

# DESIGN DESIGNATION

Current A.D.T.(600)  
 Design Year A.D.T.(780)  
 D  
 T  
 V  
 DVH  
 Functional Classification

# COUNTY OF ASHTABULA DEPARTMENT OF ENGINEERING CENTER ROAD BRIDGE OVER CONNEAUT CREEK CITY OF CONNEAUT ASHTABULA COUNTY

CHKD. BY		OHIO
DATE		
CHKD. BY		FHA REGION 5
DATE		



## 1989 SPECIFICATION

THE STANDARD SPECIFICATIONS OF THE STATE OF OHIO DEPARTMENT OF TRANSPORTATION, INCLUDING CHANGES AND SUPPLEMENTAL SPECIFICATION LISTED IN THE PROPOSAL SHALL GOVERN THIS IMPROVEMENT.

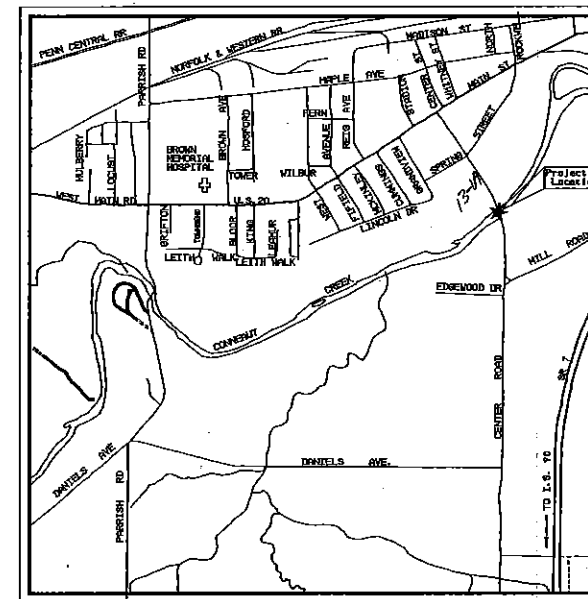
I HEREBY APPROVE THESE PLANS AND DECLARE THAT THE MAKING OF THIS IMPROVEMENT WILL REQUIRE THE CLOSING TO TRAFFIC OF THE HIGHWAY.

## CONVENTIONAL SIGNS

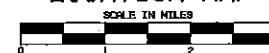
County Line _____	Limited Access (only) _____ L/A _____
Township Line _____	Right-of-Way (only) _____ R/W _____
Section Line _____	Limited Access & Right-of-Way _____ LA & RW _____
Corporation Line _____	Existing Right-of-Way _____
Fence Line (existing) X-X (proposed) X-X-X	Property Line —P/L— (in existing fence) —x-P/L-x—
Center Line _____	Railroad  ----- ----- ----- ----- ----- -----
Trees (to be removed)	Guardrail (existing)  (proposed)
Utility Poles: Telephone  Power  Light	

## INDEX OF SHEETS

- |                                    |                           |
|------------------------------------|---------------------------|
| 2) GENERAL NOTES & TYPICAL SECTION | 9) NORTH ABUTMENT DETAILS |
| 3) PLAN & PROFILE                  | 10) BEARING DETAILS       |
| 4) SITE PLAN                       | 11) BEAM DETAILS          |
| 5) SOUTH ABUTMENT DETAILS          | 12) APPROACH SLAB DETAILS |
| 6) CUT-OFF WALL DETAILS            |                           |
| 7) RETAINING WALL DETAILS          |                           |
| 8) PIER DETAILS                    |                           |



LOCATION MAP



State Highway —s.r.7— Other Highway \_\_\_\_\_  
 Interstate Highway —i.s.70— Project Location ★  
 U. S. Highway —u.s.20—

### SCALE

PLAN - - - - -   
 PROFILE HORIZ. - - - - -   
 PROFILE VERT. - - - - -

## LINE DATA

BEGIN PROJECT	STA. 9+00	
END PROJECT	STA. 13+75	
NET LENGTH OF PROJECT		475.0 LIN. FT.
ADD FOR WORK		
BEGIN WORK	STA. 7+94 to STA. 9+00	106.0 LIN. FT.
END WORK	STA. 13+75 to STA. 14+00	25.0 LIN. FT.
NET LENGTH OF WORK		131.0 LIN. FT.
<b>TOTAL 606.0 LIN. FT.</b>		

**UNDERGROUND UTILITIES**  
**48 HOURS BEFORE YOU DIG**  
 CALL 800-362-2764 TOLL FREE  
 OHIO UTILITIES PROTECTION SERVICE  
 NON-MEMBERS MUST BE CALLED DIRECT

Plan Prepared By  
 ASHTABULA COUNTY ENGINEER'S DEPARTMENT

SUPPLEMENTAL PRINTS OF STANDARD CONSTRUCTION DRAWINGS			
AS-1-81			
PSBD-1-81			
RW-1-63			
GR - 1			
GR - 2B			
GR - 4			

SUPPLEMENTAL SPECIFICATIONS	

DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION	
APPROVED _____	
DIVISION ADMINISTRATOR	DATE / /

# GENERAL NOTES

CALC. BY DATE		OHIO
CHKD. BY DATE		FHWA REGION 5

2  
12

## CONTINGENCY QUANTITIES

The contractor shall not order material or perform work listed in the General Summary for items designated by plan to be used "As Directed By The Engineer" unless authorized by the Engineer. The actual work locations and quantities used at the Engineer's discretion shall be made a matter of record by incorporation into the final change order governing completion of this project.

## LOCATION OF GUARDRAIL

The location of guardrail runs as shown in these plans are subject to adjustment prior to final acceptance. The Engineer shall be satisfied that all installations will afford maximum protection for traffic.

## UNDERGROUND UTILITIES

The location of the underground utilities shown on the plans are as obtained from the owners of the utility as required by section 153.64 of the o.r.c.

## UTILITIES NOTIFICATION

At least two working days prior to commencing construction operations in an area which may involve underground utility facilities, the Contractor shall notify the project Engineer, the requested utility protection service, and the owners of each underground utility facility shown in these plans.

The owner of the underground utility facility shall within forty-eight hours, excluding Saturday, Sunday and Legal Holidays, after notice is received, stake, mark or otherwise designate the location of the underground utility facilities in the construction area in such a manner as to indicate their course together with the approximate depth at which they were installed. The marking or locating shall be coordinated to stay approximately two working days ahead of the planned construction.

## DETOUR

No detour will be designated during the project.

## REMOVAL OF STRUCTURE

The existing steel truss will become the property of the Contractor. The Contractor will be responsible for the removal and disposal of the superstructure. The private sewer line attached to the superstructure will be removed by its owner. It will be the responsibility of the Contractor to coordinate the removal of the sewer line with its owner.

## UTILITY LINES

All expenses involved in relocating the affected utility lines shall be borne by the owners. The Contractor and Owners are requested to cooperate by arranging their work in such a manner that inconvenience to either will be held to a minimum.

## UTILITY OWNERSHIP

The following utilities and owners are located within the work limits of this project:

The Cleveland Electric Illuminating Co.  
P.O. Box 668 (Rt. 84)  
Ashtabula, Ohio 44004  
Ph. 216/997-3131

East Ohio Gas Co.  
1010 W. 30th St.  
Ashtabula, Ohio 44004  
Ph. 216/992-5100

A. T. & T.  
330 W. Wilson Bridge Rd.  
Worthington, Ohio 43085  
Ph. 1-800-222-0400

U. S. Sprint  
4665 Cornell Rd., Suite 201  
Cincinnati, Ohio 43241-2411  
1-800-521-0579

T C I Cablevision of Ohio Inc.  
1635 E. 6th St. Ext.  
Ashtabula, Ohio 44004  
Ph. 216/998-2148

The Conneaut Telephone Co.  
224 State St.  
Conneaut, Ohio 44030  
Ph. 216/593-1181

Lan Gas Co.  
(Address & Phone No. unknown)

NOTE. UTILITY LOCATIONS ARE NOT ALL SHOWN ON THESE PLANS. ADDITIONAL INFORMATION WILL BE AVAILABLE AT THE PRECONSTRUCTION MEETING.

## SURFACE INVESTIGATION

The surface investigation done by Ashtabula County Highway Department consisted of a visual field check.

This information was used to determine design elevations as shown in these plans.

The information shown as a result of this investigation was obtained solely for the use in establishing design controls for this project. The County does not guarantee the accuracy of this data and this investigation is not to be construed as part of the plans governing construction of this project. The Contractor should obtain additional information if he deems it necessary.

REFERENCE (shall be made to Standard Drawings)

PSBD-1-81 Date (revised) 6/20/89  
DBR-2-73 Date (revised) 4/10/73

## DESIGN SPECIFICATIONS

The structure conforms to "Standard Specifications for Highway Bridges" adopted by the American Association of State Highway and Transportation Officials, 1977, including the 1978, 1979, 1980, 1981 and 1982 Interim Specifications and the Ohio "Supplement" to these specifications.

## DESIGN STRESSES

CONCRETE CLASS "S" - Compressive Strength  
4500 p. s. i.

CONCRETE CLASS "C" - Compressive Strength  
4000 p. s. i.

Reinforcing Steel - ASTM A615, A616, A617  
Grade 60 minimum yield strength 60,000 p. s. i.

## CONCRETE FOR PRESTRESSED BEAMS

Unit stress 2200 p. s. i. compression  
444 p. s. i. tension

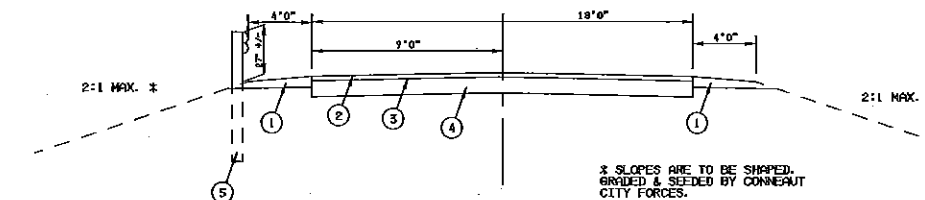
PRESTRESSING STRAND ASTM A416,  $f_s' = 270,000$  p. s. i.  
INITIAL STRESS =  $0.07 f_s'$

## DESIGN LOADING

Design Loading - HS - 20 - 44 and the Alternate Military Loading.

## DECK PROTECTION METHOD

Bituthene Waterproofing or Equal  
(with Engineer's approval.)



LEGEND		
1	617	COMPACTED AGG. SHOULDER (5' AVE.) STA. 11+75.00 to STA. 10+26.33
2	404	2 1/2" ASPHALT CONCRETE STA. 11+87.29 to STA. 14+00.00
3	407	TACK COAT II
4	304	COMPACTED AGG. BASE (9" DEPTH)
5	606	TYPE 5 GUARDRAIL

## TYPICAL SECTION

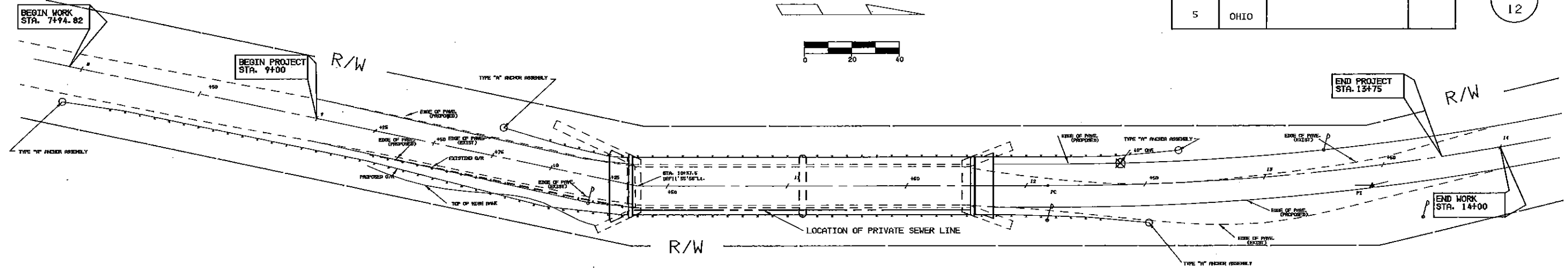
H Applied at .35 cu. ft. / Sq. Yd.  
between sta. 11+87.29 & sta. 13+50  
between sta. 11+87.29 & sta. 13+50

\* SLOPES ARE TO BE SHAPED, GRADED & SEDED BY CONNEAUT CITY FORCES.

