

MAD NOVEMBER 2019
 PROJECT ID: 5660-00-72
 COUNTY: GREEN
 WITH: 5944-01-72

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 = 166

STATE OF WISCONSIN
 DEPARTMENT OF TRANSPORTATION
 PLAN OF PROPOSED IMPROVEMENT

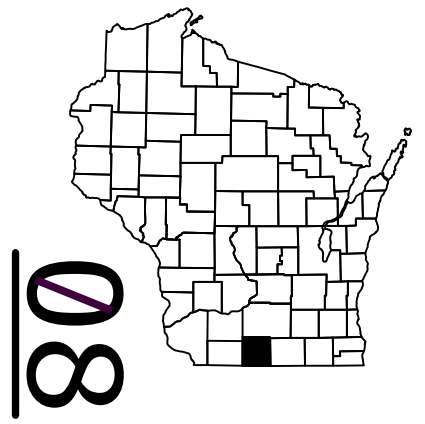
STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
5660-00-72	WISC 2019679	1
5944-01-72	WISC 2019680	1

MONROE-EVANSVILLE
 28TH AVENUE TO WEISS LANE
STH 59
GREEN COUNTY

ARGYLE-MONROE
 CTH N TO STH 11 EB & WB
STH 81
GREEN COUNTY

STATE PROJECT NUMBER
 5660-00-72

STATE PROJECT NUMBER
 5944-01-72



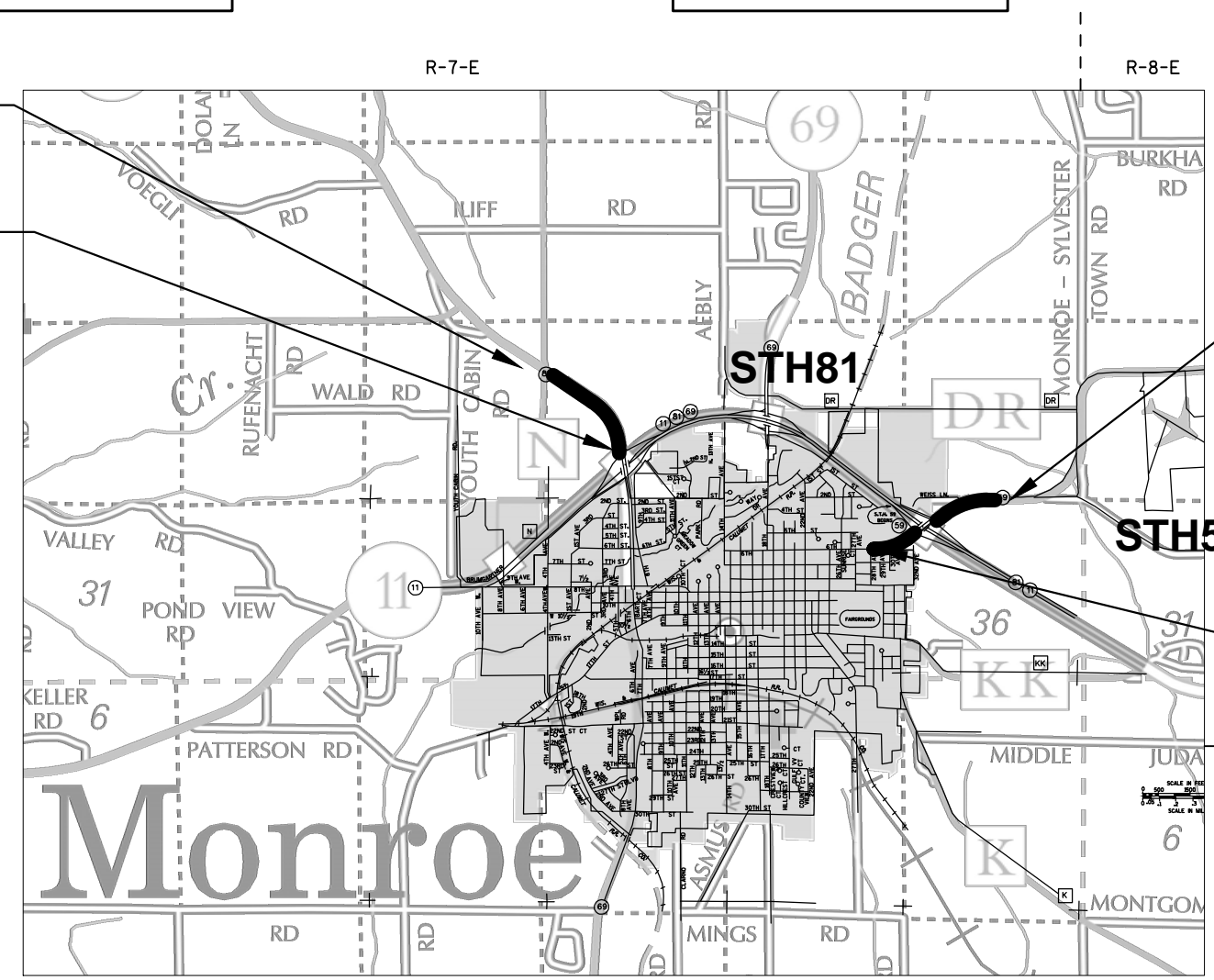
END PROJECT 5660-00-72
 STA. 207+13.23BW

BEGIN PROJECT 5660-00-72
 STA. 175+99.39BW
 X=608068.5768
 Y=142267.2095

DESIGN DESIGNATION	STH 59	STH 81
A.A.D.T.	= 3,650 (2020)	= 6,200 (2020)
A.A.D.T.	= 4,200 (2040)	= 7,000 (2040)
D.H.V.	= 476	= 1092
D.D.	= 60/40	= 59/41
T.	= 21%	= 12.7%
DESIGN SPEED	= 30MPH&60MPH	= 60MPH
ESALS	= 990,000	= 1,500,000

CONVENTIONAL SYMBOLS

PLAN	PROFILE
CORPORATE LIMITS	GRADE LINE
PROPERTY LINE	ORIGINAL GROUND
LOT LINE	MARSH OR ROCK PROFILE (To be noted as such)
LIMITED HIGHWAY EASEMENT	SPECIAL DITCH
EXISTING RIGHT OF WAY	GRADE ELEVATION
PROPOSED OR NEW R/W LINE	CULVERT (Profile View)
SLOPE INTERCEPT	UTILITIES
REFERENCE LINE	ELECTRIC
EXISTING CULVERT	FIBER OPTIC
PROPOSED CULVERT (Box or Pipe)	GAS
COMBUSTIBLE FLUIDS	SANITARY SEWER
MARSH AREA	STORM SEWER
WOODED OR SHRUB AREA	TELEPHONE
	WATER
	UTILITY PEDESTAL
	POWER POLE
	TELEPHONE POLE

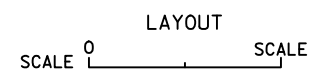


END PROJECT 5944-01-72
 STA. 41+93.09SB

STH 59 EXCLUDING
 STA. 15+82.98SB TO
 STA. 25+97.30SB

BEGIN PROJECT 5944-01-72
 STA. 4+65.00SB

X=615617.1405
 Y=139054.7092



LENGTH OF CENTERLINE STH 59 = 0.514 MI.
 LENGTH OF CENTERLINE STH 81 = 0.590 MI.
 TOTAL NET LENGTH OF CENTERLINE = 1.104 MI.

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COUNTY COORDINATES, GREEN COUNTY, NAD83 (2011), IN U.S. SURVEY FEET. VALUES ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES MAY BE USED AS GROUND DISTANCES.

ELEVATIONS SHOWN ON THIS PLAN ARE REFERENCED TO THE NORTH AMERICAN DATUM OF 2012 (NAVD 88)

STATE OF WISCONSIN
 DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor: WisDOT

Designer: RICHARD J. OLSON

Project Manager: CHRISTOPHER HAZARD

Regional Examiner: SW REGION

Regional Supervisor: KURT JOHNSON

APPROVED FOR THE DEPARTMENT

DATE: 5/1/19 *Richard J. Olson*
 (signature)

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STANDARD ABBREVIATIONS

AP	ACCESS POINT	NOM	NOMINAL
AC	ACRE	NC	NORMAL CROWN
ADJ	ADJUST	N	NORTH
AECPRC	APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE	Y	NORTH GRID COORDINATE
AH	AHEAD	NB	NORTHBOUND
AC	ASPHALT CEMENT	NO	NUMBER
ASPH	ASPHALTIC	OPT	OPTIONAL
ACP	ASPHALTIC PAVEMENT CONCRETE	OD	OUTSIDE DIAMETER
AVG	AVERAGE	PAVT	PAVEMENT
ADT	AVERAGE DAILY TRAFFIC	PLE	PERMANENT LIMITED EASEMENT
BK	BACK	PACS	PIPE ARCH CORRUGATED STEEL
BAD	BASE AGGREGATE DENSE	PT	POINT
BM	BENCH MARK	PC	POINT OF CURVATURE
CB	CATCH BASIN	PI	POINT OF INTERSECTION
C/L	CENTER LINE	PT	POINT OF TANGENCY
C/L CONST	CENTER LINE CONSTRUCTION	PVC	POINT OF VERTICAL CURVE
Δ	CENTRAL ANGLE OR DELTA	PVI	POINT OF VERTICAL INTERSECTION
CL	CLASS	PVT	POINT OF VERTICAL TANGENCY
CONC	CONCRETE	PVC	POLYVINYL CHLORIDE
CONST	CONSTRUCTION	PCC	PORTLAND CEMENT CONCRETE
CMCP	CORRUGATED METAL CULVERT PIPE	LB	POUND
CTH	COUNTY TRUNK HIGHWAY	PSF	POUNDS PER SQUARE FOOT
CABC	CRUSHED AGGREGATE BASE COURSE	PSI	POUNDS PER SQUARE INCH
CFS	CUBIC FEET PER SECOND	PE	PRIVATE ENTRANCE
CY	CUBIC YARD	PGL	PROFILE GRADE LINE
CP	CULVERT PIPE	PL	PROPERTY LINE
CPCS	CULVERT PIPE CORRUGATED STEEL	Q100	100 YEAR FLOW RATE
CPRC	CULVERT PIPE REINFORCED CONCRETE	R	RADIUS
CPRCHE	CULVERT PIPE REINFORCED CONCRETE HORIZONTAL ELLIPTICAL	RR	RAILROAD
C & G	CURB AND GUTTER	R	RANGE
D	DEGREE OF CURVE	R/L	REFERENCE LINE
DRV	DESIGN HOUR VOLUME	REINF	REINFORCING OR REINFORCEMENT
DIA	DIAMETER	REQD	REQUIRED
DD	DIRECTIONAL DISTRIBUTION	RT	RIGHT
DWY	DRIVEWAY	R/W	RIGHT-OF-WAY
E	EAST	RD	ROAD
X	EAST GRID COORDINATE	RDWY	ROADWAY
EB	EASTBOUND	SEC	SECTION CORNER
EL	ELEVATION	SHLDR	SHOULDER
ESALS	EQUIVALENT SINGLE AXLE LOADS	S	SOUTH
EXC	EXCAVATION	SB	SOUTHBOUND
EBS	EXCAVATION BELOW SUBGRADE	SQ	SQUARE
EXIST	EXISTING	SF	SQUARE FEET
FPS	FEET PER SECOND	SW	SIDEWALK
FERT	FERTILIZE	SY	SQUARE YARD
FE	FIELD ENTRANCE	SDD	STANDARD DETAIL DRAWINGS
FL	FLOW LINE	STH	STATE TRUNK HIGHWAYS
FT	FOOT	STA	STATION
GN	GRID NORTH	SS	STORM SEWER
HES	HIGH EARLY STRENGTH	SSPRC	STORM SEWER PIPE REINFORCED CONCRETE
HP	HIGH POINT	ST	STREET
HW	HIGH WATER	STR	STRUCTURE OR STRUCTURAL
HMA	HOT MIX ASPHALT	SE	SUPERELEVATION
CWA	HUNDREDWEIGHT	T	TANGENT
HYD	HYDRANT	TEMP	TEMPORARY
INL	INLET	TI	TEMPORARY INTEREST
ID	INSIDE DIAMETER	TLE	TEMPORARY LIMITED EASEMENT
I	INTERSECTION ANGLE	t	TON
INV	INVERT	T	TOWN
IP	IRON PIPE OR PIN	T/L	TRANSIT LINE
JT	JOINT	T	TRUCKS (PERCENT OF)
LT	LEFT	TYP	TYPICAL
L	LENGTH OF CURVE	USH	UNITED STATES HIGHWAY
LF	LINEAR FOOT	VAR	VARIABLE
LP	LOW POINT	V	VELOCITY OF DESIGN SPEED
LS	LUMP SUM	VERT	VERTICAL
MH	MANHOLE	VC	VERTICAL CURVE
MAX	MAXIMUM	VOL	VOLUME
Mgal	MEGAGALLON	WM	WATER MAIN
MPH	MILES PER HOUR	WV	WATER VALVE
MIN	MINIMUM	W	WEST
MON	MONUMENT	WB	WESTBOUND
		Y	YARD

GENERAL NOTES

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

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

THE LOCATION OF FIELD ENTRANCES WILL BE DETERMINED BY THE ENGINEER.

ALL CURB AND GUTTER RADII ARE MEASURED TO THE FLAG OF CURB UNLESS OTHERWISE NOTED.

EXCAVATION BELOW SUBGRADE (EBS) IS NOT USED TO BALANCE YARDAGE AND IS NOT SHOWN ON THE CROSS SECTIONS, BUT IS MEASURES AND PAID FOR AS COMMON EXCAVATION.

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

SAWCUTS AS SHOWN ON THE PLANS ARE AT SUGGESTED LOCATIONS AND MAY BE ADJUSTED AT THE DISCRETION OF THE ENGINEER TO BETTER SUIT FIELD CONDITIONS

ASPHALTIC SURFACE/HMA PAVEMENT WEIGHT CALCULATIONS ARE BASED ON 112 LB/SY/IN PER THE PAVEMENT REPORT.

THE 4.5" HMA SHALL BE PLACED IN TWO LAYERS, 2.5" LOWER LAYER AND 2" UPPER LAYER, CONSTRUCT THE PAVED SHOULDERS WITH THE SAME MIX TYPE AND THICKNESS AS THE MAINLINE. APPLY TACK COAT BETWEEN LAYERS OF HMA PAVEMENT AT A RATE OF 0.05 GAL/SY.

THE CONTRACTOR'S PAVING OPERATIONS SHALL BE CONSISTENT WITH THE PLAN TYPICAL SECTIONS AND CONSTRUCTED TO PREVENT HMA PAVEMENT LONGITUDINAL JOINTS FROM BEING LOCATED WITHIN DRIVING, TURNING, BIKE OR PARKING LANES.

THERE MAY BE AREAS OF SHALLOW BEDROCK WITHIN THIS PROJECT. EXISTING BEDROCK DEPTHS ARE BASED ON A LIMITED NUMBER OF BORINGS COMPLETED FOR THE SOILS REPORT. A COPY OF THE SOILS REPORT IS AVAILABLE UPON REQUEST FROM THE DEPARTMENT. SOME OF THE BORINGS INDICATED HARD DRILLING AND/OR AUGER REFUSAL WITHIN LESS THAN 5' OF THE EXISTING SURFACE. HARD DRILLING AND/OR AUGER REFUSAL DEPTHS HAVE BEEN INCLUDED IN THE PLAN SHEET CROSS SECTIONS.

EROSION CONTROL FEATURES AS SHOWN ON THE PLANS, SHALL BE ADJUSTED TO FIT EXISTING FIELD CONDITIONS AS DIRECTED BY THE ENGINEER.

GRADING IS NOT ALLOWED IN DELINEATED WETLAND AREAS. DO NOT STORE EQUIPMENT OR MATERIAL IN ENVIRONMENTALLY SENSITIVE AREAS, WETLANDS OR WATERWAYS.

NUMBER, LOCATIONS, AND SPACING OF TEMPORARY AND PERMANENT SIGNS AND DEVICES AS SHOWN ON THE PLANS, SHALL BE ADJUSTED TO FIT FIELD CONDITIONS.

UTILITY CONTACTS

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Town Chairman
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(608) 325-5321

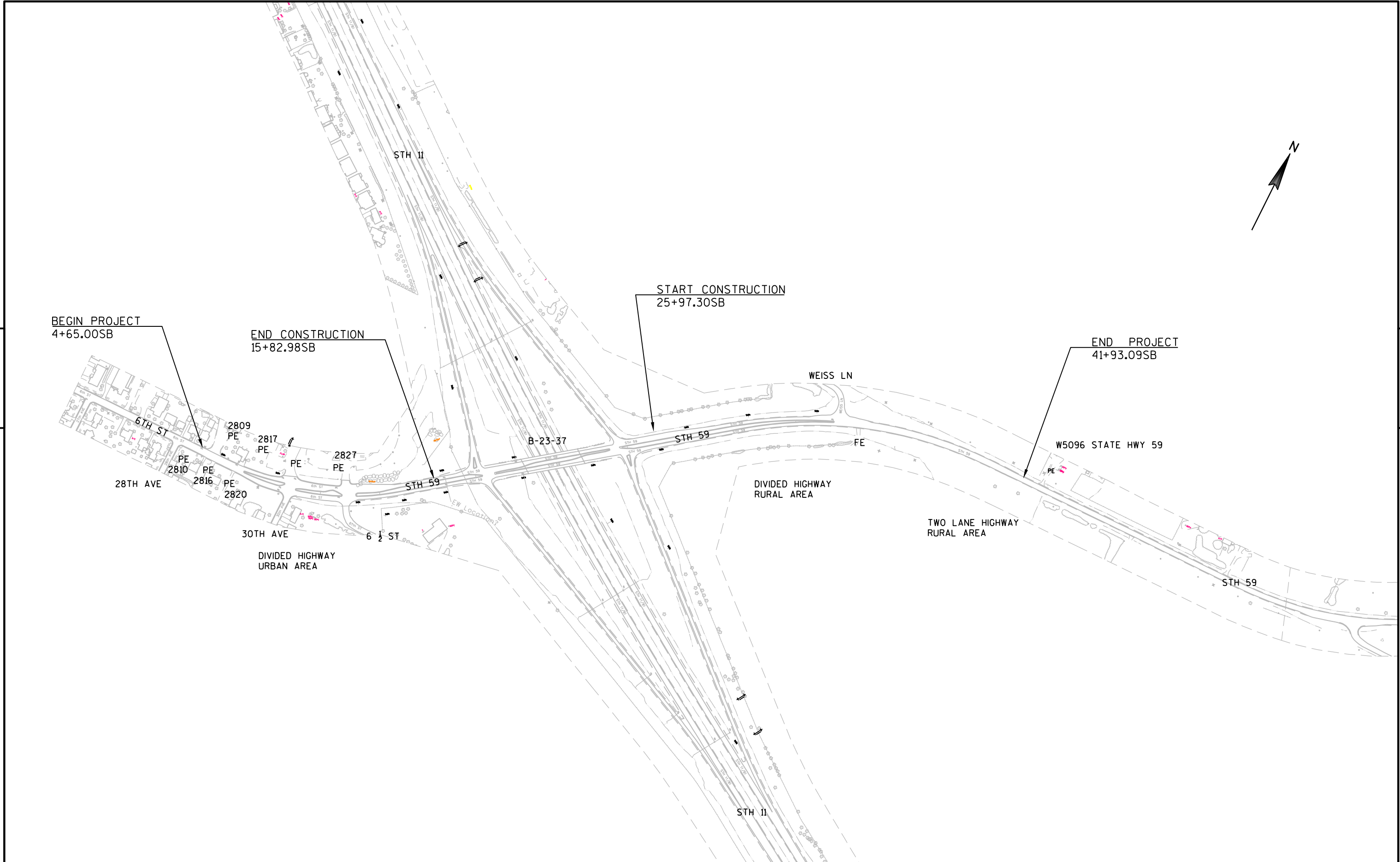
ORDER OF SECTION 2 SHEETS

- GENERAL NOTES
- PROJECT OVERVIEW
- TYPICAL SECTIONS
- CONSTRUCTION DETAILS
- INTERCHANGES
- EROSION CONTROL
- SIGNING
- TRAFFIC CONTROL AND CONSTRUCTION STAGING
- ALIGNMENT



Dial 811 or (800)242-8511

www.DiggersHotline.com



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PROJECT NO:5660-00-72	HWY:STH 59	COUNTY:GREEN	PROJECT OVERVIEW - STH 59	SHEET	E
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FILE NAME : N:\PDS\C3D\56600002\SHEETSPLAN\STH59OVERVIEW.DWG
LAYOUT NAME - SHEET - (3)

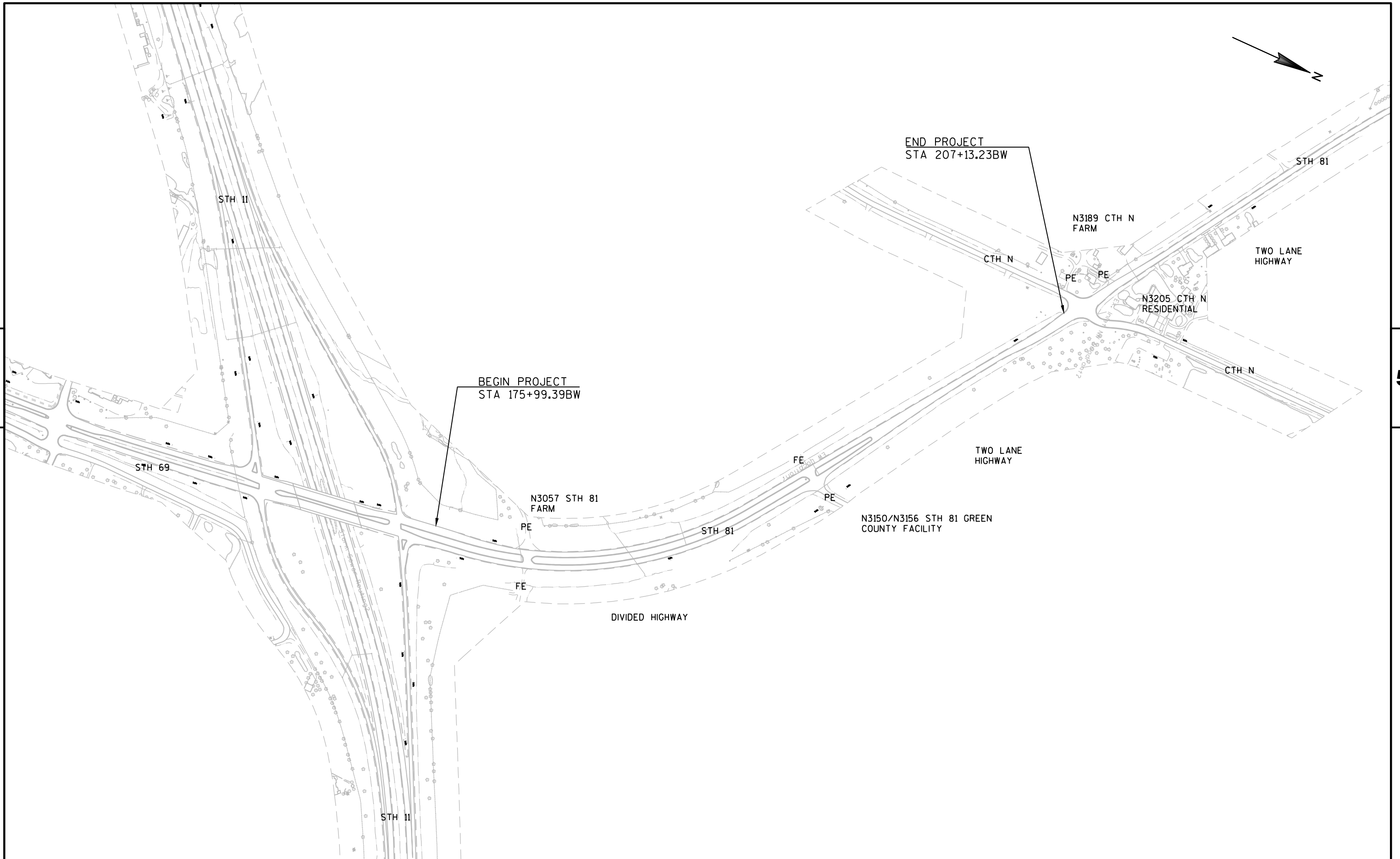
PLOT DATE : 1/4/2019 1:24 PM

PLOT BY : OLSON, RICHARD J

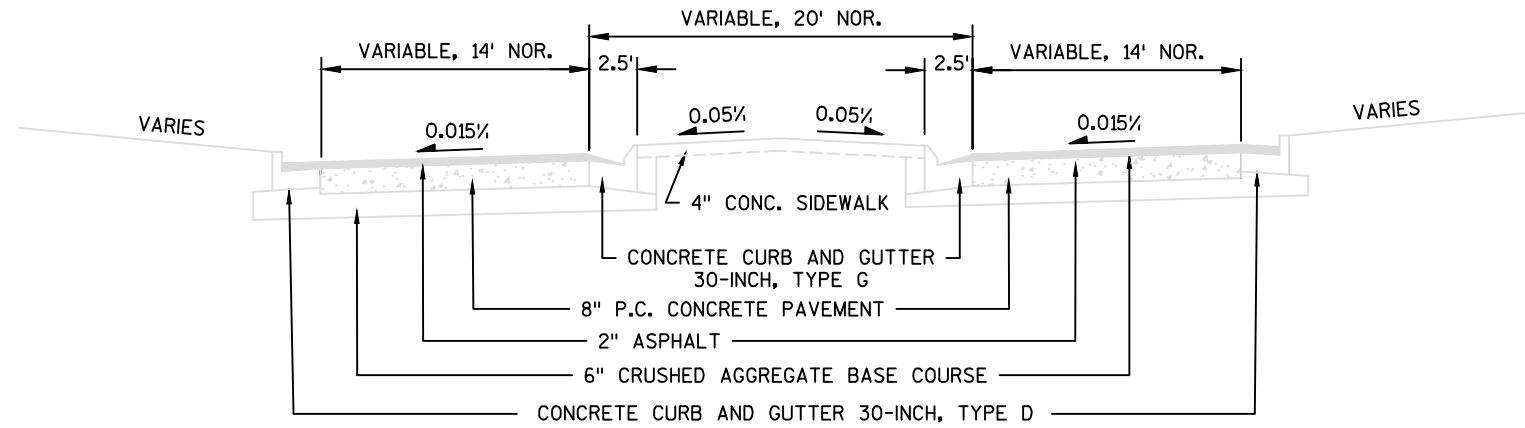
PLOT NAME :

