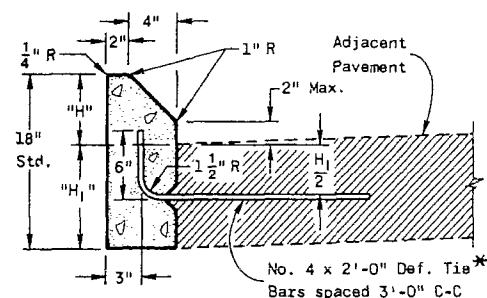


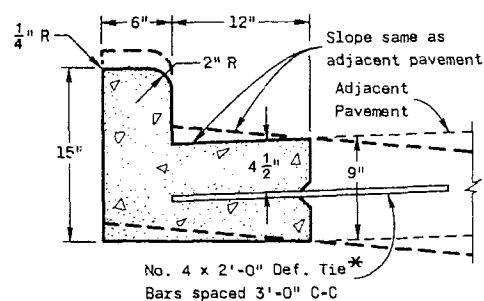
"H" = 9" Max. and 3 1/2" Min. and shall be 6" unless otherwise shown on the plans.
 "H₁" = Same as adjacent pavement thickness for rigid pavement and 12" for non-rigid pavement (Tie Bars omitted)

TYPE "A" (INCLUDING TIE BARS)
TYPE "D" (EXCLUDING TIE BARS)
CONCRETE CURB

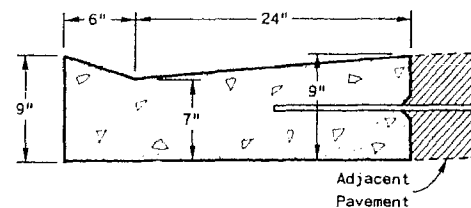
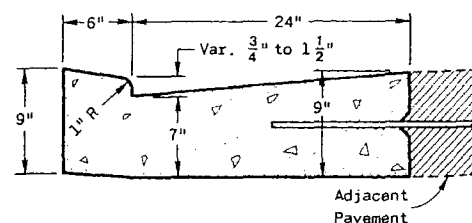


"H" = 6" Max. and 4" Min. and shall be 6" unless otherwise shown on the plans.
 "H₁" = Same as adjacent pavement thickness for rigid pavement and 12" for non-rigid pavement (Tie Bars omitted)

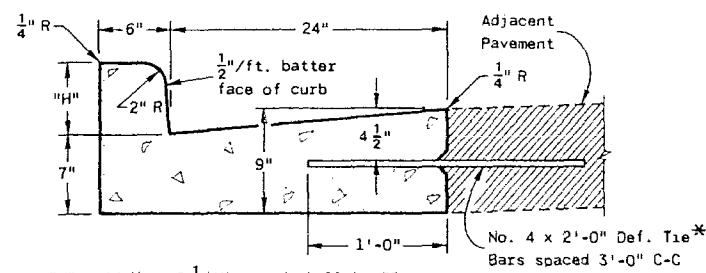
TYPE "G" (INCLUDING TIE BARS)
TYPE "J" (EXCLUDING TIE BARS)
CONCRETE CURB
 (MOUNTABLE)



TYPE "A" (INCLUDING TIE BARS)
TYPE "D" (EXCLUDING TIE BARS)
CONCRETE CURB & GUTTER 18"
 Reverse slope Curb & Gutter shown thus ---

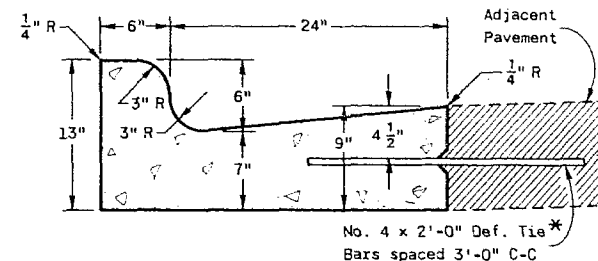


ALTERNATE ENTRANCES
CONCRETE CURB & GUTTER 30"

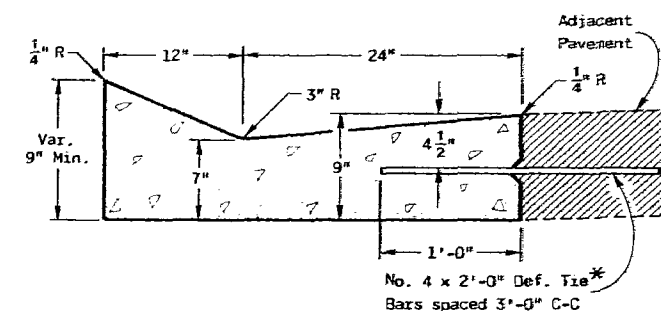


"H" = 9" Max. 3 1/2" Min. and shall be 6" unless otherwise shown on the plans.

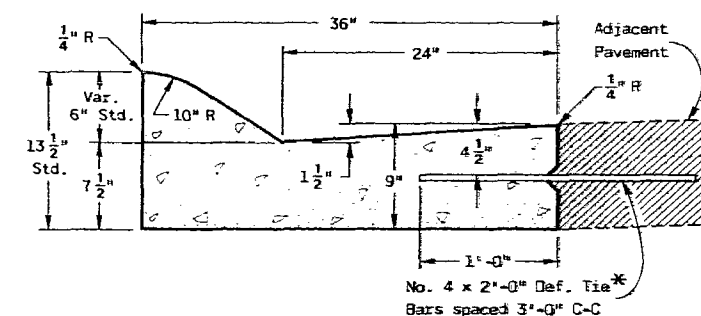
TYPE "A" (INCLUDING TIE BARS)
TYPE "D" (EXCLUDING TIE BARS)
CONCRETE CURB & GUTTER 30"



TYPE "K" (INCLUDING TIE BARS)
TYPE "L" (EXCLUDING TIE BARS)
CONCRETE CURB & GUTTER 30"



TYPE "A" (INCLUDING TIE BARS)
TYPE "D" (EXCLUDING TIE BARS)
CONCRETE GUTTER 36"



TYPE "A" (INCLUDING TIE BARS)
TYPE "D" (EXCLUDING TIE BARS)
CONCRETE CURB & GUTTER 36"
 (MOUNTABLE)

GENERAL NOTES

Details of construction, materials and workmanship not shown on this drawing shall conform to the pertinent requirements of the Standard Specifications and the applicable Special Provisions.

Detailed drawings for proposed alternate designs for Curb, Gutter and Combination Curb and Gutter shall be submitted to the Engineer for approval providing that such alternate designs make provision for equivalent capacity and strength.

Joints shall not be sealed in Concrete Curb, or Concrete Curb & Gutter.

* Where Curb and Gutter are poured adjacent to existing pavement, the Hook Bolt may be used as for "Longitudinal Joints - Concrete Pavement".

CONCRETE CURB, GUTTER, COMBINATION CURB & GUTTER

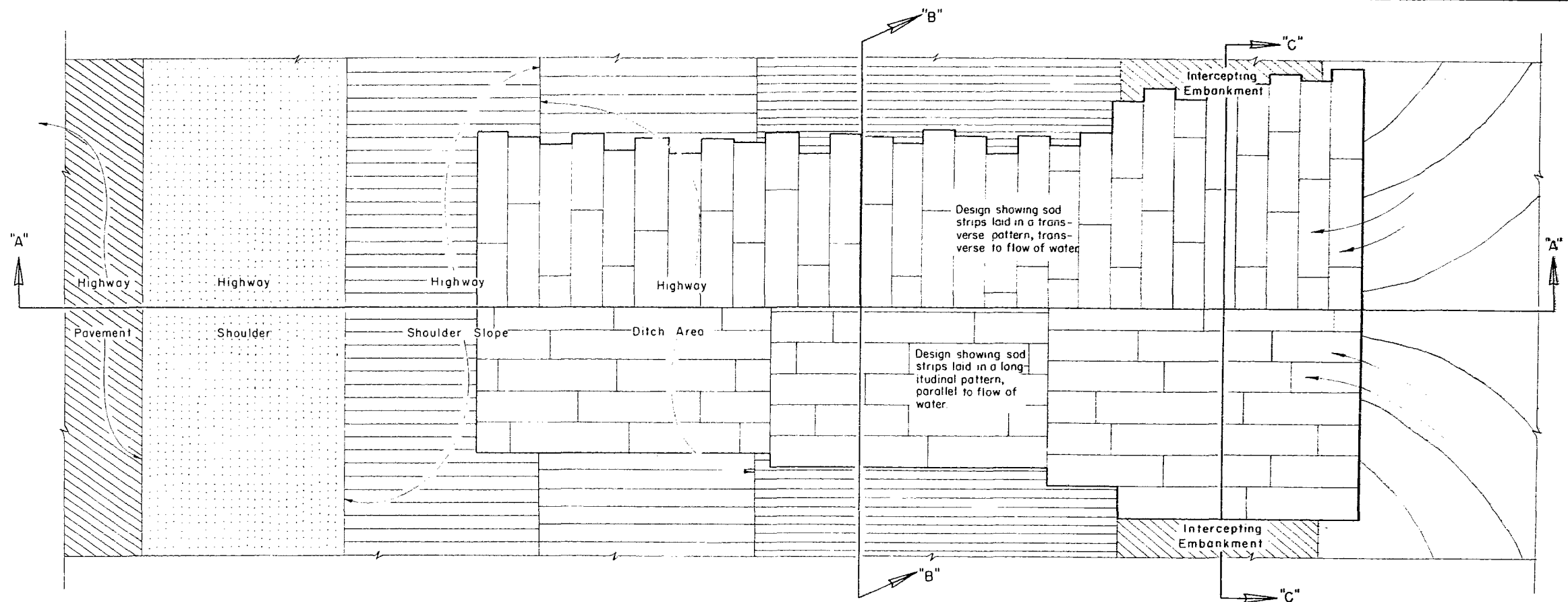
State of Wisconsin
 Department of Transportation
 Division of Highways

