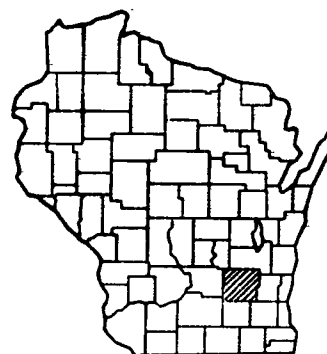


INDEX OF SHEETS

Sheet No.	Title
Sheet No. 1	1
Sheet No. 2	2-2.25 Typical Sections and Details
Sheet No. 3	3-3.4 Estimate of Quantities
Sheet No. 4	4-4.6 Miscellaneous Quantities
Sheet No. 5	5-5.2 Right of Way Plat
Sheet No. 6	6-6.2 Plan and Profile
Sheet No. 7	7-7.13 Standard Detail Drawings
Sheet No. 8	8-8.1 Sign Plates
Sheet No. 9	9-9.1 Structure Plans
Sheet No. 10	10-10.1 Computer Earthwork Data
Sheet No. 11	11-11.1 Cross Sections

TOTAL SHEETS - 99



DESIGN DESIGNATION

A.D.T.	(1990) =	20,400
A.D.T.	(2010) =	26,200
D.M.V.		
B.		50-50
T.		181
V.		65,000
ESAL		N/A

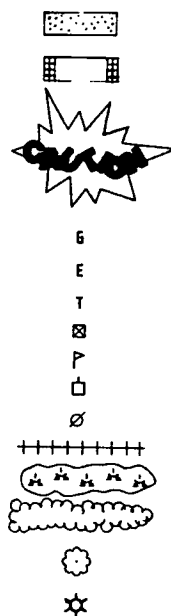
CONVENTIONAL SIGNS

COUNTY LINE	---
CORPORATE LIMITS	----
PROPERTY LINE	-----
LOT LINE	-----
LIMITED HIGHWAY EASEMENT	-----
EXISTING RIGHT OF WAY	-----
NEW RIGHT OF WAY	-----
REFERENCE LINE	-----
SLOPE INTERCEPT	-----
ORIGINAL GROUND	-----
MARSH OR ROCK PROFILE	-----
CULVERT IN PLACE	-----
CULVERT REQUIRED	-----
CULVERT REQUIRED (Profile)	-----

SOD
EROSION MAT

COMBUSTIBLE FLUIDS
(UNDER PRESSURE)
UNDERGROUND UTILITIES
GAS
ELECTRIC
TELEPHONE
SERVICE PEDESTAL
CABLE MARKER
POWER POLE
TELEPHONE POLE
RAILROADS
MARSH
WOODED AREA

TREE
LIGHT



STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

EAST COUNTY LINE-LOMIRA RD.

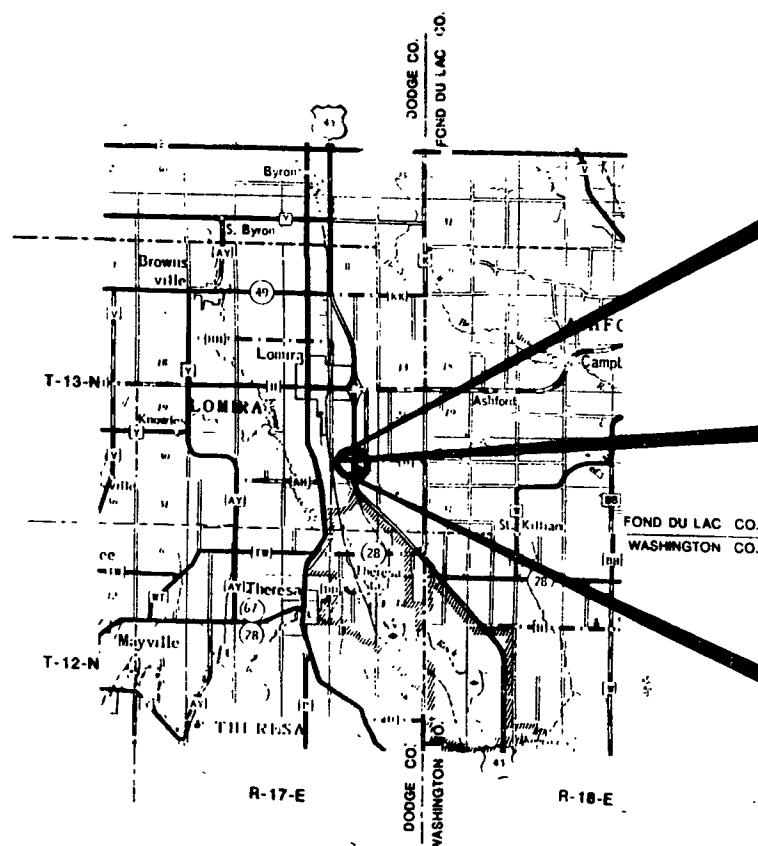
REST AREA NO. 63 IMPROVEMENTS

U.S.H. 41 (SOUTHBOUND)

DODGE COUNTY

STATE PROJECT NUMBER

1104-05-71



END PROJECT
STA. 1312+18.16

SOUTHBOUND
REST AREA
PROJECT 1104-05-71

BEGIN PROJECT
STA. 1268+00.00
N. 570,420.43
E. 2,417,022.73

LAYOUT
SCALE 0 2 MI.

TOTAL NET LENGTH OF CENTERLINE = 0.000 MI.

COORDINATES ON THIS PLAN ARE REFERENCED TO
THE WISCONSIN COORDINATE SYSTEM, SOUTH ZONE.

STATE PROJECT

1104-05-71

FEDERAL PROJECT

PROJECT

CONTRACT

ORIGINAL PLANS PREPARED BY



10-29-93
Date

Mark Lilegard
Signature

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor G.A.S.
Designer G.A.S.
District Examiner
District Supervisor
Proj. Dev. Engineer
C.D. Examiner J.E.G.

APPROVED FOR DISTRICT OFFICE

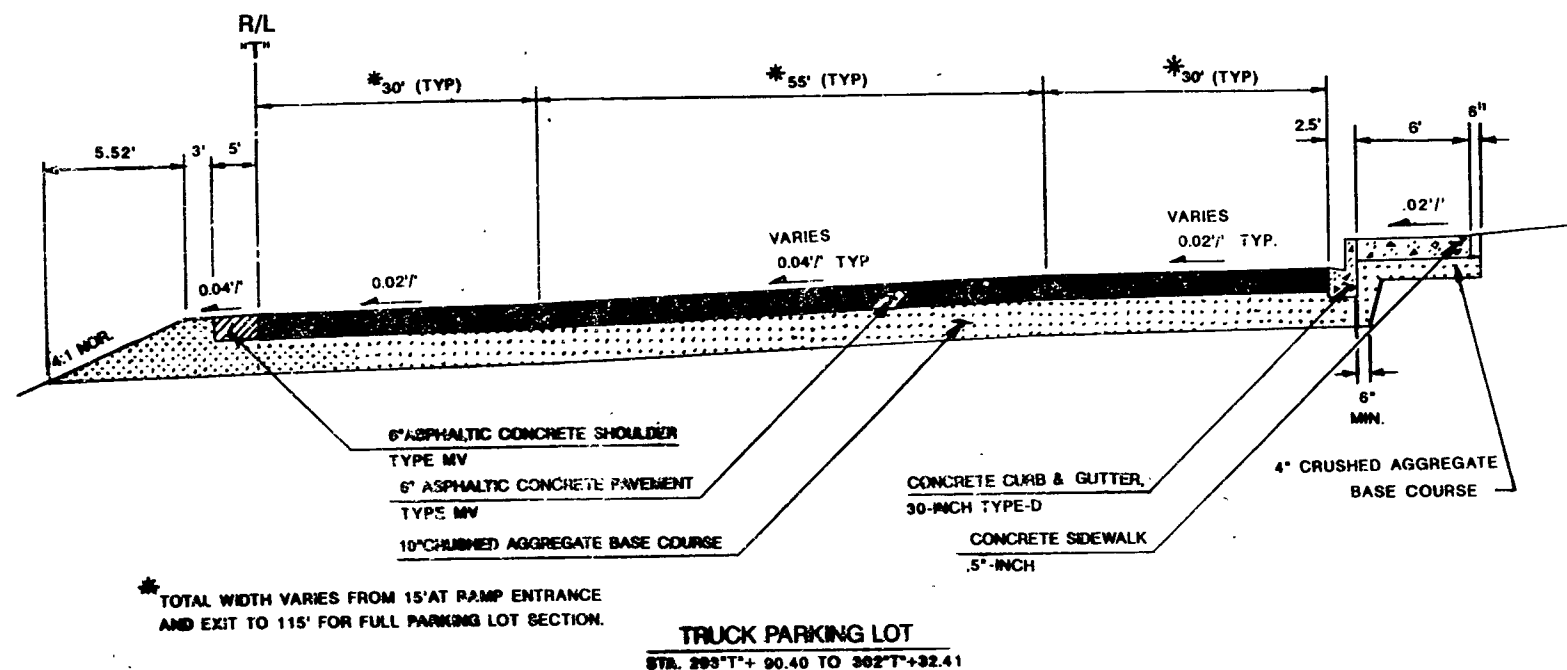
DATE: 1-10-94 Robert R. Padden
(Signature)

AUTHORIZED FOR CENTRAL OFFICE TRAFFIC

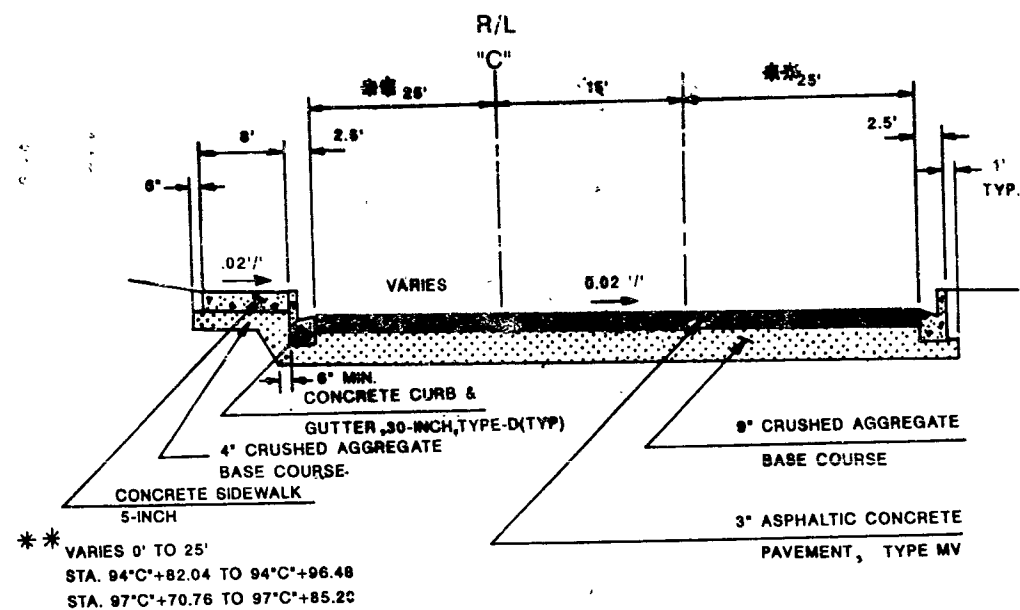
DATE: 2-28-94 Charles J. Spang
(Signature)

AUTHORIZED FOR CENTRAL OFFICE DESIGN

DATE: 2/4/94 Robert W. By
(Signature)



TRUCK PARKING LOT
STA. 293\"/>



CAR PARKING LOT
STA. 94\"/>

STANDARD DETAIL DRAWINGS

- | | |
|--------------|---|
| 8A5-9a, b | Inlet Covers A & B |
| 8C1-5 | Inlets, Types 1, 2, and 3 |
| 8D1-11 | Concrete Curb, Concrete Curb and Gutter and Pavement Ties |
| 8D5-8 | Curb Ramps |
| 8E8-2 | Typical Installations of Erosion Bales |
| 8E9-4 | Silt Fence |
| 8F1-11 | Apron Endwalls for Culvert Pipe |
| 8F2-1 | Apron Endwalls for Pipe Arch and Elliptical Pipe |
| 8F4-5 | Joint Ties for Concrete Pipe |
| 8F7-2 | STEEL APRON ENDWALLS, SLOPED SECTION, FOR C/P AND PIPE ARCHES |
| 9B2-5 | CONDUIT |
| 9B4-1 | PULL BOXES |
| 9C2-1 | CONCRETE BASES |
| 9E1-1d | Pole Mountings for Lighting Units, Type 5 |
| 9E1-1e | Hardware Details for Pole Mountings |
| 9E3-1 | Non-Freeway Lighting Unit Pole Wiring |
| 9E4-1 | Walkway Lighting Unit & Concrete Base, Type II |
| 14B15-1a | Class "A" Steel Plate Beam Guard, Installation & Elements |
| 14B15-1b | Class "A" Steel Plate Beam Guard, Post Mounting on Pier Footings and Culverts |
| 14B16-1a & b | Class "A" Steel Plate Beam Guard End Treatment with Anchorage Type 1 & 2 |
| 15A2-4 | Delineator Posts, Delineator Bracket, and Delineators |
| 15B1-7a & 7b | WOVEN WIRE FENCE |
| 15C2-2 | Barricades and Traffic Control for Road Closures |
| 15C8-6E | Pavement Marking (Ramps and Gores) |
| 14B18-1a | CLASS A STEEL PLATE BEAM GUARD (AT BRIDGES, OBSTACLES, SIDEROADS/DRIVEWAYS) |
| 15C8-6E | PAVEMENT MARKING (MAINLINE, INTERSECTION, AND TEMPORARY MARKING) |

GENERAL NOTES

NO TREES AND/OR SHRUBS ARE TO BE REMOVED WITHOUT APPROVAL OF THE ENGINEER.

THE LOCATION OF EXISTING AND PROPOSED UTILITY INSTALLATIONS AS SHOWN ON THE PLANS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT AREA THAT ARE NOT SHOWN.

CURB AND GUTTER JOINT SPACING SHALL BE 20 FEET UNLESS OTHERWISE AUTHORIZED BY THE ENGINEER IN THE FIELD.

THE THICKNESS OF THE VARIOUS COURSES OF ASPHALTIC CONCRETE SHALL BE AS SHOWN ON THE TYPICAL CROSS SECTIONS.

ASPHALTIC CONCRETE, WHERE INDICATED ON THE PLANS, SHALL CONSIST OF COURSES AS FOLLOWS:

3" THICKNESS 1-3/4" BINDER COURSE AND 1-1/4" SURFACE COURSE

6" THICKNESS 2-1/4" BINDER COURSE, 2-1/4" BINDER COURSE AND 1-1/2" SURFACE COURSE

WHEN THE QUANTITY OF THE ITEM OF BASE OR SURFACE COURSE IS MEASURED BY THE TON, THE DEPTH THICKNESS OF THE COURSE SHOWN ON THE PLANS IS APPROXIMATE AND THE ACTUAL THICKNESS WILL DEPEND ON THE DISTRIBUTION OF THE MATERIAL AS DIRECTED BY THE ENGINEER.

TO AVOID SOIL COMPACTION AND DAMAGE TO WOODED AREAS, NO VEHICLES, EQUIPMENT, OR MATERIALS SHALL BE PARKED OR STORED OUTSIDE OF THE IMMEDIATE CONSTRUCTION LIMITS OR AREAS PRESENTLY DESIGNATED FOR VEHICULAR USE

UTILITIES

WISCONSIN ELECTRIC POWER CO
P.O. BOX 119
920 INDIANA AVE
WEST BEND, WI. 53095
LEO SCHUELLER
(414)338-7623

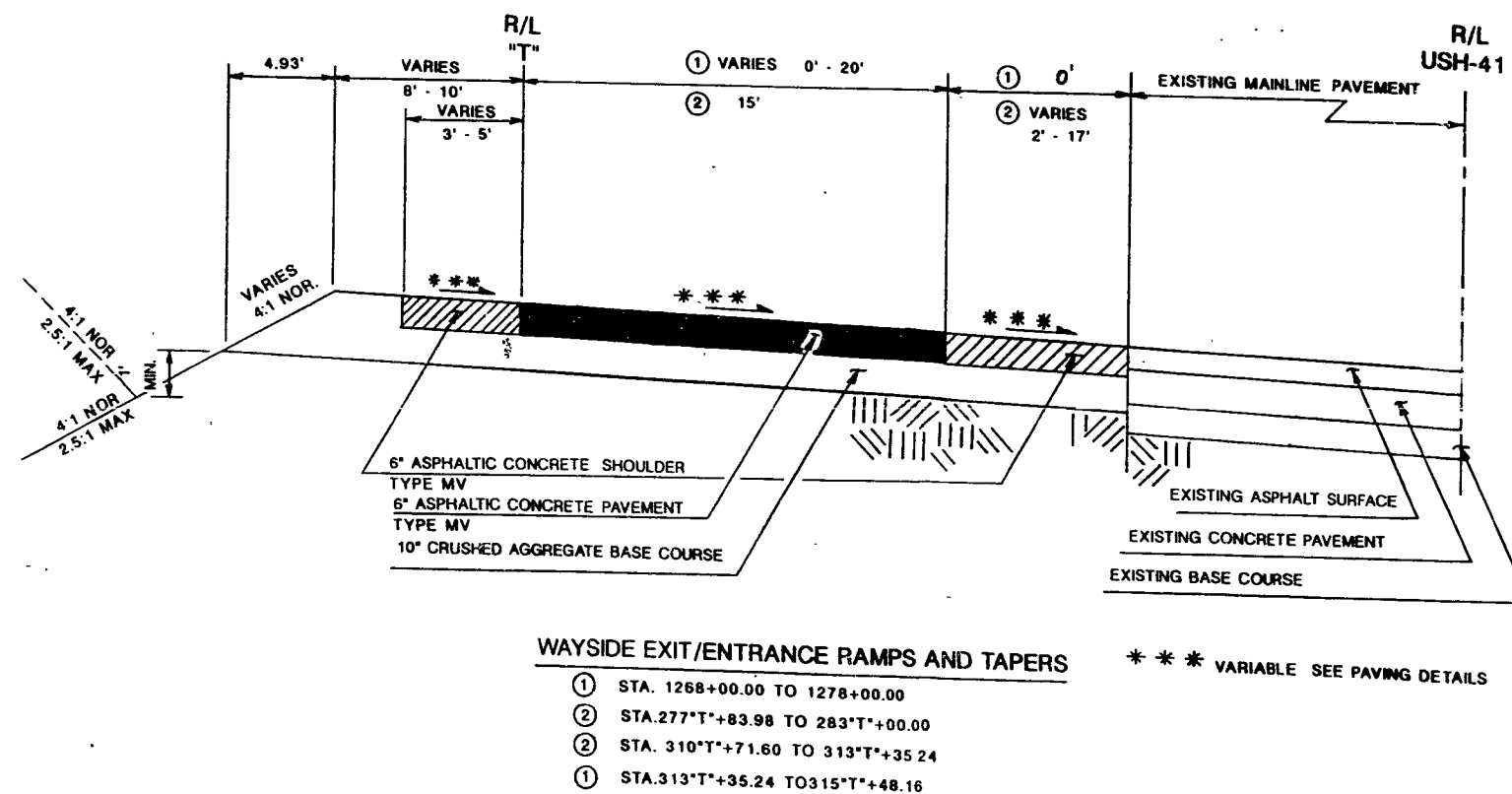
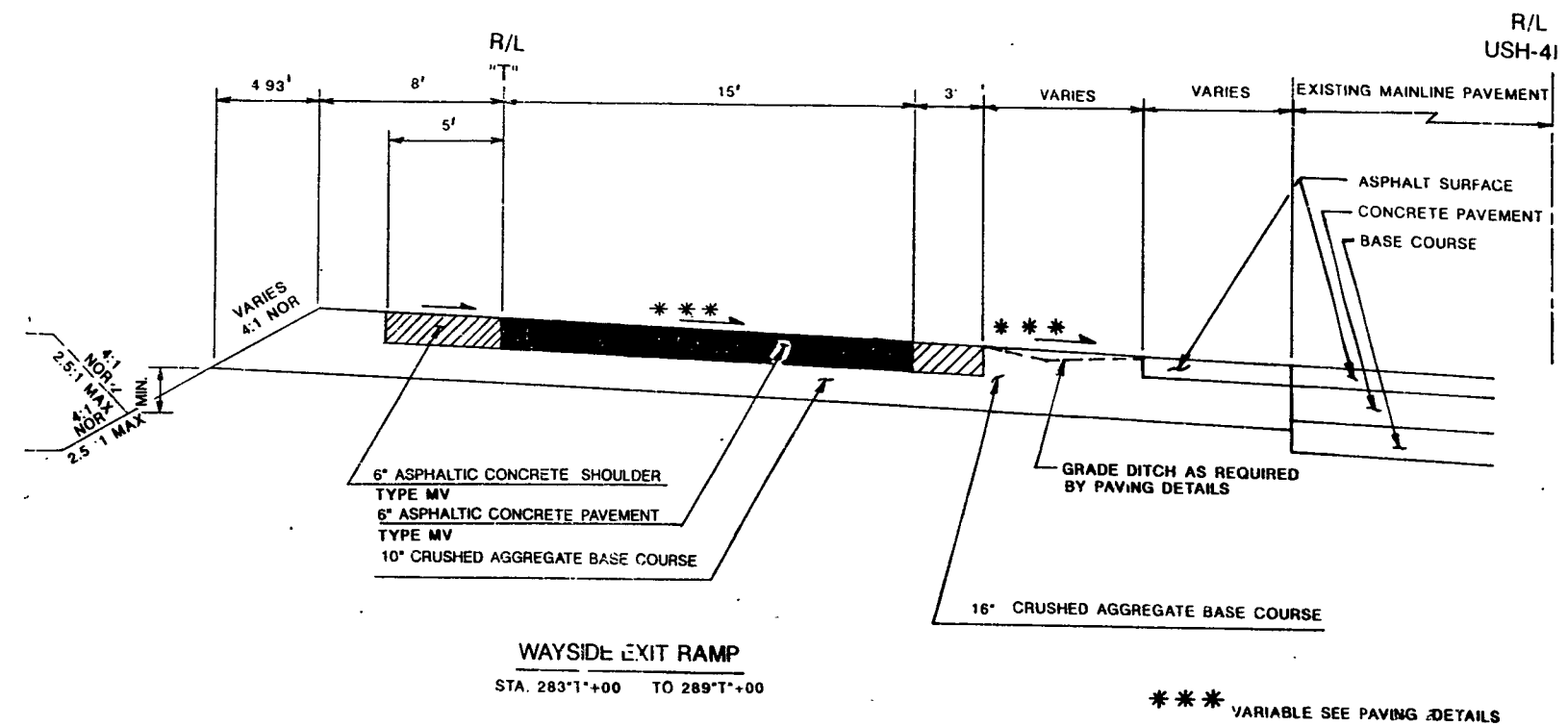
GENERAL TELEPHONE CO
107 PLEASANT VIEW DR
PLYMOUTH, WI. 53073
RAY MEWES
(414)893-7437



IN WISCONSIN
1-800-242-8511
OUTSIDE WISCONSIN
1-800-922-6576



STATE PROJECT NUMBER	SHEET NO
1104-05-71	22
TYPICAL SECTIONS	



DESIGN DATA

WIND - 15 M.P.H.
WIND COMPONENTS - NORMAL & TRANSVERSE = 100
ICE LOAD = 3 P.S.F.
GROUP LOADS PERCENT OF ALLOWABLE STRESS

1. DEAD	100
2. DEAD & WIND	140
3. DEAD, ICE & WIND	140

ALLOWABLE SOIL PRESSURE = $1/2$ T / SQ. FT.
WIND LOAD WAS APPLIED TO THE AREA OF THE SIGN AND TO THE SUPPORTING MEMBERS.
ICE LOAD WAS APPLIED TO ONE FACE OF THE SIGN AND AROUND THE SURFACE OF THE SUPPORTING MEMBERS.

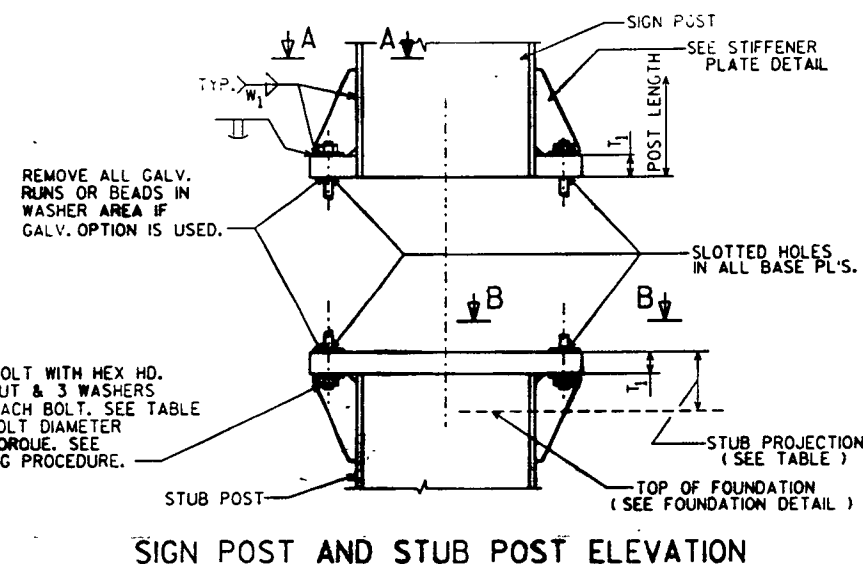
GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.
DESIGN CONFORMS WITH A.A.S.H.T.O. SPECIFICATIONS 1988.
ALL POSTS, POST STUBS & ATTACHMENTS SHALL BE A.S.T.M. A572 GRADE 50, EXCEPT WHERE CONTRACT REQUIRES A588.
IF A572 MATERIAL IS USED, THE POST, BASE PLATES, UPPER SIX INCHES OF STUB POST, FLANGE SPLICE PLATE AND FUSE PLATE SHALL BE GALVANIZED AFTER FABRICATION.
H. S. BOLTS, WASHERS & NUTS SHALL BE A325 TYPE 3 NOT GALVANIZED. THIS APPLIES TO A572 AS WELL AS A588 POSTS. ⑤

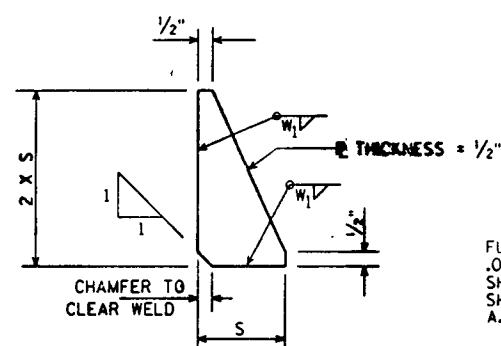
BOLTING PROCEDURE - BASE CONNECTION

1. ASSEMBLE SIGN POST TO STUB POST WITH BOLTS AND ONE OF THE FLAT WASHERS ON EACH BOLT BETW. PLATES.
2. SHIM AS REQ'D. TO PLUMB POST.
3. TIGHTEN ALL BOLTS THE MAXIMUM POSSIBLE WITH 12" OR 15" WRENCH TO BED WASHERS & SHIMS AND TO CLEAN BOLT THREADS, THEN LOOSEN EACH BOLT IN TURN AND RETIGHTEN IN A SYSTEMATIC ORDER TO THE PRESCRIBED TORQUE. (SEE TABLE)
4. BURR THREADS AT JUNCTION WITH NUT USING A CENTER PUNCH TO PREVENT NUT LOOSENING.

NOTE:
TIGHTEN THE HIGH STRENGTH BOLTS TO THE TORQUE SHOWN.
DO NOT OVERTIGHTEN.

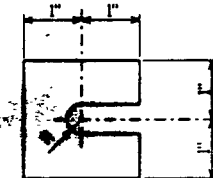


SIGN POST AND STUB POST ELEVATION



STIFFENER PLATE DETAIL

(SEE TABLE FOR DIMENSIONS)

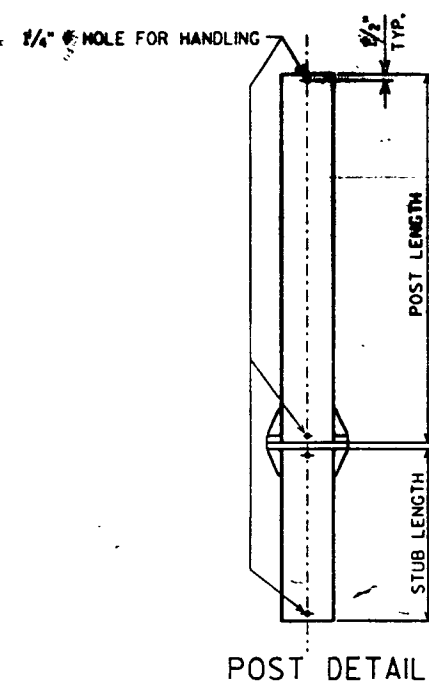


FURNISH 2 @ .012" ± THICK AND 2 @ .032" ± THICK SHIMS PER POST. SHIMS SHALL BE FABRICATED FROM BRASS SHIM STOCK OR STRIP CONFORMING TO A.S.T.M. - B36.

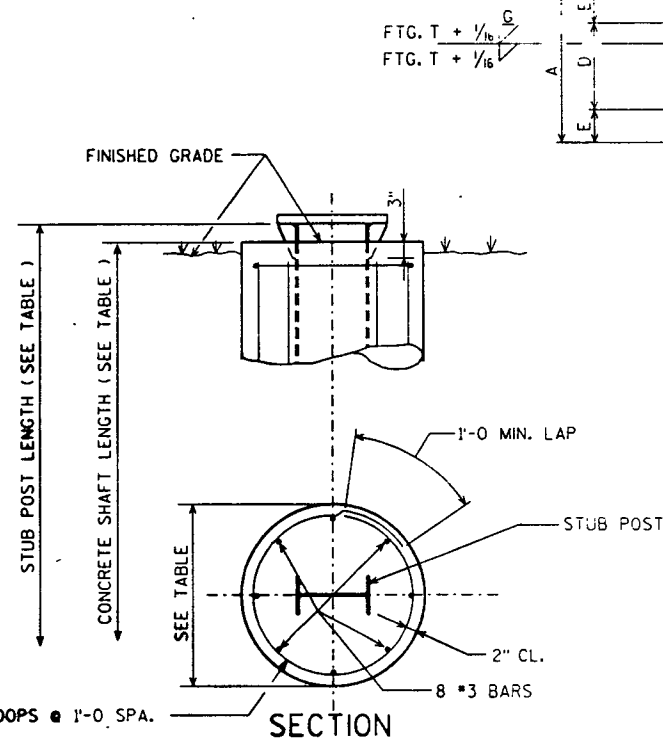
SHIM DETAIL

QUANTITIES FOR 1 FOOTING		
	CONC. MASONRY C.Y.	REINF. STEEL LBS.
A	0.6	34
B	0.8	49
C	0.9	50
D	0.9	56
E	1.0	62

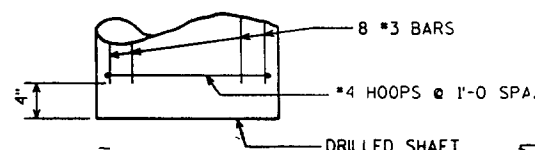
TYPE	#3	#4
A	8 @ 4'-5"	5 @ 6'-3"
B	8 @ 6'-5"	7 @ 6'-3"
C	8 @ 6'-11"	7 @ 6'-3"
D	8 @ 7'-5"	8 @ 6'-3"
E	8 @ 7'-11"	9 @ 6'-3"



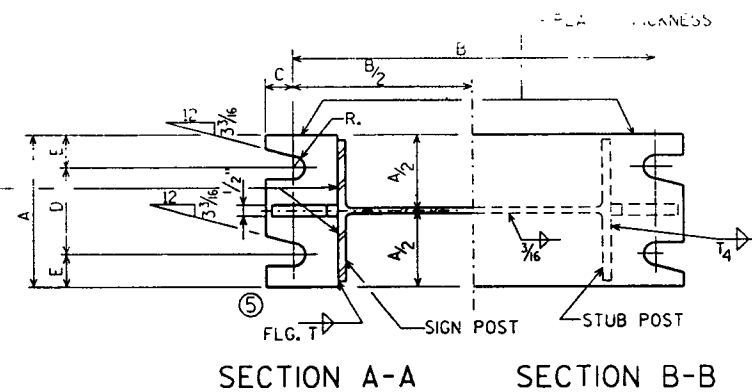
POST DETAIL



SECTION

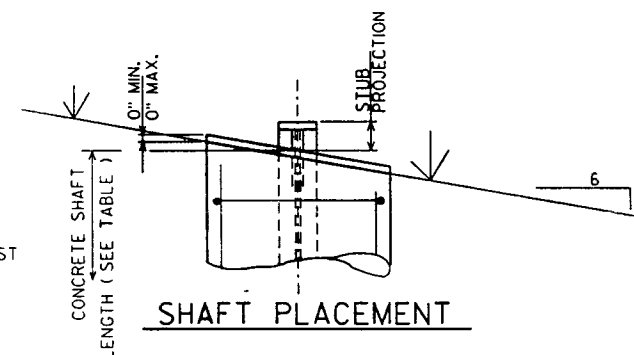


FOUNDATION DETAIL

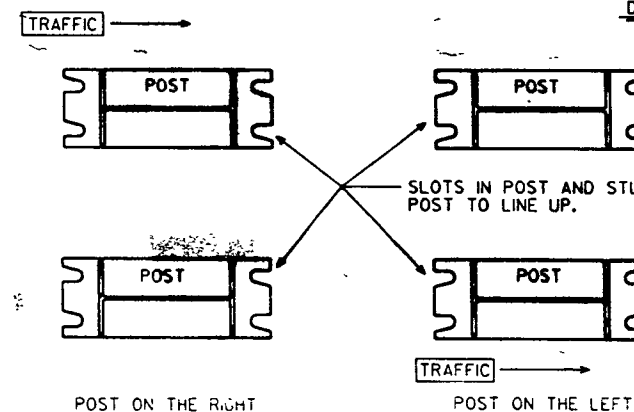


SECTION A-A

SECTION B-B



SHAFT PLACEMENT



POST SLOT ORIENTATION

BASE CONNECTION DATA TABLE														
TYPE	POST SIZE	BOLT SIZE & TORQUE	A	B	C	D	E	T ₁	T ₂	W ₁	W ₂	S	STUB LENGTH	STUB PROJECTION
A	W10"x12.0" #/FT.	3/4" @ 75'-FT.	5 1/4"	1'-0 1/2"	1 1/8"	3 1/2"	1 1/8"	1"	3/8"	5/16"	1/2"	2 1/8"	3'-6"	3"
B	W12"x16.0" #/FT.	1/2" @ 85'-FT.	5 1/2"	1'-4 1/4"	1"	3 1/2"	1"	1 1/4"	1/4"	5/8"	1/2"	3"	5'-6"	3"
C	W12"x19.0" #/FT.	1/2" @ 85'-FT.	5 1/2"	1'-4 1/4"	1"	3 1/2"	1"	1 1/2"	3/8"	5/8"	1/2"	3"	6'-0"	3"
D	W12"x22.0" #/FT.	1/2" @ 85'-FT.	5 1/2"	1'-4 1/4"	1"	3 1/2"	1"	1 1/2"	3/8"	5/8"	1/2"	3"	6'-6"	3"
E	W12"x26.0" #/FT.	1" @ 90'-FT.	7"	1'-4 1/4"	1 1/4"	4"	1 1/2"	1 1/2"	3/8"	5/8"	1/2"	3"	7'-0"	3"

STRUCTURAL CARBON STEEL PAY WTS. (1 POST) = K + (POST LENGTH X POST WT.)
"K" INCLUDES STUB, BASE PLATES, STIFFS., BOLTS, AND WASHERS.

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

State Traffic Engineer

DATE 2-12-93

PLATE NO. A3-1.11

⑦	10-30-92	QUANT., ADD. EXCEPT, ADD. SIGHT VIEW
⑥	8-24-87	BASE CONN. WELD
⑤	10-13-81	BASE CONN. WELD
④	10-15-79	POST A & E, PL. 1.11
③	11-28-78	③ 4-23-79 TYPE 1
②	5-4-78	T ₁ , T ₂ & W ₁

ING. DATE

REVISION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

TYPE A, B, C, D, & E

CONST. SPEC. 1989

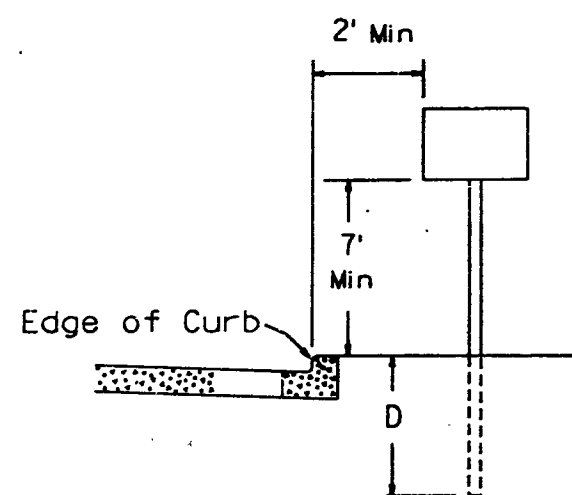
DRAWN BY LOY

FTG. & SIGN SUPPORT
DETAILS
GROUND MOUNT
BREAK-AWAY SIGNS

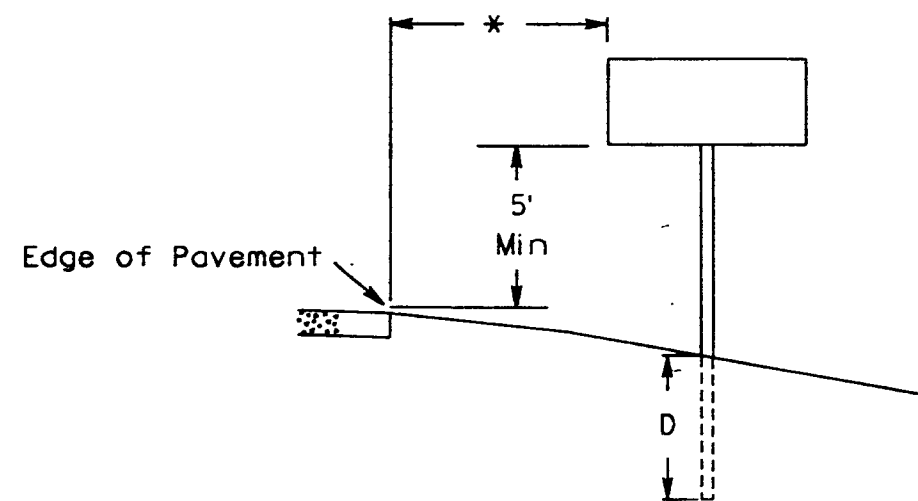
SCALE = 2.667

BR SIGNAGE - AWAY FROM

URBAN AREA



RURAL AREA

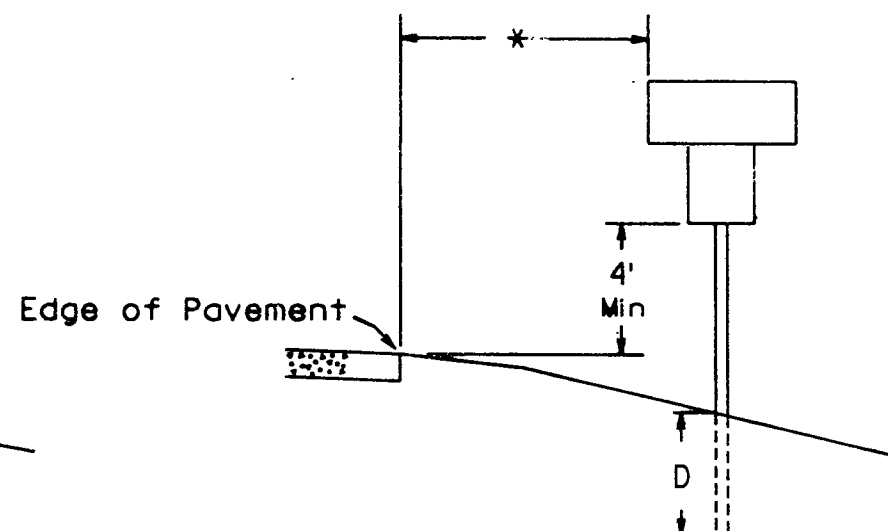
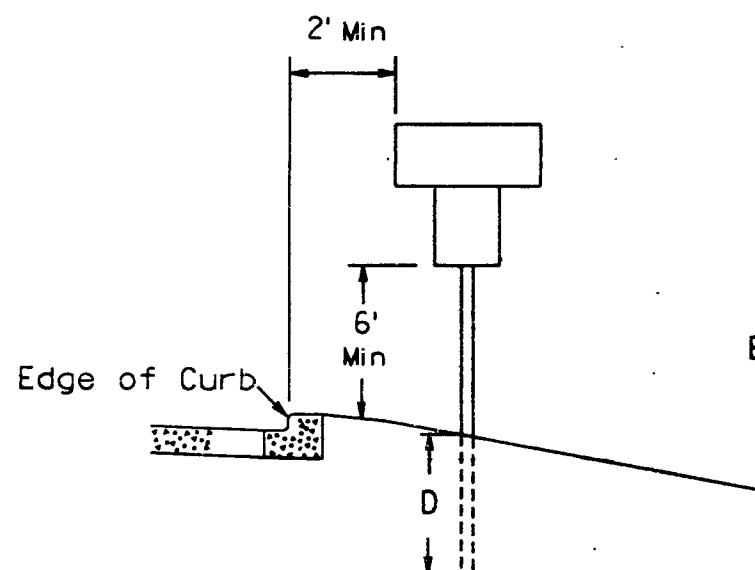


GENERAL NOTES

1. Sign assemblies wider than 4 feet or larger than 20 sq. ft. shall be mounted on multiple posts. See plate A4-4 for typical installations.

POST EMBEDMENT DEPTH

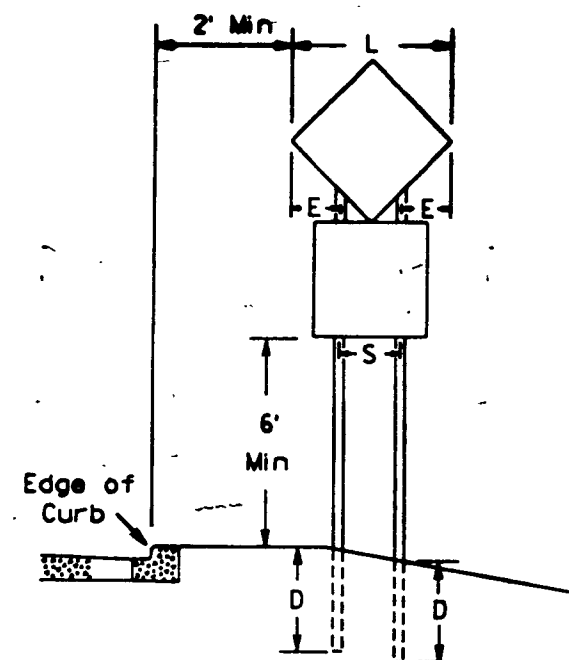
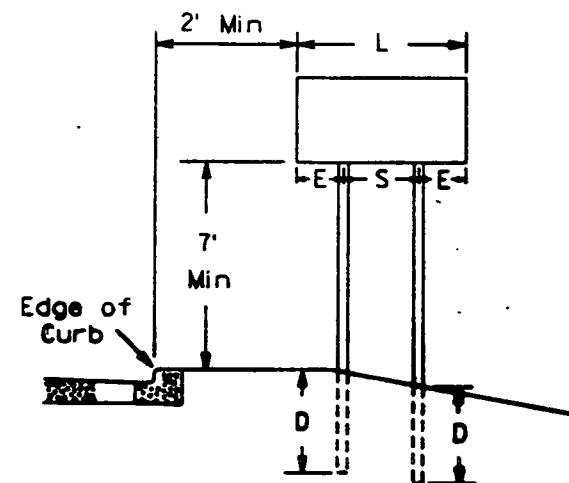
Area of Sign Installation (Sq. Ft.)	D (Min)
20 or Less	4'
Greater than 20	5'



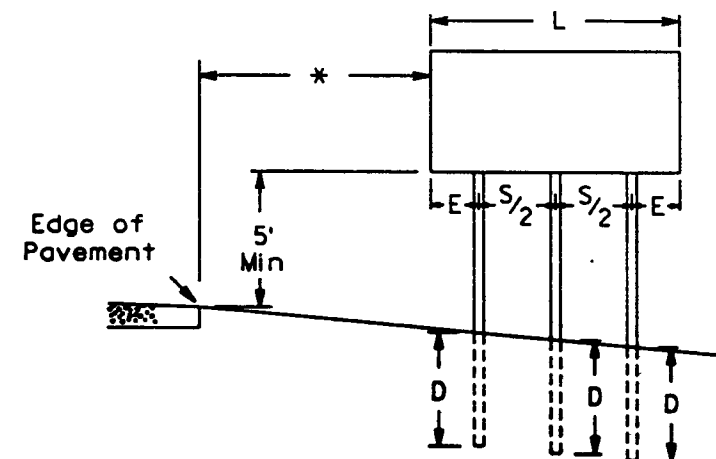
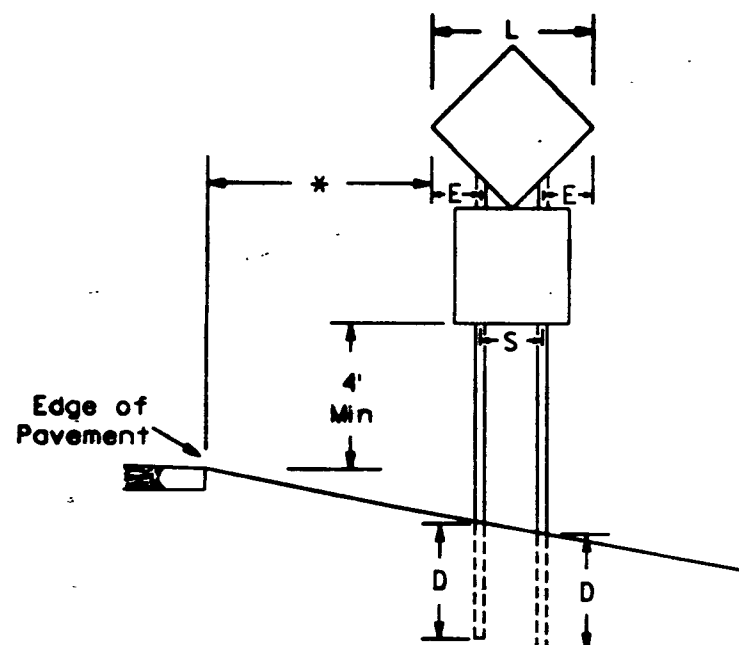
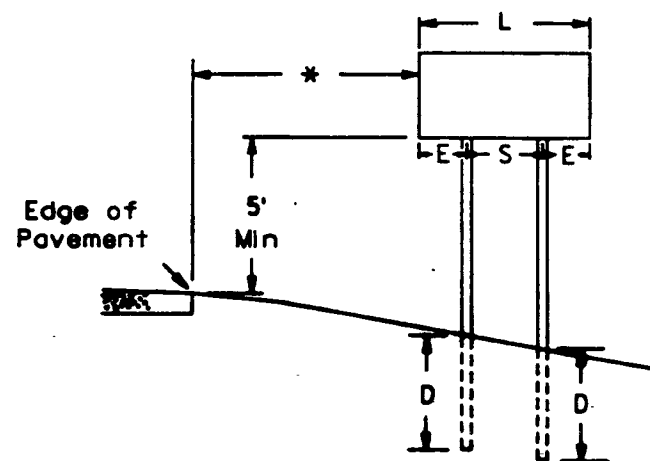
- * 12 feet minimum from edge of pavement.
Where there is a paved shoulder, 6' minimum from edge of paved shoulder, but at least 12 feet from edge of pavement.

DATE DRAWN 9-12-91	DATE REDRAWN
DATE REVISED 1-14-92	
TYPICAL INSTALLATION OF TYPE II SIGNS ON SINGLE POSTS	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Robert F. Ruch</i> State Traffic Engineer
DATE 1/21/92	PLATE NO. A4-3.8

URBAN AREA



RURAL AREA



GENERAL NOTES

- For 3 post installations, post spacing is $S/2$ and S must be greater than 7'-0"
- For 4 post installations, post spacing is $S/3$ and S must be greater than 10'-6"

* 12 feet minimum from edge of pavement. Where there is a paved shoulder, 6' minimum from edge of paved shoulder, but at least 12 feet from edge of pavement.

DIAMOND SHAPED SIGNS

L	S	E
Less than 60"	20"	$L/2 - 10$
60"--72"	32"	$L/2 - 16$
Greater than 72"	$3 L/5$	$L/5$

SIGN SHAPE OTHER THAN DIAMOND (Two Post Installations)

L	S	E
Less than 60"	$L-24"$	12"
60" or more	$3 L/5$	$L/5$

POST EMBEDMENT DEPTH

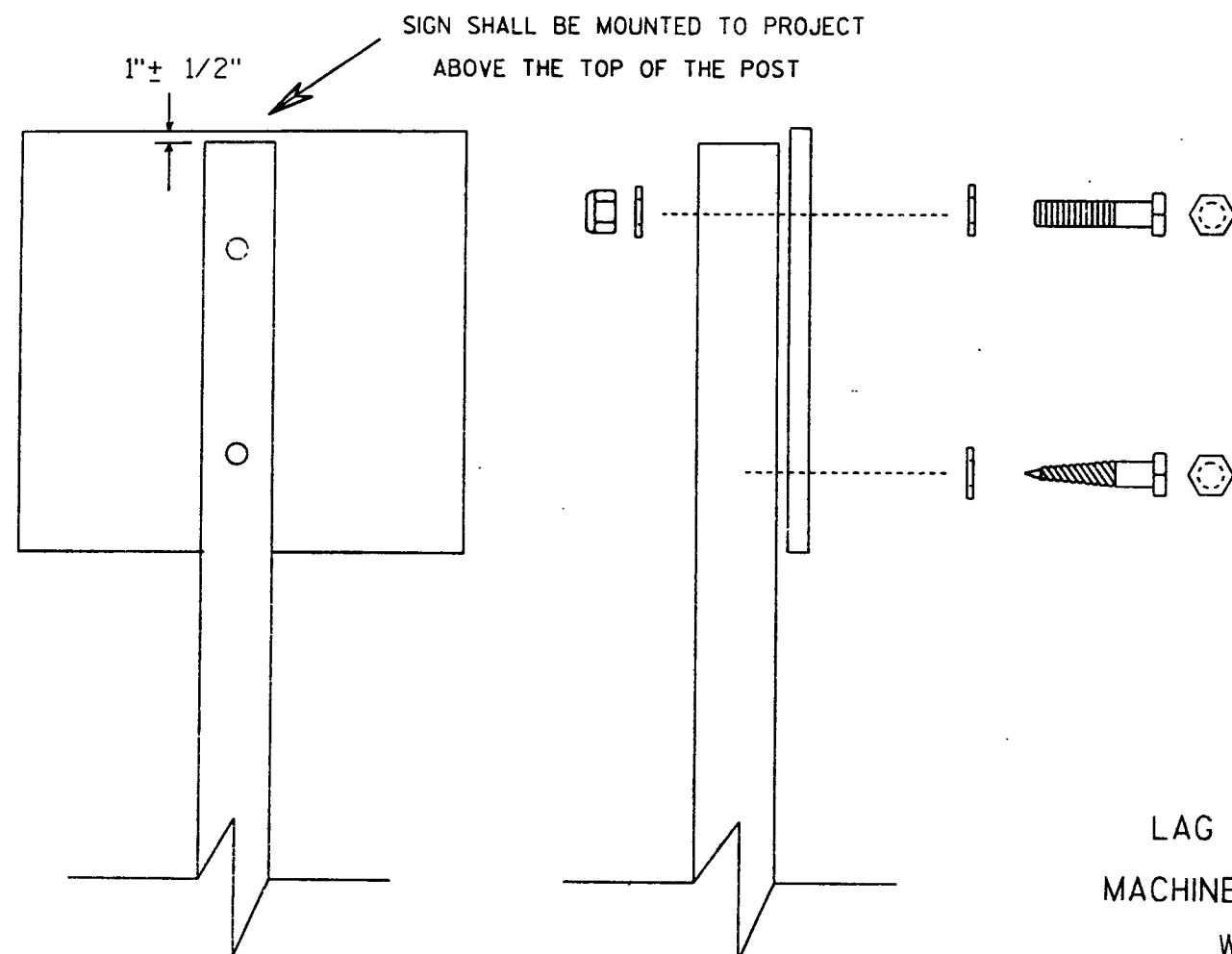
Area of Sign Installation (Sq. Ft.)	D (Min)
20 or Less	4'
Greater than 20	5'

DATE DRAWN 6-3-87 DATE REDRAWN 10-1-91
DATE REVISED 11-6-92

TYPICAL INSTALLATION
OF TYPE II SIGNS
ON MULTIPLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Peter F. Risch*
State Traffic Engineer
DATE 11/20/92 PLATE NO. A4-4:3



Nuts, bolts and lags used for mounting signs shall have hexagonal heads and shall be either :

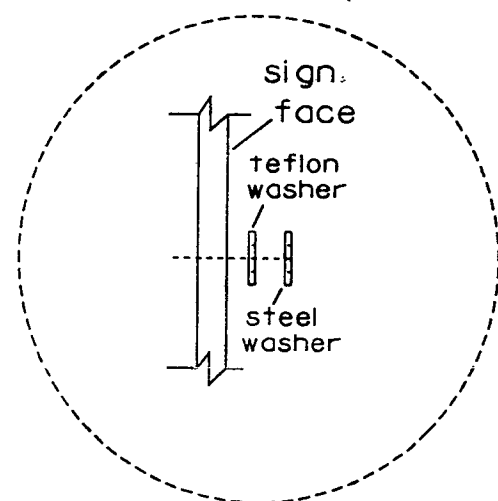
- Hot dip or mechanically galvanized in accordance with ASTM Designation: A 153, Class D, or
- Cadmium plated in accordance with ASTM Designation : B 766 TYPE 3, Class 12, or
- Electro-galvanized in accordance with ASTM Designation : B 633, TYPE III, SC 3.

Threads on bolts and nuts shall be manufactured with sufficient allowance for the cadmium plate or galvanized coating to permit the nuts to run freely on the bolts.

LAG SCREWS - $\frac{3}{8}$ " X 3"

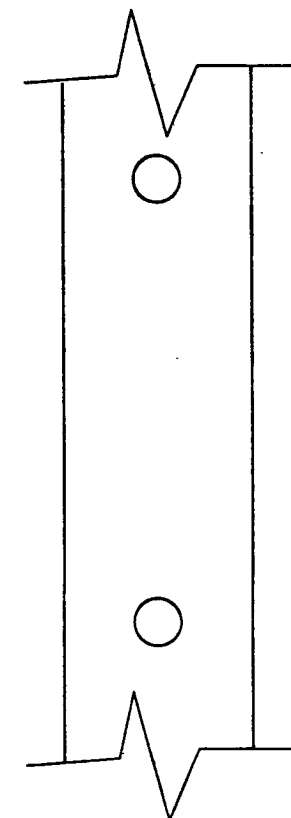
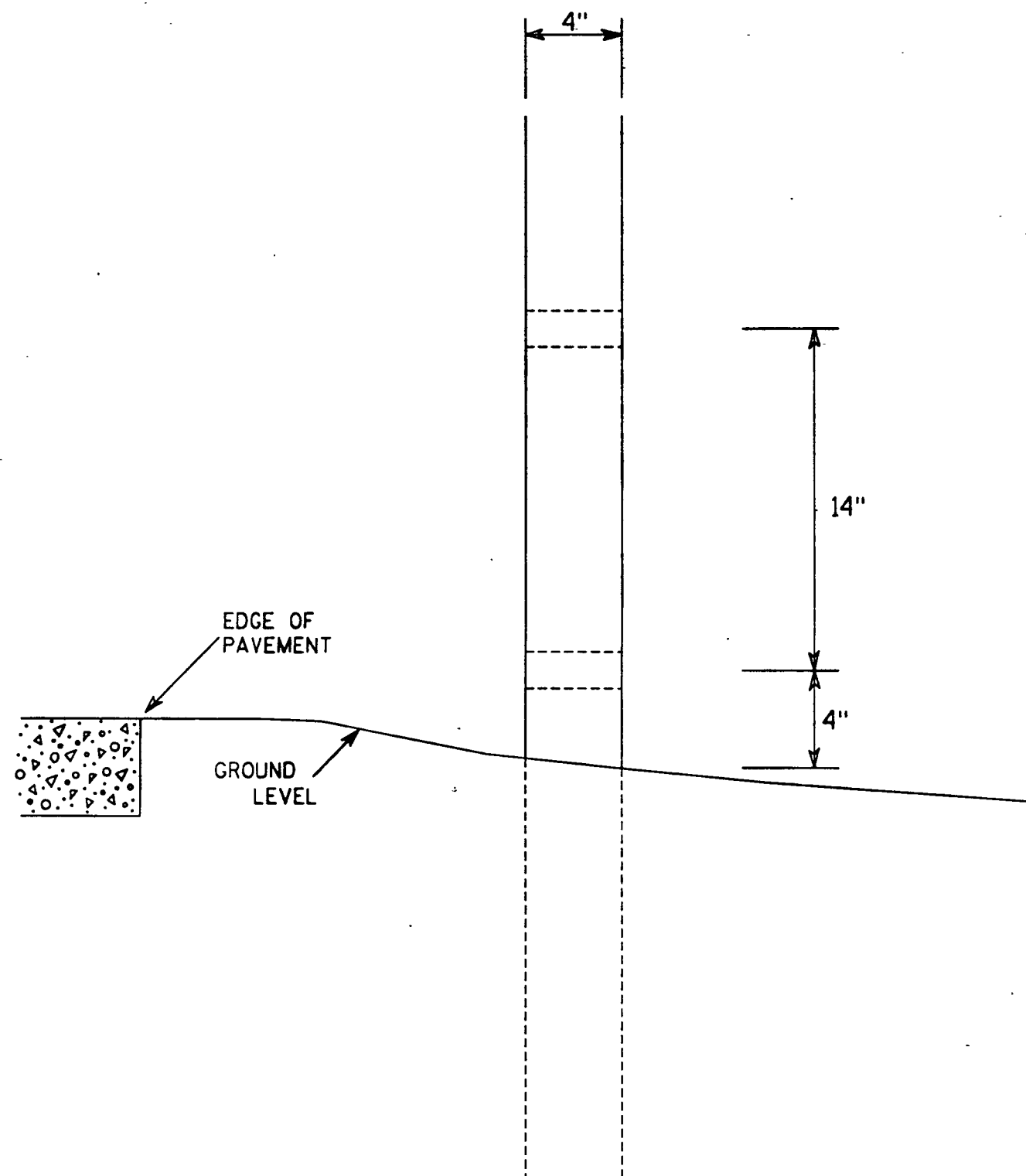
MACHINE BOLTS - $\frac{5}{16}$ " X 6-1/2" or 7" Length w/ nuts

WASHERS - 1" O.D. X $\frac{3}{8}$ " I.D. X $\frac{1}{16}$ " STEEL for signs 24x24 and smaller.
 1-1/4" O.D. X $\frac{3}{8}$ " I.D. X $\frac{1}{16}$ " STEEL for signs 24x30 to 36x48.
 1-1/2" O.D. X $\frac{7}{16}$ " I.D. X $\frac{1}{16}$ " STEEL for signs 48x48 and larger.
 1-1/4" O.D. X $\frac{3}{8}$ " I.D. X .080 TEFLON for all Type H signs.



Washer Placement when Sign Has Type H Face

DATE DRAWN 1-29-92	DATE REDRAWN
DATE REVISED	
ATTACHMENT OF SIGNS TO WOOD POSTS	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED <i>Robert E. Ruck</i> State Traffic Engineer	
DATE 2-1-92	PLATE NO. A4-8.2



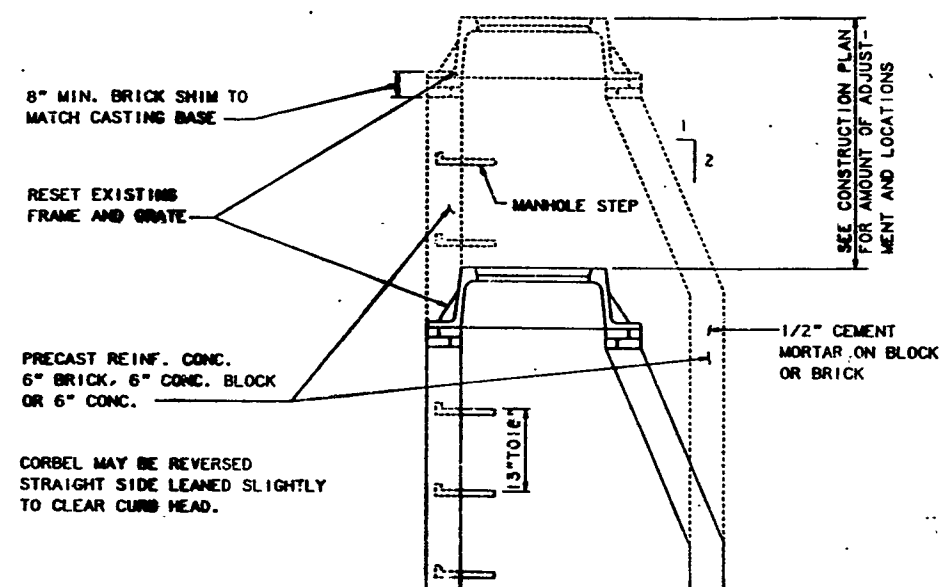
SIDE VIEW

GENERAL NOTES

1. All 4x6 Wood Posts shall be modified by having two 1½" diameter holes drilled perpendicular to the roadway centerline.

DATE DRAWN 11-1-91	DATE REDRAWN
DATE REVISED	
4 X 6 WOOD POST MODIFICATIONS	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	
State Traffic Engineer	
DATE 11/5/91	PLATE NO. A4-1111

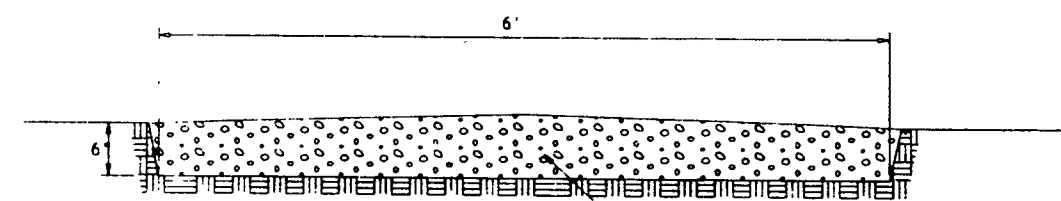
DETAILS



PRECAST MANHOLES MAY BE ADJUSTED BY REMOVAL OF PRECAST SECTIONS. WHEN REJOINING SECTIONS, THE JOINTS SHALL BE WATERTIGHT BY USING RUBBER GASKETS OR BUTYL RUBBER MASTIC MATERIALS.

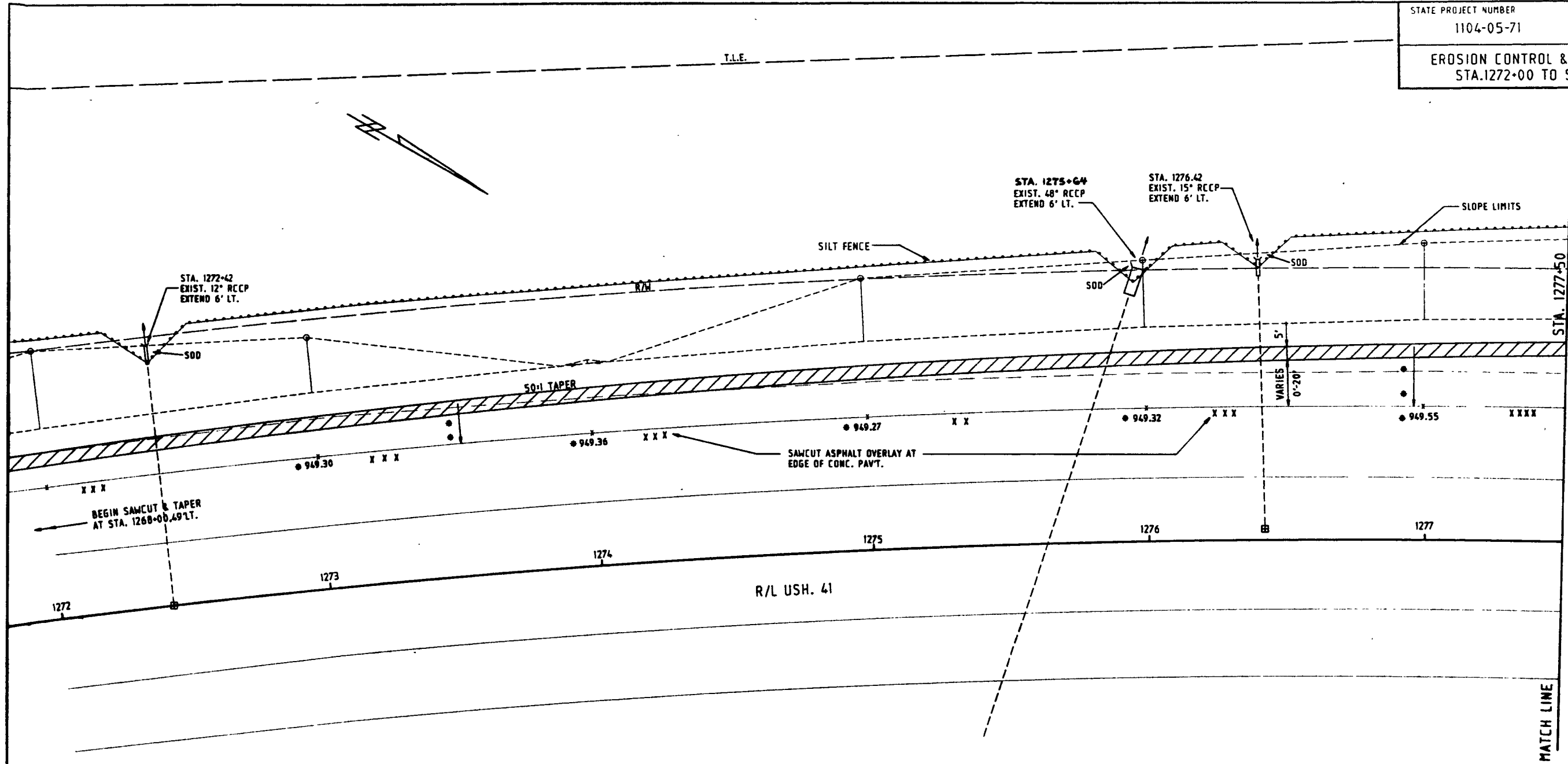
REPAIR BY REMOVING AND REPLACING DAMAGED OR LOOSE BRICK OR BLOCK TO THE DEPTH AS SHOWN ON THE PLAN OR AS DIRECTED BY THE ENGINEER. DEPTHS AS INDICATED ON PLAN ARE ESTIMATES ONLY AND MAY VARY AT TIME OF CONSTRUCTION.

