DIST 2

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
2781-00-60		

Jun 04

ORDER OF SHEETS

TOTAL SHEETS = 50

PROJECT ID: 2781-00-60 WITH: N/A

DESIGN ID 2781-00-30

COUNTY: WAUKESHA

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STATE HIGHWAY REHABILITATION - MAINTENANCE PROJECT

WATERFORD AVENUE

SOUTH COUNTY LINE TO HENNEBERRY AVENUE

STH 164

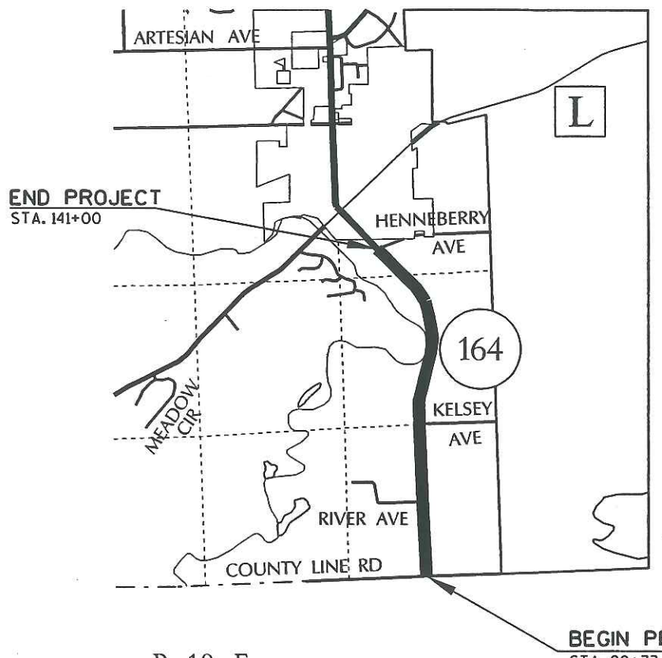
WAUKESHA COUNTY

AS-BUILT PLAN

Prime Contractor : Payne + Dolan, Inc.

Subcontractors : Century Fence
Con-Cor
Safemark
The Kuehne Co.

STATE PROJECT NUMBER
2781-00-60



Start Date : 7 Sep 04

Work Completed : 5 Oct 04

DESIGN DESIGNATION

A.D.T.	=	7,300	(2004)
A.D.T.	=	11,700	(2024)
D.H.V.	=	7.2%	
D.D.	=	62/38	
T.	=	9%	
DESIGN SPEED	=	60 MPH	
ESALS	=	5,389,371	

CONVENTIONAL SYMBOLS

PLAN

- CORPORATE LIMITS
- PROPERTY LINE
- LOT LINE
- LIMITED HIGHWAY EASEMENT
- EXISTING RIGHT OF WAY
- PROPOSED OR NEW R/W LINE
- SLOPE INTERCEPT
- REFERENCE LINE
- EXISTING CULVERT
- PROPOSED CULVERT (Box or Pipe)
- COMBUSTIBLE FLUIDS (CAUTION)
- MARSH AREA
- WOODED OR SHRUB AREA

PROFILE

- GRADE LINE
- ORIGINAL GROUND
- MARSH OR ROCK PROFILE (To be noted as such) (ROCK)
- SPECIAL DITCH (LABEL)
- GRADE ELEVATION (95.36)
- CULVERT (Profile View)

UTILITIES

- ELECTRIC (E)
- FIBER OPTIC (FO)
- GAS (G)
- SANITARY SEWER (SAN)
- STORM SEWER (SS)
- TELEPHONE (T)
- WATER (W)
- UTILITY PEDESTAL
- POWER POLE
- TELEPHONE POLE

LAYOUT
SCALE 0 0.5 MI.

TOTAL NET LENGTH OF CENTERLINE = 2.278 MI. RURAL

All coordinates on this plan are ground coordinates, (unless noted X, Y for grid) based on the Wisconsin State Plane Coordinate system (WSPCS) NAD 27 South Zone. To convert ground coordinates (N, E) to Grid Coordinates (X, Y), multiply ground coordinate by a combination factor of 0.999319 and add 2,000,000 to the X coordinate.
* Elevations show on this plan are referenced to the National Geodetic Vertical Datum of 1929 (NGVD 29)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	WAYNE HARTLING
Designer	SHARAD MOHOLKAR
Project Manager	SHARAD MOHOLKAR
District Examiner	PHIL BAIN
District Supervisor	DENNIS SKORY
C.O. Examiner	CARL BUJANOWSKI

APPROVED FOR DISTRICT OFFICE
DATE: 3/22/04 Sharad Moholkar
(Signature)

E

GENERAL NOTES

1. ITEMS SHOWN ON THE PLANS AND NOT INCLUDED IN THE ESTIMATE OF QUANTITIES ARE NOT PART OF THIS CONTRACT.
2. ASPHALTIC PRIVATE ENTRANCES SHALL BE SAW CUT AS REQUIRED TO PROVIDE A CLEAN BUTT JOINT.
3. MISCELLANEOUS REMOVAL ITEMS REQUIRING RESTORATION OF ASPHALTIC CONCRETE DRIVEWAYS OR SIDE STREETS SHALL BE REMOVED TO AN EXISTING JOINT OR SAWED AS DETERMINED BY THE FIELD ENGINEER.
4. THE CRUSHED AGGREGATE FOR SHOULDERS ADJACENT TO THE ASPHALTIC CONCRETE SHALL NOT BE PLACED UNTIL AFTER THE ASPHALTIC CONCRETE HAS BEEN PLACED.
5. PRIOR TO THE PLACEMENT OF STEEL PLATE BEAM GUARD, THE SHOULDERS SHALL BE IN PLACE, SHAPED AND COMPACTED UNLESS SHOWN OTHERWISE.
6. CONTRACTOR SHALL MAINTAIN ACCESS TO ALL DRIVEWAYS AT ALL TIMES.
7. THERE WILL BE 2 1/2 INCHES OF HMA PAVEMENT, TYPE E-10, OVERLAY.

STANDARD DETAIL DRAWINGS

08D4-3	CONCRETE SURFACE DRAIN & ASPHALTIC FLUME
8E8-3	TYPICAL INSTALLATIONS OF EROSION BALES/TEMPORARY DITCH CHECKS
8E9-5	SILT FENCE
14B15-4A, B	STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATION & ELEMENTS
14B18-4A	STEEL PLATE BEAM GUARD, CLASS "A" (AT BRIDGES, OBSTACLES AND SIDEROADS/DRIVEWAYS)
14B24-4A	STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL
14B24-4B	STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL
14B24-4C	STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL
15C4-1	TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 M.P.H. OR GREATER TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC
15C8-9A	PAVEMENT MARKING (MAINLINE)
15C8-9B	PAVEMENT MARKING (INTERSECTIONS)
15C12-2	TRAFFIC CONTROL FOR LANE CLOSURE (SUITABLE FOR MOVING OPERATIONS)

UTILITIES

MR. CARL LEMMER, PROJECT MANAGER
WE ENERGIES (ELECTRIC)
333 W EVERETT ST. - A279
MILWAUKEE WI 53203
PHONE: (262) 544-7248
FAX: (262) 544-7341

MR. CARL LEMMER, PROJECT MANAGER
WE ENERGIES (GAS)
333 W EVERETT ST. - A279
MILWAUKEE WI 53203
PHONE: (262) 544-7248
FAX: (262) 544-7341

MR. KEVIN ANDERSON, AREA MANAGER
DESIGN ENGINEER, SBC
2005 PEWAUKEE ROAD
WAUKESHA, WI 53186
PHONE: (262) 896-7440
FAX: (262) 896-7435

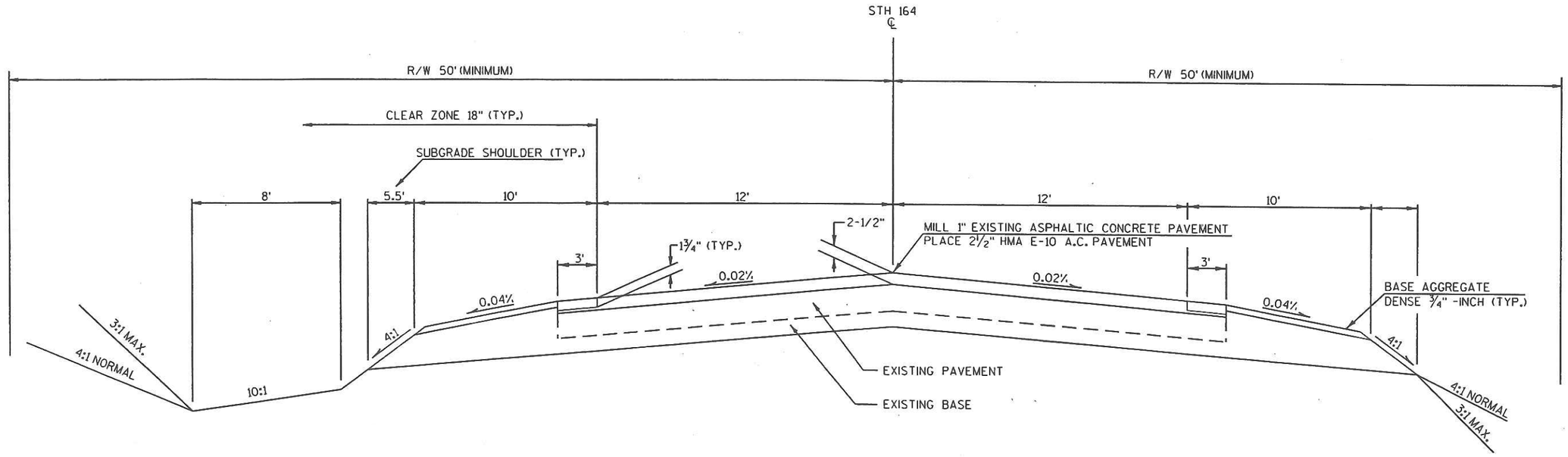
OTHER CONTACT

WISCONSIN DEPARTMENT OF NATURAL RESOURCES
ATTN: MAUREEN MILLMAN
ENVIRONMENTAL COORDINATOR, SOUTHEAST REGION
2300 N. MARTIN LUTHER KING DRIVE
MILWAUKEE, WI 53212
414-263-8613

DIGGERS HOTLINE
Toll Free (800) 242-8511
Milwaukee Area (414) 259-1181
Hearing Impaired TDD (800) 542-2289
www.DiggersHotline.com

STATE PROJECT NO: 2781-00-60	HWY: STH 164	COUNTY: WAUKESHA	GENERAL NOTES	SHEET NO: 2	E

FILE NAME : _____ PLOT DATE : _____ PLOT BY : _____ PLOT NAME : _____ ORG DATE : _____ ORIGINATOR : DIST _ PLOT SCALE : 1:1



TYPICAL SECTION

STA. 20+73 TO STA. 141+00

SUPER ELEVATED SECTION

THIS DATA IS FOR INFORMATIONAL PURPOSE ONLY, CONTRACTOR TO VERIFY AND MATCH EXISTING SUPER ELEVATION

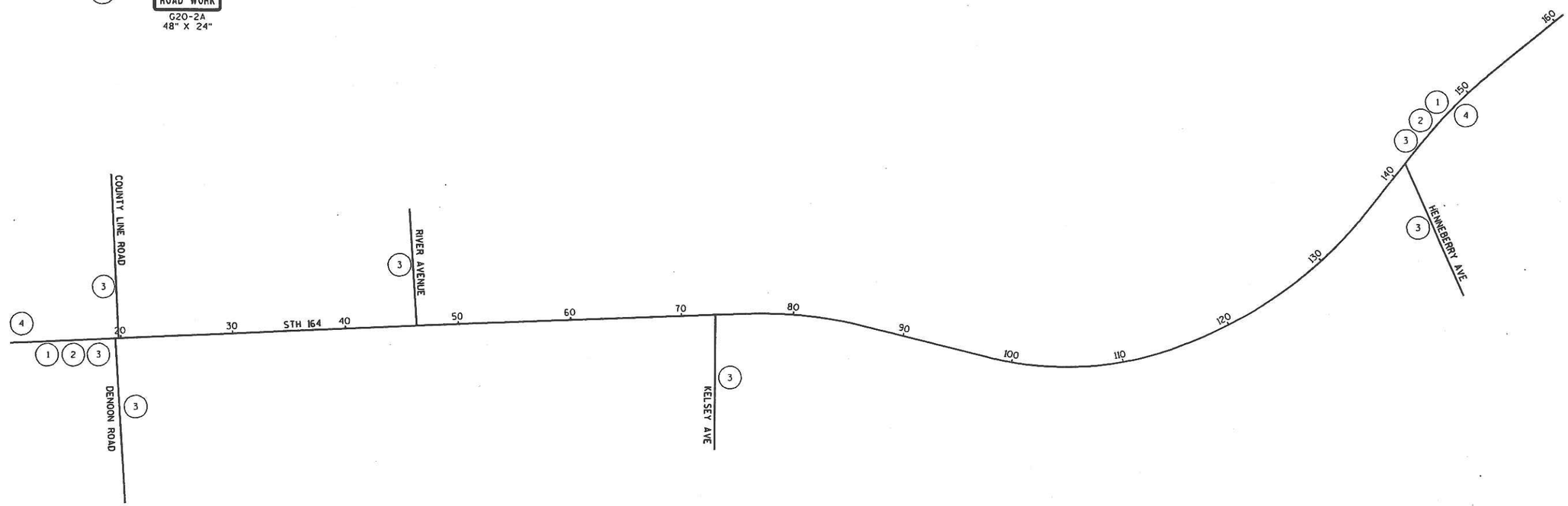
	RATE OF SUPER ELEVATION	SUBGRADE SHOULDER WIDTH
PC STA. 75+73.75 TO PT STA. 86+33.38	0.04'/FT	7.3'
PC STA. 97+90.47 TO PT STA. 114+66.55	0.05'/FT	7.7'
PC STA. 114+66.65 TO PT 135+95.48	0.04'/FT	7.3'

PROJECT NO: 2781-00-60	HWY: STH 164	COUNTY: WAUKESHA	TYPICAL	SCALE, FEET 0	SHEET NO: 3	E

FILE NAME : \\wke31fp1\cadds\projects\D2_278100164\020301_TS.dgn
PLOT DATE : 15-MAR-2004 15:59
PLOT BY : DOTMLL
PLOT NAME :
PLOT SCALE : 200:1
WISDOT/CADDS SHEET 42

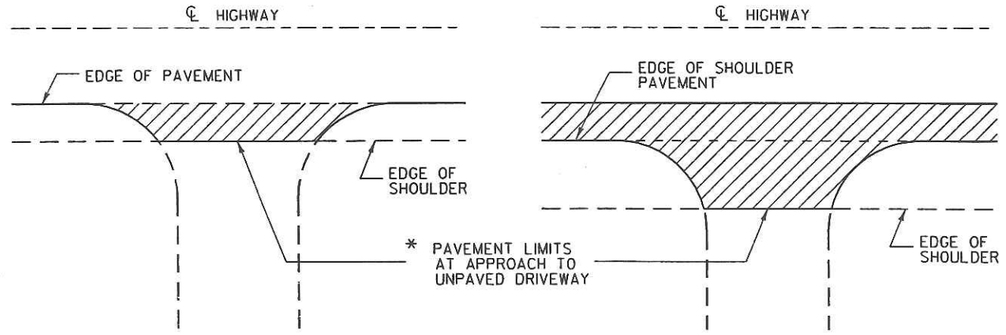
2

1. ROAD WORK 1/2 MILE W20-1
2. ROAD WORK 1500 FT W20-1
3. ROAD WORK AHEAD W20-1
4. END ROAD WORK G20-2A 48" X 24"



PROJECT NO: 2781-00-60	HWY: STH 164	COUNTY: WAUKESHA	TRAFFIC CONTROL	SHEET 4	E

FILE NAME : \\WKE31FP1\CADDS\projects\D2_278100164\025001_tc.dgn PLOT DATE : 14-APR-2004 09:51 PLOT BY : DOTR3H PLOT NAME : PLOT SCALE : 1000:1



* WHERE DRIVEWAY IS PAVED, APPROACH PAVEMENT SHOULD BE EXTENDED TO MATCH DRIVEWAY PAVEMENT.

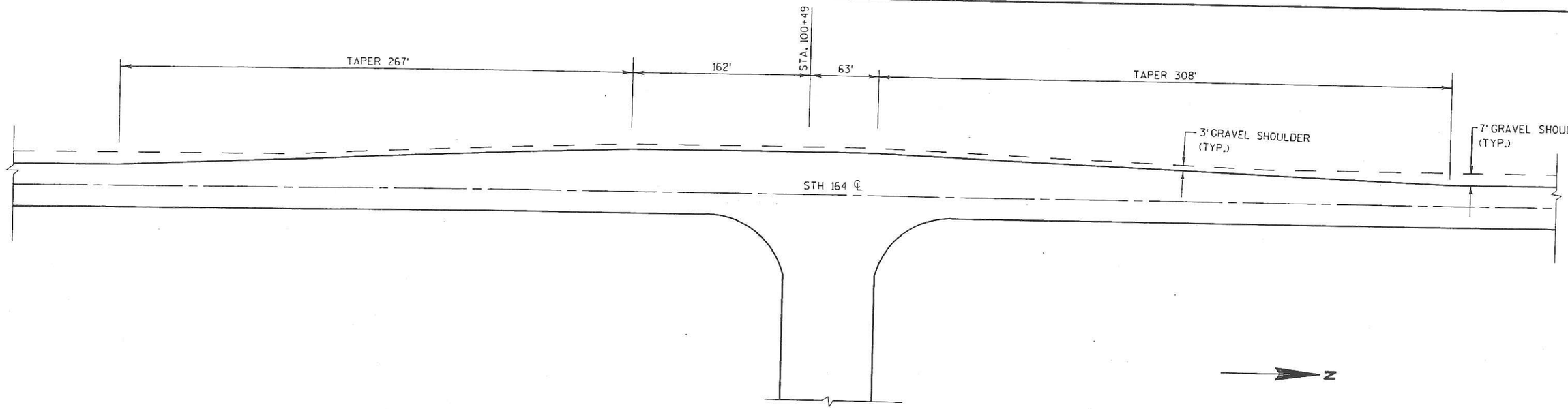
PLAN VIEW

PLAN VIEW
(PAVED SHOULDER ON SHIGHWAY)

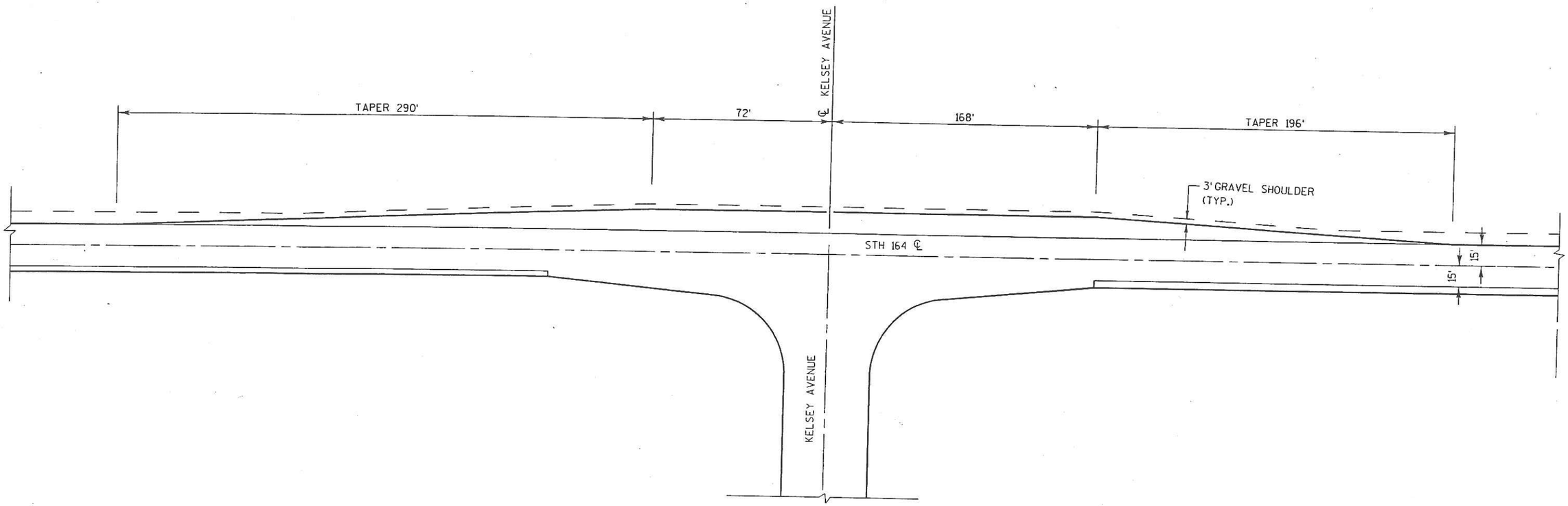
RURAL DRIVEWAY INTERSECTION DETAIL

PROJECT NO: 2781-00-60	HWY: STH 164	COUNTY: WAUKESHA	DRIVEWAY DETAIL	SHEET 5	E

2



BYPASS LANE AT STA. 100+49

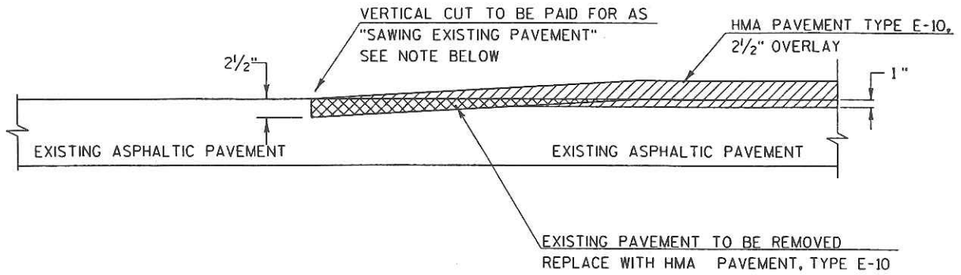


BYPASS LANE AT KELSEY AVENUE

PROJECT NO: 2781-00-60	HWY: STH 164	COUNTY: WAUKESHA	BYPASS LANE	SHEET 6	E

FILE NAME : \\WKE31FP1\CADDS\projects\D2_278100164\021001_CD.dgn

PLOT DATE : 12-MAR-2004 13:22 PLOT BY : DOTR3H PLOT NAME : PLOT SCALE : 200:1

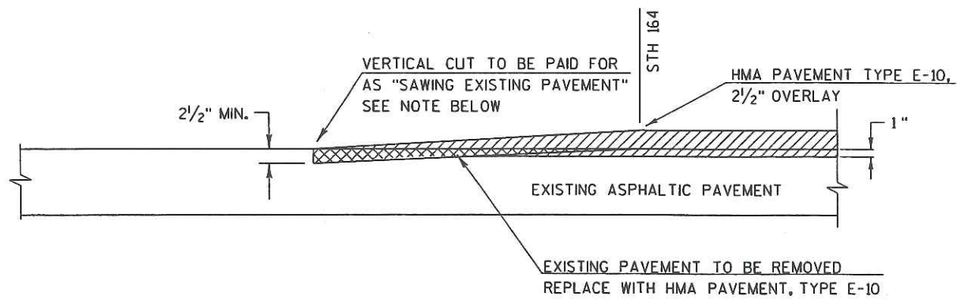


NOTE:

THE PORTION OF THE JOINT THAT VARIES IN MILLED DEPTH FROM 1" TO 2½" IS PAID FOR AS "REMOVING ASPHALTIC SURFACE, MILLING".

MILLING DETAIL

FROM STA. 20+73 TO STA. 21+73
FROM STA. 140+00 TO STA. 141+00

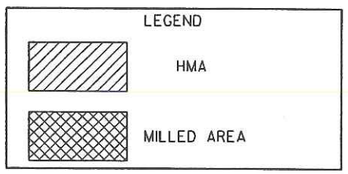


NOTE:

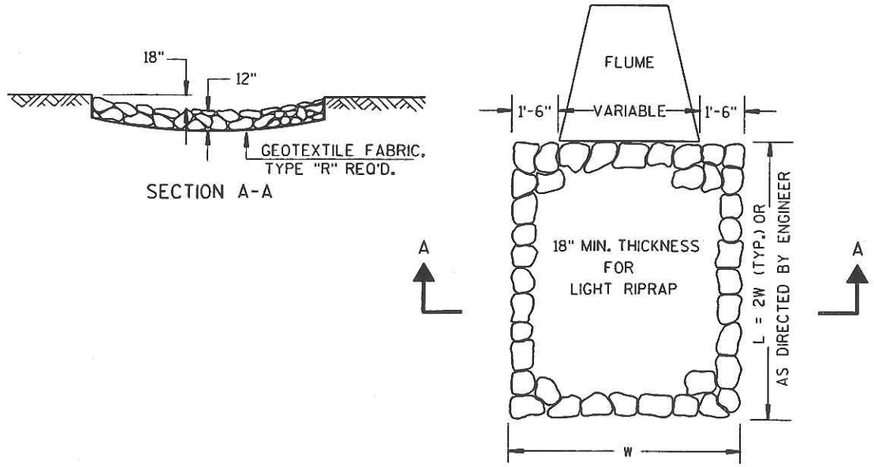
THE PORTION OF THE JOINT THAT VARIES IN MILLED DEPTH FROM 1" TO 2½" IS PAID FOR AS "REMOVING ASPHALTIC SURFACE, MILLING".

MILLING DETAIL

AT RIVER AVENUE 35'
AT KELSEY AVENUE 67'

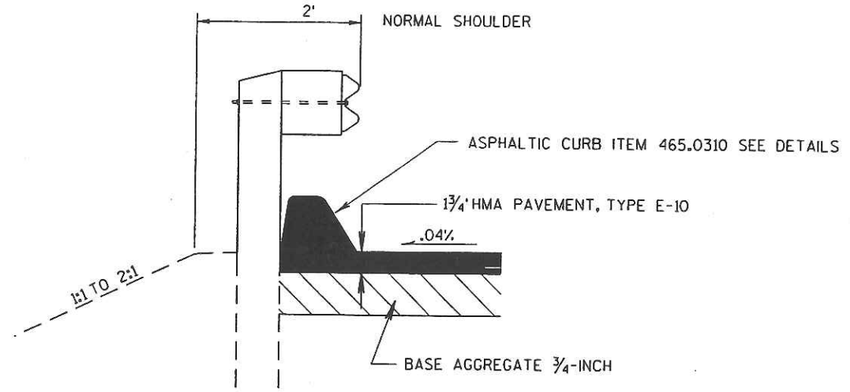


PROJECT NO: 2781-00-60	HWY: STH 164	COUNTY: WAUKESHA	CONSTRUCTION DETAIL	SHEET 7	E



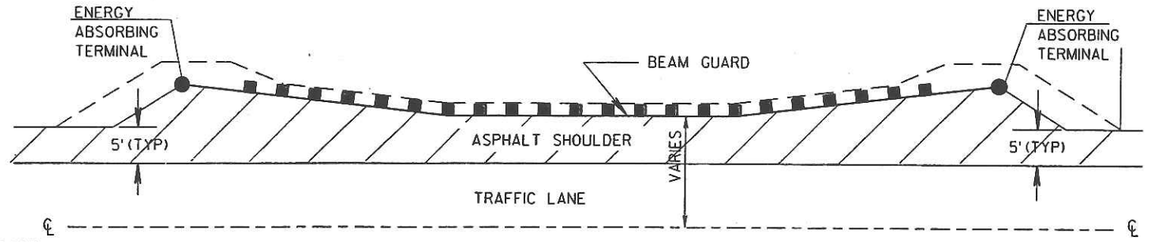
RIPRAP TREATMENT AT ASPHALTIC FLUMES

STA. 96+37, LT
STA. 104+27, LT



SHOULDER PAVING DETAIL AT GUARDRAIL

STA. 96+87 TO STA. 97+75 LT
STA. 103+50 TO STA. 105+57 LT
STA. 104+27 TO STA. 105+30 LT

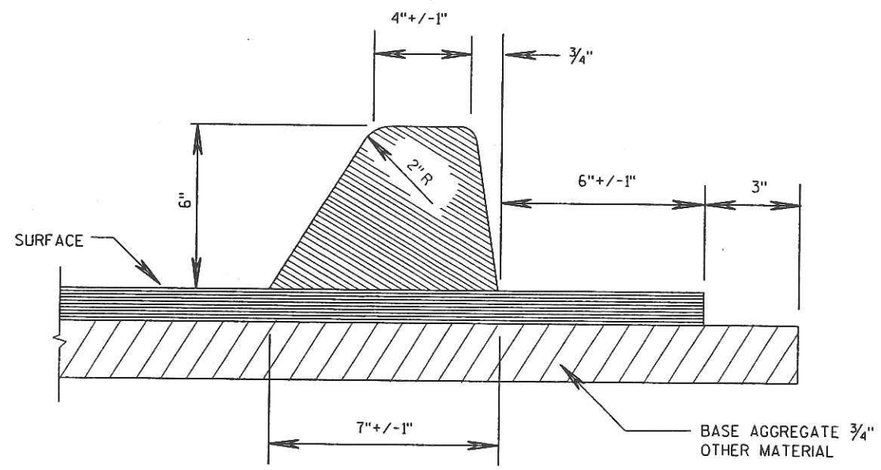


MARKER POST
STA. 96+87, LT
STA. 98+25, LT

SHOULDER PAVING AT BEAM GUARD

STA. 96+87 TO STA. 97+75, LT
STA. 104+27 TO STA. 105+30, LT

MARKER POST
STA. 103+77, LT
STA. 105+88, LT



ASPHALTIC CURB DETAIL

STA. 96+87 TO STA. 97+75
STA. 104+27 TO STA. 105+50, LT

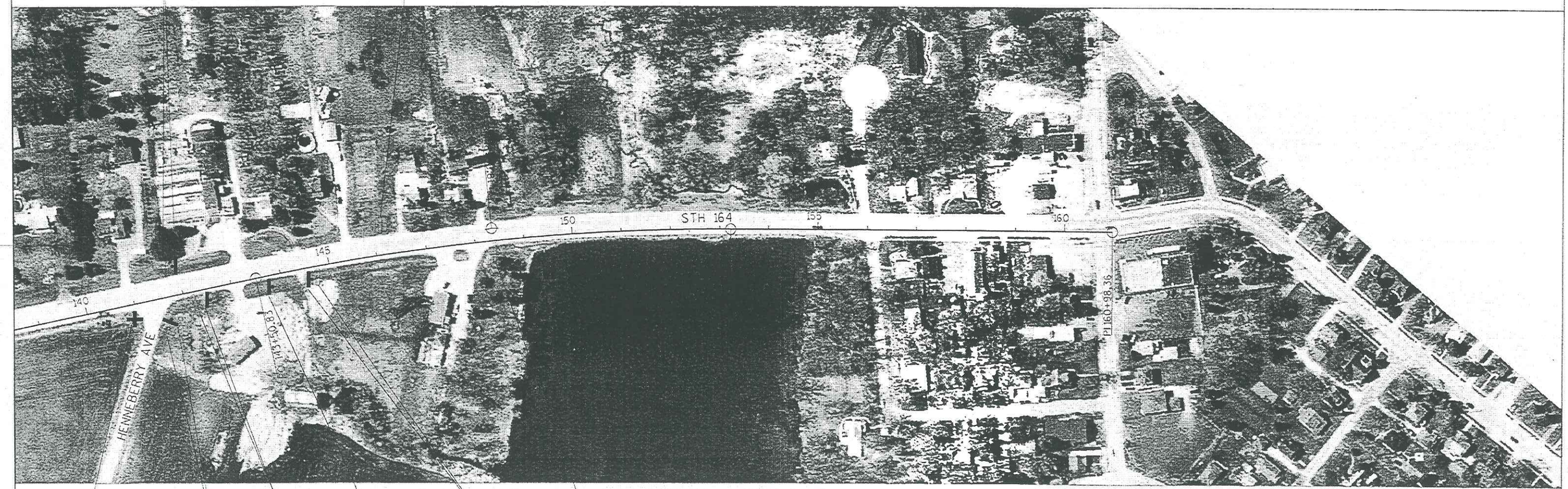
PROJECT NO: 2781-00-60	HWY: STH 164	COUNTY: WAUKESHA	CONSTRUCTION DETAIL	SHEET 8	E

