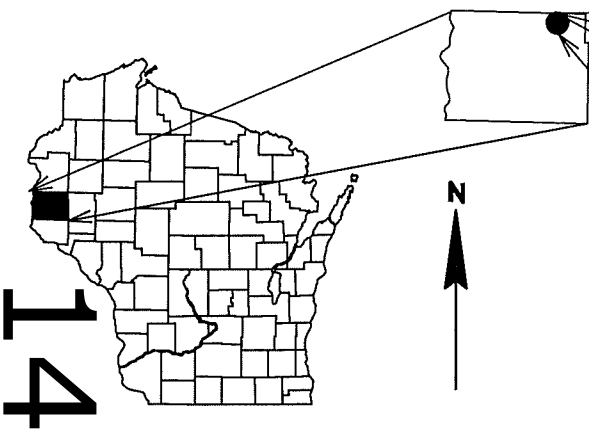


ORDER OF SHEETS

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
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 = 194



DESIGN DESIGNATION

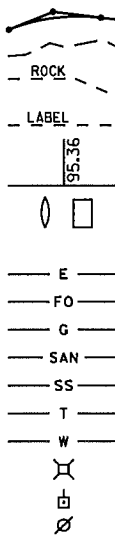
A.A.D.T. 2009	=	4000
A.A.D.T. 2029	=	5600
D.H.V. 2007	=	6.9
D.D.	=	63/37
T. 2007	=	10.3 %
DESIGN SPEED	=	60 MPH
ESALS	=	870,000

CONVENTIONAL SYMBOLS

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

PROFILE

GRADE LINE	
ORIGINAL GROUND	
MARSH OR ROCK PROFILE (To be noted as such)	
SPECIAL DITCH	
GRADE ELEVATION	
CULVERT (Profile View)	
UTILITIES	
ELECTRIC	
FIBER OPTIC	
GAS	
SANITARY SEWER	
STORM SEWER	
TELEPHONE	
WATER	
UTILITY PEDESTAL	
POWER POLE	
TELEPHONE POLE	

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

BALDWIN - CLEAR LAKE

STH 64 - NORTH COUNTY LINE

U.S.H. 63

ST. CROIX COUNTY

STATE PROJECT NUMBER
8070-08-76

END PROJECT 8070-08-76

STA. 277+70
X = 633049.03
Y = 428121.33

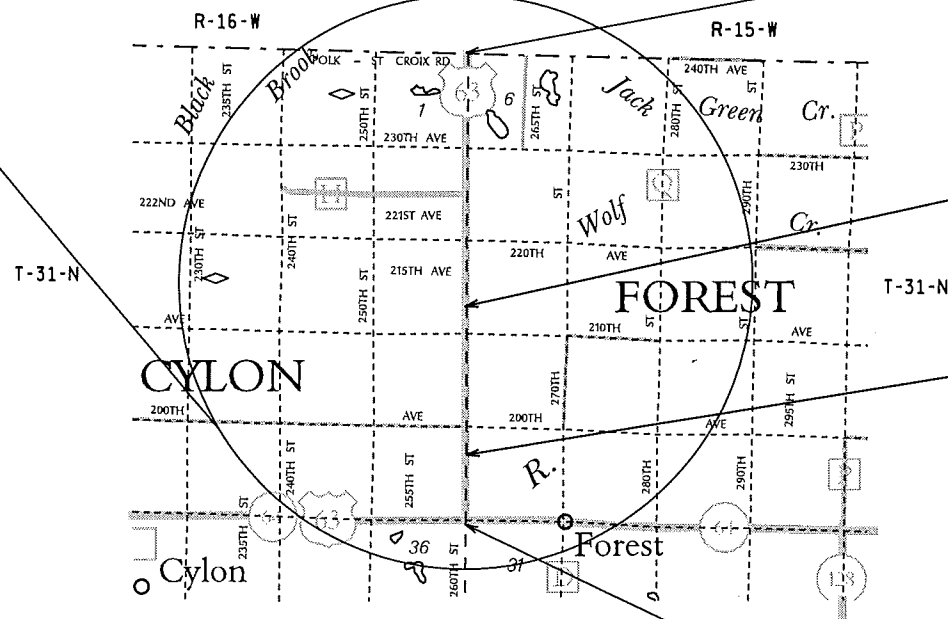
EXCEPTION B 55-0242

STA. 122+53.82
TO STA. 123+18.56

EXCEPTION B 55-0055

STA. 40+59.16
TO STA. 41+13.53

BEGIN PROJECT 8070-08-76

STA. 10+74
X = 633775.06
Y = 401474.85LAYOUT
SCALE 0 1 MI.

TOTAL NET LENGTH OF CENTERLINE = 5.05 MI.

-Coordinates on this plan are referenced to the Wisconsin County Coordinate System (WCCS), 'ST CROIX' County, (HD:NAD83 (1991), VD:NGVD29>.)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	NWR - EAU CLAIRE
Designer	AARON CHRIST
Project Manager	TARA WEISS
Regional Examiner	DANIEL OJIBWAY
Regional Supervisor	DAVID SOLBERG
C.O. Examiner	

APPROVED FOR THE DEPARTMENT

DATE: 1/2/13

E

GENERAL NOTES

CURVE DATA IS BASED ON ARC DEFINITION.

PAVEMENT REMOVAL SHALL BE TO THE NEAREST JOINT OR A SAWED EDGE AS DIRECTED BY THE ENGINEER.

WHEN PORTIONS OF EXISTING ASPHALTIC SURFACES ARE TO BE REMOVED TO ACCOMMODATE NEW CONSTRUCTION, THE LINE OF SUCH REMOVAL SHALL BE NEATLY DELINEATED WITH A SAW CUTJOINT THROUGH THE ASPHALTIC SURFACE SO THAT REMOVAL OF THE ASPHALT SHALL BE ACCOMPLISHED WITHOUT DAMAGE TO REMAINING PORTIONS. THE LOCATION OF SAW CUTS AND THE AMOUNT REMOVED WILL BE DETERMINED IN THE FIELD BY THE ENGINEER.

WHEN THE QUANTITY OF THE ITEMS OF BASE AGGREGATE, SUBBASE OR HMA PAVEMENT IS MEASURED FOR PAYMENT BY THE TON OR CUBIC YARD, THE DEPTH OR THICKNESS OF THE LAYERS SHOWN ON THE PLAN IS APPROXIMATE AND THE ACTUAL THICKNESS WILL DEPEND ON THE DISTRIBUTION OF THE MATERIAL AS DIRECTED BY THE ENGINEER.

RESHAPE AND SEED ANY PREVIOUSLY GRASSED AREAS THAT ARE DISTURBED BY OPERATIONS OUTSIDE THE NORMAL CONSTRUCTION LIMITS.

UTILITY LOCATIONS AS LISTED IN THE SPECIAL PROVISIONS ARE APPROXIMATE. THE CONTRACTOR SHALL COORDINATE CONSTRUCTION ACTIVITIES WITH DIGGERS HOTLINE OR THE UTILITIES WITH FACILITIES IN THE PROJECT AREA. THERE ARE UTILITIES IN THE PROJECT THAT ARE NOT LISTED.

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

PLACE HMA PAVEMENT LAYERS WITH THE FOLLOWING THICKNESSES AND NOMINAL SIZES:

USH 63

HMA PAVEMENT E-3 SPECIAL 19.0mm MIX (LOWER LAYER) = 2-1/4-INCH

HMA PAVEMENT E-3 SPECIAL 12.5mm MIX (LOWER LAYER) = 2-INCH

HMA PAVEMENT E-10 SPECIAL (UPPER LAYER) = 1-3/4-INCH

TOWN ROADS

ASPAHLTIC SURFACE SPECIAL = 3-INCH

COUNTY ROADS

ASPHALTIC SURFACE SPECIAL = 4.5-INCH (2 LIFTS)

UTILITY CONTACTS

CLEAR LAKE TELEPHONE - COM. LINE
MATT ANDERSON
316 THIRD AVENUE
P.O. 47
CLEAR LAKE, WI 54005-0047
(715)263-2755

DAIRYLAND POWER COOP
P.O. BOX 817
LA CROSSE, WI 54602-0817
KURT CHILDS
(608)787-1367
kdc@dairynet.com

XCEL ENERGY - ELECTRICITY
DENNY BADMAN
1414 W HAMILTON AVE
P.O. BOX 8
EAU CLAIRE, WI 54702-0008
(715) 268-3258

ST CROIX ELECTRIC COOPERATIVE
ROB DOOLEY
1925 RIDGELAND STREET
HAMMOND, WI 54015-5039
(715) 796-7000

FEDERAL - ARMY COE

MARIE KOPKA
C.O.E., ST PAUL
ST PAUL, MN 55805
(651) 290-5268

STATE - DOT/REC

TROY STAPELMANN
718 WEST CLAIREMONT
EAU CLAIRE, WI 54701
(715) 836-3911

STATE - DNR

NICK SCHAFF
WISCONSIN DNR
1300 WEST CLAIREMONT
EAU CLAIRE, WI 54701
(715) 839-1609

STATE - DOT/STORM WATER

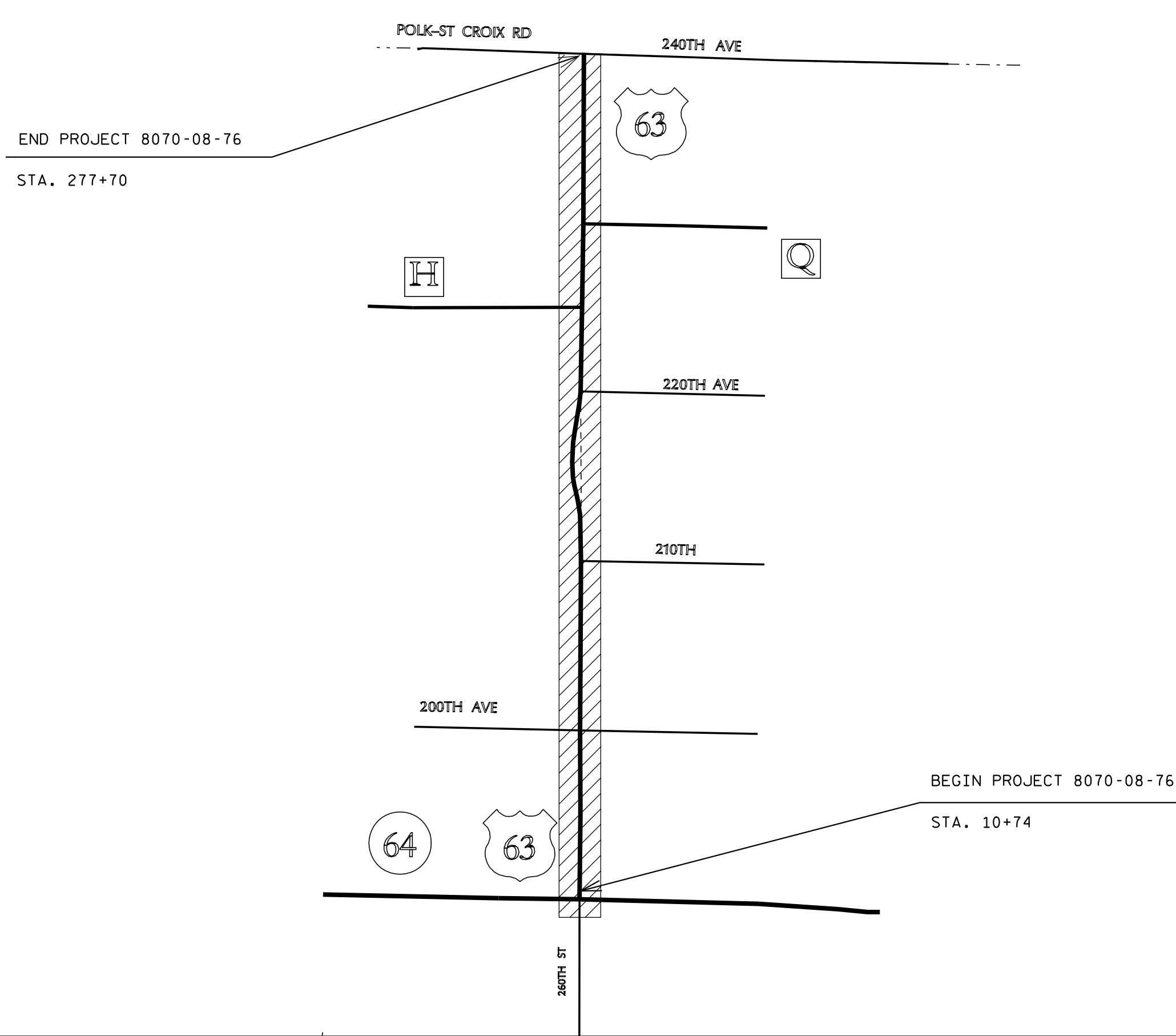
DAVID LARSON
718 WEST CLAIREMONT
EAU CLAIRE, WI 54701
(715) 836-2067

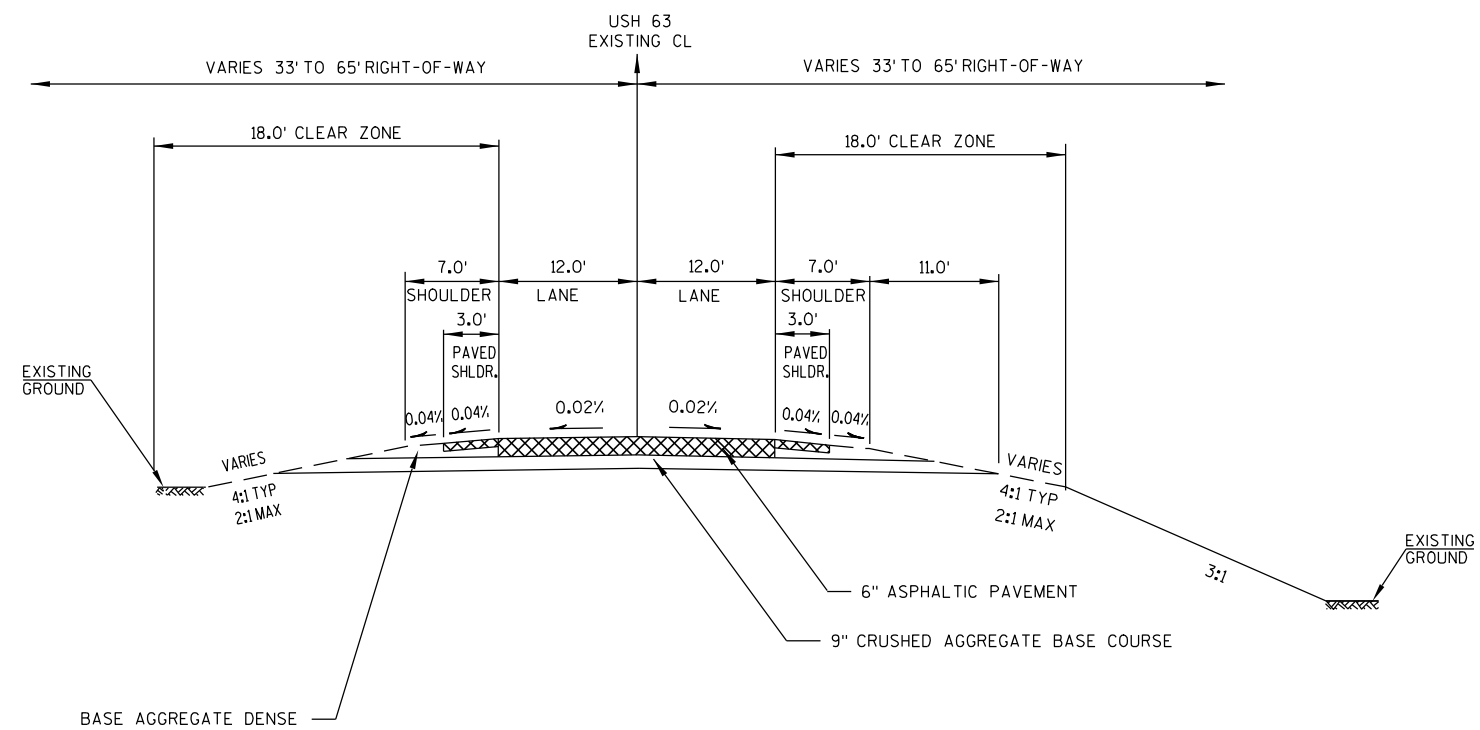
LIST OF STANDARD ABBREVIATIONS

ABUT.	ABUTMENT
AGG.	AGGREGATE
AH.	AHEAD
ASPH.	ASPHALTIC
AVG	AVERAGE
A.D.T.	AVERAGE DAILY TRAFFIC
BK.	BACK
BL OR B/L	BASE LINE
B.M.	BENCH MARK
BR	BRIDGE
C/L	CENTER LINE
CC	CENTER TO CENTER
CONC.	CONCRETE
CR.	CRUSHED
C.Y. OR CU. YD.	CUBIC YARD
C&G	CURB & GUTTER
D	DEGREE OF CURVE
D.H.V.	DESIGN HOUR VOLUME
DIA.	DIAMETER
D.	DIRECTIONAL DISTRIBUTION
DIST.	DISTRICT
E	EAST
X	EAST GRID COORDINATE
EB	EASTBOUND
ELECT.	ELECTRIC
EL. OR ELEV.	ELEVATION
EMB.	EMBANKMENT
EW	ENDWALL
ESALS	EQUIVALENT SINGLE AXLE LOADS
EXC	EXCAVATION
EXIST.	EXISTING
EXP	EXPANSION
FF	FACE TO FACE
FERT.	FERTILIZE
FG	FINISHED GRADE
FT.	FOOT
GN	GRID NORTH
HT	HEIGHT
HES	HIGH EARLY STRENGTH
CWT.	HUNDREDWEIGHT
IN DIA	INCH DIAMETER
ID	INSIDE DIAMETER
L.H.F.	LEFT-HAND FORWARD
LIN. FT. OR LF	LINEAR FOOT
L.S.	LUMP SUM
MAINT	MAINTENANCE
ML OR M/L	MATCH LINE
MATL	MATERIAL
N	NORTH
Y	NORTH GRID COORDINATE
NB	NORTHBOUND
OBLIT	OBLITERATE
OD	OUTSIDE DIAMETER
LB.	POUND
PROJ.	PROJECT
R.	RANGE, RADIUS
RR	RAILROAD
RL OR R/L	REFERENCE LINE
REBAR	REINFORCEMENT BAR
REQ'D	REQUIRED
RW	RETAINING WALL
R/W	RIGHT OF WAY
RD.	ROAD
RDWY	ROADWAY
SALV	SALVAGED
SEC	SECTION
SHLDR	SHOULDER
SHR.	SHRINKAGE
S	SOUTH
SB	SOUTHBOUND
SPECS	SPECIFICATIONS
SF OR SQ FT	SQUARE FEET
SY OR SQ YD	SQUARE YARD
STD	STANDARD
STH	STATE TRUNK HIGHWAY
STA.	STATION
SURF.	SURFACE
TEMP	TEMPORARY
TYP	TYPICAL
UNCL.	UNCLASSIFIED
VOL	VOLUME
WB	WESTBOUND
YD	YARD



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Hearing Impaired TDD (800) 542-2289
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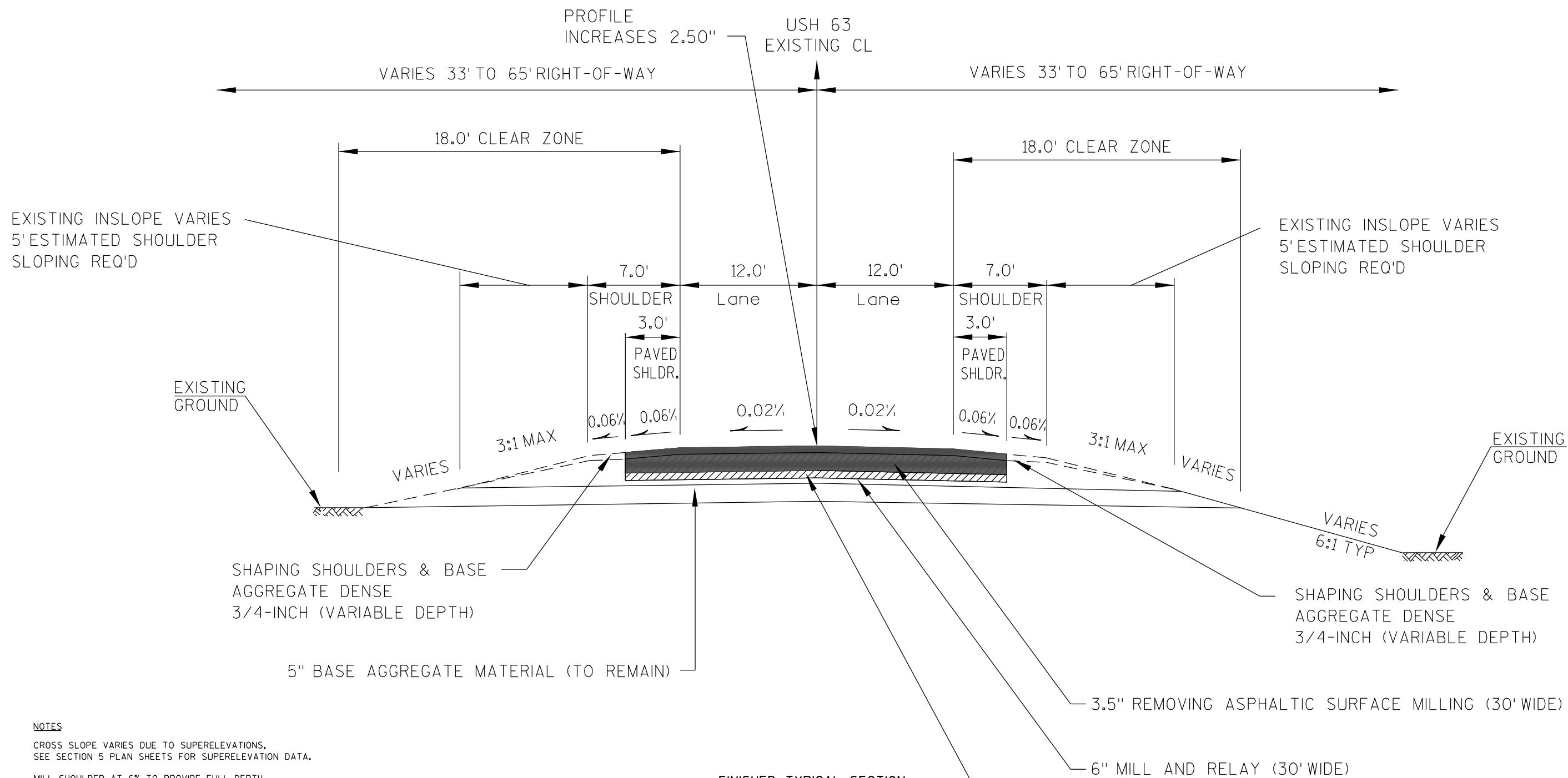
EXISTING TYPICAL SECTION

USH 63

STA 10+74 - STA 40+59.16

STA 41+13.53 - STA 122+53.82

STA 123+18.56 - STA 277+70

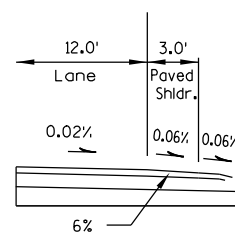


NOTES

CROSS SLOPE VARIES DUE TO SUPERELEVATIONS, SEE SECTION 5 PLAN SHEETS FOR SUPERELEVATION DATA.

MILL SHOULDER AT 6% TO PROVIDE FULL DEPTH 6" HMA PAVEMENT ON SHOULDER (SEE DETAIL).

SHOULDER MILLING DETAIL



PAVEMENT LAYERS

6" HMA PAVEMENT (USH 63)

UPPER LAYER, HMA PAVEMENT E-10 SPECIAL, ITEM SPV.0195.01 = 1-3/4", 12.5mm

LOWER LAYER, HMA PAVEMENT E-3 SPECIAL, ITEM SPV.0195.02 = 2", 12.5mm

LOWER LAYER, HMA PAVEMENT E-3 SPECIAL, ITEM SPV.0195.03 = 2-1/4", 19mm

PG64-34P BOTH LAYERS

FINISHED TYPICAL SECTION

USH 63

STA 10+74 - STA 40+59.16

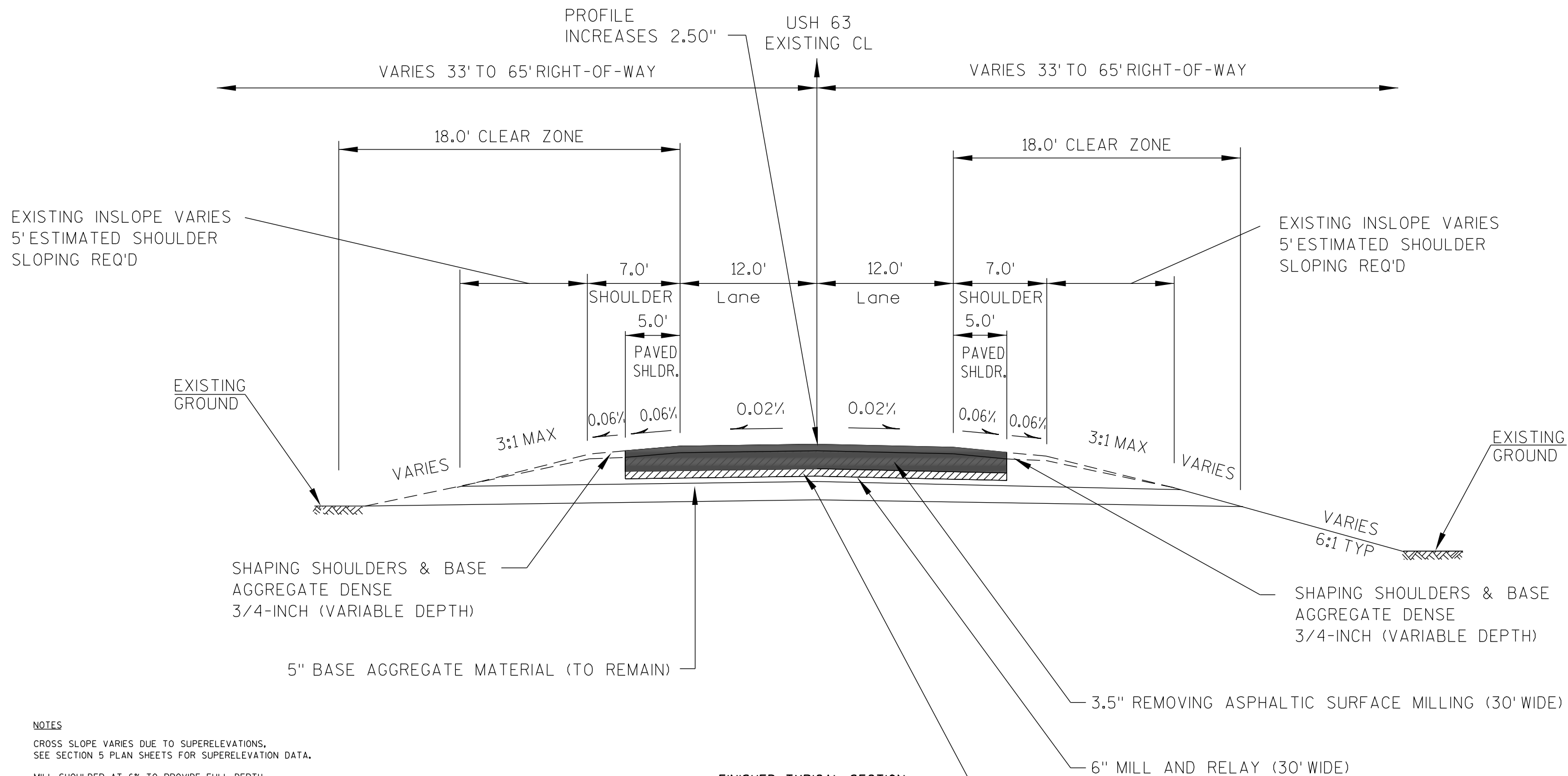
STA 41+13.53 - STA 122+53.82

STA 123+18.56 - STA 196+88 LT

STA 123+18.56 - STA 195+63 RT

STA 220+99 - STA 277+70 RT

STA 222+26 - STA 277+70 LT

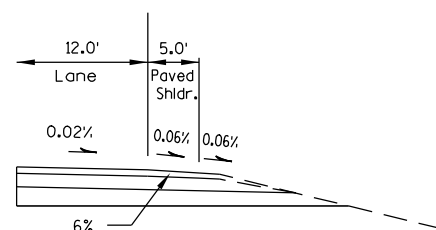


NOTES

CROSS SLOPE VARIES DUE TO SUPERELEVATIONS,
SEE SECTION 5 PLAN SHEETS FOR SUPERELEVATION DATA.

MILL SHOULDER AT 6% TO PROVIDE FULL DEPTH
6" HMA PAVEMENT ON SHOULDER (SEE DETAIL).

SHOULDER MILLING DETAIL



PAVEMENT LAYERS

6" HMA PAVEMENT (USH 63)
UPPER LAYER, HMA PAVEMENT E-10 SPECIAL, ITEM SPV.0195.01 = 1-3/4", 12.5mm
LOWER LAYER, HMA PAVEMENT E-3 SPECIAL, ITEM SPV.0195.02 = 2", 12.5mm
LOWER LAYER, HMA PAVEMENT E-3 SPECIAL, ITEM SPV.0195.03 E-3 = 2-1/4", 19mm

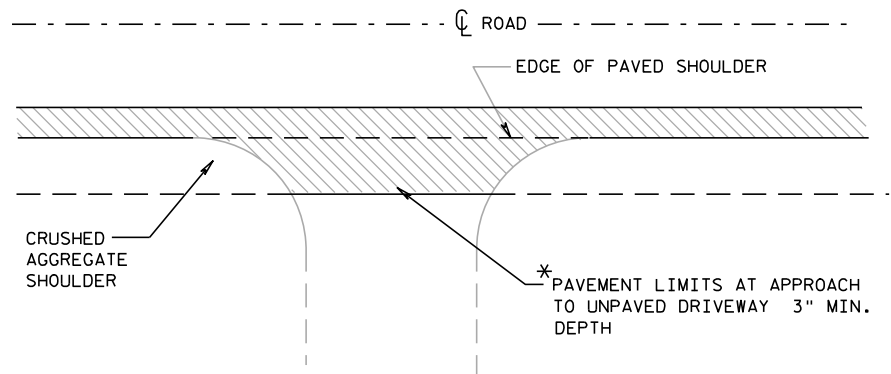
PG64-34P BOTH LAYERS

FINISHED TYPICAL SECTION

USH 63

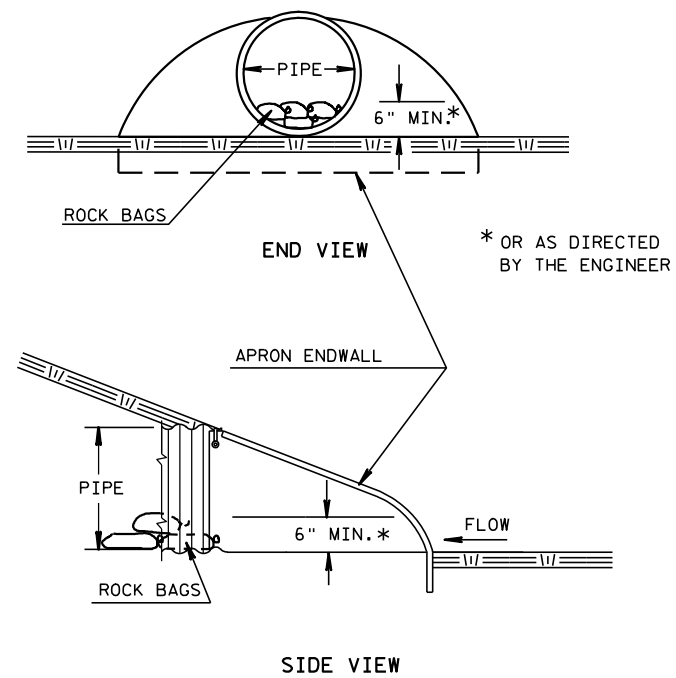
STA 196+88 - STA 222+26 LT

STA 135+63 - STA 220+99 RT

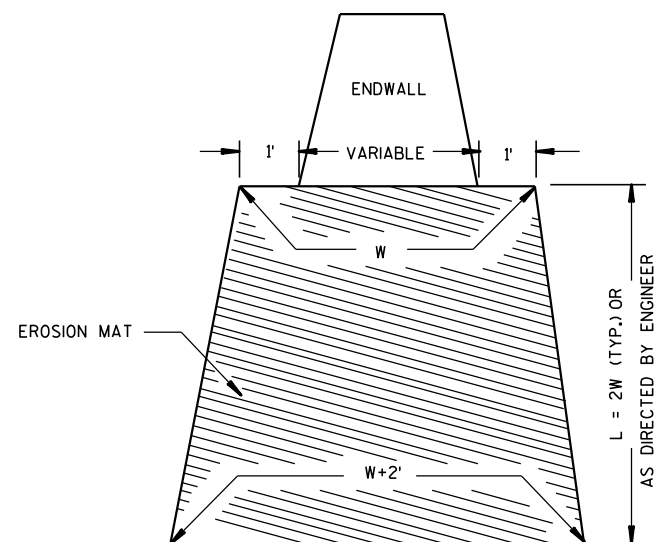


* WHERE DRIVEWAY IS PAVED, APPROACH PAVEMENT SHOULD BE EXTENDED TO MATCH DRIVEWAY PAVEMENT.

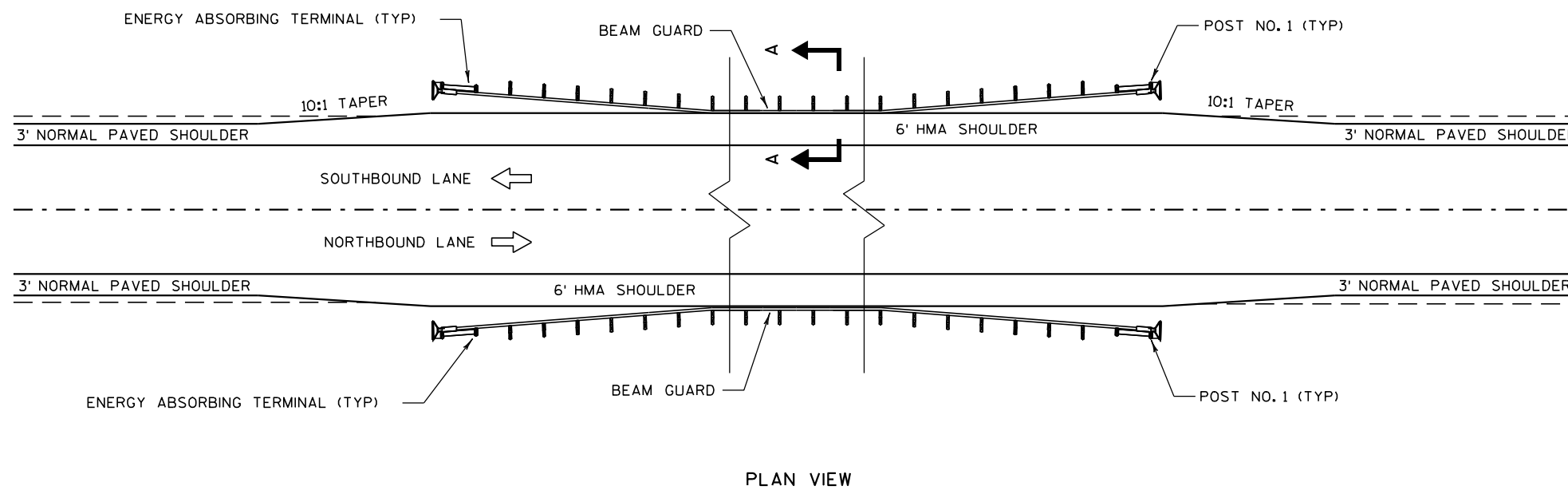
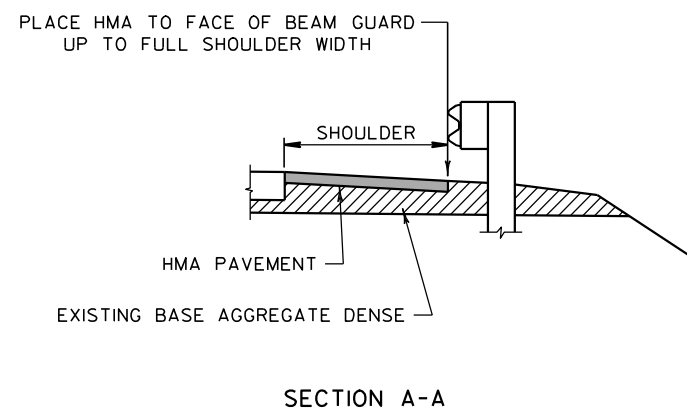
RURAL DRIVEWAY INTERSECTION DETAIL



CULVERT PIPE CHECKS

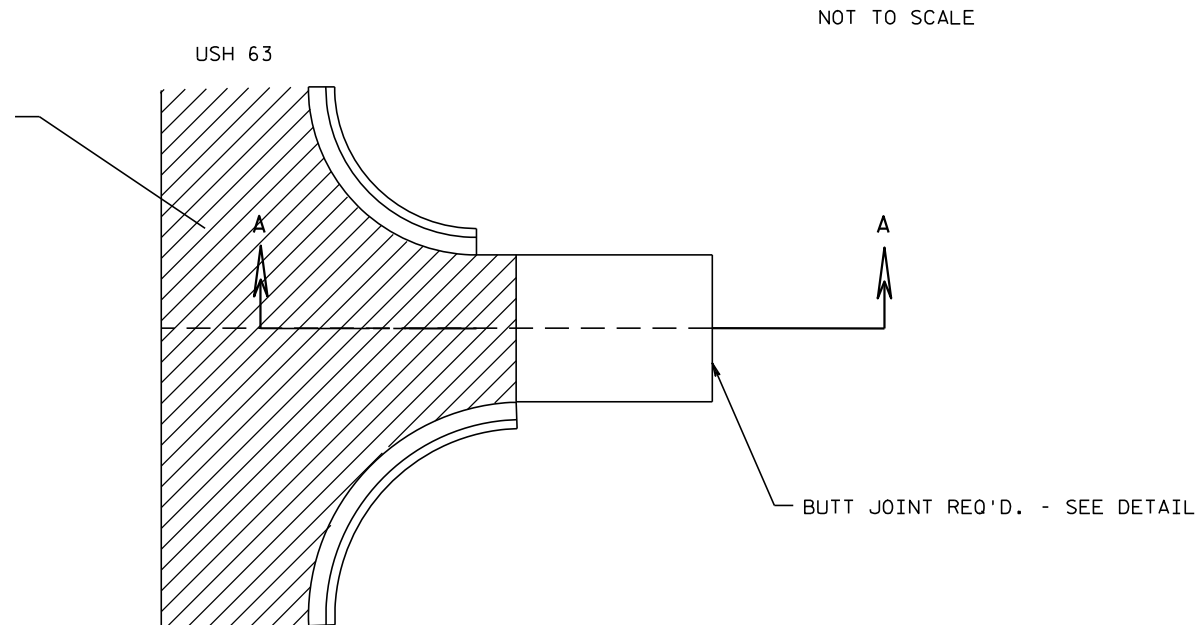


EROSION MAT TREATMENT AT CULVERTS



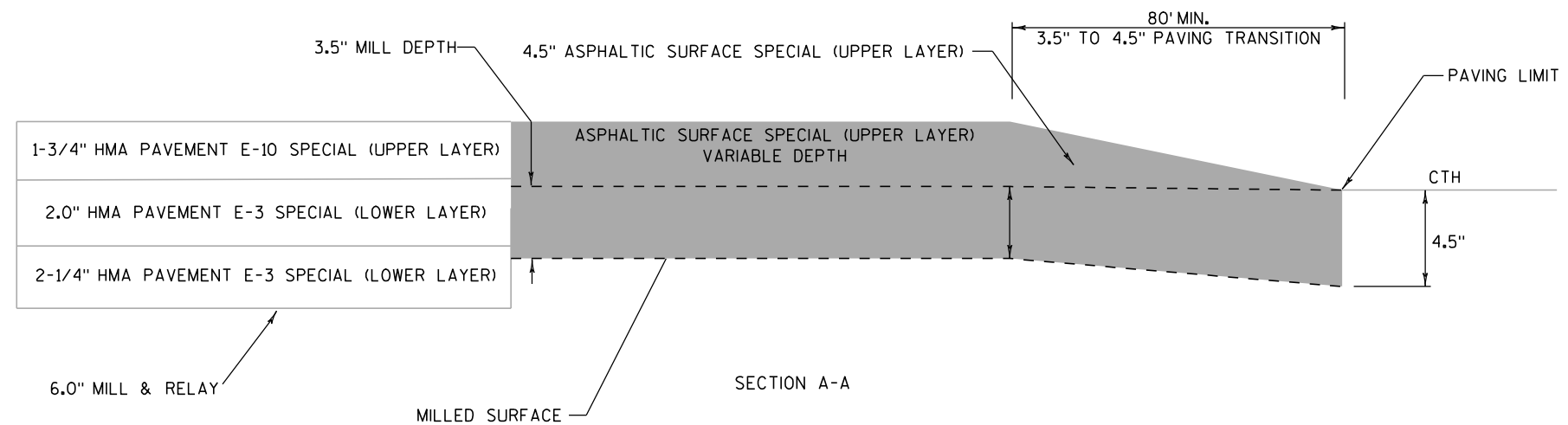
HMA SHOULDER AT BEAM GUARD DETAIL

3.5" MILL
6" MILL AND RELAY
6" REPAVE HMA:
2-1/4" E-3 SPECIAL (LOWER LAYER)
2.0" E-3 SPECIAL (LOWER LAYER)
1-3/4" E-10 SPECIAL (UPPER LAYER)



BUTT JOINT LOCATIONS		WIDTH (FT)
STREET NAME	STA.	
CTH H	18+45	21
CTH Q	11+60	21

SIDEROAD DETAIL (CTH H & CTH Q) - NEW CURB & GUTTER

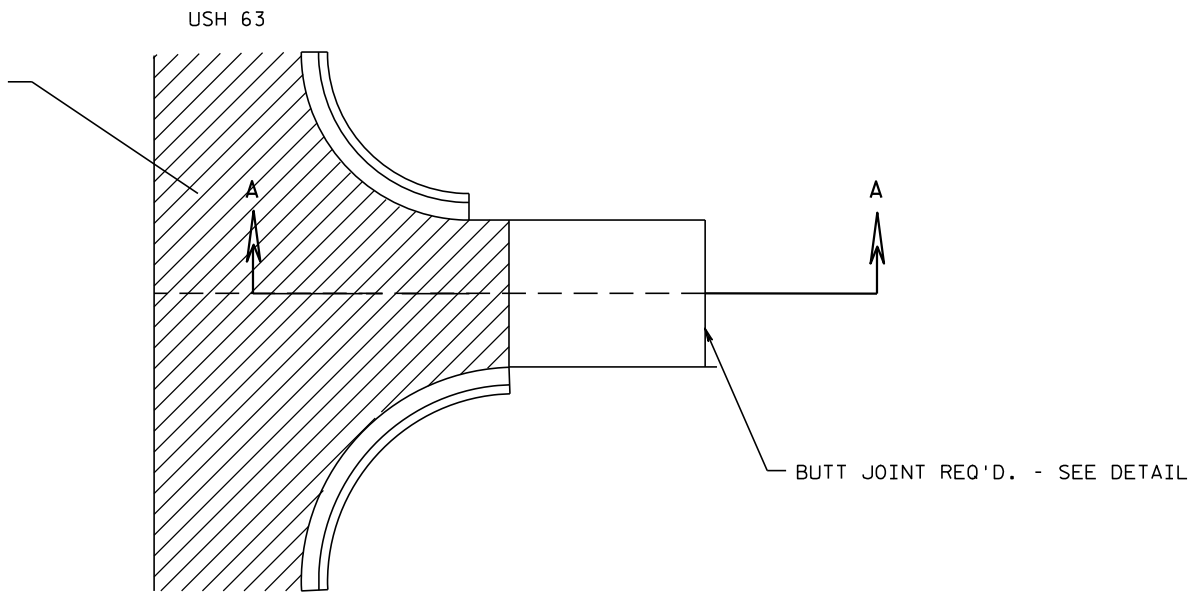


BUTT JOINT TRANSITION DETAIL: CTH H & CTH Q

SEE LOCATIONS LISTED IN TABLE

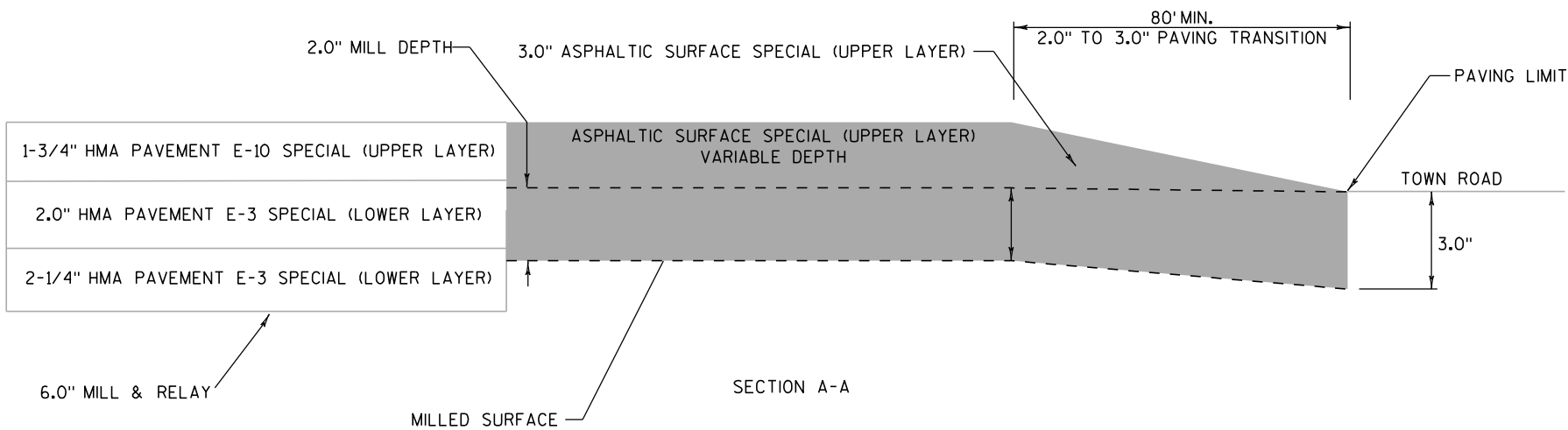
3.5" MILL
6" MILL AND RELAY
6" REPAVE HMA:
2-1/4" HMA PAVEMENT E-3 (LOWER LAYER)
2.0" HMA PAVEMENT E-3 SPECIAL (LOWER LAYER)
1-3/4" HMA PAVEMENT E-10 SPECIAL (UPPER LAYER)

NOT TO SCALE



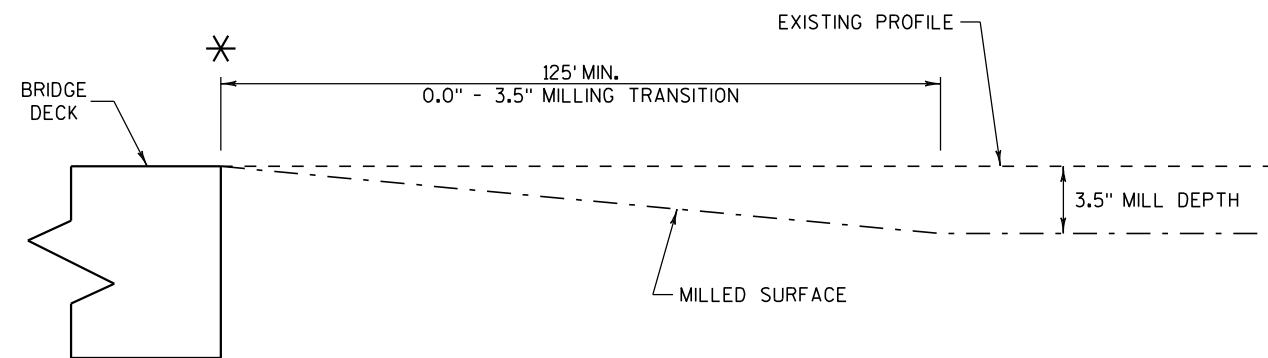
BUTT JOINT LOCATIONS		WIDTH (FT)
STREET NAME	STA.	
200TH WEST	18+35	22
200TH EAST	11+60	20
210TH	12+29	20
220TH	11+60	20
240TH WEST	18+40	22
240TH EAST	11+60	20

SIDEROAD DETAIL (TOWNROAD) - NEW CURB & GUTTER

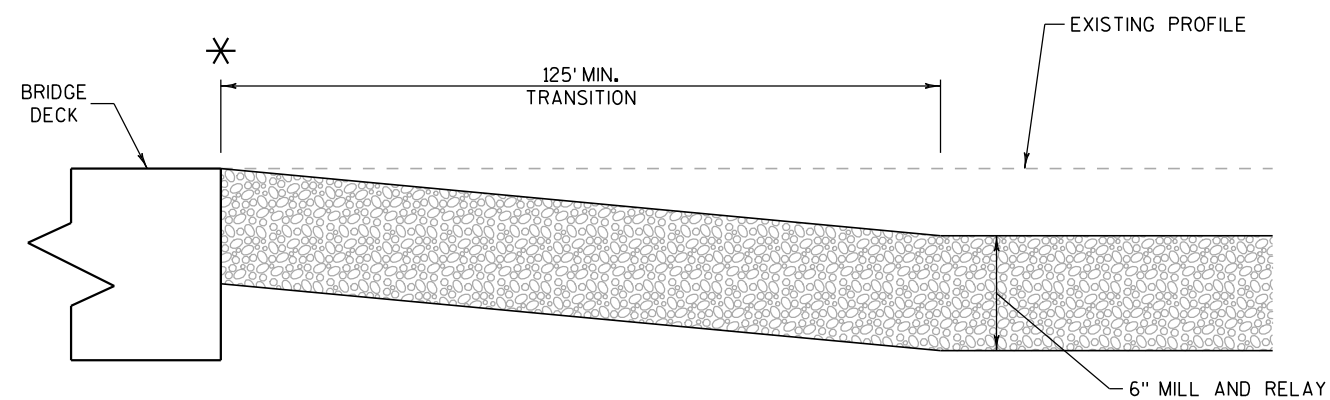


BUTT JOINT TRANSITION DETAIL: TOWN ROAD

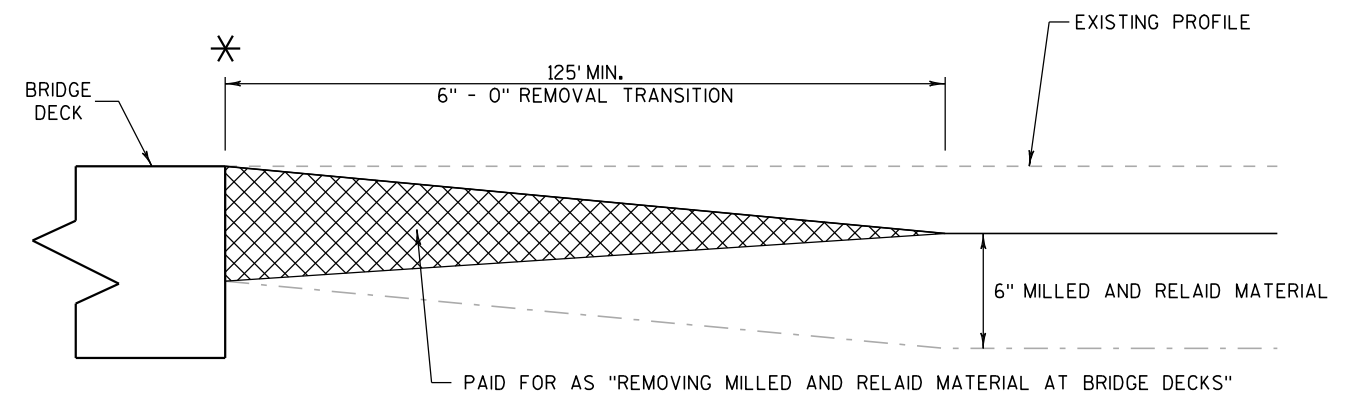
SEE LOCATIONS LISTED IN TABLE

**PHASE 1**

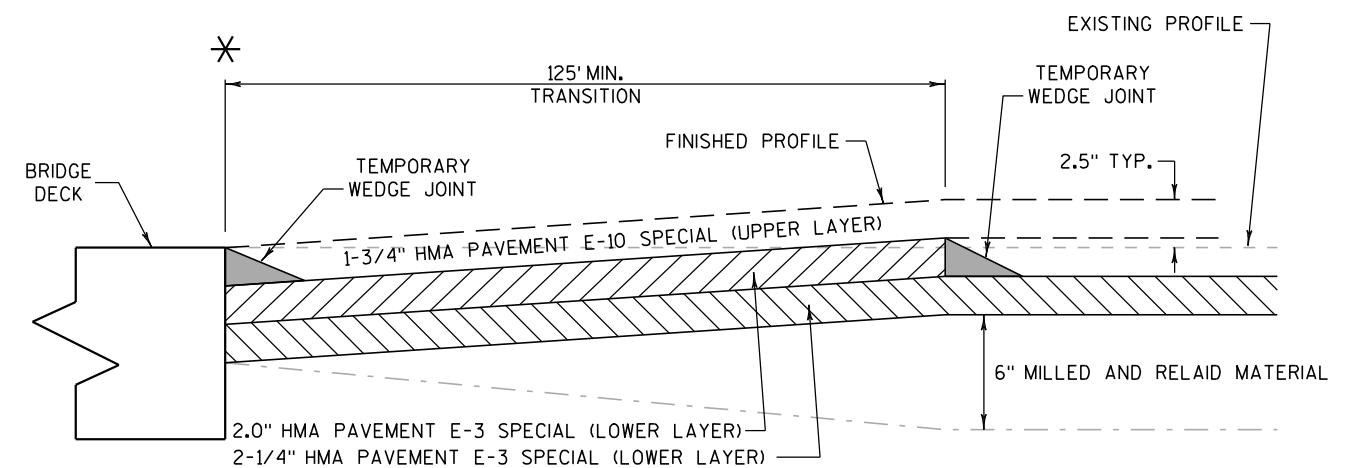
MILL AND REMOVE 0.0" TO 3.5" OF EXISTING ASPHALT SURFACE IN 125-FT TRANSITION AREA.

**PHASE 2**

MILL AND RELAY 6" OF EXISTING ASPHALT AND BASE AGGREGATE.

**PHASE 3**

REMOVE 6" TO 0" OF MILLED AND RELAID MATERIAL IN 125-FT TRANSITION AREA.

**PHASE 4**

CONSTRUCT NEW HMA PAVEMENT WITH REQUIRED LIFT THICKNESSES AND TEMPORARY JOINTS AS SHOWN.

NOTES:

MAXIMUM BUMP AT BRIDGE DECKS SHALL NOT EXCEED 2 INCHES.

CONSTRUCT THE MAINLINE HMA PAVEMENT WITH THE FOLLOWING LIFT THICKNESS:

2-1/4" HMA PAVEMENT E-3 SPECIAL (LOWER LAYER)

2.0" HMA PAVEMENT E-3 SPECIAL (LOWER LAYER)

1-3/4" HAM PAVEMENT E-10 SPECIAL (UPPER LAYER)

END OF BRIDGE DECK
STATIONING

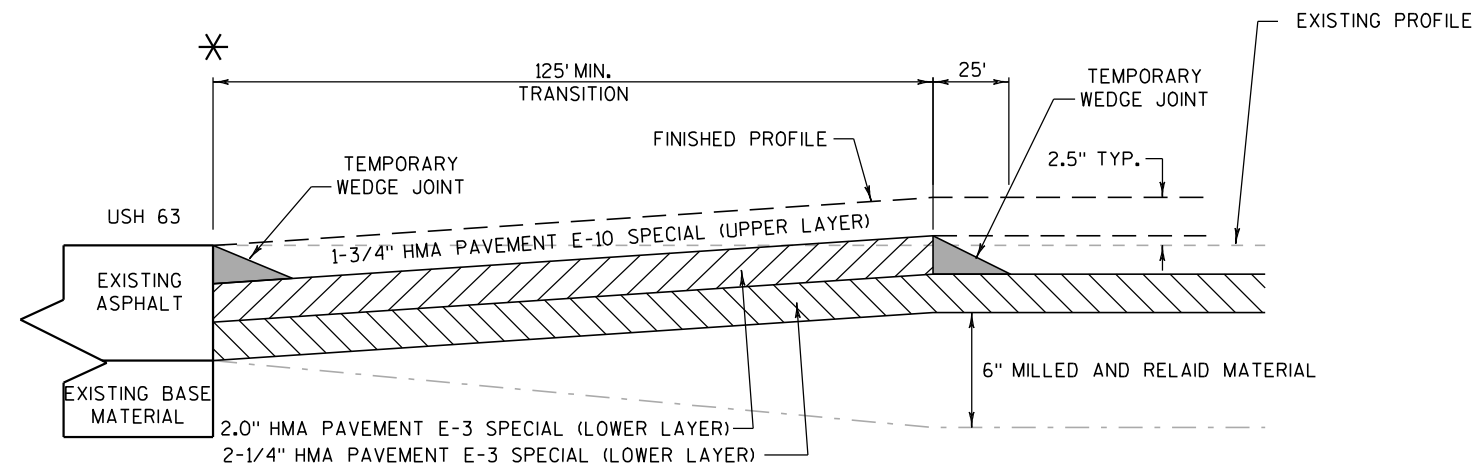
40+59.16

41+13.53

122+53.82

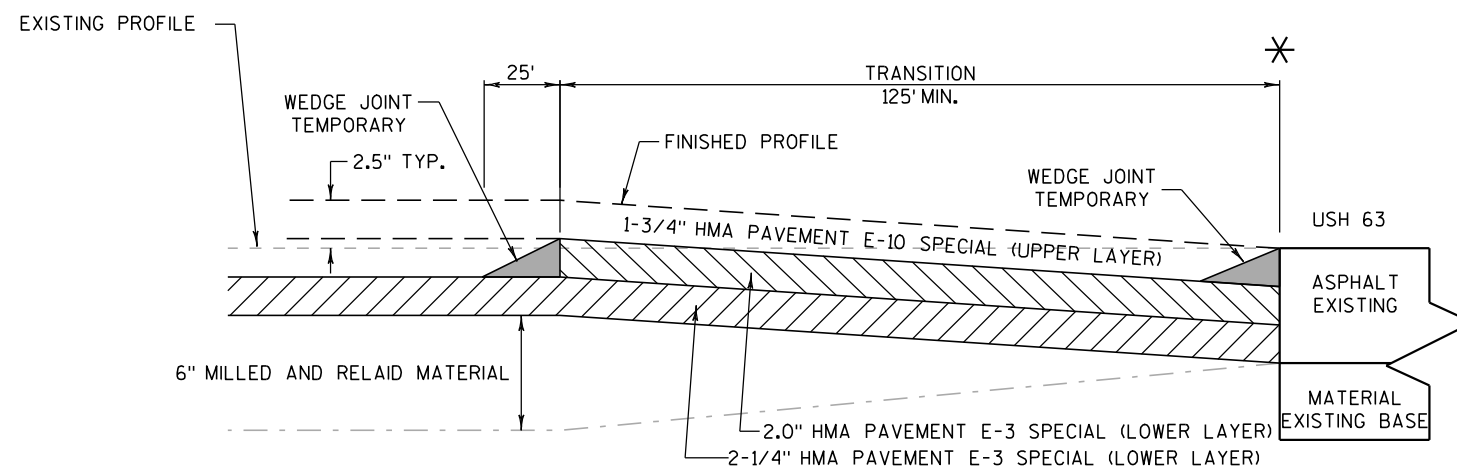
123+18.56

MAINLINE MILLING TRANSITION AND PAVING DETAIL✱ REQUIRED AT ENDS OF EXISTING BRIDGES.
SEE LOCATIONS LISTED IN TABLE.

**BUTT JOINT**

CONSTRUCT NEW HMA PAVEMENT WITH REQUIRED LIFT THICKNESSES AND TEMPORARY JOINTS AS SHOWN AT STA. 10+74

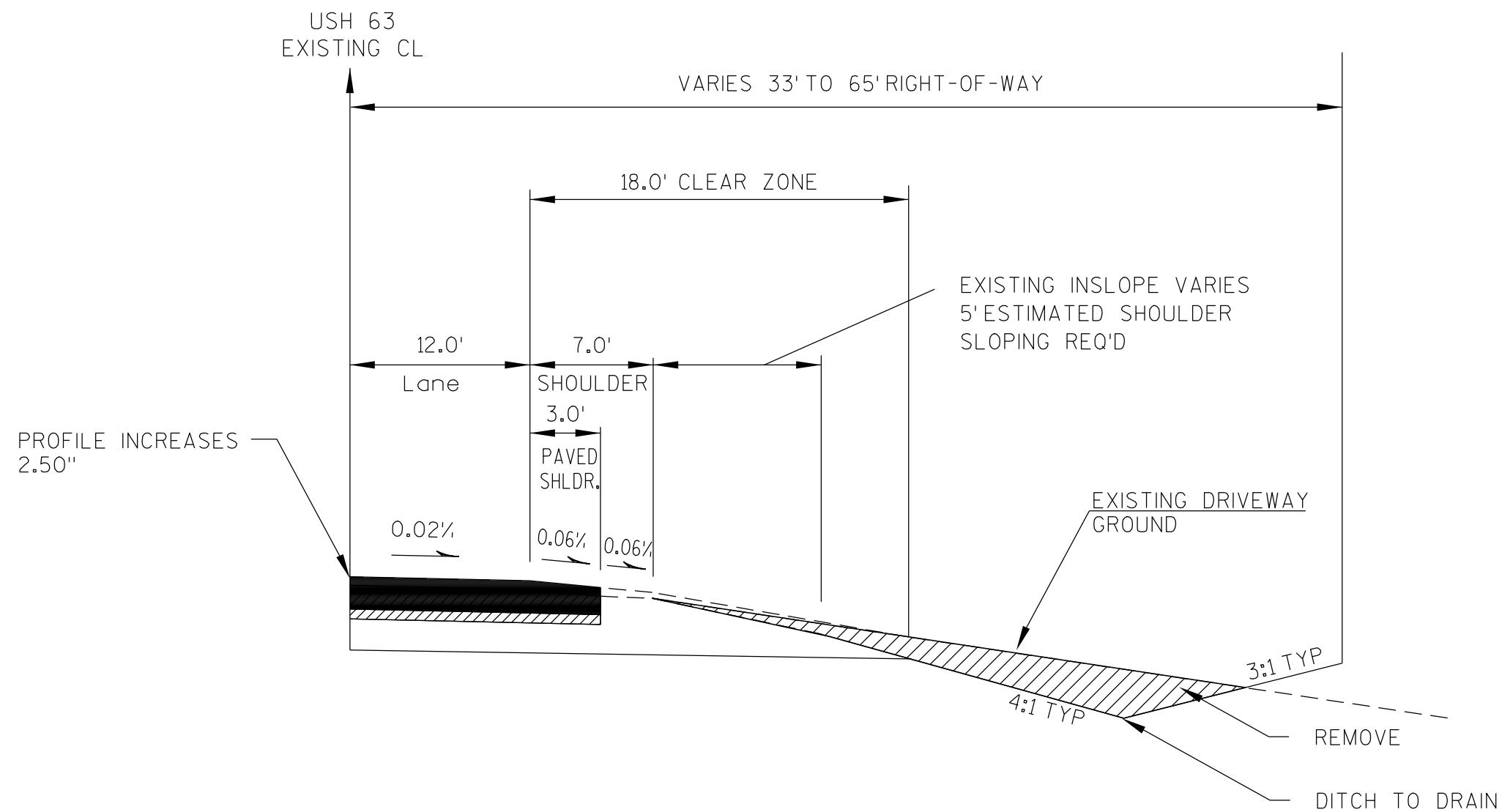
BUTT JOINT LOCATIONS		WIDTH (FT)
STREET NAME	STA.	
USH 63	10+74	48
USH 63	277+70	24

**BUTT JOINT**

CONSTRUCT NEW HMA PAVEMENT WITH REQUIRED LIFT THICKNESSES AND TEMPORARY JOINTS AS SHOWN AT STA. 277+70.

MAINLINE MILLING TRANSITION AND PAVING DETAIL

✱ REQUIRED AT BEGINNING AND END OF PROJECT.
SEE LOCATIONS LISTED IN TABLE.

FIELD ENTRANCE REMOVAL

USH 63

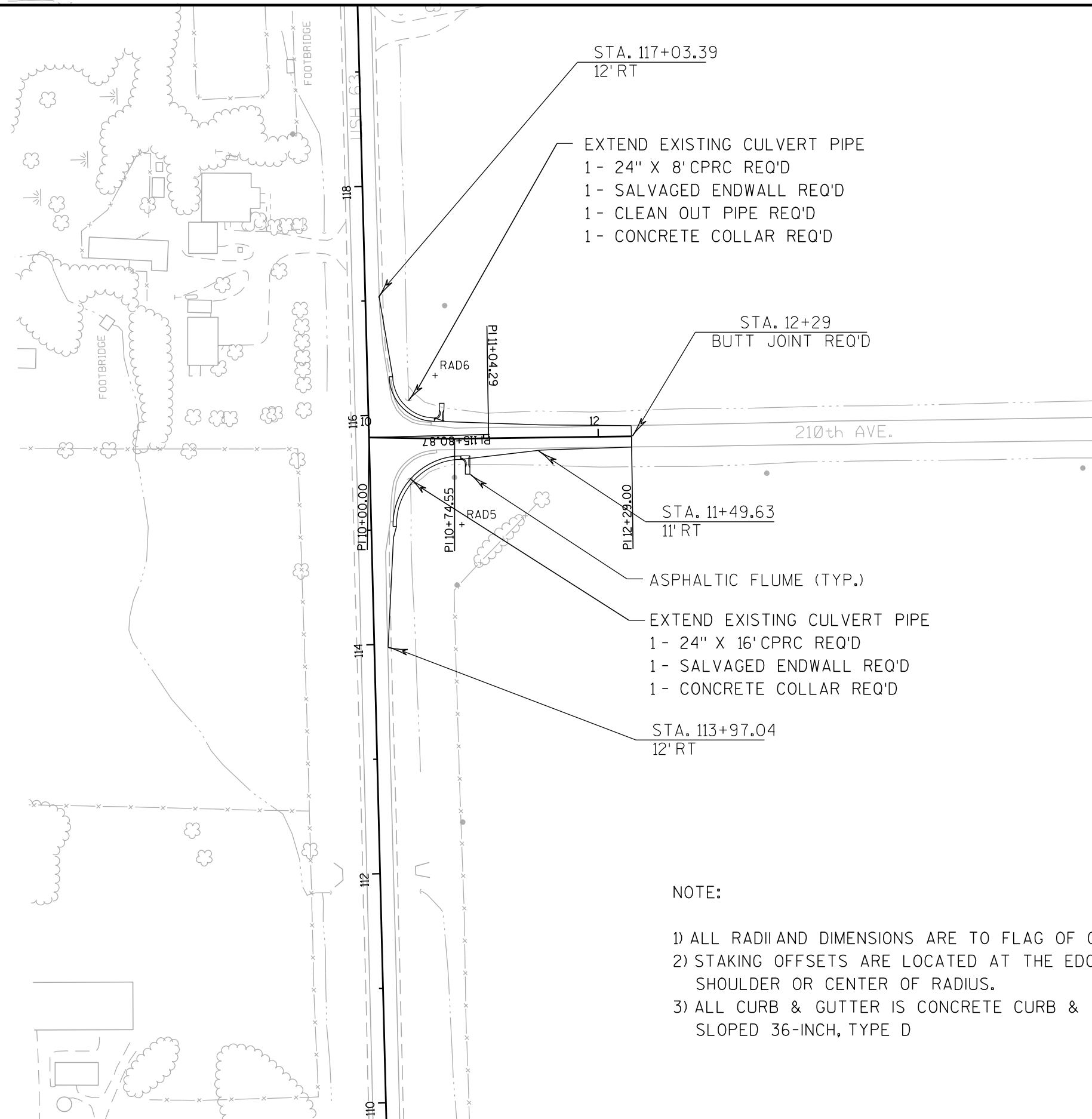
STA 108+90 RT



- 1) ALL RADII AND DIMENSIONS ARE TO FLAG OF CURB.
- 2) STAKING OFFSETS ARE LOCATED AT THE EDGE OF PAVED SHOULDER OR CENTER OF RADIUS.
- 3) ALL CURB & GUTTER IS CONCRETE CURB & GUTTER 6-INCH SLOPED 36-INCH, TYPE D

CONSTRUCT MODIFIED TYPE D INTERSECTION

POINT NO.	USH 63		210TH		RADIUS
	STATION	OFFSET	STATION	OFFSET	
5	115+02.74	79' RT	10+79.63	75' RT	60'
6	116+33.39	59' RT	10+56.59	55' LT	40'



NOTE:

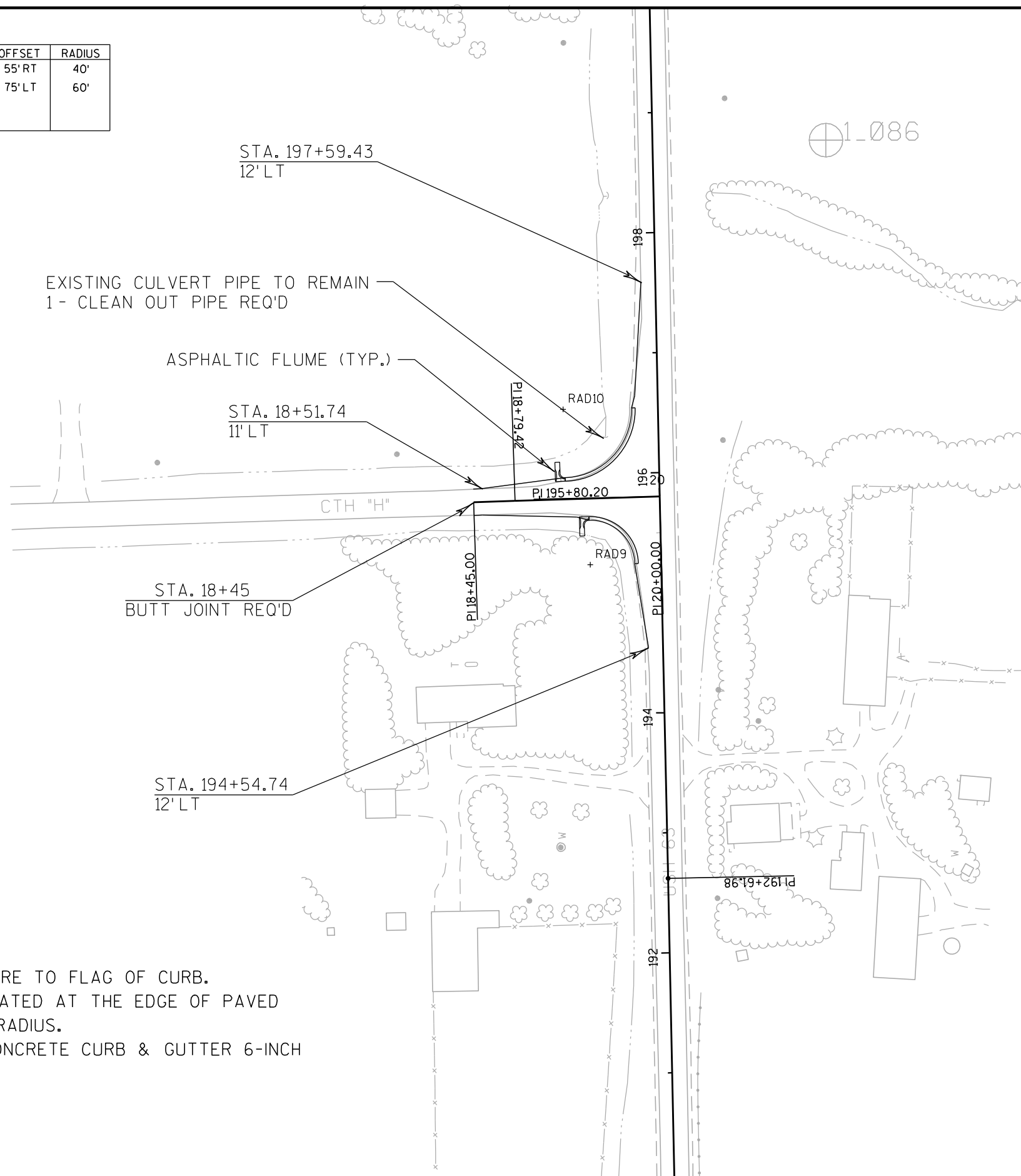
- 1) ALL RADII AND DIMENSIONS ARE TO FLAG OF CURB.
- 2) STAKING OFFSETS ARE LOCATED AT THE EDGE OF PAVED SHOULDER OR CENTER OF RADIUS.
- 3) ALL CURB & GUTTER IS CONCRETE CURB & GUTTER 6-INCH SLOPED 36-INCH, TYPE D

NOTE:

- 1) ALL RADII AND DIMENSIONS ARE TO FLAG OF CURB.
- 2) STAKING OFFSETS ARE LOCATED AT THE EDGE OF PAVED SHOULDER OR CENTER OF RADIUS.
- 3) ALL CURB & GUTTER IS CONCRETE CURB & GUTTER 6-INCH SLOPED 36-INCH, TYPE D



POINT NO.	USH 63		CTH H		RADIUS
	STATION	OFFSET	STATION	OFFSET	
9	195+24.73	59' LT	19+40.56	55' RT	40'
10	196+54.43	79' LT	19+21.74	75' LT	60'



NOTE:

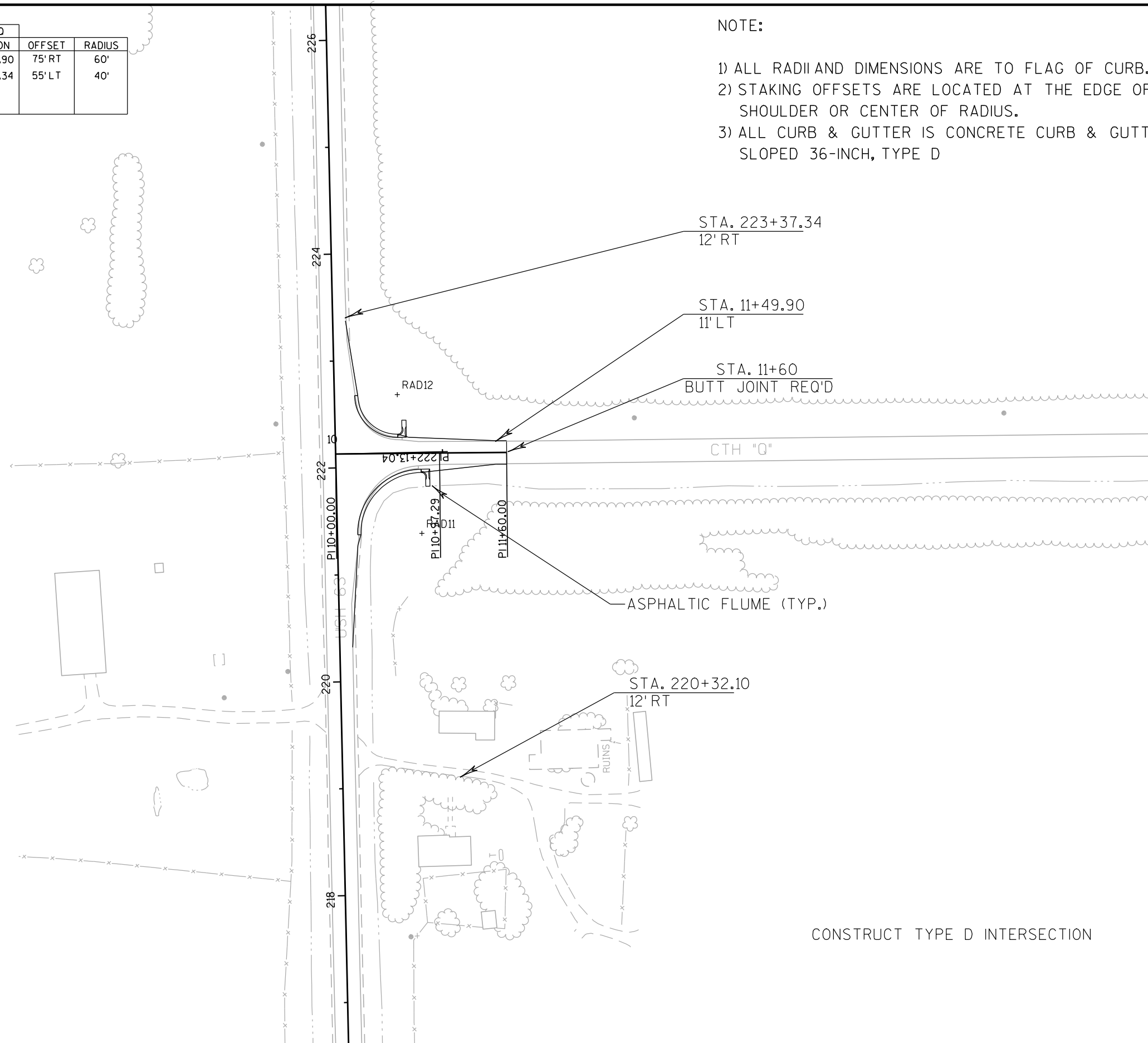
- 1) ALL RADII AND DIMENSIONS ARE TO FLAG OF CURB.
- 2) STAKING OFFSETS ARE LOCATED AT THE EDGE OF PAVED SHOULDER OR CENTER OF RADIUS.
- 3) ALL CURB & GUTTER IS CONCRETE CURB & GUTTER 6-INCH SLOPED 36-INCH, TYPE D

CONSTRUCT TYPE D INTERSECTION

POINT NO.	USH 63		CTH Q		
	STATION	OFFSET	STATION	OFFSET	RADIUS
11	221+37.10	79' LT	10+79.90	75' RT	60'
12	222+67.34	59' LT	10+58.34	55' LT	40'

NOTE:

- 1) ALL RADII AND DIMENSIONS ARE TO FLAG OF CURB.
- 2) STAKING OFFSETS ARE LOCATED AT THE EDGE OF PAVED SHOULDER OR CENTER OF RADIUS.
- 3) ALL CURB & GUTTER IS CONCRETE CURB & GUTTER 6-INCH SLOPED 36-INCH, TYPE D

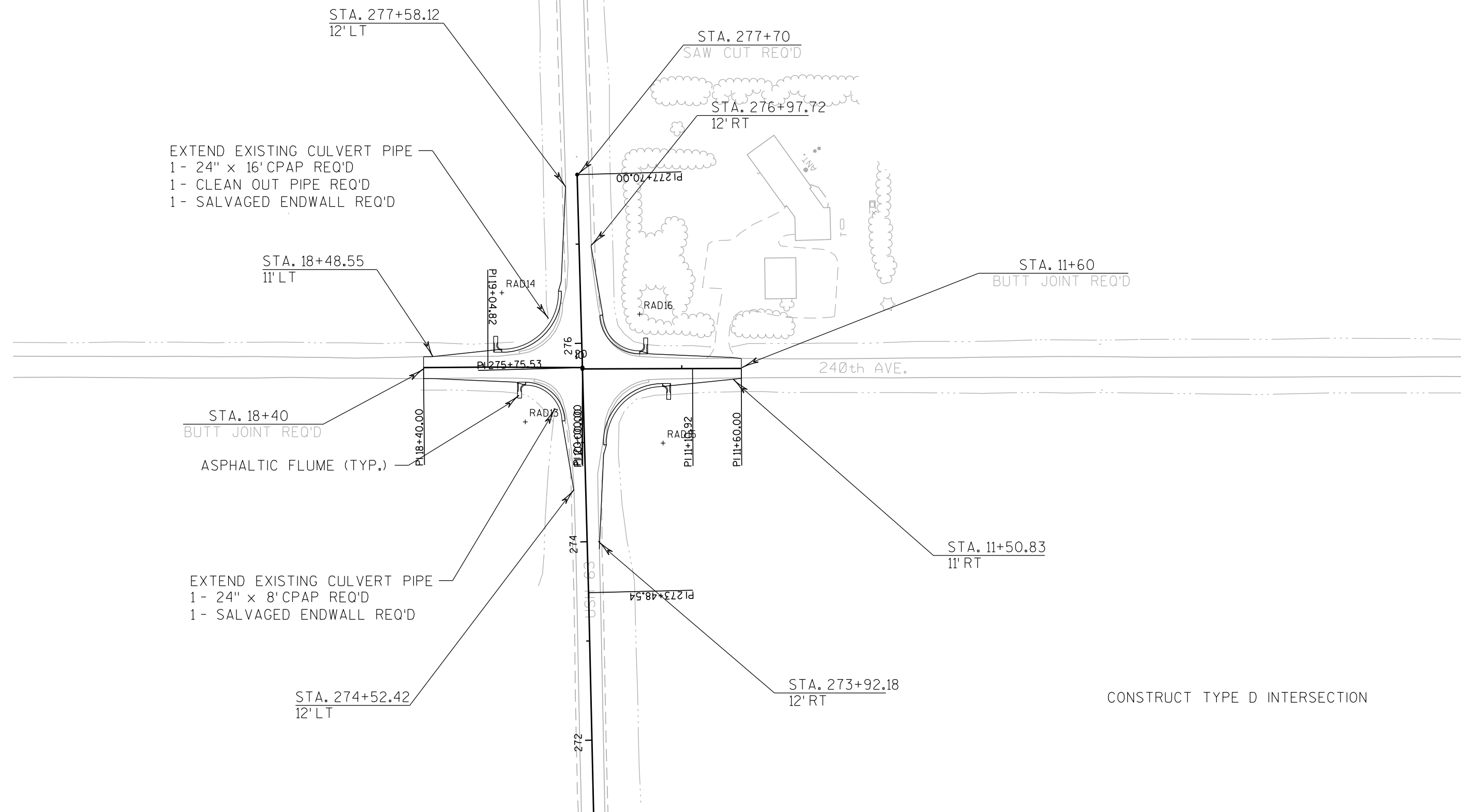


POINT NO.	USH 63		240TH		
	STATION	OFFSET	STATION	OFFSET	RADIUS
13	275+22.43	59' LT	19+42.76	55' RT	40'
14	276+53.11	79' LT	19+18.55	75' LT	60'
15	274+97.19	79' RT	10+80.83	75' RT	60'
16	276+27.73	59' RT	10+57.73	55' LT	40'

NOTE:

- 1) ALL RADII AND DIMENSIONS ARE TO FLAG OF CURB.
- 2) STAKING OFFSETS ARE LOCATED AT THE EDGE OF PAVED SHOULDER OR CENTER OF RADIUS.
- 3) ALL CURB & GUTTER IS CONCRETE CURB & GUTTER 6-INCH SLOPED 36-INCH, TYPE D

N



LEGEND

#####

EROSION MAT CLASS I, TYPE B

—●—●—●—

SILT FENCE

—○—○—○—○—

RIP RAP

△△△

TEMPORARY DITCH CHECK

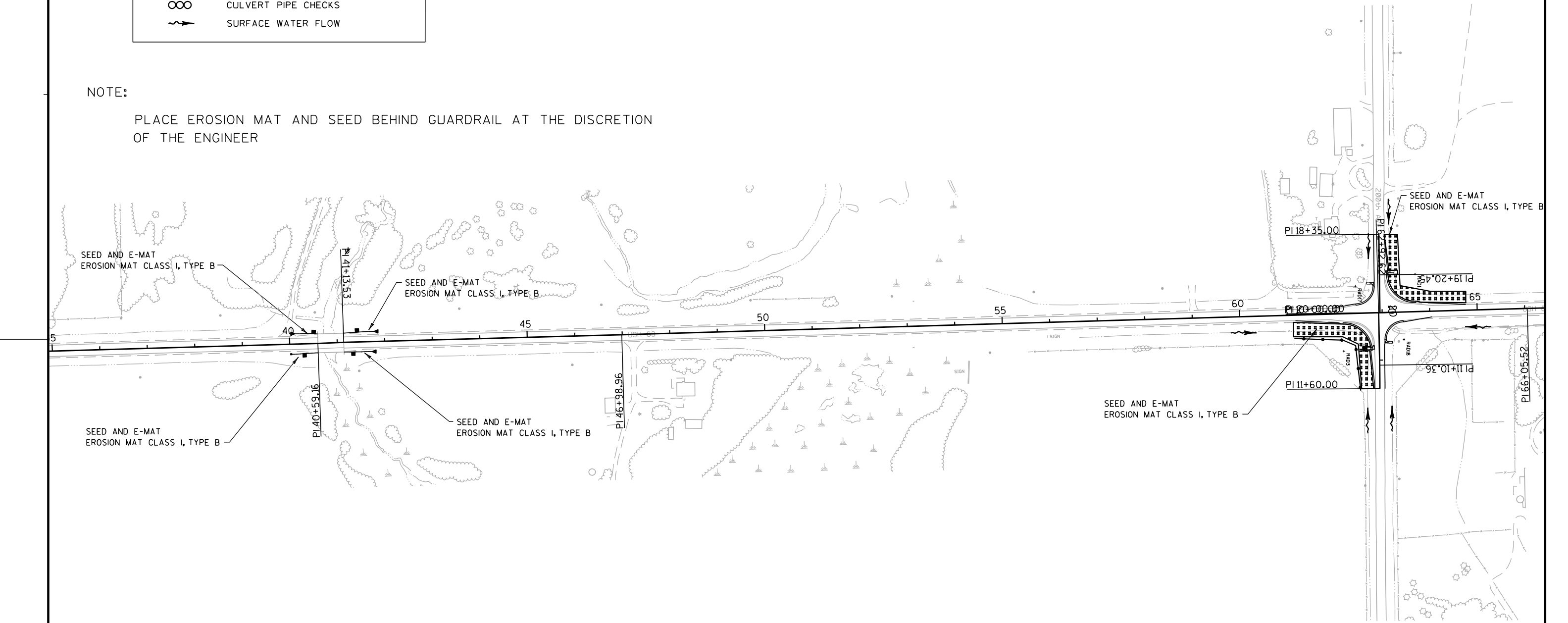
○○○

CULVERT PIPE CHECKS

~>

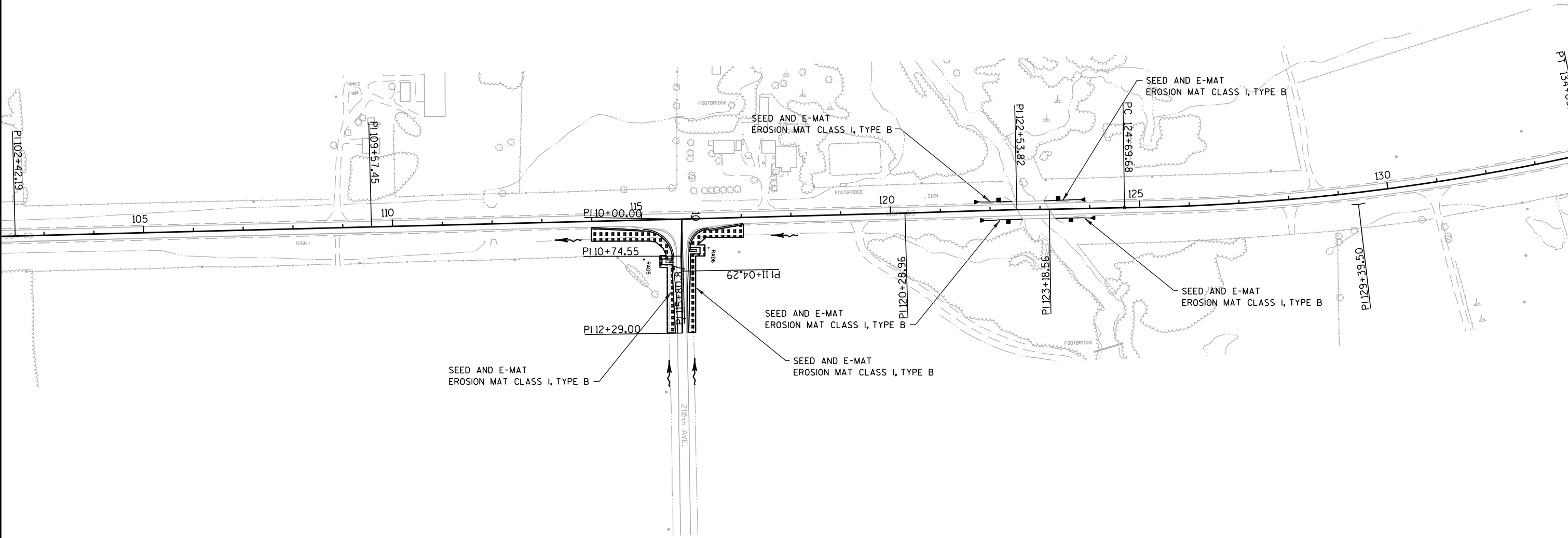
SURFACE WATER FLOW

NOTE:
PLACE EROSION MAT AND SEED BEHIND GUARDRAIL AT THE DISCRETION OF THE ENGINEER



LEGEND	
#####	EROSION MAT CLASS I, TYPE B
—●—●—●—	SILT FENCE
—○—○—○—○—	RIP RAP
△△△	TEMPORARY DITCH CHECK
○○○	CULVERT PIPE CHECK
~→	SURFACE WATER FLOW

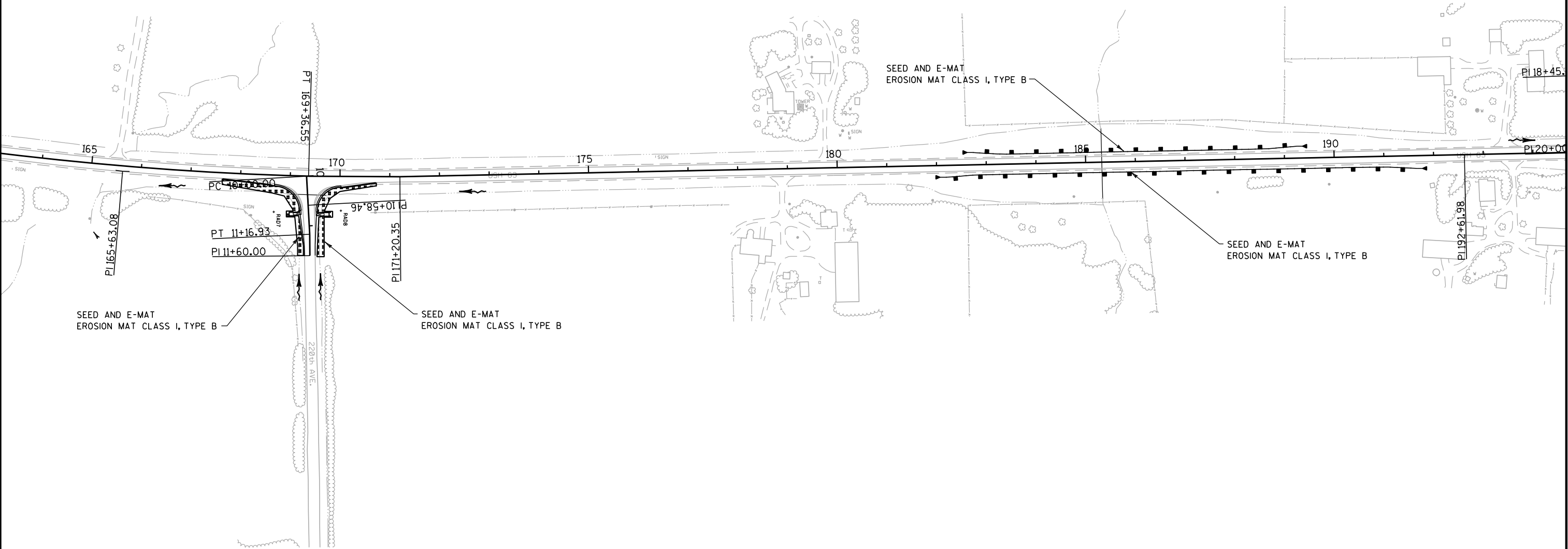
NOTE:
PLACE EROSION MAT AND SEED BEHIND GUARDRAIL AT THE DISCRETION
OF THE ENGINEER



LEGEND	
#####	EROSION MAT CLASS I, TYPE B
—●—●—●—	SILT FENCE
—○—○—○—○—	RIP RAP
△△△	TEMPORARY DITCH CHECK
○○○	CULVERT PIPE CHECK
~>	SURFACE WATER FLOW

NOTE:

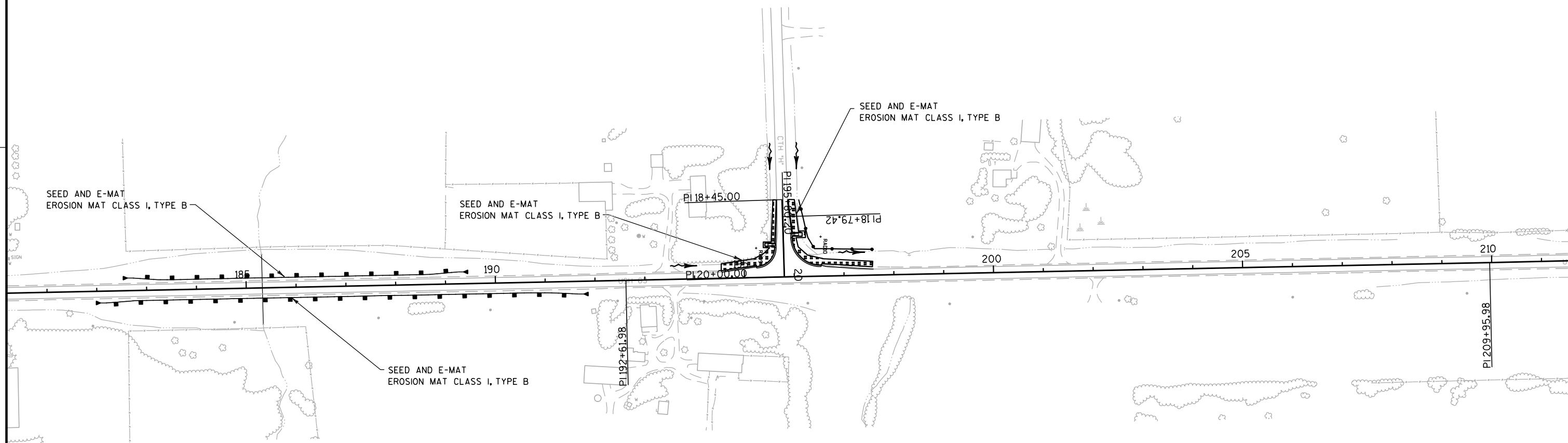
PLACE EROSION MAT AND SEED BEHIND GUARDRAIL AT THE DISCRETION OF THE ENGINEER



LEGEND	
#####	EROSION MAT CLASS I, TYPE B
—●—●—●—	SILT FENCE
—○—○—○—○—	RIP RAP
△△△	TEMPORARY DITCH CHECK
○○○	CULVERT PIPE CHECK
~>	SURFACE WATER FLOW

NOTE:

PLACE EROSION MAT AND SEED BEHIND GUARDRAIL AT THE DISCRETION
OF THE ENGINEER



LEGEND

#####

EROSION MAT CLASS I, TYPE B

—●—●—●—

SILT FENCE

—○—○—○—○—

RIP RAP

△△△

TEMPORARY DITCH CHECK

○○○

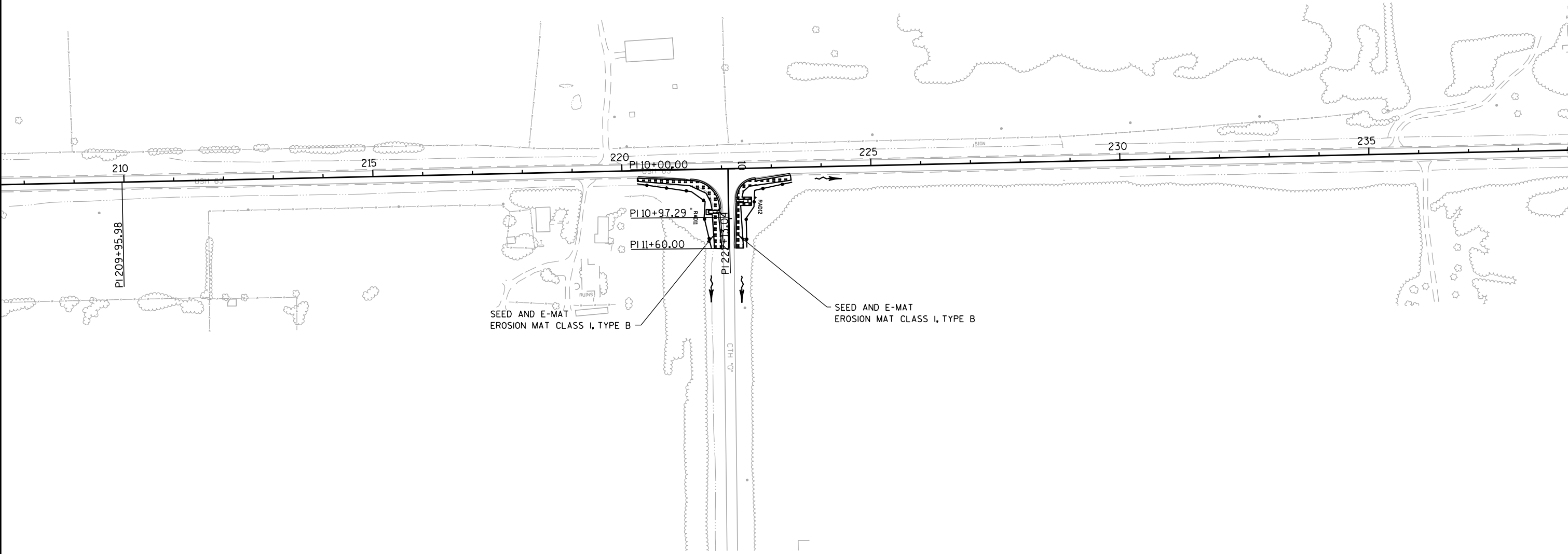
CULVERT PIPE CHECK

~>

SURFACE WATER FLOW

NOTE:

PLACE EROSION MAT AND SEED BEHIND GUARDRAIL AT THE DISCRETION OF THE ENGINEER



LEGEND

#####

EROSION MAT CLASS I, TYPE B

—●—●—●—●—

SILT FENCE

—○—○—○—○—

RIP RAP

△△△

TEMPORARY DITCH CHECK

∞∞

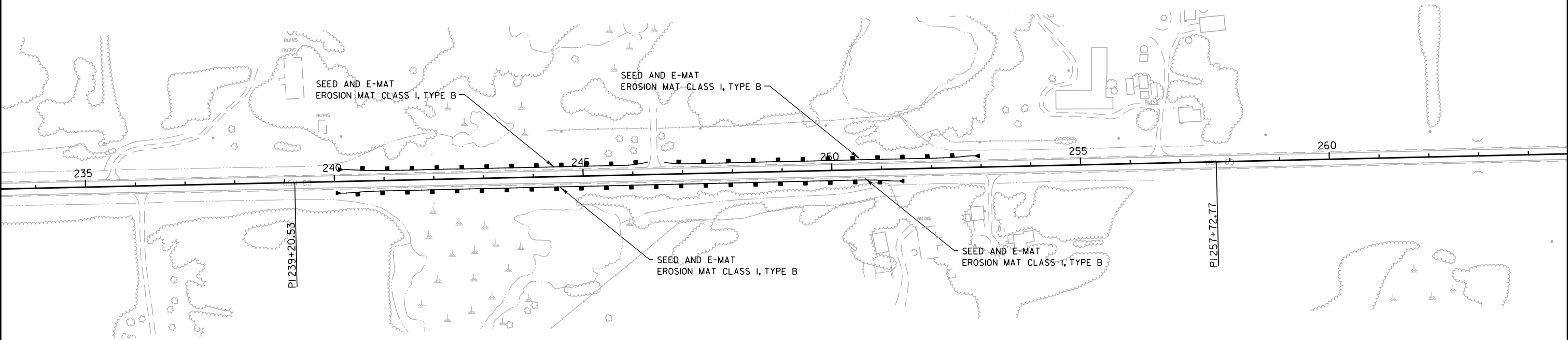
CULVERT PIPE CHECK

~>

SURFACE WATER FLOW

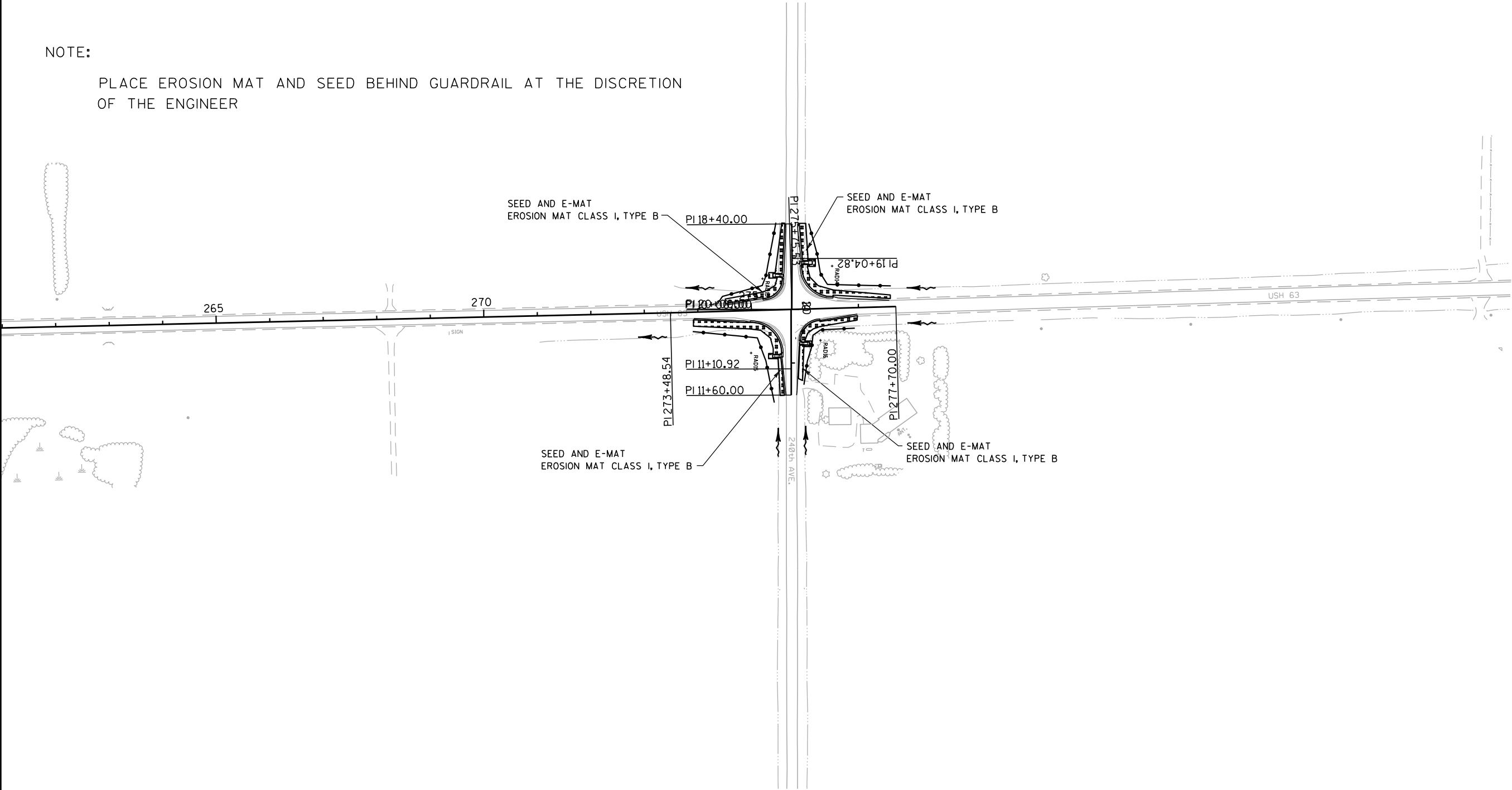
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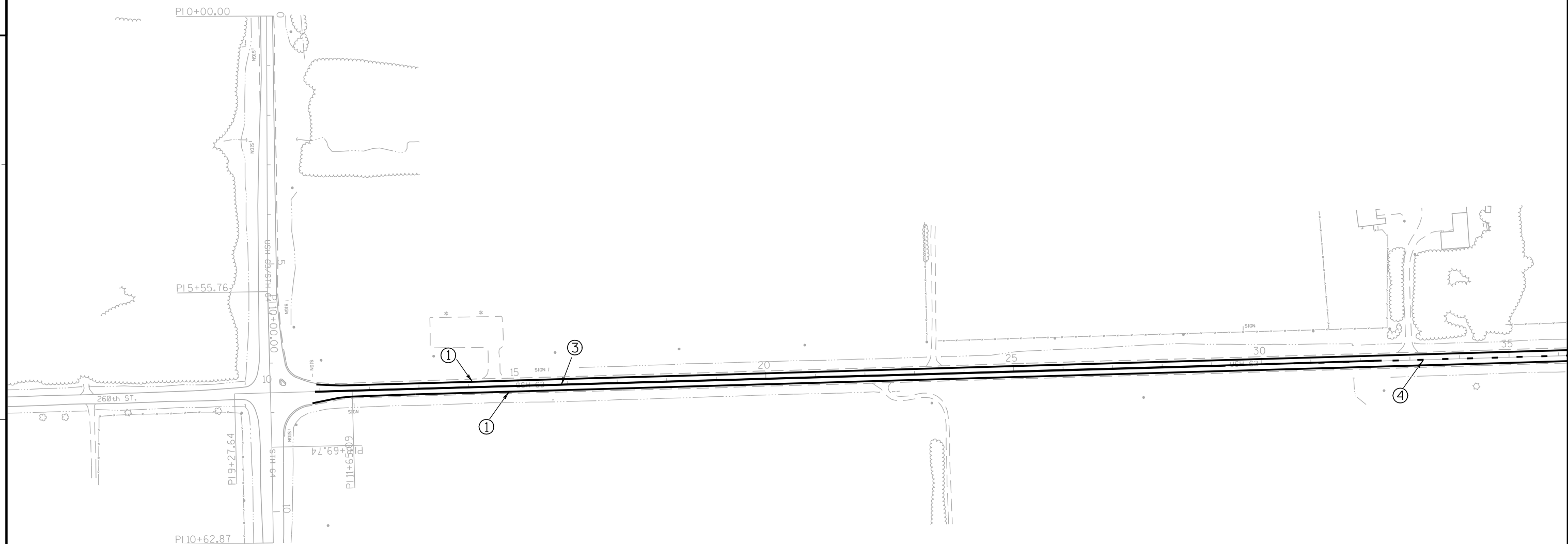
PLACE EROSION MAT AND SEED BEHIND GUARDRAIL AT THE DISCRETION OF THE ENGINEER



LEGEND	
#####	EROSION MAT CLASS I, TYPE B
—●—●—●—	SILT FENCE
o-o-o-o-o-o-o-o	RIP RAP
△△△	TEMPORARY DITCH CHECK
○○○	CULVERT PIPE CHECK
~>	SURFACE WATER FLOW

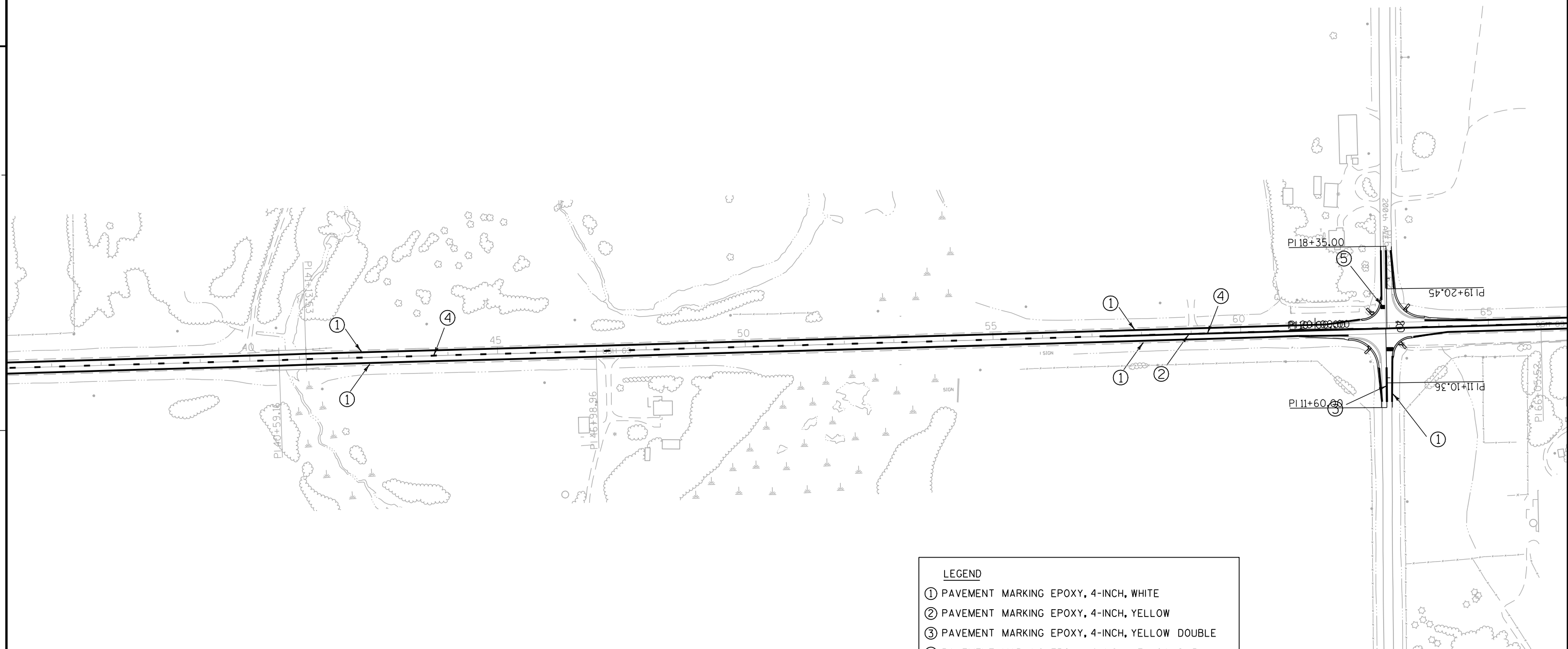
NOTE:
PLACE EROSION MAT AND SEED BEHIND GUARDRAIL AT THE DISCRETION
OF THE ENGINEER





NOTE: CENTERLINE MARKINGS ARE APPROXIMATE
AND "NO PASSING ZONE MARKINGS" ARE
LOCATED IN THE FIELD.

