

FINAL  
SHEET  
10  
4/15/83  
CRP 74-6-126  
US 181

77-447-C 7505  
06

IPE No. 379  
PD NO. 1026

CRP 74-6-126	1
16 Nueces	74-6-126 US 181

NE

INDEX OF SHEETS  
SHEET NO. DESCRIPTION

1	Title Sheet
2	General Notes
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9	CLF -80
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STATE OF TEXAS  
STATE DEPARTMENT OF HIGHWAYS AND PUBLIC TRANSPORTATION

PLANS OF PROPOSED  
STATE HIGHWAY IMPROVEMENT

PROJECT CRP 74-6-126  
CONCRETE BARRIER RAIL AND CHAIN LINK BARRIER FENCE

US 181  
NUECES COUNTY

In Corpus Christi Near IH 37 At Line "C" Overpass And Line "D" Overpass  
No Project Length



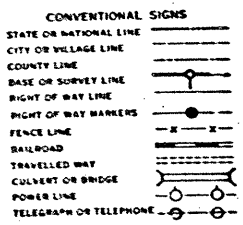
SCALE: 4" = 1 MI.

FINAL PLANS

Project was built according to the plans and specifications. These final plans reflect the work done and the quantities shown thereon and on the final estimate are final quantities.

James B. Chiles 1-12-83  
Resident Engineer Date

COUNTY Nueces PROJ. NO. CRP 74-6-126  
HWY. NO. 181 LETTING DATE 12/1/82  
DATE ACCEPTED 12/1/82



SPECIFICATIONS ADOPTED BY THE STATE HIGHWAY DEPARTMENT OF TEXAS, JANUARY 3, 1972, AND SPECIFICATION ITEMS LISTED AND DATED AS FOLLOWS, SHALL GOVERN ON THIS PROJECT: SPECIAL LABOR PROVISIONS FOR STATE PROJECTS (1000--2379).

17 SEP 81  
James H. Bell  
ASSISTANT DISTRICT DESIGN ENGINEER

STATE DEPARTMENT OF HIGHWAYS AND PUBLIC TRANSPORTATION

CORRECT: 9/18/81	RECOMMENDED FOR APPROVAL
William B. Monahan III SUPERVISING DISTRICT DESIGN ENGINEER	
9/18/81	RECOMMENDED FOR APPROVAL
S. Buterz DISTRICT ENGINEER	
	APPROVED FOR LETTING

GENERAL NOTES AND SPECIFICATION DATA--

SEQUENCE OF PROPOSED CONSTRUCTION

THE CONTRACTOR WILL BE REQUIRED TO WORK ON THE LINE C OVERPASS AND LINE D OVERPASS SIMULTANEOUSLY.

ITEM 450

THE CONTRACTOR WILL BE REQUIRED TO PATCH THE AREAS OF EXISTING SURFACING THAT IS REMOVED FOR THE INSTALLATION OF THE CONCRETE BARRIER RAIL. COMMERCIAL MIX ACP MAY BE USED UPON APPROVAL OF THE ENGINEER. MATERIAL AND LABOR FOR PATCHING, WILL NOT BE PAID FOR DIRECTLY BUT SHALL BE INCLUDED IN THE UNIT BID FOR THIS ITEM.

ITEM 452

TRAFFIC RAIL REMOVED BY THE CONTRACTOR IS CONSIDERED SALVABLE AND SHALL REMAIN THE PROPERTY OF THE STATE. THE SALVAGED RAIL WILL BE HAULED BY THE CONTRACTOR TO THE STATE'S STORAGE YARD AT SH 44 AND SH 358 AND STOCKPILED IN AN AREA DESIGNATED BY THE ENGINEER.

ITEM 450

REBAR DOWEL BONDING PROCEDURE.

- 1) HOLES SHALL BE DRILLED BY METHODS THAT WILL NOT SHATTER OR DAMAGE THE CONCRETE ADJACENT TO THE HOLE.
- 2) THE DIAMETER OF THE HOLE SHALL BE 1/4" LARGER THAN THE REBAR SIZE.
- 3) HOLES SHALL BE THOROUGHLY CLEANED OF DUST AND OTHER DELETERIOUS MATERIAL.
- 4) TYPE II PORTLAND CEMENT GROUT OR A EPOXY MORTAR SHALL BE USED FOR BONDING THE REBAR DOWELS INTO THE DRILLED HOLES. SPECIFIC INSTRUCTIONS FOR USE OF EACH BONDING MATERIAL ARE TO BE FOLLOWED CAREFULLY AS DESCRIBED BELOW.

TYPE II PORTLAND CEMENT GROUT.

- A) THE GROUT SHALL CONSIST OF A NEAT CEMENT PASTE, MADE FROM WATER MIXED WITH TYPE II PORTLAND CEMENT. THE MIXING RATIO SHALL BE FOUR GALLONS OF WATER PER 94 POUNDS OF CEMENT.
- B) CLEAN HOLES SHALL THEN BE SATURATED THOROUGHLY WITH WATER FOR A MINIMUM OF FIVE MINUTES PRIOR TO PLACING GROUT. IMMEDIATELY PRIOR TO GROUTING, ALL FREE WATER SHALL BE REMOVED FROM HOLES.
- C) ONLY AS MUCH GROUT SHALL BE MIXED AS CAN BE USED IN A REASONABLE AMOUNT OF TIME.
- D) AFTER THE INITIAL MIXING, THINNING OR RETEMPERING OF GROUT WITH EXTRA WATER SHALL NOT BE ALLOWED. HARDENED OR SET GROUT WHICH HAS BECOME TOO STIFF OR DRY TO PROVIDE A GOOD BOND SHALL BE DISCARDED.
- E) DOWELS SHALL NOT BE INSTALLED IF THE MEAN AIR OR GROUT TEMPERATURES ARE LESS THAN 45 DEG F. THE FRESHLY PLACED GROUT SHALL BE MAINTAINED AT A TEMPERATURE OF NOT LESS THAN 45 DEG F FOR 72 HOURS AND NOT LESS THAN 40 DEG F FOR AN ADDITIONAL FOUR DAYS.
- F) THE TEMPERATURE OF THE MIXED GROUT, IMMEDIATELY BEFORE PLACING, SHALL NOT BE LESS THAN 50 DEG F OR MORE THAN 90 DEG F.
- G) THE CEMENT GROUT SHALL BE CURED CONTINUOUSLY WITH EITHER WET RAGS OR A SATISFACTORY CURING COMPOUND FOR A MINIMUM PERIOD OF THREE DAYS WITHOUT DISTURBING THE DOWELS.

EPOXY MORTAR.

- A) THE EPOXY MORTAR SHALL CONSIST OF A MIXTURE OF EPOXY BINDER CONFORMING TO SPECIFICATION FOR SDHT EPOXY BINDER B-102 AND AN EQUAL VOLUME 16 X 30 MESH SAND.
- B) THE SAND SHALL BE SURFACE DRY AT TIME OF MIXING.
- C) TEMPERATURE OF EPOXY COMPONENTS SHALL BE BETWEEN 60 DEG F AND 85 DEG F AT THE TIME OF MIXING.
- D) HOLES SHALL BE CLEAN BEFORE PLACING EPOXY MORTAR.
- E) CONCRETE SURFACES OF THE DRILLED HOLES SHALL BE PRIMED WITH A COAT OF EPOXY RESIN JUST BEFORE PLACING THE MORTAR.