RECOMMENDED FOR APPROVAL
 9-12-73
 DATE

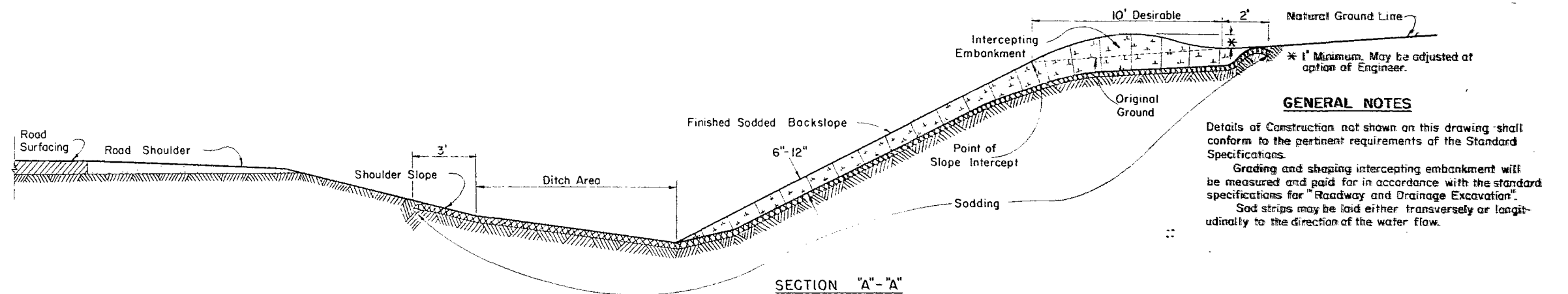
J. C. Hennel
 CHIEF OF FACILITIES DEVELOPMENT

APPROVED
 9-19-73
 DATE

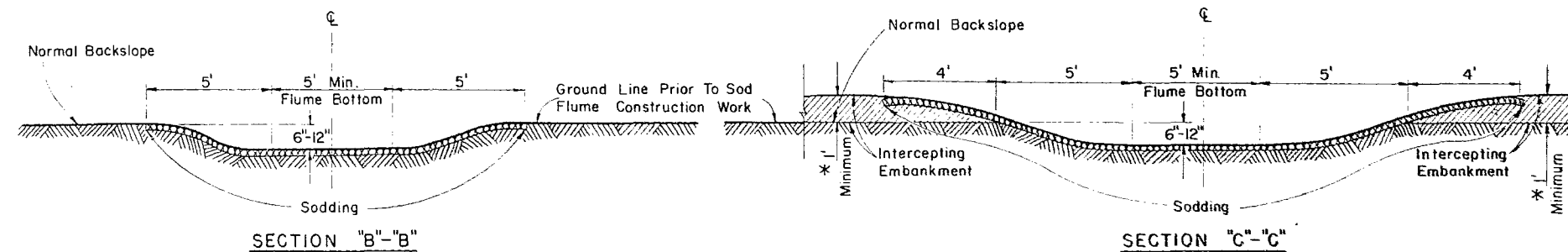
W. J. Siedler
 STATE HIGHWAY ENGINEER



PLAN VIEW OF SODDED BACKSLOPE FLUME



SECTION "A"- "A"



SECTION "B"- "B"

SECTION "C"- "C"

NOTE: Dimensions shown may be adjusted at the option of the Engineer to fit local conditions.

GENERAL NOTES

Details of Construction not shown on this drawing shall conform to the pertinent requirements of the Standard Specifications.
Grading and shaping intercepting embankment will be measured and paid for in accordance with the standard specifications for "Roadway and Drainage Excavation".
Sod strips may be laid either transversely or longitudinally to the direction of the water flow.

SODDED BACKSLOPE FLUME & INTERCEPTING EMBANKMENT

STATE HIGHWAY COMMISSION OF WISCONSIN

RECOMMENDED FOR APPROVAL:

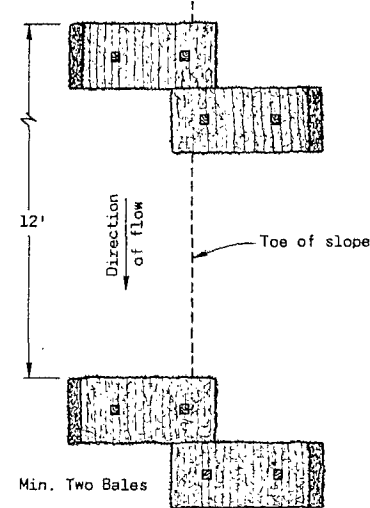
2-5-63
DATE

APPROVED:

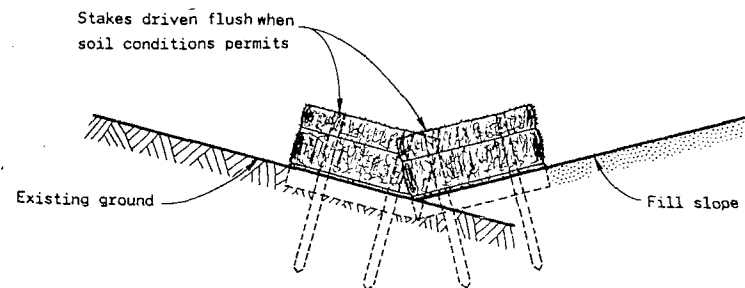
2/6/63
DATE

J. S. Pitt
ENGINEER OF DESIGN

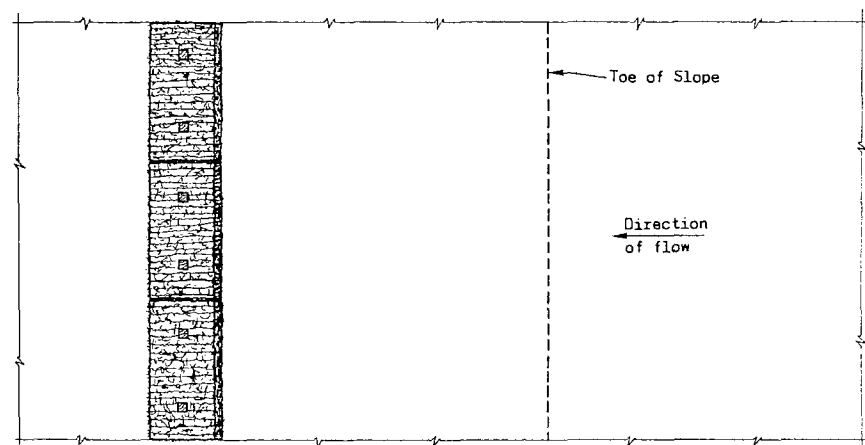
C. E. Rostetter
STATE HIGHWAY ENGINEER



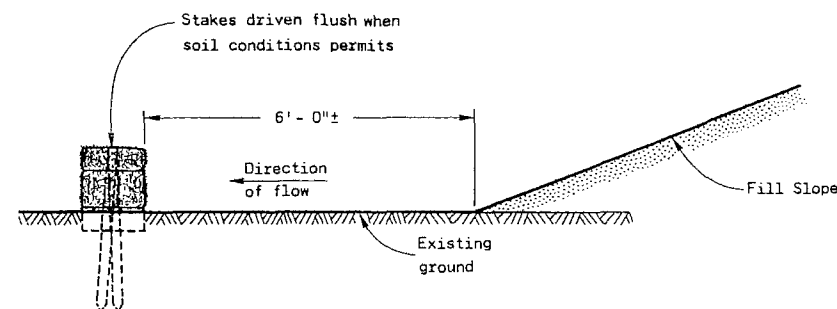
PLAN VIEW



FRONT ELEVATION
WHEN EXISTING GROUND
SLOPES TOWARD FILL SLOPE

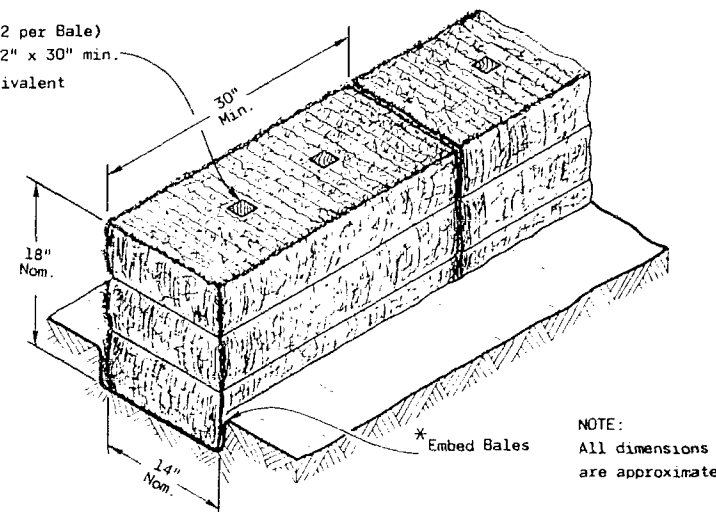


PLAN VIEW

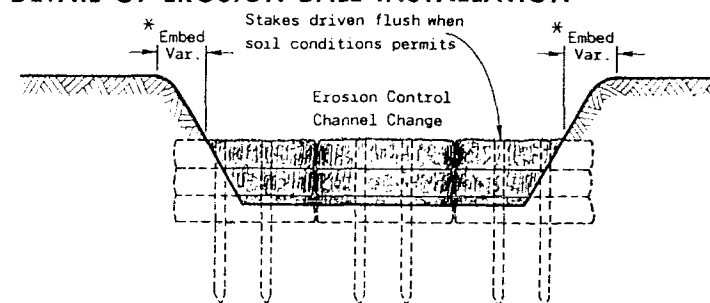


FRONT ELEVATION
EROSION BALES AT TOE OF SLOPE
WHEN EXISTING GROUND SLOPES AWAY FROM FILL SLOPE

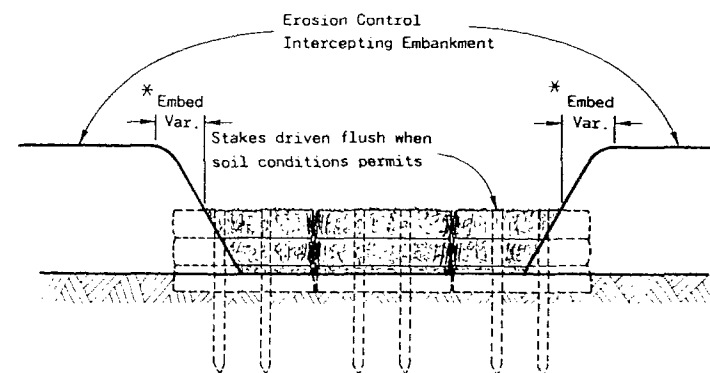
Wood Stakes (2 per Bale)
Nominal 2" x 2" x 30" min.
length or equivalent



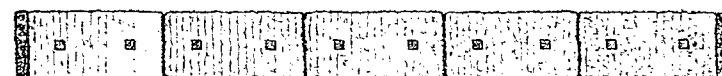
DETAIL OF EROSION BALE INSTALLATION



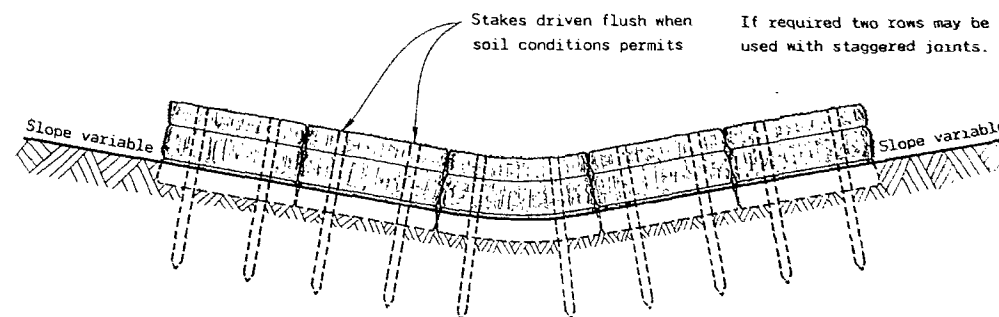
EROSION CONTROL CHANNEL CHANGE



EROSION CONTROL INTERCEPTING EMBANKMENT



PLAN VIEW



FRONT ELEVATION
EROSION BALES ACROSS DITCH BOTTOM

GENERAL NOTES

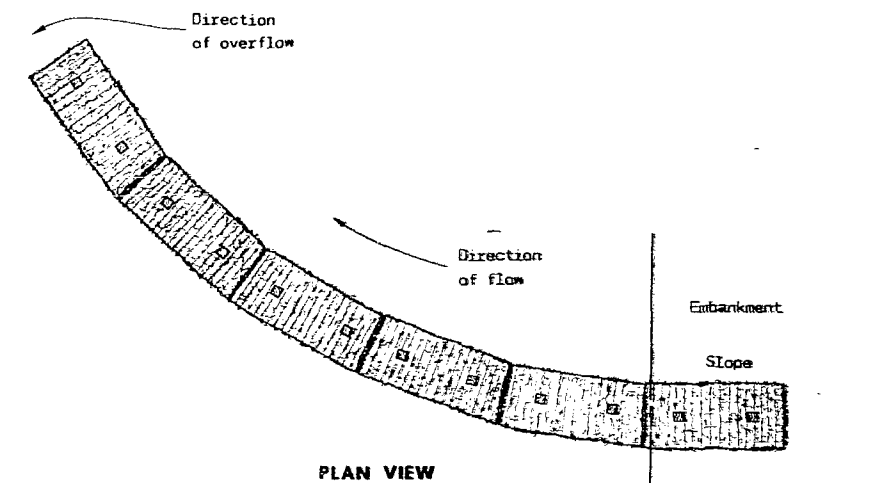
Details of construction, materials and workmanship not shown on this drawing shall conform to the pertinent requirements of the Standard Specifications and the applicable Special Provisions.

Bales shall be placed end to end or overlapping at right angles to the direction of flow and far enough up the sides of the ditch to prevent eroding around ends.

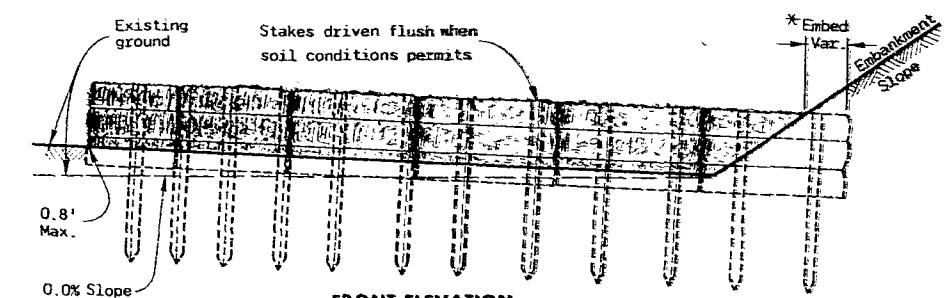
Bales shall be placed with twine or tie wires parallel to the ground.

Stakes to be battered in opposite directions.

* As determined by the Engineer.