ASHTABULA COUNTY ENGINEER DEPARTMENT JOHN W. SWALEN COUNTY ENGINEER	
GENERAL NOTES & TYPICAL SECTION CENTER RD. BRIDGE OVER CONNEAUT CREEK	
CONNEAUT CITY ASHTABULA COUNTY, OHIO	
DATE	BY
d. w. s.	d. w. s.
A. C. E. DR. N. XX-XXX-XXXX-XXXX	

FHWA REGION	STATE	PROJECT	
5	OHIO		

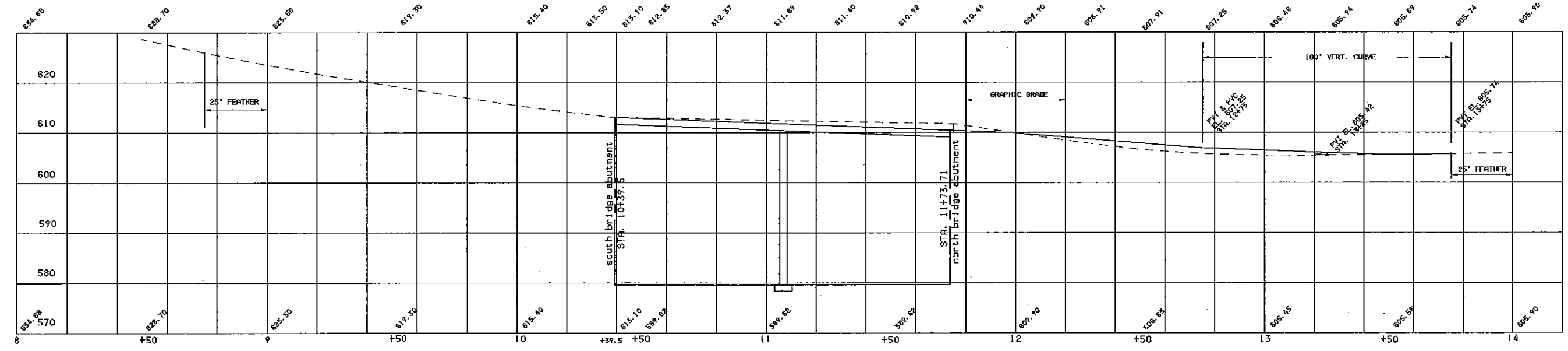
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BENCH MARK TOP NORTH WEST CORNER OF NORTH WSET WINGWALL ELEV. 610.12

BENCH MARK RAIL ROAD SPIKE POWER POLE 25' RT., STA. 13+40 ELEV. 606.22

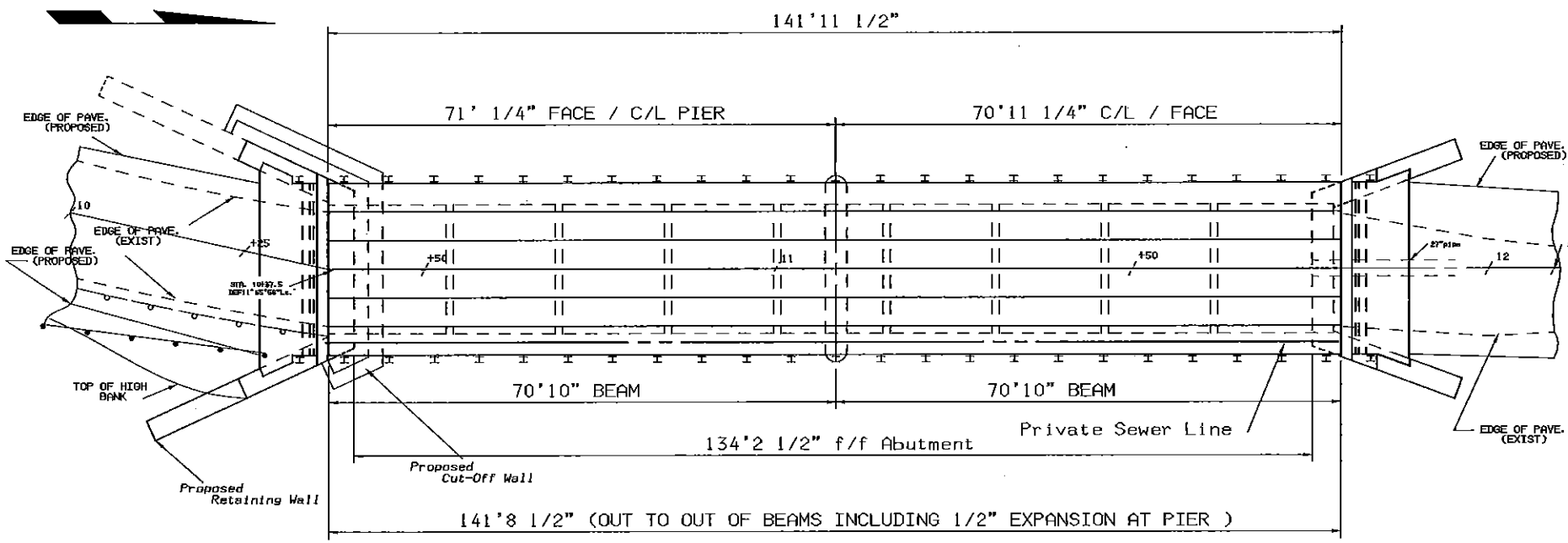
CURVE DATA  
 $\Delta=13^{\circ}32'20''$   
 $D=5'$   
 $R=1145.92'$   
 $L=270.78'$   
 $T=136.02'$   
 $E=8.04'$   
 $PC=12+09.22$   
 $PT=14+80.00$



ASHTABULA COUNTY ENGINEERING DEPARTMENT		
JOHN W. SMOLEN COUNTY ENGINEER		
PLAN & PROFILE CENTER RD. BRIDGE OVER CONNEAUT CREEK		
CONNEAUT CITY		ASHTABULA COUNTY, OHIO
SCALE	DATE	DR BY
CK D. BY	REV.	SHEET
REV.	REV.	OF
APPROVED		
A. C. E. DR. N. XX-XXX-XXXX-XXXX		

CALC. BY		OHIO
DATE		
CHKD. BY		FHWA REGION 5
DATE		

4  
12



EXISTING	STRUCTURE
TYPE	Pratt Steel Truss
SPAN	137.66' f to f
ROADWAY	16'0" f/f Guardrail
SKEW	0°
APPROACH SLAB	None
WEARING SURFACE	Bituminous
ALIGNMENT	Tangent

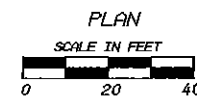
PROPOSED	STRUCTURE
TYPE	Prestressed Concrete Box Beam On Reinforced Concrete & Stone Substructure
SPAN	69'10 1/4", 71'4 1/4" out / out
ROADWAY	24'0" f to f Guardrail
SKEW	0°
APPROACH SLABS	Yes
WEARING SURFACE	Bituminous
ALIGNMENT	Tangent
SUPERELEVATION	None
LOADING	HS-20-44

FACE OF BACKWALL (SOUTH)	10+35.83
C/L BEARING	10+36.50
C/L BEARING	11+06.33
C/L PIER	11+06.85
C/L BEARING	11+07.37
C/L BEARING	11+77.21
FACE OF BACKWALL (NORTH)	11+77.79

ADT  
1989 600  
2009 780

BENCH MARK TOP NORTH WEST CORNER OF NORTH WSET WINGMALL ELEV. 610.12

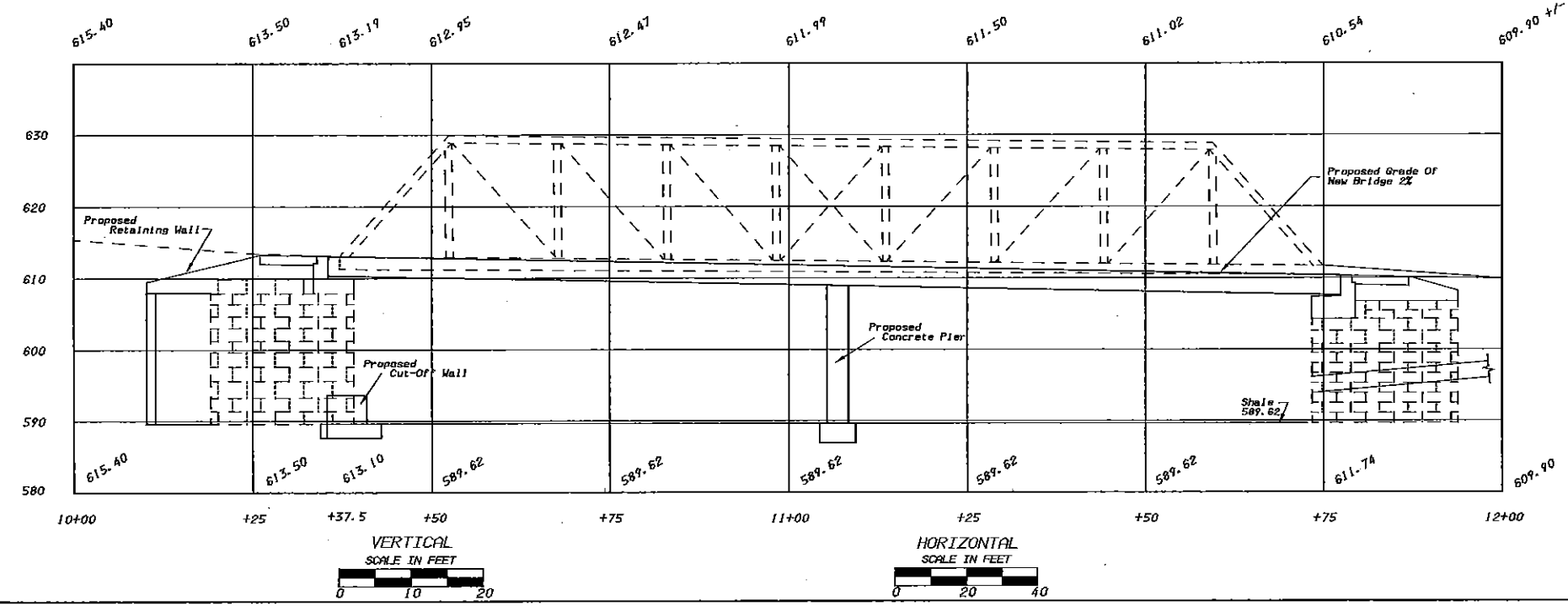
BENCH MARK RAIL ROAD SPIKE POWER POLE 25' RT., STA. 13+40 ELEV. 606.22



	c / s	Velocity	Water Surface Elev.	Min. Clearance
Q10	11,000	7.8	600.4	6.9ft.
Q25	13,400	8.8	601.2	6.1ft.
Q50	15,100	9.7	601.7	5.6ft.
Q100	17,000	10.5	602.3	5.0ft.

