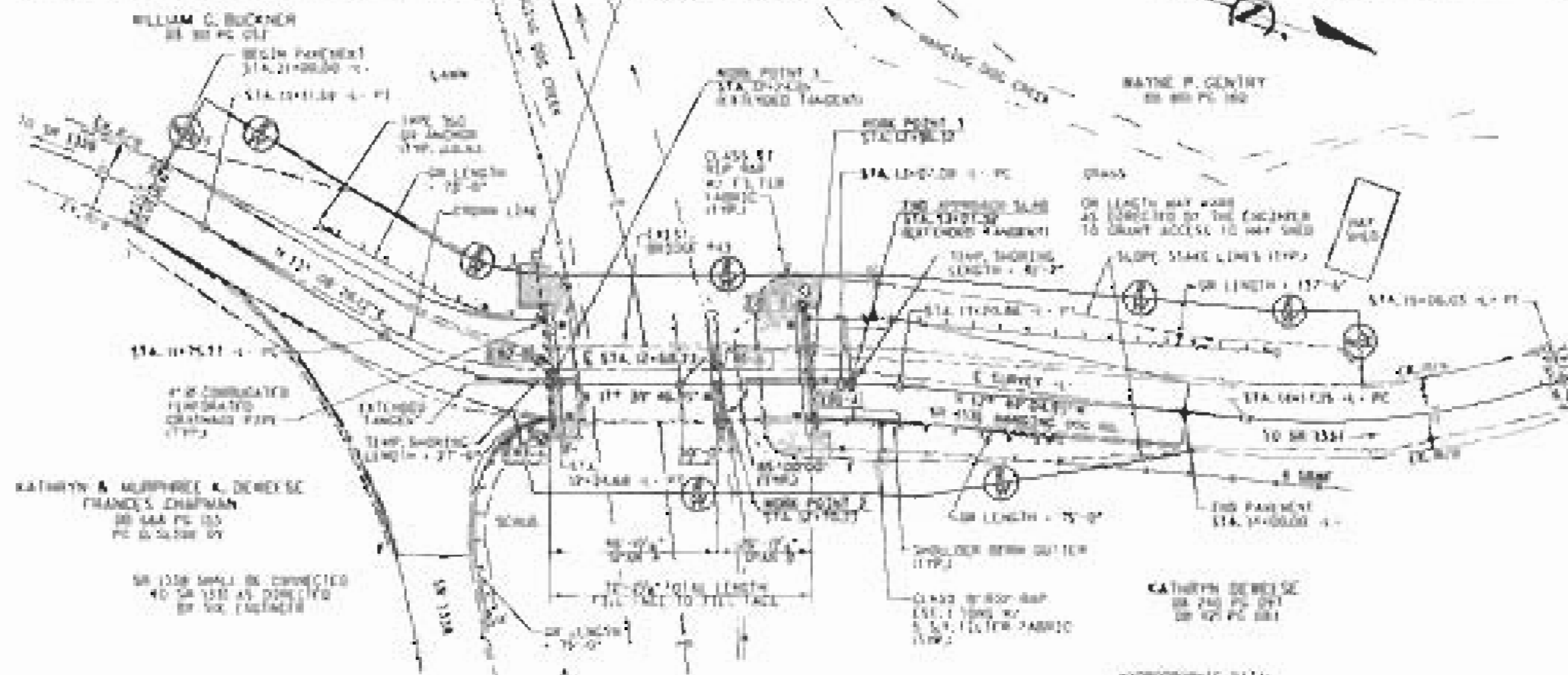


B-3430

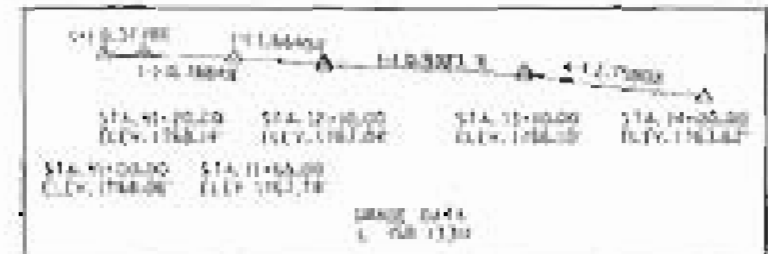
#43 CHEROKEE

EXISTING BRIDGE NO. 43  
20'-0" CLEAR ROADWAY  
SPRINKLER IN 12" DIA. 10' W. OF CENTER  
AS INDICATED CONCRETE FLOOR ON CONC. TIE BEAM  
L.S. 10' WEST ADJACENT TO REINFORCED CONCRETE  
PIERS - 12" DIA. CAP W/ 1" DIA. REIN. & CONC. STAIRS

REINFORCED CONCRETE  
12" DIA. CAP W/ 1" DIA. REIN.  
L.S. 10' WEST ADJACENT TO  
PIERS - 12" DIA. CAP W/ 1" DIA. REIN. & CONC. STAIRS



PLAN  
SCALE 1" = 20'



PROFILE ALONG E SURVEY  
SCALE 1" = 20'

MORPHOLOGIC DATA

DESIGN DISCHARGE - 3000 CFS  
FREQUENCY OF DESIGN FLOOD - 25 YEAR  
DESIGN HIGH WATER ELEVATION - 1762.7  
DRAINAGE AREA - 17.2 SQ. MI.  
BASIC DISCHARGE AT GAGE - 600 CFS  
BASIC HIGH WATER ELEVATION - 1755.8

OVERTOPPING FLOOD DATA

OVERTOPPING DISCHARGE - 545 CFS  
FREQUENCY OF OVERTOPPING FLOOD - 25 YEAR  
OVERTOPPING FLOOD ELEVATION - 1762.7

THE QUANTITY OF RIP RAP TO BE PAID FOR WILL BE THE ACTUAL NUMBER OF TONS OF EACH CLASS OF RIP RAP WHICH HAS BEEN INCORPORATED INTO THE CONTRACT AND ACCEPTED WORK. THE RIP RAP WILL BE MEASURED BY BEING WEIGHED IN TRUCKS ON CERTIFIED PLATFORM SCALES OR OTHER CALIBRATED WEIGHING DEVICES. THE QUANTITY OF RIP RAP WILL BE PAID FOR AT THE CONTRACT UNIT PRICE PER TON.

RIE RIP RAP CLASS II 48" DIA. (1) END BENT NO. 1 10 TONS  
END BENT NO. 2 120 TONS  
TOTAL 130 TONS

NOTES

- 1. APPROXIMATE LOADS AND PG OR ALTERNATE LOADING FACTORS THAT COMPLY WITH ALL APPLICABLE SPECIFICATIONS FOR HS 20.
- 2. FOR LOADS CONTROL HEADWAYS SEE LOADS CONTROL PLANS.
- 3. AFTER REMOVAL OF EXISTING BRIDGE THE EXISTING STRUCTURE SHALL BE DEMOLISHED ON THIS DATE. DEMOLITION SHALL BE ACCORDING TO THE STRUCTURAL INTEGRITY OF THE BRIDGE STRUCTURE. THIS DEMOLITION SHALL BE ACCORDING TO THE REQUIREMENTS OF THE PROJECT.
- 4. REMOVAL OF THE EXISTING BRIDGE SHALL BE PROCEEDED TO AS NOT TO CAUSE DAMAGE TO THE WATER. THE DEMOLITION SHALL REMOVE THE BRIDGE AND SHALL BE IN ACCORDANCE WITH ARTICLE 100-2 OF THE STANDARD SPECIFICATIONS.
- 5. THE SUBSTRUCTURE OF THE EXISTING BRIDGE INDICATED ON THE PLANS IS THAT THE BEST INFORMATION AVAILABLE. THIS INFORMATION IS BASED ON THE CONSTRUCTION OF THE BRIDGE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CONDITION OF THE BRIDGE AT THE TIME OF THE PROJECT.
- 6. THIS STRUCTURE HAS BEEN DESIGNED IN ACCORDANCE WITH THE DESIGNATING SCOUR AT BRIDGES, 844 P.001.
- 7. THIS BRIDGE HAS BEEN DESIGNED IN ACCORDANCE WITH THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR DESIGN OF HIGHWAY BRIDGES FOR LIMITED PERFORMANCE CATEGORY B.
- 8. BRIDGES AS THE PAVEMENT SYSTEM ON THE EXISTING STRUCTURAL STEEL CONTAINS LEAKS. THE CONTRACTOR'S ATTENTION IS DIRECTED TO ARTICLE 100-1 OF THE STANDARD SPECIFICATIONS. ANY COSTS RESULTING FROM CORRECTING LEAKS WITH APPLICABLE STATE OR FEDERAL REGULATIONS APPLICABLE TO WATER POLLUTION SHALL BE INCLUDED IN THE BIDDING PRICE FOR REMOVAL OF EXISTING STRUCTURE AT STATION 12+60.23.
- 9. SUBMITTER SHALL BE RESPONSIBLE TO ACCORDANCE WITH SECTION 100 AND SECTION 101 OF THE STANDARD SPECIFICATIONS.
- 10. PILES FOR END BENTS NO. 1 AND 2 SHALL BE DRIVEN TO A MINIMUM BEARING CAPACITY OF 10 TONS EACH.
- 11. STEEL PILE POINTS WITH TOOTH AND REQUIRED FOR PILES AT END BENTS NO. 1 AND 2.
- 12. PILES FOR EXTERIOR BENT NO. 1 SHALL BE DRIVEN TO AN ELEVATION NO HIGHER THAN 1761.7 AND SATISFY THE BEARING CAPACITY OF 10 TONS EACH.
- 13. PILE ELEVATION SHALL BE USED TO INSTALL PILES TO ELEVATION 1761.7 AT EXTERIOR BENT NO. 1. SEE SPECIAL PROVISIONS.
- 14. WITH DRIVING PILES, THE MAXIMUM BLOW COUNT SHALL NOT BE EXCEEDED.
- 15. THE SCOUR CRITICAL ELEVATION FOR EXTERIOR BENT NO. 1 IS 1761.7. SEE SCOUR CRITICAL ELEVATIONS AND FOR USE BY MAINTENANCE PERSONNEL TO MONITOR POSSIBLE SCOUR PROBLEMS DURING THE LIFE OF THE STRUCTURE.
- 16. R/C - R/C FOR WEAR SURF.
- 17. FOR FALLOUT AND FORMWORK, SEE SPECIAL PROVISIONS.
- 18. FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.
- 19. FOR TEMPORARY WORKING, SEE SPECIAL PROVISIONS.

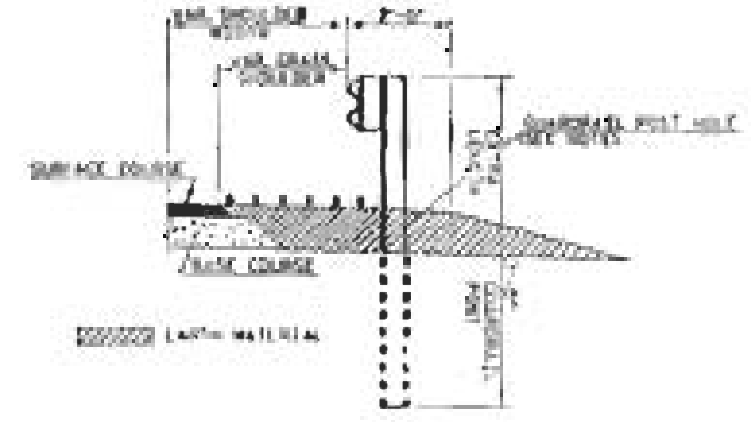
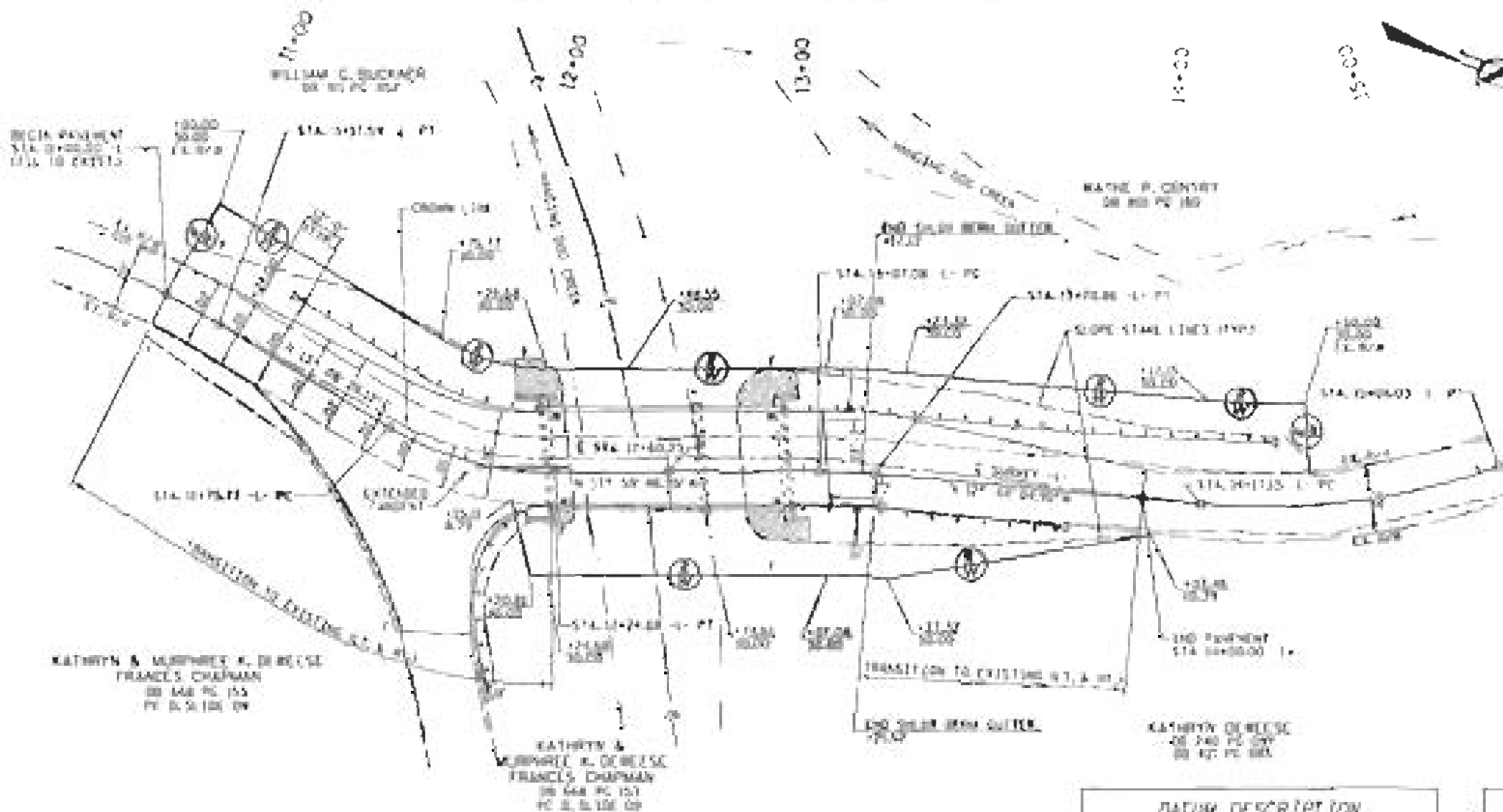


MULKEY  
ENGINEER

PROJECT NO. 33053  
CHEROKEE COUNTY  
STATION: 12+60.23 -L-

REPLACE BRIDGE NO. 43  
DEPARTMENT OF TRANSPORTATION  
BRIDGE ON SR 1331 OVER HANGING DOG CREEK BETWEEN SR 1338 & SR 1337  
21' CLEAR ROADWAY - 85' SKER

REVISIONS table with columns for NO., DATE, DESCRIPTION, and BY.

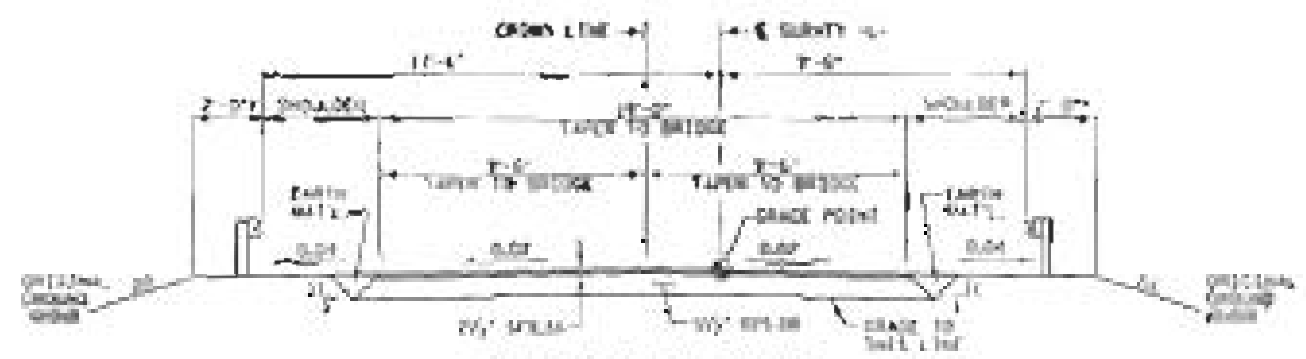


NOTE:  
 WHEN MOVED GUARDRAIL POSTS ARE USED, DRILL HOLES THROUGH EXISTING MATERIAL AND MAKE SURE THE POST WILL BE IN CONTACT WITH THE PROPER DEPTH. DRILL HOLES TO ACCOMMODATE THE PARTICULAR POST BEING USED. BACKFILL & TAMP HOLES USING THE EXCAVATED MATERIAL.  
 USE OTHER LENGTH GUARDRAIL POST - IF TYPICAL.

**GUARDRAIL PLACEMENT FOR 2' SHOULDER  
 BREAK POINT BEHIND FACE OF GUARDRAIL**

**PAVEMENT & R/W LAYOUT DETAIL**

SCALE: 1" = 20'

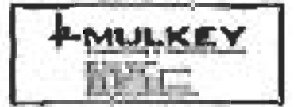


**TYPICAL ROADWAY SECTION**

85° SKEW CONSTRUCTION 11 FT 11 1/2"

**DATUM DESCRIPTION**  
 THE DATA AND DIMENSIONS SHOWN HEREIN FOR THIS PROJECT IS BASED ON THE STATE PLANS. DIMENSIONS, QUALITY OF WORK, AND MATERIALS SHALL BE AS SHOWN ON THESE PLANS. THE ABOVE DIMENSIONS AND FACTOR USED ON THIS PROJECT ARE TO BE USED AS A GUIDE ONLY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND DISTRICT RECORDS. ALL DIMENSIONS AND DISTANCES SHOWN ON THESE PLANS ARE TO BE USED AS A GUIDE ONLY.

HORIZONTAL CURVE DATA	
PI STA. 10+50.00 PTA STA. 10+50.00 L = 11.50 E = 25.00 M = 25.00	PI STA. 12+00.00 PTA STA. 12+00.00 L = 11.50 E = 25.00 M = 25.00
PI STA. 12+50.00 PTA STA. 12+50.00 L = 11.50 E = 25.00 M = 25.00	PI STA. 13+00.00 PTA STA. 13+00.00 L = 11.50 E = 25.00 M = 25.00



PROJECT NO. 33053  
 CHEROKEE COUNTY  
 STATION 12+60.23 - 4-

REPLACES BRIDGE NO. 43

DEPARTMENT OF TRANSPORTATION

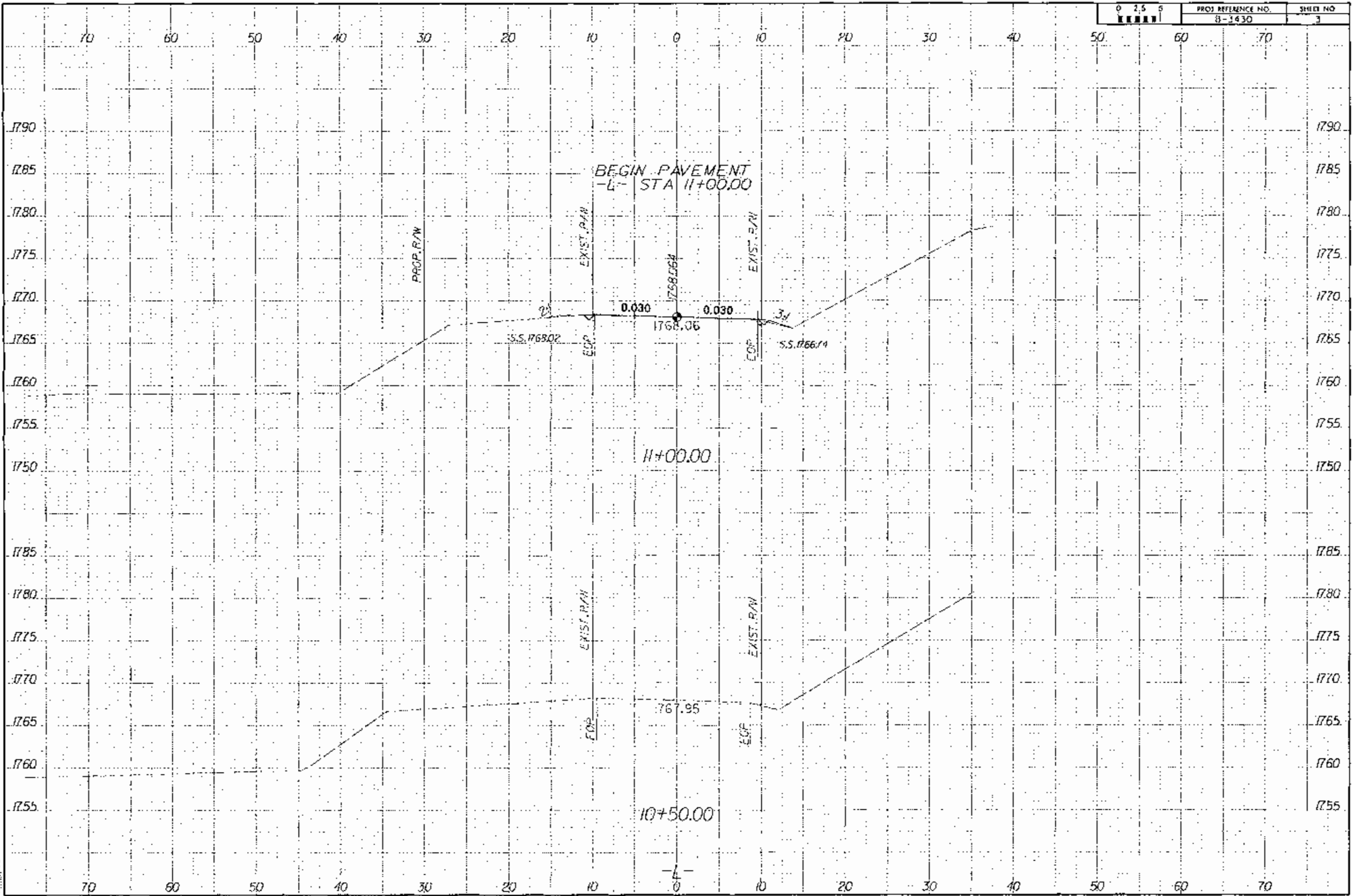
**ROADWAY DETAILS**

27' CLEAR ROADWAY - 85° SKEW

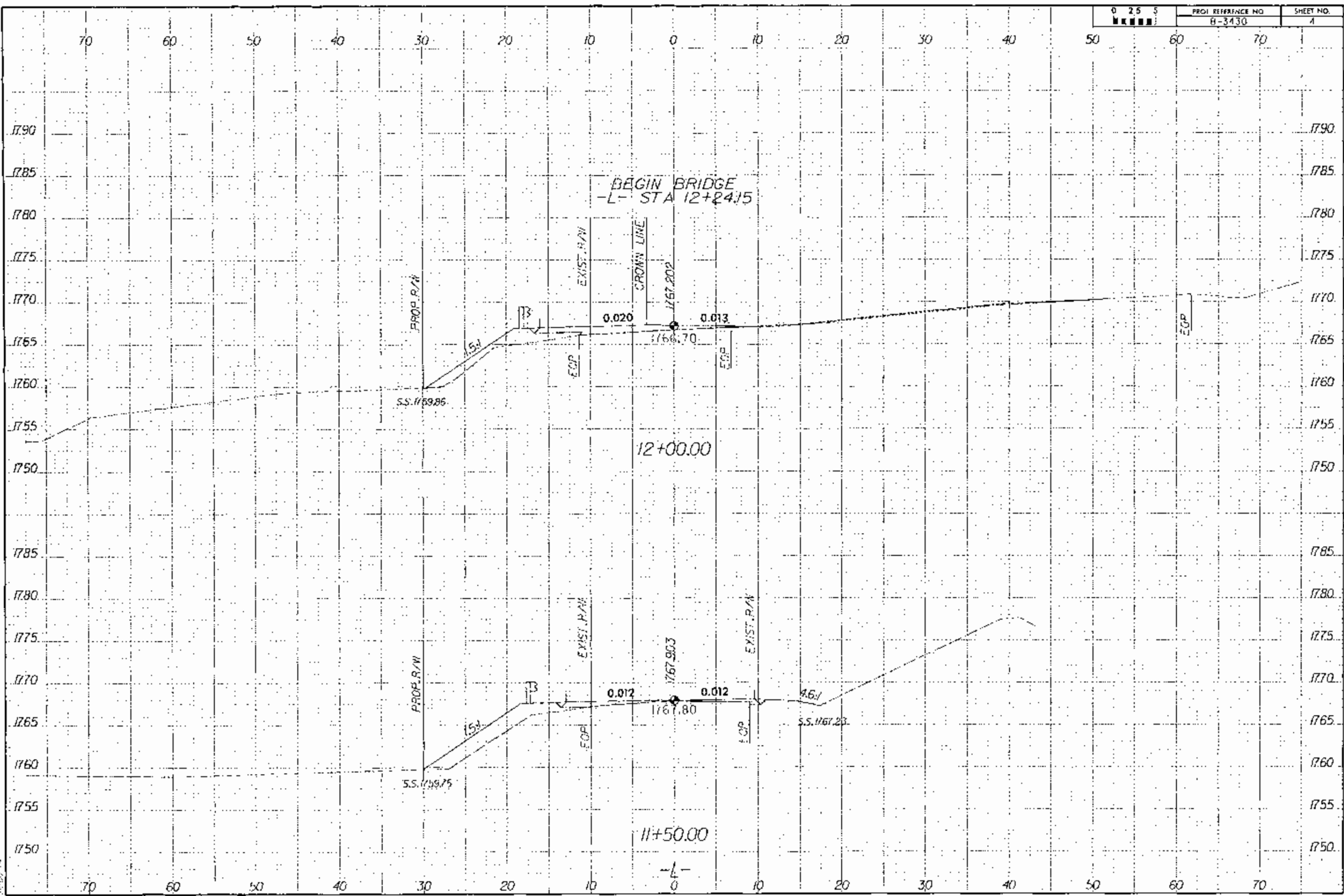
DATE	BY	CHKD.	APP.	SHEET NO.
				10

DRAWN BY: J. S. BROWN  
 CHECKED BY: J. S. BROWN

WEDGING PAVEMENT  
 FROM STA. 12+00 TO STA. 12+10  
 FROM STA. 12+10 TO STA. 12+20



CONSULT THE APPROPRIATE AGENCIES FOR THE LOCATION OF UTILITIES AND STRUCTURES.