PLOT SCALE : 1 IN:400 FT

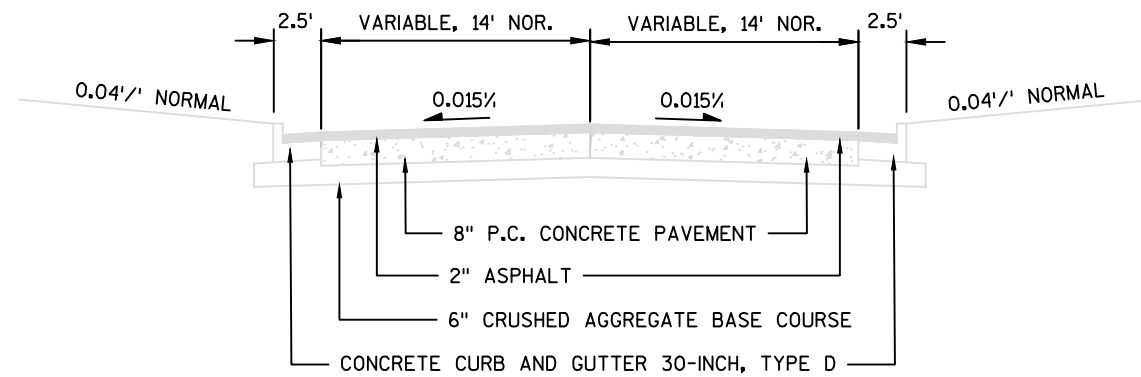
WISDOT/CADS SHEET 44



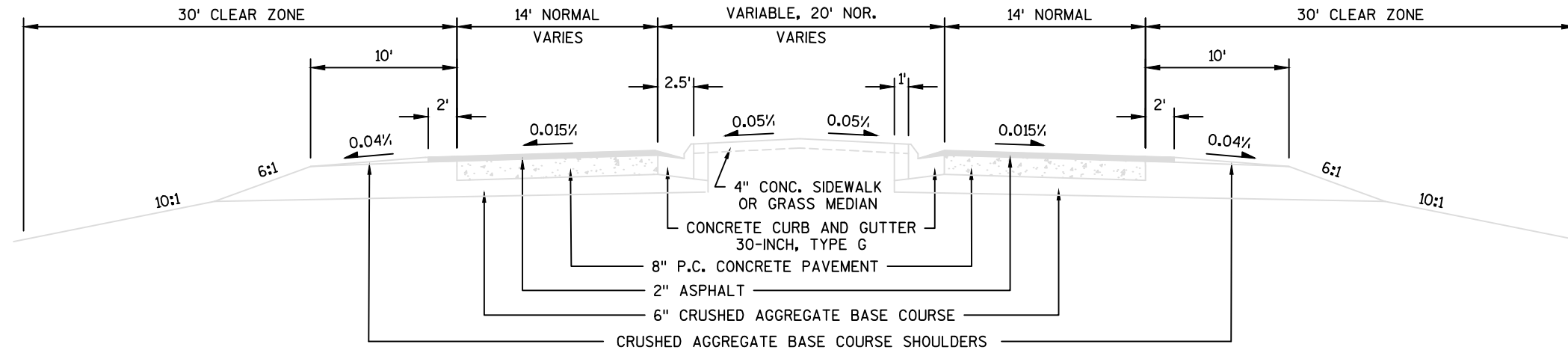
PROJECT NO:5944-01-72	HWY:STH 81	COUNTY:GREEN	PROJECT OVERVIEW - STH 81	SHEET	E
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TYPICAL EXISTING SECTION - STH 59
 STA 6+80SB TO STA 9+25SB

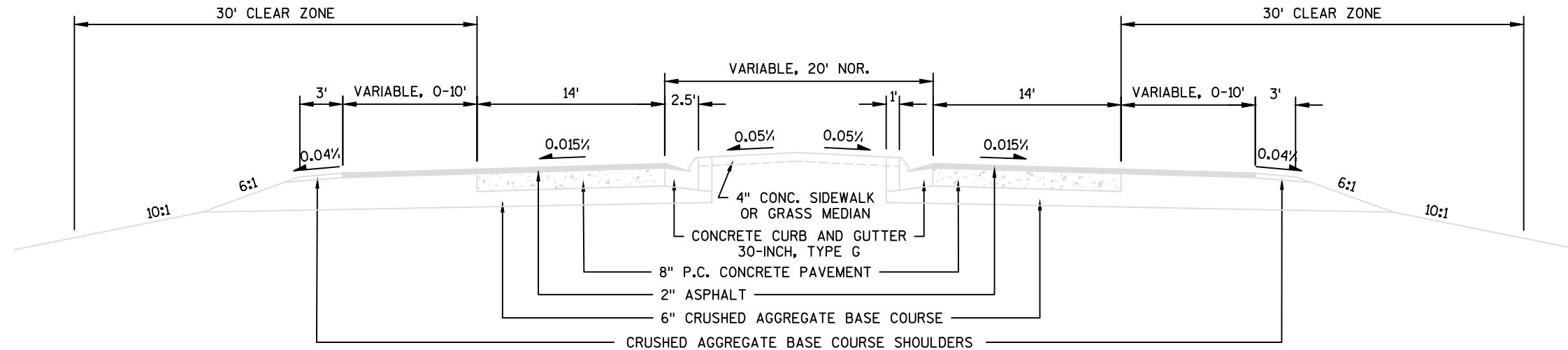


TYPICAL EXISTING SECTION - STH 59
 STA 4+65.36SB TO STA 6+80SB



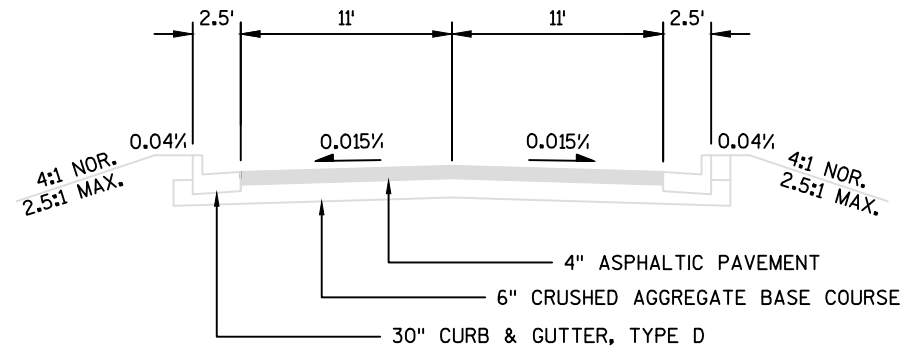
TYPICAL EXISTING SECTION - STH 59

STA 11+90SB TO STA 15+82.98SB
STA 25+97.30SB TO STA 33+75SB

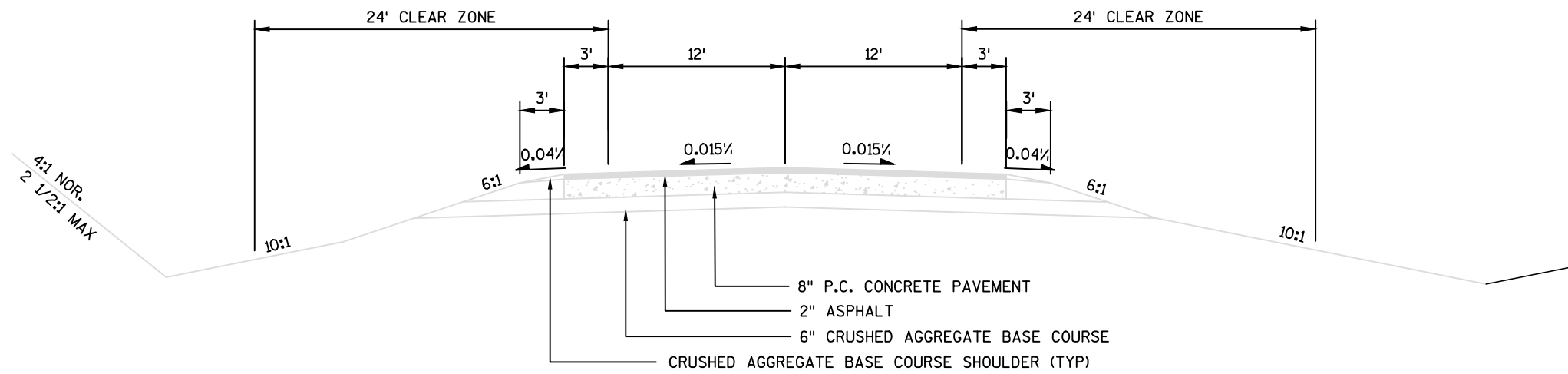


TYPICAL EXISTING SECTION - STH 59

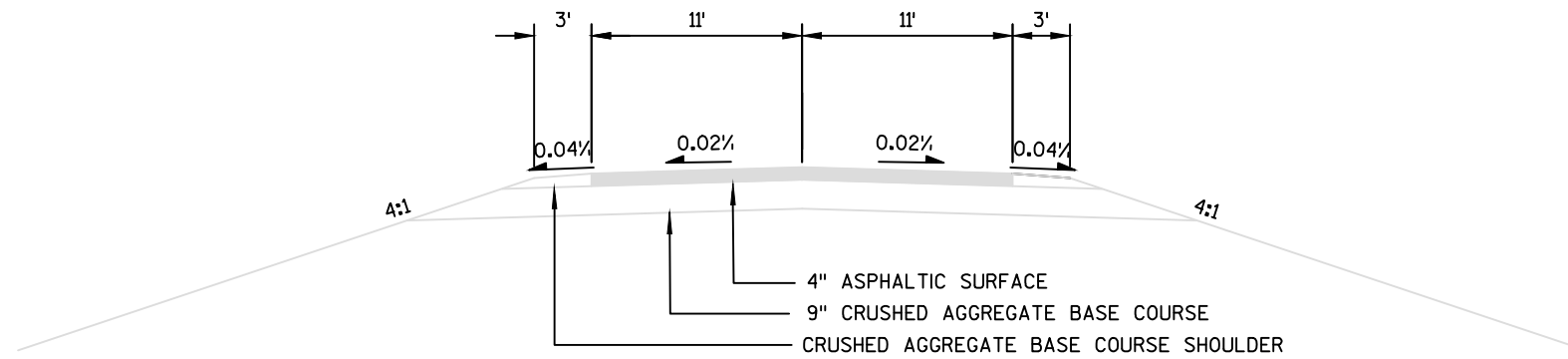
STA 9+25SB TO STA 11+90SB



TYPICAL EXISTING SECTION - 30TH AVENUE
 STA 50+00SB TO STA 50+57.85SB

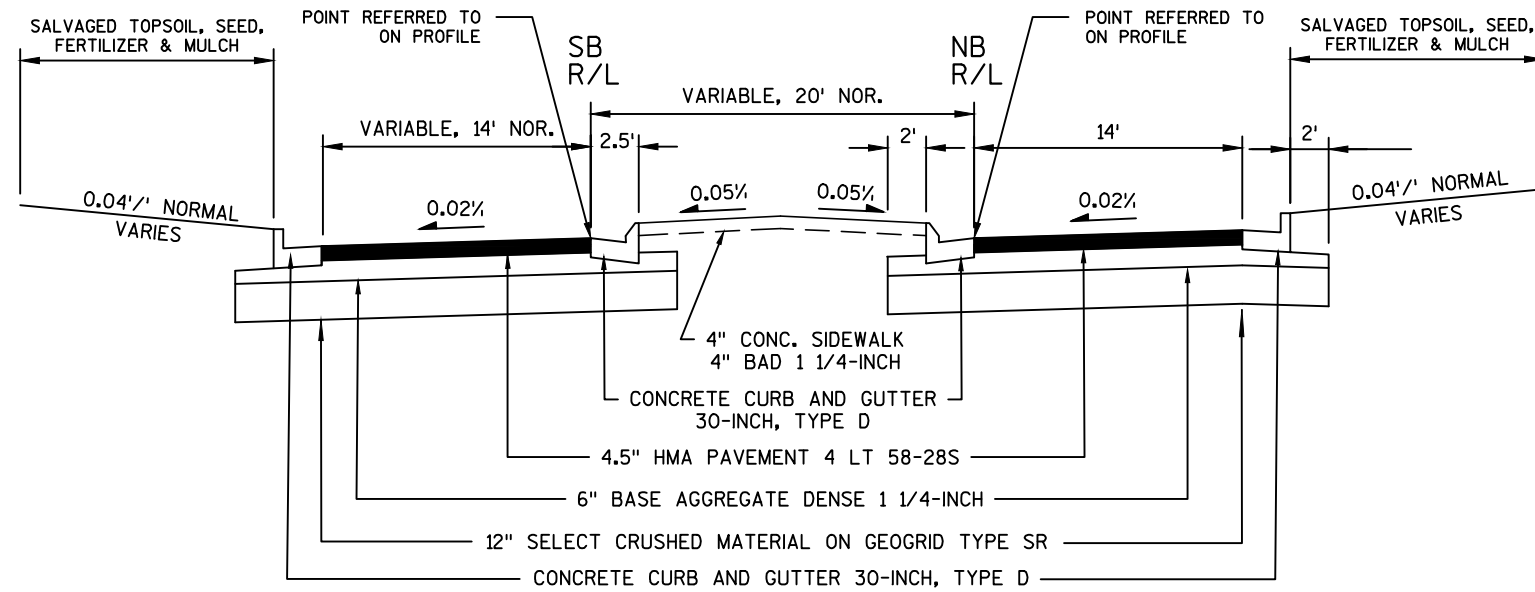


TYPICAL EXISTING SECTION - STH 59
 STA 33+75SB TO STA 41+93.09SB

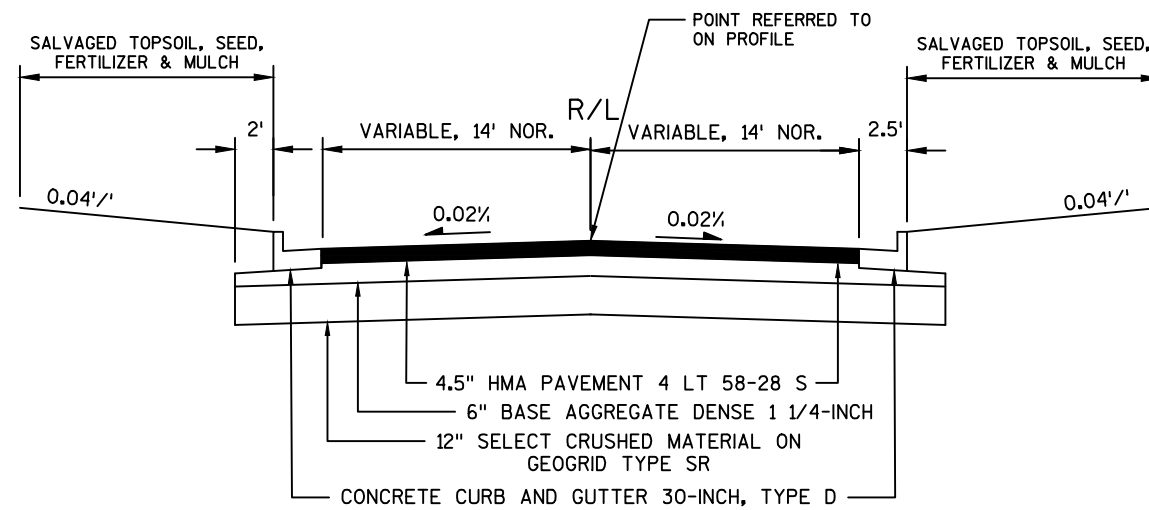


TYPICAL EXISTING SECTION - STH 59 SIDEROAD

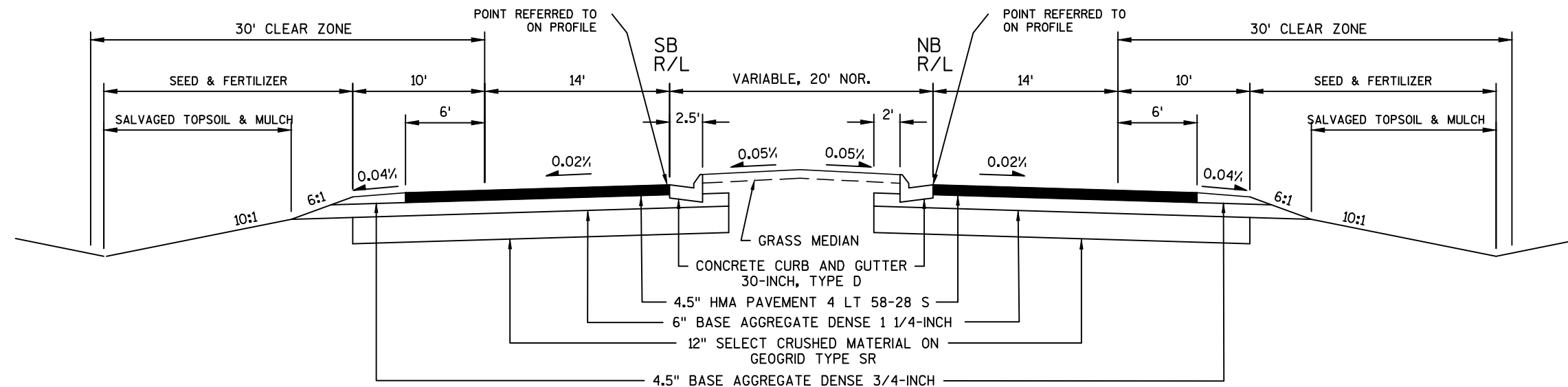
WEISS LANE, STA 70+00 TO STA 70+80.51
 6 1/2 STREET, STA 60+00 TO STA 60+60.47



