COUNTY	CONTRACT	P. R. A. REG. NO.	STATE	FED. AID PROJECT NO.	SHEET NO.	TOTAL SHEETS
		2	DEL.			

STANDARD SHEET D-14-2
MANHOLES A, B, C, D, STANDARD

PREL. TRACING L.E.G. DESIGN E.L.W. CHKD. J.T.B.

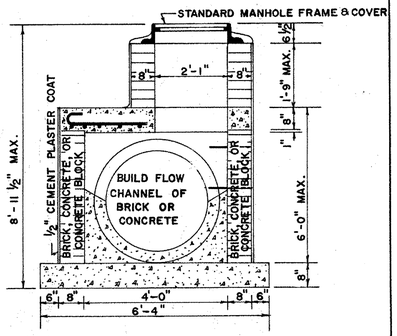
REVISIONS

1. 10/25/74, NOTE REFERRING TO STANDARD SHEET D-1, R.T.C.
2. 1/30/81, ADDED STEP NOTE R.F.R.

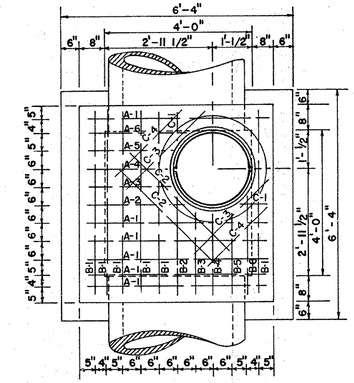
APPROVED _____ DIRECTOR OF HIGHWAYS 6.22.70 DATE

_____ ASSISTANT DIRECTOR / CHIEF ENGINEER 6/22/70 DATE

A MANHOLE



SECTION



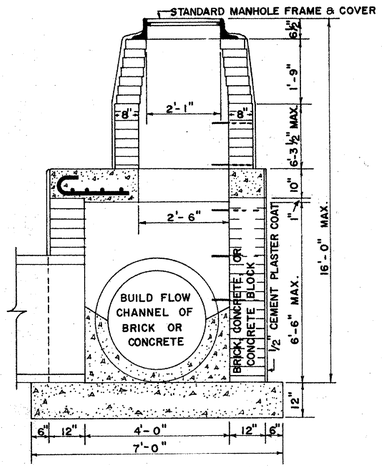
PLAN

BILL OF MATERIALS

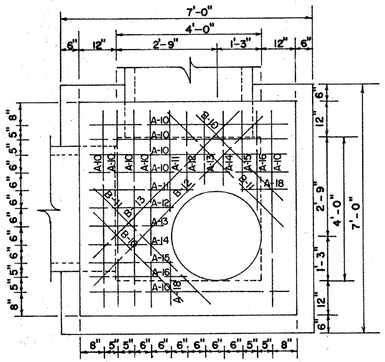
REINF. STEEL	BENT BARS NO.	SIZE	L'GTH.	MARK	BENDING DIAGRAM (ALL DIMENSIONS ARE OUT-OUT)
	6	5/8" ϕ	6'-2"	A-1	4'-10"
	6	5/8 ϕ	6'-2"	B-1	4'-10"
	1	5/8" ϕ	3'-5"	A-2	2'-9"
	1	5/8" ϕ	3'-0"	A-3	2'-4"
	1	5/8" ϕ	2'-11"	A-4	2'-3"
	1	5/8" ϕ	3'-0"	A-5	2'-4"
	1	5/8" ϕ	3'-5"	A-6	2'-9"
	1	5/8" ϕ	3'-5"	B-2	2'-9"
	1	5/8" ϕ	3'-0"	B-3	2'-4"
	1	5/8" ϕ	2'-11"	B-4	2'-3"
	1	5/8" ϕ	3'-0"	B-5	2'-4"
	1	5/8" ϕ	3'-5"	B-6	2'-9"
STRAIGHT BARS					
	2	5/8" ϕ	0'-10"	C-1	0'-10"
	2	5/8" ϕ	3'-10"	C-2	3'-10"
	2	5/8" ϕ	3'-0"	C-3	3'-0"
	2	5/8" ϕ	2'-4"	C-4	2'-4"

NOTE: ALL REINFORCING STEEL TO BE INCLUDED IN UNIT PRICE BID FOR MANHOLE.

B MANHOLE



SECTION



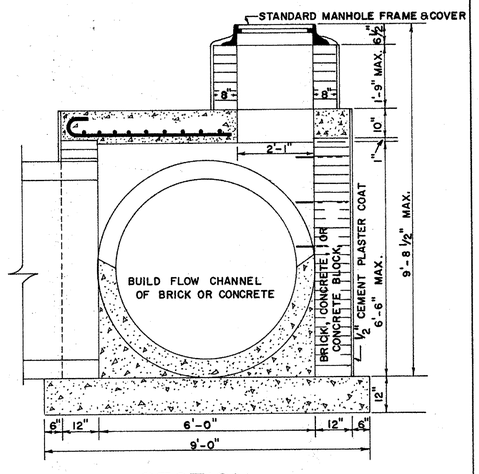
PLAN

BILL OF MATERIALS

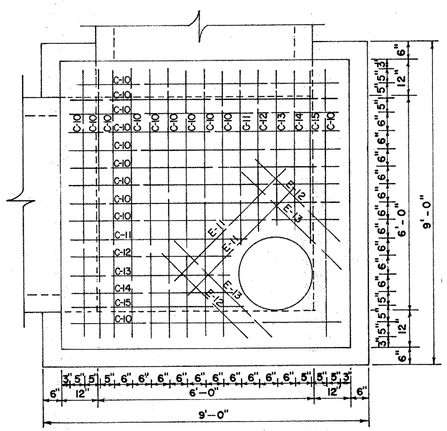
REINF. STEEL	BENT BARS NO.	SIZE	L'GTH.	MARK	BENDING DIAGRAM (ALL DIMENSIONS ARE OUT-OUT)
	10	3/4"ϕ	6'-10"	A-10	5'-6"
	2	3/4"ϕ	3'-6"	A-11	2'-10"
	2	3/4"ϕ	3'-0"	A-12	2'-4"
	2	3/4"ϕ	2'-9"	A-13	2'-1"
	2	3/4"ϕ	3'-0"	A-14	2'-4"
	2	3/4"ϕ	3'-6"	A-15	2'-10"
	2	3/4"ϕ	3'-6"	A-16	
STRAIGHT BARS					
	2	3/4" ϕ	1'-4"	A-18	
	2	3/4"ϕ	3'-6"	B-10	
	2	3/4"ϕ	4'-6"	B-11	
	1	3/4"ϕ	6'-9"	B-12	
	1	3/4"ϕ	5'-9"	B-13	

NOTE: ALL REINFORCING STEEL TO BE INCLUDED IN UNIT PRICE BID FOR MANHOLE.

C MANHOLE



SECTION



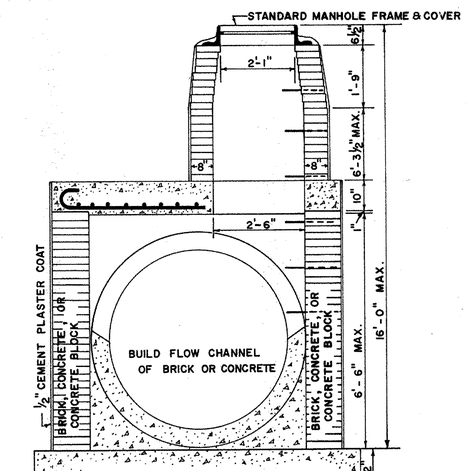
PLAN

BILL OF MATERIALS

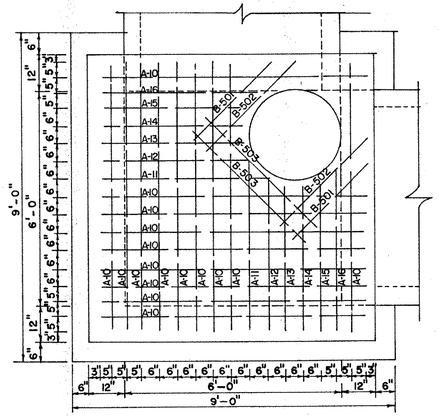
REINF. STEEL	BENT BARS NO.	SIZE	L'GTH.	MRK	BENDING DIAGRAM (ALL DIMENSIONS ARE OUT-OUT)
	20	3/4"ϕ	8'-10"	C-10	7'-6"
	2	3/4"ϕ	5'-8"	C-11	5'-0"
	2	3/4"ϕ	5'-3"	C-12	4'-7"
	2	3/4"ϕ	5'-2"	C-13	4'-6"
	2	3/4"ϕ	5'-3"	C-14	4'-7"
	2	3/4"ϕ	5'-8"	C-15	5'-0"
STRAIGHT BARS					
	2	3/4"ϕ	4'-4"	E-11	
	2	3/4"ϕ	3'-5"	E-12	
	2	3/4"ϕ	3'-10"	E-13	

NOTE: ALL REINFORCING STEEL TO BE INCLUDED IN UNIT PRICE BID FOR MANHOLE.

D MANHOLE



SECTION



PLAN

BILL OF MATERIALS

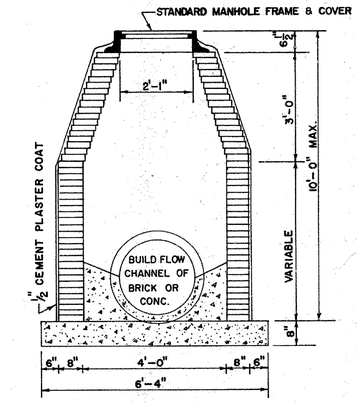
REINF. STEEL	BENT BARS NO.	SIZE	L'GTH.	MARK	BENDING DIAGRAM (ALL DIMENSIONS ARE OUT-OUT)
	18	3/4" ϕ	8'-10"	A-10	7'-6"
	2	3/4" ϕ	5'-6"	A-11	4'-10"
	2	3/4" ϕ	5'-0"	A-12	4'-4"
	2	3/4" ϕ	4'-9"	A-13	4'-1"
	2	3/4" ϕ	5'-8"	A-14	4'-4"
	2	3/4" ϕ	5'-0"	A-15	4'-10"
	2	3/4" ϕ	5'-6"	A-16	
STRAIGHT BARS					
	2	3/4" ϕ	3'-0"	B-501	3'-0"
	2	3/4" ϕ	3'-6"	B-502	3'-6"
	2	3/4" ϕ	4'-6"	B-503	4'-6"

NOTE: ALL REINFORCING STEEL TO BE INCLUDED IN UNIT PRICE BID FOR MANHOLE.

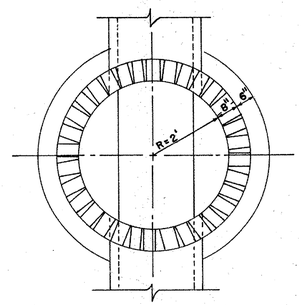
NOTE:
SEE STANDARD SHEET D-1 FOR MANHOLE FRAME and COVER. APPLIES TO ALL MANHOLES ON THIS SHEET.

STEPS ARE TO BE PLACED IN ALL CATCH BASINS AND MANHOLES OVER 4' DEEP. SEE STANDARD SHEET D-1. COST OF STEPS TO BE INCLUDED IN COST OF MANHOLES.

STANDARD MANHOLE



SECTION



PLAN

SCALE FOR ALL MANHOLES

1 0 1 2 3 4 5

COUNTY	CONTRACT	P. R. A. REG. NO.	STATE	FED. AID PROJECT NO.	SHEET NO.	TOTAL SHEETS
		2	DEL.			

STANDARD SHEET D-15

FLARED END SECTIONS — R.C.P. & C.M.P.

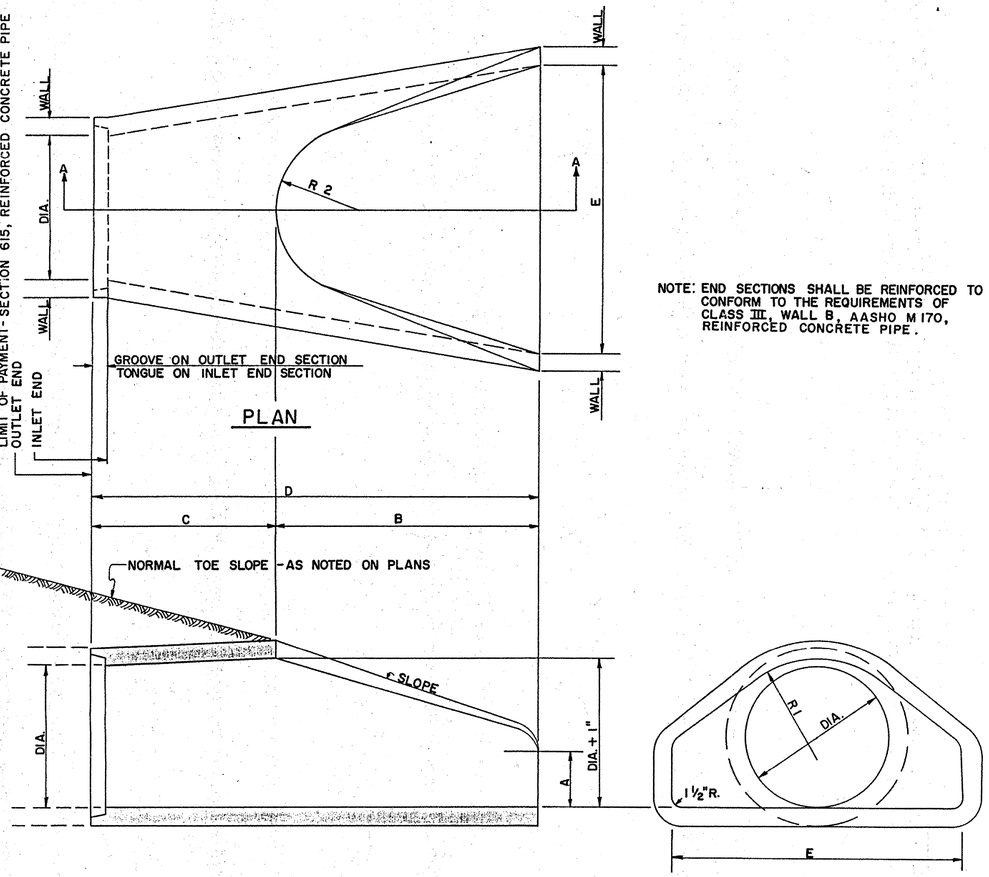
PREL. TRACING H.R.C. DESIGN J.F.R. CHKD. F.I.W.

REVISIONS

ADDED "AASHO M 170" TO "CLASS III, WALL B, ---"	1-28-71	J.T.B.
CHANGED "ITEM 26 ---" TO "SECTION 615, ---"	1-28-71	J.T.B.
ADDED FURTHER DIMENSIONS TO C.M.P. FLARED END SECT'N	7-27-71	J.T.B.
UPDATED ARCHED METAL PIPE RISE & SPAN DIMENSIONS	1-31-77	R.F.R.

APPROVED _____ 6-22-70
DIRECTOR OF OPERATIONS DATE

Lae S. Robinson 6/22/70
DEPUTY DIRECTOR-CHIEF ENGINEER DATE



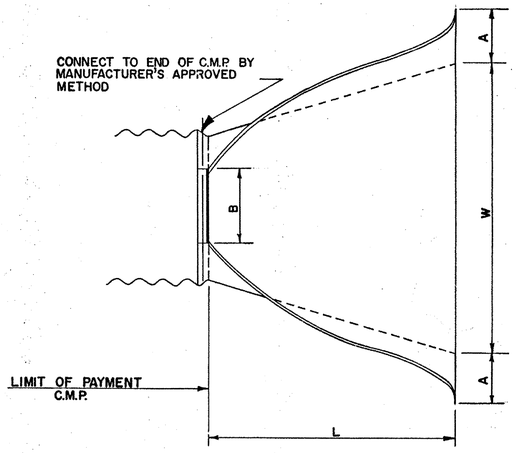
NOTE: END SECTIONS SHALL BE REINFORCED TO CONFORM TO THE REQUIREMENTS OF CLASS III, WALL B, AASHO M 170, REINFORCED CONCRETE PIPE.

SECTION A-A END VIEW

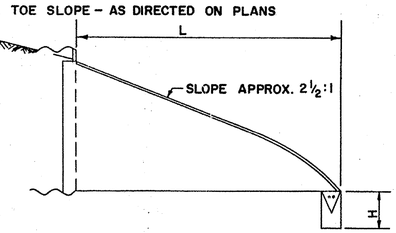
R.C.P. - STANDARD FLARED END SECTION

REINFORCED CONCRETE PIPE — STANDARD FLARED END SECTIONS
TABLE OF DIMENSIONS

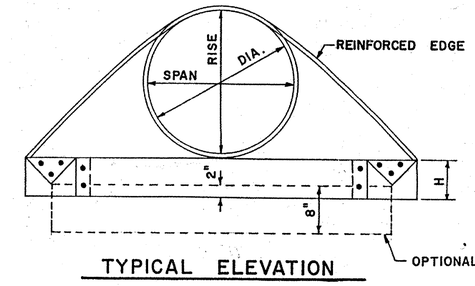
DIAMETER	WALL	SLOPE	A	B	C	D	E	R1	R2
12"	2"	3:1	4"	2'-0"	4'-0 7/8"	6'-0 7/8"	2'-0"	10 1/8"	9"
15"	2 1/4"	3:1	6"	2'-3"	3'-10"	6'-1"	2'-6"	12 1/2"	11"
18"	2 1/2"	3:1	9"	2'-3"	3'-10"	6'-1"	3'-0"	15 1/2"	12"
21"	2 3/4"	3:1	9"	2'-11"	3'-2"	6'-1"	3'-6"	16 1/8"	13"
24"	3"	3:1	9 1/2"	3'-7 1/2"	2'-6"	6'-1 1/2"	4'-0"	16 13/16"	14"
27"	3 1/4"	3:1	10 1/2"	4'-0"	2'-1 1/2"	6'-1 1/2"	4'-6"	18 9/16"	14 1/2"
30"	3 1/2"	3:1	1'-0"	4'-6"	1'-7 3/4"	6'-1 3/4"	5'-0"	18 1/2"	15"
33"	3 3/4"	3:1	1'-1 1/2"	4'-10 1/2"	3'-3 1/4"	8'-1 3/4"	5'-6"	23 3/4"	17 1/2"
36"	4"	3:1	1'-3"	5'-3"	2'-10 3/4"	8'-1 3/4"	6'-0"	24 5/16"	20"
42"	4 1/2"	3:1	1'-9"	5'-3"	2'-11"	8'-2"	6'-6"	27 1/2"	22"
48"	5"	3:1	2'-0"	6'-0"	2'-2"	8'-2"	7'-0"	28 1/2"	22"
54"	5 1/2"	2.4:1	2'-3"	5'-5"	2'-11"	8'-4"	7'-6"	33 1/8"	24"



TYPICAL PLAN



TYPICAL CROSS-SECTION



TYPICAL ELEVATION

GENERAL NOTES

1. All 3-Piece Bodies To Have 12 Gage Sides And 10 Ga. Center Panels. Width Of Center Panels To Be Greater Than 20 Per Cent Of The Pipe Periphery. Multiple Panel Bodies To Have Lap Seams Which Are To Be Tightly Joined By 3/8" Diam. Galvanized Rivets Or Bolts.
2. For 60" Thru 84" Sizes, Reinforced Edges To Be Supplemented With Galvanized Stiffener Angles. The Angles Will Be 2" x 2" x 1/4" For 60" Thru 72" Diameter And 2 1/2" x 2 1/2" x 1/4" For 78" And 84" Diameter. The Angles To Be Attached By 3/8" Diam. Galvanized Nuts And Bolts.
3. For The 79" x 49" And 85" x 54" Sizes, Reinforced Edge To Be Supplemented By 2" x 2" x 1/4" Galvanized Angles.
4. Angle Reinforcement Will Be Placed Under The Center Panel Seams On The 79" x 49" And 85" x 54" Sizes.
5. Galvanized Toe Plate To Be Available As An Accessory, When Specified.

C.M.P. - STANDARD FLARED END SECTION

ROUND METAL PIPE
TABLE OF DIMENSIONS

DIAMETER	GAGE (STEEL)	H ± 1"	L ± 1 1/2"	W ± 2"	A ± 1"	B (max.)
12"	16	6"	21"	24"	6"	6"
15"	16	6"	26"	30"	7"	8"
18"	16	6"	31"	36"	8"	10"
21"	16	6"	36"	42"	9"	12"
24"	16	6"	41"	48"	10"	13"
30"	14	8"	51"	60"	12"	16"
36"	14	9"	60"	72"	14"	19"
42"	12	11"	69"	84"	16"	22"
48"	12	12"	78"	90"	18"	27"
54"	12	12"	84"	102"	18"	30"
60"	12	12"	87"	114"	18"	33"
66"	12	12"	87"	120"	18"	36"
72"	12	12"	87"	126"	18"	39"
78"	12	12"	87"	132"	18"	42"
84"	12	12"	87"	138"	18"	45"

ARCHED METAL PIPE
TABLE OF DIMENSIONS

SPAN	RISE	GAGE (STEEL)	H ± 1"	L ± 1 1/2"	W ± 2"	A ± 1"	B (max.)
17"	13"	16	6"	19"	30"	7"	9"
21"	15"	16	6"	23"	36"	7"	10"
24"	18"	16	6"	28"	42"	8"	12"
28"	20"	16	6"	32"	48"	9"	14"
35"	24"	14	6"	39"	60"	10"	16"
42"	29"	14	8"	46"	75"	12"	18"
49"	33"	12	9"	53"	85"	13"	21"
57"	38"	12	12"	63"	90"	18"	26"
64"	43"	12	12"	70"	102"	18"	30"
71"	47"	12	12"	77"	114"	18"	33"
77"	52"	12	12"	77"	126"	18"	36"
83"	57"	12	12"	77"	138"	18"	39"

NOTE: ABOVE DETAILS AND DIMENSIONS ARE TO BE USED AS A GENERAL GUIDE. MINOR VARIATIONS, AS APPROVED BY THE ENGINEER, TO MEET INDIVIDUAL MANUFACTURER'S STANDARDS WILL BE ACCEPTABLE.

DIETZGEN Philadelphia 135 Imperial Tracing Cloth

COUNTY	CONTRACT	P. R. A. REG. NO.	STATE	FED. AID PROJECT NO.	SHEET NO.	TOTAL SHEETS
		2	DEL.			

STANDARD SHEET D-16

PIPE BEDDING & METHODS OF EROSION PROTECTION

PREL. TRACING H.R.C. DESIGN JER CHKD. E. L. W.