2

LEGEND

- EXISTING SIGN MOUNTED ON POST(S)
- EXISTING SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
- PROPOSED SIGN MOUNTED ON POST(S)
- PROPOSED SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
- (XX) DENOTES SIGN NUMBER
- ESTR EXISTING SIGN TO REMAIN
- (X) INDICATES SIGN SIZE
- LOCAL STREET SIGN
- GRAYSHADE REPRESENTS EXISTING TO BE REMOVED

N



4 — SPEED LIMIT 55 — REMOVE / R2-1(2)

2 — SPEED LIMIT 35 — REMOVE

BIG BEND HENNEBERRY BEND — ESTR

7 — STOP — R1-1(2) — STOP — REMOVE

6 — SPEED LIMIT 35 — R2-1(3) — SPEED LIMIT 35 — REMOVE

NO ENGINE BRAKING EXCEIT IN EMERGENCY — ESTR

3 — Big Bend POPULATION 1,275 — I2-3 — Big Bend POPULATION 1,275 — REMOVE

1 — SPEED LIMIT 35 — REMOVE

NOTE:
NO PASSING ZONE PERMANENT SIGNS SHALL BE LOCATED AFTER PASSING ZONES HAVE BEEN ESTABLISHED (SIGN #8, 9, 10, 13, 19)

SHEET 1 OF 5

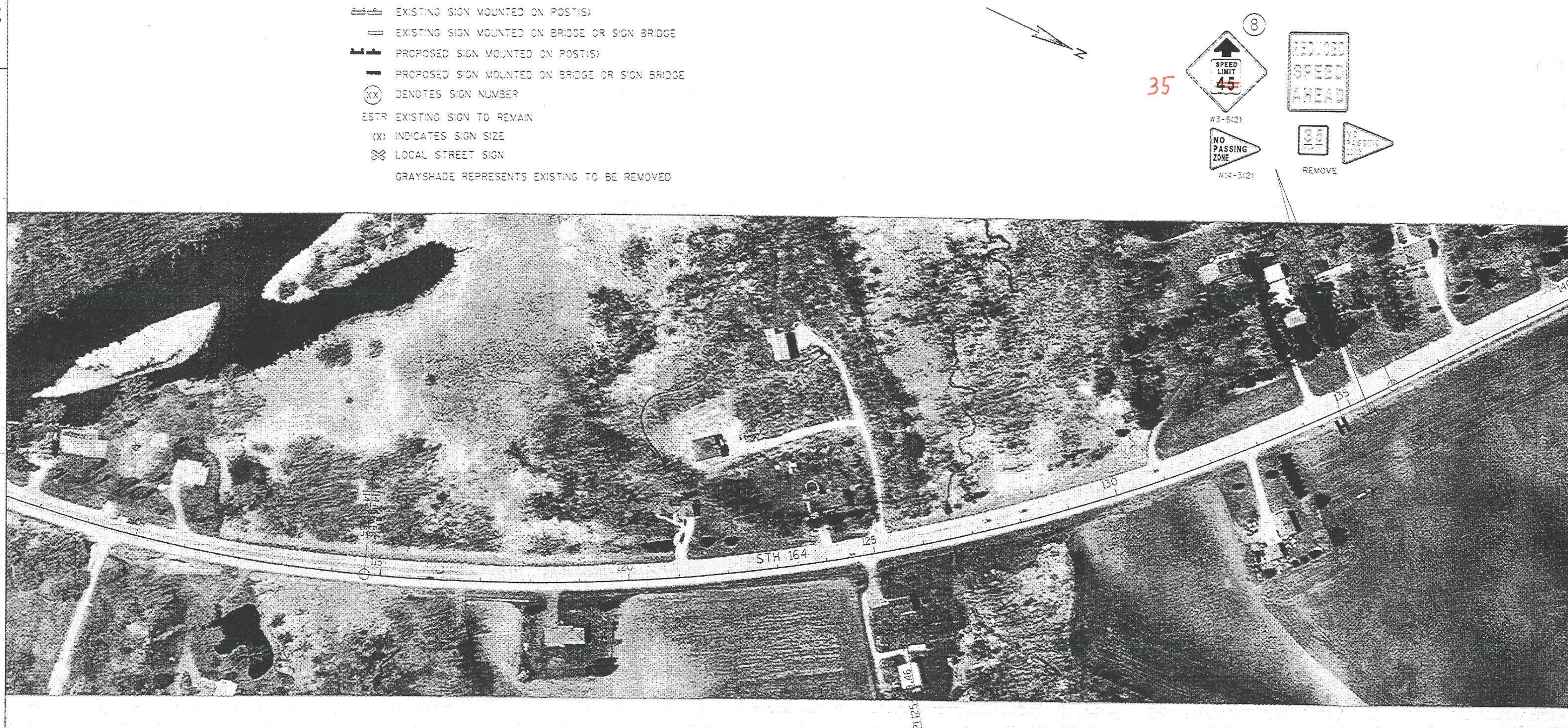
PROJECT NO: 2781-00-60	HWY: STH 164	COUNTY: WAUKESHA	PERMANENT SIGNING PLAN	SHEET 2 E

FILE NAME : ..... PLOT DATE : ..... PLOT BY : ..... PLOT NAME : ..... PLOT SCALE : .....

2

LEGEND

EXISTING SIGN MOUNTED ON POST(S)
EXISTING SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
PROPOSED SIGN MOUNTED ON POST(S)
PROPOSED SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
(XX) DENOTES SIGN NUMBER
ESTR EXISTING SIGN TO REMAIN
(X) INDICATES SIGN SIZE
LOCAL STREET SIGN
GRAYSHADE REPRESENTS EXISTING TO BE REMOVED



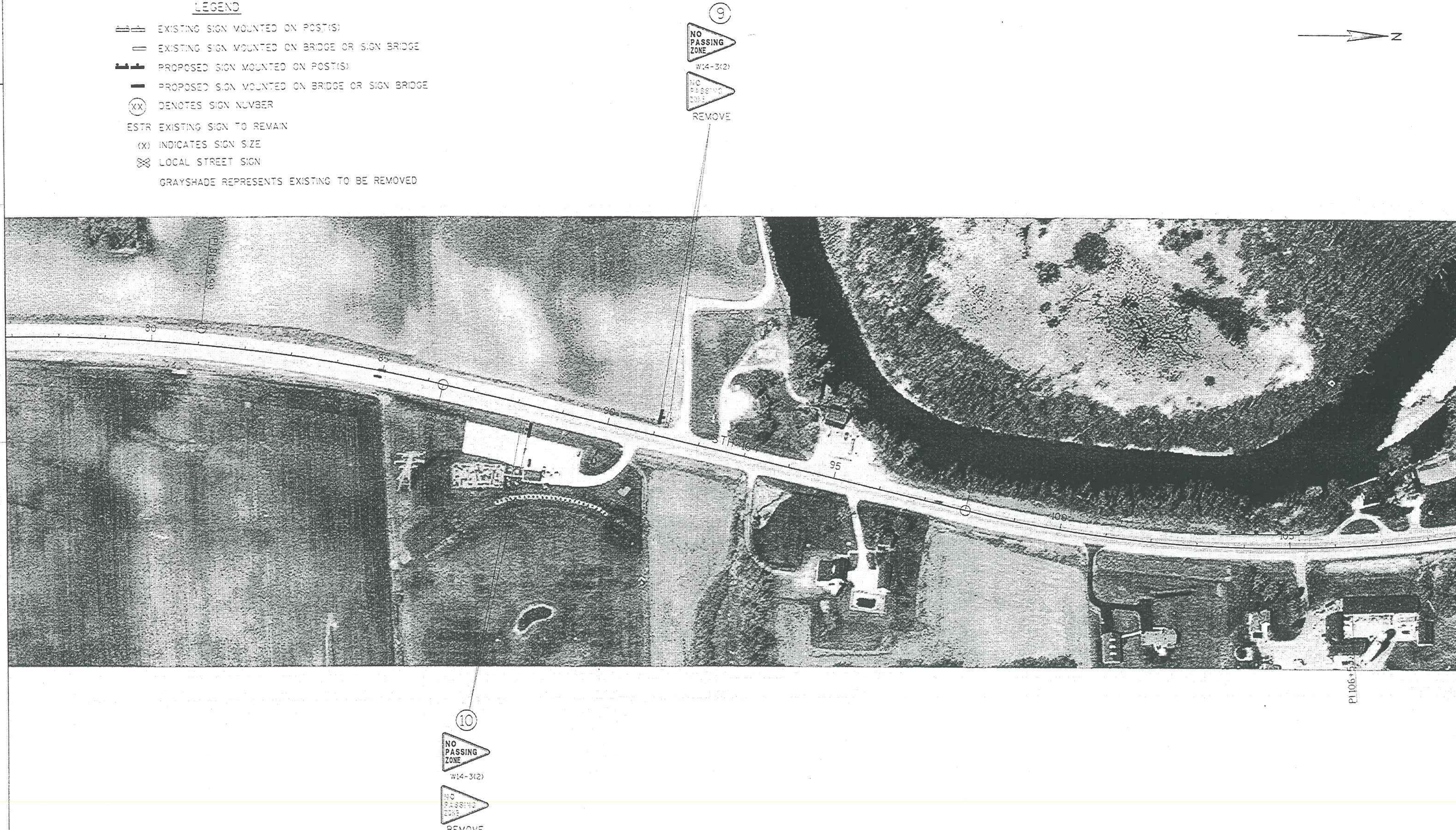
PROJECT NO: 2781-00-60	HWY: STH 164	COUNTY: WAUKESHA	PERMANENT SIGNING PLAN	SHEET 10	E

SHEET 2 OF 5

2

LEGEND

EXISTING SIGN MOUNTED ON POST(S)
EXISTING SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
PROPOSED SIGN MOUNTED ON POST(S)
PROPOSED SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
(XX) DENOTES SIGN NUMBER
ESTR EXISTING SIGN TO REMAIN
(X) INDICATES SIGN SIZE
LOCAL STREET SIGN
GRAYSHADE REPRESENTS EXISTING TO BE REMOVED



SHEET 3 OF 5

PROJECT NO: 2781-00-60	HWY: STH 164	COUNTY: WAUKESHA	PERMANENT SIGNING PLAN	SHEET 11	E

WISDOT/CADDS SHEET 42

2

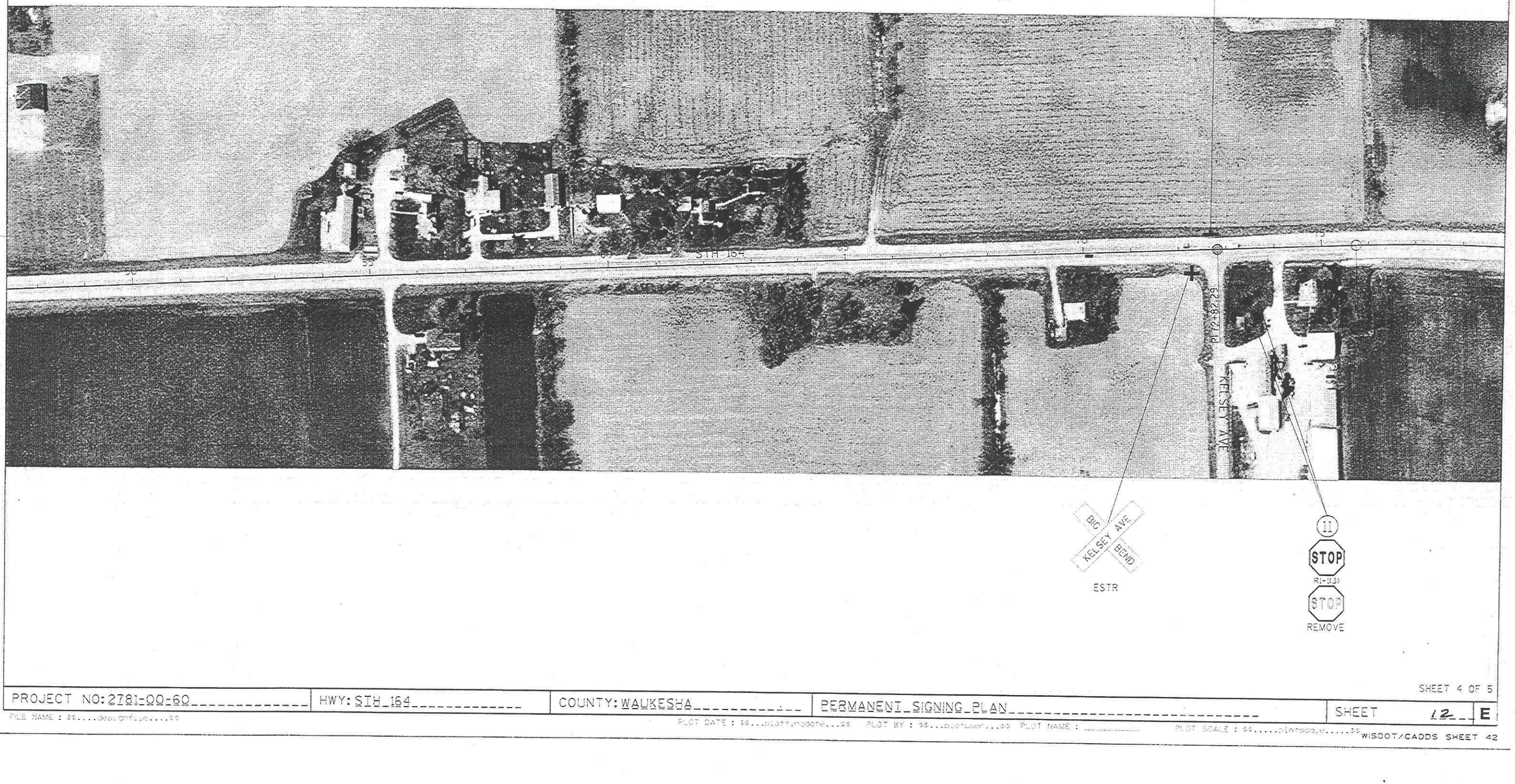
LEGEND

- EXISTING SIGN MOUNTED ON POST(S)
- EXISTING SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
- PROPOSED SIGN MOUNTED ON POST(S)
- PROPOSED SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
- (XX) DENOTES SIGN NUMBER
- ESTR EXISTING SIGN TO REMAIN
- (X) INDICATES SIGN SIZE
- LOCAL STREET SIGN
- GRAYSHADE REPRESENTS EXISTING TO BE REMOVED

N

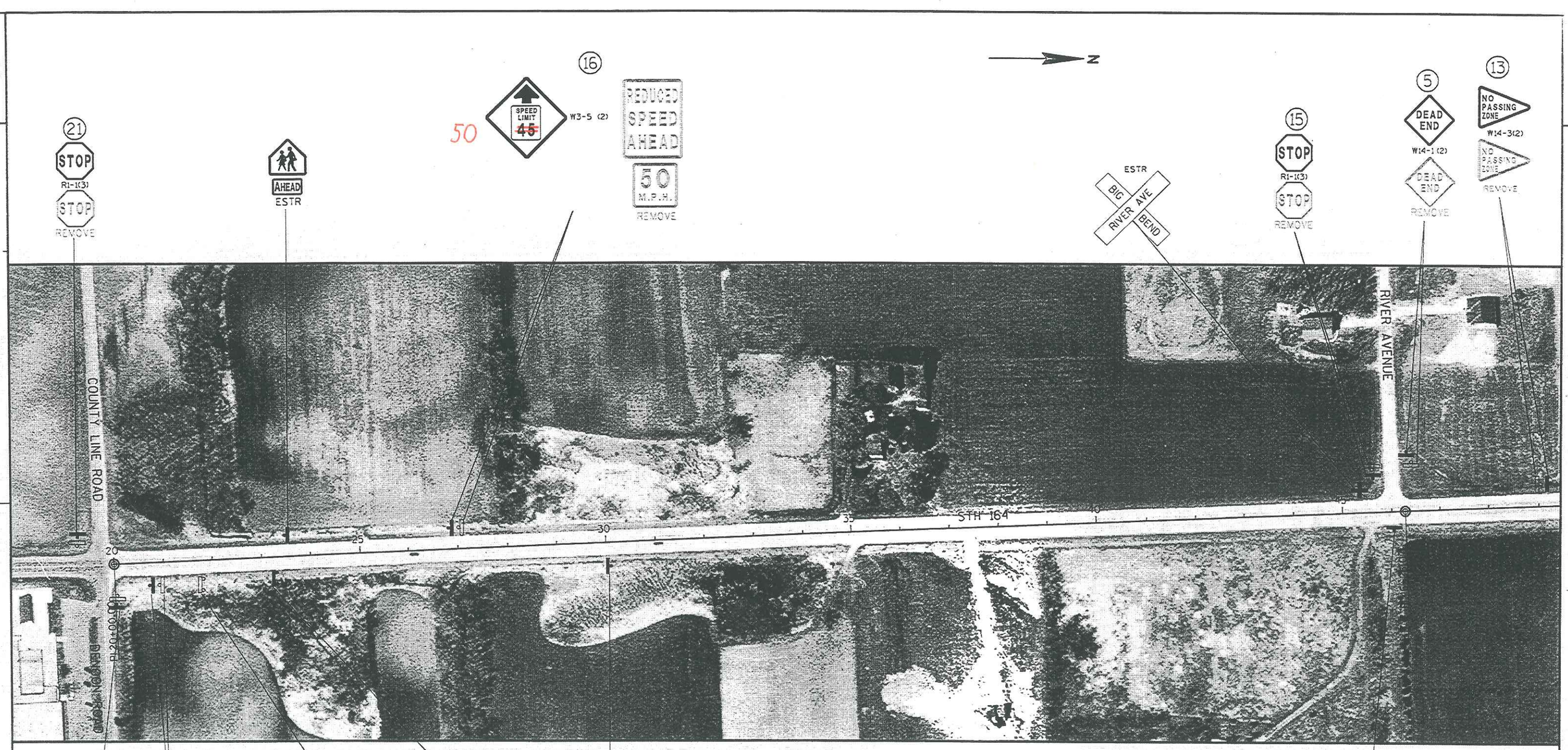
(12)
W1-7(2)

NOTE:
PUT IN LINE WITH ROADWAY



PROJECT NO: 2781-00-60	HWY: STH 164	COUNTY: WAUKESHA	PERMANENT SIGNING PLAN	SHEET 12 E

SHEET 4 OF 5



LEGEND

- EXISTING SIGN MOUNTED ON POST(S)
- EXISTING SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
- PROPOSED SIGN MOUNTED ON POST(S)
- PROPOSED SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
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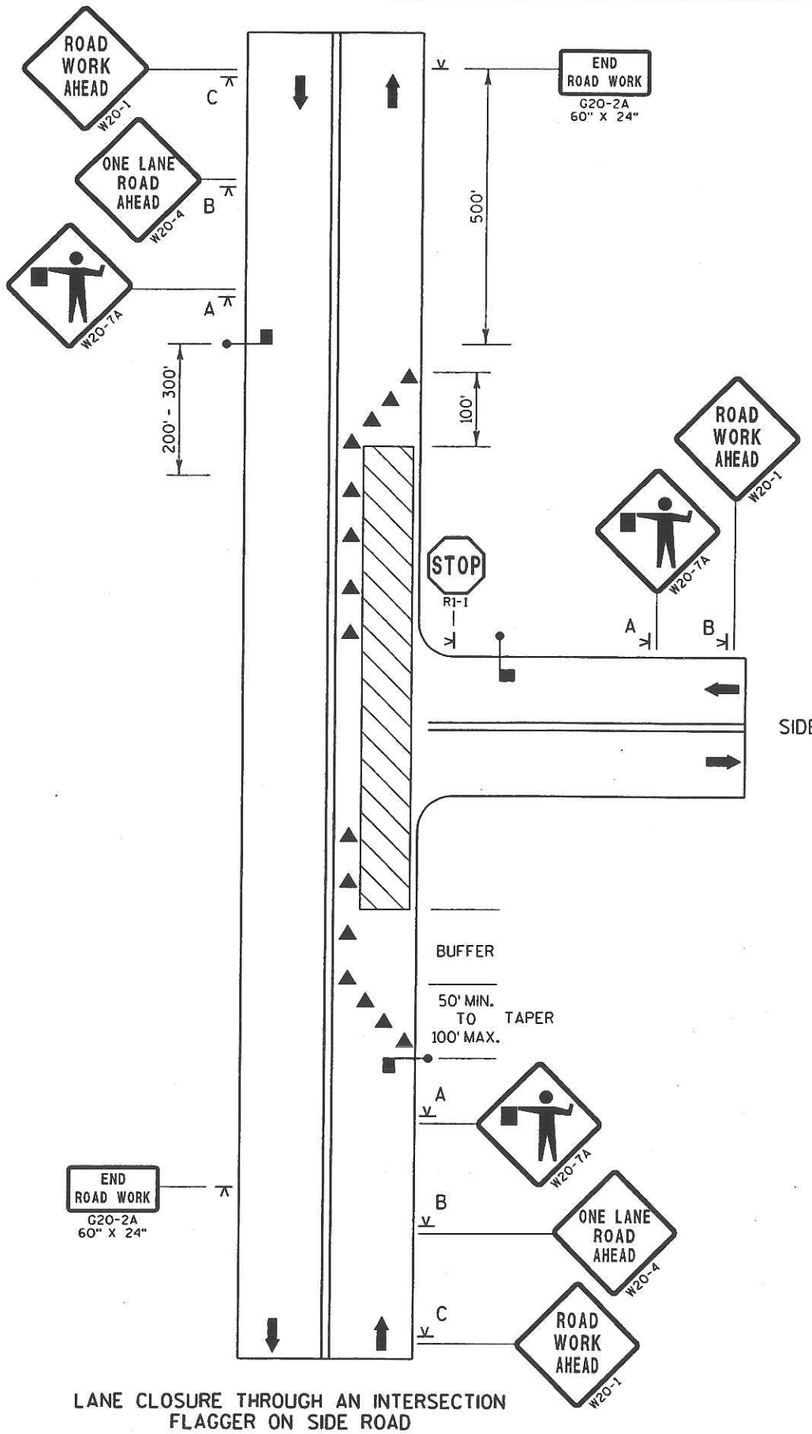
- ESTR EXISTING SIGN TO REMAIN
- (X) INDICATES SIGN SIZE
- LOCAL STREET SIGN
- GRAYSHADE REPRESENTS EXISTING TO BE REMOVED

NOTE:
PUT IN LINE WITH ROADWAY

SHEET 5 OF 5

PROJECT NO: 2781-00-60	HWY: STH 164	COUNTY: WAUKESHA	PERMANENT SIGNING PLAN	SHEET 13	E

FILE NAME : \\WKE31FP1\CADDS\projects\D2_278100164\023201_ps.dgn
PLOT DATE : 12-APR-2004 10:47 PLOT BY : DOTR3H PLOT NAME : PLOT SCALE : 200:1
WISDOT/CADDS SHEET 42



LANE CLOSURE THROUGH AN INTERSECTION
FLAGGER ON SIDE ROAD

LEGEND

- CHANNELIZING DEVICE
- PORTABLE SIGN SUPPORT
- WORK AREA
- TRAFFIC FLOW
- FLAGGER

SPEED LIMIT (MPH)	SIGN SPACING A, B, C ,(FT)	BUFFER (FT)
25	200	55
30	200	85
35	350	120
40	350	170
45	500	220
50	500	280
55	500	335

NOTES

1. Depending on traffic conditions, consider additional traffic control on the side road approaches, such as flaggers and appropriate signs.

BE PREPARED TO STOP

USE OF THE "BE PREPARED TO STOP" SIGN IS OPTIONAL. WHEN USED, THIS SIGN SHALL BE LOCATED BETWEEN THE W20-7a AND W20-4 SIGNS. A 500' TYPICAL SPACING SHALL BE PROVIDED BETWEEN THE SIGNS.

GENERAL NOTES

DETAILS OF TRAFFIC CONTROL DEVICES AND INSTALLATION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATION, THE SPECIAL PROVISIONS, AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

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

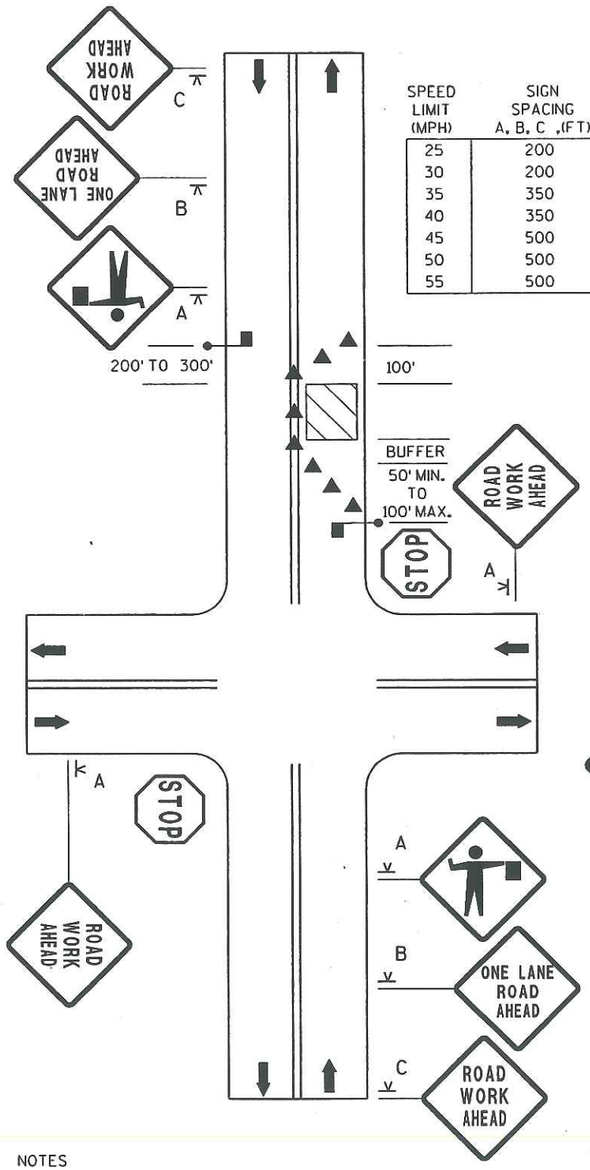
THE FIRST ADVANCE WARNING SIGN SHOULD TYPICALLY BE LOCATED IN ADVANCE OF THE ANTICIPATED TRAFFIC BACKUP OR QUEUE.

FLAGGERS SHALL BE IN SIGHT OF EACH OTHER OR IN DIRECT COMMUNICATION AT ALL TIMES. THEY SHALL BE EQUIPPED WITH STOP/SLOW PADDLES FASTENED ON SUPPORT STAFFS. WHEN THE FLAGGING OPERATION IS NOT IN EFFECT, THE "FLAGGER AHEAD", THE "ROAD CONSTRUCTION AHEAD" AND THE ONE LANE ROAD AHEAD" SIGNS SHALL BE COVERED OR REMOVED AND THE HIGHWAY RESTORED TO NORMAL OPERATION.