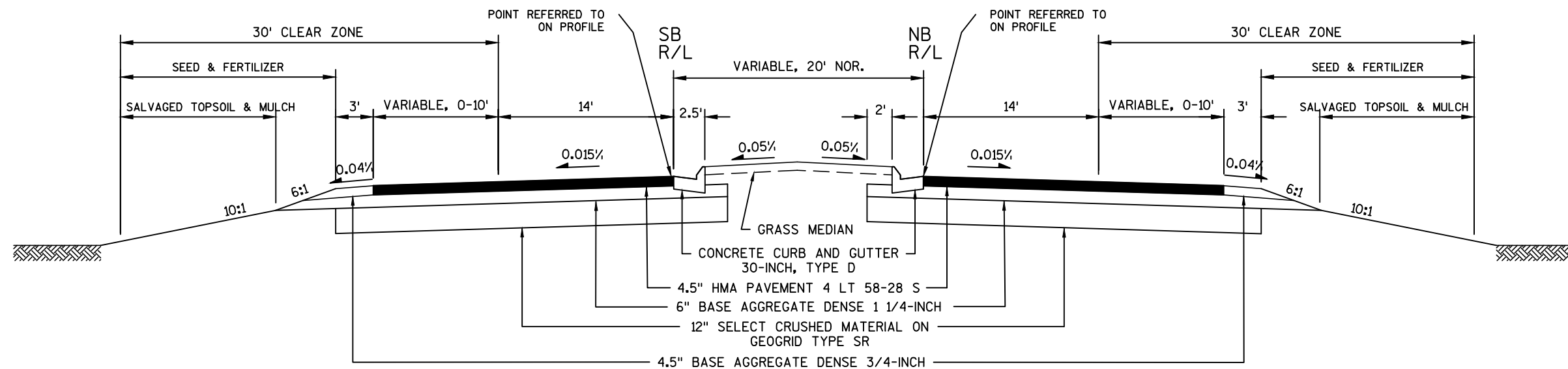
TYPICAL FINISHED SECTION - STH 59
 STA 6+80SB TO STA 9+25SB



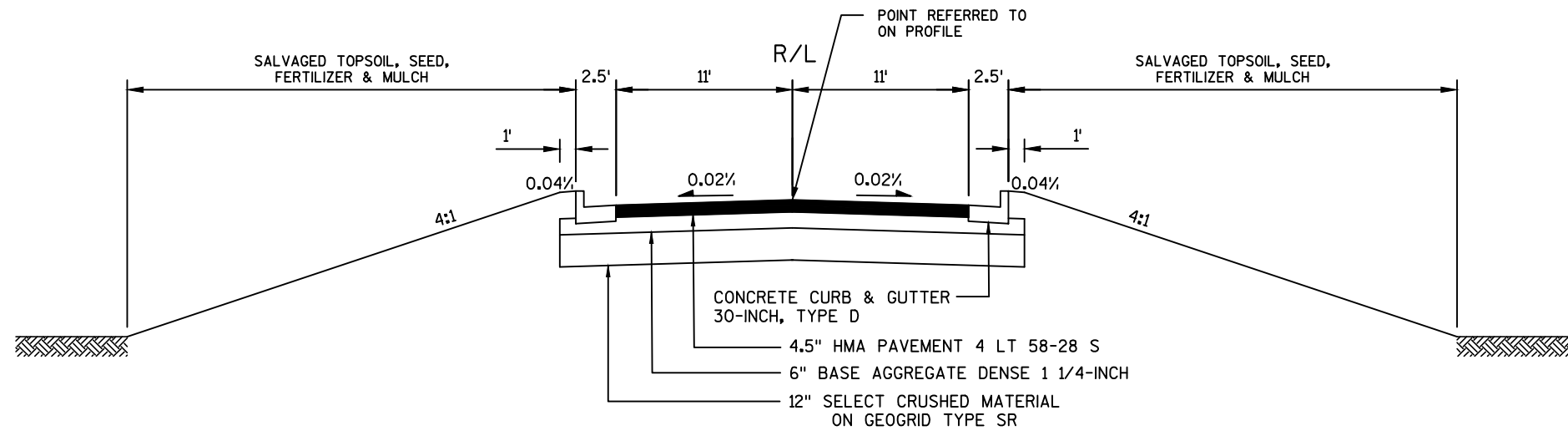
TYPICAL FINISHED SECTION - STH 59
 STA 4+65SB TO STA 6+80SB



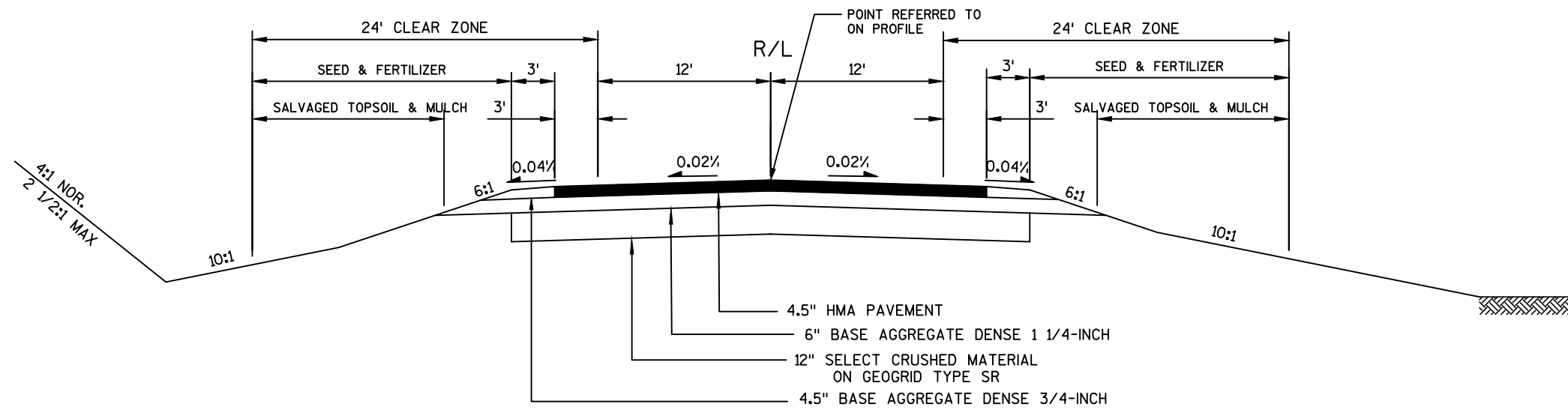
TYPICAL FINISHED SECTION - STH 59
 STA 26+97.30SB TO STA 33+75SB



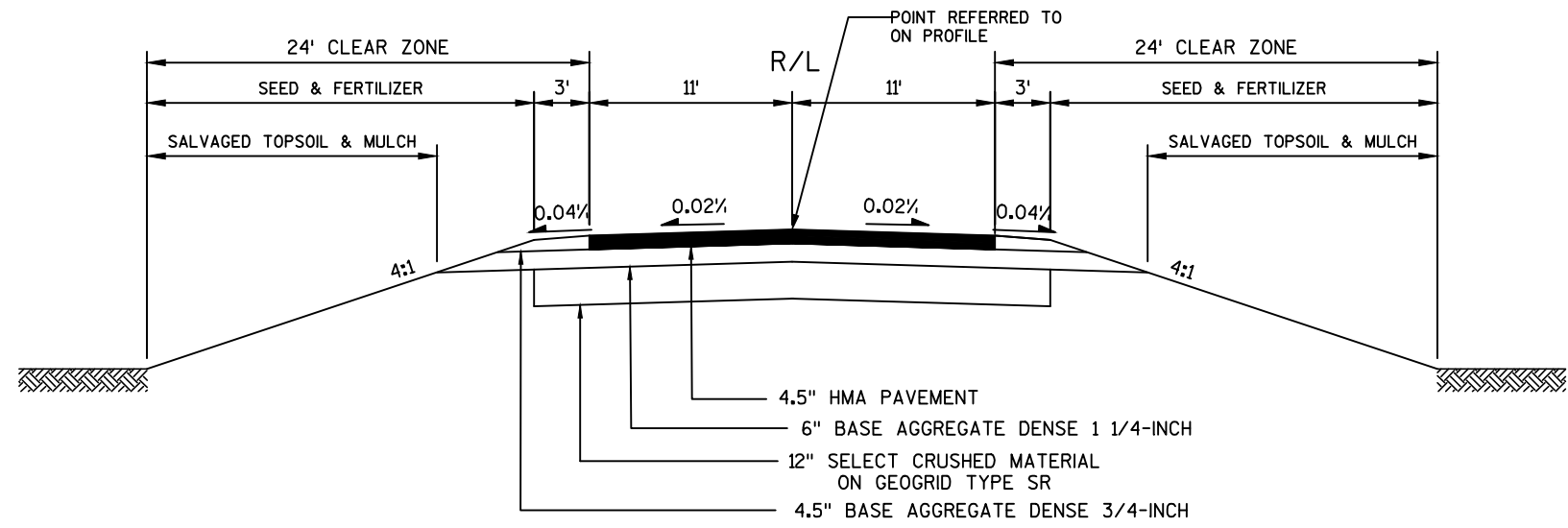
TYPICAL EXISTING SECTION - STH 59
 STA 9+25SB TO STA 11+90SB



TYPICAL FINISHED SECTION - 30TH AVENUE
STA 50+00 TO STA 50+57.85

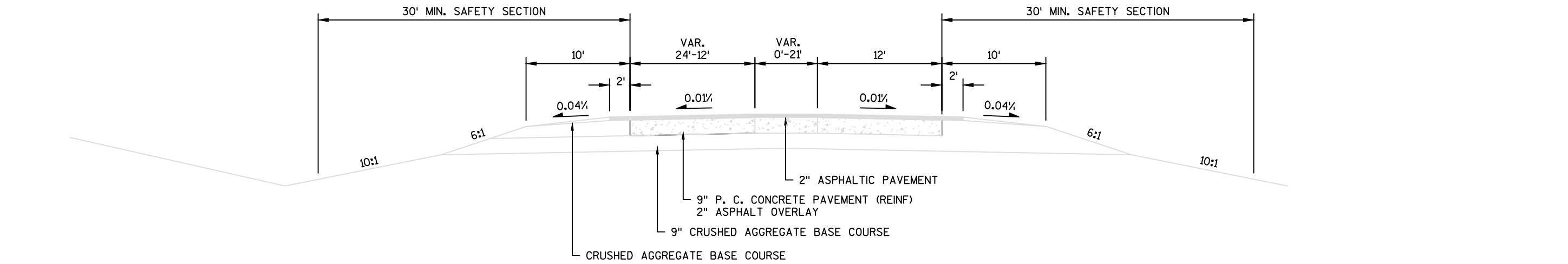


TYPICAL FINISHED SECTION - STH 59
STA 33+75B TO STA 41+93.09SB



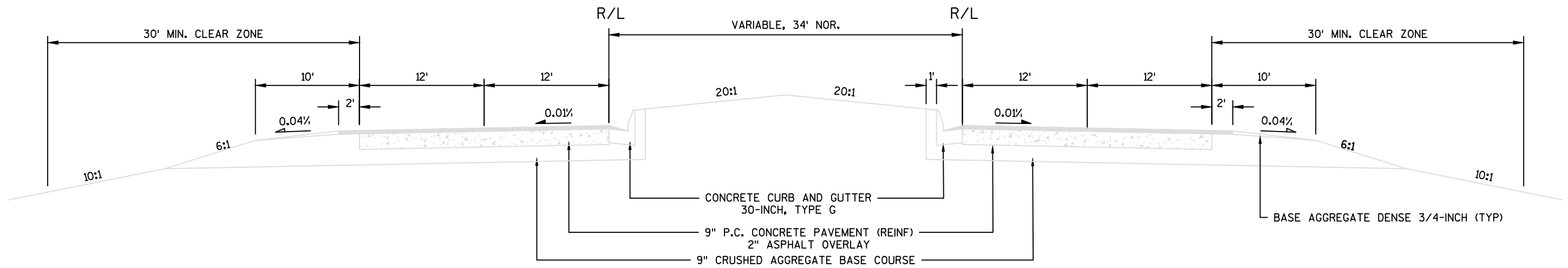
TYPICAL FINISHED SECTION - STH 59 SIDEROAD

WEISS LANE, STA 70+00 TO STA 70+80.51
 6 1/2 STREET, STA 60+00 TO STA 60+60.47



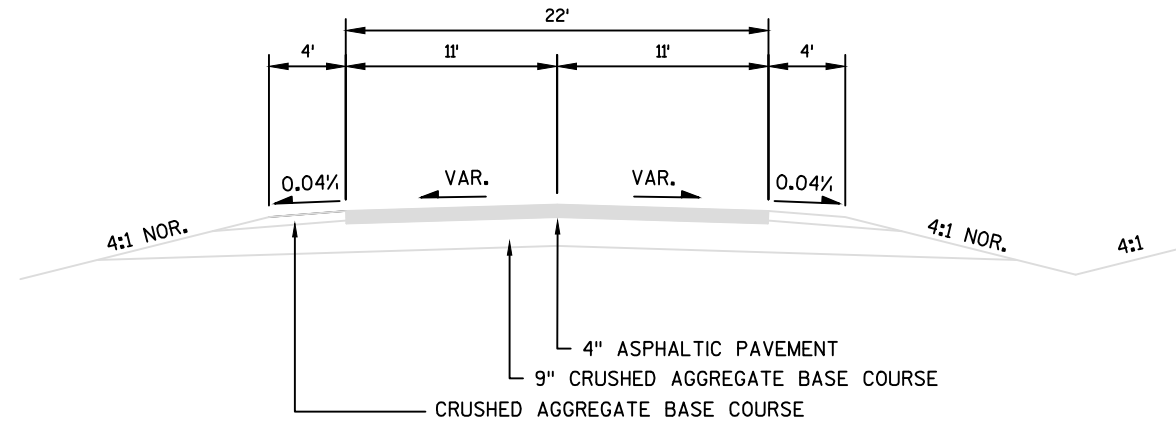
EXISTING TYPICAL SECTION

S.T.H. 81
STA 196+70BW TO STA 202+951BW

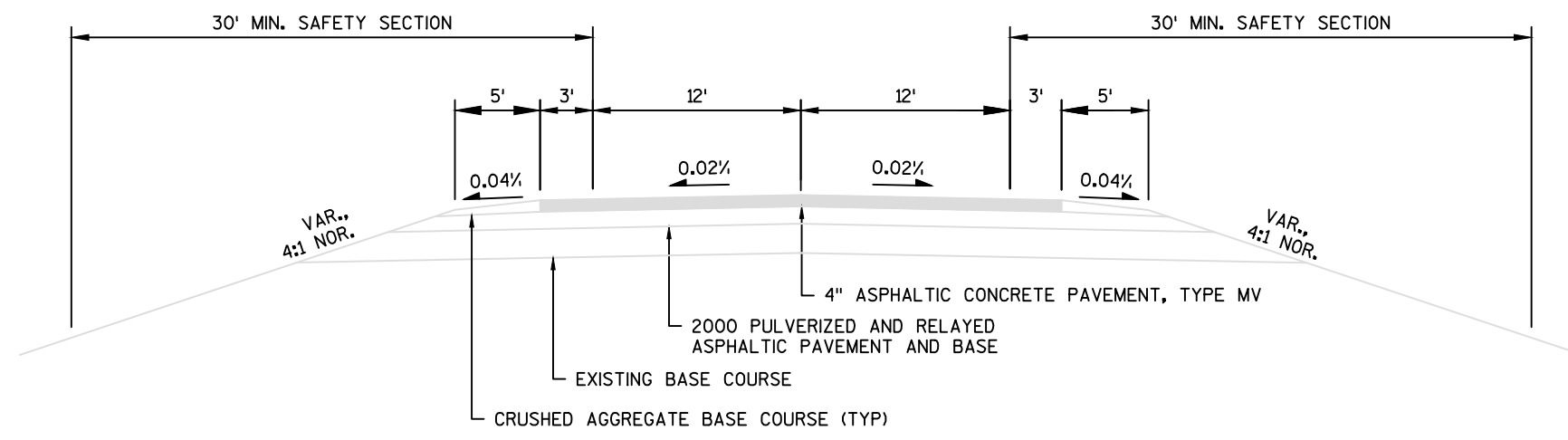


EXISTING TYPICAL SECTION

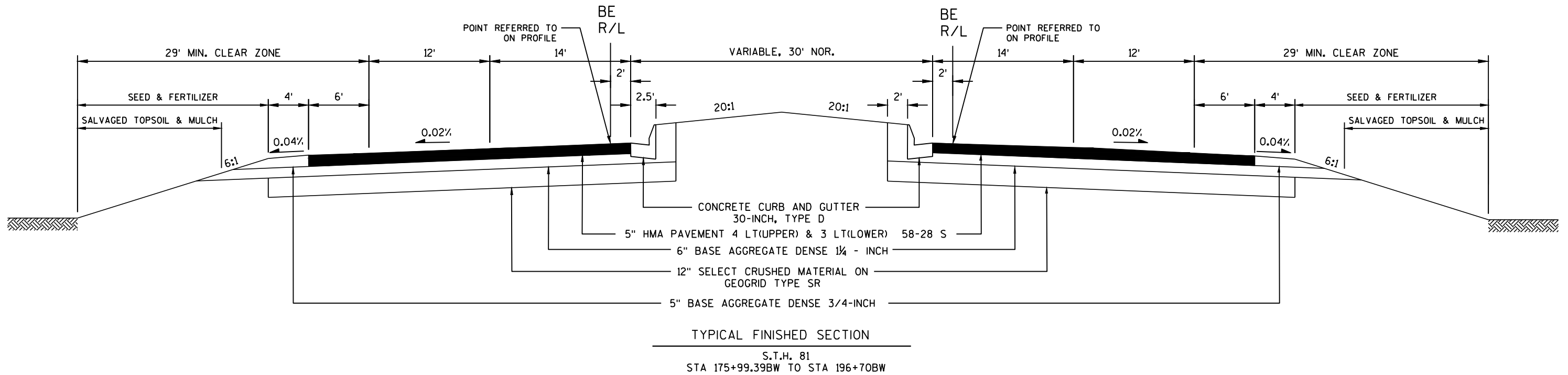
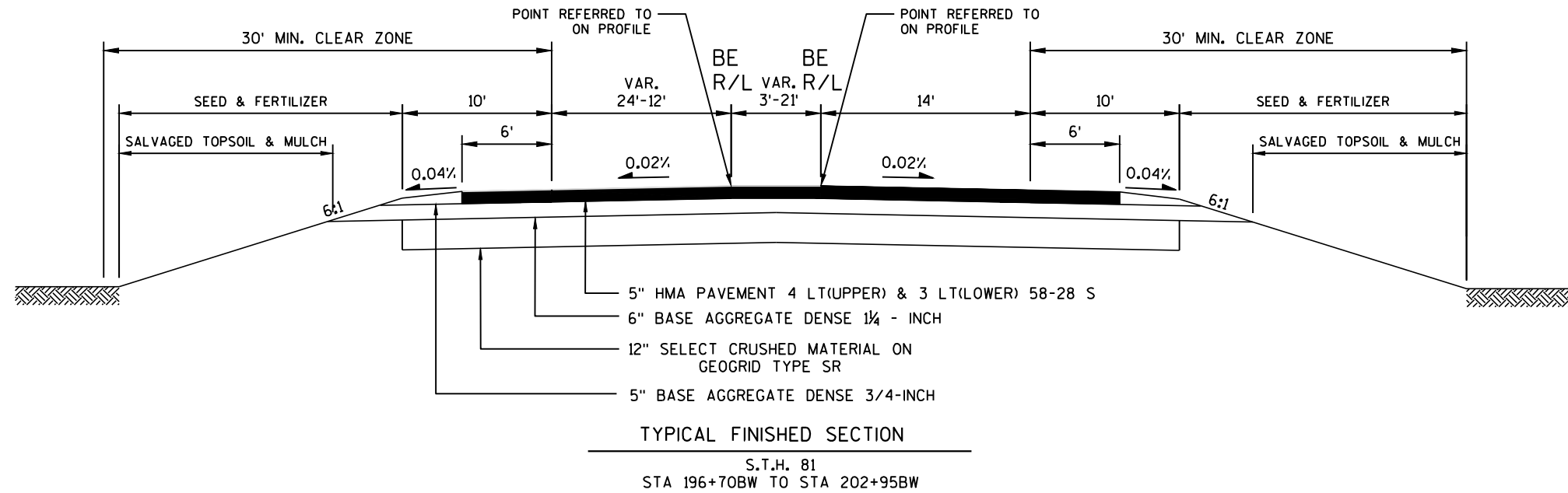
S.T.H. 81
STA 175+99.398W TO STA 196+70BW

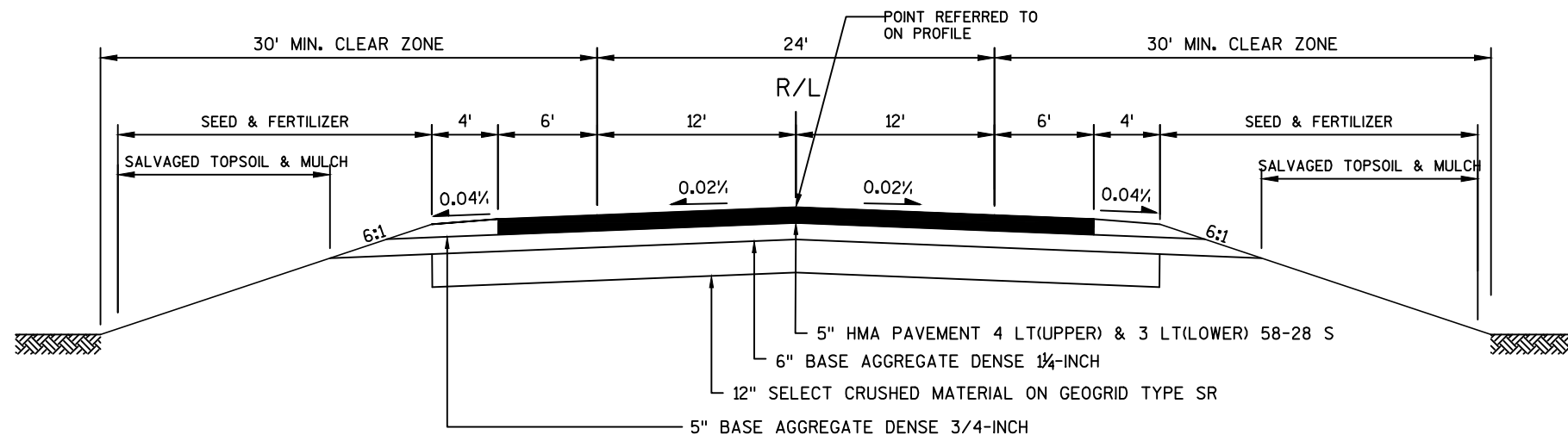


TYPICAL EXISTING SECTION - STH 81 SIDEROAD
 CTH N-DETOUR ROUTE-STH 81 TO 2ND ST N

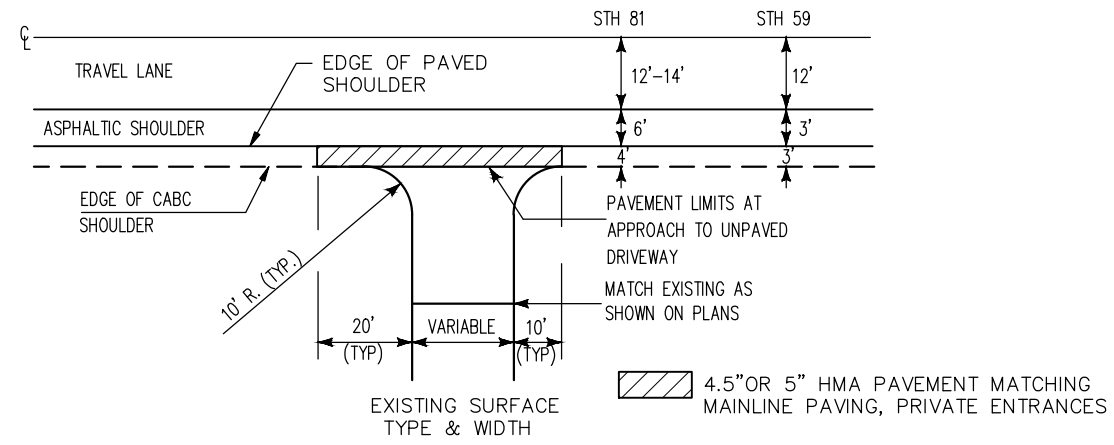


EXISTING TYPICAL SECTION
 S.T.H. 81
 STA 202+95BW TO STA 207+13.23BW

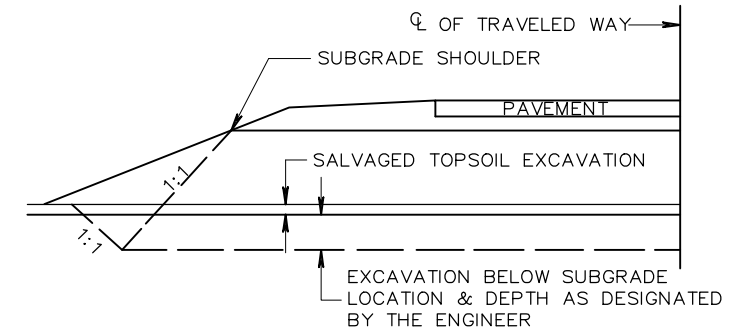




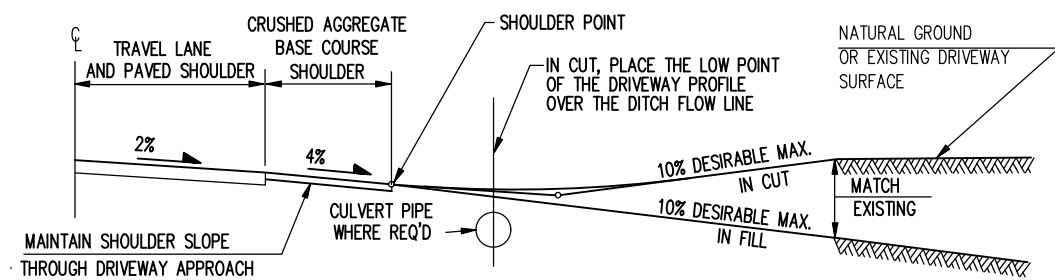
TYPICAL FINISHED SECTION
 S.T.H. 81
 STA 201+95BW TO STA 207+13.23BW



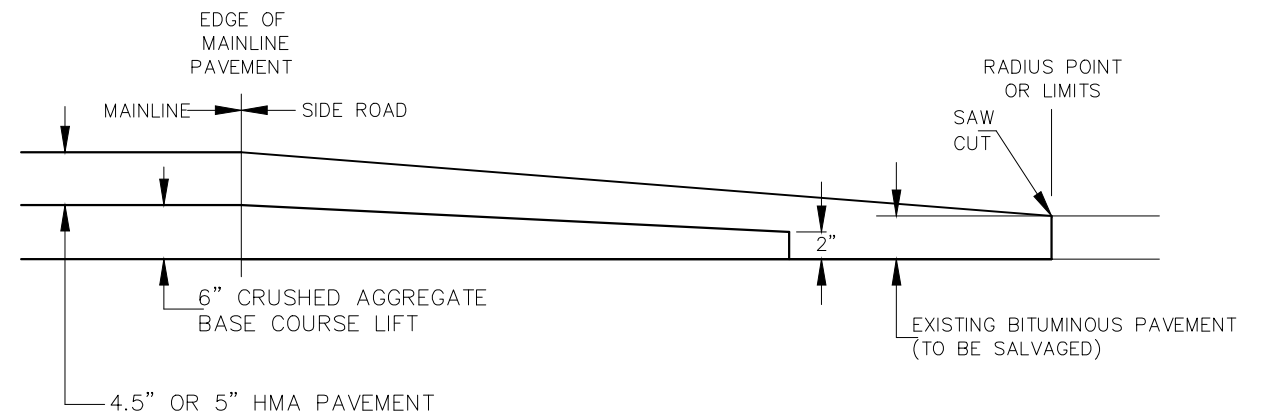
PLAN VIEW - RURAL DRIVEWAY



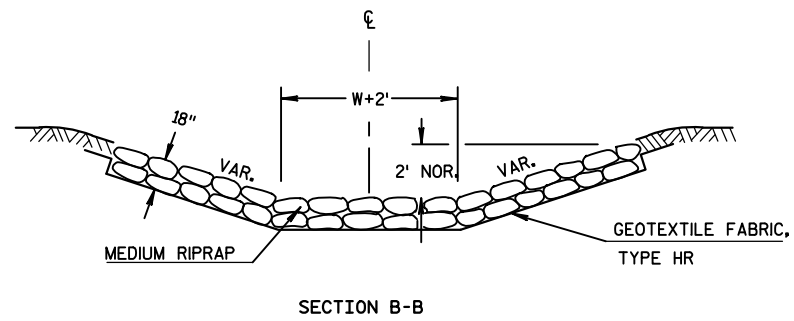
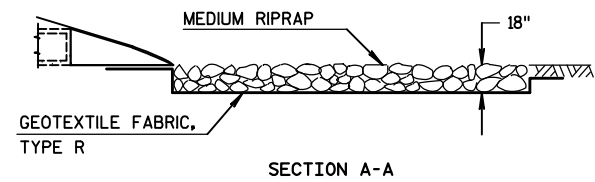
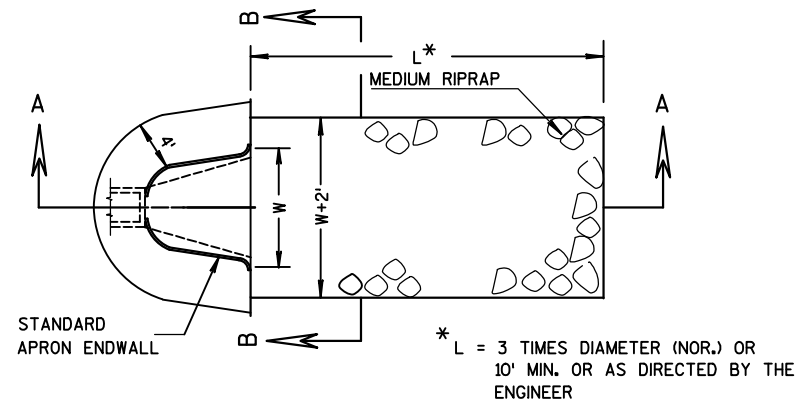
DETAIL FOR EXCAVATION BELOW SUBGRADE



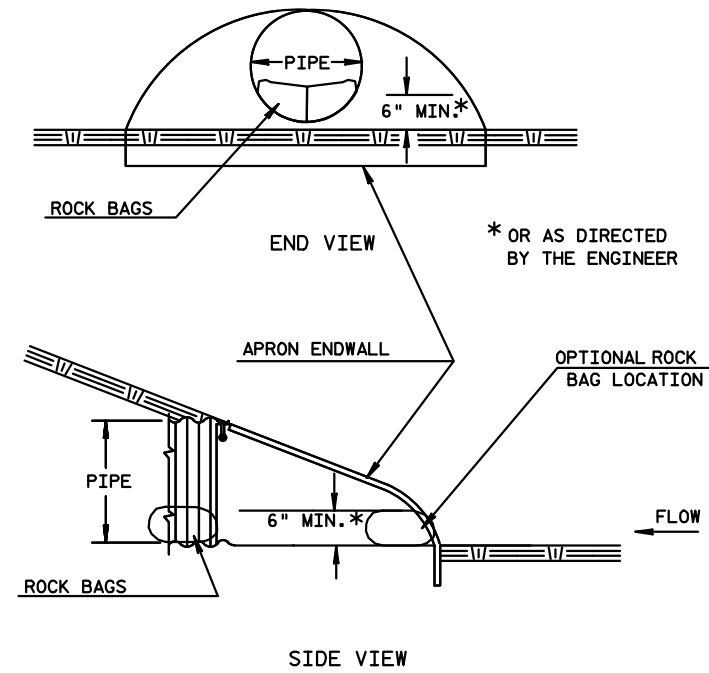
PROFILE VIEW
TYPICAL RURAL DRIVEWAY DETAILS



BUTT JOINT DETAIL FOR
SIDE ROAD INTERSECTIONS



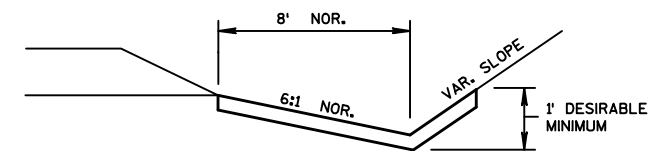
MEDIUM RIPRAP AND GEOTEXTILE FABRIC



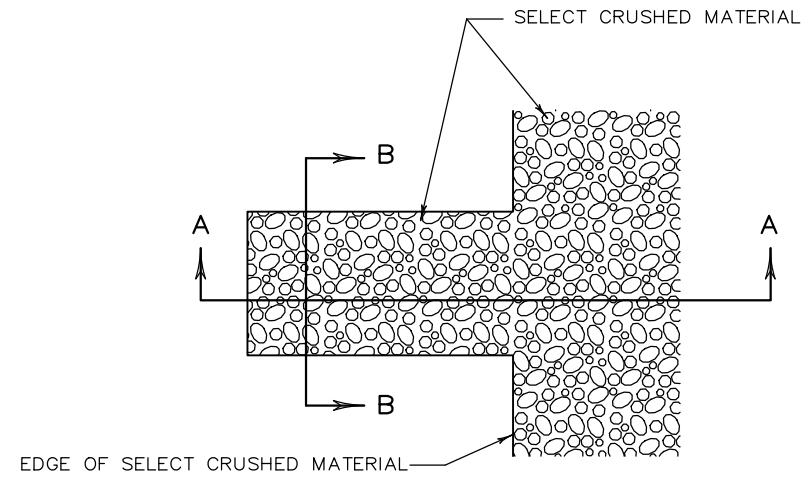
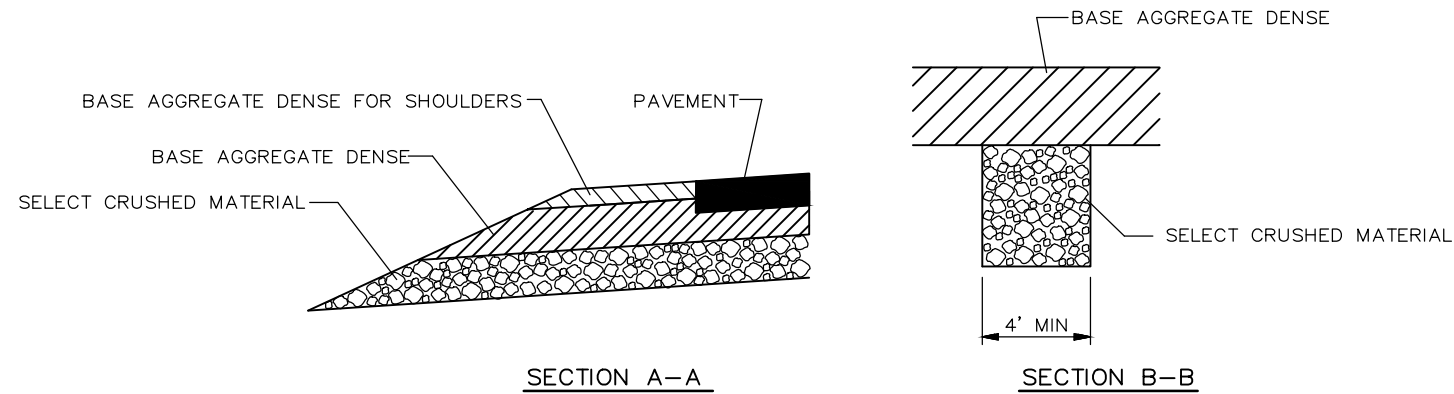
CULVERT PIPE CHECKS