REVISIONS

ONE GENERAL NOTE DELETED. 11-11-71 J.T.B.
REVISED DIMENSIONS ON CLASS A BEDDING 11-14-74 R.T.C.
REVISED EROSION PROTECTION DRAWINGS. 12/2/75 R.F.R.
UPDATED CLASS B & C BEDDING PAY ITEMS 5/11/76 R.F.R.

APPROVED _____ Director Of Operations — 6.22.70 Date

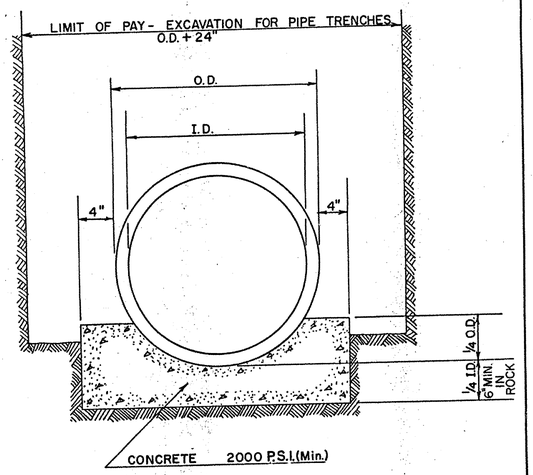
_____ Deputy Director - Chief Engineer — 6/22/70 Date

GENERAL NOTES:

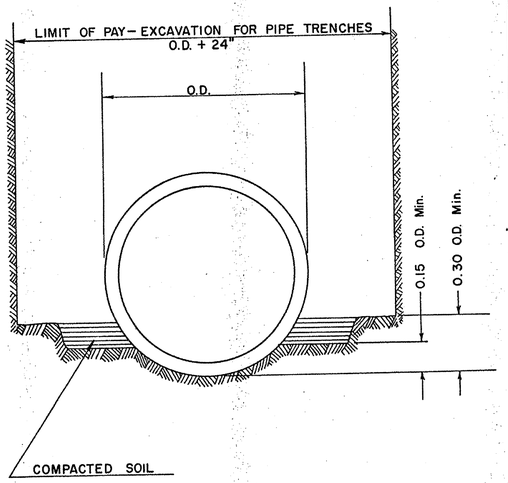
(1.) THESE ILLUSTRATIONS ARE GENERAL CASES ONLY, HOWEVER THE BASIC PRINCIPLES SHOWN ARE TO BE APPLIED TO SPECIFIC CASES.

(2.) EROSION PROTECTION SHALL BE CONSTRUCTED OF EITHER GROUTED RIP-RAP OR 6" PORTLAND CEMENT CONCRETE GUTTER. (SEE SPECIAL PROVISIONS)

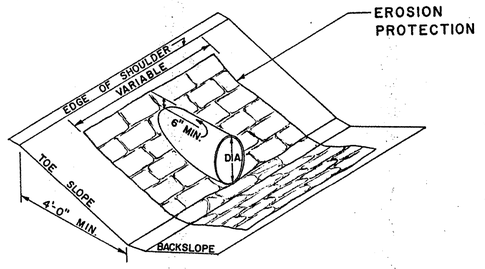
CLASS A BEDDING



CLASS B BEDDING

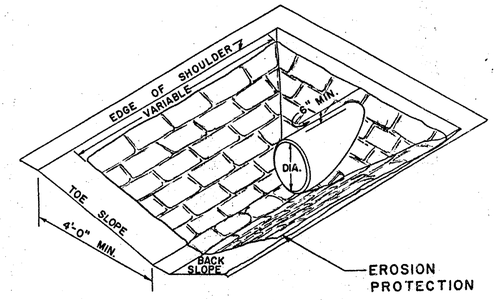


METHODS OF PLACING EROSION PROTECTION



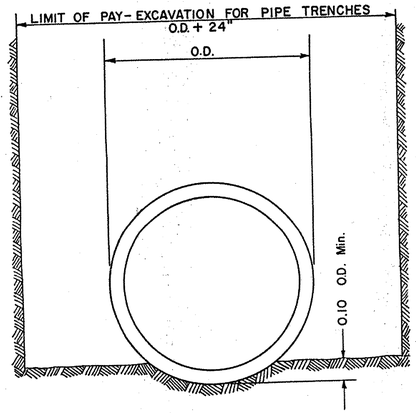
DIA. = VERTICAL SIZE OF PIPE CULVERT.

CASE I



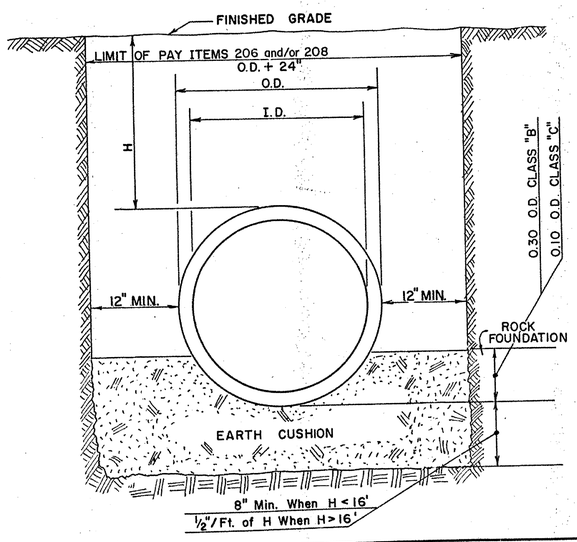
CASE II

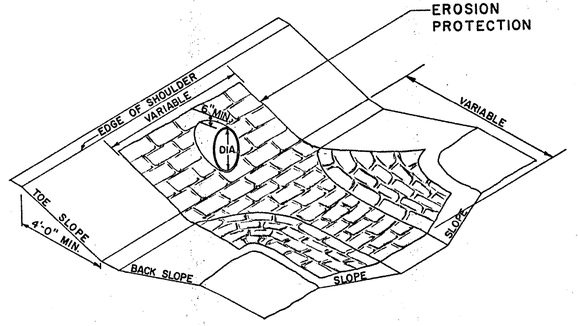
NORMAL TRENCH INSTALLATION (CLASS C BEDDING)



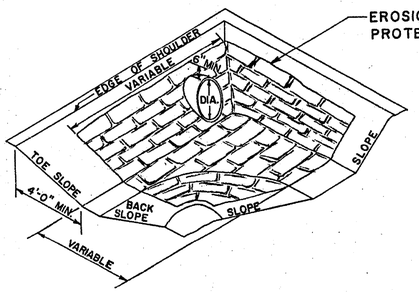
NOTE: USE CLASS "C" BEDDING UNLESS OTHERWISE INDICATED.

CLASS B & C BEDDING IN ROCK





CASE III



CASE IV

COUNTY	CONTRACT	P. R. A. REG. NO.	STATE	FED. AID PROJECT NO.	SHEET NO.	TOTAL SHEETS
		2	DEL.			

STANDARD SHEET D-17

MANHOLES W & W-30

PREL. TRACING Y.N.C. DESIGN E.L.W. CHKD. J.T.B.

REVISIONS

10/25/74, NOTE REFERRING TO STANDARD SHEET D-1, R.T.C.

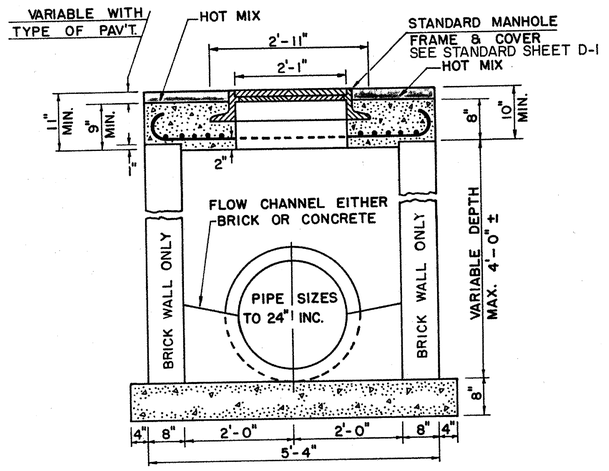
APPROVED _____ DIRECTOR OF OPERATIONS 6-29-70 DATE

Joe S. Robinson DEPUTY DIRECTOR-CHIEF ENGINEER 6/29/70 DATE

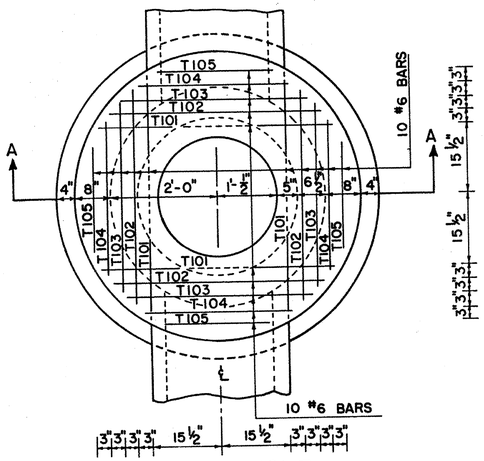
PARGET BRICK OR BLOCK MASONRY WITH 1/2" OF PORTLAND CEMENT MORTAR.

BILL OF MATERIALS

REINF. STEEL	BENT BARS NO.	SIZE	LENGTH	MARK	BENDING DIAGRAM ALL DIMENSIONS ARE OUT-OUT (8" 8")	
137 #	4	3/4" ø	5'-7"	T 101	4'-3"	5'-7" T101
	4	"	5'-2"	T 102	3'-10"	5'-2" T102
	4	"	4'-9"	T 103	3'-5"	4'-9" T103
	4	"	4'-0"	T 104	2'-8"	4'-0" T104
	4	"	3'-2"	T 105	1'-10"	3'-2" T105



SECTION A-A



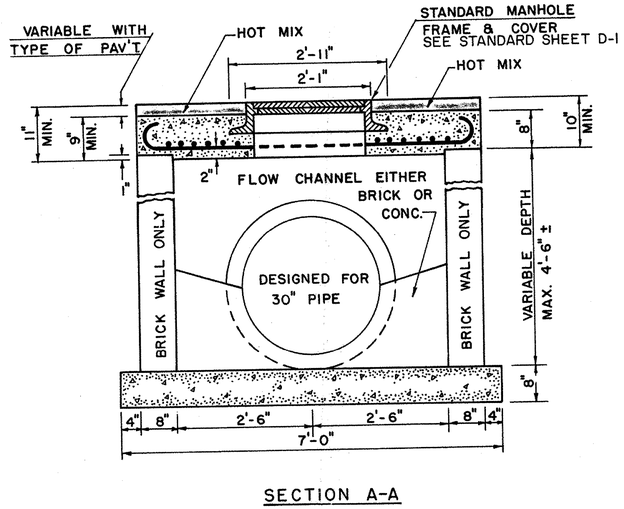
W MANHOLE

SHALLOW DEPTH ONLY

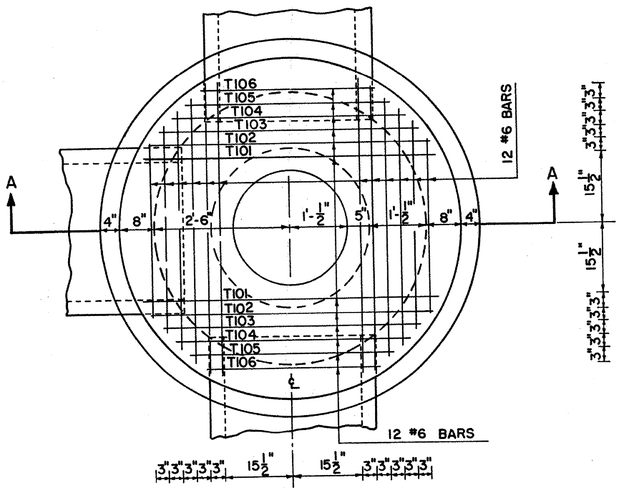
1 0 1 2 3

BILL OF MATERIALS

REINF. STEEL	BENT BARS NO.	SIZE	LENGTH	MARK	BENDING DIAGRAM ALL DIMENSIONS ARE OUT-OUT (8" 8")	
205 #	4	3/4" ø	6'-9"	T101	5'-5"	6'-9" T101
	4	"	6'-5"	T102	5'-1"	6'-5" T102
	4	"	6'-1"	T103	4'-9"	6'-1" T103
	4	"	5'-4"	T104	4'-0"	5'-4" T104
	4	"	5'-1"	T105	3'-9"	5'-1" T105
	4	"	4'-4"	T106	3'-0"	4'-4" T106



SECTION A-A



W-30 MANHOLE

SHALLOW DEPTH ONLY

1 0 1 2 3

COUNTY	CONTRACT	P. R. A. RES. NO.	STATE	FED. AID PROJECT NO.	SHEET NO.	TOTAL SHEETS
		2	DEL.			

STANDARD SHEET D-18-5

CATCH BASIN DOUBLE A

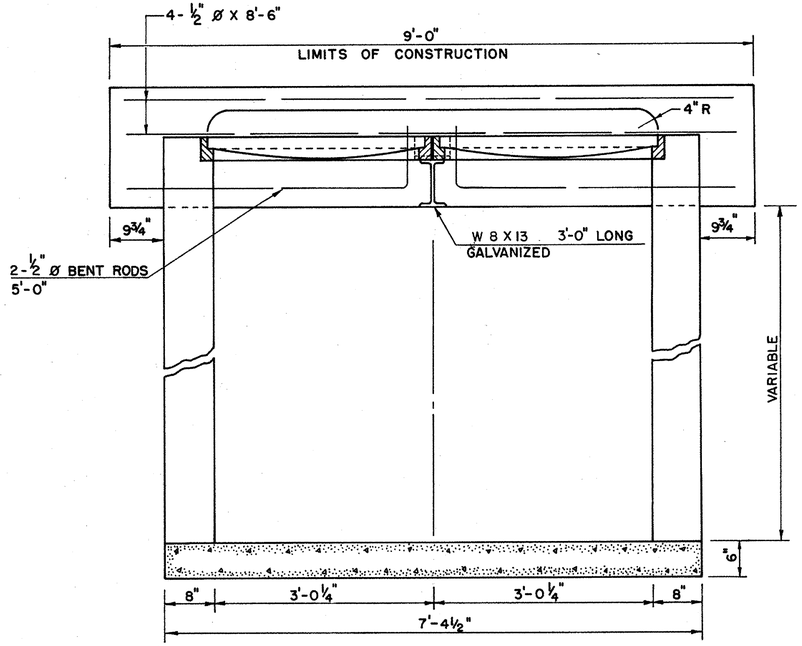
PREL. TRACING Y.N.C. DESIGN E.L.W. CHKD. J.T.B.

REVISIONS

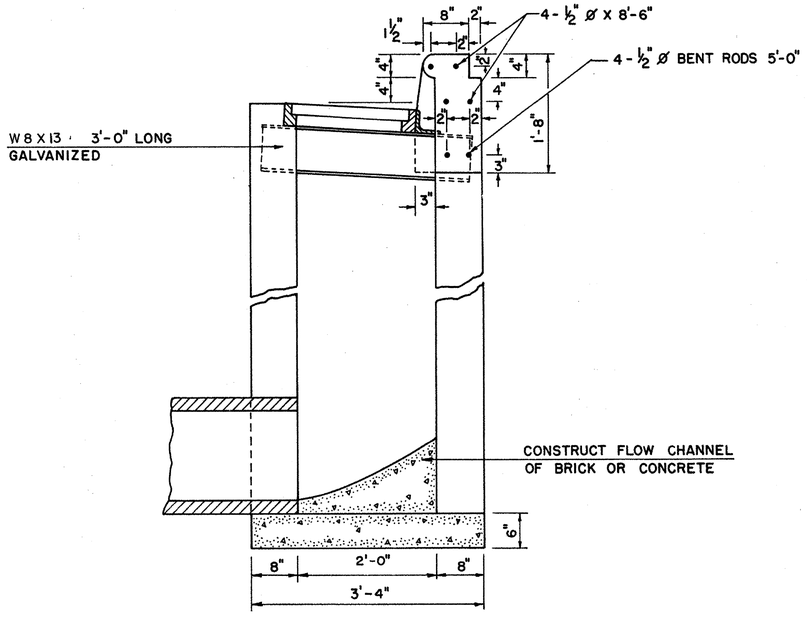
1. 3/31/71, NOMENCLATURE CHANGES FOR A.I.S.C. SPEC., D.M.E.
2. 10/25/74, NOTE REFERRING TO STANDARD SHEET D-1 R.T.C.
3. 12/2/75, STANDARDIZED DIMENSIONS & ADDED FRAME & GRATE NOTE. R.F.R.
4. 1/31/77 ADD PRECAST NOTE AND REVISE W BEAM RFR.
5. 1/30/81 REVISE NOTES R.F.R.

APPROVED _____ DIRECTOR OF OPERATIONS 7-27-70 DATE

_____ DEPUTY DIRECTOR-CHIEF ENGINEER 7/27/70 DATE

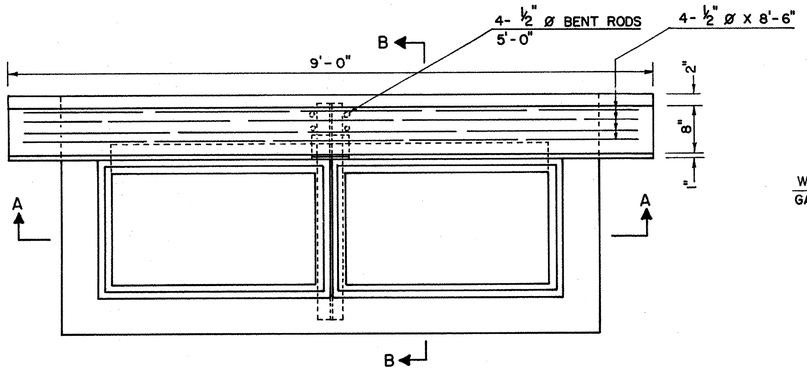


SECTION A-A

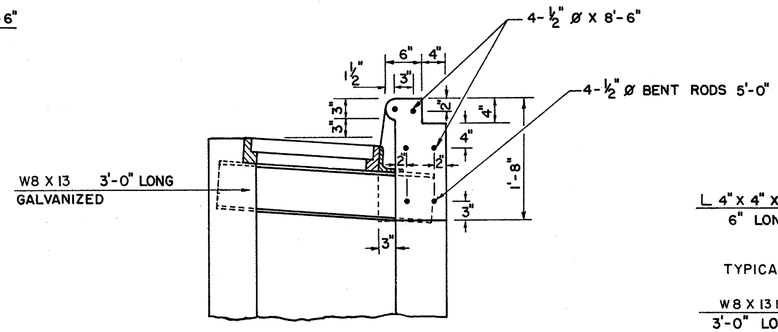


SECTION B-B

FOR USE WITH P.C.C. CURB TYPE 1

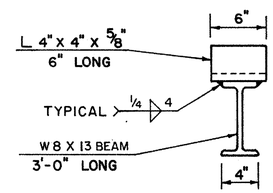


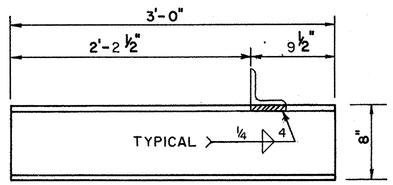
PLAN



SECTION B-B

FOR USE WITH P.C.C. CURB TYPE 2





TO BE GALVANIZED AFTER WELDING

W BEAM SUPPORT FOR STANDARD CATCH BASIN FRAMES AND GRATES

NOTES:

REINFORCING STEEL IS TO BE INCLUDED IN UNIT PRICE BID FOR DOUBLE A CATCH BASIN.

W BEAM AND ANGLE IRON ARE TO BE INCLUDED IN UNIT PRICE BID FOR DOUBLE A CATCH BASIN.

USE STANDARD CATCH BASIN FRAMES & GRATES. SEE STANDARD SHEET D-1

COST OF 9'-0" OF CURB IS TO BE INCLUDED IN UNIT PRICE BID FOR DOUBLE A CATCH BASIN.

CATCH BASIN FRAME AND GRATE MAY BE DEPRESSED ½" BELOW POSITION SHOWN, WHEN DIRECTED.

STEPS ARE TO BE PLACED IN ALL CATCH BASINS AND MANHOLES OVER 4' DEEP. SEE STANDARD SHEET D-1. COST OF STEPS TO BE INCLUDED IN COST OF CATCH.

CATCH BASINS MAY BE PRECAST. CONTRACTOR SHALL SUBMIT DETAILED PLANS SHOWING SECTIONS, JOINTS, REINFORCING AND OTHER PERTINENT INFORMATION FOR APPROVAL.

PARGET BRICK OR BLOCK MASONRY WITH 1/2" OF PORTLAND CEMENT MORTAR.

DOUBLE A CATCH BASIN

1 0 1 2

VAN DYKE PRINT MYLAR

COUNTY	CONTRACT	P. B. A. SEC. NO.	STATE	FED. AID PROJECT NO.	SHEET NO.	TOTAL SHEETS
		2	DEL.			

STANDARD SHEET D-19-5

CATCH BASINS DOUBLE J & DOUBLE J MODIFIED

PREL. TRACING Y.N.C. DESIGN E.L.W. CHKD. J.T.B.

REVISIONS

1. 4/1/71, NOMENCLATURE CHANGES FOR A.I.S.C. SPEC., D.M.E.
2. 10/25/74, NOTE REFERRING TO STANDARD SHEET D-1, R.T.C.
3. 12/2/75, STANDARDIZED DIMENSIONS & ADDED FRAME & GRATE NOTE. R.F.R.
4. 1/31/77, ADDED PRECAST NOTE AND REVISED W BEAM R.F.R.
5. 1/30/81 ADDED STEP NOTE R.F.R.