BEGIN BRIDGE  
-L- STA 12+24.15

12+00.00

11+50.00

-L-

PROP. R/W

EXIST. R/W

CROWN LINE

EGP

SS 1769.86

0.020

0.013

1768.70

0.012

0.012

1767.903

PROP. R/W

EXIST. R/W

EXIST. R/W

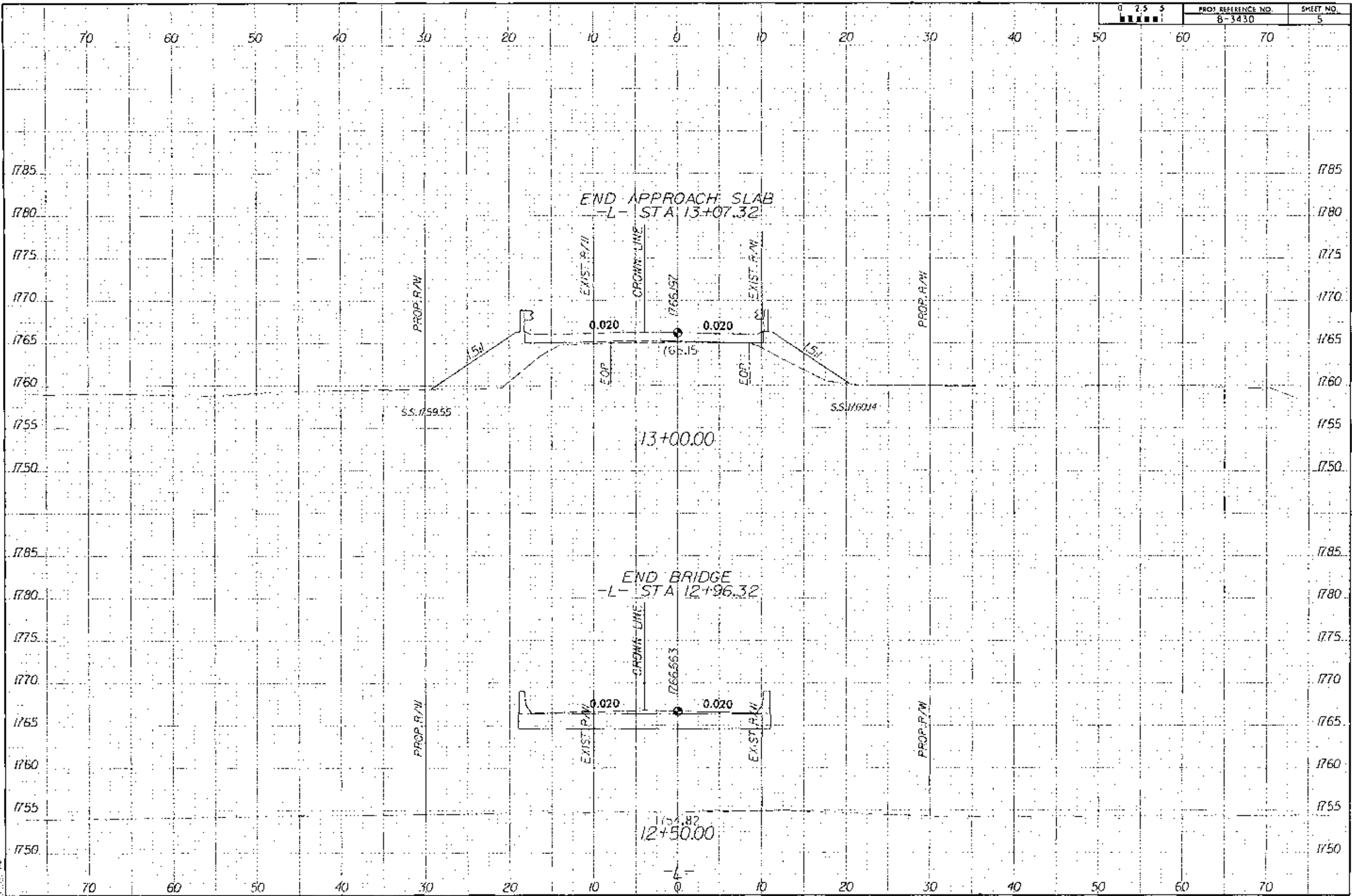
SS 1769.75

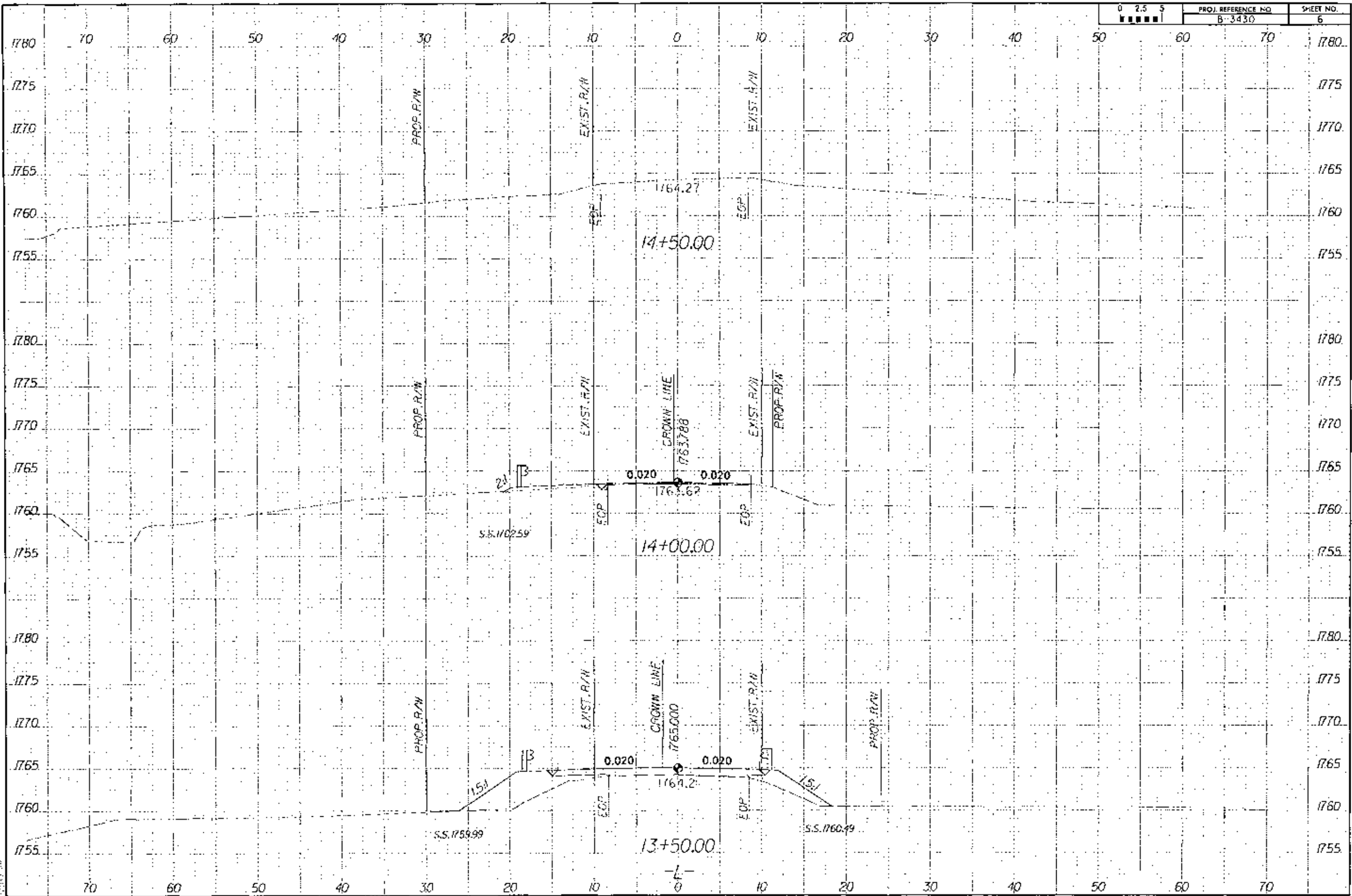
SS 1767.23

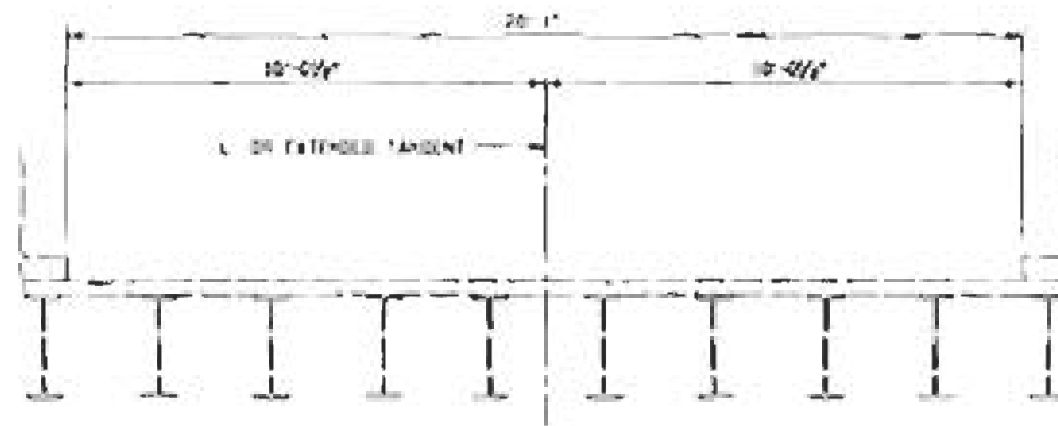
1767.80

4.6%

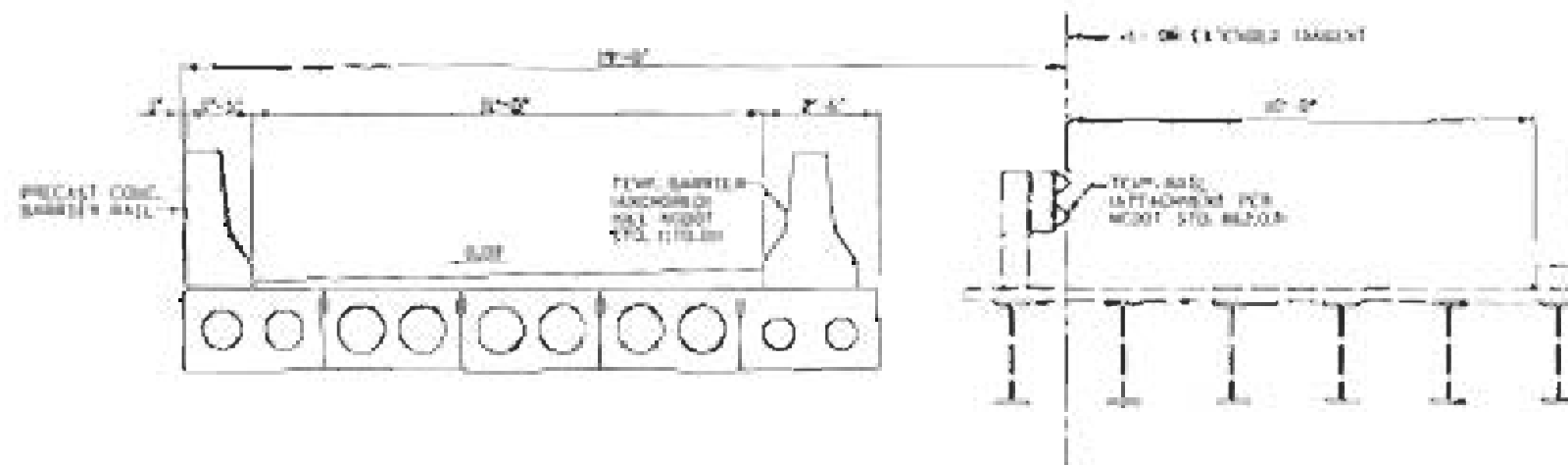
1/8" = 10' VERT. SCALE  
 1" = 40' HORIZ. SCALE



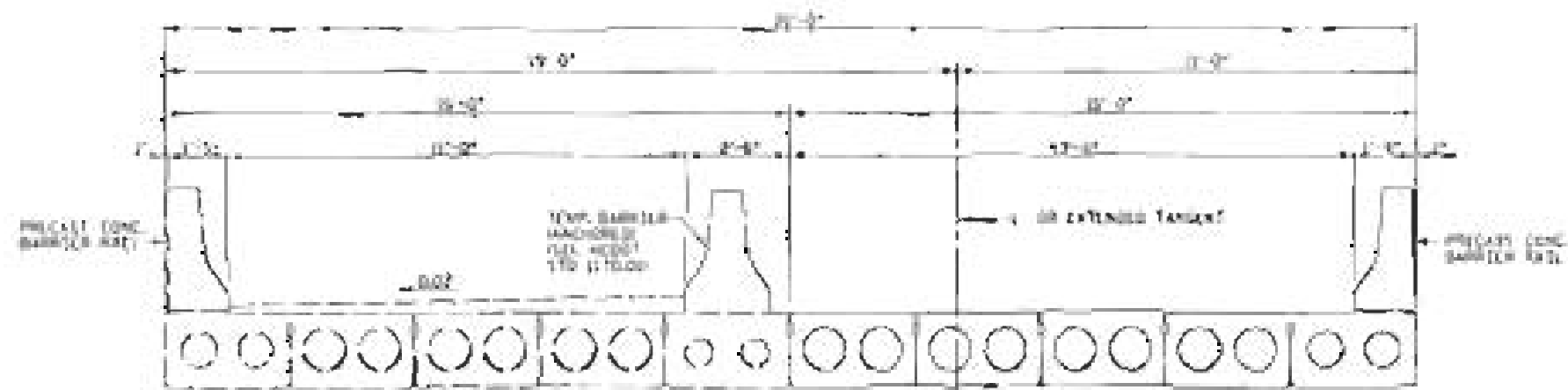




EXISTING BRIDGE



STAGE 1 CONSTRUCTION



STAGE 2 CONSTRUCTION

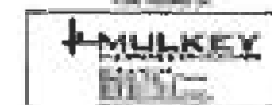
PROJECT NO. 33053  
 CHEROKEE COUNTY  
 STATION: 12+60.23 -L-

REPLACES BRIDGE NO. 43

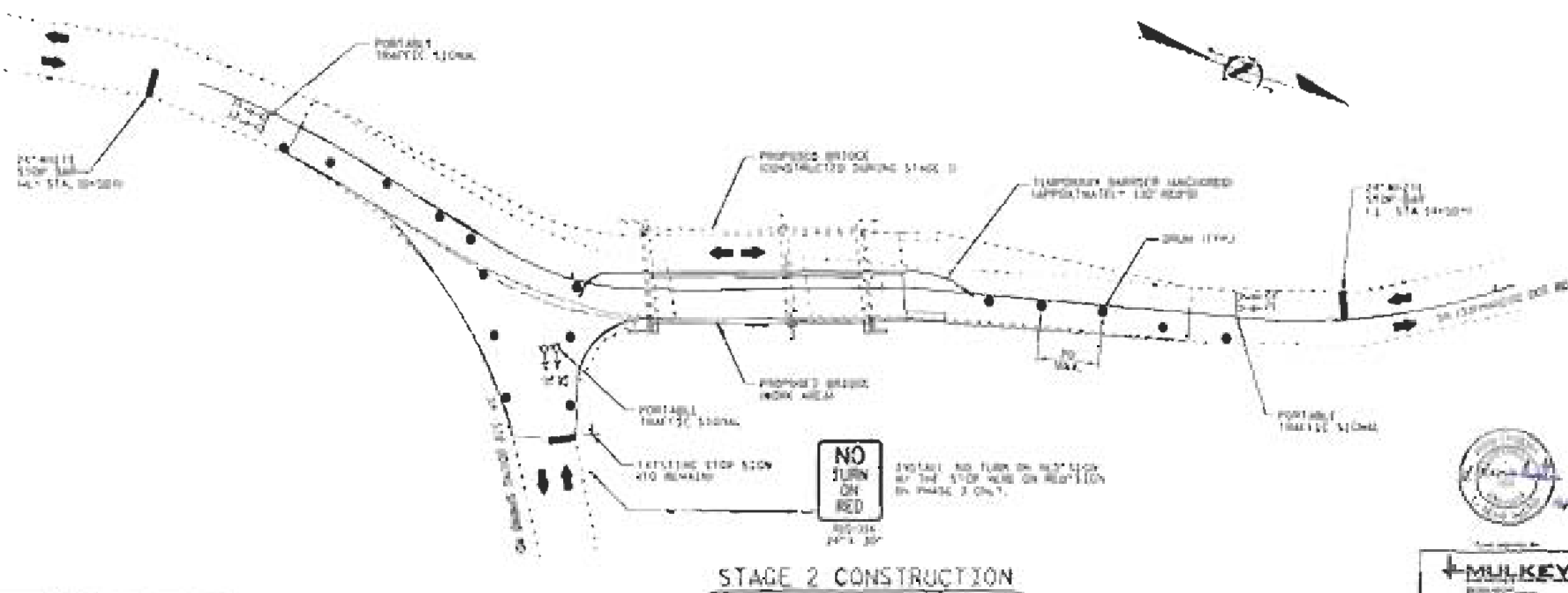
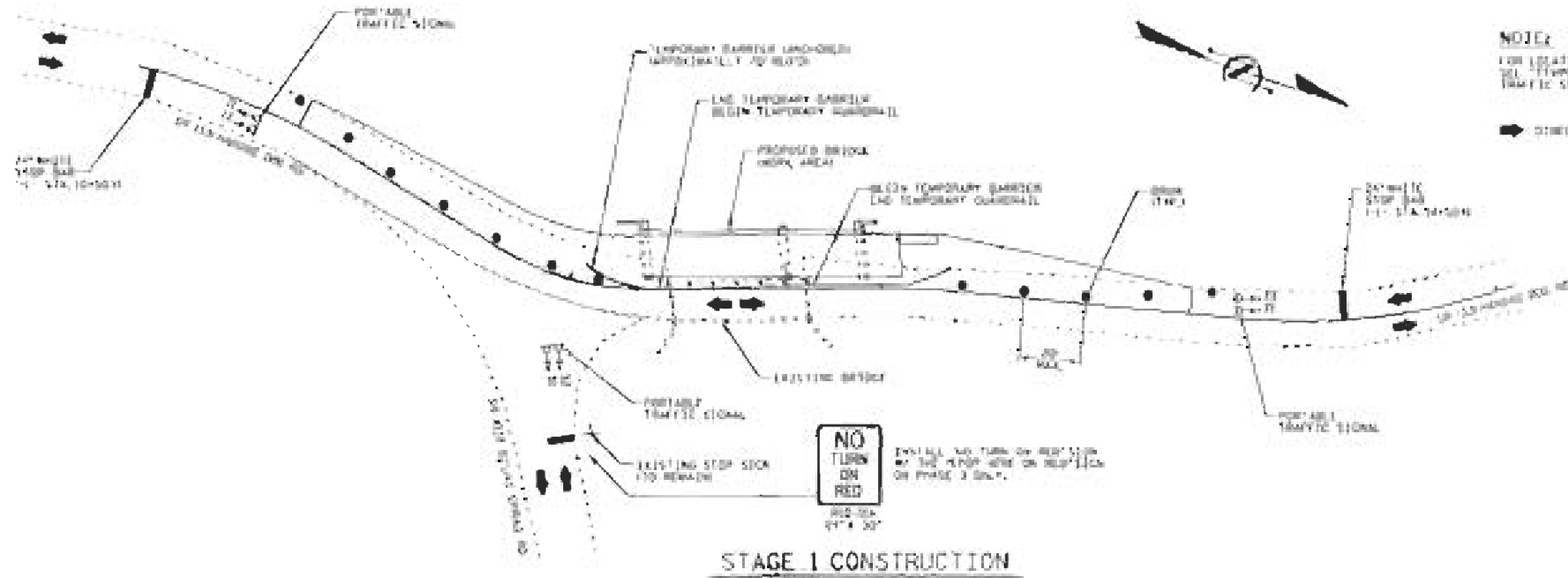
DEPARTMENT OF TRANSPORTATION

CONSTRUCTION STAGING

21' CLEAR ROADWAY - 85° SKEW



REVISIONS					DATE
NO.	DATE	BY	CHKD.	APP'D.	

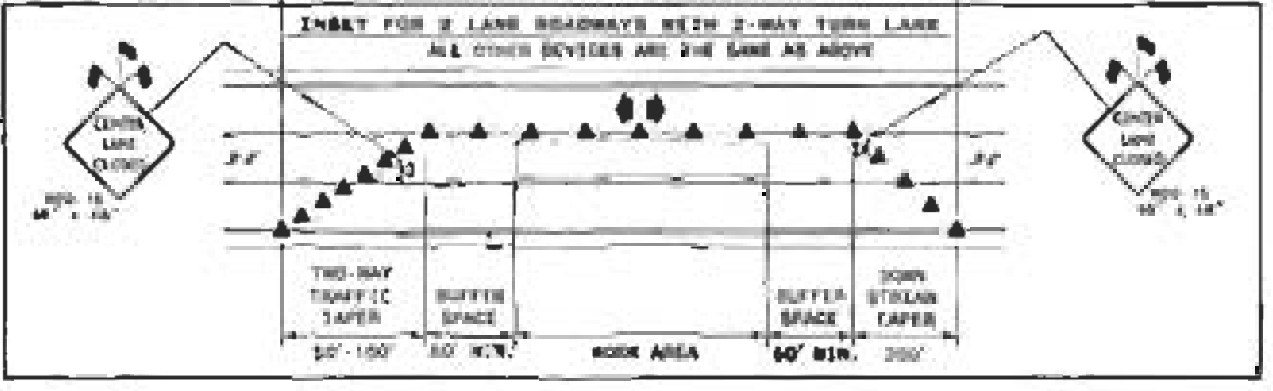
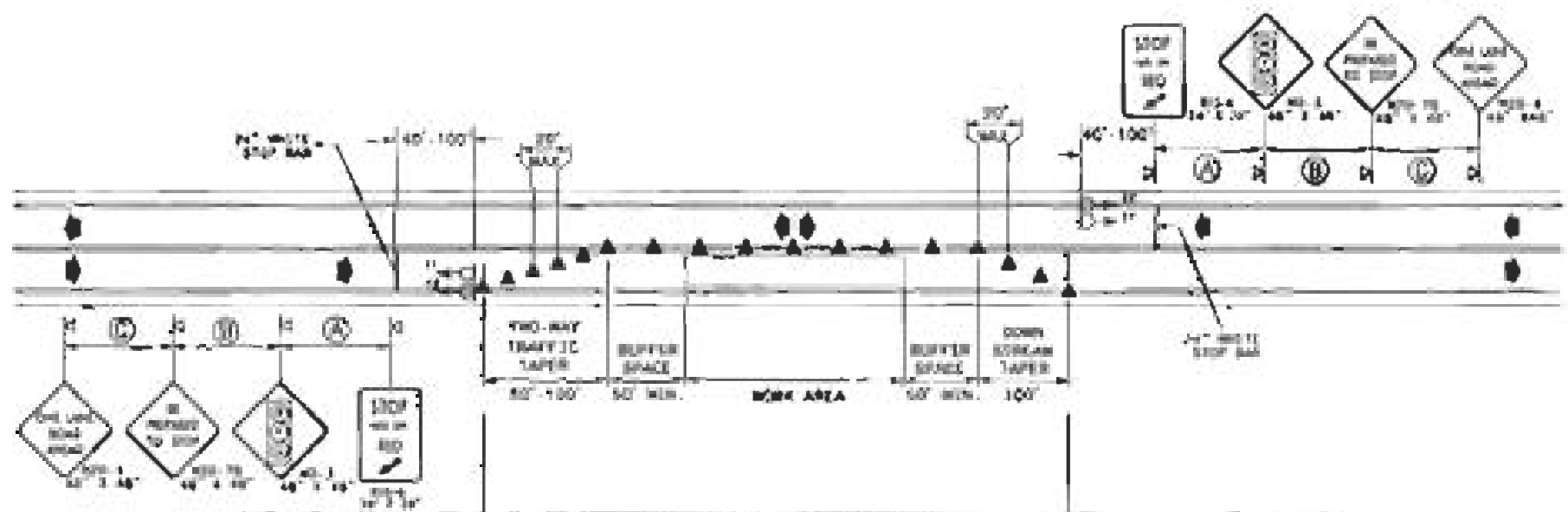




STATE OF NORTH CAROLINA  
DEPT. OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
RALEIGH, N.C.

ENGLISH STANDARD DRAWING FOR  
**TEMPORARY LANE CLOSURES**  
USING PORTABLE TRAFFIC SIGNAL

SHEET 1 OF 1

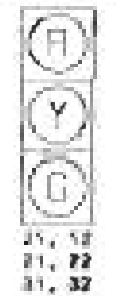


**LEGEND**

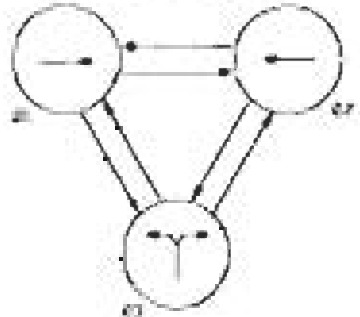
- WAVING FLARE
- CONE
- TRAFFIC SIGNAL HEAD
- PORTABLE SIGN
- DIRECTION OF TRAFFIC FLOW

- GENERAL NOTES**
- REFER TO STD. DWG. 1101-11-SHEET 4, FOR SIGN SPACING.
  - INSTALL LANE CLOSURES WITH THE TRAFFIC FLOW, BEGINNING WITH DEVICES ON THE UPSTREAM SIDE OF TRAFFIC.
  - REMOVE LANE CLOSURES AGAINST THE TRAFFIC FLOW, BEGINNING WITH DEVICES ON THE DOWNSTREAM SIDE OF TRAFFIC.
  - PLACE CONES THRU THE WORK AREA AT THE MAXIMUM SPACING EQUAL 30 FEET TO 2 TIMES THE POSTED SPEED LIMIT.
  - EXTEND LANE CLOSURES AT THE BUFFER SPACE SUCH THAT STOPPING SIGHT DISTANCE IS PROVIDED TO THE STOP BAR. (REFER TO STD. DWG. 1101-11-SHEET 2)
  - DRUMS MAY BE USED IN LIEU OF CONES.
  - USE STD. DWG. 1705-01 SHEET 2 OF 2 WHEN CLEARING FROM ONE PHASE TO ANOTHER.