RECONSTRUCTING MANHOLES

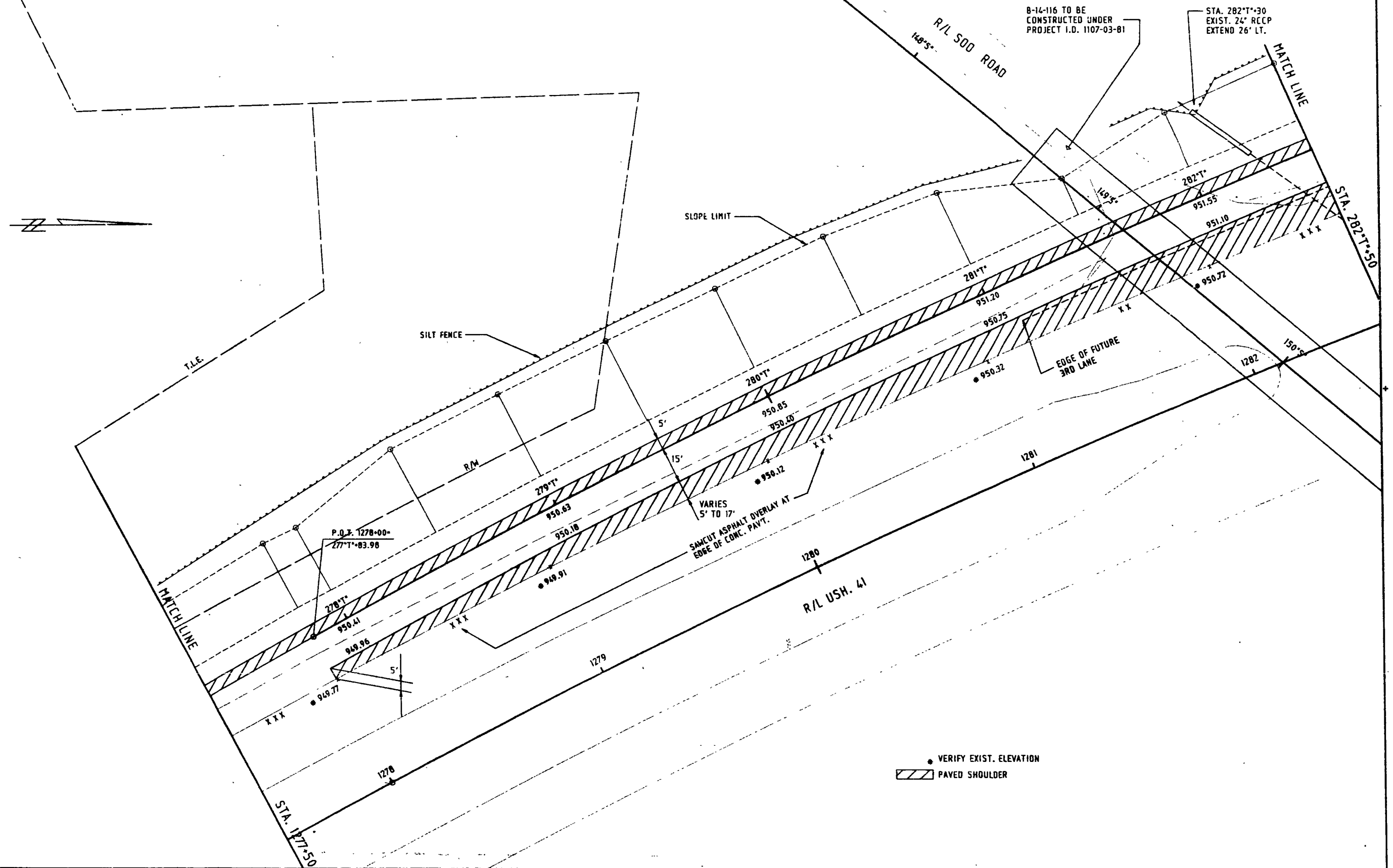


CABC PEDESTRIAN WALKWAY

NOTE: ACTUAL LOCATION OF CABC PEDESTRIAN WALKWAY TO BE LOCATED BY ENGINEER

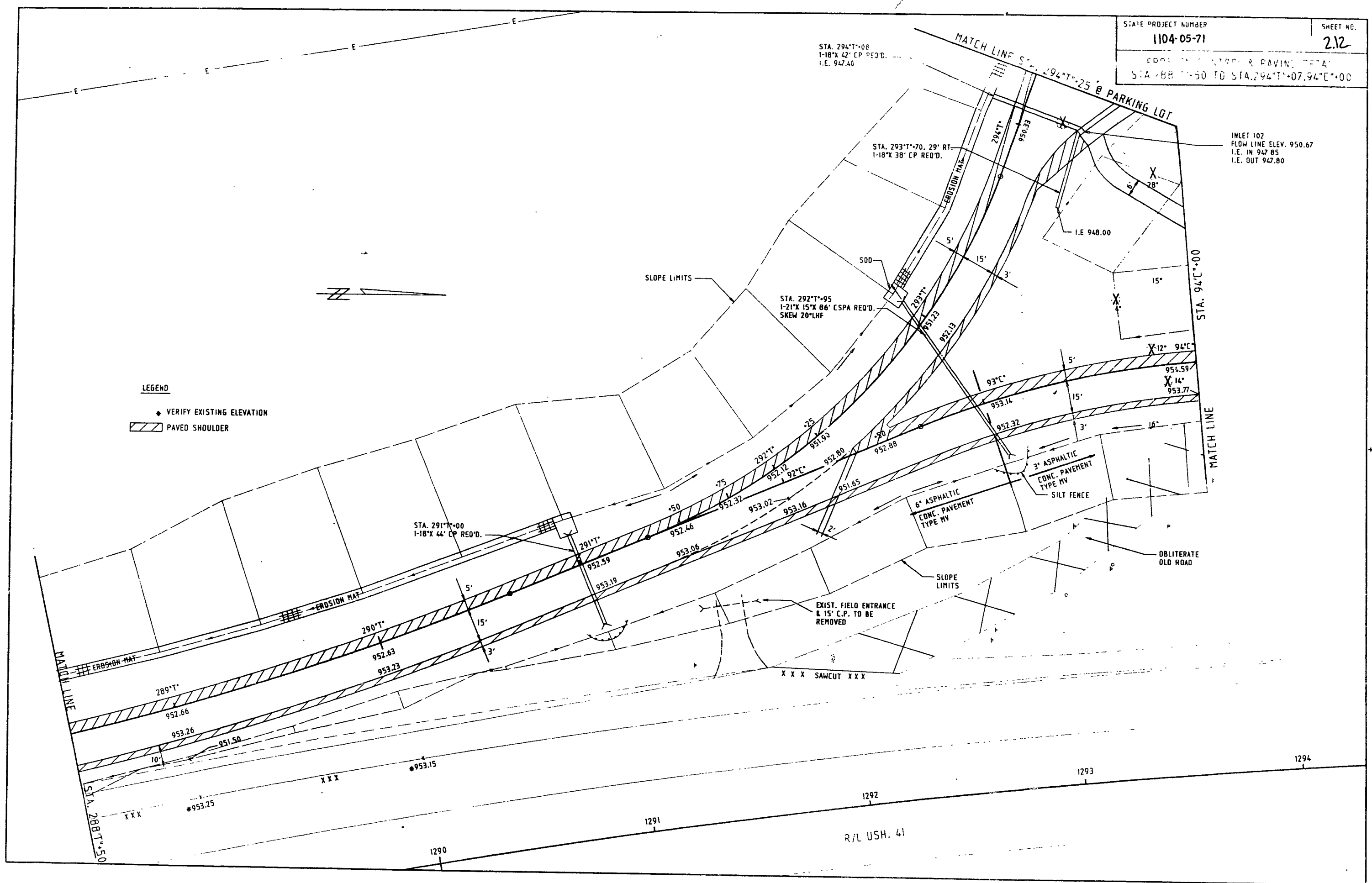


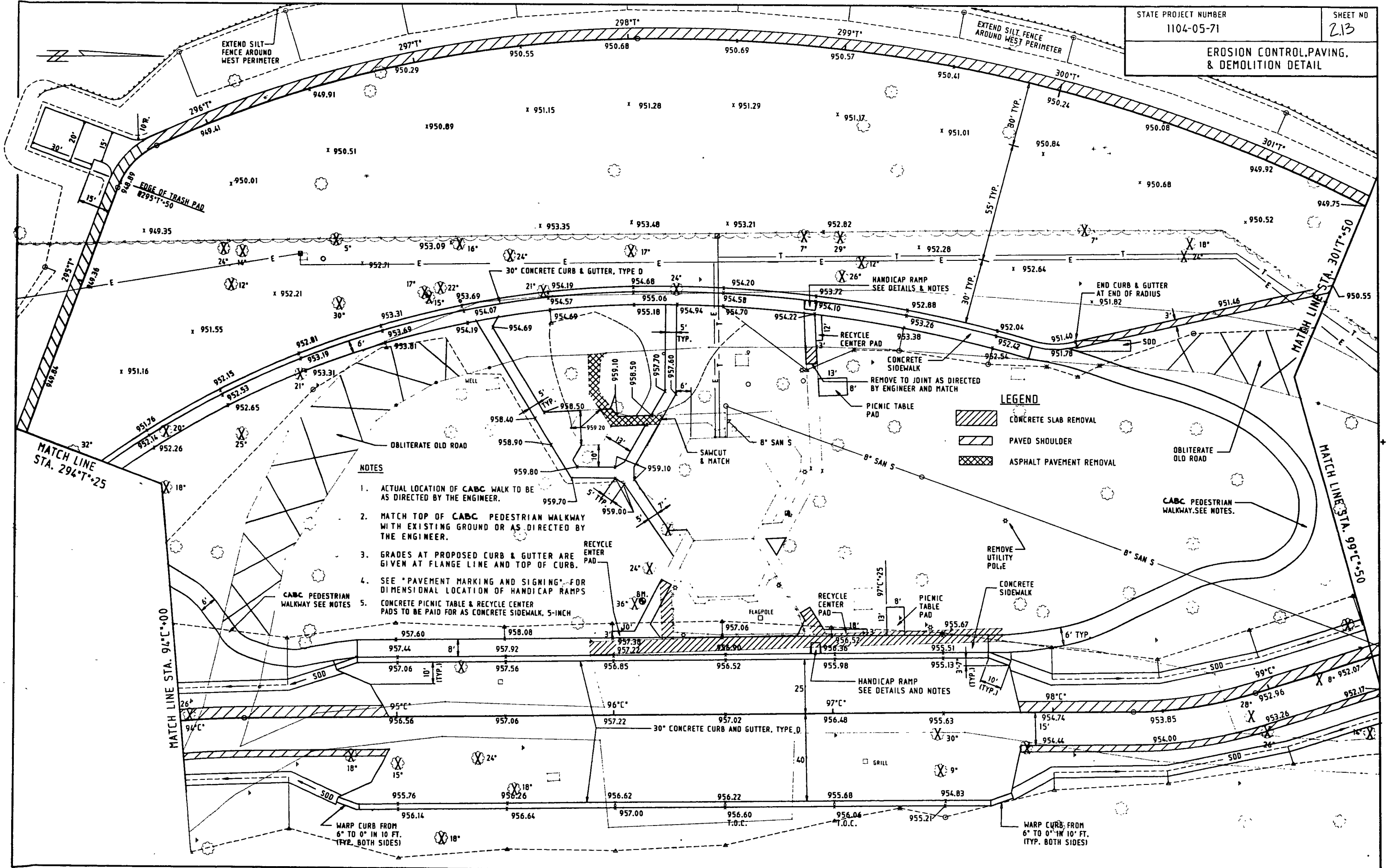
- LEGEND:**
- ◆ VERIFY EXIST. ELEVATION
 - MATCH EXIST. EDGE OF PAVEMENT AND RATE OF SUPERELEVATION (0.03'/1')
 - ▨ PAVED SHOULDER



LEGEND

- VERIFY EXISTING ELEVATION
- ▨ PAVED SHOULDER



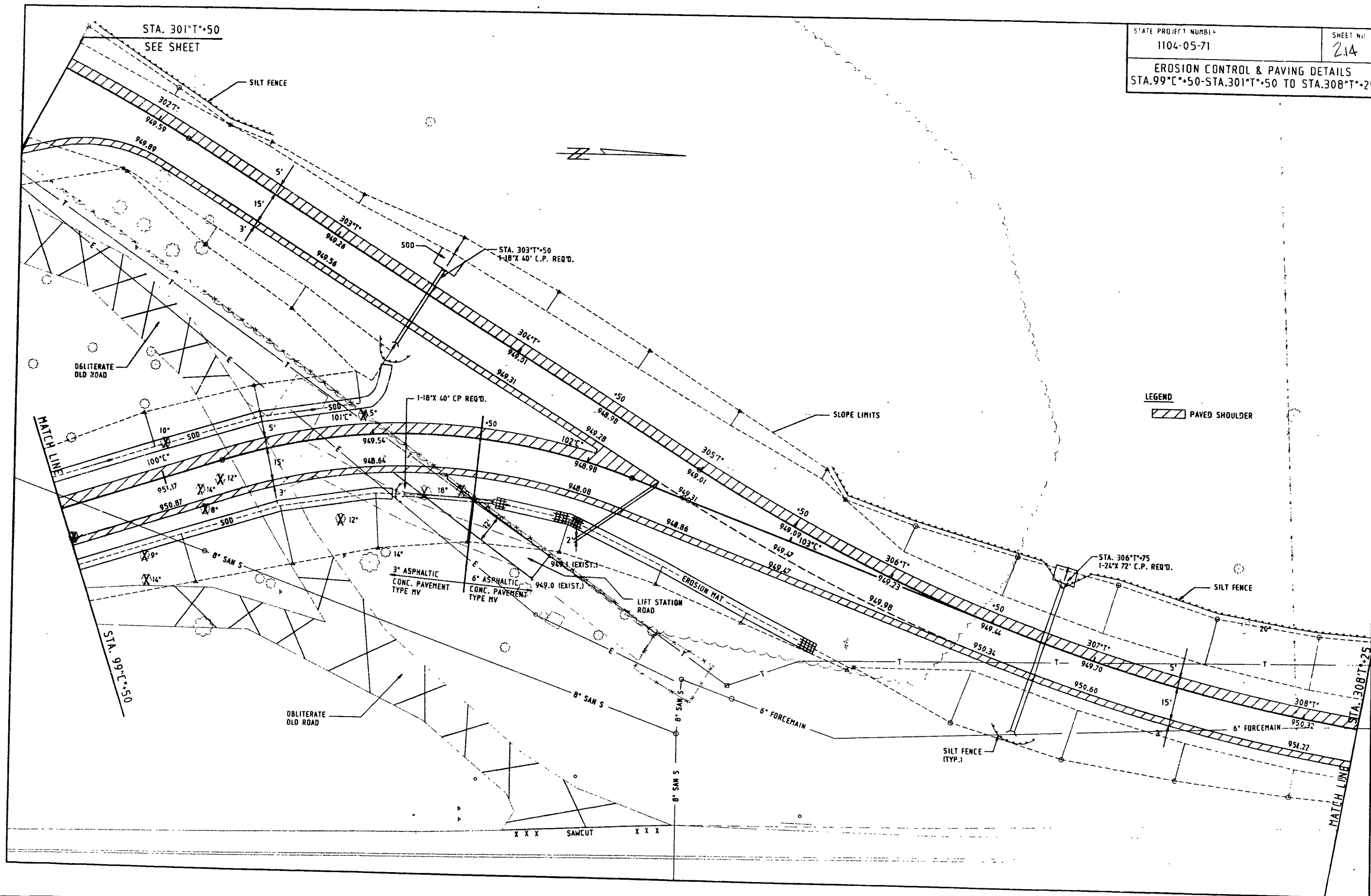


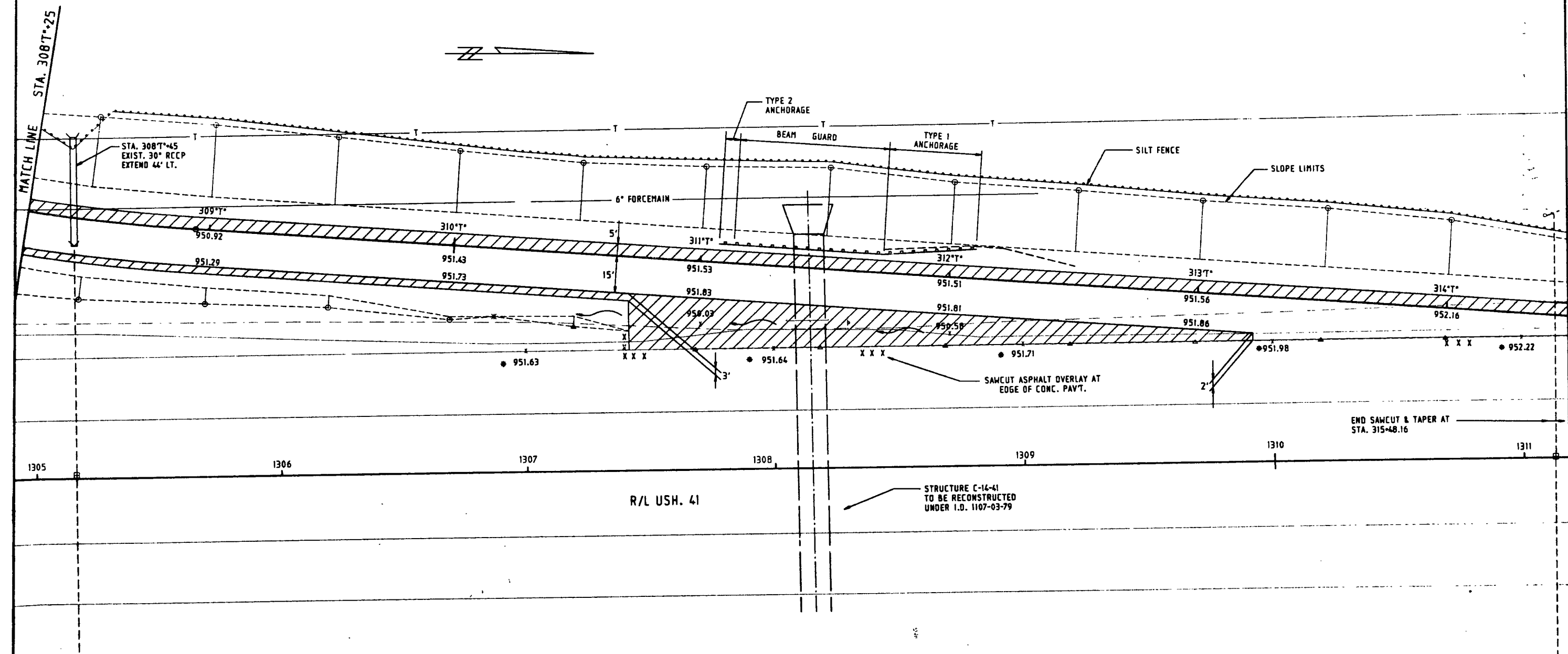
STA. 301+50
SEE SHEET

STATE PROJECT NUMBER
1104-05-71

SHEET NO.
214

EROSION CONTROL & PAVING DETAILS
STA. 99+50-STA. 301+50 TO STA. 308+25

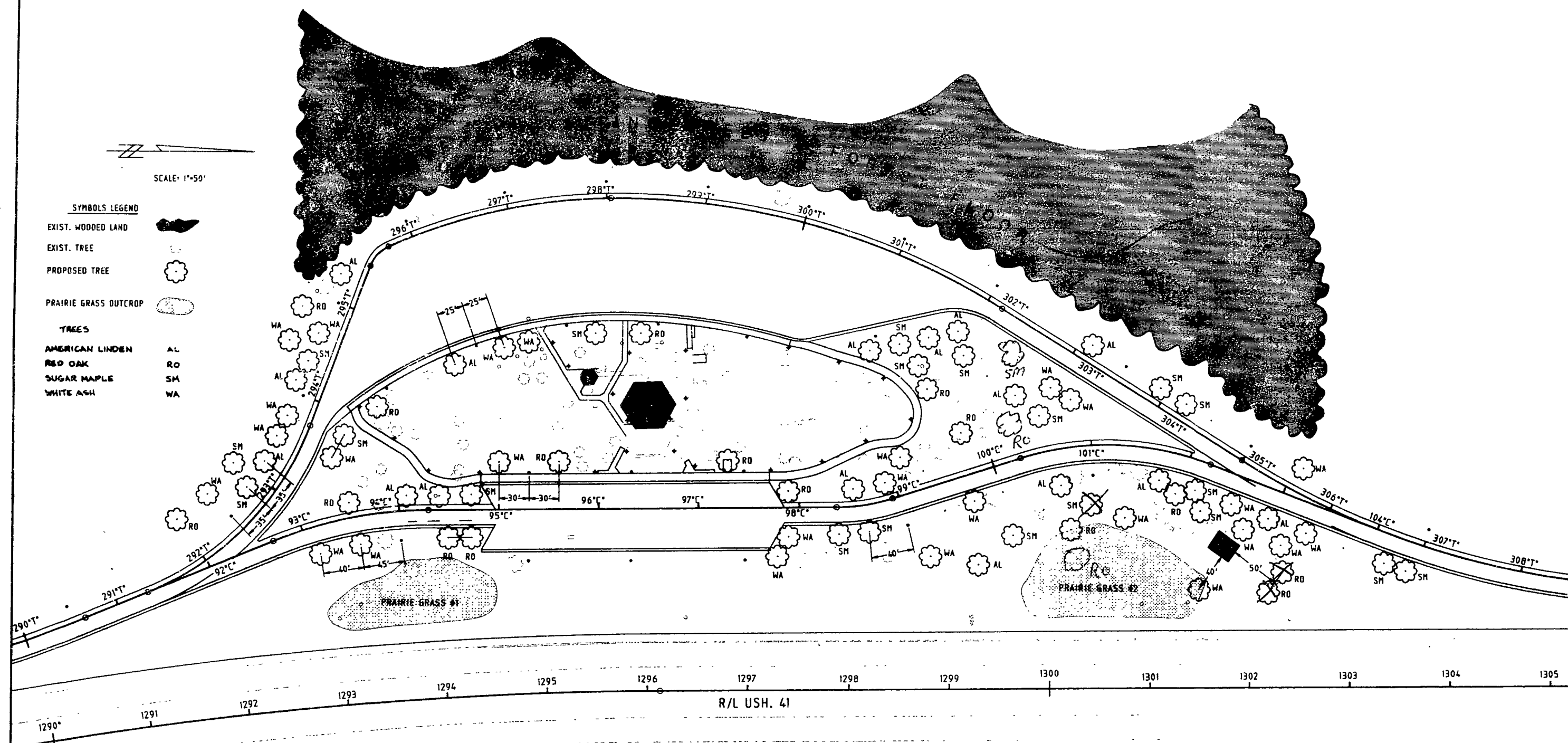


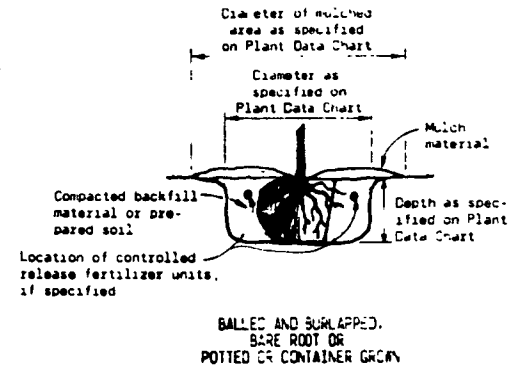
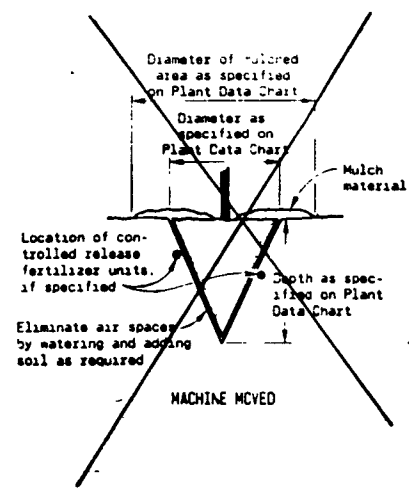


LEGEND

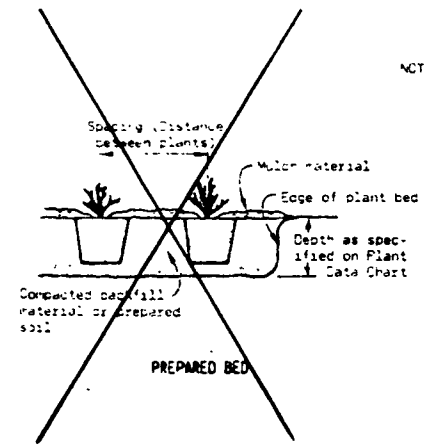
- VERIFY EXIST. ELEVATION
- ▨ PAVED SHOULDER

PLANTING PLAN

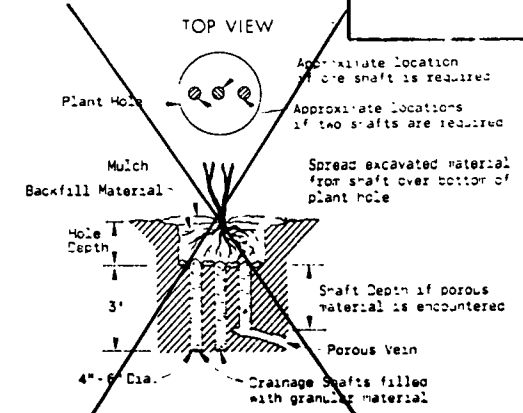
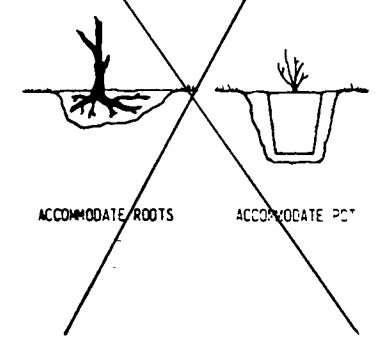




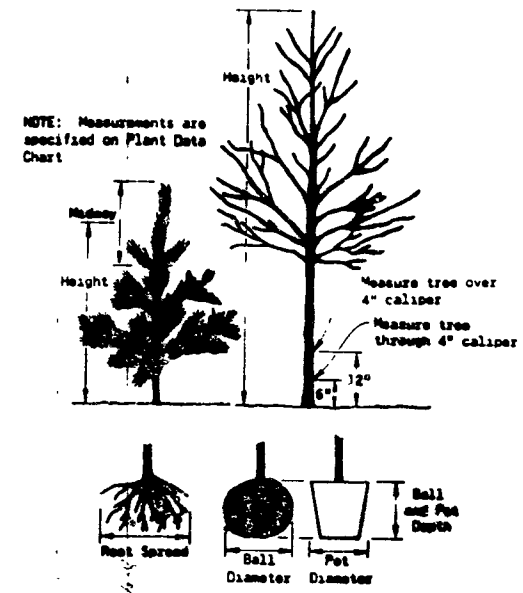
PLANTING



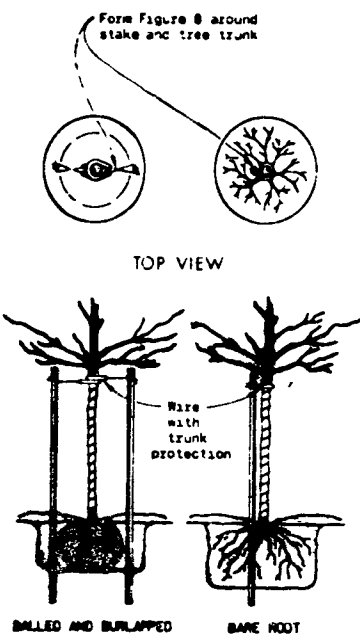
NOTE: 1) Engineer may require 2 or 3 slits in pot to speed deterioration.
2) Metal, plastic or other nondegradable pots shall be removed prior to planting.



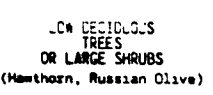
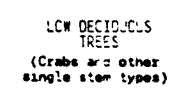
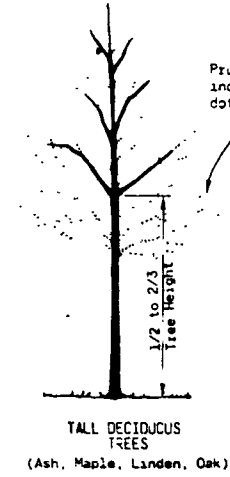
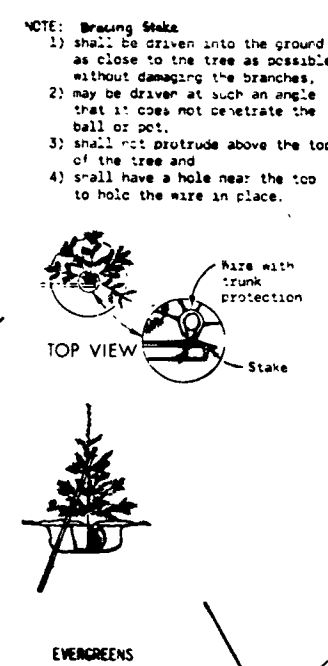
DRAINING



MEASURING



BRACING

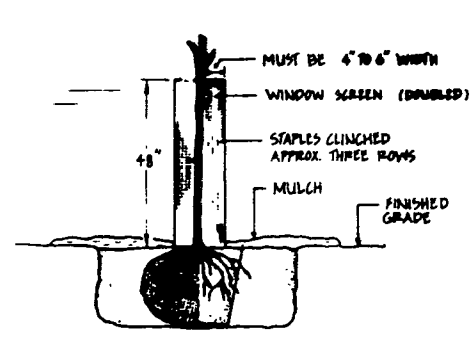


PRUNING

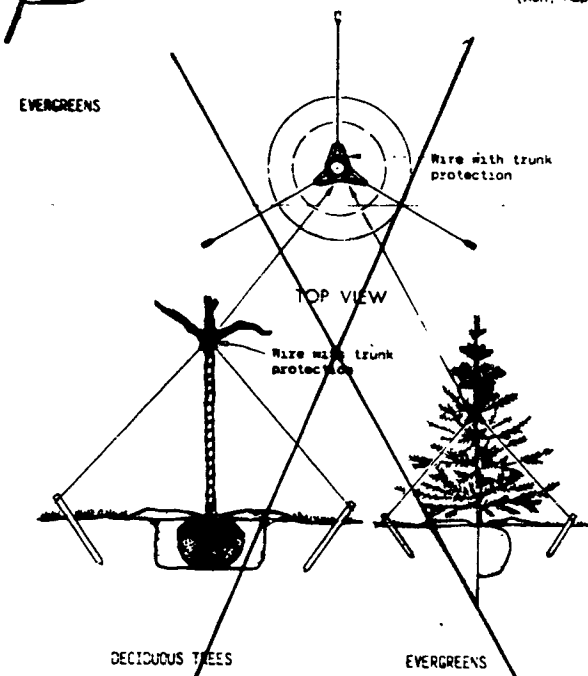
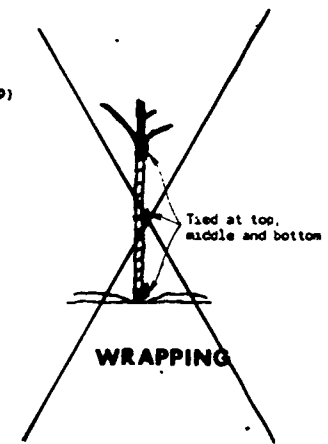
NOTES

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

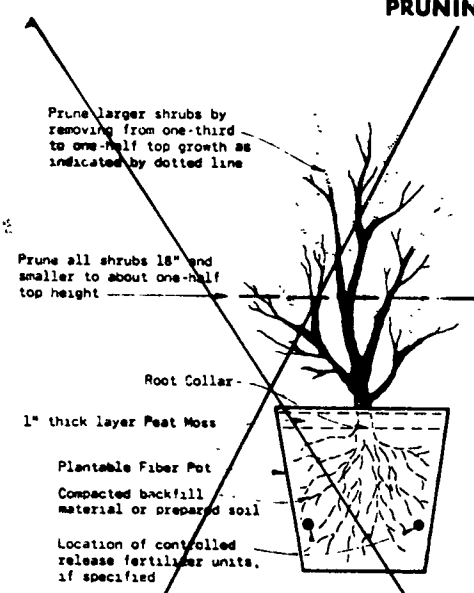
Bracing, wrapping, and guying shall be used only when specified on the Plant Data Chart.



PROTECTING

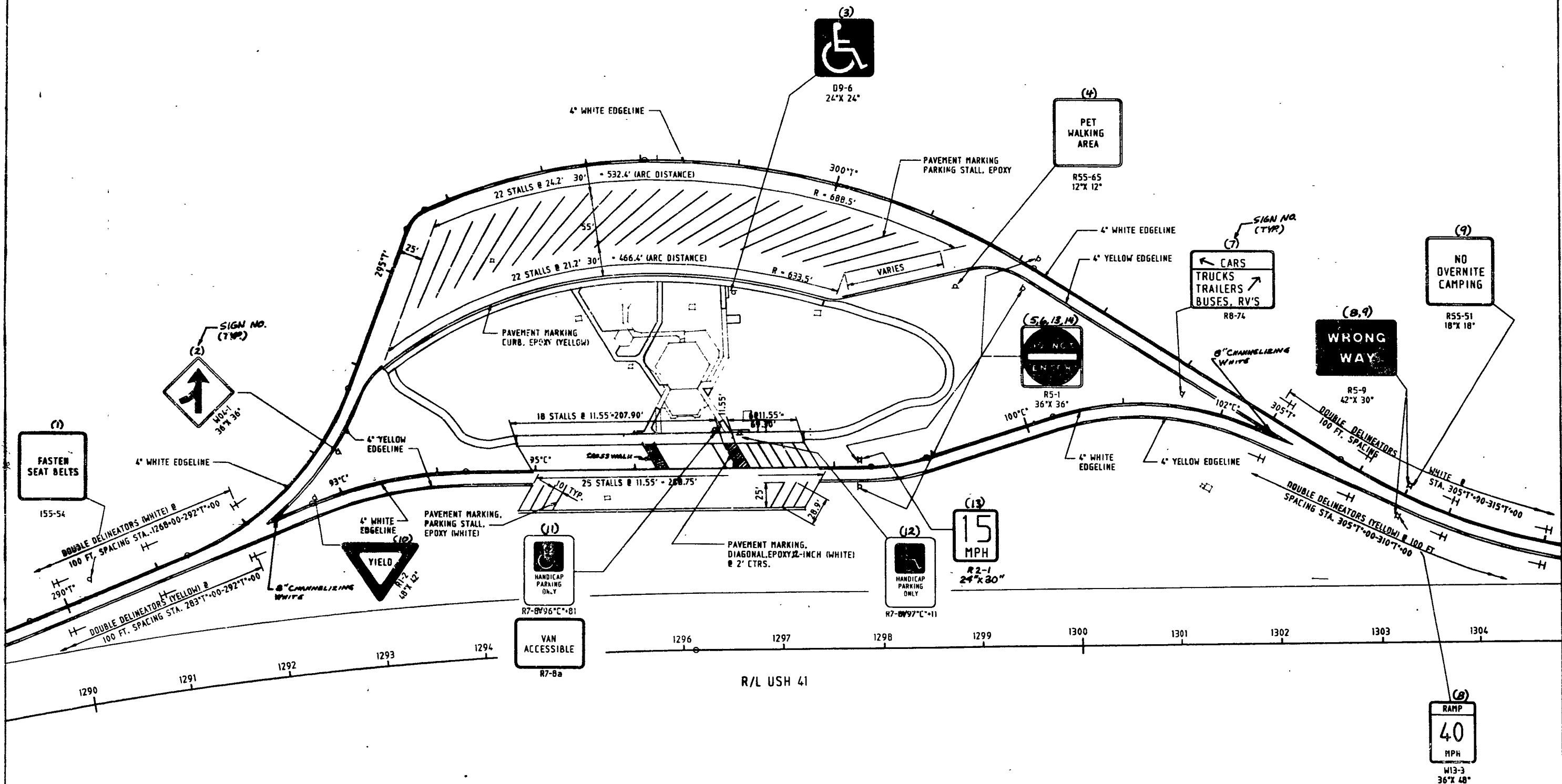


GUYING



POTTING

LEVELS: 001 - 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63



PANELBOARD SCHEDULE

LOAD	Q	CODE	P	AMP.	C/B	C/B	AMP.	P	CODE	Q	LOAD
1140	9	L	2	20	1	2	20	2	L	9	1140
900	5	L	2	20	3	4	20	2	L	5	900
1080	6	L	2	20	5	6	20	2	L	5	900
960	6	L	2	20	7	8	20	2	L	7	1020
1200	12	L	1	20	9	10	20	1	SPARE		
		SPARE	1	20	11	12	20	1	SPARE		

100 WATT HPS-WALKWAY LIGHT

IDENTIFICATION NUMBER
 PANEL AND CIRCUIT
 LUMINAIRE WATTS
 PHOTOMETRIC DISTRIBUTION

V-100-IP3- 1

111-150-12-IP2-14

IDENT NO.
 PANEL & CIRCUIT
 MAST ARM LENGTH
 LUMINAIRE WATTS
 PHOTOMETRIC DISTRIBUTION

2" PVC CONDUIT
 SINGLE CONDUCTOR INSULATED COPPER-STRANDED
 (FOR WALKWAY & ROADWAY LIGHTING)
 REFER TO SHEET S.D.D. 9E 4-1 FOR WALKWAY LIGHTING
 UNIT & CONCRETE BASE, TYPE II.

NOTE:

- REMOVE EXISTING SQ-D.
LT'G. CONTRACTOR.
- WALKWAY & ROADWAY BALLASTS
ARE 240V.

NOTE:

FIXTURE IDENT. NO'S. 6 THRU 25, BASES TO BE SETBACK FROM EDGE OF WALK 2' TO CENTER

FIXTURE IDENT. NO. 26, BASE TO LINE UP WITH #1&4.

FIXTURE IDENT. NO'S. 27 THRU 52, BASES TO BE SET BACK FROM EDGE OF ASPHALT 12' TO CENTER.

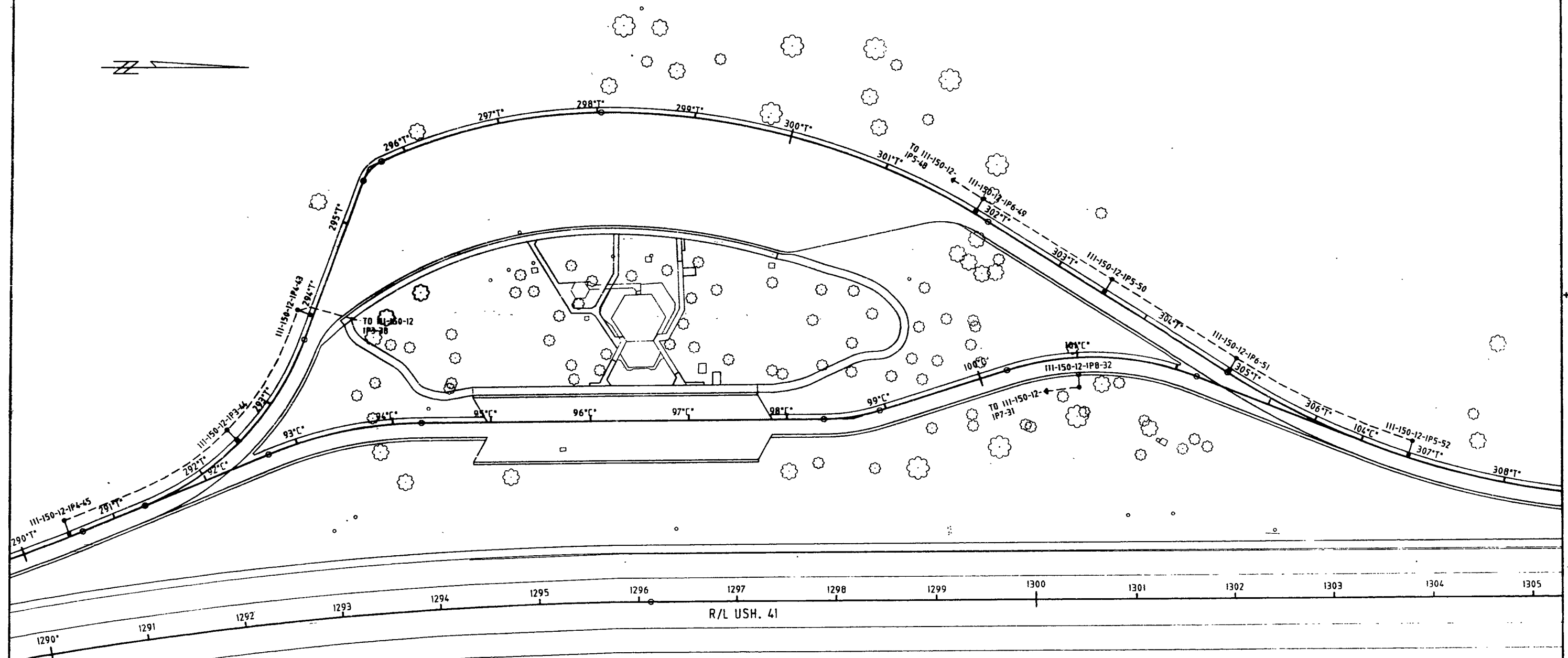
FIXTURE IDENT. NO'S. 1 THRU 5 ARE TO REMAIN AS IS.

○ — REMOVE EX. LT. POLE

1104-05-71

220

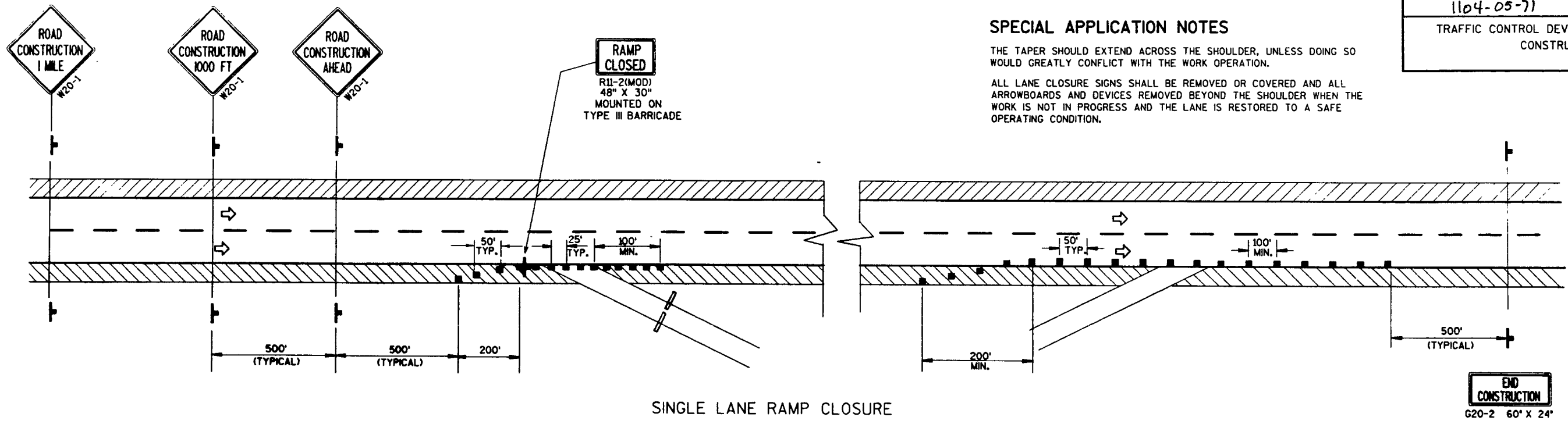
LIGHTING PLAN



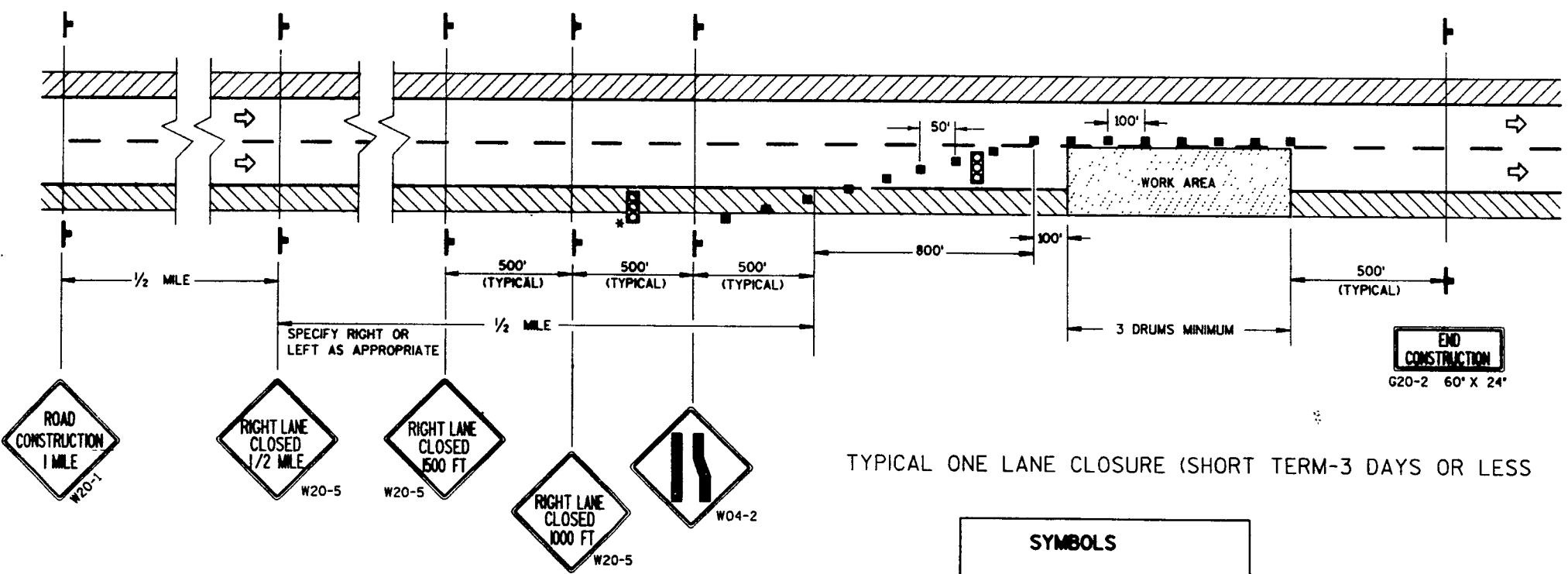
SPECIAL APPLICATION NOTES

THE TAPER SHOULD EXTEND ACROSS THE SHOULDER, UNLESS DOING SO WOULD GREATLY CONFLICT WITH THE WORK OPERATION.

ALL LANE CLOSURE SIGNS SHALL BE REMOVED OR COVERED AND ALL ARROWBOARDS AND DEVICES REMOVED BEYOND THE SHOULDER WHEN THE WORK IS NOT IN PROGRESS AND THE LANE IS RESTORED TO A SAFE OPERATING CONDITION.



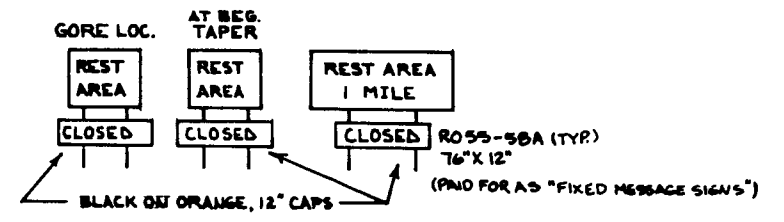
SINGLE LANE RAMP CLOSURE



TYPICAL ONE LANE CLOSURE (SHORT TERM-3 DAYS OR LESS)

- #### SYMBOLS
- TRAFFIC CONTROL DRUM
 - ARROW BOARD
 - ⊥ SIGN ON FIXED SUPPORT
 - ⊥ SIGN ON TEMPORARY SUPPORT
 - ▬ TYPE III BARRICADE

* ARROW BOARD, LOCATE APPROX. 500' IN ADVANCE OF LANE TAPER OR POSITION FOR OPTIMUM VISIBILITY.



GENERAL NOTES FOR TRAFFIC CONTROL

THE EXACT NUMBER, LOCATION AND SPACING OF ALL SIGNS AND DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS DIRECTED BY THE ENGINEER.

CHANNELIZING DEVICES PLACED ADJACENT TO WORK AREA SHALL BE PULLED BACK FROM TRAVEL LANE WHEN WORK IS NOT IN PROGRESS.

FOR NIGHTTIME OPERATION ALL ADVANCE SIGNS SHALL HAVE A TYPE "A" FLASHING LIGHT.

DURING HOURS OF DARKNESS, TYPE "C" (STEADY BURN) LIGHTS SHALL BE PROVIDED ON ALL CHANNELIZING DEVICES. BARRICADES SHIELDING AN ISOLATED HAZARD, SHALL BE EQUIPPED WITH TYPE "A" (LOW-INTENSITY FLASHING) LIGHTS.

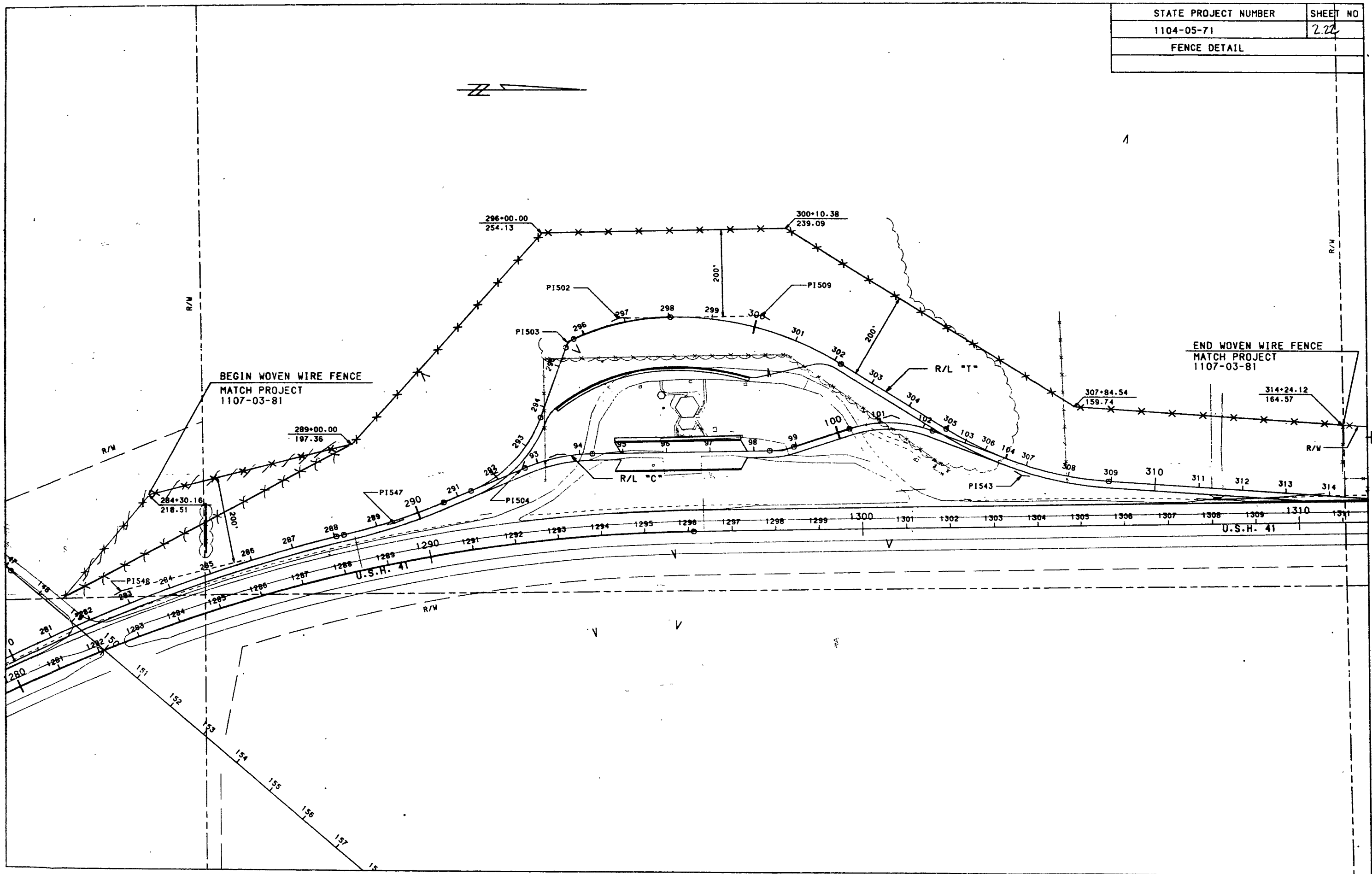
WHEN A RAMP INTERSECTS THE FACILITY ON WHICH THE WORK IS BEING PERFORMED, ADDITIONAL TRAFFIC CONTROLS SHALL BE PROVIDED AS SPECIFIED IN THE PLANS AND/OR THE SPECIAL PROVISIONS OR AS DIRECTED BY THE ENGINEER.

ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED.

"W" SIGNS ARE THE SAME AS "W" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

SEND TO: DIST. 2 CADDS WAUKESHA

STATE PROJECT NUMBER	SHEET NO
1104-05-71	222
FENCE DETAIL	



ALIGNMENT PLAN

CURVE TABLE

NO.	RADIUS	DELTA	ARC	TANGENT	CHORD	BEARING
1	3819.30	46°55'53"	3128.42	1657.96	3041.69	N 24°26'28"W
412	1445.69	05°56'22"	149.87	75.00	149.80	N 19°53'16"W
502	556.00	23°43'23"	230.21	116.78	228.57	N 12°50'13"W
503	35.00	45°07'25"	27.56	14.54	26.86	N 47°15'36"W
504	294.00	46°57'52"	240.99	127.73	234.30	N 46°20'23"W
509	718.50	32°51'15"	412.00	211.84	406.38	N 15°27'16"E
510	420.84	21°52'56"	160.73	81.35	159.75	N 11°54'59"W
538	190.00	17°03'54"	56.59	28.51	56.38	N 09°30'28"W
543	800.00	28°17'24"	395.00	201.61	391.00	N 17°44'11"E
545	287.00	38°42'50"	193.92	100.83	190.25	N 01°19'00"E
547	1432.39	09°41'48"	242.42	121.50	242.13	N 18°00'33"W
548	3898.22	15°00'17"	1020.88	513.38	1017.96	N 21°46'40"W

R/L "C"
ALIGNMENT TABLE

ALIGN	POINT	STATION	BEARING	NORTH	EAST
X011	6020	91+32.58		572453.82	2415897.30
	PC510	92+68.87	N 22°51'27.5"W	572579.41	2415844.36
	PI510	93+50.22	N 22°51'27.5"W	572654.38	2415812.76
	PT510	94+29.59	N 00°58'31.0"W	572735.72	2415811.38
	PC538	98+37.05	N 00°58'31.0"W	573143.12	2415804.44
	PI538	98+65.56	N 00°58'31.0"W	573171.62	2415803.96
	PT538	98+93.64	N 18°02'25.3"W	573198.72	2415795.13
	PC545	100+28.07	N 18°02'25.3"W	573326.54	2415753.50
	PI545	101+28.90	N 18°02'25.3"W	573422.41	2415722.27
	PT545	102+21.99	N 20°40'25.1"E	573516.75	2415757.87
	6049	104+05.16	N 20°40'25.1"E	573688.12	2415822.53

R/L USH 41
ALIGNMENT TABLE

ALIGN	POINT	STATION	BEARING	NORTH	EAST
A001	5	1241+42.27		568629.38	2418985.87
	PC	1	1264+83.87	N 47°54'24.0"W	570199.05
	PI	1	1281+41.83	N 47°54'24.0"W	571310.45
	PT	1	1296+12.29	N 00°58'31.0"W	572968.17
	4	1349+53.56	N 00°58'31.0"W	578308.67	2415898.85

R/L "T"

ALIGNMENT TABLE

ALIGN	POINT	STATION	BEARING	NORTH	EAST
X010	PC548	277+83.98	N 14°16'31.7"W	571198.00	2416380.54
	PI548	282+97.35	N 29°16'49.1"W	571645.78	2416129.45
	PT548	288+04.85	N 14°16'31.7"W	572143.31	2416002.86
	PC547	288+21.98	N 13°09'39.4"W	572159.98	2415998.96
	PI547	289+43.48	N 13°09'39.4"W	572278.29	2415971.30
	PT547	290+64.40	N 22°51'27.5"W	572390.25	2415924.10
	PC504	291+33.39	N 22°51'27.5"W	572453.82	2415897.30
	PI504	292+61.12	N 22°51'27.5"W	572571.52	2415847.69
	PT504	293+74.38	N 69°49'19.1"W	572615.58	2415727.80
	PC503	295+46.61	N 69°49'18.2"W	572674.99	2415566.14
	PI503	295+61.15	N 69°49'18.8"W	572680.01	2415552.49
	PT503	295+74.18	N 24°41'54.0"W	572693.22	2415546.41
	PC502	295+74.18	NORTH	572693.22	2415546.41
	PI502	296+90.95	N 24°41'54.3"W	572799.31	2415497.62
	PT502	298+04.39	N 00°58'31.0"W	572916.07	2415495.63
	PC509	298+04.39	N 00°58'28.5"W	572916.07	2415495.63
	PI509	300+16.22	N 00°58'22.0"W	573127.88	2415492.03
	PT509	302+16.39	N 31°52'53.2"E	573307.76	2415603.92
	PC543	304+99.34	N 31°52'53.2"E	573548.03	2415753.36
	PI543	307+00.96	N 31°52'53.2"E	573719.23	2415859.85
	PT543	308+94.35	N 03°35'29.0"E	573920.45	2415872.48
	6043	315+48.16	N 03°35'29.0"E	574572.97	2415913.43

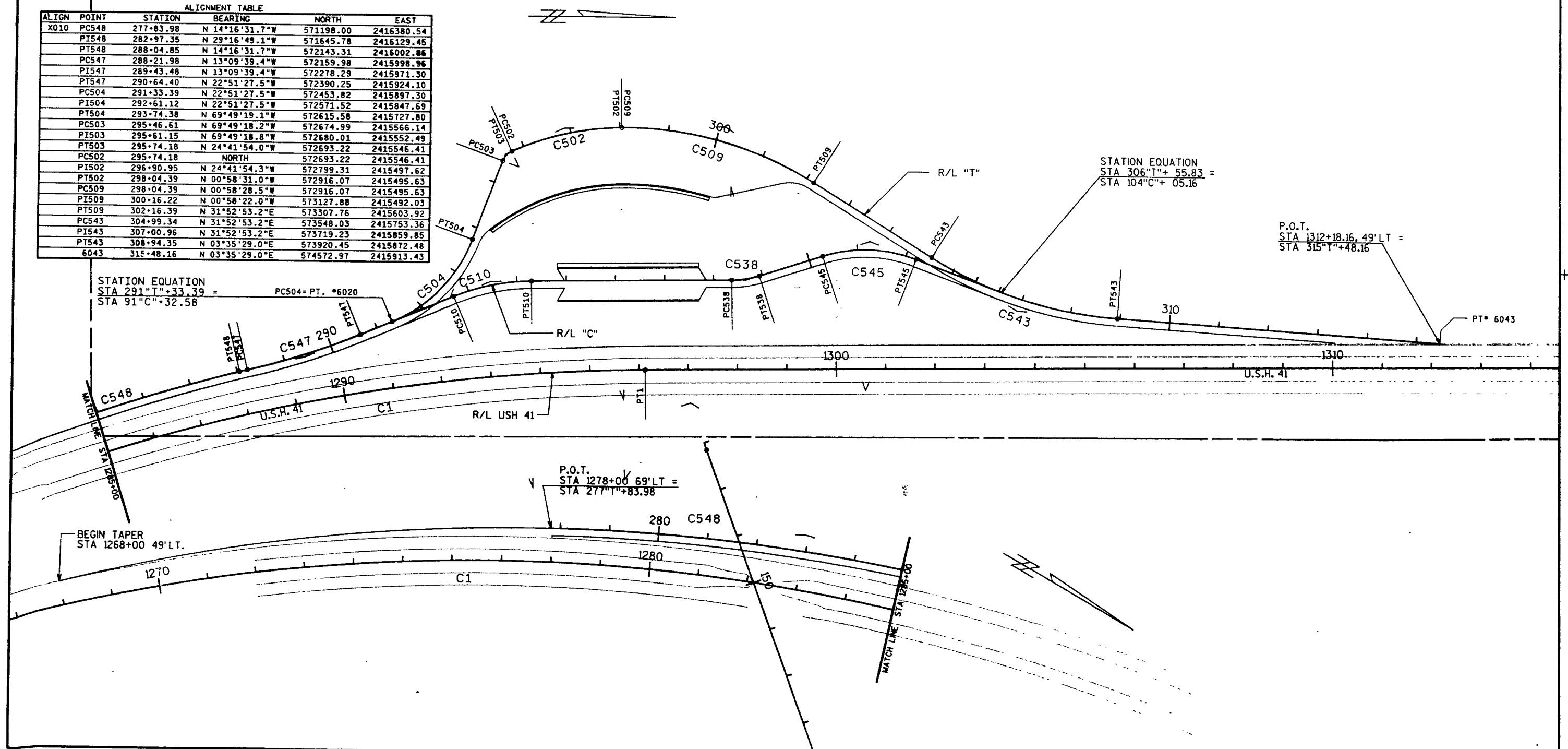
STATION EQUATION
STA 291+T+33.39 =
STA 91+C+32.58

PC504=PT. *6020

STATION EQUATION
STA 306+T+55.83 =
STA 104+C+05.16

P.O.T.
STA 1312+18.16, 49'LT =
STA 315+T+48.16

PT* 6043



DATE 01/05/95

ESTIMATE OF QUANTITIES

ITEM	ITEM DESCRIPTION	UNIT	TOTAL	1104-05-71 QUANTITY
20102	CLEARING	I.D.	984.00	984.00
20103	CLEARING	ACRE	2.50	2.50
20105	GRUBBING	I.D.	984.00	984.00
20106	GRUBBING	ACRE	2.50	2.50
20402	REMOVING ASPHALTIC SURFACE	S.Y.	14.00	14.00
20406	REMOVING CONCRETE SIDEWALK	S.Y.	152.00	152.00
20412	REMOVING FENCE	L.F.	1,280.00	1,280.00
20413	REMOVING UTILITY POLES	EACH	1.00	1.00
20422	REMOVING CONCRETE BASES	EACH	1.00	1.00
20503	UNCLASSIFIED EXCAVATION	C.Y.	31,125.00	31,125.00
20901	GRANULAR BACKFILL	C.Y.	200.00	200.00
21304	FINISHING ROADWAY, PROJECT 1107-05-71	L.S.	1.00	1.00
21401	OBLITERATING OLD ROAD	STA.	9.00	9.00
30404	CRUSHED AGGREGATE BASE COURSE	TON	18,325.00	18,325.00
30420	CRAC 66 NO. 2	TON	150.00	150.00
40204	ASPHALTIC MATERIAL FOR TACK COAT	GAL.	1,085.00	1,085.00
30426	BREAKER RUN STONE	TON	1100.00	1100.00
40501	ASPHALTIC MATERIAL FOR PLANT MIXES	TON	430.00	430.00
40713	ASPHALTIC CONCRETE PAVEMENT, TYPE MV	TON	7,155.00	7,155.00
52003	CULVERT PIPE, CLASS III, 18-INCH	L.F.	204.00	204.00
52005	CULVERT PIPE, CLASS III, 24-INCH	L.F.	72.00	72.00
52061	APRON ENDWALLS FOR CULVERT PIPE, 18-INCH	EACH	7.00	7.00
52063	APRON ENDWALLS FOR CULVERT PIPE, 24-INCH	EACH	2.00	2.00
52136	CORRUGATED STEEL PIPE ARCH, 21X15-INCH	L.F.	86.00	86.00
52162	STEEL APRON ENDWALLS FOR PIPE ARCH, 21X15-INCH	EACH	2.00	2.00
52178	STEEL APRON ENDWALLS FOR CULVERT PIPE, SLOPED SECTION, 18-INCH	EACH	1.00	1.00
52201	REINFORCED CONCRETE CULVERT PIPE, CLASS III, 12-INCH	L.F.	34.00	34.00
52202	REINFORCED CONCRETE CULVERT PIPE, CLASS III, 15-INCH	L.F.	10.00	10.00



es
H
W

ITEM	ITEM DESCRIPTION	UNIT	TOTAL	1104-05-71 QUANTITY
52203	REINFORCED CONCRETE CULVERT PIPE, CLASS III, 18-INCH	L.F.	46.00	46.00
52207	REINFORCED CONCRETE CULVERT PIPE, CLASS III, 30-INCH	L.F.	44.00	44.00
52211	REINFORCED CONCRETE CULVERT PIPE, CLASS III, 48-INCH	L.F.	6.00	6.00
52260	REINFORCED CONCRETE APRON ENDWALLS FOR CULVERT PIPE, 12-INCH	EACH	2.00	2.00
52261	REINFORCED CONCRETE APRON ENDWALLS FOR CULVERT PIPE, 15-INCH	EACH	1.00	1.00
52262	REINFORCED CONCRETE APRON ENDWALLS FOR CULVERT PIPE, 18-INCH	EACH	1.00	1.00
52266	REINFORCED CONCRETE APRON ENDWALLS FOR CULVERT PIPE, 30-INCH	EACH	1.00	1.00
52269	REINFORCED CONCRETE APRON ENDWALLS FOR CULVERT PIPE, 48-INCH	EACH	1.00	1.00
60133	CONCRETE CURB AND GUTTER, 30-INCH, TYPE D	L.F.	1,160.00	1,160.00
60205	CONCRETE SIDEWALK, 5-INCH	S.F.	7,130.00	7,130.00
61121	INLETS, TYPE 1	EACH	3.00	3.00
61128	RECONSTRUCTING MANHOLES	EACH	1.00	1.00
61161	INLET COVERS, TYPE A	EACH	1.00	1.00
61162	INLET COVERS, TYPE B	EACH	2.00	2.00
61334	NONMETALLIC CONDUIT, 2-INCH	L.F.	4,136.00	4,136.00
61408	STEEL PLATE BEAM GUARD, CLASS A	L.F.	106.00	106.00
61412	ANCHORAGES FOR STEEL PLATE BEAM GUARD, TYPE 1	EACH	1.00	1.00
61413	ANCHORAGES FOR STEEL PLATE BEAM GUARD, TYPE 2	EACH	1.00	1.00
61601	WOVEN WIRE FENCE	L.F.	3,100.00	3,100.00
61910	MOBILIZATION	L.S.	.10	.10
62505	SALVAGED TOPSOIL	S.Y.	23,560.00	23,560.00
62702	MULCHING	S.Y.	23,560.00	23,560.00
62811	EROSION BALES, DELIVERED	EACH	12.00	12.00
62812	EROSION BALES, INSTALLED	EACH	12.00	12.00
61201	PIPE UNDERDRAIN 6"	LF	835.00	835.00
61211	PIPE UNDERDRAIN UN PERF. 6"	LF	130.00	130.00
61254	RCAB FOR UNDER DRAIN 6"	EA	3.00	3.00

S
 F
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ITEM	ITEM DESCRIPTION	UNIT	TOTAL	1104-05-71 QUANTITY
62815	SILT FENCE, DELIVERED	L.F.	2,890.00	2,890.00
62816	SILT FENCE, INSTALLED	L.F.	2,890.00	2,890.00
62817	SILT FENCE MAINTENANCE	L.F.	2,890.00	2,890.00
62819	MOBILIZATIONS, EROSION CONTROL	EACH	2.00	2.00
62824	EROSION MAT, DELIVERED, CLASS I, TYPE B	S.Y.	310.00	310.00
62825	EROSION MAT, INSTALLED, CLASS I, TYPE B	S.Y.	310.00	310.00
62905	FERTILIZER, TYPE B	CWT.	15.00	15.00
63002	SEEDING	LB.	435.00	435.00
63101	SODDING	S.Y.	830.00	830.00
63201	TREES, ASH, WHITE, 1 1/4-INCH CAL., BR	EACH	26.00	26.00
63203	TREES, LINDEN, AMERICAN, 1 1/4-INCH CAL., BR	EACH	16.00	16.00
63204	TREES, MAPLE, SUGAR, 1 1/2-INCH CAL., B&B	EACH	20.00	20.00
63205	TREES, OAK, RED, 1 1/2-INCH CAL., B&B	EACH	16.00	16.00
63301	DELINEATOR POSTS	EACH	48.00	48.00
63305	DELINEATORS	EACH	96.00	96.00
63402	WOOD POSTS, 4X4-INCH X 12-FT.	EACH	11.00	11.00
63404	WOOD POSTS, 4X4-INCH X 16-FT.	EACH	4.00	4.00
63601	CONCRETE MASONRY, SIGN SUPPORTS	C.Y.	1.20	1.20
63605	BAR STEEL REINFORCEMENT, SIGN SUPPORTS	LB.	68.00	68.00
63702	SIGNS, TYPE II, REFLECTIVE	S.F.	103.37	103.37
63703	SIGNS, TYPE II, NON-REFLECTIVE	S.F.	2.25	2.25
63821	MOVING SIGN	EA	1.00	1.00
63822	MOVING SIGNS, TYPE II	EACH	1.00	1.00
63841	MOVING STRUCTURAL STEEL SIGN SUPPORTS	EACH	2.00	2.00
64005	POLES, TYPE 5, 30-FEET	EACH	27.00	27.00
64014	CONCRETE BASES, TYPE 5	EACH	27.00	27.00
64015	CONCRETE BASES, TYPE 11	EACH	20.00	20.00
64016	LIGHTING UNITS, WALKWAY LIGHTS	EACH	20.00	20.00

SHEET 3.2

ITEM	ITEM DESCRIPTION	UNIT	TOTAL	1104-05-71 QUANTITY
64031	LUMINAIRES, 100 WATTS, HIGH PRESSURE SODIUM	EACH	20.00	20.00
64032	LUMINAIRES, 150 WATTS, HIGH PRESSURE SODIUM	EACH	27.00	27.00
64056	MAST ARMS, TRUSS TYPE, 12-FOOT	EACH	27.00	27.00
64075	ELECTRICAL WIRE, LIGHTING, NO. 12	L.F.	20,103.00	20,103.00
64076	ELECTRICAL WIRE, LIGHTING, NO. 10	L.F.	7,353.00	7,353.00
64077	ELECTRICAL WIRE LIGHTING, NO 8 LF		12194	
64081	ELECTRICAL SERVICE, LIGHTING, REST AREA NO. 63	L.S.	1.00	1.00
64202	FIELD OFFICE, TYPE B	L.S.	.10	.10
64210	FIELD LABORATORY	L.S.	.10	.10
64304	TRAFFIC CONTROL, PROJECT 1104-05-71	L.S.	1.00	1.00
64310	TRAFFIC CONTROL, ARROW BOARDS	DAYS	20.00	20.00
64313	TRAFFIC CONTROL, DRUMS	DAYS	5,000.00	5,000.00
64318	TRAFFIC CONTROL, BARRICADES, TYPE III	DAYS	130.00	130.00
64321	TRAFFIC CONTROL, WARNING LIGHTS, TYPE A	DAYS	500.00	500.00
64323	TRAFFIC CONTROL, WARNING LIGHTS, TYPE C	DAYS	5,000.00	5,000.00
64326	TRAFFIC CONTRL, SIGNS	DAYS	150.00	150.00
64406	PAVEMENT MARKING, EPOXY, 4-INCH	L.F.	8,560.00	8,560.00
64414	PAVEMENT MARKING, CHANNELIZING, EPOXY, 8-INCH	L.F.	1,540.00	1,540.00
64488	PAVEMENT MARKING, DIAGONAL, EPOXY, 6-INCH	L.F.	215.00	215.00
64493	PAVEMENT MARKING, CURB RAMP, EPOXY	L.F.	60.00	60.00
64494	PAVEMENT MARKING, PARKING STALL, EPOXY	L.F.	3,525.00	3,525.00
64495	PAVEMENT MARKING, CURB, EPOXY	L.F.	525.00	525.00
64601	SAWING EXISTING PAVEMENT	L.F.	2,150.00	2,150.00
90011	SALVAGED POLES, TYPE 5, 30-FEET	EACH	1.00	1.00
90012	SALVAGED LUMINAIRES	EACH	1.00	1.00
90013	SALVAGED MAST ARMS	EACH	1.00	1.00

SHEET 3.3

7/1

ITEM	ITEM DESCRIPTION	UNIT	TOTAL	1104-05-71 QUANTITY
90014	PRAIRIE GRASS	ACRE	1.00	1.00
90015	CRUSHED AGGREGATE SURFACE, 3/8 INCH	TON	115.00	115.00
90402	QUALITY MANAGEMENT PROGRAM, ASPHALTIC MIXTURE	TON	7,155.00	7,155.00
90797	PULL BOXES, 24X36-INCH	EACH	1.00	1.00

SHEET 3.4

CLEARING AND GRUBBING

STATION	TO	STATION	CLEARING ACRE	I.D.	GRUBBING ACRE	I.D.
93C + 00	-	102C + 00		440		440
294T + 00	-	303T + 00		544		544
295T + 00	-	306T + 50	2.5		2.5	984
TOTAL =			2.5	984	2.5	984

REMOVING ASPHALTIC SURFACE

STATION	TO	STATION	S.Y.
95C + 91	-	95C + 99	14
TOT. =			14

REMOVING CONC. SIDEWALK

STATION	TO	STATION	S.Y.
95C + 89	-	97C + 77	148
96C + 91	-	96C + 97	4
TOT. =			152

REMOVING FENCE

STATION	TO	STATION	L.F.
282T + 70, RT	-	295T + 00, LT	290
295T + 00, LT	-	305T + 20, RT	990
TOT. =			1280

OBLITERATING OLD ROAD

STATION	TO	STATION	STA.
91C + 68	-	93C + 87	2
94C + 20	-	95C + 40	1.5
96C + 50	-	102C + 98	4
98C + 25	-	100C + 40	1.5
TOT. =			9

RECONSTRUCTING MANHOLES

STATION	LOCATION	EA
100C + 08	38' RT	1
TOT. =		1

CRUSHED AGG. BASE COURSE

STATION	TO	STATION	TON
1268 + 00	-	1278 + 00	1,970
277T + 83.98	-	293T + 90.40	5,060
293T + 90.40	-	302T + 16	4,825
302T + 16	-	315T + 48.16	3,260
91C + 42	-	94C + 97	680
94C + 97	-	97C + 85	1,165
97C + 85	-	104C + 00	1,160
LIFT STA. RD			30
SIDEWALKS - PER SITE PLAN			175
TOT. =			18,325

ASPHALTIC CONC. PAVT. T.Y.M.V.