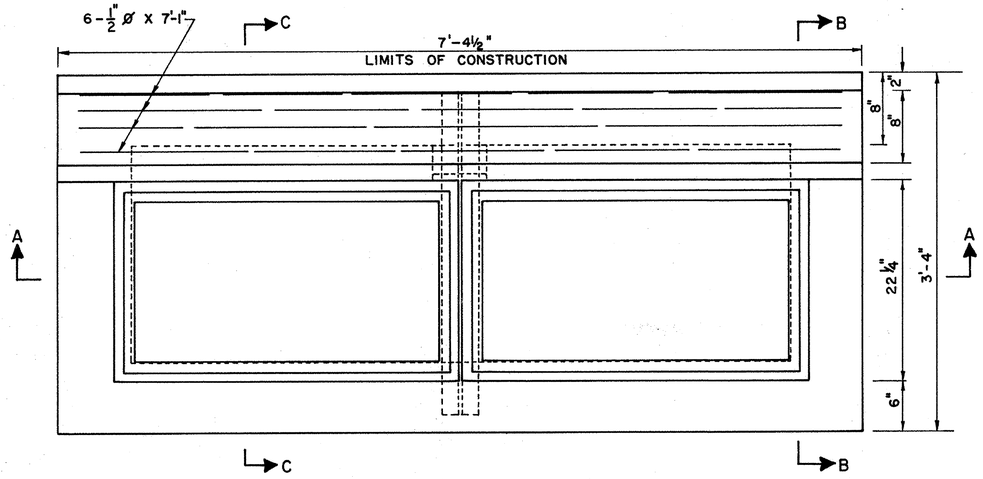
APPROVED _____ 7.27.20
DIRECTOR OF OPERATIONS DATE

Joe S. Robinson 7/27/70
DEPUTY DIRECTOR-CHIEF ENGINEER DATE

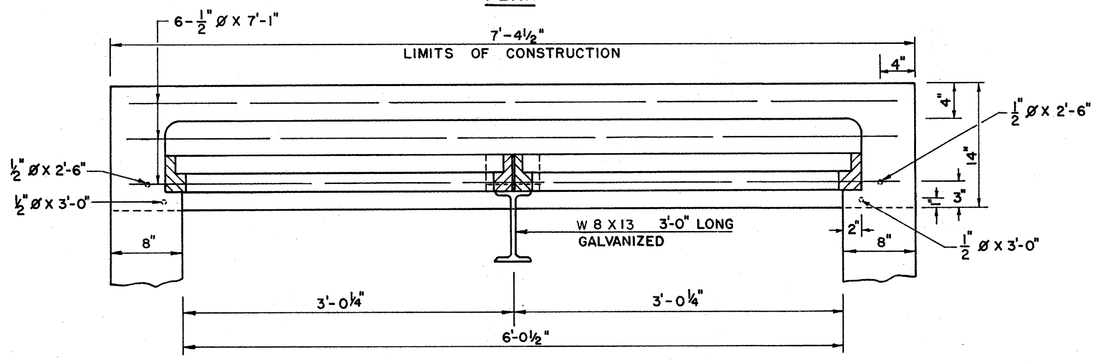
NOTE: CATCH BASINS MAY BE PRECAST. CONTRACTOR SHALL SUBMIT DETAILED PLANS SHOWING SECTIONS, JOINTS, REINFORCEMENT AND OTHER PERTINENT INFORMATION FOR APPROVAL.

STEPS ARE TO BE PLACED IN ALL CATCH BASINS AND MANHOLES OVER 4' DEEP. SEE STANDARD SHEET D-1. COST OF STEPS TO BE INCLUDED IN COST OF CATCH BASIN.

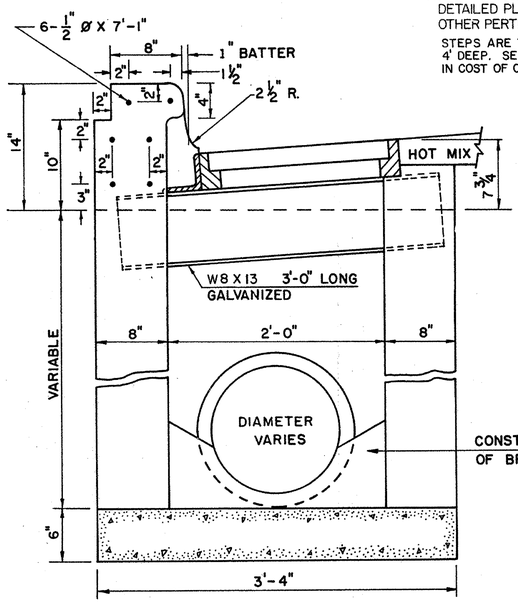
DOUBLE J CATCH BASIN FOR INTEGRAL CURB AND GUTTER ONLY



PLAN

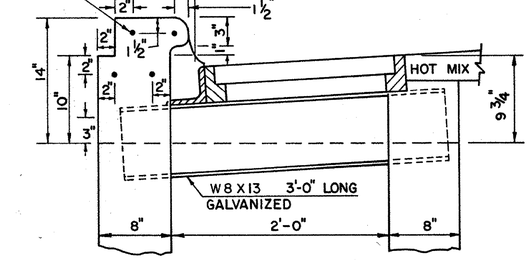


SECTION A-A

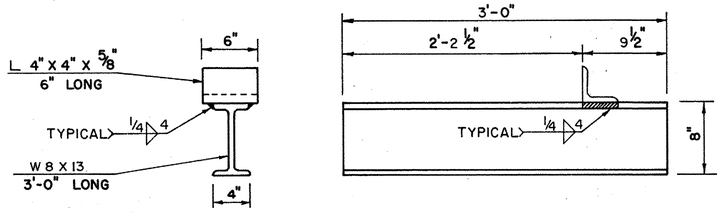


CONSTRUCT FLOW CHANNEL OF BRICK OR CONCRETE

SECTION C-C
FOR 8" CURB

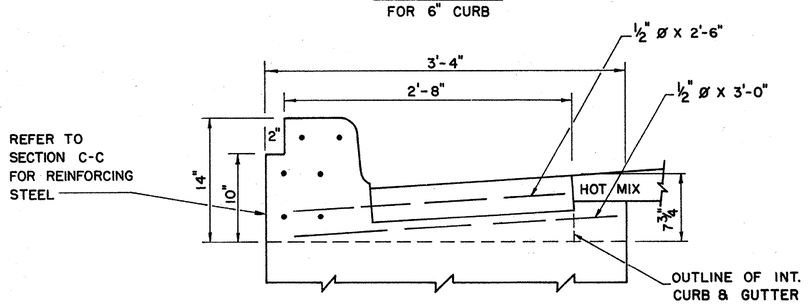


SECTION C-C
FOR 6" CURB



TO BE GALVANIZED AFTER WELDING

W BEAM SUPPORT FOR STANDARD CATCH BASIN FRAMES AND GRATES



SECTION B-B

NOTES:

REINFORCING STEEL IS TO BE INCLUDED IN UNIT PRICE BID FOR DOUBLE J CATCH BASIN.

W BEAM AND ANGLE IRON ARE TO BE INCLUDED IN UNIT PRICE BID FOR DOUBLE J CATCH BASIN.

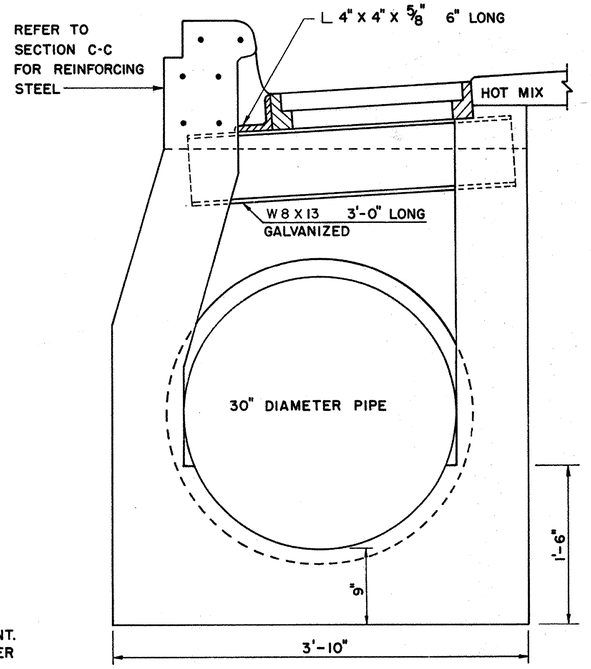
USE STANDARD CATCH BASIN FRAMES AND GRATES.
SEE STANDARD SHEET D-1

COST OF 7'-5" OF INTEGRAL CURB & GUTTER IS TO BE INCLUDED IN UNIT PRICE BID FOR DOUBLE J CATCH BASIN.

PARGET BRICK OR BLOCK MASONRY WITH 1/2" OF PORTLAND CEMENT MORTAR.

UPPER 12" OF STRUCTURE TO BE OF P.C.C. MASONRY.

CATCH BASIN FRAME AND GRATE MAY BE DEPRESSED ½" BELOW POSITION SHOWN, WHEN DIRECTED.



DOUBLE J MODIFIED
CATCH BASIN (30" PIPE)
FOR INTEGRAL CURB & GUTTER ONLY

DOUBLE J CATCH BASIN

1 0 1 2

COUNTY	CONTRACT	P. R. A. REG. NO.	STATE	FED. AID PROJECT NO.	SHEET NO.	TOTAL SHEETS
		2	DEL.			

ENVIRONMENTAL CONTROL
E-1 TEMPORARY EROSION CONTROL DETAILS

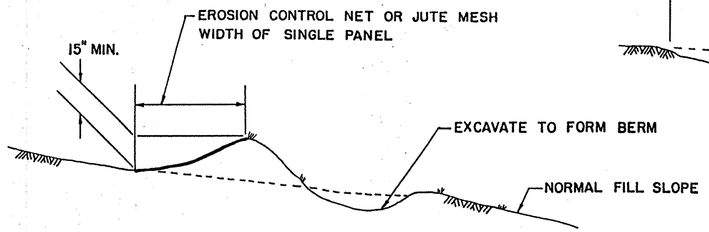
PREL. TRACING Y.N.C. DESIGN CHKD. E.L.W.

REVISIONS

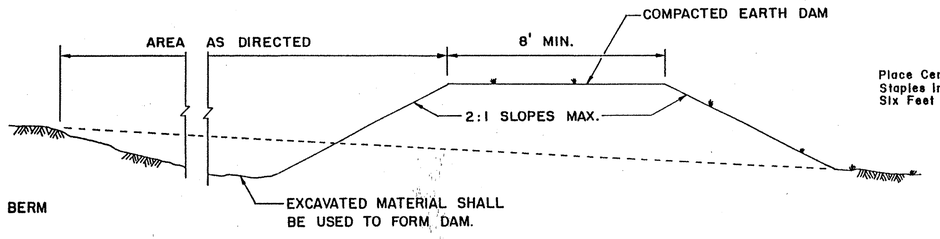
REVISED: DETAILS OF EXCELSIOR BLANKET ADDED. 7-6-71 J.T.B.

APPROVED _____ DIRECTOR OF OPERATIONS 12-7-70 DATE

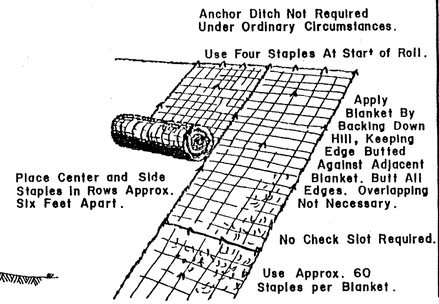
_____ DEPUTY DIRECTOR-CHIEF ENGINEER 12/7/70 DATE



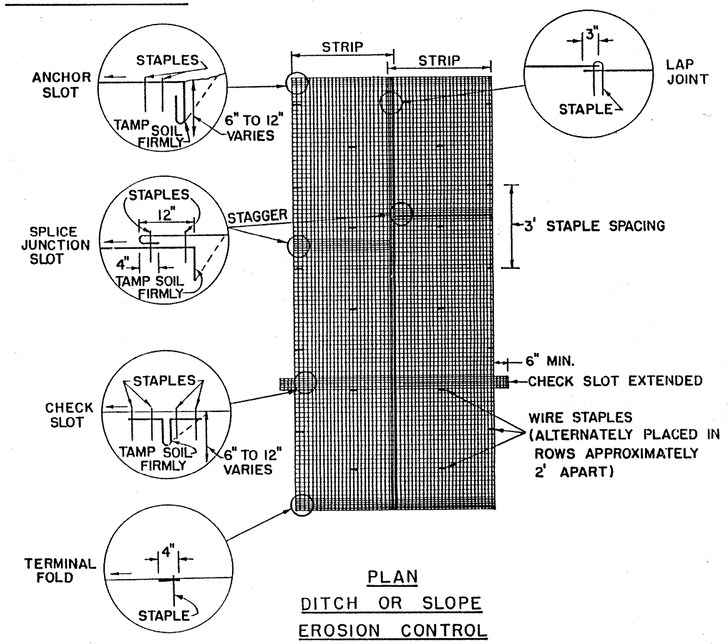
INTERCEPTING DITCH



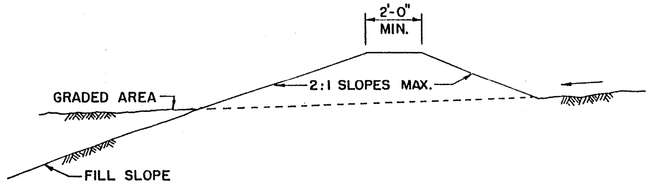
SEDIMENT BASIN



EXCELSIOR BLANKET

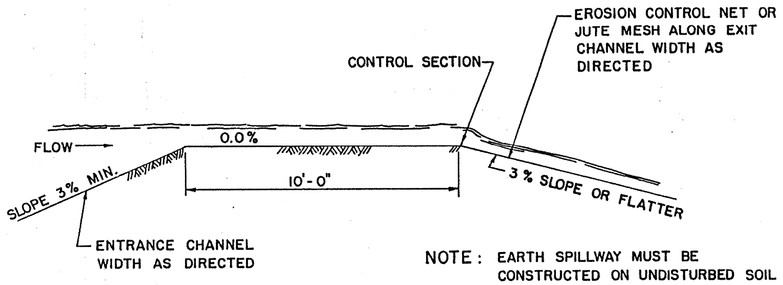


PLAN
DITCH OR SLOPE
EROSION CONTROL
NET OR JUTE MESH



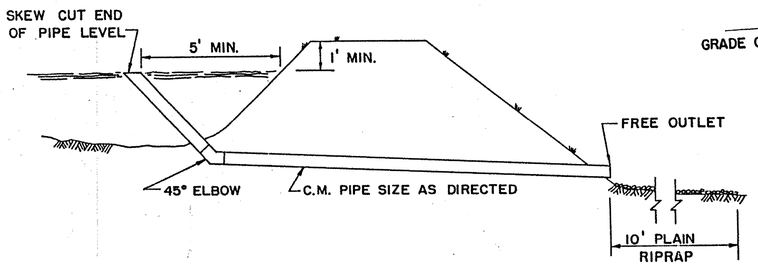
DIKE

NOTE:
1. DIKES MUST BE MACHINE COMPACTED
2. DIKES MUST HAVE A POSITIVE GRADE DRAINING TO A STABILIZED OUTLET.



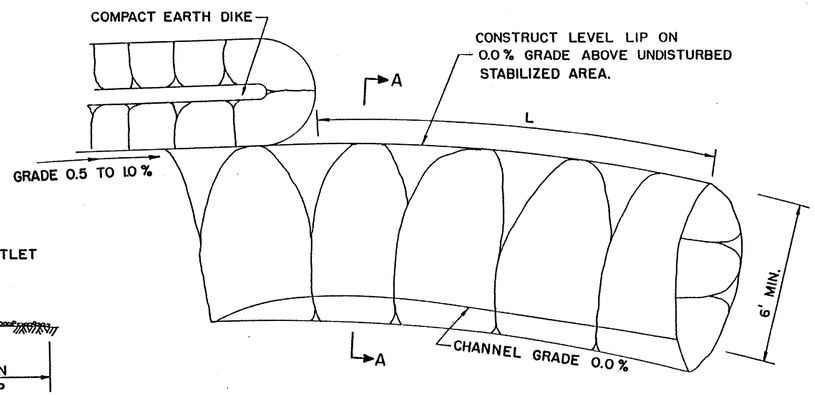
NOTE: EARTH SPILLWAY MUST BE CONSTRUCTED ON UNDISTURBED SOIL

EARTH SPILLWAY



DIKE WITH PIPE SPILLWAY

NOTE:
TOP OF RISER PIPE SHALL BE PERFORATED WITH 2 ROWS OF 1½" DIAMETER HOLES DRILLED IN A HORIZONTAL PLANE ON 10" CENTERS SPACED 8" VERTICALLY.

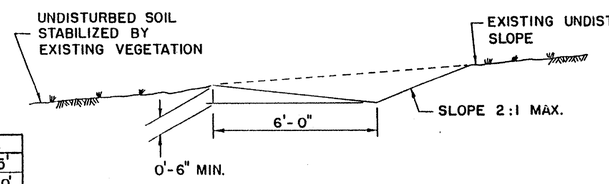


PLAN

NOTES:
1. LEVEL SPREADERS MUST BE CONSTRUCTED ON UNDISTURBED SOIL.
2. ENTRANCE MUST BE GRADED TO INSURE THE FLOW ENTERS DIRECTLY INTO THE 0.0% GRADED CHANNEL.

C.F.S.	L
0 TO 10	15'
11 TO 20	20'
21 TO 30	26'
31 TO 40	36'
41 TO 50	44'

LEVEL SPREADER



SECTION A-A

COUNTY	CONTRACT	P. R. A. REG. NO.	STATE	FED. AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
		2	DEL.				

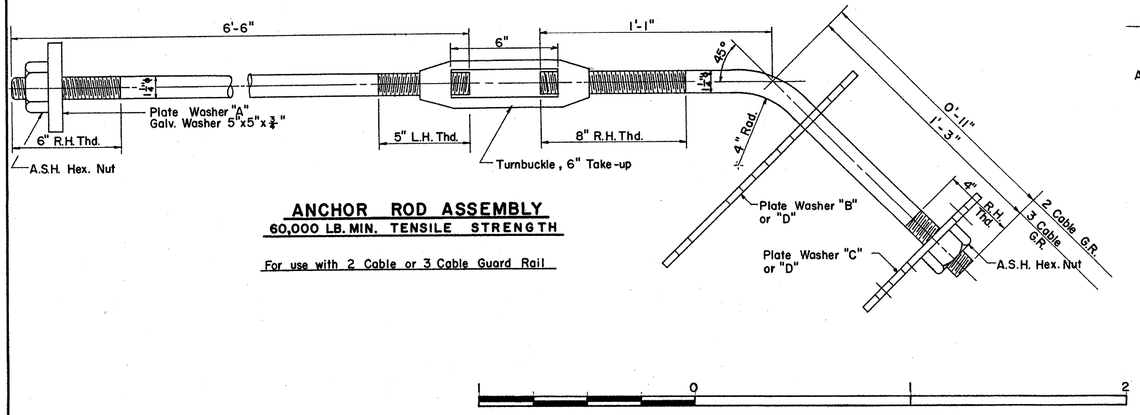
STANDARD SHEET G-1

3 CABLE GUARD RAIL & ATTACHMENTS FOR GUARD RAIL

REVISIONS:
CHANGED SECTION NUMBER FOR END POST ATTACHMENTS TO SECTION 717.
5-22-72 J.T.B.

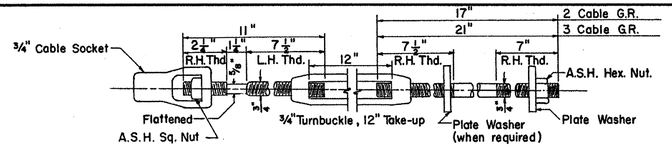
APPROVED _____ 6-22-70
DIRECTOR OF OPERATIONS DATE

_____ 6/22/70
DEPUTY DIRECTOR-CHIEF ENGINEER DATE



ANCHOR ROD ASSEMBLY
60,000 LB. MIN. TENSILE STRENGTH

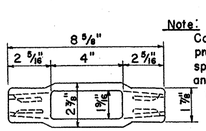
For use with 2 Cable or 3 Cable Guard Rail



CABLE END ANCHOR
25,000 LB. MIN. TENSILE STRENGTH

No Scale

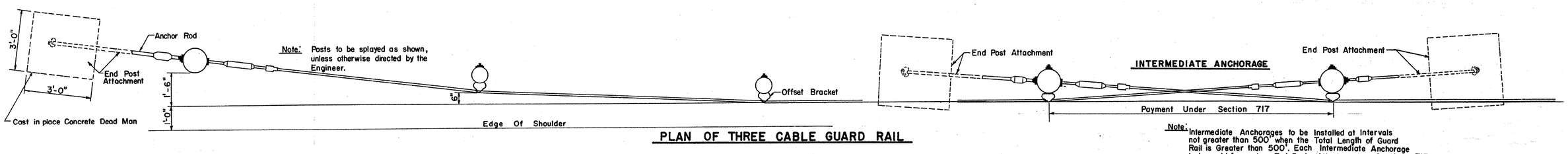
For use with 2 Cable or 3 Cable Guard Rail



Note: Cable splices may be used providing not more than one splice occurs in any one panel and no piece of cable is less than 50'-0" long.

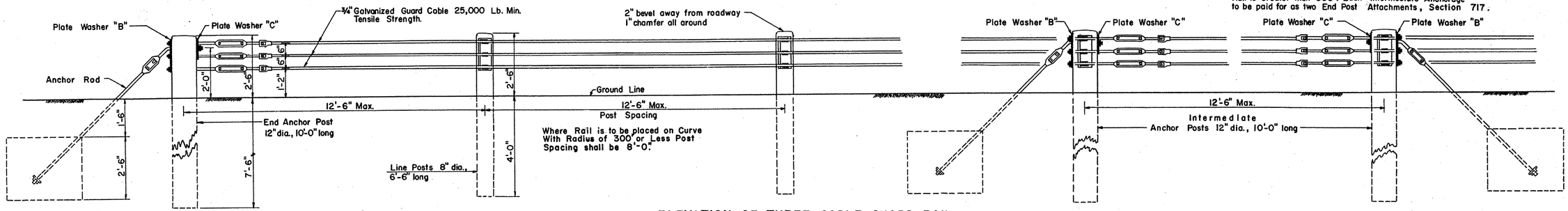
¾" CABLE SPLICE
25,000 LB. MIN. TENSILE STRENGTH

0 1 2



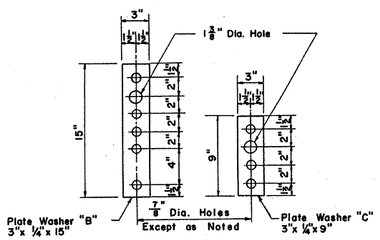
PLAN OF THREE CABLE GUARD RAIL

Note: Intermediate Anchorages to be installed at intervals not greater than 500' when the Total Length of Guard Rail is Greater than 500'. Each Intermediate Anchorage to be paid for as two End Post Attachments, Section 717.