**SIGNAL FACE I.D.**



**PHASING DIAGRAM**



**TABLE OF OPERATION**

SIGNAL FACE	PHASE			DIRECTION
	1	2	3	
A	C	R	R	R
B	R	C	R	R
C	R	R	C	R

STATE OF NORTH CAROLINA  
DEPT. OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
RALEIGH, N.C.

ENGLISH STANDARD DRAWING FOR  
**TEMPORARY LANE CLOSURES**  
USING PORTABLE TRAFFIC SIGNAL

SHEET 1 OF 1



APPROVED: \_\_\_\_\_ DATE: \_\_\_\_\_

TEMPORARY LANE CLOSURES  
USING PORTABLE TRAFFIC SIGNALS

NAME	DESIGNED
DATE	CHECKED
BY	DATE

**GENERAL NOTES**

- CONCRETE - Fc 4000 PSI SPEC GRADE WITH COMP. STRENGTH  $\geq 28$  DAYS.
- Fc 4000 PSI SPEC GRADE WITH COMP. STRENGTH  $\geq 28$  DAYS.
- CONCRETE - Fc 4000 PSI SPEC GRADE WITH COMP. STRENGTH  $\geq 28$  DAYS.
- Fc 4000 PSI SPEC GRADE WITH COMP. STRENGTH  $\geq 28$  DAYS.

SLAB	TYPE	WIRE	STANDARD	WIRE	APPLY TO
24" x 48"	LOW	0.275" DIA.	SLAB	100	FOR CABLE
	W/AL	1/2" DIA.	SLAB	100	FOR CABLE

STRUCTURAL STEEL SHALL BE OF A GRADE CONFORMING TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR STRUCTURAL STEEL OF A572 GR. 50. ALL STRUCTURAL STEEL SHALL BE DELIVERED AS PER THE SPECIFICATION.

ALL MATERIALS AND WORKMANSHIP SHALL COMPLY WITH THE APPLICABLE REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR BRIDGE AND STRUCTURES OF THE DEPARTMENT OF TRANSPORTATION WITH THE EXCEPTION OF THE SPECIAL PROVISIONS.

ALL PRESTRESSING STRANDS SHALL BE 7-WIRE LOW RELAXATION (LR) STRANDS AND SHALL CONFORM TO ASTM A421 (LR) (LR) FOR LOW RELAXATION STRANDS WHICH SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

ALL REINFORCING STEEL SHALL BE OF A GRADE CONFORMING TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR STRUCTURAL STEEL OF A572 GR. 50. ALL REINFORCING STEEL SHALL BE DELIVERED AS PER THE SPECIFICATION.

REINFORCING STEEL SHALL BE OF A GRADE CONFORMING TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR STRUCTURAL STEEL OF A572 GR. 50. ALL REINFORCING STEEL SHALL BE DELIVERED AS PER THE SPECIFICATION.

THE BACKER ROD SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR BACKER RODS OF THE STANDARD SPECIFICATIONS. THE JOINT SHALL BE FILLED WITH GROUT.

WITH CORROSION RESISTANT AND A POSITIVE HOLD-DOWN SYSTEM SHALL BE EMPLOYED TO PREVENT MOVEMENT OF THE WIRING SYSTEMS. THE SYSTEM SHALL BE DESIGNED TO BE LEFT IN PLACE UNTIL THE CONCRETE HAS REACHED MINIMUM STRENGTH. AT LEAST THREE WEEKS PRIOR TO CASTING CONCRETE SLABS THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER FOR REVIEW AND COMMENT DETAILED DRAWINGS OF THE PROPOSED HOLD-DOWN SYSTEM IN ADDITION TO STRUCTURAL DETAILS, LOCATION AND SPACING OF THE HOLD-DOWN SHALL BE INDICATED.

ALL REINFORCING STEEL 24-BARRIER BARS SHALL BE EPOXY COATED.

PRESTRESSING STRANDS SHALL BE CUT FLUSH WITH THE CONCRETE SLAB SURFACE.

APPLY EPOXY PROTECTIVE COATING TO CONCRETE SLAB SURFACE.

ALL SURFACES SHALL BE PROTECTED FROM DAMAGE. ALL EXPOSED CORNERS OF STRUCTURES SHALL BE CHAMFERED R<sub>1</sub>.

FOR BRIDGE STRUCTURES, SEE SPECIAL PROVISIONS.

FOR PRESTRESSED CONCRETE MEMBERS, SEE SPECIAL PROVISIONS.

FOR DEFLECTION TABLE, SEE PRECAST CONCRETE BARRIER WALL SECTIONS SHEET.

PROJECT NO. 33053

CHEROKEE COUNTY

STATION 12+60.23 -L-

REPORTS BRIDGE NO. 41

DEPARTMENT OF TRANSPORTATION

STANDARD

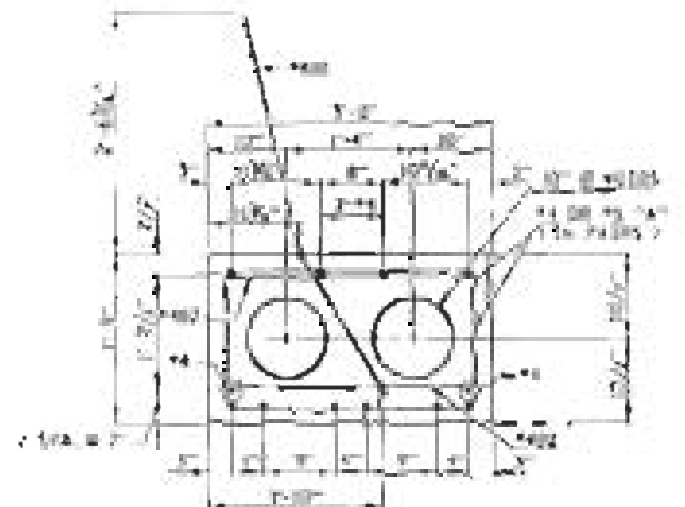
PRESTRESSED CORED SLAB

45' & 25' SPANS

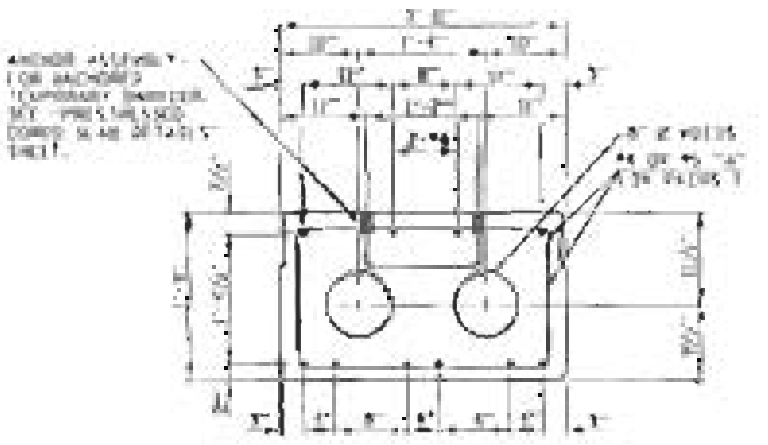
2' CLEAR ROADWAY - 85° SKED



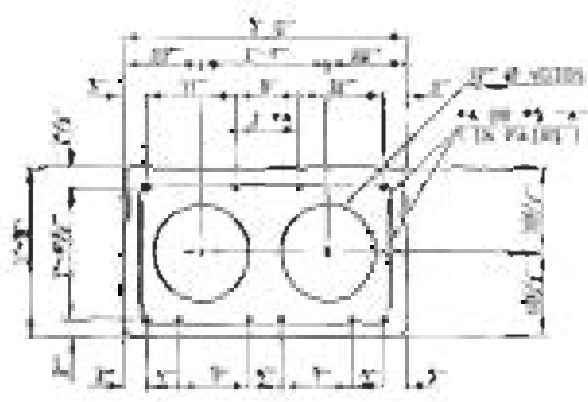
**MULKEY**



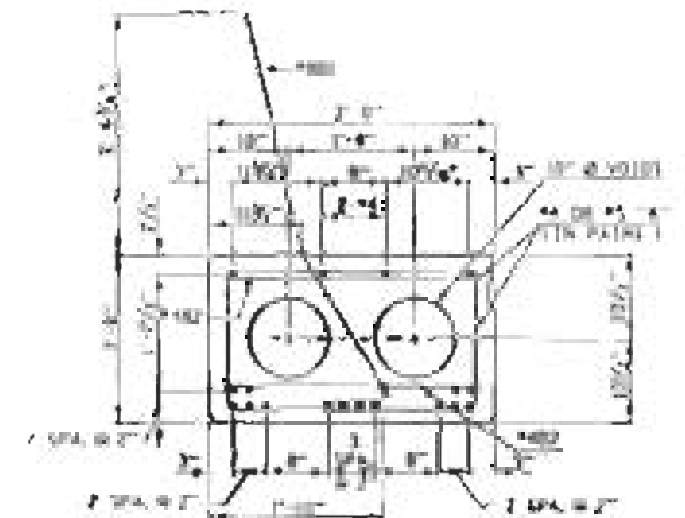
**25' SPAN**  
8 - #0.275" DIA. STRANDS  
EXTERIOR SLAB SECTION



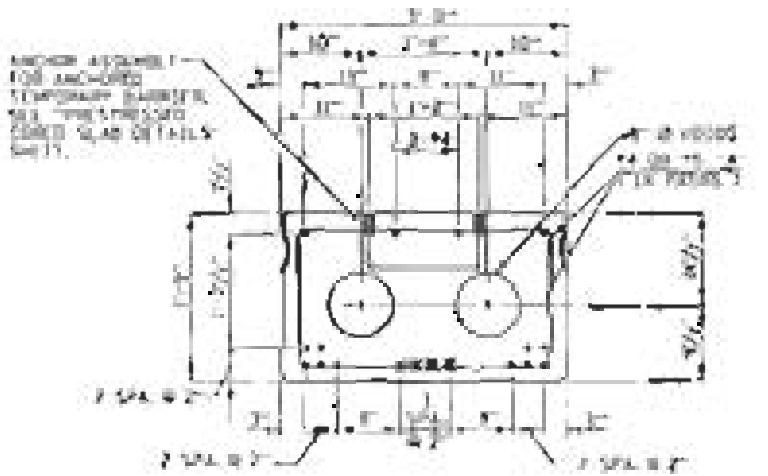
**25' SPAN**  
8 - #0.275" DIA. STRANDS  
INTERIOR SLAB SECTION



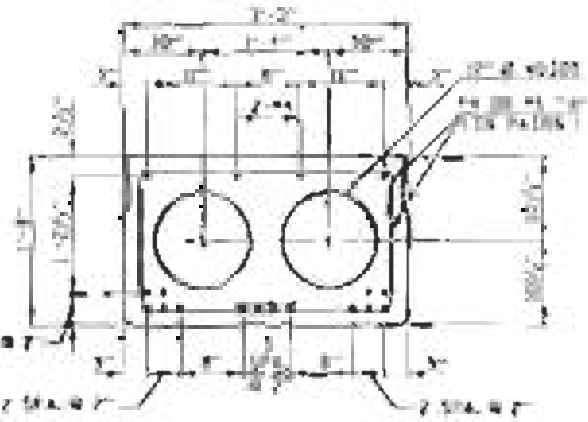
**25' SPAN**  
8 - #0.275" DIA. STRANDS  
INTERIOR SLAB SECTION



**45' SPAN**  
16 - #0.275" DIA. STRANDS  
EXTERIOR SLAB SECTION



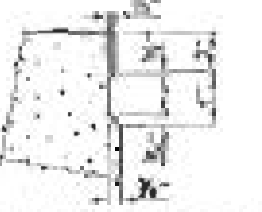
**45' SPAN**  
16 - #0.275" DIA. STRANDS  
INTERIOR SLAB SECTION



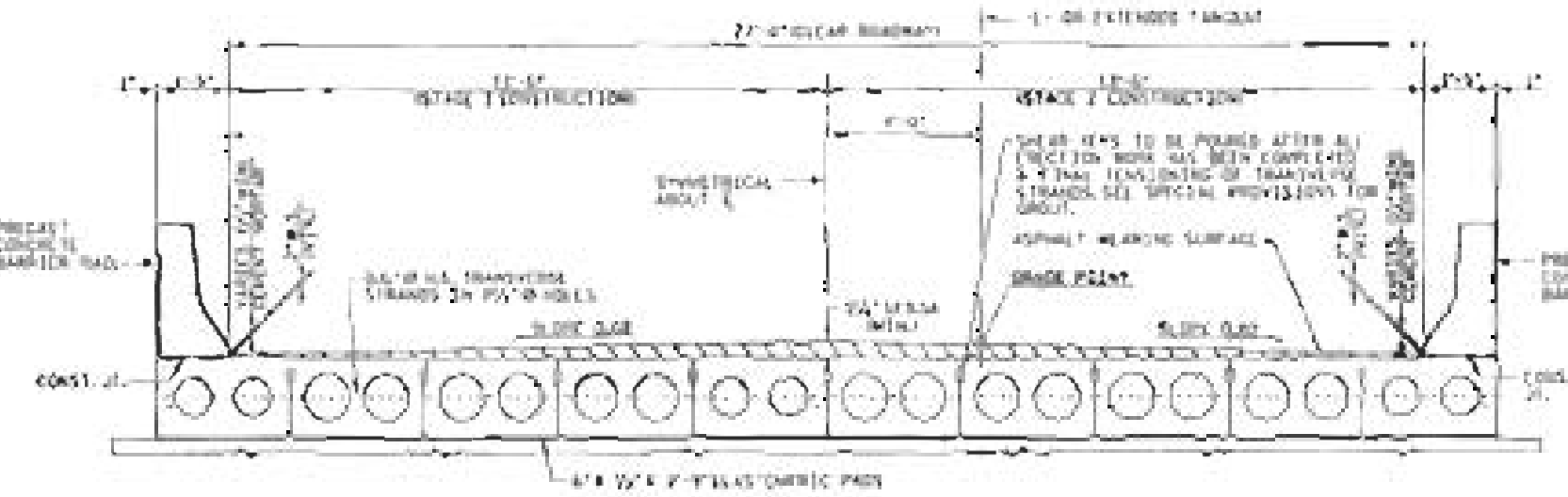
**45' SPAN**  
16 - #0.275" DIA. STRANDS  
INTERIOR SLAB SECTION

SPAN LENGTH	NUMBER OF WEATHED STRANDS FOR EXTERIOR SLAB SECTION	NUMBER OF WEATHED STRANDS FOR INTERIOR SLAB SECTION
25'	4	1
45'	8	2

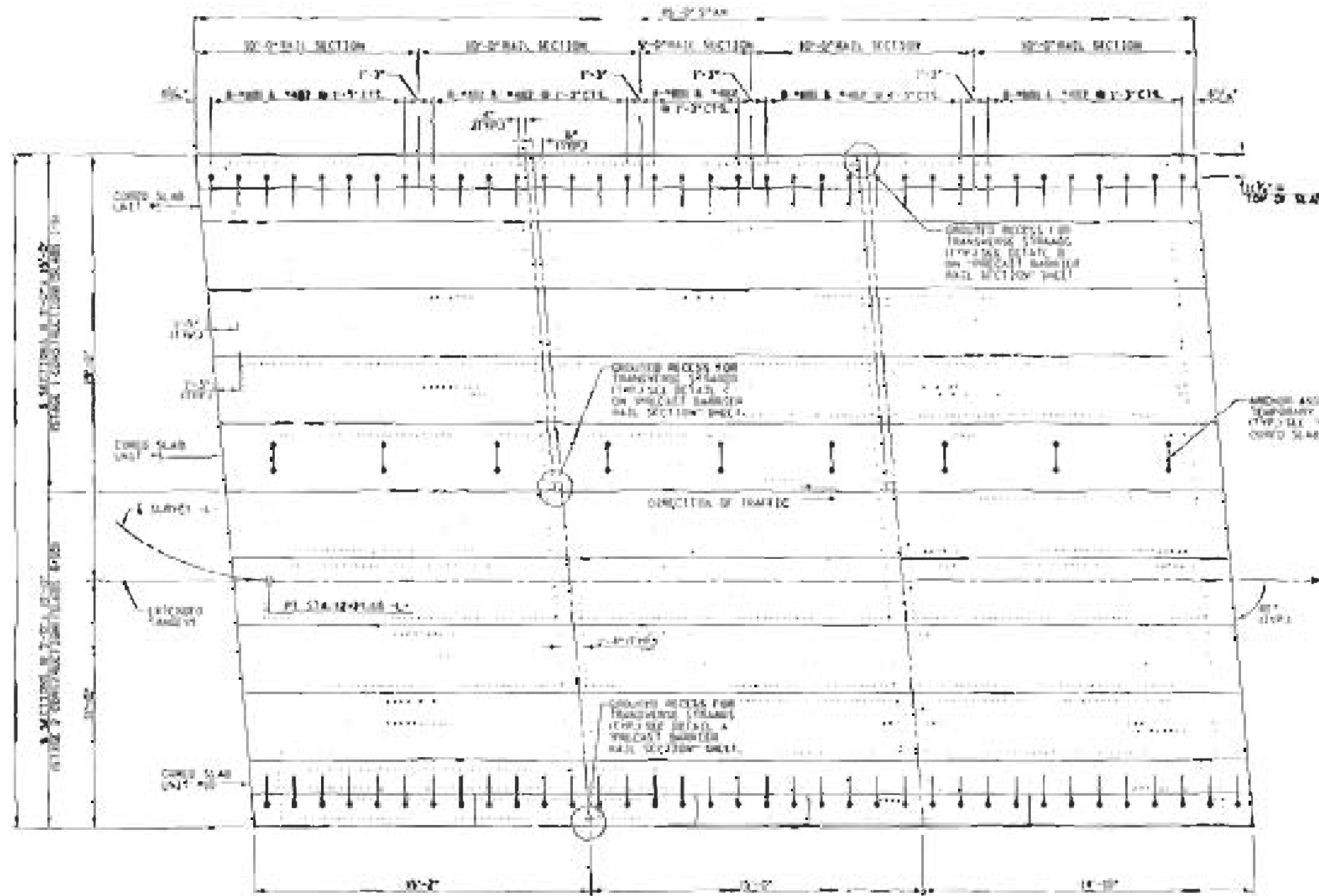
NOTE: THIS SHALL BE APPLIED TO THESE STRANDS FOR A DISTANCE OF 4" FROM THE END OF SLAB.



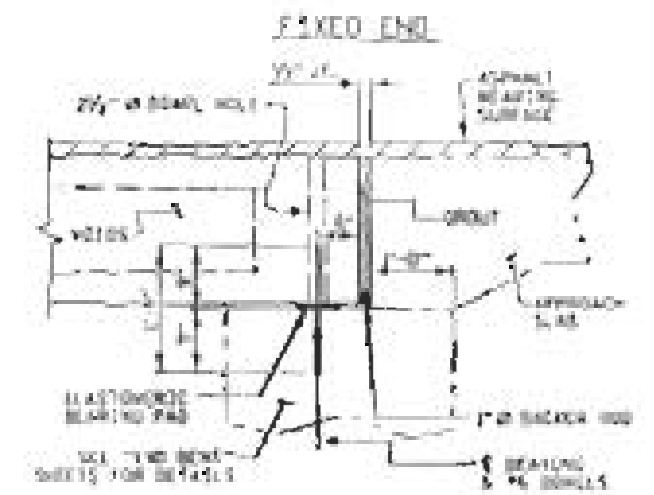
**SHEAR KEY DETAIL**  
NOTE: THIS SHALL BE SET ON OUTSIDE OF EXTERIOR CONCRETE SLAB.



**TYPICAL SECTION**

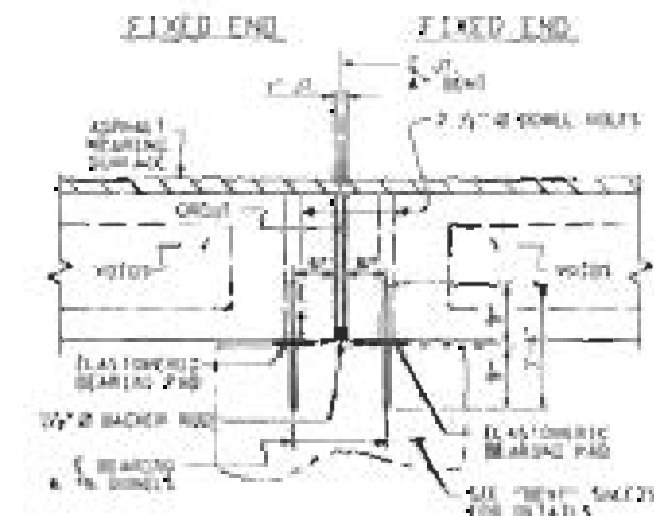


PLAN OF SPAN



SECTION AT END BENT

END BENT IS SIMILAR TO BENT 1 EXCEPT APPROACH SLAB



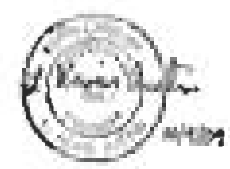
SECTION AT BENT



PART PLAN - SLAB SECTION

PROJECT NO. 33053  
 CHEROKEE COUNTY  
 STATION 12+60.23 -L-

REPLACE BRIDGE NO. 41  
 DEPARTMENT OF TRANSPORTATION  
 STANDARD  
 PRESTRESSED CORED SLAB  
 45' SPAN  
 27' CLEAR ROADWAY - 85" SKEN

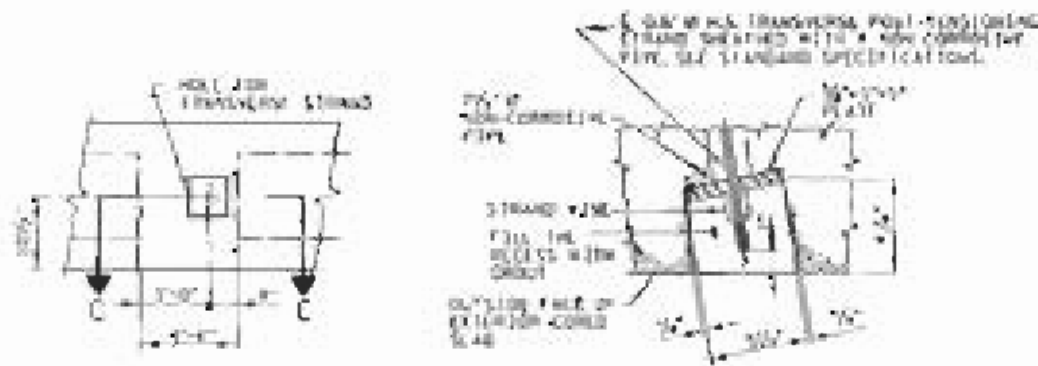


**MULKEY**  
 ENGINEER

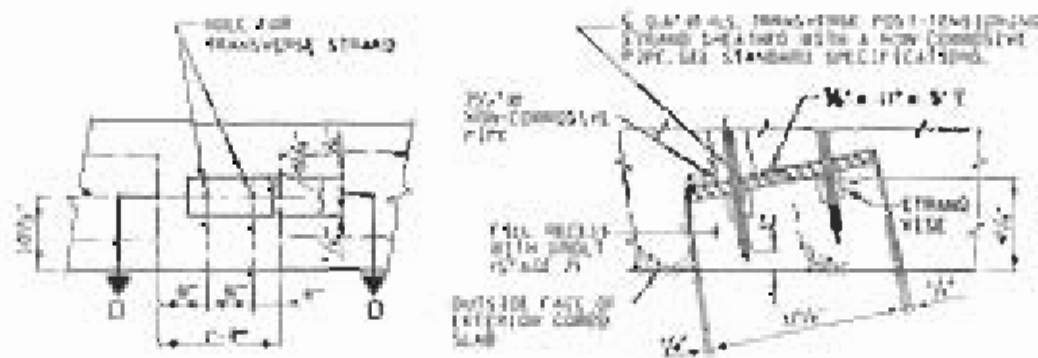
NO.	DATE	BY	REVISION	DATE
1				
2				
3				

Scale: 1/4" = 1'-0"  
 Date: 11/15/60  
 Drawn by: J. M. Mulkey

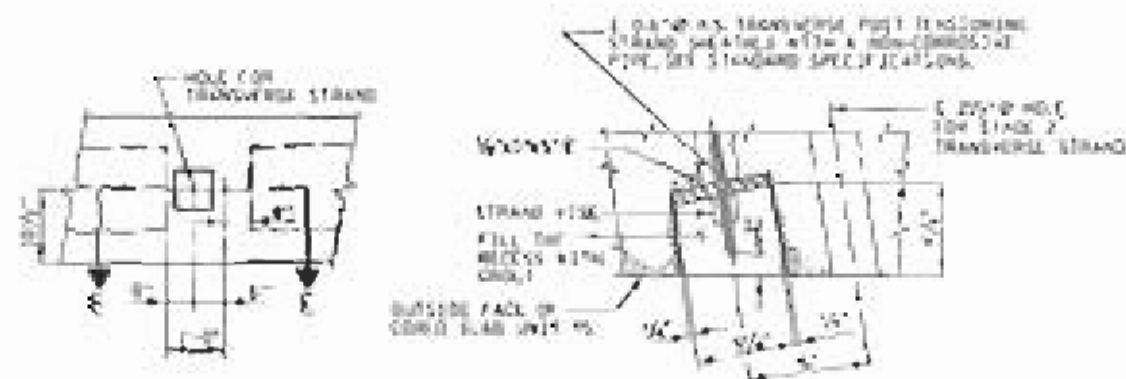




**ELEVATION SECTION C-C**  
**DETAIL A**  
**GROUTED RECESS AT END OF**  
**POST-TENSIONED STRAND**  
 (CORED SLAB UNIT #10)



**ELEVATION SECTION D-D**  
**DETAIL B**  
**GROUTED RECESS AT END OF**  
**POST-TENSIONED STRAND**  
 (CORED SLAB UNIT #1)



**ELEVATION SECTION E-E**  
**DETAIL C**  
**GROUTED RECESS AT END OF**  
**POST-TENSIONED STRAND**  
 (CORED SLAB UNIT #5)

EXTERIOR SLAB UNIT	25'	45'
CAMBER (SLAB UNIT ALONE IN PLACE)	1/4" UP	1/8" UP
DEFLECTION (SUPERIMPOSED DEAD LOAD)	0" DOWN	3/8" DOWN
TOTAL DEFLECTION	1/4" UP	1/8" UP

\* INCLUDES FUTURE WEARING SURFACE

INTERIOR SLAB UNIT	25'	45'
CAMBER (SLAB UNIT ALONE IN PLACE)	3/8" UP	1/4" UP
DEFLECTION (SUPERIMPOSED DEAD LOAD)	0" DOWN	3/8" DOWN
TOTAL DEFLECTION	3/8" UP	1/4" UP

\* INCLUDES FUTURE WEARING SURFACE

**NOTES**

1. EACH PRECAST RAIL UNIT SHALL BE CAST WITH CLASS AA CONCRETE.

2. RAIL TO BE FLUSH WITH CORNER SLAB UNITS AT EACH END OF SLAB.

3. GROUT SHALL BE 1" ABOVE STRANDS BETWEEN RAIL SECTIONS JOINTS. 2" BEHIND STRANDS FOR UNITS WITH SLOTTED STRANDS OR SUBSTITUTES IN PLACE OF GROUT.