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

PROJECT NO: 2781-00-60	HWY: STH 164	COUNTY: WAUKESHA	SIDE ROAD FLAGGER DETAIL	SHEET 14	E

LANE CLOSURE BEYOND AN INTERSECTION
(Work Area on the Through Road)



SPEED LIMIT (MPH)	SIGN SPACING A, B, C ,(FT)	BUFFER (FT)
25	200	55
30	200	85
35	350	120
40	350	170
45	500	220
50	500	280
55	500	335

LEGEND
- CHANNELIZING DEVICE
- PORTABLE SIGN SUPPORT
- WORK AREA
- TRAFFIC FLOW
- FLAGGER

BE PREPARED TO STOP

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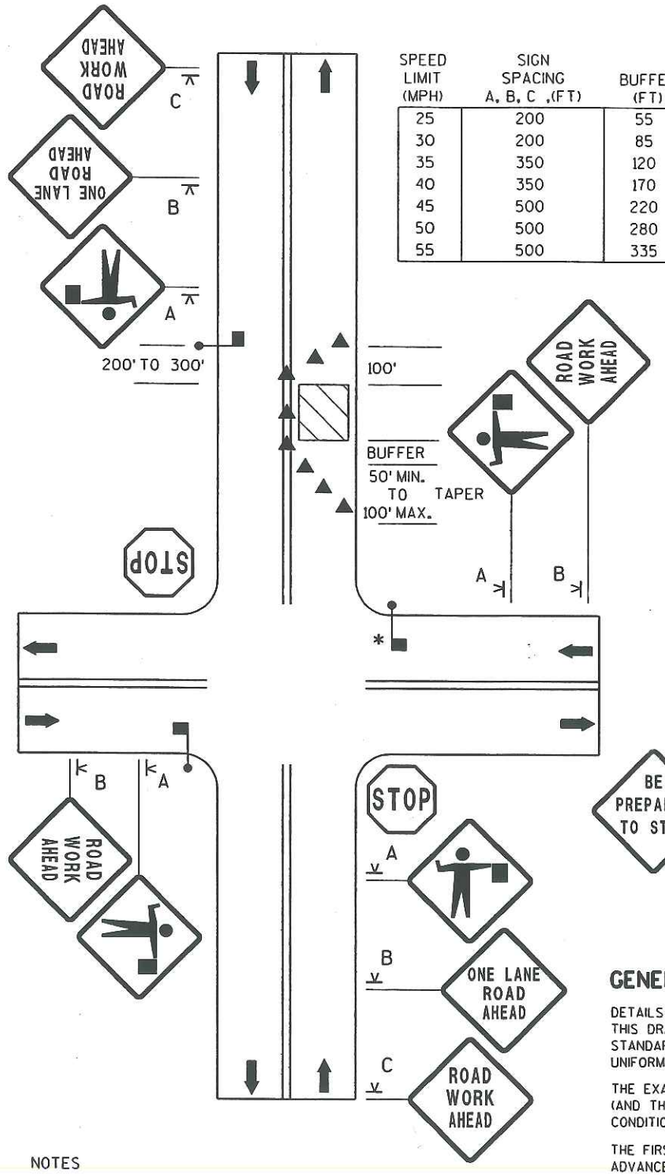
THE EXACT NUMBER, LOCATION AND SPACING OF ALL SIGNS AND DEVICES (AND THE LOCATION OF ALL FLAGGERS) SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS DIRECTED BY THE ENGINEER.

THE FIRST ADVANCE WARNING SIGN SHOULD TYPICALLY BE LOCATED IN ADVANCE OF THE ANTICIPATED TRAFFIC BACKUP OR QUEUE.

FLAGGERS SHALL BE IN SIGHT OF EACH OTHER OR IN DIRECT COMMUNICATION AT ALL TIMES. THEY SHALL BE EQUIPPED WITH STOP/SLOW PADDLES FASTENED ON SUPPORT STAFFS. WHEN THE FLAGGING OPERATION IS NOT IN EFFECT, THE "FLAGGER AHEAD", THE "ROAD CONSTRUCTION AHEAD" AND THE ONE LANE ROAD AHEAD" SIGNS SHALL BE COVERED OR REMOVED AND THE HIGHWAY RESTORED TO NORMAL OPERATION.

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

LANE CLOSURE BEYOND AN INTERSECTION
(Work Area on Side Road)



SPEED LIMIT (MPH)	SIGN SPACING A, B, C ,(FT)	BUFFER (FT)
25	200	55
30	200	85
35	350	120
40	350	170
45	500	220
50	500	280
55	500	335

LEGEND
- CHANNELIZING DEVICE
- PORTABLE SIGN SUPPORT
- WORK AREA
- TRAFFIC FLOW
- FLAGGER

BE PREPARED TO STOP

USE OF THE "BE PREPARED TO STOP" SIGN IS OPTIONAL. WHEN USED, THIS SIGN SHALL BE LOCATED BETWEEN THE W20-7a AND W20-4 SIGNS. A 500' TYPICAL SPACING SHALL BE PROVIDED BETWEEN THE SIGNS.

NOTES
1. Depending on traffic conditions, consider additional traffic control, such as flaggers and appropriate signs.

* 2. The middle flagger would normally be lead flagger and would coordinate the other flaggers.

GENERAL NOTES

DETAILS OF TRAFFIC CONTROL DEVICES AND INSTALLATION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATION, THE SPECIAL PROVISIONS, AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

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

THE FIRST ADVANCE WARNING SIGN SHOULD TYPICALLY BE LOCATED IN ADVANCE OF THE ANTICIPATED TRAFFIC BACKUP OR QUEUE.

FLAGGERS SHALL BE IN SIGHT OF EACH OTHER OR IN DIRECT COMMUNICATION AT ALL TIMES. THEY SHALL BE EQUIPPED WITH STOP/SLOW PADDLES FASTENED ON SUPPORT STAFFS. WHEN THE FLAGGING OPERATION IS NOT IN EFFECT, THE "FLAGGER AHEAD", THE "ROAD CONSTRUCTION AHEAD" AND THE ONE LANE ROAD AHEAD" SIGNS SHALL BE COVERED OR REMOVED AND THE HIGHWAY RESTORED TO NORMAL OPERATION.

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

LANE CLOSURE

PROJECT NO: 2781-00-60	HWY: STH 164	COUNTY: WAUKESHA	BEYOND INTERSECTION FLAGGING	SHEET 15	E

DATE 13APR04

ESTIMATE OF QUANTITIES

LINE NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	2781-00-60 QUANTITY
0010	204.0125	REMOVING ASPHALTIC SURFACE MILLING	TON	2,340.000	2,340.000
0020	204.0165	REMOVING GUARDRAIL	LF	120.000	120.000
0030	205.9005.S	GRADING SHAPING & FINISHING FOR BEAM GUARD TERMINALS & ANCHORAGES	EACH	4.000	4.000
0040	213.0100	FINISHING ROADWAY (PROJECT) 01. 2781-00-60	EACH	1.000	1.000
0050	305.0110	BASE AGGREGATE DENSE 3/4-INCH	TON	810.000	810.000
0060	455.0105	ASPHALTIC MATERIAL PG58-28	TON	320.000	320.000
0070	455.0605	TACK COAT	GAL	1,070.000	1,070.000
0080	460.1110	HMA PAVEMENT TYPE E-10	TON	5,840.000	5,840.000
0090	460.2000	INCENTIVE DENSITY HMA PAVEMENT	DOL	3,740.000	3,740.000
0100	460.3000	QMP HMA MIXTURE	TON	5,840.000	5,840.000
0110	465.0310	ASPHALTIC CURB	LF	235.000	235.000
0120	465.0315	ASPHALTIC FLUMES	SY	32.000	32.000
0130	606.0100	RIPRAP LIGHT	CY	4.000	4.000
0140	614.0305	STEEL PLATE BEAM GUARD CLASS A	LF	88.000	88.000
0150	614.0370	STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL	EACH	4.000	4.000
0160	619.1000	MOBILIZATION	EACH	1.000	1.000
0170	625.0100	TOPSOIL	SY	300.000	300.000
0180	627.0200	MULCHING	SY	300.000	300.000
0190	628.1105	EROSION BALES DELIVERED	EACH	64.000	64.000
0200	628.1110	EROSION BALES INSTALLED	EACH	64.000	64.000
0210	628.1505	SILT FENCE DELIVERED	LF	480.000	480.000
0220	628.1510	SILT FENCE INSTALLED	LF	480.000	480.000
0230	628.1520	SILT FENCE MAINTENANCE	LF	480.000	480.000
0240	628.1905	MOBILIZATIONS EROSION CONTROL	EACH	1.000	1.000
0250	629.0210	FERTILIZER TYPE B	CWT	0.200	0.200
0260	630.0130	SEEDING MIXTURE NO. 30	LB	5.000	5.000
0270	634.0616	POSTS WOOD 4X6-INCH X 16-FT	EACH	21.000	21.000
0280	634.0618	POSTS WOOD 4X6-INCH X 18-FT	EACH	2.000	2.000
0290	637.0202	SIGNS REFLECTIVE TYPE II	SF	144.170	144.170
0300	638.2102	MOVING SIGNS TYPE II	EACH	1.000	1.000
0310	638.2602	REMOVING SIGNS TYPE II	EACH	24.000	24.000
0320	638.3000	REMOVING SMALL SIGN SUPPORTS	EACH	20.000	20.000
0330	642.5200	FIELD OFFICE TYPE C (PROJECT)	EACH	1.000	1.000
0340	643.0100	TRAFFIC CONTROL (PROJECT) 01. 2781-00-60	EACH	1.000	1.000
0350	643.0300	TRAFFIC CONTROL DRUMS	DAYS	600.000	600.000
0360	643.0900	TRAFFIC CONTROL SIGNS	DAYS	600.000	600.000
0370	645.0130	GEOTEXTILE FABRIC TYPE R	SY	16.000	16.000
0380	646.0106	PAVEMENT MARKING EPOXY 4-INCH	LF	10,990.000	10,990.000
0390	646.0226	PAVEMENT MARKING CHANNELIZING EPOXY 8-INCH	LF	300.000	300.000
0400	646.0403	PAVEMENT MARKING SAME DAY PAINT 4-INCH	LF	11,650.000	11,650.000
0410	646.0406	PAVEMENT MARKING SAME DAY EPOXY 4-INCH	LF	26,480.000	26,480.000
0420	648.0100	LOCATING NO-PASSING ZONES	MI	2.300	2.300
0430	690.0100	SAWING EXISTING PAVEMENT	LF	370.000	370.000
0440	SPV.0060	SPECIAL 01. MARKER POST FLEXIBLE FOR GUARD RAIL TERMINAL	EACH	4.000	4.000
0450	SPV.0170	SPECIAL 01. DITCHING AND SHAPING	STA	18.000	18.000

REMOVING ASPHALTIC SURFACE, MILLING #204.0125

LOCATION	TONS
STA 20+73 TO STA 21+73	32.083
STA 140+00 TO STA 141+00	32.083
STA 100+49 LT	51.35
RIVER AVENUE	20.957
KELSEY AVENUE	35.243
STA 21+73 TO STA 140+00	2168.284
TOTAL	2340

BASE AGGREGATE DENSE, 3/4-INCH

LOCATION	#305.0110 TONS
STA 20+73 TO STA 141+00	793
GRAVEL DRIVEWAYS, SB	8.5
GRAVEL DRIVEWAYS, NB	8.5
	810

HMA PAVEMENT TYPE E-10, ITEM 460.1110

LOCATION	TONS
STA 20+73 TO STA 141+00	5597.51
RIVER AVENUE	20.03
KELSEY AVENUE	37.88
STA 100+49 LT PASSING LANE	96.84
ASPHALT DRIVEWAYS, SB	3.85
ASPHALT DRIVEWAYS, NB	3.35
STA 19+50	40.27
STA 141+40	40.27
TOTAL	5840

ASPHALTIC ITEMS

LOCATION	#455.0605 ASPHALTIC MATERIAL FOR TACK COAT GAL	#455.0105 ASPHALTIC MATERIAL PG 58-28 TONS	#460.3000 QMP HMA MIXTURE TONS	#465.0310 ASPHALTIC CURB L.F.	#465.0315 ASPHALTIC FLUMES S.Y.
STA 20+73 TO STA 141+00	1017.85	306.63	5597.51	--	--
STA 96+77 TO 97+85	--	--	--	110	16
STA 104+17 TO STA 105+40	--	--	--	125	16
RIVER AVENUE	3.71	1.12	20.03	--	--
KELSEY AVENUE	6.88	2.08	37.88	--	--
STA 100+49 LT, PASSING LANE	17.61	5.33	96.84	--	--
ASPHALT DRIVEWAYS, SB	1.17	0.21	3.85	--	--
ASPHALT DRIVEWAYS, NB	1	0.19	3.35	--	--
STA 19+50	14.46	2.22	40.27	--	--
STA 141+40	7.32	2.22	40.27	--	--
TOTALS	1070	320	5840	235	32

BEAM GUARD ITEMS

LOCATION, LT/RT	#614.0305 STEEL PLATE BEAM GUARD L.F.	#614.0370 ENERGY ABSORBING TERMINAL EACH	#204.0165 REMOVING GUARDRAIL LF	#205.9005S GRADE, SHAPE, FIN B. G. TERMINALS AND END ANCHORAGES EACH	#SPV.0060 MARKER POSTS, FLEXIBLE, FOR GUARDRAIL TERMINAL EACH
STA 96+87 TO STA 97+75 LT	88	--	--	--	--
STA 103+68 TO STA 104+27 LT	--	--	60	--	--
STA 105+30 TO STA 105+88 LT	--	--	60	--	--
STA 96+37 LT	--	1	--	1	1
STA 98+25 LT	--	1	--	1	1
STA 103+77 LT	--	1	--	1	1
STA 105+80 LT	--	1	--	1	1
TOTALS	88	4	120	4	4

PAVEMENT MARKING ITEMS

LOCATION	#646.0226 CHANNELIZING EPOXY 8-INCH WHITE L.F.	#646.0403 SAME DAY 4-INCH PAINT L.F.	#646.0406 SAME DAY 4-INCH YELLOW EPOXY L.F.	#646.0406 SAME DAY 4-INCH YELLOW EPOXY L.F.	#646.0106 4-INCH WHITE EPOXY L.F.
STA 20+73 TO STA 141+00	--	11650	24220	2050	10990
STA 98+00 TO 101+00 LT	300	--	--	--	--
RIVER AVENUE	--	--	70	--	--
KELSEY AVENUE	--	--	140	--	--
TOTALS	300	11650	24430	2050	10990
		(TOTAL SAME DAY 4-INCH YELLOW)		26480	

TRAFFIC CONTROL ITEMS

LOCATION	#643.0900 TRAFFIC CONTROL SIGNS DAYS	#643.0300 TRAFFIC CONTROL DRUMS DAYS
STA 20+73 TO STA 141+00	300	--
WORK ZONE	300	600
TOTALS	600	600

SAWING EXISING PAVEMENT # 690.0100

LOCATION	L.F.
STA 20+73	30
STA 141+00	30
RIVER AVENUE	24
KELSEY AVENUE	24
ASPHALT DRIVEWAYS, SB	140
ASPHALTI DRIVEWAYS, NB	122
	370

DITCHING AND SHAPING SPV.0090

LOCATION	STA
STA 27+00 TO STA 29+00 LT	2
STA 67+50 TO STA 69+58 RT	2
STA 70+25 TO STA 73+00 RT	3
STA 74+31 TO STA 75+20 RT	1
STA 75+20 TO STA 75+70 RT	1
STA 75+70 TO STA 76+50 RT	1
STA 76+50 TO STA 85+00 RT	8
TOTAL	18

3

EROSION CONTROL AND LANDSCAPING ITEMS

LOCATION	#606.0100 RIPRAP LIGHT C.Y.	#645.0130 GEOFAB TYPE "R" S.Y.	#625.0100 TOPSOIL S.Y.	#627.0200 MULCH S.Y.	#629.0205 FERTILIZER TYPE "B" cwt	#630.0130 SEEDING MIX # 30 LB	#628.1105 EROSION BLS INST EACH	#628.1110 EROSION BLS INST EACH	#628.1505 SILT FENCE DELIVERED SANDY LF	#628.1510 SILT FENCE INSTALLED LF	#628.1520 SILT FENCE MAINTENANCE LF
STA 96+37 LT	2	8	--	--	--	--	--	--	240	240	240
STA 104+27 LT	2	8	--	--	--	--	--	--	240	240	240
STA 98+00 LT	--	--	300	300	0.2	5	--	--	--	--	--
STA 27+00 LT	--	--	--	--	--	--	8	8	--	--	--
STA 67+50 RT	--	--	--	--	--	--	8	8	--	--	--
STA 70+25 RT	--	--	--	--	--	--	8	8	--	--	--
STA 74+31 RT	--	--	--	--	--	--	8	8	--	--	--
STA 75+20 RT	--	--	--	--	--	--	8	8	--	--	--
STA 75+70 RT	--	--	--	--	--	--	8	8	--	--	--
STA 76+50 RT	--	--	--	--	--	--	16	16	--	--	--
TOTALS	4	16	300	300	0.2	5	64	64	480	480	480

3

STATE PROJECT NO: 2781-00-60	HWY: STH 164	COUNTY: WAUKESHA	MISCELLANEOUS QUANTITIES	SHEET NO: 18	E

FILE NAME : _____ PLOT DATE : _____ PLOT BY : _____ PLOT NAME : _____ ORG DATE : _____ ORIGINATOR : DIST _ PLOT SCALE : 1:1

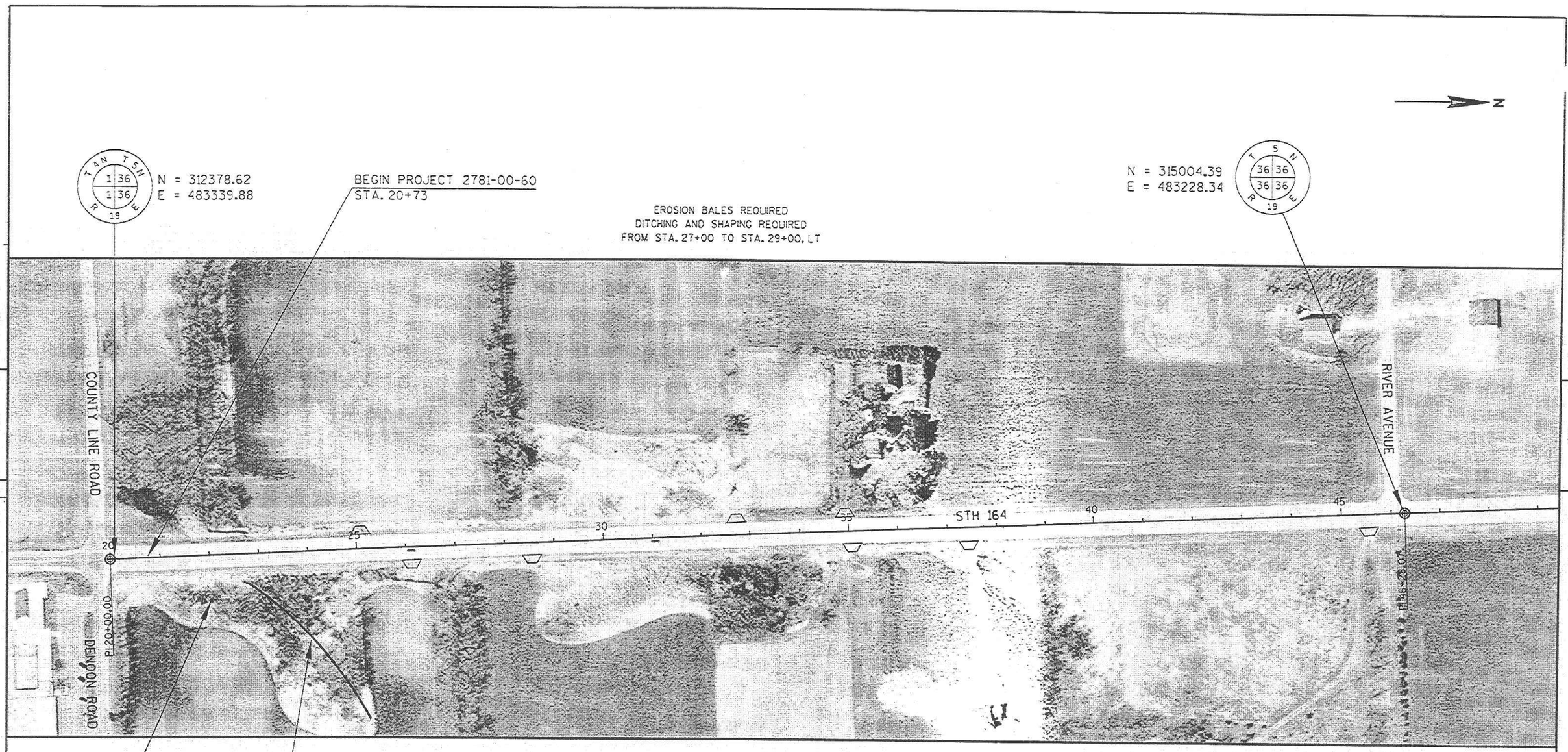
STH 164

WAUKESHA COUNTY
PROJECT NO. 2781-00-60
PERMANENT TYPE II SIGNING

CATEGORY : 010

6' MINIMUM MOUNTING HEIGHT
MEASURED FROM RIGHT EDGELINE

SIGN NO.	SIGN CODE	DESCRIPTION	SIGN SIZE	SIGN SIZE W X H (IN)X(IN)	637.0202 SIGNS TYPE II REFLEC. SQ.FT.	638.2102 MOVING SIGNS TYPE II (EA)	638.2602 REMOVING SIGNS TYPE II (EA)	638.3000 REMOVING SMALL SIGN SUPPORTS (EA)	634.0616 POST WOOD 4"X 6"X16' (EA)	634.0618 POST WOOD 4"X 6"X18' (EA)	REMARKS
1	--	SPEED LIM. 35					1	1			
2	--	SPEED LIM. 35					1	1			
3	I2-3	BIG BEND, POP.. 1,278		72 X 24	12.00		1	1	2		
4	R2-1	SPEED LIM. 55	2	24 X 30	5.00		1	1	1		
5	W14-1	DEAD END	2	36 X 36	9.00		1	1	1		SEE SHEET 10F 5
6	R2-1	SPEED LIM. 35	2	24 X 30	5.00		1	1	1		
7	R1-1	STOP SIGN	3	36 X 36	7.46		1	1	1		
8	W3-5 W14-3 -- --	SPEED REDUCTION (45) NO PASSING ZONE REDUCE SPEED AHEAD 35 M.P.H.	2 2	36 X 36 48 X 36	9.00 6.00		 1 1 1	 1	1		
9	W14-3	NO PASSING ZONE	2	48 X 36	6.00		1	1	1		
10	W14-3	NO PASSING ZONE	2	48 X 36	6.00		1	1	1		
11	R1-1	STOP SIGN	3	36 X 36	7.46		1	1	1		
12	W1-7	DOUBLE NIGHT ARROW	2	48 X 24	8.00				1		NEW
13	W14-3	NO PASSING ZONE	2	48 X 36	6.00		1	1	1		
14	W1-7	DOUBLE NIGHT ARROW	2	48 X 24	8.00				1		NEW
15	R1-1	STOP SIGN	3	36 X 36	7.46		1	1	1		
16	W3-5 -- --	SPEED REDUCTION (45) REDUCE SPEED AHEAD 55 M.P.H.	2	36 X 36	9.00		 1 1	 1	1		
17	R2-1	SPEED LIM. 55	2	24 X 30	5.00				1		
18	-- J4-1 --	SPEED LIM 55 NORTH / STH 64 WAUKESHA CO.					1 1 1	 1			
19	W14-3	NO PASSING ZONE	2	48 X 36	6.00		1	1	1		
20	R1-1	STOP SIGN	3	36 X 36	7.46		1	1	1		
21	R1-1	STOP SIGN	3	36 X 36	7.46		1	1	1		
22	J4-1 M3-1 M1-6 I2-2	 NORTH STH 164 WAUKESHA CO.		72 X 15	7.50				1	1	
- -	- - - -	UNDISTRIBUTED	-	- - - -	- - -	1	1	2	1	1	- - -
		TOTALS			144.17	1	24	20	21	2	



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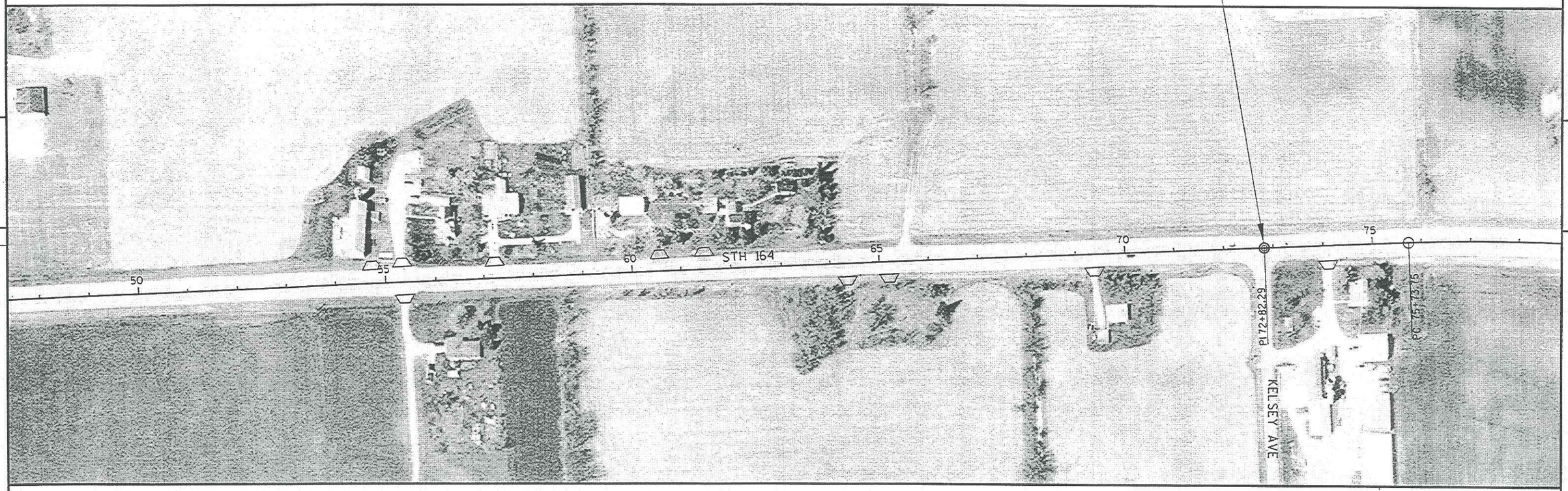
5

STA.46+00± PLACE A 4" RING OVER MONUMENT. RING TO BE FURNISHED BY D.O.T.

PROJECT NO: 2781-00-60	HWY: STH 164	COUNTY: WAUKESHA	PLAN DETAIL	SHEET 20	E

FILE NAME : \\WKE31FP1\CADDS\projects\02_278100164\021201_PD.dgn PLOT DATE : 16-MAR-2004 08:59 PLOT BY : DOTR3H PLOT NAME : PLOT SCALE : 200:1

WISDOT/CADDS SHEET 44



DITCHING AND SHAPING REQUIRED
FROM STA. 67+50 TO STA. 69+58, RT
FROM STA. 70+25 TO STA. 74+00, RT
FROM STA. 74+31 TO STA. 85+00

EROSION BALES REQUIRED

LEGEND

DRIVEWAY ENTRANCE

STA.72+80± PLACE A 4" RING OVER MONUMENT, RING TO BE FURNISHED BY D.O.T.

