

AS BUILT PLAN

PROJECT ID: 6027-03-71

COUNTY:

OUTAGAMIE

ORDER OF SHEETS

Section No. 1	Title
Section No. 2	Typical Sections and Details
Section No. 3	Estimate of Quantities
Section No. 3	Miscellaneous Quantities
Section No. 4	Right of Way Plat
Section No. 5	Plan and Profile (incl. Erosion Control)
Section No. 6	Standard Detail Drawings
Section No. 7	Sign Plates
Section No. 8	Structure Plans
Section No. 9	Computer Earthwork Data
Section No. 9	Cross Sections

TOTAL SHEETS =

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
PLAN OF PROPOSED IMPROVEMENT
CTH N, TOWN OF BUCHANAN
CTH N & BUCHANAN RD INTERSECTION
OUTAGAMIE COUNTY

STATE PROJECT NUMBER
6027-03-71

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
6027-03-71	STPG 2007277	

RECEIVED

MAY 22 2011

OUTAGAMIE COUNTY
HIGHWAY DEPARTMENT

AS BUILT PLAN
2007 CONSTRUCTION
PRIME CONTRACTOR - OUTAGAMIE CO.
PROJECT ENGINEER - STEVE SEYMOUR
(OMNNI)



DESIGN DESIGNATION

A.D.T. (2004)	=	13,950
A.D.T. (2024)	=	20,725
D.H.V. (2024)	=	2072
D	=	50/50
T. (A.D.T.)	=	2.3%
DESIGN SPEED	=	30 MPH
ESALS	=	700,800

CONVENTIONAL SYMBOLS

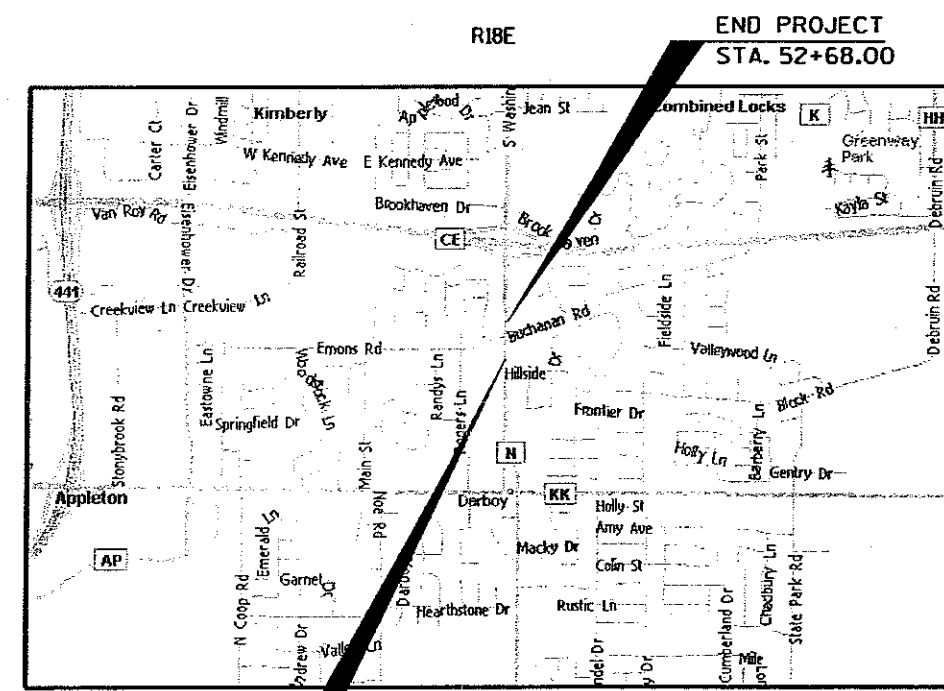
PLAN

CORPORATE LIMITS	////
PROPERTY LINE	PL + 58.1
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)	-----
SPECIAL DITCH	-----
GRADE ELEVATION	95.36
CULVERT (Profile View)	0 1
UTILITIES	
ELECTRIC	---E---
FIBER OPTIC	---FO---
GAS	---G (SIZE)---
SANITARY SEWER	---SAN (SIZE)---
STORM SEWER	---SS (SIZE)---
TELEPHONE	---T---
WATER	---W (SIZE)---
UTILITY PEDESTAL	---X---
POWER POLE	---P---
TELEPHONE POLE	---T---

T21N



BEGIN PROJECT
STA. 44+25
X 849,077.63
Y 558,062.49

END PROJECT
STA. 52+68.00

LAYOUT
SCALE 0 0.5 MI.

TOTAL NET LENGTH OF CENTERLINE = 0.160 MI. (RURAL)

COORDINATES ON THIS PLAN ARE REFERENCED TO THE OUTAGAMIE COUNTY COORDINATE SYSTEM (83/91 DATUM)

N-29

ACCEPTED FOR
COUNTY OUTAGAMIE
3-16-07
DATE
County Highway Commissioner

ORIGINAL PLANS PREPARED BY
DONOHUE & ASSOCIATES

WISCONSIN
DANIEL C. DURIG
E28013
BARABOO, WI
PROFESSIONAL ENGINEER
3-14-07

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY
Surveyor Hebert & Associates
Designer Donohue & Associates, Inc.
Management Consultant SEH, Inc.
C.D. Examiner

APPROVED FOR THE DEPARTMENT
DATE: 4-10-07
Management Consultant Signature

GENERAL NOTES

PIPE ELEVATIONS, LENGTHS AND LOCATIONS AS SHOWN ON THE PLANS MAY BE ADJUSTED TO FIT EXISTING FIELD CONDITIONS AS DIRECTED BY THE ENGINEER.

THE EXACT LENGTHS OF CULVERT PIPES SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER.

ALL CONCRETE PIPE SHALL HAVE THE APRON ENDWALL AND THE FIRST TWO PIPE JOINTS TIED AT THE JOINTS. (THREE JOINTS TOTAL)

DISTURBED AREAS WITHIN THE RIGHT-OF-WAY, EXCEPT THE AREAS WITHIN THE FINISHED SHOULDER POINTS ARE TO BE SEEDED, FERTILIZED AND MULCHED AS DIRECTED BY THE ENGINEER. ALL OTHER DISTURBED AREAS ARE TO BE SEEDED, FERTILIZED AND MULCHED AT THE CONTRACTORS EXPENSE.

DISTURBED AREAS WITHIN THE RIGHT-OF-WAY, EXCEPT THE AREAS WITHIN THE FINISHED SHOULDER POINTS ARE TO BE FERTILIZED, SEEDED, AND MULCHED.

EROSION CONTROL FEATURES AS SHOWN ON THE PLANS ARE SUGGESTED LOCATIONS. EXACT LOCATIONS WILL BE DETERMINED BY THE ENGINEER IN THE FIELD.

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

THE FACTOR USED FOR EXPANDING THE FILLS TO COMPUTE EARTHWORK VOLUMES IS 1.3.

SEED MIXTURE 40 SHALL BE USED ON ALL LAWN AREAS. ALL LAWN AREAS SHALL BE HAND RAKED PRIOR TO SEEDING. SEED MIXTURE 20 SHALL BE USED ON ALL OTHER DISTURBED AREAS.

THE EXACT LOCATION AND WIDTHS OF PRIVATE AND COMMERCIAL DRIVEWAYS ARE TO BE DETERMINED BY THE ENGINEER IN THE FIELD.

ALL DISTANCES ARE GROUND DISTANCES. TIES ARE HORIZONTAL UNLESS SHOWN OTHERWISE.

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

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

PRIOR TO PLACEMENT OF STEEL PLATE BEAM GUARD, SHOULDERS SHALL BE IN PLACE, SHAPED AND COMPACTED.

THE CONTROL SURVEY CONDUCTED FOR THIS PROJECT MET THIRD ORDER CONTROL SURVEY SPECIFICATIONS.

SILT FENCE, SILTY SOIL TO BE PLACED AS SHOWN ON THE PLAN OR AS DIRECTED BY THE ENGINEER.

THE ASPHALTIC MATERIAL FOR TACK COAT SHALL BE APPLIED AT A RATE OF 0.025 GAL./S.Y. BETWEEN ALL ASPHALTIC CONCRETE PAVEMENT LAYERS AND BETWEEN ALL MILLED SURFACE AND OVERLAY WORK.

ALL ASPHALTIC SIDE ROADS AND PRIVATE AND COMMERCIAL ENTRANCES SHALL BE MATCHED WITH A SAWED JOINT.

EROSION CONTROL IS SHOWN ON THE EROSION CONTROL PLAN SHEET AND IN THE SUMMARY OF MISCELLANEOUS QUANTITIES.

4 1/2-INCH HMA PAVEMENT SHALL BE CONSTRUCTED WITH A 2-INCH SURFACE COURSE AND ONE 2-1/2-INCH LOWER COURSE.

MARKER POSTS, FLEXIBLE ARE TO BE PLACED WITHIN 1 FT. OF THE END OF EACH SPECIFIED PIPE. PIPE LOCATIONS ARE AS SHOWN IN THE MISCELLANEOUS QUANTITIES.

ELEVATIONS SHOWN ON THIS PLAN ARE REFERENCED TO NAVD 88 DATUM, A STANDARD TABLET SET IN CONCRETE LOCATED WEST OF CTH "N" AND EAST OF THE CUL-DE-SAC ON BRUX ROAD, APPROXIMATELY 750 FEET NORTH OF CTH "KK" IN THE TOWN OF BUCHANAN LOCATED IN THE SE 1/4 OF SECTION 33, T21N, R18E. ELEVATION 749.19.

ALL CURB AND GUTTER RADII SHOWN ON THE PLANS ARE MEASURED TO THE FLANGE UNLESS OTHERWISE NOTED.

CONCRETE SIDEWALK SHALL BE CONSTRUCTED ON 2" OF GRANULAR MATERIAL, WHICH SHALL BE INCIDENTAL TO THE SIDEWALK CONSTRUCTION.

CURB HEIGHTS AT THE ENDS OF CURB AND GUTTER SHALL BE TAPERED FROM 6 INCHES TO 0 INCHES IN 10 FEET, WHERE APPLICABLE.

UTILITIES

TELEPHONE
CHRIS SABOURIN
AT&T
221 WEST WASHINGTON FLOOR 4
APPLETON, WI 54911
PHONE (920) 735-3252
PAGER (920) 556-2819

CABLE TV
MARK MCCANDLESS
TIME WARNER CABLE
1001 WEST KENNEDY AVENUE
KIMBERLY, WI 54136-0145
PHONE (920) 831-9249

SANITARY SEWER AND WATER
PAT HENNESSEY
DARBOY SANITARY DISTRICT
N398 COUNTY ROAD N
APPLETON, WI 54915
PH (920) 788-6048

NATURAL GAS
KEN BODE
WE ENERGIES
PO BOX 1699
APPLETON, WI 54912-1699
PHONE: (920) 380-3214
CELL: (920) 450-5855

ELECTRIC
JIM QUINN
WE ENERGIES
PO BOX 1699
APPLETON, WI 54912-1699
PHONE (920) 380-3401
CELL (920) 450-9430

DIGGERS & HOTLINE

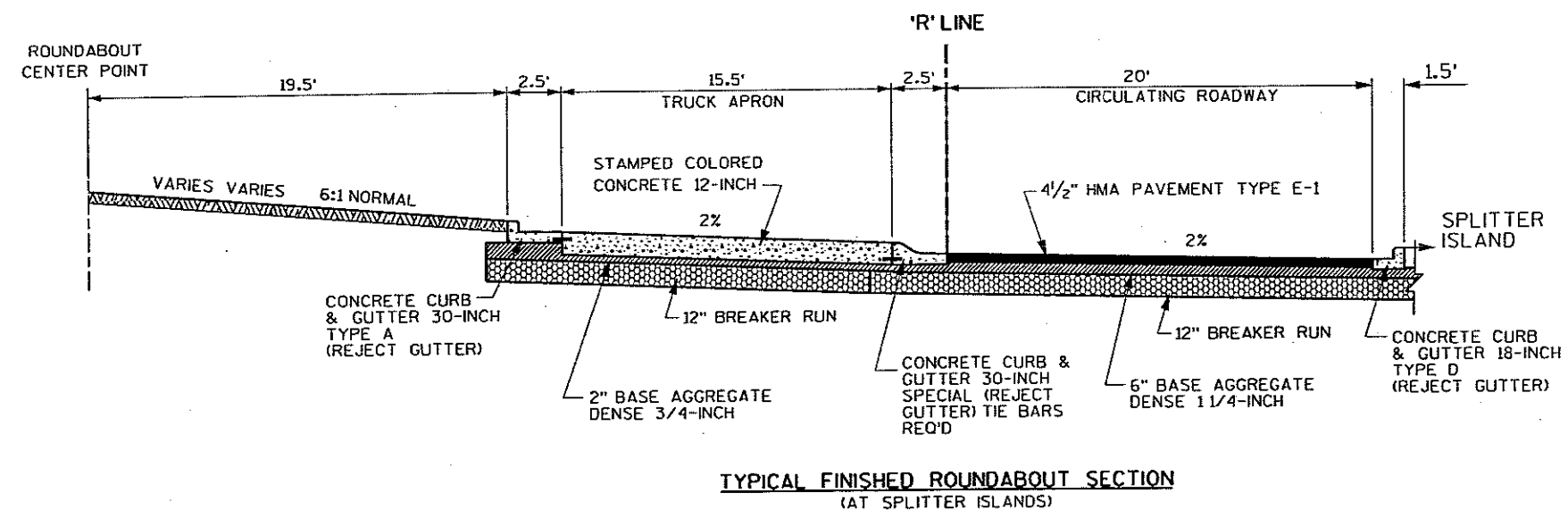
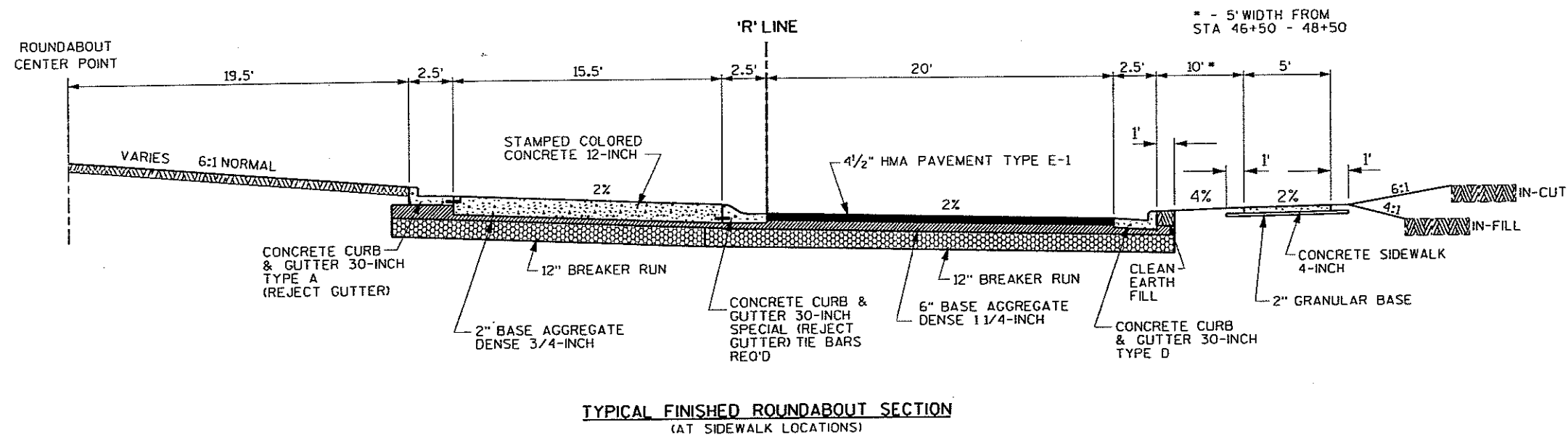
Toll Free (800) 242-8511
Milwaukee Area (414) 250-1181
Hearing Impaired TDD (800) 542-2289
www.DiggersHotline.com

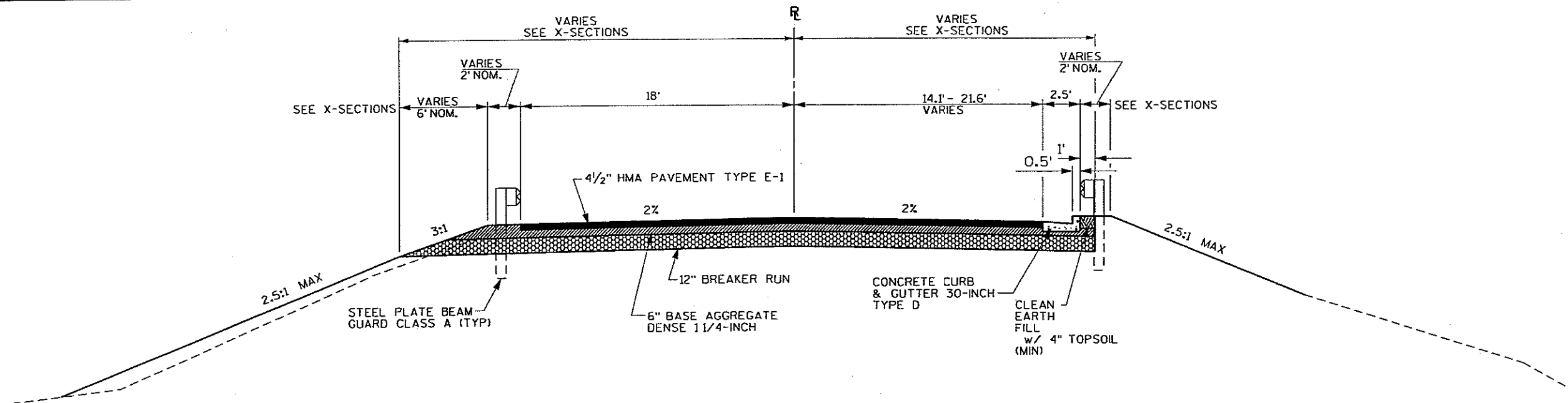
DNR CONTACT
WI. DNR, NORTHEASTERN DISTRICT
ATTN: SHELLEY SCHAEZT
1125 N. MILITARY AVENUE
P.O. BOX 10448
GREEN BAY, WI 54307

PH (920) 492-5819

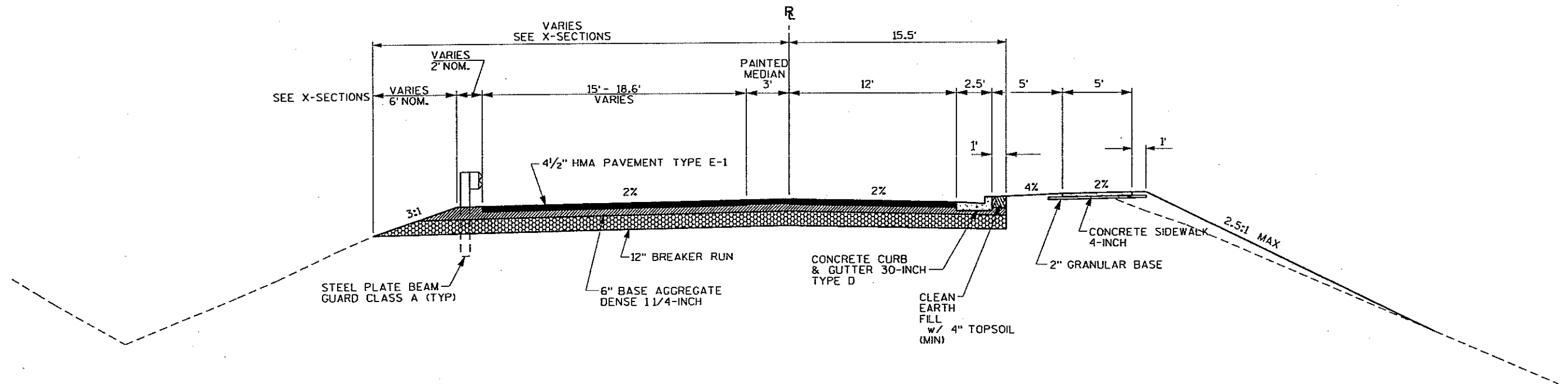
COUNTY SURVEYOR OR SURVEYS CONTACT PERSON
JAMES HEBERT - OUTAGAMIE COUNTY
410 SOUTH WALNUT STREET
APPLETON, WISCONSIN 54914

PH (920) 832-5255





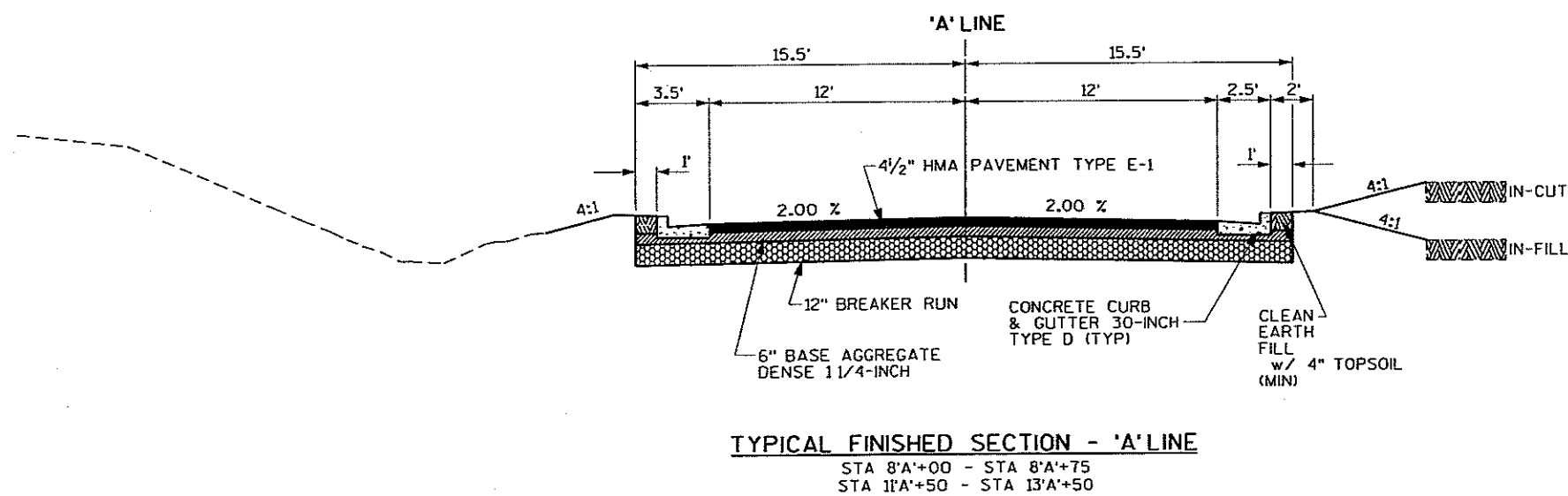
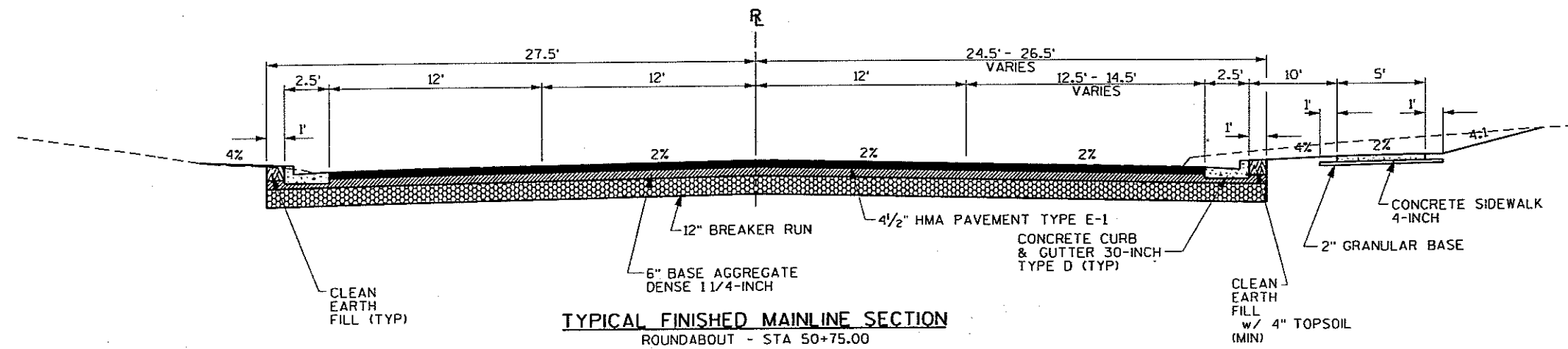
TYPICAL FINISHED MAINLINE SECTION
STA 44+25 - STA 46+00

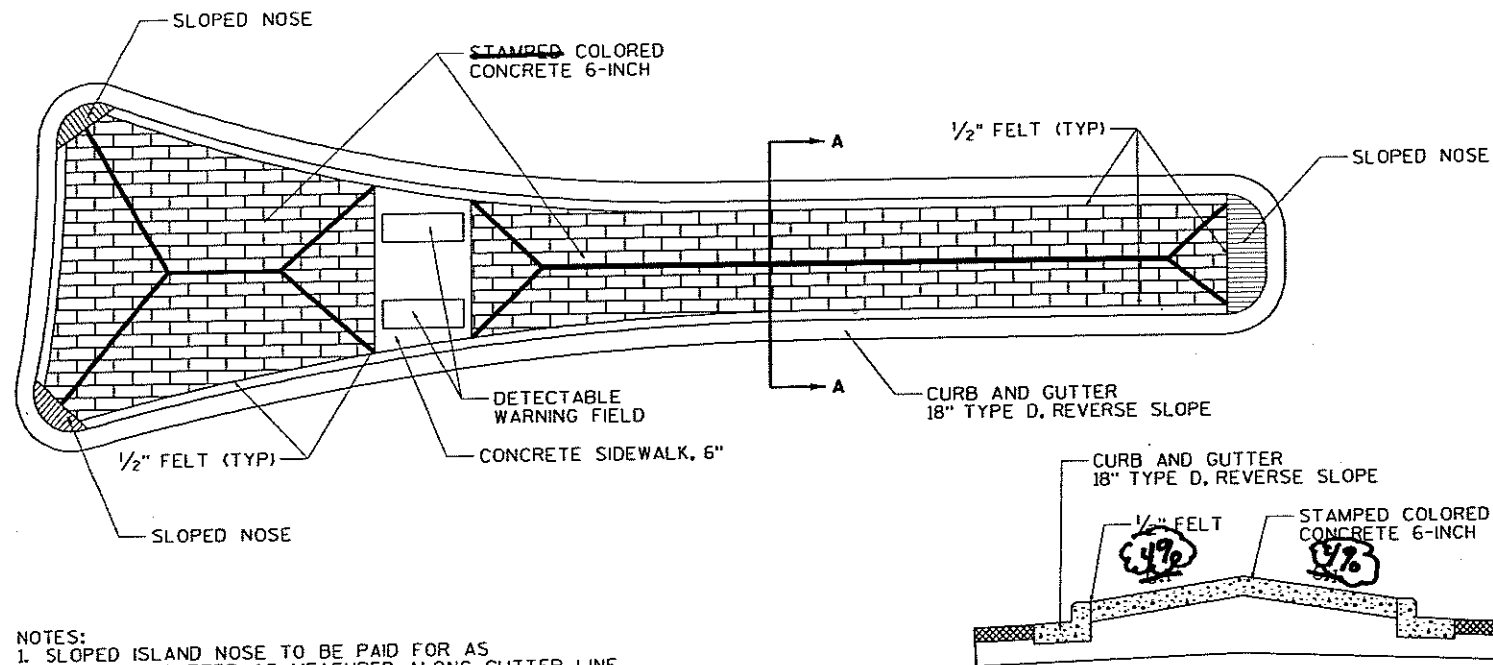


TYPICAL FINISHED MAINLINE SECTION
STA 46+00 - ROUNDABOUT

NOTES

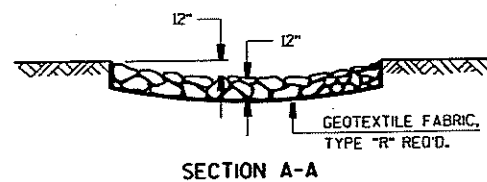
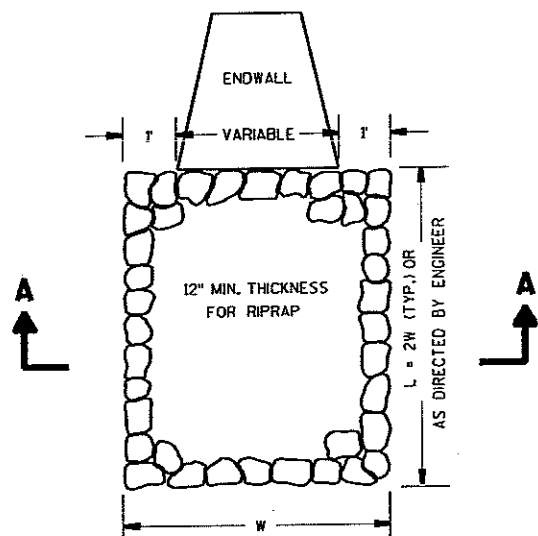
1. THICKEN SIDEWALK TO 6" AT DRIVEWAYS
2. DRIVEWAY APRONS SHALL BE PC CONCRETE AND 6" THICKNESS
3. FOR EMBANKMENT PLACED ON SIDE SLOPES 10 FEET HIGH OR HIGHER AND STEEPER THAN ONE VERTICAL TO 3 HORIZONTAL, PROVIDE VERTICALLY FACED HORIZONTAL STEPS OR BENCHES IN THE SLOPES TO SUPPORT THE EMBANKMENT.



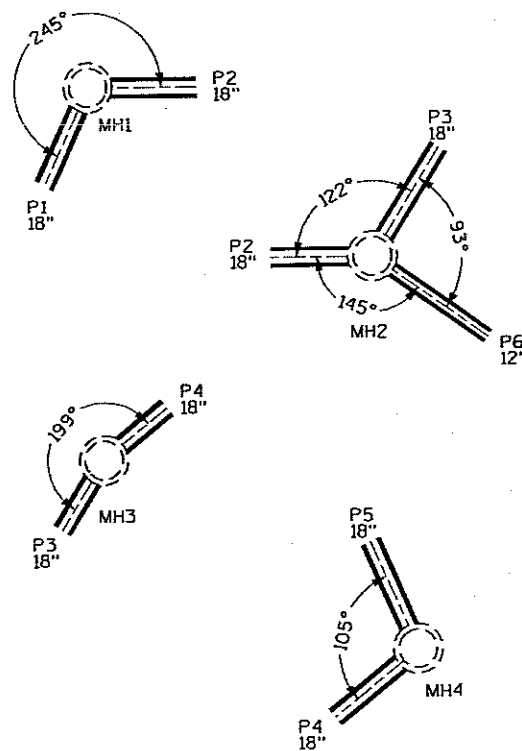


- NOTES:
1. SLOPED ISLAND NOSE TO BE PAID FOR AS CURB AND GUTTER AS MEASURED ALONG GUTTER LINE.
 2. 1/2" FELT IS INCIDENTAL TO CURB AND GUTTER.
 3. TROWEL ISLAND NOSE TO A SMOOTH FINISH.

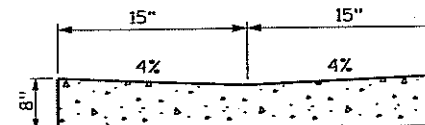
SPLITTER ISLAND



RIPRAP TREATMENT AT CULVERTS

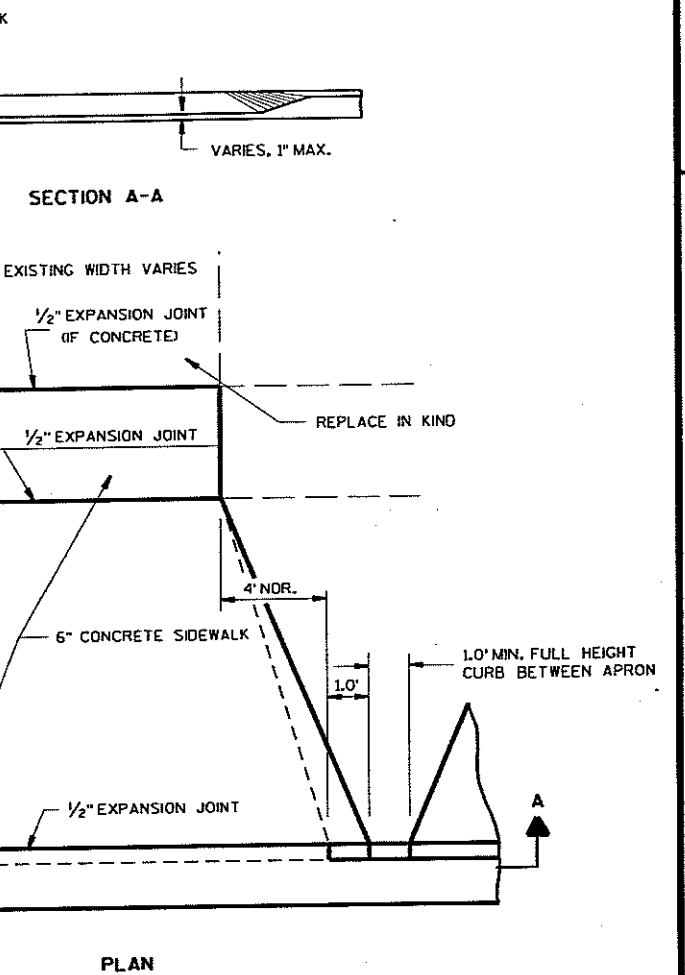


MANHOLE ANGLE DIAGRAMS



PORTLAND CEMENT CONCRETE

VALLEY CURB



URBAN DRIVEWAY DETAIL

PORTLAND CEMENT CONCRETE

CONCRETE CURB AND GUTTER, 30-INCH SPECIAL

FN: N321

MATCH GARAGE
FLOOR EL 740.50

EXIST -

RECONST. DRIVEWAY
AND APRON

30-INCH
TYPE D (TYPE)

CTH N

— RECONST. DRIVEWAY
AND APRON

—SLOPE INTERCEPT (TYP)

N 63° 41' 51" E

EMONS ROAD

$$P.L. = 9'A' + 26.34$$

6" PCC DRIVEWAY
APRON

'A' LINE

COUNTY: OUTAGAMIE

DRIVEWAY RECONFIGURATION DETAILS

SHEET NO:

E

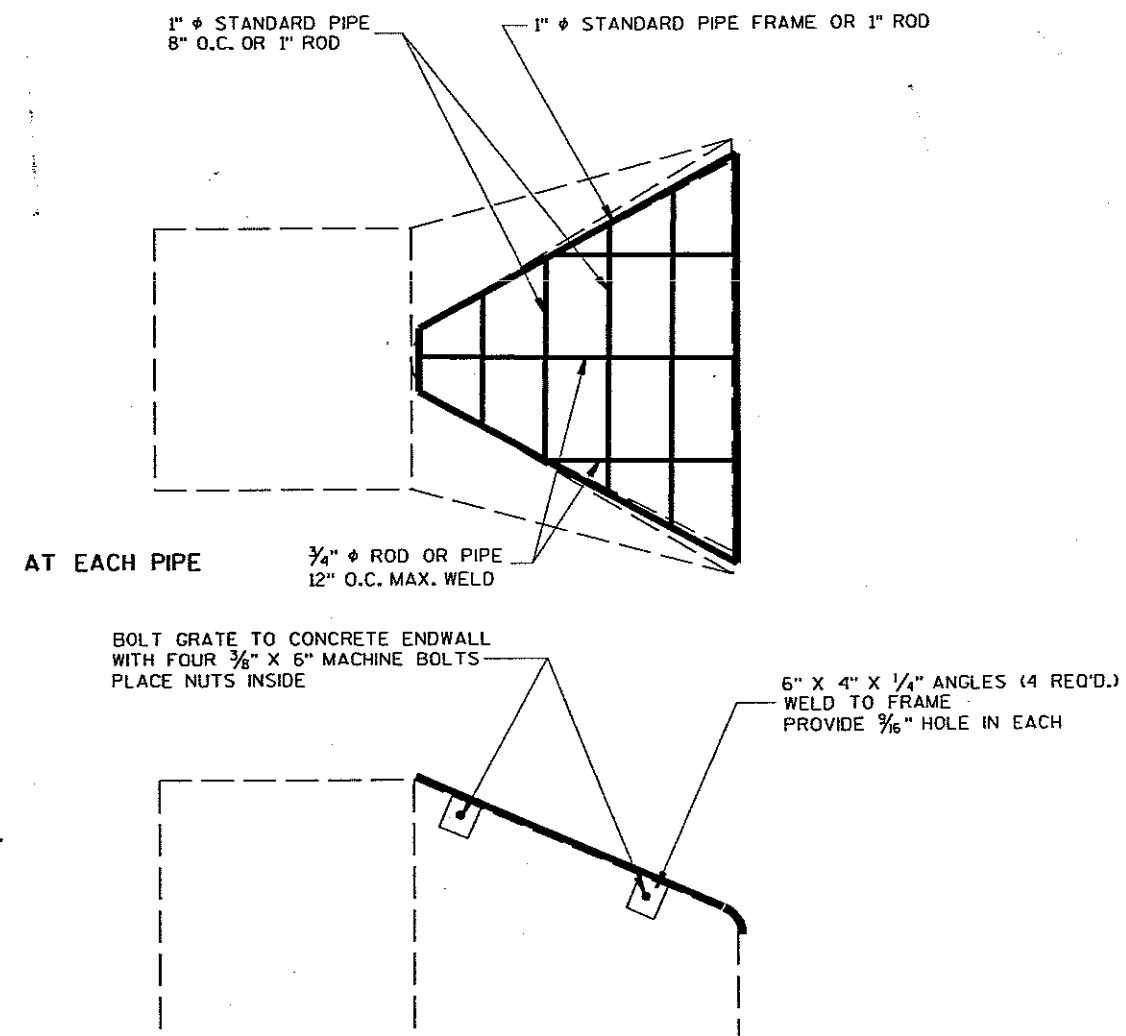
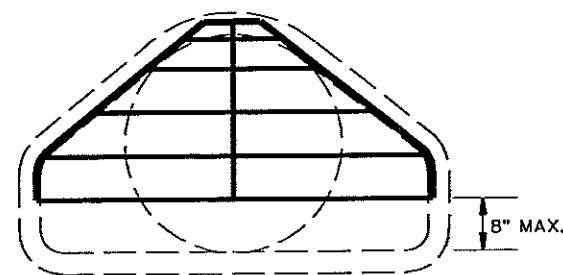
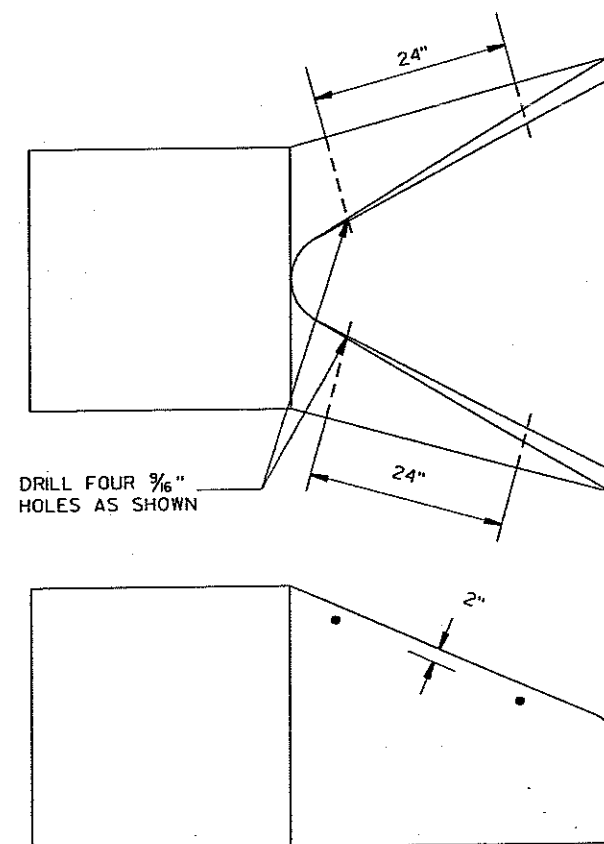
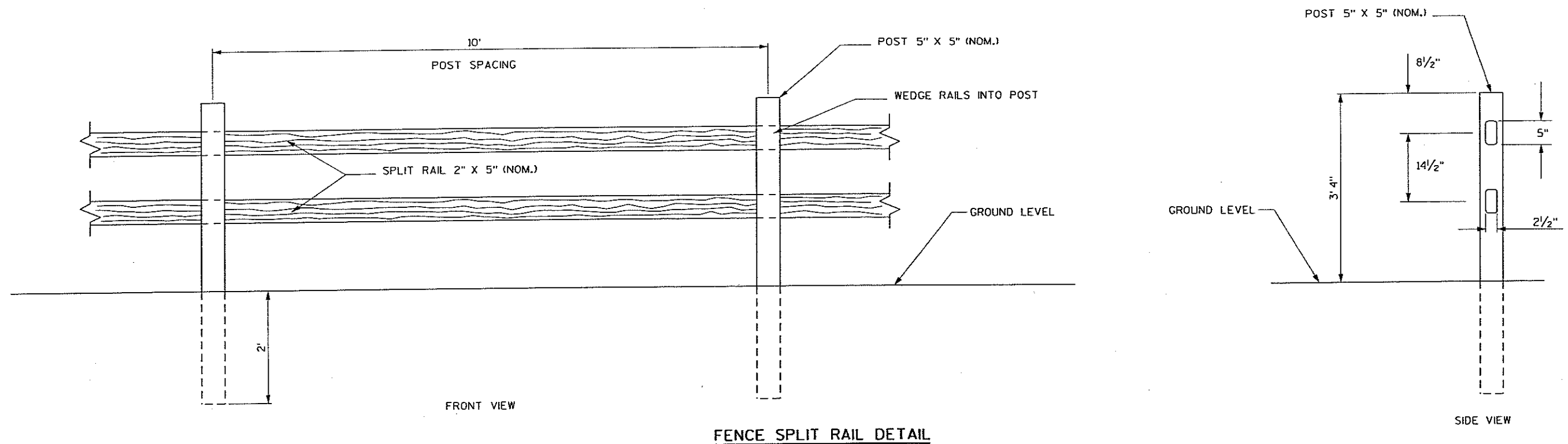
PROJECT NO: 6027-03-71

HWY: CTH N

4/17/2007

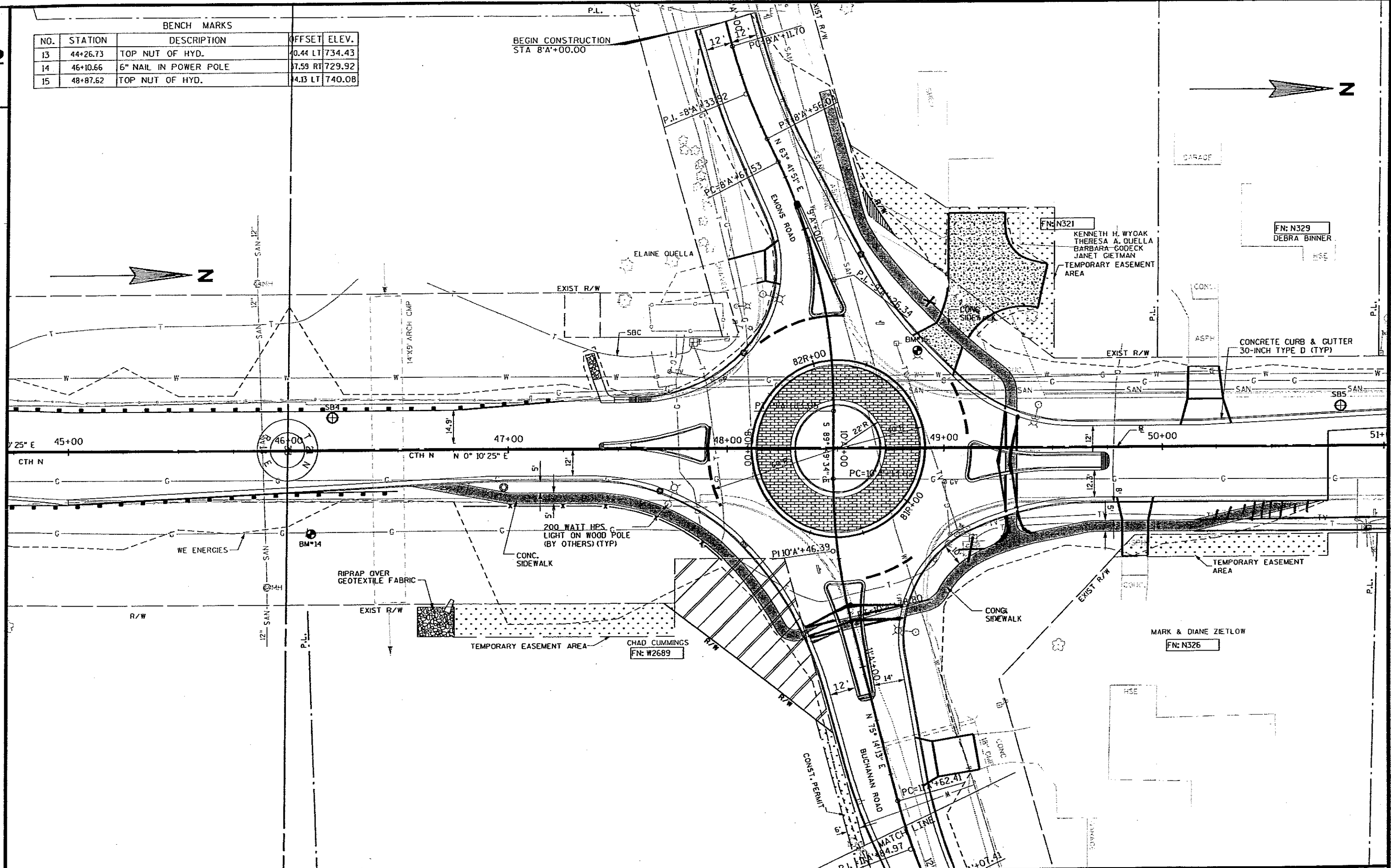
3:56:32 PM

WISDOT/CADDSS SHEET 42

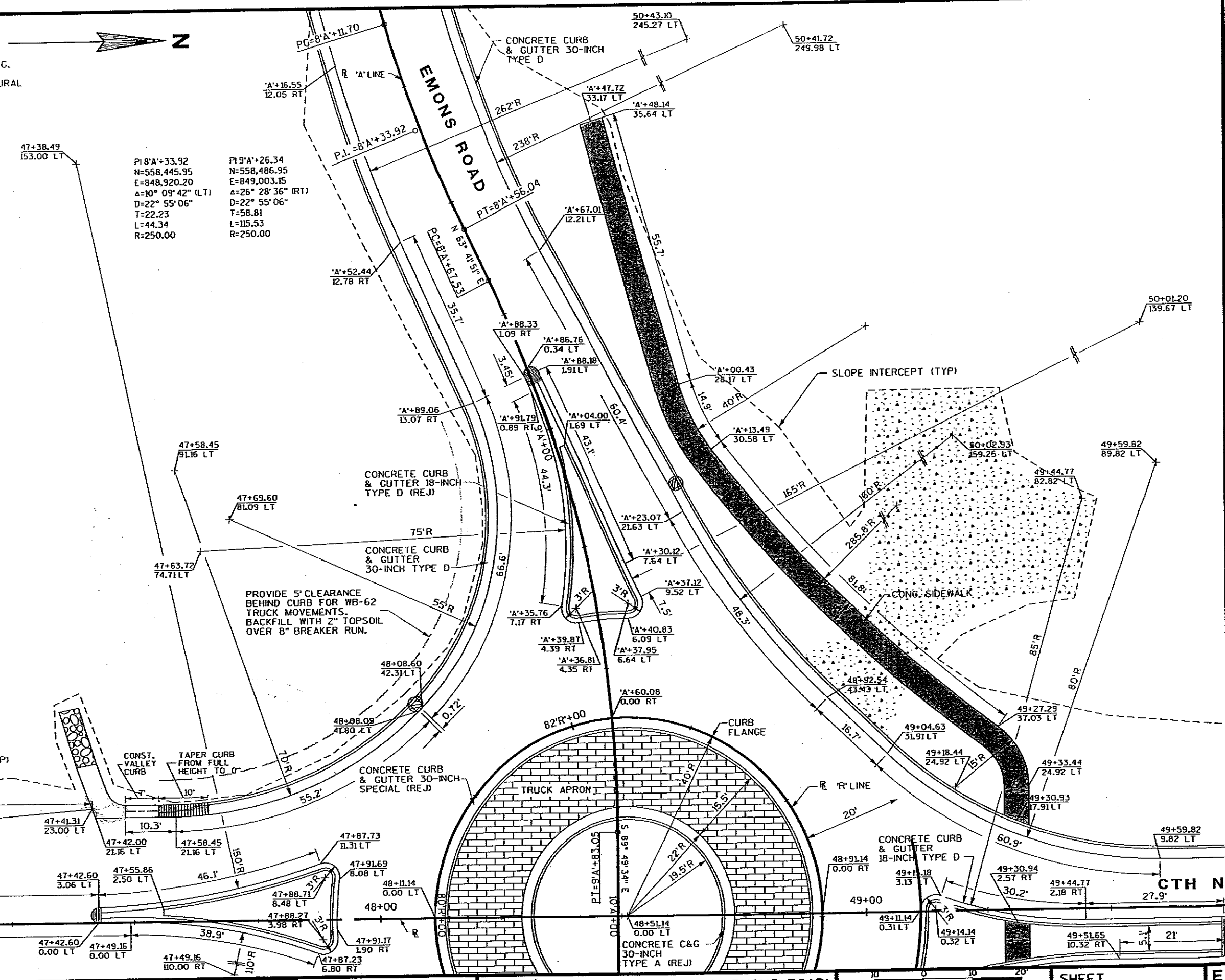


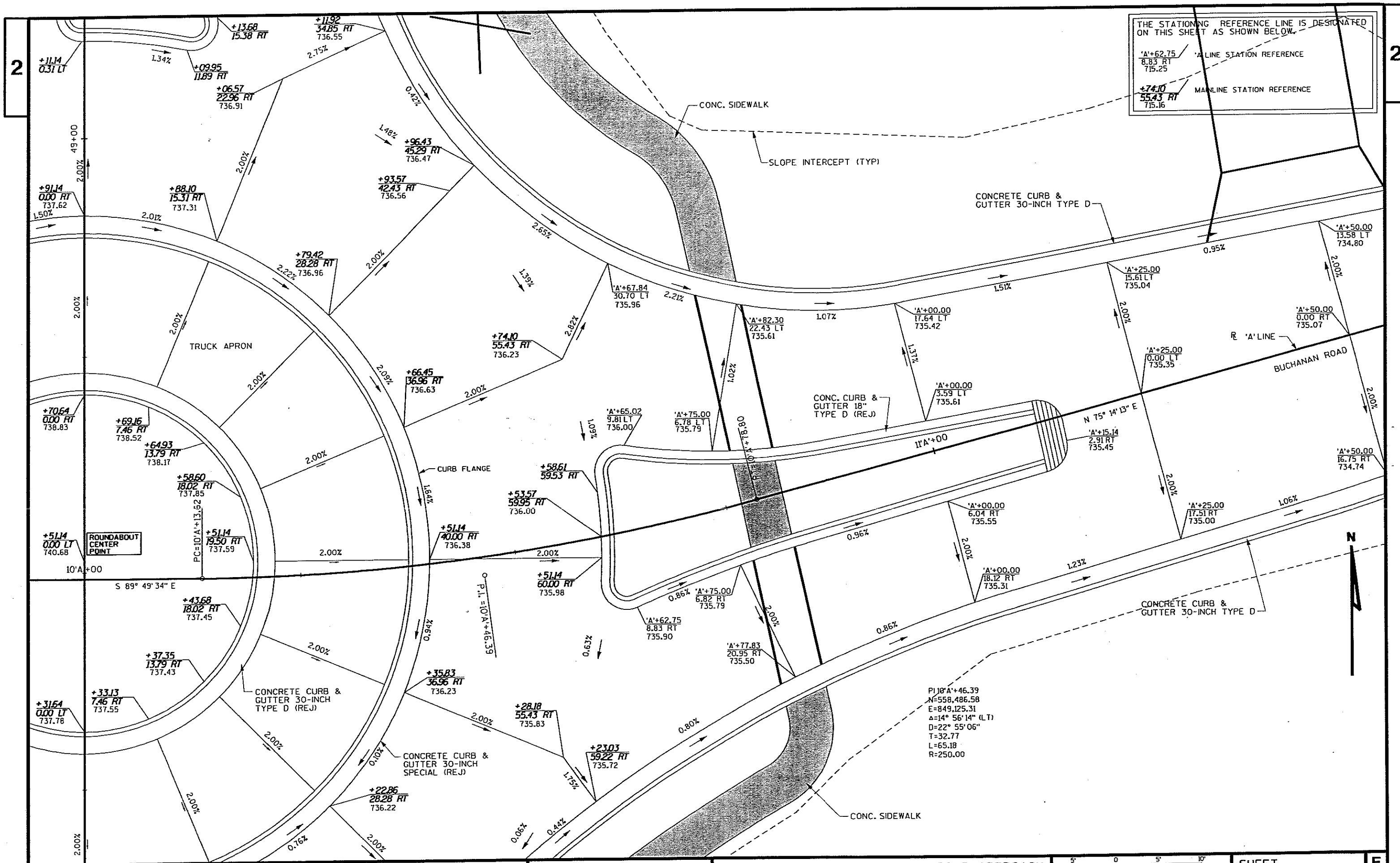
BENCH MARKS				
NO.	STATION	DESCRIPTION	OFFSET	ELEV.
13	44+26.73	TOP NUT OF HYD.	0.44 LT	734.43
14	46+10.66	6" NAIL IN POWER POLE	0.59 RT	729.92
15	48+87.62	TOP NUT OF HYD.	4.13 LT	740.08

BEGIN CONSTRUCTION
STA 8+A+00.00



CURB AT THE APPROACH END OF SPLITTER ISLANDS AND ALL SPLITTER ISLAND NOSES SHALL BE SLOPED.





