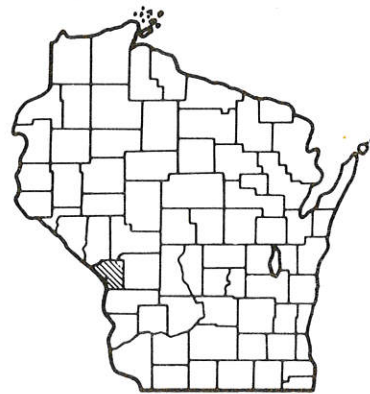


8

**Index of Sheets**

Sheet No.	1	Title
Sheet No.	2-2.6	Typical Cross Sections
Sheet No.	3	Estimate of Quantities
Sheet No.	3A-3C	Miscellaneous Quantities
Sheet No.	-	Right of Way Plat
Sheet No.	5-5.1	Plan and Profile
Sheet No.	6-6.13	Standard Details
Sheet No.	8-8.2	Structure Plans
Sheet No.	7-7.3	Standard Sign Plates
Sheet No.	9-9.3	Cross Sections

TOTAL SHEETS = 39



**Design Designation**

	U.S.H. 53	GEORGE ST.	RAMP
A.D.T. (1976)	= 24,350	11,595	2,100
A.D.T. (1996)	= 40,000	18,000	4,000
D.H.V.	= 2,679	1,275	231
D.	= 60%	60%	100%
T.	= 9%	9%	9%
V.	= 50 M.P.H.	25 M.P.H.	35 M.P.H.

**Conventional Signs**

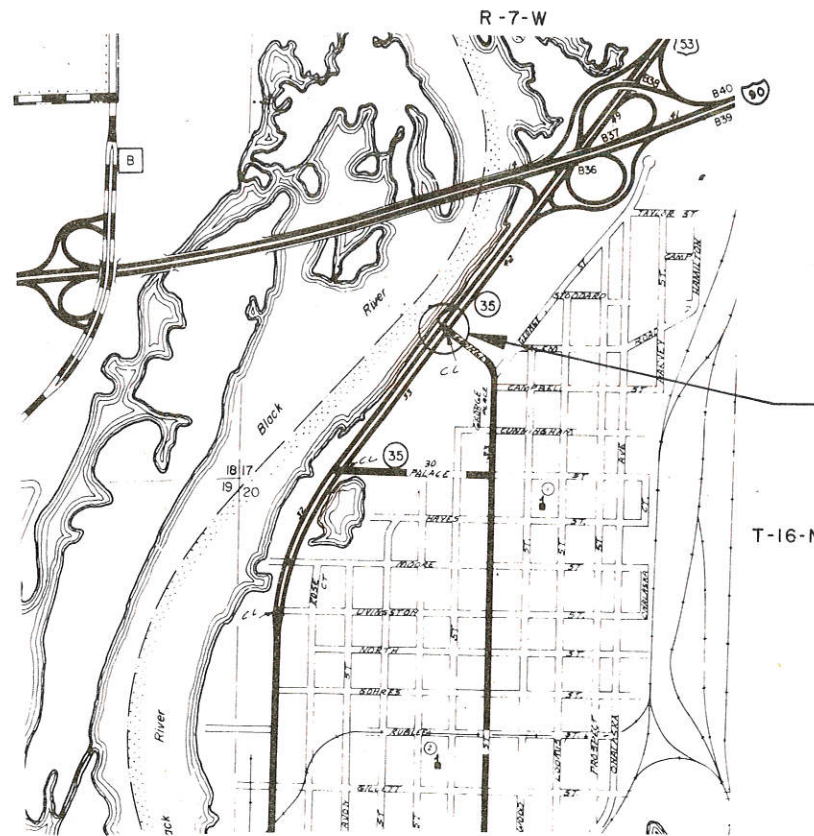
County Line	-----	Culverts in Place	-----
Township or Range Line	-----	Culverts Required	-----
Section Line	-----	Drop Inlet	-----
New Right of Way Line	-----	Power Pole	-----
Present Right of Way Line	-----	Telephone or Telegraph Pole	-----
Wire Fence	x (type) x	Right of Way Markers	-----
Corporate or City Limits	-----	Reference Stake for Hubs Only	+61.7 25.9
Property Line	P.L.	Marsh	-----
Traveled Way or P.E.	-----	Hedge	-----
Railroads	-----	Trees	-----
Base or Survey Line	-----	Ground Elevation	Datum Line 10.8
Caution Symbol (combustible fluids under pressure)		Grade Elevation	Datum Line 10.8

STATE OF WISCONSIN  
**DEPARTMENT OF TRANSPORTATION**

PLAN AND PROFILE OF PROPOSED  
**INTER. U.S.H. 53 & GEORGE ST.**  
(CITY OF LACROSSE)  
U.S.H. 53  
LA CROSSE COUNTY

STATE PROJECT NUMBER  
**1633-1-71 &**

Scales  
Plan 1 in. = 20'  
Profile Hor. 1 in. = 0' Vert. 1 in. = 0'  
Cross Sections Hor. 1 in. = 10' Vert. 1 in. = 10'



**PROJECT 1633-1-71 & 90**

N = 608,208 (±200')  
E = 1,671,979 (±200')  
550' WEST AND 1090' SOUTH OF THE CENTER  
SECTION 17, T 16N, R 7 W.

**Layout**

Scale 1" = 1000'

Total Net Length of Centerline = 0.0 Mi.

NOTE:  
COORDINATES SHOWN ARE WISCONSIN COORDINATE SYSTEM,  
SOUTH ZONE COORDINATES AND ARE SCALED FROM U.S.G.S.  
TOPOGRAPHIC MAP FOR IDENTIFICATION ONLY.

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
1633-1-71	GR 08(3)	1
1633-1-90	"	2

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

Surveyor G.J.B. District Checker R.R.S.  
Designer E.M.R. Jr. C.O. Checker PLC  
District Supervisor G.W.P. C.O. Monitor ETL

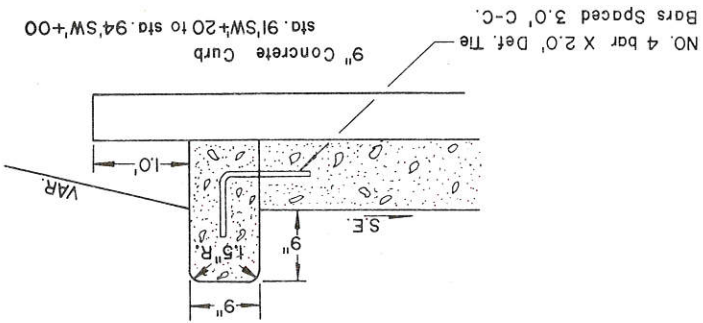
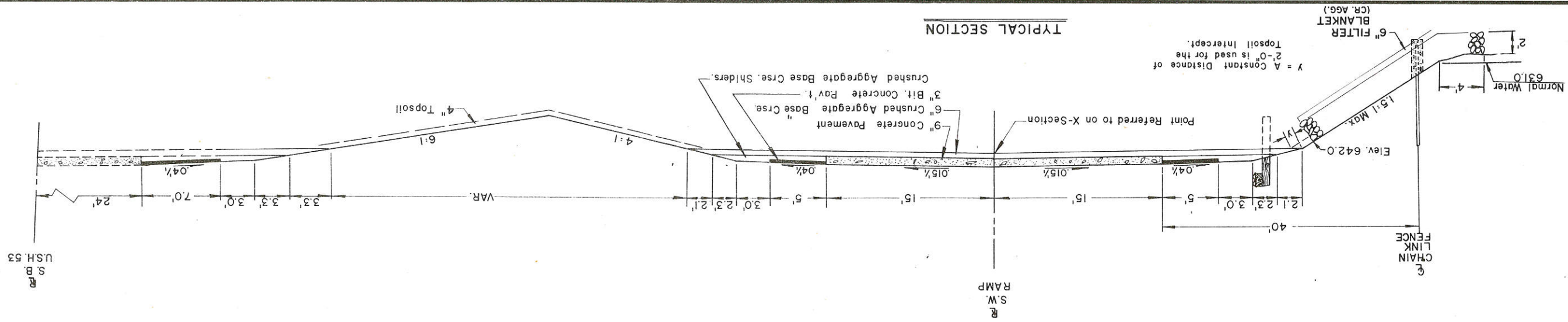
Approved:  
Date 3-16-79 TR Kinney  
DISTRICT TRANSPORTATION DIRECTOR  
Approved:  
Date 4-25-79 [Signature]  
Chief Traffic Engineer  
Approved:  
Date 5/15/79 [Signature]  
Chief Design Engineer  
Approved:  
Date 5/15/79 E.J. Byrkit  
DIRECTOR OF DEVELOPMENT

U.S. DEPARTMENT OF TRANSPORTATION  
FEDERAL HIGHWAY ADMINISTRATION  
REGION 5 WISCONSIN DIVISION

Approved:  
Date \_\_\_\_\_  
Division Engineer

DRAWINGS NOT TO SCALE

TYPICAL SECTION



- GENERAL NOTES
1. THE SAW JOINT FOR PAVEMENT REMOVAL, AT THE SAFETY ISLAND LOCATIONS, SHALL BE ALONG THE FACE OF THE TYPE "G" CURB OR AS DIRECTED BY THE ENGINEER IN THE FIELD. THE SAWING SHALL BE INCIDENTAL TO THE ITEM, REMOVING PAVEMENT.
  2. CURVE DATA IS BASED ON THE ARC DEFINITION.
  3. WHEN THE QUANTITY OF THE ITEM OF BASE COURSE IS MEASURED FOR PAYMENT BY THE CUBIC YARD, THE DEPTH OF THICKNESS OF THE COURSE SHOWN ON THE PLAN IS APPROXIMATE AND THE ACTUAL THICKNESS OF THE COURSE WILL DEPEND ON THE DISTRIBUTION OF THE MATERIAL AS DIRECTED BY THE ENGINEER.
  4. ALL AREAS OF THE RIGHT OF WAY EXCLUSIVE OF THE ROADBED, RIPRAP AND AREAS ALREADY COVERED WITH SUITABLE GRASSES SHALL BE FERTILIZED AND SEEDS AS DIRECTED BY THE ENGINEER.
  5. PRIOR TO THE PLACEMENT OF STEEL PLATE BEAM GUARD, THE CRUSHED AGGREGATE SHOULDERS SHALL BE IN PLACE, SHAPED, AND COMPACTED.
  6. NO TREES SHALL BE REMOVED WITHOUT THE APPROVAL OF THE ENGINEER EXCEPT THOSE INDICATED ON THE PLAN FOR REMOVAL.
  7. TOPSOIL SHALL BE PLACED TO A DEPTH OF 4-INCHES AT THE TIME OF PLACING.
  8. SHRINKAGE FACTOR = ACTUAL YARDAGE X 1.15
  9. THE ELEVATIONS SHOWN ON THE PLANS ARE FINISHED GRADES AND THE ELEVATIONS SHOWN ON THE CROSS SECTIONS ARE SUBGRADE ELEVATIONS.
  10. THE REMOVAL OF CONCRETE MASONRY AND EXISTING GATE CONNECTED TO THE EXISTING PIPE AT STA. 87+00 LT. SHALL BE INCIDENTAL TO THE ITEM OF 24-INCH RCPP, AND GATE HARDWARE SHALL BE SALVAGED AND BECOME THE PROPERTY OF THE STATE.
- STANDARD SIGN PLATES
- W20-1.3
  - W20-5.4
  - W20-7.4
  - G20-2.3

- STANDARD DETAIL DRAWINGS
- 8A5-3a & b CATCH BASIN, MANHOLE, AND INLET COVERS
  - 8C1-3 INLETS, TYPE 1 & 2
  - 8C6-1 INLETS, TYPE 8, 9, 10 & 11
  - 8D1-4 CONCRETE CURB, CONCRETE CURB & GUTTER, OR INTEGRAL CURB
  - 8E5-1 SODDED BACKSLOPE FLUME & INTERCEPTING EMBANKMENT
  - 8F1-8 APRON ENDWALLS FOR CULVERT PIPE & PIPE ARCH
  - 9B2-1 METAL CONDUIT & FIBER CONDUIT
  - 9B3-2 TRAFFIC SIGNAL & TRAFFIC COUNTER DETAILS
  - 9B4-3 DETAILS FOR THE INSTALLATION OF TRAFFIC SIGNAL & TRAFFIC COUNTER DETECTOR LOOP WIRES IN PAVEMENT IN PLACE
  - 1A82-4a & b CLASS "A" STEEL PLATE BEAM GUARD & STEEL PLATE BEAM MEDIUM GUARD (TWO SHEETS)
  - 1A82-4 CHAIN LINK FENCE (TYPE A)
  - 15C1-5 CONSTRUCTION BARRICADES & STANDARD SIGNS

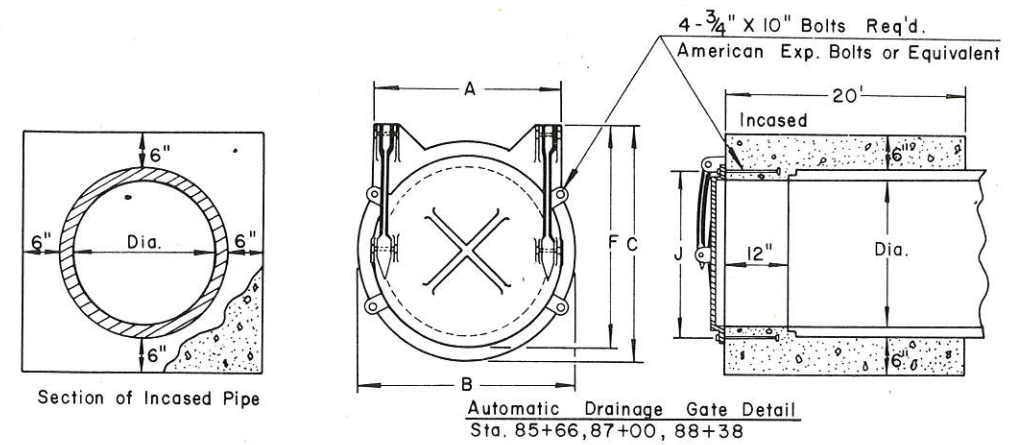
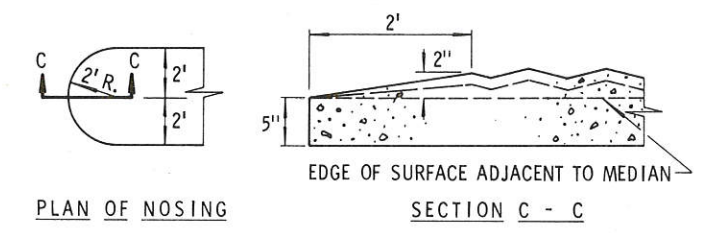
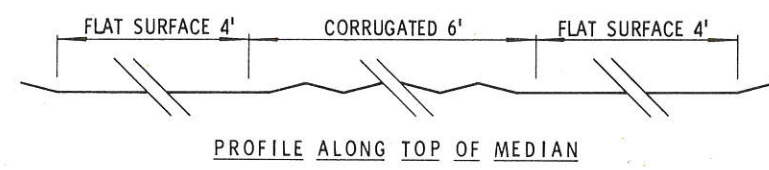
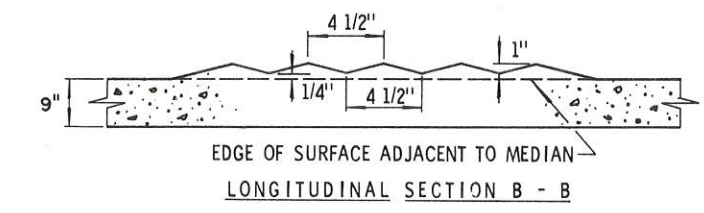
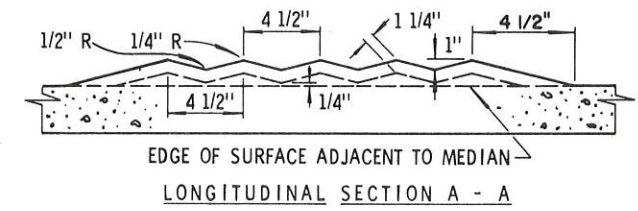
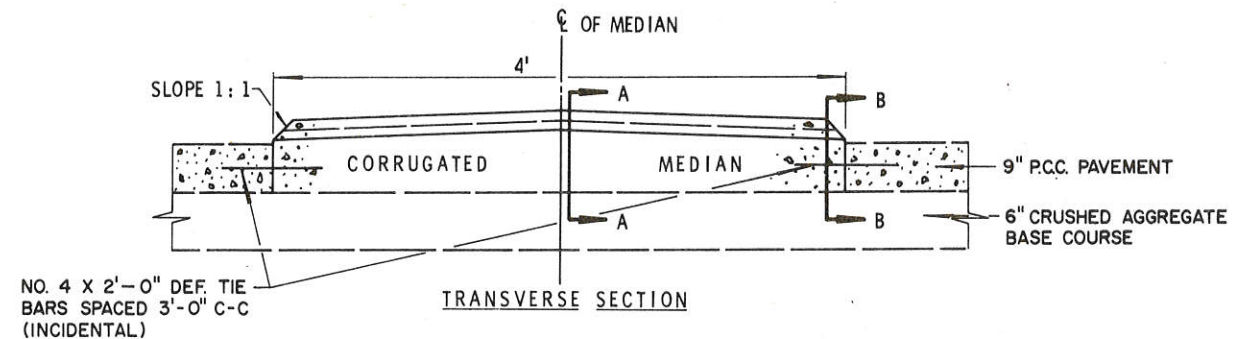
UTILITIES  
 NORTHERN STATES POWER COMPANY  
 122 5th AVENUE NORTH  
 LA CROSSE, WISCONSIN 54601  
 REP - DENNIS G. HALVERSON  
 PHONE - 608-782-8110

STATE PROJECT NUMBER	1633 - 1 - 71,90
SHEET NO.	2

STANDARD ABBREVIATIONS

A.D.T. AVERAGE DAILY TRAFFIC	G. GARAGE	R.R. RAILROAD
AH. AHEAD	GAL. GALLON	R.C.C.P. REINFORCED CONCRETE CULVERT PIPE
ET. AL. AND OTHERS	H.P. HIGH POINT	R.C.P.S.S. REINFORCED CONCRETE PIPE, STORM SEWER
BK. BACK	H. HOUSE	REQ'D REQUIRED
B. BARN	H.T. HOUSE TRAILER	RT. RIGHT
B.M. BENCH MARK	HOR. HORIZONTAL	R.H.F. RIGHT HAND FORWARD
BIT. BITUMINOUS	IN. INCHES	R/W RIGHT OF WAY
BLVD. BOULEVARD	Δ or I INTERSECTION ANGLE	RD. ROAD
BLDGS. BUILDINGS	I.H. INTERSTATE HIGHWAY	SALV. SALVAGED
C.B. CATCH BASINS	I.P. IRON PIN	SAN. SANITARY
¢ CENTERLINE	L.F. LINEAL FEET	S. SOUTH
Δ CENTRAL ANGLE OR DELTA	LT. LEFT	SHR. SHRINKAGE
CH. CH. CHANNEL CHANGE	L.H.F. LEFT HAND FORWARD	S.W. SIDEWALK
CL. CLASS	L. LENGTH OF CURVE	STD. STANDARD
C.M.C.P. CORRUGATED METAL CULVERT PIPE	L.S. LUMP SUM	S.T.H. STATE TRUNK HIGHWAY
CONC. CONCRETE	L.H.E. LIMITED HIGHWAY EASEMENT	STA. STATION
CONST. CONSTRUCTION	M.H. MANHOLE	S.S. STORM SEWER
C.P. CULVERT PIPE	MAX. MAXIMUM	ST. STREET
C.T.H. COUNTY TRUNK HIGHWAY	MI. MILE	S.E. SUPERELEVATION
CWT. HUNDRED WEIGHT	MIN. MINIMUM	SUBD. SUBDIVISION
C.Y. CUBIC YARD	MON. MONUMENT	S.Y. SQUARE YARD
D. DEGREE OF CURVE	MCPL. MUNICIPAL	SURF. SURFACE
D. DIRECTIONAL DISTRIBUTION	N. NORTH	T. TRUCK PERCENTAGE
D.H.V. DESIGN HOUR VOLUME	PAV'T. PAVEMENT	T. TANGENT LENGTH OF CURVE
DIS. DISCHARGE	P.C. POINT OF CURVATURE	TEMP. TEMPORARY
E. EAST	P.I. POINT OF INTERSECTION	T.P. TELEPHONE POLE
ELEV. ELEVATION	P.T. POINT OF TANGENCY	T. TRANSIT LINE
EMB. EMBANKMENT	P.C.C. PORTLAND CEMENT CONCRETE	UNCL. UNCLASSIFIED
EXC. EXCAVATION	P.E. PRIVATE ENTRANCE	V. DESIGN SPEED
F - F FACE TO FACE	P.L. PROPERTY LINE	VAR. VARIABLE
F. E. FIELD ENTRANCE	PP. POWER POLE	V.C. VERTICAL CURVE
F.L. FLOW LINE	PROJ. PROJECT	VERT. VERTICAL
FT. FOOT ( FEET )	R. RADIUS	W. WEST

STATE PROJECT NUMBER	SHEET NO.
1633 - 1 - 71	2.1
STANDARD ABBREVIATIONS AUTOMATIC DRAINAGE GATES DETAIL CONCRETE CORRUGATED MEDIAN DETAIL	

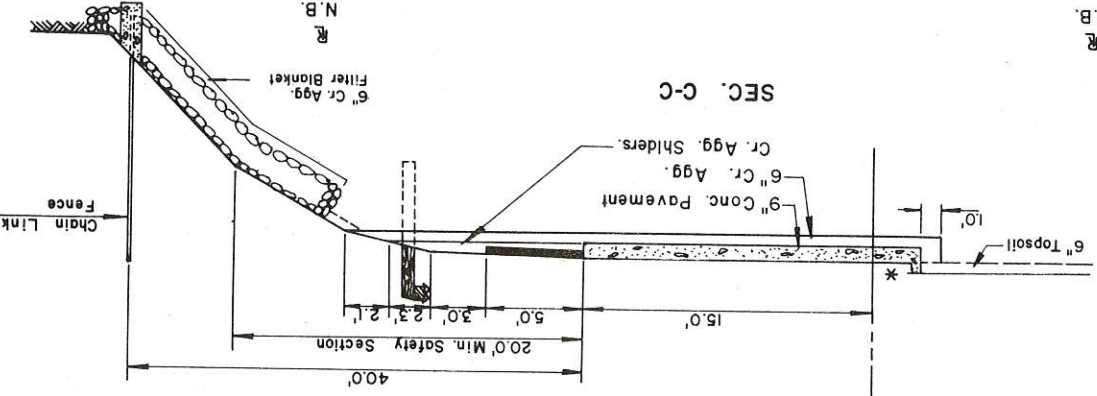


NOTE: The Quantity of Concrete to Construct the Incasement shall be Incidental to the Item, Automatic Drainage Gates.

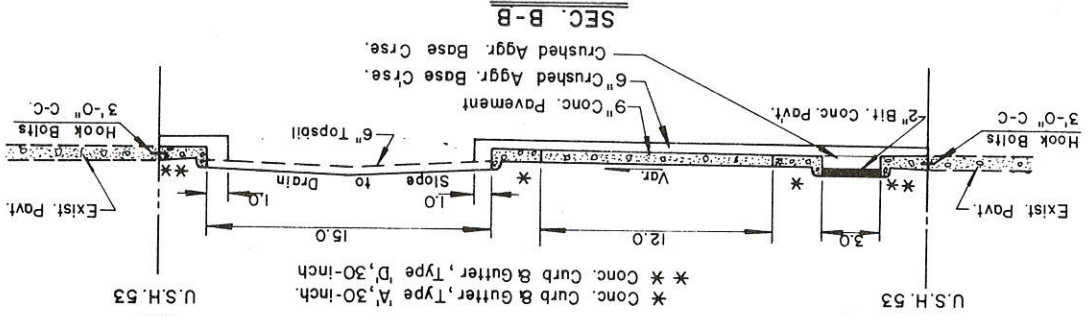
	A	B	C	F	J
18"	19 1/4"	22 1/8"	24 1/4"	19 1/4"	22 1/8"
24"	25 1/4"	28 1/4"	30 1/4"	25 1/4"	28 1/4"

DRAWINGS NOT TO SCALE

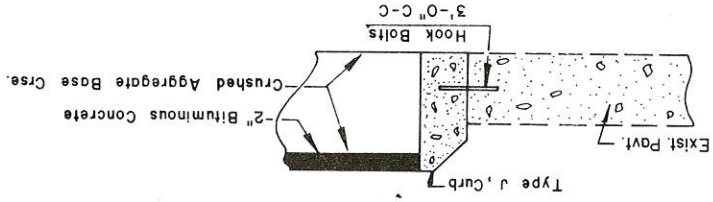
\* Conc. Curb & Gutter, Type 'A', 30 inch



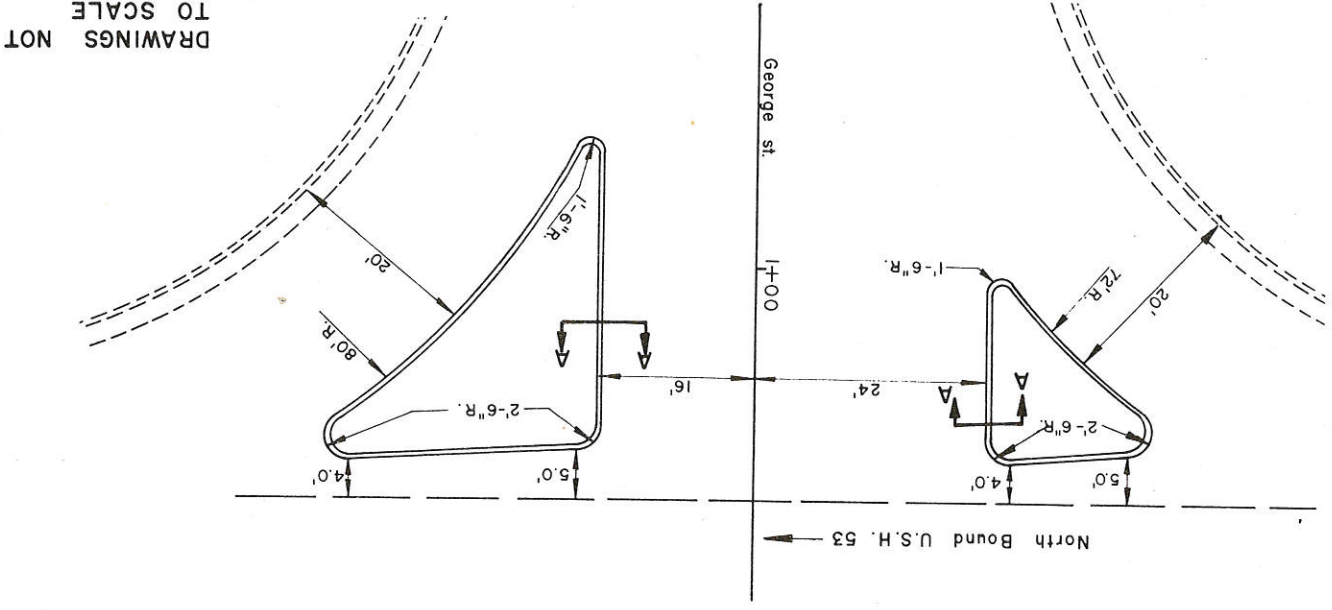
SEC. C-C



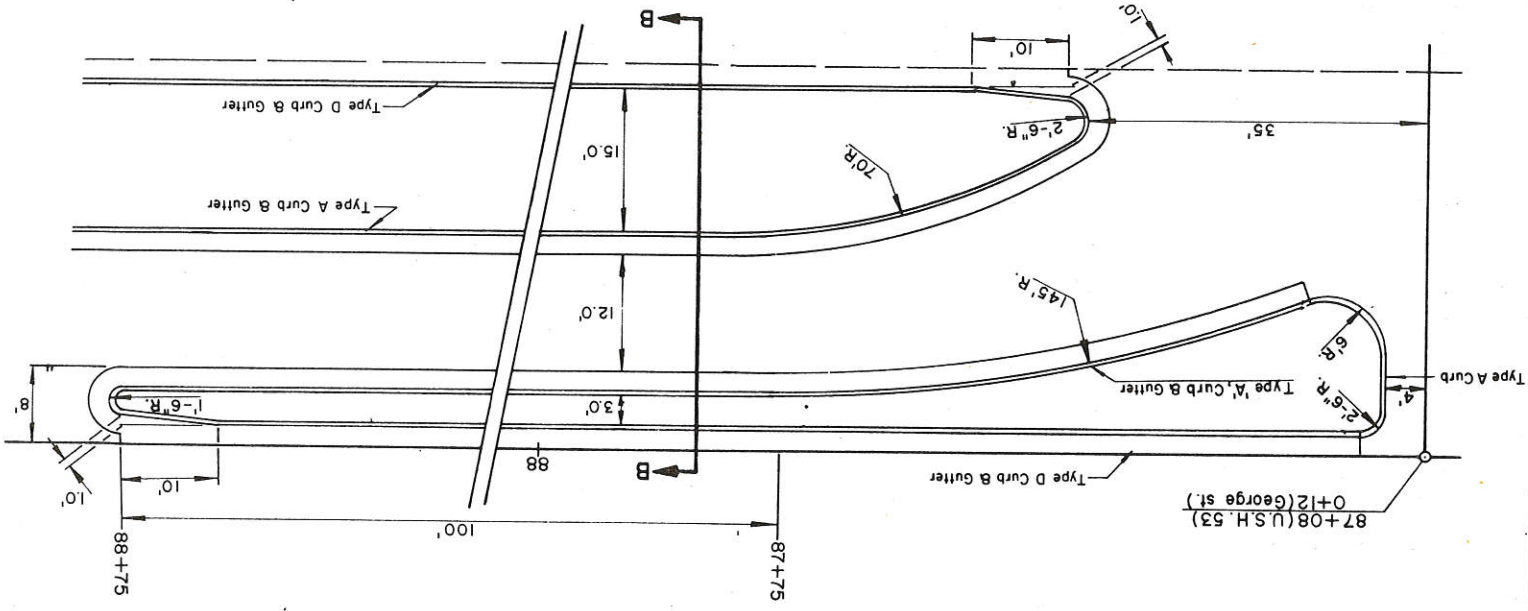
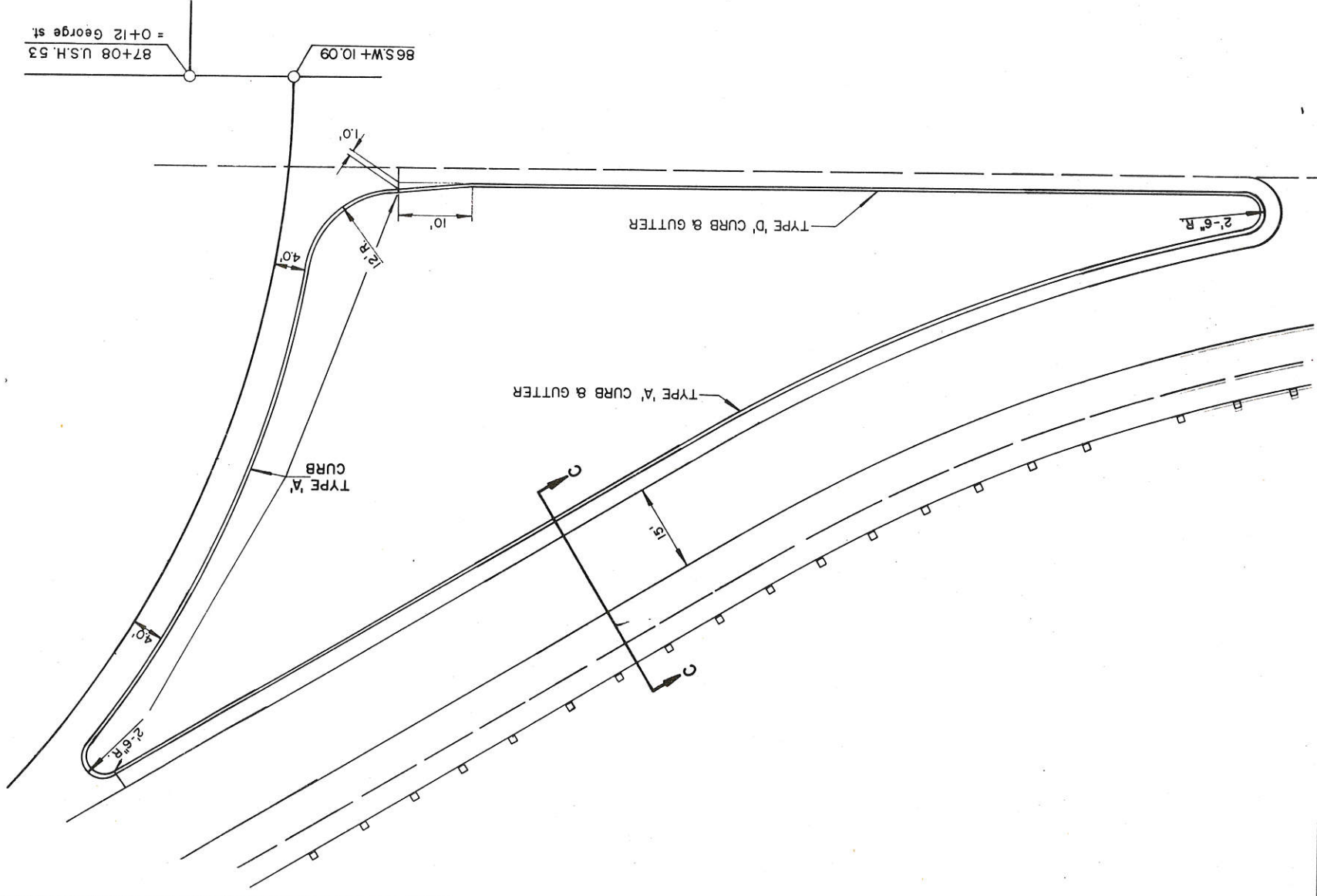
SEC. B-B



SEC. A-A

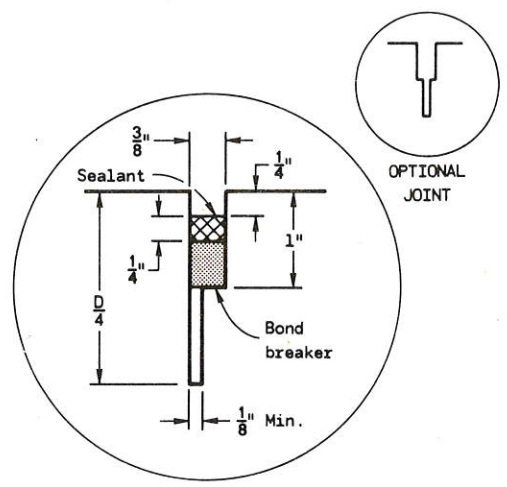


DRAWINGS NOT TO SCALE

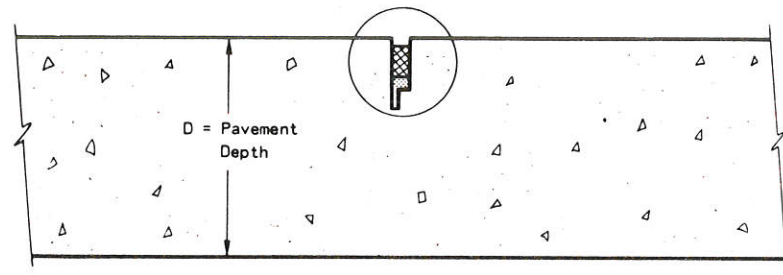


87+08 U.S.H. 53 = 0+12 George st.

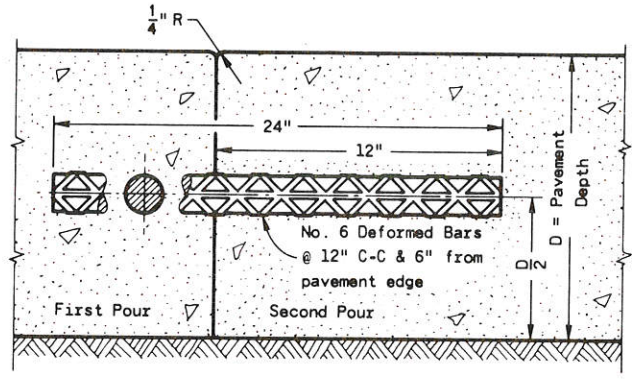
STATE PROJECT NUMBER	SHEET NO.
1633-1-71	2.3
NON-REINFORCED CONCRETE PAVEMENT (20' Normal transverse joints with poured type sealer)	



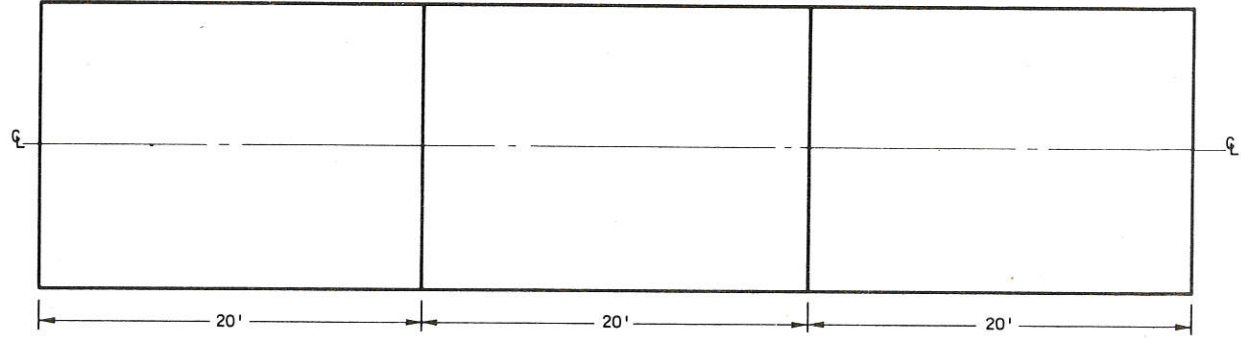
ONE COMPONENT SILICONE JOINT SEAL



CONTRACTION JOINT



CONSTRUCTION JOINT



CONTRACTION JOINT LOCATIONS

**GENERAL NOTES**

Details of construction not shown on this drawing shall conform to Standard Specifications and Special Provisions

**CONTRACTION JOINTS**

Contraction joints shall be located at a uniform spacing of 20' (±1'). Exceptions shall be as directed by the engineer.