PLAN VIEW



FRONT ELEVATION

EROSION BALES AT TOE OF SLOPE

TYPICAL INSTALLATIONS OF EROSION BALES

State of Wisconsin
Department of Transportation
Division of Highways

RECOMMENDED FOR APPROVAL

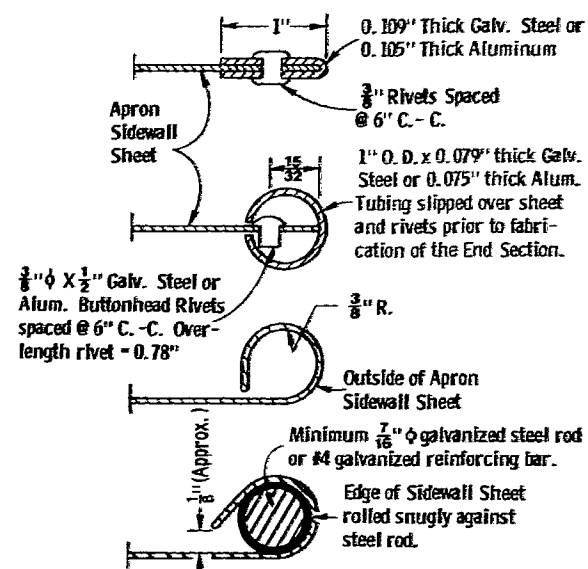
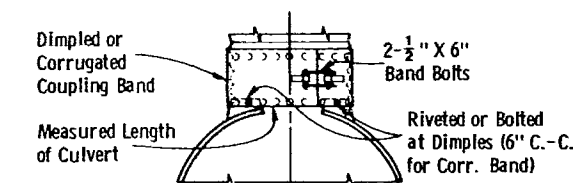
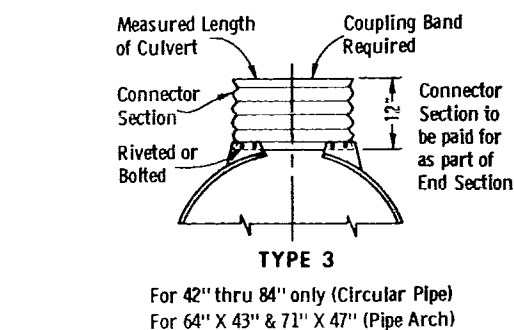
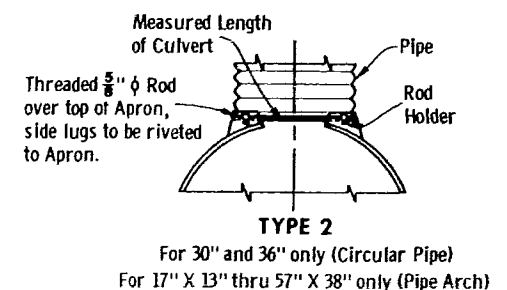
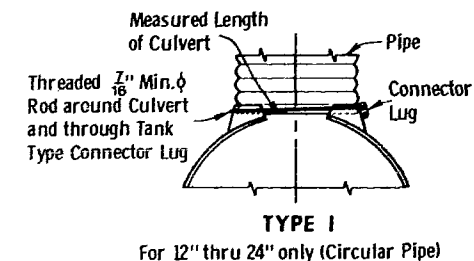
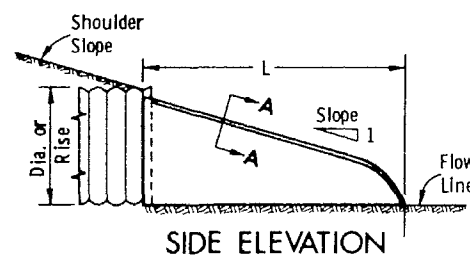
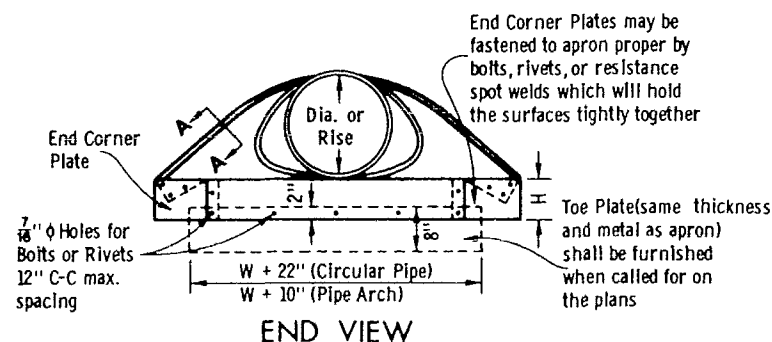
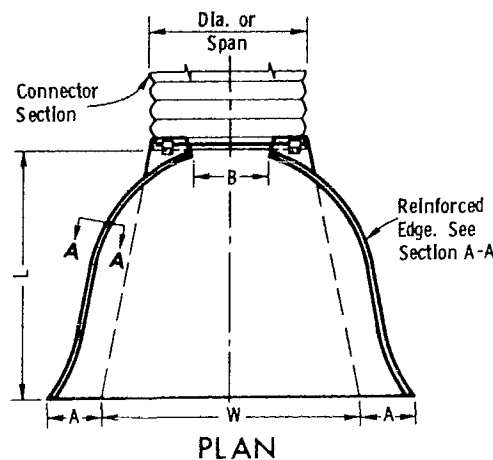
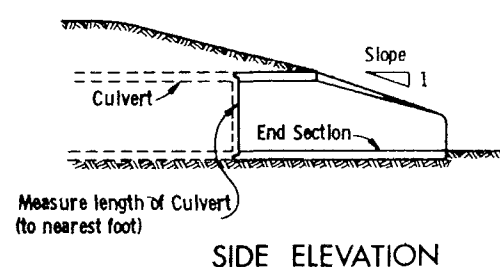
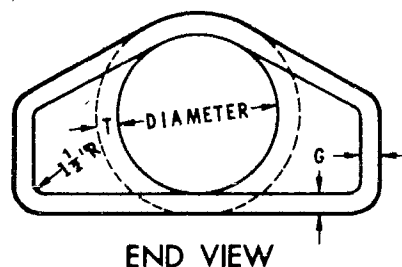
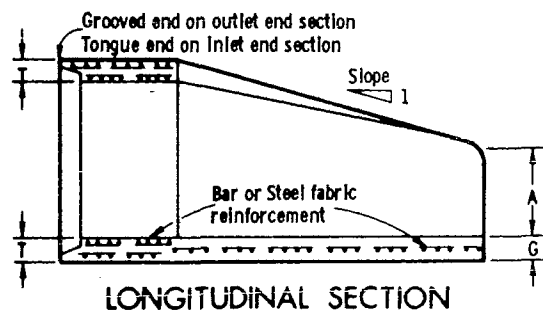
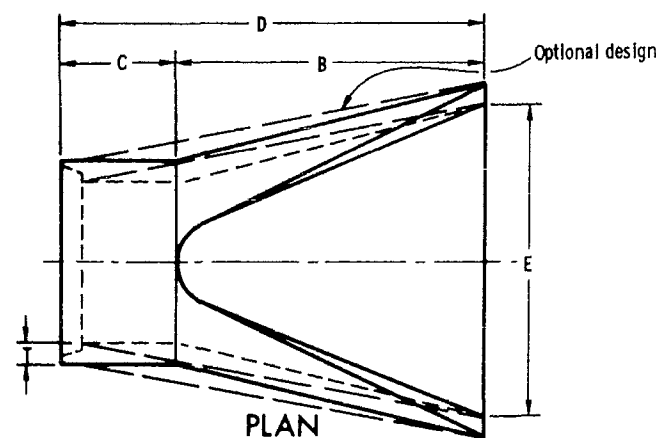
10/14/75
DATE

APPROVED

10/16/75
DATE

L. C. Thomas
CHIEF OF FACILITIES DEVELOPMENT

H. J. Fisher
STATE HIGHWAY ENGINEER



SECTION A-A GENERAL NOTES

Details of construction, materials, and workmanship not shown on this drawing shall conform to the pertinent requirements of the Standard Specifications and the applicable Special Provisions.

Variations of the dimensions and designs shown hereon will be permitted providing equivalent capacity and structural integrity are attained, and prior approval of the Engineer is obtained.

Concrete culvert endwalls may not be used with galvanized steel or aluminum culvert pipe or vice versa.

Galvanized steel or aluminum endwalls shall normally be installed on culvert pipe of the same metal. The use of galvanized steel endwalls on aluminum pipes is permitted, provided the two metals at the joint interface are kept separated by a suitable insulating material approximately 1/8" thick or greater. Such material would be an asphalt impregnated fabric, a sheet plastic, a rubber gasket or other nondegradable material of substantial strength.

When two or more pipe arches with apron endwalls are to be laid adjacent to each other, they shall be separated by the following amount.

Pipes: Total width of apron endwall less the diameter of pipe plus 6 inches.

Pipe Arches: Total width of apron endwall less the span dimension of the pipe arch plus 6 inches.

DIA.	APPROX. WEIGHT/SECTION	T	A	B	C	D	E	G	APPROX. SLOPE
12"	530	2"	4"	24"	48 1/8"	72 7/8"	24"	2"	3 to 1
15"	740	2 1/4"	6"	27"	46"	73"	30"	2 1/4"	
18"	990	2 1/2"	9"	27"	46"	73"	36"	2 1/2"	
21"	1,280	2 3/4"	9"	36"	37 1/2"	73 1/2"	42"	2 3/4"	
24"	1,520	3"	9 1/2"	43 1/2"	30"	73 1/2"	48"	3"	
27"	1,930	3 1/4"	10 1/2"	49 1/2"	24"	73 1/2"	54"	3 1/4"	
30"	2,190	3 1/2"	12"	54"	19 3/4"	73 3/4"	60"	3 1/2"	
36"	4,100	4"	15"	63"	34 3/4"	97 3/4"	72"	4"	
42"	5,380	4 1/2"	21"	63"	35"	98"	78"	4 1/2"	
48"	6,550	5"	24"	72"	26"	98"	84"	5"	3 to 1
54"	8,040	5 1/2"	27"	65"	33 1/4" - 35"	98 1/4" - 100"	90"	5"	2 5/8 to 1
60"	8,730	6"	30"	60"	39"	99"	96"	5"	2 to 1
66"	10,630	6 1/2"	34"	72"	21" - 27"		102"	5 1/2"	
72"	12,520	7"	36"	78"	21"		108"	6"	
78"	14,430	7 1/2"	36"	78"	21"	99"	114"	6 1/2"	2 to 1
84"	18,160	8"	36"	90 1/2"	21"	111 1/2"	120"	6 1/2"	1 1/2 to 1

** Minimum
* Maximum

REINFORCED CONCRETE APRON ENDWALLS

D PIPE DIAM.	MIN. METAL THICKNESS	MIN. ALUM. THICKNESS	DIMENSIONS					APPROX. SLOPE
			A ± 1"	B MAX. ± 1"	H ± 1"	L ± 1 1/2"	W ± 2"	
12"	0.064	0.060	6"	6"	6"	21"	24"	2 1/2 to 1
15"			7"	8"		26"	30"	
18"			8"	10"		31"	36"	
21"		0.060	9"	12"		36"	42"	
24"	0.064	0.075	10"	13"	6"	41"	48"	
30"	0.079	0.075	12"	16"	8"	51"	60"	
36"	0.079	0.105	14"	19"	9"	60"	72"	
42"	0.109		16"	22"	11"	69"	84"	2 1/2 to 1
48"			18"	27"	12"	78"	90"	2 1/4 to 1
54"		0.105	30"			84"	102"	2 to 1
60"		NA	33"			87"	114"	1 3/4 to 1
66"			36"			87"	120"	1 1/2 to 1
72"			39"			87"	126"	1 1/2 to 1
78"			42"			87"	132"	1 1/4 to 1
84"	0.109	NA	45"	12"		87"	138"	1 1/8 to 1