LEGEND	
①	PAVEMENT MARKING EPOXY, 4-INCH, WHITE
②	PAVEMENT MARKING EPOXY, 4-INCH, YELLOW
③	PAVEMENT MARKING EPOXY, 4-INCH, YELLOW DOUBLE
④	PAVEMENT MARKING EPOXY, 4-INCH, YELLOW, SKIP
⑤	PAVEMENT MARKING STOP LINE EPOXY 18-INCH, WHITE



NOTE: CENTERLINE MARKINGS ARE APPROXIMATE
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LEGEND

①

PAVEMENT MARKING EPOXY, 4-INCH, WHITE

②

PAVEMENT MARKING EPOXY, 4-INCH, YELLOW

③

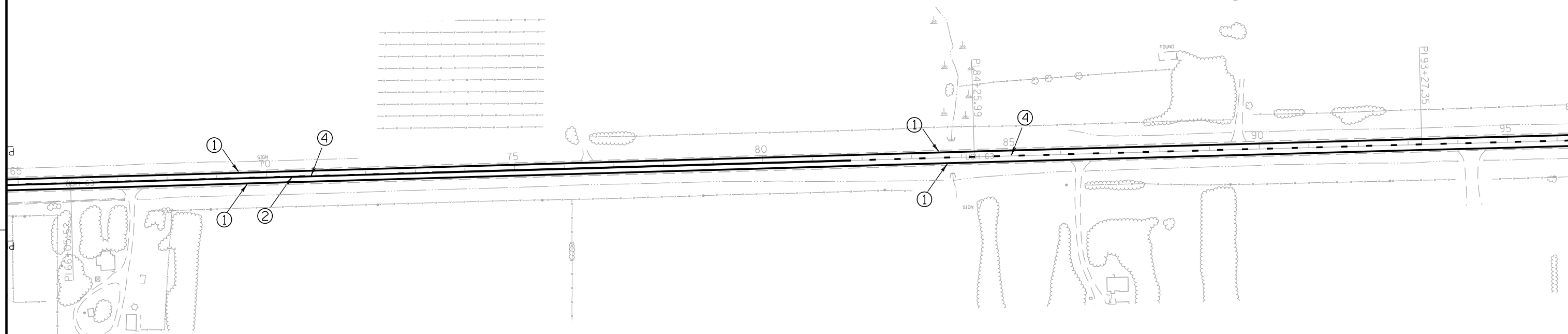
PAVEMENT MARKING EPOXY, 4-INCH, YELLOW DOUBLE

④

PAVEMENT MARKING EPOXY, 4-INCH, YELLOW, SKIP

⑤

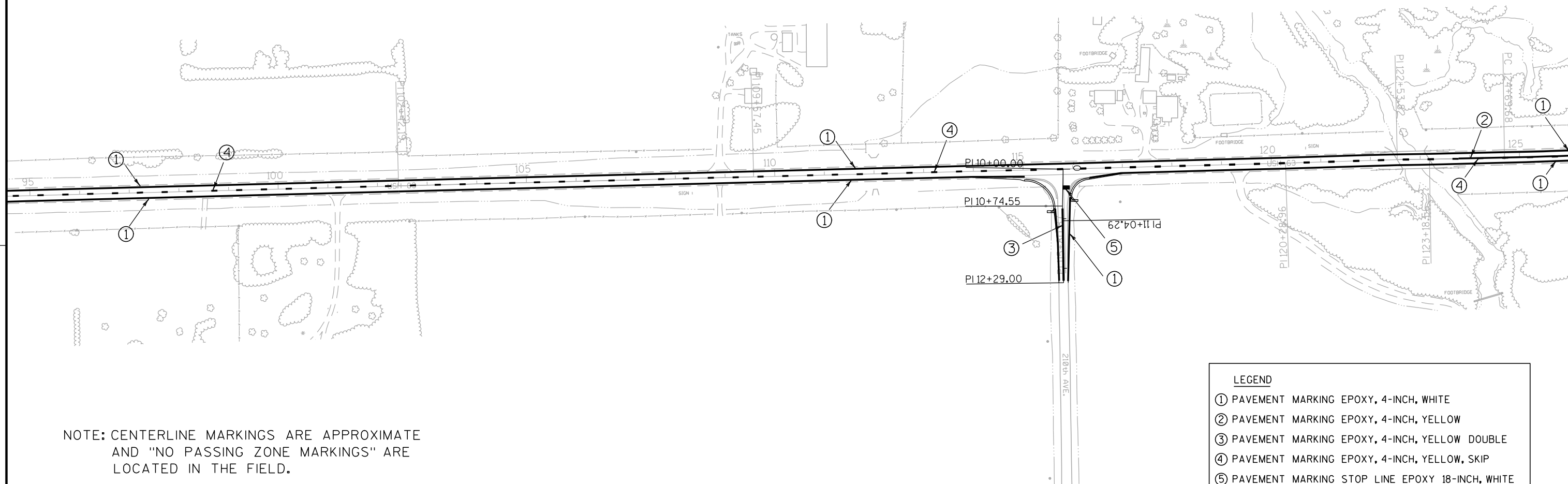
PAVEMENT MARKING STOP LINE EPOXY 18-INCH, WHITE

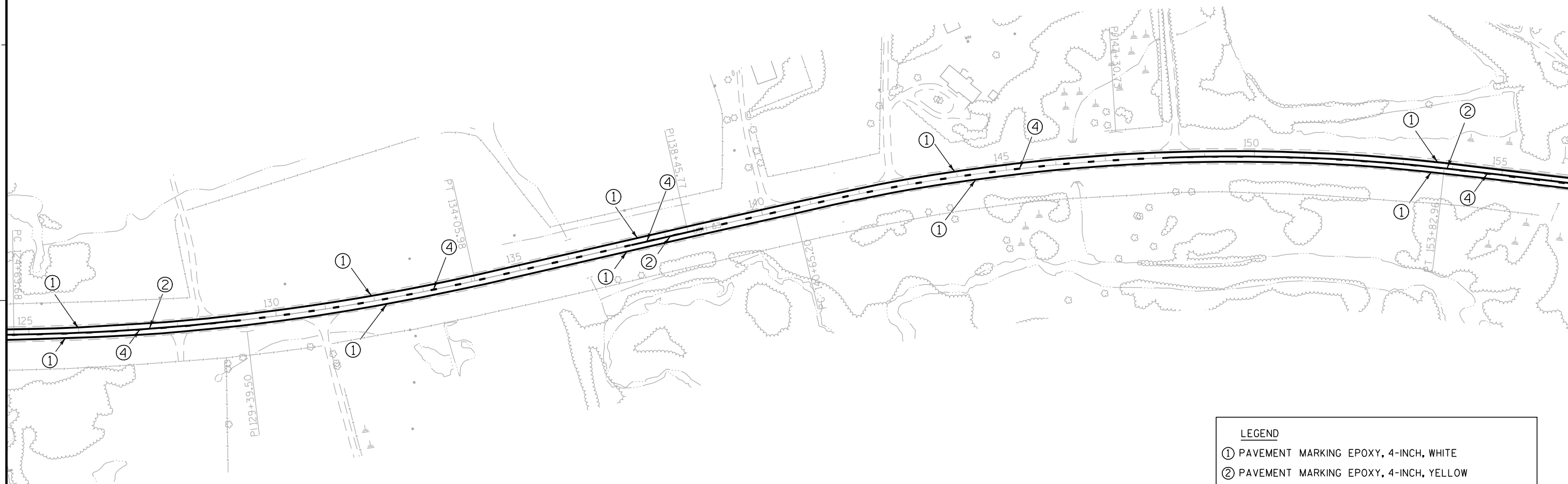


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LEGEND

- ① PAVEMENT MARKING EPOXY, 4-INCH, WHITE
- ② PAVEMENT MARKING EPOXY, 4-INCH, YELLOW
- ③ PAVEMENT MARKING EPOXY, 4-INCH, YELLOW DOUBLE
- ④ PAVEMENT MARKING EPOXY, 4-INCH, YELLOW, SKIP
- ⑤ PAVEMENT MARKING STOP LINE EPOXY 18-INCH, WHITE





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LEGEND

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PAVEMENT MARKING EPOXY, 4-INCH, WHITE

②

PAVEMENT MARKING EPOXY, 4-INCH, YELLOW

③

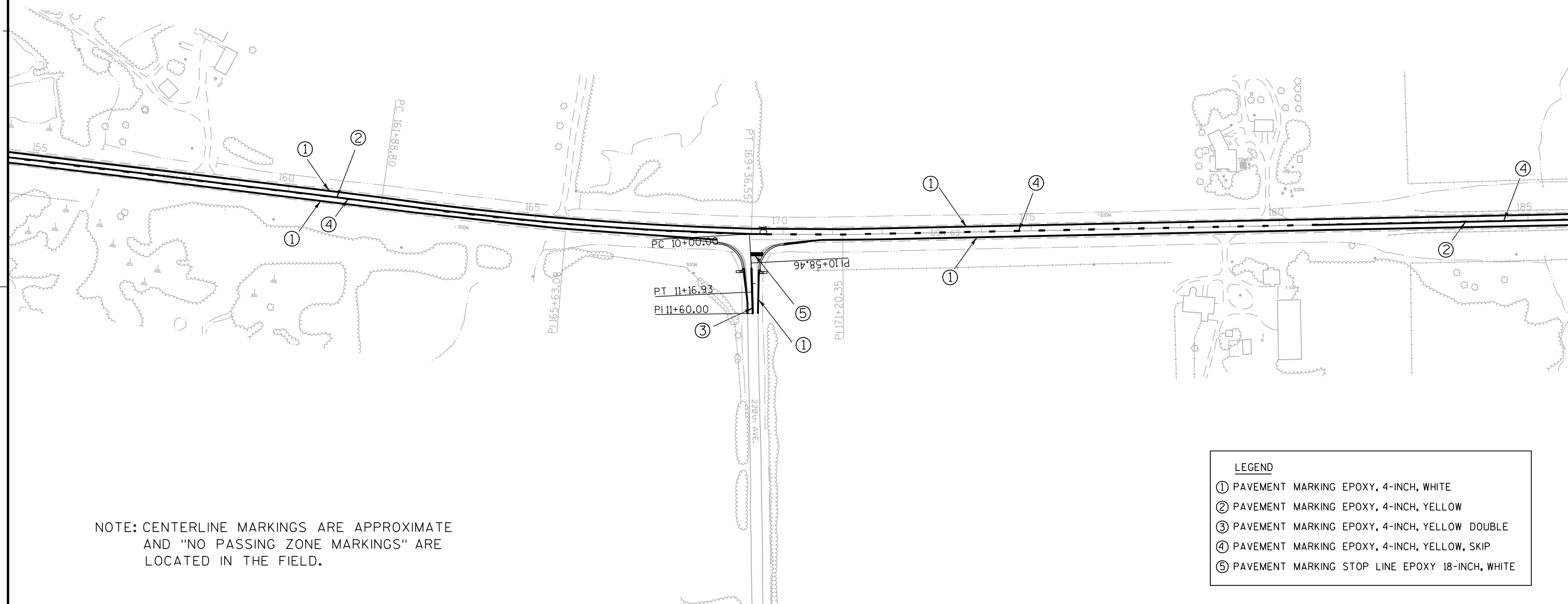
PAVEMENT MARKING EPOXY, 4-INCH, YELLOW DOUBLE

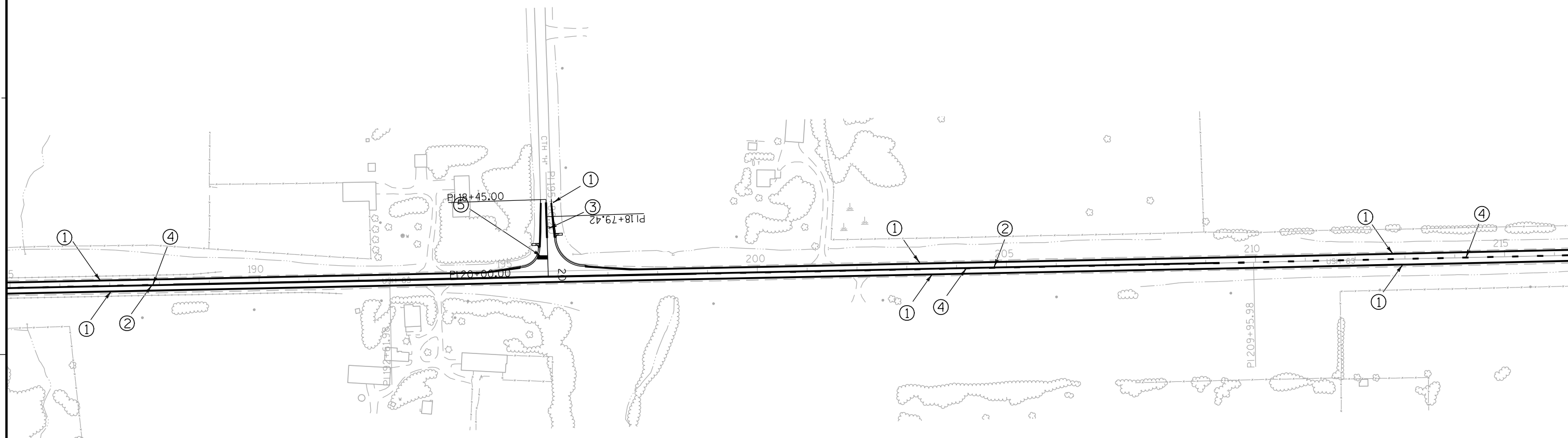
④

PAVEMENT MARKING EPOXY, 4-INCH, YELLOW, SKIP

⑤

PAVEMENT MARKING STOP LINE EPOXY 18-INCH, WHITE

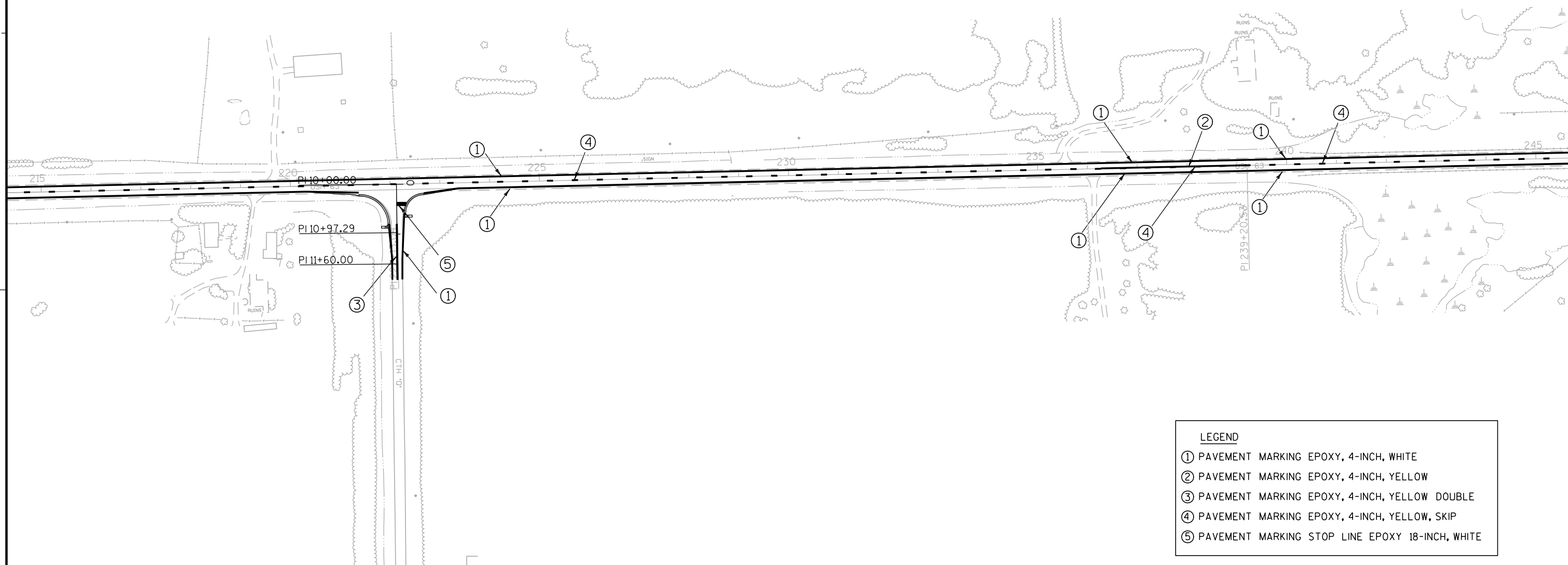




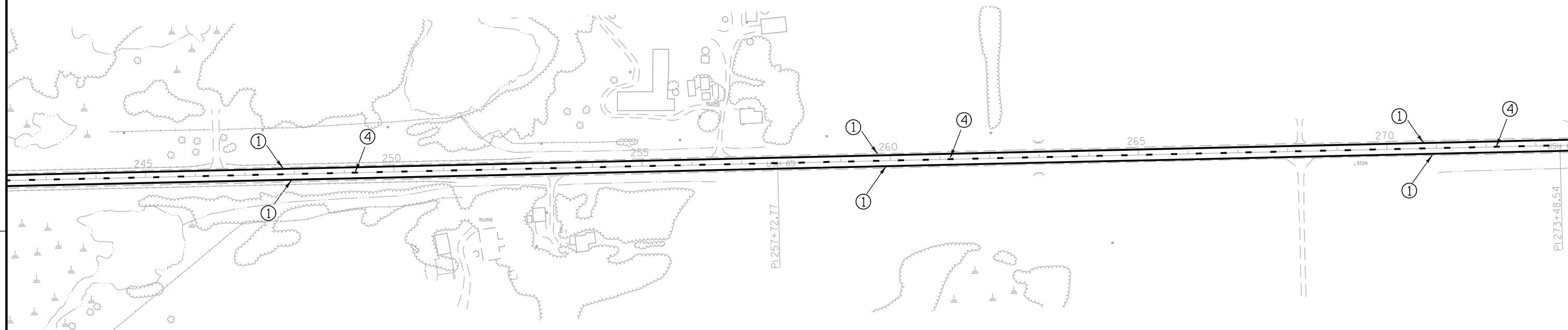
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LEGEND

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- ② PAVEMENT MARKING EPOXY, 4-INCH, YELLOW
- ③ PAVEMENT MARKING EPOXY, 4-INCH, YELLOW DOUBLE
- ④ PAVEMENT MARKING EPOXY, 4-INCH, YELLOW, SKIP
- ⑤ PAVEMENT MARKING STOP LINE EPOXY 18-INCH, WHITE



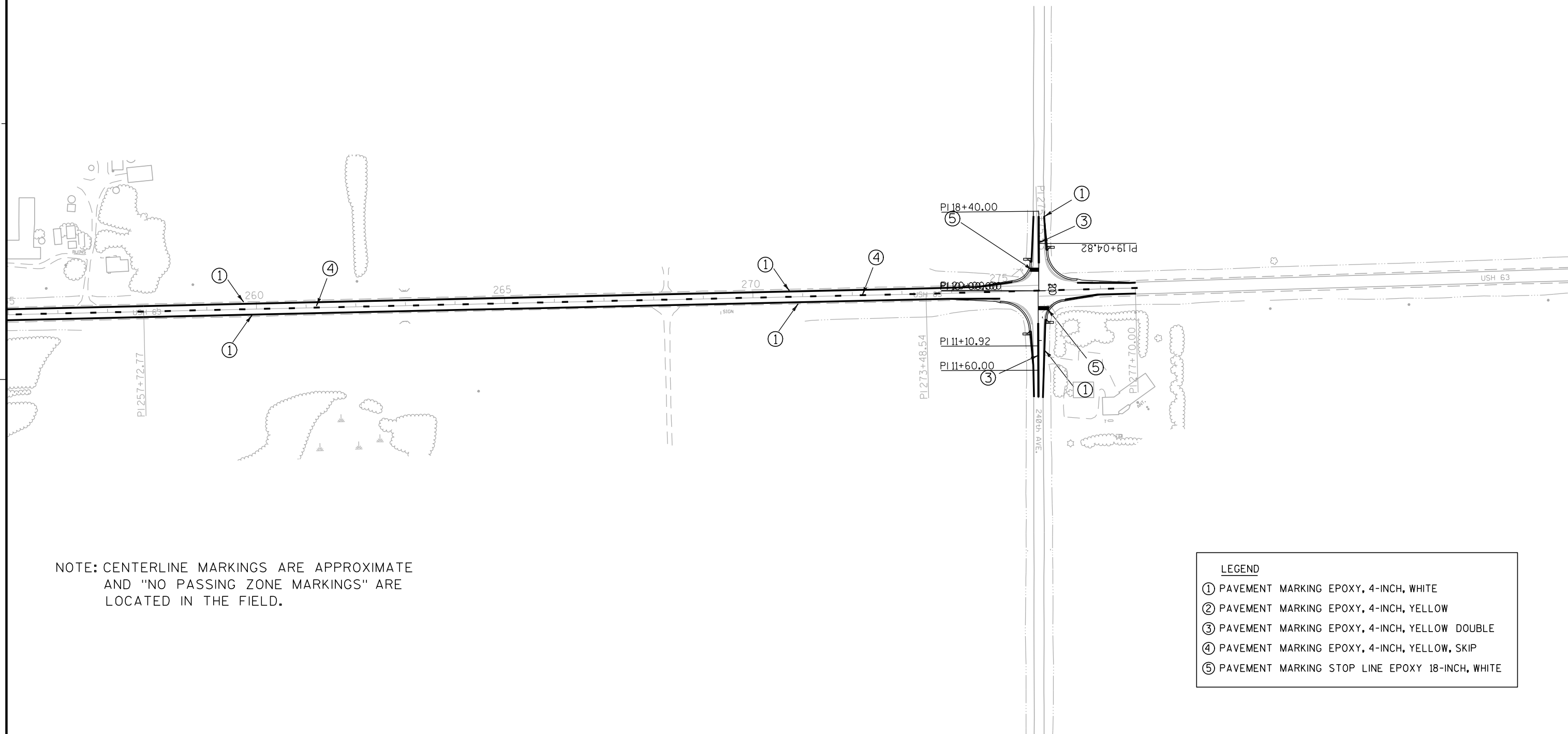
NOTE: CENTERLINE MARKINGS ARE APPROXIMATE
AND "NO PASSING ZONE MARKINGS" ARE
LOCATED IN THE FIELD.

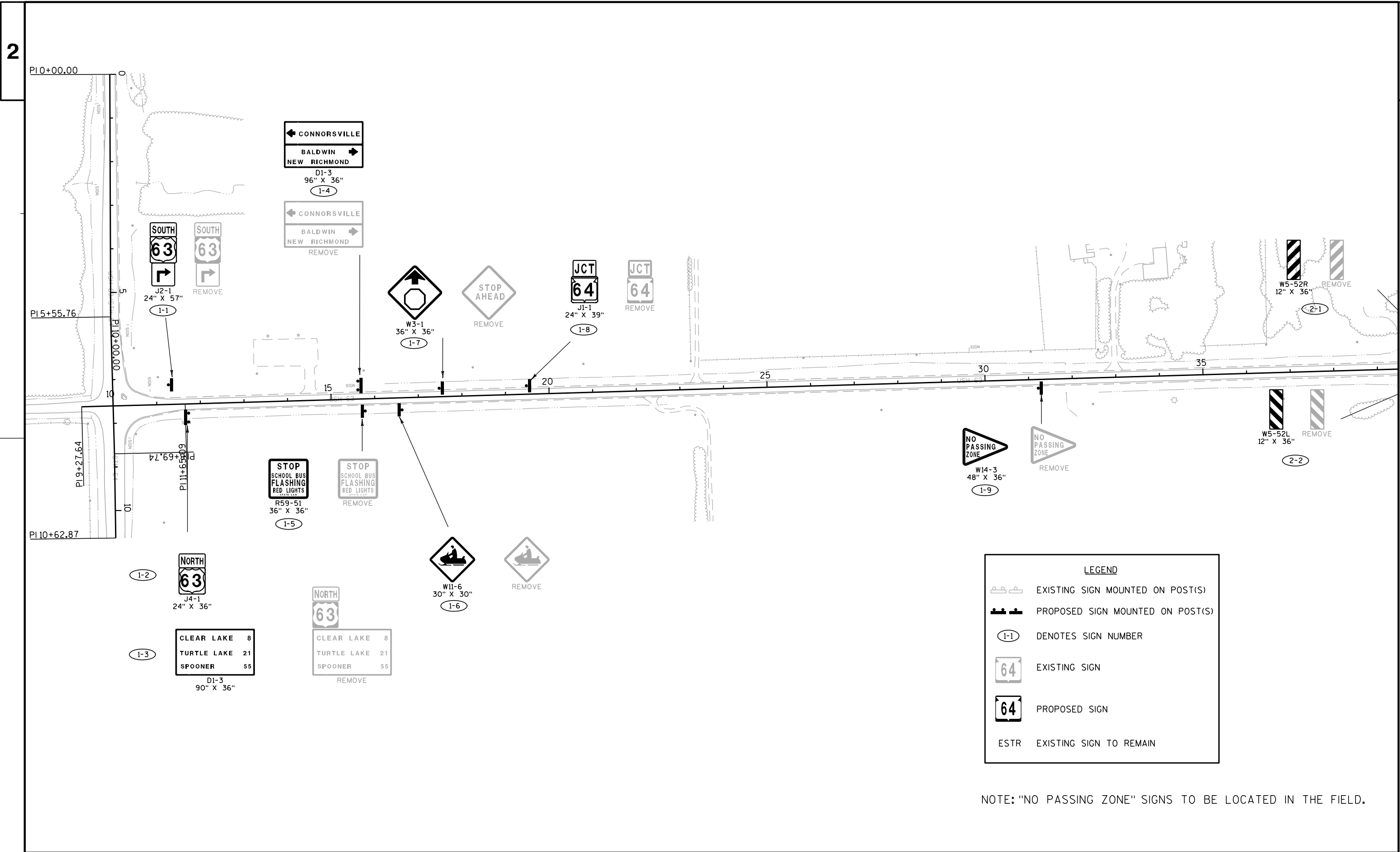


NOTE: CENTERLINE MARKINGS ARE APPROXIMATE
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LOCATED IN THE FIELD.

LEGEND

- ① PAVEMENT MARKING EPOXY, 4-INCH, WHITE
- ② PAVEMENT MARKING EPOXY, 4-INCH, YELLOW
- ③ PAVEMENT MARKING EPOXY, 4-INCH, YELLOW DOUBLE
- ④ PAVEMENT MARKING EPOXY, 4-INCH, YELLOW, SKIP
- ⑤ PAVEMENT MARKING STOP LINE EPOXY 18-INCH, WHITE



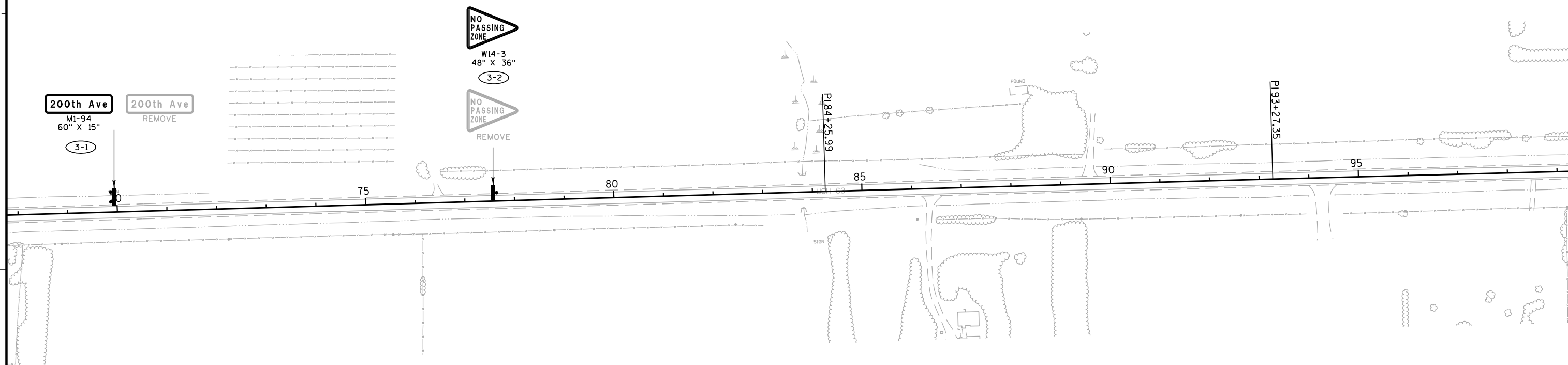




LEGEND

- EXISTING SIGN MOUNTED ON POST(S)
- PROPOSED SIGN MOUNTED ON POST(S)
- DENOTES SIGN NUMBER
- EXISTING SIGN
- PROPOSED SIGN
- ESTR EXISTING SIGN TO REMAIN

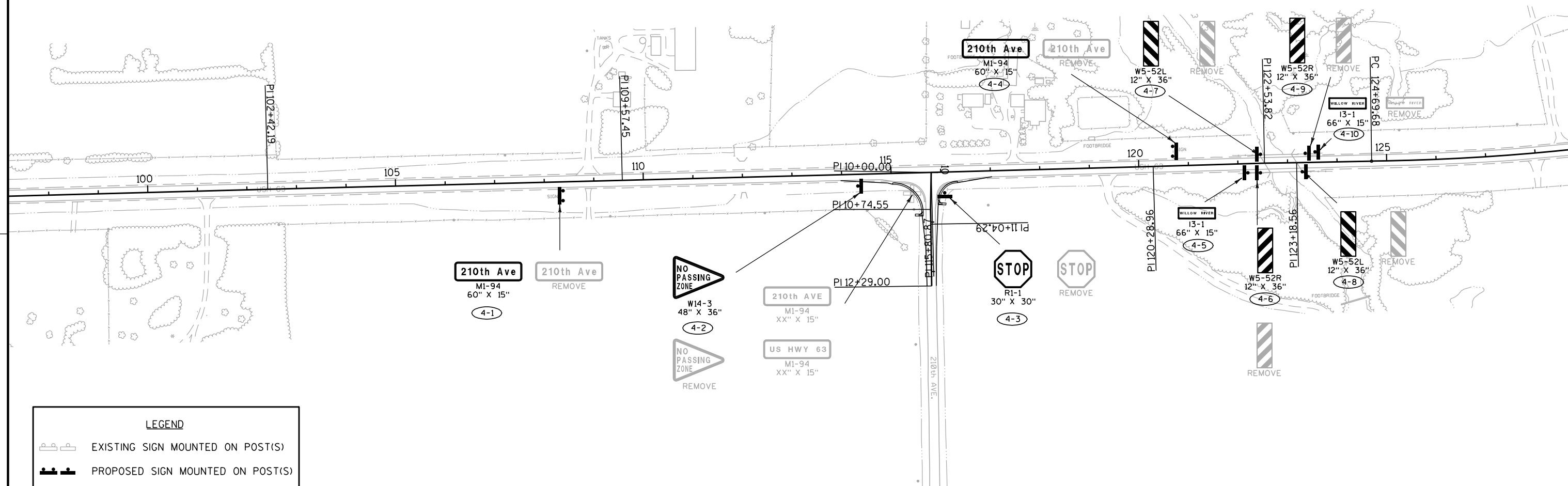
NOTE: "NO PASSING ZONE" SIGNS TO BE LOCATED IN THE FIELD.



LEGEND

- EXISTING SIGN MOUNTED ON POST(S)
- PROPOSED SIGN MOUNTED ON POST(S)
- DENOTES SIGN NUMBER
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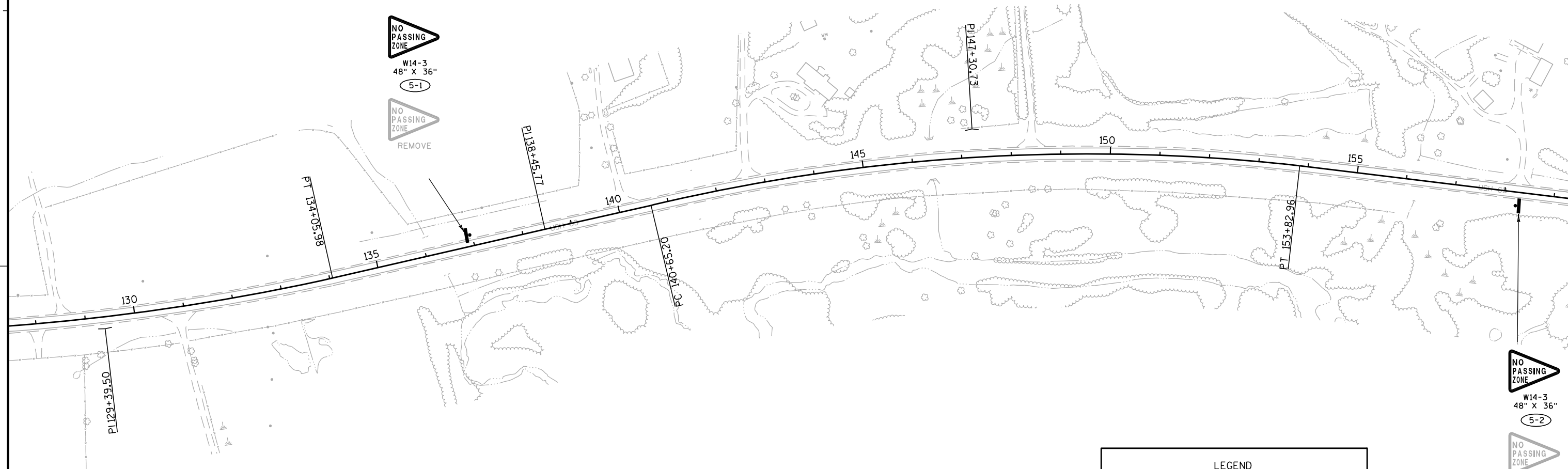
NOTE: "NO PASSING ZONE" SIGNS TO BE LOCATED IN THE FIELD.



LEGEND

- EXISTING SIGN MOUNTED ON POST(S)
- PROPOSED SIGN MOUNTED ON POST(S)
- DENOTES SIGN NUMBER
- EXISTING SIGN
- PROPOSED SIGN
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NOTE: "NO PASSING ZONE" SIGNS TO BE LOCATED IN THE FIELD.



LEGEND

EXISTING SIGN MOUNTED ON POST(S)

PROPOSED SIGN MOUNTED ON POST(S)

DENOTES SIGN NUMBER

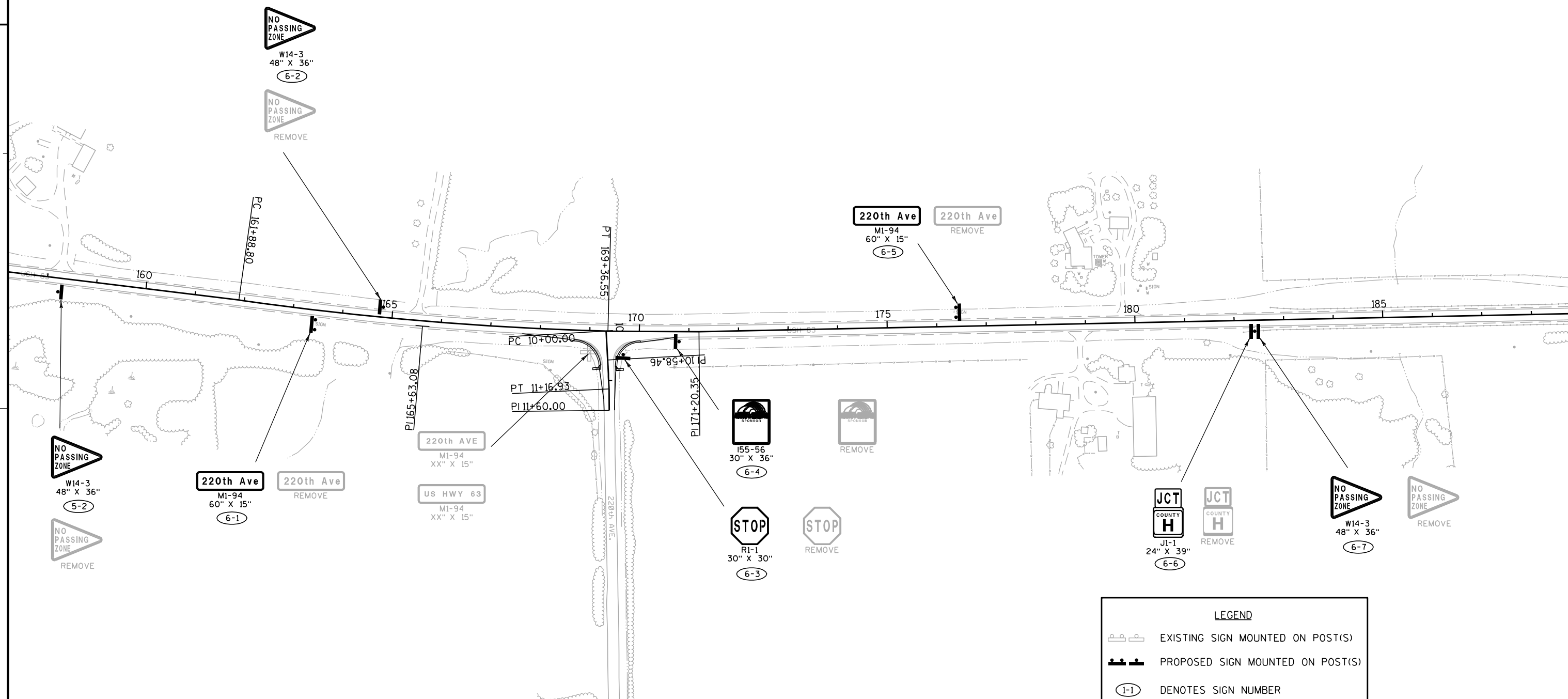
EXISTING SIGN

PROPOSED SIGN

ESTR

EXISTING SIGN TO REMAIN

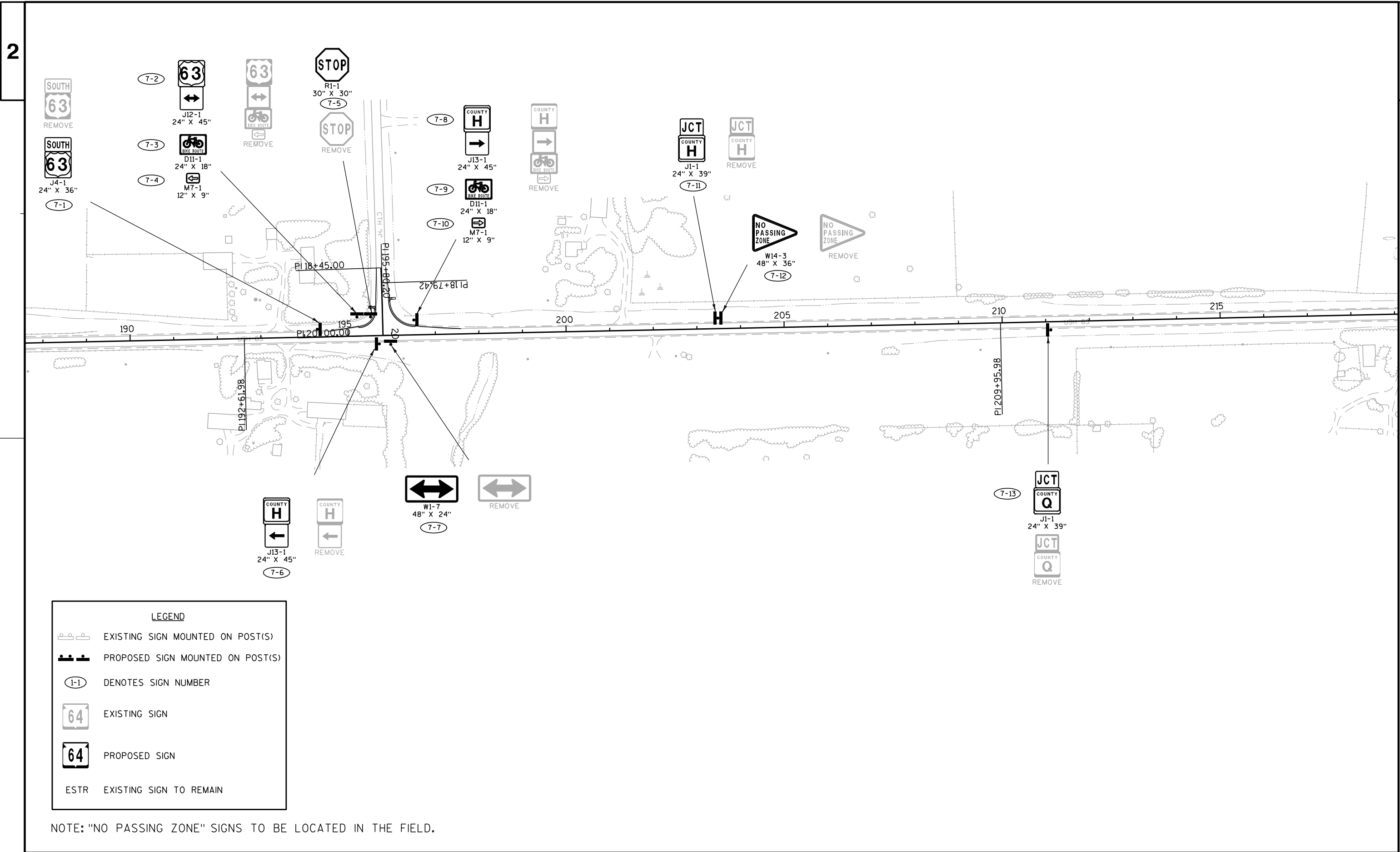
NOTE: "NO PASSING ZONE" SIGNS TO BE LOCATED IN THE FIELD.

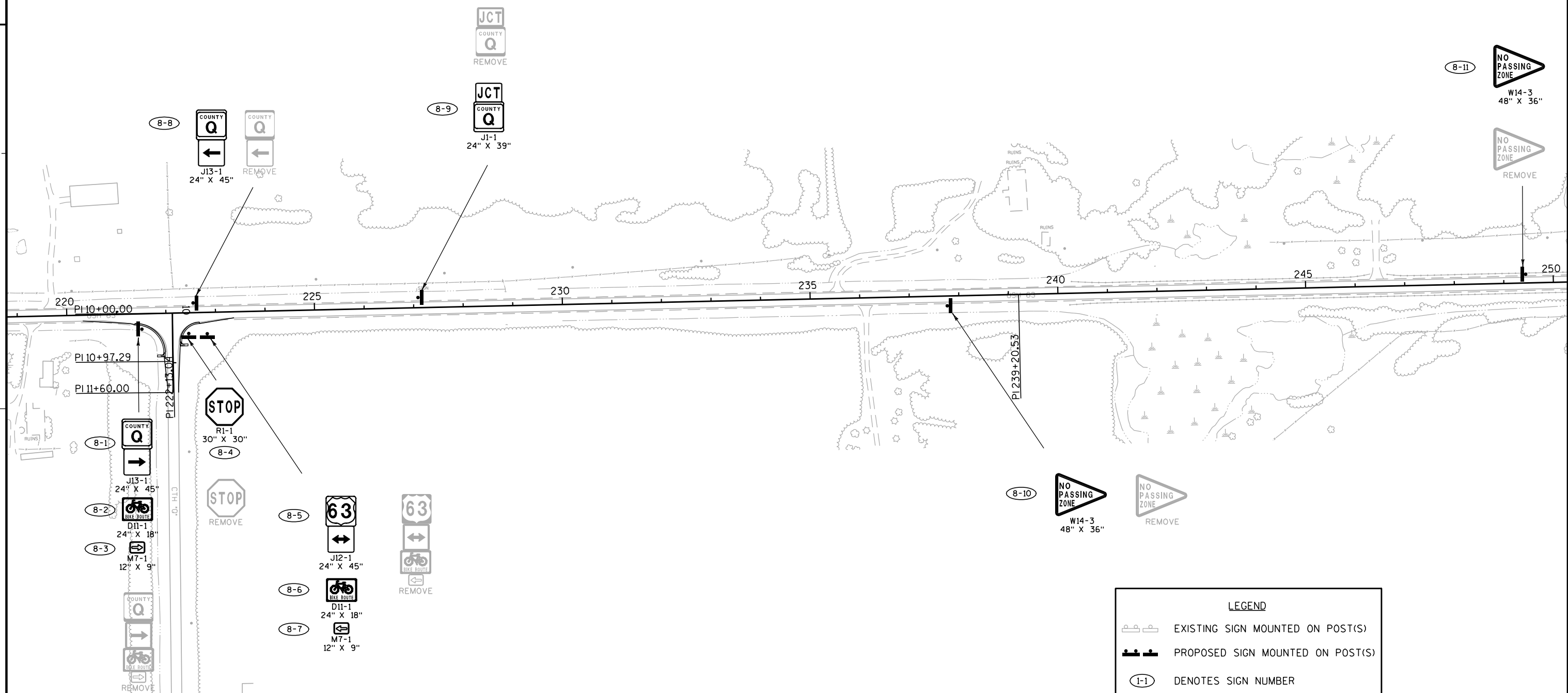


LEGEND

- EXISTING SIGN MOUNTED ON POST(S)
- PROPOSED SIGN MOUNTED ON POST(S)
- DENOTES SIGN NUMBER
- EXISTING SIGN
- PROPOSED SIGN
- EXISTING SIGN TO REMAIN

NOTE: "NO PASSING ZONE" SIGNS TO BE LOCATED IN THE FIELD.

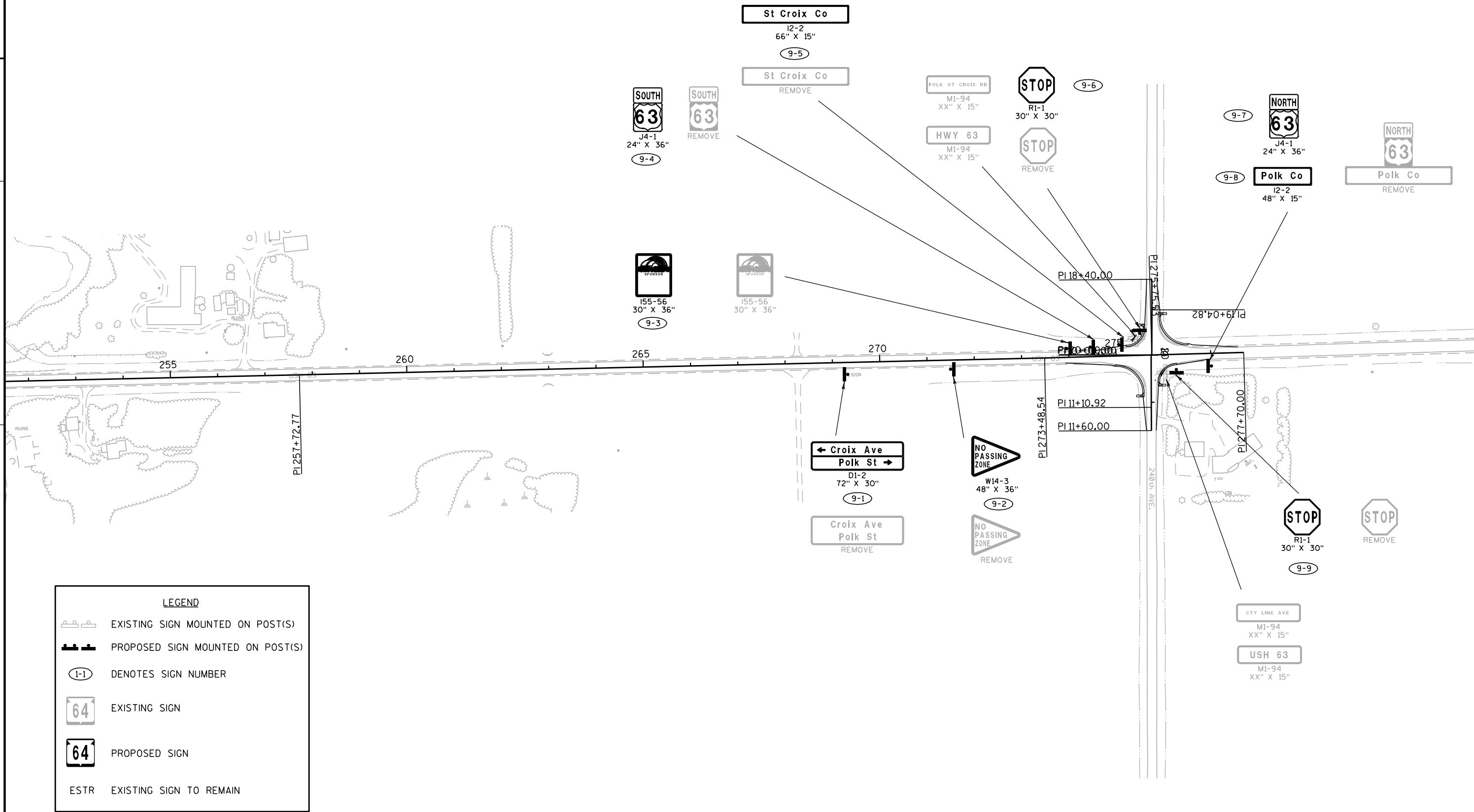




LEGEND

- EXISTING SIGN MOUNTED ON POST(S)
- PROPOSED SIGN MOUNTED ON POST(S)
- DENOTES SIGN NUMBER
- EXISTING SIGN
- PROPOSED SIGN
- ESTR EXISTING SIGN TO REMAIN

NOTE: "NO PASSING ZONE" SIGNS TO BE LOCATED IN THE FIELD.



GENERAL NOTES FOR TRAFFIC CONTROL

SIGNS FOR ADVANCED WARNING OF CONSTRUCTION SHALL BE PLACED PRIOR TO THE INITIAL PHASE OF CONSTRUCTION AND SHALL REMAIN IN PLACE UNTIL THE PROJECT IS COMPLETED.

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

ROAD MACHINERY, TRUCK ENTRANCE, FLAGMEN AHEAD, ETC. SIGNS SHALL BE USED AS NEEDED AND SHALL BE REMOVED OR COVERED WHEN THE ACTIVITY OR CONDITION DOES NOT EXIST.

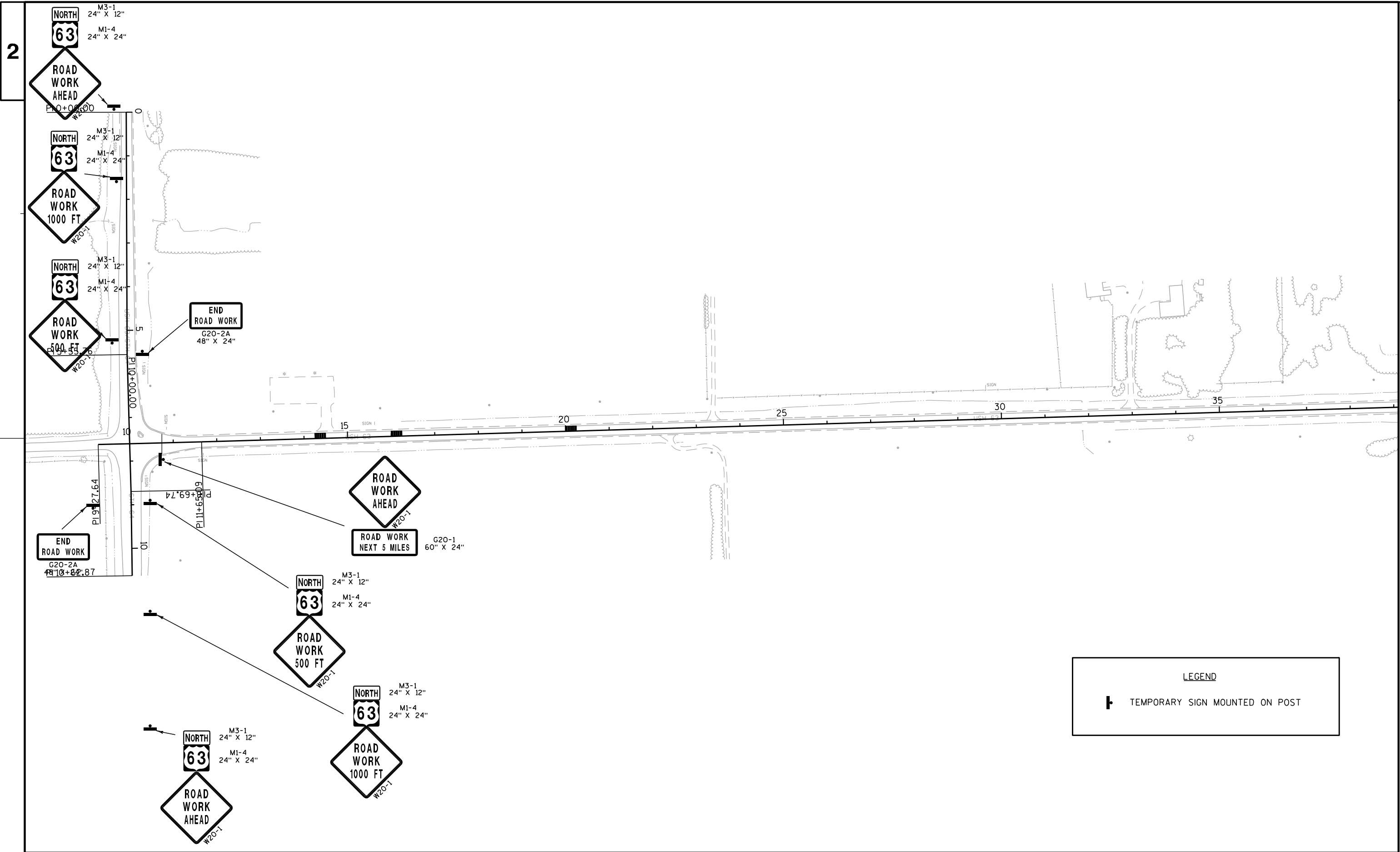
TRAFFIC CONTROL PLANS ARE NOT DRAWN TO SCALE.

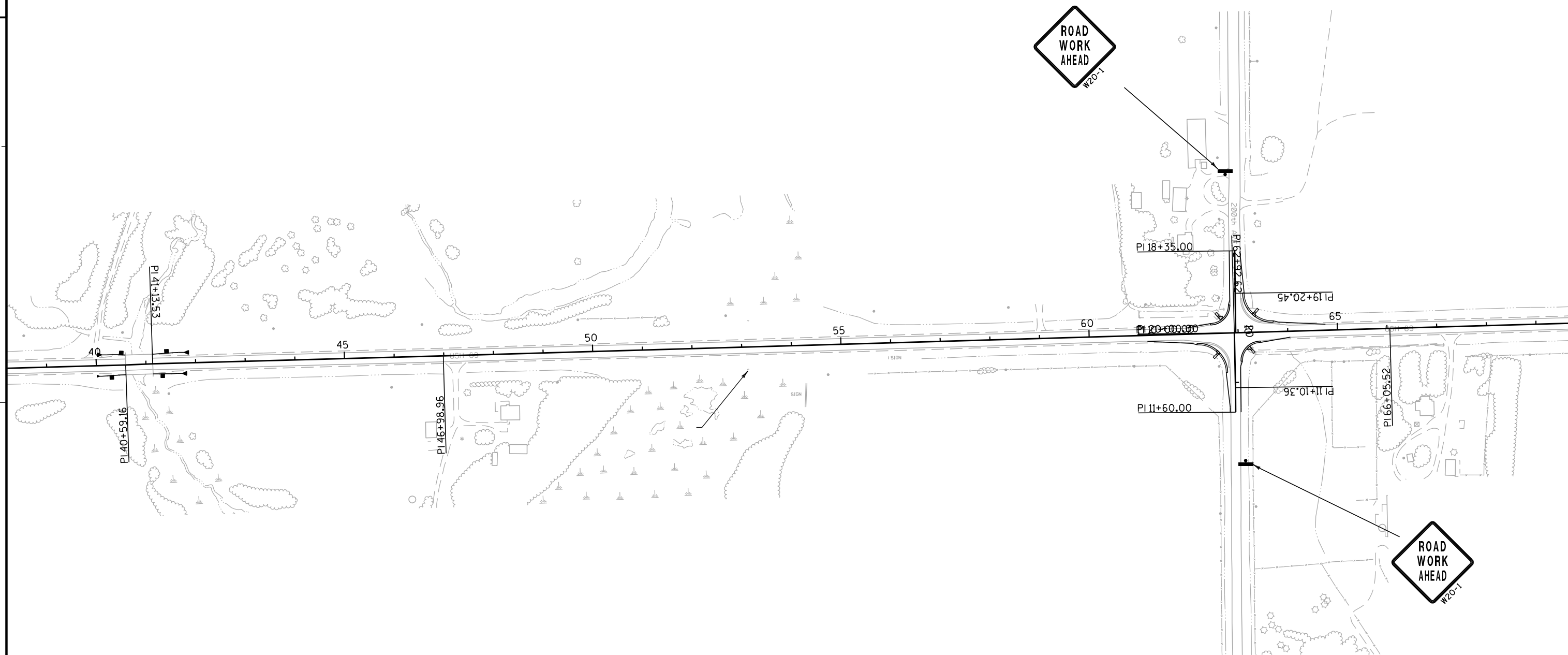
ALL SINGS ARE 48" X 48" UNLESS DIMENSIONED OTHERWISE.

ADDITIONAL SIGNS AND DEVICES ARE SHOWN ELSEWHERE IN THE PLAN.

USE AS REQUIRED:

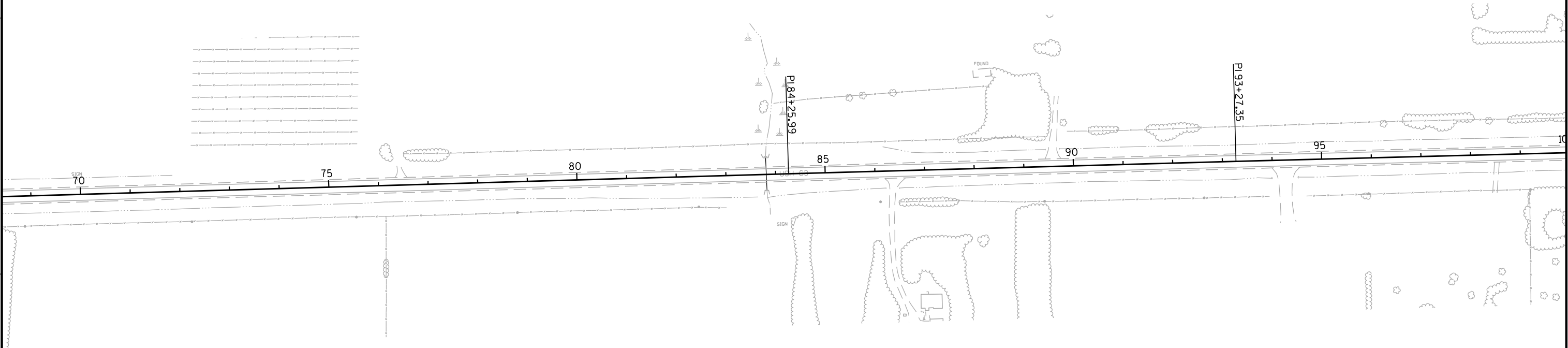






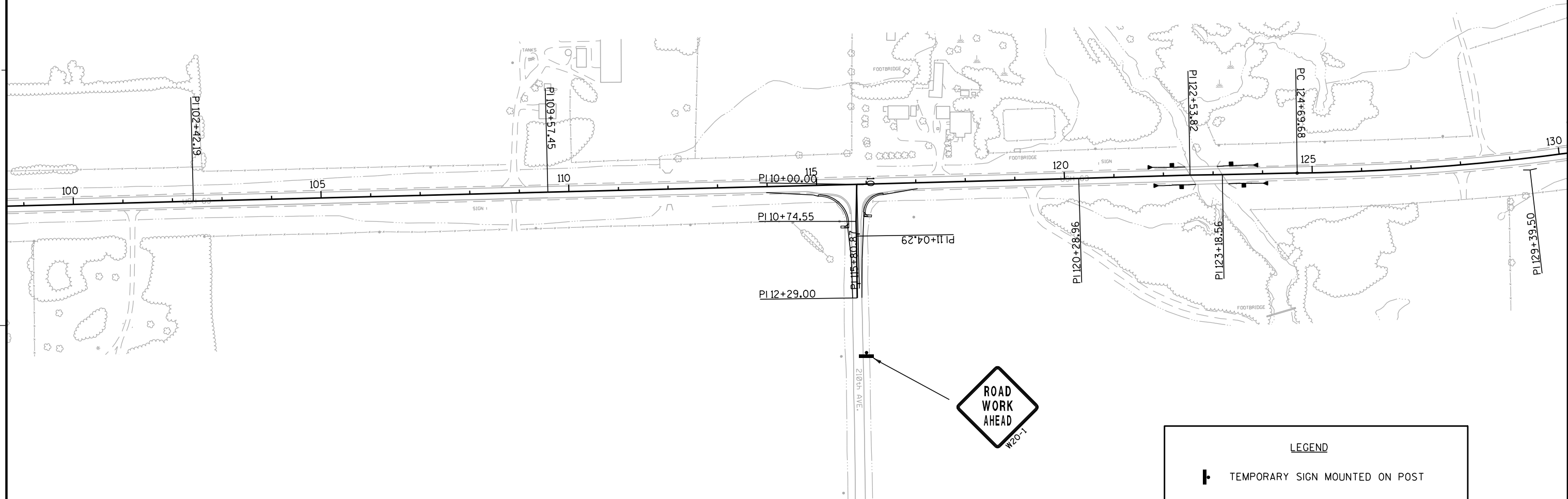
LEGEND

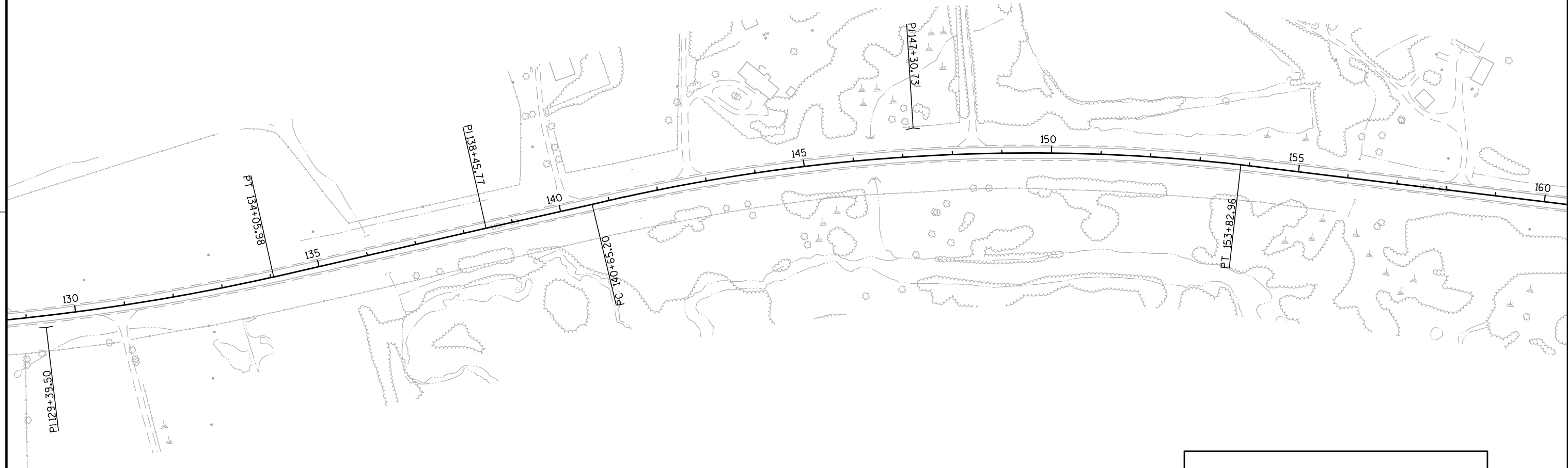
 TEMPORARY SIGN MOUNTED ON POST



LEGEND

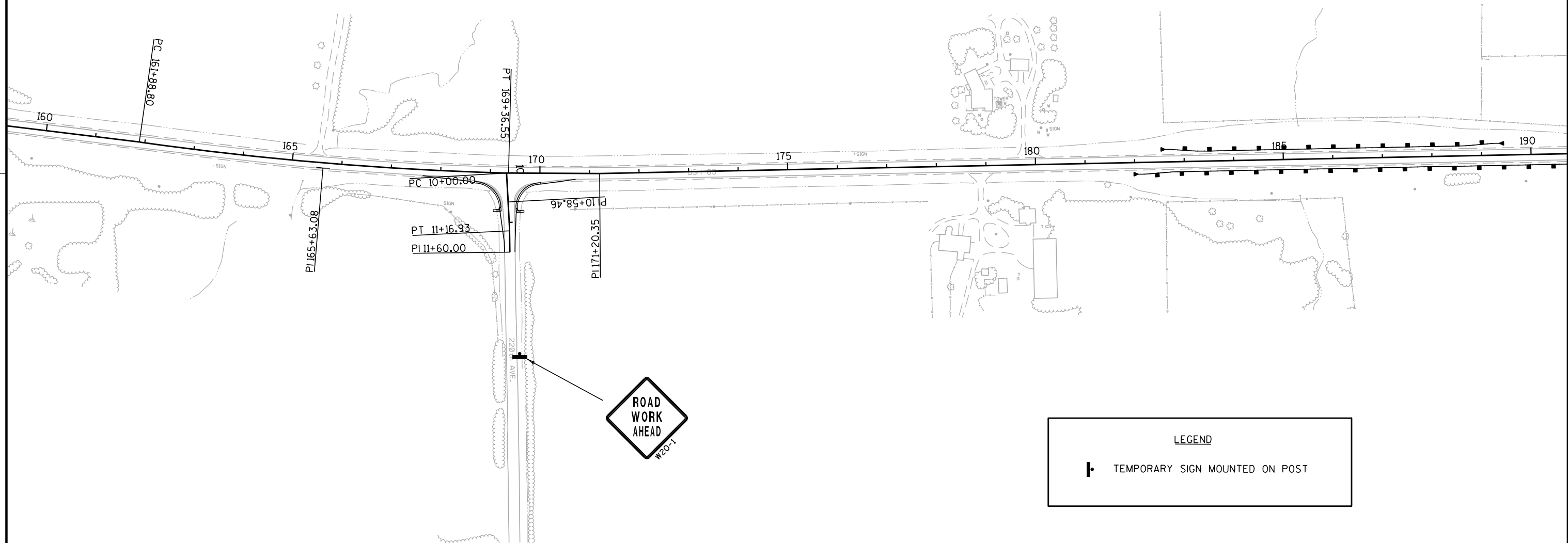
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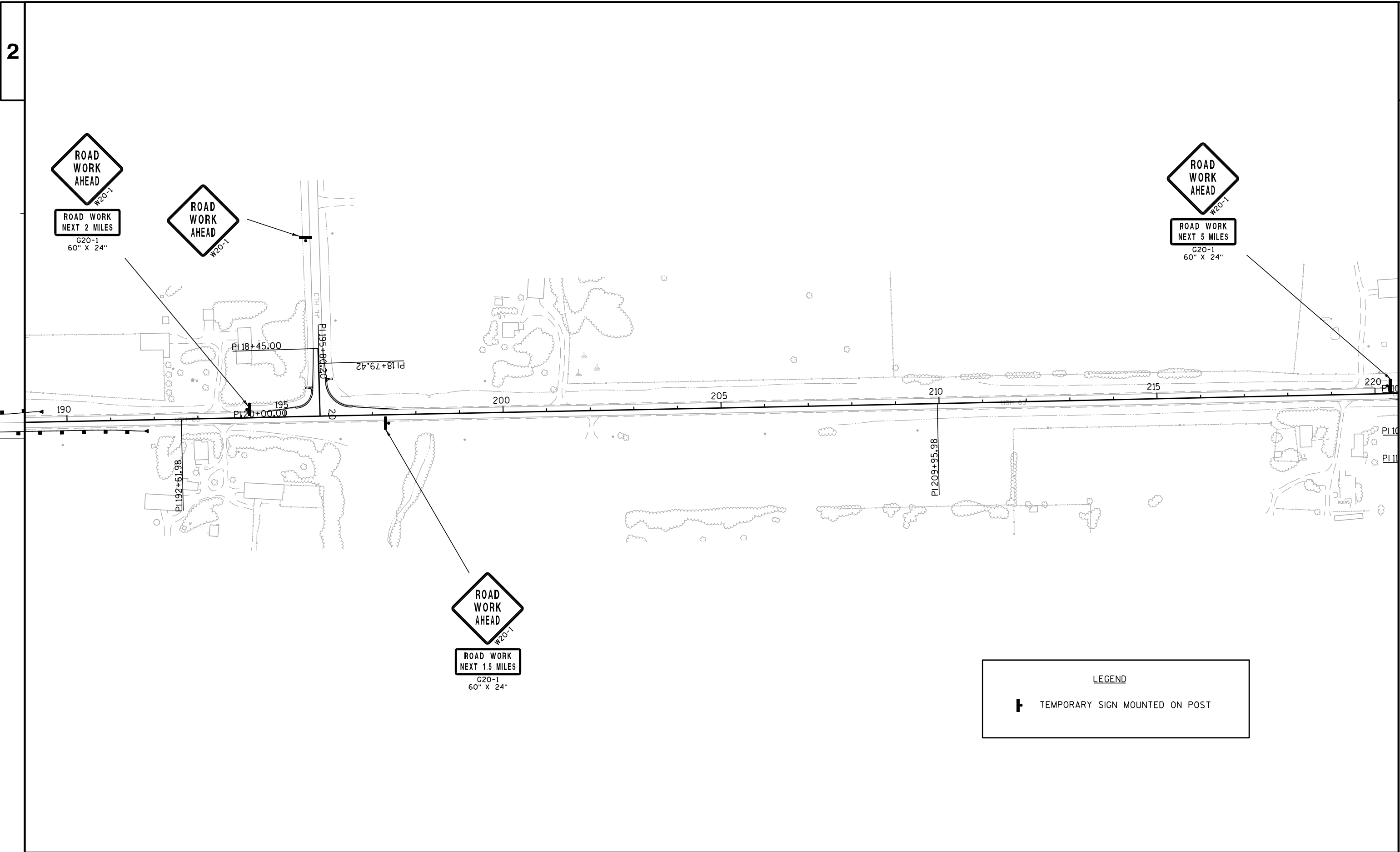


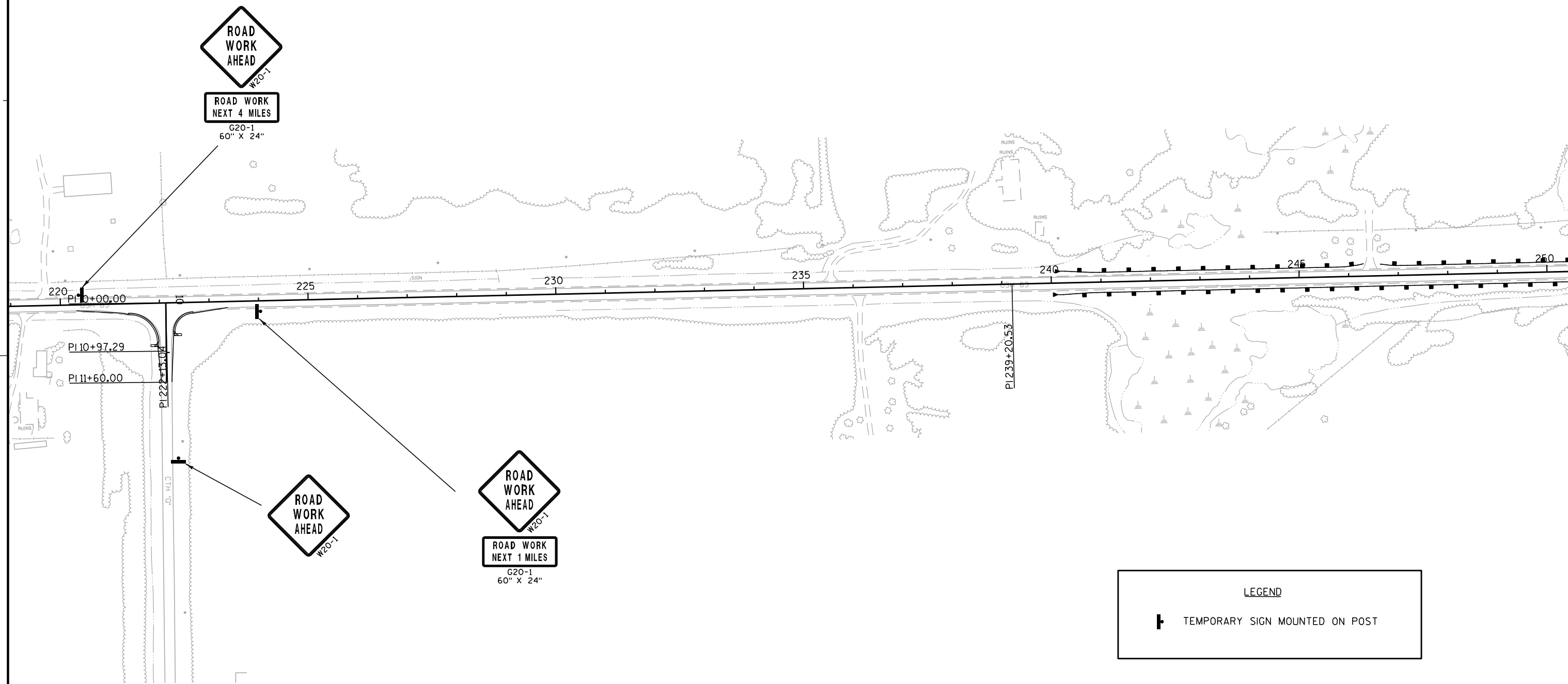


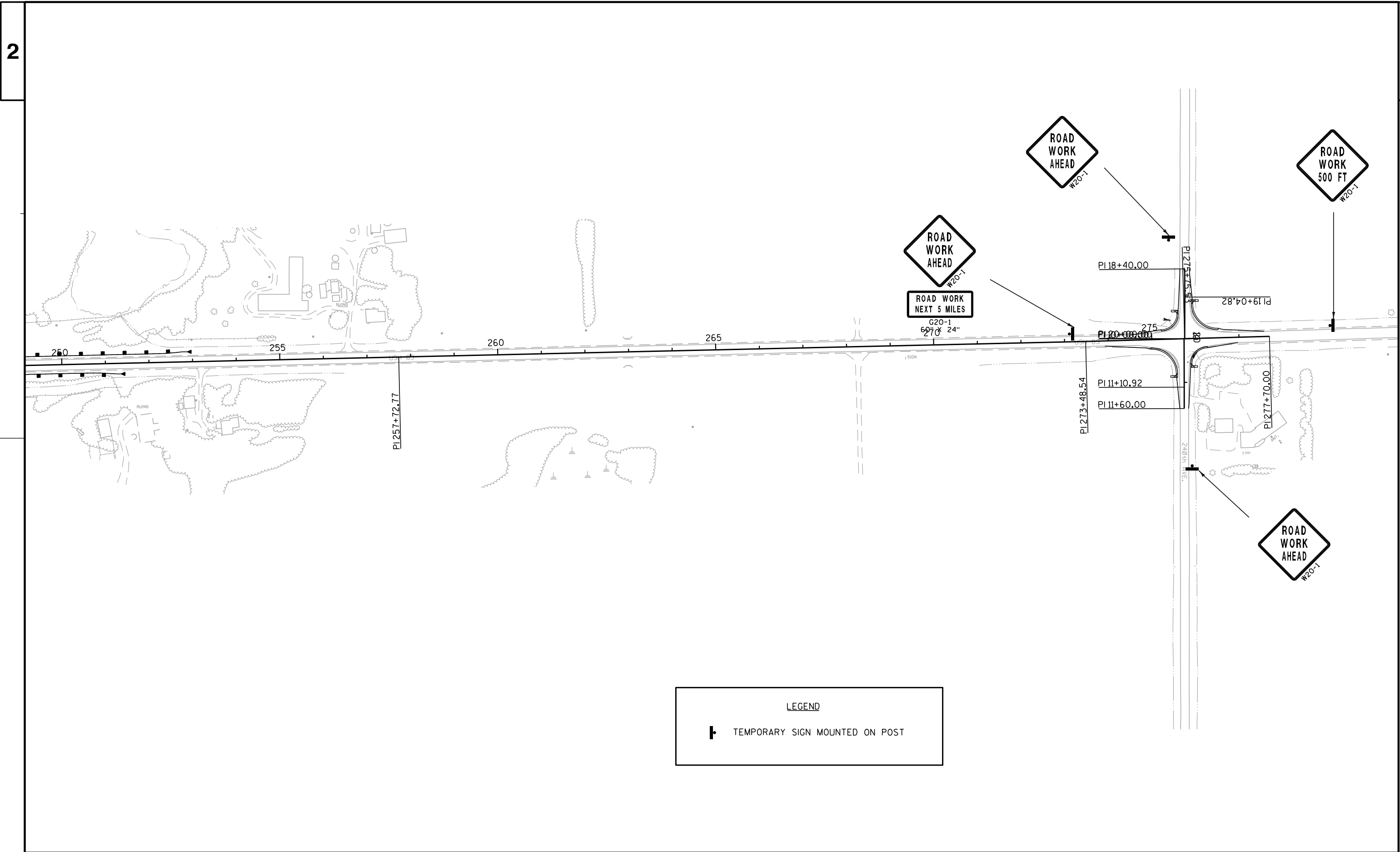
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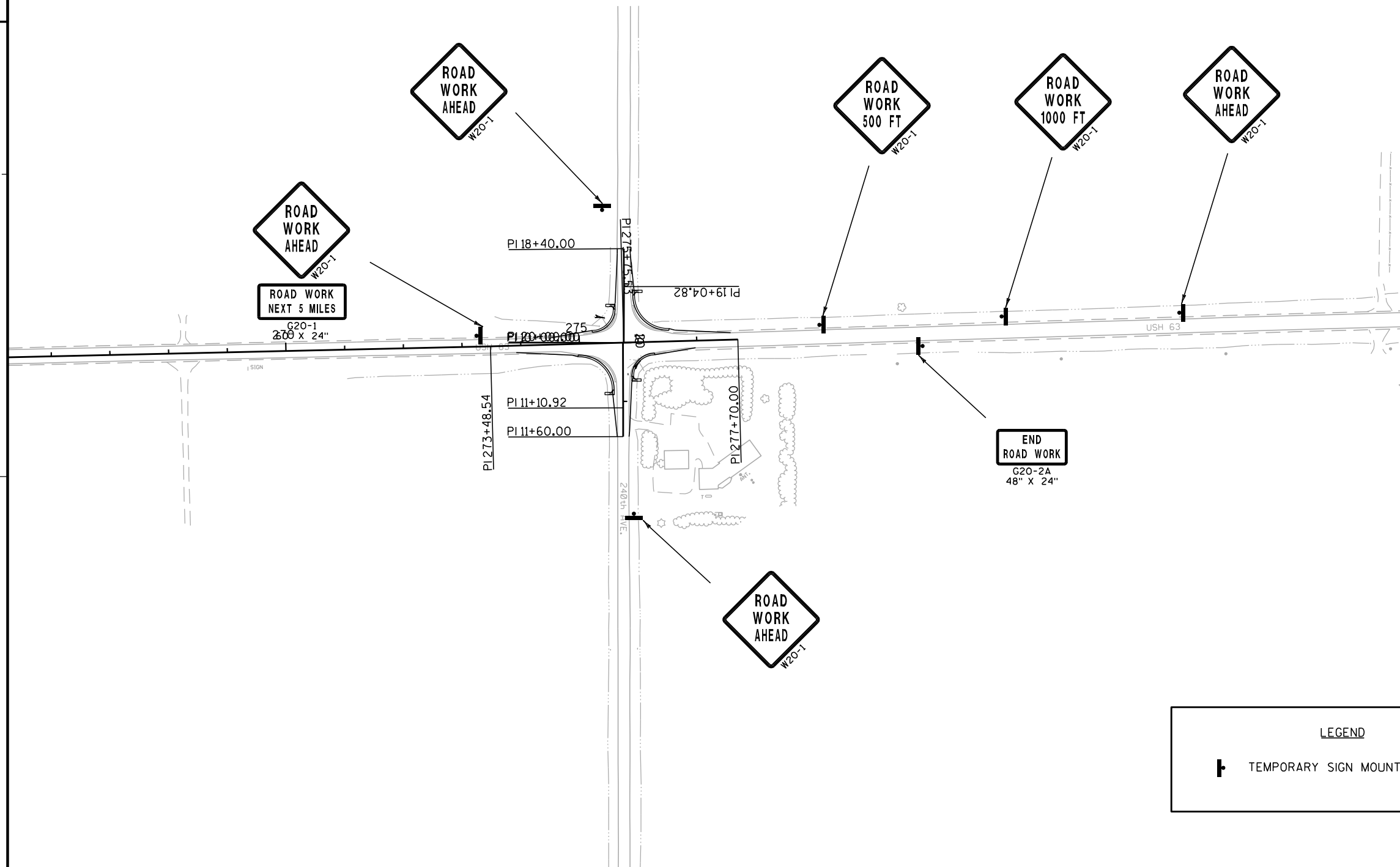
TEMPORARY SIGN MOUNTED ON POST





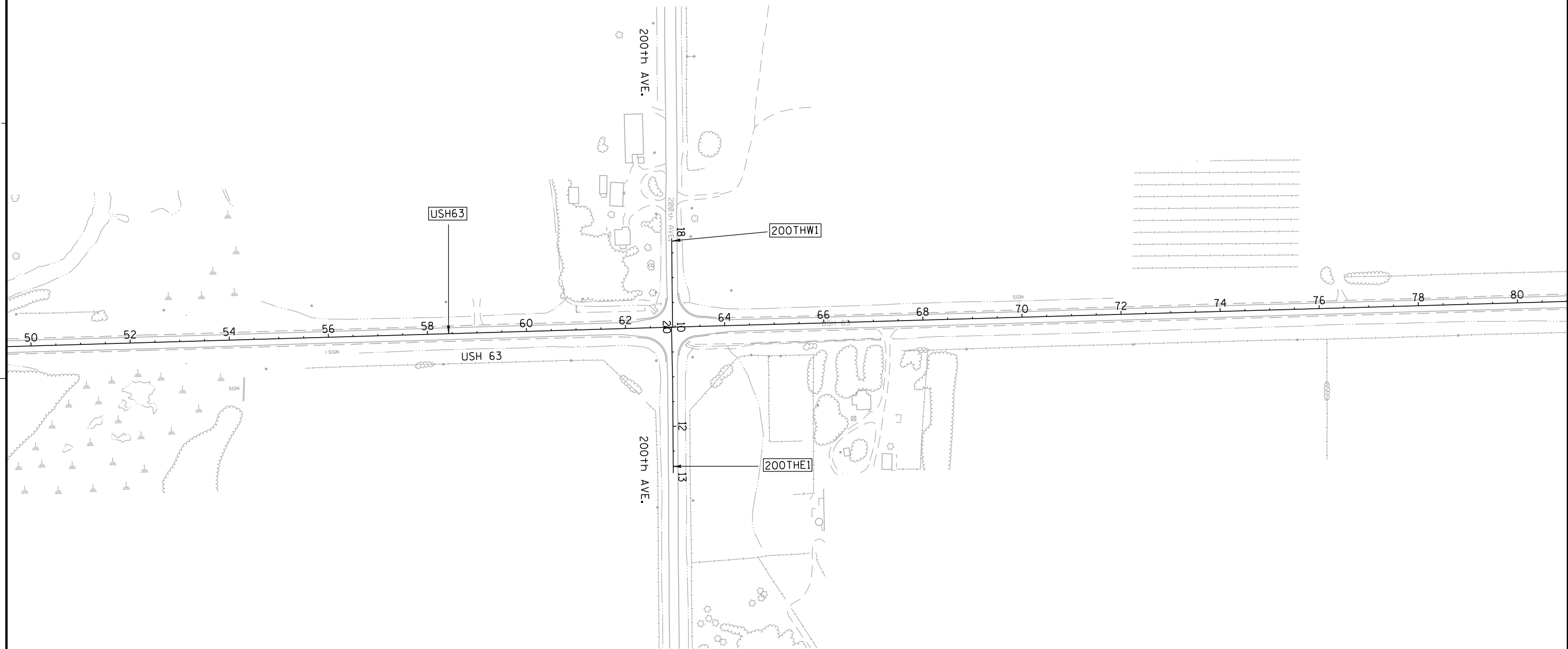




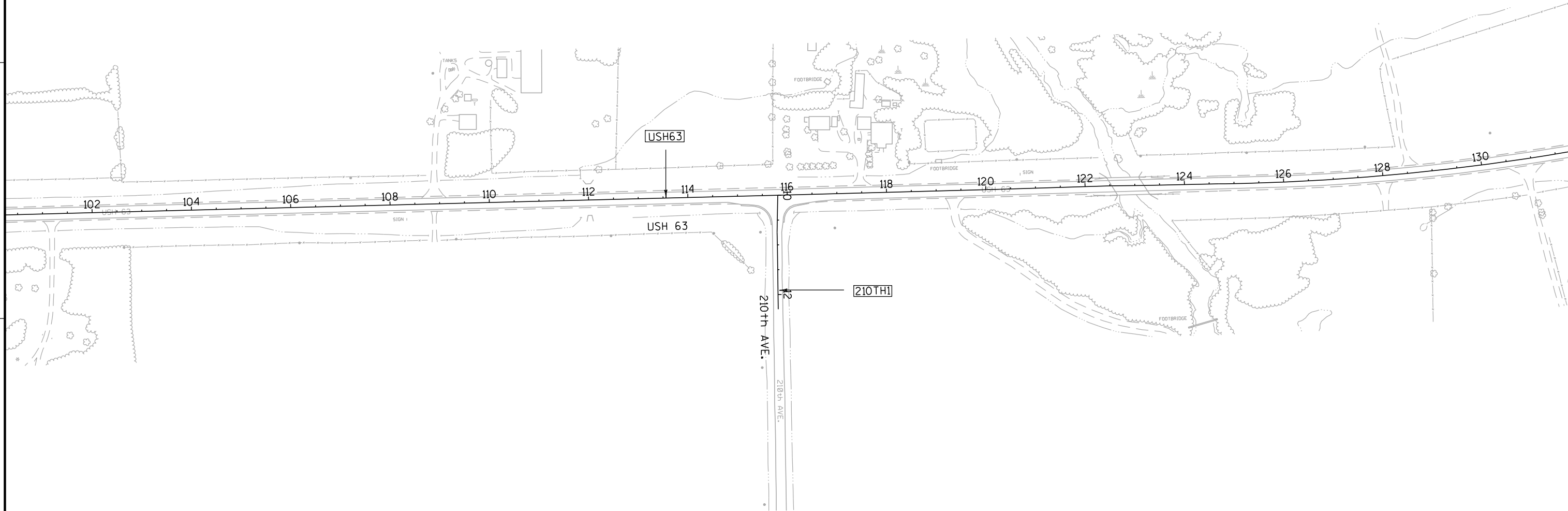




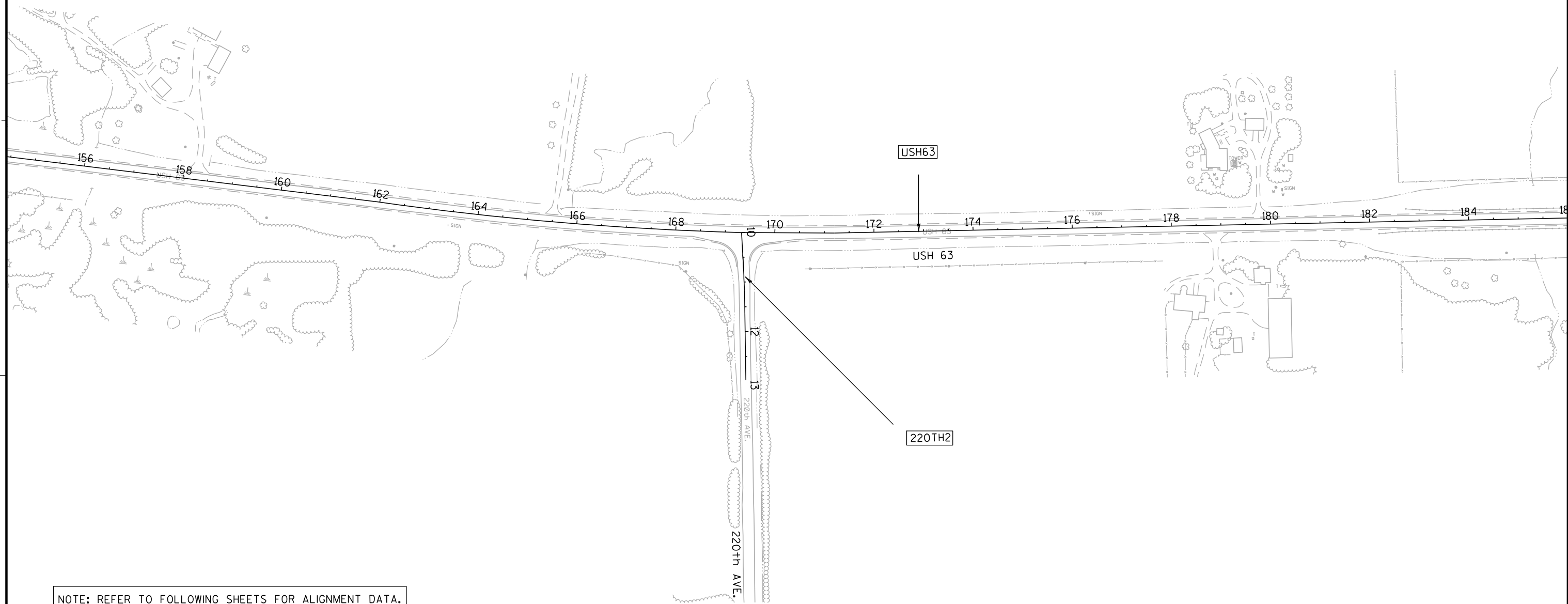
NOTE: REFER TO FOLLOWING SHEETS FOR ALIGNMENT DATA.

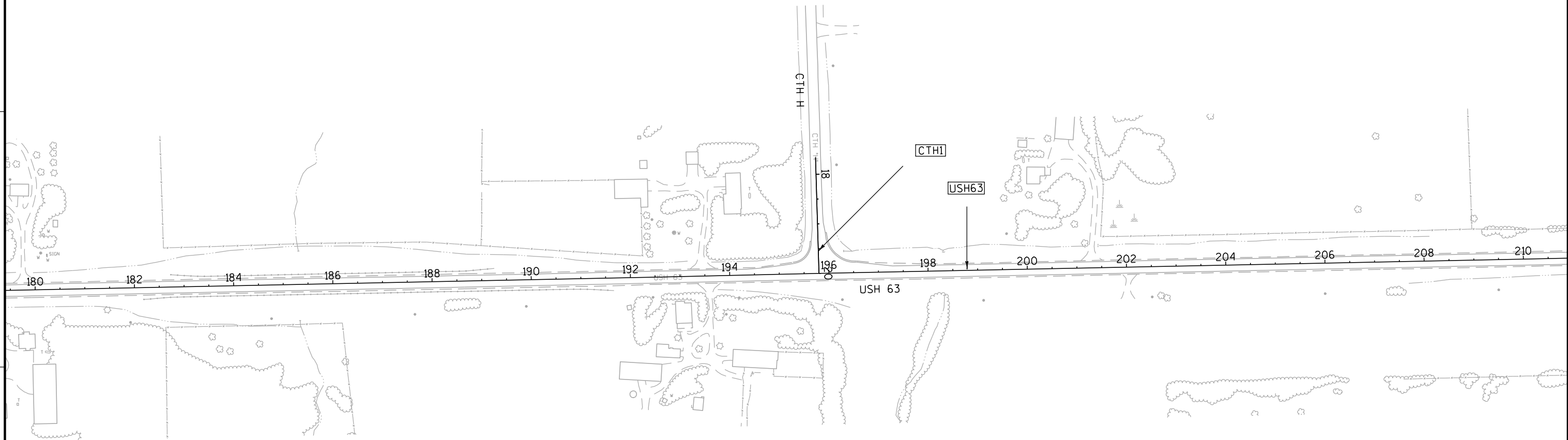


NOTE: REFER TO FOLLOWING SHEETS FOR ALIGNMENT DATA.

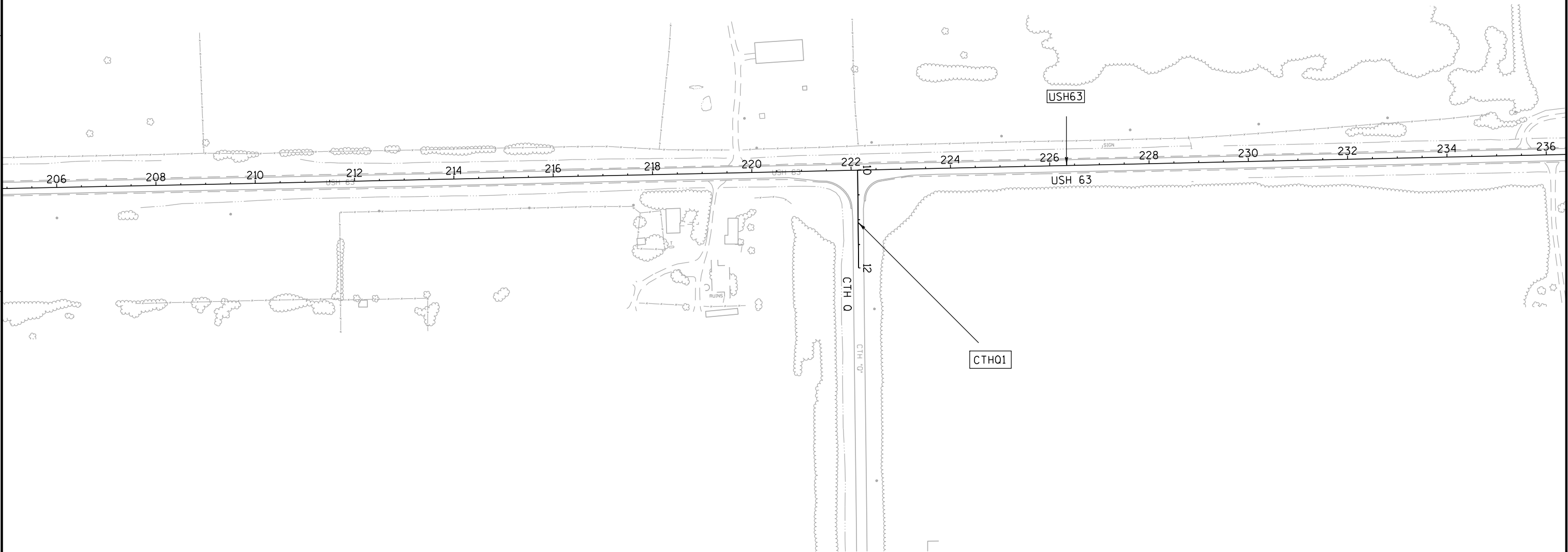


NOTE: REFER TO FOLLOWING SHEETS FOR ALIGNMENT DATA.

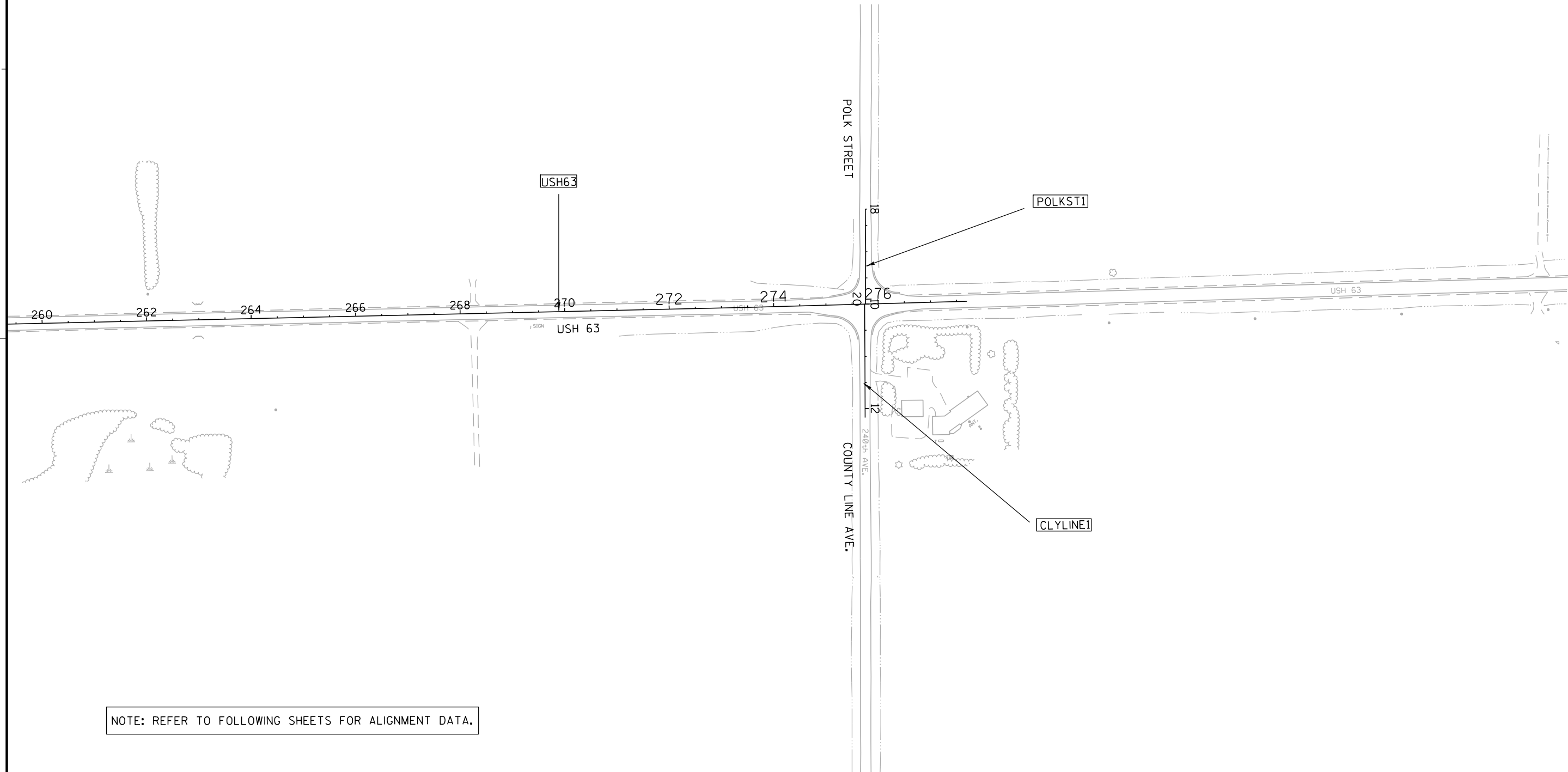




NOTE: REFER TO FOLLOWING SHEETS FOR ALIGNMENT DATA.



NOTE: REFER TO FOLLOWING SHEETS FOR ALIGNMENT DATA.



CHAIN USH63
List CL58-57,2-4,59,5,52-53,66-65,54,6,55,7-9,C ,C1,CL56,C ,C2,C ,C3
List ,CL16,60,17,61,36,62-64,20,73
Description USH 63 CL 8-6-12
Layer 1
Feature PRL

CL58 N 401328.54 E 633778.88 Z 9999.990 STA 9+27.64
Distance 72.36' Bearing N 1°29'36.55" W
CL57 N 401400.87 E 633776.99 Z 0.000 STA 10+00.00
Distance 165.10' Bearing N 1°29'36.55" W
CL2 N 401565.91 E 633772.69 Z 1143.270 STA 11+65.09
Distance 2894.07' Bearing N 1°39'07.71" W
CL3 N 404458.78 E 633689.25 Z 1075.590 STA 40+59.16
Distance 54.37' Bearing N 2°11'32.90" W
CL4 N 404513.11 E 633687.17 Z 1082.160 STA 41+13.53
Distance 585.43' Bearing N 1°34'28.59" W
CL59 N 405098.32 E 633671.08 Z 9999.990 STA 46+98.96
Distance 1593.66' Bearing N 1°40'18.39" W
CL5 N 406691.30 E 633624.59 Z 1083.830 STA 62+92.62
Distance 312.89' Bearing N 1°36'32.65" W
CL52 N 407004.07 E 633615.80 Z 9999.990 STA 66+05.52
Distance 1820.47' Bearing N 1°39'32.02" W
CL53 N 408823.78 E 633563.10 Z 9999.990 STA 84+25.99
Distance 901.36' Bearing N 1°35'35.09" W
CL66 N 409724.79 E 633538.04 Z 9999.990 STA 93+27.35
Distance 914.85' Bearing N 1°30'20.55" W
CL65 N 410639.32 E 633514.00 Z 9999.990 STA 102+42.19
Distance 715.25' Bearing N 1°27'41.00" W
CL54 N 411354.34 E 633495.76 Z 9999.990 STA 109+57.45
Distance 623.42' Bearing N 1°26'56.24" W
CL6 N 411977.56 E 633480.00 Z 1088.470 STA 115+80.87
Distance 448.10' Bearing N 1°31'35.17" W
CL55 N 412425.50 E 633468.06 Z 9999.990 STA 120+28.96
Distance 224.86' Bearing N 1°46'01.17" W
CL7 N 412650.25 E 633461.13 Z 1067.590 STA 122+53.82
Distance 64.74' Bearing N 0°45'08.40" W
CL8 N 412714.98 E 633460.28 Z 1078.410 STA 123+18.56
Distance 151.12' Bearing N 1°12'34.27" W
CL9 N 412866.07 E 633457.09 Z 1078.230 STA 124+69.68
Distance 0.00' Bearing N 0°00'00.00" E
CURVE C1
PC N 412866.07 E 633457.09 STA 124+69.68
CC N 412805.69 E 628919.05
PIN 413335.85 E 633450.84 STA 129+39.50
TAN 469.82'
DB N 0°45'44.39" W
DA N 12°34'57.75" W
LChord Distance 934.64' Bearing N 6°40'21.07" W
External Distance 24.25'
Middle Ordinate 24.12'
Radius 4538.44'
DEG 1°15'44.84"
DELTA -11°49'13.37"
LENGTH 936.30'
PT N 413794.38 E 633348.49 STA 134+05.98
CURVE C1
Distance 439.79' Bearing N 12°55'48.23" W

CL56 N 414223.02 E 633250.08 Z 9999.990 STA 138+45.77
Distance 219.43' Bearing N 12°42'39.76" W
CURVE C2
PC N 414437.07 E 633201.80 STA 140+65.20
CC N 415320.53 E 636908.44
PIN 415084.46 E 633047.49 STA 147+30.73
TAN 665.53'
DB N 13°24'21.63" W
DA N 6°24'30.17" E
LChord Distance 1311.20' Bearing N 3°29'55.73" W
External Distance 57.68'
Middle Ordinate 56.82'
Radius 3810.47'
DEG 1°30'13.11"
DELTA 19°48'51.79"
LENGTH 1317.76'
PT N 415745.83 E 633121.78 STA 153+82.96
CURVE C2
Distance 805.84' Bearing N 6°56'34.46" E
CURVE C3
PC N 416545.76 E 633219.19 STA 161+88.80
CC N 417465.45 E 626753.82
PIN 416916.31 E 633271.90 STA 165+63.08
TAN 374.28'
DB N 8°05'45.41" E
DA N 1°32'07.79" E
LChord Distance 747.34' Bearing N 4°48'56.60" E
External Distance 10.72'
Middle Ordinate 10.70'
Radius 6530.46'
DEG 0°52'38.51"
DELTA -6°33'37.62"
LENGTH 747.75'
PT N 417290.46 E 633281.93 STA 169+36.55
CURVE C3
Distance 183.80' Bearing N 0°18'19.77" E
CL16 N 417474.26 E 633282.91 Z 1115.000 STA 171+20.35
Distance 2141.63' Bearing N 1°10'50.88" W
CL60 N 419615.44 E 633238.77 Z 9999.990 STA 192+61.98
Distance 318.22' Bearing N 1°16'20.82" W
CL17 N 419933.58 E 633231.71 Z 1128.940 STA 195+80.20
Distance 1415.78' Bearing N 1°09'47.18" W
CL61 N 421349.07 E 633202.97 Z 9999.990 STA 209+95.98
Distance 1217.06' Bearing N 1°15'56.36" W
CL36 N 422565.83 E 633176.09 Z 0.000 STA 222+13.04
Distance 1707.49' Bearing N 1°16'17.61" W
CL62 N 424272.90 E 633138.20 Z 9999.990 STA 239+20.53
Distance 1852.24' Bearing N 1°17'36.61" W
CL63 N 426124.67 E 633096.38 Z 9999.990 STA 257+72.77
Distance 1575.77' Bearing N 1°18'03.81" W
CL64 N 427700.03 E 633060.60 Z 9999.990 STA 273+48.54
Distance 226.99' Bearing N 1°35'04.33" W
CL20 N 427926.93 E 633054.33 Z 1142.540 STA 275+75.53
Distance 194.47' Bearing N 1°33'34.55" W
CL73 N 428121.33 E 633049.03 Z 9999.990 STA 277+70.00

CHAIN LENGTH 26842.36'

CHAIN 200THE1
List CL5,23,76
Description 200TH East 9-7-12
Layer 1
Feature PRL

CL5 N 406691.30 E 633624.59 Z 1083.830 STA 10+00.00
Distance 110.36' Bearing N 88°50'21.81" E
CL23 N 406693.54 E 633734.93 Z 9999.990 STA 11+10.36
Distance 49.64' Bearing N 89°36'51.66" E
CL76 N 406693.87 E 633784.56 Z 9999.990 STA 11+60.00

CHAIN LENGTH 160.00'

CHAIN 200THW1
List CL77,46-47
Description 200TH West 9-7-12
Layer 1
Feature PRL

CL77 N 406691.66 E 633459.53 Z 9999.990 STA 18+35.00
Distance 85.45' Bearing N 89°16'59.92" E
CL46 N 406692.73 E 633544.98 Z 9999.990 STA 19+20.45
Distance 79.55' Bearing N 89°16'59.92" E
CL47 N 406693.72 E 633624.52 Z 0.000 STA 20+00.00

CHAIN LENGTH 165.00'

CHAIN 210TH1
List CL6,27,25-26
Description 210TH AVE EAST 9-6-12
Layer 1
Feature PRL

CL6 N 411977.56 E 633480.00 Z 1088.470 STA 10+00.00
Distance 74.55' Bearing S 89°04'09.76" E
CL27 N 411976.35 E 633554.54 Z 9999.990 STA 10+74.55
Distance 29.74' Bearing N 88°59'06.10" E
CL25 N 411976.88 E 633584.28 Z 9999.990 STA 11+04.29
Distance 124.71' Bearing N 89°12'54.88" E
CL26 N 411978.58 E 633708.97 Z 9999.990 STA 12+29.00

CHAIN LENGTH 229.00'

CHAIN 220TH2
List C CL1,29
Description 220TH AVE CL 9-6-12
Layer 1
Feature PRL

CURVE CL1
PC N 417286.61 E 633281.82 STA 10+00.00
CC N 407303.58 E 633864.23
PIN 417290.01 E 633340.19 STA 10+58.46
TAN 58.46'
DB N 86°39'40.10" E
DA N 87°19'51.87" E
LChord Distance 116.93' Bearing N 86°59'45.98" E
External Distance 0.17'
Middle Ordinate 0.17'
Radius 10000.00'
DEG 0°34'22.65"
DELTA 0°40'11.77"
LENGTH 116.93'
PT N 417292.73 E 633398.59 STA 11+16.93
CURVE CL1
Distance 43.07' Bearing N 89°21'25.26" E
CL29 N 417293.22 E 633441.66 Z 9999.990 STA 11+60.00

CHAIN LENGTH 160.00'

CHAIN CTH1
List CL71,34,17
Description CTH H updated 9-6-12
Layer 1
Feature PRL

CL71 N 419928.83 E 633076.78 Z 9999.990 STA 18+45.00
Distance 34.42' Bearing N 88°09'31.38" E
CL34 N 419929.94 E 633111.18 Z 9999.990 STA 18+79.42
Distance 120.58' Bearing N 88°16'11.68" E
CL17 N 419933.58 E 633231.71 Z 1128.940 STA 20+00.00

CHAIN LENGTH 155.00'

CHAIN CTHQ1
List CL36-37,72
Description CTH Q 7-23-12
Layer 1
Feature PRL

CL36 N 422565.83 E 633176.09 Z 0.000 STA 10+00.00
Distance 97.29' Bearing N 89°25'04.00" E
CL37 N 422566.82 E 633273.37 Z 9999.990 STA 10+97.29
Distance 62.71' Bearing N 89°25'04.00" E
CL72 N 422567.46 E 633336.08 Z 9999.990 STA 11+60.00

CHAIN LENGTH 160.00'

CHAIN CTYLINE1
List CL45,43,75
Description CTY Line Ave 9-6-12
Layer 1
Feature PRL

CL45 N 427925.50 E 633054.36 Z 0.000 STA 10+00.00
Distance 110.92' Bearing N 89°47'12.95" E
CL43 N 427925.91 E 633165.28 Z 9999.990 STA 11+10.92
Distance 49.08' Bearing N 89°47'12.95" E
CL75 N 427926.09 E 633214.36 Z 9999.990 STA 11+60.00

CHAIN LENGTH 160.00'

CHAIN POLKST1
List CL74,42,20
Description Polk Street 9-6-12
Layer 1
Feature PRL

CL74 N 427926.81 E 632894.33 Z 9999.990 STA 18+40.00
Distance 64.82' Bearing N 89°28'37.12" E
CL42 N 427927.40 E 632959.15 Z 9999.990 STA 19+04.82
Distance 95.18' Bearing S 89°43'00.71" E
CL20 N 427926.93 E 633054.33 Z 1142.540 STA 20+00.00

CHAIN LENGTH 160.00'

DATE 17APR13		E S T I M A T E O F Q U A N T I T I E S			
LINE		8070-08-76			
NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	QUANTITY
0010	203.0100	REMOVING SMALL PIPE CULVERTS	EACH	1.000	1.000
0020	204.0115	REMOVING ASPHALTIC SURFACE BUTT JOINTS	SY	96.000	96.000
0030	204.0120	REMOVING ASPHALTIC SURFACE MILLING	SY	102,610.000	102,610.000
0040	204.0150	REMOVING CURB & GUTTER	LF	1,101.000	1,101.000
0050	205.9015.S	GRADING SHAPING & FINISHING INTERSECTION (LOCATION) 01.200TH AVE	LS	1.000	1.000
0060	205.9015.S	GRADING SHAPING & FINISHING INTERSECTION (LOCATION) 02. 210TH AVE	LS	1.000	1.000
0070	205.9015.S	GRADING SHAPING & FINISHING INTERSECTION (LOCATION) 03. 220TH AVE	LS	1.000	1.000
0080	205.9015.S	GRADING SHAPING & FINISHING INTERSECTION (LOCATION) 04. CTH H	LS	1.000	1.000
0090	205.9015.S	GRADING SHAPING & FINISHING INTERSECTION (LOCATION) 05. CTH O	LS	1.000	1.000
0100	205.9015.S	GRADING SHAPING & FINISHING INTERSECTION (LOCATION) 06. 240TH AVE	LS	1.000	1.000
0110	211.0100	PREPARE FOUNDATION FOR ASPHALTIC PAVING (PROJECT) 01.8070-08-76	LS	1.000	1.000
0120	213.0100	FINISHING ROADWAY (PROJECT) 01. 8070-08-76	EACH	1.000	1.000
0130	305.0110	BASE AGGREGATE DENSE 3/4-INCH	TON	8,987.000	8,987.000
0140	305.0120	BASE AGGREGATE DENSE 1 1/4-INCH	TON	709.000	709.000
0150	305.0500	SHAPING SHOULDERS	STA	532.000	532.000
0160	330.0100	MILL AND RELAY	SY	102,610.000	102,610.000
0170	440.4410.S	INCENTIVE IRI RIDE	DOL	20,000.000	20,000.000
0180	455.0605	TACK COAT	GAL	4,660.000	4,660.000
0190	460.2000	INCENTIVE DENSITY HMA PAVEMENT	DOL	20,580.000	20,580.000
0200	465.0120	ASPHALTIC SURFACE DRIVEWAYS AND FIELD ENTRANCES	TON	6.000	6.000
0210	465.0315	ASPHALTIC FLUMES	SY	112.000	112.000
0220	465.0450	ASPHALTIC INTERSECTION RUMBLE STRIP	SY	75.000	75.000
0230	520.7000	CLEANING CULVERT PIPES	EACH	25.000	25.000
0240	520.8000	CONCRETE COLLARS FOR PIPE	EACH	5.000	5.000
0250	522.0124	CULVERT PIPE REINFORCED CONCRETE CLASS III 24-INCH	LF	48.000	48.000
0260	522.0130	CULVERT PIPE REINFORCED CONCRETE CLASS III 30-INCH	LF	8.000	8.000
0270	524.0624	APRON ENDWALLS FOR CULVERT PIPE SALVAGED 24-INCH	EACH	6.000	6.000
0280	524.0630	APRON ENDWALLS FOR CULVERT PIPE SALVAGED 30-INCH	EACH	1.000	1.000
0290	525.0124	CULVERT PIPE CORRUGATED ALUMINUM 24-INCH	LF	24.000	24.000
0300	525.0324	ALUMINUM APRON ENDWALLS FOR ALUMINUM CULVERT PIPE 24-INCH	EACH	1.000	1.000
0310	601.0557	CONCRETE CURB AND GUTTER 6-INCH SLOPED 36-INCH TYPE D	LF	800.000	800.000
0320	606.0200	RIPRAP MEDIUM	CY	16.000	16.000
0330	614.0010	BARRIER SYSTEM GRADING SHAPING FINISHING	EACH	15.000	15.000
0340	614.0200	STEEL THRIE BEAM STRUCTURE APPROACH	LF	21.000	21.000
0350	614.0305	STEEL PLATE BEAM GUARD CLASS A	LF	1,176.000	1,176.000
0360	614.0345	STEEL PLATE BEAM GUARD SHORT RADIUS	LF	39.000	39.000
0370	614.0370	STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL	EACH	2.000	2.000
0380	614.0390	STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL	EACH	3.000	3.000
0390	614.0920	SALVAGED RAIL	LF	4,508.000	4,508.000
0400	614.2330	MGS GUARDRAIL 3 K	LF	2,778.000	2,778.000

DATE 17APR13		E S T I M A T E O F Q U A N T I T I E S			
LINE				8070-08-76	
NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	QUANTITY
0410	614.2500	MGS THRIE BEAM TRANSITION	LF	273.000	273.000
0420	614.2610	MGS GUARDRAIL TERMINAL EAT	EACH	13.000	13.000
0430	618.0100	MAINTENANCE AND REPAIR OF HAUL ROADS	EACH	1.000	1.000
		(PROJECT) 01.8070-08-76			
0440	619.1000	MOBILIZATION	EACH	1.000	1.000
0450	625.0500	SALVAGED TOPSOIL	SY	5,526.000	5,526.000
0460	628.1504	SILT FENCE	LF	600.000	600.000
0470	628.1520	SILT FENCE MAINTENANCE	LF	600.000	600.000
0480	628.1905	MOBILIZATIONS EROSION CONTROL	EACH	5.000	5.000
0490	628.1910	MOBILIZATIONS EMERGENCY EROSION CONTROL	EACH	4.000	4.000
0500	628.7504	TEMPORARY DITCH CHECKS	LF	40.000	40.000
0510	628.7555	CULVERT PIPE CHECKS	EACH	12.000	12.000
0520	633.5200	MARKERS CULVERT END	EACH	38.000	38.000
0530	634.0614	POSTS WOOD 4X6-INCH X 14-FT	EACH	56.000	56.000
0540	637.0202	SIGNS REFLECTIVE TYPE II	SF	431.000	431.000
0550	638.2602	REMOVING SIGNS TYPE II	EACH	89.000	89.000
0560	638.3000	REMOVING SMALL SIGN SUPPORTS	EACH	65.000	65.000
0570	642.5001	FIELD OFFICE TYPE B	EACH	1.000	1.000
0580	643.0100	TRAFFIC CONTROL (PROJECT) 01.8070-08-76	EACH	1.000	1.000
0590	643.0300	TRAFFIC CONTROL DRUMS	DAY	14,160.000	14,160.000
0600	643.0715	TRAFFIC CONTROL WARNING LIGHTS TYPE C	DAY	14,160.000	14,160.000
0610	643.0900	TRAFFIC CONTROL SIGNS	DAY	2,080.000	2,080.000
0620	645.0130	GEOTEXTILE FABRIC TYPE R	SY	60.000	60.000
0630	646.0106	PAVEMENT MARKING EPOXY 4-INCH	LF	54,055.000	54,055.000
0640	646.0406	PAVEMENT MARKING SAME DAY EPOXY 4-INCH	LF	11,625.000	11,625.000
0650	647.0566	PAVEMENT MARKING STOP LINE EPOXY 18-INCH	LF	120.000	120.000
0660	648.0100	LOCATING NO-PASSING ZONES	MI	5.000	5.000
0670	649.0100	TEMPORARY PAVEMENT MARKING 4-INCH	LF	47,982.000	47,982.000
0680	650.4500	CONSTRUCTION STAKING SUBGRADE	LF	26,695.000	26,695.000
0690	650.5500	CONSTRUCTION STAKING CURB GUTTER AND	LF	805.000	805.000
		CURB & GUTTER			
0700	650.6000	CONSTRUCTION STAKING PIPE CULVERTS	EACH	4.000	4.000
0710	650.8000	CONSTRUCTION STAKING RESURFACING	LF	26,696.000	26,696.000
		REFERENCE			
0720	650.9910	CONSTRUCTION STAKING SUPPLEMENTAL	LS	1.000	1.000
		CONTROL (PROJECT) 01.8070-08-76			
0730	690.0150	SAWING ASPHALT	LF	72.000	72.000
0740	SPV.0035	SPECIAL 01.BASE REPAIR FOR ASPHALTIC	CY	30.000	30.000
		PAVING			
0750	SPV.0060	SPECIAL 01.FIELD ENTRANCE REMOVAL	EACH	1.000	1.000
0760	SPV.0090	SPECIAL 01.CONCRETE CURB AND GUTTER	LF	800.000	800.000
		CURE AND SEAL TREATMENT			
0770	SPV.0105	SPECIAL 01.PAVING INTEGRAL SHOULDERS AT	LS	1.000	1.000
		6% CROSS SLOPE			
0780	SPV.0105	SPECIAL 02.REMOVING MILLED AND RELAID	LS	1.000	1.000
		MATERIAL			
0790	SPV.0105	SPECIAL 03. MILLING AND REMOVING	LS	1.000	1.000
		TEMPORARY JOINT			
0800	SPV.0170	SPECIAL 01. REHEATING HMA PAVEMENT	STA	277.000	277.000
		LONGITUDINAL JOINTS SPECIAL			
0810	SPV.0195	SPECIAL 01. ASPHALTIC SURFACE SPECIAL	TON	1,768.000	1,768.000
0820	SPV.0195	SPECIAL 02. HMA PAVEMENT TYPE E-3	TON	10,018.000	10,018.000
		SPECIAL 19.0 MM MIX			
0830	SPV.0195	SPECIAL 03. HMA PAVEMENT TYPE E-3	TON	11,271.000	11,271.000
		SPECIAL 12.5 MM MIX			

DATE 17APR13			E S T I M A T E O F Q U A N T I T I E S		
LINE			8070-08-76		
NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	QUANTITY
0840	SPV.0195	SPECIAL 04. HMA PAVEMENT TYPE E-10	TON	8,766.000	8,766.000
		SPECIAL			

REMOVING SMALL PIPE CULVERTS

CATEGORY	STATION	LOCATION	203.0100 EACH
0010	108+90	RT	1
TOTAL 0010			1

REMOVING PAVEMENT

CATEGORY	STATION	LOCATION	204.0100 SY	REMARKS
0010	14+25	SB	25	RUMBLE STRIPS
0010	16+00	SB	25	RUMBLE STRIPS
0010	20+00	SB	25	RUMBLE STRIPS
TOTAL 0010			75	

REMOVING ASPHALTIC SURFACE BUTT JOINTS

CATEGORY	STATION	LOCATION	204.0115 SY
0010	18+35	200TH WEST	12
0010	11+60	200TH EAST	12
0010	12+29	210TH EAST	12
0010	11+60	220TH EAST	12
0010	18+45	CTH H	12
0010	11+60	CTH Q	12
0010	18+40	240TH WEST	12
0010	11+60	240TH EAST	12
TOTAL 0010			96

REMOVING ASPHALTIC SURFACE MILLING

CATEGORY	STATION	TO	STATION	LOCATION	204.0120 SY
0010	10+74	-	40+59.16	USH 63	9951
0010	41+13.53		122+53.82	USH 63	27134
0010	123+18.56		277+70	USH 63	51505
0010	18+35	-	19+85	200TH AVE WEST	1729
0010	10+15	-	11+60	200TH AVE EAST	1716
0010	10+00	-	12+29	210TH AVE	1922
0010	10+15	-	11+60	220TH AVE	1801
0010	18+45	-	19+85	CTH H	1704
0010	10+15	-	11+60	CTH Q	1716
0010	18+40	-	19+85	240TH WEST	1716
0010	10+15	-	11+60	240TH EAST	1716
				TOTAL 0010	102610

REMOVING CURB & GUTTER

CATEGORY	STATION	TO	STATION	LOCATION	204.0150 LF
0010	19+20	-	19+80	200TH AVE. WEST, NORTH	80
0010	19+44	-	19+84	200TH AVE. WEST, SOUTH	63
0010	10+18	-	10+58	200TH AVE. EAST, NORTH	63
0010	10+20	-	10+80	200TH AVE. EAST, SOUTH	79
0010	10+20	-	10+57	210TH AVE., NORTH	49
0010	10+22	-	10+80	210TH AVE., SOUTH	62
0010	10+23	-	10+73	220TH AVE., NORTH	59
0010	10+14	-	10+68	220TH AVE., SOUTH	76
0010	19+22	-	19+82	CTH H, NORTH	95
0010	19+41	-	19+81	CTH H, SOUTH	57
0010	10+18	-	10+58	CTH Q, NORTH	60
0010	10+20	-	10+80	CTH Q, SOUTH	96
0010	19+19	-	19+79	POLK-ST. CROIX RD NORTH	75
0010	19+43	-	19+83	POLK-ST. CROIX RD SOUTH	52
0010	10+18	-	10+58	CTY LINE AVE, NORTH	58
0010	10+21	-	10+81	CTY LINE AVE, SOUTH	77
				TOTAL 0010	1101

PREPARE FOUNDATION FOR ASPHALTIC PAVING (PROJECT)

FINISHING ROADWAY (8070-08-76)

CATEGORY	STATION	TO	STATION	LOCATION	211.0100 LS
0010	10+74	-	277+70		1
TOTAL 0010					1

CATEGORY	STATION	TO	STATION	LOCATION	213.0100 EACH
0010	10+74	-	277+70	USH 63	1
TOTAL 0010					1

GRADING SHAPING & FINISHING INTERSECTION (LOCATION)

CATEGORY	STATION	LOCATION	205.9015.S.01 LS	205.9015.S.02 LS	205.9015.S.03 LS	205.9015.S.04 LS	205.9015.S.05 LS	205.9015.S.06 LS	* FILL CY	* SALVAGED TOPSOIL SY	* FERTILIZER TYPE B CWT	* SEEDING MIX NO.30 LB	* EROSION MAT CLASS I, TYPE B SY
0010	62+93	200TH	1						189	1700	1.0	31	1700
0010	115+81	210TH		1					94	850	0.5	15	850
0010	169+37	220TH			1				94	850	0.5	15	850
0010	195+80	CTH H				1			94	850	0.5	15	850
0010	222+13	CTH Q					1		94	425	0.5	15	850
0010	275+76	CROIX AVE (240TH WEST)						1	189	1700	1.0	31	1700
0010	275+76	(POLK ST) 240TH EAST											
TOTAL 0010			1	1	1	1	1	1	755	6375	4	123	6800

* ITEMS AND QUANTITIES FOR INFORMATION ONLY.