STATION	TO	STATION	TON
1268 + 00	-	1278 + 00	540
277T + 83.98	-	293T + 90.40	2,350
293T + 90.40	-	302T + 16	2,665
302T + 16	-	315T + 48.16	1,260
91C + 42	-	94C + 97	275
94C + 97	-	97C + 85	360
97C + 85	-	104C + 00	475
TOT. =			7,155

CONCRETE CURB AND GUTTER, 30-INCH, TYPE D

STATION	TO	STATION	LOC.	L.F.
94C + 68	-	97C + 85	LT	319
94C + 68	-	97C + 85	RT	319
294T + 07	-	300T + 42	RT	522
TOT. =				1,160

CONCRETE SIDEWALK, 5-INCH

STATION	TO	STATION	LOC.	S.F.
94C + 82	-	97C + 71	LT	2312
294T + 07	-	300T + 18	RT	2820
INTERIOR SIDEWALKS				1650
MISC. PADS				348
TOT. =				7130

SAWING EXISTING PAVEMENT

STATION	TO	STATION	LOC.	L.F.
1268 + 00	-	1278 + 00	RT	1,000
277T + 84	-	283T + 00	RT	516
310T + 70	-	315T + 48	RT	478
EXISTING ENTRANCE RAMP				81
EXISTING EXIT RAMP				75
TOT. =				2,150

LANDSCAPING

STATION	TO	STATION	LOCATION	SALVAGED TOPSOIL S.Y.	MULCH S.Y.	SEEDING LBS	FERTILIZER TY B C.W.T	PRAIRIE GRASS LBS.
1270 + 00	-	1278 + 00	LT	2,030	2,030	40	1.3	
278T + 00	-	315T + 00	LT	13,930	13,930	250	8.8	
283T + 00	-	311T + 00	RT	3,470	3,470	65	2.2	
92C + 50	-	102C + 00	LT	1,505	1,505	30	1	
92C + 00	-	102C + 50	RT	2,625	2,625	50	1.7	
1293 + 00	-	1294 + 50	LT					27
1299 + 75	-	1301 + 50	LT					50
PROJECT TOTALS				23,560	23,560	435	15	77

CROSS DRAIN AND MINOR SIDE ROAD PIPES

STATION	TYPE	CONC.	STEEL	ALUM.	DIA. (IN.)	LENGTH (L.F.)	LOCATION	APRON ENDWALLS	JT. TIES EACH	COMMENT
1272 + 42	RCCP	III	---	---	12	6	LT	1	2	EXTEND LT
1275 + 64	RCCP	III	---	---	48	6	LT	1	2	EXTEND LT
1278 + 42	RCCP	III	---	---	15	6	LT	1	2	EXTEND LT
283T + 37	RCCP	III	---	---	12	28	LT	1	2	EXTEND LT
288T + 48	RCCP	III	---	---	18	48	LT	1	2	EXTEND LT
291T + 00	CP	III	0.064	0.060	18	44	LT	2		
292T + 95	CSPA	---	---	---	21 x 15	86	C/L	2		
293T + 70	CP	III	0.064	0.060	18	38	RT	1		
294T + 08	CP	III	0.064	0.060	18	42	C/L	1		
303T + 50	CP	III	0.064	0.060	18	40	LT	2		
306T + 75	CP	III	0.064	0.075	24	72	LT	2		
308T + 45	RCCP	III	---	---	30	44	LT	1	2	EXTEND LT
LIFT STA. RD.	CP	III	0.064	0.060	18	40	C/L	2		
282 T + 30	RCCP	III	---	---	24	26	LT	1	2	EXTEND LT

* 1 APRON ENDWALL SHALL BE A SLOPED END SECTION PFR S.D.D.

INLETS

STATION	LOC.	TYPE	COVER TYPE A	TYPE B	FLOW LINE ELEV	INVERT ELEV	DEPTH FEET
283T + 37	22' RT	1	1	1	950.30	944.80	4.8
288T + 48	26' RT	1	1	1	951.56	947.55	3.3
294T + 08	28' RT	1	1	1	950.67	947.80	2.5
TOTALS		3	1	2			

* FIELD VERIFY

EARTHWORK SUMMARY

STATION	TO	STATION	UNCL. C.Y.	FILL C.Y.	EXCESS C.Y.	SHORTAGE C.Y.
92C + 00	-	95C + 00	6,040	0	6,040	---
95C + 00	-	98C + 00	2,320	5	2,315	---
98C + 00	-	102C + 50	2,395	5	2,390	---
1270 + 00	-	1278 + 00	520	2,325	---	1,805
278T + 00	-	294T + 00	17,070	7,940	9,130	---
294T + 00	-	302T + 00	1,875	11,120	---	9,245
302T + 00	-	315T + 00	905	9,415	---	8,510
PROJECT BALANCE			31,125	30,810		

FILL QUANTITIES HAVE BEEN EXPANDED BY A FACTOR OF 1.30

EXCESS = UNCLASSIFIED - FILL

SHORTAGE = FILL - UNCLASSIFIED

EROSION MAT DELIVERED & INSTALLED
CLASS I, TYPE B

STATION	TO	STATION	LOC.	S.Y.
288T + 50	-	291T + 00	LT	140
293T + 00	-	294T + 25	LT	70
101C + 60	-	103C + 40	RT	100
TOT. =				310

SILT FENCE, DELIVERED, INSTALLED, MAINTAINED (SILTY SOIL)

STATION	TO	STATION	LOC.	L.F.
1272 + 00	-	1278 + 00	LT	600
277T + 84	-	283T + 39	LT	355
281T + 78	-	283T + 00	LT	122
295T + 55	-	302T + 50	LT	695
305T + 50	-	315T + 48	LT	998
CULVERTS				120
TOT. =				2890

EROSION BALES DELIVERED & INSTALLED

STATION	LOCATION	EACH
UNDISTRIBUTED		12
TOT. =		12

SODDING

STATION	TO	STATION	LOC.	S.Y.
283T + 00	-	288T + 50	LT	308
300T + 48	-	300T + 95	RT	28
94C + 00	-	94C + 82	LT	46
94C + 00	-	94C + 82	RT	46
97C + 70	-	101C + 25	LT	197
97C + 70	-	101C + 10	RT	189
CULVERTS				18
TOT. =				830

WOVEN WIRE FENCE

STATION	TO	STATION	LOC.	L.F.
284 + 30.16	-	314 + 24.12	LT	3100
TOT. =				3100

STEEL PLATE BEAM GUARD, CLASS A

STATION	TO	STATION	LOC.	L.F.
311T + 06	-	312T + 12	LT	106
TOT. =				106

CRUSHED AGG SURFACE, 3/8-INCH

SIDEWALKS - PER SITE PLAN 115 TONS



STATE PROJECT NUMBER

1104-05-71

SHEET NO

3A

MISCELLANEOUS QUANTITIES

DELINEATORS

STATION	TO	STATION	LOC.	DELIN. POSTS EACH	DELIN. EACH
1268 + 00	-	1278 + 00	LT	10	20
277T + 84	-	292T + 00	LT	14	28
283T + 00	-	292T + 00	RT	9	18
305T + 00	-	315T + 00	LT	10	20
305T + 00	-	310T + 00	RT	5	10
PROJECT TOTALS =				48	96

MOVING SIGNS

STATION	TO	STATION	LOC.	MOVING SIGNS EACH	MOVING SMALL SIGN SUPPORTS EACH	CONC. MASONRY C.Y.	BAR STEEL REINF. LBS.	H.S. STRUCT. STEEL SIGN SUPPORTS LBS.
310T + 50	-	315T + 50	LT	1		1.2	68	548
1301 + 00	-	1307 + 00	LT	1	2		68	548
PROJECT TOTALS =				2	2	1.2	68	548

TRAFFIC CONTROL

ARROW BOARD DAYS	DRUMS DAYS	SIGN DAYS	TYPE C LIGHTS DAYS	TYPE A LIGHTS DAYS	TYPE III BARRICADES DAYS
20	5000	150	5000	500	130

PAVEMENT MARKING

PAVEMENT MARKING, NAME	WHITE L.F.	YELLOW L.F.	TOTAL L.F.
PAVEMENT MARKING, EPOXY, 4"	5,550	3,055	8,560
PAVEMENT MARKING, CHANNELIZING, EPOXY, 8"	1,540		1,540
PAVEMENT MARKING, DIAGONAL, EPOXY, 12"	215		215
PAVEMENT MARKING, CURB RAMP EPOXY		60	60
PAVEMENT MARKING, PARKING STALL EPOXY	3,525		3,525
PAVEMENT MARKING, CURB EPOXY		525	525

SIGNING

SIGN NO.	SIGN CODE	STATION	LOCATION	S.F.	SIGN TYPE 2 REFL	SIGN TYPE 2 NON-REFL	WOOD POSTS, 4X6-INCH 12-FT.	16-FT.	COMMENT
1	156-54	290T + 32	LT	5					
2	156-54	293T + 15	RT	9					
3	156-54	299T + 15	RT	4					
4	156-54	301T + 69	RT	1					
5	156-54	302T + 14	LT	9					
6	156-54	302T + 15	RT	9					
7	156-54	304T + 10	RT	15.75					
8	156-54	306T + 53	RT	20.75					2 SIGNS
9	156-54	306T + 55	LT	8.75	2.25				2 SIGNS
10	156-54	92C + 73	LT	7					
11	156-54	96C + 76	LT	2.62					2 SIGNS
12	156-54	97C + 10	LT	1.5					
13	156-54	98C + 28	LT	14					2 SIGNS
14	156-54	98C + 28	RT	9					
PROJECT TOTALS =				116.37	2.25		11	4	

REMOVING UTILITY POLE

STATE PROJECT NUMBER	SHEET NO
1104-05-71	36
MISCELLANEOUS QUANTITIES	

STATION	I.D. NO.	CONC. BASES		LIGHTING		MAST ARMS TRUSS TY 12-FOOT (EA.)	LUMINAIRES HIGH PRESSURE SODIUM		COMMENTS
		TYPE 5 (EA.)	TYPE 11 (EA.)	TYPE 5 30-FOET (EA.)	POLES WALKWAY 10-FOET (EA.)		100 WATTS (EA.)	150 WATTS (EA.)	
96C + 34, LT	1								EXISTING
96C + 29, LT	2								EXISTING
96C + 78, LT	3								EXISTING
97C + 46, LT	4								EXISTING
96C + 88, LT	5								EXISTING
96C + 88, LT	6		1		1		1		
96C + 72, LT	7		1		1		1		
96C + 98, LT	8		1		1		1		
97C + 72, LT	9		1		1		1		
98C + 28, LT	10		1		1		1		
96C + 88, LT	11		1		1		1		
97C + 91, LT	12		1		1		1		
98C + 41, LT	13		1		1		1		
98C + 21, LT	14		1		1		1		
98C + 36, LT	15		1		1		1		
98C + 30, LT	16		1		1		1		
98C + 15, LT	17		1		1		1		
98C + 71, LT	18		1		1		1		
98C + 66, LT	19		1		1		1		
98C + 34, LT	20		1		1		1		
96C + 72, LT	21		1		1		1		
94C + 81, LT	22		1		1		1		
94C + 30, LT	23		1		1		1		
94C + 00, LT	24		1		1		1		
294T + 14, RT	25		1		1		1		
98C + 31, LT	26	1		1		1		1	
96C + 31, RT	27	1		1		1		1	
94C + 00, RT	28	1		1		1		1	
98C + 32, RT	29	1		1		1		1	
97C + 46, RT	30	1		1		1		1	
98C + 00, RT	31	1		1		1		1	
101C + 00, RT	32	1		1		1		1	
298T + 57, RT	33	1		1		1		1	
298T + 70, RT	34	1		1		1		1	
301T + 00, LT	35	1		1		1		1	
297T + 39, RT	36	1		1		1		1	
296T + 26, RT	37	1		1		1		1	
294T + 45, RT	38	1		1		1		1	
298T + 00, LT	39	1		1		1		1	
297T + 00, LT	40	1		1		1		1	
296T + 00, LT	41	1		1		1		1	
295T + 00, LT	42	1		1		1		1	
294T + 00, LT	43	1		1		1		1	
292T + 50, LT	44	1		1		1		1	
290T + 60, LT	45	1		1		1		1	
288T + 00, LT	46	1		1		1		1	
300T + 00, LT	47	1		1		1		1	
301T + 00, LT	48	1		1		1		1	
302T + 00, LT	49	1		1		1		1	
303T + 80, LT	50	1		1		1		1	
305T + 00, LT	51	1		1		1		1	
307T + 00, LT	52	1		1		1		1	
TOTAL =		27	20	27	20	27	20	27	

CONDUIT & ELECTRIC WIRE									
LOCATION			NONMET. CONDUIT 2-IN. (L.F.)	ELECTRICAL WIRE LIGHTING		COMMENTS	LOCATION		
CIRCUIT	FROM	TO		NO. 8 (L.F.)	NO. 10 (L.F.)		CIRCUIT	FROM	TO
1,2	PNL 1P	PB-1	-	-	250	EXISTING 2" CONDUIT MUST BE CUT FOR PB-1 INSTALLATION	5,6	1P3-44	-1P4-45
1,2	PB-1	1P2-5	-	-	50	PLACE IN EXISTING 2"C.	5,6	PNL-1P	PB-1
1,2	1P2-5	V-100-	-	-	220	PLACE IN EXISTING 2"C.	5,6	1P2-5	V-100-
1,2	V-100-	1P1-6	57	-	330		5,6	V-100-	111-150-12
1,2	1P1-6	1P2-20	-	-	-		5,6	1P1-6	-1P4-33
1,2	V-100-	V-100-	47	-	290		5,6	111-150-12	111-150-12
1,2	1P2-20	1P1-17	-	-	-		5,6	-1P4-33	-1P5-46
1,2	V-100-	V-100-	30	-	200		5,6	111-150-12	111-150-12
1,2	1P1-17	1P2-16	-	-	-		5,6	-1P5-46	-1P6-39
1,2	V-100-	V-100-	60	-	345		5,6	111-150-12	111-150-12
1	1P1-17	1P2-8	-	-	-		5,6	-1P6-39	-1P5-40
1	V-100-	V-100-	30	-	105		5	111-150-12	111-150-12
1	1P2-8	1P1-19	-	-	-		5	-1P5-40	-1P6-41
1	1P2-5	V-100-	27	-	100		5,6	111-150-12	111-150-12
1,2	1P2-5	1P1-7	-	-	-		5,6	1P6-41	1P5-42
1,2	1P1-3	1P2-2	-	-	320	PLACE IN EXISTING 2"C.	5,6	111-150-12	111-150-12
1	1P2-2	1P1-1	-	-	280	PLACE IN EXISTING 2"C.	5,6	-1P5-46	-1P6-47
1,2	1P1-3	1P2-4	-	-	180	PLACE IN EXISTING 2"C.	5,6	111-150-12	111-150-12
1,2	1P2-4	V-100-	26	-	650	PLACE IN EXISTING 2"C.	5,6	-1P6-47	-1P5-48
1,2	V-100-	V-100-	58	-	175		5,6	111-150-12	111-150-12
1,2	1P1-9	1P2-10	-	-	260		5,6	-1P5-48	-1P6-49
1,2	V-100-	V-100-	48	-	285		5,6	111-150-12	111-150-12
1,2	1P2-10	1P1-11	-	-	-		5	111-150-12	111-150-12
1,2	V-100-	V-100-	56	-	325		5	1P5-50	-1P6-51
1,2	1P1-11	1P2-15	-	-	-		7,8	111-150-12	111-150-12
1,2	V-100-	V-100-	55	-	320		7,8	-1P6-51	-1P5-52
2	1P2-15	1P1-14	-	-	-		7,8	PNL-1P	PB-1
2	V-100-	V-100-	48	-	315		7,8	PB-1	V-100-
3,4	PNL 1P	PB-1	-	-	250	PLACE IN EXISTING 2"C.	7,8	-1P8-8	1P8-8
3,4	PB-1	1P2-5	-	-	50	PLACE IN EXISTING 2"C.	7,8	V-100-	111-150-12
3,4	1P2-5	V-100-	-	-	250	PLACE IN EXISTING 2"C.	7,8	1P8-8	-1P8-30
3,4	V-100-	111-150-12	40	-	338		7,8	111-150-12	111-150-12
3,4	1P1-6	1P4-33	-	-	-		7,8	-1P8-30	-1P7-31
3,4	111-150-12	111-150-12	95	-	613		7,8	111-150-12	111-150-12
3,4	-1P4-33	-1P3-34	-	-	-		7,8	-1P7-31	-1P8-32
3,4	111-150-12	V-100-	43	-	280		7,8	V-100-	V-100-
3	V-100-	111-150-12	90	-	408		7,8	1P8-8	1P8-21
3,4	1P4-12	-1P3-35	-	-	-		7,8	V-100-	111-150-12
3,4	111-150-12	111-150-12	93	-	603		7,8	-1P8-21	-1P7-26
3,4	-1P4-33	-1P3-36	-	-	-		7,8	111-150-12	111-150-12
3,4	111-150-12	111-150-12	96	-	628		7,8	1P8-27	-1P7-29
3,4	-1P4-37	1P4-37	-	-	-		7,8	-1P8-27	-1P7-28
3,4	111-150-12	111-150-12	102	-	648		7,8	111-150-12	V-100-
3,4	111-150-12	111-150-12	105	-	663		7,8	-1P7-26	1P8-22
3,4	1P3-38	1P4-43	-	-	-		7,8	V-100-	V-100-
3,4	111-150-12	111-150-12	150	-	888		7,8	1P7-23	1P8-24
4	1P4-43	-1P3-44	-	-	-		8	V-100-	V-100-
4	111-150-12	111-150-12	200	-	738		TOTALS	1P8-24	1P7-25

CONTINUED

MISCELLANEOUS QUANTITIES

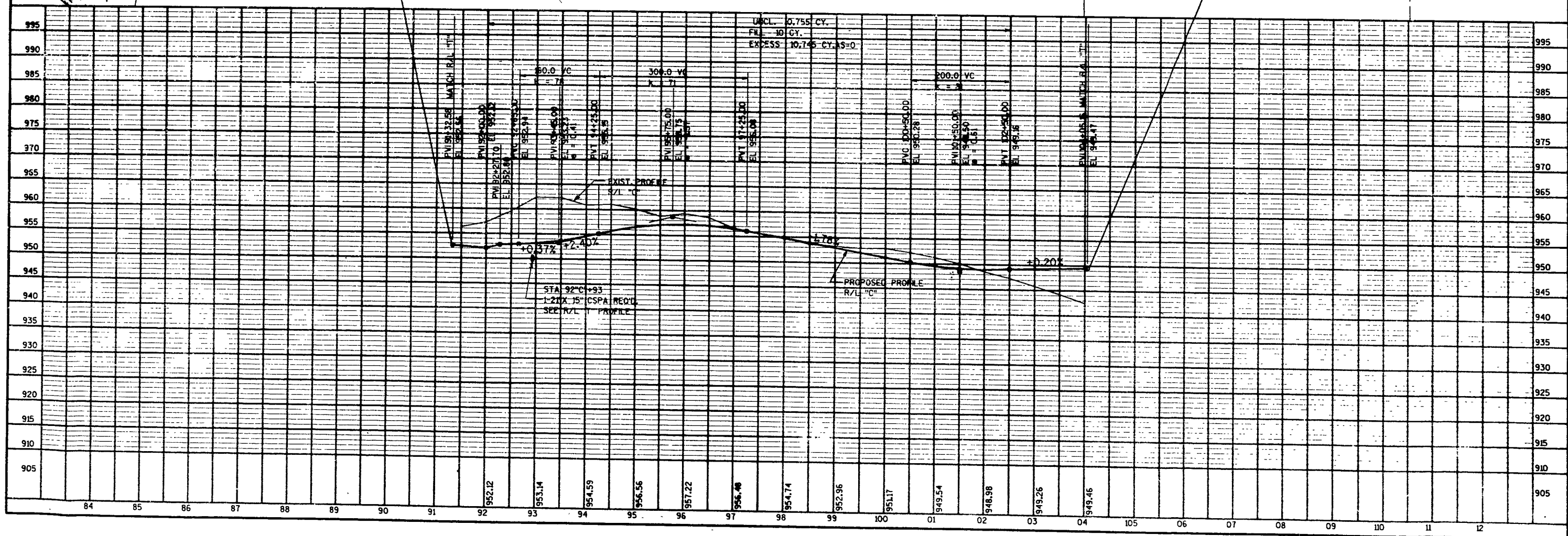
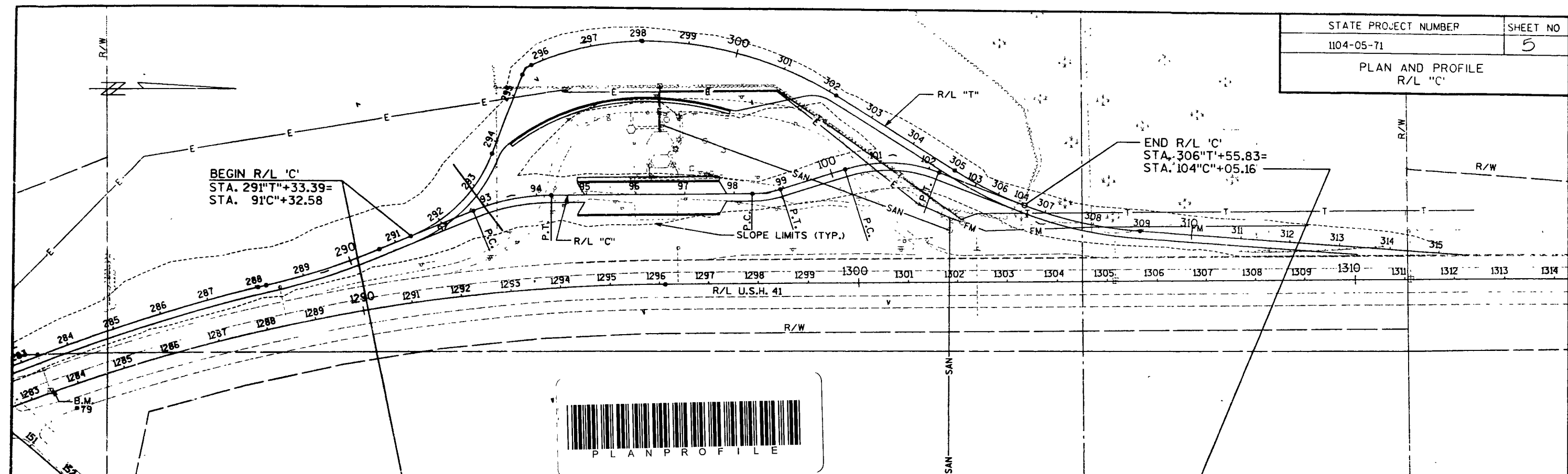
P L A N T D A T A C H A R T

USE	SYMBOL	COMMON NAME	SCIENTIFIC NAME	TYPE	AVG MATURE HGT	MIN PLANTING SIZE	ROOT MODE	MIN ROOT BALL DIA X DEPTH	MIN HOLE SIZE DIA X DEPTH	FERTILIZER PACKETS REQ	RODENT PROTECTION	BRACE	MIN MULCH DIA	TOTAL REQUIRED
DECIDUOUS TREE	AL	AMERICAN LINDEN	TILIA AMERICANA	I	80'	11/4" CAL	BR	20" x 13"	32" x 13"	3	YES	YES	44"	16
	RO	RED OAK	QUERCUS RUBRA (BOREALIS)	I	75'	11/2" CAL	B & B	20" x 13"	32" x 13"	3	YES	YES	44"	16
	SM	SUGAR MAPLE	ACER SACCHARUM	I	75'	11/2" CAL	B & B	20" x 13"	32" x 13"	3	YES	YES	44"	20
	WA	WHITE ASH	FRAXINUS AMERICANA	I	75'	11/4" CAL	BR	20" x 13"	32" x 13"	3	YES	YES	44"	26

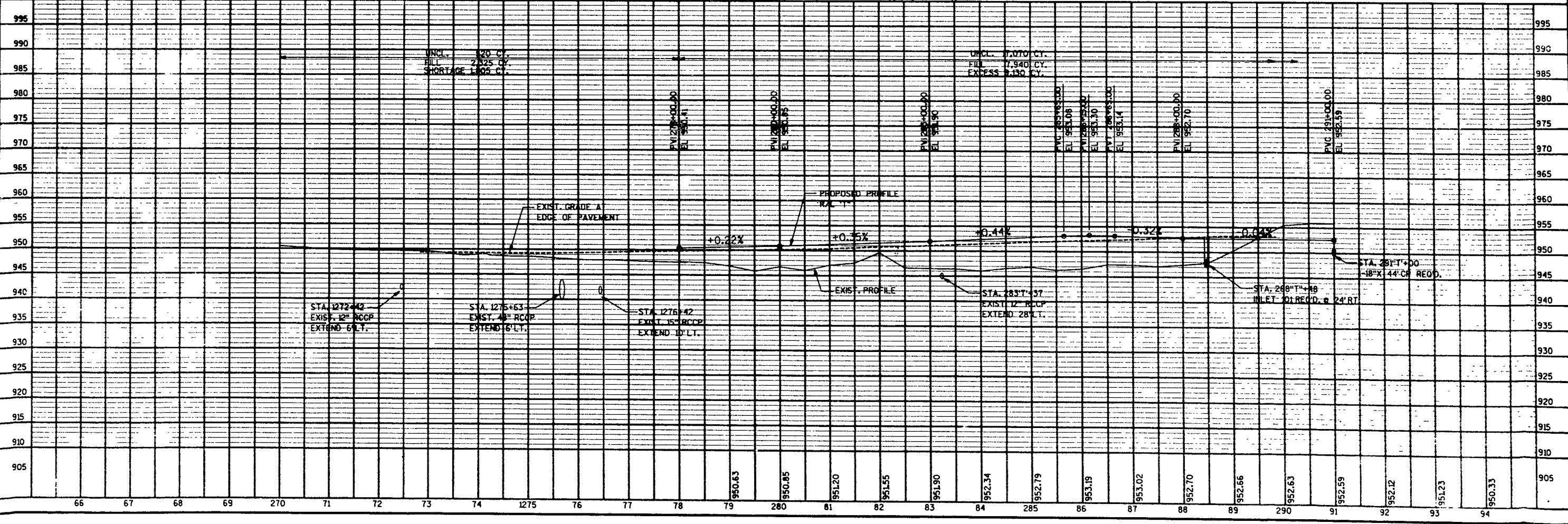
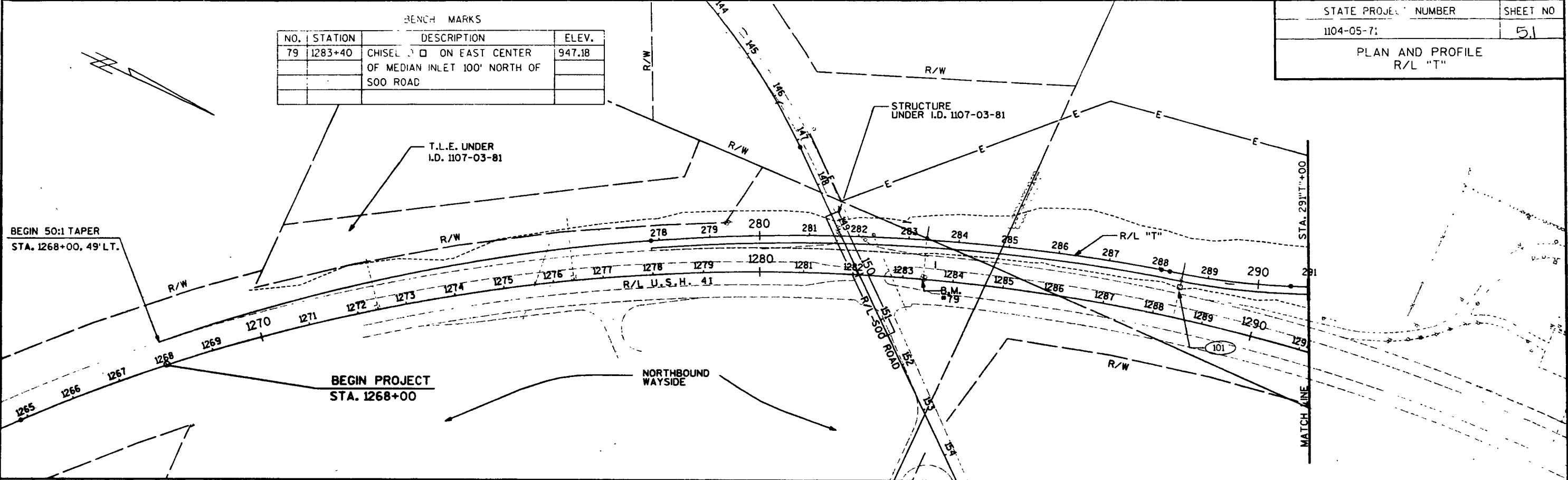
LEVELS 01 - 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63

PLANT SCALE:

STATE PROJECT NUMBER	SHEET NO
1104-05-71	5
PLAN AND PROFILE R/L "C"	

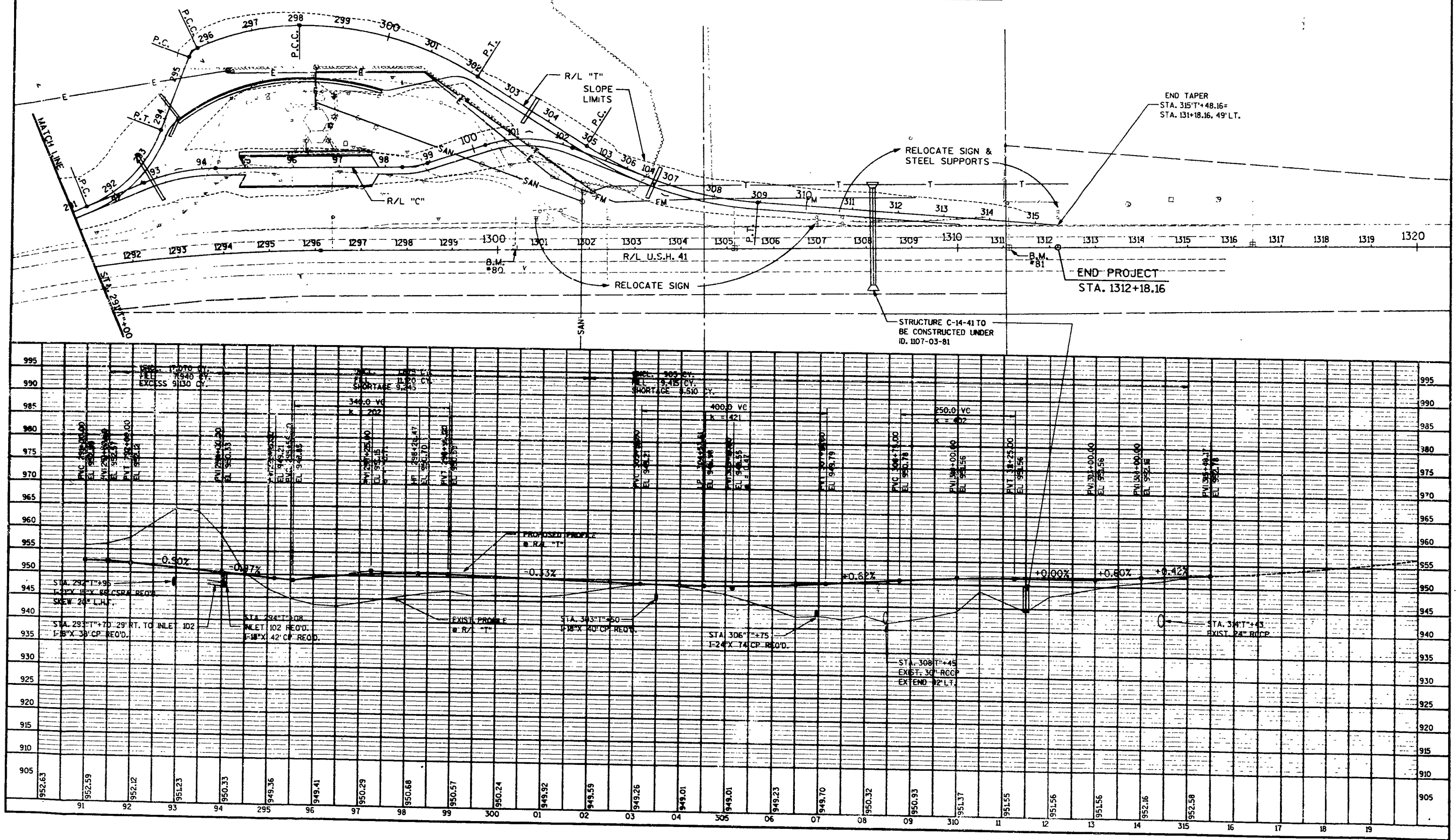


BENCH MARKS			
NO.	STATION	DESCRIPTION	ELEV.
79	1283+40	CHISEL ON EAST CENTER OF MEDIAN INLET 100' NORTH OF S00 ROAD	947.18



BENCH MARKS			
NO.	STATION	DESCRIPTION	ELEV.
80	1300+38	CHISELED ON CENTER OF MEDIAN INLET.	948.05
81	1311+14	CHISELED ON CENTER OF MEDIAN INLET	947.99

STATE PROJECT NUMBER	SHEET NO
1104-05-71	52
PLAN AND PROFILE R/L "T"	



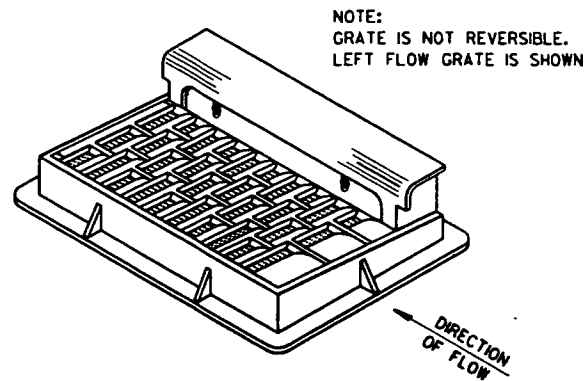
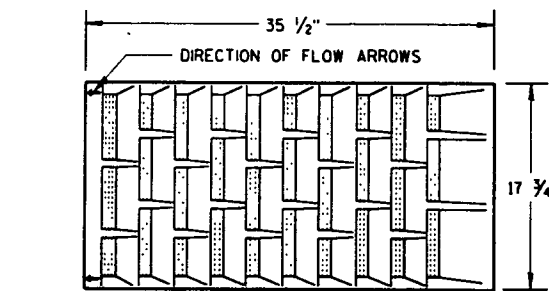
GENERAL NOTES

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.

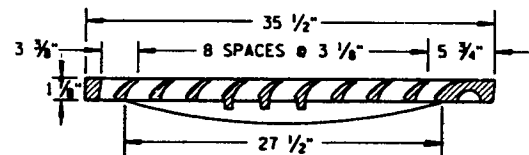
DETAIL DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR CATCH BASIN, MANHOLE AND INLET COVERS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

ROUND FRAMES AND COVERS SHALL HAVE CONTINUOUSLY MACHINED BEARING SURFACES TO PREVENT ROCKING AND RATTLING.

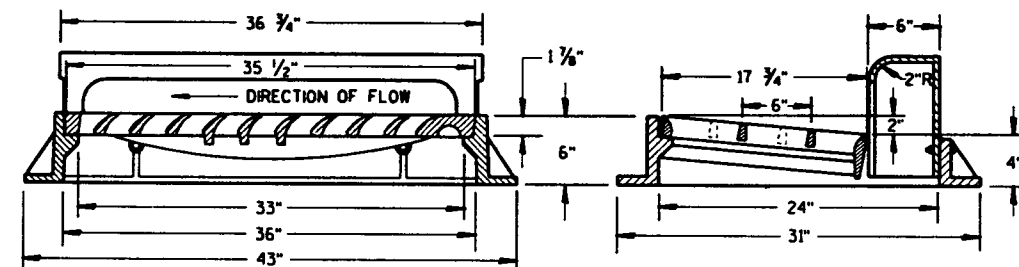
THE ACTUAL WEIGHT OF COVERS MAY VARY WITHIN 5 PERCENT, PLUS OR MINUS, OF THE APPROXIMATE WEIGHT.



NOTE:
GRATE IS NOT REVERSIBLE.
LEFT FLOW GRATE IS SHOWN



NOTE: CURB BOX HEIGHT ADJUSTABLE 6" TO 9"

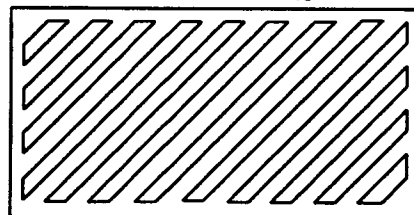


TYPE "H"

(APPROXIMATE WEIGHT 145 LBS.)

FRAME..... 195 LBS.
GRATE..... 135 LBS.
CURB BOX..... 115 LBS.

1 1/8" DIAGONAL BARS WITH 1 1/8" OPENINGS



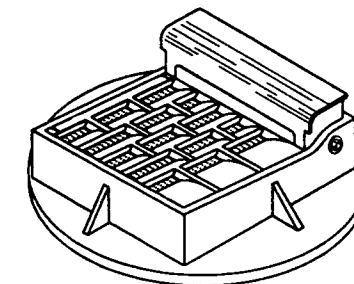
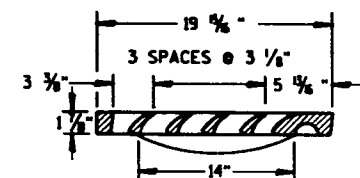
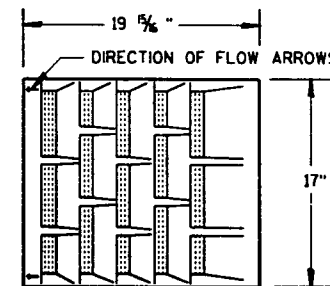
SPECIAL GRATE FOR TYPE "H" COVER

(MEASURES 35 1/2" X 17 3/4" X 2")

(APPROXIMATE WEIGHT 170 LBS.)

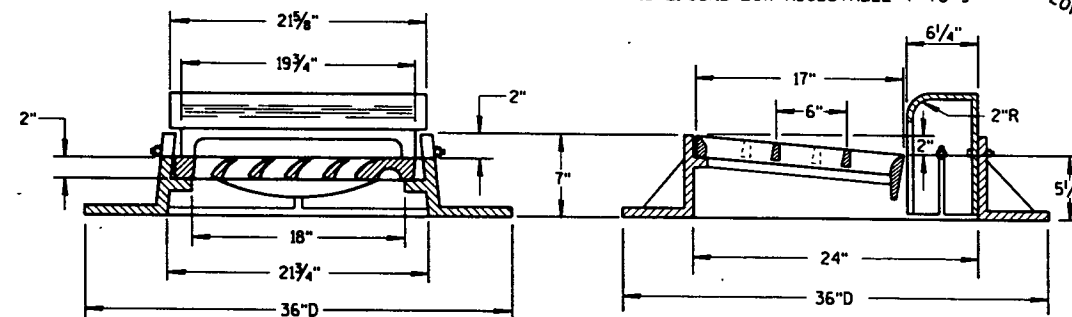
GRATE..... 170 LBS.

(NOTE AS TYPE H-S ON DRAINAGE TABLE)



NOTE:
GRATE IS NOT REVERSIBLE
LEFT FLOW GRATE IS SHOWN

NOTE: CURB BOX ADJUSTABLE 4" TO 9"

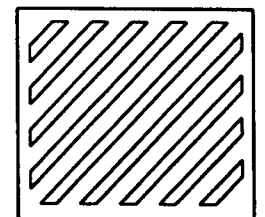


TYPE "A"

(APPROXIMATE WEIGHT 405 LBS.)

FRAME..... 235 LBS.
GRATE..... 85 LBS.
CURB BOX..... 85 LBS.

1" DIAGONAL BARS
WITH 1 1/2" OPENINGS



SPECIAL GRATE FOR TYPE "A" COVER

(MEASURES 19 5/8" X 17" X 1 1/8")

GRATE..... 85 LBS.

(NOTE AS TYPE A-S ON DRAINAGE TABLE)



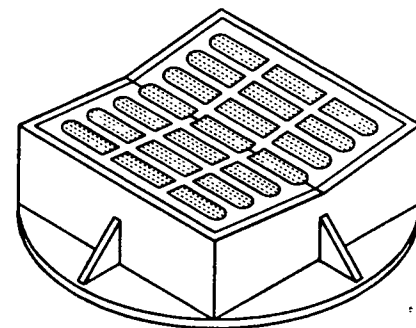
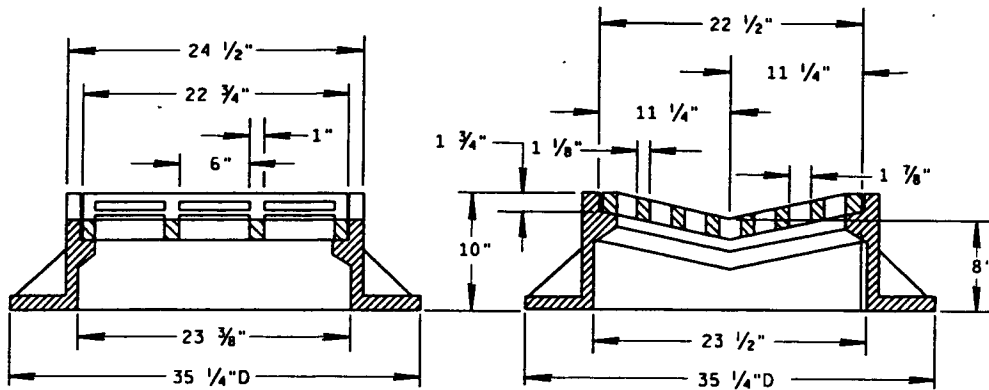
INLET COVERS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

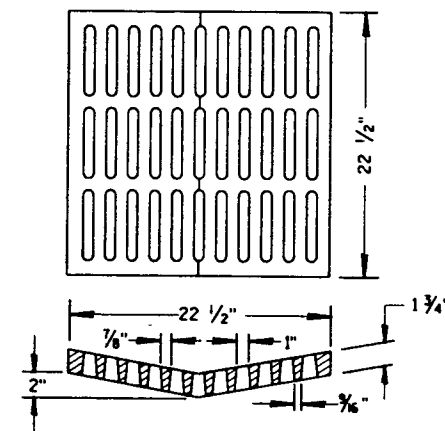
APPROVED
1/25/93
DATE

STATE DESIGN ENGINEER FOR HWYS

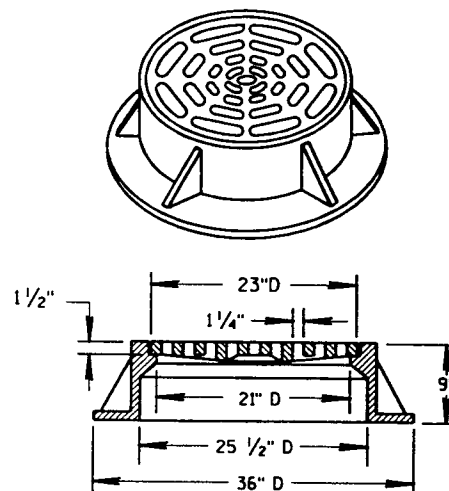
FHWA



TYPE "B"
(APPROXIMATE WEIGHT 395 LBS.)
FRAME..... 285 LBS.
GRATE..... 110 LBS.



**ALTERNATIVE GRATE FOR
FOR TYPE "B" COVER**
(APPROXIMATE GRATE WEIGHT 125 LBS.)
GRATE..... 125 LBS.
USE WHERE PEDESTRIAN OR BICYCLE TRAFFIC IS POSSIBLE.
NOTE AS TYPE B-A ON THE DRAINAGE TABLE



TYPE "C"
(APPROXIMATE WEIGHT 340 LBS.)
FRAME..... 235 LBS.
GRATE..... 105 LBS.

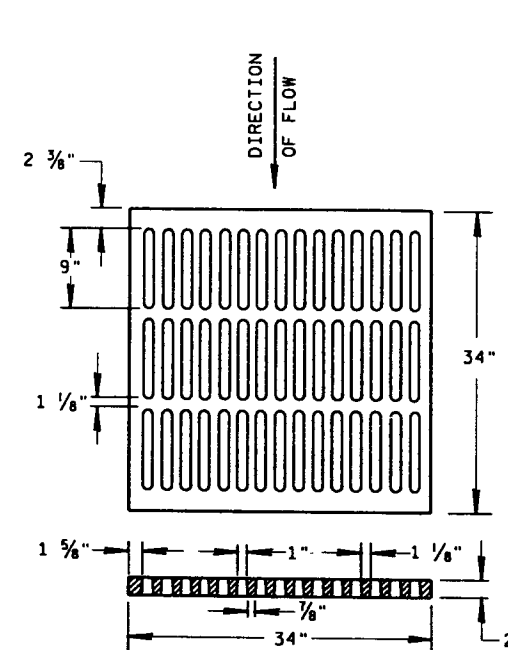
GENERAL NOTES

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.

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.

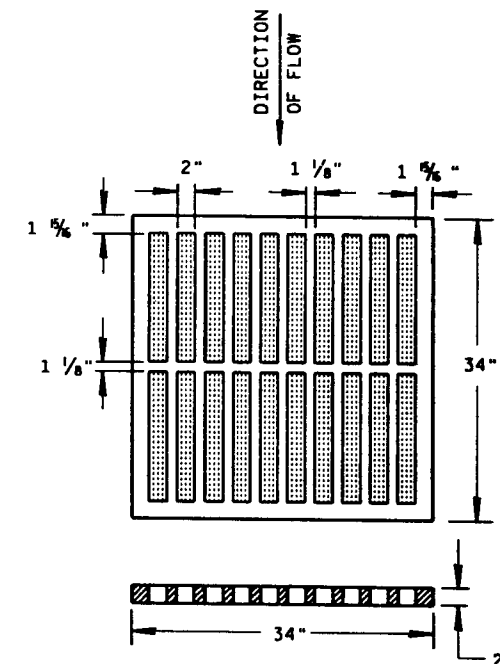
ROUND FRAMES AND COVERS SHALL HAVE CONTINUOUSLY MACHINED BEARING SURFACES TO PREVENT ROCKING AND RATTLING.

THE ACTUAL WEIGHT OF COVERS MAY VARY WITHIN 5 PERCENT, PLUS OR MINUS, OF THE APPROXIMATE WEIGHT.



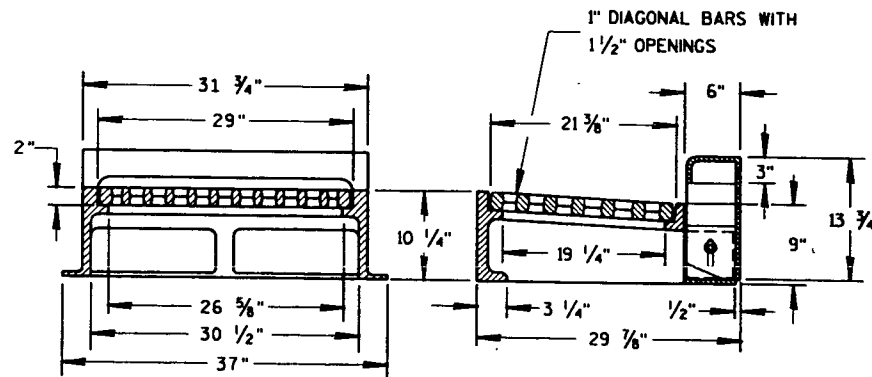
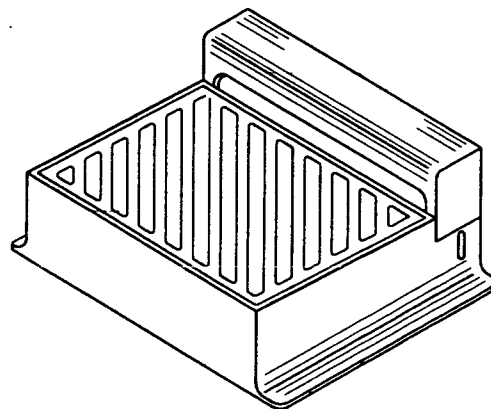
ALTERNATIVE TYPE "MS"
(APPROXIMATE GRATE WEIGHT 365 LBS.)
GRATE..... 365 LBS.

USE WHERE PEDESTRIAN OR BICYCLE TRAFFIC IS PERMITTED
NOTE AS TYPE MS-A ON THE DRAINAGE TABLE



TYPE "MS"
(APPROXIMATE GRATE WEIGHT 270 LBS.)
GRATE..... 270 LBS.

USE ON FREEWAYS AND EXPRESSWAYS
NOTE AS TYPE MS ON DRAINAGE TABLE



NOTE: CURB BOX HEIGHT ADJUSTABLE 6" TO 9"

TYPE "WM"
(APPROXIMATE WEIGHT 670 LBS.)
FRAME..... 360 LBS.
GRATE..... 160 LBS.
CURB BOX..... 150 LBS.

DIAGONAL SLOTS, SHALL BE ORIENTED TO THE DIRECTION OF FLOW AS ILLUSTRATED. GRATES ARE MANUFACTURED TO BE REVERSIBLE.

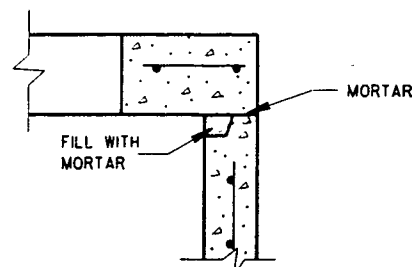
INLET COVERS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

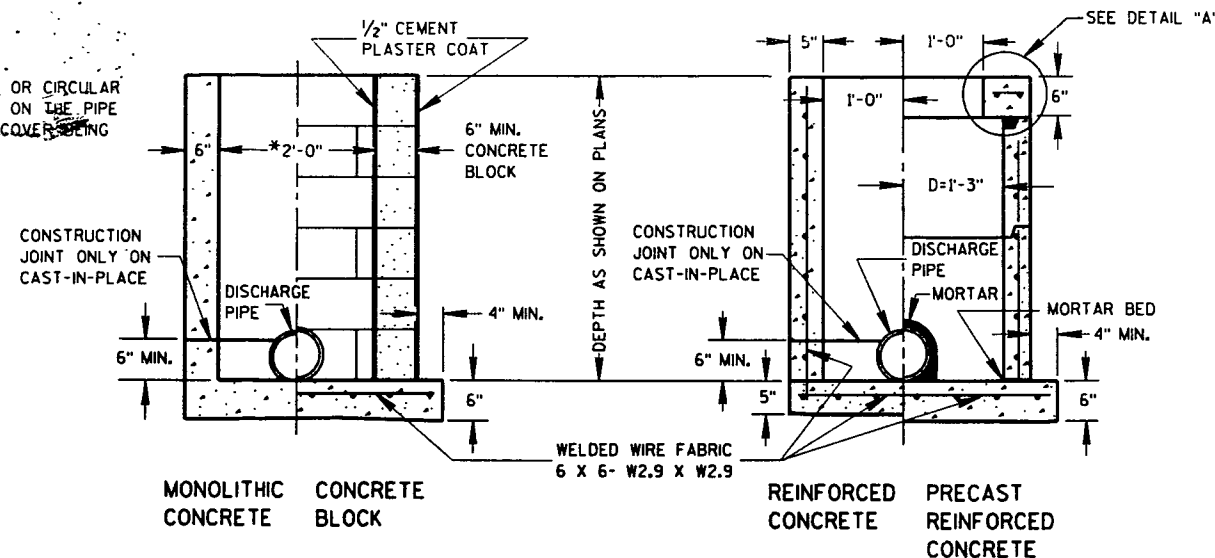
APPROVED
1/25/93
DATE
FHWA

STATE DESIGN ENGINEER FOR HWYS

*SELECTION OF SQUARE OR CIRCULAR DESIGN WILL BE BASED ON THE PIPE SIZES AND THE INLET COVER BEING UTILIZED



DETAIL "A"



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.

ALL 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 3-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.

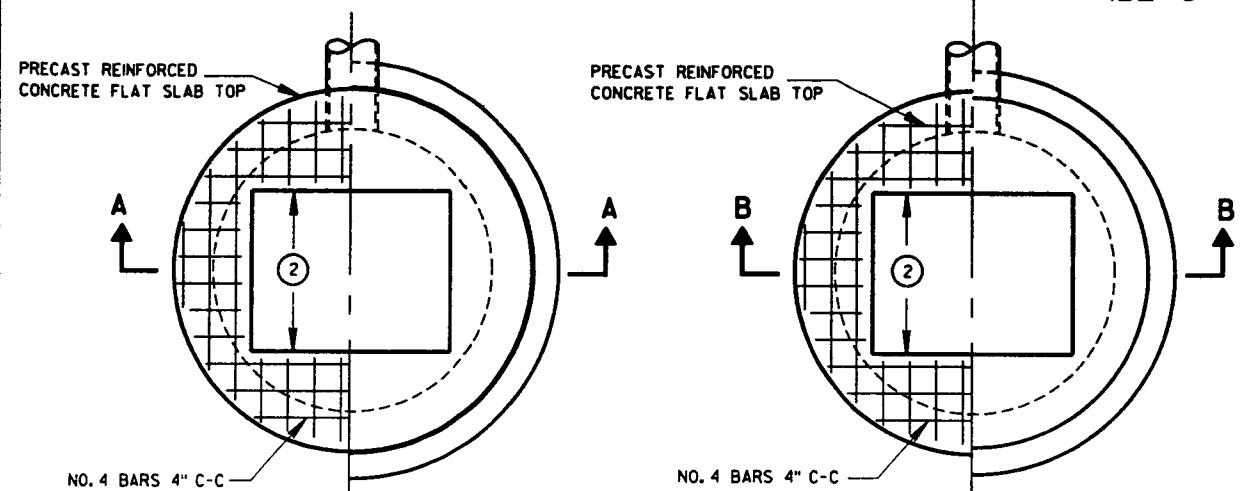
PRECAST REINFORCED BASES SHALL BE PLACED ON A BED OF MATERIAL AT LEAST 6 INCHES IN DEPTH, WHICH MEETS THE REQUIREMENTS OF GRANULAR BACKFILL. THIS BEDDING SHALL BE COMPACTED AND PROVIDE UNIFORM SUPPORT FOR THE ENTIRE AREA OF THE BASE.

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 REINFORCEMENT SHALL BE EMBEDDED 2 INCHES CLEAR UNLESS OTHERWISE SHOWN OR NOTED.

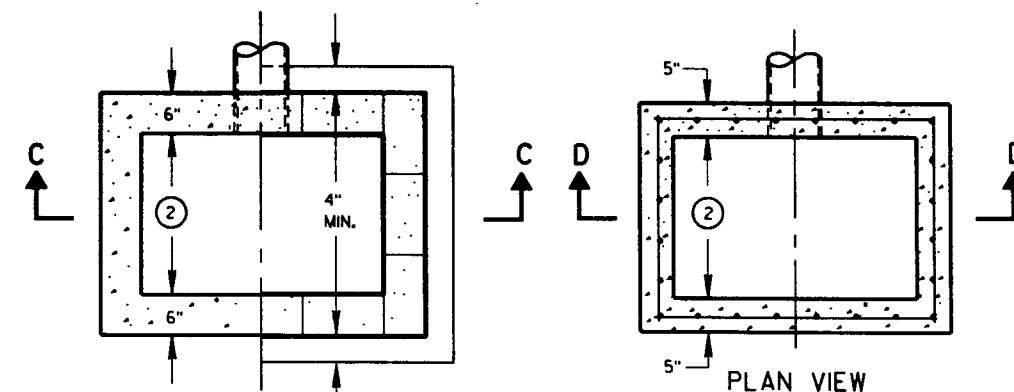
PRECAST REINFORCED CONCRETE RISERS SHALL BE PLACED WITH TONGUE DOWN.

- ① USE 2'-6" OPENING FOR TYPE 2 INLETS, 3'-0" OPENING FOR TYPE 3 INLETS, AND 2'-11" FOR TYPE 4 INLETS.
- ② USE 2'-0" OPENING FOR TYPE 1, 2 & 3 INLETS, 2'-6 1/2" OPENING FOR TYPE 4 INLETS.



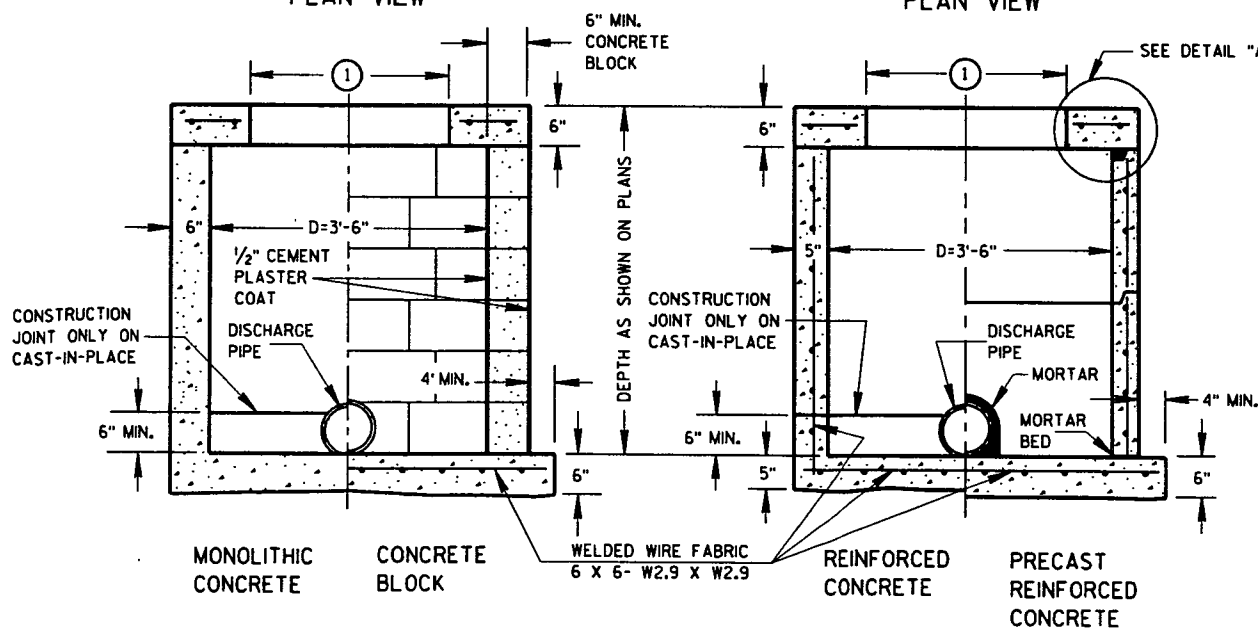
PLAN VIEW

PLAN VIEW



PLAN VIEW

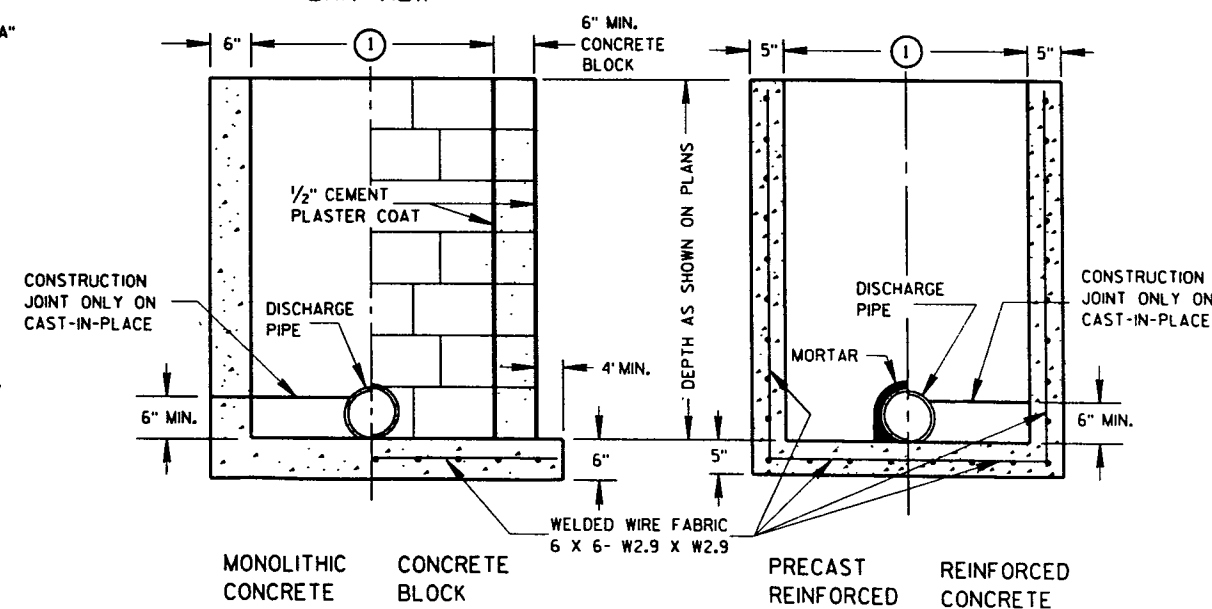
PLAN VIEW



SECTION A-A

SECTION B-B

INLETS TYPE 2, 3 & 4



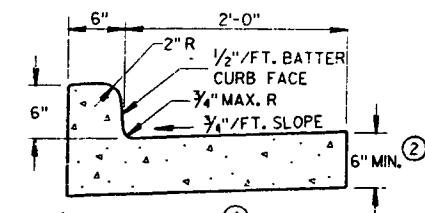
SECTION C-C

SECTION D-D

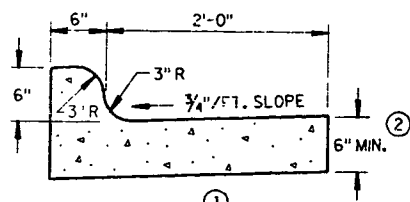
INLETS TYPE 1, 2, 3 & 4

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

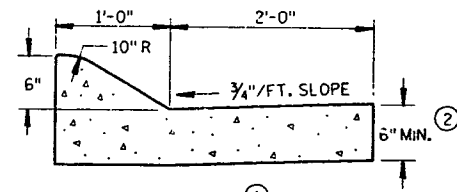
APPROVED
8/24/94
DATE
FHW



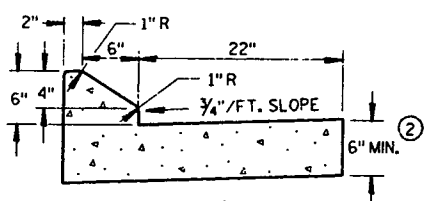
TYPES A & D



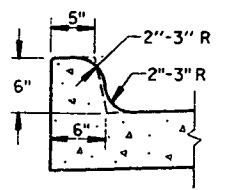
TYPES K & L



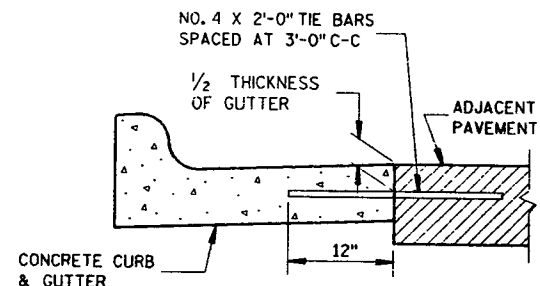
TYPES A & D
CONCRETE CURB & GUTTER 36"



TYPES G & J

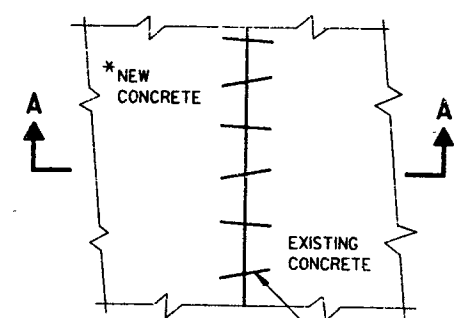


OPTIONAL CURB SHAPE
FOR TYPES K & L



TYPICAL TIE BAR LOCATION

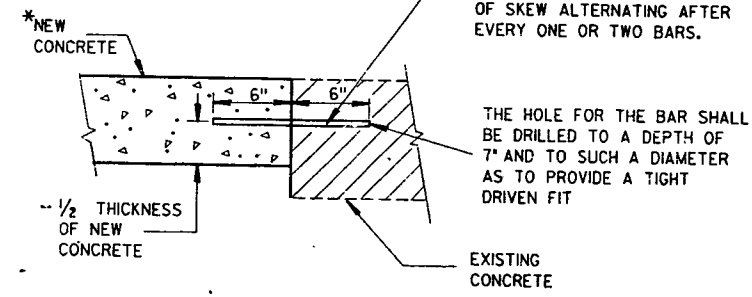
CONCRETE CURB & GUTTER 30"



PLAN VIEW

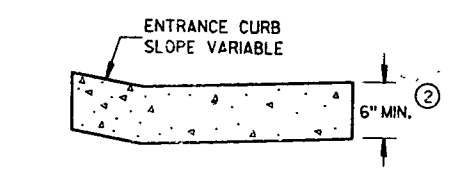
*NEW CURB & GUTTER,
SURFACE DRAINS,
CONCRETE PAVEMENT
OR OTHER NEW CONCRETE.