ITEM 562

THE CONTRACTOR WILL BE REQUIRED TO FURNISH AND INSTALL TWO TERMINAL CONNECTORS. THE CONNECTORS AND THEIR INSTALLATION WILL NOT BE PAID FOR DIRECTLY BUT SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THIS ITEM.

ITEM 5275

ALL HARDWARE NEEDED TO SECURE THE BARRIERS TOGETHER, AS NOTED ON SHEET 8, WILL BE FURNISHED BY THE CONTRACTOR.

ITEM 5275 AND 5301

UPON COMPLETION OF THIS PROJECT, THE CONCRETE BARRIERS, FURNISHED BY THE CONTRACTOR AND USED FOR TRAFFIC CONTROL, WILL REMAIN THE PROPERTY OF THE STATE. THE CONTRACTOR WILL BE REQUIRED TO HAUL THE BARRIERS TO THE STATE'S STORAGE YARD LOCATED AT SH 44 AND SH 358 AND STOCKPILED AS DIRECTED BY THE ENGINEER. EQUIPMENT AND LABOR FOR HAULING AND STOCKPILING THE BARRIERS WILL NOT BE PAID FOR DIRECTLY BUT SHALL BE INCLUDED IN THE UNIT PRICES BID FOR ITEM 5301 "BARCD, SIGNS AND TRAF HANDLING".

ITEM 5301

SPECIFICATION DATA

SHEET A

GENERAL NOTES AND SPECIFICATION DATA--

ITEM 5301, CONT'D

THE STATE HAS IN STOCK SIX SECTIONS OF THE PROPOSED TEMPORARY CONCRETE BARRIERS THAT WILL BE USED FOR TRAFFIC CONTROL. ONE SECTION IS STORED AT THE STATE'S STORAGE YARD LOCATED AT 1701 S PADRE ISLAND DRIVE. THE REMAINDER ARE STORED AT THE STATE'S STORAGE YARD AT SH 44 AND SH 358. THE CONTRACTOR WILL BE REQUIRED TO FURNISH EQUIPMENT AND LABOR FOR LOADING AND HAULING THE BARRIERS TO AND FROM THE JOB SITE. EQUIPMENT AND LABOR FOR LOADING, HAULING, AND RESTOCKPILING THE BARRIERS WILL NOT BE PAID FOR DIRECTLY BUT SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THIS ITEM.

ITEM 4000

RAIL(CONCRETE BARRIER) SHALL RECEIVE A CLASS A OR B FINISH.

SPECIFICATION DATA

SHEET B

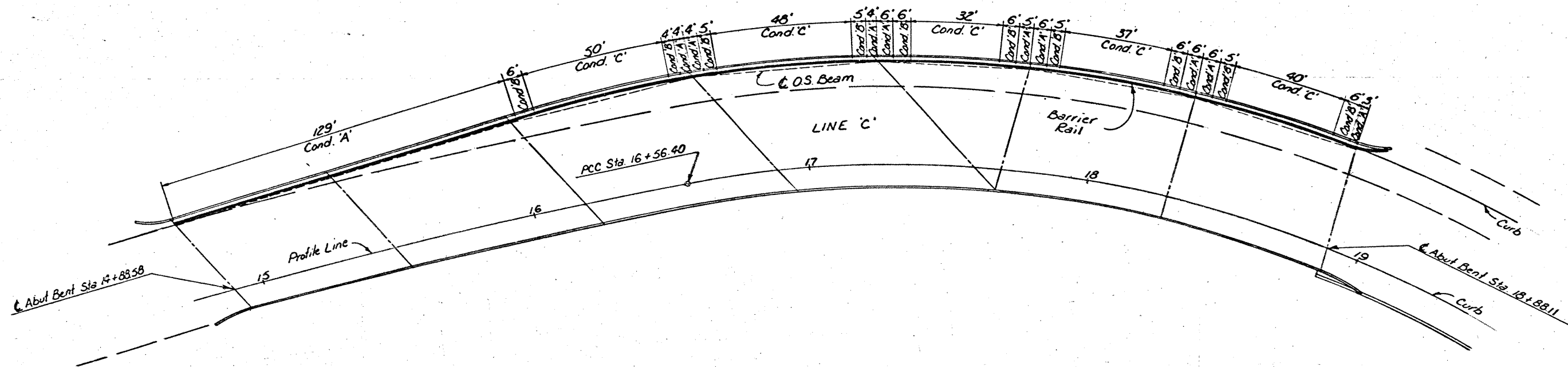
## ESTIMATE SUMMARY

[illegible]

# ESTIMATE & QUANTITY SHEET

STATE DIST. NO.	COUNTY	PROJECT NO.	SHEET NO.
16	NUECES	CRP 74-6-126	3

Note: Dimensions shown are approximate  
and are measured along  $\epsilon$  of Barrier  
Rail.