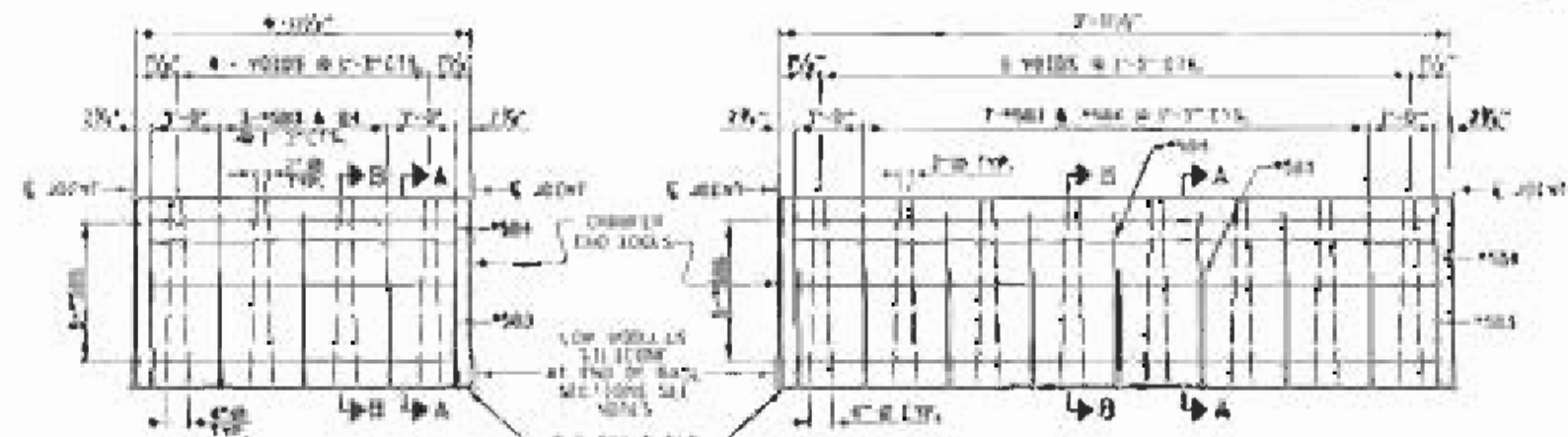
4. EACH PRECAST RAIL UNIT SHALL BE SUPPLIED WITH FITTING BRACKETS TO CABLES AND JOINTS WRAPPED AROUND THE RAIL UNITS FOR LIFTING.

5. THE EXPANSION JOINT SEALER SHALL BE LOW MOLECULAR SILICONE SEALANT. SEE SECTION 1008-1 OF THE STANDARD SPECIFICATION.

6. CONCRETE CURING: (a) CURING SHALL BE BY THE PLANT OR EXPOSED CONCRETE CURING COMPOUND SHALL BE APPLIED 2" WITHIN THE 20' CURING PERIODS FOR EXCESSIVE CURING MAY BE REPEATED BY 1/2" BRUSH WITHIN 10 DAYS INTO CURING PERIOD. (b) BRUSHING SHALL BE REPEATED EVERY 7 DAYS BY REPEATING WITH A 1/2" BRUSHING TOOL. BRUSHING SHALL BE REQUIRED ON PLANS AND CURVES OR EXPANSION JOINTS IN THE ROADWAY FACES AND TOPS OF CURBS AND STRONG WALLS. BRUSHING SHALL BE REPEATED WITH A 1/2" BRUSHING TOOL ON CURBS AND WALLS OR TOPS OF CURBS OR WALLS.

7. DECK GRADING ARE NOT PERMITTED.

BILL OF MATERIAL FOR ONE 5'-0" RAIL SECTION					
BAR NO.	SIZE	TYPE	LENGTH	WEIGHT	
1	1/2"	1	2'-0"	0.4	1
2	1/2"	2	2'-0"	0.4	1
3	1/2"	1	2'-0"	0.4	1
REINFORCING TIES, ETC.					0.1
CLASS AA CONCRETE (28,000 PSI)					0.5
BILL OF MATERIAL FOR ONE 10'-0" RAIL SECTION					
BAR NO.	SIZE	TYPE	LENGTH	WEIGHT	
1	1/2"	1	2'-0"	0.4	1
2	1/2"	2	2'-0"	0.4	1
3	1/2"	1	2'-0"	0.4	1
REINFORCING TIES, ETC.					0.1
CLASS AA CONCRETE (28,000 PSI)					1.0
BAR TYPES					



**TYPICAL 5'-0" PRECAST UNIT**

**TYPICAL 10'-0" PRECAST UNIT**



**SECTION A-A**



**SECTION B-B**

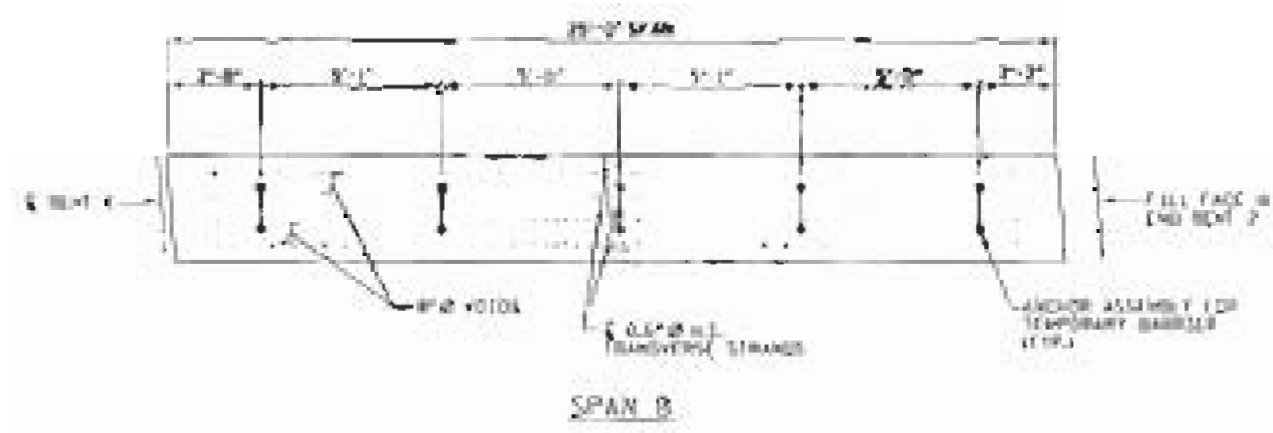
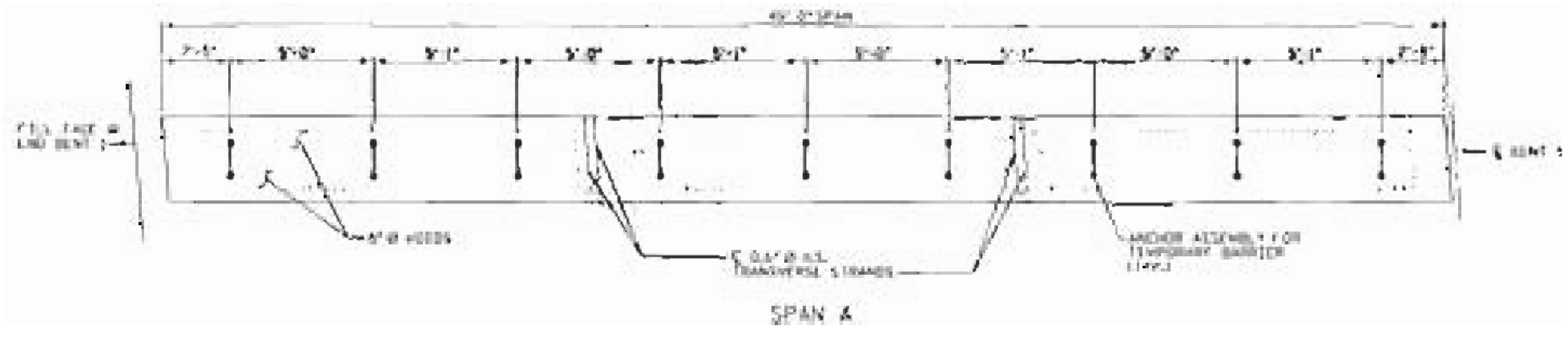
PROJECT NO. 33053  
 CHEROKEE COUNTY  
 STATION 12+60.23 -L-

REPLACES BRIDGE NO. 41

DEPARTMENT OF TRANSPORTATION  
 STANDARD PRECAST CONCRETE BARRIER RAIL SECTIONS  
 25' & 45' SPANS  
 27" CLEAR ROADWAY - 85° SKEW



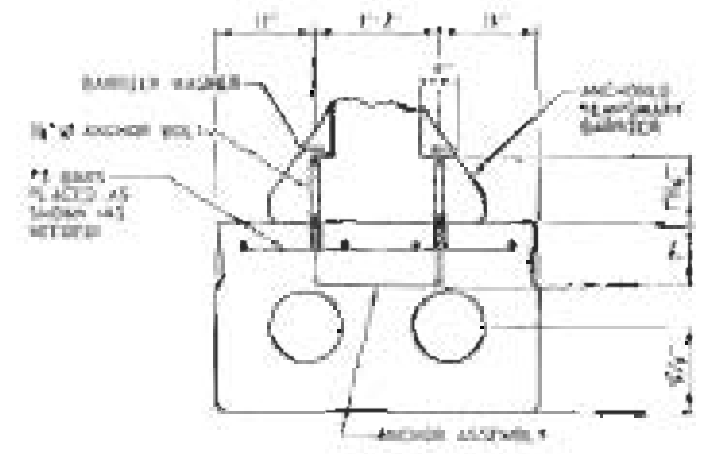
**MULKEY ENGINEERING, INC.**



ANCHOR ASSEMBLY LAYOUT FOR CORED SLAB UNIT #5

NOTES

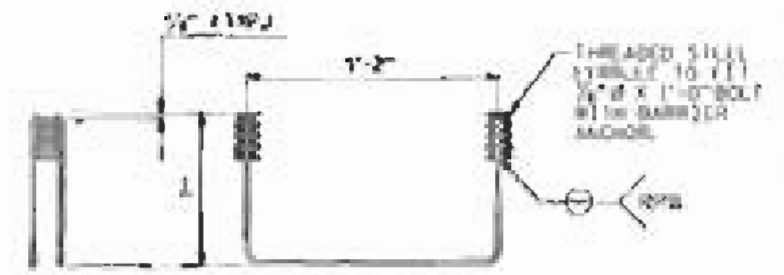
- 1. THE ANCHOR ASSEMBLY FOR TEMPORARY BARRIER SHALL CONSIST OF THE FOLLOWING COMPONENTS:
  - A. FERRELS SHALL BE MADE FROM STEEL MEETING THE REQUIREMENTS OF AASHTO ROAD GRADE 12.14 AND SHALL HAVE A MINIMUM LENGTH OF THREADS OF 20".
  - B. 2 - 3/4" X 1-1/2" ANCHOR BOLTS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A307. ANCHOR BOLTS SHALL BE GALVANIZED. AT THE CONTRACTOR'S OPTION, STAINLESS STEEL BOLTS AND WASHERS MAY BE USED AS AN ALTERNATE FOR THE 3/4" X 1-1/2" GALVANIZED ANCHOR BOLTS. THEY SHALL CONFORM TO OR EXCEED THE MECHANICAL REQUIREMENTS OF ASTM A307. THE USE OF ANY ALTERNATE SHALL BE APPROVED BY THE ENGINEER.
  - C. WIRE STRAP SHOWN IN THE ANCHOR ASSEMBLY DETAIL ARE MAXIMUM ALLOWABLE SIZE AND SHALL HAVE A MINIMUM TENSILE STRENGTH OF 100,000 PSI.
- 2. ANCHOR ASSEMBLY WITH BOLTS SHALL BE ASSEMBLED IN THE SHOP. BOLT THREADS MAY BE RE-CUT AS NECESSARY TO INSURE FIT.
- 3. THE COST OF THE ANCHOR ASSEMBLY COMPLETE IN PLACE SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR CONSTRUCTION OF SUPERSTRUCTURE, SEE SPECIAL PROVISIONS.
- 4. FERRELS TO BE PLACED DURING CASTING OF THE CORED SLAB UNITS AS RECOMMENDED BY THE MANUFACTURER.
- 5. AT THE CONTRACTOR'S OPTION, FERRELS WITH OPEN OR CLOSED ENDS MAY BE USED.
- 6. FOR 4' X 20' X 1/2" BARRIER RAILER TO BE USED WITH ANCHOR ASSEMBLY, SEE ROADWAY PLAN.
- 7. PAYMENT FOR ANCHORED TEMPORARY BARRIER AND BARRIER WASHER ARE INCLUDED IN TRAFFIC CONTROL PAY ITEM, SEE SPECIAL PROVISIONS.



CORED SLAB UNIT #5

(SHOWING PLACEMENT OF ANCHOR ASSEMBLY)

THE #5 BARS ARE INCIDENTAL AND THEIR COST SHALL BE INCLUDED IN THE PRICE BID FOR THE CONSTRUCTION OF SUPERSTRUCTURE.



SIDE VIEW ELEVATION

MAXIMUM LENGTH OF THREADS ON INSERT (STEM) IS 20"

ANCHOR ASSEMBLY FOR TEMPORARY BARRIER

119 ASSEMBLIES REQUIRED

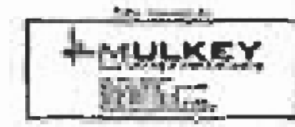
PROJECT NO. 33053  
 CHEROKEE COUNTY  
 STATION: 12+60.23 -L-

REPLACES BRIDGE NO. 43

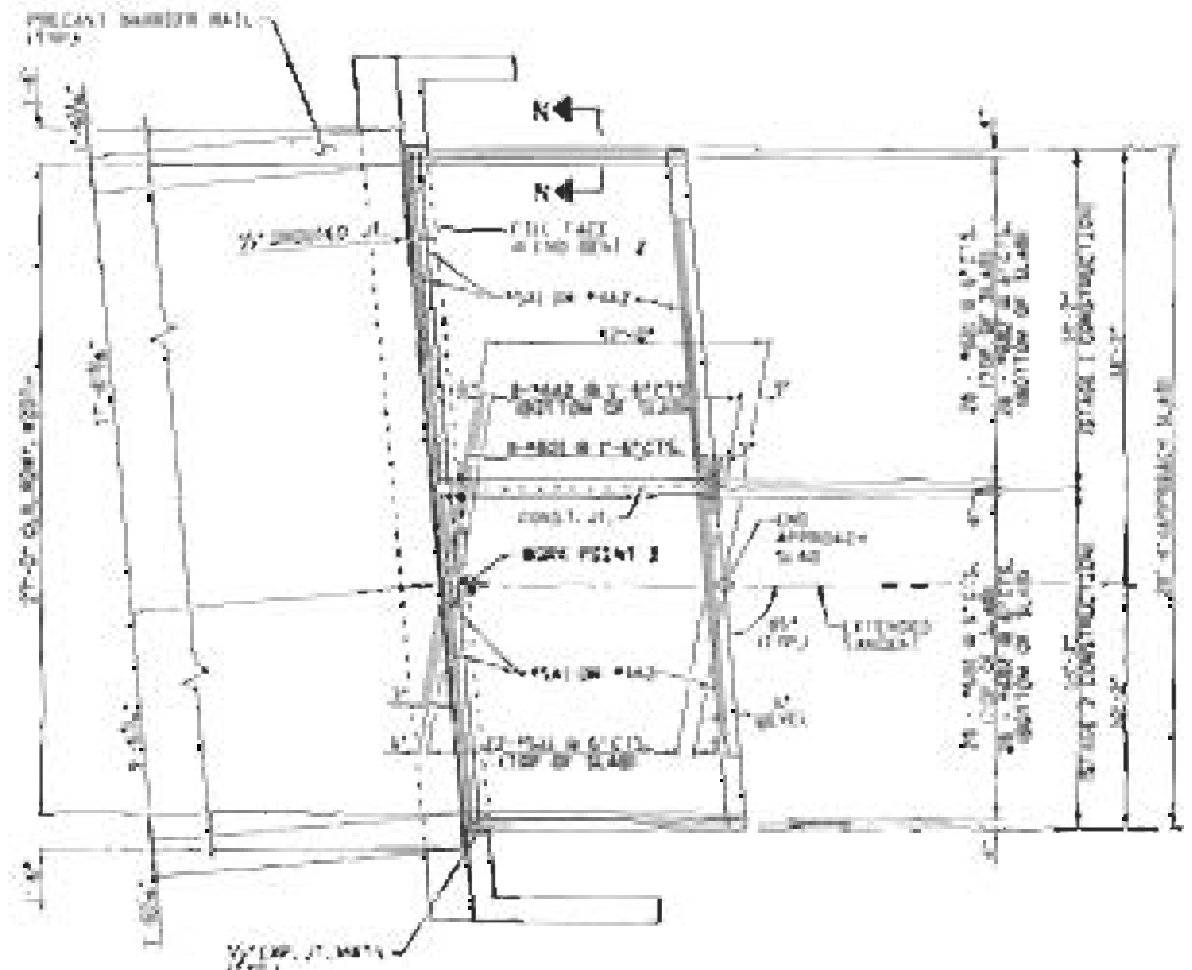
DEPARTMENT OF TRANSPORTATION

PRESTRESSED CORED SLAB DETAILS

27' CLEAR ROADWAY - 85° SKEW



REVISIONS		DATE



PLAN OF APPROACH SLAB

**NOTES**

REINFORCED BRIDGE APPROACH FILL INCLUDING FABRIC, IMPERMEABLE COVERING, 2\"/>

AREA BETWEEN THE WINGWALL AND APPROACH SLAB SHALL BE GRADED TO MATCH THE ROADWAY AND SHALL EXTEND 1'-0\"/>

THE 8\"/>

THE CONTRACTOR MAY USE EITHER 2\"/>

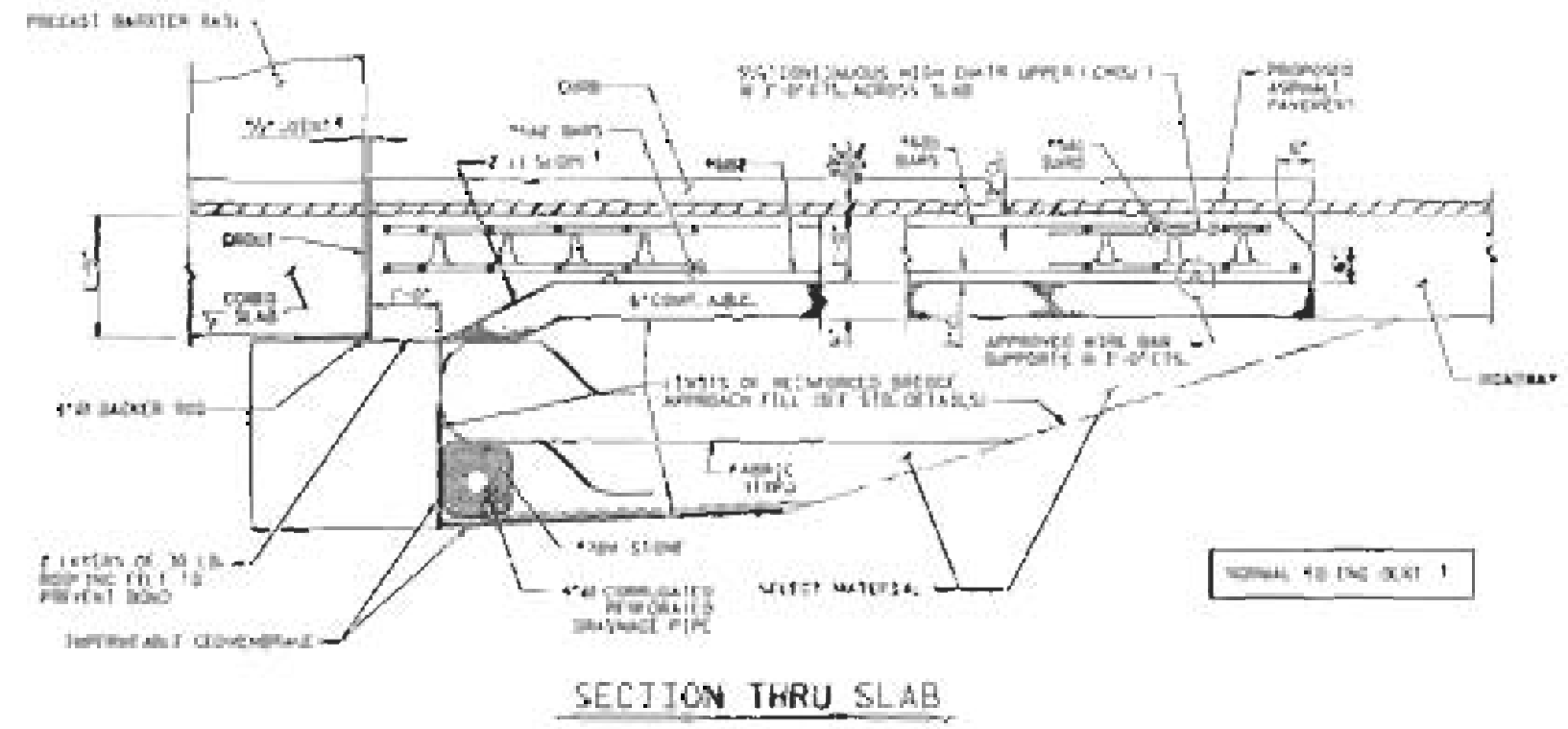
THE CONTRACTOR MAY USE 5\"/>

FOR JOINT DETAILS SEE PRESTRESSED CONCRETE CURB SLAB SHEET.

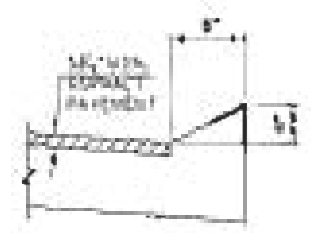
THE JOINT AT THE END BENT SHALL BE DETAIL AS SHOWN AS PRACTICAL WITH THE COMPLETION OF THE APPROACH SLAB.

APPROACH SLAB PROVISION IS NOT REQUIRED.

