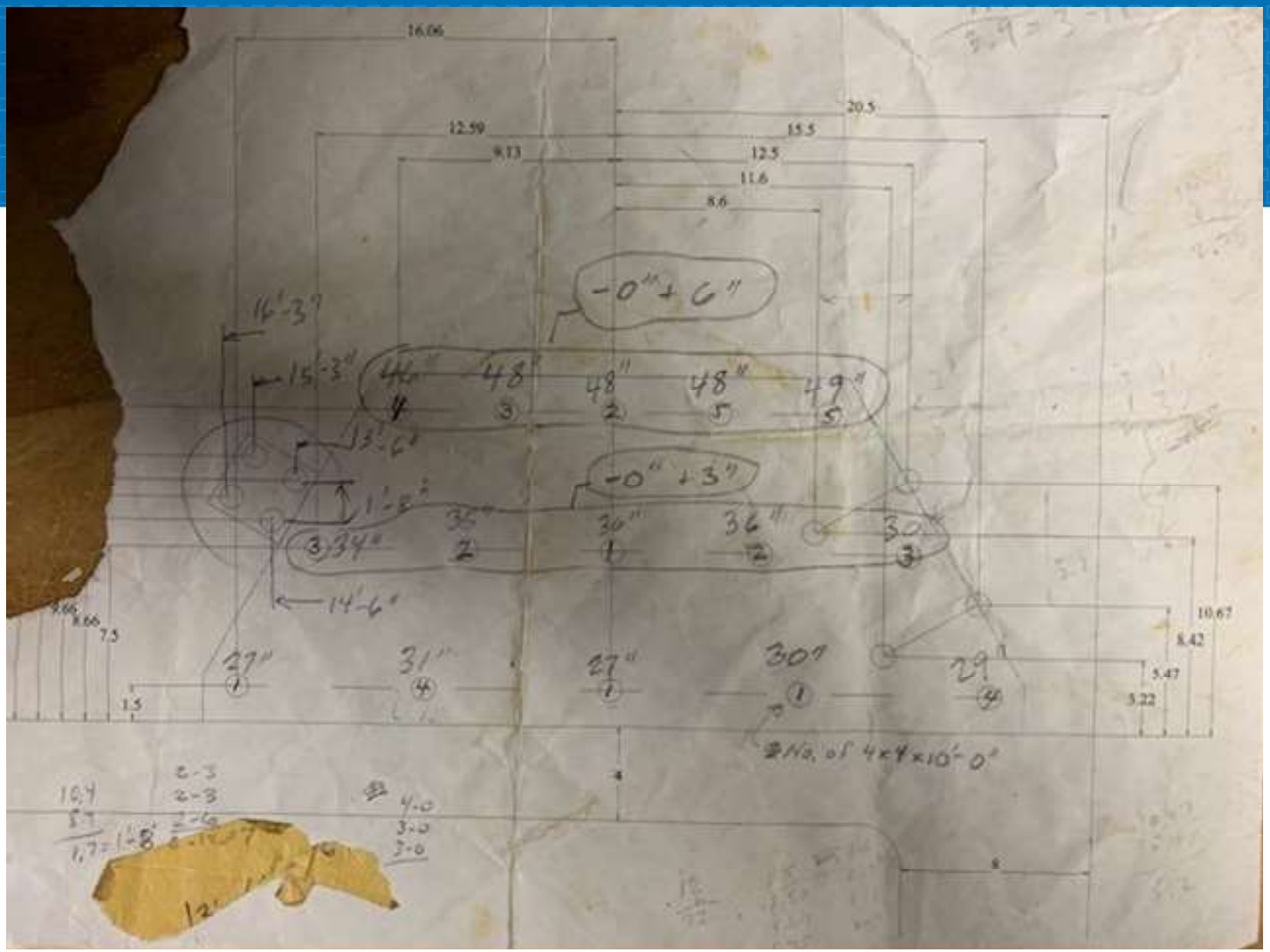
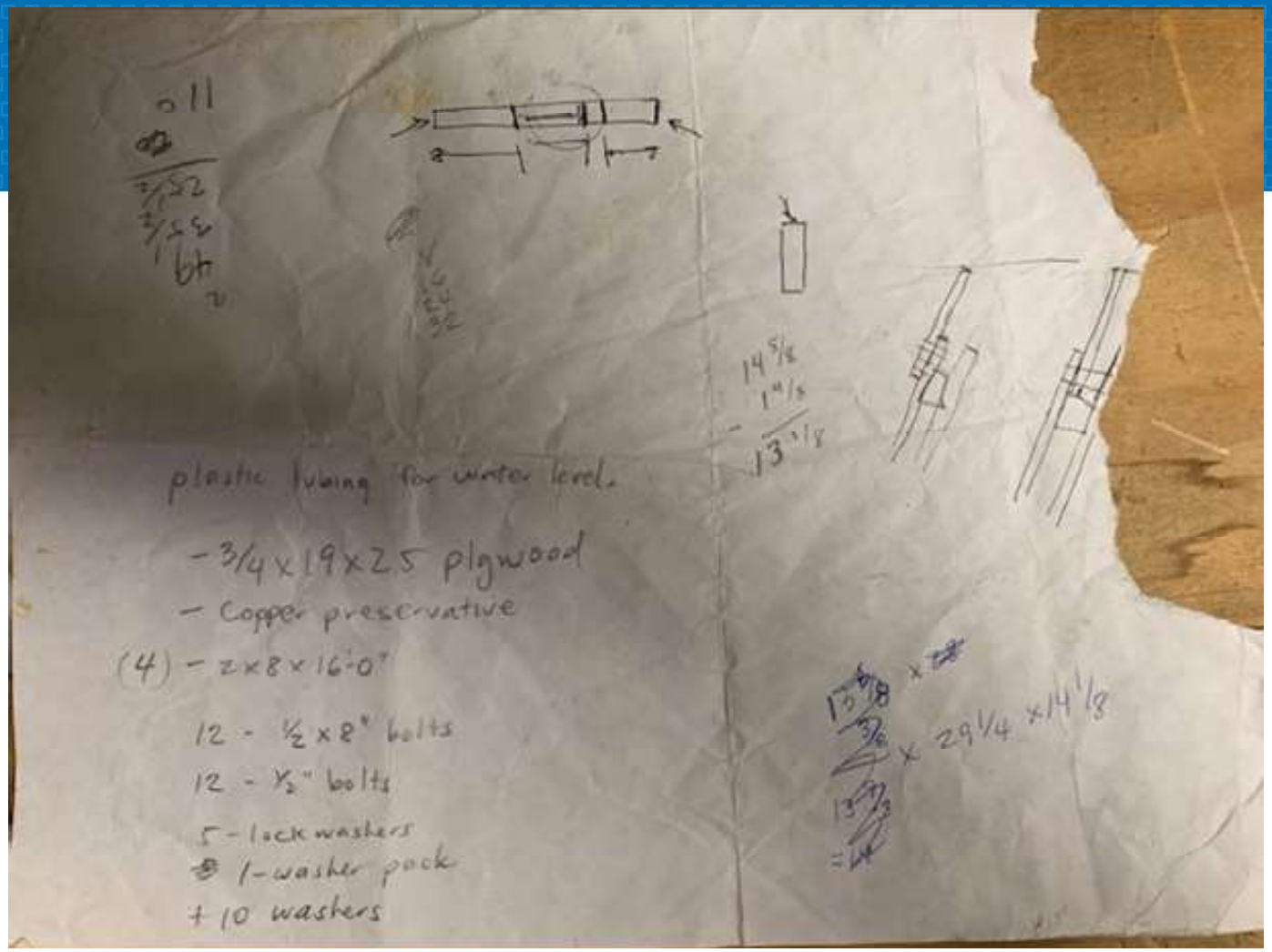
Ohio Bridges: Time Capsule

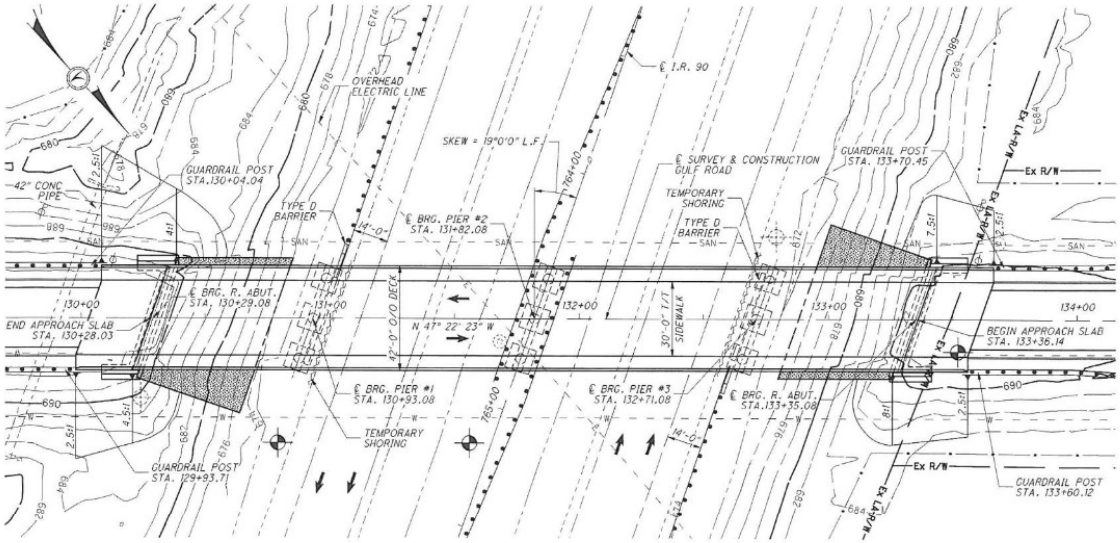
Association for Bridge Construction and Design

September 20, 2023

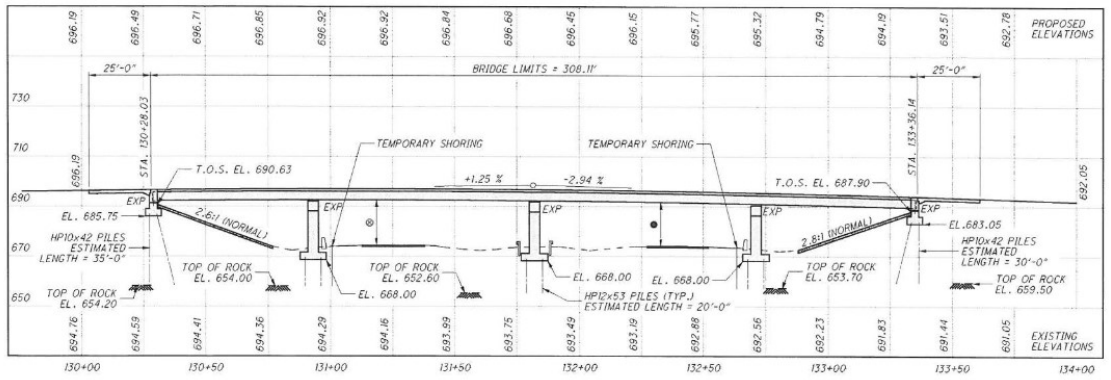
BURGESS & NIPLE


16.06
12.59
9.13
20.5
15.5
12.5
11.6
8.6
-0" + 6"
16'-3"
15'-3"
44"
48"
48"
48"
49"
4
3
2
5
5
13'-6"
1'-8"
-0" + 3"
3 34"
35"
30"
36"
30"
2
1
2
3
14'-6"
10.67
8.42
5.47
3.22
27"
31"
27"
30"
29"
1
4
1
1
4
2 No. of 4x4x10'-0"
2-3
2-3
4-0
3-0
3-0


plastic tubing for water level.
- 3/4 x 19 x 25 plywood
- Copper preservative
(4) - 2 x 8 x 16'-0"
12 - 1/2 x 8" bolts
12 - 1/2" bolts
5 - lock washers
1 - washer pack
+ 10 washers
14 5/8
1 1/8
13 1/8
x 29 1/4 x 14 1/8



PLAN



PROFILE ALONG ℄ SURVEY & CONSTRUCTION GULF ROAD

NOTES

FOR BENCHMARK INFORMATION. SEE ROADWAY PLAN SHEETS.

EARTHWORK LIMITS SHOWN ARE APPROXIMATE. ACTUAL SLOPES SHALL CONFORM TO PLAN CROSS SECTIONS.

FOR THE LOCATION OF THE EXISTING STRUCTURE SEE SOIL BORING SHEETS.

DESIGN TRAFFIC:
2010 ADT = 8330 2010 ADTT = 167
2030 ADT = 9090 2030 ADTT = 182
DIRECTIONAL DISTRIBUTION = 0.51

LEGEND

- BORING LOCATION
- HISTORICAL BORING LOCATION
- EXP - EXPANSION
- T.O.S. - TOP OF SLOPE
- ● - 16'-6" REQUIRED MINIMUM VERTICAL CLEARANCE 16'-10" ACTUAL VERTICAL CLEARANCE
- ⊗ - 17'-5" ACTUAL VERTICAL CLEARANCE

VERTICAL CURVE DATA

LENGTH = 350.00'
PVI STA = 131+81.58
PVI EL = 698.46
g1 = +1.25% g2 = -2.94%

EXISTING STRUCTURE

TYPE: CONTINUOUS STEEL BEAM WITH REINFORCED CONCRETE DECK AND SUBSTRUCTURE.
SPANS: 60'-6"; 2 @ 86'-6"; 60'-6" C/C BEARINGS
ROADWAY: 30'-0" F/F SAFETY CURB
LOADING: CF400 (57)
SKEW: 18°-59'-20" L.F.
WEARING SURFACE: ASPHALT - 1" THICK
APPROACH SLABS: AS-1-54 (25' LONG, MODIFIED)
ALIGNMENT: TANGENT
CROWN: 3/16" /FT
STRUCTURAL FILE NUMBER: 4704770
DATE BUILT: 1970
DISPOSITION: ENTIRE STRUCTURE TO BE REMOVED

PROPOSED STRUCTURE

TYPE: 4-SPAN CONTINOUS A572/A709 STEEL BEAM WITH COMPOSITE REINFORCED CONCRETE DECK ON CAP & COLUMN PIERS AND SEMI-INTEGRAL ABUTMENTS
SPANS: 64'-0", 89'-0", 89'-0", 64'-0" C/C BEARINGS
ROADWAY: 30'-0" TOE/TOE SIDEWALK
SIDEWALK: 5'-0"
LOADING: HL-93
FUTURE WEARING SURFACE: 60 PSF
SKEW: 19° L.F.
WEARING SURFACE: MONOLITHIC CONCRETE
APPROACH SLABS: 25' LONG (AS-1-81)
ALIGNMENT: TANGENT
CROWN: 0.016 FT./FT
COORDINATES: LATITUDE N 41°-24'-54"
LONGITUDE W 82°-05'-36"

DESIGN AGENCY: ODOT CENTRAL OFFICE OFFICE OF PRODUCTION
DESIGNED MSB DATE 1/26/09 STRUCTURE FILE NUMBER 4704783
DRAWN CWW CHECKED
DESIGNED CWW CHECKED TAA

LORAIN COUNTY
STA. 130+28.03
STA. 133+36.14

SITE PLAN
BRIDGE NO. LOR-90-14.78
L.R. 90 UNDER GULF RD.

LOR-90-14.78
PID No. 19686

1 / 25
27 / 51

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STANDARD DRAWINGS AND SUPPLEMENTAL SPECIFICATIONS

REFER TO THE FOLLOWING STANDARD BRIDGE DRAWING(S):

AS-1-81 REVISED 7/19/02

BR-2-98 REVISED 7/19/02

GSD-1-96 REVISED 7/19/02

SICD-1-96 REVISED 7/19/02

VPF-1-90 REVISED 7/19/02

AND TO THE FOLLOWING SUPPLEMENTAL SPECIFICATION(S):

898 DATED 7/21/2006

DESIGN SPECIFICATIONS

DESIGN SPECIFICATIONS: THIS STRUCTURE CONFORMS TO THE "LRFD BRIDGE DESIGN SPECIFICATIONS" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 2007, AND THE ODOT BRIDGE DESIGN MANUAL, 2007.

LOAD MODIFIER FOR OPERATIONAL IMPORTANCE

OPERATIONAL IMPORTANCE: A LOAD MODIFIER OF 1.0 HAS BEEN ASSUMED FOR THE DESIGN OF THIS STRUCTURE IN ACCORDANCE WITH THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, ARTICLE 1.3.5 AND THE ODOT BRIDGE DESIGN MANUAL, 2007.

DESIGN LOADING

DESIGN LOADING: DESIGN LOADING: HL-93

FUTURE WEARING SURFACE (FWS) OF 0.060 KIPS/SQ.FT.

DESIGN DATA

CONCRETE CLASS QSC2 - COMPRESSIVE STRENGTH 4.5 KSI (SUPERSTRUCTURE)

CONCRETE CLASS QSC1 - COMPRESSIVE STRENGTH 4.0 KSI (SUBSTRUCTURE)

REINFORCING STEEL - MINIMUM YIELD STRENGTH 60 KSI

STRUCTURAL STEEL - ASTM A709 GRADE 50 - YIELD STRENGTH 50 KSI

STEEL H-PILES - ASTM A572 - YIELD STRENGTH 50 KSI

DECK PROTECTION METHOD

EPOXY COATED REINFORCING STEEL
2.5" CONCRETE COVER

MONOLITHIC WEARING SURFACE

MONOLITHIC WEARING SURFACE IS ASSUMED, FOR DESIGN PURPOSES, TO BE 1 INCH THICK.

ITEM 202 - STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN

REMOVE THE ENTIRE EXISTING SPREAD FOOTINGS TO AVOID INTERFERING WITH PLACEMENT OF THE PROPOSED STRUCTURE.

THE REMOVAL OF THE ABANDONED ATTACHED UTILITY CONDUIT TO BE INCLUDED IN THIS ITEM FOR PAYMENT.

PILES TO BEDROCK

PILES TO BEDROCK: DRIVE PILES TO REFUSAL ON BEDROCK. THE DEPARTMENT WILL CONSIDER REFUSAL TO BE OBTAINED BY PENETRATING WEAK BEDROCK FOR SEVERAL INCHES TO A MINIMUM RESISTANCE OF 20 BLOWS PER INCH OR BY CONTACTING STRONG BEDROCK AND THE PILE RECEIVING AT LEAST 20 BLOWS. SELECT THE HAMMER SIZE TO ACHIEVE THE REQUIRED DEPTH TO BEDROCK AND REFUSAL. INSTEAD OF DRIVING TO REFUSAL, THE CONTRACTOR MAY PERFORM DYNAMIC LOAD TESTING ACCORDING TO C&MS 523 TO ESTABLISH A DRIVING CRITERIA FOR EACH PILE TYPE AND CAPACITY. ESTABLISH THE DRIVING CRITERIA TO ACHIEVE AN ULTIMATE BEARING VALUE THAT IS 1.5 TIMES THE TOTAL FACTORED LOAD GIVEN BELOW FOR THE PILES. PAYMENT FOR DYNAMIC LOAD TESTING PERFORMED AT THE CONTRACTOR'S OPTION IS INCLUDED IN THE UNIT PRICE PAY ITEM FOR PILES DRIVEN.

THE TOTAL FACTORED LOAD IS 310 KIPS PER PILE FOR THE HP10x42 ABUTMENT PILES. THE TOTAL FACTORED LOAD IS 380 KIPS PER PILE FOR THE HP12x53 PIER PILES.

REAR ABUTMENT PILES:
19 PILES 35 FEET LONG, ORDER LENGTH
FORWARD ABUTMENT PILES:
19 PILES 30 FEET LONG, ORDER LENGTH
PIER PILES:
45 PILES 25 FEET LONG, ORDER LENGTH

BATTERED PILES

BATTERED PILES: THE BLOW COUNT FOR BATTERED PILES SHALL BE THE BLOW COUNT DETERMINED FOR VERTICAL PILES OF THE SAME ULTIMATE BEARING VALUE DIVIDED BY AN EFFICIENCY FACTOR (D). COMPUTE THE EFFICIENCY FACTOR (D) AS FOLLOWS:

$$D = \frac{1-UG}{\sqrt{1+G^2}}$$

U = COEFFICIENT OF FRICTION, WHICH IS ESTIMATED AT 0.05 FOR DOUBLE-ACTING AIR OPERATED OR DIESEL HAMMERS; 0.1 FOR SINGLE-ACTING AIR OPERATED OR DIESEL HAMMERS; AND 0.2 FOR DROP HAMMERS.
G = RATE OF BATTER (1/3, 1/4, ETC.)