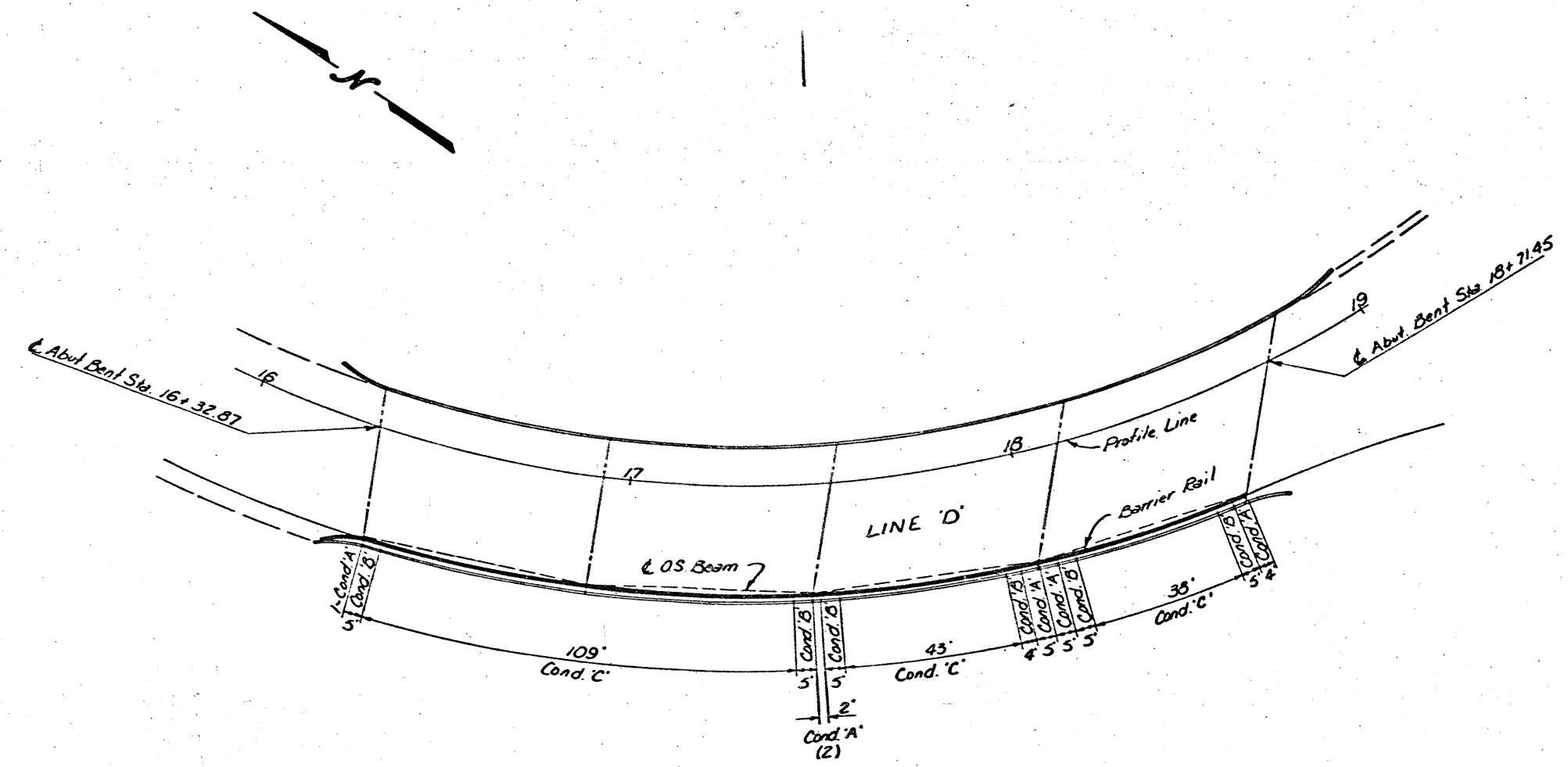
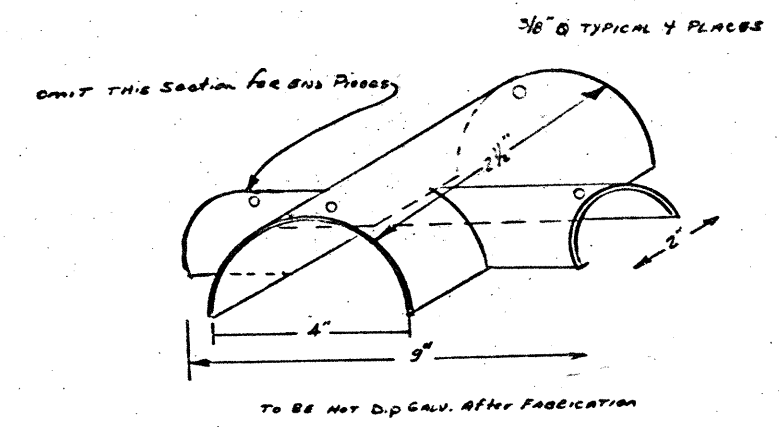
Approximate Number of Conditions

A = 87  
B = 27  
C = 103

445.25 L.F. Barrier Rail

BARRIER RAIL  
LAYOUT SHEET  
LINE 'C' 4

FED. RD. DIST. NO.	STATE	PROJECT NO.	SHEET NO.
4	TEXAS	CRP 74-6-126	4
STATE DIST. NO.	COUNTY	CONTRACT NO.	JOB NO.
16	NUECES	74 6 126	US 181



Note: Dimensions shown are approximate and are measured along  $\ell$  of Barrier Rail.

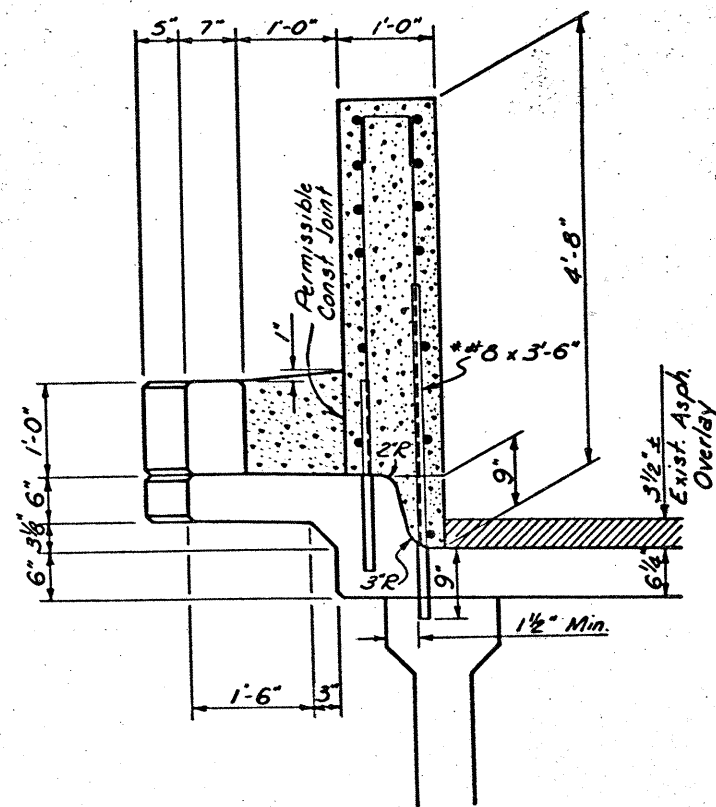
Approximate Number of Conditions  
 A • 9  
 B • 15  
 C • 95

246.50 L.F. Barrier Rail

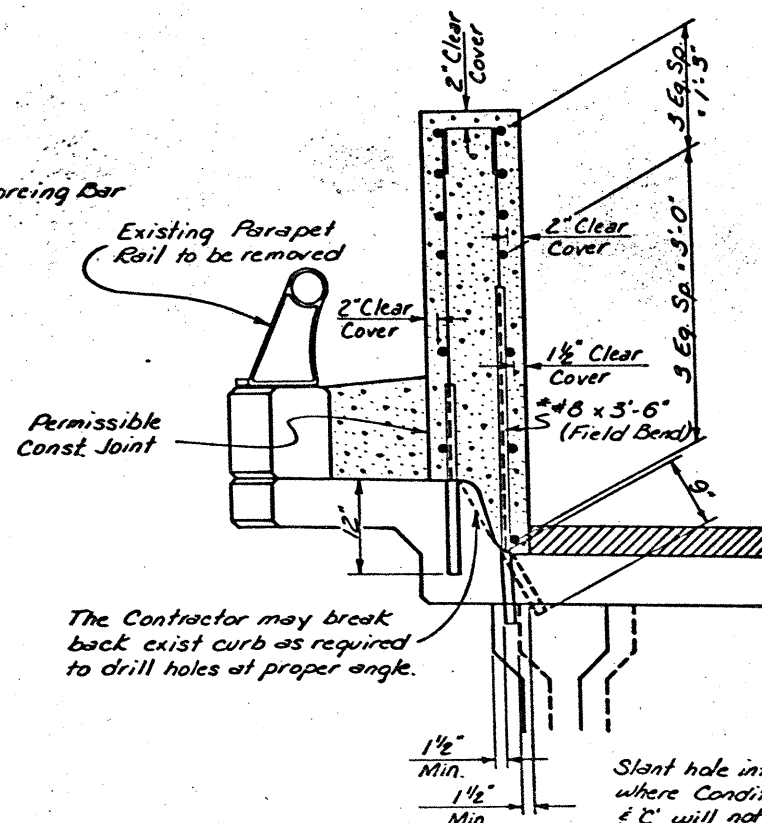
BARRIER RAIL  
LAYOUT SHEET  
LINE 'D' 5