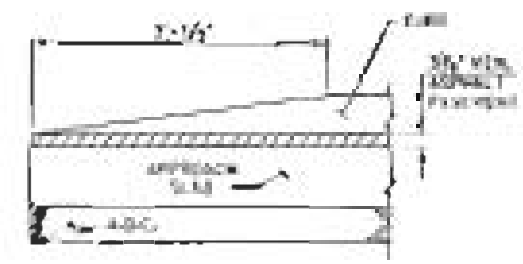
BILL OF MATERIAL FOR APPROACH SLAB AT END BENT 2					
ITEM NO.	QTY	TYPE	LENGTH	WEIGHT	
#1	48	#4	15'-0"	684	
#2	36	#4	15'-0"	513	
#3	24	#4	0'-1"	132	
#4	36	#4	17'-2"	974	
#5	8	#8	2'-2"	46	
REINFORCING STEEL				1,869	1,869
WEEDY COATING					
REINFORCING STEEL				1,869	1,869
CLASS 44 CONCRETE				6.2	14.7



SECTION THRU SLAB



SECTION N-N



END OF CURB CURB DETAILS

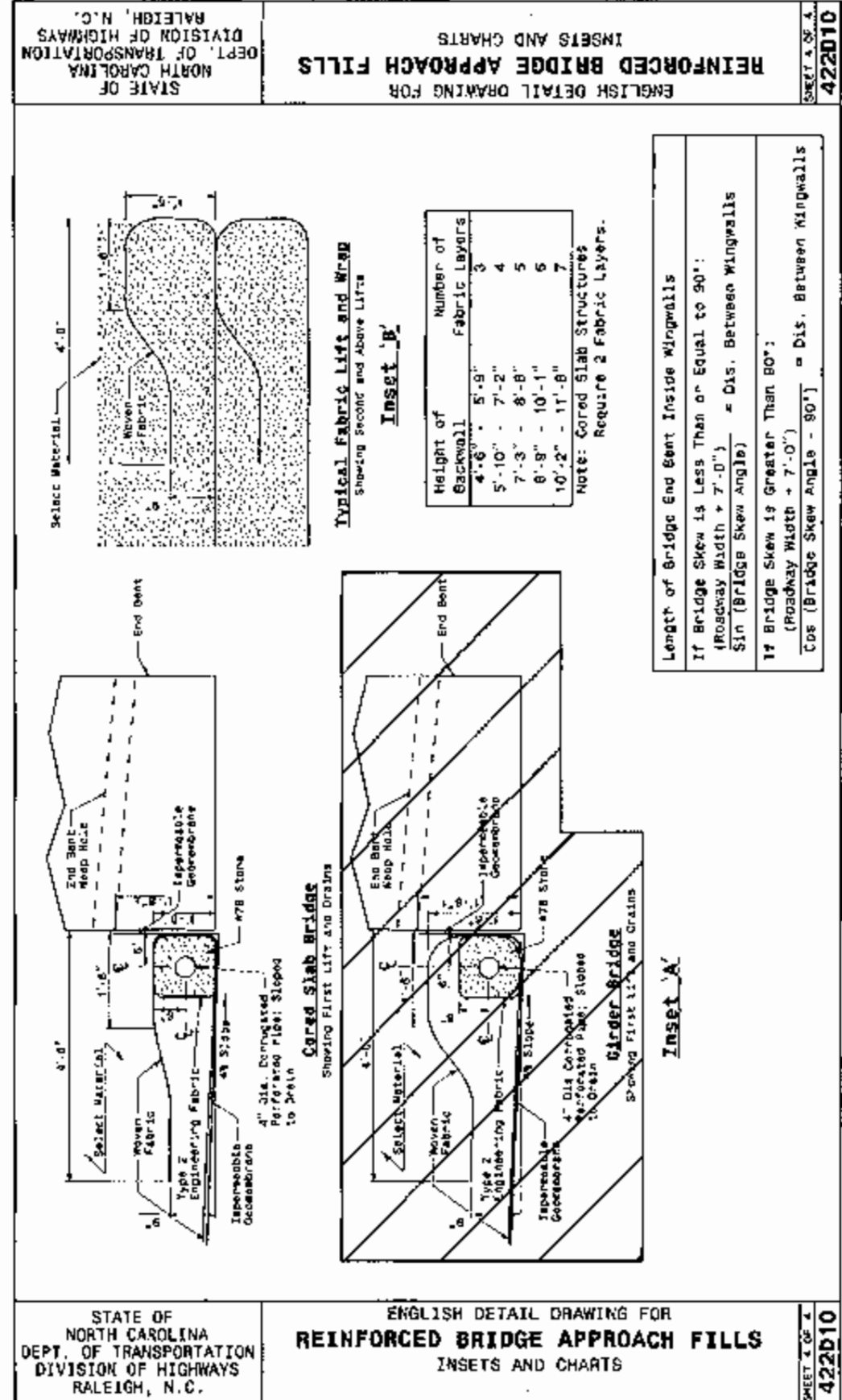
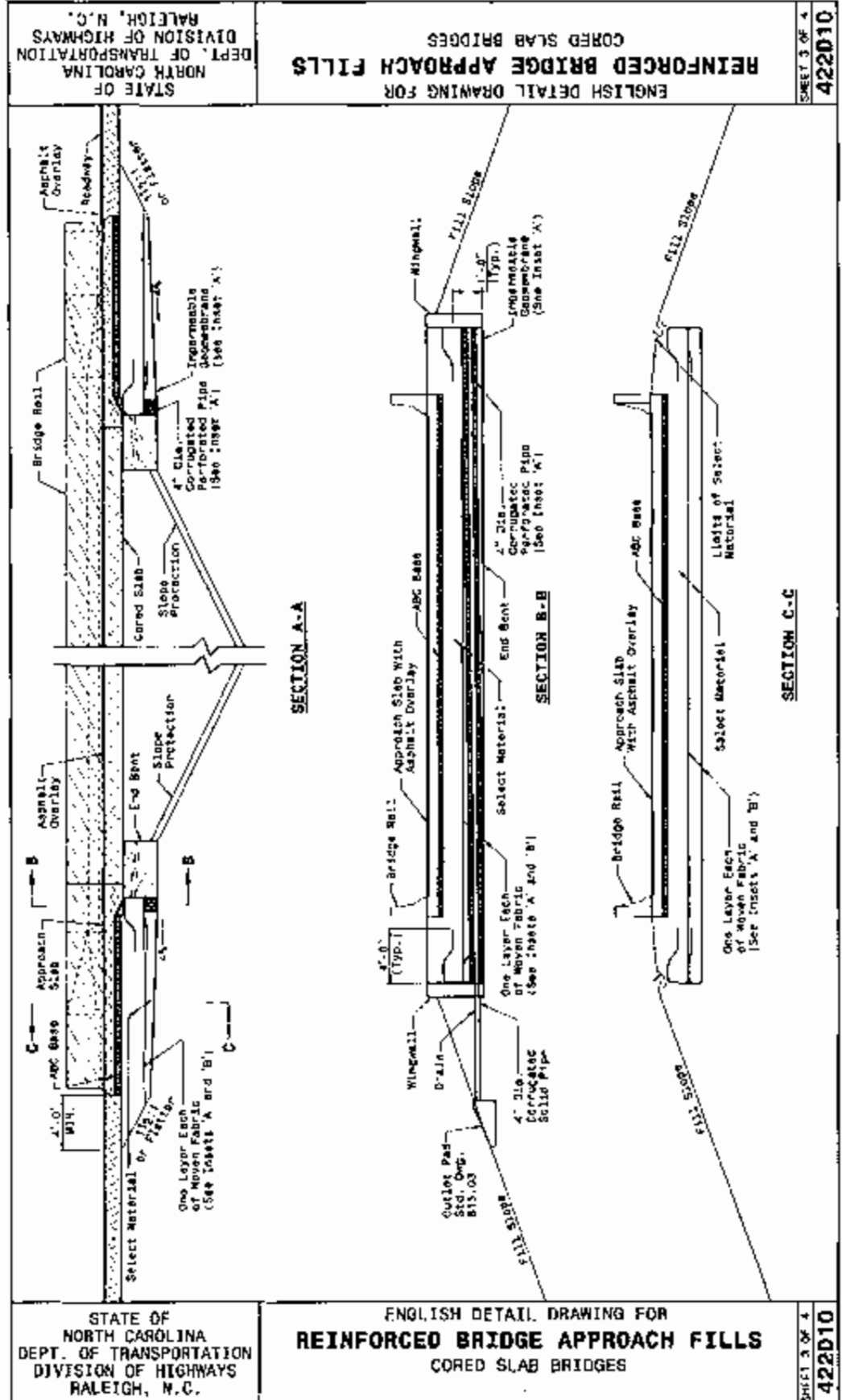
PROJECT NO. 33053  
 CHEROKEE COUNTY  
 STATION: 12+60.23 -L-

BUREAU'S DESIGN NO. 43  
 DEPARTMENT OF TRANSPORTATION  
**APPROACH SLAB**  
 27' CLEAR ROADWAY - 85' S&W









DESIGN SERVICES UNIT  
 STANDARDS AND SPECIAL DESIGN  
 Office 919-250-4129 FAX 919-250-4118

SEE PLATE FOR TITLE

ORIGINAL BY: 2002 STANDARDS DATE: 01.15.02  
 MODIFIED BY: C.L. HARRIS DATE: 09-28-03  
 CHECKED BY: DATE:  
 FILE SPEC: stds\02stds\stds\en\14\eng\11\422d10.dgn

NOTES

THE GUARDRAIL ANCHOR ASSEMBLY SHALL CONSIST OF A 1/2" HOLD-DOWN PLATE AND 3 - 3/4" Ø BOLTS WITH NUTS AND WASHERS, RIBBAIL, AND ADHESIVELY ANCHORED SEE 'E'.

THE HOLD-DOWN PLATE SHALL CONFORM TO AASHTO MTD GRADE 36. AFTER FABRICATION, THE HOLD-DOWN PLATE SHALL BE HOT-DIP GALVANIZED IN ACCORDANCE WITH AASHTO M11.

BOLTS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A307 AND NUTS SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M270. BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED. AT THE CONTRACTOR'S OPTION, STAINLESS STEEL BOLTS, NUTS AND WASHERS MAY BE USED AS AN ALTERNATE FOR THE HOT-DIP GALVANIZED BOLTS, NUTS AND WASHERS. THIS SHALL CONFORM TO OR EXCEED THE MECHANICAL REQUIREMENTS OF ASTM A307. THE USE OF THIS ALTERNATE SHALL BE APPROVED BY THE ENGINEER.

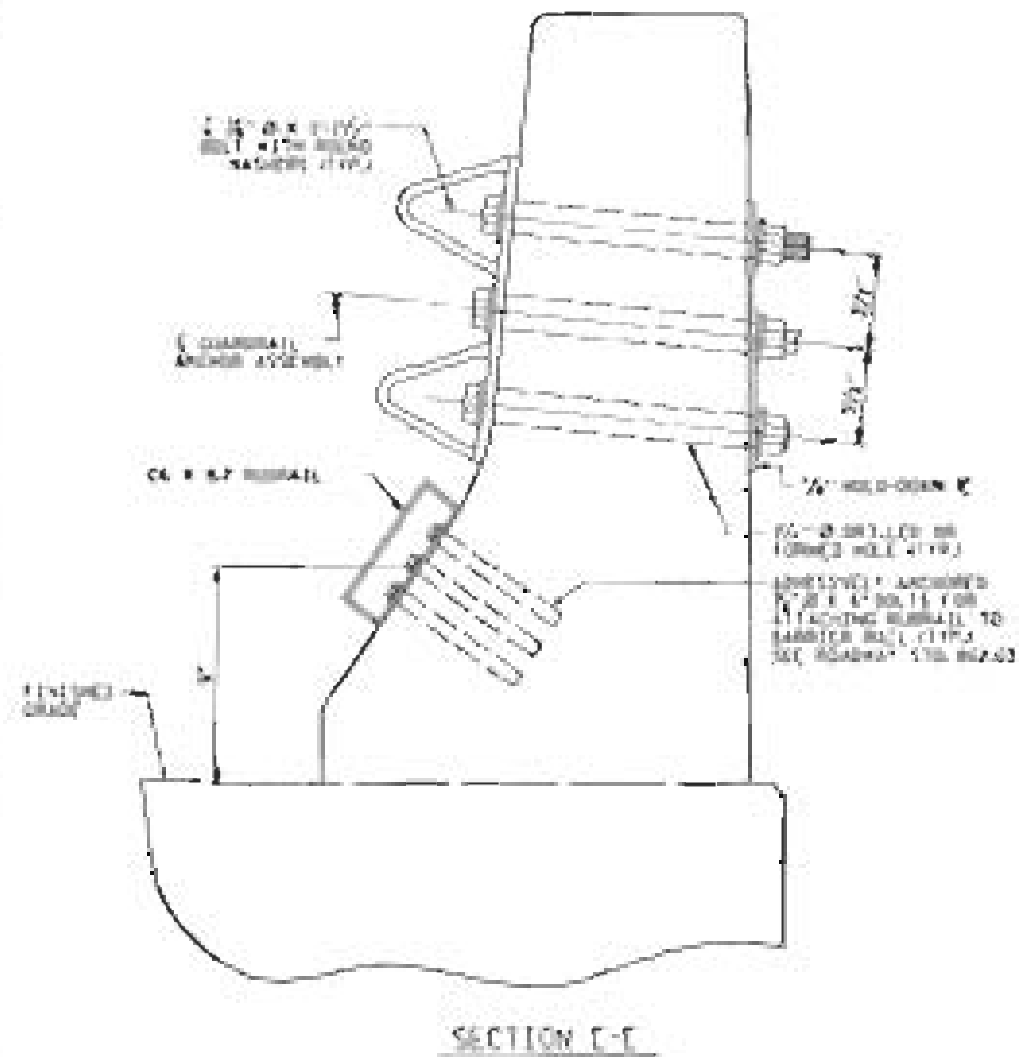
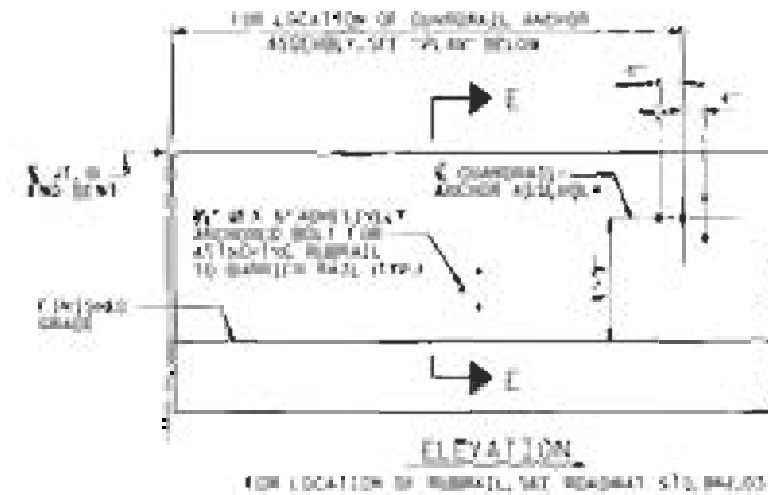
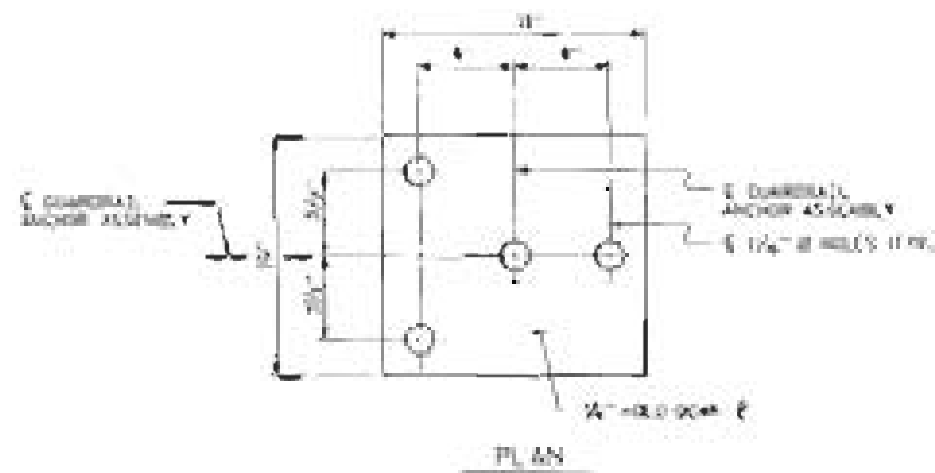
THE GUARDRAIL ANCHOR ASSEMBLY IS REQUIRED AT ALL POINTS WHERE APPROACH GUARDRAIL IS TO BE ATTACHED TO THE END OF BARRIER RAIL FOR POINTS OF ATTACHMENT, SEE SECTION.

AFTER INSTALLATION, THE EXPOSED THREAD OF THE BOLT SHALL BE BURIED WITH A SHARP POINTED TOOL.

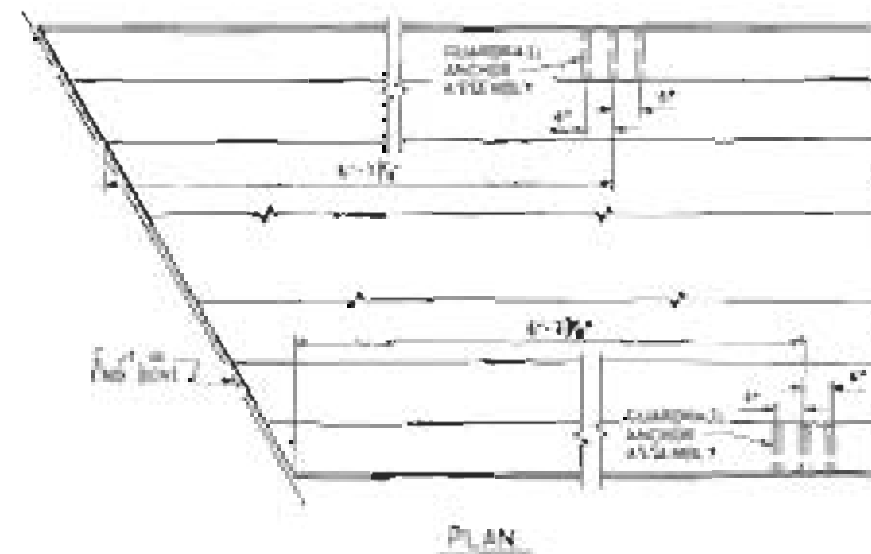
THE COST OF THE GUARDRAIL ANCHOR ASSEMBLY SHALL BE INCLUDED IN THE LUMP SUM BID PRICE FOR STEEL ON GUARDRAIL.

THE 1/2" Ø HOLDS SHALL BE FORMED OR DRILLED WITH A CORN-BILL IMPACT TOOL. WILL NOT BE PLANNED, AND CONCRETE DAMAGED BY THIS WORK SHALL BE REPAIRED TO THE SATISFACTION OF THE ENGINEER.

IN CASE OF RIBBAIL IS TO BE ADHESIVELY ANCHORED TO THE RAIL, ALONG THREE (3) 3/4" Ø BOLTS WITH WASHERS. LEVEL AND FINE STRIP IS REQUIRED, AND THE TENSILE LOAD OF THE 3/4" Ø BOLT IS 25 KIPS. FOR ADHESIVELY ANCHORED ANCHOR BOLTS OR CASES, SEE SPECIAL PROVISIONS, SEE ROADWAY STANDARD SPEC. FOR DETAIL AND LOCATION OF THE RIBBAIL.

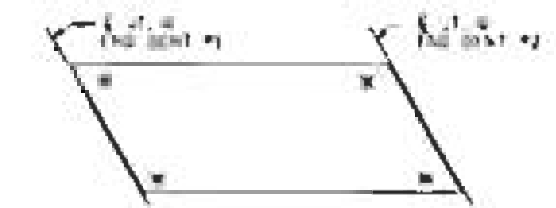


GUARDRAIL ANCHOR ASSEMBLY DETAILS



LOCATION OF ANCHORS FOR GUARDRAIL

END VIEW TO BE SHOWN AS SHOWN BY EXAMPLE.



SKETCH SHOWING POINTS OF ATTACHMENT

■ DENOTES GUARDRAIL ANCHOR ASSEMBLY

PROJECT NO. 33053  
 CHEROKEE COUNTY  
 STATION 12+60.23 -L-

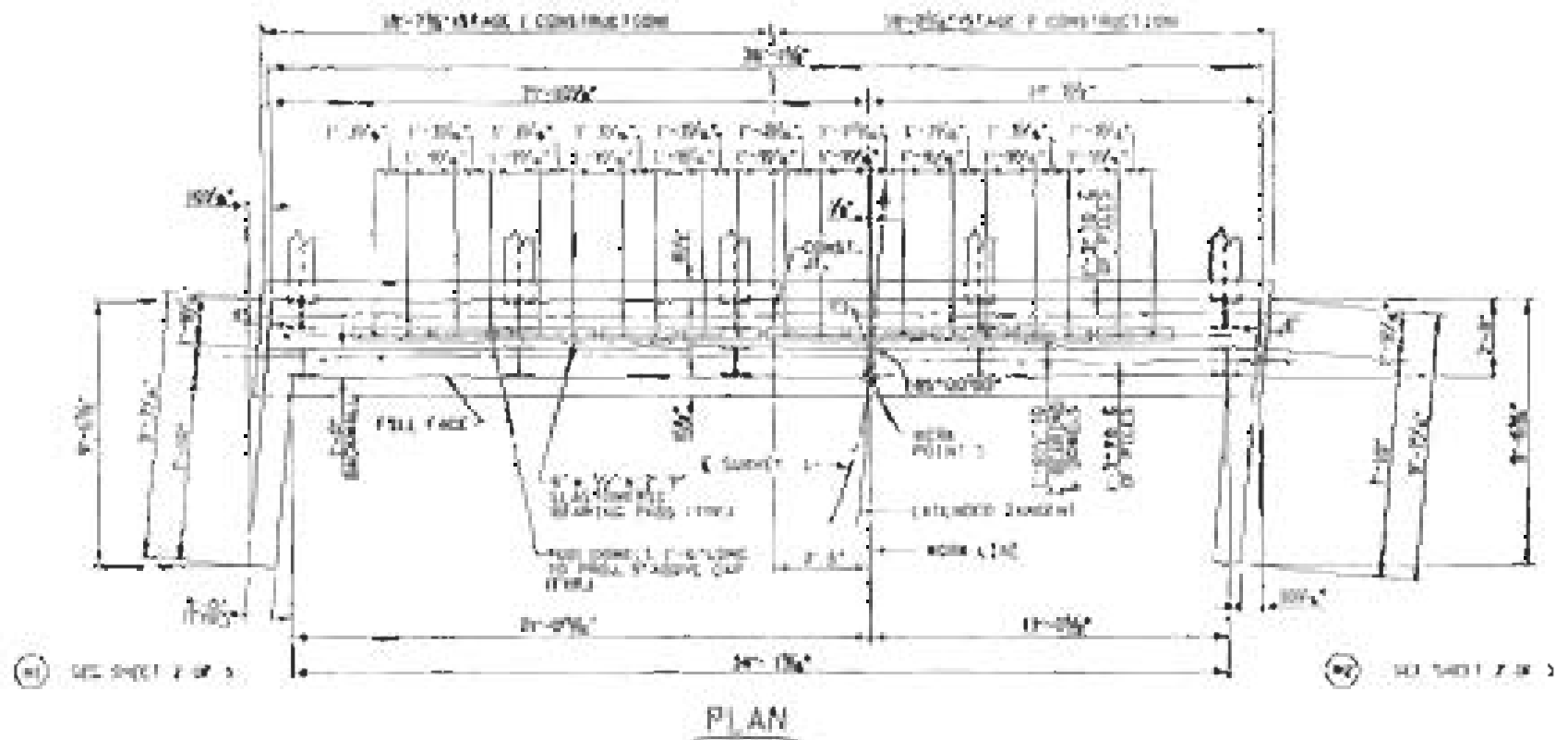
DEPARTMENT OF TRANSPORTATION  
 STANDARD

GUARDRAIL ANCHORAGE  
 FOR BARRIER RAIL

DESIGNED BY: P. R. MOSE	DATE: 1/18
CHECKED BY: J. A. BROWN	DATE: 1/18
APPROVED BY: [Signature]	DATE: 1/18



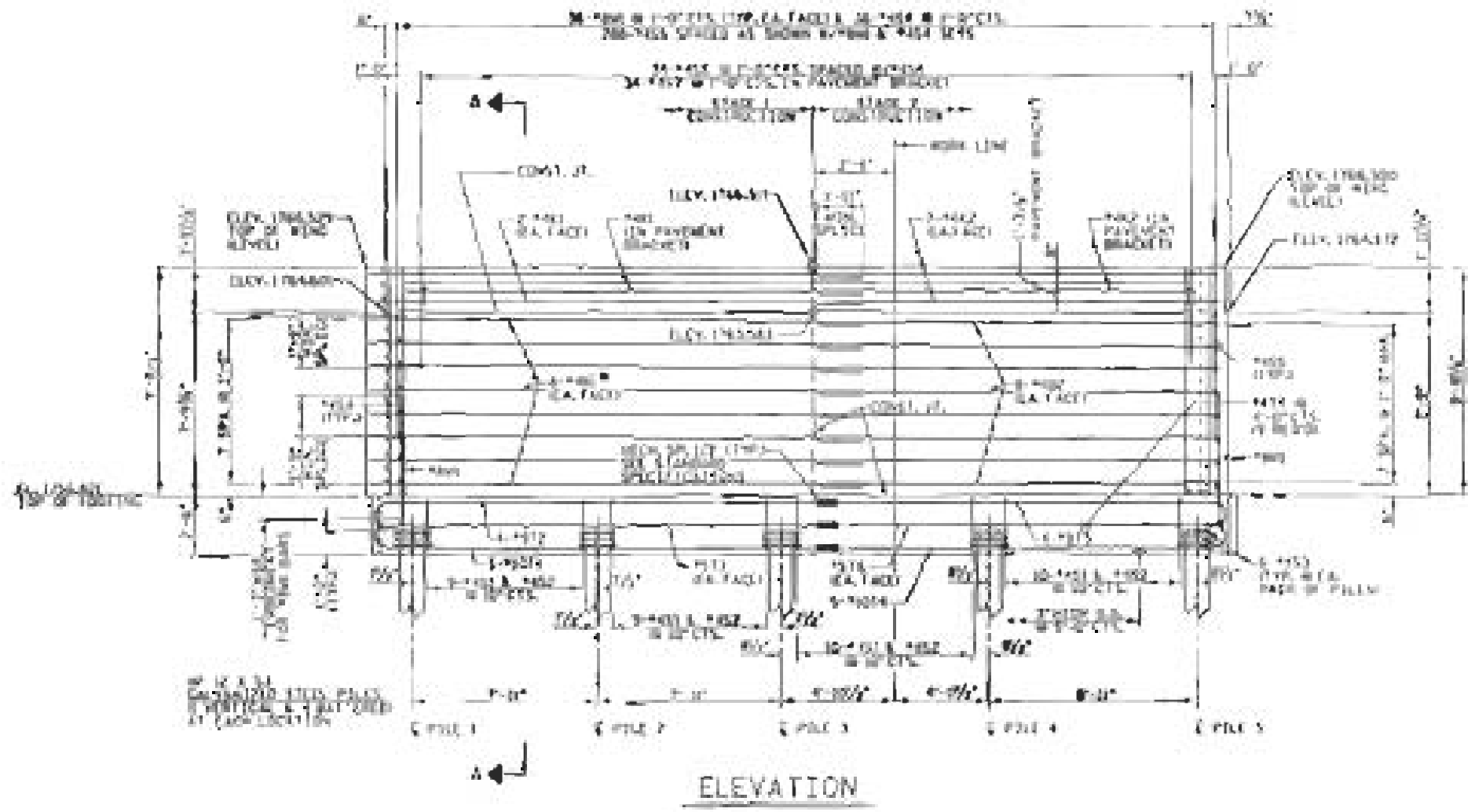
REVISIONS					DATE
					18
					30



**NOTES**

STRUTS IN CAP MAY BE OMITTED AS NECESSARY TO CLEAR PILE CAPS.

THE CONTRACTOR SHALL PROVIDE FOR INSTALLATION OF THE 4" DIAMETER PERFORATED DRAIN PIPE THROUGH THE PILE CAPS. REINFORCING IN THE PILE WALL MAY BE OMITTED AS NECESSARY TO CLEAR THE DRAIN PIPE.



NO. 10 BARS MAY BE USED INSTEAD OF NO. 8 BARS FOR TEMPORARY BRACING OF THE PILES DURING STAGE 2 CONSTRUCTION.