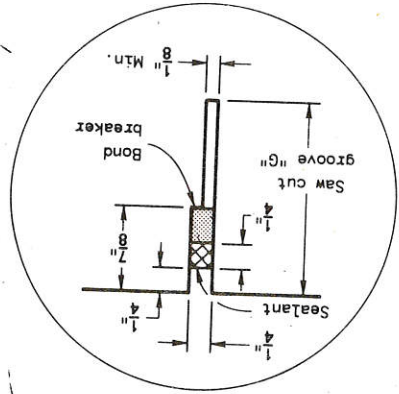
Contraction Joints shall be sealed with a one-component, cold poured, silicone rubber sealant conforming to Federal Specifications TT-S-1543, Class A and TT-S-230, Class A.

**CONSTRUCTION JOINTS**

Construction joints shall be located a minimum of 4 feet from the nearest contraction joint.

Deformed bars may be inserted through the header board after concrete has been poured.

STATE PROJECT NUMBER	1633-1-71
SHEET NO.	2.4
LONGITUDINAL JOINTS FOR CONCRETE PAVEMENT	



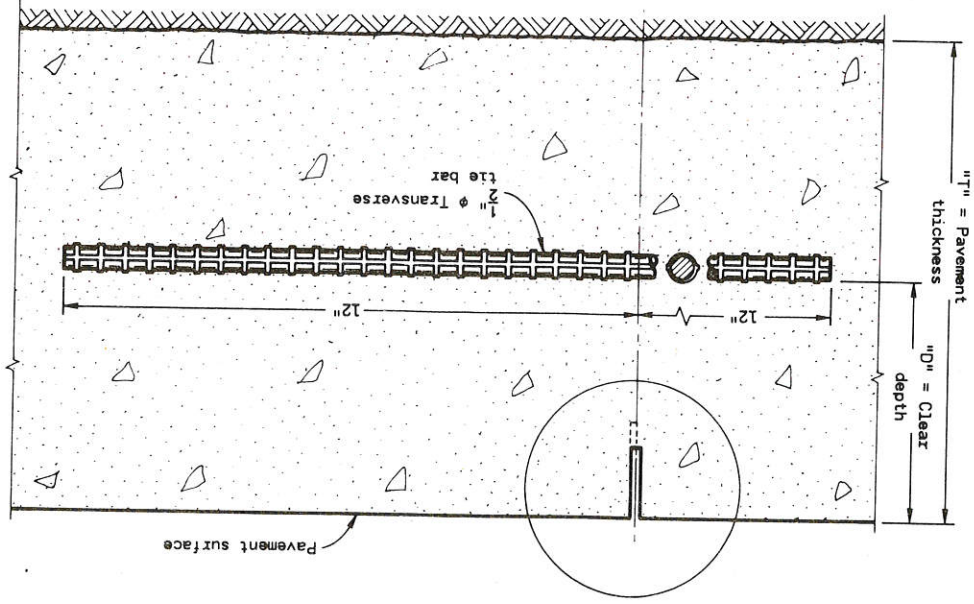
**GENERAL NOTES**

Details of construction not shown on this drawing shall conform to the pertinent requirements of the Standard Specifications and the applicable Special Provisions.  
 TIE BARS  
 Longitudinal joints placed during initial construction shall be of the sawed type or construction type at the option of the contractor and shall be tied with deformed bar steel reinforcement.

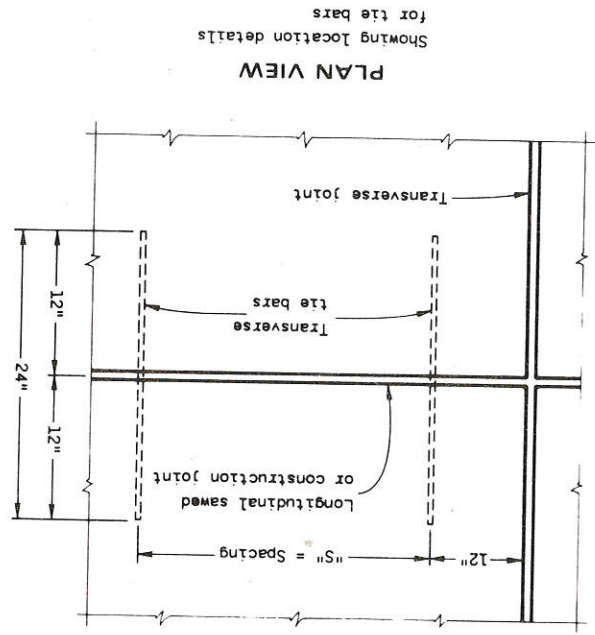
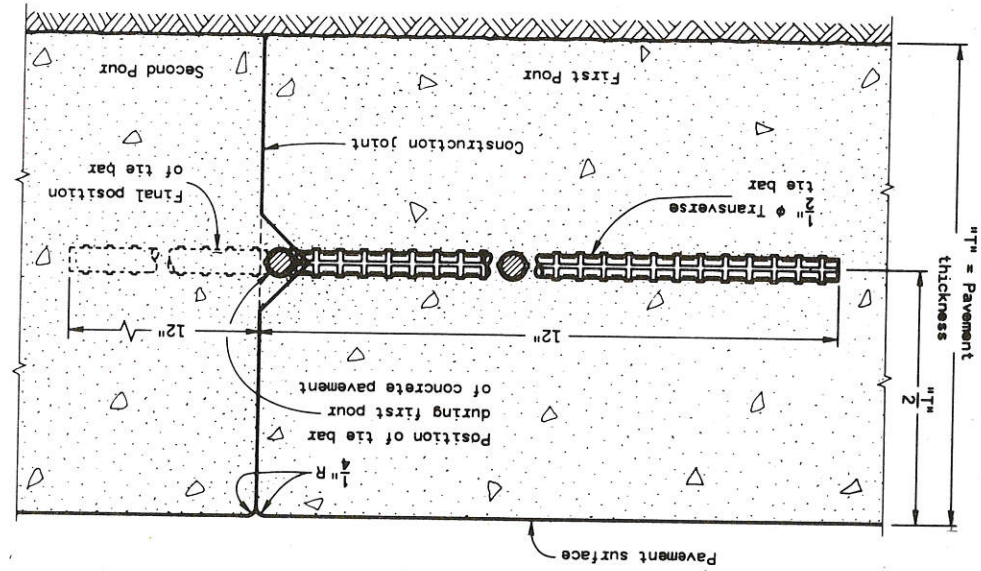
**JOINT SEALING**  
 Sowed type longitudinal joints shall be sealed with a silicone type sealer. A backup material or bond breaker, compatible with the joint sealer shall be placed in the bottom of joints prior to sealing.

Pavement Thickness "T"	Clear Depth "D"	Saw Cut Groove "G"	Saw Cut Maximum Tie Bar Spacing "S"
9"	3 1/4" - 5 1/4"	1 1/2"	36"

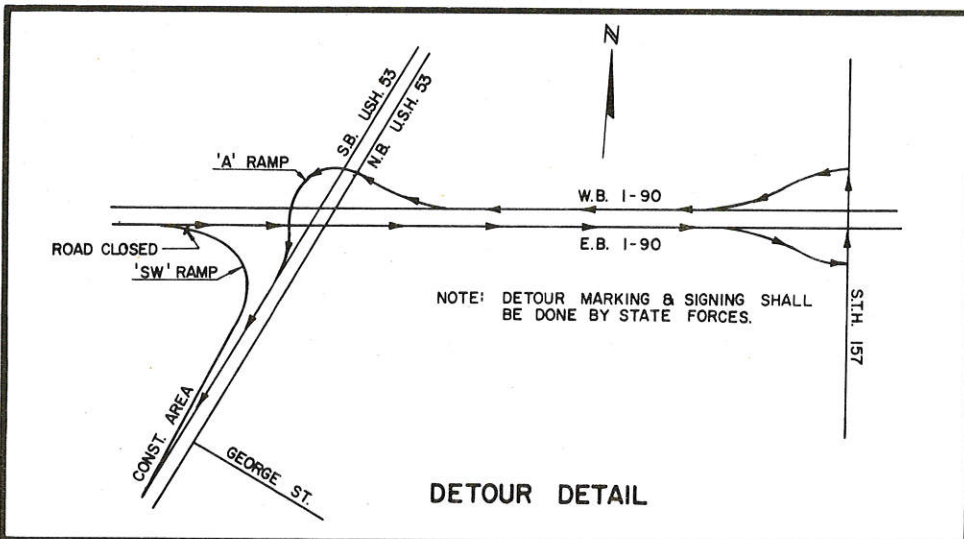
**SECTION  
 SAWED JOINT  
 (TIE BAR)**



**SECTION  
 CONSTRUCTION JOINT  
 (TIE BAR)**



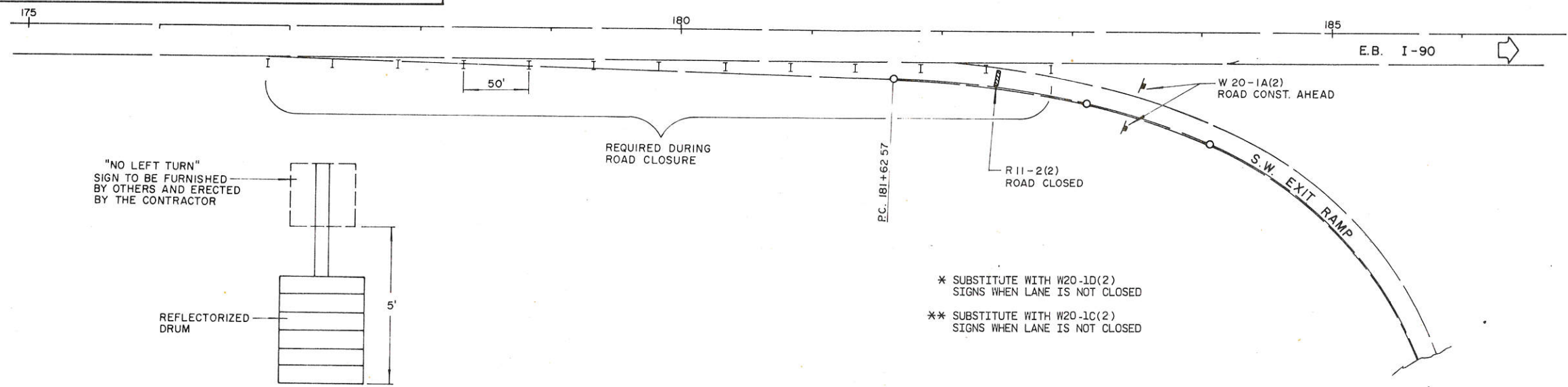
STATE PROJECT NUMBER	SHEET NO.
1633 - 1 - 71	2,5
TYPICAL TRAFFIC CONTROL DETAIL	



**NOTES**

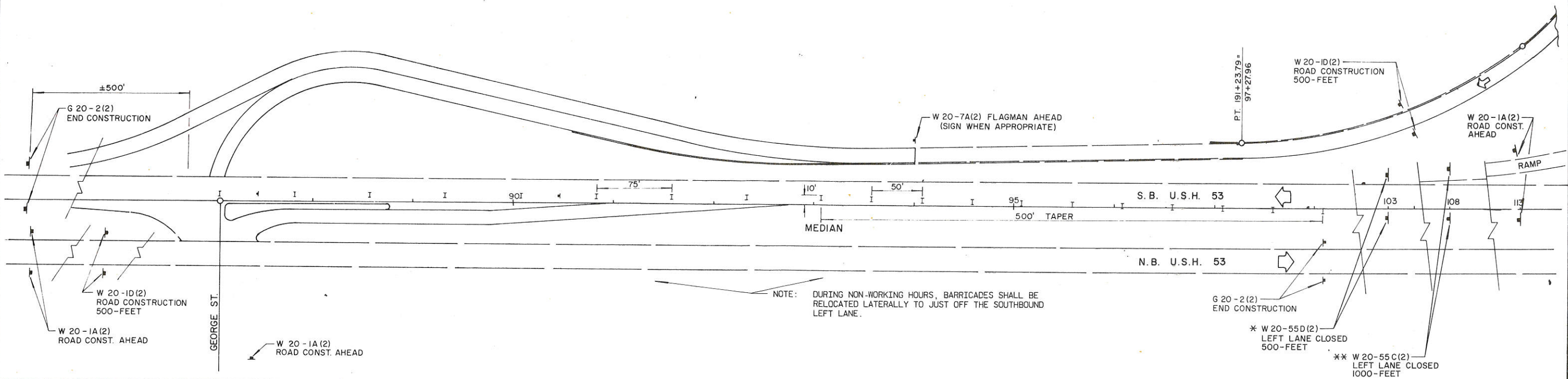
1. DRAWING SHOWS TRAFFIC CONTROL FOR TYPICAL SITUATIONS. ADDITIONAL TRAFFIC CONTROL DEVICES MAY BE REQUIRED AND/OR LAYOUT DETAILS MODIFIED DEPENDING ON CONTRACTORS METHODS OR SEQUENCE OF OPERATION.

- LEGEND**
- REFLECTORIZED DRUMS WITH R3-2(2) & R3-2P(2) SIGNS (SEE DETAIL A)
  - TYPE III BARRICADE (WITH SIGN ATTACHED IF NOTED)
  - TYPE II BARRICADE WITH ONE TYPE "C" STEADY BURN WARNING LIGHT.
  - POST WITH ATTACHED SIGN



\* SUBSTITUTE WITH W20-1D(2) SIGNS WHEN LANE IS NOT CLOSED

\*\* SUBSTITUTE WITH W20-1C(2) SIGNS WHEN LANE IS NOT CLOSED



SHEET NO.	STATE PROJECT NUMBER
2.6	1633-1-71,90

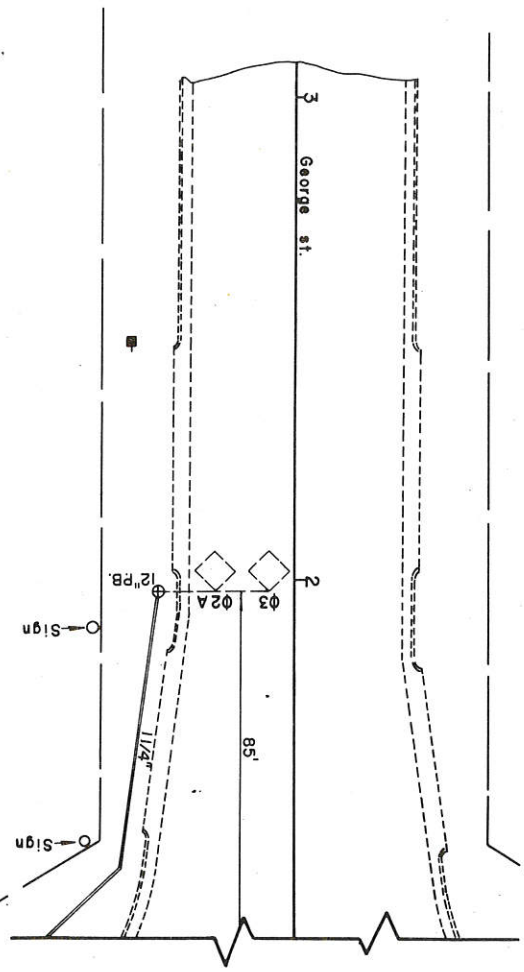
NOTE: THE CONDUIT, PULL BOXES, SIGNAL BASES, LIGHTING UNIT BASES AND DETECTOR UNITS SHOWN ON THIS SHEET ARE NOT PART OF 1633-1-90 AND SHALL BE CONSTRUCTED UNDER PROJ. 1633-1-71.

PHASE	01	02	03	04	05	06	07	08
01 (1-4)	R	R	R	R	R	R	R	R
02 (5,6)	R	R	R	R	R	R	R	R
03 (7-9)	R	R	R	R	R	R	R	R
04 (10-13)	R	R	R	R	R	R	R	R
05 (14-17)	R	R	R	R	R	R	R	R
06 (18)	R	R	R	R	R	R	R	R
07 (19)	R	R	R	R	R	R	R	R
08 (20)	R	R	R	R	R	R	R	R
02-04 overlap (18,19)	R	R	R	R	R	R	R	R

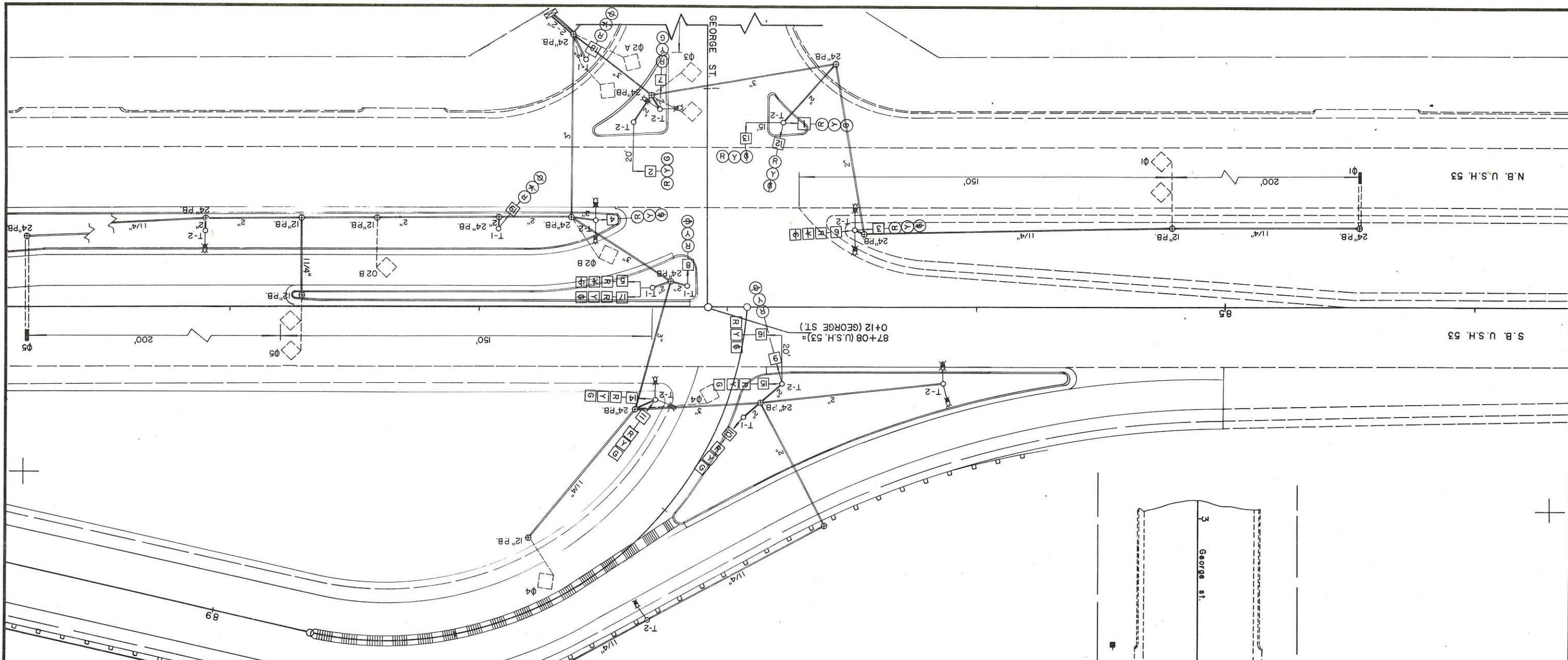
G = GRN. BALL  
Y = YEL. BALL  
R = RED BALL  
\* = YEL. ARROW  
Φ = GRN. ARROW

PHASE	NON CONFLICTING PHASE	PHASES IN CONFLICT
01	5 OR 6	2-3-4-7-8
02	5 OR 6	1-3-4-7-8
03	7 OR 8	1-2-4-5-6
04	7 OR 8	1-2-3-5-6
05	1 OR 2	3-4-6-7-7
06	1 OR 2	3-4-5-7-8
07	3 OR 4	1-2-5-6-8
08	3 OR 4	1-2-5-6-7

ANY ACTUATED PHASE FOR WHICH THERE IS NO CALL SHALL BE SKIPPED. WHEN ONE PHASE IS ON ALONE, ANY NON-CONFLICTING PHASE MAY START TIMING CONCURRENTLY WITHOUT A CLEARANCE INTERVAL (SEE CHART).



- NOTES:
- 01, 03, 04 & 05 DETECTORS ALL CALL AND EXTENDED THEIR RESPECTIVE PHASE.
  - RIGHT TURN 02 A DETECTOR CALLS DURING 01 & 05 ONLY AND EXTENDS DURING 02, 03 & 04.
  - 02 A DETECTOR DISCONNECTED DURING 02 IF THERE IS A WAITING CALL ON 03.
  - 02 A DETECTOR DISCONNECTED DURING 03 IF THERE IS A WAITING CALL ON 04.





# ESTIMATE OF QUANTITIES

1633-1-71 - GRADING, BASE COURSE, PCC PAVEMENT,  
SAFETY ISLANDS & SIGNAL BASES  
1633-1-90 - TRAFFIC SIGNALS & LIGHTING UNITS

STATE PROJECT NUMBER      SHEET NO.

1633 - 1 - 71, 90

3

STATION TO STATION	NET LENGTH OF CENTER LINE	CLEARING	GRUBBING	REMOVING PAVEMENT	REMOVING BITUMINOUS SURFACE	REMOVING CURB	REMOVING INLETS	UNCLASSIFIED EXCAVATION	BORROW EXCAVATION	FINISHING ROADWAY, 1633-1-71	CRUSHED AGGREGATE BASE COURSE	BITUMINOUS CONCRETE SURFACING	CONCRETE PAVEMENT, 9 - INCH	CULVERT PIPE, CLASS III, 18-INCH	APRON ENDWALLS FOR CULVERT PIPE, 18-INCH	REINFORCED CONCRETE CULVERT PIPE, CLASS III, 18-INCH	REINFORCED CONCRETE CULVERT PIPE, CLASS III, 24-INCH	REINFORCED CONCRETE APRON ENDWALLS FOR CULVERT PIPE, 18-INCH	CONCRETE CURB, TYPE A	CONCRETE CURB, TYPE J	CONCRETE CURB AND GUTTER, 30-INCH, TYPE A
PROJECT 1633-1-71	900	82	82	2150	1060	791	1	2109	11,076	1	2190	200	3325	92	1	160	52	1	103	170	662
	900	82	82	2150	1060	791	1	2109	11,076	1	2190	200	3325	92	1	160	52	1	103	170	662

CONCRETE CURB AND GUTTER 30-INCH, TYPE D	HEAVY RIPRAP	INLETS, TYPE 1	INLETS, TYPE 8	RECON-STRUCTING INLETS	INLET COVERS, TYPE A	INLET COVERS, TYPE MS	METAL CONDUIT 1-1/4-INCH	METAL CONDUIT 2-INCH	METAL CONDUIT 3-INCH	FIBER CONDUIT, 3-INCH	ANCHORAGES FOR STEEL PLATE BEAM GUARD	STEEL PLATF BEAM GUARD, CLASS A	MOBILIZATION 1633-1-71	CONCRETE CORRUGATED MEDIAN	CHAIN LINK FENCE, TYPE A, 6- FEET	TOPSOIL	FERTILIZER	SEEDING	SODDING	FIELD OFFICE, TYPE B	TRAFFIC CONTROL 1633-1-71	CONCRETE CURB, 9-INCH	REMOVE AND REPLACE CHAIN LINK FENCE	SIGNAL BASE		HOOK BOLTS	AUTOMATIC DRAINAGE GATES, 18-INCH
																								TYPE I	TYPE II		
60133 L. F.	60602 C. Y.	61121 EACH	61123 EACH	61129 EACH	61161 EACH	61170 EACH	61311 L. F.	61313 L. F.	61315 L. F.	61323 L. F.	61406 EACH	61408 L. F.	61911 L. S.	62001 S. F.	61606 L. F.	62501 S. Y.	62901 CWT.	63002 LB.	63101 S. Y.	64202 L. S.	64302 L. S.	90001 L. F.	90002 L. F.	90003 EACH	90004 EACH	90005 EACH	90006 EACH
614	1215	3	1	1	3	1	1037	453	328	62	2	648	1	640	30	3750	2.7	75	30	1	1	280	800	5	11	413	2
614	1215	3	1	1	3	1	1037	453	328	62	2	648	1	540	30	3750	2.7	75	30	1	1	280	800	5	11	413	2

AUTOMATIC DRAINAGE GATES, 24-INCH	CONTROL CABINET BASE, TYPE 2	PULL BOXES		SAW JOINTS	DETECTOR LOOPS	SALVAGED RIPRAP	CONCRETE MASONRY, SIGN SUPPORTS	BAR STEEL REINFORCEMENT, SIGN SUPPORTS	SIGN BRIDGE, 55-FT.	TRAFFIC SIGNALS & LIGHTING UNITS
		12"x24"	24"x36"							
90007 EACH	90008 EACH	90009 EACH	90010 EACH	90011 L. F.	90012 L. S.	90013 C. Y.	63601 C. Y.	63605 LB.	64134 EACH	90001 L. S.
1	1	7	12	471	1	540	9	520	1	
										PROJECT 1633-1-90
1	1	7	12	471	1	540	9	520	1	

# DETAIL SUMMARY SHEET OF MISCELLANEOUS QUANTITIES

## CLEARING & GRUBBING

Station	Location	In. Dia.
86+64	113' Lt.	28"
87+10	110' Lt.	22"
87+20	107' Lt.	32"

## STEEL PLATE BEAM GUARD, CLASS "A"

Station	Station	Location	L.F.	Remarks
85+70	-	91+90	Lt.	648 2 Anchorages Required

## REMOVING PAVEMENT

Station	Station	Loc.	S.Y.	Remarks
85+00	-	94+00	Lt.	1438 S.W. Ramp
87+08	-	91+43	Rt.	618 Turning Lane
86+75	-	70' Rt.	22	Safety Island
87+32	-	70' Rt.	72	Safety Island

Station	Station	Location	S.F.	Remarks
87+20	-	88+60	Lt.	640 Length = 160' Width = 4'

## REMOVING BITUMINOUS SURFACE

Station	Station	Location	S.Y.	Remarks
85+00	-	94+00	Lt.	500 Exit Ramp Shld.
86+00	-	87+10	Lt.	73 S.B. Lane Shld.
88+22	-	92+22	Lt.	178 S.B. Lane Shld.
87+44	-	92+70	Rt.	179 Turning Lane Shld.
87+44	-	90+70	Rt.	109 N.B. Lane Shld.
87+26	-	87+34	Rt.	21 N.B. Lane Patch

Station	Station	Location	L.F.	Remarks
85+00	-	93+00	Lt.	800 30'

## REMOVING CURB

Station	Location	L.F.	Remarks
87+25	80' Rt.	30'	Existing Island
86+00-93+61	Lt.	761'	Ramp Barrier

Station	Location	S.Y.	Remarks
88+38	80' Lt. (6 x 12)	8	Inlet Protection
93+50	20' Rt. (9 x 15)	14	Inlet Protection
93+50	120' Rt. (6 x 12)	8	Disch. Protection

Station	Location	L.F.	Remarks
86'SW'+34-87'SW'+00	Lt.	78	Island Curb
87+12	Rt.	25	Island Curb

## REMOVING INLETS

Station	Location	Each
88+00	30' Lt.	1

## SIGNAL & LIGHTING UNIT BASES, TYPE I & II

Station	Location	Type I	Type II
86+13	30' Lt.	---	1
86+50	31' Rt.	---	1
86+77	75' Rt.	---	1
86+77	30' Lt.	---	1
86+93	44' Lt.	1	---
87+15	8' Rt.	1	---
87+30	8' Rt.	1	---
87+30	38' Lt.	---	1
87+28	80' Rt.	---	1
87+38	75' Rt.	---	1
87+54	35' Rt.	---	1
87+58	100' Rt.	1	---
87+93	31' Rt.	1	---
89+10	30' Rt.	---	1
87'SW'+35	27' Lt.	---	1
88'SW'+40	27' Lt.	---	1

## CONCRETE CURB, 9-INCH (90001)

Station	Station	Location	L.F.	Remarks
91'SW'+20	-	94+00	Rt.	280 Exit Ramp Barrier

## CONCRETE CURB, TYPE 'J'

Station	Location	L.F.	Remarks
86+75	70' Rt.	58 L.F.	Safety Island
87+32	70' Rt.	112 L.F.	Safety Island

## CONCRETE CURB & GUTTER, TYPE "A", 30-INCH

Station	Station	Location	L.F.	Remarks
85"A"+27	-	86"A"+86	Rt.	173 Safety Island
87+15	-	88+78	Median	155 Safety Island
87+44	-	90+70	Median	334 S.B. Turning Lane

## CONCRETE CURB & GUTTER, TYPE "D", 30-INCH

Station	Station	Location	L.F.	Remarks
85+60	-	86+85	Lt.	125 Safety Island
87+15	-	88+78	Rt.	163 Safety Island
87+44	-	90+70	Rt.	326 N.B. Lane (Lt.)

## FIBER CONDUIT, 3-INCH

Station	Location	L.F.
83+20	Rt.	22
90+80	Rt.	40

1633-1-71

STATE PROJECT NUMBER

3A

# DETAIL SUMMARY SHEET OF MISCELLANEOUS QUANTITIES

## CRUSHED AGGREGATE BASE COURSE & CRUSHED AGGREGATE SHOULDERS

Station	Station	Location	C.Y.	Shoulder C.Y.	Filter Blanket	Remarks
85+00	87+50	S.W. Ramp	188	63		Acceleration Lane
86+35	87+50	S.W. Ramp	92	29		George St. Conn.
87+50	91+00	S.W. Ramp	445	175		--
91+00	93+50	S.W. Ramp	253	63		--
87+08	92+75	Median	257	--		--
1+00		George St. Lt.	34	--		Island
1+00		George St. Rt.	11	--		Island
86+50	93+00	Lt.	120	20	440	
Undistributed					--	

## BITUMINOUS CONCRETE PAVEMENT & BITUMINOUS MATERIAL FOR SURFACE COURSE

Station	Station	Location	Bit. Conc. Pav't. Tons	Bit. Mat for Surf. Crse. Tons	Remarks
84"A"+69.24	94"SW"+00	Lt.	88	5.3	Lt. Shoulder
86"SW"+50	91"SW"+18	Rt.	43	2.6	Rt. Shoulder
88+75	90+60	Rt.	24	1.4	S.B. Turning Lane
90+70	92+70	Rt.	11	0.6	Turning Lane Shld.
87+15		Rt.	11	0.7	Island
0+90 (George St.)		Rt.	2	0.1	Island
0+90 (George St.)		Lt.	5	0.3	Island
Undistributed			16	1.0	

## CROSS DRAIN PIPES

Station	Location	Type	Length	Inlet	Discharge	Remarks
85+66	26' Lt.	18" RCCP	46'	Type 1-A	Auto. Drainage Gate	
87+00	82' Lt.	24" RCCP	52'	--	"	Extension Existing Pipe
87+44	32' Rt.	--	--	Type 1-A	--	Inlet to Inlet
88+00	3' Rt.	18" RCCP	20'	Type 1-A	--	
88"A"+25	86' Lt.	18" RCCP	94'	Apron Endwall	Auto. Drainage Gate	
93+50	22' Rt.	18" C.P.	92'	Type 8-MS	Apron Endwall	Sod Req'd. (Inlet & Disch) (0.064 METAL - 0.060 ALUM.)

## METAL CONDUIT, 1-1/4" - 2" - 3"

Station	Station	Loc.	1-1/4" L.F.	2" L.F.	3" L.F.	Station	Location	12" x 24"	24" x 36"
83+20	85+20	30' Rt.	200'	-	-	84+40	32' Rt.		1
85+20	86+45	30' Rt.	122'	-	-	85+20	32' Rt.		1
86+45	86+58	30' Rt.	-	2'	-	86+45	30' Rt.		1
86+58	86+78	30' Rt.	-	67'	-	86+55	98' Rt.		1
86+58	87+32	97' Rt.	-	30'	-	86+60	89' Lt.		1
87+30		83' Rt.	-	5'	-	86+85	39' Lt.		1
87+35		80' Rt.	-	11'	-	87+24	10' Rt.		1
87+32	87+63	85' Rt.	-	38'	-	87+30	85' Rt.		1
87+60		105' Rt.	-	10'	-	87+38	41' Lt.		1
87+70		115' Rt.	-	20'	-	87+63	35' & 110' Rt.		2
87+65		36' Rt.	-	71'	-	87+80	94' Lt.		
87+65	87+93	35' Rt.	-	27'	-	87+91	36' Rt.		
87+93		35' Rt.	-	3'	-	88+40	36' Rt.		2
87+93	88+41	35' Rt.	-	47'	-	88+70	4' & 36' Rt.		
88+41	88+71	35' Rt.	-	30'	-	89+10	36' Rt.		
88+71		35' Rt.	30	-	-	90+80	28' Rt.		
89+10	89+10	35' Rt.	-	37'	-	2+00	28' Lt. (George Street)		1
89+10	90+80	35' Rt.	170'	3'	-		HOOK BOLTS (90006)		
87+53	87+63	35' Rt.	-	8'	-	Station	Station	Loc.	No. @ 3' C-C
87+23	87+63	10' Rt.	-	45'	-	85+00	87+12	24' Lt.	71
87+20		10' Rt.	-	5'	-	87+08	88+75	C/L	56
87+27		10' Rt.	-	6'	-	0+12	0+52	C/L	14
87+23	87+37	40' Lt.	-	-	-	(George)	(George)		
87+37	87+80	40' Lt.	55'	-	-	87+08	90+70	40' Rt.	121
86+86	87+37	40' Lt.	-	49'	-	0+90 (George)	70' Rt.	70' Rt.	20
86+83		35' Lt.	-	10'	-	0+90 (George)	70' Rt.	70' Rt.	38
86+90	86+86	45' Lt.	-	7'	-	87+28	40' Rt.	40' Rt.	16
86+62	86+87	35' Lt.	-	71'	-	90+60	C/L	C/L	67
86+62	87+30	40' Lt.	-	54'	-	85+00	24' Lt.	24' Lt.	5
87+30	88+47	90' Lt.	80'	-	-	94"SW"+00	C/L	C/L	5
87+30	160' Lt.	120'	120'	-	-				
1+20	2+00 (George St.)	85'	-	-	-				
88+47	90+11	125' Lt.	165'	-	-				

## SAW JOINTS (90011)

Station	Station	Location	L.F.	Remarks
85+00	24' Lt.	22	17' PCC & 5' Bit.	
87+10	24' Lt.	7	Bituminous	
88+00	92+22	422	Bituminous	
93"SW"+60.76	C/L	20	15' PCC & 5' Bit.	

# DETAIL SUMMARY SHEET OF MISCELLANEOUS QUANTITIES

## 9" CONCRETE PAVEMENT

Station	Station	Location	Concrete S.Y.	Remarks
87+08	87+75	Median	149	--
87+75	90+60	"	380	12' Lane
90+60	92+75	"	171	Taper
		24' Rt.	21	Patch N.B. Lane
85+00	85+60	24' Lt.	38	Wedge
84"A"+69.24	86"A"+65.41	"	294	--
86"A"+65.41	87"A"+55.93	"	151	--
86"SW"+34	87"SW"+55.93	"SW" Ramp Lt.	42	Wedge
86"SW"+34	87"SW"+55.93	"SW" Ramp	203	15' Lane
87"SW"+55.93	88"SW"+59.80	SW Ramp	300	26' Lane
88"SW"+59.80	91"SW"+00	SW Ramp	800	30' Lane
91"SW"+00	94"SW"+00	SW Ramp	750	Taper
Undistributed			26	

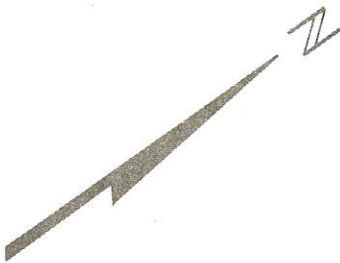
## TOPSOIL, SEEDING & FERTILIZER

Station	Station	Location	Topsoil S.Y.	Seeding (lbs) #4 @ 2#/1000 SF	Fertilizer (CWT) @7#/100 SF	Remarks
85+00	94+00	Exit Ramp Lt.	506	9	0.3	
87+20	92+20	Lt.	2331	42	1.5	
		Lt.	360	7	0.2	
		Rt.	524	10	0.5	
Undistributed			29	7	0.2	
						Between Exit Ramp and S.B. Lane

STATE PROJECT NUMBER	SHEET NO.
1633-1-71	5

P.I. 85'A+73.24  
 $\Delta = 28^\circ-14'-22''$   
 $D = 15^\circ-00'$   
 $T = 96.08'$   
 $R = 381.97'$   
 $L = 188.26'$   
 $E = 11.90'$   
 $SE = 0.015'/FT.$   
 P.C. 84'A+77.15  
 P.T. 86'A+65.41

P.I. 87'SW'+81.28  
 $\Delta = 102^\circ-48'-10''$   
 $D = 39^\circ-30'-52''$   
 $T = 181.65'$   
 $R = 145.0'$   
 $L = 260.17'$   
 $E = 5.64'$   
 $SE = 0.015'/FT.$   
 P.C. 85'SW'+99.63  
 P.T. 88'SW'+59.80



STA. 87+00  
 1-24" R.C.C.P. REQ'D.(EXTENSION)  
 1-AUTO.DRAIN. GATE REQ'D.