UTILITY LINES

REFER TO THE PROJECT UTILITY NOTE FOR DE-ENERGIZING OF THE AERIAL TRANSMISSION LINE.

ITEM 898 - QC/QA CONCRETE, CLASS QSC2, SUPERSTRUCTURE (DECK), AS PER PLAN

ITEM 898 - QC/QA CONCRETE, CLASS QSC2, SUPERSTRUCTURE (DECK), AS PER PLAN: THE DEPARTMENT WILL CALCULATE THE FINAL ADJUSTED PAYMENT ACCORDING TO 898.17 AND INCLUDE APPROACH SLAB CONCRETE AND DECK CONCRETE IN THE SAME LOT TO DETERMINE FINAL PAY FACTORS.

DECK PLACEMENT DESIGN ASSUMPTIONS:

DECK PLACEMENT DESIGN ASSUMPTIONS:
THE FOLLOWING ASSUMPTIONS OF CONSTRUCTION MEANS AND METHODS WERE MADE FOR THE ANALYSIS AND DESIGN OF THE SUPERSTRUCTURE. THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN OF THE FALSEWORK SUPPORT SYSTEM WITHIN THESE PARAMETERS AND WILL ASSUME RESPONSIBILITY FOR SUPERSTRUCTURE ANALYSIS FOR DEVIATION FROM THESE DESIGN ASSUMPTIONS.

AN EIGHT WHEEL FINISHING MACHINE WITH A MAXIMUM WHEEL LOAD OF 1.1 KIPS FOR A TOTAL MACHINE LOAD OF 8.9 KIPS.

A MINIMUM OUT-TO-OUT WHEEL SPACING AT EACH END OF THE MACHINE OF 103".

A MAXIMUM SPACING OF OVERHANG FALSEWORK BRACKETS OF 48 IN.

A MAXIMUM DISTANCE FROM THE CENTERLINE OF THE FASCIA GIRDER TO THE FACE OF THE SAFETY HANDRAIL OF 65".

ITEM 898 - QC/QA CONCRETE, CLASS QSC2, SUPERSTRUCTURE (APPROACH SLAB), AS PER PLAN

ITEM 898 - QC/QA CONCRETE, CLASS QSC2, SUPERSTRUCTURE (APPROACH SLAB), AS PER PLAN FURNISH APPROACH SLABS CONFORMING TO CMS 526 EXCEPT CONCRETE SHALL BE IN ACCORDANCE WITH SUPPLEMENTAL SPECIFICATION 898, QC/QA CONCRETE, CLASS QSC2. THE ACCEPTED QUANTITIES SHALL INCLUDE: CONCRETE, CURBS, REINFORCING STEEL, JOINT FILLERS, JOINT SEALERS, JOINT SEALS, AND WATERPROOFING. THE DEPARTMENT WILL MEASURE APPROACH SLABS BY THE NUMBER OF SQUARE YARDS. THE DEPARTMENT WILL INITIALLY PAY THE FULL BID PRICE TO THE CONTRACTOR UPON COMPLETING THE WORK. THE DEPARTMENT WILL CALCULATE THE FINAL ADJUSTED PAYMENT ACCORDING TO 898.17 AND INCLUDE APPROACH SLAB CONCRETE AND DECK CONCRETE IN THE SAME LOT TO DETERMINE FINAL PAY FACTORS.

ITEM 898 - QC/QA CONCRETE, CLASS QSC2, SUPERSTRUCTURE (PARAPET), AS PER PLAN

ITEM 898 - QC/QA CONCRETE, CLASS QSC2, SUPERSTRUCTURE (PARAPET), THE CONCRETE QUANTITIES OF THE PARAPET AND SIDEWALK ON BOTH THE BRIDGE DECK AND THE APPROACH SLABS ARE INCLUDED FOR PAYMENT.

CONCRETE PARAPETS

CONCRETE PARAPETS: AS SOON AS A CONCRETE SAW CAN BE OPERATED WITHOUT DAMAGING THE FRESHLY PLACED CONCRETE, SAWCUT 1¼" DEEP CONTROL JOINTS INTO THE PERIMETER OF THE CONCRETE PARAPET STARTING AND ENDING AT THE ELEVATION OF THE CONCRETE DECK. PLACE THE SAWCUTS AT A MINIMUM OF 6 FEET AND A MAXIMUM OF 10 FEET CENTERS. USE AN EDGE GUIDE, FENCE, OR JIG TO ENSURE THAT THE CUT JOINT IS STRAIGHT, TRUE, AND ALIGNED ON ALL FACES OF THE PARAPET. THE JOINT WIDTH SHALL BE THE WIDTH OF THE SAW BLADE, A NOMINAL WIDTH OF ¼ INCH. SEAL THE PERIMETER OF THE DEFLECTION CONTROL JOINT TO A MINIMUM DEPTH OF 1 INCH WITH A POLYURETHANE OR POLYMERIC MATERIAL CONFORMING TO ASTM C920, TYPE S. LEAVE THE BOTTOM ½ INCH OF THE INSIDE AND OUTSIDE FACE UNSEALED TO ALLOW WATER TO ESCAPE.

ITEM 516 SEMI-INTEGRAL ABUTMENT EXPANSION JOINT SEAL, AS PER PLAN

ITEM 516 SEMI-INTEGRAL ABUTMENT EXPANSION JOINT SEAL, AS PER PLAN: INSTALL A 3 FOOT WIDE NEOPRENE SHEET AT LOCATIONS SHOWN IN THE PLANS. SECURE THE NEOPRENE SHEETING TO THE CONCRETE WITH 1¼" X #10 GAGE (LENGTH X SHANK DIAMETER) GALVANIZED BUTTON HEAD SPIKES THROUGH A 1 INCH OUTSIDE DIAMETER, #10 GAGE GALVANIZED WASHER. MAXIMUM FASTENER SPACING IS 9 INCHES. USE OF OTHER SIMILAR GALVANIZED DEVICES, WHICH WILL NOT DAMAGE EITHER THE NEOPRENE OR THE CONCRETE, WILL BE SUBJECT TO THE APPROVAL OF THE ENGINEER.

CENTER THE NEOPRENE STRIPS ON ALL JOINTS. FOR HORIZONTAL JOINTS, SECURE THE HORIZONTAL NEOPRENE STRIP BY USING A SINGLE LINE OF FASTENERS, STARTING AT 6 INCHES, +/-, FROM THE TOP OF THE NEOPRENE STRIP. FOR THE VERTICAL JOINTS SECURE THE VERTICAL NEOPRENE STRIP BY USING A SINGLE VERTICAL LINE OF FASTENERS, STARTING AT 6 INCHES, +/-, FROM THE VERTICAL EDGE OF THE NEOPRENE STRIP NEAREST TO THE CENTERLINE OF ROADWAY. FOR VERTICAL JOINTS, INSTALL 2 ADDITIONAL FASTENERS AT 6 INCHES, CENTER TO CENTER, ACROSS THE TOP OF THE NEOPRENE STRIP ON THE SAME SIDE OF THE VERTICAL JOINT AS THE SINGLE VERTICAL ROW OF FASTENERS IS LOCATED.

THE VERTICAL NEOPRENE STRIPS SHALL COMPLETELY OVERLAP THE HORIZONTAL STRIPS. LAP LENGTHS OF THE HORIZONTAL STRIPS THAT ARE NOT VULCANIZED OR ADHESIVE BONDED, SHALL BE AT LEAST 1 FOOT IN LENGTH, OR 6 INCHES IN LENGTH IF THE LAP IS VULCANIZED OR ADHESIVE BONDED. NO LAPS ARE ACCEPTABLE IN VERTICALLY INSTALLED NEOPRENE STRIPS.

THE NEOPRENE SHEETING SHALL BE 3/32" THICK GENERAL PURPOSE, HEAVY-DUTY NEOPRENE SHEET WITH NYLON FABRIC REINFORCEMENT. THE SHEETING SHALL BE "FAIRPRENE NUMBER NN-0003", BY E. I. DUPONT DE NEMOURS AND COMPANY, INC., "WINGPRENE" BY THE GOODYEAR TIRE AND RUBBER COMPANY, OR AN APPROVED ALTERNATE. THE NEOPRENE SHEETING SHALL CONFORM TO THE FOLLOWING:

DESCRIPTION OF TEST	ASTM	REQUIREMENT
THICKNESS, INCHES	D751	0.094 +/- 0.01
BREAKING STRENGTH, GRAB, LBS, MINIMUM	D751	700 X 700 (LONG. X TRANS.)
ADHESIVE STRIP, 1" WIDE X 2" LONG, LBS, MINIMUM	D751	9
BURST STRENGTH, PSI, MINIMUM	D751	1400
HEAT AGING, 70 HR, 212 OF, 1800 BEND WITHOUT CRACKING	D2136	NO CRACKING OF COATING
LOW TEMP. BRITTLENESS, 1 HR, -40 DEG. F, BEND AROUND ¼" MANDREL	D2136	NO CRACKING OF COATING

METHOD OF MEASUREMENT: THE DEPARTMENT WILL MEASURE THE TOTAL LENGTH OF JOINT TO BE SEALED BY THE NUMBER OF FEET.

BASIS OF PAYMENT: THE DEPARTMENT WILL PAY FOR ACCEPTED QUANTITIES AT THE CONTRACT PRICE FOR ITEM 516, SEMI-INTEGRAL ABUTMENT EXPANSION JOINT SEAL, AS PER PLAN.

DESIGN AGENCY: ODOT CENTRAL OFFICE, OFFICE OF PRODUCTION
DESIGNED: MRB | DRAWN: MRB | REVIEWED: RCD | DATE: 3/16/09
CHECKED: TAA | REVISED: | STRUCTURE FILE NUMBER: 4704789

GENERAL NOTES
BRIDGE NO. LOR-90-1478
I.R. 90 UNDER GULF

LOR-90-14.78
PID No. 19585

ESTIMATED QUANTITIES

ITEM	EXTENSION	TOTAL	UNIT	DESCRIPTION	ABUT.	PIERS	SUPER.	GEN.	SHEET #
202	11003	LUMP		STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN				LUMP	2/25
202	22900	200	SQ YD	APPROACH SLAB REMOVED			200		
503	11100	LUMP		COFFERDAMS AND EXCAVATION BRACING				LUMP	
503	21300	LUMP		UNCLASSIFIED EXCAVATION				LUMP	
505	11100	LUMP		PILE DRIVING EQUIPMENT MOBILIZATION				LUMP	
507	00100	1425	FT	STEEL PILES HP10X42, FURNISHED	1425				
507	00150	1235	FT	STEEL PILES HP10X42, DRIVEN	1235				
507	00200	1125	FT	STEEL PILES HP12X53, FURNISHED		1125			
507	00250	900	FT	STEEL PILES HP12X53, DRIVEN		900			
509	10000	176550	POUND	EPOXY COATED REINFORCING STEEL	16228	39055	121267		
512	10100	1595	SQ YD	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	76	308	1211		
513	10040	LUMP		STRUCTURAL STEEL MEMBERS, LEVEL 2				LUMP	
513	20000	4860	EACH	WELDED STUD SHEAR CONNECTORS			4860		
514	00300	LUMP		FIELD PAINTING STRUCTURAL STEEL, INTERMEDIATE COAT				LUMP	
514	00400	LUMP		FIELD PAINTING STRUCTURAL STEEL, FINISH COAT				LUMP	
516	13600	30	SQ FT	1" PREFORMED EXPANSION JOINT FILLER			30		
516	13900	125	SQ FT	2" PREFORMED EXPANSION JOINT FILLER	125				
516	14021	110	FT	SEMI-INTEGRAL ABUTMENT EXPANSION JOINT SEAL, AS PER PLAN	110				2/25
516	44200	10	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), (BEARING: 18"x22"x3.65", LOAD PLATE: 20"x24"x2")		10			
516	44201	5	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), AS PER PLAN, (BEARING: 18"x22"x3.65", LOAD PLATE: 20"x24"xBEVEL")		5			24/25
516	44201	10	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), AS PER PLAN, (BEARING: 14"x18"x3.65", LOAD PLATE: 16"x20"x1.5")	10				23/25
518	21230	LUMP		POROUS BACKFILL WITH FILTER FABRIC				LUMP	
518	40000	90	FT	6" PERFORATED CORRUGATED PLASTIC PIPE	90				
518	40012	69	FT	6" NON-PERFORATED CORRUGATED PLASTIC PIPE	69				
SPECIAL	53000200	LUMP		STRUCTURE MISC.: PRECONSTRUCTION CONDITION SURVEY				LUMP	3/25
SPECIAL	53000200	LUMP		STRUCTURE MISC.: VIBRATION MONITORING				LUMP	3/25
601	20000	600	SQ YD	CRUSHED AGGREGATE SLOPE PROTECTION	600				
607	39310	600	FT	VANDAL PROTECTION FENCE, 8' STRAIGHT, COATED FABRIC			600		
898	10201	422	CU YD	QC/QA CONCRETE, CLASS QSC2, SUPERSTRUCTURE (DECK), AS PER PLAN			422		2/25
898	10705	234	SQ YD	QC/QA CONCRETE, CLASS QSC2, SUPERSTRUCTURE (APPROACH SLAB), (T=15"), AS PER PLAN			234		2/25
898	11001	190	CU YD	QC/QA CONCRETE, CLASS QSC2, SUPERSTRUCTURE (PARAPET), AS PER PLAN			190		2/25
898	20100	149	CU YD	QC/QA CONCRETE, CLASS QSC1, SUBSTRUCTURE (PIER ABOVE FOOTING)		149			
898	20150	44	CU YD	QC/QA CONCRETE, CLASS QSC1, SUBSTRUCTURE (ABUTMENT)	44				
898	20300	219	CU YD	QC/QA CONCRETE, CLASS QSC1, SUBSTRUCTURE (FOOTING)	102	117			

DESIGN AGENCY: ODOT CENTRAL OFFICE OFFICE OF PRODUCTION

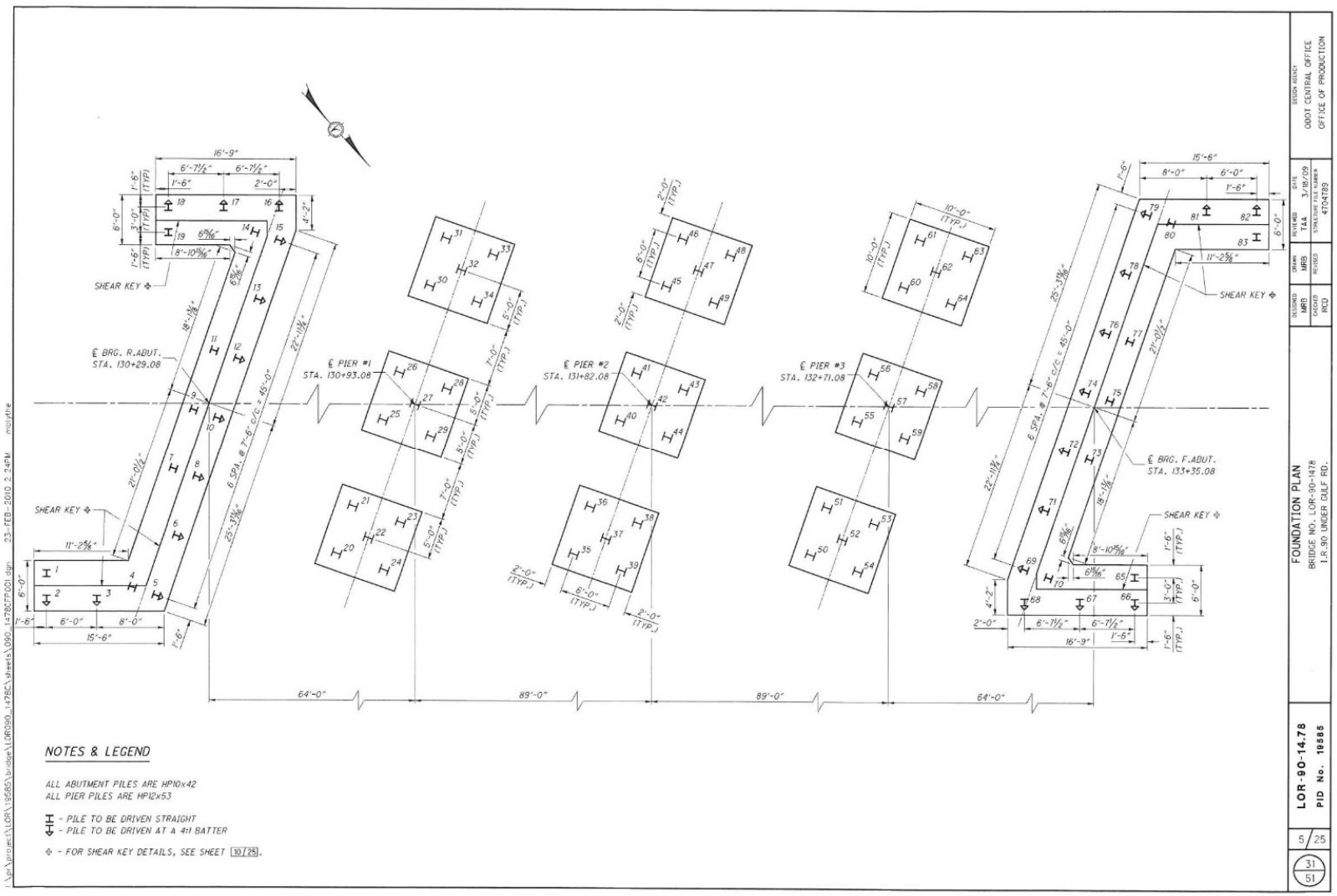
DESIGNED MRB | DRAWN MRB | CHECKED RCJ | REVISED | REVISED C.J.W. | DATE: 3/26/09 | STRUCTURE FILE NUMBER 4704789

ESTIMATED QUANTITIES
BRIDGE NO. LOR-90-14.78
I.R. 90 UNDER GULF

LOR-90-14.78
PID No. 19585

4/25

30/51



NOTES & LEGEND

ALL ABUTMENT PILES ARE HP10x42
ALL PIER PILES ARE HP12x53

- PILE TO BE DRIVEN STRAIGHT
- PILE TO BE DRIVEN AT A 4:1 BATTER

℄ - FOR SHEAR KEY DETAILS, SEE SHEET 10/25.

DESIGN AGENCY: ODOT CENTRAL OFFICE
OFFICE OF PRODUCTION
DESIGNED: MRB
DRAWN: MRB
CHECKED: RKD
REVISED:
DATE: 3-18-09
STRUCTURE FILE NUMBER: 4704789

FOUNDATION PLAN
BRIDGE NO. LOR-90-1478
I.R. 90 UNDER GALF RD.