FED. RD. DIST. NO.	STATE	PROJECT NO.	SHEET NO.
6	TEXAS	CRP 74-6-126	5
STATE DIST. NO.	COUNTY	CONTRACT	SECTION
16	NUECES	74	6
		126	US181

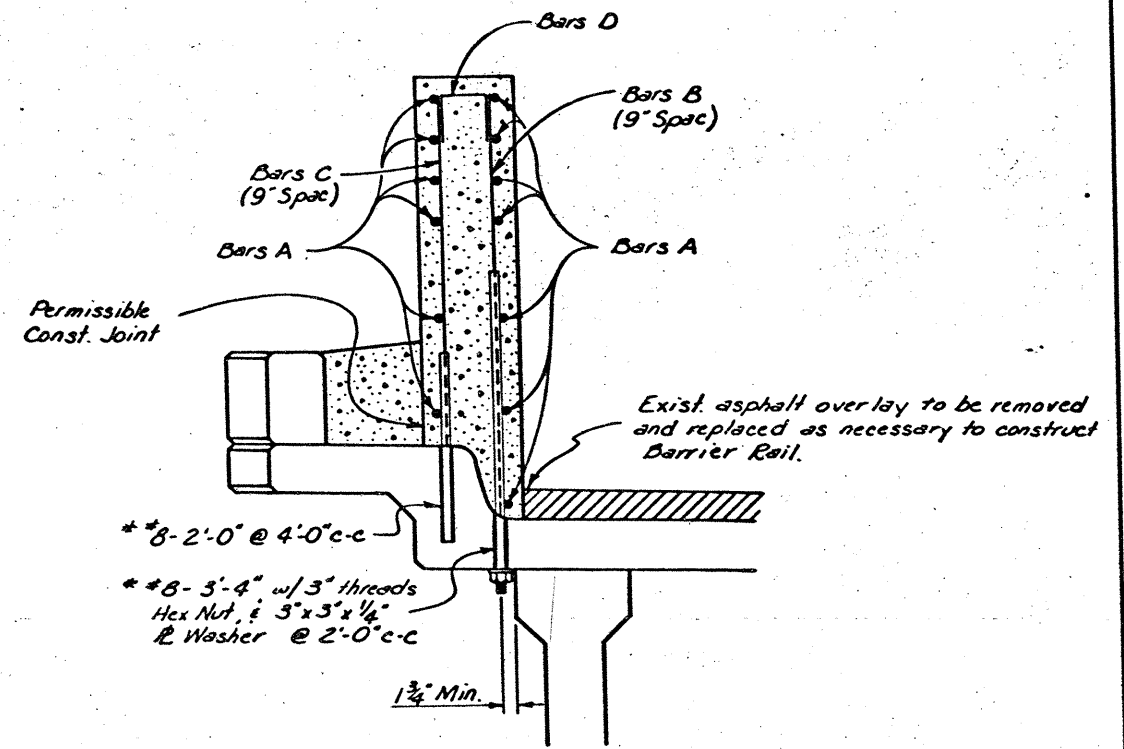




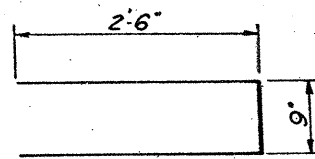
CONDITION 'A'



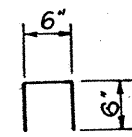
CONDITION 'B'



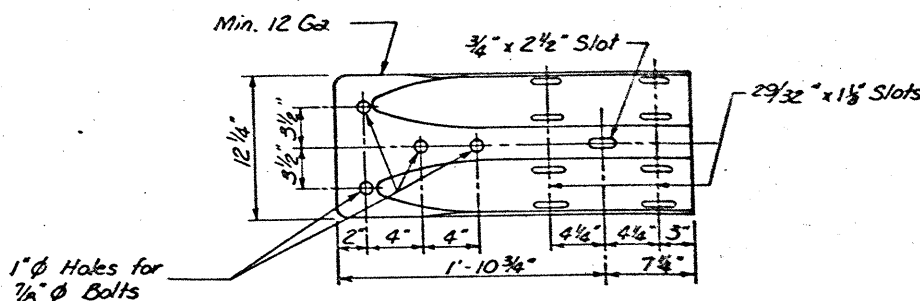
CONDITION 'C'



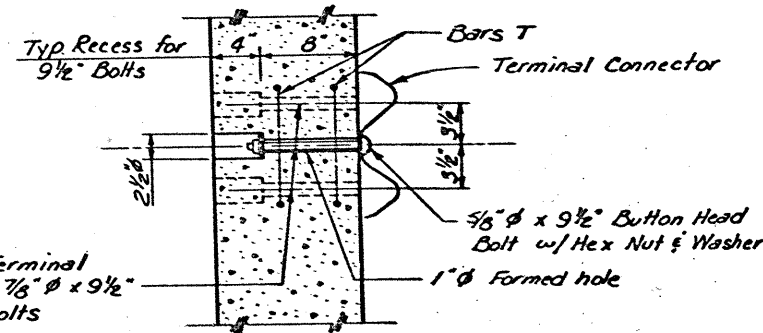
Bars T



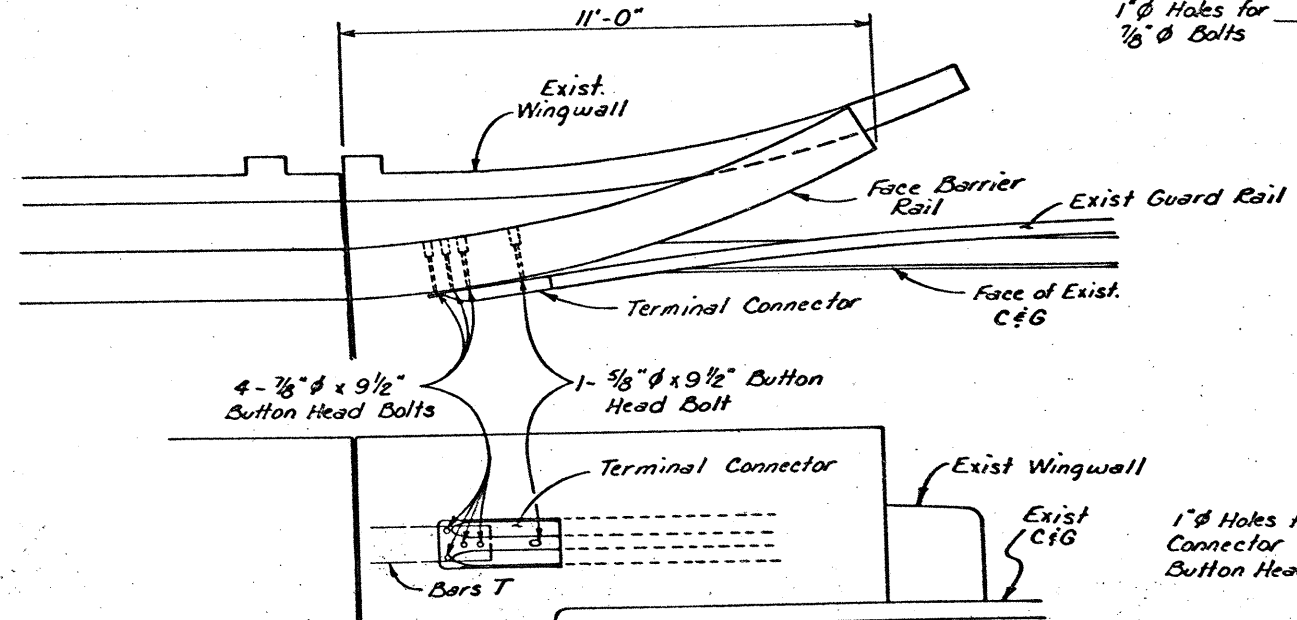
Bars D



TERMINAL CONNECTOR



SECTION THRU BARRIER RAIL AT TERMINAL CONNECTION



TERMINAL CONNECTION

TYPICAL 50'-0" SECTION  
BILL OF REINFORCING STEEL  
AND ESTIMATED QUANTITIES

BAR	NO.	SIZE	LENGTH	WEIGHT
A	13	#6	52'-8"	1,028
B	68	#5	4'-6"	319
C	68	#5	3'-9"	266
D	68	#4	1'-6"	68
Reinforcing Steel				Lb. 1,681
Class 'C' Conc.				C.Y. 9.8