STA. 85+66  
 1-18" R.C.C.P. REQ'D.  
 1-AUTO. DRAIN. GATE REQ'D  
 TYPE I-A INLET REQ'D.

87'SW'+55.93 =  
 87'A'+55.93

STA. 88'SW'+25  
 1-18" R.C.C.P. REQ'D.  
 1-AUTO. DRAIN. GATE REQ'D.  
 1- APRON ENDWALL REQ'D.

SOD REQ'D.

TO BE REMOVED

84'A'+69.24 =  
 85+00.0(U.S.H. 53)

S.B. U.S.H. 53

N 35°-34' E

85

87+08(U.S.H. 53)=  
 0+12(GEORGE ST.)

86+92.38(U.S.H. 53)  
 86'SW'+10.09

STA. 88+00  
 1-18" R.C.C.P. REQ'D.  
 TYPE I-A INLET REQ'D.

TYPE I-A INLET REQ'D.

RECONSTRUCT INLET  
 TO BE REMOVED (BY OTHERS)

N.B. U.S.H. 53

LIGHT

TO BE REMOVED (BY OTHERS)

TO BE REMOVED (BY OTHERS)

GEORGE ST.

B.M. STA. 87+00 TOP OF MANHOLE COVER 40' RT. ELEV. 644.965

5.1

STA. 93+50  
1-18" C.P. REQ'D.  
1- APRON ENDWALL REQ'D.  
1- TYPE 8-MS INLET REQ'D.

SOD REQ'D.

SOD REQ'D.

95

N 36° - 34' E

92+75

90+50

90

9" CURB

93'SW

92'SW

91'SW

90'SW

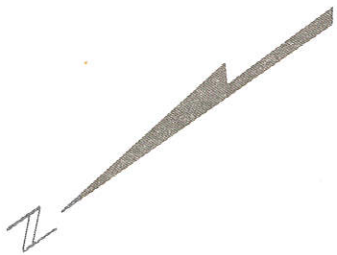
S.W. Exit Ramp

CHAIN LINK FENCE

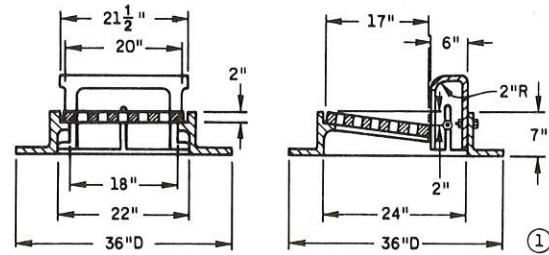
STA. 90'SW+00  
55-FT. SIGN BRIDGE S-32-3 REQ'D.  
SEE DRAWINGS X62940 - X62942

PI. 92'SW'+68.68  
Δ = 13°-52'-51"  
D = 7°-30'  
T = 93.0'  
R = 763.94'  
L = 185.08'  
E = 5.64'  
SE = 0.04'/FT.  
PC. 91'SW'+75.68  
PT. 93'SW'+60.76

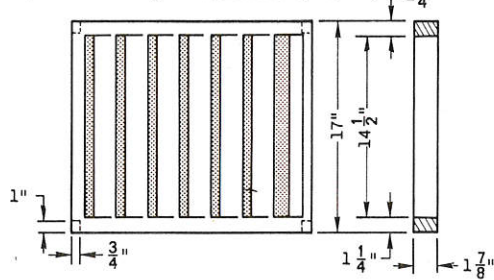
Black River



SHEET NO.	STATE PROJECT NUMBER
5.1	1633-1-71



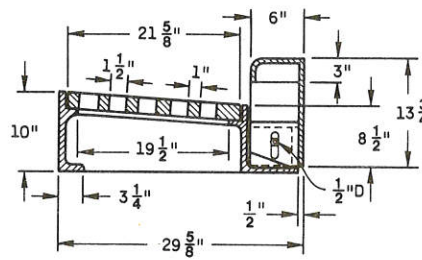
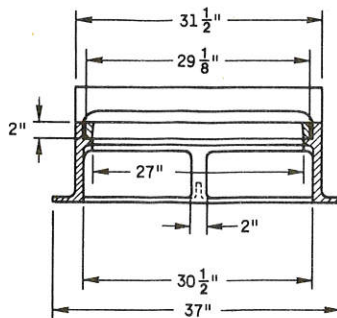
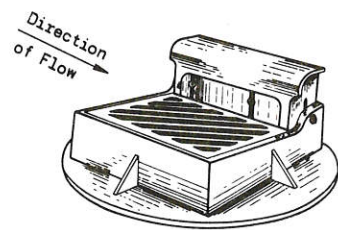
Details of Curb Box, Frame and Diagonally Slotted Grate (Curb Box height adjustable 4" to 9")



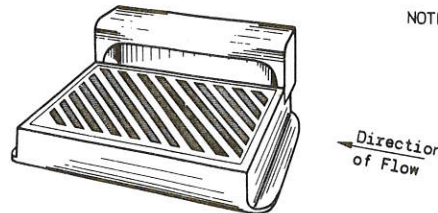
1" Diagonal Bars with 1 1/2" Openings

**TYPE "A"**

(Approximate Weight 405 lbs.)  
 Frame Weight 250 lbs.  
 Grate Weight 85 lbs.  
 Box Weight 70 lbs.

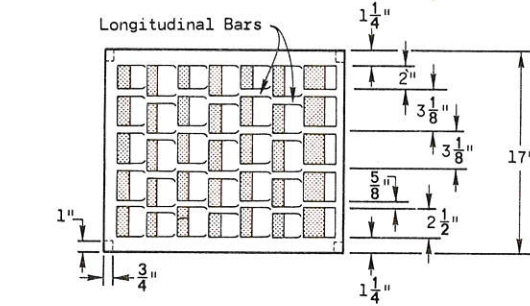


NOTE: Curb Box height adjustable 6" to 9"



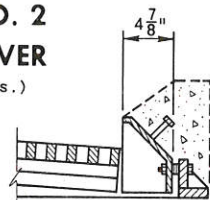
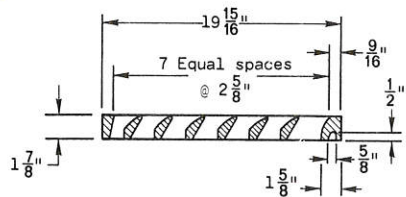
**TYPE "WM"**

(Approximate Weight 670 lbs.)  
 Frame Weight 350 lbs.  
 Grate Weight 185 lbs.  
 Box Weight 135 lbs.



**SPECIAL GRATE NO. 2 FOR TYPE "A" COVER**

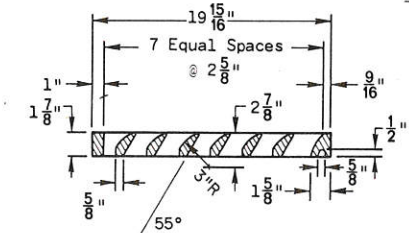
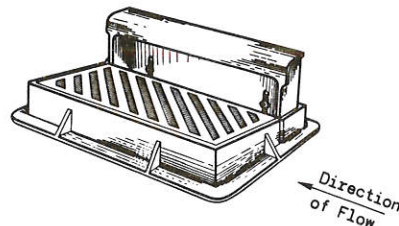
(Approximate Weight 84 lbs.)



**MOUNTABLE CURB BOX FOR TYPES "A" & "H" COVERS**

**TYPE "H"**

(Approximate Weight 510 lbs.)  
 Frame Weight 220 lbs.  
 Grate Weight 175 lbs.  
 Box Weight 115 lbs.

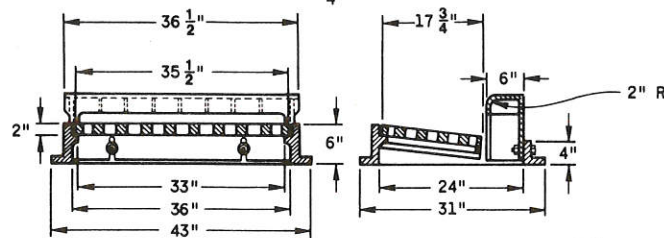


**SPECIAL GRATE NO. 1 FOR TYPE "A" COVER**

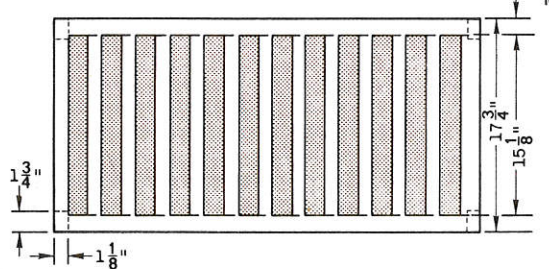
(Approximate Weight 70 lbs.)

TYPES "A" AND "H" COVERS SHALL BE FURNISHED WITH DIAGONALLY SLOTTED GRATES UNLESS OTHERWISE SPECIFIED IN THE CONTRACT

1 3/8" Diagonal Bars with 1 1/4" Openings

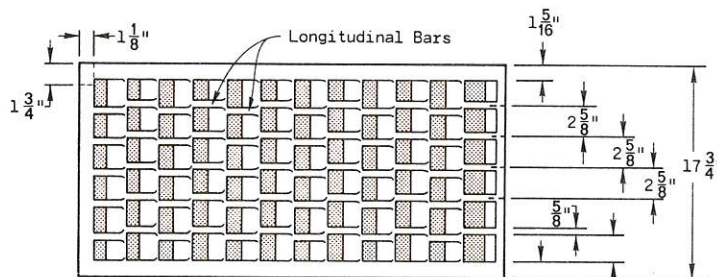
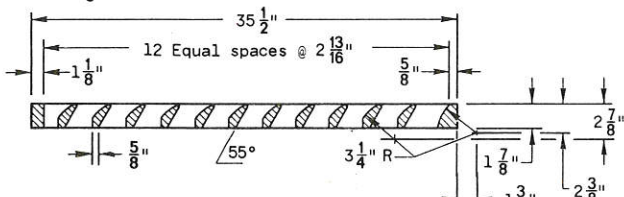


Details of Curb Box, Frame and Diagonally Slotted Grate (Curb Box height adjustable 6" to 9")



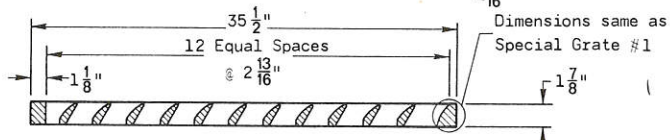
**SPECIAL GRATE NO. 1 FOR TYPE "H" COVER**

(Approximate Weight 140 lbs.)

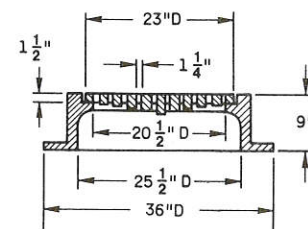


**SPECIAL GRATE NO. 2 FOR TYPE "H" COVER**

(Approximate Weight 165 lbs.)



CAUTION: DO NOT USE GRATES WITH LONGITUDINAL SLOTS WHERE BICYCLE TRAFFIC IS PERMITTED.



**TYPE "C"**  
Slotted Grate

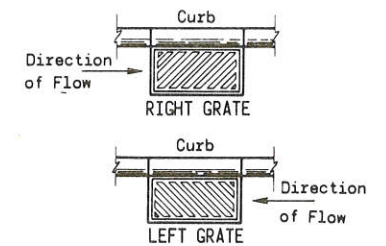


**TYPE "J"**  
Solid Cover

**TYPE "C" - TYPE "J"**

Frame Weight 250 lbs.  
 Slotted Grate Weight 125 lbs.  
 Solid Cover Weight 150 lbs.

Diagonal Slots shall be oriented to the direction of flow. RIGHT and LEFT grates or grates that are manufactured to be reversible and can be used as either RIGHT or LEFT grates shall be furnished depending on direction of flow (See sketch below)



**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.

Detail drawings for proposed alternate designs for Catch Basin, Manhole and Inlet Covers shall be submitted to the Engineer for approval providing that such alternate designs make provision for equivalent capacity and strength.

All Catch Basin, Manhole and Inlet Covers which are placed in vehicular traffic areas shall be "Non-Rocking" type.

Adjustment of the cover to grade may be accomplished by the use of mortar and brick, or by precast concrete grade rings. Precast concrete grade rings shall conform to the specifications for Precast Reinforced Concrete Manhole Sections, AASHTO Designation M199, except that when such units are wet cast, they shall be made with air-entraining portland cement. Maximum adjustment shall be 8 inches.

The actual weight of covers may vary within 5 percent, plus or minus, of the approximate weight.

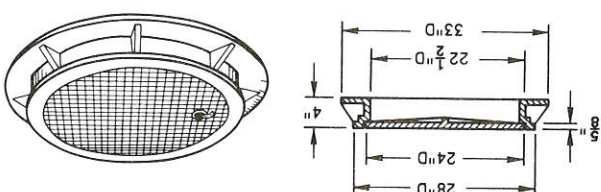
**CATCH BASIN MANHOLE AND INLET COVERS**

State of Wisconsin  
 Department of Transportation  
 Division of Highways

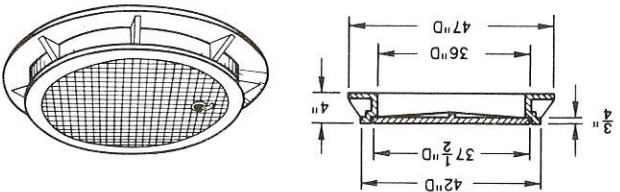
APPROVED  
 11-23-77  
 DATE  
 APPROVED  
 11-25-77  
 DATE  
 FHWA

*Bill Baker*  
 SUPERVISING DEVELOPMENT ENGINEER  
*D. J. Alford*  
 CHIEF OF FACILITIES DEVELOPMENT

TYPE "L"  
(Approximate Weight 220 lbs.)

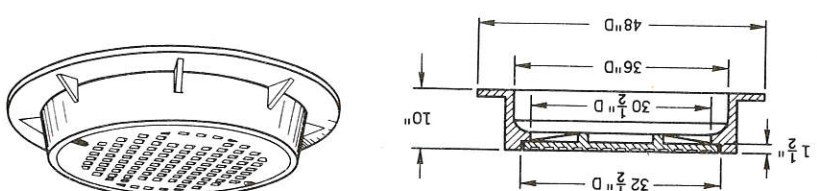


TYPE "M"  
(Approximate Weight 535 lbs.)



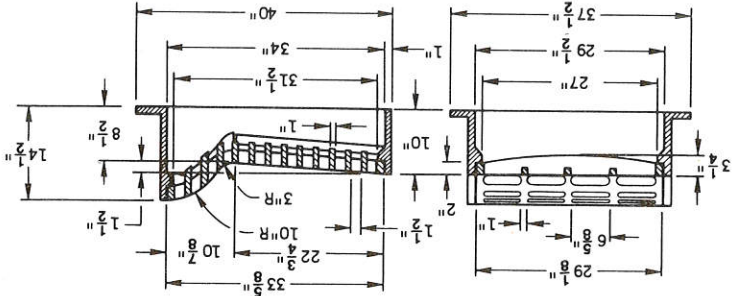
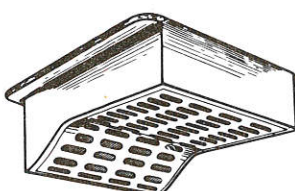
TYPE "K"

(Approximate Weight 785 lbs.)

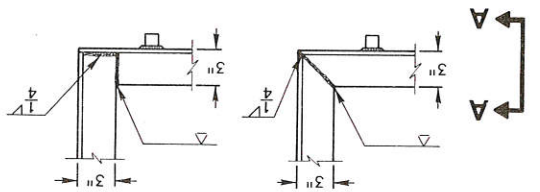


TYPE "F"  
(Approximate Weight 850 lbs.)

Frame 515 lbs.  
Back grate 160 lbs.  
Front grate 175 lbs.



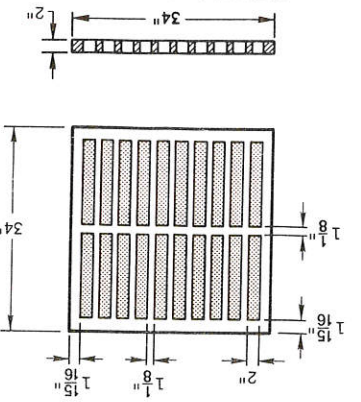
TYPICAL CORNER OF FRAME FOR STEEL GRATE



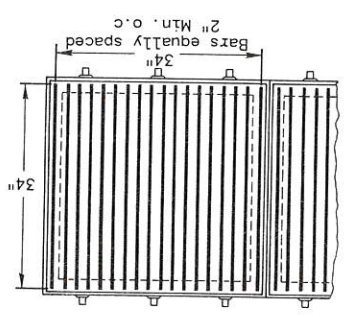
CAUTION: DO NOT USE GRATES WITH LONGITUDINAL SLOTS WHERE BICYCLE TRAFFIC IS PERMITTED.

TYPE "MS"

CAST IRON GRATE  
(Approximate Grate Weight 285 lbs.)

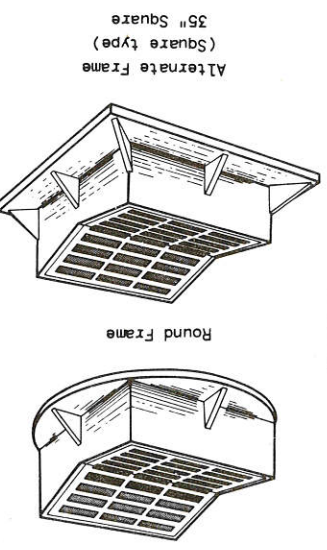
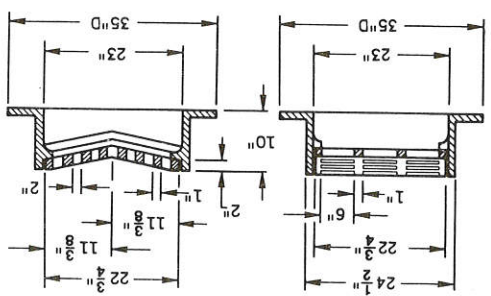


STEEL GRATE  
(Approximate Weight 209 lbs.)



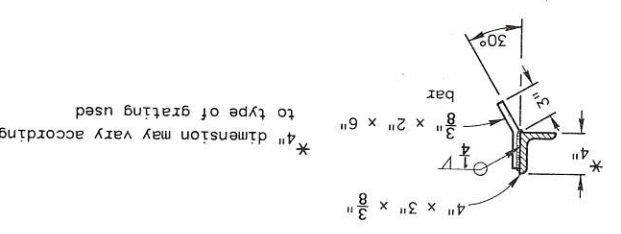
TYPE "B"

(Approximate Weight 395 lbs.)  
Frame Weight 285 lbs.  
Grate Weight 110 lbs.

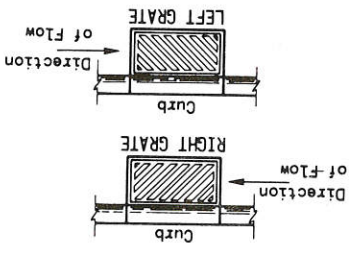


**GENERAL NOTES**  
Details of construction, materials and workmanship not shown on this drawing shall conform to the pertinent requirements of the Standard Specifications and the applicable Special Provisions.  
and Inlet Covers shall be submitted to the Engineer for approval providing that such alternate designs make provision for equivalent capacity and strength.  
All Catch Basins, Manhole and Inlet Covers which are placed in vehicular traffic areas shall be "Non-Rocking" type.  
Adjustment of the cover to grade may be accomplished by the use of mortar and brick, or by precast concrete grade rings. Precast concrete grade rings shall conform to the specifications for Precast Reinforced Concrete Manhole Sections, ASHTO Designation M199, except that when such units are wet cast, they shall be made with air-entraining portland cement. Maximum adjustment shall be 8 inches.  
The actual weight of covers may vary within 5 percent, plus or minus, of the approximate weight.  
The type "MS" cover may either be a cast iron grate or a steel grate and frame at the contractors option. A frame is not required with the cast iron cover.  
The steel grating shall be capable of carrying an H20 load on a 2' - 10" max. clear span and shall have a minimum section modulus thru the main bearing bars of 3.80 inches<sup>3</sup> per ft. of width. The grating shall be cut in such a manner that all riveted or welded connections are left intact. End banding with a 8/8" min. thickness is required. The size of the frame shall be such that when the grate is in place, the clearance between the grate and the frame will not exceed 5/8" on any side. Main bars shall be laterally supported by transverse bars. Grating and frame shall be galvanized as specified in ASHTO Designation M-111 after fabrication. Grating shall be approved by the Engineer.

SECTION A-A



\* 4" dimension may vary according to type of grating used



Diagonal Slots shall be oriented to the direction of flow. RIGHT and LEFT grates or grates that are manufactured to be reversible and can be used as either RIGHT or LEFT grates shall be furnished depending on direction of flow. (See sketch below)

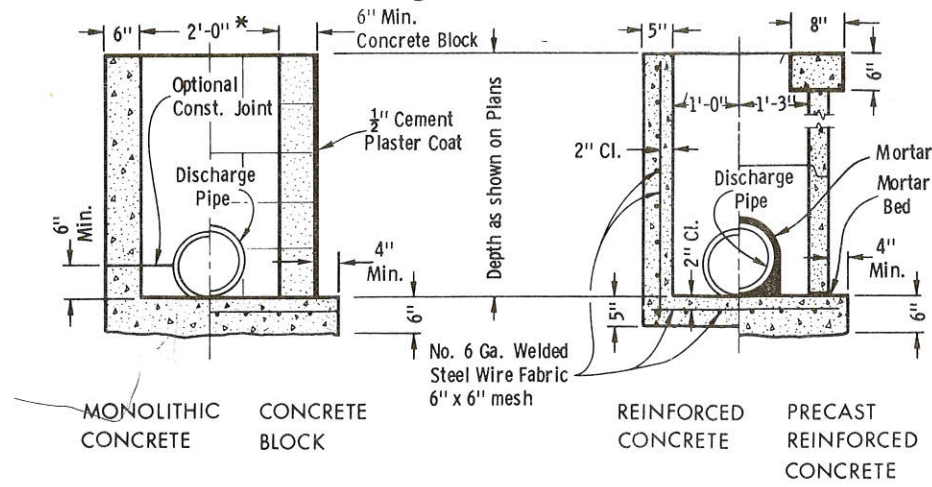
CATCH BASIN  
MANHOLE AND  
INLET COVERS

State of Wisconsin  
Department of Transportation  
Division of Highways

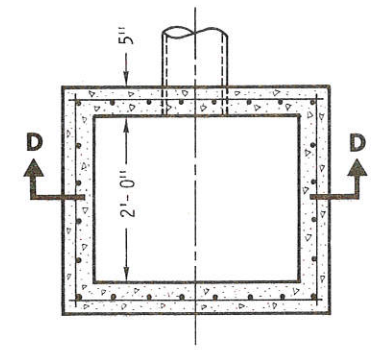
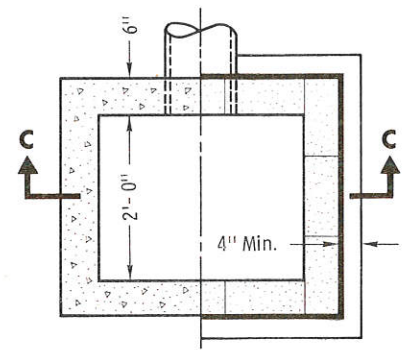
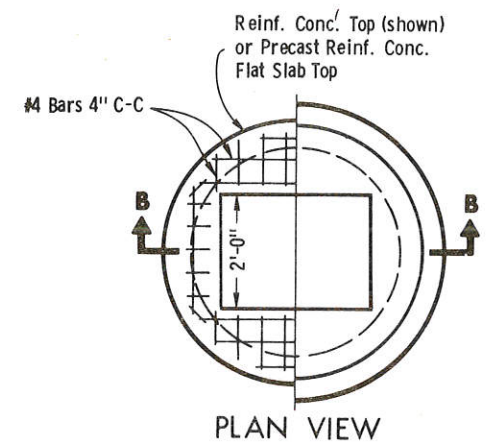
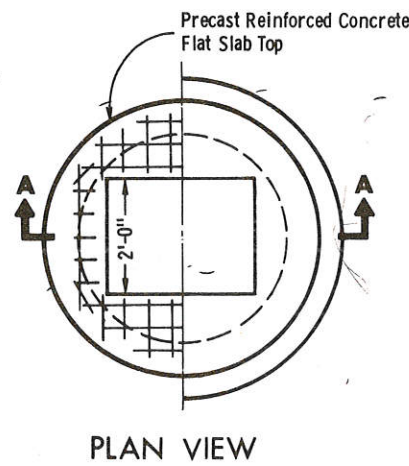
APPROVED 11-23-77  
SUPERVISING DEVELOPMENT ENGINEER  
DATE 11-23-77  
APPROVED 11-25-77  
CHIEF OF FACILITIES DEVELOPMENT  
DATE 11-25-77



\* Selection of Square or Circular Design will be based on the pipe sizes and the Inlet Cover being utilized.



**INLETS 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.

Detailed drawings for proposed alternate designs for underground drainage structures shall be submitted to the Engineer for approval providing that such alternate designs make provision for equivalent capacity and strength.

Square Precast Inlet units shall conform to the pertinent requirements of AASHTO Designation M 199.

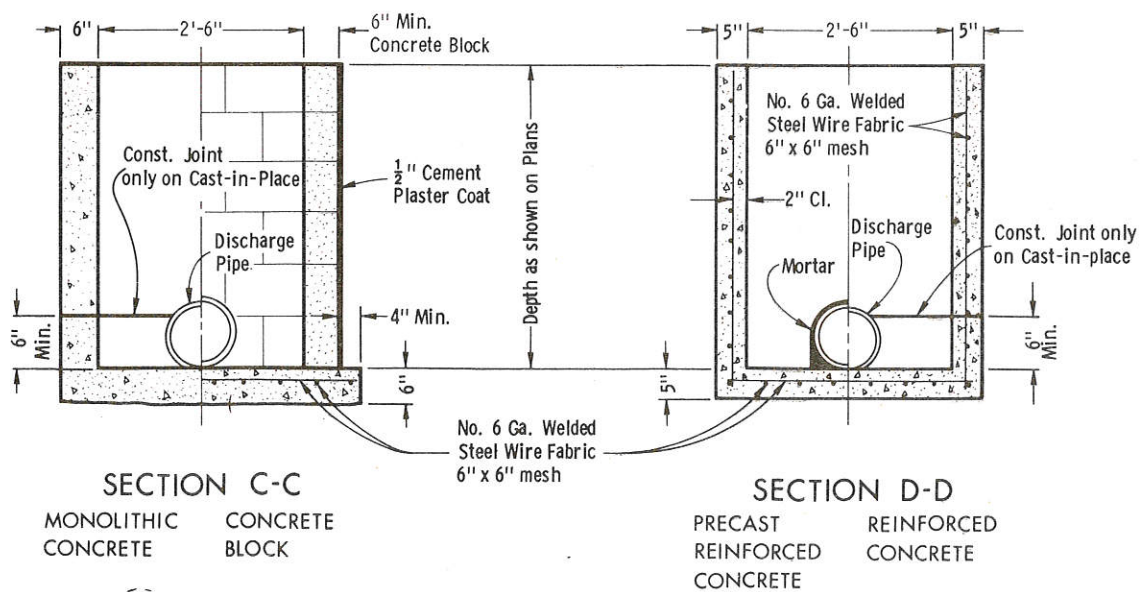
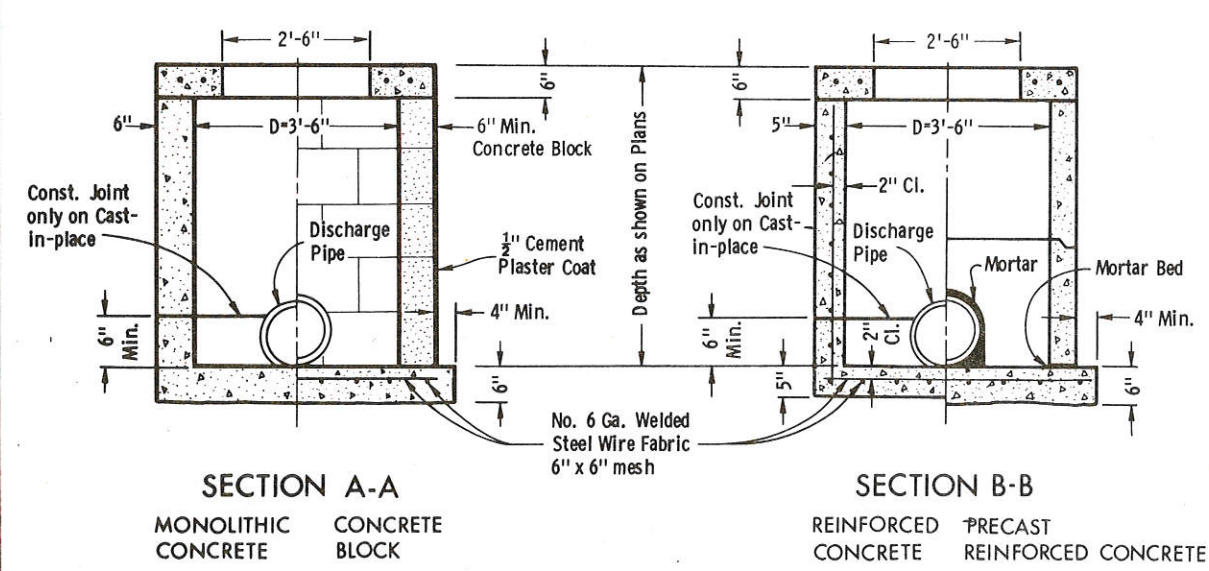
All drainage structures are designated on the plans as "Manholes 1 - C", "Catch Basins 1 - B", "Inlets 1 - H", etc. The first digit designates the masonry portion of the structure, and the following letter designates the type of cover to be used to comprise the complete unit.

Precast Reinforced Bases shall be placed on a bed of material at least 6 inches in depth, which meets the requirements for Granular Backfill. This bedding shall be compacted and provide uniform support for the entire area of the base.

Precast Reinforced Concrete Flat Slab Tops may be used on the structures. The Tops shall be installed on a bed of mortar.

All bar steel reinforced reinforcement shall be embedded 2 inches clear unless otherwise shown or noted.

Precast Reinforced Concrete Risers may be placed with tongue up or down.

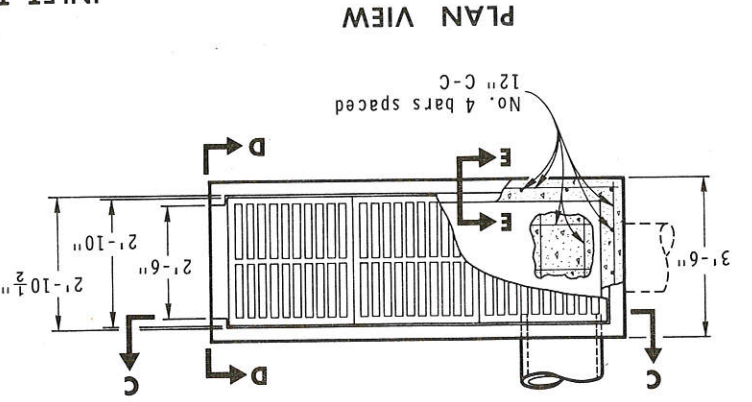


**INLETS TYPE 2**

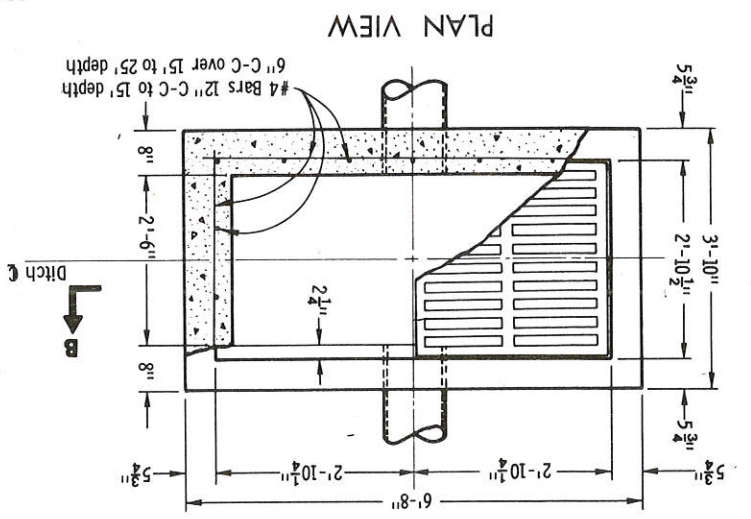
<b>INLETS TYPE 1 &amp; 2</b>	
State of Wisconsin Department of Transportation Division of Highways	
RECOMMENDED FOR APPROVAL: DATE 10-16-75	<i>J.C. Heinal</i> CHIEF OF FACILITIES DEVELOPMENT
APPROVED DATE 10-16-75	<i>W.J. Sinden</i> STATE HIGHWAY ENGINEER

S.D.D. 8C1-3

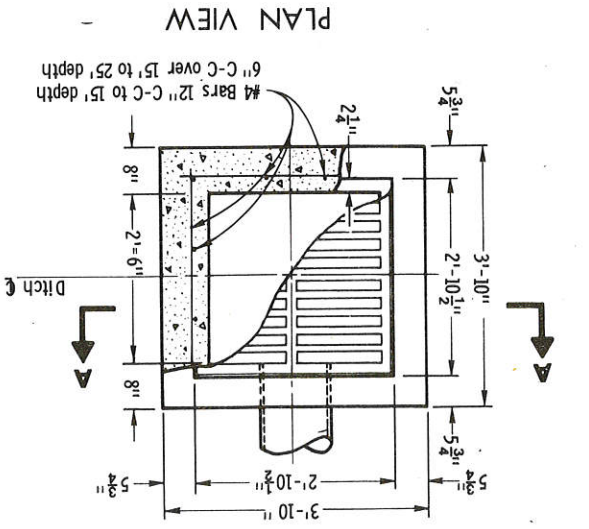
S.D.D. 8C1-3



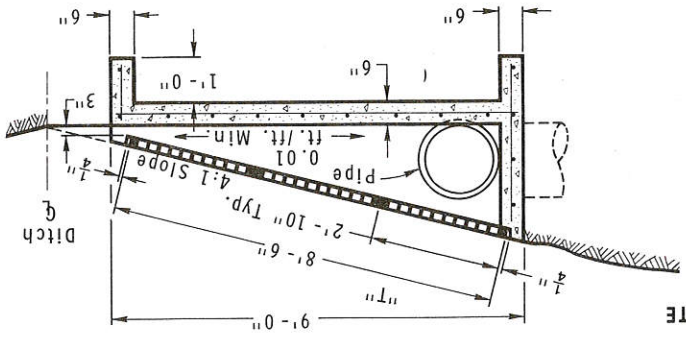
REINFORCED CONCRETE  
INLET TYPE 10



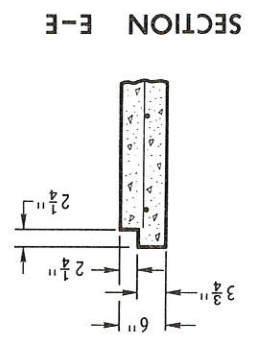
REINFORCED CONCRETE  
INLET TYPE 8



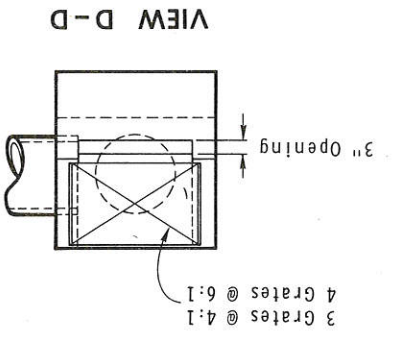
REINFORCED CONCRETE  
INLET TYPE 9



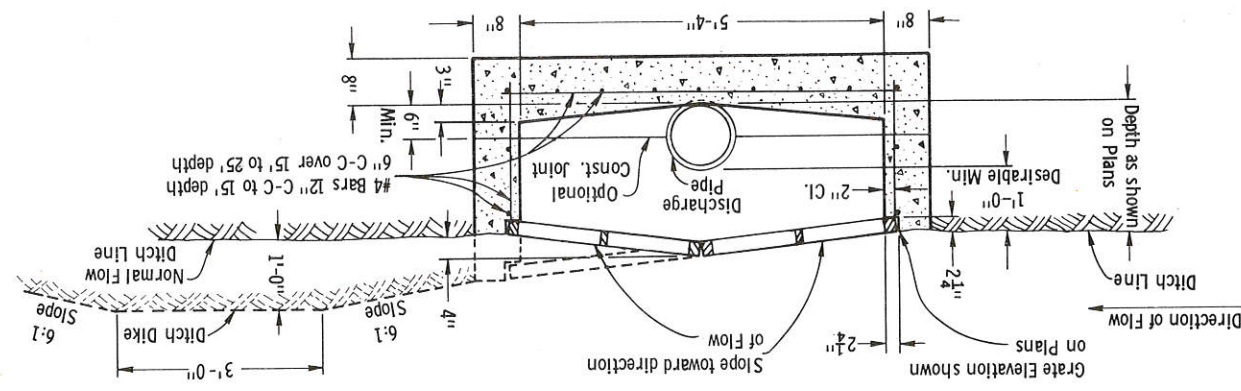
SECTION C-C



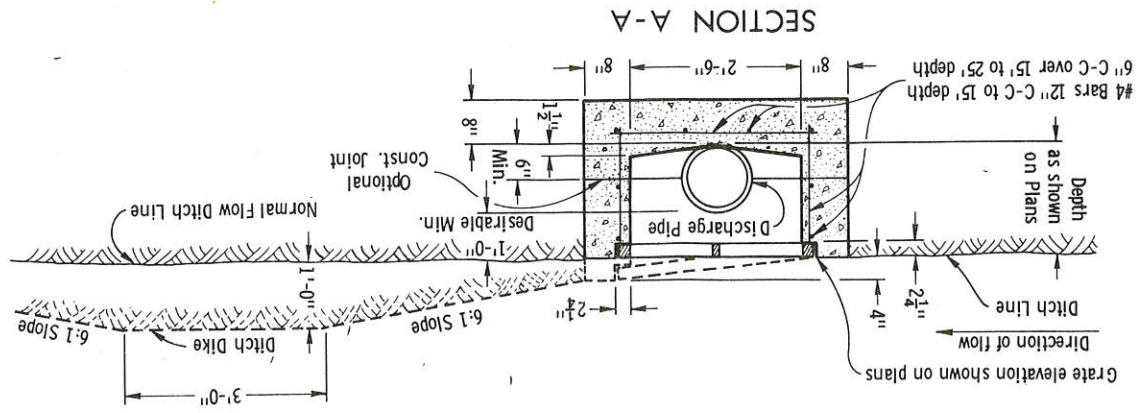
SECTION E-E



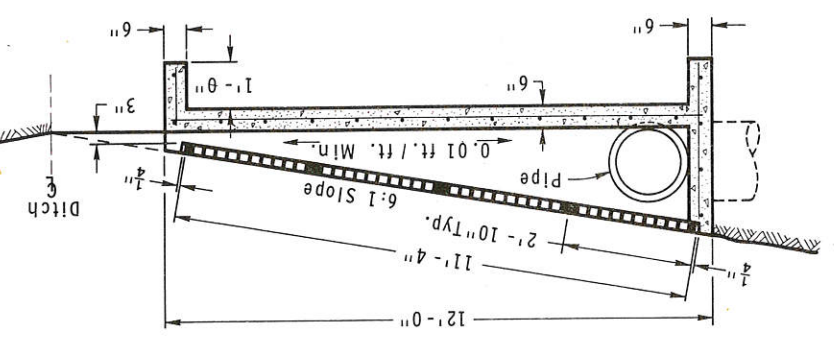
VIEW D-D



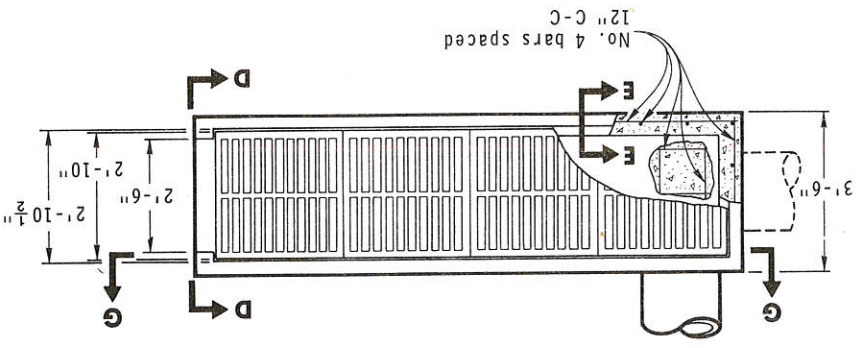
SECTION B-B



SECTION A-A



SECTION G-G



PLAN VIEW  
INLET TYPE II

REINFORCED CONCRETE

**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 inlets which may include precast reinforced concrete inlets, shall be submitted to the Engineer for approval providing that such alternate designs make provision for equivalent capacity and strength.