[illegible]

1

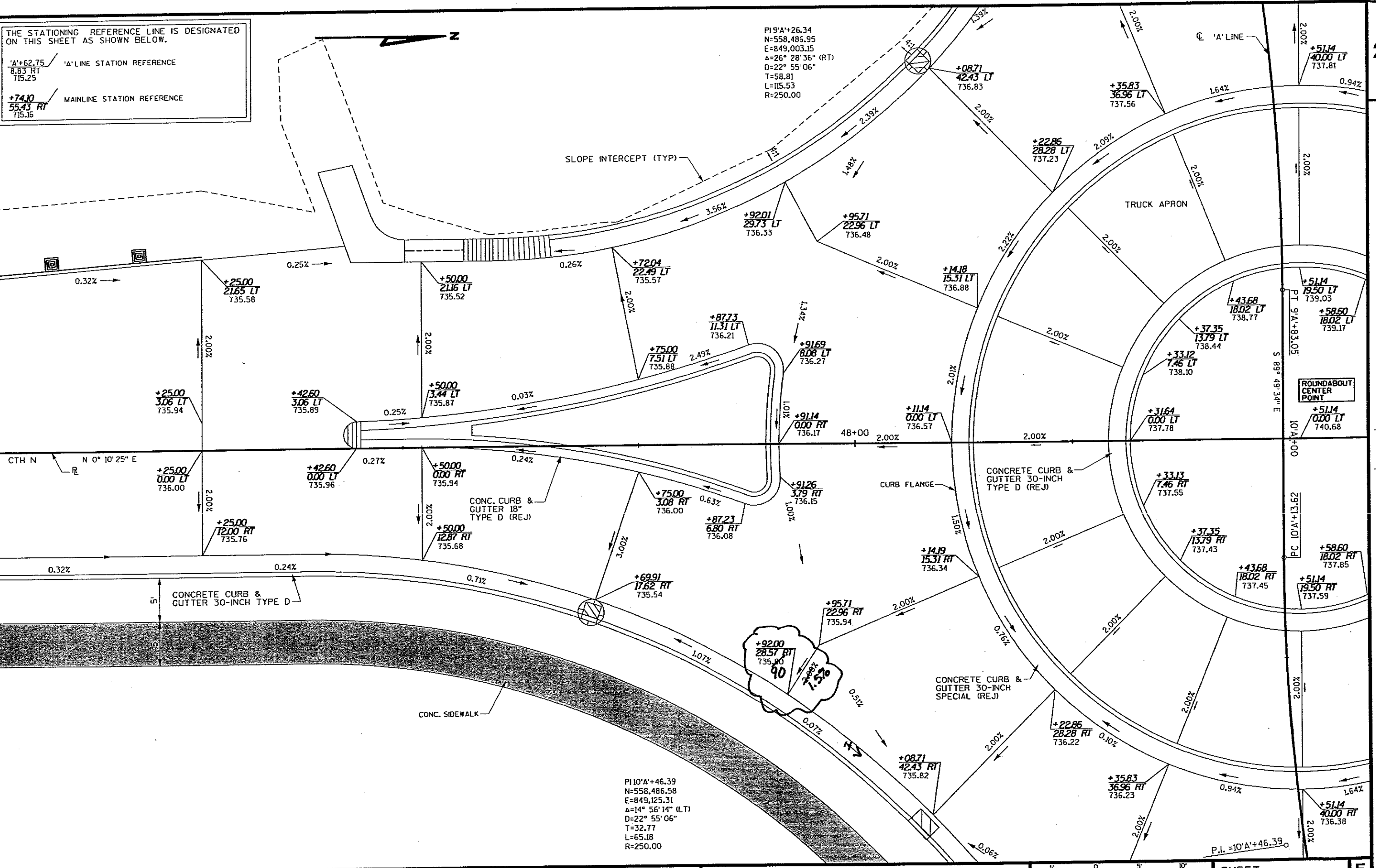
THE STATIONING REFERENCE LINE IS DESIGNATED ON THIS SHEET AS SHOWN BELOW.

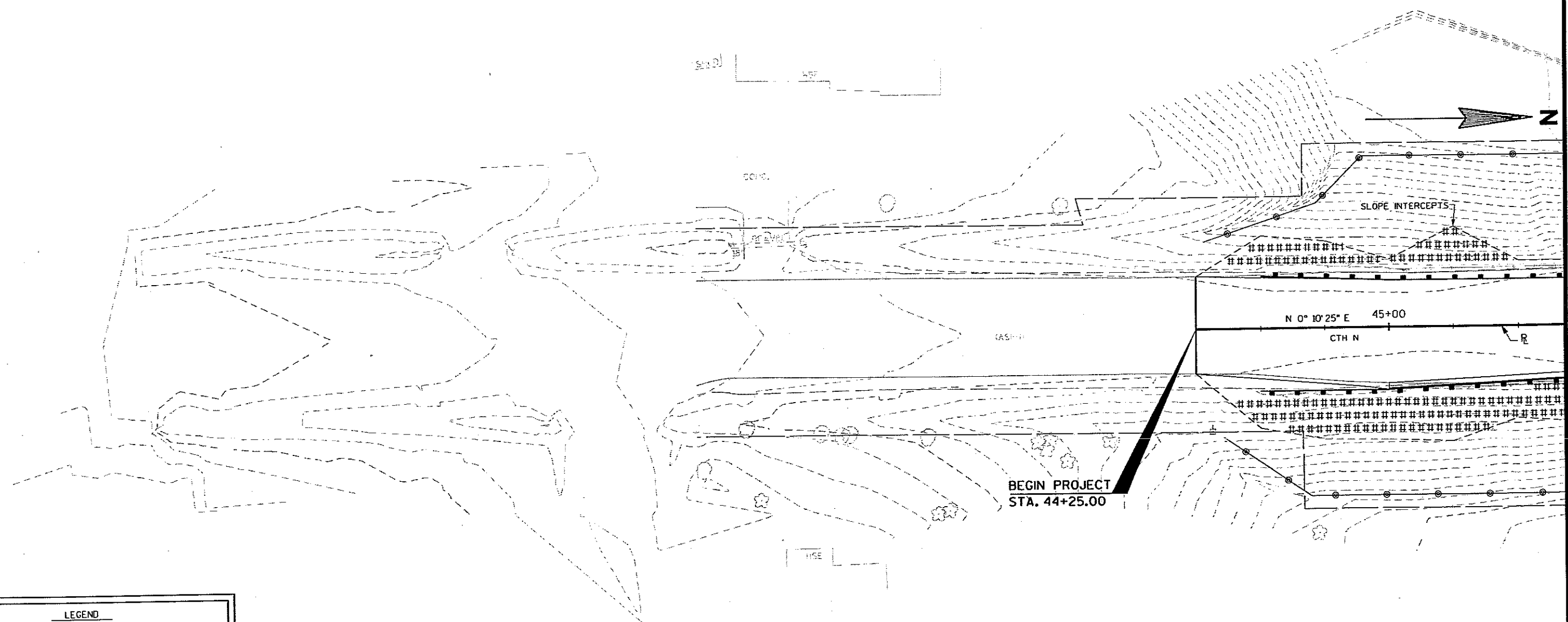
'A'+62.75
8.83 RT
715.25

'A' LINE STATION REFERENCE

+74.10
55.43 RT
715.16

MAINLINE STATION REFERENCE



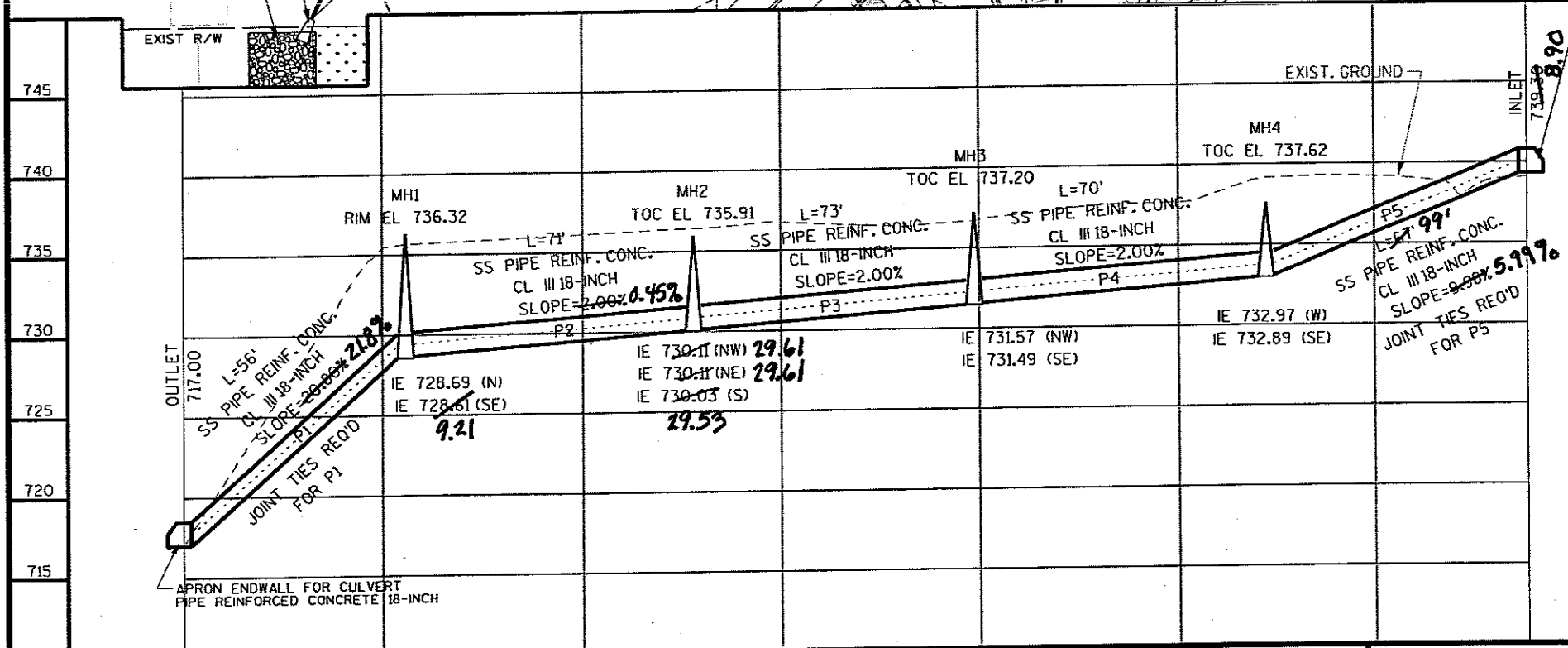
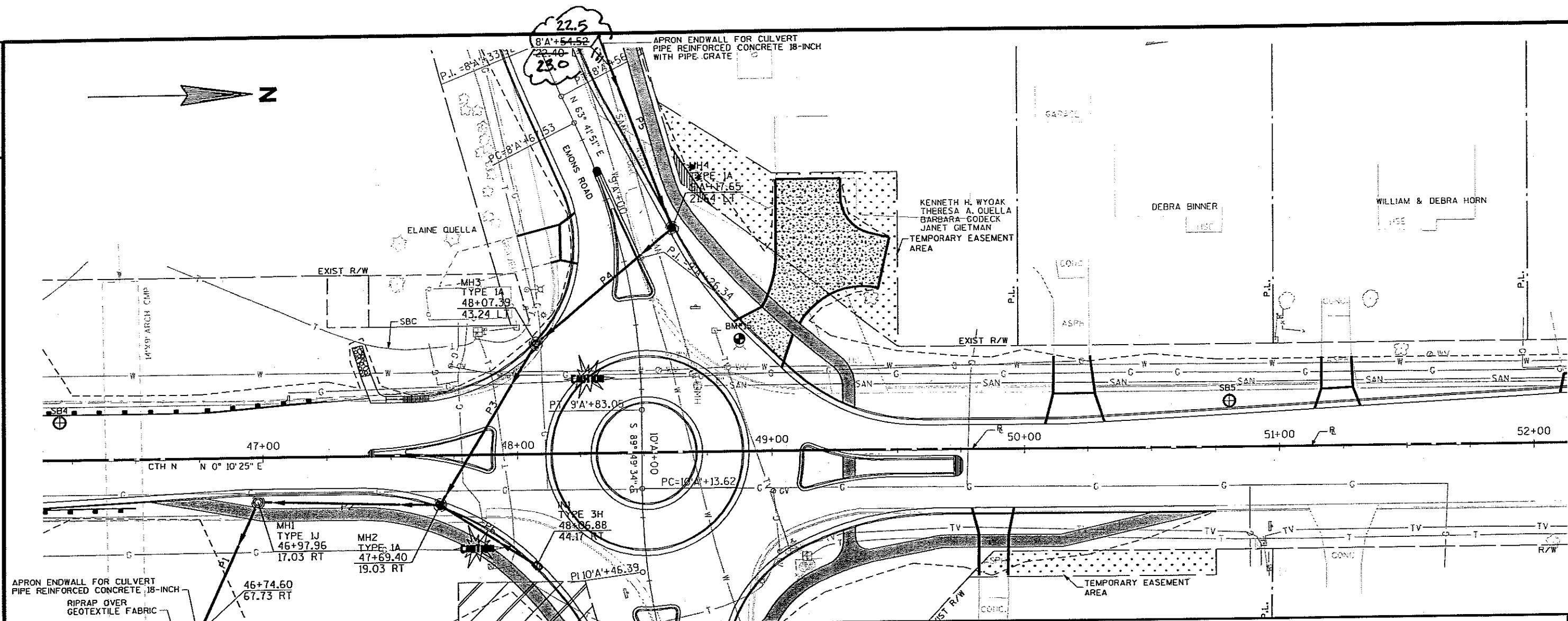


LEGEND

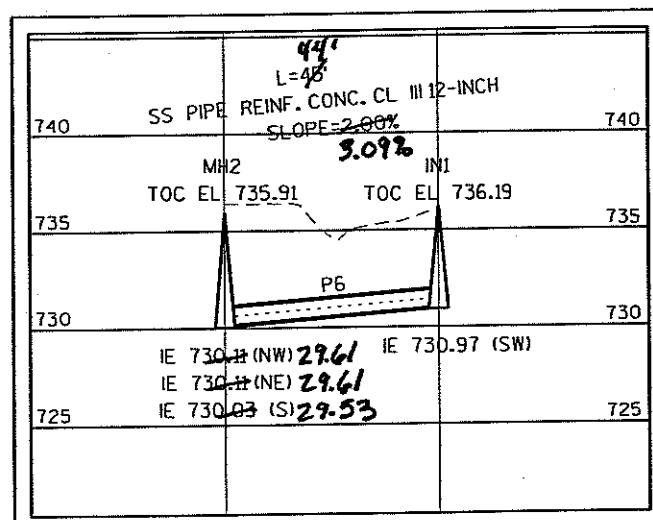
- RIPRAP OVER GEOTEXTILE FABRIC
- SILT FENCE
- TEMPORARY DITCH CHECK
- EROSION MAT - CLASS I, TYPE B
- REINFORCED SODDING
- DIRECTION OF FLOW
- SOD
- INLET PROTECTION



T



APRON ENDWALL FOR
CULVERT PIPE REINFORCED
CONCRETE 18-INCH



NOTES

STATIONS AND OFFSETS PROVIDED AT
MANHOLES ARE MEASURED TO THE CENTER OF THE STRUCTURE.

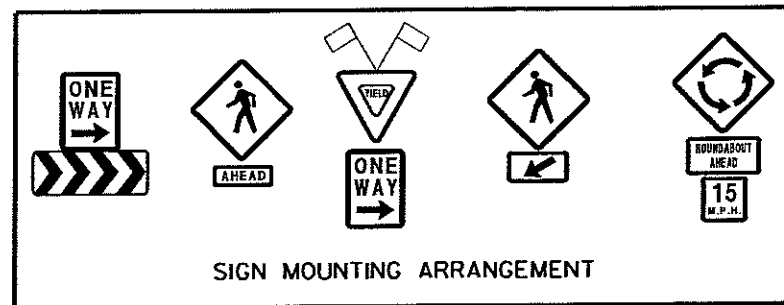
STATIONS AND OFFSETS PROVIDED AT
INLETS ARE MEASURED TO THE CENTER OF THE STRUCTURE AT THE BACK OF CURB.

TOC = TOP OF CURB

NOTE:
DETAILS OF PAVEMENT MARKINGS AND SIGNS NOT SHOWN
ON THIS DRAWING SHALL CONFORM TO PERTINENT
REQUIREMENTS OF THE WISCONSIN D.O.T. STANDARD
DETAILS FOR PAVEMENT MARKING AND SIGNS.

LEGEND

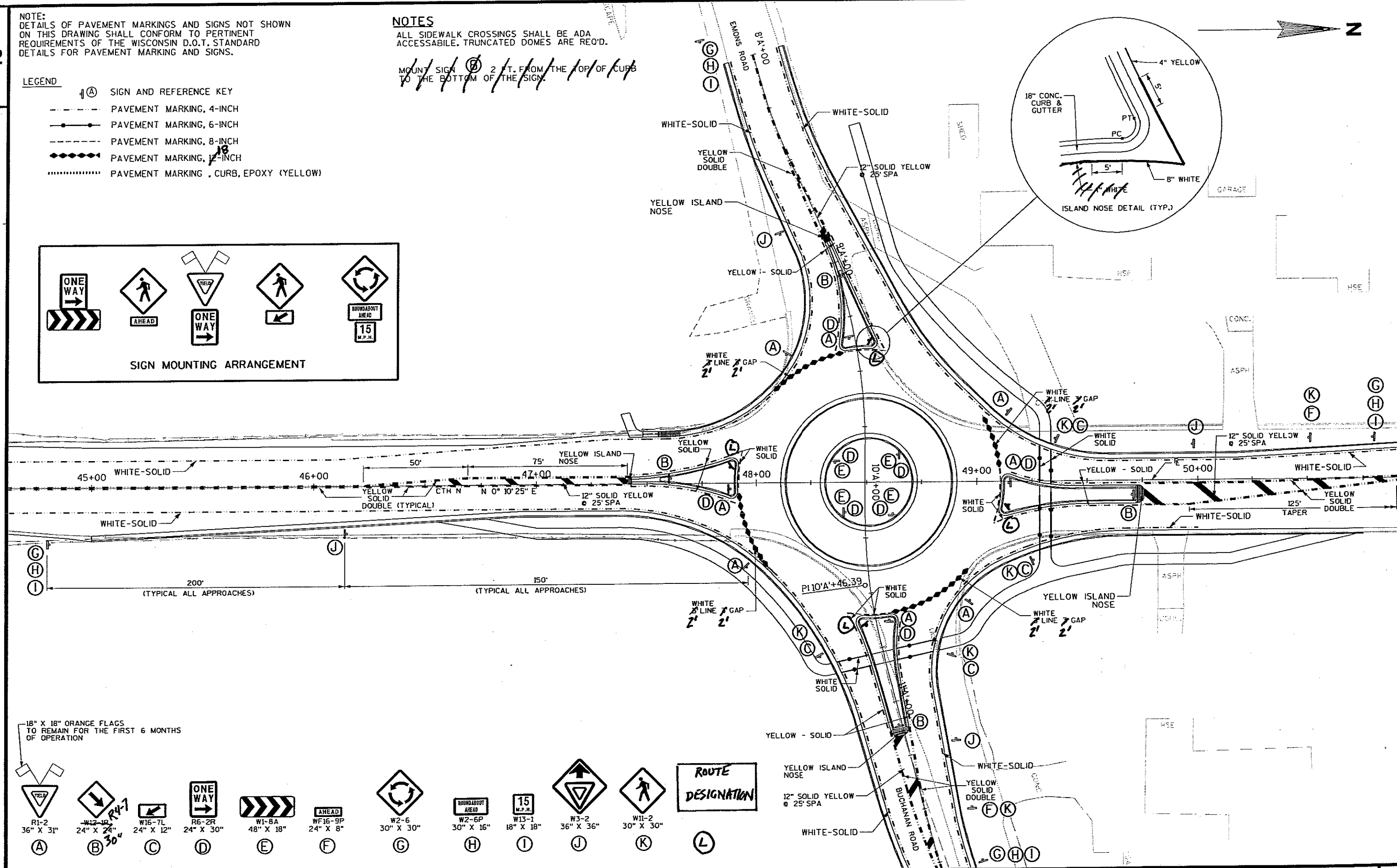
- ① (A) SIGN AND REFERENCE KEY
- PAVEMENT MARKING, 4-INCH
- PAVEMENT MARKING, 6-INCH
- PAVEMENT MARKING, 8-INCH
- PAVEMENT MARKING, 12-INCH
- PAVEMENT MARKING, CURB, EPOXY (YELLOW)



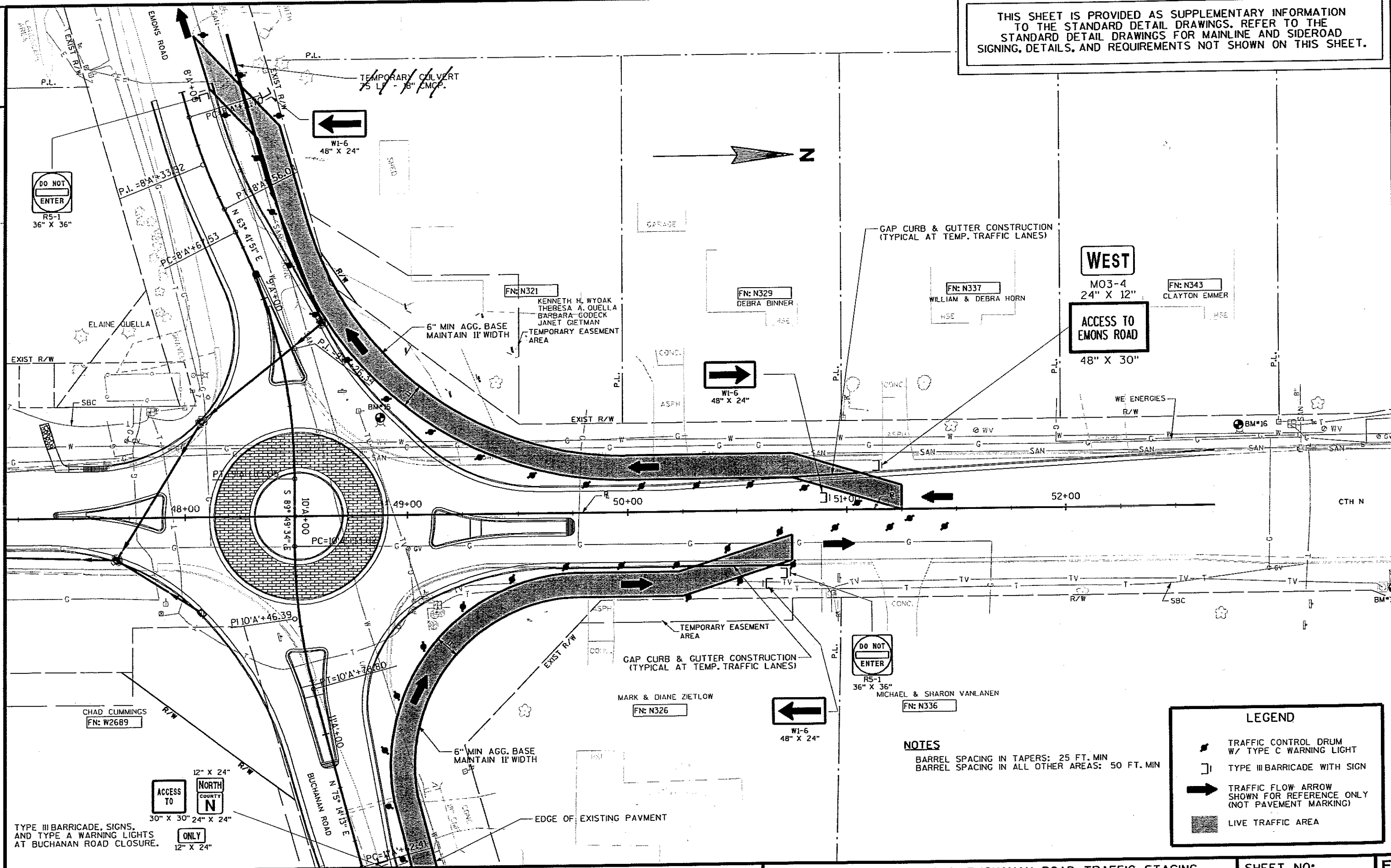
NOTES

ALL SIDEWALK CROSSINGS SHALL BE ADA
ACCESSIBLE. TRUNCATED DOMES ARE REQ'D.

MOUNT SIGN 2 FT. FROM THE TOP OF CURB
TO THE BOTTOM OF THE SIGN



THIS SHEET IS PROVIDED AS SUPPLEMENTARY INFORMATION TO THE STANDARD DETAIL DRAWINGS. REFER TO THE STANDARD DETAIL DRAWINGS FOR MAINLINE AND SIDEROAD SIGNING, DETAILS, AND REQUIREMENTS NOT SHOWN ON THIS SHEET.



3

TOTAL	500
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TOTAL	1200
-------	------

TOTAL	4
-------	---

LOCATION	LF
CENTRAL ISLAND - TRUCK APRON	126
TOTAL	126

TOTAL	60
-------	----

TOTAL	850
-------	-----

TOTAL	1795
-------	------

TOTAL	35	70
-------	----	----

LOCATION	LF
CENTRAL ISLAND - MOUNTABLE CURB	240
TOTAL	240

TOTAL	2
-------	---

TOTAL ~~45~~ 44 ~~338~~ 370

LOCATION			MANHOLES TYPE 1	INLETS TYPE 3	INLET COVERS TYPE A	MANHOLE COVERS TYPE J	INLET COVERS TYPE H
			(EACH)	(EACH)	(EACH)	(EACH)	(EACH)
46+97.96	17.03	RT	1			1	
47+69.40	19.03	RT	1		1		
48+07.39	43.24	LT	1		1		
9'A'+17.65	21.64	LT	1		1		
48+06.88	44.17	RT		1			1
TOTAL			4	1	3	1	1

** ALL QUANTITIES ON THIS SHEET
ARE CATEGORY 0010 UNLESS OTHERWISE NOTED.

SAWING EXISTING PAVEMENT

STA	LOCATION	LF
44+25	BEGIN PROJ STA	38
52+68	END PROJ LIMITS	238 44.5
8'A+00	EMONS ROAD	24
13'A+50	BUCHANAN ROAD	24
VARIOUS	DRIVEWAYS	28
TOTAL		400

REMOVING CURB & GUTTER

LOCATION			LF
NORTHWEST	QUADRANT	RADIUS	445
NORTHEAST	QUADRANT	RADIUS	150
SOUTHEAST	QUADRANT	RADIUS	95
SOUTHWEST	QUADRANT	RADIUS	75
TOTAL			765

REMOVING GUARDRAIL

STA	STA	LOCATION	LF
44+50	47+75	LT CTH-N	325
44+55	47+95	RT CTH-N	340
TOTAL			665

BASE MATERIALS

STA	STA	LOCATION	BASE SALVAGED ASPHALTIC PAVEMENT DENSE 1 1/4-INCH	TON	BREAKER RUN TON	BASE AGGREGATE DENSE 3/4-INCH TON
44+25	52+68	CTH-N	1400	4850 1050	3850 1150	54
SHOULDERS		CTH-N	400	200		75
TEMP. ACCESS		CTH-N				200 25
DRIVEWAYS						
TOTAL			1800	2100	1050	354

EARTHWORK SUMMARY

STA	STA	LOCATION	EXCAVATION COMMON (CY)	FILL (CY)	EXPANDED FILL (30%) (CY)	WASTE (CY)
44+25	52+68	CTH-N EMONS RD BUCHANAN RD	2685	456	593	2092

ASPHALT PAVEMENT

STA	STA	LOCATION	HMA PAVEMENT TYPE E-1 TON	ASPHALTIC MATERIAL PG64-22 TON	ASPHALTIC MATERIAL PG64-28 TON	TACK COAT GAL
44+25	52+68	CTH-N	1040 930.09	35 26.62	28 19.15	100 150
TOTAL			930.09	26.62	19.15	150

STAMPED COLORED CONCRETE, 12-INCH

LOCATION	SY
TRUCK APRON	322
TOTAL	322

STAMPED COLORED CONCRETE, 6-INCH

LOCATION	SY
WEST SPLITTER ISLAND	26
EAST SPLITTER ISLAND	46
NORTH SPLITTER ISLAND	47
SOUTH SPLITTER ISLAND	28
TOTAL	147

ASPHALTIC SURFACE DRIVEWAYS AND FIELD ENTRANCES

STA	LOCATION	TON
8'A+90	LT	3
12'A+30	RT	4
12'A+60	RT	3
49+90	RT	5
50+20	LT	7
51+25	LT	3
TOTAL		22

ASPHALTIC FLUMES

STA	LOCATION	SY
47+45	LT CTH N	710.3
13+30	RT BUCHANAN ROAD	212.0
13+40	LT BUCHANAN ROAD	76.0
44+50	RT CTH N	9.0
TOTAL		937.3

STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL

STA	STA	LOCATION	EACH
44+50	45+00	LT CTH-N	1
46+75	47+25	LT CTH-N	1
44+50	45+00	RT CTH-N	1
46+00	46+50	RT CTH-N	1
TOTAL			4

SPECIAL - FENCE SPLIT RAIL (CATEGORY 0020)

LOCATION	LF
SE QUAD WALK PATH	105
TOTAL	105

CURB RAMP DETECTABLE WARNING FIELD YELLOW

STA	LOCATION	SF
46+60	RT CTH-N	8
49+30	RT CTH-N	8
49+30	LT CTH-N	8
50+55	RT CTH-N	8
10+75	RT BUCHANAN	8
10+75	LT BUCHANAN	8
EAST SPLITTER ISLAND		816
NORTH SPLITTER ISLAND		816
TOTAL		840

STEEL PLATE BEAM GUARD CLASS A

STA	STA	LOCATION	LF
45+00	46+75	LT CTH-N	175
45+00	46+00	RT CTH-N	100
TOTAL			275

CONCRETE SIDEWALK 4-INCH (CATEGORY 0020)

LOCATION	SF
SE QUAD WALK PATH	990 976.3
NW QUAD WALK PATH	750 783.5
NE QUAD WALK PATH	840 1289.8
TOTAL 2045 3042.6	

CONCRETE DRIVEWAY 6-INCH

STA	LOCATION	SF
8+67	LT EMONS RD	270
11+50	LT BUCHANAN RD	40
49+85	RT CTH-N	15
TOTAL		325

CONCRETE SIDEWALK 6-INCH

LOCATION	SF
EAST SPLITTER ISLAND	4572.8
NORTH SPLITTER ISLAND	4060.2
EMONS DRIVEWAY, STA. 9'A+00 TO 40'60'	10086.5
EMONS DRIVEWAY STA 8'A+75	715
CTH N DRIVEWAY STA 49+95 RT	630
TOTAL	9592.0

** ALL QUANTITIES ON THIS SHEET
ARE CATEGORY 0010 UNLESS OTHERWISE NOTED.

CONVENTIONAL SIGNS AND ABBREVIATIONS

COUNTY LINE	---	FOUNDATION OR RUIN	FOM.
TOWNSHIP & RANGE LINES	---	BUILDING	[Symbol]
SECTION LINE	---	CEMETARY	[Symbol]
QUARTER LINE	---	GAS MARKER OR TELEPHONE PEDISTAL	[Symbol]
SIXTEENTH LINE	---	IRON PIN	[Symbol]
NEW REFERENCE LINE	---	RIGHT OF WAY MONUMENT (Type)	[Symbol] (Type)
PROPOSED OR NEW R/W LINE	---	RIGHT OF WAY POINT	[Symbol]
EXISTING RIGHT OF WAY	---	VALVE	[Symbol] (Label)
PROPERTY LINE	---	SILLO, MANHOLE OR WELL, ETC.	[Symbol] (Label)
CORPORATE LIMITS	---	PULL BOX	[Symbol]
LOT TIE AND OTHER MINOR LINES	---	SERVICE PEDESTAL	[Symbol]
SLOPE INTERCEPTS	---	CABLE MARKER	[Symbol]
UNDERGROUND FACILITY (GAS, TELEPHONE, ELECTRIC, ETC.)	---	BUSHES	[Symbol]
FENCE	---	TREES (DECIDUOUS)	[Symbol]
TEMPORARY INTEREST	---	TREES (CONIFEROUS)	[Symbol]
SECTION CORNER	[Symbol]	WOODED OR SHRUB AREA	[Symbol]
HAZARDOUS UTILITY SITE	[Symbol]	MARSH AREA	[Symbol]
PROPOSED CULVERT (Box or Pipe)	[Symbol]	GAS PUMPS	[Symbol]
RAILROAD	[Symbol]	POLE	[Symbol]
POWER POLE	[Symbol]	FIRE HYDRANT	[Symbol]
TELEPHONE POLE	[Symbol]	LIGHT POLE	[Symbol]
SIGN	[Symbol]		

NO ACCESS (BY ACQUISITION)	[Symbol]
NO ACCESS (BY STATUTORY AUTHORITY)	[Symbol]
NO ACCESS (BY PREVIOUS PROJECT OR COVENENT)	[Symbol]

NOTES

COORDINATES AND BEARINGS ON THIS PLAT ARE ORIENTED TO THE WISCONSIN COUNTY COORDINATE SYSTEM, OUTAGAMIE COUNTY.

RIGHT-OF-WAY MONUMENTS WILL BE PLACED PRIOR TO THE COMPLETION OF THE PROJECT.

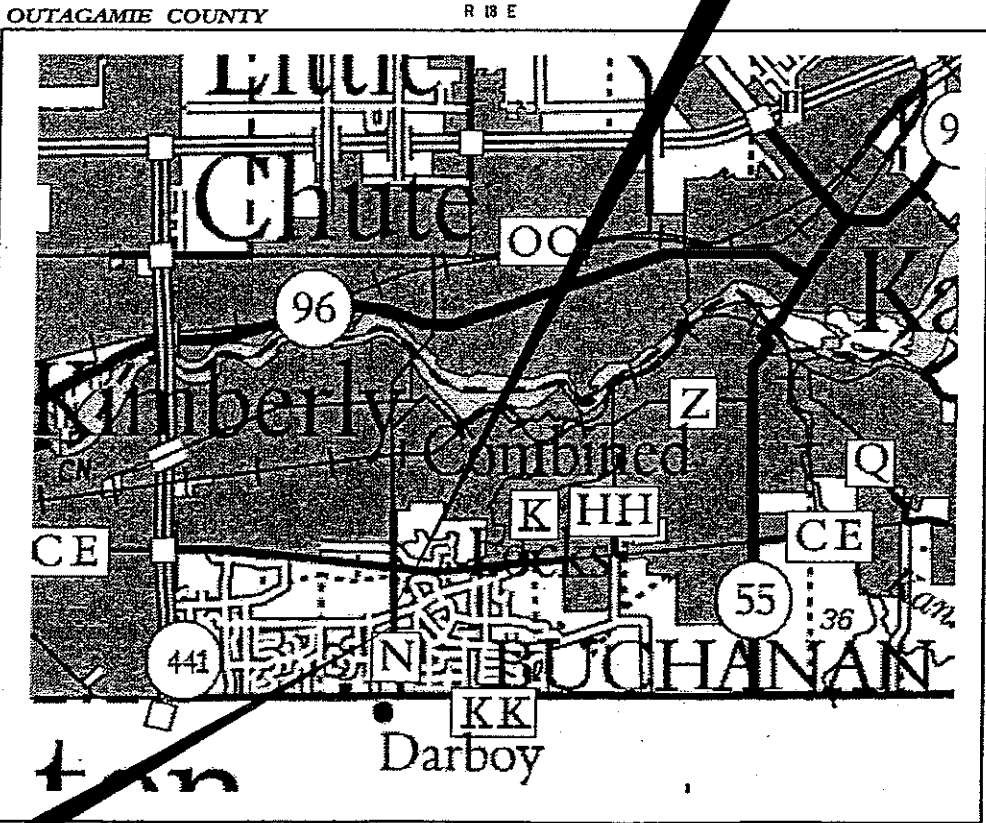
RIGHT-OF-WAY BOUNDARIES ARE DEFINED WITH COURSES OF THE PERIMETER OF THE HIGHWAY LANDS REFERENCED TO THE U.S. PUBLIC LAND SURVEY SYSTEM OR OTHER SURVEYS OF PUBLIC RECORD.

THE EXISTING RIGHT-OF-WAY SHOWN HEREIN IS BASED ON THE FOLLOWING POINTS OF REFERENCE:
TOWN OF BUCHANAN PARCEL MAPS, FIELD EVIDENCE AND MONUMENTATION, CERTIFIED SURVEYS, PLATS OF SURVEY, ROADWAY R/W PLATS, AND THE EXISTING CENTERLINE OF C.T.H. "N".

BEGIN RELOCATION ORDER
STA. 47+71.36
2811.82' NORTH OF AND 9.92' EAST OF THE SOUTH 1/4 CORNER, SECTION 33, T21N, R18E, TOWN OF BUCHANAN, OUTAGAMIE COUNTY, WI (MAG NAIL)

AC.	ACRE	m	METER
AH.	AHEAD	MI.	MILE
ALUM. MON.	ALUMINUM MONUMENT	P.	PAGE
ANT.	ANTENNA	P.C.	POINT OF CURVATURE
A.P.	ACCESS POINT	P.E.	PRIVATE ENTRANCE
B.	BARN	PERM.	PERMANENT
BK.	BACK	P.T.	POINT OF TANGENCY
B.M.	BENCHMARK	P.I.	POINT OF INTERSECTION
C.	CHURCH	P.L.E.	PERMANENT LIMITED EASEMENT
C/L	CENTERLINE	R.	RADIUS
CONC. MON.	CONCRETE MONUMENT	R.D.E.	RESTRICTED DEVELOPMENT EASEMENT
CONST.	CONSTRUCTION	REM.	REMAINING
C.P.	CULVERT PIPE	REST.	RESTAURANT
C.S.M.	CERTIFIED SURVEY MAP	RT.	RIGHT
D.	DEGREE OF CURVE	R/W	RIGHT OF WAY
ETAL	AND OTHERS	S.	SHED
FRL.	FRACTIONAL	S.D.	STORM DRAINAGE
FT.	FEET	S.F.	SQUARE FEET
G.	GARAGE	sm	SQUARE METER
H.	HOUSE	STA.	STATION
ha	HECTARE	T	TANK
km	KILOMETER	TAV.	TAVERN
L.	LENGTH OF CURVE	TEMP.	TEMPORARY
L.C.	LONG CHORD OF CURVE	T.I.	TEMPORARY INTEREST
L.C.B.	LONG CHORD BEARING	VOL.	VOLUME
LT.	LEFT	W	WALL

END RELOCATION ORDER
STA 48+77.22
2917.67' NORTH OF AND 10.24' EAST OF THE SOUTH 1/4 CORNER, SECTION 33, T21N, R18E, TOWN OF BUCHANAN, OUTAGAMIE COUNTY, WI (MAG NAIL)



LAYOUT
SCALE 0 1 mi. 2 mi.
TOTAL NET LENGTH OF CENTERLINE = 0.02 MI.

R/W PROJECT NUMBER 5816	SHEET NUMBER 21	TOTAL SHEETS
PLAT OF RIGHT-OF-WAY REQUIRED FOR CTH N ROUNDABOUT (EMONS RD/BUCHANAN RD INTERSECTION)		
CTH N OUTAGAMIE CO		
CONSTRUCTION PROJECT NUMBER 5816		

APPROVED FOR OUTAGAMIE COUNTY	
3-10-06 (Date)	<i>David Hebert</i> (Signature)

PLAT PREPARED BY:
DONOHUE & ASSOCIATES
WITH HEBERT ASSOCIATES, INC.
APPLETON, WI



3-5-06 (Date)	<i>David Hebert</i> (Signature)
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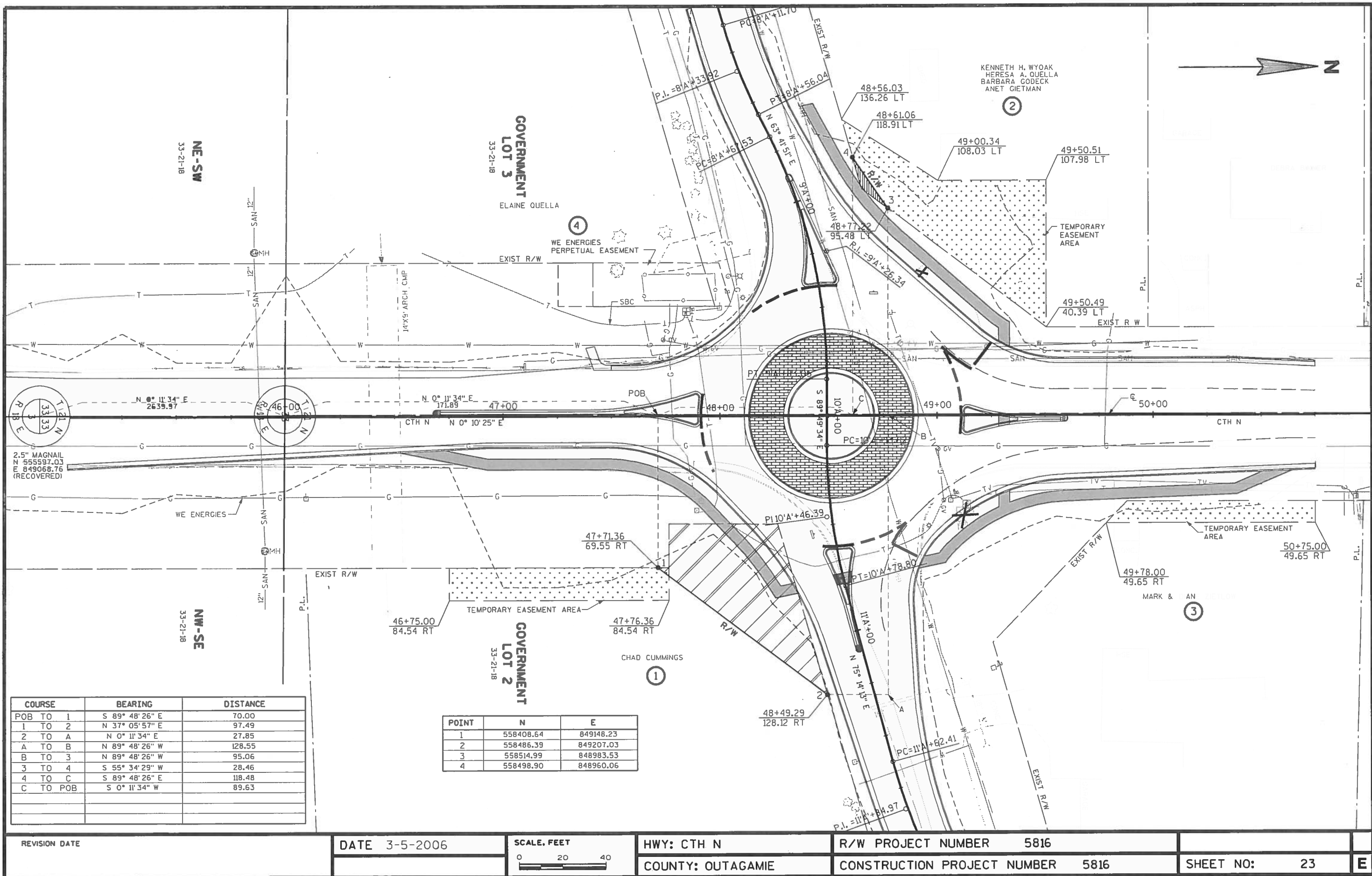
REVISION DATE

SCHEDULE OF LANDS & INTERESTS REQUIRED

AREAS SHOWN IN THE TOTAL ACRES COLUMN MAY BE APPROXIMATE AND ARE DERIVED FROM TAX ROLLS OR OTHER AVAILABLE SOURCES AND MAY NOT INCLUDE LANDS OF THE OWNER WHICH ARE NOT CONTIGUOUS TO THE AREA TO BE ACQUIRED.