PROJECT NO: 2781-00-60	HWY: STH 164	COUNTY: WAUKESHA	PLAN DETAIL	SHEET 21	E

FILE NAME : \\wke31fp1\cadds\projects\02_278100164\021202_PD.dgn PLOT DATE : 15-MAR-2004 16:02 PLOT BY : DOTMLL PLOT NAME : PLOT SCALE : 200:1

STA. 97+75 TO STA. 98+25
REQUIRED STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINALS

STA. 97+75 TO STA. 98+25
REQUIRED STEEL PLATE BEAM GUARD CLASS A

STA. 96+37. LT
REQUIRED MARKER POST

CURVE AT PI STA. 81+06.99
PC STA. 75+73.75
PT STA. 86+33.38
SUPERELEVATION = 0.04%

STA. 105+30 TO STA. 105+80. LT
REMOVE GUARDRAIL
REQUIRED STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINALS

STA. 103+77 TO STA. 104+27. LT
REQUIRED STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINALS

STA. 103+68 TO STA. 104+27. LT
REMOVE GUARDRAIL

STA. 103+77. LT
REQUIRED MARKER POST

CAUTION

STA. 105+80. LT
REQUIRED MARKER POST

N

PI 81+06.99

80

85

STH 164

90

PI 86+33.38

95

100

105

PI 106+53.26

5

5

DITCHING AND SHAPING REQUIRED
FROM STA. 74+31 TO STA. 85+00. RT
EROSION BALES REQUIRED

STA. 96+37. LT
REQUIRED ASPHALTIC FUME
REQUIRED GEOTEXILE FABRIC TYPE R
REQUIRED LIGHT RIPRAP

STA. 96+37 TO STA. 96+87. LT
REQUIRED STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINALS

LEGEND
DRIVEWAY ENTRANCE

STA. 96+87 TO STA. 97+75. LT
REQUIRED SHOULDER PAVING AT BEAM GUARD
REQUIRED ASPHALTIC CURB
REQUIRED SILT FENCE

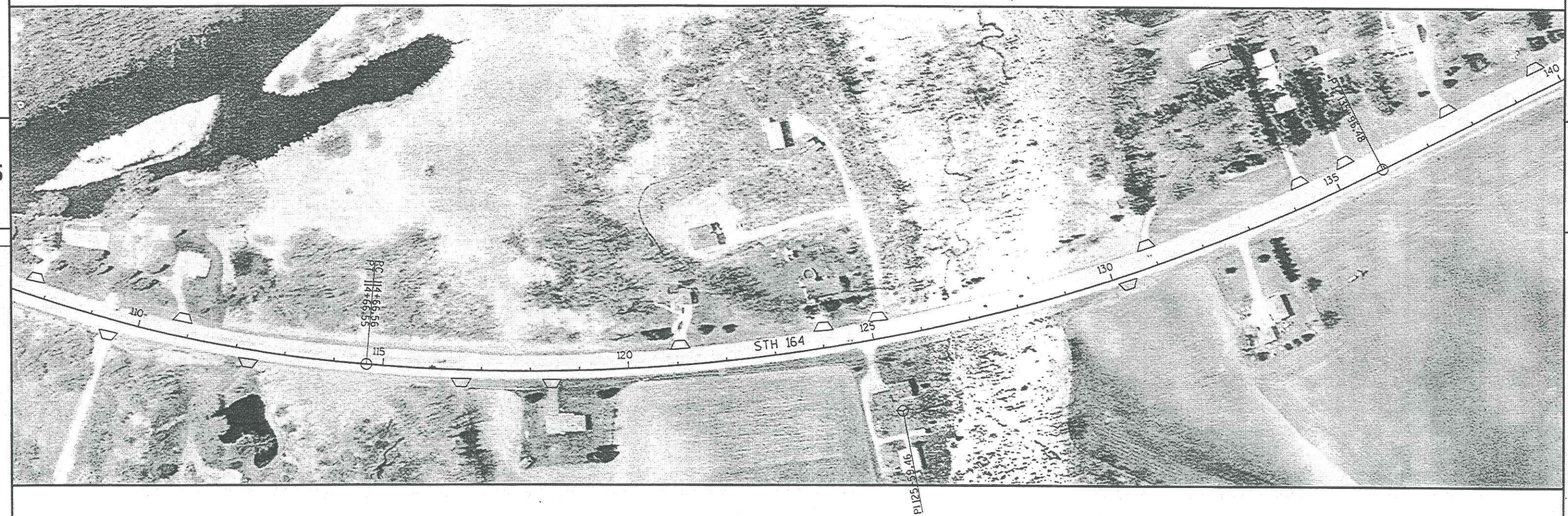
STA. 98+25.
REQUIRED MARKER POST

STA. 104+27. LT
REQUIRED ASPHALTIC FUME
REQUIRED GEOTEXILE FABRIC TYPE R
REQUIRED LIGHT RIPRAP

STA. 104+27 TO STA. 105+30. LT
REQUIRED SHOULDER PAVING AT BEAM GUARD
REQUIRED ASPHALTIC CURB
REQUIRED SILT FENCE

CURVE AT PI STA. 106+53.26
PC STA. 97+90.47
PT STA. 104+66.55
SUPERELEVATION = 0.05%

PROJECT NO: 2781-00-60	HWY: STH 164	COUNTY: WAUKESHA	PLAN DETAIL	SHEET 22	E



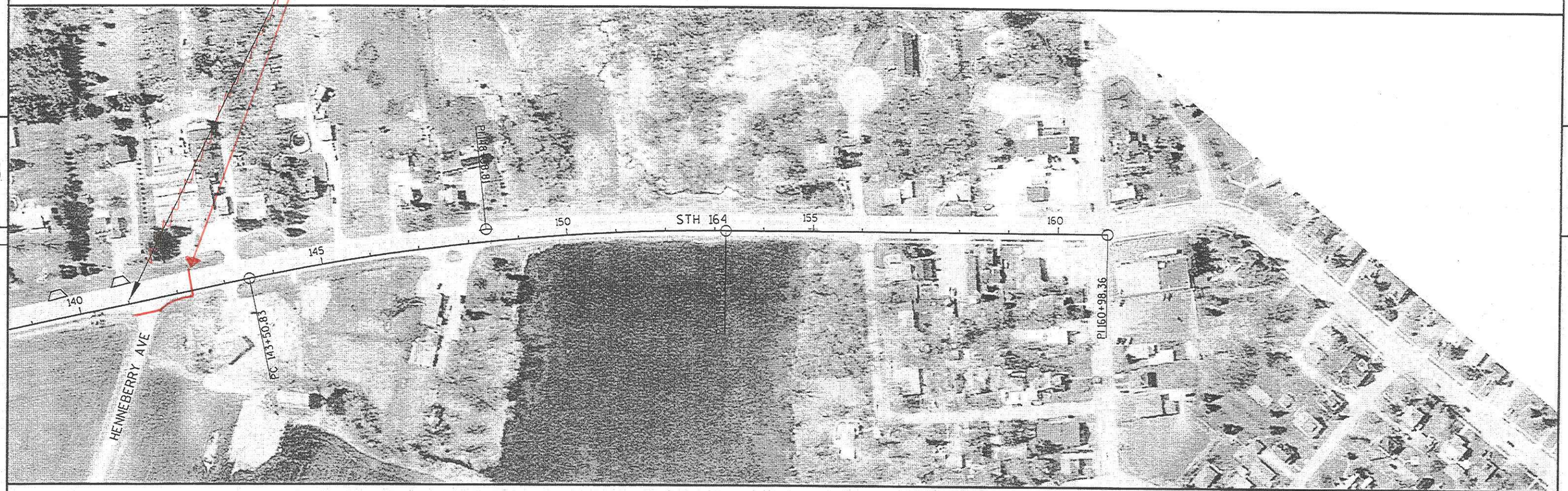
LEGEND

DRIVEWAY ENTRANCE

PROJECT NO: 2781-00-60	HWY: STH 164	COUNTY: WAUKESHA	PLAN DETAIL	SHEET 23	E

END PROJECT 2781-00-60
STA. ~~141+00~~ 142+30

N



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5

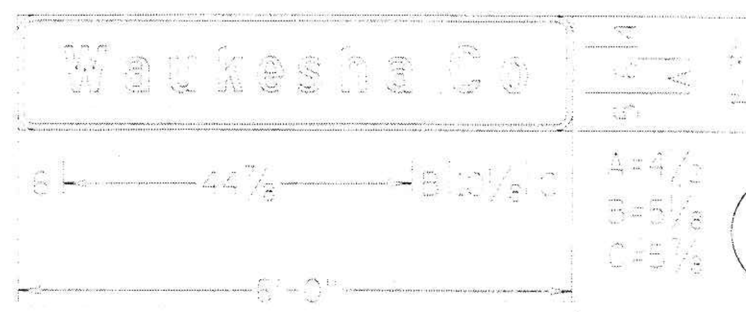
LEGEND

DRIVEWAY ENTRANCE

PROJECT NO: 2781-00-60	HWY: STH 164	COUNTY: WAUKESHA	PLAN DETAIL	SHEET 24	E

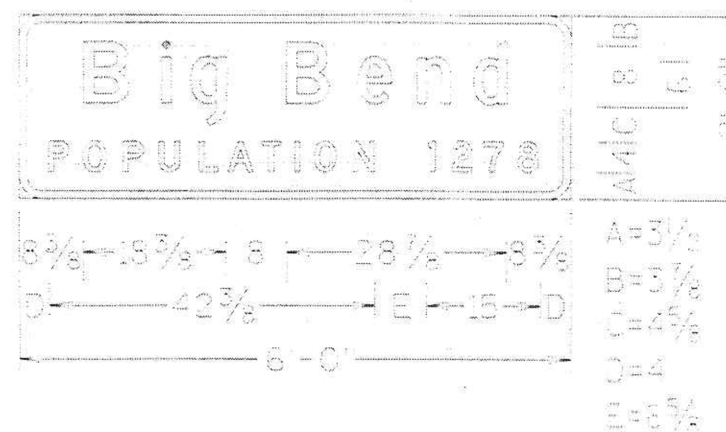
FILE NAME : \\WKE31FP1\CADDS\projects\02_278100164\021205_PD.dgn PLOT DATE : 12-MAR-2004 09:16 PLOT BY : DOTR3H PLOT NAME : PLOT SCALE : 200:1

WISDOT/CADDS SHEET 44



22

¾" BORDER
2¼" RADIUS
12-2



3

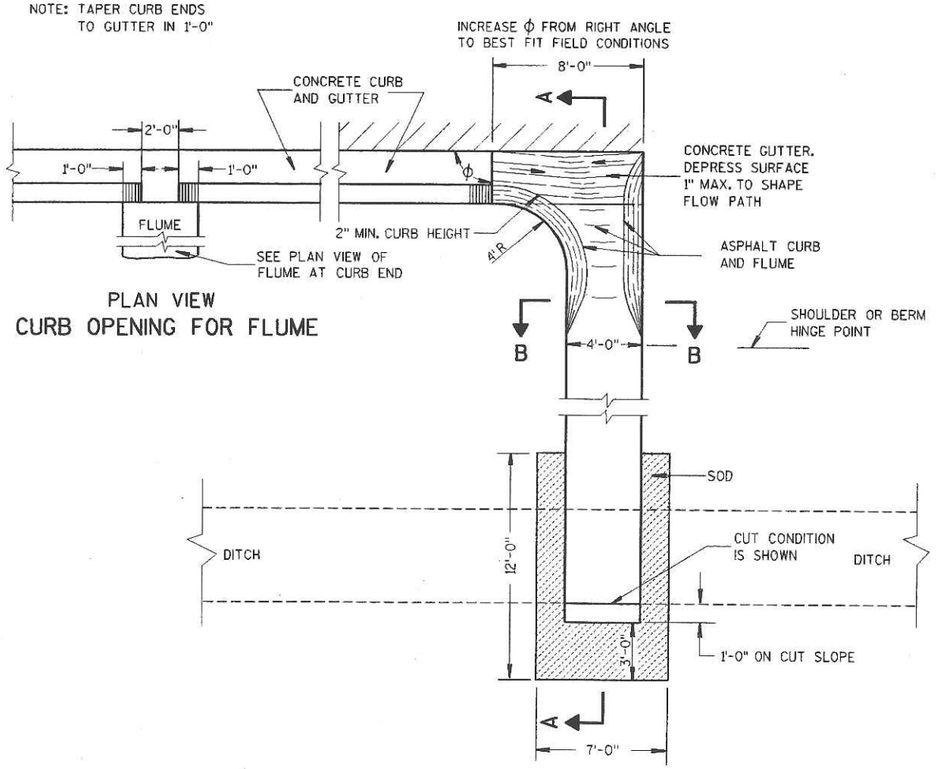
1" BORDER
3" RADIUS
I2-3(VOD)

GENERAL NOTES:

1. DETAILS OF CONSTRUCTION, MATERIALS, AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS, THE SPECIAL PROVISIONS, AND THE PLANS.
2. UNLESS OTHERWISE NOTED, ALL SIGNS SHOWN ON THIS SHEET ARE "SIGNS, TYPE I".
3. UNLESS OTHERWISE NOTED, TYPE I SIGNS ON THIS SHEET SHALL HAVE "TYPE H REFLECTIVE SHEETING" AND "TYPE H MESSAGE MATERIAL". TYPE II SIGNS SHALL BE TYPE H REFLECTIVE SHEETING.
4. UNLESS OTHERWISE NOTED, ALL SIGNS SHOWN ON THIS SHEET SHALL HAVE A GREEN BACKGROUND AND WHITE MESSAGE.
5. ALL UPPER CASE MESSAGE (EXCEPT ON SHIELDS OR WHERE OTHERWISE NOTED) SHALL BE "SERIES E MODIFIED". ALL LOWERCASE MESSAGE WITH AN INITIAL UPPERCASE LETTER SHALL BE "SERIES E MODIFIED".
6. UNLESS OTHERWISE NOTED, ALL SIGNS SHOWN ON THIS SHEET SHALL HAVE "TYPE A" OR "TYPE C" ARROWS AS SHOWN. SEE THE STANDARD SIGN PLATES FOR FURTHER DETAILS.
7. SEE THE STANDARD SIGN PLATES FOR FURTHER DETAILS ON ROUTE MARKER SHIELDS.
8. THE SIGN NUMBER IS DENOTED IN THE CIRCLE NEAR EACH DETAIL.
9. DO NOT SCALE.

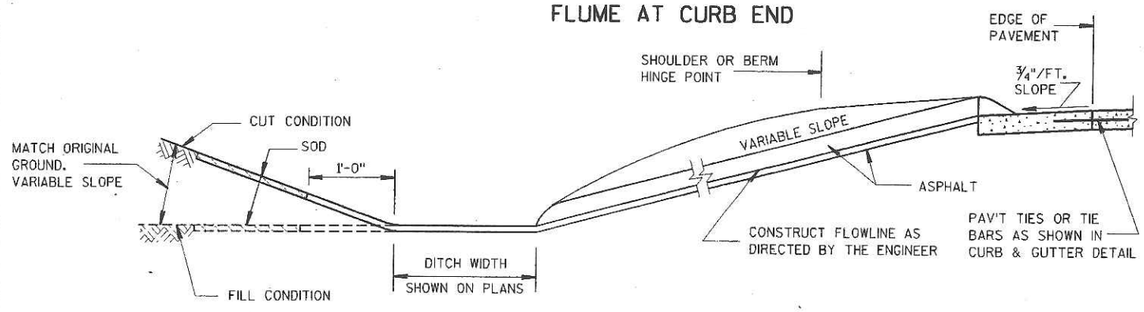
PROJECT NO: 2781-00-60	HWY: STH 164	COUNTY: WAUKESHA	SIGNING DETAIL - TYPE 1 SIGNS	SCALE: 0 ½" 1"	SHEET 25	E

ASPHALTIC FLUME

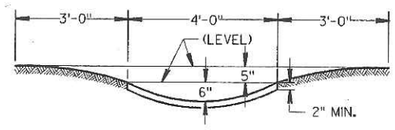


PLAN VIEW
CURB OPENING FOR FLUME

PLAN VIEW
FLUME AT CURB END



SECTION A-A



SECTION B-B

GENERAL NOTES

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

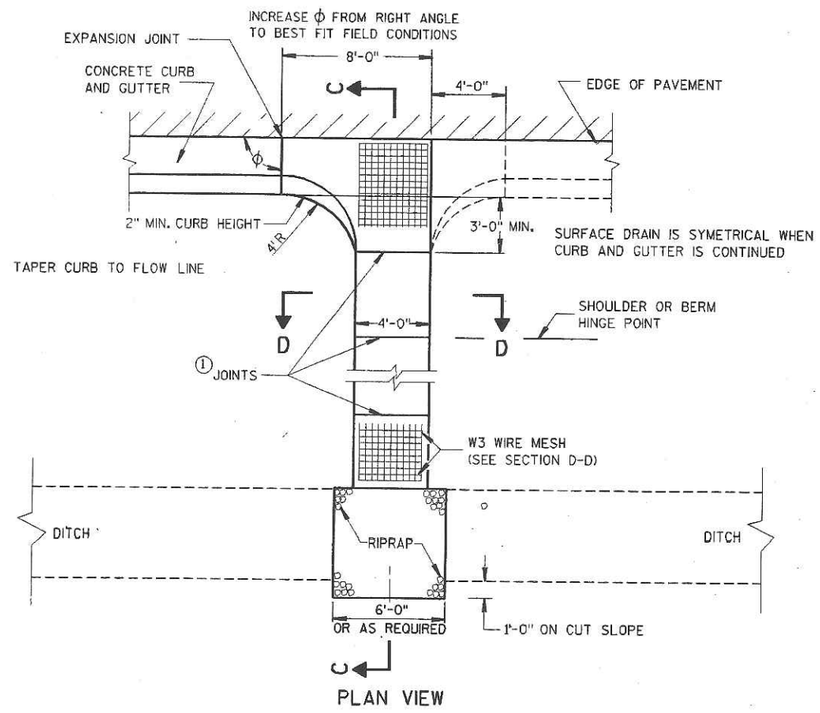
WELDED STEEL WIRE FABRIC SHALL BE IN ACCORDANCE WITH AASHTO SPECIFICATION M55.

① JOINTS SHALL BE ⅛ TO ¼ INCH WIDE BY 1½ INCHES DEEP AND SPACED AT UNIFORM INTERVALS OF APPROXIMATELY 4 FEET.

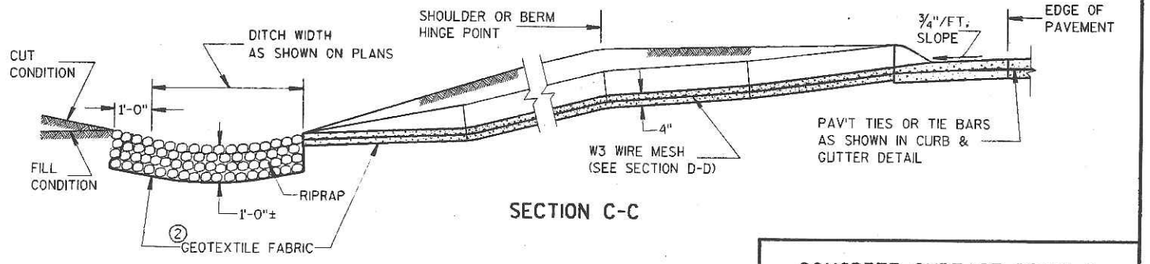
② GEOTEXTILE FABRIC TYPE "R" SHALL UNDERLAY THE FULL LENGTH AND WIDTH OF THE CONCRETE SURFACE DRAIN AND RIPRAP.

③ CONCRETE SURFACE DRAIN WITHOUT CURB AND GUTTER MAY BE USED ON BACKSLOPES WHEN SPECIFIED

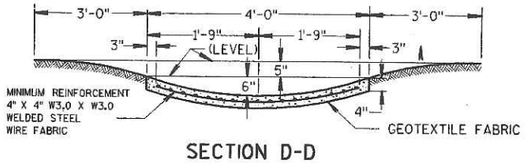
③ CONCRETE SURFACE DRAIN



PLAN VIEW



SECTION C-C



SECTION D-D

CONCRETE SURFACE DRAIN & ASPHALTIC FLUME

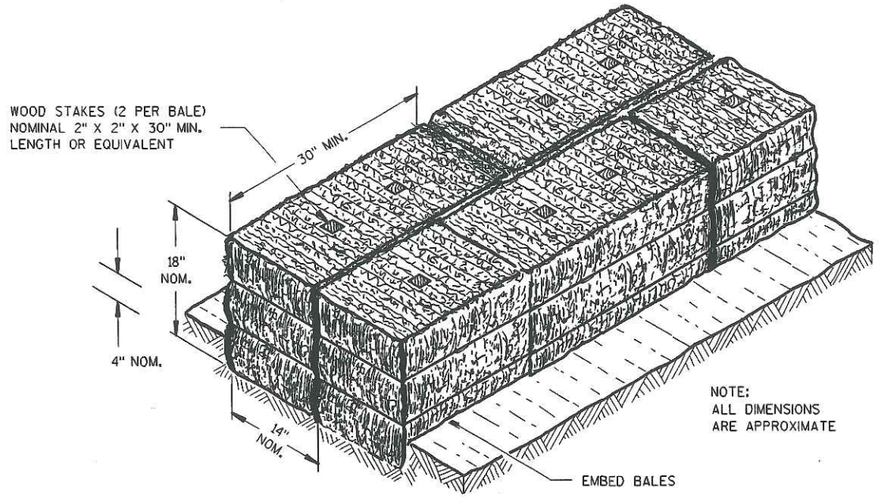
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
10/23/09
DATE
FHWA

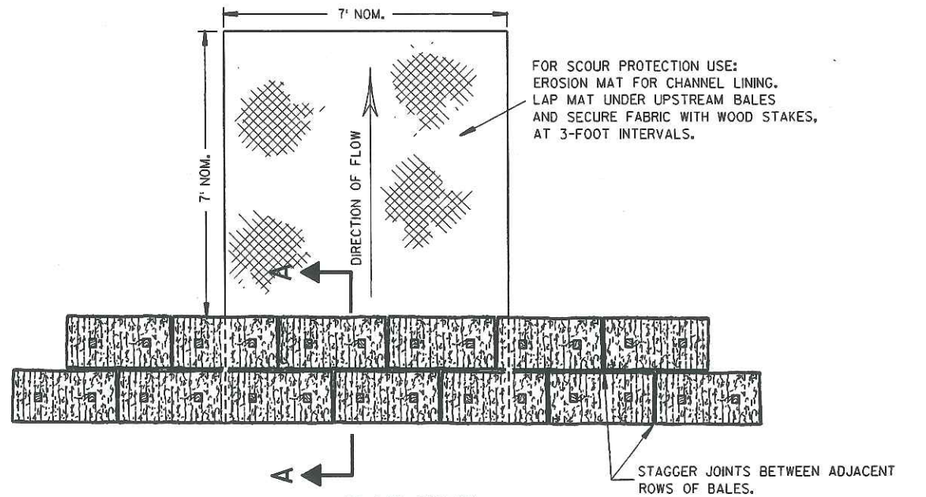
STATE DESIGN ENGINEER FOR HWYS

S.D.D. 8 D 4-3

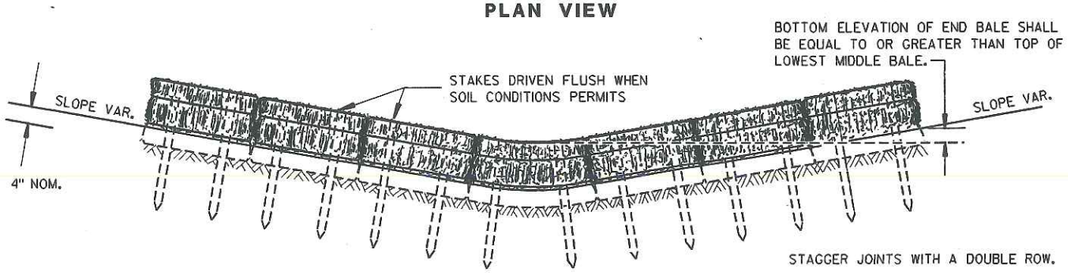
S.D.D. 8 D 4-3



SECTION A-A



PLAN VIEW



FRONT ELEVATION

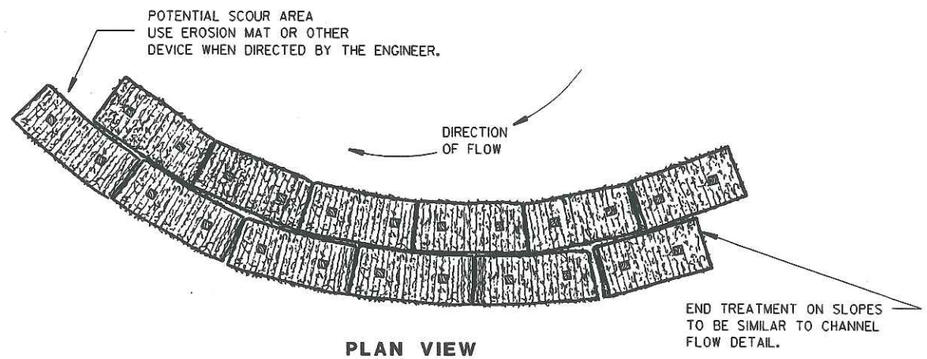
TEMPORARY DITCH CHECK USING EROSION BALES ①

S.D.D. 8 E 8-3

GENERAL NOTES

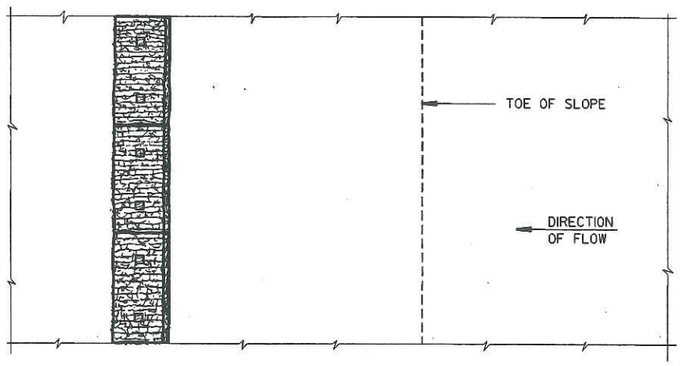
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

① TEMPORARY DITCH CHECKS EITHER EROSION BALES OR MANUFACTURED SHALL BE PAID FOR UNDER THE BID ITEM OF TEMPORARY DITCH CHECK. THE DEPARTMENT WILL NOT PAY FOR TEMPORARY DITCH CHECKS CONSTRUCTED OF A SINGLE ROW OF EROSION BALES.

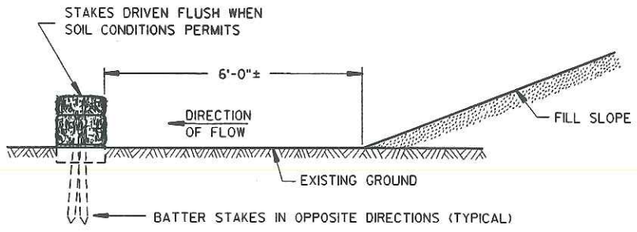


PLAN VIEW

WHEN ALTERING THE DIRECTION OF FLOW



PLAN VIEW



FRONT ELEVATION

WHEN EXISTING GROUND SLOPES AWAY FROM FILL SLOPE

EROSION BALES FOR SHEET FLOW

TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS

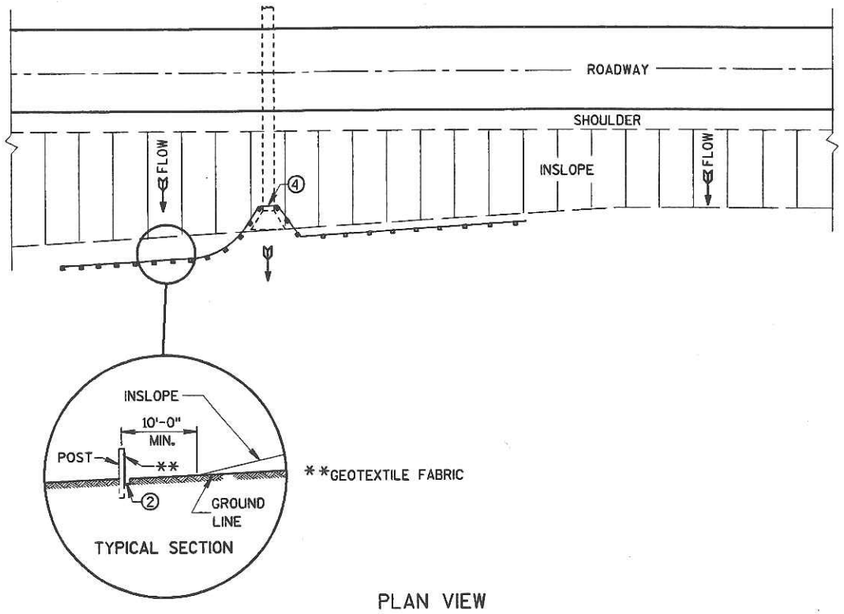
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED 6/4/02
DATE

CHIEF ROADWAY DEVELOPMENT ENGINEER

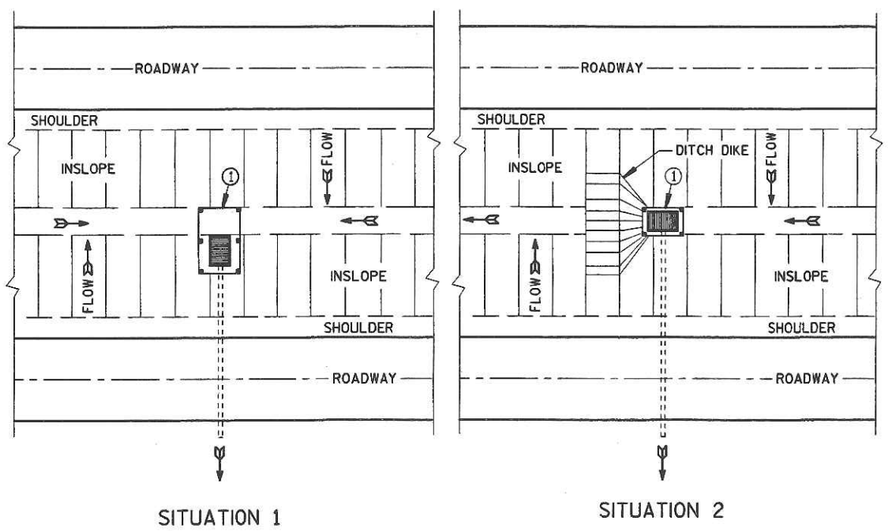
FHWA

S.D.D. 8 E 8-3



PLAN VIEW

TYPICAL APPLICATION OF SILT FENCE



PLAN VIEW

SILT FENCE AT MEDIAN SURFACE DRAINS

GENERAL NOTES

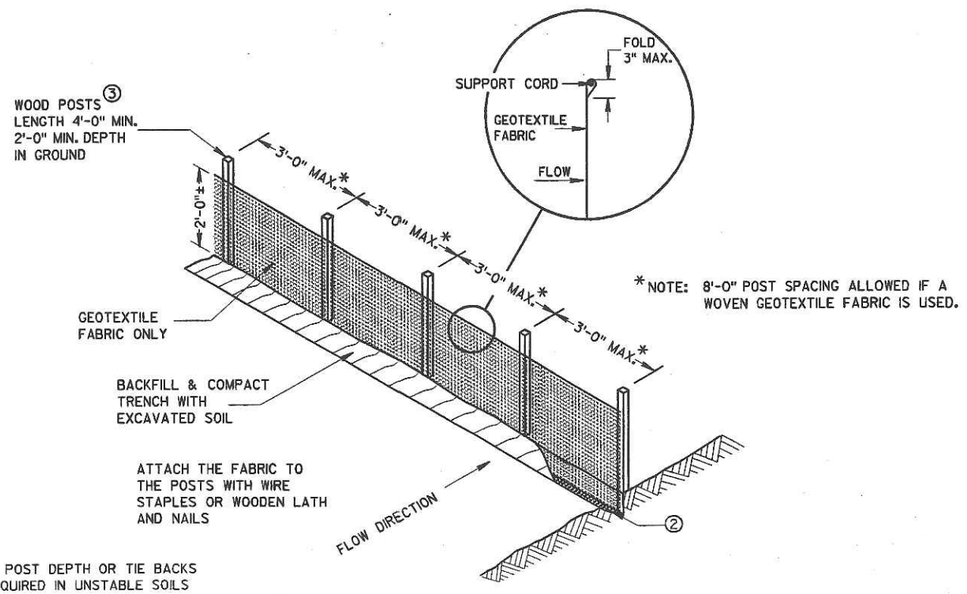
DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

① HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.

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.

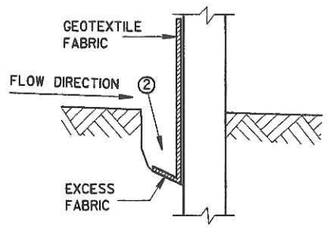
③ WOOD POSTS SHALL BE A MINIMUM SIZE OF 1⅛" X 1⅛" OF OAK OR HICKORY.

④ SILT FENCE TO EXTEND ACROSS THE TOP OF THE PIPE.