Precast reinforced concrete inlet units, if used, shall conform to the requirements of the Catch Basins, Manholes and Inlets Section of the Standard Specifications.

All inlets are designated on the Plans as "Inlets, 8-MS", etc. This designation is interpreted to mean that the number, or first digit designates the masonry portion of the structure and the following letter designates the type of cover or iron casting to be used therewith to comprise the complete unit.

All bar steel reinforcement shall be embedded 2 inches clear unless otherwise shown or noted.

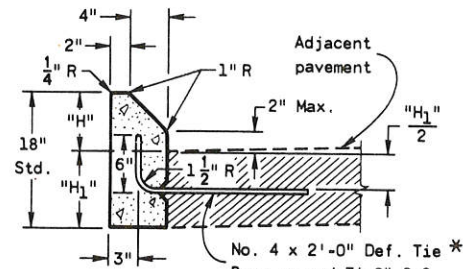
INLETS TYPE 8, 9, 10 and 11

State of Wisconsin  
Department of Transportation  
Division of Highways

RECOMMENDED FOR APPROVAL: *[Signature]*  
DATE: 4-30-74

APPROVED: *[Signature]*  
DATE: 5-02-74

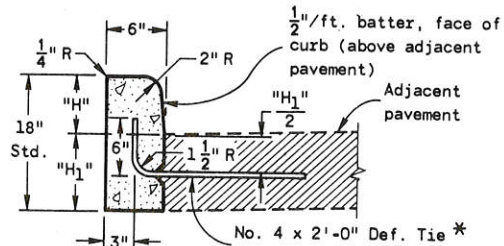
STATE HIGHWAY ENGINEER



No. 4 x 2'-0" Def. Tie \*  
Bars spaced 3'-0" C-C

"H" = 6" Max. and 4" Min. and shall be 6" unless otherwise shown on the plans.  
"H<sub>1</sub>" = Same as adjacent pavement thickness for rigid pavement and 12" for non-rigid pavement (Tie Bars omitted).

**TYPE "G"**  
(INCLUDING TIE BARS)  
**CONCRETE CURB**

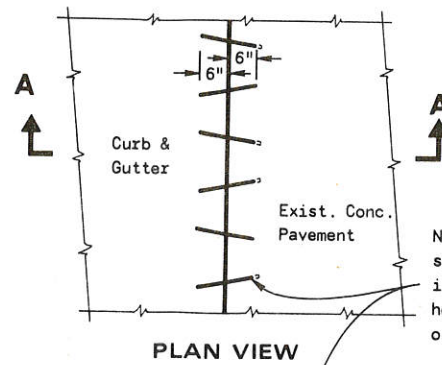


$\frac{1}{2}$ " /ft. batter, face of curb (above adjacent pavement)

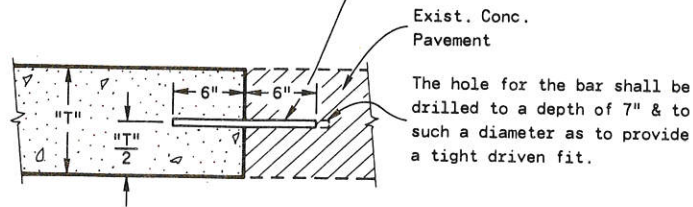
No. 4 x 2'-0" Def. Tie \*  
Bars spaced 3'-0" C-C

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

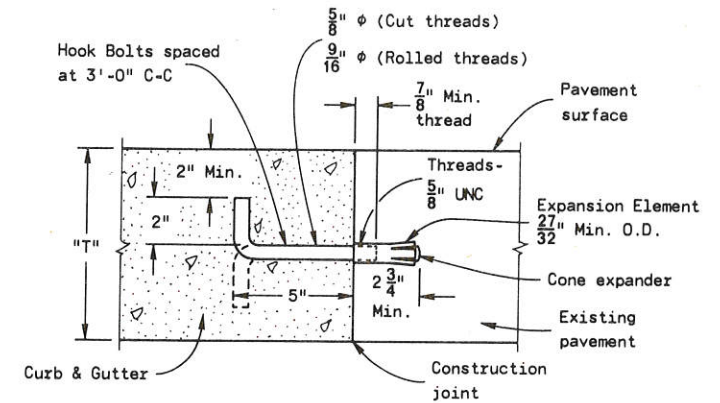
**TYPE "A"**  
(INCLUDING TIE BARS)  
**CONCRETE CURB**



No. 6 x 12" Def. Bars spaced 3'-0" C-C, installed on 6:1 skew horizontally. Direction of skew alternating.



**SECTION A - A**  
**ALTERNATE TIE BAR INSTALLATION**



**HOOK BOLT**

**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.

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

Where Concrete Curb or Concrete Curb & Gutter is poured adjacent to existing P.C. concrete pavement, a "Hook Bolt" or "Alternate Tie Bar Installation" shown on this sheet is required.

Where the adjacent pavement will be bituminous concrete,  $\frac{3}{4}$  inch expansion joints shall be installed in the Concrete Curb or Concrete Curb & Gutter. These expansion joints shall be located about 3 feet from each end of all catch basins or inlets, at all locations where tangent and radial curb and gutter meet, and on tangent sections at a maximum spacing of 300 feet.

**INTEGRAL CURB AND GUTTER ALTERNATE**

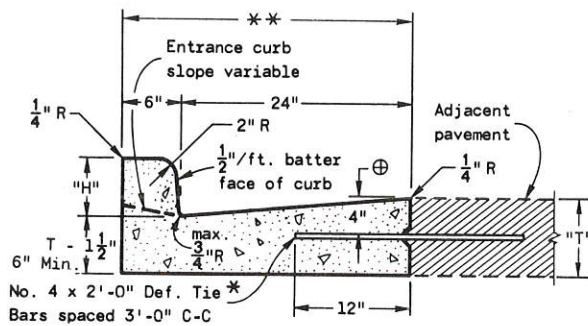
Unless otherwise specified in the contract, Integral Curb & Gutter may be built as an alternate to Curb & Gutter.

Integral Curb & Gutter shall be measured and paid for as Curb & Gutter. Pay limits for Concrete Integral Curb & Gutter.

Pavement reinforcing steel and load transfer dowels will not be required within the pay limits of Integral Curb & Gutter.

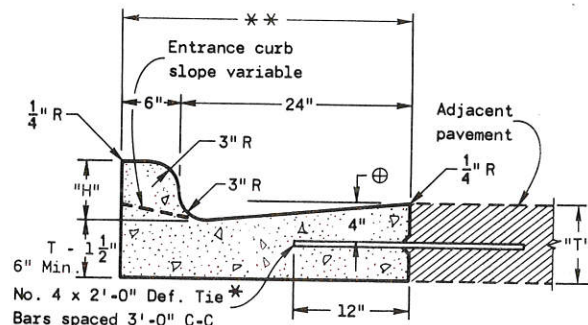
Contraction, construction or expansion joints shall be continuous through the Integral Curb & Gutter. The joints in Integral Curb & Gutter shall be spaced the same as the joints in the pavement.

"T" = Pavement thickness  
⊕ = Or center of pavement, whichever is less



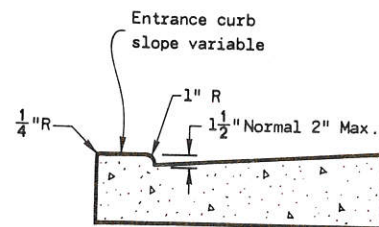
**TYPE "A"**  
(INCLUDING TIE BARS)  
**TYPE "D"**  
(EXCLUDING TIE BARS)

**CONCRETE CURB & GUTTER 30"**

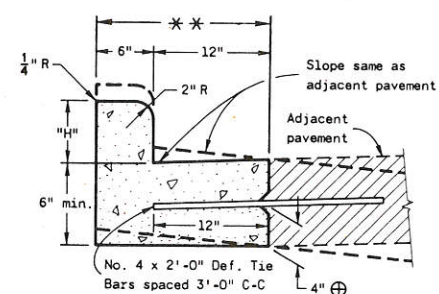


"H" = 9" Max. 3 1/2" Min. and shall be 6" unless otherwise shown on the plans.

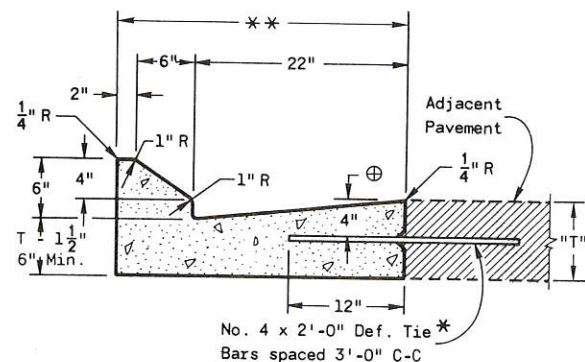
**TYPE "K"**  
(INCLUDING TIE BARS)  
**TYPE "L"**  
(EXCLUDING TIE BARS)



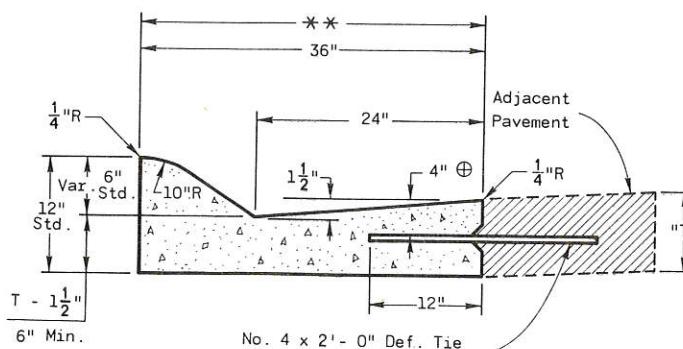
**ALTERNATE ENTRANCE CURB**  
(When directed by the Engineer)



**TYPE "A"**  
(INCLUDING TIE BARS)  
**TYPE "D"**  
(EXCLUDING TIE BARS)  
**CONCRETE CURB & GUTTER 18"**



**TYPE "G"**  
(INCLUDING TIE BARS)  
**TYPE "J"**  
(EXCLUDING TIE BARS)  
**CONCRETE CURB & GUTTER 30"**



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

**CONCRETE CURB & GUTTER**

**CONCRETE CURB, CONCRETE CURB & GUTTER, OR INTEGRAL CURB**

State of Wisconsin  
Department of Transportation  
Division of Highways

APPROVED  
7-13-78  
DATE  
APPROVED  
7-13-78  
DATE  
FHWA

*Ed. Baker*  
SUPERVISING DEVELOPMENT ENGINEER

*D. J. Stank*  
CHIEF OF FACILITIES DEVELOPMENT

STATE HIGHWAY COMMISSION OF WISCONSIN

**SODDED BACKSLOPE FLUME & INTERCEPTING EMBANKMENT**

RECOMMENDED FOR APPROVAL: \_\_\_\_\_

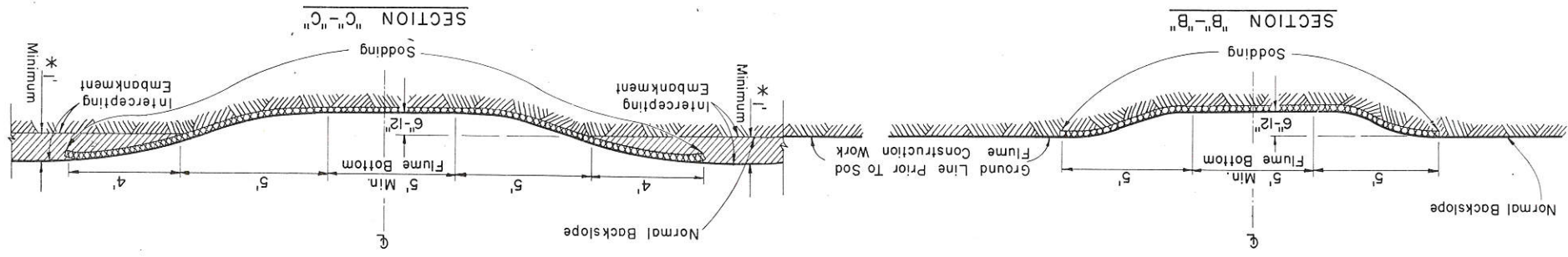
DATE: 2-5-63

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

DATE: 2/6/63

STATE HIGHWAY ENGINEER

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



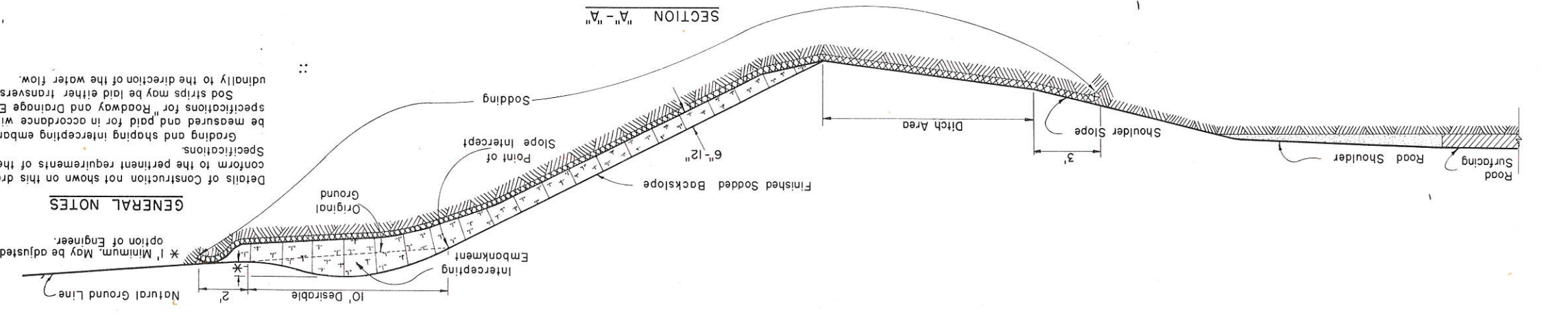
**GENERAL NOTES**

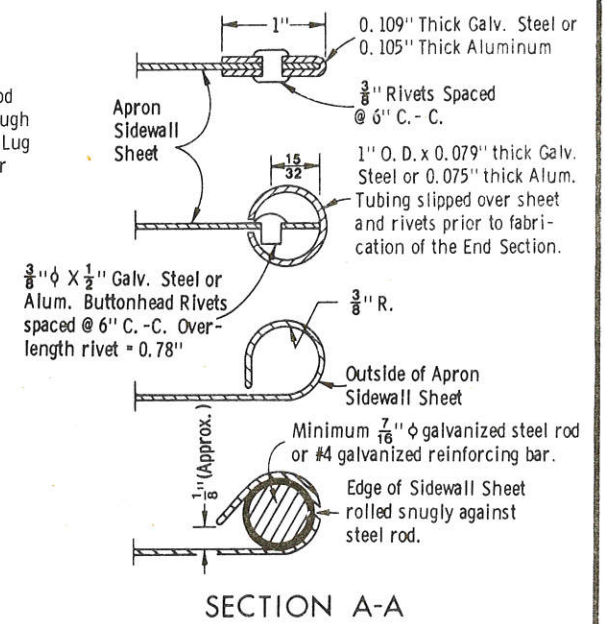
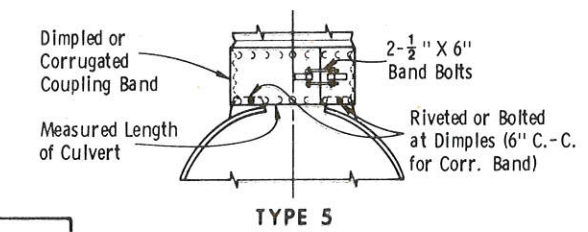
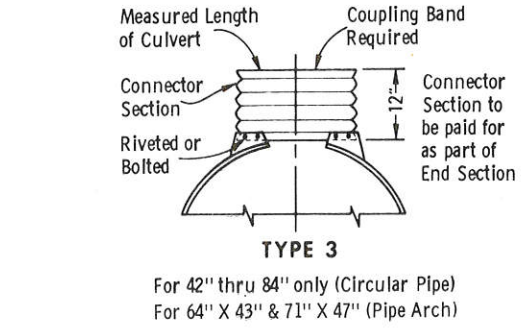
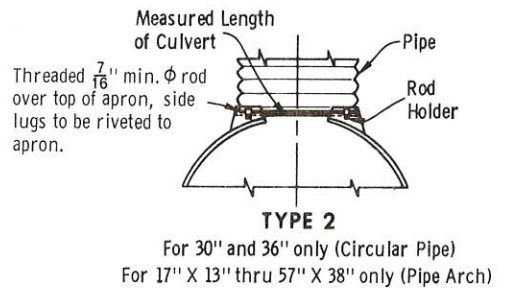
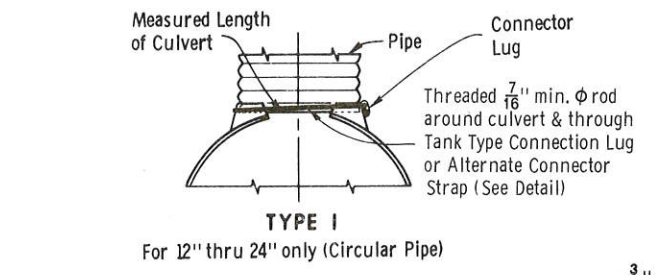
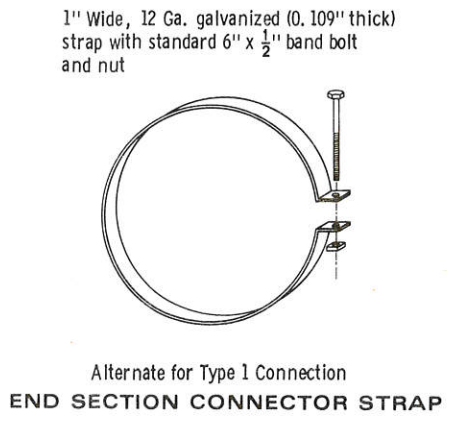
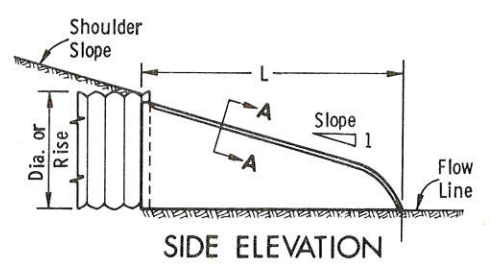
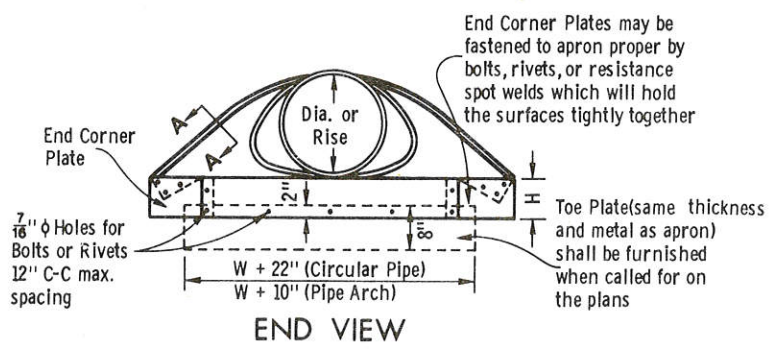
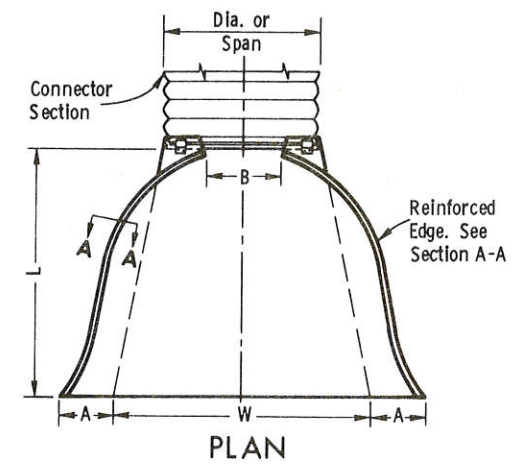
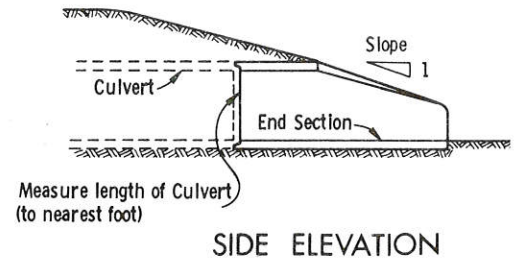
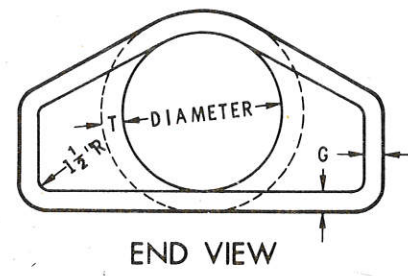
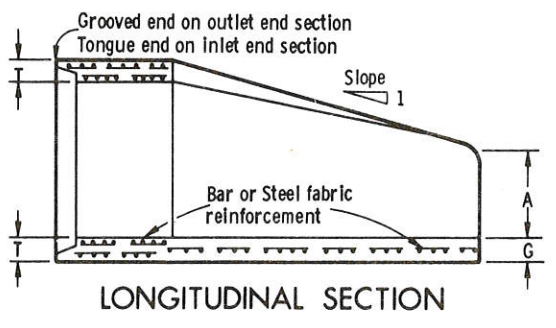
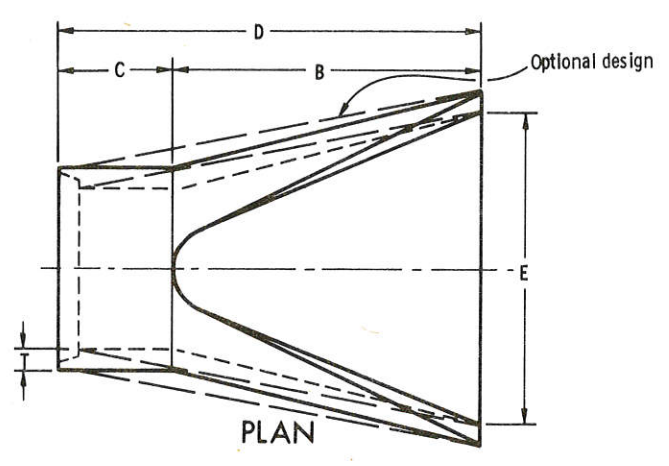
\* 1' Minimum. May be adjusted at option of Engineer.

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.





**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 7/8"	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 1/2 to 1
60"	8,730	6"	30"	60"	39"	99"	96"	5"	2 to 1
66"	10,630	6 1/2"	30"	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.	H ± 1"	L ± 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 1/3 to 1
78"			42"			87"	132"	1 1/4 to 1
84"	0.109	NA	18"	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	
		A ± 1"	B MAX.	H ± 1"	L ± 1/2"	W ± 2"		
17"	13"	0.064	7"	9"	6"	19"	30"	2 1/2 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"	2 1/2 to 1
64"	43"		18"	30"	12"	70"	102"	2 1/4 to 1
71"	47"		18"	33"	12"	77"	114"	2 1/4 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**

**TYPE 5**  
 Alternate for  
 All sizes Corrugated Circular Pipe and Pipe Arch  
 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

APPROVED  
 7-14-78  
 DATE

APPROVED  
 7-17-78  
 DATE

APPROVED  
*R. W. Baker*  
 SUPERVISOR DEVELOPMENT ENGINEER

APPROVED  
*D. J. Staud*  
 CHIEF OF FIELD OFFICES DEVELOPMENT

IOWA

S.D.D. 8 F 1-8

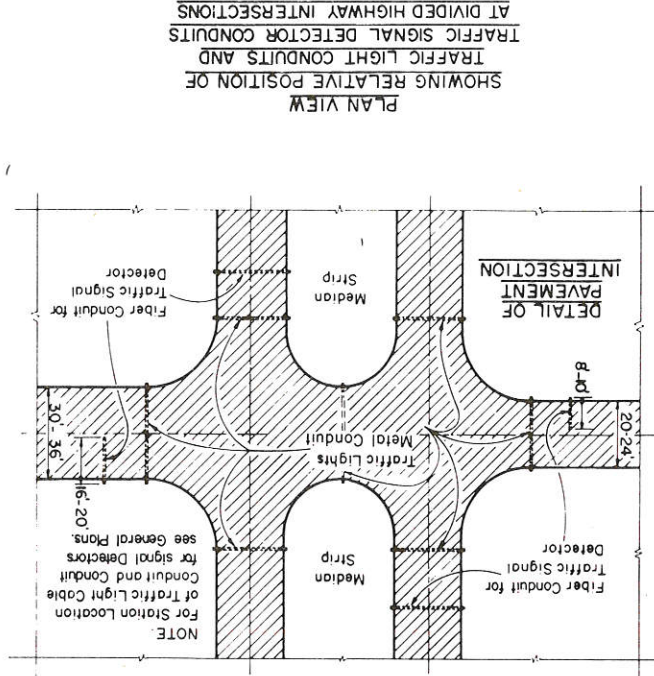
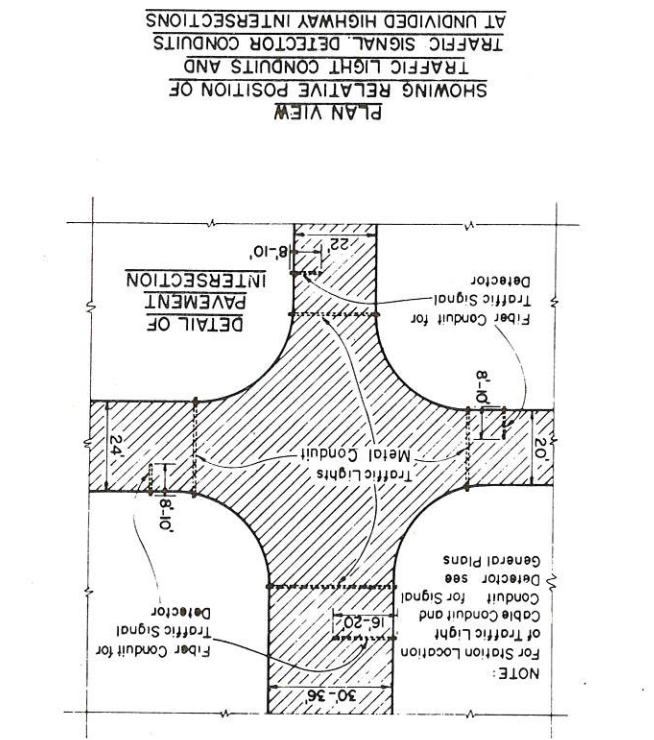
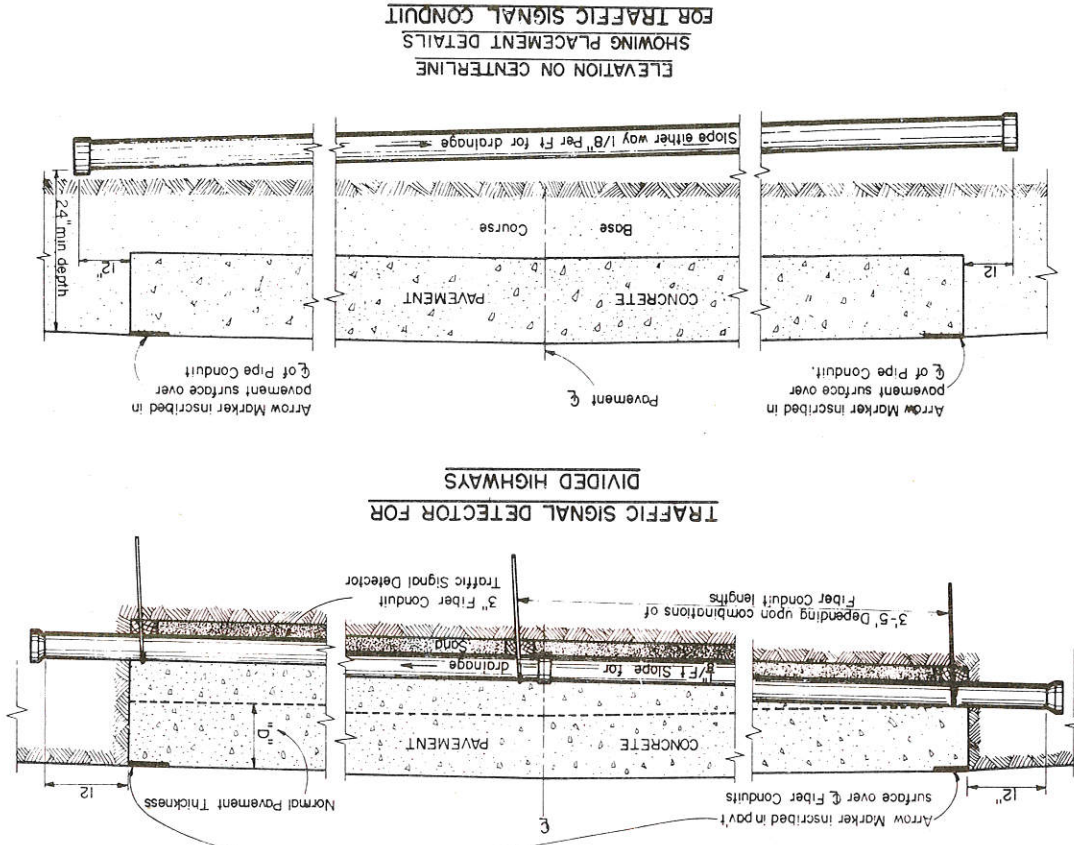
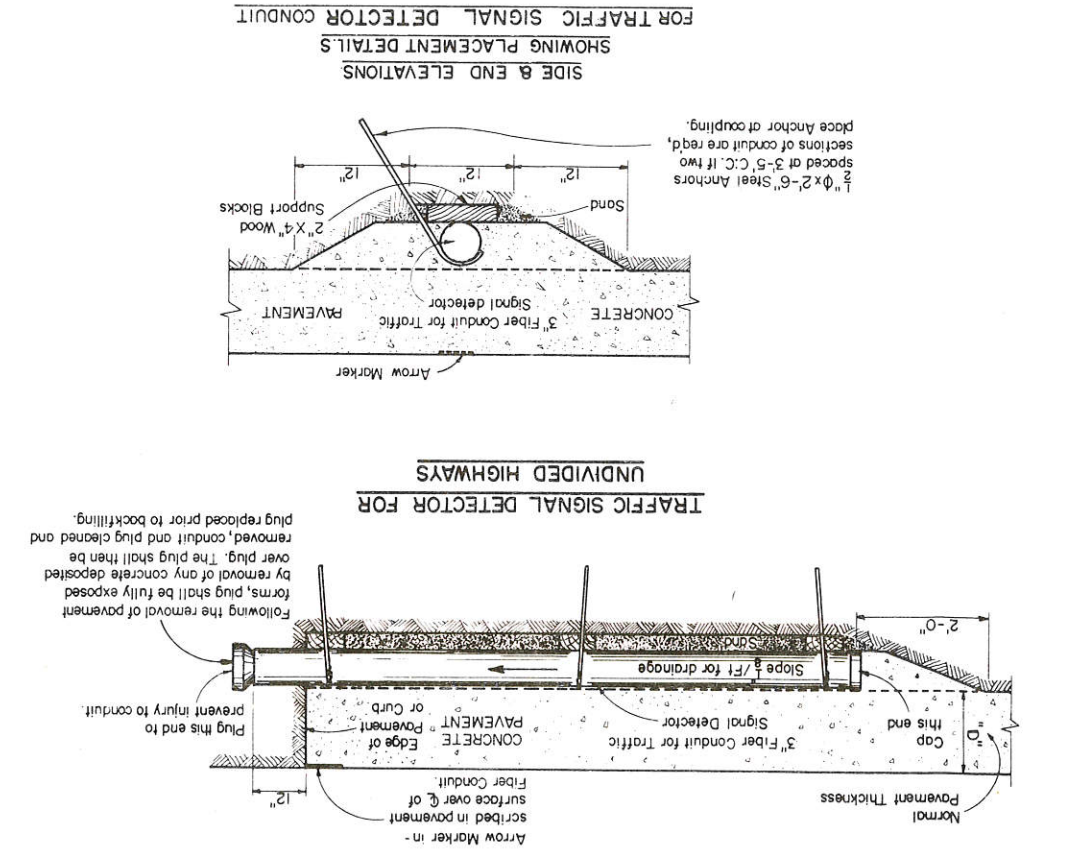
RECOMMENDED FOR APPROVAL	
DATE: 4-3-63	APPROVED: <i>[Signature]</i>
DATE: 4/5/63	APPROVED: <i>[Signature]</i>
STATE HIGHWAY COMMISSION OF WISCONSIN	
FIBER CONDUIT	
8	
METAL CONDUIT	

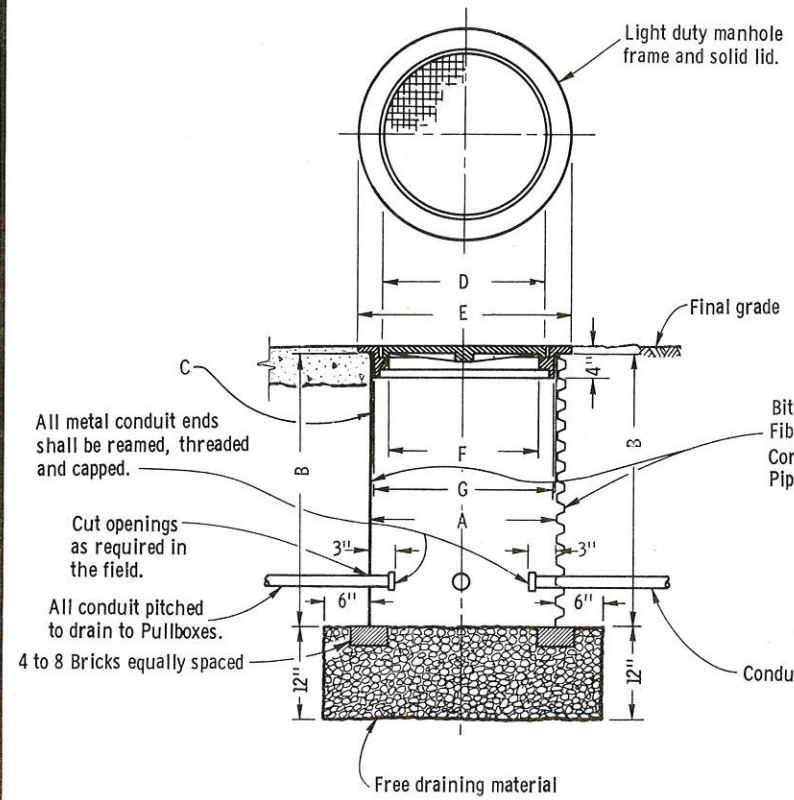
**GENERAL NOTES**  
 Details of construction not shown on this drawing shall conform to the pertinent requirements of the Standard Specifications, and the applicable Special Provisions.