PROJECT NO. 33053  
 CHEROKEE COUNTY  
 STATION: 12+60.23 -L-  
 REPLACES BRIDGE NO. 43 SHEET 1 OF 3

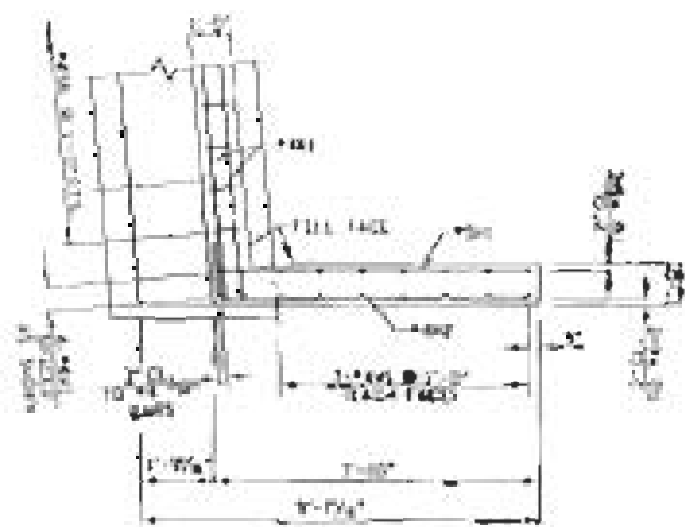
DEPARTMENT OF TRANSPORTATION

**SUBSTRUCTURE  
END BENT 1**

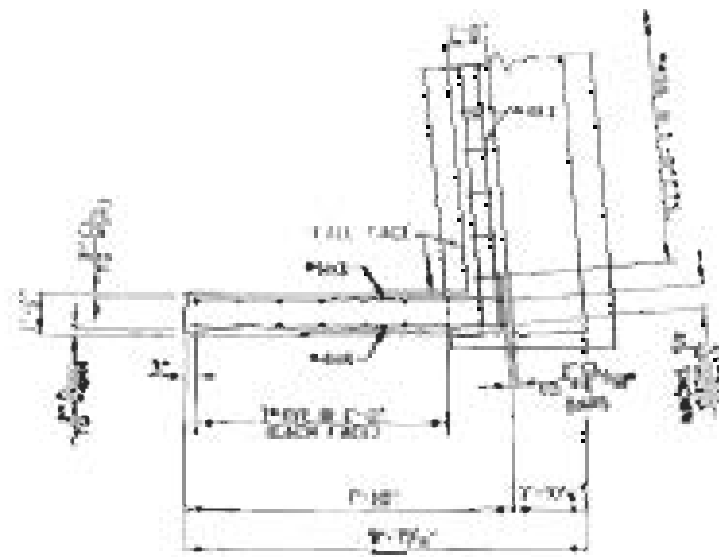
21' CLEAR ROADWAY - 85° SKEW

REVISIONS				DATE
NO.	DESCRIPTION	BY	CHKD.	

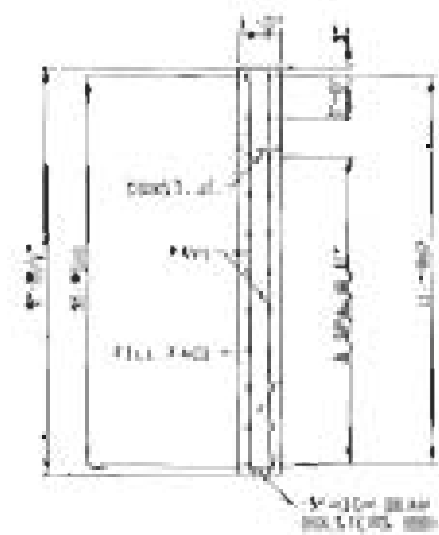




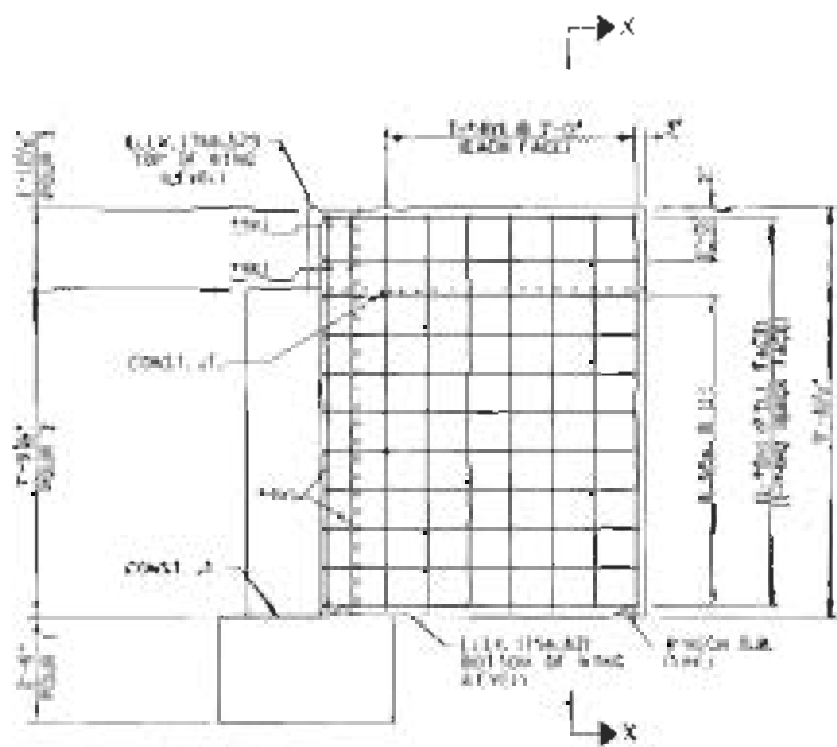
(W1) PLAN OF LEFT WING



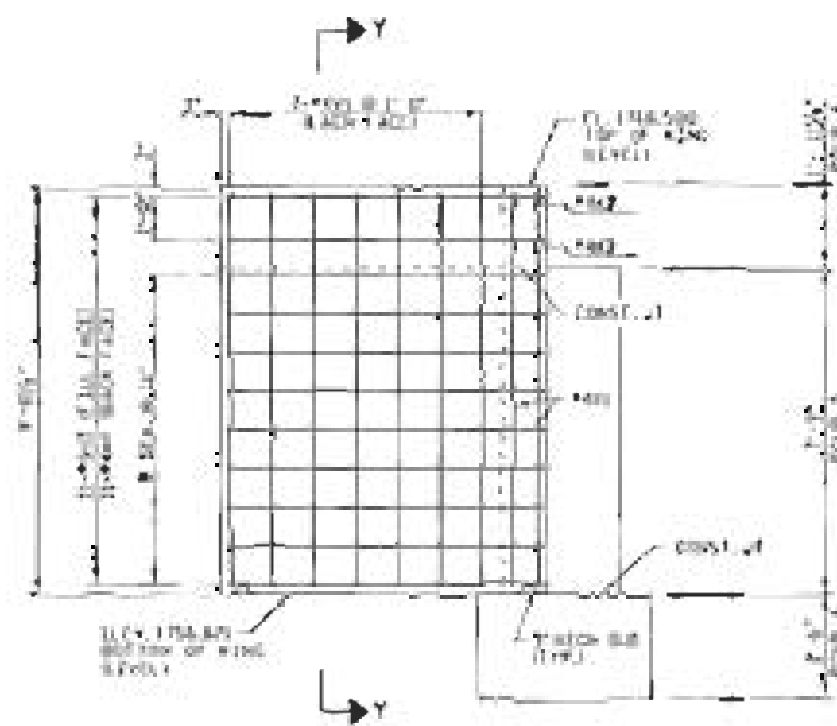
(W2) PLAN OF RIGHT WING



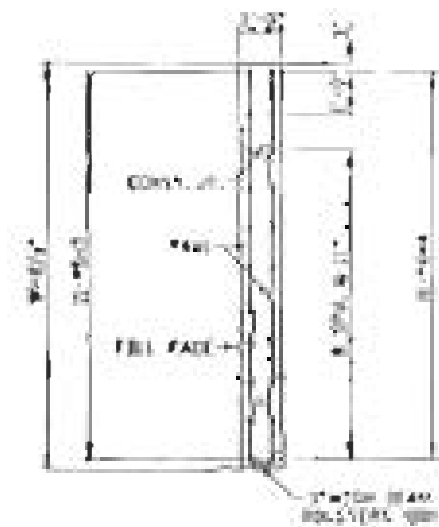
SECTION X-X



(W1) ELEVATION OF LEFT WING



(W2) ELEVATION OF RIGHT WING



SECTION Y-Y

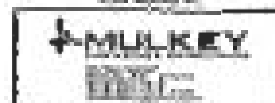
PROJECT NO. 33053  
 CHEROKEE COUNTY  
 STATION: 12+60.23 -L-

REPLACES BRIDGE NO. 12 SHEET 1 OF 1

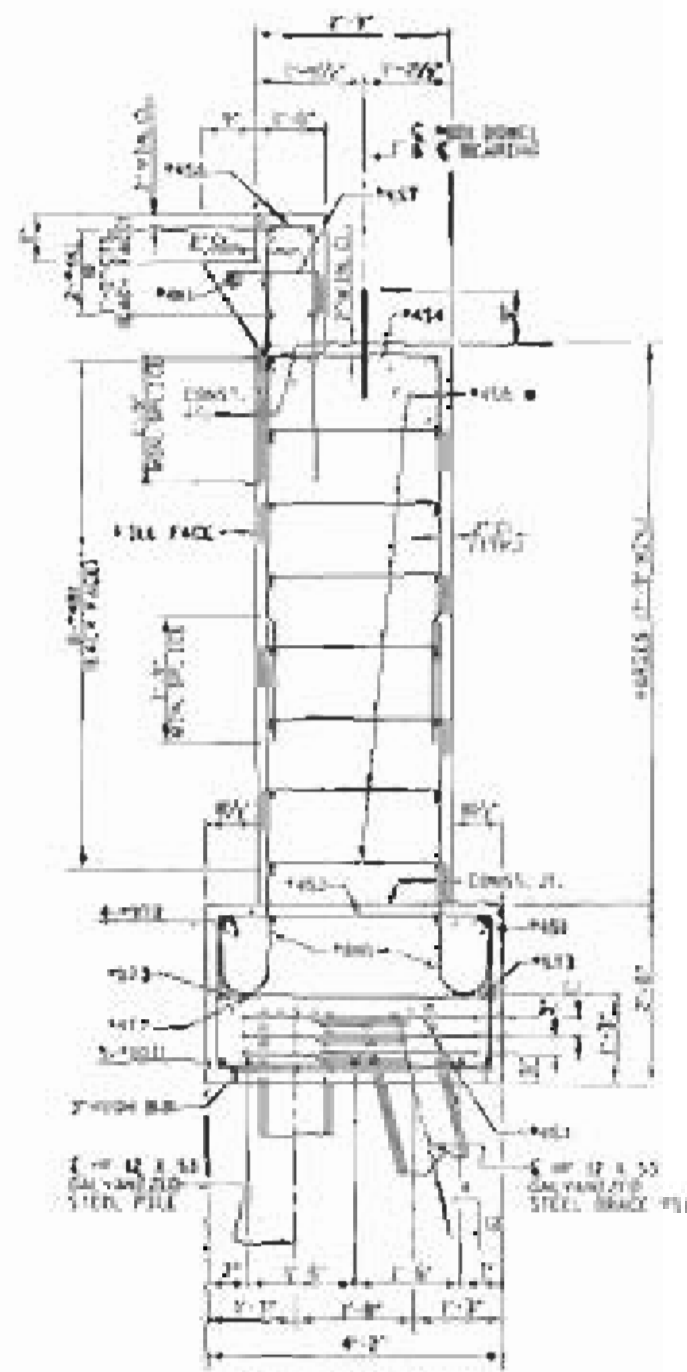
DEPARTMENT OF TRANSPORTATION

SUBSTRUCTURE  
 END BENT 1

27' CLEAR ROADWAY - 85° SKEW

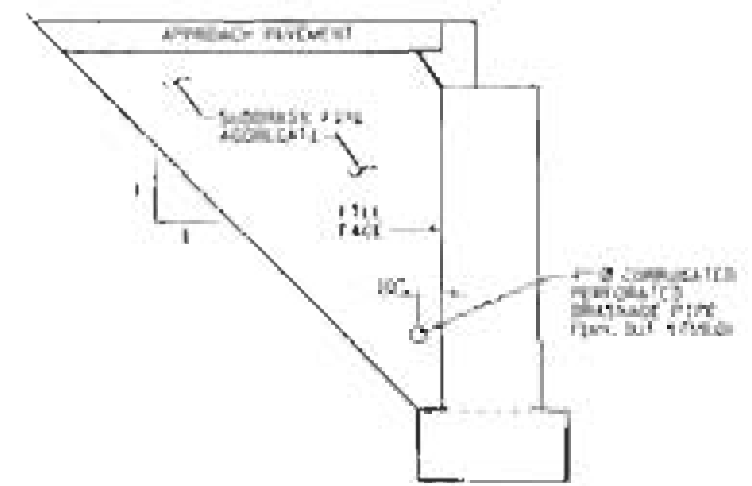


NO.	DATE	BY	REVISION
1			
2			
3			

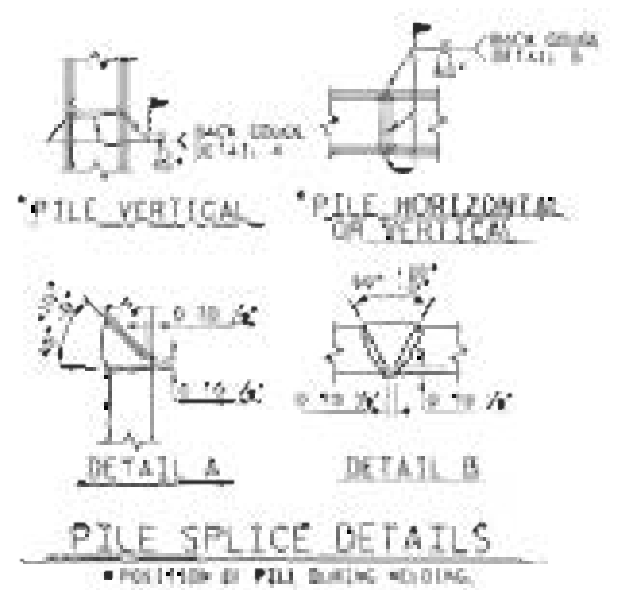


SECTION A-A

\* ALL REINFORCING BARS ON ADJACENT PILES AS SHOWN ON BOTH HORIZONTAL & VERTICAL DIRECTIONS.

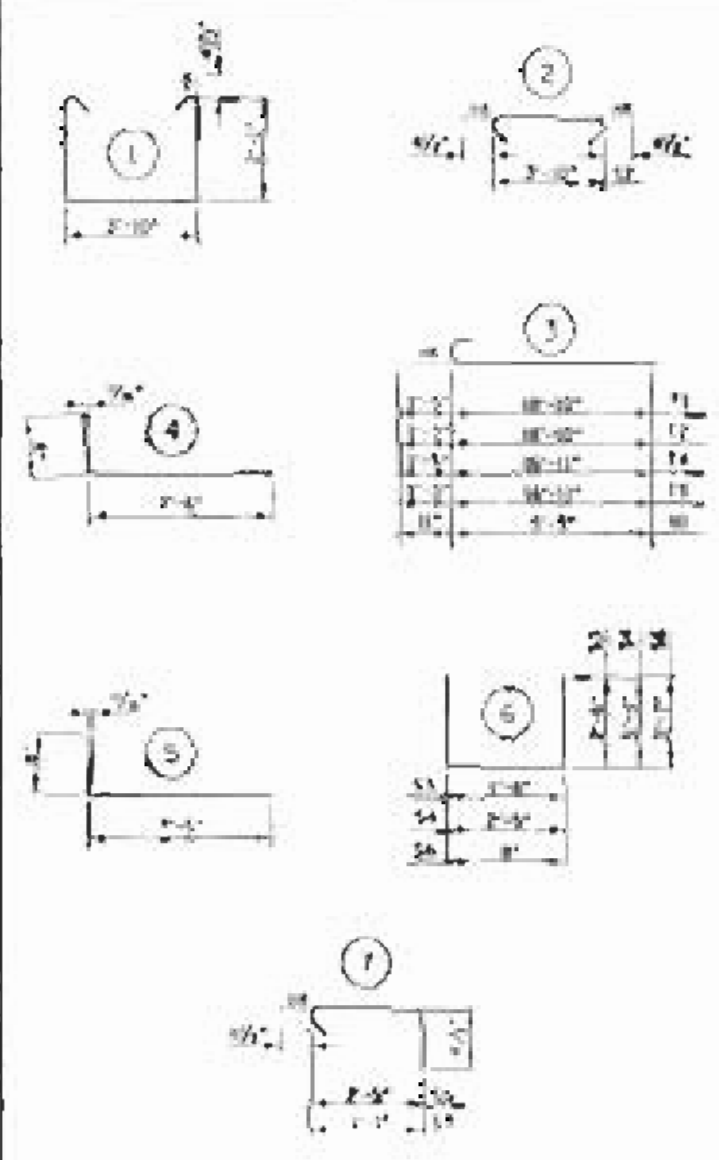


SUBDRAIN DETAIL AT END BENT 1



PILE SPLICE DETAILS

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT

BILL OF MATERIAL

FOR END BENT 1					
BAR NO.	NO.	SIZE	TYPE	LENGTH	WEIGHT
1	16	#4	STR	10'-0"	118
2	16	#4	STR	10'-0"	118
3	20	#4	STR	7'-0"	49
4	11	#4	4	8'-0"	34
5	11	#4	4	8'-0"	34
6	11	#4	5	8'-0"	35
7	11	#4	5	8'-0"	35
8	1	#4	STR	10'-0"	49
9	1	#4	STR	10'-0"	49
10	12	#4	7	8'-0"	105
11	20	#4	1	8'-0"	202
12	20	#4	2	8'-0"	118
13	20	#4	6	8'-0"	114
14	20	#4	6	8'-0"	114
15	20	#4	7	8'-0"	118
16	20	#4	7	8'-0"	118
17	20	#4	7	8'-0"	118
18	1	#4	7	8'-0"	49
19	4	#4	1	8'-0"	118
20	2	#4	STR	10'-0"	49
21	5	#4	3	8'-0"	114
22	4	#4	3	8'-0"	114
23	2	#4	STR	10'-0"	49
24	2	#4	STR	10'-0"	49
25	2	#4	STR	10'-0"	49
26	2	#4	STR	10'-0"	49
27	2	#4	STR	10'-0"	49
28	20	#4	STR	8'-0"	202
TOTAL REINFORCING STEEL -					3180 lbs
CLASS "A" CONCRETE -					100 YARDS
PILE 1 -					1.3 cu. yds.
PILE 2 -					1.6 cu. yds.
PILE 3 -					1.1 cu. yds.
PILE 4 -					1.1 cu. yds.
PILE 5 -					1.1 cu. yds.
PILE 6 -					1.1 cu. yds.
PILE 7 -					1.1 cu. yds.
PILE 8 -					1.1 cu. yds.
PILE 9 -					1.1 cu. yds.
PILE 10 -					1.1 cu. yds.
PILE 11 -					1.1 cu. yds.
PILE 12 -					1.1 cu. yds.
PILE 13 -					1.1 cu. yds.
PILE 14 -					1.1 cu. yds.
PILE 15 -					1.1 cu. yds.
PILE 16 -					1.1 cu. yds.
PILE 17 -					1.1 cu. yds.
PILE 18 -					1.1 cu. yds.
PILE 19 -					1.1 cu. yds.
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PILE 90 -					1.1 cu. yds.
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PILE 92 -					1.1 cu. yds.
PILE 93 -					1.1 cu. yds.
PILE 94 -					1.1 cu. yds.
PILE 95 -					1.1 cu. yds.
PILE 96 -					1.1 cu. yds.
PILE 97 -					1.1 cu. yds.
PILE 98 -					1.1 cu. yds.
PILE 99 -					1.1 cu. yds.
PILE 100 -					1.1 cu. yds.

PROJECT NO. 33053  
 CHEROKEE COUNTY  
 STATION 12+60.23 -L-

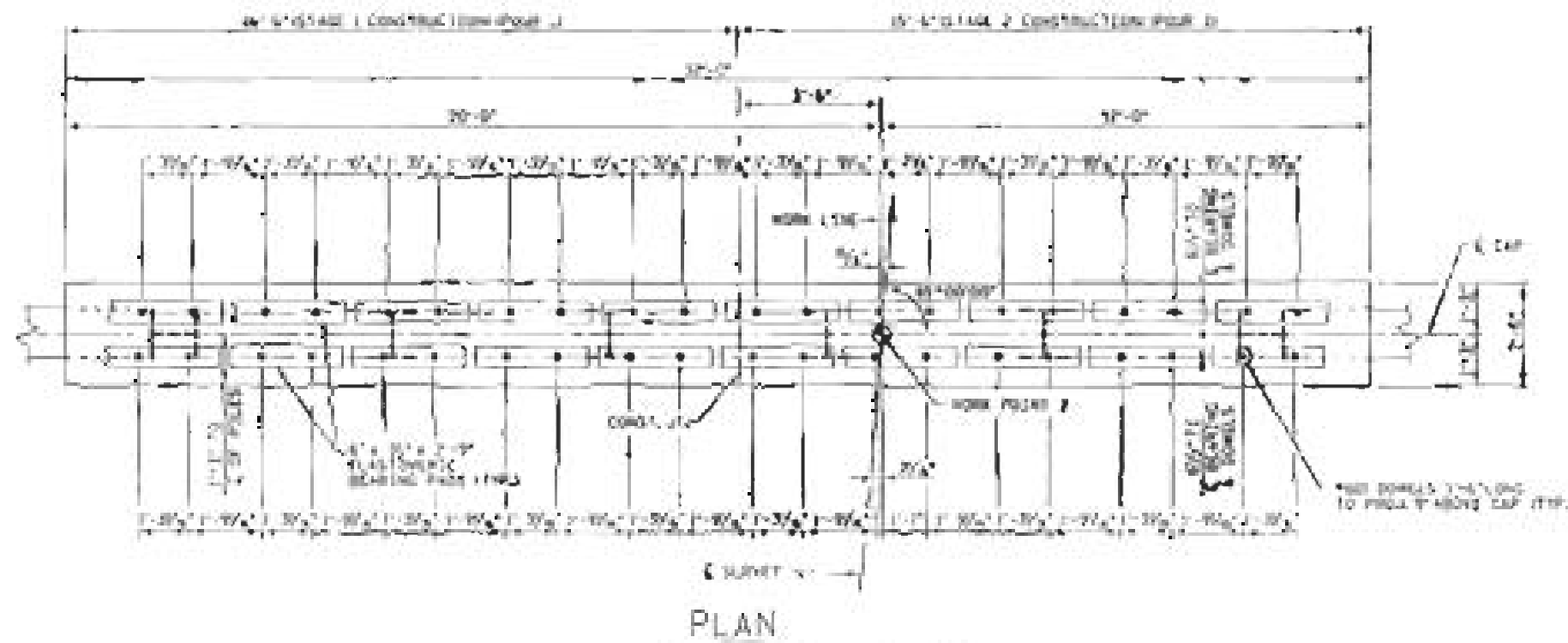
REVISION NUMBER NO. 1 SHEET 1 OF 2

DEPARTMENT OF TRANSPORTATION

SUBSTRUCTURE  
 END BENT 1

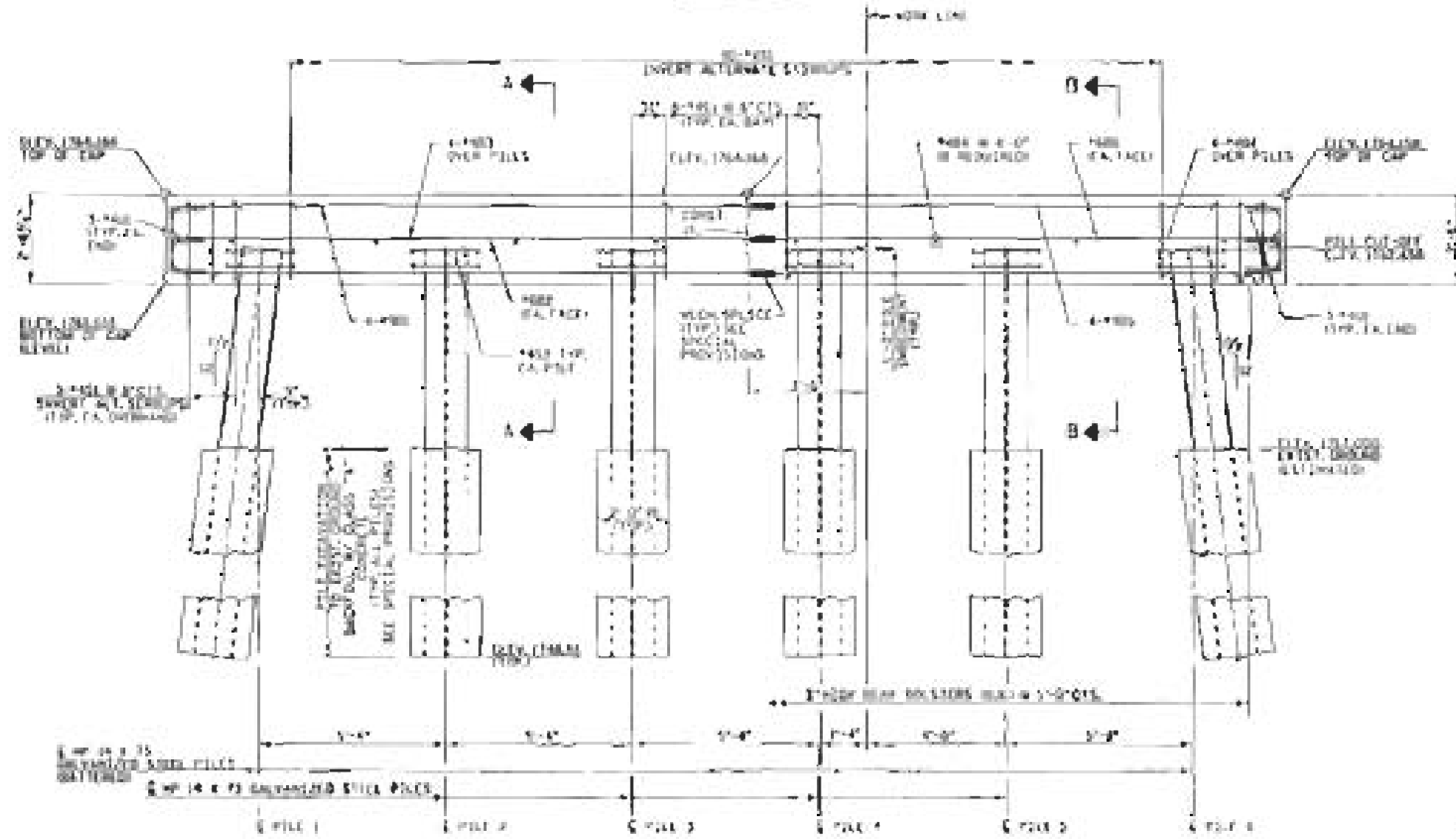
27' CLEAR ROADWAY - 45° SKEW

MILKEY



NOTES  
 COLUMNS ON CAP MAY BE SHIFTED AS NECESSARY TO CLEAR PILE BEAMS.