PARCEL NUMBER	OWNER(S)	INTEREST REQUIRED	TOTAL (ACRES) OR S.F.	R/W (ACRES) OR S.F. REQUIRED			TOTAL (ACRES) OR S.F. REM.		T.L.E. P.L.E. (ACRES) OR S.F.	
				NEW	EXISTING	TOTAL				
1	CHAD T. CUMMINGS	FEE & TLE	75,359	2,846	0	2,846	72,513		1,511	
2	KENNETH H. WYOAK, THERESA A. QUELLA, BARBARA GODECK, AND JANET GIETMAN	FEE & TLE	34,412	68	0	68	34,344		3,127	
3	MARK A. ZIETLOW AND DIANA K. ZIETLOW	TLE	50,965	0	0	0	50,965		923	
4	WE ENERGIES	RELEASE OF RIGHTS	0	0	0	0	0		0	

REVISION DATE	DATE 3-5-2006	SCALE. FEET	HWY: CTH N	R/W PROJECT NUMBER 5816	
		 0 100 N/A	COUNTY: OUTAGAMIE	CONSTRUCTION PROJECT NUMBER 5816	SHEET NO: 22 E



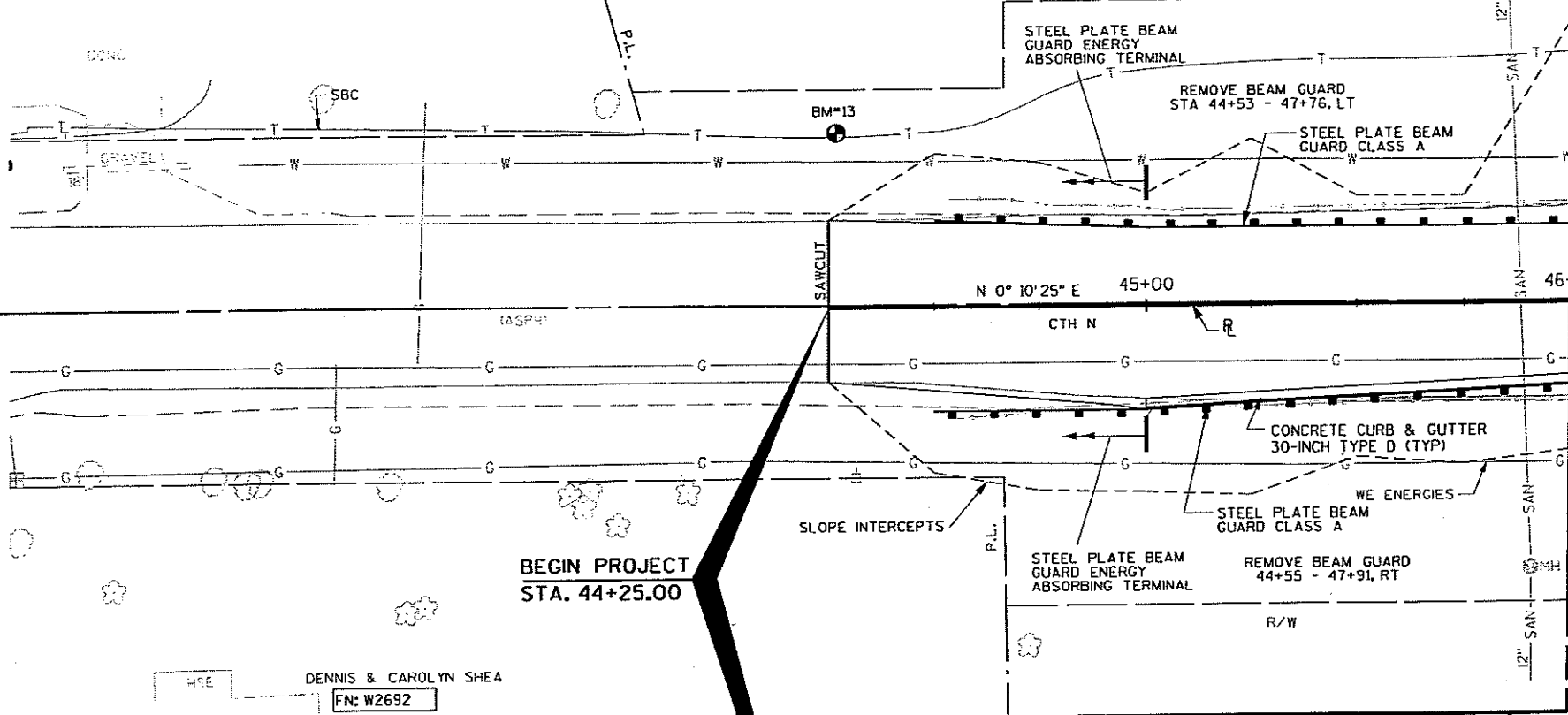
COURSE	BEARING	DISTANCE
POB TO 1	S 89° 48' 26" E	70.00
1 TO 2	N 37° 05' 57" E	97.49
2 TO A	N 0° 11' 34" E	27.85
A TO B	N 89° 48' 26" W	128.55
B TO 3	N 89° 48' 26" W	95.06
3 TO 4	S 55° 34' 29" W	28.46
4 TO C	S 89° 48' 26" E	118.48
C TO POB	S 0° 11' 34" W	89.63

POINT	N	E
1	558408.64	849148.23
2	558486.39	849207.03
3	558514.99	848983.53
4	558498.90	848960.06

REVISION DATE	DATE 3-5-2006	SCALE, FEET 0 20 40	HWY: CTH N	R/W PROJECT NUMBER 5816	
			COUNTY: OUTAGAMIE	CONSTRUCTION PROJECT NUMBER 5816	SHEET NO: 23
					E

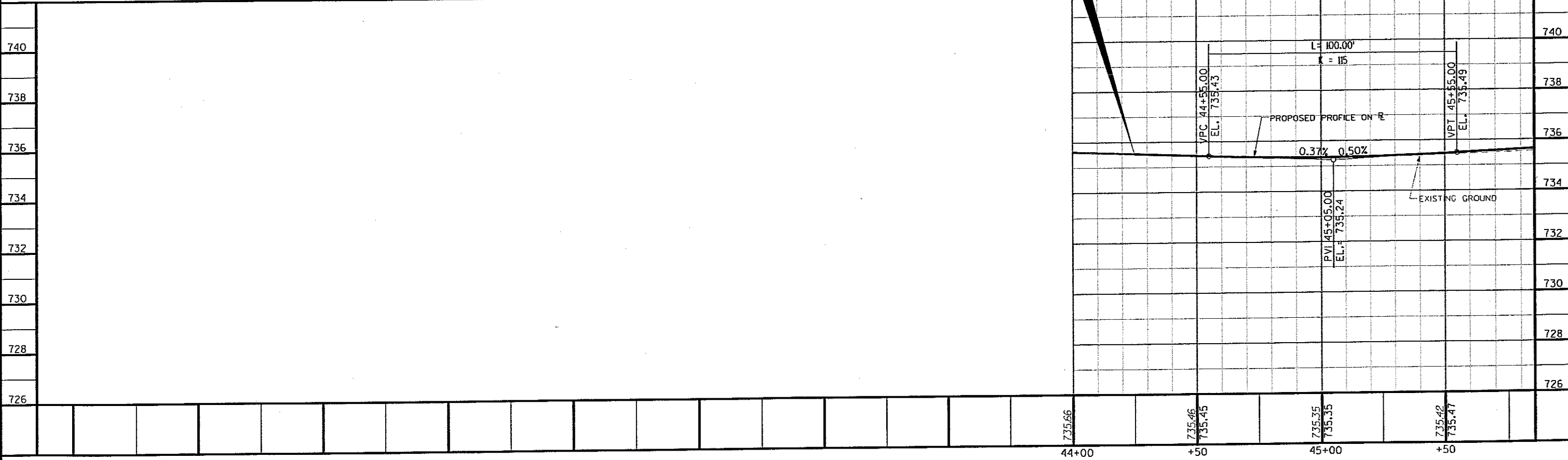
BENCH MARKS				
NO.	STATION	DESCRIPTION	OFFSET	ELEV.
13	44+26.73	TOP NUT OF HYD.	40.44 LT	734.43
14	46+10.66	6" NAIL IN POWER POLE	37.59 RT	729.92
15	48+87.62	TOP NUT OF HYD.	44.13 LT	740.08

FN: N271
PATRICK SCHINK

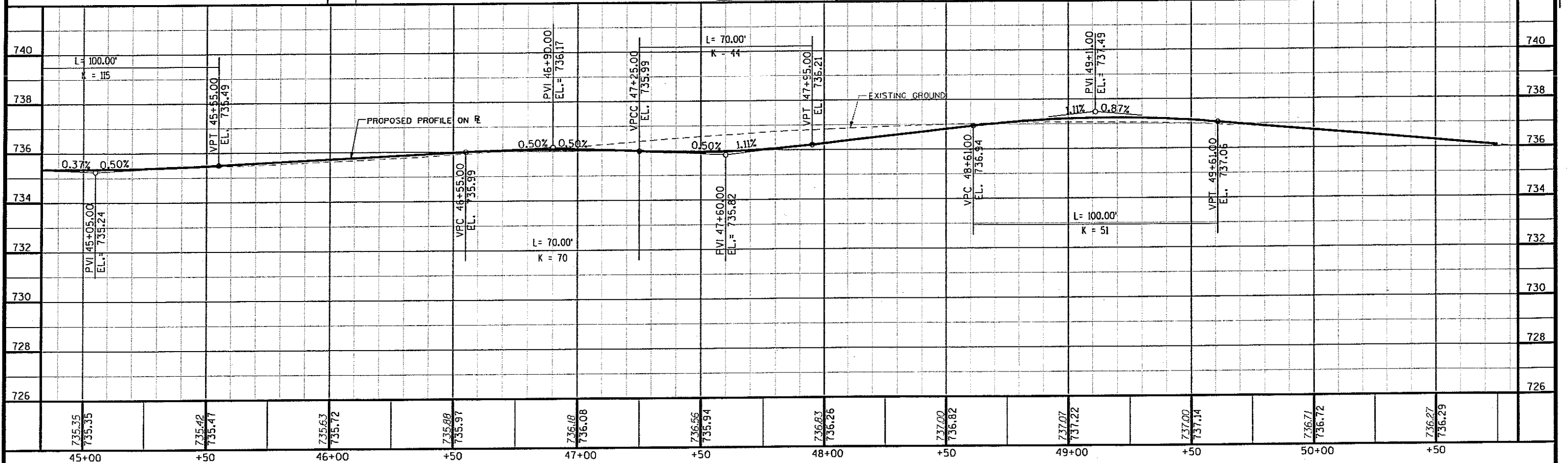
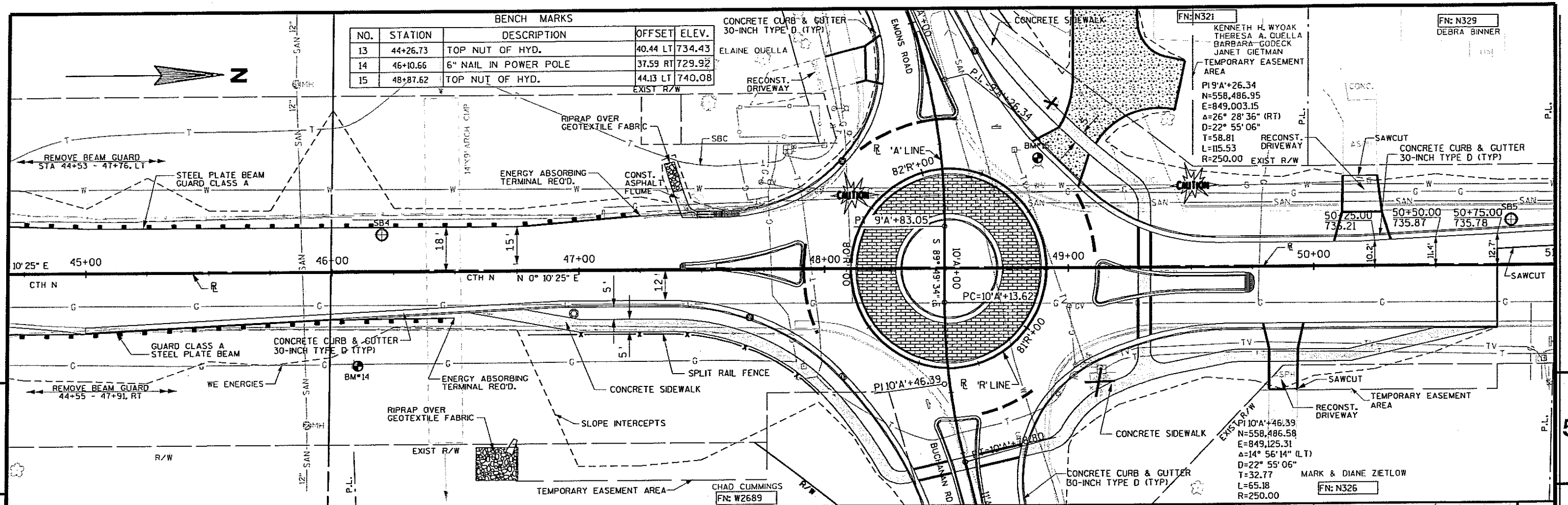


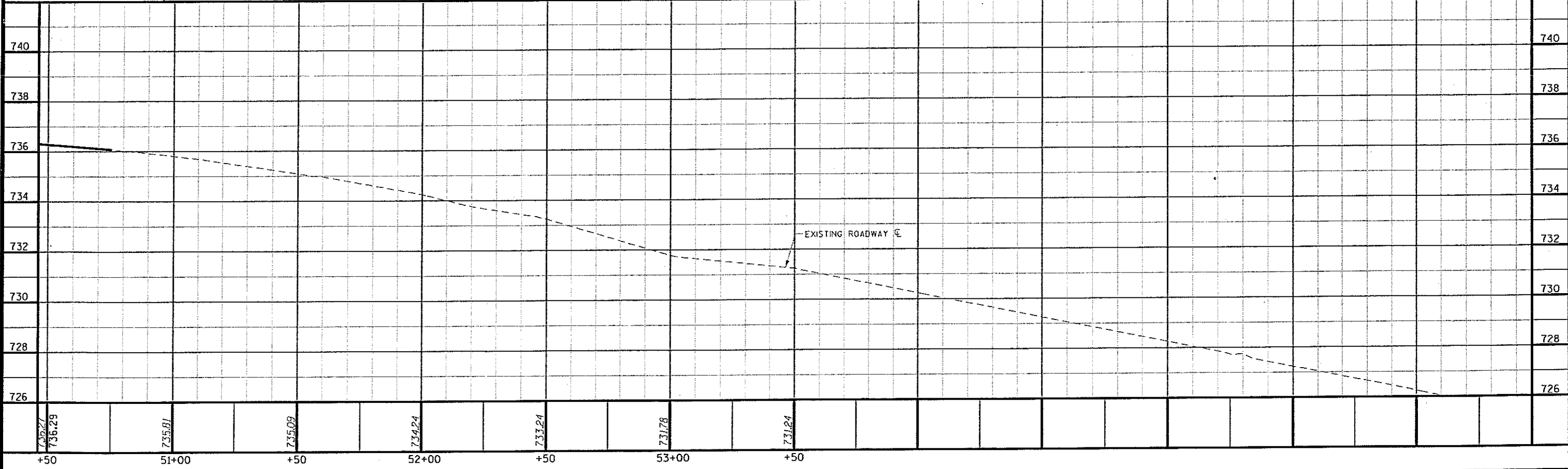
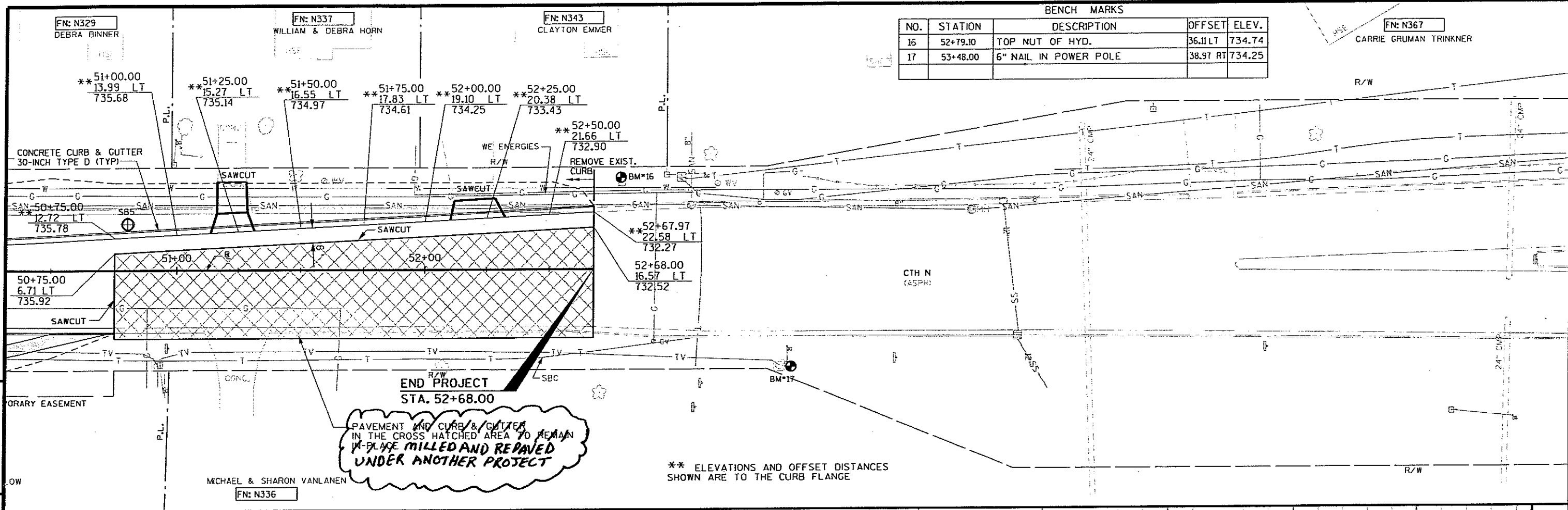
BEGIN PROJECT
STA. 44+25.00

DENNIS & CAROLYN SHEA
FN: W2692

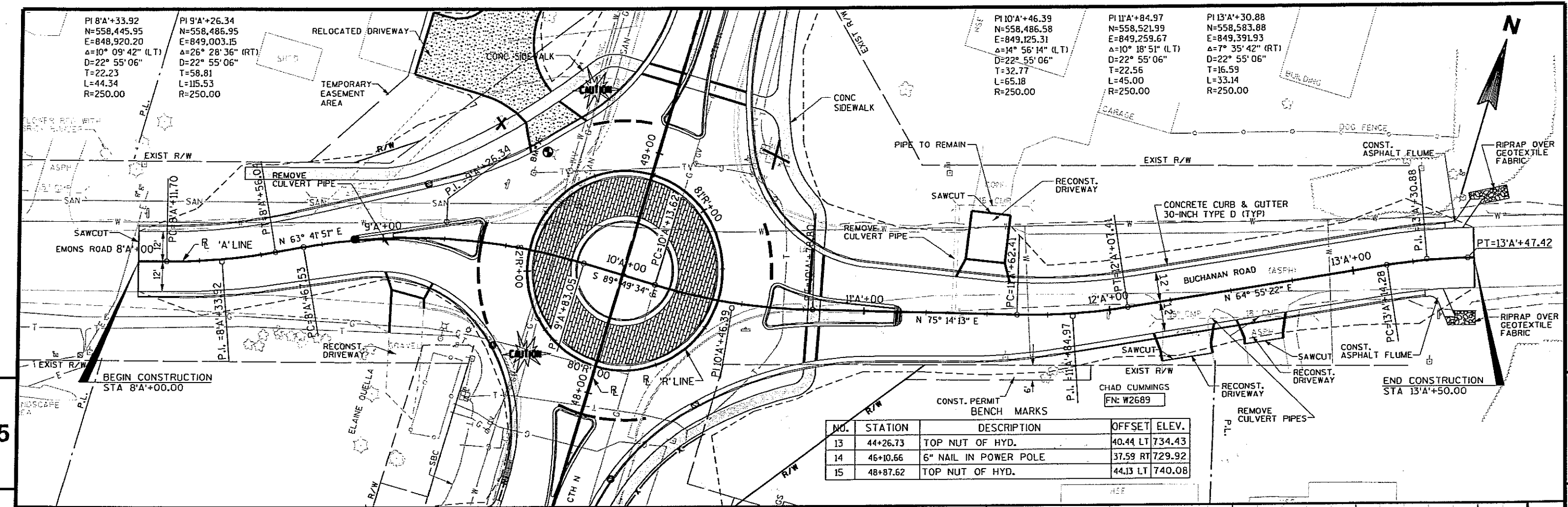


NO.	STATION	DESCRIPTION	OFFSET	ELEV.
13	44+26.73	TOP NUT OF HYD.	40.44 LT	734.43
14	46+10.66	6" NAIL IN POWER POLE	37.59 RT	729.92
15	48+87.62	TOP NUT OF HYD.	44.13 LT	740.08

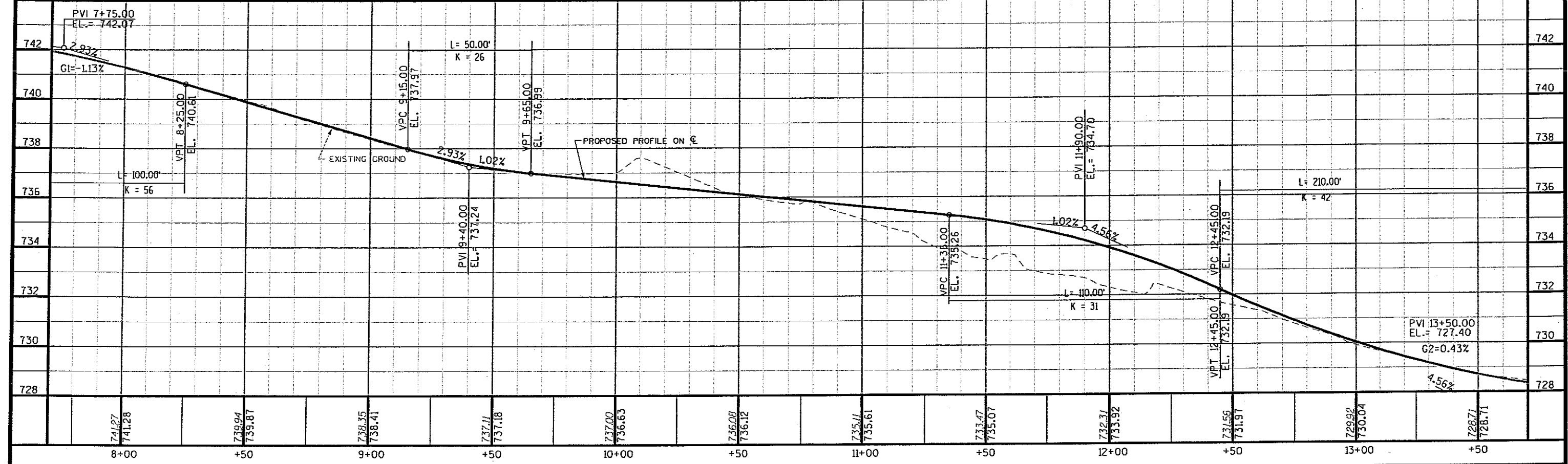




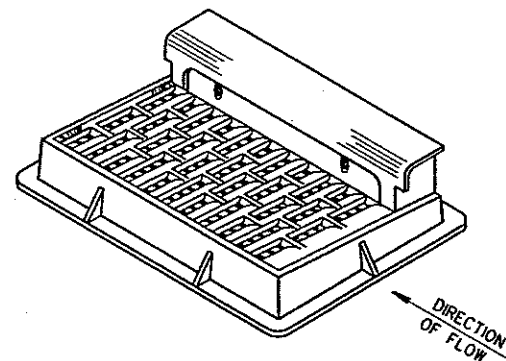
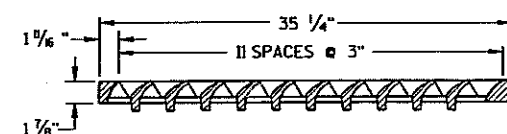
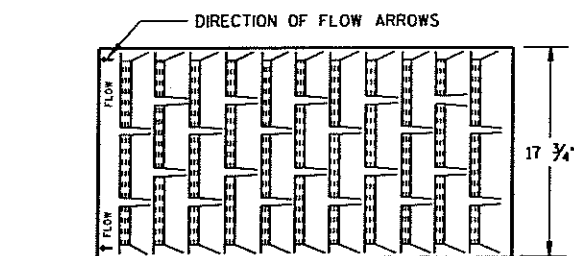
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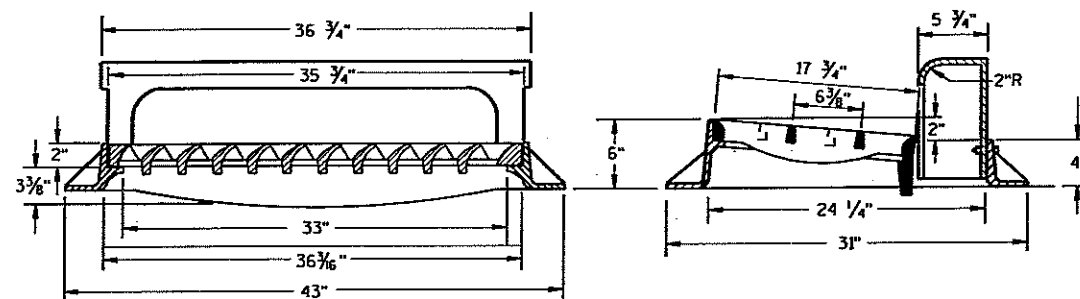
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NOTE:
GRATE IS REVERSIBLE.



NOTE: CURB BOX HEIGHT ADJUSTABLE 6" TO 9"

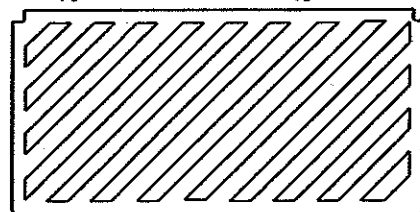


TYPE "H"

(APPROXIMATE WEIGHT 422 LBS.)

FRAME..... 175 LBS.
GRATE..... 138 LBS.
CURB BOX..... 109 LBS.

1 1/8" DIAGONAL BARS WITH 1 5/8" OPENINGS



SPECIAL GRATE FOR TYPE "H" COVER

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

(APPROXIMATE WEIGHT 172 LBS.)

GRATE..... 172 LBS.

(NOTED AS TYPE H-S ON DRAINAGE TABLE)

GENERAL NOTES

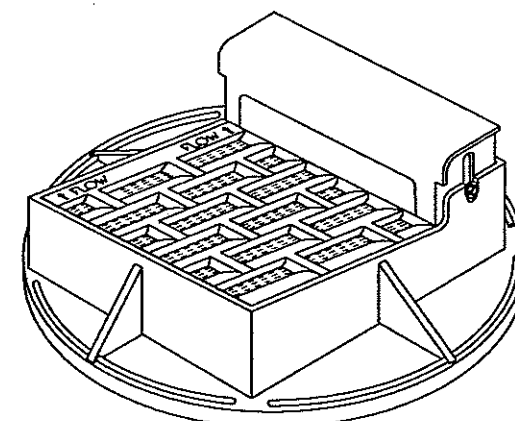
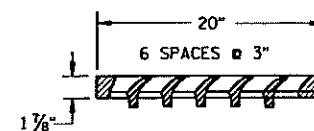
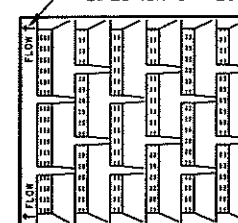
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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

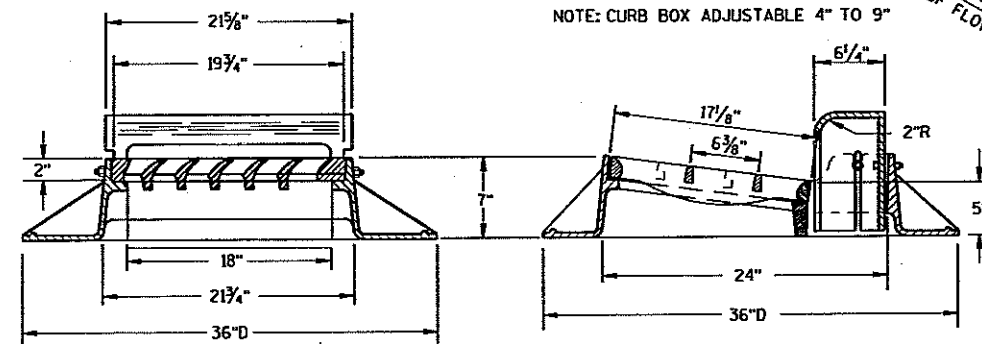
ROUND FRAMES AND COVERS SHALL HAVE CONTINUOUSLY MACHINED BEARING SURFACES TO PREVENT ROCKING AND RATTLING.

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

DIRECTION OF FLOW ARROWS



NOTE: CURB BOX ADJUSTABLE 4" TO 9"



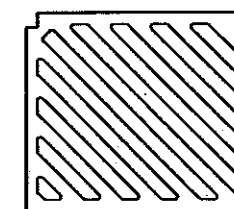
TYPE "A"

(APPROXIMATE WEIGHT 325 LBS.)

FRAME..... 157 LBS.
GRATE..... 84 LBS.
CURB BOX..... 84 LBS.

NOTE:
GRATE IS REVERSIBLE.

1" DIAGONAL BARS
WITH 1 1/2" OPENINGS



SPECIAL GRATE FOR TYPE "A" COVER

(MEASURES 19 3/4" X 17" X 1 7/8")

GRATE..... 84 LBS.

(NOTED AS TYPE A-S ON DRAINAGE TABLE)

INLET COVERS TYPE A, H, A-S, & H-S

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

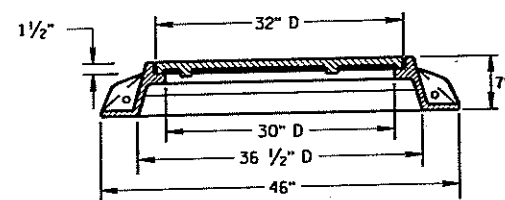
APPROVED

10/4/99

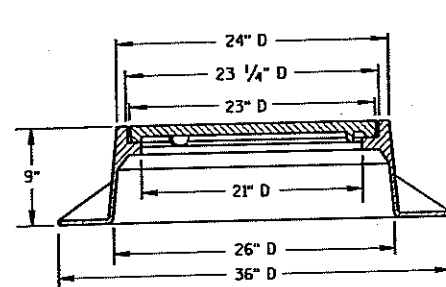
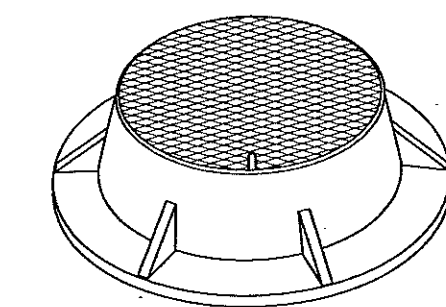
DATE

FHWA

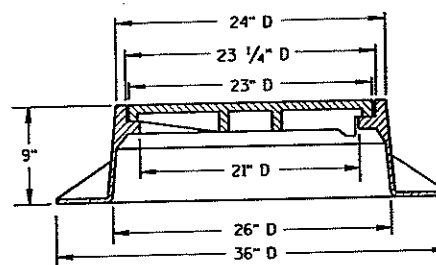
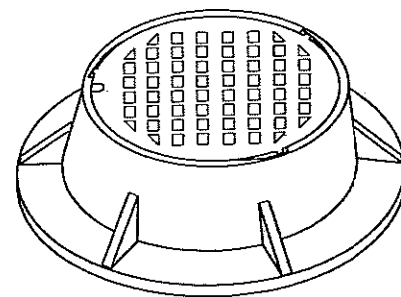
Paul J. Thompson
CHIEF ROADWAY DEVELOPMENT ENGINEER



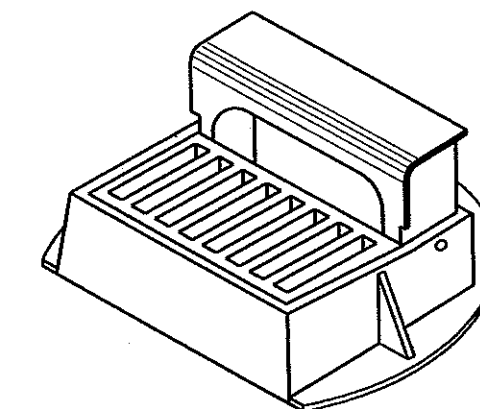
SECTION A-A
TYPE "K"
(APPROXIMATE WEIGHT 415 LBS.)
FRAME.....210 LBS.
LID.....205 LBS.



TYPE "J"
 (APPROXIMATE WEIGHT 250 LBS.)
 FRAME.....135 LBS.
 LID.....115 LBS.



TYPE "J" SPECIAL
 TYPE "B" NON-ROCKING SELF-SEAL LID
 (APPROXIMATE WEIGHT 245 LBS.)
 FRAME.....145 LBS.
 LID.....100 LBS.
 (NOTED AS TYPE J-S ON THE DRAINAGE TABLE)



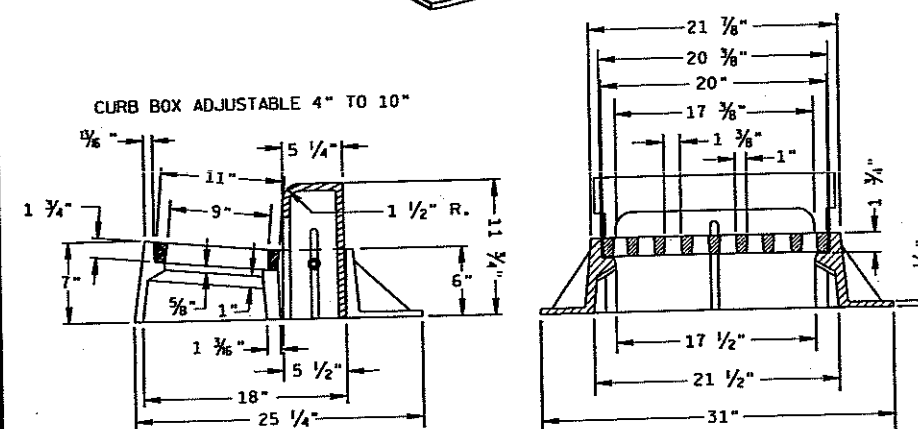
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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

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

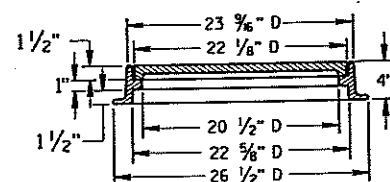
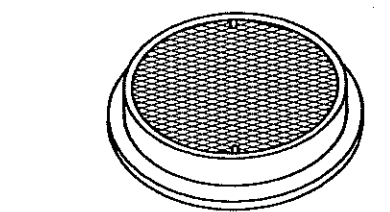
THE ACTUAL WEIGHT OF COVERS MAY VARY WITHIN 5 PERCENT, PLUS OR MINUS, OF THE APPROXIMATE WEIGHT.

- ① MANUFACTURER MAY PROVIDE ADDITIONAL SEALS OR GASKETS.

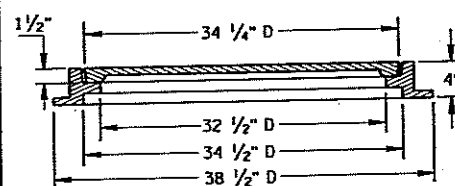
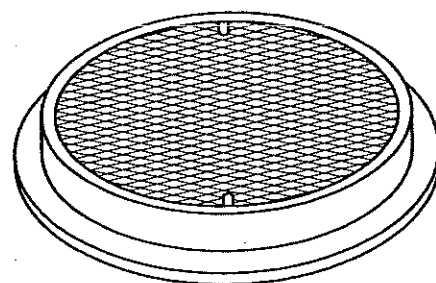


INLET COVER TYPE "Z"
(APPROXIMATE WEIGHT 340 LBS.)

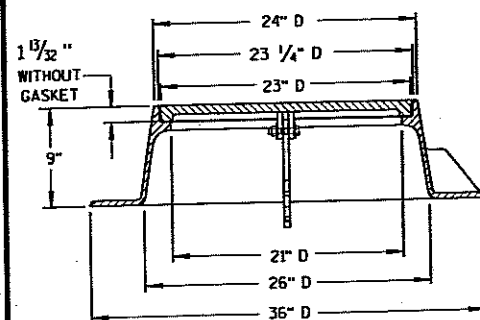
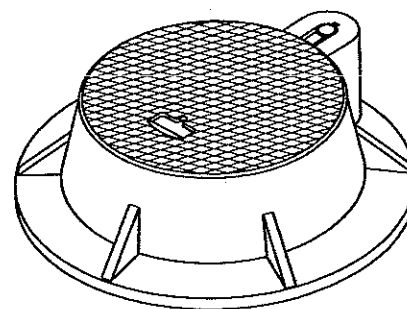
FRAME.....	198 LBS.
GRATE.....	50 LBS.
CURB BOX.....	92 LBS.



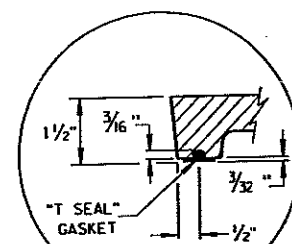
TYPE "L"
(APPROXIMATE WEIGHT 145 LBS.)
FRAME.....75"
LID.....70"



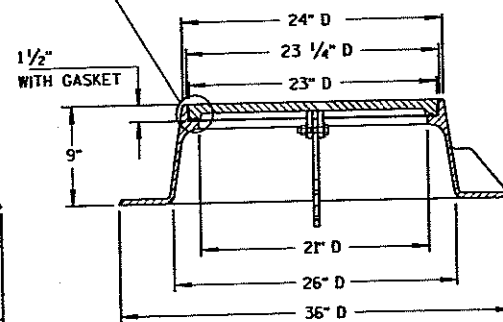
TYPE "M"
(APPROXIMATE WEIGHT 385 LBS.)
FRAME..... 125"
LID..... 260"



TYPE "J" HINGED
LID WITHOUT "T SEAL" GASKET
(APPROXIMATE WEIGHT 310 LBS.)
FRAME.....190 LBS.
LID.....120 LBS.
(NOTED AS TYPE J-H ON THE DRAINAGE TABLE)



"T SEAL" GASKET DETAIL



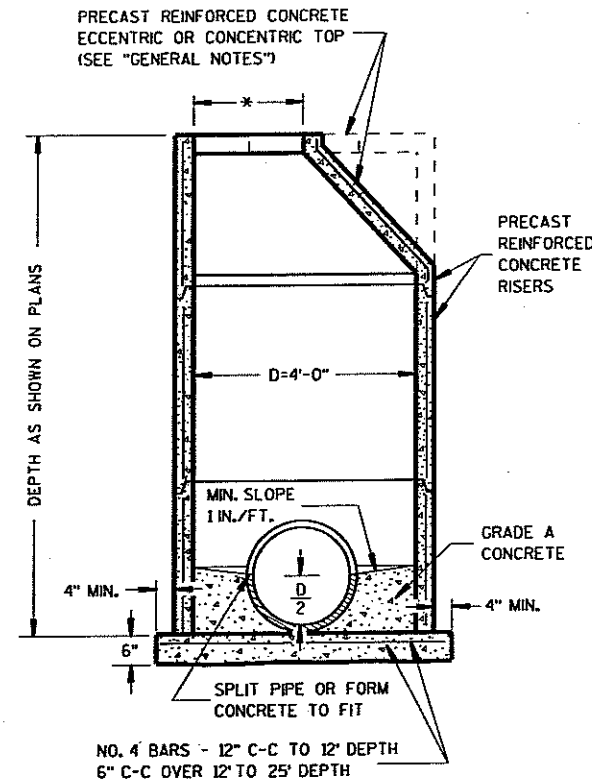
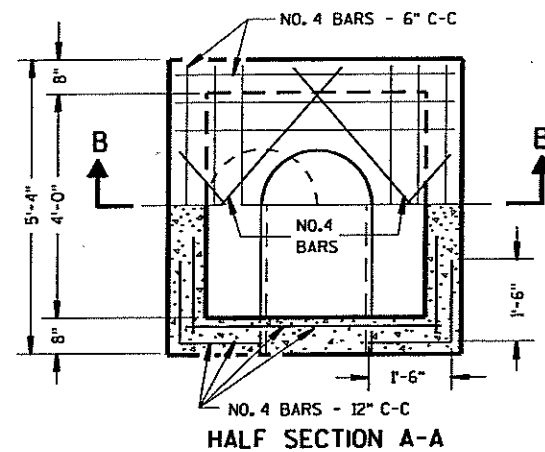
TYPE "J" HINGED-SPECIAL (1)
LID WITH "T SEAL" GASKET
(APPROXIMATE WEIGHT 310 LBS.)
FRAME.....190 LBS.
LID.....120 LBS.
(NOTED AS TYPE J-S-H ON THE DRAINAGE TABLE)

INLET COVER, TYPE Z
MANHOLE COVERS, TYPE
K, J, J-S, J-H, J-H-S, L & M

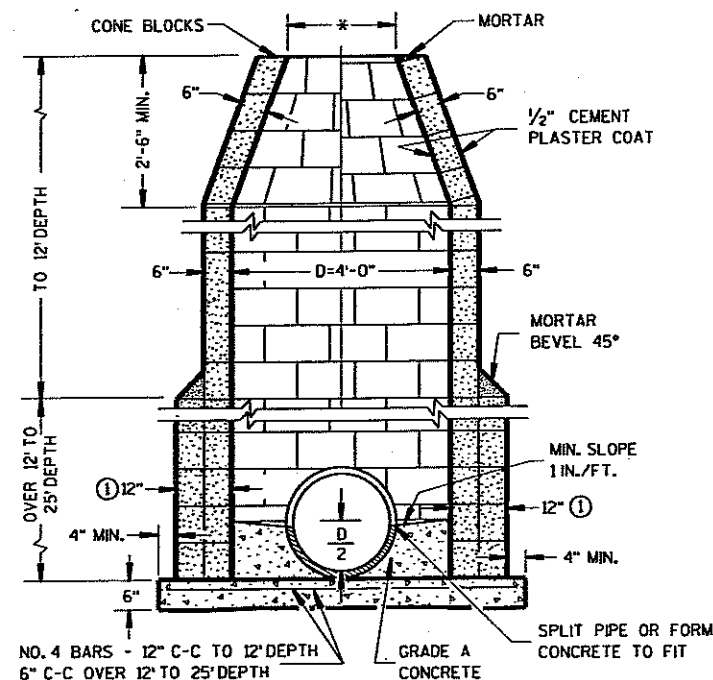
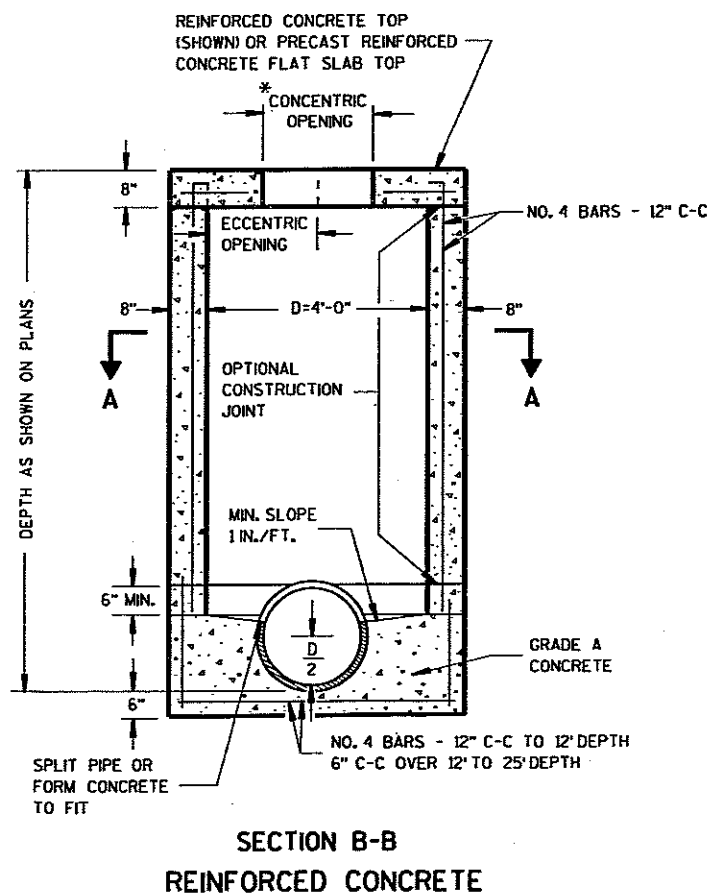
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
4-29-05
DATE
FHWA

CHIEF, ROADWAY DEVELOPMENT ENGINEER



PRECAST REINFORCED CONCRETE



CONCRETE BLOCK

GENERAL NOTES

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

DETAILED DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR UNDERGROUND DRAINAGE STRUCTURES SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

ALL DRAINAGE STRUCTURES ARE DESIGNATED ON THE PLANS AS "MANHOLES 1-C", "CATCH BASINS 1-B", "INLETS 3-H", ETC. THE FIRST DIGIT DESIGNATES THE MASONRY PORTION OF THE STRUCTURE, AND THE FOLLOWING LETTER DESIGNATES THE TYPE OF COVER TO BE USED TO COMPRISE THE COMPLETE UNIT.

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

PRECAST REINFORCED CONE TOPS (ECCENTRIC OR CONCENTRIC) MAY BE USED ON CONCRETE BLOCK STRUCTURES. THE CONE TOPS SHALL BE INSTALLED ON A BED OF MORTAR.

ECCENTRIC CONE TOPS MAY BE USED ON ALL STRUCTURES, AND CONCENTRIC CONE TOPS SHALL BE USED ONLY ON STRUCTURES 5 FEET OR LESS IN DEPTH, UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

STEPS CONFORMING TO AASHTO M 199 SHALL BE INSTALLED IN ALL STRUCTURES OVER 5 FEET IN DEPTH.

SOLID ALUMINUM STEPS SHALL HAVE A MINIMUM CROSS SECTIONAL DIMENSION OF 0.75 INCH. ALUMINUM SURFACES TO BE EMBEDDED IN CONCRETE SHALL BE GIVEN ONE COAT OF SUITABLE QUALITY PAINT, SUCH AS ZINC CHROMATE PRIMER CONFORMING TO FEDERAL SPECIFICATION TT-P-645 OR EQUIVALENT.

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

PRECAST REINFORCED CONCRETE RISERS MAY BE PLACED WITH TONGUE UP OR DOWN.

ALL PRECAST INLET UNITS AND MANHOLES SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF AASHTO DESIGNATION M 199.

* USE 2'-0" DIAMETER OPENING WITH TYPE "C", "L" AND "J" COVERS, OR 3'-0" DIAMETER WITH TYPE "K" AND "M" COVERS.

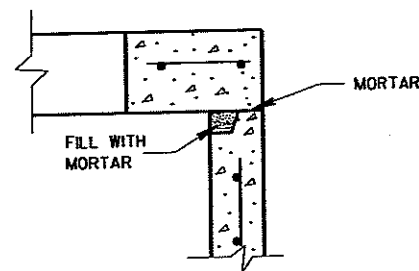
① 2 COURSES 6" BLOCK.