DRAINAGE AREA 178 SQ. MILES

ORDINARY HIGH WATER MARK Elev. 599.1 Annual Occurrence



ESTIMATED		QUANTITIES				
ITEM	TOTAL	UNIT	DESCRIPTION	ABUTMENTS	PIER	GENERAL
202	LUMP	LUMP	Superstructure removed, as per plan			X
404	25.0	Cu Yd	Asphalt concrete, A C - 20			X
503	LUMP	LUMP	Portions of sandstone abutments removed			X
503	LUMP	LUMP	Cofferdams, Cribbs & Sheeting			X
503	LUMP	LUMP	Unclassified Excavation (Abutment modification including Backfill)			X
503	LUMP	LUMP	Unclassified Excavation (Retaining Wall)			X
503	39.9	Cu Yd	Unclassified Excavation (Shale Excavation)		X	X
509	13.847	Lbs.	Reinforcing Steel	X	X	X
510	24	each	Dowel Rods			X
511	40.5	Cu Yd	Class C Concrete For Footings (Pier, Retaining Wall & Cut-Off Wall)		X	X
511	161.0	Cu Yd	Class C Concrete (Abutment modifications Cut-Off & Retaining Walls & Pier Above Footings & APPROACH SLABS)	X	X	X
511	3.0	Cu Yd	Class S Concrete, Superstructure			X
515	12	each	Prestress Concrete Beams			X
516	48	each	6"x18" 1/4" Elastomeric Bearing Pads			X
516	52.0	Sq Ft	1/2"x26"x24" Preformed Expansion Joint			X
516	60.0	Sq Ft	1"x30"x24" Preformed Expansion Joint			X
516	24	Lin Ft	Structural Expansion Joint (Including Elastomeric Compression Seal)			X
517	299	Lin Ft	Bridge Railing (deep beam rail, type 1 post & 6 special anchor installations)			X
518	40.0	Cu Yd	Porous Backfill	X		X
Special	380	Sq Yd	Bituthene Waterproofing			X
Special	285'4"	Lin Ft	Dripstrip As Per Plan			X
ROADWAY						
202	XXXX	Lin Ft	GUARDRAIL REMOVED			
202	300	Sq Yd	PAVEMENT REMOVAL			
203	LUMP	LUMP	EXCAVATION (GRADE CHANGE N. ABUT.)			
304	50.0	Cu Yd	AGGREGATE BASE			
404	53.0	Cu Yd	ASPHALT CONCRETE			
407	95.0	Gal.	TACK & PRIME COATS			
606	375	Lin Ft	GUARDRAIL TYPE 5			
606	4	each	ANCHOR ASSEMBLY TYPE A			
614	LUMP	LUMP	MAINTAINING TRAFFIC			
614	.12	MILES	TEMPORARY CENTERLINE MARKING			
617	70.0	Cu Yd	TYPE 304 AGGREGATE (210 sq yds berms)			
623	LUMP	LUMP	CONSTRUCTION LAYOUT STAKES			

NOTE  
Earth work limits shown are approximate, actual slopes shall conform to plan cross sections.

ASHTABULA COUNTY ENGINEER DEPARTMENT  
JOHN W. SMOLEN COUNTY ENGINEER

**SITE PLAN**  
CENTER ROAD CONNEAUT CITY  
OVER CONNEAUT CREEK  
ASHTABULA COUNTY OHIO

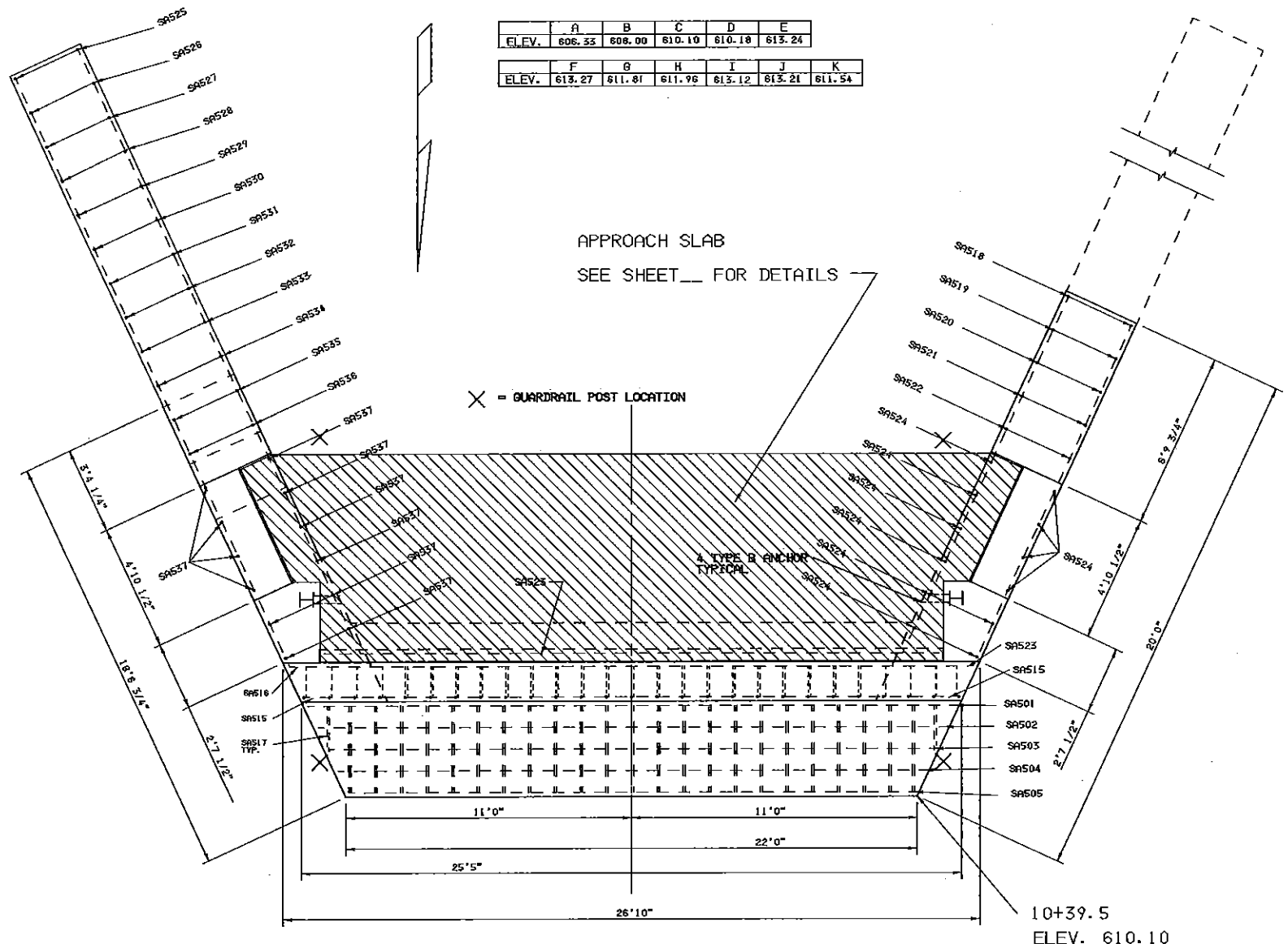
APPROVED FOR CONSTRUCTION

A.C.E. DR. N. XX-XXX-XXXX-XXXX

	A	B	C	D	E	
ELEV.	608.55	608.00	610.10	610.10	613.24	
	F	G	H	I	J	K
ELEV.	613.27	611.81	611.96	613.12	613.21	611.54

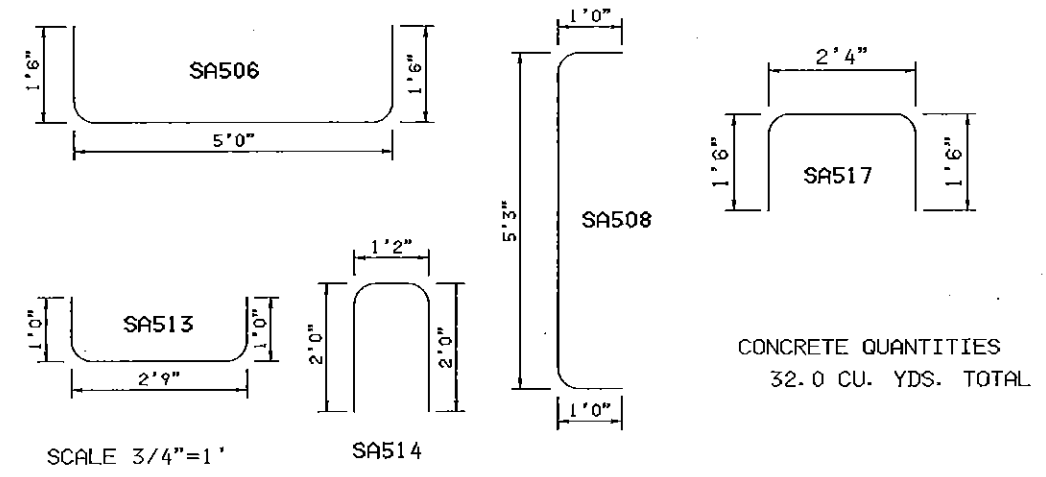
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DATE		
CHKD. BY		FHWA REGION 5
DATE		

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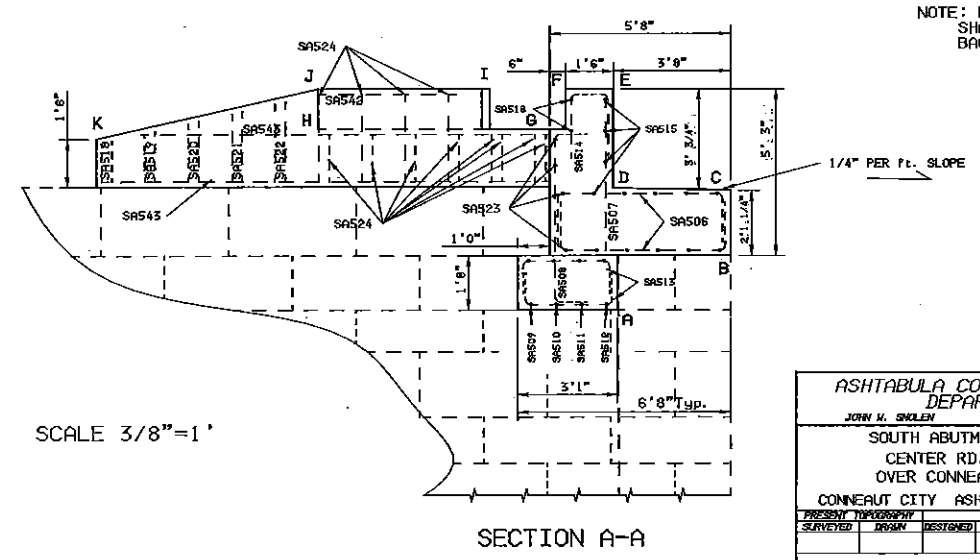
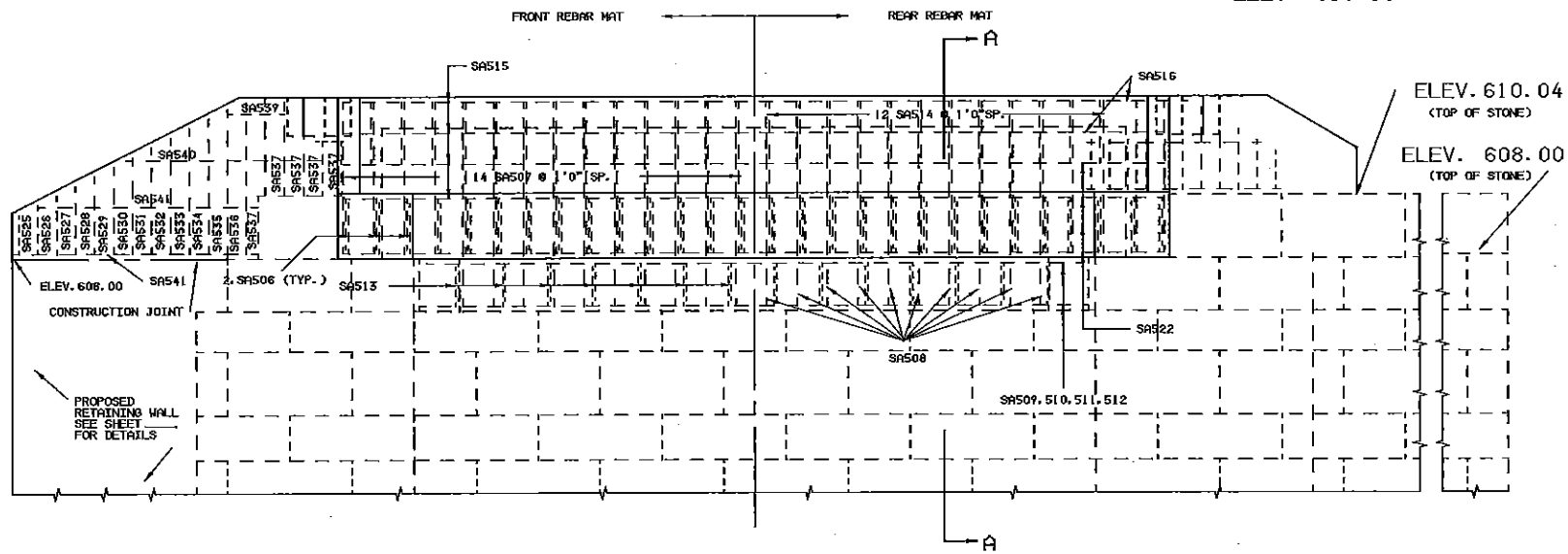