NO. 6 X 12" DEF. BARS
SPACED 3'-0" C-C,
INSTALLED ON 6:1 SKEW
HORIZONTALLY. DIRECTION
OF SKEW ALTERNATING AFTER
EVERY ONE OR TWO BARS.

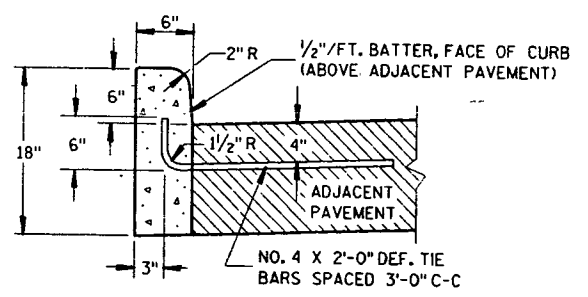


SECTION A-A
PAVEMENT TIES

THE HOLE FOR THE BAR SHALL
BE DRILLED TO A DEPTH OF
7" AND TO SUCH A DIAMETER
AS TO PROVIDE A TIGHT
DRIVEN FIT

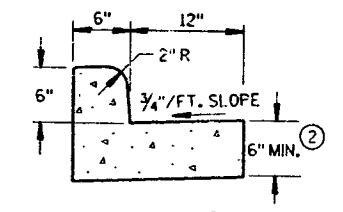


DRIVEWAY ENTRANCE CURB
(WHEN DIRECTED BY THE ENGINEER)

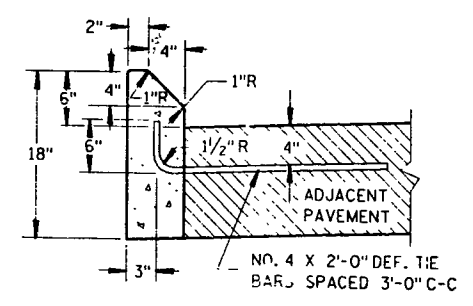


TYPES A & D

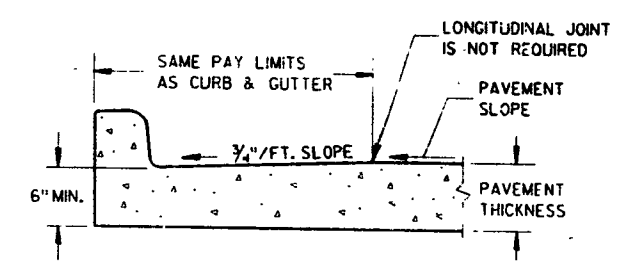
CONCRETE CURB



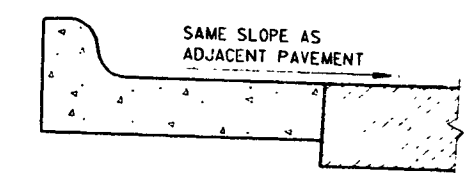
TYPES A & D
CONCRETE CURB & GUTTER 18"



TYPES G & J



PARTIAL SECTION OF PAVEMENT
WITH INTEGRAL CURB & GUTTER



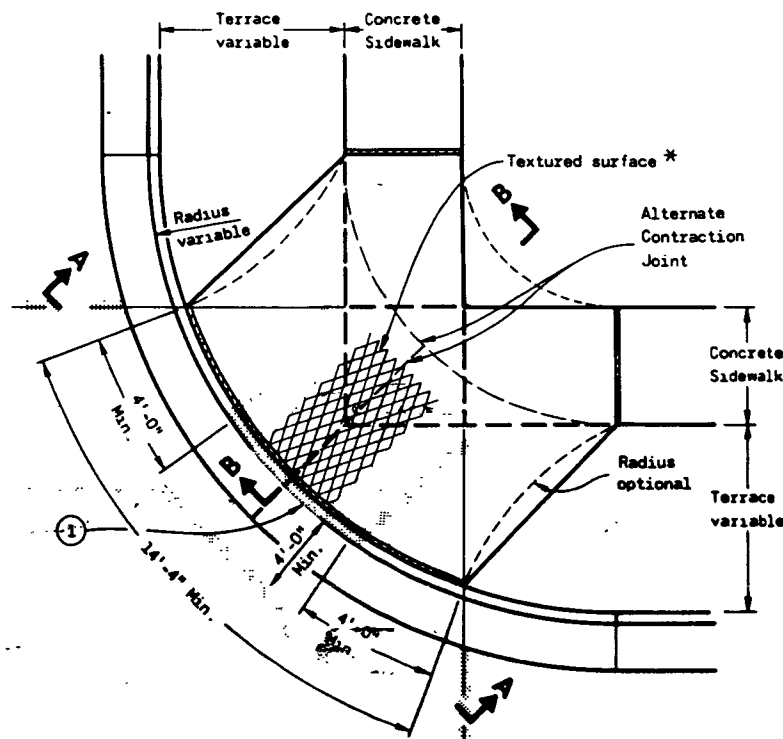
REVERSE SLOPE GUTTER
(TYPICAL FOR ALL CURB & GUTTER TYPES)

GENERAL NOTES

- DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.
- SEALANT IS NOT REQUIRED IN THE JOINTS OF CONCRETE CURB OR CONCRETE CURB & GUTTER EXCEPT AS REQUIRED FOR INTEGRAL GUTTER.
- PAVEMENT TIES ARE REQUIRED, WHEN INCLUDED IN THE CONTRACT, WHERE CONCRETE CURB, CONCRETE CURB AND GUTTER OR CONCRETE PAVEMENT IS PLACED ADJACENT TO EXISTING CONCRETE.
- PAVEMENT TIES AND TIE BARS SHALL BE EPOXY COATED IN CONFORMANCE WITH SUBSECTION 505.2.4 OF THE STANDARD SPECIFICATIONS.
- INTEGRAL CURB & GUTTER SHALL CONFORM TO THE DETAILS SHOWN FOR CONCRETE CURB & GUTTER INCLUDING THE TRANSVERSE GUTTER SLOPE. TIE BARS AND A LONGITUDINAL CONSTRUCTION JOINT ARE NOT REQUIRED WITH THIS ALTERNATE.
- PAVEMENT JOINTS SHALL BE EXTENDED THROUGH INTEGRAL CURB & GUTTER. JOINTS IN INTEGRAL GUTTER SHALL HAVE THE SAME DIMENSIONS AS THE JOINTS IN THE ADJACENT PAVEMENT. JOINTS IN INTEGRAL CURB SHALL BE 1/8" WIDE.
- JOINTS IN INTEGRAL CURB & GUTTER SHALL BE SEALED TO THE FACE OF CURB WITH THE SAME SEALANT SPECIFIED FOR THE PAVEMENT JOINT. THE COST OF FURNISHING AND INSTALLING THIS SEALANT SHALL BE INCIDENTAL TO THE ITEM CONCRETE CURB & GUTTER.
- UNLESS OTHERWISE SHOWN ON THE TYPICAL CROSS SECTIONS, THE BASE COURSE AND UNCLASSIFIED EXCAVATION LIMITS ARE TWO FEET BEHIND THE BACK OF CURBS.
- TIE BARS ARE REQUIRED FOR CURB AND GUTTER TYPES A, G AND K.
- THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE COURSE PROVIDED A 6" MINIMUM GUTTER THICKNESS IS MAINTAINED.
- WHEN REVERSE SLOPE GUTTER IS REQUIRED, THE LOCATIONS WILL BE SHOWN ELSEWHERE IN THE PLAN.

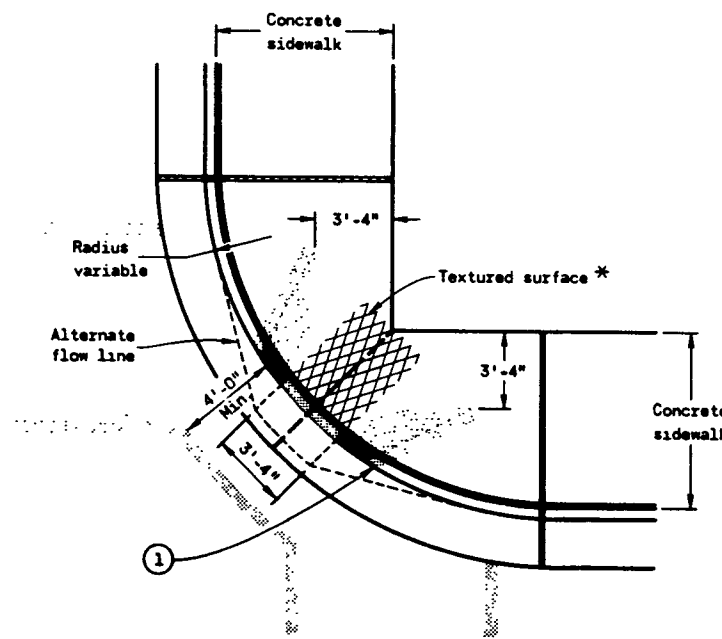
CONCRETE CURB, CONCRETE CURB & GUTTER AND PAVEMENT TIES	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 10-23-86 DATE	STATE DESIGN ENGINEER FOR HWYS FHWA

S.D.D. 8 D 1-11

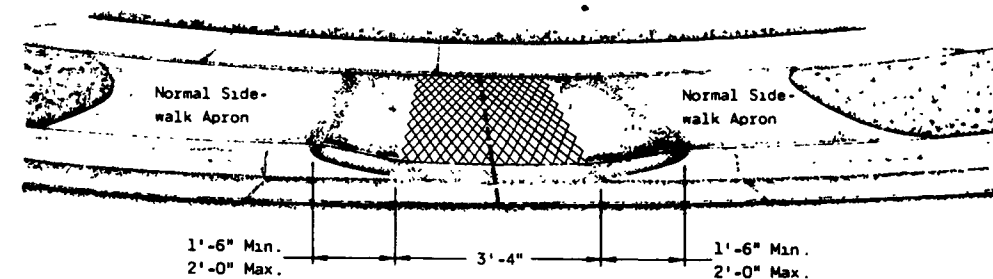


PLAN VIEW
TYPE 1 RAMP
(CENTER OF CORNER RADIUS)

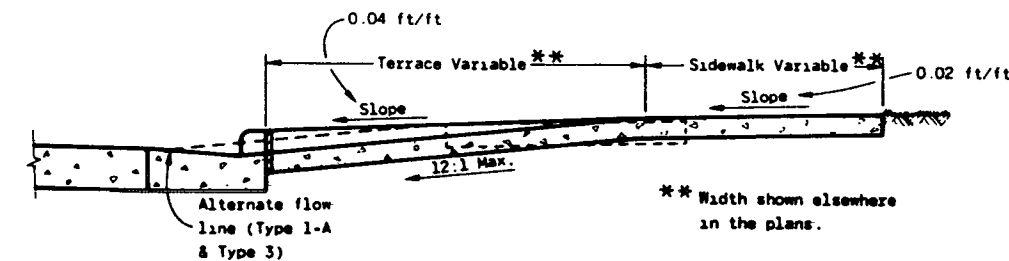
1' ——— EXPANSION JOINTS - SIDEWALK
- - - CONTRACTION JOINTS
Location of joints may be varied from those shown to better fit site conditions and/or local government preference.



PLAN VIEW
TYPE 1-A RAMP
(NO TERRACE)



VIEW A-A



SECTION B-B

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.

Ramps shall be built at 12:1 or flatter. When necessary, the sidewalk elevation may be lowered to meet the high point on the ramp.

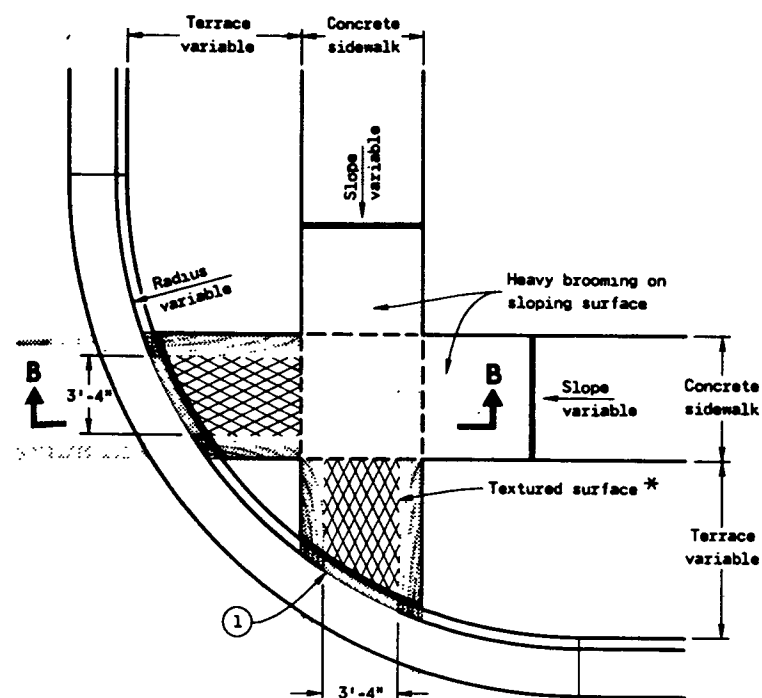
Type 1 or Type 1-A Ramps shall have a normal sidewalk apron and curb on both sides of ramp.

Curb ramps shall be measured and paid for as Concrete Sidewalk and Concrete Curb and Gutter.

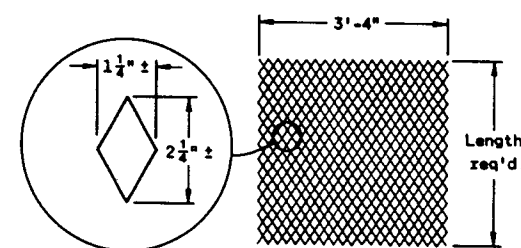
Surface texturing shall consist of linear impressions approximately $\frac{1}{4}$ inch to $\frac{3}{8}$ inch in depth and width, oriented to provide a uniform pattern of diamond shapes measuring approximately $1\frac{1}{4}$ inches in width by $2\frac{1}{4}$ inches in length, with the length being parallel to the direction of pedestrian movement. This surface texture may be achieved by impressing and removing a piece of expanded metal regular industrial mesh into the surface of the ramp while the concrete is in a plastic state.

① The ramp shall be bordered on both sides and on the curb line with a 4 inch wide yellow stripe or with brick of a contrasting color. Normally the paint stripe alternate will be used. The municipality or the department will apply this striping unless otherwise specified in the contract.

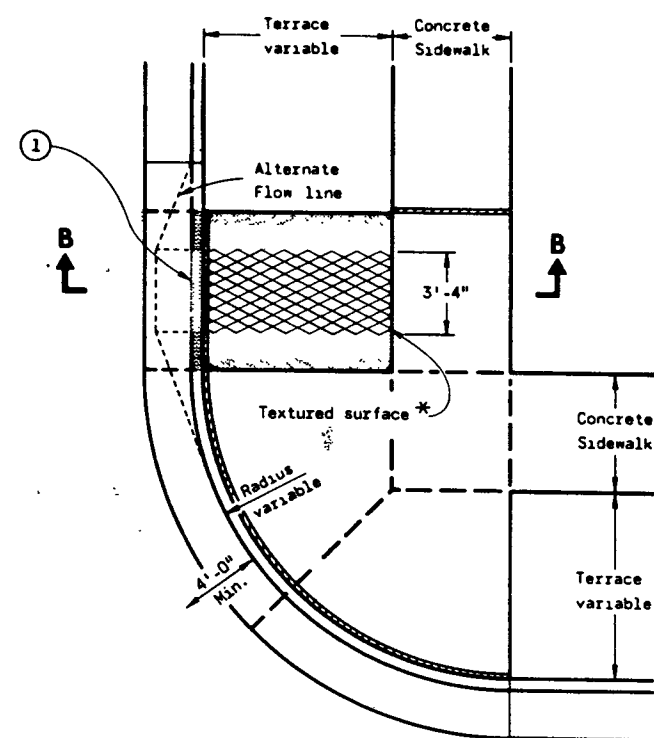
If a municipality requires the brick alternate, special details and provisions are shown elsewhere in the plans.



PLAN VIEW
TYPE 2 RAMP
(ON LINE WITH SIDEWALK)



DETAIL OF DIAMOND PATTERN *



PLAN VIEW
TYPE 3 RAMP
(OUTSIDE OF CROSSWALK AREA)

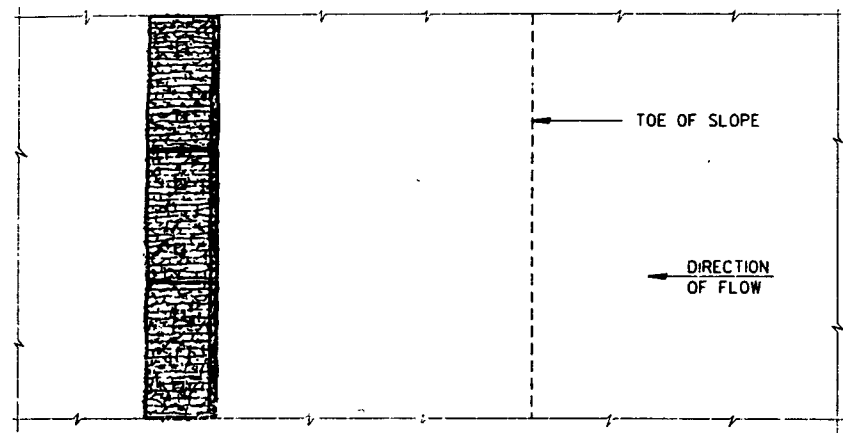
CURB RAMPS

State of Wisconsin
Department of Transportation

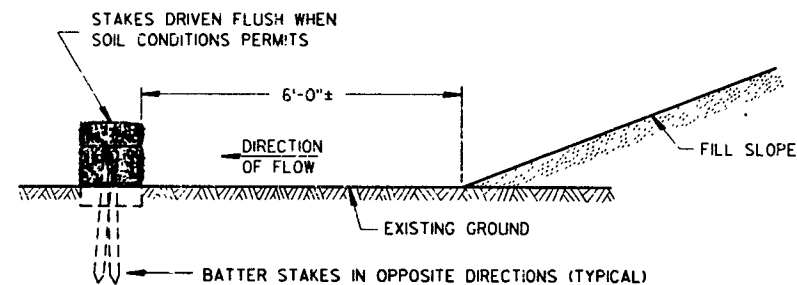
APPROVED
10-23-84
DATE

CHIEF DESIGN ENGINEER

FHWA



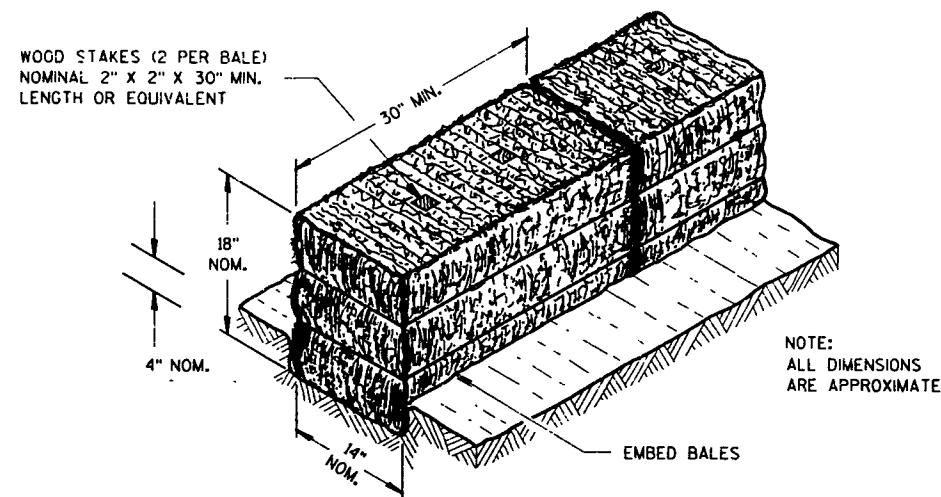
PLAN VIEW



FRONT ELEVATION

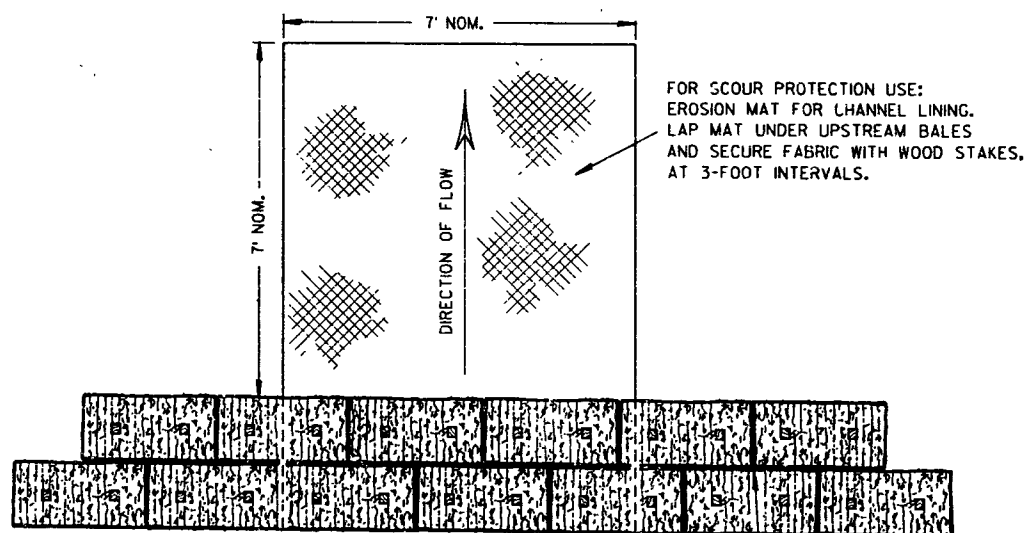
WHEN EXISTING GROUND SLOPES AWAY FROM FILL SLOPE

EROSION BALES FOR SHEET FLOW



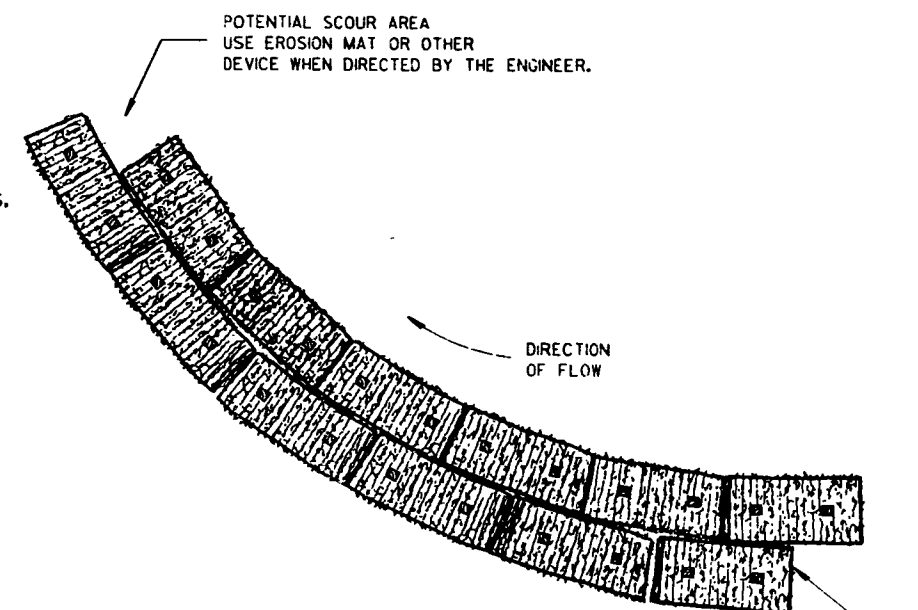
GENERAL NOTES

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.



PLAN VIEW

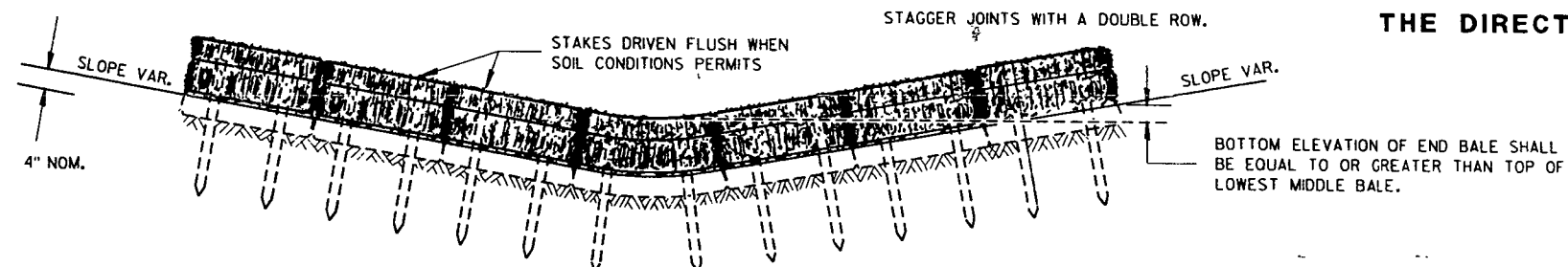
STAGGER JOINTS BETWEEN ADJACENT ROWS OF BALES.



PLAN VIEW

END TREATMENT ON SLOPES TO BE SIMILAR TO CHANNEL FLOW DETAIL.

EROSION BALES WHEN ALTERING THE DIRECTION OF FLOW



FRONT ELEVATION

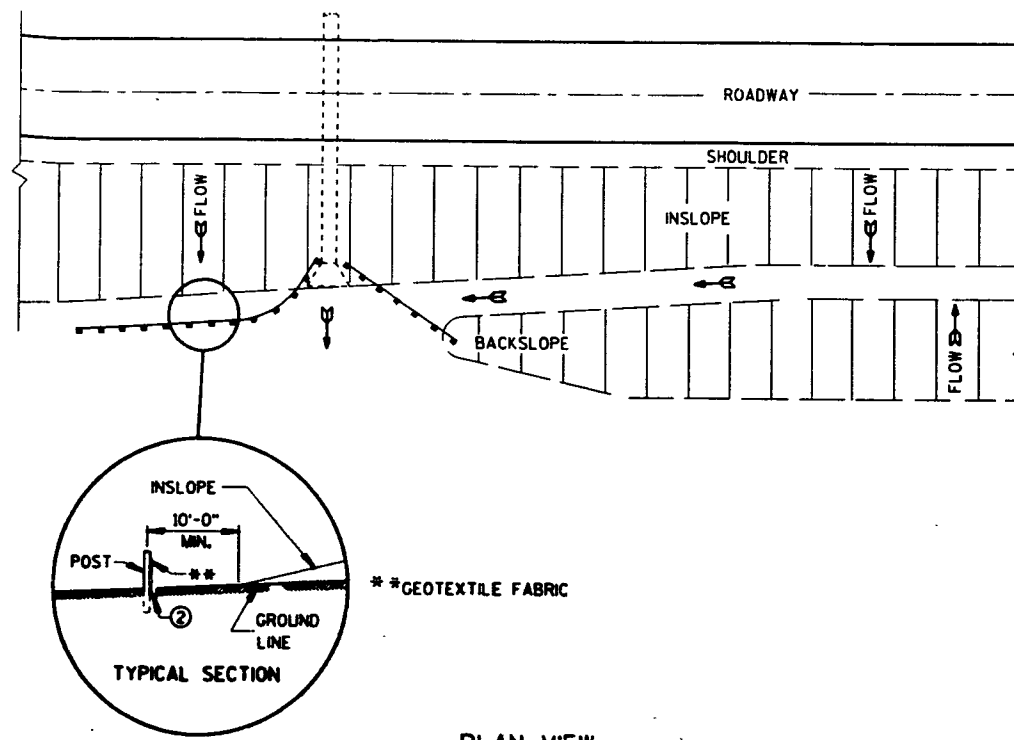
EROSION BALES FOR CHANNEL FLOW

TYPICAL INSTALLATIONS OF EROSION BALES

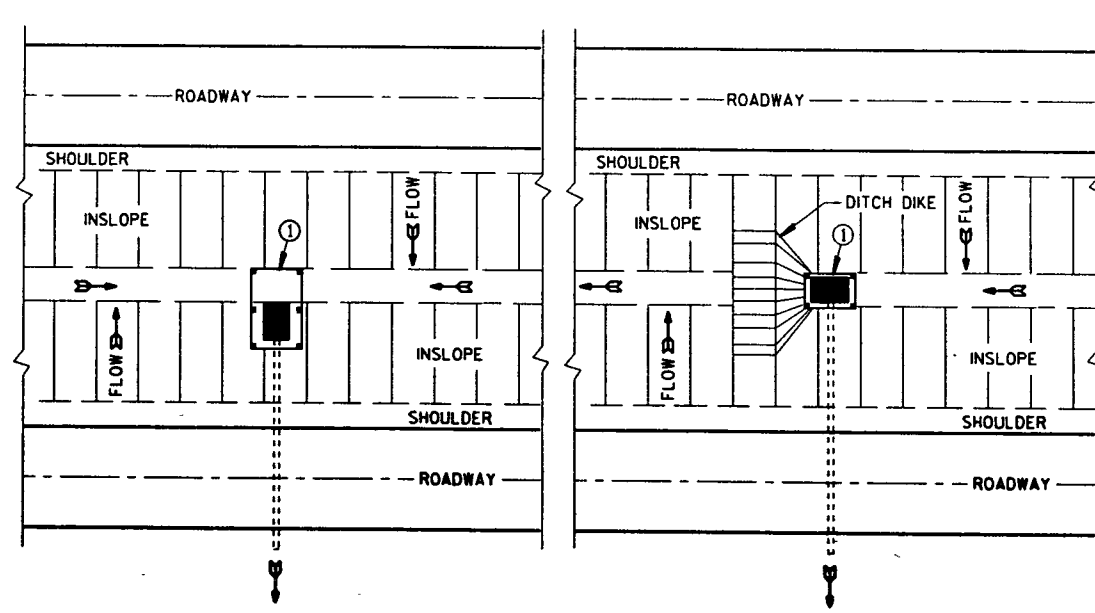
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
DATE 4/29/94
CHIEF ROADWAY DEVELOPMENT ENGINEER

FHWA



PLAN VIEW
TYPICAL APPLICATIONS OF SILT FENCE

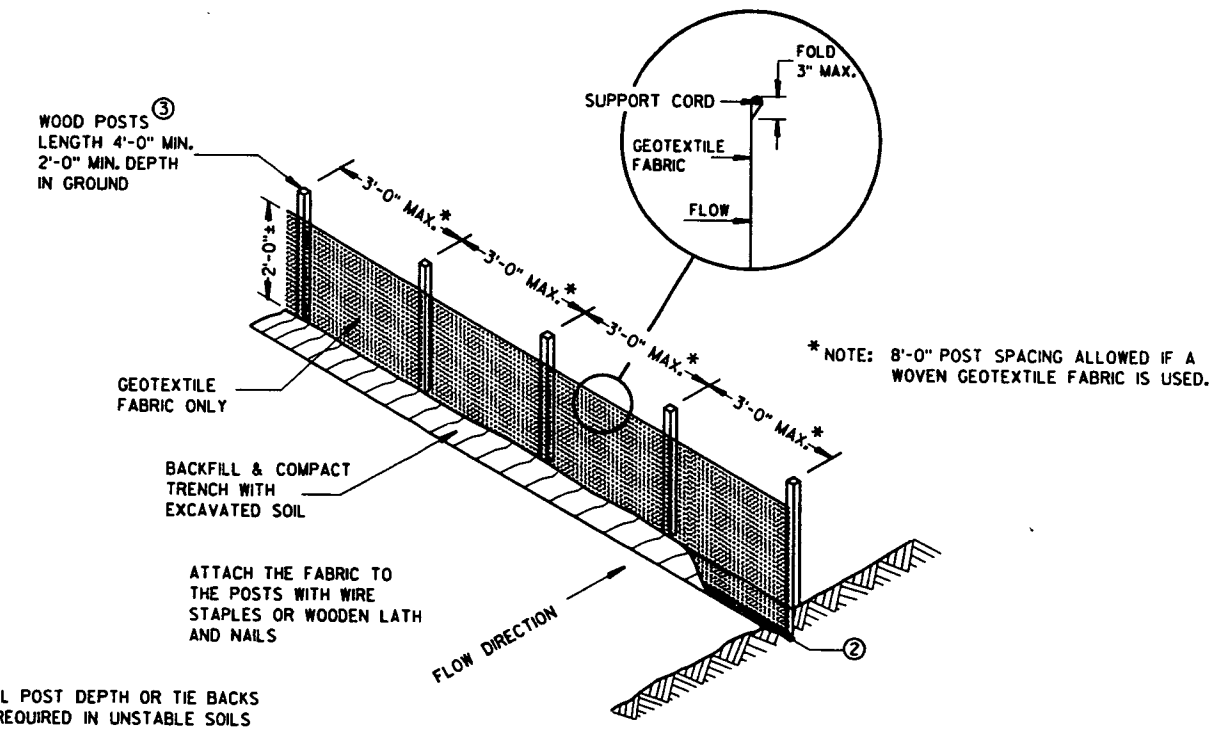


SITUATION 1
SITUATION 2
PLAN VIEW
SILT FENCE AT MEDIAN SURFACE DRAINS

GENERAL NOTES

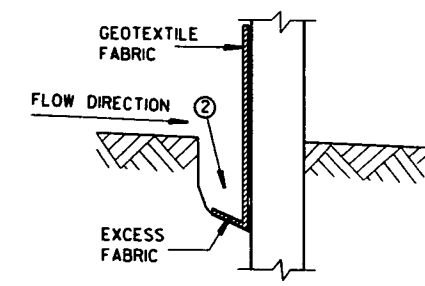
DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

- ① HORIZONTAL BRACE WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS AS DIRECTED BY THE ENGINEER.
- ② TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
- ③ WOOD POSTS SHALL BE A MINIMUM SIZE OF 1 1/8" X 1 1/8" OF OAK OR HICKORY.

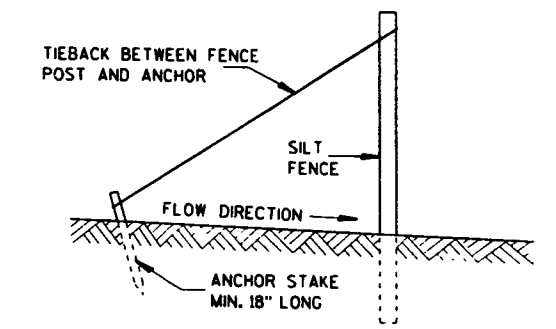


NOTE: ADDITIONAL POST DEPTH OR TIE BACKS MAY BE REQUIRED IN UNSTABLE SOILS

SILT FENCE
(NON-REINFORCED)



TRENCH DETAIL



SILT FENCE TIE BACK
(WHEN REQUIRED BY THE ENGINEER)

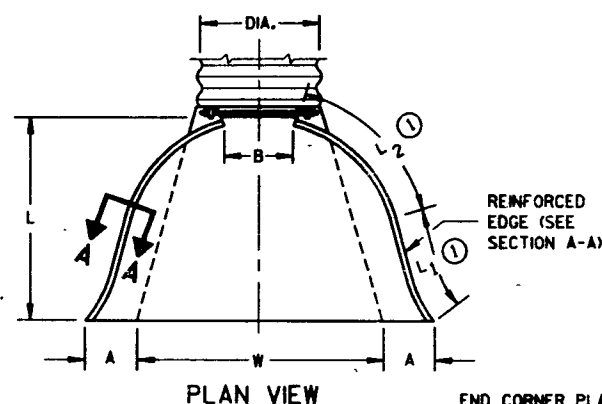
SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

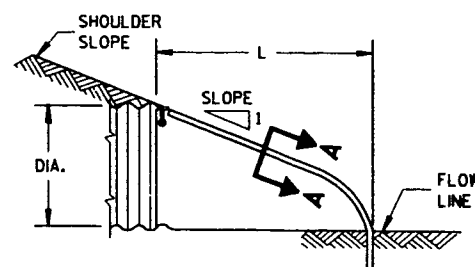
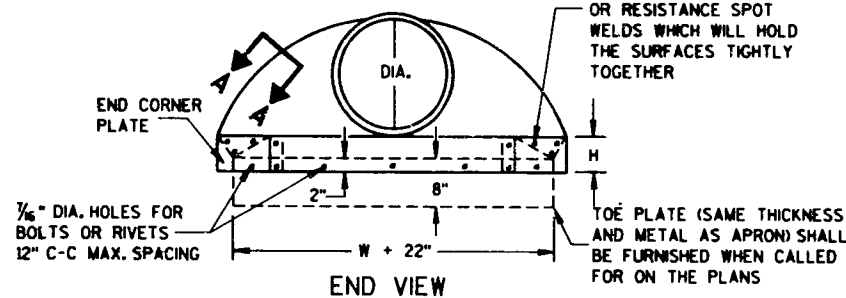
APPROVED
DATE 6/29/94
DATE 6/29/94
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

METAL APRON ENDWALLS												
PIPE DIA. (IN.)	MIN. THICK. (Inches)		DIMENSIONS (Inches)							APPROX. SLOPE	BODY	
	STEEL	ALUM.	A (±1")	B (MAX.)	H (±1")	L (±1½")	L ₁ ①	L ₂ ①	W (±2")			
12	.064	.060	6	6	6	21	12	17½	24	2½ to 1	1 Pc.	
15	.064	.060	7	8	6	26	14	21¾	30	2½ to 1	1 Pc.	
18	.064	.060	8	10	6	31	15	28¼	36	2½ to 1	1 Pc.	
21	.064	.060	9	12	6	36	18	29¾	42	2½ to 1	1 Pc.	
24	.064	.075	10	13	6	41	18	37¼	48	2½ to 1	1 Pc.	
30	.079	.075	12	16	8	51	18	52¼	60	2½ to 1	1 Pc.	
36	.079	.105	14	19	9	60	24	59¾	72	2½ to 1	2 Pc.	
42	.109	.105	16	22	11	69	24	75¾	84	2½ to 1	2 Pc.	
48	.109	.105	18	27	12	78	24	81	90	2¼ to 1	3 Pc.	
54	.109	.105	18	30	12	84	30	85½	102	2¼ to 1	3 Pc.	
60	.109x	.105x	18	33	12	87	—	—	114	2 to 1	3 Pc.	
66	.109x	.105x	18	36	12	87	—	—	120	2 to 1	3 Pc.	
72	.109x	.105x	18	39	12	87	—	—	126	2 to 1	3 Pc.	
78	.109x	.105x	18	42	12	87	—	—	132	1½ to 1	3 Pc.	
84	.109x	.105x	18	45	12	87	—	—	138	1½ to 1	3 Pc.	
90	.109x	.105x	18	37	12	87	—	—	144	1½ to 1	3 Pc.	
96	.109x	.105x	18	35	12	87	—	—	150	1½ to 1	3 Pc.	

* EXCEPT CENTER PANEL
SEE GENERAL NOTES



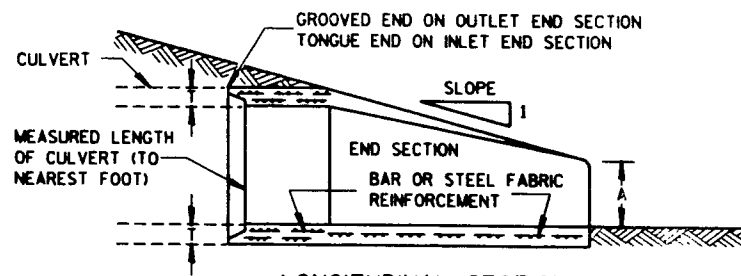
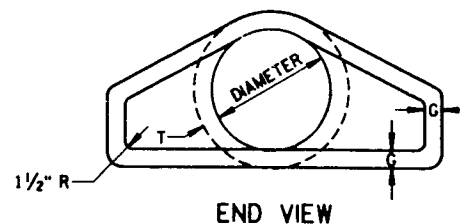
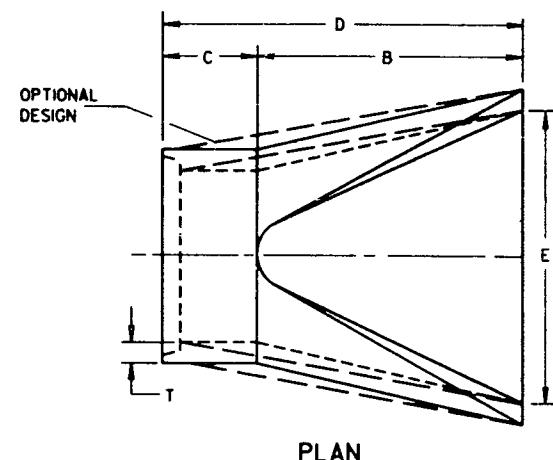
END CORNER PLATES MAY BE FASTENED TO APRON PROPER BY BOLTS, RIVETS, OR RESISTANCE SPOT WELDS WHICH WILL HOLD THE SURFACES TIGHTLY TOGETHER



METAL ENDWALLS

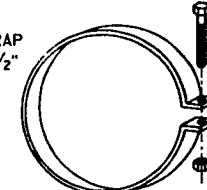
REINFORCED CONCRETE APRON ENDWALLS								
PIPE DIA. (IN.)	DIMENSIONS (Inches)							APPROX. SLOPE
	T	A	B	C	D	E	G	
12	2	4	24	48 $\frac{1}{4}$	72 $\frac{1}{4}$	24	2	3 to 1
15	2 $\frac{1}{4}$	6	27	46	73	30	2 $\frac{1}{4}$	3 to 1
18	2 $\frac{1}{2}$	9	27	46	73	36	2 $\frac{1}{2}$	3 to 1
21	2 $\frac{3}{4}$	9	36	37 $\frac{1}{2}$	73 $\frac{1}{2}$	42	2 $\frac{3}{4}$	3 to 1
24	3	9 $\frac{1}{2}$	43 $\frac{1}{2}$	30	73 $\frac{1}{2}$	48	3	3 to 1
27	3 $\frac{1}{4}$	10 $\frac{1}{2}$	49 $\frac{1}{2}$	24	73 $\frac{1}{2}$	54	3 $\frac{1}{4}$	3 to 1
30	3 $\frac{1}{2}$	12	54	19 $\frac{1}{4}$	73 $\frac{1}{2}$	60	3 $\frac{1}{2}$	3 to 1
36	4	15	63	34 $\frac{1}{4}$	97 $\frac{1}{4}$	72	4	3 to 1
42	4 $\frac{1}{2}$	21	63	35	98	78	4 $\frac{1}{2}$	3 to 1
48	5	24	72	26	98	84	5	3 to 1
54	5 $\frac{1}{2}$	27	65	33 $\frac{1}{4}$ -35	98 $\frac{1}{4}$ -100	90	5 $\frac{1}{2}$	2 $\frac{3}{4}$ to 1
60	6	30-35	60	39	99	96	5	2 to 1
66	6 $\frac{1}{2}$	24-30	72-78	21-27	99	102	5 $\frac{1}{2}$	2 to 1
72	7	24-36	78	21	99	108	6	2 to 1
78	7 $\frac{1}{2}$	24-36	78	21	99	114	6 $\frac{1}{2}$	2 to 1
84	8	36	90 $\frac{1}{2}$	21	111 $\frac{1}{2}$	120	6 $\frac{1}{2}$	1 $\frac{1}{2}$ to 1
90	8 $\frac{1}{2}$	41	87 $\frac{1}{2}$	24	111 $\frac{1}{2}$	132	6 $\frac{1}{2}$	1 $\frac{1}{2}$ to 1

* MINIMUM
** MAXIMUM

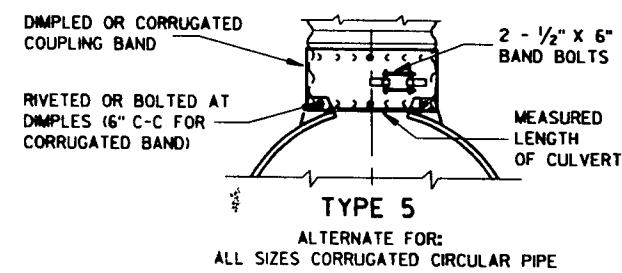
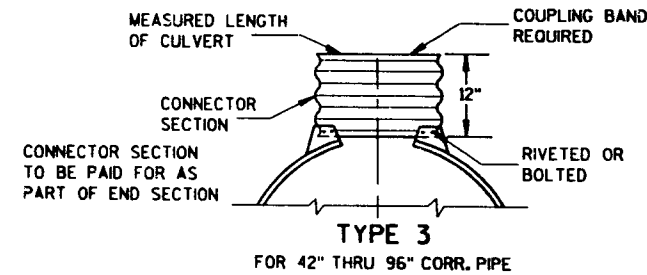
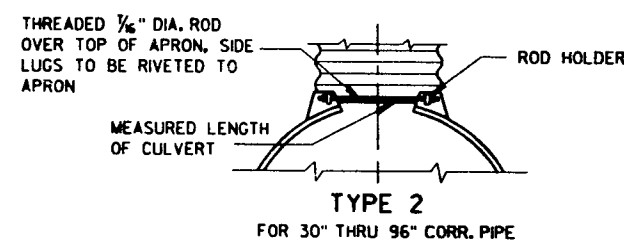
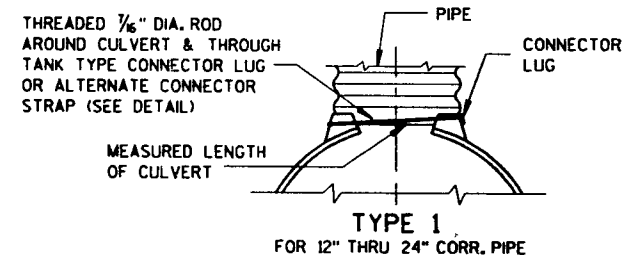


CONCRETE ENDWALLS

1" WIDE, 12 GA. (0.109" THICK) GALVANIZED STRAP WITH STANDARD 6" X 1/2" BAND BOLT AND NUT



ALTERNATE FOR TYPE 1 CONNECTION
END SECTION CONNECTOR STRAP



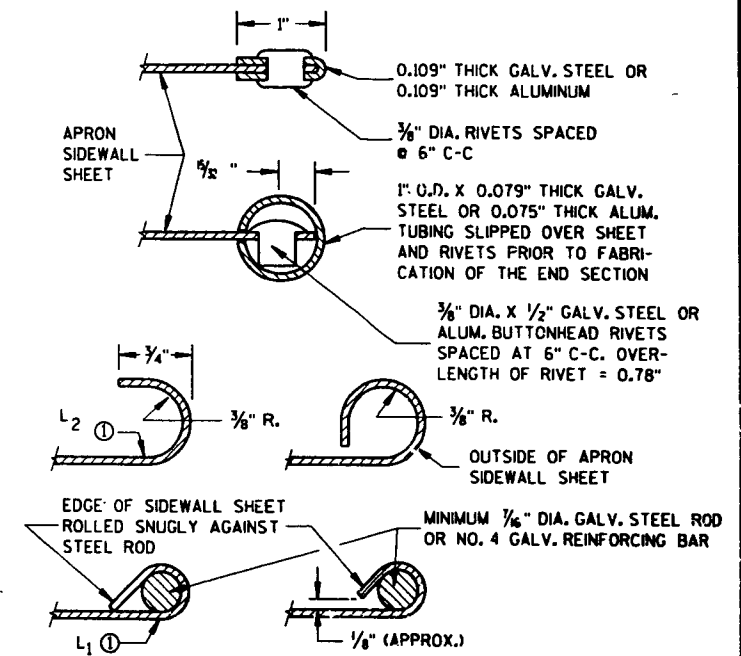
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL, AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

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.

CONNECTION DETAILS



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.

CONCRETE CULVERT ENDWALLS MAY NOT BE USED WITH GALVANIZED STEEL OR ALUMINUM CULVERT PIPE OR VISE VERSA. GALVANIZED STEEL OR ALUMINUM ENDWALLS SHALL NORMALLY BE INSTALLED ON CULVERT PIPE OF THE SAME METAL.

ALL THREE PIECE STEEL APRON ENDWALLS FOR 60" DIAMETER PIPE AND LARGER SHALL HAVE 0.109" SIDES AND 0.138" CENTER PANELS. ALL THREE PIECE ALUMINUM APRON ENDWALLS FOR 60" DIAMETER PIPE AND LARGER SHALL HAVE 0.105" SIDES AND 0.134" CENTER PANELS. THE WIDTH OF CENTER PANELS SHALL BE GREATER THAN 20 PERCENT OF THE PIPE PERIMETER.

LAP SEAMS SHALL BE TIGHTLY JOINED BY GALVANIZED RIVETS OR BOLTS FOR STEEL UNITS AND ALUMINUM RIVETS AND BOLTS FOR ALUMINUM UNITS. FOR THE 60" THROUGH 96" DIAMETER APRON ENDWALL SIZES, THE REINFORCED EDGES AND CENTER PANEL SEAMS SHALL BE FURTHER REINFORCED WITH GALVANIZED STEEL OR ALUMINUM STIFFENER ANGLES. THE ANGLES SHALL BE ATTACHED BY GALVANIZED NUTS AND BOLTS FOR STEEL UNITS AND ALUMINUM NUTS AND BOLTS FOR ALUMINUM UNITS.

WHERE TWO OR MORE PIPES WITH APRON ENDWALLS ARE LAID ADJACENT TO EACH OTHER, THEY SHALL BE SEPARATED BY A DISTANCE SUFFICIENT TO PROVIDE A MINIMUM CLEARANCE OF 6 INCHES BETWEEN APRON ENDWALLS.

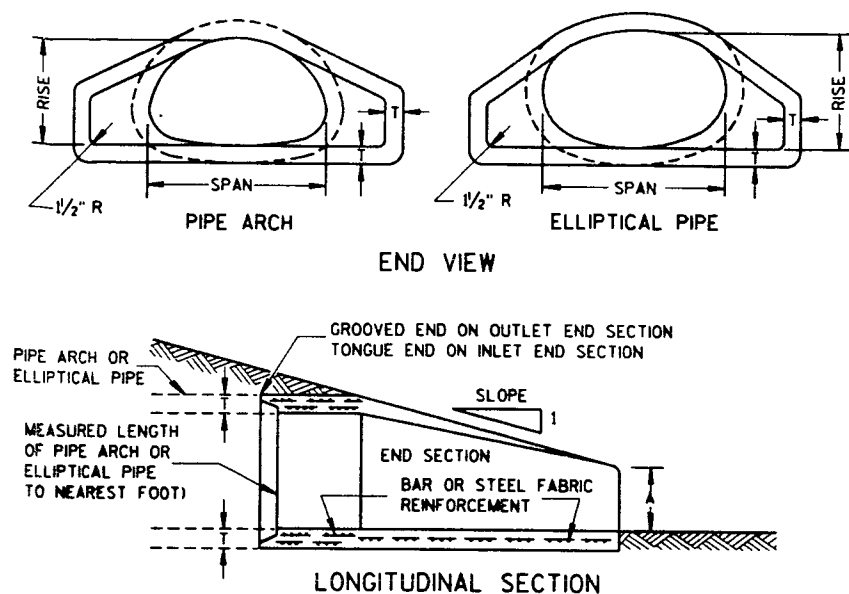
① FOR PIPE SIZES UP TO 60" DIAMETER, A 180° ROLLED EDGE MAY BE USED INSTEAD OF STEEL ROD REINFORCEMENT. SEE SECTION A-A.

APRON ENDWALLS FOR CULVERT PIPE

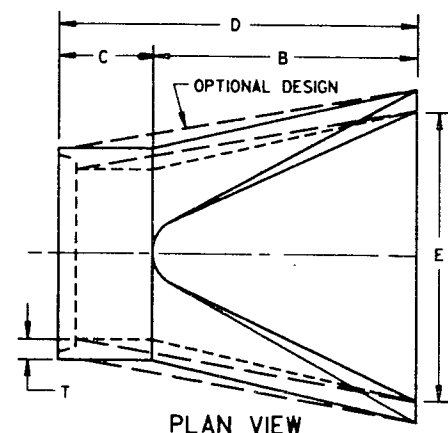
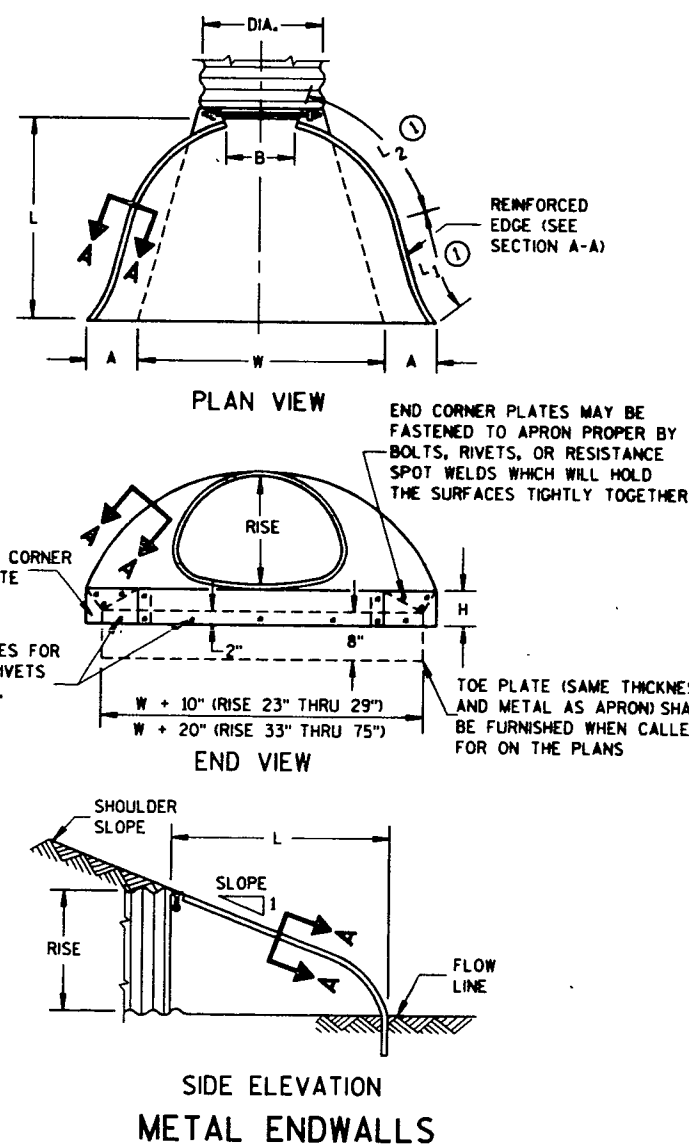
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
11/30/94
DATE
CHIEF ROADWAY DEVELOPMENT ENGINEER

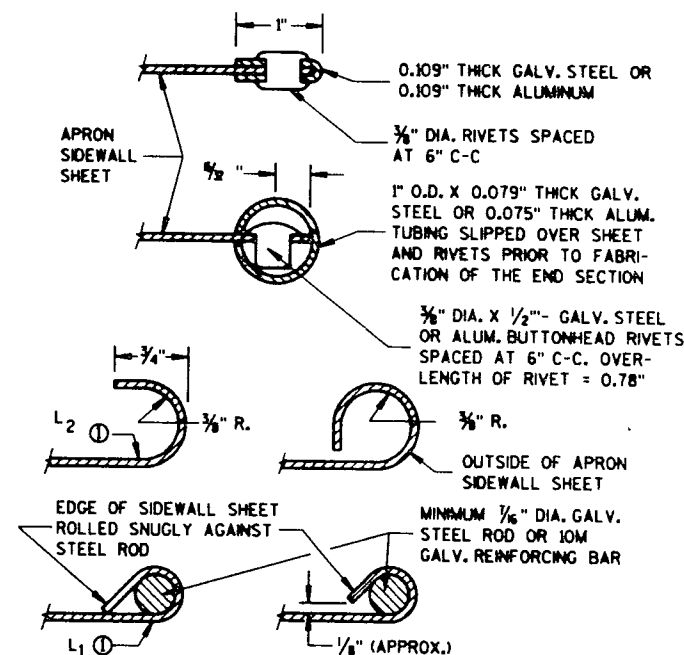
FHWA



CONCRETE ENDWALLS



PLAN VIEW



SECTION A-A

2- 2 1/2" X 1/2" CORRUGATIONS													
EQUIV. DIA. (Inches)	(Inches)		MIN. THICK. (Inches)		DIMENSIONS (Inches)								APPROX. SLOPE
	SPAN	RISE	STEEL	ALUM.	A (±1")	B (MAX.)	H (±1")	L (±1/2")	L1 (±1")	L2 (±1")	W (±2")	BODY	
15	17	13	.064	.060	7	9	6	19	14	16	30	2 1/2 to 1	1 Pc.
18	21	15	.064	.060	7	10	6	23	14	19 1/2	36	2 1/2 to 1	1 Pc.
21	24	18	.064	.060	8	12	6	28	18	21 1/4	42	2 1/2 to 1	1 Pc.
24	28	20	.064	.060	9	14	6	32	18	27 1/2	48	2 1/2 to 1	1 Pc.
30	35	24	.079	.075	10	16	6	39	18	37 5/8	60	2 1/2 to 1	1 Pc.
36	42	29	.079	.075	12	18	8	46	24	45 5/8	75	2 1/2 to 1	1 Pc.
42	49	33	.109	.105	13	21	9	53	24	54 3/4	85	2 1/2 to 1	2 Pc.
48	57	38	.109	.105	18	26	12	63	24	68	90	2 1/2 to 1	3 Pc.
54	64	43	.109	.105	18	30	12	70	24	72 3/4	102	2 1/4 to 1	3 Pc.
60	71	47	.109*	.105*	18	33	12	77	30	82 1/4	114	2 1/4 to 1	3 Pc.
66	77	52	.109*	.105*	18	36	12	77	—	—	126	2 to 1	3 Pc.
72	83	57	.109*	.105*	18	39	12	77	—	—	138	2 to 1	3 Pc.

3" X 1" CORRUGATIONS													
EQUIV. DIA. (Inches)	(Inches)		MIN. THICK. (Inches)		DIMENSIONS (Inches)								APPROX. SLOPE
	SPAN	RISE	STEEL	ALUM.	A (±1")	B (MAX.)	H (±1")	L (±1/2")	L1 (±1")	L2 (±1")	W (±2")	BODY	
48	53	41	.109	.105	18	26	12	63	24	72 3/4	90	2 1/2 to 1	2 Pc.
54	60	46	.109	.105	18	30	12	70	30	82 1/4	102	2 to 1	2 Pc.
60	66	51	.109*	.105*	18	33	12	77	—	—	114	1 1/2 to 1	3 Pc.
66	73	55	.109*	.105*	18	36	12	77	—	—	126	1 1/2 to 1	3 Pc.
72	81	59	.109*	.105*	18	39	12	77	—	—	138	2 to 1	3 Pc.
78	87	63	.109*	.105*	22	38	12	77	—	—	148	1 1/2 to 1	3 Pc.
84	95	67	.109*	.105*	22	34	12	77	—	—	162	1 1/2 to 1	3 Pc.
90	103	71	.109*	.105*	22	38	12	77	—	—	174	1 1/2 to 1	3 Pc.
96	112	75	.109*	.105*	24	40	12	77	—	—	174	1 1/2 to 1	3 Pc.

NOTE: ALL SPLICES TO BE LAP RIVETED OR BOLTED.

* EXCEPT CENTER PANEL SEE GENERAL NOTES

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.

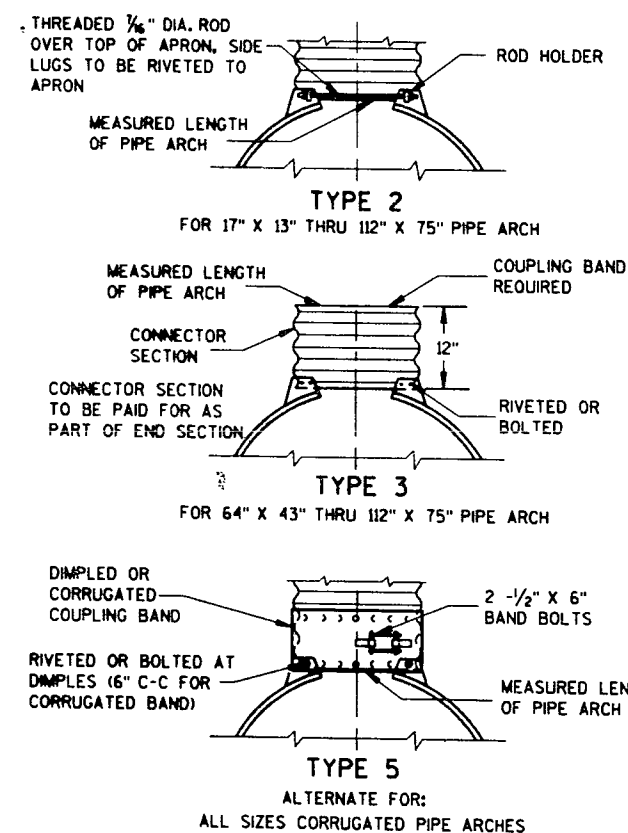
CONCRETE APRON ENDWALLS MAY NOT BE USED WITH GALVANIZED STEEL OR ALUMINUM CULVERT PIPE OR VISE VERSA. GALVANIZED STEEL OR ALUMINUM APRON ENDWALLS SHALL NORMALLY BE INSTALLED ON CULVERT PIPE OF THE SAME METAL.

ALL THREE PIECE STEEL APRON ENDWALLS FOR 66" X 51" PIPE ARCH AND LARGER SHALL HAVE 0.109" SIDES AND 0.138" CENTER PANELS. ALL THREE PIECE ALUMINUM APRON ENDWALLS FOR 66" X 51" PIPE ARCH AND LARGER SHALL HAVE 0.105" SIDES AND 0.134" CENTER PANELS. THE WIDTH OF CENTER PANELS SHALL BE GREATER THAN 20 PERCENT OF THE PIPE ARCH PERIMETER.

LAP SEAMS SHALL BE TIGHTLY JOINED BY GALVANIZED RIVETS OR BOLTS FOR STEEL UNITS AND ALUMINUM RIVETS AND BOLTS FOR ALUMINUM UNITS. FOR THE 77" X 52" THROUGH 112" X 75" APRON ENDWALL SIZES, THE REINFORCED EDGES AND CENTER PANEL SEAMS SHALL BE FURTHER REINFORCED WITH GALVANIZED STEEL OR ALUMINUM STIFFENER ANGLES. THE ANGLES SHALL BE ATTACHED BY GALVANIZED NUTS AND BOLTS FOR STEEL UNITS AND ALUMINUM NUTS AND BOLTS FOR ALUMINUM UNITS.

WHERE TWO OR MORE PIPES WITH APRON ENDWALLS ARE LAID ADJACENT TO EACH OTHER, THEY SHALL BE SEPARATED BY A DISTANCE SUFFICIENT TO PROVIDE A MINIMUM CLEARANCE OF 6 INCHES BETWEEN APRON ENDWALLS.

① FOR PIPE ARCH SIZES UP TO 73" X 55" A 180° ROLLED EDGE MAY BE USED INSTEAD OF STEEL ROD REINFORCEMENT. SEE SECTION A-A.



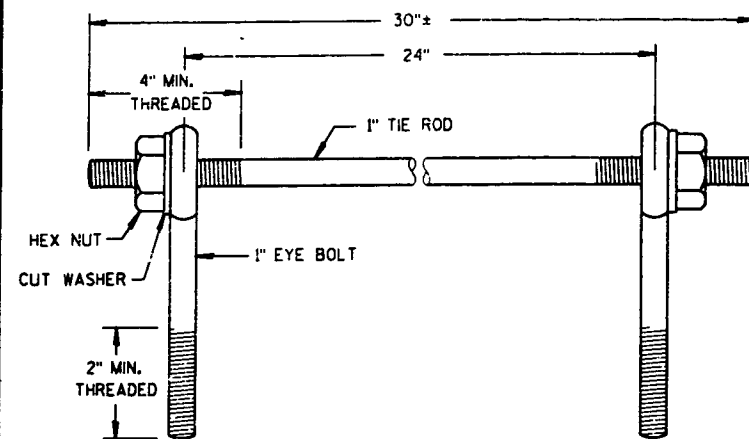
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL, AND CORRUGATED BAND FITS INSIDE ENDWALL.

CONNECTION DETAILS

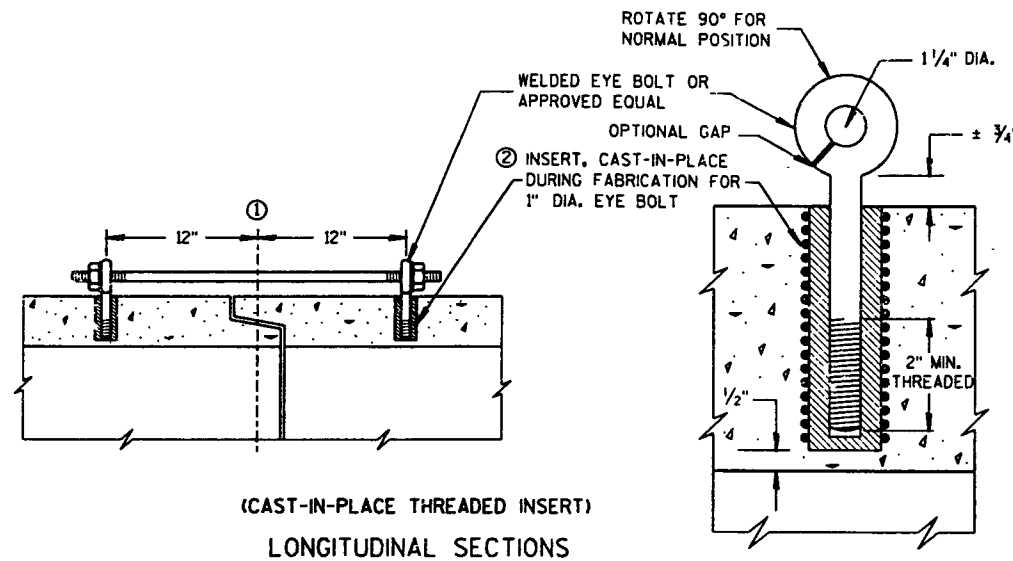
APRON ENDWALLS FOR PIPE ARCH AND ELLIPTICAL PIPE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
11/30/94
DATE
THOMAS J. K...
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA



EYE BOLTS AND TIE ROD



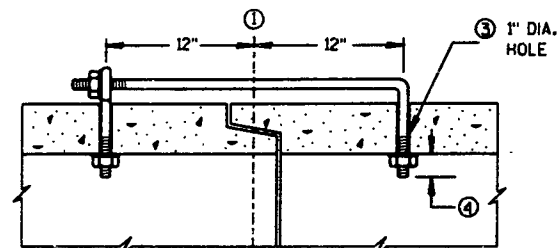
GENERAL NOTES

CONCRETE CULVERT PIPE SHALL BE TIED TOGETHER IN THE MANNER ILLUSTRATED BY THIS DETAIL AT LOCATIONS DESIGNATED ON THE PLAN. THE CONTRACTOR MAY USE EITHER ALTERNATE 1, 2 OR 3 FOR DRAINAGE STRUCTURES. ONLY ALTERNATE 1 AND 3 MAY BE USED FOR CATTLE PASSES, UNLESS OTHERWISE STATED IN THE CONTRACT THE MATERIALS, FABRICATION AND WORK NECESSARY TO TIE CULVERT PIPE AS INDICATED ON THE PLANS AND BY THIS DETAIL WILL BE CONSIDERED INCIDENTAL TO CULVERT PIPE, REINFORCED CONCRETE CULVERT PIPE, OR REINFORCED CONCRETE PIPE CATTLE PASS.