PLAN



ELEVATION

PROJECT NO. 33053  
 CHEROKEE COUNTY  
 STATION: 12+60.23 -L-

REPLACES BRIDGE NO. 85 SHEET 1 OF 2

DEPARTMENT OF TRANSPORTATION

SUBSTRUCTURE BENT 1

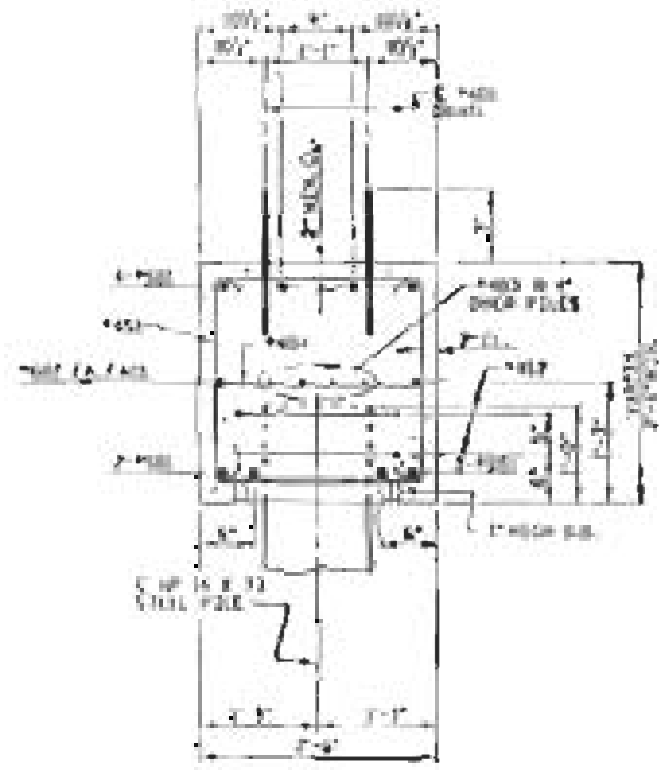
27' CLEAR ROADWAY - 85° SKEW



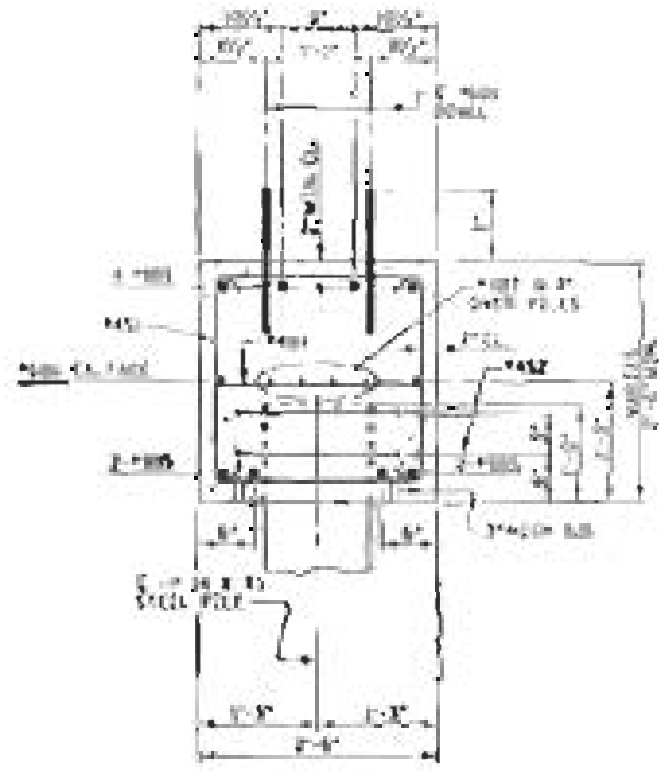
MULKEY ENGINEERING, INC.

REVISIONS					SHEET NO. 17
NO.	DATE	BY	CHKD.	APP'D.	

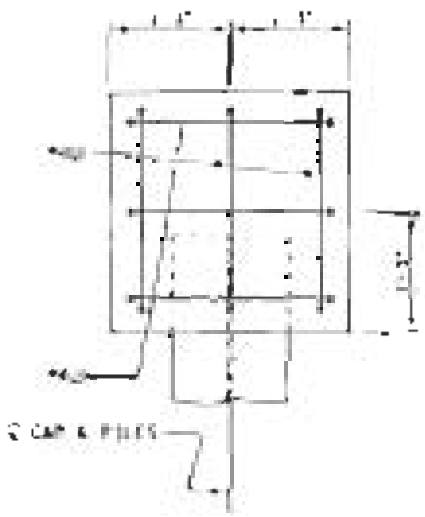
DESIGNED BY: J. A. BULLOCK DATE: 05/11/09  
 CHECKED BY: J. A. BULLOCK DATE: 05/11/09



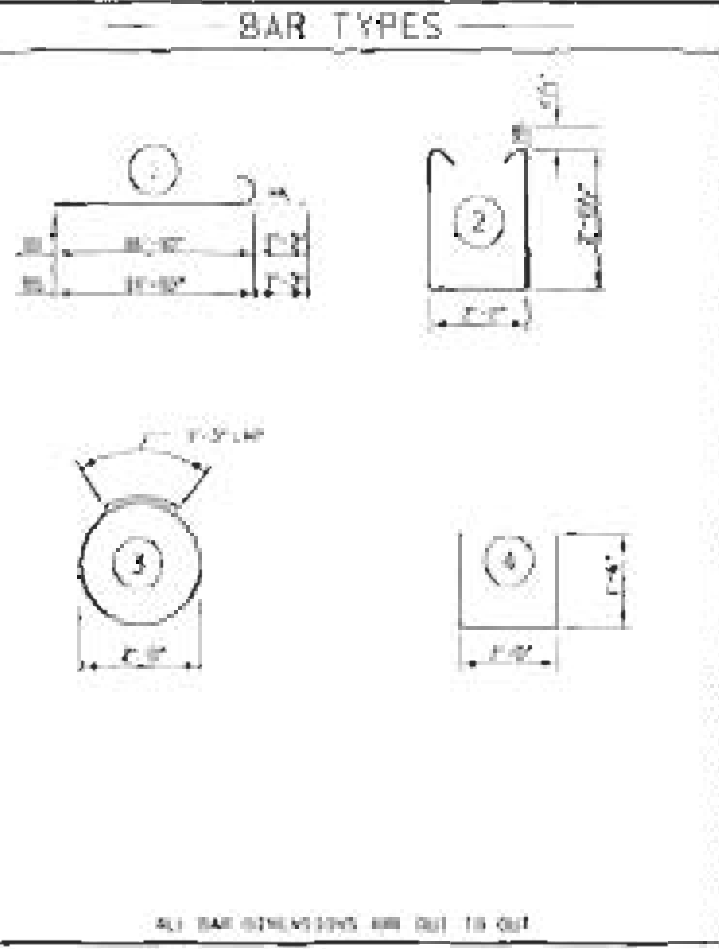
SECTION A-A



SECTION B-B



END VIEW  
(TYPICAL BOTH ENDS)



BILL OF MATERIAL

NO.	QTY	SIZE	TYPE	LENGTH	WT (LBS)
1	1	10	1	10'-0"	100
2	4	10	2	10'-0"	400
3	1	10	3	10'-0"	100
4	4	10	4	10'-0"	400
5	1	10	1	10'-0"	100
6	4	10	2	10'-0"	400
7	1	10	3	10'-0"	100
8	4	10	4	10'-0"	400
9	1	10	1	10'-0"	100
10	4	10	2	10'-0"	400
11	1	10	3	10'-0"	100
12	4	10	4	10'-0"	400
13	1	10	1	10'-0"	100
14	4	10	2	10'-0"	400
15	1	10	3	10'-0"	100
16	4	10	4	10'-0"	400
17	1	10	1	10'-0"	100
18	4	10	2	10'-0"	400
19	1	10	3	10'-0"	100
20	4	10	4	10'-0"	400
21	1	10	1	10'-0"	100
22	4	10	2	10'-0"	400
23	1	10	3	10'-0"	100
24	4	10	4	10'-0"	400
25	1	10	1	10'-0"	100
26	4	10	2	10'-0"	400
27	1	10	3	10'-0"	100
28	4	10	4	10'-0"	400
29	1	10	1	10'-0"	100
30	4	10	2	10'-0"	400
31	1	10	3	10'-0"	100
32	4	10	4	10'-0"	400
33	1	10	1	10'-0"	100
34	4	10	2	10'-0"	400
35	1	10	3	10'-0"	100
36	4	10	4	10'-0"	400
37	1	10	1	10'-0"	100
38	4	10	2	10'-0"	400
39	1	10	3	10'-0"	100
40	4	10	4	10'-0"	400
41	1	10	1	10'-0"	100
42	4	10	2	10'-0"	400
43	1	10	3	10'-0"	100
44	4	10	4	10'-0"	400
45	1	10	1	10'-0"	100
46	4	10	2	10'-0"	400
47	1	10	3	10'-0"	100
48	4	10	4	10'-0"	400
49	1	10	1	10'-0"	100
50	4	10	2	10'-0"	400
51	1	10	3	10'-0"	100
52	4	10	4	10'-0"	400
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54	4	10	2	10'-0"	400
55	1	10	3	10'-0"	100
56	4	10	4	10'-0"	400
57	1	10	1	10'-0"	100
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62	4	10	2	10'-0"	400
63	1	10	3	10'-0"	100
64	4	10	4	10'-0"	400
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66	4	10	2	10'-0"	400
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68	4	10	4	10'-0"	400
69	1	10	1	10'-0"	100
70	4	10	2	10'-0"	400
71	1	10	3	10'-0"	100
72	4	10	4	10'-0"	400
73	1	10	1	10'-0"	100
74	4	10	2	10'-0"	400
75	1	10	3	10'-0"	100
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86	4	10	2	10'-0"	400
87	1	10	3	10'-0"	100
88	4	10	4	10'-0"	400
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90	4	10	2	10'-0"	400
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92	4	10	4	10'-0"	400
93	1	10	1	10'-0"	100
94	4	10	2	10'-0"	400
95	1	10	3	10'-0"	100
96	4	10	4	10'-0"	400
97	1	10	1	10'-0"	100
98	4	10	2	10'-0"	400
99	1	10	3	10'-0"	100
100	4	10	4	10'-0"	400

CONCRETE QUANTITIES

ITEM	QUANTITY	UNIT
TOTAL REINFORCING STEEL	1000	LBS
CLASS 40 CONCRETE	100	CU YARDS
FOOT 1	50	CU YARDS
FOOT 2	50	CU YARDS
TOTAL	100	CU YARDS
FILL EXCAVATION IN SOIL - (CU YD)	25	
FILL EXCAVATION NOT IN SOIL - (CU YD)	10	
FILL EXCAVATION BACKFILL		
CLASS 40 CONCRETE - (CU YARDS)	100	
UP TO 4" CALKING STEEL PILES		
PILE NUMBER - (LISTED)	10	

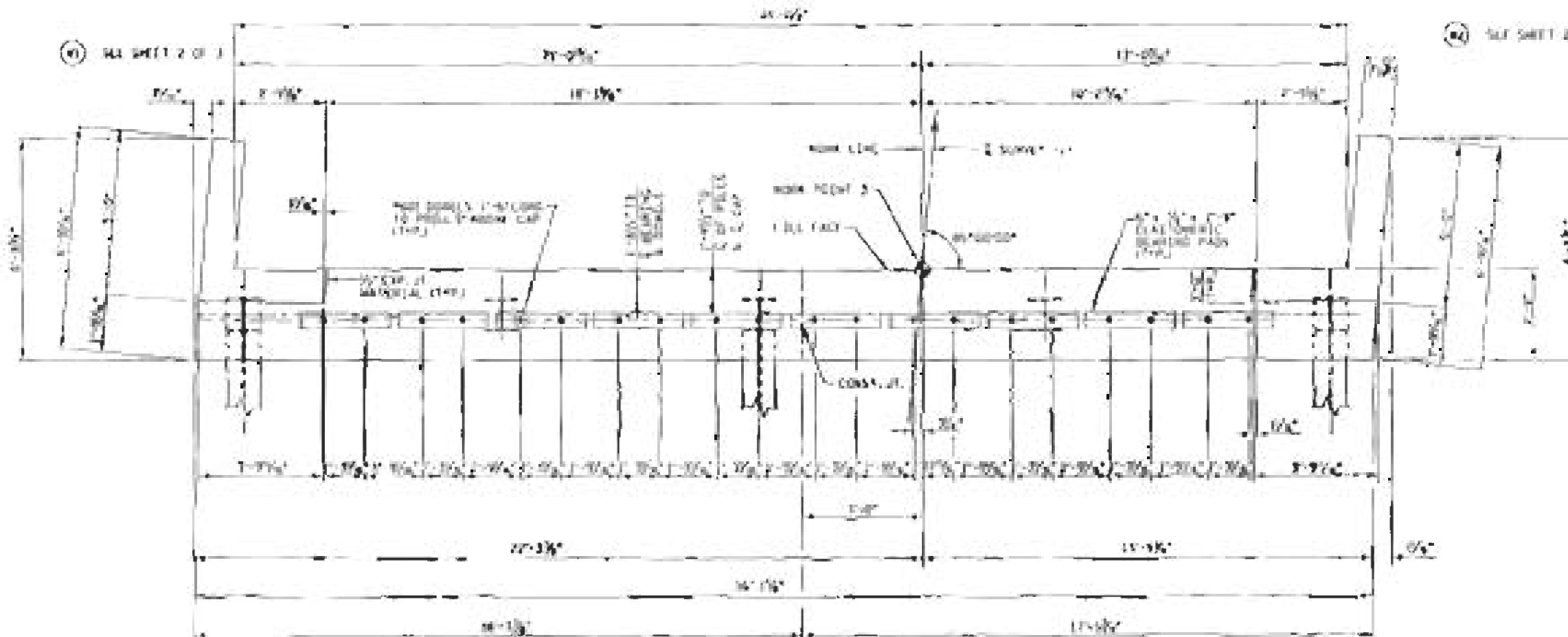
PROJECT NO. 13053  
 CHEROKEE COUNTY  
 STATION 12+60.23 -L-

REPLACE BRIDGE NO. 41 SHEET 2 OF 2  
 DEPARTMENT OF TRANSPORTATION  
 SUBSTRUCTURE BENT 1  
 27' CLEAR ROADWAY - 85° SKEW



(V) SEE SHEET 2 OF 3

(W) SEE SHEET 2 OF 3

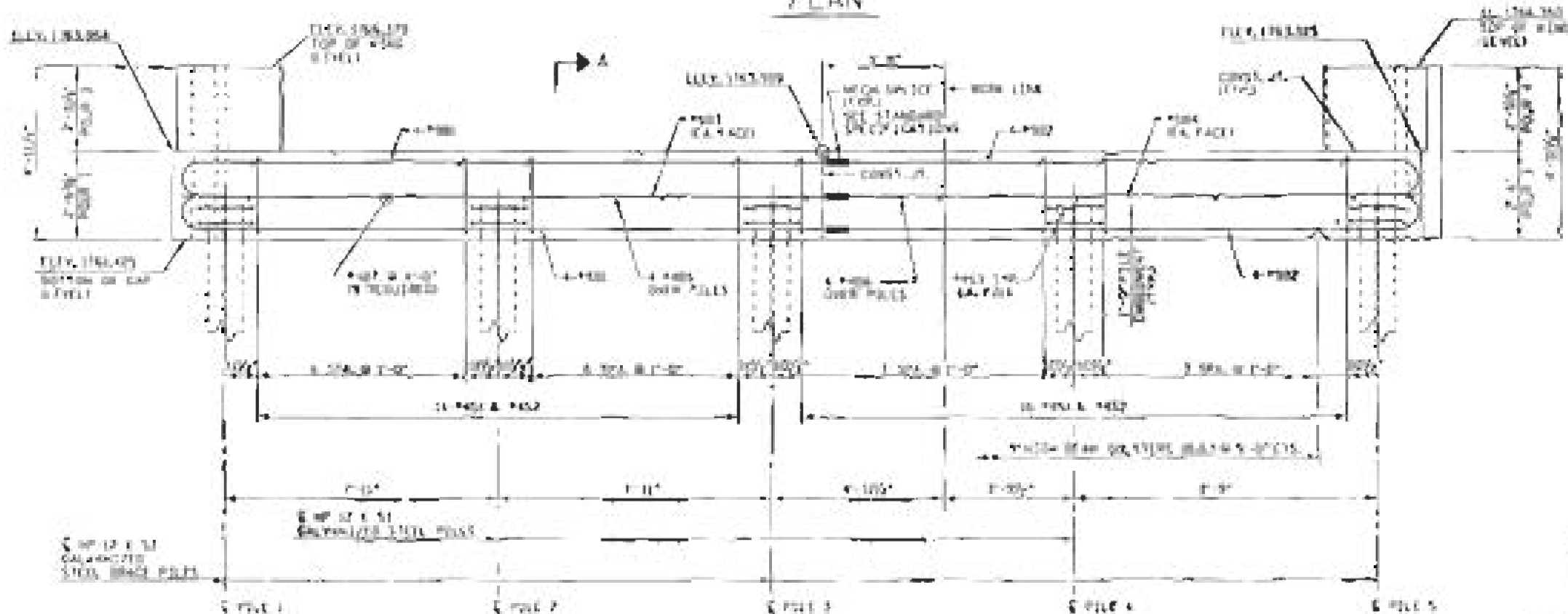


NOTES

1. CHECKS TO CAP MAY BE REQUIRED AS NECESSARY TO CLEAR PILE POINT.

2. THE CONTRACTOR SHALL PROVIDE FOR PROTECTION OF ALL EXISTING UTILITIES UNDER THE WORK AREA AS REQUIRED FOR THE PROJECT. APPROACH 1111 TO THE PROPOSED BRIDGE APPROACH 1111 TO BE RETAINED. ALL UTILITIES SHALL BE DELETED AS NECESSARY TO CLEAR THE BRIDGE PILE.

PLAN



ELEVATION

PROJECT NO. 33953  
 CHEROKEE COUNTY  
 STATION: 12+60.23 -L-

REPLACE BRIDGE NO. 83 SHEET 1 OF 3

DEPARTMENT OF TRANSPORTATION

SUBSTRUCTURE  
END BENT 2

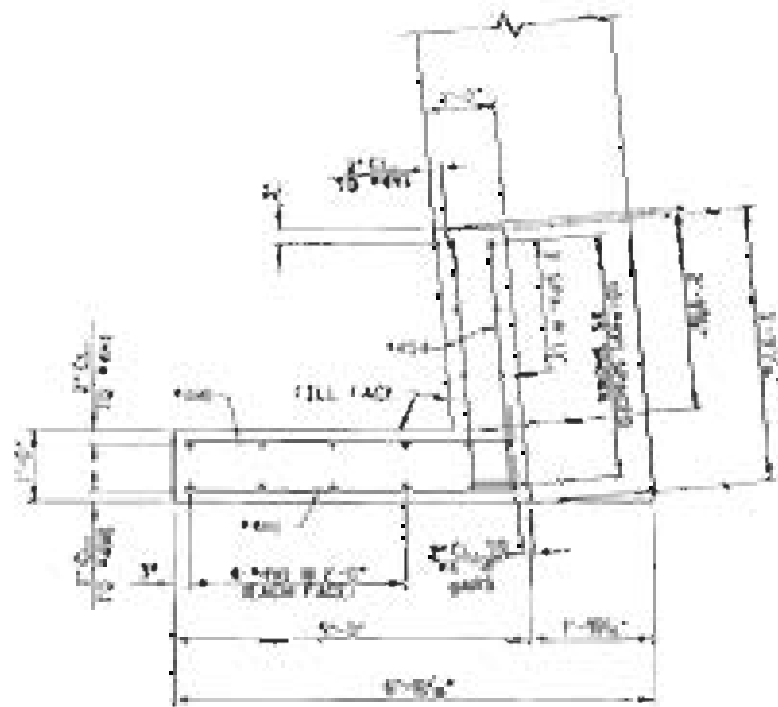
21' CLEAR ROADWAY - 85" SKED



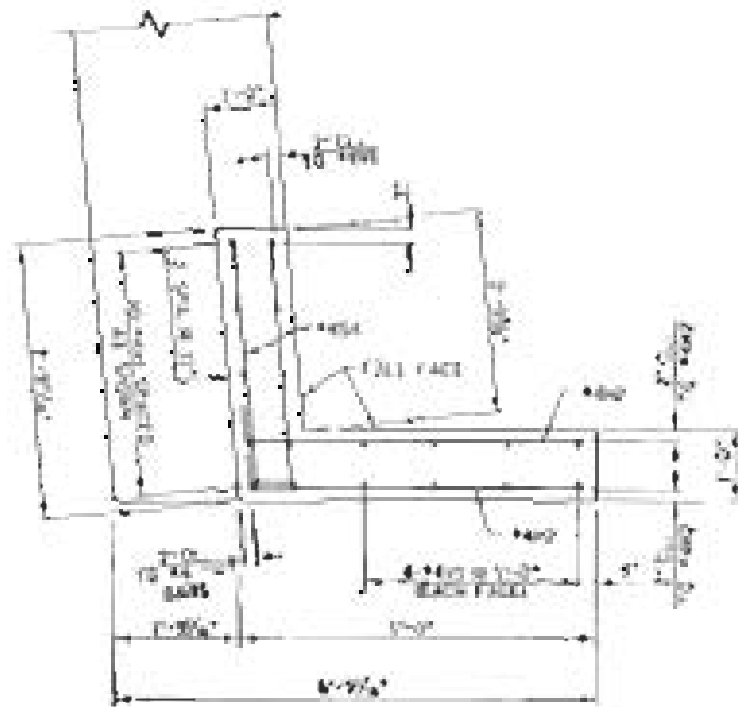
MILKEY ENGINEERING

DATE: 11/11/11  
 DRAWN BY: J. B. BISHOP  
 CHECKED BY: C. BISHOP

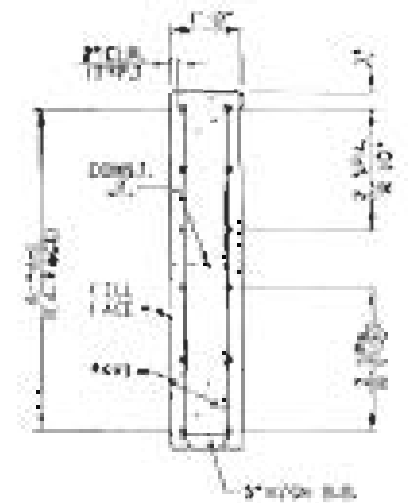




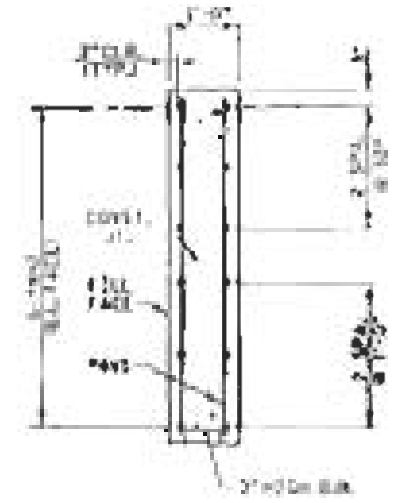
W1 PLAN OF LEFT WING



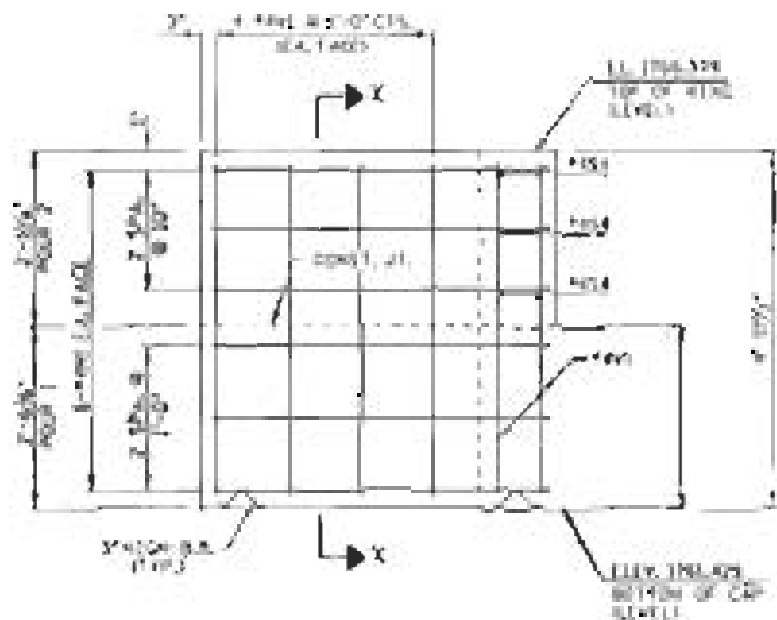
W2 PLAN OF RIGHT WING



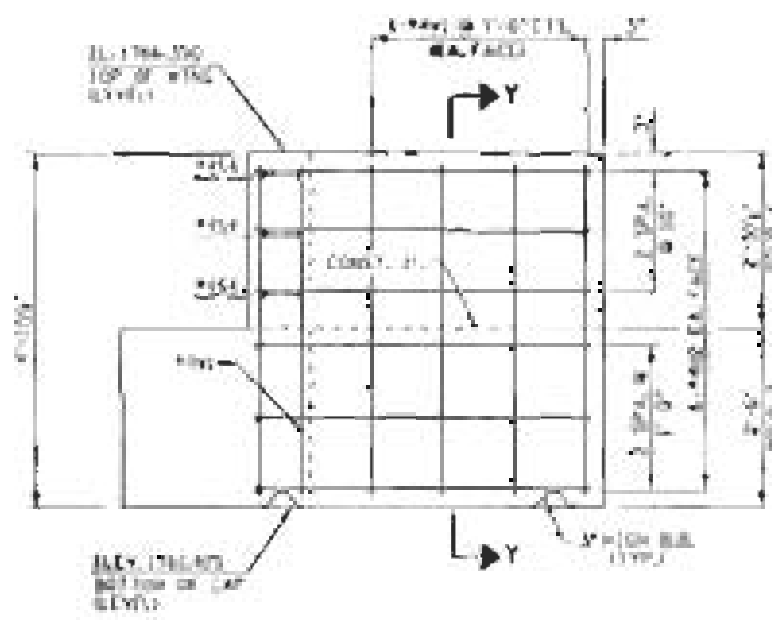
SECTION X-X



SECTION Y-Y



W1 ELEVATION OF LEFT WING



W2 ELEVATION OF RIGHT WING

PROJECT NO. 33053  
 CHEROKEE COUNTY  
 STATION: 12+60.23 -L-

REPLACES BRIDGE NO. 13 SHEET 2 OF 3

DEPARTMENT OF TRANSPORTATION

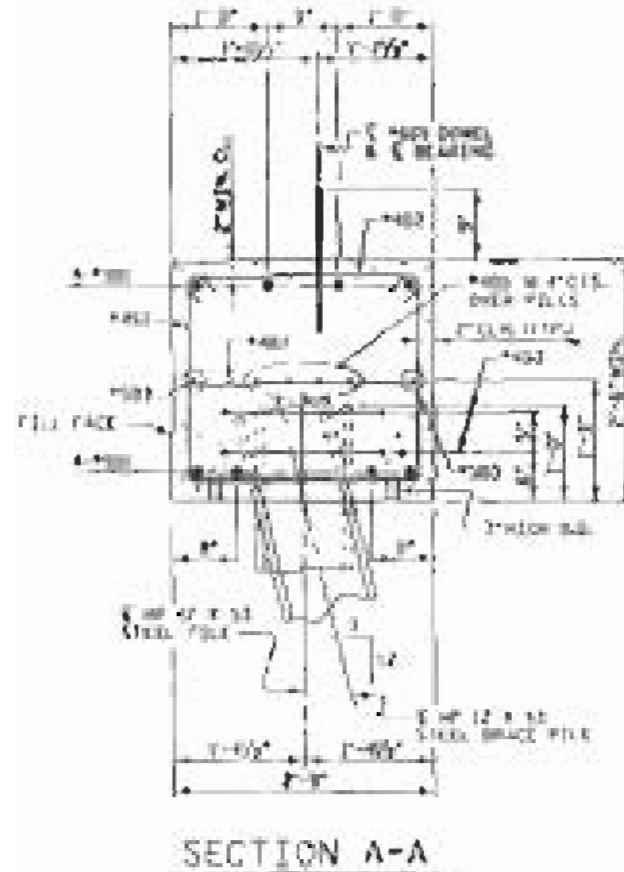
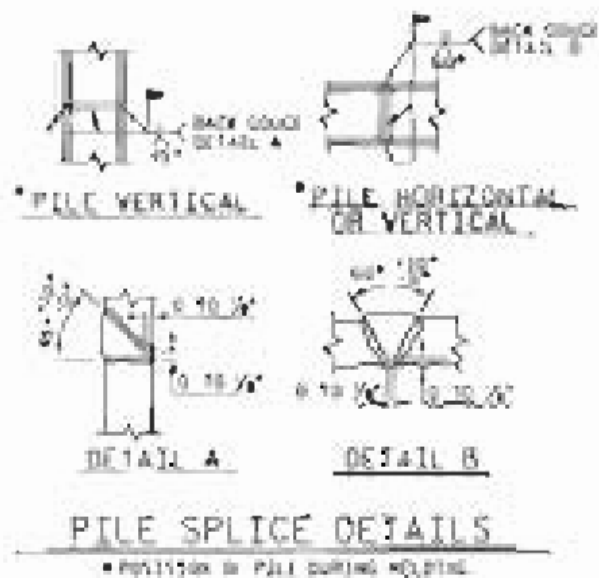
SUBSTRUCTURE  
 END BENT 2