ESTIMATED BAG SIZE = 18" X 12" X 6"

PIPE SIZE	ESTIMATED NO. OF BAGS
12"	1
15"	2
18"	2
21"	3
14" X 23"	3
24"	3
27"	4
30"	5
19" X 30"	5
36"	7
24" X 38"	8
42"	8
29" X 45"	10
48"	10
34" X 53"	10
38" X 60"	13
60"	13
66"	15
53" X 83"	19



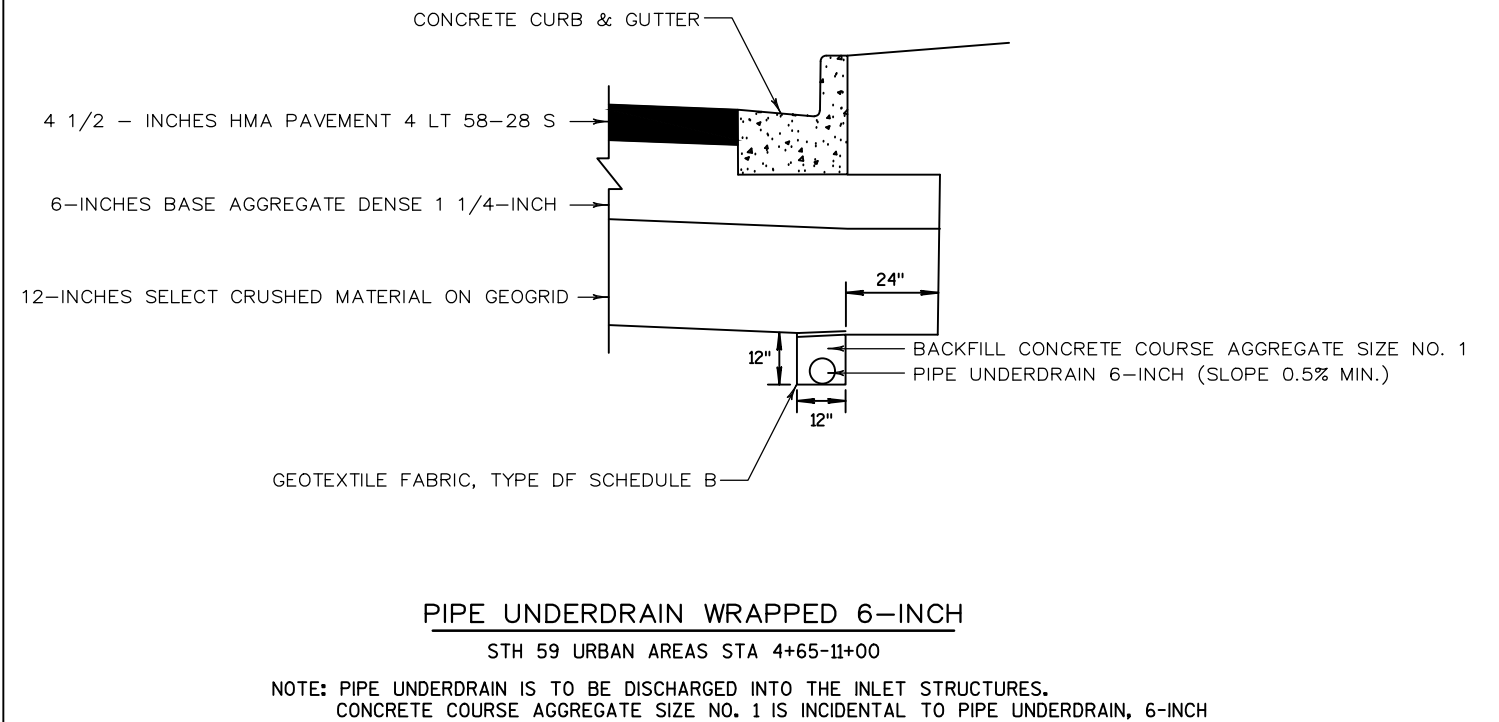
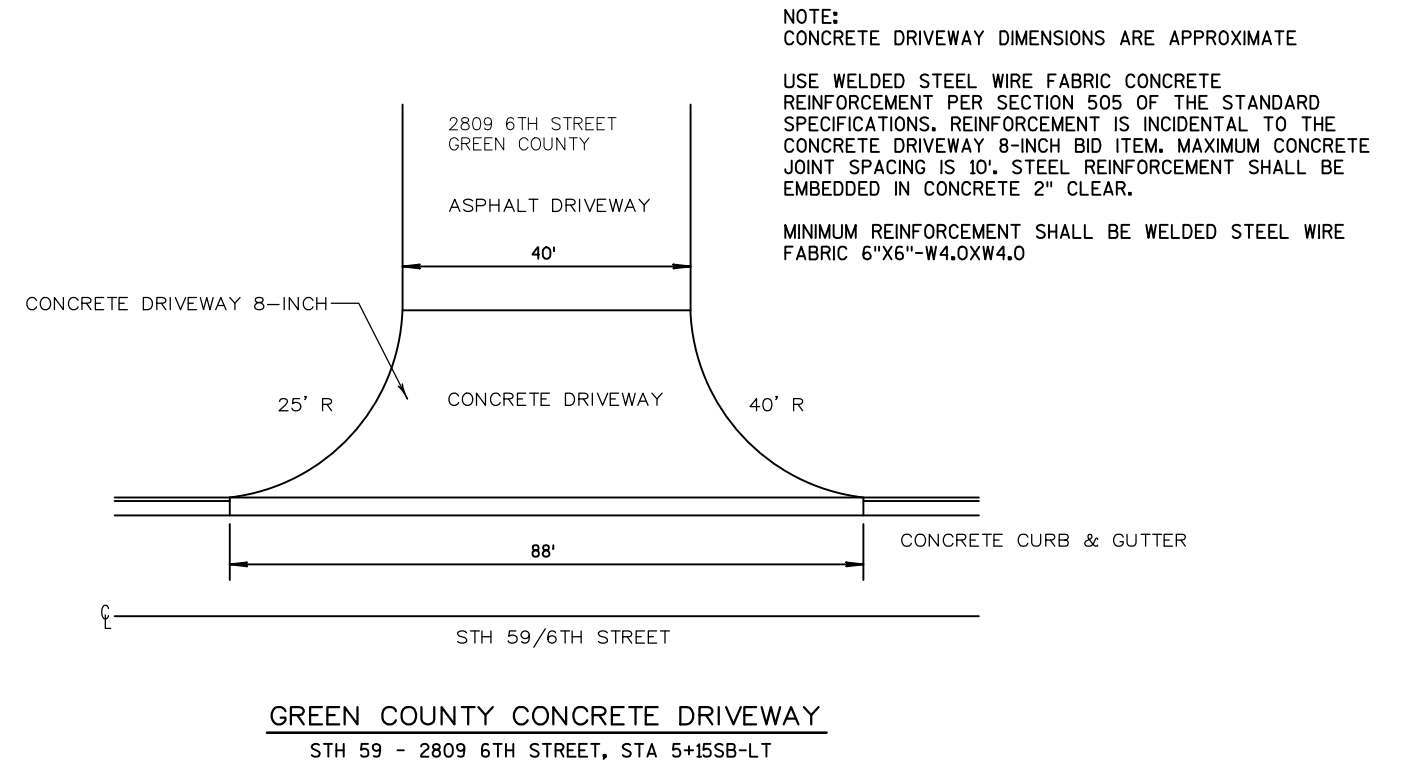
EROSION MAT DETAIL FOR DITCHES

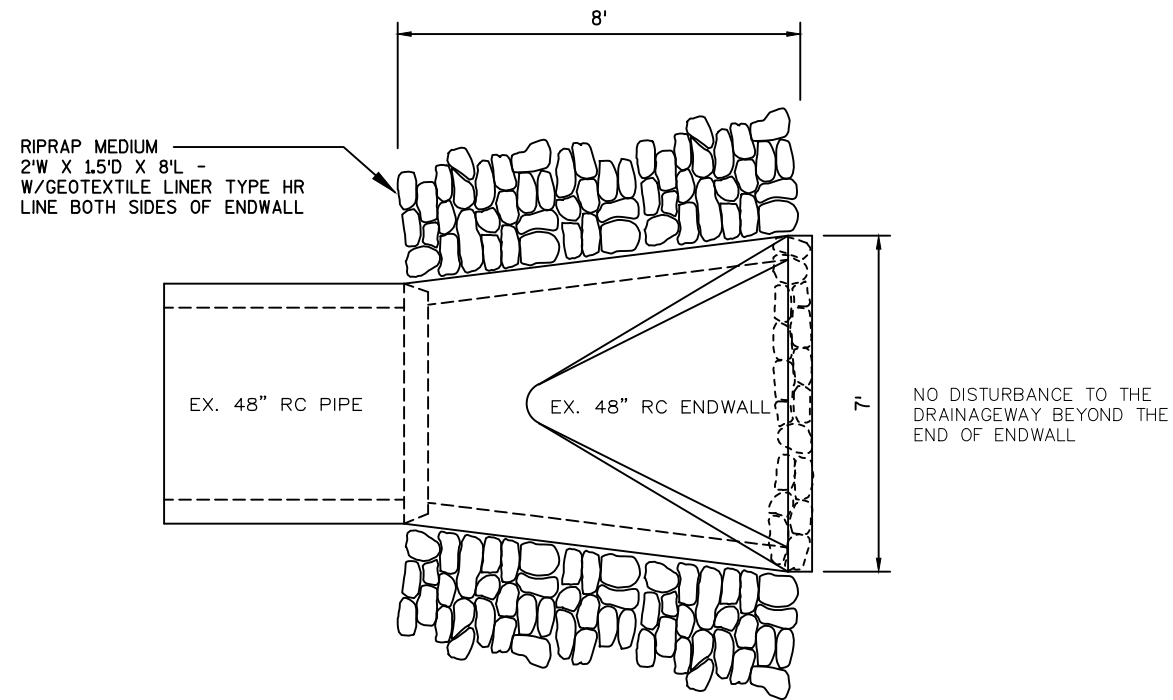


DETAIL FOR FRENCH DRAINS

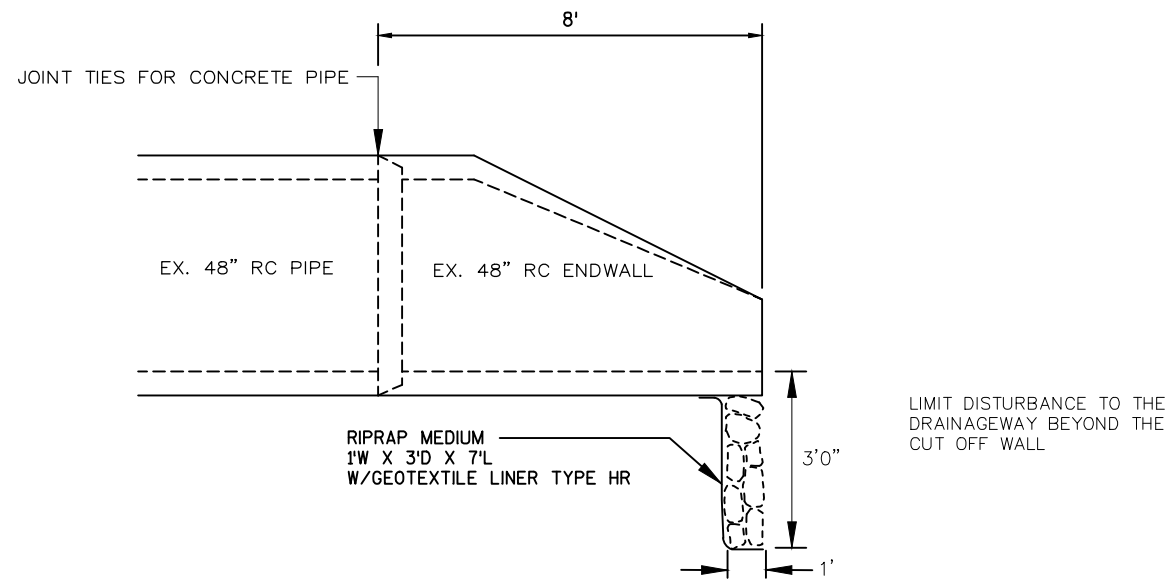
DRAINS ARE TO BE CONSTRUCTED AT LEAST EVERY 250' AND AT EACH SAG VERTICAL CURVE IN THE PROFILE.
(LOCATIONS TO BE DETERMINED IN THE FIELD BY THE ENGINEER)

EXCAVATION REQUIRED TO CONSTRUCT FRENCH DRAINS SHALL BE CONSIDERED INCIDENTAL TO THE ITEM SELECT CRUSHED MATERIAL.
DO NOT COVER FRENCH DRAINS WITH TOPSOIL





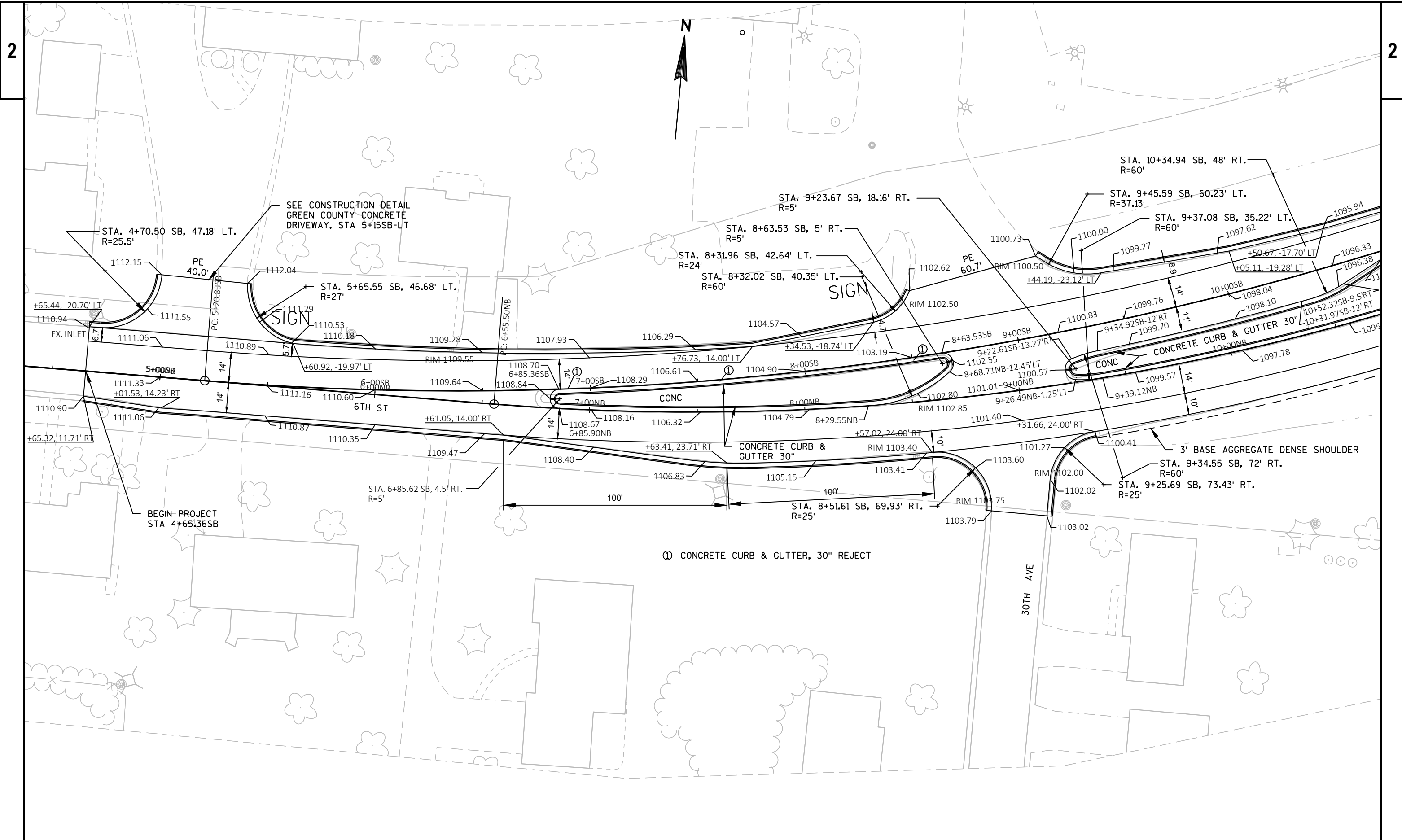
PLAN



LONGITUDINAL SECTION

SALVAGED RC ENDWALL DETAIL

STH 81 - STA 185+12BE-78' RT



PROJECT NO: 5660-00-72

HWY: STH 59

COUNTY: GREEN

PLAN DETAILS

SHEET

E

FILE NAME : N:\PDS\C3D\56600002\SHEETPLAN\021201_PD.DWG
LAYOUT NAME - 1

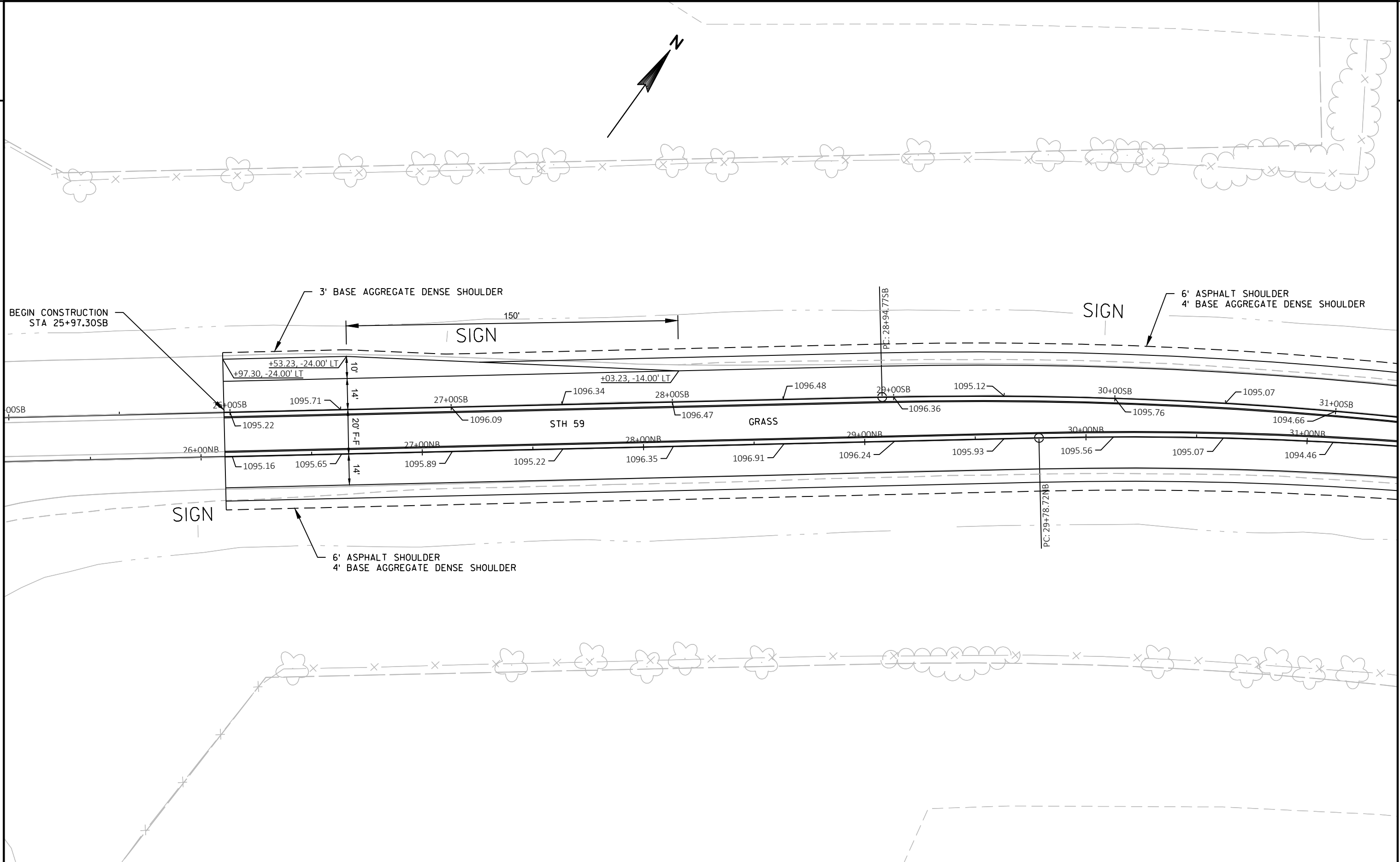
PLOT DATE : 2/1/2019 12:49 PM

PLOT BY : OLSON, RICHARD J

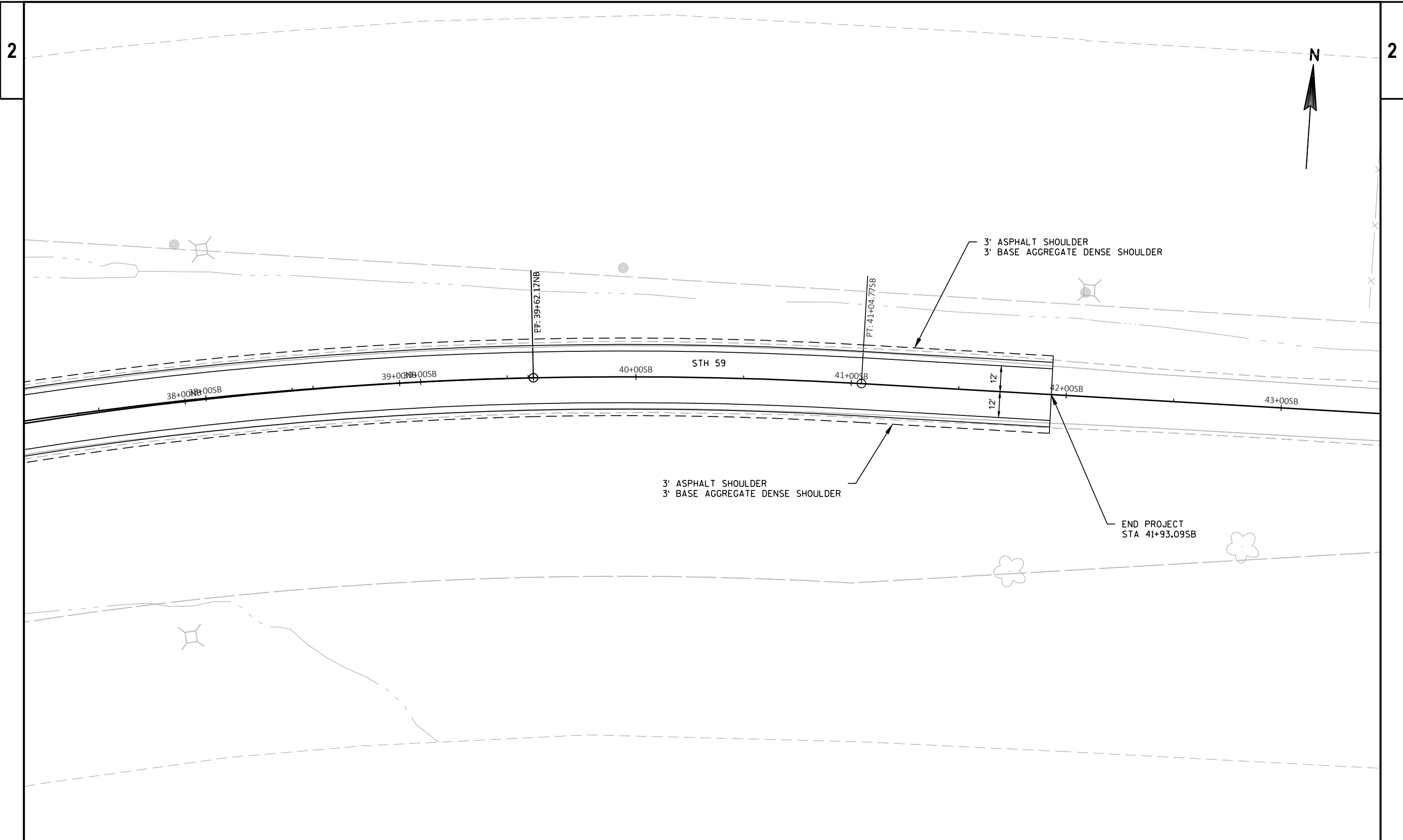
PLOT NAME :

PLOT SCALE : 1 IN=40 FT

WISDOT/CABDS SHEET 44



PROJECT NO: 5660-00-72	HWY: STH 59	COUNTY: GREEN	PLAN DETAILS	SHEET	E
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2

2

PROJECT NO: 5660-00-72	HWY: STH 59	COUNTY: GREEN	PLAN DETAILS	SHEET	E
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FILE NAME : N:\PDS\C3D\56600002\SHEETSPLAN\021201_PD.DWG
LAYOUT NAME - 6

