

STATE OF OHIO  
DEPARTMENT OF TRANSPORTATION

**SAN-20-9.11**

**SANDUSKY COUNTY  
WASHINGTON TOWNSHIP**

**PROJECT DESCRIPTION**

CULVERT EXTENSIONS AT NINEMILE CREEK (SAN-20-0911) AND MUDDY CREEK TRIBUTARY (SAN-20-0970), WILL INCLUDE SAFETY GRADING AND DITCH RELOCATION. THE PROJECT ALSO INCLUDES REPLACING THE BRIDGE OVER MUDDY CREEK (SAN-20-1035), AND ADJUSTING THE VERTICAL CURVE AT THE BRIDGE.

FEDERAL PROJECT NO.

TE 21- G 000(309)

PID NO.

20224

RAILROAD INVOLVEMENT

NONE

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**1997 SPECIFICATIONS**

THE STANDARD SPECIFICATIONS OF THE STATE OF OHIO, DEPARTMENT OF TRANSPORTATION, INCLUDING CHANGES AND SUPPLEMENTAL SPECIFICATIONS 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 AND THAT DETOURS WILL BE PROVIDED AS INDICATED ON SHEET 8.

UNDER AUTHORITY OF SECTION 4511.21, DIVISION (I) OF THE OHIO REVISED CODE, THE REVISED PRIMA FACIE SPEED LIMITS AS INDICATED HEREIN ARE DETERMINED TO BE REASONABLE AND SAFE, AND ARE HEREBY ESTABLISHED FOR THE DURATION OF THIS PROJECT. THE PRIMA FACIE SPEED LIMIT OR LIMITS HEREBY ESTABLISHED SHALL BECOME EFFECTIVE WHEN APPROPRIATE SIGNS GIVING NOTICE THEREOF ARE ERECTED.

SAN 20- 9.11  
000277  
DIST 02

PID# 2024  
05/24/00

PORTION TO BE IMPROVED.....  
INTERSTATE & DIVIDED HIGHWAY.....  
UNDIVIDED STATE & FEDERAL ROUTES.....  
OTHER ROADS.....

**DESIGN DESIGNATION**

CURRENT ADT (2000)	15318
DESIGN YEAR ADT (2020)	27666
DESIGN HOURLY VOLUME (2020)	2767
DIRECTIONAL DISTRIBUTION	55%
TRUCKS (24 HOUR B&C)	24%
DESIGN SPEED	55 MPH
LEGAL SPEED	55 MPH

DESIGN FUNCTIONAL CLASSIFICATION -  
RURAL ARTERIAL

**DESIGN EXCEPTIONS**

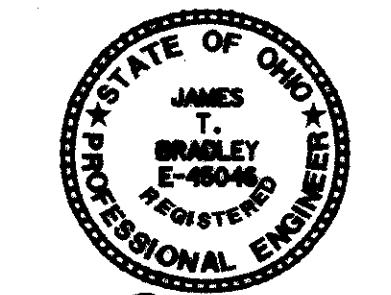
NONE REQUIRED

**UNDERGROUND UTILITIES**  
TWO WORKING DAYS  
BEFORE YOU DIG  
CALL 1-800-362-2764 (TOLL FREE)  
OHIO UTILITIES PROTECTION SERVICE  
NON-MEMBERS  
MUST BE CALLED DIRECTLY

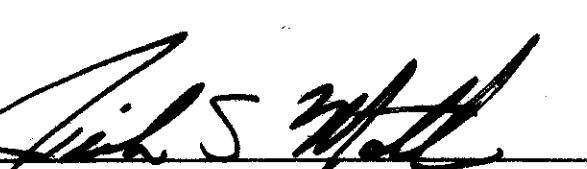
PLAN PREPARED BY:

ENGINEER: FRED MORTALI  
TECH. SPECIALIST: MIKE SMITH

**ENGINEERS SEAL:**  
FOR ROADWAY DESIGN  
  
SIGNED: Michael J. Thompson  
DATE: 2-24-00

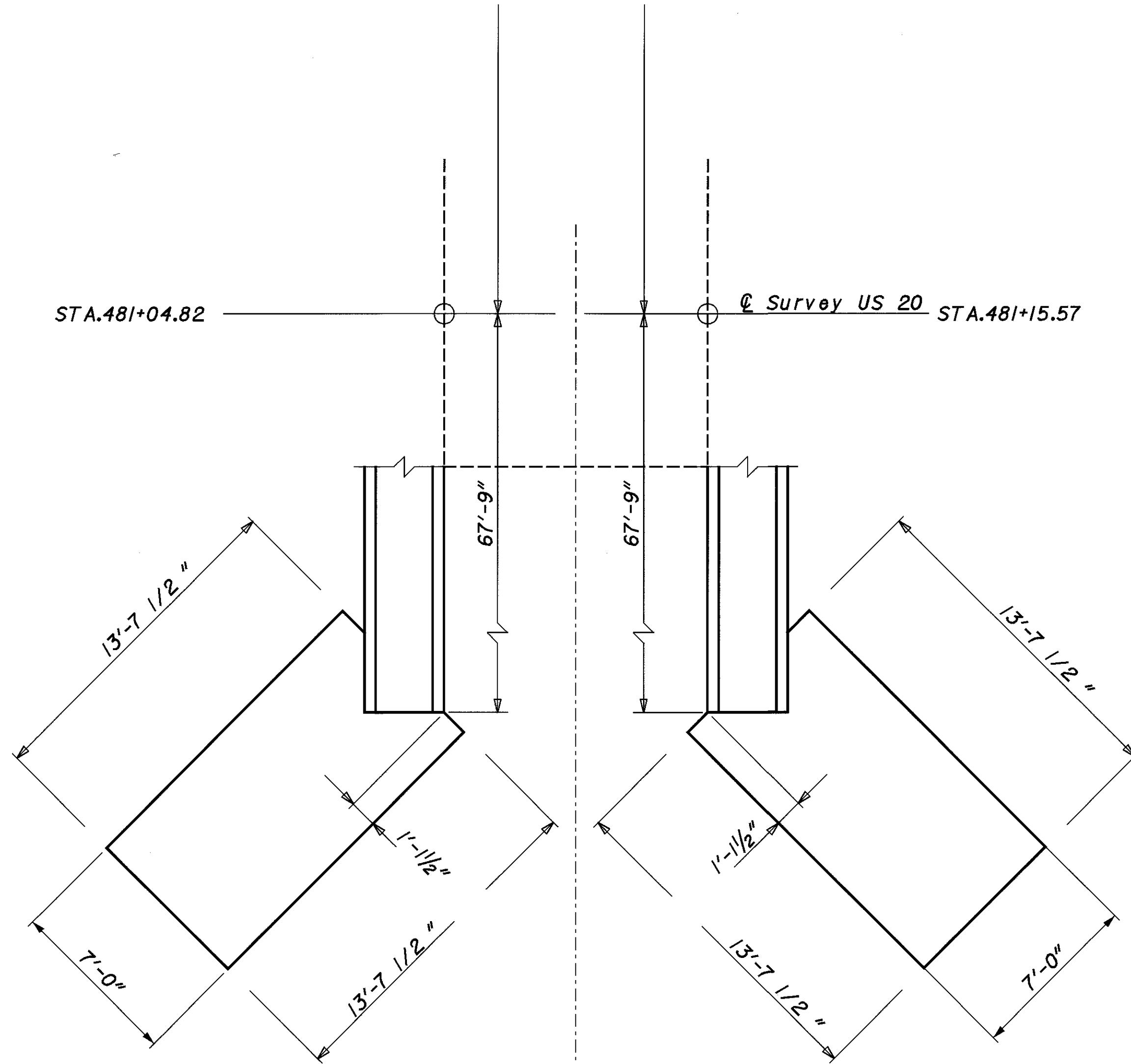
**ENGINEERS SEAL:**  
FOR STRUCTURE DESIGN  
  
SIGNED: James T. Bradley  
DATE: 2-24-00

STANDARD CONSTRUCTION DRAWINGS								SUPPLEMENTAL SPECIFICATIONS	
BP-9.1	4-29-99	GR-1.1M	10-21-97	CB-1.2M	7-12-95	MT-35.0IM	1-30-95	AS-1-BIM	10-25-94
		GR-2.1M	4-14-98			MT-35.1IM	1-30-95	BR-1M	12-15-94
		GR-3.1M	10-21-97			MT-95.30M	4-25-94		
		GR-3.2M	10-21-97			MT-95.4M	4-25-94		
		GR-4.2M	10-21-97			MT-95.70M	1-30-95		
						MT-99.20M	1-30-95		
						MT-100.00M	4-25-94		
		GR-5.3M	11-30-94			MT-101.20M	3-01-95		
						MT-105.10M	4-25-94		
						DM-4.1M	6-30-95		
						DM-4.2M	6-30-95		
						DM-4.3	4-29-99		
						DM-4.4	4-29-99		