\* Includes one 2'-8" lap  
All Reinforcing Bars shall be Gr. 60

APPROXIMATE QUANTITY  
OF DOWEL BARS (LINE 'D')

NUMBER	SIZE	LENGTH
* 59	#8	2'-0"
* 24	#8	3'-6"
* 95	#8	3'-4"

APPROXIMATE QUANTITY  
OF DOWEL BARS (LINE 'C')

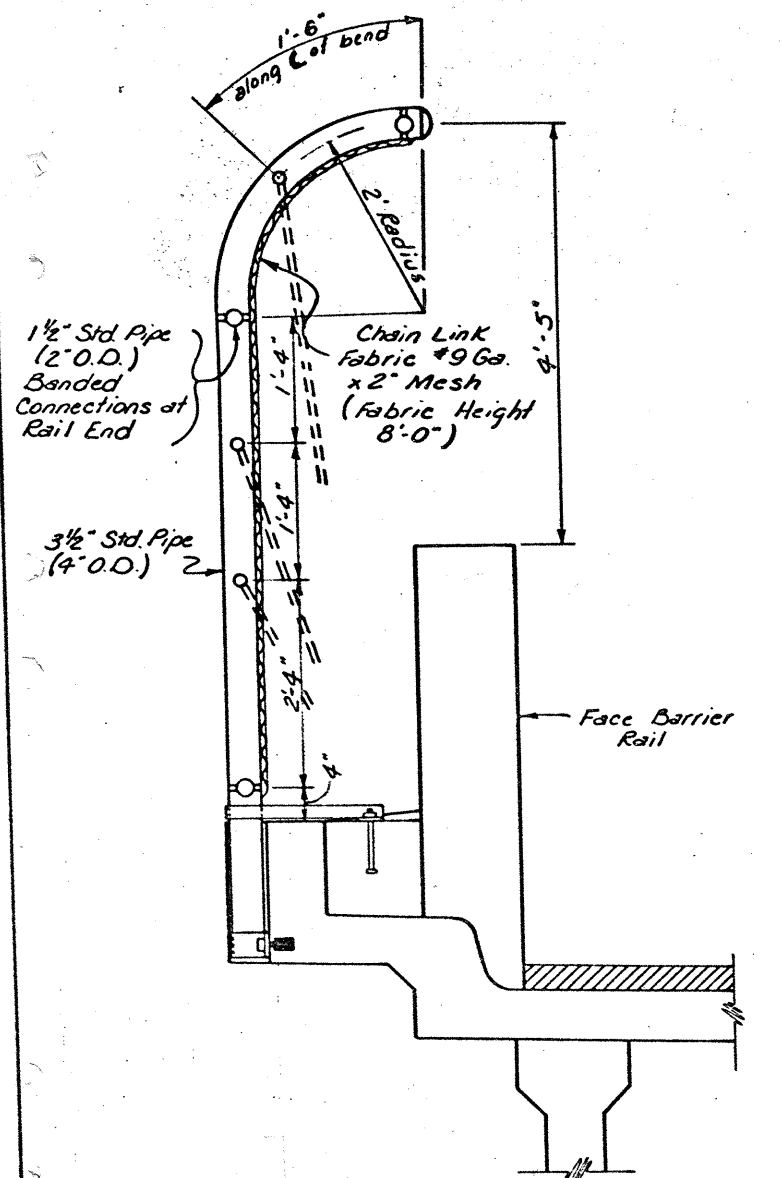
NUMBER	SIZE	LENGTH
* 109	#8	2'-0"
* 114	#8	3'-6"
* 104	#8	3'-4"

\* Bottom 3" shall be threaded, w/ Hex Nut, 3" x 3" x 1/4" Washer.  
\* Gr. 60 Reinforcing Bar

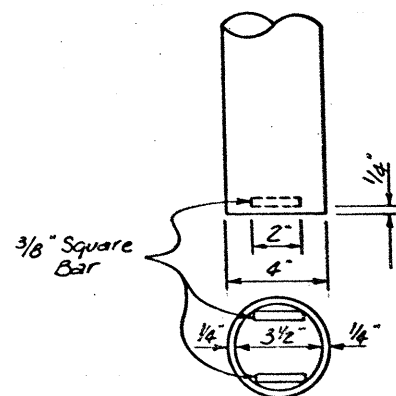
NOTE: ALL QUANTITIES SHOWN ARE FOR CONTRACTOR'S INFORMATION ONLY. BARRIER RAIL SHALL BE PAID FOR BY THE LINEAR FOOT

# BARRIER RAIL DETAILS

FED. RD. DIST. NO.	STATE	PROJECT NO.	SHEET NO.
16	TEXAS	CRP 74-6-126	6
COUNTY	CONTRACT	SECTION	JOB
NUECES	74	6	126
ROADWAY NO.	US	181	

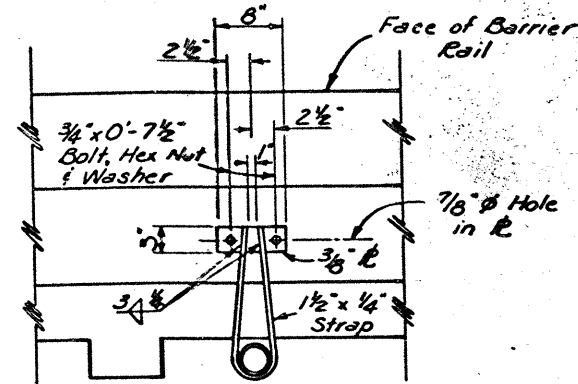


SECTION SHOWING CHAIN LINK FENCE

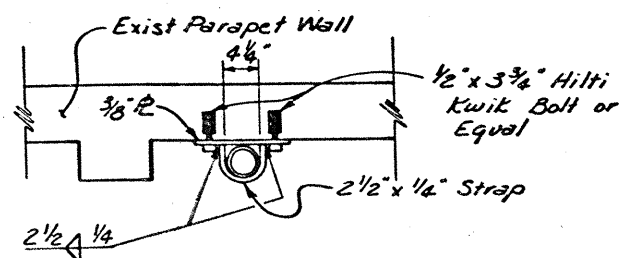


POST BOTTOM DETAIL

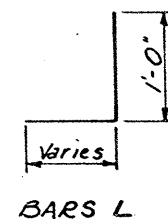
Note:  
Weld both ends of  
3/8" Square Bar