MANHOLES TYPE 1

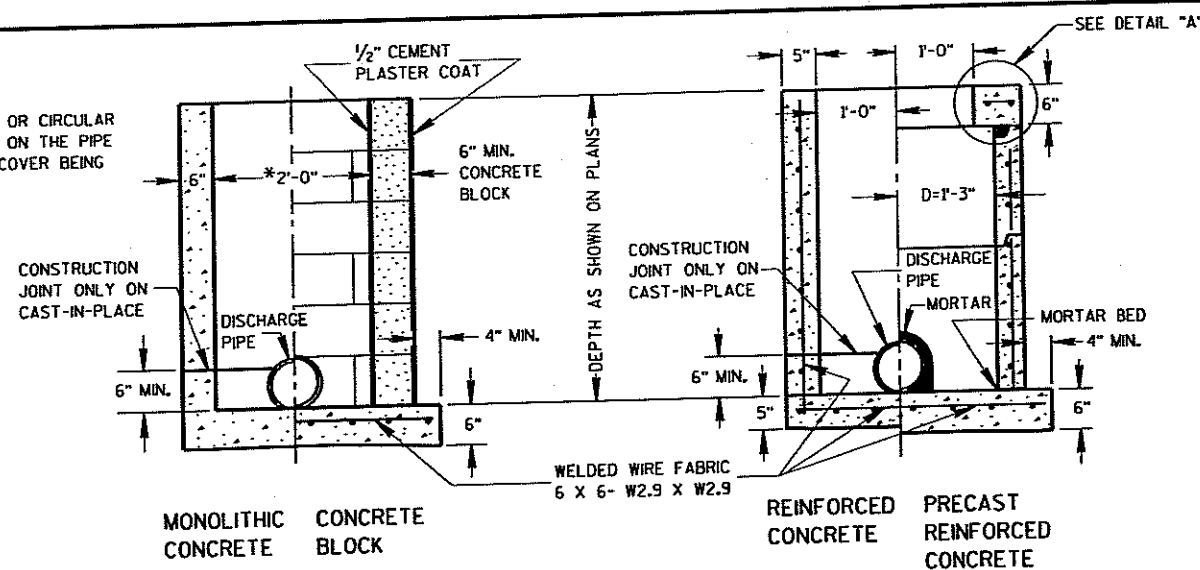
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
9/9/05 /S/ Jerry H. Zogg
DATE ROADWAY STANDARDS DEVELOPMENT
ENGINEER
FHWA

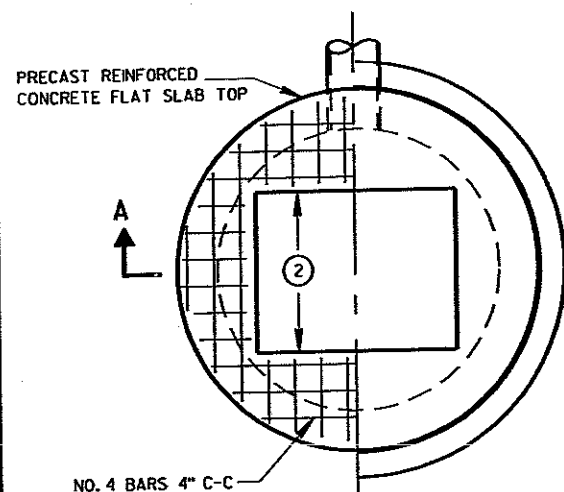
*SELECTION OF SQUARE OR CIRCULAR DESIGN WILL BE BASED ON THE PIPE SIZES AND THE INLET COVER BEING UTILIZED



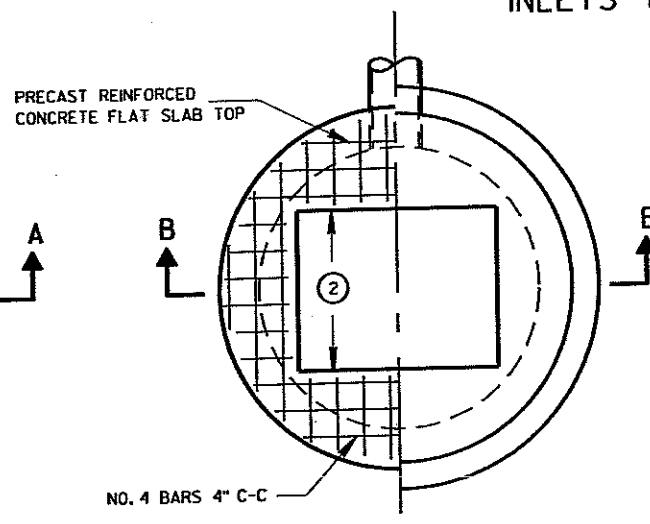
DETAIL "A"



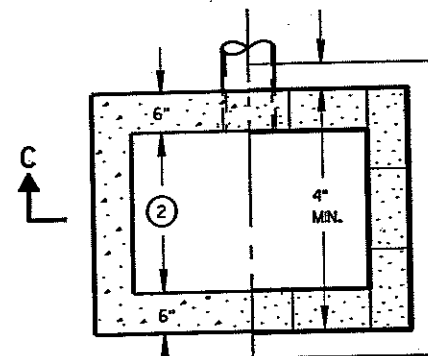
INLETS TYPE 1



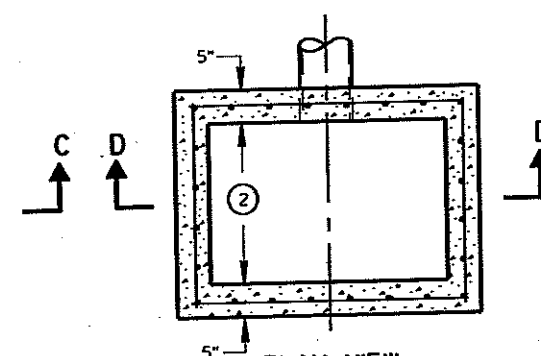
PLAN VIEW



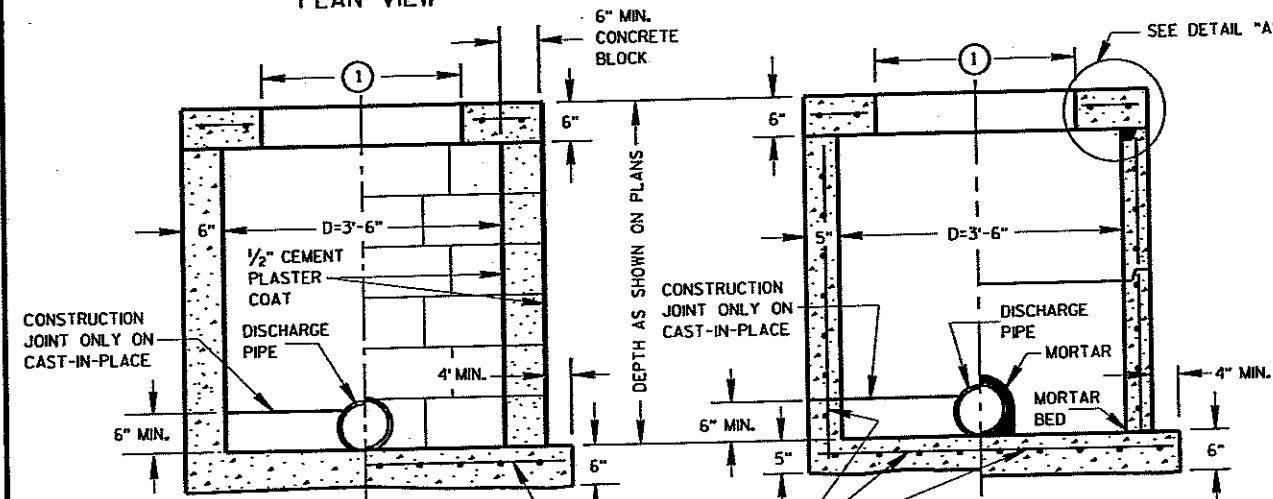
PLAN VIEW



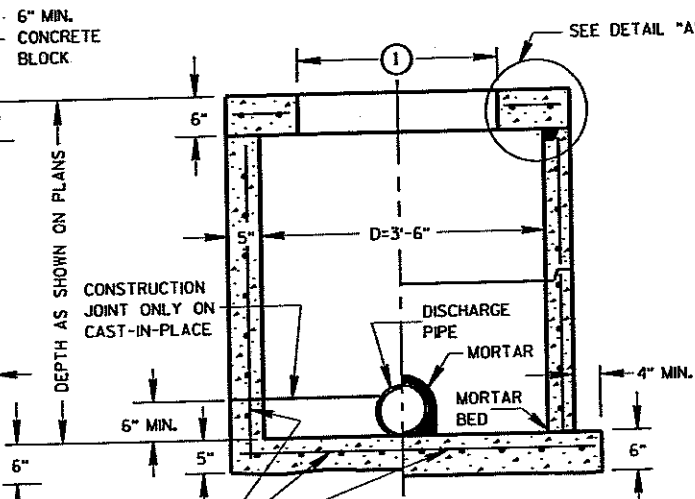
PLAN VIEW



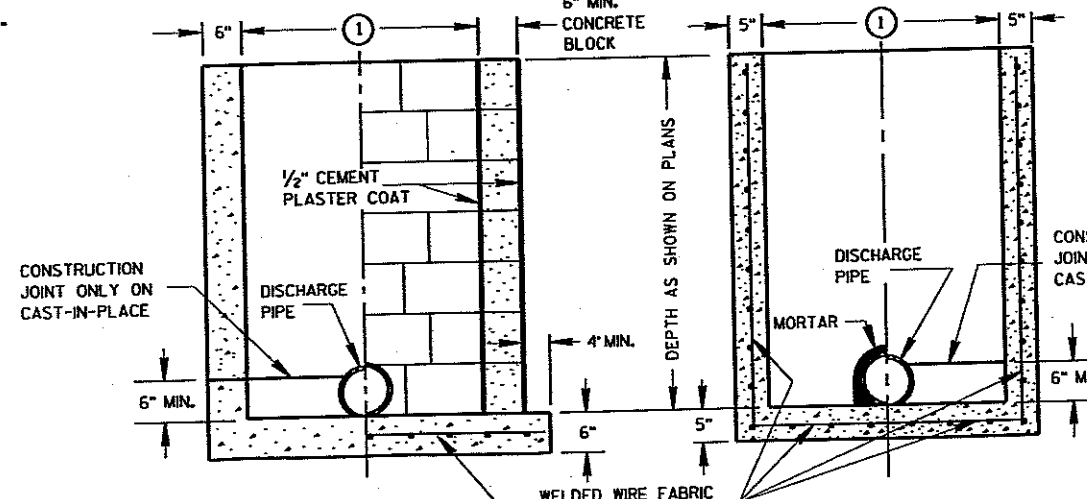
PLAN VIEW



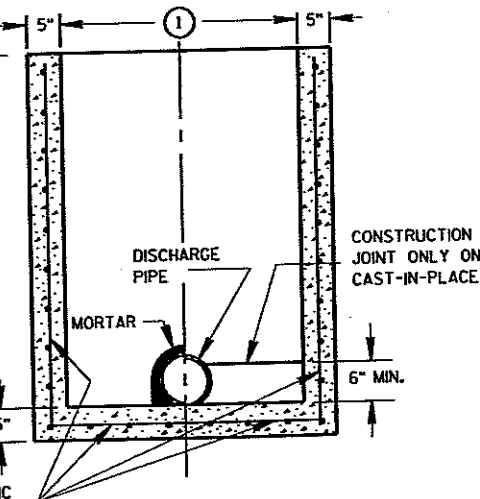
SECTION A-A



SECTION B-B



SECTION C-C



SECTION D-D

GENERAL NOTES

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

DETAILED DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR UNDERGROUND DRAINAGE STRUCTURES SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

ALL PRECAST INLET UNITS SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF AASHTO DESIGNATION M 199.

ALL DRAINAGE STRUCTURES ARE DESIGNATED ON THE PLANS AS "MANHOLES 1-C", "CATCH BASINS 1-B", "INLETS 3-H", ETC. THE FIRST DIGIT DESIGNATES THE MASONRY PORTION OF THE STRUCTURE, AND THE FOLLOWING LETTER DESIGNATES THE TYPE OF COVER TO BE USED TO COMPRISE THE COMPLETE UNIT.

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

PRECAST REINFORCED CONCRETE FLAT SLAB TOPS MAY BE USED ON THE STRUCTURES. THE TOPS SHALL BE INSTALLED ON A BED OF MORTAR.

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

PRECAST REINFORCED CONCRETE RISERS SHALL BE PLACED WITH TONGUE DOWN.

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

INLETS TYPE 1, 2, 3 & 4

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
8/26/94
DATE

Tom J. Thompson
CHIEF ROADWAY DEVELOPMENT ENGINEER

FHWA

GENERAL NOTES

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

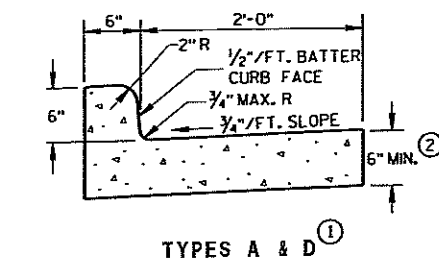
PAVEMENT TIES AND TIE BARS SHALL BE EPOXY COATED IN CONFORMANCE WITH SUBSECTION 505.2.6.2 OF THE STANDARD SPECIFICATIONS.

INTEGRAL CURB & GUTTER SHALL CONFORM TO THE DETAILS SHOWN FOR CONCRETE CURB & GUTTER INCLUDING THE TRANSVERSE GUTTER SLOPE. A LONGITUDINAL CONSTRUCTION JOINT IS NOT REQUIRED WITH INTEGRAL CURB AND GUTTER.

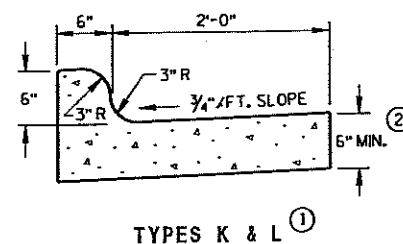
WHERE THE TRANSVERSE JOINTS IN THE PAVEMENT ARE REQUIRED TO BE SEALED, THE JOINTS IN THE INTEGRAL CURB AND GUTTER SHALL BE SEALED TO THE FACE OF CURB WITH THE SAME TYPE OF SEALANT. THE COST OF FURNISHING AND INSTALLING THIS SEALANT SHALL BE INCIDENTAL TO THE ITEM CONCRETE CURB AND GUTTER.

UNLESS OTHERWISE SHOWN ON THE TYPICAL CROSS SECTIONS, THE BASE COURSE AND UNCLASSIFIED EXCAVATION LIMITS ARE 2'-0" BEHIND THE BACK OF CURBS.

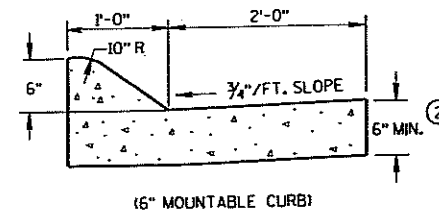
- ① TIE BARS ARE REQUIRED FOR CURB AND GUTTER TYPES A, G AND K.
- ② THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE COURSE PROVIDED A 6" MINIMUM GUTTER THICKNESS IS MAINTAINED.
- ③ WHEN REVERSE SLOPE GUTTER IS REQUIRED, THE LOCATION(S) WILL BE SHOWN ELSEWHERE IN THE PLAN.



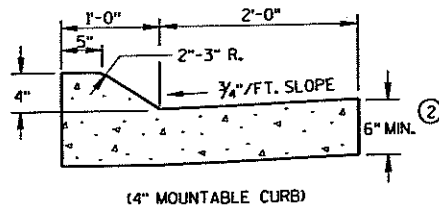
TYPES A & D ①



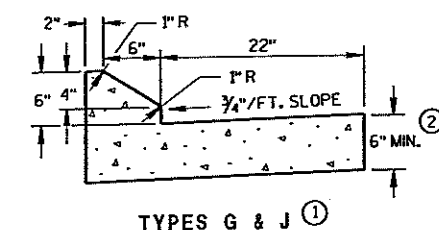
TYPES K & L ①



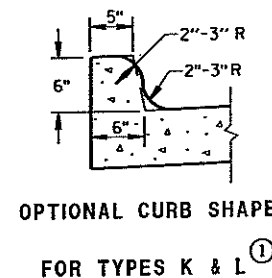
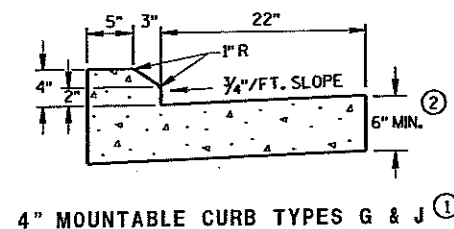
(6" MOUNTABLE CURB)



(4" MOUNTABLE CURB)

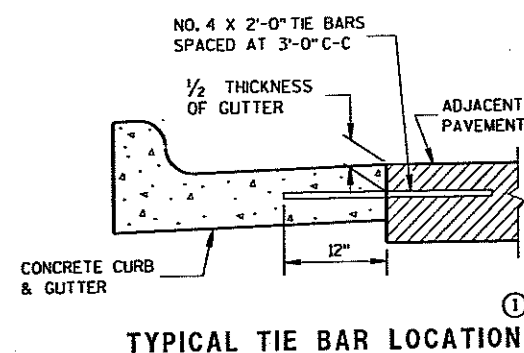
TYPES A & D ①
CONCRETE CURB & GUTTER 36"

TYPES G & J ①

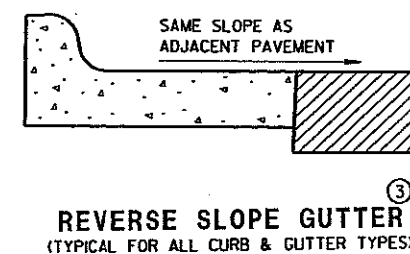
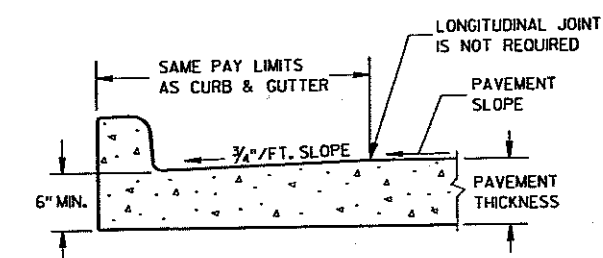
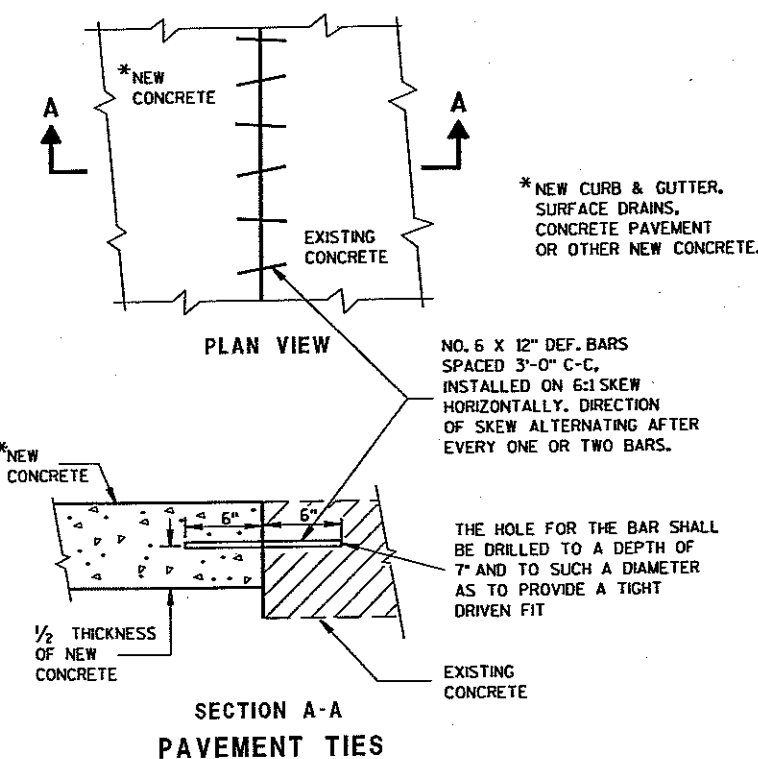
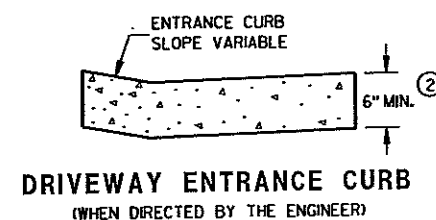
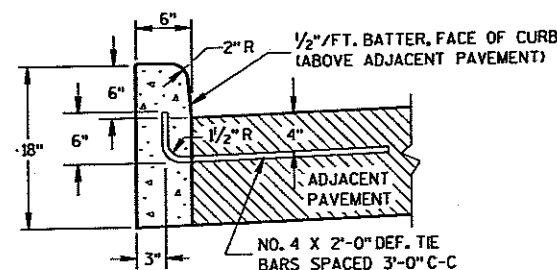
OPTIONAL CURB SHAPE
FOR TYPES K & L ①

4" MOUNTABLE CURB TYPES G & J ①

CONCRETE CURB & GUTTER 30"

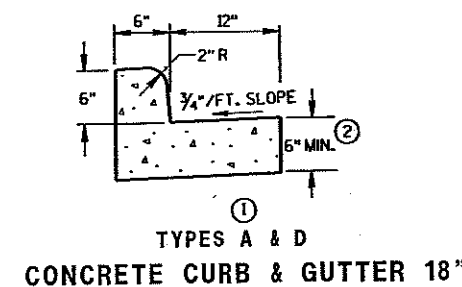
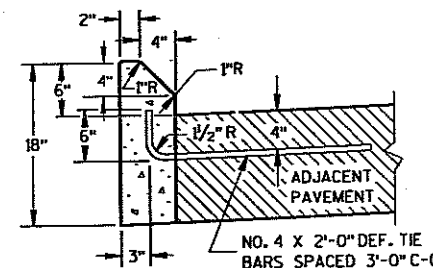


TYPICAL TIE BAR LOCATION

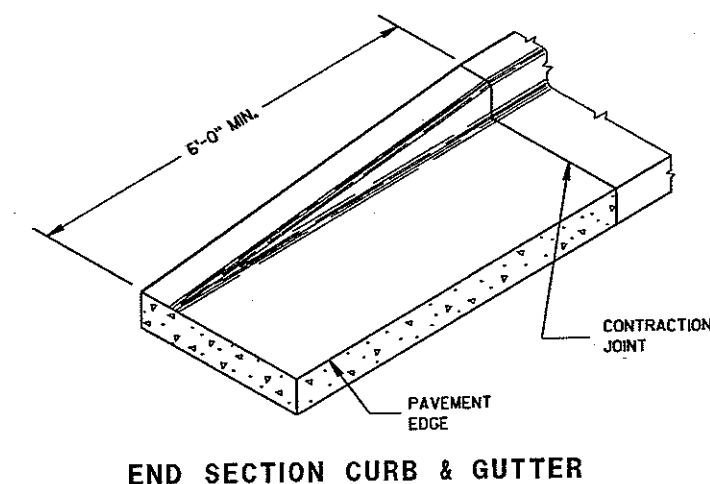
REVERSE SLOPE GUTTER
(TYPICAL FOR ALL CURB & GUTTER TYPES)PARTIAL SECTION OF PAVEMENT
WITH INTEGRAL CURB & GUTTERSECTION A-A
PAVEMENT TIESDRIVEWAY ENTRANCE CURB
(WHEN DIRECTED BY THE ENGINEER)

TYPES A & D

CONCRETE CURB

TYPES A & D
CONCRETE CURB & GUTTER 18"

TYPES G & J



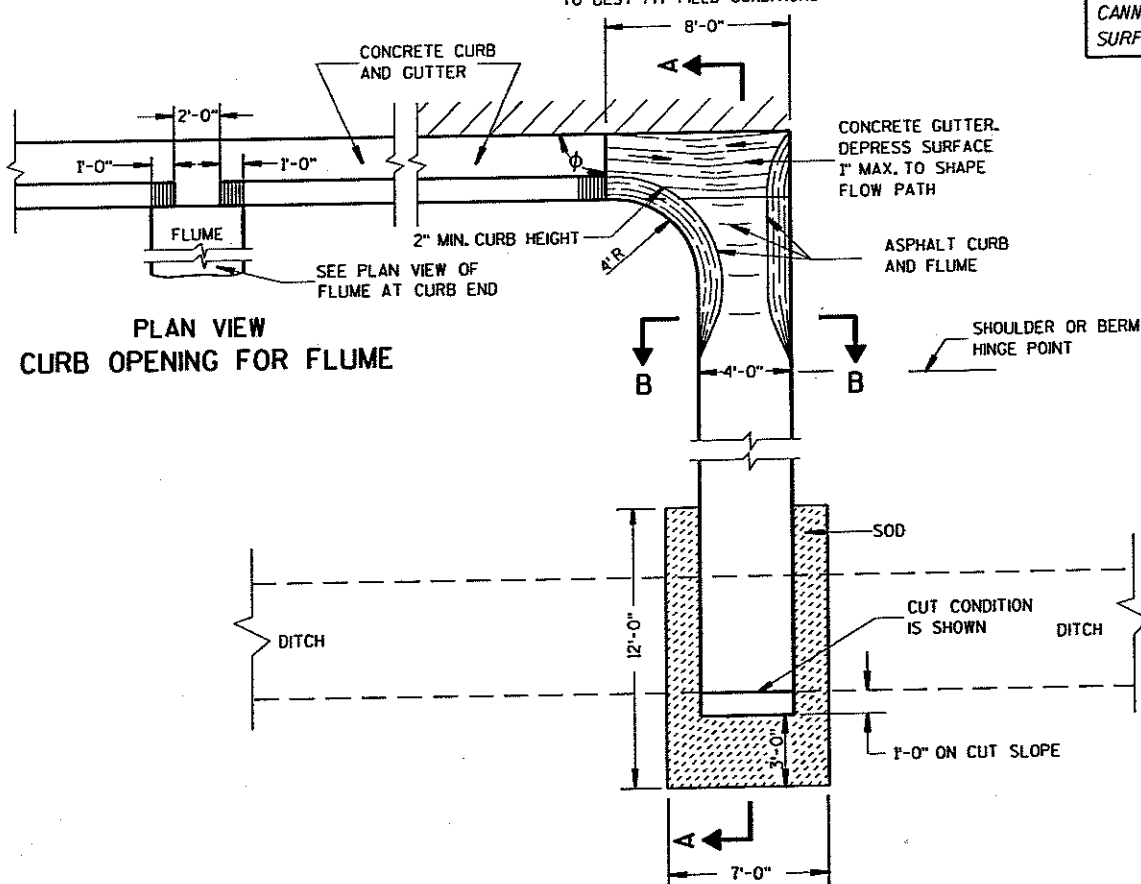
END SECTION CURB & GUTTER

CONCRETE CURB, CONCRETE
CURB & GUTTER AND
PAVEMENT TIES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

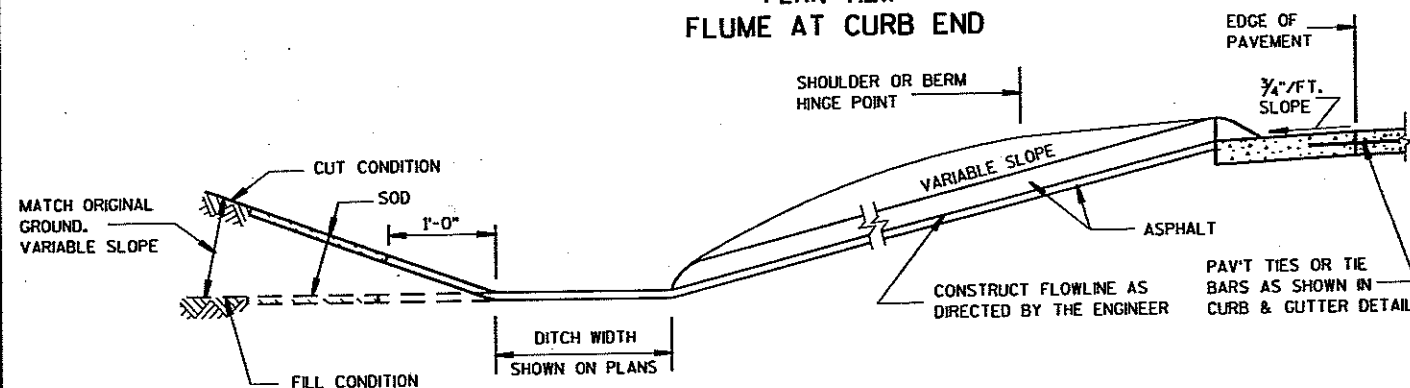
APPROVED
6-7-06 /S/ Jerry H. Zoog
DATE ROADWAY STANDARDS DEVELOPMENT
ENGINEER
FHWA

NOTE: TAPER CURB ENDS
TO GUTTER IN 1'-0"

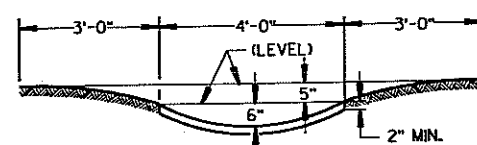


PLAN VIEW
CURB OPENING FOR FLUME

PLAN VIEW
FLUME AT CURB END



SECTION A-A



SECTION B-B

DESIGN NOTES: (WILL NOT APPEAR IN CONTRACT PLANS)

UTILIZE INLETS WHERE STORM WATER VOLUME AND VELOCITY CANNOT BE ACCOMODATED EFFECTIVELY WITH A FLUME OR SURFACE DRAIN.

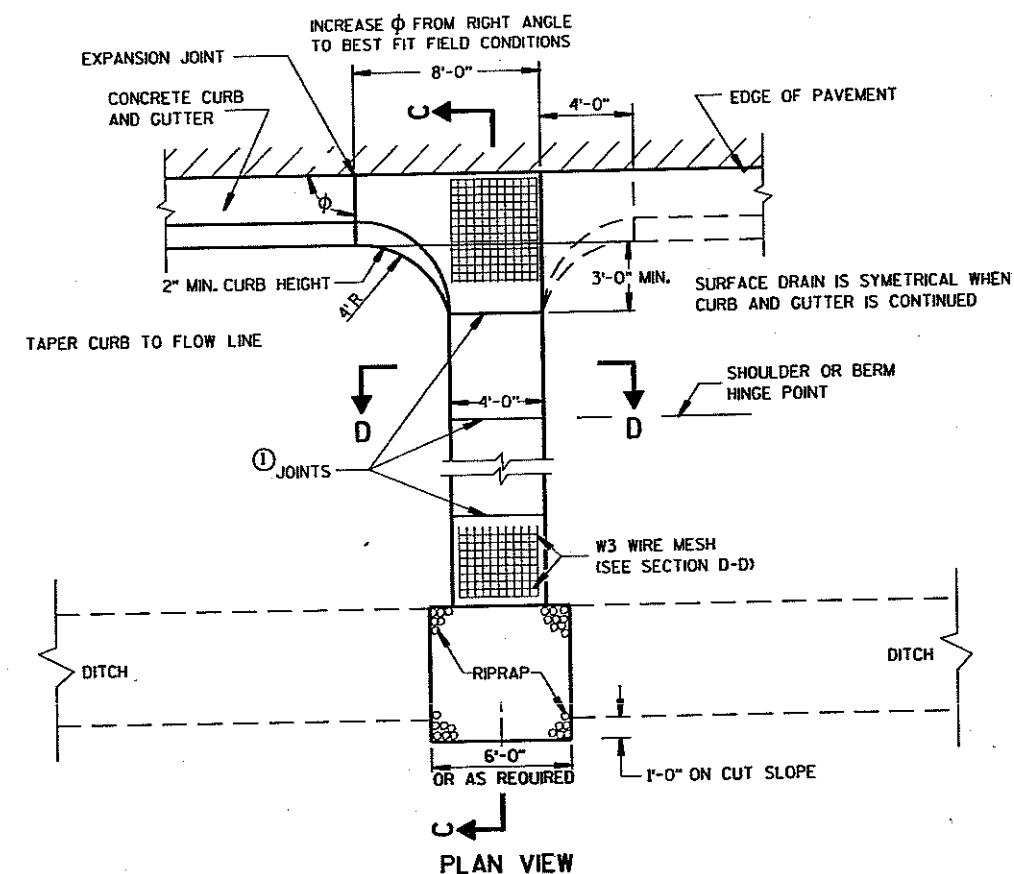
GENERAL NOTES

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

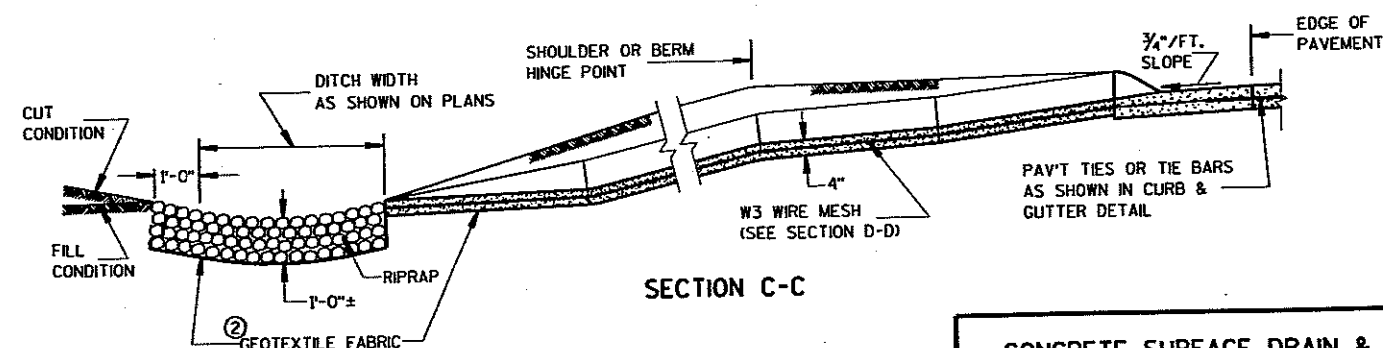
WELDED STEEL WIRE FABRIC SHALL BE IN ACCORDANCE WITH AASHTO SPECIFICATION M55.

- ① JOINTS SHALL BE $\frac{1}{8}$ TO $\frac{1}{4}$ INCH WIDE BY $1\frac{1}{2}$ 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

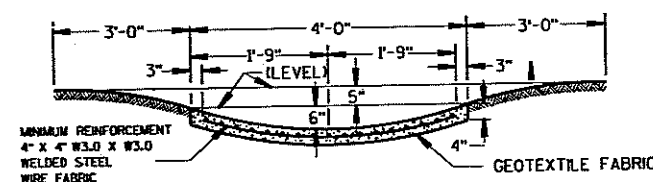
③ CONCRETE SURFACE DRAIN



PLAN VIEW



SECTION C-C



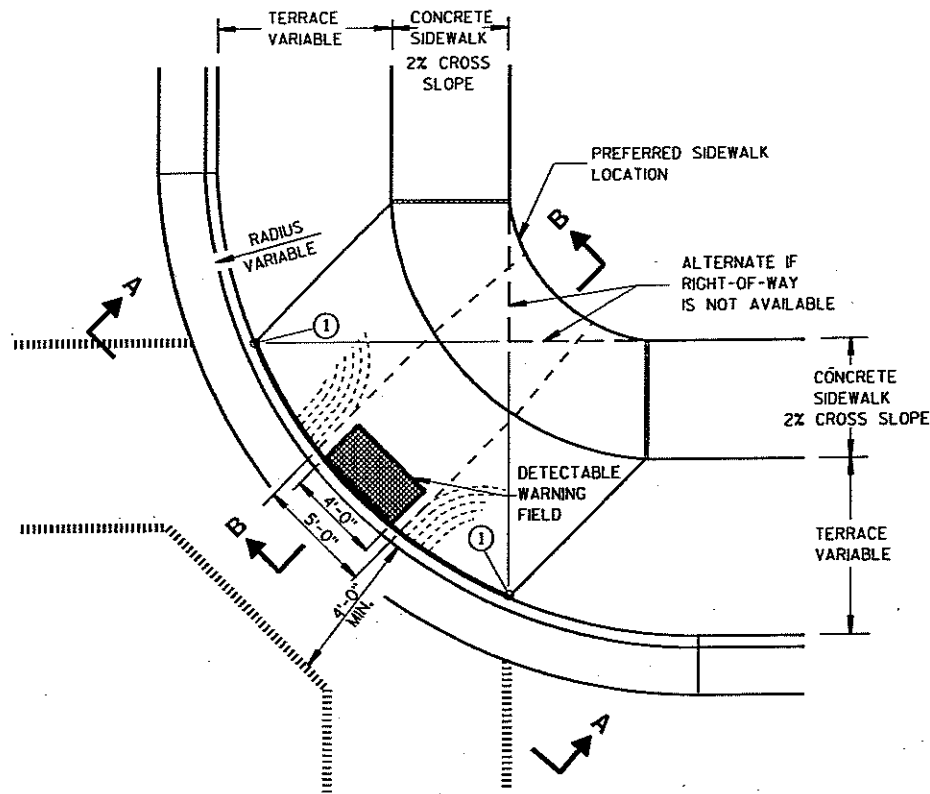
SECTION D-D

CONCRETE SURFACE DRAIN & ASPHALTIC FLUME

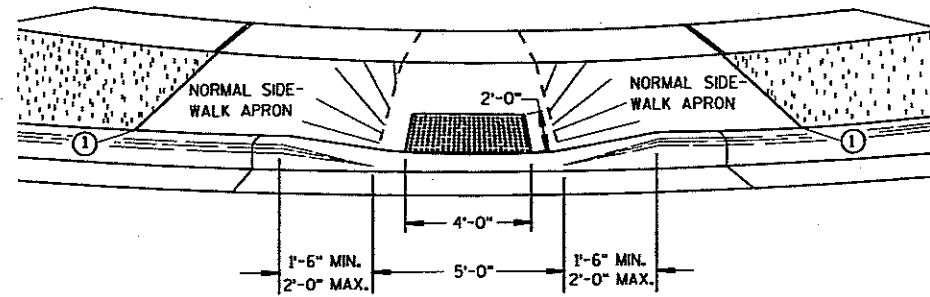
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
10/23/89
DATE
FHWA

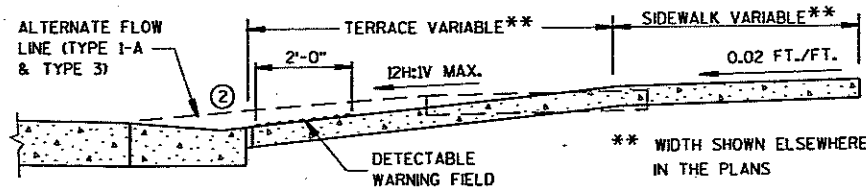
J. Malin
STATE DESIGN ENGINEER FOR HWY



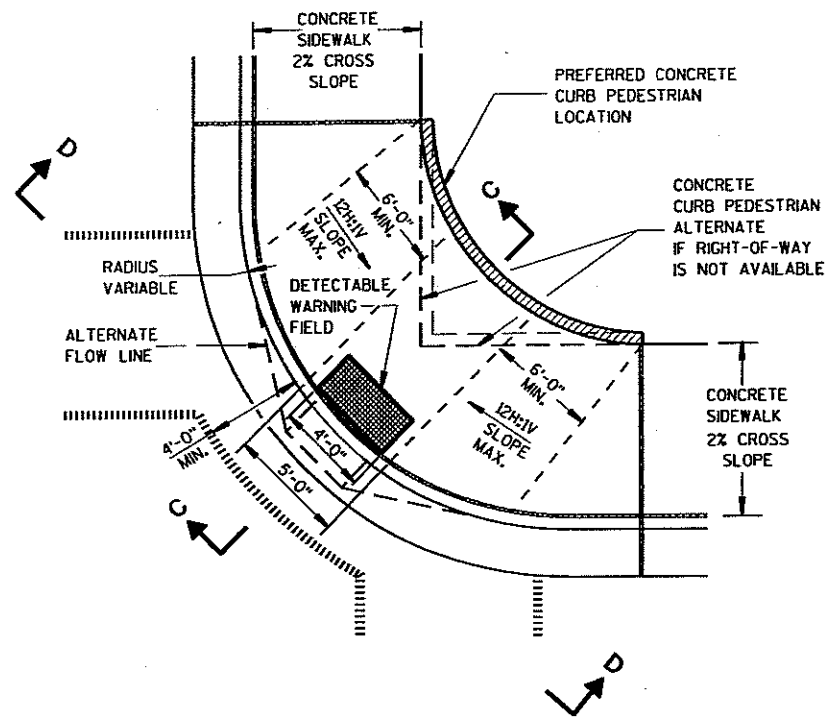
PLAN VIEW
TYPE 1 RAMP
(CENTER OF CORNER RADIUS)



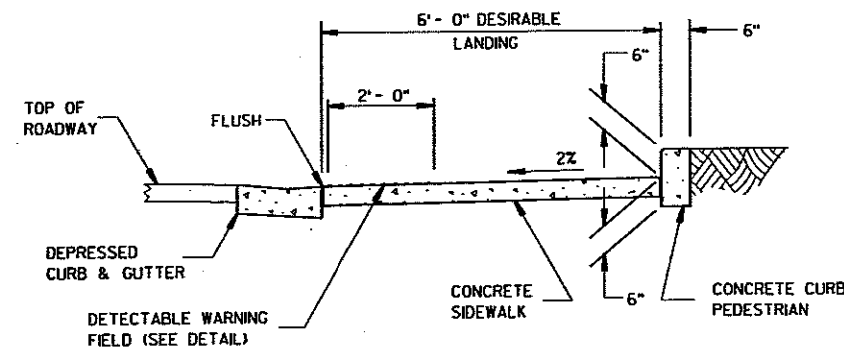
VIEW A-A



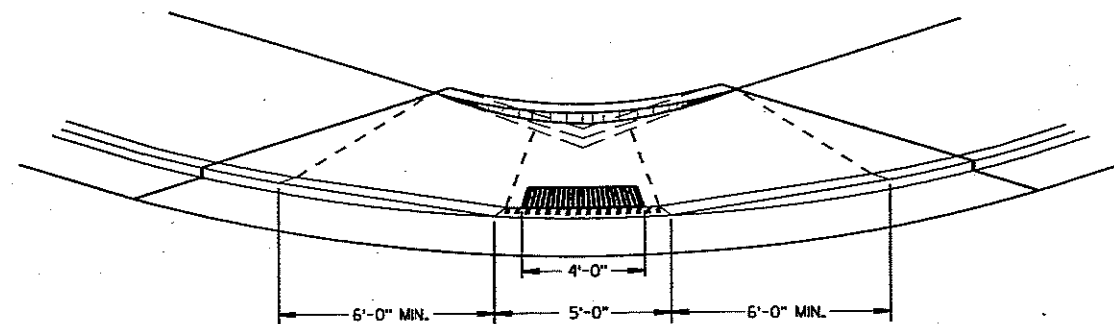
SECTION B-B



PLAN VIEW
TYPE 1-A RAMP
(NO TERRACE)



SECTION C-C



VIEW D-D

GENERAL NOTES

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

RAMPS SHALL BE BUILT AT 12H:IV OR FLATTER. WHEN NECESSARY, THE SIDEWALK ELEVATION MAY BE LOWERED TO MEET THE HIGH POINT ON THE RAMP.

TYPE 1 RAMPS SHALL HAVE A NORMAL SIDEWALK APRON AND CURB ON BOTH SIDES OF RAMP.

DETECTABLE WARNING FIELD SHALL BE MEASURED AND PAID BY THE SQUARE FOOT AS "CURB RAMP DETECTABLE WARNING FIELD". THE CONCRETE PEDESTRIAN CURB, IF NEEDED, SHALL BE MEASURED AND PAID BY THE LINEAL FOOT AS "CONCRETE CURB PEDESTRIAN". CONCRETE SIDEWALK IN THE CURB RAMP AREA SHALL BE MEASURED AND PAID BY THE SQUARE FOOT AS CONCRETE SIDEWALK, INCLUDING THE AREA UNDER THE DETECTABLE WARNING FIELD.

SELECT CURB RAMP DETECTABLE WARNING FIELD MATERIALS AND DEVICES FROM THE DEPARTMENT'S APPROVED MATERIALS LIST. THE COLOR OF THE DETECTABLE WARNING FIELD IS SPECIFIED ELSEWHERE AND IS INCIDENTAL TO THE BID ITEM OF "CURB RAMP DETECTABLE WARNING FIELD".

SURFACE TEXTURE OF THE RAMP SHALL BE OBTAINED BY COARSE BROOMING TRANSVERSE TO THE SLOPE OF THE RAMP.

- ① THIS POINT IS AN EXTENSION OF OUTSIDE EDGE OF APPROACHING SIDEWALK WHERE IT MEETS THE BACK OF CONCRETE CURB.
- ② GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 12%. PROVIDE DRAINAGE AWAY FROM CURB RAMP AT GUTTER FLAG INTERFACE.

LEGEND

- 1/2" EXPANSION JOINT-SIDEWALK
- - - CONTRACTION JOINT FIELD LOCATED
- ||||| PAVEMENT MARKING CROSSWALK (WHITE)
- - - ALTERNATIVE LAYOUT

CURB RAMPS
TYPES 1 AND 1-A

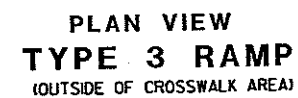
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

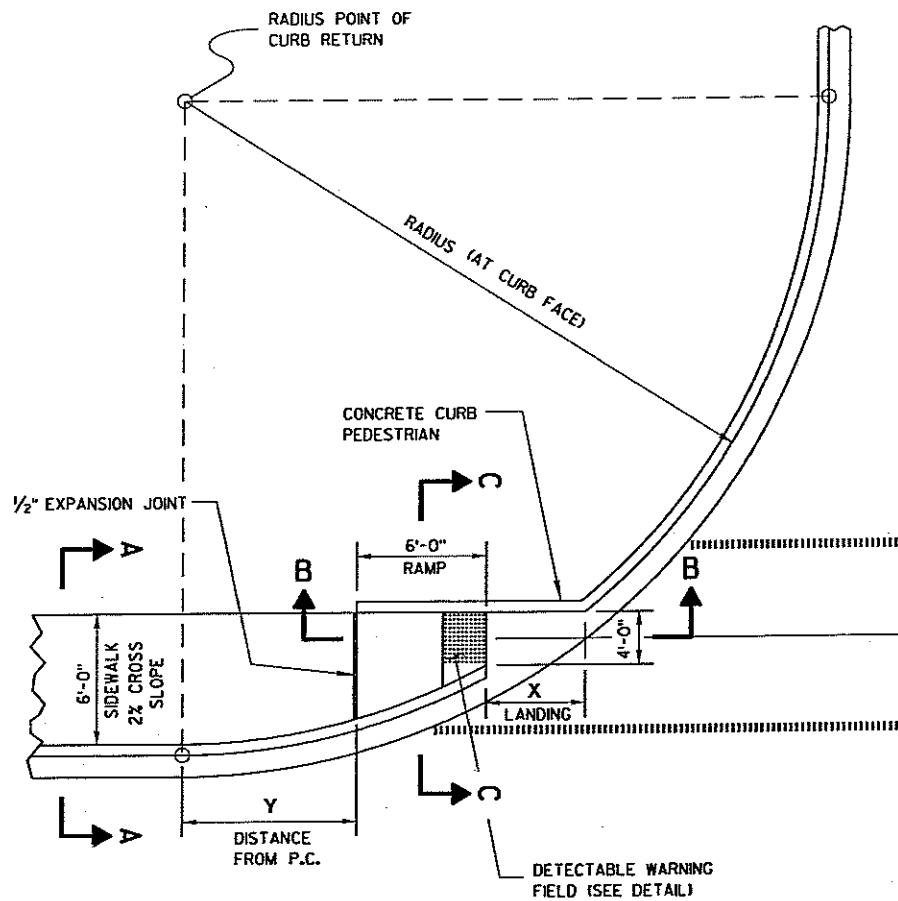


USE THE TYPE 3 RAMP ONLY WHEN A TYPE 1 OR TYPE 2 CANNOT BE ACHIEVED BECAUSE OF FIELD CONDITIONS.

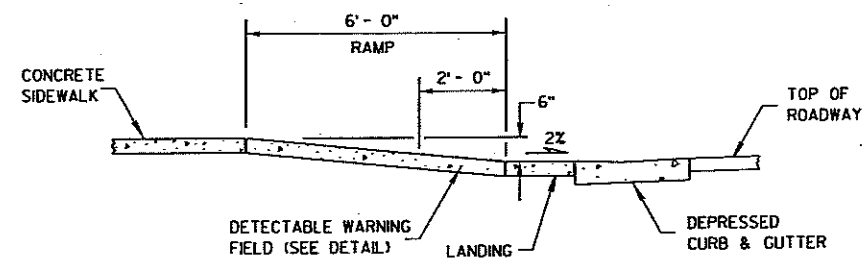
- ① WHEN THIS DISTANCE IS LESS THAN 6'-0" IT MAY BE DIFFICULT TO ACHIEVE A 12H:1V SLOPE. OR FLATTER, ON THE RAMP, REDUCE CURB HEIGHT IN TRIANGLE AREA TO ACHIEVE 12H:1V SLOPE, OR FLATTER, ON RAMP. 2" MINIMUM CURB HEIGHT.
- ② GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. PROVIDE DRAINAGE AWAY FROM CURB RAMP AT GUTTER FLAG INTERFACE.
- ③ PROVIDE LANDING AT TOP OF RAMP WITH NO MORE THAN 2% SLOPE IN ANY DIRECTION.

 1/2" EXPANSION JOINT-SIDEWALK
 CONTRACTION JOINT FIELD LOCATED
 PAVEMENT MARKING CROSSWALK (WHITE)
 ALTERNATIVE LAYOUT





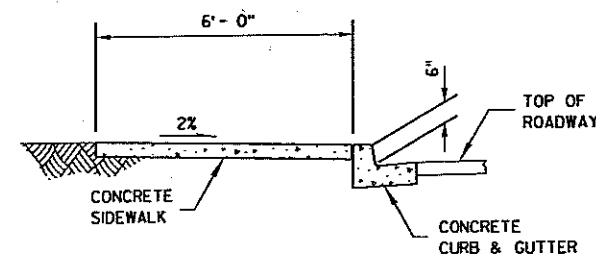
CURB RAMP TYPE 4A
PLAN VIEW



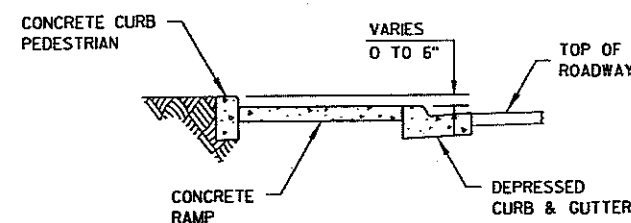
SECTION B-B

RADIUS (AT CURB FACE)	X	Y
20 FEET	6'-1 3/4"	2'-7 1/4"
30 FEET	7'-11 3/4"	4'-8 1/4"
40 FEET	9'-5 1/4"	6'-5"
50 FEET	10'-8 3/4"	7'-11 1/4"
60 FEET	11'-10 1/4"	9'-3 1/2"

INTERMEDIATE RADII CAN BE INTERPOLATED



SECTION A-A



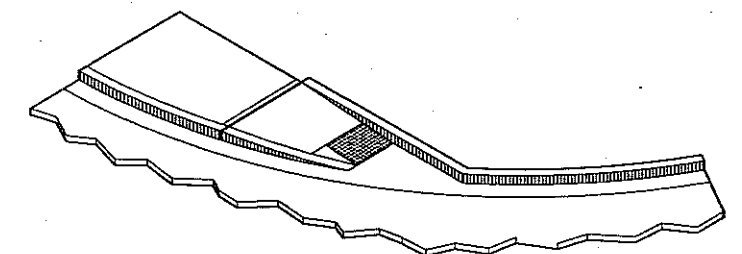
SECTION C-C

GENERAL NOTES

AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF RAMP ACCESS AREAS.

RAMP SLOPES SHALL NOT BE STEEPER THAN 12:1

SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2%.