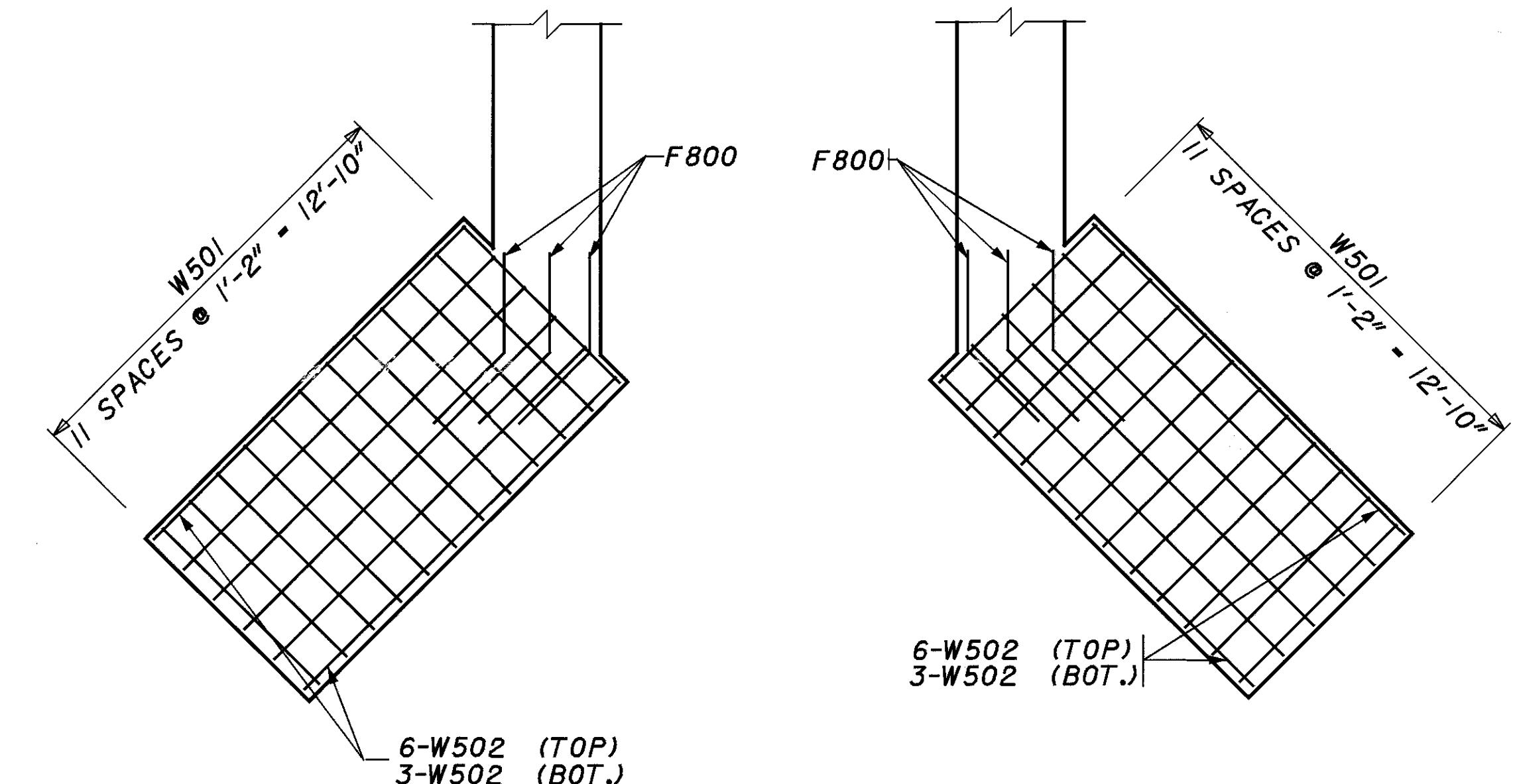
APPROVED:   
DATE: 2/24/00 DISTRICT DEPUTY DIRECTOR

APPROVED:   
DATE: 3-16-00 DIRECTOR, DEPARTMENT OF TRANSPORTATION





FOOTING LAYOUT



FOOTING REINFORCING PLAN