MARK	Nº.	LENGTH	TYPE	SPACE	WEIGHT
SA501	2	24'11"	ST	0'10"	52.0
SA502	2	24'2"	ST	0'10"	50.4
SA503	2	23'4"	ST	0'10"	48.7
SA504	2	22'7"	ST	0'10"	47.1
SA505	2	21'9"	ST	0'10"	45.4
SA506	56	8'0"	BT	1'0"	467.3
SA507	28	4'8"	ST	1'0"	126.6
SA508	20	7'3"	BT	1'0"	151.2
SA509	2	21'1"	ST	1'0"	44.0
SA510	2	20'3"	ST	1'0"	42.2
SA511	2	19'5"	ST	1'0"	40.5
SA512	2	18'7"	ST	1'0"	38.8
SA513	28	4'9"	BT	1'0"	138.7
SA514	27	5'2"	BT	1'0"	145.5
SA515	4	25'6"	ST	1'0"	106.4
SA516	2	26'10"	ST	1'0"	56.0
SA517	4	5'4"	ST	1'6"	22.2
SA518	2	1'4"	ST	1'6"	2.8
SA519	2	1'7"	ST	1'6"	3.3
SA520	2	1'10"	ST	1'6"	3.6
SA521	2	2'2"	ST	1'6"	4.5
SA522	2	2'5"	ST	1'6"	5.0
SA523	4	23'8"	ST	1'0"	98.7
SA524	12	2'9"	ST	1'6"	34.4

MARK	Nº.	LENGTH	TYPE	SPACE	WEIGHT
SA525	2	1'3"	ST	1'6"	2.6
SA526	2	1'7"	ST	1'6"	3.3
SA527	2	1'10"	ST	1'6"	3.8
SA528	4	2'2"	ST	1'6"	9.0
SA529	2	2'5"	ST	1'6"	5.0
SA530	2	2'10"	ST	1'6"	5.9
SA531	2	3'1"	ST	1'6"	6.4
SA532	2	3'5"	ST	1'6"	7.1
SA533	2	3'9"	ST	1'6"	7.8
SA534	2	4'1"	ST	1'6"	8.5
SA535	2	4'4"	ST	1'6"	9.0
SA536	2	4'8"	ST	1'6"	9.7
SA537	12	4'10"	ST	1'6"	60.5
SA538					
SA539	2	6'0"	ST	1'6"	16.7
SA540	2	17'0"	ST	1'6"	35.5
SA541	4	26'0"	ST	1'6"	108.5
SA542	2	5'0"	ST	1'6"	10.4
SA543	4	14'0"	ST	1'6"	58.4
			TOTAL		2144



CONCRETE QUANTITIES  
32.0 CU. YDS. TOTAL



NOTE: FOOTER AND ABUTMENT SHALL HAVE 18" OF POROUS BACKFILL TO ELEV. 611.81

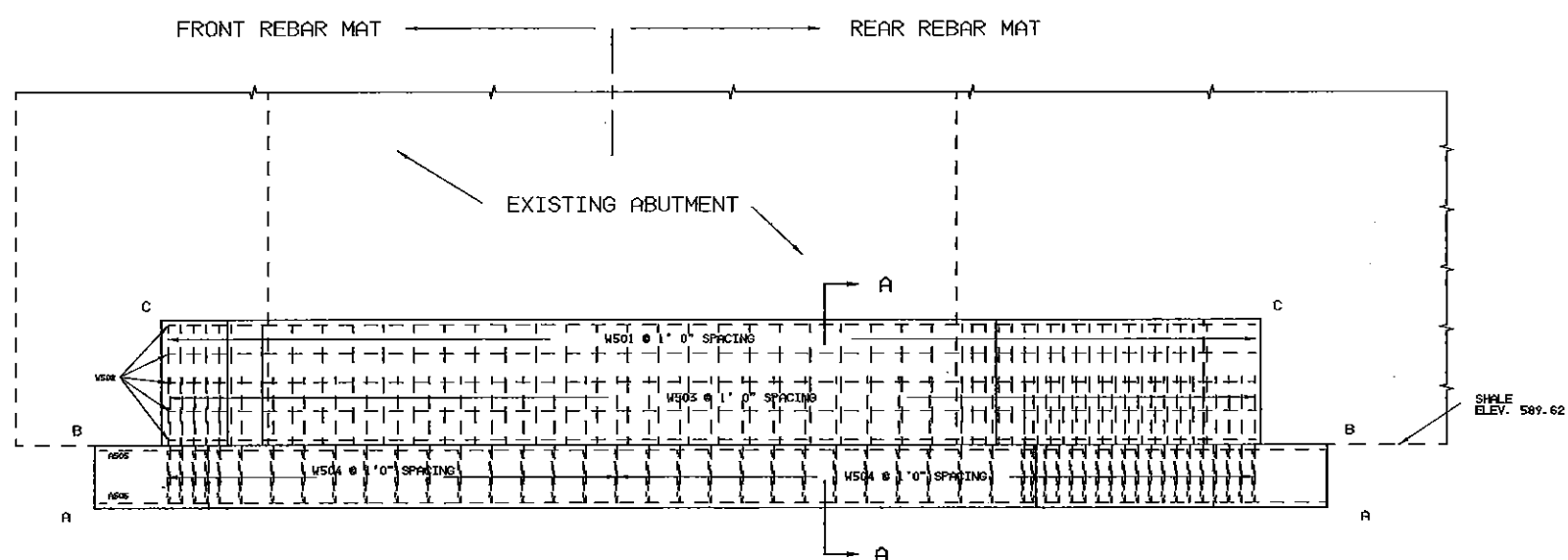
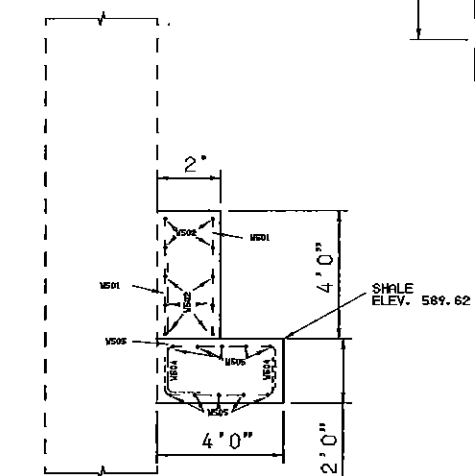
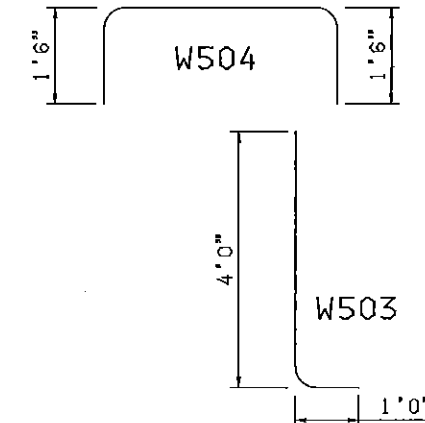
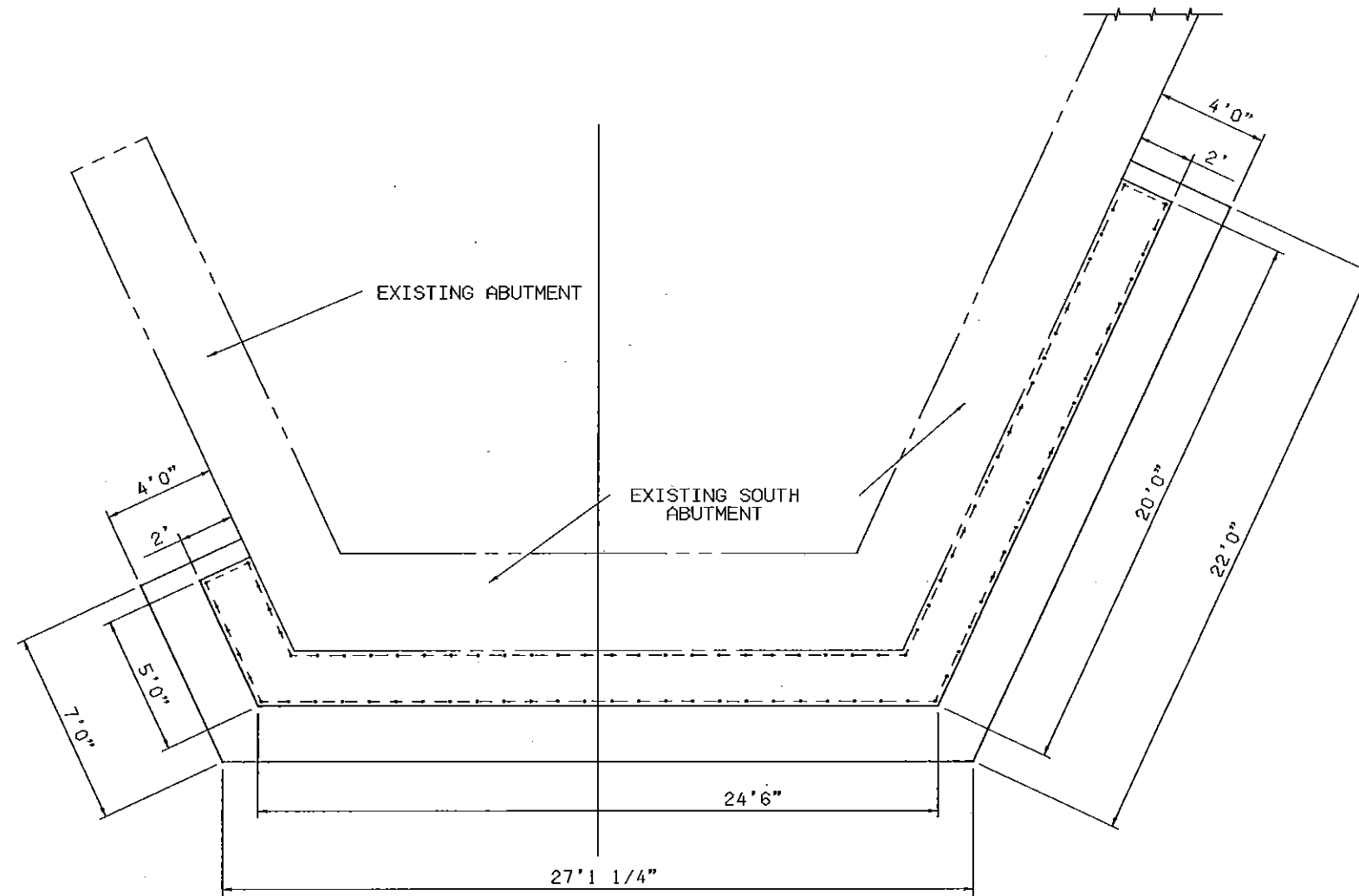
ASHTABULA COUNTY ENGINEER DEPARTMENT  
JOHN W. SKILLEN COUNTY ENGINEER  
SOUTH ABUTMENT DETAILS  
CENTER RD. BRIDGE OVER CONNEAUT CREEK  
CONNEAUT CITY ASHTABULA COUNTY, OHIO  
A.C.E. DR. N°. XX-XXX-XXXX-XXXX