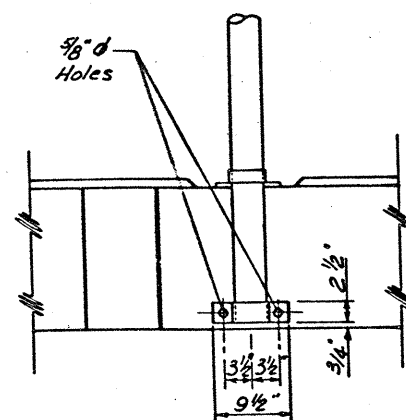
TOP BRACKET DETAIL



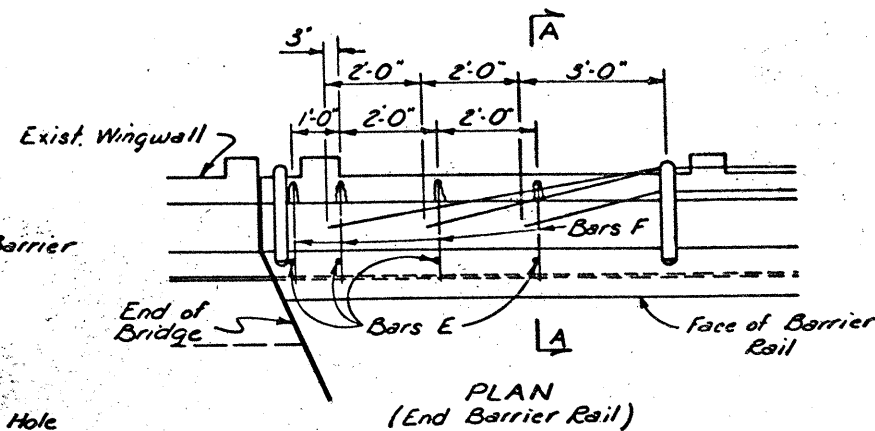
BOTTOM BRACKET DETAIL



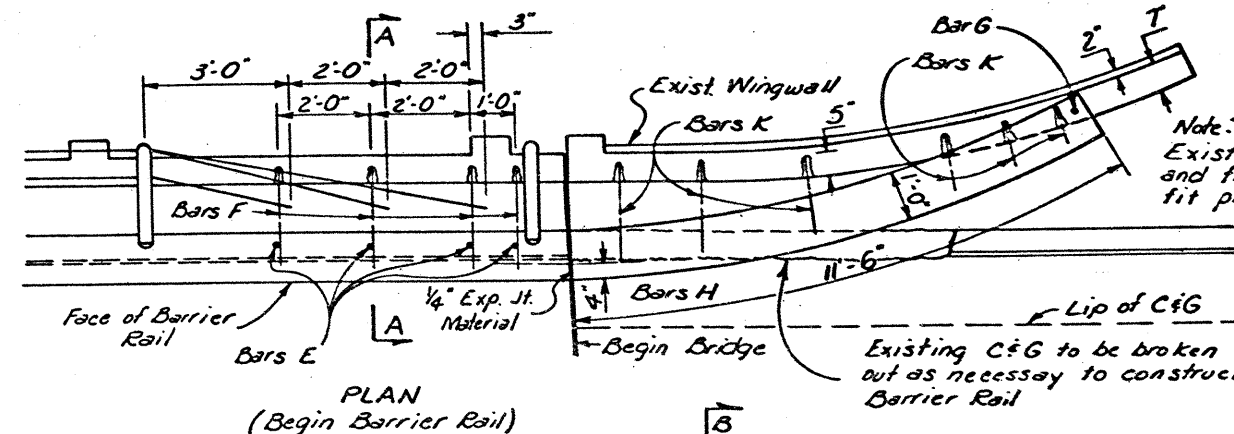
BARS L



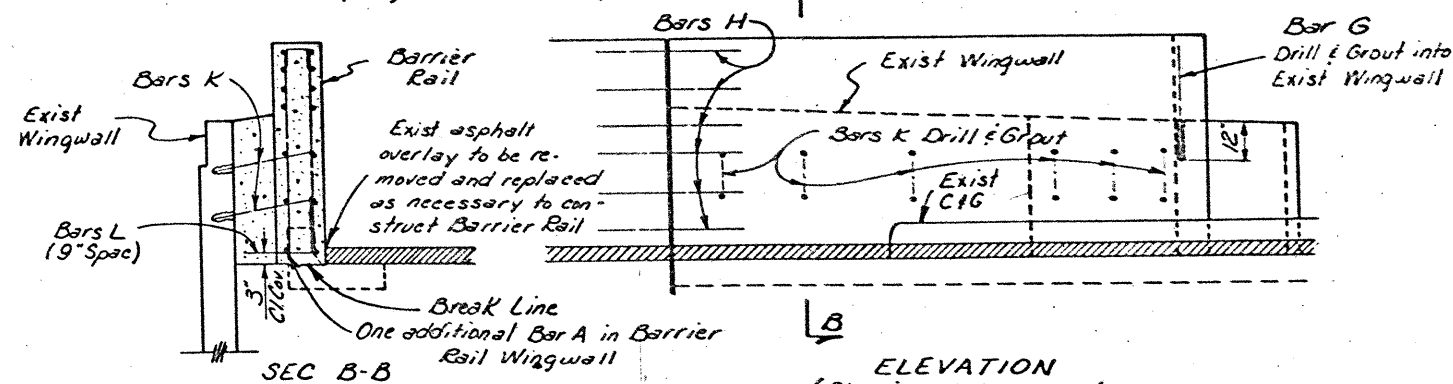
ELEVATION OF POST BRACKETS



PLAN (End Barrier Rail)

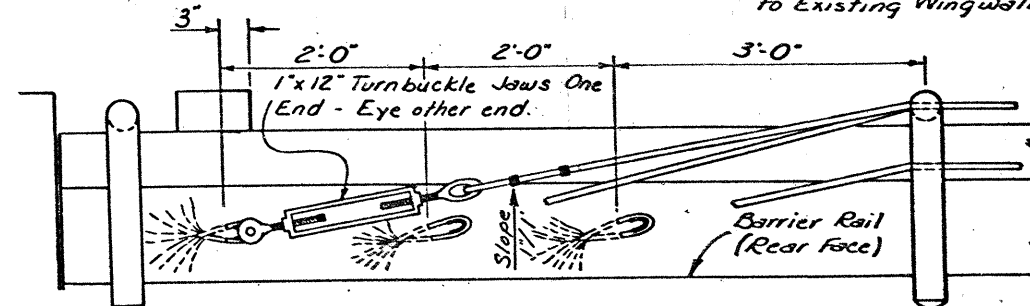


PLAN (Begin Barrier Rail)