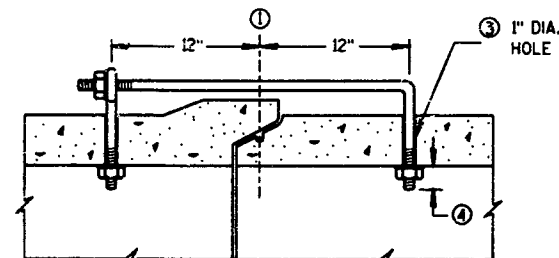
DETAILED DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR JOINT TIES SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.

- ① C. OF TONGUE AND GROOVE OR BELL AND SPIGOT JOINTS.
- ② THE INSIDE OF THE THREADED INSERTS SHALL BE CLEAN TO ALLOW THE INSERTION OF THREADED EYE BOLTS.
- ③ HOLES SHALL BE CAST-IN-PLACE OR DRILLED 12" FROM C. OF TONGUE AND GROOVE.
- ④ BOLT PROJECTION INSIDE OF PIPE SHALL NOT EXCEED 2".
- ⑤ ROD DIAMETER + 1 INCH.
- ⑥ LENGTH ADEQUATE TO EXTEND TO WITHIN 1/2 INCH OF THE INNER SURFACE OF THE PIPE.

EYE BOLT AND TIE ROD ASSEMBLY (ALTERNATE NO. 1)



(TONGUE & GROOVE PIPE)



(MODIFIED BELL PIPE)
LONGITUDINAL SECTION

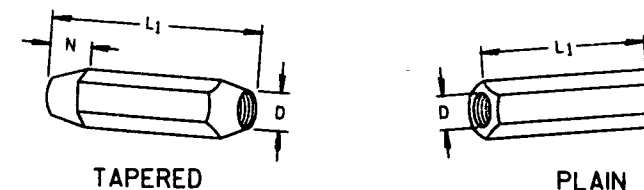
EYE BOLT DIMENSION TABLE

PIPE SIZE	L = LENGTH	
	TONGUE & GROOVE PIPE	MODIFIED BELL PIPE
18" TO 24"	4 1/2"	6 1/4"
30"	5"	7"
36"	5 1/2"	7"
42"	6"	
48"	6 1/2"	
60"	7 1/2"	
66"	8"	

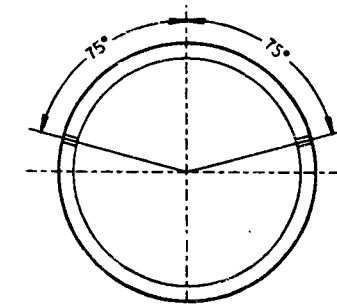
ADJUSTABLE TIE ROD TABLE

PIPE DIAMETER	TIE ROD DIAMETER	D	L ₁	N
12-60	5/8	5/8	5	1/2
66-84	3/4	3/4	5	1/2
90-108	1	1	7	1 1/8

DIMENSIONS SHOWN ARE IN INCHES

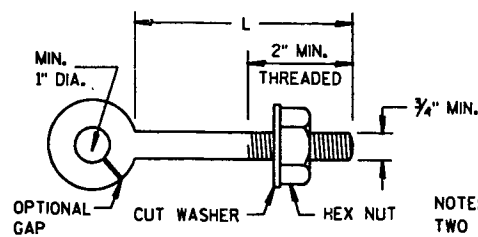


RIGHT AND LEFT THREADS
SLEEVE NUTS



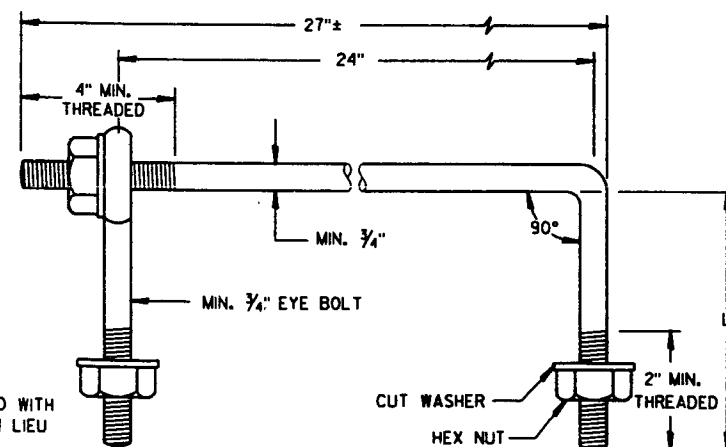
PLACEMENT OF (2) CAST-IN-PLACE INSERTS OR HOLES DURING FABRICATION FOR PIPE SECTIONS REQUIRING TIE RODS

TRANSVERSE SECTION



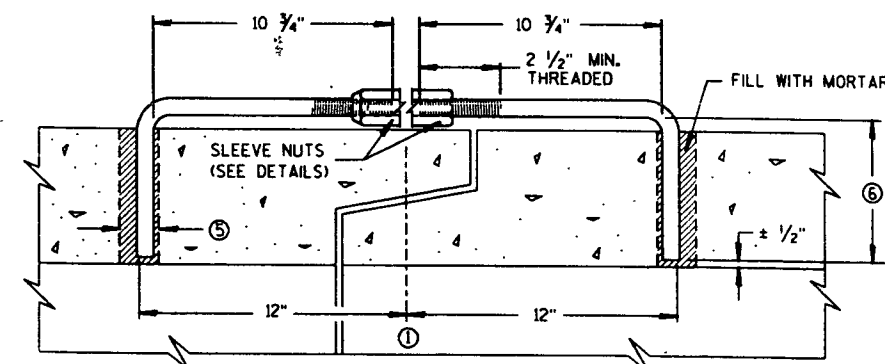
EYE BOLT

NOTE: TWO EYE BOLTS MAY BE USED WITH A 30" LONG THREADED ROD IN LIEU OF THE 90° BENT TIE ROD.



EYE BOLT AND TIE ROD

EYE BOLT AND TIE ROD ASSEMBLY (ALTERNATE NO. 2)



LONGITUDINAL SECTION

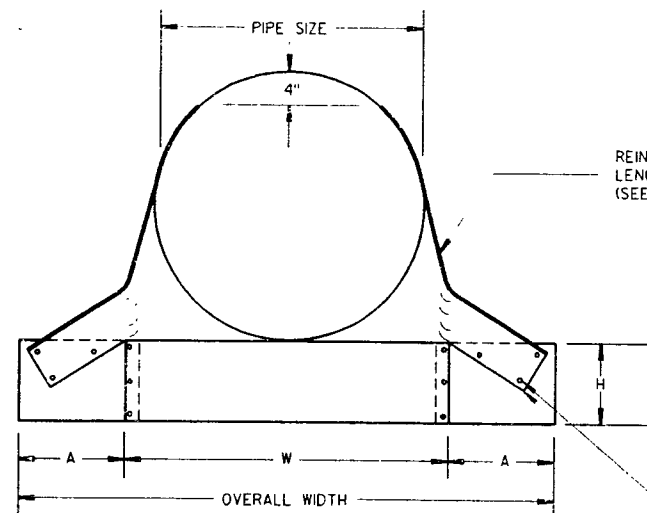
ADJUSTABLE TIE ROD (ALTERNATE NO. 3)

JOINT TIES FOR CONCRETE PIPE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

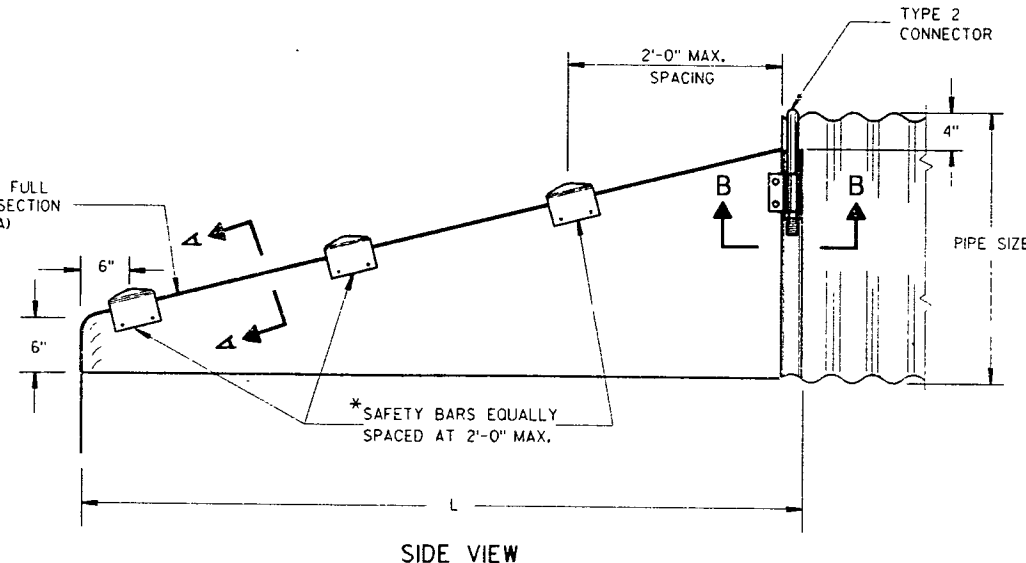
APPROVED
9/18/92
DATE
FHWA

STATE DESIGN ENGINEER FOR HWYS



FRONT VIEW

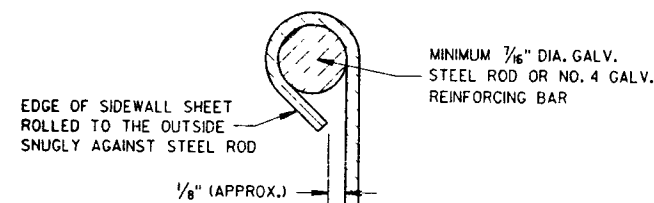
BOLTS, RIVETS, OR RESISTANCE SPOT WELDS WHICH WILL HOLD THE SURFACES TIGHTLY TOGETHER



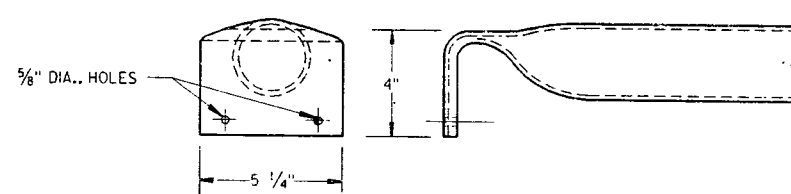
SIDE VIEW

*NOTE: THREE SAFETY BARS ARE SHOWN. ACTUAL NUMBER OF BARS REQUIRED AT A 2'-0" C-C MAX. SPACING WILL VARY DEPENDING ON THE LENGTH OF THE END SECTION.

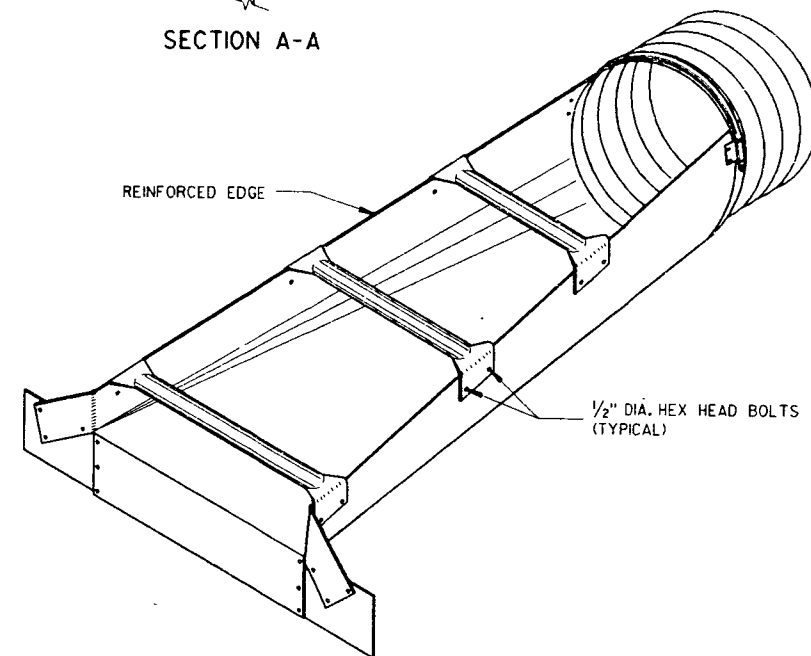
3" GALVANIZED PIPE, FLATTEN ENDS, THEN BEND OUTSIDE 4" TO MATCH END SECTION SIDES.



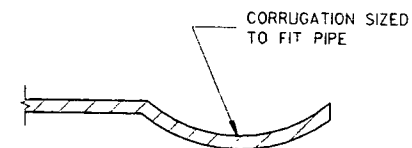
SECTION A-A



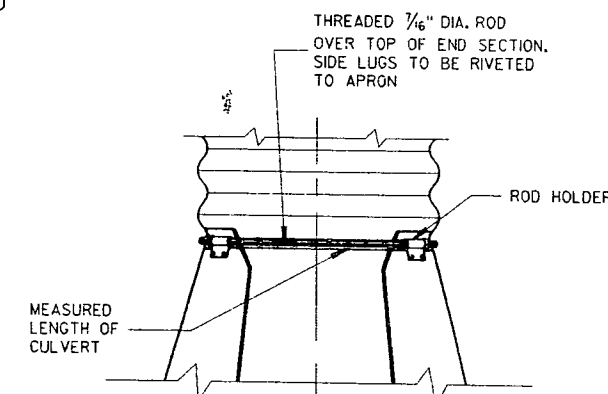
DETAIL OF SAFETY BAR



ISOMETRIC VIEW



SECTION B-B



TYPE 2 CONNECTION DETAIL

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.

SLOPED END SECTIONS SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS, SECTION 521 FOR STEEL APRON ENDWALLS.

SAFETY BARS SHALL BE FABRICATED FROM GALVANIZED STEEL PIPE MEETING THE REQUIREMENTS OF ASTM A-53, GRADE B, SCHEDULE 40 OR APPROVED EQUAL.

STEEL APRON ENDWALLS FOR CULVERT PIPE								
PIPE DIA. (IN.)	MIN. THICK. (Inches)	DIMENSIONS (Inches)				L DIMENSIONS		
		A	H	W	OVERALL WIDTH	SLOPE	LENGTH INCHES	
15	.064	8	6	21	37	6:1	30	
18	.064	8	6	24	40	6:1	48	
21	.064	8	6	27	43	6:1	66	
24	.064	8	6	30	46	6:1	84	
30	.109	12	9	36	60	6:1	120	
36	.109	12	9	42	66	6:1	156	
42	.109	16	12	48	80	5.63 TO 1	180	
48	.109	16	12	54	86	4.74 TO 1	180	
54	.109	16	12	60	92			

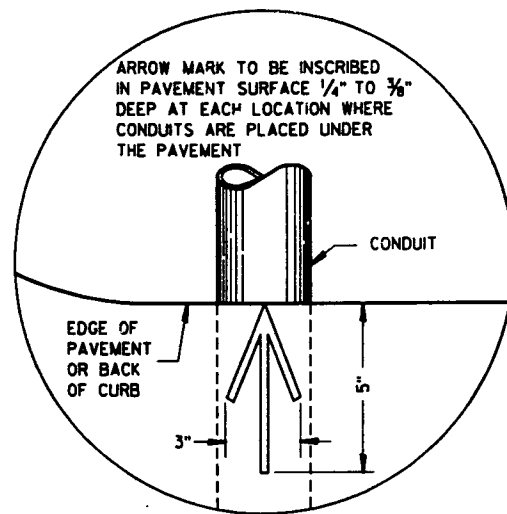
STEEL APRON ENDWALLS FOR PIPE ARCH									
EQUIV. DIA. (Inches)	(Inches)		MIN. THICK. (Inches)	DIMENSIONS (Inches)				L DIMENSIONS	
	SPAN	RISE		A	H	W	OVERALL WIDTH	SLOPE	LENGTH INCHES
15	17	13	.064	8	6	23	39	6:1	18
18	21	15	.064	8	6	27	43	6:1	30
21	24	18	.064	8	6	30	46	6:1	48
24	28	20	.064	8	6	34	50	6:1	60
30	35	24	.079	12	9	41	65	6:1	84
36	42	29	.109	12	9	48	72	6:1	114
42	49	33	.109	16	12	55	87	6:1	138
48	57	38	.109	16	12	63	95	6:1	168
54	64	43	.109	16	12	70	102	5.45 TO 1	180

STEEL APRON ENDWALLS FOR CULVERT PIPE AND PIPE ARCH SLOPED SECTION

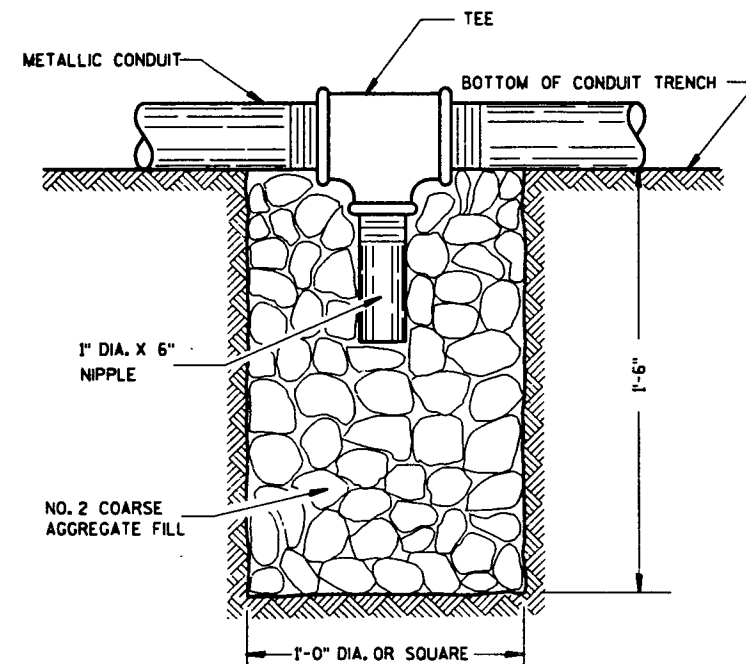
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
DATE
FWA

STATE DESIGN ENGINEER FOR HWYS

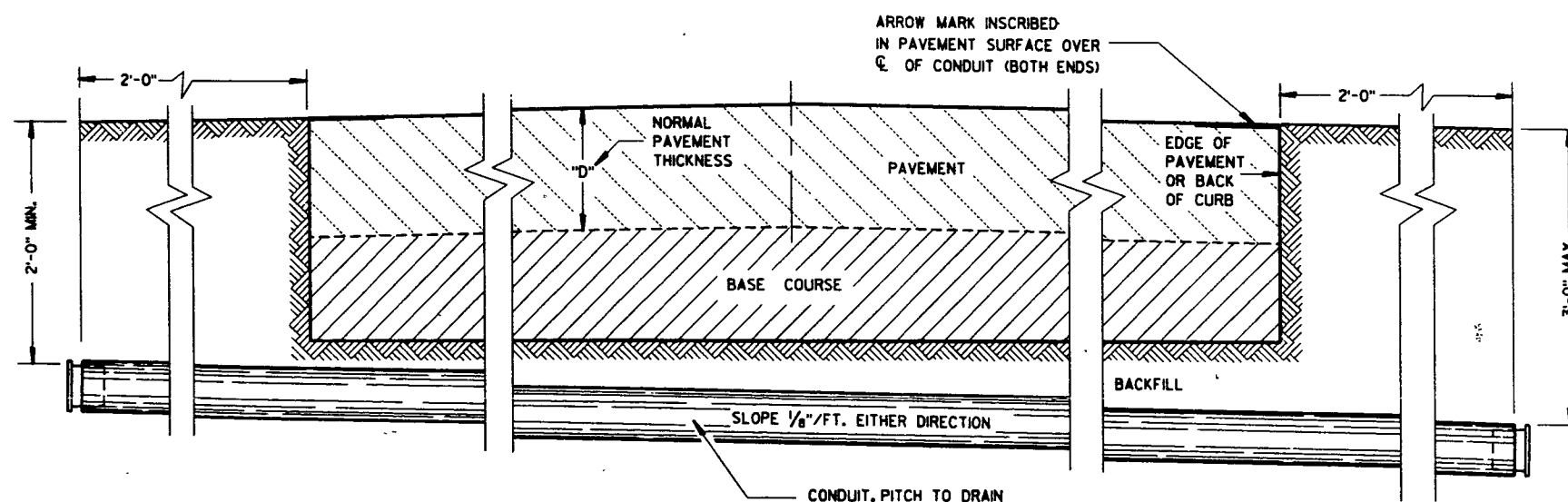


PLAN VIEW
ARROW MARK



NOTE: INSTALL AT LOCATIONS WHERE METALLIC CONDUITS CANNOT BE PITCHED TO DRAIN INTO A PULL BOX.

DRAIN SUMP FOR CONDUIT



SIDE ELEVATION

DETAIL FOR CONDUIT UNDER PAVED HIGHWAYS

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

METALLIC (STANDARD SPECIFICATION 613.2.2) OR NONMETALLIC (STANDARD SPECIFICATION 613.2.3) CONDUIT SHALL BE FURNISHED AND PLACED AS SHOWN.

DEPTH OF CONDUIT INSTALLED BELOW THE TRAVELED WAY SHALL BE 24 INCHES MINIMUM AND 36 INCHES MAXIMUM.

DEPTH OF CONDUIT INSTALLED THAT IS NOT BELOW THE TRAVELED WAY SHALL BE 18 INCHES MINIMUM AND 36 INCHES MAXIMUM.

ANY EXCEPTION TO THE MAXIMUM DEPTH SHALL BE ONLY WITH THE WRITTEN APPROVAL OF THE ENGINEER.

THE TRENCH SHALL NOT BE BACKFILLED PRIOR TO INSPECTION OF THE CONDUIT.

ALL METALLIC CONDUIT RACEWAY ENDS SHALL BE REAMED AND THREADED.

ALL METALLIC CONDUIT IN WHICH WIRE OR CABLE IS TO BE INSTALLED SHALL BE BUSHED WITH APPROVED THREADED BUSHINGS BEFORE INSTALLATION OF THE WIRE OR CABLE.

ALL METALLIC CONDUITS IN WHICH WIRE OR CABLE IS NOT TO BE INSTALLED SHALL BE CAPPED WITH THREADED PROTECTIVE CAPS, AS APPROVED BY THE ENGINEER.

ALL NONMETALLIC CONDUIT SHALL BE CAPPED OR PLUGGED IMMEDIATELY AFTER INSTALLATION.

NONMETALLIC CONDUITS IN WHICH WIRE OR CABLE IS NOT BEING INSTALLED SHALL REMAIN CAPPED OR PLUGGED.

WHEN REQUIRED TO CONNECT NONMETALLIC CONDUIT TO METALLIC CONDUIT, ONLY U.L. LISTED ADAPTER FITTINGS SHALL BE USED.

PRIOR TO CONDUIT ACCEPTANCE, CONDUIT CAPS OR PLUGS SHALL BE REMOVED, AND THE CAPS, PLUGS AND CONDUIT ENDS SHALL BE THOROUGHLY CLEANED AND THEN THE CAPS OR PLUGS REINSTALLED TO ENSURE THAT THE CAPS OR PLUGS CAN BE EASILY REMOVED IN THE FUTURE.

ALL CONDUIT BEING FURNISHED AND INSTALLED SHALL HAVE THE U.L. LABEL FIRMLY ATTACHED.

CONDUIT RUNS SHALL BE THE SAME SIZE PIPE FROM ONE END TO THE OTHER (FROM PULL BOX TO PULL BOX-OR-JUNCTION BOX TO JUNCTION BOX).

A #12 GAUGE, GALVANIZED PULL WIRE SHALL BE INSTALLED IN EACH RUN OF CONDUIT THAT DOES NOT RECEIVE CABLE OR WIRE UNDER THIS CONTRACT. THE PULL WIRE SHALL BE DOUBLED BACK 2 FEET AT EACH END CAP OF THE CONDUIT RUN.

BENDING OF PVC SHALL BE ACCOMPLISHED BY USING A BLANKET OR EMERSION TYPE TANK DESIGNED FOR THE PURPOSE OF BENDING PVC ELECTRICAL CONDUIT.

ALL CONDUIT RUNS SHALL BE STRAIGHT (WITHOUT BENDS) FROM PULL BOX TO PULL BOX, PULL BOX TO BASE AND BASE TO BASE AS SHOWN ON THE PLANS UNLESS OTHERWISE APPROVED BY THE PROJECT ENGINEER.

ALL CUT ENDS SHALL BE TRIMMED INSIDE AND OUTSIDE TO REMOVE ALL ROUGH EDGES ON NONMETALLIC CONDUIT. (SEE NEC 347.5)

CONDUIT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

DATE 7/1/92

DATE 9/15/92

DATE

DATE

DATE

DATE

DATE

DATE

STATE ELECTRICAL ENGR FOR HWYS
STATE TRAFFIC ENGINEER FOR HWYS

DATE

DATE

DATE

DATE

TABLE OF NOMINAL DIMENSIONS AND WEIGHTS

DIMENSION IN INCHES		TYPE OF PIPE						
		CORRUGATED STEEL						POLYETHYLENE SDR 32.5
PIPE DIAMETER (INSIDE)	A	12	12	18	18	24	24	12
PIPE LENGTH **	B	24	36	24	36	24	36	24
WALL THICKNESS	C	0.064	0.064	0.064	0.064	0.064	0.064	0.4
COVER	D	10 1/4	10 1/4	16 1/4	16 1/4	22 1/4	22 1/4	10 1/4
FRAME	E	14 1/2	14 1/2	20 1/2	20 1/2	26 1/2	26 1/2	14 1/2
FRAME	F	8 1/2	8 1/2	14 1/2	14 1/2	20 1/2	20 1/2	8 1/2
FRAME	G	11 1/2	11 1/2	17 1/2	17 1/2	23 1/2	23 1/2	11 1/2
WEIGHT IN POUNDS *								
FRAME AND COVER		60	60	110	110	155	155	60

* THE ACTUAL WEIGHT OF THE MANHOLE FRAME AND COVER MAY VARY WITHIN 5 PERCENT PLUS OR MINUS OF THE WEIGHTS SHOWN.

** NORMALLY USED LENGTHS. THE PROJECT ENGINEER SHALL DETERMINE IF PIPE LENGTHS, OTHER THAN THOSE SPECIFIED, SHALL BE USED, TO A MAXIMUM OF 48" (CONTINUOUS LENGTH, NON-SPLICED)

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

ALL FRAMES AND COVERS SHALL BE HEAVY DUTY TYPE, SUITABLE FOR VEHICULAR TRAFFIC LOADS.

POLYETHYLENE PULL BOXES SHALL NOT BE INSTALLED IN CONCRETE OR ASPHALTIC PAVEMENT. PULL BOXES LOCATED IN THE ROADWAY SHALL HAVE LOCKING COVERS.

ENTRANCE HOLES INTO PULL BOXES SHALL BE CUT WITH A CIRCULAR HOLE SAW OR HYDRAULIC CONDUIT PUNCH. HOLE SIZE SHALL BE THE OUTSIDE DIAMETER OF THE CONDUIT THAT IS TO FIT IN THE OPENING PLUS NO MORE THAN 1/4".

THE CONTRACTOR SHALL NOT INSTALL WIRE IN ANY PULL BOX UNTIL ITS INSTALLATION HAS BEEN INSPECTED AND ACCEPTED BY THE ENGINEER.

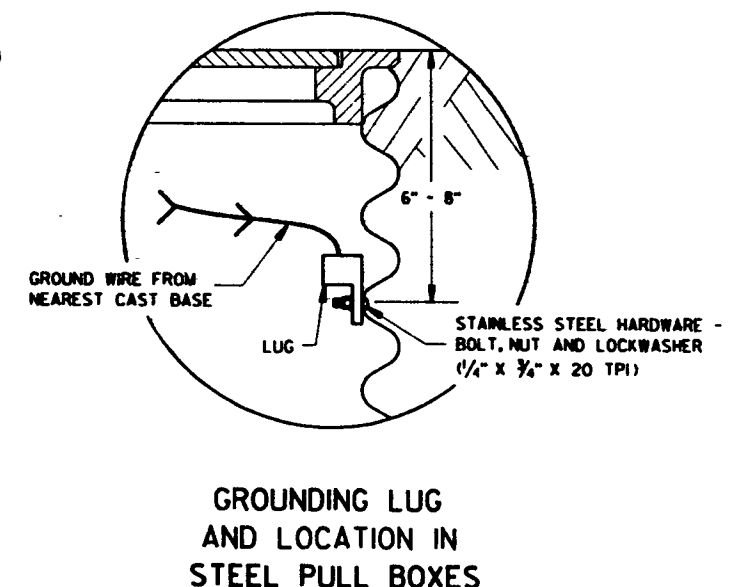
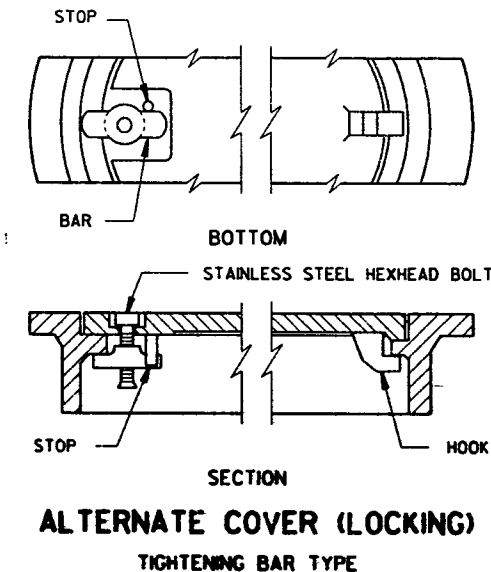
GROUNDING LUGS (MECHANICAL CONNECTORS) SHALL BE U.L. LISTED AND APPROVED FOR USE WITH COPPER WIRE. THE MECHANICAL CONNECTION (INSIDE AND OUTSIDE) TO THE PULL BOX, SHALL BE TOTALLY AND PERMANENTLY SEALED WITH A SILICONE OR RUBBERIZED CAULKING COMPOUND AS APPROVED BY THE ENGINEER.

GROUNDING LUGS ARE NOT REQUIRED IN PULL BOXES WHEN VOLTAGES OF LESS THAN 50 VOLTS AC ARE THE ONLY VOLTAGES ENCOUNTERED IN THE BOXES.

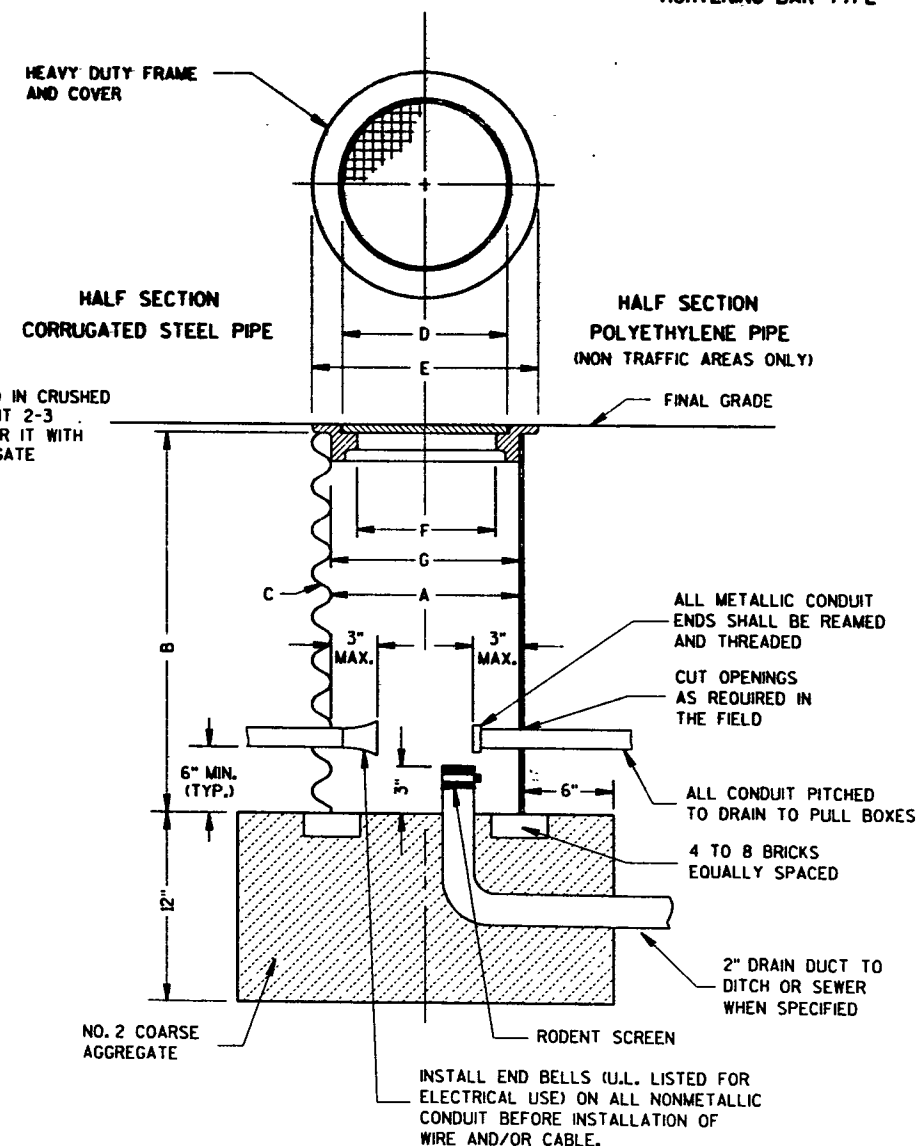
DRAIN DUCT SHALL BE MEASURED AND PAID FOR SEPARATELY.

RODENT SCREEN SHALL BE 1/2" GALVANIZED STEEL MESH AND BE INSTALLED WITH A STAINLESS STEEL HOSE CLAMP OF SUFFICIENT SIZE.

ALL METALLIC CONDUIT IN WHICH WIRE AND/OR CABLE IS TO BE INSTALLED, SHALL BE BUSHED BEFORE INSTALLATION OF THE WIRE AND/OR CABLE.



WHEN A PULL BOX IS INSTALLED IN CRUSHED AGGREGATE SHOULDERS, PLACE IT 2-3 INCHES BELOW GRADE AND COVER IT WITH 2-3 INCHES OF CRUSHED AGGREGATE



PULL BOX

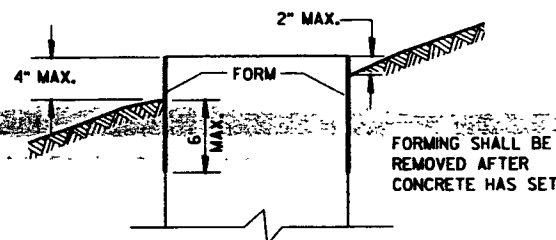
PULL BOX

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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4/21/93
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4/21/93
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STATE TRAFFIC ENGINEER FOR HWYS

FHWA

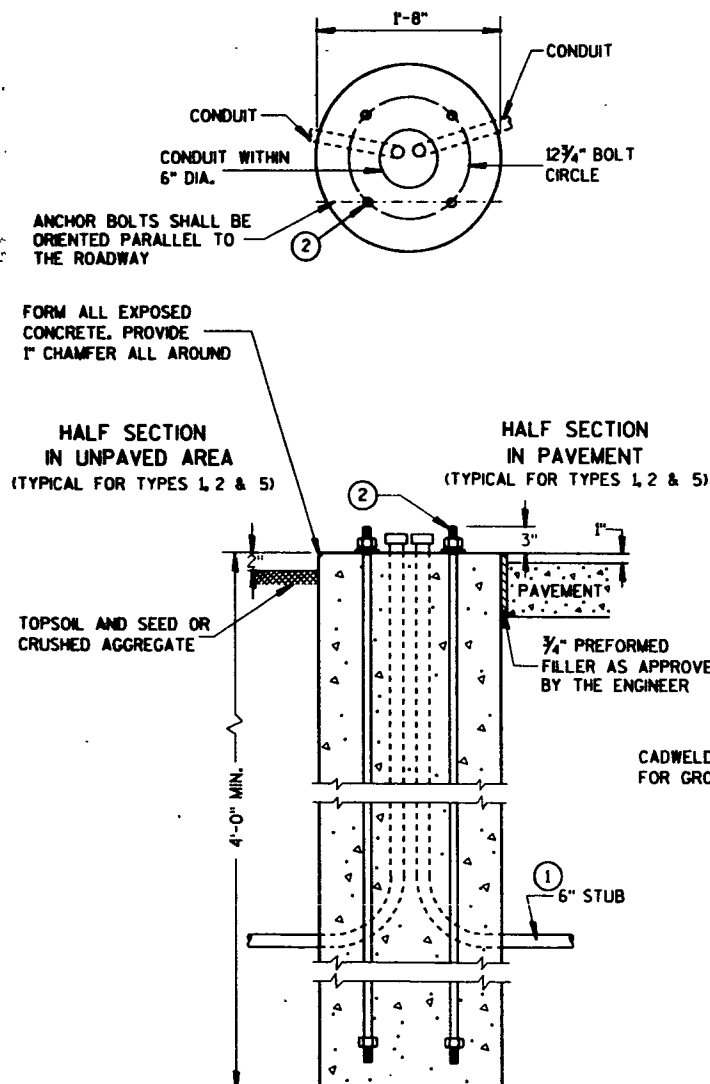
FORM DEPTH SHALL BE NO MORE THAN 6" BELOW GRADE ON THE LOWER SIDE OF BASE



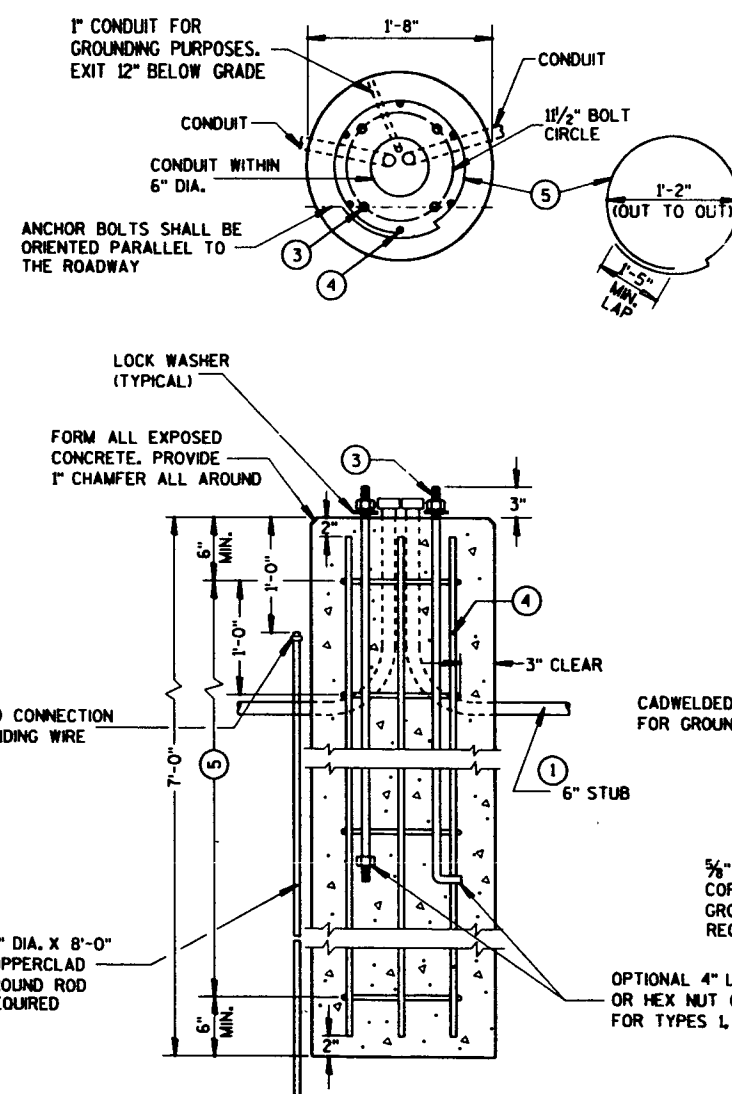
FORMING DETAIL

QUANTITY REQUIREMENTS	CONCRETE BASE TYPE		
	1	2	5
APPROX. CUBIC YARDS OF CONCRETE	.32	.57	.40
LBS. OF HOOP BAR STEEL	NONE	23	16
LBS. OF VERTICAL BAR STEEL	NONE	60	18

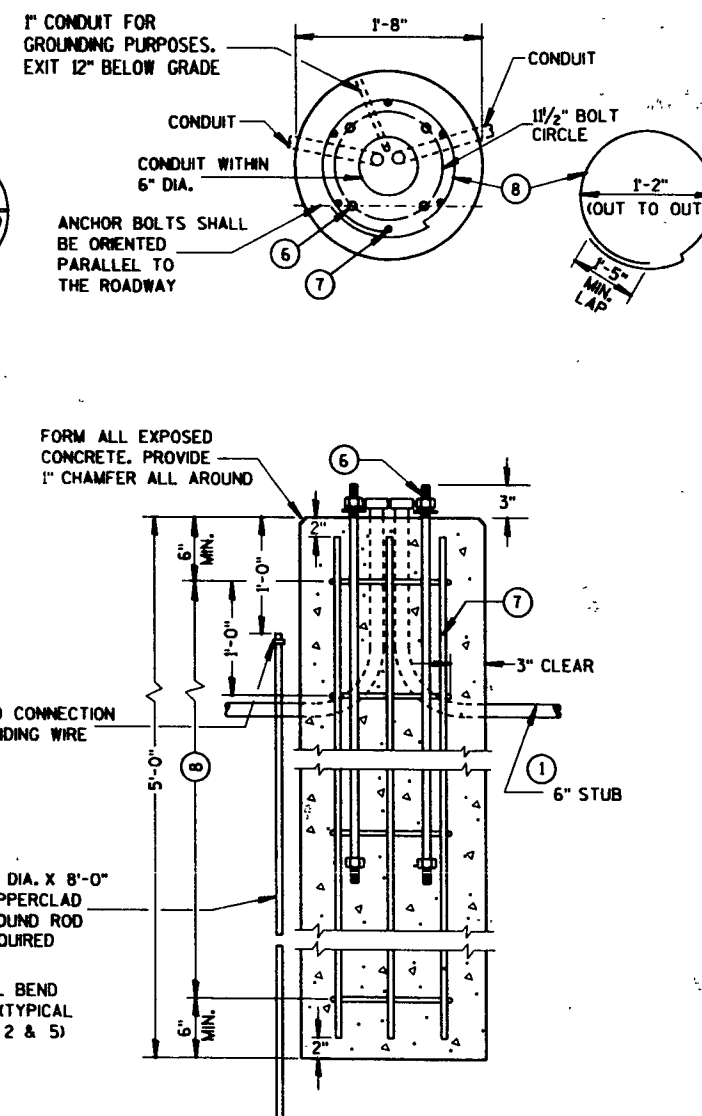
WELDING ANCHOR BOLTS TO THE CAGE IS UNACCEPTABLE. TIE WIRES SHALL BE USED.



TYPE 1



TYPE 2



TYPE 5

CONCRETE BASES

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

BASES SHALL BE EXCAVATED BY USE OF A CIRCULAR AUGER.

TOP SURFACES OF CONCRETE BASES SHALL BE TROWEL FINISHED AND LEVEL.

CONDUIT SIZES AND LOCATIONS SHALL BE AS SHOWN ON THE PLANS.

MINIMUM BENDING RADIUS OF CONDUIT = 6 X THE DIAMETER.

CONDUIT HEIGHT ABOVE CONCRETE BASES SHALL BE 1 INCH. ALL METALLIC CONDUIT ENDS SHALL BE REAMED AND THREADED.

ALL METALLIC CONDUITS IN WHICH WIRE OR CABLE IS NOT TO BE INSTALLED SHALL BE CAPPED WITH THREADED PROTECTIVE CAPS, AS APPROVED BY THE ENGINEER.

ALL NONMETALLIC CONDUITS IN WHICH WIRE OR CABLE IS NOT INSTALLED SHALL BE PLUGGED.

ALL CONDUIT ENDS AT THE TOP OF CONCRETE BASES SHALL BE CAPPED IF METALLIC OR PLUGGED IF NONMETALLIC IMMEDIATELY AFTER PLACEMENT AND BEFORE CONCRETE IS POURED. CONDUITS IN WHICH WIRE OR CABLE IS NOT INSTALLED SHALL REMAIN CAPPED OR PLUGGED.

BELL ENDS SHALL BE INSTALLED ON ALL PVC CONDUIT EXPOSED AT THE TOP OF CONCRETE BASES BEFORE INSTALLATION OF CABLE OR WIRE.

ENDS OF CONDUIT INSTALLED BELOW GRADE FOR FUTURE USE SHALL BE CAPPED IF METALLIC OR PLUGGED IF NONMETALLIC.

WHEN REQUIRED TO CONNECT NONMETALLIC CONDUIT TO METALLIC CONDUIT, ONLY ADAPTER FITTINGS, U.L. LISTED FOR ELECTRICAL USE, SHALL BE USED.

IF A BASE REQUIRES A DEEP FORM BECAUSE OF LOOSE DIRT OR FILL, THE FORM SHALL BE REMOVED BEFORE BACKFILLING AROUND THE BASE. BACKFILL SHALL BE TAMPED TIGHT AGAINST THE BARE CONCRETE BASE IN LAYERS OF 1 FOOT OR LESS.

A NO. 6 AWG. STRANDED COPPER GROUNDING WIRE SHALL BE CADWELDED TO THE GROUND ROD FOR TYPE 2 AND TYPE 5 BASES.

THE GROUNDING WIRE SHALL BE FURNISHED AND INSTALLED TO ENTER THE BASE OF THE TYPE 2 AND TYPE 5 BASES THROUGH A 1 INCH CONDUIT INSTALLED FOR GROUNDING PURPOSES, LEAVING A 4 FOOT COIL OF WIRE ABOVE THE CONCRETE BASE. THE GROUNDING WIRE SHALL BE NEATLY COILED AND THE COILS TIED TOGETHER.

ANCHOR BOLTS SHALL BE THREADED 8" IN LENGTH ON EACH END OF THE BOLT, AND BE MANUFACTURED IN ACCORDANCE WITH SECTION 640.2.9 OF THE STANDARD SPECIFICATIONS, ASTM A-449, OR ASTM A-687 (GRADE 105).

WHEN ANCHOR BOLTS USING THE ALTERNATE "L" BEND ARE FURNISHED, THE 4" "L" BEND SHALL BE IN ADDITION TO THE SPECIFIED ANCHOR BOLT BAR LENGTH. THE "L" BEND END SHALL NOT BE THREADED.

① THE MINIMUM DEPTH OF CONDUIT EXITING THE CONCRETE BASE AND INSTALLED BELOW THE TRAVELED WAY SHALL BE 24 INCHES. THE MINIMUM DEPTH OF CONDUIT EXITING THE CONCRETE BASE THAT IS NOT INSTALLED BELOW THE TRAVELED WAY SHALL BE 18 INCHES. THE MAXIMUM DEPTH OF ALL CONDUIT SHALL BE 36 INCHES EXCEPT WITH WRITTEN APPROVAL BY THE ENGINEER.

② (4) 1" DIA. X 3'-6" ANCHOR BOLTS.

③ (4) 1" DIA. X 5'-0" ANCHOR BOLTS.

④ (6) NO. 6 X 6'-8" BAR STEEL REINFORCEMENT.

⑤ (7) NO. 4 X 5'-1" BAR STEEL REINFORCEMENT @ 1'-0" C-C.

⑥ (4) 1" DIA. X 3'-6" ANCHOR BOLTS.

⑦ (6) NO. 4 X 4'-8" BAR STEEL REINFORCEMENT

⑧ (5) NO. 4 X 5'-1" BAR STEEL REINFORCEMENT @ 1'-0" C-C.

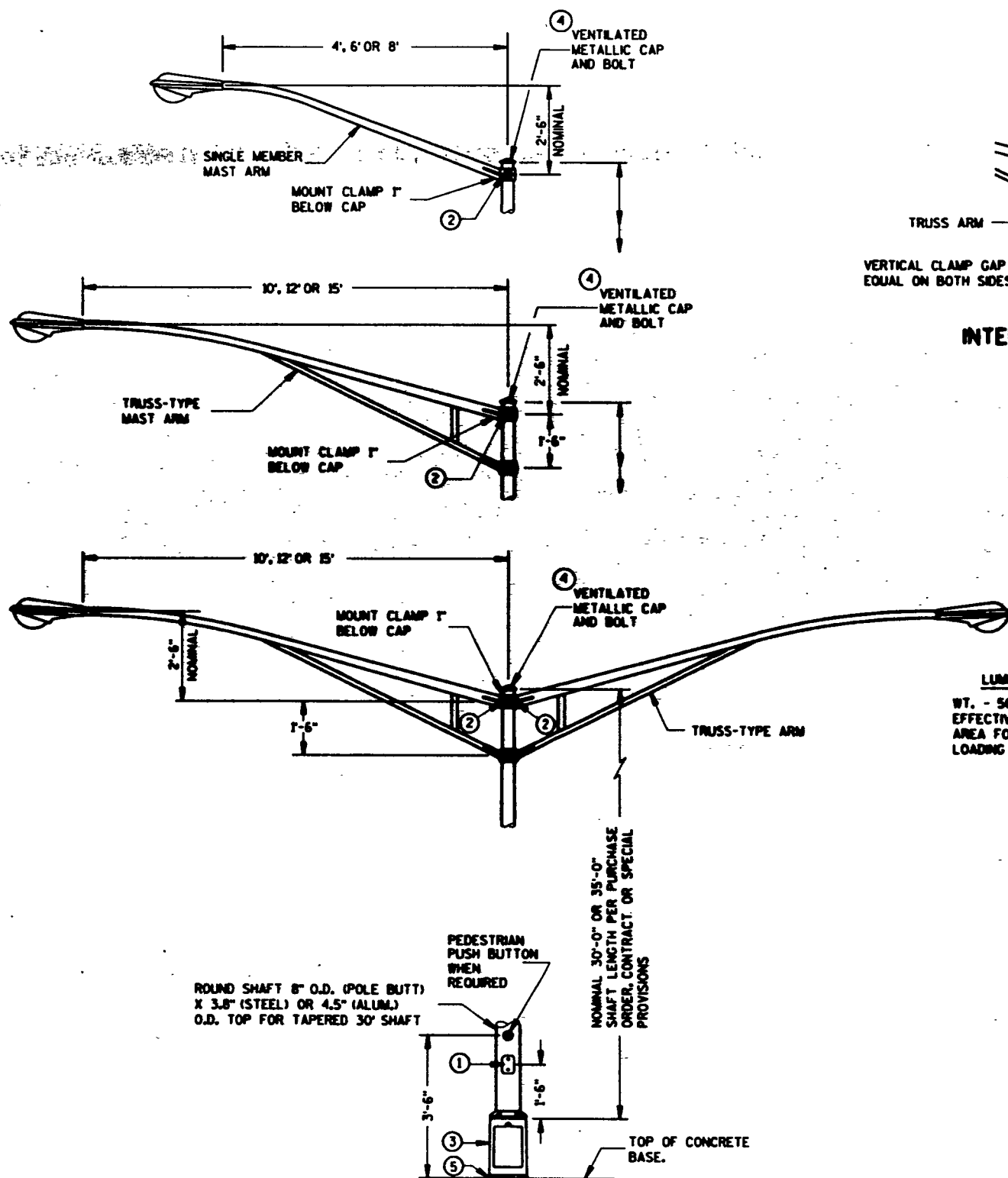
CONCRETE BASES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

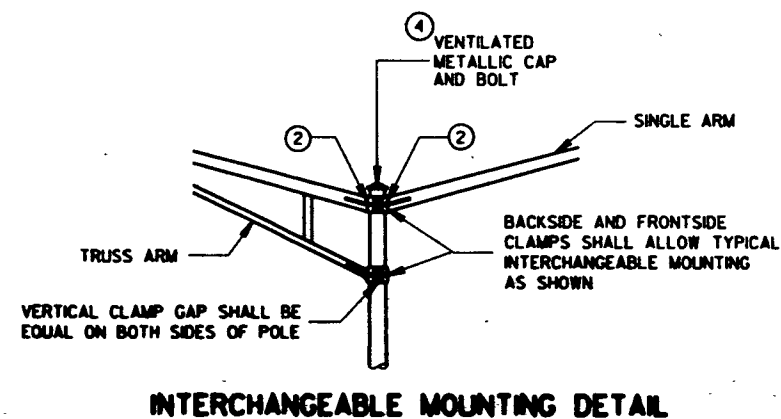
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4/21/93
DATE
4/21/93
DATE

STATE ELECTRICAL ENGR FOR HWYS
STATE TRAFFIC ENGINEER FOR HWYS

FWHA



TYPE 5 POLE MOUNTING CONFIGURATION
(MAXIMUM LOAD)
LIGHTING ONLY



GENERAL NOTES

ALL LUMINAIRE POLE MOUNTINGS SHALL BE DESIGNED FOR TWIN 15' ARMS WITH LUMINAIRES.

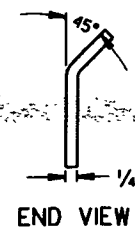
THE SLIPFITTER END OF THE LUMINAIRE MAST ARM SHALL BE A NOMINAL 2 3/8 INCHES IN OUTSIDE DIAMETER. THE STRAIGHT PORTION OF THE SLIPFITTER END OF THE LUMINAIRE ARM SHALL BE A NOMINAL 12 INCHES IN LENGTH.

- ① 4" x 6" REINFORCED HANDHOLE & COVER ASSEMBLY WITH 2 (TWO) 1/4" x 3/4" - 20 TPI HEX HEAD STAINLESS STEEL BOLTS.
- ② GROMMETS, 1" CHASE NIPPLES OR 1" CLOSE CONDUIT NIPPLES WITH BUSHINGS SHALL BE PROVIDED FOR 1 1/8" HOLE IN POLE SHAFT FOR WIRING.
- ③ CAST ALUMINUM TRANSFORMER BASE, WHEN REQUIRED.
- ④ FURNISH AND INSTALL VENTILATED, CAST, METALLIC (ALUMINUM ALLOY) CAPS. FASTEN CAPS WITH ONE (1) 1/4" x 3/4" - 20 TPI STAINLESS STEEL, HEX HEAD BOLT.
- ⑤ SHIMMING, IF NEEDED, SHALL BE LOCATED BETWEEN THE CONCRETE FOUNDATION AND THE TRANSFORMER BASE.

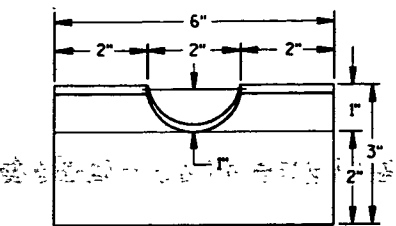
NOTE:
SHEET SDD 9 E 1-10 IS REQUIRED WHEN THIS DRAWING IS CALLED FOR IN THE PLANS.

POLE MOUNTINGS FOR
LIGHTING UNITS
TYPE 5

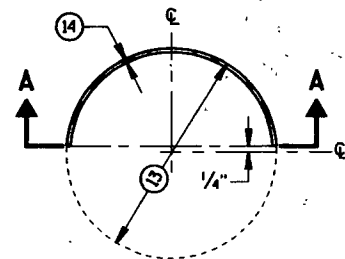
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



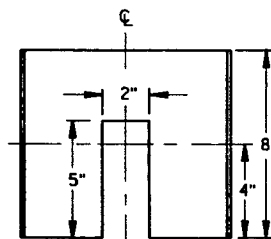
END VIEW



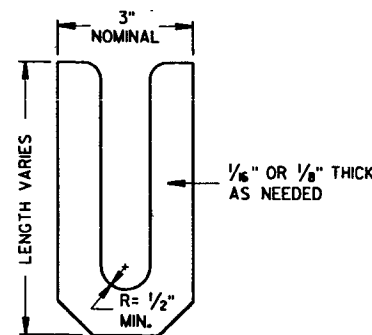
FRONT VIEW
RECTANGULAR CLAMP SHIM
(4 TO A SET)



PLAN VIEW

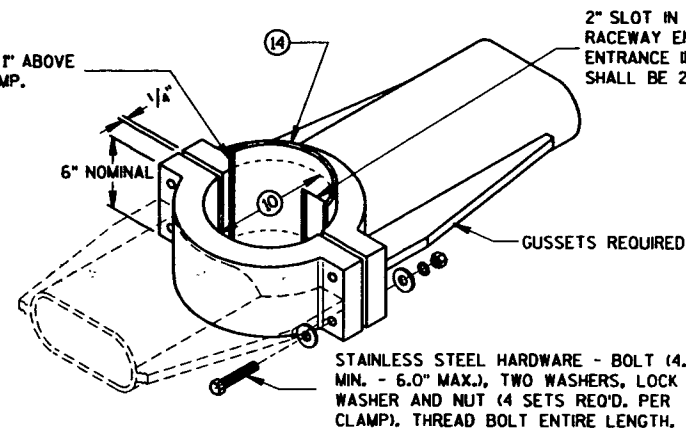


SECTION A-A
CIRCULAR CLAMP SHIM
(2 TO A SET)



LEVELING SHIM (15)

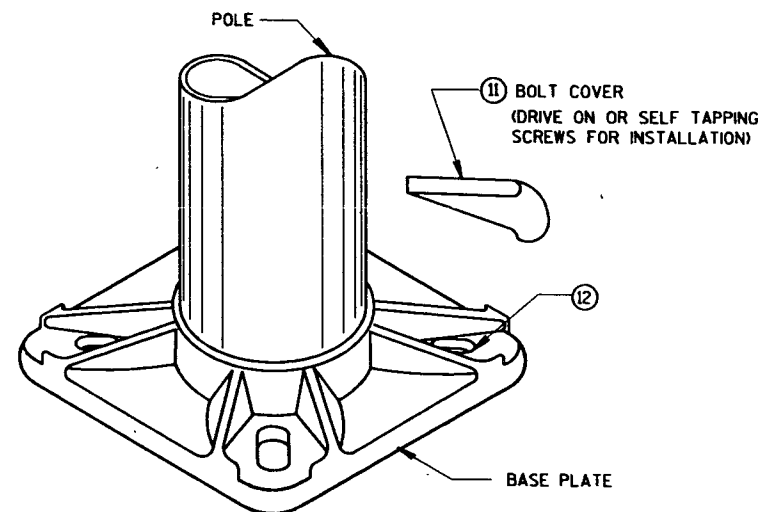
SHIMS TO EXTEND 1" ABOVE
AND 1" BELOW CLAMP.



TYPICAL TROMBONE MAST ARM AND
LUMINAIRE MAST ARM MOUNTING CLAMP

GENERAL NOTES

- (10) 4.5" I.D. FOR LUMINAIRE MAST ARM CLAMP.
6.625" I.D. FOR TROMBONE MAST ARM CLAMP.
- (11) INDIVIDUAL BASE PLATE ANCHOR BOLT COVERS. (4 REQUIRED)
- (12) BASE PLATE SLOTTED TO ACCEPT 11" THROUGH 12" BOLT CIRCLE USING
1" DIAMETER ANCHOR BOLTS.
- (13) OUTSIDE SHIM DIAMETER - (4.5" O.D. FOR LUMINAIRE MAST ARM)
(6.625" O.D. FOR TROMBONE MAST ARM)
- (14) VARIABLE SHIM THICKNESS - (0.10", 0.25", 0.35", 0.53" OR 0.70")
SHIM THICKNESS FOR TROMBONE MAST ARMS MAY BE TYPICALLY 0.35",
0.53" OR 0.70".
SHIM THICKNESS FOR LUMINAIRE MAST ARMS MAY BE TYPICALLY 0.10",
0.25" OR 0.35".
SHIM MATERIAL SHALL BE ALUMINUM ALLOY.
SHIM THICKNESS SHALL BE IMPRESSED INTO EACH SHIM. NUMERALS
SHALL BE 1/4" HIGH AND LEGIBLE.
THE CONTRACTOR SHALL SUBMIT TWO COPIES OF ALL SHIM SHOP DRAWINGS
TO THE ENGINEER FOR APPROVAL.
- (15) LEVELING SHIMS, DESIGNED FOR THE PURPOSE, SHALL BE USED WHEN PLUMBING
POLES. THE USE OF WASHERS IN LIEU OF PROPER LEVELING SHIMS IS NOT
ACCEPTABLE. LEVELING SHIMS SHALL BE USED ONLY BETWEEN THE TOP OF THE
CONCRETE BASE AND A METALLIC BASE PLATE.
SHIM LENGTH SHALL BE LONG ENOUGH TO COMPLETELY COVER THE AREA
UNDER THE LENGTH AND WIDTH OF THE BASE MOUNTING FLANGE.

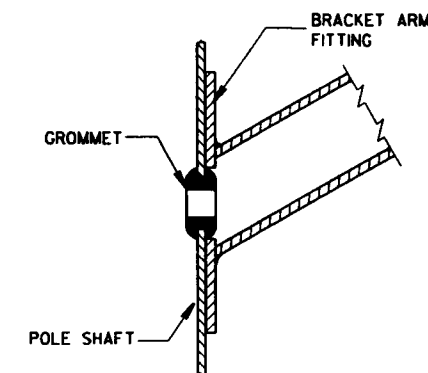
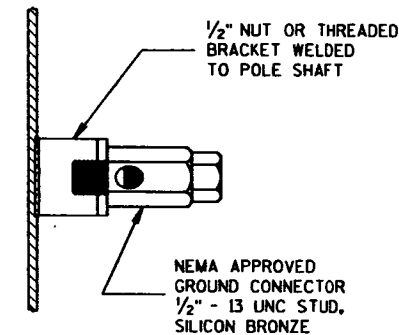


BASE PLATE

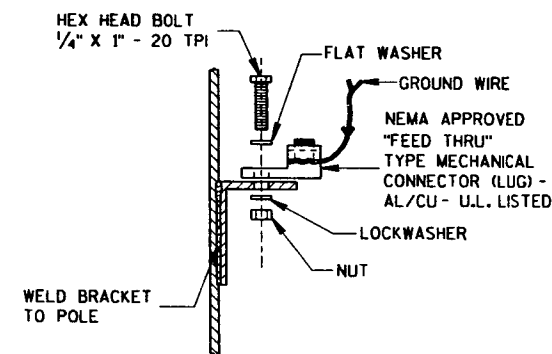
2" SLOT IN ALL SHIMS TO MATCH
RACEWAY ENTRANCE INTO ARM.
ENTRANCE INTO ARM RACEWAY
SHALL BE 2" MINIMUM.

GUSSETS REQUIRED

STAINLESS STEEL HARDWARE - BOLT (4.5"
MIN. - 6.0" MAX.), TWO WASHERS, LOCK
WASHER AND NUT (4 SETS REQ'D. PER
CLAMP). THREAD BOLT ENTIRE LENGTH.

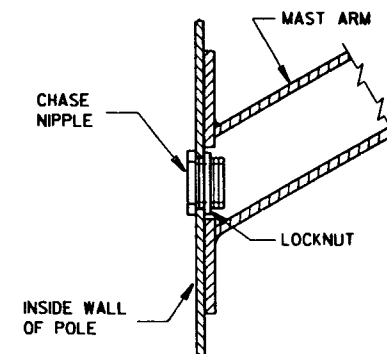


TYPICAL APPLICATION OF
GROMMET IN POLE SHAFT

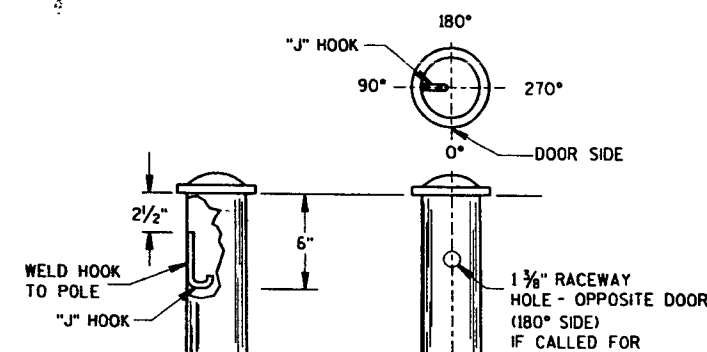


TYPICAL GROUNDING CONNECTIONS

NUT, BOLT AND WASHERS SHALL
BE STAINLESS STEEL



TYPICAL APPLICATION OF
CHASE NIPPLE IN POLE SHAFT



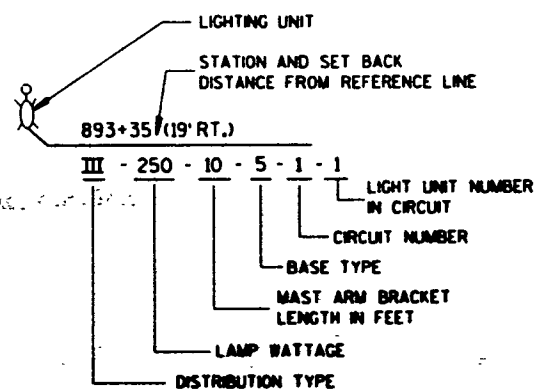
TYPICAL "J" HOOK LOCATION

NOTE:
THIS DRAWING IS REQUIRED WHEN DRAWINGS
SDD 9 E 1-1a, b, c, OR d IS CALLED FOR IN
THE PLANS.

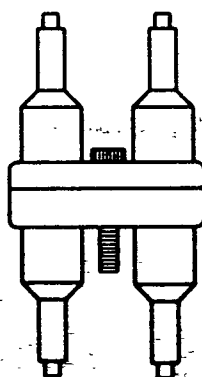
HARDWARE DETAILS FOR POLE MOUNTINGS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
DATE 2/21/93
DATE 4/21/93
STATE ELECTRICAL ENGR FOR HWYS
STATE TRAFFIC ENGINEER FOR HWYS
FHWA



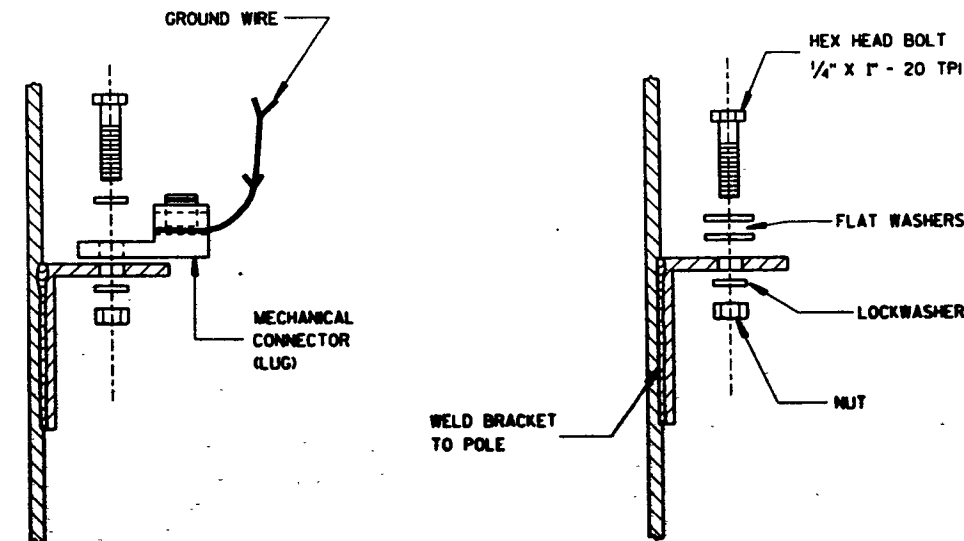
LIGHTING UNIT CODE



DETAIL "A"
DOUBLE POLE



DETAIL "B"
SINGLE POLE

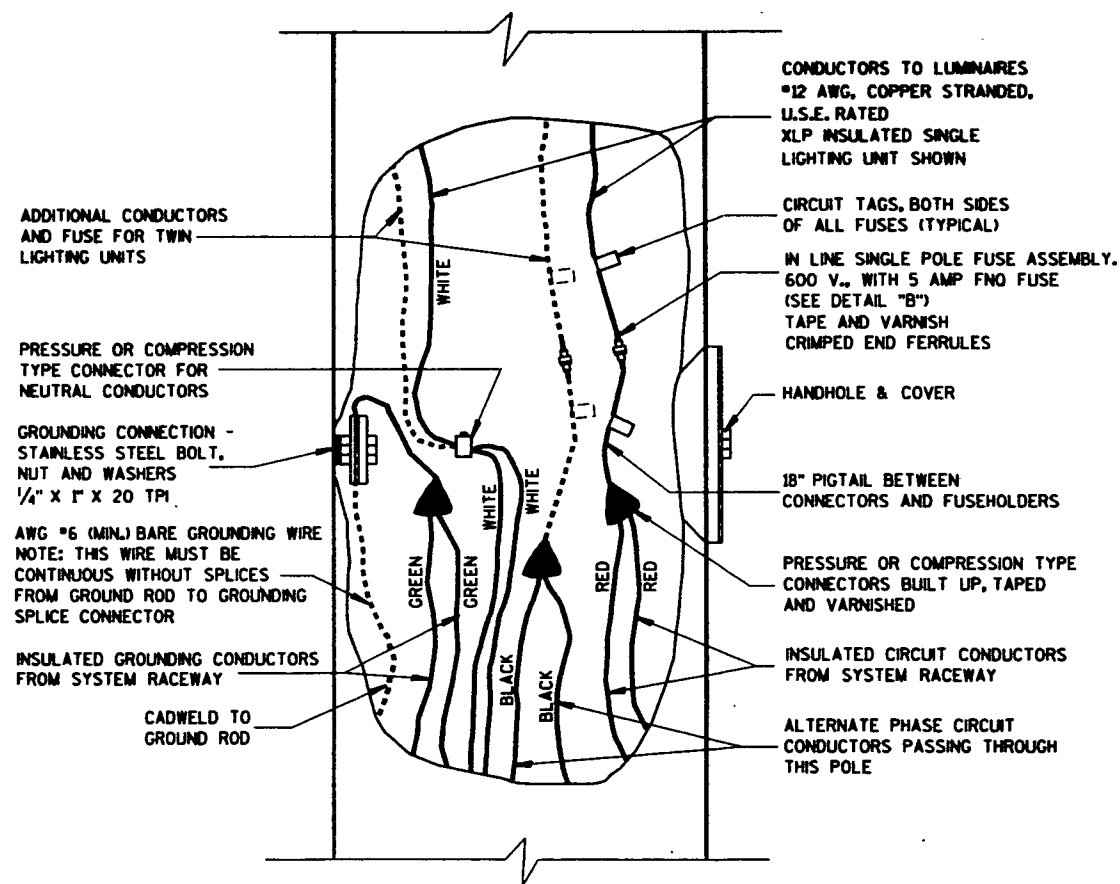


TYPICAL GROUNDING CONNECTIONS

NUT, BOLT AND WASHERS SHALL BE STAINLESS STEEL

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.