STRUCTURE DETAIL  
BRIDGE NO. SAN-20-9.1

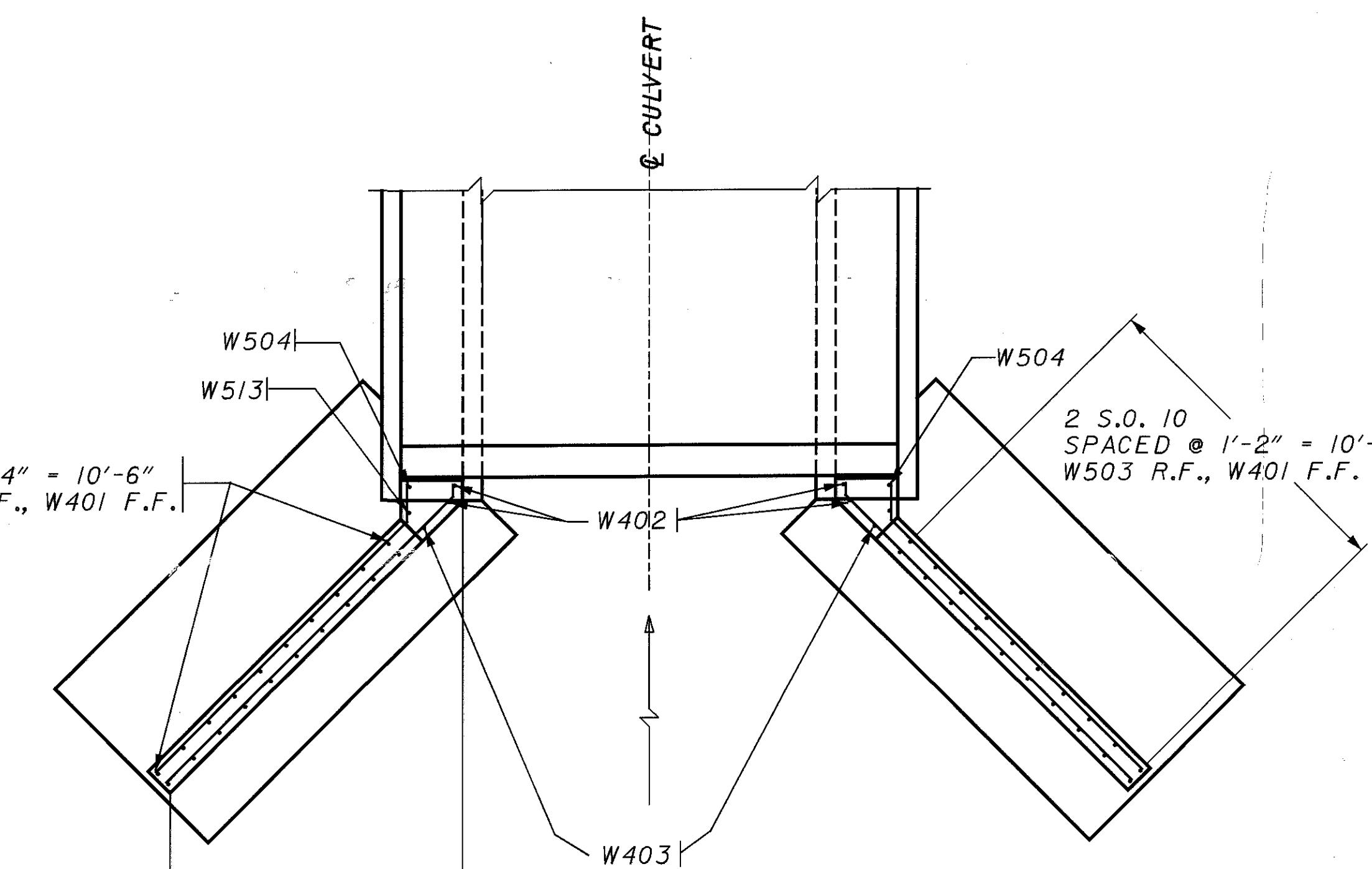
DESIGNED  
**FCM**

CHECKED  
**FCM**

REvised  
**JTB**

**LEGEND**

F.F. - FRONT FACE  
R.F. - REAR FACE  
B.F. - BOTH FACES