**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.

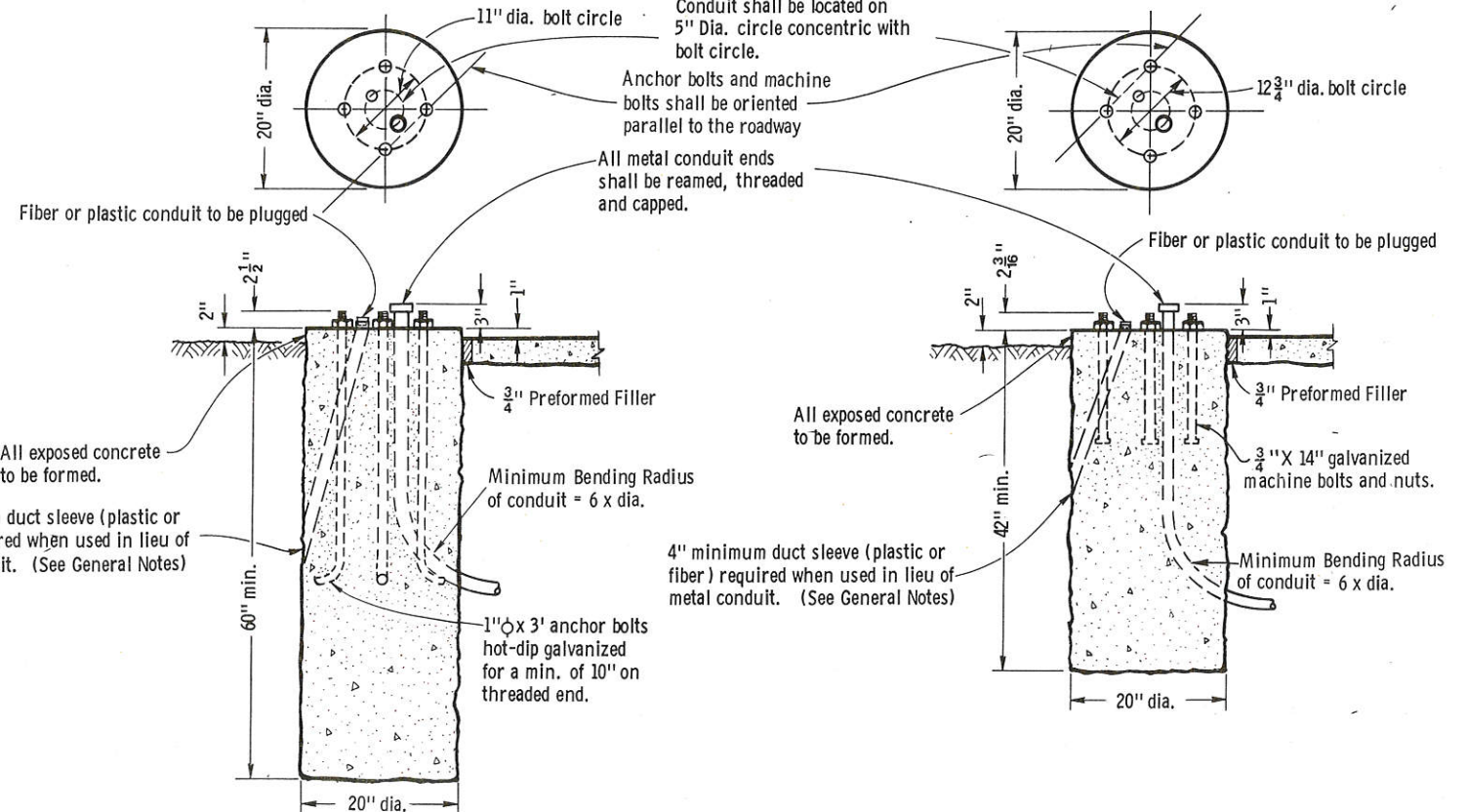




PIPE TYPE	BITUMINOUS FIBER				CORR. METAL	
P Pipe Dia. (Inside)	A	12"	18"	24"	24"	24"
P Pipe Length	B	24"	24"	24"	36"	36"
Wall Thickness	C	0.4"	0.4"	0.4"	0.4"	.064"
Manhole Lid	D	10 1/4"	16 1/4"	22 1/4"	22 1/4"	22 1/4"
Manhole Frame	E	14 1/2"	20 1/2"	26 1/2"	26 1/2"	26 1/2"
Manhole Frame	F	8 1/2"	14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

SHOWING INSTALLATION IN PAVED LOCATION

SHOWING INSTALLATION IN UNPAVED LOCATION



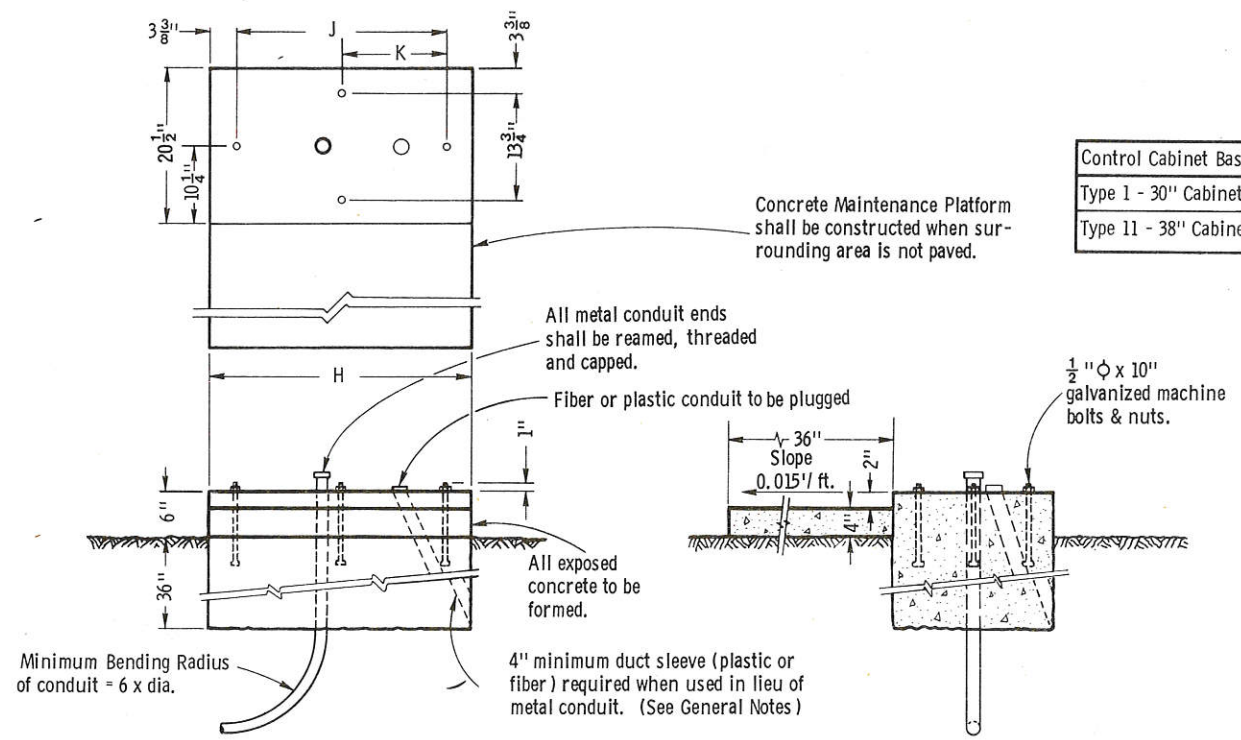
SHOWING INSTALLATION IN UNPAVED LOCATION

SHOWING INSTALLATION IN PAVED LOCATION

SHOWING INSTALLATION IN UNPAVED LOCATION

SHOWING INSTALLATION IN PAVED LOCATION

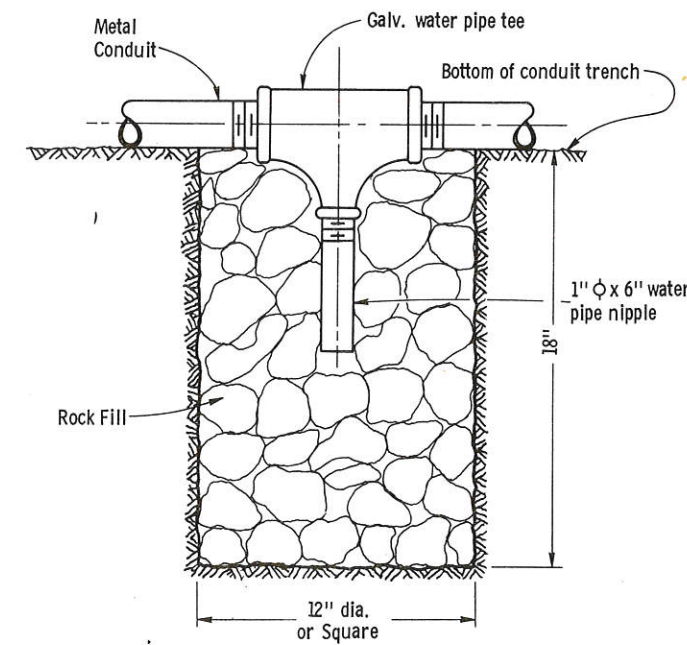
**PULL BOX AND DETECTOR BOX DETAIL**



Control Cabinet Base	H	J	K
Type 1 - 30" Cabinet	34"	27 1/4"	13 5/8"
Type 11 - 38" Cabinet	42"	35 1/4"	17 5/8"

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

**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:  
DATE 4-13-72  
*J. C. Hennrich*  
CHIEF DESIGN ENGINEER

APPROVED:  
DATE 4-13-72  
*S. E. Hicks*  
STATE HIGHWAY ENGINEER

RECOMMENDED FOR APPROVAL  
 DATE: 3-3-75  
 CHIEF OF FACILITIES DEVELOPMENT

APPROVED  
 DATE: 3-4-75  
 STATE HIGHWAY ENGINEER

State of Wisconsin  
 Department of Transportation  
 Division of Highways

DETAILS FOR THE INSTALLATION OF  
 TRAFFIC SIGNAL AND TRAFFIC COUNTER  
 DETECTOR LOOP WIRES  
 IN PAVEMENT IN PLACE

The slots in the pavement shall be cut to dimension with a saw and cleaned free of dirt, dust and debris prior to installation of the wire.

Loop wire shall be No. 12 AWG, Type USE, RHM, RHH or XLP stranded copper. To prevent damage to wire insulation during installation, use a dull object (preferably wood) to push the wire down into the slot.

After placing the wire in the slot, fill the slot with an asphaltic material. Refer to Section 409.2.5 of the State of Wisconsin Standard Specifications for Road and Bridge Construction, Edition of 1975. An epoxy type sealant may be used if approved by the Engineer, only when asphaltic material is unavailable.

Each loop circuit shall be continuous, without splices, and free from grounds. The resistance to ground and between adjacent loops shall be infinity as determined with a megger.

If a pull box or detector box is not provided outside of the curb or edge of pavement at a point where wires from the loop extend through the pavement, the wires should then be brought through the bottom of the pavement and just under the lower edge of the curb back side. A small hole should be dug under the curb at this point so that a splice kit (epoxy type) may be used to waterproof the splice that connects wires from the loop to the lead wires which eventually terminate in the control cabinet. Splice kits must also be used when the splice is made in a pull box.

Two conductor, No. 14 AWG, shielded cable shall be used from the splice connection at the curb to the control cabinet except as noted in the next paragraph. 2/C - No. 14 (19x27), 0.032 polyethylene, black and clear color codes, cabled with 1x No. 16 AWG stranded tinned copper drain wire, aluminum polyester shield, with 1x No. 16 AWG stranded tinned copper drain wire, aluminum polyester shield, 0.035 chrome vinyl jacket as manufactured by Belden (No. 8720), or 2/C - No. 14, 7x bare copper, 0.047 XLP, printed color code, cabled with 1x No. 16-7x tinned copper drain wire, aluminum mylar tape, 0.047 PVC jacket as manufactured by Okonite, shall be used. These cables are polyethylene insulated.

Belden 8720 is not direct burial cable. It must be placed in non-metallic duct or metal conduit. Okonite cable is direct burial and it is not necessary to place this direct burial cable in non-metallic duct or metal conduit.

The two single conductor loop wires must be twisted together at a rate of three twists per foot from the pavement edge to the splice or to its connection with loop lead-in cable. If the distance from the pavement edge to the control cabinet is less than 75 feet, the loop lead wires may be left long enough to reach the control cabinet. However, the single conductor wires must then be twisted at least three turns per foot all the way to the control cabinet. In this instance a splice is not used.

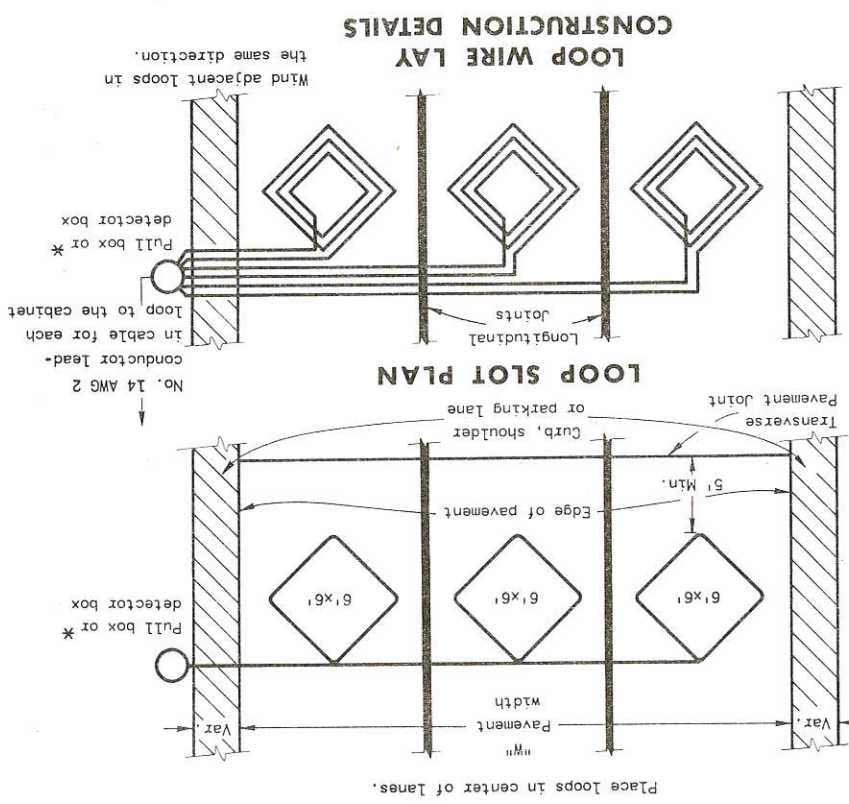
It is recommended that these twisted single conductor pairs shall be installed in non-metallic duct or metal conduit. Lead-in wires along curbs shall be buried 50 inches deep or tucked under the curb for protection from stakes, posts or any other objects that can be driven into the ground.

Lead-in wires at the point where a splice is made shall be cut to the shortest possible length. This will eliminate additional loops caused by folding of the excess wire, which can cause improper operation of detector amplifiers.

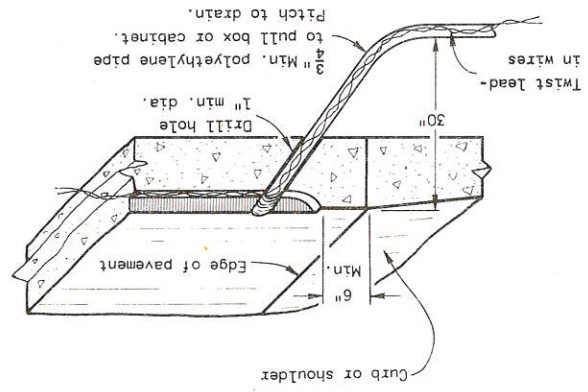
A splice for a two conductor cable consists of two soldered joints enclosed in a single splice kit. Each wire shall be soldered and insulated from one another. See Standard Detail Drawing entitled "Traffic Signal and Traffic Counter Details" for pull box or detector box details.

**NOTES**

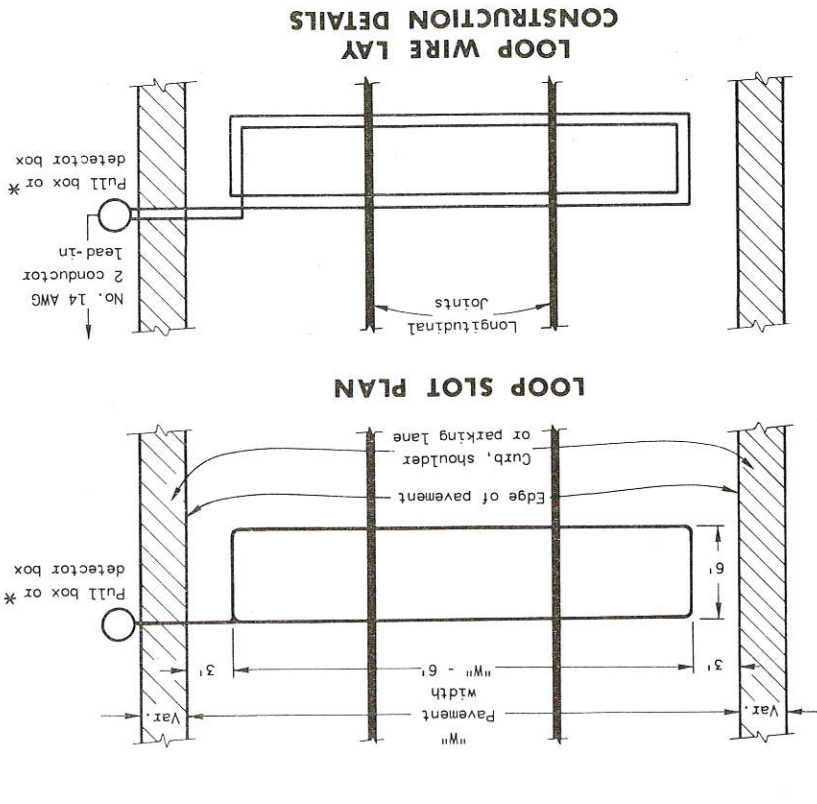
**TRAFFIC COUNTER STATION MULTIPLE LANE DETECTION LOOP**



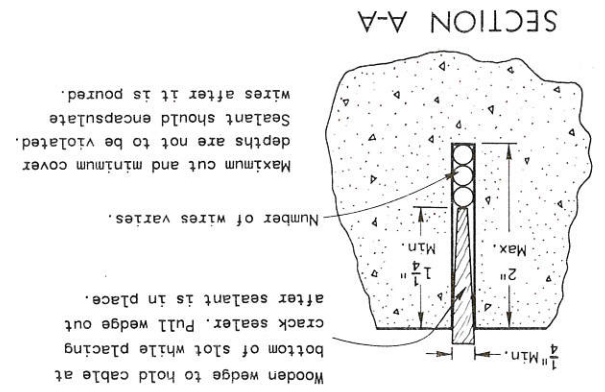
**LOOP LEAD-IN WIRES**



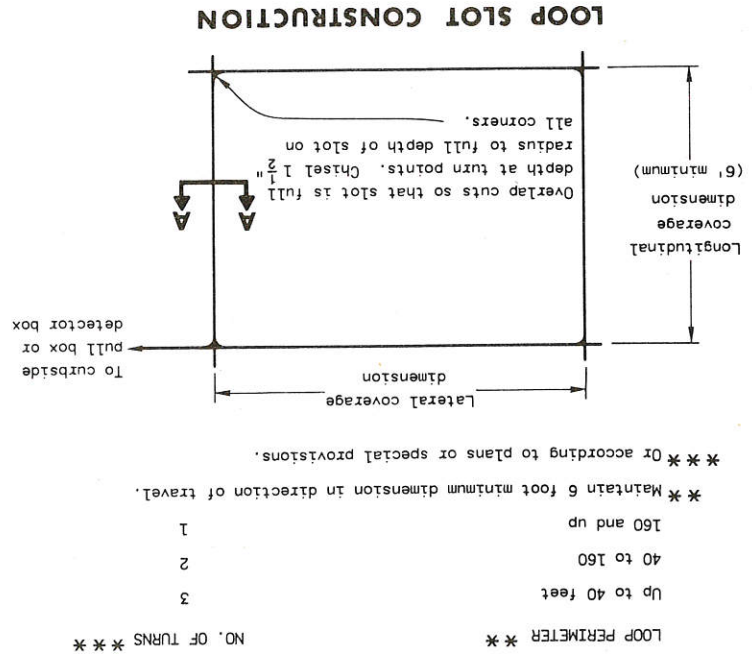
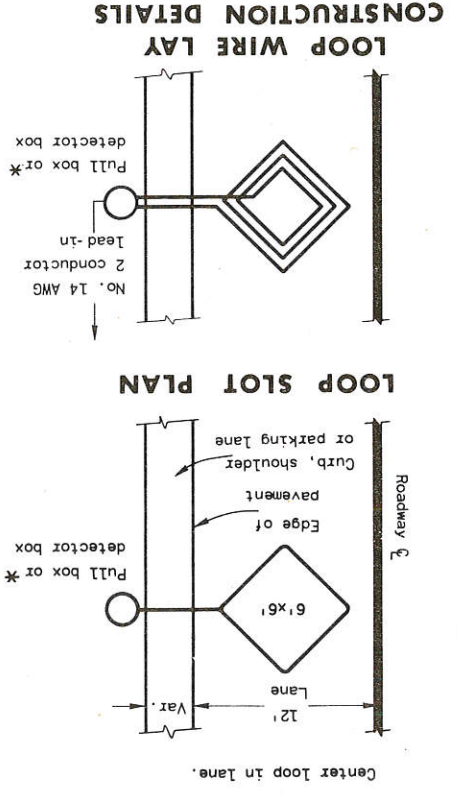
**TRAFFIC SIGNAL MULTIPLE LANE MASS DETECTION LOOP**



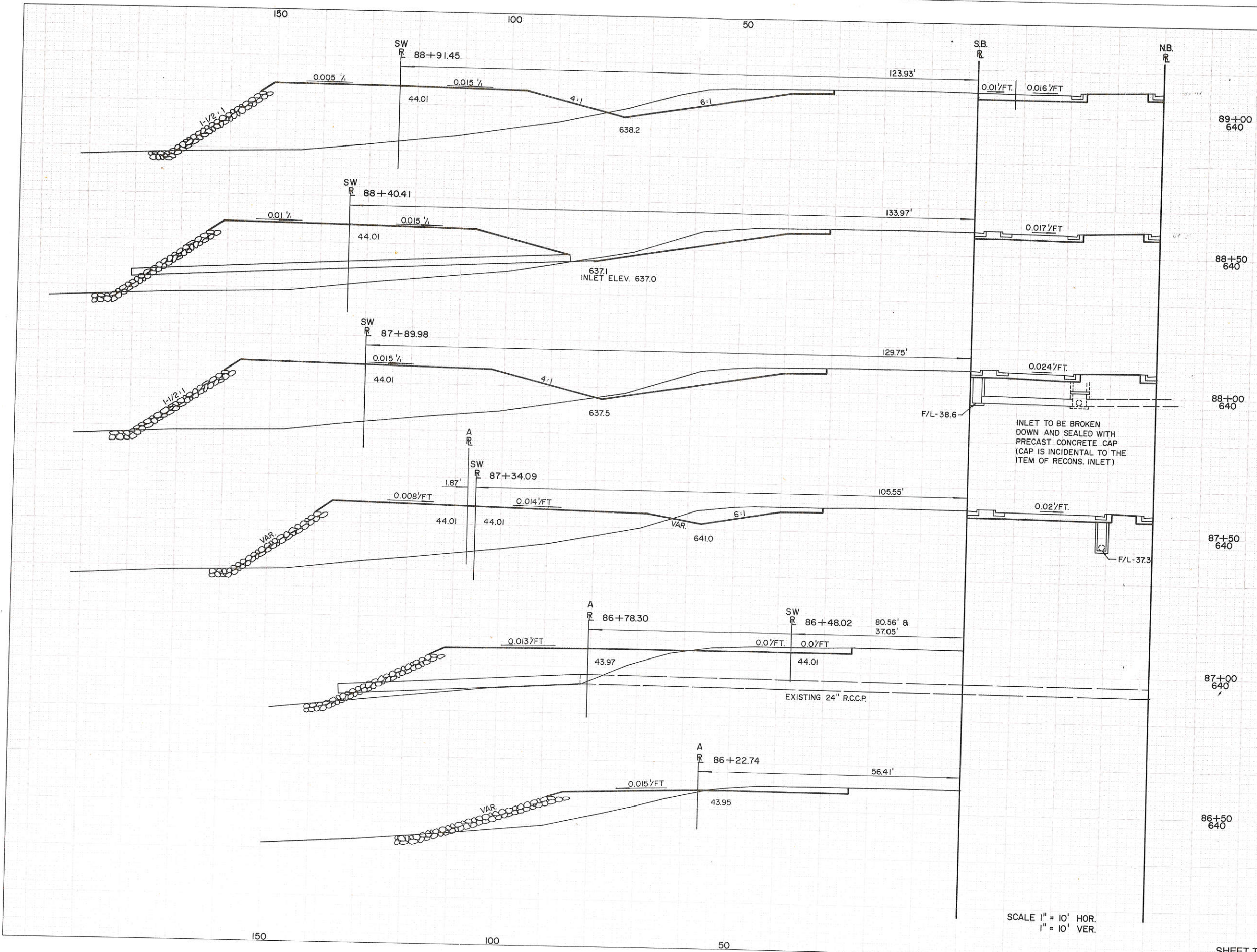
**SECTION A-A  
 LOOP AND LEAD-IN WIRES IN PAVEMENT**



**TRAFFIC SIGNAL SINGLE LANE DETECTION LOOP**







STATE PROJECT NUMBER  
1633-1-71

SHEET NUMBER  
91

STATION	DISTANCE	YARDAGE	
		EXCAVATION	FILL
89+00	640		
88+50	640	98	504
87+00	640	107	1039
87+50	640	139	1504
88+00	640	167	1700
88+50	640	181	1640
89+00	640		
87+50	640		
87+00	640		
86+50	640		
SHEET TOTAL		692	6387

SCALE 1" = 10' HOR.  
1" = 10' VER.



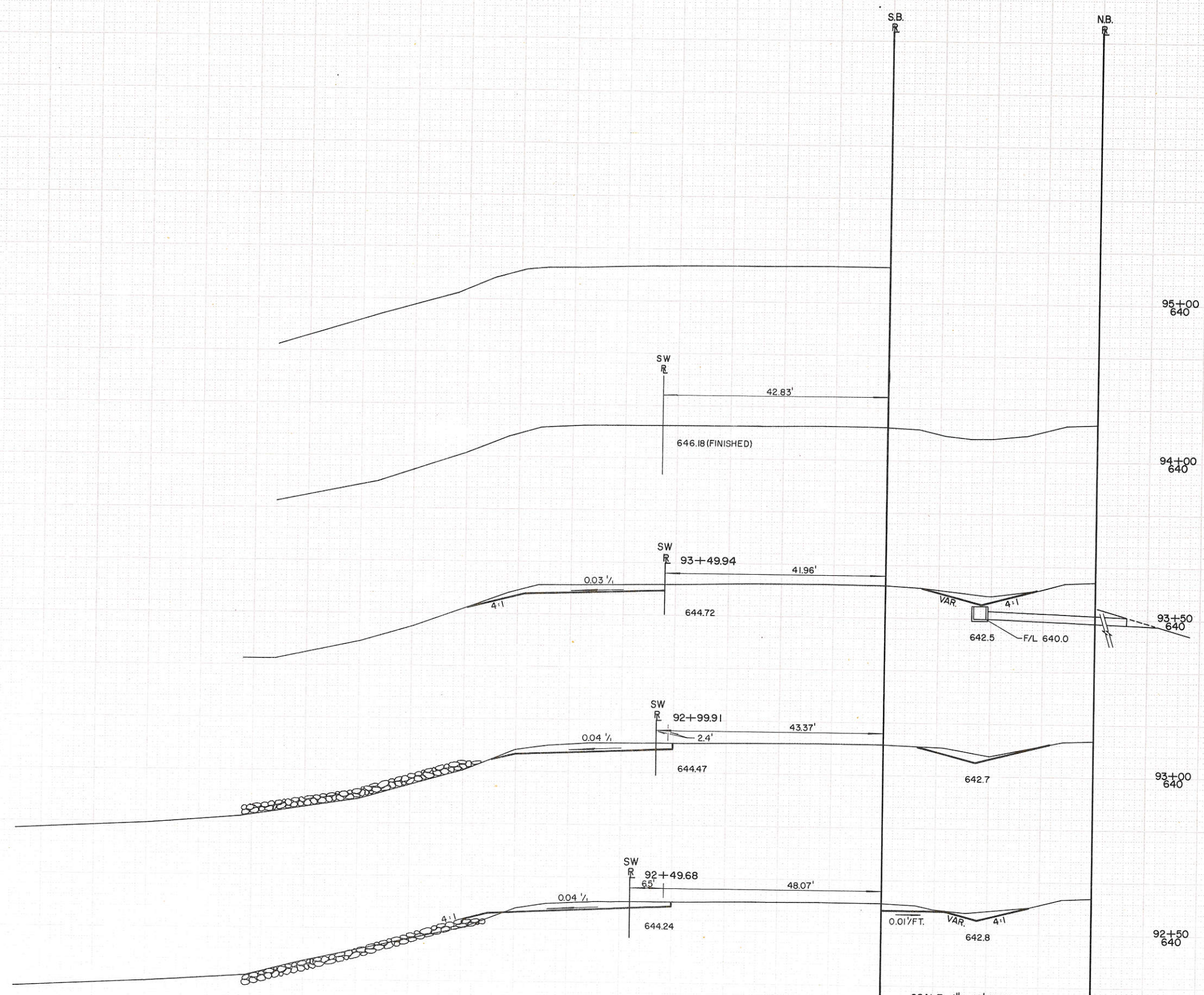
100 50

S.B.  
R

N.B.  
R

STATE PROJECT NUMBER	SHEET NUMBER
1633-1-71	9.3

STATION	DISTANCE	YARDAGE		
		EXCAVATION		FILL
		UNLC.		
92+50				9
93+00	135			0
93+50	143			0
94+00	70			0
SHEET TOTAL		348		9



SCALE 1" = 10' HOR.  
1" = 10' VER.

100 50

SHEET TOTAL 348 9

Plan 249

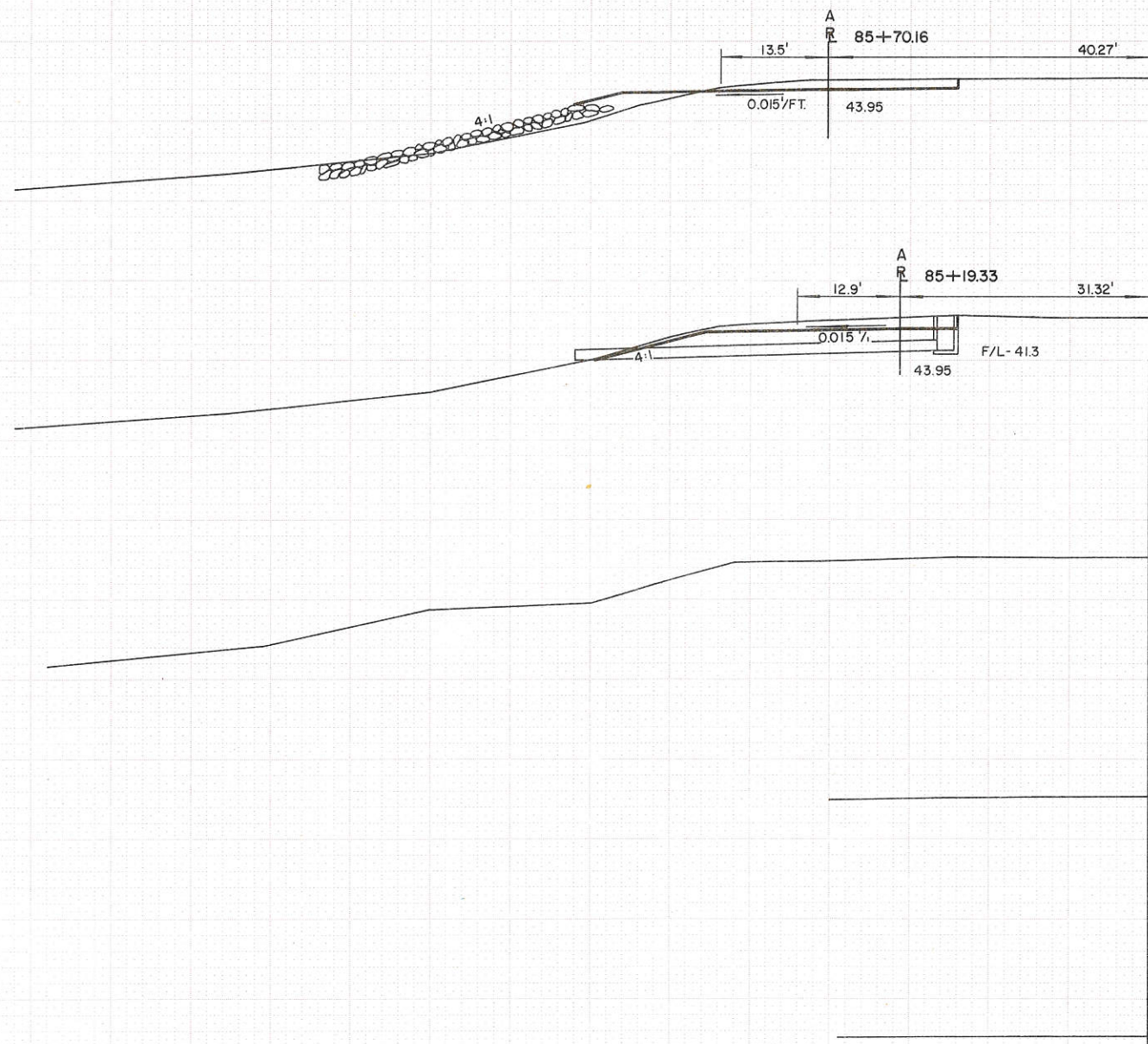
100

50

S.B.  
R

N.B.  
R

STATE PROJECT NUMBER	SHEET NUMBER
1633-1-71	9



STATION	DISTANCE	YARDAGE		
		EXCAVATION		FILL
		UNCL.		
85+00				
86+00	640	39		0
85+50		61		19
86+00		69		157
86+00	640			
85+50				
85+00	640			
84+50				
84+50	640			
84+00				
84+00	640			
SHEET TOTAL		169		176

SCALE 1" = 10' HOR.  
1" = 10' VER.

100

50

**NOTES**

DERIVINGS SHALL NOT BE GALVANIZED. ALL STRUCTURAL STEEL MEMBERS SHALL BE GALVANIZED. (A36 Fy = 36,000 P.S.I.)

ALL STEEL PIPE MEMBERS OF TRUSSES ARE TO BE AS SPECIFIED FOR WELDED AND SEAMLESS STEEL PIPE ASTM DESIGNATION A53 GRADE B, Fy = 35,000 P.S.I.

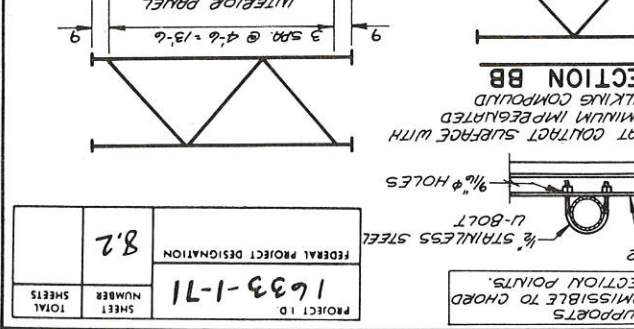
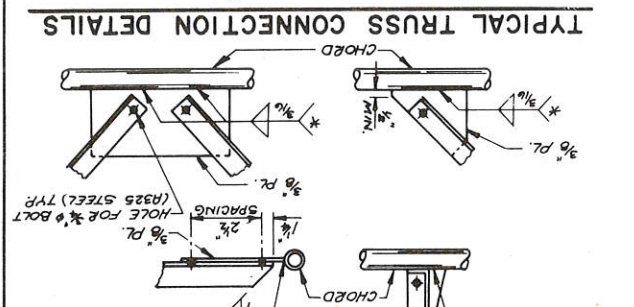
COLUMN SPLICES MAY BE ELIMINATED IF COLUMNS CAN BE GALVANIZED IN ONE PIECE.

WELDED CONNECTIONS MAY BE USED IN LIEU OF BOLTED CONNECTIONS IF UNIT CAN BE GALVANIZED IN ONE PIECE.

ALL BOLTED CONNECTIONS SHALL BE MADE WITH STRAINLESS STEEL (S.S.) BOLTS. SEE ALL SIGN BRIDGE FOR TYPE.

**TYP. WELDED ALT.**

11	2 1/2" x 2 1/2" x 1/4"
10	3 x 3 x 3/8"
9	3 x 3 x 1/2"
8	3 x 3 x 5/8"
7	3 x 3 x 3/4"
6	3 x 3 x 7/8"
5	3 x 3 x 1"
4	3 x 3 x 1 1/8"
3	3 x 3 x 1 1/4"
2	3 x 3 x 1 1/2"
1	3 x 3 x 1 3/4"
10	4 x 4 x 1/2"
9	4 x 4 x 3/4"
8	4 x 4 x 5/8"
7	4 x 4 x 3/8"
6	4 x 4 x 1/2"
5	4 x 4 x 3/4"
4	4 x 4 x 5/8"
3	4 x 4 x 3/8"
2	4 x 4 x 1/2"
1	4 x 4 x 3/4"



**DESIGN DATA**

DEAD LOAD - WT. OF SIGN, SUPPORTING STRUCTURES, CROWL, LIGHTS

LIVE LOAD - SINGLE LINE LOAD OF 500 LBS. DISTRIBUTED OVER 2' OF CROWL AND RAILINGS.