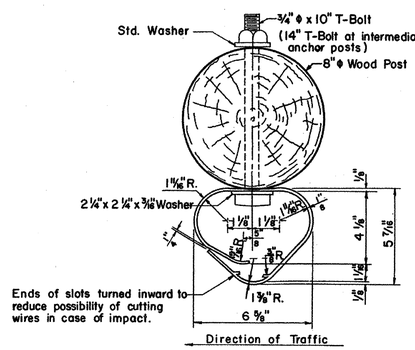
ELEVATION OF THREE CABLE GUARD RAIL

0 1 2 3 4

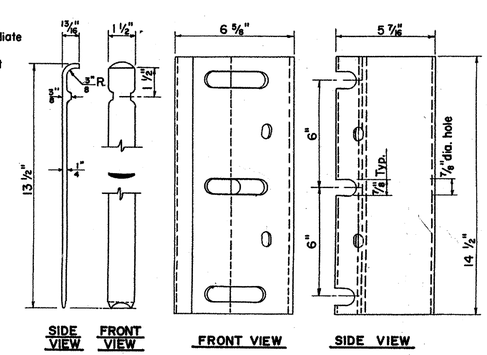


GALVANIZED STEEL PLATE WASHERS FOR 3 CABLE GUARD RAIL

0 1 2 3



PLAN OF OFFSET BRACKET AND POST ASSEMBLY



0 1 2

OFFSET ATTACHMENT FOR 3 CABLE GUARD RAIL

CHECKED
GRADE
BEARINGS
TIE POINTS
BENCH MARKS
EARTHWORK
DRAINAGE

REVISIONS

K & E CO. 17 8183
HRC

COUNTY	CONTRACT	P. R. A. REG. NO.	STATE	FED. AID PROJECT NO.	SHEET NO.	TOTAL SHEETS
		2	DEL.			

STANDARD SHEET G-2-9

STEEL BEAM GUARDRAIL WOOD AND STEEL POST DETAILS

PREL. TRACING J. W. DESIGN CHKD. E. L. W.

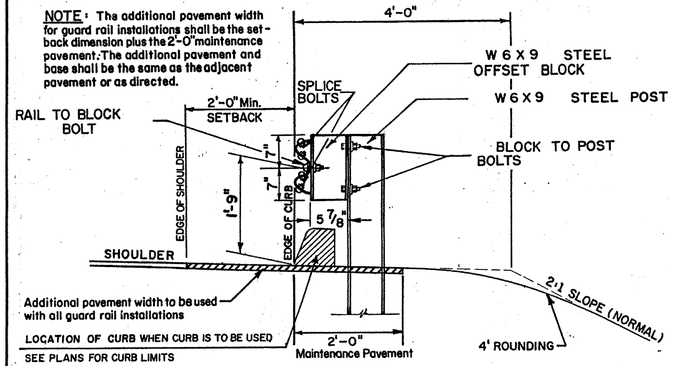
REVISIONS

1. CORRECTED DIMENSIONS ON SPLICE DETAIL 8-13-70 J.T.B.
2. 4/1/71, NOMENCLATURE CHANGES FOR A.I.S.C. SPEC., D.M.E.
3. ADDED OFFSET BRACKET DIMENSION PREVIOUSLY OMITTED 9-17-71 J.T.B
4. ADDED NOTE REFERRING TO C-POST 6/8/74 R.T.C.

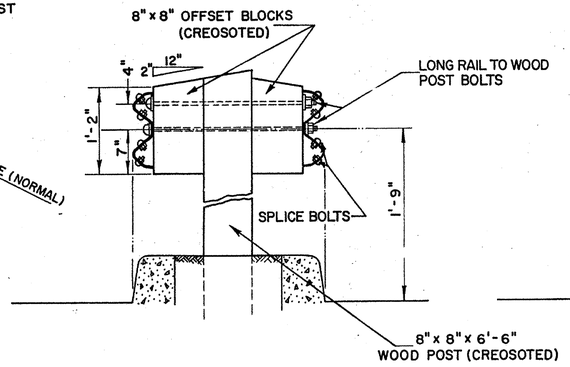
APPROVED _____ DIRECTOR OF OPERATIONS — DATE 6-25-74

_____ DEPUTY DIRECTOR-CHIEF ENGINEER — DATE 6/29/10

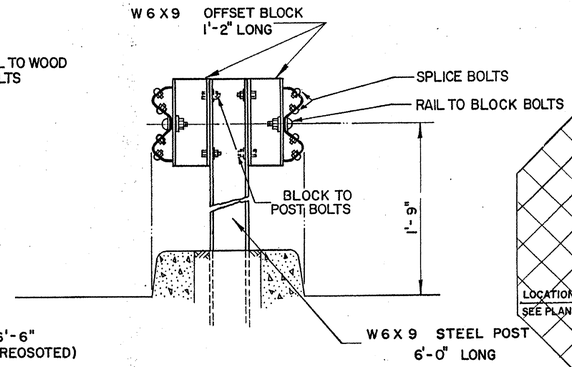
NOTE: The additional pavement width for guard rail installations shall be the set-back dimension plus the 2'-0" maintenance pavement. The additional pavement and base shall be the same as the adjacent pavement or as directed.



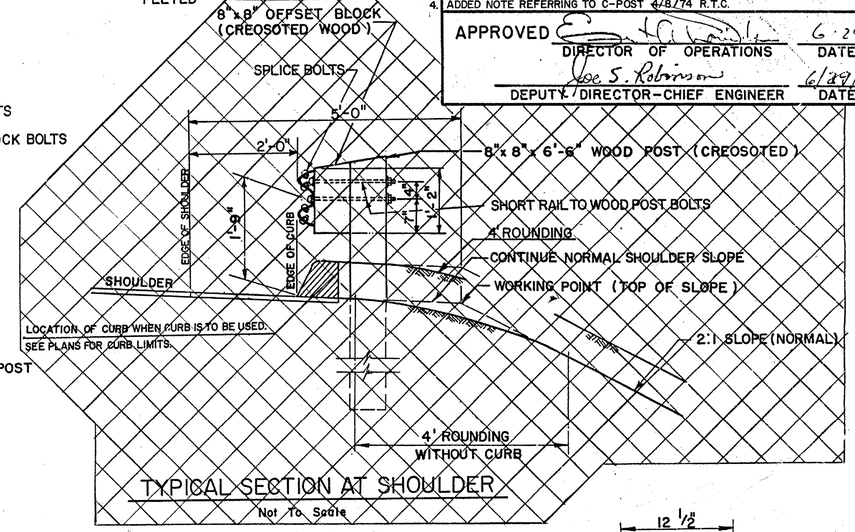
RURAL
TYPICAL SECTION AT SHOULDER
Not To Scale



MEDIAN BARRIER
WOOD POST
Not To Scale



MEDIAN BARRIER
STEEL POST
Not To Scale



TYPICAL SECTION AT SHOULDER
Not To Scale

NOTE: TRANSITION GUARDRAIL 1 FT. IN 37.5 FT. WHEN PASSING FROM CURBED SECTION TO SECTION WITH NO CURB.

SEE STANDARD SHEET G-4 FOR ALT. 6" C-STRONG POST DETAIL.

THREADS OF ALL BOLTS SHALL BE BURRED AFTER GUARDRAIL INSTALLATION IS COMPLETED

ALL WOOD POST DIMENSIONS ARE NOMINAL

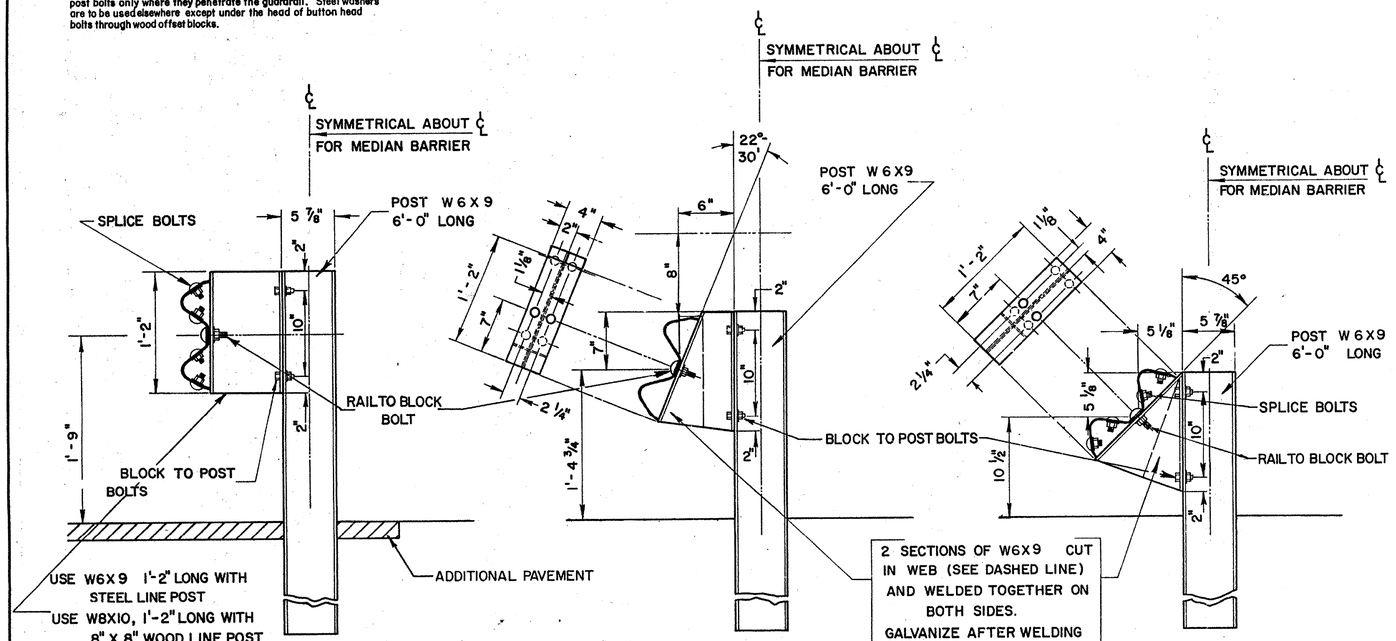
WASHER INSTALLATION NOTES:
(See standards sheet G-4 for washer details)

ONE "TYPE A" WASHER SHALL BE USED UNDER –
- The head on button head rail to block bolts
- The head on button head long rail to wood post bolts *
- The nut on button head long rail to wood post bolts *
- The head on button head short rail to wood post bolts *

ONE STEEL WASHER SHALL BE USED UNDER –
- The nut on button head rail to block bolts
- The head on block to steel post bolts
- The nut on block to steel post bolts
- The nut on button head long rail to wood post bolts *
- The nut on button head short rail to wood post bolts

STEEL WASHERS SHALL NOT BE USED ON SPLICE BOLTS

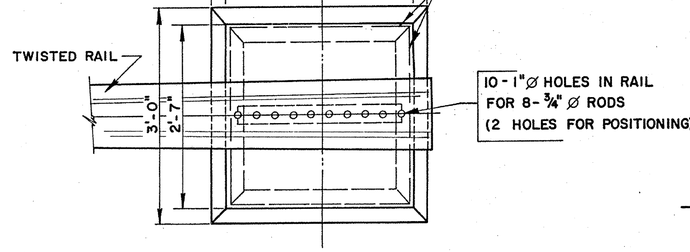
* "Type A" washers to be used on long or short rail to wood post bolts only where they penetrate the guardrail. Steel washers are to be used elsewhere except under the head of button head bolts through wood offset blocks.



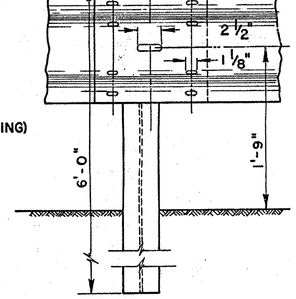
POST "A"
Not To Scale

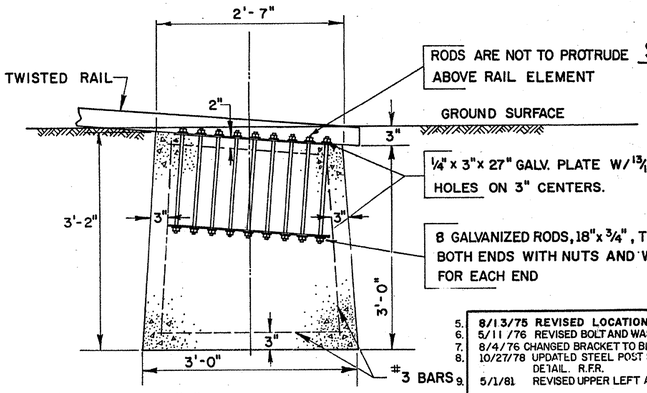
POST "B"
Not To Scale

POST "C"
Not To Scale



Top View (Single Barrier)





TYPE "A" ANCHOR BLOCK
SIDE VIEW (Single Rail & Median Barrier)

SPLICE DETAIL FOR STEEL POST

REVISIONS

5. 8/13/75 REVISED LOCATION OF CURB AND PLACEMENT OF GUARDRAIL RTC
6. 5/11/76 REVISED BOLT AND WASHER NOTES AND SHOULDER TO GUARDRAIL DIMENSION R.F.R.
7. 8/4/76 CHANGED BRACKET TO BLOCK R.F.R.
8. 10/27/78 UPDATED STEEL POST SIZES, REVISED ANCHOR BLOCK DETAIL AND WOOD POST DETAIL. R.F.R.
9. 5/1/81 REVISED UPPER LEFT AND DELETED UPPER RIGHT TYPICAL SECTION R.F.R.

COUNTY	CONTRACT	P. R. A. REG. NO.	STATE	FED. AID PROJECT NO.	SHEET NO.	TOTAL SHEETS
		2	DEL.			

STANDARD SHEET G-3-5
GUARD RAIL PLACING AND ANCHORING

PREL. TRACING J. WHITE DESIGN E. L. W. CHKD. J. T. B.

REVISIONS
1. 4/1/71, NOMENCLATURE CHANGES FOR A.I.S.C. SPEC., D.M.E.
2. 4/8/74, ADDED NOTE REFERRING TO C-POST. R.T.C.
3. 8/13/75, ADDED NOTE REFERRING TO NORMAL SIDE SLOPES & REV. SHOULDER OFFSETS R.T.C.

APPROVED *E. L. Peterson* 6-22-70
DIRECTOR OF OPERATIONS DATE

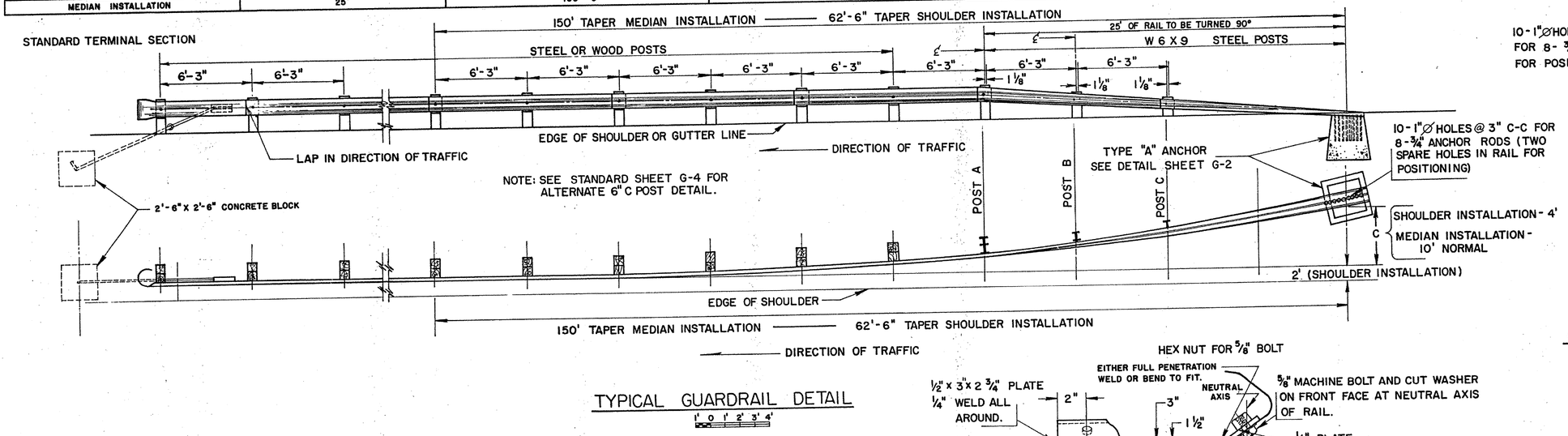
Lee S. Robinson 6/22/70
DEPUTY DIRECTOR-CHIEF ENGINEER DATE

DISTANCE FROM BEGINING OF TAPER		6.25	12.50	18.75	25.00	31.25	37.50	43.75	50.00	56.25	62.50	68.75	75.00	81.25	87.50	93.75	100.00	106.25	112.50	118.75	125.00	131.25	137.50	143.75	150.00
END OFFSET	C=4	0.014	0.160	0.360	0.640	1.000	1.440	1.960	2.560	3.240	4.000														
	C=6	0.027	0.107	0.240	0.427	0.667	0.960	1.307	1.707	2.160	2.667	3.227	3.840	4.507	5.227	6.000									
	C=8	0.020	0.080	0.180	0.320	0.500	0.720	0.980	1.280	1.620	2.000	2.420	2.880	3.380	3.920	4.500	5.120	5.780	6.480	7.220	8.000				
	C=10	0.017	0.069	0.156	0.278	0.434	0.625	0.851	1.111	1.406	1.736	2.101	2.500	2.934	3.403	3.906	4.444	5.017	5.625	6.267	6.944	7.656	8.403	9.184	10.000

TABLE OF OFFSETS FROM TANGENT FOR PLACING GUARDRAIL TAPER

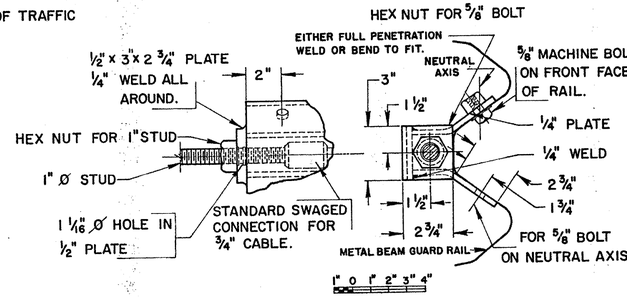
✳ NOT REQUIRED IF GUARD RAIL IS ANCHORED TO OBSTRUCTION UNLESS FILL CONDITIONS WARRANT.

	LENGTH OF TWIST	LENGTH OF TAPER (AND TWIST)	MINIMUM LENGTH OF TANGENT RAIL BEFORE OBSTRUCTION	MINIMUM LENGTH OF RAIL BEYOND OBSTRUCTION ✳
SHOULDER INSTALLATION	25'	62'-6"	50' (TO INCLUDE CONNECTION)	25' (TO INCLUDE CONNECTION)
MEDIAN INSTALLATION	25'	150'-0"	50' (TO INCLUDE CONNECTION)	25' (TO INCLUDE CONNECTION)

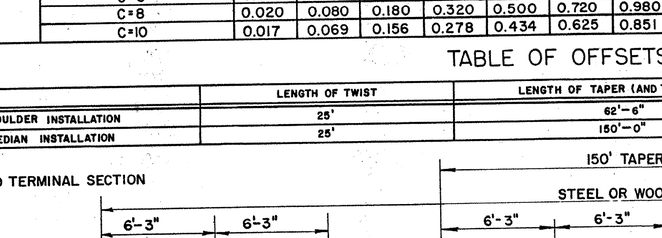


TYPICAL GUARDRAIL DETAIL

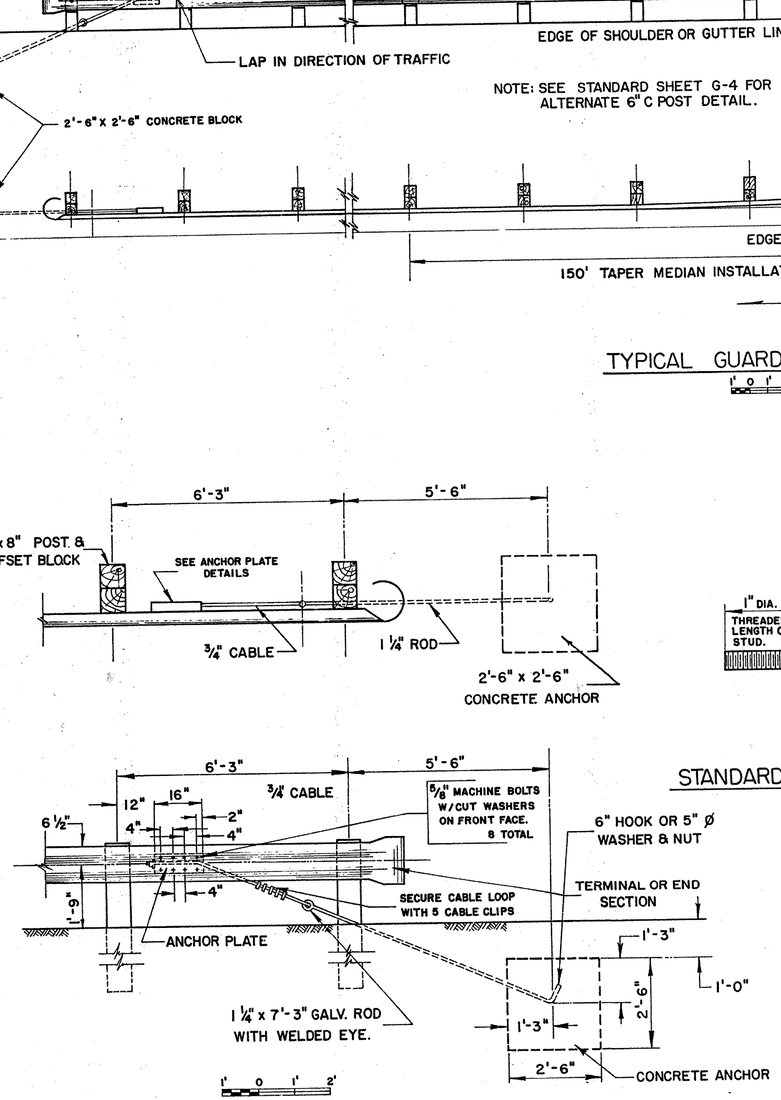
1' 0 1' 2' 3' 4'



ANCHOR PLATE DETAILS



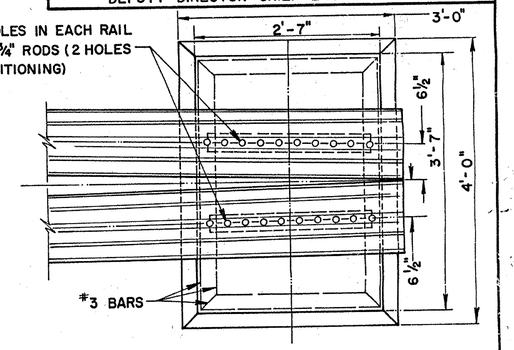
STANDARD SWAGE FITTING AND STUD

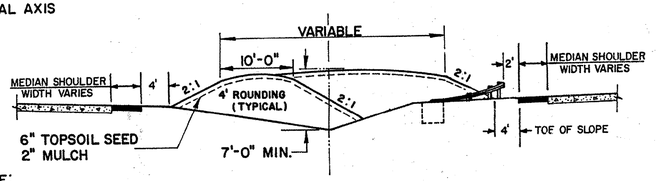


END ANCHOR DETAILS BLOCKED OUT "W" BEAM

ANCHOR BLOCK (MEDIAN BARRIER)
TO BE USED AT ALL MEDIAN BARRIER RAIL ENDS

1' 0 1' 2'

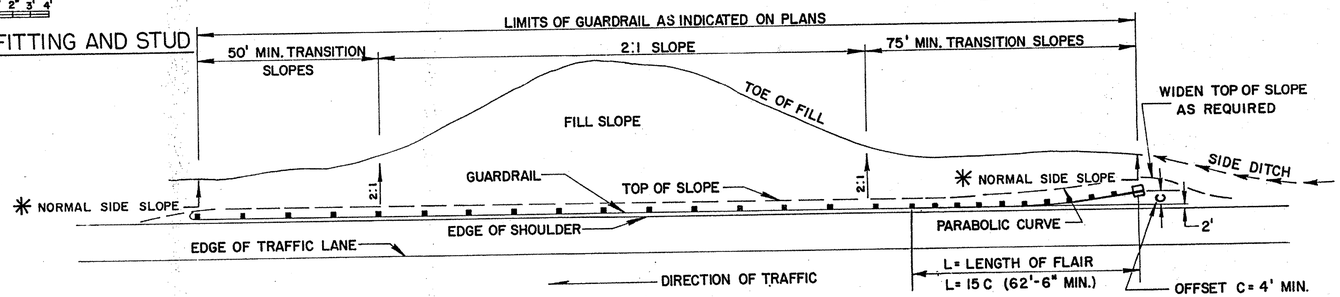




NOTE:
1. MATERIAL FOR MOUND NOT TO BE COMPACTED.
2. MOUND TO BE CONSTRUCTED FROM APPROVED EXCESS MATERIAL UNLESS OTHERWISE DIRECTED.
3. SKETCH SHOWN IS TYPICAL WHEN PROPOSED GRADE LINES OF PAVEMENT ARE IDENTICAL.
4. MOUNDS TO BE CONSTRUCTED ONLY WHERE CALLED FOR ON PLANS.