LOR-90-14.78
PID No. 19585

5 / 25
37 / 51

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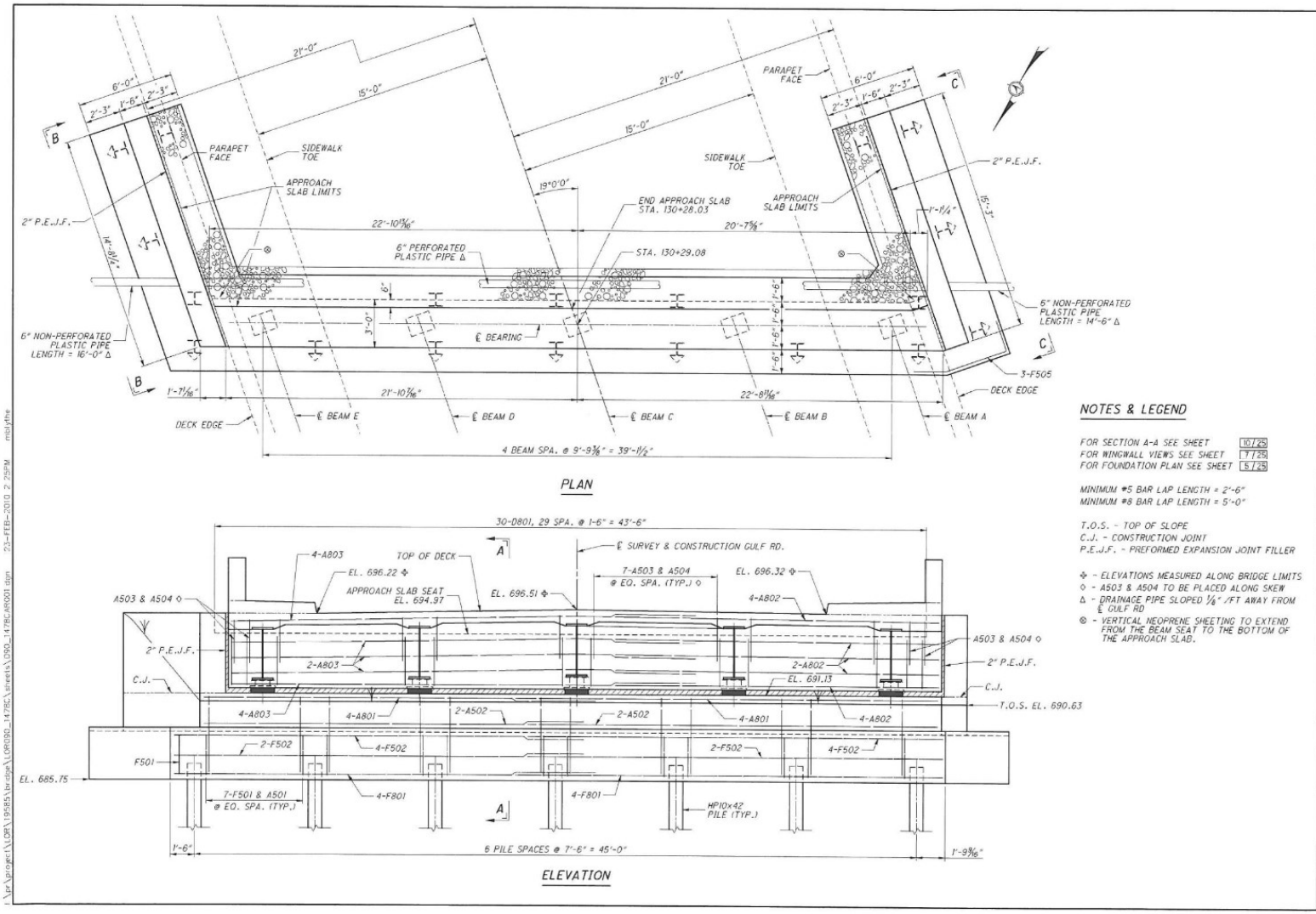
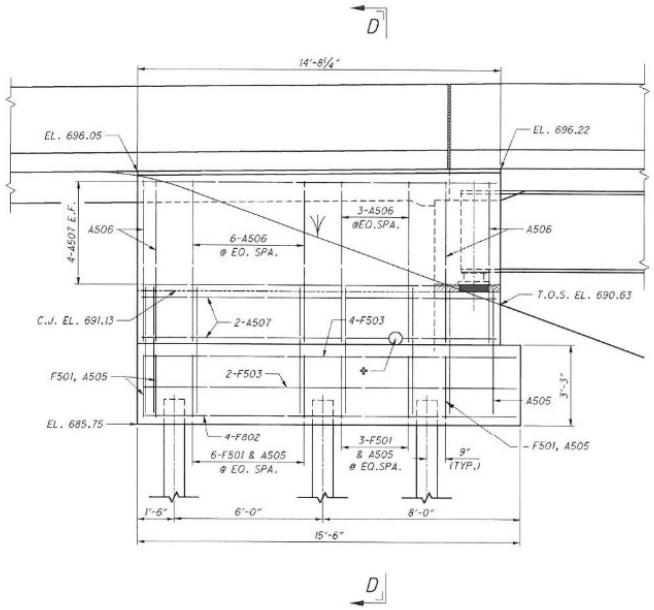
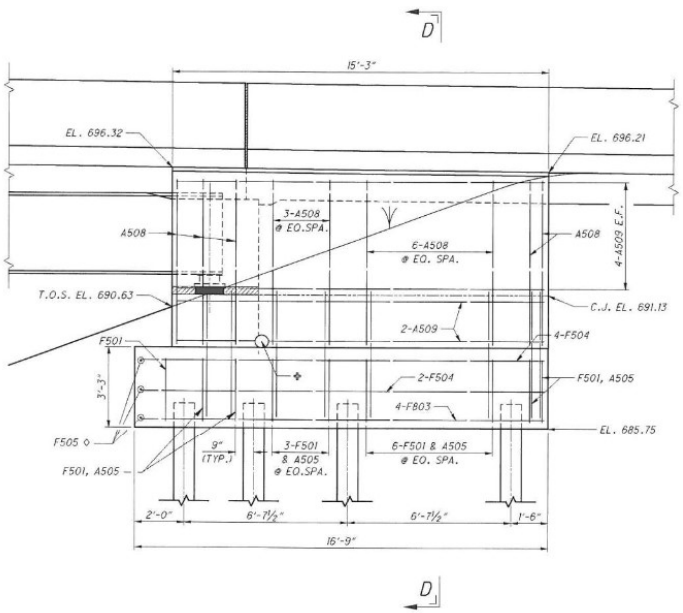

PLAN
ELEVATION
NOTES & LEGEND
FOR SECTION A-A SEE SHEET 10 / 25
FOR WINGWALL VIEWS SEE SHEET 7 / 25
FOR FOUNDATION PLAN SEE SHEET 5 / 25
MINIMUM #5 BAR LAP LENGTH = 2'-6"
MINIMUM #8 BAR LAP LENGTH = 5'-0"
T.O.S. - TOP OF SLOPE
C.J. - CONSTRUCTION JOINT
P.E.J.F. - PREFORMED EXPANSION JOINT FILLER
✣ - ELEVATIONS MEASURED ALONG BRIDGE LIMITS
◊ - A503 & A504 TO BE PLACED ALONG SKEW
Δ - DRAINAGE PIPE SLOPED 1/8" /FT AWAY FROM ℄ GULF RD
⊗ - VERTICAL NEOPRENE SHEETING TO EXTEND FROM THE BEAM SEAT TO THE BOTTOM OF THE APPROACH SLAB.
REAR ABUTMENT DETAILS
BRIDGE NO. LOR-90-1478
1.34.90 UNDER GULF RD.
LOR-90-14.78
PID No. 19585
6 / 25
32 / 51



VIEW B-B



VIEW C-C

NOTES & LEGEND

FOR ABUTMENT DETAILS SEE SHEET 6 / 25
FOR SECTION D-D SEE SHEET 10 / 25
FOR FOUNDATION PLAN SEE SHEET 5 / 25

E.F. - EACH FACE
T.O.S. - TOP OF SLOPE
C.J. - CONSTRUCTION JOINT

✣ - 6" NON-PERFORATED PLASTIC PIPE TO EXTEND THROUGH WINGWALLS

◊ - FOR MORE DETAILS SEE SHEET 6 / 25

DESIGN AGENCY
ODOT CENTRAL OFFICE
OFFICE OF PRODUCTION

DATE RECEIVED 3/16/09
STRUCTURE FILE NUMBER 4704169

DRAWN MRB
REVISED

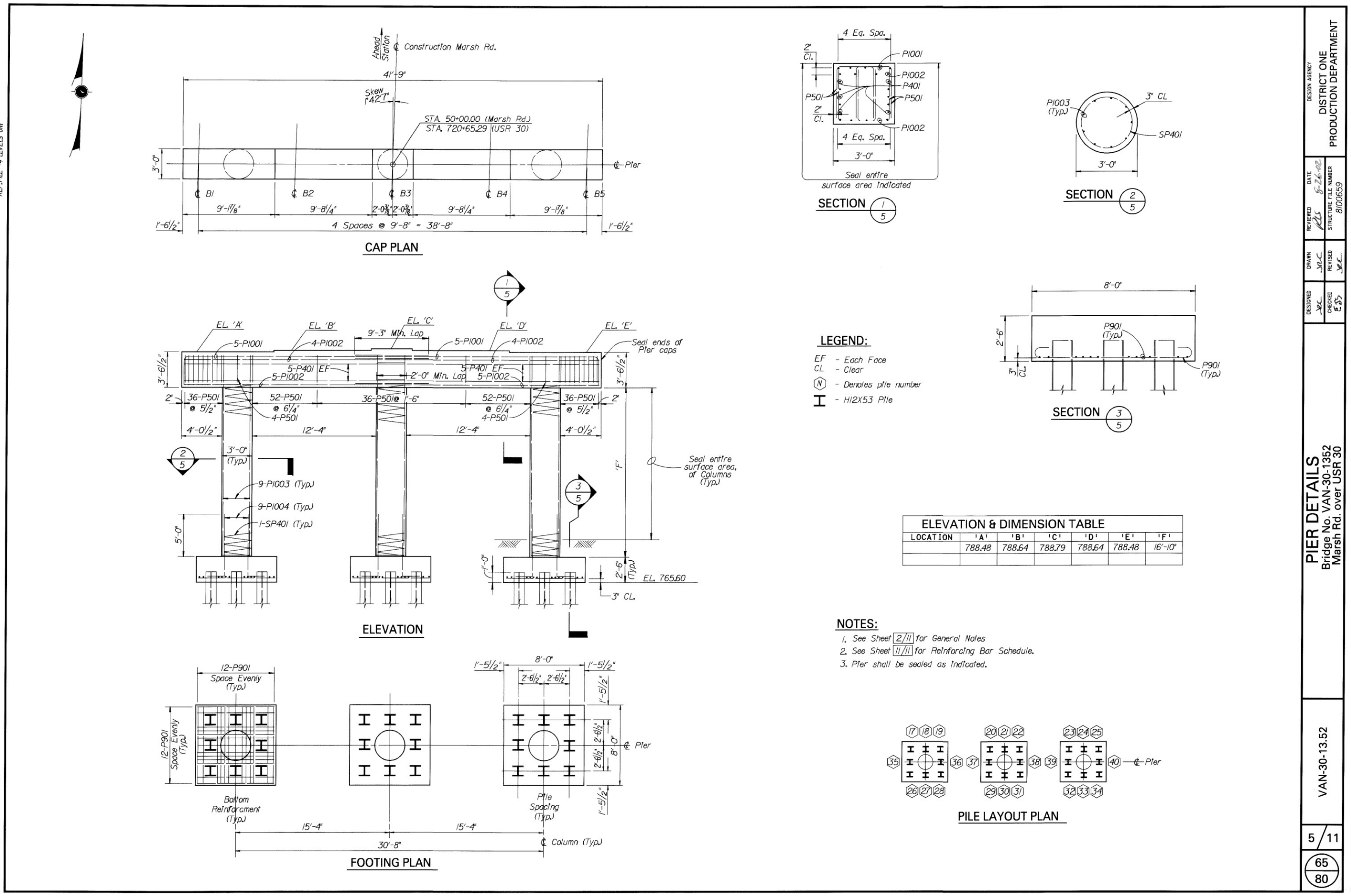
DESIGNED MRB
CHECKED TAA

REAR ABUTMENT WINGWALL DETAILS
BRIDGE NO. LOR-90-1478
I.R.90 UNDER OLD RD.

LOR-90-14.78
PID No. 19585

7 / 25

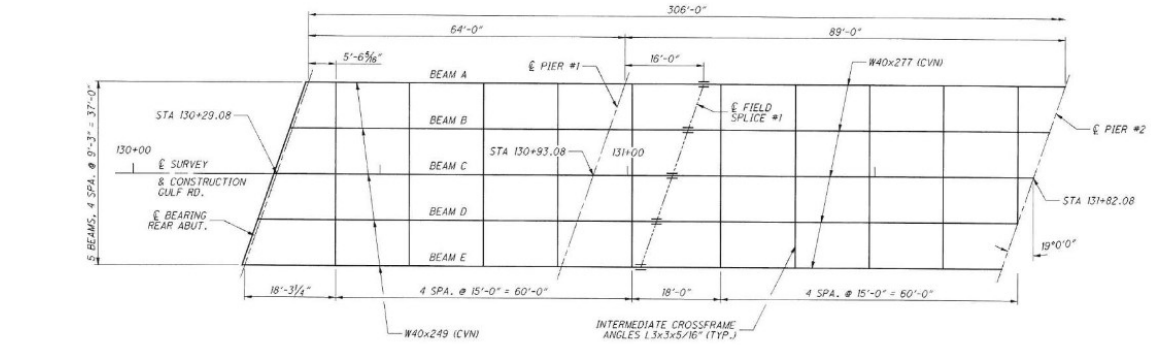
33 / 51



ELEVATION & DIMENSION TABLE

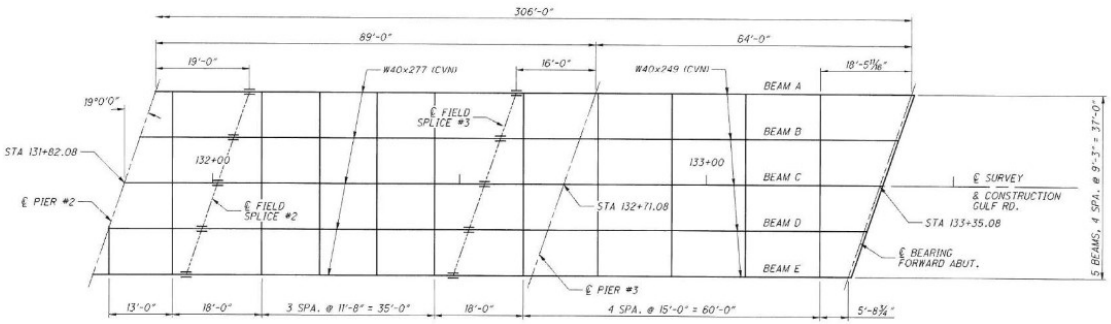
LOCATION	'A'	'B'	'C'	'D'	'E'	'F'
	788.48	788.64	788.79	788.64	788.48	16'-10"

BURGESS & NIPLE



FRAMING PLAN

REAR ABUTMENT TO PIER #2



FRAMING PLAN

PIER #2 TO FORWARD ABUTMENT

NOTES

FOR NOTES SEE SHEETS 15/25

SUPERSTRUCTURE DETAILS

BRIDGE NO. LOR-90-14.78

I.R. 90 UNDER GULF RD.

DESIGN AGENCY: ODOT CENTRAL OFFICE, OFFICE OF PRODUCTION

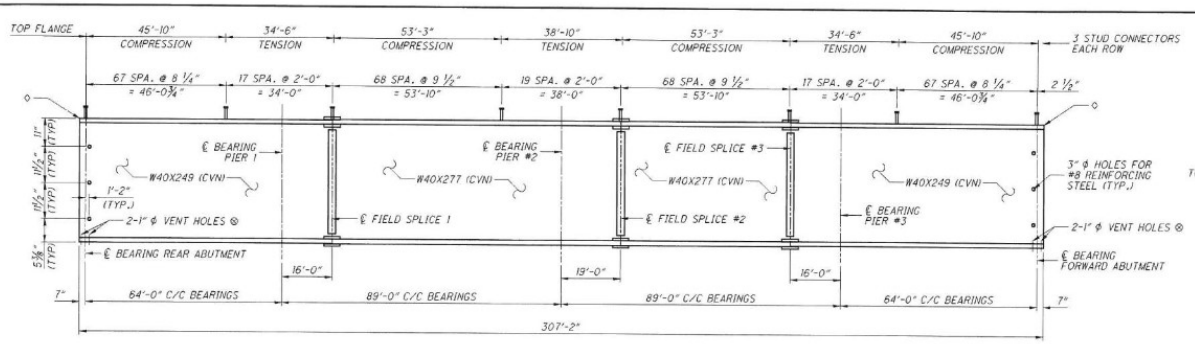
DESIGNED MRB | DRAWN MRB | CHECKED T&A | REVISED | REVIEWED RCD | DATE 3/18/09 | STRUCTURE FILE NUMBER 4704789

LOR-90-14.78

PID No. 19585

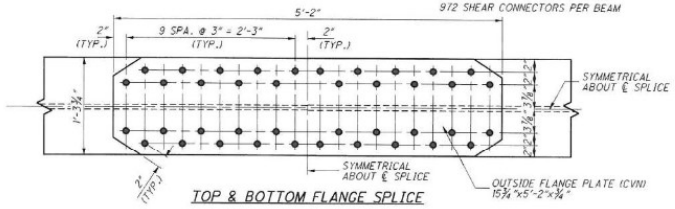
14/25

40/51



BEAM ELEVATION

(EXAGGERATED VERTICAL SCALE)
972 SHEAR CONNECTORS PER BEAM



TOP & BOTTOM FLANGE SPLICE

(40 BOLTS PER FLANGE)

NOTES & LEGEND

WELD ATTACHMENT OF SUPPORTS FOR CONCRETE DECK FINISHING MACHINE TO AREAS OF THE FASCIA STRINGER FLANGES DESIGNATED "COMPRESSION". DO NOT WELD ATTACHMENTS TO AREAS DESIGNATED "TENSION". FILLET WELDS TO COMPRESSION FLANGES SHALL BE AT LEAST 1" FROM EDGE OF FLANGE, BE NO MORE THAN 2" LONG, AND BE AT LEAST ¼" FOR THICKNESSES UP TO ¾" OR ⅝" FOR GREATER THAN ¾" THICK.

CVN: WHERE A SHAPE OR PLATE IS DESIGNATED (CVN), FURNISH MATERIAL THAT MEETS THE MINIMUM NOTCH TOUGHNESS REQUIREMENTS AS SPECIFIED IN 711.01.

3" ϕ HOLES DRILLED INTO PROPOSED BEAMS SHALL BE PAID UNDER ITEM 513 STRUCTURAL STEEL. THIS PAYMENT IS INCIDENTAL TO THE PAY ITEM

HIGH STRENGTH BOLTS SHALL BE 1" DIAMETER A325 UNLESS OTHERWISE NOTED.

ALL BEAM LENGTH DIMENSIONS ARE @ 60° F.

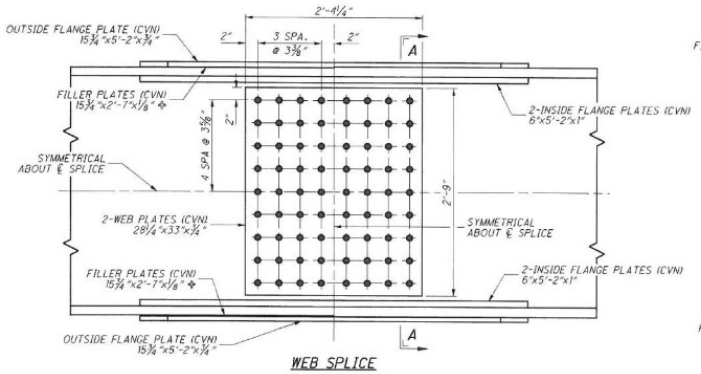
ALL STRUCTURAL STEEL SHALL BE ASTM A709 GRADE 50.

LATERAL AND LONGITUDINAL SPACING OF WELDED STUD CONNECTORS MAY BE ALTERED AT FIELD SPLICE LOCATIONS TO AVOID INTERFERENCE WITH FLANGE SPLICE BOLTS PROVIDED THAT AT LEAST THE NUMBER OF STUDS SPECIFIED IN THE BEAM ELEVATION ARE PROVIDED.

⊗ - 1" ϕ HOLES DRILLED INTO PROPOSED BEAM FLANGES SHALL BE PAID UNDER ITEM 513 STRUCTURAL STEEL. THIS PAYMENT IS INCIDENTAL TO THE PAY ITEM. FOR DETAILS SEE SHEET 23 OF 25.

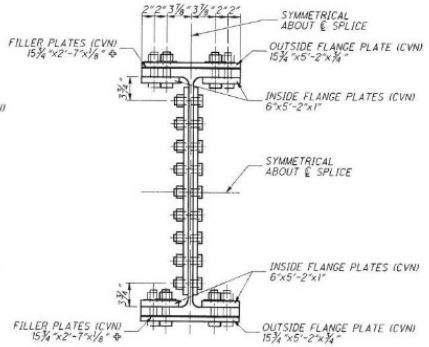
✥ - FILLER PLATES ONLY REQUIRED FOR FIELD SPLICES 1 & 3

◊ - THE TOP BEAM FLANGE NEED NOT BE CLIPPED AT THE ABUTMENTS AS IS SHOWN IN SICD-1-96

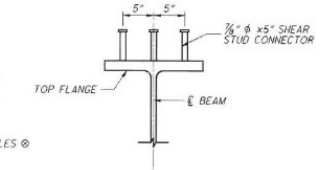


WEB SPLICE

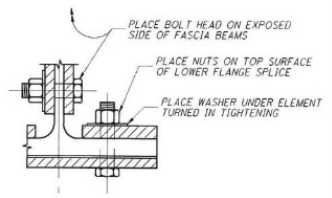
(72 WEB BOLTS)



SECTION A-A



SHEAR CONNECTOR DETAIL



PARTIAL SECTION

ODOT CENTRAL OFFICE
OFFICE OF PRODUCTION

DESIGNED T.A.A. | DRAWN M.R.B. | CHECKED M.R.B. | REVISED | REVISED | DATE 3/18/09 | STRUCTURE FILE NUMBER 4704789

SUPERSTRUCTURE DETAILS

BRIDGE NO. LOR-90-1478
I.R. 90 UNDER GULF RD.