3 WIRE - 120, 240 OR 480 VOLTS TO GROUND
2 WIRE - 120 VOLTS TO GROUND

CONDUCTORS TO LUMINAIRES
#12 AWG. COPPER STRANDED,
U.S.E. RATED
XLP INSULATED SINGLE
LIGHTING UNIT SHOWN
TWIN LIGHTING UNITS REQUIRE
INDIVIDUAL SETS OF LEAD
WIRES AND FUSE ASSEMBLY.

AWG #6 (MIN.) BARE GROUND WIRE
NOTE: THIS WIRE MUST BE
CONTINUOUS WITHOUT SPLICES
FROM GROUND ROD TO GROUNDING
SPLICE CONNECTOR

GROUNDING CONNECTION -
STAINLESS STEEL BOLT,
NUT AND WASHERS
1/4" X 1" X 20 TPI

PRESSURE OR COMPRESSION
TYPE CONNECTOR FOR
GROUNDING CONDUCTORS

INSULATED GROUNDING CONDUCTORS
FROM SYSTEM RACEWAY

CADWELD TO
GROUND ROD

CIRCUIT TAGS, BOTH SIDES
OF ALL FUSES (TYPICAL)

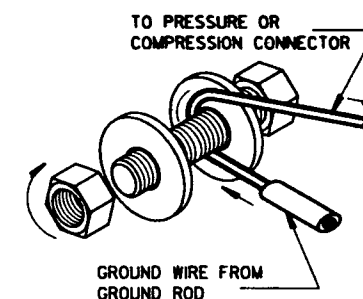
IN LINE FUSE ASSEMBLY
TWO POLE, 600 V.,
WITH 5 AMP FNO FUSES
(SEE DETAIL "A")
TAPE AND VARNISH
CRIMPED END FERRULES

HANDHOLE & COVER

18" PIGTAIL BETWEEN
CONNECTORS AND FUSEHOLDERS

PRESSURE OR COMPRESSION TYPE
CONNECTORS BUILT UP, TAPED
AND VARNISHED

INSULATED CIRCUIT CONDUCTORS
FROM SYSTEM RACEWAY



GROUND WIRE INSTALLATION BETWEEN TWO WASHERS

NON-FREWAY LIGHTING UNIT
POLE WIRING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

4/21/93

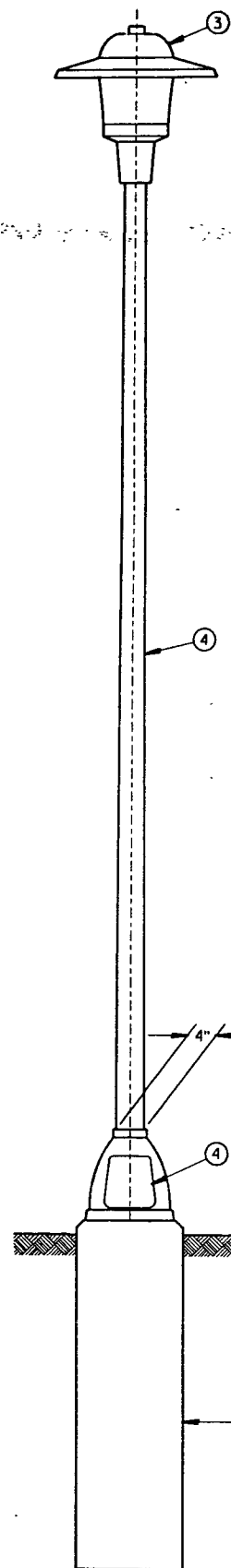
DATE

4/21/93

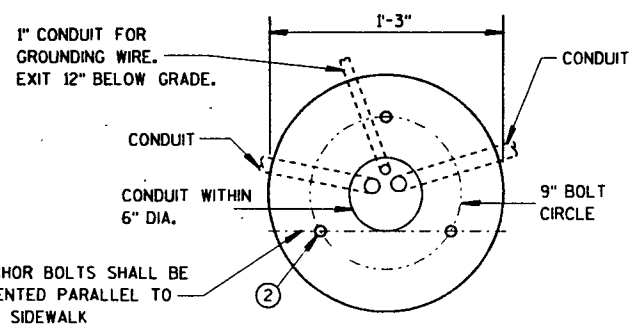
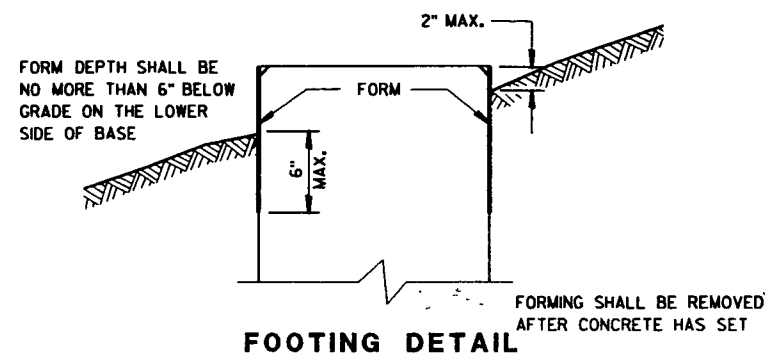
DATE

FHWA

STATE ELECTRICAL ENGR FOR HWYS
STATE TRAFFIC ENGINEER FOR HWYS



WALKWAY LIGHTING
UNIT DETAIL



FORM ALL EXPOSED
CONCRETE. PROVIDE
1\"/>

SALVAGED TOPSOIL OR
TOPSOIL AND SEED, SOD
OR CRUSHED AGGREGATE

CADWELDED CONNECTION
TO GROUNDING WIRE

5/8\"/>

* GROUND ROD LENGTH MAY VARY
SEE SPECIAL PROVISIONS.

CONCRETE BASE, TYPE 11

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

CONCRETE BASES SHALL BE EXCAVATED BY USE OF A CIRCULAR AUGER.

TOP SURFACES OF CONCRETE BASES SHALL BE TROWEL FINISHED AND LEVEL.

CONDUIT RUNS, NUMBER OF CONDUITS IN EACH CONCRETE BASE AND CONDUIT SIZE IS AS SHOWN ON THE PLANS. THE 1-INCH CONDUIT IS USED IN ALL BASES.

MINIMUM BENDING RADIUS OF CONDUIT SHALL BE SIX TIMES THE DIAMETER OF THE CONDUIT.

CONDUIT HEIGHT ABOVE CONCRETE BASES SHALL BE 1-INCH. ALL METALLIC CONDUIT ENDS SHALL BE REAMED AND THREADED.

ALL METALLIC CONDUITS IN WHICH WIRE OR CABLE IS NOT TO BE INSTALLED SHALL BE CAPPED WITH THREADED PROTECTIVE CAPS, AS APPROVED BY THE ENGINEER.

BELL ENDS SHALL BE INSTALLED ON ALL PVC CONDUIT EXPOSED AT THE TOP OF THE CONCRETE BASE AND BEFORE INSTALLATION OF CABLE OR WIRE.

ALL CONDUIT ENDS AT THE TOP OF CONCRETE BASES SHALL BE CAPPED IF METALLIC OR PLUGGED IF NONMETALLIC IMMEDIATELY AFTER PLACEMENT AND BEFORE CONCRETE IS POURED. CONDUITS IN WHICH WIRE OR CABLE IS NOT INSTALLED SHALL REMAIN CAPPED OR PLUGGED.

ENDS OF CONDUIT INSTALLED BELOW GRADE FOR FUTURE USE SHALL BE CAPPED IF METALLIC OR PLUGGED IF NONMETALLIC.

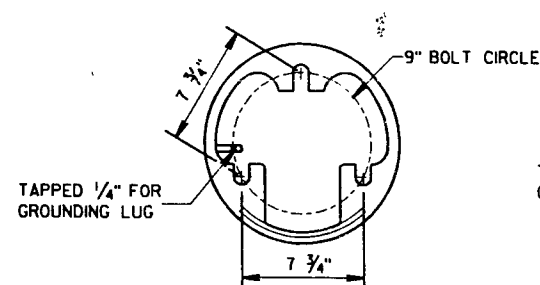
WHEN REQUIRED TO CONNECT NONMETALLIC CONDUIT TO METALLIC CONDUIT, ONLY ADAPTER FITTINGS, U.L. LISTED FOR ELECTRICAL USE, SHALL BE USED.

IF A CONCRETE BASE REQUIRES A DEEP FORM BECAUSE OF LOOSE DIRT OR FILL, THE FORM SHALL BE REMOVED BEFORE BACKFILLING AROUND THE CONCRETE BASE. BACKFILL SHALL BE TAMPED TIGHT AGAINST THE BARE CONCRETE BASE IN LAYERS OF 1-FOOT OR LESS.

THE GROUNDING WIRE SHALL BE NO. 6 AWG, BARE, STRANDED COPPER. IT SHALL BE CADWELDED TO THE GROUND ROD. THE GROUND WIRE SHALL BE INSTALLED LEAVING A 2-FOOT LENGTH OF WIRE ABOVE THE CONCRETE BASE. THE 2-FOOT LENGTH OF GROUNDING WIRE ABOVE THE BASE SHALL BE NEATLY COILED AND THE COILS TIED TOGETHER.

① DEPTH OF CONDUIT EXITING THE CONCRETE BASE AND INSTALLED BELOW THE TRAVELED WAY SHALL BE 24-INCHES MIN. DEPTH OF CONDUIT EXITING THE CONCRETE BASE THAT IS NOT INSTALLED BELOW THE TRAVELED WAY SHALL BE 18-INCHES MIN. DEPTH OF ALL CONDUITS SHALL NOT EXCEED 36-INCHES.

② THREE - 3/4-INCH DIA. X 15-INCH ANCHOR BOLTS OR 3/4-INCH DIA. X 19-INCH ANCHOR BOLTS INCLUDING THE 4-INCH \"L\" BEND. THE \"L\" BEND SHALL NOT BE THREADED.



WALKWAY PEDESTAL BASE STANDARD DETAIL

GENERAL NOTES (CONTINUED)

③ FIXTURE:

100 WATT HIGH PRESSURE SODIUM POLETOP UNIT WITH A MULTI-TAP (120/240 VAC.) HIGH REACTANCE HIGH POWER FACTOR BALLAST.

FIXTURES SHALL HAVE SELF-LEVELING SLIPFITTERS TO FIT POLES WITH 3-INCH O.D. TOPS OR MOUNTING TENONS.

THE REFRACTOR SHALL BE ONE PIECE PRISMATIC, WITH A TYPE \"V\" (SYMMETRIC) LIGHT PATTERN. THE REFRACTOR SHALL BE ONE PIECE INJECTION MOLDED POLYCARBONATE.

THE BALLAST ASSEMBLY SHALL BE OF MODULAR DESIGN AND SHALL CONTAIN ALL ELECTRICAL COMPONENTS INCLUDING BALLAST, TERMINAL BLOCK, SOCKET, STARTER AND BRACKET. THE STARTER SHALL BE FULLY ENCAPSULATED AND OF QUICK DISCONNECT TYPE.

AN ANSI WATTAGE LABEL SHALL BE LOCATED ON THE LOWER HOUSING ABOVE THE SLIPFITTER. WATTAGE, VOLTAGE AND WIRING DIAGRAM LABELS SHALL BE LOCATED ON THE INSIDE OF THE LUMINAIRE HOUSING.

④ PEDESTAL BASE STANDARD:

THE PEDESTAL BASE STANDARD SHALL BE A ONE PIECE WELDED UNIT, WITH AN OVERALL HEIGHT OF TEN FEET.

THE POLE SHALL BE ROUND, TAPERED, ALUMINUM WITH A 3-INCH OUTSIDE DIAMETER TOP AND 0.125 INCH WALL THICKNESS.

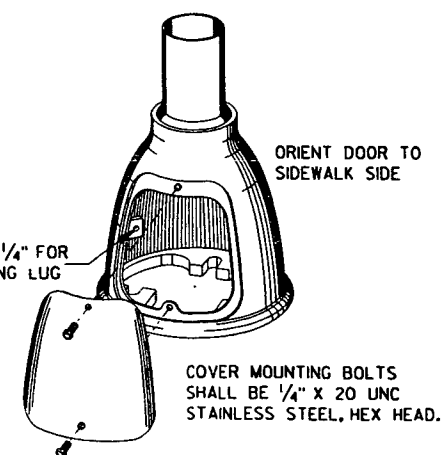
THE BELL SHAPED BASE SHALL BE 12 1/2 INCHES IN DIAMETER AND HAVE A 9-INCH BOLT CIRCLE. BOLTS SHALL BE INCLUDED WITH THE BASE.

THE ACCESS DOOR OPENING SHALL BE APPROXIMATELY 7 1/2 X 5 1/4 X 7 1/2-INCHES.

THE FIXTURE AND PEDESTAL BASE STANDARD SHALL BE PAINTED WITH AN EARTH COLORED THERMOSET POWDER COAT, ACRYLIC ENAMEL. THE ENAMEL SHALL BE FORMULATED TO SHOW NO APPRECIABLE FADING WITHIN FIVE YEARS.

GROUNDING LUGS (MECHANICAL CONNECTORS) SHALL BE U.L. LISTED \"AL/CU\" TYPE. CONNECTION HARDWARE SHALL BE STAINLESS STEEL (BOLT, NUT, LOCKWASHER - 1/4\"/>

ALL NONMETALLIC CONDUIT CUT ENDS SHALL BE TRIMMED INSIDE AND OUTSIDE TO REMOVE ALL ROUGH EDGES. (SEE NEC 347.5)

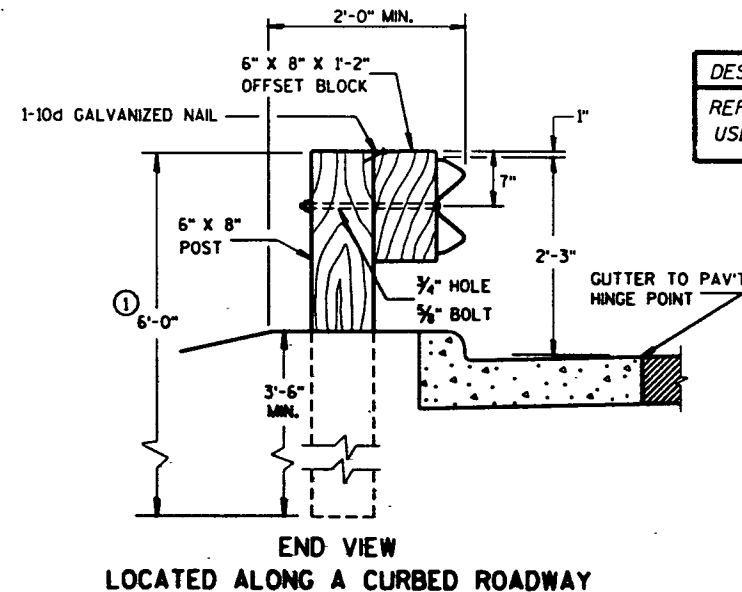
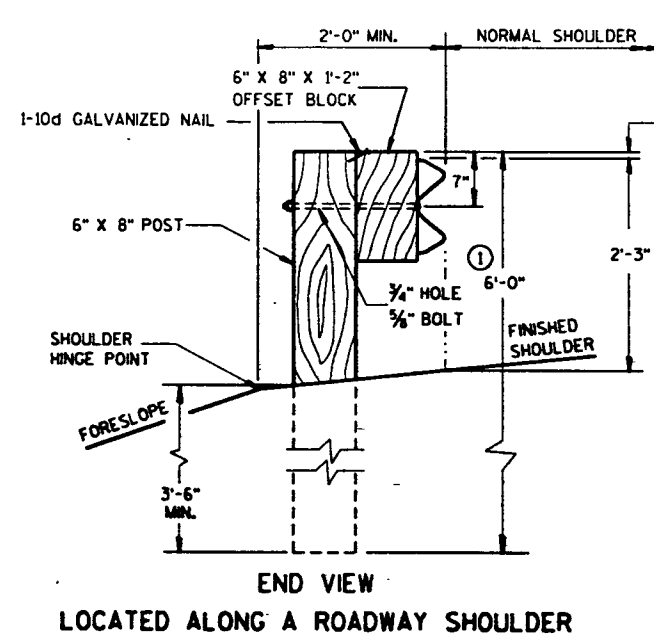


WALKWAY LIGHTING UNIT AND
CONCRETE BASE, TYPE 11

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
4/21/93
DATE
4/21/93
DATE
FHWA

STATE ELECTRICAL ENGR FOR HWYS
STATE TRAFFIC ENGINEER FOR HWYS

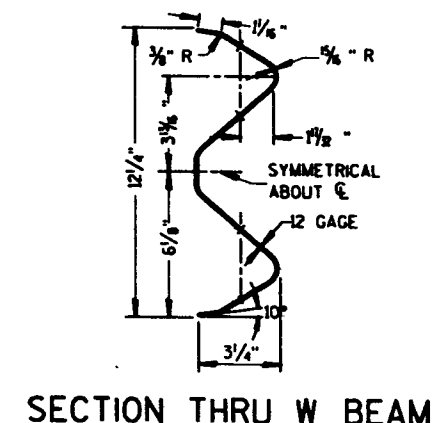
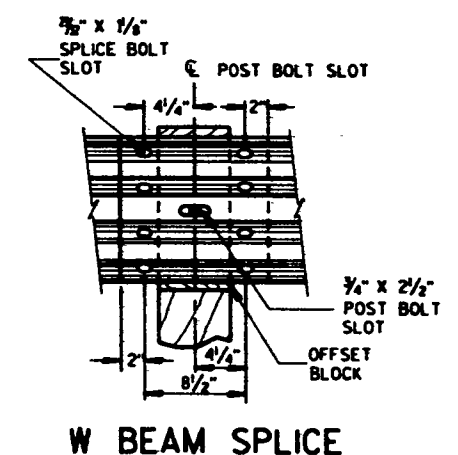
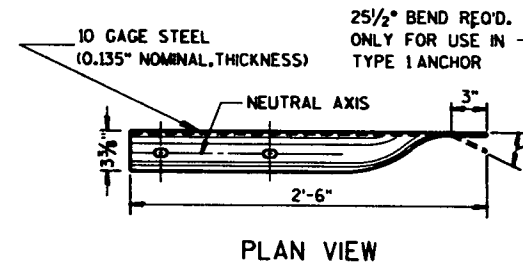
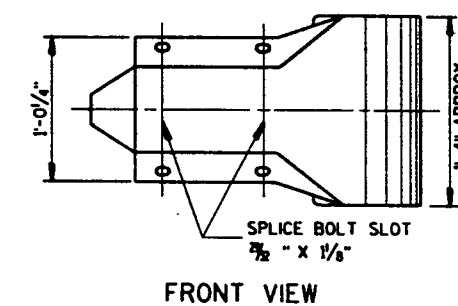
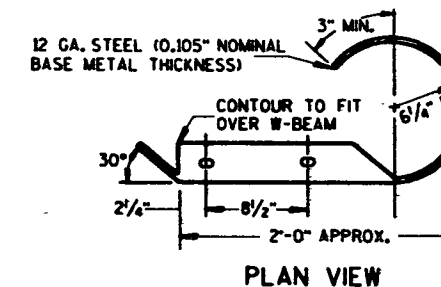
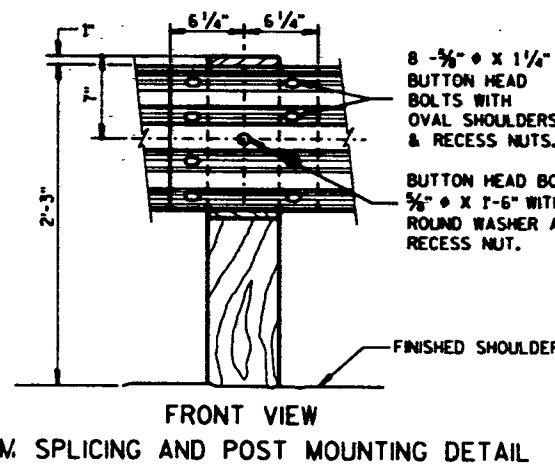
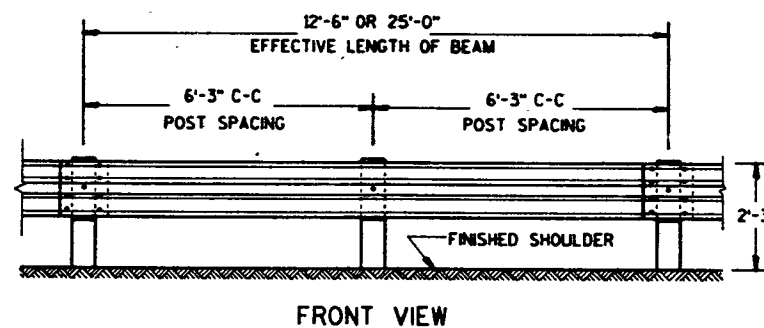


DESIGN NOTE: (WILL NOT APPEAR ON CONTRACT PLANS)
REFER TO PROCEDURE 11-45-1 FOR GUIDANCE ON THE
USE OF BEAM GUARD ON CURBED ROADWAYS.

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.

- POST LENGTH SHALL BE INCREASED TO PROVIDE A MINIMUM EMBEDMENT OF 3'-6" WHERE THE SHOULDER HINGE POINT IS LOCATED IN FRONT OF THE POST.
- PROVIDE TYPE "H" SILVER REFLECTIVE SHEETING ON ALL REFLECTORS EXCEPT THOSE LOCATED ALONG THE LEFT EDGE OF ONE-WAY ROADWAYS, WHICH SHALL BE PROVIDED WITH TYPE "H" YELLOW REFLECTIVE SHEETING.



NOTE:
SHEETS 10 IS OPTIONAL FOR INCLUSION
IN PLANS WHEN APPLICABLE.

CLASS "A"
STEEL PLATE BEAM GUARD,
INSTALLATION & ELEMENTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
5/13/91
DATE
STATE DESIGN ENGINEER FOR HWYS
FHWA

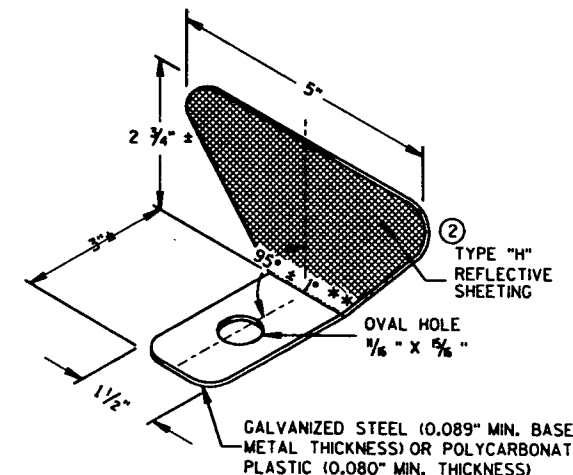
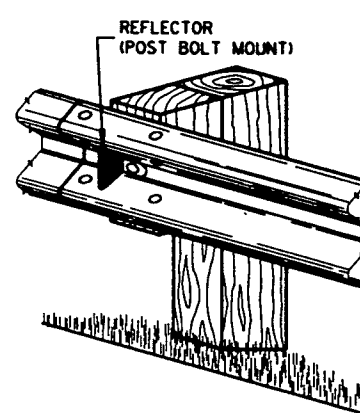
FRONT VIEW
W BEAM TERMINAL CONNECTOR

TYPICAL INSTALLATION OF STEEL PLATE BEAM GUARD

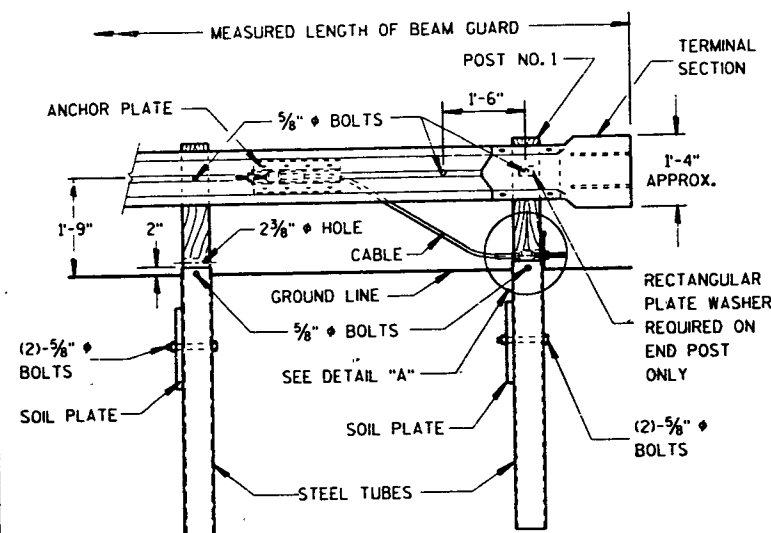
REFLECTOR SPACING				
BEAM GUARD LENGTH	REFLECTOR SPACING	NO. SURFACES REFLECTORIZED	MIN. NO. REFLECTORS	
ONE WAY TRAFFIC	< 200'	50' C-C	1	3
	> 200'	100' C-C	1	
TWO WAY TRAFFIC	< 200'	25' C-C	1*	6
	> 200'	50' C-C	1*	
TWO WAY TRAFFIC	< 200'	50' C-C	2**	3
	> 200'	100' C-C	2**	

* EVERY OTHER REFLECTOR REVERSED FOR 2-WAY VISIBILITY. CONTRACTOR MAY FURNISH TWO-SIDED REFLECTORS IN LIEU OF ONE-SIDED REFLECTORS.

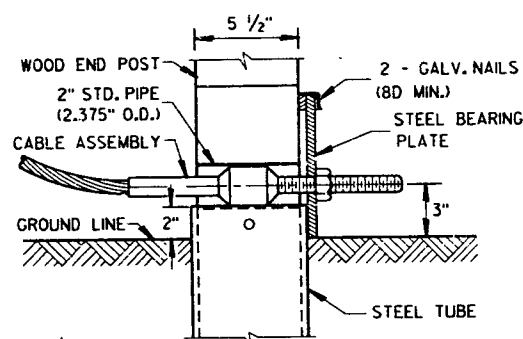
** ANGLE OF BEND TO BE 90° ± 1° FOR TWO-SIDED REFLECTORS.



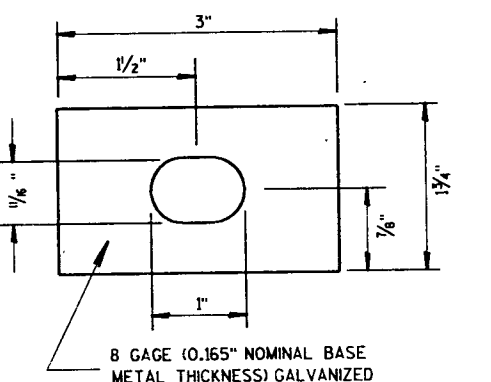
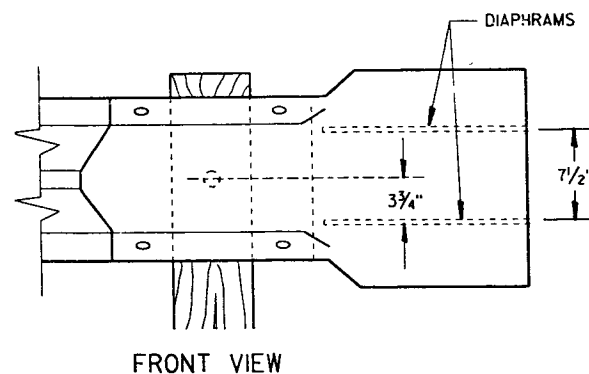
② REFLECTOR DETAIL AND TYPICAL INSTALLATION



① FRONT VIEW
TYPE 1 ANCHORAGE

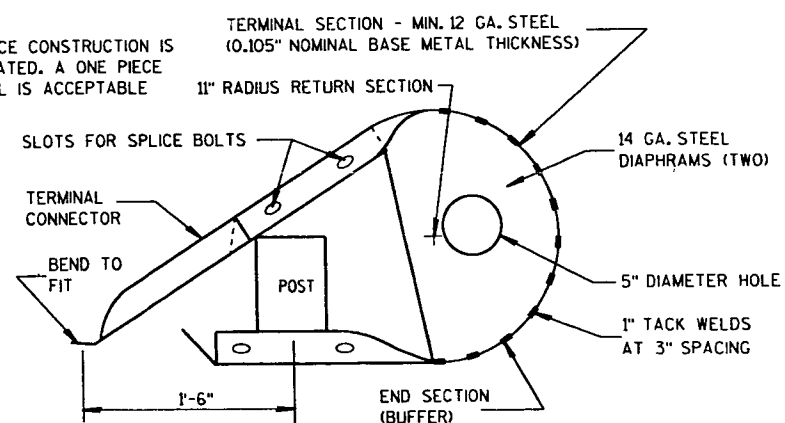


DETAIL "A"
(POST NO. 1)



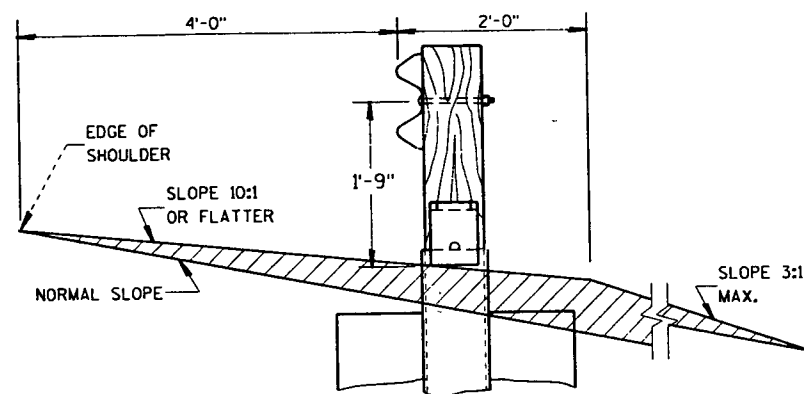
RECTANGULAR PLATE WASHER

NOTE:
TWO PIECE CONSTRUCTION IS ILLUSTRATED. A ONE PIECE TERMINAL IS ACCEPTABLE

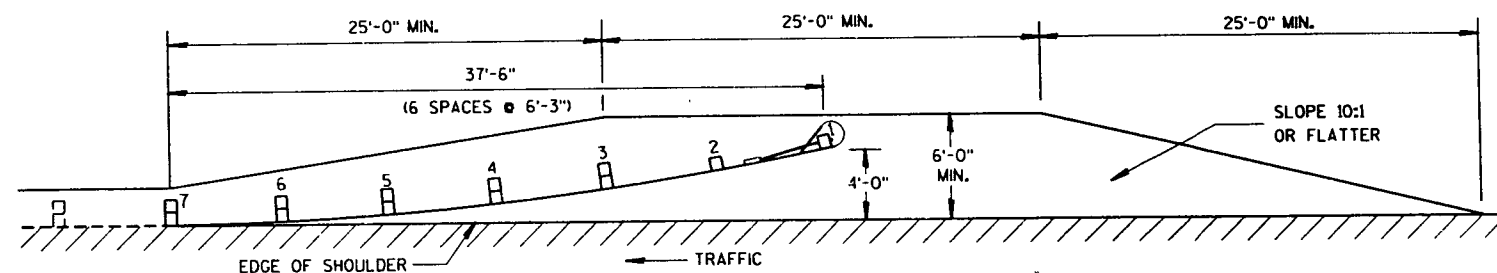


PLAN VIEW

TERMINAL SECTION DETAIL

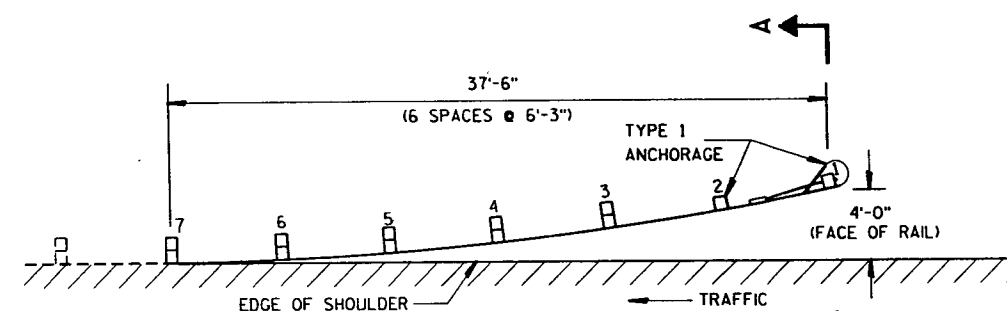


SECTION A-A



PLAN VIEW

ROADWAY WIDENING FOR TYPE 1 ANCHORAGE



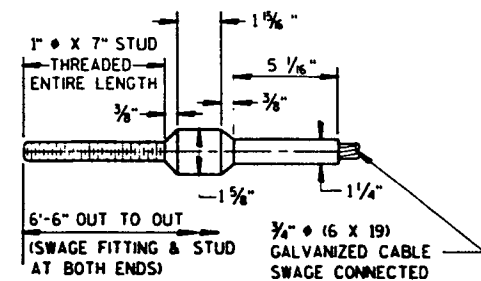
PLAN VIEW

END TREATMENT WITH ANCHORAGE TYPE 1

NOTE:
THIS DRAWING CONSISTS OF TWO SHEETS. BOTH SHEETS ARE REQUIRED WHEN THIS DRAWING IS CALLED FOR IN THE PLANS.

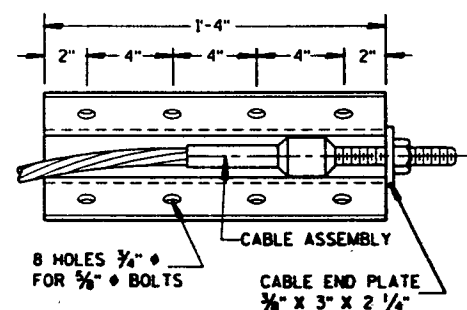
CLASS "A" STEEL PLATE BEAM GUARD
END TREATMENT WITH ANCHORAGE,
TYPE 1 & 2

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



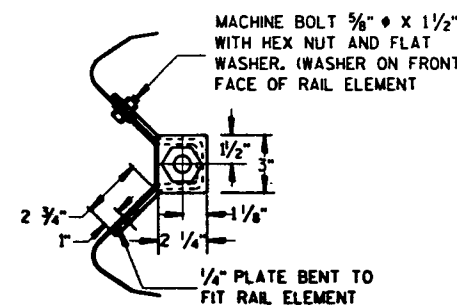
CABLE ASSEMBLY

CABLE, SWAGE FITTING, STUD AND NUT SHALL DEVELOP A MINIMUM BREAKING STRENGTH OF 40,000 LB (TIGHTEN UNTIL TAUT)

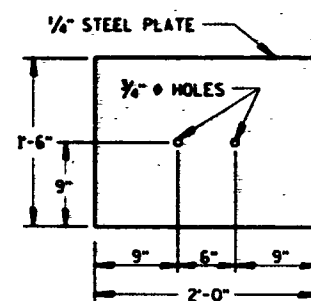


FRONT VIEW

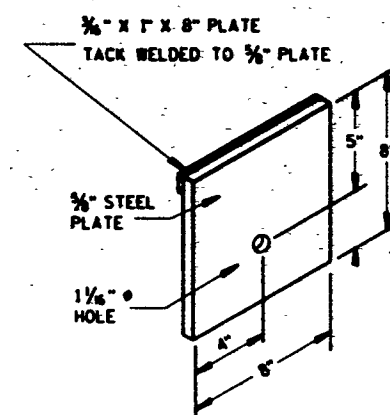
ANCHOR PLATE DETAIL



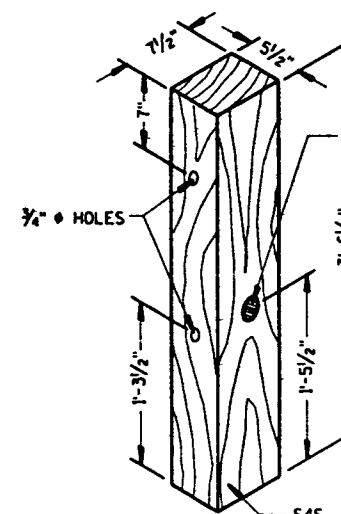
END VIEW



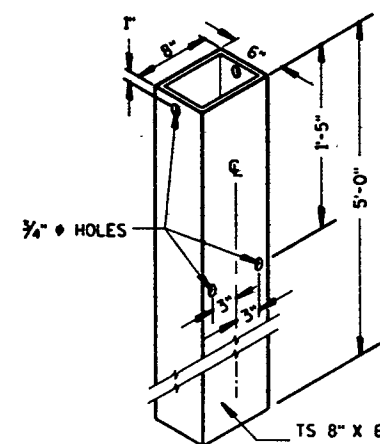
SOIL PLATE



STEEL BEARING PLATE



WOOD BREAKAWAY POST



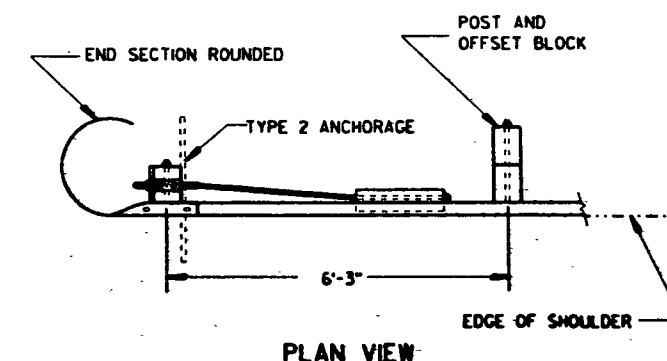
STEEL TUBE

THE STEEL TUBE SHALL CONFORM TO REQUIREMENTS OF ASTM A501

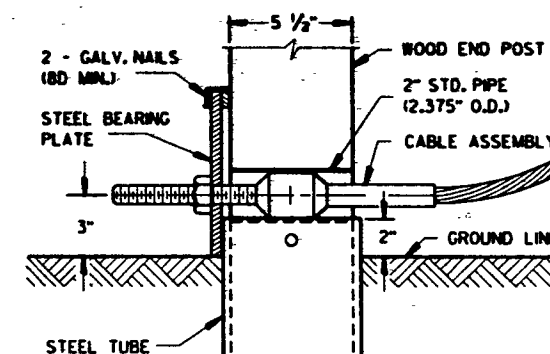
ANCHORAGE COMPONENTS
(COMMON TO BOTH TYPE 1 & 2 ANCHORAGES)

NOTE:

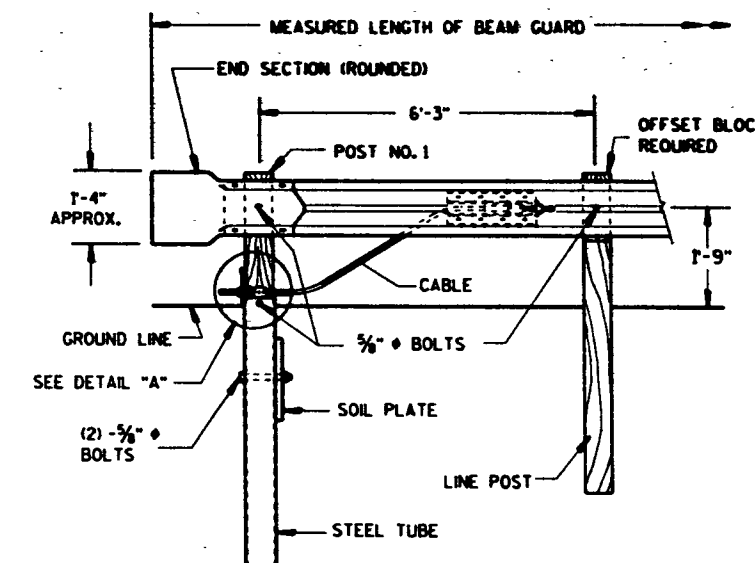
STRUCTURAL TUBING SHALL CONFORM TO THE REQUIREMENTS OF ASTM A-500 GRADE B OR ASTM A-501.



PLAN VIEW



DETAIL "A"
(POST NO. 1)



FRONT VIEW
TYPE 2 ANCHORAGE

END TREATMENT WITH ANCHORAGE TYPE 2
(USE ON ONE-WAY ROADWAYS ONLY - DEPARTING END)

NOTE:
THIS DRAWING CONSISTS OF TWO SHEETS.
BOTH SHEETS ARE REQUIRED WHEN THIS
DRAWING IS CALLED FOR IN THE PLANS.

CLASS 'A' STEEL PLATE BEAM GUARD
END TREATMENT WITH ANCHORAGE,
TYPE 1 & 2

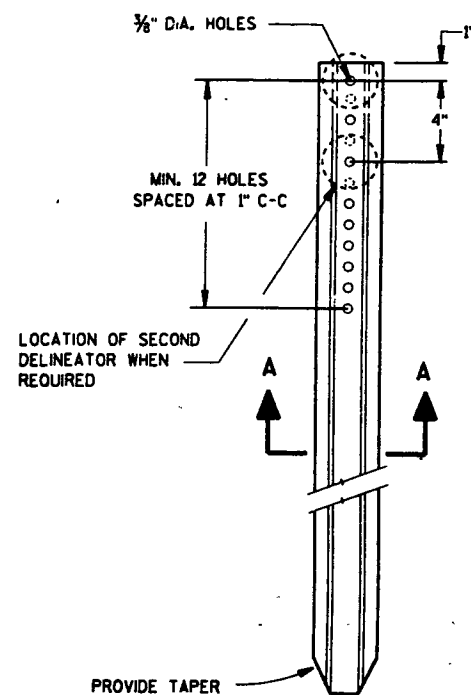
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

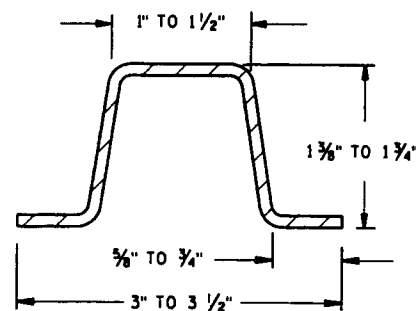
5/13/91
DATE

FHWA

STATE DESIGN ENGINEER FOR HWYS

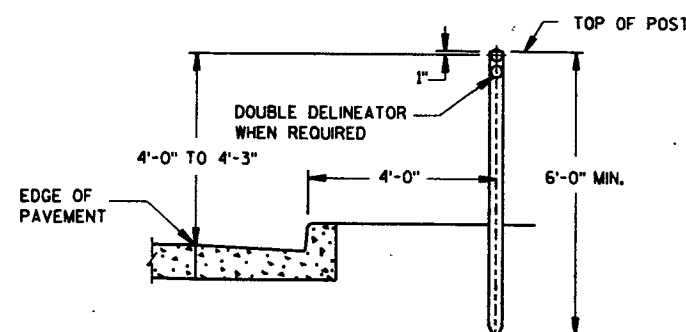
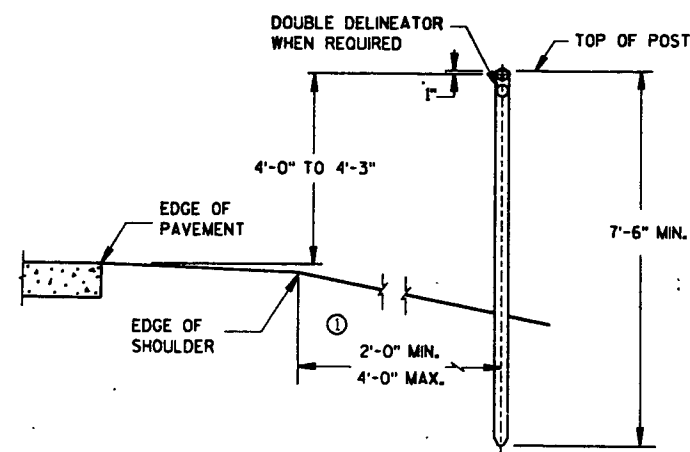


DELINEATOR POST

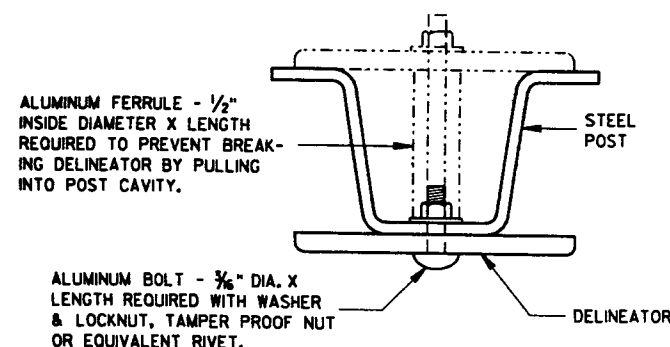


SECTION A-A

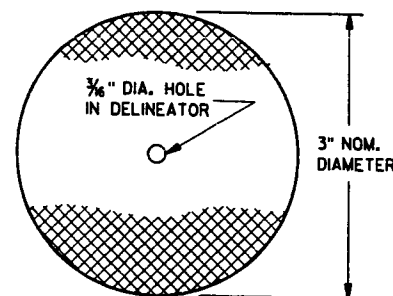
WEIGHT 2.0 LBS PER FT. $\pm$ 0.1 LB.



TYPICAL INSTALLATIONS OF DELINEATOR POSTS



MOUNTING DETAIL FOR DELINEATOR



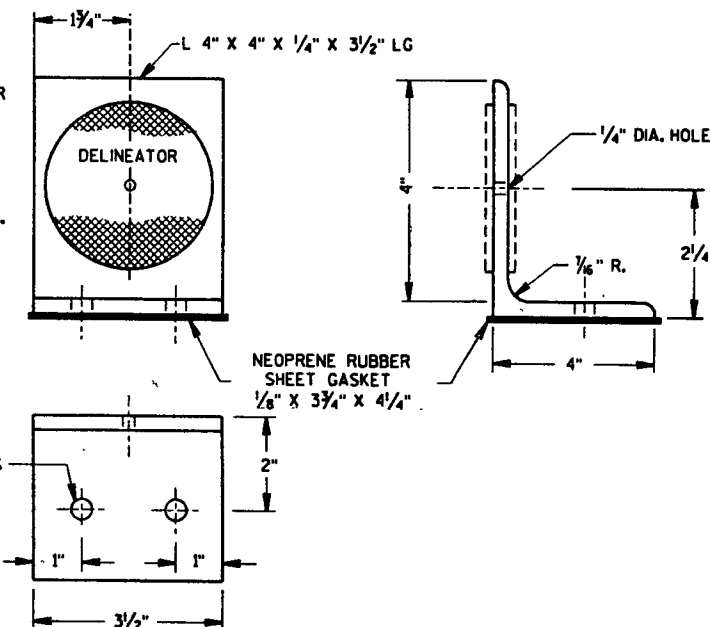
DELINEATOR

GENERAL NOTES

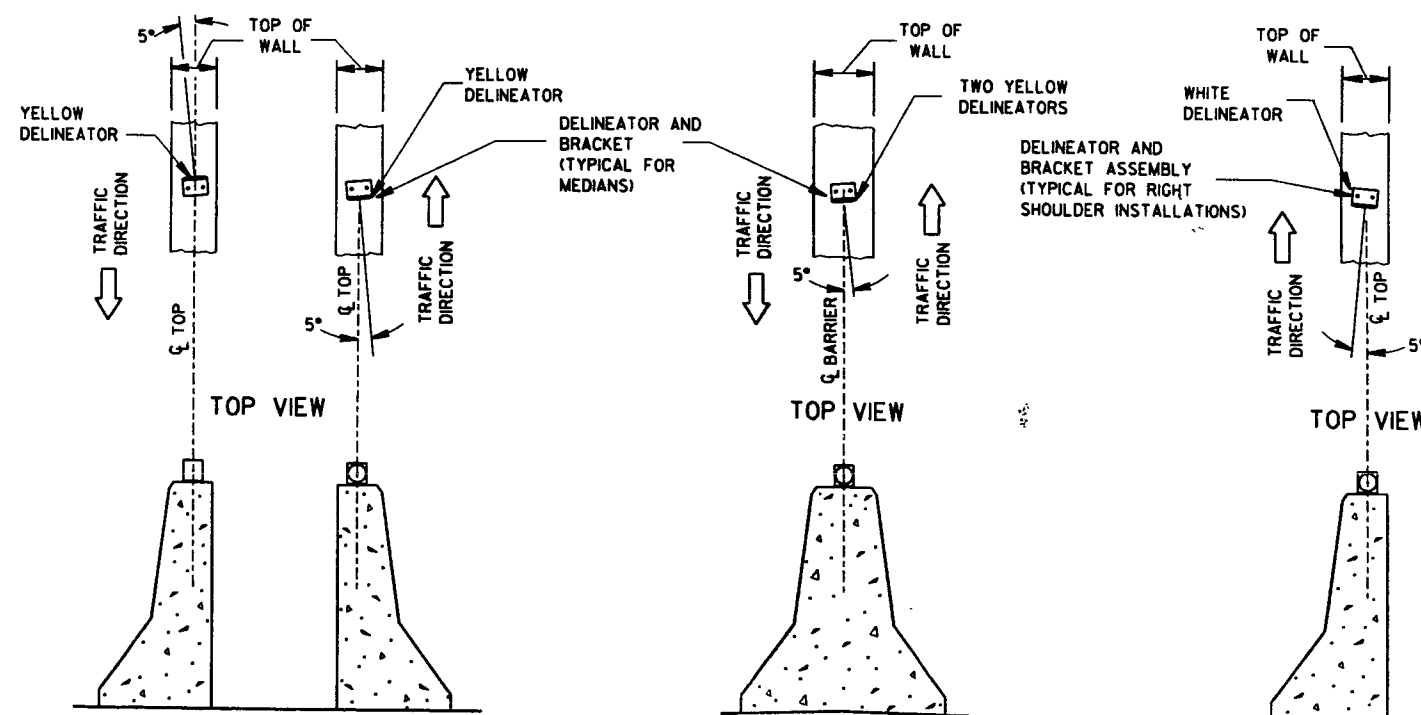
DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

- ① DELINEATORS SHALL BE PLACED AT A CONSTANT DISTANCE FROM THE EDGE OF THE ROADWAY FOR THE LENGTH OF THE INSTALLATION.

NOTE:
FASTEN DELINEATOR TO BRACKET WITH BOLTS 3/8" DIA. X LENGTH REQ'D. WITH WASHER AND LOCKNUT OR EQUIVALENT RIVETS.



DELINEATOR BRACKET

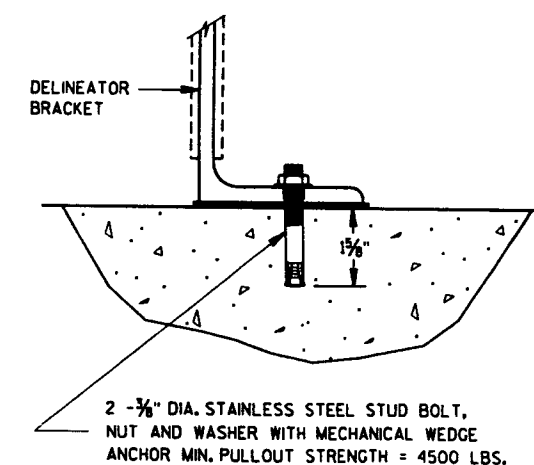


DOUBLE BARRIERS IN MEDIAN

MEDIAN BARRIER

BARRIER LOCATED TO RT. OF TRAFFIC FLOW

LOCATION AND AIMING DETAILS FOR DELINEATORS MOUNTED ON CONCRETE BARRIERS



DELINEATOR BRACKET MOUNTING DETAIL

DELINEATOR POST, DELINEATOR
BRACKET AND DELINEATOR

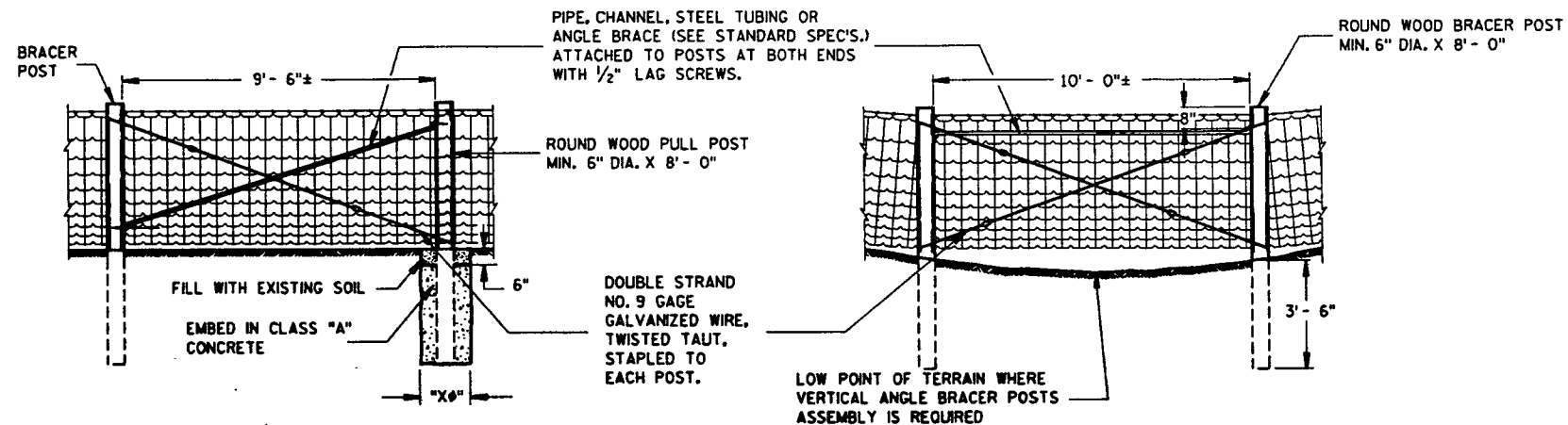
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
1/4/93
DATE
STATE TRAFFIC ENGINEER FOR HWYS

FHWA

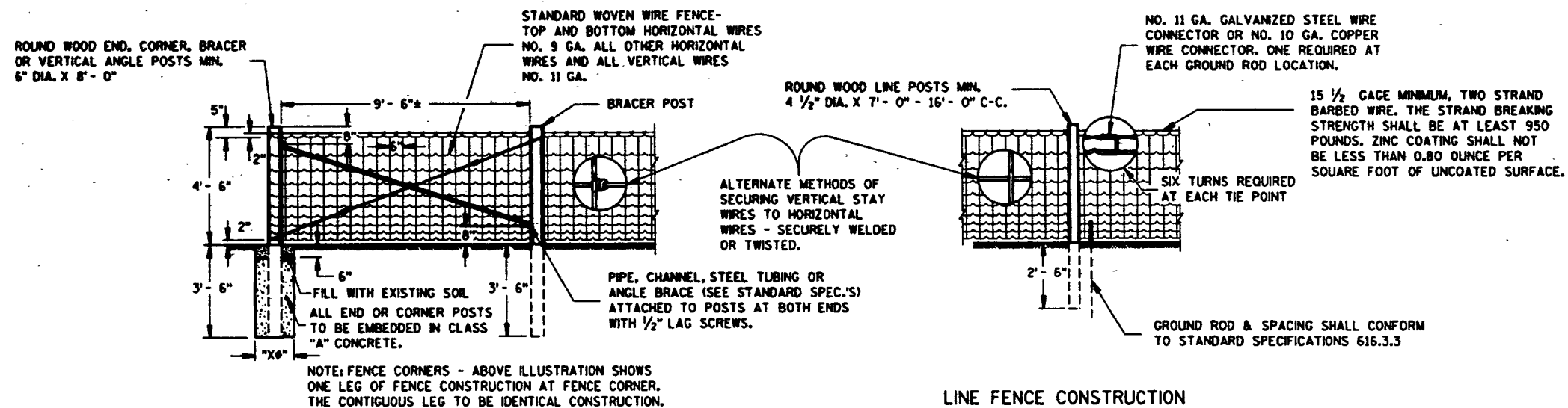
NOTE: PULL OR STRETCHER POST ASSEMBLIES SHALL BE PLACED MIDWAY BETWEEN END POSTS AND CORNER POSTS WHERE A RUN OF FENCE EXCEEDS 660' BUT IS LESS THAN 1,320'. FOR RUNS OF FENCE IN EXCESS OF 1,320' MAXIMUM SPACING OF PULL OR STRETCHER POST ASSEMBLIES SHALL BE 660'± C-C.

ILLUSTRATION SHOWS POSITION OF STANDARD STEEL BRACE, DOUBLE STRAND GALVANIZED WIRE, AND THE POST TO BE EMBEDDED IN CONCRETE WHEN WIRE FENCE IS INSTALLED FROM LEFT TO RIGHT. THE BRACES SHALL BE POSITIONED ON THE OPPOSITE DIAGONALS AND THE OPPOSITE POST SHALL BE EMBEDDED IN CONCRETE WHEN WIRE FENCE IS INSTALLED FROM RIGHT TO LEFT.



PULL OR STRETCHER POSTS ASSEMBLY

VERTICAL ANGLE BRACER POSTS ASSEMBLY



END OR CORNER POSTS ASSEMBLY

LINE FENCE CONSTRUCTION

GENERAL NOTES

DETAILS OF CONSTRUCTION NOT SHOWN HEREON SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

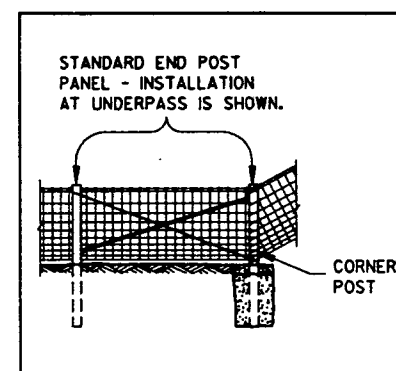
"XØ" = DIAMETER OF THE POST PLUS 12".

FENCE STAPLES SHOULD NEVER BE DRIVEN VERTICALLY INTO WOOD POSTS (WITH BOTH LEGS PARALLEL WITH THE WOOD GRAIN). DOING SO CAN SEPARATE THE GRAIN AND SIGNIFICANTLY REDUCE THE HOLDING POWER. ROTATING THE STAPLES SLIGHTLY OFF VERTICAL STRADDLES THE GRAIN AND PROVIDES MORE RESISTANCE TO PULL-OUT.

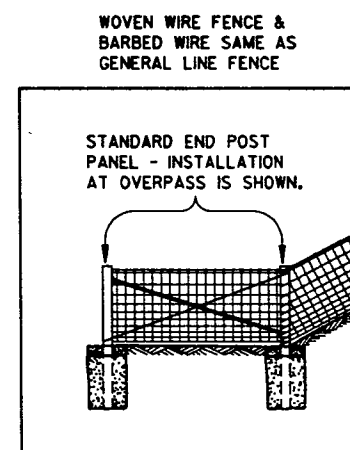
DO NOT STAPLE WIRE TIGHT TO THE LINE POSTS. ALLOW MOVEMENT OF WIRE FOR EXPANSION AND CONTRACTION. STAPLE ARRANGEMENT SHALL BE THE SAME FOR ALL OTHER POSTS EXCEPT THAT THEY SHALL BE DRIVEN TIGHT TO POSTS. ALL STAPLES SHALL BE 2" X 9 GAGE AND SHALL BE MANUFACTURED FROM GALVANIZED WIRE OR HOT DIP GALVANIZED AFTER FORMING. STAPLES SHALL HAVE SLASH-CUT POINTS.

FENCE SHALL BE LOCATED 3'-0" INSIDE THE RIGHT OF WAY LINE UNLESS OTHERWISE INDICATED ON THE PLANS.

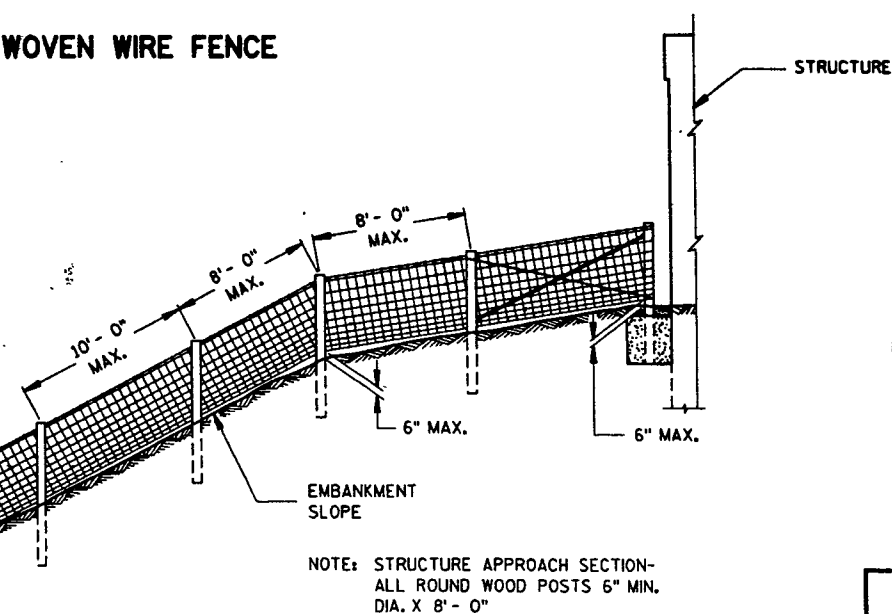
GENERAL ROADSIDE VIEW OF WOVEN WIRE FENCE



ALTERNATE FENCE DESIGN AT STRUCTURE



FENCE DESIGN AT STRUCTURE APPROACH



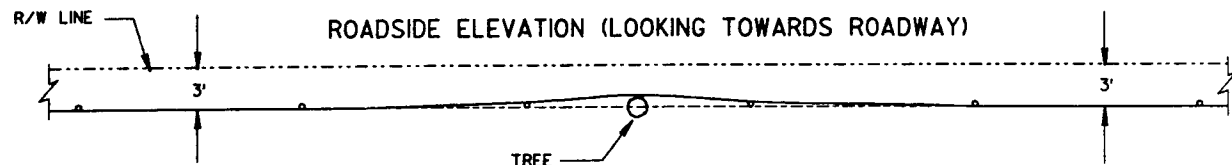
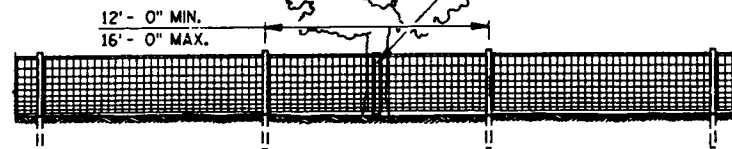
NOTE: THIS STANDARD DETAIL DRAWING CONSISTS OF TWO PLATES AND BOTH ARE REQUIRED WHEN THIS STANDARD IS CALLED FOR IN THE PLANS.

WOVEN WIRE FENCE

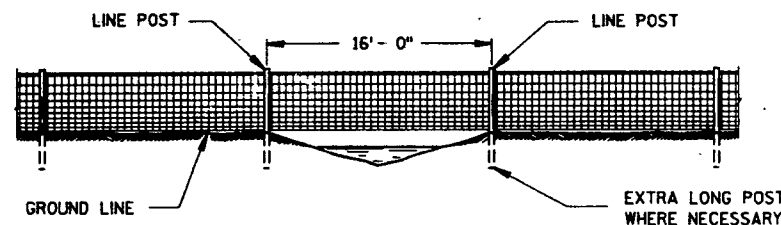
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

NOTE: TREE IN NORMAL FENCE LINE SPECIFICALLY ORDERED BY ENGINEER TO REMAIN IN PLACE.

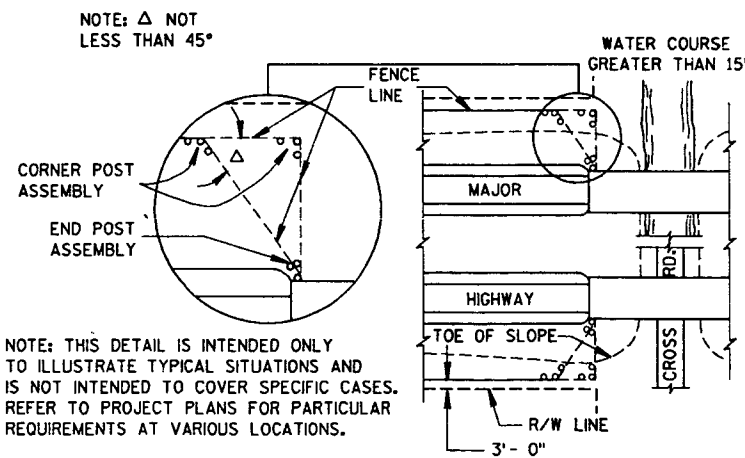
2" X 6" DOUGLAS FIR OR SO. YELLOW PINE PLACED BETWEEN TREE AND WOVEN WIRE FENCE. WOVEN WIRE FENCE AND BARBED WIRE TO BE STAPLED TO 2" X 6" LIKE AS TO LINE POST. 2" X 6" NOT FASTENED TO TREE.



PLAN VIEW
FENCE DESIGN AT TREES REMAINING
IN NORMAL FENCE LINE



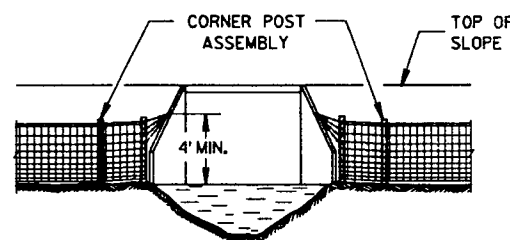
FENCE CONSTRUCTION OVER STREAM
COURSES OF 15 FT. OR LESS IN WIDTH



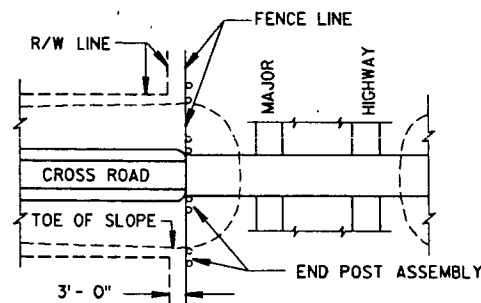
NOTE: THIS DETAIL IS INTENDED ONLY TO ILLUSTRATE TYPICAL SITUATIONS AND IS NOT INTENDED TO COVER SPECIFIC CASES. REFER TO PROJECT PLANS FOR PARTICULAR REQUIREMENTS AT VARIOUS LOCATIONS.