ICE LOAD - 3 P.S.F. TO 1' FACE OF SIGN & AROUND SURFACE OF MEMBERS.

WIND PRESSURE - 85 M.P.H. TO SIGN AREA & EXPOSED MEMBERS.

WIND COMPONENTS: NORMAL, TRANSVERSE

COMBINATION 1: 1.0

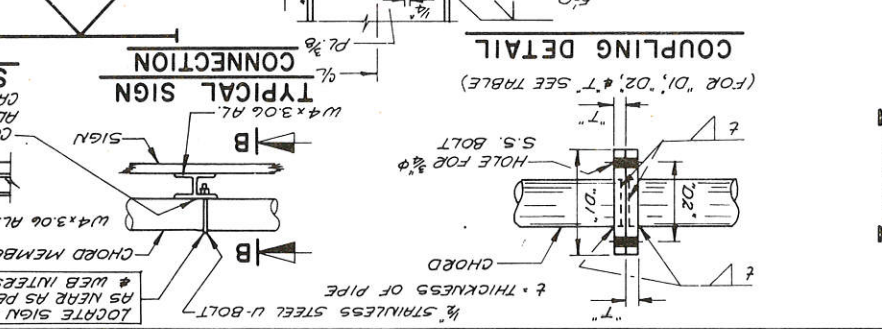
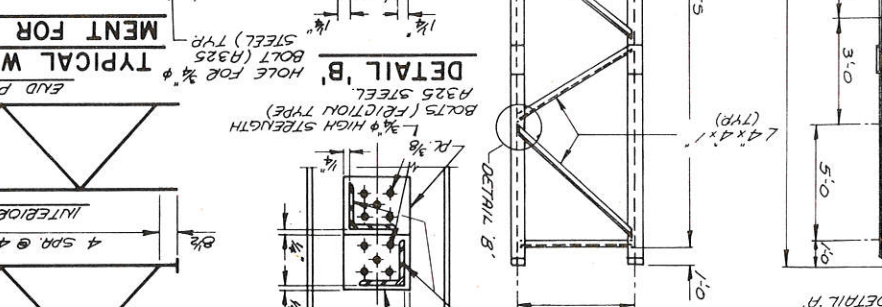
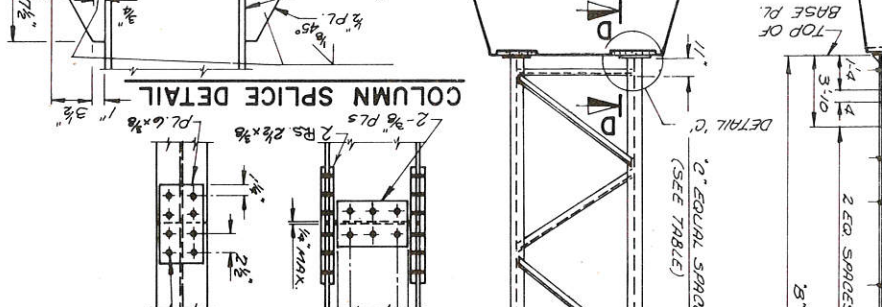
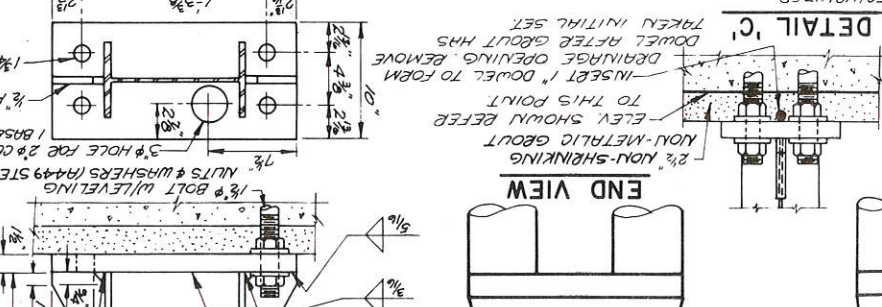
COMBINATION 2: 1.0

GROUP LOADS: 1 DEAD, 2 DEAD + WIND, 3 DEAD + ICE + 25 P.S.F. WIND

STEEL - A36 - Fy = 36,000 P.S.I.

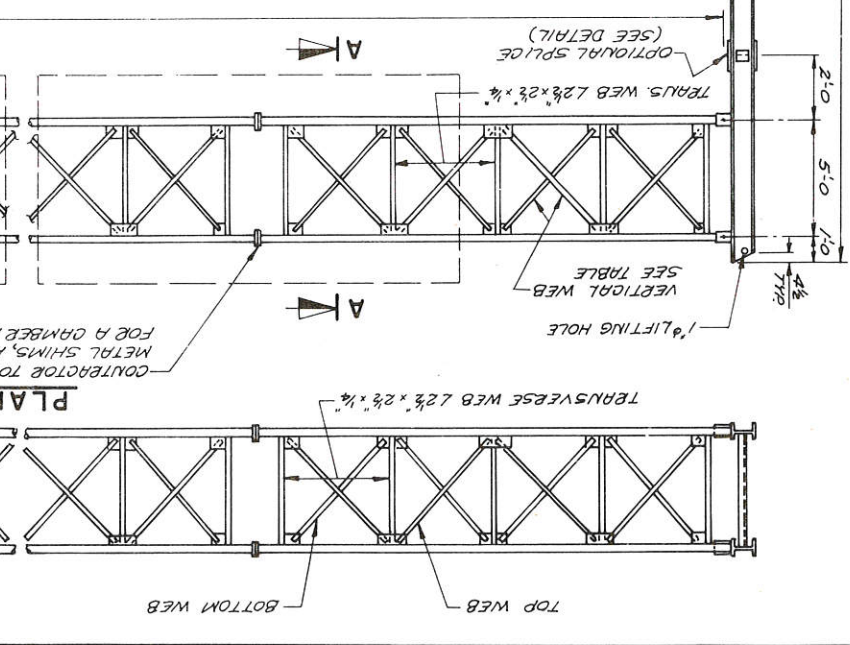
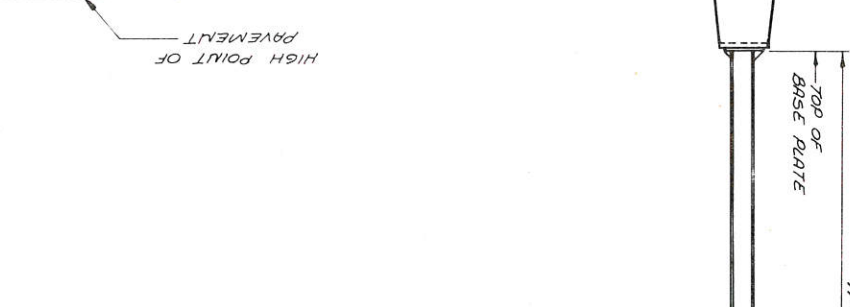
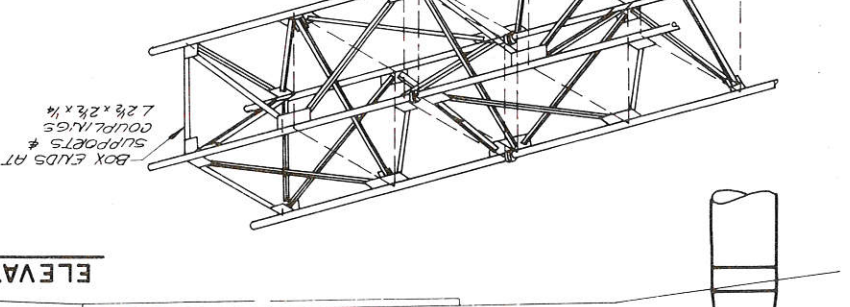
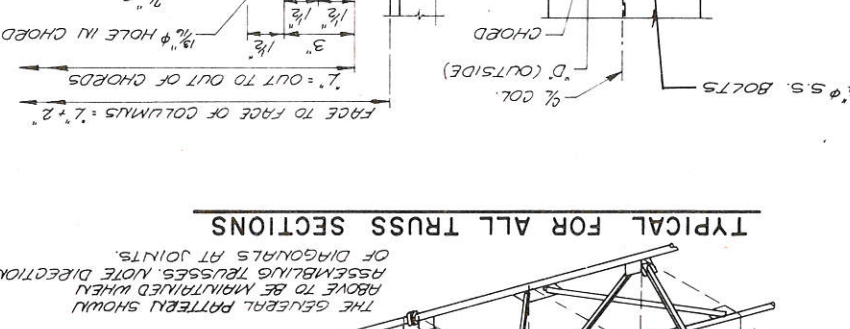
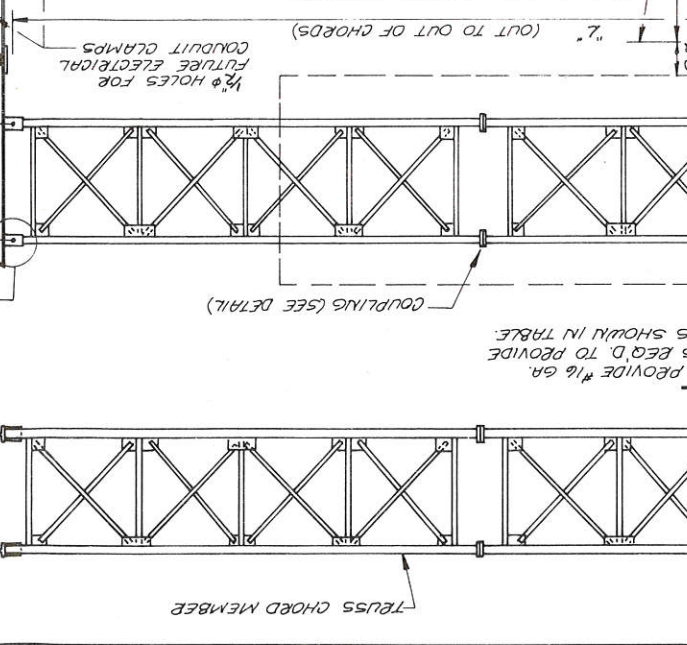
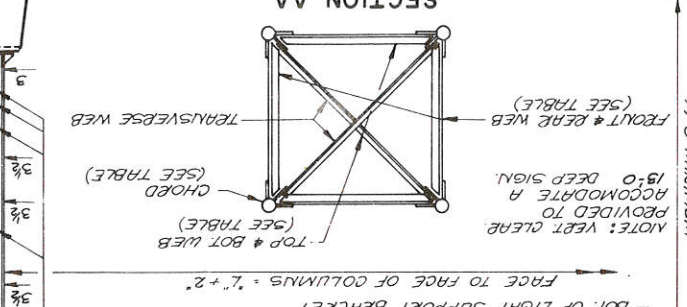
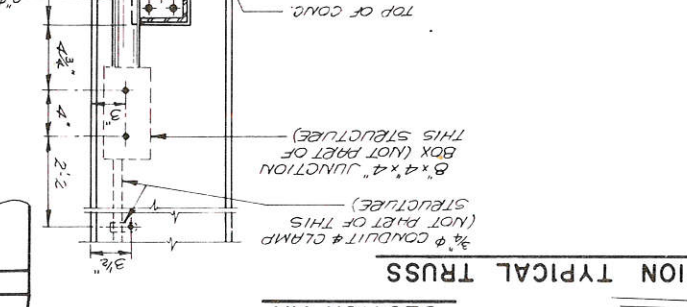
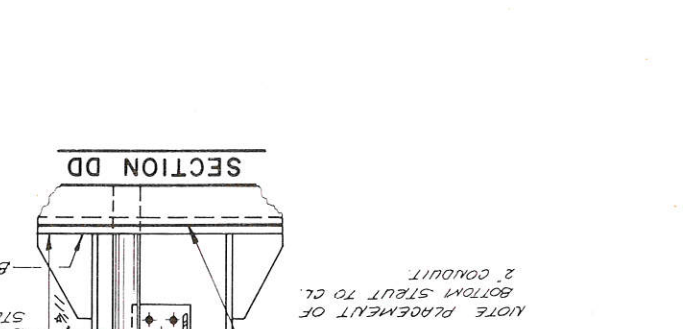
PIPE - A53 GRADE B, Fy = 35,000 P.S.I.

% OF ALLOWABLE STRESS: 100, 140, 140



**TABLE**

STRUCTURE	A	B	C	D	E	F	G	H	I	J	K	L
	27'-0"	28'-0"	27'-0"	28'-0"	27'-0"	28'-0"	27'-0"	28'-0"	27'-0"	28'-0"	27'-0"	28'-0"
	5'-32-3	5'-32-3	5'-32-3	5'-32-3	5'-32-3	5'-32-3	5'-32-3	5'-32-3	5'-32-3	5'-32-3	5'-32-3	5'-32-3
	2 1/2" x 2 1/2" x 1/4"	2 1/2" x 2 1/2" x 1/4"	2 1/2" x 2 1/2" x 1/4"	2 1/2" x 2 1/2" x 1/4"	2 1/2" x 2 1/2" x 1/4"	2 1/2" x 2 1/2" x 1/4"	2 1/2" x 2 1/2" x 1/4"	2 1/2" x 2 1/2" x 1/4"	2 1/2" x 2 1/2" x 1/4"	2 1/2" x 2 1/2" x 1/4"	2 1/2" x 2 1/2" x 1/4"	2 1/2" x 2 1/2" x 1/4"
	7 x 3/8"	7 x 3/8"	7 x 3/8"	7 x 3/8"	7 x 3/8"	7 x 3/8"	7 x 3/8"	7 x 3/8"	7 x 3/8"	7 x 3/8"	7 x 3/8"	7 x 3/8"
	5 1/2"	5 1/2"	5 1/2"	5 1/2"	5 1/2"	5 1/2"	5 1/2"	5 1/2"	5 1/2"	5 1/2"	5 1/2"	5 1/2"
	4	4	4	4	4	4	4	4	4	4	4	4
	1	1	1	1	1	1	1	1	1	1	1	1
	12 WF 27	12 WF 27	12 WF 27	12 WF 27	12 WF 27	12 WF 27	12 WF 27	12 WF 27	12 WF 27	12 WF 27	12 WF 27	12 WF 27
	55	55	55	55	55	55	55	55	55	55	55	55
	N° OF	N° OF	N° OF	N° OF	N° OF	N° OF	N° OF	N° OF	N° OF	N° OF	N° OF	N° OF
	BOLTS IN	BOLTS IN	BOLTS IN	BOLTS IN	BOLTS IN	BOLTS IN	BOLTS IN	BOLTS IN	BOLTS IN	BOLTS IN	BOLTS IN	BOLTS IN
	CHAMBER	CHAMBER	CHAMBER	CHAMBER	CHAMBER	CHAMBER	CHAMBER	CHAMBER	CHAMBER	CHAMBER	CHAMBER	CHAMBER
	COLUMN	COLUMN	COLUMN	COLUMN	COLUMN	COLUMN	COLUMN	COLUMN	COLUMN	COLUMN	COLUMN	COLUMN
	"L"	"L"	"L"	"L"	"L"	"L"	"L"	"L"	"L"	"L"	"L"	"L"



**BILL OF BARS (1 FOOTING) 520#**

DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT.

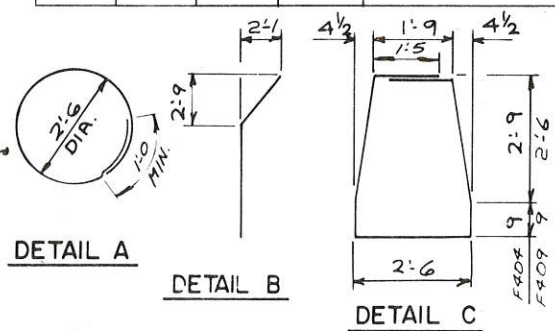
MARK	NO.	LENGTH	SPACING	LOCATION	DET.
F401	10	8-11	1'-0"	FOOTING - HOOPS	A
F502	10	10-3	SHOWN	" - VERT.	
F503	14	13-2	"	" "	B
F404	6	12-0	1'-0"	" - STIRRUPS	C
F405	2	7-8	SHOWN	" - HORIZ.	
F406	2	9-2	"	" "	
F407	2	10-8	"	" "	
F408	2	11-6	"	" "	
F409	2	11-6	"	" - STIRRUPS	C

PROJECT ID <b>1633-1-71</b>	SHEET NUMBER <b>8</b>	TOTAL SHEETS
FEDERAL PROJECT DESIGNATION		

**GENERAL NOTES**

DRAWINGS SHALL NOT BE SCALED.

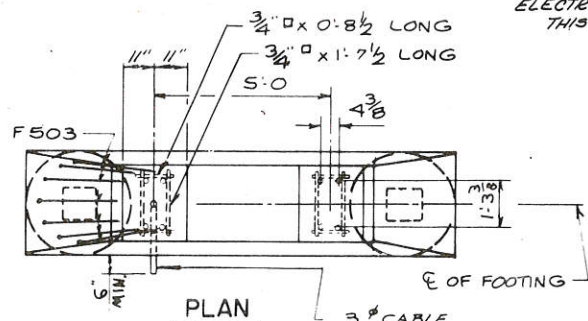
BAR STEEL REINFORCEMENT SHALL BE IMBEDDED 3" CLEAR.  
THE USE OF STRUCTURAL GRADE BAR STEEL REINFORCEMENT IS PROHIBITED.



DETAIL A

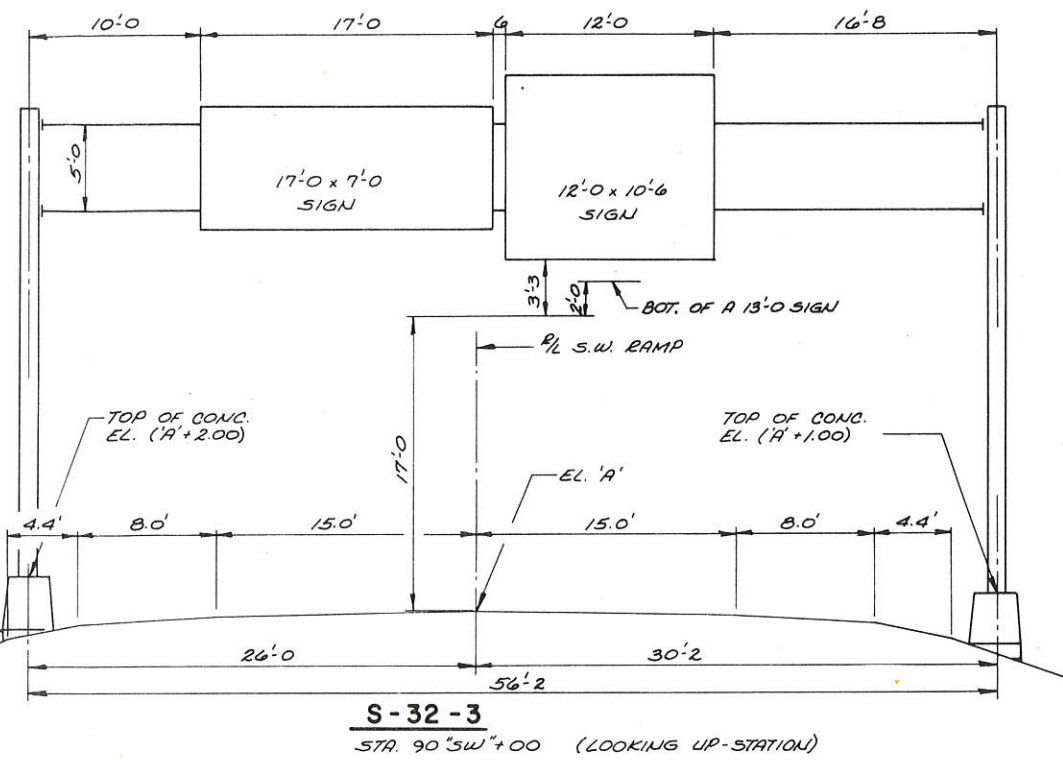
DETAIL B

DETAIL C



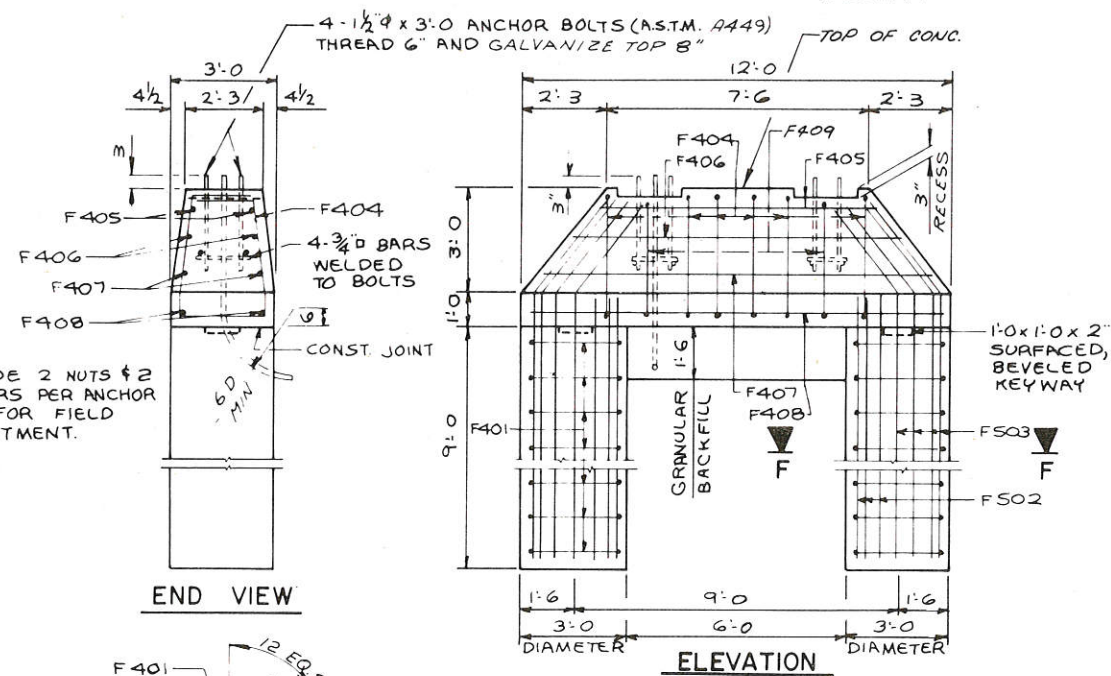
PLAN

ELECTRICAL ENTRANCE THIS FTS.



S-32-3

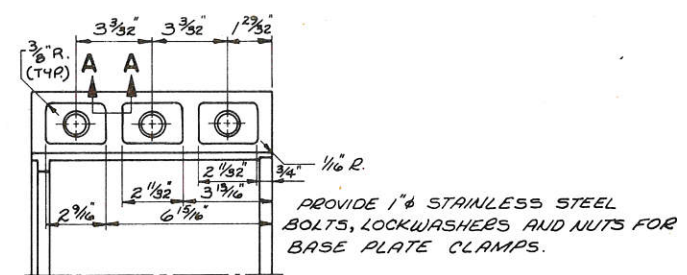
STA. 90+5W+00 (LOOKING UP-STATION)



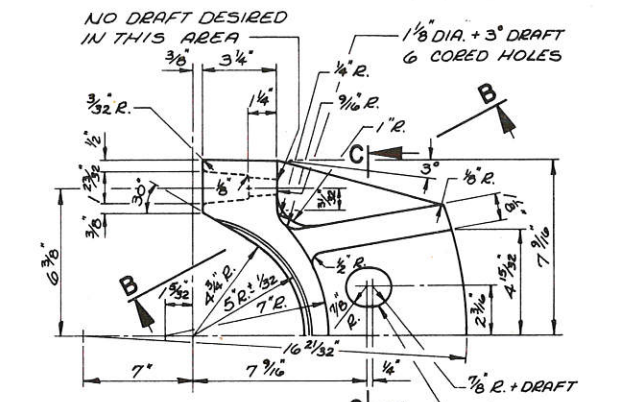
FOOTING TYPE "F1"

**SUMMARY OF QUANTITIES**

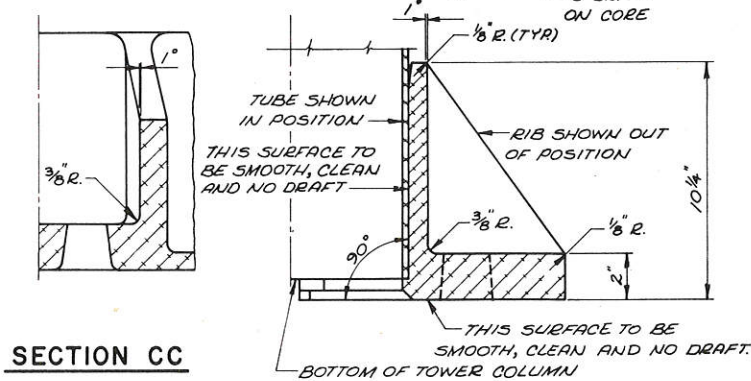
	UNIT	
CONCRETE MASONRY	CY	9.0
BAR STEEL REINFORCEMENT	LB	520



SECTION AA

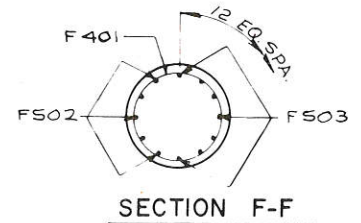


SECTION BB



SECTION CC

**BASE PLATE DETAILS - ALUM. SIGN BRIDGE**



SECTION F-F

No.	Date	Revision	By

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS

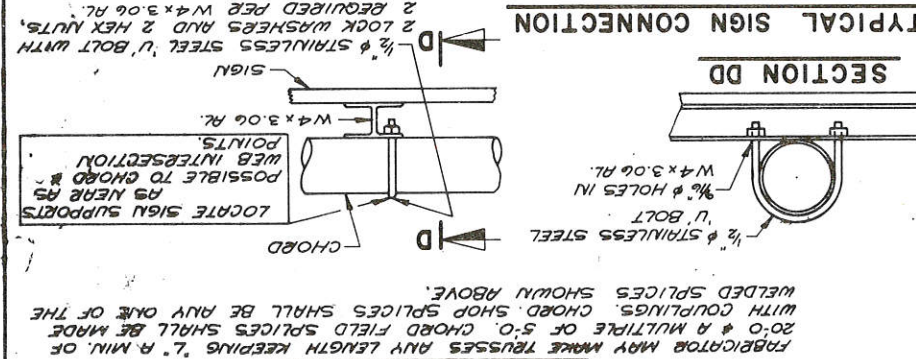
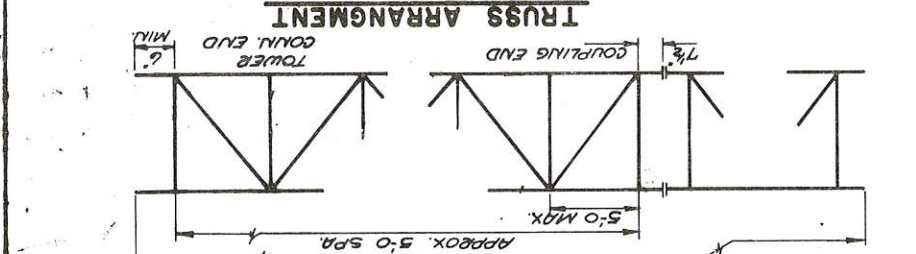
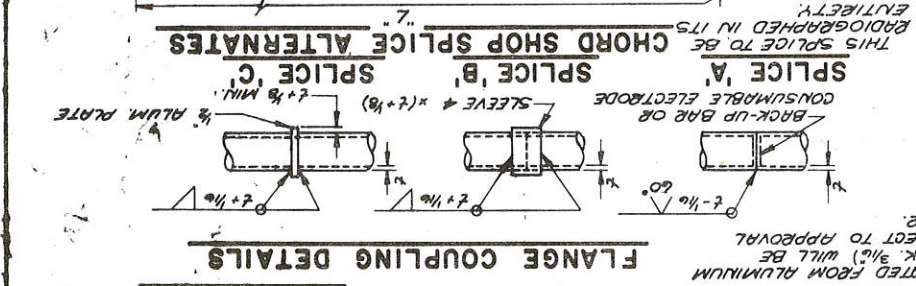
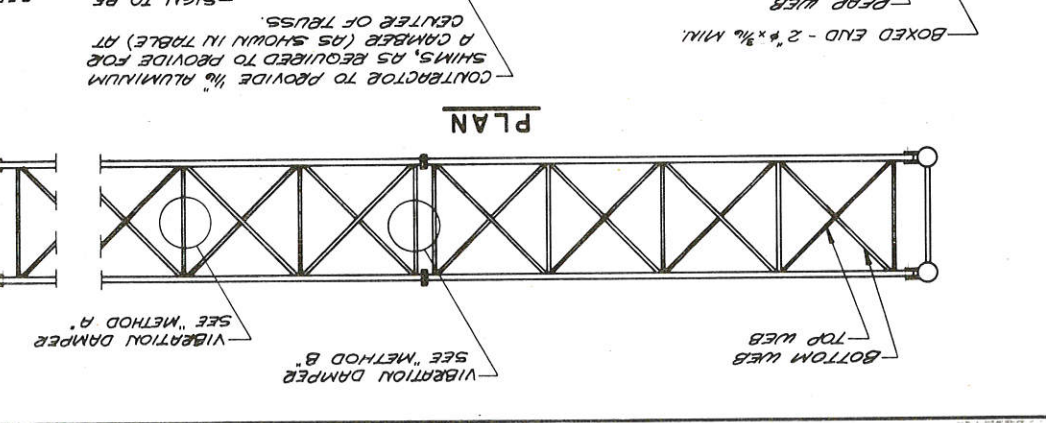
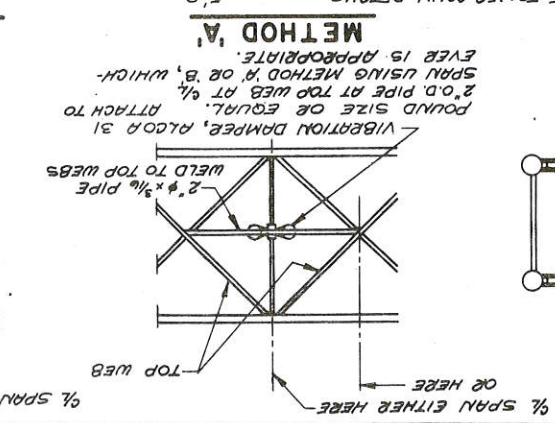
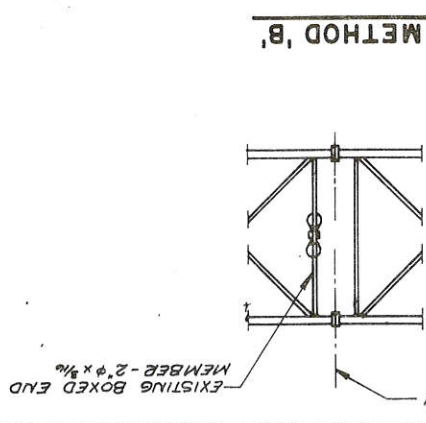
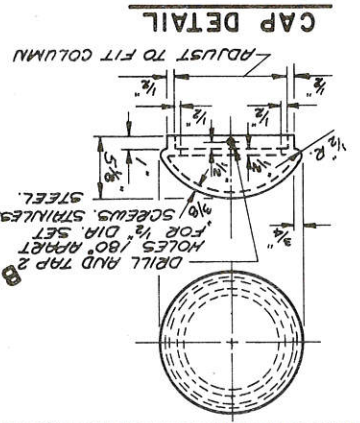
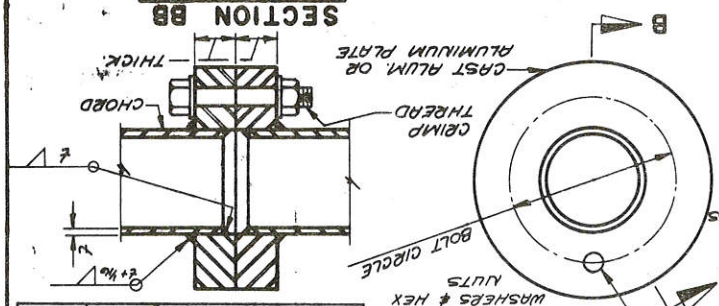
**STRUCTURE S-32-3**

Const. Spec. 1975	Drawn By R.J.G.	Plots Checked
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**SIGN BRIDGE FOOTING TYPE 'F1' & LAYOUT**

SHEET 1 OF 3  
**X62940**

PROJECT ID.	1633-1-71
FEDERAL PROJECT DESIGNATION	8.1
SHEET NUMBER	8.1
TOTAL SHEETS	8.1



**NOTES**

1. A GROUNDING LUG FOR #14-#6 WIRE SHALL BE PROPERLY AFFIXED WITHIN THE HANDHOLE AND ACCESSIBLE FROM THE HANDHOLE.

2. ALL STAINLESS STEEL BOLTS, LOCK WASHERS & NUTS SHALL CONFORM TO A.S.T.M. A276. ANY OF THE THREE HUNDRED SERIES WHICH HAVE A MINIMUM YIELD OF 40,000 P.S.I. & AN ELONGATION OF 15% FOR OVER 1/4\" & 12% UNDER SHALL BE USED.

3. SIGNS OR BLANKS SHALL BE INSTALLED ON TRUSS AT TIME OF ERECTION. BLANKS SHALL BE 1/4\" THE LENGTH OF THE BRIDGE, 1/6\" DEEPER THAN C. TO C. OF CHORDS. & SHALL BE CENTERED ON THE BRIDGE. SIGNS SHALL BE AS DESIGNATED IN PLANS.

**DESIGN DATA**

DEAD LOAD - WT. OF SIGN, SUPPORTING STRUCTURE, CROWL, LIGHTS AND RAIL LUGS.

LIVE LOAD - SINGLE LINE LOAD OF 500 LBS. DISTRIBUTED OVER 2' OF CROWL AND RAIL LUGS.

ICE LOAD - 3 P.S.F. TO 1' FACE OF SIGN & AROUND SURFACE OF MEMBERS.

WIND PRESSURE - 65 M.P.H. TO SIGN REAR AND EXPOSED MEMBERS.