LOR-90-14.78
PID No. 19585

15 / 25

41 / 51

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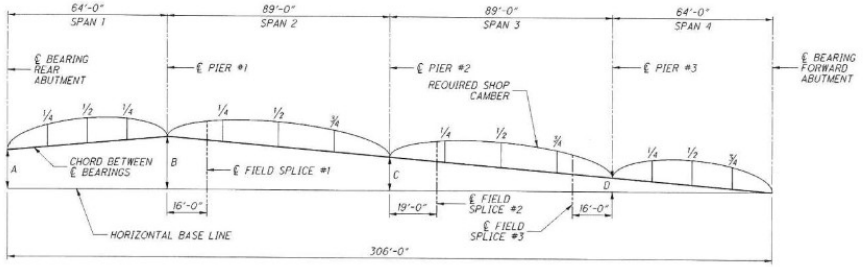

BLOCKING AND CAMBER DIAGRAM

(STEEL IN UNLOADED POSITION)

BLOCKING HEIGHTS

	BEAM A	BEAM B	BEAM C	BEAM D	BEAM E
A	2'-10"	2'-8 5/8"	2'-7 1/4"	2'-5 3/4"	2'-4 7/16"
B	3'-2"	3'-0 13/16"	2'-11 1/8"	2'-10 11/16"	2'-9 3/4"
C	2'-9 3/4"	2'-8 3/4"	2'-8"	2'-7 5/16"	2'-6 13/16"
D	1'-6 1/4"	1'-5 7/8"	1'-5 5/8"	1'-5 1/4"	1'-5 3/16"

BEAM A-E DEFLECTION AND CAMBER, INCHES

LOCATION OF POINT	SPAN 1			SPAN 2				SPAN 3					SPAN 4		
	1/4	1/2	3/4	SPLICE #1	1/4	1/2	3/4	SPLICE #2	1/4	1/2	3/4	SPLICE #3	1/4	1/2	3/4
BEAM DEFLECTION	1/16	1/16	0	1/16	1/8	1/8	1/16	1/16	1/16	1/8	1/8	1/16	0	1/16	1/16
REMAINING NON-COMPOSITE DL DEFLECTION	3/16	1/4	1/16	3/16	5/16	1/2	1/4	1/4	1/4	1/2	5/16	3/16	1/16	1/4	3/16
COMPOSITE DL DEFLECTION ✥	3/16	3/16	1/16	1/16	1/4	3/16	1/4	3/16	1/4	3/16	1/4	3/16	1/16	1/16	3/16
VERTICAL CURVE CORRECTION	9/16	3/4	9/16	7/8	1 1/8	1 3/16	1 5/16	1 3/16	1 5/16	1 5/16	1 1/8	7/8	9/16	3/4	9/16
SHOP CAMBER	1	1 1/4	11/16	1 5/16	1 13/16	2 5/8	1 1/8	1 11/16	1 1/8	2 5/8	1 13/16	1 5/16	11/16	1 1/4	1

NOTES & LEGEND

FOR ADDITIONAL NOTES SEE SHEETS 15/25

DL - DEAD LOAD

✥ - COMPOSITE DEAD LOAD DEFLECTION IS THE DEFLECTION CAUSED BY THE WEIGHT OF THE PARAPETS, FENCES & SIDEWALKS.

DESIGN AGENCY: ODOT CENTRAL OFFICE, OFFICE OF PRODUCTION
DETAILED: MRB
CHECKED: TAA
DRAWN: MRB
REVIEWED: RCD
DATE: 3/18/09
STRUCTURE FILE NUMBER: 4704789

SUPERSTRUCTURE DETAILS
BRIDGE NO. LOR-90-14.78
I.R. 90 UNDER GULF RD.

LOR-90-14.78
PID No. 19585

16 / 25
42 / 51

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SCREED ELEVATIONS

LOCATION	LEFT EDGE OF DECK STATION	LEFT EDGE OF DECK ELEV.	BEAM A STATION	BEAM A ELEV.	LEFT TOE OF S.W. STATION	LEFT TOE OF S.W. ELEV.	BEAM B STATION	BEAM B ELEV.	BEAM C / P.G. STATION	BEAM C / P.G. ELEV.
BEGIN A.S.	130+08.19	696.05	NA		130+08.19	696.05	NA		130+03.02	696.23
℄ R.ABUT.	130+36.31	696.35	130+35.45	696.34	130+34.24	696.33	130+32.27	696.41	130+29.08	696.52
1/4 SPAN	130+52.31	696.51	130+51.45	696.50	130+50.24	696.49	130+48.27	696.57	130+45.08	696.70
1/2 SPAN	130+68.31	696.61	130+67.45	696.61	130+66.24	696.60	130+64.27	696.68	130+61.08	696.81
3/4 SPAN	130+84.31	696.66	130+83.45	696.65	130+82.24	696.65	130+80.27	696.73	130+77.08	696.87
PIER #1	131+00.31	696.68	130+99.45	696.68	130+98.24	696.68	130+96.27	696.76	130+93.08	696.91
℄ F.S.#1	131+16.31	696.72	131+15.45	696.72	131+14.24	696.72	131+12.27	696.81	131+09.08	696.96
1/4 SPAN	131+22.56	696.73	131+21.70	696.73	131+20.49	696.73	131+18.52	696.82	131+15.33	696.97
1/2 SPAN	131+44.81	696.70	131+43.95	696.70	131+42.74	696.70	131+40.77	696.80	131+37.58	696.96
3/4 SPAN	131+67.06	696.54	131+66.20	696.55	131+64.99	696.55	131+63.02	696.66	131+59.83	696.83
PIER #2	131+89.31	696.32	131+88.45	696.33	131+87.24	696.34	131+85.27	696.45	131+82.08	696.62
℄ F.S.#2	132+08.31	696.15	132+07.45	696.16	132+06.24	696.18	132+04.27	696.29	132+01.08	696.47
1/4 SPAN	132+11.56	696.12	132+10.70	696.13	132+09.49	696.15	132+07.52	696.26	132+04.33	696.45
1/2 SPAN	132+33.81	695.86	132+32.95	695.87	132+31.74	695.89	132+29.77	696.01	132+26.58	696.20
3/4 SPAN	132+56.06	695.47	132+55.20	695.49	132+53.99	695.51	132+52.02	695.64	132+48.83	695.84
℄ F.S.#3	132+62.31	695.35	132+61.45	695.36	132+60.24	695.38	132+58.27	695.51	132+55.08	695.72
PIER #3	132+78.31	695.01	132+77.45	695.03	132+76.24	695.05	132+74.27	695.18	132+71.08	695.39
1/4 SPAN	132+94.31	694.69	132+93.45	694.71	132+92.24	694.73	132+90.27	694.87	132+87.08	695.08
1/2 SPAN	133+10.31	694.34	133+09.45	694.36	133+08.24	694.39	133+06.27	694.53	133+03.08	694.75
3/4 SPAN	133+26.31	693.94	133+25.45	693.96	133+24.24	693.99	133+22.27	694.14	133+19.08	694.36
℄ F.ABUT.	133+42.31	693.48	133+41.45	693.51	133+40.24	693.54	133+38.27	693.69	133+35.08	693.92
END A.S.	133+65.30	692.81	NA		133+65.30	692.81	NA		133+60.14	693.21

LOCATION	BEAM D STATION	BEAM D ELEV.	RIGHT TOE OF S.W. STATION	RIGHT TOE OF S.W. ELEV.	BEAM E STATION	BEAM E ELEV.	RIGHT EDGE OF DECK STATION	RIGHT EDGE OF DECK ELEV.
BEGIN A.S.	NA		129+97.86	695.92	NA		129+97.86	695.92
℄ R.ABUT.	130+25.89	696.34	130+23.92	696.23	130+22.71	696.22	130+21.85	696.21
1/4 SPAN	130+41.89	696.52	130+39.92	696.41	130+38.71	696.40	130+37.85	696.40
1/2 SPAN	130+57.89	696.64	130+55.92	696.54	130+54.71	696.53	130+53.85	696.52
3/4 SPAN	130+73.89	696.71	130+71.92	696.61	130+70.71	696.60	130+69.85	696.60
PIER #1	130+89.89	696.75	130+87.92	696.65	130+86.71	696.65	130+85.85	696.65
℄ F.S.#1	131+05.89	696.81	131+03.92	696.71	131+02.71	696.71	131+01.85	696.71
1/4 SPAN	131+12.14	696.83	131+10.17	696.73	131+08.96	696.73	131+08.10	696.73
1/2 SPAN	131+34.39	696.82	131+32.42	696.74	131+31.21	696.74	131+30.35	696.74
3/4 SPAN	131+56.64	696.70	131+54.67	696.61	131+53.46	696.62	131+52.60	696.62
PIER #2	131+78.89	696.50	131+76.92	696.42	131+75.71	696.43	131+74.85	696.44
℄ F.S.#2	131+97.89	696.36	131+95.92	696.29	131+94.71	696.30	131+93.85	696.31
1/4 SPAN	132+01.14	696.33	131+99.17	696.26	131+97.96	696.28	131+97.10	696.28
1/2 SPAN	132+23.39	696.10	132+21.42	696.03	132+20.21	696.05	132+19.35	696.06
3/4 SPAN	132+45.64	695.74	132+43.67	695.68	132+42.46	695.70	132+41.60	695.71
℄ F.S.#3	132+51.89	695.62	132+49.92	695.56	132+48.71	695.58	132+47.85	695.60
PIER #3	132+67.89	695.30	132+65.92	695.25	132+64.71	695.27	132+63.85	695.29
1/4 SPAN	132+83.89	695.00	132+81.92	694.95	132+80.71	694.97	132+79.85	694.99
1/2 SPAN	132+99.89	694.67	132+97.92	694.63	132+96.71	694.65	132+95.85	694.67
3/4 SPAN	133+15.89	694.30	133+13.92	694.25	133+12.71	694.28	133+11.85	694.30
℄ F.ABUT.	133+31.89	693.86	133+29.92	693.82	133+28.71	693.85	133+27.85	693.87
END A.S.	NA		133+54.97	693.12	NA		133+54.97	693.12

DEFLECTION USED FOR SCREED ELEVATIONS, INCHES

LOCATION OF POINT	SPAN 1				SPAN 2				SPAN 3				SPAN 4		
	1/4	1/2	3/4	SPLICE #1	1/4	1/2	3/4	SPLICE #2	1/4	1/2	3/4	SPLICE #3	1/4	1/2	3/4
SLAB & COMPOSITE D.L. DEFLECTION	3/8	3/8	1/8	3/8	9/16	15/16	1/2	7/16	1/2	15/16	9/16	3/8	1/8	3/8	3/8

NOTES & LEGEND

SCREED ELEVATIONS SHOWN ARE FOR THE DECK SLAB SURFACE PRIOR TO CONCRETE PLACEMENT. ALLOWANCE HAS BEEN MADE FOR ANTICIPATED CALCULATED DEAD LOAD DEFLECTIONS.

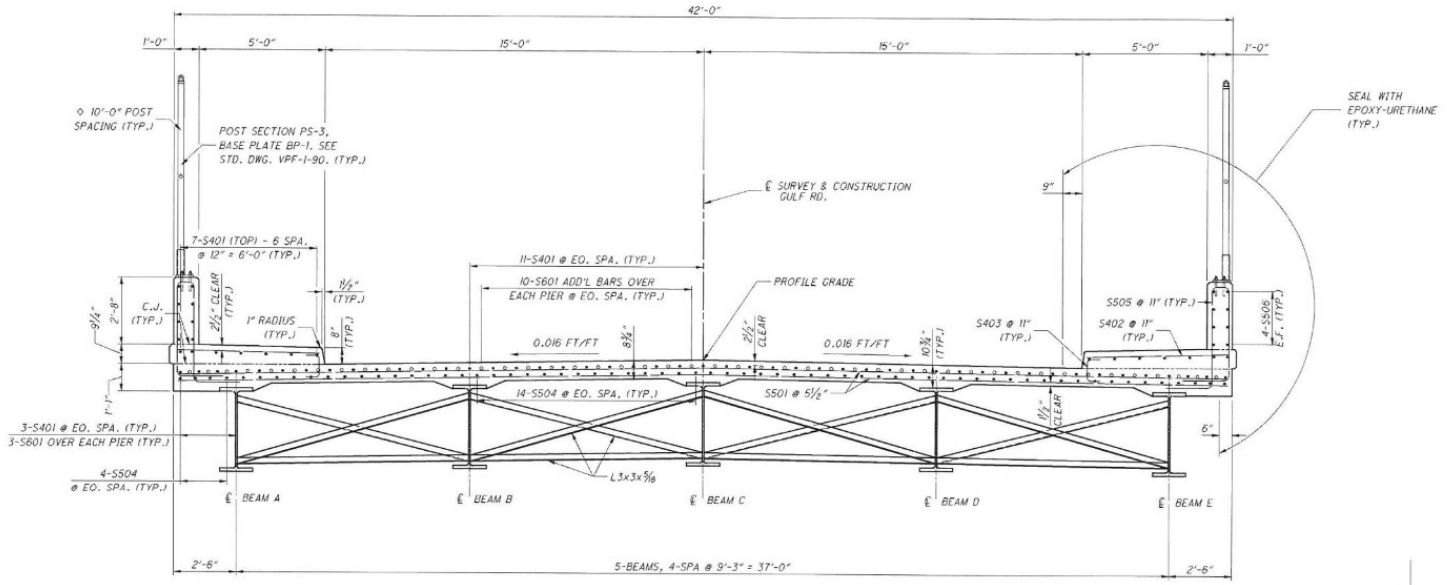
FOR ADDITIONAL NOTES SEE SHEETS 16/25

P.G. - PROFILE GRADE
S.W. - SIDEWALK
A.S. - APPROACH SLAB
F.S. - FIELD SPLICE
R. - REAR
F. - FORWARD
D.L. - DEAD LOAD

DESIGN AGENCY: ODOT CENTRAL OFFICE, OFFICE OF PRODUCTION
DESIGNED: TAA | CHECKED: MRB | DRAWN: MRB | REVISED: | REVIEWED: RCD | DATE: 3/18/09 | STRUCTURE FILE NUMBER: 4704789

SUPERSTRUCTURE DETAILS
BRIDGE NO. LOR-90-1478
I.R. 90 UNDER GULF RD.

LOR-90-14.78
PID No. 19585



TRANSVERSE SECTION

NOTES & LEGEND

DECK SLAB CONCRETE QUANTITY: THE ESTIMATED QUANTITY OF DECK SLAB CONCRETE IS BASED ON THE CONSTANT DECK SLAB THICKNESS, AS SHOWN, PLUS THE QUANTITY OF CONCRETE THAT FORMS EACH BEAM/GIRDER HAUNCH. THE ESTIMATE ASSUMES A CONSTANT HAUNCH THICKNESS OF 2 INCHES AND A CONSTANT HAUNCH WIDTH OUTSIDE THE EDGE OF EACH BEAM/GIRDER FLANGE OF 9 INCHES. DEVIATE FROM THIS HAUNCH THICKNESS AS NECESSARY TO PLACE THE DECK SURFACE AT THE FINISHED GRADE. THE ALLOWABLE TOLERANCE FOR THE HAUNCH WIDTH OUTSIDE THE EDGE OF EACH BEAM/GIRDER FLANGE IS +/- 3 INCHES.

THE HAUNCH THICKNESS WAS MEASURED AT THE CENTERLINE OF THE BEAM/GIRDER, FROM THE SURFACE OF THE DECK TO THE TOP OF THE TOP FLANGE MINUS THE DECK SLAB THICKNESS.

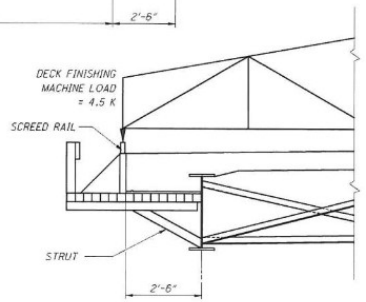
FOR CROSS-FRAME CONNECTION DETAILS SEE STD DWG GSD-1-96.

REINFORCING STEEL MAY BE FIELD OR SHOP BENT TO ACCOMODATE THE CROWN OF THE DECK. PAYMENT SHALL BE INCLUDED WITH ITEM 509, REINFORCING STEEL

CONSTRUCTION LOADING: THE TOTAL, UNFACTORED WEIGHT OF FORMWORK ON THE OVERHANG INCLUDING FALSEWORK, EDGEFORM, AND RAILING WAS ASSUMED TO BE 0.146 KIPS/FT. THE TOTAL WEIGHT OF THE DECK FINISHING MACHINE WAS ASSUMED TO BE 6.3 KIPS. IF THE CONTRACTOR USES FORMWORK LOADS THAT EXCEED THESE ASSUMPTIONS, THE CONTRACTOR SHALL REANALYZE THE GIRDERS AND SUBMIT THE CALCULATIONS TO THE ENGINEER FOR APPROVAL.

C.J. - CONSTRUCTION JOINT
E.F. - EACH FACE

◊ - FOR MORE DETAILS SEE SHEET 21/25



CONSTRUCTION LOADING

TRANSVERSE SECTION
BRIDGE NO. LOR-90-1478
I.R. 90 UNDER GULF RD.

LOR-90-14.78
PID No. 19685

DESIGNED TAA
DRAWN CWW
CHECKED MAB
REVISED
REVISING RCD
DATE 3/16/09
STRUCTURE FILE NUMBER 4704789
LEAD AGENCY ODOT CENTRAL OFFICE OFFICE OF PRODUCTION

18/25
44/51

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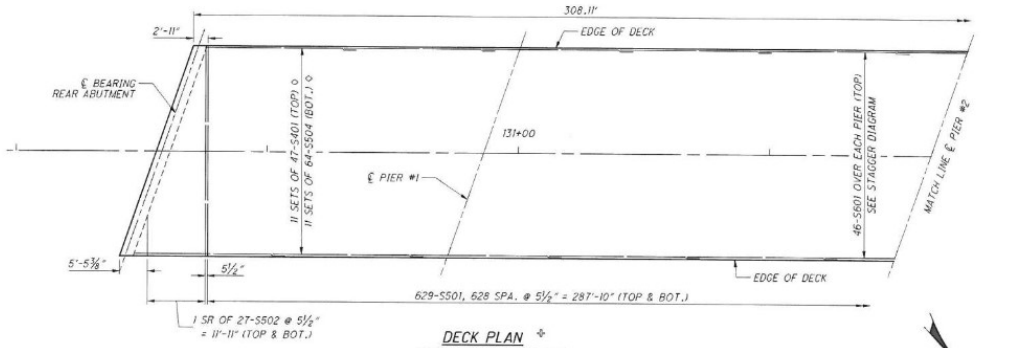
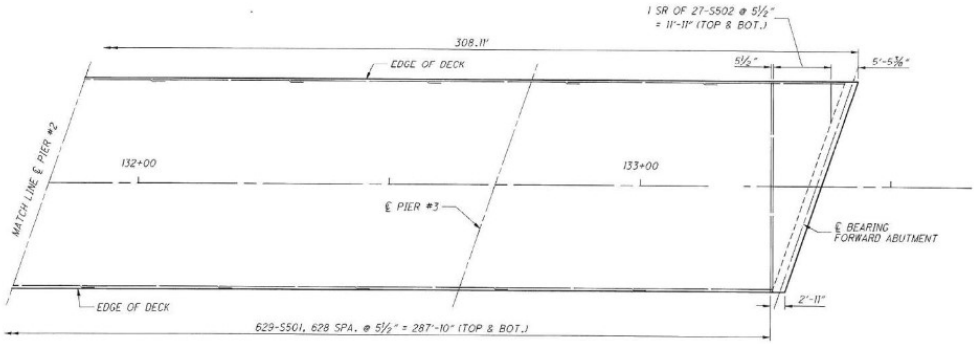


DECK PLAN ✣

REAR ABUTMENT TO PIER #2



DECK PLAN ✣

PIER #2 TO FORWARD ABUTMENT

NOTES & LEGEND

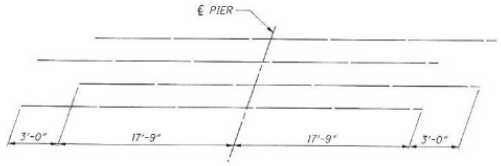
THE HAUNCH THICKNESS WAS MEASURED AT THE CENTERLINE OF THE BEAM/GIRDER, FROM THE SURFACE OF THE DECK TO THE TOP OF THE TOP FLANGE MINUS THE DECK SLAB THICKNESS.

ALL REINFORCING STEEL IS TO BE EPOXY COATED.