MEDIAN MOUNDS

10' 0 10' 20'



✳ NORMAL SIDE SLOPES TO BE 6:1 OR 4:1 AS GIVEN ON CONTRACT PLANS.

PLAN AT SHOULDER
NOT TO SCALE

REVISIONS
4. 5/11/76 REVISED MED. MOUND DETAILS, CLARIFIED LENGTH OF 90° RAIL TWIST AND ADDED NOTE ELIMINATING REQUIRED USE OF GUARD RAIL AFTER PARAPET WALL. - R.T.C.
5. 10/27/78 UPDATED STEEL POST SIZE AND ADDED CONNECTION NOTES TO TABLE R.F.R.

© CAL PRINT MYLAR

COUNTY	CONTRACT	P. R. A. REG. NO.	STATE	FED. AID PROJECT NO.	SHEET NO.	TOTAL SHEETS
		2	DEL.			

STANDARD SHEET G-4-7

POSTS & FASTENERS - GALVANIZED STEEL BEAM GUARDRAIL

DET. TRACING J.T.B. DESIGN _____ CHKD. E.L.W.

REVISIONS

1. 4/1/71, NOMENCLATURE CHANGES FOR A.I.S.C. SPEC., D.M.E.
2. 10/10/74, ADDED 6"-C STRONG POST AS ALTERNATE FOR W 6 x 8.5 STEEL POST, R.T.C.
3. 1/30/76 ADDED NOTES CONCERNING GALVANIZING AND USE OF BO , R.T.C
4. 5/11/76 ADDED BURRING NOTE R.F.R.
5. 8/4/76 NOMENCLATURE CHANGES AND SHORT WOOD POST BOLT LENGTH REVISED R.F.R
6. 10/27/78 WOOD AND STEEL POSTS REVISED - STEEL POST SIZES UPDATED R.F.R
7. 5/15/84 ADDED REFLECTORIZED WASHER DETAIL B.E.B.

APPROVED _____ 8-1-84
DIRECTOR OF HIGHWAYS DATE

_____ 8/1/84
DEPUTY DIRECTOR - CHIEF ENGINEER DATE

FASTENERS INCLUDE BOLTS, NUTS, AND WASHERS. SOME OF THE NUT AND BOLT DRAWINGS INCLUDE A WASHER DETAIL; OTHERS DO NOT. THE SIGNIFICANCE OF THIS IS THAT A PARTICULAR WASHER MAY BE USED WITH MORE THAN ONE BOLT OR THAT A PARTICULAR BOLT MAY BE USED WITH MORE THAN ONE WASHER AND, TO AVOID EXCLUSIONS AND EXPLANATORY NOTES ON THE DRAWINGS, THE PARTS HAVE BEEN SEGREGATED.

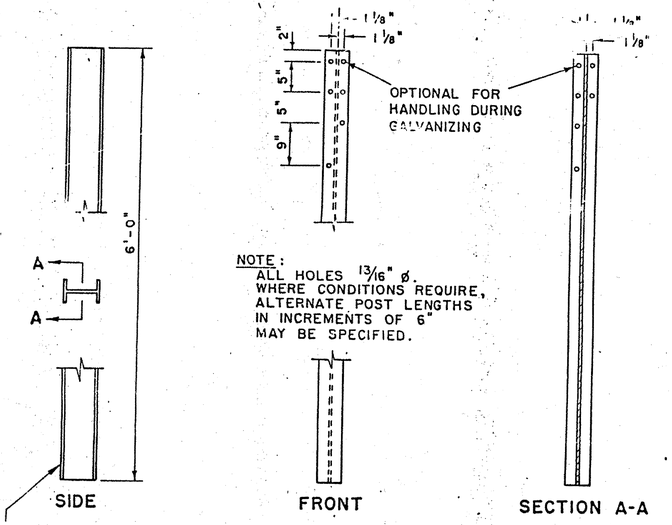
STEEL AND WOOD POSTS AND OFFSET BLOCKS ARE SHOWN FOR "W" BEAM GUARDRAIL AND "W" BEAM MEDIAN BARRIER SYSTEMS ONLY.

ALTERNATE 6"C-STRONG POST MAY BE USED IN PLACE OF W 6 x 9 STEEL POST IN ACCORDANCE WITH F.H.W.A-N 5040.2 APRIL 30, 1974. SEE DETAIL THIS SHEET 6"C-STRONG POST.

THE THREADS OF ALL BOLTS SHALL BE BURRED AFTER INSTALLATION OF THE GUARDRAIL HAS BEEN COMPLETED.

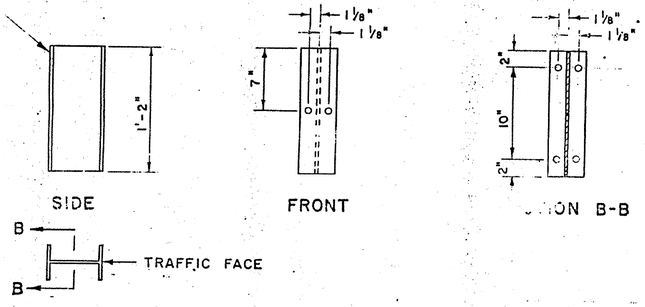
NO PUNCHING, DRILLING OR CUTTING OF GALVANIZED STEEL BEAM GUARDRAIL POST OR BLOCKS WILL BE PERMITTED AFTER GALVANIZING.

ALL WOOD POST DIMENSIONS ARE NOMINAL

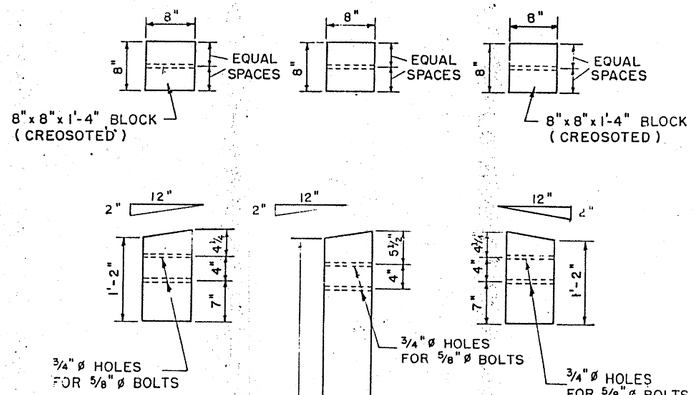


NOTE: ALL HOLES 13/16" ø. WHERE CONDITIONS REQUIRE, ALTERNATE POST LENGTHS IN INCREMENTS OF 6" MAY BE SPECIFIED.

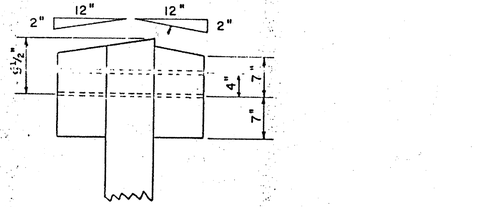
W6 x 9 GALVANIZED STEEL BEAM GUARDRAIL POST



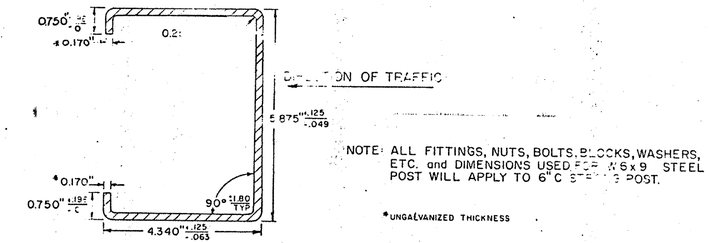
W6 X 9 GALVANIZED STEEL BEAM GUARDRAIL BLOCK



NOTE: WHERE SOIL CONDITIONS REQUIRE, ALTERNATE POST LENGTHS IN INCREMENTS OF 6" MAY BE SPECIFIED.



8"X8" WOOD POST AND BLOCK ASSEMBLY FOR GALVANIZED STEEL BEAM GUARDRAIL.

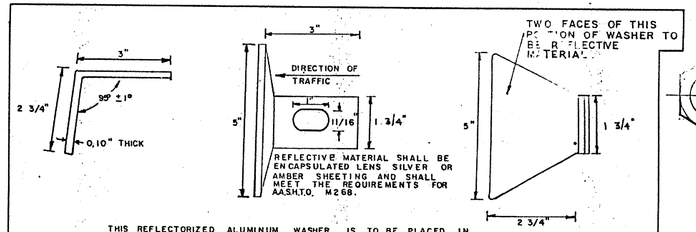


NOTE: ALL FITTINGS, NUTS, BOLTS, BLOCKS, WASHERS, ETC. and DIMENSIONS USED FOR W 6 x 9 STEEL POST WILL APPLY TO 6"C STRONG POST.

*UNGALVANIZED THICKNESS

GALVANIZED STEEL BEAM GUARDRAIL 6"-C-STRONG POST

MATERIAL - ASTM - A570 - WITH MECHANICAL PROPERTIES = TO A36
GALVANIZING - AASHTO - M111 (ASTM A123)



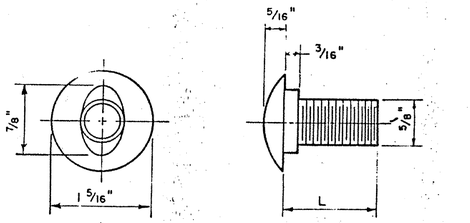
REFLECTIVE MATERIAL SHALL BE ENCAPSULATED LENS SILVER OR AMBER SHEETING AND SHALL MEET THE REQUIREMENTS FOR AASHTO. M268.

THIS REFLECTORIZED ALUMINUM WASHER IS TO BE PLACED IN VALLEY OF BEAM WHEN MOUNTING BEAM ONTO EACH FIFTH POST. WASHER SHALL MEET SPECIFICATION REQUIREMENTS FOR ASTM B209 ALLOY 5052 - H32.

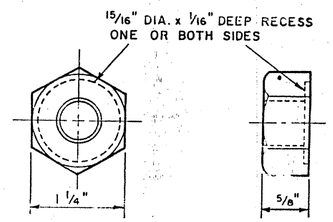
COST OF REFLECTORIZED WASHER TO BE INCIDENTAL TO SECTION 715 - GALVANIZED STEEL BEAM GUARDRAIL.

REFLECTORIZED WASHER

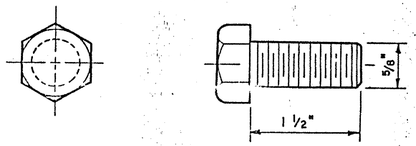
3/8" ø BUTTON HEAD BOLT



	L	THREAD LENGTH
SPLICE BOLTS, RAIL TO BLOCK BOLTS	1 1/4"	FULL LENGTH THREAD
SHORT RAIL TO WOOD POST BOLTS AND SHORT WOOD POST BOLTS	2"	1 1/2" MIN. THREAD LENGTH
	16"	2 1/2" MIN. THREAD LENGTH
LONG RAIL TO WOOD POST BOLTS AND LONG WOOD POST BOLTS.	24 1/2"	2" MIN. THREAD LENGTH



5/8" ø RECESS NUT

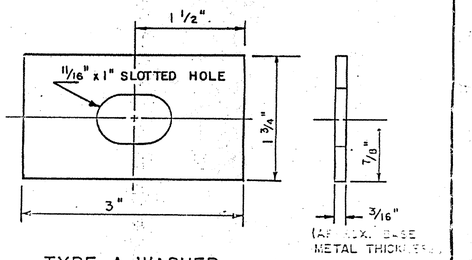


5/8" ø HEX BOLT

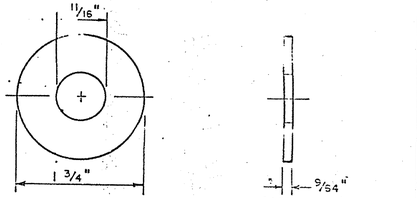
(BRACKET TO POST BOLTS)



5/8" ø HEX NUT



TYPE A WASHER



STEEL WASHER

COUNTY	CONTRACT	P. R. A. REG. NO.	STATE	FED. AID PROJECT NO.	SHEET NO.	TOTAL SHEETS
		2	DEL.			

STANDARD SHEET G-5

RAIL ELEMENTS - GALVANIZED STEEL BEAM GUARDRAIL

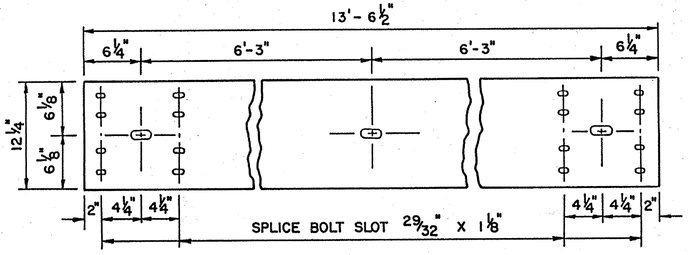
PREL. TRACING Y.N.C. DESIGN CHKD. E.L.W.

REVISIONS

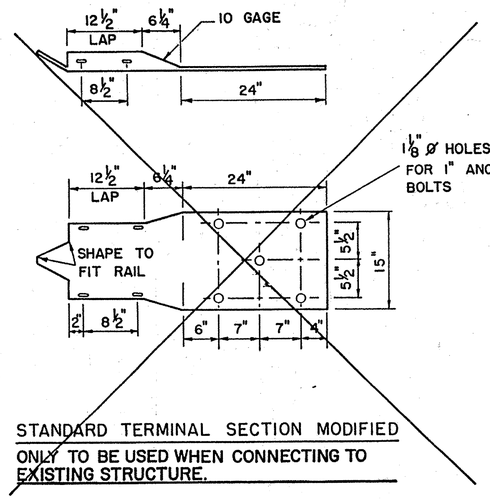
ADDED NOTES REFERRING TO GAGES. 10-27-71 J. T. B.
ADDED NOTE REFERRING TO C-POST 4/8/74 R.T.C.
ADDED STD. TERMINAL SECTION MODIFIED NOTE 3/12/76
ADDED BACK-UP PLATE NOTE. 5/1/76 R.F.R.
REVISED TERMINAL CONNECTOR NOTE & DELETED STD. TERMINAL SECTION MOD. 8/4/76 R.F.R.

APPROVED _____ DIRECTOR OF HIGHWAYS 8.19.70 DATE

_____ DEPUTY DIRECTOR-CHIEF ENGINEER 8/19/70 DATE

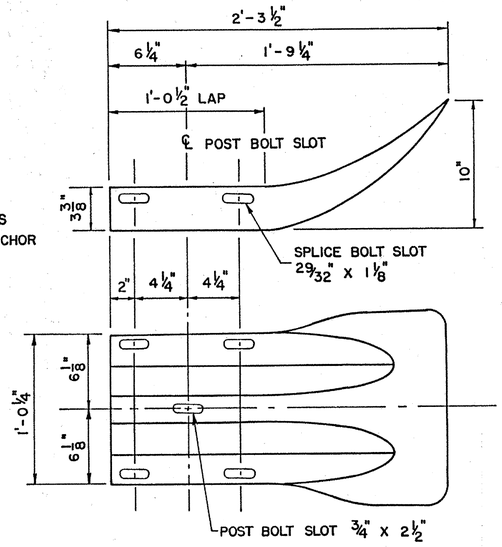


DETAIL TYPICAL RAIL SECTION



STANDARD TERMINAL SECTION MODIFIED

ONLY TO BE USED WHEN CONNECTING TO EXISTING STRUCTURE.



END SECTION (FLARED)

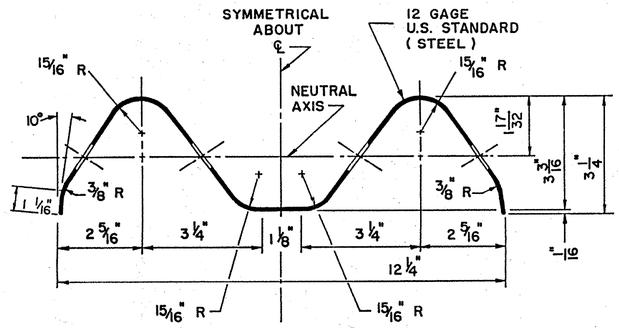
NOTE:

RAIL ELEMENTS INCLUDE THE BASIC RAIL ELEMENTS, SPLICES, AND SPECIAL RAIL SECTIONS SUCH AS TERMINALS FOR "W" BEAM GUARDRAIL AND "W" BEAM MEDIAN BARRIER SYSTEMS.

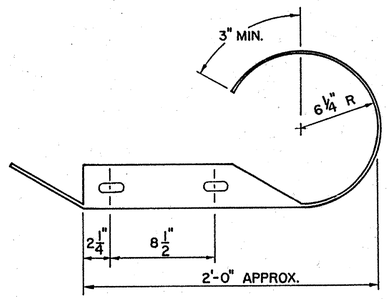
USE 12 GAGE UNLESS OTHERWISE SPECIFIED.

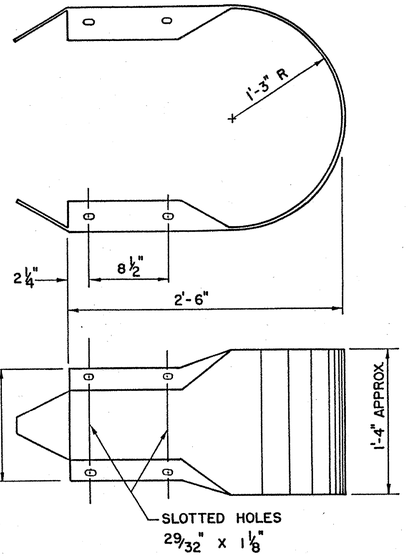
~~STANDARD TERMINAL SECTION MODIFIED TO BE 10 GAGE.~~

SEE STANDARD SHEET G-4 FOR ALTERNATE 6" C STRONG POST DETAIL.

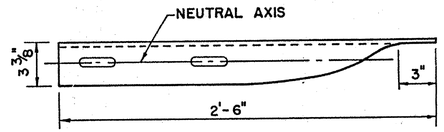


DETAIL RAIL ELEMENT

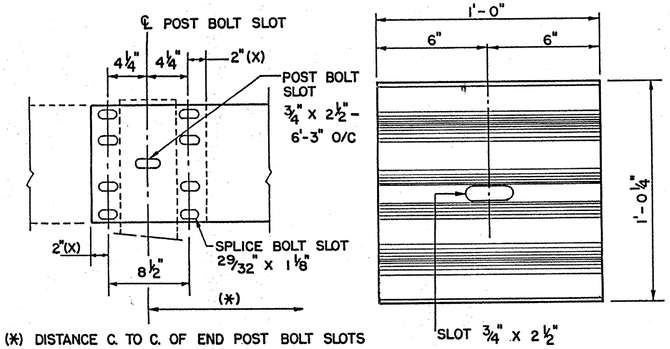




BUFFER END SECTION



(X) TOLERANCE $+1\frac{1}{4}" - \frac{1}{4}"$

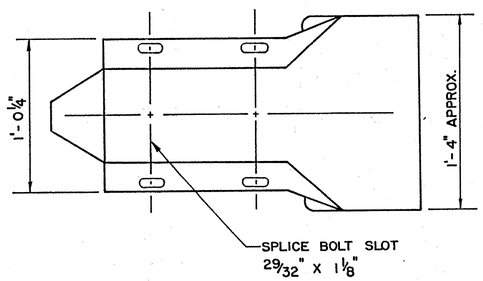


(*) DISTANCE C. TO C. OF END POST BOLT SLOTS 12'-6" OR 25'-0". DISTANCE C. TO C. OF INTERMEDIATE POST BOLT SLOT 6'-3" UNLESS OTHERWISE SPECIFIED.

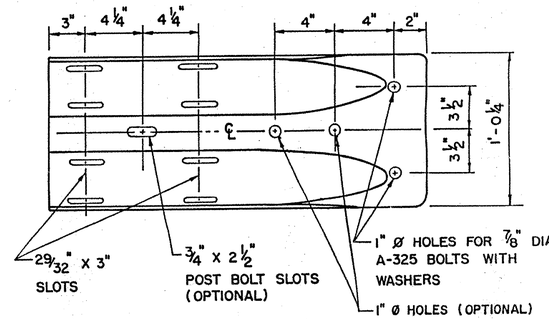
BEAM SPLICE

BACK-UP PLATE

BACK-UP PLATE SHALL BE PLACED BEHIND GUARDRAIL AT NON-SPLICE POSTS.



END SECTION (ROUNDED)



TERMINAL CONNECTOR

COUNTY	CONTRACT	P. R. A. REG. NO.	STATE	FED. AID PROJECT NO.	SHEET NO.	TOTAL SHEETS
		2	DEL.			