WIND COMBINATIONS

COMBINATION 1

COMBINATION 2

WIND COMBINATIONS

1.00

1.40

1.40

3 DEAD + ICE + 25 P.S.F. WIND

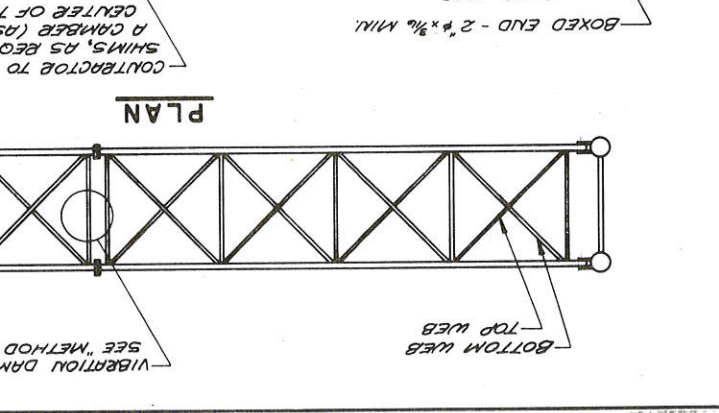
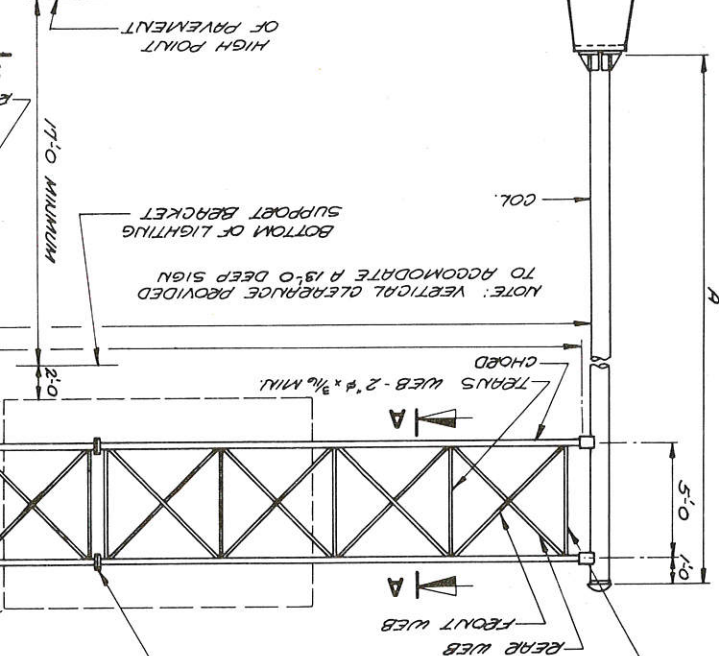
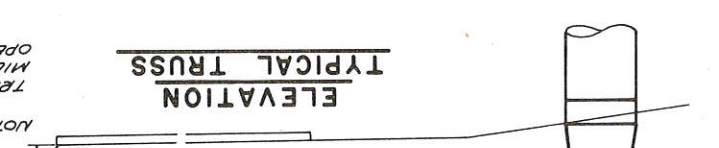
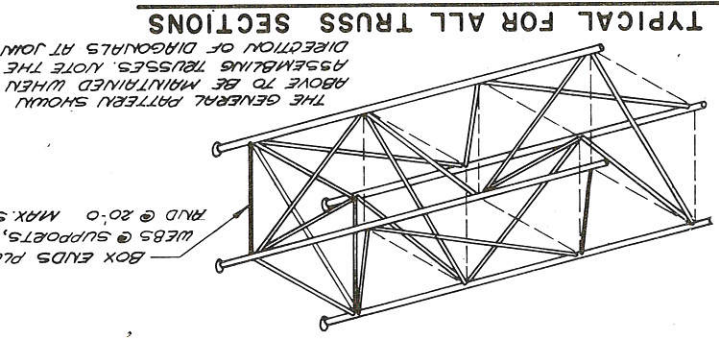
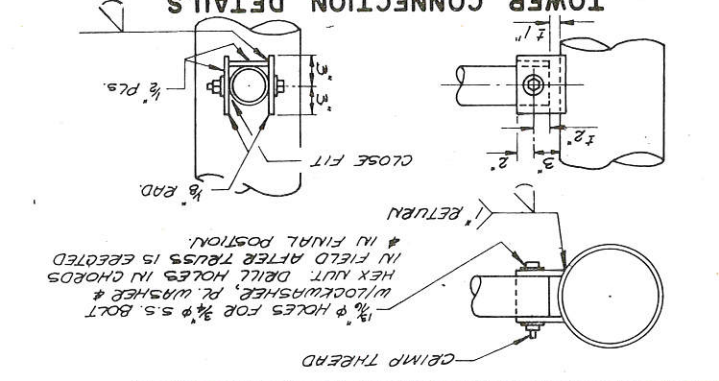
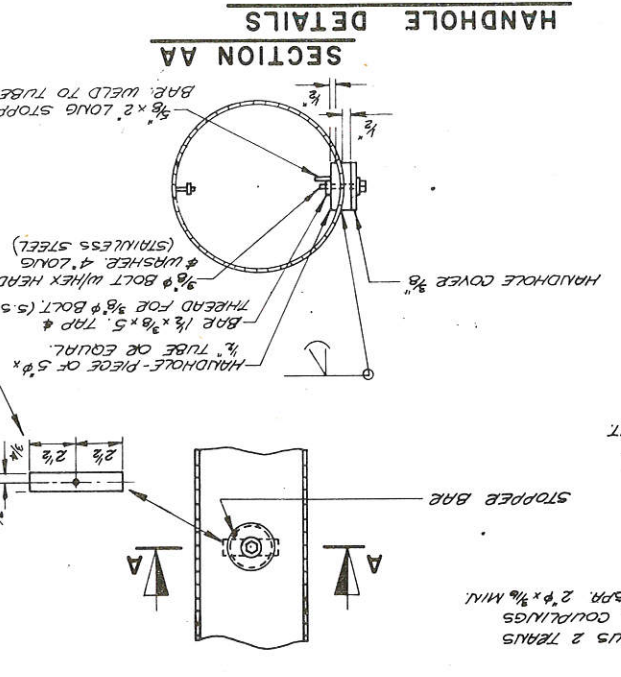
1 DEAD

2 DEAD + WIND

3 DEAD + ICE + 25 P.S.F. WIND

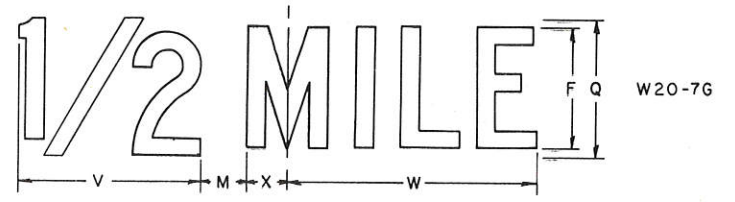
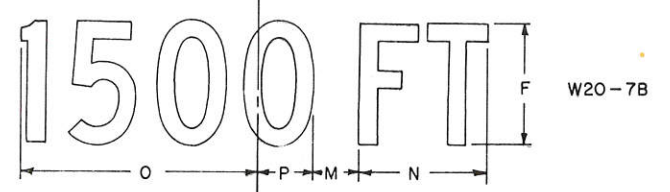
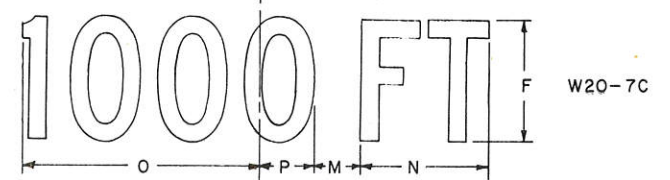
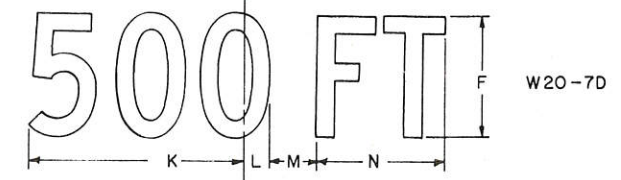
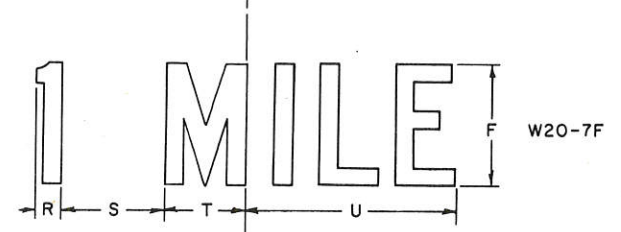
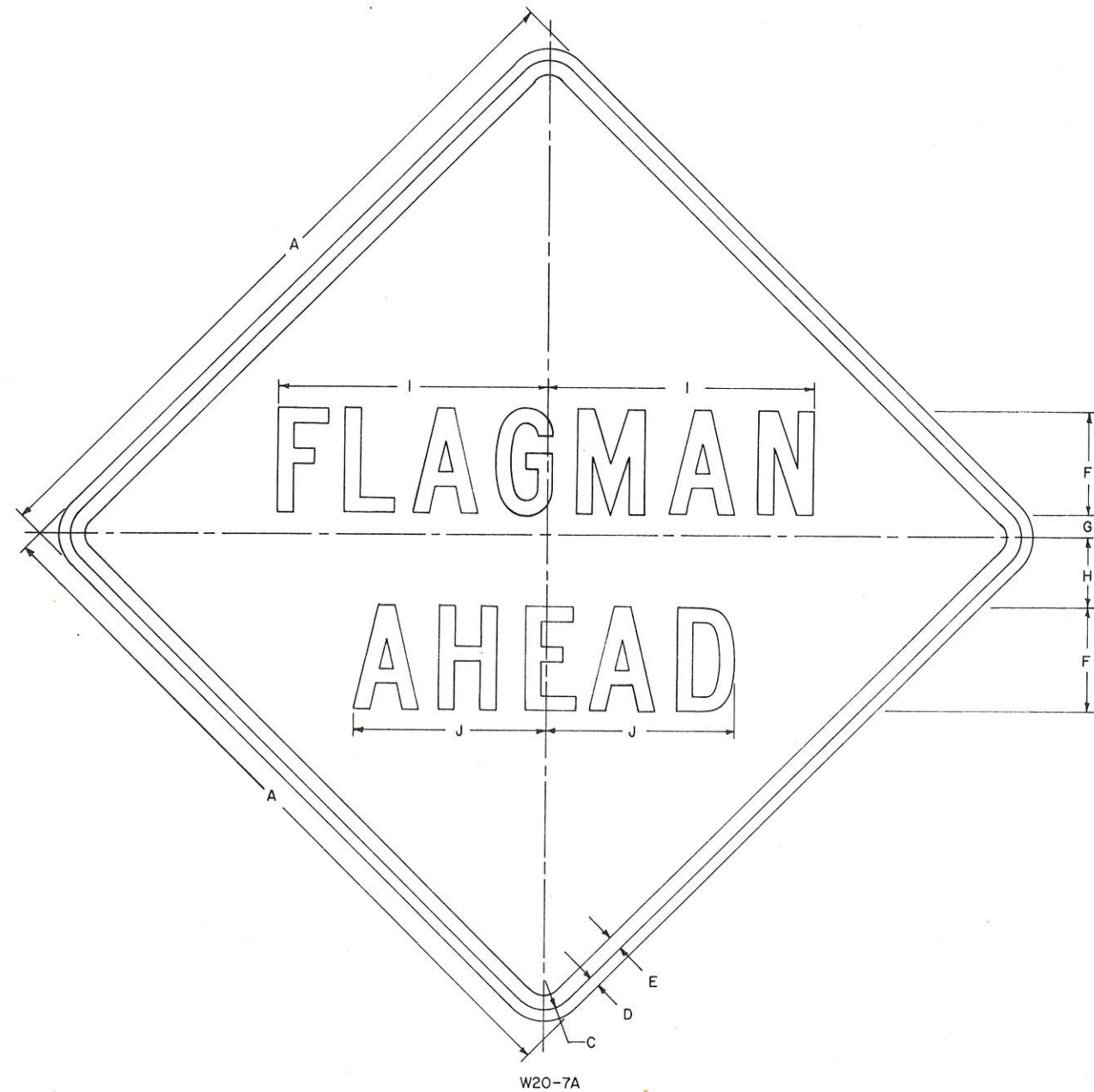
STATE OF WISCONSIN	DEPARTMENT OF TRANSPORTATION	DIVISION OF HIGHWAYS
STRUCTURE S - 32-3	1975	1975
Drawn By R.J.G.	Checked	Checked
Sheet 2 of 3	X62941	ALUMINUM SIGN BRIDGE

BRIDGE	5-52-3	55	4 1/2 x 1/2	2 1/2 x 3/16	2 1/2 x 3/16	8 1/2 x 1/8	4	4 1/2	1	10 1/2 x 5/16	3 1/2 x 3/16	27'-0"	28'-0"	6
CHORD														
FRONT WEB														
REAR WEB														
TOP & COUPLING														
BOLT CIRCLE														
CAMBER														
COLUMN														
WEB														
A														
B														
C														
TOWER A														
TOWER B														





PROJECT I. D.	SHEET NUMBER	TOTAL SHEETS
PROJECT DESIGNATION		



NOTES:

- Sign is Type II
- Color:
  - Background - Non-Reflective Orange
  - Message - Black
- Face Material - Paint
- Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
- All letters & numbers are Series "C"
- Substitute distances shown for "AHEAD" as Code requires.
- This drawing may be scaled for Standard Size only.

SIZE	CODE SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Bid Area Sq. Ft.
Minimum	1	36		15/8	5/8	3/4	5	1 1/8	3 9/16	12 7/8	9 1/16	8 9/16	15/16	1 7/8	5 3/8	9 5/8	2 3/8	6	1	4 1/4	3 5/16	8 11/16	7 3/8	10 1/4	1 11/16		9.00	
Standard	2	48		2 1/4	3/4	1	7	1 1/2	4 3/4	18	12 5/8	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	8	1 7/16	6	4	12 1/8	10 5/8	14 3/8	2 3/8		16.00	
Oversize	3	48		2 1/4	3/4	1	7	1 1/2	4 3/4	18	12 5/8	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	8	1 7/16	6	4	12 1/8	10 5/8	14 3/8	2 3/8		16.00	
Exp-way	4	48		2 1/4	3/4	1	7	1 1/2	4 3/4	18	12 5/8	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	8	1 7/16	6	4	12 1/8	10 5/8	14 3/8	2 3/8		16.00	
Freeway	5	48		2 1/4	3/4	1	7	1 1/2	4 3/4	18	12 5/8	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	8	1 7/16	6	4	12 1/8	10 5/8	14 3/8	2 3/8		16.00	
		AA	BB	CC	DD	EE	FF	GG	HH	II	JJ	KK	LL	MM	NN	OO	PP	QQ	RR	SS	TT	UU	VV	WW	XX	YY	ZZ	
Minimum	1																											
Standard	2																											
Oversize	3																											
Exp-way	4																											
Freeway	5																											

Date Drawn - 7/26/62 Date Redrawn - 9/15/72

Date Revised - 6-23-65  
9-15-72

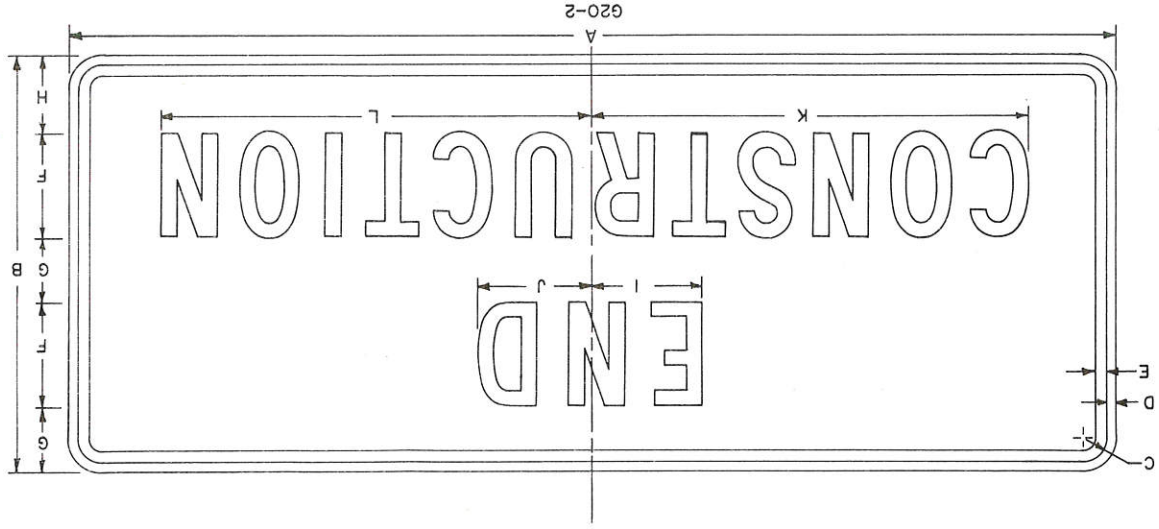
**STANDARD SIGN**  
**W20-7A,B,C,D,F & G**

WISCONSIN DIVISION OF HIGHWAYS

APPROVED *[Signature]*  
CHIEF TRAFFIC ENGINEER

DATE 6-7-78 PLATE NO. W20-74

SIZE	CODE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Bid Area Sq. Ft.
Minimum	1	60	24	1 1/2	1 1/2	1	2	8	5	8	6	3 1/2	4 1/2	4 1/2	6 1/4	6 3/4	25	24 5/8										10.00
Standard	2	60	24	1 1/2	1 1/2	1	2	8	5	8	6	3 1/2	4 1/2	4 1/2	6 1/4	6 3/4	25	24 5/8										10.00
Over-size	3																											
Exp - way	4	60	24	1 1/2	1 1/2	1	2	8	5	8	6	3 1/2	4 1/2	4 1/2	6 1/4	6 3/4	25	24 5/8										10.00
Freeway	5																											



NOTES:

1. Sign is Type II
2. Color:  
Background - ReflectORIZED Orange  
Message - Black
3. Face Material - Reflective Sheeting
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. All letters are Series "C"

PROJECT I.D.	
SHEET NUMBER	
TOTAL SHEETS	

Date Drawn - 8-7-62 Date Redrawn - 4-12-73 *WJR*

Date Revised - 4-12-73 *WJR*  
12-6-77 *WJR*

STANDARD SIGN  
G20-2

WISCONSIN DIVISION OF HIGHWAYS

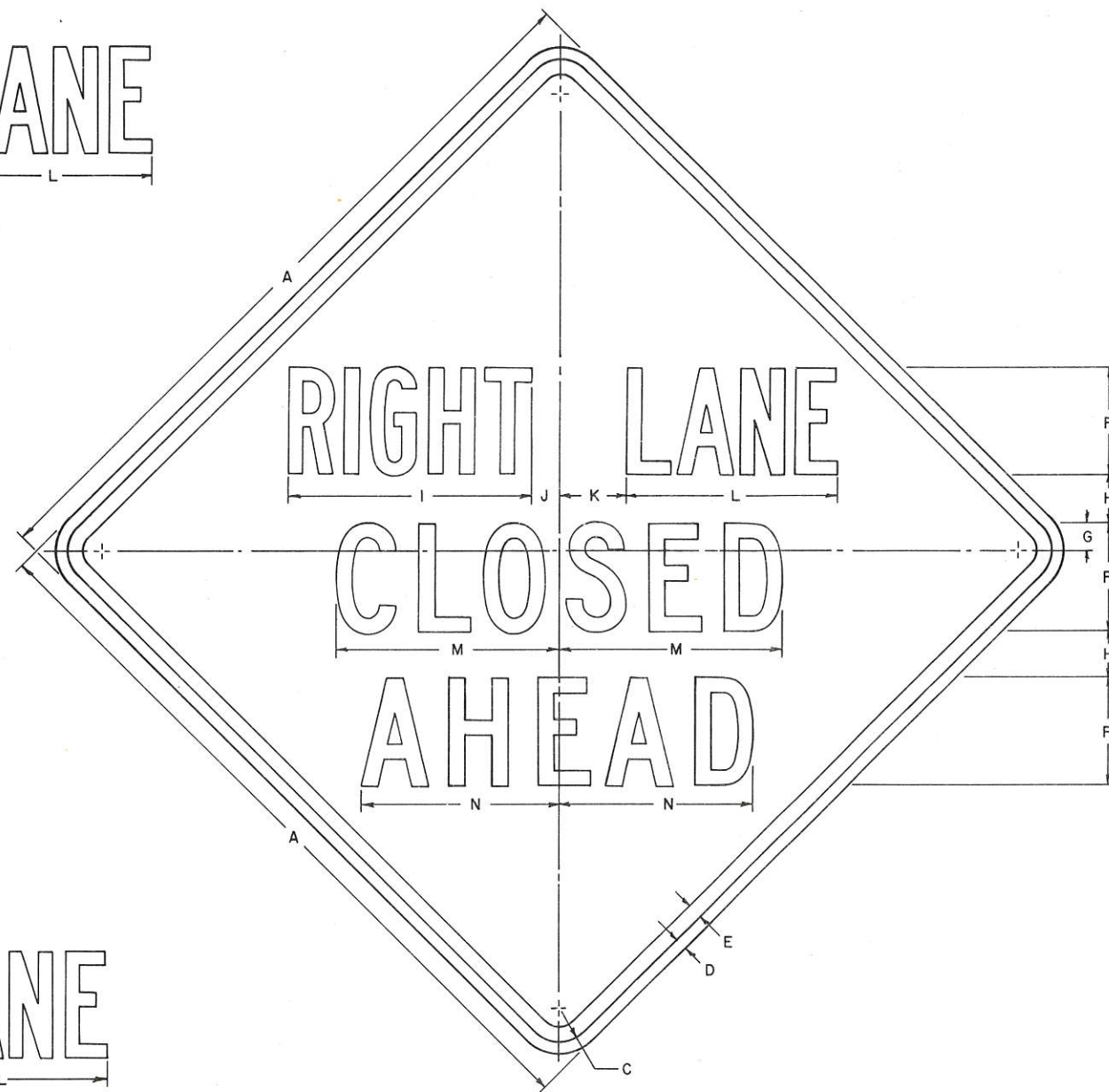
APPROVED *[Signature]*  
CHIEF TRAFFIC ENGINEER

DATE 12-19-77 PLATE NO. G20-2.3

PROJECT I. D.	SHEET NUMBER	TOTAL SHEETS
PROJECT DESIGNATION		

CENTER LANE

W20-56



W20-5A

LEFT LANE

W20-55

1 MILE

W20-5F

500 FT

W20-5D

1000 FT

W20-5C

1500 FT

W20-5B

1/2 MILE

W20-5G

NOTES:

- Sign is Type II
- Color:
  - Background - Reflectorized Orange
  - Message - Black
- Face Material - Reflective Sheeting
- Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
- "\_\_\_ LANE" - Series "B".  
All other copy - Series "C".
- Drawing may be scaled for standard size only.

SIZE	CODE SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Bid Area Sq. Ft.	
Minimum	1	36		15/8	5/8	3/4	5	1 1/4	2 1/4	11 1/4	1 1/4	3 1/8	9 3/4	10 3/8	9 1/16	1 1/4	13 1/8	1 5/16	1 11/16	9 9/16	1 3/16	1 5/16	1	4 1/4	8 11/16	7 3/8	10 1/4	9.0	
Standard	2	48		2 1/4	3/4	1	7	1 3/4	3 1/8	15 3/4	1 3/4	4 3/8	13 5/8	14 1/2	12 5/8	1 3/4	18 3/8	1 7/8	2 3/8	13 3/8	1 5/8	1 7/8	1 7/16	6	12 1/8	10 5/8	14 3/8	16.0	
Oversize	3	48		2 1/4	3/4	1	7	1 3/4	3 1/8	15 3/4	1 3/4	4 3/8	13 5/8	14 1/2	12 5/8	1 3/4	18 3/8	1 7/8	2 3/8	13 3/8	1 5/8	1 7/8	1 7/16	6	12 1/8	10 5/8	14 3/8	16.0	
Exp-way	4	48		2 1/4	3/4	1	7	1 3/4	3 1/8	15 3/4	1 3/4	4 3/8	13 5/8	14 1/2	12 5/8	1 3/4	18 3/8	1 7/8	2 3/8	13 3/8	1 5/8	1 7/8	1 7/16	6	12 1/8	10 5/8	14 3/8	16.0	
Freeway	5	48		2 1/4	3/4	1	7	1 3/4	3 1/8	15 3/4	1 3/4	4 3/8	13 5/8	14 1/2	12 5/8	1 3/4	18 3/8	1 7/8	2 3/8	13 3/8	1 5/8	1 7/8	1 7/16	6	12 1/8	10 5/8	14 3/8	16.0	
		AA	BB	CC	DD	EE	FF	GG	HH	II	JJ	KK	LL	MM	NN	OO	PP	QQ	RR	SS	TT	UU	VV	WW	XX	YY	ZZ		
Minimum	1	8 9/16	2 3/8	1 7/8	5 3/8	9 5/8	3 5/8	6																					
Standard	2	12	3 3/8	2 5/8	7 1/2	13 1/2	4 5/8	8																					
Oversize	3	12	3 3/8	2 5/8	7 1/2	13 1/2	4 5/8	8																					
Exp-way	4	12	3 3/8	2 5/8	7 1/2	13 1/2	4 5/8	8																					
Freeway	5	12	3 3/8	2 5/8	7 1/2	13 1/2	4 5/8	8																					

Date Drawn - 5-4-64 Date Redrawn - 9-18-72

Date Revised - 4-27-78

**STANDARD SIGN**  
W20-5, W20-55, W20-56

WISCONSIN DIVISION OF HIGHWAYS

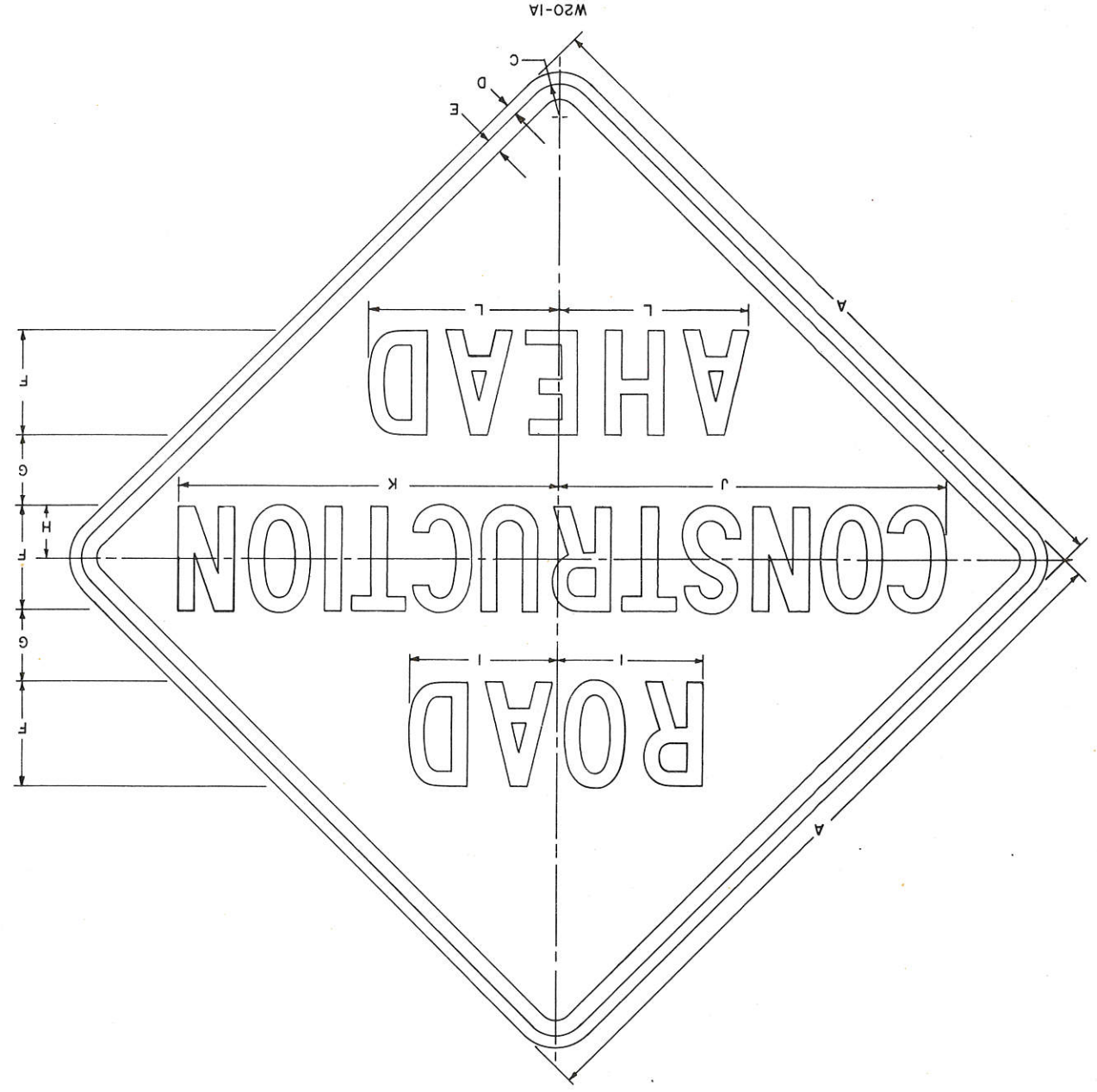
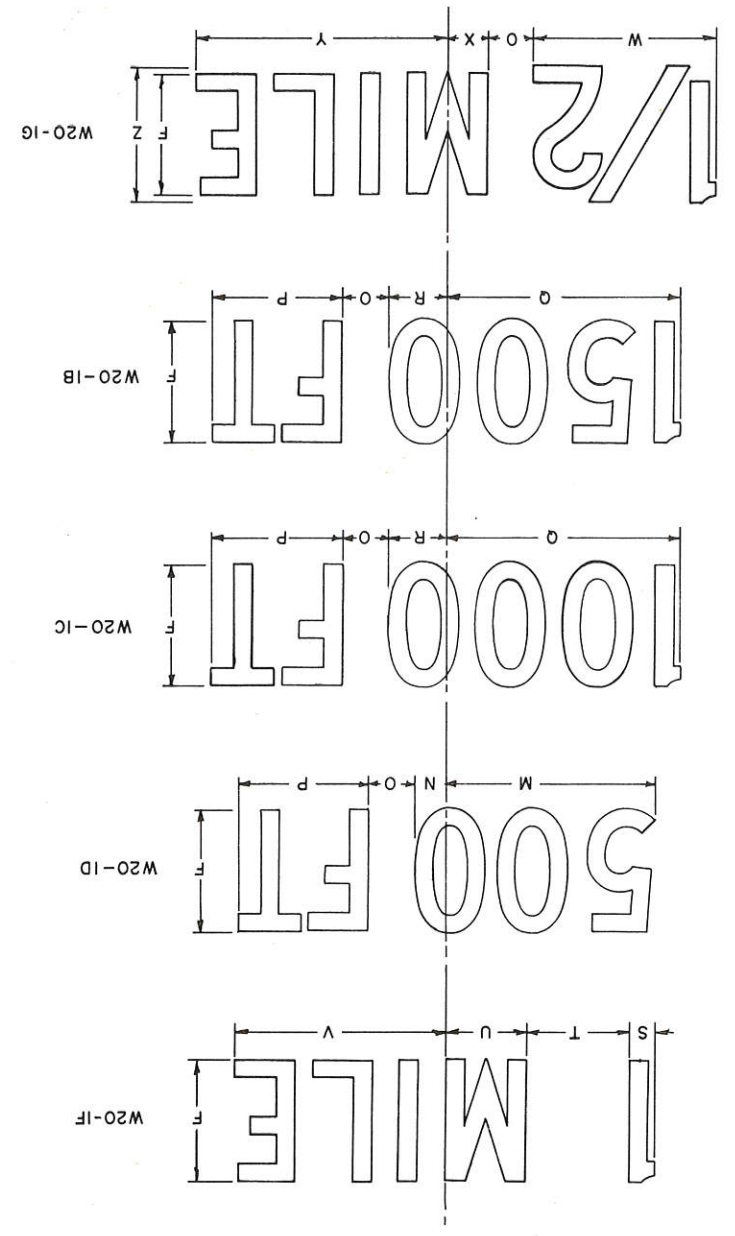
APPROVED CHIEF TRAFFIC ENGINEER

DATE 6-9-78 PLATE NO. W20-5.4

PROJECT I.D.	PROJECT DESIGNATION
SHEET NUMBER	SHEET TOTAL

NOTES:

1. Sign is Type II
2. Color:
  - Background - ReflectORIZED Orange
  - Message - Black
3. Face Material - Reflective Sheeting
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. All letters & numbers are Series "C"
6. Substitute distances shown for "AHEAD" as Code requires.
7. Drawing may be scaled for standard size only.



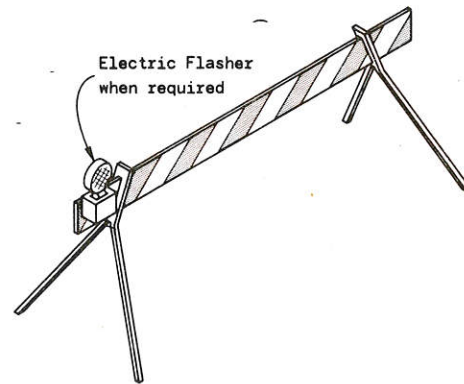
SIZE	CODE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Sq. Ft.
Minimum	1	36	18	5	5	3	3	5	5	2	2	2	2	2	2	2	2	2	2	1	4	3	3	3	3	3	10	6
Standard	2	48	24	7	7	4	4	7	7	3	3	3	3	3	3	3	3	3	3	1	4	4	4	4	4	4	14	8
Enlarge	3	48	24	7	7	4	4	7	7	3	3	3	3	3	3	3	3	3	3	1	4	4	4	4	4	4	14	8
Exp-way	4	48	24	7	7	4	4	7	7	3	3	3	3	3	3	3	3	3	3	1	4	4	4	4	4	4	14	8
Free-way	5	48	24	7	7	4	4	7	7	3	3	3	3	3	3	3	3	3	3	1	4	4	4	4	4	4	14	8
Minimum	1																											
Standard	2																											
Enlarge	3																											
Exp-way	4																											
Free-way	5																											

DATE 6-9-78  
 CHIEF TRAFFIC ENGINEER  
 APPROVED  
 WISCONSIN DIVISION OF HIGHWAYS  
 STANDARD SIGN  
 W20-1A,B,C,D,F & G  
 Date Drawn - 9-17-62 Date Redrawn - 9-8-72  
 Date Revised - 9-7-72 4-28-78

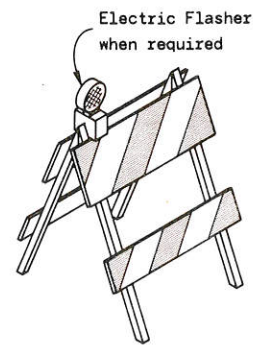
TABLE OF BARRICADE CHARACTERISTICS

BARRICADE TYPE	I	II	III
Height	3' Minimum		5' Minimum
* Rail Width	8" Minimum to 12" Maximum		
Rail Length	2' Minimum to variable Maximum		
** Stripe Width	6" at 45° Angle		
Stripe Colors	Reflectorized Orange & White		

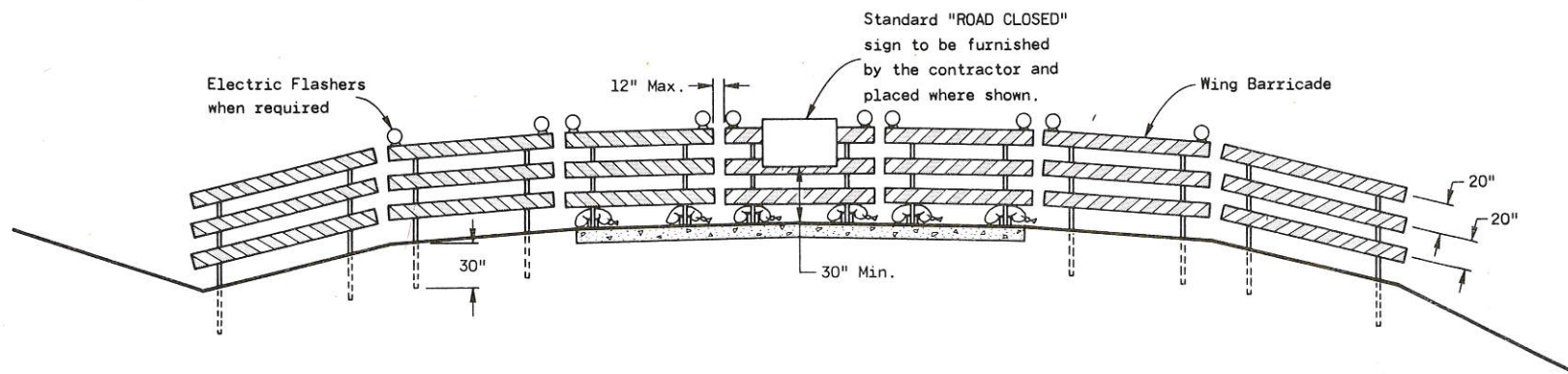
\* Nominal dimensions when barricade is constructed of lumber.  
 \*\* May be 4" for rail lengths less than 3'.



TYPICAL TYPE I BARRICADE

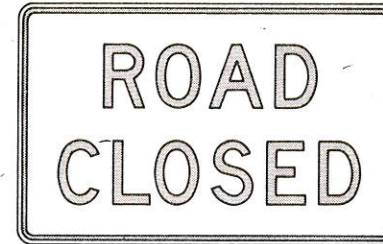


TYPICAL TYPE II BARRICADE



TYPICAL INSTALLATION SHOWING TYPE III BARRICADE

CONSTRUCTION BARRICADES



R11-2  
48" x 30"

Black Lettering on Reflective  
White Background  
Letter Series "D"  
Letter height 8"



W20-3  
48" x 48"

Black Lettering on Reflective  
Orange Background  
Letter Series "D"  
Letter height 7"

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 effected 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.

Each barricade shall have the name and telephone number of a person responsible for 24 hour emergency service printed in letters at least 3/4 inch in height.

CONSTRUCTION BARRICADES  
& STANDARD SIGNS

State of Wisconsin  
Department of Transportation  
Division of Highways

APPROVED  
10-1-76  
DATE

*D. J. Stund*  
CHIEF OF FACILITIES DEVELOPMENT

APPROVED  
10-1-76  
DATE

*W. J. Siedler*  
STATE HIGHWAY ENGINEER

RECOMMENDED FOR APPROVAL  
 DATE 4-26-76  
 APPROVED  
 DATE 4-26-76  
 CHIEF OF FACILITIES DEVELOPMENT  
 STATE HIGHWAY ENGINEERS

State of Wisconsin  
 Department of Transportation  
 Division of Highways

(TYPE A)  
 CHAIN LINK FENCE

Chain Link Fence materials shall conform to the requirements of AASHTO Designation M 181 except that Type IV Vinyl Coated Fabric will not be permitted. The weight of zinc coating on Type I Steel Fabric shall be 2.0 ounces per square foot.

The portion of Aluminum Alloy Posts which will be set in concrete shall be coated with a bituminous or other suitable material to a minimum thickness of 8 mils, and maximum thickness of 20 mils. Coating material shall be set firm before embedding posts in concrete.

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. Details not covered by any of the above shall conform to the Manufacturers Specifications.

Detailed drawings for proposed alternate designs for "Chain Link Fence or Chain Link Fence Gates" shall be submitted to the Engineer for approval. Only one type of Terminal, Gate or Line Post shall be used throughout a project. Ornamental tops are required on all posts except the 3.5" x 3.5" Formed Posts.

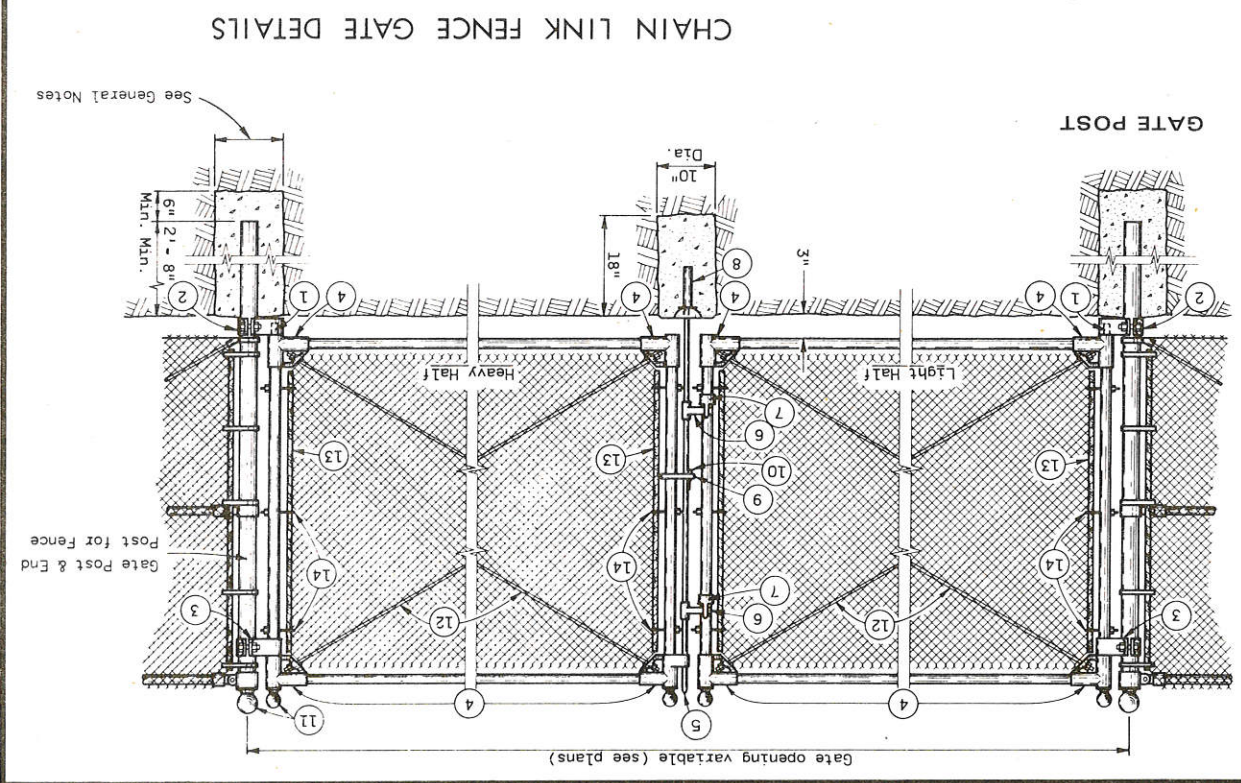
Diameter of Gate Post Footings shall be at least 1 foot larger than Gate Posts.