#4 BAR MINIMUM LAP = 2'-0"
#5 BAR MINIMUM LAP = 2'-6"

✣ - SIDEWALK AND PARAPET REINFORCING NOT SHOWN FOR CLARITY. FOR REINFORCING CALL OUT, SEE SHEETS 20 25 - 22 25.

◊ - S401 & S504 TO TERMINATE AT EACH ABUTMENT FACE.



STAGGER OF S601 BARS OVER PIERS

DESIGN AGENCY: ODOT CENTRAL OFFICE OFFICE OF PRODUCTION
DATE: 3/18/09
STRUCTURE FILE NUMBER: 4704169
DRAWN: CWW
CHECKED: MRD
DESIGNED: TAA
REVISED: RCD

DECK PLAN
BRIDGE NO. LOR-90-1478
T.R. 90 UNDER GULF RD.

LOR-90-14.78
PID No. 19685

19 / 25

45 / 51

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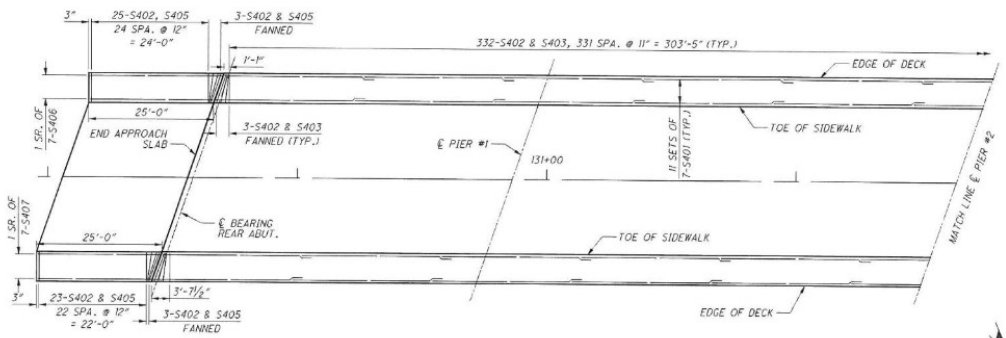
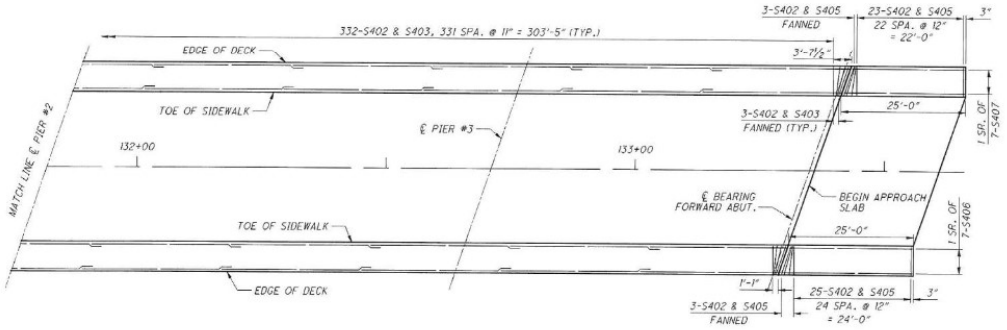


SIDEWALK PLAN ✣
REAR ABUTMENT TO PIER #2



SIDEWALK PLAN ✣
PIER #2 TO FORWARD ABUTMENT

NOTES & LEGEND

ALL REINFORCING STEEL IS TO BE EPOXY COATED.

#4 BAR MINIMUM LAP = 2'-0"

✣ - DECK AND PARAPET REINFORCING NOT SHOWN FOR CLARITY. FOR REINFORCING CALL OUT, SEE SHEETS 18 | 25 , 21 | 25 & 22 | 25.

DESIGN AGENCY
ODOT CENTRAL OFFICE
OFFICE OF PRODUCTION

DESIGNED	DRAWN	REVIEWED	DATE
LJ	MRB	MRB	3/18/09
CHECKED	REVISED	STRUCTURE NUMBER	
MRB		4704178	

SIDEWALK PLAN
BRIDGE NO. LOR-90-14.78
I.R. 90 UNDER GULF RD.

LOR-90-14.78
PID No. 19585

20 | 25

46
51

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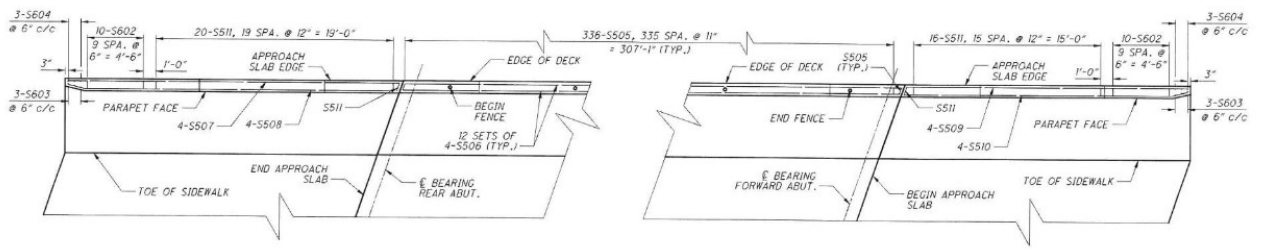
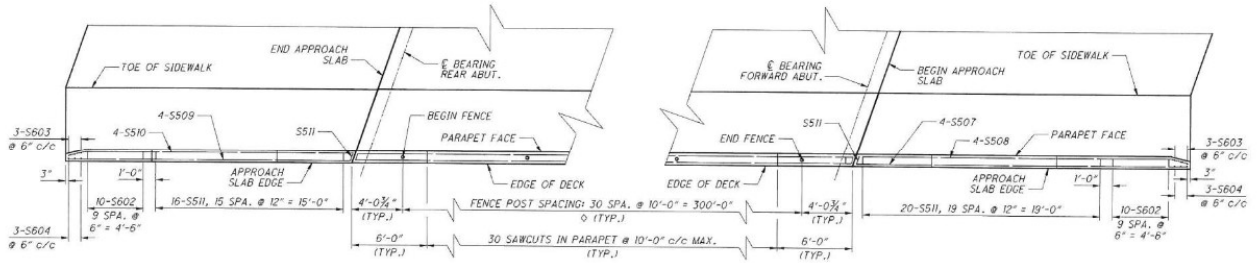


PARAPET PLAN ✣
REAR, LEFT CORNER

PARAPET PLAN ✣
FORWARD, LEFT CORNER



PARAPET PLAN ✣
REAR, RIGHT CORNER

PARAPET PLAN ✣
FORWARD, RIGHT CORNER

NOTES & LEGEND

CONCRETE PARAPETS: AS SOON AS A CONCRETE SAW CAN BE OPERATED WITHOUT DAMAGING THE FRESHLY PLACED CONCRETE, SAWCUT 1'/4" DEEP CONTROL JOINTS INTO THE PERIMETER OF THE CONCRETE PARAPET STARTING AND ENDING AT THE ELEVATION OF THE CONCRETE DECK. PLACE THE SAWCUTS AT A MINIMUM OF 6 FEET AND A MAXIMUM OF 10 FEET CENTERS.

USE AN EDGE GUIDE, FENCE, OR JIG TO ENSURE THAT THE CUT JOINT IS STRAIGHT, TRUE, AND ALIGNED ON ALL FACES OF THE PARAPET. THE JOINT WIDTH SHALL BE THE WIDTH OF THE SAW BLADE, A NOMINAL WIDTH OF ¼ INCH.

SEAL THE PERIMETER OF THE DEFLECTION CONTROL JOINT TO A MINIMUM DEPTH OF 1 INCH WITH A POLYURETHANE OR POLYMERIC MATERIAL CON- FORMING TO ASTM C920, TYPE S. LEAVE THE BOTTOM ½ INCH OF THE INSIDE AND OUTSIDE FACE UNSEALED TO ALLOW WATER TO ESCAPE.

ALL REINFORCING STEEL IS TO BE EPOXY COATED.

#5 BAR MINIMUM LAP = 2'-6"

✣ - DECK AND SIDEWALK REINFORCING NOT SHOWN FOR CLARITY. FOR REINFORCING CALL OUT, SEE SHEETS 19 / 25 , 20 / 25 & 22 / 25 .

◇ - SEE STD. DWG. VPF-1-90 FOR MORE DETAILS

DESIGN AGENCY: ODOT CENTRAL OFFICE
OFFICE OF PRODUCTION

DESIGNED: TAA
DRAWN: MRB
CHECKED: MBS
REVIEWED: RCD
DATE: 3/18/09
STRUCTURE NUMBER: 4704789
REVISED:

PARAPET PLAN
BRIDGE NO. LOR-90-M78
I.R. 90 UNDER GULF RD.

LOR-90-14.78
PID No. 19685

21 / 25

47 / 51

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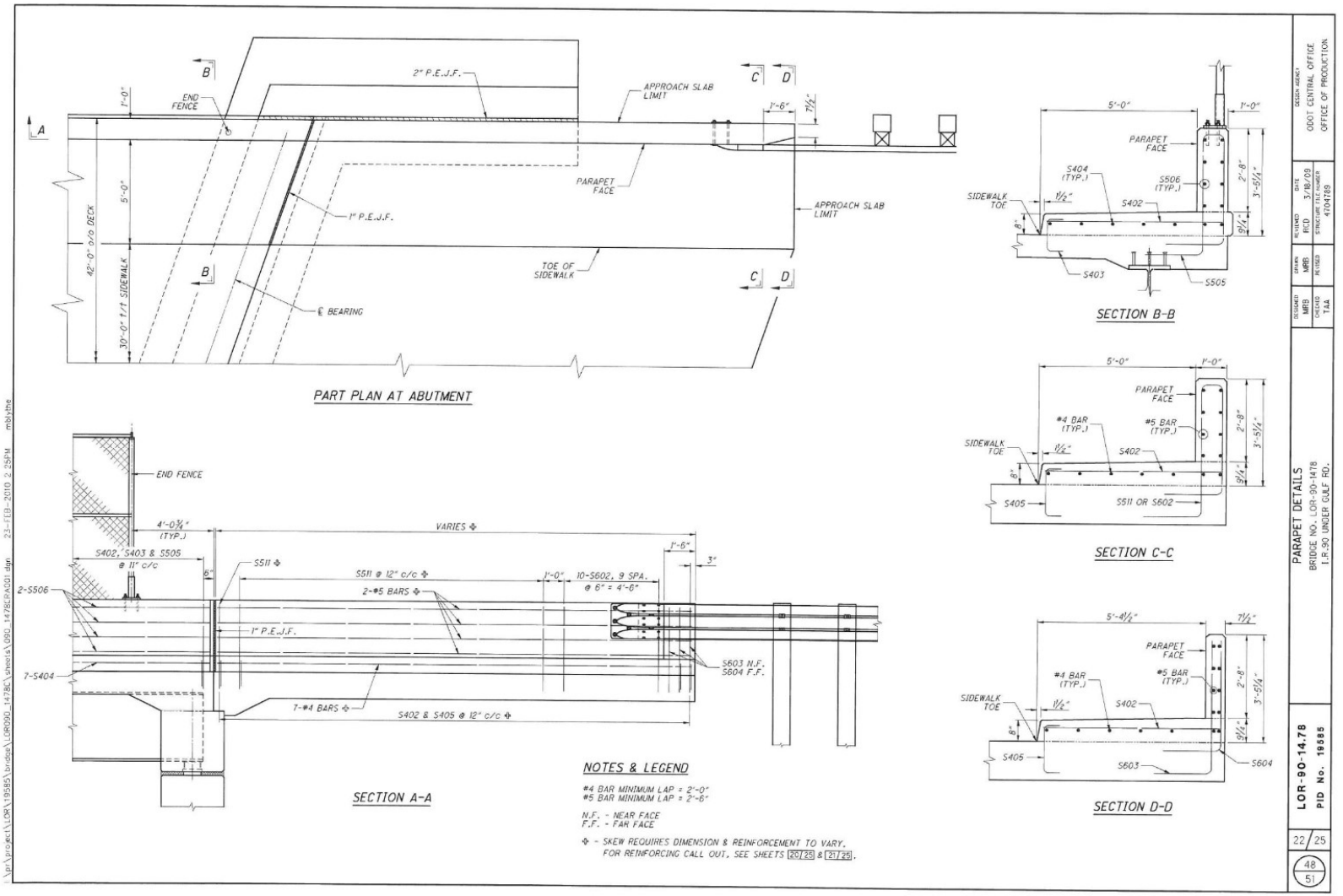
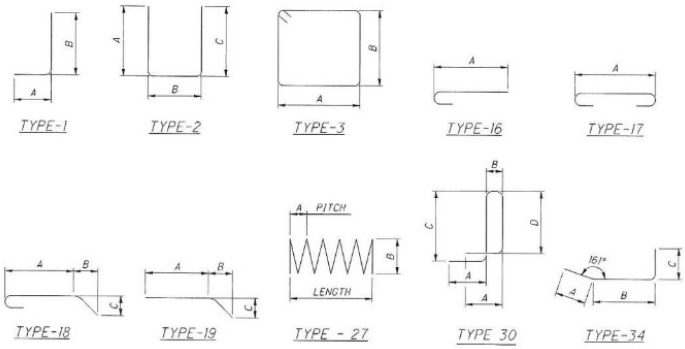

PART PLAN AT ABUTMENT
SECTION A-A
SECTION B-B
SECTION C-C
SECTION D-D
NOTES & LEGEND
#4 BAR MINIMUM LAP = 2'-0"
#5 BAR MINIMUM LAP = 2'-6"
N.F. - NEAR FACE
F.F. - FAR FACE
◈ - SKEW REQUIRES DIMENSION & REINFORCEMENT TO VARY. FOR REINFORCING CALL OUT, SEE SHEETS 20 25 & 21 25.
PARAPET DETAILS
BRIDGE NO. LOR-90-14.78
I.R.90 UNDER GULF RD.
LOR-90-14.78
PID No. 19585
ODOT CENTRAL OFFICE
OFFICE OF PRODUCTION
3/18/09
4704789
22 25
48 51

MARK	NUMBER REAR	NUMBER FORWARD	NUMBER TOTAL	LENGTH	WEIGHT	TYPE	DIMENSIONS A	B	C	D	E	R	INC
ABUTMENTS													
F501	69	69	138	17'-0"	2447	3	2'-7"	5'-7"					
F502	12	12	24	25'-9"	645	STR							
F503	6	6	12	15'-1"	189	STR							
F504	6	6	12	16'-4"	204	STR							
F505	3	3	6	8'-0"	50	34	2'-0"	4'-0"	2'-0"				
F801	8	8	16	26'-6"	1132	STR							
F802	4	4	8	15'-1"	322	STR							
F803	4	4	8	16'-4"	349	STR							
A501	42	42	84	15'-6"	1358	3	2'-7"	4'-10"					
A502	4	4	8	24'-8"	206	STR							
A503	32	32	64	12'-2"	812	3	2'-8"	3'-1"					
A504	32	32	64	7'-11"	528	2	3'-1"	2'-0"	3'-1"				
A505	26	26	52	10'-11"	592	2	5'-0"	1'-2"	5'-0"				
A506	13		13	14'-7"	198	2	6'-10"	1'-2"	6'-10"				
A507	12	12	24	14'-3"	357	STR							
A508	14		14	14'-11"	218	2	7'-0"	1'-2"	7'-0"				
A509	12	12	24	14'-10"	371	STR							
A510		1	1	15'-9"	16	2	7'-5"	1'-2"	7'-5"				
		1	1	13'-11"			6'-6"		6'-6"				
A511		SR OF	SR OF	TO	195	2	TO	1'-2"	TO				0'- ½"
		13	13	14'-11"			7'-0"		7'-0"				
		1	1	14'-9"			6'-11"		6'-11"				
A512		SR OF	SR OF	TO	207	2	TO	1'-2"	TO				0'- ½"
		13	13	15'-9"			7'-5"		7'-5"				
A801	8	8	16	26'-6"	1132	STR							
A802	14	14	28	21'-2"	1582	STR							
A803	14	14	28	29'-11"	2237	STR							
D801	30	30	60	5'-6"	881	18	3'-4"	1'-0"	1'-0"				
			SUB-TOTAL		16,228								

MARK	NUMBER TOTAL	LENGTH	WEIGHT	TYPE	DIMENSIONS A	B	C	D	E	R	INC
SUPERSTRUCTURE											
S401	671	30'-0"	13447	STR							
S402	784	5'-8"	2969	STR							
S403	676	2'-6"	1129	2	0'-10"	1'-0"	0'-10"				
S405	108	2'-11"	210	2	0'-10"	1'-5"	0'-10"				
	2	24'-7"									
S406	SR OF	TO	239	STR							0'-4"
	7	26'-7"									
	2	22'-7"									
S407	SR OF	TO	220	STR							0'-4"
	7	24'-7"									
S501	1258	41'-7"	54561	STR							
	4	8'-0"									
S502	SR OF	TO	2792	STR							1'-3 ½"
	27	41'-7"									
S503	20	6'-0"	125	STR							
S504	704	30'-0"	22028	STR							
S505	674	10'-6"	7381	30	1'-6"	0'-8"	3'-10 ½"	3'-6"			
S506	192	28'-0"	5607	STR							
S507	8	26'-7"	222	STR							
S508	8	26'-3"	219	19	24'-9"	1'-6"	0'-4 ½"				
S509	8	22'-6"	188	STR							
S510	8	23'-10"	199	19	22'-4"	1'-6"	0'-4 ½"				
S511	76	10'-11"	865	30	1'-6"	0'-8"	4'-3"	3'-6"			
S601	138	38'-6"	7980	STR							
S602	40	11'-5"	686	30	1'-10"	0'-8"	4'-3"	3'-6"			
S603	12	5'-11"	107	1	1'-10"	4'-3"					
S604	12	5'-2"	93	1	1'-10"	3'-6"					
	SUB-TOTAL		121,267								

MARK	NUMBER PIER #1	PIER #2	PIER #3	TOTAL	LENGTH	WEIGHT	TYPE	DIMENSIONS A	B	C	D	E	R	INC
PIERS														
SP401	3			3	16'-8"	1035	27	0'-4 ½"	3'-6"					
SP402		3		3	16'-4"	1015	27	0'-4 ½"	3'-6"					
SP403			3	3	15'-0"	938	27	0'-4 ½"	3'-6"					
P501	48	48	48	144	15'-4"	2303	3	3'-8"	3'-8"					
P502	10	10	10	30	43'-7"	1364	STR							
P503	48	48	48	144	9'-7"	1439	STR							
P801	48	48	48	144	11'-3"	4325	17	9'-7"						
P901	16	16	16	48	43'-7"	7112	STR							
P1000		45		45	21'-1"	4082	16	19'-8"						
P1001	45			45	21'-5"	4141	16	20'-0"						
P1002	45	45	45	135	12'-10"	7455	1	1'-10"	11'-4"					
P1003			45	45	19'-10"	3840	16	18'-5"						
				SUB-TOTAL		39,055								



DESIGN AGENCY: ODOT CENTRAL OFFICE
DESIGNED: MRB
DRAWN: MRB
CHECKED: TAA
REVISED: 3/2009
STRUCTURE FILE NUMBER: 4704769
OFFICE OF PRODUCTION

REINFORCING STEEL LIST

BRIDGE NO. LOR-90-1478
I.R.90 UNDER GULF RD.