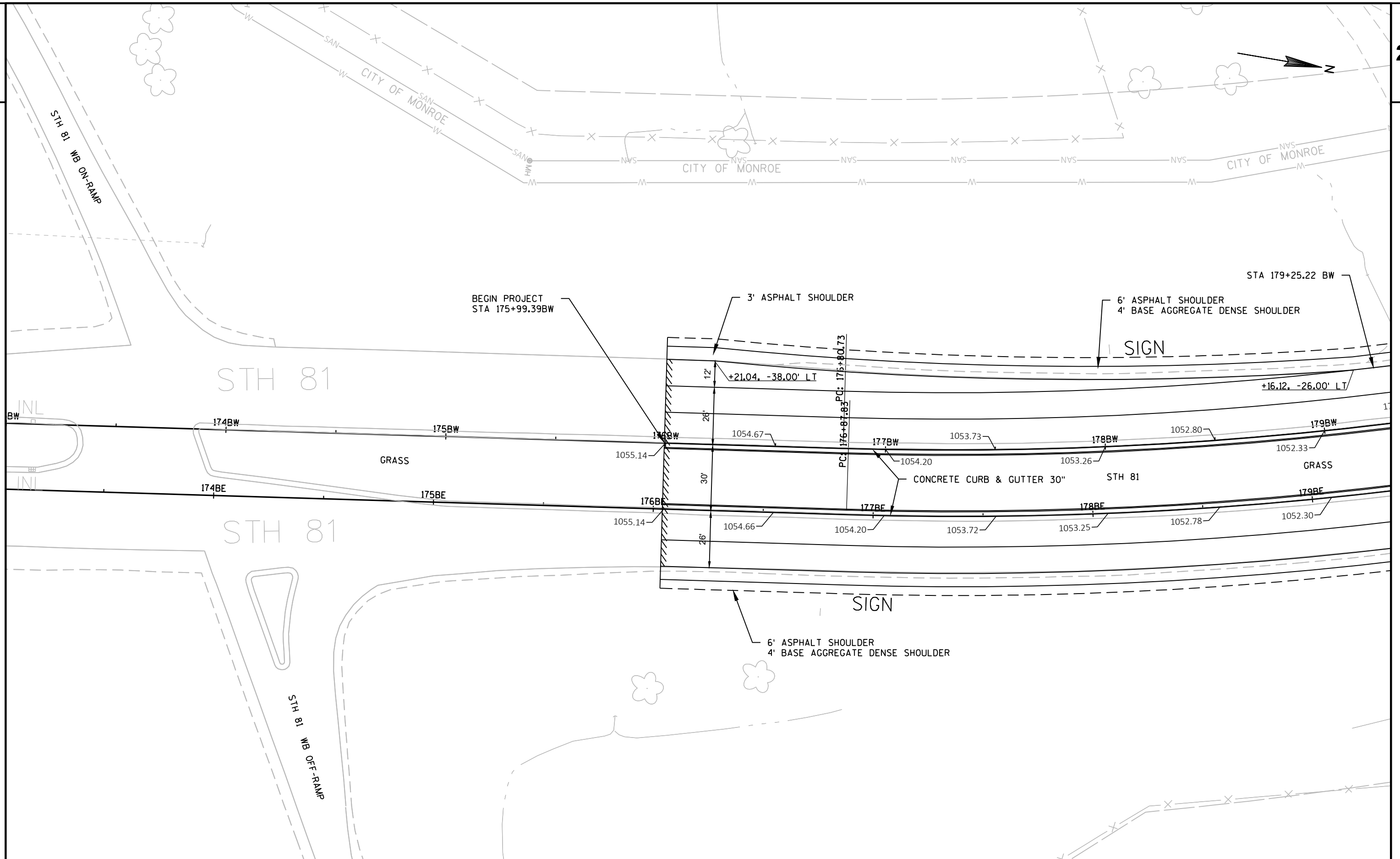
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PLOT BY : OLSON, RICHARD J

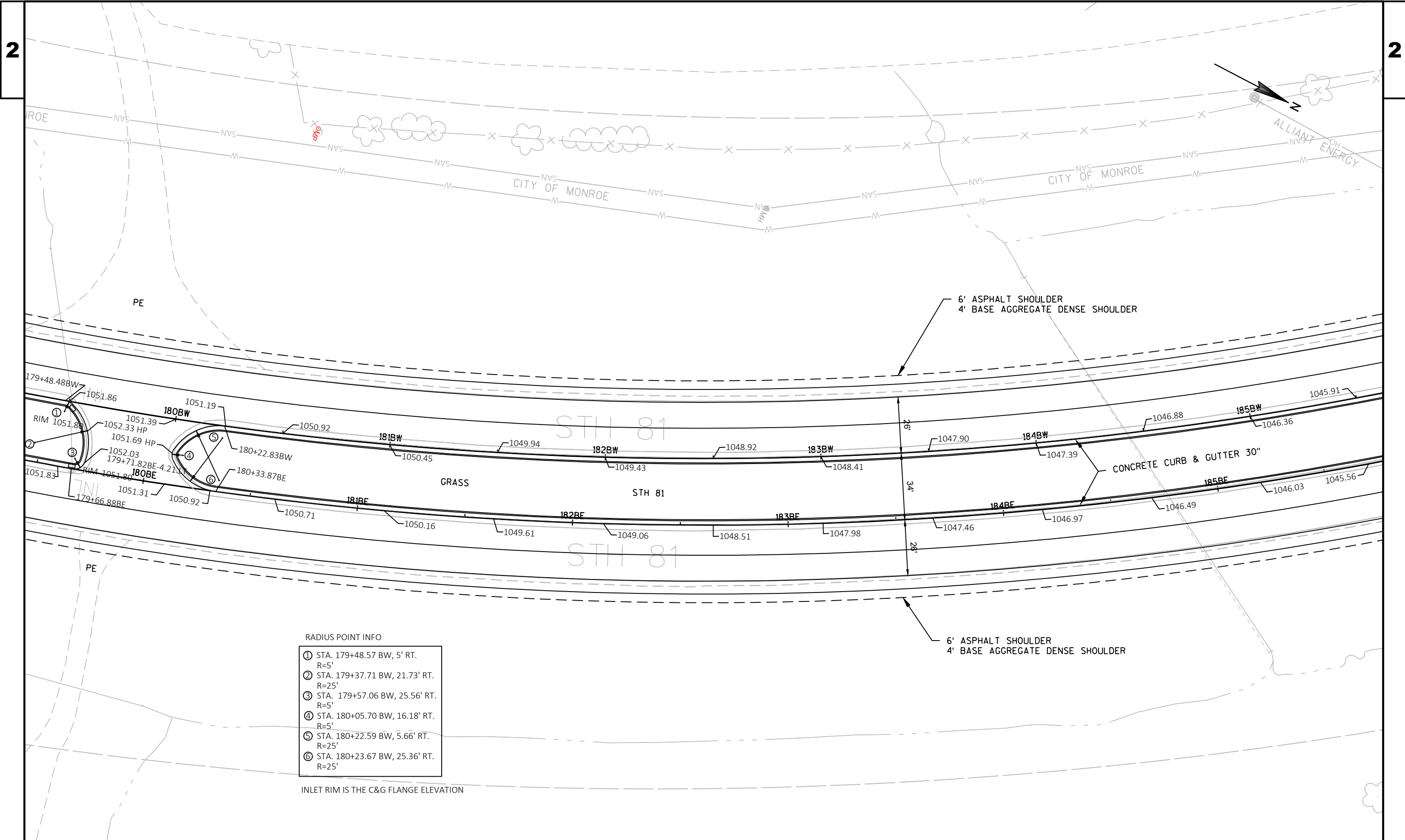
PLOT NAME :

PLOT SCALE : ###/###/###

WISDOT/CADD SHEET 44



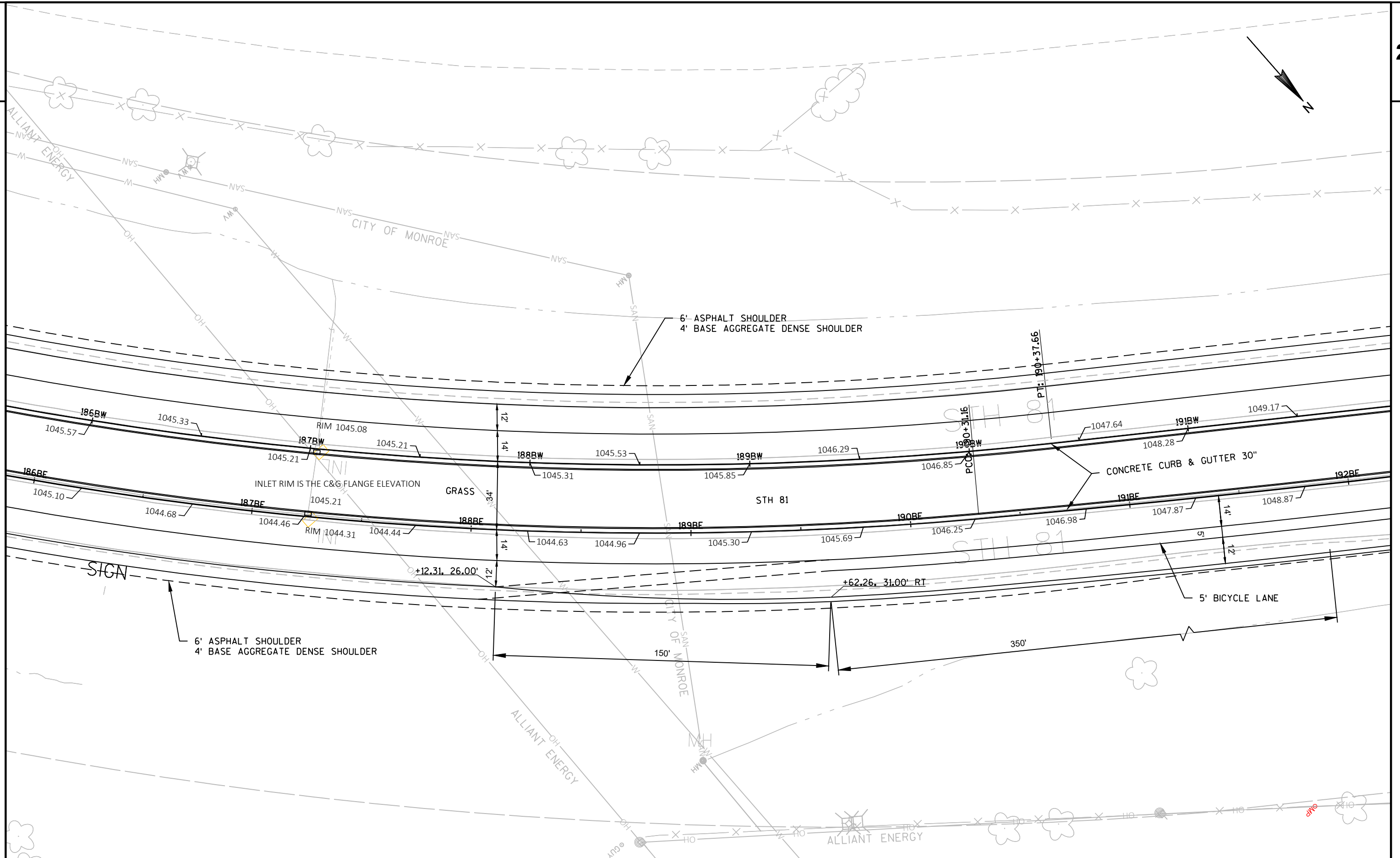
PROJECT NO:5944-01-72	HWY:STH 81	COUNTY:GREEN	PLAN DETAILS	SHEET	E
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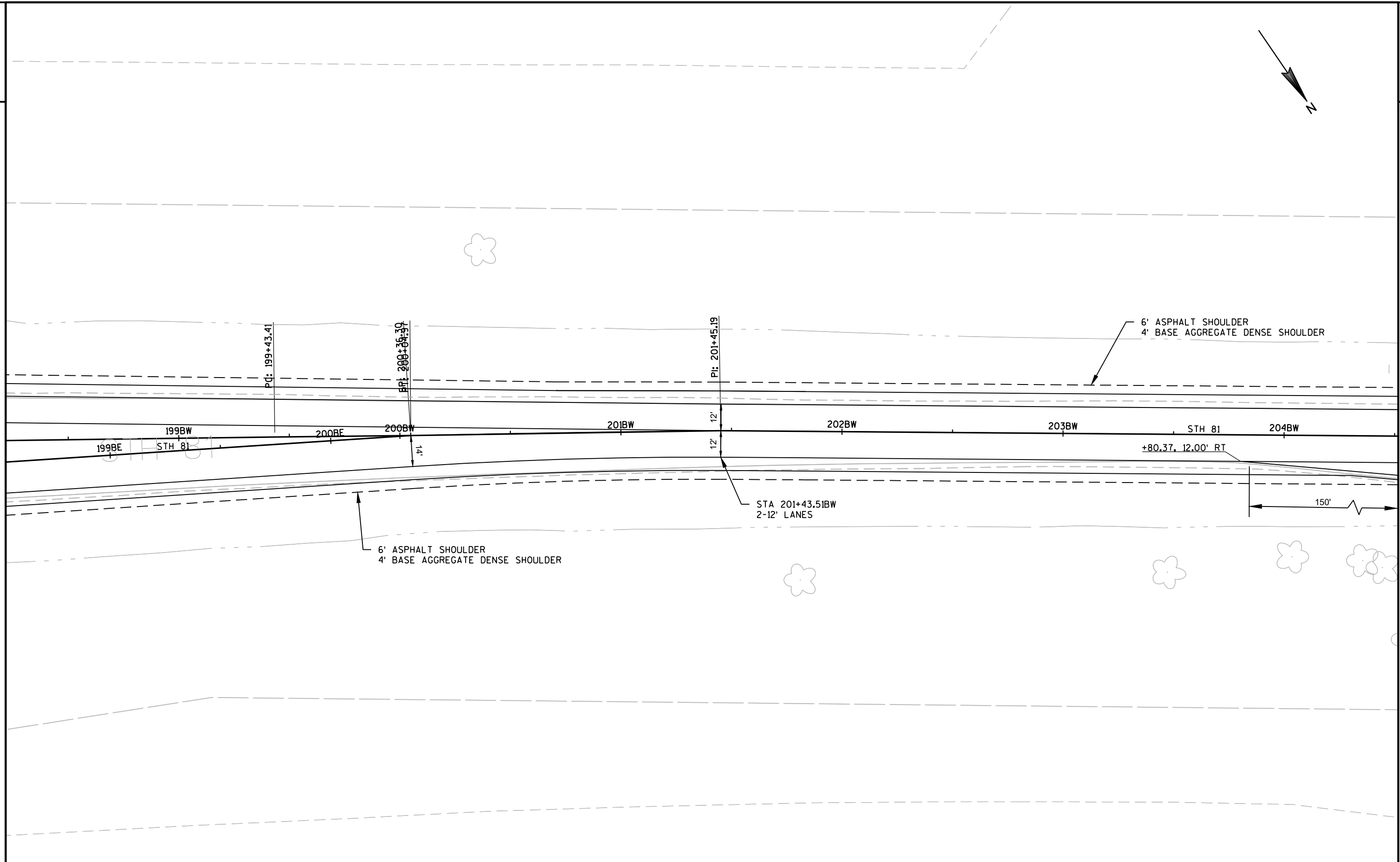
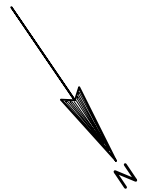
RADIUS POINT INFO

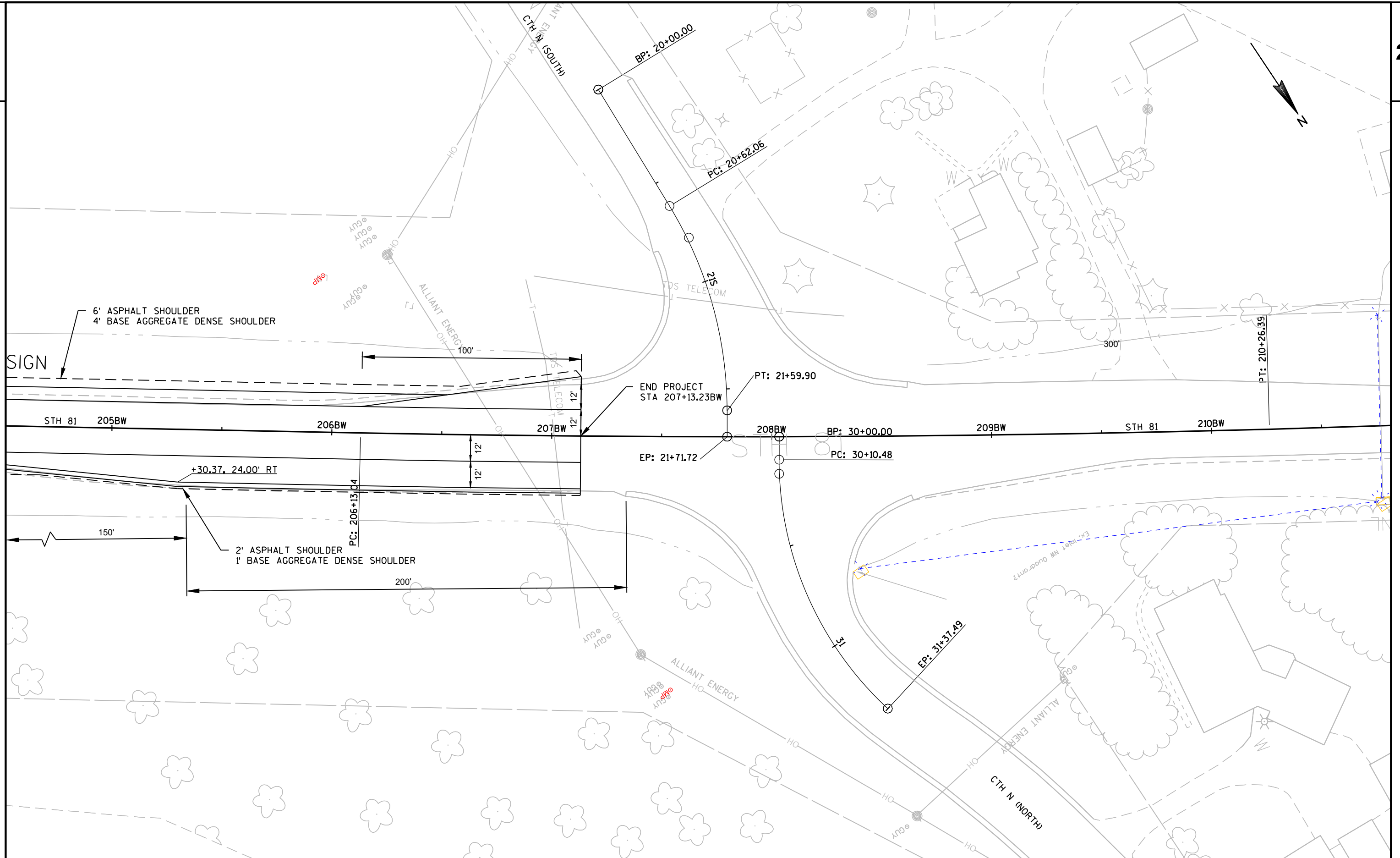
①	STA. 179+48.57 BW, 5' RT. R=5'
②	STA. 179+37.71 BW, 21.73' RT. R=25'
③	STA. 179+57.06 BW, 25.56' RT. R=5'
④	STA. 180+05.70 BW, 16.18' RT. R=5'
⑤	STA. 180+22.59 BW, 5.66' RT. R=25'
⑥	STA. 180+23.67 BW, 25.36' RT. R=25'

INLET RIM IS THE C&G FLANGE ELEVATION



PROJECT NO:5944-01-72	HWY:STH 81	COUNTY:GREEN	PLAN DETAILS	SHEET E
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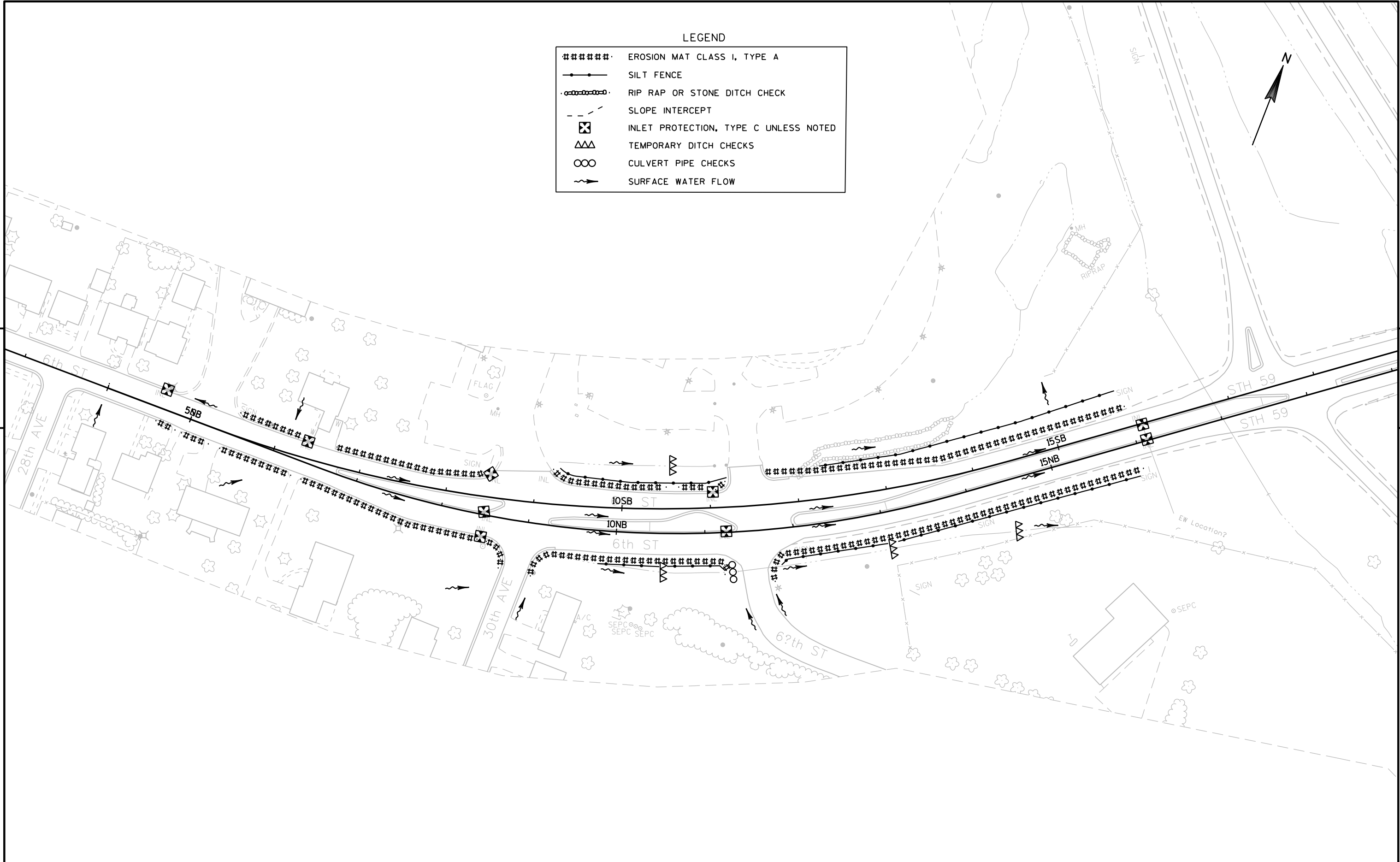




PROJECT NO:5944-01-72	HWY:STH 81	COUNTY:GREEN	PLAN DETAILS	SHEET E
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LEGEND

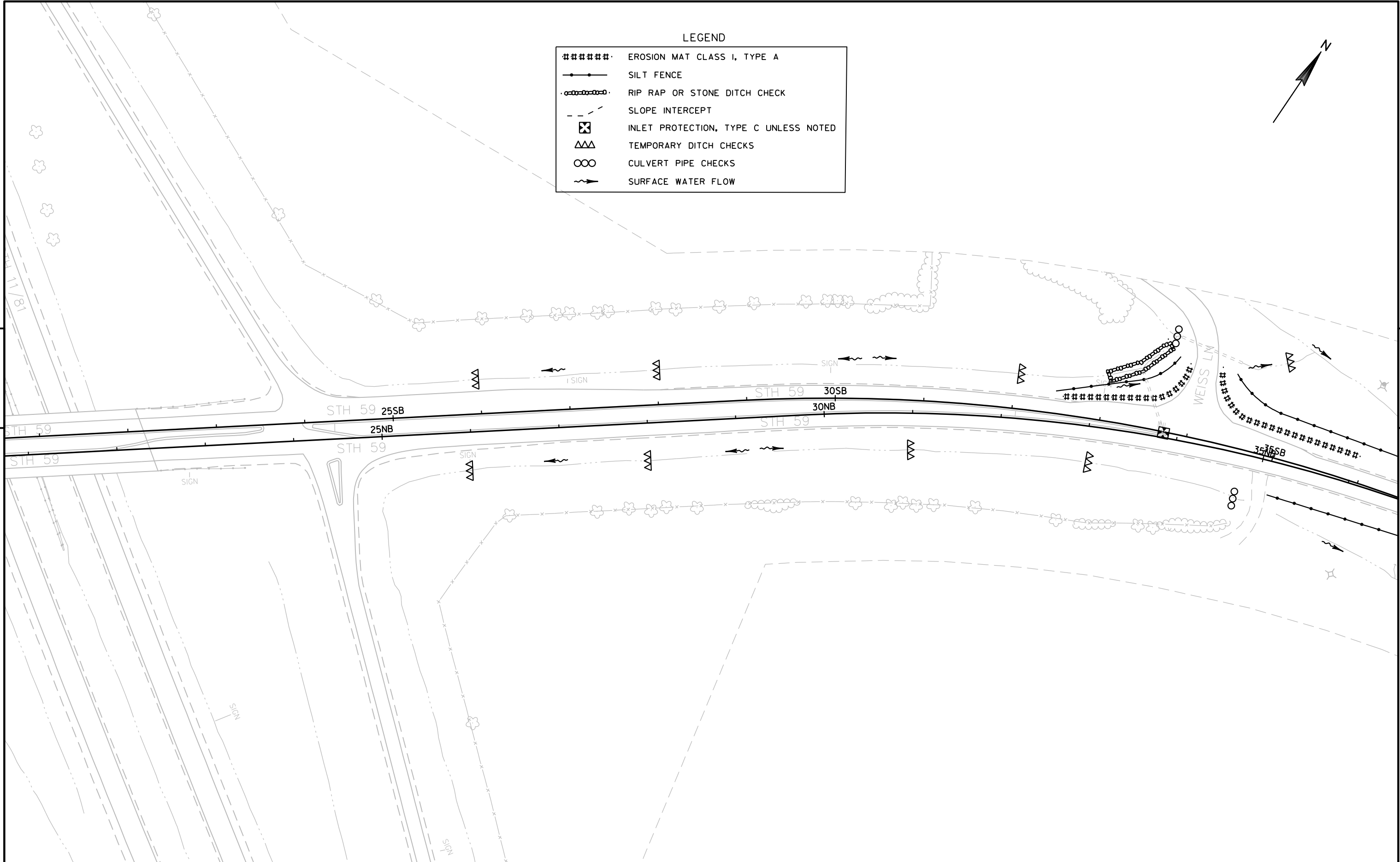
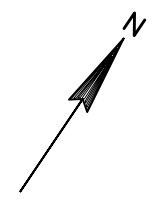
#####	EROSION MAT CLASS I, TYPE A
—●—	SILT FENCE
—○—	RIP RAP OR STONE DITCH CHECK
- - -	SLOPE INTERCEPT
⊠	INLET PROTECTION, TYPE C UNLESS NOTED
△△	TEMPORARY DITCH CHECKS
○○	CULVERT PIPE CHECKS
→	SURFACE WATER FLOW