CALC. BY		OHIO
DATE		
CHKD. BY		FHWA REGION 5
DATE		

6  
12

SCALE 3/8"=1'

BAR SCHEDULE					
MARK	N°	LENGTH	TYPE	SPACING	WEIGHT
W501	102	3'-8"	ST	1'-0"	390.1
W502	10	4'-9"	FBT	1'-0"	511.1
W505	47	5'-0"	BT	1'-0"	245.1
W504	94	6'-8"	BT	1'-0"	626.7
W505	10	52'-0"	FBT	1'-0"	542.4
TOTAL					2418.4



	A	B	C
ELEV.	587.62	589.62	593.62

CONCRETE QUANTITIES  
FOOTER 15.5 CU. YDS.  
WALL 14.0 CU. YDS.

ASHTABULA COUNTY ENGINEER DEPARTMENT  
JOHN W. SIKLEN COUNTY ENGINEER

CUT/OFF WALL DETAILS  
CENTER RD. BRIDGE  
OVER CONNEAUT CREEK

CONNEAUT CITY ASHTABULA COUNTY, OHIO

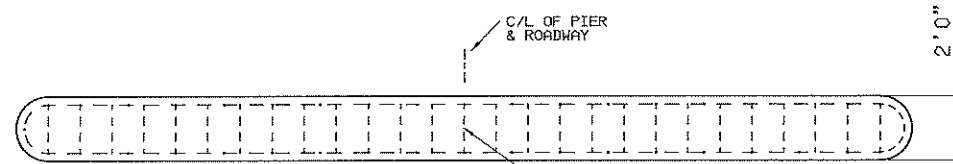
PRESENT TOPOGRAPHY	PROPOSED MARK
SURVEYED	DESIGNED
DRWN	CHECKED
REVISED	REVISED
d. w. m.	d. w. m.

A. C. E. DR. N°. XX-XXX-XXXX-XXXX

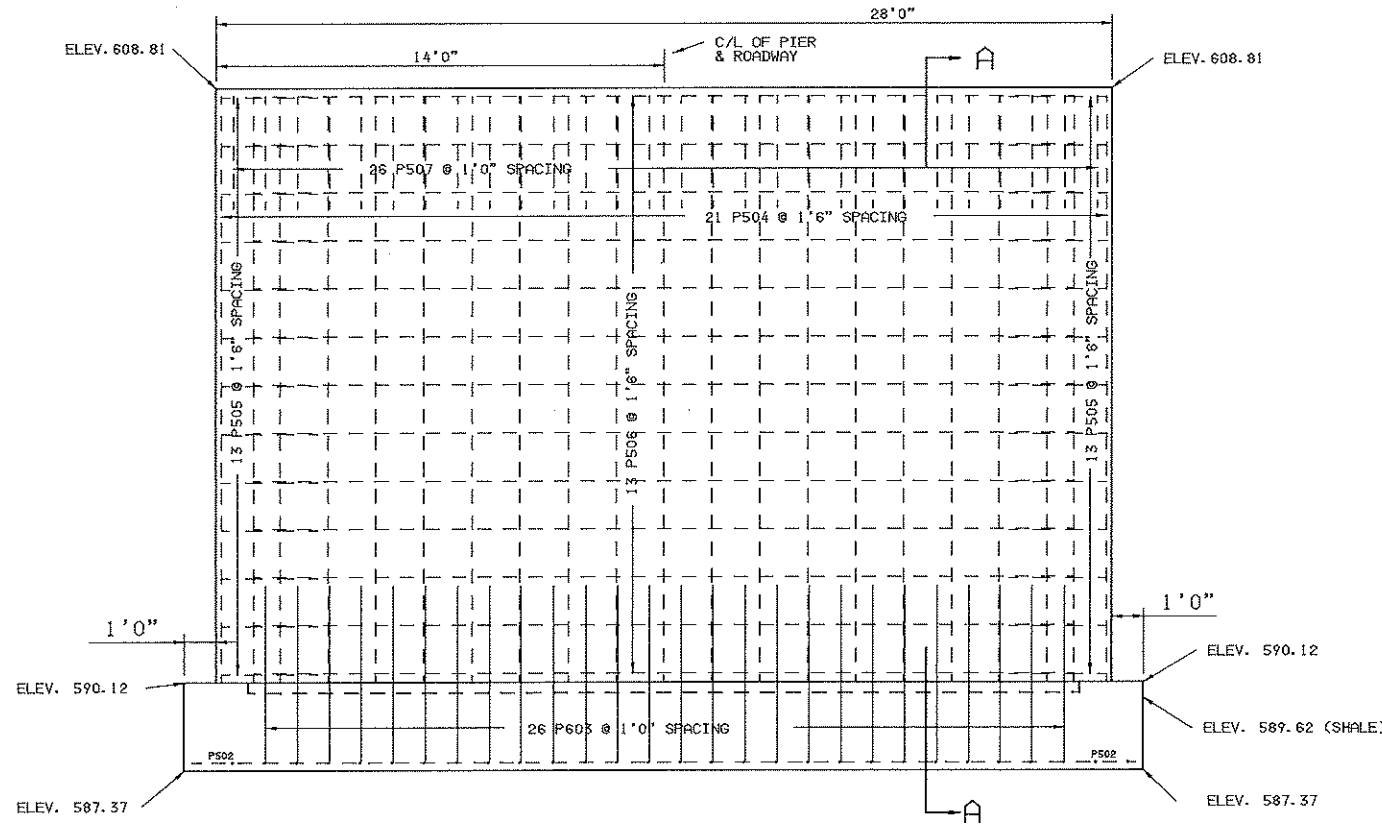


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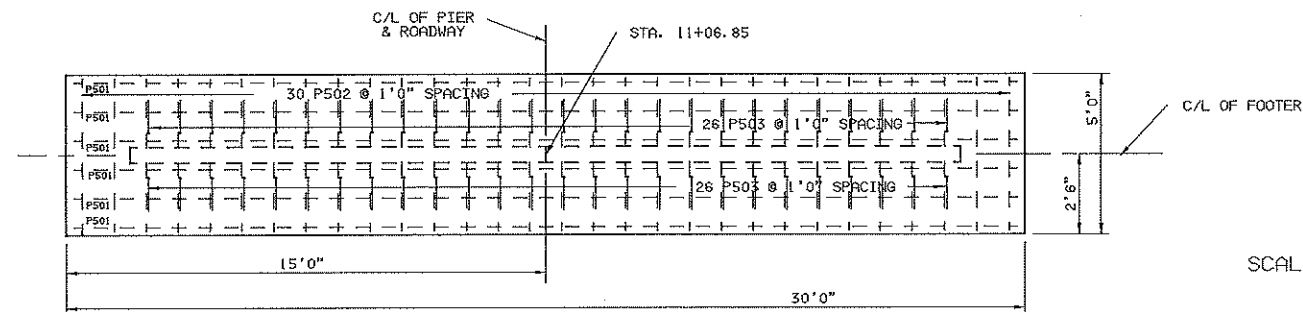
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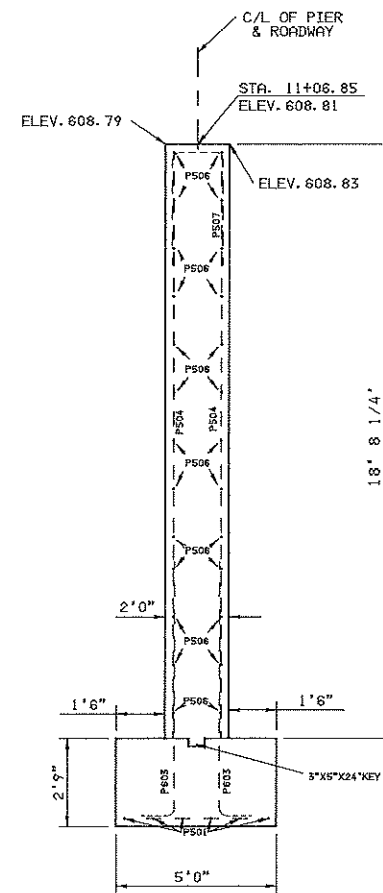
PLAN STA 11+06.85



ELEVATION

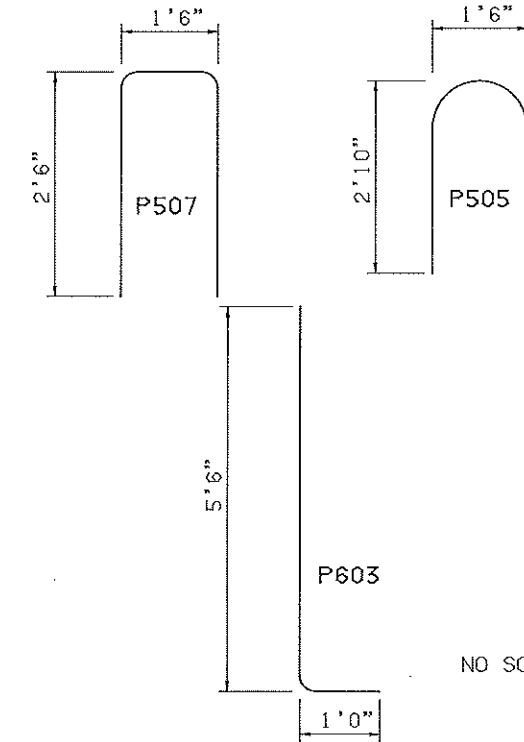


FOOTER PLAN



SECTION A-A

SCALE 3/8"=1'



NO SCALE

BAR SCHEDULE					
MARK	N'	LENGTH	TYPE	SPACING	WEIGHT
P501	6	29'6"	ST.	0'11"	184.6
P502	30	4'6"	ST.	1'0"	143.9
P603	52	10'0"	BT.	1'0"	780.0
P504	40	18'0"	ST.	1'6"	751.0
P505	26	6'6"	BT.	1'6"	176.3
P506	26	25'6"	ST.	1'6"	891.5
P507	26	6'6"	BT.	1'0"	176.3
			TOTAL		2904.6

CONCRETE QUANTITIES

FOOTER 15.5 CU. YDS.  
WALL 38.0 CU. YDS.