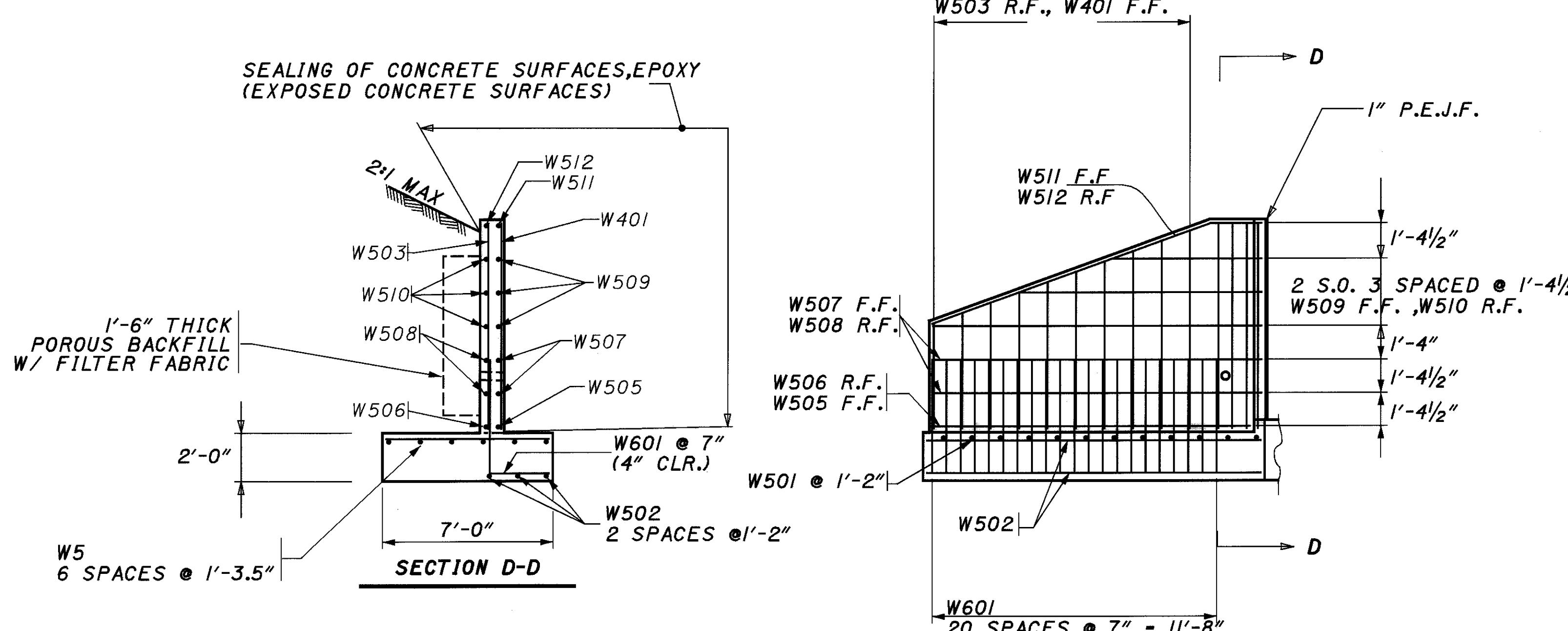
DRAWN  
**FCM**  
CHECKED  
**FCM**  
REVISED  
**JTB**

**STRUCTURE DETAIL**  
BRIDGE NO. SAN-20-9//

SAN-20-9//

42  
67

SEALING OF CONCRETE SURFACES, EPOXY  
(EXPOSED CONCRETE SURFACES)