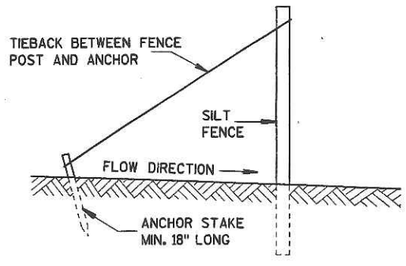


NOTE: ADDITIONAL POST DEPTH OR TIE BACKS MAY BE REQUIRED IN UNSTABLE SOILS

SILT FENCE



TRENCH DETAIL



SILT FENCE TIE BACK

(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
03/06/00
DATE
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

S.D.D. 8 E 9-5

S.D.D. 8 E 9-5

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.

(1) W6 X 9 OR W6 X 8.5 STEEL POSTS AND NOTCHED PLASTIC BLOCKOUTS ARE ACCEPTABLE ALTERNATIVES FOR 6" X 8" WOOD POSTS WITH WOOD OR PLASTIC BLOCKOUTS. USE APPROVED NOTCHED PLASTIC BLOCKOUTS WITH STEEL POSTS.

DO NOT MIX STEEL POSTS AND WOOD POSTS IN A SINGLE INSTALLATION.

(2) USE STRUCTURAL STEEL POSTS CONFORMING TO AASHTO M183. GALVANIZE ACCORDING TO AASHTO M 111. EITHER SET THE POSTS IN DRILLED HOLES OR DRIVE TO GRADE. REMOVE MUSHROOMING CAUSED BY DRIVING AND REPAIR DAMAGED SPELTER COATING ON GALVANIZED POSTS.

(3) INSTALL STEEL POSTS WITH HOLES ON APPROACHING TRAFFIC SIDE.

(4) USE EITHER WOOD OR APPROVED PLASTIC BLOCKOUTS ON WOOD POSTS.

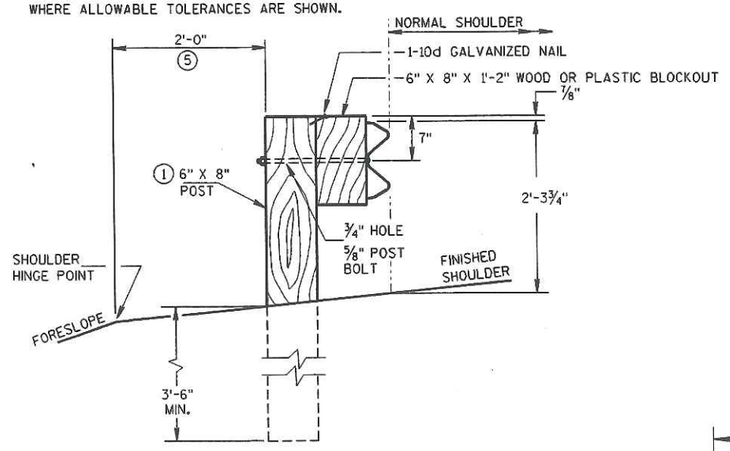
(5) WHEN SPECIFIED IN THE PLANS, THE 2-FOOT MINIMUM TO HINGE POINT MAY BE REDUCED OR ELIMINATED IF EXISTING CONDITIONS DO NOT PERMIT THE DESIRABLE EARTHWORK.

INCREASE POST LENGTH TO PROVIDE A MINIMUM EMBEDMENT OF 3'-6" IF THE SHOULDER HINGE POINT IS LOCATED IN FRONT OF THE POST.

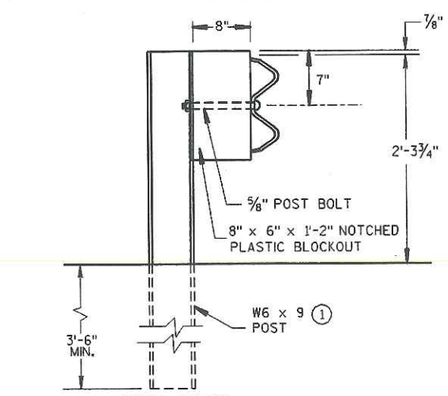
(6) IF ROCK IS ENCOUNTERED DURING EXCAVATION, THE ENGINEER MAY APPROVE USING A 12 INCH DIAMETER POST HOLE EXTENDING 20 INCHES DEEP INTO THE ROCK. PLACE GRANULAR MATERIAL IN THE BOTTOM OF THE HOLE APPROXIMATELY 2½ INCHES DEEP. CUT THE POSTS TO LENGTH AND PLACE IN YHE HOLE. BACKFILL WITH MATERIAL EXCAVATED FROM THE HOLE AND COMPACT ADEQUATEY.

INSTALL BEAM GUARD SECTIONS AND ALL NECESSARY HARDWARE ACCORDING TO THE APPLICABLE PLAN AND CURRENT STANDARD AND SUPPLEMENTAL SPECIFICATIONS.

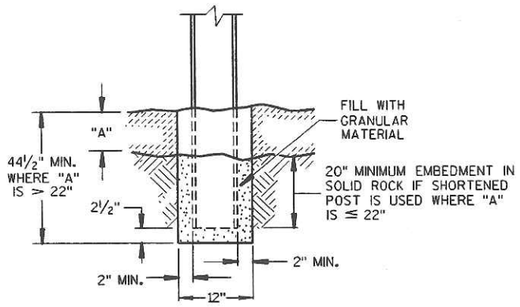
ALL DIMENSIONS ARE SUBJECT TO MANUFACTURER'S TOLERANCES EXCEPT WHERE ALLOWABLE TOLERANCES ARE SHOWN.



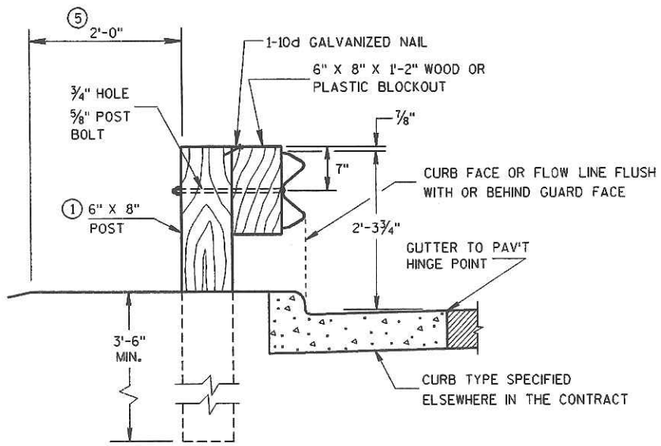
END VIEW
LOCATED ALONG A ROADWAY SHOULDER



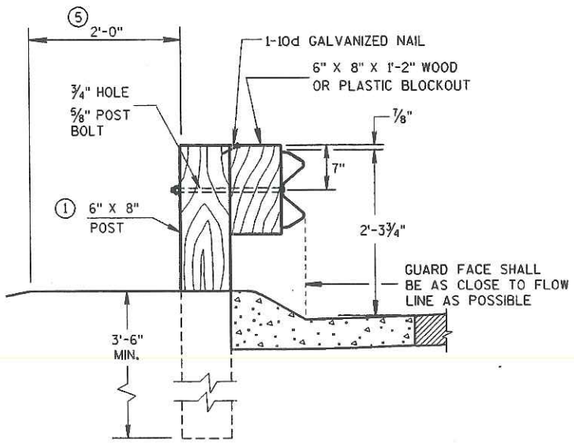
END VIEW
STEEL POST & NOTCHED
PLASTIC BLOCKOUT ALTERNATIVE



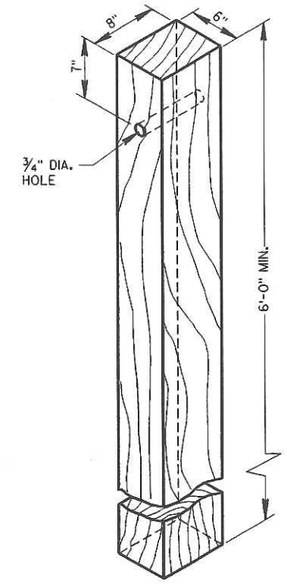
END VIEW
SETTING STEEL OR WOOD POST IN ROCK (6)



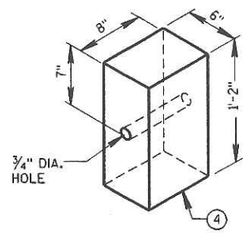
END VIEW
LOCATED ALONG A CURBED ROADWAY



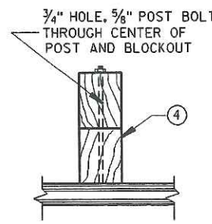
END VIEW
LOCATED ALONG A
MOUNTABLE CURBED ROADWAY



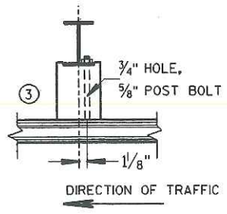
WOOD POST
(6"X8") NOMINAL



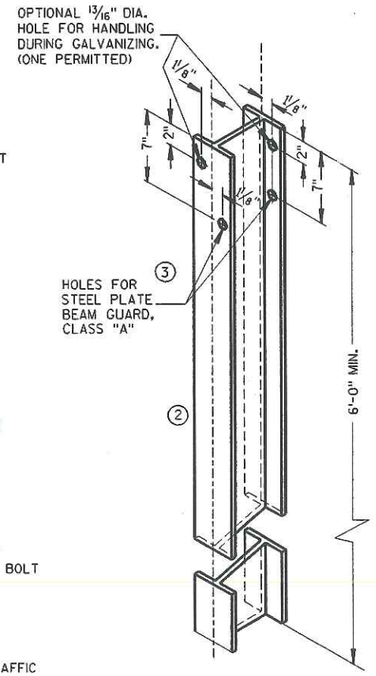
WOOD OR PLASTIC
BLOCKOUT FOR WOOD POSTS



PLAN VIEW
WOOD POST,
BLOCKOUT & BEAM

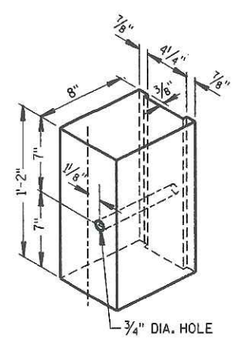


PLAN VIEW
STEEL POST, NOTCHED
PLASTIC BLOCKOUT & BEAM



STEEL POST &
HOLE PUNCHING DETAIL
(W6 X 9) (1)

ALL HOLES 13/16" DIAMETER EXCEPT AS NOTED



NOTCHED PLASTIC BLOCKOUT
FOR STEEL POSTS

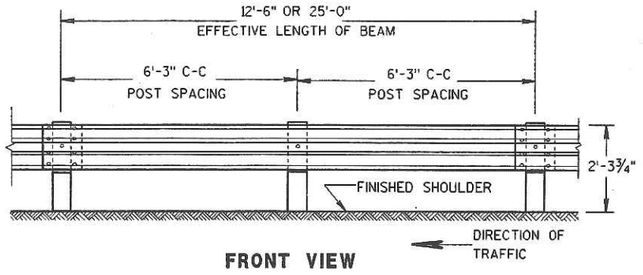
STEEL PLATE BEAM GUARD,
CLASS "A"
INSTALLATION & ELEMENTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

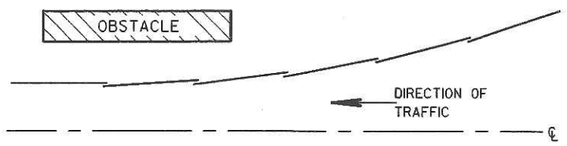
TYPICAL INSTALLATION OF STEEL PLATE BEAM GUARD

S.D.D. 14 B 15-4a

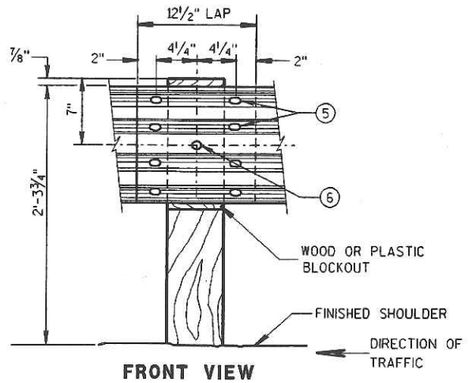
S.D.D. 14 B 15-4a



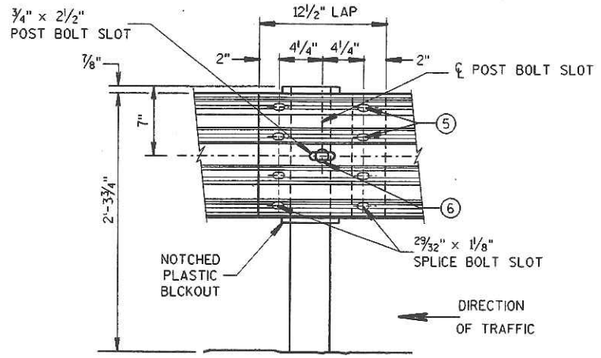
FRONT VIEW



PLAN VIEW
BEAM LAPPING DETAIL



FRONT VIEW
BEAM SPLICE AT WOOD POST
AND POST MOUNTING DETAIL



FRONT VIEW
BEAM SPLICE AT STEEL POST

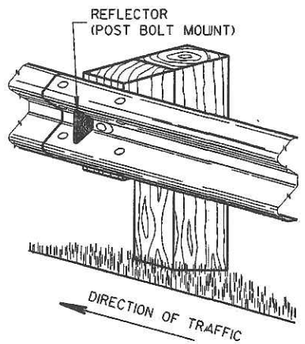
TYPICAL SPLICING DETAILS OF STEEL PLATE BEAM GUARD

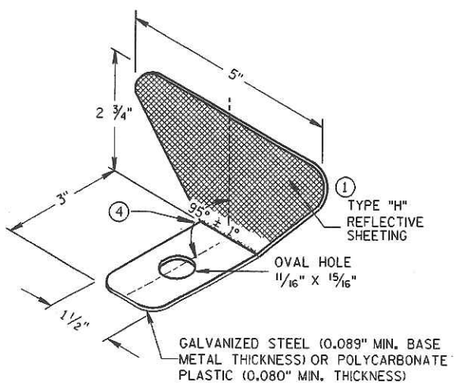
GENERAL NOTES

1. 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.
2. DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.
3. REVERSE EVERY OTHER REFLECTOR FOR 2-WAY VISIBILITY. THE CONTRACTOR MAY FURNISH TWO-SIDED REFLECTORS IN LIEU OF ONE-SIDED REFLECTORS.
4. PROVIDE AN ANGLE OF BEND OF 90° ± 1° FOR TWO-SIDED REFLECTORS.
5. 8 -⅝" ϕ X 1¼" BUTTON HEAD BOLTS WITH OVAL SHOULDERS & RECESS NUTS.
6. ⅝" ϕ X 1'-6" BUTTON HEAD BOLT AND AND RECESS NUT WITH ROUND WASHER UNDER NUT.

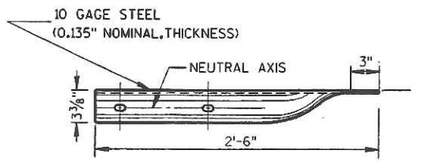
REFLECTOR SPACING ②

	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 ③	6
	> 200'	50' C-C	1	
TWO WAY TRAFFIC	< 200'	50' C-C	2	3
	> 200'	100' C-C	2 ④	

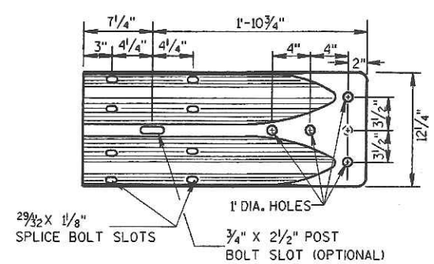




ONE SIDED REFLECTOR DETAIL AND TYPICAL INSTALLATION ①

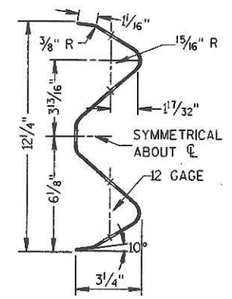


PLAN VIEW



FRONT VIEW

W BEAM TERMINAL CONNECTOR
(USE ONLY ON THE TRAFFIC EXIT END OF ONE WAY BRIDGES)



SECTION THRU W BEAM

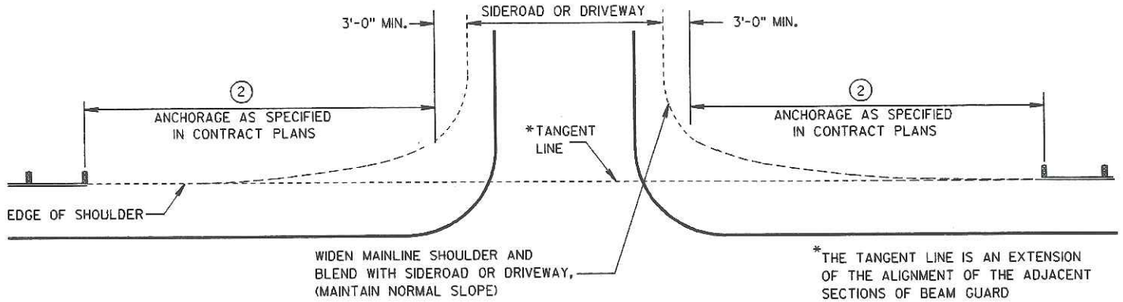
STEEL PLATE BEAM GUARD,
CLASS "A",
INSTALLATION & ELEMENTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

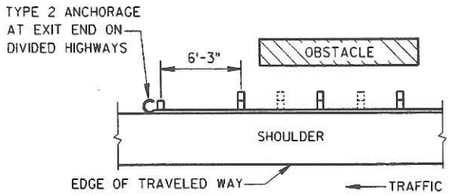
APPROVED
12/08/00
DATE
John Haverberg
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

S.D.D. 14 B 15-4b

S.D.D. 14 B 15-4b



BEAM GUARD AT SIDEROADS OR DRIVEWAYS



BEAM GUARD AT OBSTACLES EXIT END - ONE WAY TRAFFIC

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.

W6 X 9 OR W6 X 8.5 STEEL POSTS WITH NOTCHED PLASTIC BLOCKOUTS ARE ACCEPTABLE ALTERNATIVES FOR 6" X 8" WOOD POSTS WITH WOOD OR PLASTIC BLOCKOUTS. USE APPROVED NOTCHED PLASTIC BLOCKOUTS WITH STEEL POSTS.

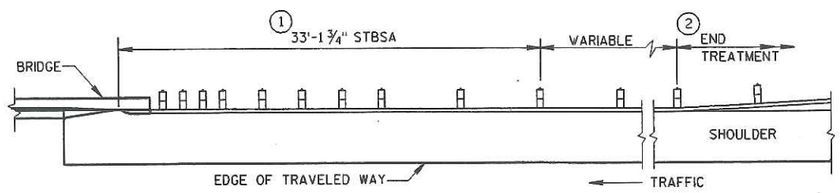
THE LOCATIONS AND LENGTHS OF BEAM GUARD ARE SHOWN ELSEWHERE IN THE PLAN.

(1) USE STEEL THRIE BEAM STRUCTURAL APPROACH (STBSA).

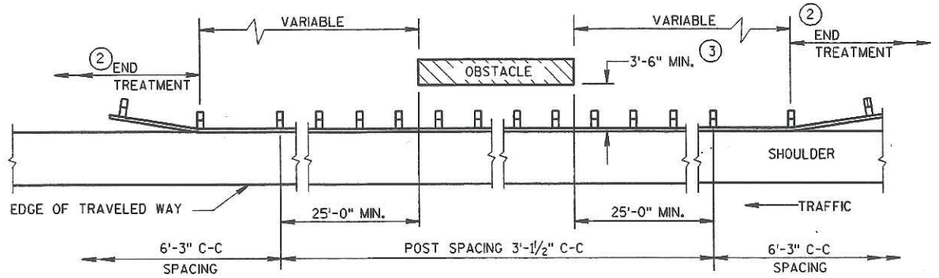
(2) USE AN APPROVED END TREATMENT FOR THE TRAFFIC APPROACH SIDE OF BRIDGE/OBSTACLES. USE TYPE 2 ANCHORAGE ONLY AT THE DOWNSTREAM ENDS OF BEAM GUARD LOCATED ALONG ROADWAYS WITH ONE WAY TRAFFIC.

(3) DESIGN DEFLECTION OF W-BEAM BARRIER SYSYTEM

LATERAL DISTANCE TO FIXED OBJECT	POST SPACING
3'-6" TO 4'-6"	3' - 1½"
4'-6" AND OVER	6' - 3"

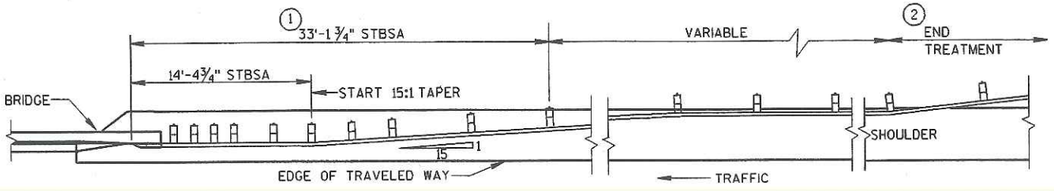


BEAM GUARD AT FULL WIDTH BRIDGES



BEAM GUARD AT OSBSTACLES - TWO WAY TRAFFIC

(RAIL TO OBSTACLE CLEARANCE 3'-6" TO 4'-6")



BEAM GUARD AT NARROW BRIDGES

(FLARED TO SHOULDER EDGE, THEN PARALLEL TO ROADWAY)

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
12/08/00
DATE
John Haverberg
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

S.D.D. 14 B 18-4a

S.D.D. 14 B 18-4a

BILL OF MATERIALS

NOTE NO.	QTY.	DESCRIPTION
①	4	WOOD BREAKAWAY TERMINAL POST: 5½" X 7½" X 3'-9"
②	4	STEEL TUBE: TS 8" X 6" X 0.188", 4'-6" LONG
③	4	SOIL PLATE: 2'-0" X 1'-6" X ¼"
④	4	WOOD BREAKAWAY CRT POST: 6" X 8" X 6'-0"
⑤	6	WOOD OFFSET BLOCKS: 6' X 8" X 1'-2"
⑥	1	PIPE SLEEVE: 2" X 5 ½" STANDARD PIPE
⑦	1	BEARING PLATE
⑧	1	BCT CABLE ASSEMBLY
⑨	1	CABLE ANCHOR BOX
⑩	1	STRUT & YOKE
⑪	1	STEEL PLATE BEAM, END PANEL 12 GA. 13'-6½" LONG FOR SKT-350, ET-2000 AND ET-2000 PLUS
⑫	3	STEEL PLATE BEAM: 12 GA. 13'-6½"
⑬	1	ET-2000/ET-2000 PLUS GUARDRAIL EXTRUDER OR SKT-350 IMPACT HEAD: AS FURNISHED BY MANUFACTURER
⑭	1	REFLECTIVE SHEETING: 18" X 18"

GENERAL NOTES

Ⓐ USE 3:1 OR FLATTER SLOPE FOR INSTALLATION ON EXISTING HIGHWAYS.

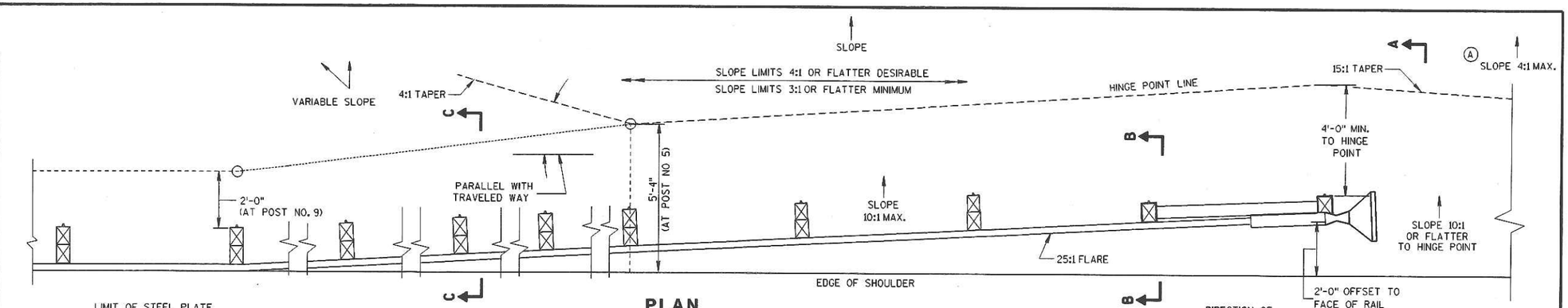
Ⓑ DO NOT ATTACH GUARDRAIL TO POST BLOCKS AT POSTS NO. 3, 5 & 7.

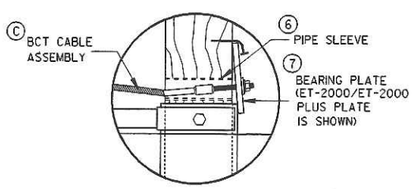
Ⓒ AFTER FINAL ASSEMBLY, RECHECK CABLE TO BE SURE IT IS TAUT AND HAS NOT RELAXED.

STEEL POSTS SHALL NOT BE ALLOWED FOR USE WITH ENERGY ABSORBING TERMINALS.

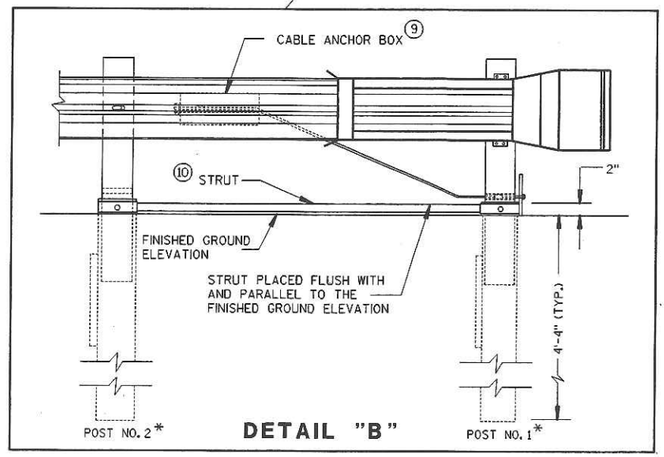
DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

*DO NOT ATTACH BLOCKOUTS TO POSTS 1 AND 2.