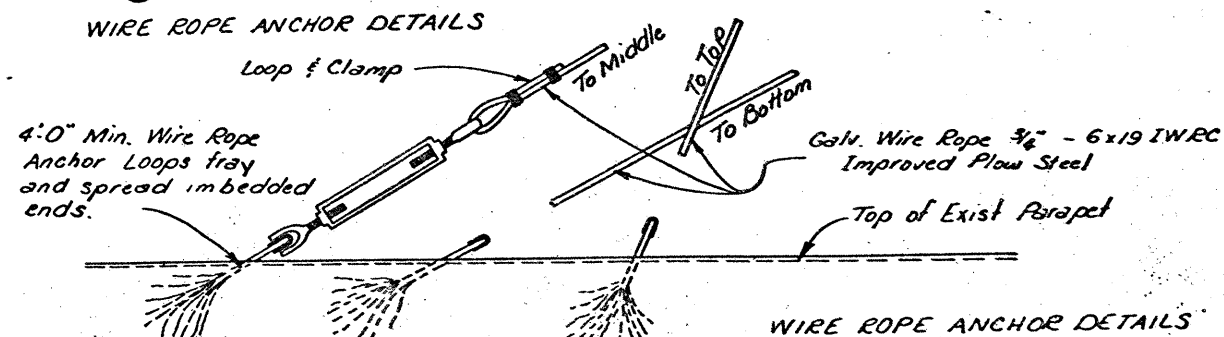


SEC B-B

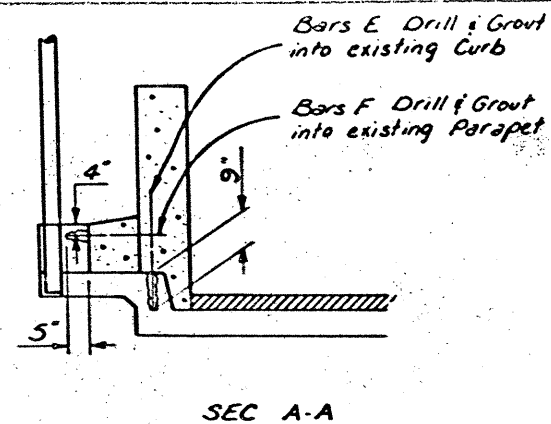
ELEVATION (Showing Attachment to Existing Wingwall)



WIRE ROPE ANCHOR DETAILS



WIRE ROPE ANCHOR DETAILS



SEC A-A

BAR	NO	SIZE	LENGTH	WEIGHT
A	1	#6	11'-3"	17
E	8	#8	2'-6"	53
F	8	#8	2'-0"	43
G	1	#6	2'-6"	4
H	6	#8	3'-0"	48
K	12	#6	2'-1" Av.	38
L	8	#6	1'-5" Av.	17
T	2	#4	5'-9"	8
Reinforcing Steel				Lb 228
Class C Conc.				CY 1.9

NOTE: ALL QUANTITIES SHOWN ARE FOR CONTRACTOR'S INFORMATION ONLY. BARRIER RAIL SHALL BE PAID FOR BY THE LINEAR FOOT.

Reinforcing steel in this bill is in addition to other Barrier Rail steel.

Note: Existing Guard Fence to be cut and field bent as necessary to fit proposed Barrier Rail.

Note: In the area of tie in between Existing Wingwall and Prop. Barrier Rail the cutting & bending of Barrier Rail reinforcing steel shall be as directed by the Engineer.

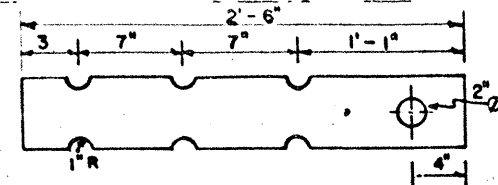
#### GENERAL NOTES

1. Designed according to A.A.S.H.T.O. 1977 Standard and Interim Specifications.
2. Chamfer all exposed corners 3/4" unless otherwise shown.
3. Deep Beam rail connection, terminal connector, and all anchorage provisions including bolts, nuts, and washers shall be included in price bid per linear foot of Barrier Rail.
4. All steel connecting bolts, nuts, washers and fasteners for steel Deep Beam rail member shall be galvanized.
5. Dimensions relating to reinforcing steel are to center of bars unless otherwise shown.
6. All existing parapet railing on Barrier Rail side of bridge shall be removed.

#### BARRIER RAIL DETAILS

FED. RD. DIST. NO.	STATE	PROJECT NO.	SHEET NO.
16	TEXAS	CRP 74-6-126	7
COUNTY	CONTRACT	SECTION	JOB
NUECES	74	6	126 US181

Length may be varied slightly  
with approval of the Engineer.



Note: Plates conform to ASTM A36 Steel

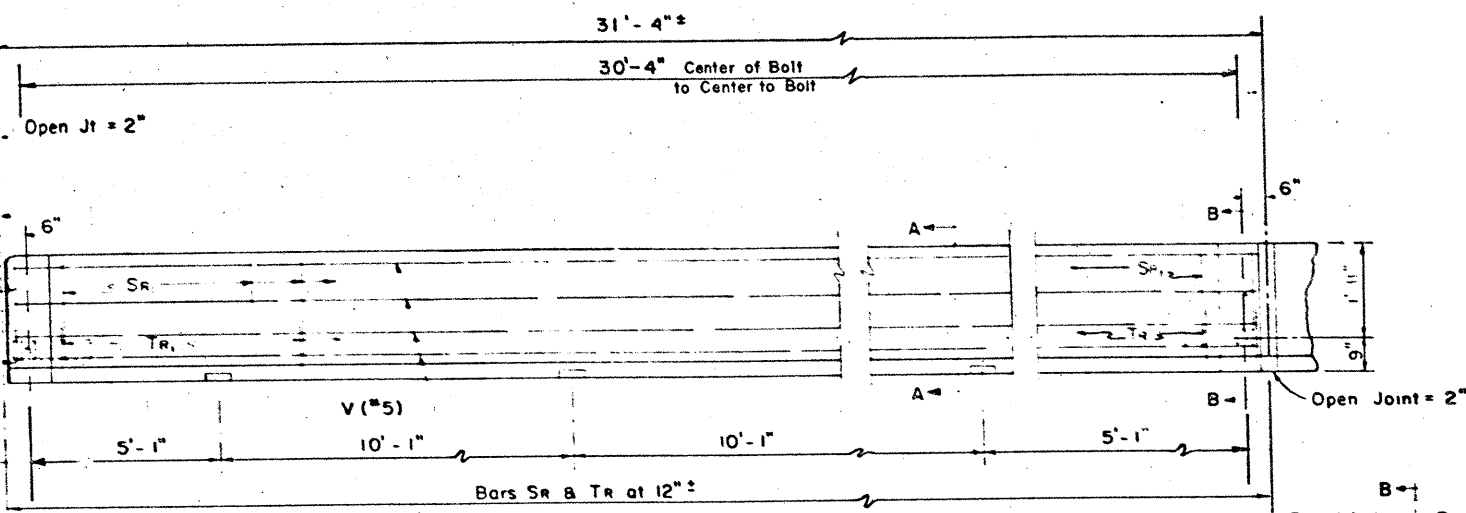
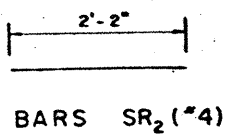
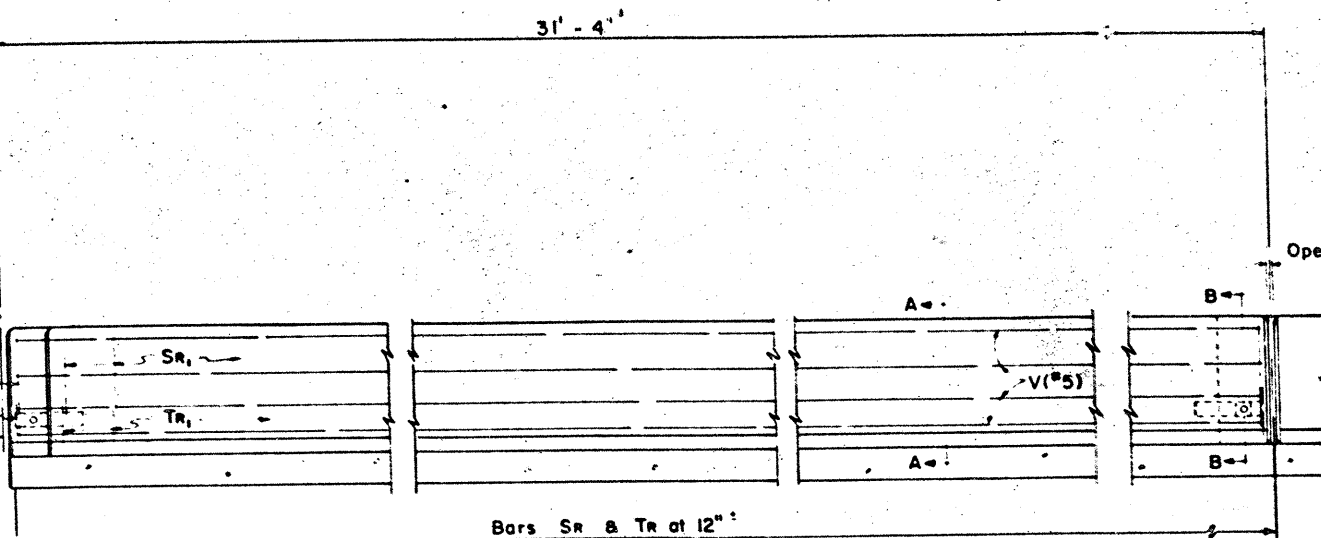
ANCHORAGE PLATE