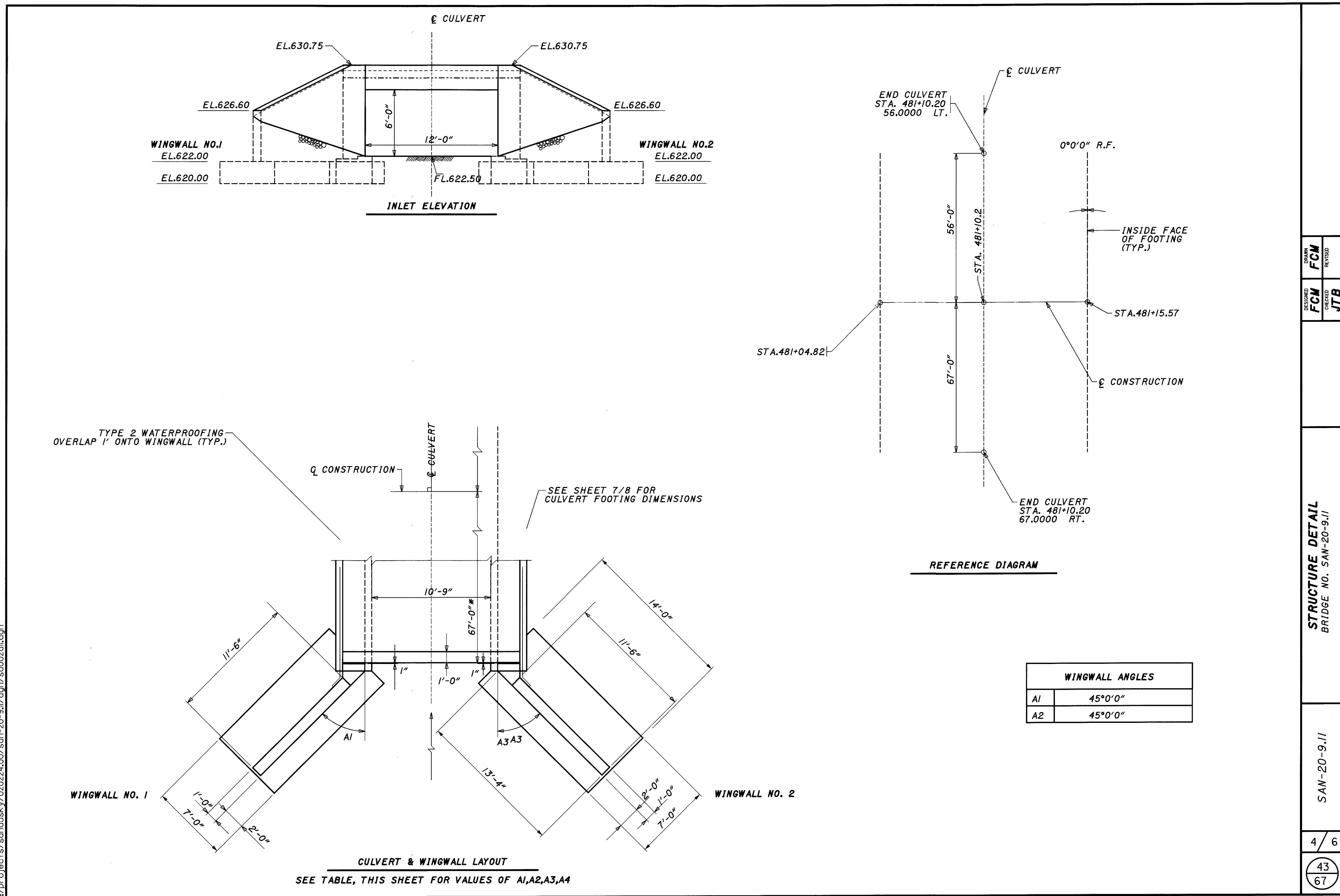


WINGWALL 2 ELEVATION (Reverse Hand)

**NOTES:**

ITEM 518, POROUS BACKFILL WITH FILTER FABRIC, AS PER PLAN 1'-6" THICK SHALL BE PLACED BEHIND THE WINGWALLS ONLY AND SHALL EXTEND 12" BELOW THE EMBANKMENT SURFACE. GEOTEXTILE FABRIC SHALL BE PLACED BETWEEN THE POROUS BACKFILL AND REPLACED EXCAVATION ADJACENT TO THE STRUCTURE. IT SHALL TURN UNDER THE BOTTOM OF THE POROUS BACKFILL AND RETURN 6" ABOVE THE TOP ELEVATION OF THE WEEPHOLE.

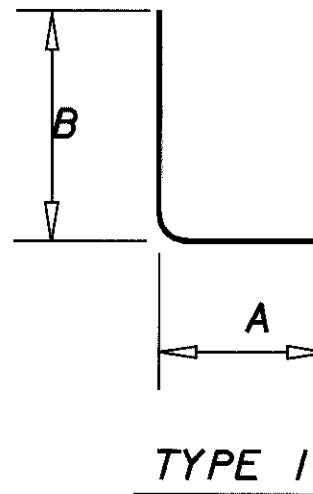
1" PREFORMED EXPANSION JOINT FILLER SHALL BE EXTENDED FROM TOP OF FOOTING TO TOP OF WALL.