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BASE AGGREGATE DENSE 3/4-INCH

					305.0110
CATEGORY	STATION	TO	STATION	LOCATION	TON
0010	10+74	-	40+59	LT	493
0010	10+74	-	40+59	RT	493
0010	41+14	-	62+45	LT	352
0010	41+14	-	62+17	RT	347
0010	63+71	-	122+44	LT	970
0010	63+44	-	115+03	RT	852
0010	116+33	-	122+44	RT	101
0010	123+08	-	195+25	LT	1192
0010	123+30	-	168+69	RT	750
0010	170+02	-	221+37	RT	848
0010	196+54	-	275+22	LT	1300
0010	222+67	-	274+97	RT	864
0010	276+53	-	277+70	LT	19
0010	276+98	-	277+70	RT	12
0010	18+35	-	19+20	200TH AVE. WEST, LT	8
0010	18+35	-	19+44	200TH AVE. WEST, RT	10
0010	10+58	-	11+60	200TH AVE. EAST, LT	9
0010	10+20	-	11+60	200TH AVE. EAST, RT	13
0010	10+57	-	12+29	210TH AVE., LT	16
0010	10+80	-	12+29	210TH AVE., RT	14
0010	10+73	-	11+60	220TH AVE., LT	8
0010	10+68	-	11+60	220TH AVE., RT	9
0010	18+45	-	19+22	CTH H, LT	7
0010	18+45	-	19+41	CTH H, RT	9
0010	10+58	-	11+60	CTH Q, LT	9
0010	10+80	-	11+60	CTH Q, RT	7
0010	18+40	-	19+19	POLK-ST. CROIX RD LT	7
0010	18+40	-	19+43	POLK-ST. CROIX RD RT	10
0010	10+58	-	11+60	CTY LINE AVE, LT	9
0010	10+81	-	11+60	CTY LINE AVE, RT	7
0010	UNDISTRIBUTED			DRIVEWAYS	240
TOTAL 0010					8987

BASE AGGREGATE DENSE 1 1/4-INCH

					305.0120
CATEGORY	STATION	TO	STATION	LOCATION	TON
0010	UNDISTRIBUTED			SIDEROADS	709
TOTAL 0010					709

SHAPING SHOULDERS

CATEGORY	STATION	TO	STATION	LOCATION	305.0500 STA
0010	10+74	-	40+59	USH 63, LT	30
0010	10+74	-	40+59	USH 63,RT	30
0010	41+14	-	122+54	USH 63, LT	81
0010	41+14	-	122+54	USH 63, RT	81
0010	123+19	-	277+70	USH 63, LT	155
0010	123+19	-	277+70	USH 63, RT	155
TOTAL 0010					532

MILL AND RELAY

CATEGORY	STATION	TO	STATION	LOCATION	330.0100 SY
0010	10+74	-	40+59.16	USH 63	9951
0010	41+13.53	-	122+53.82	USH 63	27134
0010	123+18.56	-	277+70	USH 63	51505
0010	18+35	-	19+85	200TH AVE WEST	1729
0010	10+15	-	11+60	200TH AVE EAST	1716
0010	10+00	-	12+29	210TH AVE	1922
0010	10+15	-	11+60	220TH AVE	1801
0010	18+45	-	19+85	CTH H	1704
0010	10+15	-	11+60	CTH Q	1716
0010	18+40	-	19+85	240TH WEST	1716
0010	10+15	-	11+60	240TH EAST	1716
TOTAL 0010					102610

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CONCRETE RUMBLE STRIPS INTERSECTION

CATEGORY	STATION	LOCATION	SY
0010	14+25	SB	25
0010	16+00	SB	25
0010	20+00	SB	25
TOTAL 0010			75

TACK COAT

CATEGORY	STATION	TO	STATION	LOCATION	GAL	REMARKS
0010	10+74	-	277+70	USH 63	4442	BETWEEN LIFTS 1 & 2, 2 and Surface
0010		UNDISTRIBUTED		SIDEROADS	64	
0010		UNDISTRIBUTED		IN FRONT OF BEAM GUARD	154	
TOTAL 0010					4660	

ASPHALTIC SURFACE DRIVEWAYS AND FIELD ENTRANCES

CATEGORY	STATION	LOCATION	TON
0010	14+50	LT	1
	33+00	LT	1
	86+40	RT	1
	119+36	RT	1
	128+53	LT	1
	201+28	LT	1
TOTAL 0010			6

ASPHALTIC INTERSECTION RUMBLE STRIP

CATEGORY	STATION	LOCATION	SY
0010	14+25	SB	25
0010	16+00	SB	25
0010	20+00	SB	25
TOTAL 0010			75

ASPHALTIC FLUMES

CATEGORY	STATION	LOCATION	465.0315 SY
0010	19+20	200TH WEST, LT	7
0010	19+44	200TH WEST, RT	7
0010	10+58	200TH EAST, LT	7
0010	10+80	200TH EAST, RT	7
0010	10+57	210TH AVE, LT	7
0010	10+80	210TH AVE, RT	7
0010	10+73	220TH, LT	7
0010	10+68	220TH, RT	7
0010	19+22	CTH H, LT	7
0010	19+41	CTH H, RT	7
0010	10+58	CTH Q, LT	7
0010	10+80	CTH Q, RT	7
0010	19+19	POLK-ST. CROIX RD , LT	7
0010	19+43	POLK-ST. CROIX RD , RT	7
0010	10+58	CTY LINE AVE, LT	7
0010	10+81	CTY LINE AVE, RT	7
TOTAL 0010			112

CONCRETE COLLAR FOR PIPE

CATEGORY	STATION	LOCATION	520.8000 EACH
0010	10+35	210TH (SOUTH/EAST QUADRANT)	1
0010	10+35	210TH (NORTH/EAST QUADRANT)	1
0010	10+37	220TH (SOUTH/EAST QUADRANT)	1
0010	10+37	220TH (NORTH/EAST QUADRANT)	1
0010	19+52	200TH WEST	1
TOTAL 0010			5

CULVERT PIPE REINFORCED CONCRETE CLASS III 24-INCH

CATEGORY	STATION	LOCATION	522.0124 LF
0010	10+35	210TH (SOUTH/EAST QUADRANT)	16
0010	10+35	210TH (NORTH/EAST QUADRANT)	8
0010	10+37	220TH (SOUTH/EAST QUADRANT)	8
0010	10+37	220TH (NORTH/EAST QUADRANT)	16
TOTAL 0010			48

CLEANING CULVERT PIPES

CATEGORY	STATION	LOCATION	520.7000 EACH
0010	15+70	USH 63	1
0010	31+85	USH 63	1
0010	53+13	USH 63	1
0010	61+03	USH 63	1
0010	19+52	200TH West	1
0010	83+81	USH 63	1
0010	83+97	USH 63	1
0010	111+84	USH 63	1
0010	112+01	USH 63	1
0010	10+35	210TH	1
0010	136+15	USH 63	1
0010	136+23	USH 63	1
0010	141+58	USH 63	1
0010	146+39	USH 63	1
0010	156+20	USH 63	1
0010	158+61	USH 63	1
0010	165+50	USH 63	1
0010	10+37	220TH	1
0010	185+32	USH 63	1
0010	19+55	CTH H	1
0010	198+32	USH 63	1
0010	228+86	USH 63	1
0010	241+98	USH 63	1
0010	262+98	USH 63	1
0010	19+61	Polk St	1
TOTAL 0010			25

CULVERT PIPE REINFORCED CONCRETE CLASS III 30-INCH

CATEGORY	STATION	LOCATION	522.0130 LF
0010	19+52	200TH WEST	8
TOTAL 0010			8

APRON ENDWALLS FOR CULVERT PIPE SALVAGED 24-INCH

CATEGORY	STATION	LOCATION	524.0624 EACH
0010	10+35	210TH, LT	1
0010	10+35	210TH, RT	1
0010	10+37	220TH, LT	1
0010	10+37	220TH, RT	1
0010	19+61	240TH, LT	1
0010	19+61	240TH, RT	1
TOTAL 0010			6

APRON ENDWALLS FOR CULVERT PIPE SALVAGED 30-INCH

CATEGORY	STATION	LOCATION	524.0630 EACH
0010	19+52	200TH WEST	1
TOTAL 0010			1

CULVERT PIPE CORRUGATED ALUMINUM 24-INCH

CATEGORY	STATION	LOCATION	525.0124 LF	THICKNESS INCHES
0010	19+61	POLK-ST. CROIX RD , LT	16	0.075
0010	19+61	POLK-ST. CROIX RD , RT	8	0.075
TOTAL 0010			24	

ALUMINUM APRON ENDWALLS FOR ALUMINUM CULVERT PIPE 24-INCH

CATEGORY	STATION	LOCATION	525.0324 EACH
0010	19+61	POLK-ST. CROIX RD , LT	1
TOTAL 0010			1

CONCRETE CURB & GUTTER 6-INCH SLOPED 36-INCH TYPE D

CATEGORY	STATION	TO	STATION	LOCATION	601.0557 LF
0010	19+20	-	19+80	200TH AVE. WEST, NORTH	60
0010	19+44	-	19+84	200TH AVE. WEST, SOUTH	40
0010	10+18	-	10+58	200TH AVE. EAST, NORTH	40
0010	10+20	-	10+80	200TH AVE. EAST, SOUTH	60
0010	10+20	-	10+57	210TH AVE., NORTH	40
0010					
0010	10+22	-	10+80	210TH AVE., SOUTH	60
0010	10+23	-	10+73	220TH AVE., NORTH	50
0010	10+14	-	10+68	220TH AVE., SOUTH	50
0010	19+22	-	19+82	CTH H, NORTH	60
0010	19+41	-	19+81	CTH H, SOUTH	40
0010					
0010	10+18	-	10+58	CTH Q, NORTH	40
0010	10+20	-	10+80	CTH Q, SOUTH	60
0010	19+19	-	19+79	POLK-ST. CROIX RD NORTH	60
0010	19+43	-	19+83	POLK-ST. CROIX RD SOUTH	40
0010	10+18	-	10+58	CTY LINE AVE, NORTH	40
0010					
0010	10+21	-	10+81	CTY LINE AVE, SOUTH	60
TOTAL 0010					800

RIPRAP MEDIUM

CATEGORY	STATION	LOCATION	606.0200 CY
0010	19+20	200TH WEST, LT	1
0010	19+44	200TH WEST, RT	1
0010	10+58	200TH EAST, LT	1
0010	10+80	200TH EAST, RT	1
0010	10+57	210TH, LT	1
0010	10+80	210TH, RT	1
0010	10+73	220TH, LT	1
0010	10+68	220TH, RT	1
0010	19+22	CTH H, LT	1
0010	19+41	CTH H, RT	1
0010	10+58	CTH Q, LT	1
0010	10+80	CTH Q, RT	1
0010	19+19	POLK-ST. CROIX RD , LT	1
0010	19+43	POLK-ST. CROIX RD , RT	1
0010	10+58	CTY LINE AVE, LT	1
0010	10+81	CTY LINE AVE, RT	1
TOTAL 0010			16

BARRIER SYSTEM GRADING SHAPING FINISHING

CATEGORY	STATION	TO	STATION	LOCATION	614.0010 EACH	* FILL CY	* SALVAGED TOPSOIL SY	* FERTILIZER TYPE B CWT	* SEEDING MIX NO.30 LB	* EROSION MAT CLASS I, TYPE B SY
0010	40+00	-	40+61	USH 63, RT	1	15	54	0.03	1.0	54
0010	41+18	-	41+79	USH 63, LT	1	18	54	0.03	1.0	54
0010	41+18	-	41+79	USH 63, RT	1	18	54	0.04	1.0	54
0010	121+70	-	122+40	USH 63, LT	1	67	62	0.39	1.1	62
0010	121+80	-	122+49	USH 63, RT	1	24	61	0.04	1.1	61
0010	123+30	-	123+95	USH 63, LT	1	104	58	0.04	1.0	58
0010	123+40	-	124+05	USH 63, RT	1	25	58	0.04	1.0	58
0010	182+50	-	189+13	USH 63, LT	2	1365	589	0.37	10.6	589
0010	182+00	-	192+06	USH 63, RT	2	147	894	0.56	16.0	894
0010	240+00	-	252+25	USH 63, RT	2	245	1089	0.69	19.6	1089
0010	240+00	-	251+14	USH 63, LT	2	134	990	0.62	17.8	990
TOTAL 0010					15	2162	3964	2.8	71	3964

* ITEMS AND QUANTITIES FOR INFORMATION ONLY.

STEEL THRIE BEAM STRUCTURE APPROACH

CATEGORY	STATION	TO	STATION	LOCATION	614.0200 LF
0010	40+00	-	40+21	USH 63, LT	21
TOTAL 0010					21

STEEL PLATE BEAM GUARD CLASS A

CATEGORY	STATION	TO	STATION	LOCATION	614.0305 LF
0010	40+13	-	40+51	USH 63, LT	38
0010	240+61	-	246+23	USH 63, LT	563
0010	246+66	-	252+41	USH 63, LT	575
TOTAL 0010					1176

STEEL PLATE BEAM GUARD SHORT RADIUS

CATEGORY	STATION	TO	STATION	LOCATION	614.0345 LF	REMARKS
0010	40+05	-	40+13	USH 63, LT	13	9' RADIUS
0010	246+40	-	246+45	USH 63, LT	13	9' RADIUS
0010	246+60	-	246+65	USH 63, LT	13	9' RADIUS
TOTAL 0010					39	

STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL

CATEGORY	STATION	TO	STATION	LOCATION	614.0370 EACH
0010	240+04	-	252+91	USH 63, LT	2
TOTAL 0010					2

STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL

CATEGORY	STATION	TO	STATION	LOCATION	614.0390 EACH
0010	40+13	-	40+13	USH 63, LT	1
0010	246+40	-	246+45	USH 63, LT	1
0010	246+60	-	246+65	USH 63, LT	1
TOTAL 0010					3

SALVAGED RAIL

CATEGORY	STATION	TO	STATION	LOCATION	614.0920 LF
0010	40+00	-	40+48	USH 63, LT	48
0010	40+00	-	40+61	USH 63, RT	61
0010	41+18	-	41+79	USH 63, LT	61
0010	41+18	-	41+79	USH 63, RT	61
0010	121+70	-	122+40	USH 63, LT	70
0010	121+80	-	122+49	USH 63, RT	69
0010	123+30	-	123+95	USH 63, LT	65
0010	123+40	-	124+05	USH 63, RT	65
0010	182+50	-	189+13	USH 63, LT	663
0010	182+00	-	192+06	USH 63, RT	1006
0010	240+00	-	252+25	USH 63, RT	1225
0010	240+00	-	251+14	USH 63, LT	1114
TOTAL 0010					4508

MGS GUARDRAIL 3 K

CATEGORY	STATION	TO	STATION	LOCATION	614.2330 LF
0010	40+39	-	40+77	USH 63, LT	38
0010	40+39	-	40+77	USH 63, RT	38
0010	40+20	-	40+58	USH 63, RT	38
0010	123+47	-	123+85	USH 63, LT	38
0010	123+69	-	124+07	USH 63, RT	38
0010	121+67	-	122+05	USH 63, LT	38
0010	121+77	-	122+15	USH 63, RT	38
0010	182+39	-	188+27	USH 63, LT	588
0010	180+92	-	189+79	USH 63, RT	887
0010	240+57	-	250+94	USH 63, RT	1037
TOTAL 0010					2778

MGS THRIE BEAM TRANSITION

CATEGORY	STATION	TO	STATION	LOCATION	614.2500 LF
0010	40+00	-	40+39	USH 63, RT	39
0010	41+18	-	41+57	USH 63, LT	39
0010	41+18	-	41+57	USH 63, RT	39
0010	121+70	-	122+09	USH 63, LT	39
0010	121+80	-	122+19	USH 63, RT	39
0010	123+30	-	123+69	USH 63, LT	39
0010	123+40	-	123+79	USH 63, RT	39
TOTAL 0010					273

MGS GUARDRAIL TERMINAL EAT

CATEGORY	STATION	TO	STATION	LOCATION	614.2610 EACH
0010		-	39+27	USH 63, RT	1
0010		-	42+55	USH 63, LT	1
0010		-	42+58	USH 63, RT	1
0010		-	121+00	USH 63, LT	1
0010		-	121+13	USH 63, RT	1
0010		-	124+52	USH 63, LT	1
0010		-	124+73	USH 63, RT	1
0010	181+86	-	189+30	USH 63, LT	2
0010	182+20	-	192+14	USH 63, RT	2
0010	240+04	-	251+48	USH 63, RT	2
TOTAL 0010					13

MAINTENANCE AND REPAIR OF HAUL ROADS (8070-08-76)

CATEGORY	STATION	TO	STATION	LOCATION	618.0100 EACH
0010	10+74	-	277+70	PROJECT 8070-08-76	1
TOTAL 0010					1

MOBILIZATION

CATEGORY	STATION	TO	STATION	LOCATION	619.1000 EACH
0010	10+74	-	277+70	USH 63	1.0
TOTAL 0010					1.0

SALVAGED TOPSOIL

CATEGORY	STATION	TO	STATION	LOCATION	625.0500 SY
0010	10+74	-	277+70	UNDISTRIBUTED	5526
TOTAL 0010					5526

SILT FENCE

CATEGORY	STATION	TO	STATION	LOCATION	628.1504 LF	REMARKS
0010	257+00	-	259+50	USH 63	200	CULVERT PIPES
0010		UNDISTRIBUTED		SIDEROADS	400	
TOTAL 0010					600	

SILT FENCE MAINTENANCE

CATEGORY	STATION	TO	STATION	LOCATION	628.1520 LF	REMARKS
0010	257+00	-	259+00	USH 63	200	CULVERT PIPES
0010		UNDISTRIBUTED		SIDEROADS	400	
TOTAL 0010					600	

MOBILIZATIONS EROSION CONTROL

CATEGORY	STATION	TO	STATION	LOCATION	628.1905 EACH	REMARKS
0010		UNDISTRIBUTED		USH 63	5	PROJECT
TOTAL 0010					5	

MOBILIZATIONS EMERGENCY EROSION CONTROL

CATEGORY	STATION	TO	STATION	LOCATION	628.1910 EACH	REMARKS
0010		UNDISTRIBUTED		USH 63	4	PROJECT
TOTAL 0010					4	

TEMPORARY DITCH CHECKS

CATEGORY	STATION	LOCATION	628.7504 LF
0010	19+52	200TH WEST	10
0010	10+35	210TH	10
0010	10+37	220TH	10
0010	19+61	POLK-ST. CROIX RD , LT	10
TOTAL 0010			40

CULVERT PIPE CHECKS

CATEGORY	STATION	LOCATION	628.7555 EACH
0010	19+52	200TH WEST	3
0010	10+35	210TH	3
0010	10+37	220TH	3
0010	19+61	POLK-ST. CROIX RD, LT	3
TOTAL 0010			12

MARKERS CULVERT END

CATEGORY	STATION	LOCATION	633.5200 EACH
0010	15+70	USH 63	2
0010	31+85	USH 63	2
0010	53+13	USH 63	2
0010	61+03	USH 63	2
0010	83+81	USH 63	2
0010	111+84	USH 63	2
0010	112+01	USH 63	2
0010	136+15	USH 63	2
0010	136+23	USH 63	2
0010	141+58	USH 63	2
0010	146+39	USH 63	2
0010	156+20	USH 63	2
0010	158+61	USH 63	2
0010	165+50	USH 63	2
0010	185+32	USH 63	2
0010	198+32	USH 63	2
0010	228+86	USH 63	2
0010	241+98	USH 63	2
0010	262+98	USH 63	2
TOTAL 0010			38

SIGNING ITEMS									
CATEGORY	SIGN NO.	ROADWAY	STATION	LOCATION	SIGN CODE	SIZE INCH	634.0614	637.0202	SIGN MESSAGE
							POSTS WOOD 4x6-INCH x 14-FT	SIGNS REFLECTIVE TYPE II SF	
0010	1-1	USH 63	11+23	LT	M3-3	24 x 12	1	2	SOUTH
0010	1-1	USH 63	11+23	LT	M1-4	24 x 24		4	USH 63
0010	1-1	USH 63	11+23	LT	M5-1R	21 x 21		3.1	ARROW
0010	1-2	USH 63	11+65	RT	M3-1	24 x 12		2	NORTH
0010	1-2	USH 63	11+65	RT	M1-4	24 x 24		4	USH 63
0010	1-3	USH 63	11+65	RT	D2-3	90 x 36	2	22.5	CLEAR LAKE 8, TURTLE LAKE 21, SPOONER 55
0010	1-4	USH 63	15+70	LT	D1-3	96 x 36	2	24	CONNERSVILLE (LEFT ARROW), BALDWIN, NEW RICHMOND (RIGHT ARROW)
0010	1-5	USH 63	15+70	RT	R59-51	36 x 36	1	9	STOP SCHOOL BUS FLASHING RED LIGHTS STATE LAW
0010	1-6	USH 63	16+62	RT	W11-6	30 x 30	1	6.25	SNOWMOBILE XING
0010	1-7	USH 63	17+50	LT	W3-1	36 x 36	1	9	STOP AHEAD SYMBOL
0010	1-8	USH 63	19+50	LT	W2-1	21 x 15	1	2.20	JCT
0010	1-8	USH 63	19+50	LT	M1-6	24 x 24		4	STH 64
0010	1-9	USH 63	31+25	RT	W14-3	48 x 36	1	6	NO PASSING ZONE
0010	2-1	USH 63	40+60	LT	W5-52-L	12 x 36		3	CLEARANCE STRIPER DOWN LEFT
0010	2-2	USH 63	40+60	RT	W5-52-R	12 x 36		3	CLEARANCE STRIPER DOWN RIGHT
0010	2-3	USH 63	41+13	LT	W5-52-L	12 x 36		3	CLEARANCE STRIPER DOWN LEFT
0010	2-4	USH 63	41+13	RT	W5-52-R	12 x 36		3	CLEARANCE STRIPER DOWN RIGHT
0010	2-5	USH 63	45+41	RT	M1-94	60 x 15	1	6.25	200TH AVENUE
0010		200th Ave East	10+50	RT					US HWY 63
0010		200th Ave East	10+50	RT					200TH AVENUE
0010	2-6	200th Ave West	19+30	RT	R1-1	30 x 30	1	5.18	STOP
0010	2-7	200th Ave East	10+50	LT	R1-1	30 x 30	1	5.18	STOP
0010	3-1	USH 63	70+00	LT	M1-94	60 x 15	1	6.25	200TH AVENUE
0010	3-2	USH 63	77+64	LT	W14-3	48 x 36	1	6	NO PASSING ZONE
0010	4-1	USH 63	108+40	RT	M1-94	60 x 15	1	6.25	210TH AVENUE
0010	4-2	USH 63	114+40	RT	W14-3	48 x 36	1	6	NO PASSING ZONE
0010		210th Ave East	10+40	RT					210TH AVENUE
0010		210th Ave East	10+40	RT					US HWY 63
0010	4-3	USH 63	10+40	LT	R1-1	30 x 30	1	6.25	STOP
0010	4-4	USH 63	120+70	LT	M1-94	60 x 15	1	6.25	210TH AVENUE
0010	4-5	USH 63	122+54	LT	I-3-1	66 x 15	1	1.88	WILLOW RIVER
0010	4-6	USH 63	122+54	RT	W5-52-R	12 x 36		3	CLEARANCE STRIPER DOWN RIGHT
0010	4-7	USH 63	122+54	LT	W5-52-L	12 x 36		3	CLEARANCE STRIPER DOWN LEFT
0010	4-8	USH 63	123+19	LT	W5-52-L	12 x 36		3	CLEARANCE STRIPER DOWN LEFT
0010	4-9	USH 63	123+19	RT	W5-52-R	12 x 36		3	CLEARANCE STRIPER DOWN RIGHT
0010	4-10	USH 63	123+19	LT	I-3-1	66 x 15	1	1.88	WILLOW RIVER
0010	5-1	USH 63	137+23	LT	W14-3	48 x 36	1	6	NO PASSING ZONE
0010	5-2	USH 63	158+23	RT	W14-3	48 x 36	1	6	NO PASSING ZONE
0010	6-1	USH 63	163+47	RT	M1-94	60 x 15	1	6.25	220TH AVENUE
0010	6-2	USH 63	164+37	LT	W14-3	48 x 36	1	6	NO PASSING ZONE
0010		220th Ave East	10+43	RT					220TH AVENUE
0010		220th Ave East	10+43	RT					US HWY 63
0010	6-3	220th Ave East	10+43	LT	R1-1	30 x 30	1	6.25	STOP
0010	6-4	USH 63	170+80	RT	I-55-56	30 x 36	1	7.5	ADOPT A HIGHWAY [SPONSOR]
0010	6-5	USH 63	176+41	LT	M1-94	60 x 15	1	5.3	220TH AVENUE
SUBTOTAL 0010							28	223	CONTINUED ON NEXT PAGE

SIGNING ITEMS - CONT'D

CATEGORY	SIGN NO.	ROADWAY	STATION	LOCATION	SIGN CODE	SIZE INCH	634.0614 POSTS WOOD 4x6-INCH x 14-FT EACH	637.0202 SIGNS REFLECTIVE TYPE II SF	SIGN MESSAGE	REMARKS
0010	6-6	USH 63	182+43	RT	M2-1	21 x 15	1	2.2	JCT	
0010	6-6	USH 63	182+43	RT	M1-5A	24 x 24		4	CTH H	
0010	6-7	USH 63	182+43	RT	W14-3	48 x 36	1	6	NO PASSING ZONE	
0010	7-1	USH 63	194+29	RT	M3-3	24 x 12	1	2	SOUTH	
0010	7-1	USH 63	194+29	RT	M1-4	24 x 24		4	USH 63	
0010	7-2	USH 63	19+56	RT	M1-4	24 x 24	1	4	USH 63	
0010	7-2	USH 63	19+56	RT	M6-4	21 x 21		3.1	Double Arrow	
0010	7-3	USH 63	19+56	RT	D11-1	24 x 18		3	Bike Route	
0010	7-4	USH 63	19+56	RT	M7-1	12 x 9		0.75	Left Arrow	
0010	7-5	CTH H	19+56	RT	R1-1	30 x 30	1	6.25	STOP	
0010	7-6	USH 63	195+72	RT	M1-5A	24 x 24	1	4	CTH H	
0010	7-6	USH 63	195+72	RT	M6B-1	21 x 21		3.1	ARROW	
0010	7-7	USH 63	195+98	RT	W1-7	48 x 24	1	8	NIGHT ARROW (DOUBLE)	
0010	7-8	USH 63	196+50	LT	M1-5A	24 x 24	1	4	CTH H	
0010	7-8	USH 63	196+50	LT	M6B-1	21 x 21		3.1	ARROW	
0010	7-9	USH 63	196+50	LT	D11-1	24 x 18		3	BIKE ROUTE	
0010	7-10	USH 63	196+50	LT	M7-1	12 x 9		0.75	RIGHT ARROW	
0010	7-11	USH 63	203+48	LT	MB2-1	21 x 15	1	2.2	JCT	
0010	7-11	USH 63	203+48	LT	M1-5A	24 x 24		4	CTH H	
0010	7-12	USH 63	203+48	RT	W14-3	48 x 36	1	6	NO PASSING ZONE	
0010	7-13	USH 63	211+12	RT	M2-1	21 x 15	1	2.2	JCT	
0010	7-13	USH 63	211+12	RT	M1-5A	24 x 24		4	CTH Q	
0010	8-1	USH 63	221+52	RT	M1-5A	24 x 24	1	4	CTH Q	
0020	8-1	USH 63	221+52	RT	M6-1	21 x 21		3.1	ARROW	
0010	8-2	USH 63	221+52	RT	D11-1	24 x 18		3	BIKE ROUTE	
0010	8-3	USH 63	221+52	RT	M7-1	12 x 9		0.75	RIGHT ARROW	
0010	8-4	CTH Q	10+43	RT	R1-1	30 x 30	1	6.25	STOP	
0010	8-5	USH 63	10+43	LT	M1-4	24 x 24	1	4	USH 63	
0010	8-5	USH 63	10+43	LT	M6-4	21 x 21		3.1	Double Arrow	
0010	8-6	USH 63	10+43	LT	D11-1	24 x 18		3	Bike Route	
0010	8-7	USH 63	10+43	LT	M7-1	12 x 9		0.75	Left Arrow	
0010	8-8	USH 63	222+55	LT	M1-5A	24 x 24		4	CTH Q	
0010	8-8	USH 63	222+55	LT	M6-1	21 x 21	1	3.1	ARROW	
0010	8-9	USH 63	227+00	LT	J1-1	24 x 39	1	6.5	JCT CTH Q	
0010	8-10	USH 63	237+77	RT	W14-3	48 x 36	1	6	NO PASSING ZONE	
0010	8-11	USH 63	249+45	LT	W14-3	48 x 36	1	6	NO PASSING ZONE	
0010	9-1	USH 63	269+32	RT	M1-94	72 x 30	1	15	CROIX AVE / POLK ST	
0010	9-2	USH 63	271+50	RT	W14-3	48 x 36	1	6	NO PASSING ZONE	
0010	9-3	USH 63	273+95	RT	I-55-56	30 x 36	1	7.5	ADOPT A HIGHWAY [SPONSOR]	
0010	9-4	USH 63	274+45	RT	M3-3	24 x 12	1	2	SOUTH	
0010	9-4	USH 63	274+45	RT	M1-4	24 x 24		4	USH 63	
0010	9-5	USH 63	275+05	LT	I2-2	66 x 15	2	8.25	ST. CROIX CO	
0010		240TH Ave West	19+65	RT					POLK ST. CROIX RD	Same post as below
0010		240Th Ave West	19+65	RT					HWY 63	Same post as above
0010	9-6	240th Ave West	19+65	RT	R1-1	30 x 30	1	6.25	STOP	
0010	9-7	USH 63	277+00	RT	M3-1	24 x 12	1	2	NORTH	
0010	9-7	USH 63	277+00	RT	M1-4	24 x 24		4	USH 63	
0010	9-8	USH 63	277+00	RT	I2-2	48 x 15		6	POLK CO	
0010		240th Ave East	10+38	LT					CTY LINE ROAD	Same post as below
0010		240th Ave East	10+38	LT					USH 63	Same post as above
0010	9-9	240th Ave East	10+38	LT	R1-1	30 x 30	1	6.25	STOP	
SUBTOTAL 0010							27	200		
TOTAL 0010							56	431		

REMOVING SIGN ITEMS								
CATEGORY	SIGN NO.	ROADWAY	LOCATION	STATION	638.2602	638.3000	SIGN MESSAGE	REMARKS
					REMOVING SIGNS TYPE II EACH	REMOVING SMALL SIGN SUPPORTS EACH		
0010	1-1	USH 63	LT	11+23	1	1	SOUTH	
0010	1-1	USH 63	LT	11+23	1		USH 63	
0010	1-1	USH 63	LT	11+23	1		ARROW	
0010	1-2	USH 63	RT	11+65	1	1	NORTH	
0010	1-2	USH 63	RT	11+65	1		USH 63	
0010	1-3	USH 63	RT	11+65	1	2	CLEAR LAKE 8, TURTLE LAKE 21, SPOONER 55	
0010	1-4	USH 63	RT	15+70	1	1	STOP SCHOOL BUS FLASHING RED LIGHTS STATE LAW	
0010	1-5	USH 63	LT	15+70	1	2	CONNERSVILLE (LEFT ARROW), BALDWIN, NEW RICHMOND (RIGHT ARROW)	
0010	1-6	USH 63	RT	16+62	1	1	SNOWMOBILE XING	
0010	1-7	USH 63	LT	17+50	1	1	STOP AHEAD SYMBOL	
0010	1-8	USH 63	LT	19+50	1	1	JCT	
0010	1-8	USH 63	LT	19+50	1		STH 64	
0010	1-9	USH 63	RT	31+25	1	1	NO PASSING ZONE	
0010	2-1	USH 63	LT	40+60	1	1	CLEARANCE STRIPER DOWN LEFT	
0010	2-2	USH 63	RT	40+60	1	1	CLEARANCE STRIPER DOWN RIGHT	
0010	2-3	USH 63	LT	41+13	1	1	CLEARANCE STRIPER DOWN LEFT	
0010	2-4	USH 63	RT	41+13	1	1	CLEARANCE STRIPER DOWN RIGHT	
0010	2-5	USH 63	RT	45+41	1	1	200TH AVENUE	
0010		200th Ave East	RT	10+50			US HWY 63	Same post as below
0010		200th Ave East	RT	10+50			200TH AVENUE	Same post as above
0010	2-6	200th Ave West	LT	19+30	1	1	STOP	
0010	2-7	200th Ave East	RT	10+50	1	1	STOP	
0010	3-1	USH 63	LT	70+00	1	1	200TH AVENUE	
0010	3-2	USH 63	LT	77+64	1	1	NO PASSING ZONE	
0010	4-1	USH 63	RT	108+40	1	1	210TH AVENUE	
0010	4-2	USH 63	RT	114+40	1	1	NO PASSING ZONE	
0010		210th Ave East	RT	10+40			210TH AVENUE	Same post as below
0010		210th Ave East	RT	10+40			US HWY 63	Same post as above
0010	4-3	USH 63	LT	10+40	1	1	STOP	
0010	4-4	USH 63	LT	120+70	1	1	210TH AVENUE	
0010	4-6	USH 63	RT	122+54	1	1	CLEARANCE STRIPER DOWN RIGHT	
0010	4-7	USH 63	LT	122+54	1	1	CLEARANCE STRIPER DOWN LEFT	
0010	4-8	USH 63	RT	123+19	1	1	CLEARANCE STRIPER DOWN RIGHT	
0010	4-9	USH 63	LT	123+19	1	1	CLEARANCE STRIPER DOWN LEFT	
0010	4-10	USH 63	LT	123+19	1	1	WILLOW RIVER	
0010	5-1	USH 63	LT	137+23	1	1	NO PASSING ZONE	
0010	5-2	USH 63	RT	158+23	1	1	NO PASSING ZONE	
0010	6-1	USH 63	RT	163+47	1	1	220TH AVENUE	
0010	6-2	USH 63	LT	164+37	1	1	NO PASSING ZONE	
0010		220th Ave East	RT	10+43			US HWY 63	Same post as below
		220th Ave East	RT	10+43			220TH AVENUE	Same post as above
0010	6-3	220th Ave East	LT	10+43	1	1	STOP	
0010	6-4	USH 63	RT	170+80	1	1	ADOPT A HIGHWAY [SPONSOR]	
0010	6-5	USH 63	LT	176+41	1	1	220TH AVENUE	
0010	6-6	USH 63	RT	182+43	1	1	JCT	
0010	6-6	USH 63	RT	182+43	1	1	CTH H	
SUBTOTAL 0010					40	38	CONTINUED ON NEXT PAGE	

REMOVING SIGN ITEMS - CONT'D									
CATEGORY	SIGN NO.	ROADWAY	LOCATION	STATION	638.2602	638.3000	SIGN MESSAGE	REMARKS	
					REMOVING SIGNS	REMOVING SMALL SIGN			
					TYPE II EACH	SUPPORTS EACH			
0010	6-7	USH 63	RT	182+43	1	1	NO PASSING ZONE		
0010	7-1	USH 63	RT	194+29	1	1	SOUTH		
0010	7-1	USH 63	RT	194+29	1		USH 63		
0010	7-2	CTH H	RT	19+56	1	1	USH 63		
0010	7-2	CTH H	RT	19+56	1		DOUBLE ARROW		
0010	7-3	CTH H	RT	19+56	1		BIKE ROUTE		
0010	7-4	CTH H	RT	19+56	1		LEFT ARROW		
0010	7-5	CTH H	RT	19+56	1	1	STOP		
0010	7-6	USH 63	RT	195+72	1	1	CTH H		
0010	7-6	USH 63	RT	195+72	1		ARROW		
0010	7-7	USH 63	RT	195+98	1	1	NIGHT ARROW (DOUBLE)		
0010	7-8	USH 63	LT	196+50	1	1	CTH H		
0010	7-8	USH 63	LT	196+50	1		ARROW		
0010	7-9	USH 63	LT	196+50	1		BIKE ROUTE		
0010	7-10	USH 63	LT	196+50	1		RIGHT ARROW		
0010	7-11	USH 63	LT	203+48	1	1	JCT		
0010	7-11	USH 63	LT	203+48	1		CTH H		
0010	7-12	USH 63	RT	203+48	1	1	NO PASSING ZONE		
0010	7-13	USH 63	RT	211+12	1	1	JCT		
0010	7-13	USH 63	RT	211+12	1		CTH Q		
0010	8-1	USH 63	RT	221+52	1	1	CTH Q		
0010	8-1	USH 63	RT	221+52	1		ARROW		
0010	8-2	USH 63	RT	221+52	1		BIKE ROUTE		
0010	8-3	USH 63	RT	221+52	1		RIGHT ARROW		
0010	8-4	CTH Q	LT	10+43	1	1	STOP		
0010	8-5	USH 63	LT	10+43	1	1	USH 63		
0010	8-5	USH 63	LT	10+43	1		DOUBLE ARROW		
0010	8-6	USH 63	LT	10+43	1		BIKE ROUTE		
0010	8-7	USH 63	LT	10+43	1		LEFT ARROW		
0010	8-8	USH 63	LT	222+55	1	1	CTH Q		
0010	8-8	USH 63	LT	222+55	1		ARROW		
0010	8-9	USH 63	LT	227+00	1	1	JCT CTH Q		
0010	8-10	USH 63	RT	237+77	1	1	NO PASSING ZONE		
0010	8-11	USH 63	LT	249+45	1	1	NO PASSING ZONE		
0010	9-1	USH 63	RT	269+32	1	1	CROIX AVE \POLK ST		
0010	9-2	USH 63	RT	271+50	1	1	NO PASSING ZONE		
0010	9-3	USH 63	RT	273+95	1	1	ADOPT A HIGHWAY [SPONSOR]		
0010	9-4	USH 63	RT	274+45	1	1	SOUTH		
0010	9-4	USH 63	RT	274+45	1		USH 63		
0010	9-5	USH 63	LT	275+05	1	1	ST. CROIX CO		
0010		240TH Ave West	RT	19+65	1		POLK ST. CROIX RD	Same post as below	
0010		240TH Ave West	RT	19+65	1		HWY 63	Same post as above	
0010	9-6	240th Ave West	RT	19+65	1	1	STOP		
0010	9-7	USH 63	RT	277+00	1	1	NORTH		
0010	9-7	USH 63	RT	277+00	1		USH 63		
0010	9-8	USH 63	RT	277+00	1	1	POLK CO		
0010		240th Ave East	LT	10+38	1	1	CTY LINE ROAD	Same post as below	
0010		220th Ave East	LT	10+38	1		USH 63	Same post as above	
0010	9-9	240th Ave East	LT	10+38	1	1	STOP		
SUBTOTAL 0010					49	27			
TOTAL 0010					89	65			

FIELD OFFICE TYPE B (PROJECT)

CATEGORY	LOCATION	642.5001 EACH
0010	PROJECT	1
TOTAL 0010		1

TRAFFIC CONTROL WARNING LIGHTS TYPE C

CATEGORY	STATION TO	STATION	LOCATION	643.0715 DAYS
0010	10+74 -	277+70	SIDEROADS	6400
0010	10+74 -	277+70	BEAM GUARD	7760
TOTAL 0010				14160

TRAFFIC CONTROL (8070-08-76)

CATEGORY	STATION	TO	STATION	LOCATION	643.0100 EACH
0010	10+74	-	277+70	PROJECT 8070-08-76	1
TOTAL 0010					1

TRAFFIC CONTROL SIGNS

CATEGORY	STATION	TO	STATION	LOCATION	643.0900 DAYS	REMARKS
0010	10+74	-	277+70	USH 63	2080	ADVANCED WARNING
TOTAL 0010					2080	

TRAFFIC CONTROL DRUMS

CATEGORY	STATION TO	STATION	LOCATION	643.0300 DAYS
0010	10+74 -	277+70	SIDEROADS	6400
0010	10+74 -	277+70	BEAM GUARD	7760
TOTAL 0010				14160

GEOTEXTILE FABRIC TYPE R

645.0130			
CATEGORY	STATION	LOCATION	SY
0010	19+20	200TH WEST, LT	4
0010	19+44	200TH WEST, RT	4
0010	10+58	200TH EAST, LT	4
0010	10+80	200TH EAST, RT	4
0010	10+57	210TH, LT	4
0010	10+80	210TH, RT	4
0010	10+73	220TH, LT	4
0010	10+68	220TH, RT	4
0010	19+22	CTH H, LT	
0010	19+41	CTH H, RT	4
0010	10+58	CTH Q, LT	4
0010	10+80	CTH Q, RT	4
0010	19+19	POLK-ST. CROIX RD , LT	4
0010	19+43	POLK-ST. CROIX RD , RT	4
0010	10+58	CTY LINE AVE, LT	4
0010	10+81	CTY LINE AVE, RT	4
TOTAL 0010			60

PAVEMENT MARKING EPOXY 4-INCH

					646.0106	
CATEGORY	STATION	TO	STATION	LOCATION	LF	REMARKS
0010	10+74	-	277+70	USH 63, NB	26201	EDGE LINE (WHITE)
0010	10+74	-	277+70	USH 63, SB	25916	EDGE LINE (WHITE)
0010	UNDISTRIBUTED			SIDE ROADS	1938	EDGE LINE (WHITE)
TOTAL 0010					54055	

PAVEMENT MARKING SAME DAY EPOXY 4-INCH

646.0406				
CATEGORY	STATION TO	STATION	LOCATION	LF
	10+74	- 277+70	USH 63	9787
	UNDISTRIBUTED		SIDE ROADS	1838
	TOTAL 0010			11625

PAVEMENT MARKING STOP LINE EPOXY 18-INCH

647.0566			
CATEGORY	STATION	LOCATION	LF
0010	19+77	200TH AVE WEST	15
0010	20+23	200TH AVE EAST	15
0010	10+23	210TH AVE EAST	15
0010	10+23	220TH AVE EAST	15
0010	19+77	CTH H	15
0010			
0010	10+23	CTH Q	15
0010	19+77	CROIX AVE	15
0010	10+23	POLK ST	15
TOTAL 0010			120

LOCATING NO-PASSING ZONES

CATEGORY	STATION	TO	STATION	LOCATION	648.0100 MI
0010	10+74	-	277+70	USH 63	5
TOTAL 0010					5

CONSTRUCTION STAKING CURB GUTTER AND CURB & GUTTER

CATEGORY	STATION	TO	STATION	LOCATION	650.5500 LF
0010	19+20	-	19+80	200TH AVE. WEST, NORTH	60
0010	19+44	-	19+84	200TH AVE. WEST, SOUTH	40
0010	10+18	-	10+58	200TH AVE. EAST, NORTH	40
0010	10+20	-	10+80	200TH AVE. EAST, SOUTH	60
0010	10+20	-	10+57	210TH AVE., NORTH	40
0010	10+22	-	10+80	210TH AVE., SOUTH	60
0010	10+23	-	10+73	220TH AVE., NORTH	50
0010	10+14	-	10+68	220TH AVE., SOUTH	55
0010	19+22	-	19+82	CTH H, NORTH	60
0010	19+41	-	19+81	CTH H, SOUTH	40
0010	10+18	-	10+58	CTH Q, NORTH	40
0010	10+20	-	10+80	CTH Q, SOUTH	60
0010	19+19	-	19+79	POLK-ST. CROIX RD NORTH	60
0010	19+43	-	19+83	POLK-ST. CROIX RD SOUTH	40
0010	10+18	-	10+58	CTY LINE AVE, NORTH	40
0010	10+21	-	10+81	CTY LINE AVE, SOUTH	60
TOTAL 0010					805

TEMPORARY PAVEMENT MARKING 4-INCH

CATEGORY	STATION	TO	STATION	LOCATION	649.0100 LF	REMARKS
0010	10+74	-	277+70	USH 63	15994	MILLED SURFACE - YELLOW
0010	10+74	-	277+70	USH 63	15994	1ST LIFT (LOWER LAYER) - YELLOW
0010	10+74	-	277+70	USH 63	15994	2ND LIFT (LOWER LAYER) - YELLOW
TOTAL 0010					47982	

CONSTRUCTION STAKING PIPE CULVERTS

CATEGORY	STATION	LOCATION	650.6000 EACH
0010	19+52	200TH WEST	1
0010	10+35	210TH	1
0010	10+37	220TH	1
0010	19+61	POLK-ST. CROIX RD , LT	1
TOTAL 0010			4

CONSTRUCTION STAKING SUBGRADE

CATEGORY	STATION	TO	STATION	LOCATION	650.4500 LF
0010	10+74	-	277+70	USH 63	26696
TOTAL 0010					26696

CONSTRUCTION STAKING RESURFACING REFERENCE

CATEGORY	STATION	TO	STATION	LOCATION	650.8000 LF
0010	10+74		277+70	USH 63	26696
TOTAL 0010					26696

CONSTRUCTION STAKING SUPPLEMENTAL CONTROL (8070-08-76)

CATEGORY	STATION	TO	STATION	LOCATION	650.9910 LS
0010	10+74	-	277+70	PROJECT 8070-08-76	1
TOTAL 0010					1

SAWING ASPHALT

CATEGORY	STATION	LOCATION	690.0150 LF
0010	10+74	USH 63	48
0010	270+70	USH 63	24
TOTAL 0010			72

BASE REPAIR FOR ASPHALTIC PAVING

CATEGORY	STATION	TO	STATION	LOCATION	SPV.0035 (01) CY
0010	10+74	-	277+70	PROJECT	30
TOTAL 0010					30

FIELD ENTRANCE REMOVAL

CATEGORY	STATION	LOCATION	SPV.0060(01)	*	*	*	*	*
				COMMON	TOPSOIL	FERTILIZER	SEEDING	MULCHING
			EACH	EXCAVATION		TYPE B	MIX NO. 30	
				CY	CY	CWT	LB	SY
0010	108+90	RT	1	19	11	0.06	2	95
TOTAL 0010			1	19	11	0.06	2	95

* ITEMS AND QUANTITIES FOR INFORMATION ONLY.

CONCRETE CURB & GUTTER AND SEAL TREATMENT

					SPV.0090(01)
CATEGORY	STATION	TO	STATION	LOCATION	LF
0010	19+20	-	19+80	200TH AVE. WEST, NORTH	60
0010	19+44	-	19+84	200TH AVE. WEST, SOUTH	40
0010	10+18	-	10+58	200TH AVE. EAST, NORTH	40
0010	10+20	-	10+80	200TH AVE. EAST, SOUTH	60
0010	10+20	-	10+57	210TH AVE., NORTH	40
0010					
0010	10+22	-	10+80	210TH AVE., SOUTH	60
0010	10+23	-	10+73	220TH AVE., NORTH	50
0010	10+14	-	10+68	220TH AVE., SOUTH	50
0010	19+22	-	19+82	CTH H, NORTH	60
0010	19+41	-	19+81	CTH H, SOUTH	40
0010					
0010	10+18	-	10+58	CTH Q, NORTH	40
0010	10+20	-	10+80	CTH Q, SOUTH	60
0010	19+19	-	19+79	POLK-ST. CROIX RD NORTH	60
0010	19+43	-	19+83	POLK-ST. CROIX RD SOUTH	40
0010	10+18	-	10+58	CTY LINE AVE, NORTH	40
0010					
0010	10+21	-	10+81	CTY LINE AVE, SOUTH	60
TOTAL 0010					800

PAVING INTEGRAL SHOULDERS AT 6% CROSS SLOPE

CATEGORY	STATION	TO	STATION	LOCATION	SPV.0105(01) LS
0010	-	-	-	PROJECT	1
TOTAL 0010					1

REMOVING MILLED AND RELAID MATERIAL

CATEGORY	STATION	TO	STATION	LOCATION	SPV.0105(02) LS
0010	-	-	-	PROJECT	1
TOTAL 0010					1

MILLING AND REMOVING TEMPORARY JOINT

ASPHALTIC SURFACE SPECIAL

CATEGORY	STATION	TO	STATION	LOCATION	SPV.0105(03) LS
0010		-		PROJECT	1
				TOTAL 0010	1

CATEGORY	STATION	TO	STATION	LOCATION	SPV.0195(01) TON
0010	18+35	-	19+44	200TH AVE. WEST	121
0010	10+20	-	11+60	200TH AVE. EAST	122
0010	10+57	-	12+29	210TH AVE.	159
0010	10+68	-	11+60	220TH AVE.	141
0010	18+45	-	19+41	CTH H	128
0010	10+58	-	11+60	CTH Q	128
0010	18+40	-	19+19	POLK-ST. CROIX RD	131
0010	10+58	-	11+60	CTY LINE AVE	131
0010			UNDISTRIBUTED	IN FRONT OF BEAM GUARD	707
				TOTAL 0010	1768

HMA PAVEMENT TYPE E-3 SPECIAL (19.0 MM MIX)

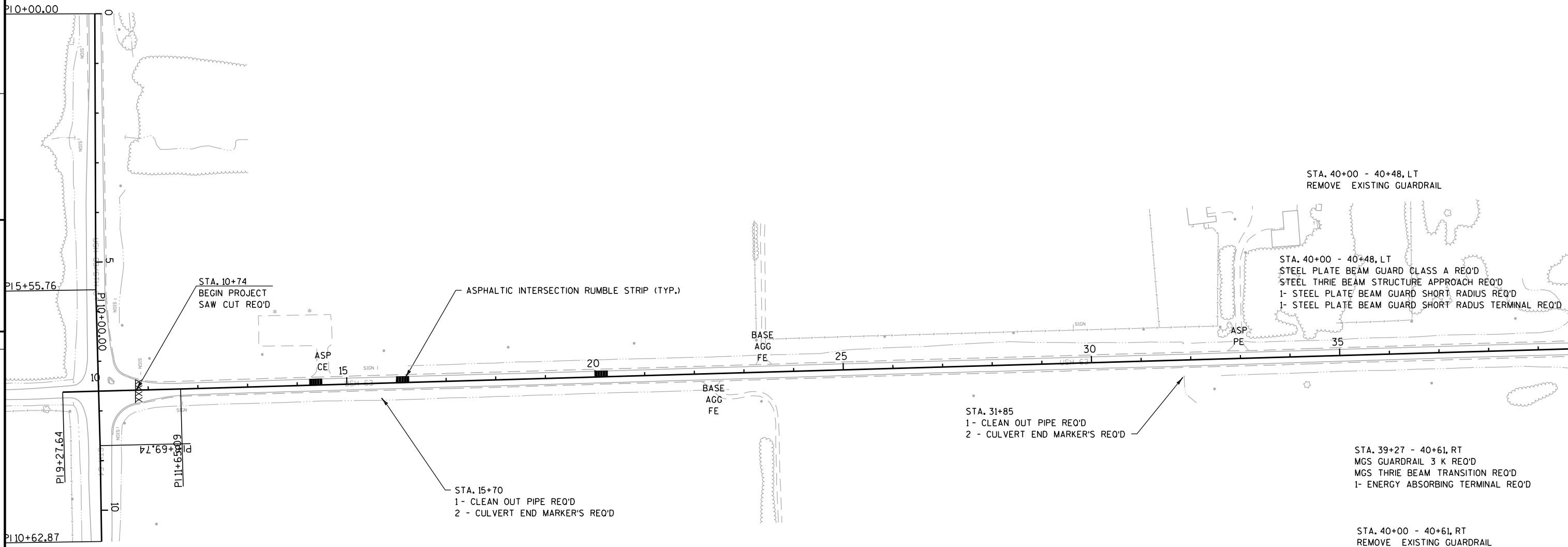
					SPV.0195(02)		REMARKS
CATEGORY	STATION	TO	STATION	LOCATION	TON		
REHEATING HMA PAVEMENT LONGITUDINALJOINTS SPECIAL							
					0010	10+74 - 40+59	LT 572
					0010	10+74 - 40+59	RT 572
					0010	41+14 - 62+45	LT 409
					0010	41+14 - 62+17	RT 403
					0010	63+71 - 122+44	LT 1126
					0010	63+44 - 115+03	RT 989
					0010	116+33 - 122+44	RT 117
					0010	123+08 - 195+25	LT 1383
					0010	123+30 - 168+69	RT 870
					0010	170+02 - 195+63	RT 491
					0010	195+63 - 220+99	RT 551 5' paved shoulder
					0010	196+54 - 222+26	LT 559 5' paved shoulder
					0010	222+67 - 274+97	RT 1002
					0010	226+26 - 275+22	LT 938
					0010	276+53 - 277+70	LT 22
					0010	276+98 - 277+70	RT 14
						TOTAL 0010	10018

HMA PAVEMENT TYPE E-3 SPECIAL (12.5 MM MIX)

SPV.0195(03)						
CATEGORY	STATION	TO	STATION	LOCATION	TON	REMARKS
0010	10+74	-	40+59	LT	644	
0010	10+74	-	40+59	RT	644	
0010	41+14	-	62+45	LT	460	
0010	41+14	-	62+17	RT	454	
0010	63+71	-	122+44	LT	1266	
0010	63+44	-	115+03	RT	1112	
0010	116+33	-	122+44	RT	132	
0010	123+08	-	195+25	LT	1556	
0010	123+30	-	168+69	RT	979	
0010	170+02	-	195+63	RT	552	
0010	195+63	-	220+99	RT	620	5' paved shoulder
0010	196+54	-	222+26	LT	629	5' paved shoulder
0010	222+67	-	274+97	RT	1128	
0010	226+26	-	275+22	LT	1056	
0010	276+53	-	277+70	LT	25	
0010	276+98	-	277+70	RT	16	
TOTAL 0010					11271	

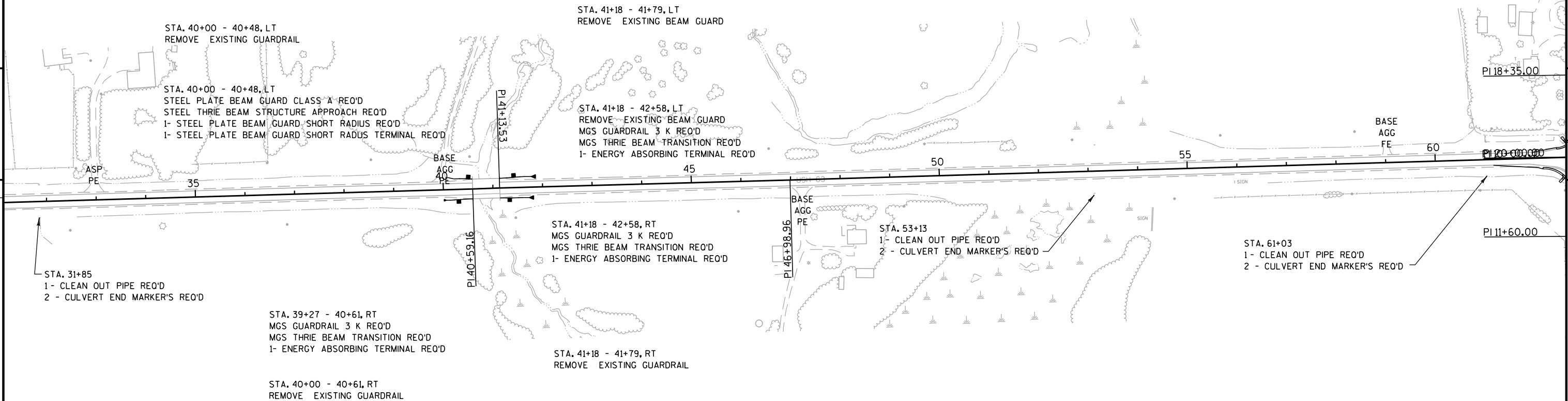
HMA PAVEMENT TYPE E-10 SPECIAL

SPV.0195(04)						
CATEGORY	STATION	TO	STATION	LOCATION	TON	REMARKS
0010	10+74	-	40+59	LT	501	
0010	10+74	-	40+59	RT	501	
0010	41+14	-	62+45	LT	357	
0010	41+14	-	62+17	RT	353	
0010	63+71	-	122+44	LT	985	
0010	63+44	-	115+03	RT	865	
0010	116+33	-	122+44	RT	102	
0010	123+08	-	195+25	LT	1210	
0010	123+30	-	168+69	RT	761	
0010	170+02	-	195+63	RT	430	
0010	195+63	-	220+99	RT	482	5' paved shoulder
0010	196+54	-	222+26	LT	489	5' paved shoulder
0010	222+67	-	274+97	RT	877	
0010	226+26	-	275+22	LT	821	
0010	276+53	-	277+70	LT	20	
0010	276+98	-	277+70	RT	12	
TOTAL 0010					8766	



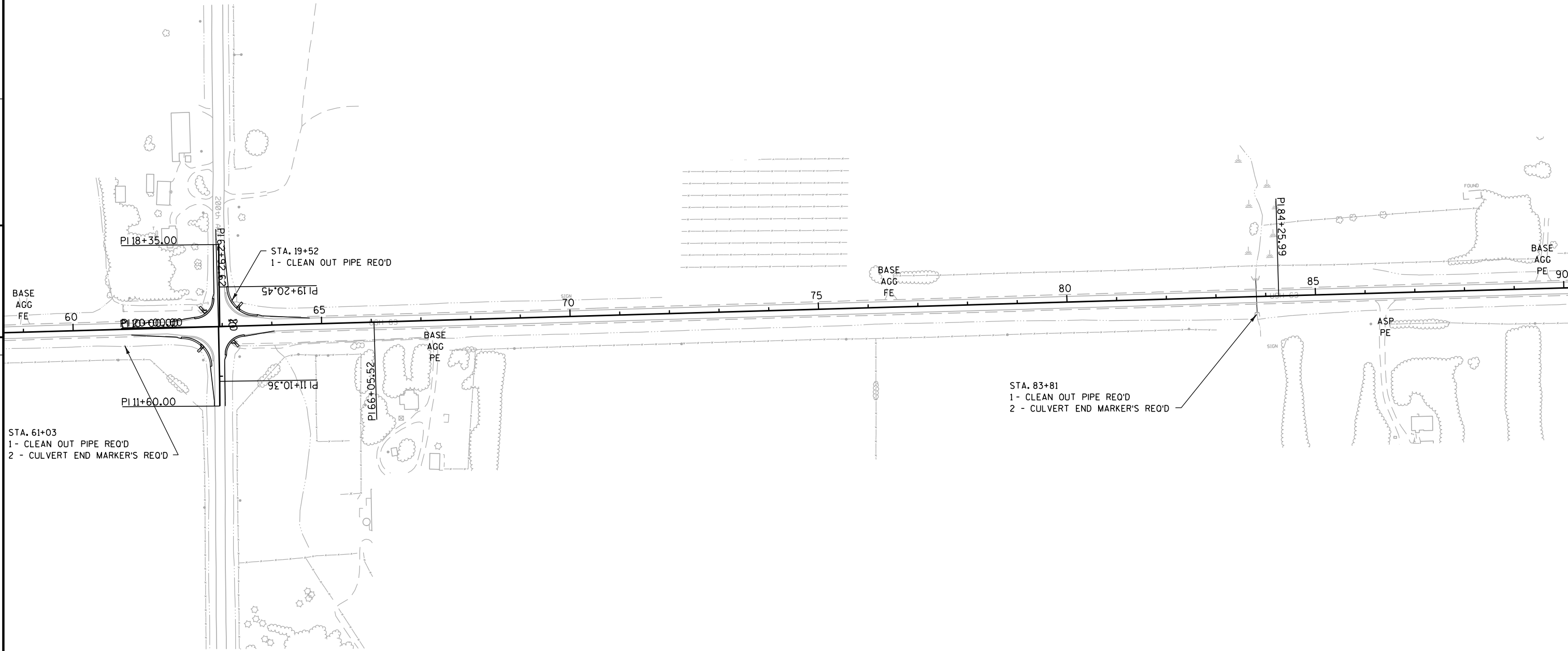
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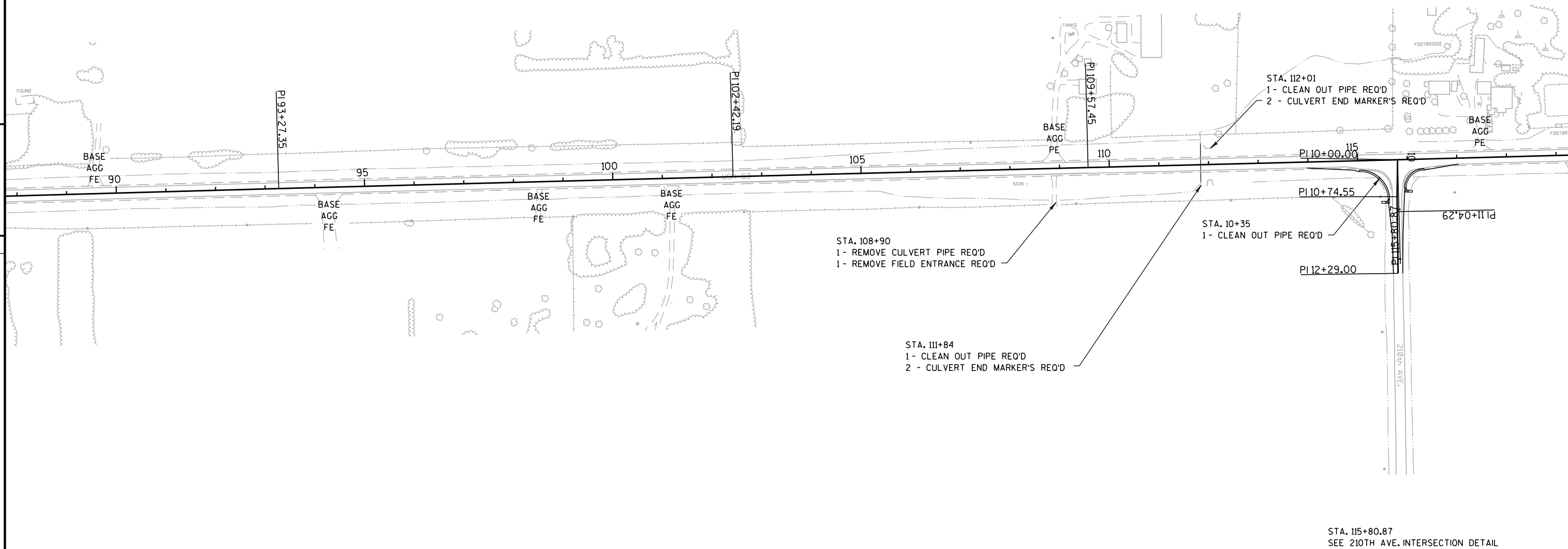


STA. 62+92.62
SEE 200TH AVE. INTERSECTION DETAIL

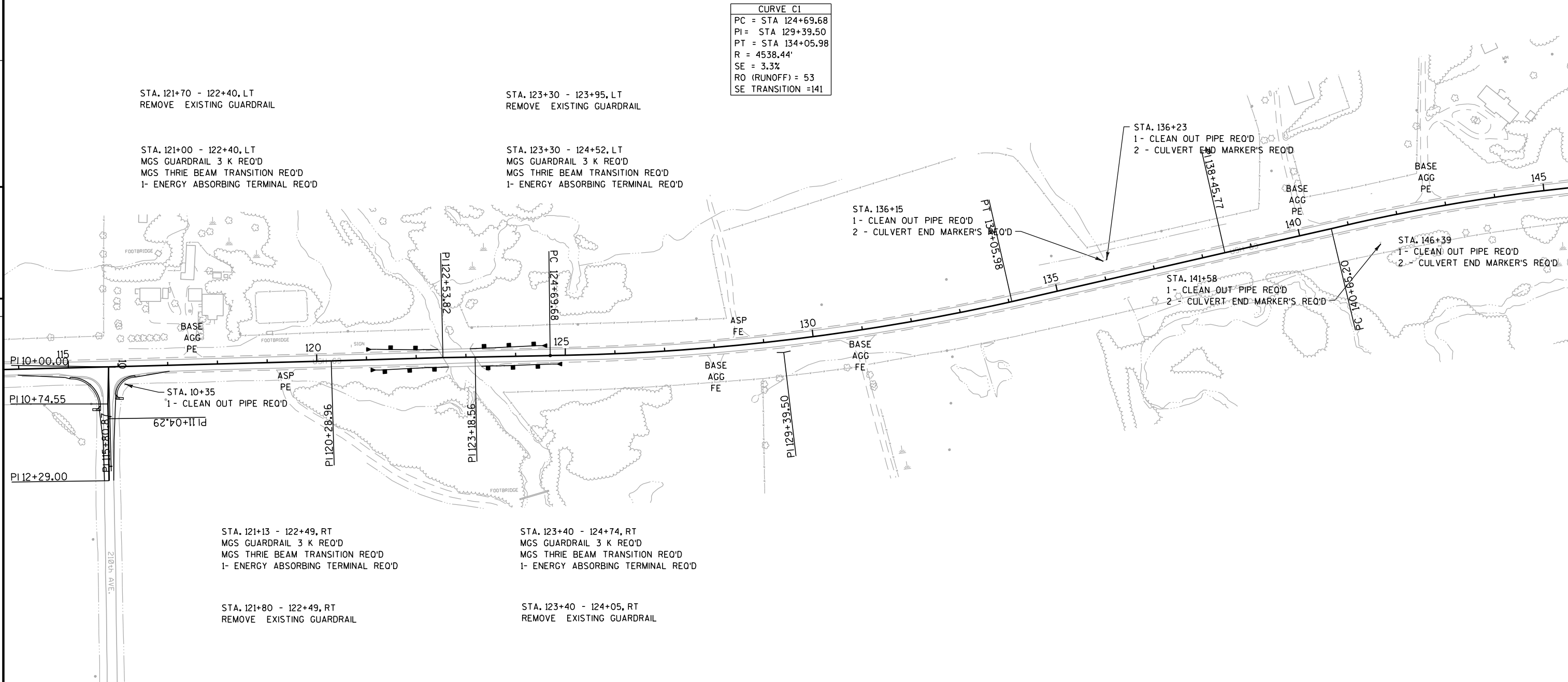
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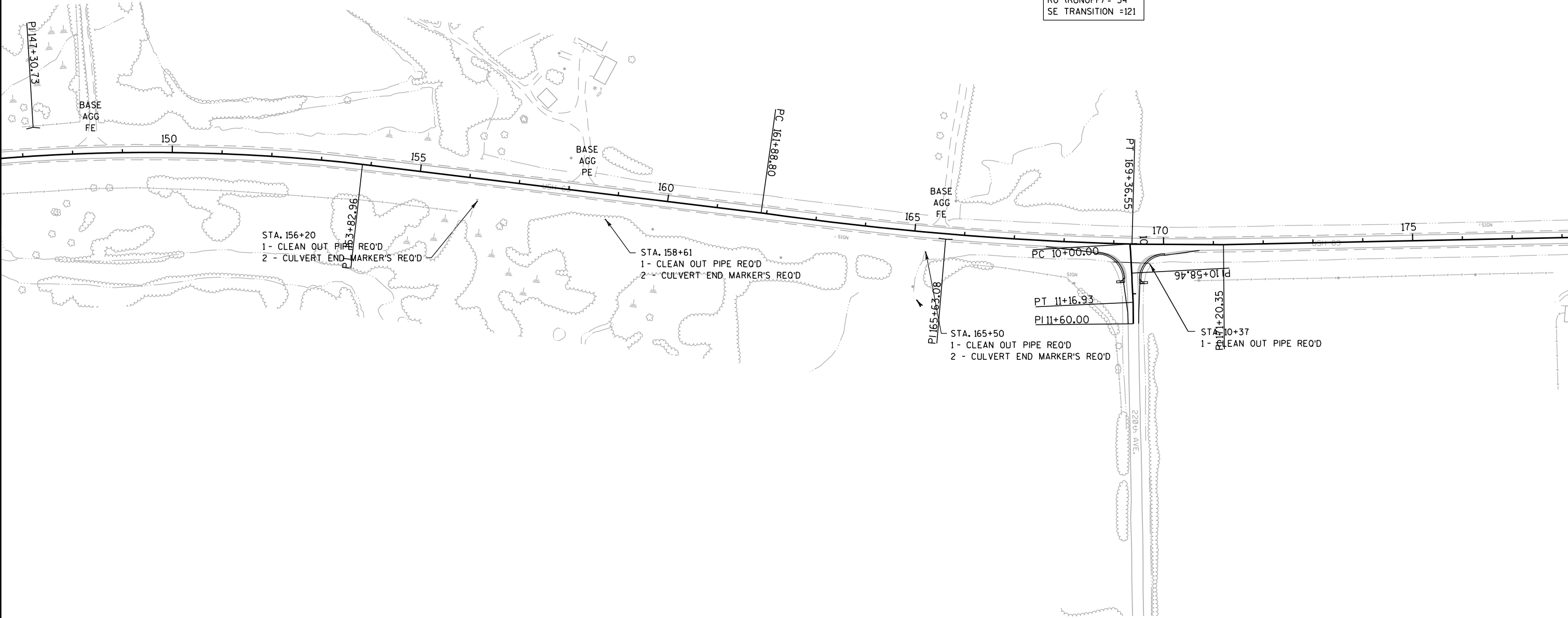
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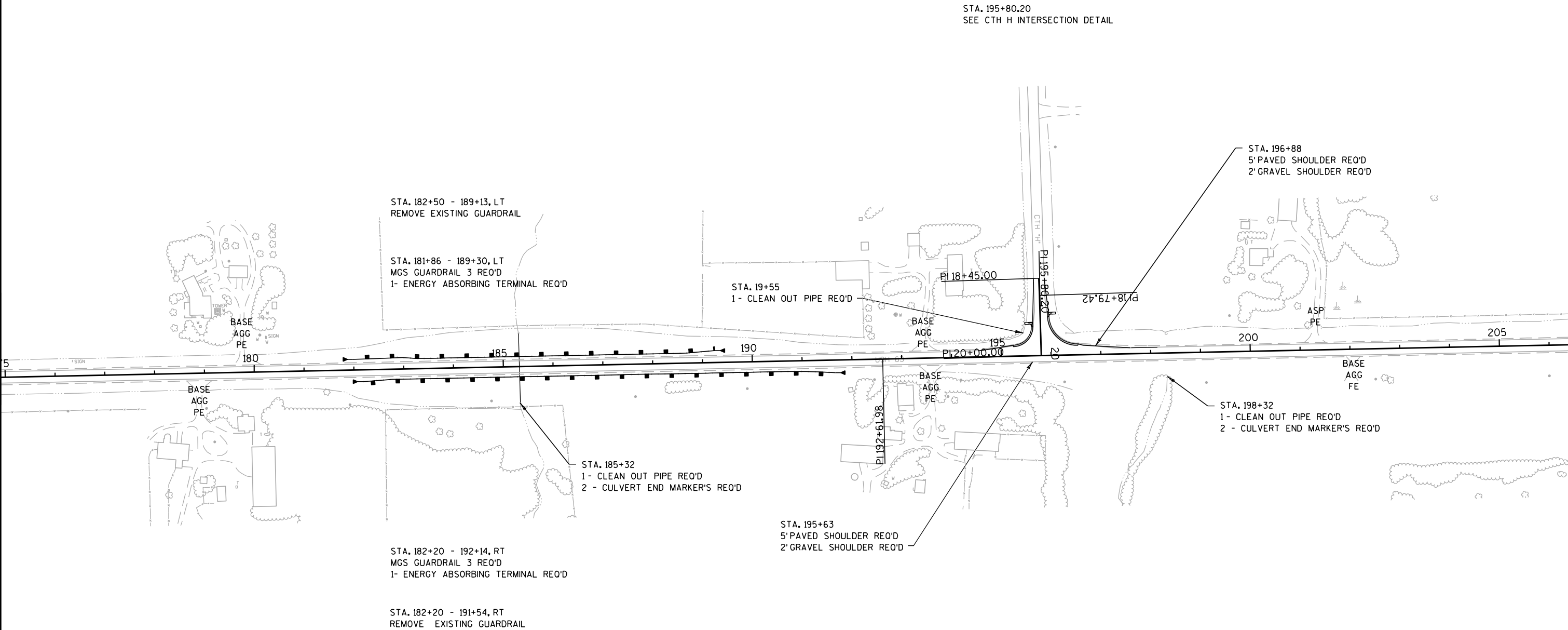
CURVE C2	
PC	= STA 140+65.20
PI	= STA 147+30.73
PT	= STA 153+82.96
R	= 3810.47'
SE	= 3.7%
RO (RUNOFF)	= 54
SE TRANSITION	=153

CURVE C3	
PC	= STA 161+88.80
PI	= STA 165+63.08
PT	= STA 169+36.55
R	= 6530.46'
SE	= 2.5%
RO (RUNOFF)	= 54
SE TRANSITION	=121



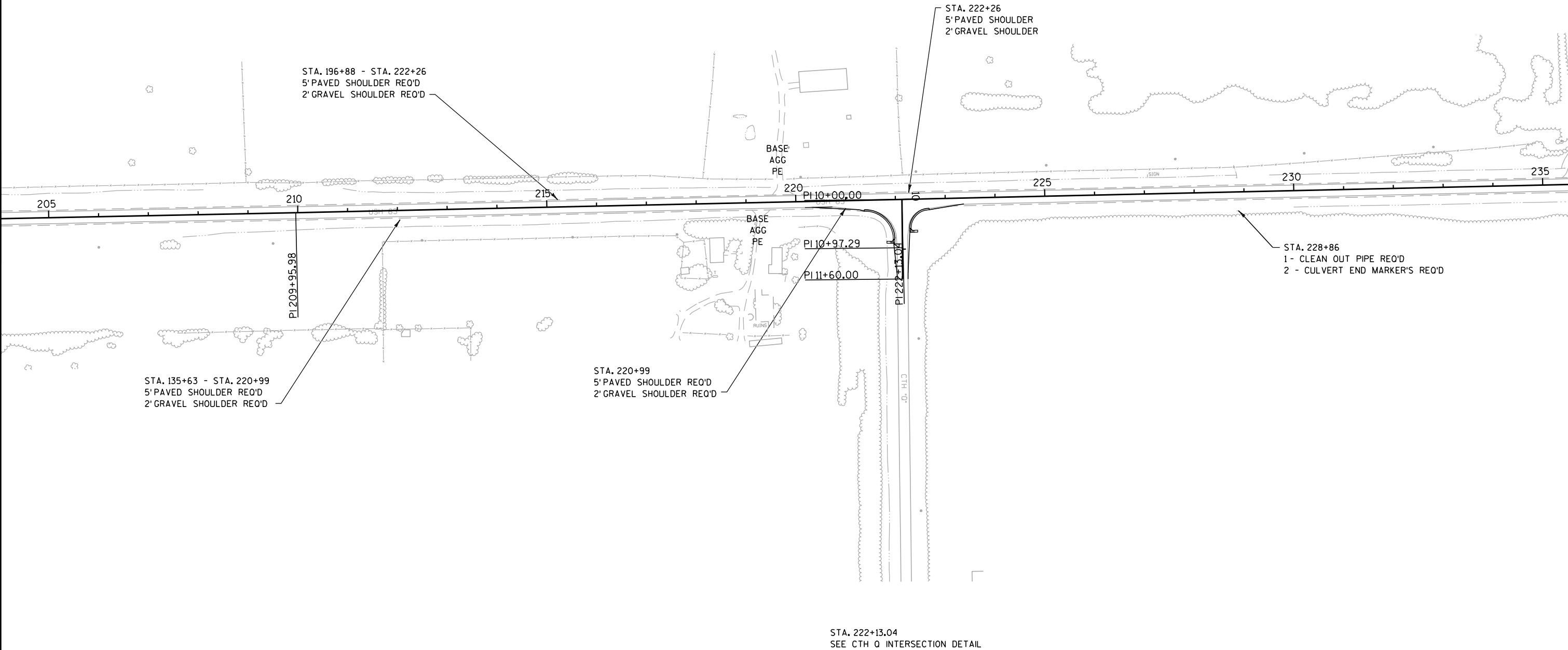
STA. 169+36.55
SEE 220TH AVE. INTERSECTION DETAIL

5



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5



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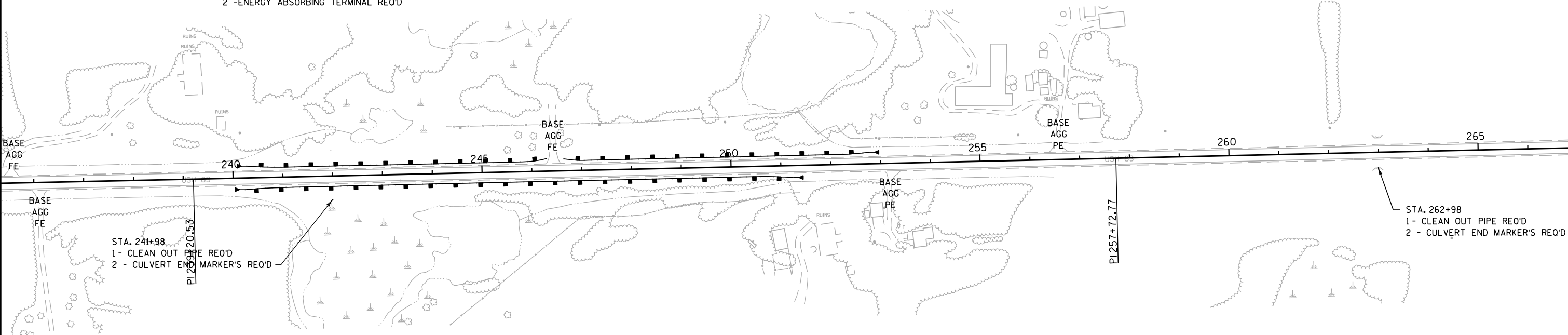
PROJECT NO: 8070-08-76	HWY: USH 63	COUNTY: ST. CROIX	PLAN	SHEET	E
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5

5

STA. 240+00 - 251+14, LT
REMOVE EXISTING GUARDRAIL

STA. 240+04 - 252+91, LT
STEEL PLATE BEAM GUARD CLASS A REQ'D
2-STEEL PLATE BEAM GUARD SHORT RADIUS
2 -STEEL BEAM GUARD SHORT RADIUS TERMINAL REQ'D
2 -ENERGY ABSORBING TERMINAL REQ'D



STA. 241+98
1 - CLEAN OUT PIPE REQ'D
2 - CULVERT END MARKER'S REQ'D

STA. 262+98
1 - CLEAN OUT PIPE REQ'D
2 - CULVERT END MARKER'S REQ'D

STA. 240+04 - 251+48, RT
MGS GUARDRAIL 3 REQ'D

2- ENERGY ABSORBING TERMINAL REQ'D

STA. 240+00 - 251+48, RT
REMOVE EXISTING GUARDRAIL

STA. 275+75.53
SEE 240TH AVE. INTERSECTION DETAIL

STA. 268+27
1 - REMOVE CULVERT PIPE REQ'D
1 - REMOVE FIELD ENTRANCE REQ'D

STA. 262+98
1 - CLEAN OUT PIPE REQ'D
2 - CULVERT END MARKER'S REQ'D

STA. 19+61
1 - CLEAN OUT PIPE REQ'D

STA. 277+70
END PROJECT

STA. 277+70
SAWCUT

PI 18+40.00

PI 19+04.82

PI 20+00.00

PI 11+10.92

PI 11+60.00

PI 27+70.00

PI 273+48.54

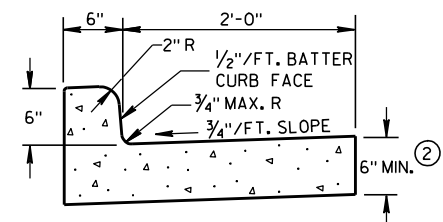
BASE
AGG
FE

BASE
AGG
PE

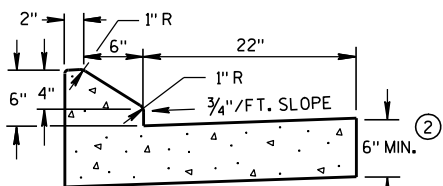
SEE 240TH AVE. INTERSECTION DETAIL

Standard Detail Drawing List

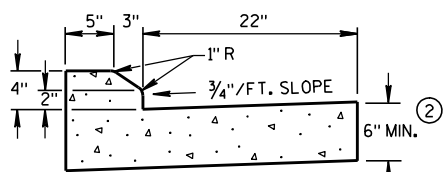
08D01-17	CONCRETE CURB, CONCRETE CURB AND GUTTER AND TIES
08D04-05	CONCRETE SURFACE DRAINS & ASPHALTIC FLUMES
08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
08F01-11	APRON ENDWALLS FOR CULVERT PIPE
08F02-01	APRON ENDWALLS FOR PIPE ARCH AND ELLIPTICAL PIPE
08F03-03	DETAILS FOR PIPE CATTLE PASS, CONCRETE ENDWALLS AND STEPS
08F04-07	JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL
09A01-13A	AT-GRADE SIDE ROAD INTERSECTION, TYPES "B1", "B2", "C" AND D AND TEE INTERSECTION BYPASS LANE
13A08-01	ASPHALTIC RUMBLE STRIPS AT INTERSECTION
14B15-07A	STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATION & ELEMENTS
14B15-07B	STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATION & ELEMENTS
14B15-07C	STEEL PLATE BEAM GUARD, CLASS "A", INSTALLATION & ELEMENTS
14B18-06A	STEEL PLATE BEAM GUARD, CLASS "A" (AT BRIDGES, OBSTACLES AND SIDEROADS/DRIVEWAYS)
14B20-11A	STEEL THRIE BEAM STRUCTURE APPROACH
14B24-07A	STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL
14B24-07B	STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL
14B24-07C	STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL
14B27-01A	STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL
14B27-01B	STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL
14B27-01C	STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL
14B42-02A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-02B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-02C	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B44-01A	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-01B	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-01C	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B45-03A	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03B	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03C	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03D	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03E	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03F	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03G	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03H	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03I	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03J	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
15A03-02A	FLEXIBLE MARKER POST FOR CULVERT END
15A03-02B	FLEXIBLE MARKER POST FOR CULVERT END
15C06-05	SIGNING & MARKING FOR TWO LANE BRIDGES
15C08-15A	PAVEMENT MARKING (MAINLINE)
15C08-15B	PAVEMENT MARKING (INTERSECTIONS)
15C08-15E	PAVEMENT MARKING (LEFT TURN LANE)
15C12-03	TRAFFIC CONTROL FOR LANE CLOSURE (SUITABLE FOR MOVING OPERATIONS)
15D28-01	TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY



TYPES A & D ①

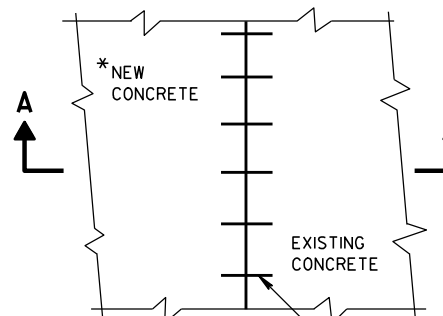


6" SLOPED CURB TYPES G & J ①



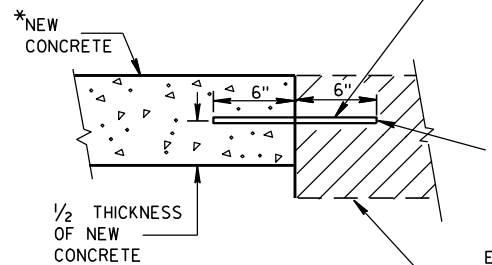
4" SLOPED CURB TYPES G & J ①

CONCRETE CURB & GUTTER 30"



PLAN VIEW

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

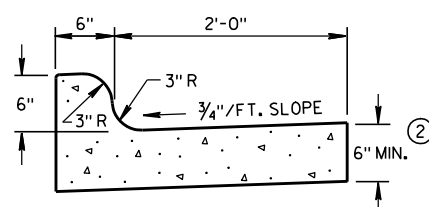


SECTION A-A
TIE BARS DRILLED
INTO EXISTING PAVEMENT

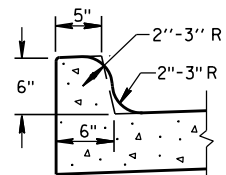
NO. 6 TIE BARS SPACED 2'-6" C-C,
INSTALLED PERPENDICULAR
TO THE LONGITUDINAL JOINT.

MAXIMUM DRILL HOLE
SIZE IS 1/8" GREATER
THAN TIE BAR DIAMETER

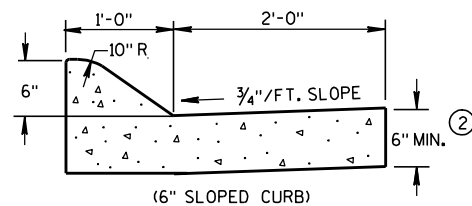
EXISTING
CONCRETE



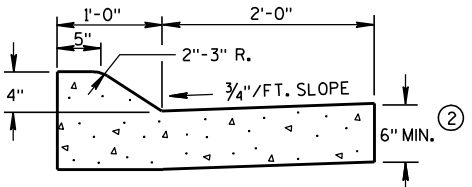
TYPES K & L ①



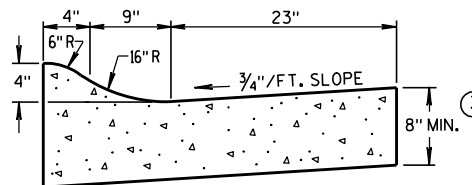
OPTIONAL CURB SHAPE
FOR TYPES K & L ①



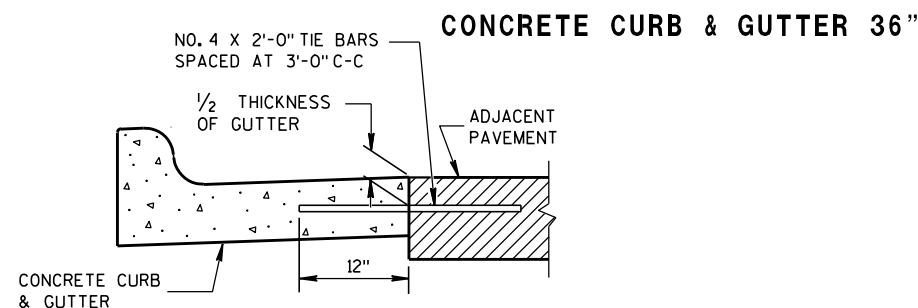
(6" SLOPED CURB)



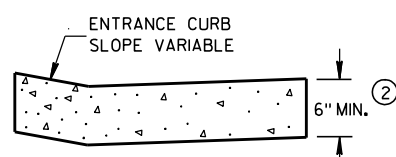
TYPES A & D ①



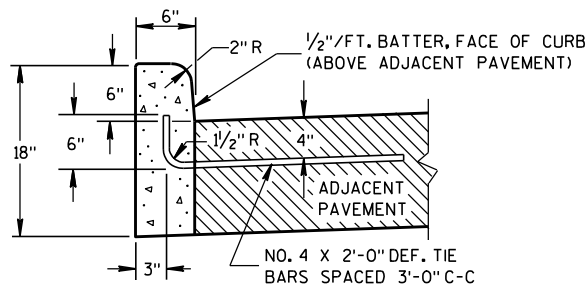
4" SLOPED CURB TYPES R & T ① ④



TYPICAL TIE BAR LOCATION ①

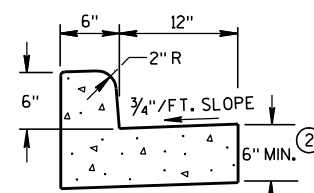


DRIVEWAY ENTRANCE CURB
(WHEN DIRECTED BY THE ENGINEER)

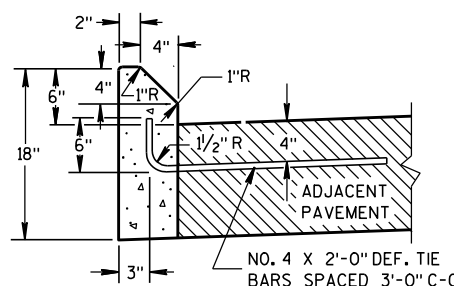


TYPES A & D ①

CONCRETE CURB



TYPES A & D
CONCRETE CURB & GUTTER 18"



TYPES G & J ①

GENERAL NOTES

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

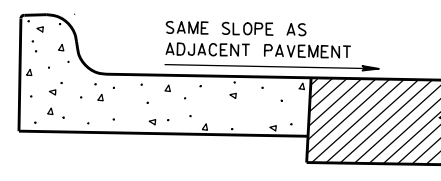
PAVEMENT TIES AND TIE BARS SHALL BE EPOXY COATED IN CONFORMANCE WITH SUBSECTION 505.2.6.2 OF THE STANDARD SPECIFICATIONS.

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.

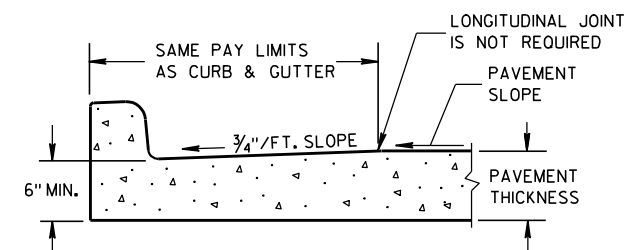
WHERE THE TRANSVERSE JOINTS IN THE PAVEMENT ARE REQUIRED TO BE SEALED, THE JOINTS IN THE INTEGRAL CURB AND GUTTER SHALL BE SEALED TO THE FACE OF CURB WITH THE SAME TYPE OF SEALANT. THE COST OF FURNISHING AND INSTALLING THIS SEALANT SHALL BE INCIDENTAL TO THE ITEM CONCRETE CURB AND GUTTER.

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

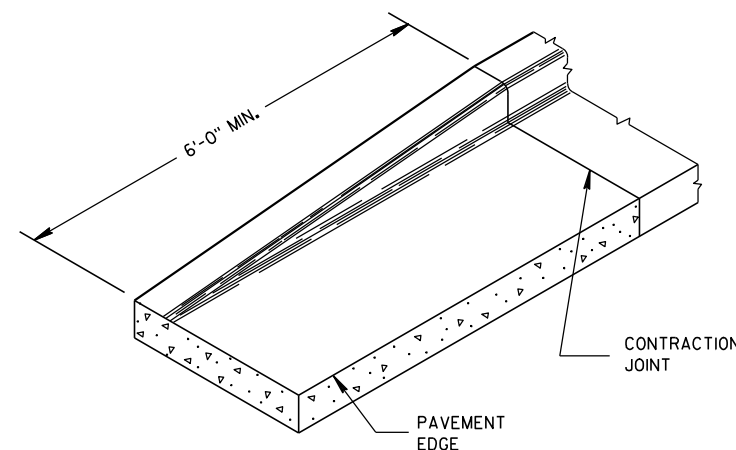
- ① TIE BARS ARE REQUIRED FOR CURB AND GUTTER TYPES A, G, K AND R.
- ② THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 6" MINIMUM GUTTER THICKNESS IS MAINTAINED.
- ③ THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 8" MINIMUM GUTTER THICKNESS IS MAINTAINED.
- ④ THE FACE OF CURB IS 6" FROM THE BACK OF CURB.
- ⑤ WHEN REVERSE SLOPE GUTTER IS REQUIRED, THE LOCATION(S) WILL BE SHOWN ELSEWHERE IN THE PLAN.



REVERSE SLOPE GUTTER ⑤
(TYPICAL FOR ALL CURB & GUTTER TYPES)



PARTIAL SECTION OF PAVEMENT
WITH INTEGRAL CURB & GUTTER



END SECTION CURB & GUTTER

CONCRETE CURB, CONCRETE
CURB & GUTTER AND TIES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

9/4/08

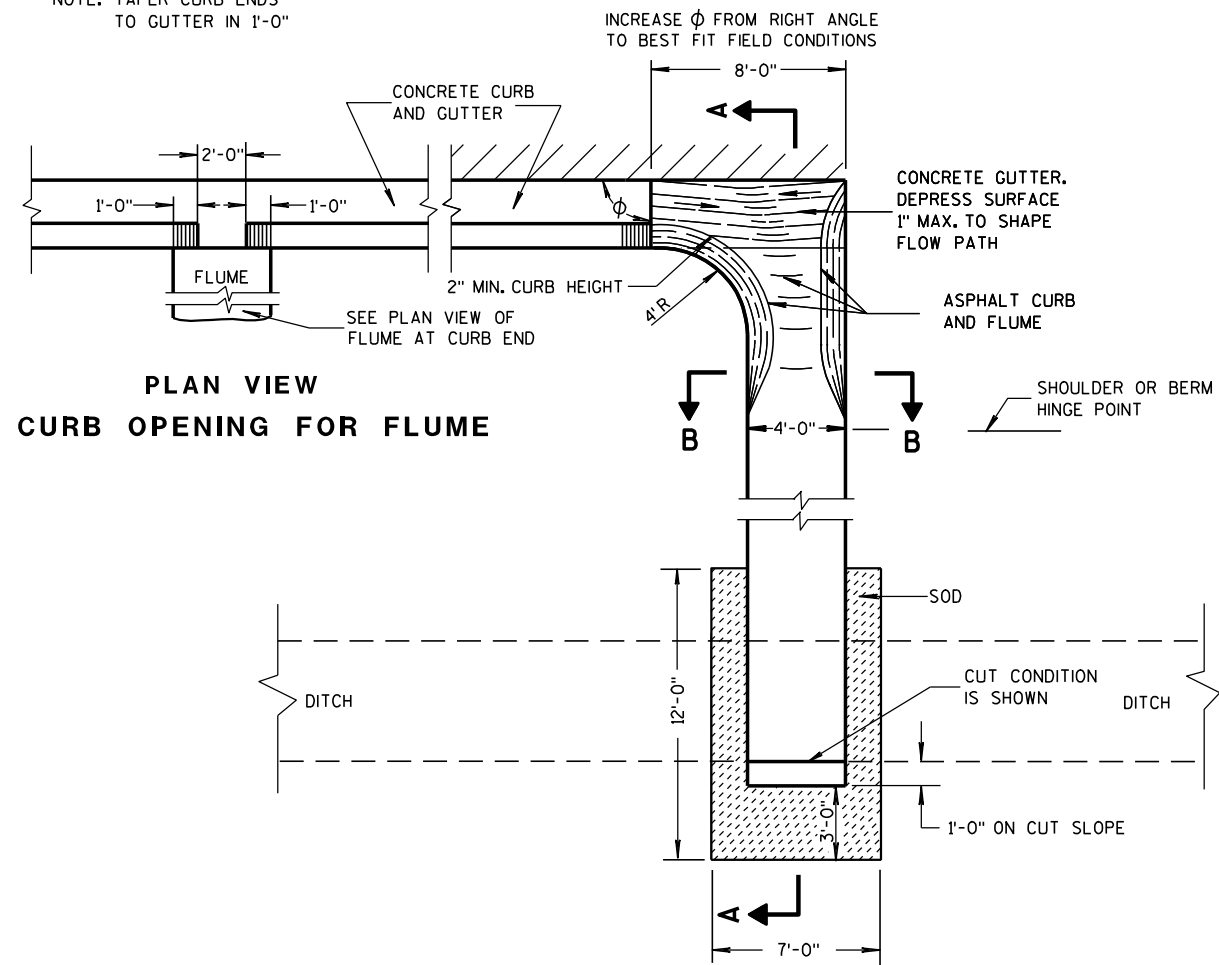
DATE

FHWA

/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER

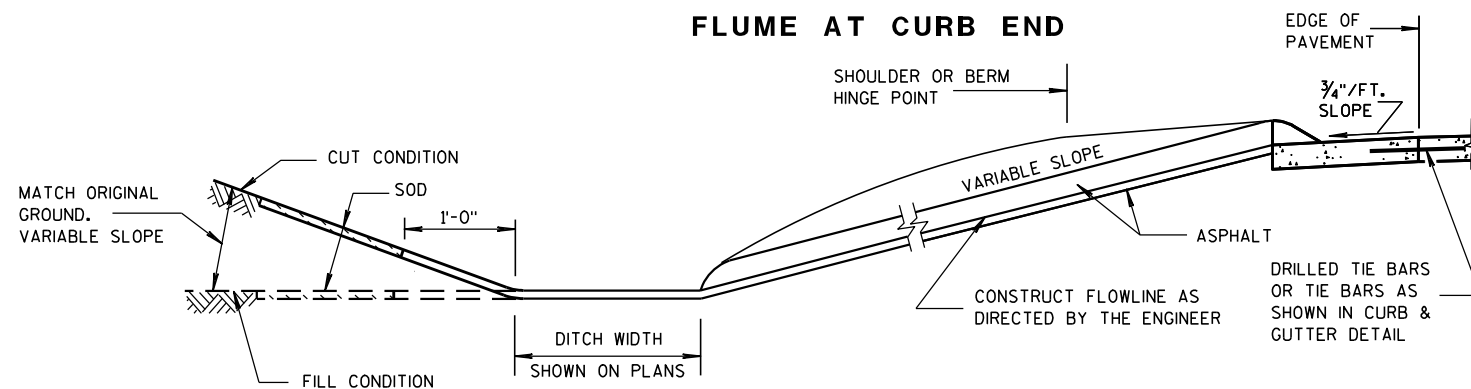
ASPHALTIC FLUME

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

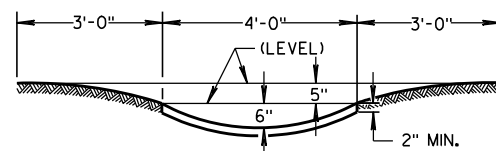


PLAN VIEW
CURB OPENING FOR FLUME

PLAN VIEW
FLUME AT CURB END



SECTION A-A



SECTION B-B

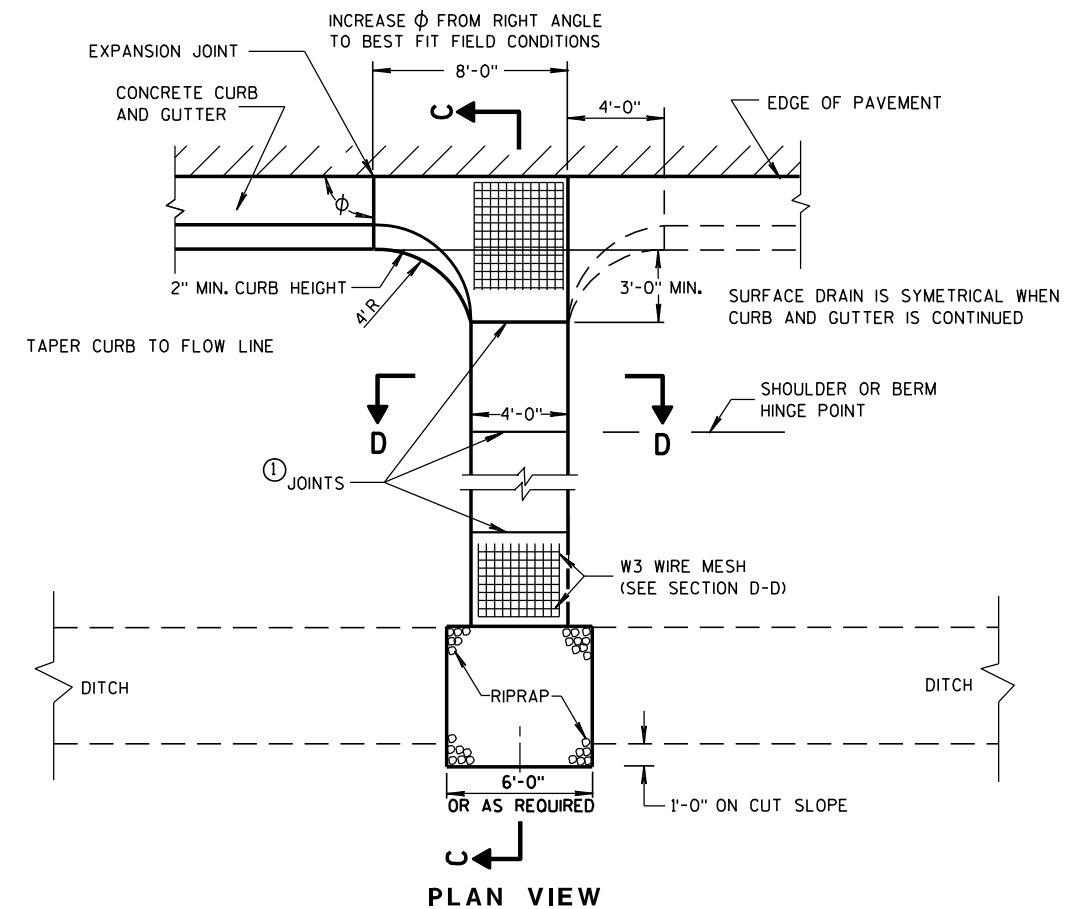
GENERAL NOTES

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

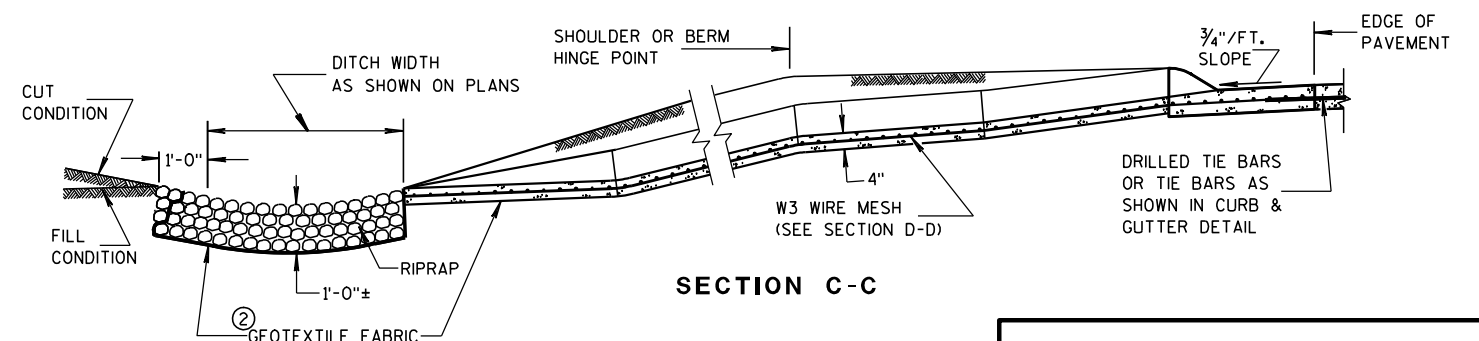
WELDED STEEL WIRE FABRIC SHALL BE IN ACCORDANCE WITH AASHTO SPECIFICATION M55.