NOTE: All splices to be lap riveted or bolted

METAL OR ALUMINUM APRON ENDWALLS FOR CIRCULAR PIPES

PIPE — ARCH DIMENSIONS		MIN. METAL THICK.	DIMENSIONS					APPROX SLOPE
SPAN	RISE		A ± 1"	B MAX.	H ± 1"	L ± 1½"	W ± 2"	
17"	13"	0.064	7"	9"	6"	19"	30"	2½ to 1
21"	15"	↑	7"	10"	↑	23"	36"	↑
24"	18"	↓	8"	12"	↓	28"	42"	↓
28"	20"	0.064	9"	14"	↓	32"	48"	↓
35"	24"	0.079	10"	16"	6"	39"	60"	↓
42"	29"	0.079	12"	18"	8"	46"	75"	↓
49"	33"	0.109	13"	21"	9"	53"	85"	↓
57"	38"	↑	18"	26"	12"	63"	90"	2½ to 1
64"	43"	↑	18"	30"	12"	70"	102"	2¼ to 1
71"	47"	↑	18"	33"	12"	77"	114"	2¼ to 1
77"	52"	↓	18"	36"	12"	77"	126"	2 to 1
83"	57"	0.109	18"	39"	12"	77"	138"	2 to 1

NOTE: All splices to be lap riveted or bolted

METAL APRON ENDWALLS FOR PIPE ARCHES

NOTE: Dimpled Band fits over Outside of Endwall, and Corr. Band fits Inside Endwall. Dimpled Band may be used with Helically Corrugated Pipe

CONNECTION DETAILS

CIRCULAR PIPE

For Circumferentially Corrugated Pipe use Endwall Connection Details 1, 2, 3, or 5 as applicable.

For Helically Corrugated Pipe use Endwall Connection Details 1, 2 or 5.

For Helically Corrugated Pipes with two Circumferential Corrugations at each end use Endwall Connection Details 1, 2, or 3

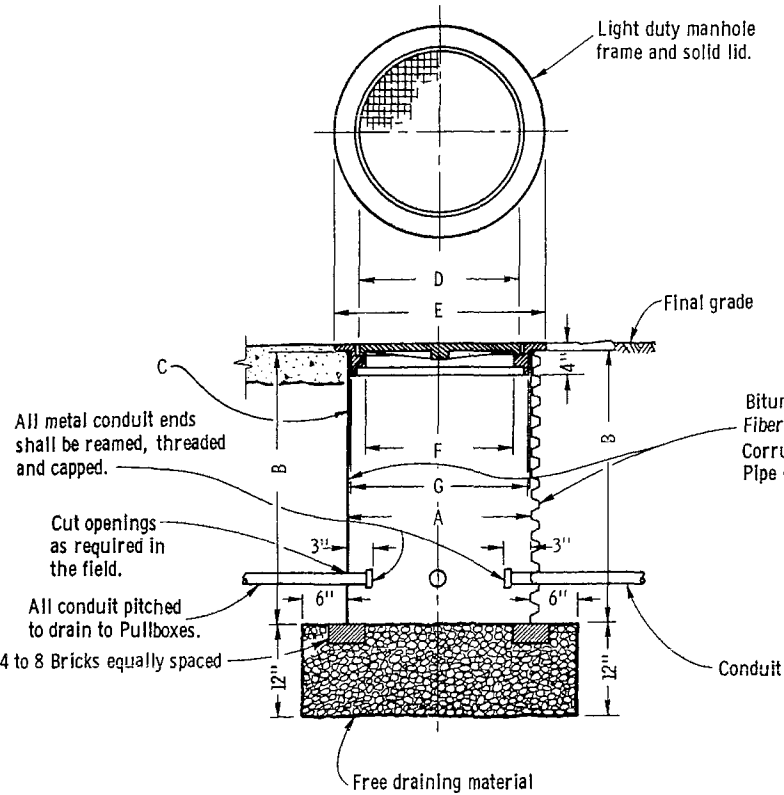
PIPE ARCH

Use Endwall Connection Details 2, 3, or 5 as applicable.

APRON ENDWALLS FOR CULVERT PIPE AND PIPE ARCH

State of Wisconsin
Department of Transportation
Division of Highways

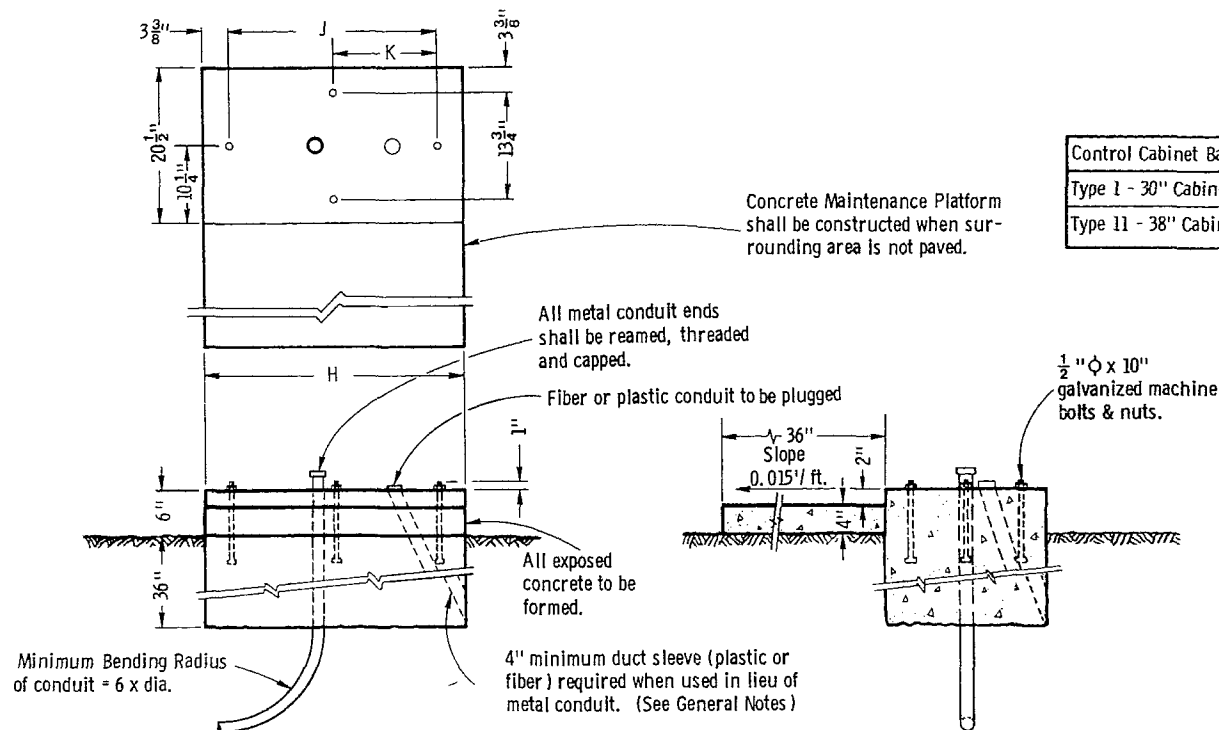
RECOMMENDED FOR APPROVAL
7-29-75
DATE
APPROVED
7-29-75
DATE
J. C. Hermal
CHIEF OF FACILITIES DEVELOPMENT
H. J. Siedler
STATE HIGHWAY ENGINEER