27' CLEAR ROADWAY - 85' SKCH

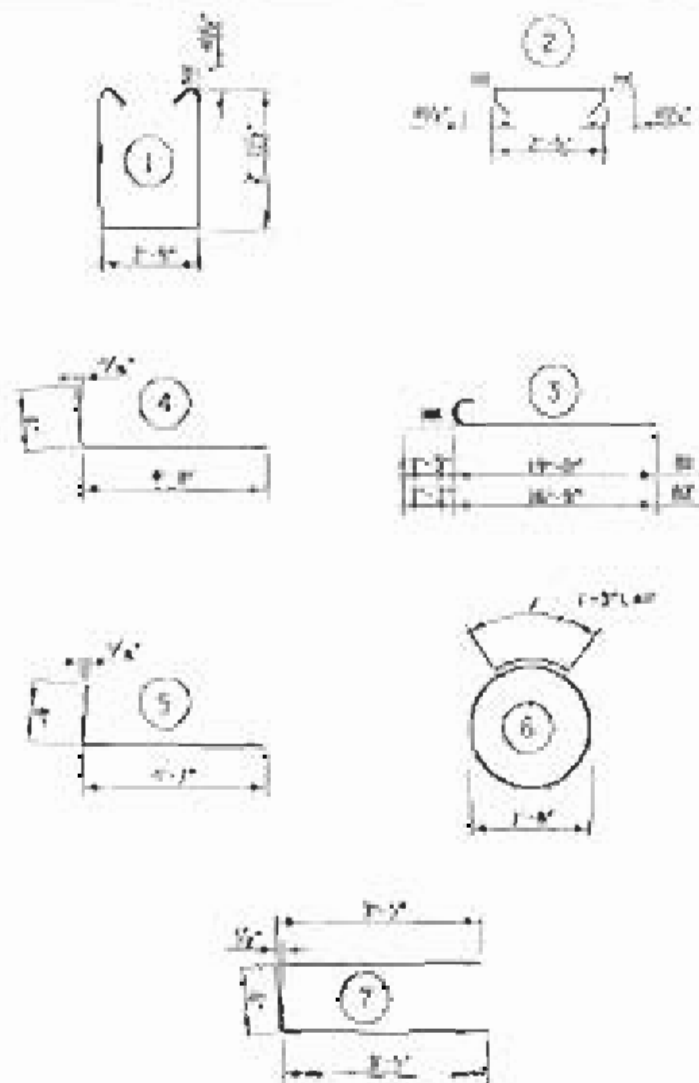


MULKEY  
 ENGINEERING, INC.

REVISIONS					DATE
NO.	DATE	BY	CHKD.	APP'D.	
					7/9
					2014
					30



BAR TYPES

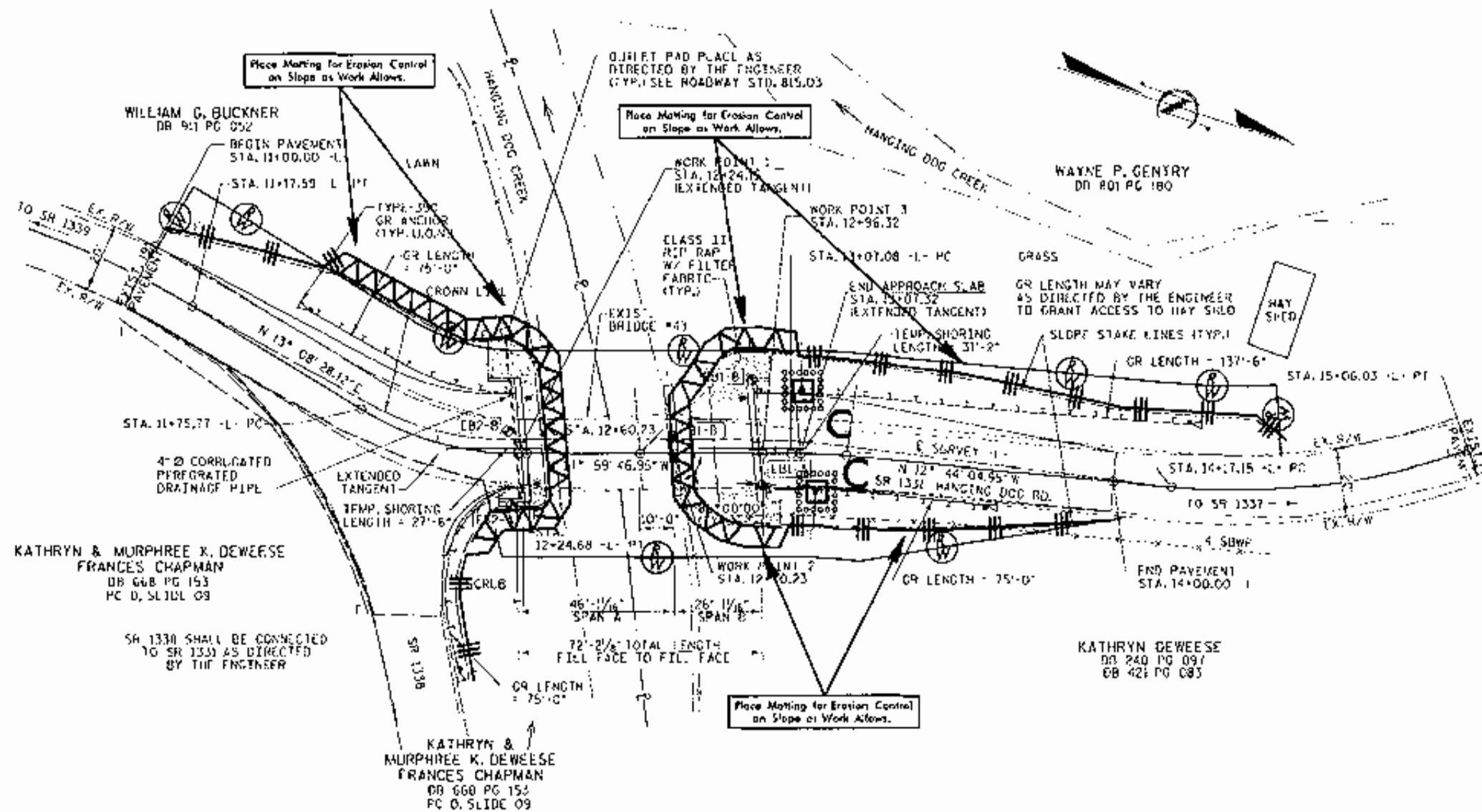


ALL BAR DIMENSIONS ARE OUT TO OUT

BILL OF MATERIAL

FOR END BENT 2					
BAR NO.	QTY	TYPE	LENGTH	WEIGHT	
1	8	#8	30'-0"	304	
2	1	#1	18'-0"	150	
3	1	#1	18'-0"	150	
4	4	#4	18'-0"	112	
5	4	#4	18'-0"	112	
6	1	#4	18'-0"	112	
7	4	#4	18'-0"	112	
8	4	#4	18'-0"	112	
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260	4	#4	18'-0"	112	
261	4	#4	18'-0"	112	
262	4	#			

# EROSION CONTROL PLAN



Sta. #	Description	Symbol
1605.01	Temporary Silt Fence	—
1606.01	Special Sediment Control Fence	~ ~ ~ ~ ~
1630.06	Special Stilling Basin	□
1632.03	Rock Inlet Sediment Trap Type C	□

ROADSIDE ENVIRONMENTAL UNIT  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
MARIETTA, GA  
2006 STANDARD SPECIFICATIONS

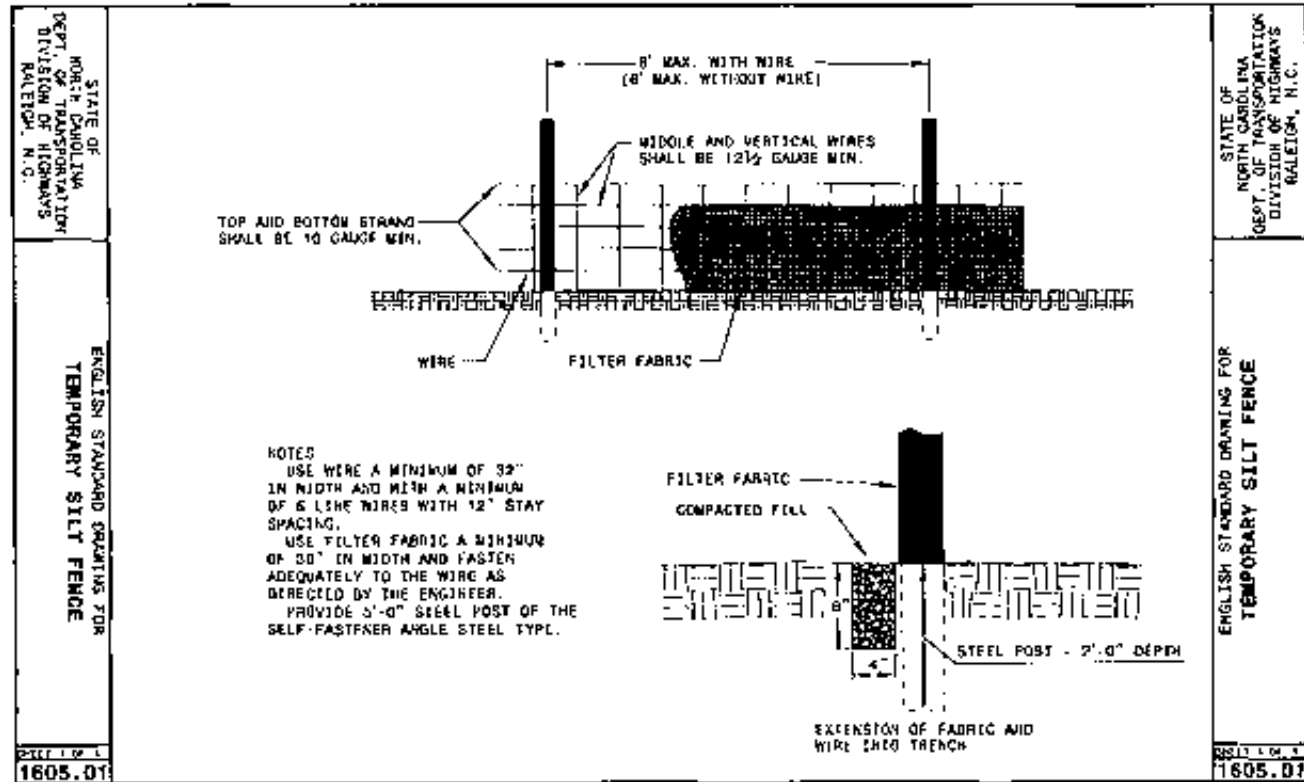
NOTES: ANY DEVIATION FROM OPTIONS GIVEN WILL REQUIRE PRIOR APPROVAL BY ENGINEER.  
  
ADDITIONAL EROSION CONTROL DEVICES MAY NEED TO BE INSTALLED AS DIRECTED BY THE ENGINEER.

PROJECT NO. 33053  
CHEROKEE COUNTY  
STATION: 12+60.23 -L-

REPLACES BRIDGE NO. 43  
BRIDGE ON SR 1331 OVER HANGING DOG CREEK BETWEEN SR 1339 & SR 1337  
27' CLEAR ROADWAY - 85° SKEW

REVISIONS				DATE
NO.	BY	CHKD	DATE	27
1				30

# EROSION CONTROL PLAN



## SAFETY FENCE:

### Description

Safety Fence shall consist of furnishing, installing and maintaining polyethylene or polypropylene fence along the outside riparian buffer, wetland, or water boundary located within the construction corridor to mark the areas that have been approved to infringe within the buffer, wetland or water. The fence shall be installed prior to any land disturbing activities.

### Materials

Polyethylene or polypropylene fence shall be a highly visible preconstructed safety fence approved by the Engineer. The fence material shall have an ultraviolet coating.

Either wood posts or steel posts may be used. Wood posts shall be hardwood with a wedge or pencil tip at one end, and shall be at least 5 ft. in length with a minimum nominal 2" x 2" cross section. Steel post shall be at least 5 ft. in length, and have a minimum weight of 0.85 lbs./ft. of length.

### Construction Methods

No additional clearing and grubbing is anticipated for the installation of this fence; however, if any clearing and grubbing is required, it will be the minimum required for the installation of the safety fence. Such clearing shall include satisfactory removal and disposal of all trees, brush, stumps and other objectionable material.

The fence shall be erected to conform to the general contour of the ground. When determined necessary, minor grading along the fence line shall be performed to meet this requirement provided no obstructions to proper drainage are created.

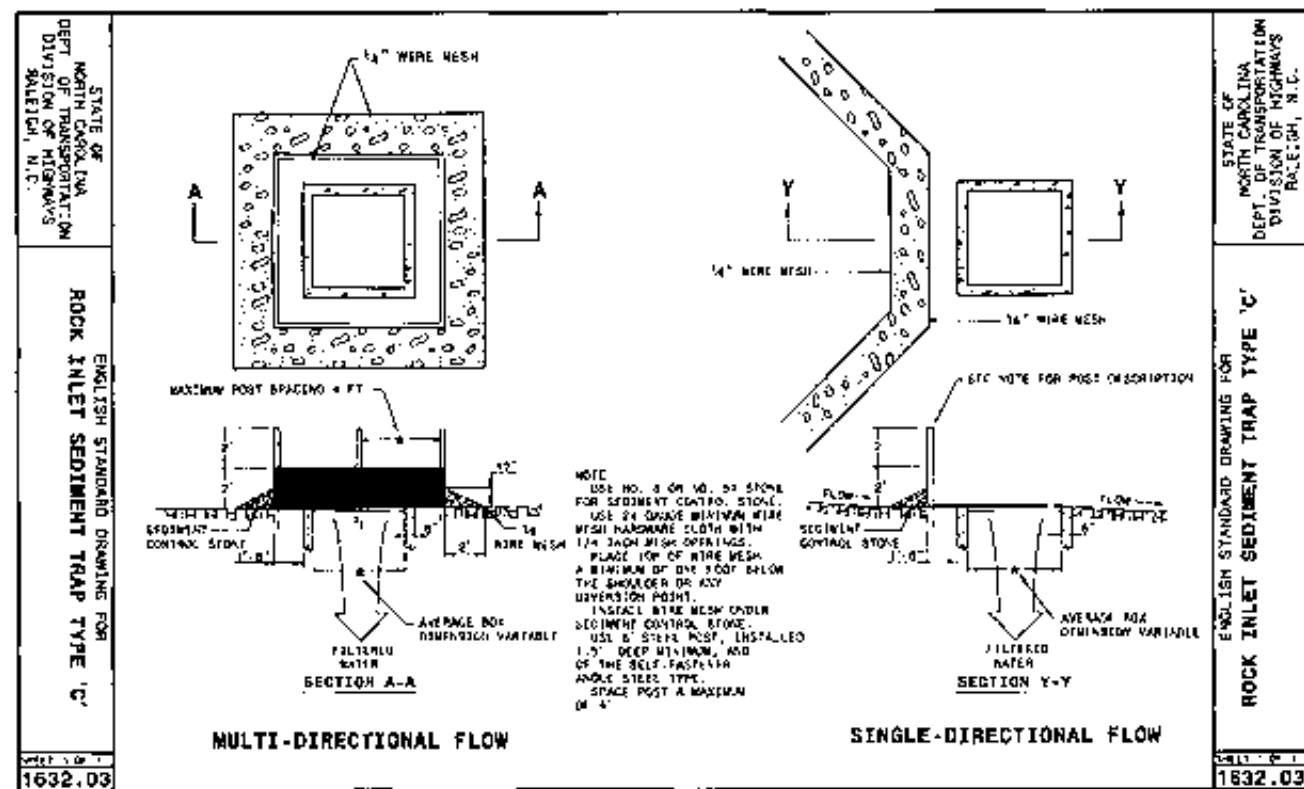
Posts shall be set and maintained in a vertical position and may be hand set or set with a post driver. If hand set, all backfill material shall be thoroughly tamped. Wood posts may be sheared to a dull point if power driven. Posts damaged by power driving shall be removed and replaced prior to final acceptance. The tops of all wood posts shall be cut at a 30-degree angle. The wood posts may, at the option of the Contractor, be cut at this angle either before or after the posts are erected.

The fence fabric shall be attached to the wood posts with one 2' galvanized wire staple across each cable or to the steel post with wire or other acceptable means.

The Contractor shall be required to maintain the safety fence in a satisfactory condition for the duration of the project as determined by the Engineer.

### Measurement and Payment

Safety Fence will be paid for at the contract price for "Lump Sum" for Erosion Control. Such payment will be full compensation including but not limited to clearing and grading, furnishing and installing fence fabric with necessary posts and post bracing, staples, tie wires, tools, equipment and incidentals necessary to complete this work.



ROADSIDE ENVIRONMENTAL UNIT  
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PROJECT NO. 33053  
CHEROKEE COUNTY  
STATION: 12+60.23 -L-

REPLACES BRIDGE NO. 43

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH, N.C.

BRIDGE ON SR 1331 OVER  
HANGING DOG CREEK BETWEEN  
SR 1339 & SR 1337

27' CLEAR ROADWAY - 85° SKEW

REVISIONS					SHEET NO. 28
NO.	DATE	BY	CHKD.	DATE	
1					1511
2					39



# EROSION CONTROL PLAN

## SPECIAL STILLING BASIN:

### Description

This work consists of furnishing, placing, and removing special stilling basin(s) as directed. The special stilling basin shall be used to filter pumped water during construction of drilled pier, pile excavation, footing excavation, and/or culvert construction. The special stilling basin shall also be used for sediment storage at the outlet of temporary slope drain pipe(s).

### Materials

Refer to Division 10

Item	Section
Filter Fabric for Drainage, Type 2	1036
Sediment Control Stone	1005

The filter fabric and sediment control stone shall be clean and shall not contain debris.

The special stilling basin shall be a water permeable fabric bag that traps sand, silt, and fines as sediment-laden water is pumped into it, or as runoff flows into it through the temporary slope drain pipe(s).

The special stilling basin shall be a bag constructed to a minimum size of 10" x 15" made from a nonwoven fabric. It shall have a seam-in 8" (maximum) spout for receiving pump discharge. The bag seams shall be sewn with a double needle machine using a high strength thread. The seams shall have a minimum wide width strength as follows:

Test Method	Minimum Specifications
ASTM D 4884	80 lb/in

The fabric used to construct the bag shall be stabilized to provide resistance to ultra violet degradation and meet the following specifications for flow rates, strength, and permeability:

Property	Test Method	Minimum Specifications
Weight	ASTM D-3776	8.0 oz/yd
Grab tensile	ASTM D-4632	200.0 lb
Puncture	ASTM D-4833	130.0 lb
Flow rate	ASTM D-4491	80.0 gal/min/ft
Permeability	ASTM D-4491	12 1/2 sec
UV Resistance	ASTM D-4355	70.0%

### Construction Methods

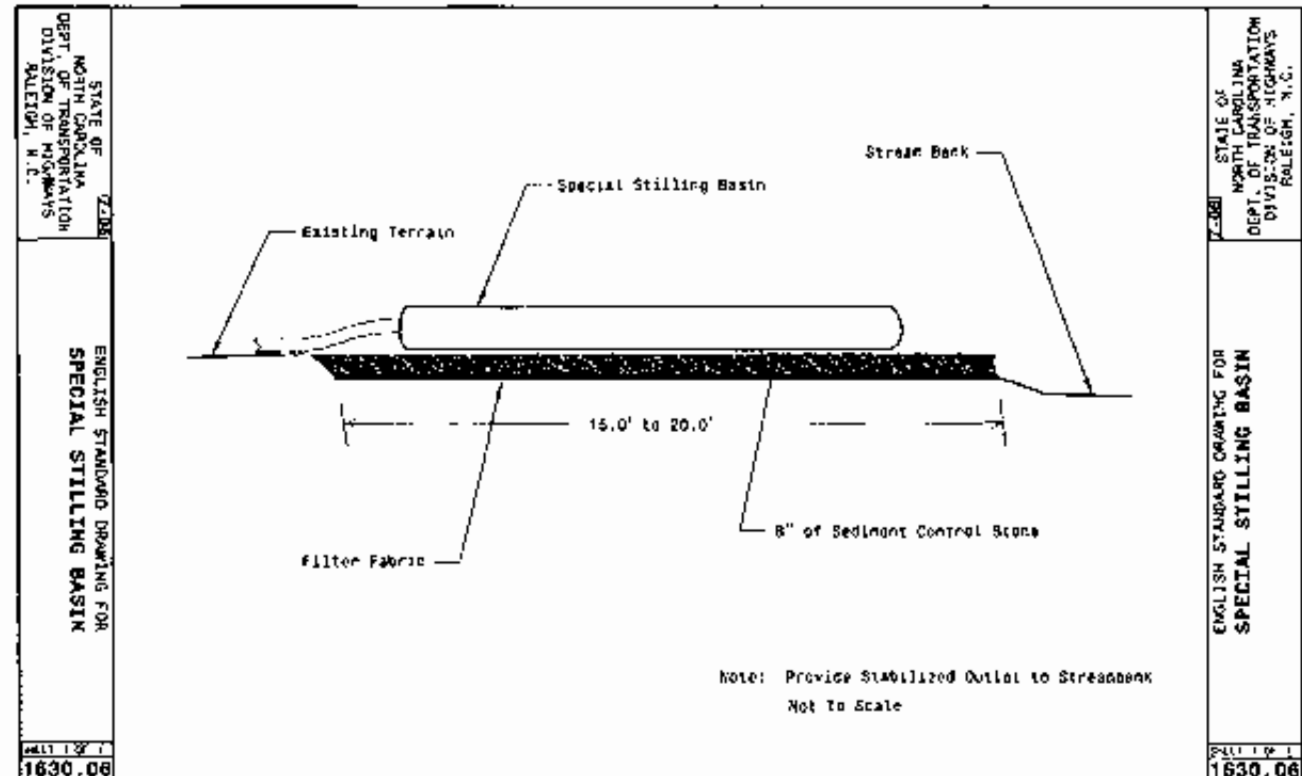
The Contractor shall install the special stilling basin(s), filter fabric, and stone in accordance with Standard Drawing No 1630.06 and at locations on the plans and as directed.

The special stilling basin(s) shall be constructed such that it is portable and can be used adjacent to each drilled pier, footing, and/or culvert. Temporary slope drain pipe(s) shall be attached to the special stilling basin(s) so that the runoff in the slope drain pipe(s) flows directly into the special stilling basin(s). The special stilling basin(s) shall be placed so the incoming water flows into and through the bag without causing erosion. The neck or spout of the bag shall be tied off tightly to stop the water from flowing out of the bag without going through the walls. If applicable, the neck or spout of the bag shall be quite allow for a slope drain pipe to be inserted into the special stilling basin, and tied off tightly to stop the water from flowing out of the bag.

The special stilling basin(s) shall be replaced and disposed of when it is full of sediment or when it is impractical for the bag to filter the sediment out at a reasonable flow rate. Prior approval from the Engineer shall be received before removal and replacement.

The Contractor shall be responsible for providing a sufficient quantity of bags to contain silt from pumped effluent during construction of drilled pier, footing excavation, and/or culvert construction. A sufficient quantity of special stilling basins shall be provided to contain sediment from temporary slope drain runoff.

The quantity of sediment control stone, filter fabric for drainage, and special stilling basin(s) as measured above will be paid for at contract price for "Lump Sum for Erosion Control". Such price and payment will be full compensation for all work covered by this provision, including but not limited to, furnishing all materials, placing and maintaining the special stilling basin(s), and removal and disposal of silt accumulations and bag.



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ADDITIONAL EROSION CONTROL DEVICES MAY  
NEED TO BE INSTALLED AS DIRECTED BY THE  
ENGINEER.

PROJECT NO. 33053  
CHEROKEE COUNTY  
STATION: 12+60.23 -L-

REPLACES BRIDGE NO. 43

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH, N. C.

BRIDGE ON SR 1331 OVER  
HANGING DOG CREEK BETWEEN  
SR 1339 & SR 1337

27' CLEAR ROADWAY - 85° SKEW

NO.	REV.	DATE	BY	CHKD.	DESCRIPTION	SHEET NO.
1	1					30
2	1					30