PLAN VIEW
MAJOR HIGHWAY OVERPASS OR STREAM COURSE
CROSSING OF GREATER THAN 15 FT. IN WIDTH

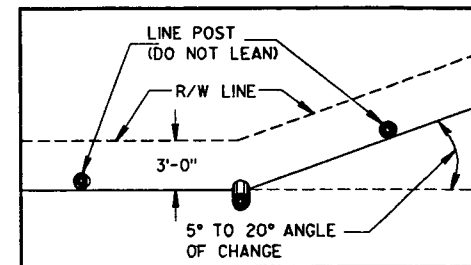
FENCE LOCATION AT STRUCTURES



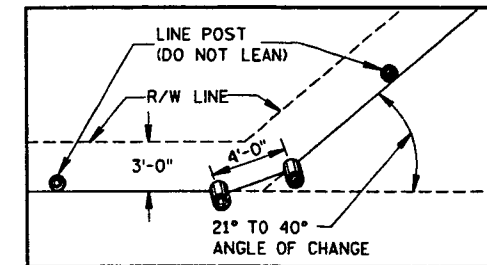
FENCE INSTALLATION TO WINGWALLS



PLAN VIEW
MAJOR HIGHWAY UNDERPASS



PLAN VIEW
SINGLE POST CORNER



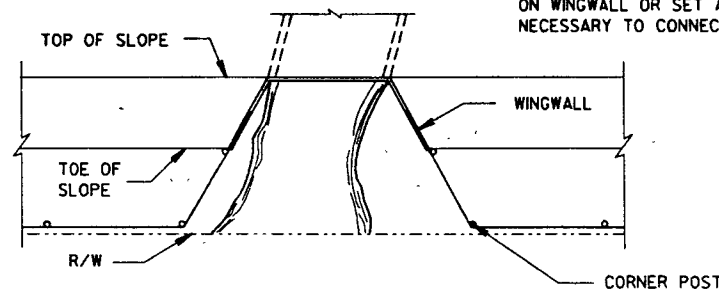
PLAN VIEW
DOUBLE POST CORNER

RIGHT OF WAY LINE CHANGE 40° AND LESS

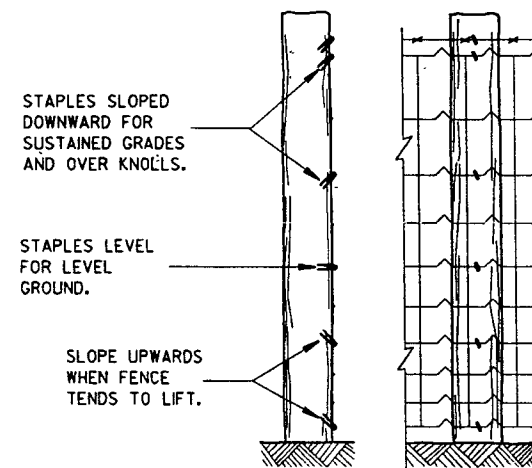
NOTE: SINGLE AND DOUBLE POSTS SHALL BE A MIN. 6" DIA. X 8'-0" WITH A LEAN OF 4" TOWARD THE OUTSIDE OF THE CURVE.

WHEN THE RIGHT OF WAY LINE CHANGE IS MORE THAN 40° USE THE CORNER OR STRETCHER POSTS ASSEMBLY.

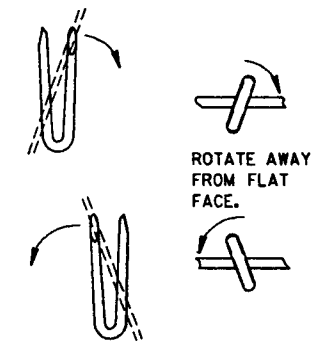
NOTE: PLACE A MINIMUM OF 4 STRANDS OF BARBED WIRE, 6" MAXIMUM CENTERS IN FAN SHAPE CONNECTED TO AN EYE BOLT ON WINGWALL OR SET A LONE POST WHEN NECESSARY TO CONNECT BARBED WIRE.



NOTE: WHEN POSTS ARE DRIVEN THE SMALL END SHALL BE DOWN.



END ELEVATION
FARM SIDE ELEVATION
FENCE MOUNTING DETAIL



LINE POST

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

WOVEN WIRE FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

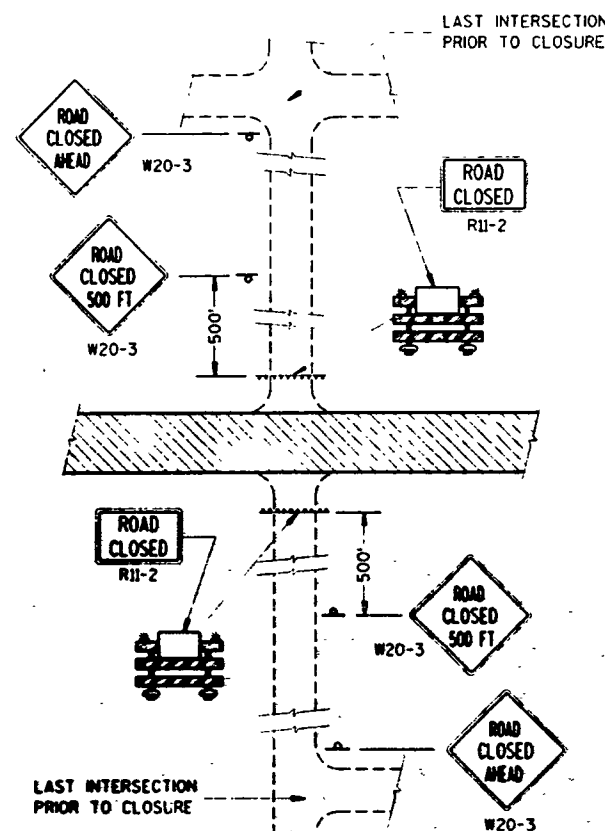
APPROVED

12-26-85

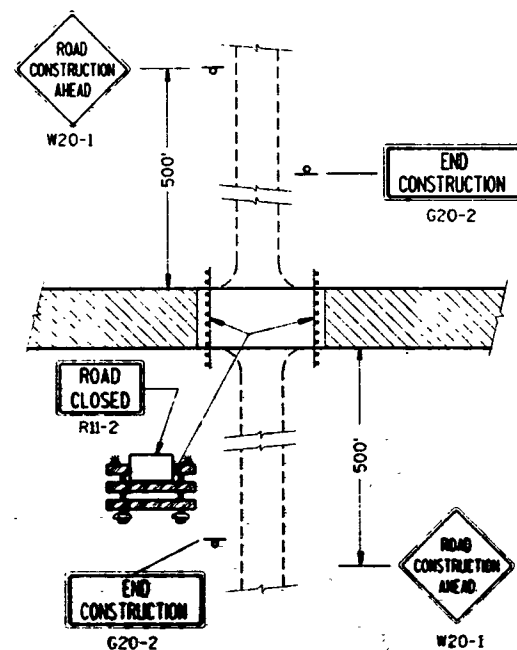
DATE

FHWA

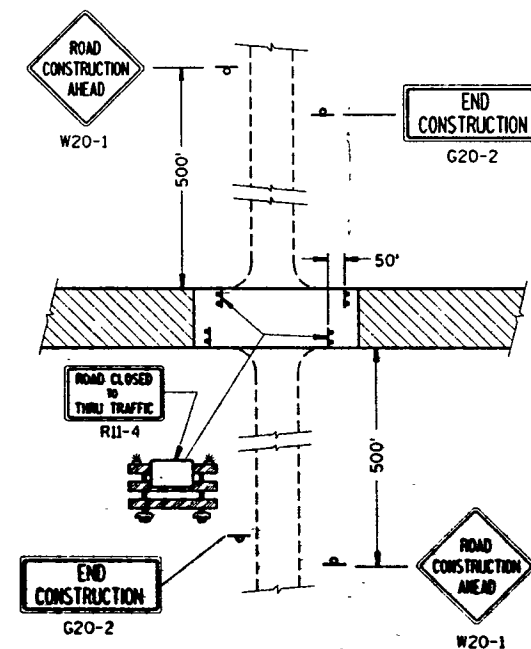
STATE DESIGN ENGINEER FOR HWYS



DETAIL 1
(NO ACCESS TO PROJECT)

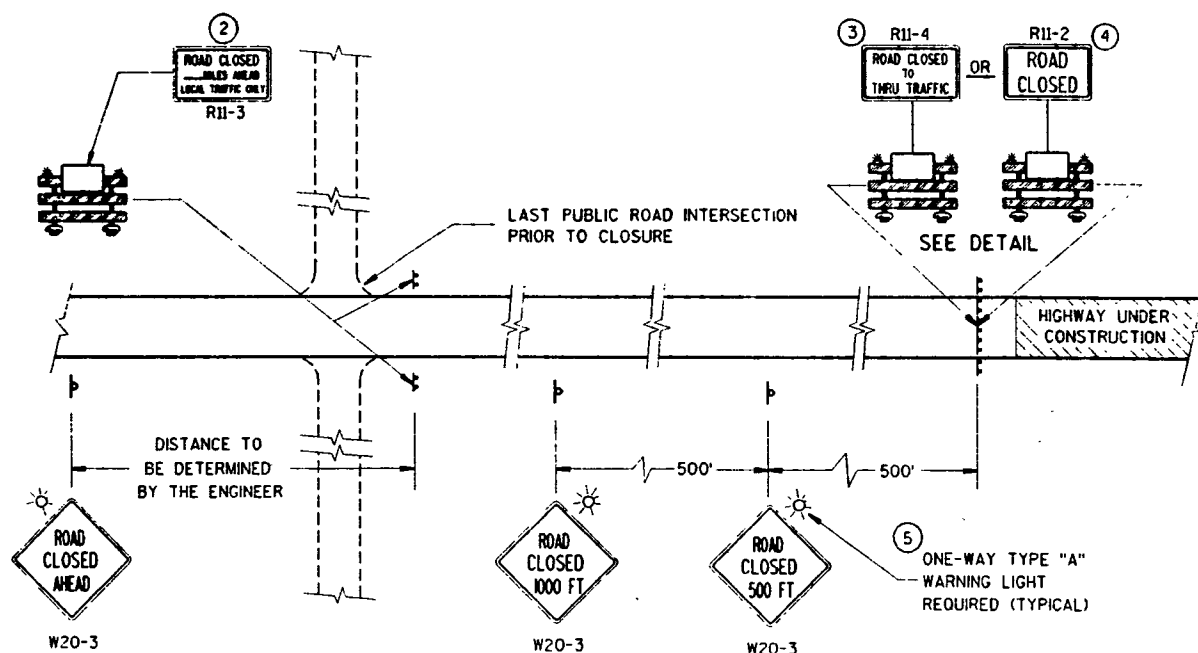


DETAIL 2
(PUBLIC CROSS-TRAFFIC MAINTAINED.
NO ACCESS TO PROJECT).

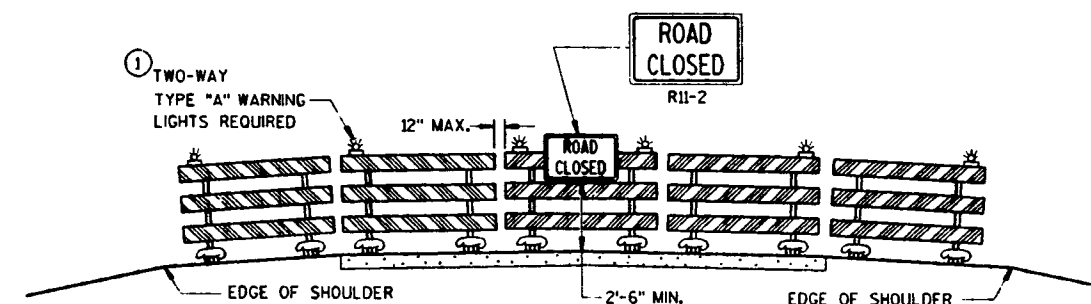


DETAIL 3
(PUBLIC CROSS-TRAFFIC MAINTAINED. CONTRACTOR,
LOCAL BUSINESS AND RESIDENT ACCESS).

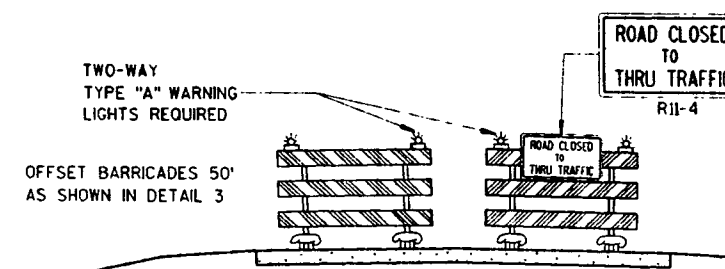
SIDEROAD CLOSURES



MAINLINE CLOSURE



APPROACH VIEW
ROAD CLOSURE BARRICADE DETAIL



APPROACH VIEW
LANE CLOSURE BARRICADE DETAIL

GENERAL NOTES

DETAILS OF TRAFFIC CONTROL DEVICES AND THEIR LOCATION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE WISCONSIN MANUAL OF TRAFFIC CONTROL DEVICES, THE PLANS, SPECIFICATIONS AND CONTRACT.

SIGN AND BARRICADE LOCATIONS MAY BE ADJUSTED IN THE FIELD AS DIRECTED BY THE ENGINEER. ANY EXISTING TRAFFIC SIGNS THAT CONFLICT WITH THIS WORK SHALL BE COVERED AS DIRECTED BY THE ENGINEER. ALL "STOP" OR OTHER REGULATORY SIGNS ON THE SIDE ROADS SHALL NOT BE DISTURBED, EXCEPT WHEN NECESSARY TO COMPLETE THE WORK. THE SIGNS MUST THEN BE IMMEDIATELY REESTABLISHED.

ALL TYPE III BARRICADES SHALL HAVE RAILS REFLECTORIZED ON BOTH FACES. STRIPES SHALL BE PROPERLY SLOPED DOWN TOWARD THE TRAFFIC SIDE OR AS SHOWN IN THE ROAD CLOSURE BARRICADE DETAIL FOR FULL ROAD CLOSURES. TYPE "A" LOW INTENSITY FLASHING WARNING LIGHTS SHALL BE VISIBLE ON BOTH SIDES OF THE BARRICADE.

THE ROAD CLOSED SIGN (R11-2), ROAD CLOSED _____ MILES AHEAD SIGN (R11-3) AND THE ROAD CLOSED TO THRU TRAFFIC SIGN (R11-4) SHALL BE ATTACHED ONLY TO THE TOP RAIL OF THE TYPE III BARRICADE. THE SIGNS SHALL NOT COVER MIDDLE RAIL.

TYPE "H" REFLECTIVE SHEETING SHALL BE USED ON ALL BARRICADES, TYPE I, II AND III, AND ON ALL R11-2, R11-3 AND R11-4 SIGNS.

ALL SIGNS SHALL BE 48" X 48" UNLESS OTHERWISE NOTED BELOW:

R11-2, "ROAD CLOSED" SIGNS SHALL BE 48" X 30".

R11-3, AND R11-4 SIGNS SHALL BE 60" X 30".

G20-2 SIGNS SHALL BE 60" X 24".

- 1 TWO WARNING LIGHTS SHALL BE PROVIDED ON THE CENTER BARRICADE AND AT LEAST ONE WARNING LIGHT SHALL BE PROVIDED ON EACH OF THE OTHER BARRICADES WITHIN THE ROADWAY LIMITS. SPACING OF THE WARNING LIGHTS SHALL BE UNIFORM TO THE EDGE OF ROADWAY AS SHOWN.
- 2 THESE SIGNS AND BARRICADES ARE NOT REQUIRED IF ROAD CLOSURE BEGINS AT INTERSECTION.
- 3 FOR ROAD CLOSURE WITH LOCAL ACCESS TO PROJECT, SEE LANE CLOSURE BARRICADE DETAIL.
- 4 FOR ROAD CLOSURE WITHOUT LOCAL ACCESS TO PROJECT, SEE ROAD CLOSURE BARRICADE DETAIL.
- 5 ONE-WAY LIGHTS SHALL BE PROVIDED ON ALL ADVANCE WARNING SIGNS. THE UNIT SHALL BE POSITIONED SUCH THAT THE LIGHT SOURCE IS OUTSIDE THE SIGN FACE AND AT THE TOP OF THE SIGN.

LEGEND

- POST MOUNTED WARNING SIGN
- TYPE III BARRICADES WITH TYPE "H" REFLECTIVE SHEETING
- TYPE "A" LOW INTENSITY FLASHING WARNING LIGHT (FOR NIGHT USE)
- WORK AREA

BARRICADES AND TRAFFIC CONTROL FOR ROAD CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

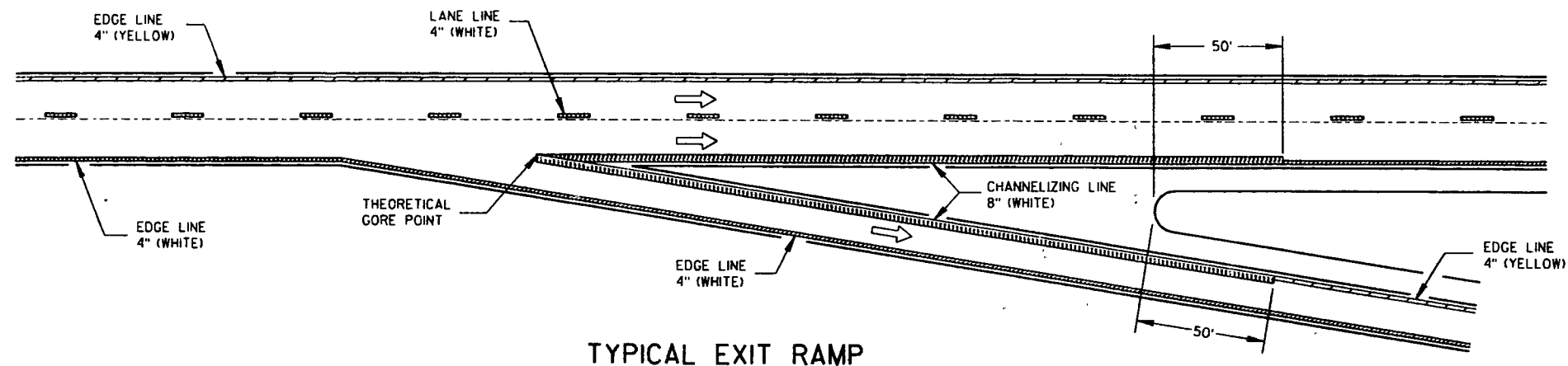
APPROVED

10-31-87

DATE

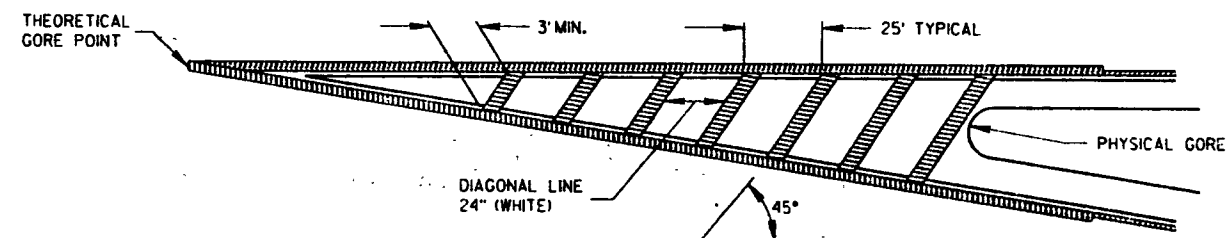
FWHA

STATE TRAFFIC ENGINEER FOR HWY'S

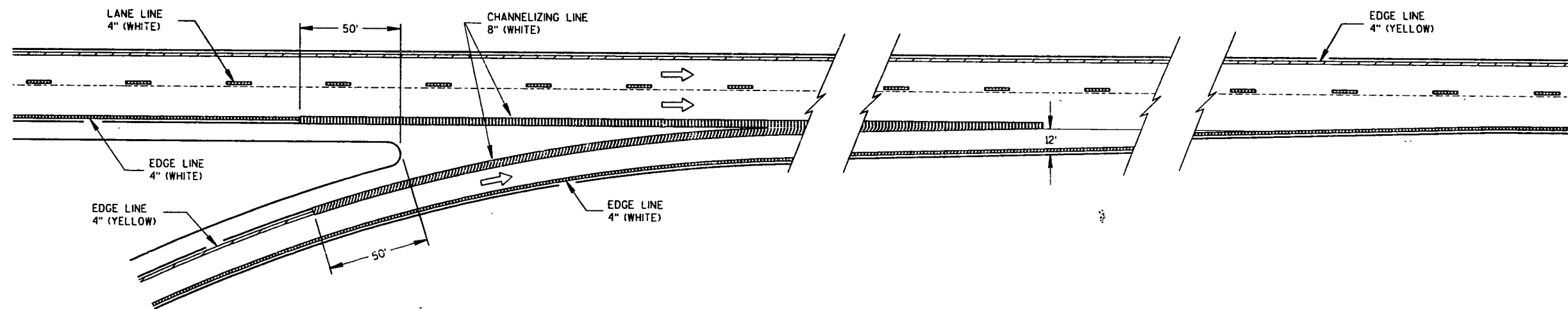


TYPICAL EXIT RAMP

NOTE:
ARROW SYMBOL (→)
SHOWS DIRECTION OF TRAVEL



CROSS-HATCH LINES AT
EXIT RAMP GORES WHEN SPECIFIED IN THE CONTRACT

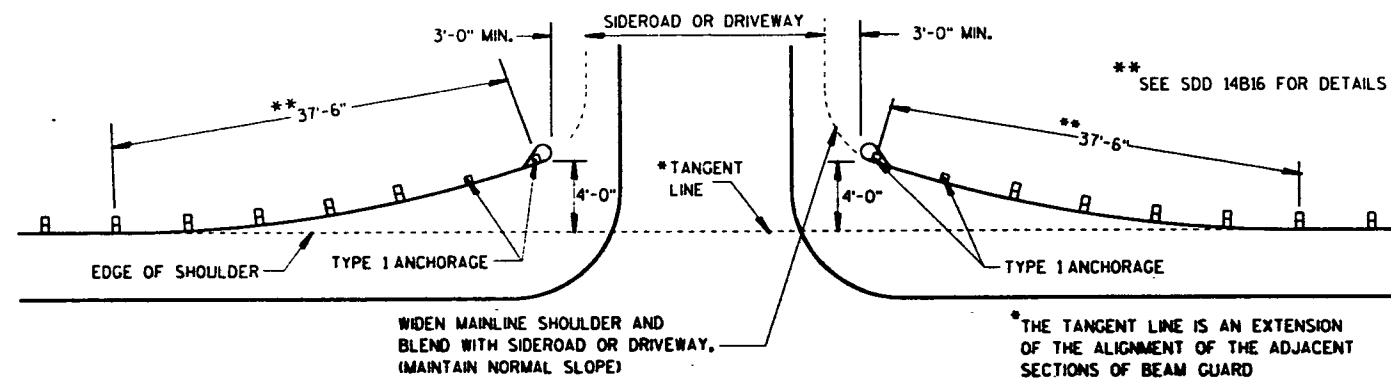


TYPICAL ENTRANCE RAMP

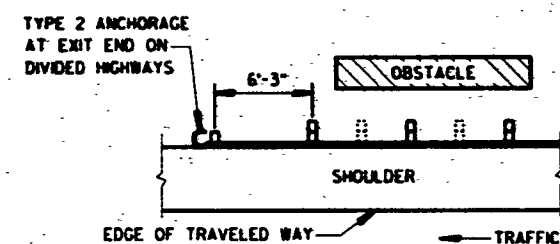
NOTE:
SDD 15 C 8-6a IS REQUIRED WHEN THIS DRAWING
IS CALLED FOR IN THE PLANS.

PAVEMENT MARKING
(RAMPS AND GORES)

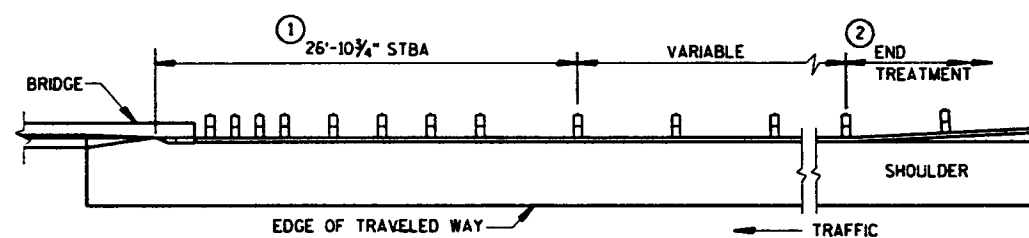
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



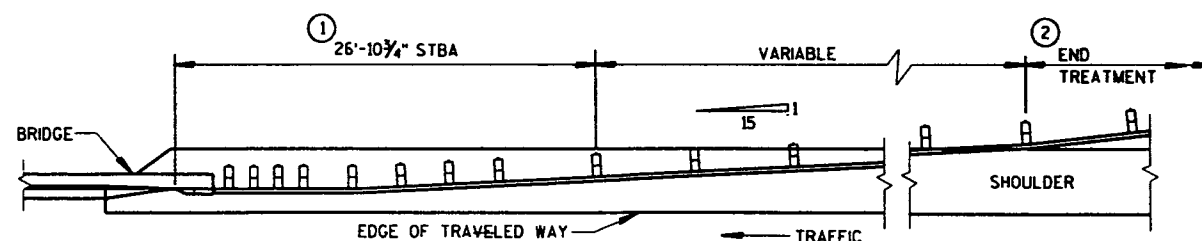
BEAM GUARD AT MINOR SIDEROADS OR DRIVEWAYS



BEAM GUARD AT OBSTACLES EXIT END - ONE WAY TRAFFIC



BEAM GUARD AT FULL WIDTH BRIDGES



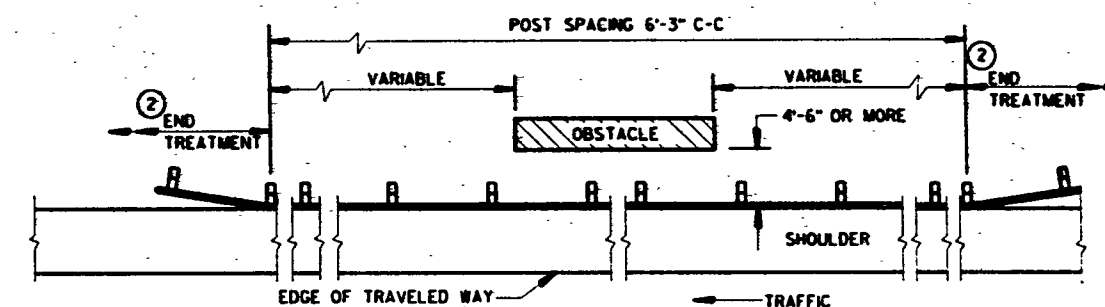
BEAM GUARD AT NARROW BRIDGES

GENERAL NOTES

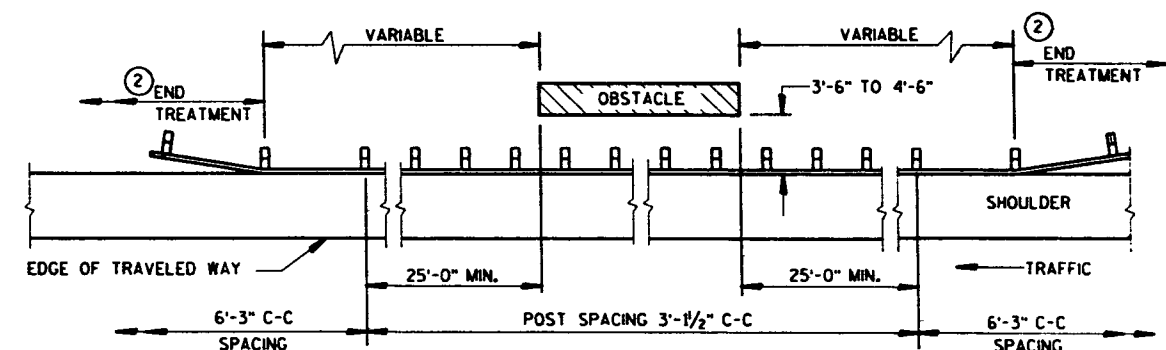
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

BEAM GUARD LOCATIONS AND LENGTHS ARE SHOWN ELSEWHERE IN THE PLAN.

- ① STEEL THRIE BEAM STRUCTURE APPROACH.
- ② UNLESS OTHERWISE INDICATED, THE FLARED END TREATMENT WITH A TYPE 1 ANCHORAGE SHALL BE USED TO TERMINATE BEAM GUARD ON THE TRAFFIC APPROACH SIDE OF BRIDGES/OBSTACLES. TYPE 2 ANCHORAGE SHALL BE USED ONLY AT THE DOWNSTREAM ENDS OF BEAM GUARD LOCATED ALONG ROADWAYS WITH ONE WAY TRAFFIC.



BEAM GUARD AT OBSTACLES - TWO WAY TRAFFIC (RAIL TO OBSTACLE CLEARANCE 4'-6" OR MORE)



BEAM GUARD AT OBSTACLES - TWO WAY TRAFFIC (RAIL TO OBSTACLE CLEARANCE 3'-6" TO 4'-6")

CLASS "A" STEEL PLATE
BEAM GUARD
(AT BRIDGES, OBSTACLES
AND SIDEROADS/DRIVEWAYS)

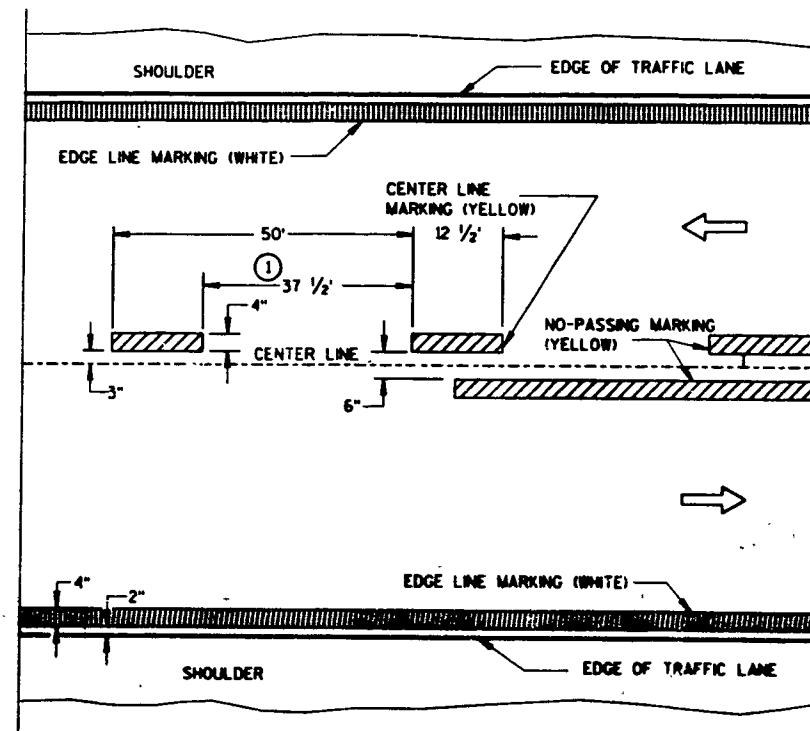
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

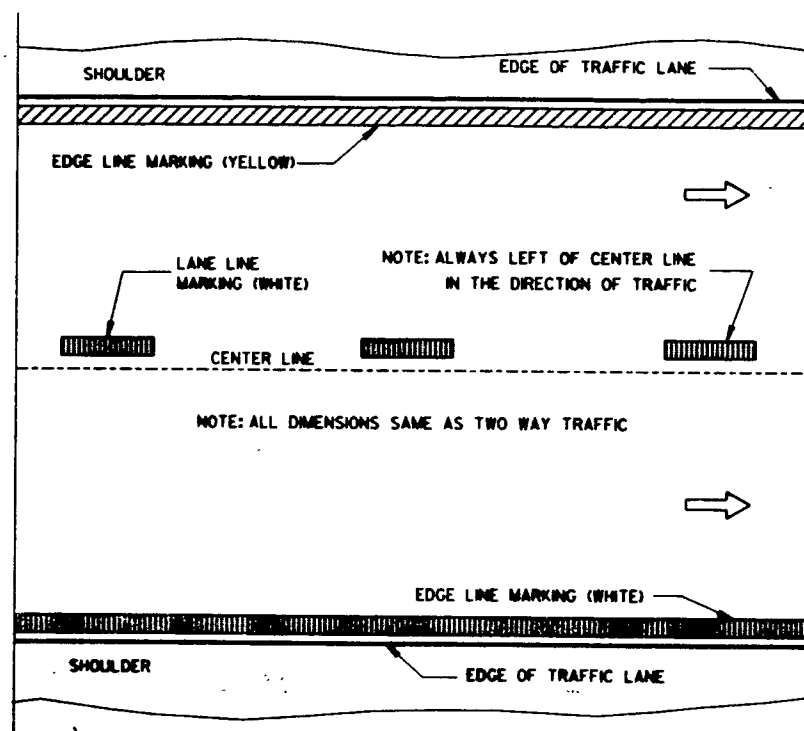
5/13/91
DATE

STATE DESIGN ENGINEER FOR HWYS

FHWA



TWO WAY TRAFFIC



ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING

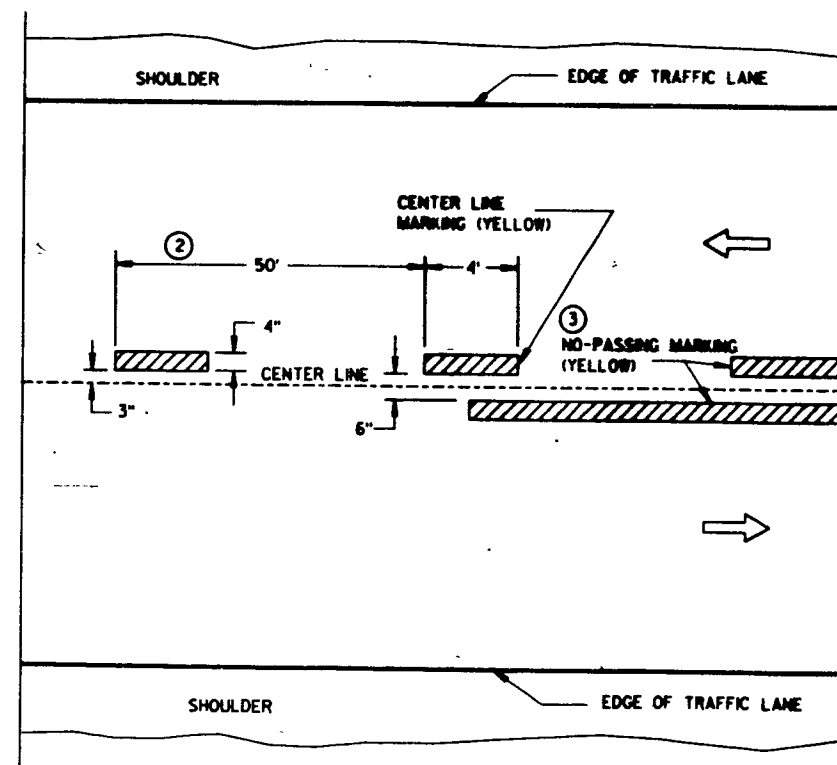
GENERAL NOTES

DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO STANDARD SPECIFICATIONS AND SPECIAL PROVISIONS.

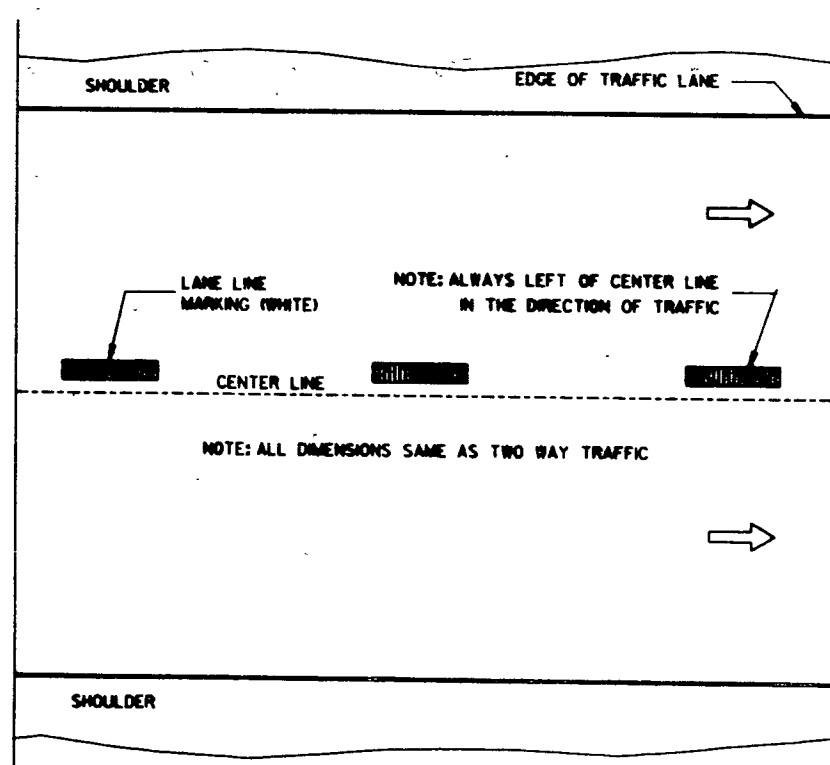
- ① CENTER LINE/LANE LINE MARKINGS SHALL BE 37 1/2 FEET BETWEEN DASHES THROUGHOUT THE PROJECT, INCLUDING THE STARTING OR ENDING GAP FROM THE EXISTING CENTER LINE/LANE LINE MARKING.
- ② HALF CYCLE LENGTHS (25') WITH 2' MINIMUM STRIPE LENGTHS SHALL BE PROVIDED ON ROADWAYS (INCLUDING TEMPORARY TRAVELED WAYS) WITH REVERSE CURVATURE, CURVATURE OF OVER 5 DEGREES OR WHEN DIRECTED BY THE ENGINEER TO MARK UNUSUAL ALIGNMENT OF THE TRAVELED WAY.
- ③ NO PASSING ZONE TEMPORARY PAVEMENT MARKING IS REQUIRED TO BE PLACED, WHERE APPROPRIATE, ALONG WITH CENTERLINE TEMPORARY PAVEMENT MARKING WHEN A SAME DAY PERMANENT PAVEMENT MARKING ITEM IS INCLUDED IN THE CONTRACT.

NOTE

ARROW SYMBOL (→) SHOWS DIRECTION OF TRAVEL



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY (INTERMEDIATE) PAVEMENT MARKING (SHOWS CYCLE FOR TEMPORARY CENTER LINE OR TEMPORARY LANE LINE MARKING)

PAVEMENT MARKING
(MAINLINE)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
8/18/94
DATE

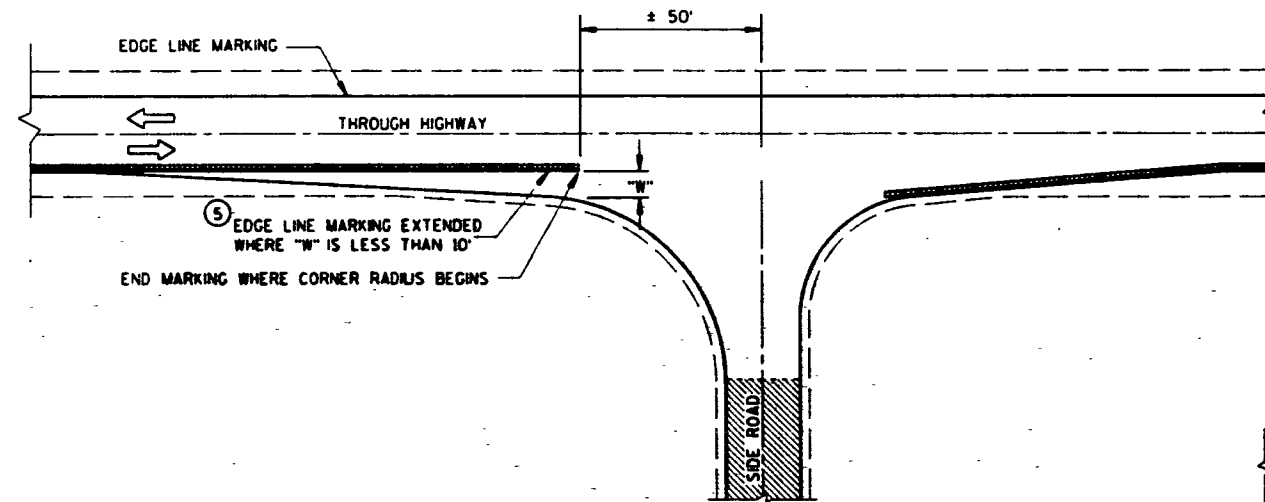
John J. Rensch
DIRECTOR, OFFICE OF TRAFFIC

FHWA

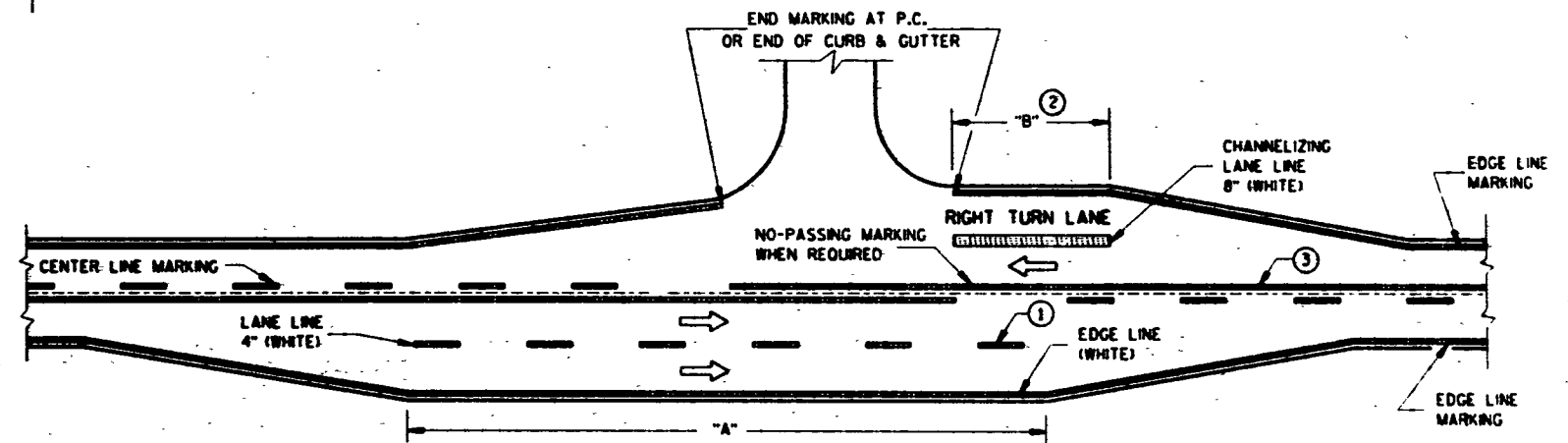
NOTES

EDGE LINES SHALL BE OMITTED THROUGH INTERSECTIONS. EDGE LINES SHALL BE CONTINUED THROUGH DRIVEWAYS.

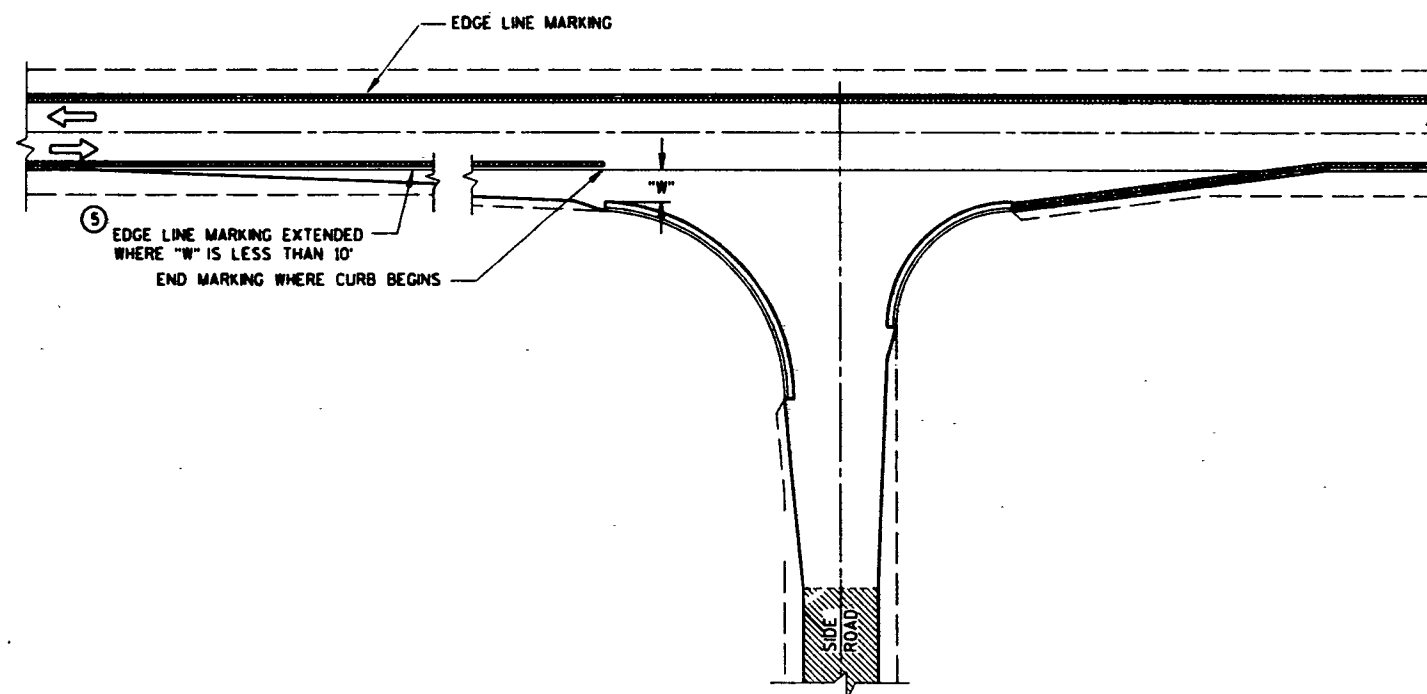
- ① WHEN DISTANCE "A" IS LESS THAN 250 FEET, OMIT LANE LINE.
- ② WHEN DISTANCE "B" IS LESS THAN 100 FEET, OMIT CHANNELIZING LANE LINE.
- ③ NO-PASSING MARKING SHALL BE PROVIDED WHERE SIGHT DISTANCE IS DEFICIENT. THE LENGTH OF NO-PASSING MARKING SHALL BE 500 FEET MINIMUM.
- ④ ALTERNATIVE MARKING SHALL BE PROVIDED WHEN SPECIFIED IN THE CONTRACT. TYPICAL SITUATIONS WHERE THIS MARKING MAY BE REQUIRED ARE WHERE THE INTERSECTION IS ON A SHARP HORIZONTAL CURVE OR CREST VERTICAL CURVE IN AN UNLIGHTED AREA SUCH THAT THE EDGE LINE MAY BE MISLEADING TO THE MOTORIST OR DISAPPEAR FROM SIGHT.
- ⑤ LOCATE THE EDGE LINE ALONG THE TAPER WHERE "W" IS 10' OR MORE.



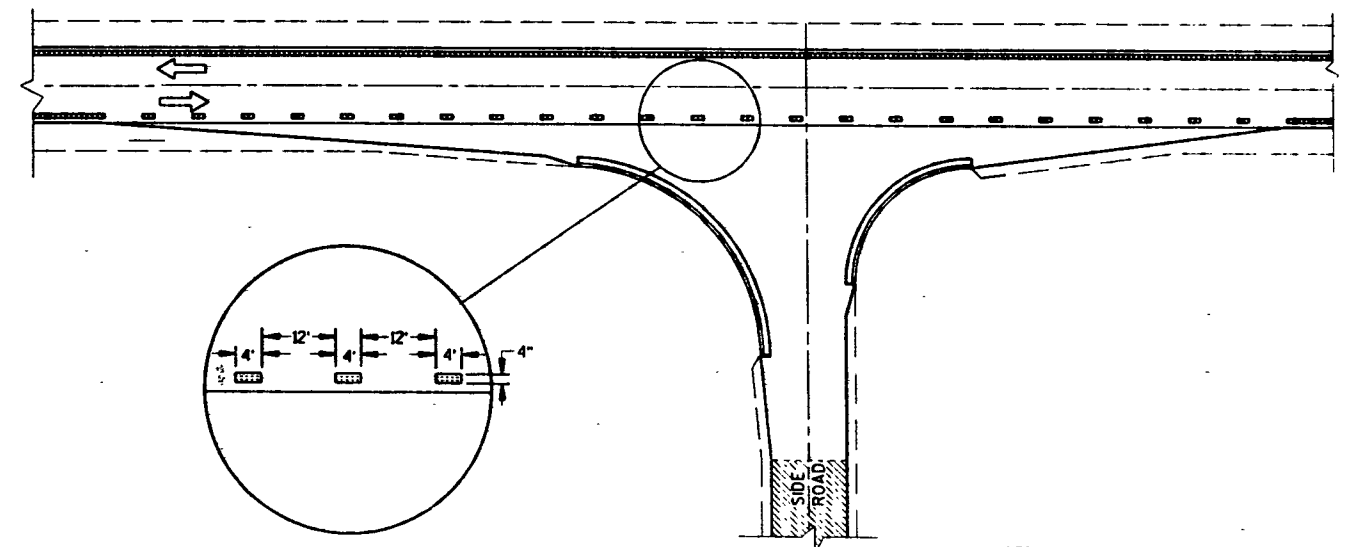
MINOR INTERSECTION WITHOUT CURBS



MAJOR INTERSECTIONS
(INTERSECTION WITH FULL RIGHT TURN LANE OR BYPASS LANES)



MINOR INTERSECTION WITH CURBS
(TYPICAL MARKING)



MINOR INTERSECTION WITH CURBS
④ (FOR SPECIAL CONDITIONS AS SPECIFIED)

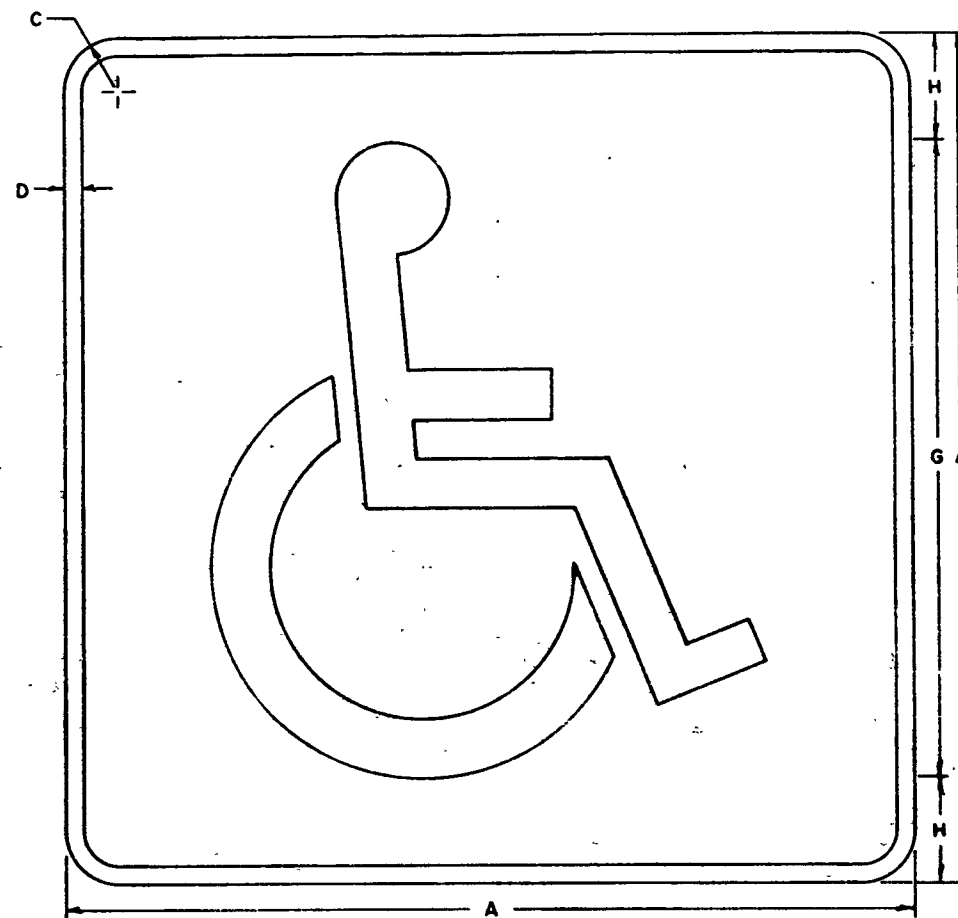
NOTE:
SDD 15 C 8-6a IS REQUIRED WHEN THIS DRAWING
IS CALLED FOR IN THE PLANS.

PAVEMENT MARKING
(INTERSECTIONS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

NOTES

1. Sign is Type II - Reflective - reference
WIS D.O.T. Standard Specification for
ROAD and BRIDGE CONSTRUCTION latest edition.
2. Color:
Background - Blue
Message - White
3. Message Series -
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.



D9-6

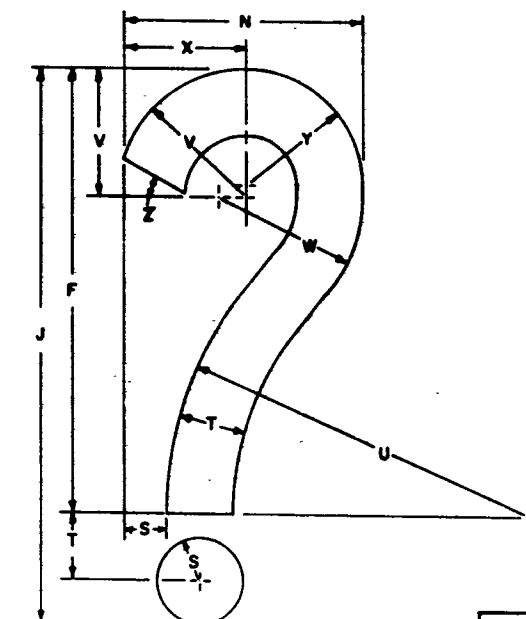
SIZE	CODE SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Std Area Sq. Ft.
Minimum	1																											
Standard	2	24		1 1/2	1 1/2			18	3																			4.0
Oversize	3																											
Exp way	4																											
Freeway	5																											
Bicycle	6																											
Snowmobile	7																											
		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																											
Bicycle	6																											
Snowmobile	7																											

Date Drawn - 11-8-82	Date Redrawn -
Date Revised -	
STANDARD SIGN	
D9-6	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>[Signature]</i> Chief Traffic Engineer
DATE 1-6-83	PLATE NO D9-6.1

PROJECT NO.	SHEET NUMBER	TOTAL SHEETS
PROJECT DESIGNATION		

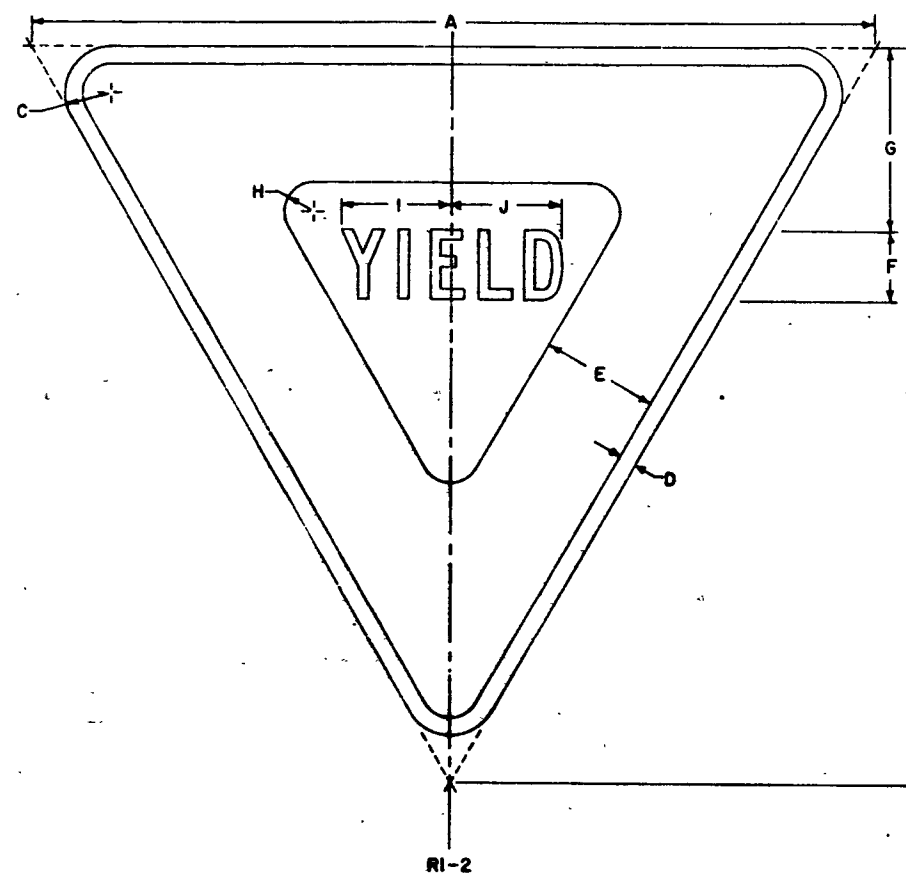
NOTES:

- Sign is Type II
- Color:
Background - Reflectorized White
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.
- All letters are Series "C"



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
Minimum	1																										
Standard	2	40	18	1 1/8	3/8	1/2	5	2 7/8	2 1/4	2 3/8	6 1/4	15	10	3	2 11/16	17 7/8	1/4	3 9/16	13 3/8	1/2	3/4	4 1/8	1 7/8	1 5/8	1 3/8	1 1/8	30°
Oversize	3																										
Exp-way	4																										
Freeway	5																										
		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 -	Date Redrawn - 10-26-72
Date Revised - 10-25-72	6-6-73
STANDARD SIGN I55-54	
Old Code: S55-54	
WISCONSIN DIVISION OF HIGHWAYS	
APPROVED <i>H. S. Fisher</i> STATE HIGHWAY ENGINEER	
DATE 1/30/75	PLATE NO. I55-54.1
Replaces Old Plate: S55-54.2	

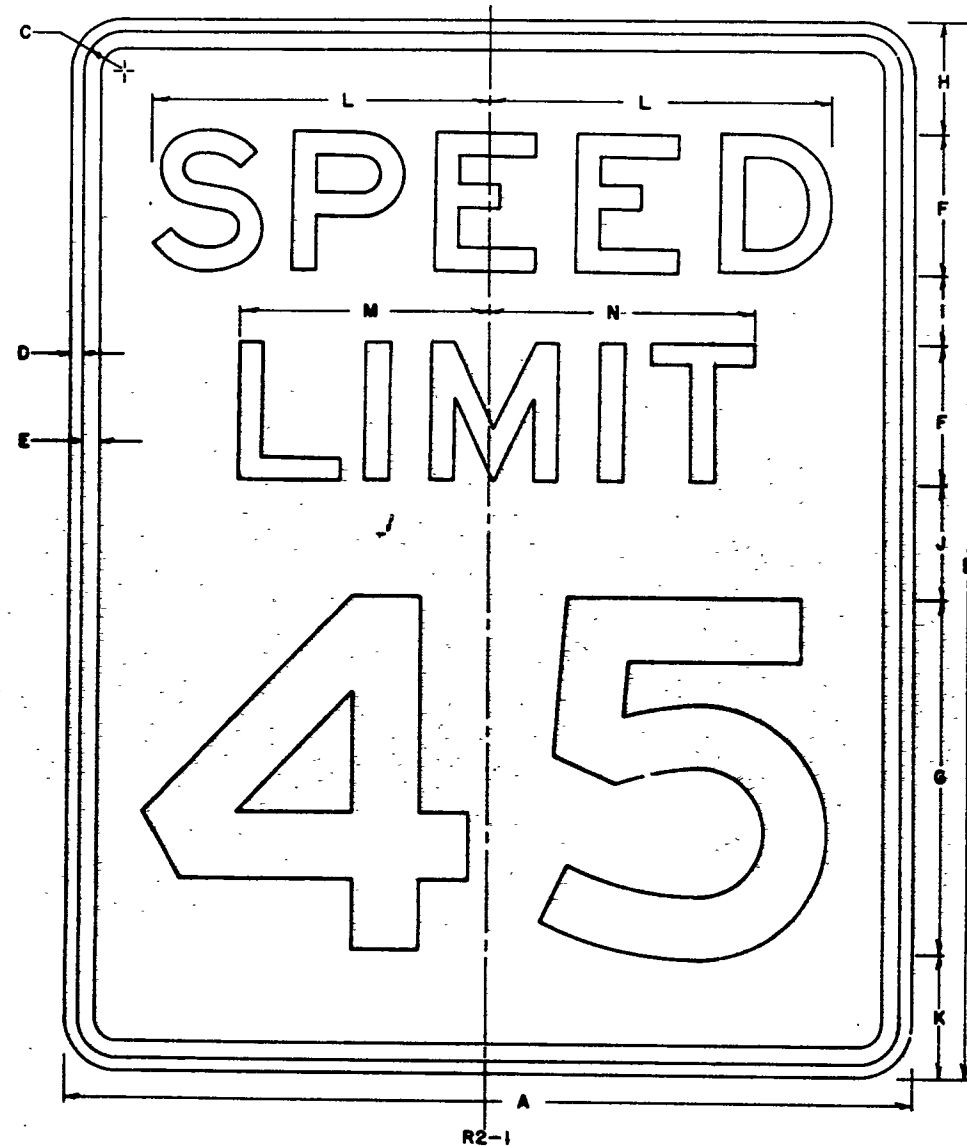


NOTES:

1. Sign is Type II
2. Color : Material
Background - White - Type H reflective sheeting
Message - - See note 5
3. Message Series - "C"
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. The border strip and word message are reflectorized red.
6. 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	Brd Area Sq Ft
Minimum	1	36	31	2	3/4	5	3	7 3/4	1 1/4	4 3/4	4 3/8																	3.88
Standard	2	36	31	2	3/4	5	3	7 3/4	1 1/4	4 3/4	4 3/8																	3.88
Oversize	3																											
Exp way	4	48	42	3	1	6	4	9 3/4	2	6 1/4	5 7/8																	7.00
Freeway	5	60	52	3	1 1/2	8	5	13	2 1/2	7 7/8	7 1/4																	10.83
Bicycle	6																											
Snowmobile	7																											
		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																											
Bicycle	6																											
Snowmobile	7																											

Date Drawn -	Date Redrawn - 10-30-80
Date Revised - 7-7-75	
9-4-75	
10-30-80	
STANDARD SIGN	
RI-2	
WISCONSIN DEPT. OF TRANSPORTATION	
APPROVED	Chief Traffic Engineer
DATE 8-14-81	PLATE NO RI-2.8



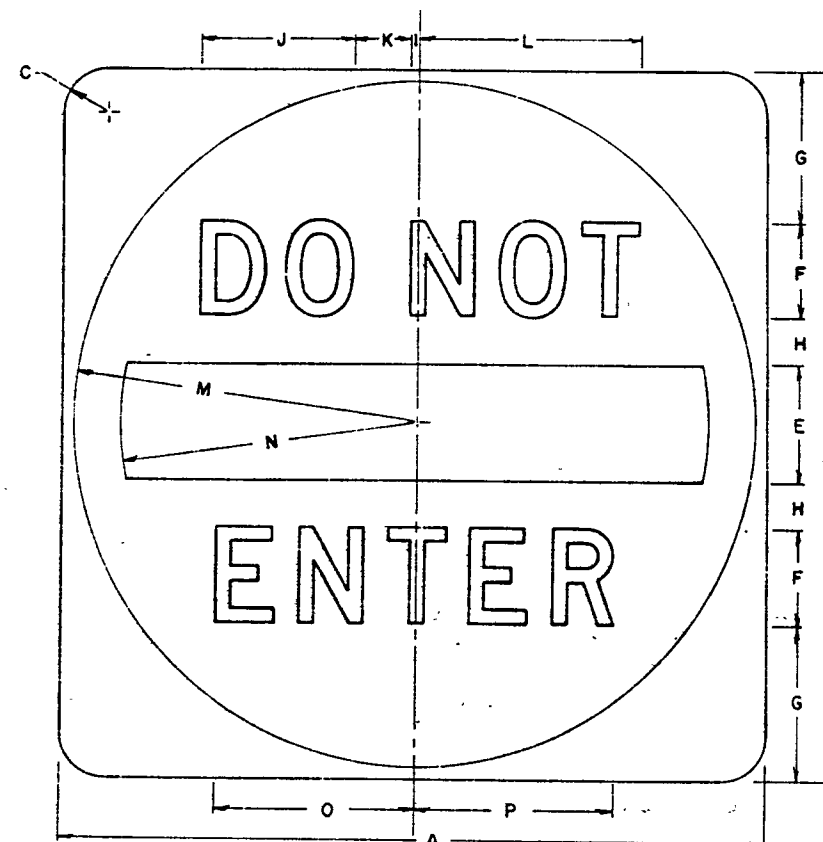
NOTES

1. Sign is Type II - Reflective - reference WIS D.O.T. Standard Specification for ROAD and BRIDGE CONSTRUCTION latest edition.
2. Color:
Background - White
Message - Black
3. Message Series - See Note 5
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. Letters & numerals for sizes "1 & 4" shall be series D, for sizes "2 & 5" they shall be series E.
6. Substitute appropriate numerals and adjust spacing as required.
7. 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	18	24	1 1/8	3/8	1/2	4	8	2 1/2	1 1/2	1 3/4	2 1/2	7 3/8	5 5/8	5 5/8													3.0
Standard	2	24	30	1 1/8	3/8	1/2	4	10	3 1/2	2	3 1/2	3 1/2	9 5/8	7 1/8	7 1/2													5.0
Oversize	3	36	48	1 3/8	1/2	3/8	8	16	5	3	3 1/2	4 1/2	14 3/4	10 5/8	11 1/4													12.0
Exp-way	4	36	48	1 3/8	1/2	3/8	8	16	5	3	3 1/2	4 1/2	14 3/4	10 5/8	11 1/4													12.0
Freeway	5	48	60	2 1/4	3/4	1	8	20	6 1/2	4	6 1/2	7	19 1/4	14 1/4	15													20.0
Bicycle	6																											
Snowmobile	7																											
		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																											
Bicycle	6																											
Snowmobile	7																											

RV	CK	RA	RA

Date Drawn -	Date Redrawn - 9-28-81
Date Revised - 8-13-84	
STANDARD SIGN R2-1	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>[Signature]</i> Chief Traffic Engineer
DATE 9-11-84	PLATE NO R2-1.6



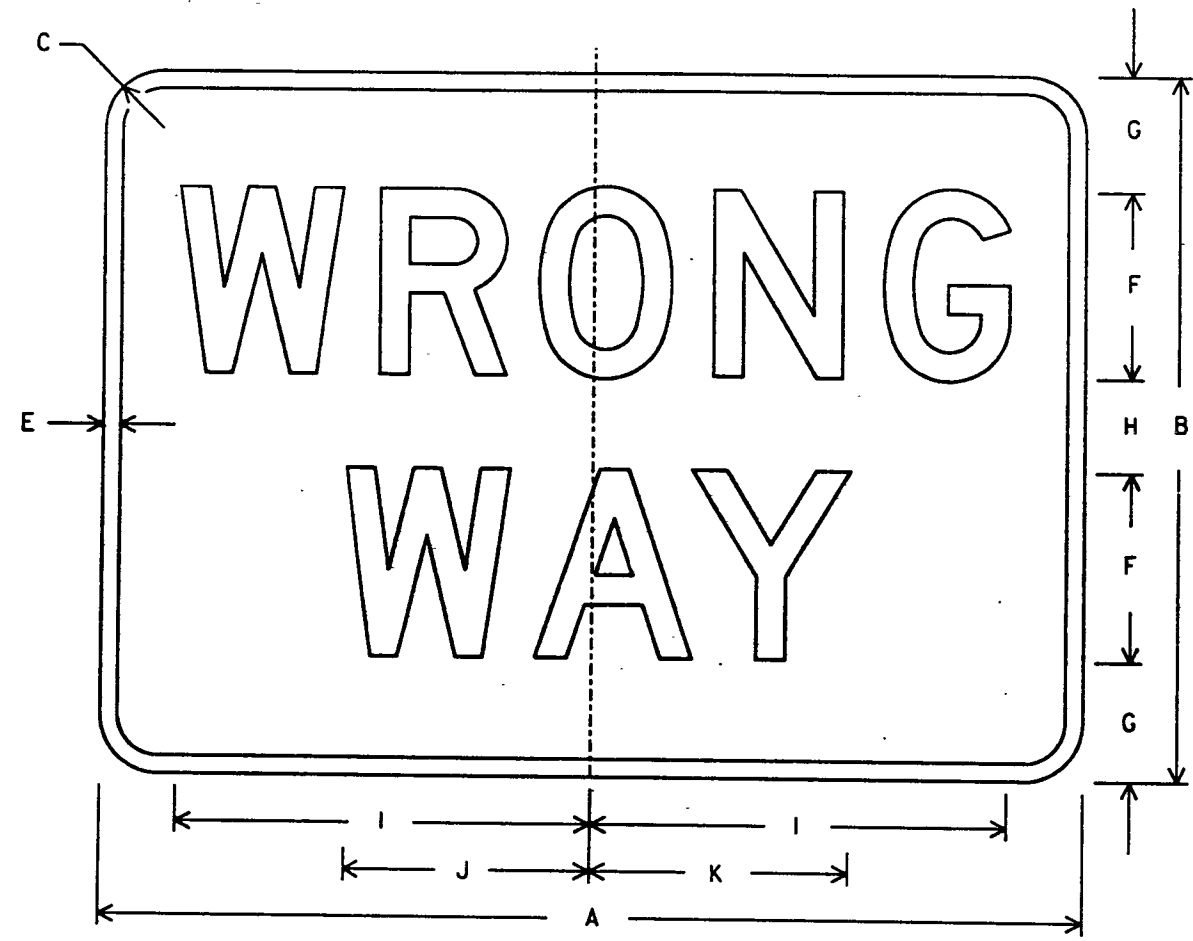
R5-1

NOTES

1. Sign is Type II - Reflective Type R - reference WIS DOT Standard Specification for ROAD and BRIDGE CONSTRUCTION, latest edition.
2. Color:
Background - White
Message - See Note 5
3. Message Series - D
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. Message will be reflectorized red circle with letters and bar being reflective white.
6. This 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	Area
Minimum	1																											Sq. Ft.
Standard	2	30		1 7/8		5	4	6 1/2	2	3/8	6 1/2	2 3/8	9 5/8	14 1/2	12 1/2	8 1/2	8 9/16											6.26
Overpass	3	36		2 1/4		6	5	7 1/2	2 1/2	7/16	8 1/8	2 15/16	12 1/16	17 1/2	15	10 5/8	10 11/16											9.0
Exp. way	4	36		2 1/4		6	5	7 1/2	2 1/2	7/16	8 1/8	2 15/16	12 1/16	17 1/2	15	10 5/8	10 11/16											9.0
Freeway	5	48		3		8	6	11	3	9/16	9 3/4	3 5/8	14 7/16	23 1/2	20	12 3/4	12 7/8											16.0
Bicycle	6																											
Snowmobile	7																											
Minimum	1	AA	BB	CC	DD	EE	FF	GG	HH	II	IJ	KK	LL	MM	NN	OO	PP	QQ	RR	SS	TT	UU	VV	WW	XX	YY	ZZ	
Standard	2																											
Overpass	3																											
Exp. way	4																											
Freeway	5																											
Bicycle	6																											
Snowmobile	7																											

Date drawn -	5-3-84
Date revised -	5-3-84
STANDARD SIGN R5-1	
WISCONSIN DEPT. OF TRANSPORTATION	
Date -	9-11-84
Drawn by -	R5-110



NOTES

- Sign is Type II- Type H Reflective - reference WIS DOT Standard Specification for ROAD and BRIDGE CONSTRUCTION latest edition.
- Color:
Background - Red
Message - White
- Message Series - Series D
- 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.