LOR-90-14.78
PID No. 19585

25/25

51/51

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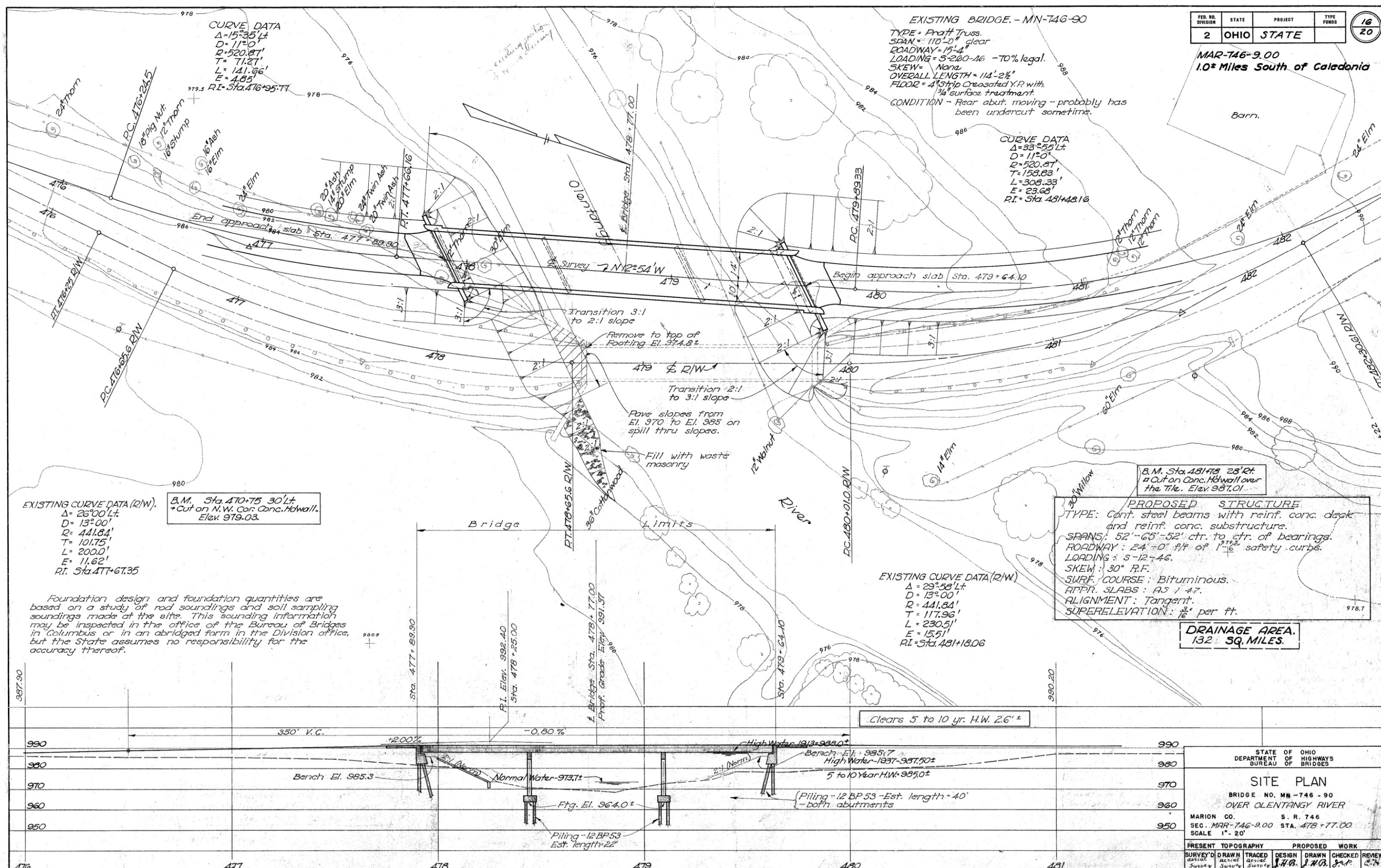
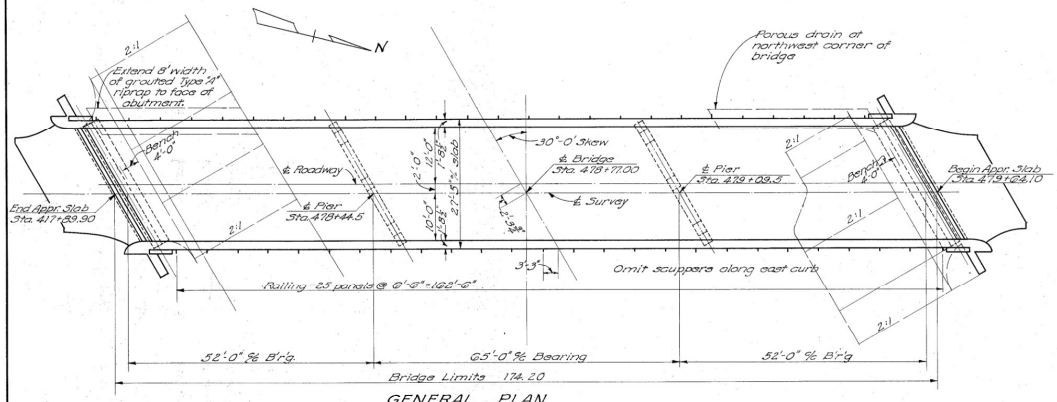


BURGESS & NIPLE

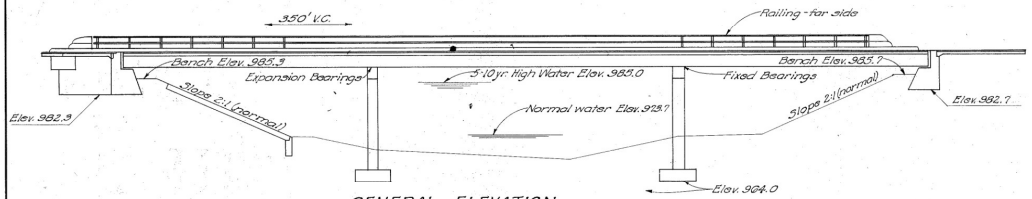
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO	STATE	

17
20

MAR - 746 - 9.00



GENERAL PLAN



GENERAL ELEVATION
(Piling for piers and abutments not shown)

ESTIMATED QUANTITIES

Item	Total	Unit	Description	Superst.	Abut.	Pier	Gen'l.
E-2	Lump	Sum	Cofferdams, cribs and sheeting				Lump
E-2	287	Cu.Yd.	Unclassified Excavation		70	165	52
E-3	80	Cu.Yd.	Channel Excavation				80
S-1	13	Cu.Yd.	Class "A" concrete, top wall				13
S-1	115	Cu.Yd.	Class "C" concrete, Superstructure	115			
S-1	32	Cu.Yd.	Class "C" concrete, Pier Caps & Columns			32	
S-1	79	Cu.Yd.	Class "E" concrete, Abutments		79		
S-1	37	Cu.Yd.	Class "E" concrete, Pier Footings			37	
S-3	455	Sq.Yd.	Type "C" waterproofing	455			
S-4	98639	Lb.	Reinforcing steel	22150	5690	10696	103
S-7	104200	Lb.	Structural steel	104200			
S-8	104200	Lb.	Field painting of structural steel	104200			
S-14	348	Lin.Ft.	Railing (Steel with concrete and posts)	348			
S-16	Lump	Sum	First test pile				Lump
S-18	1170	Lin.Ft.	Steel piling, 12 BP 53		640	530	
S-24	Lump	Sum	Removal of existing structure				Lump
S-29	6	Cu.Yd.	Porous drains on embankment slopes				6
I-10	402	Sq.Yd.	Type "A" riprap				402
T-35	32	Cu.Yd.	Asphaltic Concrete Surface Course, Type "A" or "C" (85-100)	32			

GENERAL NOTES

REFERENCE shall be made to Standard Drawing C3B-3-47, revised 7-27-49.

REMOVAL OF EXISTING STRUCTURE: When no longer needed to maintain traffic the existing structure shall be removed. The floor beams shall be carefully dismantled and piled on the right of way for disposal by the State's forces. The remainder of the removed materials shall become the property of the Contractor. The south abutment shall be removed and the slopes dressed as shown on the Site Plan. The north abutment shall be removed to 6" below the finished ground lines and the slopes dressed to 2:1. Removal of earth and dressing of slopes shall be included with removal of existing structure for payment. Suitable waste masonry may be disposed of as bank protection at the direction of the Engineer.

EXCAVATION QUANTITY includes the removal of fill material between top of earth bench and bottom of abutment.

PILING shall be driven with a steam hammer of not less than 7000# energy per blow, to firm contact with shale for the pier piles and preferably to firm contact with shale for the abutment piles. The required penetration shall be considered as attained when the capacity according to the formula in Sec. 3-18.05 is at least 35 tons per pile for the pier piles and 40 tons for the abutment piles if a 7,000# hammer is used, or 45 tons for the pier piles and 30 tons for the abutment piles if a 13,000# hammer is used and if the length of penetration of the pier piles, and preferably of the abutment piles, approximately equals the depth to shale according to the bridge foundation investigation report. If the energy rating of the hammer is between these values, the required formula capacity shall be determined by interpolation. (The design load is 36 tons per pile for the pier piles and 27 tons for the abutment piles.)

PAINTING, both shop and field, shall be according to Item 3-8 except that the paint shall be applied by brushing. Spray application will not be permitted.

STEEL FOR END FINISH need not be copper-bearing.

METAL WASHERS of approximately 3" diameter shall be provided on the anchor bolts, between the railing posts and the fascia of the deck, to hold the railing in accurate alignment. Washers shall be used only to the extent necessary for this purpose. The space between each railing post and the face of the concrete shall be thoroughly and neatly filled with "Leadite" or approved equivalent, to exclude moisture. Payment for washers and filling shall be considered as included in the contract price per lin. ft. of railing.

SURFACE FINISH OF CONCRETE: Railing end posts, curb faces and fascias of deck shall receive a rubbed surface finish. All other exposed surfaces shall be governed by the provisions of Item 3-1.

POROUS DRAIN, extending from face of abutment to Elev. 978.0', shall be placed on and flush with embankment slope at the northwest corner of the bridge. The drain shall be 4 ft. wide and one ft. thick and shall be centered under the scuppers. It shall be composed of No. 1 or No. 12 gravel, stone, or slag. Construction procedure shall conform essentially to Item 1-8. Trench excavation shall be included for payment with the price per cu. yd. bid for "Porous drains on embankment slopes."

SLOPE PAVING may be either riprap or concrete slab. If riprap is constructed using stone, concrete blocks or broken concrete, it shall be grouted over an 4 ft. width, centered under the scuppers at the southwest corner of bridge. At this corner of the bridge an 4 ft. width of paving shall be extended to face of abutment. The upper extended portion of the slope paving, whether constructed as riprap or a concrete slab, shall be designed 6" at the center to form a gutter. This depression shall be tapered to zero in the upper two feet of the stream bank paving (below extended portion). Grouting as described above shall be included with "Item 1-10 "Type A riprap" for payment.

REINFORCING STEEL shall be 2" clear of surface of concrete except as otherwise shown.

GRAVEL, if used as the coarse aggregate, shall be according to Sec. M-3.03 instead of M-3.01 for "Class 'C' concrete, superstructure".

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES AND RAILROAD CROSSINGS

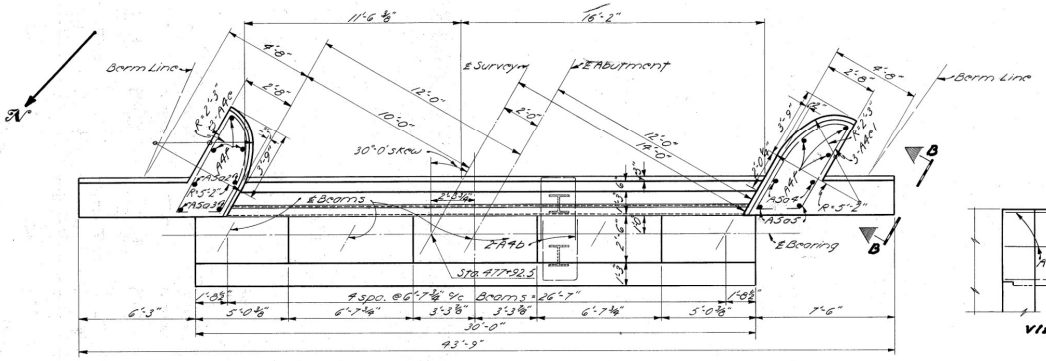
GENERAL PLAN & ELEVATION, NOTES & ESTIMATED QUANTITIES
BRIDGE No. MN-746-90
OVER OLENTANGY RIVER

MARION COUNTY
SEC. MAR-746-9.00 STA. 478+77.00

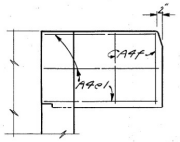
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED BBG.	DATE	REVISED
REK	REK	JDJ	RHN	WHC	9-11-53	

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS	18/20
2	OHIO	STATE		

MAR-746-9.00



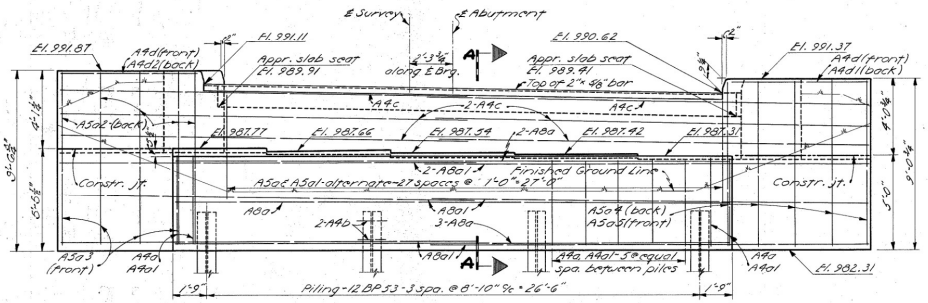
SOUTH ABUTMENT PLAN



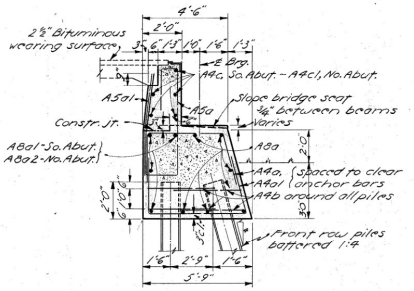
VIEW B-B

BRIDGE SEAT PROCEDURE: Concrete above bridge seat construction joint shall not be placed until after steelwork is erected. Steel rod finish shall be used as a template for top of backwall.

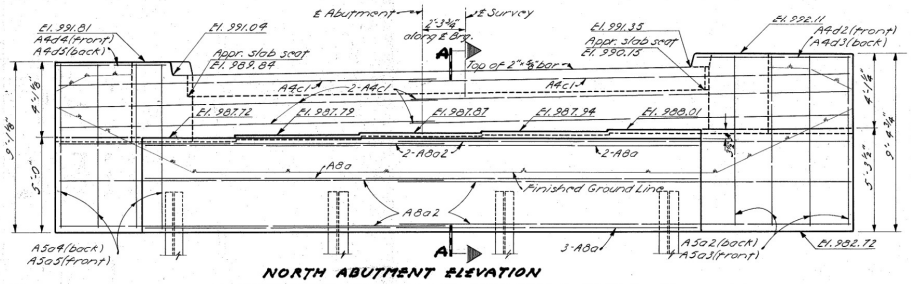
CAPPED PILE ABUTMENTS: All earth fill around the abutments shall be made full height of earth bench. Excavation shall then be made for the abutment cap, after which the piling shall be driven.



SOUTH ABUTMENT ELEVATION

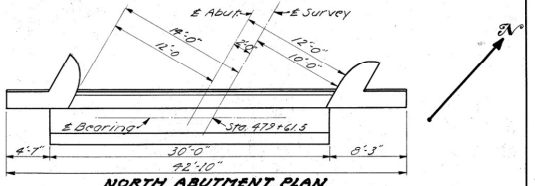


SECTION A-A



NORTH ABUTMENT ELEVATION

Details and dimensions are the same as for South Abutment unless shown otherwise.



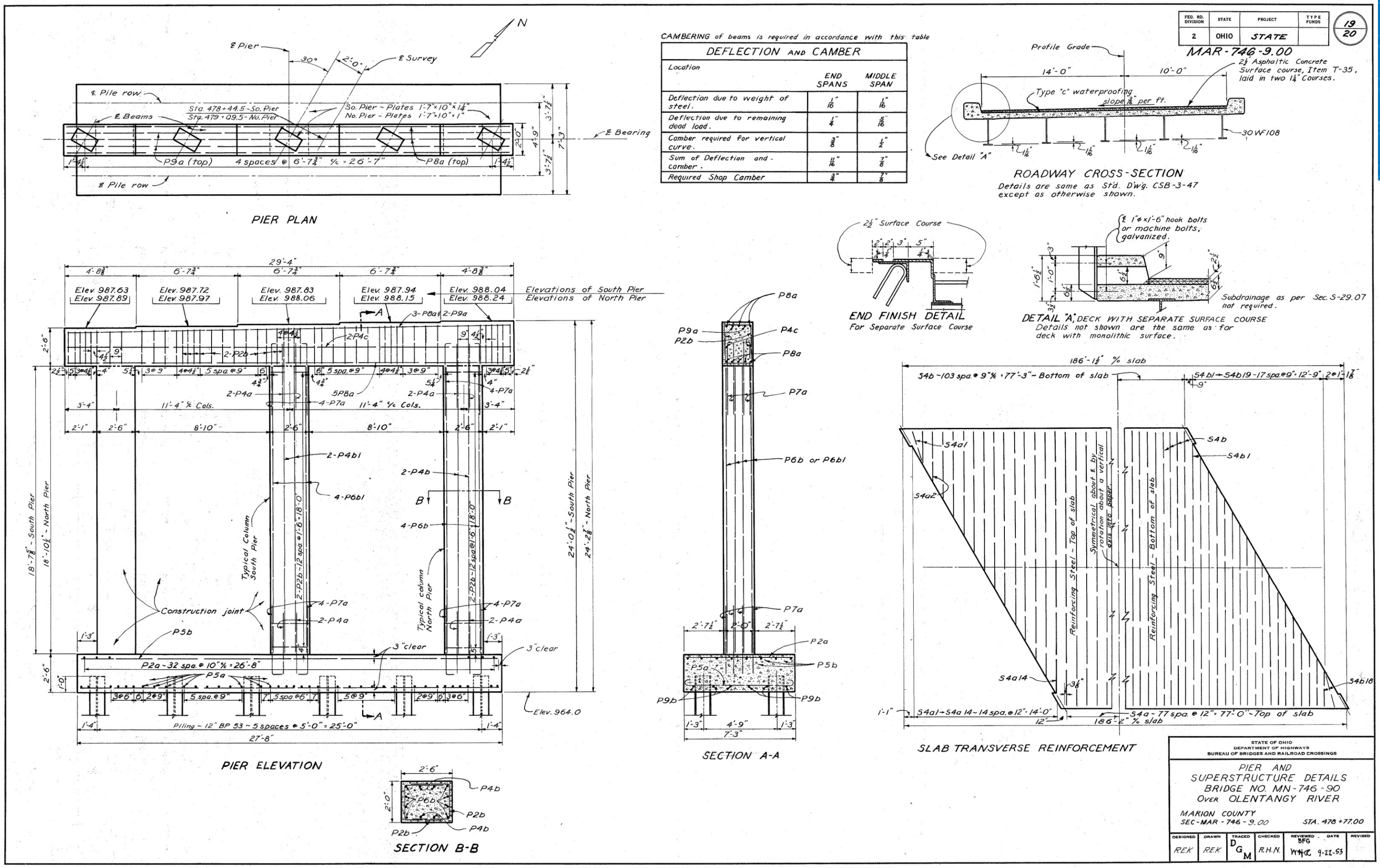
NORTH ABUTMENT PLAN

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES AND RAILROAD CROSSINGS

ABUTMENT DETAILS
BRIDGE NO. MN-746-9.00
OVER
OLENTANGY RIVER

MARION COUNTY
SEC. MAR-746-9.00 STA. 478+77.00

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
REK	REK	GHH	R.H.N	BFG	9-22-53	


PIER PLAN
PIER ELEVATION
SECTION A-A
SECTION B-B
ROADWAY CROSS-SECTION
Details are same as Std. Dw'g. CSB-3-47 except as otherwise shown.
END FINISH DETAIL
For Separate Surface Course
DETAIL "A", DECK WITH SEPARATE SURFACE COURSE
Details not shown are the same as for deck with monolithic surface.
SLAB TRANSVERSE REINFORCEMENT
Elevations of South Pier
Elevations of North Pier
Construction joint
Typical Column South Pier
Typical column North Pier
Piling ~ 12" BP 53 ~ 5 spaces @ 5'-0" = 25'-0"
Elev. 964.0
MAR-746-9.00
FED. RD. DIVISION
STATE
PROJECT
2
OHIO
STATE
19
20
STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES AND RAILROAD CROSSINGS
PIER AND SUPERSTRUCTURE DETAILS
BRIDGE NO. MN-746-90
OVER OLENTANGY RIVER
MARION COUNTY
SEC-MAR-746-9.00
STA. 476+77.00
DESIGNED
DRAWN
TRACED
CHECKED
REVIEWED
DATE
REVISED
REK
REK
R.H.N.
9-22-53

CAMBERING of beams is required in accordance with this table

DEFLECTION AND CAMBER		
Location	END SPANS	MIDDLE SPAN
Deflection due to weight of steel.	1/16"	1/16"
Deflection due to remaining dead load.	1/4"	5/16"
Camber required for vertical curve.	3/8"	1/2"
Sum of Deflection and camber.	11/16"	7/8"
Required Shop Camber	3/4"	7/8"