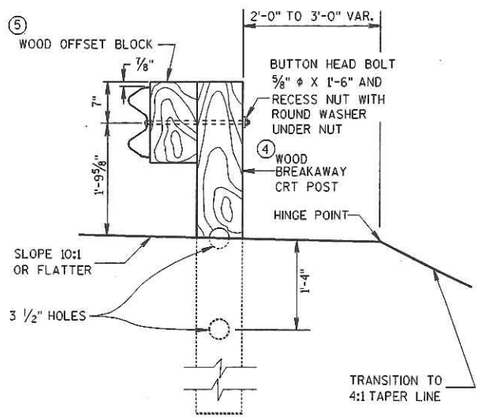




DETAIL "A"

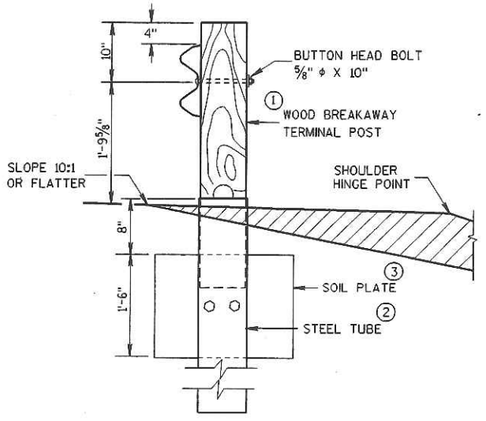


DETAIL "B"



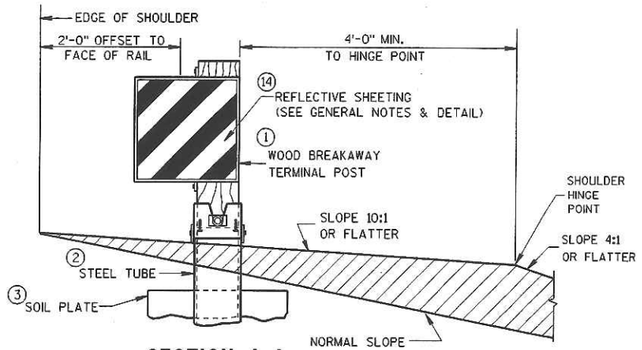
SECTION C-C

TYPICAL AT POST NOS. 4, 6, 8



SECTION B-B

TYPICAL AT POST NO. 2*



SECTION A-A

TYPICAL AT POST NO. 1*

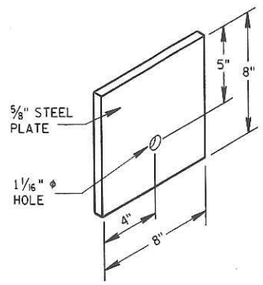
STEEL PLATE BEAM GUARD
ENERGY ABSORBING TERMINAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

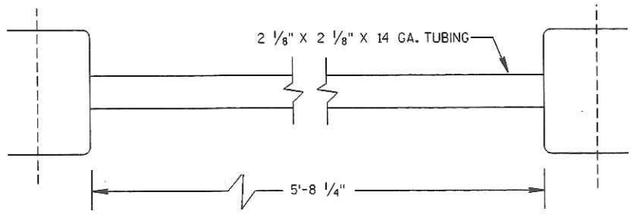
S.D.D. 14 B 24-4a

6

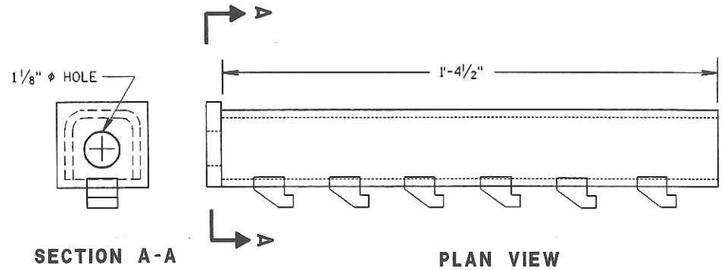
S.D.D. 14 B 24-4a



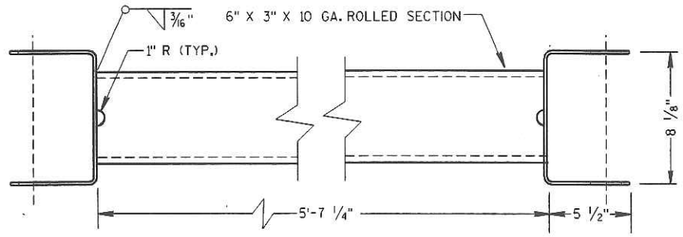
STEEL BEARING PLATE (SKT-350)



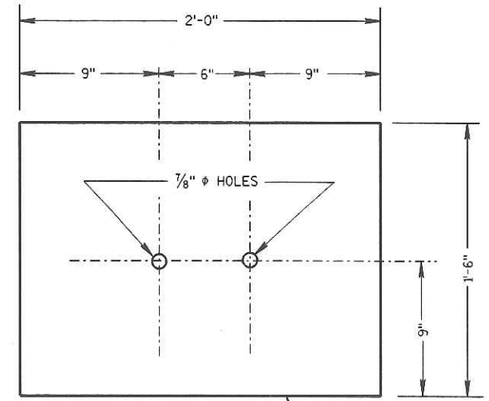
STRUT DETAIL (SKT-350)



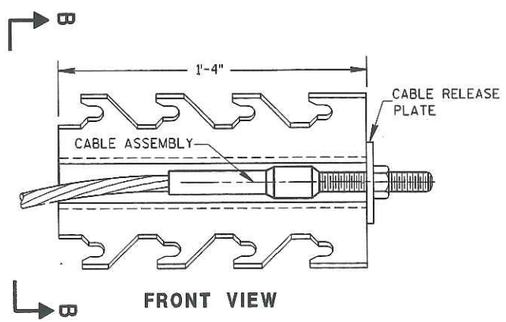
CABLE ANCHOR BOX (ET-2000/ET-2000 PLUS)

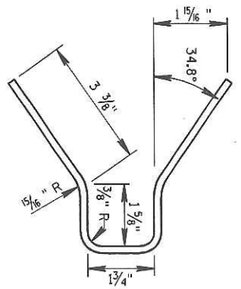


STRUT DETAIL (ET-2000/ET-2000 PLUS)



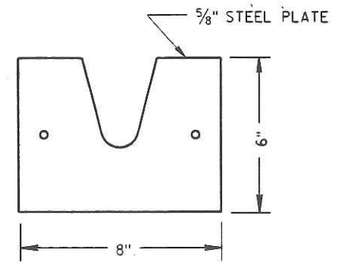
SOIL PLATE
(SKT-350, ET-2000/ET-2000 PLUS)



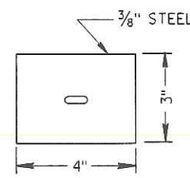


CABLE ANCHOR BOX (SKT-350)

(SKT-350)



STEEL BEARING PLATE
(ET-2000/ET-2000 PLUS)



BEARING PLATE WASHER
(ET-2000/ET-2000 PLUS)

(ET-2000/ET-2000 PLUS)

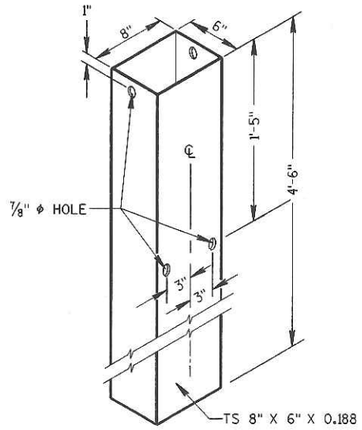
STEEL PLATE BEAM GUARD
ENERGY ABSORBING TERMINAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

S.D.D. 14 B 24-4b

S.D.D. 1 B 24-4b

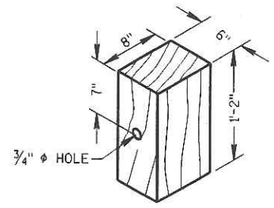


STEEL TUBE

(POSTS NO. 1-4

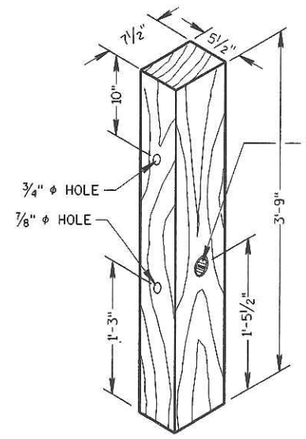
THE STEEL TUBE SHALL CONFORM

TO REQUIREMENTS OF ASTM A500



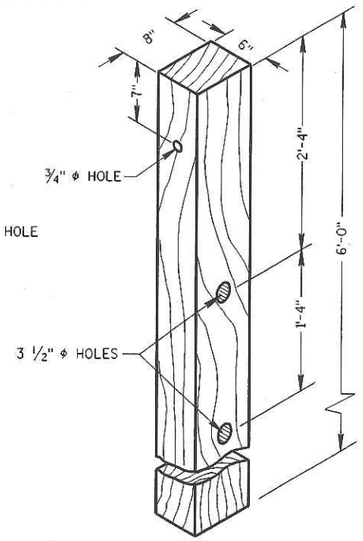
WOOD OFFSET BLOCK

REQ'D. AT ALL POSTS EXCEPT POST NO'S 1 & 2



TERMINAL POST

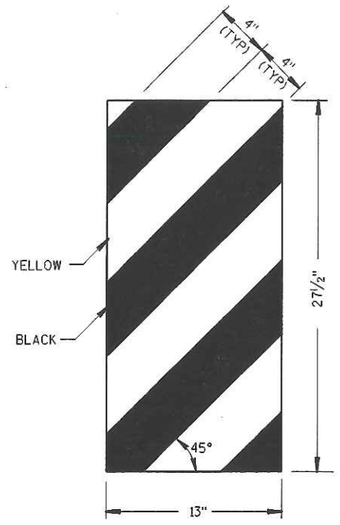
(POSTS NO. 1-4



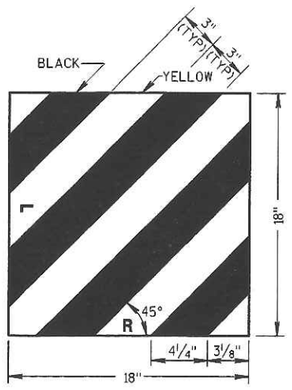
CRT POST

(POSTS NO'S 5-8

WOOD BREAKAWAY POSTS



ET-2000 PLUS ONLY



ET-2000 AND SKT-350

REFLECTIVE SHEETING DETAILS

GENERAL NOTES

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

STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL SHALL BE EITHER THE EXTRUDER TERMINAL (ET-2000), OR THE SEQUENTIAL KINKING TERMINAL (SKT-350). THE CONTRACTOR SHALL NOT INTERMIX PROPRIATERY PRODUCT MATERIALS.

STEEL PLATE BEAM GUARD, ENERGY ABSORBING TERMINAL SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE EACH, WHICH SHALL INCLUDE HARDWARE, STEEL PLATE BEAM GUARD, POSTS, REFLECTIVE SHEETING AND INSTALLATION AS SHOWN.

REFLECTIVE SHEETING - SHALL CONFORM TO ASTM SPECIFICATION D4956-94, REFLECTIVE SHEETING TYPE III, BACKING CLASS 4, PERFORMANCE REQUIREMENT TYPE III. THE MESSAGE AND LINES SHALL BE APPLIED TO THE SIGNS BY THE SILK SCREEN STENCIL PROCESS USING A BLACK OR DARK STENCIL PASTE AS A TYPE APPROVED BY THE MANUFACTURER OF THE FACE MATERIAL TO WHICH IT IS TO BE APPLIED. MESSAGE UNITS CUT FROM NONREFLECTIVE SHEETING AND APPLIED TO THE SIGN FACE ARE NOT ACCEPTABLE. AFTER THE APPROACH END OF THE STEEL PLATE BEAM GUARD INSTALLATION IS COMPLETE, CLEAN THE AREA WHERE THE REFLECTIVE SHEETING WILL BE APPLIED IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATION. ONCE CLEAN, APPLY REFLECTIVE SHEETING DIRECTLY TO THE STEEL PLATE BEAM GUARD AS SHOWN. THE CONTRACTOR SHALL TURN OVER THE MANUFACTURERS WARRANTY FOR THE REFLECTIVE SHEETING TO THE DEPARTMENT FOR POTENTIAL DEALING WITH THE MANUFACTURER. PAYMENT OF REFLECTIVE SHEETING IS INCIDENTAL TO STEEL PLATE BEAM GUARD, ENERGY ABSORBING TERMINAL.

WHEN ROCK IS ENCOUNTERED DURING EXCAVATION, A 12 INCH DIA. POST HOLE EXTENDING 20 INCHES DEEP INTO THE ROCK MAY BE USED IF APPROVED BY THE ENGINEER. GRANULAR MATERIAL SHALL BE PLACED IN THE BOTTOM OF THE HOLE APPROXIMATELY 2 1/2" INCHES DEEP TO PROVIDE DRAINAGE. THE SOIL TUBES SHALL BE FIELD CUT TO LENGTH, PLACED IN THE HOLE AND BACKFILLED WITH ADEQUATELY COMPACTED MATERIAL EXCAVATED FROM THE HOLE.

6

STEEL PLATE BEAM GUARD
ENERGY ABSORBING TERMINAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED 6/25/03
DATE

CHIEF ROADWAY DEVELOPMENT ENGINEER

FHWA

S.D.D. 14 B 24-4c

S.D.D. 14 B 24-4c

TWO-LANE ROADWAY

SYMBOLS

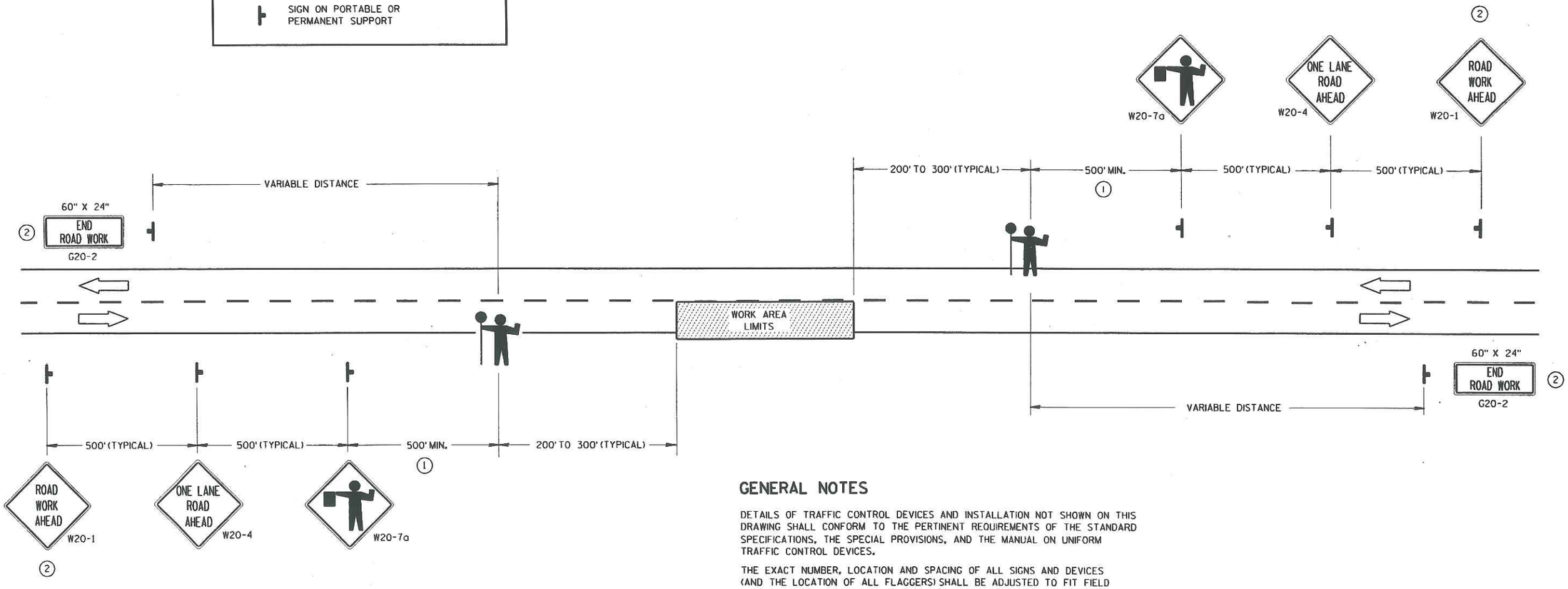
WORK AREA

FLAGGER, EQUIPPED WITH STOP/SLOW PADDLE FASTENED ON SUPPORT STAFF

SIGN ON PORTABLE OR PERMANENT SUPPORT

W20-7b

USE OF THE "BE PREPARED TO STOP" SIGN IS OPTIONAL. WHEN USED, THIS SIGN SHALL BE LOCATED BETWEEN THE W20-7a AND W20-4 SIGNS. A 500' TYPICAL SPACING SHALL BE PROVIDED BETWEEN THE SIGNS.



(1) FOR A MOVING WORK OPERATION,
SIGNING FOR BOTH DIRECTIONS SHALL BE REESTABLISHED (AS SIMULTANEOUSLY AS PRACTICAL) AT APPROXIMATELY 3500 FOOT INTERVALS IN THE MOVING WORK OPERATION OR AS DIRECTED BY THE ENGINEER.

(2) SIGN NOT REQUIRED IF FLAGGING OPERATION OCCURS WITHIN A SIGNED ROAD WORK ZONE AREA.

GENERAL NOTES

DETAILS OF TRAFFIC CONTROL DEVICES AND INSTALLATION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS, THE SPECIAL PROVISIONS, AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

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

THE FIRST ADVANCE WARNING SIGN SHOULD TYPICALLY BE LOCATED IN ADVANCE OF THE ANTICIPATED TRAFFIC BACKUP OR QUEUE.

WHEN A SIDE ROAD OR 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.

FLAGGERS SHALL BE IN SIGHT OF EACH OTHER OR IN DIRECT COMMUNICATION AT ALL TIMES. THEY SHALL BE EQUIPPED WITH STOP/SLOW PADDLES FASTENED ON SUPPORT STAFFS. WHEN THE FLAGGING OPERATION IS NOT IN EFFECT, THE "FLAGGER AHEAD", THE "ROAD WORK AHEAD" AND THE ONE LANE ROAD AHEAD" SIGNS SHALL BE COVERED OR REMOVED AND THE HIGHWAY RESTORED TO NORMAL OPERATION.

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

TRAFFIC CONTROL FOR LANE CLOSURE (SUITABLE FOR MOVING OPERATIONS)

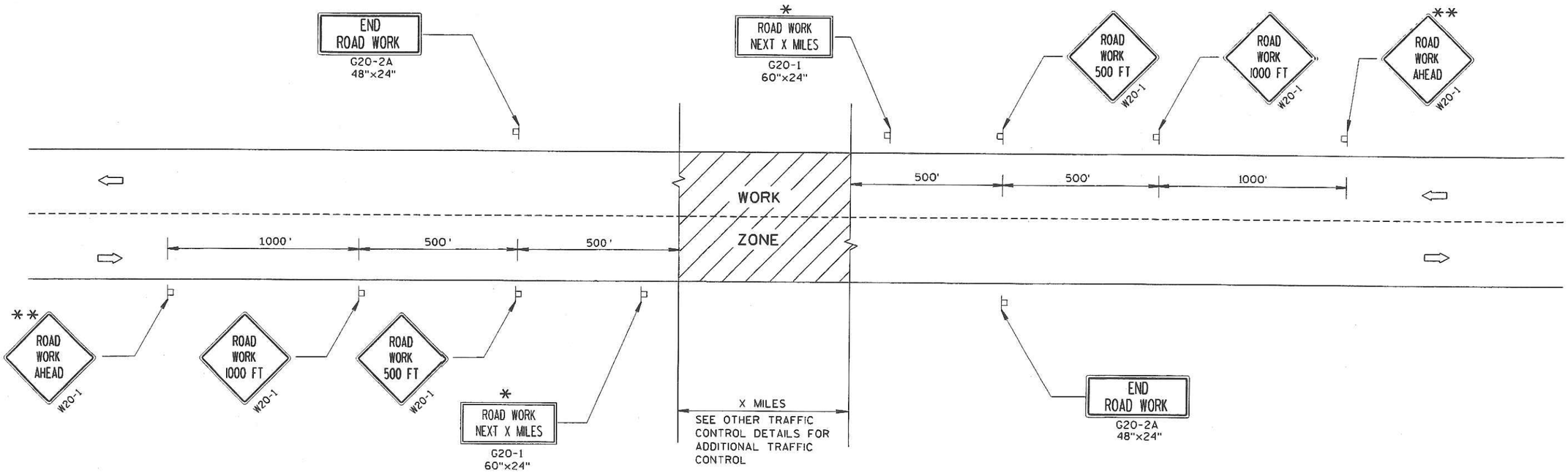
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
2/17/94 Peter T. Rusch
DATE STATE TRAFFIC ENGINEER FOR HWYS

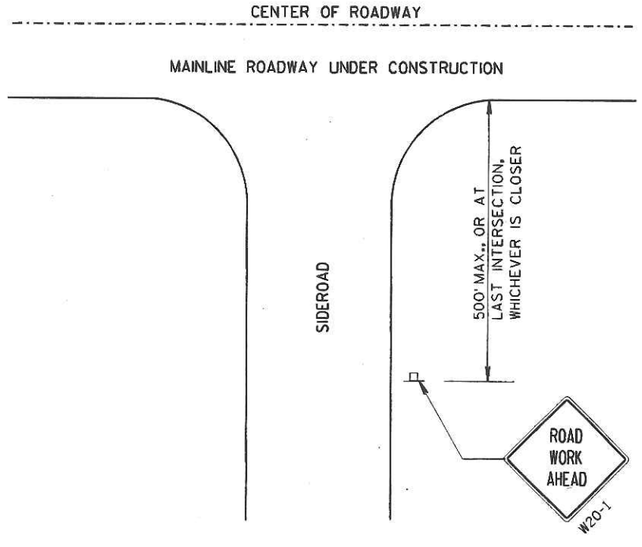
FHWA

S.D.D. 15 C 12-2

S.D.D. 15 C 12-2



TYPICAL SIDEROAD APPROACH WARNING SIGN DETAIL



GENERAL NOTES

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

THE SPACING BETWEEN TRAFFIC CONTROL SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND SHOULD PROVIDE A MINIMUM OF 200 FEET (500 FEET DESIRABLE) CLEARANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED.

SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

IF A "STOP" SIGN MUST BE REMOVED FOR A WORK OPERATION, A TEMPORARY "STOP" SIGN SHALL BE PLACED PRIOR TO THE SIGN REMOVAL, OR A FLAGGER SHALL BE PROVIDED UNTIL THE SIGN IS RE-ESTABLISHED.

* OMIT G20-1 SIGNS IF LENGTH OF WORK AREA IS 2 MILES OR LESS.

** PLACE ADDITIONAL W20-1 "ROAD WORK AHEAD" SIGN IF WORK AREA WITHIN THE PROJECT IS SEPARATED BY MORE THAN 2 MILES FROM PREVIOUS WORK AREA OR SIGNING.

LEGEND

POST MOUNTED SIGN

DIRECTION OF TRAFFIC FLOW

TRAFFIC CONTROL,
ADVANCE WARNING SIGNS
45 M.P.H. OR GREATER
TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

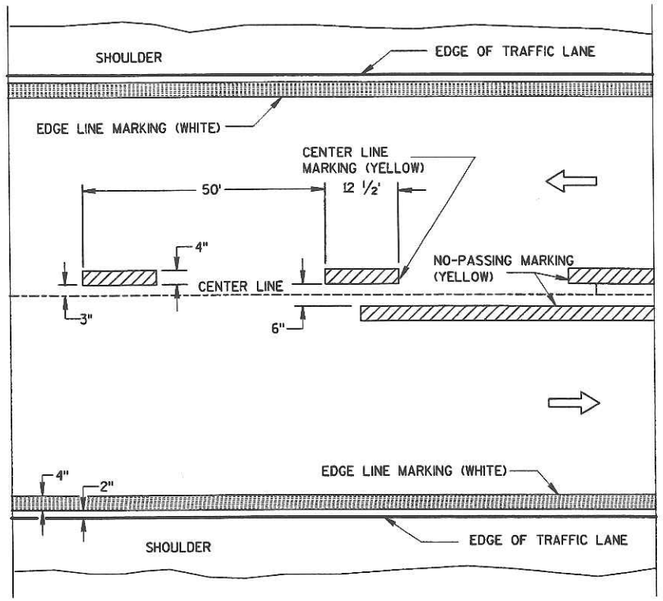
APPROVED
5/23/00
DATE

Christa J. Spang
CHIEF SIGNS AND MARKING ENGINEER

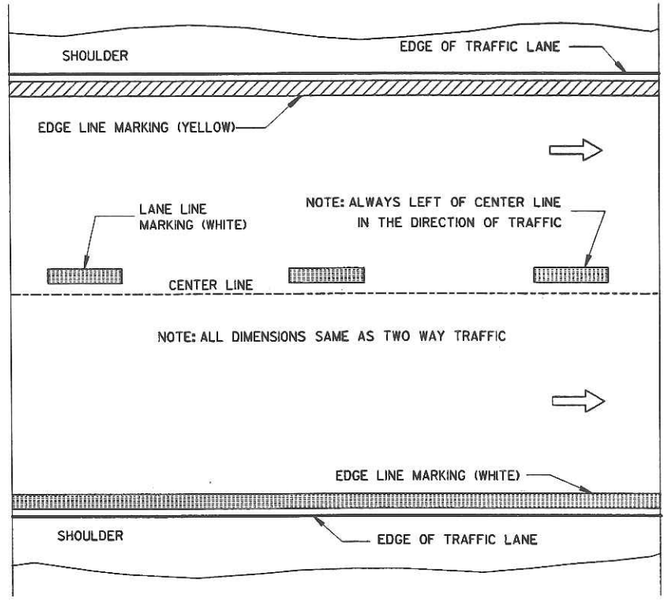
FHWA

S.D.D. 15 C 4-1

S.D.D. 15 C 4-1

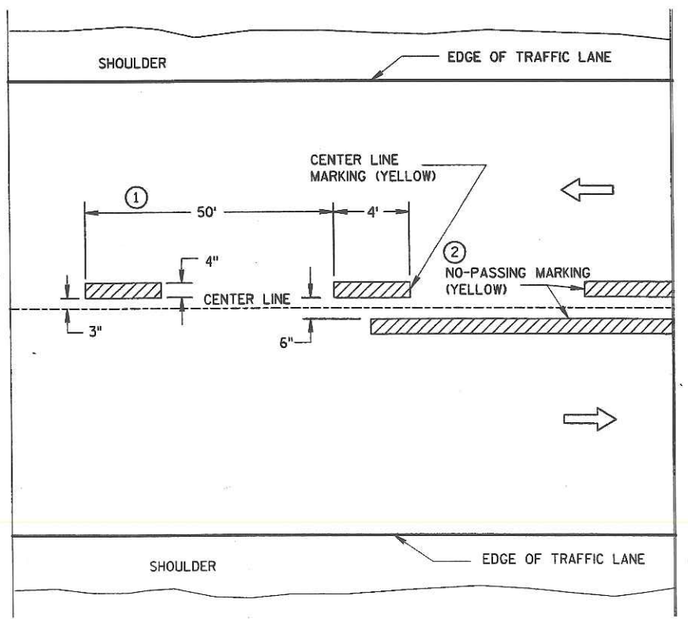


TWO WAY TRAFFIC

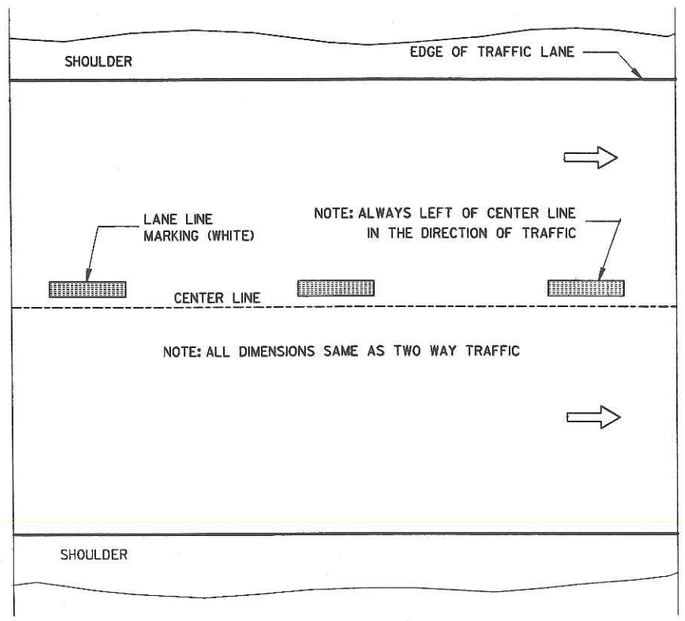


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY (INTERMEDIATE) PAVEMENT MARKING

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

GENERAL NOTES

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

① 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.

② 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

PAVEMENT MARKING
(MAINLINE)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
2-17-00
DATE
Christ I. Spang
CHIEF SIGNS AND MARKING ENGINEER
FHWA

S.D.D. 15 C 8-9a

S.D.D. 15 C 8-9a

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.

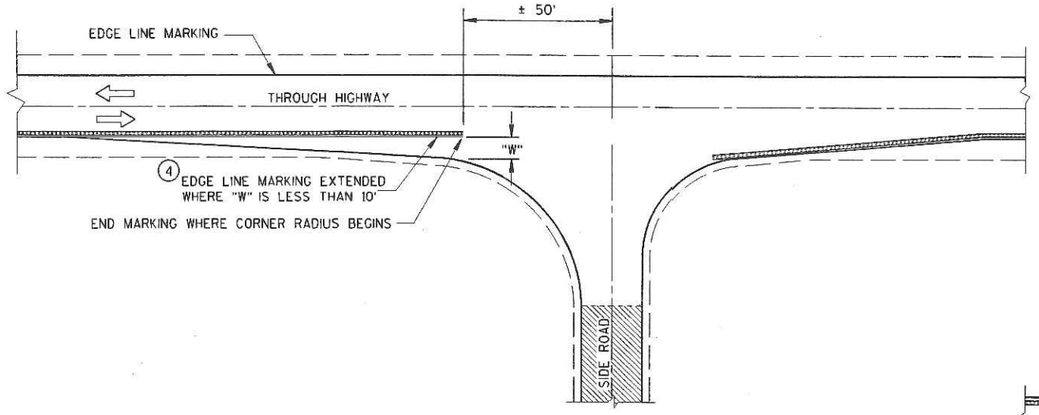
(2) WHEN DISTANCE "B" IS LESS THAN 100 FEET, OMIT CHANNELIZING LANE LINE.

(3) 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.

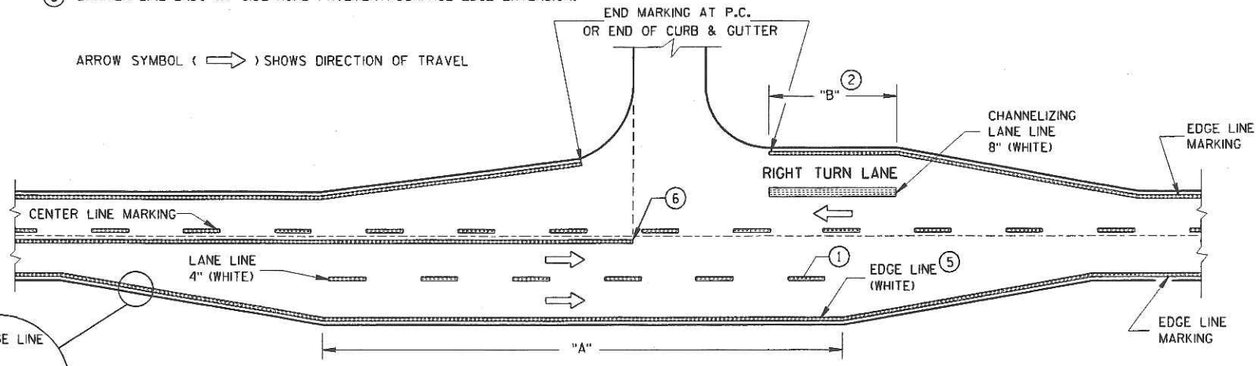
(4) LOCATE THE EDGE LINE ALONG THE TAPER WHERE "W" IS 10' OR MORE.

(5) THE EDGE LINE IN THE TAPER AREAS OF THE BYPASS LANE AND THE BYPASS LANE SHALL BE LOCATED 1-FOOT FROM EDGE OF PAVEMENT TO THE OUTSIDE EDGE OF EDGE LINE.