PROJECT NO: 5660-00-72	HWY: STH 59	COUNTY: GREEN	EROSION CONTROL	SHEET	E
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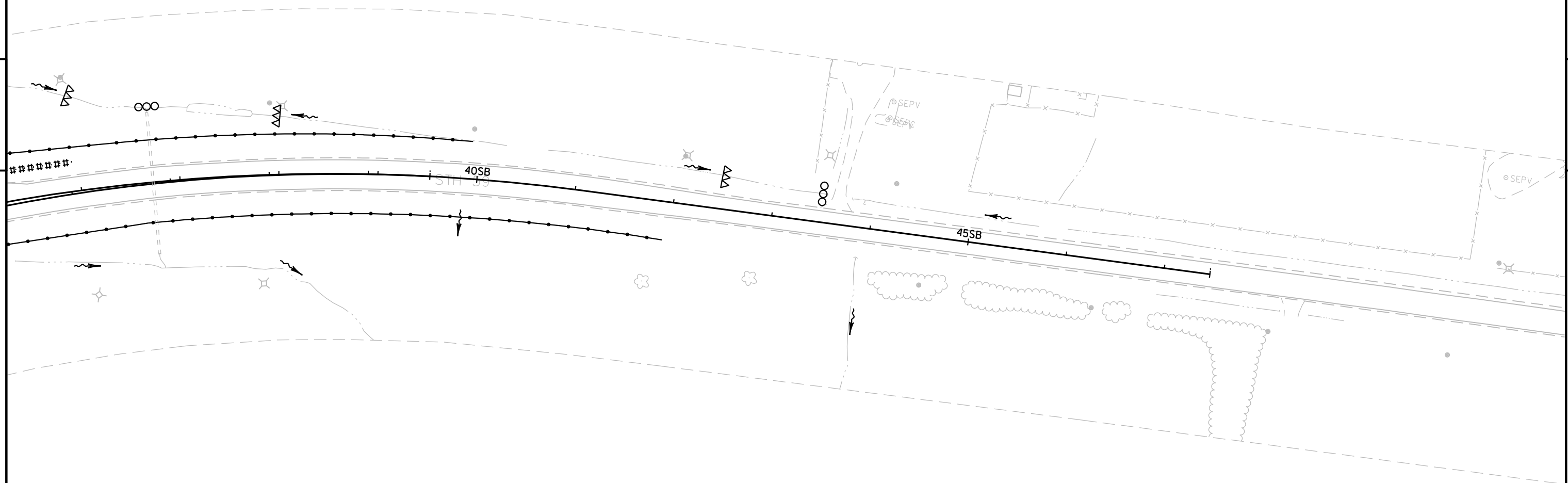
LEGEND

#####	EROSION MAT CLASS I, TYPE A
—●—	SILT FENCE
—○—	RIP RAP OR STONE DITCH CHECK
- - -	SLOPE INTERCEPT
⊠	INLET PROTECTION, TYPE C UNLESS NOTED
△△	TEMPORARY DITCH CHECKS
○○	CULVERT PIPE CHECKS
~>	SURFACE WATER FLOW



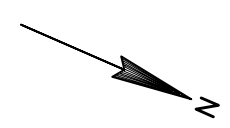
LEGEND

#####	EROSION MAT CLASS I, TYPE A
—●—	SILT FENCE
—○—	RIP RAP OR STONE DITCH CHECK
- - -	SLOPE INTERCEPT
⊠	INLET PROTECTION, TYPE C UNLESS NOTED
△△	TEMPORARY DITCH CHECKS
○○	CULVERT PIPE CHECKS
~>	SURFACE WATER FLOW



LEGEND

#####	EROSION MAT CLASS I, TYPE A
—●—	SILT FENCE
—○—○—○—	RIP RAP OR STONE DITCH CHECK
- - -	SLOPE INTERCEPT
⊠	INLET PROTECTION, TYPE C UNLESS NOTED
△△△	TEMPORARY DITCH CHECKS
○○	CULVERT PIPE CHECKS
~>	SURFACE WATER FLOW



BEGIN PROJECT
STA 175+99.39BW

REMOVE & REPLACE
48" RCP ENDWALL
PLACE RIPRAP
STA 184+02BW-77'LT

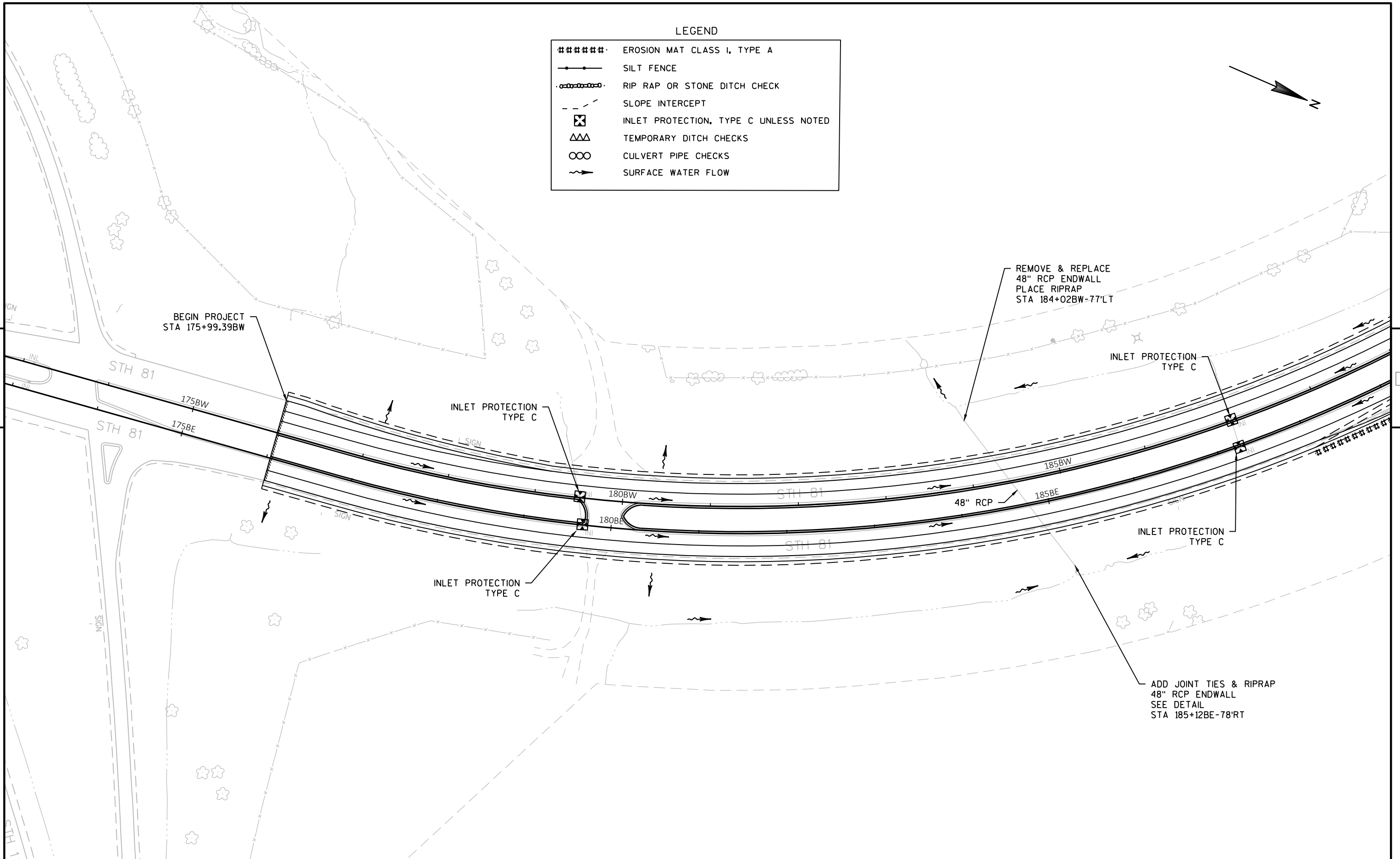
INLET PROTECTION
TYPE C

INLET PROTECTION
TYPE C

INLET PROTECTION
TYPE C

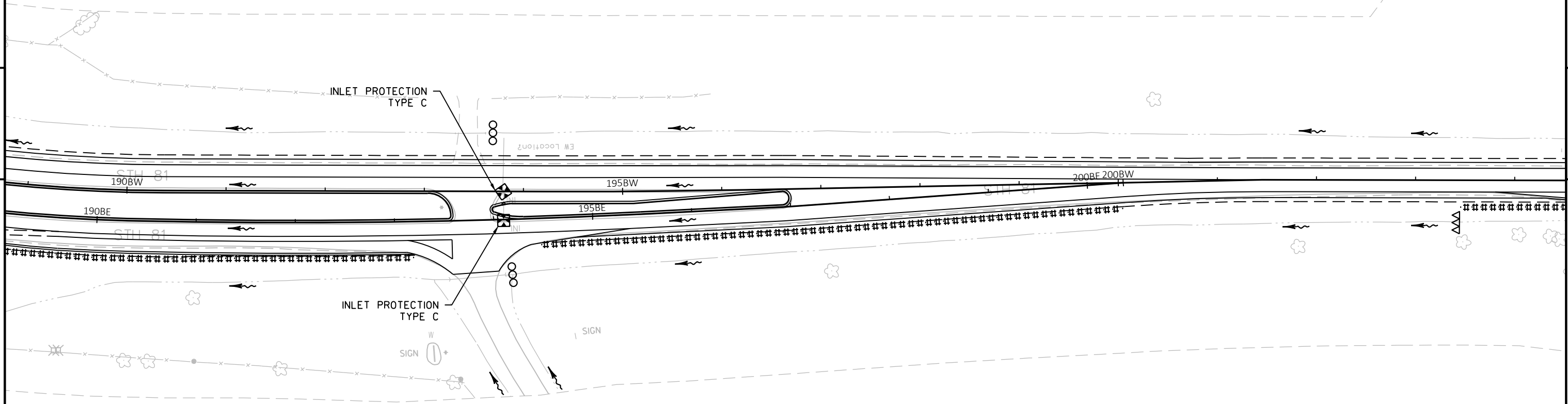
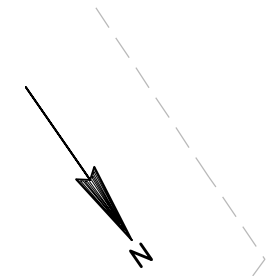
INLET PROTECTION
TYPE C

ADD JOINT TIES & RIPRAP
48" RCP ENDWALL
SEE DETAIL
STA 185+12BE-78'RT



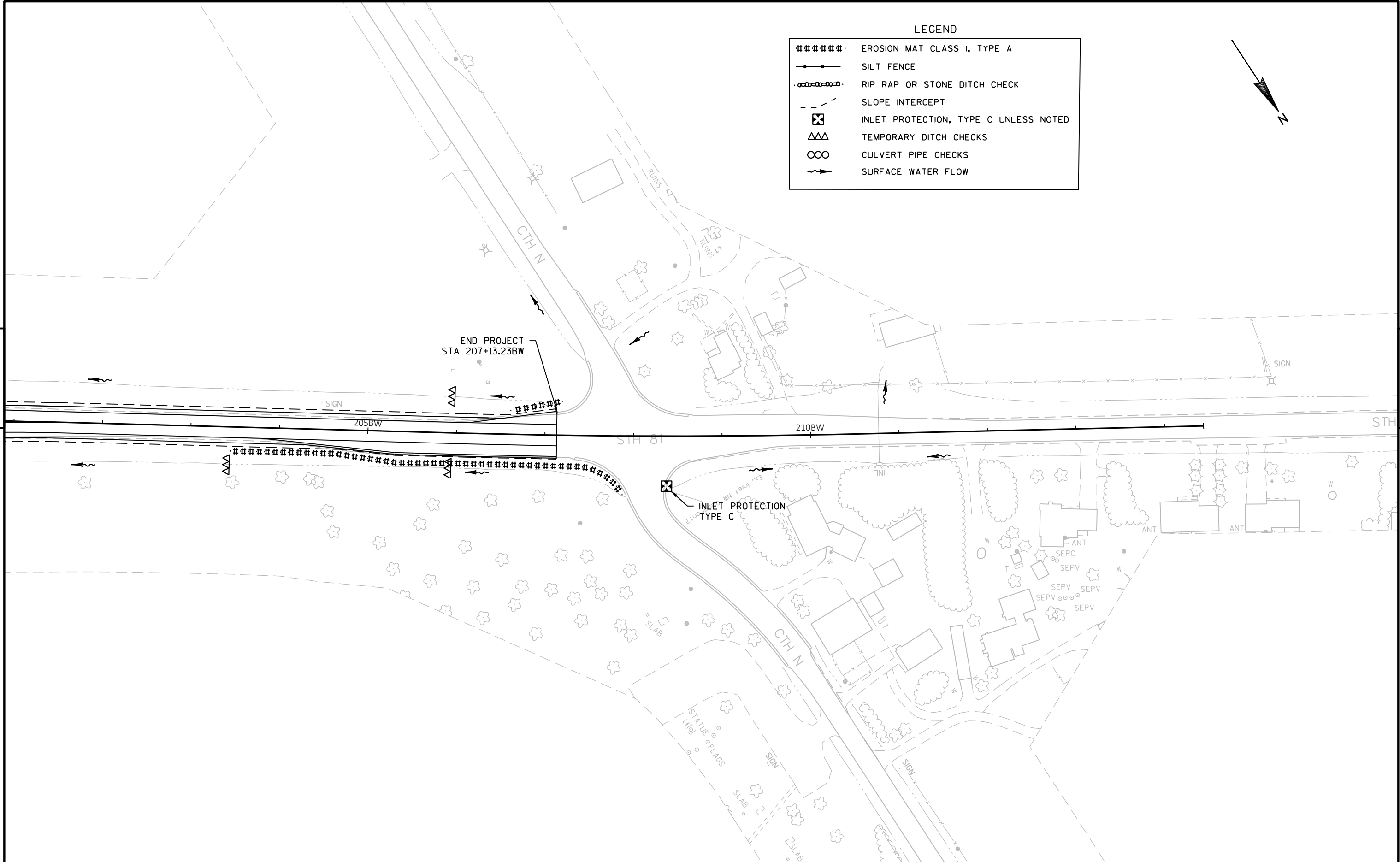
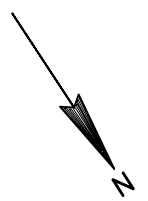
LEGEND

#####	EROSION MAT CLASS I, TYPE A
—●—	SILT FENCE
—○—○—○—	RIP RAP OR STONE DITCH CHECK
- - -	SLOPE INTERCEPT
⊠	INLET PROTECTION, TYPE C UNLESS NOTED
△△△	TEMPORARY DITCH CHECKS
○○	CULVERT PIPE CHECKS
~>	SURFACE WATER FLOW

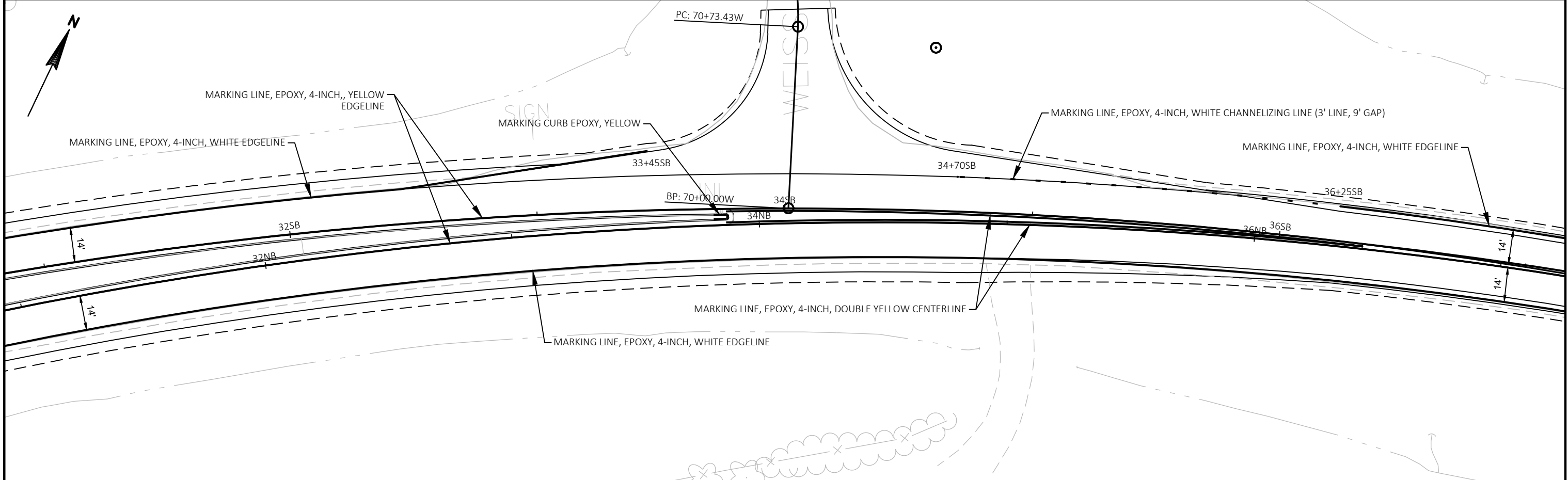
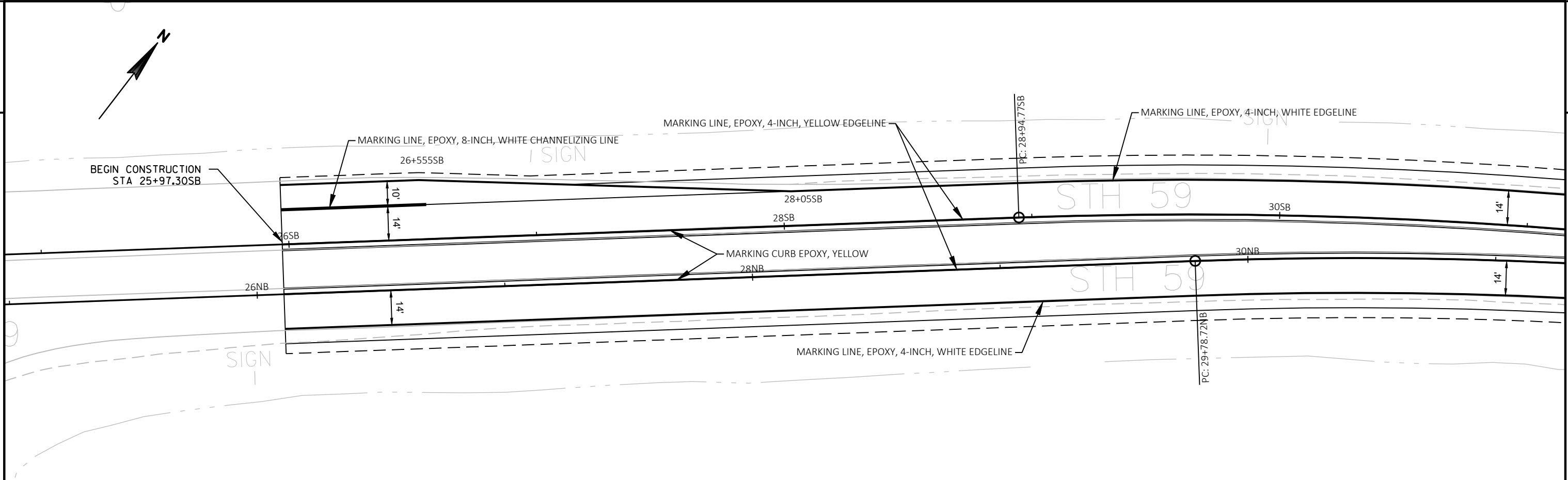


LEGEND

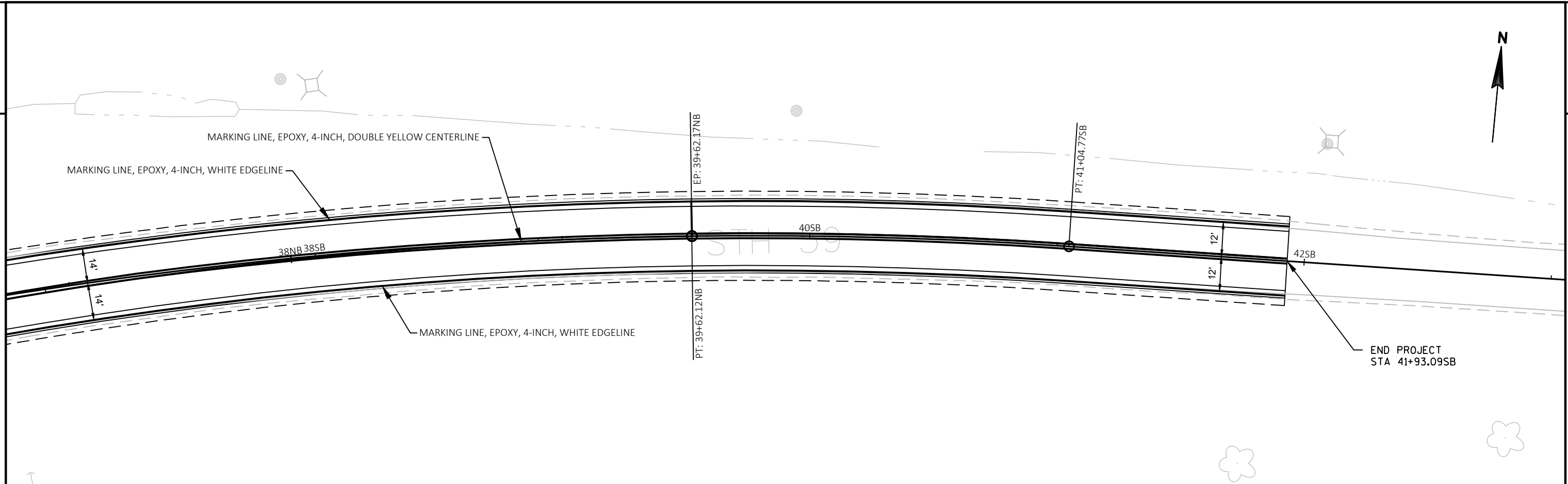
#####	EROSION MAT CLASS I, TYPE A
—●—	SILT FENCE
—○—○—○—	RIP RAP OR STONE DITCH CHECK
- - -	SLOPE INTERCEPT
⊠	INLET PROTECTION, TYPE C UNLESS NOTED
△△△	TEMPORARY DITCH CHECKS
○○○	CULVERT PIPE CHECKS
~>	SURFACE WATER FLOW



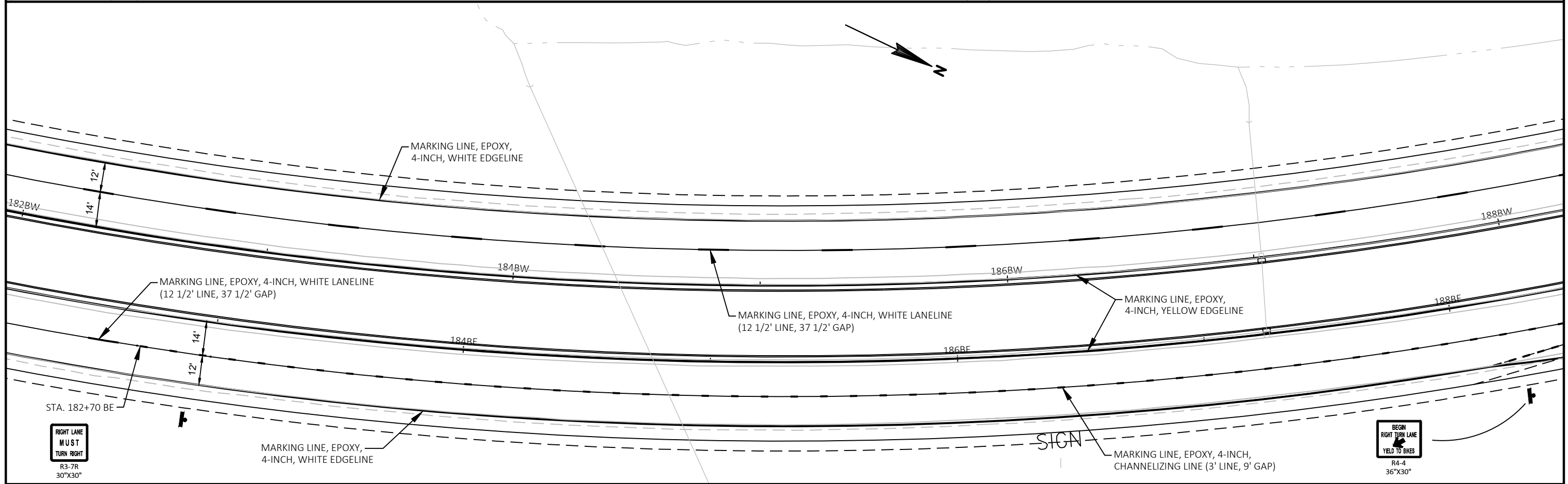
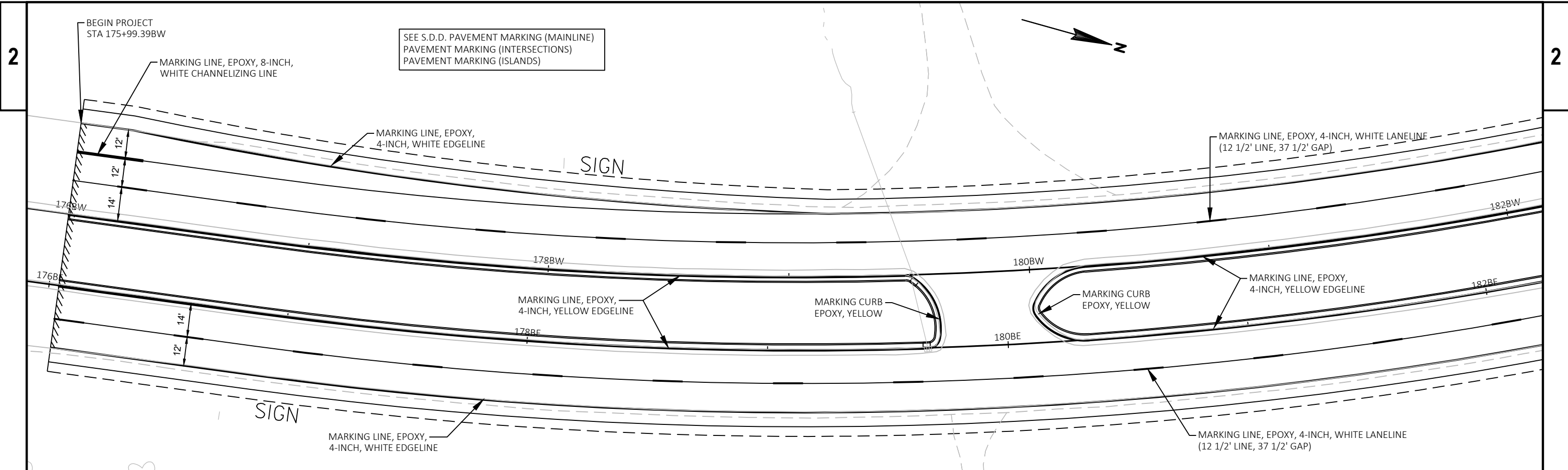
PROJECT NO: 5944-01-72	HWY: STH 81	COUNTY: GREEN	EROSION CONTROL	SHEET	E
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PROJECT NO: 5660-00-72	HWY: STH 59	COUNTY: GREEN	PAVEMENT MARKING	SHEET	E
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PROJECT NO: 5660-00-72	HWY: STH 59	COUNTY: GREEN	PAVEMENT MARKING	SHEET	E
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PROJECT NO: 5944-01-72