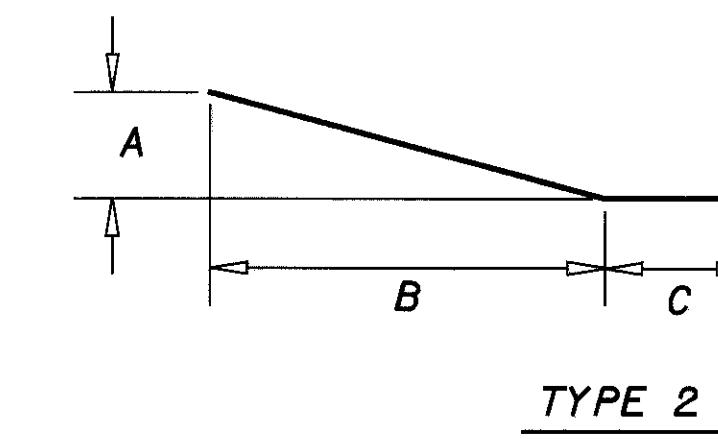
### EPOXY COATED REINFORCING STEEL LIST

THE BAR SIZE NUMBER IS SPECIFIED ON THE PLANS IN THE BAR MARK COLUMN. THE FIRST DIGIT WHERE THREE DIGITS ARE USED, AND THE FIRST TWO DIGITS WHERE FOUR ARE USED, INDICATES THE BAR SIZE NUMBER. FOR EXAMPLE, W601 IS A NO. 6 BAR. BAR DIMENSIONS SHOWN ARE OUT TO OUT UNLESS OTHERWISE INDICATED. R INDICATES INSIDE RADIUS, UNLESS OTHERWISE NOTED. "STD." WRITTEN IN PLACE OF A DIMENSION INDICATES A STANDARD BEND AT THE END OF THE BAR.

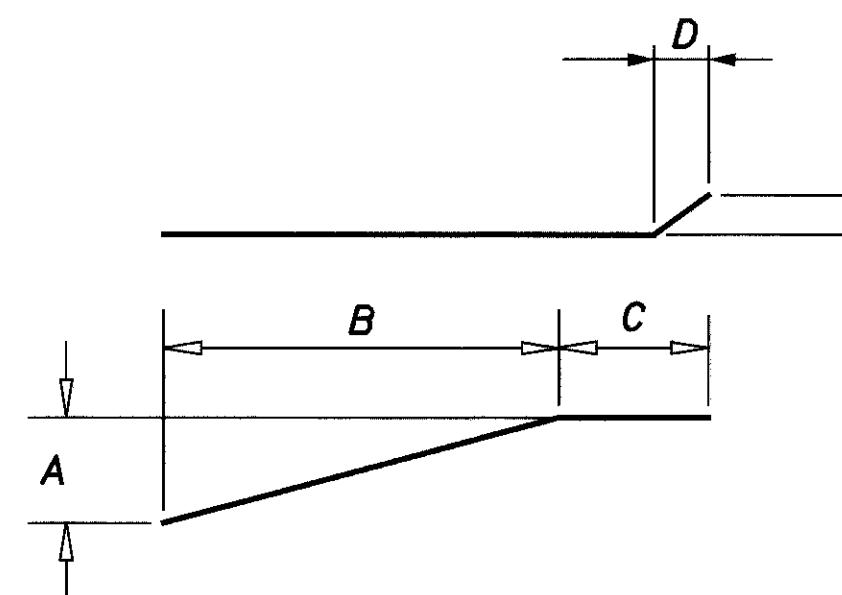
ALL REINFORCING STEEL TO BE EXOXY COATED.