- ① JOINTS SHALL BE 1/8" TO 1/4" INCH WIDE BY 1 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

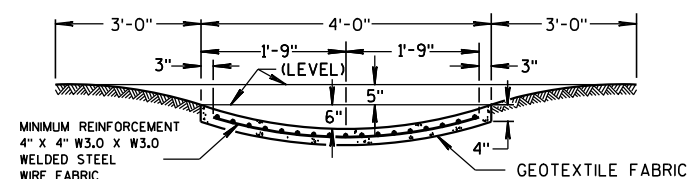
③ CONCRETE SURFACE DRAIN



PLAN VIEW



SECTION C-C



SECTION D-D

CONCRETE SURFACE DRAINS & ASPHALTIC FLUMES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

9-4-08

DATE

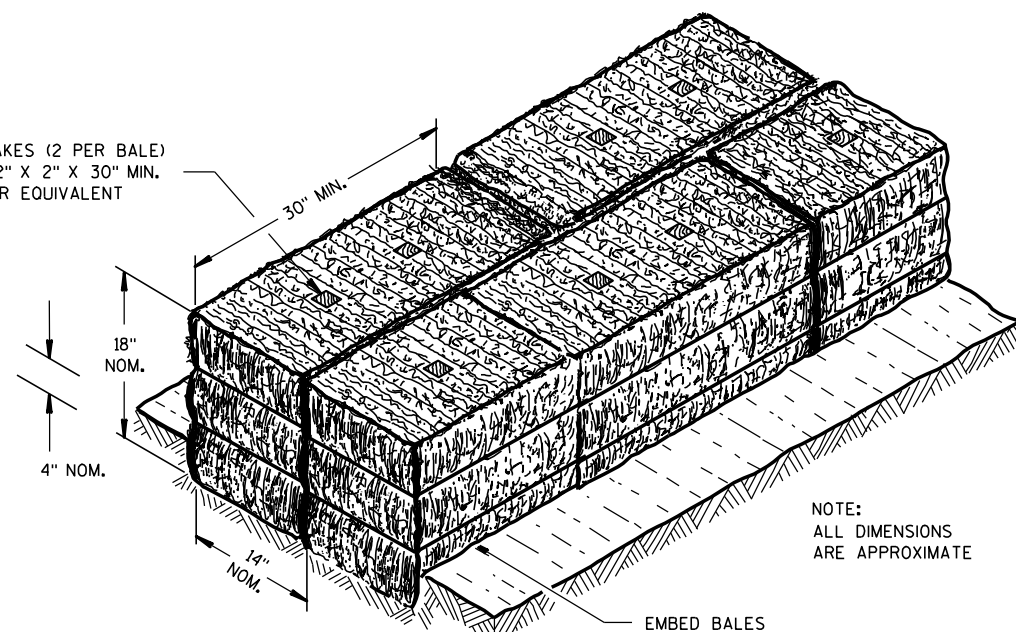
FHWA

/S/ Jerry H. Zogg

ROADWAY STANDARDS DEVELOPMENT

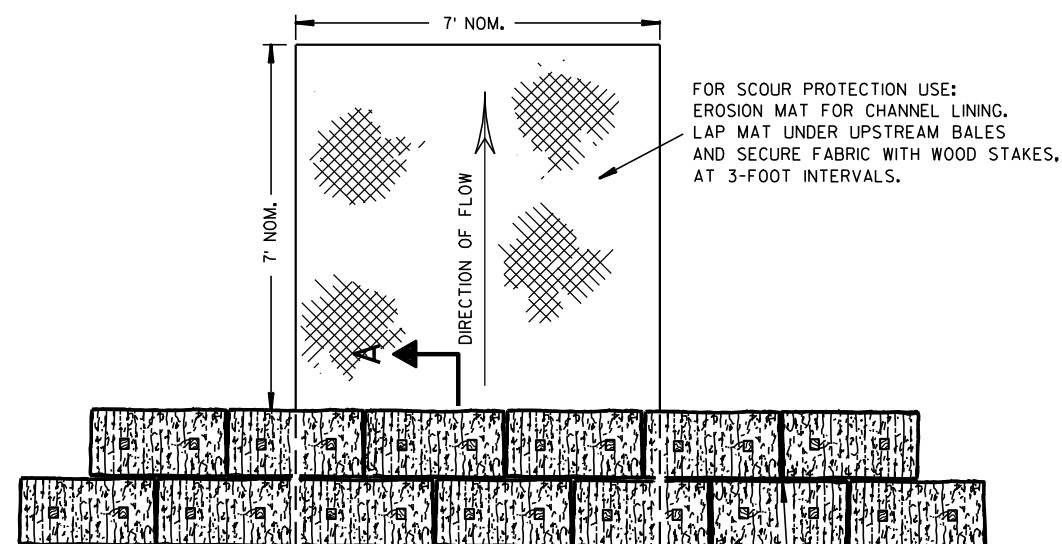
ENGINEER

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



NOTE:
ALL DIMENSIONS
ARE APPROXIMATE

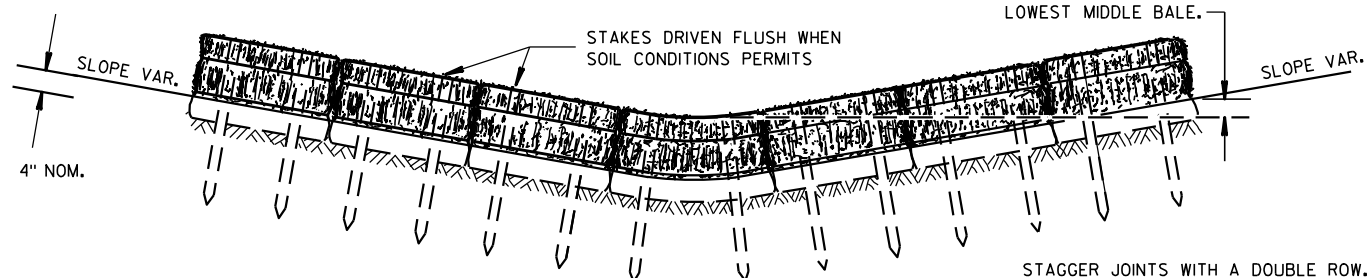
SECTION A-A



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.



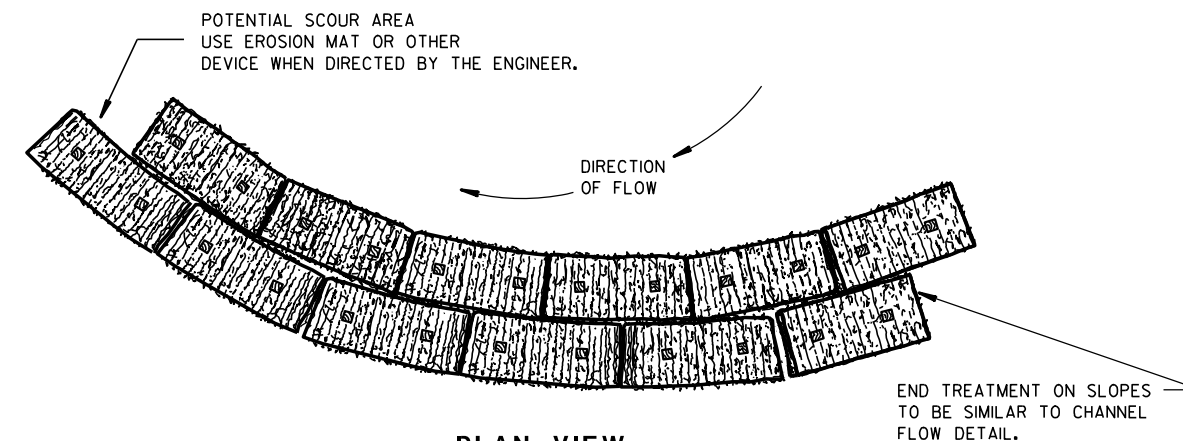
FRONT ELEVATION

TEMPORARY DITCH CHECK USING EROSION BALES ①

GENERAL NOTES

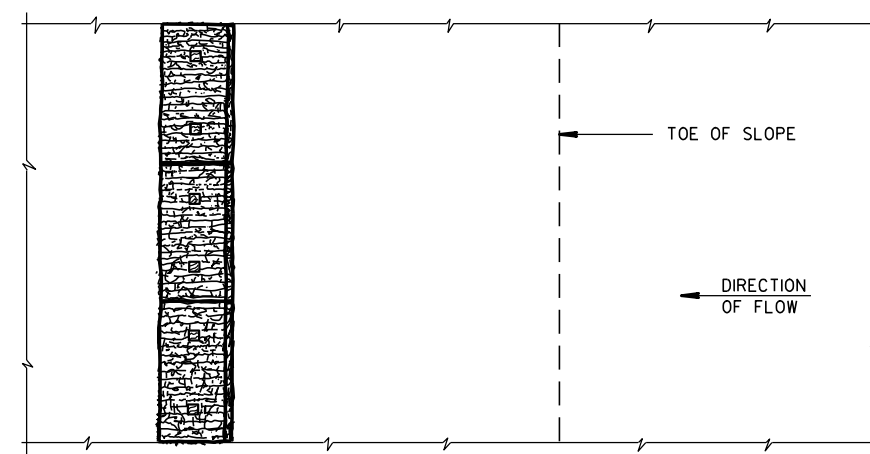
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

- 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.

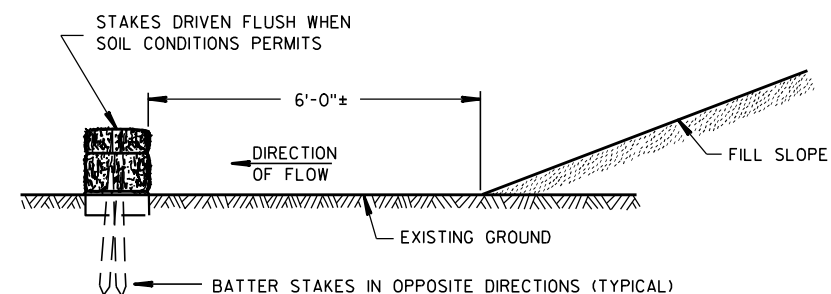


PLAN VIEW

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

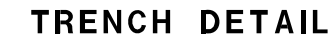
6/04/02
DATE

/S/ Beth Canestra
CHIEF ROADWAY DEVELOPMENT ENGINEER

FHWA



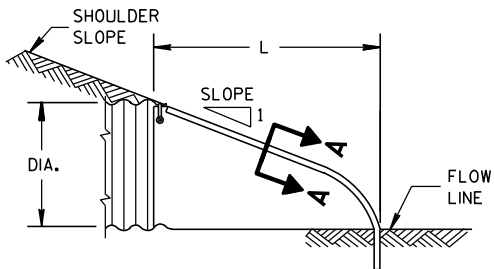
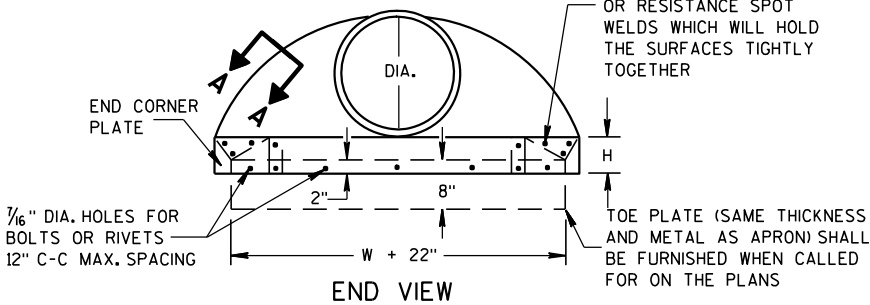
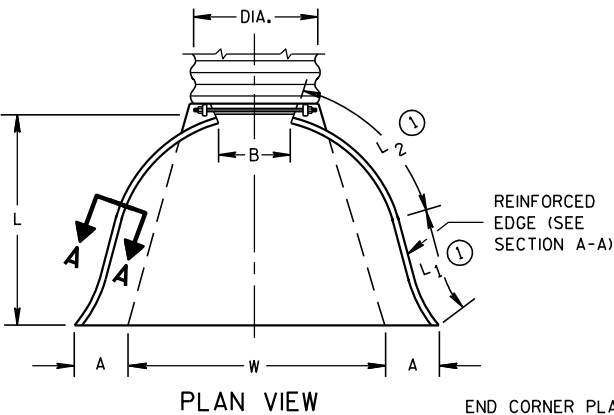
- ① HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.
- ② FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
- ③ WOOD POSTS SHALL BE A MINIMUM SIZE OF 1½" X 1½" 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.



SILT FENCE	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 4-29-05 DATE	/S/ <u>Beth Cannestra</u> CHIEF 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 1/2")	L1 ①	L2 ①	W (±2")			
12	.064	.060	6	6	6	21	12	17 1/2	24	2 1/2 to 1	1	1 Pc.
15	.064	.060	7	8	6	26	14	21 3/4	30	2 1/2 to 1	1	1 Pc.
18	.064	.060	8	10	6	31	15	28 1/4	36	2 1/2 to 1	1	1 Pc.
21	.064	.060	9	12	6	36	18	29 5/8	42	2 1/2 to 1	1	1 Pc.
24	.064	.075	10	13	6	41	18	37 1/4	48	2 1/2 to 1	1	1 Pc.
30	.079	.075	12	16	8	51	18	52 1/4	60	2 1/2 to 1	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 5/8	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	.109x	.105x	18	33	12	87	—	—	114	2 to 1	3	Pc.
66	.109x	.105x	18	36	12	87	—	—	120	2 to 1	3	Pc.
72	.109x	.105x	18	39	12	87	—	—	126	2 to 1	3	Pc.
78	.109x	.105x	18	42	12	87	—	—	132	1 1/2 to 1	3	Pc.
84	.109x	.105x	18	45	12	87	—	—	138	1 1/2 to 1	3	Pc.
90	.109x	.105x	18	37	12	87	—	—	144	1 1/2 to 1	3	Pc.
96	.109x	.105x	18	35	12	87	—	—	150	1 1/2 to 1	3	Pc.

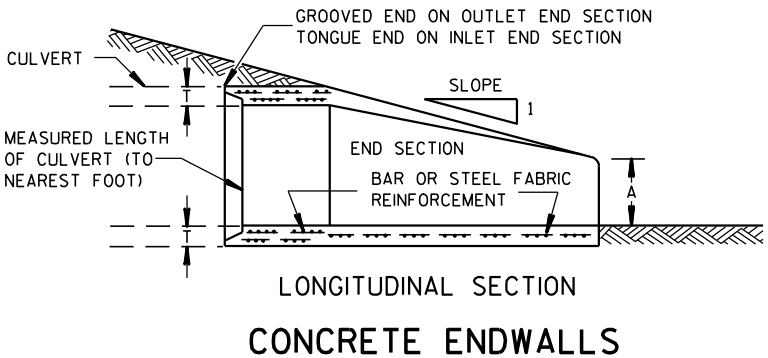
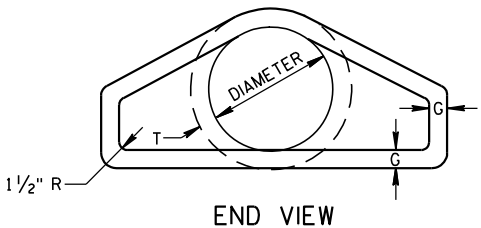
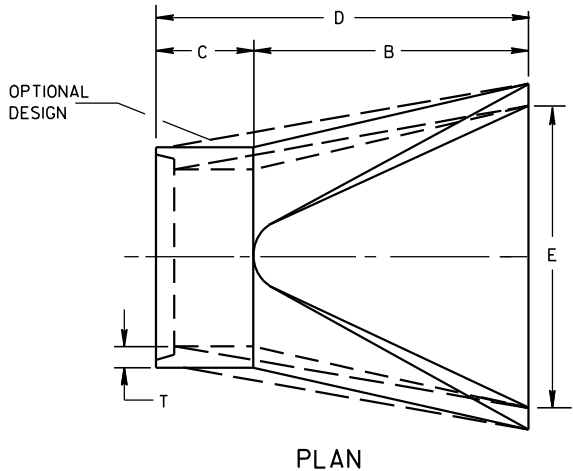
* EXCEPT CENTER PANEL
SEE GENERAL NOTES



SIDE ELEVATION
METAL ENDWALLS

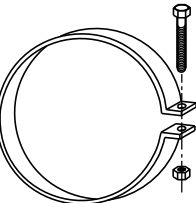
REINFORCED CONCRETE APRON ENDWALLS												
PIPE DIA. (IN.)	DIMENSIONS (Inches)							APPROX. SLOPE				
	T	A	B	C	D	E	G					
12	2	4	24	48 1/8	72 1/8	24	2	3 to 1				
15	2 1/4	6	27	46	73	30	2 1/4	3 to 1				
18	2 1/2	9	27	46	73	36	2 1/2	3 to 1				
21	2 3/4	9	36	37 1/2	73 1/2	42	2 3/4	3 to 1				
24	3	9 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 3/4	73 1/2	60	3 1/2	3 to 1				
36	4	15	63	34 3/4	97 3/4	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	98 1/4	90	5 1/2	2 1/2 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

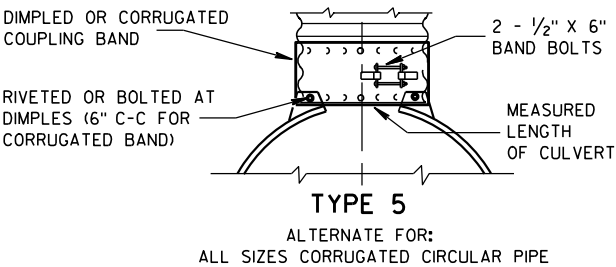
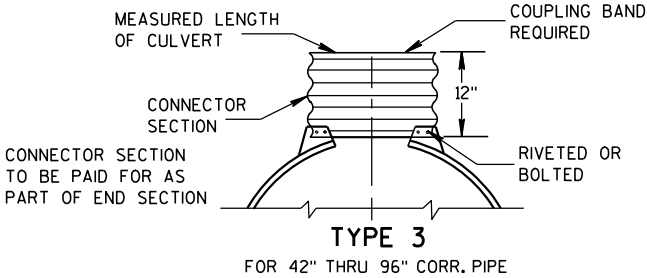
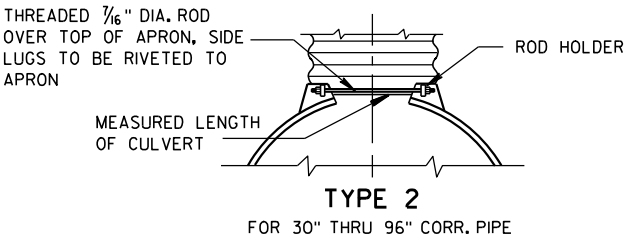
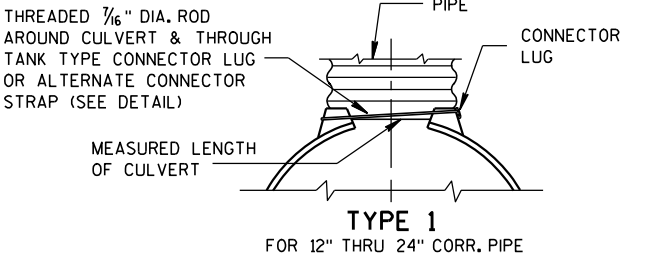


LONGITUDINAL SECTION
CONCRETE ENDWALLS

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



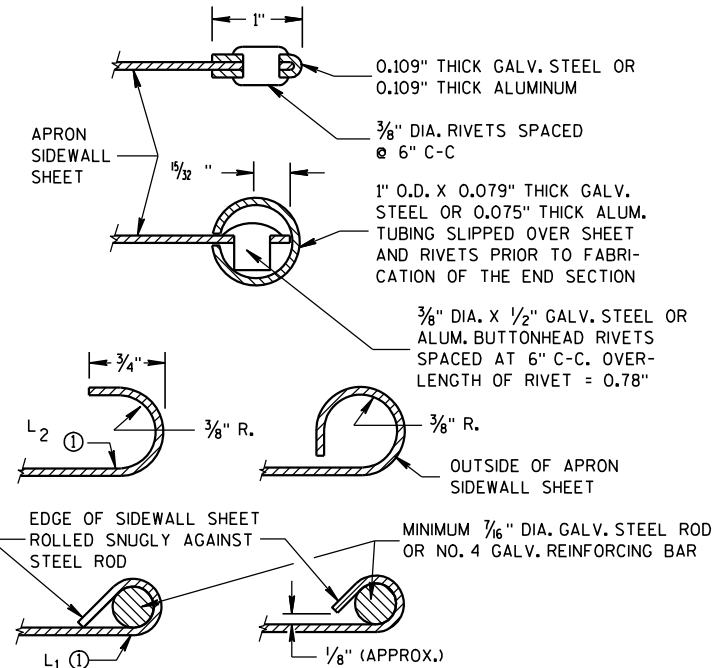
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL, AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

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.

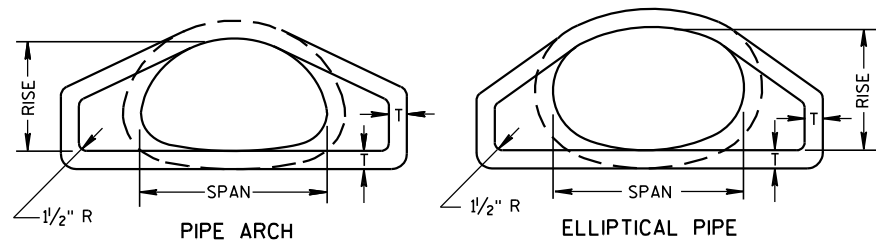
ALL THREE PIECE STEEL APRON ENDWALLS FOR 60" DIAMETER PIPE AND LARGER SHALL HAVE 0.109" SIDES AND 0.138" CENTER PANELS. ALL THREE PIECE ALUMINUM APRON ENDWALLS FOR 60" DIAMETER PIPE AND LARGER SHALL HAVE 0.105" SIDES AND 0.134" CENTER PANELS. THE WIDTH OF CENTER PANELS SHALL BE GREATER THAN 20 PERCENT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

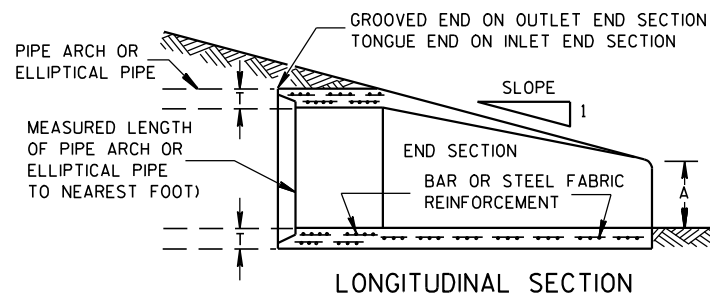
WHERE TWO OR MORE PIPES WITH APRON ENDWALLS ARE LAID ADJACENT TO EACH OTHER, THEY SHALL BE SEPARATED BY A DISTANCE SUFFICIENT TO PROVIDE A MINIMUM CLEARANCE OF 6 INCHES BETWEEN APRON ENDWALLS.

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	/S/ Rory L. Rhinesmith CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA	

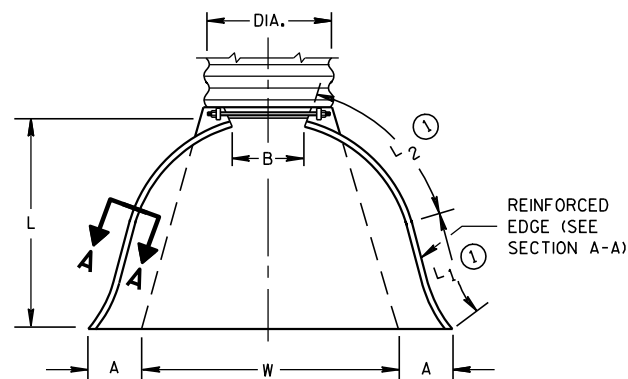


END VIEW



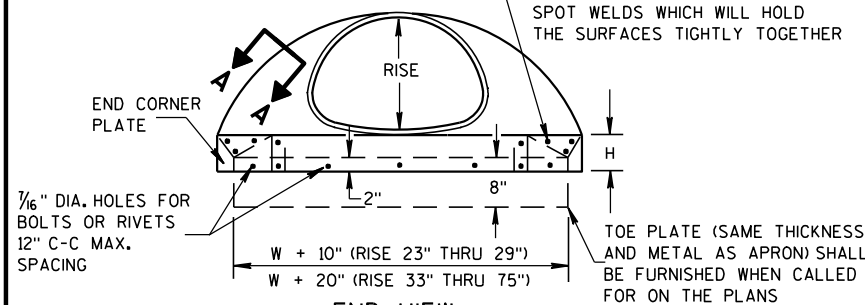
LONGITUDINAL SECTION

CONCRETE ENDWALLS

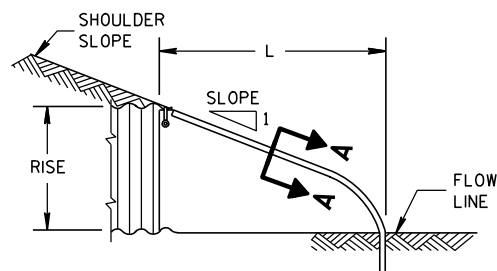
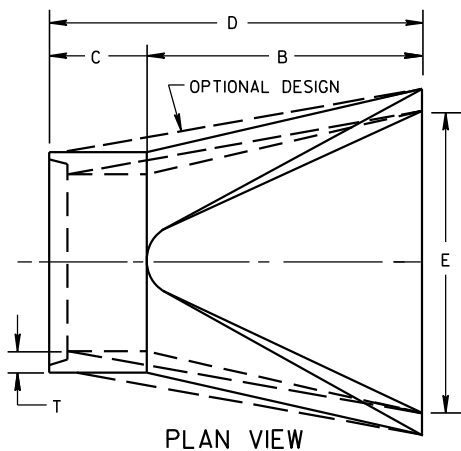


PLAN VIEW

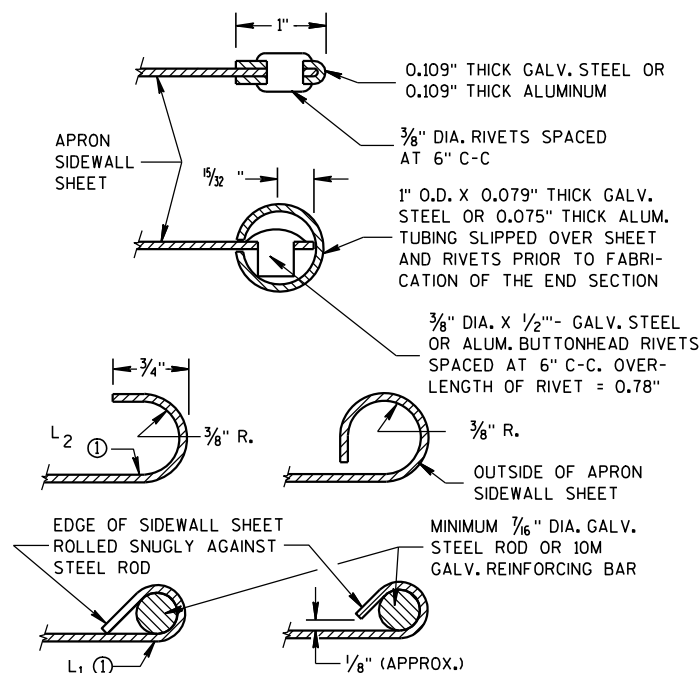
END CORNER PLATES MAY BE FASTENED TO APRON PROPER BY BOLTS, RIVETS, OR RESISTANCE SPOT WELDS WHICH WILL HOLD THE SURFACES TIGHTLY TOGETHER



END VIEW

SIDE ELEVATION
METAL ENDWALLS

PLAN VIEW



SECTION A-A

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

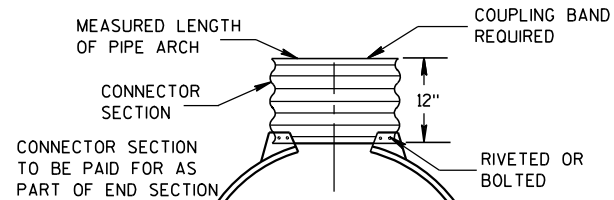
3" X 1" CORRUGATIONS													
EQUIV. DIA. (Inches)	(Inches)		MIN. THICK. (Inches)		DIMENSIONS (Inches)							APPROX. SLOPE	BODY
	SPAN	RISE	STEEL	ALUM.	A (±1")	B (MAX.)	H (±1")	L (±1 1/2")	L1 ⓪	L2 ⓪	W (±2")		
48	53	41	.109	.105	18	26	12	63	24	72¾	90	2½ to 1	2 Pc.
54	60	46	.109	.105	18	30	12	70	30	82¼	102	2 to 1	2 Pc.
60	66	51	.109*	.105*	18	33	12	77	—	—	114	1½ to 1	3 Pc.
66	73	55	.109*	.105*	18	36	12	77	—	—	126	1½ to 1	3 Pc.
72	81	59	.109*	.105*	18	39	12	77	—	—	138	2 to 1	3 Pc.
78	87	63	.109*	.105*	22	38	12	77	—	—	148	1½ to 1	3 Pc.
84	95	67	.109*	.105*	22	34	12	77	—	—	162	1½ to 1	3 Pc.
90	103	71	.109*	.105*	22	38	12	77	—	—	174	1½ to 1	3 Pc.
96	112	75	.109*	.105*	24	40	12	77	—	—	174	1½ to 1	3 Pc.

NOTE: ALL SPLICES TO BE LAP RIVETED OR BOLTED.

* EXCEPT CENTER PANEL
SEE GENERAL NOTES

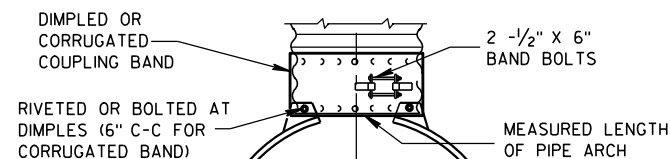
TYPE 2

FOR 17" X 13" THRU 112" X 75" PIPE ARCH



TYPE 3

FOR 64" X 43" THRU 112" X 75" PIPE ARCH



TYPE 5

ALTERNATE FOR:
ALL SIZES CORRUGATED PIPE ARCHESNOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL,
AND CORRUGATED BAND FITS INSIDE ENDWALL.

CONNECTION DETAILS

REINFORCED CONCRETE PIPE ARCH

EQUIV. DIA. (Inches)	DIMENSIONS (Inches)								APPROX. SLOPE
	** SPAN	** RISE	T	A	B	C	D	E	
24	29	18	3	8 1/2	39	33	72	48	3 to 1
30	36	22	3 1/2	9 1/2	50	46	96	60	3 to 1
36	44	27	4	11 1/8	60	36	96	72	3 to 1
42	51	31	4 1/2	15 1/8	60	36	96	78	3 to 1
48	58	36	5	21	60	36	96	84	3 to 1
54	65	40	5 1/2	25 1/2	60	36	96	90	3 to 1
60	73	45	6	31	60	36	96	96	3 to 1
72	88	54	7	31	60	39	99	120	2 to 1
84	102	62	8	28 1/2	83	19	102	144	2 to 1

REINFORCED CONCRETE ELLIPTICAL PIPE

EQUIV. DIA. (Inches)	DIMENSIONS (Inches)								APPROX. SLOPE
	** SPAN	** RISE	T	A	B	C	D	E	
24	30	19	3 1/4	8 1/2	39	33	72	48	3 to 1
30	38	24	3 3/4	9 1/2	54	18	72	60	3 to 1
36	45	29	4 1/2	11 1/8	60	24	84	72	2 1/2 to 1
42	53	34	5	15 1/4	60	36	96	78	2 1/2 to 1
48	60	38	5 1/2	21	60	36	96	84	2 1/2 to 1
54	68	43	6	25 1/2	60	36	96	90	2 1/2 to 1
60	76	48	6 1/2	30	60	36	96	96	2 1/2 to 1

**NOMINAL SIZE

GENERAL NOTES

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

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

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

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

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

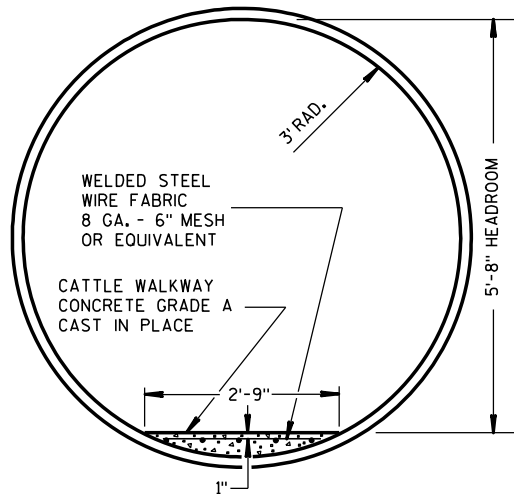
① FOR PIPE ARCH SIZES UP TO 73" X 55" A 180° ROLLED EDGE MAY BE USED INSTEAD OF STEEL ROD REINFORCEMENT. SEE SECTION A-A.

APRON ENDWALLS FOR
PIPE ARCH AND
ELLIPTICAL PIPESTATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

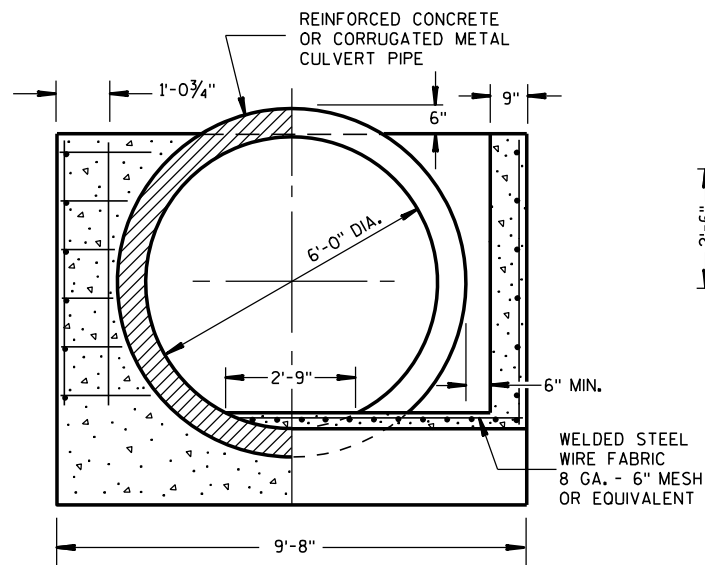
APPROVED

11/30/94
DATE/S/ Rory L. Rhinesmith
CHIEF ROADWAY DEVELOPMENT ENGINEER

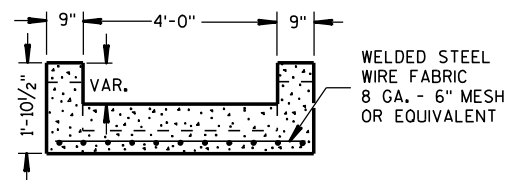
FHWA



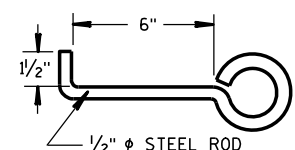
CROSS SECTION
CORRUGATED METAL PIPE
CATTLE PASS



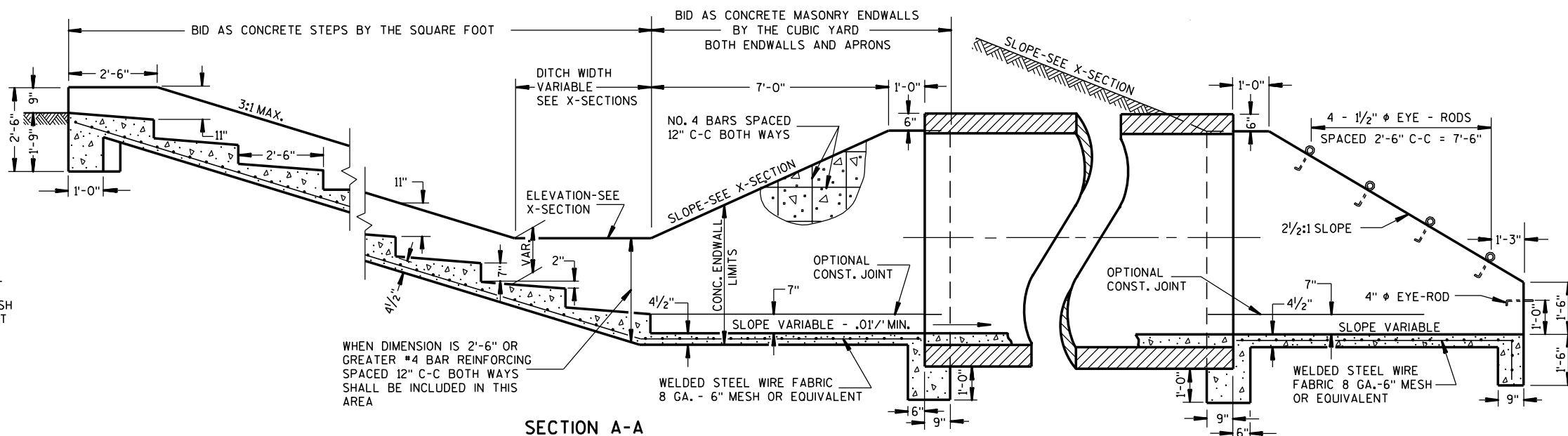
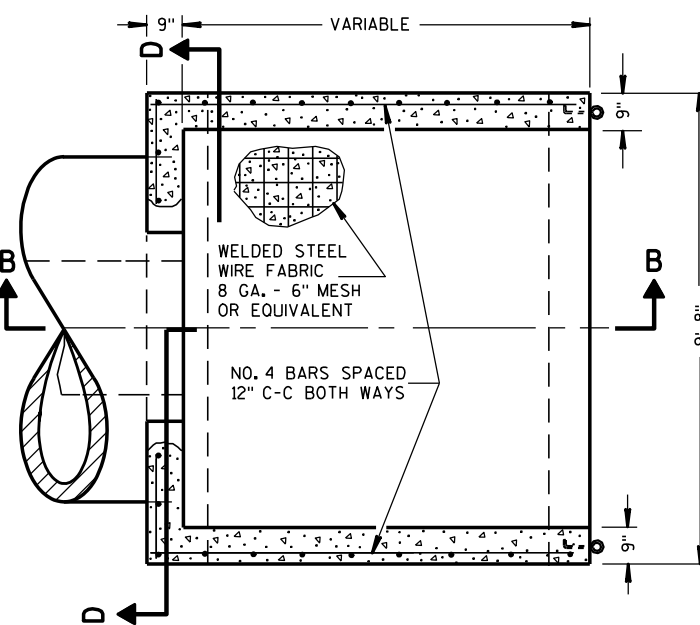
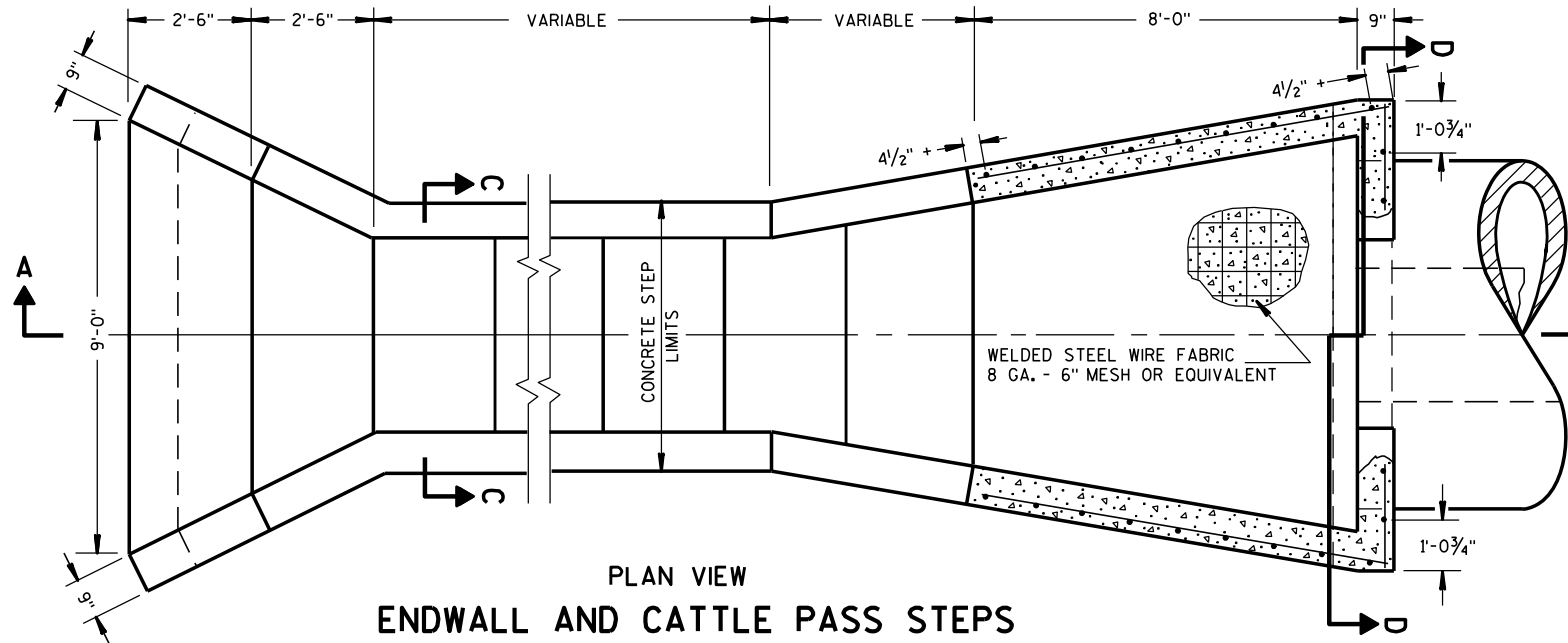
SECTION D-D



SECTION C-C



EYE-ROD ANCHOR



SECTION B-B

GENERAL NOTES

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

ALL STEEL REINFORCEMENT IN ENDWALLS AND CATTLE PASS STEPS SHALL BE EMBEDDED 2 INCHES CLEAR UNLESS OTHERWISE NOTED.

ALL STEEL REINFORCEMENT OR FABRIC USED AS SHOWN ABOVE SHALL BE INCIDENTAL TO THE BID ITEM OF WHICH IT IS AN INTEGRAL PART.

EYE-RODS FOR FENCE CONNECTIONS SHALL BE PROVIDED BY THE CONTRACTOR AS AN INCIDENTAL TO THE BID ITEM OF CONCRETE MASONRY, ENDWALLS AND SHALL BE GALVANIZED.

CONCRETE USED FOR THE CATTLE WALKWAY WITHIN THE PIPE SHALL BE INCIDENTAL TO THE BID ITEM OF PIPE CATTLE PASS.

DETAILS FOR PIPE CATTLE PASS, CONCRETE ENDWALL AND STEPS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

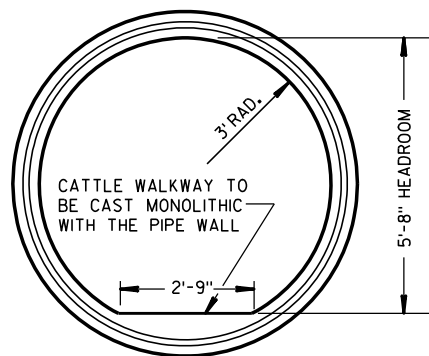
6/6/75

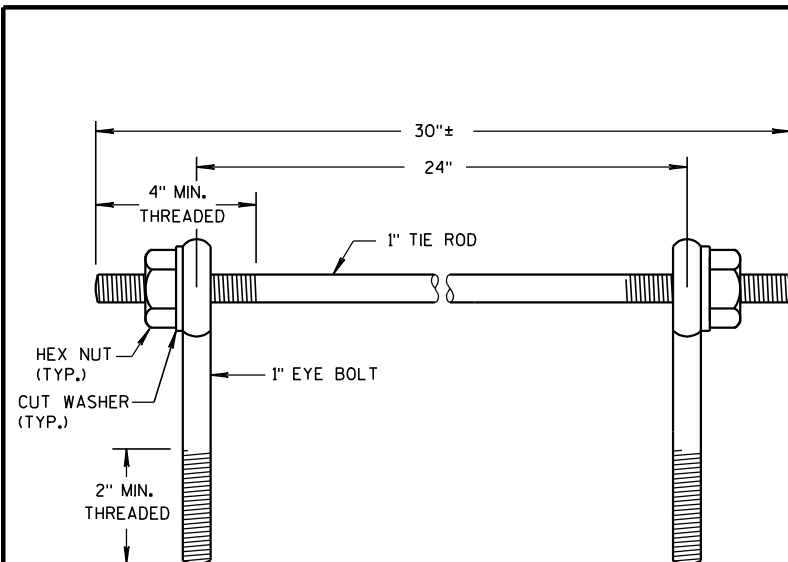
DATE

FHWA

/S/ Harold Fielder
STATE DESIGN ENGINEER FOR HWYS

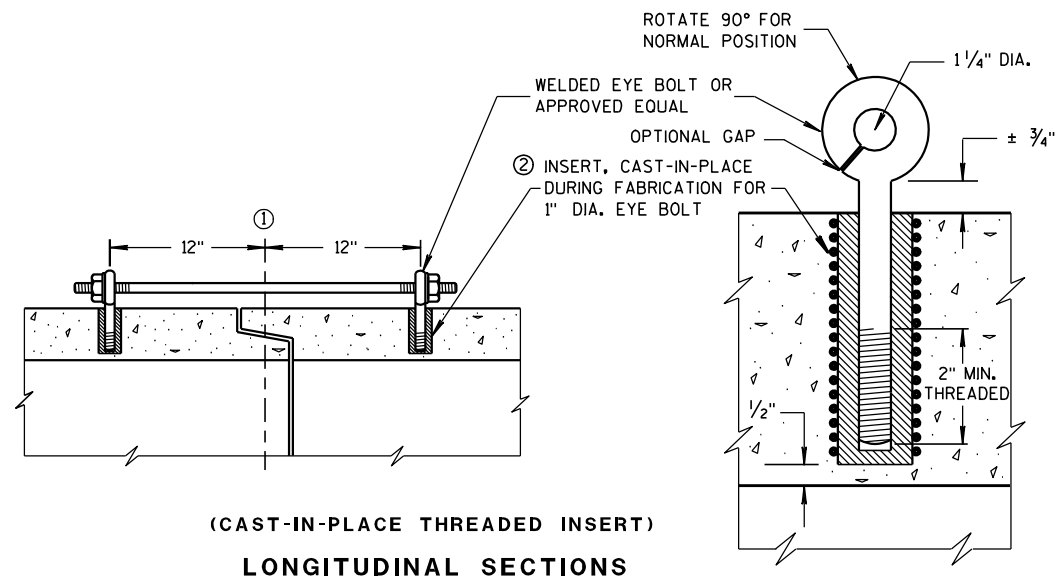
END VIEW
REINFORCED CONCRETE PIPE CATTLE PASS





EYE BOLTS AND TIE ROD

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

(CAST-IN-PLACE THREADED INSERT)
LONGITUDINAL SECTIONS

GENERAL NOTES

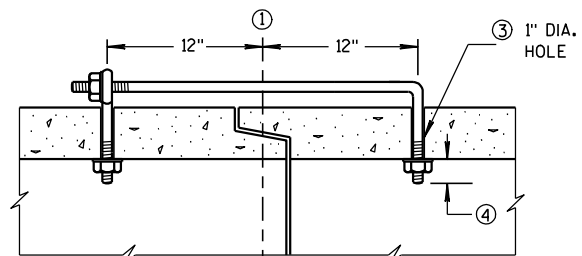
DETAILS OF CONSTRUCTION, MATERIALS, AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

CONCRETE CULVERT AND STORM SEWER PIPE SHALL BE TIED TOGETHER IN THE MANNER ILLUSTRATED BY THIS DETAIL AT LOCATIONS DESIGNATED IN THE STANDARD SPECIFICATIONS AND 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 THE PIPE BY THIS DETAIL WILL BE CONSIDERED INCIDENTAL TO THE PIPE AND APRON ENDWALLS IF REQUIRED.

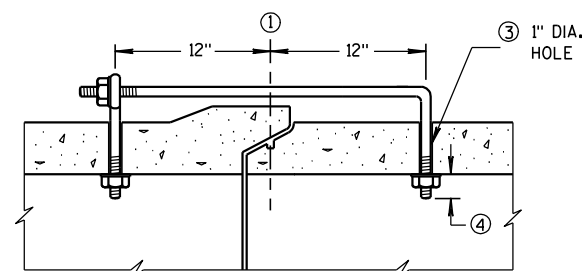
DETAILED DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR JOINT TIES SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.

JOINT TIES TO BE HOT-DIP GALVANIZED PER ASTM A 153.

- 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 INCHES FROM ϕ OF TONGUE AND GROOVE.
- ④ BOLT PROJECTION INSIDE OF PIPE SHALL NOT EXCEED 2 INCHES.
- ⑤ OPENING TO BE ROD DIAMETER PLUS 1 INCH.
- ⑥ LENGTH ADEQUATE TO EXTEND TO WITHIN $\frac{1}{2}$ INCH OF THE INNER SURFACE OF THE PIPE.

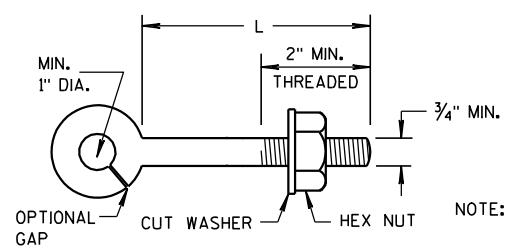


(TONGUE & GROOVE PIPE)

(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"	

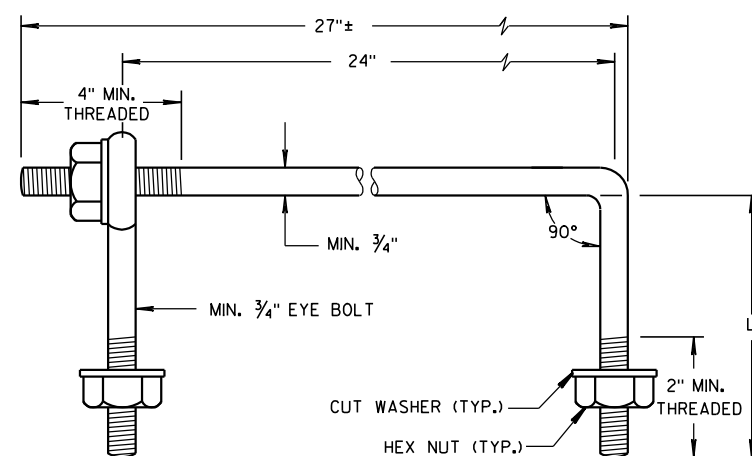


EYE BOLT

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

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

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

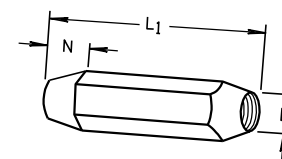


EYE BOLT AND TIE ROD

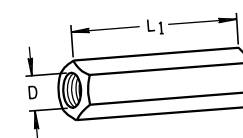
ADJUSTABLE TIE ROD TABLE

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 1/16

DIMENSIONS SHOWN ARE IN INCHES



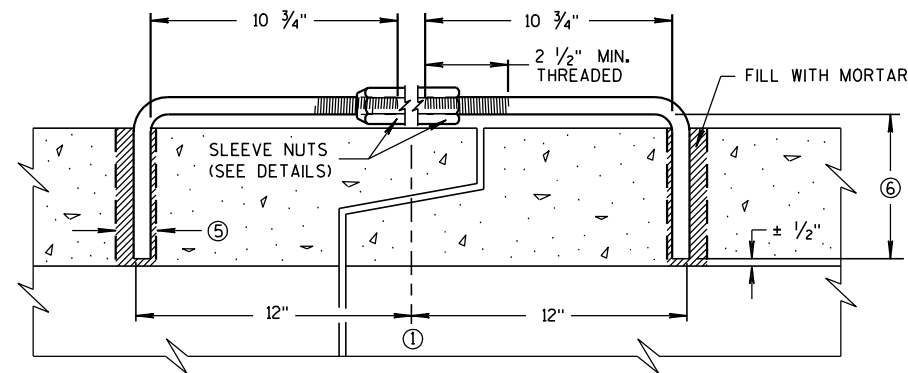
TAPERED



PLAIN

RIGHT AND LEFT THREADS

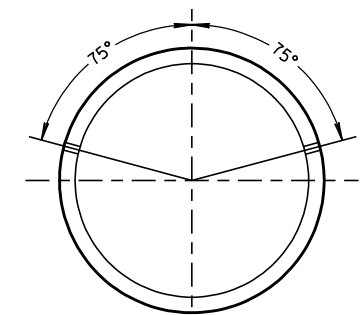
SLEEVE NUTS



LONGITUDINAL SECTION

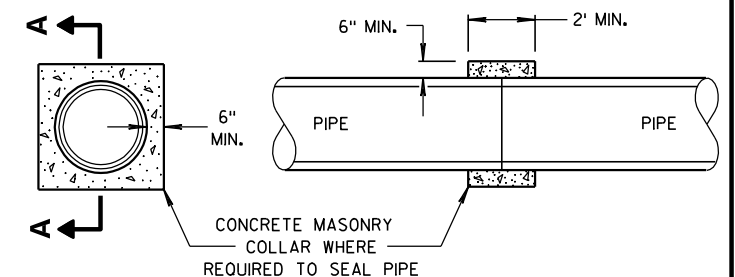
(JOINT TIES FOR 12" TO 108" DIA. CONCRETE PIPE)

ADJUSTABLE TIE ROD (ALTERNATE NO. 3)



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

TRANSVERSE SECTION



SECTION A-A

CONCRETE COLLAR DETAIL

JOINT TIES FOR CONCRETE
PIPE AND CONCRETE
COLLAR DETAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

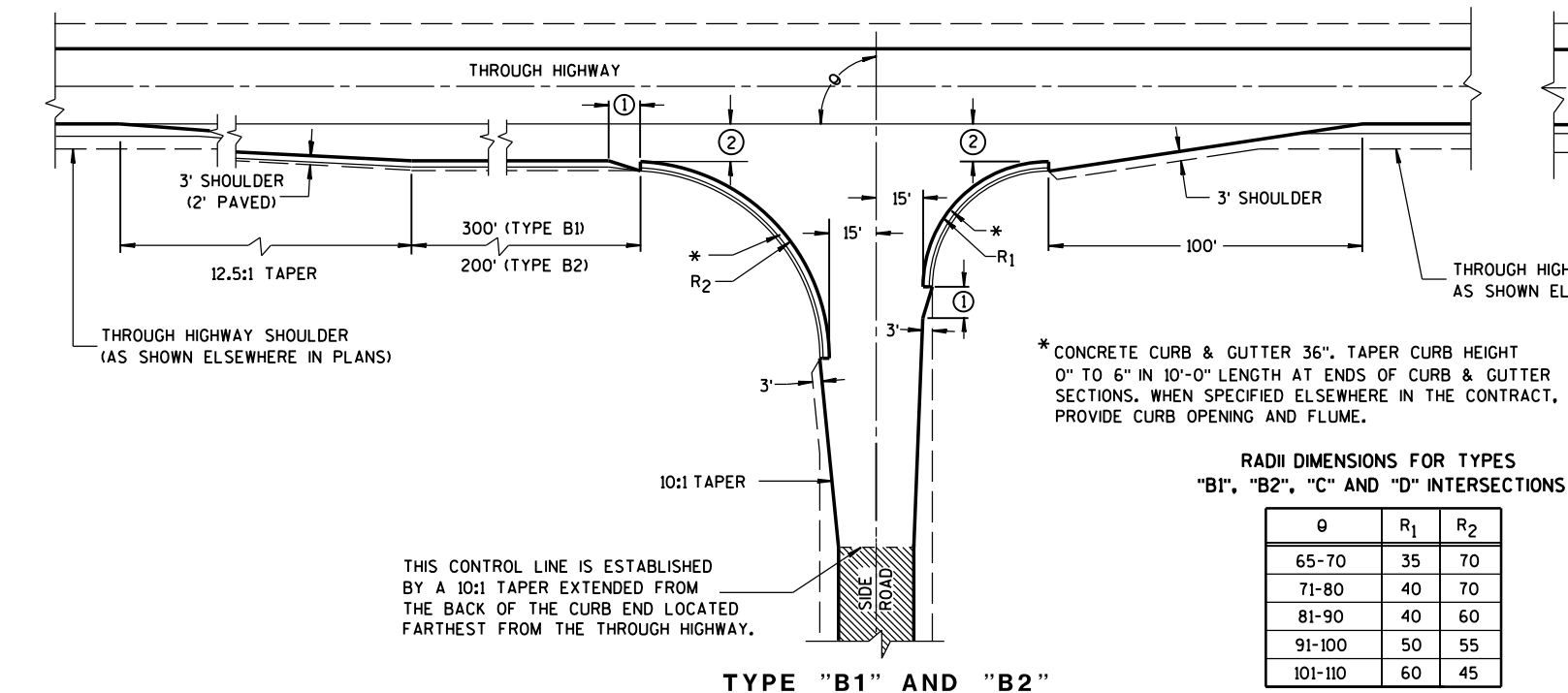
APPROVED

6/5/2012

DATE

FHWA

/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER



GENERAL NOTES

DESIGNS MAY BE USED INTERCHANGEABLY IN COMBINATION OR SEPARATELY FOR ANY ONE COMPLETE INTERSECTION DEPENDING UPON INTERSECTION ANGLE AND SURFACING OF EACH APPROACH ROADWAY.

SIDE ROAD SURFACING NOTE

WHEN THE SIDE ROAD IS NOT PRESENTLY PAVED, PAVEMENT SHALL BE PLACED TO THE LIMITS SHOWN UNLESS OTHERWISE PROVIDED IN THE CONTRACT. WHERE THE CONSTRUCTION LIMITS ARE BEYOND THE PAVING LIMITS, CRUSHED AGGREGATE SURFACING SHALL BE PLACED BETWEEN THE PAVING LIMITS AND CONSTRUCTION LIMITS.

WHEN THE SIDE ROAD IS PRESENTLY PAVED, NEW PAVEMENT SHALL BE PLACED TO THE LIMITS OF DESIGN AS SHOWN AND BEYOND, IF NECESSARY, TO MEET EXISTING PAVEMENT.

WHEN THE SIDE ROAD IS THE CONSTRUCTION PROJECT, THE INTERSECTION SURFACING SHALL BE THE SAME AS FOR THE PROJECT.

EXISTING PAVED SURFACE

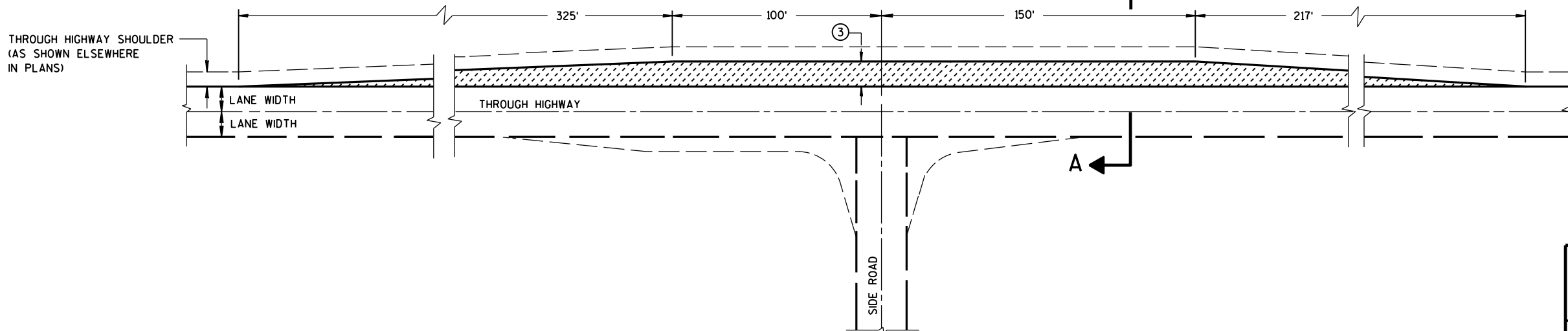
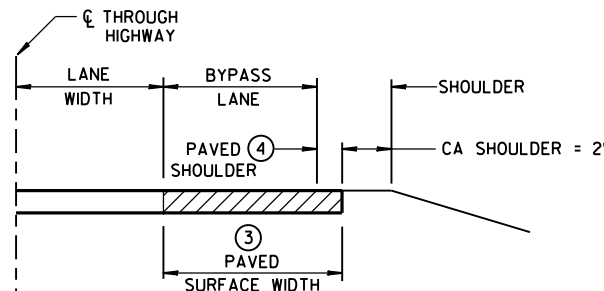
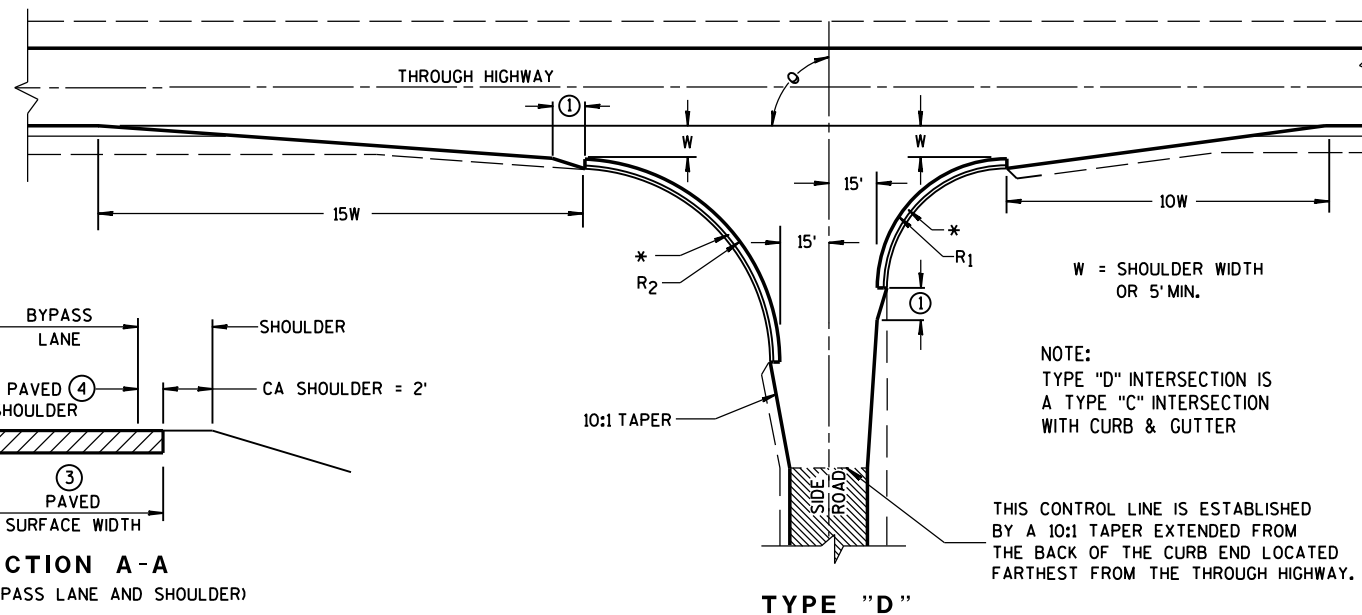
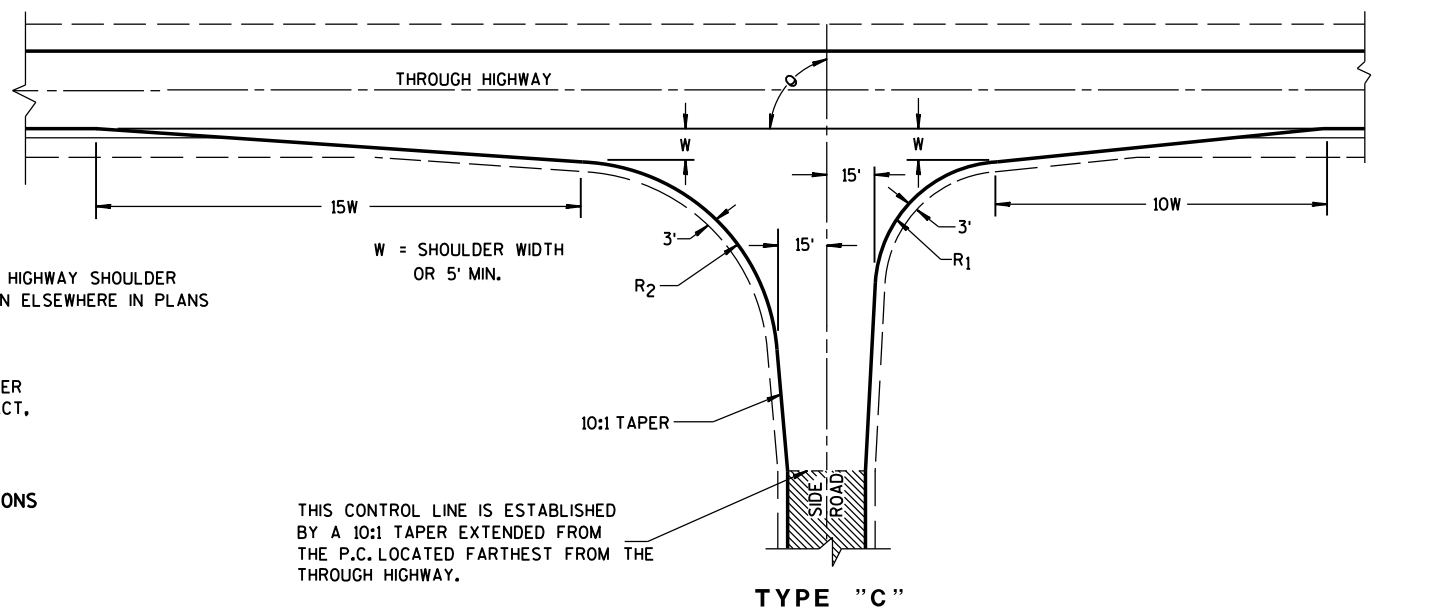
BYPASS LANE

- ① 10-FT TYPICAL.
- ② 12-FT** PLUS ADDITIONAL WIDTH FOR BIKE LANE IF SHOWN ELSEWHERE IN THE PLAN.

**10-FT MAY BE USED ON TYPE B2 ON RESURFACING PROJECTS IF SPECIFIED IN THE CONTRACT.
- ③ BYPASS LANE PAVED SURFACE WIDTH OUTSIDE OF TRAVEL LANE
-ASPHALT = 12-FT PLUS PAVED SHOULDER WIDTH.
-PC CPNCRETE = 13-FT PLUS PAVED SHOULDER WIDTH.
- ④ BYPASS LANE PAVED SHOULDER WIDTH = THE GREATER OF 1-FT OR THE PAVED SHOULDER WIDTH OF THE THROUGH HIGHWAY.

RADII DIMENSIONS FOR TYPES "B1", "B2", "C" AND "D" INTERSECTIONS

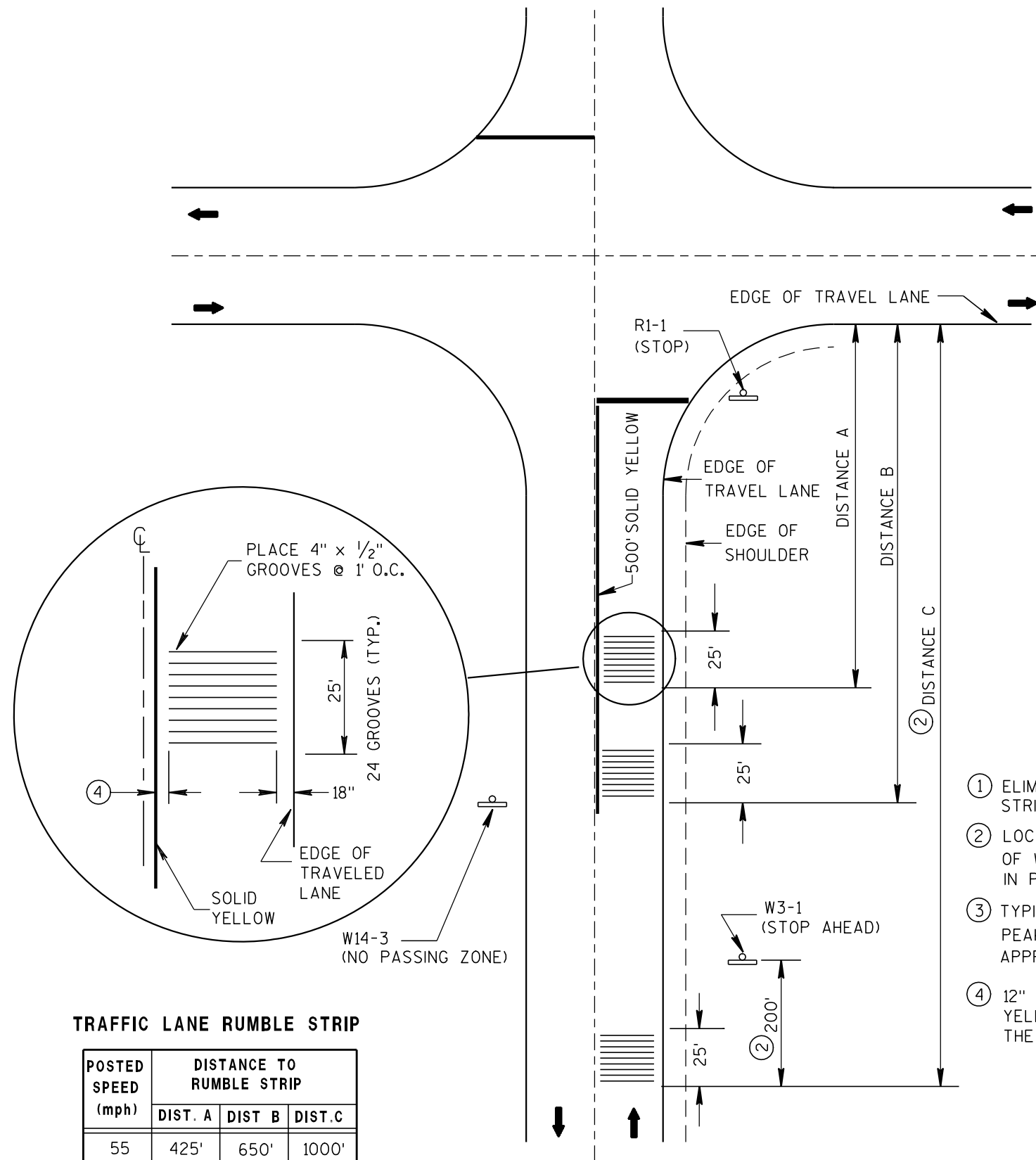
θ	R ₁	R ₂
65-70	35	70
71-80	40	70
81-90	40	60
91-100	50	55
101-110	60	45



TEE INTERSECTION BYPASS LANE DETAIL

AT-GRADE SIDE ROAD
INTERSECTION, TYPES "B1", "B2",
"C" AND "D" AND TEE
INTERSECTION BYPASS LANE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



TRAFFIC LANE RUMBLE STRIP

POSTED SPEED (mph)	DISTANCE TO RUMBLE STRIP		
	DIST. A	DIST. B	DIST. C
55	425'	650'	1000'
50	325'	450'	800'
45	275'	400'	650'
40	225'	①	550'
35	175'	①	475'
≤ 30	125'	①	425'

ARROW SYMBOL (➡) SHOWS DIRECTION OF TRAVEL

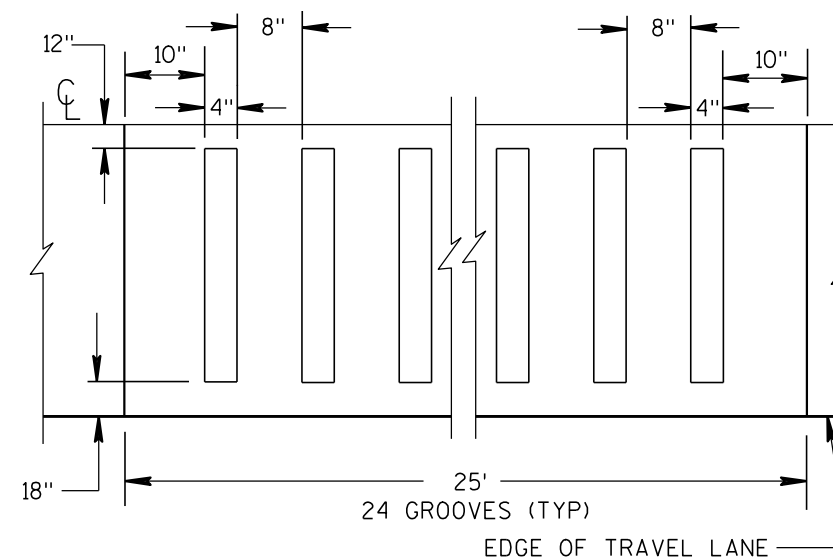
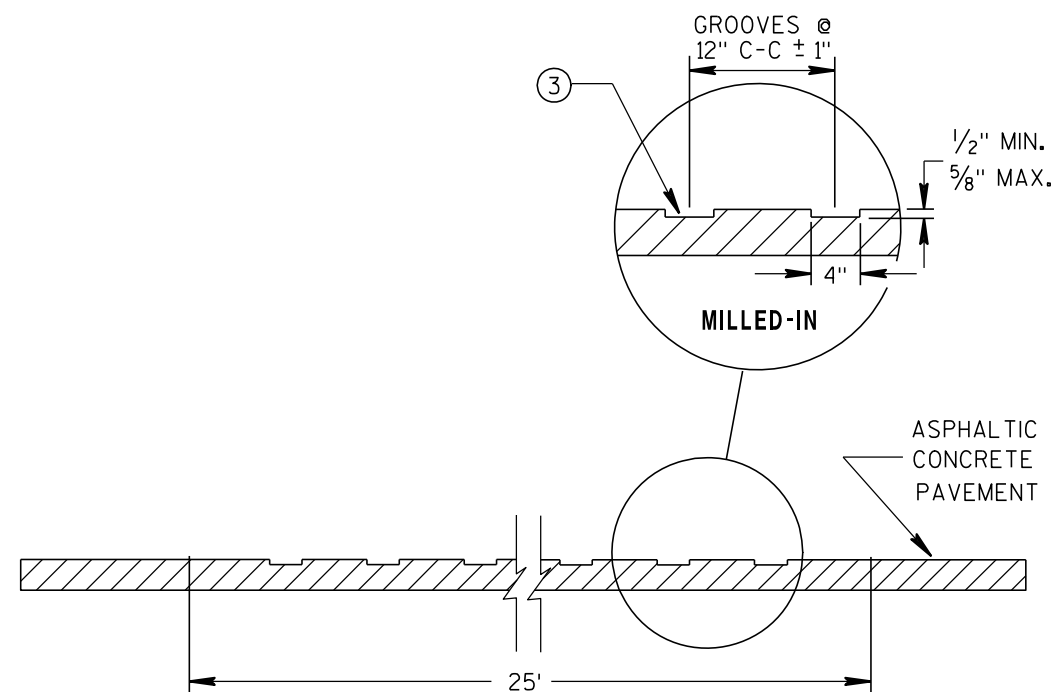
- ① ELIMINATE THE MIDDLE SET OF RUMBLE STRIPS.
- ② LOCATE RUMBLE STRIP 200' IN ADVANCE OF W3-1 SIGN AS SHOWN. IF W3-1 IS NOT IN PLACE, USE DISTANCE C.
- ③ TYPICAL VERTICAL VARIATION BETWEEN PEAKS AND VALLEYS WITHIN THE CUT APPROXIMATELY $\frac{1}{16}$ "
- ④ 12" CLEAR BETWEEN THE SOLID YELLOW LINE AND THE EDGE OF THE RUMBLE.

GENERAL NOTES

CONTRACTOR SHALL CONFIRM RUMBLE STRIP LOCATION WITH THE ENGINEER PRIOR TO INSTALLATION. THE ENGINEER MAY MODIFY THE RUMBLE STRIP LOCATION AS FIELD CONDITIONS DICTATE.

WHEN ASPHALTIC PAVEMENT IS NEW IN THE RUMBLE AREA THE CONTRACTOR SHALL ALLOW THE PAVEMENT TO CURE A MINIMUM OF 7 DAYS PRIOR TO RUMBLE INSTALLATION.

PAVEMENT MARKING AND SIGNING DETAILS AND SPECIFICATIONS ARE PROVIDED ELSEWHERE IN THE CONTRACT.

ASPHALTIC RUMBLE STRIPS
AT INTERSECTION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

8/17/2011

DATE

FHWA

/S/ Jerry H. Zogg

ROADWAY STANDARDS DEVELOPMENT

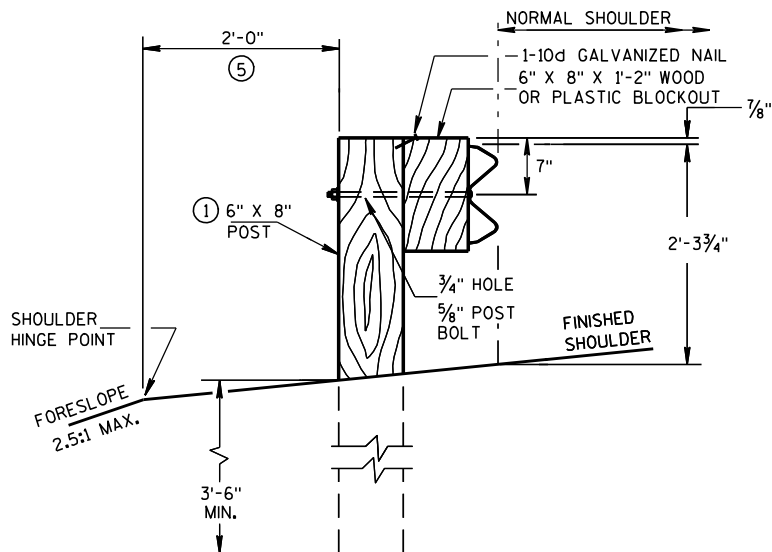
ENGINEER

GENERAL NOTES

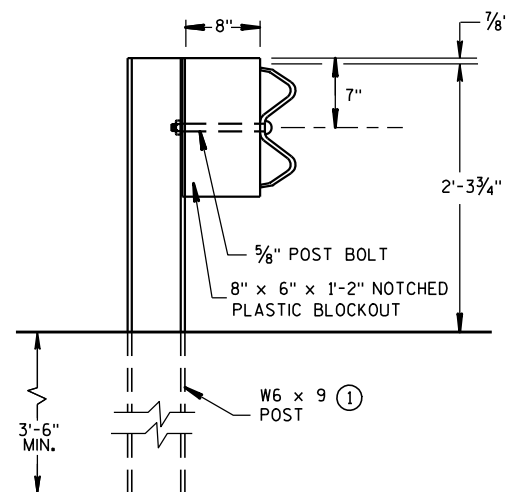
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS, AND THE APPLICABLE SPECIAL PROVISIONS.

- 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 IF THE DISTANCE FROM BACK OF POST TO SHOULDER HINGE POINT IS LESS THAN 2 FEET INSTALL LONGER POST AT HALF POST SPACING, W BEAM (LHW).
- 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.

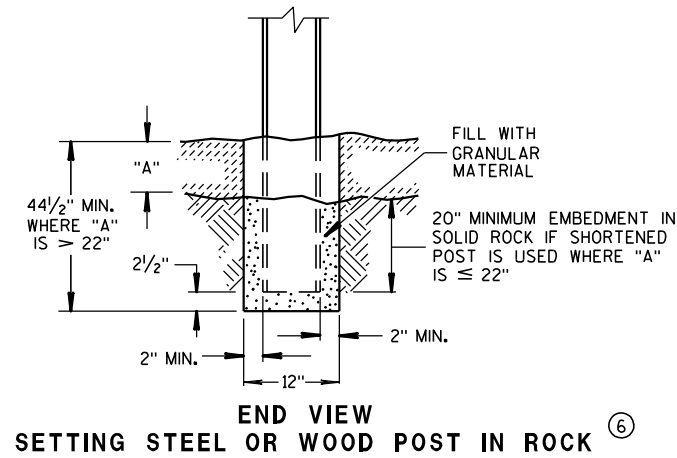
INSTALL BEAM GUARD SECTIONS AND ALL NECESSARY HARDWARE ACCORDING TO THE APPLICABLE PLAN AND CURRENT STANDARD AND SUPPLEMENTAL SPECIFICATIONS. ALL DIMENSIONS ARE SUBJECT TO MANUFACTURER'S TOLERANCES EXCEPT WHERE ALLOWABLE TOLERANCES ARE SHOWN.



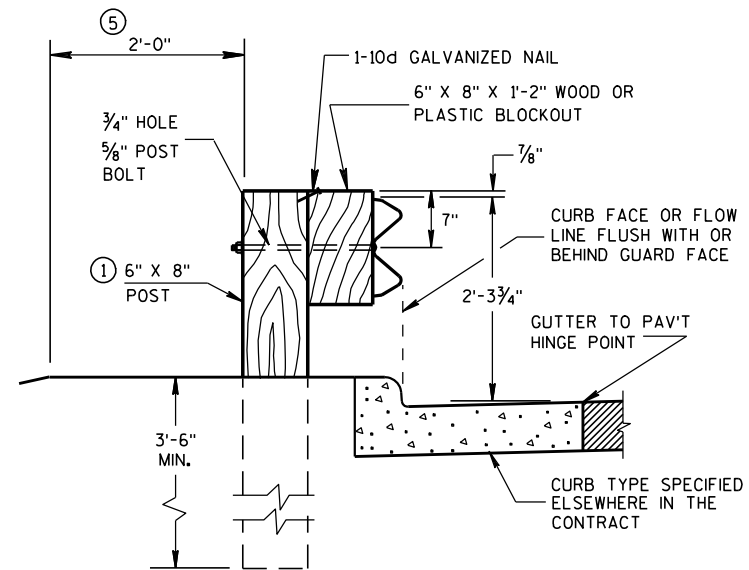
END VIEW
LOCATED ALONG A ROADWAY SHOULDER
STANDARD INSTALLATION



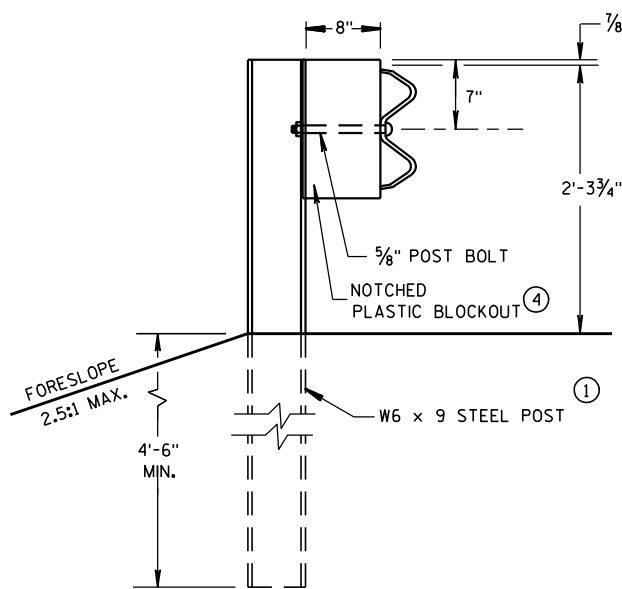
END VIEW
STEEL POST & NOTCHED
PLASTIC BLOCKOUT ALTERNATIVE
STANDARD INSTALLATION



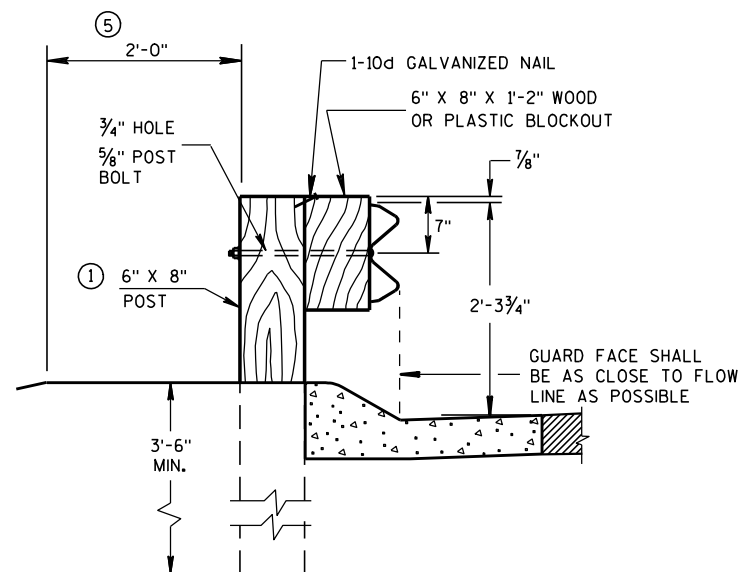
END VIEW
SETTING STEEL OR WOOD POST IN ROCK ⑥



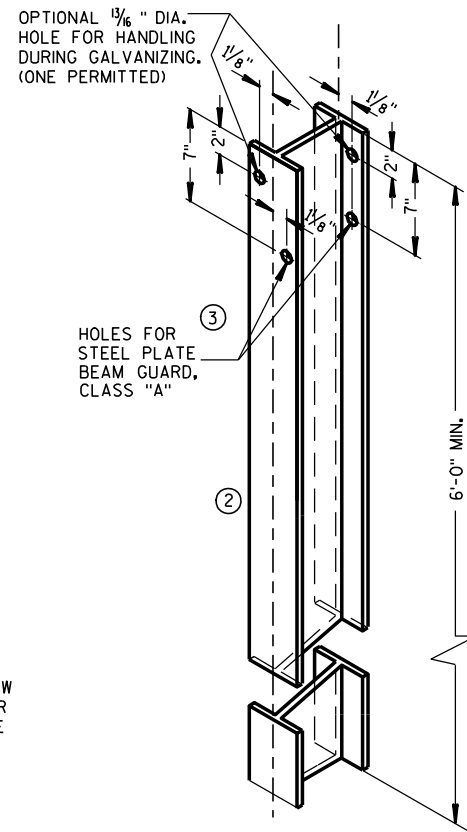
END VIEW
LOCATED ALONG A CURBED ROADWAY



END VIEW
LONGER POST AT HALF
POST SPACING W BEAM
(LHW)

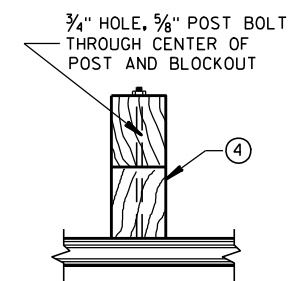


END VIEW
LOCATED ALONG A
MOUNTABLE CURBED ROADWAY

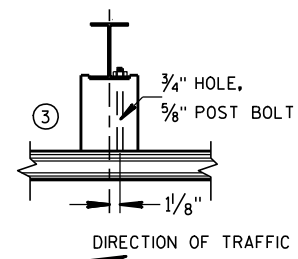


STEEL POST &
HOLE PUNCHING DETAIL
(W6 X 9) ①

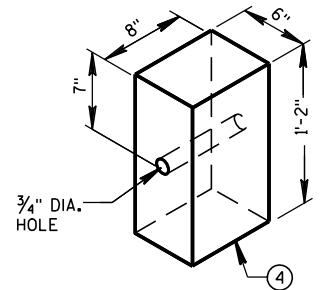
ALL HOLES 1 3/8" DIAMETER EXCEPT AS NOTED



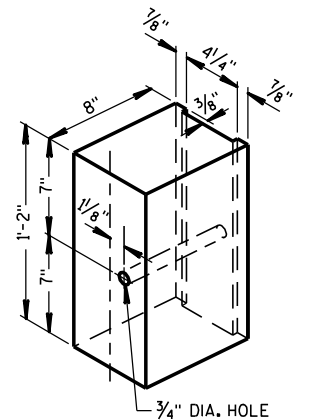
PLAN VIEW
WOOD POST,
BLOCKOUT & BEAM



PLAN VIEW
STEEL POST, NOTCHED
PLASTIC BLOCKOUT & BEAM



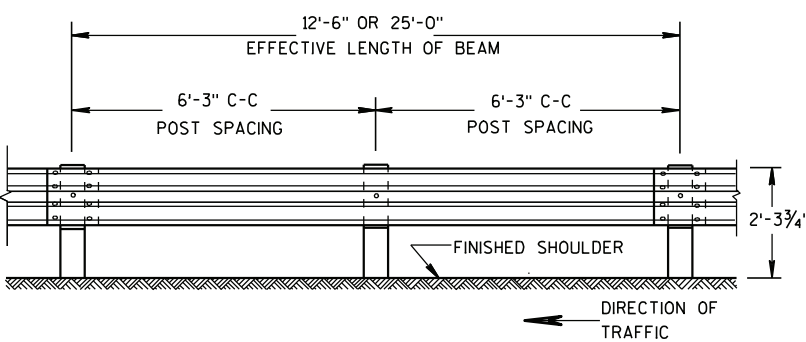
WOOD OR PLASTIC
BLOCKOUT FOR
WOOD POSTS



TYPICAL NOTCHED
PLASTIC BLOCKOUT
FOR STEEL POSTS ①

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

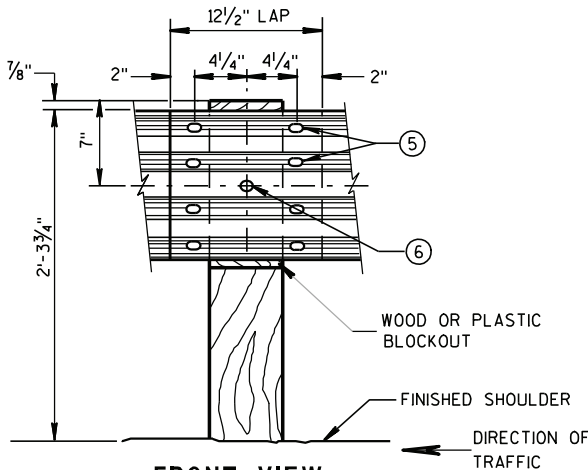
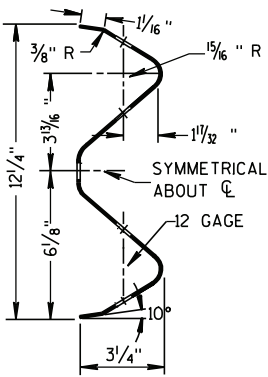
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



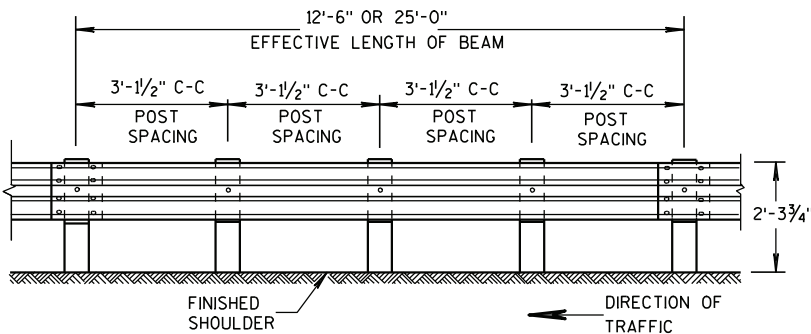
FRONT VIEW

POST SPACING STANDARD INSTALLATION

SECTION THRU W BEAM

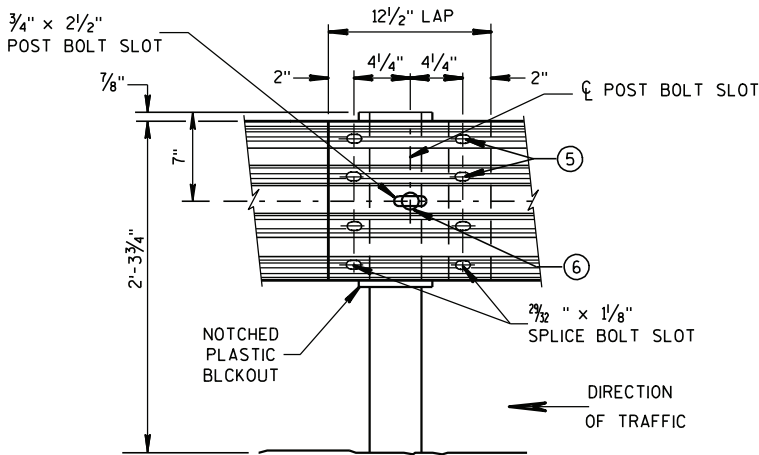


FRONT VIEW
BEAM SPLICE AT WOOD POST
AND POST MOUNTING DETAIL



FRONT VIEW

POST SPACING FOR LONGER POST AT HALF POST SPACING W BEAM (LHW)

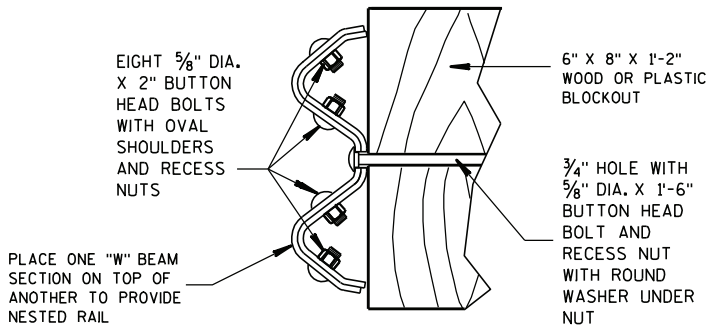


FRONT VIEW
BEAM SPLICE AT STEEL POST

TYPICAL SPLICING DETAILS OF STEEL PLATE BEAM GUARD

GENERAL NOTES

- ① PROVIDE TYPE "H" SILVER REFLECTIVE SHEETING ON ALL REFLECTORS EXCEPT THOSE LOCATED ALONG THE LEFT EDGE OF ONE-WAY ROADWAYS, WHICH SHALL BE PROVIDED WITH TYPE "H" YELLOW REFLECTIVE SHEETING.
- ② DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.
- ③ REVERSE EVERY OTHER REFLECTOR FOR 2-WAY VISIBILITY. THE CONTRACTOR MAY FURNISH TWO-SIDED REFLECTORS IN LIEU OF ONE-SIDED REFLECTORS.
- ④ PROVIDE AN ANGLE OF BEND OF $90^\circ \pm 1^\circ$ FOR TWO-SIDED REFLECTORS.
- ⑤ 8 - $\frac{5}{8}$ " ϕ X 2" BUTTON HEAD BOLTS WITH OVAL SHOULDERS & RECESS NUTS.
- ⑥ $\frac{5}{8}$ " ϕ X 1'-6" BUTTON HEAD BOLT AND AND RECESS NUT WITH ROUND WASHER UNDER NUT.

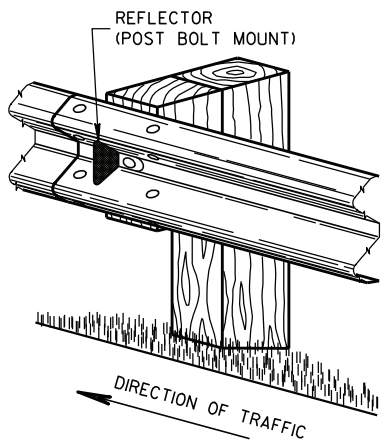


NESTED W BEAM (NW)

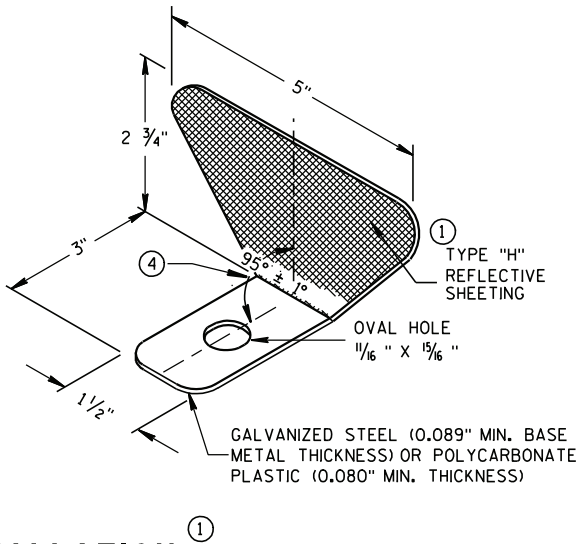
USE ALL OTHER STANDARD BEAM GUARD DETAILS FOR
CONSTRUCTING NESTED W BEAM (NW)

REFLECTOR SPACING^②

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

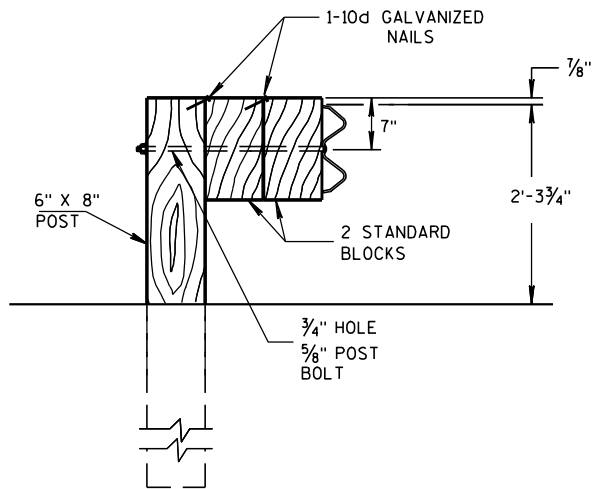


ONE SIDED REFLECTOR DETAIL AND TYPICAL INSTALLATION



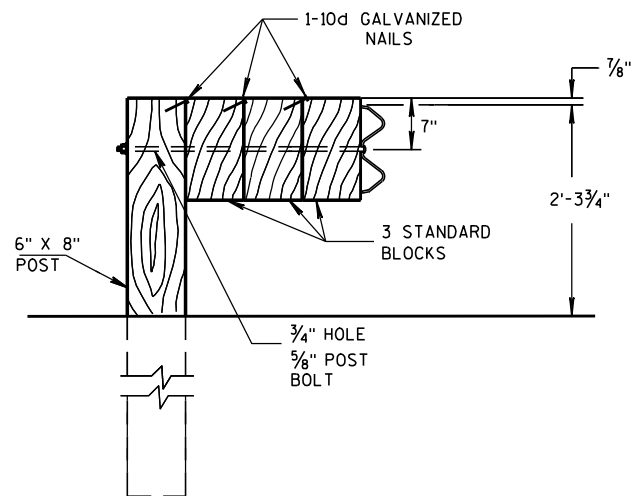
STEEL PLATE BEAM GUARD, CLASS "A", INSTALLATION & ELEMENTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



DETAIL FOR DOUBLE BLOCKS

THE NUMBER OF DOUBLE BLOCK POSTS
WITHIN A BARRIER RUN IS UNLIMITED

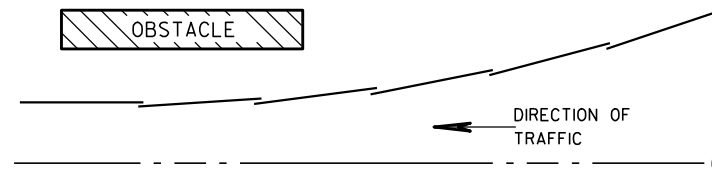


DETAIL FOR TRIPLE BLOCKS

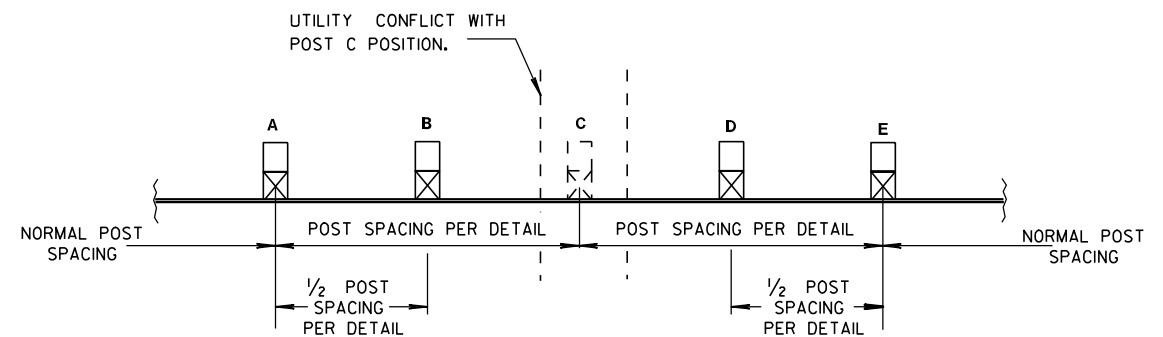
TRIPLE BLOCK DETAIL IS LIMITED TO ONE
LOCATION WITHIN A BEAM GUARD RUN.

NOTES: USE DOUBLE OR TRIPLE BLOCKS WHEN UNDERGROUND OBSTACLES
PREVENT THE POST FROM BEING INSTALLED.

DO NOT USE EXTRA BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND
SHOULDER HINGE POINT OR CAUSES A FIXED OBJECT TO BE WITHIN THE DEFLECTION
DISTANCE OF THE BARRIER.



PLAN VIEW BEAM LAPPING DETAIL



POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

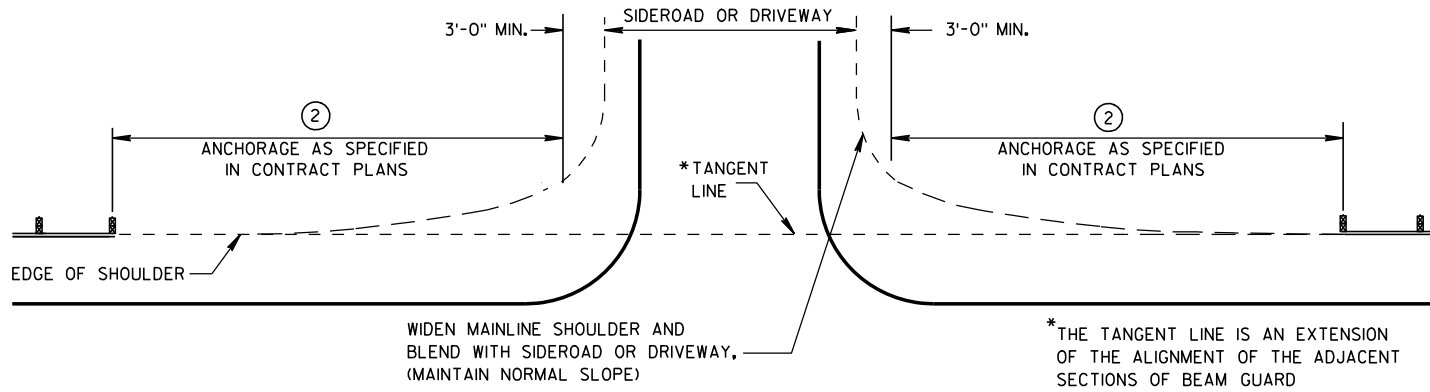
APPROVED

5/23/11

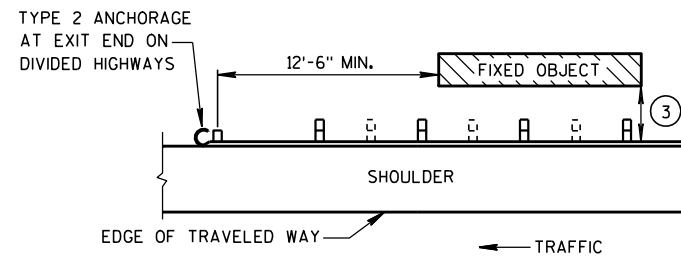
DATE

FHWA

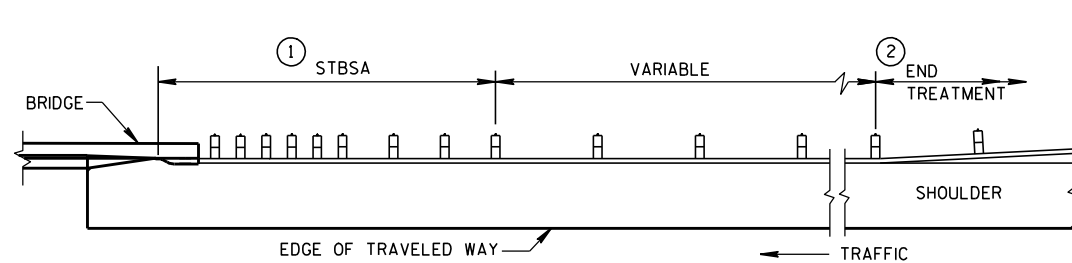
/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER



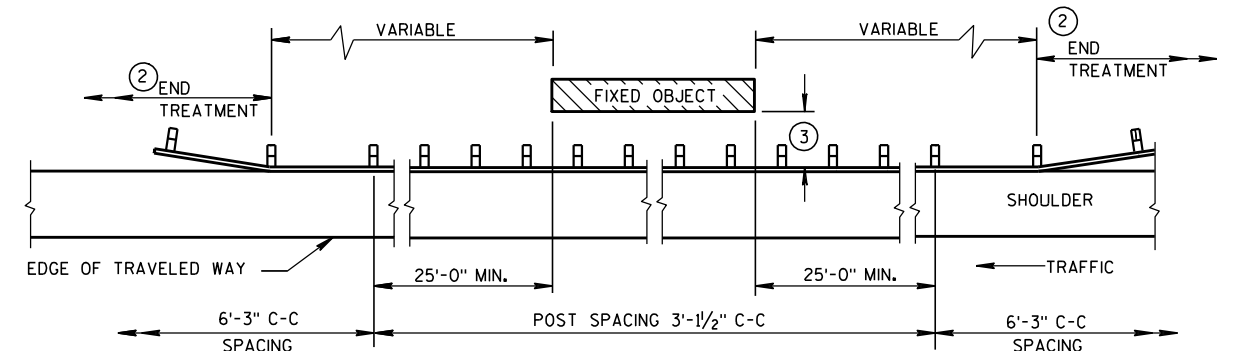
BEAM GUARD AT SIDEROADS OR DRIVEWAYS



BEAM GUARD AT OBSTACLES EXIT END - ONE WAY TRAFFIC



BEAM GUARD AT FULL WIDTH BRIDGES



BEAM GUARD AT OBSTACLES - 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

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP SHALL CONFORM TO THE PERTINENT STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

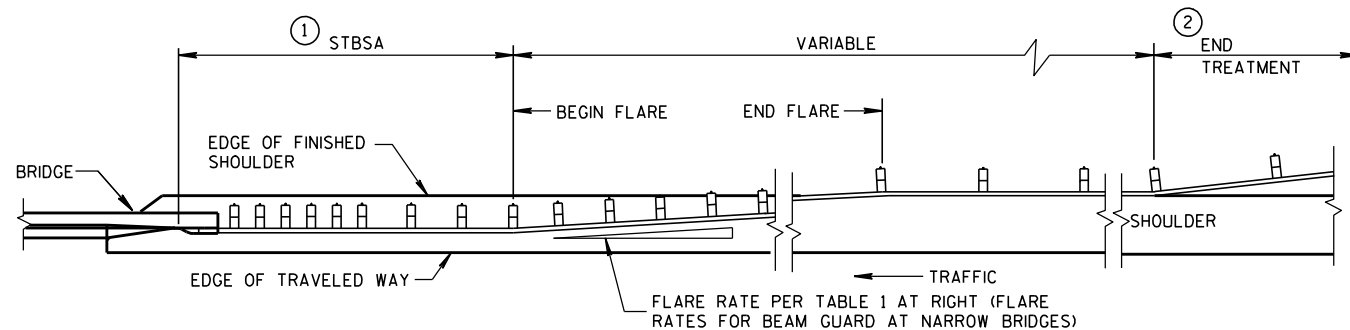
W6 X 9 OR W6 X 8.5 STEEL POSTS WITH NOTCHED PLASTIC BLOCKOUTS ARE ACCEPTABLE ALTERNATIVES FOR 6" X 8" WOOD POSTS WITH WOOD OR PLASTIC BLOCKOUTS. USE APPROVED NOTCHED PLASTIC BLOCKOUTS WITH STEEL POSTS.