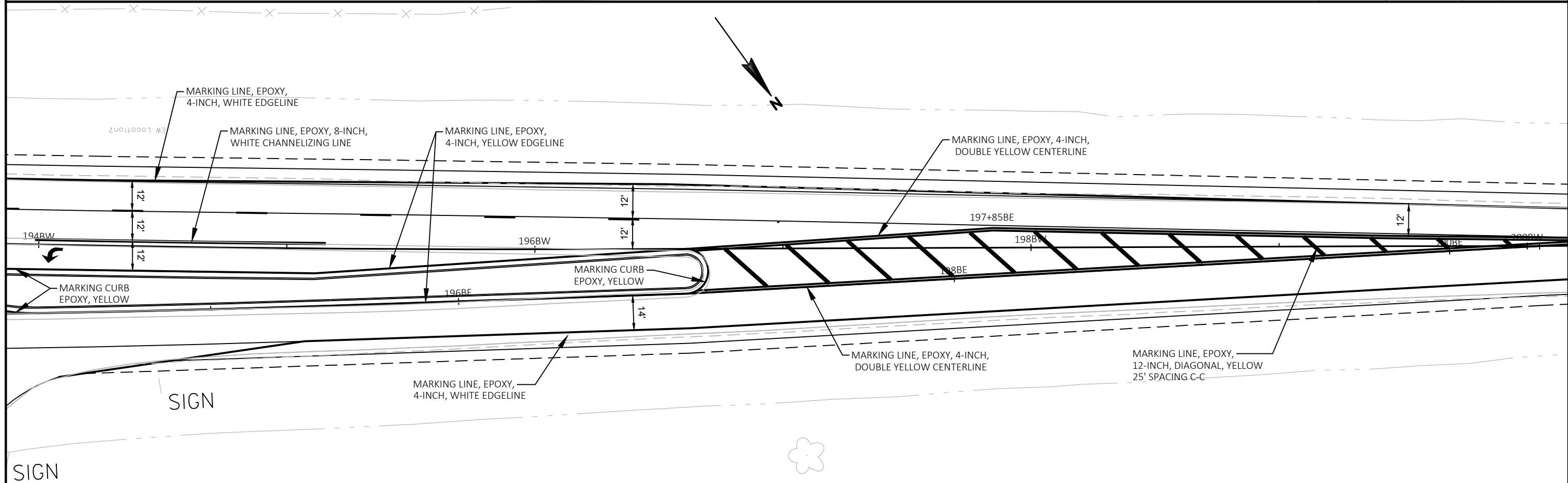
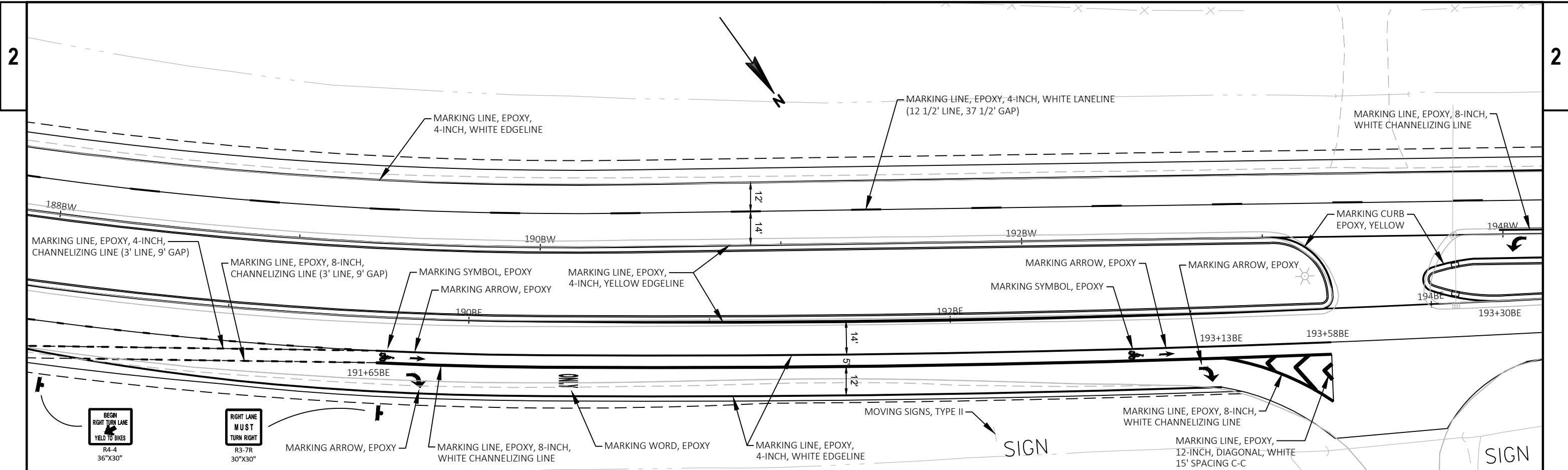
HWY: STH 81

COUNTY: GREEN

PAVEMENT MARKING

SHEET

E



PROJECT NO: 5944-01-72	HWY: STH 81	COUNTY: GREEN	PAVEMENT MARKING	SHEET	E
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LAYOUT NAME - 3

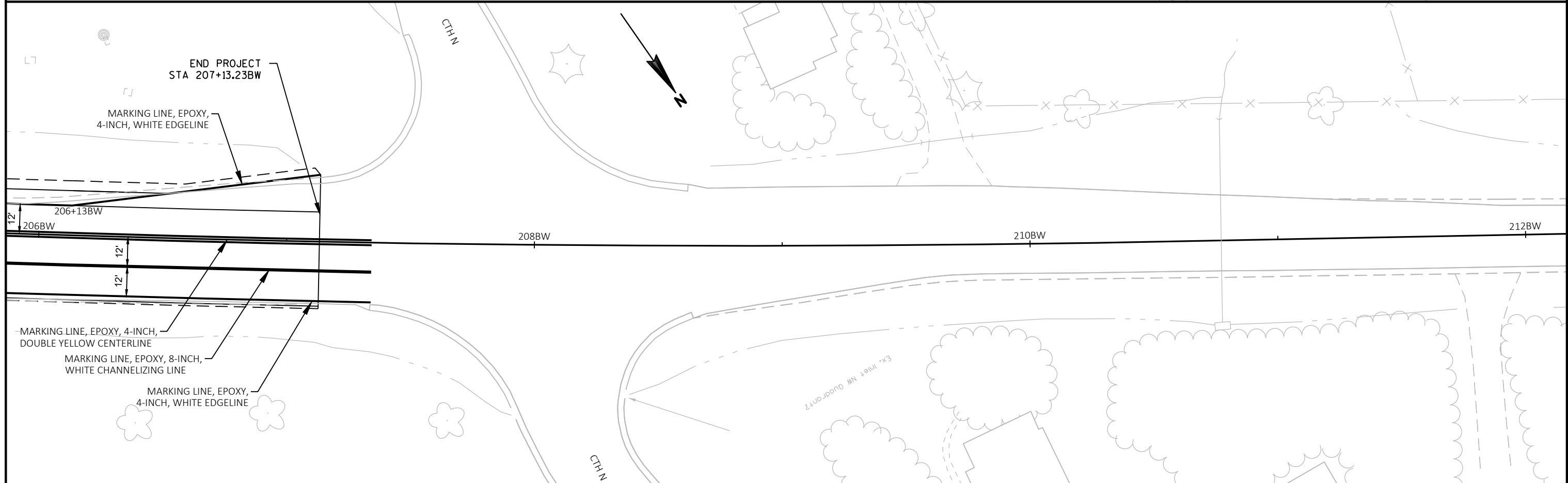
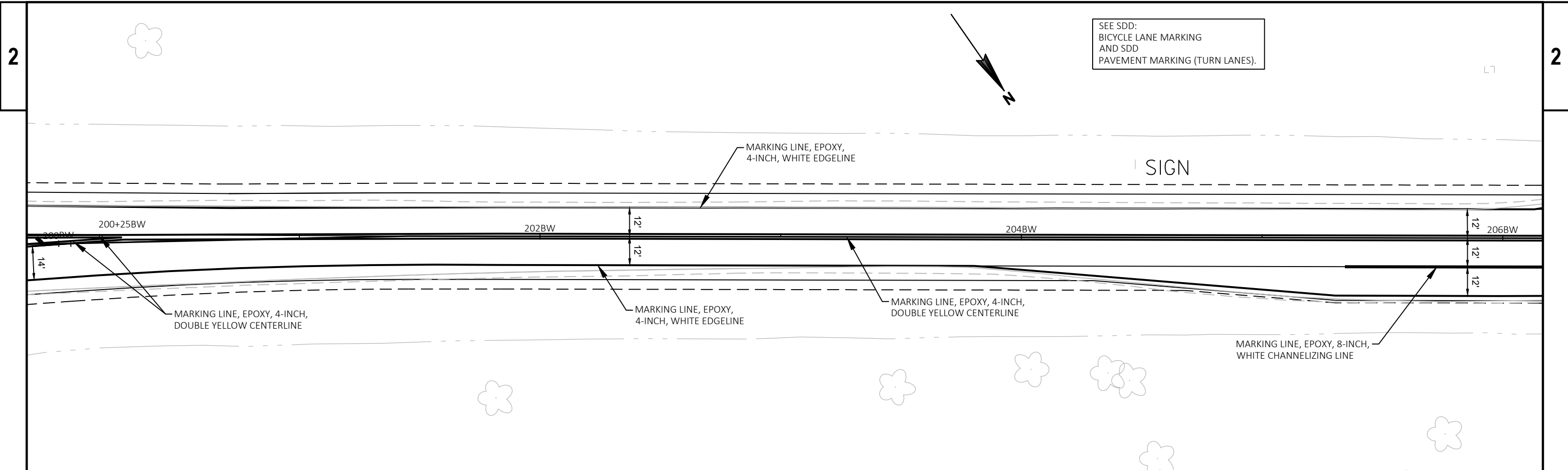
PLOT DATE : 2/4/2019 1:17 PM

PLOT BY : OLSON, RICHARD J

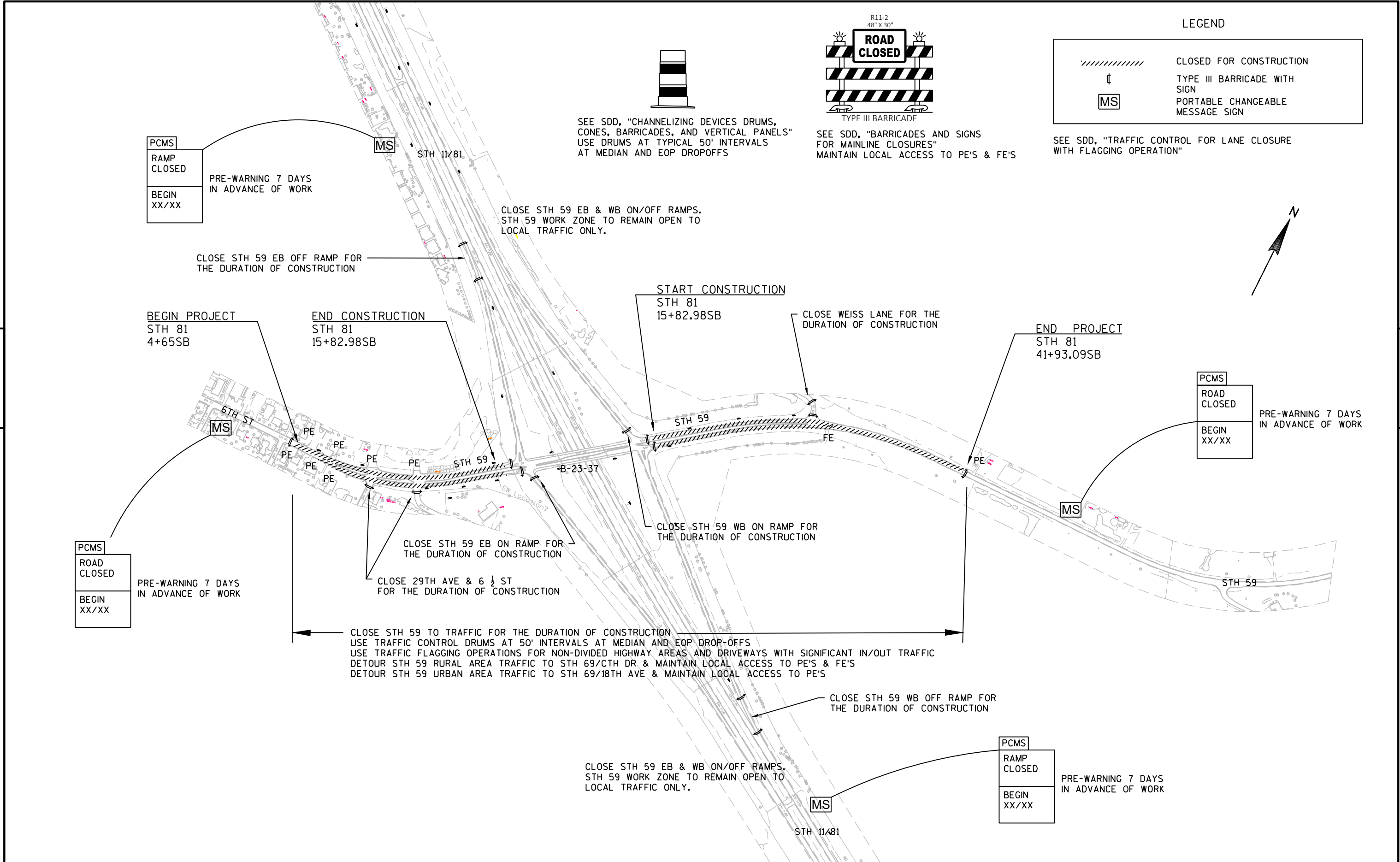
PLOT NAME :

PLOT SCALE : 1 IN:40 FT

WISDOT/CADD SHEET 44



PROJECT NO: 5944-01-72	HWY: STH 81	COUNTY: GREEN	PAVEMENT MARKING	SHEET	E
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PCMS
RAMP
CLOSED
BEGIN
XX/XX

PRE-WARNING 7 DAYS
IN ADVANCE OF WORK

MS STH 11/81

CLOSE STH 59 EB & WB ON/OFF RAMP.
STH 59 WORK ZONE TO REMAIN OPEN TO
LOCAL TRAFFIC ONLY.

CLOSE STH 59 EB OFF RAMP FOR
THE DURATION OF CONSTRUCTION

BEGIN PROJECT
STH 81
4+65SB

END CONSTRUCTION
STH 81
15+82.98SB

START CONSTRUCTION
STH 81
15+82.98SB

CLOSE WEISS LANE FOR THE
DURATION OF CONSTRUCTION

END PROJECT
STH 81
41+93.09SB

PCMS
ROAD
CLOSED
BEGIN
XX/XX

PRE-WARNING 7 DAYS
IN ADVANCE OF WORK

PCMS
ROAD
CLOSED
BEGIN
XX/XX

PRE-WARNING 7 DAYS
IN ADVANCE OF WORK

CLOSE STH 59 EB ON RAMP FOR
THE DURATION OF CONSTRUCTION

CLOSE 29TH AVE & 6 1/2 ST
FOR THE DURATION OF CONSTRUCTION

CLOSE STH 59 WB ON RAMP FOR
THE DURATION OF CONSTRUCTION

CLOSE STH 59 TO TRAFFIC FOR THE DURATION OF CONSTRUCTION
USE TRAFFIC CONTROL DRUMS AT 50' INTERVALS AT MEDIAN AND EOP DROP-OFFS
USE TRAFFIC FLAGGING OPERATIONS FOR NON-DIVIDED HIGHWAY AREAS AND DRIVEWAYS WITH SIGNIFICANT IN/OUT TRAFFIC
DETOUR STH 59 RURAL AREA TRAFFIC TO STH 69/CTH DR & MAINTAIN LOCAL ACCESS TO PE'S & FE'S
DETOUR STH 59 URBAN AREA TRAFFIC TO STH 69/18TH AVE & MAINTAIN LOCAL ACCESS TO PE'S

CLOSE STH 59 WB OFF RAMP FOR
THE DURATION OF CONSTRUCTION

CLOSE STH 59 EB & WB ON/OFF RAMP.
STH 59 WORK ZONE TO REMAIN OPEN TO
LOCAL TRAFFIC ONLY.

PCMS
RAMP
CLOSED
BEGIN
XX/XX

PRE-WARNING 7 DAYS
IN ADVANCE OF WORK

LEGEND

	CLOSED FOR CONSTRUCTION
	TYPE III BARRICADE WITH SIGN
	PORTABLE CHANGEABLE MESSAGE SIGN

R11-2
48" X 30"

TYPE III BARRICADE

SEE SDD, "BARRICADES AND SIGNS
FOR MAINLINE CLOSURES"
MAINTAIN LOCAL ACCESS TO PE'S & FE'S

SEE SDD, "CHANNELIZING DEVICES DRUMS,
CONES, BARRICADES, AND VERTICAL PANELS"
USE DRUMS AT TYPICAL 50' INTERVALS
AT MEDIAN AND EOP DROPOFFS

SEE SDD, "TRAFFIC CONTROL FOR LANE CLOSURE
WITH FLAGGING OPERATION"

5

5

LEGEND

- ● ● DETOUR ROUTE
- Ⓟ/Ⓟ EXISTING SIGN
- Ⓟ/Ⓟ PROPOSED SIGN
- ▨ WORK ZONE

NOTE:
ALL SIGNS SHOWN ON DETOUR SHEETS
SHALL BE PAID FOR AS TRAFFIC CONTROL
DETOUR SIGNS UNLESS OTHERWISE NOTED.