ASHTABULA COUNTY ENGINEER  
DEPARTMENT  
JOHN W. SICKLEN COUNTY ENGINEER

PIER DETAILS  
CENTER RD. BRIDGE  
OVER CONNEAUT CREEK

CONNEAUT CITY ASHTABULA COUNTY, OHIO

PREPARED	DESIGNED	CHECKED	REVISED

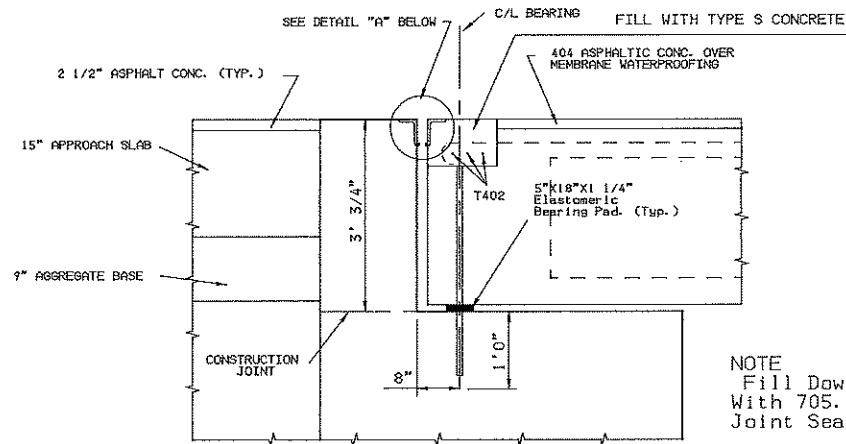
A.C.E. DR. N. XX-XXX-XXXX-XXXX



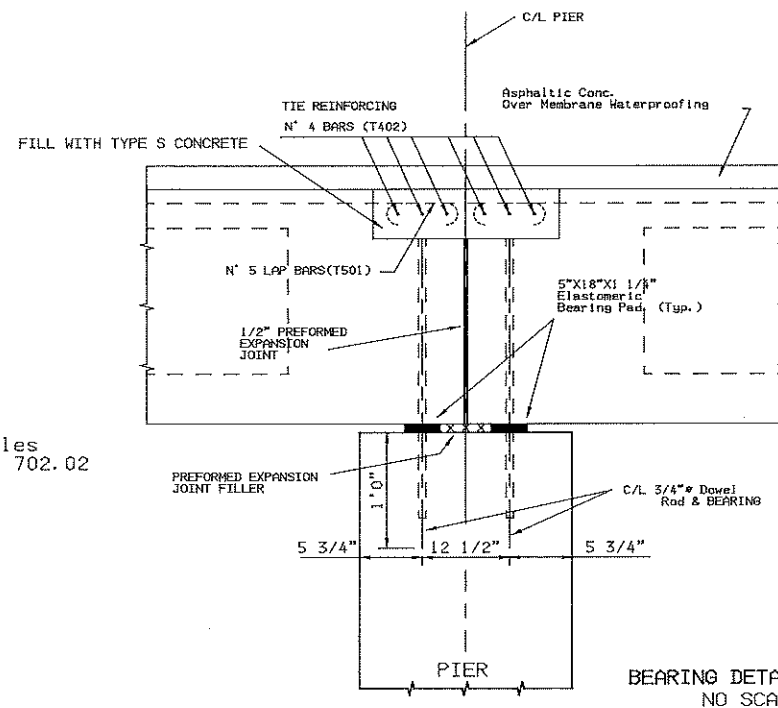


CALC. BY		OHIO
DATE		
CHKD. BY		FHWA REGION 5
DATE		

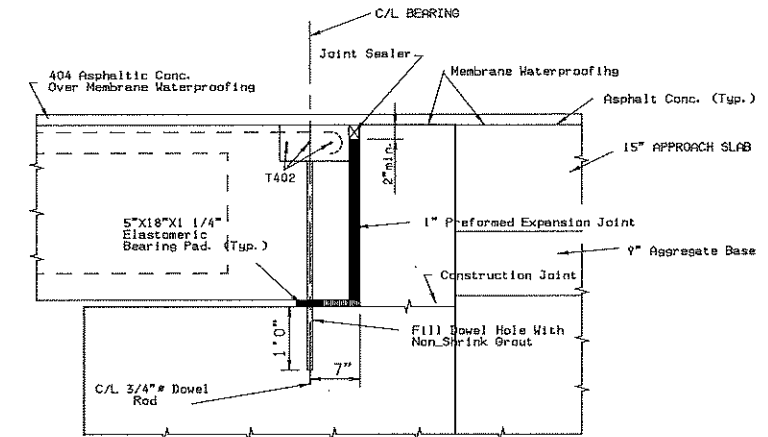
10  
12



BEARING DETAIL SOUTH ABUT. (EXPANSION)



BEARING DETAIL PIER  
NO SCALE

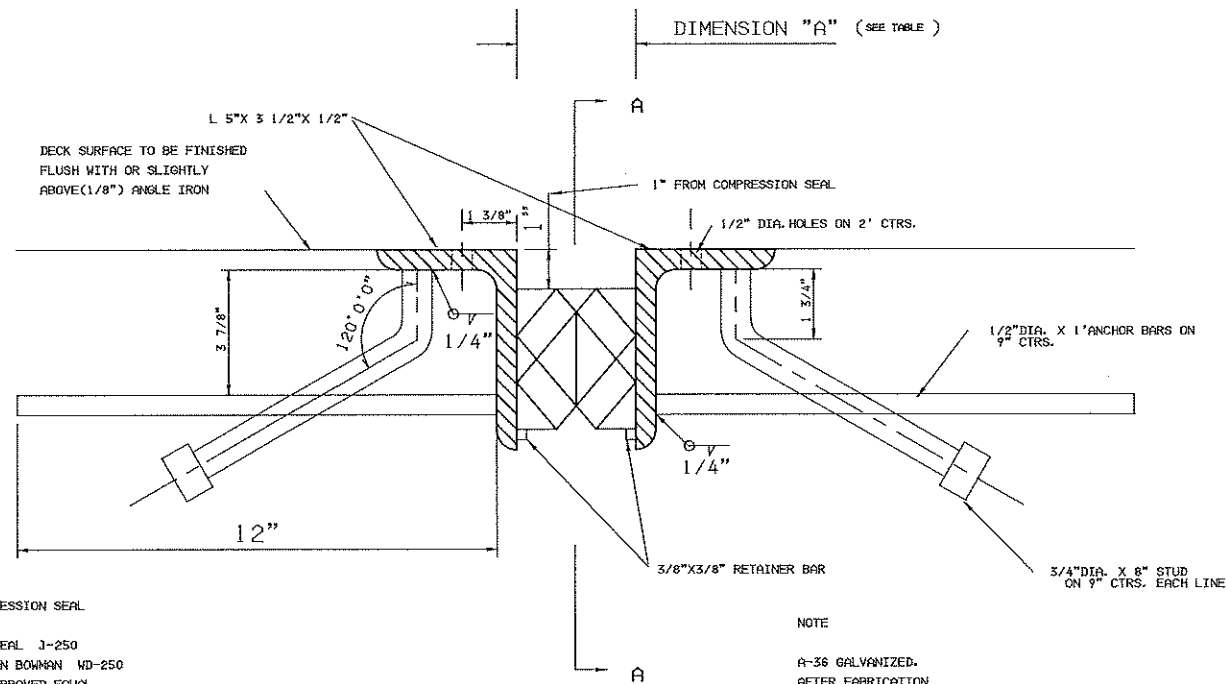


BEARING DETAILS NORTH ABUTMENT  
NO SCALE

NOTE  
Fill Dowel Holes  
With 705.04 or 702.02  
Joint Sealer

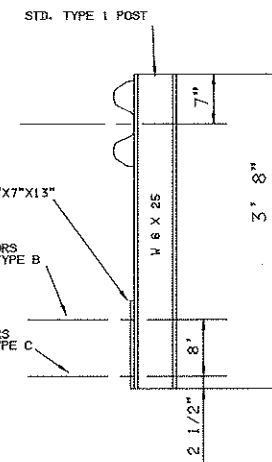
NOTE  
Fill Dowel Holes  
With 705.04 or 702.02  
Joint Sealer

DEGREES F	DIMENSION "A"
90°	1.17"
80°	1.28"
70°	1.39"
60°	1.50"
50°	1.61"
40°	1.72"
30°	1.83"

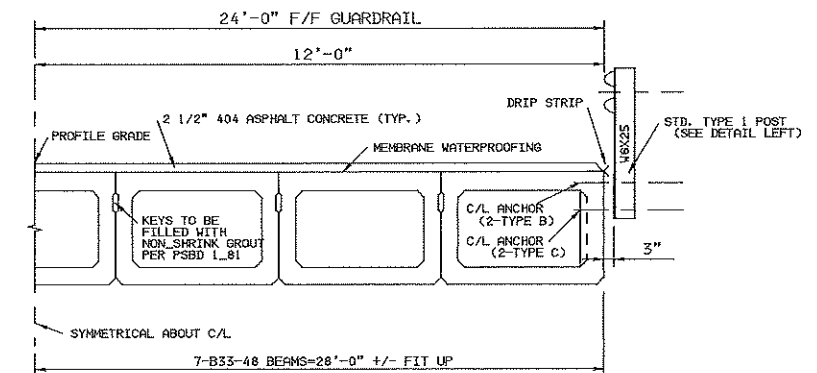


COMPRESSION SEAL  
ACHASEAL J-250  
WATSON BOWMAN WD-250  
OR APPROVED EQUAL

NOTE  
A-36 GALVANIZED.  
AFTER FABRICATION

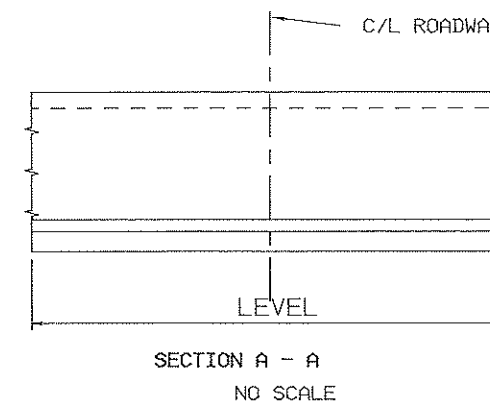
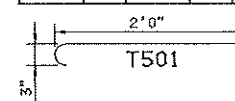