STANDARD SHEET G-6-6
CORRUGATED METAL DOWNSPOUTS

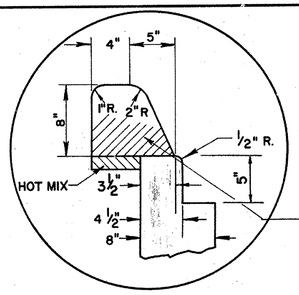
PREL. TRACING J.L. White DESIGN E. L. W. CHKD. J. T. B.

REVISIONS

1. CHANGED BASIN MEASUREMENT & PIPE LOCATION-Y.N.C. 7-20-70
2. CORRECTED DIMENSION ON INTAKE BASIN - J.T.B. 6-24-71
3. CORRECTED DIMENSIONS FOR DOWNSPOUT SPLASH APRON. 10-10-75 R.F.R.
4. CORRECTED DIMENSION, FACE OF CURB TO ROUNDING. 12-2-75 R.F.R.
5. REMOVED "TO BE PAID FOR..." NOTE.- R.T.C.- 5-11-76.
6. MINOR NOMENCLATURE CHANGES R.F.R. 10/27/78

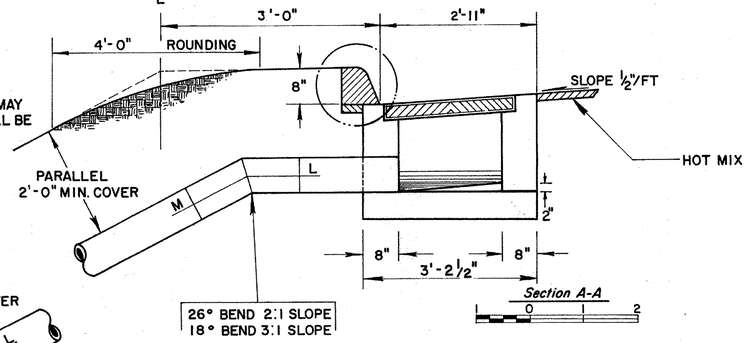
APPROVED _____ 6-23-70
DIRECTOR OF OPERATIONS — DATE

Jas S. Robinson 6/22/70
DEPUTY DIRECTOR-CHIEF ENGINEER — DATE



NOTE:
C.M.P. INCLUDING ELBOW, TO BE PAID FOR BY LINEAR FOOT. LENGTH OF ELBOW TO BE MEASURED ALONG ℄ AXIS M-L AS SHOWN BELOW.

TYPE 2 HOT MIX CURB MAY BE USED. LOCATION WILL BE THE SAME.

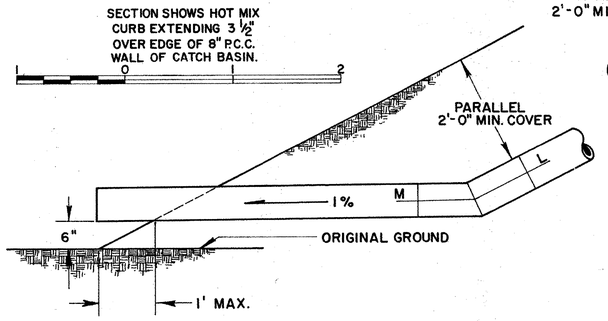


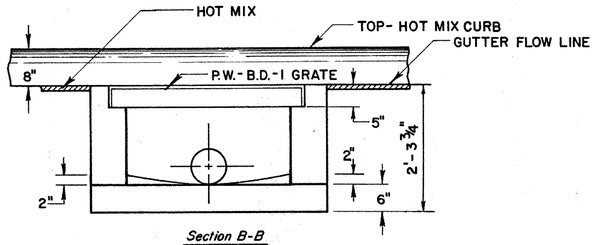
Section A-A

0 1 2

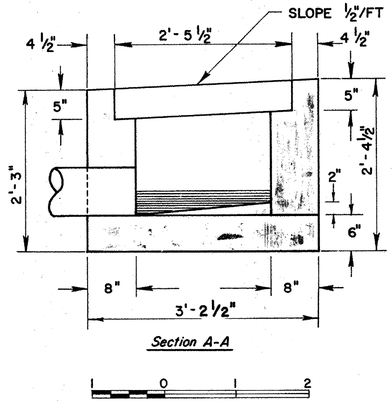
SECTION SHOWS HOT MIX CURB EXTENDING 3 1/2" OVER EDGE OF 8" P.C.C. WALL OF CATCH BASIN.

0 2



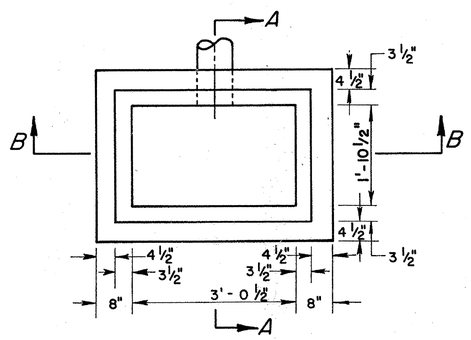


Section B-B



Section A-A

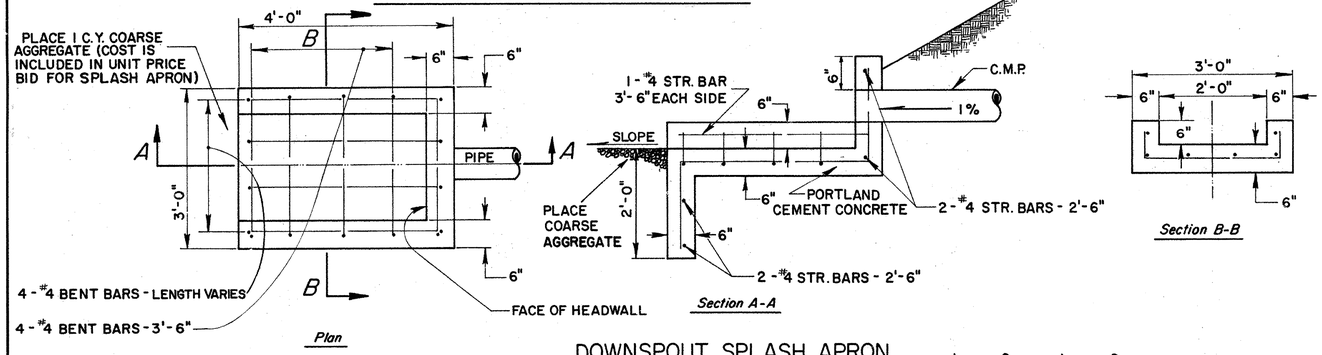
0 1 2



Plan

0 1 2

DETAIL OF INTAKE BASIN AND CORRUGATED METAL DOWNSPOUTS



Plan

Section A-A

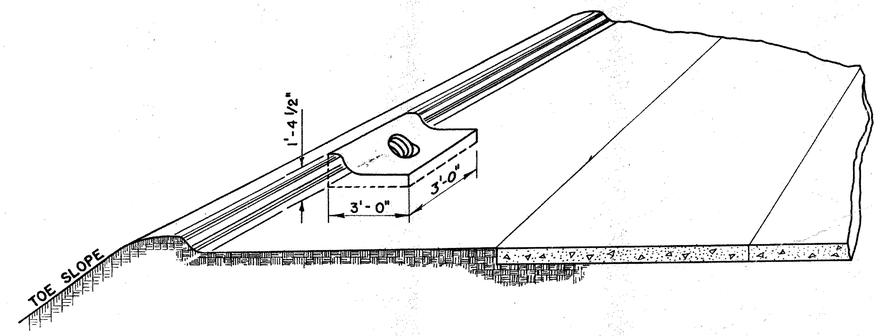
Section B-B

DOWNSPOUT SPLASH APRON

Construct if and where directed, to be paid for at the unit price bid for each splash apron.

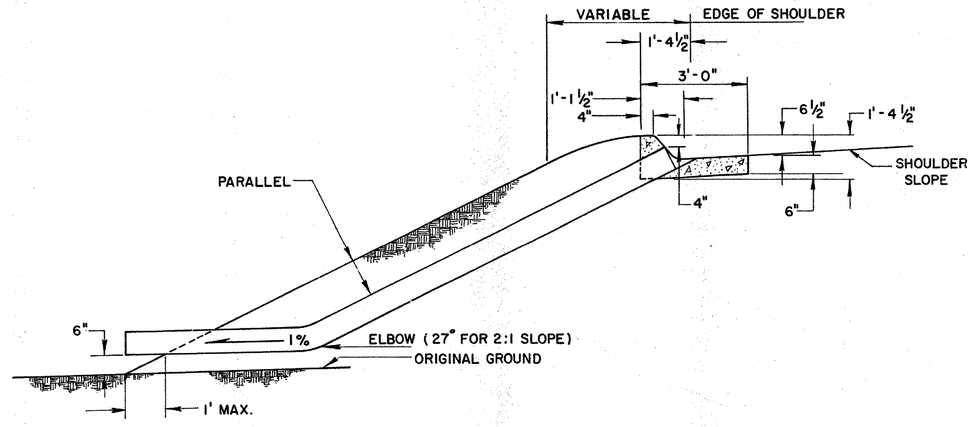
0 1 2

NOTE:
USE P.W.-B.D.-1 GRATE ON INTAKE BASIN.



P.C.C. INTAKE APRON

NOTE:
P. C. C. INTAKE APRON TO BE PAID FOR AT UNIT PRICE BID FOR EACH.



CORRUGATED METAL DOWNSPOUTS WITH P.C.C. INTAKE APRON

0 1 2 3 4

STATE OF DELAWARE
DEPARTMENT OF TRANSPORTATION

STANDARD SHEET NUMBER G-7-1

GUARDRAIL TO BARRIER CONNECTION DETAILS

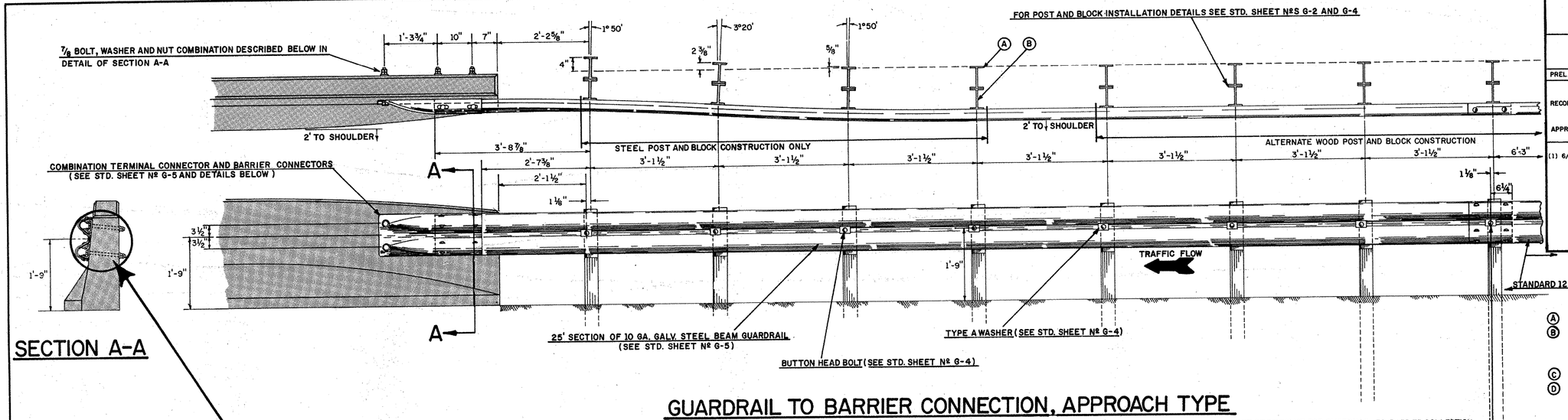
PREL. TRACING R.F.R. 7-29-76 DESIGN R.T.C. CHKD. R.T.C.

RECOMMENDED 8/6 19 76 R. E. Tomasetti CHIEF ENGINEER

APPROVED 8/9 19 76 R. A. Fisher DIRECTOR OF HIGHWAYS

REVISIONS

(1) 6/30/78 Revised connection and nomenclature R.F.R.

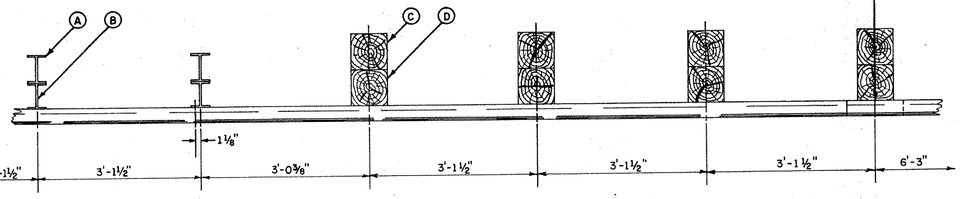


SECTION A-A

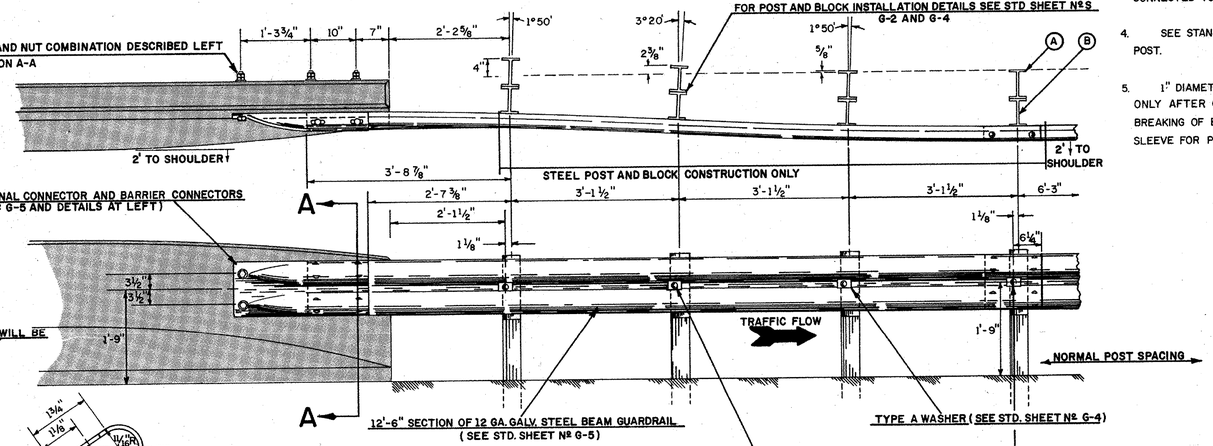
Ⓐ W6 X 9 GALV. STEEL POST - SEE STD. SHEET G-4 FOR SPECIFICATIONS
Ⓑ W6 X 9 GALV. STEEL BLOCK-SEE STD. SHEET G-4 FOR SPECIFICATIONS

Ⓒ 8"X 8" CREOSOTED WOOD POST-SEE STD. SHEET G-4 FOR SPECIFICATIONS
Ⓓ 8"X 8" CREOSOTED WOOD BLOCK-SEE STD. SHEET G-4 FOR SPECIFICATIONS

GUARDRAIL TO BARRIER CONNECTION, APPROACH TYPE

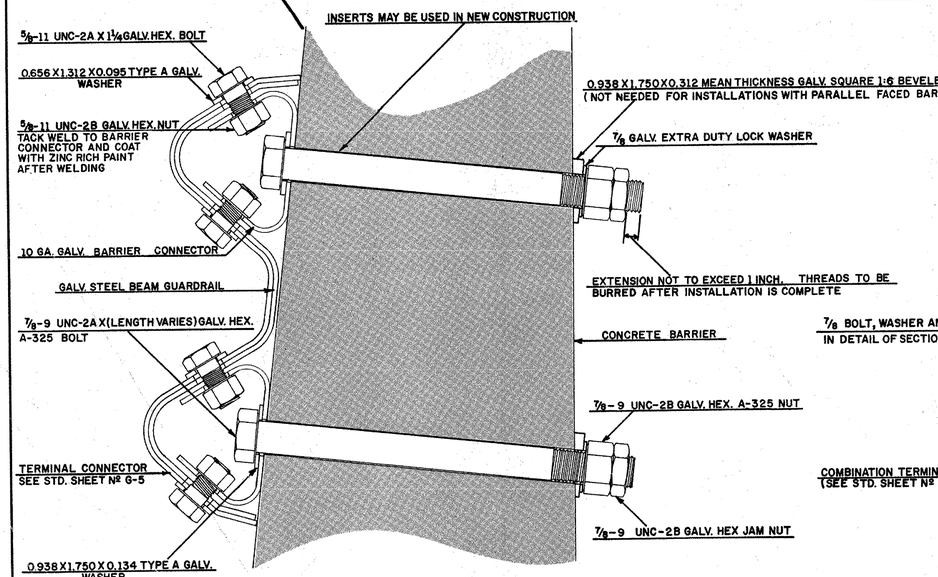


ALTERNATE WOOD POST METHOD

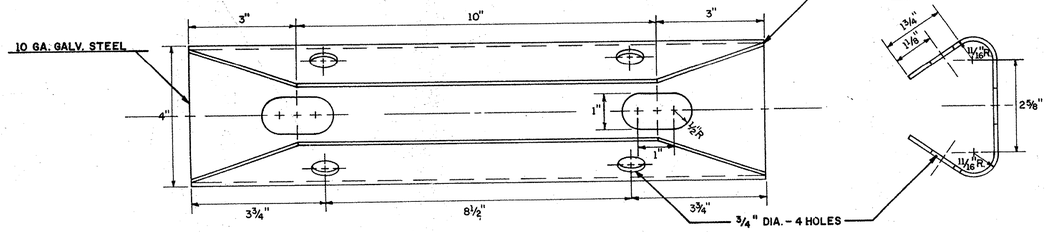


GUARDRAIL TO BARRIER CONNECTION, EXIT TYPE

LIMIT OF PAYMENT FOR GUARDRAIL TO BARRIER CONNECTION EXIT TYPE



DETAIL OF SECTION A-A



BARRIER CONNECTOR

GENERAL NOTES

1. THE GUARDRAIL TO BARRIER CONNECTION, APPROACH TYPE, SHALL BE USED AT EACH END OF BARRIERS ON UNDIVIDED ROADS AND AT THE TRAFFIC APPROACH END OF BARRIERS ON DIVIDED ROADS.
2. THE GUARDRAIL TO BARRIER CONNECTION, EXIT TYPE, SHALL BE USED ON THE TRAFFIC EXIT END ONLY OF BARRIERS ON DIVIDED ROADS.
3. THIS SHEET SHALL ALSO APPLY WHERE GUARDRAIL IS TO BE CONNECTED TO THE VERTICAL FACE OF EXISTING BARRIERS.
4. SEE STANDARD SHEET NUMBER G-4 FOR ALTERNATE 6"-C-STRONG POST.
5. 1" DIAMETER BOLT HOLES SHALL BE DRILLED THROUGH BARRIER ONLY AFTER CONCRETE IS COMPLETELY CURED. AVOID CUTTING OR BREAKING OF BAR REINFORCEMENT. USE 1" I. D. THINWALL GALVANIZED SLEEVE FOR PRE-FORMED HOLE ALTERNATE.

BRANDYWINE REPRODUCTION

STATE OF DELAWARE
DEPARTMENT OF TRANSPORTATION

STANDARD SHEET NUMBER G-8

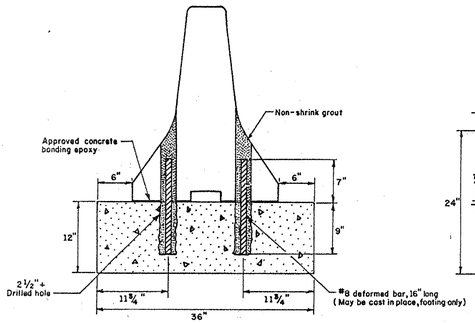
PORTABLE PORTLAND CEMENT CONCRETE SAFETY BARRIER

PREL. TRACING R.F.R. 12-14-76 DESIGN R.T.C. CHKD.

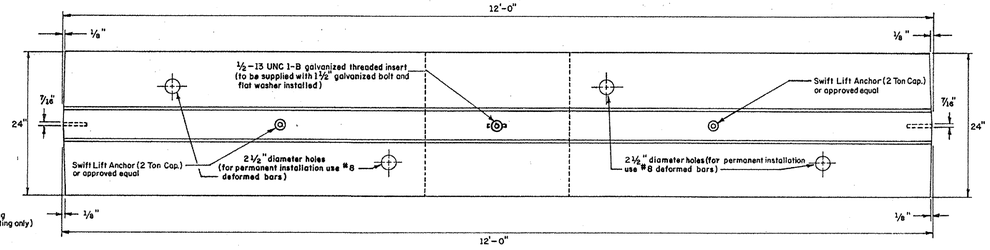
RECOMMENDED 10/11 19 77 R. E. Tinnetts CHIEF ENGINEER

APPROVED 10/13 19 77 R D Bennett ACTING DIRECTOR OF HIGHWAYS

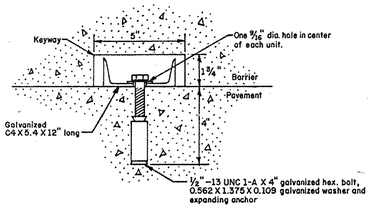
REVISIONS



P.C.C. SAFETY BARRIER FOOTING
(For permanent installation only)



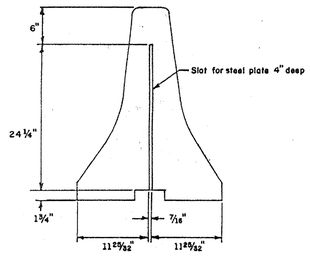
TOP VIEW



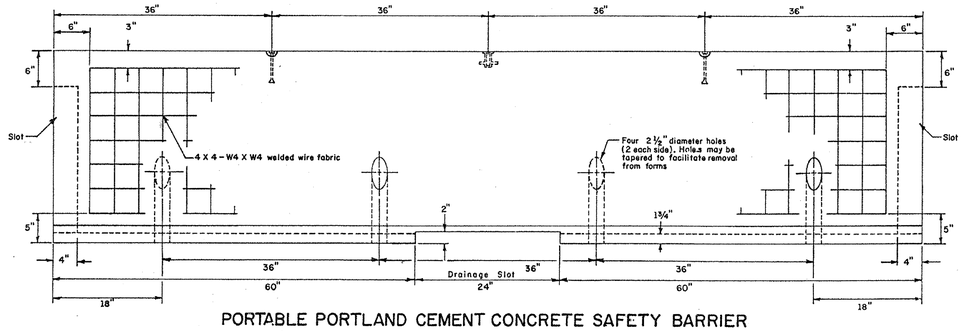
TEMPORARY INSTALLATION ON BRIDGE DECKS

Two channel sections shall be used for each barrier section. The bolt shall be placed 2'-0" from end of barrier, except as required to clear bridge expansion joints.