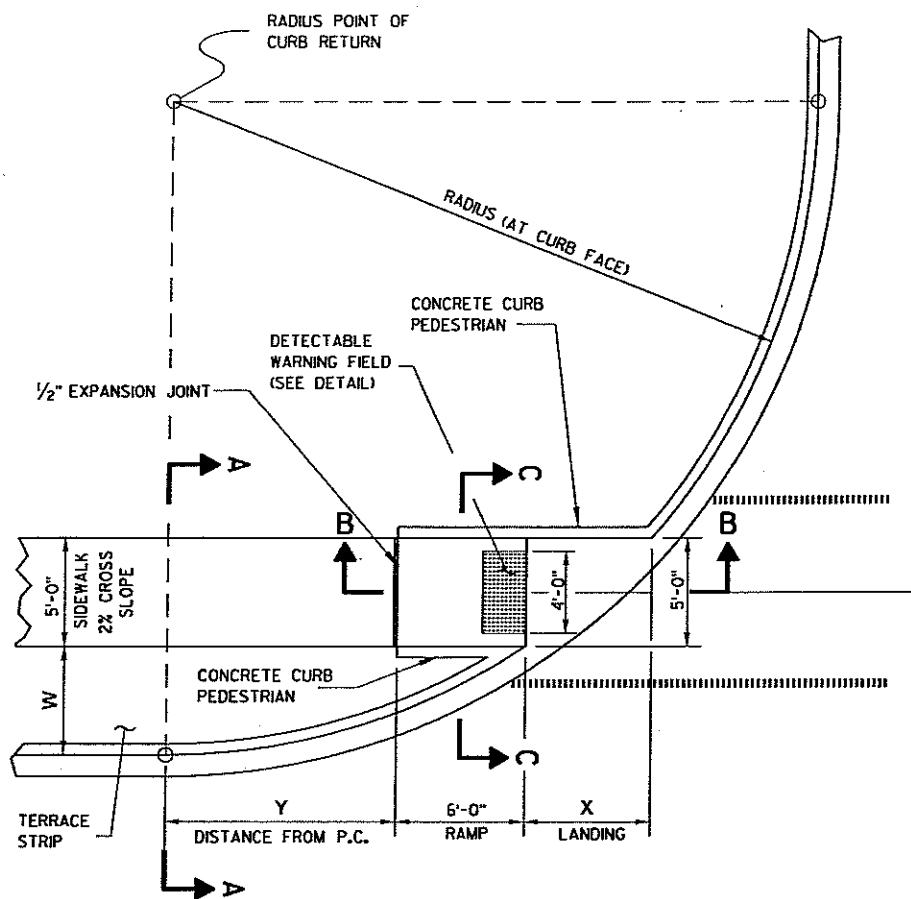
ISOMETRIC VIEW

LEGEND

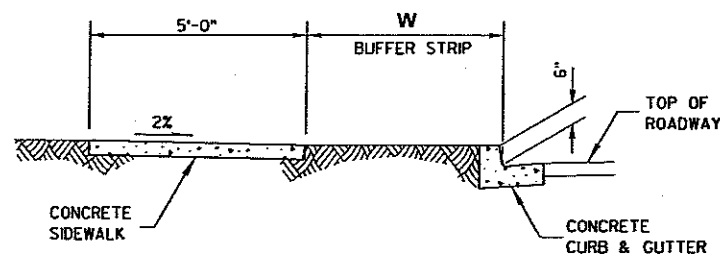
- 1/2" EXPANSION JOINT-SIDEWALK
- CONTRACTION JOINT FIELD LOCATED
- PAVEMENT MARKING CROSSWALK (WHITE)

**CURB RAMPS
TYPE 4A**

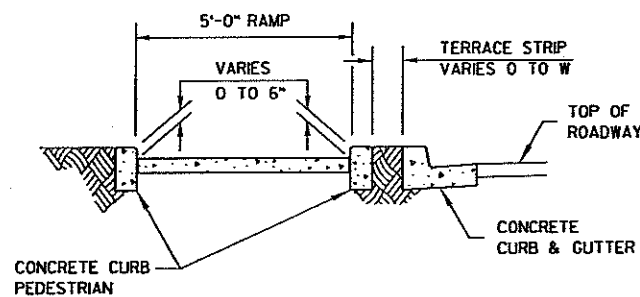
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



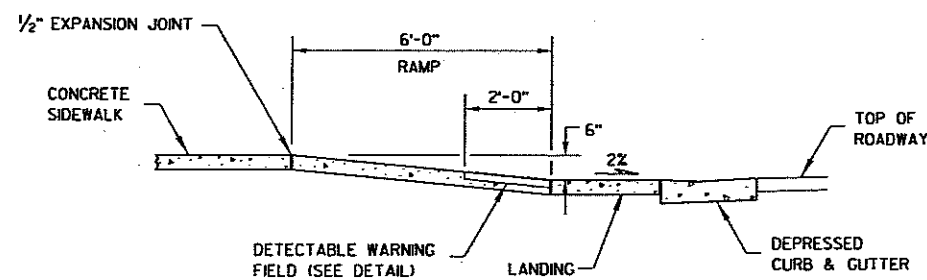
CURB RAMP TYPE 4B
PLAN VIEW



SECTION A-A



SECTION C-C



SECTION B-B

GENERAL NOTES

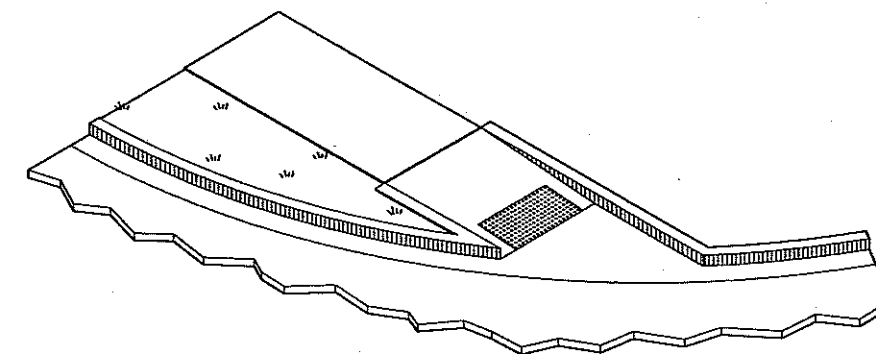
AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF RAMP ACCESS AREAS.

RAMP SLOPES SHALL NOT BE STEEPER THAN 12:1

SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2%.

RADIUS (AT CURB FACE)	W = 3' - 0"		W = 4' - 0"		W = 5' - 0"		W = 6' - 0"		W = 7' - 0"	
	X	Y	X	Y	X	Y	X	Y	X	Y
20 FEET	5'-5 1/2"	4'-6 1/2"	4'-8 1/2"	6'-0"	4'-1"	7'-2 3/4"	3'-7"	8'-3 1/2"	3'-1 1/2"	9'-2 1/2"
30 FEET	7'-3 3/4"	7'-1"	6'-5 1/2"	8'-11 1/2"	5'-9 1/4"	10'-7"	5'-2 1/2"	12'-0"	4'-8 3/4"	13'-3 1/4"
40 FEET	8'-9 1/2"	9'-2 1/2"	7'-10"	11'-5 1/4"	7'-1"	13'-4 1/2"	6'-5 3/4"	15'-3/4"	5'-11 1/2"	16'-7 1/4"
50 FEET	10'-3/4"	11'-3/4"	9'-1/4"	13'-7 1/4"	8'-2 1/2"	15'-9 1/2"	7'-6 1/2"	17'-9"	6'-11 3/4"	19'-6 1/4"
60 FEET	11'-2 1/2"	12'-8 3/4"	10'-3/4"	15'-6 1/2"	9'-2 1/4"	17'-11 3/4"	8'-5 3/4"	20'-1 3/4"	7'-10 1/2"	22'-1 1/2"
70 FEET	12'-2 3/4"	14'-3 1/4"	11'-1/4"	17'-4"	10'-1"	19'-11 3/4"	9'-3 3/4"	22'-4 1/4"	8'-8 1/4"	24'-6 1/4"
80 FEET	13'-2"	15'-8 1/2"	11'-10 1/2"	18'-11 3/4"	10'-10 3/4"	21'-10"	10'-1"	24'-4 3/4"	9'-5"	26'-8 3/4"
90 FEET	14'-1/2"	17'-1 1/2"	12'-8 1/4"	20'-6 1/2"	11'-7 3/4"	23'-7"	10'-9 3/4"	26'-3 3/4"	10'-1 1/4"	28'-9 1/2"
100 FEET	14'-10 1/2"	18'-3 3/4"	13'-5 1/2"	22'-0"	12'-4 1/4"	25'-2 3/4"	11'-5 3/4"	28'-1 1/2"	10'-9"	30'-9"

INTERMEDIATE RADII CAN BE INTERPOLATED



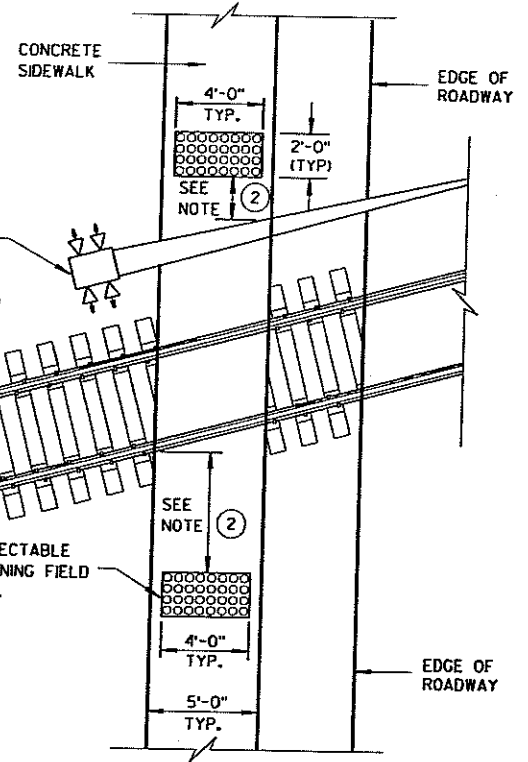
ISOMETRIC VIEW

LEGEND

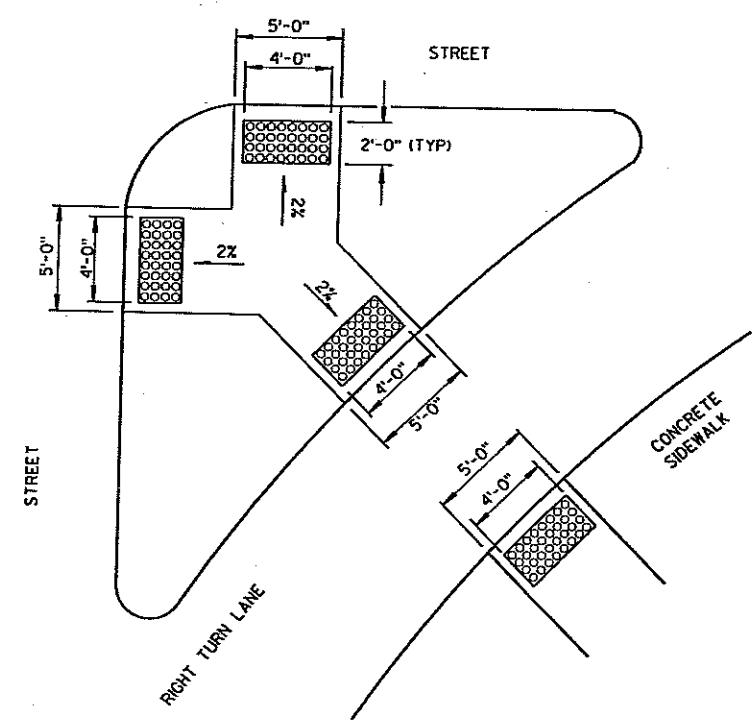
- 1/2" EXPANSION JOINT-SIDEWALK
- CONTRACTION JOINT FIELD LOCATED
- PAVEMENT MARKING CROSSWALK (WHITE)

CURB RAMPS
TYPE 4B

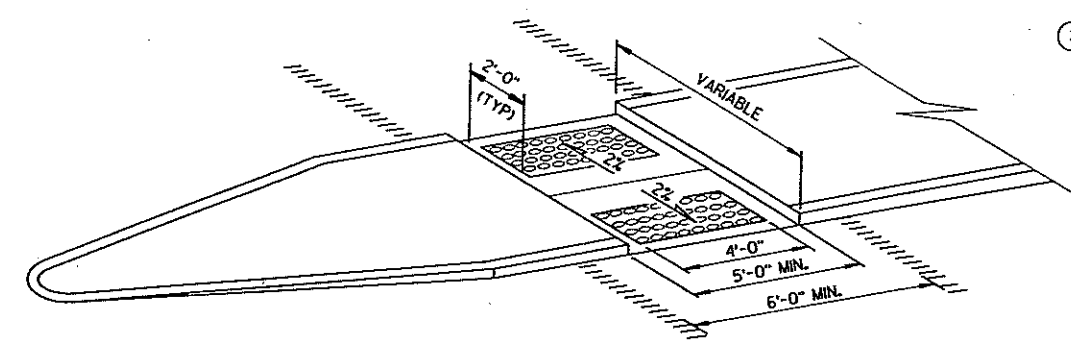
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



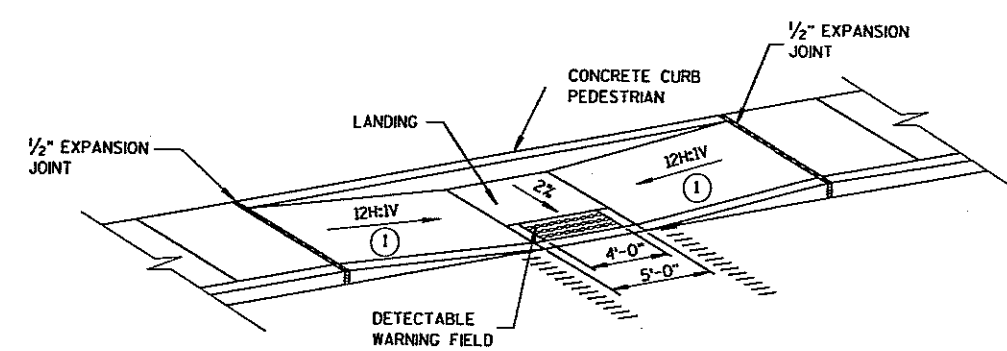
TYPE 8
DETECTABLE WARNINGS
AT RAILROAD CROSSING



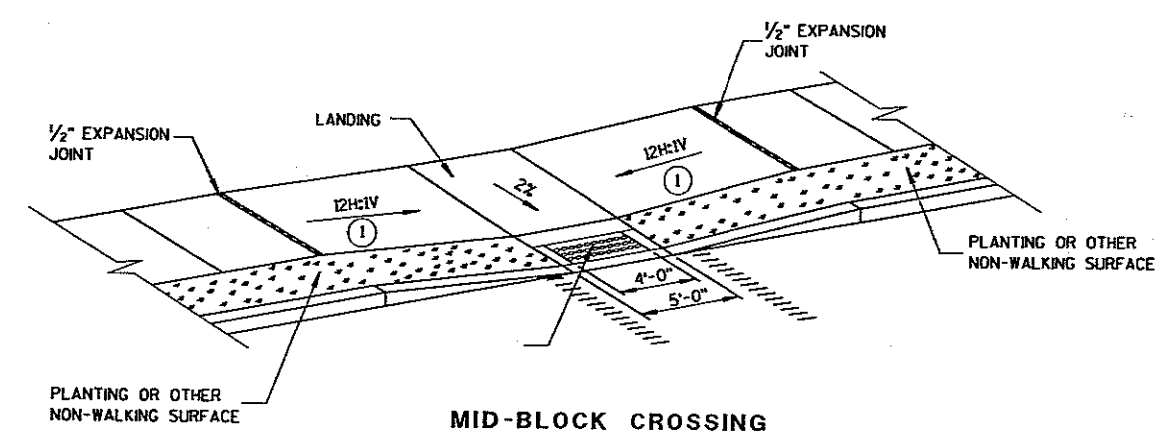
TYPE 6
DETECTABLE WARNING AT ISLANDS



MEDIAN ISLAND
NON-ELEVATED CROSSING
TYPE 5



MID-BLOCK CROSSING
TYPE 7A



MID-BLOCK CROSSING
TYPE 7B

NOTE: THESE PARALLEL AND PARALLEL/PERPENDICULAR CURB RAMPS MAY BE USED AT INTERSECTIONS AND MID BLOCK LOCATIONS.

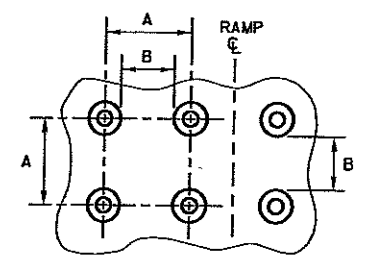
GENERAL NOTES

SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2%.

- ① SLOPE SIDEWALK TOWARD LANDING AS SHOWN WHERE THERE IS NO TERRACE OR WHERE THE TERRACE WIDTH IS LESS THAN 6 FEET WIDE.
- ② THE EDGE OF THE DETECTABLE WARNING FIELD NEAREST TO A RAILROAD CROSSING SHALL BE 15 FEET ± 0.1' FROM THE FACE OF THE GATE ARM IF THE GATE ARM EXTENDS ACROSS THE SIDEWALK. WHERE THERE IS NO PEDESTRIAN GATE, THE EDGE OF THE DETECTABLE WARNING FIELD NEAREST TO THE RAILROAD CROSSING SHALL BE 15 FEET FROM THE NEAREST RAIL.

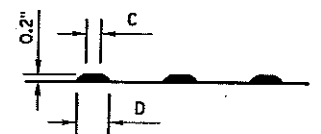
LEGEND

- 1/2" EXPANSION JOINT-SIDEWALK
- - - CONTRACTION JOINT FIELD LOCATED
- ||||| PAVEMENT MARKING CROSSWALK (WHITE)

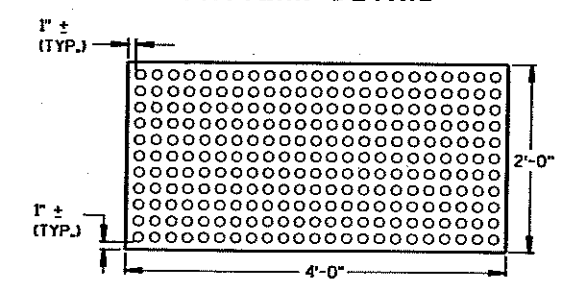


	MIN.	MAX.
A	1.6"	2.4"
B	0.65"	1.5"
C	*	*
D	0.9"	1.4"

* THE C DIMENSION IS 50% TO 65% OF THE D DIMENSION.



TRUNCATED DOMES
DETECTABLE WARNING
PATTERN DETAIL



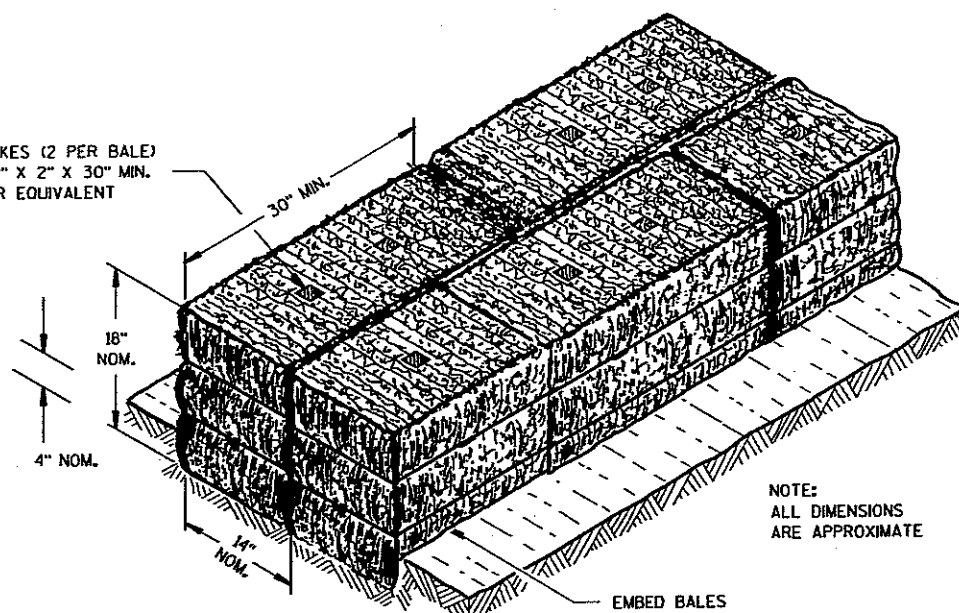
PLAN VIEW
DETECTABLE WARNING
FIELD (TYPICAL)

CURB RAMPS
TYPES 5, 6, 7A, 7B & 8

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

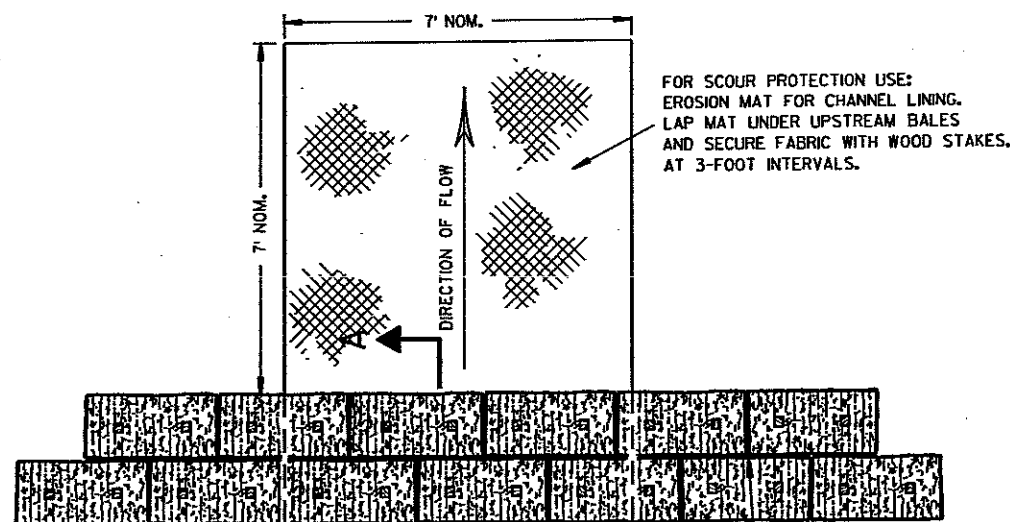
APPROVED
9/9/05 /S/ Jerry H. Zogg
DATE ROADWAY STANDARDS DEVELOPMENT
FHWA ENGINEER

WOOD STAKES (2 PER BALE)
NOMINAL 2" X 2" X 30" MIN.
LENGTH OR EQUIVALENT



NOTE:
ALL DIMENSIONS
ARE APPROXIMATE

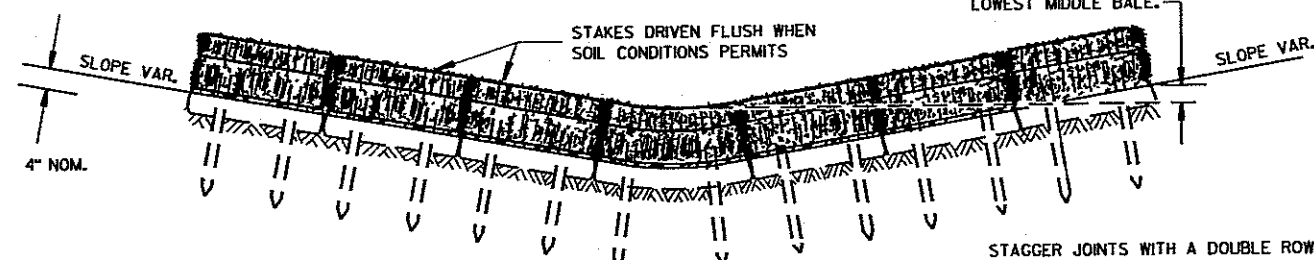
SECTION A-A



PLAN VIEW

STAGGER JOINTS BETWEEN ADJACENT
ROWS OF BALES.

BOTTOM ELEVATION OF END BALE SHALL
BE EQUAL TO OR GREATER THAN TOP OF
LOWEST MIDDLE BALE.



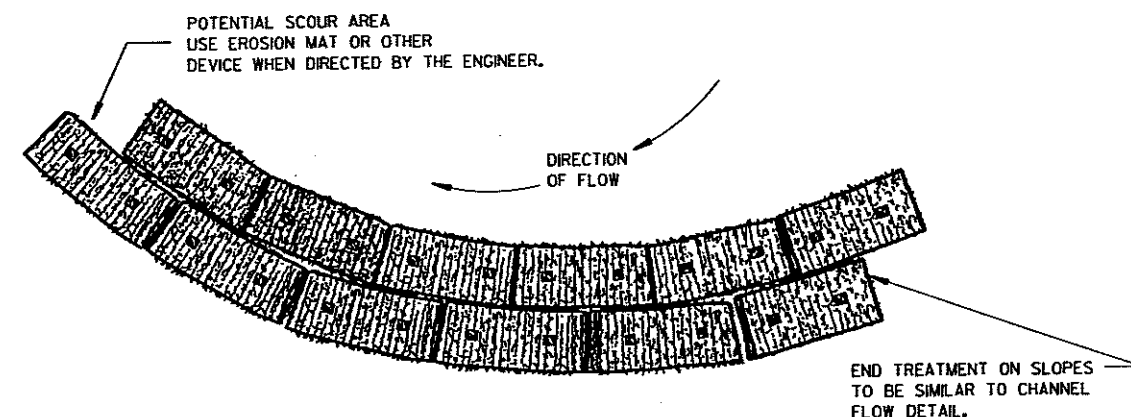
FRONT ELEVATION

TEMPORARY DITCH CHECK USING EROSION BALES ①

GENERAL NOTES

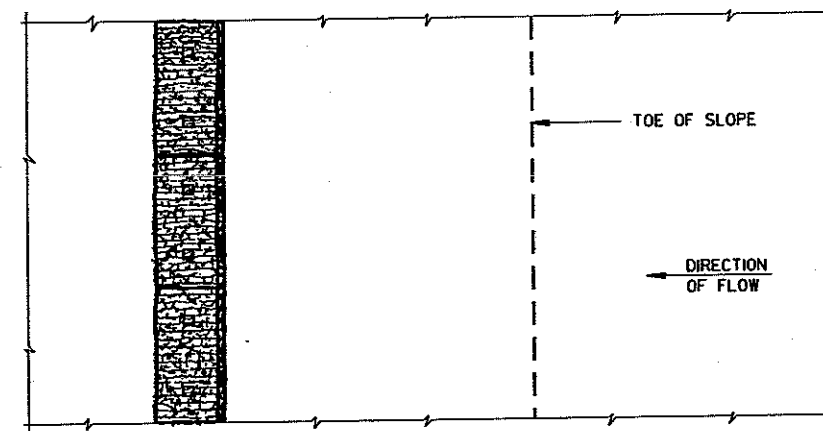
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

- 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.

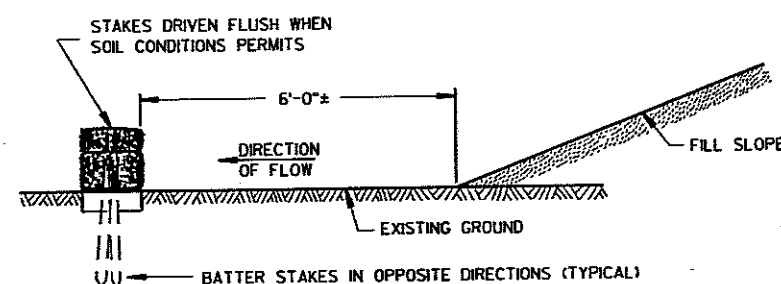


PLAN VIEW

WHEN ALTERING THE DIRECTION OF FLOW



PLAN VIEW



FRONT ELEVATION

WHEN EXISTING GROUND SLOPES AWAY FROM FILL SLOPE

EROSION BALES FOR SHEET FLOW

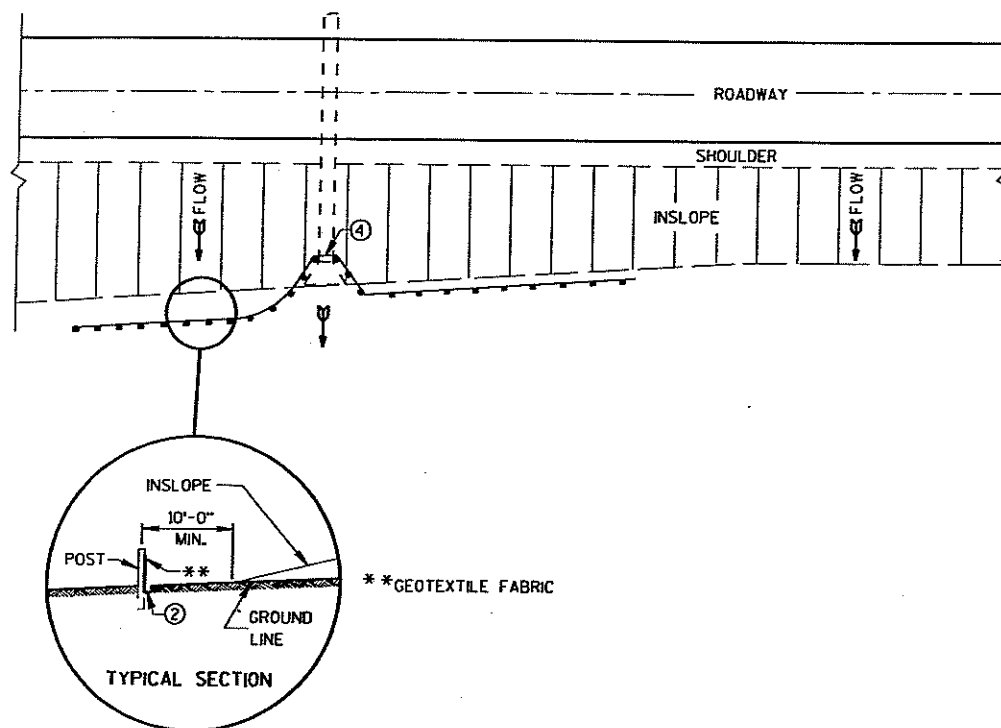
TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

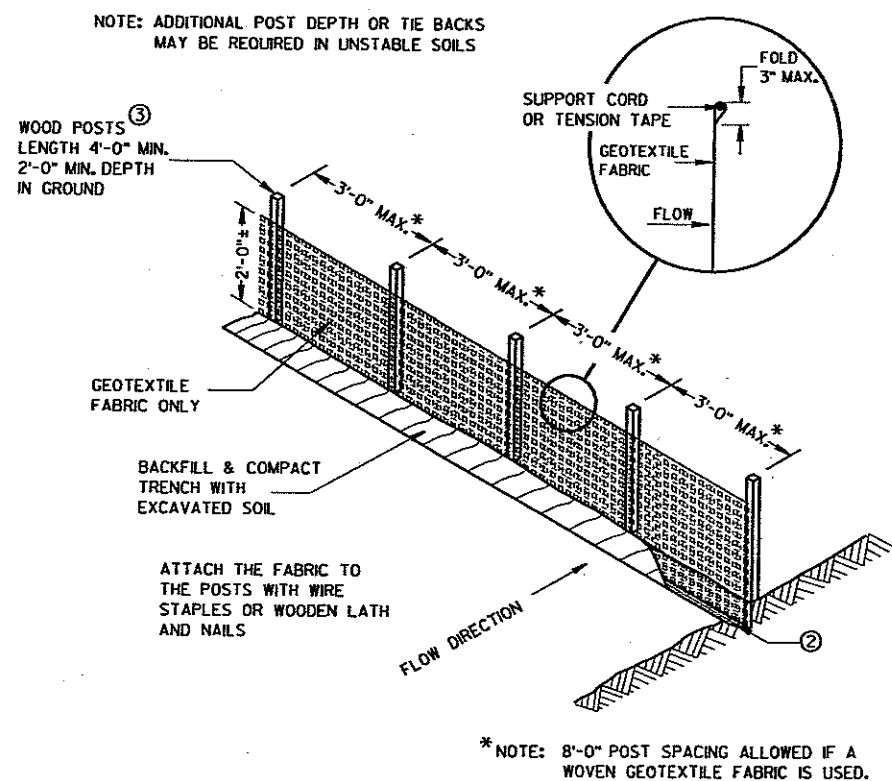
APPROVED
6/04/02
DATE

CHIEF ROADWAY DEVELOPMENT ENGINEER

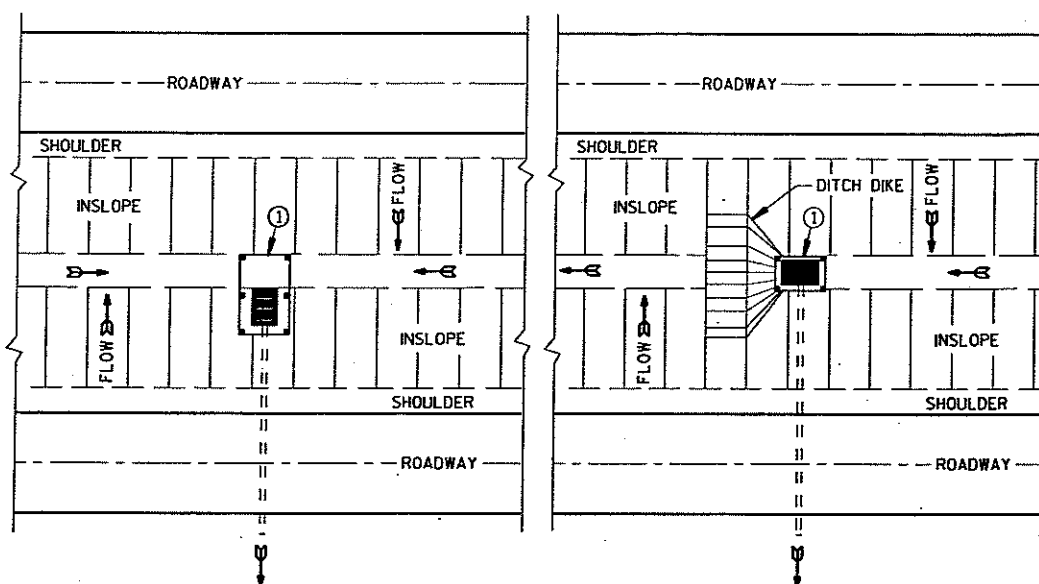
FHWA



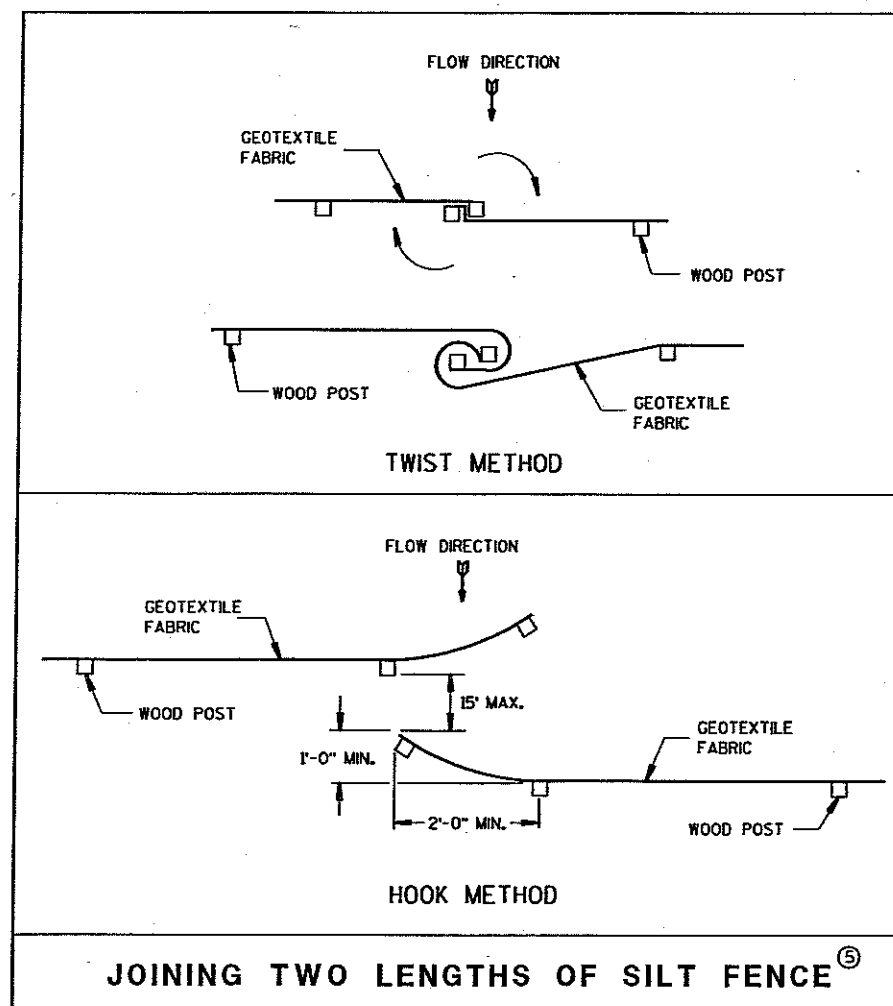
PLAN VIEW
TYPICAL APPLICATION OF SILT FENCE



SILT FENCE



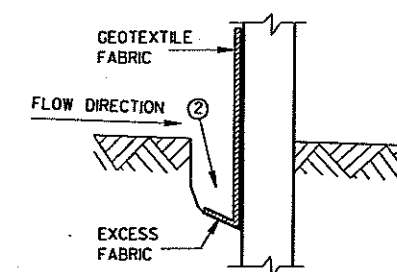
SITUATION 1
SITUATION 2
PLAN VIEW
SILT FENCE AT MEDIAN SURFACE DRAINS



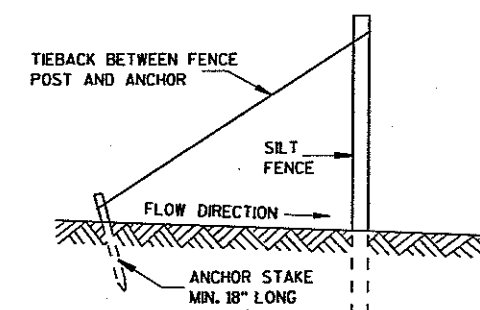
GENERAL NOTES

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

- ① HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.
- ② FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
- ③ WOOD POSTS SHALL BE A MINIMUM SIZE OF 1 1/8" X 1 1/8" OF OAK OR HICKORY.
- ④ SILT FENCE TO EXTEND ACROSS THE TOP OF THE PIPE.
- ⑤ CONSTRUCT SILT FENCE FROM A CONTINUOUS ROLL IF POSSIBLE BY CUTTING LENGTHS TO AVOID JOINTS. IF A JOINT IS NECESSARY USE ONE OF THE FOLLOWING TWO METHODS: A) OVERLAP THE END POSTS AND TWIST, OR ROTATE, AT LEAST 180 DEGREES, B) HOOK THE END OF EACH SILT FENCE LENGTH.

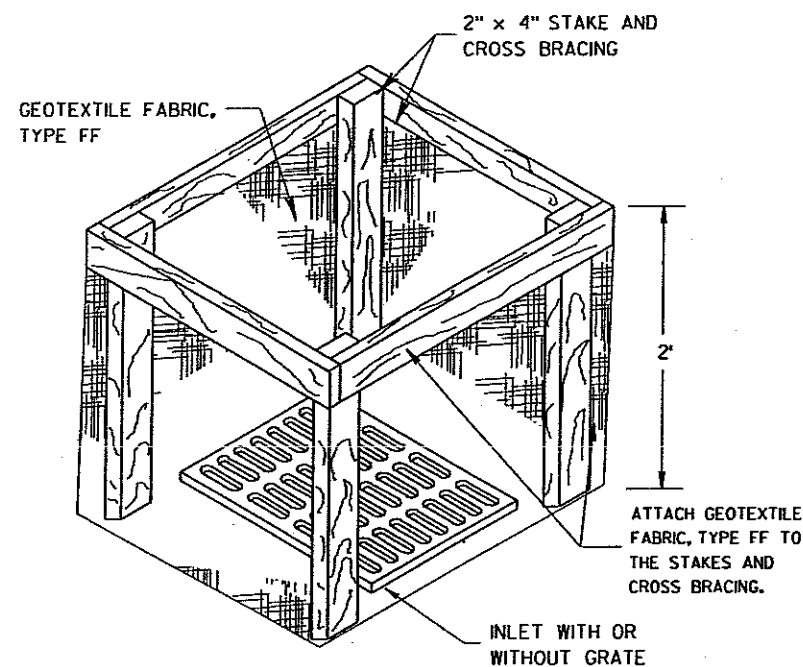
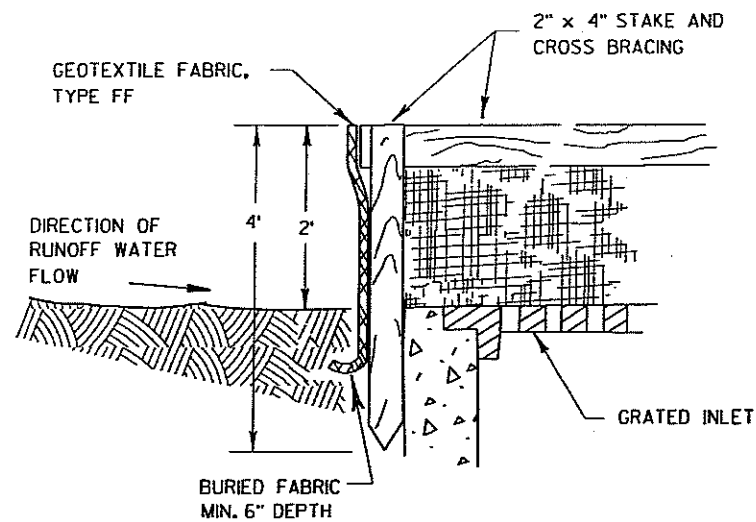


TRENCH DETAIL



SILT FENCE TIE BACK
(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 4-29-05 DATE FHWA	CHEF ROADWAY DEVELOPMENT ENGINEER



INLET PROTECTION, TYPE A

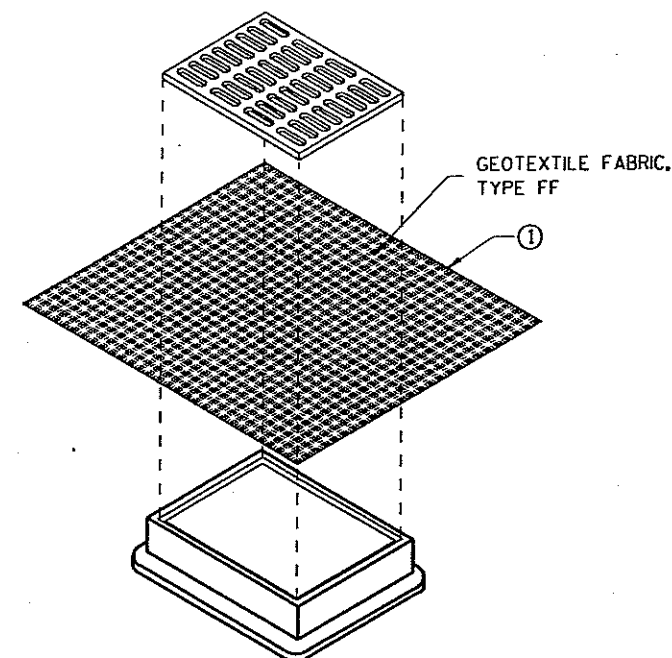
GENERAL NOTES

INLET PROTECTION DEVICES SHALL BE MAINTAINED OR REPLACED AT THE DIRECTION OF THE ENGINEER.

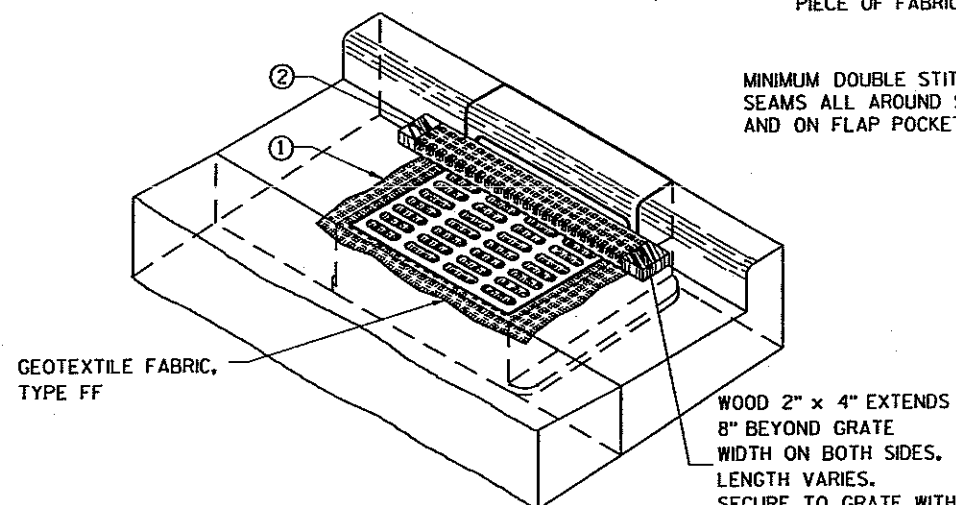
MANUFACTURED ALTERNATIVES APPROVED AND LISTED ON THE DEPARTMENT'S EROSION CONTROL PRODUCT ACCEPTABILITY LIST MAY BE SUBSTITUTED.

WHEN REMOVING OR MAINTAINING INLET PROTECTION, CARE SHALL BE TAKEN SO THAT THE SEDIMENT TRAPPED ON THE GEOTEXTILE FABRIC DOES NOT FALL INTO THE INLET. ANY MATERIAL FALLING INTO THE INLET SHALL BE REMOVED IMMEDIATELY.

- ① FINISHED SIZE, INCLUDING FLAP POCKETS WHERE REQUIRED, SHALL EXTEND A MINIMUM OF 10" AROUND THE PERIMETER TO FACILITATE MAINTENANCE OR REMOVAL.
- ② FOR INLET PROTECTION, TYPE C (WITH CURB BOX), AN ADDITIONAL 18" OF FABRIC IS WRAPPED AROUND THE WOOD AND SECURED WITH STAPLES. THE WOOD SHALL NOT BLOCK THE ENTIRE HEIGHT OF THE CURB BOX OPENING.
- ③ FLAP POCKETS SHALL BE LARGE ENOUGH TO ACCEPT WOOD 2X4.



**INLET PROTECTION, TYPE B
(WITHOUT CURB BOX)**
(CAN BE INSTALLED IN ANY INLET WITHOUT A CURB BOX)



INLET PROTECTION, TYPE C (WITH CURB BOX)

INSTALLATION NOTES

TYPE B & C

TRIM EXCESS FABRIC IN THE FLOW LINE TO WITHIN 3" OF THE GRATE.

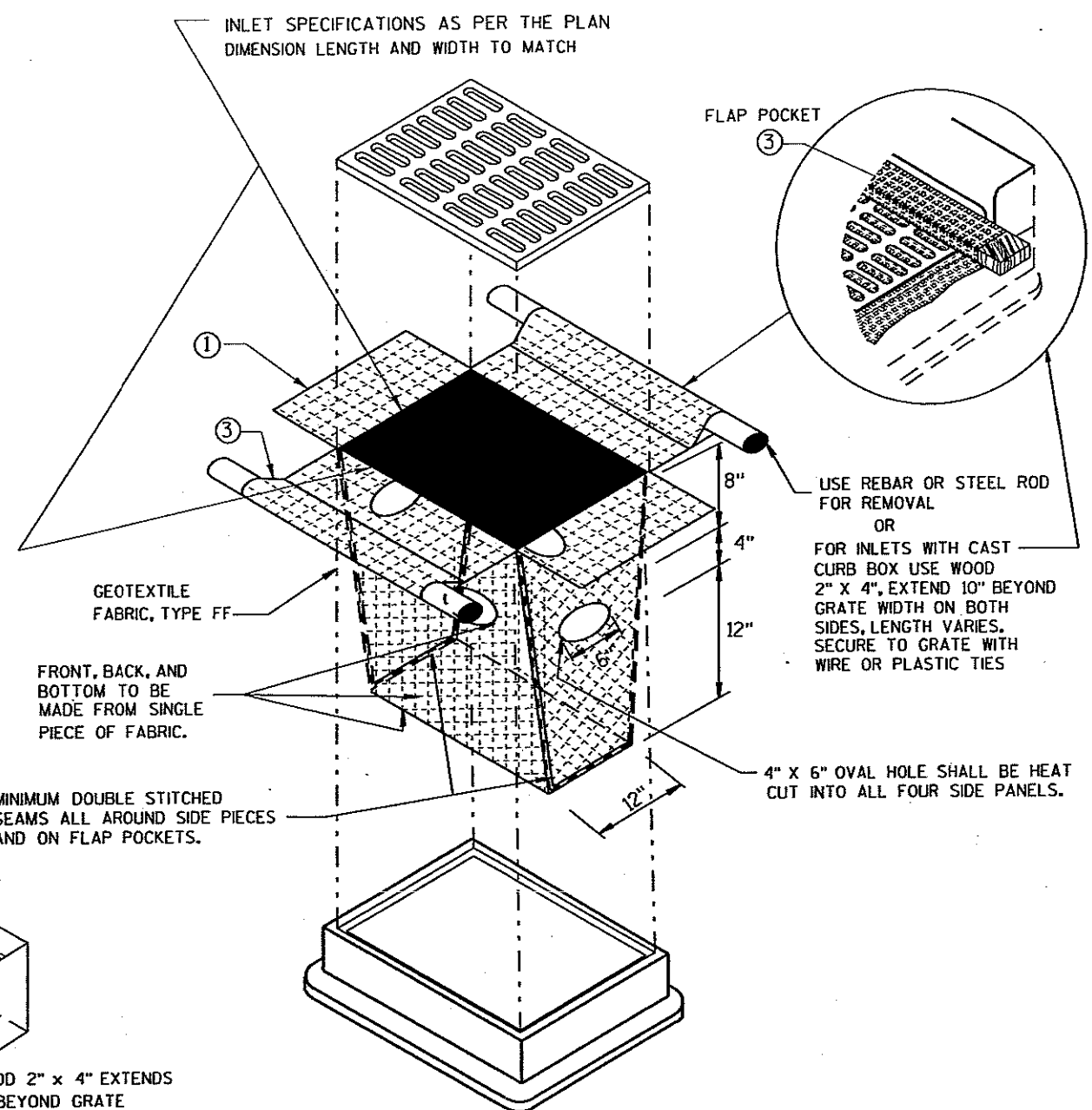
THE CONTRACTOR SHALL DEMONSTRATE A METHOD OF MAINTENANCE, USING A SEWN FLAP, HAND HOLDS OR OTHER METHOD TO PREVENT ACCUMULATED SEDIMENT FROM ENTERING THE INLET.

TYPE D

DO NOT INSTALL INLET PROTECTION TYPE D IN INLETS SHALLOWER THAN 30", MEASURED FROM THE BOTTOM OF THE INLET TO THE TOP OF THE GRATE.

TRIM EXCESS FABRIC IN THE FLOW LINE TO WITHIN 3" OF THE GRATE.