GUARD RAIL POST DETAIL

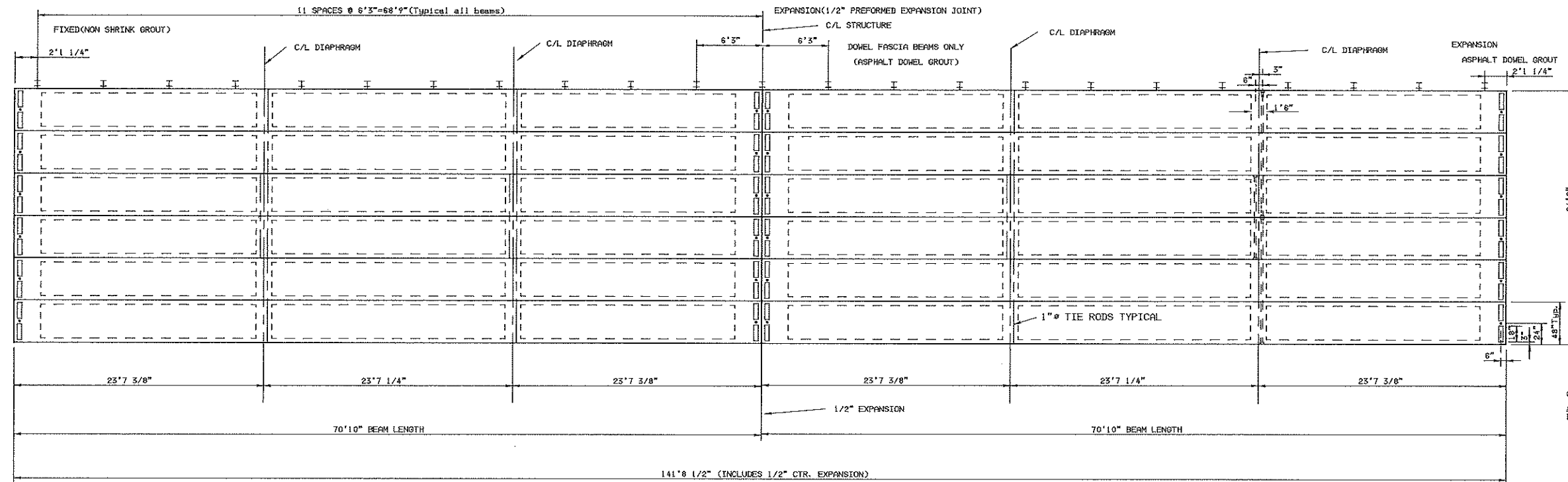


TRANSVERSE DECK SECTION

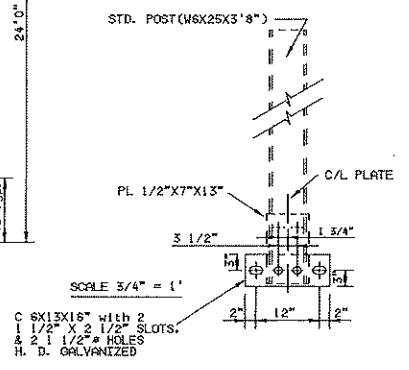
BAR SCHEDULE					
MARK	N#	LENGTH	TYPE	SPACE	WEIGHT
T501	24	3'0"	BT	1'0"	75.1
T402	12	25'6"	ST	0'4"	147.1
DOWEL	24	3'0"	ST	1'0"	---
TOTAL					222.0 LBS



ASHTABULA COUNTY ENGINEER DEPARTMENT					
JOHN W. SHOLEN COUNTY ENGINEER					
BEARING DETAILS FOR CENTER RD. BRIDGE OVER CONNEAUT CREEK					
CONNEAUT CITY			ASHTABULA COUNTY, OHIO		
PRES. TOPOGRAPHY	DESIGNED	CHECKED	REVISED	DATE	BY
A.C.E. DR. N. XX-XXX-XXXX-XXXX					



11  
12

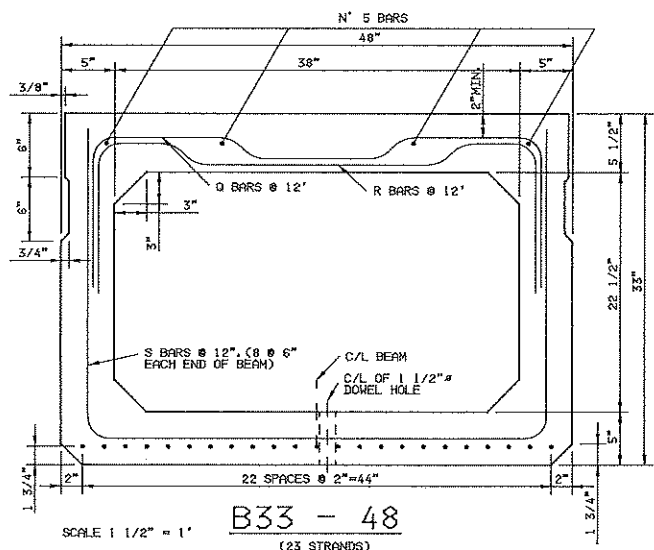
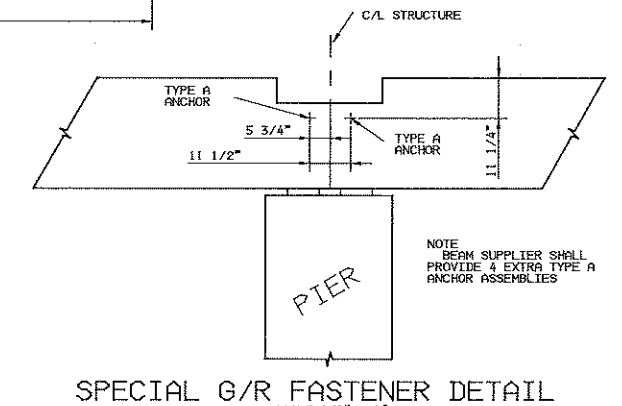
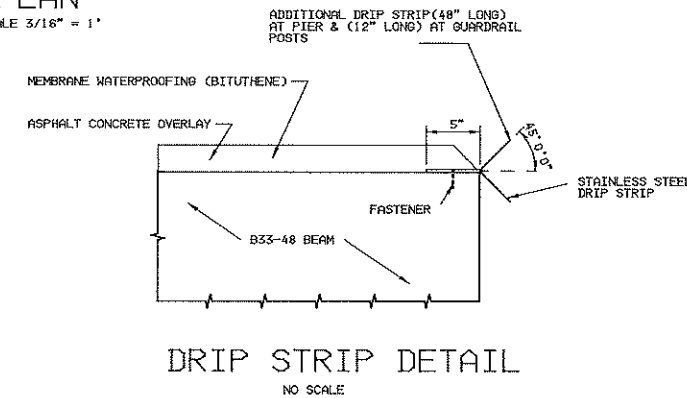


**ITEMS TO BE SUPPLIED BY BEAM MANUFACTURE:**

- 1) 12, B33-48 (70'10" )NON COMPOSITE PRESTRESS BEAMS, WITH NO SKEW PER ODOT STD DRWG.PSBD
- 2) FACIA BEAMS TO BE DELIVERED WITH GUARDRAIL POSTS ATTACHED
- 3) ALL NECESSARY TIE RODS PER ODOT STD. DRWG. PSBD(HOT DIP GALVANIZED)
- 4) 48, BEARING PADS (1 1/4"X 6"X 18") 50 DUROMETER NEOPRENE
- 5) 24, ANCHOR DOWELS (3/4" DIA. X 36")
- 6) NON-SHRINK ADDITIVE FOR SHEAR KEY GROUT AND CAULKING HEMP
- 7) PREFORMED EXPANSION JOINT (1" X 30" X 24', 1/2"X26"X24") & ALL NECESSARY JOINT MATERIAL
- 8) 48, GUARDRAIL POSTS (H.D. GALVANIZED)
- 9) 2SPECIAL GUARDRAIL MOUNTING CHANNELS PER PLAN & 10 TYPE A ANCHORS; ALL TO BE H.D. GALVANIZED
- 10) STAINLESS STEEL DRIP STRIP (TO BE ATTACHED BY COUNTY FORCES)

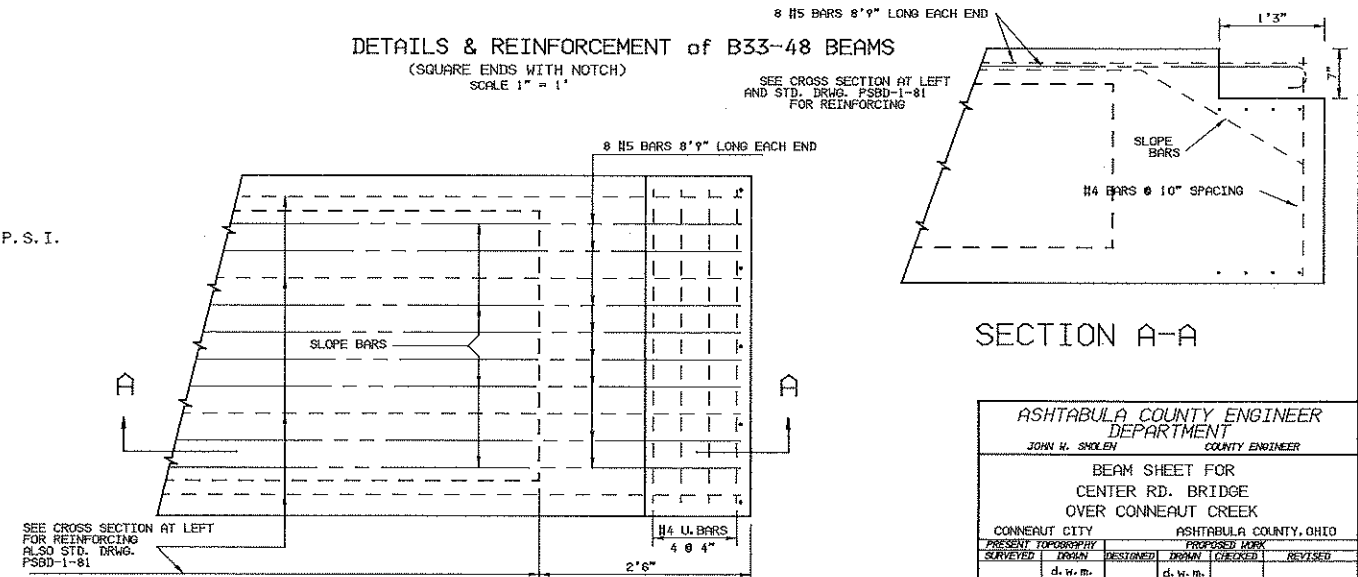
NOTE: All Rebar in Pre Cast Beams Shall be Epoxy Coated.

**PLAN**  
SCALE 3/16" = 1'



**DESIGN DATA (TYPICAL ALL BEAMS FOR THIS PROJECT)**  
 DESIGN LOADING HS20-44 AND THE ALTERNATE MILITARY LOADING  
 SUPERIMPOSED DEAD LOAD 270 LBS. PER LIN. FT.  
 DIAPHRAGM WEIGHT IS BASED ON 3'-0" LONG DIAPHRAGMS  
 CONCRETE  
 MIN. COMPRESSIVE STRENGTH AT 28 DAY  $f'_c = 5500$  P.S.I.  
 MIN. COMPRESSIVE STRENGTH AT TIME OF INITIAL PRESTRESS  $f'_{ci} = 4000$  P.S.I.  
 SECTION PROPERTIES  
 B33-48  $A_{cs} = 733.5$ ;  $I_{cs} = 108,150$ ;  $Y_{cs} = 16.61$ ;  $Z_{cs} = 6599$ ;  $Z_{cs} = 6511$   
 REINFORCING STEEL  
 ASTM A615, A616, OR A617 UNIT STRESS 20,000 P.S.I.  
 PRESTRESSING STEEL  
 ASTM A416 GRADE 270, 1/2" DIAMETER SEVEN WIRE, UNCOATED, STRESS RELIEVED STRAND  
 $A_p = 1.53$  SQ. IN.  
 $f_p = 270,000$  P.S.I.  
 INITIAL STRESS  $0.7 f_p = 189,000$  P.S.I.  
 STRESS AT RELEASE  $0.63 f_p = 170,000$  P.S.I.  
 (ASSUMED AT SECTION OF MAX. MOMENT)