DETAIL A

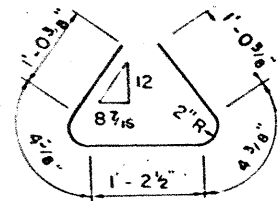
# GENERAL NOTES

- (1) ALL FORMS FOR PRECAST MEDIAN BARRIER SHALL BE CONSTRUCTED OF STEEL.
- (2) LONGITUDINAL BARS FOR ROADWAY BARRIER SHALL CONFORM TO ASTM A-615 OR ASTM A-616 (GRADE 60). VERTICAL BARS SHALL CONFORM TO ASTM A-615 (GRADE 40).
- (3) BAR SPLICES FOR ROADWAY BARRIER SHALL BE A MINIMUM OF 24 TIMES THE NOMINAL DIAMETER OF THE BAR.
- (4) CHAMFER ALL EXPOSED CORNERS 3/4" UNLESS OTHERWISE SHOWN.
- (5) THE CONCRETE MEDIAN BARRIER SHALL RECEIVE A CLASS "A" OR "B" FINISH.
- (6) CONCRETE SHALL BE CLASS "A" (CLASS "H"-4000 PSI. MAY BE USED IN LIEU OF CLASS "A" WHEN APPROVED BY THE ENGINEER).
- (7) LIFTING DEVICES AND THEIR LOCATION SHALL BE AS APPROVED BY THE ENGINEER.
- (8) AXIS OF MEDIAN BARRIER SHALL BE VERTICAL EXCEPT WHERE MEDIAN IS SUPERELEVATED; THEN AXIS SHALL BE NORMAL TO ROADWAY SURFACE.
- (9) ALL STEEL FITTING SHALL BE GALVANIZED AFTER FABRICATION.
- (10) THE REINFORCING CAGE MAY BE TACK WELDED IN LIEU OF TYING.

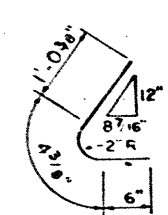
## ELEVATION OF BARRIER ON BRIDGE



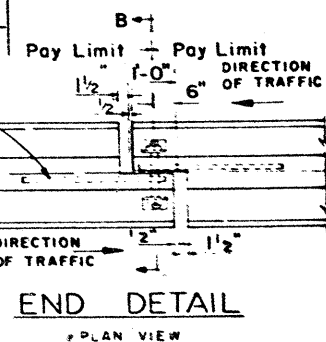
BARS SR1 (#4)  
Note: Bars SR1 & TR1 may be furnished as one continuous bar with a 4\"/>



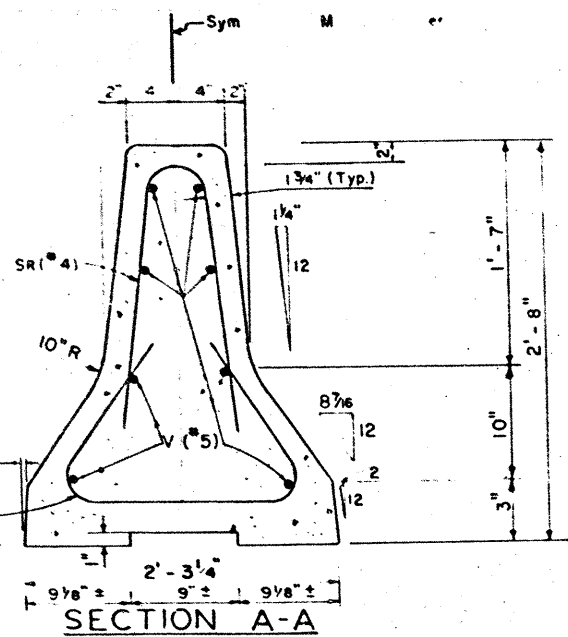
BARS TR1 (#4)  
PROVIDE 3-2\"/>



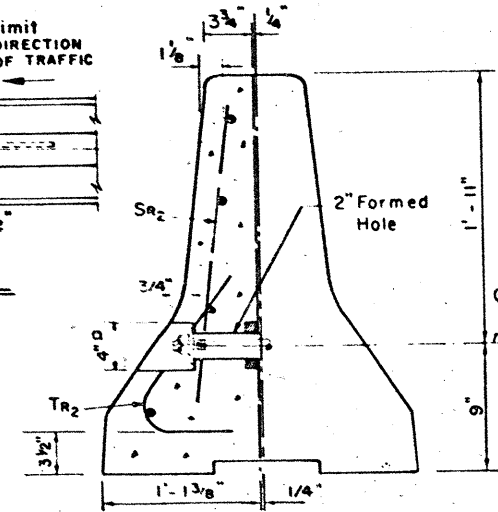
BARS TR2 (#4)  
Note: Bars SR2 and TR2 may be furnished as one bar.



END DETAIL  
PLAN VIEW



SECTION A-A



SECTION B-B

APPROX. P.L.F. QUANTITIES		
Concrete	C.Y.	0.123
Reinf. Steel	LB	15.125

NOTE: APPROX. WEIGHT FOR ONE UNIT = 7 TONS

TEXAS HIGHWAY DEPARTMENT  
PRECAST CONCRETE  
MEDIAN BARRIER  
TYPE 2

PCMB(2)-78(DIST. 16)

ORIGINAL DRAWING DATE	STATE	PROJECT NO.	SHEET NO.
DW	TEXAS	CRP 74-6-126	8
CK	STATE	COUNTY	CONTRACT
	16	Nueces	74 6 126 US 181