THE INSTALLED BAG SHALL HAVE A MINIMUM SIDE CLEARANCE, BETWEEN THE INLET WALLS AND THE BAG, MEASURED AT THE BOTTOM OF THE OVERFLOW HOLES, OF 3". WHERE NECESSARY THE CONTRACTOR SHALL CINCH THE BAG, USING PLASTIC ZIP TIES, TO ACHIEVE THE 3" CLEARANCE. THE TIES SHALL BE PLACED AT A MAXIMUM OF 4" FROM THE BOTTOM OF THE BAG.



INLET PROTECTION, TYPE D

(CAN BE INSTALLED IN ANY INLET TYPE WITH OR WITHOUT A CURB BOX AS PER NOTE ②)

**INLET PROTECTION
TYPE A, B, C, AND D**

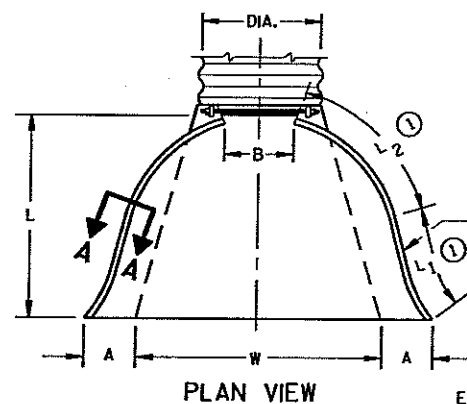
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
10/16/02
DATE
FHWA

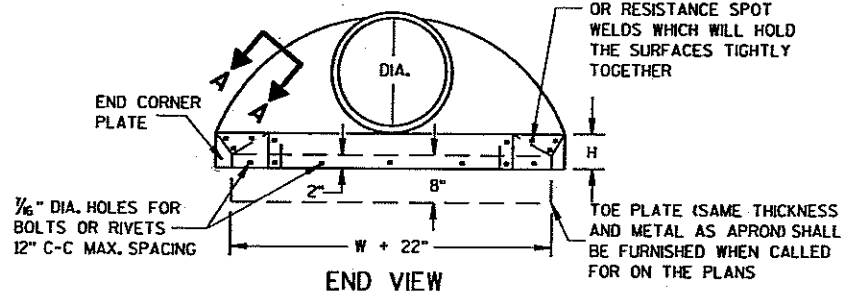
CHEF ROADWAY DEVELOPMENT ENGINEER

METAL APRON ENDWALLS											
PIPE DIA. (IN.)	MIN. THICK. (Inches)		DIMENSIONS (Inches)							APPROX. SLOPE	BODY
	STEEL	ALUM.	A (±1")	B (MAX.)	H (±1")	L (±1/2")	L ₁ (1)	L ₂ (1)	W (±2")		
12	.064	.060	6	6	6	21	12	17 1/2	24	2 1/2 to 1	1 Pc.
15	.064	.060	7	8	6	26	14	21 3/4	30	2 1/2 to 1	1 Pc.
18	.064	.060	8	10	6	31	15	28 1/4	36	2 1/2 to 1	1 Pc.
21	.064	.060	9	12	6	36	18	29 3/8	42	2 1/2 to 1	1 Pc.
24	.064	.075	10	13	6	41	18	37 1/4	48	2 1/2 to 1	1 Pc.
30	.079	.075	12	16	8	51	18	52 1/4	60	2 1/2 to 1	1 Pc.
36	.079	.105	14	19	9	60	24	59 3/4	72	2 1/2 to 1	2 Pc.
42	.109	.105	16	22	11	69	24	75 3/8	84	2 1/2 to 1	2 Pc.
48	.109	.105	18	27	12	78	24	81	90	2 1/4 to 1	3 Pc.
54	.109	.105	18	30	12	84	30	85 1/2	102	2 1/4 to 1	3 Pc.
60	.109*	.105*	18	33	12	87	—	—	114	2 to 1	3 Pc.
66	.109*	.105*	18	36	12	87	—	—	120	2 to 1	3 Pc.
72	.109*	.105*	18	39	12	87	—	—	126	2 to 1	3 Pc.
78	.109*	.105*	18	42	12	87	—	—	132	1 1/2 to 1	3 Pc.
84	.109*	.105*	18	45	12	87	—	—	138	1 1/2 to 1	3 Pc.
90	.109*	.105*	18	37	12	87	—	—	144	1 1/2 to 1	3 Pc.
96	.109*	.105*	18	35	12	87	—	—	150	1 1/2 to 1	3 Pc.

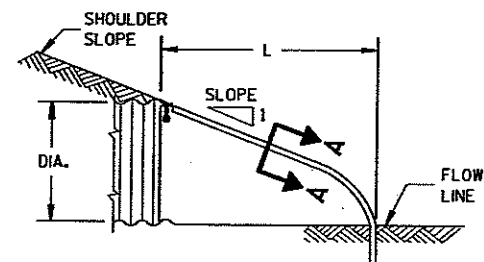
* EXCEPT CENTER PANEL
SEE GENERAL NOTES



PLAN VIEW

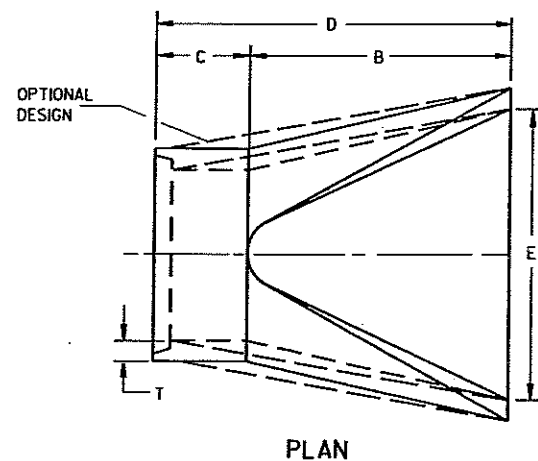


END VIEW

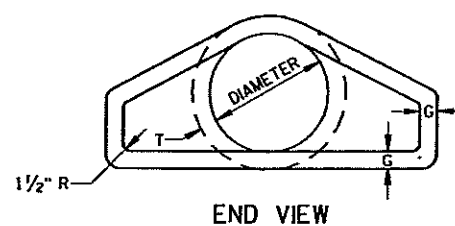
SIDE ELEVATION
METAL ENDWALLS

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

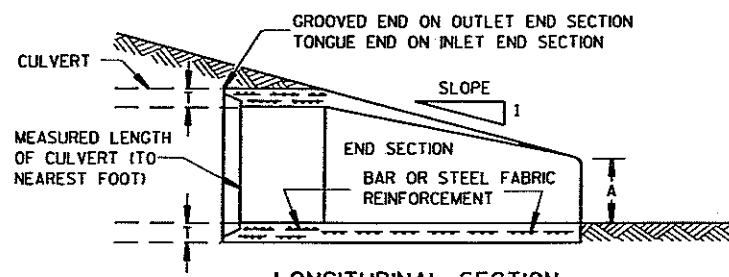
* MINIMUM
** MAXIMUM



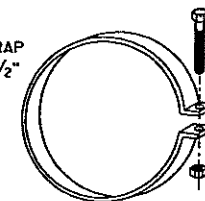
PLAN



END VIEW

LONGITUDINAL SECTION
CONCRETE ENDWALLS

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

ALTERNATE FOR TYPE 1 CONNECTION
END SECTION CONNECTOR STRAP

THREADED 3/8" DIA. ROD AROUND CULVERT & THROUGH TANK TYPE CONNECTOR LUG OR ALTERNATE CONNECTOR STRAP (SEE DETAIL)

MEASURED LENGTH OF CULVERT

TYPE 1
FOR 12" THRU 24" CORR. PIPE

THREADED 3/8" DIA. ROD OVER TOP OF APRON, SIDE LUGS TO BE RIVETED TO APRON

MEASURED LENGTH OF CULVERT

TYPE 2
FOR 30" THRU 96" CORR. PIPE

MEASURED LENGTH OF CULVERT

CONNECTOR SECTION TO BE PAID FOR AS PART OF END SECTION

TYPE 3
FOR 42" THRU 96" CORR. PIPE

DIMPLED OR CORRUGATED COUPLING BAND

RIVETED OR BOLTED AT DIMPLES (6" C-C FOR CORRUGATED BAND)

TYPE 5

ALTERNATE FOR:
ALL SIZES CORRUGATED CIRCULAR PIPE

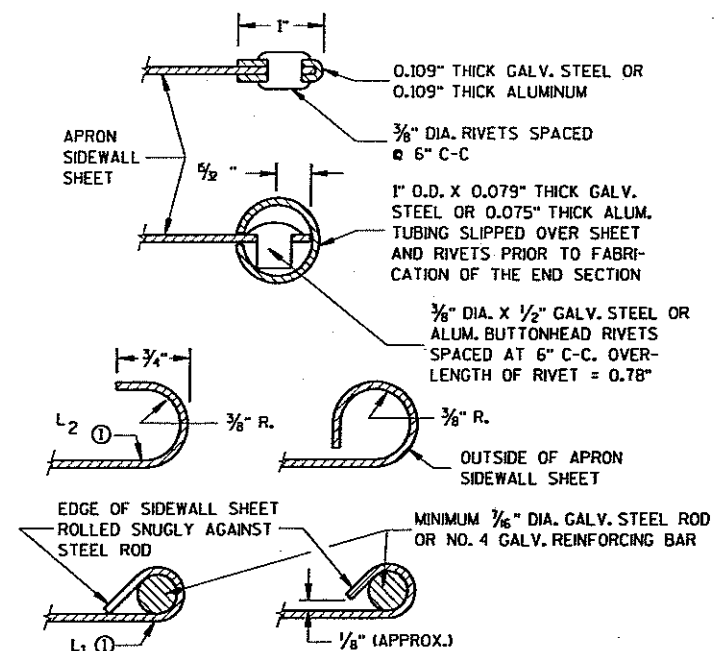
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL, AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

FOR CIRCUMFERENTIALLY CORRUGATED PIPE USE ENDWALL CONNECTION DETAILS 1, 2, 3 OR 5 AS APPLICABLE.

FOR HELICALLY CORRUGATED PIPE USE ENDWALL CONNECTION DETAILS 1, 2 OR 5.

FOR HELICALLY CORRUGATED PIPES WITH TWO CIRCUMFERENTIAL CORRUGATIONS AT EACH END USE ENDWALL CONNECTION DETAILS 1, 2 OR 3.

CONNECTION DETAILS



SECTION A-A

GENERAL NOTES

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

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

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

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

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

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

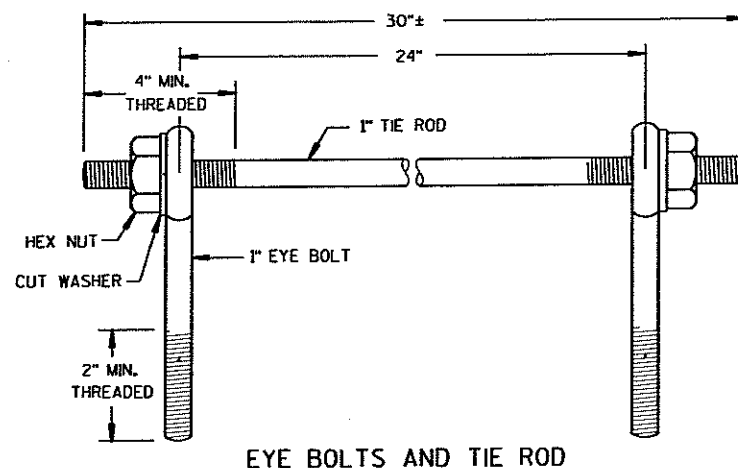
APRON ENDWALLS FOR
CULVERT PIPE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

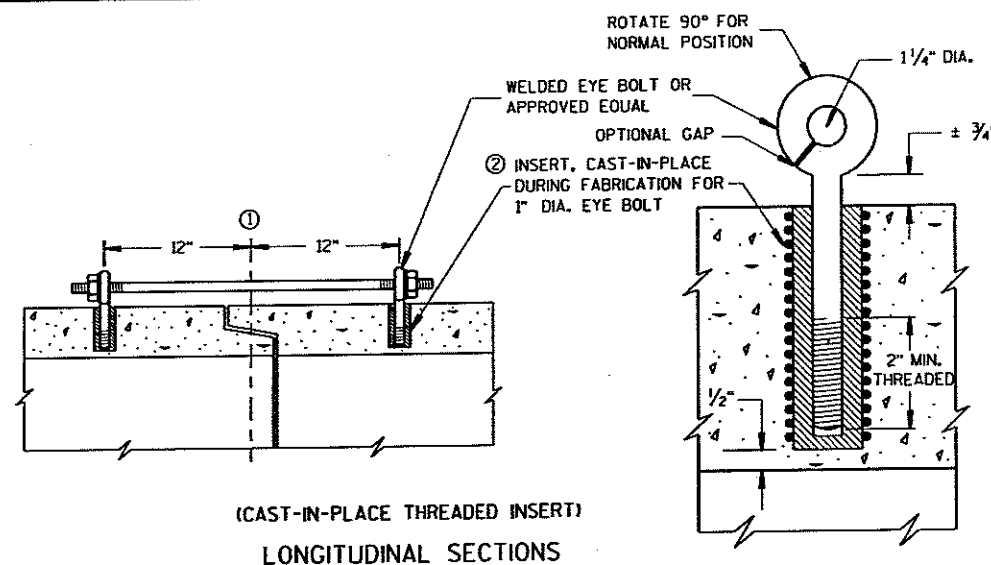
APPROVED
11/30/94
DATE

Chief Roadway Development Engineer

FHWA



EYE BOLTS AND TIE ROD



(CAST-IN-PLACE THREADED INSERT)
LONGITUDINAL SECTIONS

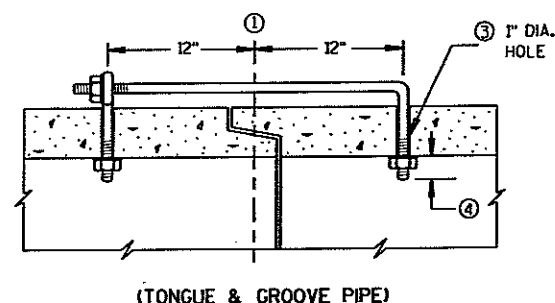
GENERAL NOTES

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

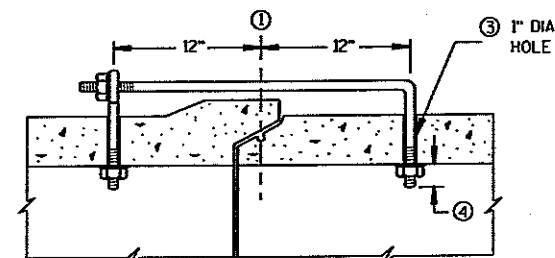
DETAILED DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR JOINT TIES SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.

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

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



(TONGUE & GROOVE PIPE)



(MODIFIED BELL PIPE)
LONGITUDINAL SECTION

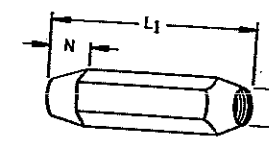
EYE BOLT DIMENSION TABLE

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

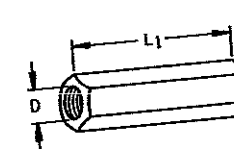
ADJUSTABLE TIE ROD TABLE

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

DIMENSIONS SHOWN ARE IN INCHES



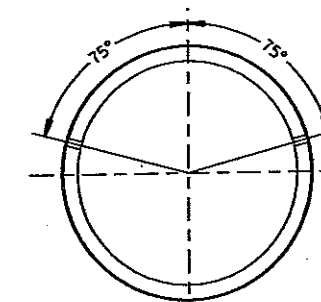
TAPERED



PLAIN

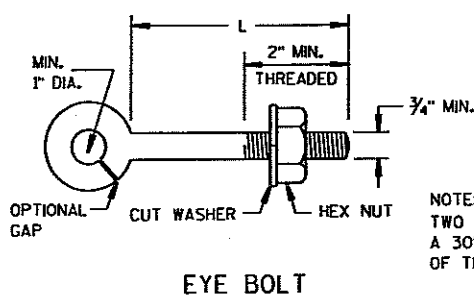
RIGHT AND LEFT THREADS

SLEEVE NUTS



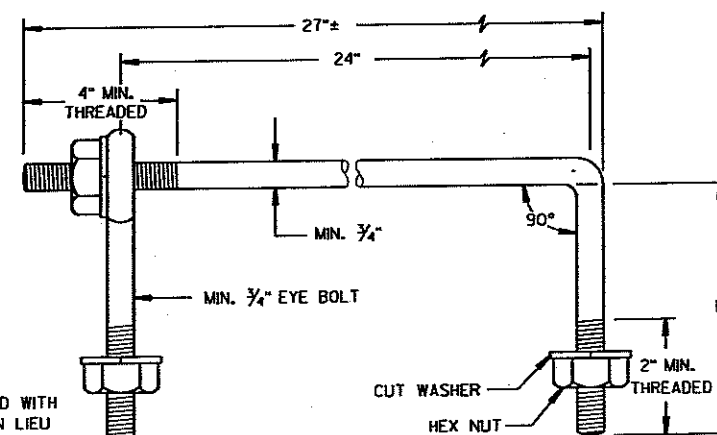
PLACEMENT OF (2) CAST-IN-PLACE
INSERTS OR HOLES DURING FABRICATION
FOR PIPE SECTIONS REQUIRING TIE RODS

TRANSVERSE SECTION



EYE BOLT

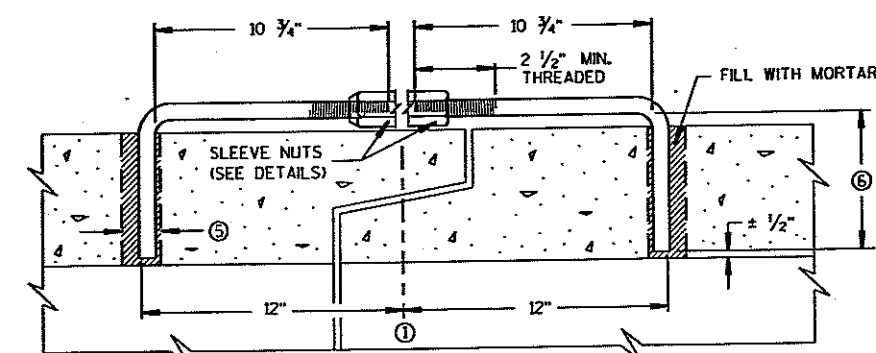
NOTE:
TWO EYE BOLTS MAY BE USED WITH
A 30" LONG THREADED ROD IN LIEU
OF THE 90° BENT TIE ROD.



EYE BOLT AND TIE ROD

(JOINT TIES FOR 18" TO 66" DIA. CONCRETE PIPE)

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



LONGITUDINAL SECTION

(JOINT TIES FOR 12" TO 108" DIA. CONCRETE PIPE)

ADJUSTABLE TIE ROD (ALTERNATE NO. 3)

DESIGN NOTE:

THE NUMBER OF PIPE TIES REQUIRED SHOULD BE INCLUDED ON THE MISCELLANEOUS QUANTITIES SHEET WITH THE CULVERT PIPE LISTING.

NOTE:

DESIGN NOTE WILL NOT APPEAR ON THE CONTRACT PLAN.

JOINT TIES FOR CONCRETE PIPE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

8/16/92
DATE

FHWA

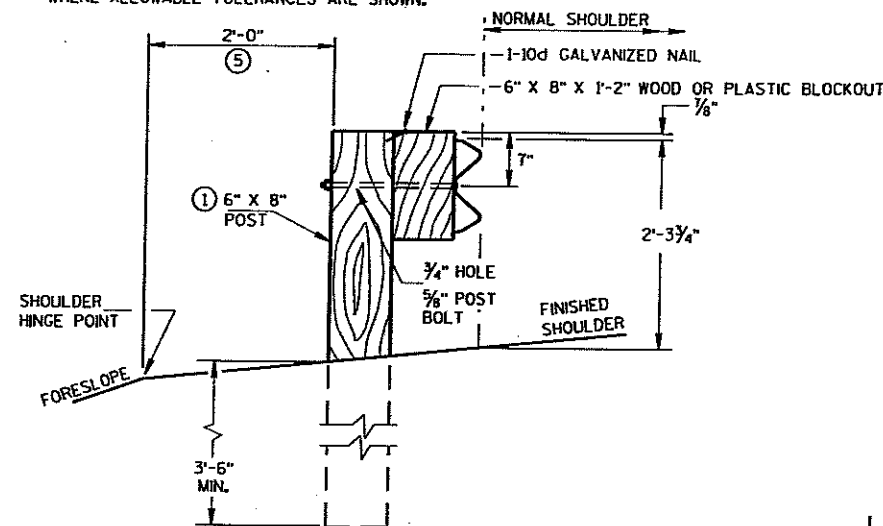
STATE DESIGN ENGINEER FOR HWYS

GENERAL NOTES

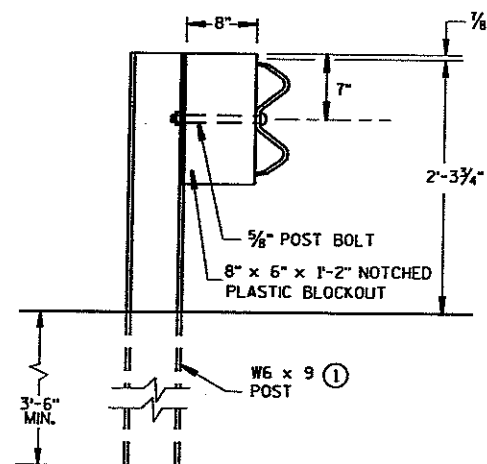
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS, AND THE APPLICABLE SPECIAL PROVISIONS.

- 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. APPROVED PLASTIC BLOCKOUT DESIGNS MAY VARY FROM THIS TYPICAL DETAIL WHEN USED IN CONJUNCTION WITH STEEL POSTS. DO NOT MIX STEEL POSTS AND WOOD POSTS IN A SINGLE INSTALLATION.
- ② USE STRUCTURAL STEEL POSTS CONFORMING TO ASTM A 36. GALVANIZED POSTS ACCORDING TO AASHTO M 111 EITHER SET THE POSTS IN DRILLED HOLES OR DRIVE TO GRADE. REMOVE MUSHROOMING CAUSED BY DRIVING AND REPAIR DAMAGED SPALTER 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 SHOULDER HINGE POINT MAY BE BETWEEN THE FRONT FACE OF THE POST AND 2 FEET BEHIND THE BACK OF THE POST, IF EXISTING CONDITIONS DO NOT PERMIT THE DESIRABLE EARTHWORK. INCREASE POST DEPTH TO PROVIDE A MINIMUM EMBEDMENT OF 4'-6" WHERE THE SHOULDER HINGE POINT IS LOCATED BETWEEN THE FRONT FACE OF THE POST AND 2 FEET BEHIND THE BACK 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 2 1/2 INCHES DEEP. CUT THE POSTS TO LENGTH AND PLACE IN THE HOLE. BACKFILL WITH MATERIAL EXCAVATED FROM THE HOLE AND COMPACT ADEQUATELY.

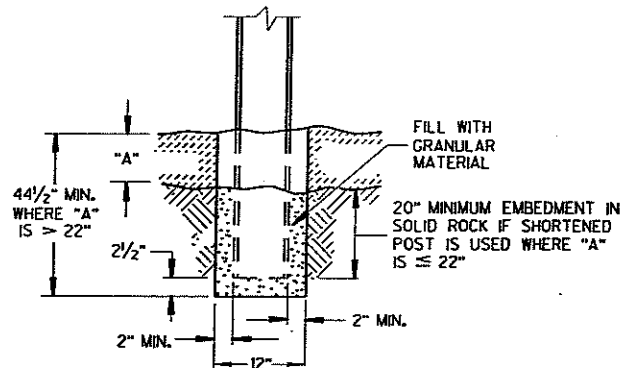
INSTALL BEAM GUARD SECTIONS AND ALL NECESSARY HARDWARE ACCORDING TO THE APPLICABLE PLAN AND CURRENT STANDARD AND SUPPLEMENTAL SPECIFICATIONS. ALL DIMENSIONS ARE SUBJECT TO MANUFACTURER'S TOLERANCES EXCEPT WHERE ALLOWABLE TOLERANCES ARE SHOWN.



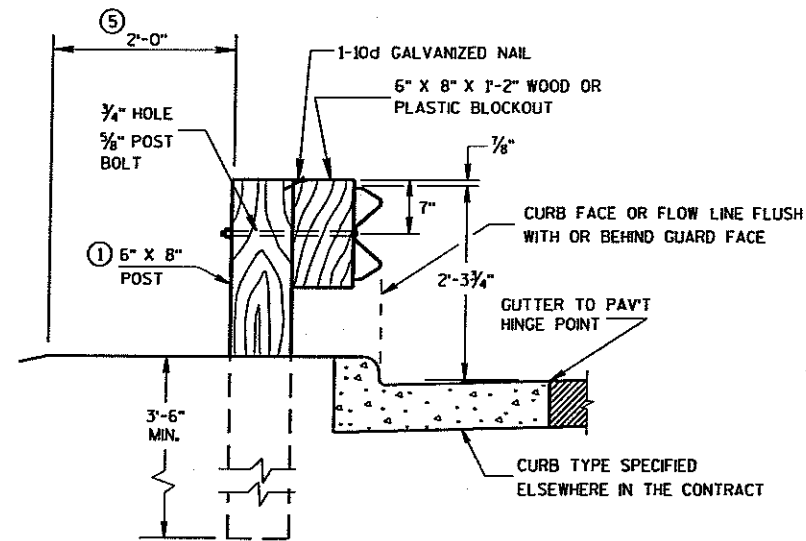
END VIEW
LOCATED ALONG A ROADWAY SHOULDER



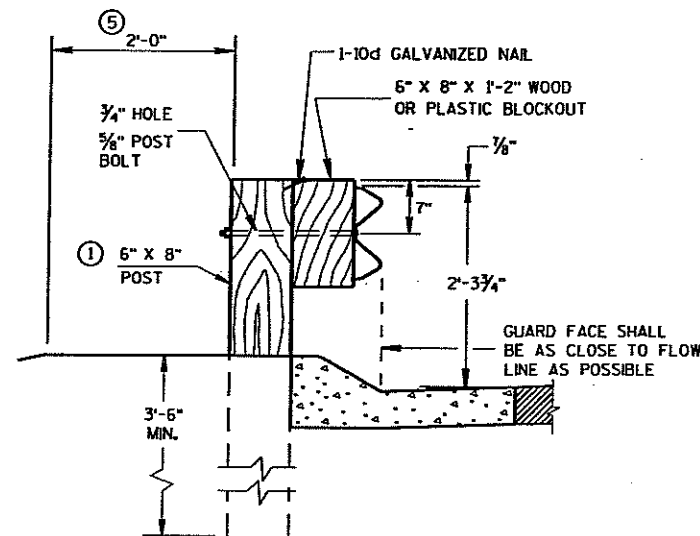
END VIEW
STEEL POST & NOTCHED
PLASTIC BLOCKOUT ALTERNATIVE



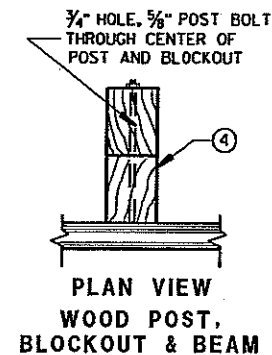
END VIEW
SETTING STEEL OR WOOD POST IN ROCK ⑥



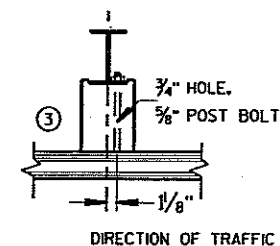
END VIEW
LOCATED ALONG A CURBED ROADWAY



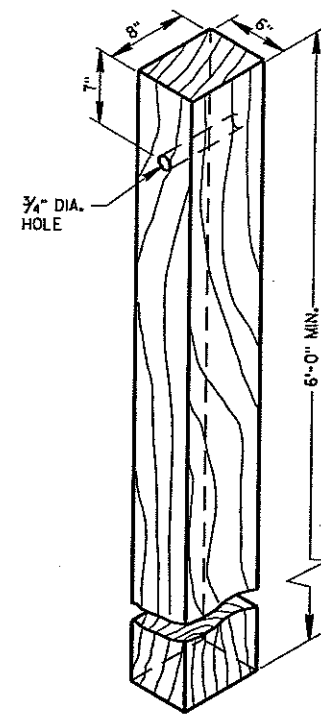
END VIEW
LOCATED ALONG A
MOUNTABLE CURBED ROADWAY



PLAN VIEW
WOOD POST,
BLOCKOUT & BEAM

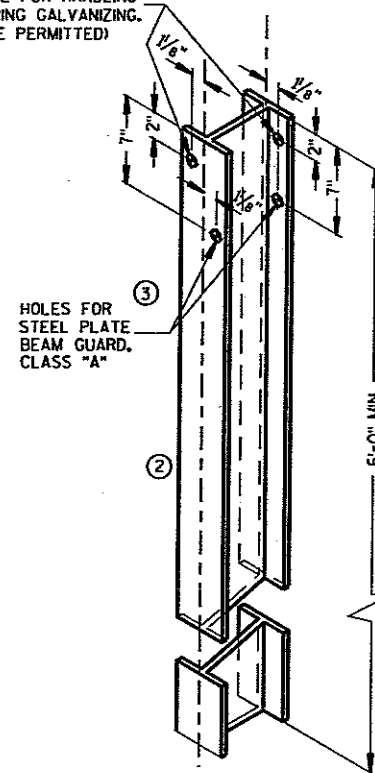


PLAN VIEW
STEEL POST, NOTCHED
PLASTIC BLOCKOUT & BEAM



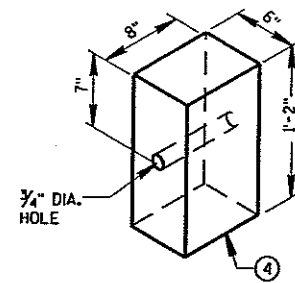
WOOD POST
(6" X 8") NOMINAL

OPTIONAL 5/8" DIA.
HOLE FOR HANDLING
DURING GALVANIZING.
(ONE PERMITTED)

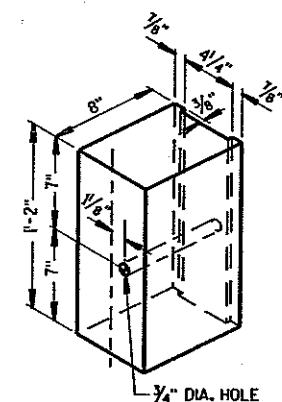


STEEL POST &
HOLE PUNCHING DETAIL
(W6 X 9) ①

ALL HOLES 5/8" DIAMETER EXCEPT AS NOTED



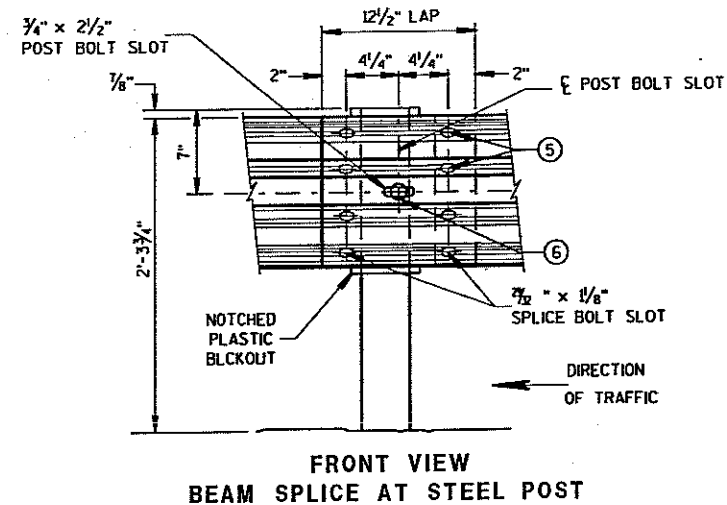
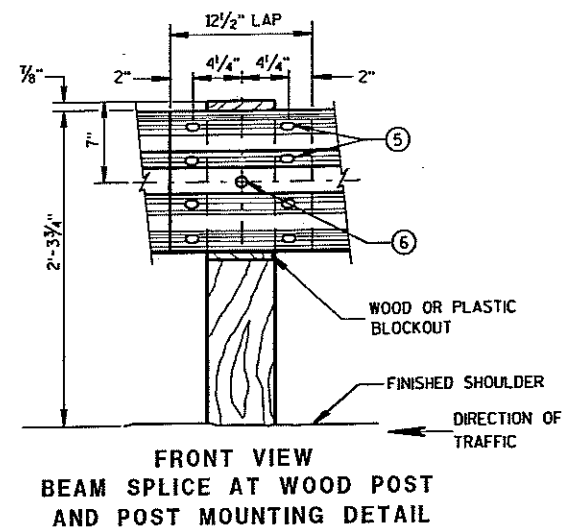
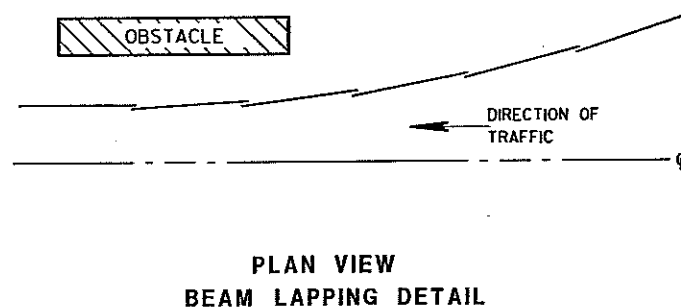
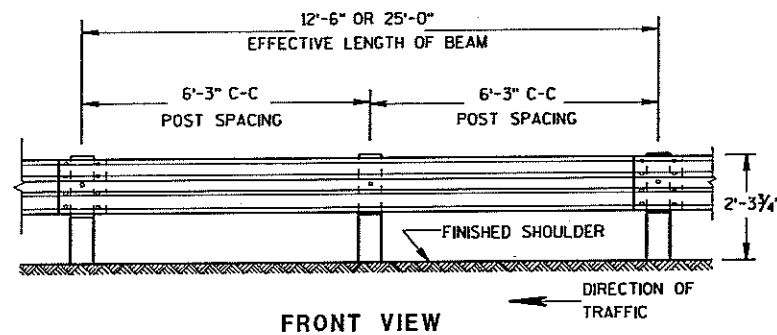
WOOD OR PLASTIC
BLOCKOUT FOR WOOD POSTS



TYPICAL NOTCHED PLASTIC ①
BLOCKOUT FOR STEEL POSTS

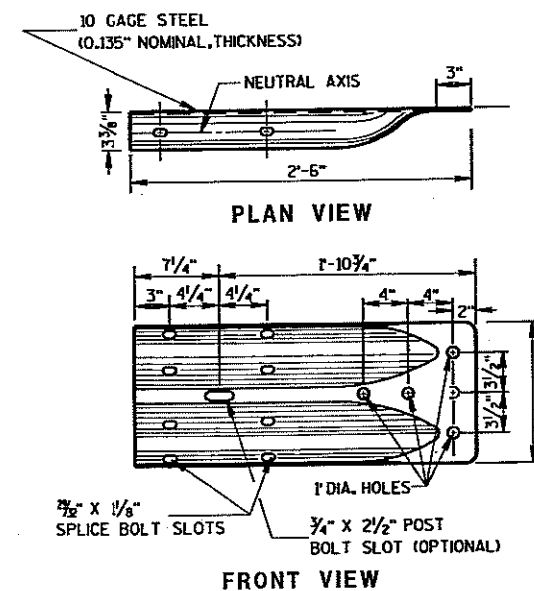
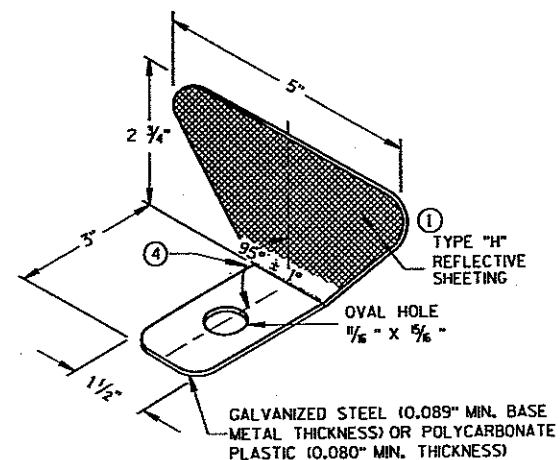
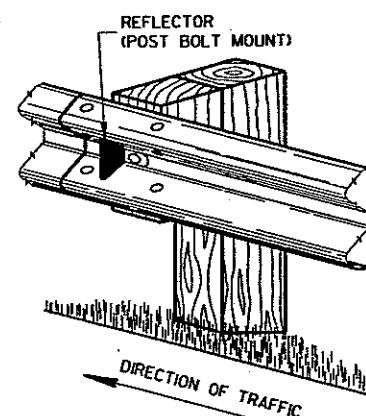
STEEL PLATE BEAM GUARD,
CLASS "A"
INSTALLATION & ELEMENTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



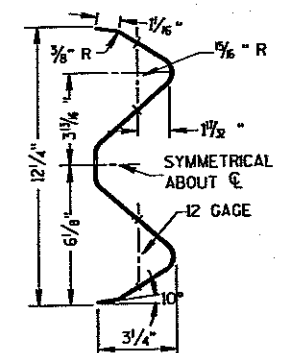
TYPICAL SPLICING DETAILS OF STEEL PLATE BEAM GUARD

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



- ## 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 $90^\circ \pm 1^\circ$ FOR TWO-SIDED REFLECTORS.
- ⑤ 8 - $\frac{3}{8}$ " $\times$ 1 $\frac{1}{4}$ " BUTTON HEAD BOLTS WITH OVAL SHOULDERS & RECESS NUTS.
- ⑥ $\frac{5}{8}$ " $\times$ 1'-6" BUTTON HEAD BOLT AND AND RECESS NUT WITH ROUND WASHER UNDER NUT.

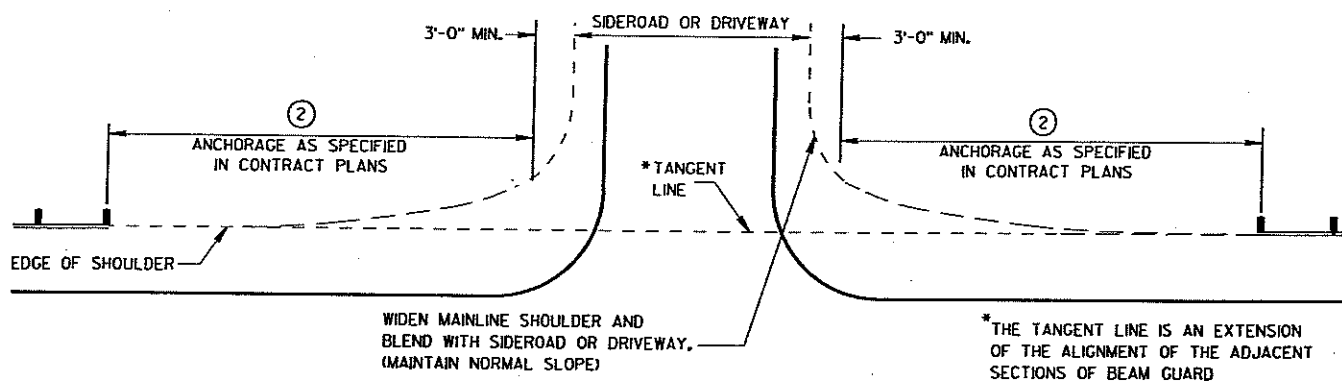


SECTION THRU W BEAM

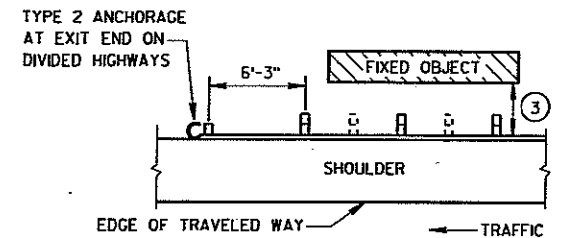
STEEL PLATE BEAM GUARD,
CLASS "A",
INSTALLATION & ELEMENTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

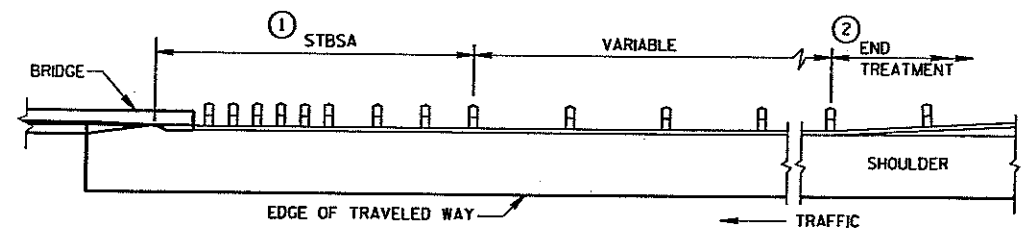
APPROVED
10/23/06 /S/ Jerry H. Zogg
DATE ROADWAY STANDARDS DEVELOPMENT
ENGINEER
FHWA



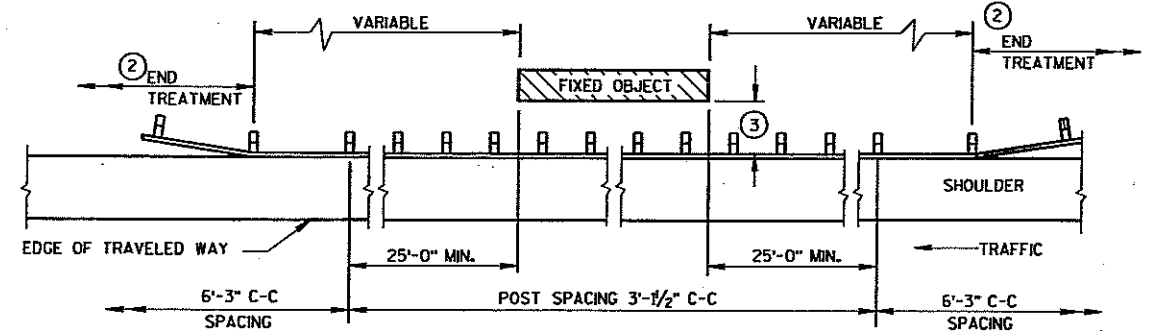
BEAM GUARD AT SIDEROADS OR DRIVEWAYS



**BEAM GUARD AT OBSTACLES
EXIT END - ONE WAY TRAFFIC**



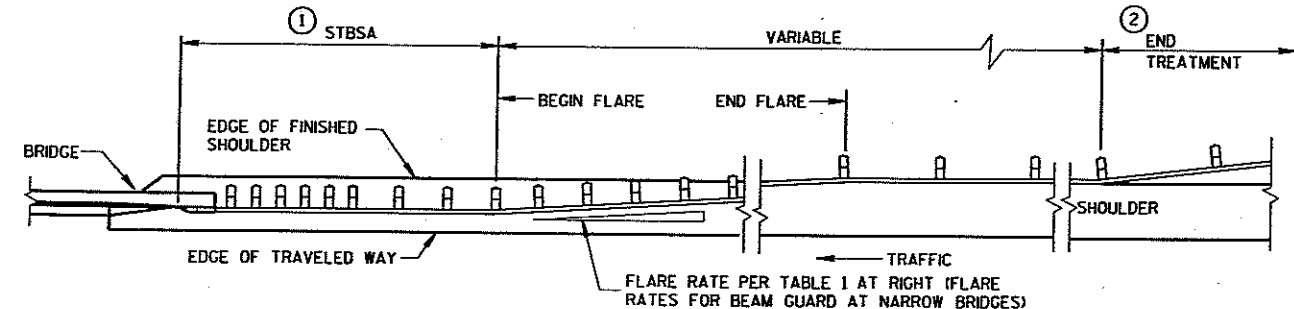
BEAM GUARD AT FULL WIDTH BRIDGES



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

**TABLE 1
FLARE RATES FOR BEAM
GUARD AT NARROW BRIDGES**

POSTED SPEED (MPH)	FLARE RATE
25	13:1
30	15:1
35	16:1
40	18:1
45	21:1
50	24:1
55	26:1
65	30:1



BEAM GUARD AT NARROW BRIDGES
(FLARED TO SHOULDER EDGE, THEN PARALLEL TO ROADWAY)

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP SHALL CONFORM TO THE PERTINENT 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 STEEL THRIE BEAM STRUCTURAL APPROACH (STBSA) - SEE SDD 14B20.
- 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.

MINIMUM LATERAL DISTANCE FROM FACE OF BEAM GUARD TO FIXED OBJECT	POST SPACING
3'-6"	3' - 1/2"
4'-6"	6' - 3"

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
10-23-06
DATE

/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER

FHWA

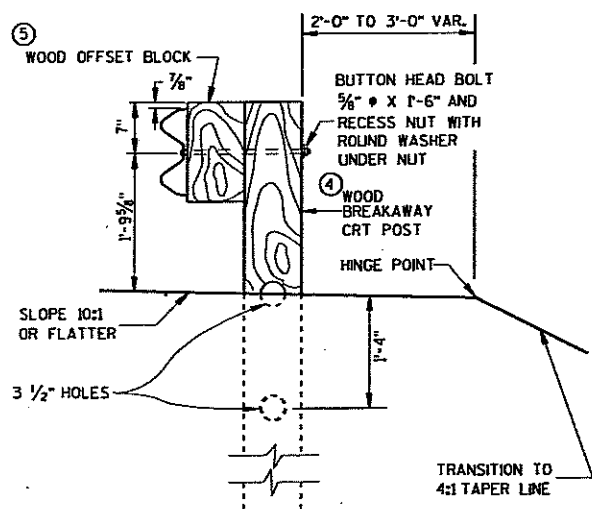
NOTE NO.	QTY.	DESCRIPTION
(1)	4	WOOD BREAKAWAY TERMINAL POST: 5 1/2" X 7 1/2" X 3'-9"
(2)	4	STEEL TUBE: 15 8" X 6" X 0.188", 4'-6" LONG
(3)	4	SOIL PLATE: 2'-0" X 1'-6" X 1/4"
(4)	4	WOOD BREAKAWAY CRT POST: 6" X 8" X 6'-0"
(5)	6	WOOD OFFSET BLOCKS: 6' X 8" X 1'-2"
(6)	1	PIPE SLEEVE: 2" X 5 1/2" STANDARD 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'-6 1/2" LONG FOR SKT-350, ET-2000 AND ET-2000 PLUS
(12)	3	STEEL PLATE BEAM: 12 GA. 13'-6 1/2"
(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"

- (A) USE 3:1 OR FLATTER SLOPE FOR INSTALLATION ON EXISTING HIGHWAYS.
- (B) DO NOT ATTACH GUARDRAIL TO POST BLOCKS AT POSTS NO. 3, 5 & 7.
- (C) 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.



EDGE OF SHOULDER

2'-0" OFFSET TO FACE OF RAIL

4'-0" MIN. TO HINGE POINT

REFLECTIVE SHEETING (SEE GENERAL NOTES & DETAIL)

WOOD BREAKAWAY TERMINAL POST

SHOULDER HINGE POINT

SLOPE 10:1 OR FLATTER

SLOPE 4:1 OR FLATTER

STEEL TUBE

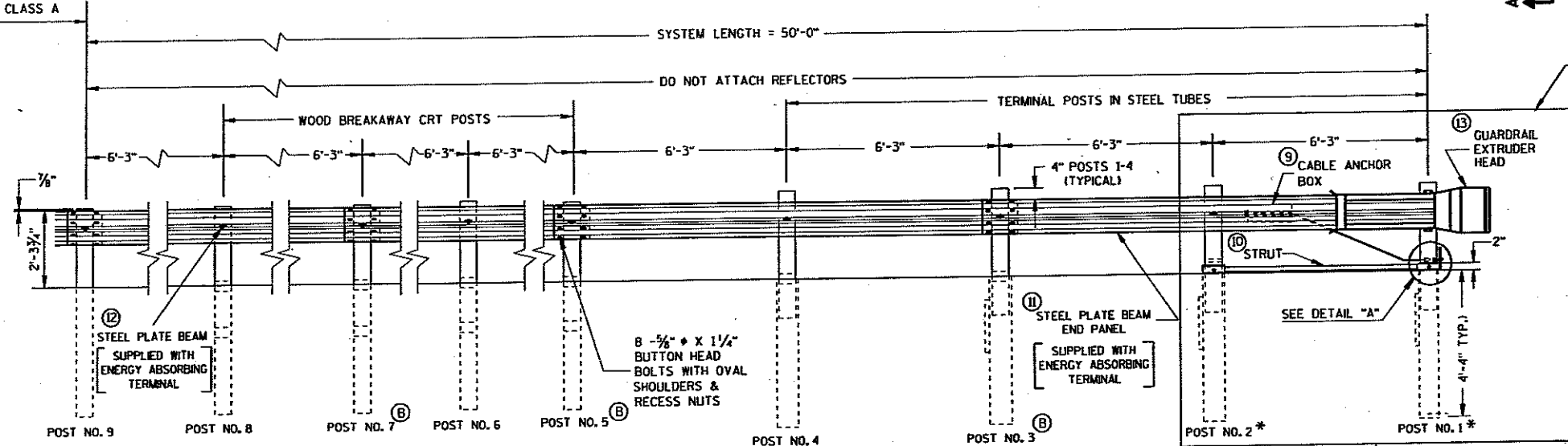
SOIL PLATE

PLAN

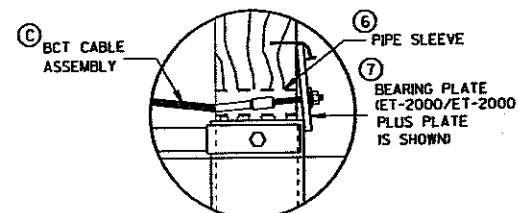
The diagram illustrates the plan view of a railroad crossing. Key features include:

- Track Layout:** Two main tracks are shown, with a **PARALLEL WITH TRAVELED WAY** section. A **HINGE POINT LINE** is indicated by a dashed line.
- Slope Limits:**
 - SLOPE LIMITS 4:1 OR FLATTER DESIRABLE** and **SLOPE LIMITS 3:1 OR FLATTER MINIMUM** are noted for the upper section.
 - SLOPE 10:1 MAX.** is indicated for the lower section.
 - SLOPE 4:1 MAX.** is indicated for the rightmost section.
- Dimensions and Spacing:**
 - 2'-0" (AT POST NO. 9)** is shown for the first track section.
 - 5'-4" (AT POST NO. 5)** is shown for the second track section.
 - 4'-0" MIN. TO HINGE POINT** is shown for the third track section.
 - 2'-0" OFFSET TO FACE OF RAIL** is shown for the fourth track section.
- Other Features:**
 - EDGE OF SHOULDER** is marked along the bottom.
 - 25:1 FLARE** is indicated for the fourth track section.
 - 15:1 TAPER** is indicated for the fifth track section.
 - 10:1 OR FLATTER TO HINGE POINT** is indicated for the sixth track section.
 - 2'-0" (AT POST NO. 9)** is also shown for the first track section.