**DETAILS & REINFORCEMENT of B33-48 BEAMS**  
(SQUARE ENDS WITH NOTCH)  
SCALE 1" = 1'



**SECTION A-A**

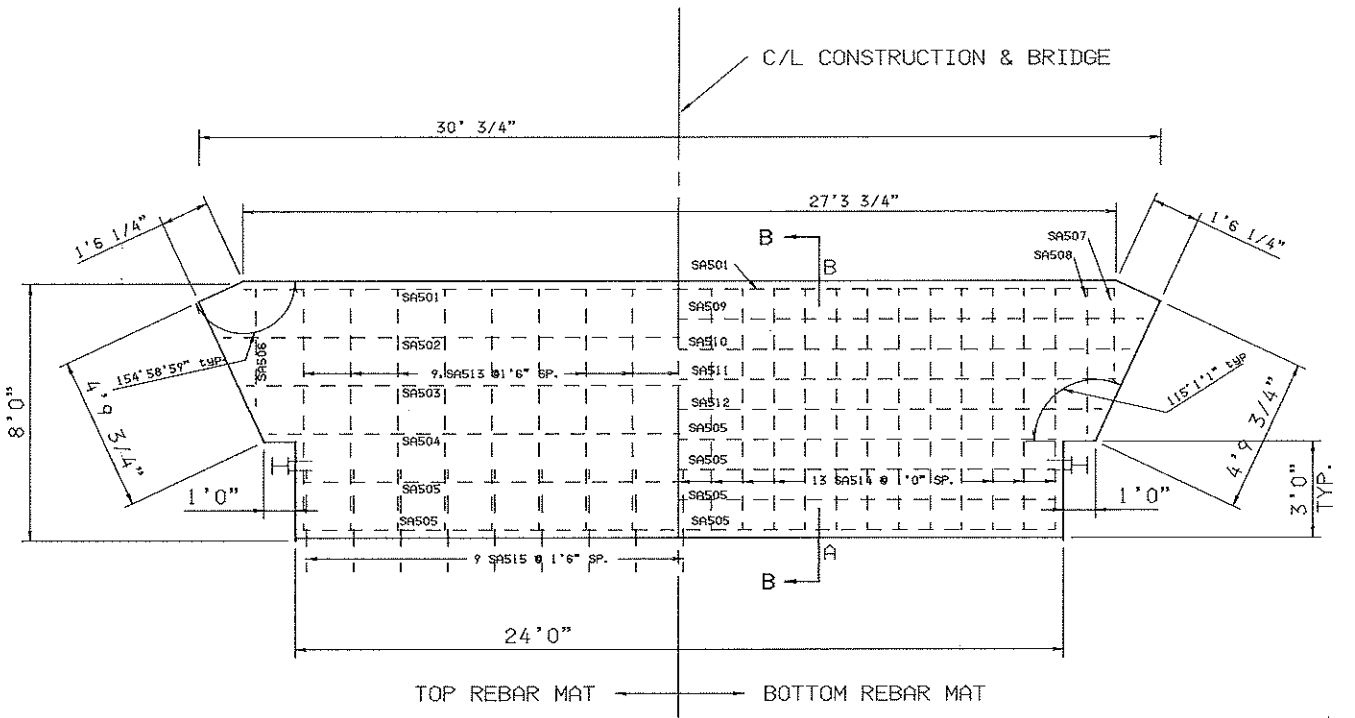
ASHTABULA COUNTY ENGINEER DEPARTMENT			
JOHN W. SHOLEN COUNTY ENGINEER			
BEAM SHEET FOR CENTER RD. BRIDGE OVER CONNEAUT CREEK			
CONNEAUT CITY		ASHTABULA COUNTY, OHIO	
PREPARED BY	DESIGNED	CHECKED	REVISED
d. w. m.	d. w. m.	d. w. m.	d. w. m.
A. C. E. DR. N. XX-XXX-XXXX-XXXX			

CALC. BY		OHIO
DATE		
CHKD. BY		FHWA REGION 5
DATE		

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12

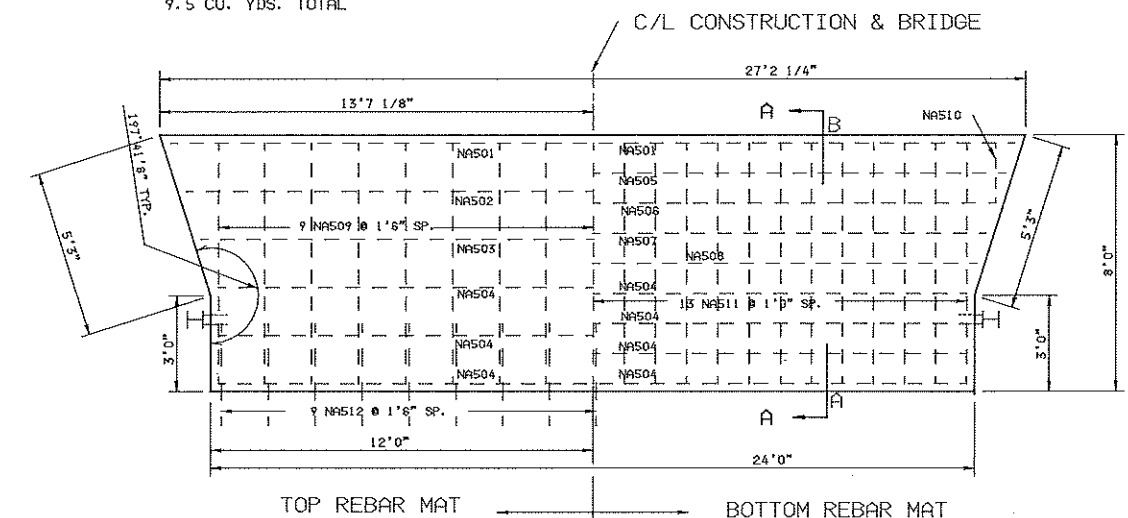
	A	B
ELEV.	610.27	610.11

CONCRETE QUANTITIES  
9.5 CU. YDS. TOTAL

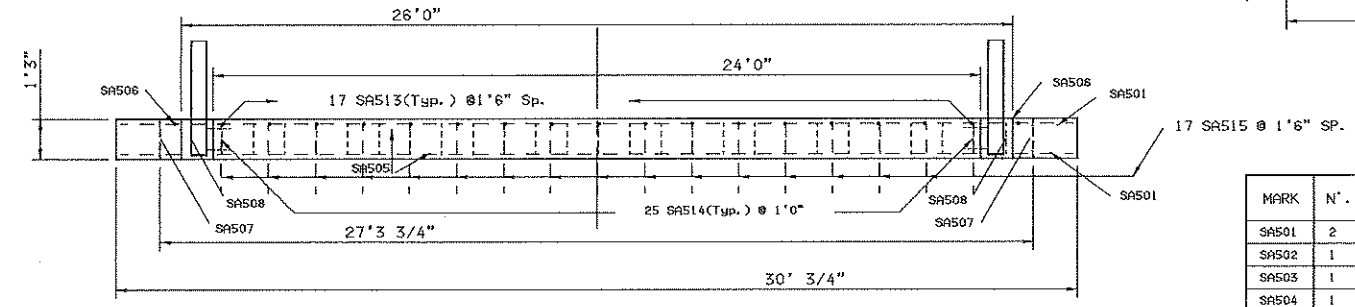
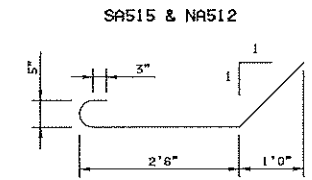


SCALE 3/8" = 1'

SOUTH APPROACH SLAB DETAIL  
SCALE 3/8" = 1'

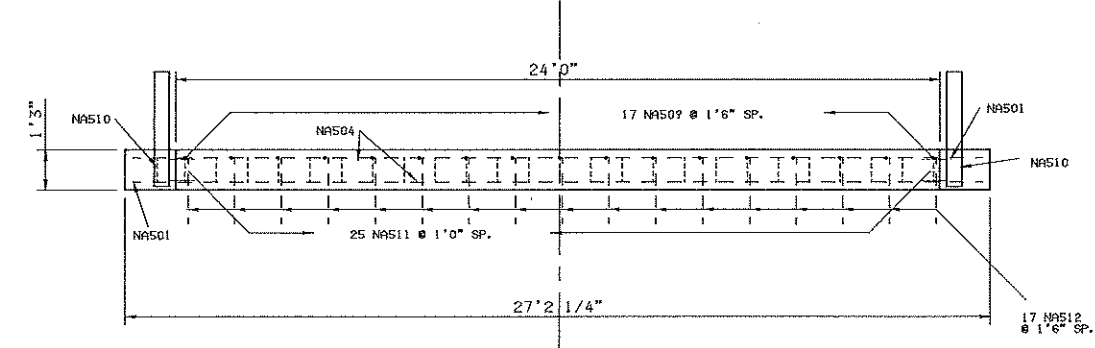


NORTH APPROACH SLAB DETAIL  
SCALE 3/8" = 1'

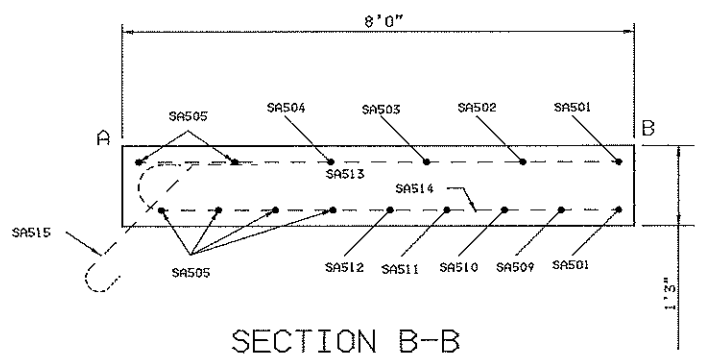


MARK	N.	Length	Type	Space	Weight
SAS01	2	27' 2"	ST	#	57
SAS02	1	28' 6"	ST	1' 6"	30
SAS03	1	26' 6"	ST	1' 6"	28
SAS04	1	25' 8"	ST	1' 6"	27
SAS05	6	23' 6"	ST	*	147
SAS06	1	3' 7"	ST	1' 6"	4
SAS07	1	3' 9"	BT	1' 0"	4
SAS08	1	5' 4"	BT	1' 0"	6
SAS09	1	29' 0"	ST	1' 0"	30
SAS10	1	28' 2"	ST	1' 0"	29
SAS11	1	27' 3"	ST	1' 0"	28
SAS12	1	26' 4"	ST	1' 0"	27
SAS13	17	7' 6"	ST	1' 6"	133
SAS14	25	8' 9"	BT	1' 0"	228
SAS15	17	4' 4"	BT	1' 6"	77
			TOTAL		855 <sup>lbs</sup>

NORTH APPROACH SLAB REINFORCING STEEL					
NAS01	2	26' 6"	ST	#	55
NAS02	1	25' 6"	ST	1' 6"	27
NAS03	1	24' 6"	ST	1' 6"	26
NAS04	7	23' 6"	ST	*	172
NAS05	1	26' 0"	ST	1' 0"	27
NAS06	1	25' 4"	ST	1' 0"	26
NAS07	1	24' 9"	ST	1' 0"	26
NAS08	1	24' 0"	ST	1' 0"	25
NAS09	17	7' 6"	ST	1' 6"	133
NAS10	1	3' 0"	BT	1' 0"	3
NAS11	25	8' 9"	BT	1' 0"	228
NAS12	17	4' 4"	BT	1' 0"	77
			TOTAL		828 <sup>lbs</sup>
			TOTAL (BOTH)		1683 <sup>lbs</sup>



SECTION A-A  
SCALE 3/4" = 1'



SECTION B-B  
SCALE 3/4" = 1'

	A	B
ELEV.	613.06	613.21

CONCRETE QUANTITIES  
10.0 CU. YDS. TOTAL

ASHTABULA COUNTY ENGINEER DEPARTMENT  
JOHN W. SKELLEN COUNTY ENGINEER

APPROACH SLAB DETAILS  
CENTER RD. BRIDGE  
OVER CONNEAUT CREEK

CONNEAUT CITY ASHTABULA COUNTY, OHIO

PRESERVED TOPOGRAPHY	DESIGNED	PROPOSED WORK
SURVEYED	DRAWN	CHECKED
d. w. r.	d. w. r.	d. w. r.

A.C.E. DR. N. XX-XXX-XXXX-XXXX