**GENERAL NOTES**

\* Gate Leaf widths.

Gate Width *	Type	Shape	Outside Dimensions Inches	Weight Lbs. / L.F.	Diameter Inches	Weight Lbs. / L.F.
Over 18 to 23	Steel	Round	8.625	24.70	1.90	2.72
Over 18 to 23	Aluminum	Round	8.625	9.88	1.90	0.94
Over 13 to 18	Steel	Round	6.625	18.97	1.90	2.72
Over 13 to 18	Aluminum	Round	6.625	6.56	1.90	0.94
Over 6 to 13	Steel	Round	4.00	9.10	1.90	2.72
Over 6 to 13	Aluminum	Round	4.00	3.15	1.90	0.94
6 or less	Steel	Formed	3.50 x 3.50	5.10	1.90	2.72
6 or less	Aluminum	Round	2.875	2.00	1.90	0.94
6 or less	Steel	Round	2.875	5.79	1.90	2.72
6 or less	Aluminum	Round	2.875	2.00	1.90	0.94

GATE FRAMES (ALL HEIGHTS)



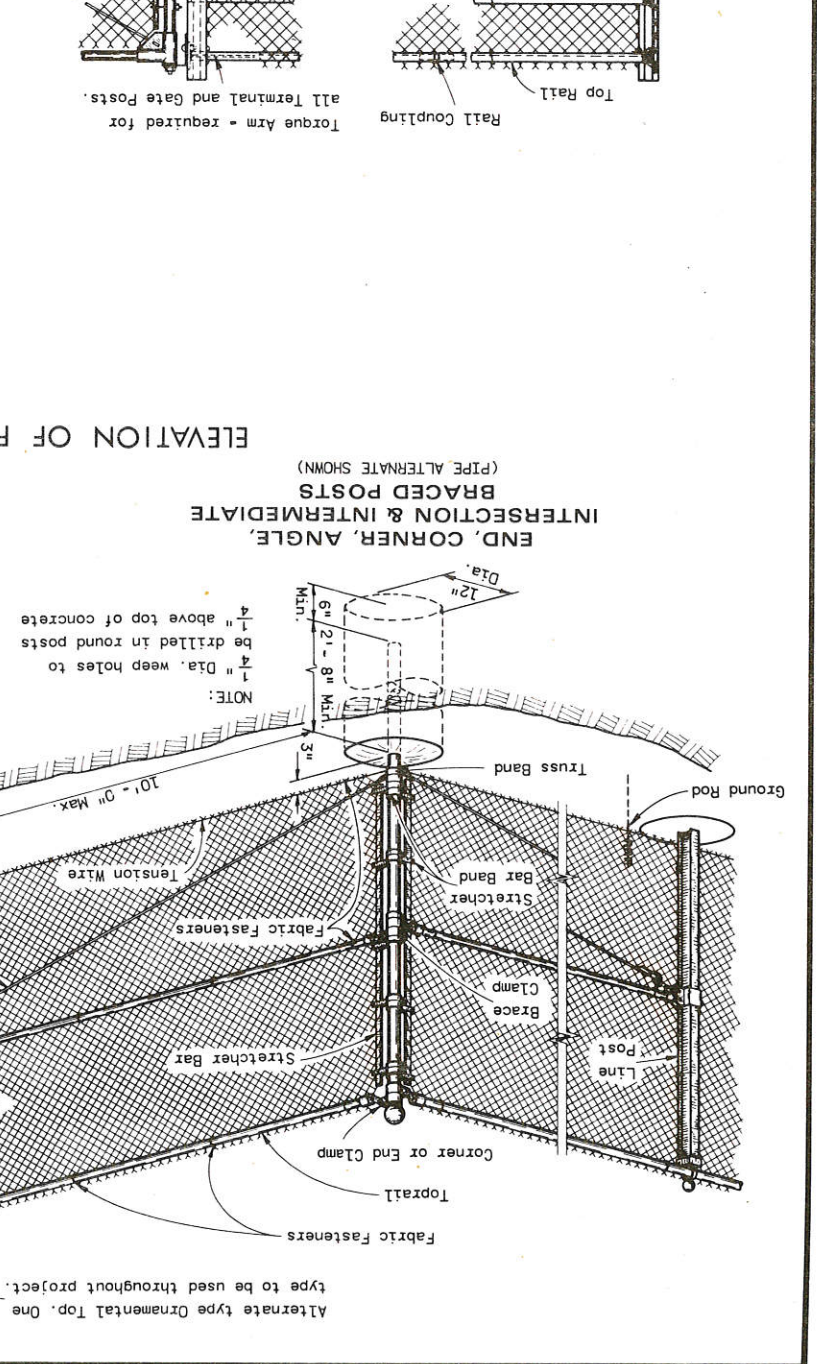
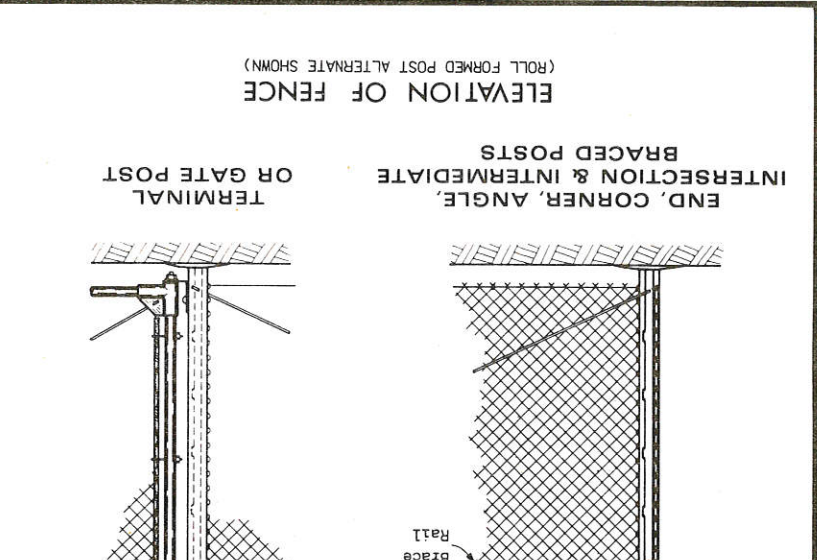
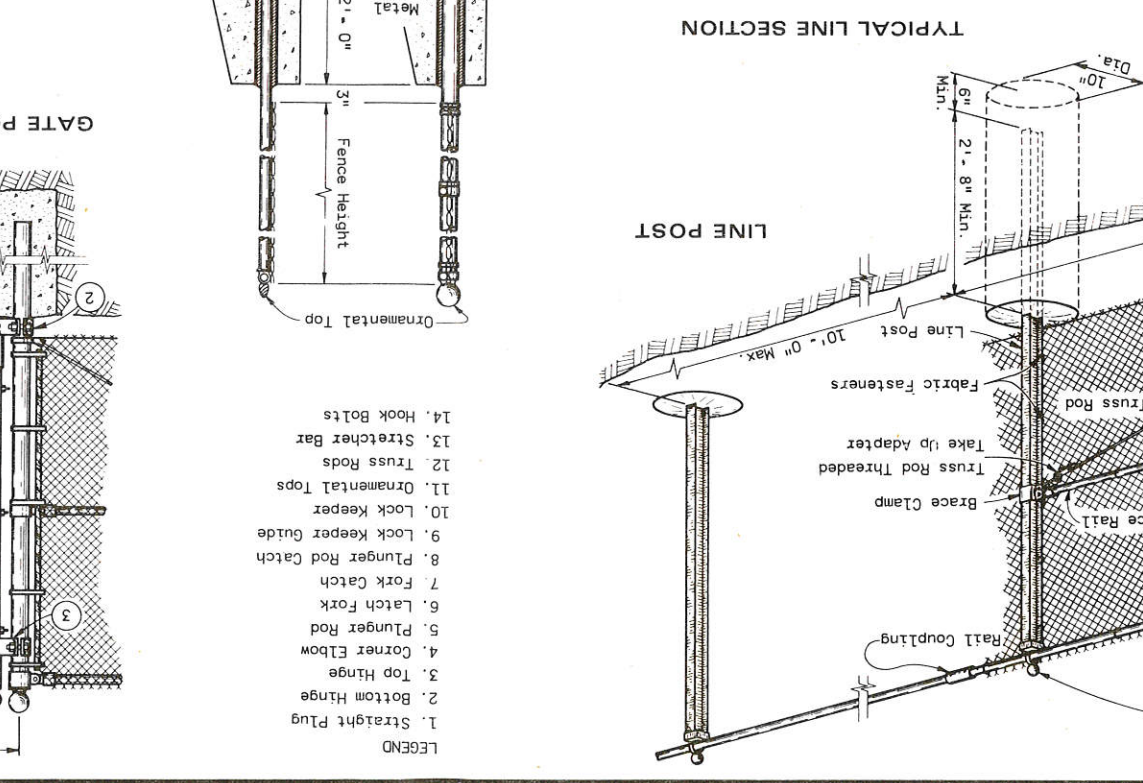
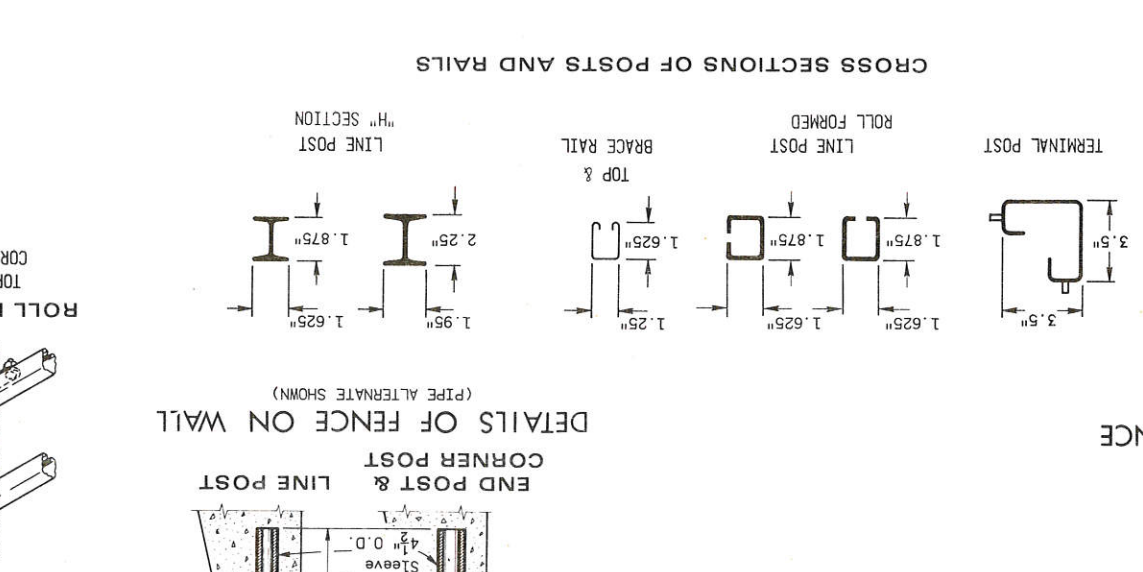
**ALUMINUM ALLOY POSTS**

Use	Feet	Shape	Outside Dimensions Inches	Weight Lbs. / L.F.
Terminal Posts	6 and Less	Round	2.375	2.75
	Over 6	Round	2.875	2.00
All Heights	Formed	3.5 x 3.5	5.10	35 000
	Round	6 and Less	1.90	2.72
Line Posts	6 and Less	"H" Section	1.875 x 1.625	3.26
	Over 6	"H" Section	2.25 x 1.95	4.10
Top Rail & Brace Rail	Formed	Round	1.66	2.27
	Formed	Round	1.66	0.79

**STEEL POSTS**

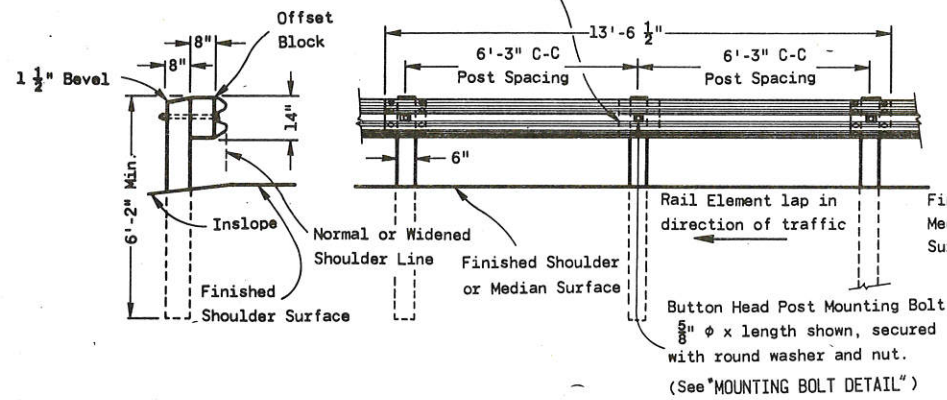
Use	Feet	Shape	Outside Dimensions Inches	Weight Lbs. / L.F.
Terminal Posts	6 and Less	Round	2.375	3.65
	Over 6	Round	2.875	5.79
All Heights	Formed	3.5 x 3.5	5.10	35 000
	Round	6 and Less	1.90	2.72
Line Posts	6 and Less	"H" Section	1.875 x 1.625	3.26
	Over 6	"H" Section	2.25 x 1.95	4.10
Top Rail & Brace Rail	Formed	Round	1.66	2.27
	Formed	Round	1.66	0.79

Includes End, Corner, Angle, Intersection and Intermediate Braced Posts.



One foot long section of rail element, with a  $\frac{3}{4}$ " slotted hole for mounting, shall be placed behind the continuous rail element at the intermediate posts.

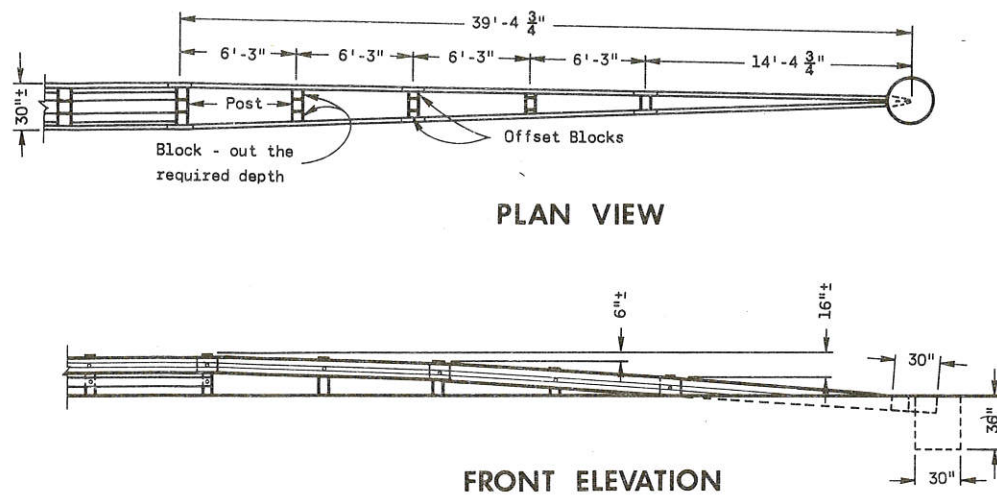
Sawed and treated timber posts and offset blocks shall be furnished and placed in accordance with Standard Specifications. Posts shall be 6" x 8" x 6'-6" and have 6" x 8" x 14" offset blocks.



END ELEVATION

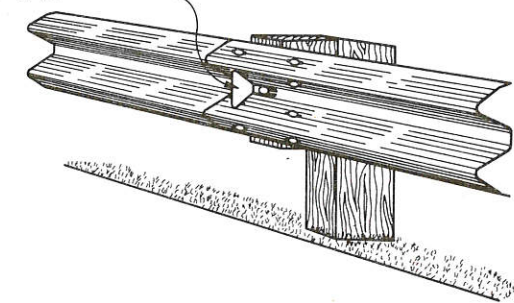
FRONT ELEVATION

END ELEVATION



ANCHOR DETAIL FOR DOUBLE RAIL ELEMENT INSTALLATION

NOTE: (DIVIDED HIGHWAYS) Reflector spacing shall be 50' C-C on installations less than 200' long, with a minimum of 3 reflectors on any installation. For installations 200' or longer, spacing shall be 100' C-C. (COUNTER-DIRECTIONAL HIGHWAYS) Reflector spacing shall be 25' C-C on installations less than 200' long, with a minimum of 6 reflectors on any installation, and every other reflectorized surface shall be reversed. For installations 200' or longer, spacing shall be 50' C-C.

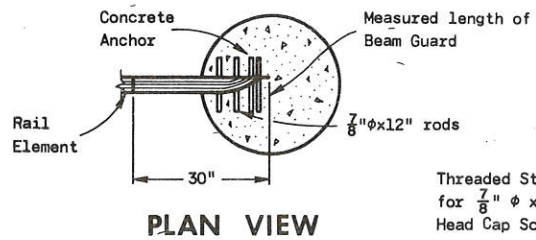


TYPICAL INSTALLATION

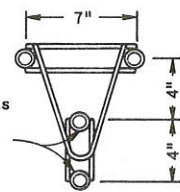
STEEL PLATE BEAM GUARD

STEEL PLATE BEAM MEDIAN GUARD

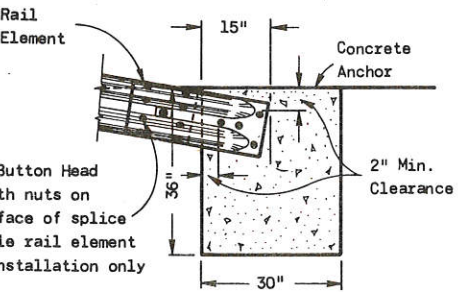
STEEL PLATE BEAM GUARD OR STEEL PLATE BEAM MEDIAN GUARD



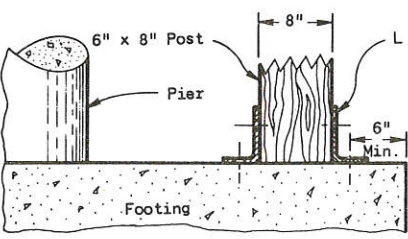
PLAN VIEW



PLAN VIEW

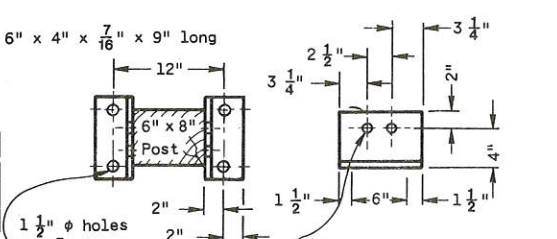


SECTION VIEW ANCHOR DETAIL SINGLE RAIL ELEMENT INSTALLATION



SECTION VIEW

POST FOOTING DETAIL AT PIERS

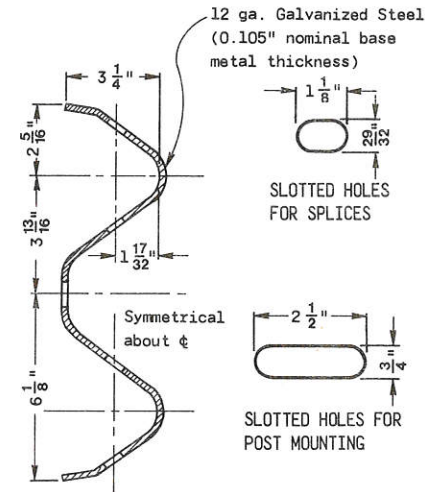


PLAN VIEW

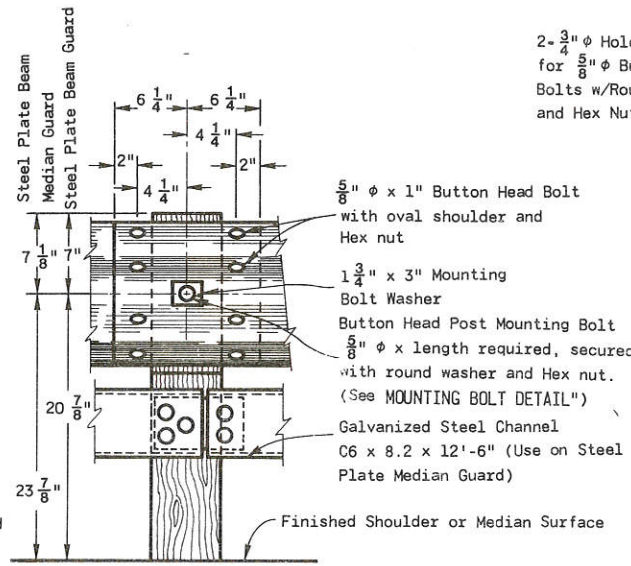
ELEVATION

ELEVATION 4 BOLT INSERT ASSEMBLY

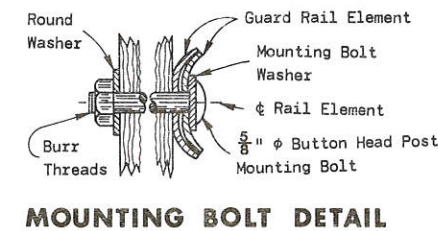
NOTE: Installation of 4 Bolt Insert Assembly (with Cap Screws inserted) to be part of Bridge Contract.



SECTION THRU RAIL ELEMENT

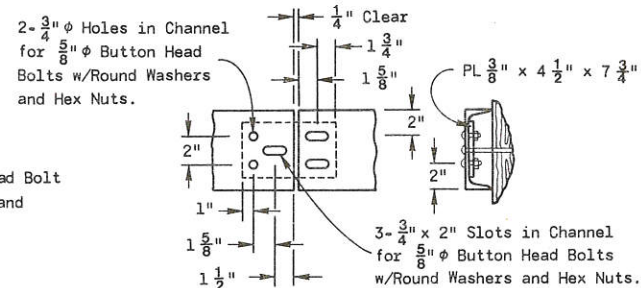


RAIL ELEMENT SPLICING AND POST MOUNTING DETAIL

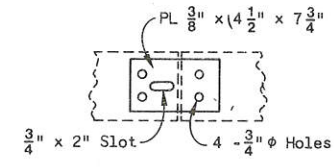


MOUNTING BOLT DETAIL

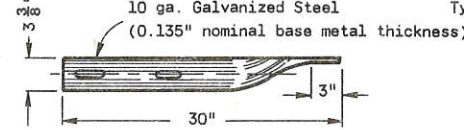
MOUNTING BOLT WASHER



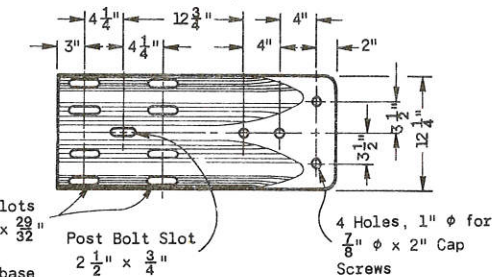
RUB RAIL SPLICE DETAIL



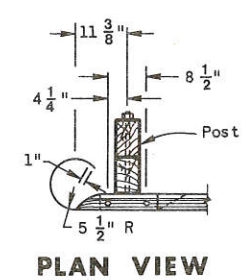
SPLICE PLATE



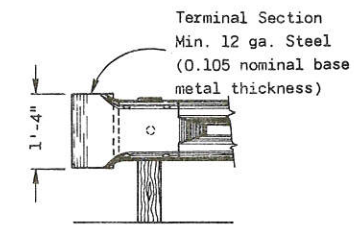
END SHOE DETAIL



END SHOE DETAIL



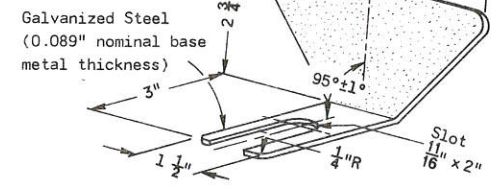
PLAN VIEW



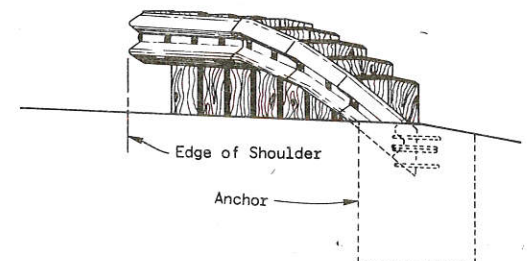
FRONT ELEVATION

TERMINAL SECTION DETAILS

The reflectorized surface shall consist of Silver Reflective Sheeting of the type used as background on Type I, Type II, or Type III signs.



REFLECTOR DETAIL



TYPICAL TERMINAL END ELEVATION

NOTE: THIS STANDARD DETAIL DRAWING CONSISTS OF TWO PLATES, AND BOTH PLATES ARE REQUIRED WHEN THIS STANDARD IS CALLED FOR IN THE PLANS.

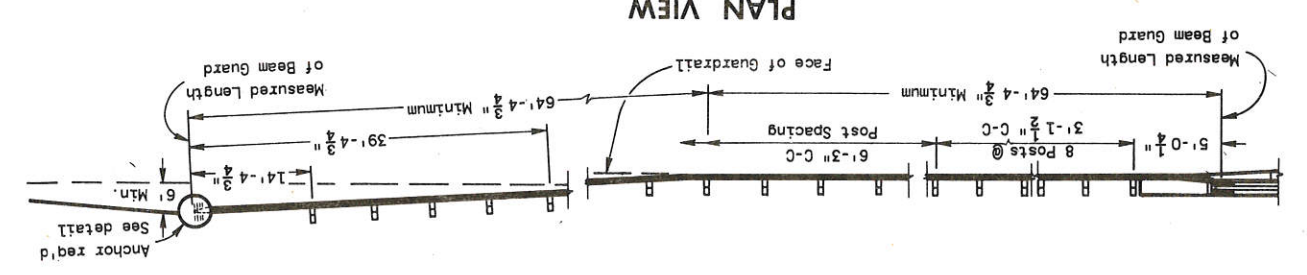
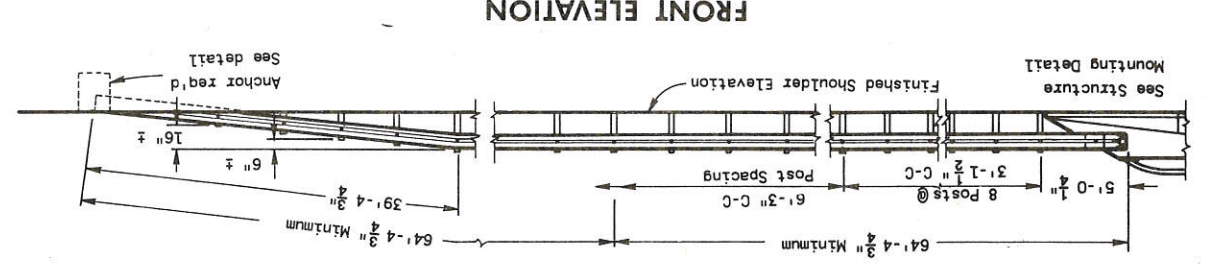
CLASS "A" STEEL PLATE BEAM GUARD & STEEL PLATE BEAM MEDIAN GUARD

State of Wisconsin Department of Transportation Division of Highways

RECOMMENDED FOR APPROVAL DATE 5-7-76 DATE 5-11-76

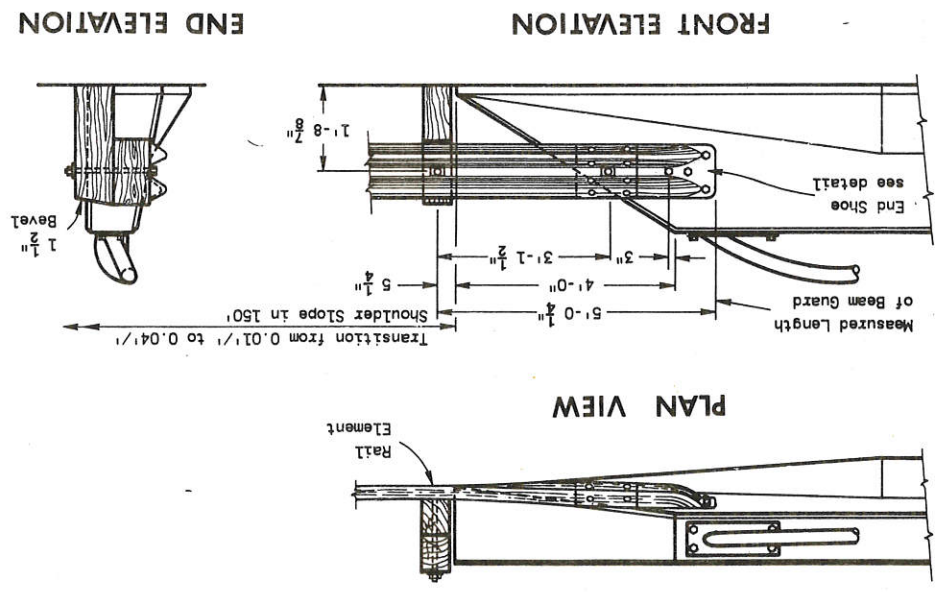
Signature of Chief of Facilities Development and State Highway Engineer

TYPICAL INSTALLATION AT STRUCTURES



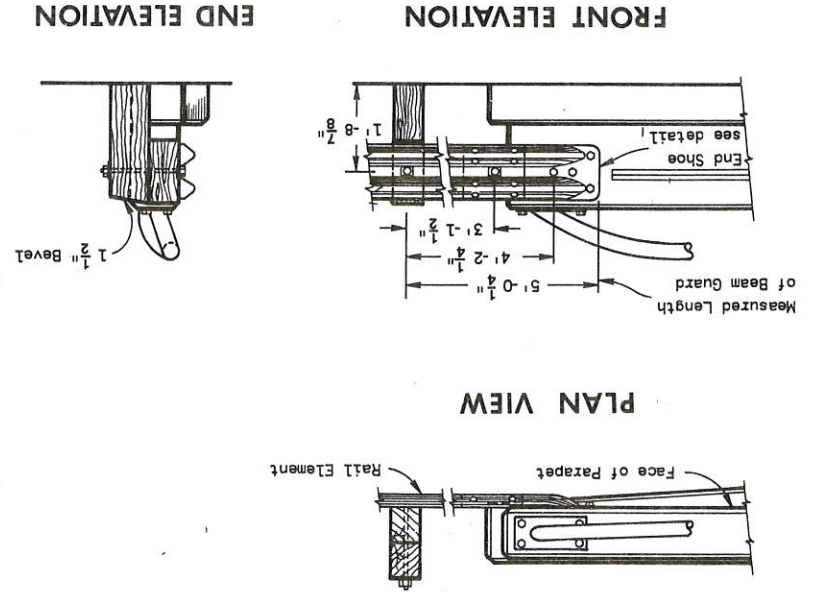
SLOPING TYPE PARAPET WALL

STRUCTURE MOUNTING DETAIL



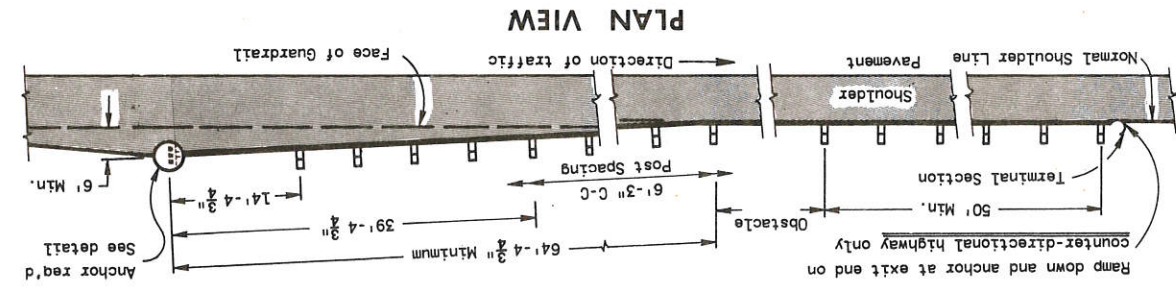
VERTICAL TYPE PARAPET WALL

STRUCTURE MOUNTING DETAIL



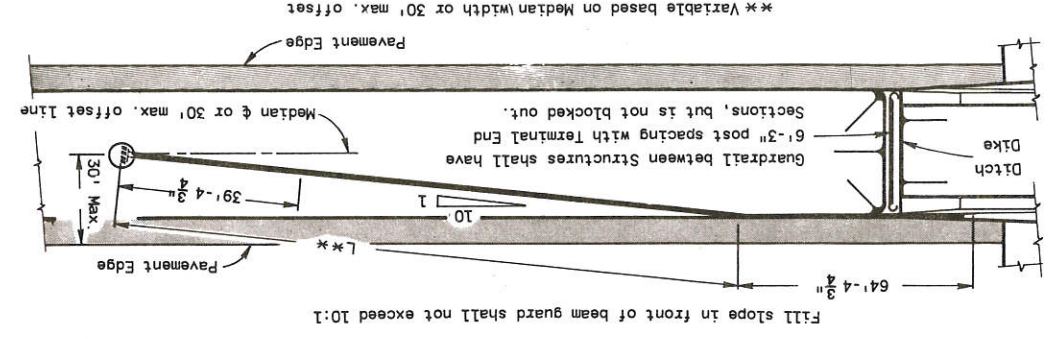
LOCATIONS OTHER THAN STRUCTURES

TYPICAL INSTALLATION AT



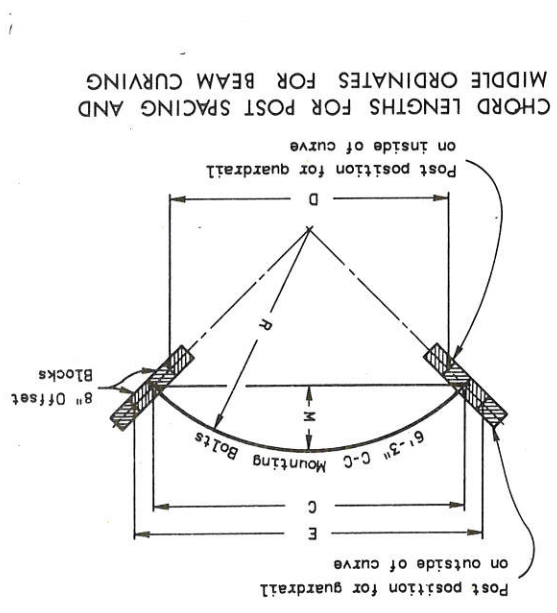
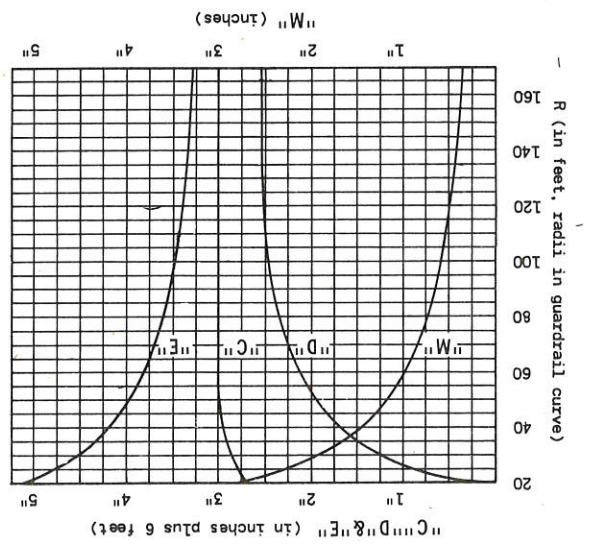
MEDIAN PROTECTION

PLAN VIEW



GENERAL NOTES

CURVE DATA FOR POST SPACING AND BEAM CURVING



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.

The exact location of the beginning and end of each guardrail installation shall be as shown on the plans or as directed by the Engineer.

Square anchor alternates will be permitted. Square anchors shall be a minimum of 24 inches x 24 inches. The shoulder widening to accommodate the anchored end of the guardrail shall be accomplished at the rate of widening not to exceed 15 to 1.

Upon approval of the Engineer, the 6 foot anchor offset may be reduced to nothing for replacement installations where existing conditions will not permit the desirable offset. However, when no offset greater than or equal to 3 feet can be provided, the minimum length of guardrail in advance of an obstacle (obstacle to anchor) shall be 150 feet.

The minimum clearance from the front face of guardrail to obstacle shall be 3 feet unless otherwise shown on contract plans. When clearance is less than 3 feet post spacing shall be reduced to 3 feet - 1 1/2 inches C.C. The "Post Footing Details At Piers" shall be used when more than 3 feet - 6 inches of earth is provided over the top of the footing.

NOTE: THIS STANDARD DETAIL DRAWING CONSISTS OF TWO PLATES, AND BOTH PLATES ARE REQUIRED WHEN THIS STANDARD IS CALLED FOR IN THE PLANS.

CLASS "A"  
STEEL PLATE BEAM GUARD &  
STEEL PLATE BEAM MEDIUM GUARD