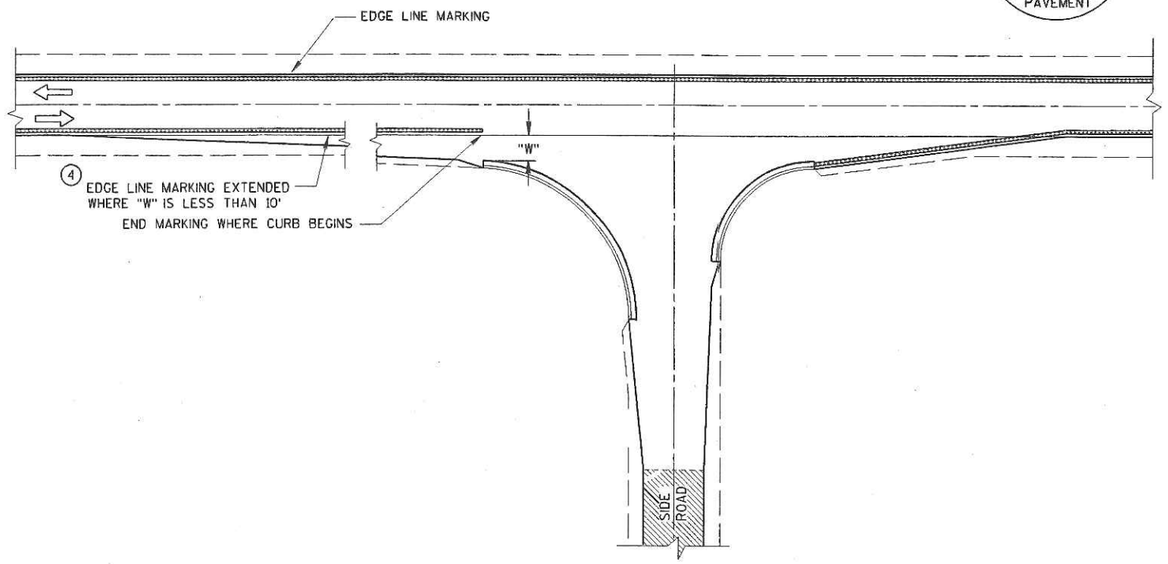
(6) BARRIER LINE ENDS AT SIDE ROAD PAVEMENT/SURFACE EDGE EXTENSION.



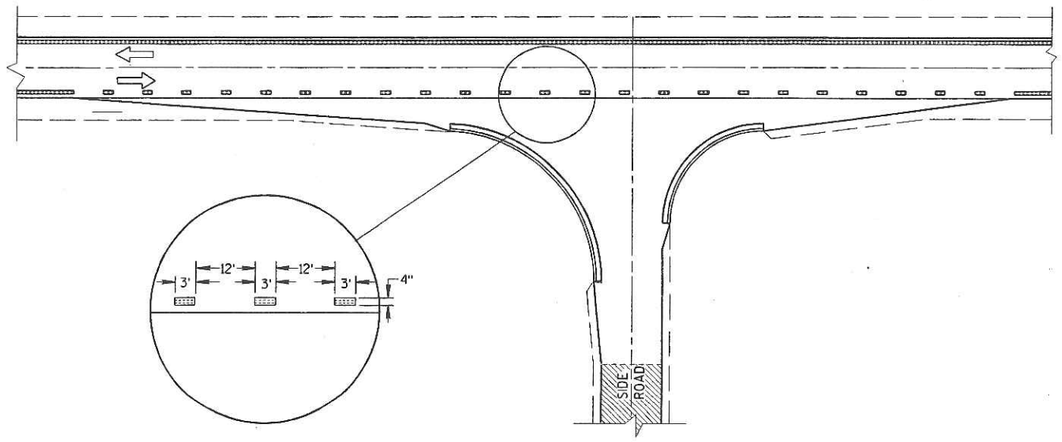
MINOR INTERSECTION WITHOUT CURBS



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



MINOR INTERSECTION WITH CURBS
(TYPICAL MARKING)



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

PAVEMENT MARKING
(INTERSECTIONS)

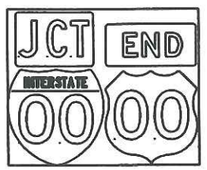
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

S.D.D. 15 C 8-9b

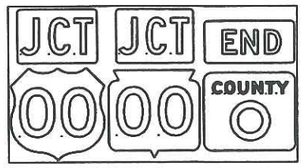
S.D.D. 15 C 8-9b

TYPICAL ASSEMBLIES

J1-1

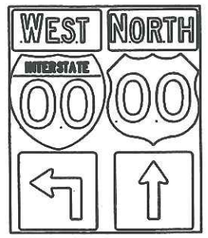


J1-2

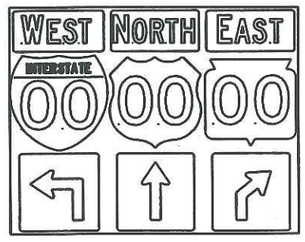


J1-3

J2-1



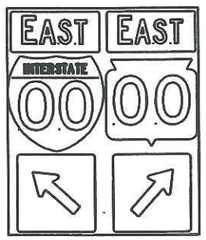
J2-2



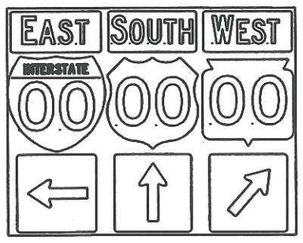
J2-3

JV

J3-1

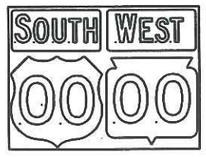


J3-2



J3-3

J4-1



J4-2

J13-1

J12-1

J32-1

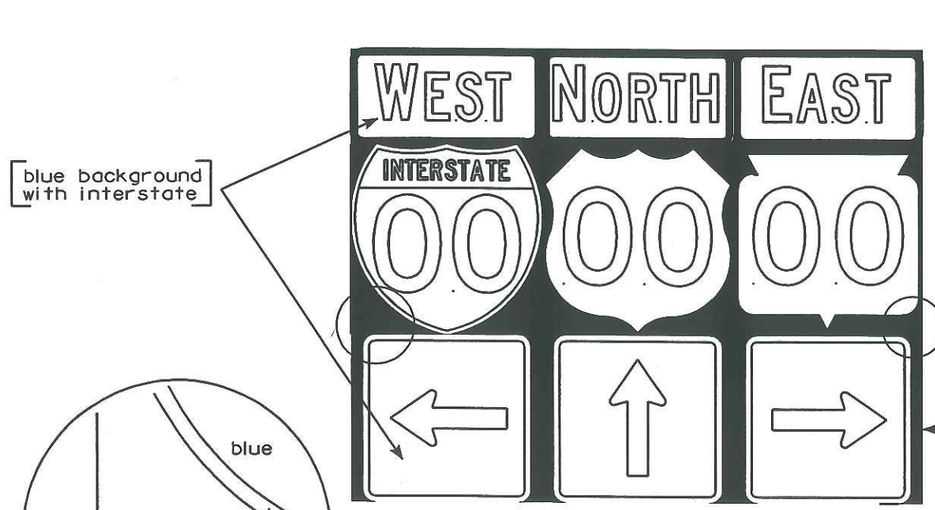
J33-1

J23-1

J22-1

NOTES

1. Signs are Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Black Non-reflective
   Message - see Note 5
3. Message Series - See Note 5
4. Corners shall be square since base material is plywood.
5. The colors and message spacing on each marker shall be according to the applicable route marker panel specifications.
6. Certain marker heads require the component pieces to be the same color. As an example, all the components used with an M1-1 interstate marker shall be blue.



ROUTE MARKERS & COMPONENTS IN TYPICAL ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch for State Traffic Engineer

DATE 10/17/02 PLATE NO. A2-1S.3

7

STATE PROJECT NUMBER:					SHEET NO: 39	E

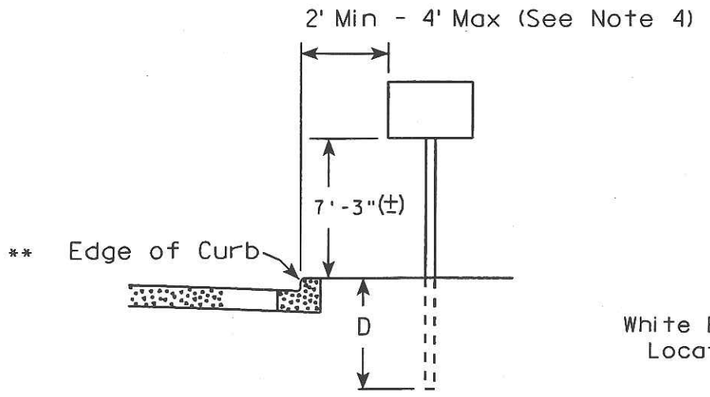
FILE NAME : C:\Users\Projects\tr_stdplate\A21S.DGN PLOT DATE : 09-APR-2004 09:02 PLOT BY : DOTDZK PLOT NAME : ORG DATE : 10/17/02 Originator : DON KLUEVER

WISDOT/CADDS SHEET 42

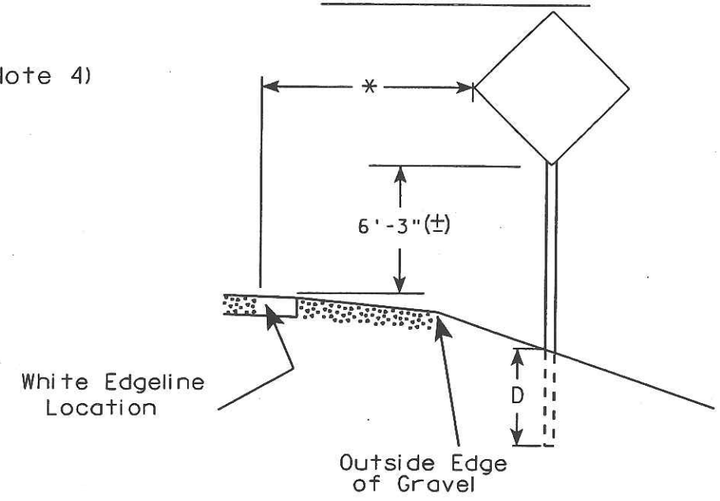
57.58.59.60.61.62.63

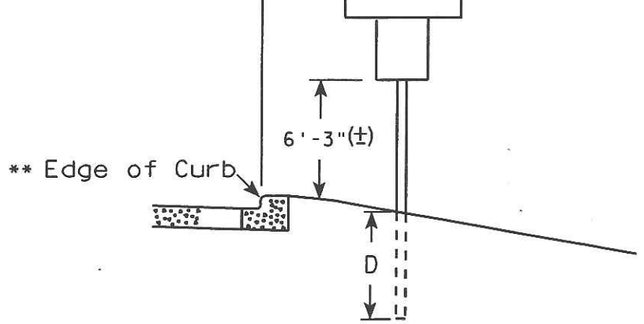
LEVELS ON • 2.3. 5.6. 10.

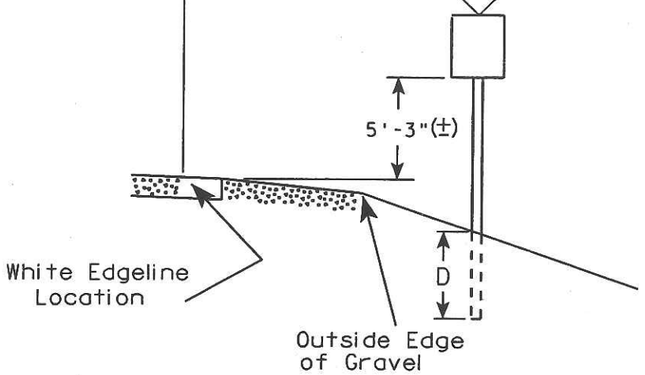
URBAN AREA



RURAL AREA (See Note 2)







** The existence of curb and gutter does not in itself mandate the vertical clearance illustrated. That height is typically where there is sidewalk adjacent to the roadway or parking is permitted. This same criteria applies to mountable curb as well and measurement shall be taken from flow line.

* 6 feet from edge of a paved shoulder or 12 feet from the edge of pavement (edge line location) or 2 feet from outside edge of gravel, whichever is greater unless directed by project engineer.

GENERAL NOTES

1. Signs wider than 4 feet or larger than 20 sq. ft. shall be mounted on multiple posts. Refer to plate A4-4.
2. For expressways and freeways, mounting height is 7'- 3" (±) or 6'-3" (±) depending upon existence of a sub-sign.
3. Minimum mounting height for J assemblies (A4-5) is 7'-3" (±) or 6'-3" (±) per urban or rural detail respectively.
4. Minimum mounting height for signs mounted on traffic signal poles is 5'- 3" (±).
5. Offset distance shall be consistent with existing signs or consistent throughout length of project.
6. The (±) tolerance for mounting height is 3 inches.

POST EMBEDMENT DEPTH

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

7

TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch for State Traffic Engineer

DATE 2/20/03 PLATE NO. A4-3.12

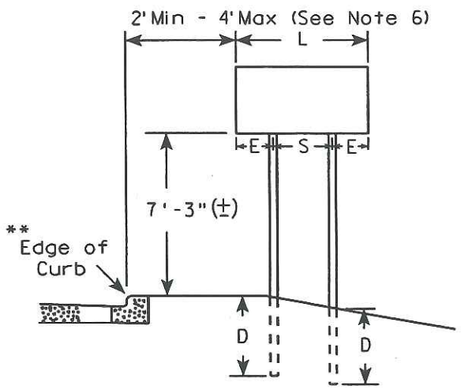
STATE PROJECT NUMBER:	HWY:	COUNTY:			SHEET NO: 40	E

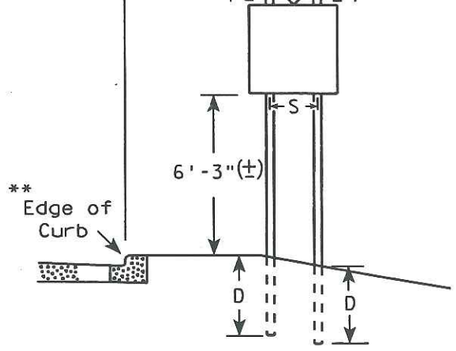
FILE NAME : C:\Users\Projects\tr_stdplate\A43.DGN PLOT DATE : 09-APR-2004 09:02 PLOT BY : DOTDZK PLOT NAME : REV DATE : 12/20/02 Originator : Sandy Anderson PLOT SCALE : 101.940000:1.000000

WISDOT/CADDS SHEET 42

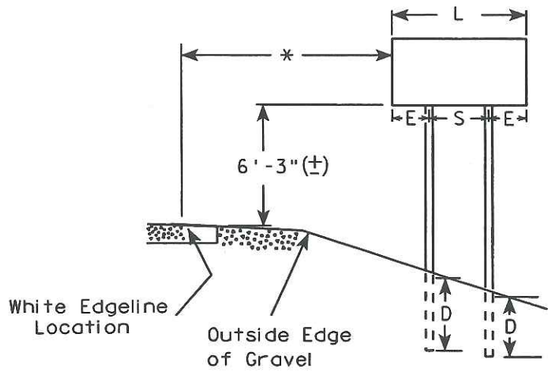
LEVELS ON · 2 5.6. 10.11.12.13.14.15.16. 50. 57.58.59.60.61.62.63

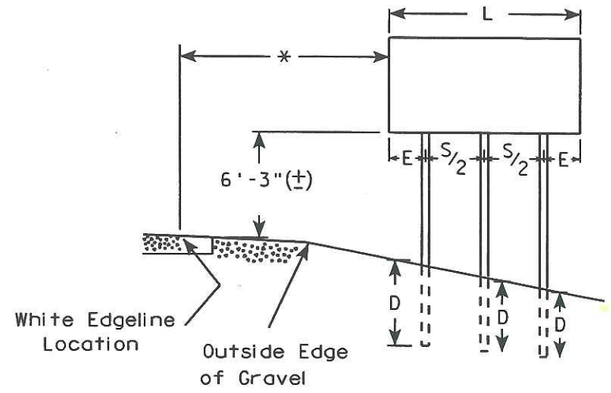
URBAN AREA

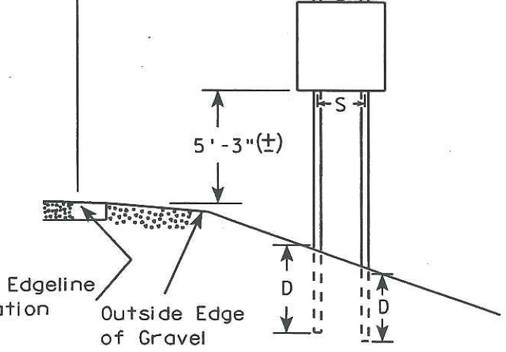




RURAL AREA (See Note 3)







GENERAL NOTES

1. For 3 post installations, spacing is S/2 and S must be greater than 7'-0".
2. For 4 post installations, spacing is S/3 and S must be greater than 10'-6".
3. For expressways and freeways, mounting height is 7'-3" (±) or 6'-3" (±) depending upon existence of sub-sign.
4. The (±) tolerance for mounting height is 3 inches.
5. Minimum mounting height for J assemblies (A4-5) is 7'-3" (±) or 6'-3" (±) per urban or rural detail respectively.
6. Offset distance shall be consistent with existing signs or consistent throughout length of project.

* 6 feet from edge of a paved shoulder or 12 feet from the edge of pavement (edge line location) or 2 feet from outside edge of gravel, whichever is greater unless directed by project engineer.

** The existence of curb and gutter does not in itself mandate the vertical clearance illustrated. That height is typically where there is sidewalk adjacent to the roadway or parking is permitted. This same criteria applies to mountable curb as well and measurement shall be from the flow line..

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'

TYPICAL INSTALLATION OF TYPE II SIGNS ON MULTIPLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 2/20/03 PLATE NO. A4-4.7

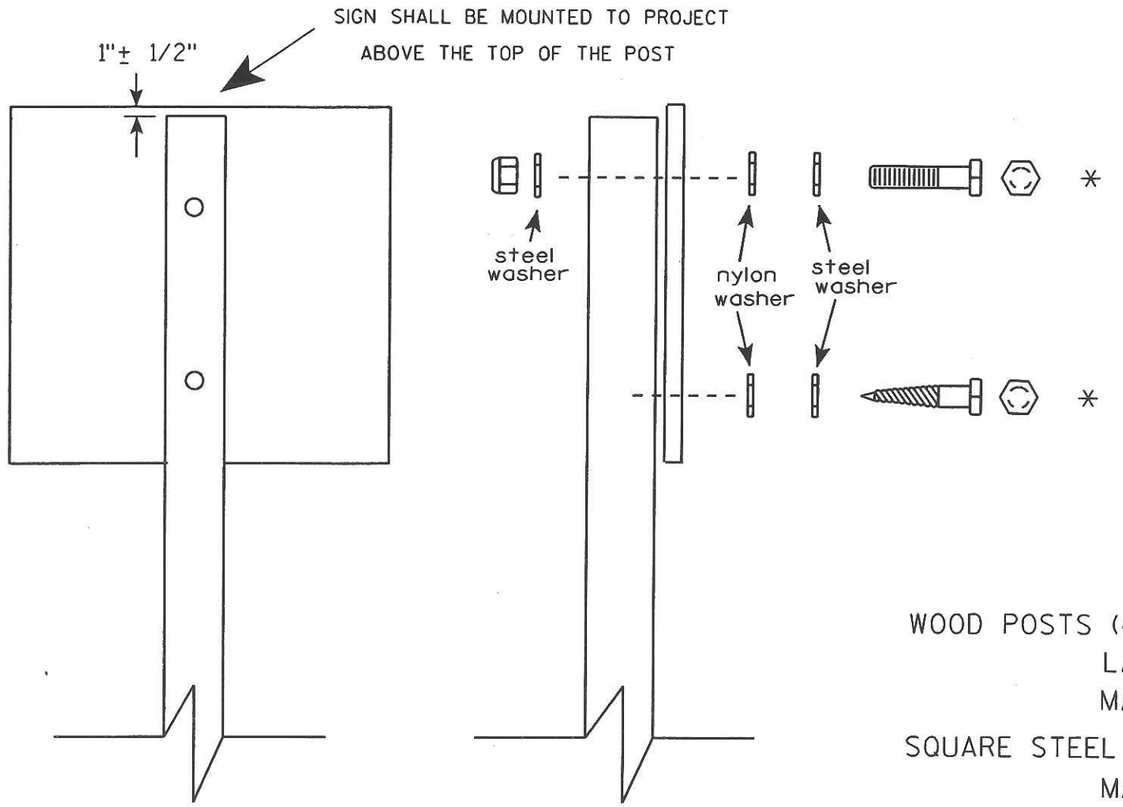
STATE PROJECT NUMBER:	HWY:	COUNTY:			SHEET NO: 41	E

FILE NAME : C:\Users\Projects\tr_stdplate\A44.DGN PLOT DATE : 09-APR-2004 09:03 PLOT BY : DOTDZK PLOT NAME : ORG DATE : Originator : Sandy Anderson PLOT SCALE : 104.000000:1.000000 WISDOT/CADDS SHEET 42

7

57.58.59.63

LEVELS ON • 1.2.5. 5.6. 10.



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

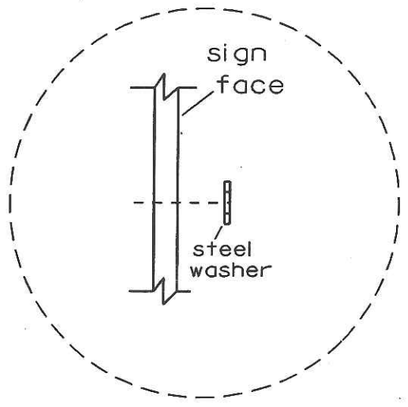
a. Hot dip or mechanically galvanized in accordance with ASTM Designation: A 153, Class D, or
b. Cadmium plated in accordance with ASTM Designation : B 766 TYPE 3, Class 12, or
c. Electro-galvanized in accordance with ASTM Designation : B 633, TYPE III, SC 3.

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.

WOOD POSTS (4" x 4" or 4" x 6")
LAG SCREWS - 3/8" X 3"
MACHINE BOLTS - 5/16" X 6-1/2" or 7" Length w/ nuts

SQUARE STEEL POSTS (2" x 2")
MACHINE BOLTS - 3/8" X 3-1/4" Length w/ nuts

WASHERS (ALL POSTS) -
1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL
1-1/4" O.D. X 3/8" I.D. X .080 NYLON for all Type H signs.



Washer Placement when Sign Has Other Than Type H or Type F Face

* Two different fastening systems are shown for illustration purposes. On any individual sign, either one or the other system shall be used. Actual number of fasteners per sign varies with the sign area, but normally there are two. For a single post installation, all signs 9 sq. ft. or larger require the use of 3 fasteners.

7

ATTACHMENT OF SIGNS TO POSTS

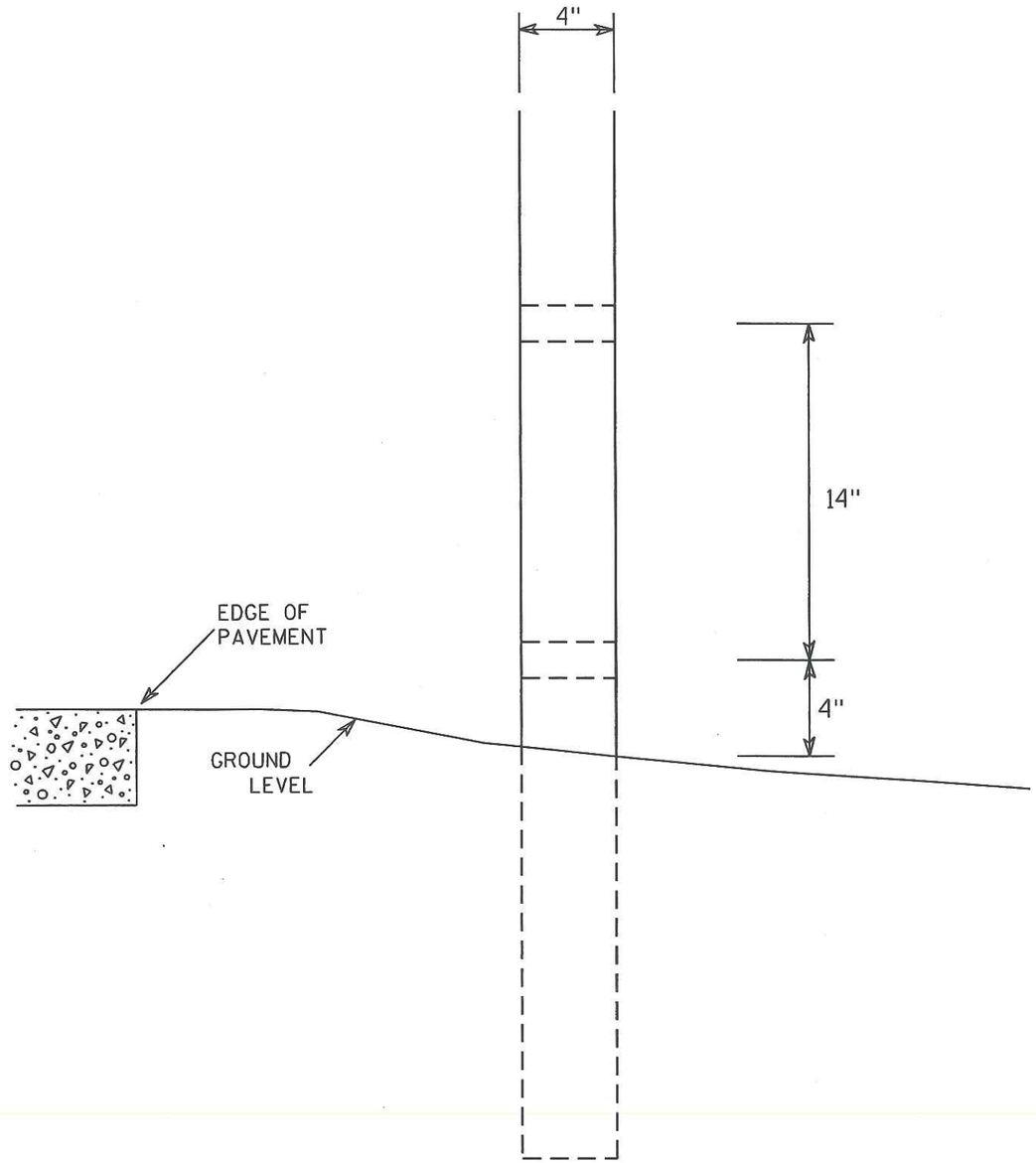
WISCONSIN DEPT OF TRANSPORTATION

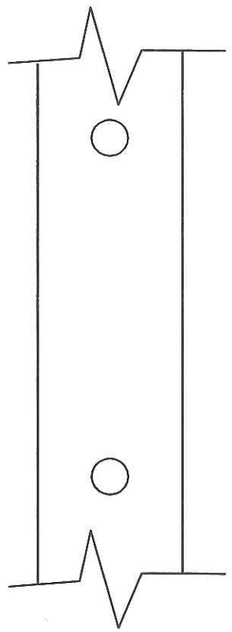
APPROVED Chester J Spang for State Traffic Engineer

DATE 4/03/02 PLATE NO. A4-8.5

STATE PROJECT NUMBER:

SHEET NO: 42 E





SIDE VIEW

GENERAL NOTES

1. All 4 x 6 Wood Posts shall be modified by having two 1½" diameter holes drilled perpendicular to the roadway centerline.