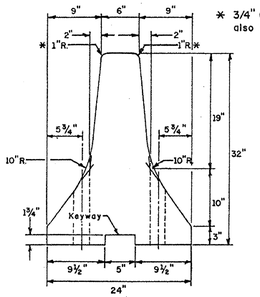
Hole is to be filled with non-shrink grout immediately upon removal of temporary barrier.



SLOT DIMENSIONS



PORTABLE PORTLAND CEMENT CONCRETE SAFETY BARRIER



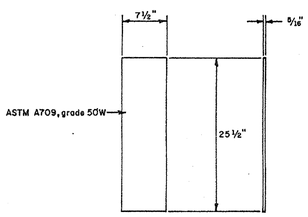
* ¾" Chamfer may also be used.

CROSS SECTION

LIFTING DEVICES SHALL BE SWIFT LIFT ANCHORS, (2 TON CAPACITY) AS MANUFACTURED BY SUPERIOR CONCRETE ACCESSORIES, INC. OR APPROVED EQUAL.

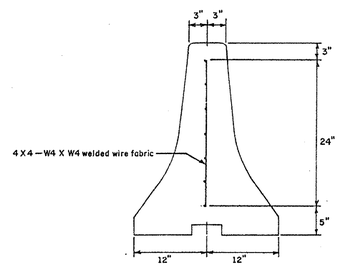
PORTLAND CEMENT CONCRETE MASONRY SHALL CONFORM TO SECTION 812, *PORTLAND CEMENT CONCRETE*, CLASS A (28 DAY STRENGTH 4000 P.S.I.).

THE PORTABLE PORTLAND CEMENT CONCRETE SAFETY BARRIER SHALL NOT BE USED AS A PERMANENT BARRIER ON BRIDGES.



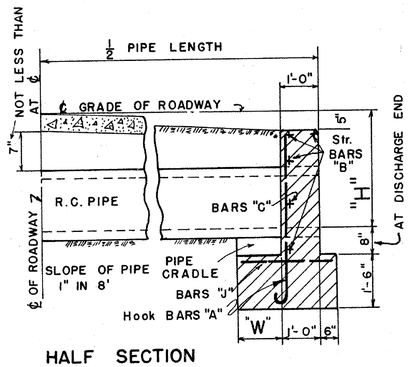
One steel plate shall be supplied with each safety barrier

STEEL CONNECTOR PLATE

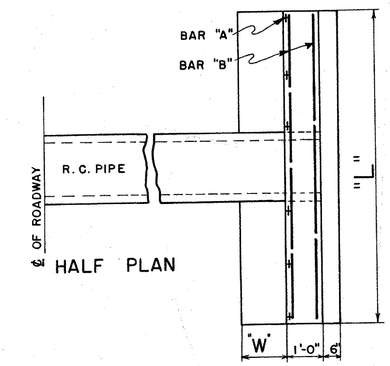


WIRE MESH LOCATION

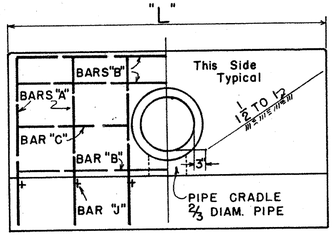
STRAIGHT TYPE HEADWALLS



HALF SECTION



HALF PLAN



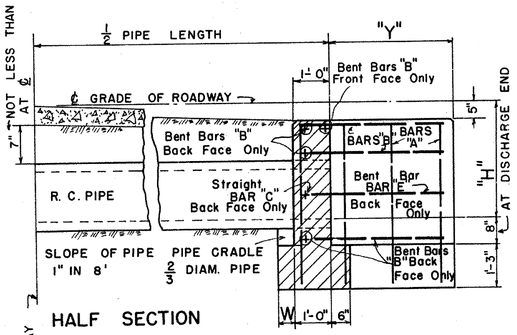
END ELEVATION

NOTE:
MINIMUM "H" CROWN GRADE TO DISCH. END
18" PIPE = 3.25'
24" PIPE = 3.75'
30" PIPE = 4.25'
36" PIPE = 4.75'

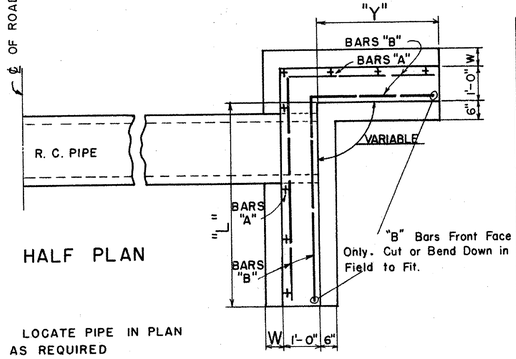
BILL OF MATERIALS NOTE

H	L	W	SPACING OF BARS "J"	QUANTITIES FOR TWO HEADWALLS ½" REINFORCING BARS BARS "A" NO.	BARS "A" LENGTH	BARS "A" TOTAL LENGTH	BARS "B" NO.	BARS "B" LENGTH	BARS "B" TOTAL LENGTH	BARS "C" NO.	BARS "C" LENGTH	BARS "C" TOTAL LENGTH	BARS "J" NO.	BARS "J" LENGTH	BARS "J" TOTAL LENGTH	TOTAL WEIGHT	CONCRETE C.U. YDS. WALLS PIPE SIZES 18"	24"	30"	36"	FOOTING
3.25	8'-9"	1'-3"	16"	16	5'-0"	80	8	8'-6"	68	4	3'-0"	12				107	2.20				2.67
3.50	9'-6"	1'-5"	14"	16	5'-6"	88	8	9'-0"	72	4	3'-6"	14				116	2.58				3.08
3.75	10'-3"	1'-6"	14"	16	5'-9"	92	8	10'-0"	80	4	3'-6"	14				124	2.98	2.90			3.42
4.00	11'-0"	1'-8"	16"	16	6'-0"	96	8	10'-6"	84	4	4'-0"	16	16	3'-0"	48	163	3.42	3.34			3.87
4.25	11'-9"	1'-9"	16"	16	6'-3"	100	8	11'-6"	92	4	4'-0"	16	16	3'-0"	48	171	3.87	3.80	3.70		4.24
4.50	12'-6"	1'-11"	14"	20	6'-6"	130	8	12'-0"	96	4	4'-6"	18	20	3'-0"	60	203	4.36	4.29	4.19		4.75
4.75	13'-3"	2'-0"	14"	20	6'-9"	135	8	13'-0"	104	4	4'-6"	18	20	3'-0"	60	212	4.88	4.81	4.71	4.58	5.15
5.00	14'-0"	2'-2"	16"	20	7'-0"	140	8	13'-6"	108	4	5'-0"	20	20	3'-6"	70	226	5.42	5.35	5.26	5.14	5.70
5.25	14'-9"	2'-3"	16"	20	7'-3"	145	10	14'-6"	145	4	5'-6"	22	20	3'-6"	70	255	5.99	5.93	5.83	5.71	6.15
5.50	15'-6"	2'-5"	14"	24	7'-6"	120	10	15'-0"	150	4	6'-0"	24	24	3'-6"	84	293	6.59	6.53	6.44	6.32	6.75
5.75	16'-3"	2'-6"	14"	24	7'-9"	186	10	16'-0"	160	4	6'-6"	26	24	3'-6"	84	305	7.22	7.15	7.07	6.95	7.22
6.00	17'-0"	2'-8"	16"	24	8'-0"	192	10	16'-6"	165	4	6'-6"	26	24	4'-0"	96	320	7.87	7.81	7.73	7.61	7.87

Note: All Bars Straight Except Hookbar "A"



HALF SECTION



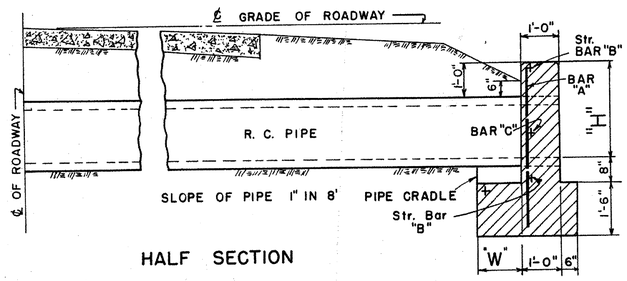
HALF PLAN

LOCATE PIPE IN PLAN AS REQUIRED

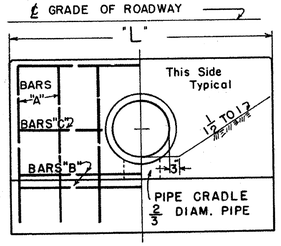
"L" TYPE HEADWALLS NOTE

H	L	Y	W	SPACING OF VERTICAL BARS	QUANTITIES FOR TWO HEADWALLS ½" REINFORCING BARS BARS "A" NO.	BARS "A" LENGTH	BARS "A" TOTAL LENGTH	BARS "B" NO.	BARS "B" LENGTH	BARS "B" TOTAL LENGTH	BARS "C" NO.	BARS "C" LENGTH	BARS "C" TOTAL LENGTH	BARS "E" NO.	BARS "E" LENGTH	BARS "E" TOTAL LENGTH	TOTAL WEIGHT	CONCRETE C.U. YDS. WALLS PIPE SIZES 15"&18"	24"	30"	36"	FOOTING
3.25	5'-8"	3'-5"	6"	16"	16	4'-6"	72	8	10'-6"	84	2	3'-6"	7	2	5'-0"	10	116	2.51				1.87
3.50	6'-0"	3'-9"	7"	15"	20	4'-9"	95	8	11'-0"	88	2	4'-0"	8	2	5'-6"	11	135	2.88				2.09
3.75	6'-5"	4'-2"	8"	15"	20	5'-0"	100	8	12'-0"	96	2	4'-0"	8	2	6'-0"	12	144	3.33	3.24			2.36
4.00	6'-9"	4'-6"	8"	16"	20	5'-3"	105	8	12'-6"	100	2	4'-0"	8	2	6'-0"	12	150	3.76	3.67			2.50
4.25	7'-2"	4'-11"	9"	16"	20	5'-6"	110	8	13'-6"	108	2	4'-6"	9	2	6'-6"	13	160	4.27	4.18	4.06		2.78
4.50	7'-6"	5'-3"	10"	16"	20	5'-9"	115	8	14'-0"	112	2	4'-6"	9	2	7'-0"	14	167	4.75	4.66	4.54		3.04
4.75	7'-11"	5'-8"	10"	14"	24	6'-0"	144	8	15'-0"	120	2	5'-0"	10	2	7'-6"	15	193	5.31	5.22	5.11	4.96	3.22
5.00	8'-3"	6'-0"	11"	14"	26	6'-3"	163	10	15'-6"	155	2	5'-6"	11	2	7'-6"	15	230	5.85	5.76	5.64	5.50	3.51
5.25	8'-8"	6'-5"	11"	14"	26	6'-6"	169	10	16'-6"	165	2	6'-0"	12	2	8'-0"	16	242	6.47	6.38	6.26	6.12	3.70
5.50	9'-0"	6'-9"	12"	14"	28	6'-9"	189	10	17'-0"	170	2	6'-6"	13	2	8'-6"	17	260	7.05	6.97	6.85	6.71	3.99
5.75	9'-5"	7'-2"	12"	14"	28	7'-0"	196	10	18'-0"	180	2	6'-6"	13	2	9'-0"	18	272	7.73	7.65	7.53	7.39	4.19
6.00	9'-9"	7'-6"	13"	14"	30	7'-3"	218	10	18'-6"	185	2	7'-0"	14	2	9'-0"	18	291	8.37	8.29	8.18	8.03	4.50

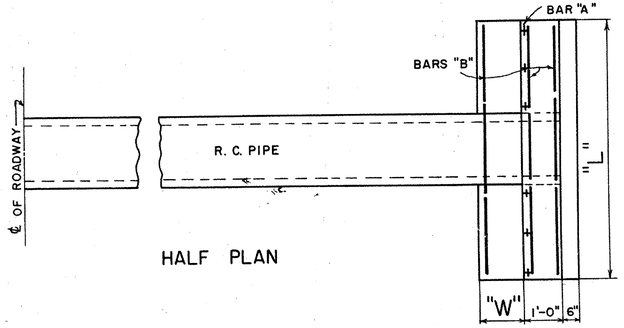
Note: Bars Are Bent or Straight As Shown On Section



HALF SECTION



END ELEVATION

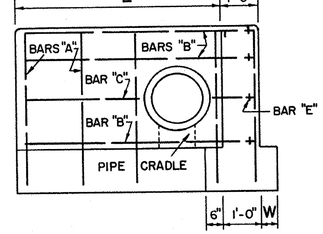


HALF PLAN

R.R. TYPE HEADWALLS NOTE

DIAMETER OF PIPE	H	L	W	SPACING OF VERTICAL BARS	QUANTITIES FOR 2 HEADWALLS ½" REINFORCING BARS BARS "A" NO.	BARS "A" LENGTH	BARS "A" TOTAL LENGTH	BARS "B" NO.	BARS "B" LENGTH	BARS "B" TOTAL LENGTH	BARS "C" NO.	BARS "C" LENGTH	BARS "C" TOTAL LENGTH	TOTAL WEIGHT	CONCRETE CU. YDS. WALLS	FOOTING	TOTAL
18"	2.75	7'-3"	1'-3"	13"	12	5'-0"	60	8	7'-0"	56	4	2'-6"	10	86	1.77	2.22	3.99
24"	3.25	9'-3"	1'-6"	12"	16	5'-6"	88	8	9'-0"	72	4	3'-0"	12	117	2.55	3.09	5.64
30"	3.83	11'-6"	1'-9"	12"	20	6'-0"	120	8	11'-0"	88	4	4'-0"	16	152	3.62	4.16	7.78
36"	4.33	13'-6"	2'-0"	11"	24	6'-6"	156	8	13'-0"	104	4	4'-6"	18	189	4.68	5.25	9.93

Note: All Straight Bars



END ELEVATION

NOTE:
MINIMUM "H" CROWN GRADE TO DISCHARGE END
18" PIPE = 3.25'
24" PIPE = 3.75'
30" PIPE = 4.25'
36" PIPE = 4.75'

SLOPE OF EARTH 1½" TO 1', KEEP FREE OF PIPE.

THE PLAN AND PROFILE OF THE CONTRACT SHOWS THE LOCATION AND TYPE OF WALLS REQUIRED.

EXISTING STRUCTURES SHALL BE REMOVED AS DIRECTED.

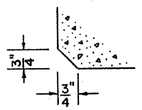
A SUITABLE FOUNDATION FOR HEADWALLS WILL BE REQUIRED. CARRY FOOTINGS TO SUFFICIENT DEPTH FOR FIRM MATERIAL AND FROST ACTION.

QUANTITIES IN BILL OF MATERIALS ARE FOR DIMENSIONS SHOWN ON THE SHEET.

NOTE MINIMUM "H" FOR VARIOUS PIPES.

THIS SHEET IS NOW STANDARD AND SUPERSEDES ALL PREVIOUS SHEETS.

UNLESS OTHERWISE SPECIFIED ALL BARS TO HAVE 1½" COVER.



UNLESS OTHERWISE SPECIFIED ALL CORNERS ARE TO BE FINISHED AS SHOWN IN ABOVE SKETCH.

COUNTY	CONTRACT	P. R. A. REG. NO.	STATE	FED. AID PROJECT NO.	SHEET NO.	TOTAL SHEETS
		2	DEL.			

STANDARD SHEET H-1
STRAIGHT & L TYPE HEADWALLS
PREL. TRACING L.E.G. DESIGN CHKD. E.L.W.
REVISIONS

APPROVED Earl H. Daisley 6.22.70
DIRECTOR OF OPERATIONS DATE
Rae S. Robinson 6/22/70
DEPUTY DIRECTOR-CHIEF ENGINEER DATE

COUNTY	CONTRACT	P. R. A. REG. NO.	STATE	FED. AID PROJECT NO.	SHEET NO.	TOTAL SHEETS
		2	DEL.			

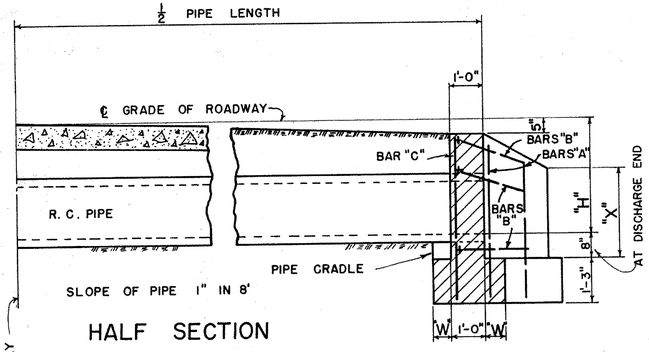
STANDARD SHEET H-2
45° STANDARD & 45° R. R. TYPE CULVERT

PREL. TRACING L.E.G. DESIGN CHKD. E.L.W.

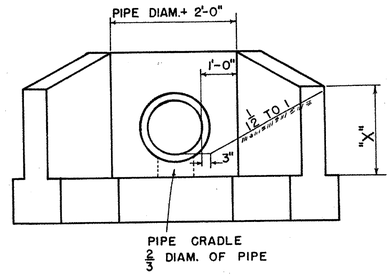
REVISIONS

APPROVED _____ 6-22-70
DIRECTOR OF OPERATIONS DATE

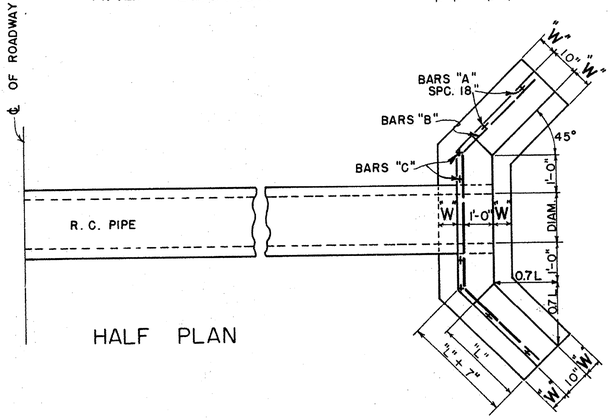
_____ 6/22/70
DEPUTY DIRECTOR-CHIEF ENGINEER DATE



HALF SECTION



END ELEVATION



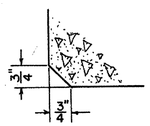
HALF PLAN

45° STANDARD CULVERT

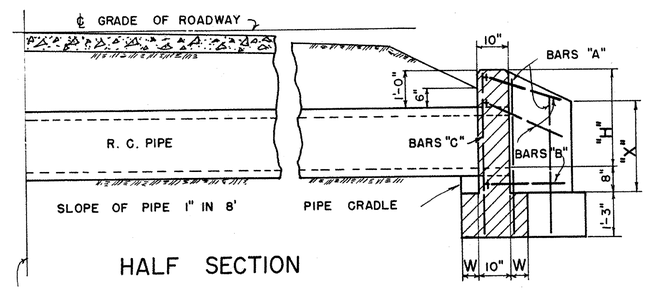
NOTE:
MINIMUM "H" ℄ GRADE ROADWAY TO DISCHARGE END
18" PIPE = 3.25'
24" PIPE = 3.75'
30" PIPE = 4.25'
36" PIPE = 4.75'

NOTE :
BARS "A" INCREASE BY 6" INTERVALS.
4 BARS OF EACH LENGTH REQUIRED

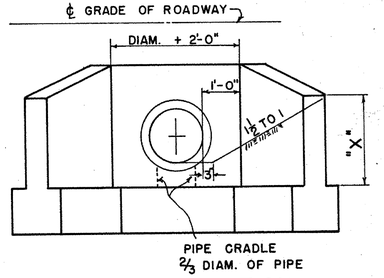
H	L	X	W	QUANTITIES FOR TWO HEADWALLS ½"ø REINFORCING RODS BARS "A" NO.	BARS "A" LENGTH	BARS "A" TOTAL LENGTH	BARS "B" 18" NO.	BARS "B" 18" LENGTH	BARS "B" 18" TOTAL LENGTH	BARS "B" 24" NO.	BARS "B" 24" LENGTH	BARS "B" 24" TOTAL LENGTH	BARS "B" 30" NO.	BARS "B" 30" LENGTH	BARS "B" 30" TOTAL LENGTH	BARS "B" 36" NO.	BARS "B" 36" LENGTH	BARS "B" 36" TOTAL LENGTH	BARS C NO.	BARS C LENGTH	BARS C TOTAL LENGTH	TOTAL WGT. POUNDS 18"	24"	30"	36"	CONCRETE CU. YDS. WALLS 18"	24"	30"	36"	WINGS 18"	24"	30"	36"	FOOTINGS 18"	24"	30"	36"
3.25	2'-6"	2'-6"	6"	8	3'-9":4'-3"	32	6	9'-6"	57										8	4'-6"	36	84				1.89				1.63						
3.50	2'-9"	2'-9	7"	8	4'-0":4'-6"	34	6	10'-0"	60										8	4'-9"	38	88				2.15				1.86						
3.75	3'-0"	3'-0"	8"	12	4'-0":5'-0"	54	6	10'-6"	63	6	11'-0"	66							8	5'-0"	40	105	107			2.42	2.48			2.12	2.23					
4.00	3'-3"	3'-0"	8"	12	4'-0":5'-0"	54	6	11'-0"	66	6	11'-6"	69							8	5'-3"	42	108	110			2.66	2.72			2.23	2.33					
4.25	3'-6"	3'-3"	9"	12	4'-6":5'-6"	60	6	11'-6"	69	6	12'-0"	72	6	12'-6"	75				8	5'-6"	44	116	118	120		2.96	3.03	3.08		2.49	2.61	2.72				
4.50	3'-9"	3'-6"	10"	12	4'-6":5'-6"	60	6	12'-0"	72	6	12'-6"	75	6	13'-0"	78				8	5'-9"	46	119	121	123		3.27	3.36	3.41		2.79	2.90	3.03				
4.75	4'-0"	3'-9"	10"	12	5'-0":6'-0"	66	6	12'-6"	75	6	13'-0"	78	6	13'-6"	81	6	14'-0"	84	8	6'-0"	48	126	128	130	132	3.60	3.69	3.76	3.80	2.89	3.01	3.14	3.26				
5.00	4'-3"	3'-9"	11"	16	4'-9":6'-3"	88	8	13'-0"	104	6	13'-6"	81	6	14'-0"	84	6	14'-6"	87	8	6'-3"	50	162	146	148	150	3.88	3.98	4.06	4.11	3.21	3.34	3.47	3.59				
5.25	4'-6"	4'-0"	11"	16	5'-0":6'-6"	92	8	13'-6"	108	8	14'-0"	112	6	14'-6"	87	6	15'-0"	90	8	6'-6"	52	168	171	154	156	4.23	4.34	4.43	4.48	3.34	3.46	3.59	3.72				
5.50	5'-0"	4'-0"	12"	16	5'-0":6'-6"	92	8	14'-6"	116	8	15'-0"	120	6	15'-6"	93	6	16'-0"	96	8	6'-9"	54	175	178	160	162	4.68	4.81	4.90	4.97	3.79	3.93	4.07	4.21				
5.75	5'-3"	4'-3"	12"	16	5'-6":7'-0"	100	8	15'-0"	120	8	15'-6"	124	8	16'-0"	128	6	16'-6"	99	8	7'-0"	56	184	187	190	170	5.08	5.20	5.31	5.39	3.91	4.05	4.19	4.33				
6.00	5'-6"	4'-3"	13"	16	5'-6": 7'-0"	100	8	15'-6"	124	8	16'-0"	128	8	16'-6"	132	6	17'-0"	102	8	7'-3"	58	188	191	194	174	5.40	5.53	5.66	5.75	4.29	4.44	4.58	4.73				



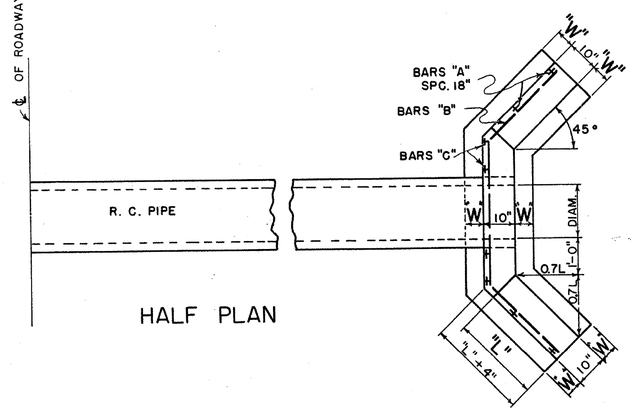
UNLESS OTHERWISE SPECIFIED
ALL CORNERS ARE TO BE FINISHED
AS SHOWN IN ABOVE SKETCH.