SHOWING INSTALLATION IN
PAVED LOCATION

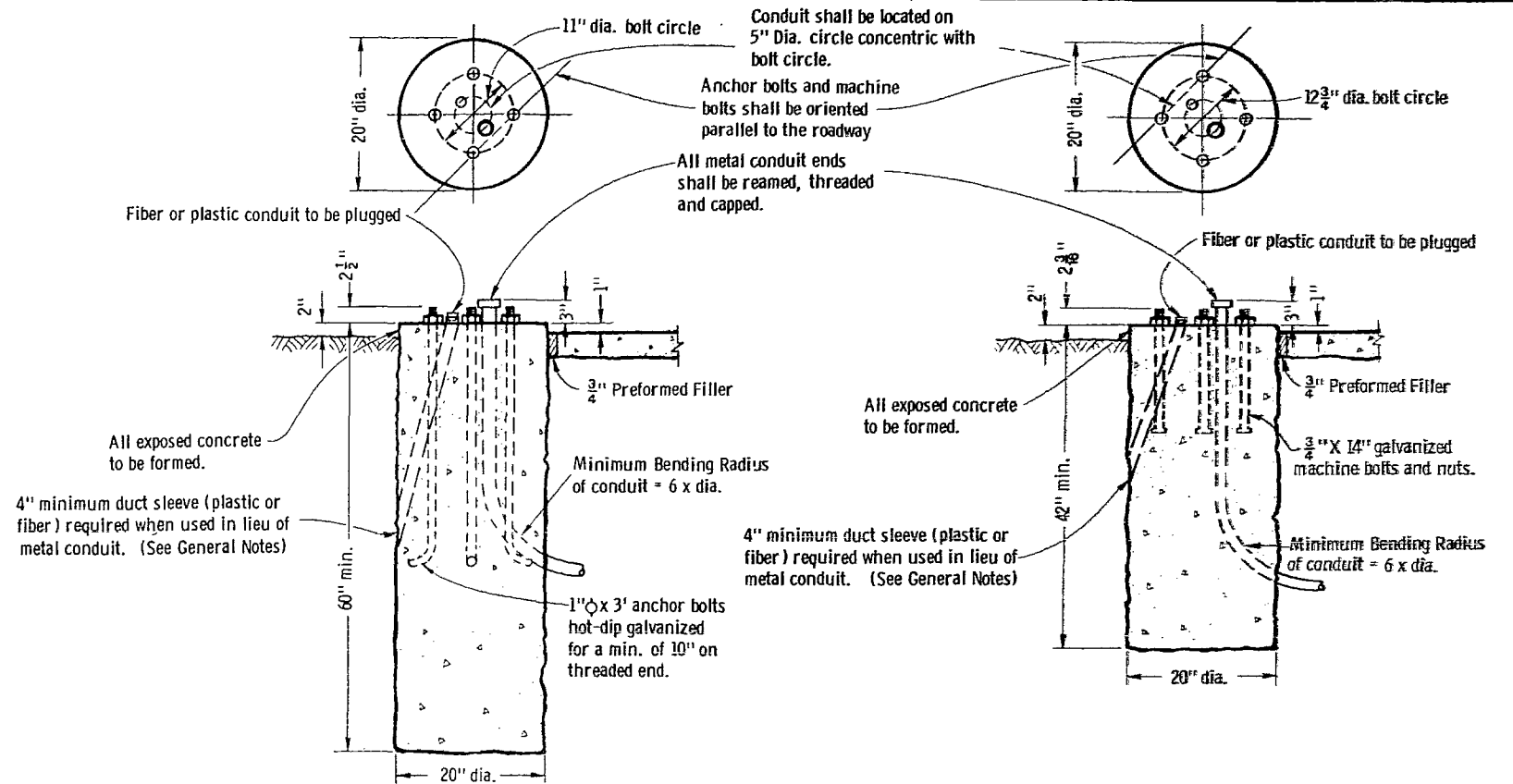
SHOWING INSTALLATION IN
UNPAVED LOCATION

PULL BOX AND DETECTOR BOX DETAIL



TRAFFIC SIGNAL AND TRAFFIC COUNTER
CONTROL CABINET BASE
TYPE 1 and 2

PIPE TYPE		BITUMINOUS FIBER					CORR. METAL
Pipe Dia. (Inside)	A	12"	18"	24"	24"	24"	24"
Pipe Length	B	24"	24"	24"	36"	36"	36"
Wall Thickness	C	0.4"	0.4"	0.4"	0.4"	0.4"	.064"
Manhole Lid	D	10 1/4"	16 1/4"	22 1/4"	22 1/4"	22 1/4"	22 1/4"
Manhole Frame	E	14 1/2"	20 1/2"	26 1/2"	26 1/2"	26 1/2"	26 1/2"
Manhole Frame	F	8 1/2"	14 1/2"	20 1/2"	20 1/2"	20 1/2"	20 1/2"
Manhole Frame	G	11 1/2"	17 1/2"	23 1/2"	23 1/2"	23 1/2"	23 1/2"
Lid & Frame		55#	100#	160#	160#	160#	160#



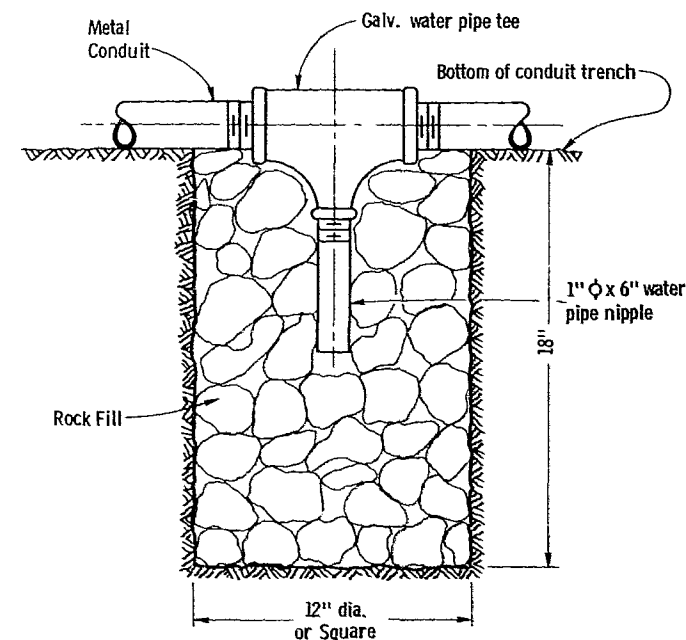
SHOWING INSTALLATION IN
UNPAVED LOCATION

SHOWING INSTALLATION IN
PAVED LOCATION

SHOWING INSTALLATION IN
UNPAVED LOCATION

SHOWING INSTALLATION IN
PAVED LOCATION

TRAFFIC SIGNAL BASE TYPE 2



Note: Install as required at points in conduit for drainage.

DRAIN SUMP FOR METAL CONDUIT

TRAFFIC SIGNAL BASE TYPE 1

GENERAL NOTES

Details of construction, materials and workmanship not shown on this drawing shall conform to the pertinent requirements of the Standard Specifications and the applicable Special Provisions.

Conduit may be metal, fiber or plastic. Locate as required. 12-inch min. bending radius applies to metal conduit only.

Concrete masonry shall be grade "AA".

Conduit installed as a continuous system between Pullboxes shall have a min. depth of 12 inches and shall always be below the pavement.

Detailed drawings for proposed alternate designs for "Traffic Signal and Traffic Counter Details" shall be submitted to the Engineer for approval.

TRAFFIC SIGNAL AND TRAFFIC COUNTER DETAILS

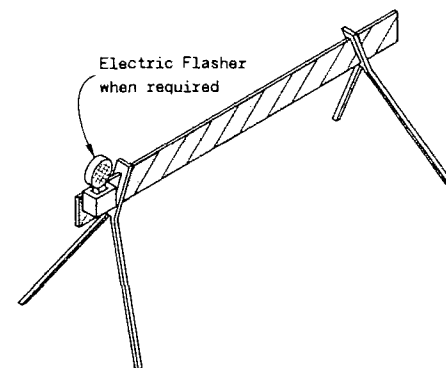
State of Wisconsin
Department of Transportation
Division of Highways

RECOMMENDED FOR APPROVAL:
4-13-72
DATE
APPROVED
4-13-72
DATE

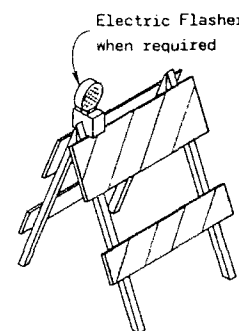
TABLE OF BARRICADE CHARACTERISTICS

BARRICADE TYPE	I	II	III
Height	3'(91.4 cm) Min.		5'(152.4 cm) Min.
* Rail Width	8"(20.3 cm) Min. to 12"(30.5 cm) Max.		
Rail Length	2'(61.0 cm) Min. to Variable Maximum		
** Stripe Width	6" (15.2 cm) at 45° Angle		
Stripe Colors	Reflectorized Orange & White		

* Nominal dimensions when barricade is constructed of lumber.
 ** May be 4"(10.2 cm) for rail lengths less than 3'(91.4 cm).