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	Area sq. ft.
1	30	18	1 1/2		1/2	5	3	2	11	6 1/2	6 7/8																3.75
2	36	24	2		5/8	6	4 1/2	3	13 1/4	7 7/8	8 1/4																6.00
3	42	30	2 1/2		3/4	8	5	4	17 3/4	10 1/2	11																8.75
4	42	30	2 1/2		3/4	8	5	4	17 3/4	10 1/2	11																8.75
5	42	30	2 1/2		3/4	8	5	4	17 3/4	10 1/2	11																8.75

DATE DRAWN 1-29-92 DATE REDRAWN

DATE REVISED 4-15-92

STANDARD SIGN

R5-9

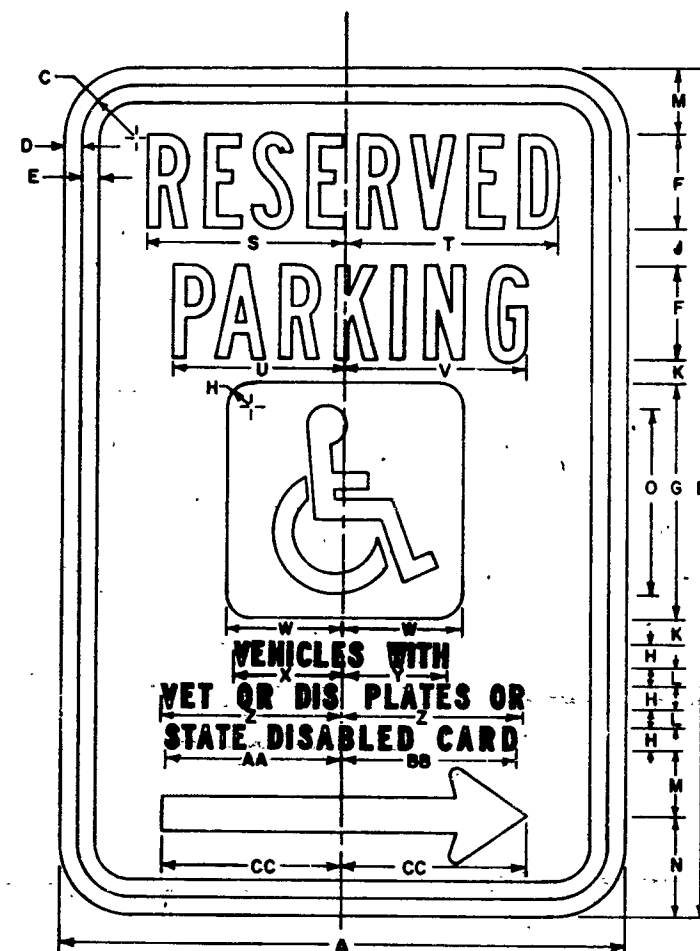
WISCONSIN DEPT OF TRANSPORTATION

APPROVED

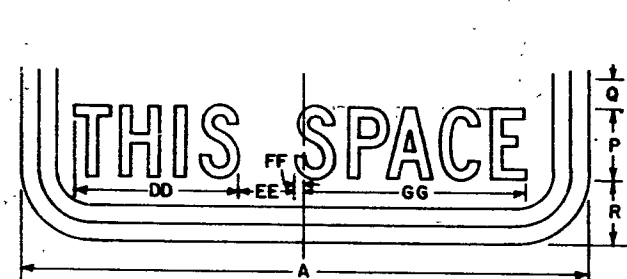
State Traffic Engineer

DATE 4/21/92

PLATE NO. R5-9.6



R7-8R

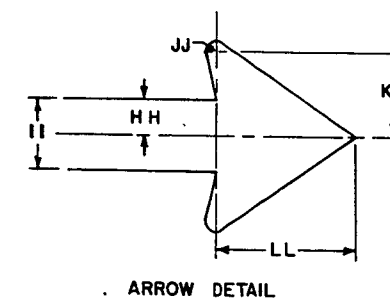


R7-8A

NOTES

- Sign is Type II - Reflective- reference WIS DOT. Standard Specification for ROAD and BRIDGE CONSTRUCTION latest edition.
- Color:
Background - Sign is white; paraplegic symbol is blue.
Message - Legend and border are green; paraplegic symbol is white.
- Message Series - Lines 1 & 2 - "B"
Lines 3, 4, 5 & 6 - "C"
- 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.
- R7-8R (Right Arrow), R7-8L (Left Arrow), R7-8A (THIS SPACE).
- 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	Bd Area Sq. Ft.
Minimum	1																											
Standard	2	12	18	1 1/8	3 3/8	3 3/8	2	5	1 1/2		3 1/4	9 1/8	3 3/8	1 3/8	2 1/8	4	1 1/2	5 3/8	1 3/8	4 1/4	4 5/8	3 5/8	3 7/8	2 1/2	2 3/8	2 1/4	3 7/8	
Oversize	3	18	24	1 1/8	3 3/8	1 1/2	3	6	2 1/4		7 3/8	5 3/8	7 1/8	1 7/8	3	5	2	7 3/8	2	6	6 1/4	5 3/8	5 1/2	3	3 1/4	3 1/8	5	
Exp-way	4																											
Freeway	5																											
Bicycle	6																											
Snowmobile	7																											
		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	3 3/4	3 5/8	3 7/8	3 1/2	1 3/16	3 1/16	4 1/16	3 3/16	3 4	1 3/8	7 8	1 1/2															1.50
Oversize	3	4 3/8	4 5/8	5 1/8	4 1/8	1 3/8	3 1/8	6 3/8	5 3/8	1 1/8	3 1/8	1 1/8	2 1/4															3.00
Exp-way	4																											
Freeway	5																											
Bicycle	6																											
Snowmobile	7																											



ARROW DETAIL

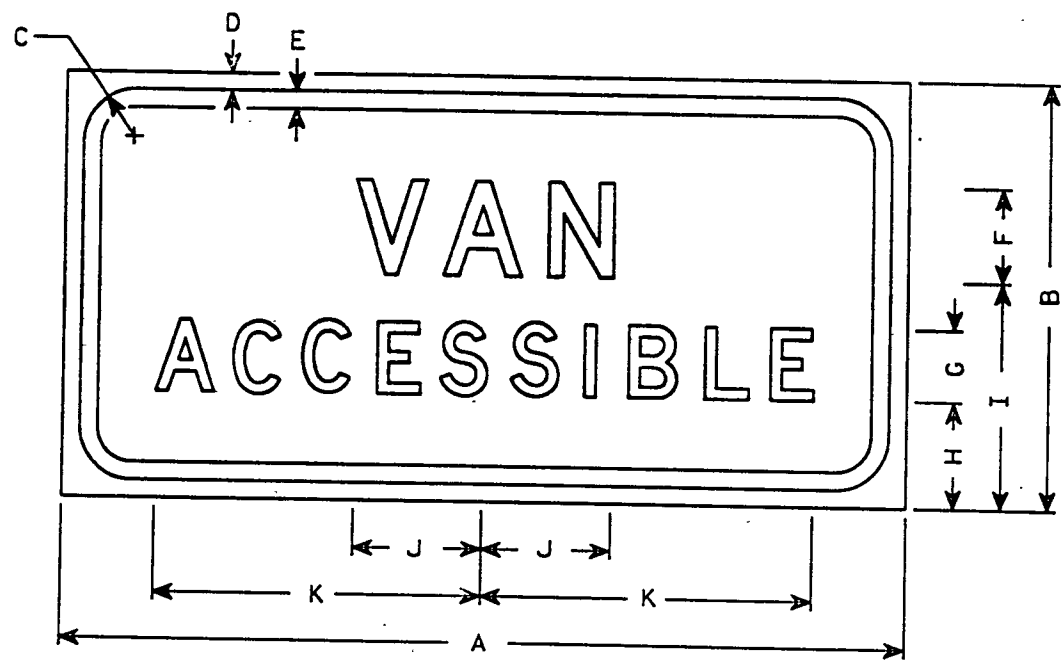
Date Drawn - 1-25-79	Date Redrawn - 4-15-83
Date Revised - 4-15-83	
STANDARD SIGN	
R7-8	
WISCONSIN DEPT. OF TRANSPORTATION	
APPROVED	<i>[Signature]</i> Chief Traffic Engineer
DATE 5-5-83	PLATE NO R7-8.2

PLOT NAME

PLOT SCALE: 2 1/4"

FILE NAME: P78V.DGN

LEVELS ON - 2 5 10



R7-8V

NOTES

1. Sign is Type II - Reflective - reference WIS DOT Standard Specification for ROAD and BRIDGE CONSTRUCTION latest edition.
2. Color:
Background - White
Message - Green
3. Message Series - D
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.

Metric equivalent
for this sign is:

SIZE	
1	
2	300 mm x 150 mm
3	450 mm x 225 mm
4	
5	

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	Area Sq. Ft.
2	12	6	1 1/8	3/8	3/8	1 1/2	1	1 5/8	3 1/2	2	5 1/4																0.50
3	18	9	1 1/8	3/8	3/8	2	1 1/2	2 1/4	4 3/4	2 3/4	7																1.12
4																											
5																											

STANDARD SIGN
R7-8V

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

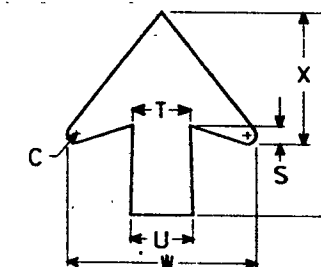
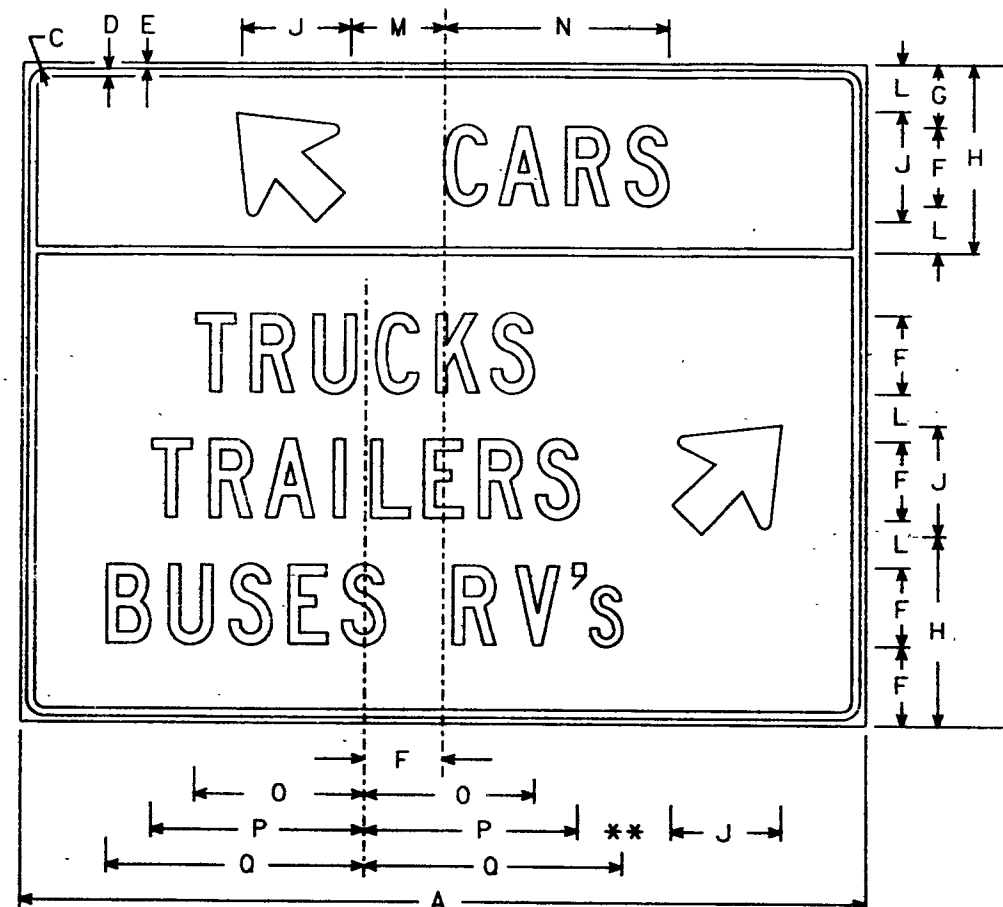
Peter F. Rusch
Director, Office of Traffic

DATE 2/8/94

PLATE NO. R7-SV.1

NOTES

- Sign is Type II - Reflective - reference WIS DOT Standard Specification for ROAD and BRIDGE CONSTRUCTION latest edition.
- Color:
Background - White
Message - Black
- Message Series - C
- 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.
- Substitute appropriate arrow configuration and/or placement in relationship to the message and adjust spacing as required.



** Optically balance arrow between message and edge of sign.

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	Area sq. ft.
2																											
3	54	42	1⅛	¾	½	5	4	12		7		3	6	14¾	10⅞	13⅝	16½		¾	2⅞	2⅝	8½	8	5½			15.7
4																											
5																											

DATE DRAWN 9-20-91	DATE REDRAWN
DATE REVISED	
STANDARD SIGN	
R8-74	
(REPLACES R8-71 & R8-72)	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	
State Traffic Engineer	
DATE 1/2/96	PLATE NO. R8-74.1

NOTES

1. Sign is Type II - Non-Reflective - reference
WIS D.O.T. Standard Specification for
ROAD and BRIDGE CONSTRUCTION latest edition.
2. Color:
Background - White
Message - Black
3. Message Series "B"
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.



R55-51

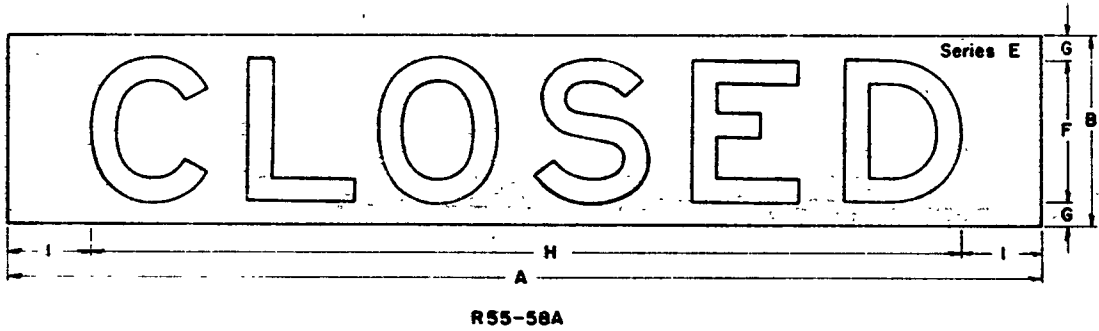
SIZE	CODE SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Std Area Sq. Ft.
Minimum	1																											
Standard	2	18		1 1/8	3/8	3/8	4	3	2	1 1/2	2	2 1/8	6 7/8	7	7 3/16	7 1/4												2.25
Oversize	3																											
Exp-way	4																											
Freeway	5																											
Bicycle	6																											
Snowmobile	7																											
		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																											
Bicycle	6																											
Snowmobile	7																											

RV	CK	RA	RA

Date Drawn - 6-26-63	Date Redrawn - 8-24-83
Date Revised - _____	
STANDARD SIGN R55-51	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>[Signature]</i> Chief Traffic Engineer
DATE 2-28-84	PLATE NO. R55-51.2

STATE PROJECT NUMBER	SHEET NO

- 1. Sign Type II
- 2. Color
 - Background - Yellow
 - Message - Black
- 3. Face Material - Reflective Sheeting
- 4. This plaque to be used with the D5-61 & D5-62 only, for wayside closures.



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																											
Standard	2	44	8				6	1	37	3 1/2																		2.4
Oversize	3																											
Exp-way	4	76	12				10	1	58	9																		6.3
Freeway	5																											
		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-12-4-78	Date Redrawn-
Date Revised-	
STANDARD SIGN R55-58A	
WISCONSIN DIVISION OF HIGHWAYS	
APPROVED	CHIEF TRAFFIC ENGINEER
DATE 1-22-79	PLATE NO. R55-58A.1

PLOT NAME: 5565

PLOT SCALE: 2:3

FILE NAME: STRIPES

ORIGINATOR: AL WEDENBECH

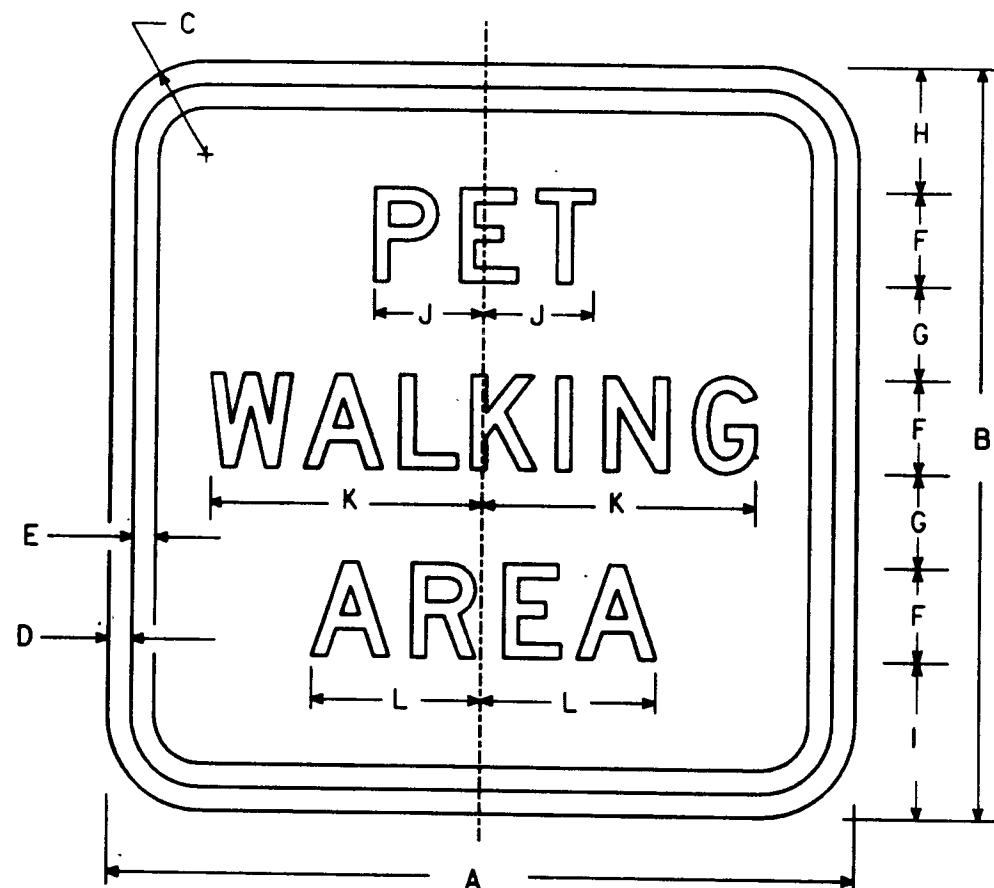
LEVELS ON - 2, 5, 12

58.59

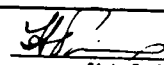
STATE PROJECT NUMBER SHEET NO.

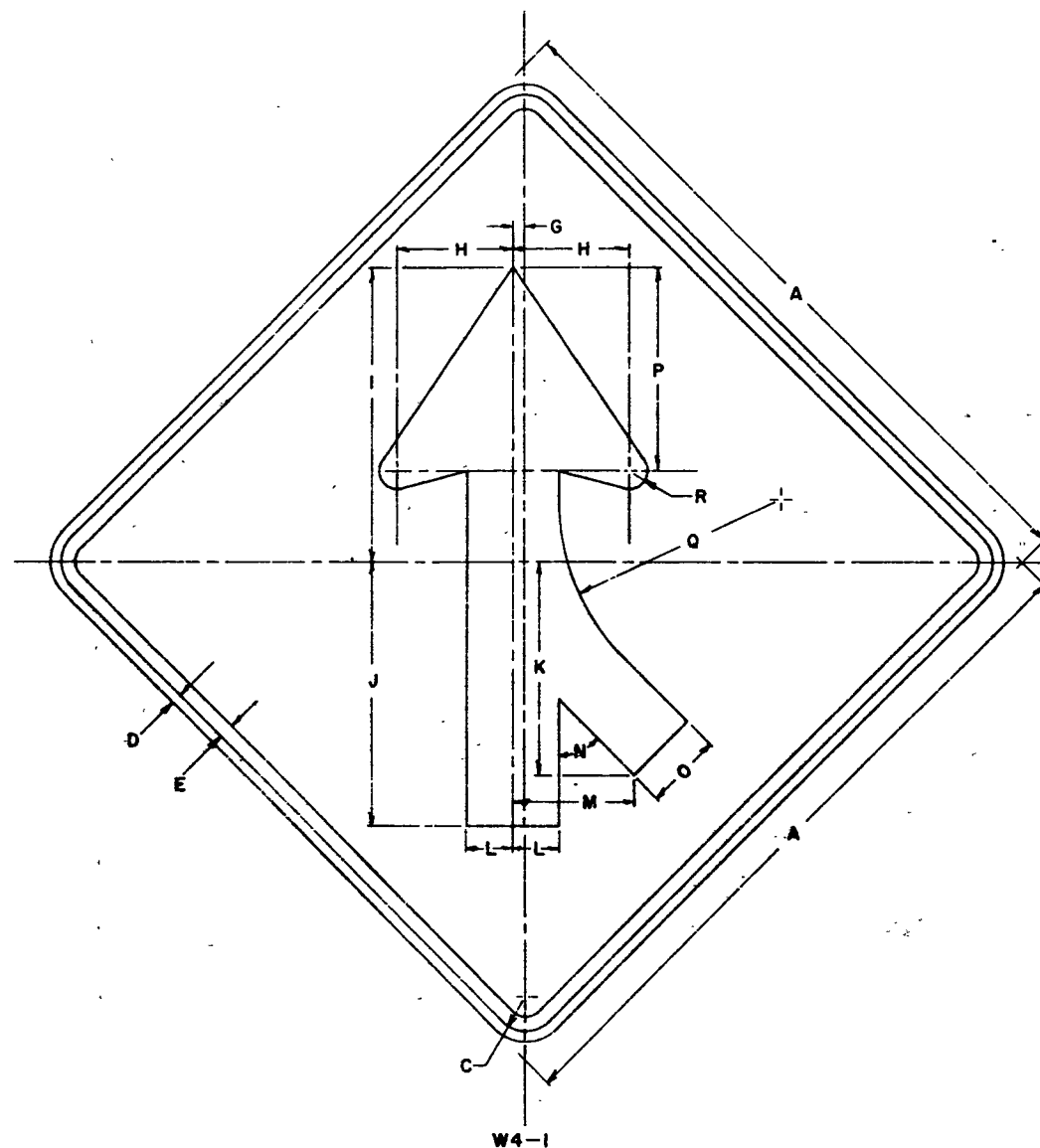
NOTES

1. Sign is Type II - Reflective - reference WIS DOT Standard Specification for ROAD and BRIDGE CONSTRUCTION latest edition.
2. Color:
Background - White
Message - Black
3. Message Series - D
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.



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	Area sq. ft.
2	12	12	1 1/2	3/8	3/8	1 1/2	1 1/2	2	2 1/2	1 3/4	4 3/8	2 3/4															1.0
3																											
4																											
5																											

DATE DRAWN 11-17-89	DATE REDRAWN
DATE REVISED	
STANDARD SIGN R55-65	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	
State Traffic Engineer	
DATE 11-29-89	PLATE NO. R55-65.1



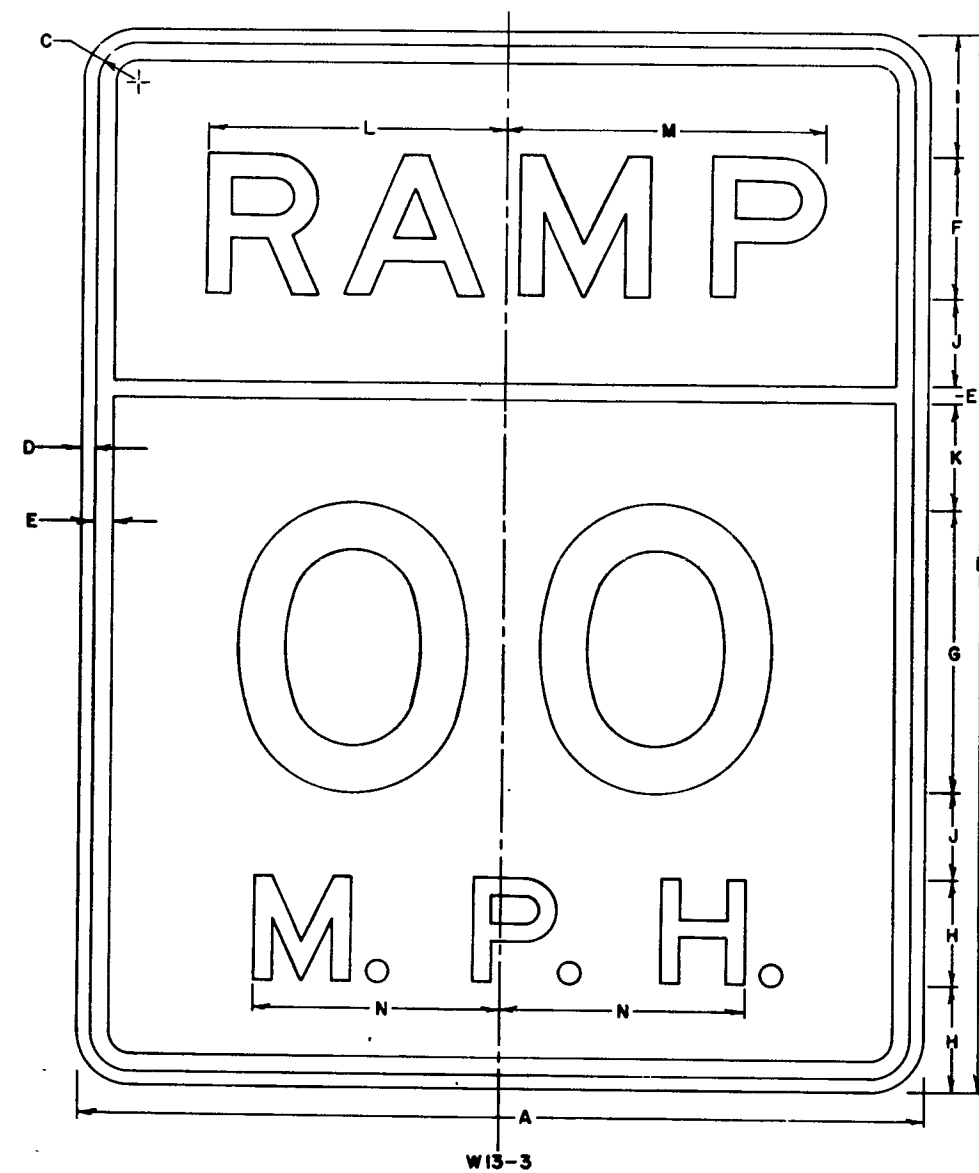
W4-1

NOTES

1. Sign is Type II - Type H reflective - reference WIS DOT Standard Specification for ROAD and BRIDGE CONSTRUCTION latest edition.
2. Color:
Background - Yellow
Message - Black
3. 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.
4. W4-1L same as W4-1 except arrow is reversed.
5. 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	Std Area Sq Ft
Minimum	1	24		1 1/8	3 3/8	1 1/2		7 1/8	4	10 3/16	9	7 3/16	1 5/8	4 3/16	45°	2 5/8	7	7 5/8	5 5/8									4.0
Standard	2	30		1 3/8	3 1/2	1 5/8		7 1/2	5	12 3/4	11 1/4	9	2	5 1/4	45°	3 1/4	8 3/4	9 1/2	3 3/4									6.25
Oversize	3	36		1 5/8	3 5/8	1 3/4		7 3/8	6	15 5/16	13 1/2	10 3/16	2 3/8	6 5/16	45°	3 7/8	10 1/2	11 3/8	7 7/8									9.0
Exp way	4	36		1 5/8	3 5/8	1 3/4		7 3/8	6	15 5/16	13 1/2	10 3/16	2 3/8	6 5/16	45°	3 7/8	10 1/2	11 3/8	7 7/8									9.0
Freeway	5	48		2 1/4	3 3/4	1		13 1/8	8	20 3/8	18	14 3/8	3 3/16	8 3/8	45°	5 3/16	14	15 3/16	1 3/16									16.0
Bicycle	6																											
Snowmobile	7																											
		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																											
Bicycle	6																											
Snowmobile	7																											

Date Drawn	Date Redrawn
Date Revised	1-13-83
	5-6-85
STANDARD SIGN W4-1	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>[Signature]</i> Chief Traffic Engineer
DATE 5-31-85	PLATE NO W4-1.8



NOTES

1. Sign is Type II Reflective - reference
WIS D.O.T. Standard Specification for ROAD
and BRIDGE CONSTRUCTION latest edition.
2. Color:
Background - Yellow
Message - Black
3. Message Series - E
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. Substitute appropriate numerals and adjust
spacing to give proper balance.

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	24	30	1 1/8	3/8	1/2	4	8	3	3 1/2	2 1/2	3	8 1/2	9	7													5.0
Standard	2	24	30	1 1/8	3/8	1/2	4	8	3	3 1/2	2 1/2	3	8 1/2	9	7													5.0
Oversize	3																											
Exp way	4	36	48	1 5/8	5/8	3/4	6	12	5	6	4	5 1/4	12 3/4	13 1/2	10 1/2													12.0
Freeway	5	48	60	2 1/4	3/4	1	8	16	6	7	5	6	17	18	14													20.0
Bicycle	6																											
Snowmobile	7																											
		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																											
Bicycle	6																											
Snowmobile	7																											

CK	RA	RA

Date Drawn -	Date Redrawn - 10-23-81
Date Revised -	10-23-81
STANDARD SIGN W13-3	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>[Signature]</i> Chief Traffic Engineer
DATE 2-22-82	PLATE NO W13-3.2

28-OCT-93 17:27:19

AVERAGE END AREA VOLUMES

MODEL FILE : X:CAREDT.END

STATION	END-AREA		VOLUME INCREMENTAL		VOLUME CUMULATIVE				MASS HAUL
	CUT	FILL	CUT	FILL	CUT	FAC	FILL	FAC	
92+00	226.3	0.0							
92+50	376.9	0.0	558.5	0.0	558.5	1.0	0.0	1.3	558.5
93+00	849.1	0.0	1135.1	0.0	1693.6	1.0	0.0	1.3	1693.6
93+50	737.1	0.0	1468.7	0.0	3162.3	1.0	0.0	1.3	3162.3
94+00	582.2	0.0	1221.6	0.0	4383.9	1.0	0.0	1.3	4383.9
94+50	406.1	0.0	915.1	0.0	5299.0	1.0	0.0	1.3	5299.0
95+00	391.3	0.0	738.4	0.0	6037.3	1.0	0.0	1.3	6037.3
95+50	254.6	0.0	598.1	0.0	6635.4	1.0	0.0	1.3	6635.4
96+00	302.4	0.0	515.8	0.0	7151.2	1.0	0.0	1.3	7151.2
96+50	254.8	0.0	515.9	0.0	7667.1	1.0	0.0	1.3	7667.1
97+00	126.4	0.0	353.0	0.0	8020.0	1.0	0.0	1.3	8020.0
97+50	85.9	1.4	196.5	1.7	8216.6	1.0	1.7	1.3	8214.9
98+00	65.1	0.0	139.8	1.7	8356.4	1.0	3.3	1.3	8353.1
98+50	44.3	0.0	101.4	0.0	8457.8	1.0	3.3	1.3	8454.5
99+00	85.6	0.0	120.3	0.0	8578.1	1.0	3.3	1.3	8574.8
99+50	142.5	0.0	211.2	0.0	8789.2	1.0	3.3	1.3	8785.9
100+00	221.6	0.0	337.1	0.0	9126.3	1.0	3.3	1.3	9123.0
100+50	262.0	0.0	447.8	0.0	9574.1	1.0	3.3	1.3	9570.8
101+00	237.9	0.0	462.8	0.0	10036.9	1.0	3.3	1.3	10033.6
101+50	164.2	0.0	372.3	0.0	10409.3	1.0	3.3	1.3	10406.0
102+00	91.8	0.0	237.1	0.0	10646.4	1.0	3.3	1.3	10643.0
102+50	21.0	4.8	104.5	5.6	10750.9	1.0	8.9	1.3	10742.0

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1104-05-71 9

AVERAGE END AREA VOLUMES

MODEL FILE : X:TRKEDIT.END

STATION	END-AREA		VOLUME INCREMENTAL		VOLUME CUMULATIVE				MASS HAUL
	CUT	FILL	CUT	FILL	CUT	FAC	FILL	FAC	
278+00	13.0	155.9							
278+50	12.9	199.1	24.0	410.8	24.0	1.0	410.8	1.3	-386.8
279+00	6.4	222.6	17.9	488.1	41.9	1.0	898.9	1.3	-857.0
279+50	6.3	245.8	11.7	542.2	53.6	1.0	1441.1	1.3	-1387.5
280+00	12.8	224.9	17.6	544.8	71.3	1.0	1985.9	1.3	-1914.6
280+50	7.7	243.7	18.9	542.3	90.2	1.0	2528.2	1.3	-2438.0
281+00	12.3	194.4	18.5	507.0	108.7	1.0	3035.2	1.3	-2926.6
281+50	13.8	121.1	24.1	365.1	132.8	1.0	3400.3	1.3	-3267.5
282+00	16.3	62.3	27.8	212.3	160.6	1.0	3612.6	1.3	-3452.0
282+50	14.8	182.1	28.7	282.9	189.3	1.0	3895.5	1.3	-3706.2
283+00	15.9	189.1	28.4	429.6	217.7	1.0	4325.1	1.3	-4107.4
283+50	28.2	163.1	40.9	407.6	258.5	1.0	4732.7	1.3	-4474.2
284+00	62.5	160.2	84.0	374.2	342.6	1.0	5106.9	1.3	-4764.4
284+50	92.1	142.1	143.2	349.8	485.8	1.0	5456.8	1.3	-4971.0
285+00	131.3	139.4	206.9	325.7	692.6	1.0	5782.5	1.3	-5089.9
285+50	239.4	135.5	343.3	318.1	1035.9	1.0	6100.6	1.3	-5064.7
286+00	300.0	133.4	499.5	311.2	1535.4	1.0	6411.8	1.3	-4876.4
286+50	354.1	112.0	605.6	284.0	2141.0	1.0	6695.8	1.3	-4554.8
287+00	331.4	104.7	634.7	250.8	2775.8	1.0	6946.6	1.3	-4170.8
287+50	279.3	100.3	565.5	237.2	3341.2	1.0	7183.8	1.3	-3842.5
288+00	291.8	86.7	528.8	216.5	3870.1	1.0	7400.3	1.3	-3530.2
288+50	284.6	73.0	533.7	184.8	4403.8	1.0	7585.1	1.3	-3181.3
289+00	357.9	53.9	594.9	146.9	4998.6	1.0	7731.9	1.3	-2733.3
289+50	481.4	36.8	777.1	105.0	5775.7	1.0	7836.9	1.3	-2061.2
290+00	475.5	24.5	886.0	70.9	6661.7	1.0	7907.8	1.3	-1246.1
290+50	457.6	0.0	863.9	28.3	7525.6	1.0	7936.2	1.3	-410.6
291+00	490.8	0.0	878.1	0.0	8403.7	1.0	7936.2	1.3	467.5
291+50	489.4	0.0	907.6	0.0	9311.3	1.0	7936.2	1.3	1375.1
292+00	473.2	0.0	891.3	0.0	10202.6	1.0	7936.2	1.3	2266.4
292+50	711.4	0.0	1096.9	0.0	11299.5	1.0	7936.2	1.3	3363.3
293+00	1036.2	0.0	1618.2	0.0	12917.7	1.0	7936.2	1.3	4981.5
293+50	1270.4	0.0	2135.7	0.0	15053.4	1.0	7936.2	1.3	7117.2
294+00	905.4	0.0	2014.6	0.0	17068.0	1.0	7936.2	1.3	9131.9

28-OCT-93 17:27:33

AVERAGE END AREA VOLUMES

MODEL FILE : X:TAPER.END

STATION	END-AREA		VOLUME INCREMENTAL		VOLUME CUMULATIVE				MASS HAUL
	CUT	FILL	CUT	FILL	CUT	FAC	FILL	FAC	
1270+00	16.4	12.6							
1271+00	18.5	6.4	64.6	43.8	64.6	1.0	43.8	1.3	20.8
1272+00	22.0	37.9	75.0	102.5	139.6	1.0	146.3	1.3	-6.7
1273+00	12.6	53.7	64.1	212.1	203.7	1.0	358.3	1.3	-154.7
1274+00	25.2	4.0	70.0	133.5	273.7	1.0	491.9	1.3	-218.2
1275+00	20.7	72.6	84.9	177.4	358.6	1.0	669.2	1.3	-310.6
1276+00	15.4	103.0	66.7	406.5	425.4	1.0	1075.8	1.3	-650.4
1277+00	11.7	133.3	50.2	547.0	475.5	1.0	1622.8	1.3	-1147.2
1278+00	11.9	169.2	43.7	700.3	519.2	1.0	2323.1	1.3	-1803.8



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AVERAGE END AREA VOLUMES

MODEL FILE : X:TRKEDIT.END

STATION	END-AREA		VOLUME INCREMENTAL		VOLUME CUMULATIVE				MASS HAUL
	CUT	FILL	CUT	FILL	CUT	FAC	FILL	FAC	
294+00	905.4	0.0							
295+00	0.0	246.6	1676.7	570.9	1676.7	1.0	570.9	1.3	1105.8
295+50	0.0	522.6	0.0	890.3	1676.7	1.0	1461.2	1.3	215.5
296+00	0.0	534.6	0.0	1223.7	1676.7	1.0	2684.9	1.3	-1008.1
296+50	6.8	554.9	6.3	1261.0	1683.1	1.0	3945.9	1.3	-2262.8
297+00	32.3	425.7	36.2	1134.9	1719.3	1.0	5080.8	1.3	-3361.5
297+50	39.4	361.2	66.3	910.7	1785.6	1.0	5991.5	1.3	-4205.9
298+00	3.8	298.3	40.0	763.3	1825.6	1.0	6754.8	1.3	-4929.2
298+50	6.1	260.5	9.2	646.8	1834.8	1.0	7401.6	1.3	-5566.8
299+00	6.3	250.6	11.5	591.6	1846.3	1.0	7993.2	1.3	-6146.9
299+50	5.5	280.4	11.0	614.7	1857.3	1.0	8607.9	1.3	-6750.6
300+00	3.5	291.5	8.4	662.0	1865.7	1.0	9269.9	1.3	-7404.2
300+50	3.3	263.2	6.3	642.1	1872.0	1.0	9911.9	1.3	-8039.9
301+00	0.0	220.5	3.1	559.8	1875.1	1.0	10471.8	1.3	-8596.7
301+50	0.0	151.6	0.0	430.6	1875.1	1.0	10902.4	1.3	-9027.3
302+00	0.1	37.4	0.1	218.8	1875.1	1.0	11121.2	1.3	-9246.0

01-NOV-93 15:20:45

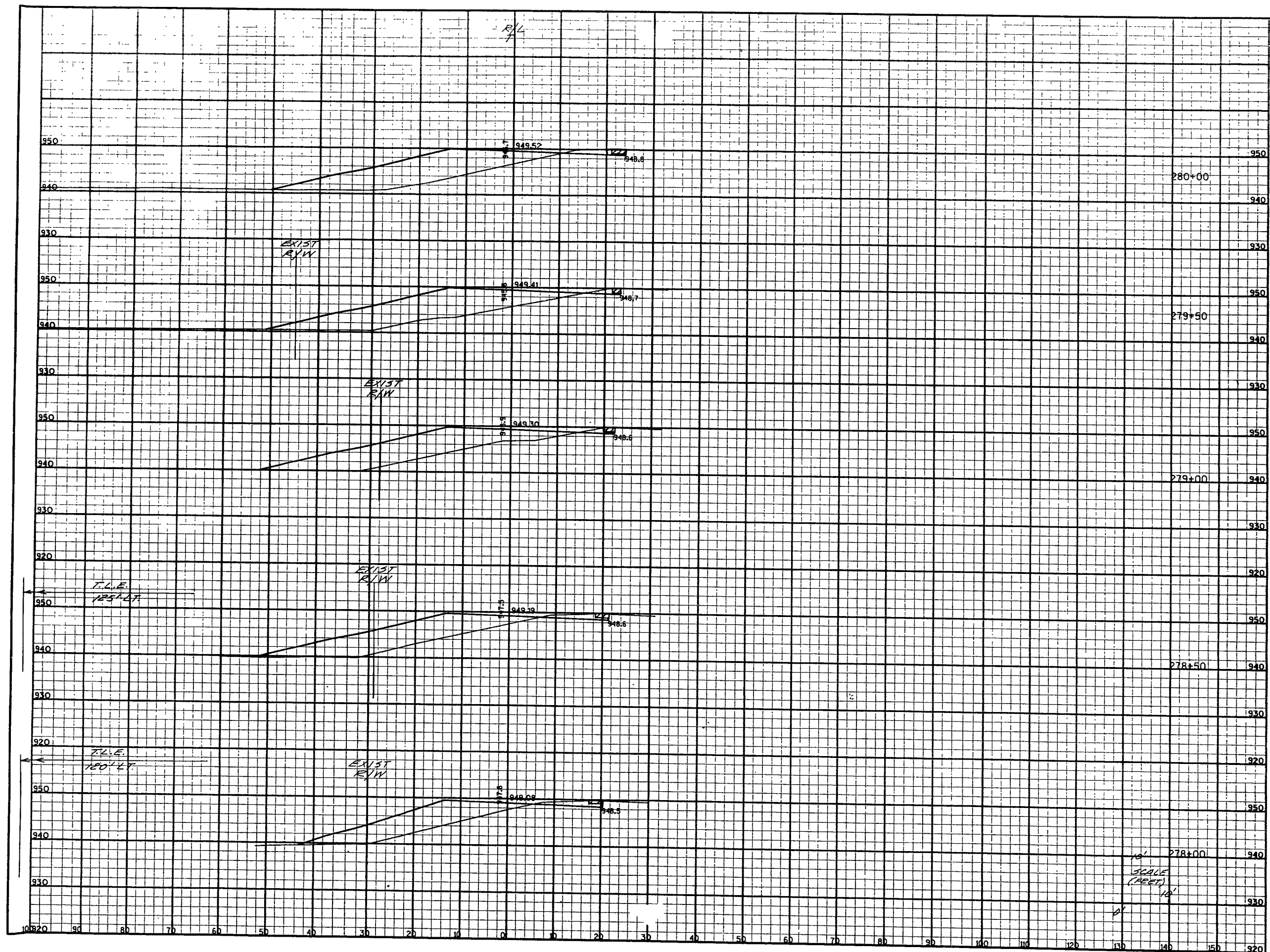
AVERAGE END AREA VOLUMES

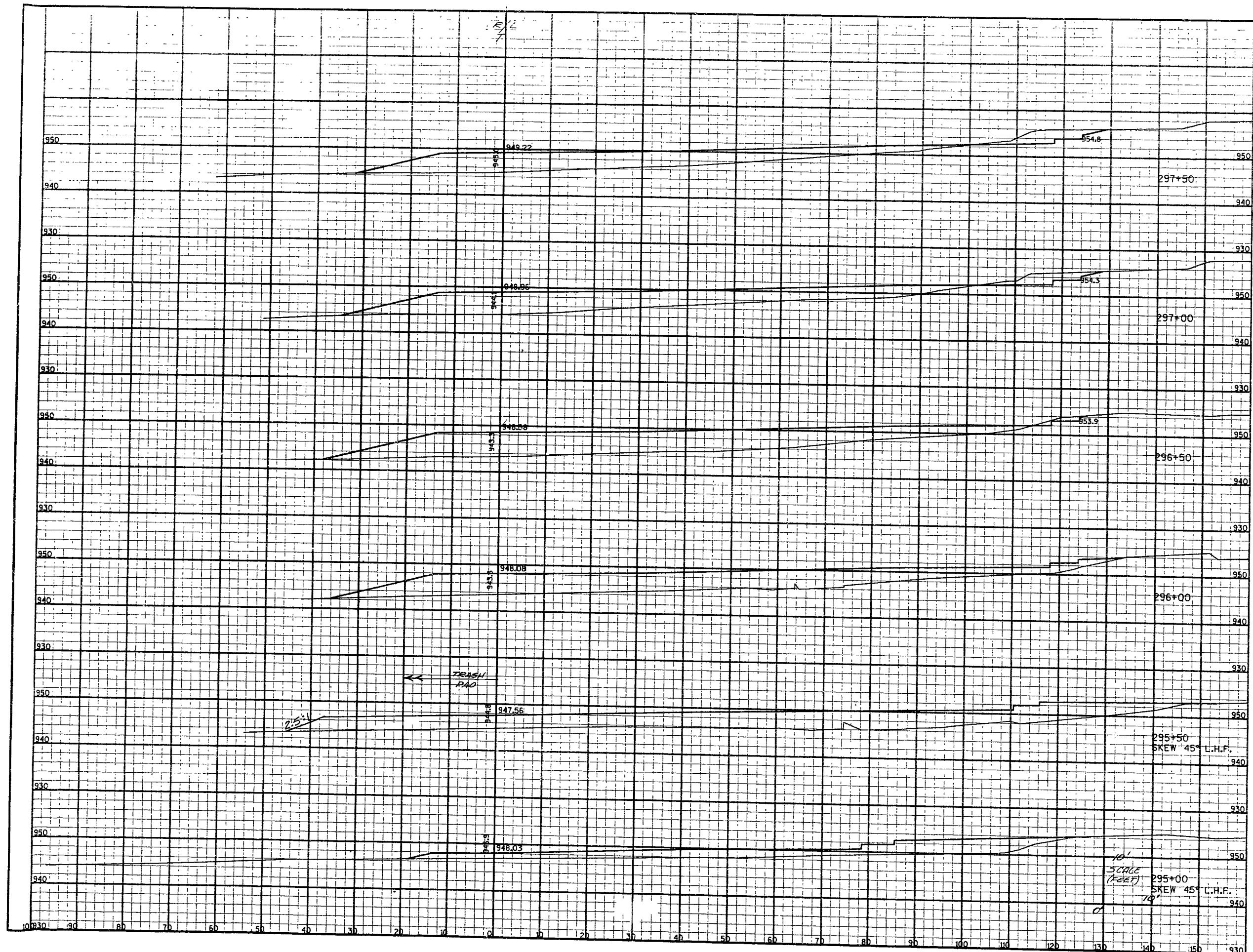
MODEL FILE : X:TRKEDIT.END

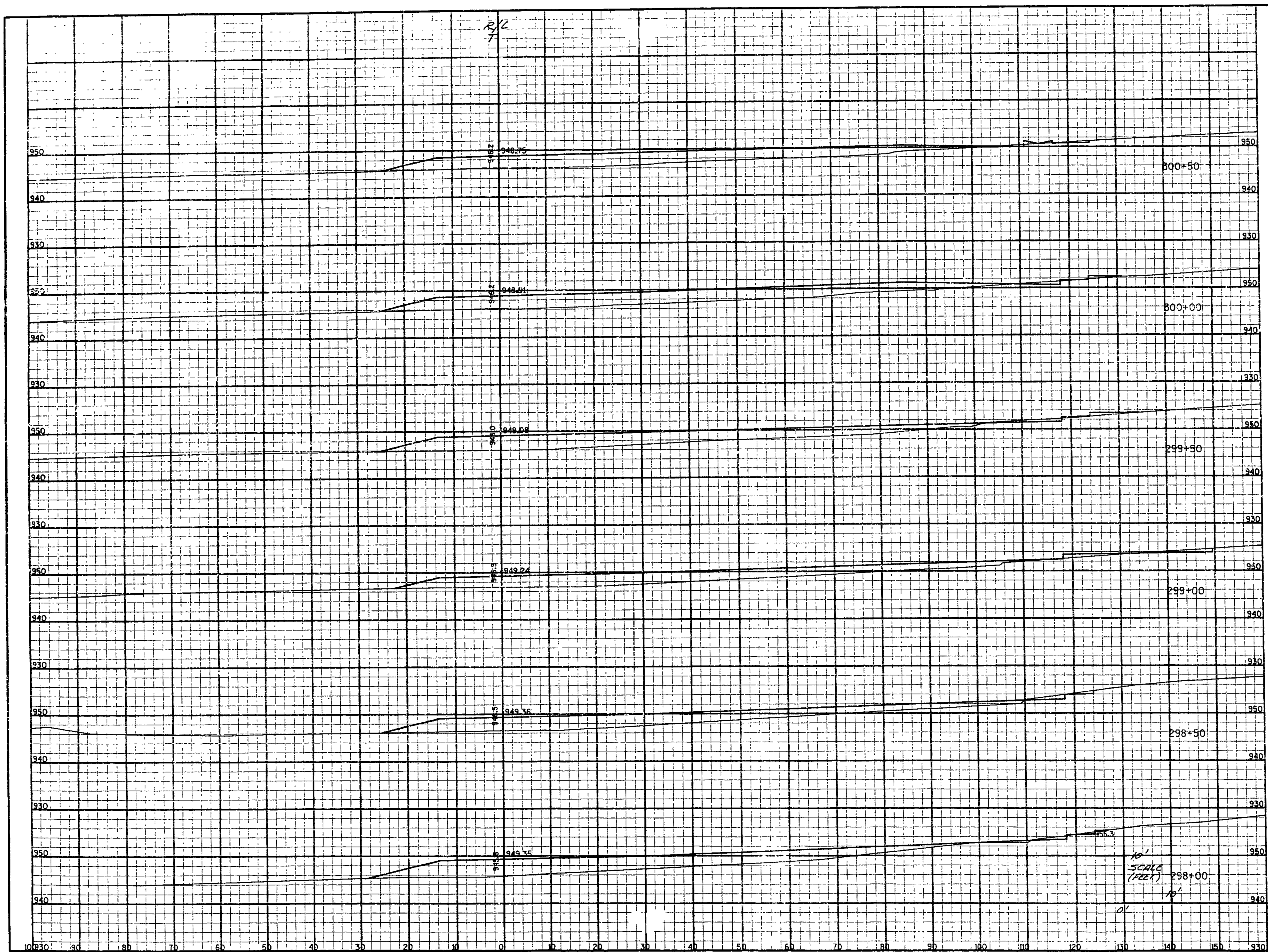
STATION	END-AREA		VOLUME INCREMENTAL		VOLUME CUMULATIVE				MASS HAUL
	CUT	FILL	CUT	FILL	CUT	FAC	FILL	FAC	
302+00	0.1	37.4							
302+50	21.4	1.0	19.9	44.5	19.9	1.0	44.5	1.3	-24.6
303+00	72.2	0.0	86.7	1.2	106.6	1.0	45.6	1.3	61.0
303+50	141.3	0.0	197.7	0.0	304.3	1.0	45.6	1.3	258.7
304+00	87.9	0.0	212.2	0.0	516.5	1.0	45.6	1.3	470.8
304+50	39.4	0.0	117.9	0.0	634.4	1.0	45.6	1.3	588.7
305+00	18.5	14.1	53.6	16.3	688.0	1.0	61.9	1.3	626.0
305+50	13.0	113.8	29.2	148.0	717.1	1.0	209.9	1.3	507.2
306+00	0.4	219.5	12.4	385.7	729.6	1.0	595.6	1.3	133.9
306+50	0.0	352.3	0.4	661.8	729.9	1.0	1257.4	1.3	-527.5
307+00	0.0	358.0	0.0	822.1	729.9	1.0	2079.5	1.3	-1349.6
307+50	0.0	374.1	0.0	847.4	729.9	1.0	2926.9	1.3	-2196.9
308+00	0.0	337.1	0.0	823.2	729.9	1.0	3750.1	1.3	-3020.1
308+50	0.0	403.7	0.0	857.5	729.9	1.0	4607.5	1.3	-3877.6
309+00	0.0	361.3	0.0	885.5	729.9	1.0	5493.0	1.3	-4763.1
309+50	0.0	315.4	0.0	783.3	729.9	1.0	6276.3	1.3	-5546.4
310+00	0.0	262.7	0.0	669.1	729.9	1.0	6945.5	1.3	-6215.5
310+50	3.3	82.3	3.0	399.3	733.0	1.0	7344.7	1.3	-6611.8
311+00	8.1	172.5	10.5	294.9	743.4	1.0	7639.7	1.3	-6896.2
311+50	10.7	231.5	17.4	467.7	760.9	1.0	8107.4	1.3	-7346.5
312+00	10.2	133.6	19.4	422.6	780.3	1.0	8530.0	1.3	-7749.7
312+50	12.9	112.2	21.4	284.5	801.7	1.0	8814.5	1.3	-8012.8
313+00	16.1	79.7	26.8	222.1	828.6	1.0	9036.6	1.3	-8208.0
313+50	11.2	60.7	25.2	162.5	853.8	1.0	9199.1	1.3	-8345.3
314+00	8.7	39.8	18.4	116.3	872.2	1.0	9315.4	1.3	-8443.2
314+50	7.9	20.9	15.3	70.2	887.5	1.0	9385.6	1.3	-8498.1
315+00	9.0	3.5	15.7	28.3	903.1	1.0	9413.8	1.3	-8510.7

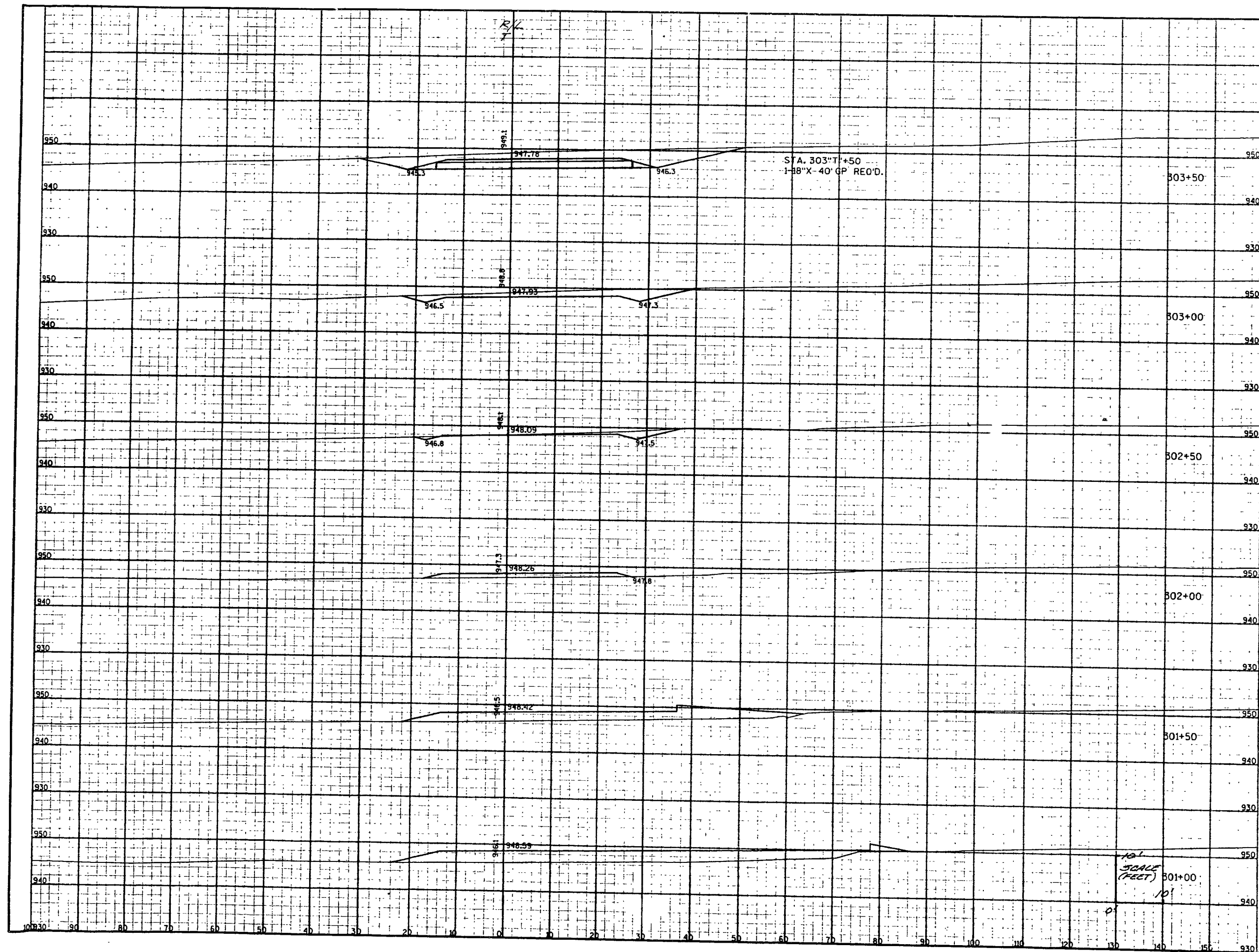
1104-05-71

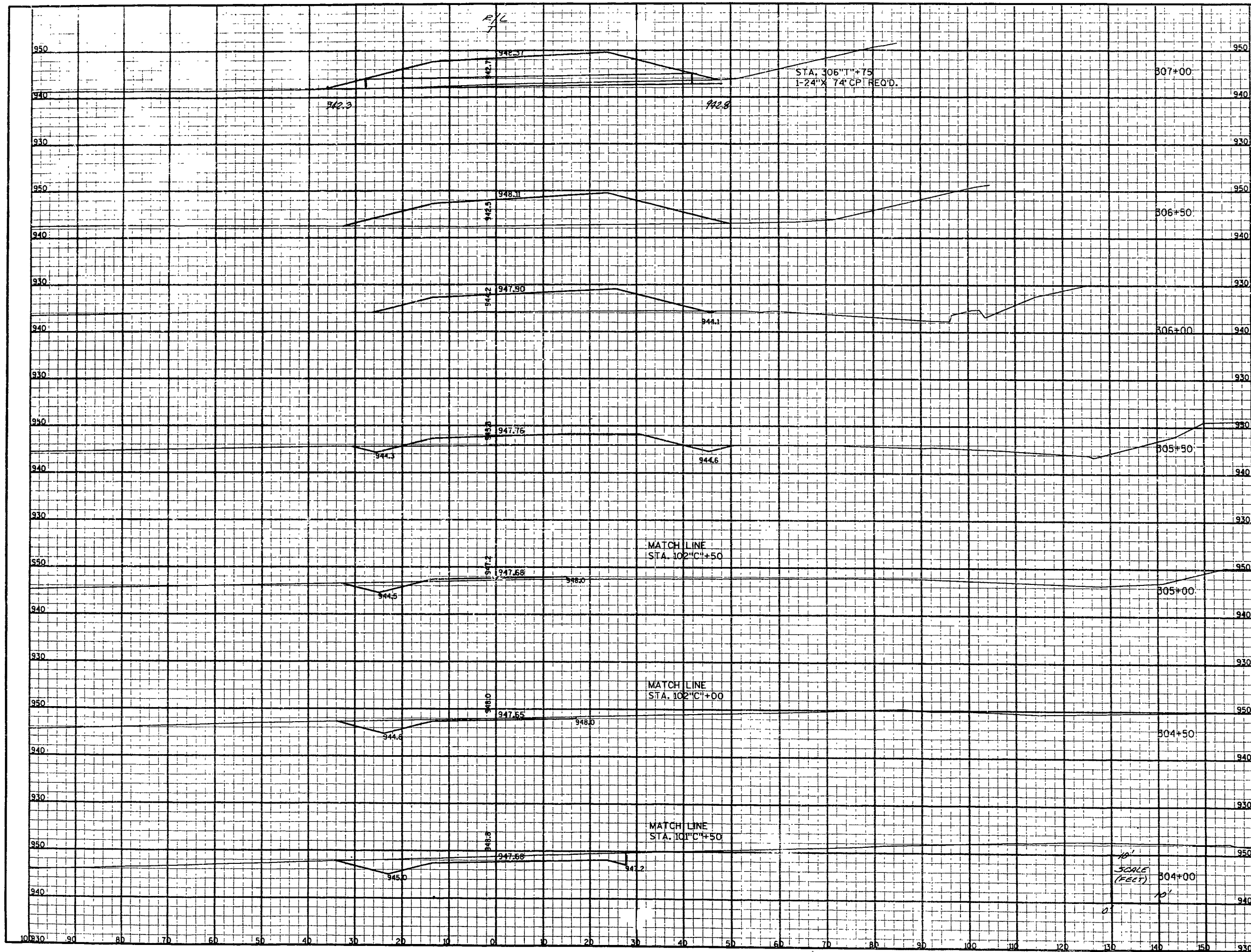
9.1

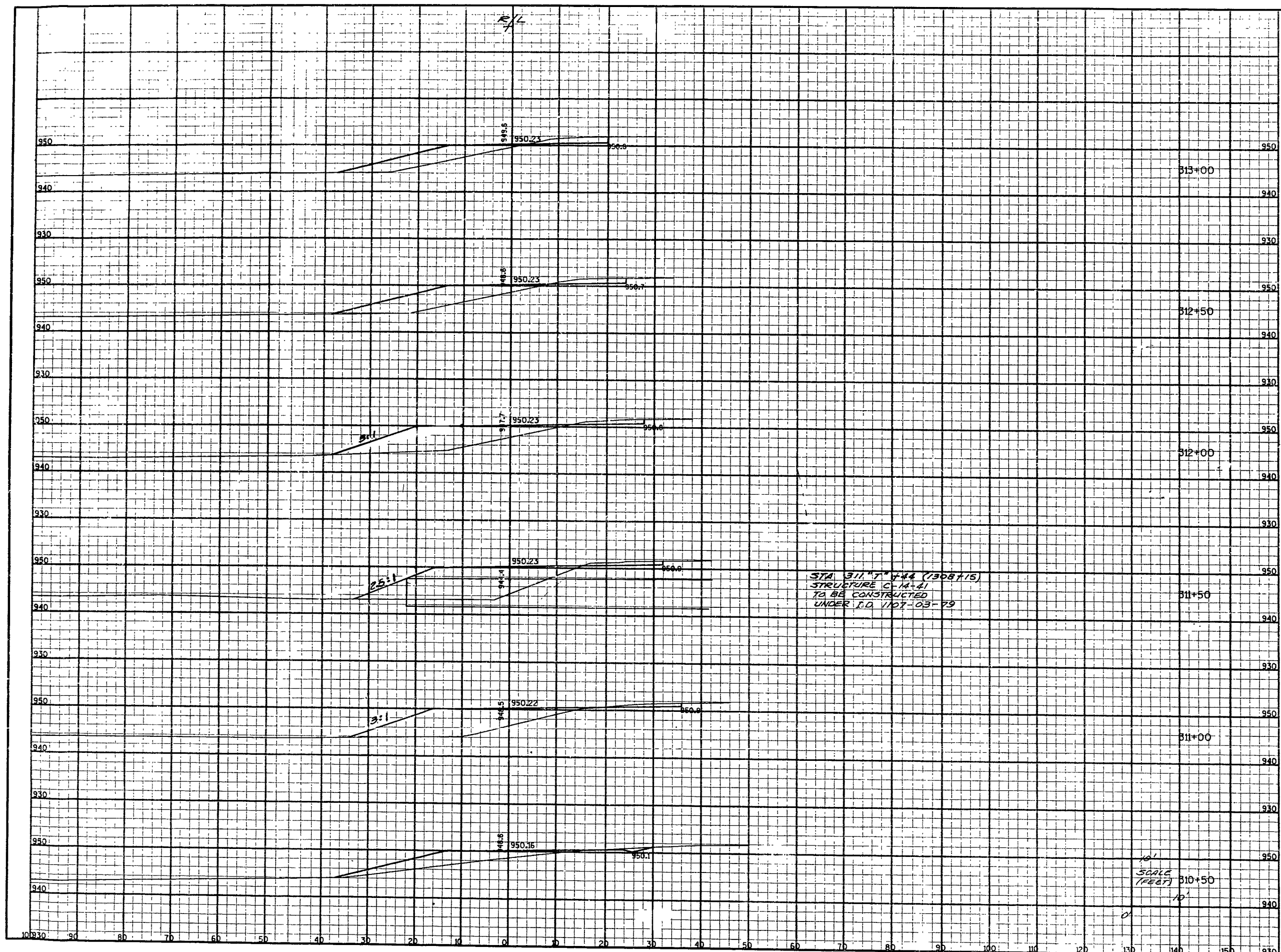
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