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

- STEEL THRIE BEAM STRUCTURAL APPROACH (STBSA) - SEE CURRENT SDD 14B20.
- 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 1/2"
4'-6"	6' - 3"

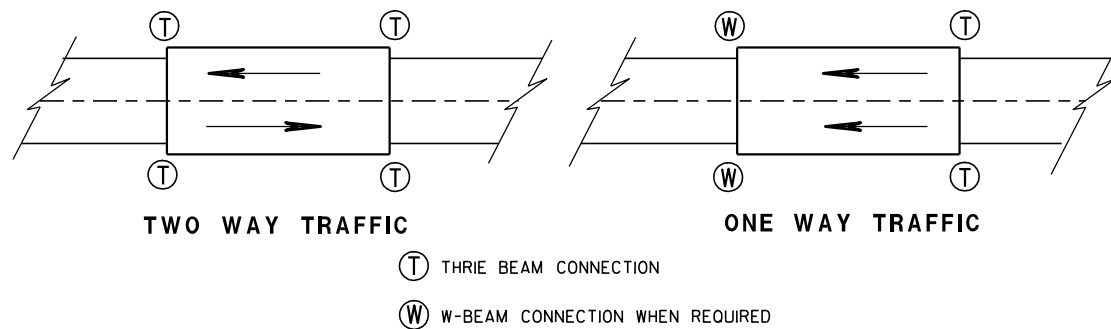
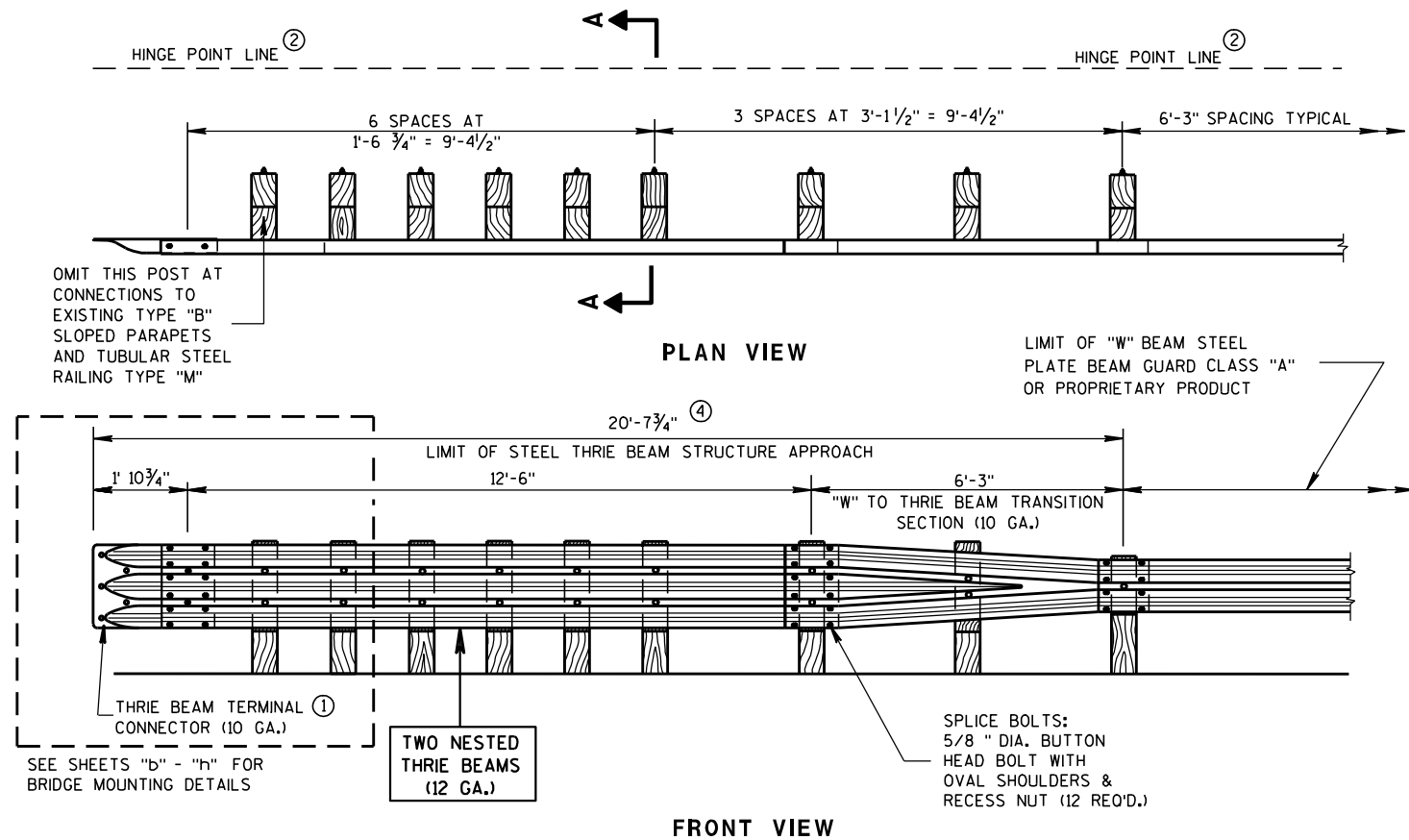
BEAM GUARD AT NARROW BRIDGES (FLARED TO SHOULDER EDGE, THEN PARALLEL TO ROADWAY)



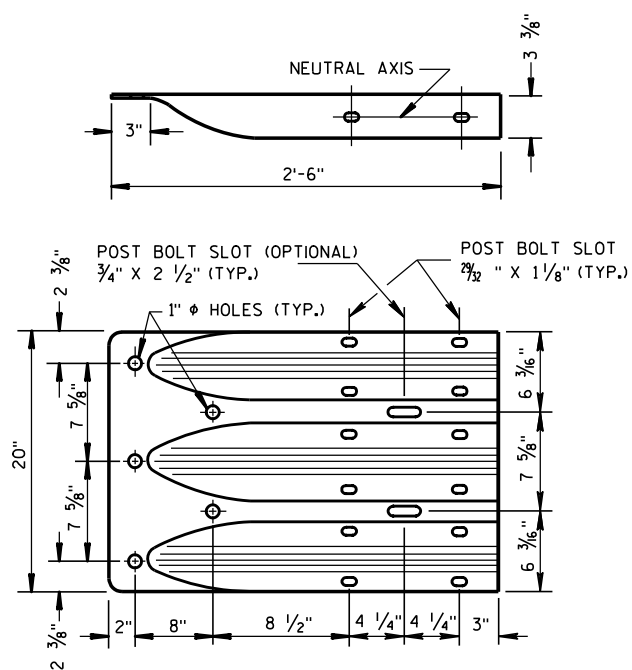
STEEL PLATE BEAM GUARD
CLASS "A"
AT BRIDGES, OBSTACLES
AND SIDEROADS/DRIVEWAYS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

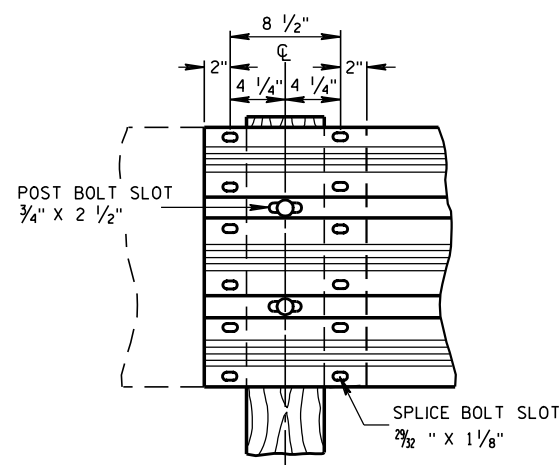
APPROVED
8-21-07
DATE
/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER
FHWA



TYPICAL LOCATIONS OF THRIE BEAM AND W-BEAM CONNECTIONS TO BRIDGE



THRIE BEAM TERMINAL CONNECTOR



THRIE BEAM SPLICE

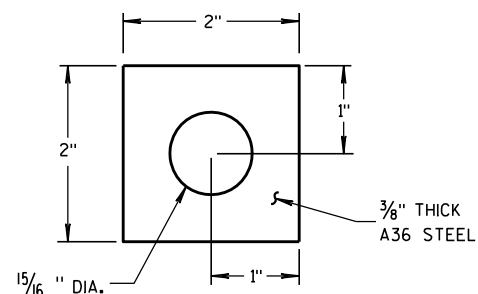
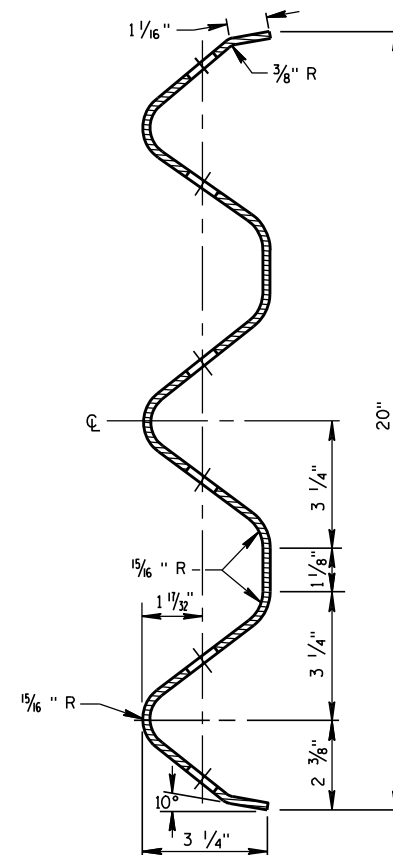


PLATE WASHER DETAIL



SECTION THRU THRIE BEAM RAIL ELEMENT

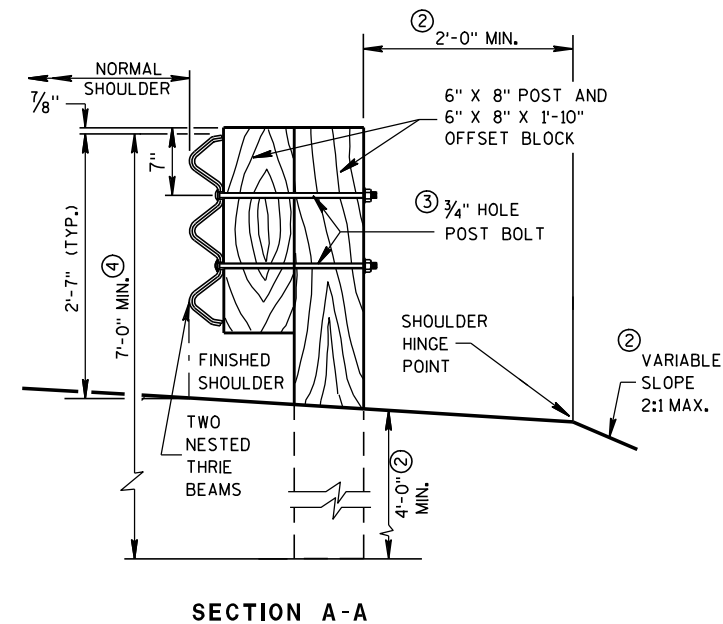
GENERAL NOTES

BOLT THE THRIE BEAM TO ALL POSTS AND BLOCKOUTS. DRILL OR PUNCH BOLT HOLES IN THE BEAM IF THE POST SPACING IS LESS THAN 6'-3".

DO NOT USE STEEL POSTS AND NOTCHED PLASTIC BLOCKOUTS IN THE STEEL THRIE BEAM STRUCTURAL APPROACH AND THE TRANSITION SECTION OF STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATIONS.

IF ROCK IS ENCOUNTERED, REMOVE ROCK TO FULL DEPTH OF POST PLUS 2 1/2", AND 12" DIAMETER AROUND POST. SEE 14B15 FOR MORE DETAILS.

- ① BRIDGE RAILING TYPE "W" DOES NOT REQUIRE A TERMINAL CONNECTOR.
- ② MINIMUM EMBEDMENT SHALL BE 4'-0". WHERE EXISTING CONDITIONS DO NOT PERMIT THE APPROPRIATE EARTHWORK SHOWN ON THE PLAN TYPICAL SECTIONS OR DETAILS, THE ENGINEER MAY ALLOW THE REDUCTION OR ELIMINATION OF THE 2 FOOT DISTANCE TO THE HINGE POINT. OTHERWISE BUILD AS THE PLAN SHOWS OR AS THE ENGINEER DIRECTS. IF THE 2 FOOT DISTANCE TO THE HINGE POINT IS REDUCED OR ELIMINATED, INCREASE THE POST EMBEDMENT DEPTH TO 4'-6" OR MORE.
- ③ POST BOLTS ARE 5/8" DIAMETER ASTM A307 BUTTON HEAD BOLT. A POST BOLT REQUIRES A 5/8" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX AND A 5/8" DIAMETER F844 FLAT WASHER. LENGTH OF POST BOLT MAY VARY.
- ④ ALL WOOD POSTS MUST BE 6" X 8" AND AT LEAST 7'-0" LONG.



STEEL THRIE BEAM STRUCTURE APPROACH

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

8/31/2012

DATE

FHWA

/s/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER

BILL OF MATERIALS

NOTE NO.	QTY.	DESCRIPTION
①	4	WOOD BREAKAWAY TERMINAL POST: 5 1/2" X 7 1/2" X 3'-9"
②	**	STEEL TUBE: OPTION 1 - QUANTITY OF 4 TS 8" X 6" X 0.188", 4'-6" LONG OR OPTION 2 - QUANTITY OF 2 TS 8" X 6" X 0.188", 6'-0" AND 2 TS 8" X 6" X 0.188", 4'-6" LONG
③	2	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 TYPE H: 18" X 18"
⑮	1	E.A.T. MARKER POST

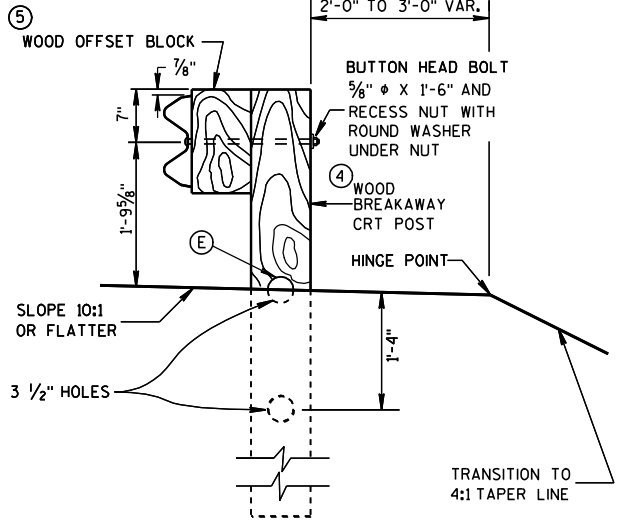
GENERAL NOTES

FOLLOW MANUFACTURE'S BOLTING RECOMMENDATIONS. IF NONE ARE AVAILABLE, INSTALL 5/8" ϕ X 1'-6" BUTTON HEAD BOLTS AT ALL POSTS EXCEPT FOR POST 1.

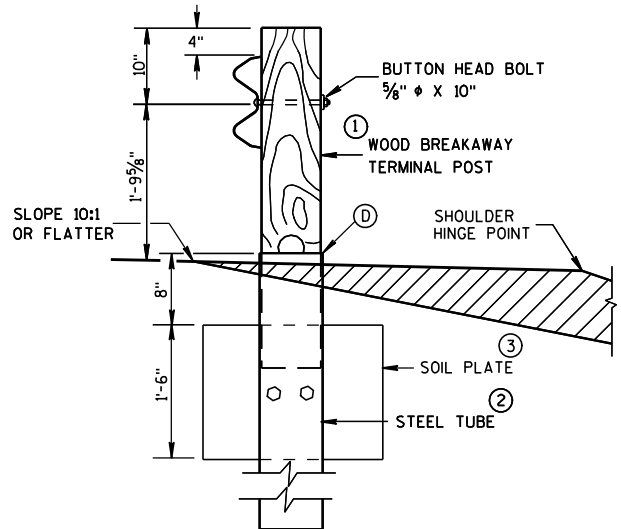
- (A) THE SLOPE IN THE AREA BOUNDED BY THE EXTENDED VEHICLE RUNOUT PATH (EVRP), THE HINGE POINT LINE (HPL), AND THE CLEAR ZONE LIMITS (CZL) SHALL BE 4:1 OR FLATTER.
- (B) AFTER FINAL ASSEMBLY, RECHECK CABLE TO BE SURE IT IS TAUT AND HAS NOT RELAXED.
- (C) THE 13 SLOT FIRST RAIL PANEL MAY BE USED IN LIEU OF THE 3 SLOT RAIL PANEL ON SKT-350 ONLY.
- (D) THE TOP OF THE STEEL TUBE ON POSTS 1 THROUGH 4 SHALL NOT BE MORE THAN 3" ABOVE THE FINISH GROUND ELEVATION.
- (E) THE CENTER OF THE UPPER 3 1/2" DIAMETER HOLE ON POST 5 THROUGH 8 SHALL BE 3/4" ABOVE THE FINISHED GROUND LINE.
- (F) SHEETING IS ATTACHED TO 0.040 ALUMINUM SHEET AND ATTACHED TO E.A.T. HEAD USING 4 STAINLESS STEEL SELF-TAPPING SCREWS, ONE SCREW PER CORNER OF E.A.T. 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.

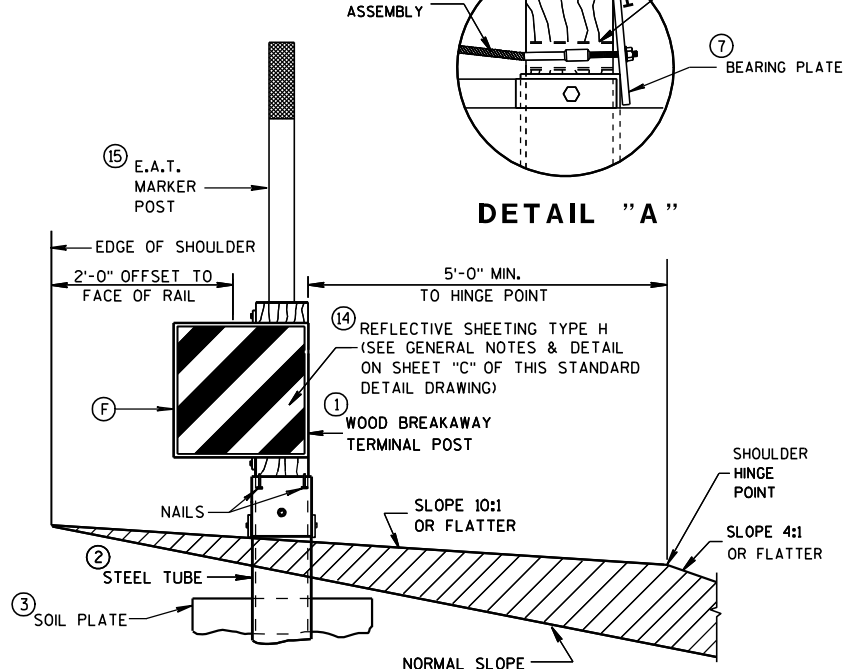
** SDD SHOWS 4 - 54 INCH STEEL TUBES WITH SOIL PLATES INSTALLED ON POST 1 AND POST 2. POST 3 AND 4 DO NOT NEED SOIL PLATES. AN ALTERNATIVE INSTALLATION WOULD CONSIST OF 2 - 72 INCH STEEL TUBES ON POST 1 AND POST 2 AND 54 INCH TUBES ON POSTS 3 AND 4. THE ALTERNATIVE INSTALLATION DOES NOT REQUIRE SOIL PLATES.



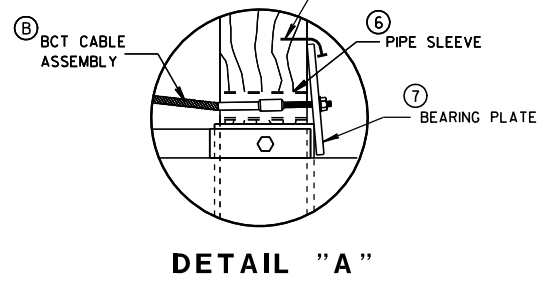
SECTION C-C
TYPICAL AT POST NOS. 6, 8



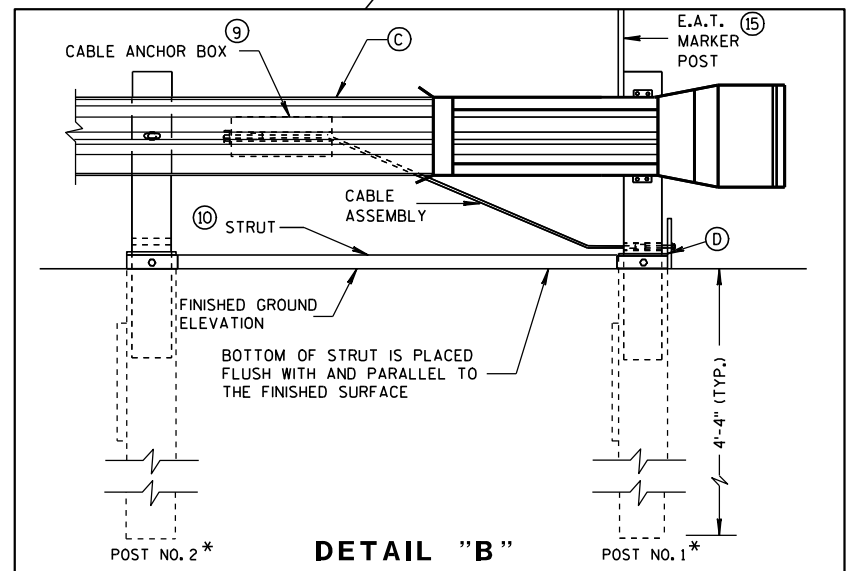
SECTION B-B
TYPICAL AT POST NO. 2*



SECTION A-A
TYPICAL AT POST NO. 1*



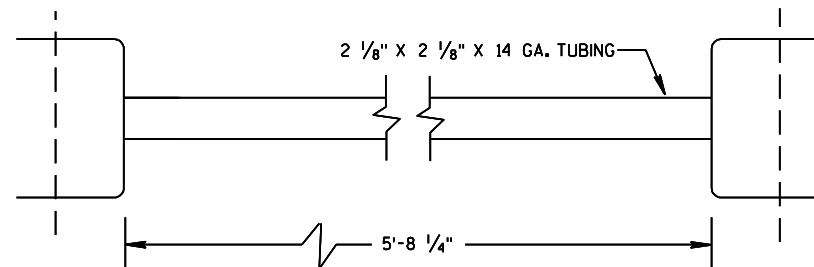
DETAIL "A"



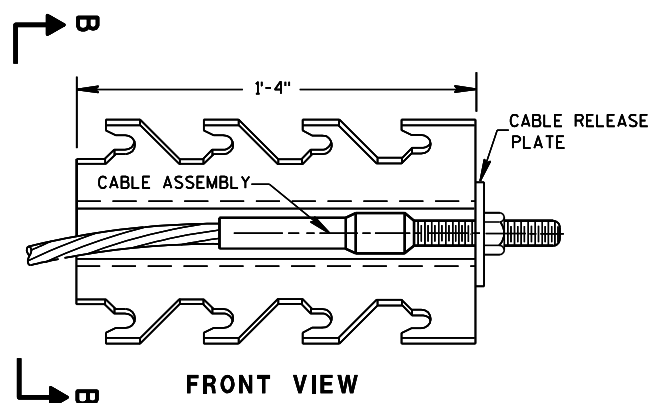
DETAIL "B"

STEEL PLATE BEAM GUARD
ENERGY ABSORBING TERMINAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

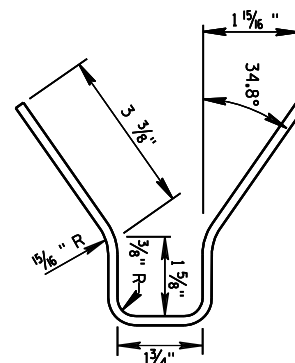


⑩ STRUT DETAIL (SKT-350)

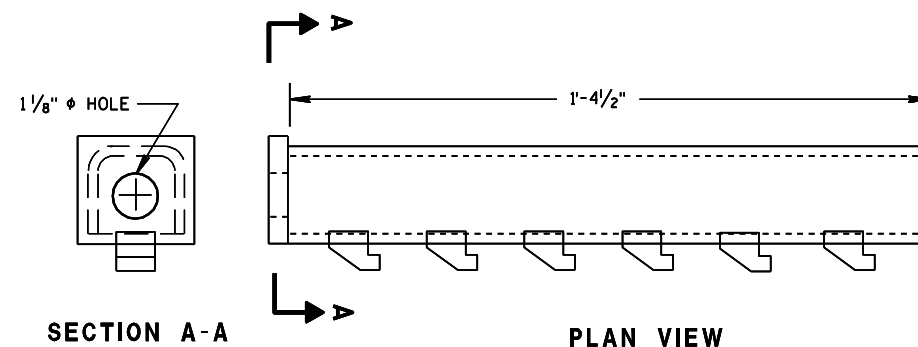


⑨ CABLE ANCHOR BOX (SKT-350)

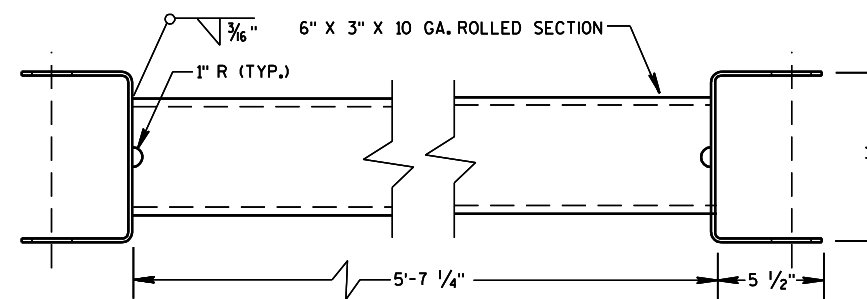
(SKT-350)



SECTION B-B

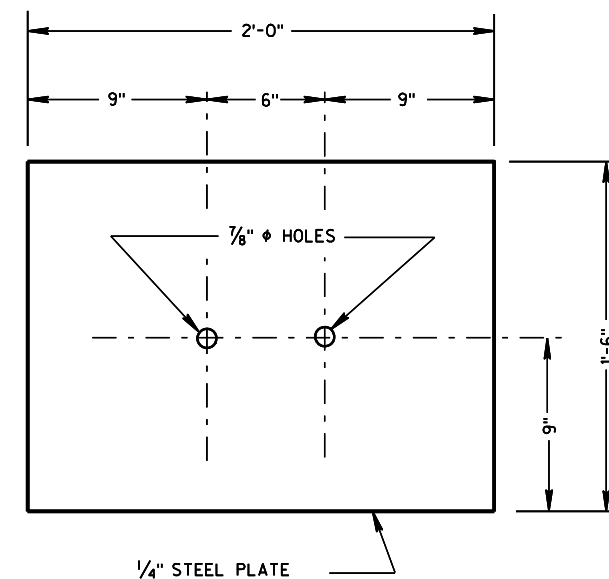


⑨ CABLE ANCHOR BOX (ET-2000/ET-2000 PLUS)

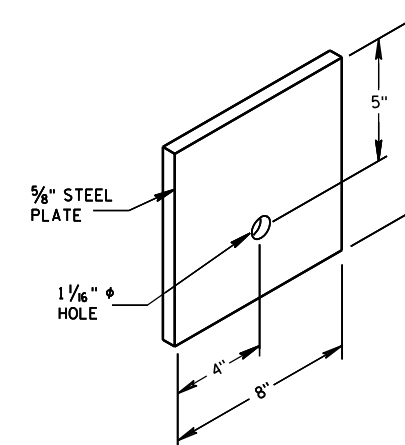


⑩ STRUT DETAIL (ET-2000/ET-2000 PLUS)

(ET-2000/ET-2000 PLUS)



③ SOIL PLATE
(SKT-350, ET-2000/ET-2000 PLUS)



⑦ STEEL BEARING PLATE
(SKT-350, ET-2000/ET-2000 PLUS)

STEEL PLATE BEAM GUARD
ENERGY ABSORBING TERMINAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



⑤ **WOOD OFFSET BLOCK**
REQ'D. AT ALL POSTS EXCEPT POST NO'S 1 & 2



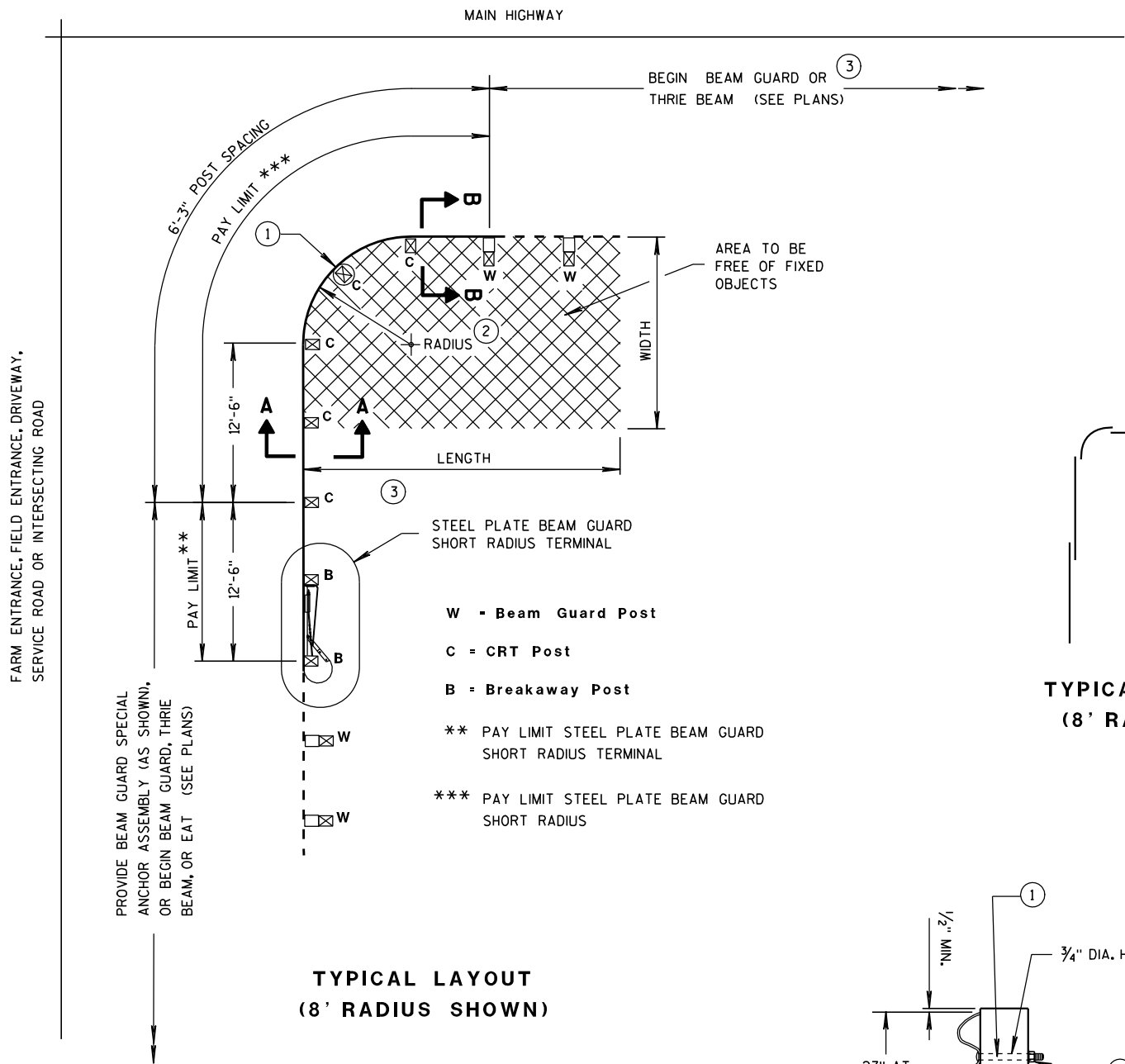
APPROVED

<u>4-12-10</u>	<u>/S/ Jerry H. Zogg</u>
DATE	ROADWAY STANDARDS DEVELOPMENT
FWA	ENGINEER

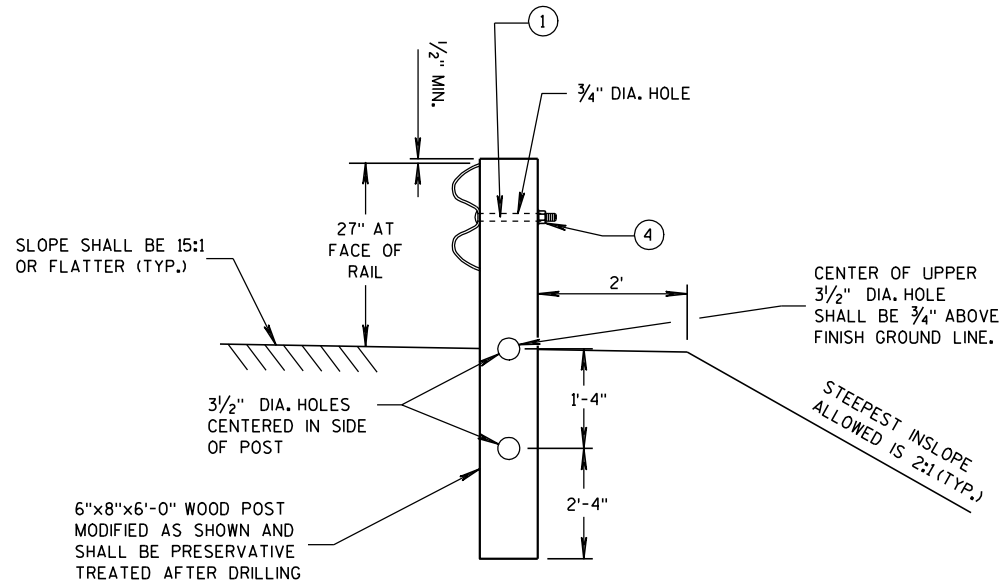
(G) 1/2" DIA. X 3" LAG BOLT WITH WASHER.



REFLECTIVE SHEETING DETAILS



TYPICAL LAYOUT
(8' RADIUS SHOWN)



SECTION A-A
(CRT POST)

STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL

TYPICAL LAP SPLICES
(8' RADIUS SHOWN)

GENERAL NOTES

ALL ANGLES, CHANNELS, AND PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A36 AND THE STRUCTURAL TUBING SHALL CONFORM TO ASTM A 500. WELDING SHALL MEET THE CURRENT REQUIREMENTS OF THE AMERICAN WELDING SOCIETY STRUCTURAL WELDING CODE ANSI/AWS D1.1. ALL STRUCTURAL STEEL SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A 123. PUNCHING, DRILLING, CUTTING, OR WELDING WILL NOT BE PERMITTED AFTER GALVANIZING. FURNISH AND INSTALL HARDWARE PER STANDARD SPECIFICATION 614.2, UNLESS NOTED OTHERWISE.

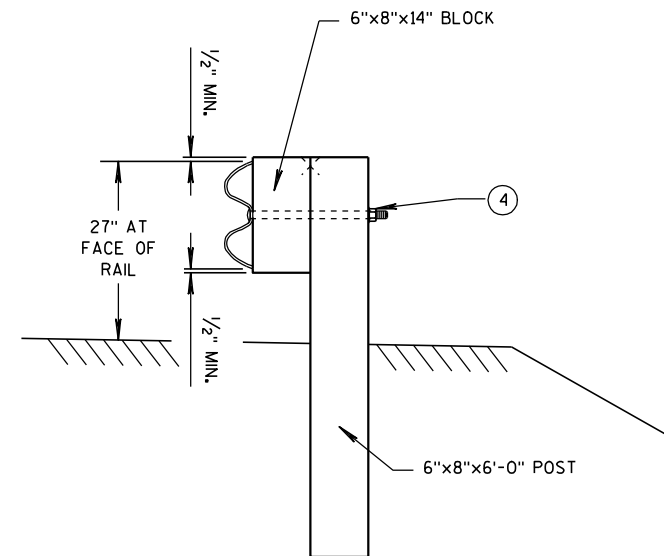
SHOP BEND CURVED RAIL SECTIONS.

SEE STANDARD DETAIL DRAWING 14 B 15 FOR OTHER DETAIL.

- 1 ON THE 8 FOOT RADIUS INSTALLATION, DO NOT INSTALL BUTTON HEAD BOLT AT CENTER CRT POST.
- 2 RADIUS FROM 8' - 36'. SEE PLAN.
- 3 HEIGHT TRANSITION MAY BE REQUIRED. SEE PLAN OR PROJECT ENGINEER.
- 4 5/8" ϕ X 1'-6" BUTTON HEAD BOLT AND RECESS NUT WITH ROUND WASHER UNDER NUT.

RADIUS	NUMBER OF CRT POSTS	*NUMBER AND LENGTH OF CURVED RAILS	REQUIRED AREA FREE OF FIXED OBJECTS (LENGTH x WIDTH)
8'	5	1 at 12.5'	25' x 15'
16'	7	1 at 25'	30' x 15'
24'	9	1 at 25' and 1 at 12.5'	40' x 20'
32'	11	2 at 25'	50' x 20'

* THE NUMBER OF RAILS IS BASED ON A 90° INTERSECTION. SEE PLAN FOR NON 90° INSTALLATIONS.



SECTION B-B
(BEAM GUARD POST)

STEEL PLATE BEAM GUARD
SHORT RADIUS TERMINAL

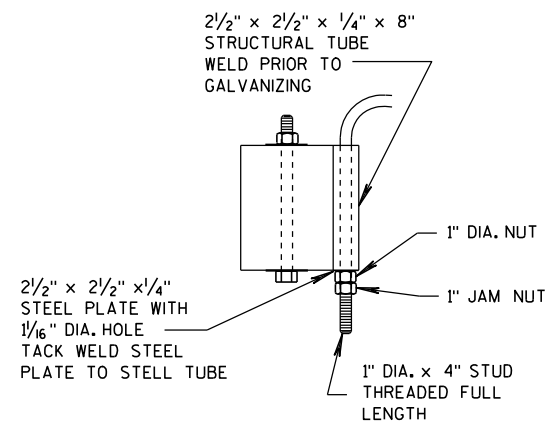
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



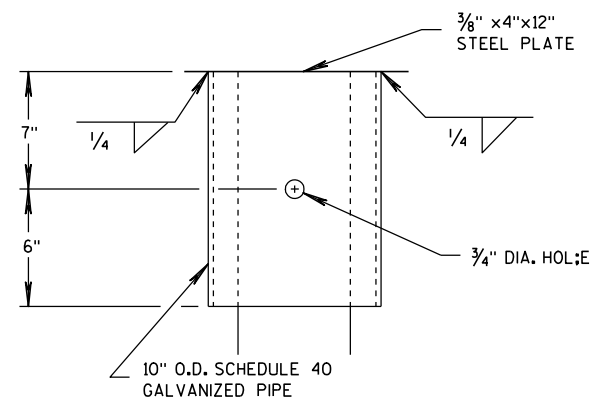
STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL

GENERAL NOTES

- ① ATTACH W BEAM RAIL TO THE STEEL PIPE WITH A 5/8" X 2" BUTTON HEAD BOLT WITH NO WASHER. CONNECTION TO THE POST IS NOT REQUIRED.
- INSTALL GALVANIZED 3/4" (6X19) PREFORMED WIRE OR INDEPENDENT WIRE ROPE CORE CONFORMING TO AASHTO M 30. MANUFACTURE WIRE ROPE OUT OF IMPROVED PLOW STEEL WITH A MINIMUM BREAKING STRENGTH OF 42,800 PSI.



DETAIL A

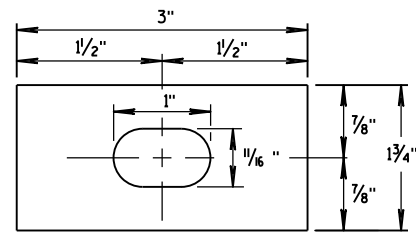


DETAIL B

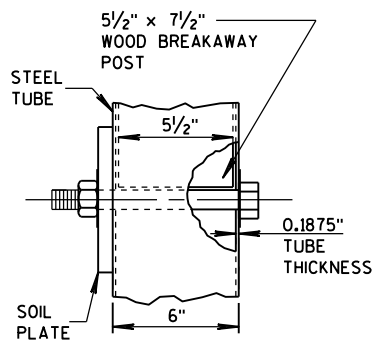
(BEAM GUARD AND TERMINAL SECTION NOT SHOWN)

STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL

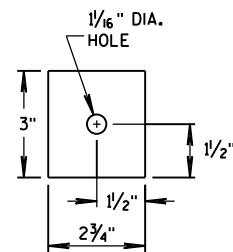
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



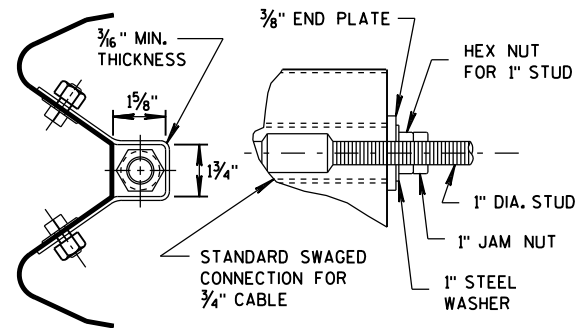
**RECTANGULAR
PLATE WASHER**



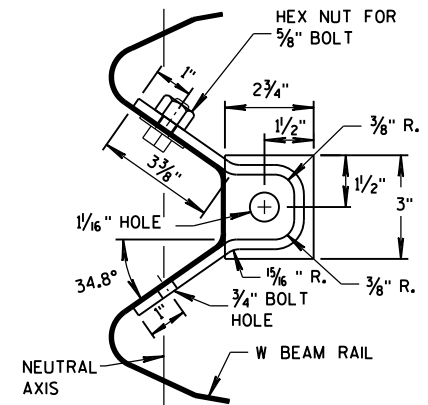
DETAIL D



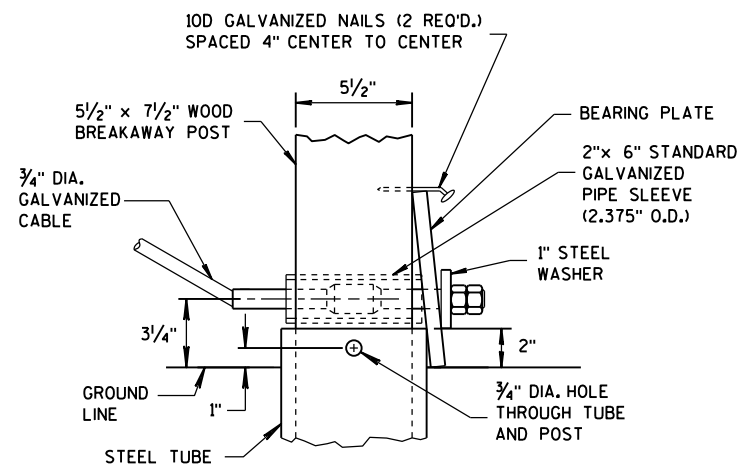
END PLATE



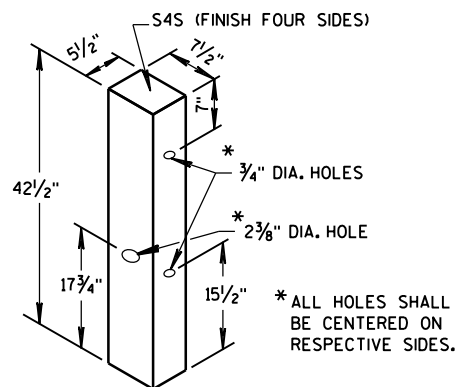
**SECTION C-C
(END PLATE REMOVED)**



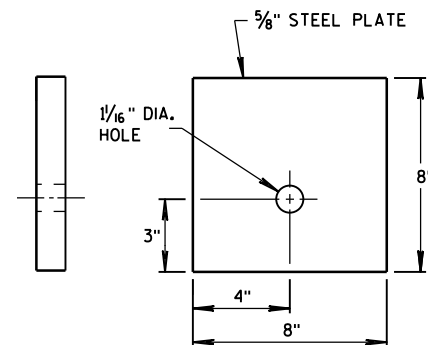
ANCHOR BRACKET



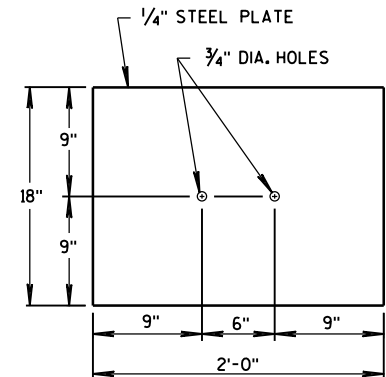
DETAIL C



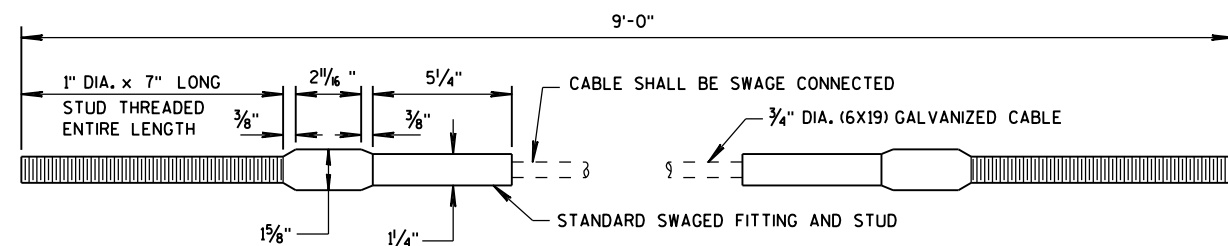
WOOD BREAKAWAY POST



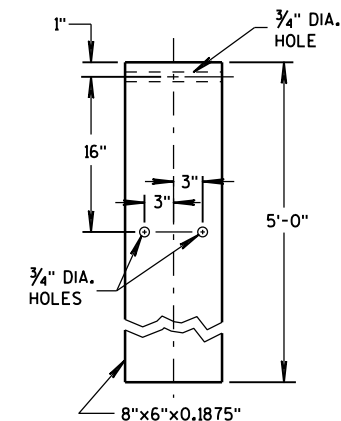
BEARING PLATE



SOIL PLATE



CABLE ASSEMBLY



STEEL TUBE

**STEEL PLATE BEAM GUARD
SHORT RADIUS TERMINAL**

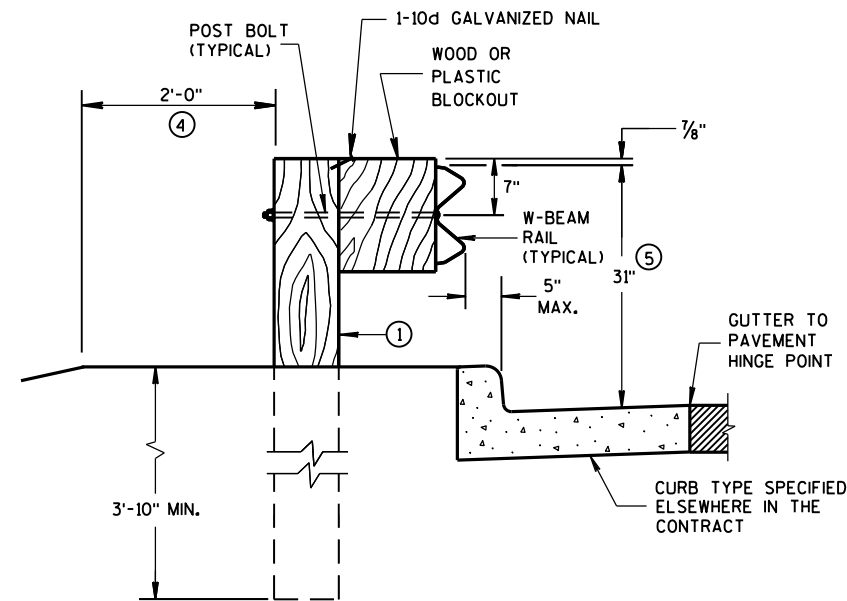
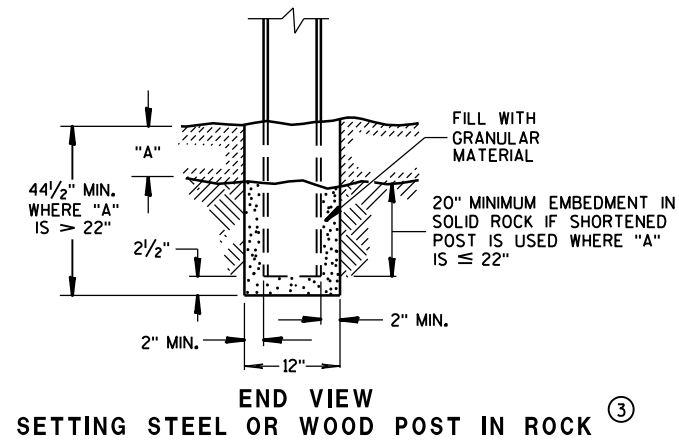
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
12/18/08
DATE
FHWA

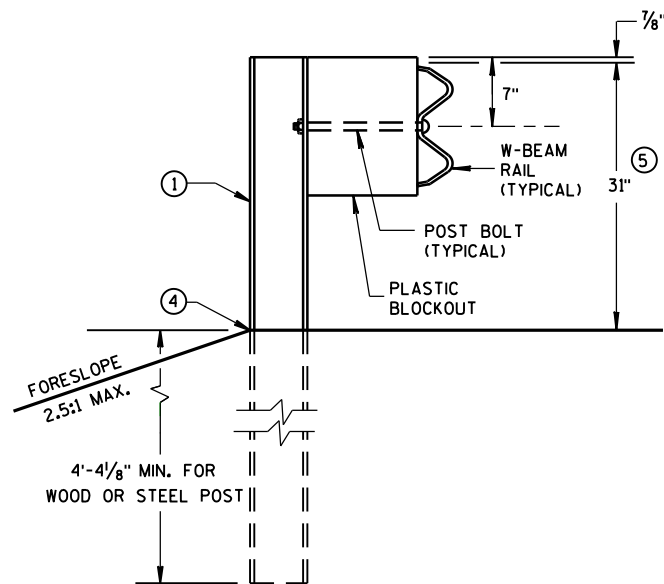
/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER

S.D.D. 14 B 42-2a

- S.D.D. 14 B 42-2a**

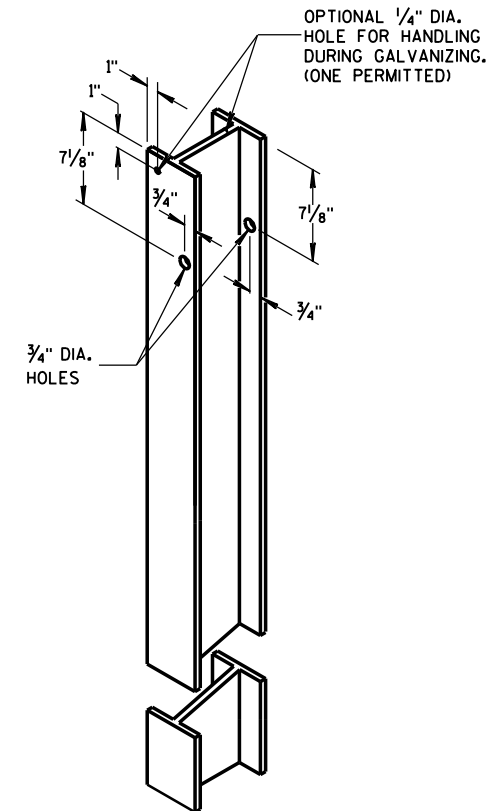


END VIEW
LOCATED ALONG A CURBED ROADWAY

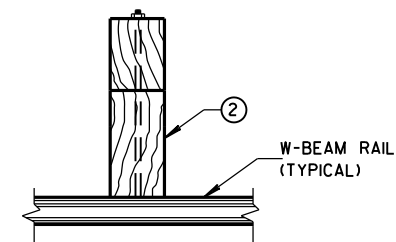


END VIEW

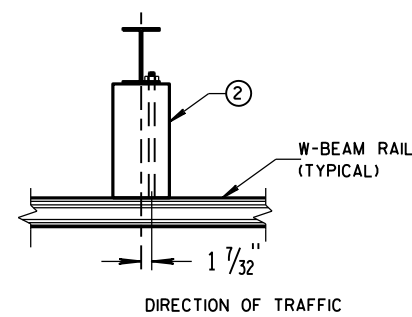
MGS LONGER POST AT HALFPOST SPACING W BEAM (K)



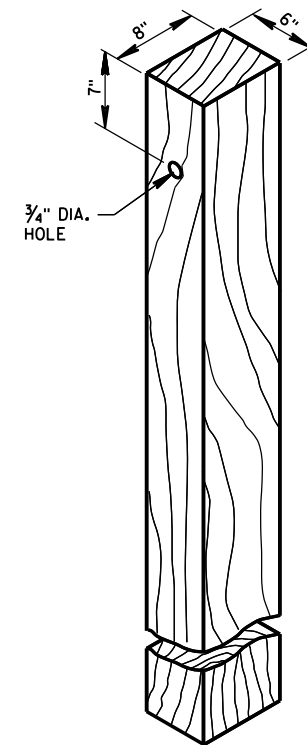
**STEEL POST &
HOLE PUNCHING DETAIL
(w6X9)^①**



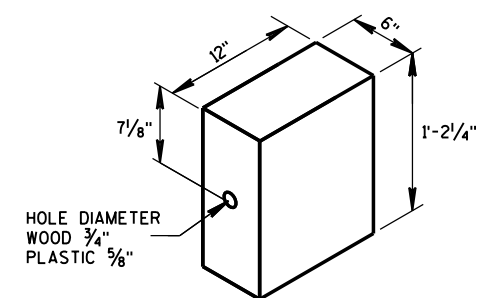
**PLAN VIEW
WOOD POST,
BLOCKOUT & BEAM**



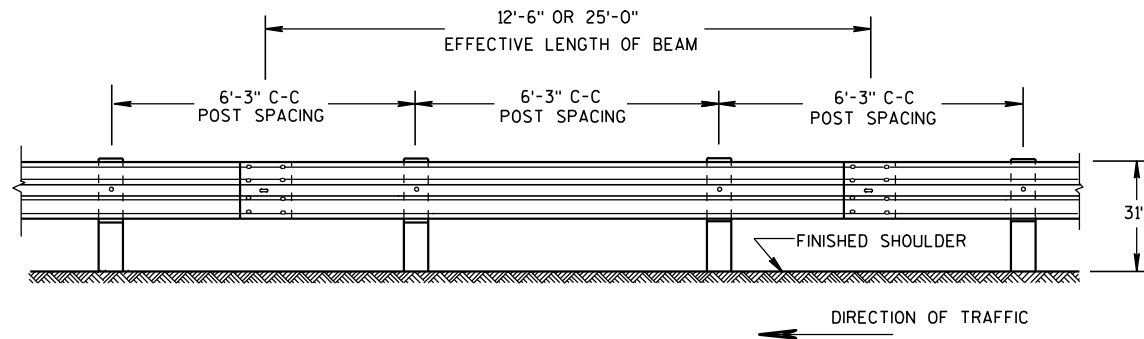
PLAN VIEW
STEEL POST,
PLASTIC BLOCKOUT & BEAM



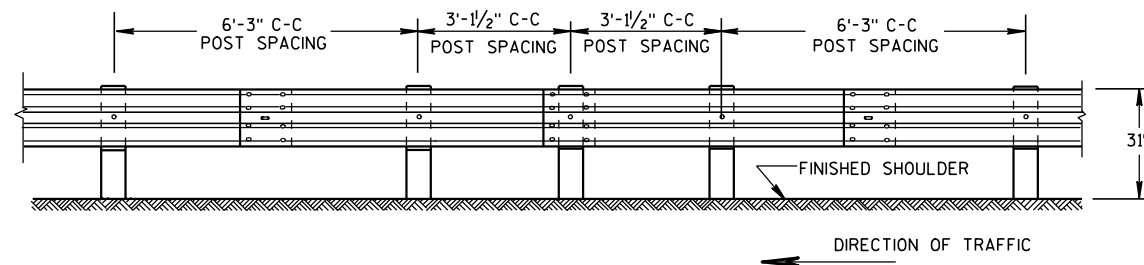
WOOD POST
(6" X 8") NOMINAL ^①



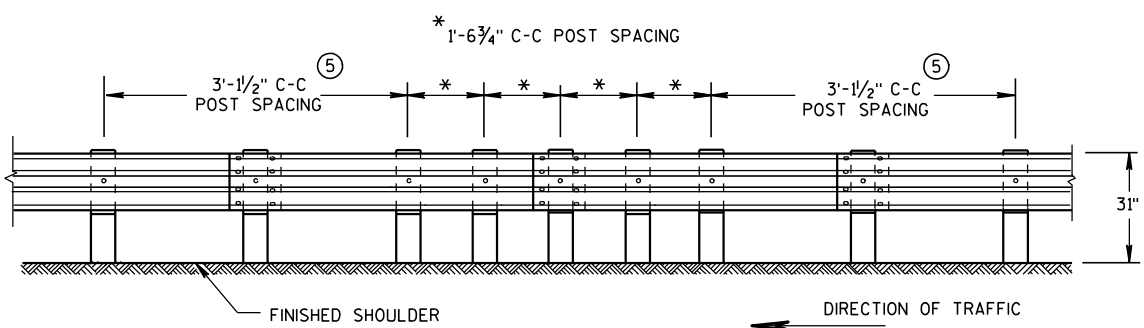
**WOOD OR
PLASTIC BLOCKOUT** ⁽²⁾



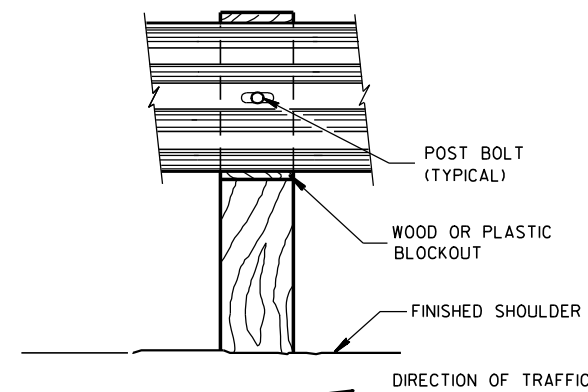
FRONT VIEW
POST SPACING STANDARD INSTALLATION



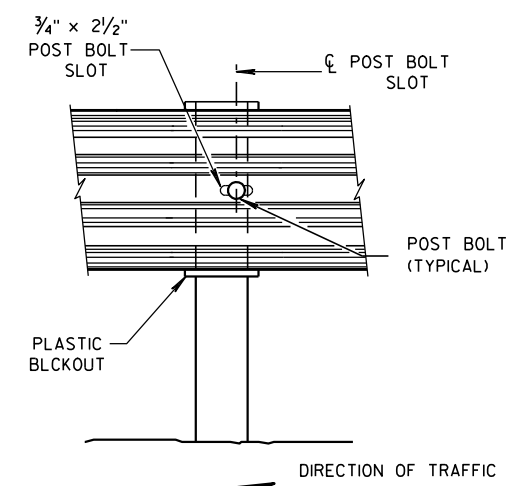
FRONT VIEW
**HALF POST SPACING (HS) AND
HALF POST SPACING WITH LONGER POSTS (K)**



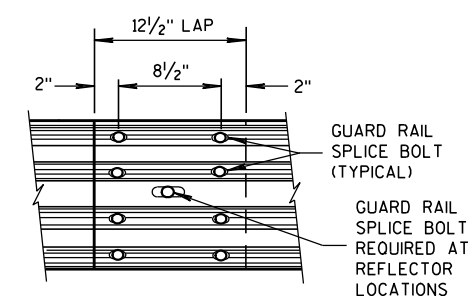
FRONT VIEW
QUARTER POST SPACING (QS)



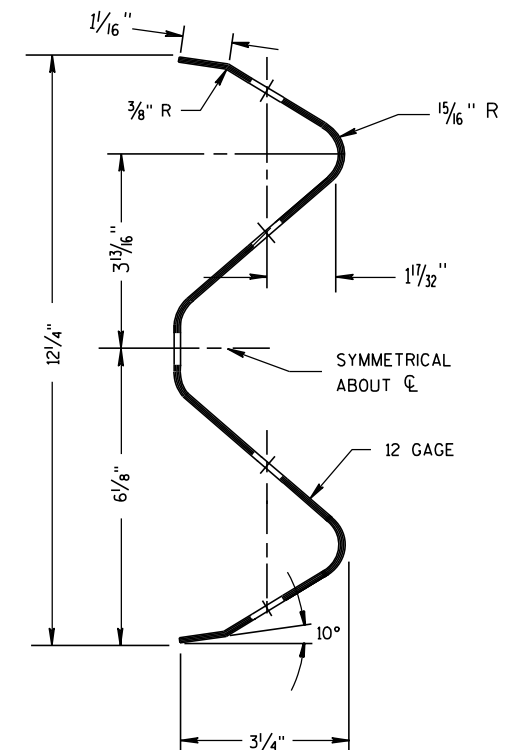
FRONT VIEW AT WOOD POST



FRONT VIEW AT STEEL POST



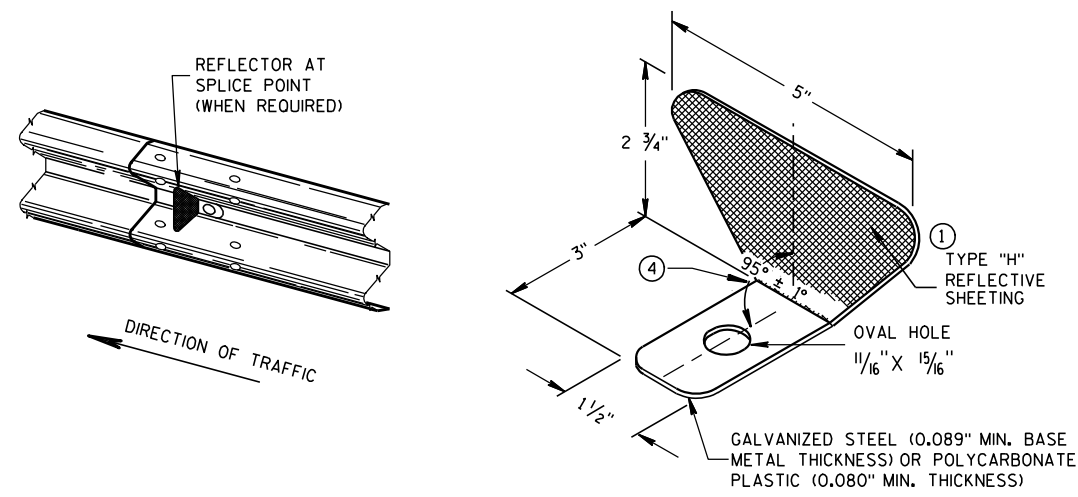
**FRONT VIEW
MID-SPAN BEAM SPLICE**



SECTION THRU W-BEAM RAIL

REFLECTOR SPACING

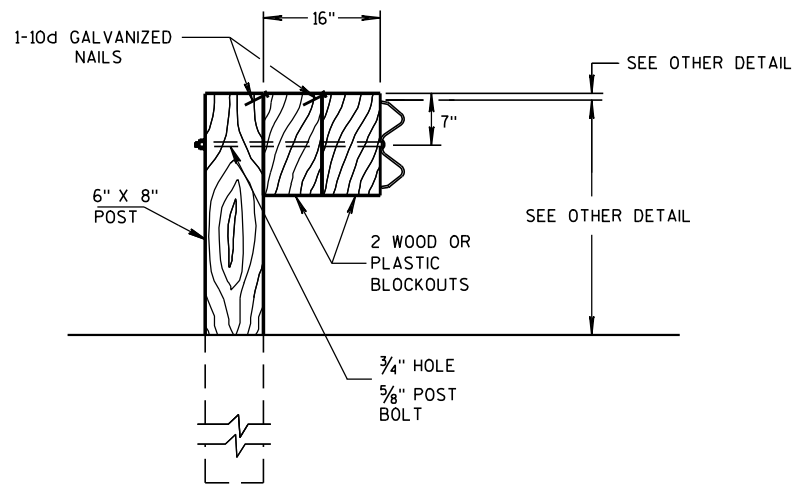
	BEAM GUARD LENGTH	REFLECTOR SPACING	NO. SURFACES REFLECTORIZED	MIN. NO. REFLECTORS
ONE WAY TRAFFIC	< 200'	50' C-C	1	3
	> 200'	100' C-C	1	
TWO WAY TRAFFIC	< 200'	25' C-C	1	6
	> 200'	50' C-C	1	
TWO WAY TRAFFIC	< 200'	50' C-C	2	3
	> 200'	100' C-C	2	



ONE SIDED REFLECTOR DETAIL AND TYPICAL INSTALLATION

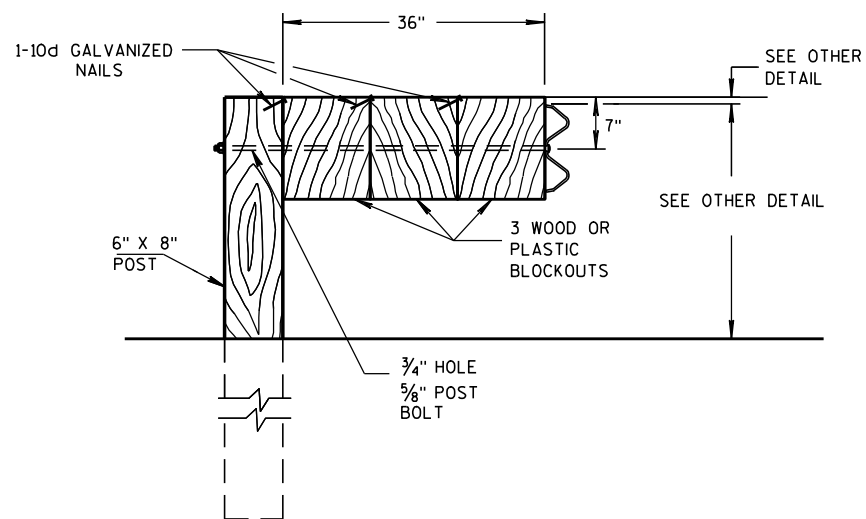
GENERAL NOTES

- 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. RAIL SPLICE LOCATIONS ARE THE ONLY ACCEPTABLE LOCATIONS FOR REFLECTORS.
 - 3 REVERSE EVERY OTHER REFLECTOR FOR 2-WAY VISIBILITY. THE CONTRACTOR MAY FURNISH TWO-SIDED REFLECTORS IN LIEU OF ONE-SIDED REFLECTORS.
 - 4 PROVIDE AN ANGLE OF BEND OF 90° ± 1° FOR TWO-SIDED REFLECTORS.
 - 5 25 FEET OF HALF POST SPACING IS REQUIRED ON APPROACH AND DEPARTURE ENDS OF QUARTER POST SPACING.
- POST BOLTS ARE A 5/8" DIAMETER ASTM A307 GUARDRAIL BOLT. A POST BOLT REQUIRES 5/8" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT AND 5/8" DIAMETER F844 FLAT WASHER. POST BOLTS MAY BE LONGER IF MULTIPLE BLOCKOUTS ARE BEING USED.
- GUARD RAIL SPLICE BOLTS ARE A 5/8" DIAMETER ASTM A307 GUARDRAIL HEAD BOLT. A GUARDRAIL SPLICE BOLT REQUIRES 5/8" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT.



DETAIL FOR 16" BLOCKOUT DEPTH

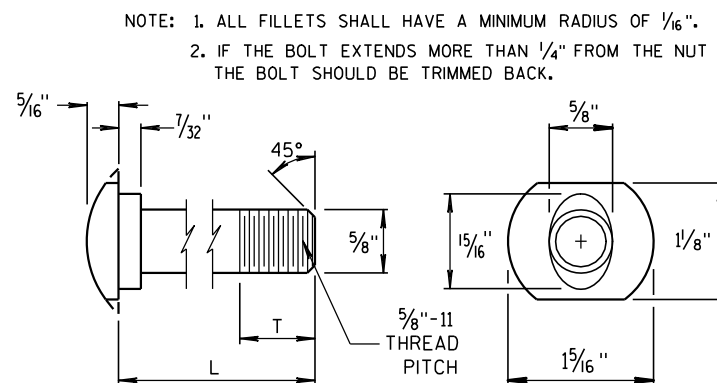
IT IS ACCEPTABLE TO USE BLOCKOUTS UP TO 16" DEEP TO INCREASE THE POST OFFSET TO AVOID UNDERGROUND OBSTACLES. THERE IS NO LIMIT TO THE NUMBER OF POSTS THAT CAN HAVE ADDITIONAL BLOCKOUTS UP TO 16" DEEP.



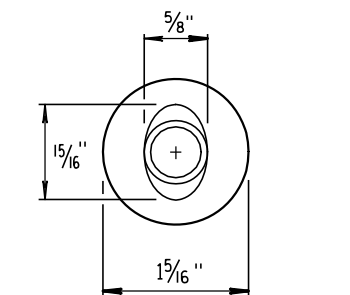
DETAIL FOR 36" BLOCKOUT DEPTH

NOTES: UNDER SPECIAL CIRCUMSTANCES, SUCH AS AVOIDING OBSTACLES THAT ARE NOT RELOCATED, IT IS ACCEPTABLE TO INSTALL ADDITIONAL BLOCKOUTS TO OBTAIN UP TO 36" DEPTH FOR ONE OR TWO POSTS IN A SECTION OF GUARDRAIL.

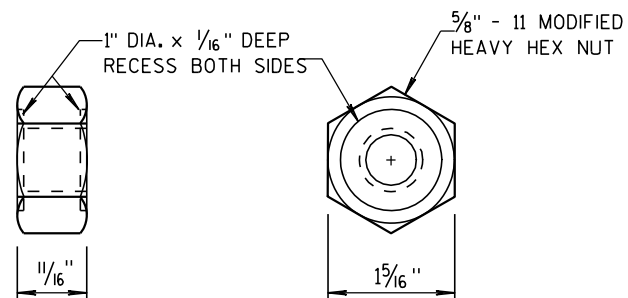
DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT OR CAUSES A FIXED OBJECT TO BE WITHIN THE DEFLECTION DISTANCE OF THE BARRIER.



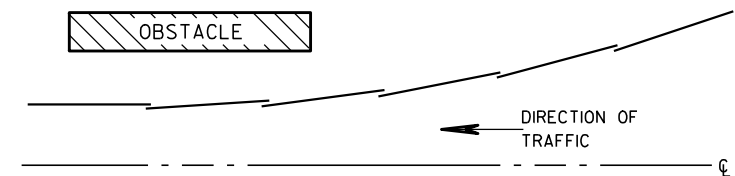
POST BOLT TABLE



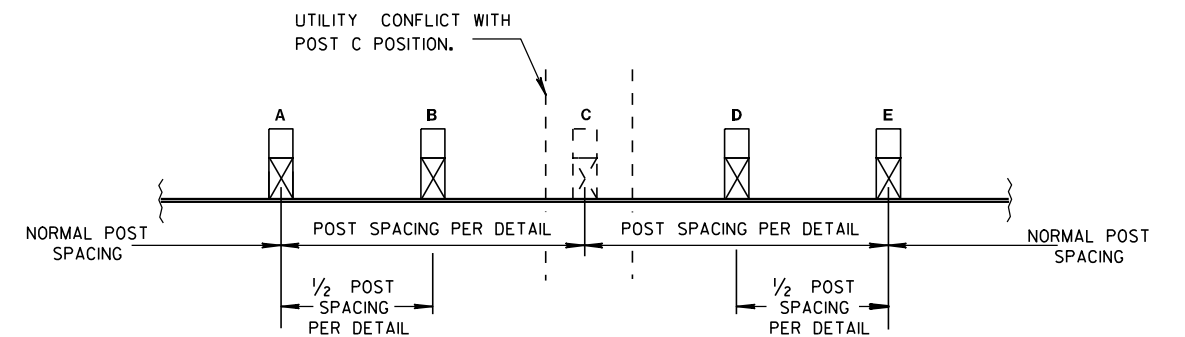
ALTERNATE BOLT HEAD



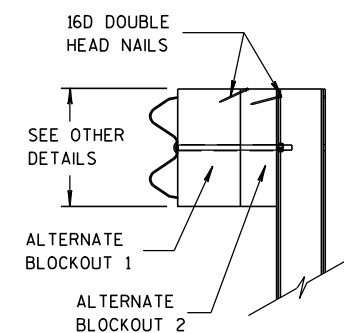
POST BOLT AND RECESS NUT



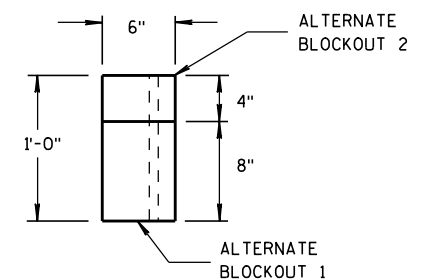
PLAN VIEW
BEAM LAPPING DETAIL



POST DRIVING FOR CONTINUOUS
UNDERGROUND OBSTRUCTION



SIDE VIEW



TOP VIEW

ALTERNATE WOOD
BLOCKOUT DETAIL

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

11/15/2011
DATE

FHWA

/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER

6

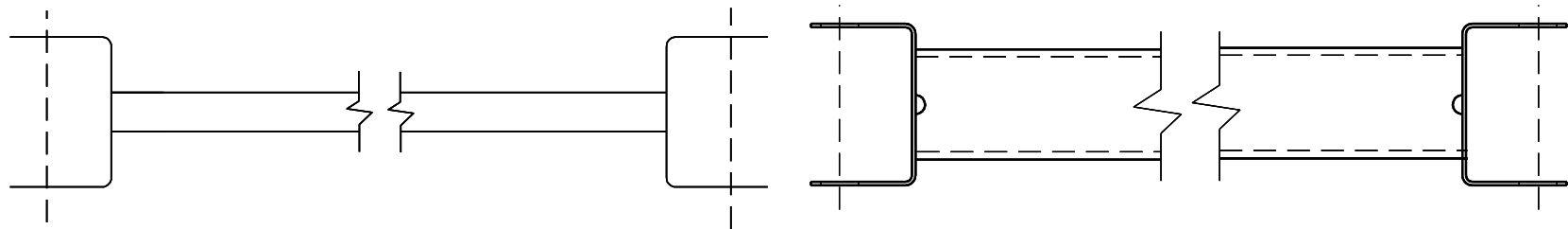
- S.D.D. 14 B 44-1a**

THE CENTER OF THE UPPER 3 1/2" DIAMETER HOLE ON POST NUMBER 3
THROUGH POST 9 IS TO BE FLUSH WITH THE GROUND LINE (+ 3/4")

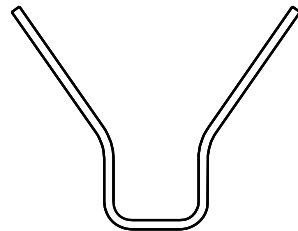
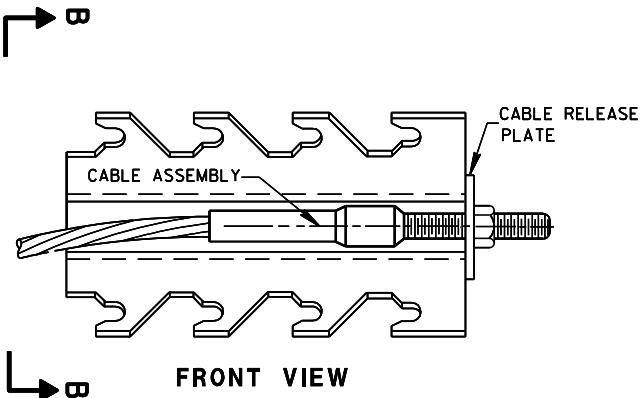


STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

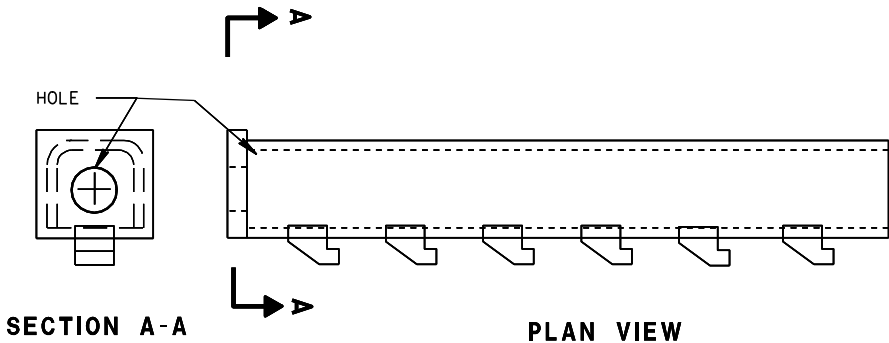
S.D.D. 14 B 44-1a



GENERIC GROUND STRUT



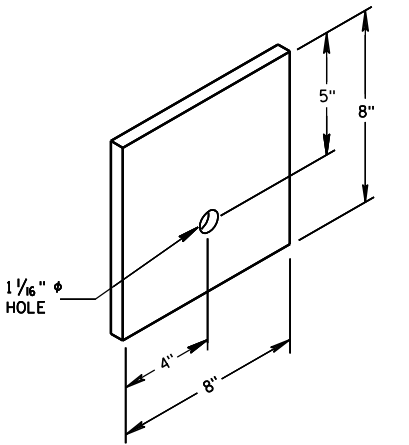
SECTION B-B



GENERIC ANCHOR CABLE BOX

BILL OF MATERIALS

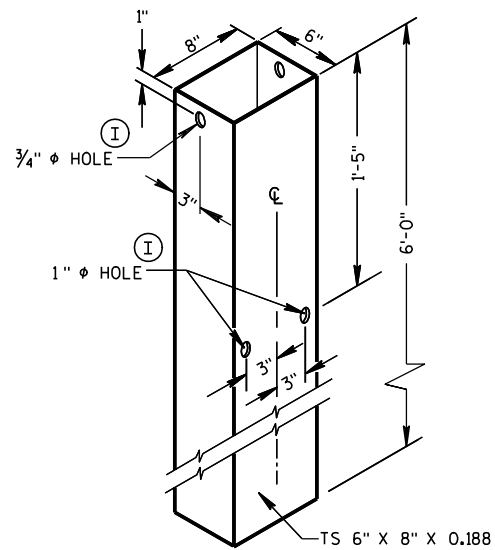
PART NO.	DESCRIPTION
MATERIALS PROVIDED BY MGS EAT MANUFACTURER. SEE MANUFACTURER'S DETAILS FOR MORE INFORMATION.	
①	WOOD BREAKAWAY POST
②	6" X 8" X 0.188", 6'-0" LONG FOUNDATION TUBE AT POSTS 1 AND 2
③	WOOD CRT
④	WOOD BLOCKOUT
⑤	PIPE SLEEVE
⑥	BEARING PLATE
⑦	BCT CABLE ASSEMBLY
⑧	ANCHOR CABLE BOX
⑨	GROUND STRUT
⑩	PERFORATED W-BEAM RAIL END PANEL, 12'-6" LONG.
⑪	STANDARD W-BEAM RAIL, MULTIPLE SECTIONS REQUIRED. SECTIONS VARY IN LENGTH.
⑫	END SECTION EAT
⑬	0.040" ALUMINUM SHEET WITH REFLECTIVE SHEETING TYPE H (ONLY THE SHEETING IS SUPPLIED BY THE MANUFACTURER)
⑭	EAT MARKER POST - YELLOW (SEE APPROVED PRODUCTS LIST)



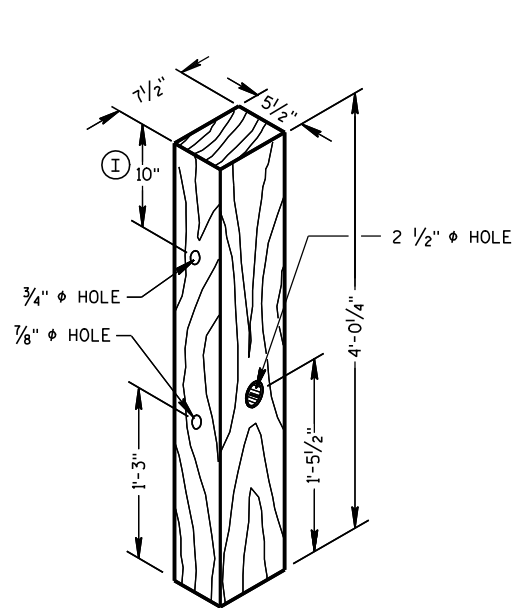
BEARING PLATE

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

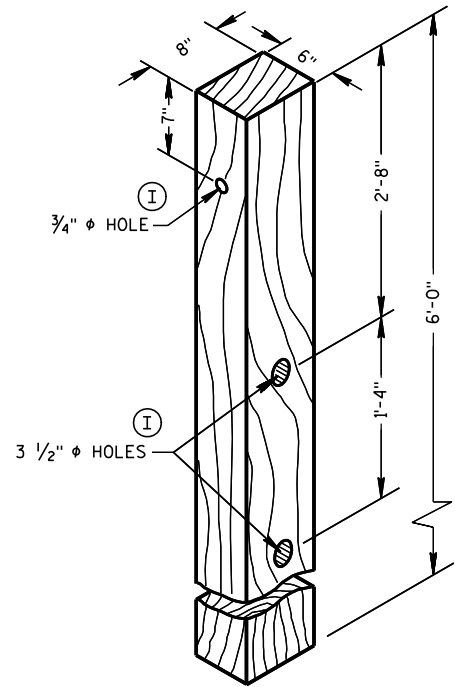
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



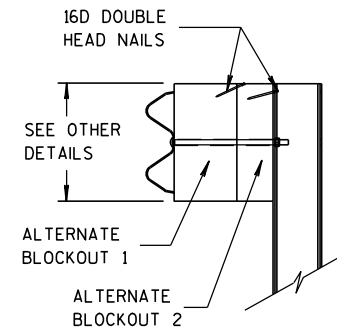
FOUNDATION TUBE ②



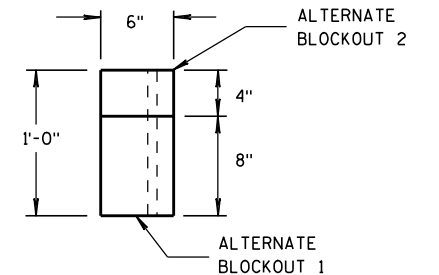
WOOD BREAKAWAY POST ①



WOOD CRT POST ③

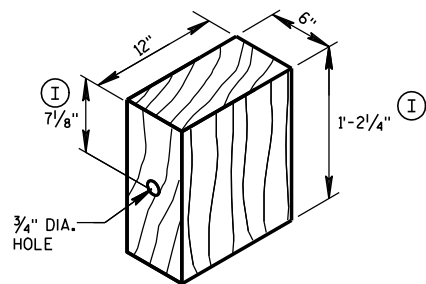


SIDE VIEW



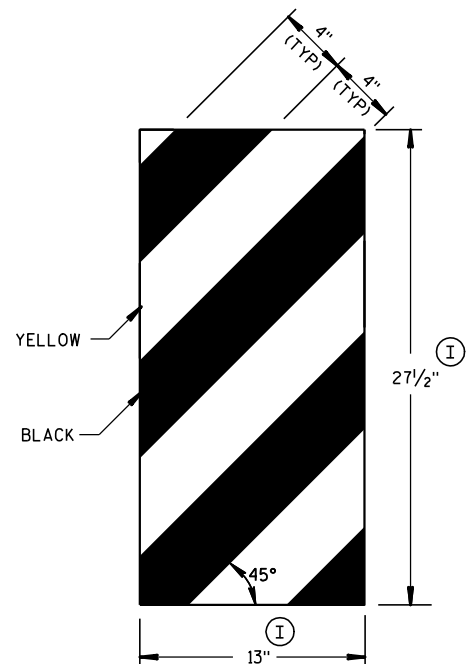
TOP VIEW

ALTERNATE WOOD
BLOCKOUT DETAIL

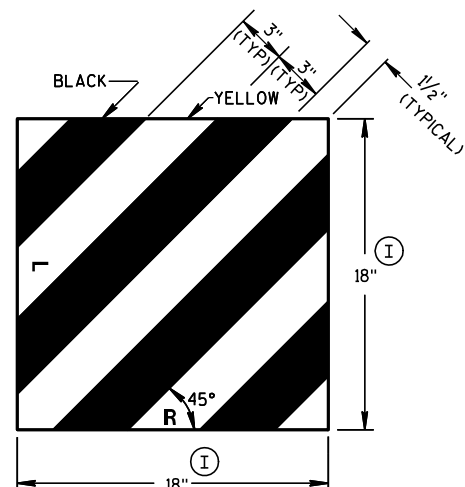


WOOD BLOCKOUT ④
REQ'D. AT ALL POSTS EXCEPT POST NO'S 1 & 2

YELLOW REFLECTIVE TAPE
3" X 9" TYPE H
REFLECTIVE SHEETING



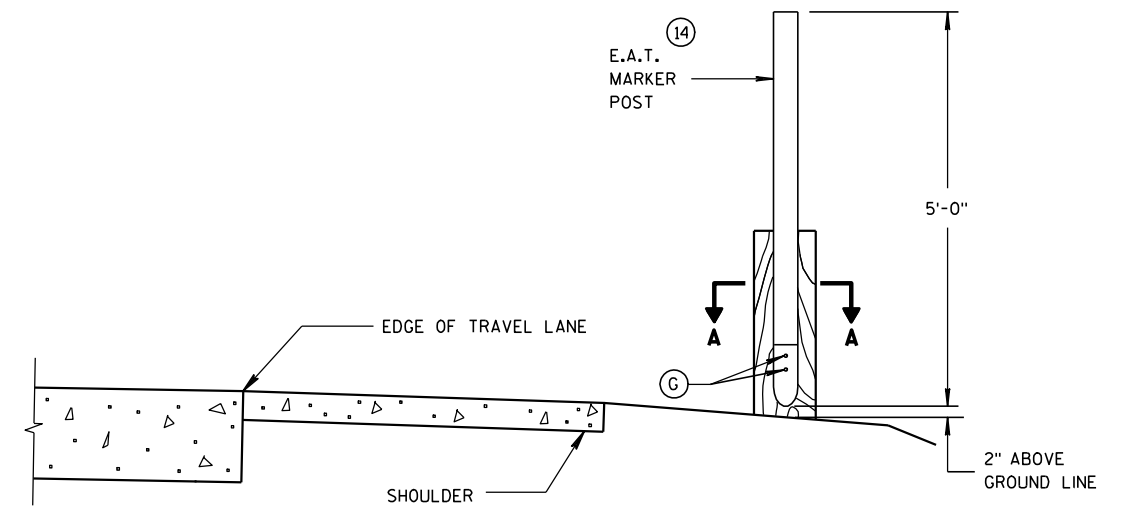
GENERIC REFLECTIVE SHEETING ⑬ ④



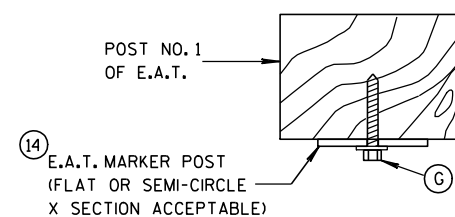
FRONT VIEW

SIDE VIEW

E.A.T. MARKER POST ⑭



TYPICAL INSTALLATION OF E.A.T.
MARKER POST BACKSIDE OF POST NO. 1
(E.A.T. AND RAIL REMOVED FOR CLARITY)



SECTION A-A

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

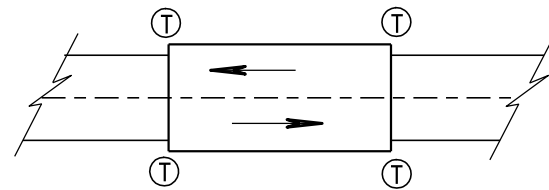
APPROVED

5/23/2011

DATE

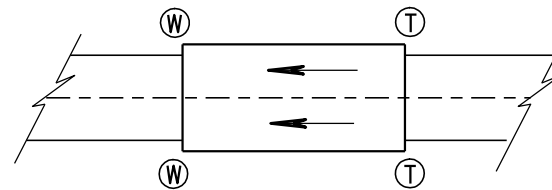
FHWA

/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER



TWO WAY TRAFFIC

Ⓣ THRIE BEAM CONNECTION



ONE WAY TRAFFIC

Ⓦ W-BEAM CONNECTION WHEN REQUIRED

GENERAL NOTES

BOLT THE THRIE BEAM TO ALL POSTS AND BLOCKOUTS. DRILL OR PUNCH BOLT HOLES IN THE BEAM IF THE POST SPACING IS LESS THAN 6'-3".

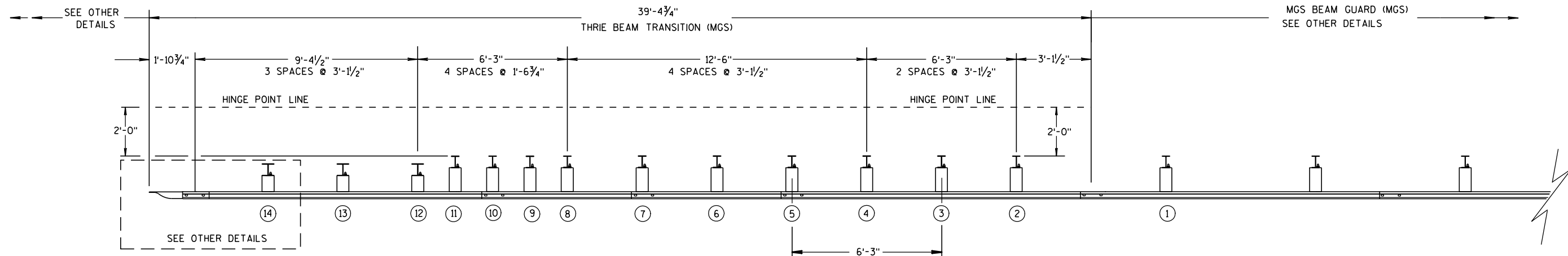
IF ROCK IS ENCOUNTERED, REMOVE ROCK TO FULL DEPTH OF POST PLUS 2½", AND 12" DIAMETER AROUND POST. SEE 14B42 FOR MORE DETAILS.

TRANSITION USES STEEL POSTS ONLY.

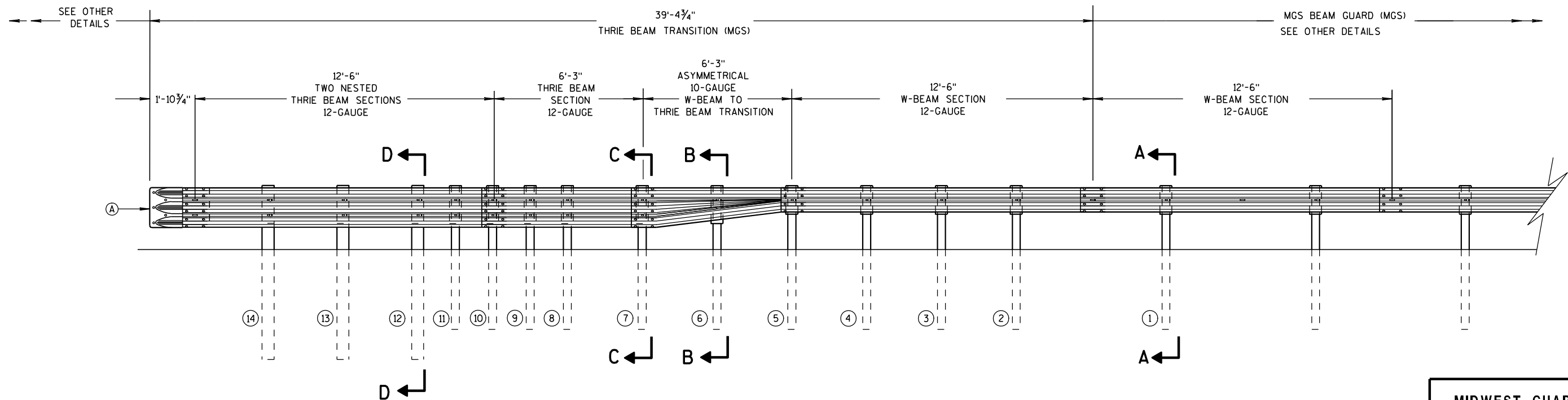
SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

Ⓐ BRIDGE RAILING TYPE "W" DOES NOT REQUIRE A TERMINAL CONNECTOR.

TYPICAL LOCATIONS OF THRIE BEAM AND W-BEAM CONNECTIONS TO BRIDGE



PLAN VIEW



ELEVATION VIEW

MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

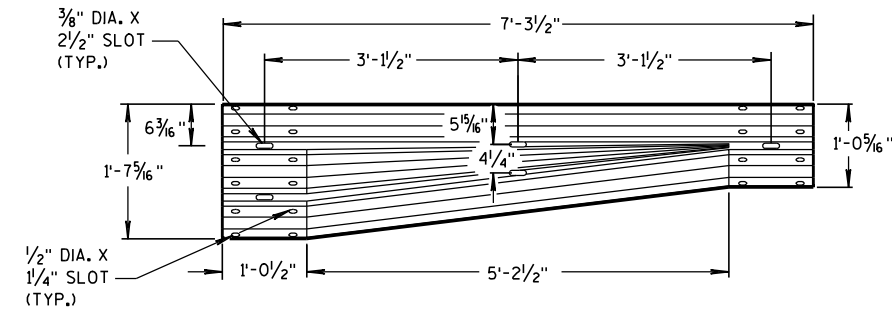
S.D.D. 14 B 45-3b



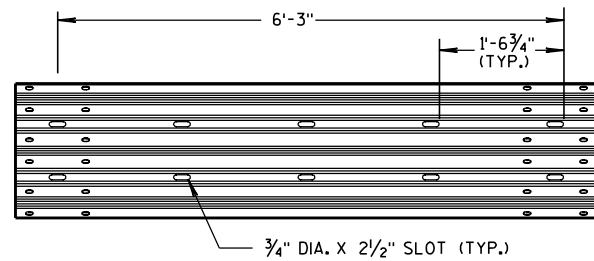
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

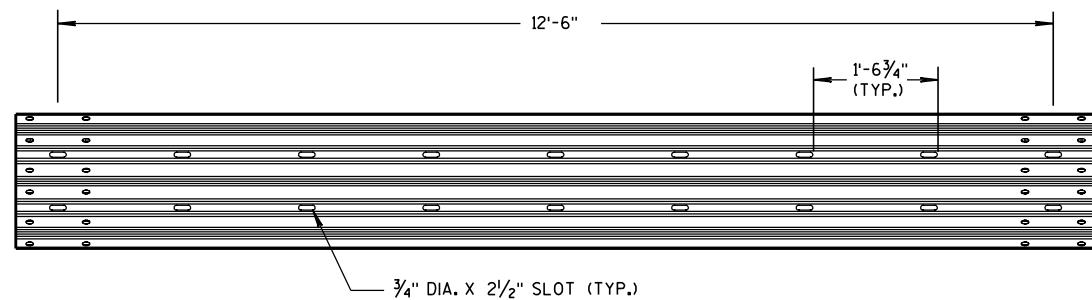
S.D.D. 14 B 45-3b



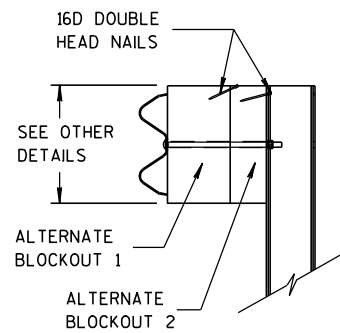
W-BEAM TO THRIE BEAM TRANSITION SECTION



6'-3" THRIE BEAM SECTION

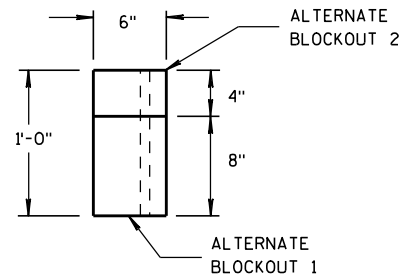


12'-6" THRIE BEAM SECTION

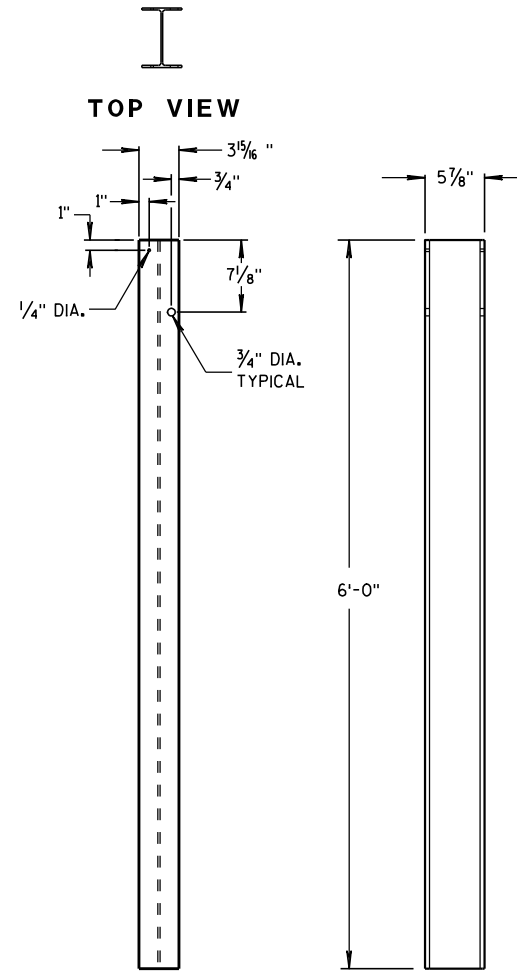


SIDE VIEW

ALTERNATE WOOD BLOCKOUT DETAIL

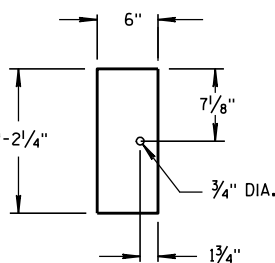
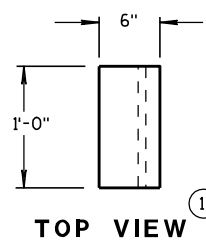


TOP VIEW

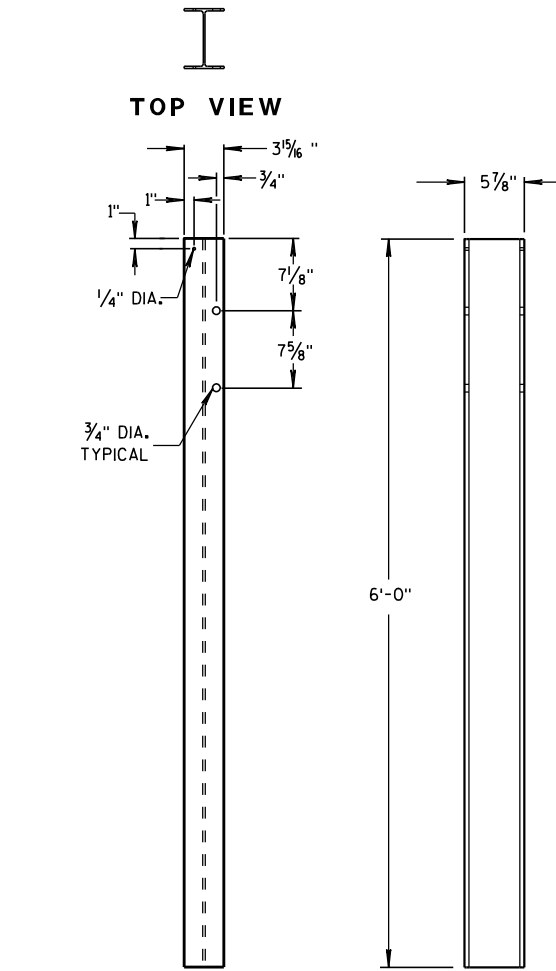


STEEL POSTS 1-5

① WOOD BLOCKS MAY BE CONSTRUCTED OUT OF 2 WOOD BLOCKS. SEE ALTERNATE WOOD BLOCK DETAIL.

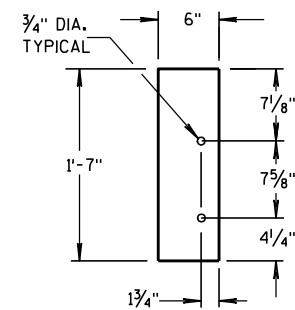
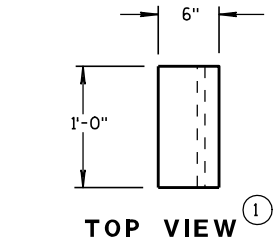


BLOCKOUT POSTS 1-5

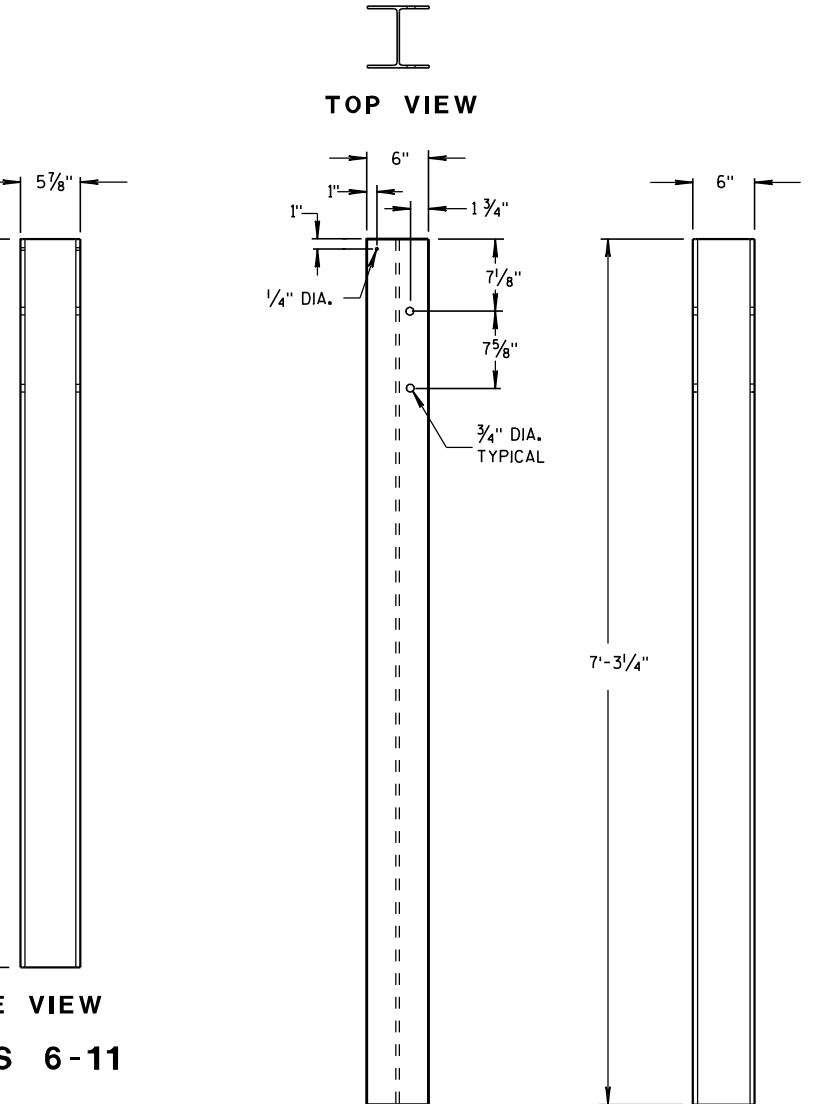


STEEL POSTS 6-11

① WOOD BLOCKS MAY BE CONSTRUCTED OUT OF 2 WOOD BLOCKS. SEE ALTERNATE WOOD BLOCK DETAIL.



BLOCKOUT POSTS 6-11



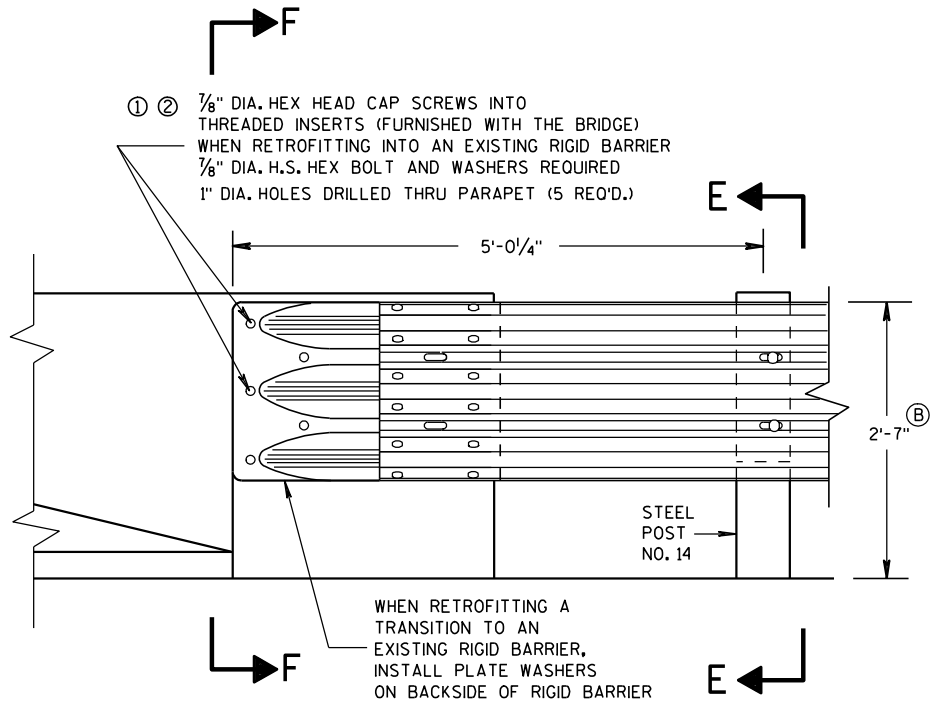
STEEL POSTS 12-14

STEEL POST SIZES

POST NUMBER	SECTION TYPE	LENGTH
①	W6x9	72"
②	W6x9	72"
③	W6x9	72"
④	W6x9	72"
⑤	W6x9	72"
⑥	W6x9	72"
⑦	W6x9	72"
⑧	W6x9	72"
⑨	W6x9	72"
⑩	W6x9	72"
⑪	W6x9	72"
⑫	W6x15	87 1/8"
⑬	W6x15	87 1/8"
⑭	W6x15	87 1/8"

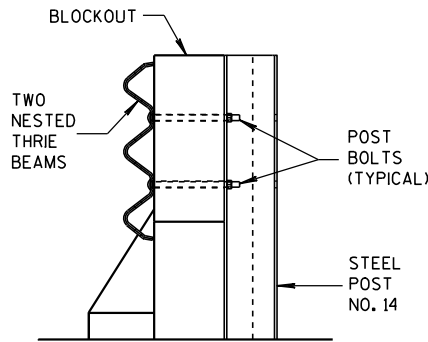
MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



FRONT VIEW

THRIE BEAM CONNECTION TO BRIDGE
PARAPET WITH SQUARE ENDS

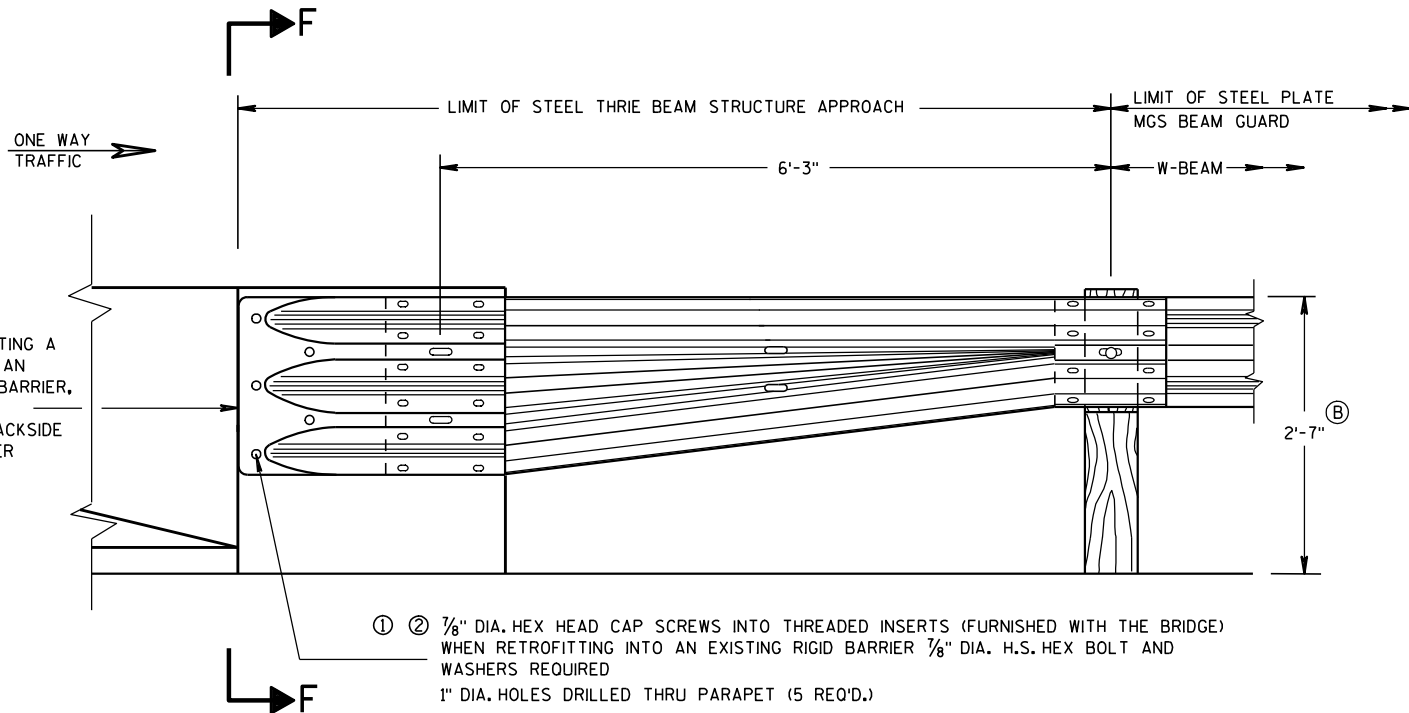


SECTION E-E

GENERAL NOTES

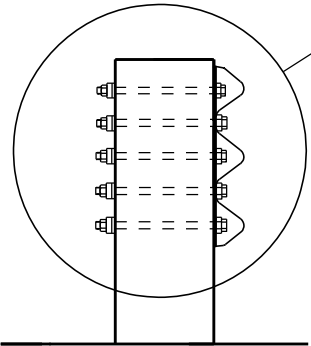
THESE ARE TYPICAL CONNECTION DETAILS. ADJUST THE POSTION OF CONNECTIONS TO EXISTING BRIDGES TO FIT THE ACTUAL BRIDGE AND SITE DIMENSIONS.

- ① DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.
- ② BOLTS MAY BE A325 BOLTS OR A449 BOLTS, BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X 5/8" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.
- ③ THE RECESS FOR A W-BEAM CONNECTION, WHICH EXISTS ON SOME PARAPETS OF THIS TYPE, SHALL BE FILLED WITH A TREATED TIMBER BLOCKOUT. BLOCKOUT SIZE IS 1'-6" X 2'-0" X 3 1/2".
- (B) TOLERANCE FOR TOP OF BEAM IS ± 1".

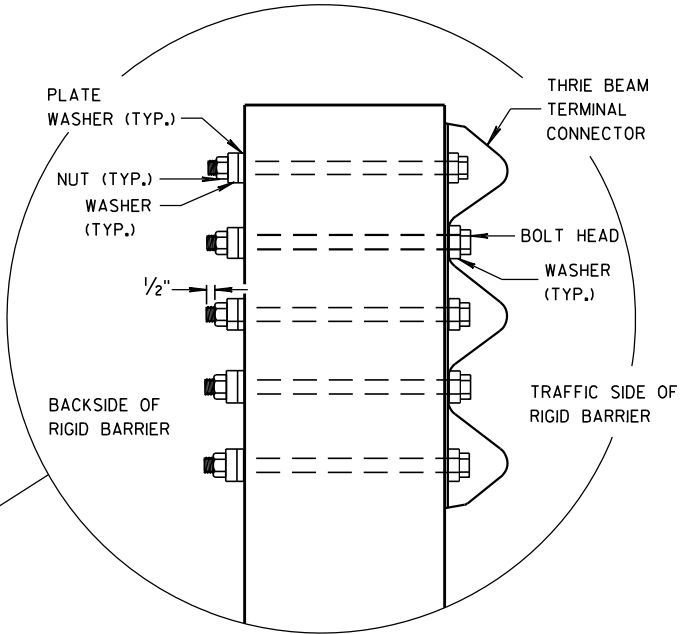


FRONT VIEW

W BEAM TRANSITION AND CONNECTION TO
BRIDGE PARAPETS WITH SQUARE ENDS
(USE ONLY ON THE TRAFFIC EXIT END OF ONE WAY BRIDGES)



SECTION F-F

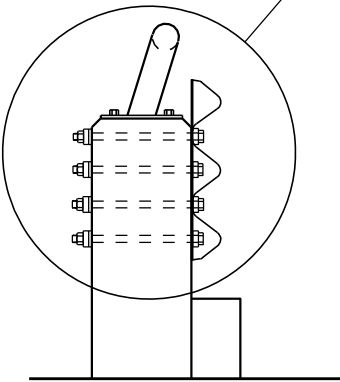
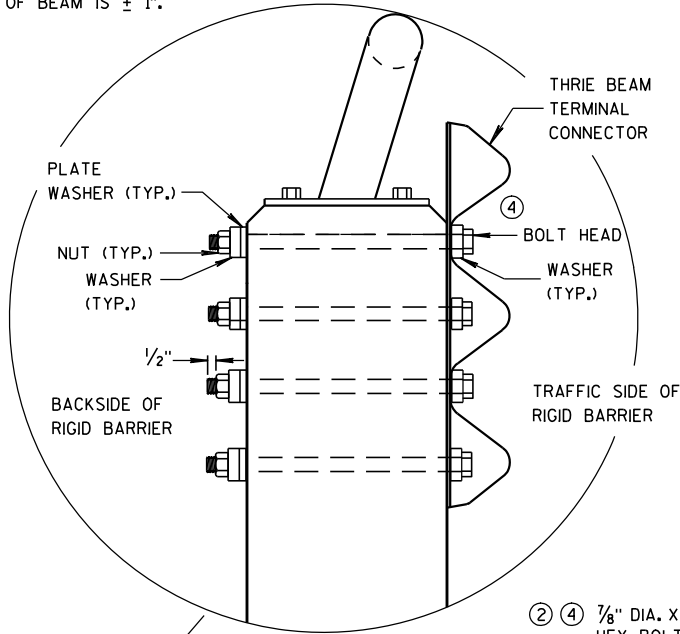


MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 8/31/2012 DATE	/S/ Jerry H. Zogg ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA	

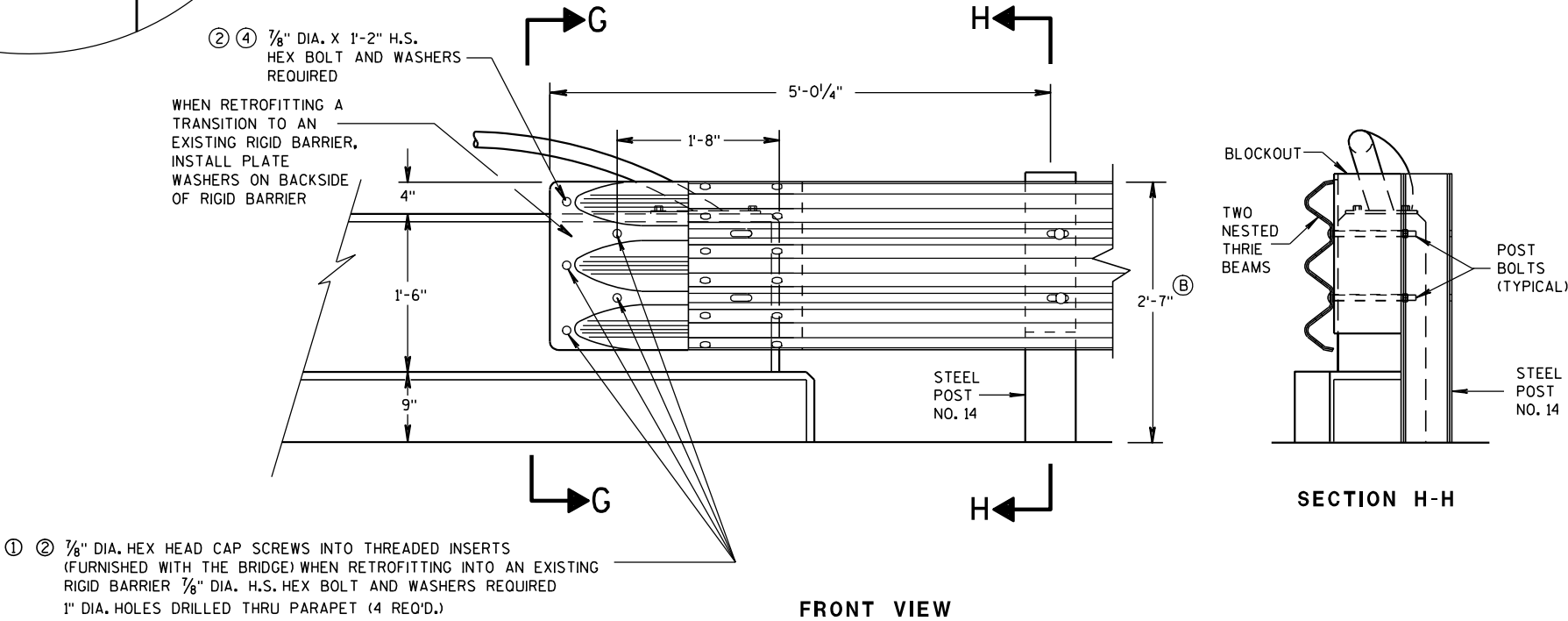
GENERAL NOTES

THESE ARE TYPICAL CONNECTION DETAILS. ADJUST THE POSITION OF CONNECTIONS TO EXISTING BRIDGES TO FIT THE ACTUAL BRIDGE AND SITE DIMENSIONS.

- ① DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.
- ② BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X $\frac{5}{8}$ " THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.
- ③ THE RECESS FOR A W-BEAM CONNECTION, WHICH EXISTS ON SOME PARAPETS OF THIS TYPE, SHALL BE FILLED WITH A TREATED TIMBER BLOCKOUT. BLOCKOUT SIZE IS 1'-6" X 2'-0" X 3 $\frac{1}{2}$ ". BLOCK IS INCIDENTAL TO THE CONTRACT.
- ④ BOLT, NUT AND WASHERS NOT REQUIRED FOR THIS LOCATION WHEN RETROFITTING AN EXISTING PAPAPET AND THE HOLE IS EITHER ABOVE PARAPET OR WITHIN 4 INCHES OF THE EDGE OF PARAPET.
- Ⓑ TOLERANCE FOR TOP OF BEAM IS $\pm 1"$.

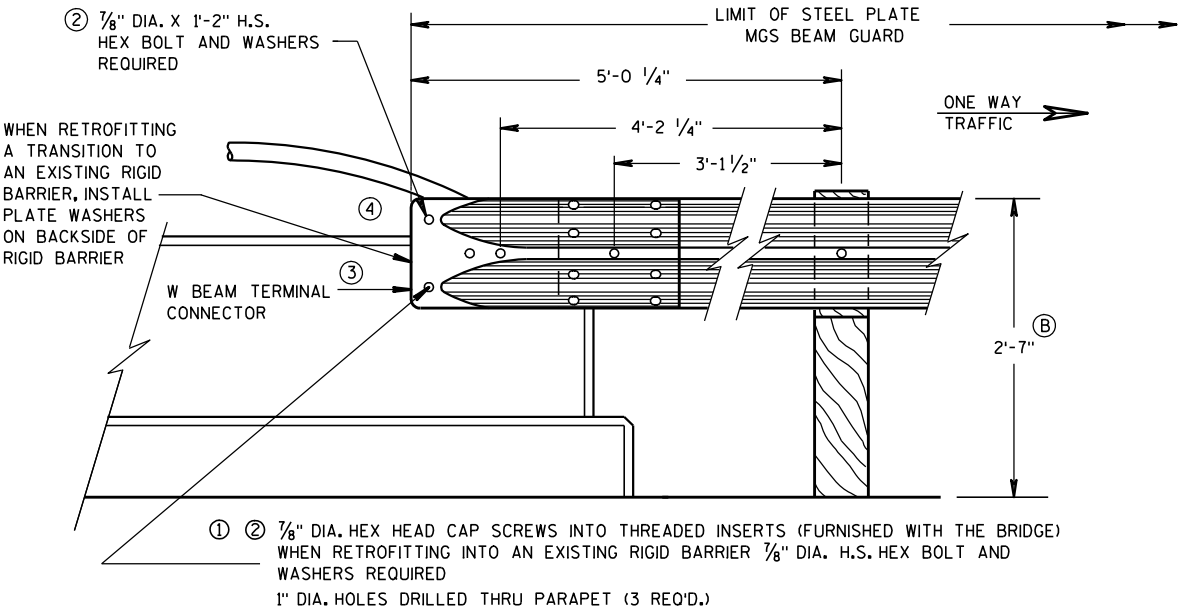


SECTION G-G



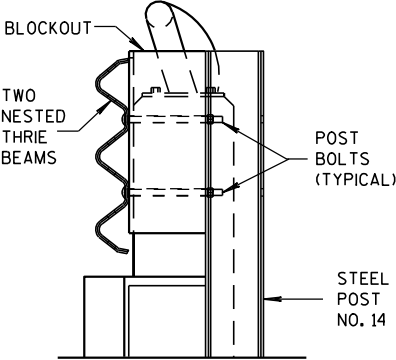
FRONT VIEW

THRIE BEAM CONNECTION TO VERTICAL FACED PARAPETS



FRONT VIEW

W BEAM CONNECTION TO VERTICAL FACE PARAPET
(USE ONLY ON THE TRAFFIC EXIT END OF ONE WAY BRIDGES)

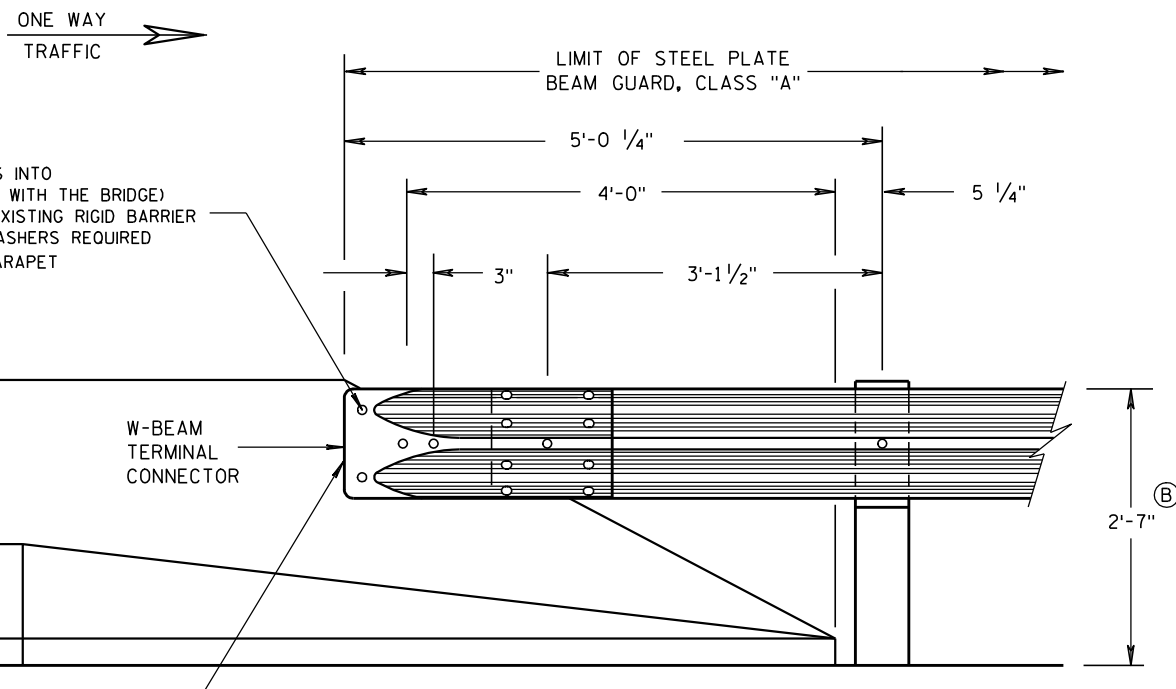


SECTION H-H

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
8-31-2012 /S/ Jerry H. Zogg
DATE ROADWAY STANDARDS DEVELOPMENT
ENGINEER
FHWA



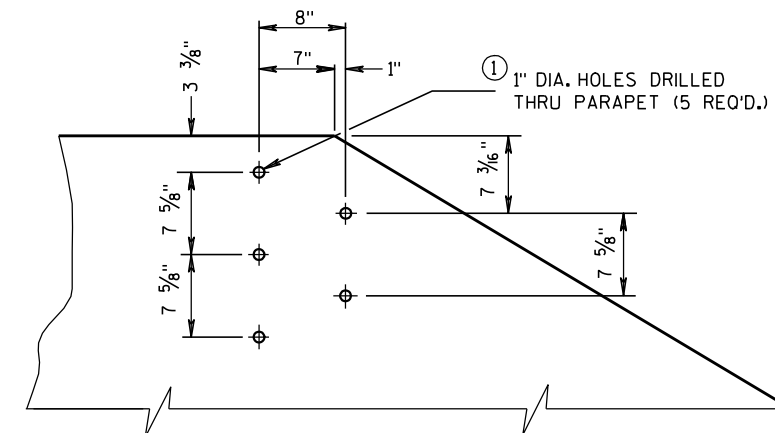
FRONT VIEW

W BEAM CONNECTION TO PARAPETS WITH SLOPED ENDS

(USE ONLY AT TRAFFIC EXIT END OF ONE WAY BRIDGE)

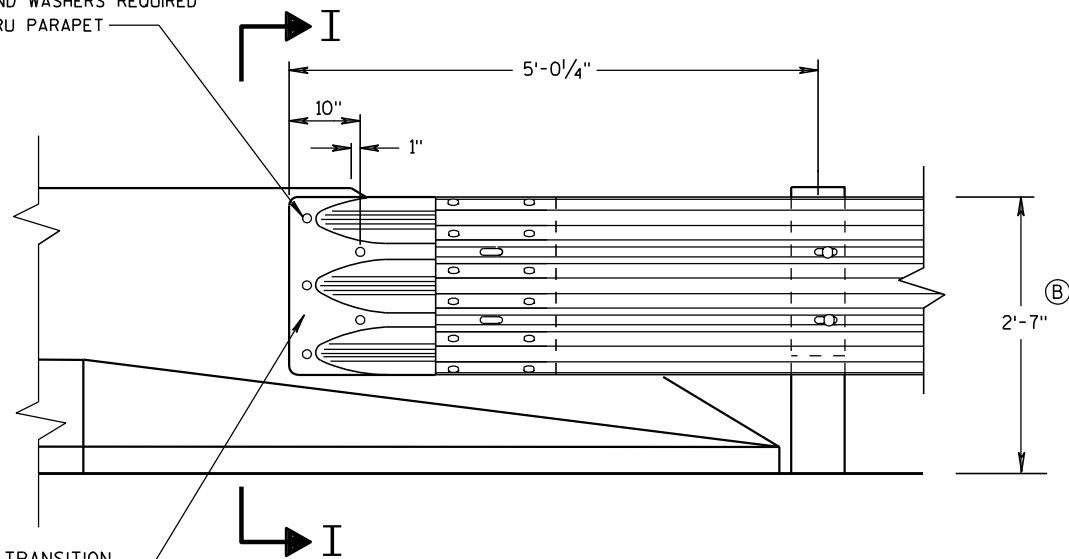
GENERAL NOTES

- ① DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.
- ② BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X 5/8" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.
- ③ TOLERANCE FOR TOP OF BEAM IS $\pm 1"$.



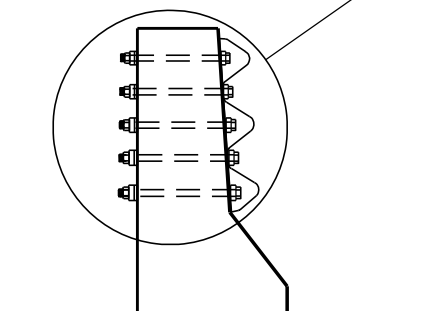
DRILL HOLE LOCATION AND PATTERN FOR THRIE BEAM CONNECTION

- ① ② 1/8" DIA. HEX HEAD CAP SCREWS INTO THREADED INSERTS (FURNISHED WITH THE BRIDGE) WHEN RETROFITTING INTO AN EXISTING RIGID BARRIER 1/8" DIA. H.S. HEX BOLT AND WASHERS REQUIRED 1" DIA. HOLES DRILLED THRU PARAPET (5 REQ'D.)

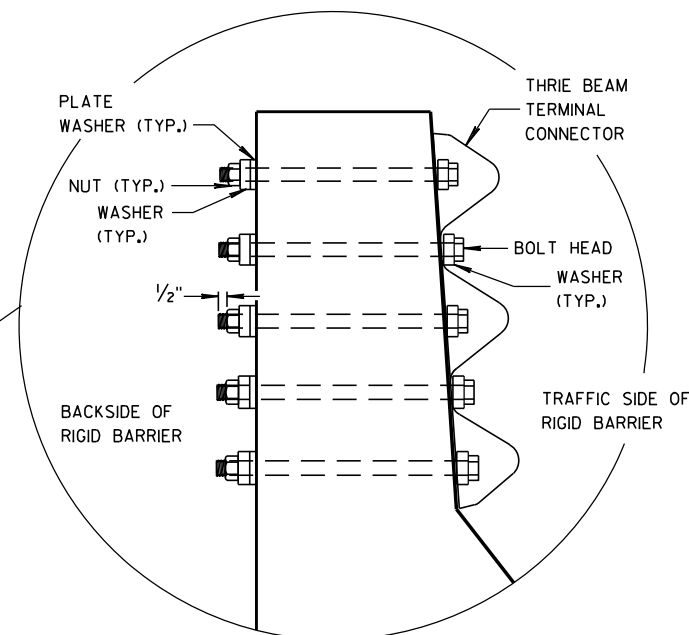


FRONT VIEW

THRIE BEAM CONNECTION TO BRIDGE PARAPETS WITH SLOPED ENDS



SECTION I-I

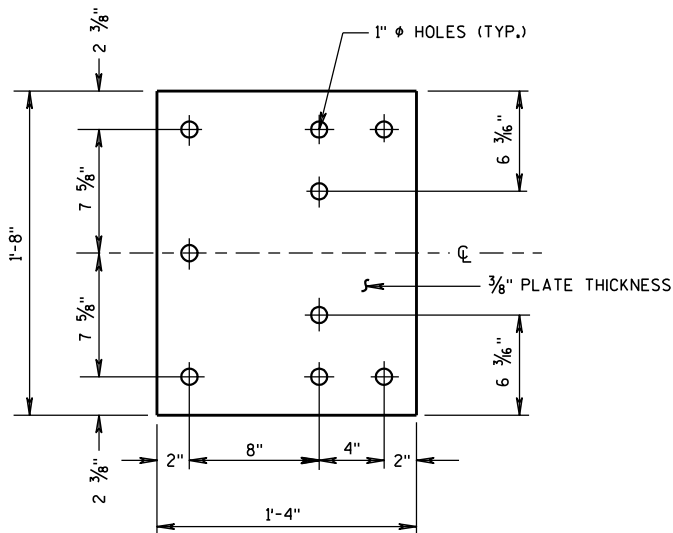


MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

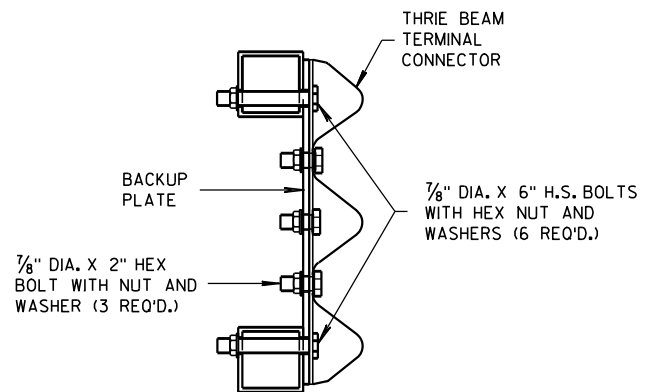
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
8/31/2012
DATE
FHWA

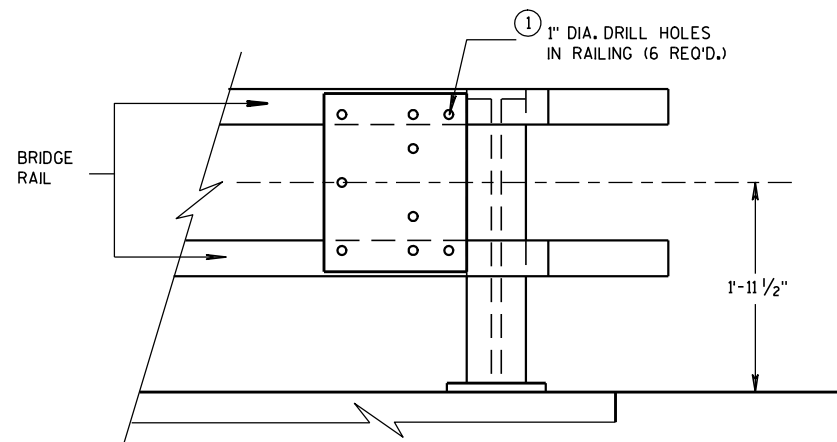
/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER



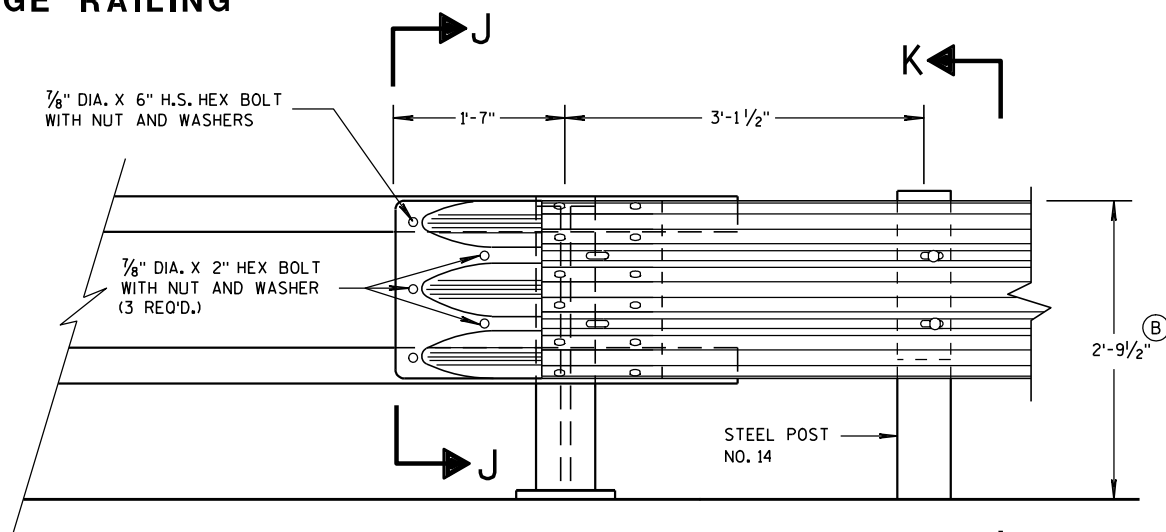
BACK-UP PLATE DETAIL



SECTION J-J

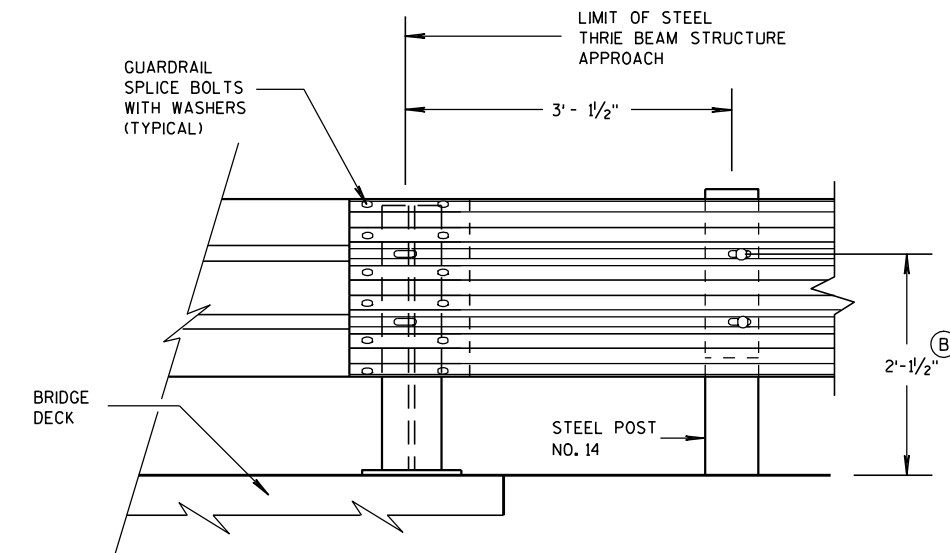


BACK-UP PLATE MOUNTING ONTO BRIDGE RAILING



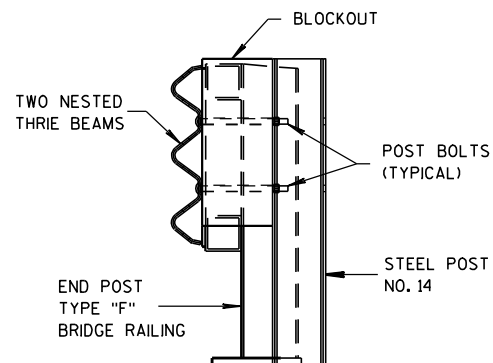
FRONT VIEW

THRIE BEAM CONNECTION TO TUBULAR RAILING TYPE "F"



FRONT VIEW

THRIE BEAM CONNECTION TO STEEL RAILING TYPE "W"



SECTION K-K

GENERAL NOTES

- ① DRILLING HOLES THROUGH THE PAPER, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.
- ② TOLERANCE FOR TOP OF BEAM IS $\pm 1"$.

**MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)**

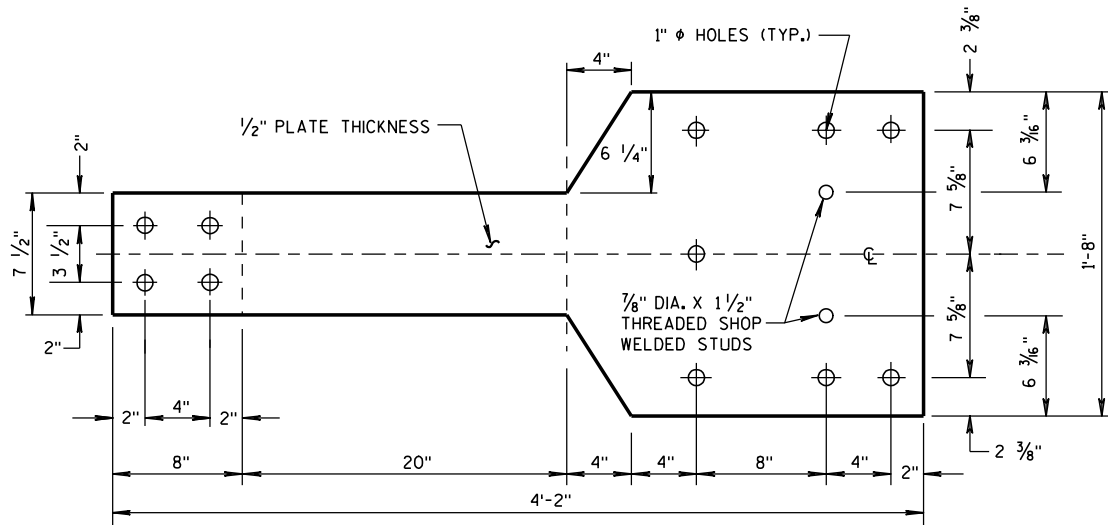
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
8/31/2012
DATE
FHWA

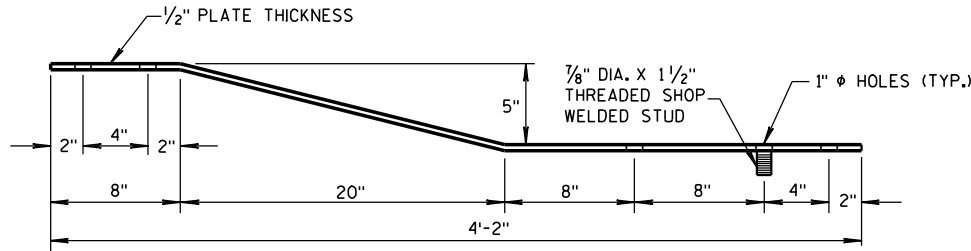
/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER

GENERAL NOTES

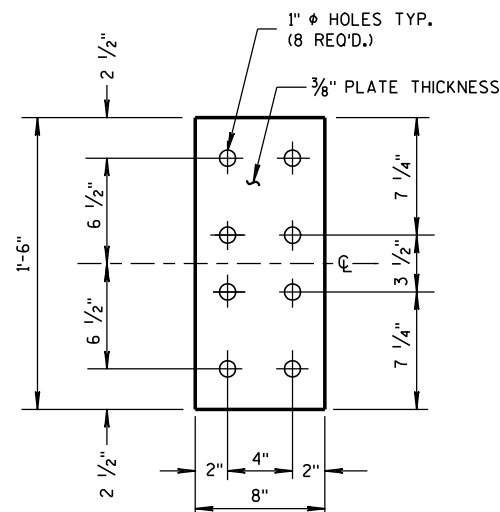
(B) TOLERANCE FOR TOP OF W-BEAM RAIL IS $\pm 1"$.



FRONT VIEW

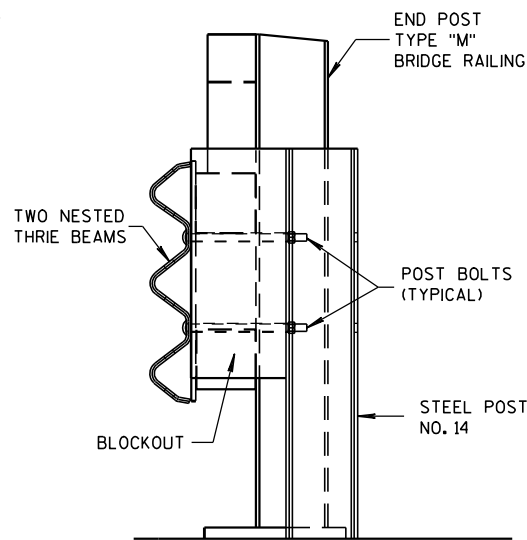


PLAN VIEW
BACK-UP PLATE DETAIL, TYPE "M"

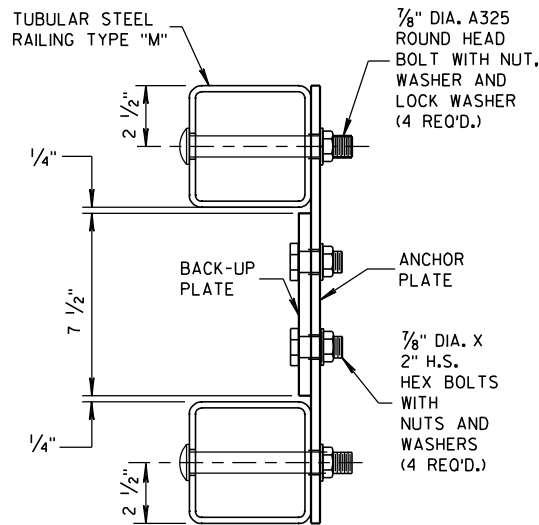


FRONT VIEW

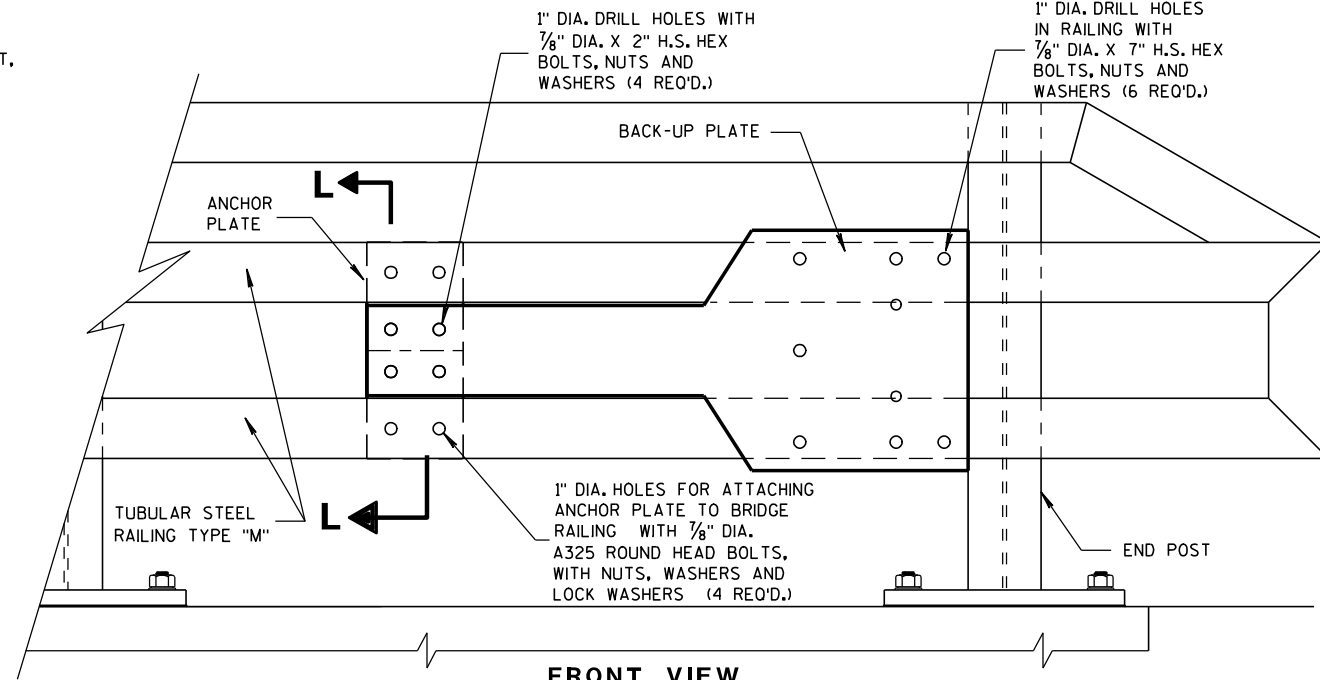
ANCHOR
PLATE DETAIL,
TYPE "M"



SECTION M-M

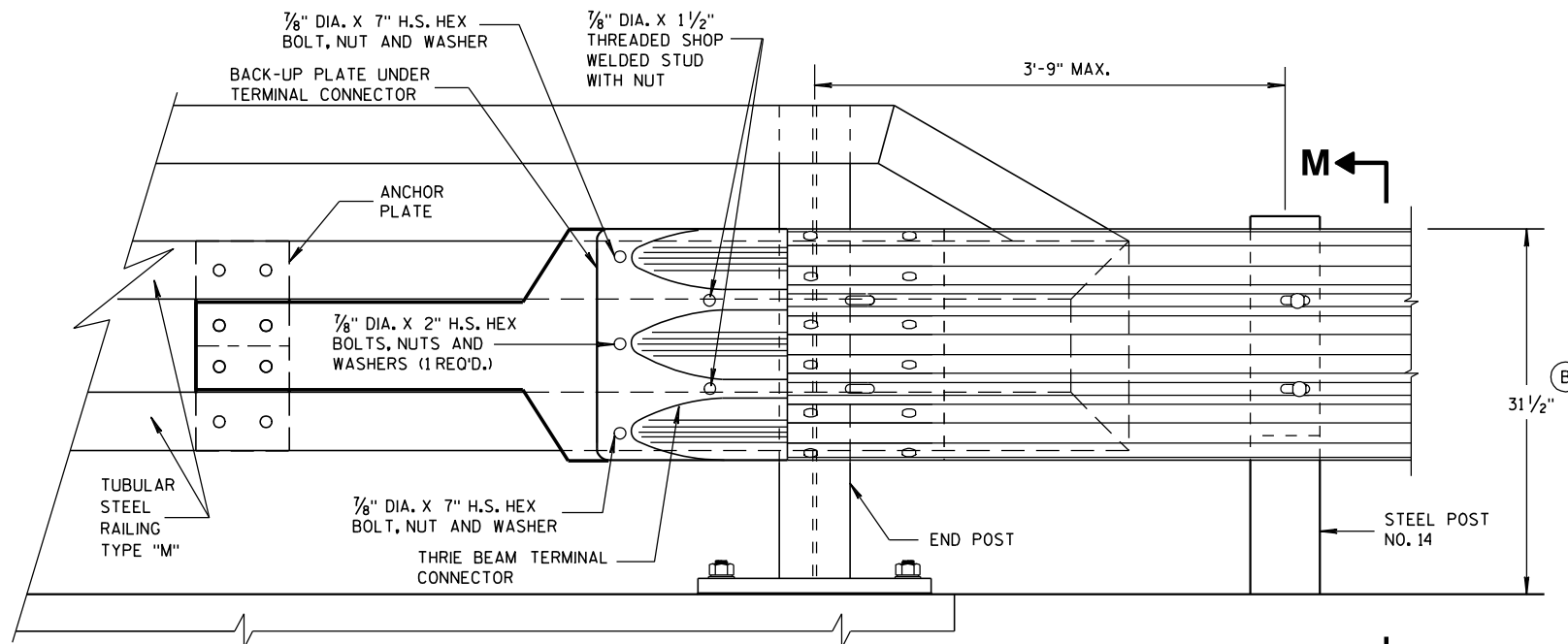


SECTION L-L

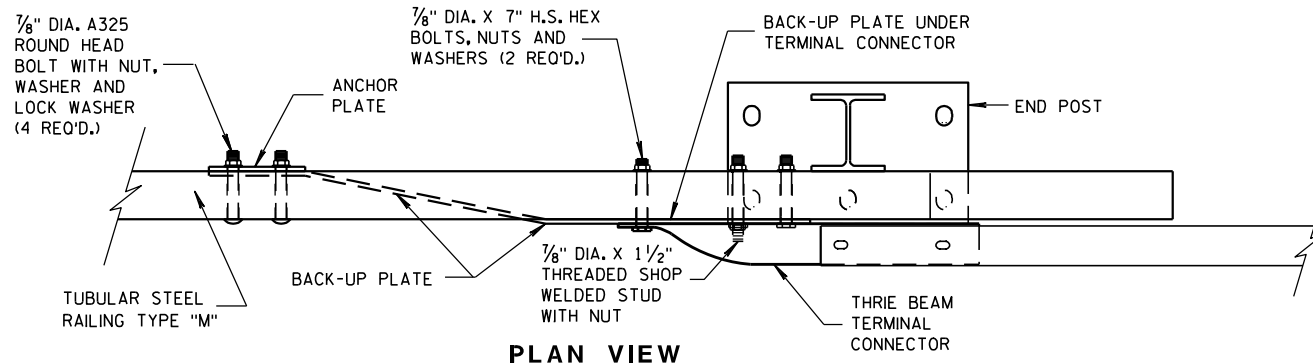


FRONT VIEW

ANCHOR AND BACK-UP PLATE MOUNTING TO BRIDGE RAILING, TYPE "M"



FRONT VIEW



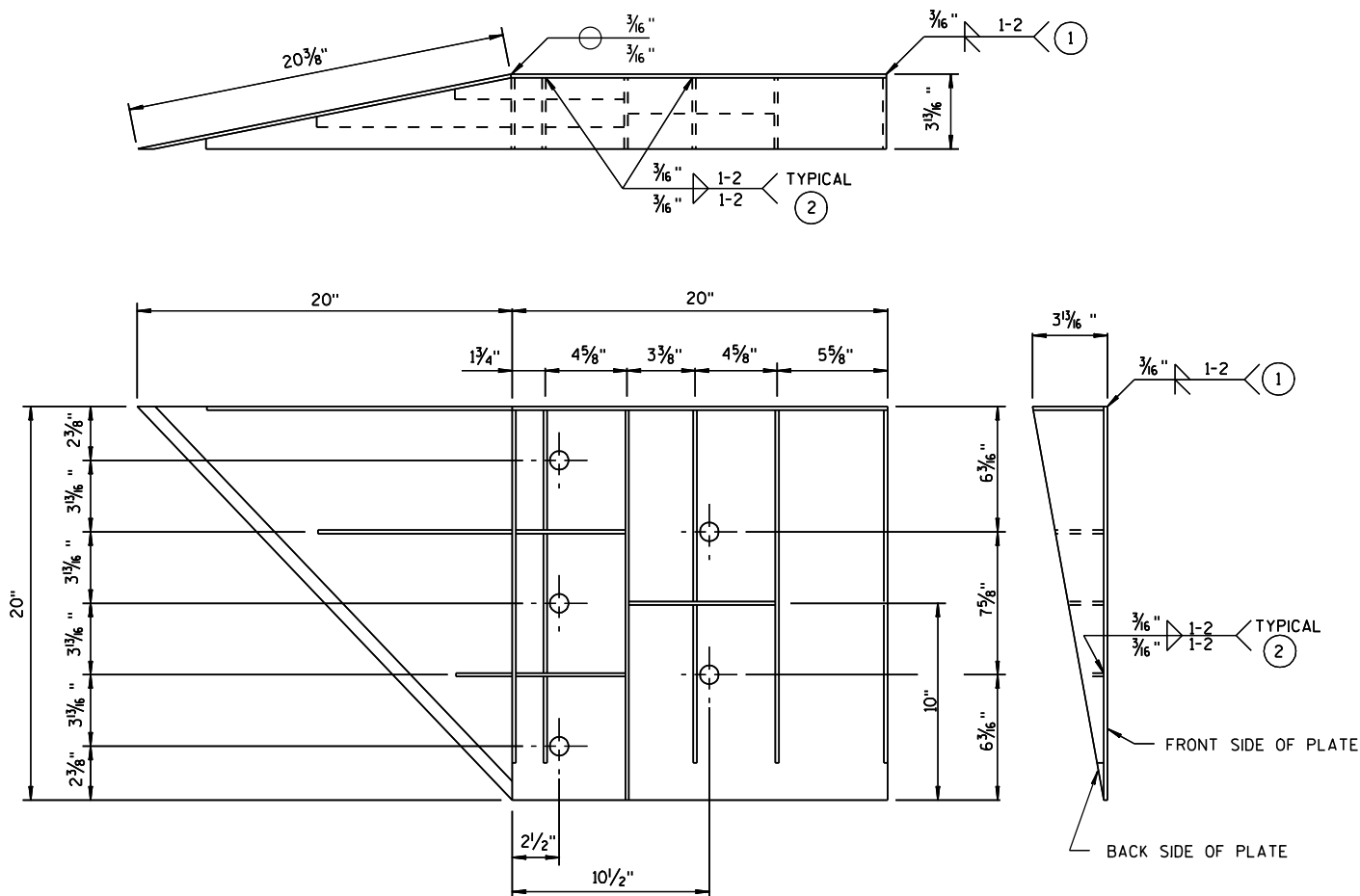
PLAN VIEW

THRIE BEAM CONNECTION TO TUBULAR RAILING, TYPE "M"

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
8-31-2012 DATE /S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER
FHWA

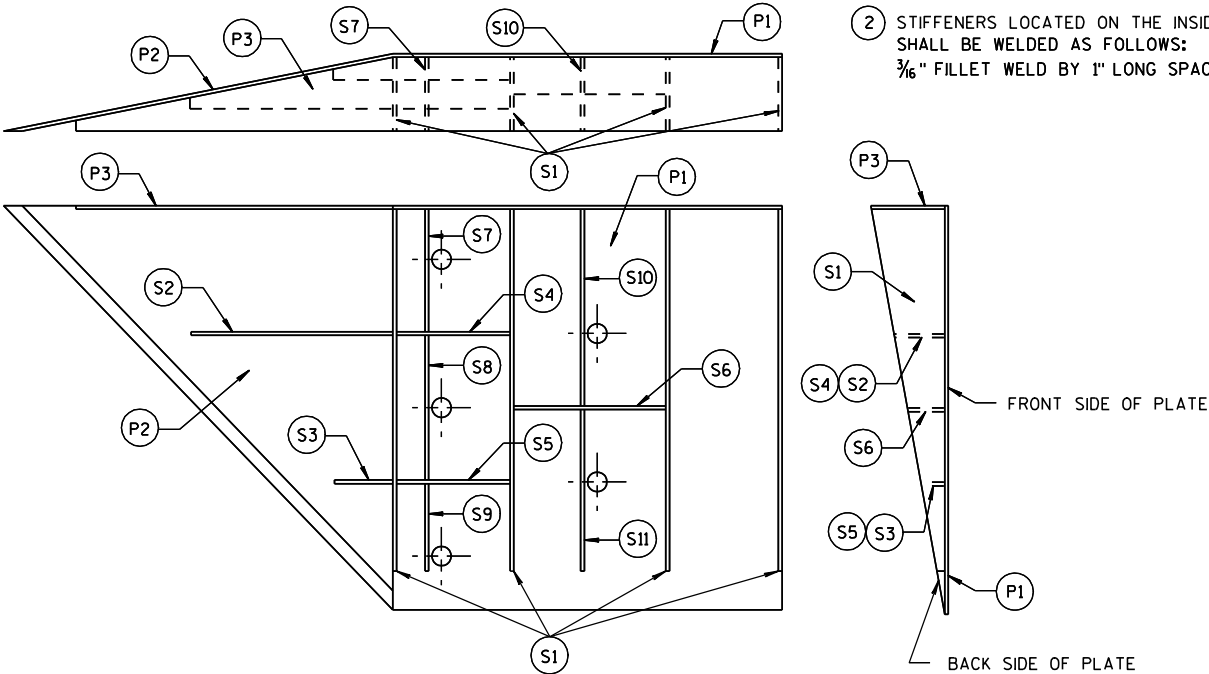


WELDING INSTRUCTION
(VIEWED FROM BACK SIDE OF PLATE)

SINGLE SLOPE CONNECTION PLATE

CONNECTOR PLATE DIMENSION (PER ASSEMBLY)				
PLATE	QUANTITY	SHAPE	SIZE (A x B x C x D)	THICKNESS
P1	1		20" x 20"	3/16"
P2	1		20" x 20" x 28 5/16"	3/16"
P3	1		39" x 3 5/8" x 20" x 19 5/16"	3/16"
S1	4		18 7/16" x 3 5/8" x 18 3/4"	1/4"
S2	1		10 1/4" x 2 7/16" x 10 3/8" x 1/2"	1/4"
S3	1		3" x 1 1/16" x 3 1/8" x 1/2"	1/4"
S4	1		6 1/8" x 2 1/16"	1/4"
S5	1		6 1/8" x 1 1/16"	1/4"
S6	1		7 3/4" x 1 3/4"	1/4"
S7	1		2 9/16" x 6" x 3 5/8" x 5 7/8"	1/4"
S8	1		1 7/32" x 7 1/2" x 2 1/2" x 7 3/8"	1/4"
S9	1		6 1/16" x 6 3/16" x 1 1/32"	1/4"
S10	1		1 7/8" x 9 7/8" x 3 5/8" x 9 1/16"	1/4"
S11	1		8 1/2" x 8 3/4" x 1 1/16"	1/4"

PLATE AND STIFFENER IDENTIFICATION
(VIEWED FROM BACK SIDE OF PLATE)



GENERAL NOTES

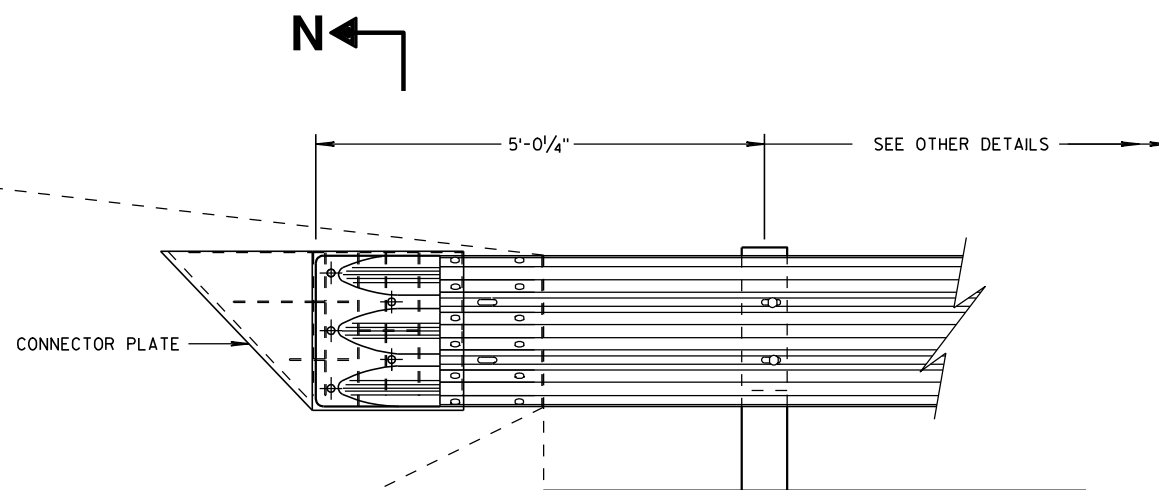
- COVER PLATE PANELS ARE 3/16" THICK.
- ALL STIFFENERS ARE 1/4" THICK.
- CONNECTOR PLATE SHALL BE FABRICATED FROM ASTM GRADE A36 STEEL AND GALVANIZED.
- FOR GALVANIZED REQUIREMENTS, SEE SECTION 614 OF THE STANDARD SPECIFICATIONS.
- ALL HOLE DIAMETERS SHALL BE 1".
- FOR OPPOSITE SIDE INSTALLATION MIRROR DRAWINGS.

- 1 STIFFENERS LOCATED AT THE OUTSIDE EDGES OF THE COVER PLATES SHALL BE WELDED AS FOLLOWS:
SINGLE BEVEL GROOVE WELD ON EXTERNAL SIDES AND 3/16" FILLET WELD BY 1" LONG SPACED AT 2" ON INTERNAL SIDES.
- 2 STIFFENERS LOCATED ON THE INSIDE OF THE COVER PLATE SHALL BE WELDED AS FOLLOWS:
3/16" FILLET WELD BY 1" LONG SPACED AT 2".

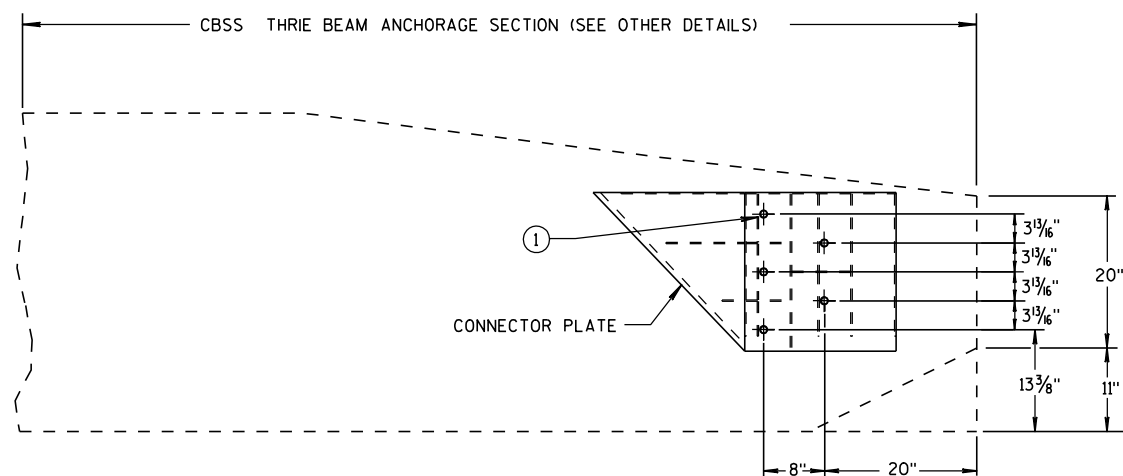
MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
8/31/2012 DATE /S/ Jerry H. Zogg
FHWA ROADWAY STANDARDS DEVELOPMENT ENGINEER



THRIE BEAM CONNECTION TO SINGLE SLOPE BARRIER

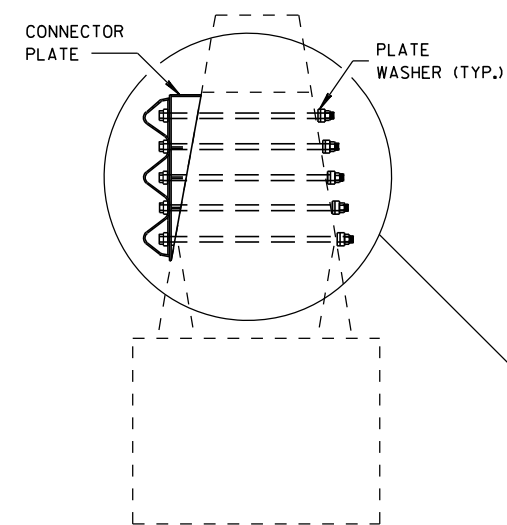


SINGLE SLOPE CONNECTION PLATE PLACEMENT

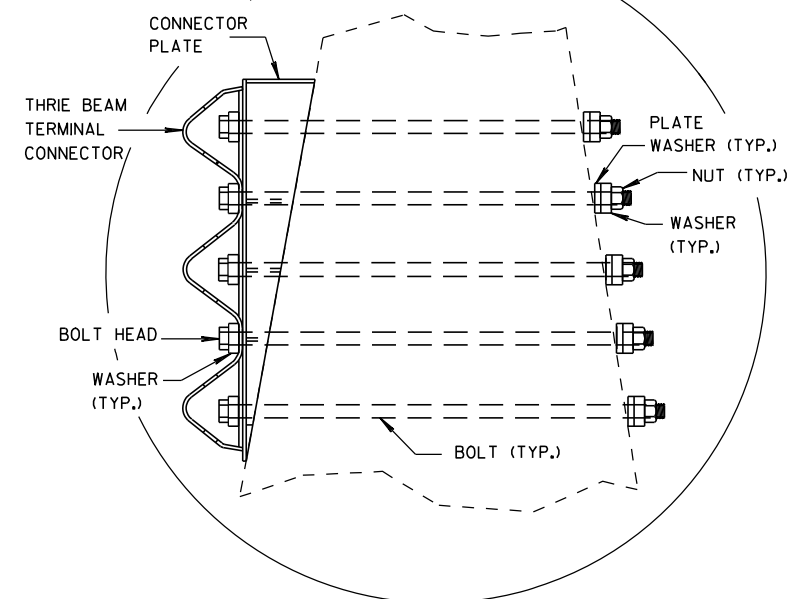
GENERAL NOTES

CONNECTOR PLATE, DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

- ① BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X 5/8" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.



SECTION N-N



**MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)**

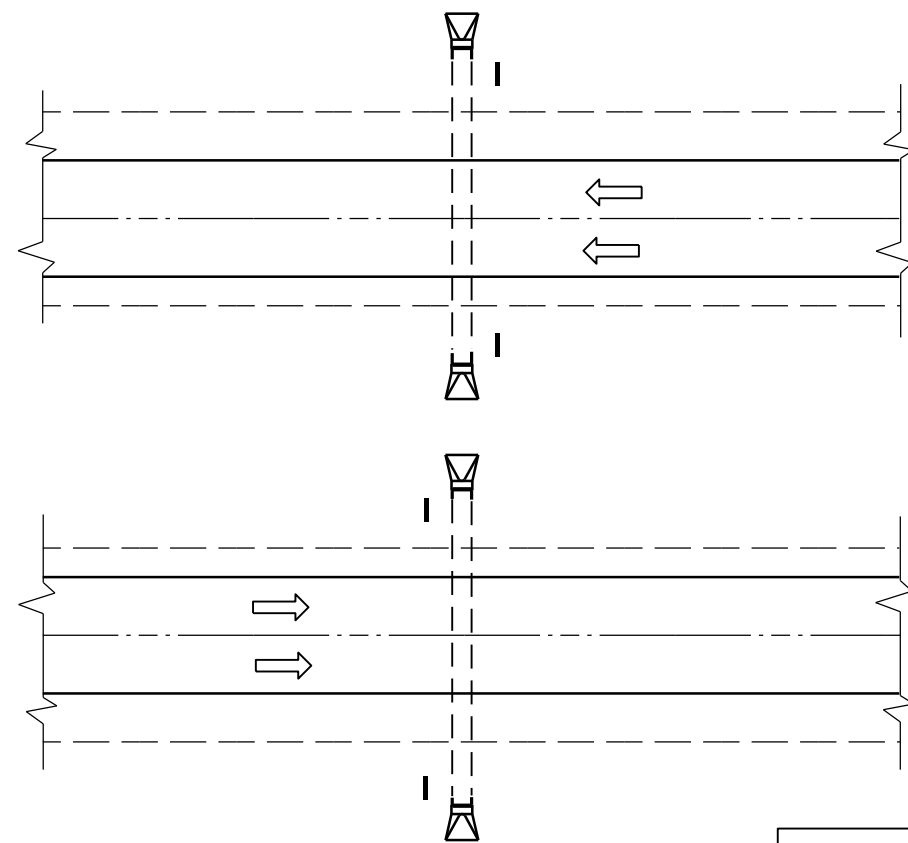
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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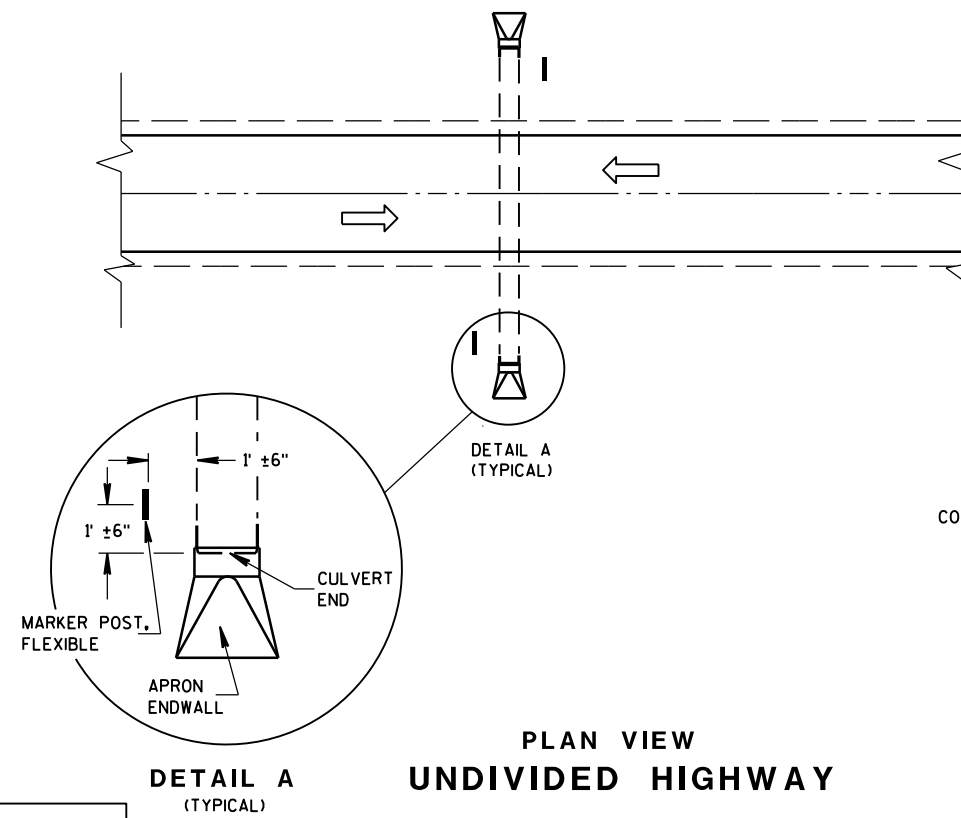
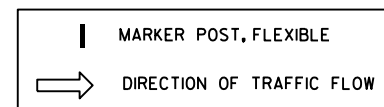
8/31/2012
DATE

FHWA

/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER



PLAN VIEW
DIVIDED HIGHWAY



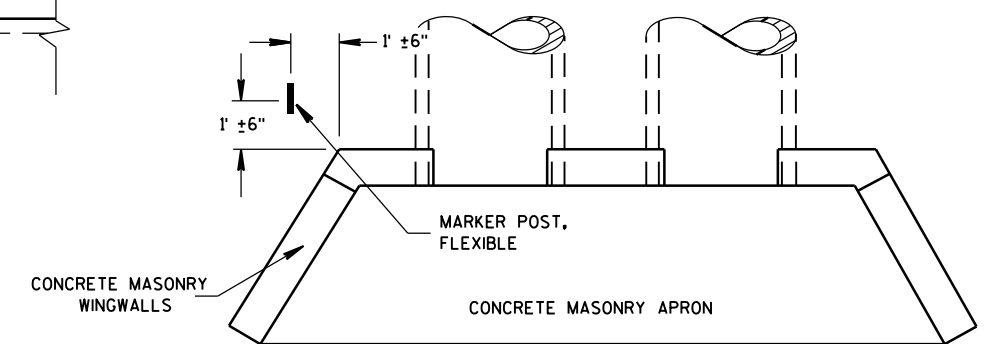
DETAIL A
(TYPICAL)

PLAN VIEW
UNDIVIDED HIGHWAY

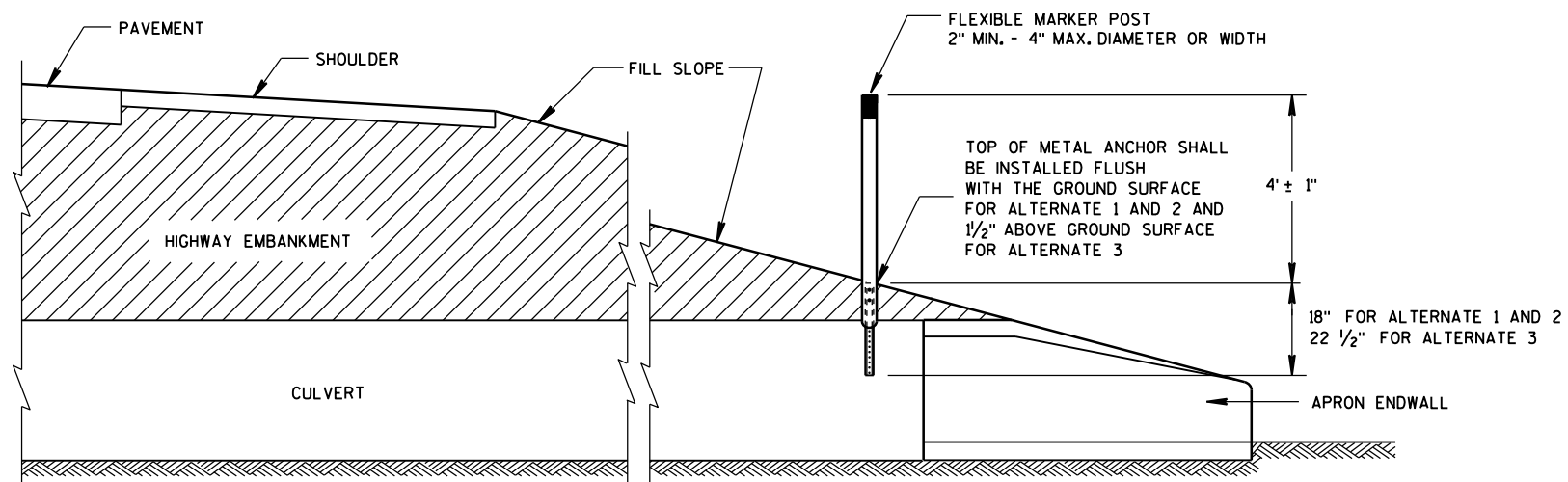
FLEXIBLE MARKER POST LOCATION

GENERAL NOTES

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



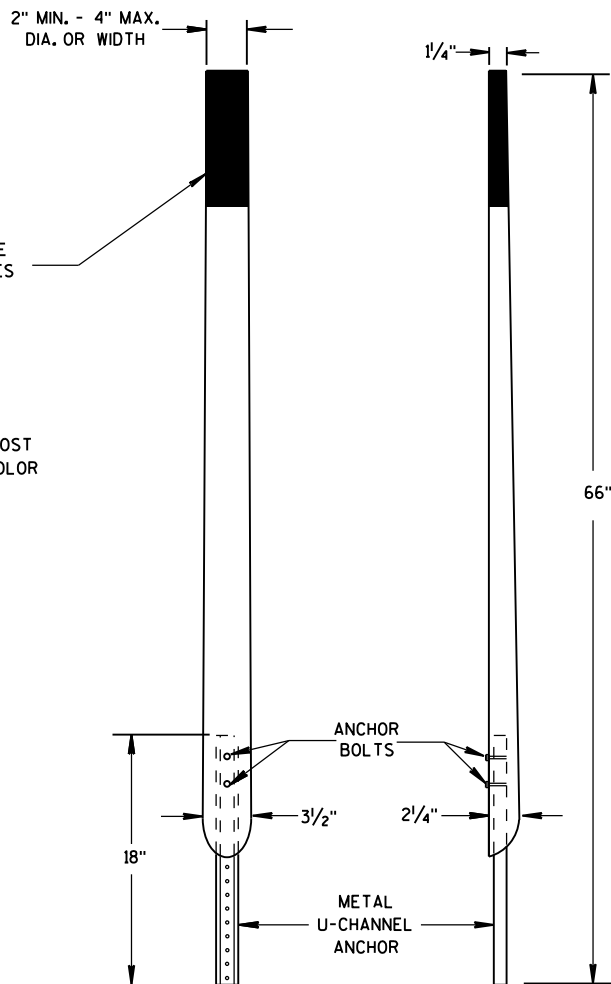
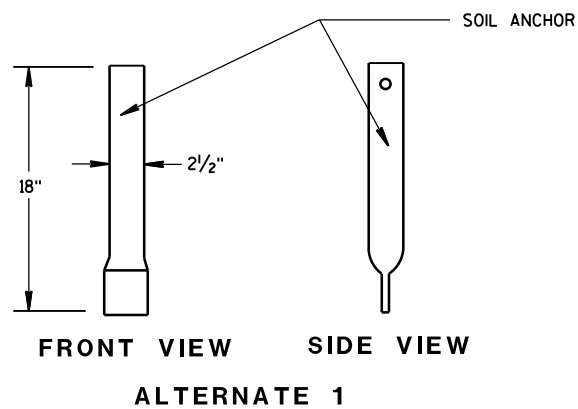
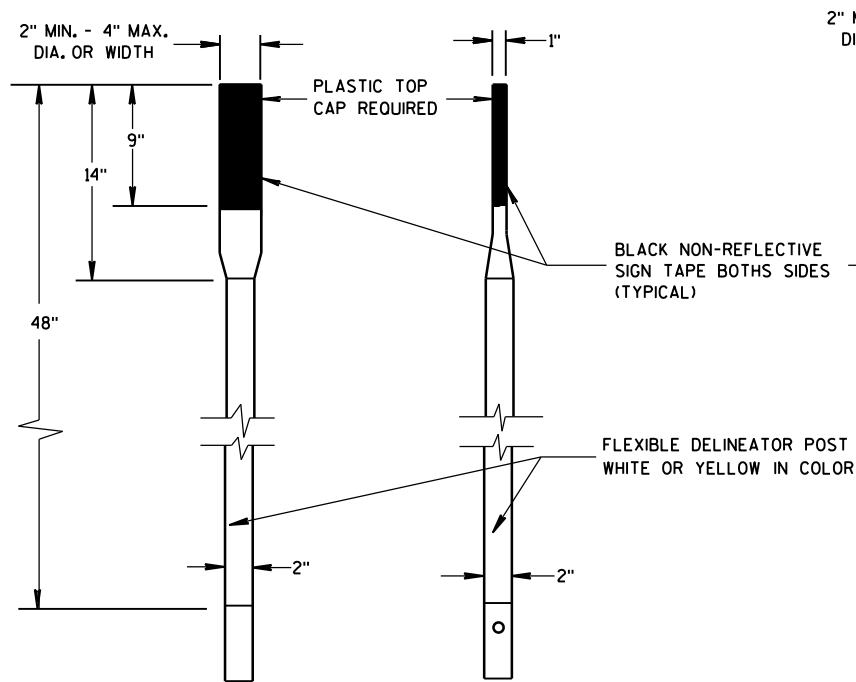
PLAN VIEW
CONCRETE MASONRY ENDWALLS FOR
CULVERT PIPE AND PIPE ARCH



CROSS SECTION
FLEXIBLE MARKER POST

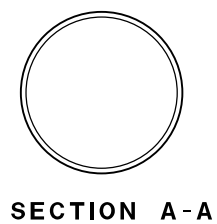
FLEXIBLE MARKER POST
FOR CULVERT END

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

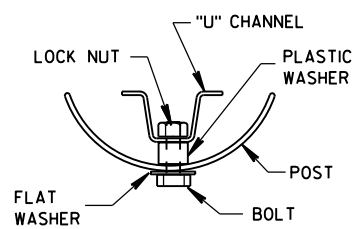
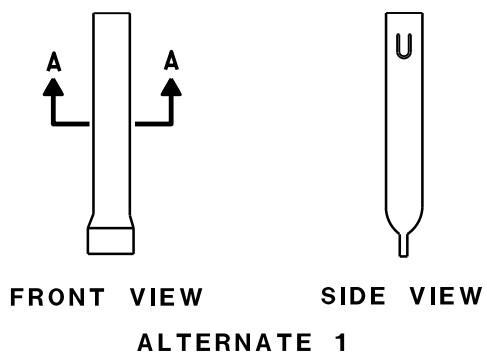


FRONT VIEW SIDE VIEW
ALTERNATE 2

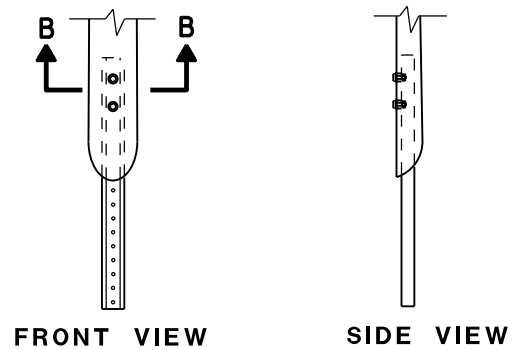
FLEXIBLE MARKER POSTS



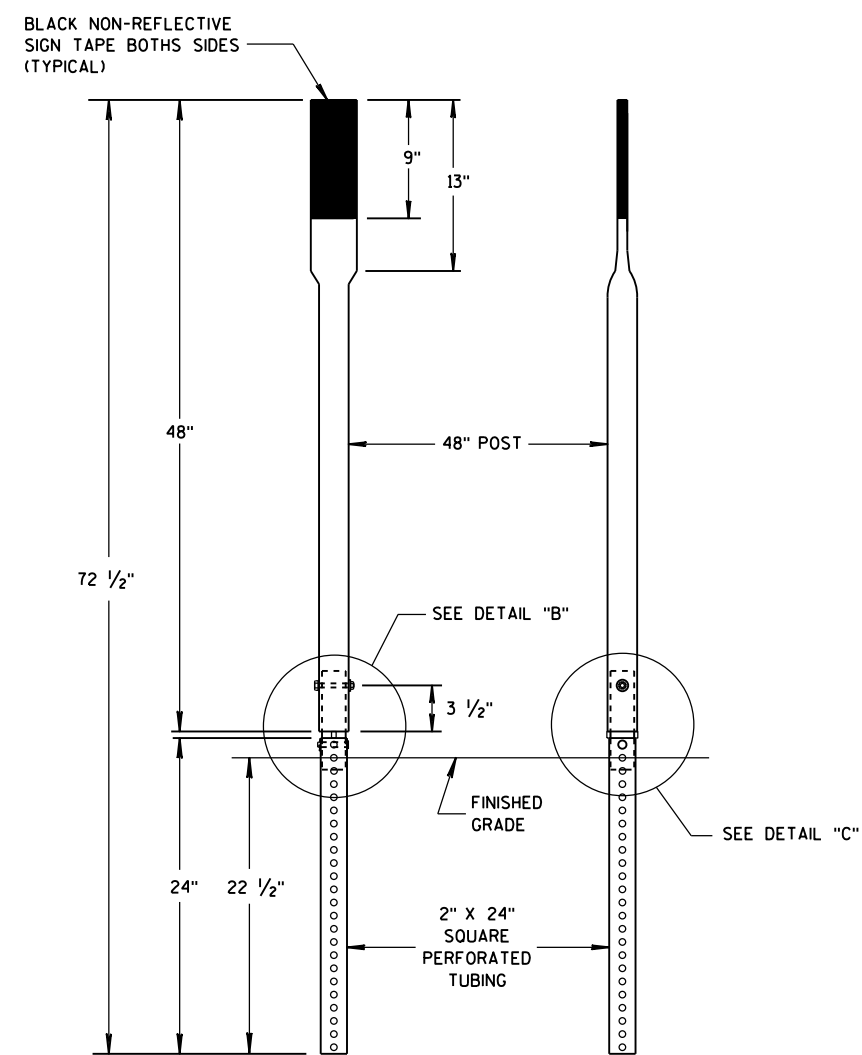
SECTION A-A



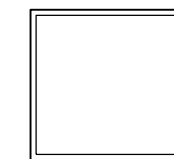
SECTION B-B



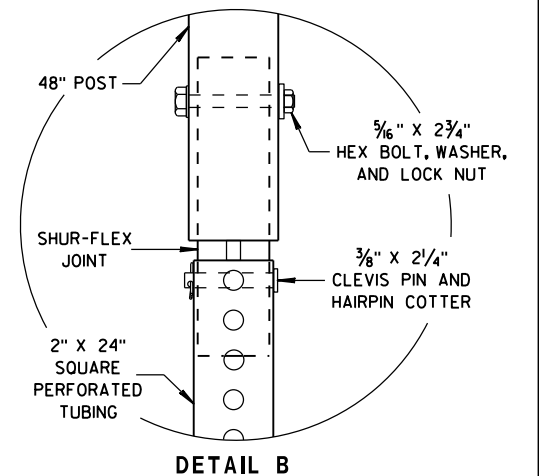
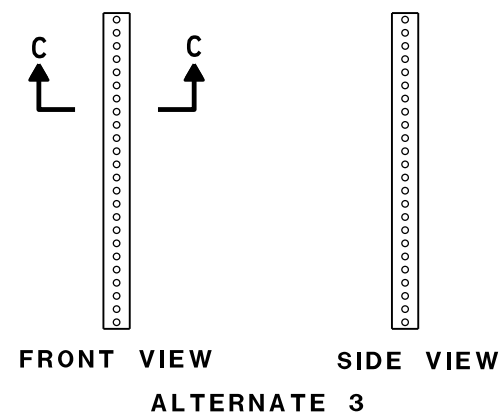
FRONT VIEW SIDE VIEW
ALTERNATE 2
FLEXIBLE MARKER POST ANCHORS



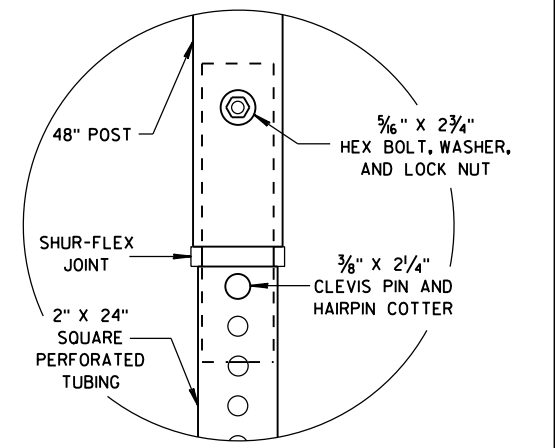
FRONT VIEW SIDE VIEW
ALTERNATE 3



SECTION C-C



DETAIL B



DETAIL C

FLEXIBLE MARKER POST FOR CULVERT END

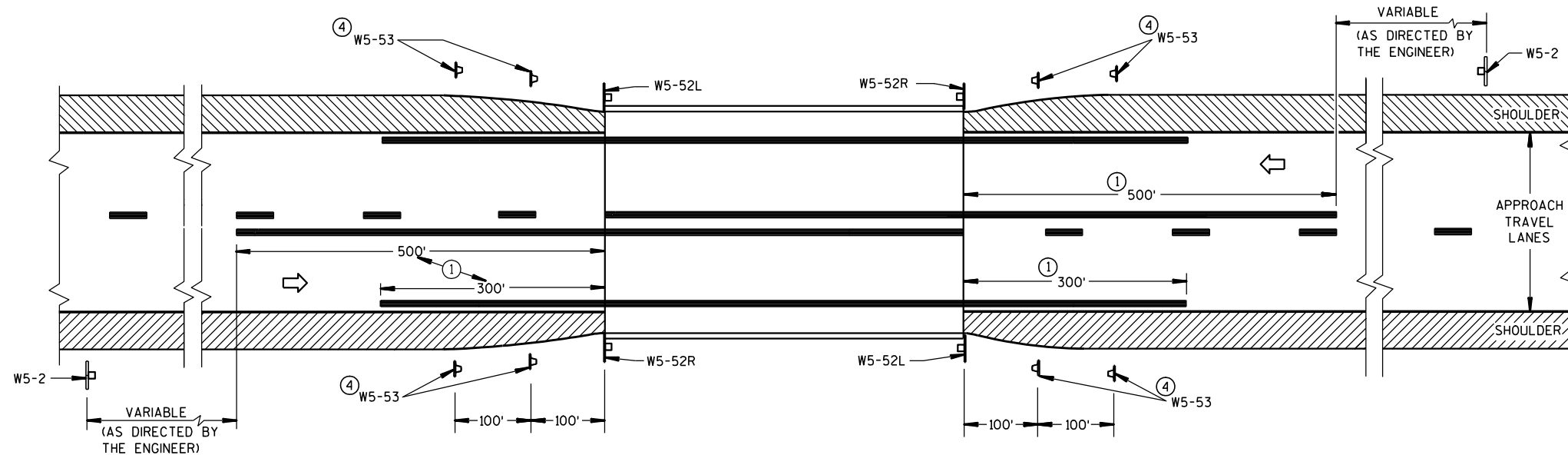
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

10/1/2012
DATE

FHWA

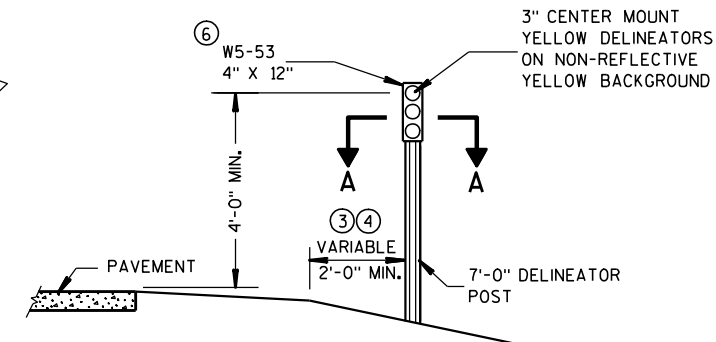
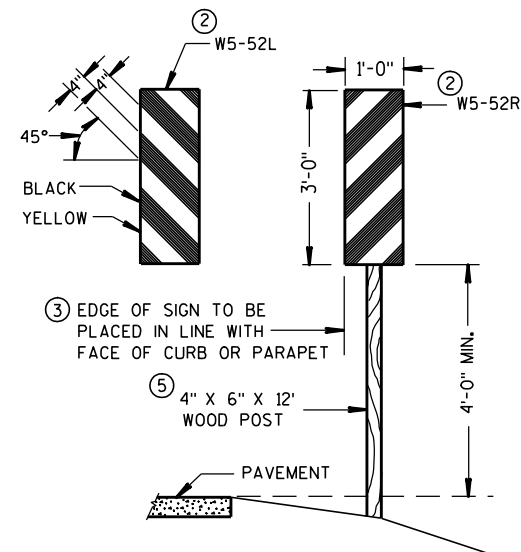
/S/ Travis Feltes
STATE TRAFFIC ENGINEER OF DESIGN



SITUATION 1

WARRANTING CRITERION:

BRIDGE WIDTH IS AT LEAST 18 FEET BUT LESS THAN 24 FEET



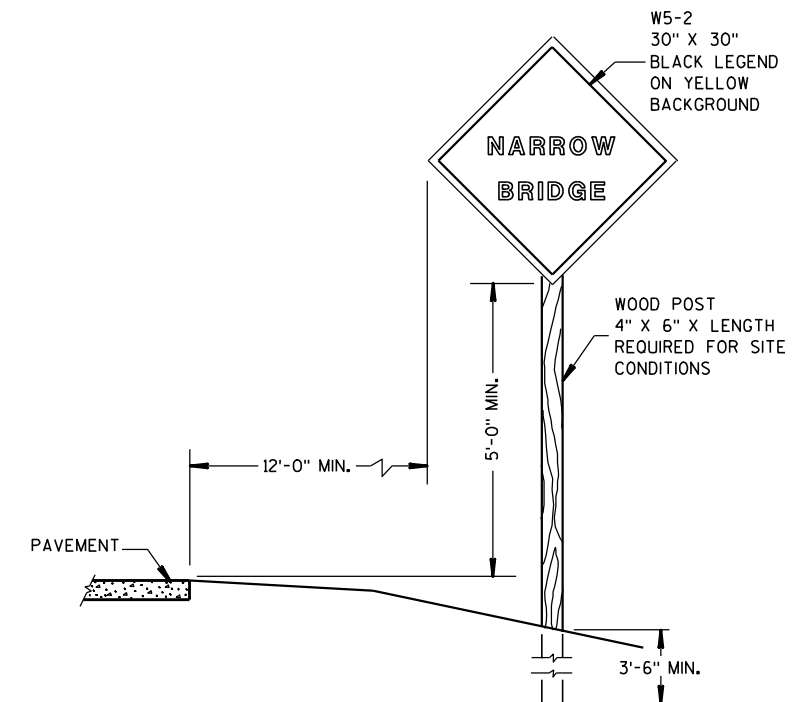
OBJECT MARKER PLACEMENT

GENERAL NOTES

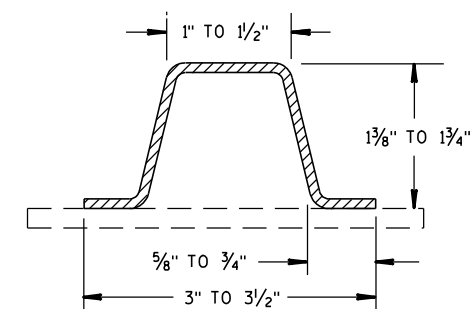
DETAILS OF TRAFFIC CONTROL DEVICES AND INSTALLATION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS, THE SPECIAL PROVISIONS, AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

PAVEMENT MARKING SHOWN ON THIS DRAWING IS NOT REQUIRED UNLESS OTHERWISE SPECIFIED IN THE CONTRACT. WHEN SPECIFIED, PAVEMENT MARKING SHALL CONFORM TO THIS DRAWING AND OTHER CONTRACT REQUIREMENTS.

- ① MINIMUM DISTANCE UNLESS OTHERWISE SHOWN ON THE PLAN.
- ② FACE OF OBJECT MARKERS W5-52R AND W5-52L SHALL BE COVERED WITH TYPE H REFLECTIVE SHEETING.
- ③ LOCATE OBJECT MARKER POST(S) BEHIND GUARDRAIL WHEN PRESENT.
- ④ OBJECT MARKERS (W5-53) SHALL BE LOCATED ALONG A LINE FLARED AWAY FROM THE BRIDGE CORNER TO DELINEATE THE NARROWING OF THE SHOULDER OR BERM.
- ⑤ A 12 FOOT DELINEATOR POST MAY BE USED INSTEAD OF A WOOD POST.
- ⑥ NON-BID ITEM. INCIDENTAL TO OTHER ITEMS.

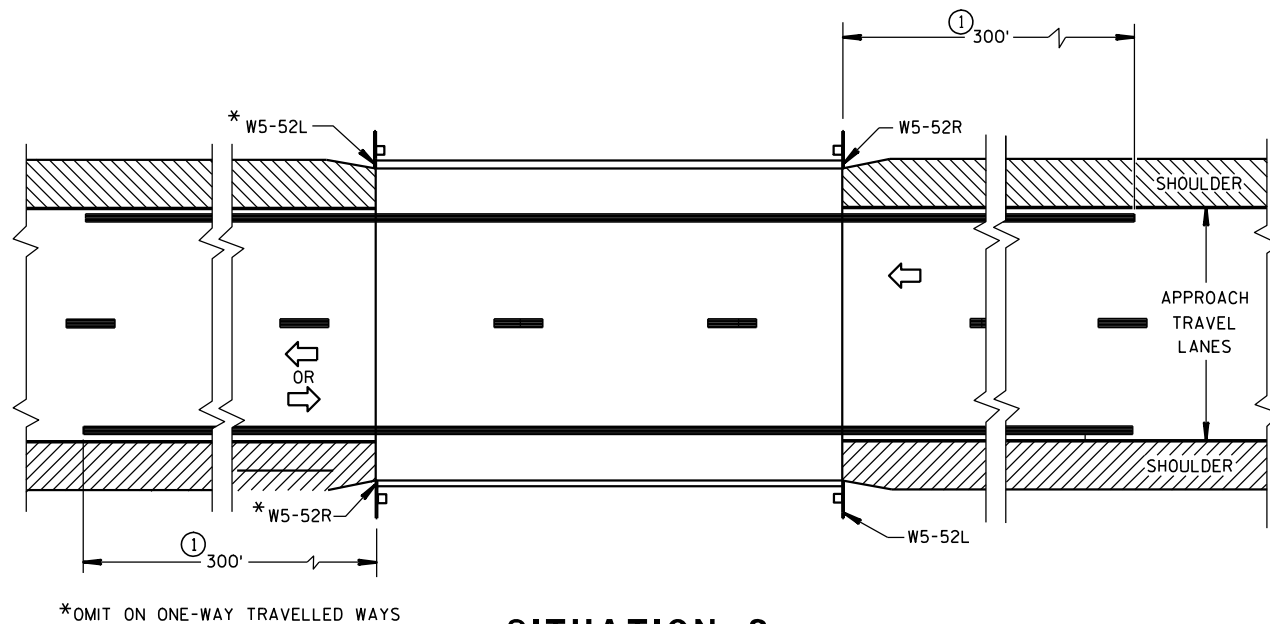


SIGN PLACEMENT



SECTION A-A

(MINIMUM WEIGHT 1.9 LBS. PER FT. AFTER GALVANIZING)



SITUATION 2

WARRANTING CRITERIA:

1. BRIDGE WIDTH IS AT LEAST 24 FEET AND
2. BRIDGE IS LESS THAN 6 FEET WIDER (ON EACH SIDE) THAN APPROACH TRAVEL LANES.

SIGNING & MARKING FOR TWO LANE BRIDGES

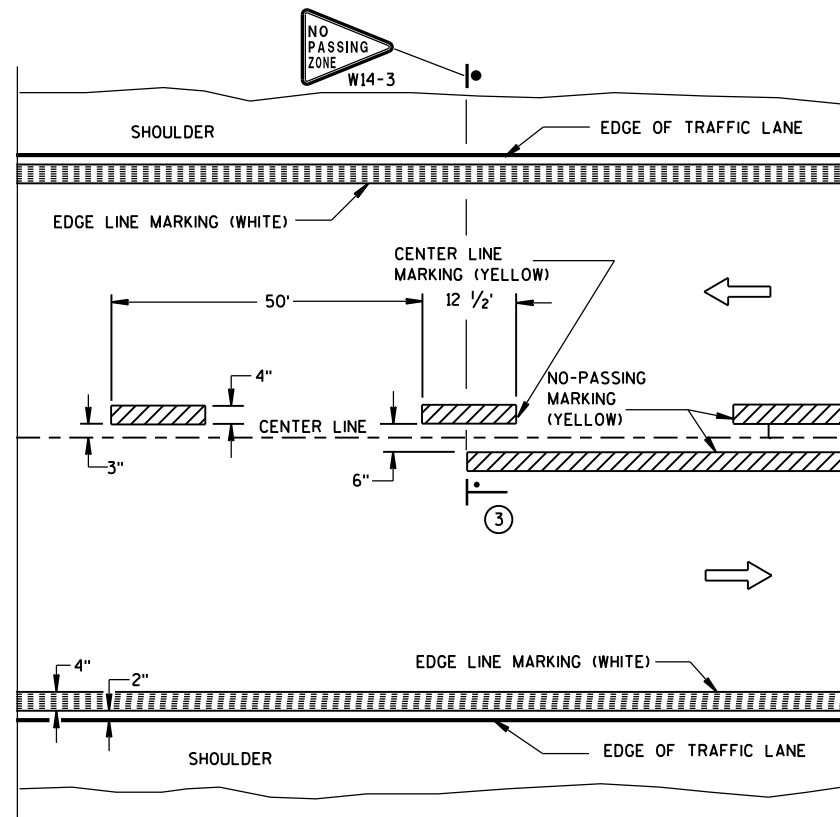
STATE OF WISCONSIN
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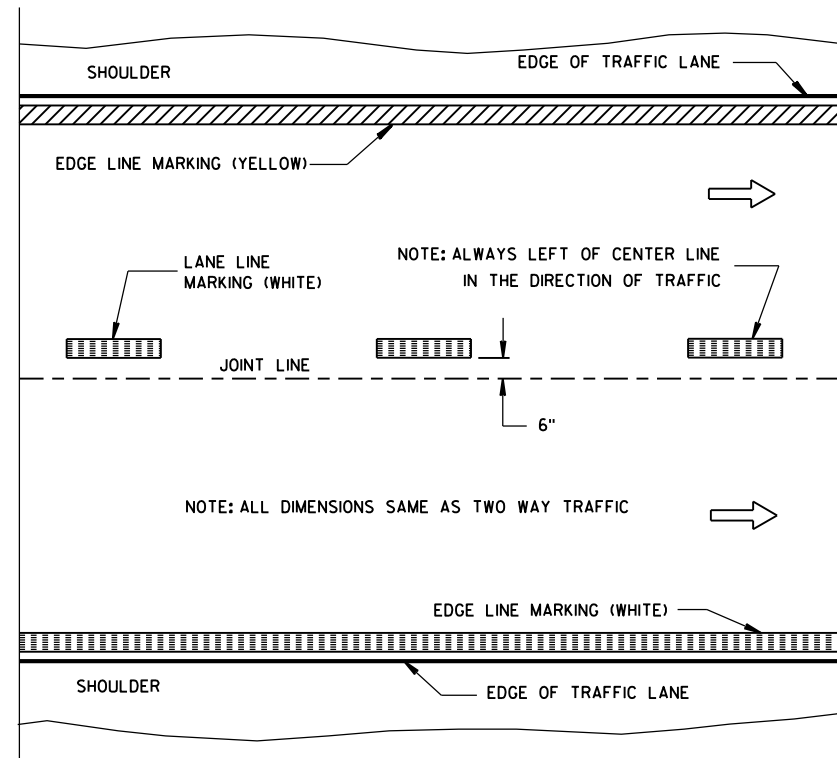
9/5/06
DATE

FHWA

/S/ Thomas N. Notbohm
STATE TRAFFIC ENGINEER OF DESIGN

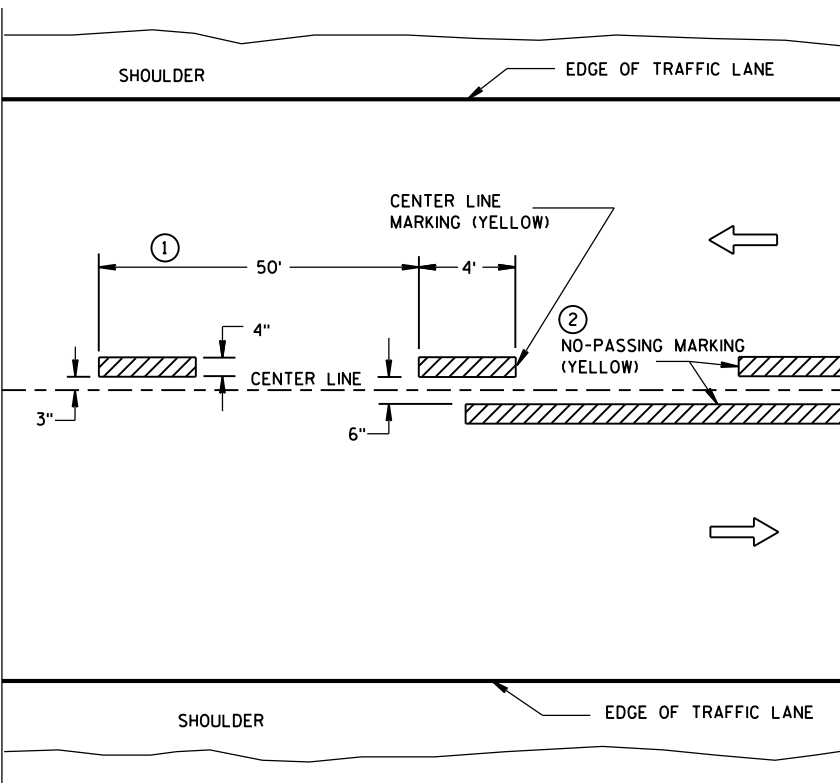


TWO WAY TRAFFIC

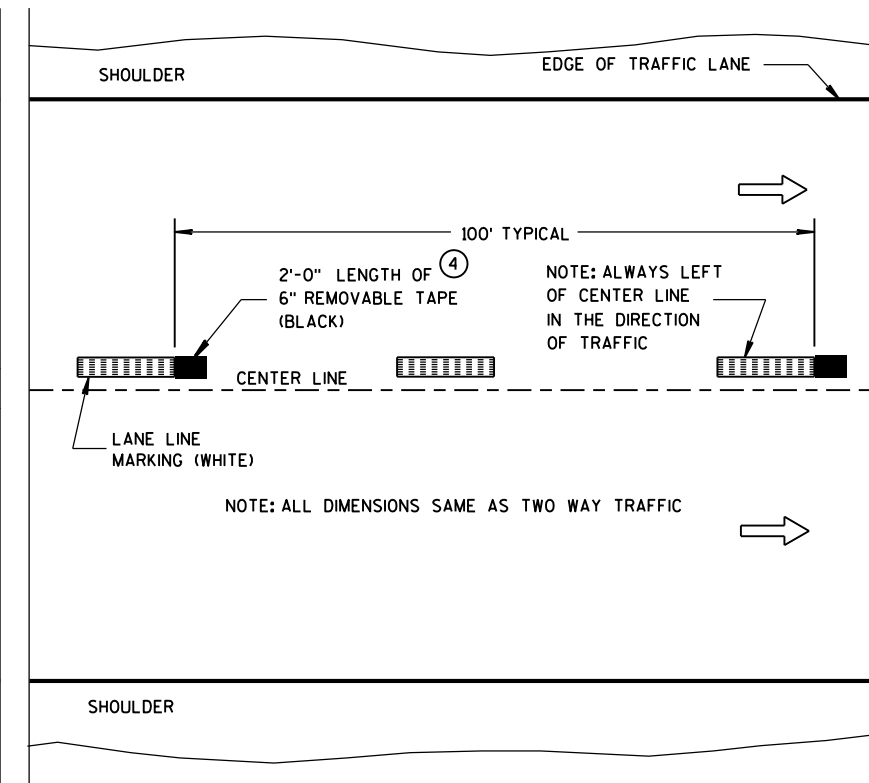


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

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

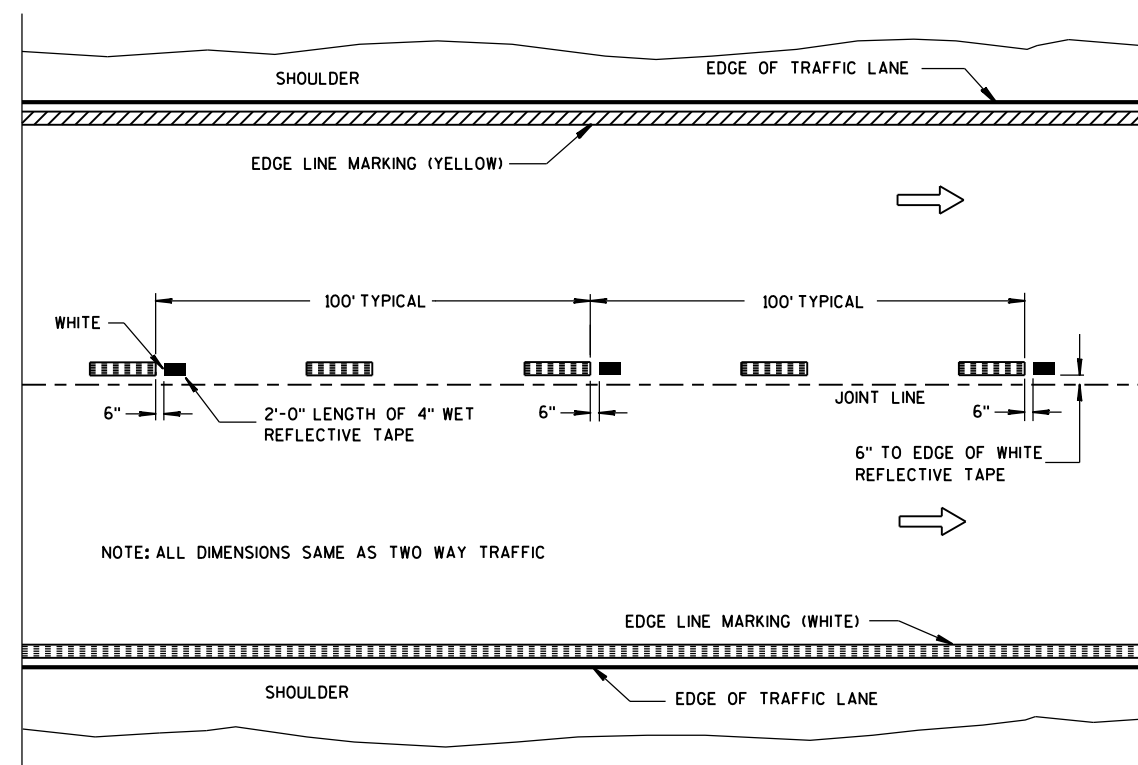
GENERAL NOTES

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 NO PASSING ZONE MARKINGS ARE PLACED ACCORDING TO "T" MARKINGS. IF EXISTING NO PASSING ZONE W14-3 SIGNS ARE BEYOND 50 FEET IN EITHER DIRECTION, THE SIGNS SHALL BE MOVED TO THE "T" MARKINGS.
- ④ CONCRETE ONLY.

NOTE

ARROW SYMBOL (→) SHOWS DIRECTION OF TRAVEL



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

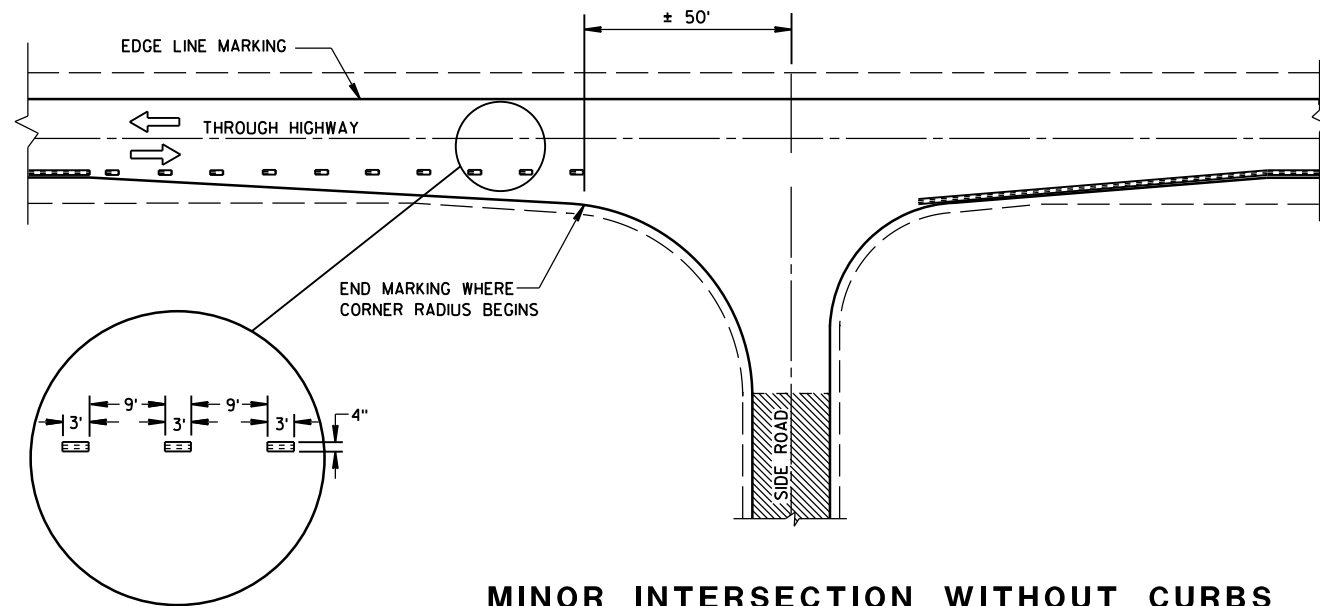
LEGEND

- "T" MARKING
- POST MOUNTED SIGN

PAVEMENT MARKING
(MAINLINE)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

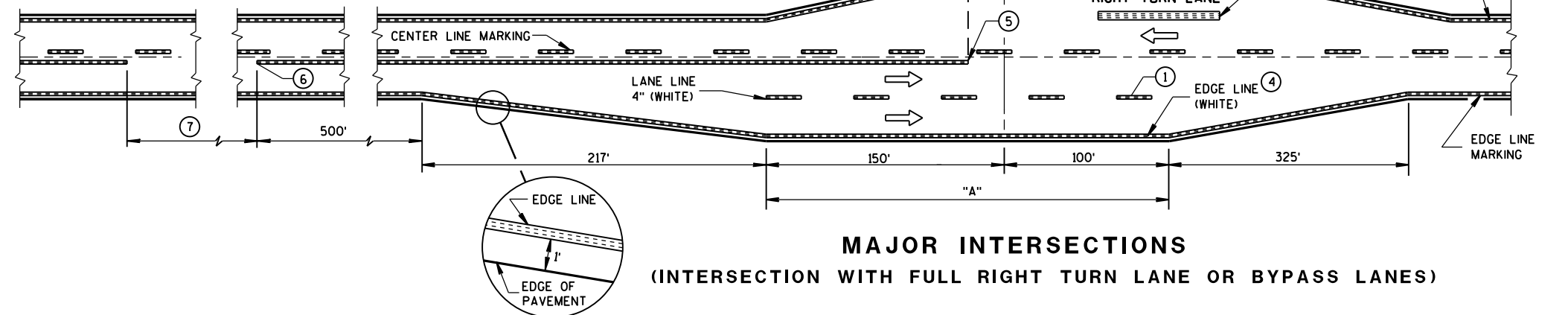
APPROVED
10-1-2012 /S/ Travis Feltes
DATE STATE TRAFFIC ENGINEER OF DESIGN
FHWA



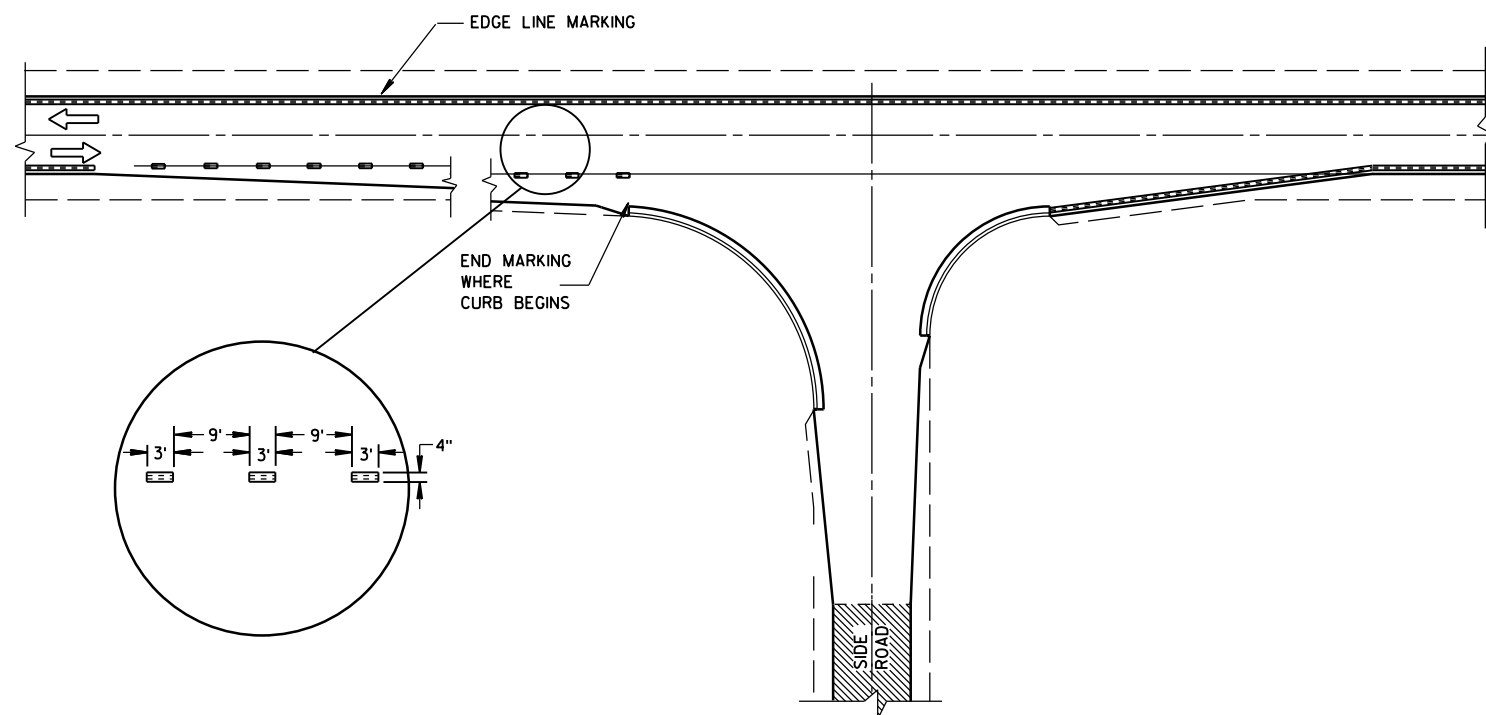
MINOR INTERSECTION WITHOUT CURBS

⑦

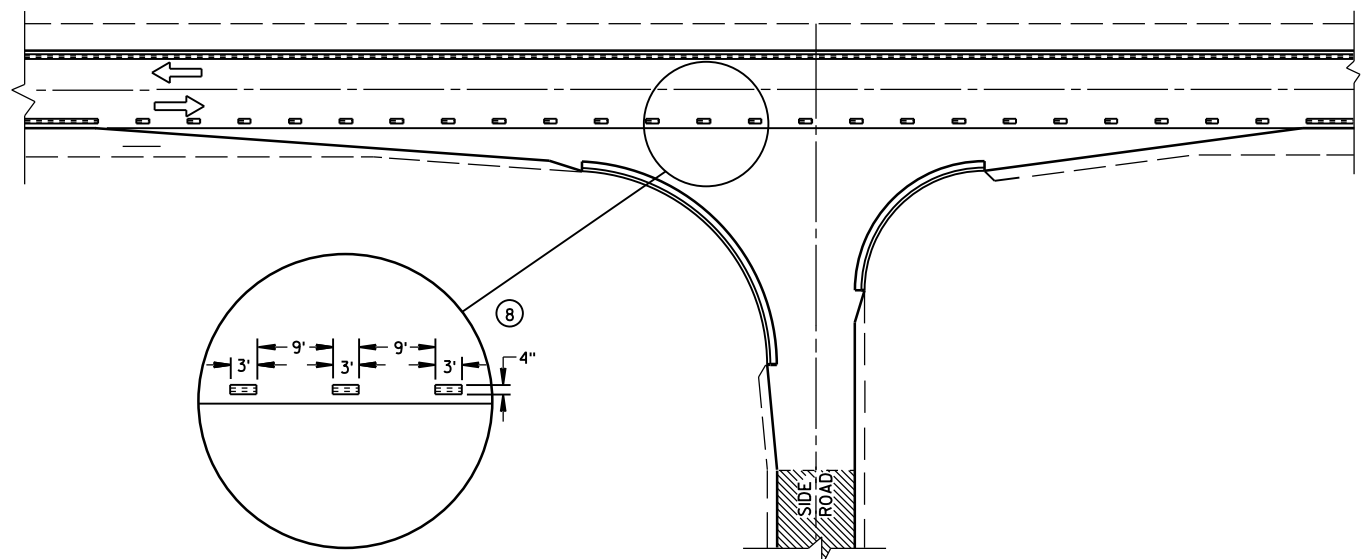
POSTED SPEED (MPH)	MINIMUM DISTANCE BETWEEN ZONES (FEET)
25 - 30	528
35 - 40	528
45 - 50	686
55	792



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



MINOR INTERSECTION WITH CURBS
(TYPICAL MARKING)



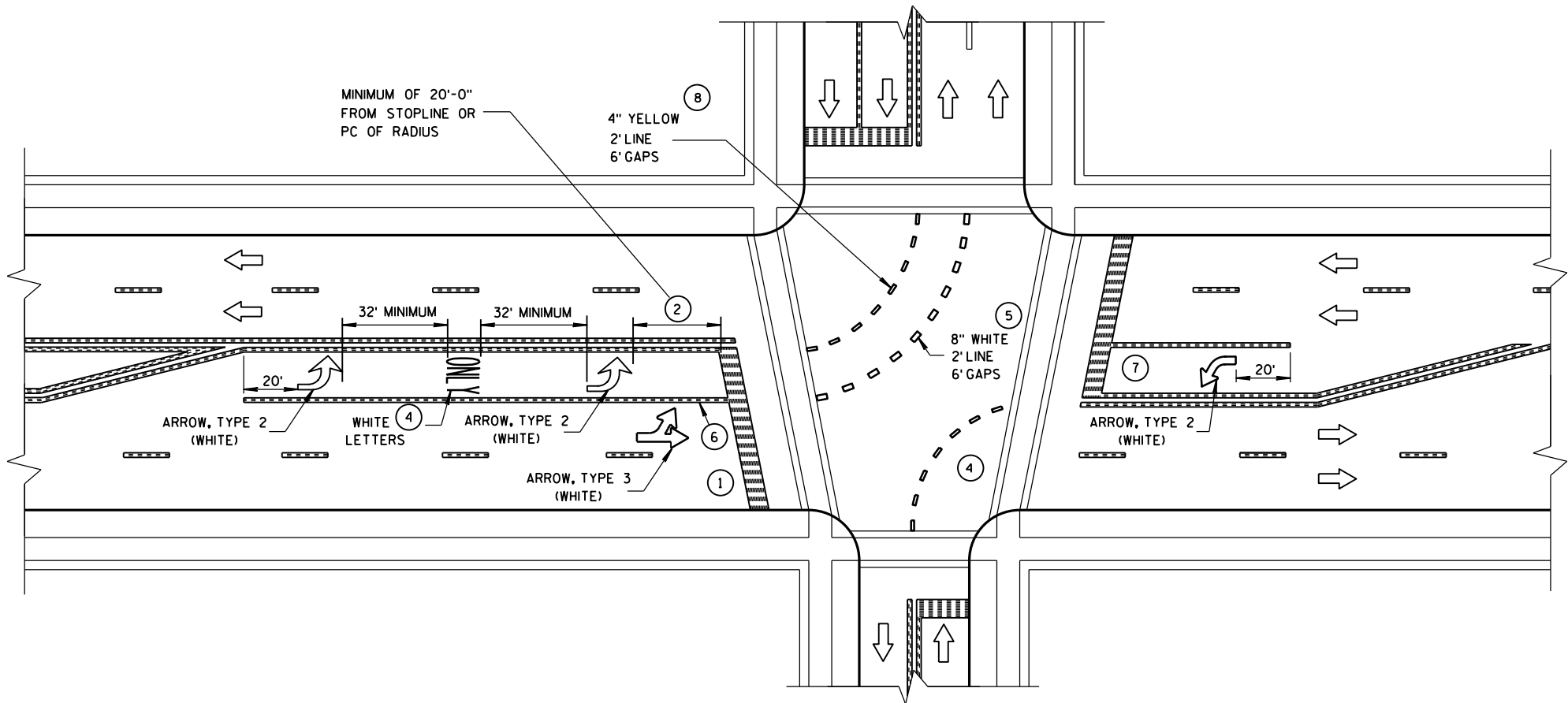
MINOR INTERSECTION WITH CURBS
③ (FOR SPECIAL CONDITIONS AS SPECIFIED)

GENERAL NOTES

- EDGE LINES SHALL BE OMITTED THROUGH INTERSECTIONS. EDGE LINES SHALL BE CONTINUED THROUGH DRIVEWAYS.
- ① WHEN DISTANCE "A" IS LESS THAN 250 FEET, OMIT LANE LINE.
 - ② WHEN DISTANCE "B" IS LESS THAN 100 FEET, OMIT CHANNELIZING LANE LINE.
 - ③ ALTERNATIVE MARKING SHALL BE PROVIDED WHEN SPECIFIED IN THE CONTRACT. TYPICAL SITUATIONS WHERE THIS MARKING MAY BE REQUIRED ARE WHERE THE INTERSECTION IS ON A SHARP HORIZONTAL CURVE OR CREST VERTICAL CURVE IN AN UNLIGHTED AREA SUCH THAT THE EDGE LINE MAY BE MISLEADING TO THE MOTORIST OR DISAPPEAR FROM SIGHT.
 - ④ THE EDGE LINE IN THE TAPER AREAS OF THE BYPASS LANE AND THE BYPASS LANE SHALL BE LOCATED 1-FOOT FROM EDGE OF PAVEMENT TO THE OUTSIDE EDGE OF EDGE LINE.
 - ⑤ BARRIER LINE ENDS AT SIDE ROAD PAVEMENT/SURFACE EDGE EXTENSION.
 - ⑥ BARRIER LINE STARTS 500 FEET PRIOR TO THE BYPASS TAPER.
 - ⑦ IF THE DISTANCE BETWEEN 2 SUCCESSIVE NO-PASSING ZONES IS LESS THAN THE MINIMUM DISTANCE BETWEEN ZONES, CONNECT THE 2 ZONES.
 - ⑧ 3' LINE 9' GAP, EXCEPT RETRACE THE EXISTING LINE - GAP PATTERN WHERE EXISTING MARKINGS ARE IN PLACE.
- ARROW SYMBOL (→) SHOWS DIRECTION OF TRAVEL

PAVEMENT MARKING
(INTERSECTIONS)

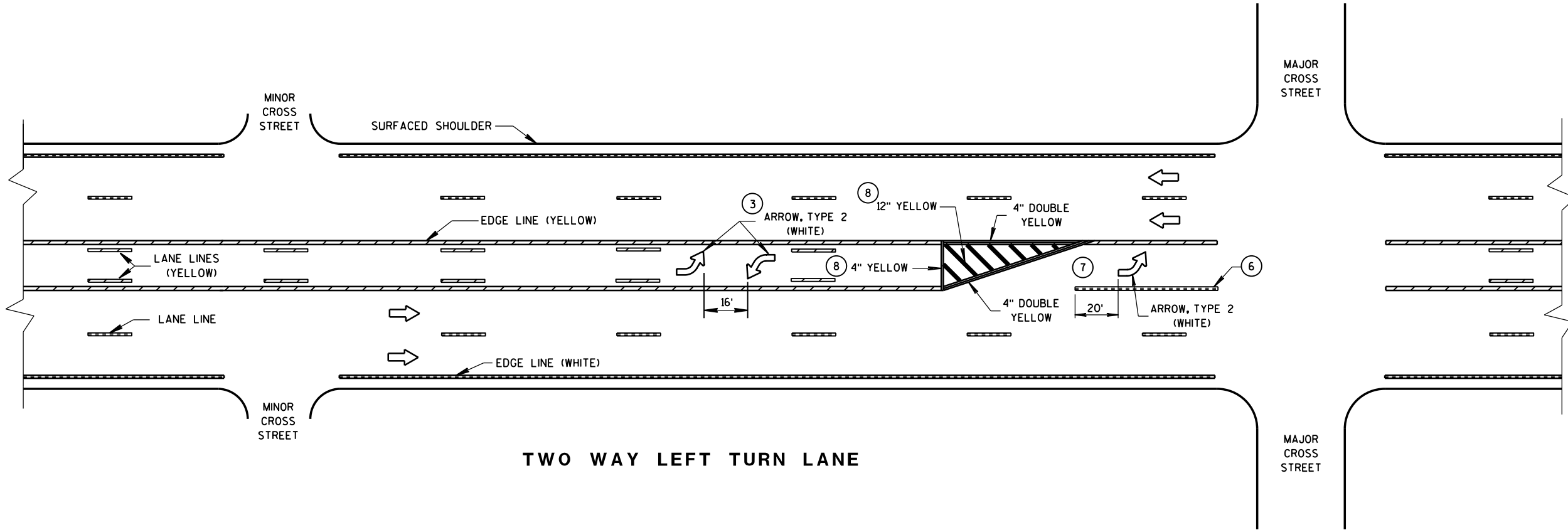
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



GENERAL NOTES

- 1 STOP BAR IS REQUIRED ONLY WHEN SPECIFIED IN THE CONTRACT.
- 2 DISTANCE MAY BE ADJUSTED TO ACCOMODATE SHORT LEFT TURN LANES, AS APPROVED BY THE ENGINEER.
- 3 A SET OF ARROWS IS REQUIRED EVERY 400' OR NEAR INTERSECTIONS OR DRIVEWAYS WITH TURNING TRAFFIC.
- 4 ADD EXTRA ARROW AND ONLY PER 160' OR WHEN ON A CURVE.
- 5 8" WHITE WITH 2' LINE 6' GAPS FOR DUAL TURN LANE.
- 6 8" WHITE
- 7 ADD SECOND ARROW WHEN TURN BAY IS GREATER THAN OR EQUAL TO 108'.
- 8 REQUIRED ONLY WHEN SPECIFIED IN THE CONTRACT.