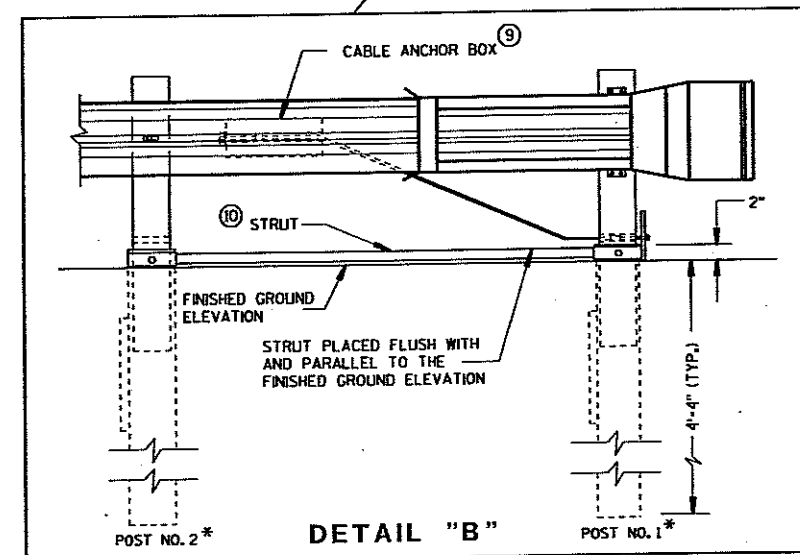
PLAN



ELEVATION



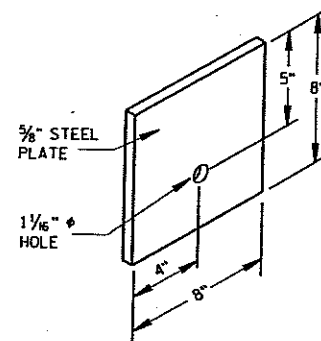
DETAIL "A"



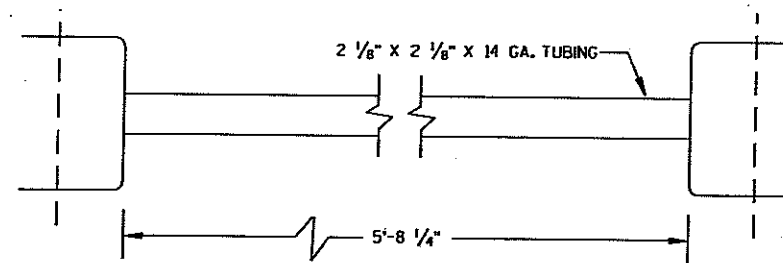
DETAIL "B"

STEEL PLATE BEAM GUARD
ENERGY ABSORBING TERMINAL

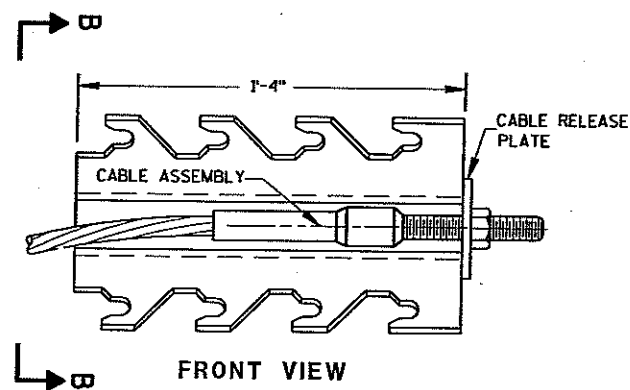
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



STEEL BEARING PLATE (SKT-350)

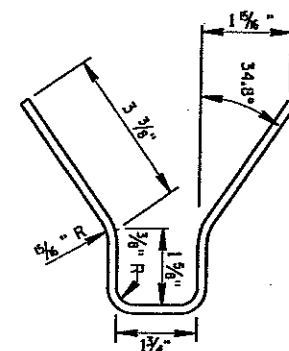


STRUT DETAIL (SKT-350)

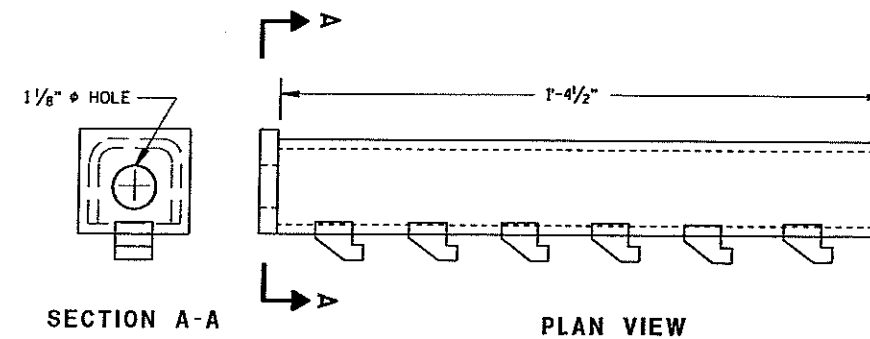


CABLE ANCHOR BOX (SKT-350)

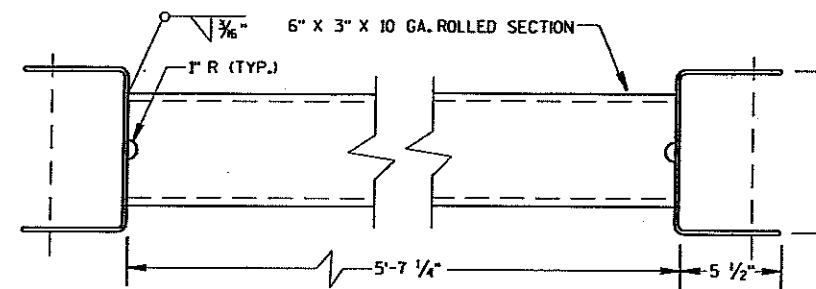
(SKT-350)



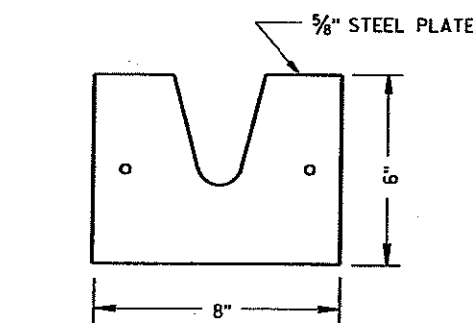
SECTION B-B



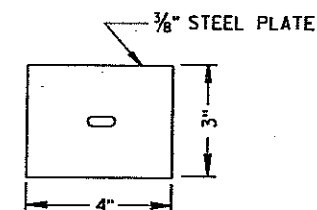
CABLE ANCHOR BOX (ET-2000/ET-2000 PLUS)



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

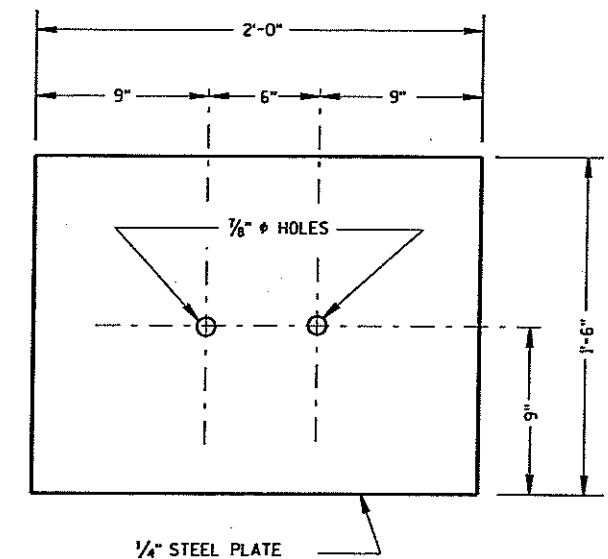


STEEL BEARING PLATE
(ET-2000/ET-2000 PLUS)



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

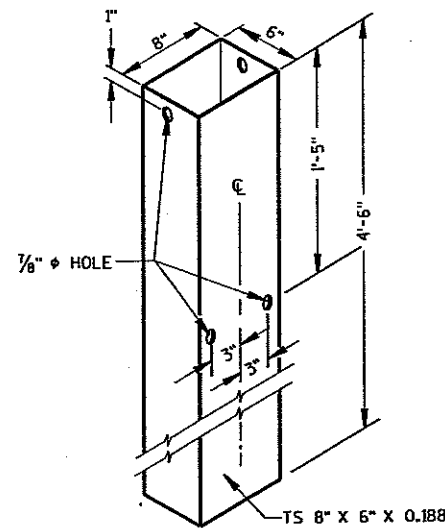
(ET-2000/ET-2000 PLUS)



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

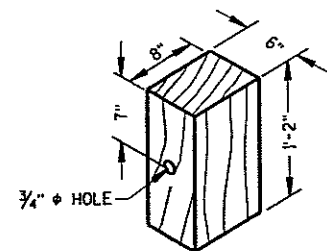
STEEL PLATE BEAM GUARD
ENERGY ABSORBING TERMINAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



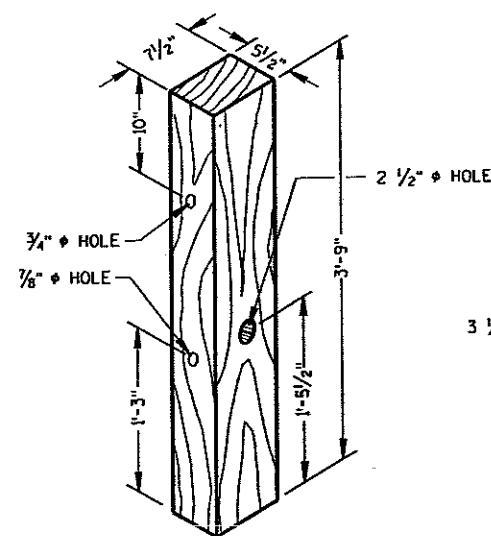
STEEL TUBE

(POSTS NO. 1-4)
THE STEEL TUBE SHALL CONFORM
TO REQUIREMENTS OF ASTM A500



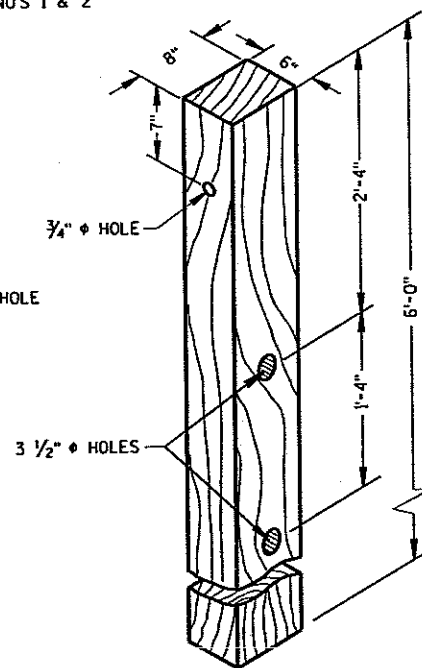
WOOD OFFSET BLOCK

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



TERMINAL POST

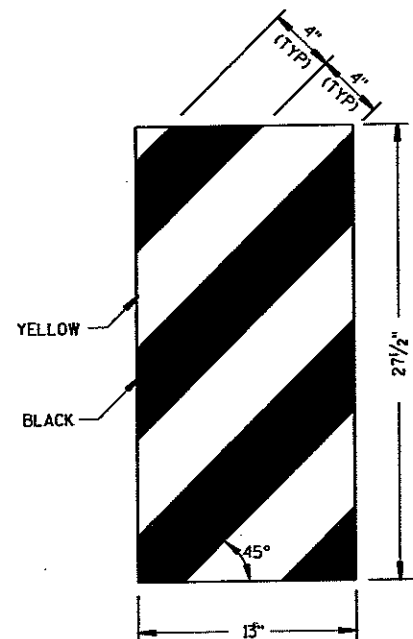
(POSTS NO. 1-4)



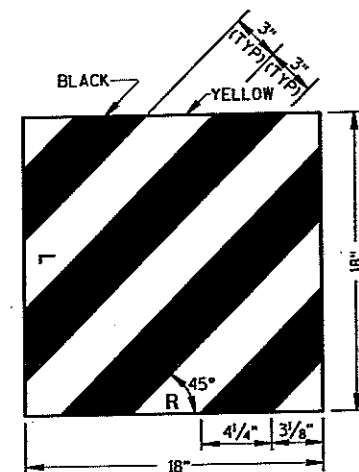
CRT POST

(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 PROPRIETARY 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.

STEEL PLATE BEAM GUARD
ENERGY ABSORBING TERMINAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

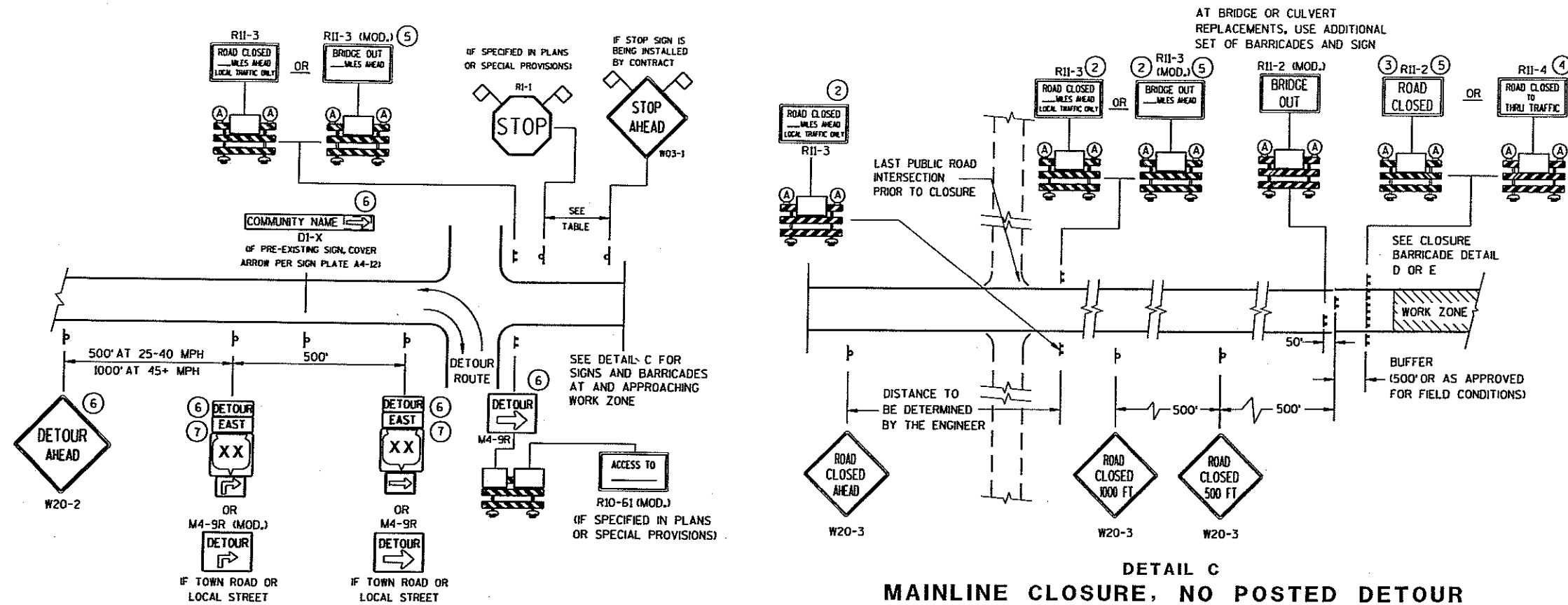
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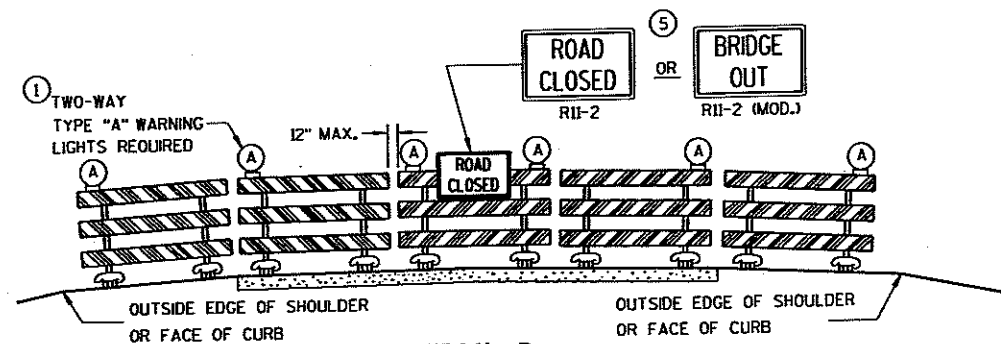
DATE

FHWA

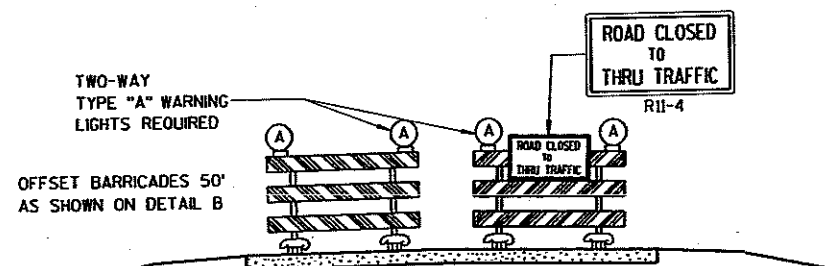
CHIEF ROADWAY DEVELOPMENT ENGINEER

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





DETAIL D
ROAD CLOSURE BARRICADE DETAIL
APPROACH VIEW



DETAIL E
LANE CLOSURE BARRICADE DETAIL
APPROACH VIEW

SEE SDD 15C2-4a FOR LEGEND

GENERAL NOTES

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

ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER.

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

BARRICADES THAT MUST BE MOVED FOR A WORK OPERATION SHALL BE IMMEDIATELY RE-ESTABLISHED UPON COMPLETION OF THE OPERATION OR, FOR CONTINUING OPERATIONS, AT THE END OF EACH WORKING DAY.

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

ALL TYPE II BARRICADES SHALL HAVE RAILS REFLECTORIZED ON BOTH FACES. STRIPES SHALL BE PROPERLY SLOPED DOWN TOWARD THE TRAFFIC SIDE OR AS SHOWN IN THE ROAD CLOSURE BARRICADE DETAIL D FOR FULL ROAD CLOSURES.

TYPE "A" LOW-INTENSITY FLASHING WARNING LIGHTS SHALL BE VISIBLE ON BOTH SIDES OF THE BARRICADE.

THE R11-2, R11-3, M4-9, R11-4 AND R10-61 SIGNS PLACED ON BARRICADES SHALL COVER NO MORE THAN THE TOP RAIL. THE SIGNS SHALL NOT COVER ANY PORTION OF THE MIDDLE OR BOTTOM RAILS.

THE REFLECTIVE SHEETING USED ON R11-2, R11-3, R11-4, R10-61 AND R1-1 SIGNS SHALL COMPLY WITH SUBSECTION 637.2.2.2 OF THE STANDARD SPECIFICATIONS.

"WO AND "MO" SIGNS ARE THE SAME AS "W" AND "M" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

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

R11-2 SHALL BE 48" X 30".

R11-3, R11-4 AND R10-61 SHALL BE 60" X 30".

M4-9 SHALL BE 30" X 24".

M3-X AND M4-8 SHALL BE 24" X 12". (30" X 15" IF NEEDED TO MATCH EXISTING SIGNS.)

M1-4, M1-5A, AND M1-6 SHALL BE 24" X 24". (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS.)

M05-1 AND M06-1 SHALL BE 21" X 21". (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS.)

D1-X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS.

R1-1 SHALL BE 36" X 36".

- ① TWO WARNING LIGHTS SHALL BE PROVIDED ON THE CENTER BARRICADE AND A MINIMUM OF ONE WARNING LIGHT SHALL BE PROVIDED ON EACH OF THE OTHER BARRICADES WITHIN THE ROADWAY LIMITS. SPACING OF THE WARNING LIGHTS SHALL BE UNIFORM TO THE EDGE OF ROADWAY AS SHOWN (APPROX. 8-FOOT LIGHT SPACING).
- ② THESE SIGNS AND BARRICADES ARE NOT REQUIRED IF ROAD CLOSURE BEGINS AT INTERSECTION.
- ③ FOR ROAD CLOSURE WITHOUT LOCAL ACCESS TO PROJECT, SEE ROAD CLOSURE BARRICADE DETAIL D.
- ④ FOR ROAD CLOSURE WITH LOCAL ACCESS TO PROJECT, SEE LANE CLOSURE BARRICADE DETAIL E.
- ⑤ FOR BRIDGE OR CULVERT REPLACEMENTS, SUBSTITUTE "BRIDGE OUT" INSTEAD OF "ROAD CLOSED" ON R11-2 AND R11-3 SIGNS.
- ⑥ INSTALL DETOUR AND COMMUNITY GUIDE SIGNS AND ARROWS ONLY IF SPECIFIED IN THE CONTRACT. IF THERE ARE EXISTING ROUTE MARKER ASSEMBLIES THAT WILL REMAIN IN PLACE, ADJUST THE LOCATION OF THE DETOUR ROUTE SIGNS TO CORRESPOND WITH THE EXISTING ASSEMBLIES. MODIFY EXISTING SIGNS WHERE POSSIBLE. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS. IF DETOUR SIGNS ARE BEING INSTALLED BY OTHERS, PLACE THE CONTRACTED TRAFFIC CONTROL SIGNS TO ALLOW FOR PLACEMENT OF ALL WARNING, DETOUR AND GUIDE SIGNS AS SHOWN.
- ⑦ "EAST" CARDINAL DIRECTION MARKERS AND RIGHT TURN ARROWS ARE SHOWN. USE OTHER CARDINAL DIRECTIONS AND ARROWS AS APPROPRIATE.

BARRICADES AND SIGNS FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

9/16/03

DATE

FHWA

Thomas N. Nottolm for
CHIEF SIGNS AND MARKING ENGINEER

S.D.D. 15 C 2-4b

S.D.D. 15 C 2-4b

THIS DRAWING PROVIDES GENERAL GUIDANCE ON TYPICAL DETOUR SIGN LAYOUT AND SPACING. SEE PROJECT DETOUR SIGNING SHEETS FOR SPECIFIC DETAILS FOR EACH PROJECT.

GENERAL NOTES

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

IF THERE ARE EXISTING ROUTE MARKER ASSEMBLIES THAT WILL REMAIN IN PLACE, ADJUST THE LOCATION OF THE DETOUR ROUTE SIGNS TO CORRESPOND WITH THE EXISTING ASSEMBLIES. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS, MODIFY EXISTING SIGNS WHERE POSSIBLE.

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

ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH TRAFFIC CONTROL "IN USE", SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER.

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

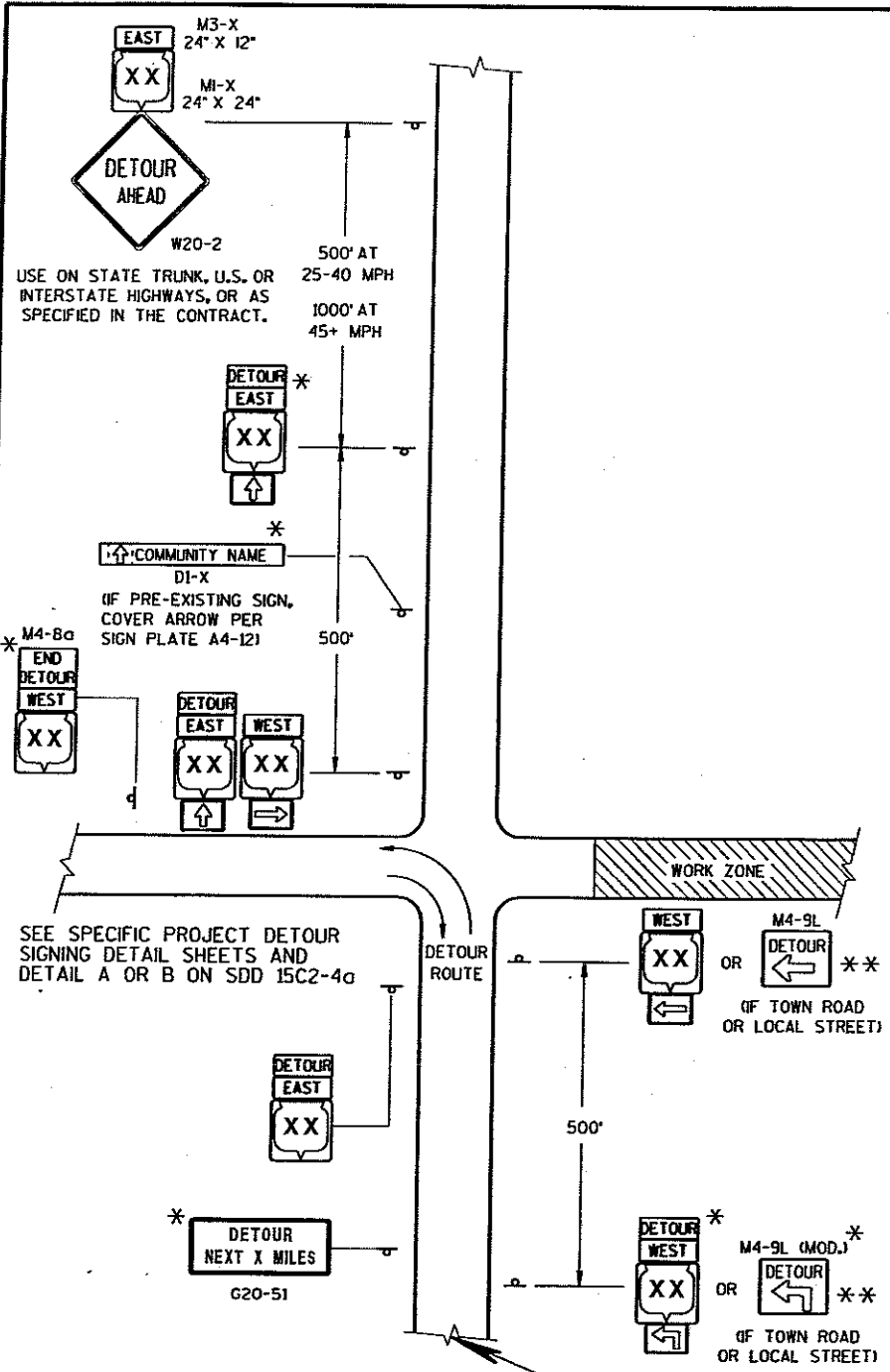
"MO" SIGNS ARE THE SAME AS "M" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

SIGN SIZES SHALL BE AS FOLLOWS:

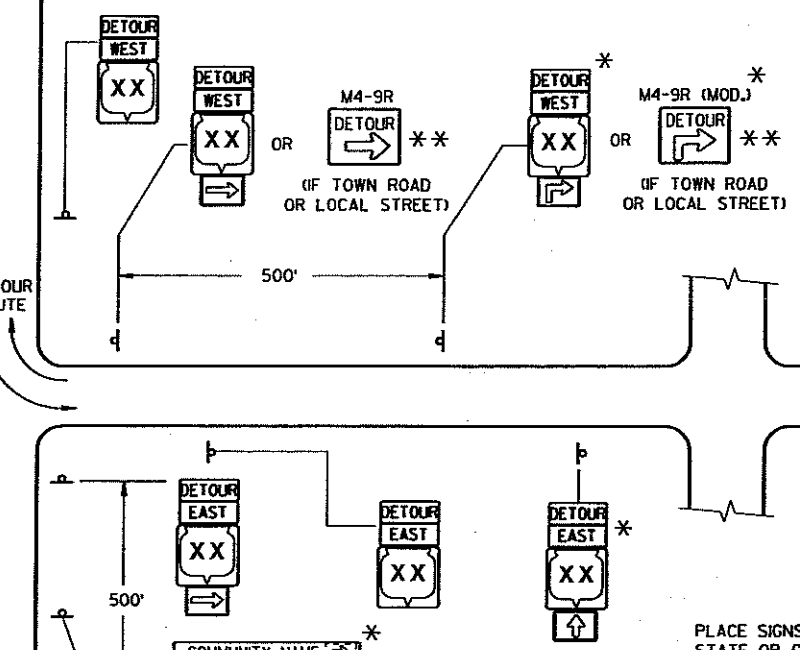
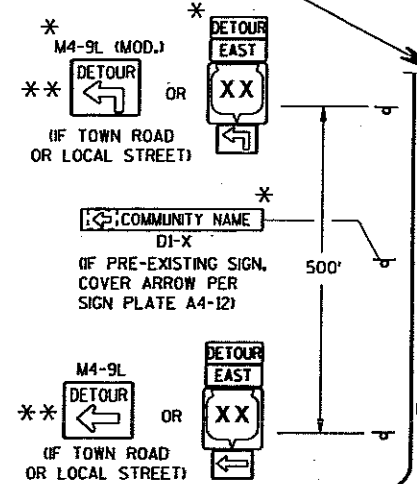
M3-X AND M4-8 SHALL BE 24" X 12". (30" X 15" IF NEEDED TO MATCH EXISTING SIGNS.)
 M1-4, M1-5A, AND M1-6 SHALL BE 24" X 24". (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS.)
 M05-1 AND M06-1 SHALL BE 21" X 21". (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS.)
 M4-9 SHALL BE 30" X 24".
 M4-8a SHALL BE 24" X 18".
 G20-51 SHALL BE 60" X 24".
 W20-2 SHALL BE 48" X 48".
 DI-X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS.

* OPTIONAL SIGNS. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS.

** FOR A TOWN ROAD OR LOCAL STREET DETOURED ONTO A STATE TRUNK HIGHWAY, PLACE A ROAD NAME PLAQUE ABOVE THE M4-9 SIGN AS SPECIFIED IN THE CONTRACT.



MATCH POINT

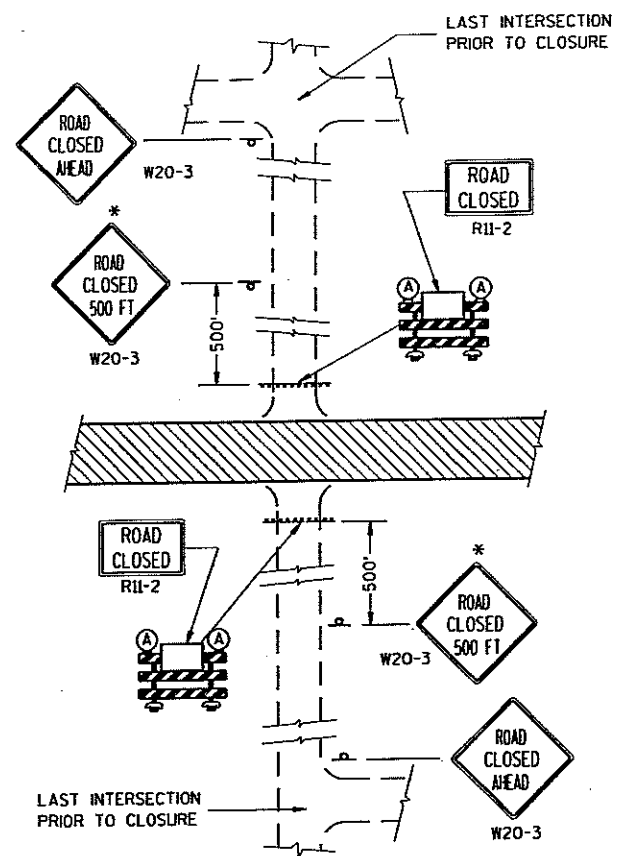


PLACE SIGNS BEYOND INTERSECTIONS WITH STATE OR COUNTY TRUNK HIGHWAYS OR AT 4 MILE MAXIMUM SPACING (4 BLOCKS IF URBAN AREA.)

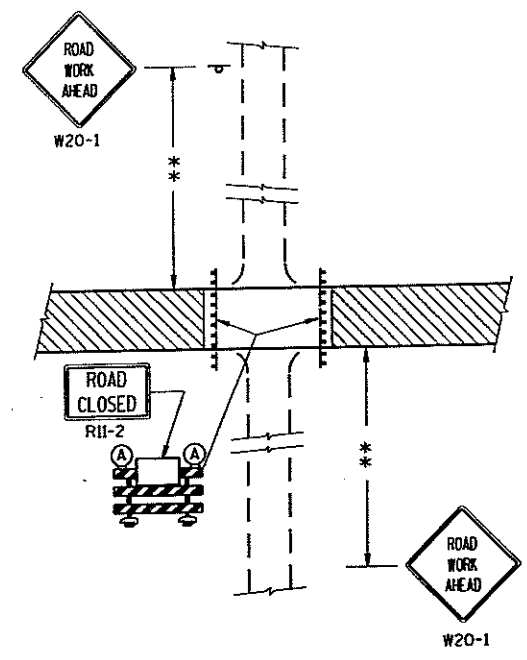
- LEGEND**
- POST MOUNTED SIGN
 - WORK ZONE
 - DETOUR M4-8
 - EAST M3-X
 - MI-4
 - OR
 - COUNTY MI-5A
 - OR
 - MI-6
 - OR
 - MI-4
 - OR
 - MI-5A
 - OR
 - MI-6
 - OR
 - MI-4
 - OR
 - MI-5A
 - OR
 - MI-6

DETAIL F
DETOUR SIGNING

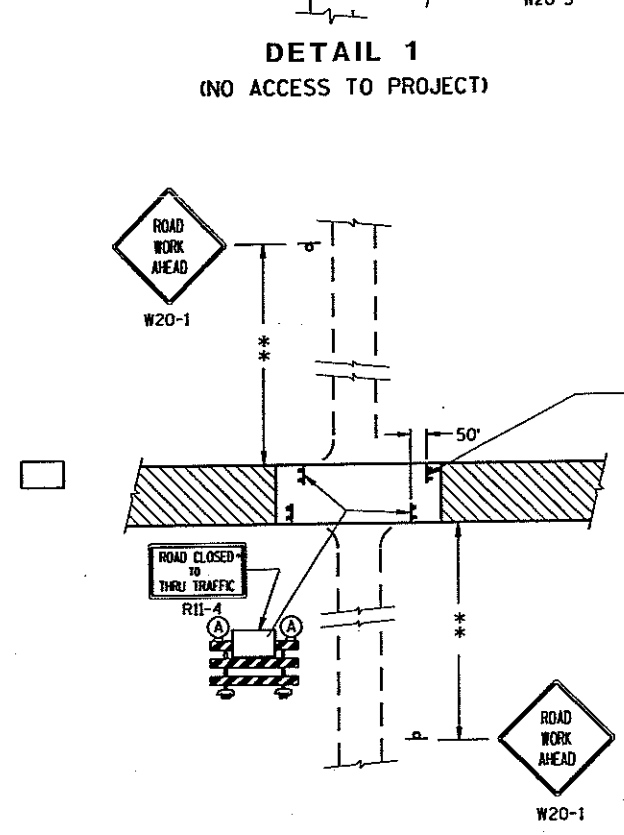
DETOUR SIGNING FOR MAINLINE CLOSURES	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 9-16-03 DATE	Thomas N. Notbohm for CHIEF SIGNS AND MARKING ENGINEER
FHWA	



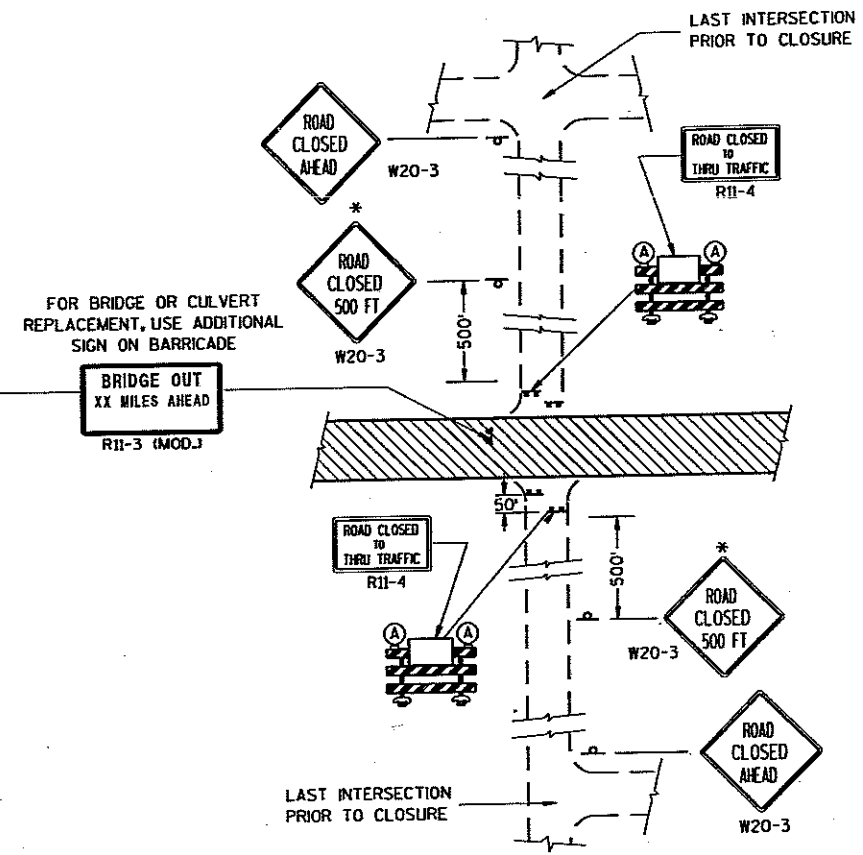
DETAIL 1
(NO ACCESS TO PROJECT)



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



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



DETAIL 4
(CONTRACTOR, LOCAL BUSINESS AND
RESIDENT ACCESS TO PROJECT)

GENERAL NOTES

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

ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER.

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

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.

BARRICADES THAT MUST BE MOVED FOR A WORK OPERATION SHALL BE IMMEDIATELY RE-ESTABLISHED UPON COMPLETION OF THE OPERATION OR, FOR CONTINUING OPERATIONS, AT THE END OF EACH WORKING DAY.

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

ALL TYPE III BARRICADES SHALL HAVE RAILS REFLECTORIZED ON BOTH FACES. STRIPES SHALL BE PROPERLY SLOPED DOWN TOWARD THE TRAFFIC SIDE OR AS SHOWN IN THE ROAD CLOSURE BARRICADE DETAIL D FOR FULL ROAD CLOSURES.

TYPE "A" LOW-INTENSITY FLASHING WARNING LIGHTS SHALL BE VISIBLE ON BOTH SIDES OF THE BARRICADE.

THE R11-2, R11-3 AND R11-4 SIGNS PLACED ON BARRICADES SHALL COVER NO MORE THAN THE TOP RAIL. THE SIGNS SHALL NOT COVER ANY PORTION OF THE MIDDLE OR BOTTOM RAILS.

THE REFLECTIVE SHEETING USED ON R11-2, R11-3 AND R11-4 SIGNS SHALL COMPLY WITH SUBSECTION 637.2.2.2 OF THE STANDARD SPECIFICATIONS.

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

R11-2 SHALL BE 48" X 30".

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

*OMIT THE "ROAD CLOSED 500 FT." SIGN IF THE LAST INTERSECTION IS 500 FT. OR LESS FROM THE WORK ZONE.

**500' MAX. OR AT LAST INTERSECTION WHICHEVER IS CLOSER.

LEGEND

⊥ POST MOUNTED WARNING SIGN

⊥ TYPE III BARRICADES

ⓐ TYPE "A" LOW INTENSITY FLASHING WARNING LIGHT (FOR NIGHT USE)

▨ WORK AREA

BARRICADES AND SIGNS FOR SIDEROAD CLOSURES

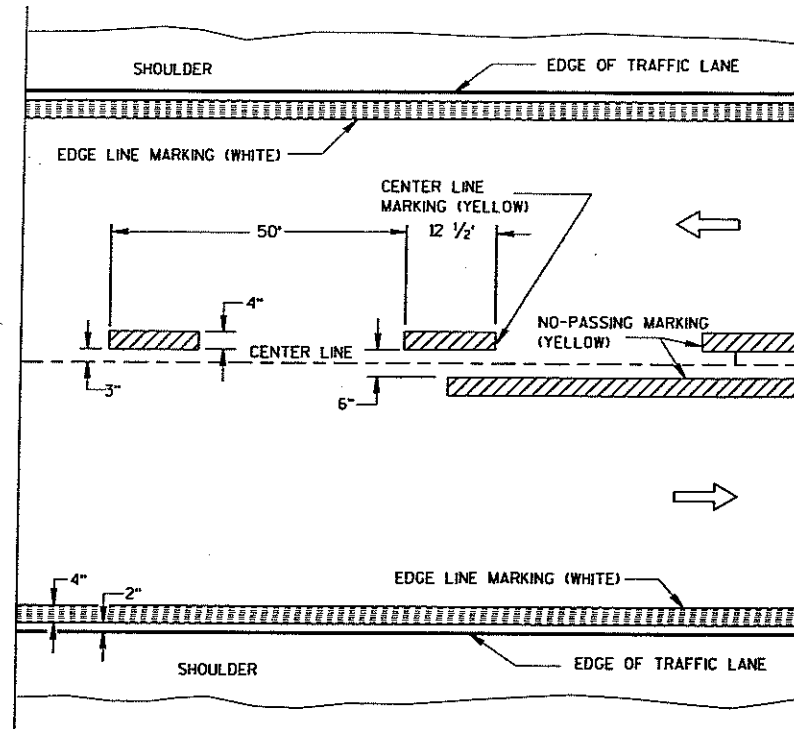
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
9-16-03

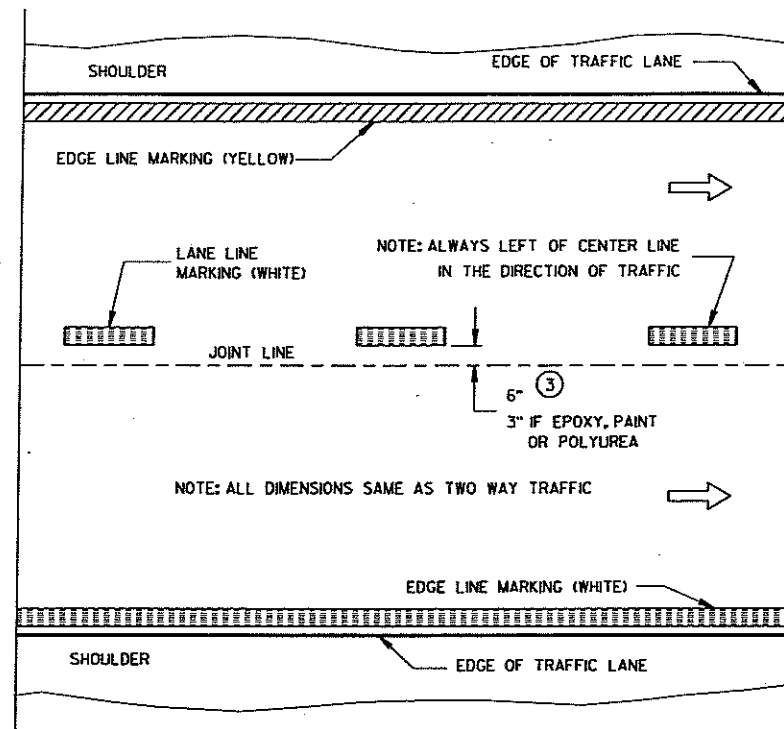
DATE

Thomas N. Nottbohm
CHIEF SIGNS AND MARKING ENGINEER

FHWA

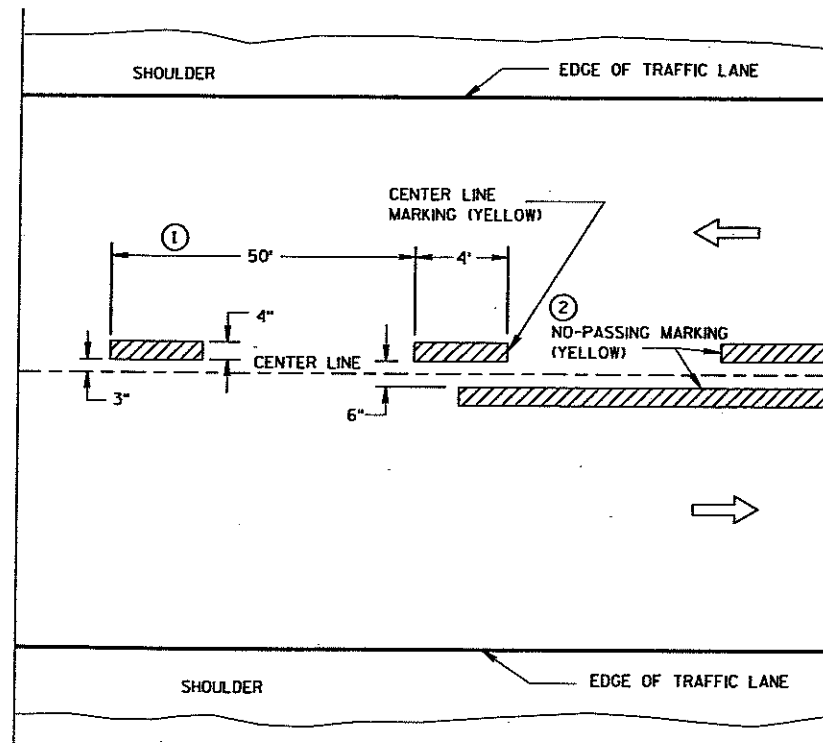


TWO WAY TRAFFIC

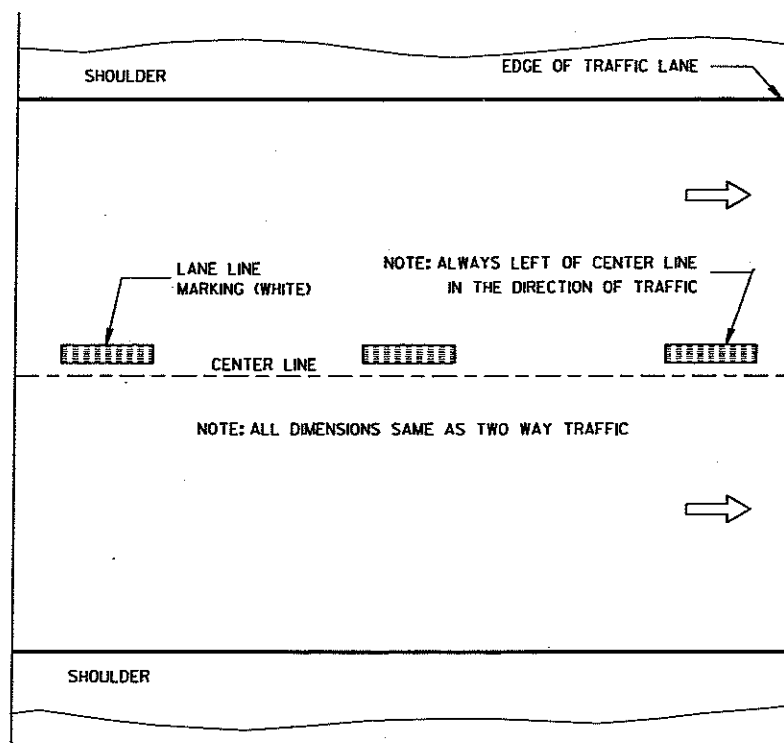


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

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

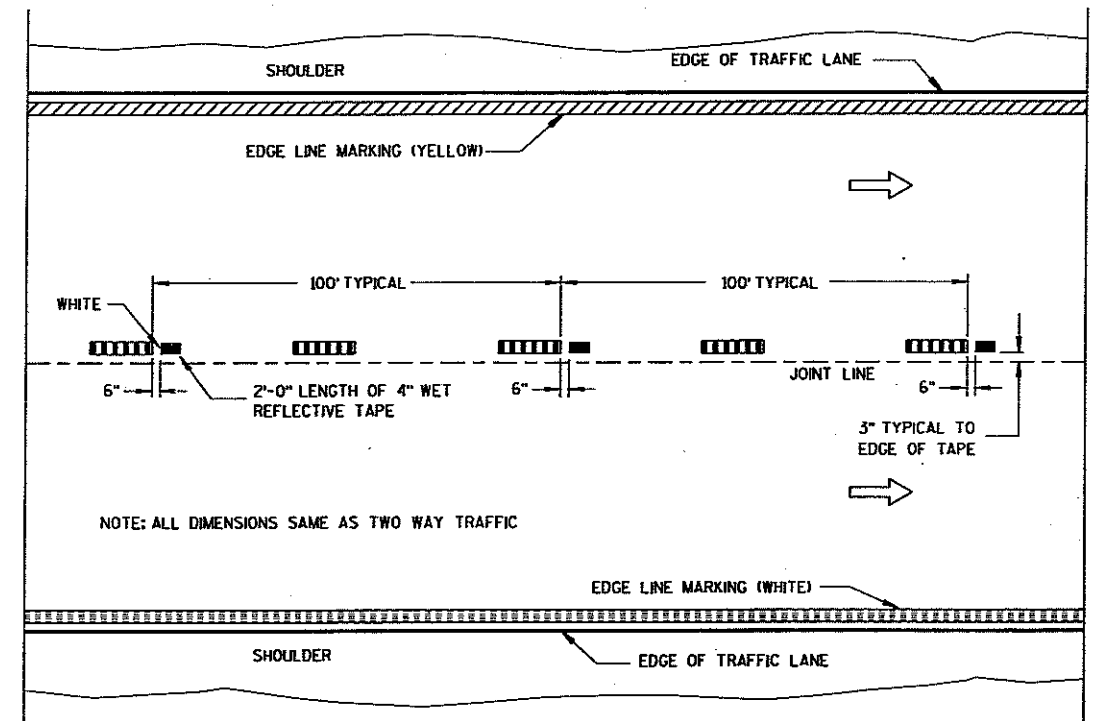
GENERAL NOTES

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.
- ③ DIMENSION FROM THE WHITE REFLECTIVE EDGE FOR WET REFLECTIVE TAPE PLACEMENT ONLY.