7

4 X 6 WOOD POST MODIFICATIONS

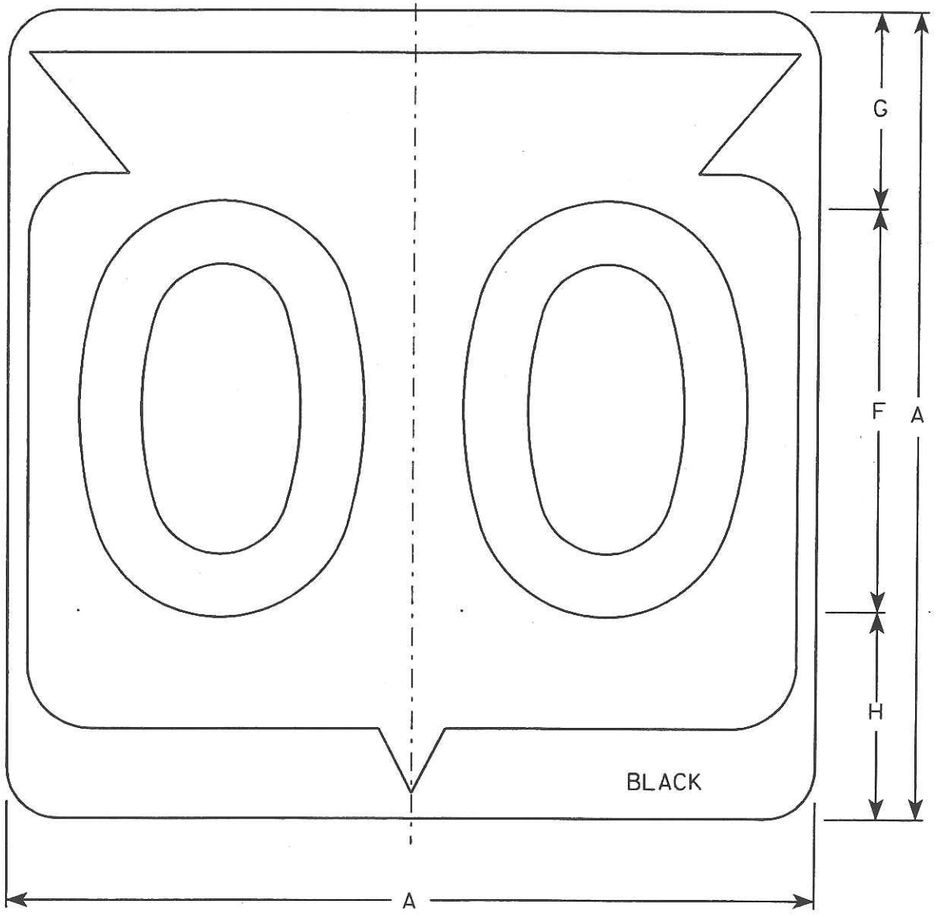
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Chester J Spange for State Traffic Engineer

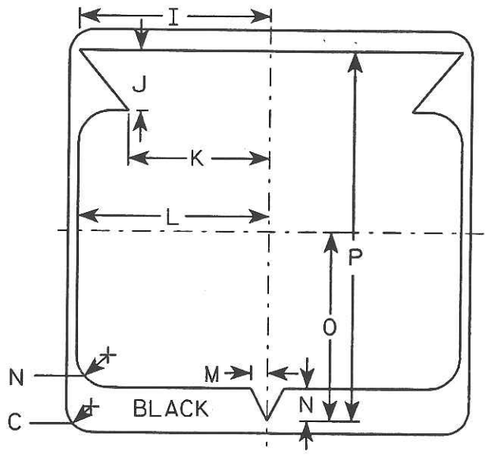
DATE 3/27/97 PLATE NO. A4-11.2

STATE PROJECT NUMBER:

SHEET NO: 43 E



M1-6



NOTES

1. Sign is Type II - See Note 6 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White & Black - See Note 6
   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. Substitute appropriate Series numerals and adjust spacing as per plate A10-1.
6. Permanent Signs
   Background - Type H Reflective
   Detour or temporary Signs
   Background - Reflective

Metric equivalent for this sign is:

SIZE	
1	
2	600 mm X 600 mm
3	900 mm X 900 mm
4	900 mm X 900 mm
5	900 mm X 900 mm

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.	Area m2
1																												
2	24		1 1/2			12	5 1/2	6 1/2	10 1/4	2 1/2	8 7/8	11 1/2	1	1 7/8	11 1/4	21 7/8											4.0	.36
3	36		2 1/4			18	8 3/4	9 1/4	15 3/8	5 3/8	12 5/8	17 1/8	1 1/2	2 7/8	16 7/8	33											9.0	.81
4	36		2 1/4			18	8 3/4	9 1/4	15 3/8	5 3/8	12 5/8	17 1/8	1 1/2	2 7/8	16 7/8	33											9.0	.81
5	36		2 1/4			18	8 3/4	9 1/4	15 3/8	5 3/8	12 5/8	17 1/8	1 1/2	2 7/8	16 7/8	33											9.0	.81

STATE ROUTE MARKER M1-6 FOR ASSEMBLIES

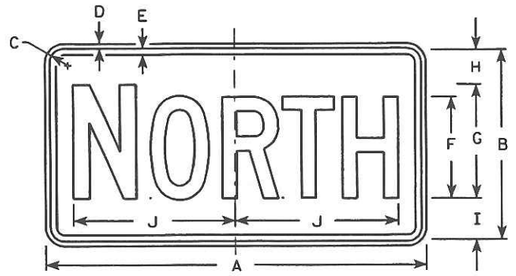
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Chester J Spong for State Traffic Engineer

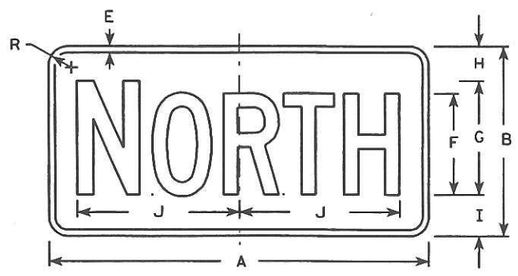
DATE 3/20/02 PLATE NO. M1-6.9

STATE PROJECT NUMBER:

SHEET NO: 44 E



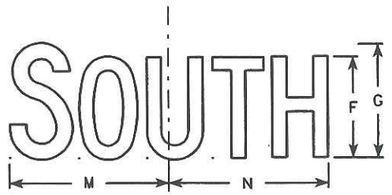
M3-1
MK3-1
MO3-1



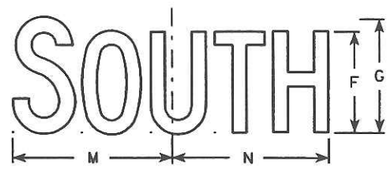
MB3-1
MG3-1
MM3-1*
MN3-1

M3-2
MK3-2
MO3-2

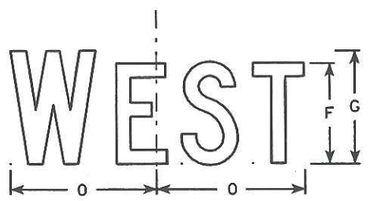
MB3-2
MG3-2
MM3-2*
MN3-2



M3-3
MK3-3
MO3-3



MB3-3
MG3-3
MM3-3*
MN3-3



M3-4
MK3-4
MO3-4

MB3-4
MG3-4
MM3-4*
MN3-4

Metric equivalent for this sign is:

SIZE	
1	
2	600 mm X 300 mm
3	750 mm X 375 mm
4	750 mm X 375 mm
5	750 mm X 375 mm

NOTES

1. All Signs Type II - See Note 5 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - See note 5
   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. M3-1 thru M3-4 Background - White - Type H Reflective (Detour or temporary signs - Reflective)
   Message - Black
   MB3-1 thru MB3-4 Background - Blue
   Message - White - Type H Reflective (Detour or temporary signs - Reflective)
   MG3-1 thru MG3-4 Background - Green
   Message - White - Type H Reflective
   MK3-1 thru MK3-4 Background - Green
   Message - White - Type H Reflective
   MM3-1 thru MM3-4 Background - White - Type H Reflective
   Message - Green
   MN3-1 thru MN3-4 Background - Brown
   Message - White - Type H Reflective
   MO3-1 thru MO3-4 Background - Orange - Reflective
   Message - Black
6. Border shall be omitted on MM series.
7. Note the first letter of each direction is larger than the remainder of the message.

* See Note 6

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.	Area m2
1																												
2	24	12	1 1/8	3/8	1/2	6	7	2 1/4	2 3/4	10 1/4	7 7/8	8 3/8	10 1/4	9 3/4	8 3/4			1 1/2									2.00	0.18
3	30	15	1 1/8	3/8	1/2	8	9	2 3/4	3 1/4	12 3/4	10 3/8	11 1/8	12 5/8	12 1/2	11 5/8			1 1/2									3.13	0.28
4	30	15	1 1/8	3/8	1/2	8	9	2 3/4	3 1/4	12 3/4	10 3/8	11 1/8	12 5/8	12 1/2	11 5/8			1 1/2									3.13	0.28
5	30	15	1 1/8	3/8	1/2	8	9	2 3/4	3 1/4	12 3/4	10 3/8	11 1/8	12 5/8	12 1/2	11 5/8			1 1/2									3.13	0.28

STANDARD SIGNS
M3-1 thur M3-4
SERIES

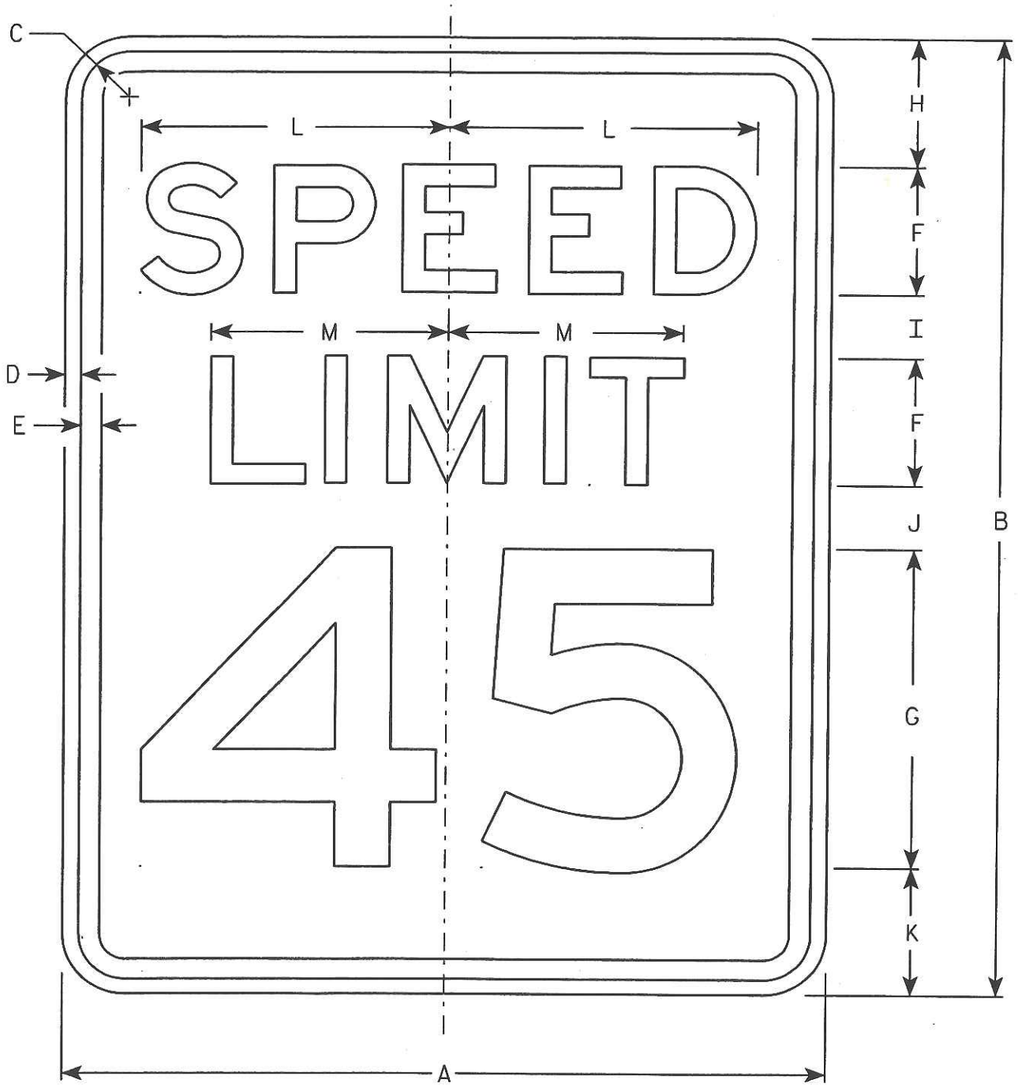
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Chester J Spang for State Traffic Engineer

DATE 3/20/02 PLATE NO. M3-1.10

STATE PROJECT NUMBER:

SHEET NO: 45 E



R2-1

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White
   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 optically adjust spacing to achieve proper balance.

Metric equivalent for this sign is:

SIZE	
1	450 mm X 600 mm
2	600 mm X 750 mm
3	900 mm X 1200 mm
4	900 mm X 1200 mm
5	1200 mm X 1500 mm

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.	Area m2
1	18	24	1 1/8	3/8	1/2	3	8	3	2	2	3	7 1/4	5 1/2														3.0	.28
2	24	30	1 1/8	3/8	1/2	4	10	3	2 1/4	3 3/8	3 3/8	9 5/8	7 3/8														5.0	.46
3	36	48	1 3/8	1/2	5/8	6	14	6	5	5	6	14 3/8	11														12.0	1.11
4	36	48	1 3/8	1/2	5/8	6	14	6	5	5	6	14 3/8	11														12.0	1.11
5	48	60	2 1/4	3/4	1	8	20	6	4 1/2	6 3/4	6 3/4	19 1/4	14 5/8														20.0	1.86

STANDARD SIGN
R2-1

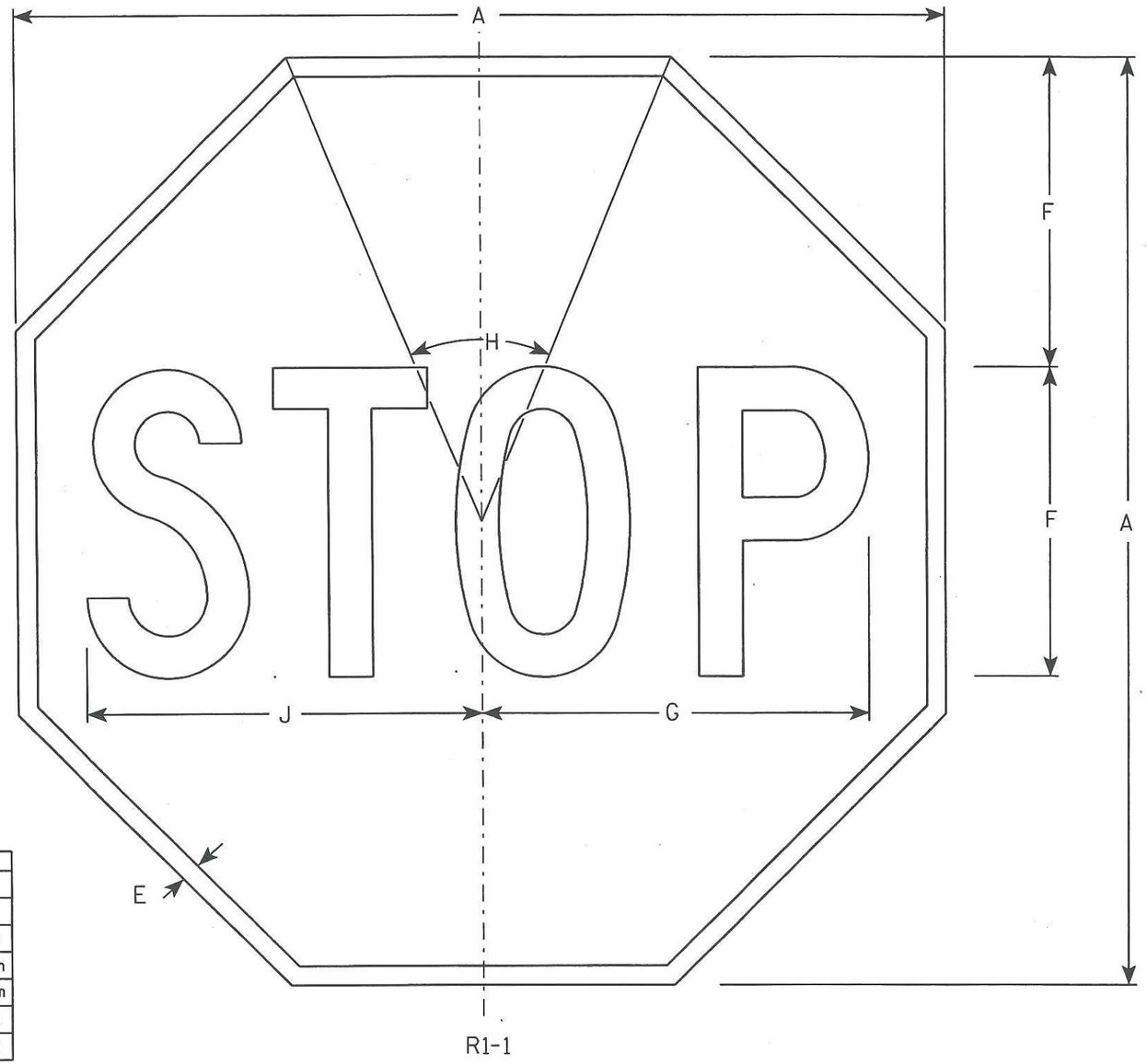
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Chester J Spang for State Traffic Engineer

DATE 2/01/02 PLATE NO. R2-1.11

STATE PROJECT NUMBER:

SHEET NO: 16 E



NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Red
   Message - White
3. Message Series - C

Metric equivalent for this sign is:

SIZE	
1	600 mm X 600 mm
2	750 mm X 750 mm
3	900 mm X 900 mm
4	1200 mm X 1200 mm
5	1200 mm X 1200 mm
6	450 mm X 450 mm
7	300 mm X 300 mm

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.	Area m2
1	24				3/8	8	10	45°		10 1/4																	3.31	0.31
2	30				5/8	10	12 1/2	45°		12 3/4																	5.18	0.48
3	36				3/4	12	15	45°		15 3/8																	7.46	0.69
4	48				1	16	20	45°		20 1/2																	13.25	1.23
5	48				1	16	20	45°		20 1/2																	13.25	1.23
6	18				3/8	6	7 3/4	45°		7 3/4																	1.86	0.17
7	12				1/4	4	5	45°		5 1/8																	0.78	0.07

STANDARD SIGN
R1-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Chester J Spang
for State Traffic Engineer

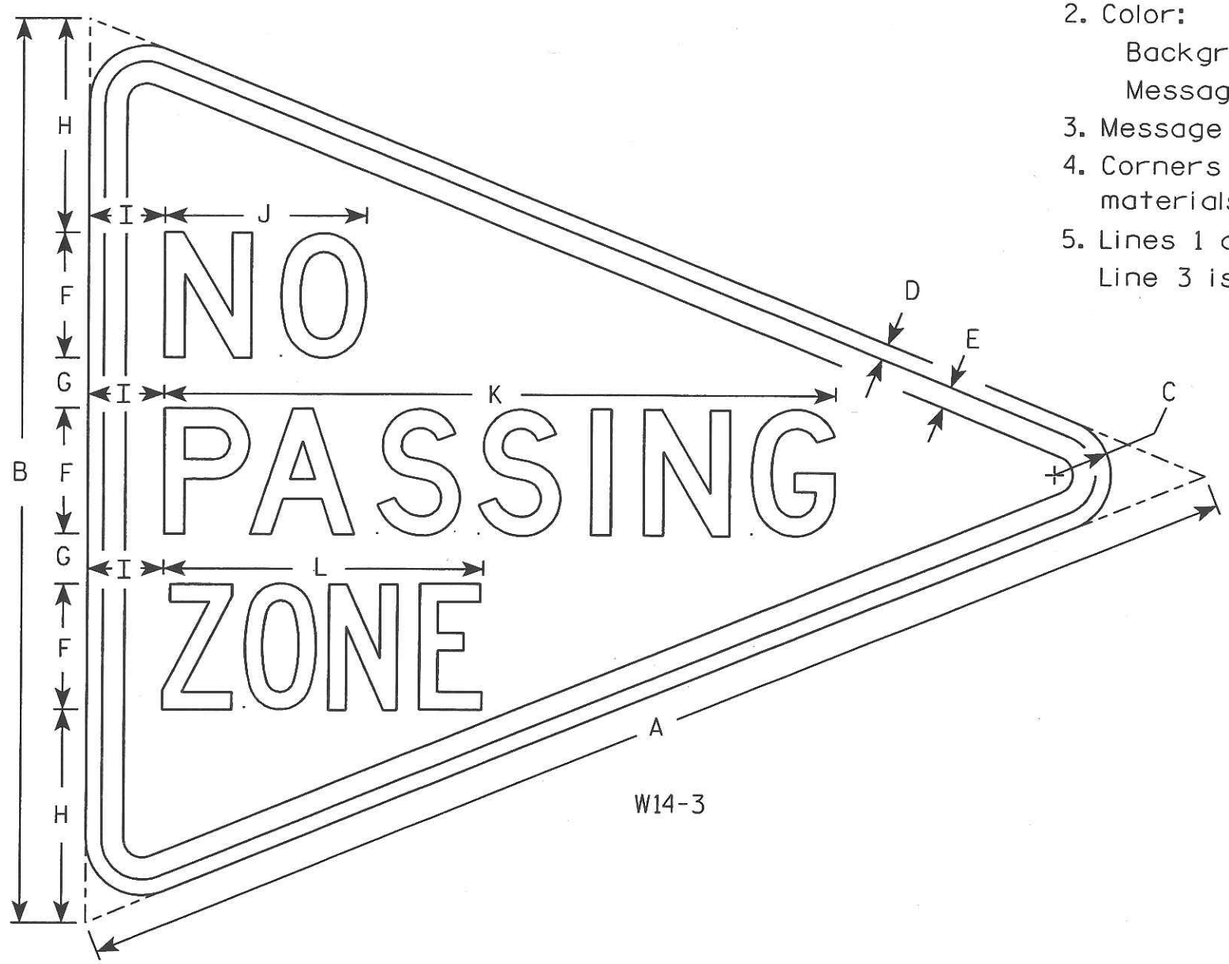
DATE 10/15/98 PLATE NO. R1-1.11

STATE PROJECT NUMBER:	HWY:	COUNTY:			SHEET NO: 47	E

FILE NAME : C:\Users\Projects\tr_stdplate\R11.DGN PLOT DATE : 09-APR-2004 09:07 ORG DATE : 1980 PLOT NAME : Originator : Sandy Anderson PLOT SCALE : 4.500000:1.000000 WISDOT/CADDS SHEET 42

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Yellow
   Message - Black
3. Message Series - See note 5
4. Corners and borders shall be rounded on all base materials for this sign.
5. Lines 1 and 2 are Series D.
   Line 3 is series C.



W14-3

Metric equivalent for this sign is:

SIZE	
1	
2	1200 mm X 900 mm
3	1600 mm X 1200 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.	Area m2
1																												
2	48	36	2 1/4	5/8	7/8	5	2	8 1/2	3	8	26 3/4	12 3/4															6.0	.54
3	64	48	3	3/4	1 1/4	6	3	12	4	10 3/4	33 5/8	16 1/2															10.7	.96
4																												
5																												

STANDARD SIGN
W14-3

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Chester J Sprang for State Traffic Engineer

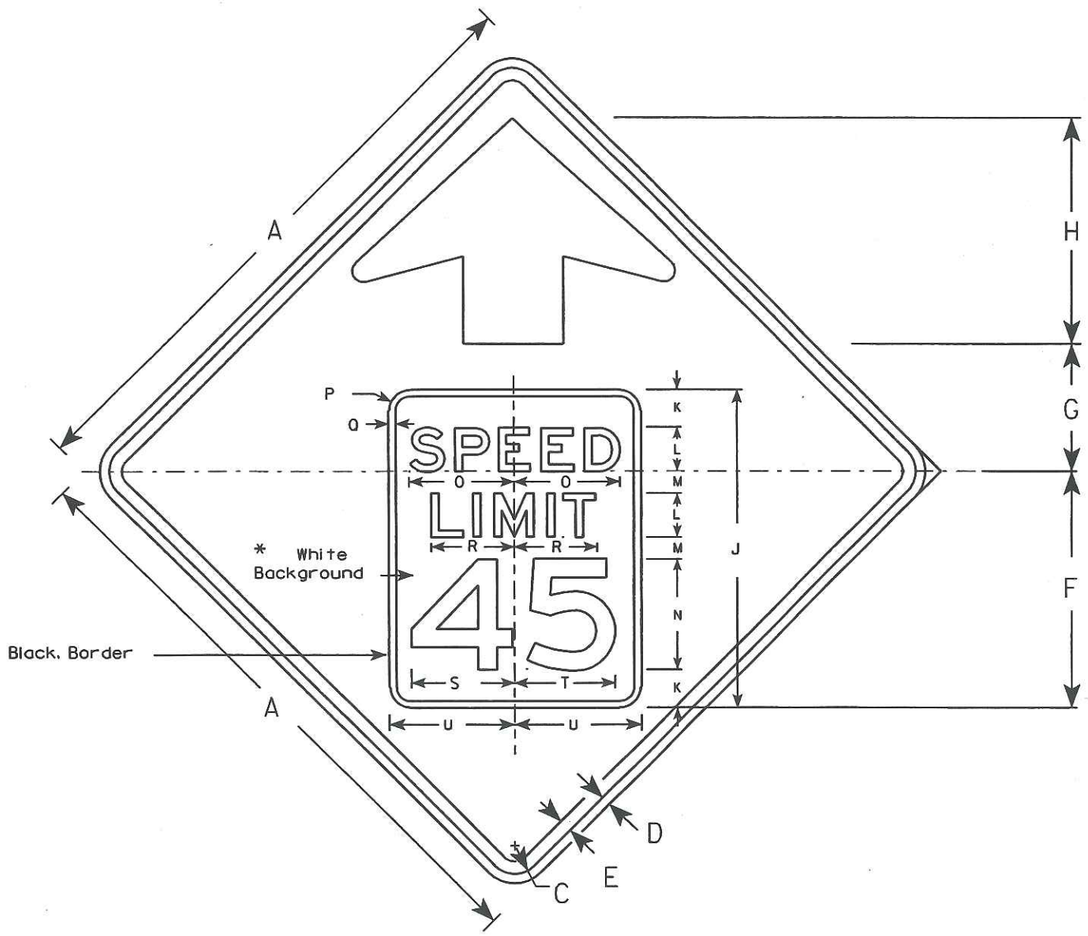
DATE 1/21/98 PLATE NO. W14-3.8

SHEET NO: 48 E

FILE NAME : C:±Users±Projects±tr_stdplate±W143.DGN PLOT DATE: 09-APR-2004 09:08 ORG DATE : 1/21/98 Originator : Don Kluever

WISDOT/CADDS SHEET 42

LEVELS ON - 2.3. 5.6. 10.

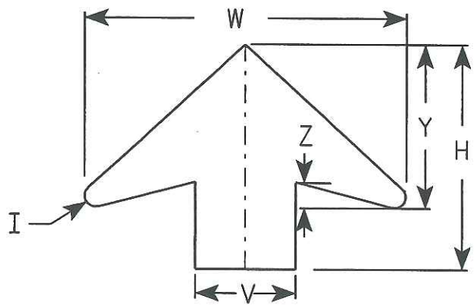


W3-5

NOTES

1. All Signs Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color: *
   Background - YELLOW*
   Message - BLACK
3. Message Series - E
4. Substitute appropriate numerals and optically adjust spacing to achieve proper balance

*Speed Limit Sign shall have a White Background



ARROW DETAIL

Metric equivalent for this sign is:

SIZE	
1	
2	900 mm X 900 mm
3	1200 mm X 1200 mm
4	1200 mm X 1200 mm
5	1200 mm X 1200 mm

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.	Area sq
1																												
2	36		1 5/8	5/8	3/4	14 1/8	7 1/2	13 1/2	5/8	19	2 1/4	2 5/8	1 3/8	6 1/2	6 1/4	1 1/2	3/8	4 7/8	6 1/4	6	7 1/2	6	19 1/4		9 3/4	1 5/8	9.0	0.81
3	36		1 5/8	5/8	3/4	14 1/8	7 1/2	13 1/2	5/8	19	2 1/4	2 5/8	1 3/8	6 1/2	6 1/4	1 1/2	3/8	4 7/8	6 1/4	6	7 1/2	6	19 1/4		9 3/4	1 5/8	9.0	0.81
4	48		2 1/4	3/4	1	18 3/4	10 1/8	17 7/8	7/8	25 1/4	3	3 1/2	1 3/4	8 3/4	8 3/8	1 5/8	1/2	6 5/8	8 1/4	8	10	8	25 5/8		13	2	16.0	1.44
5	48		2 1/4	3/4	1	18 3/4	10 1/8	17 7/8	7/8	25 1/4	3	3 1/2	1 3/4	8 3/4	8 3/8	1 5/8	1/2	6 5/8	8 1/4	8	10	8	25 5/8		13	2	16.0	1.44

STANDARD SIGN
W3-5

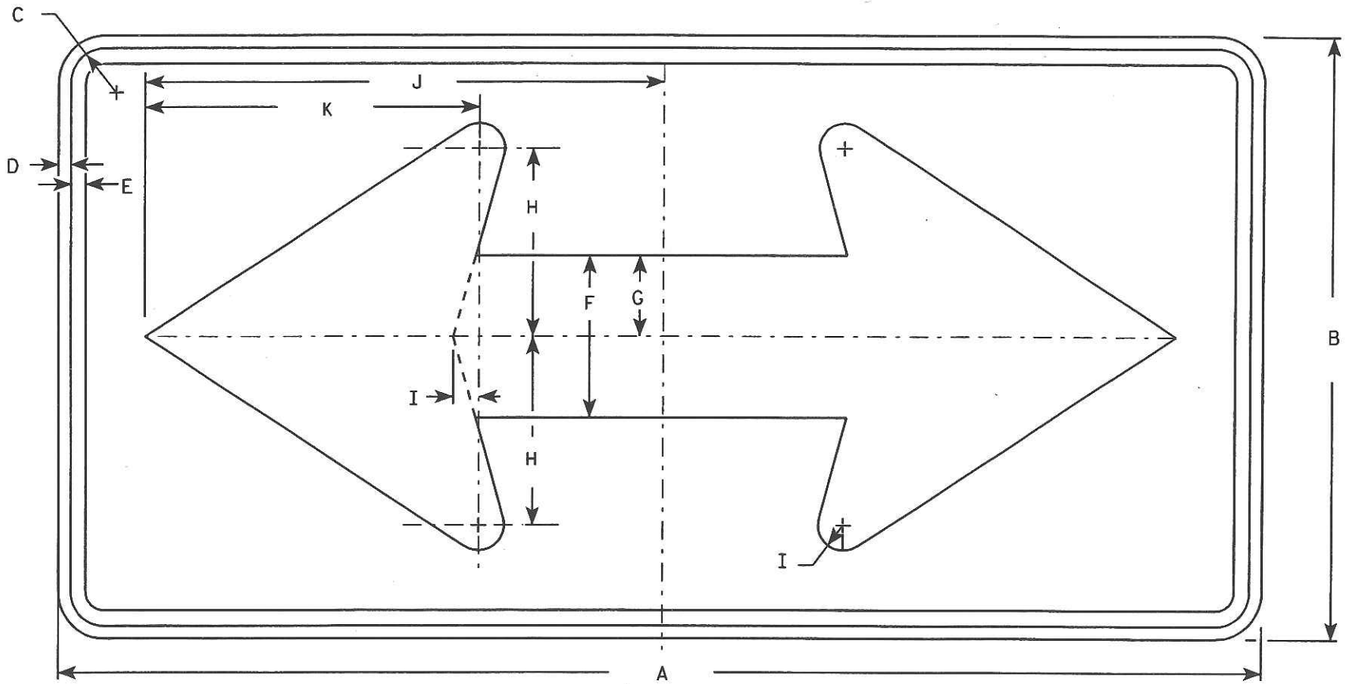
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
For State Traffic Engineer

DATE 2/18/04 PLATE NO. W3-5.1

PROJECT NO:

SHEET NO: 48 E



W1-7

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE 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.

Metric equivalent for this sign is:

SIZE	
1	900 mm X 450 mm
2	1200 mm X 600 mm
3	1500 mm X 750 mm
4	1500 mm X 750 mm
5	2400 mm X 1200 mm

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.	Area m2
1	36	18	1 1/8	3/8	1/2	5	2 1/2	5 3/4	3/4	15 5/8	10 1/8																4.5	0.41
2	48	24	1 3/8	1/2	5/8	6 1/2	3 1/4	7 1/2	1	20 1/2	13 1/4																8.0	0.72
3	60	30	1 3/8	1/2	5/8	8	4	9 1/4	1 1/4	25 3/8	16 1/4																12.5	1.13
4	60	30	1 3/8	1/2	5/8	8	4	9 1/4	1 1/4	25 3/8	16 1/4																12.5	1.13
5	96	48	2 1/4	3/4	1	13	6 1/2	15	2	41	26 1/2																32.0	2.88

STANDARD SIGN
W1-7

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Chester J Sprage
for State Traffic Engineer

DATE 8/20/97 PLATE NO. W1-7.6

SHEET NO: 50 E