NOTE:
ARROW SYMBOL (➡)
SHOWS DIRECTION OF TRAVEL



TWO WAY LEFT TURN LANE

PAVEMENT MARKING
(LEFT TURN LANE)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

TWO-LANE ROADWAY

SYMBOLS



WORK AREA



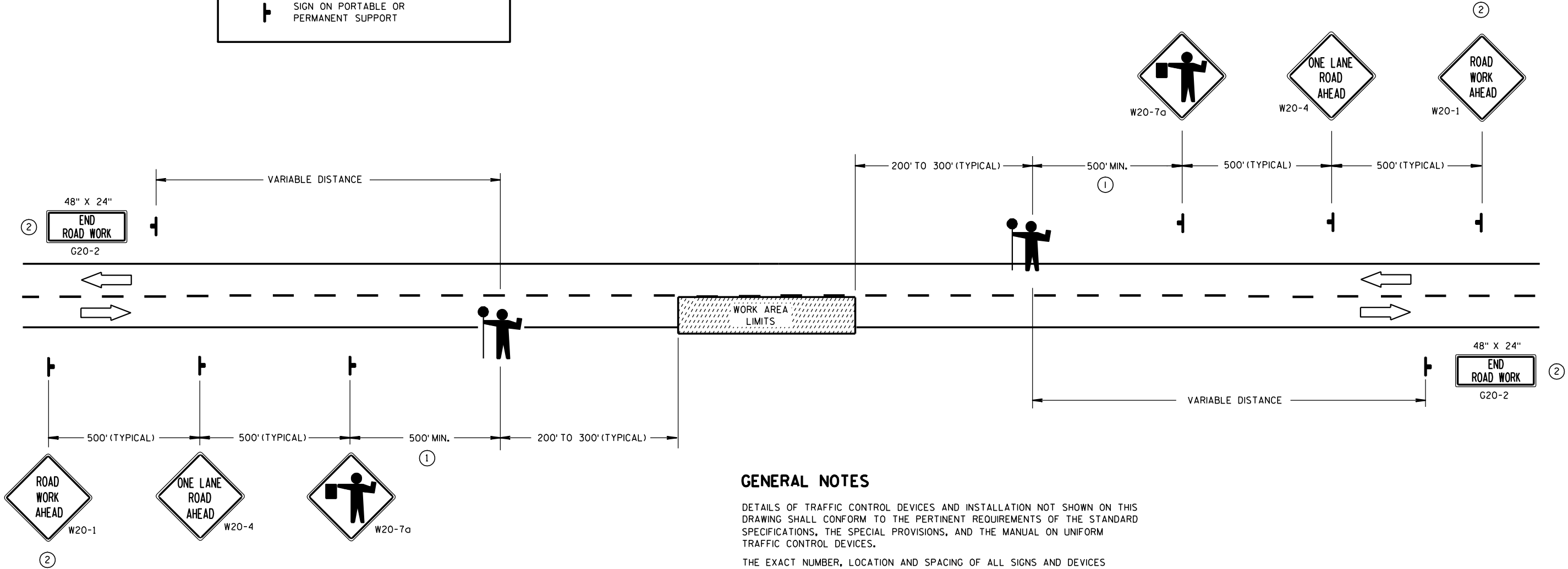
FLAGGER, EQUIPPED WITH STOP/SLOW PADDLE FASTENED ON SUPPORT STAFF



SIGN ON PORTABLE OR PERMANENT SUPPORT



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



GENERAL NOTES

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

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

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

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

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

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

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

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

TRAFFIC CONTROL FOR LANE CLOSURE (SUITABLE FOR MOVING OPERATIONS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
9/5/06
DATE

/S/ Thomas N. Notbohm
STATE TRAFFIC ENGINEER OF DESIGN

FHWA

GENERAL NOTES

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

ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED. IF NECESSARY DUE TO SPACE CONSTRAINTS IN URBAN AREAS, 36" X 36" SIGNS MAY BE USED IF APPROVED BY DISTRICT TRAFFIC UNIT.

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

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

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.

W20-1 AND G20-2A SIGNS ARE NOT REQUIRED IF THE WORK AREA IS WITHIN A LARGER WORK ZONE WHERE THESE SIGNS ARE ALREADY PRESENT. G20-2A SIGNS MAY ALSO BE OMITTED IF DURATION OF WORK IS LESS THAN 7 CONTINUOUS DAYS AND NIGHTS.

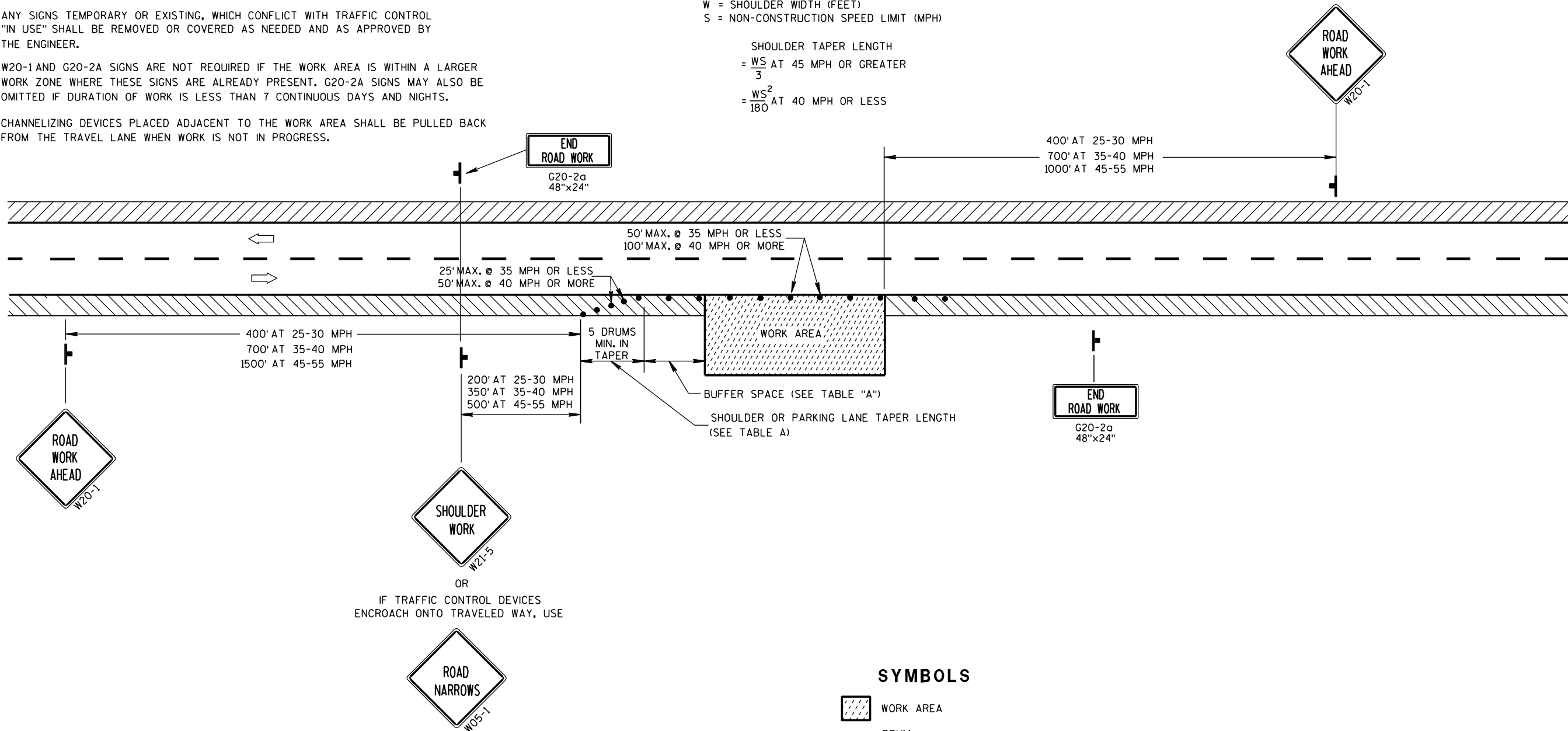
CHANNELIZING DEVICES PLACED ADJACENT TO THE WORK AREA SHALL BE PULLED BACK FROM THE TRAVEL LANE WHEN WORK IS NOT IN PROGRESS.

TABLE A

SHOULDER TAPER LENGTH (FEET)					BUFFER SPACE (FEET)
S	W	4	6	8	
30	20	30	40	50	85
35	30	45	55	70	120
40	40	55	75	90	170
45	60	90	120	150	220
50	70	100	135	170	280
55	75	110	150	185	335

W = SHOULDER WIDTH (FEET)
S = NON-CONSTRUCTION SPEED LIMIT (MPH)

SHOULDER TAPER LENGTH
= $\frac{WS}{3}$ AT 45 MPH OR GREATER
= $\frac{WS^2}{180}$ AT 40 MPH OR LESS



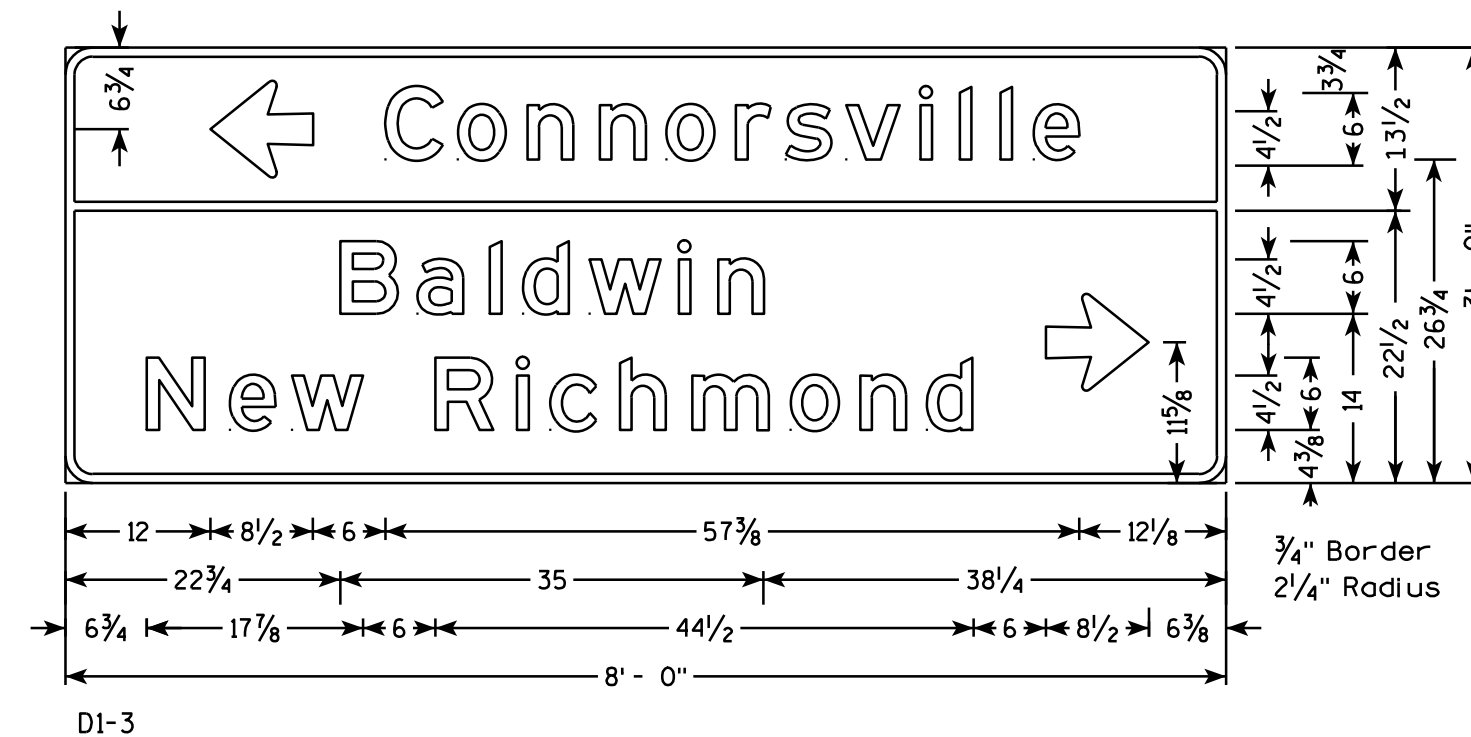
SYMBOLS

- WORK AREA
- DRUM
- POST MOUNTED SIGN
- DIRECTION OF TRAFFIC FLOW

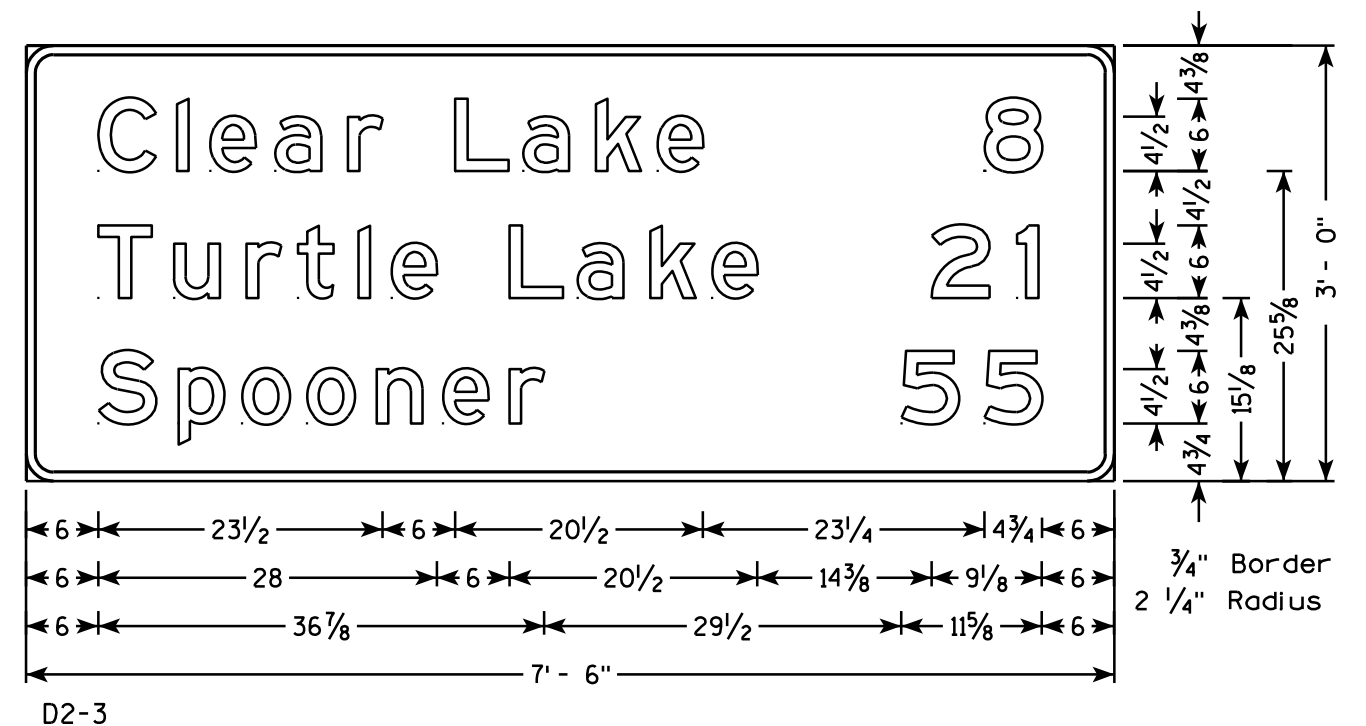
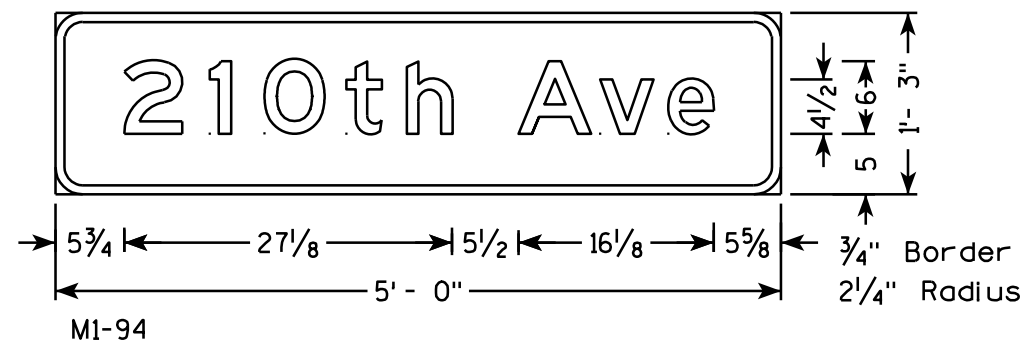
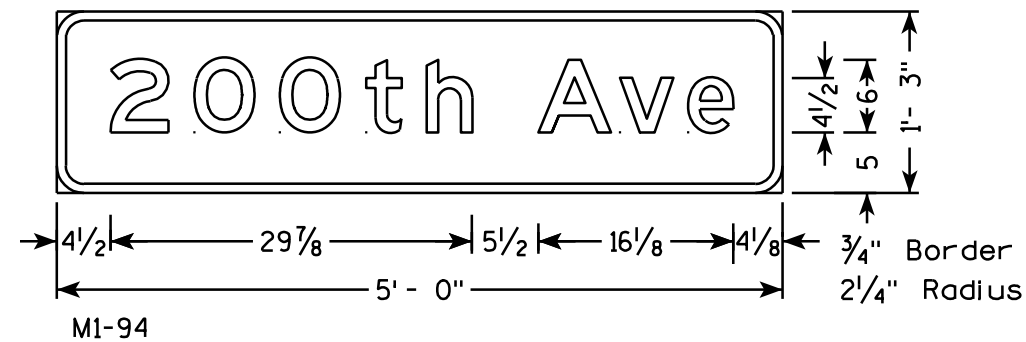
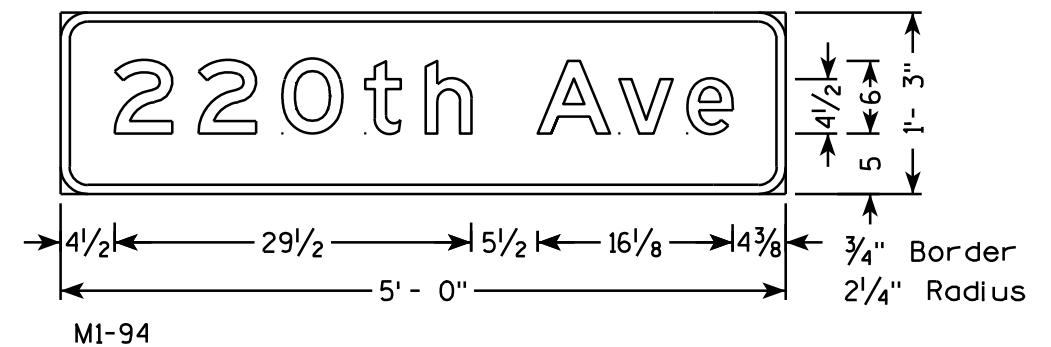
TRAFFIC CONTROL,
WORK ON SHOULDER OR
PARKING LANE,
UNDIVIDED ROADWAY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
5/23/00 /S/ Chester J. Spang
DATE CHIEF SIGNS AND MARKING ENGINEER
FHWA



- NOTES**
1. All Signs Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
 2. Color:
Background - GREEN
Message - WHITE
 3. Message Series - E

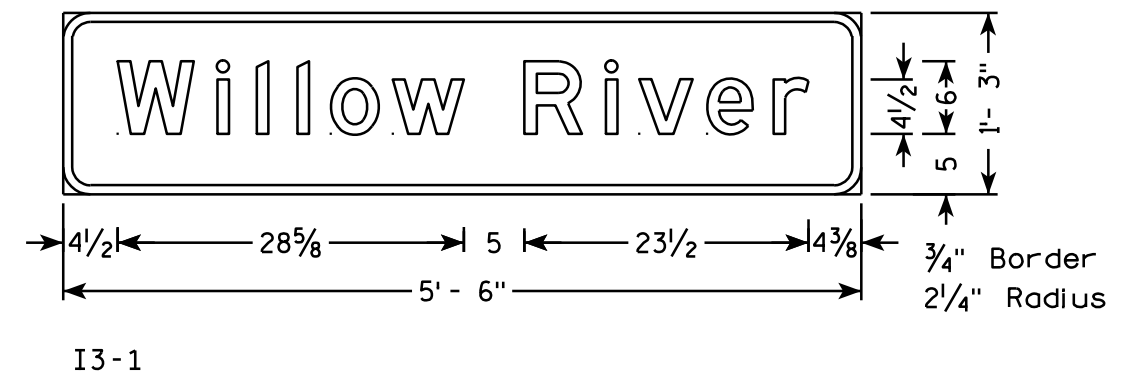
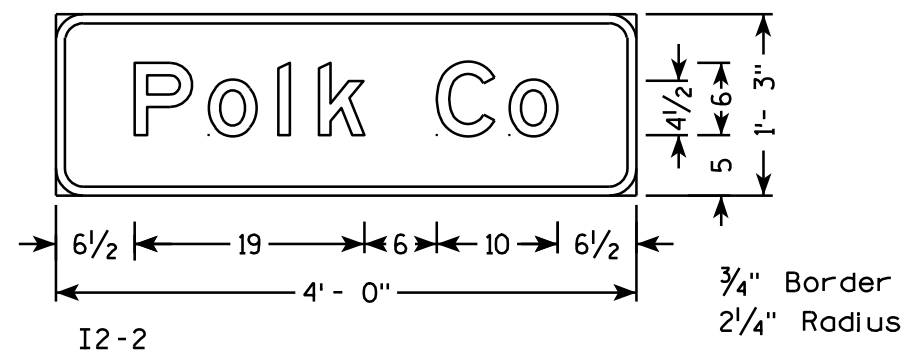
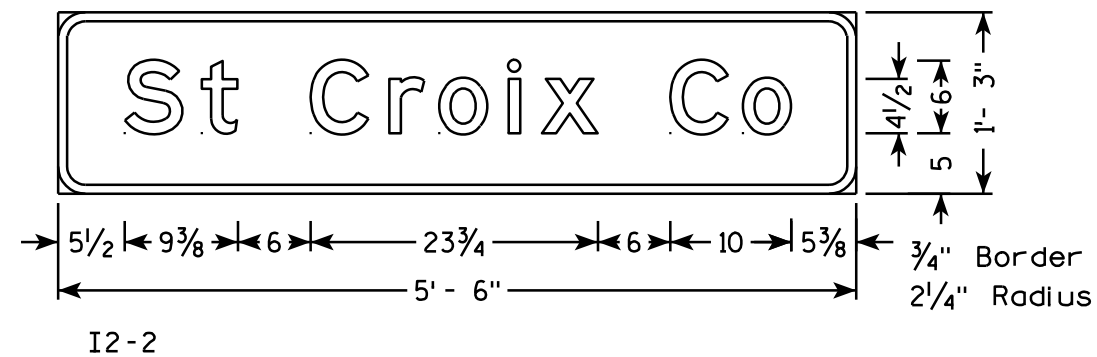
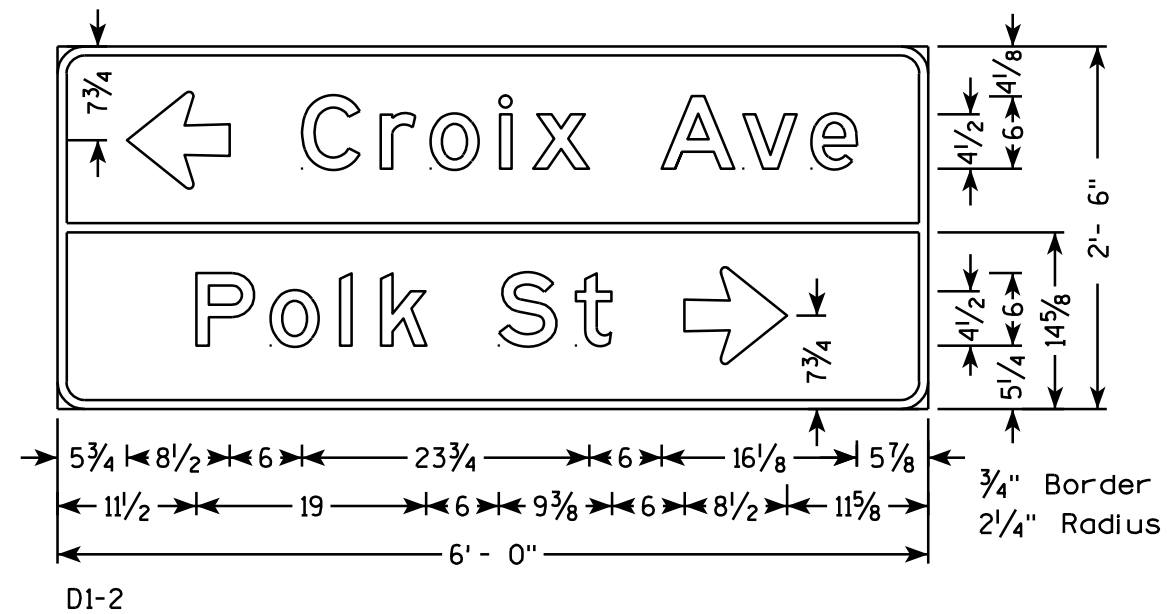


7

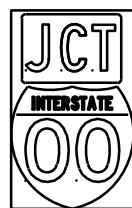
7

NOTES

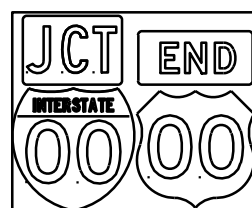
1. All Signs Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - GREEN
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3. Message Series - E



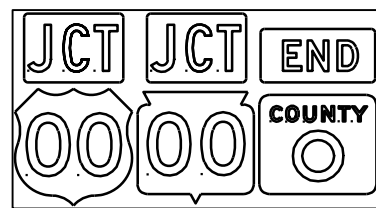
TYPICAL ASSEMBLIES



J1-1



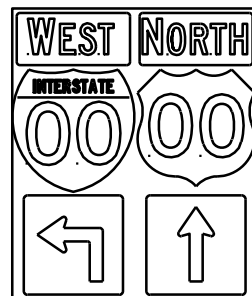
J1-2



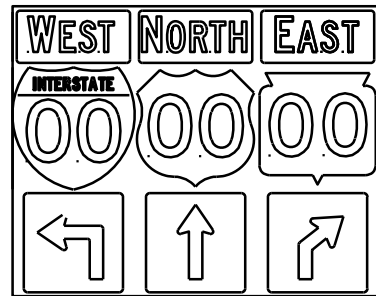
J1-3



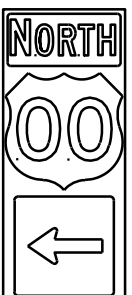
J2-1



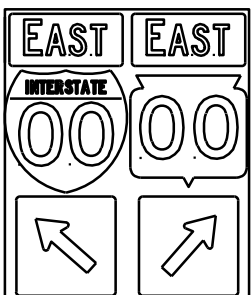
J2-2



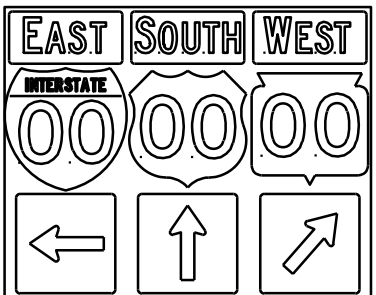
J2-3



J3-1



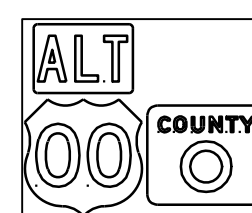
J3-2



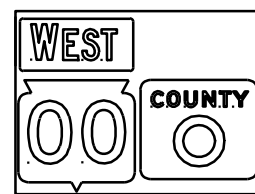
J3-3



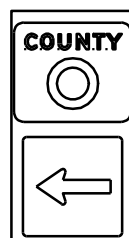
J4-1



J4-2



J4-2



J13-1



J12-1



J32-1



J33-1



J23-1



J22-1

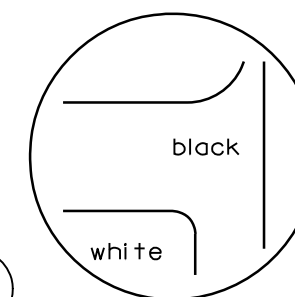
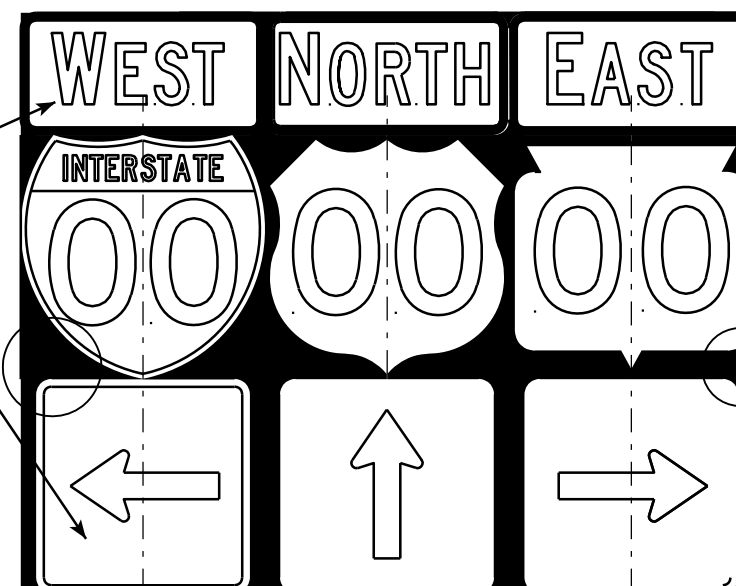
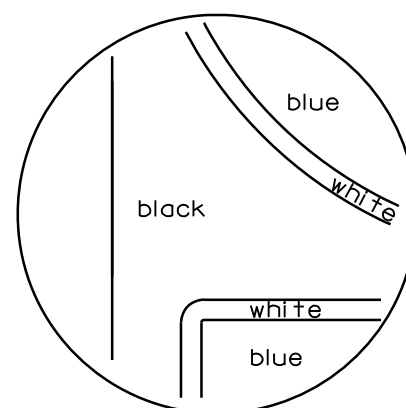


JV

NOTES

- Signs are Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
- Color:
Background - Black Non-reflective
Message - see Note 5
- Message Series - See Note 5
- Corners shall be square since base material is plywood.
- The colors and message spacing on each marker shall be according to the applicable route marker panel specifications.
- Certain marker heads require the component pieces to be the same color. As an example, all the components used with an M1-1 Interstate marker shall be blue.
- Single panel j-assemblies shall only be used with route marker shields that are same size. If the route marker shields are different size use multiple piece component.
- Route assemblies that have 24 inch route shields and have dimensions greater than 48 inches (both vertical and horizontal) shall have one horizontal splice between the arrows and route shields. Vertical splices shall not be used on route assemblies with a horizontal dimension of 144 inches or less. The contractor shall not use more than one vertical joint per sign and the joint shall be between route shields.
- Route assemblies that have 36 inch shields and have dimensions greater than 48 inches (both vertical and horizontal) shall have two horizontal splices. One horizontal splice shall be between the cardinal direction and route shields and the other horizontal splice shall be between the arrows and route shields. Vertical splices shall not be used on route assemblies with a horizontal dimension of 144 or less. The contractor shall not use more than one vertical joint per sign and the joint shall be between route shields.

[blue background with interstate]



[black background]

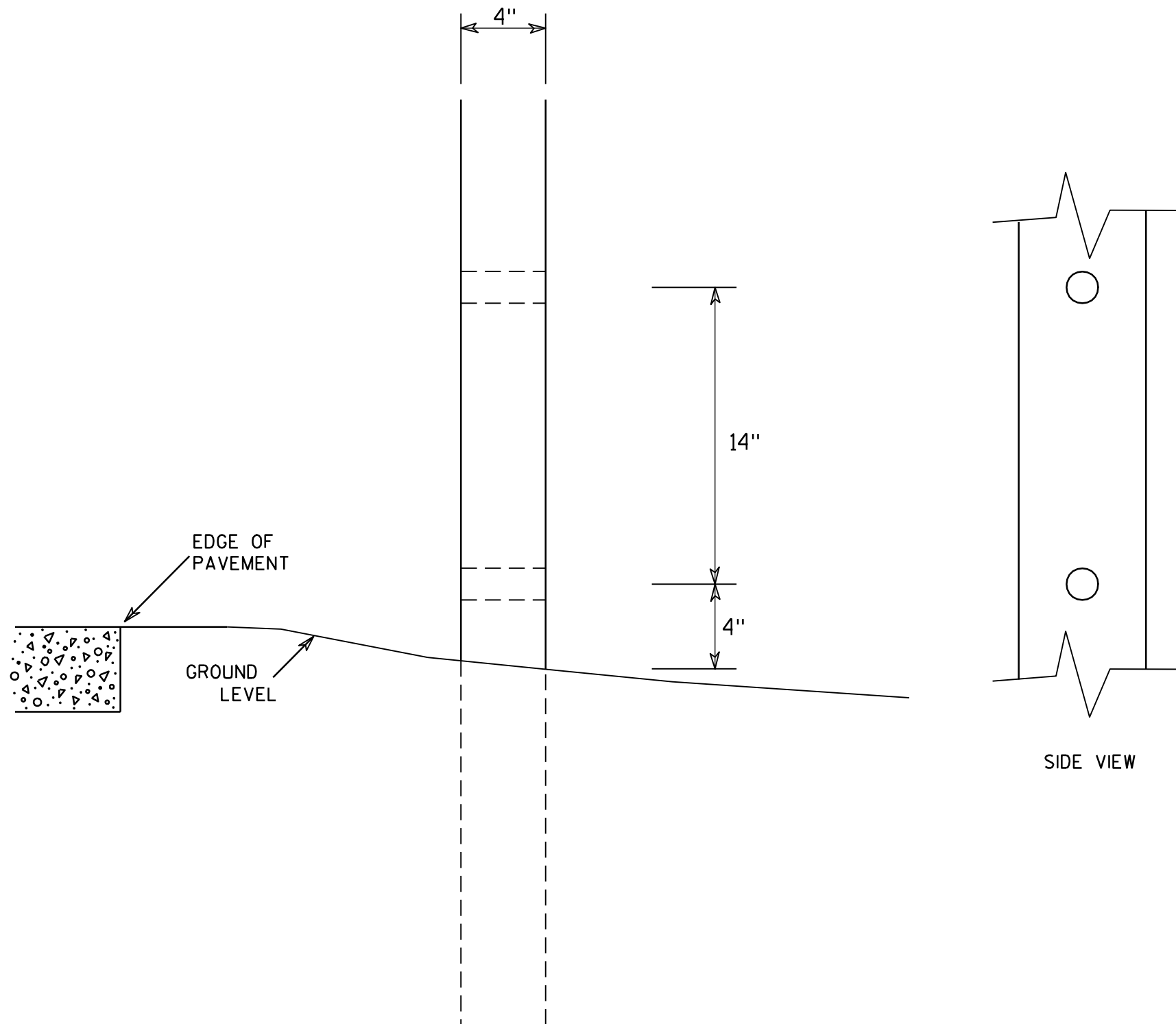
ROUTE MARKERS & COMPONENTS IN TYPICAL ASSEMBLIES	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> For State Traffic Engineer
DATE 10/21/09	PLATE NO. A2-1S.6

PROJECT NO:

SHEET NO:

E

7



GENERAL NOTES

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

7

4 X 6 WOOD POST MODIFICATIONS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Chester J. Spang
for State Traffic Engineer

DATE 3/27/97

PLATE NO. A4-11.2

PROJECT NO:

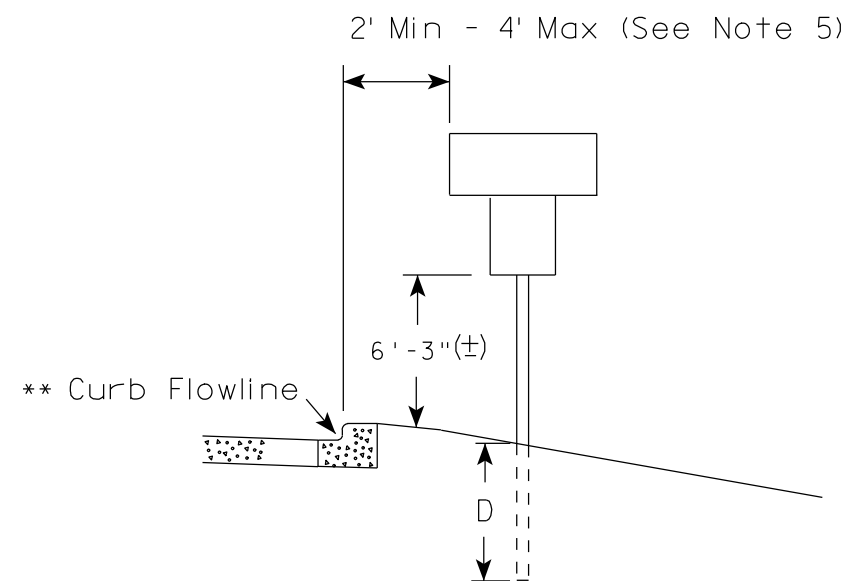
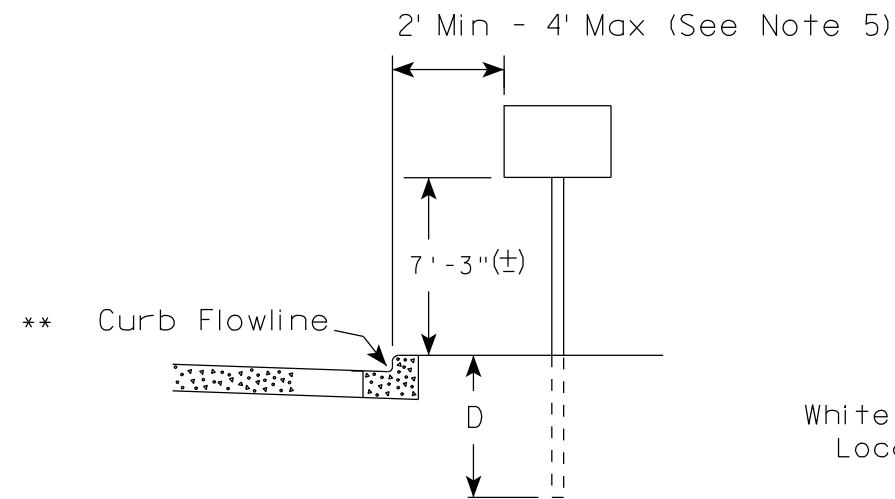
HWY:

COUNTY:

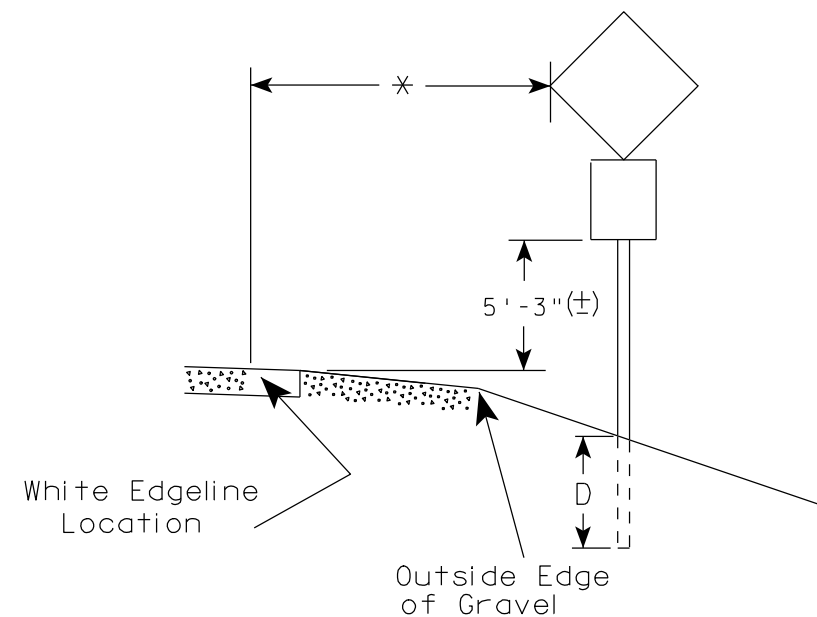
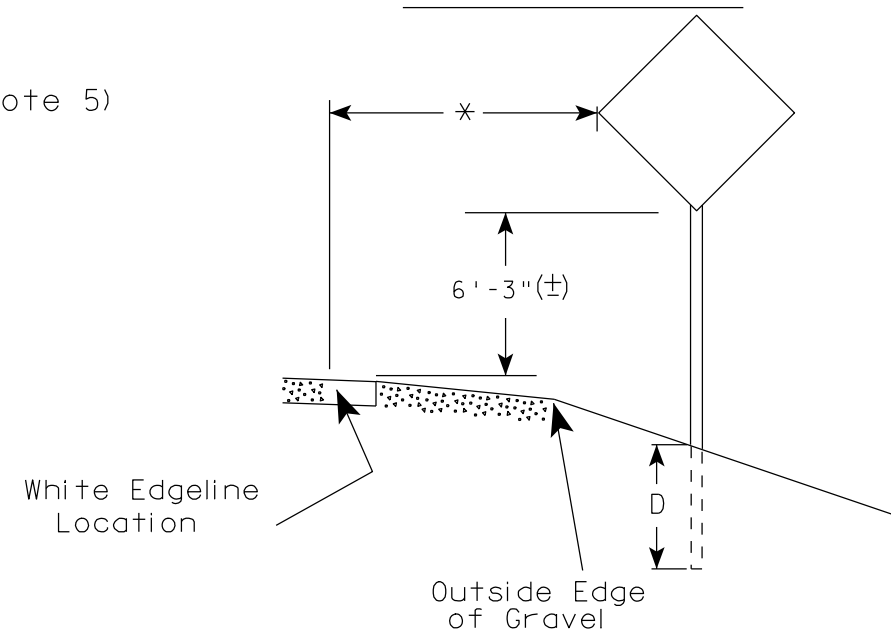
SHEET NO:

E

URBAN AREA



RURAL AREA (See Note 2)



GENERAL NOTES

1. Signs wider than 4 feet or larger than 20 sq. ft. shall be mounted on multiple posts. Refer to plate A4-4.
2. If signs are mounted on barrier wall, see A4-10 sign plate.
3. For expressways and freeways, mounting height is 7'-3" (±) or 6'-3" (±) depending upon existence of a sub-sign.
4. Minimum mounting height for J assemblies (A4-5) is 7'-3" (±) or 6'-3" (±) per urban or rural detail respectively.
5. Minimum mounting height for signs mounted on traffic signal poles is 5'-3" (±).
6. Offset distance shall be consistent with existing signs or consistent throughout length of project.
7. The (±) tolerance for mounting height is 3 inches.
8. Folding stop signs (R1-1F) shall be mounted at a height of 5'-3" (±) or as directed by the Engineer.
9. The Double Arrow sign (W12-1) shall be mounted at a height of 2'-3" (±). The Chevron sign (W1-8), Roundabout Chevron panel (R6-4B), Clearance Markers (W5-52), Mile Markers (D10 series) & End of Road Markers (W5-56 & W5-56A) shall be mounted at a height of 4'-3" (±).

POST EMBEDMENT DEPTH

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

✱✱ The existence of curb and gutter does not in itself mandate the vertical clearance illustrated. That height is typically measured where there is sidewalk adjacent to the roadway or parking is permitted. In the absence of sidewalk vertical clearance is measured from the top of the curb. Offset of signs is measured from the flow line.

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

TYPICAL INSTALLATION
OF PERMANENT TYPE II
SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 9/21/2011 PLATE NO. A4-3.16

PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E

GENERAL NOTES

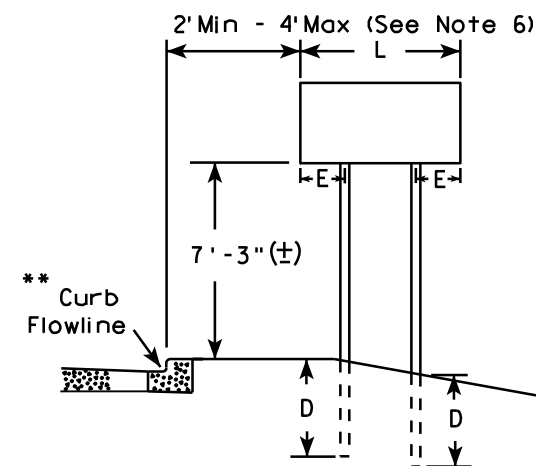
- For multiple post installations, individual post spacing shall be greater than 3'-6".
- See tables below for required number of posts.
- For expressways and freeways, mounting height is 7'-3" (±) or 6'-3" (±) depending upon existence of sub-sign.
- The (±) tolerance for mounting height is 3 inches.
- Minimum mounting height for J assemblies (A4-5) is 7'-3" (±) or 6'-3" (±) per urban or rural detail respectively.
- Offset distance shall be consistent with existing signs or consistent throughout length of project.
- Folding stop signs (R1-1F) shall be mounted at a height of 5'-3" (±) or as directed by the engineer.
- The Double Arrow sign (W12-1) shall be mounted at a height of 2'-3" (±). The Chevron sign (W1-8), Roundabout Chevron panel (R6-4B), Clearance Markers (W5-52), Mile Markers (D10 series) & End of Road Markers (W5-56 & W5-56A) shall be mounted at a height of 4"-3" (±).

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

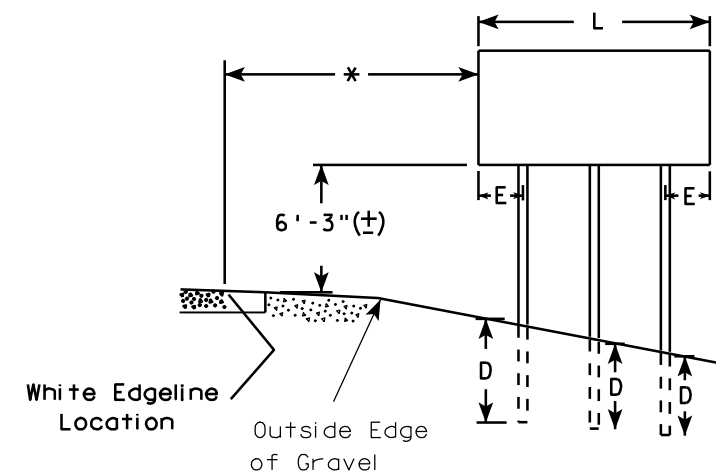
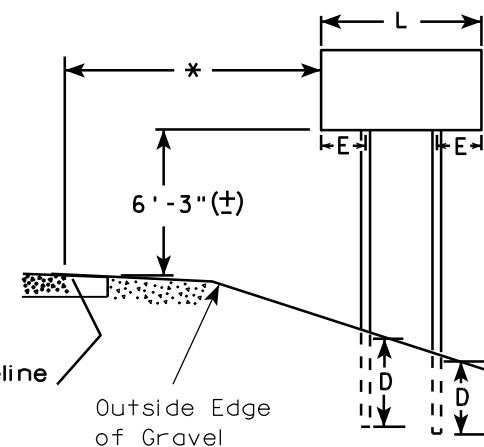
** The existence of curb and gutter does not in itself mandate the vertical clearance illustrated. That height is typically measured where there is sidewalk adjacent to the roadway or parking is permitted. In the absence of sidewalk vertical clearance is measured from the top of the curb. Offset of signs is measured from the flow line.

*** See A4-3 sign plate for signs 4' or less in width or 20 S.F. or less in area.

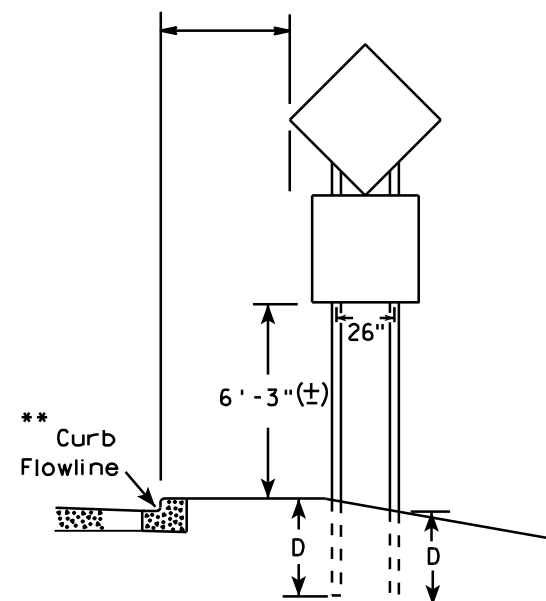
URBAN AREA



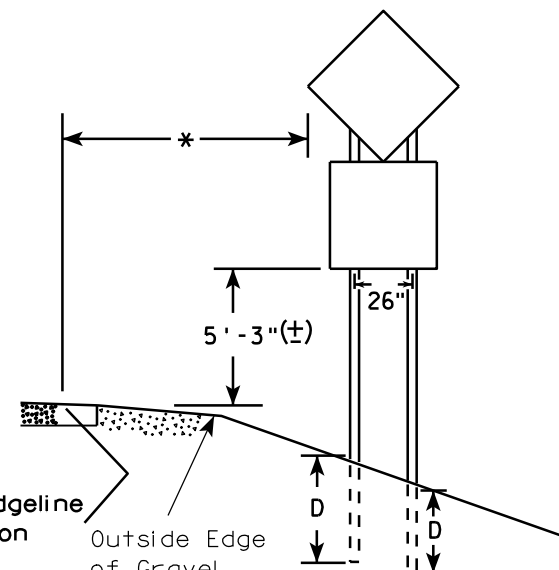
RURAL AREA (See Note 3)



2' Min - 4' Max (See Note 6)



48" DIAMOND WARNING SIGN



48" DIAMOND WARNING SIGN

SIGN SHAPE OTHER THAN DIAMOND (TWO POSTS REQUIRED)	
L	E
Greater than 48" Less than 60"	12"
60" to 120"	L/5

SIGN SHAPE OTHER THAN DIAMOND (THREE POSTS REQUIRED)	
L	E
Greater than 120" less than 168"	12"

SIGN SHAPE OTHER THAN DIAMOND (FOUR POSTS REQUIRED)	
L	E
168" and greater	12"

POST EMBEDMENT DEPTH

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

TYPICAL INSTALLATION
OF TYPE II SIGNS
ON MULTIPLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 9/21/2011 PLATE NO. A4-4.11

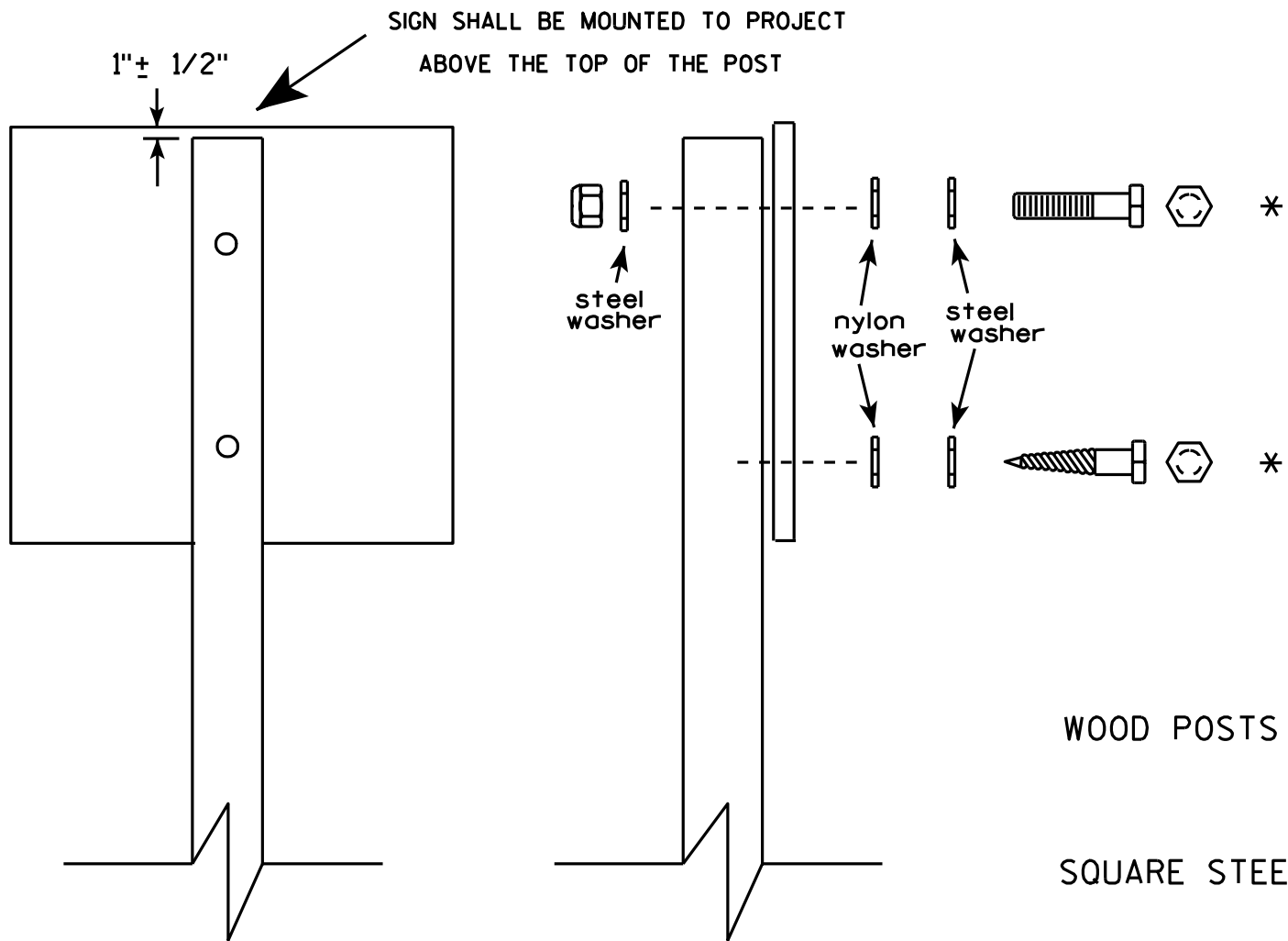
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E

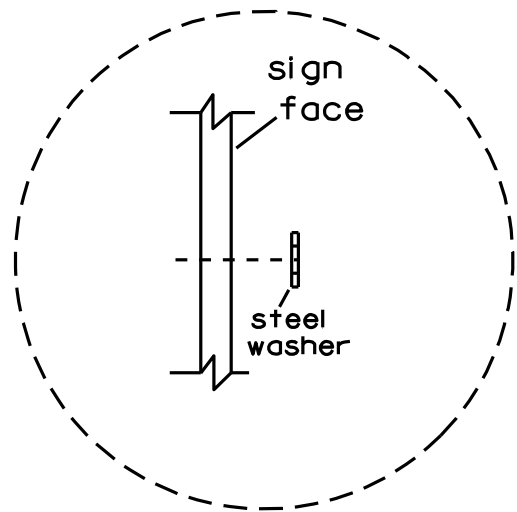


Nuts, bolts and lags used for mounting signs shall have hexagonal heads and shall be either :

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

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

- WOOD POSTS (4" x 4" or 4" x 6")
LAG SCREWS - 3/8" X 3"
MACHINE BOLTS - 5/16" X 6-1/2" or 7" Length w/ nuts
- SQUARE STEEL POSTS (2" x 2")
MACHINE BOLTS - 3/8" X 3-1/4" Length w/ nuts
RIVETS - 9/32" (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM BODY/MANDREL
O.D. FLANGE .720-.765 INCH, GRIP RANGE .042-.375 INCH
- WASHERS (ALL POSTS) -
1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL
1-1/4" O.D. X 3/8" I.D. X .080 NYLON for all Type H signs.

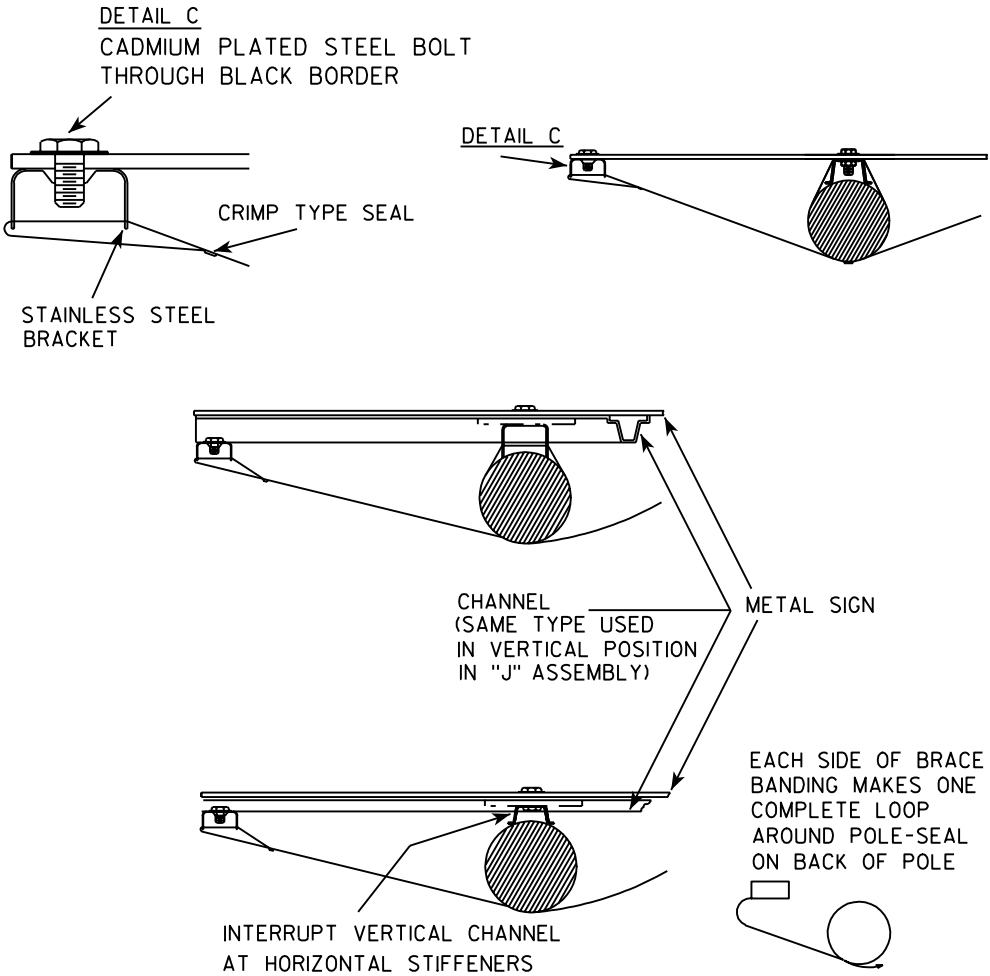


Washer Placement when Sign Has Other Than Type H or Type F Face

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

ATTACHMENT OF SIGNS TO POSTS	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> For State Traffic Engineer
DATE 3/23/10	PLATE NO. A4-8.7

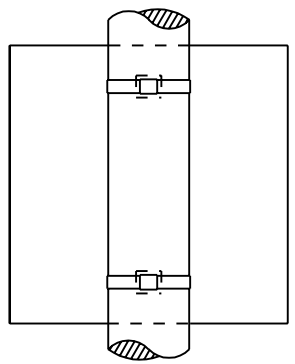
BRACE BANDING



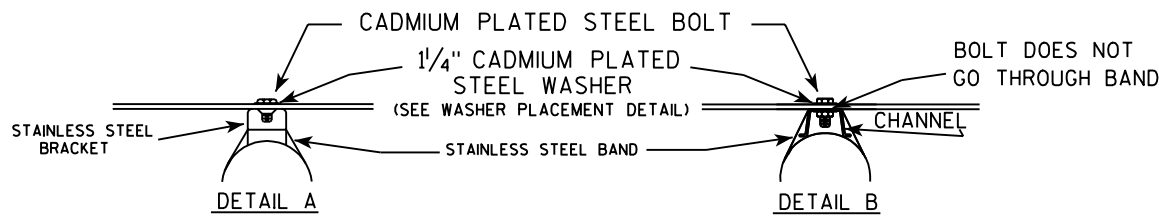
BRACE BANDING

BRACE BANDING SHALL BE TIGHTENED FIRMLY BUT NOT SO TIGHT AS TO APPRECIABLY CURVE FACE OF SIGN.

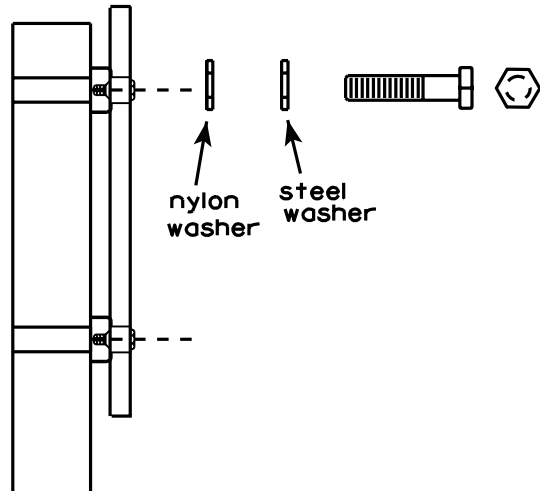
SINGLE SIGN



BRACKET BANDING

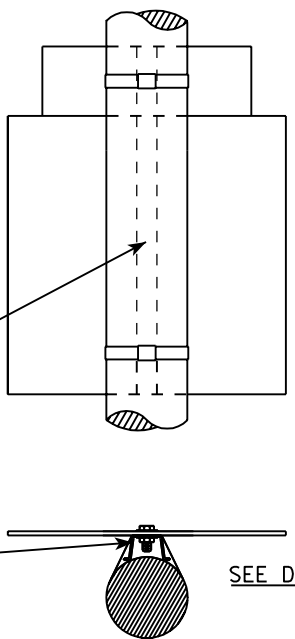


WASHER PLACEMENT



WASHERS (ALL POSTS) -
1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL
1-1/4" O.D. X 3/8" I.D. X .080 NYLON
FOR ALL TYPE H SIGNS

"J" ASSEMBLY



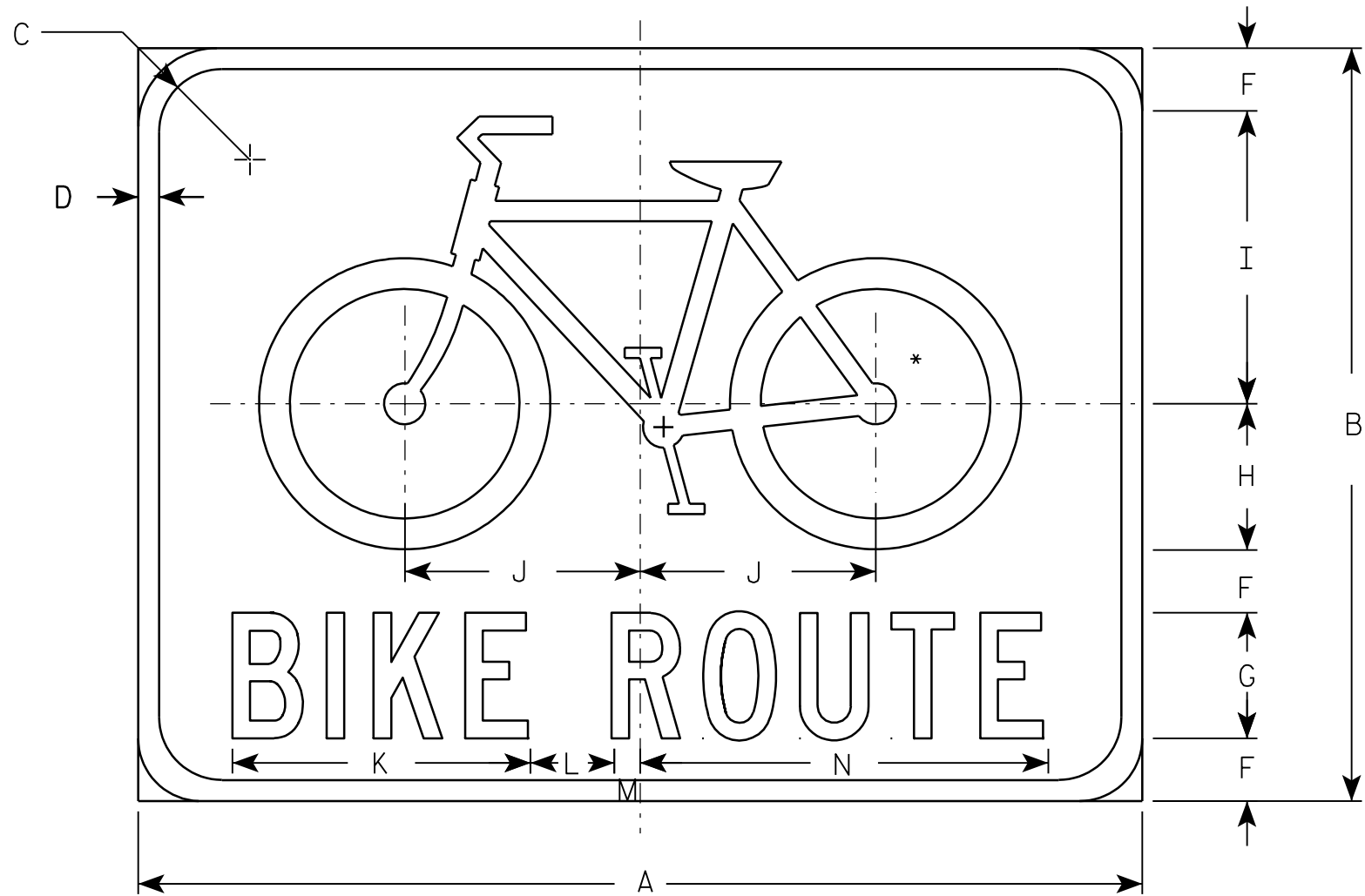
GENERAL NOTES

1. Signs 4' or greater in width shall have one brace band installed at the center of the sign.
2. Signs 3' or greater in height shall have three bracket bands installed. Signs less than 3' in height shall have two bracket bands installed.
3. Banding and assembly bracket shall be stainless steel. All bands shall be 3/4" in width and 0.025" thickness.

STANDARD SIGN
SIGN BANDING DETAILS

WISCONSIN DEPT OF TRANSPORTATION
APPROVED *Matthew R. Rauch*
For State Traffic Engineer
DATE 11/08/05 PLATE NO. A5-9.2

7



D11-1

Metric equivalent
for this sign is:

SIZE	
1	
2	600 mm X 450 mm
3	750 mm X 600 mm
4	
5	

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	O	R	S	T	U	V	W	X	Y	Z	Area sq. ft.	Area m ²
1																												
2	24	18	1 1/2	1/2		1 1/2	3	3 1/2	7	5 5/8	7 1/8	2	5/8	9 3/4													3.0	0.27
3	30	24	1 1/4	5/8		2	4	4 3/4	9 1/4	7 1/2	9 1/2	2 5/8	7/8	13													5.0	0.45
4																												
5																												

NOTES

- Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
- Color:
Background - GREEN
Message - WHITE
- Message Series - C
- Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.

* See W11-1 for symbol design

STANDARD SIGN
D11-1

WISCONSIN DEPT OF TRANSPORTATION

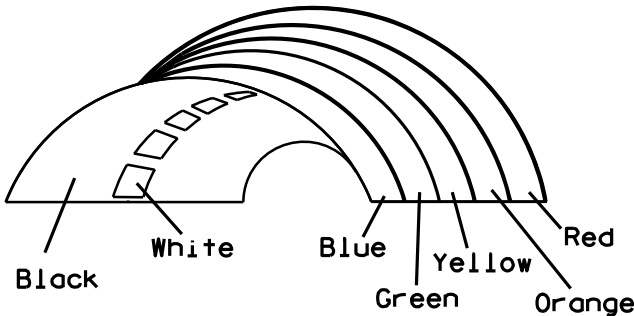
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 3/24/04 PLATE NO. D11-1.1

7



Background Colors of Symbol*



NOTES

- 1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
- 2. Color:
 - Background - White
 - Message - (See Note 5)
- 3. Message Series - (See Note 6)
- 4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
- 5. Border - Blue
 - Line 1- Red
 - Line 2 - Black
 - Line 3-5 - Blue
- 6. Line 1- Dutch 8011L
 - Line 2 - Series E
 - Line 3-5 - Series C
- 7. Contractor shall provide and install a new post bracket in accordance with the I55-56B sign detail.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	30	36	1 1/2	1/2	5/8	3	2	3 1/2	2 7/8	1	8	2 1/8	11 1/4	11 1/8	9 3/8	1 1/4		3/4	12 5/8	7 1/2							7.5
3																											
4																											
5																											

PROJECT NO:

HWY:

COUNTY:

SHEET NO:

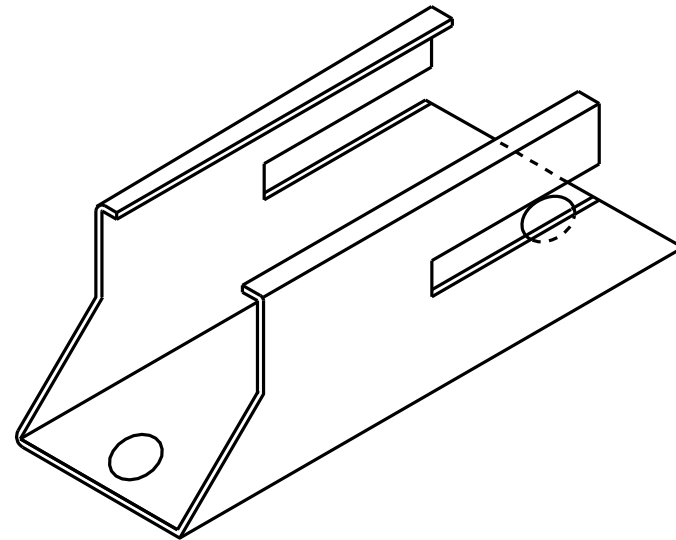
STANDARD SIGN
I55-56

WISCONSIN DEPT OF TRANSPORTATION

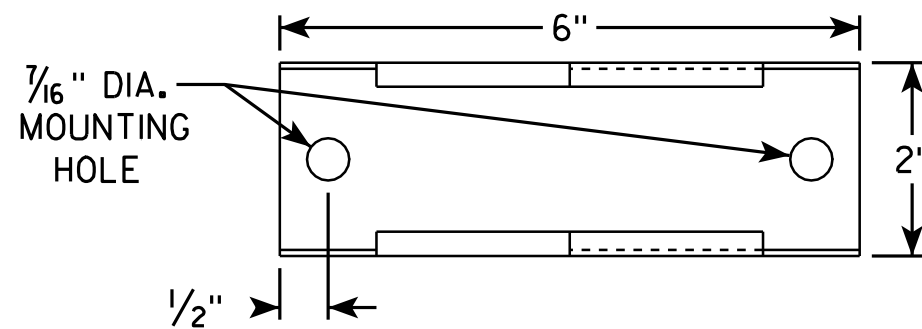
APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 4/27/11 PLATE NO. I55-56.3

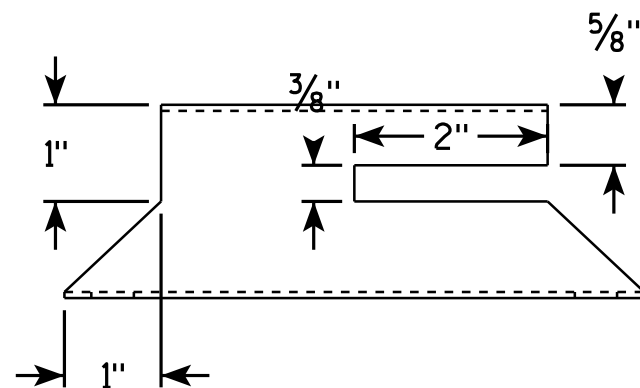
ISOMETRIC VIEW



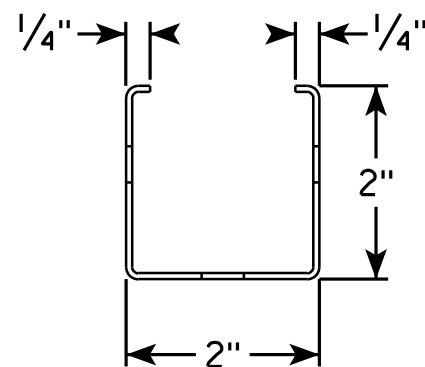
TOP VIEW



SIDE VIEW



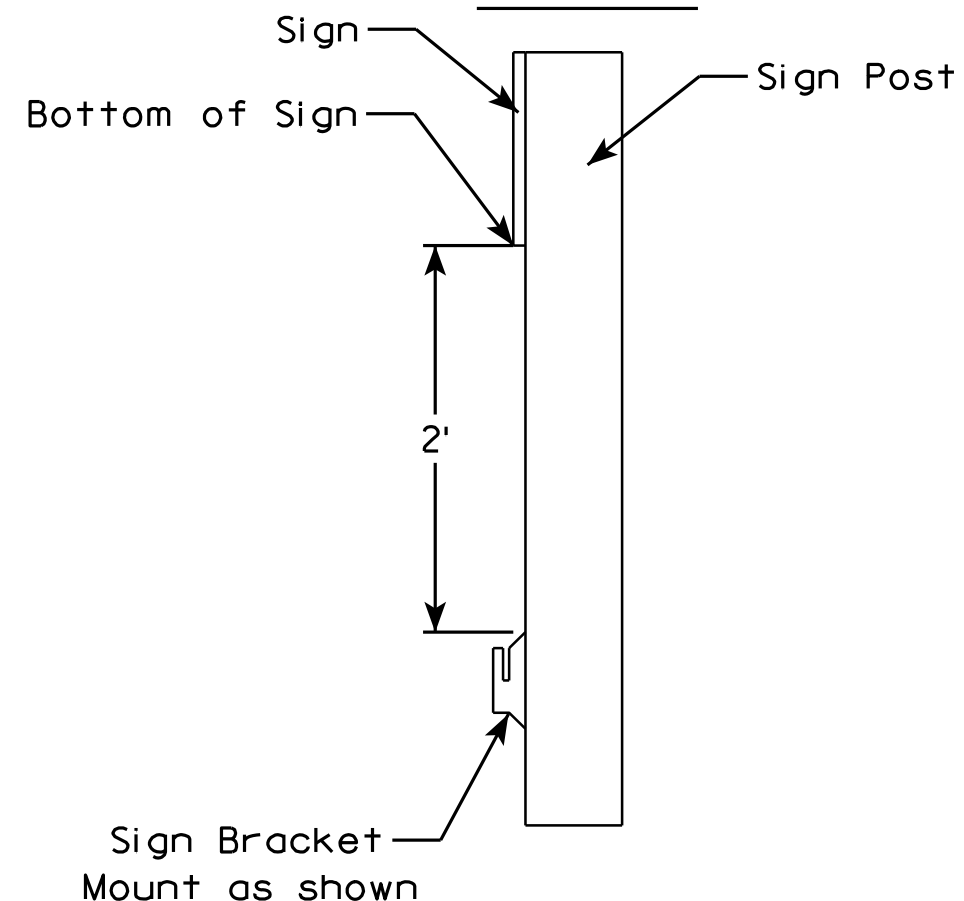
END VIEW



NOTES

1. Must be capable of permanent attachment to a wood or steel channel sign post utilizing the fastening hardware specified on the A4-8 sign plate.
2. Shall be entirely primed and painted with two coats of a black powder coated enamel paint.
3. Shall be made with 12 gauge steel, and incorporate no welds, no hinged components, no threaded lock-type components, and no parts which are loose or can be separated from the main body.
4. Shall have rounded edges with at least 1/8" radii.
5. Shall not have unrounded and uncoated metal edges which can contact the back surface of the roll-up sign.
6. Top of bracket shall be mounted 2' below the bottom of the I55-56 sign.
7. Cost of bracket and fastening hardware shall be incidental to the I55-56 sign.

SIDE VIEW



ROLLUP SIGN BRACKET
I55-56B

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 2/5/10 PLATE NO. I55-56B.1

PROJECT NO:

HWY:

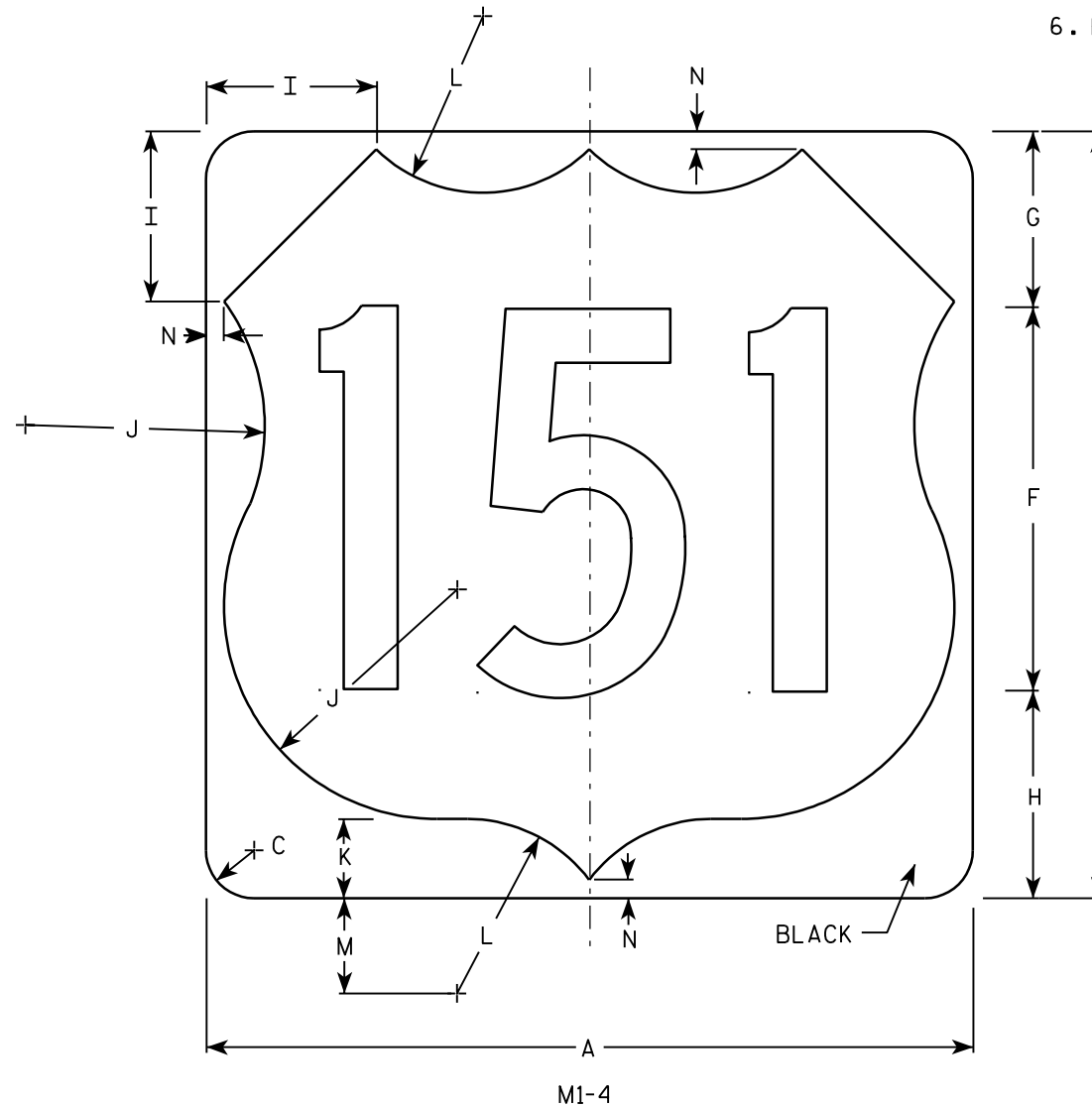
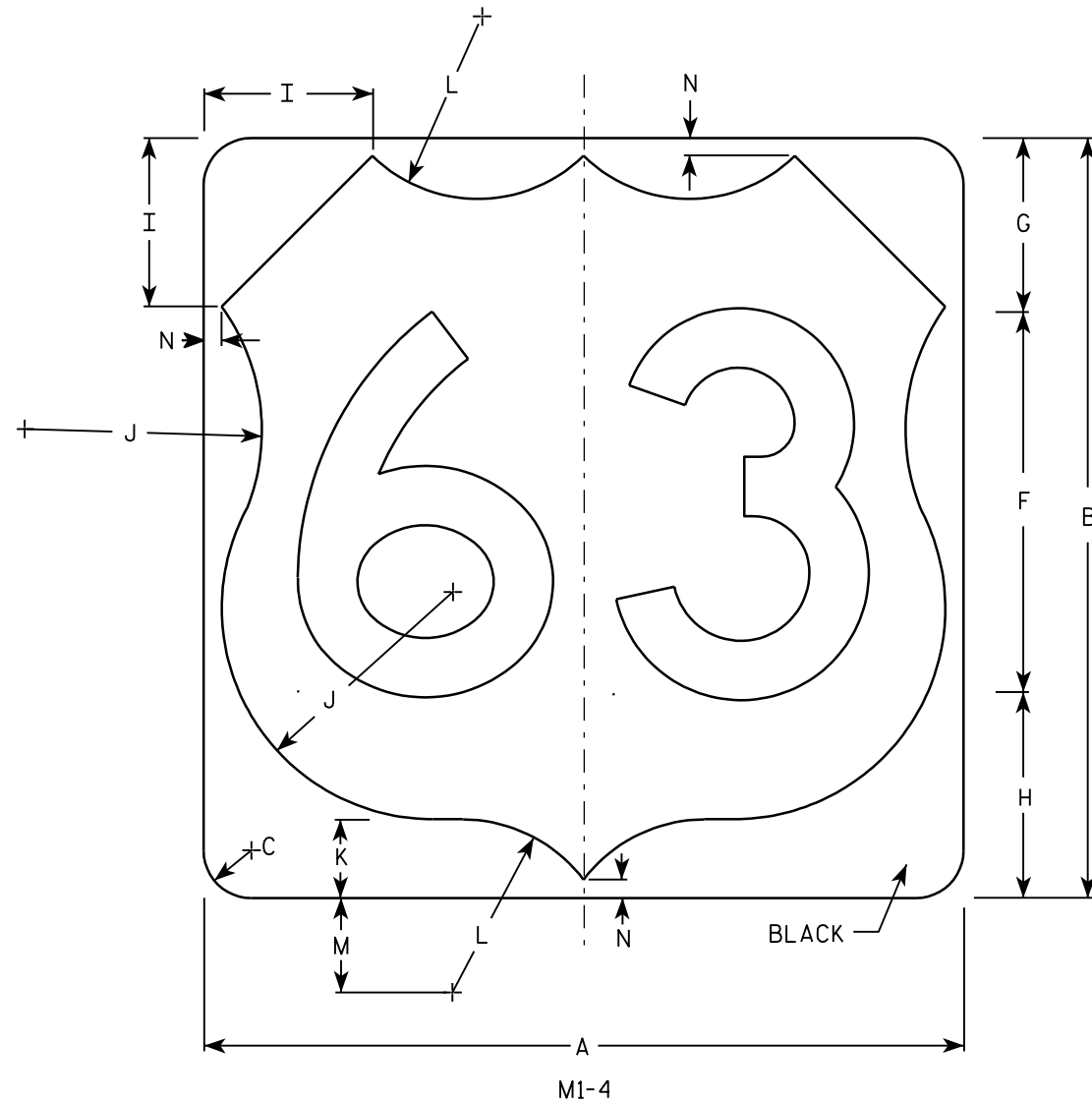
COUNTY:

SHEET NO:

E

NOTES

- Sign is Type II - See Note 6 - reference
WIS DOT Standard Specification for HIGHWAY
and STRUCTURE CONSTRUCTION latest edition.
- Color:
Background - White & Black - See Note 6
Message - Black
- Message Series - See note 5
- Corners may be square or rounded when base
material is plywood but borders shall be rounded
as shown. When base material is metal, the
corners and borders shall be rounded.
- Substitute appropriate numerals and adjust
spacing as per Plate A10-1.
- Permanent Signs
Background - Type H Reflective
Detour or other temporary signs
Background - Reflective



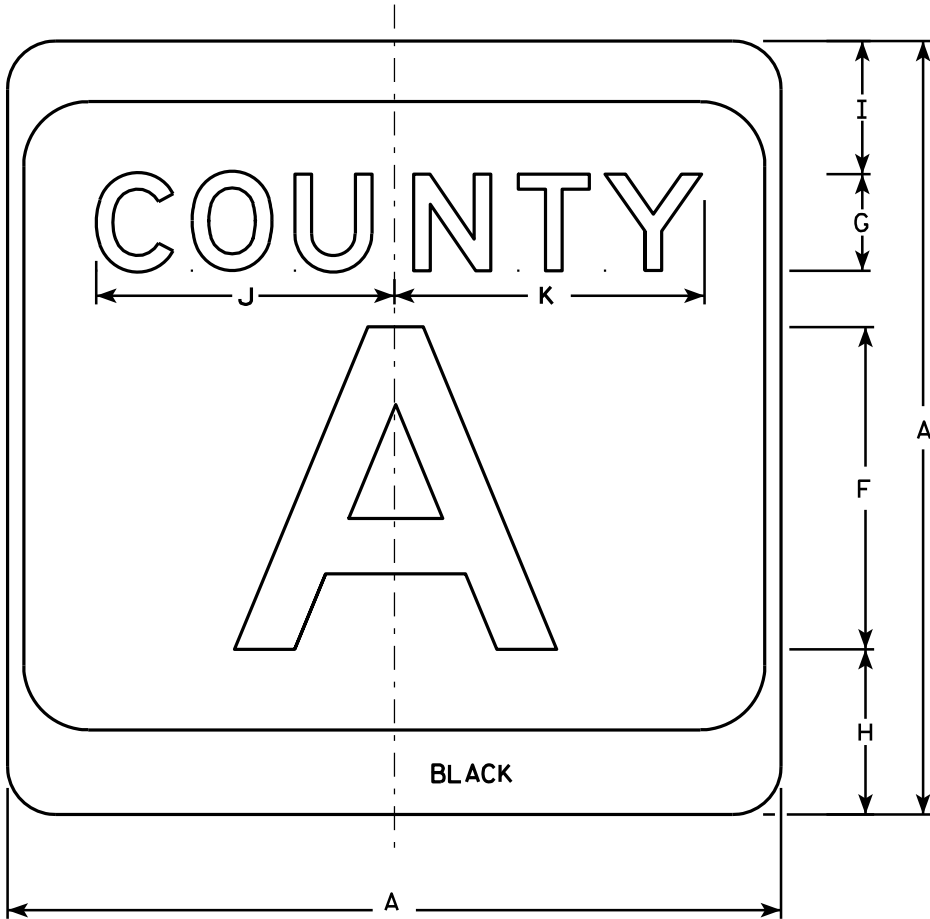
Metric equivalent
for this sign is:

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

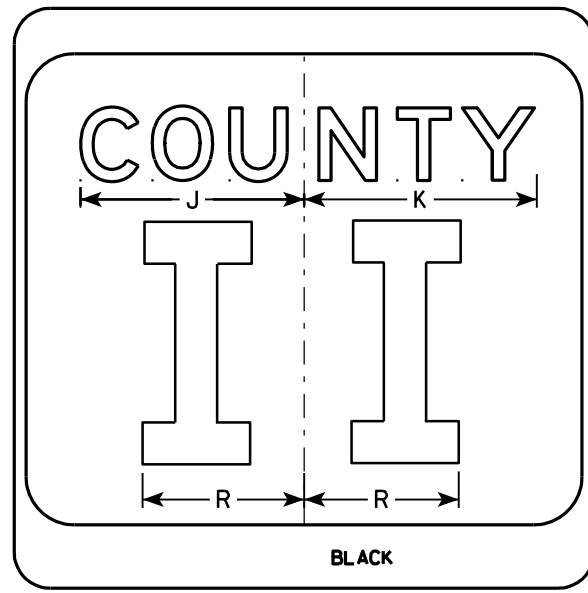
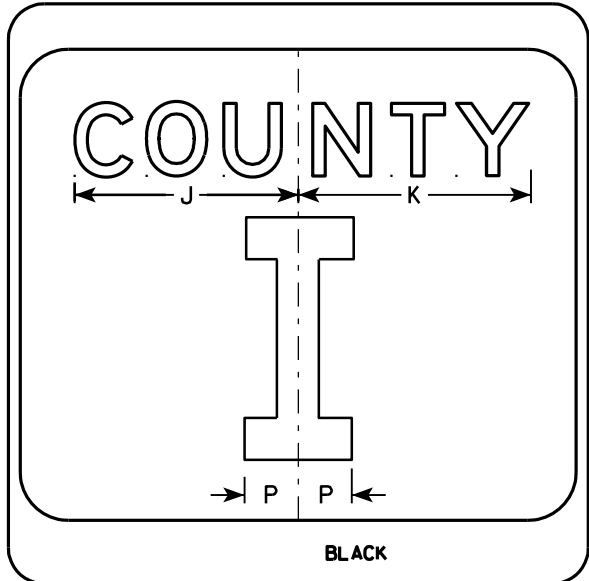
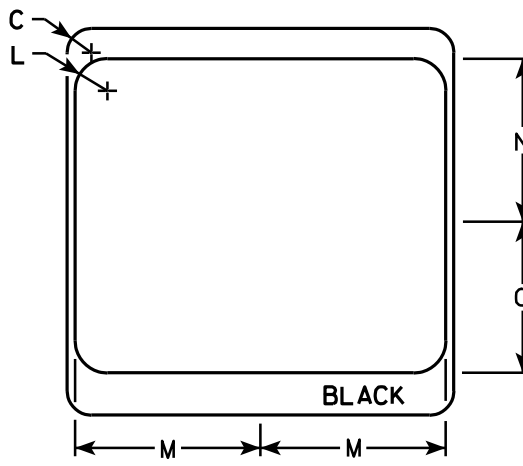
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Areq sq. ft.	Area m ²
1																												
2	24	24	1 1/2			12	5 1/2	6 1/2	5	7 1/2	2 1/2	5 1/2	3	1/2													4.0	.36
3	36	36	2 1/4			18	8 1/4	9 1/4	7 1/4	11 1/4	3 3/4	8 1/4	4 1/2	3/4													9.0	.81
4	36	36	2 1/4			18	8 1/4	9 1/4	7 1/4	11 1/4	3 3/4	8 1/4	4 1/2	3/4													9.0	.81
5	36	36	2 1/4			18	8 1/4	9 1/4	7 1/4	11 1/4	3 3/4	8 1/4	4 1/2	3/4													9.0	.81

PROJECT NO: HWY: COUNTY: SHEET NO: **E**

7



M1-5A



NOTES

1. Sign is Type II - see Note 7 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - White & Black - See Note 7
Message - Black
3. Message Series - see Note 5
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Message Series E for 1 letter.
Message Series D for 2 letters unless message is too big then Series C.
Message Series C for 3 letters unless message is too big then Series B.
6. Substitute appropriate letters & optically center to achieve proper balance.
7. Permanent Signs
Background - Type H Reflective
Detour or temporary Signs
Background - Reflective

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	24		1 1/2			10	3	5 1/8	4 1/8	9 1/4	9 5/8	2	11 1/2	10 1/8	9 3/8	2 1/4		6 5/8									4.0
3	36		2 1/4			16	4	7 5/8	5 5/8	12 1/4	12 7/8	3	17 1/8	15 1/4	14	3 3/8		10									9.0
4	36		2 1/4			16	4	7 5/8	5 5/8	12 1/4	12 7/8	3	17 1/8	15 1/4	14	3 3/8		10									9.0
5	36		2 1/4			16	4	7 5/8	5 5/8	12 1/4	12 7/8	3	17 1/8	15 1/4	14	3 3/8		10									9.0

CTH MARKER

M1-5A FOR ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 9/27/11 PLATE NO. M1-5A.8

PROJECT NO:

HWY:

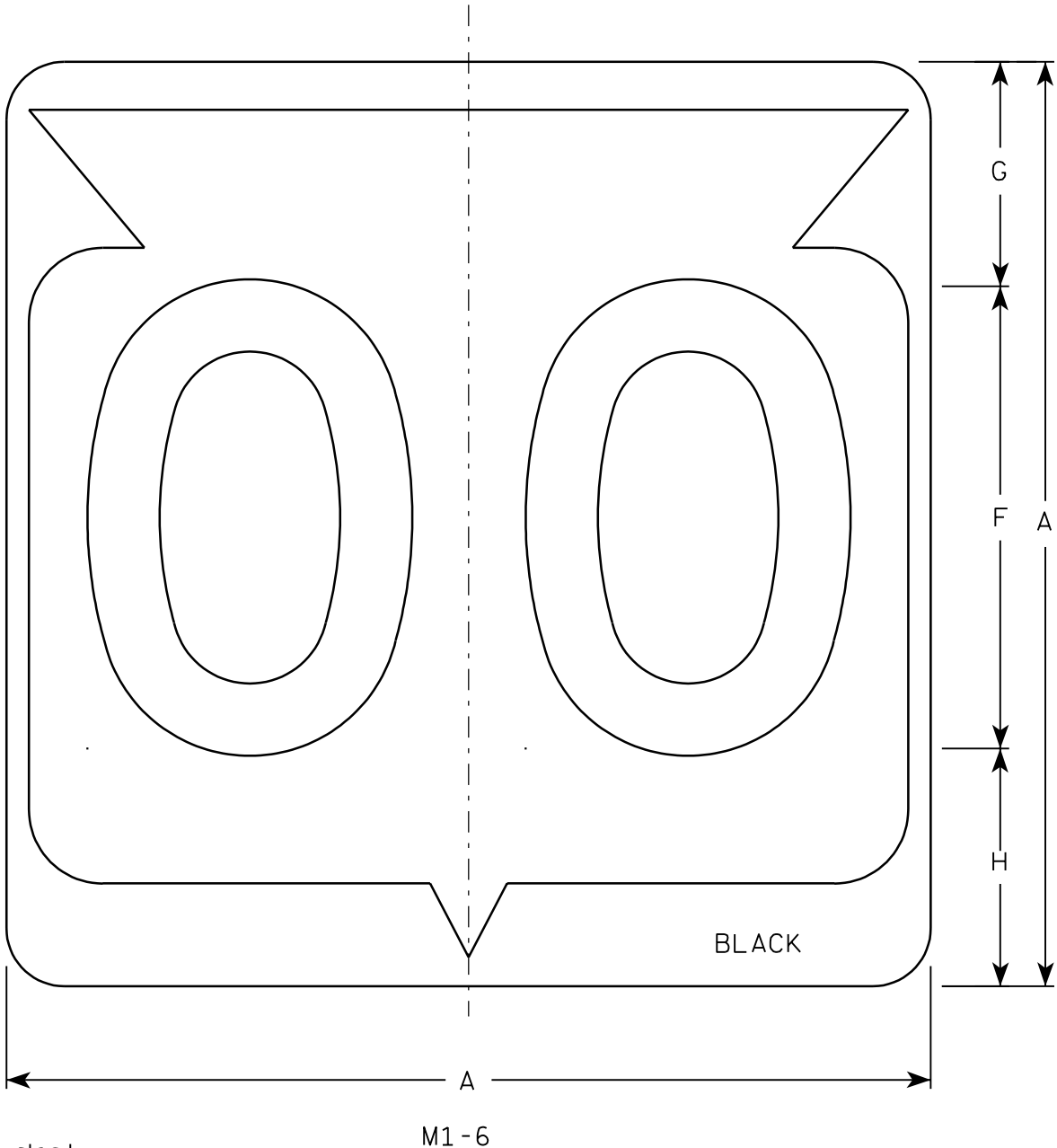
COUNTY:

SHEET NO:

E

7

7



Metric equivalent
for this sign is:

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

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.	Area m ²
1																												
2	24		1 1/2			12	5 1/2	6 1/2	10 1/4	2 1/2	8 7/8	11 1/2	1	1 7/8	11 1/4	21 7/8											4.0	.36
3	36		2 1/4			18	8 3/4	9 1/4	15 3/8	5 3/8	12 5/8	17 1/8	1 1/2	2 7/8	16 7/8	33											9.0	.81
4	36		2 1/4			18	8 3/4	9 1/4	15 3/8	5 3/8	12 5/8	17 1/8	1 1/2	2 7/8	16 7/8	33											9.0	.81
5	36		2 1/4			18	8 3/4	9 1/4	15 3/8	5 3/8	12 5/8	17 1/8	1 1/2	2 7/8	16 7/8	33											9.0	.81

PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E

FILE NAME : C:\Users\Projects\tr_stdp\late\M16.DGN

PLOT DATE : 13-OCT-2005 14:55

PLOT BY : DITJPH

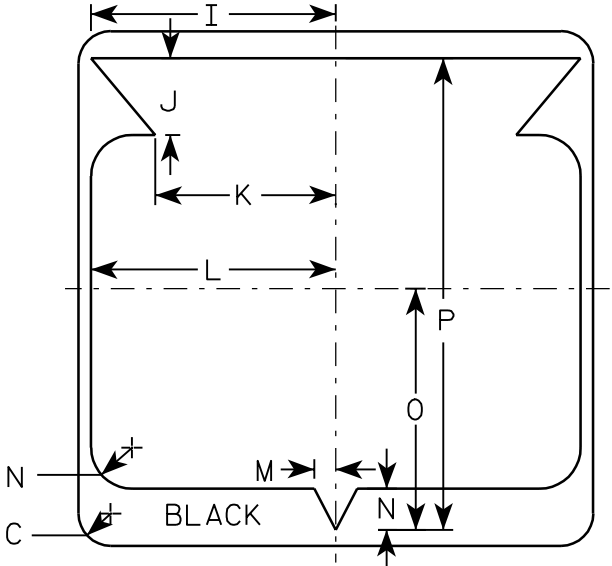
PLOT NAME :

PLOT SCALE : 6.715871:1.000000

WISDOT/CADDS SHEET 42

NOTES

1. Sign is Type II - See Note 6 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - White & Black - See Note 6
Message - Black
3. Message Series - See note 5
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Substitute appropriate Series numerals and adjust spacing as per plate A10-1.
6. Permanent Signs
Background - Type H Reflective
Detour or temporary Signs
Background - Reflective



STATE ROUTE MARKER
M1-6 FOR ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

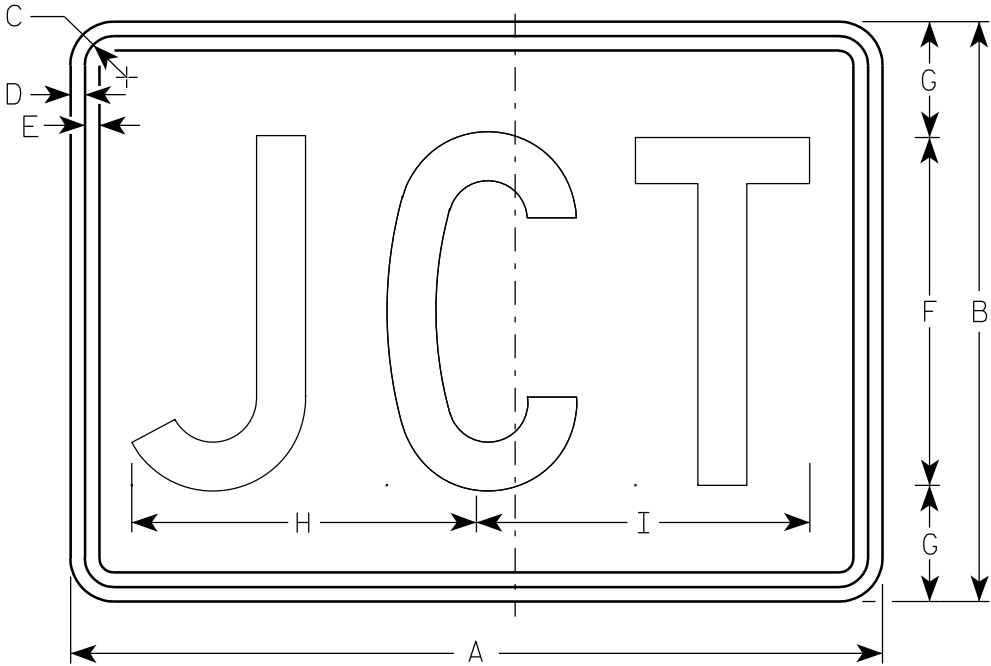
Chester J. Spang
for State Traffic Engineer

DATE 3/20/02

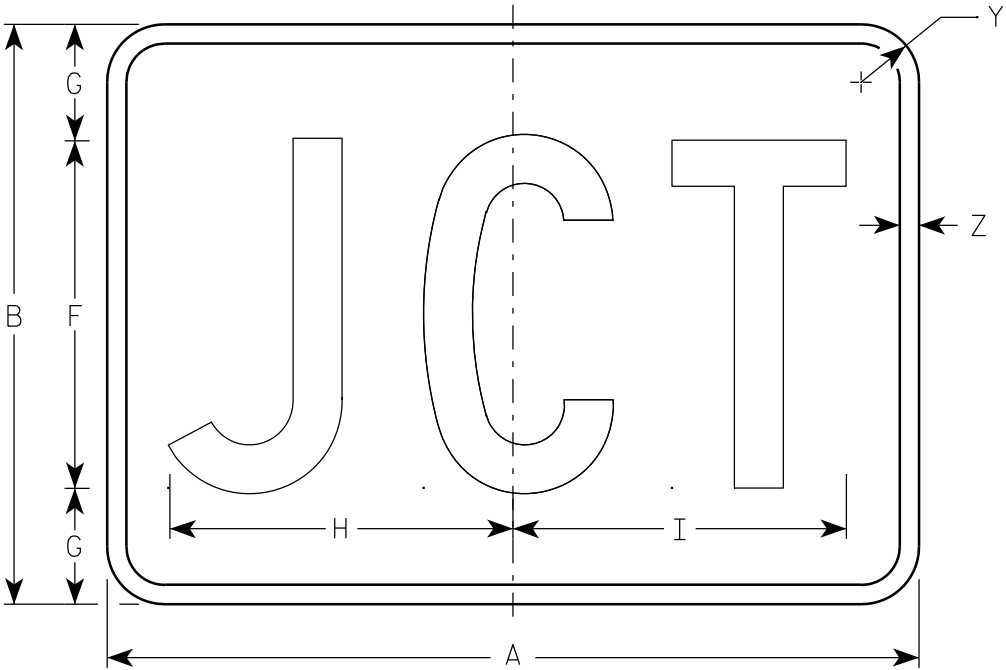
PLATE NO. M1-6.9

NOTES

1. Sign is Type II - See Note 5 - reference
WIS DOT Standard Specification for HIGHWAY
and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - See note 5
Message - See note 5
3. Message Series - C
4. Corners may be square or rounded when base
material is plywood but borders shall be rounded
as shown. When base material is metal, the
corners and borders shall be rounded.
5. M2-1 Background - White - Type H Reflective
(Detour or temporary Signs - Reflective)
Message - Black
MB2-1 Background - Blue
Message - White - Type H Reflective
(Detour or temporary Signs - Reflective)
MG2-1 Background - Green
Message - White - Type H Reflective
MK2-1 Background - Green
Message - White - Type H Reflective
MM2-1 Background - White - Type H Reflective
Message - Green
MN2-1 Background - Brown
Message - White - Type H Reflective
MR2-1 Background - Brown
Message - Yellow - Type H Reflective



M2-1
MK2-1
MM2-1
MR2-1



MB2-1
MG2-1
MN2-1

Metric equivalent
for this sign is:

SIZE	
1	
2	525 mm X 375 mm
3	750 mm X 525 mm
4	750 mm X 525 mm
5	750 mm X 525 mm

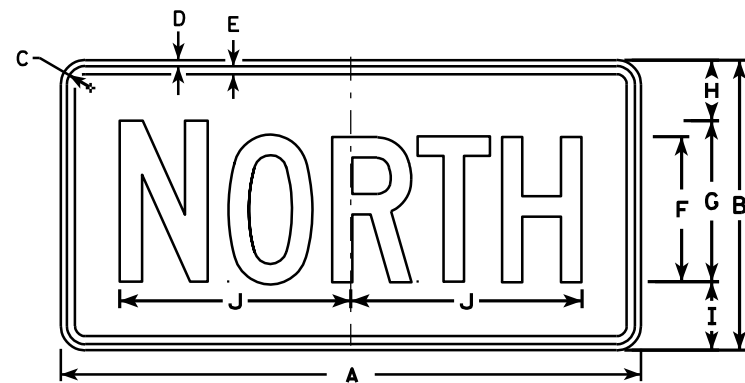
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.	Area m ²
1																												
2	21	15	1 1/8	3/8	3/8	9	3	8 7/8	8 5/8																1 1/2	1/2	2.20	0.20
3	30	21	1 1/8	3/8	3/8	13	4	12 7/8	12 3/8																1 1/2	1/2	4.40	0.20
4	30	21	1 1/8	3/8	3/8	13	4	12 7/8	12 3/8																1 1/2	1/2	4.40	0.20
5	30	21	1 1/8	3/8	3/8	13	4	12 7/8	12 3/8																1 1/2	1/2	4.40	0.20

STANDARD SIGN
M2 - 1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED
Matthew R. Rauch
for State Traffic Engineer

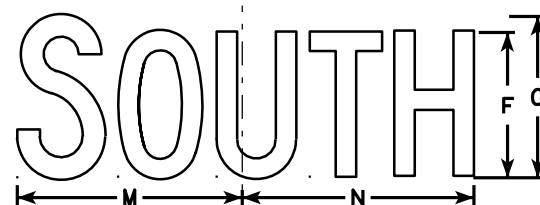
DATE 3/16/10 PLATE NO. M2-1.10



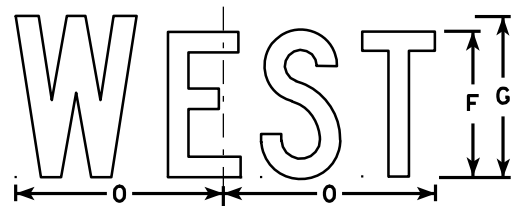
M3-1
MK3-1
M03-1



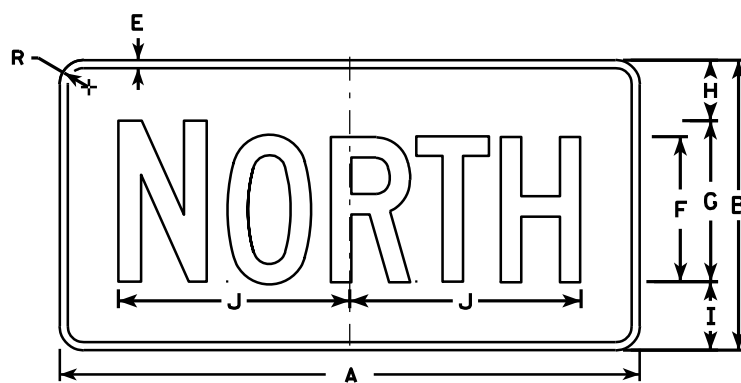
M3-2
MK3-2
M03-2



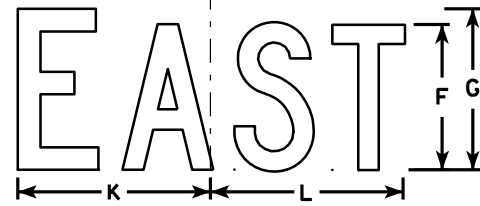
M3-3
MK3-3
M03-3



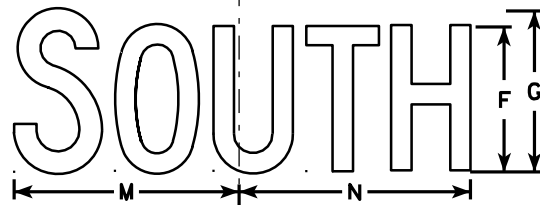
M3-4
MK3-4
M03-4



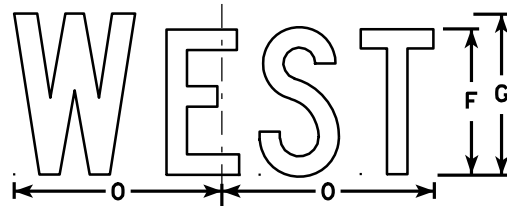
MB3-1
MG3-1
MM3-1
MN3-1



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



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



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

NOTES

1. All Signs Type II - See Note 5 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - See note 5
Message - See note 5
3. Message Series - C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. M3-1 thru M3-4 Background - White - Type H Reflective (Detour or temporary signs - Reflective)
Message - Black
MB3-1 thru MB3-4 Background - Blue
Message - White - Type H Reflective (Detour or temporary signs - Reflective)
MG3-1 thru MG3-4 Background - Green
Message - White - Type H Reflective
MK3-1 thru MK3-4 Background - Green
Message - White - Type H Reflective
MM3-1 thru MM3-4 Background - White - Type H Reflective
Message - Green
MN3-1 thru MN3-4 Background - Brown
Message - White - Type H Reflective
M03-1 thru M03-4 Background - Orange - Reflective
Message - Black
6. Note the first letter of each direction is larger than the remainder of the message.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	24	12	1 1/8	3/8	3/8	6	7	2 1/4	2 3/4	10 1/4	7 7/8	8 3/8	10 1/4	9 3/4	8 3/4			1 1/2									2.00
3	36	18	1 1/8	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13			1 1/2									4.5
4	36	18	1 1/8	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13			1 1/2									4.5
5	36	18	1 1/8	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13			1 1/2									4.5

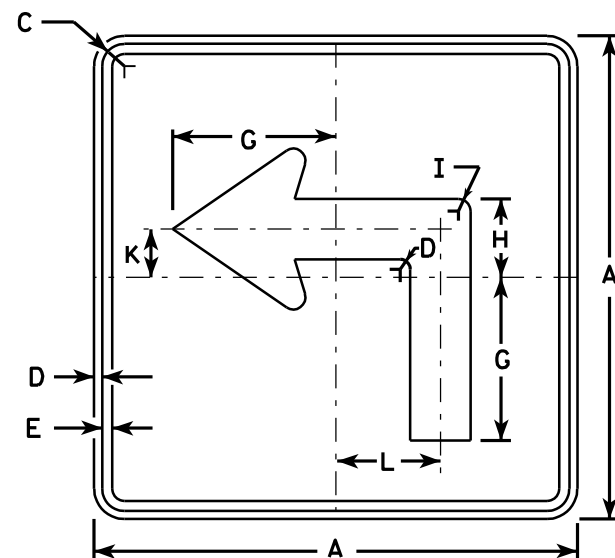
PROJECT NO: HWY: COUNTY: SHEET NO: E

STANDARD SIGNS M3-1 thru M3-4 SERIES

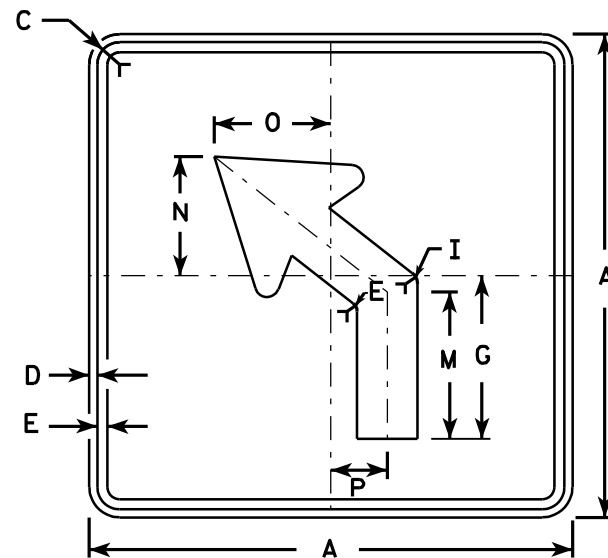
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

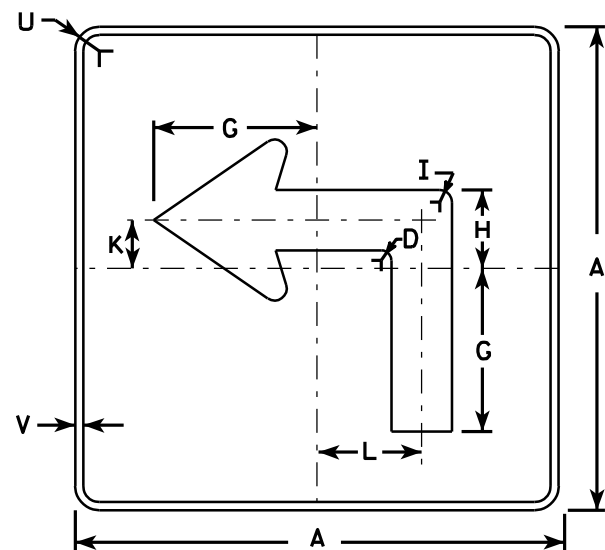
DATE 11/10/10 PLATE NO. M3-1.12



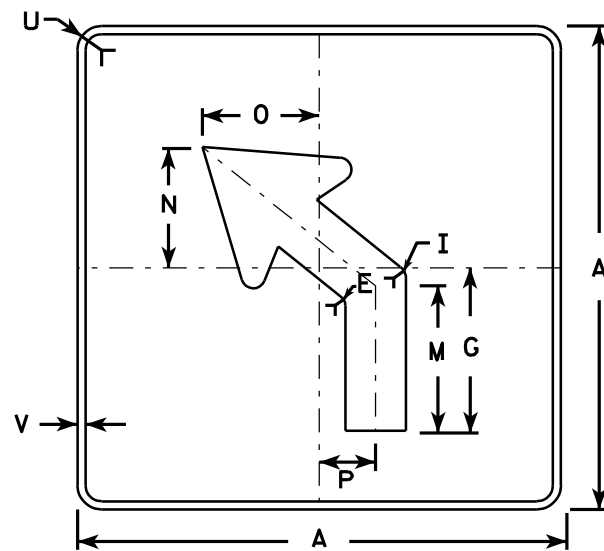
M5-1L
MK5-1L
MM5-1L
MO5-1L
MR5-1L



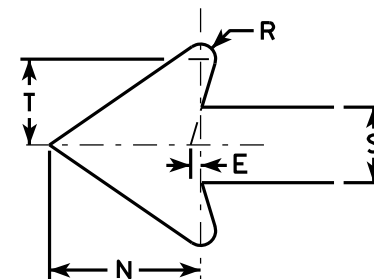
M5-2L
MK5-2L
MM5-2L
MO5-2L
MR5-2L



MB5-1L
MG5-1L
MN5-1L



MB5-2L
MG5-2L
MN5-2L



Metric equivalent
for this sign is:

SIZE	
1	
2	525 mm X 525 mm
3	750 mm X 750 mm
4	750 mm X 750 mm
5	750 mm X 750 mm

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.	Area m ²
1																												
2	21		1 1/8	3/8	3/8		7	3 3/8	5/8		2 1/8	4 1/2	6 3/8	5 1/4	5	2 1/2		1/2	2 5/8	3	1 1/2	1/2					3.06	0.28
3	30		1 3/8	1/2	5/8		10 1/8	4 7/8	7/8		3	6 1/2	9 1/8	7 1/2	7 1/4	3 1/2		3/4	3 3/4	4 1/4	1 7/8	1/2					6.25	0.56
4	30		1 3/8	1/2	5/8		10 1/8	4 7/8	7/8		3	6 1/2	9 1/8	7 1/2	7 1/4	3 1/2		3/4	3 3/4	4 1/4	1 7/8	1/2					6.25	0.56
5	30		1 3/8	1/2	5/8		10 1/8	4 7/8	7/8		3	6 1/2	9 1/8	7 1/2	7 1/4	3 1/2		3/4	3 3/4	4 1/4	1 7/8	1/2					6.25	0.56

PROJECT NO:	HWY:	COUNTY:	SHEET NO:	E
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NOTES

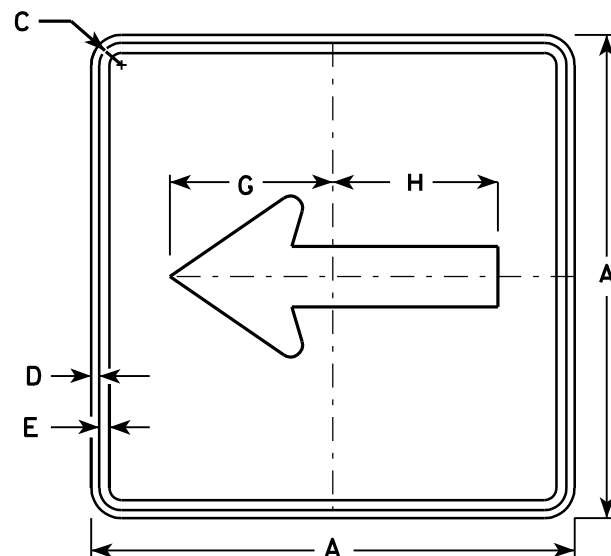
- Signs are Type II - See Note 4 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
- Color:
Background - See note 4
Message - See note 4
- Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
- M5-1 and M5-2 Background - White - Type H Reflective (Detour or temporary Signs - Reflective) Message - Black
MB5-1 and MB5-2 Background - Blue Message - White - Type H Reflective (Detour or temporary Signs - Reflective)
MG5-1 and MG5-2 Background - Green Message - White - Type H Reflective
MK5-1 and MK5-2 Background - Green Message - White Type H Reflective
MM5-1 and MM5-2 Background - White - Type H Reflective Message - Green
MN5-1 and MN5-2 Background - Brown Message - White - Type H Reflective
MO5-1 and MO5-2 Background - Orange - Reflective Message - Black
MR5-1 and MR5-2 Background - Brown Message - Yellow - Type H Reflective
- M5-1R same as M5-1L except arrow points right.
- M5-2R same as M5-2L except arrow tilts right.