HALF SECTION



END ELEVATION



HALF PLAN

45° R. R. TYPE CULVERT

DIAMETER OF PIPE	H	L	X	W	QUANTITIES FOR TWO HEADWALLS ½"ø REINFORCING RODS BARS "A" NO.	BARS "A" LENGTH	BARS "A" TOTAL LENGTH	BARS "B" NO.	BARS "B" LENGTH	BARS "B" TOTAL LENGTH	BARS "C" NO.	BARS "C" LENGTH	BARS "C" TOTAL LENGTH	TOTAL WEIGHT	CONCRETE CU. YDS. WALLS	FOOTING	TOTAL
18"	2.75	2'-6"	2'-6"	6"	8	3'-6"	4'-0"	30	6	9'-6"	57	8	4'-6"	36	84	1.70	1.55	3.25
24"	3.25	2'-11"	2'-11"	8"	8	4'-0"	4'-6"	34	6	11'-0"	66	8	5'-0"	40	95	2.19	2.10	4.29
30"	3.83	3'-4"	3'-4"	9"	12	4'-0"	5'-0"	54	6	12'-0"	72	8	5'-6"	44	116	2.78	2.54	5.32
36"	4.33	3'-9"	3'-9"	10"	12	4'-6"	5'-6"	60	6	13'-6"	81	8	6'-0"	48	129	3.38	3.04	6.42

NOTE:
BARS "A" INCREASE BY 6" INTERVALS
4 OF EACH LENGTH REQUIRED.

THE PLAN AND PROFILE OF THE CONTRACT SHOWS THE LOCATION AND TYPE OF WALLS REQUIRED.
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QUANTITIES IN BILL OF MATERIALS ARE FOR DIMENSIONS SHOWN ON THE SHEET.
NOTE MINIMUM "H" FOR VARIOUS PIPES.
THIS SHEET IS NOW STANDARD AND SUPERSEDES ALL PREVIOUS SHEETS.

VAN DYKE MYLAR

COUNTY	CONTRACT	P. R. A. REG. NO.	STATE	FED. AID PROJECT NO.	SHEET NO.	TOTAL SHEETS
		2	DEL.			

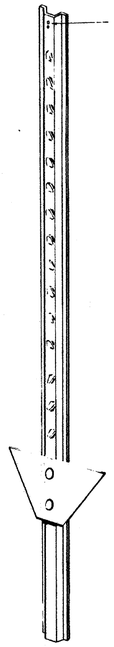
STANDARD SHEET M-1

PREL. TRACING V. L. D. DESIGN J. J. S. CHKD. E. L. W.

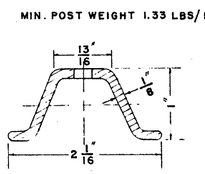
REVISIONS

APPROVED _____ 6-22-70
DIRECTOR OF OPERATIONS DATE

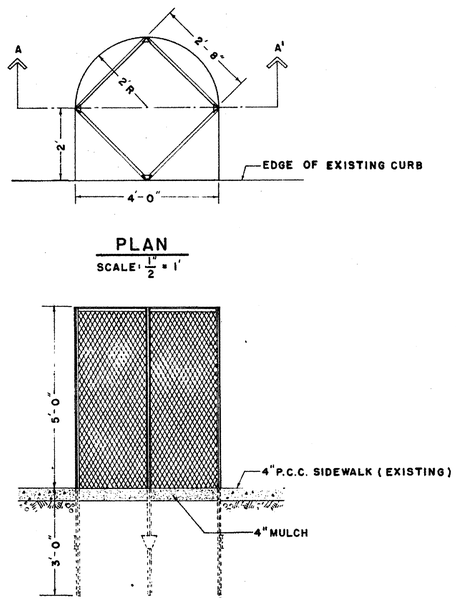
_____ 6/22/70
DEPUTY DIRECTOR-CHIEF ENGINEER DATE



8' STEEL POST WITH LUGS SPACED 4" APART
NO SCALE

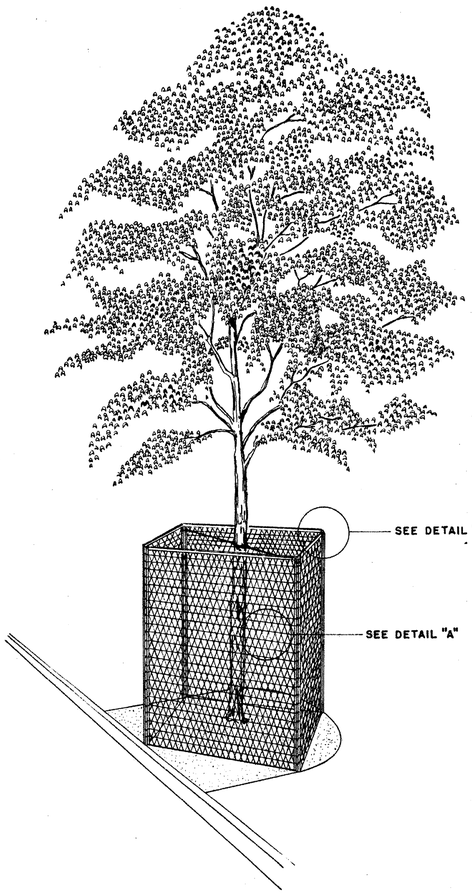


SECTION OF POST
SCALE : 1"= 1"

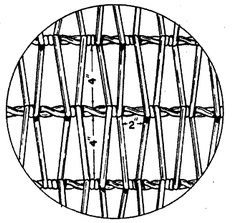


PLAN
SCALE: 1/2" = 1'

SECTION A-A'
SCALE: 1/2" = 1'



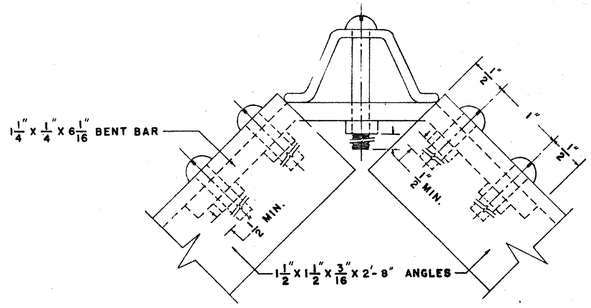
TREE PROTECTION



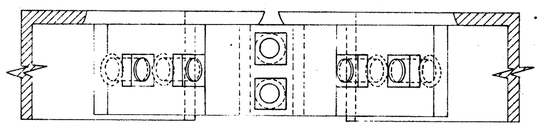
NOTE:
HORIZONTAL CABLES AND CROSS WIRES TO BE 12 1/2 GAUGE GALVANIZED

APPROX. FENCE FABRIC HT.= 56"

DETAIL "A"
NO SCALE



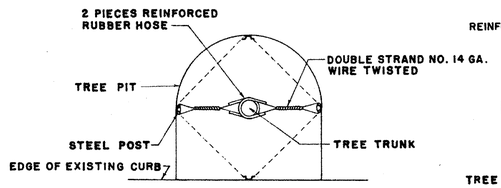
TOP VIEW

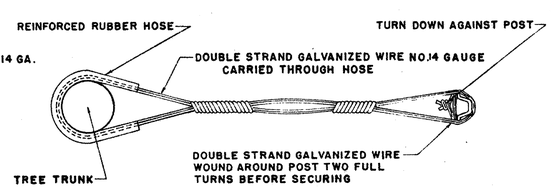


FRONT VIEW

DETAIL "B"
SCALE: 1"=1"

NOTE: SIZE OF ALL BOLTS TO BE 1/4" DIA. WITH NUTS
SIZE OF HOLES TO BE 5/16" DIA.
BOLTS TO PROJECT A MINIMUM OF 1/2" BEYOND NUTS WHEN SECURELY FASTENED
ALL BOLTS TO BE CHECKED AFTER NUTS HAVE BEEN SECURELY FASTENED





DETAIL SHOWING WIRES THROUGH RUBBER HOSE & METHODS OF FASTENING WIRES TO POSTS

NO SCALE

3 MILPRINT MYLAR

COUNTY	CONTRACT	P. B. A. REG. NO.	STATE	FED. AID PROJECT NO.	SHEET NO.	TOTAL SHEETS
		2	DEL.			

STANDARD SHEET M-2

PORTLAND CEMENT CONCRETE STEPS

PREL. TRACING H.R.C. DESIGN J.E.R. CHKD. E.L.W.

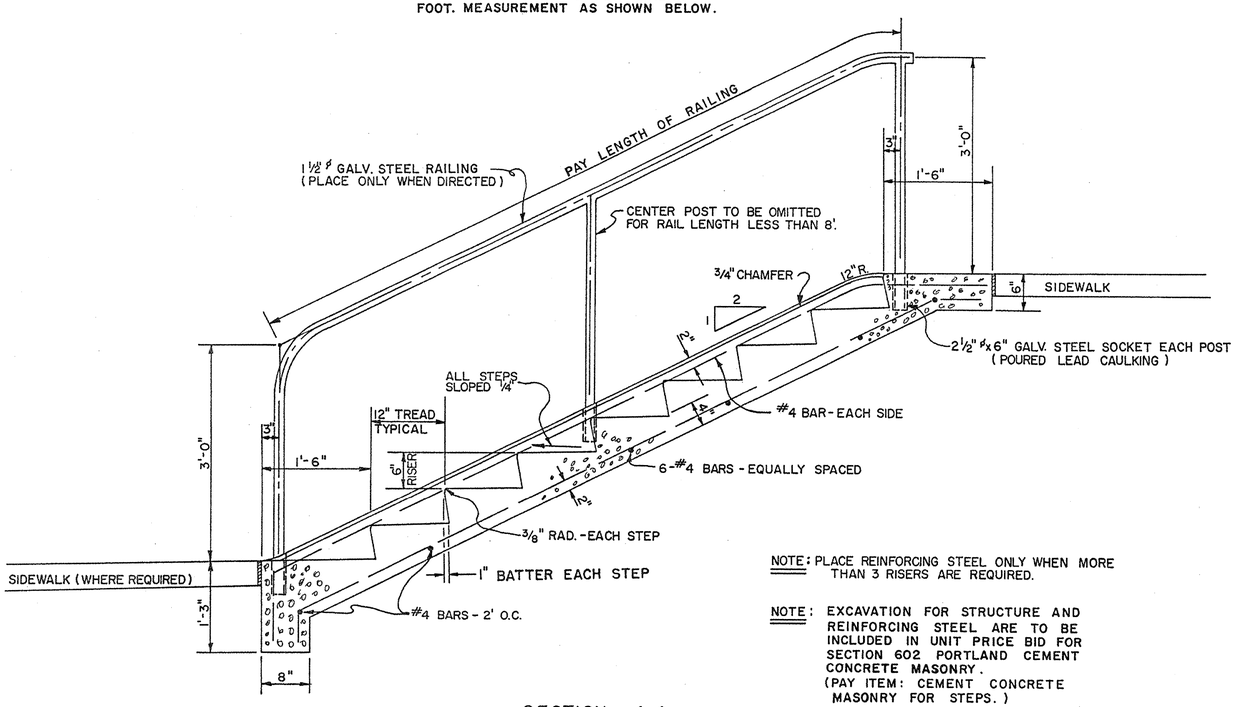
REVISIONS

CHANGED GALV. IRON RAILING TO GALV. STEEL RAILING. 1-16-73 J.T.B.

APPROVED _____ DIRECTOR OF OPERATIONS 6-22-70 DATE

_____ DEPUTY DIRECTOR-CHIEF ENGINEER 6/22/70 DATE

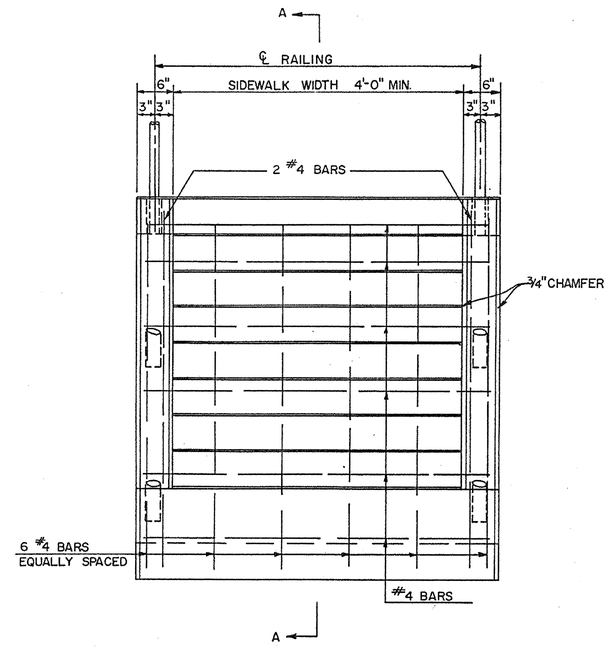
NOTE:
GALVANIZED STEEL RAILING TO BE PAID FOR AT UNIT PRICE BID PER LINEAR FOOT. MEASUREMENT AS SHOWN BELOW.



SECTION A-A

NOTE: PLACE REINFORCING STEEL ONLY WHEN MORE THAN 3 RISERS ARE REQUIRED.

NOTE: EXCAVATION FOR STRUCTURE AND REINFORCING STEEL ARE TO BE INCLUDED IN UNIT PRICE BID FOR SECTION 602 PORTLAND CEMENT CONCRETE MASONRY. (PAY ITEM: CEMENT CONCRETE MASONRY FOR STEPS.)



ELEVATION

PORT. CEM. CONC. STEPS

1 0 1 2 3

ESTIMATED QUANTITIES — PORT. CEM. CONC. STEPS

No. OF RISERS	RAILING LENGTH	SIDEWALK WIDTH 4'			SIDEWALK WIDTH 5'			SIDEWALK WIDTH 6'		
		P.C.C. MASONRY	REINF. STEEL (#4 BARS)		P.C.C. MASONRY	REINF. STEEL (#4 BARS)		P.C.C. MASONRY	REINF. STEEL (#4 BARS)	
	L.F.	(C.Y.)	LENGTH	WEIGHT (#)	(C.Y.)	LENGTH	WEIGHT (#)	(C.Y.)	LENGTH	WEIGHT (#)
2	—	.6	—	—	.7	—	—	.8	—	—
3	—	.7	—	—	.8	—	—	1.0	—	—
4	10'-0"	.8	63'-0"	42.0	1.0	73'-2"	48.9	1.2	83'-4"	55.7
5	12'-4"	1.0	76'-7"	51.2	1.1	89'-0"	59.5	1.3	101'-5"	67.7
6	14'-6"	1.1	84'-4"	56.3	1.3	97'-10"	65.4	1.5	111'-4"	74.4
7	16'-8"	1.2	97'-0"	65.0	1.4	112'-8"	75.3	1.7	128'-4"	85.7
8	19'-0"	1.4	104'-2"	69.6	1.6	120'-10"	80.7	1.9	137'-6"	91.9
9	21'-2"	1.5	118'-4"	79.0	1.7	137'-4"	91.7	2.0	156'-4"	104.4
10	23'-4"	1.6	131'-0"	87.5	1.9	152'-2"	101.6	2.2	173'-4"	115.8
11	25'-8"	1.8	138'-4"	92.4	2.1	160'-6"	107.2	2.4	182'-8"	122.0
12	27'-10"	1.9	150'-7"	100.6	2.2	174'-10"	116.8	2.6	199'-1"	133.0
13	30'-2"	2.0	160'-4"	107.1	2.4	186'-0"	124.2	2.8	211'-8"	141.4
14	32'-4"	2.1	172'-9"	115.4	2.5	200'-6"	133.9	3.0	228'-3"	152.5
15	34'-6"	2.3	179'-11"	120.2	2.7	208'-8"	139.4	3.1	237'-5"	158.6
16	36'-10"	2.4	192'-4"	128.4	2.8	223'-2"	149.1	3.3	254'-0"	169.7

COUNTY	CONTRACT	P. R. A. REG. NO.	STATE	FED. AID PROJECT NO.	SHEET NO.	TOTAL SHEETS
		2	DEL.			

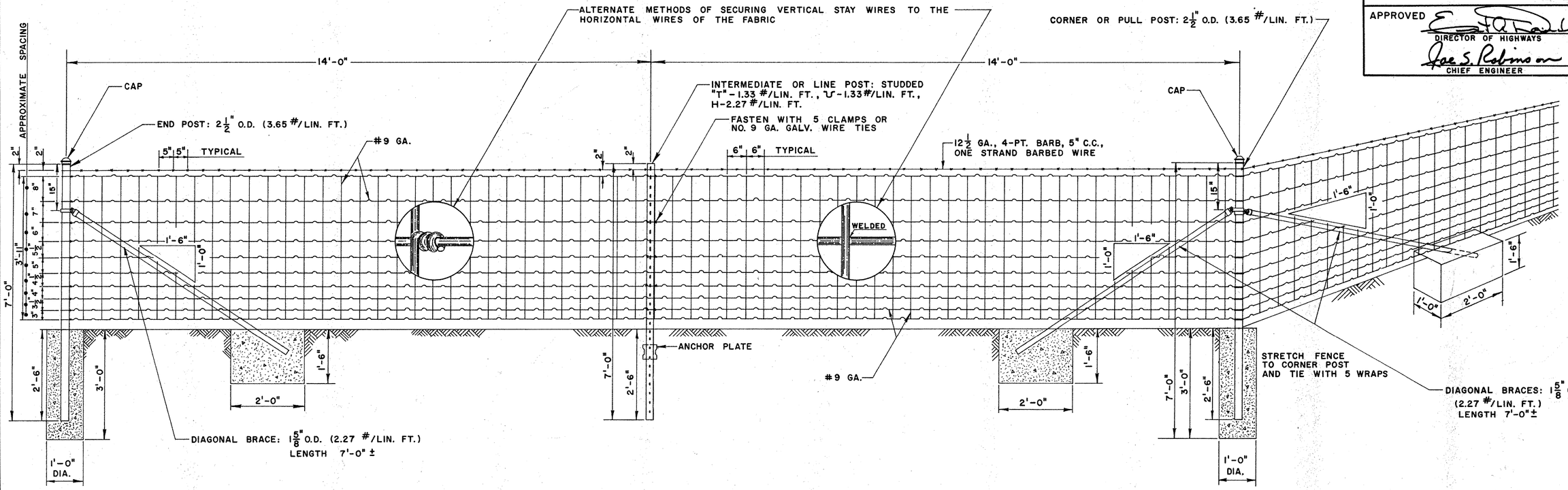
STANDARD SHEET M-3,
RIGHT-OF-WAY FENCE

PREL. TRACING D.M.E. DESIGN E.L.W. CHKD. J.J.S.

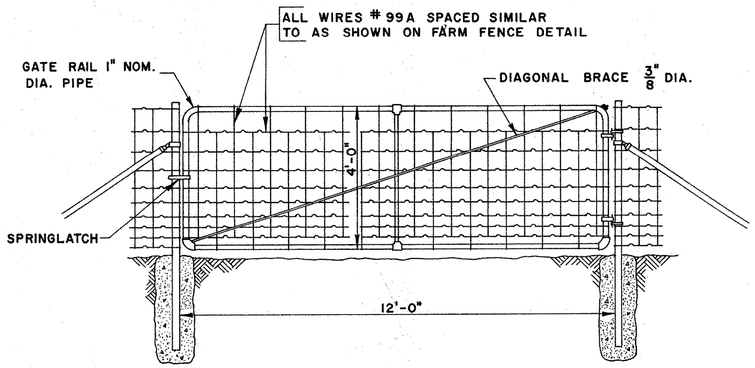
REVISIONS

APPROVED _____ DIRECTOR OF HIGHWAYS 4.22.71 DATE

_____ CHIEF ENGINEER 4/22/71 DATE

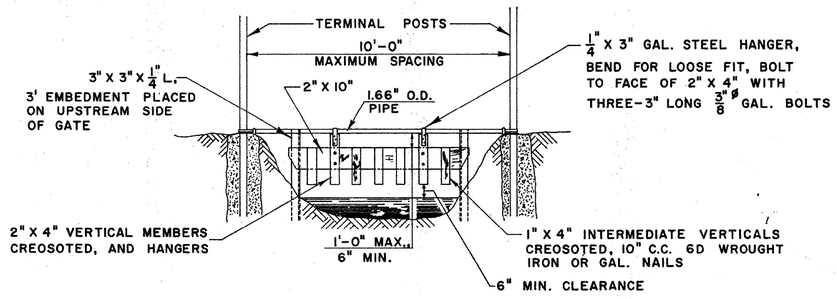


RIGHT-OF-WAY FENCE



VEHICULAR GATE FOR RIGHT-OF-WAY FENCE

1 0 1 2 3 4



FLAP GATE DETAIL

NO SCALE