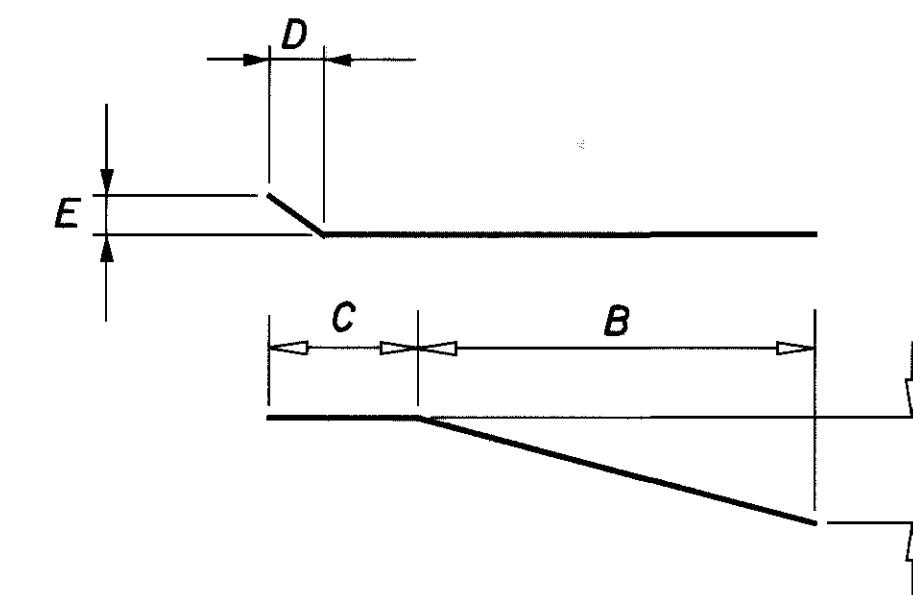
TYPE 1



TYPE 2



TYPE 3



TYPE 4

S.O. - SERIES OF  
BENDING DIAGRAMS

MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C	D	E	INCR
<b>WINGWALL 1</b>										
W401	1	4' 3"		STR						5"
	S.O.	T0								
	10	8'								
W402	2	8' 0"		STR						
W403	1	8' 5"		STR						
<b>WINGWALL 2</b>										
W401	1	4' 3"		STR						5"
	S.O.	T0								
	10	8'								
W402	2	8' 0"		STR						
W403	1	8' 5"		STR						
W501	12	6' 8"		STR						
W502	9	13' 3½"		STR						
W503	1	4' 3"		STR						5"
	S.O.	T0								
	10	8' 0"								
W504	1	8' 0"		STR						
W505	1	12' 8"		STR						
W506	1	11' 11"		2	9' 8"	9' 8"	6"			
W507	2	13' 4"		2	11' 1"	11' 1"	4"			
W508	2	12' 5"		2	9' 8"	9' 8"	1' 2"			
	1	13' 4"			11' 1"	11' 1"	4"			
W509	S.O.	T0		2						2'-2"
	3	6' 9½"			4' ½"	5' ½"	4"			
	1	12' 5"			9' 8"	9' 8"	1' 2"			
W510	S.O.	T0		2						2'-7½"
	3	4' 6"			2' 4½"	2' 4½"	1' 2"			
W511	1				3	4' ½"	11' 3"	2' 1"	3½"	3½"
W512	1				3	4' ½"	11' 3"	1' ½"	10"	10"
W513	1	8' 5"								
W601	21	7' 1"		1	4' 8"	2' 6"				
F800	3	4'-0"		2	1'-5"	1'-5"	2'-0"			
<b>STRUCTURE DETAIL</b>										
BRIDGE NO. SAN-20-9.11										
DESIGNED DRAWN REVIEWED DATE										
FCM FCM										
CHECKED REVISED STRUCTURE FILE NUMBER										
5 / 6										
44										
67										
DESIGN AGENT										

## *GENERAL NOTES*

## **DESIGN SPECIFICATIONS:**

THIS STRUCTURE CONFORMS TO "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 1996, INCLUDING THE INTERIM SPECIFICATIONS THROUGH 1999 AND THE ODOT BRIDGE DESIGN MANUAL.

### ***DESIGN LOADING:***

## *HS20-44 AND THE ALTERNATE MILITARY LOADING.*

## **DESIGN STRESSES:**

**CAST-IN-PLACE STRUCTURES  
CONCRETE CLASS C -  $f'c = 4,000 \text{ psi}$  SUBSTRUCTURE  
REINFORCING STEEL - ASTM A615, A616, OR A617  
 $F_y = 60,000 \text{ psi}$ .**

## **FOUNDATION BEARING PRESSURE:**

WINGWALL AND CULVERT FOOTINGS, AS DESIGNED PRODUCE A MAXIMUM BEARING PRESSURE OF 3 TONS PER SQUARE FEET. THE ALLOWABLE MAXIMUM BEARING PRESSURE IS 7 TONS PER SQUARE FEET.

### **UTILITY LINES:**

*ALL EXPENSES INVOLVED IN RELOCATING (INSTALLING) THE AFFECTED  
UTILITY LINES SHALL BE BORNE BY THE OWNER(S). THE CONTRACTOR AND  
OWNER(S) ARE REQUESTED TO COOPERATE BY ARRANGING THEIR WORK IN SUCH  
A MANNER THAT INCONVENIENCE TO EITHER WILL BE HELD TO A MINIMUM.*