STANDARD SIGN
M5-1 & M5-2

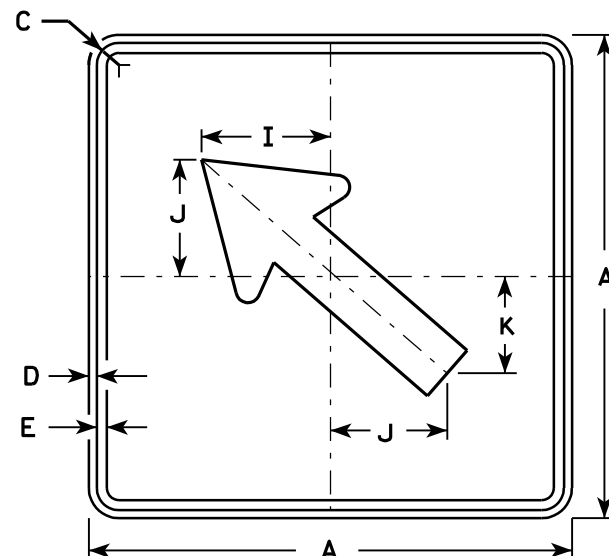
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

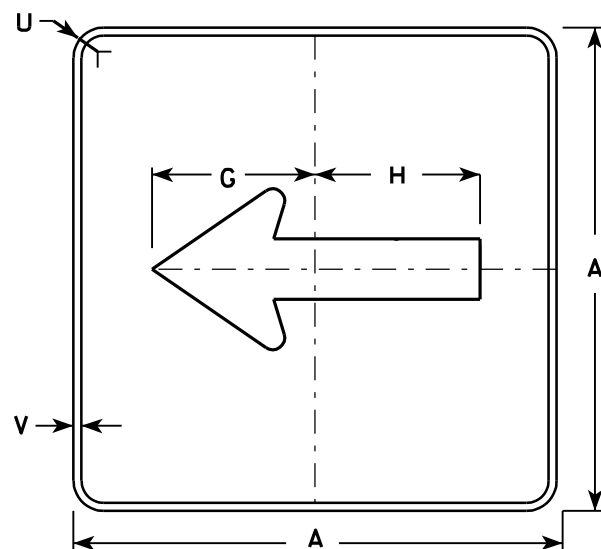
DATE 3/16/10 PLATE NO. M5-1.11



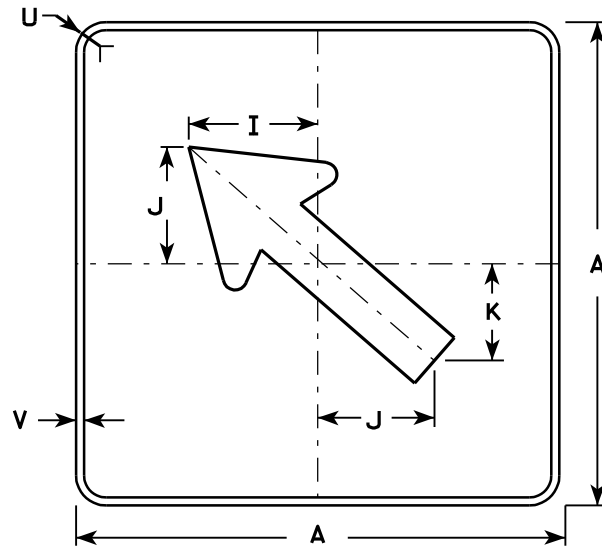
M6-1
MK6-1
MM6-1
MO6-1
MR6-1



M6-2
MK6-2
MM6-2
MO6-2
MR6-2



MB6-1
MG6-1
MN6-1



MB6-2
MG6-2
MN6-2

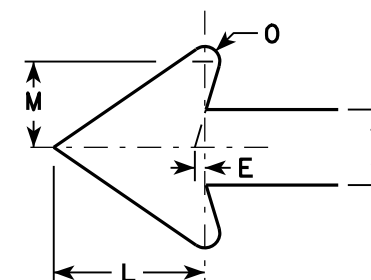
Metric equivalent
for this sign is:

SIZE	
1	
2	525 mm X 525 mm
3	750 mm X 750 mm
4	750 mm X 750 mm
5	750 mm X 750 mm

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.	Area m2
1																												
2	21		1 1/8	3/8	3/8		7 1/2	7 1/8	5 5/8	5	4 1/4	5 1/4	3	2 5/8	1/2						1 1/2	1/2					3.06	0.28
3	30		1 3/8	1/2	5/8		10 3/4	10 1/4	8	7 1/4	6	7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2					6.25	0.56
4	30		1 3/8	1/2	5/8		10 3/4	10 1/4	8	7 1/4	6	7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2					6.25	0.56
5	30		1 3/8	1/2	5/8		10 3/4	10 1/4	8	7 1/4	6	7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2					6.25	0.56

NOTES

- Signs are Type II - See Note 4 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
- Color:
Background - See note 4
Message - See note 4
- Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
- M6-1 and M6-2 Background - White - Type H Reflective
(Detour or temporary Signs - Reflective)
Message - Black
MB6-1 and MB6-2 Background - Blue
Message - White - Type H Reflective
(Detour or temporary Signs - Reflective)
MG6-1 and MG6-2 Background - Green
Message - White - Type H Reflective
MK6-1 and MK6-2 Background - Green
Message - White - Type H Reflective
MM6-1 and MM6-2 Background - White - Type H Reflective
Message - Green
MN6-1 and MN6-2 Background - Brown
Message - White - Type H Reflective
MO6-1 and MO6-2 Background - Orange - Reflective
Message - Black
MR6-1 and MR6-2 Background - Brown
Message - Yellow - Type H Reflective



STANDARD SIGN M6-1 & M6-2 SERIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 3/16/10 PLATE NO. M6-1.12

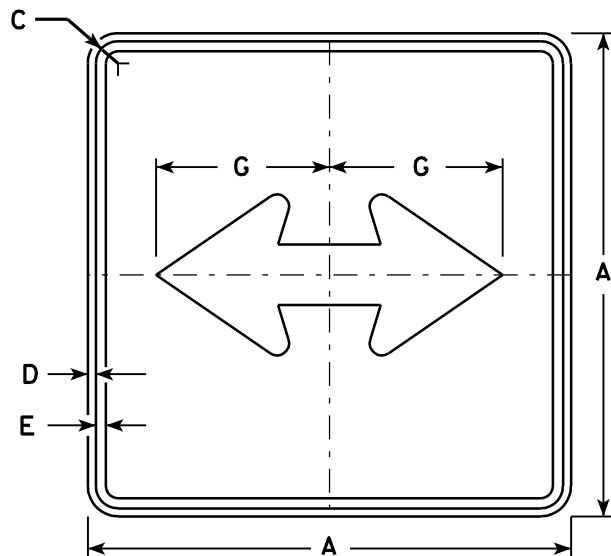
PROJECT NO:

HWY:

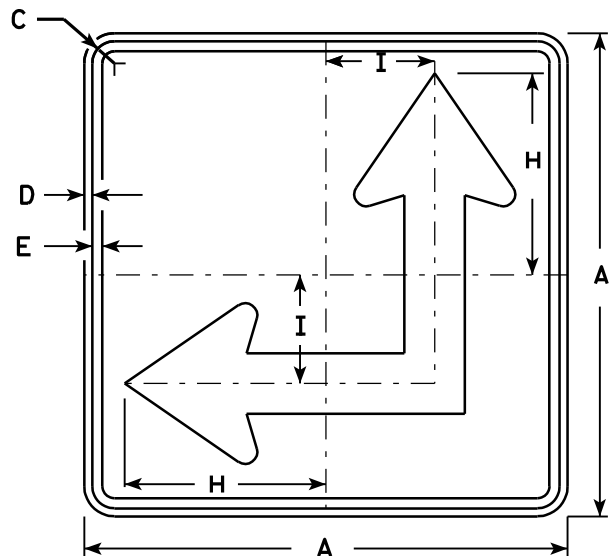
COUNTY:

SHEET NO:

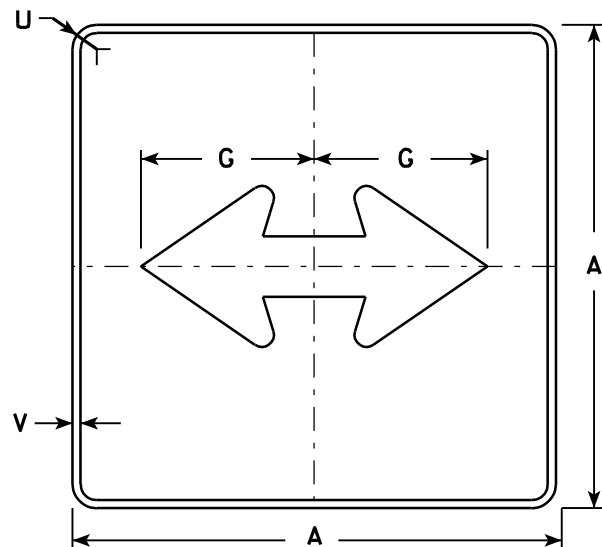
E



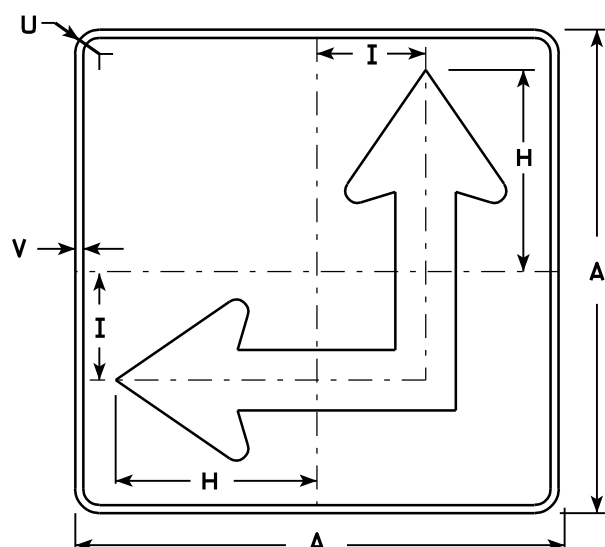
M6 - 4
MK6 - 4
MM6 - 4
MO6 - 4
MR6 - 4



M6 - 6
MK6 - 6
MM6 - 6
MO6 - 6
MR6 - 6



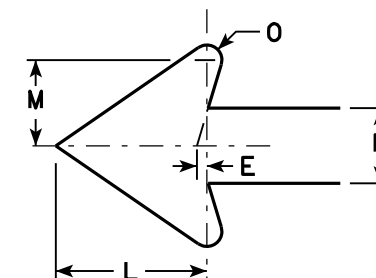
MB6 - 4
MG6 - 4
MN6 - 4



MB6 - 6
MG6 - 6
MN6 - 6

NOTES

- Signs are Type II - See Note 4 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
- Color:
Background - See Note 4
Message - See Note 4
- Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
- M6-4 and M6-6 Background - White - Type H Reflective (Detour or temporary Signs - Reflective)
Message - Black
MB6-4 and MB6-6 Background - Blue
Message - White - Type H Reflective (Detour or temporary Signs - Reflective)
MG6-4 and MG6-6 Background - Green
Message - White - Type H Reflective
MK6-4 and MK6-6 Background - Green
Message - White - Type H Reflective
MM6-4 and MM6-6 Background - White - Type H Reflective
Message - Green
MN6-4 and MN6-6 Background - Brown
Message - White - Type H Reflective
MO6-4 and MO6-6 Background - Orange - Reflective
Message - Black
MR6-4 and MR6-6 Background - Brown
Message - Yellow - Type H Reflective
- M6-6R same as M6-6L except arrow points ahead and right.



Metric equivalent
for this sign is:

SIZE	
1	
2	525 mm X 525 mm
3	750 mm X 750 mm
4	750 mm X 750 mm
5	750 mm X 750 mm

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.	Area sq.
1																												
2	21		1 1/8	3/8	3/8		7 1/2	8 3/4	4 1/4			5 1/4	3	2 5/8	1/2						1 1/2	1/2					3.06	0.28
3	30		1 3/8	1/2	5/8		10 3/4	12 1/2	6 3/4			7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2					6.25	0.56
4	30		1 3/8	1/2	5/8		10 3/4	12 1/2	6 3/4			7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2					6.25	0.56
5	30		1 3/8	1/2	5/8		10 3/4	12 1/2	6 3/4			7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2					6.25	0.56

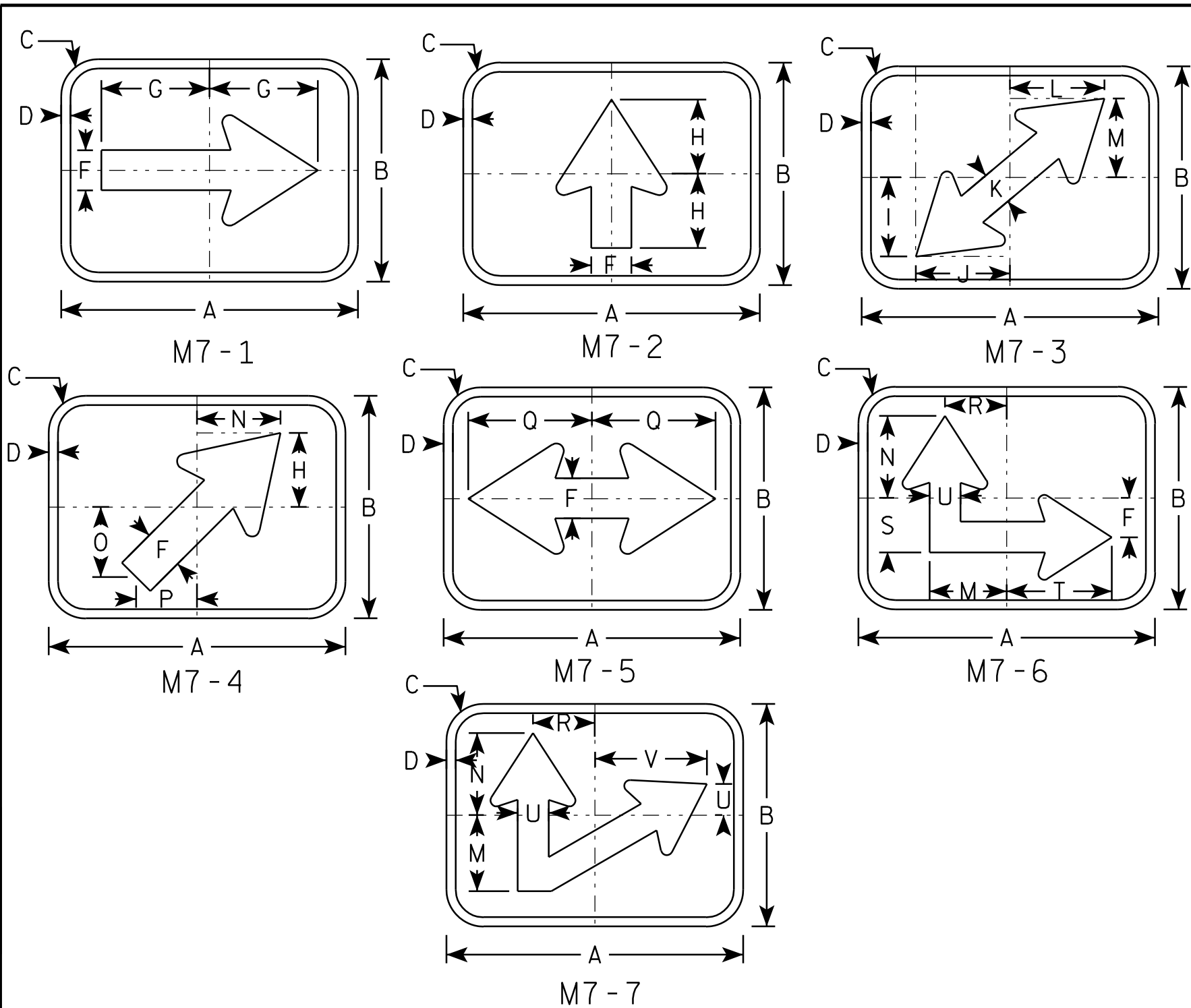
PROJECT NO:	HWY:	COUNTY:	SHEET NO:	E
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STANDARD SIGN
M6 - 4 & M6 - 6
SERIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 3/16/10 PLATE NO. M6-4.7



NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Green
Message - White
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	12	9	1½	¾		1 ⅝	4 ⅜	3	3 ¼	3 ¾	1 ⅜	3 ⅞	3 ⅛	3 ⅜	2 ⅞	2 ½	5	2 ½	2 ¼	4 ¼	1 ¼	4 ½					.75
3																											
4																											
5																											

STANDARD SIGN
M7 SERIES

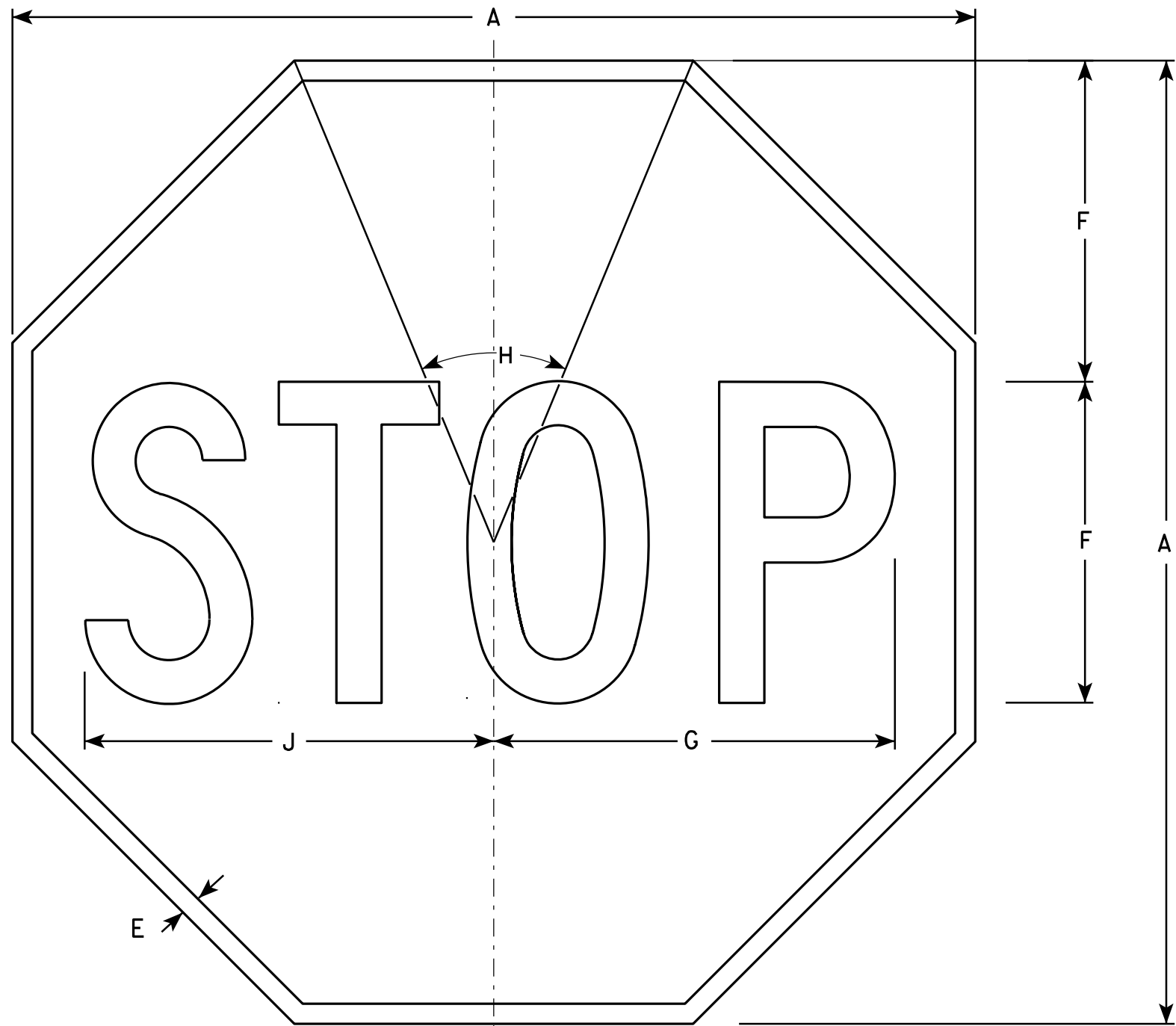
WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Matthew R. Rauch
for State Traffic Engineer

DATE 05/04/10

PLATE NO. M7-1.1



NOTES

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

R1-1

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	24				3/8	8	10	45°		10 1/4																	3.31
2S	30				5/8	10	12 1/2	45°		12 3/4																	5.18
2M	36				3/4	12	15	45°		15 3/8																	7.46
3	36				3/4	12	15	45°		15 3/8																	7.46
4	48				1	16	20	45°		20 1/2																	13.25
5	48				1	16	20	45°		20 1/2																	13.25
6	18				3/8	6	7 3/4	45°		7 3/4																	1.86
7	12				1/4	4	5	45°		5 1/8																	0.78

STANDARD SIGN
R1 - 1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 12/03/10 PLATE NO. R1-1.12

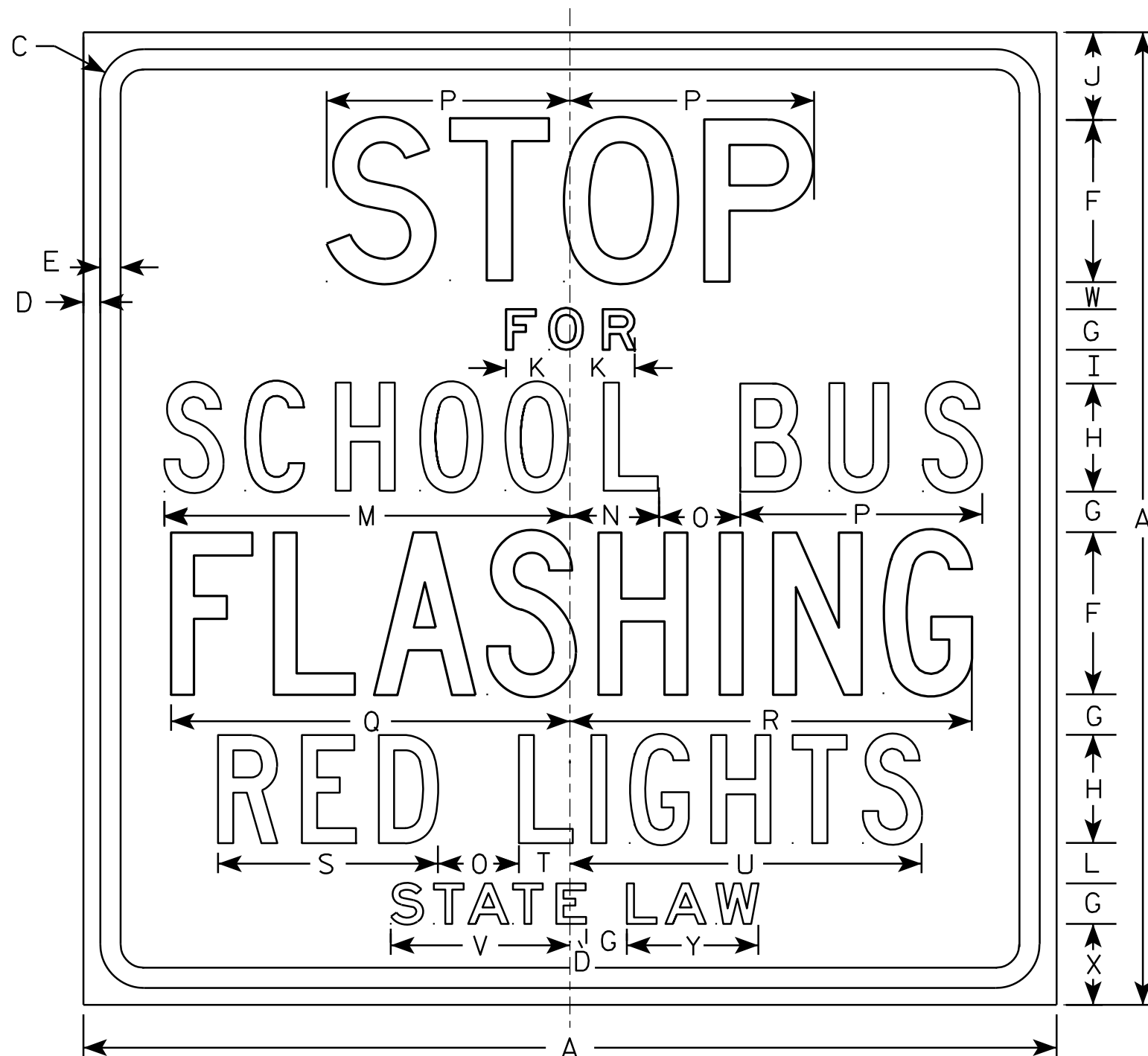
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E



R59-51

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - White
Message - Black
3. Message Series - See note 5
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Line 1 is Series D
Lines 2 & 6 are Series E
Line 3, 4 & 5 are Series C

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	36		1 5⁄8	5⁄8	3⁄4	6	1 1⁄2	4	1 1⁄4	3 1⁄4	2 3⁄8	1 1⁄2	15	3 1⁄4	3	9	14 3⁄4	14 7⁄8	8 1⁄8	1 7⁄8	13	6 5⁄8	1	3	4 7⁄8		9.0
2M	36		1 5⁄8	5⁄8	3⁄4	6	1 1⁄2	4	1 1⁄4	3 1⁄4	2 3⁄8	1 1⁄2	15	3 1⁄4	3	9	14 3⁄4	14 7⁄8	8 1⁄8	1 7⁄8	13	6 5⁄8	1	3	4 7⁄8		9.0
3	48		2 1⁄4	3⁄4	1	8	2	6	1 1⁄4	4 3⁄4	3 1⁄4	1 1⁄2	20 1⁄4	5	3 5⁄8	12	19 1⁄2	20	11 5⁄8	3 3⁄4	19	9 1⁄2	1	3 1⁄2	6 3⁄4		16.0
4	48		2 1⁄4	3⁄4	1	8	2	6	1 1⁄4	4 3⁄4	3 1⁄4	1 1⁄2	20 1⁄4	5	3 5⁄8	12	19 1⁄2	20	11 5⁄8	3 3⁄4	19	9 1⁄2	1	3 1⁄2	6 3⁄4		16.0
5																											

STANDARD SIGN
R59-51

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Matthew R. Rauch
For State Traffic Engineer

DATE 3/30/11

PLATE NO. R59-51.10

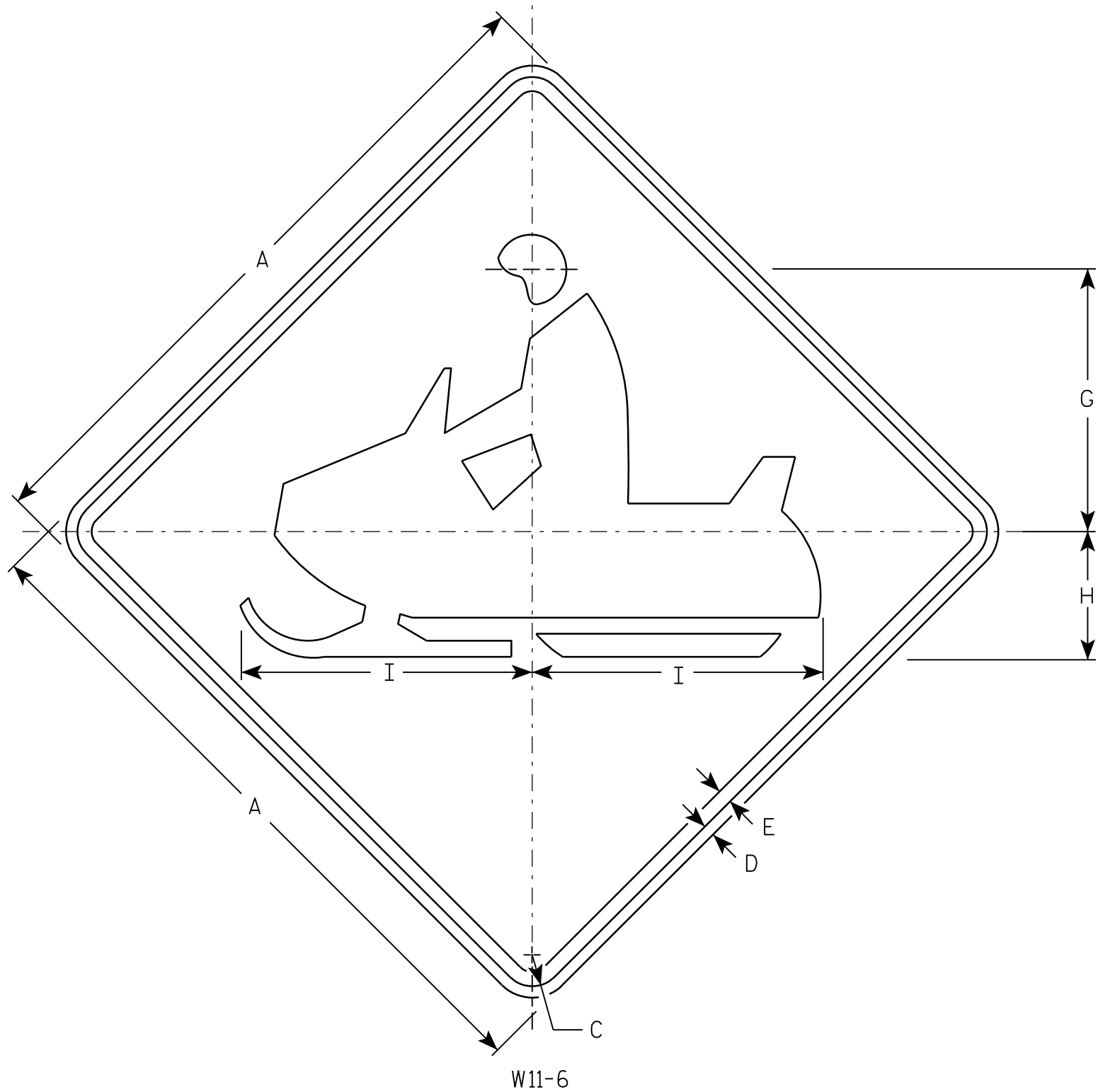
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E



NOTES

- 1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
- 2. Color:
Background - Yellow
Message - Black
- 3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	24		1 1/8	3/8	1/2		9 1/2	4 1/2	10 1/4																		4.0
2S	30		1 3/8	1/2	5/8		11 1/2	5 5/8	12 3/4																		6.25
2M	30		1 3/8	1/2	5/8		11 1/2	5 5/8	12 3/4																		6.25
3	36		1 5/8	5/8	3/4		14 1/8	6 3/4	15 1/4																		9.0
4	48		2 1/4	3/4	1		19	9	20 1/2																		16.0
5																											

PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E

STANDARD SIGN
W11-6

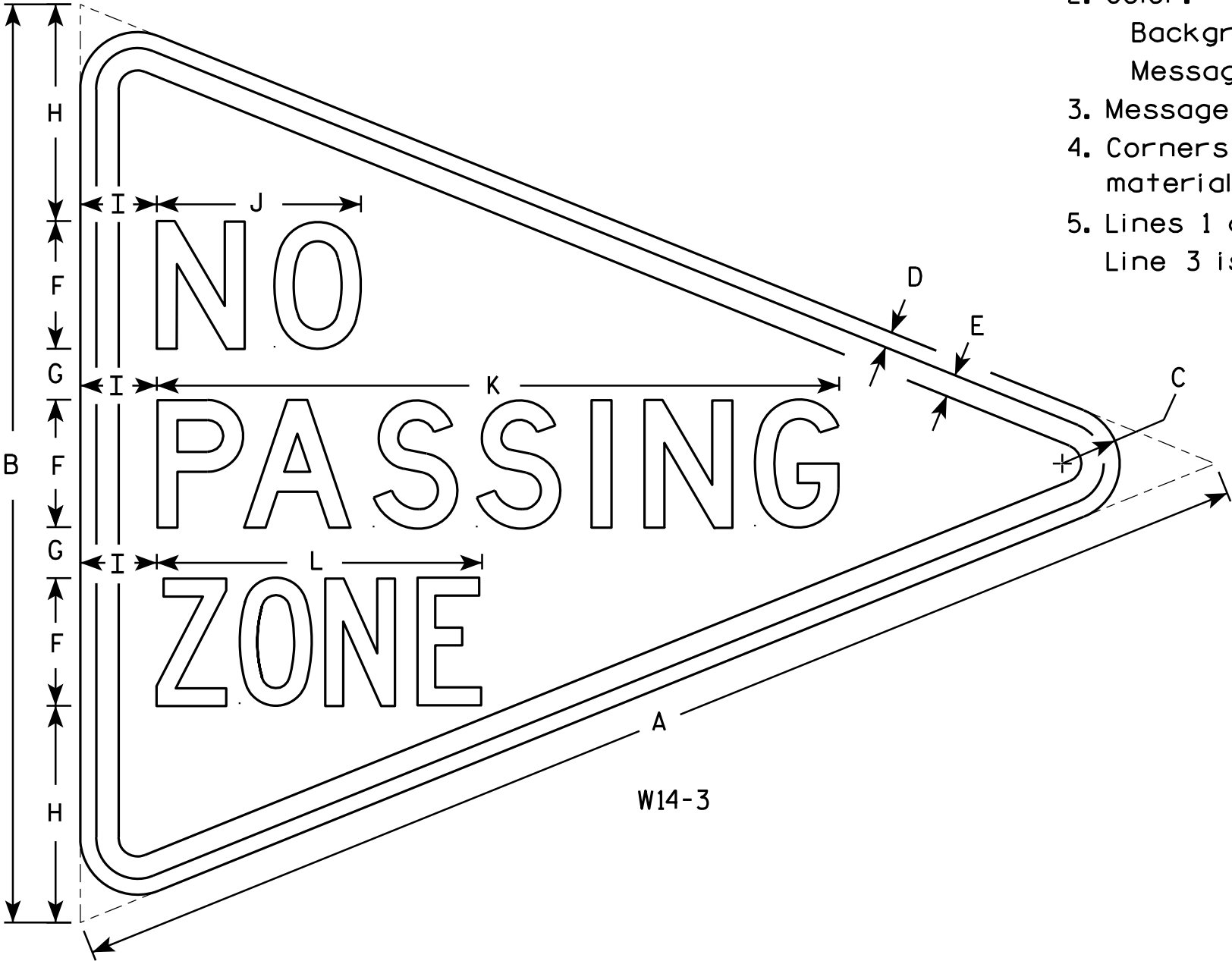
WISCONSIN DEPT OF TRANSPORTATION

APPROVED
Matthew R. Rauch
for State Traffic Engineer

DATE 3/16/11 PLATE NO. W11-6.7

NOTES

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



W14-3

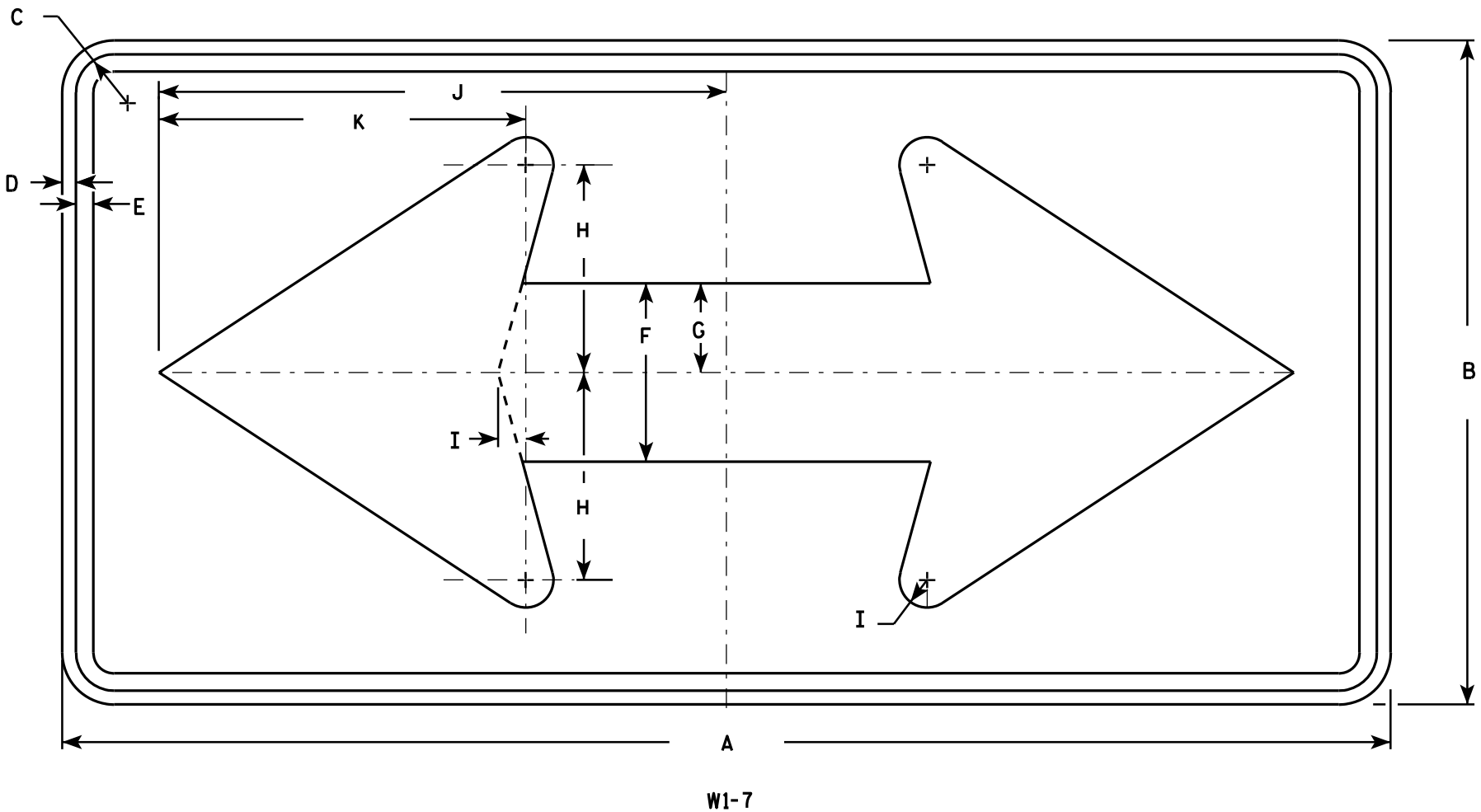
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	48	36	2 1/4	5/8	7/8	5	2	8 1/2	3	8	26 3/4	12 3/4															6.0
2M	48	36	2 1/4	5/8	7/8	5	2	8 1/2	3	8	26 3/4	12 3/4															6.0
3	64	48	3	3/4	1 1/4	6	3	12	4	10 3/4	33 5/8	16 1/2															10.7
4																											
5																											

STANDARD SIGN
W14-3

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 6/7/10 PLATE NO. W14-3.9



NOTES

- 1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
- 2. Color:
Background - Yellow
Message - Black
- 3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36	18	1 1/8	3/8	1/2	5	2 1/2	5 3/4	3/4	15 5/8	10 1/8																4.5
2S	48	24	1 3/8	1/2	5/8	6 1/2	3 1/4	7 1/2	1	20 1/2	13 1/4																8.0
2M	48	24	1 3/8	1/2	5/8	6 1/2	3 1/4	7 1/2	1	20 1/2	13 1/4																8.0
3	60	30	1 3/8	1/2	5/8	8	4	9 1/4	1 1/4	25 3/8	16 1/4																12.5
4	60	30	1 3/8	1/2	5/8	8	4	9 1/4	1 1/4	25 3/8	16 1/4																12.5
5	96	48	2 1/4	3/4	1	13	6 1/2	15	2	41	26 1/2																32.0

STANDARD SIGN
W1 - 7

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 6/7/10 PLATE NO. W1-7.7

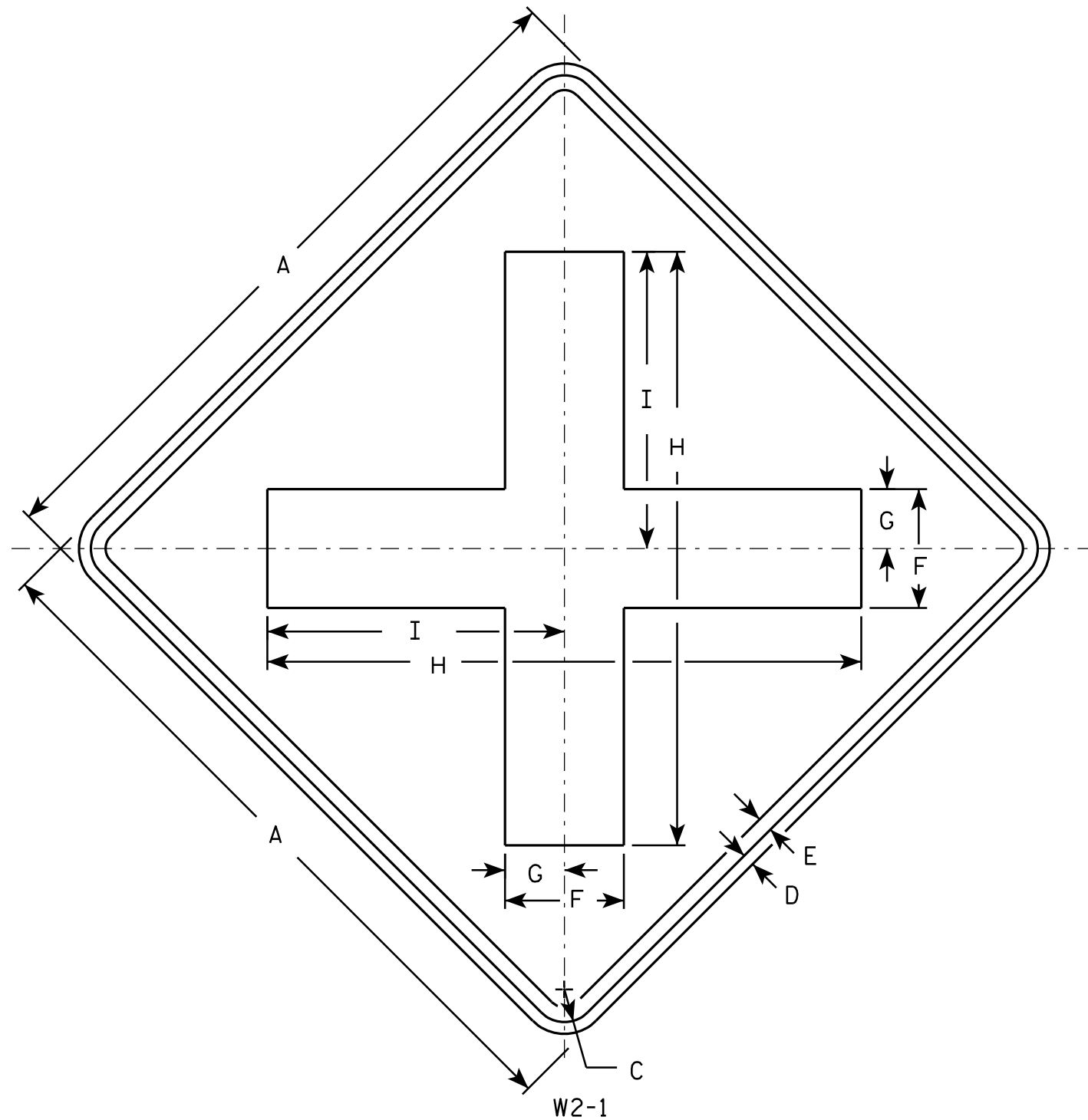
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E



NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Yellow
Message - Black
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	24		1 1/8	3/8	1/2	4	2	20	10																		4.0
2S	30		1 3/8	1/2	5/8	5	2 1/2	25	12 1/2																		6.25
2M	30		1 3/8	1/2	5/8	5	2 1/2	25	12 1/2																		6.25
3	36		1 5/8	5/8	3/4	6	3	30	15																		9.0
4	48		2 1/4	3/4	1	8	4	40	20																		16.0
5																											

STANDARD SIGN W2-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 5/29/12 PLATE NO. W2-1.9

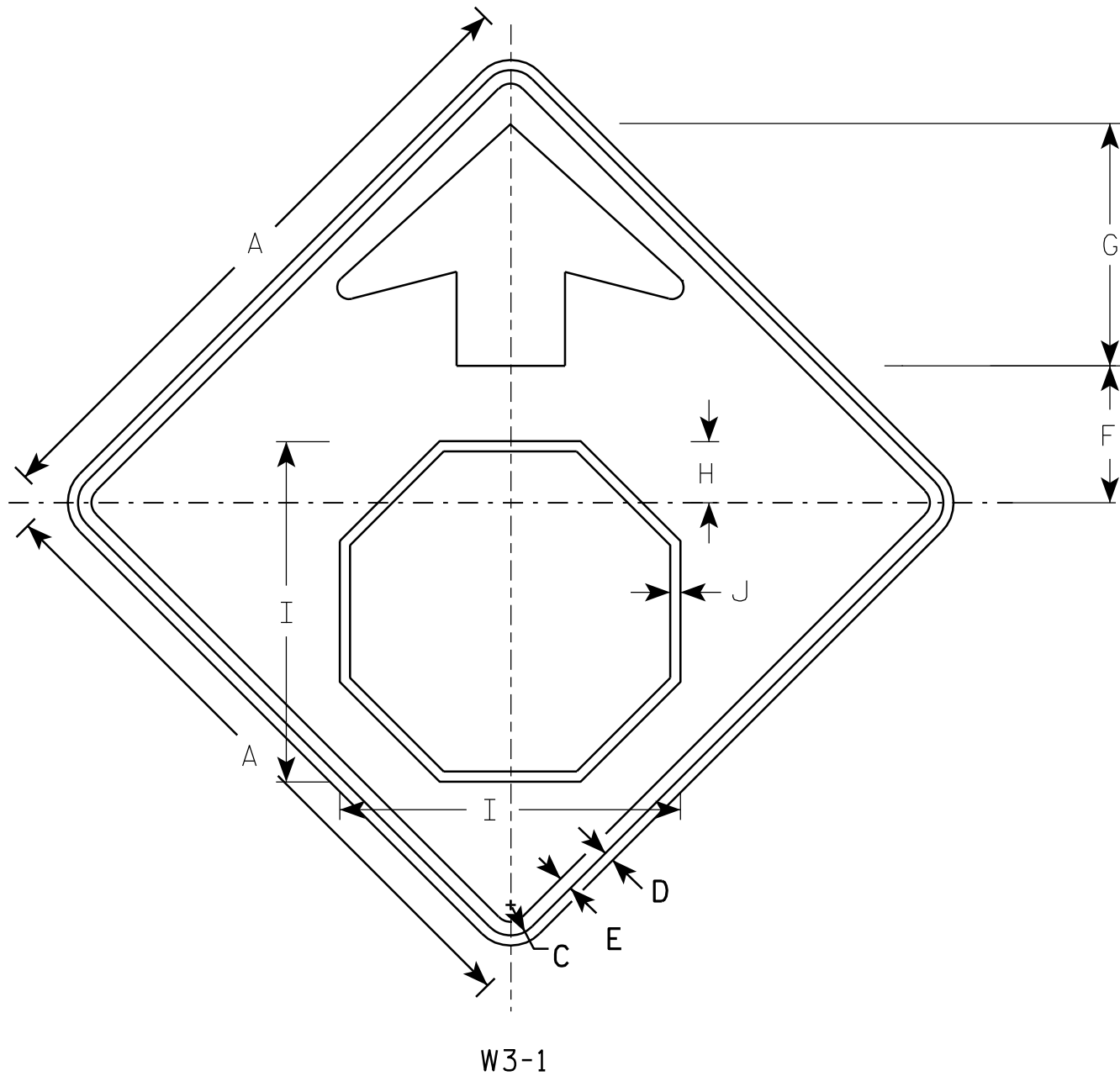
PROJECT NO:

HWY:

COUNTY:

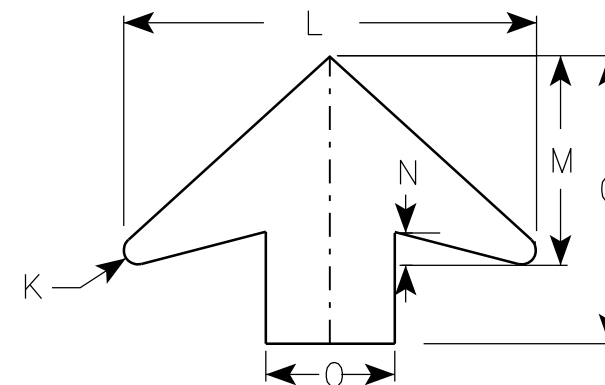
SHEET NO:

E



NOTES

1. All Signs Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - YELLOW
Arrow & Border - BLACK
Stop Symbol - WHITE BORDER ON RED BACKGROUND



ARROW DETAIL

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	30		1 ³ / ₈	1/2	5/8	6 1/4	11 1/4	2 7/8	15 3/4	1/2	1/2	16	8	1 1/4	5												6.25
2S	36		1 5/8	5/8	3/4	7 1/2	13 1/2	3 1/2	19	5/8	5/8	19 1/4	9 3/4	1 5/8	6												9.0
2M	36		1 5/8	5/8	3/4	7 1/2	13 1/2	3 1/2	19	5/8	5/8	19 1/4	9 3/4	1 5/8	6												9.0
3	36		1 5/8	5/8	3/4	7 1/2	13 1/2	3 1/2	19	5/8	5/8	19 1/4	9 3/4	1 5/8	6												9.0
4	48		2 1/4	3/4	1	10	17 7/8	4 1/2	25 1/8	3/4	7/8	25 5/8	13	2	8												16.0
5	48		2 1/4	3/4	1	10	17 7/8	4 1/2	25 1/8	3/4	7/8	25 5/8	13	2	8												16.0

PROJECT NO:

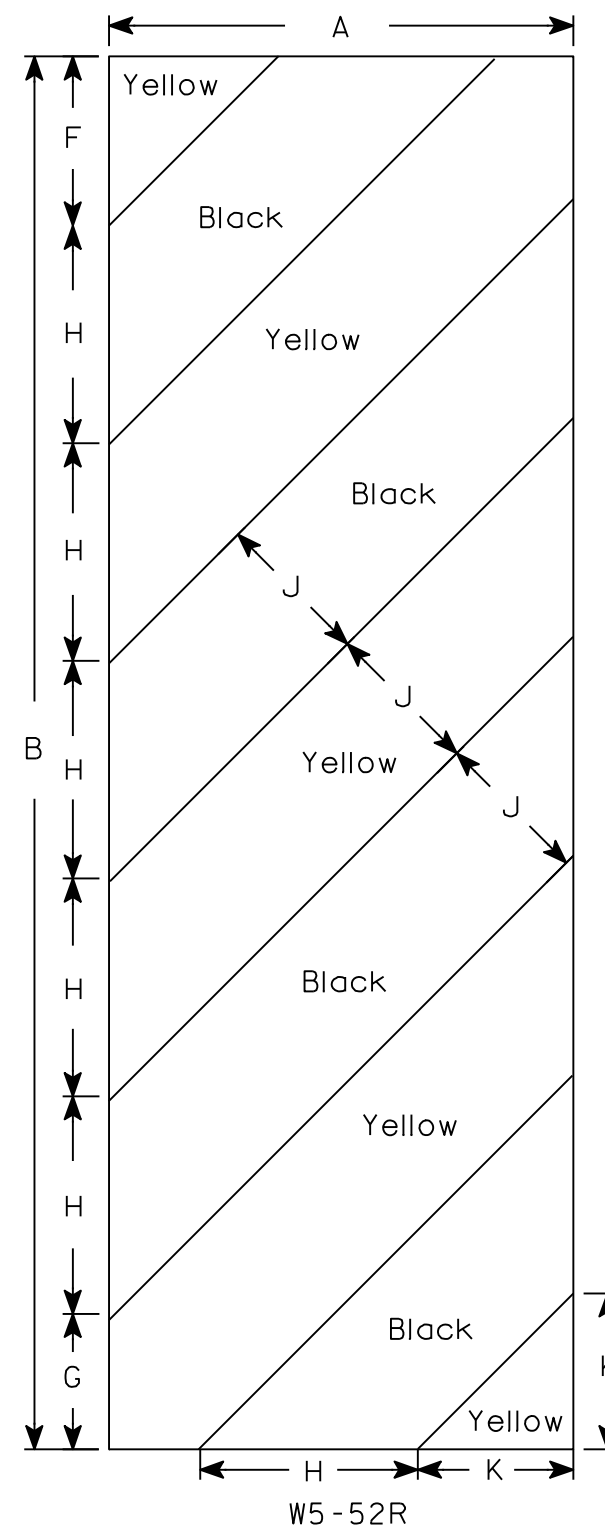
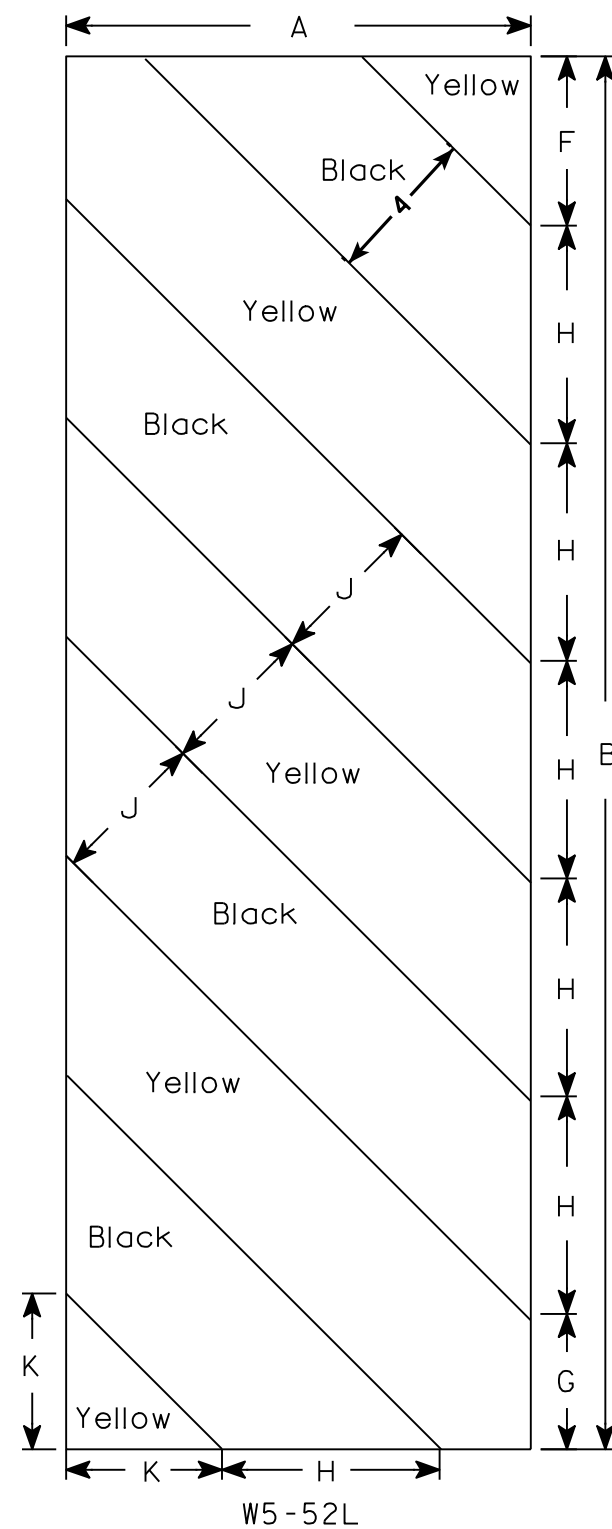
STANDARD SIGN W3-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer
DATE 6/7/10 PLATE NO. W3-1.12

SHEET NO:

E



NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
 - Background - Yellow
 - Message - Black
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. Alternate colors of stripes as shown.

[illegible]

STANDARD SIGN
W5-52L & W5-52R

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer
DATE 5/29/12 PLATE NO. W5-52.9

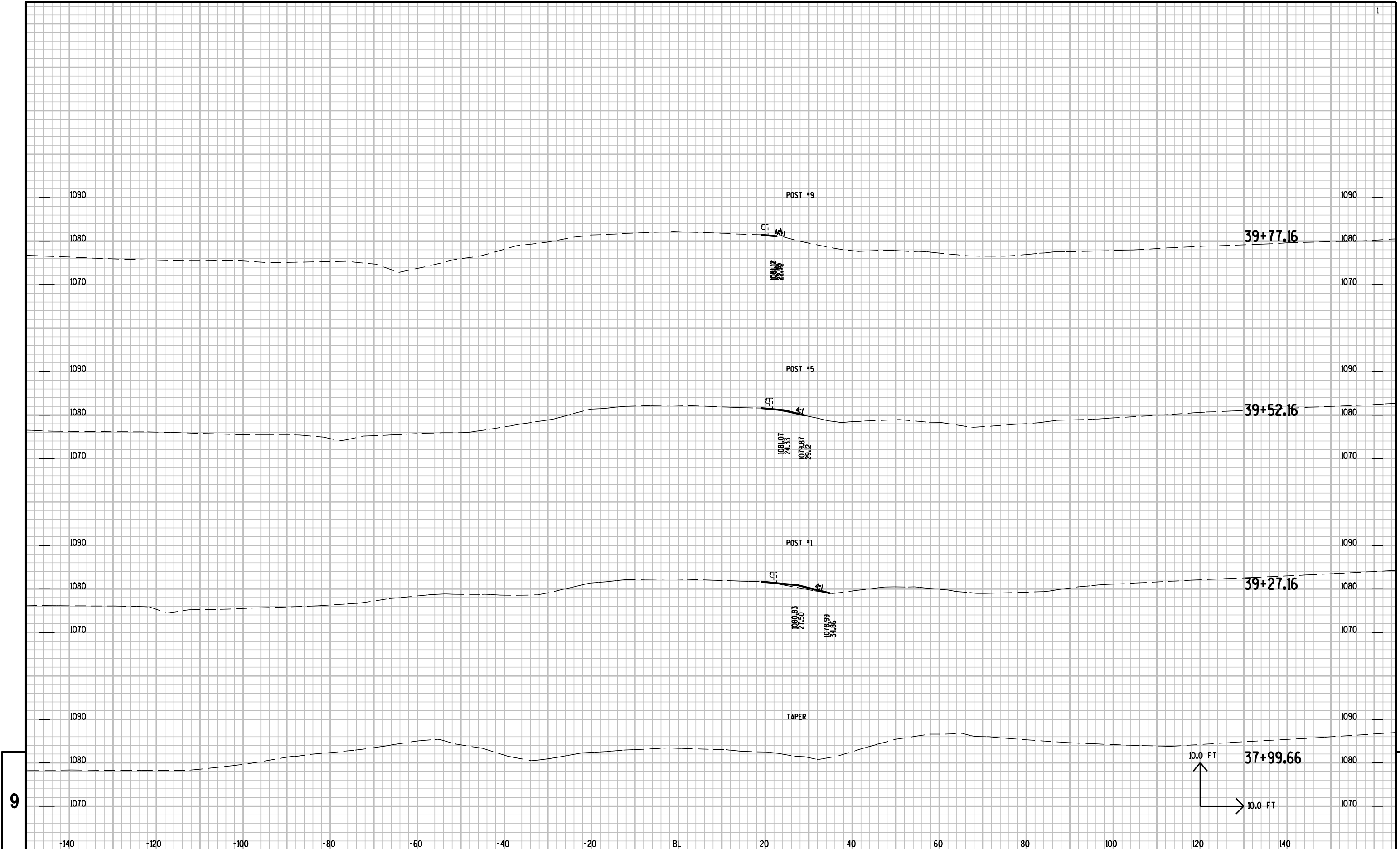
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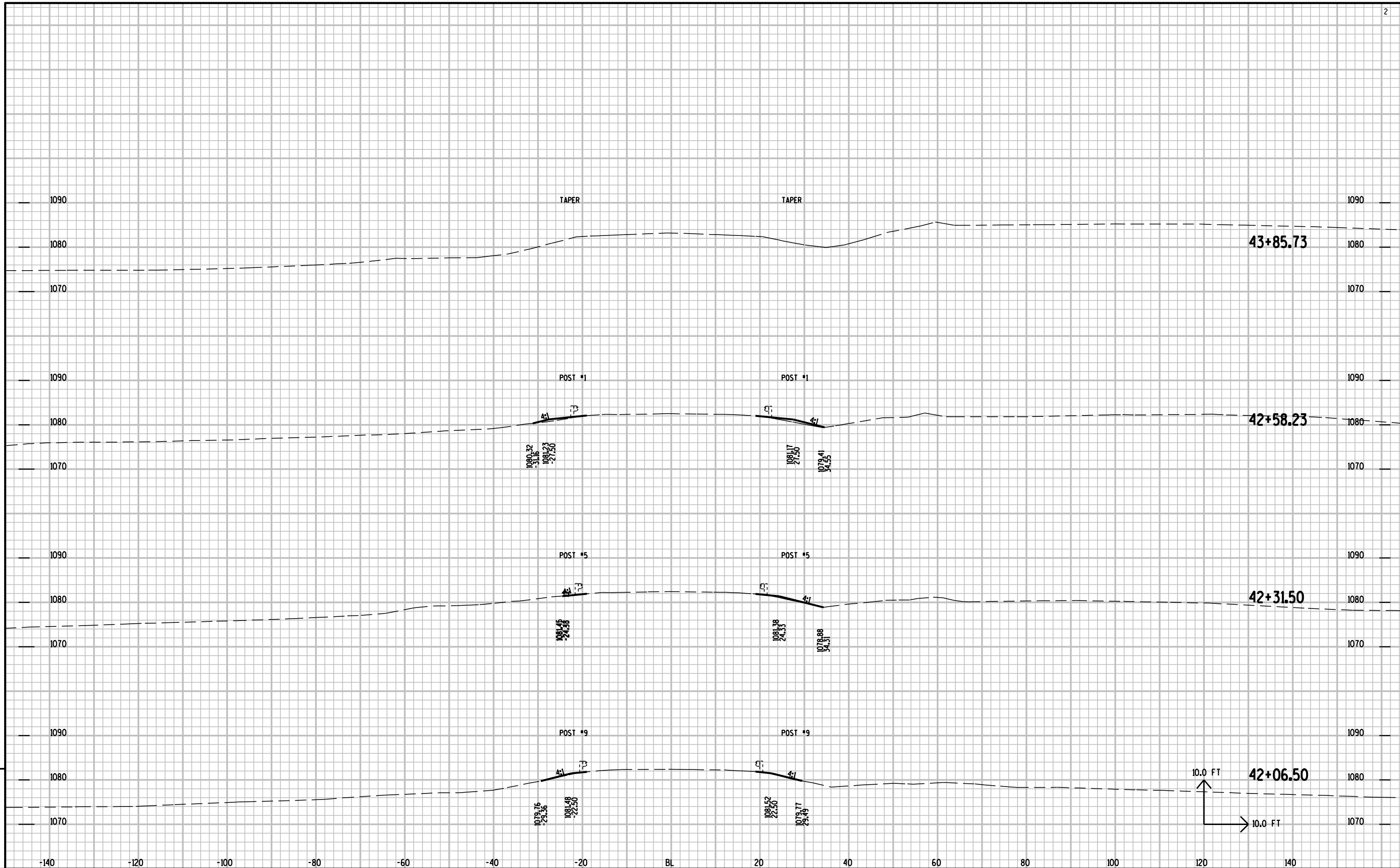
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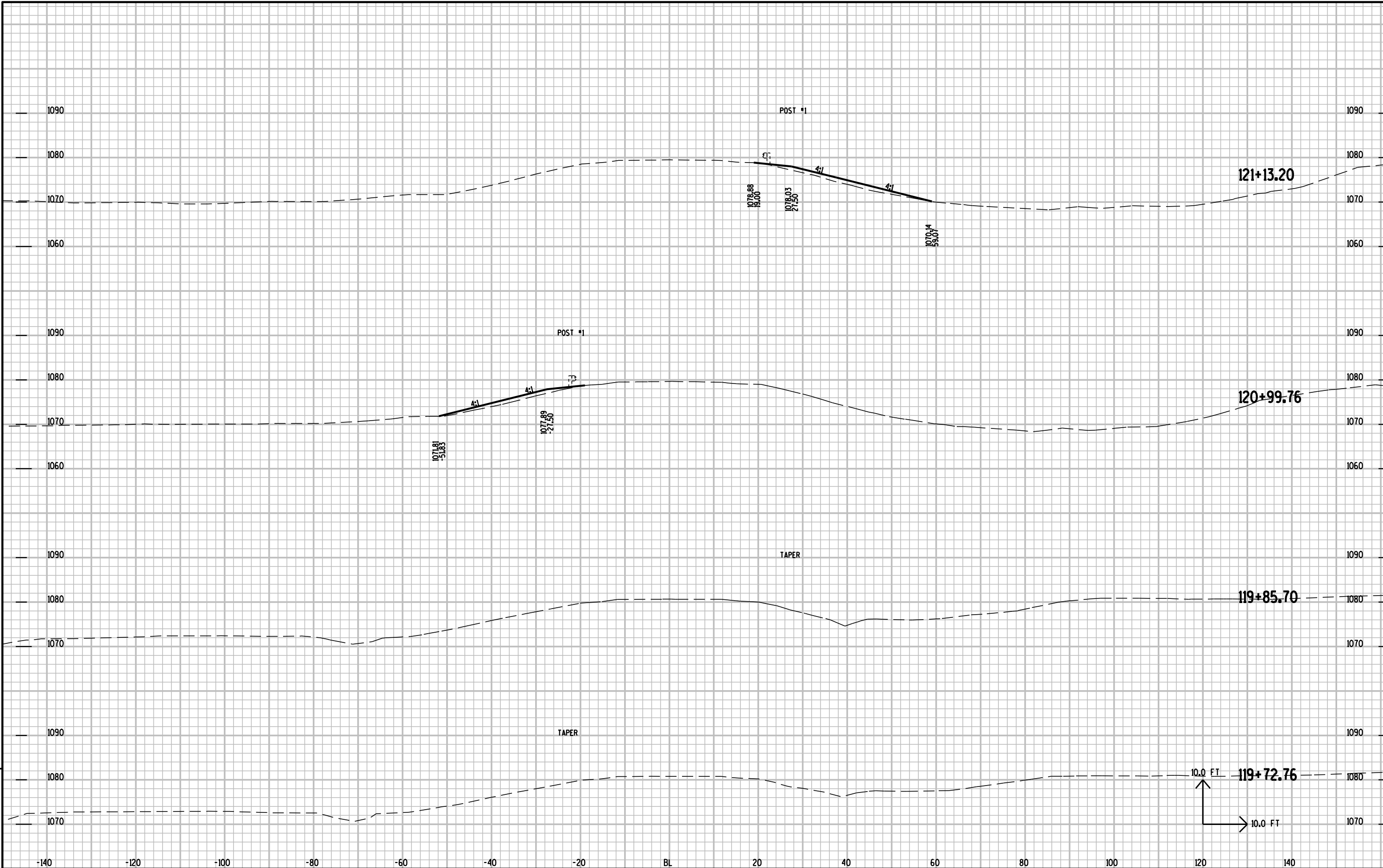
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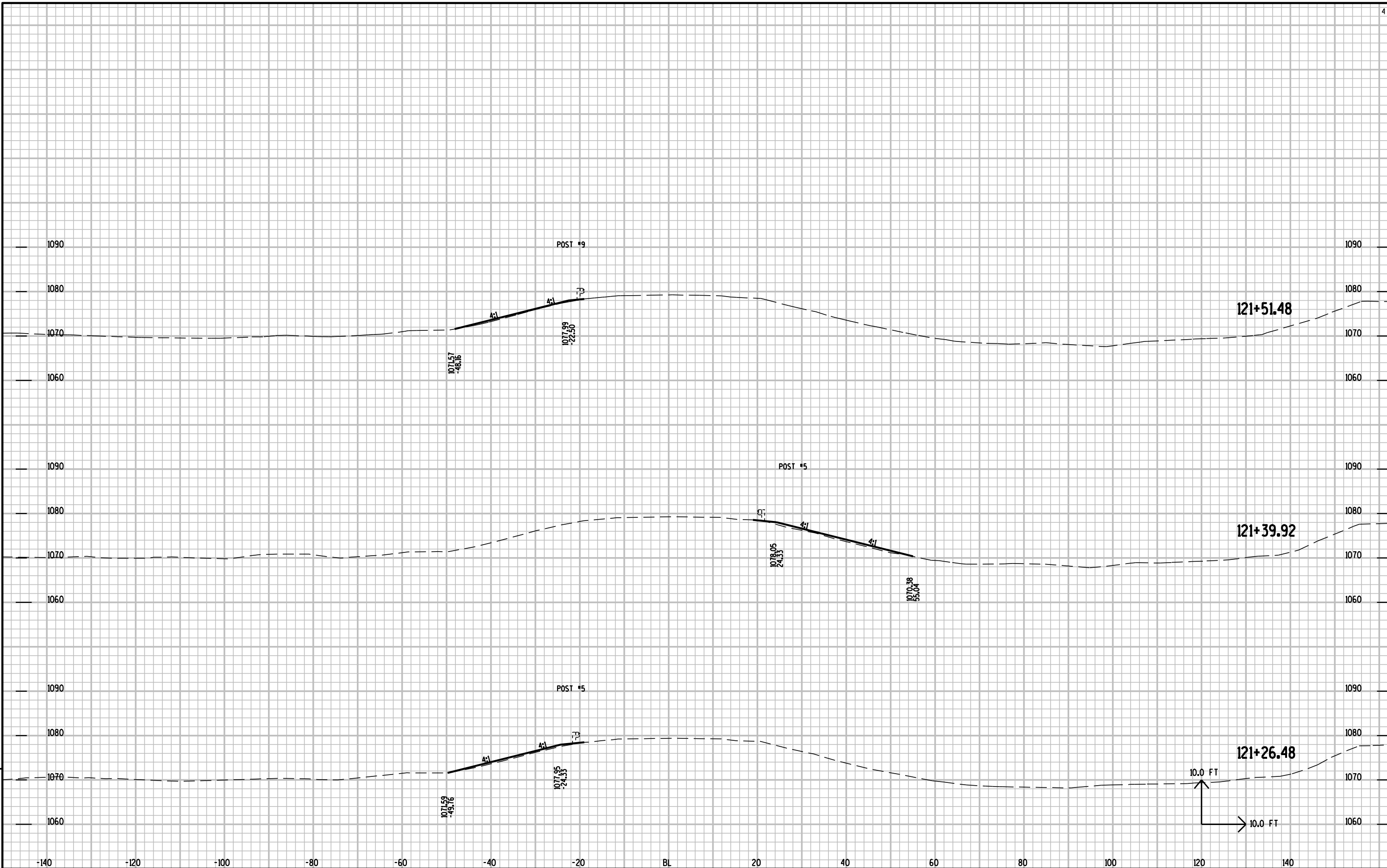
SHEET NO:

E

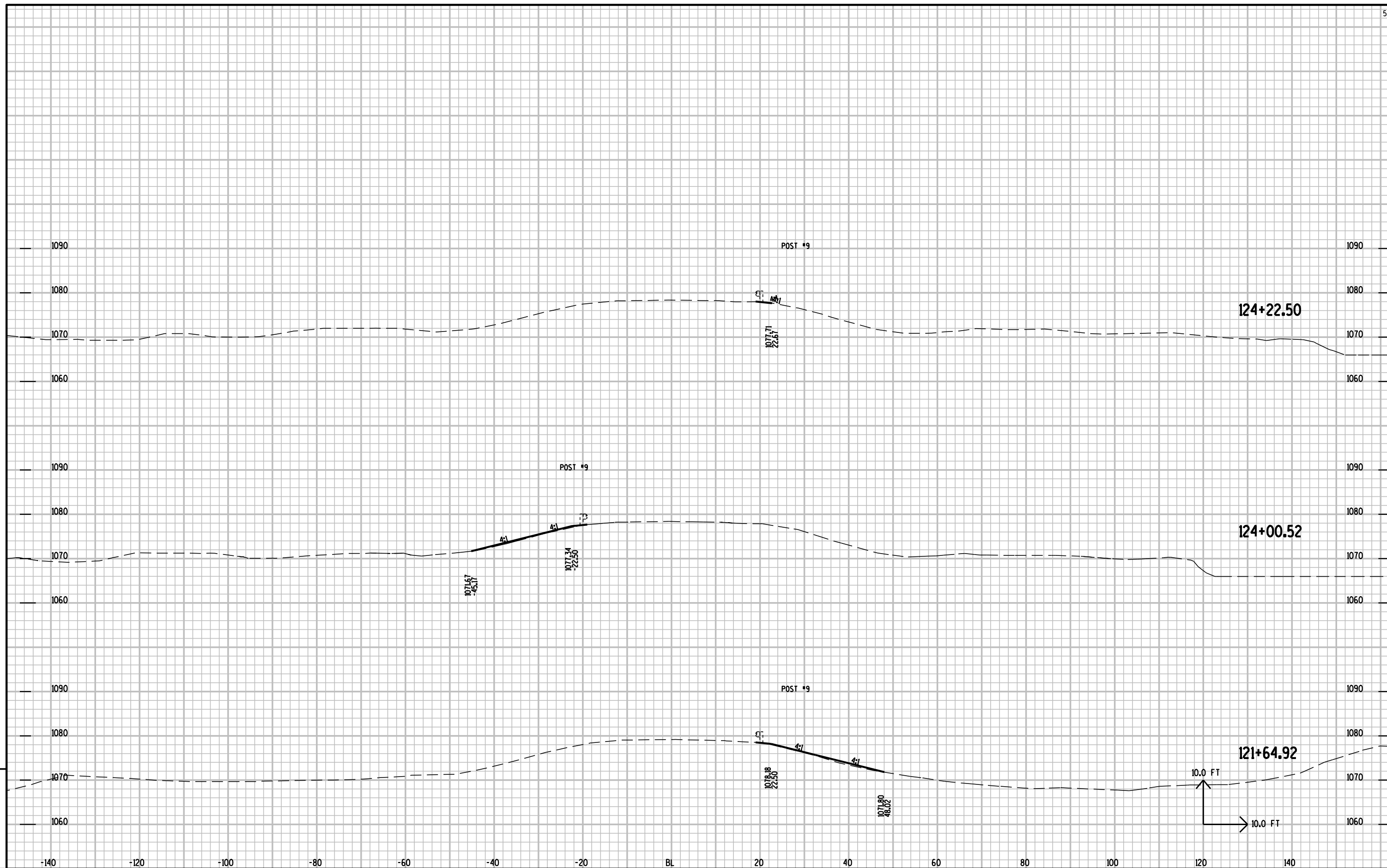




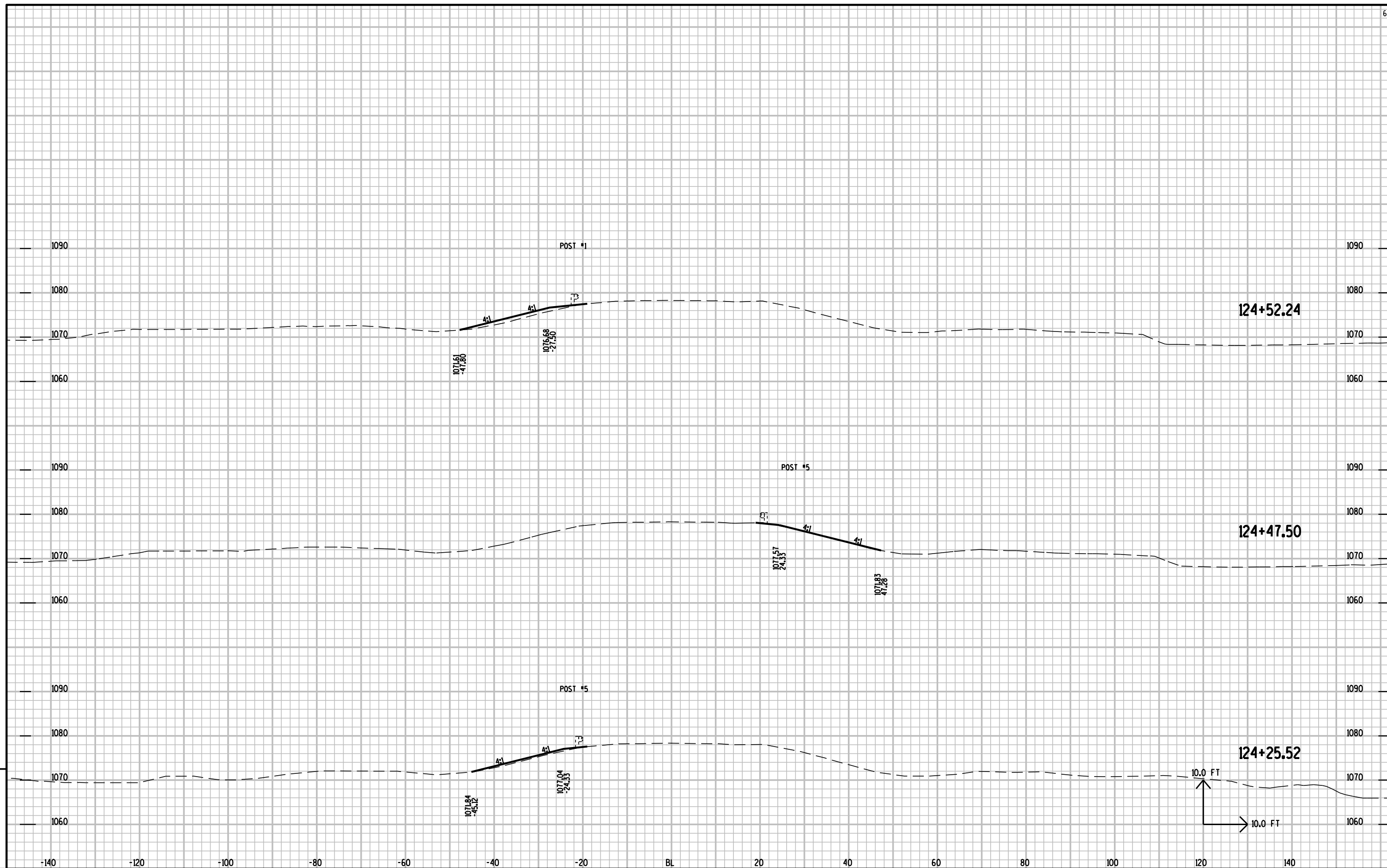




PROJECT NO: 8070-08-76	HWY: USH 63	COUNTY: ST. CROIX	CROSS SECTIONS:	BEAM GUARD LOCATIONS	SHEET NO:	E
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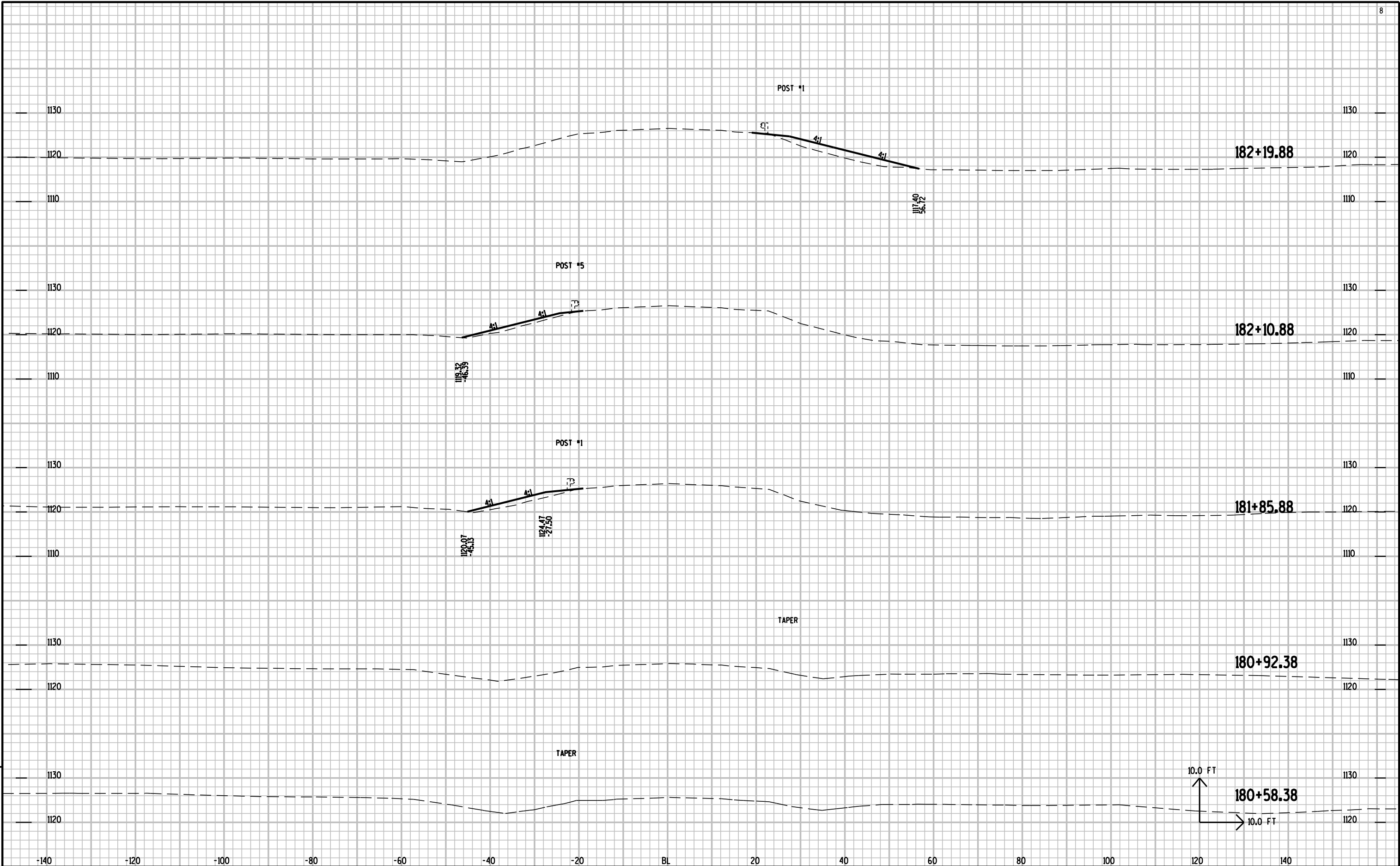


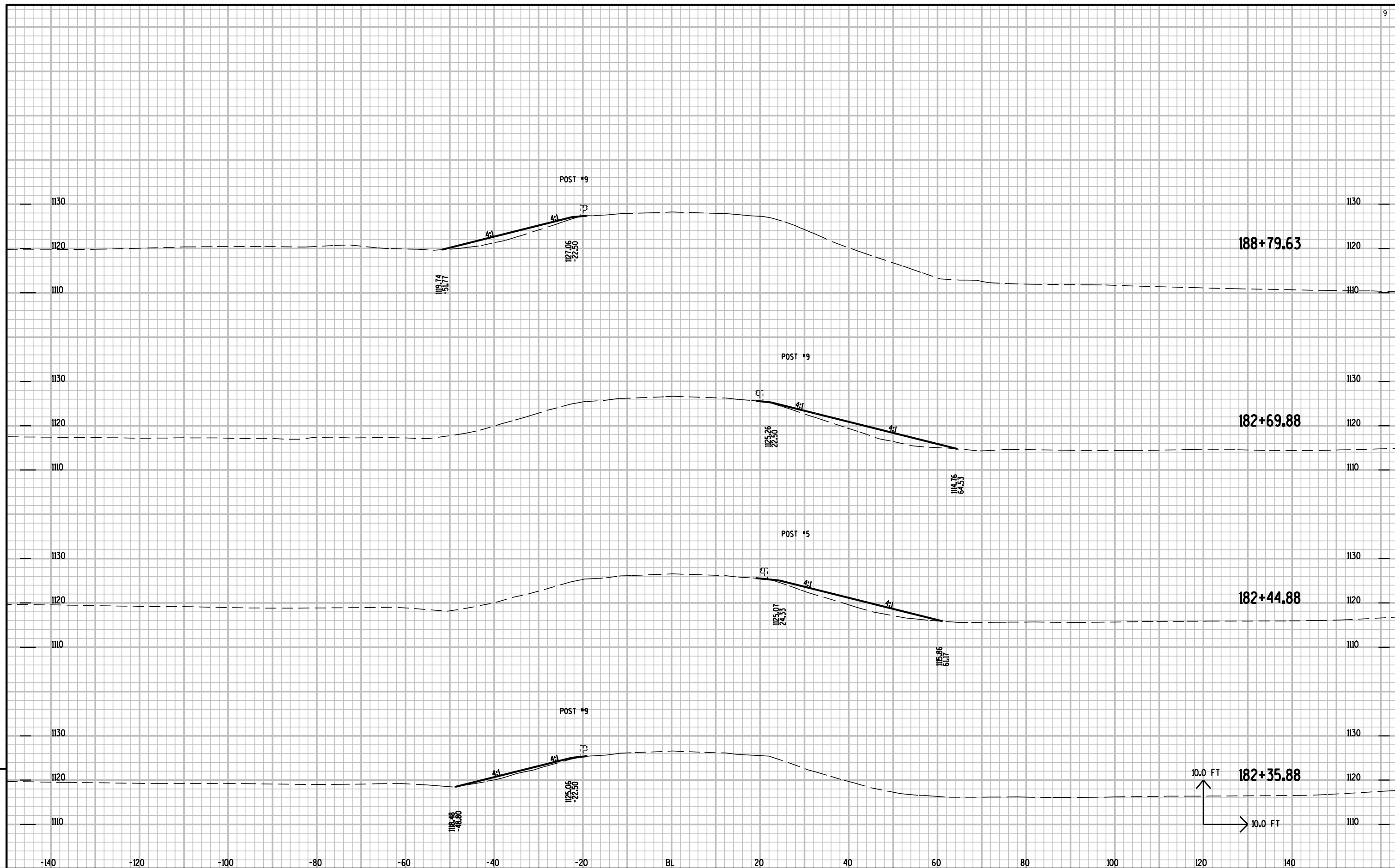
PROJECT NO: 8070-08-76	HWY: USH 63	COUNTY: ST. CROIX	CROSS SECTIONS:	BEAM GUARD LOCATIONS	SHEET NO:	E
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9

9

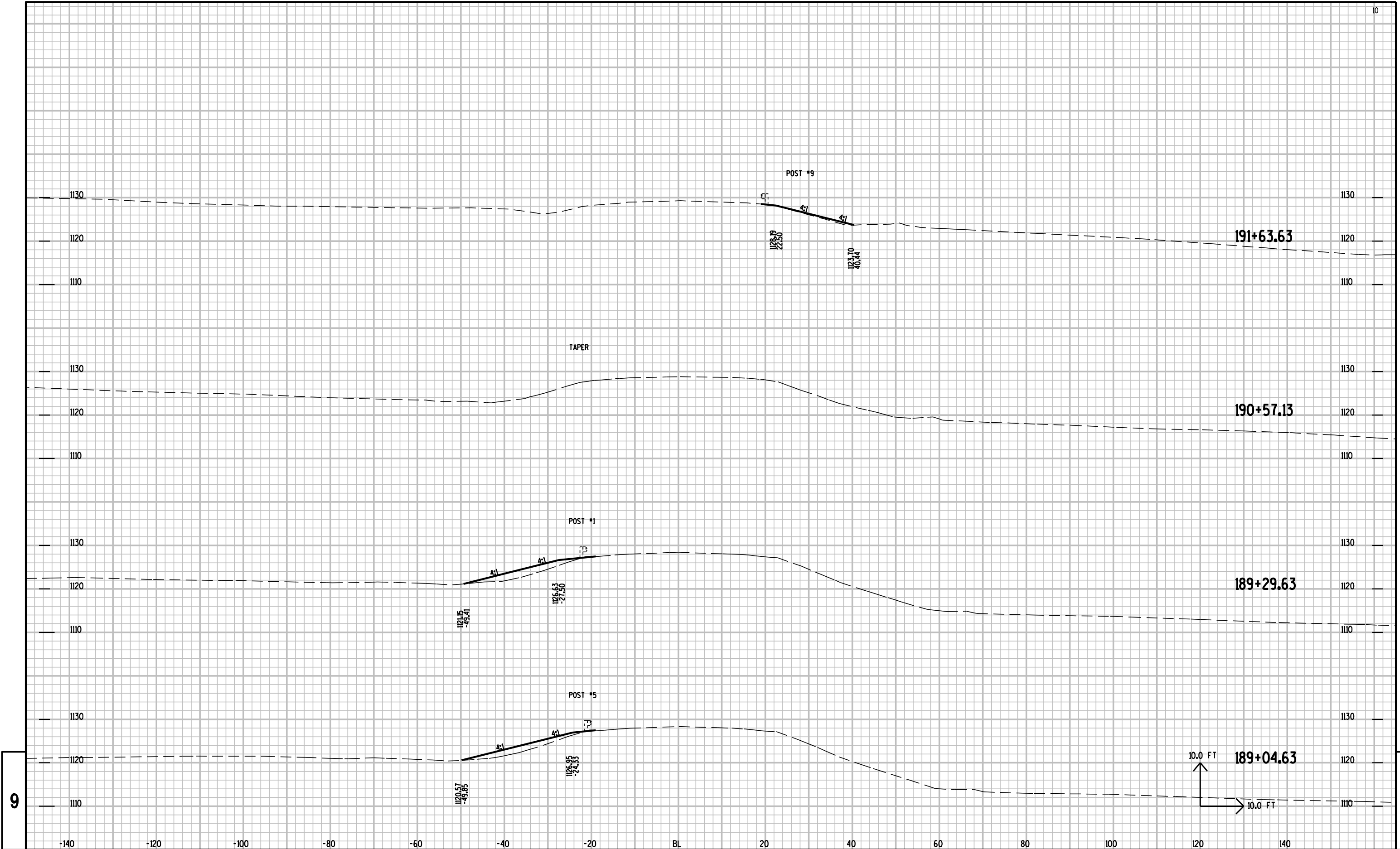




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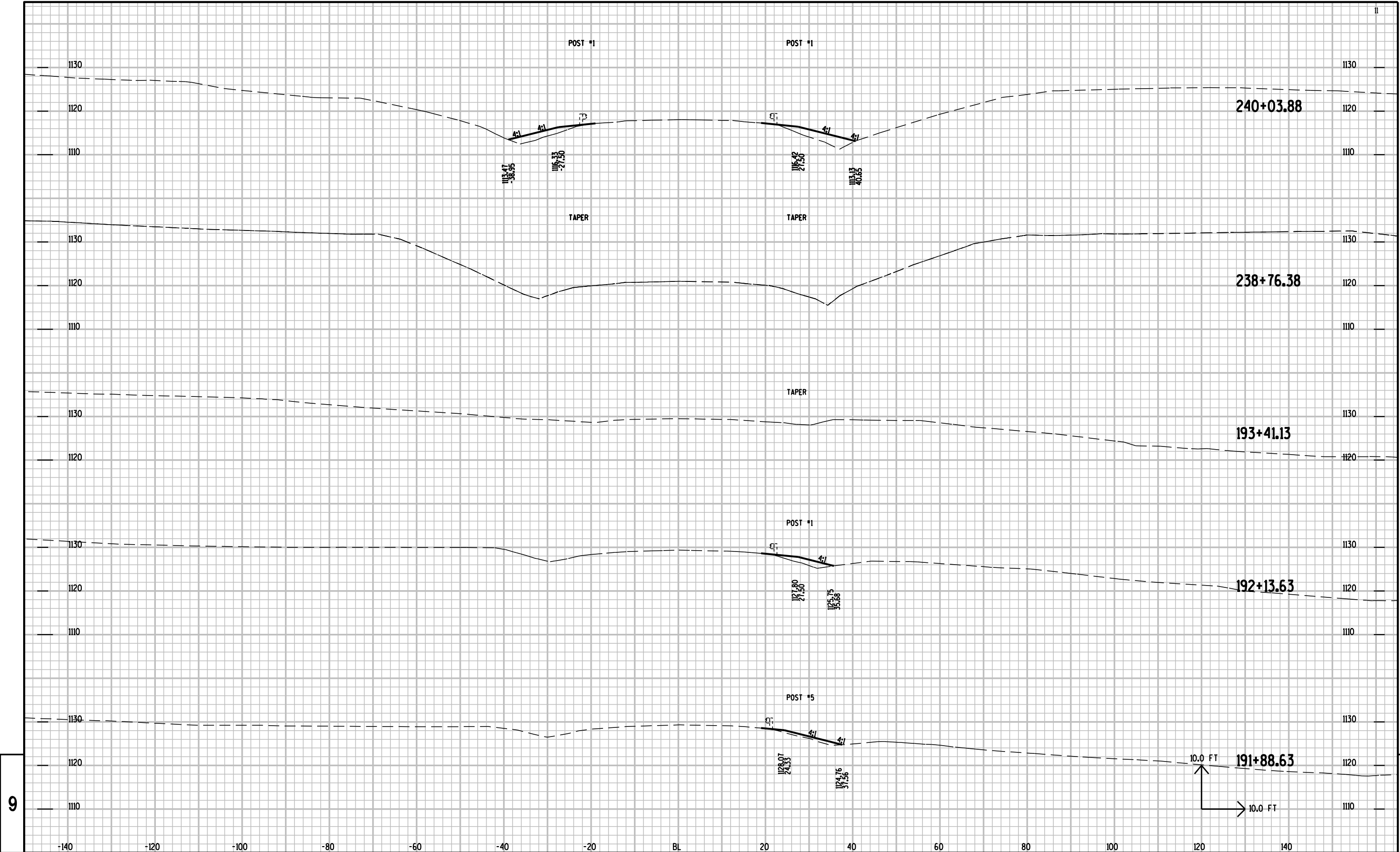
9

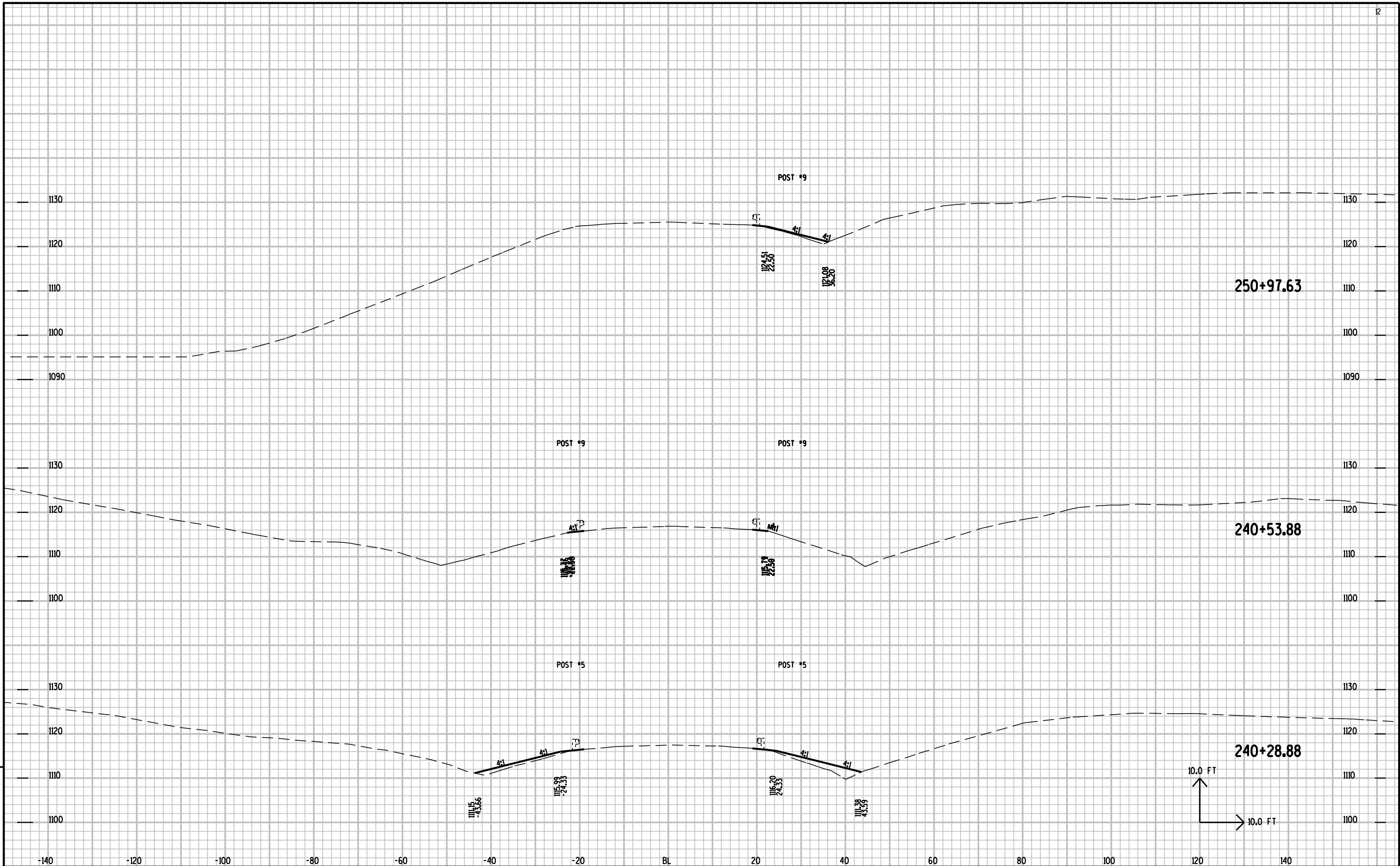
PROJECT NO: 8070-08-76	HWY: USH 63	COUNTY: ST. CROIX	CROSS SECTIONS:	BEAM GUARD LOCATIONS	SHEET NO:	E
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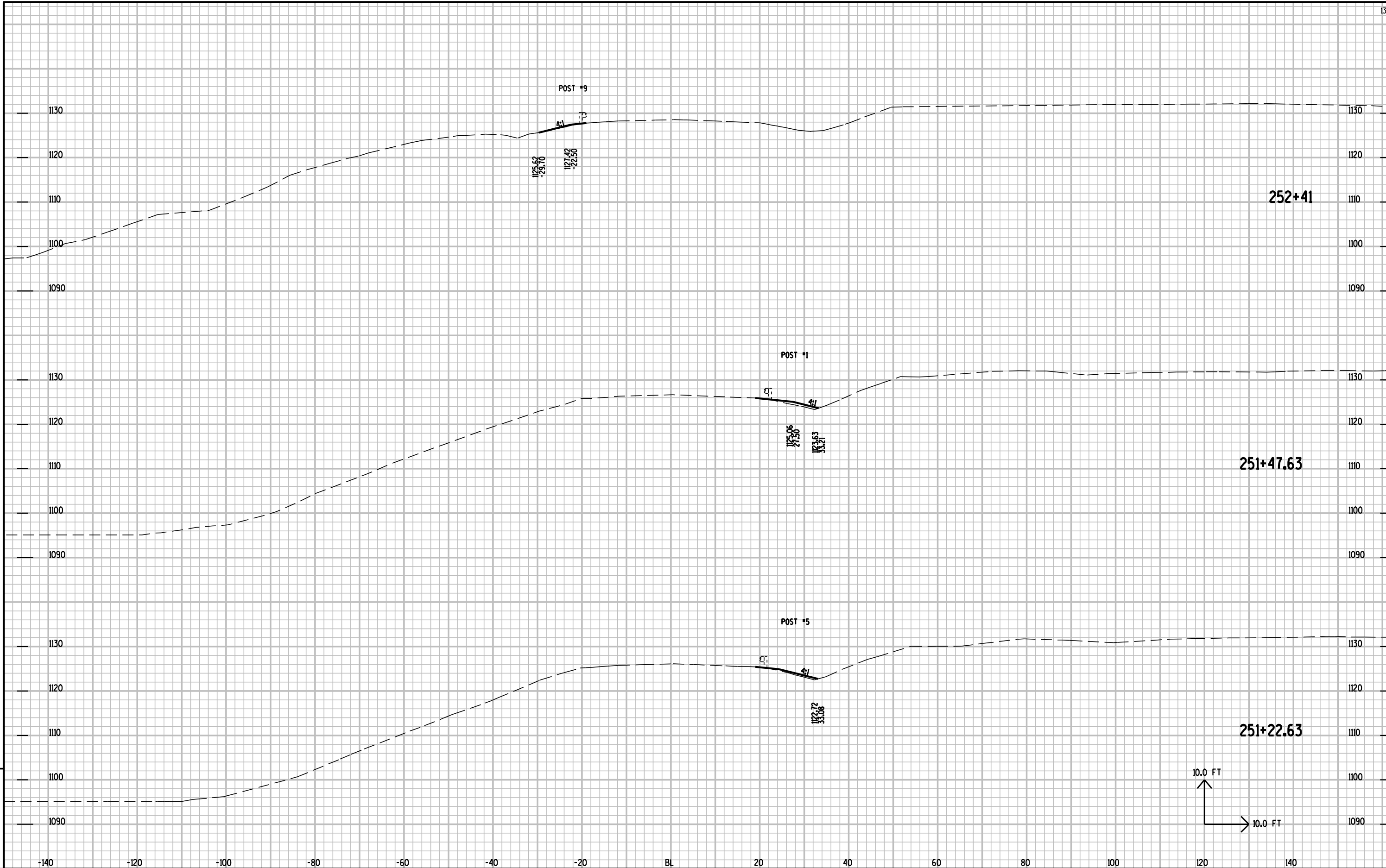


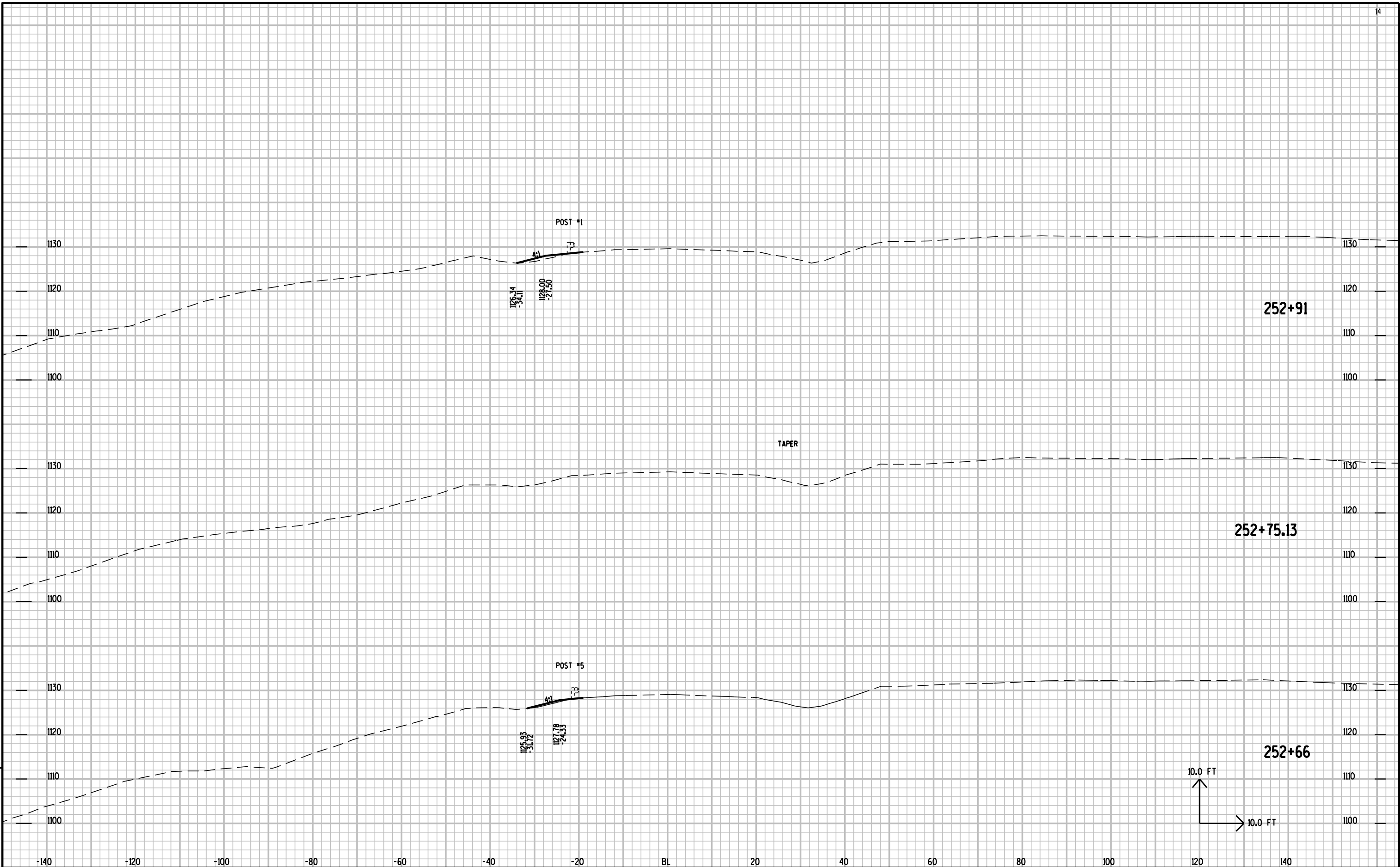
PROJECT NO: 8070-08-76	HWY: USH 63	COUNTY: ST. CROIX	CROSS SECTIONS:	BEAM GUARD LOCATIONS	SHEET NO:	E
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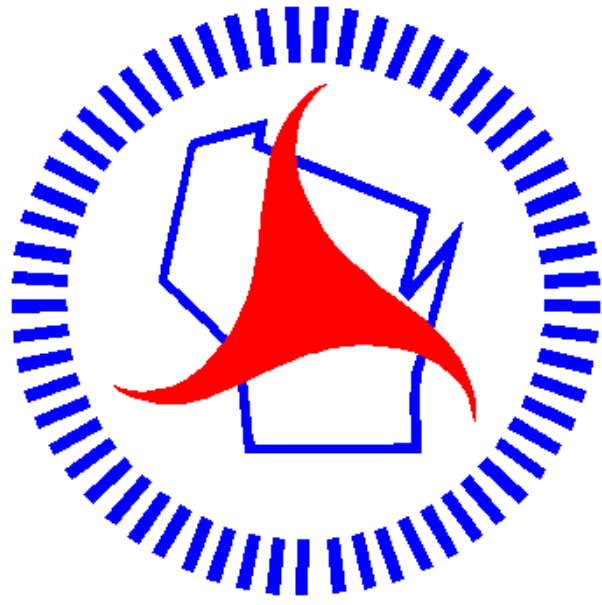
PROJECT NO: 8070-08-76	HWY: USH 63	COUNTY: ST. CROIX	CROSS SECTIONS:	BEAM GUARD LOCATIONS	SHEET NO:	E
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PROJECT NO: 8070-08-76	HWY: USH 63	COUNTY: ST. CROIX	CROSS SECTIONS:	BEAM GUARD LOCATIONS	SHEET NO:	E
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Notes



Wisconsin Department of Transportation

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<http://www.dot.wisconsin.gov>