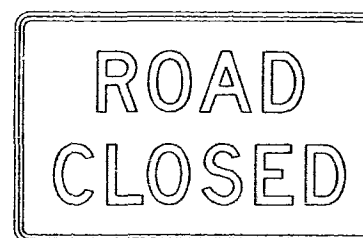
TYPICAL TYPE I BARRICADE



TYPICAL TYPE II BARRICADE



W20-3
 48"(121.9 cm) x 48"(121.9 cm)
 Black Lettering on Reflective
 Orange Background
 Letter Series "D"
 Letter height 7" (17.8 cm)



R11-2
 48"(121.9 cm) x 30"(76.2 cm)
 Black Lettering on Reflective
 White Background
 Letter Series "D"
 Letter height 8" (20.3 cm)

STANDARD SIGNS-TYPE II

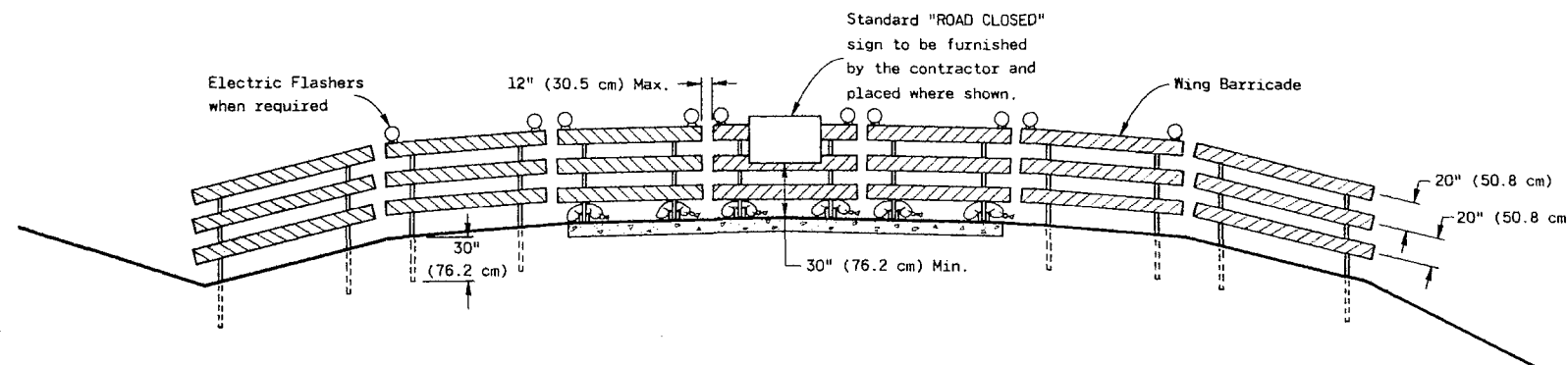
GENERAL NOTES

The contractor shall furnish, erect and maintain Barricades and Signs. Details regarding location, spacing, dimensions, fabrication, material, sign lettering, lighting devices and color of Barricades and Signs shall conform to this drawing, the Wisconsin Manual on Uniform Traffic Control Devices, the Standard Specifications, Special Provisions and/or plans.

Type III Barricades and Signs shall be erected at the termini of projects and at other road or street locations where it is necessary to control or eliminate public access to the construction area.

Type I and II Barricades shall be used on projects when traffic is to be maintained through the construction area.

The actual field location of barricade installations and advance signs shall be as directed by the Engineer.



TYPICAL INSTALLATION SHOWING TYPE III BARRICADE

CONSTRUCTION BARRICADES

CONSTRUCTION BARRICADES & STANDARD SIGNS

State of Wisconsin
 Department of Transportation
 Division of Highways

RECOMMENDED FOR APPROVAL:

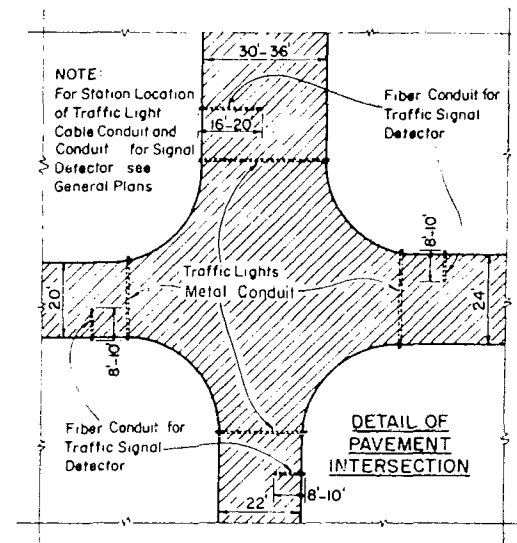
6-6-75
 DATE

L. C. Hennel
 CHIEF OF FACILITIES DEVELOPMENT

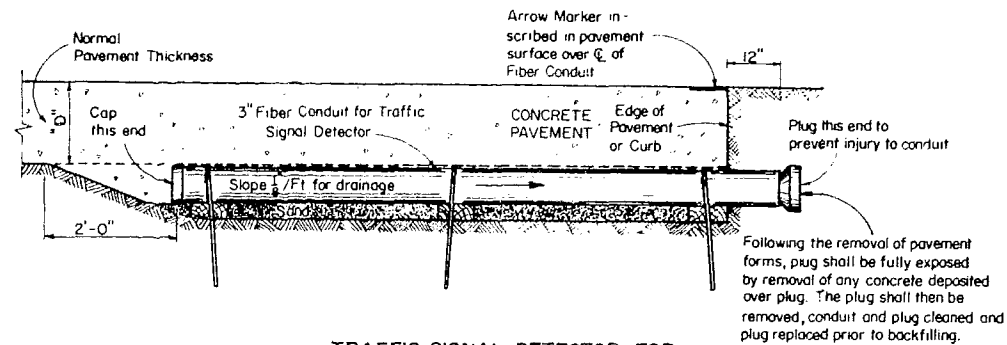
APPROVED

6-6-75
 DATE

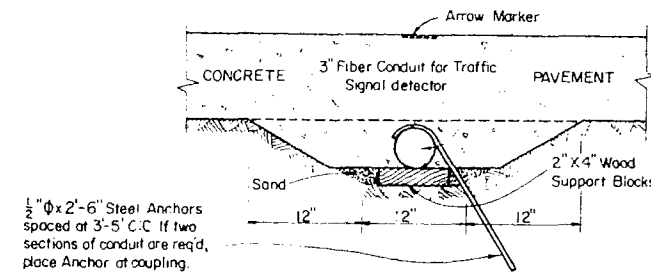
W. J. Siedler
 STATE HIGHWAY ENGINEER



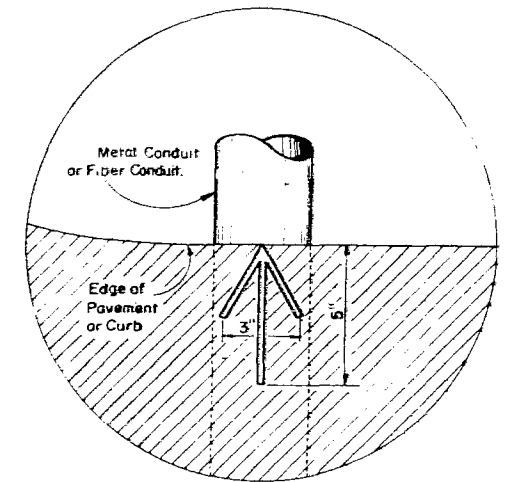
PLAN VIEW
SHOWING RELATIVE POSITION OF
TRAFFIC LIGHT CONDUITS AND
TRAFFIC SIGNAL DETECTOR CONDUITS
AT UNDIVIDED HIGHWAY INTERSECTIONS



TRAFFIC SIGNAL DETECTOR FOR
UNDIVIDED HIGHWAYS

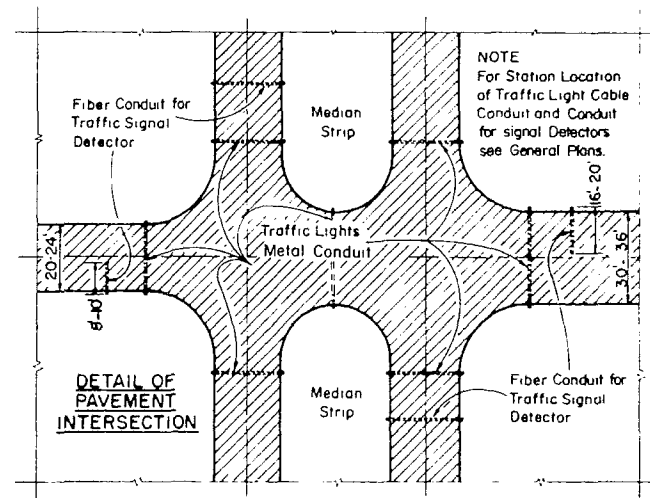


SIDE & END ELEVATIONS
SHOWING PLACEMENT DETAILS
FOR TRAFFIC SIGNAL DETECTOR CONDUIT

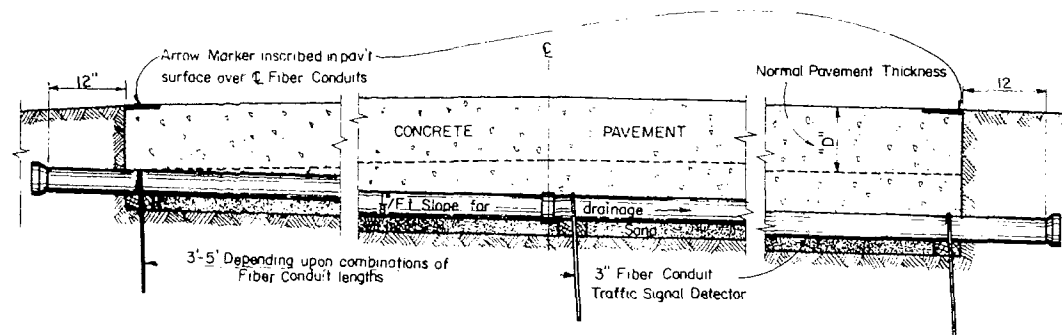


Arrow Marker to be inscribed in fresh concrete and/or bituminous surfacing 1/8" to 3/8" deep at each location where pipe conduit or fiber conduit are placed under rigid surfacing.