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO	STATE	

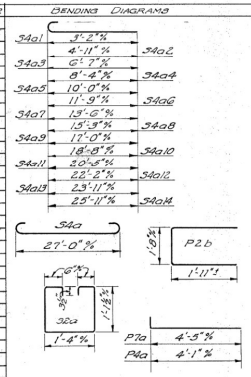
20
20

MAR-746-9.00

REINFORCING STEEL LIST

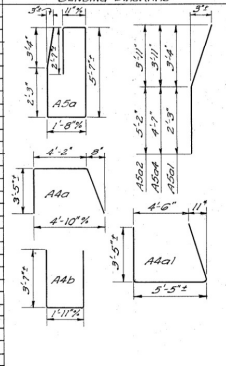
MARK	SIZE	NO.	LENGTH	WEIGHT	SHP.
Superstructure					
35a	1"	16	36'-0"	625	S
35b	7/8"	60	36'-0"	3244	S
34a	7/8"	155	28'-2"	4554	B
34a1	5/8"	4	3'-9"	16	B
34a2	7/8"	2	5'-6"	11	B
34a3	7/8"	2	7'-2"	15	B
34a4	5/8"	2	8'-11"	19	B
34a5	5/8"	2	10'-7"	22	B
34a6	5/8"	2	12'-4"	26	B
34a7	5/8"	2	14'-1"	29	B
34a8	5/8"	2	15'-10"	33	B
34a9	5/8"	2	17'-7"	37	B
34a10	5/8"	2	19'-3"	40	B
34a11	5/8"	2	21'-0"	44	B
34a12	5/8"	2	22'-9"	47	B
34a13	5/8"	2	24'-6"	51	B
34aH	5/8"	2	26'-6"	55	B
34b	5/8"	206	27'-0"	5801	S
34b1	5/8"	2	25'-9"	54	S
34b2	5/8"	2	24'-5"	51	S
34b3	5/8"	2	23'-2"	48	S
34b4	5/8"	2	21'-10"	46	S
34b5	5/8"	2	20'-7"	43	S
34b6	5/8"	2	19'-3"	40	S
34b7	5/8"	2	17'-11"	37	S
34b8	5/8"	2	16'-8"	35	S
34b9	5/8"	2	15'-4"	32	S

BENDING DIAGRAM



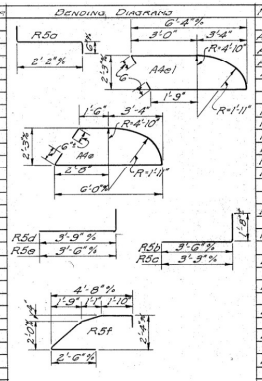
MARK	SIZE	NO.	LENGTH	WEIGHT	SHP.
Superstructure (cont'd)					
34b10	7/8"	2	14'-1"	29	B
34b11	7/8"	2	12'-9"	27	B
34b12	7/8"	2	11'-6"	24	B
34b13	7/8"	2	10'-2"	21	B
34b14	7/8"	2	8'-10"	18	B
34b15	7/8"	2	7'-7"	16	B
34b16	7/8"	2	6'-3"	13	B
34b17	7/8"	2	4'-11"	10	S
34b18	5/8"	4	3'-8"	8	S
34c	7/8"	165	35'-8"	6109	S
32a	1 1/2"	268	4'-7"	820	B
Pier					
P9a	1 1/8"	4	29'-0"	499	S
P9b	1 1/8"	12	27'-2"	1609	S
P8a	1"	16	29'-0"	1578	S
P7a	1"	98	5'-7"	1491	B
P6b	7/8"	24	18'-9"	920	S
P3b1	1 1/8"	24	10'-8"	908	S
P5a	7/8"	76	8'-1"	922	S
P5b	7/8"	18	27'-2"	659	S
P4a	7/8"	48	4'-10"	242	B

BENDING DIAGRAM



MARK	SIZE	NO.	LENGTH	WEIGHT	SHP.
Pier (cont'd)					
P4b	7/8"	12	18'-9"	235	S
P4b1	7/8"	12	18'-6"	232	S
P4c	7/8"	4	2'-9"-0"	121	S
P2a	1 1/4"	68	6'-9"	298	S
P2b	1 1/4"	352	5'-4"	1254	B
Abutments					
A8a	1"	12	29'-8"	1210	S
A8a1	1"	8	23'-9"	632	S
A8a2	1"	8	22'-10"	621	S
A5a	3/4"	28	14'-9"	620	B
A5a1	3/4"	28	5'-7"	235	B
A5a2	3/4"	3	9'-7"	123	B
A5a3	3/4"	8	9'-1"	109	S
A5a4	3/4"	8	8'-6"	102	B
A5a5	3/4"	8	8'-8"	104	S
A4a	3/4"	38	10'-11"	439	B
A4a1	3/4"	38	12'-1"	479	B
A4b	7/8"	32	8'-10"	295	B
A4c	7/8"	10	22'-8"	236	S
A4c1	7/8"	10	22'-2"	231	S
A4d	5/8"	2	7'-4"	15	S
A4d1	5/8"	1	6'-4"	7	S
A4d2	5/8"	2	8'-2"	17	S
A4d3	5/8"	1	7'-9"	5	S
A4d4	5/8"	1	5'-8"	6	S

BENDING DIAGRAM



MARK	SIZE	NO.	LENGTH	WEIGHT	SHP.
Abutments (cont'd)					
A4d5	5/8"	1	6'-8"	7	S
A4e	7/8"	6	12'-3"	77	B
A4e1	7/8"	6	12'-10"	80	B
A4f	5/8"	12	3'-8"	40	S
Railing					
R5a	3/4"	16	3'-4"	*	B
R5b	3/4"	12	5'-0"	*	B
R5c	3/4"	4	4'-9"	*	B
R5d	3/4"	12	4'-7"	*	B
R5e	3/4"	4	4'-4"	*	B
R5f	3/4"	6	8'-10"	*	B
Replacement Bars					
RE9	1/8"	1	7'-2"	31	S
RE8	1"	1	6'-10"	29	S
RE7	1"	1	6'-6"	17	S
RE6	7/8"	1	6'-2"	19	S
RE5	3/4"	1	5'-10"	9	S
RE4	3/4"	1	5'-7"	6	S
RE2	1/2"	1	5'-3"	4	S

NOTE: The bar size designations shown above do not correspond with the size designations given in the January 1, 1953 edition of the Construction and Material Specifications.

* To be included for payment with price bid per lin. ft., Item 509-14.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES AND RAILROAD CROSSINGS

REINFORCING STEEL LIST

BRIDGE No. MN-746-9.00
OVER OLENTANGY RIVER

MARION COUNTY
SEC. MAR-746-9.00 STA. 478 + 77.00

DESIGNED	DRAWN	TRACED	CHECKED	REVISED	DATE	REVISED
REK	REK	JDJ	RHN	WHE	9-12-53	

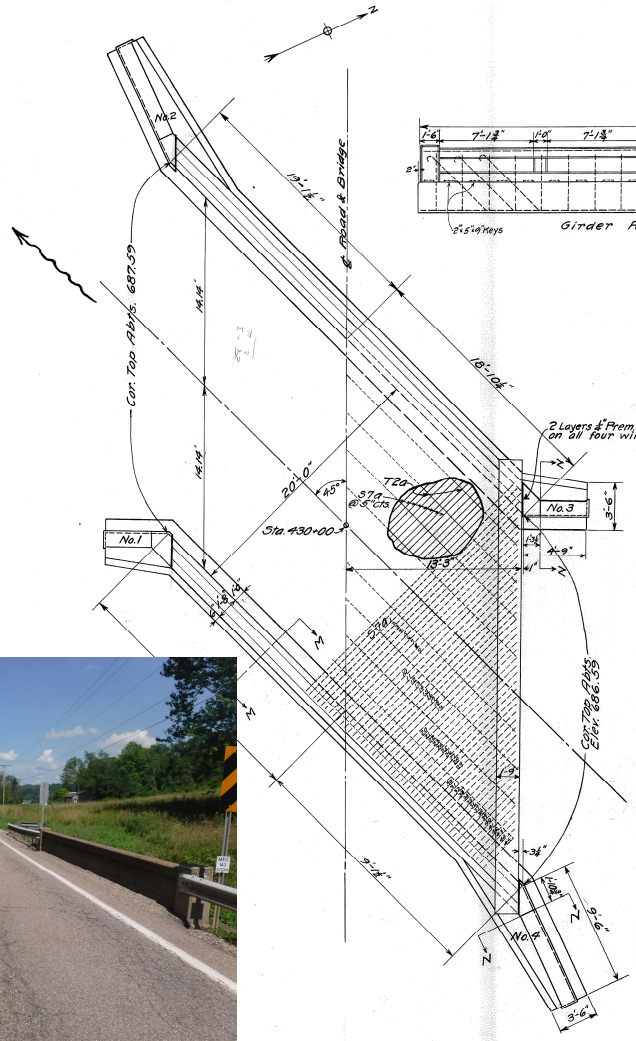
FED. AID DIST. NO.	STATE	FED. AID PROJECT	FISCAL YEAR
	OH10		

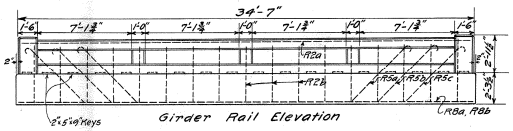
13/15

S.H. 163 SEC. N-F

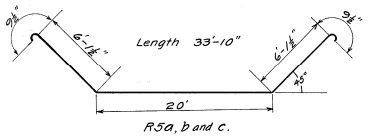
MEIGS COUNTY

PROJECT NO. 5

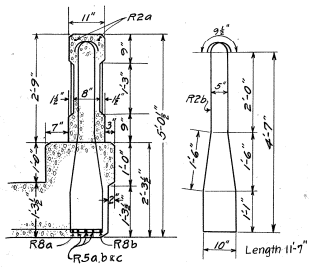


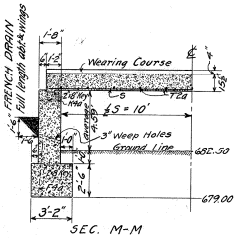


Girder Rail Elevation

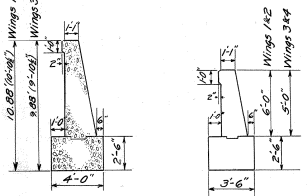


R5a, b and c.





SEC. M-M



Sec. N-N

End View of Wings

Estimated Quantities:

Excavation. Dry	33 Cu. Yds.
" Wet	30 " "
Concrete, 1:5½ Slab & Curbs	44.0 " "
Concrete, 1:6½ Abts & Wings	41.1 " "
Footings	32.1 " "
Reinf. Steel	7092 Lbs.
¼" Prem. Exp. Joint	44 Sq. Ft.
4" Wearing Course	81 Sq. Yds.
RR-6 Railing	69.2 Lin. Ft.
Cleaning Channel	15 Cu. Yds.
Detour Bridge	1

STEEL LIST

Mark	Size	Shape	No. Req'd	Length	Wt.
57a	1"ø	Strt	35	22-2	2072
" 1	"	"	2	21-9	116
" 2	"	"	2	21-4	114
" 3	"	"	2	20-11	112
" 4	"	"	2	20-6	109
" 5	"	"	2	20-1	107
" 6	"	"	2	19-8	105
" 7	"	"	2	19-3	103
" 8	"	"	2	18-10	101
" 9	"	"	2	18-5	98
" 10	"	"	2	18-0	96
" 11	"	"	2	17-7	94
" 12	"	"	2	17-2	92
" 13	"	"	2	16-9	90
" 14	"	"	2	16-4	87
" 15	"	"	2	15-11	85
" 16	"	"	2	15-6	83
" 17	"	"	2	15-1	80
" 18	"	"	2	14-8	78
" 19	"	"	2	14-3	76
" 20	"	"	2	13-10	74
" 21	"	"	2	13-5	71
" 22	"	"	2	13-0	69
" 23	"	"	2	12-7	67
" 24	"	"	2	12-2	65
" 25	"	"	2	11-9	63
" 26	"	"	2	11-4	61
" 27	"	"	2	10-11	59
" 28	"	"	2	10-6	56
" 29	"	"	2	10-1	54
" 30	"	"	2	9-8	52
" 31	"	"	2	9-3	50
" 32	"	"	2	8-10	47
" 33	"	"	2	8-5	45
" 34	"	"	2	8-0	43
" 35	"	"	2	7-7	41
" 36	"	"	2	7-2	38
" 37	"	"	2	6-9	36
" 38	"	"	2	6-4	34
" 39	"	"	2	5-11	32
" 40	"	"	2	5-6	29
" 41	"	"	2	5-1	27
" 42	"	"	2	4-8	25
" 43	"	"	2	4-3	23
" 44	"	"	2	3-10	21
" 45	"	"	2	3-5	18
T2a	⅝ ø	Strt	11	36-9	270
A W	⅝ ø	Bent	16	9-0	216
F4a	⅝ ø	Strt	38	4-6	178
K4a	⅝ ø	Strt	32	2-0	108
R2a	¾ ø	Strt	2	34-3	163
R2b	¾ ø	Bent	34	11-7	263
R5a	⅝ ø	Bent	2	33-10	105
R5b	⅝ ø	Bent	2	33-10	105
R5c	⅝ ø	Bent	2	33-10	102
R8a	1" ø	Strt	2	34-6	233
R8b	1" ø	Strt	2	34-6	230
				Total	7092

⑩

Sta. 430+00.

Bridge Data:

Type: Special Superelevated Skewed Slab Bridge.

Size: Span 20', H 10'-6", Rdy 24', Skew 45°

Work Reqd: Build New Bridge.

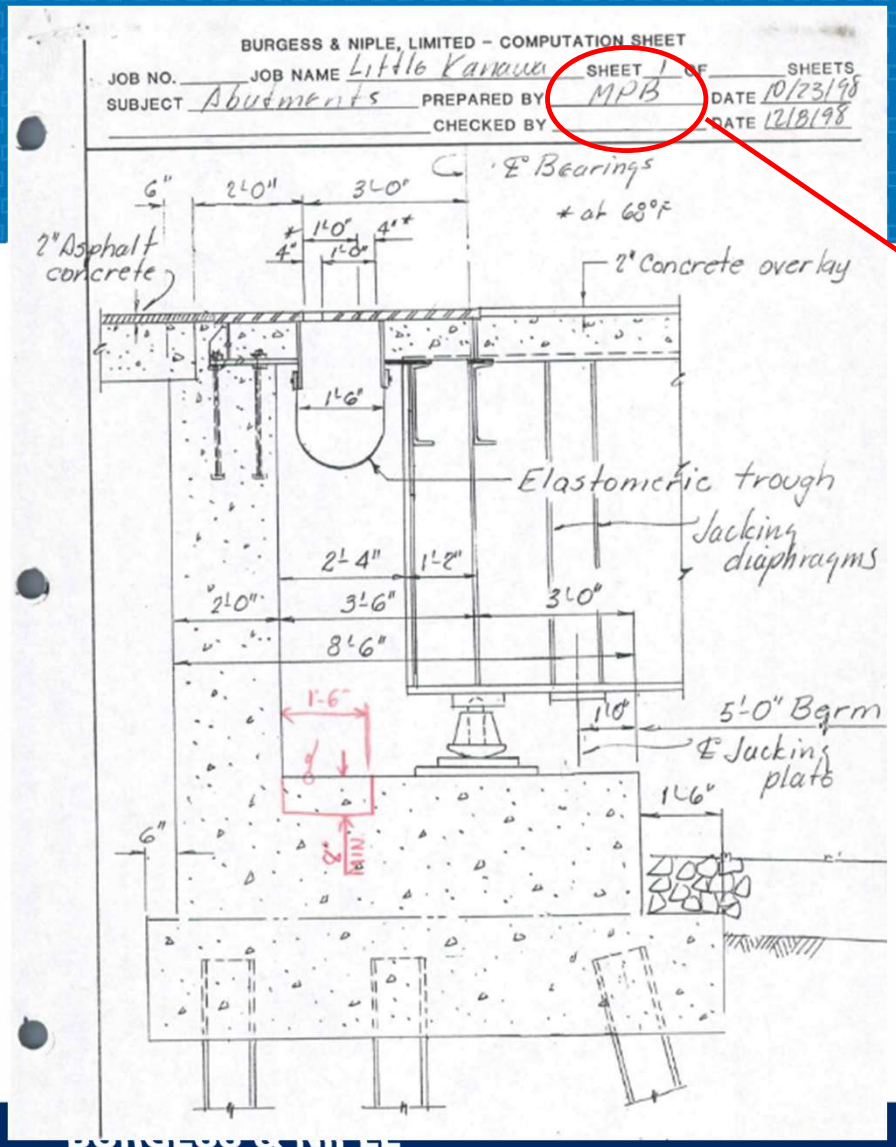
Remove Old Structure.

Drawn by Blazewicz Dec. 1929

Checked by:

Date:

Div. Engr.



Martin P. (“Marty”) Burke, PE

BURGESS & NIPLE, LIMITED – COMPUTATION SHEET

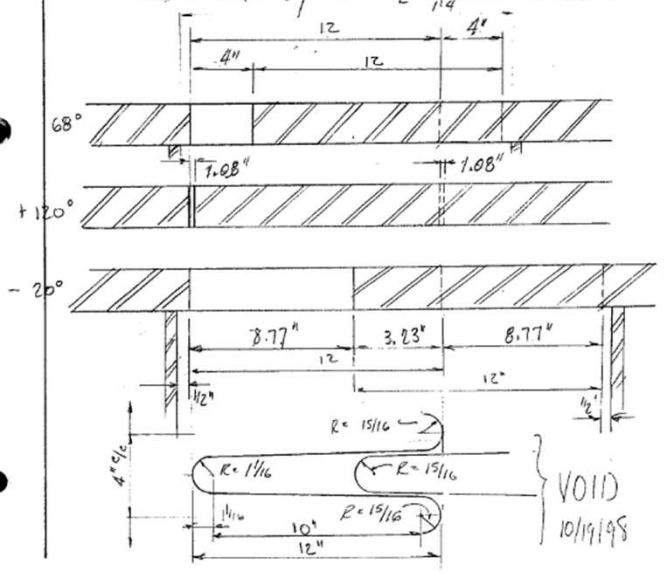
JOB NO. ____ JOB NAME Little Kanawa Br. SHEET 3 OF ____ SHEETS
SUBJECT Bout. Joints PREPARED BY MPB DATE 10/12/98
CHECKED BY ____ DATE 12/19/98 R

Length from fixed pier.