NOTE

ARROW SYMBOL (→) SHOWS DIRECTION OF TRAVEL

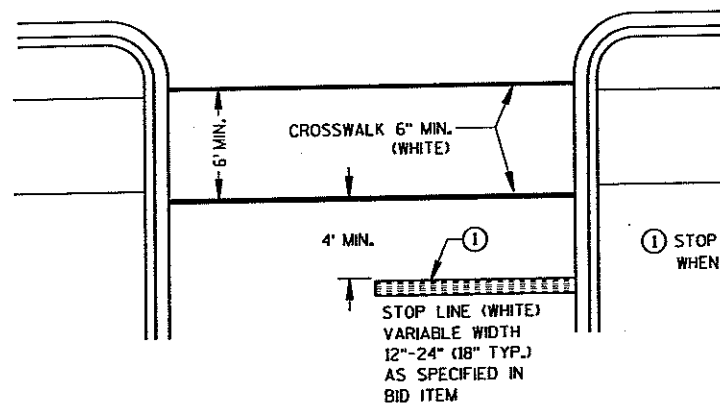


WET REFLECTIVE TAPE SUPPLEMENT TO
SPRAYED OR NON WET REFLECTIVE TAPE LANE LINE

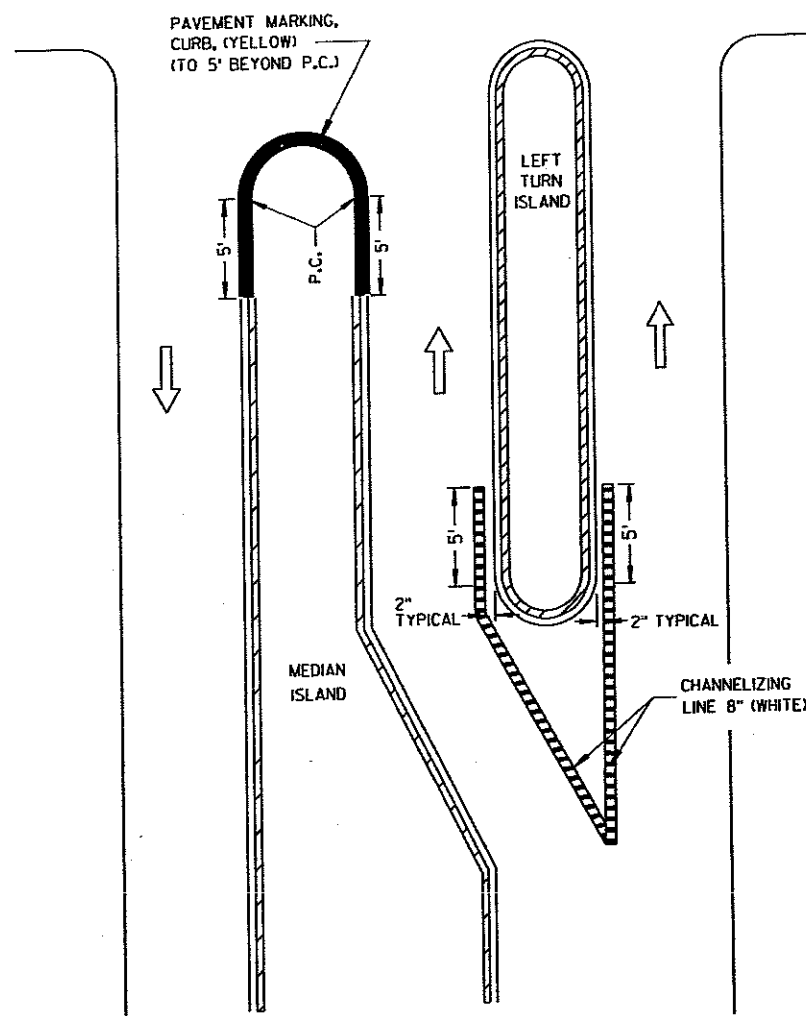
PAVEMENT MARKING
(MAINLINE)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

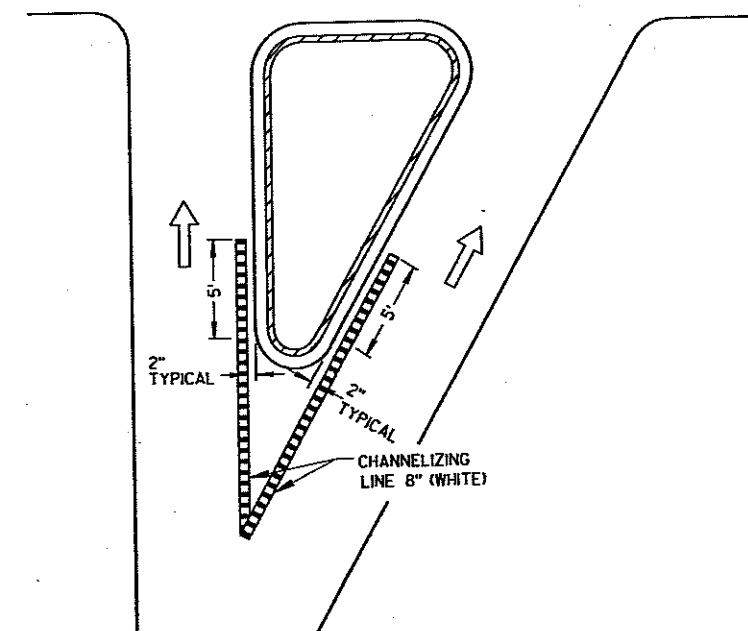
APPROVED
1-16-07 /S/ Thomas N. Notbohm
DATE STATE TRAFFIC ENGINEER OF DESIGN
FHWA



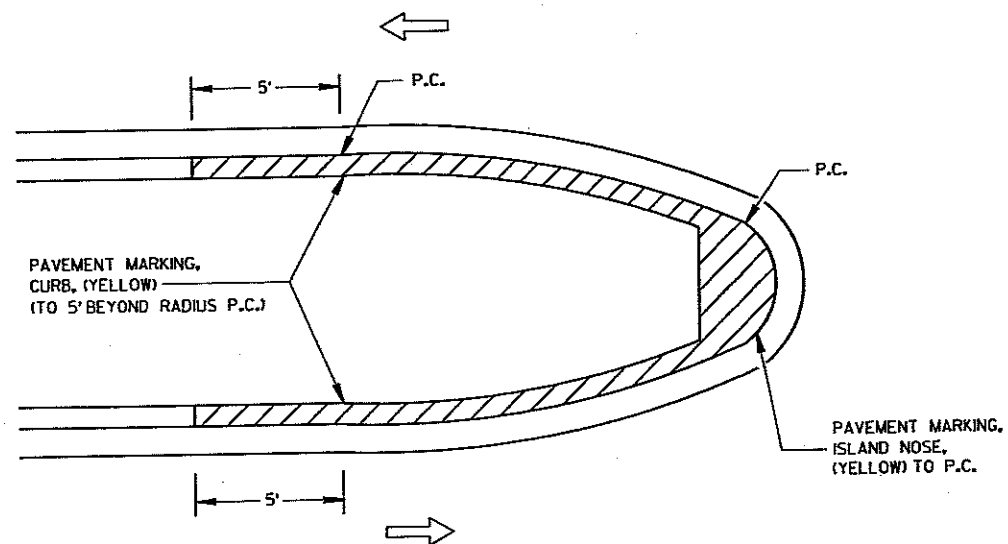
STOP LINE AND CROSSWALK



LEFT TURN & MEDIAN ISLAND



RIGHT TURN ISLAND



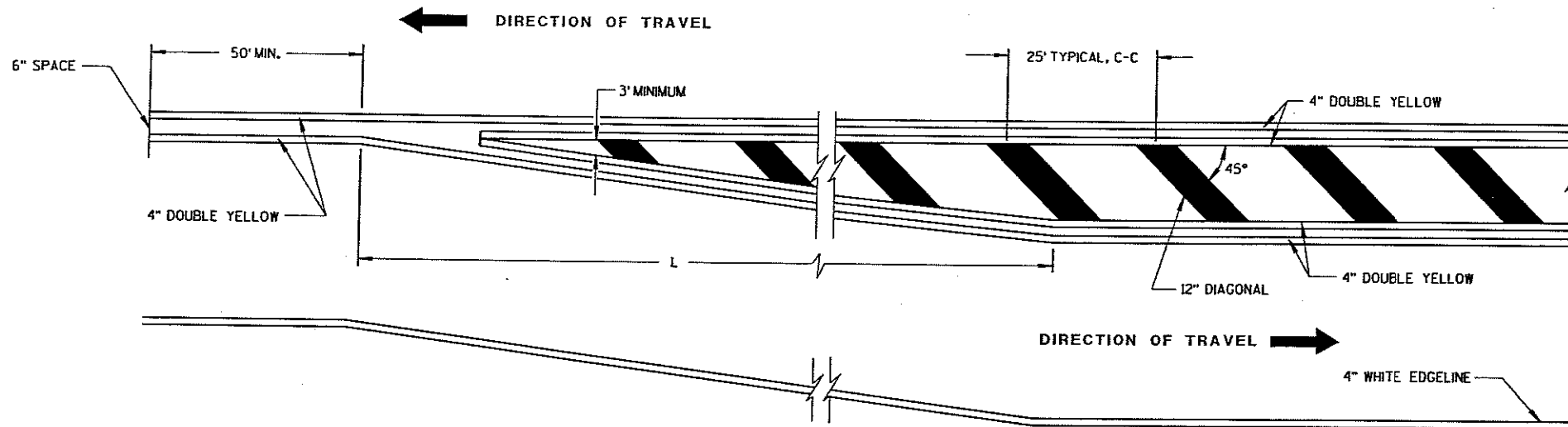
MEDIAN ISLAND WITH SLOPED NOSE

NOTE:
ARROW SYMBOL (→)
SHOWS DIRECTION OF TRAVEL

PAVEMENT MARKING
(ISLANDS, STOP LINE &
CROSS WALK)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
1-16-03
DATE
FHW
Deborah L. Kozel
CHIEF SIGNS AND MARKING ENGINEER



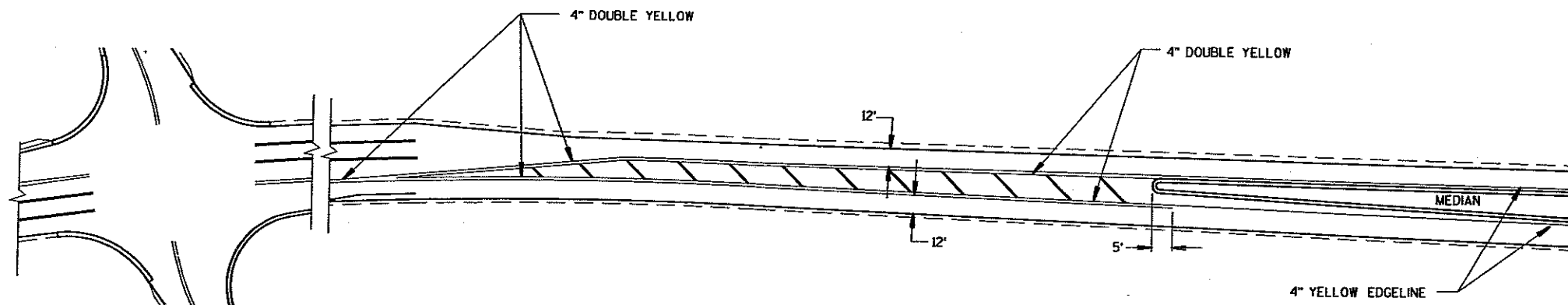
MEDIAN ISLAND DETAIL

GENERAL NOTE

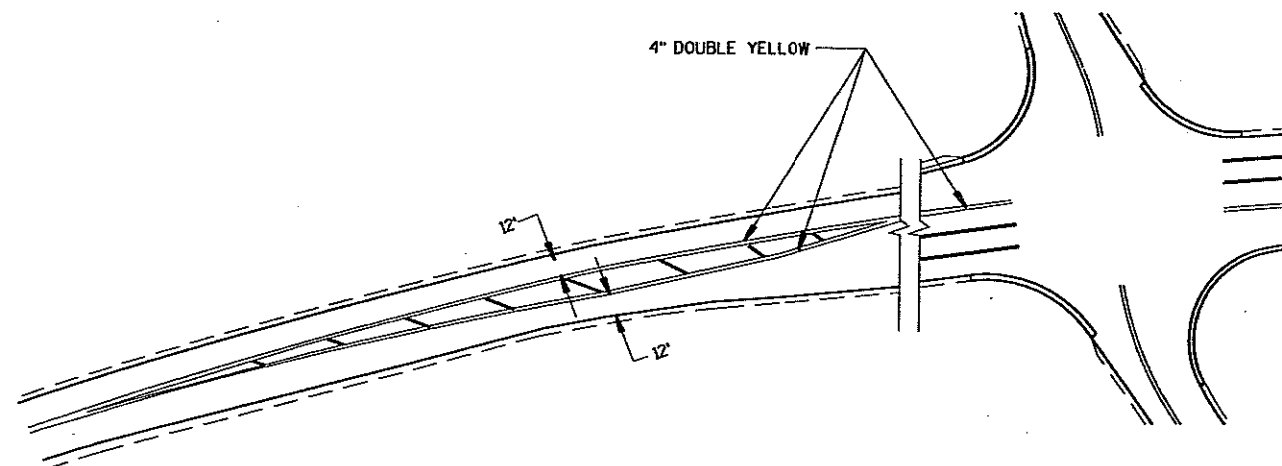
DIAGONALS ARE OPTIONAL WHEN PAINTED ISLAND IS LESS THAN 6 FEET AT WIDEST POINT.

MINIMUM SHIFTING TAPER LENGTH TABLE

POSTED SPEED (S)	TAPER LENGTH (L)
25	100'
30	100'
35	125'
40	165'
45	270'
50	300'
55	330'
65	390'



APPROACH MARKINGS FOR OTHER MEDIAN TYPES



NON APPROACH MARKINGS

MEDIAN ISLAND MARKING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

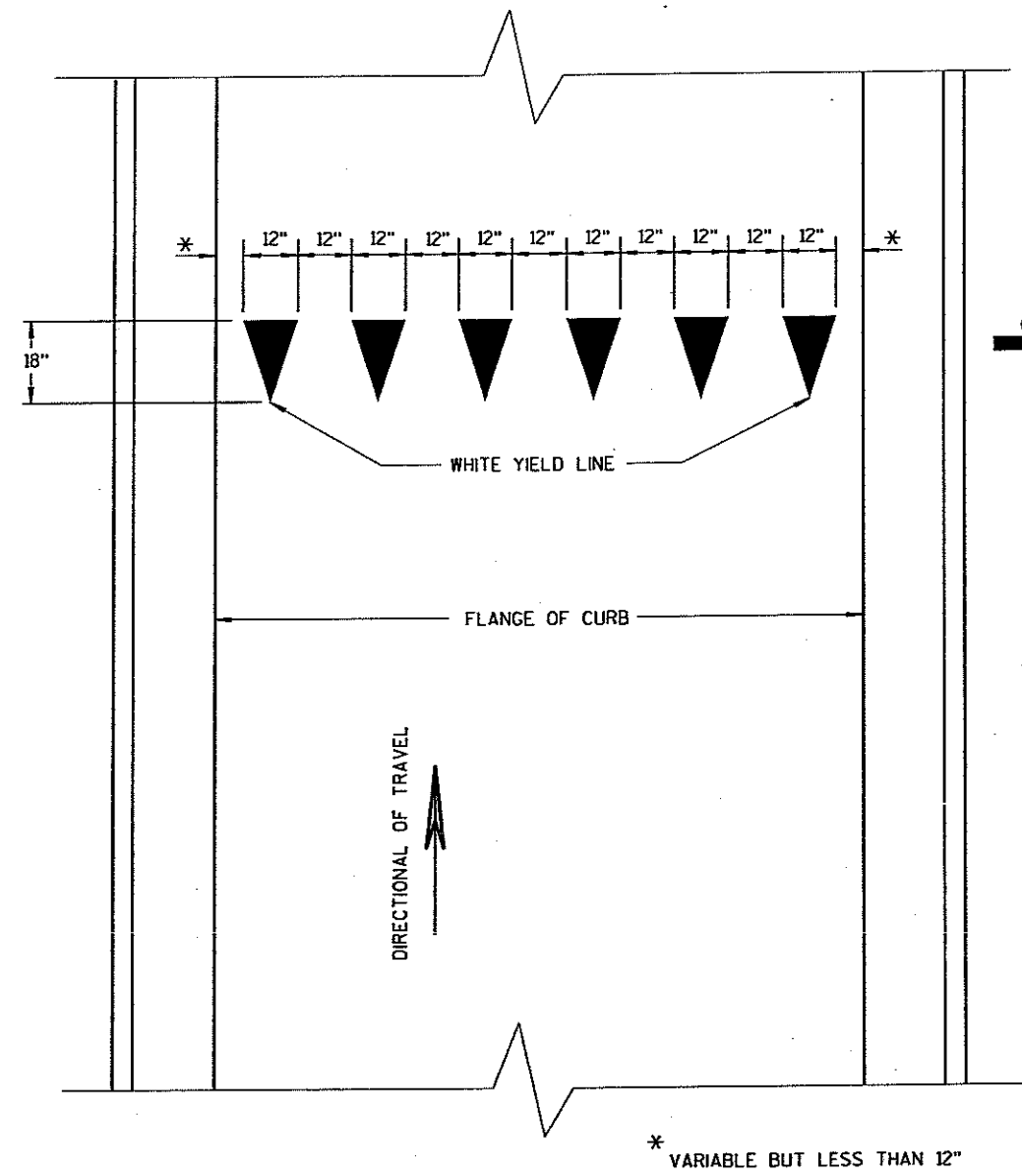
APPROVED

3-17-03

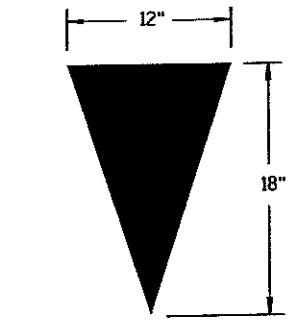
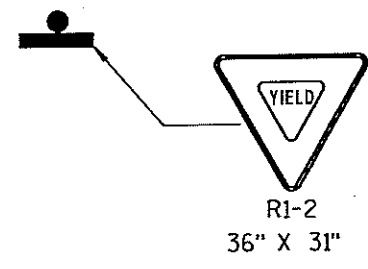
DATE

FHWA

Robert L. Kozl
CHIEF SIGNS AND MARKING ENGINEER

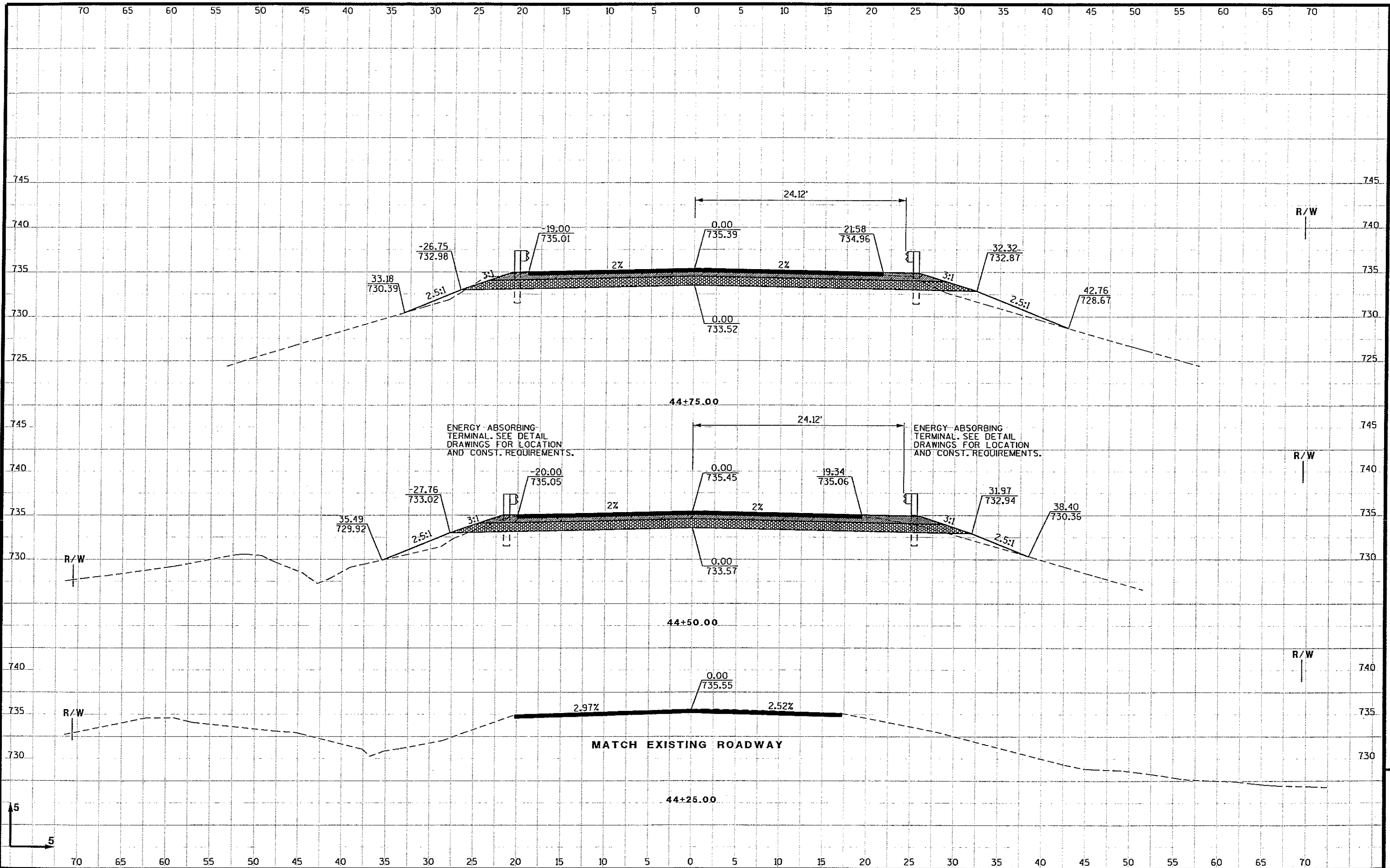


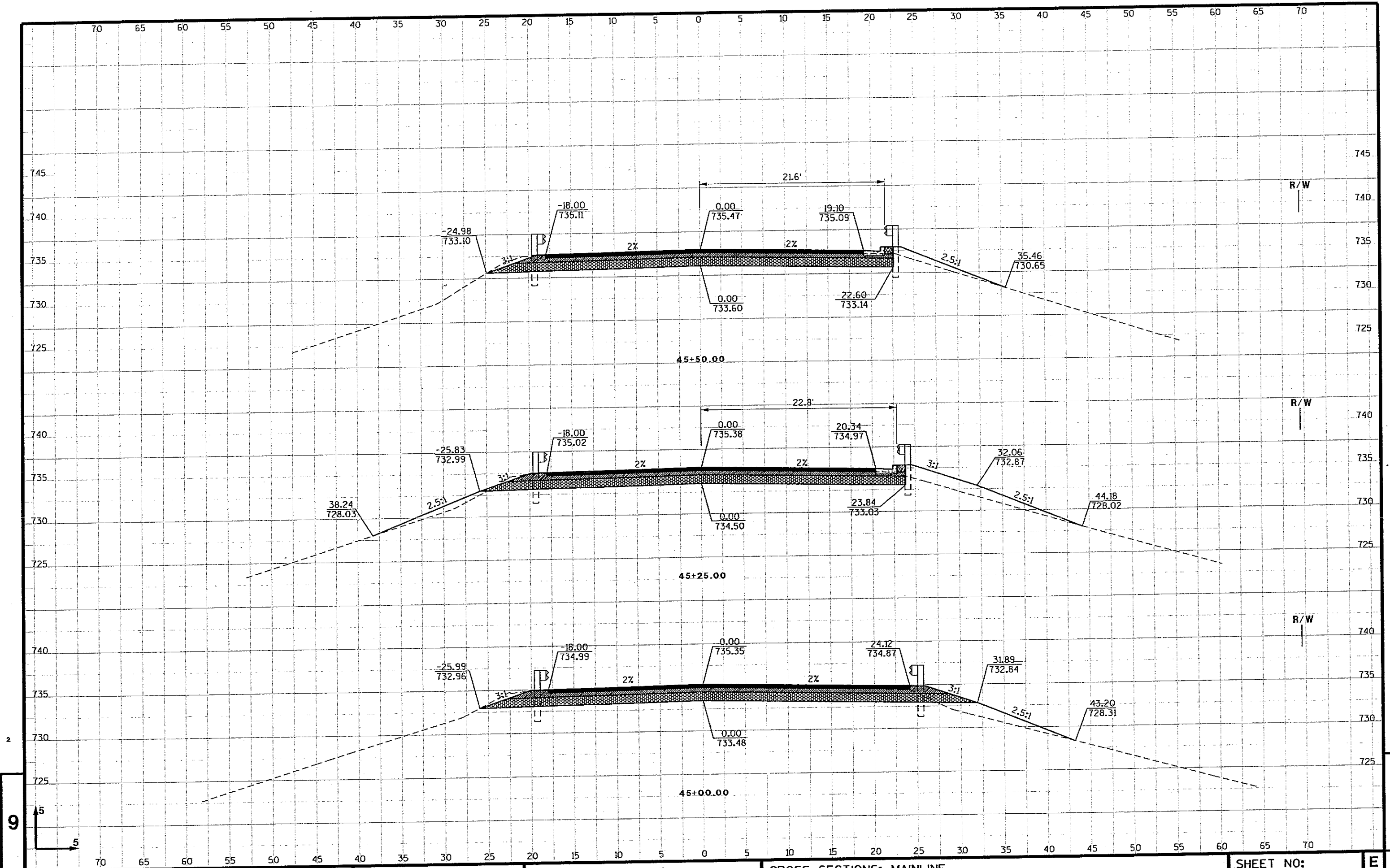
YIELD LINE

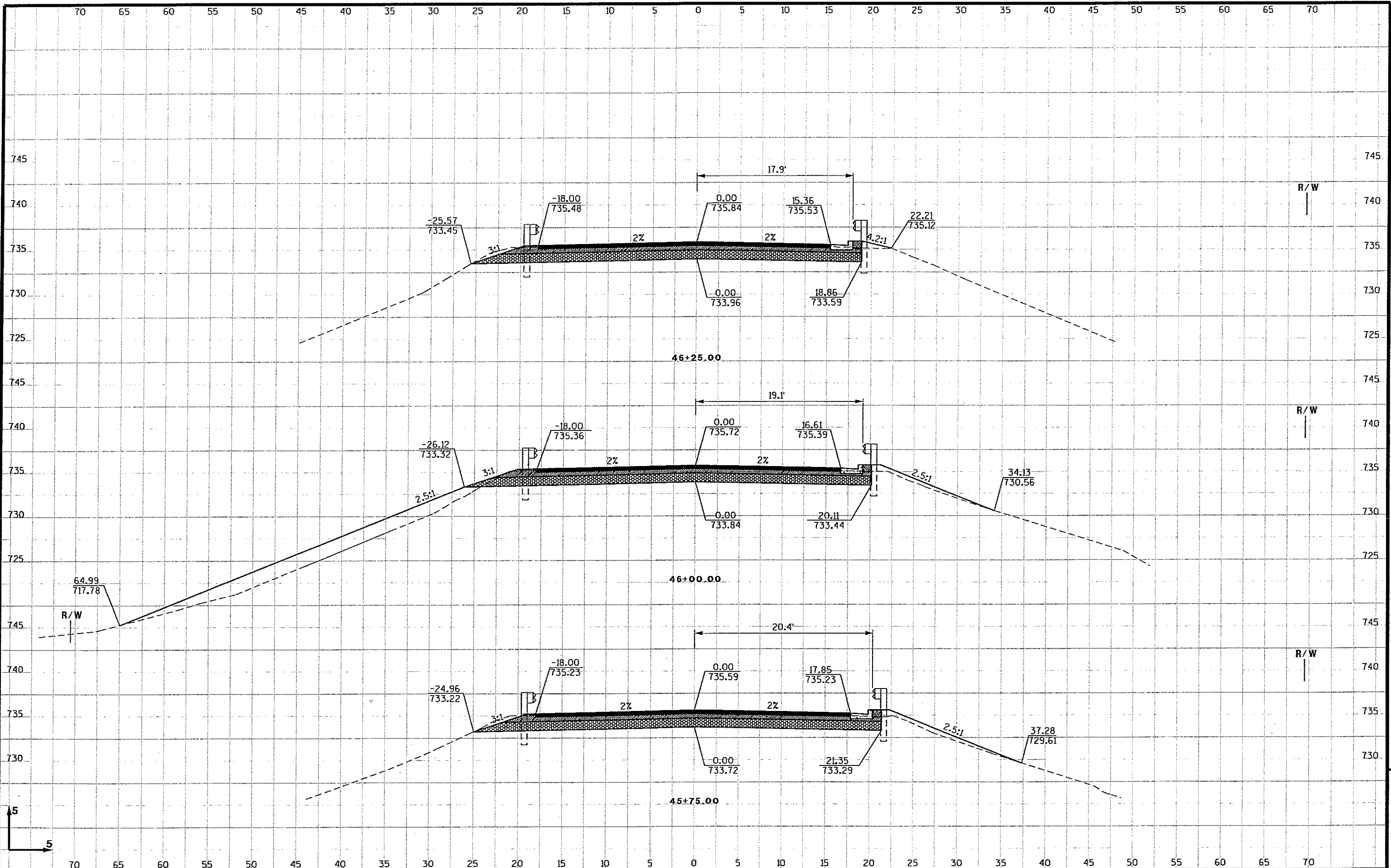


YIELD TRIANGLE

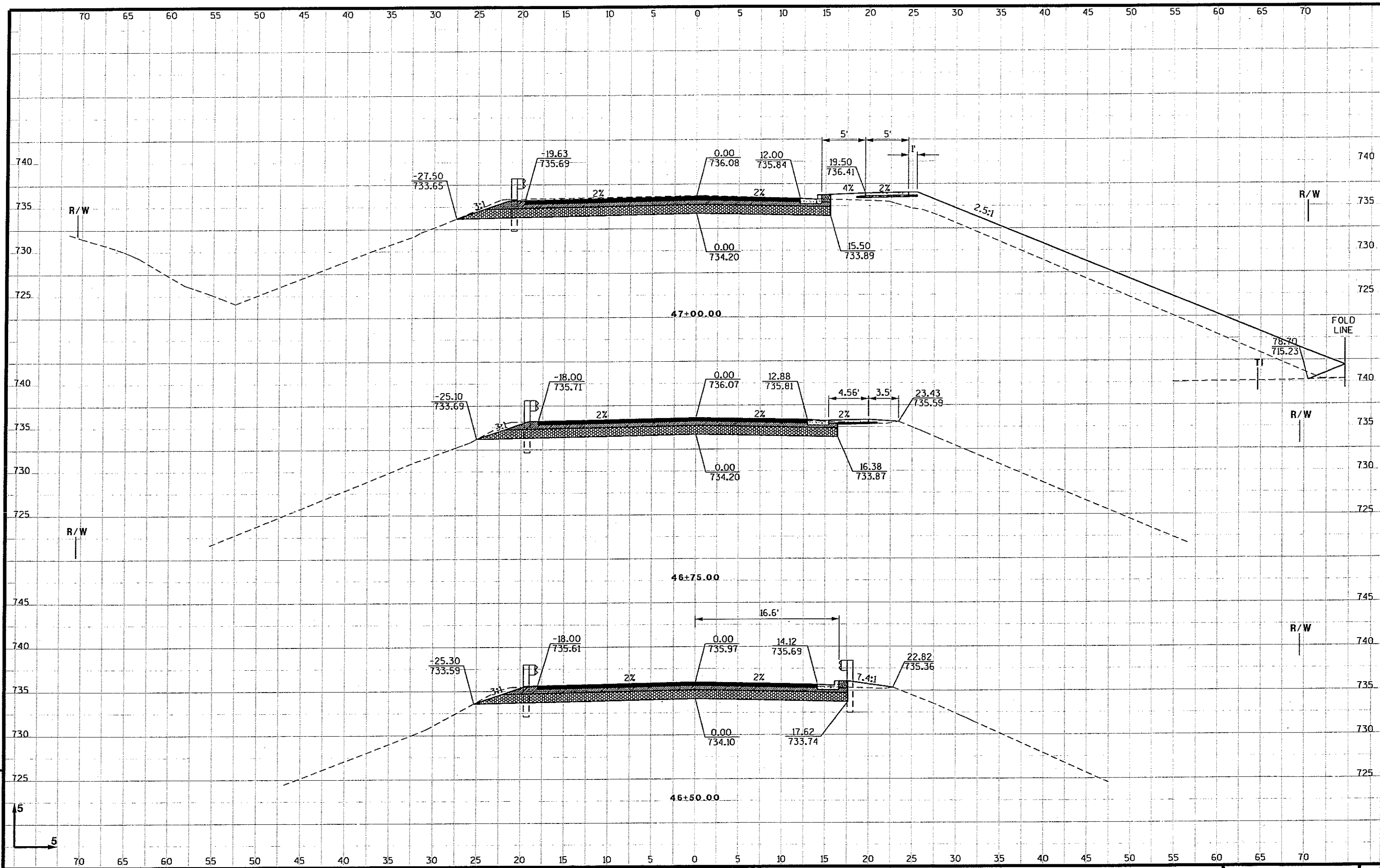
YIELD MARKINGS	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 1/28/05 DATE	<i>Thomas N. Notesh</i> STATE TRAFFIC ENGINEER OF DESIGN
FHWA	

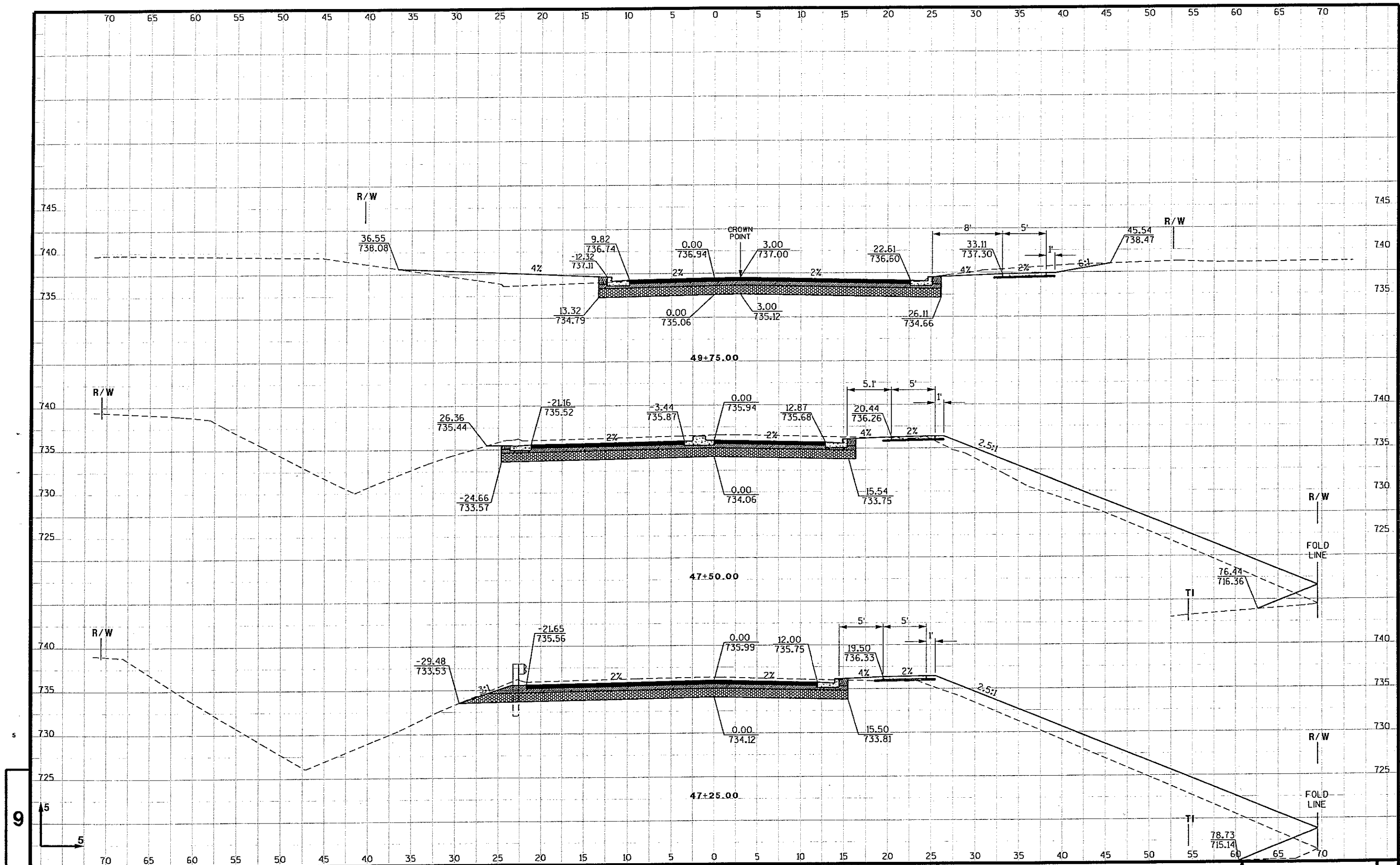


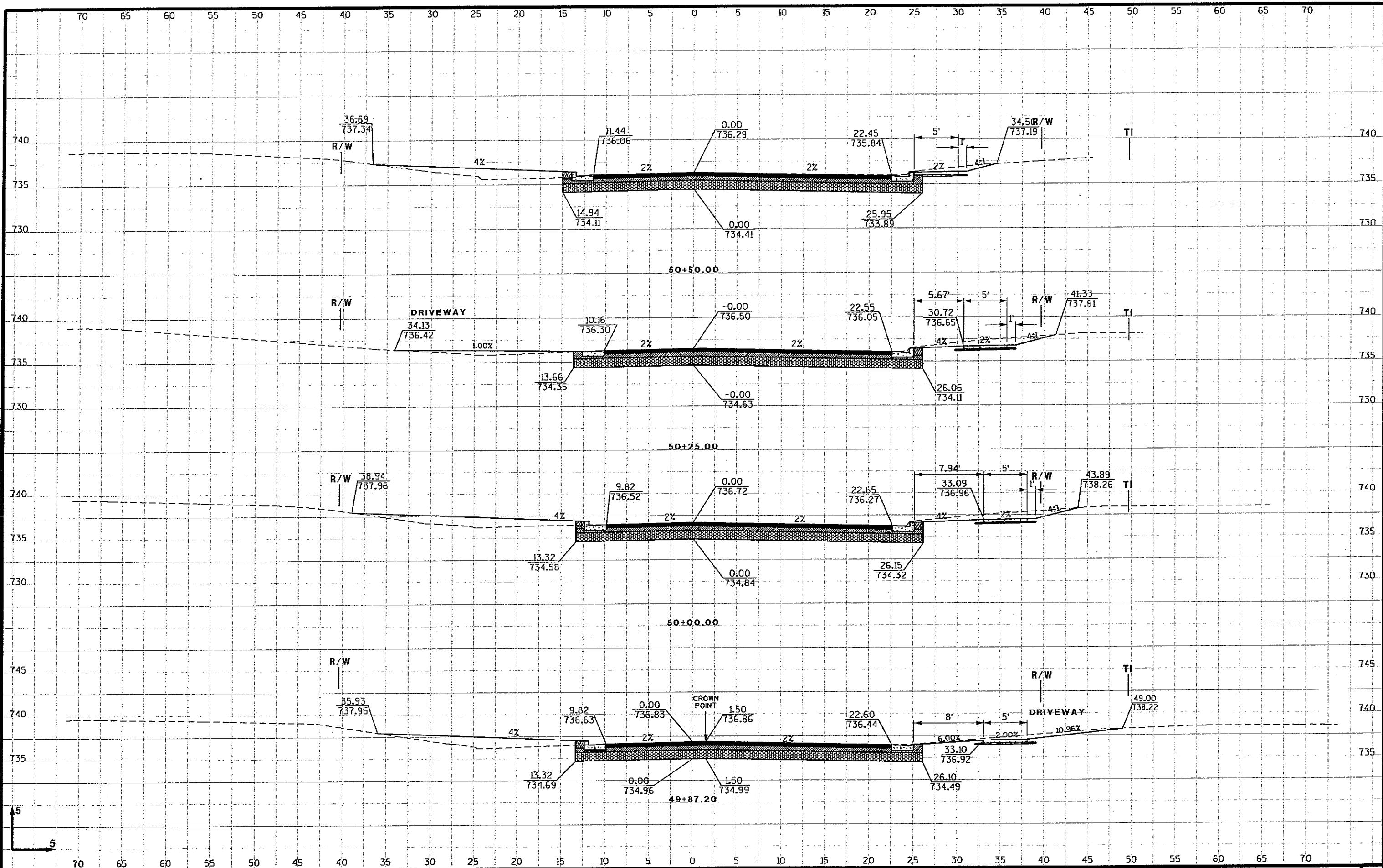


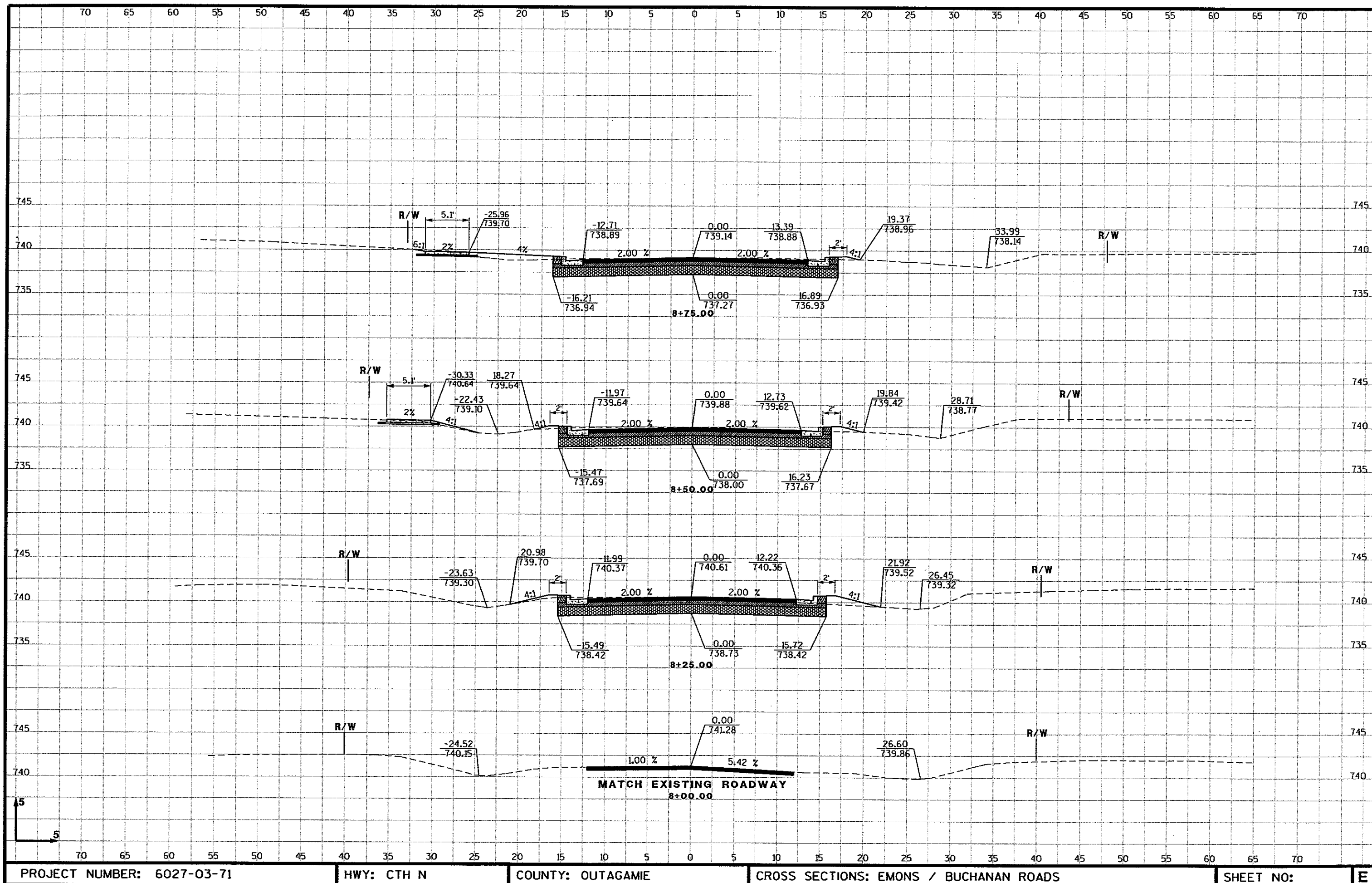


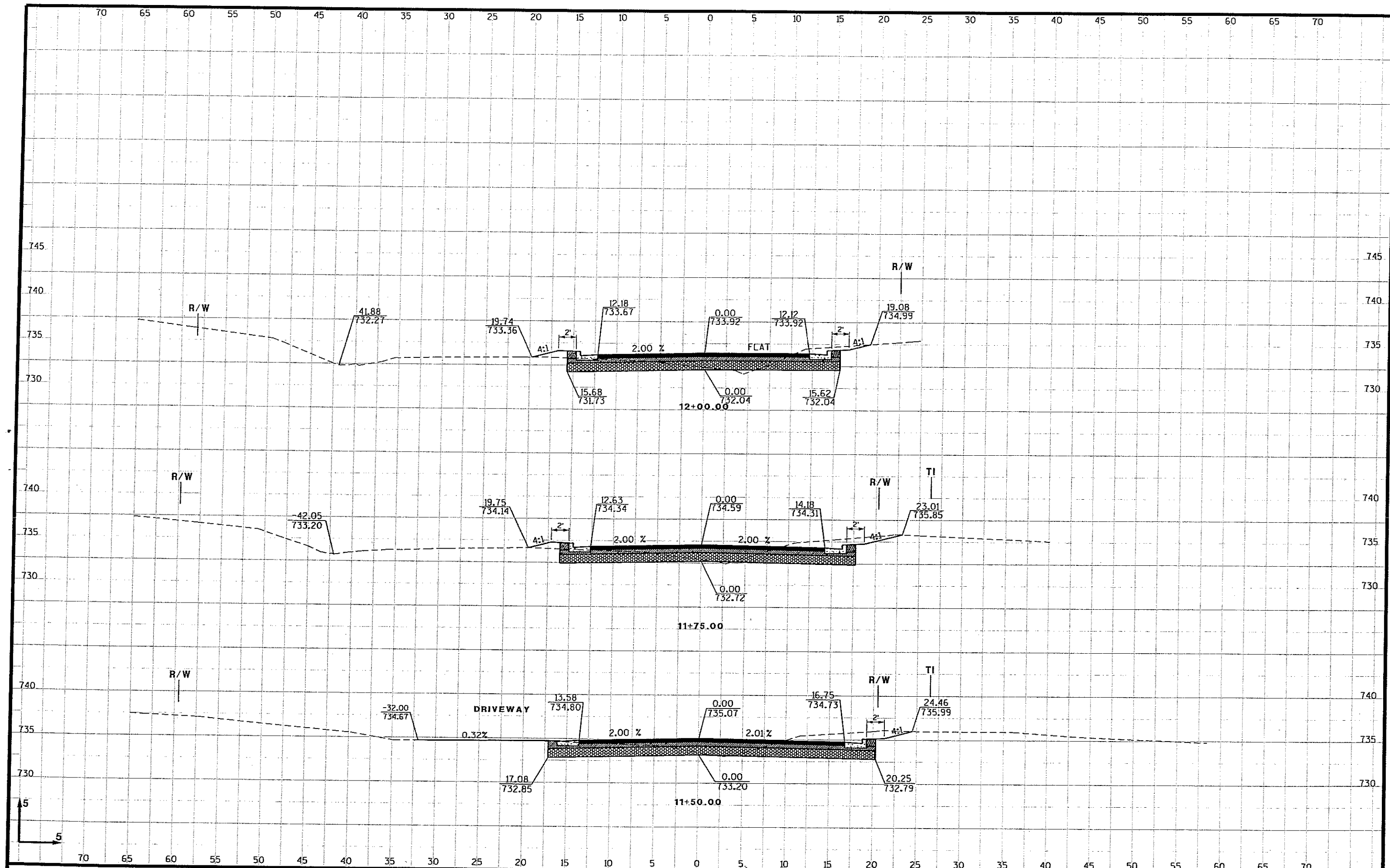
9











PROJECT NUMBER: 6027-03-71

HWY: CTH N

COUNTY: OUTAGAMIE

CROSS SECTIONS: EMONS / BUCHANAN ROADS

SHEET NO:

E