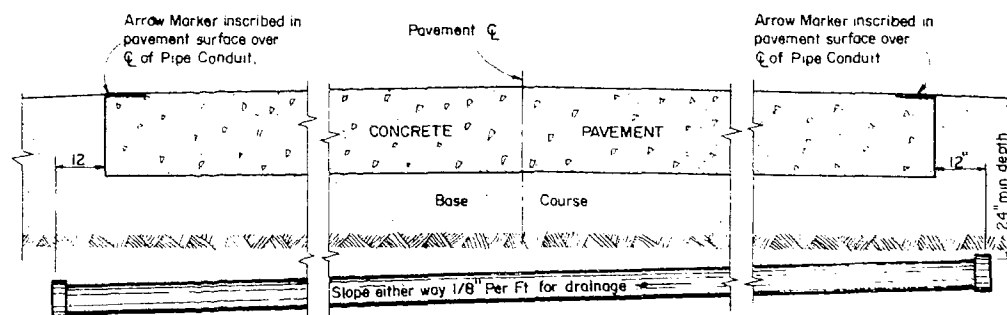
PLAN VIEW - ARROW MARKER



PLAN VIEW
SHOWING RELATIVE POSITION OF
TRAFFIC LIGHT CONDUITS AND
TRAFFIC SIGNAL DETECTOR CONDUITS
AT DIVIDED HIGHWAY INTERSECTIONS



TRAFFIC SIGNAL DETECTOR FOR
DIVIDED HIGHWAYS



ELEVATION ON CENTERLINE
SHOWING PLACEMENT DETAILS
FOR TRAFFIC SIGNAL CONDUIT

GENERAL NOTES

Details of Construction not shown on this drawing shall conform to the pertinent requirements of the Standard Specifications, and the applicable Special Provisions.

MATERIALS

Metal Conduit shall be furnished and placed as shown hereon and in accord with the Standard Specifications.

Fiber Conduit shall be furnished and placed as shown hereon and in accord with the Standard Specifications.

MEASUREMENT & PAYMENT

The item of Fiber Conduit shall be measured and paid for by the linear foot complete in place and in accord with Standard Specifications.

CONDUIT SIZE

Unless shown or required otherwise on the plans, Metal Conduit shall be 2" I.D.

METAL CONDUIT & FIBER CONDUIT

STATE HIGHWAY COMMISSION OF WISCONSIN

RECOMMENDED FOR APPROVAL

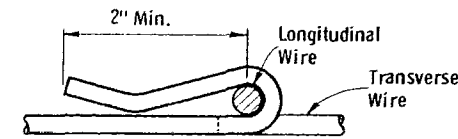
4-3-63
DATE

APPROVED

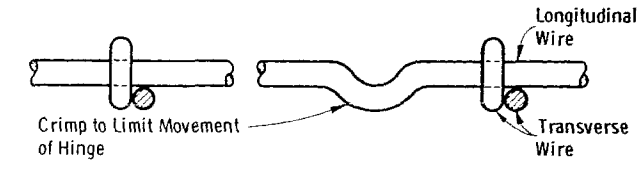
4/5/63
DATE

J. J. Pitt
ENGINEER OF DESIGN

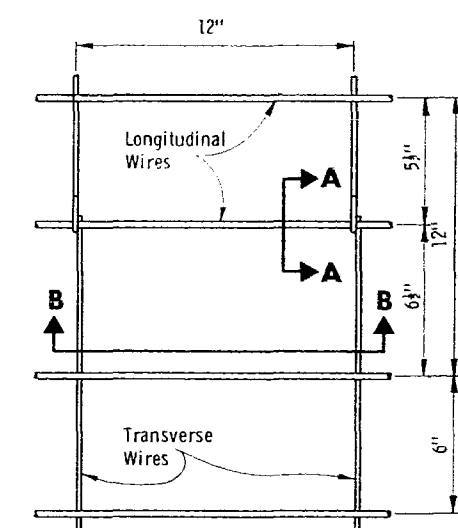
E. L. Rottiger
STATE HIGHWAY ENGINEER



SECTION A-A



SECTION B-B



PLAN VIEW

OPTIONAL HINGE DETAIL

GENERAL NOTES

Details of construction and materials not shown hereon shall conform to the pertinent requirements of the Standard Specifications and the applicable Special Provisions.

Alternate hinge designs may be used upon approval of the Engineer.

WELDED STEEL WIRE FABRIC

Welded Steel Wire Fabric shall conform to the requirements of the Standard Specification for Welded Steel Wire Fabric for Concrete Reinforcement A. A. S. H. O. Designation M 55 except as shown hereon.

Welded Steel Wire Fabric Specifications:

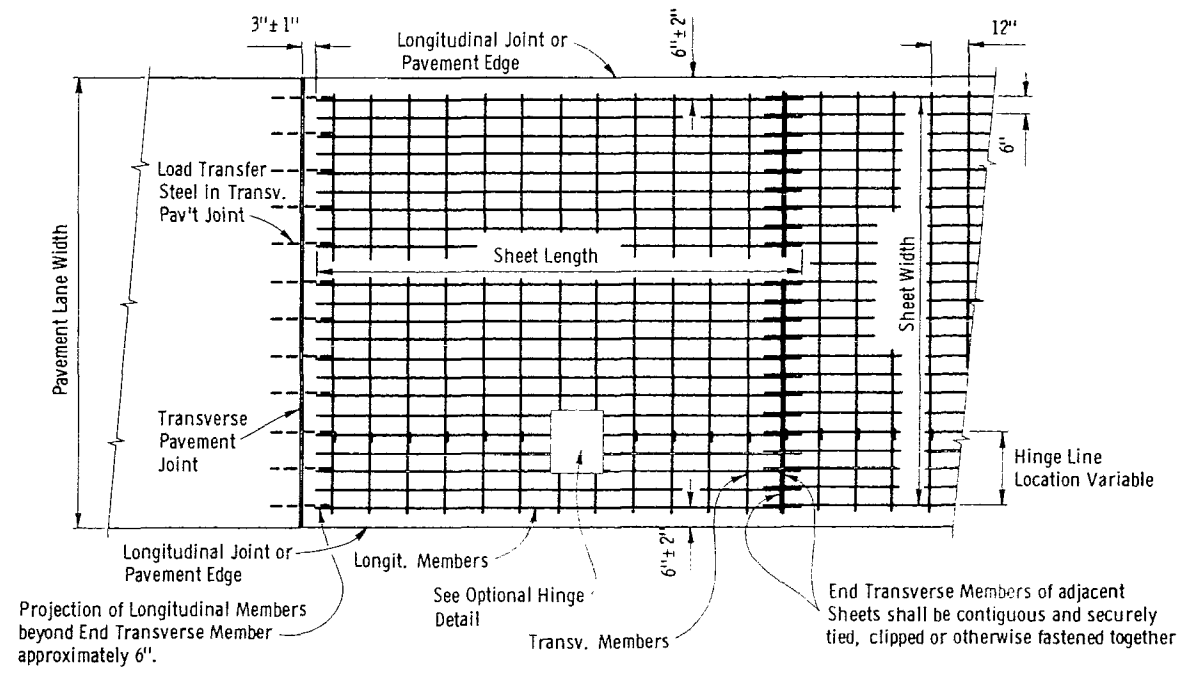
- Approximate weight per 100 sq. ft. = 69.0 lbs.
- Longitudinal Steel - Gage No. 0 = 0.3065" D at 6" C - C.
- Transverse Steel - Gage No. 4 = 0.2253" D at 12" C - C.

Side lap of adjacent sheets shall be approximately 6".

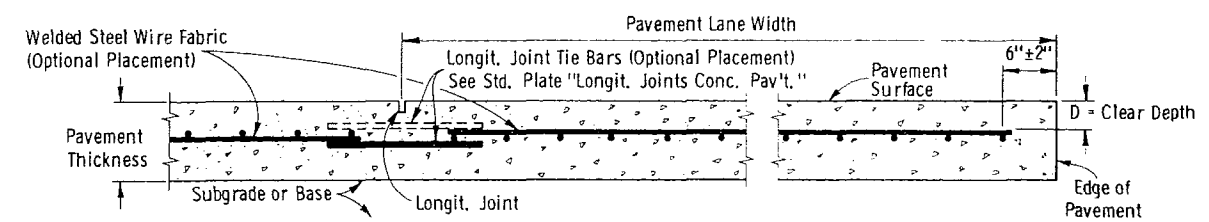
SPECIAL REQUIREMENTS

Welded Steel Wire Fabric shall be shipped to the job site in flat sheets.

One longitudinal hinge line will be permitted in each Welded Steel Wire Fabric sheet for convenience in shipping. This hinge shall encircle the longitudinal wire such that no more than one (1) inch of transverse movement of the hinge exists. The longitudinal wire around which the hinge rotates shall be crimped adjacent to the hinge such that no more than one (1) inch of longitudinal movement of the hinge exists.



PLAN VIEW



CROSS SECTION

WELDED STEEL WIRE FABRIC

Pavement Thickness	"D"
8"	2"-4"
9"	2"-4 1/2"
10"	2"-5"

CONCRETE PAVEMENT REINFORCEMENT

State of Wisconsin
Department of Transportation
Division of Highways

RECOMMENDED FOR APPROVAL
11-30-72
DATE
APPROVED
12-1-72
DATE

S.D.D. 13A1-2