175 + 235 + 275 = 685

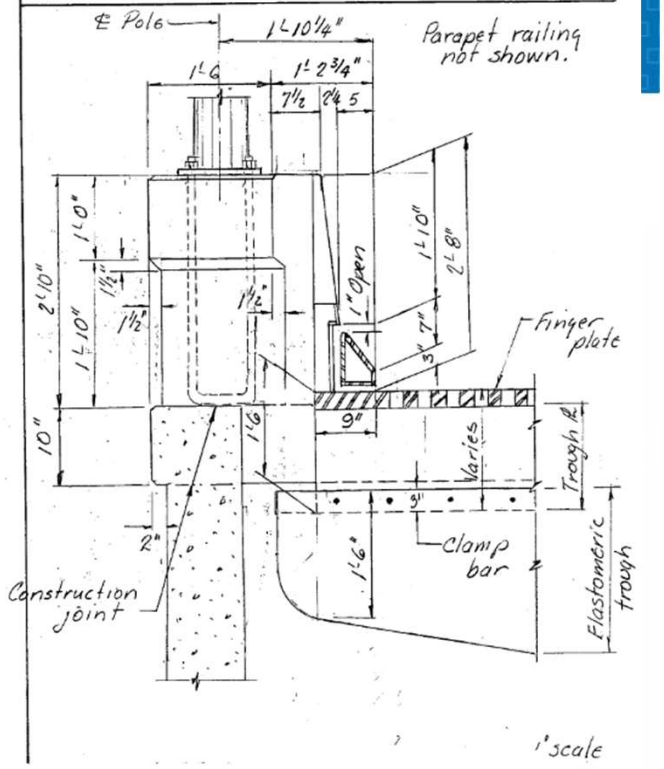
$\Delta_L = (.0000065)(685)(12)(10°) = 0.53"/10°F$

From 68 to -20 = say 90° $\Delta_L = (0.53)(9) = 4.77"$ } 5"
68 to +120 = say 55° $\Delta_L = (.53)(5.5) = 2.92"$ } 3"



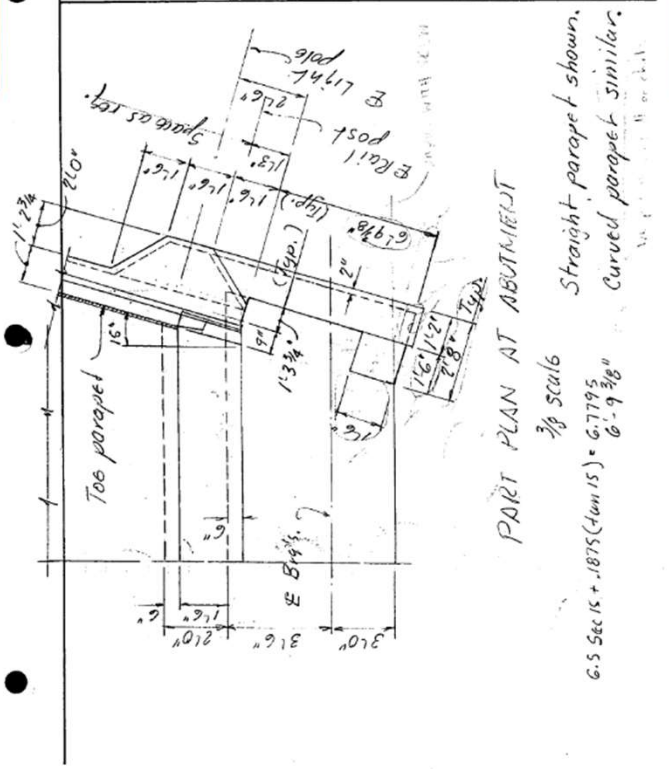
BURGESS & NIPLE, LIMITED – COMPUTATION SHEET

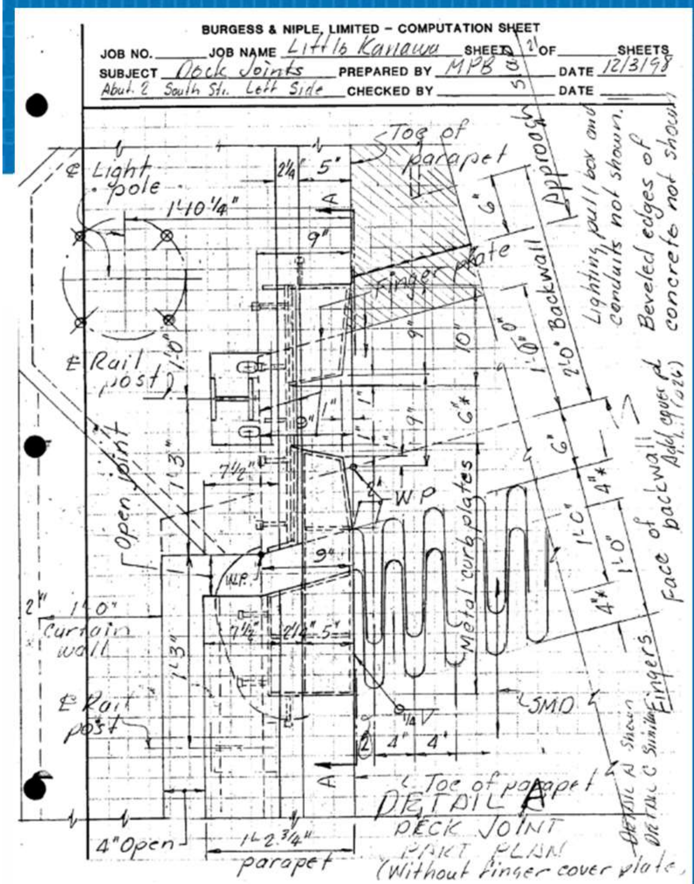
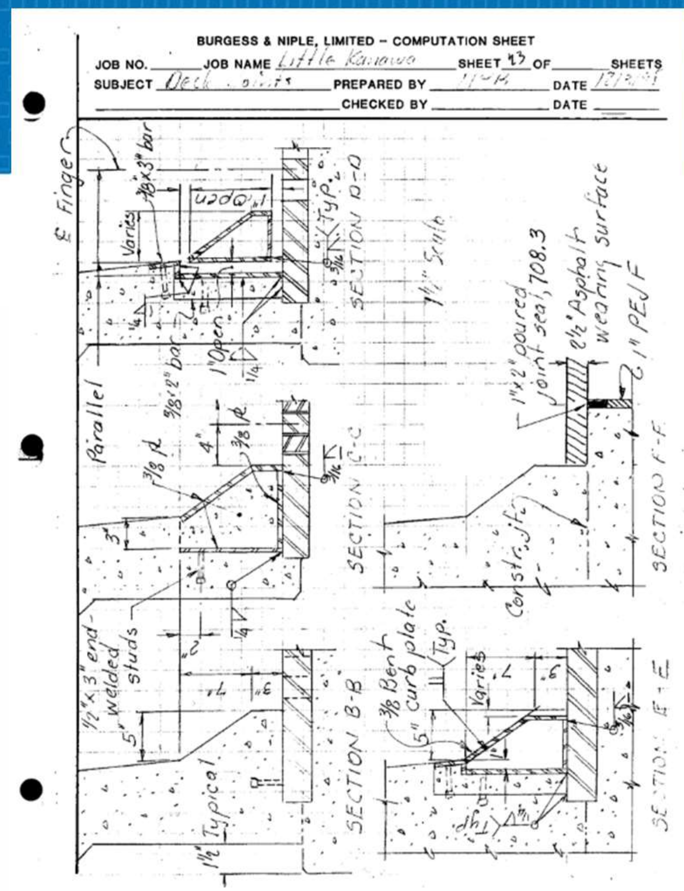
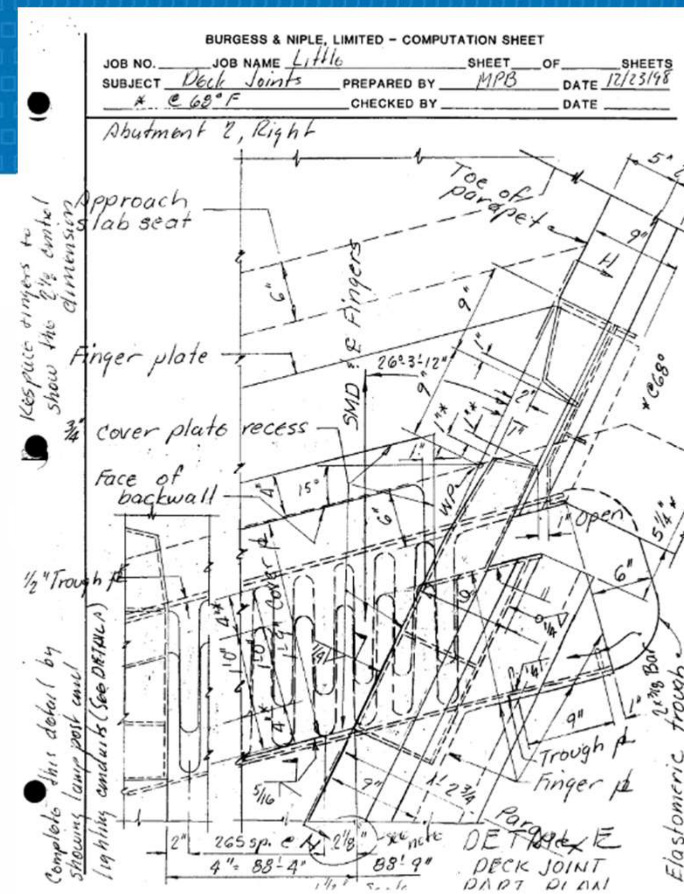
JOB NO. ____ JOB NAME Little Kanawa SHEET 4 OF ____ SHEETS
SUBJECT ____ PREPARED BY MPB DATE 11/6/98
CHECKED BY ____ DATE 12/18/98 R



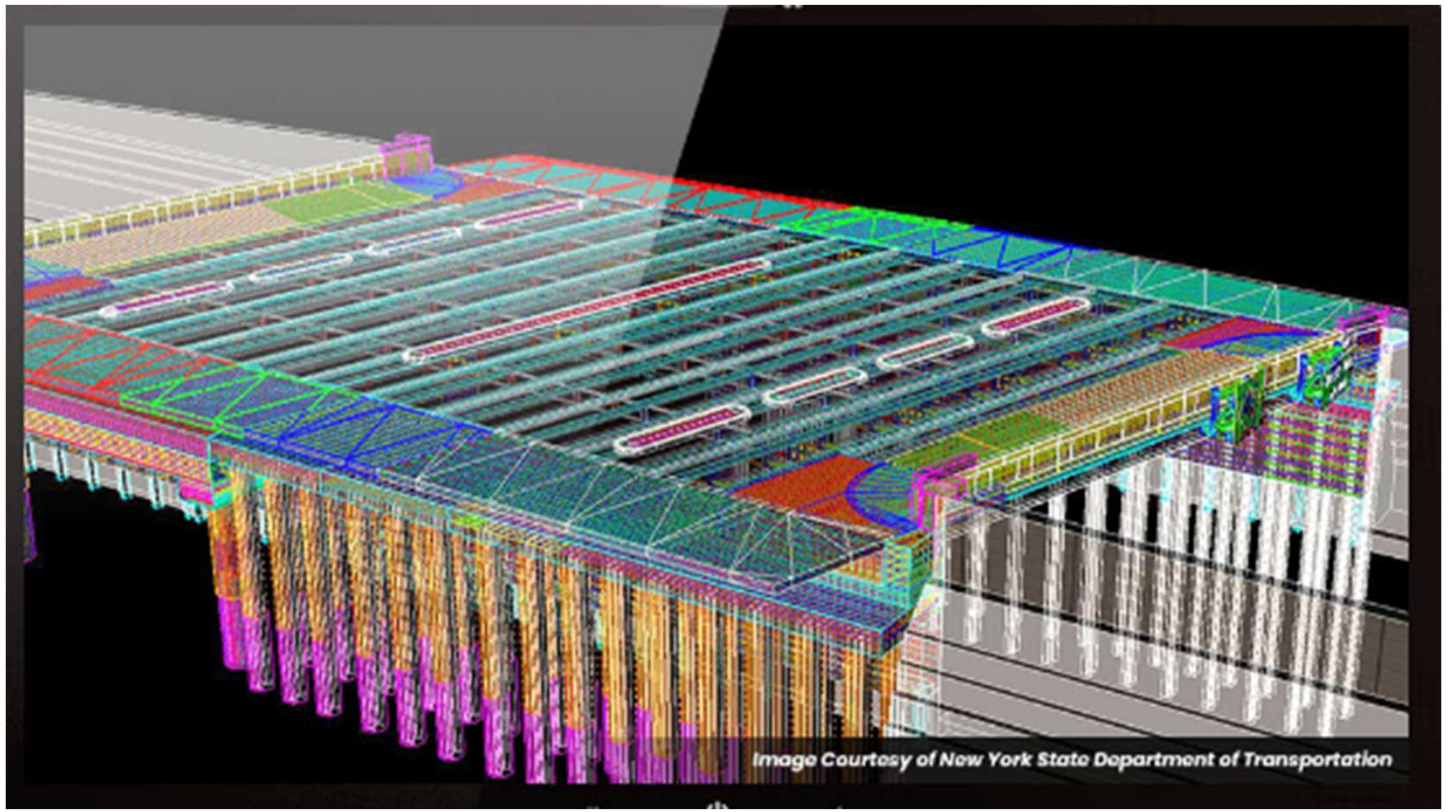
BURGESS & NIPLE, LIMITED – COMPUTATION SHEET

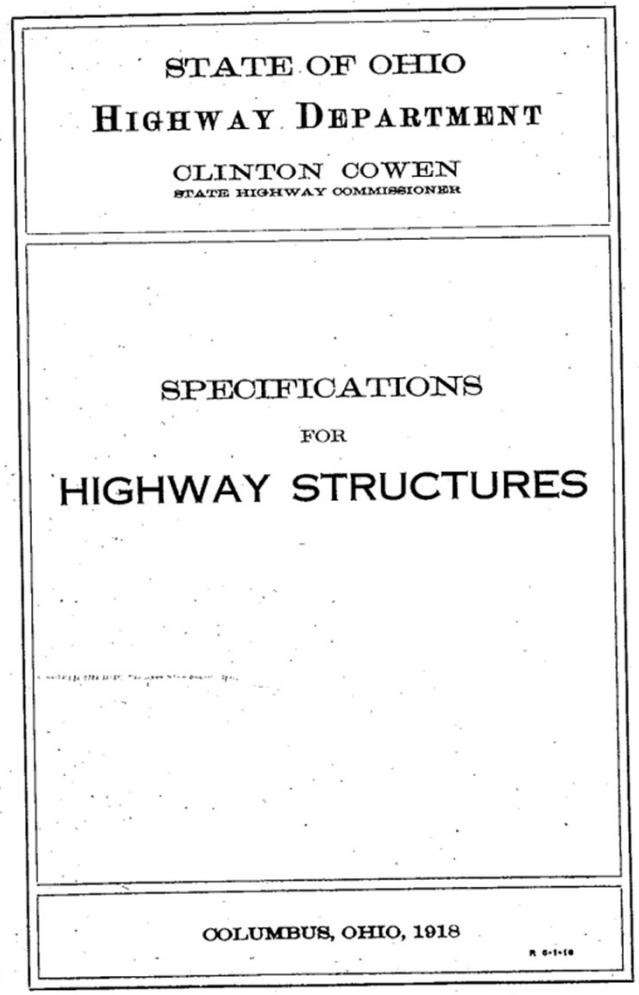
JOB NO. ____ JOB NAME Little Kanawa SHEET 9 OF ____ SHEETS
SUBJECT Abutments PREPARED BY MPB DATE 11/13/98
CHECKED BY ____ DATE 12/18/98 R




BURGESS & NIPLE, LIMITED – COMPUTATION SHEET
JOB NO. JOB NAME Little Kanawa SHEET OF SHEETS
SUBJECT Deck Joints PREPARED BY MPB DATE 12/3/98
Abut. 2 South Str. Left Side CHECKED BY DATE
Toe of parapet
Approach
Lighting pull box and conduits not shown.
Beveled edges of concrete not shown
Finger plate
2'-0" Backwall
Metal curb plates
Face of backwall
Fingers
Open joint
Curtain wall
SMD
DETAIL A
DECK JOINT
PART PLAN
(Without finger cover plate)
4" Open
parapet

BURGESS & NIPLE, LIMITED – COMPUTATION SHEET
JOB NO. JOB NAME Little Kanawa SHEET OF SHEETS
SUBJECT Deck Joints PREPARED BY DATE
CHECKED BY DATE
SECTION D-D
SECTION C-C
SECTION B-B
SECTION F-F
SECTION E-E
Parallel
1" Open
1"x2" poured joint seal, 708.3
2½" Asphalt wearing surface
Const. jt.
3/8 Bent curb plate
½"x3" end-welded studs
Typical

BURGESS & NIPLE, LIMITED – COMPUTATION SHEET
JOB NO. JOB NAME Little SHEET OF SHEETS
SUBJECT Deck Joints PREPARED BY MPB DATE 12/23/98
@ 68° F CHECKED BY DATE
Abutment 2, Right
Approach slab seat
Toe of parapet
Finger plate
Cover plate recess
Face of backwall
Fingers
1" Open
½" Trough
Trough
Finger
Elastomeric trough
DETAIL E
DECK JOINT
PART PLAN

The (Not So Distant) Future





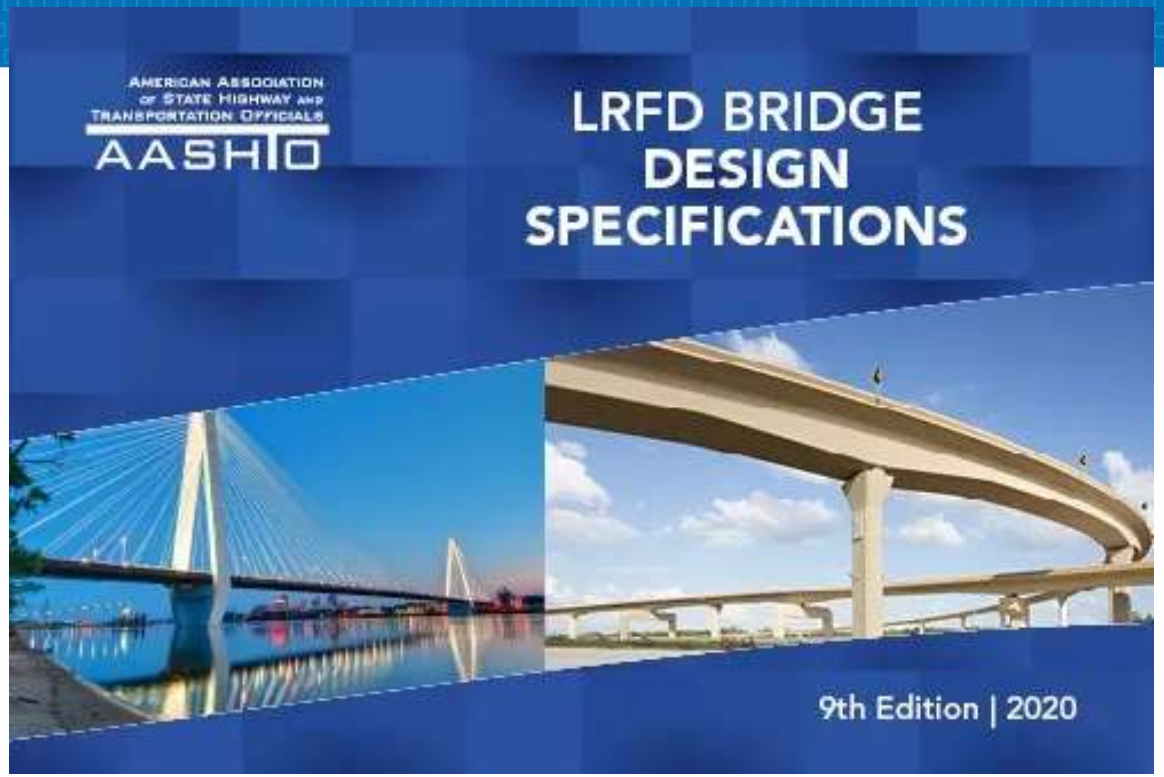
STATE OF OHIO DEPARTMENT OF TRANSPORTATION

BRIDGE DESIGN MANUAL

2020 EDITION

JANUARY 2023

Year	Pages
1918	67
1933	84
1957	104
1974	79
1982	190
1993	245
1998	363
2003	520
2019	384
2023	534



1st Edition:1931

ASD

LFD

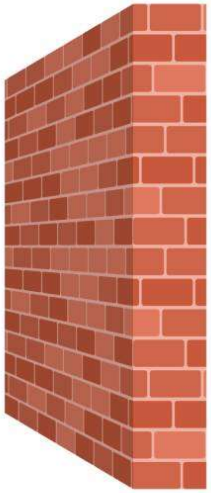
LRFD

Preliminary Design (Bridge Studies)

Construction Cost Estimates

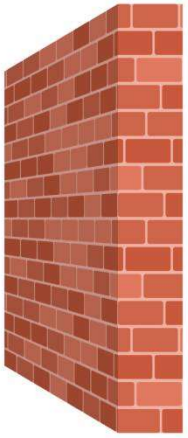
“Rules” versus “Guidelines”

Build Per Plan. Period.



Design Build

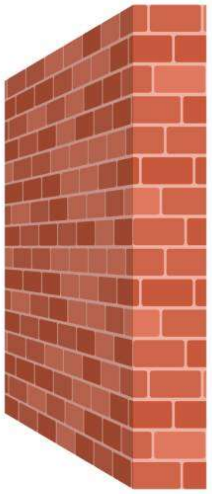
Rules



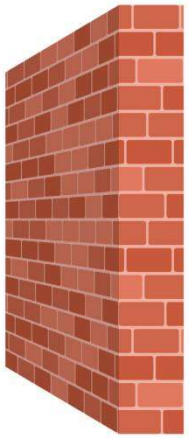
Build Per Plan. Sort of.

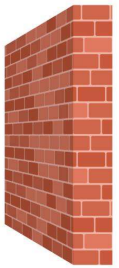
VECP

ATC

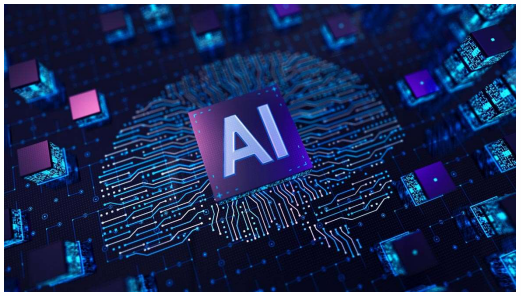


Progressive Design Build





Rules



Thank You!

BURGESS & NIPLE