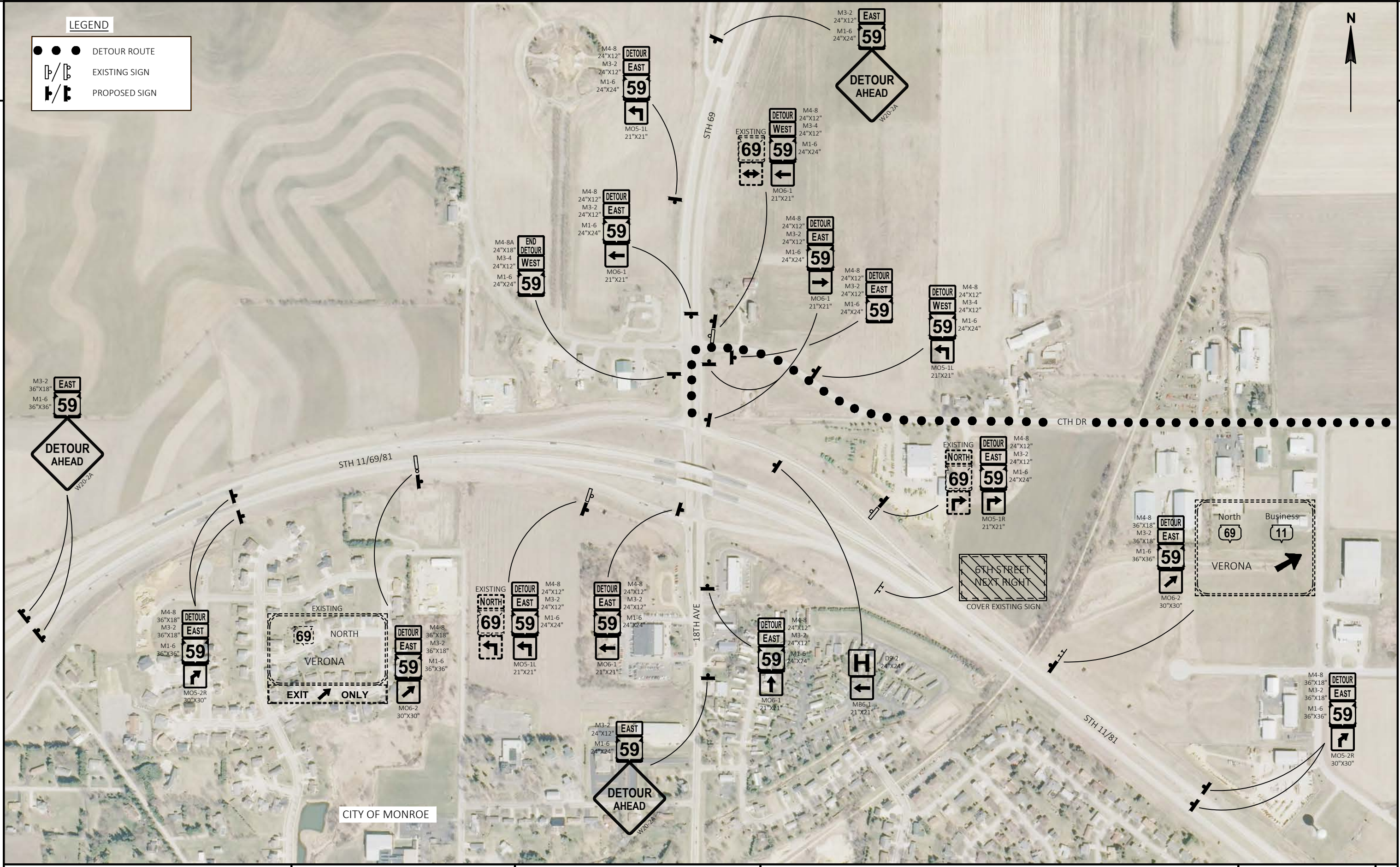
CTH DR/STH 69 DETOUR

STH 59 WORK ZONE

CITY OF MONROE

LEGEND

- ● ● DETOUR ROUTE
- ▭/▭ EXISTING SIGN
- ▭/▭ PROPOSED SIGN



PROJECT NO: 5660-00-72

HWY: STH 59

COUNTY: GREEN

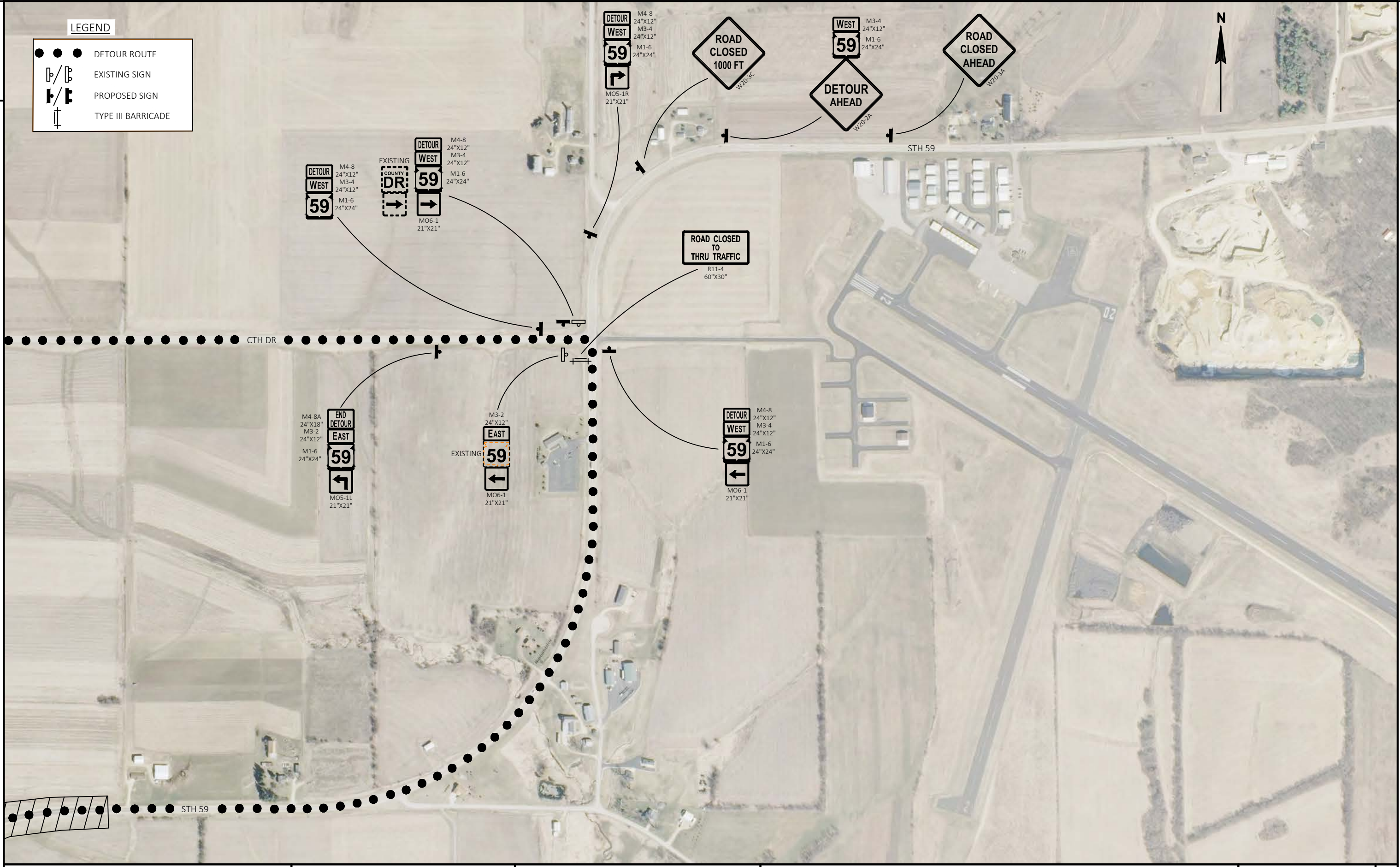
DETOUR

SHEET

E

LEGEND

- ● ● DETOUR ROUTE
- ▤/▤ EXISTING SIGN
- ▨/▨ PROPOSED SIGN
- ⚡ TYPE III BARRICADE



PROJECT NO: 5660-00-72

HWY: STH 59

COUNTY: GREEN

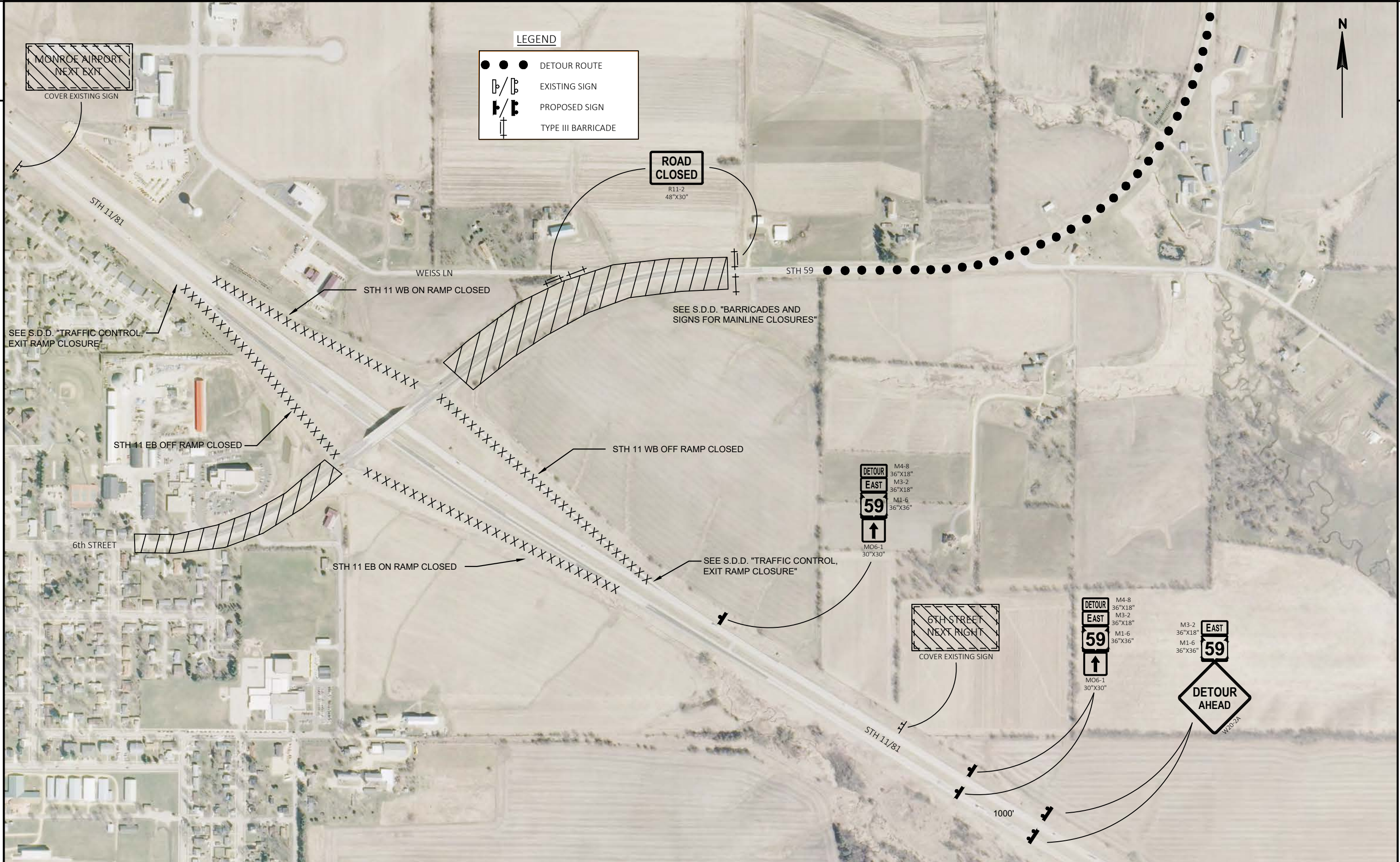
DETOUR

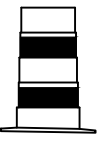
SHEET

E

LEGEND

- ● ● DETOUR ROUTE
- ▬/▬ EXISTING SIGN
- ▬/▬ PROPOSED SIGN
- ⊥ TYPE III BARRICADE





SEE SDD, "CHANNELIZING DEVICES DRUMS, CONES, BARRICADES, AND VERTICAL PANELS"
USE DRUMS AT TYPICAL 50' INTERVALS AT MEDIAN AND EOP DROPOFFS

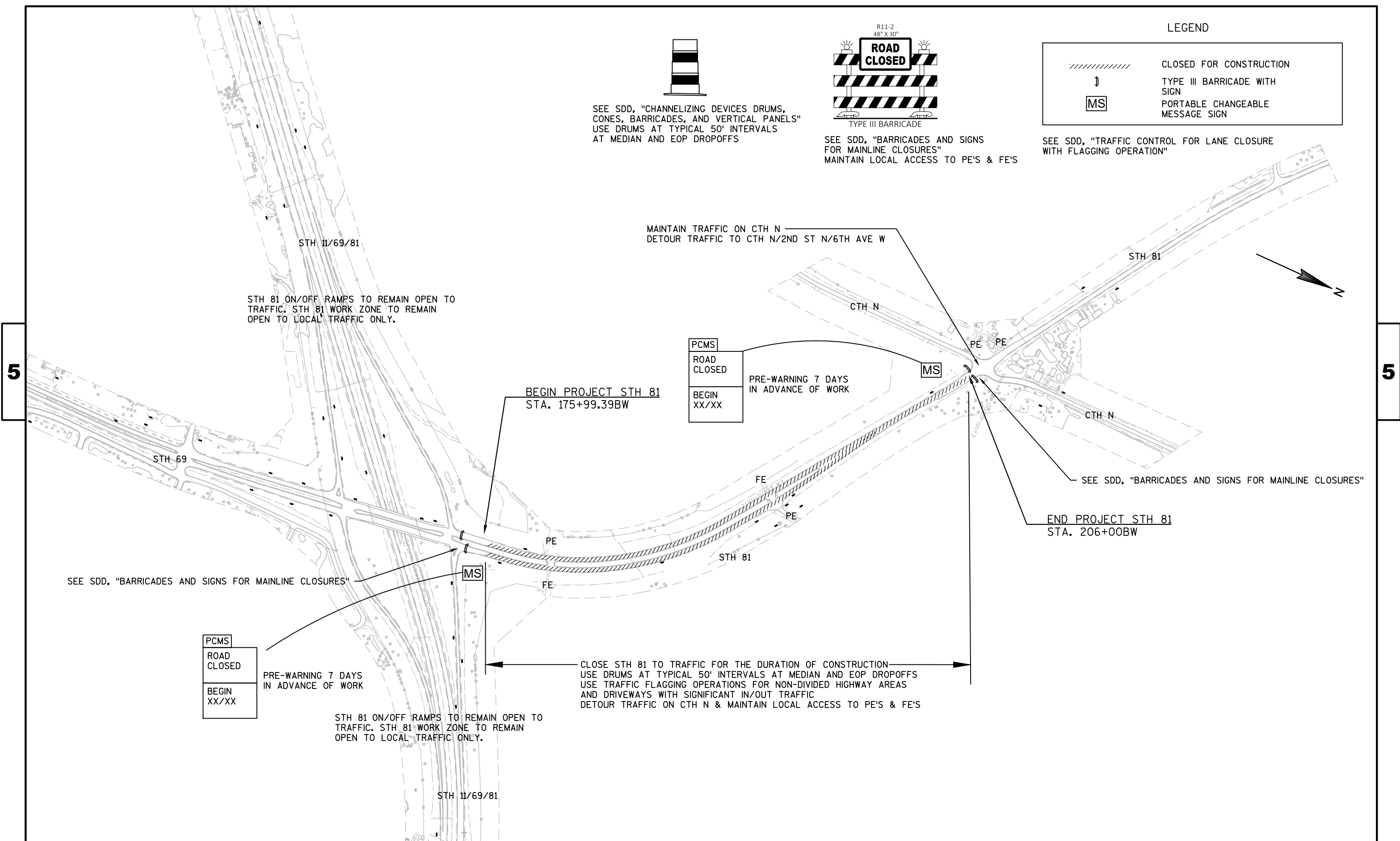


SEE SDD, "BARRICADES AND SIGNS FOR MAINLINE CLOSURES"
MAINTAIN LOCAL ACCESS TO PE'S & FE'S

LEGEND

	CLOSED FOR CONSTRUCTION
	TYPE III BARRICADE WITH SIGN
	PORTABLE CHANGEABLE MESSAGE SIGN

SEE SDD, "TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION"



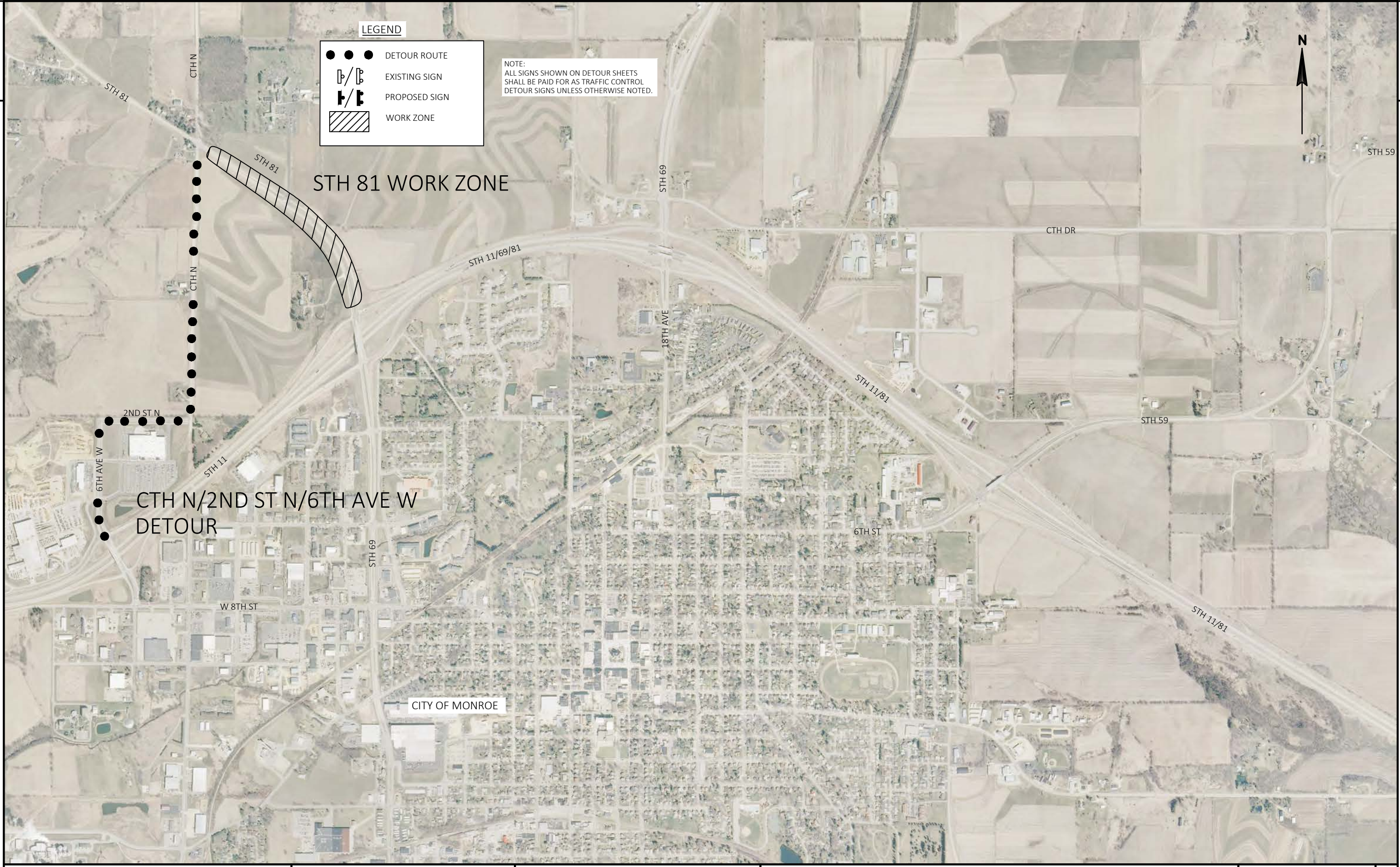
5

5

LEGEND

- ● ● DETOUR ROUTE
- ▮/▮ EXISTING SIGN
- ▮/▮ PROPOSED SIGN
- ▨ WORK ZONE

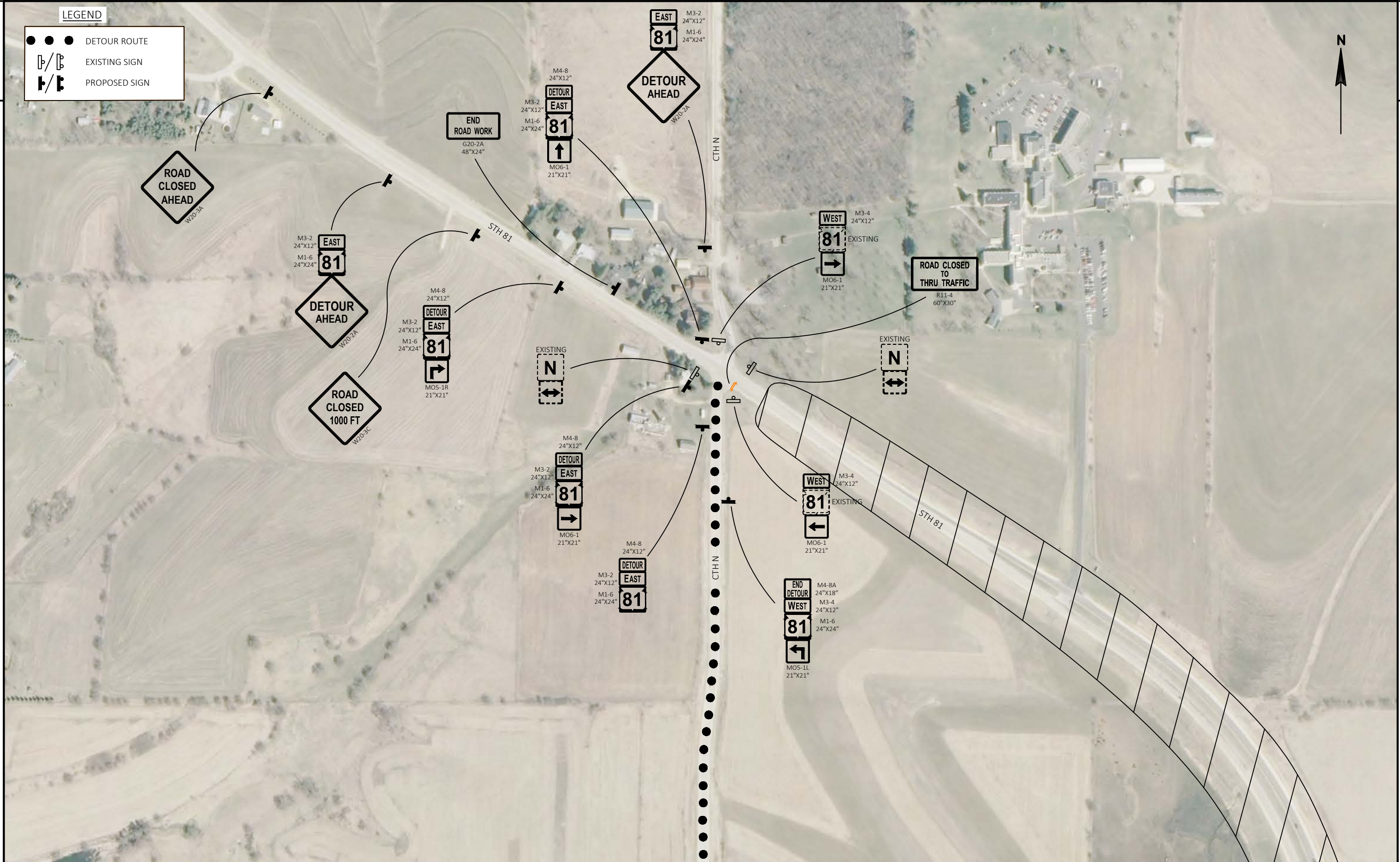
NOTE:
ALL SIGNS SHOWN ON DETOUR SHEETS
SHALL BE PAID FOR AS TRAFFIC CONTROL
DETOUR SIGNS UNLESS OTHERWISE NOTED.



PROJECT NO: 5944-01-72	HWY: STH 81	COUNTY: GREEN	DETOUR STH 81	SHEET	E
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LEGEND

- ● ● DETOUR ROUTE
- ▭/▭ EXISTING SIGN
- ▭/▭ PROPOSED SIGN





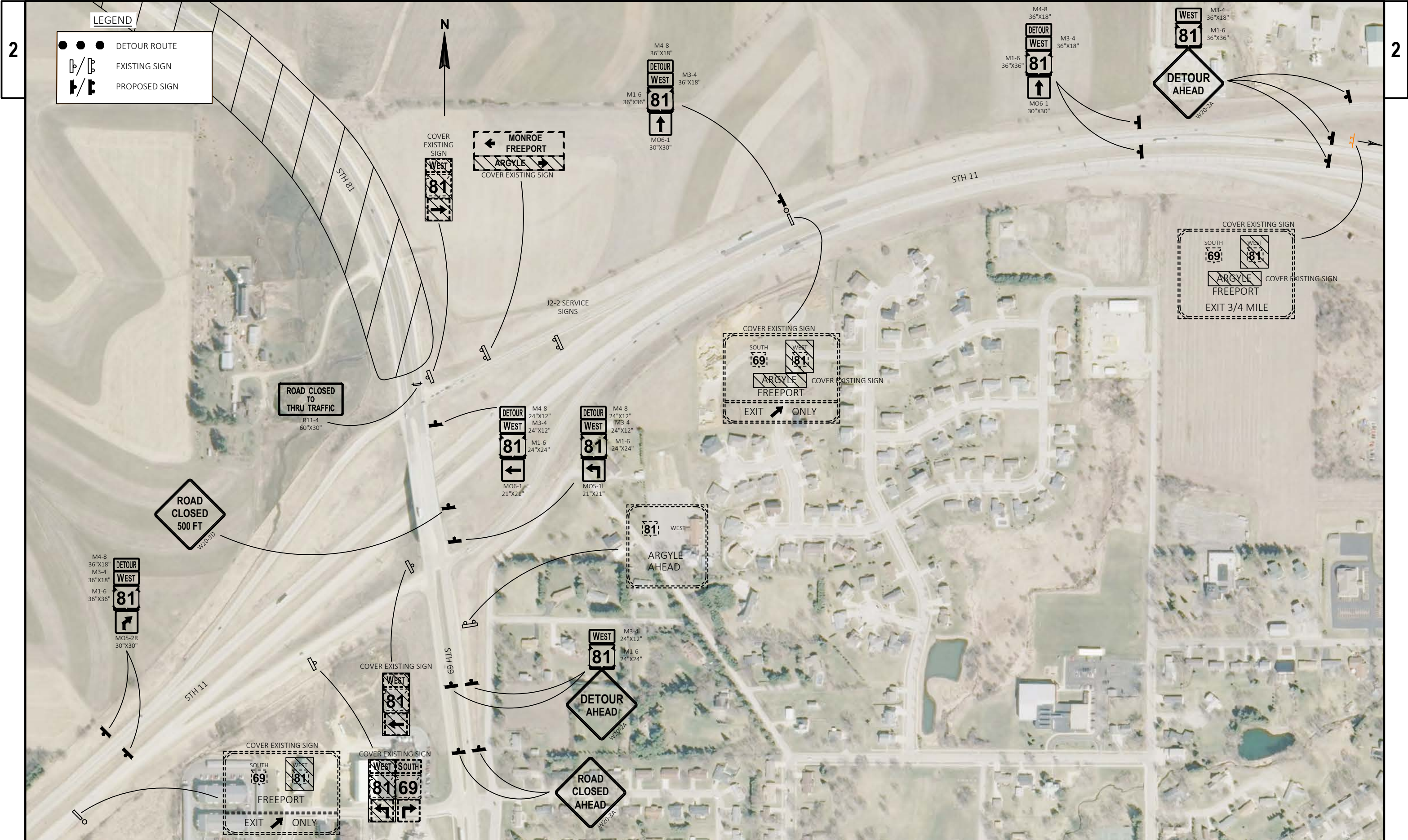
LEGEND

- ● ● DETOUR ROUTE
- ▭/▭ EXISTING SIGN
- ▭/▭ PROPOSED SIGN



2

2



LEGEND

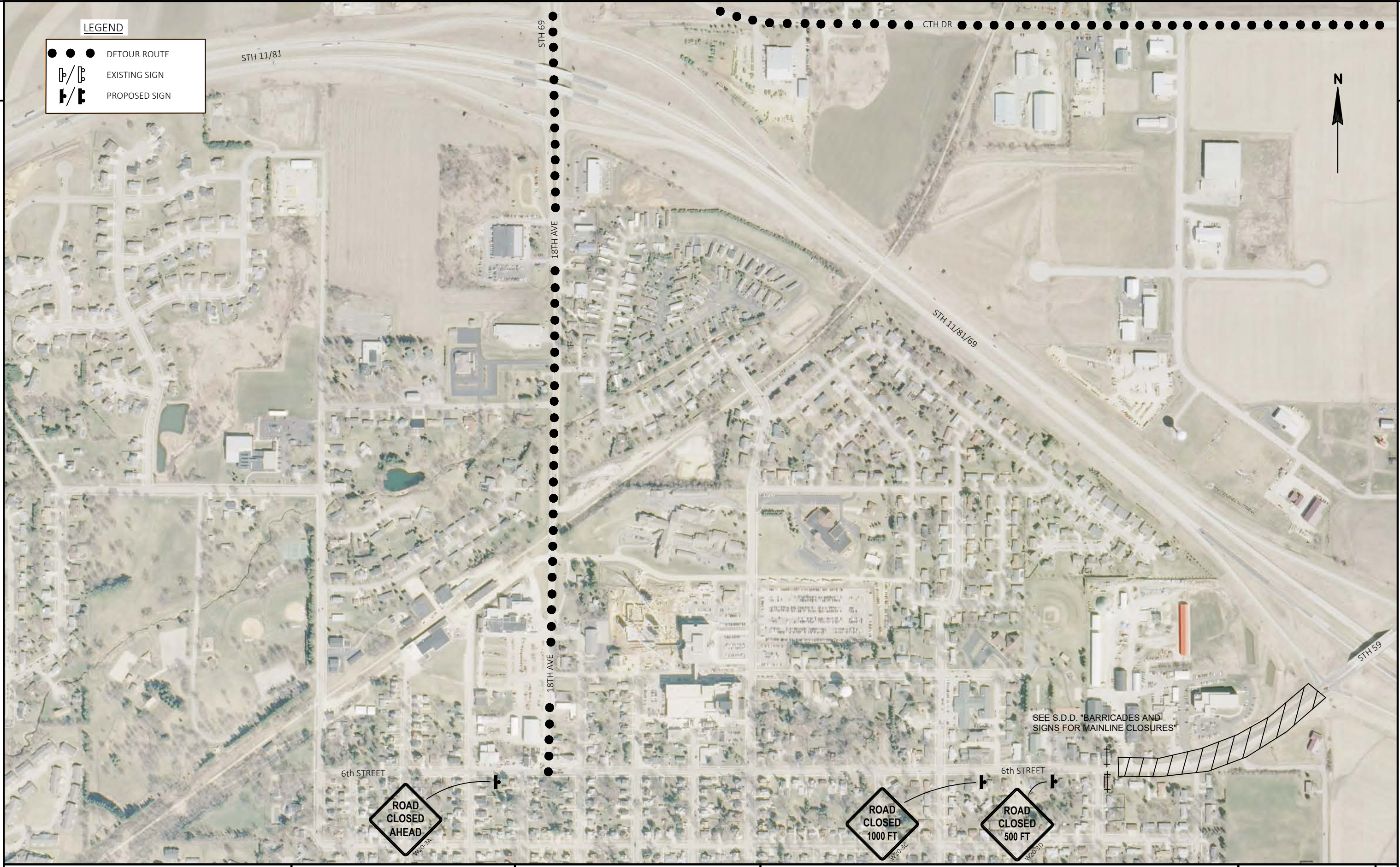
- ● ● DETOUR ROUTE
- ▭/▭ EXISTING SIGN
- ▭/▭ PROPOSED SIGN

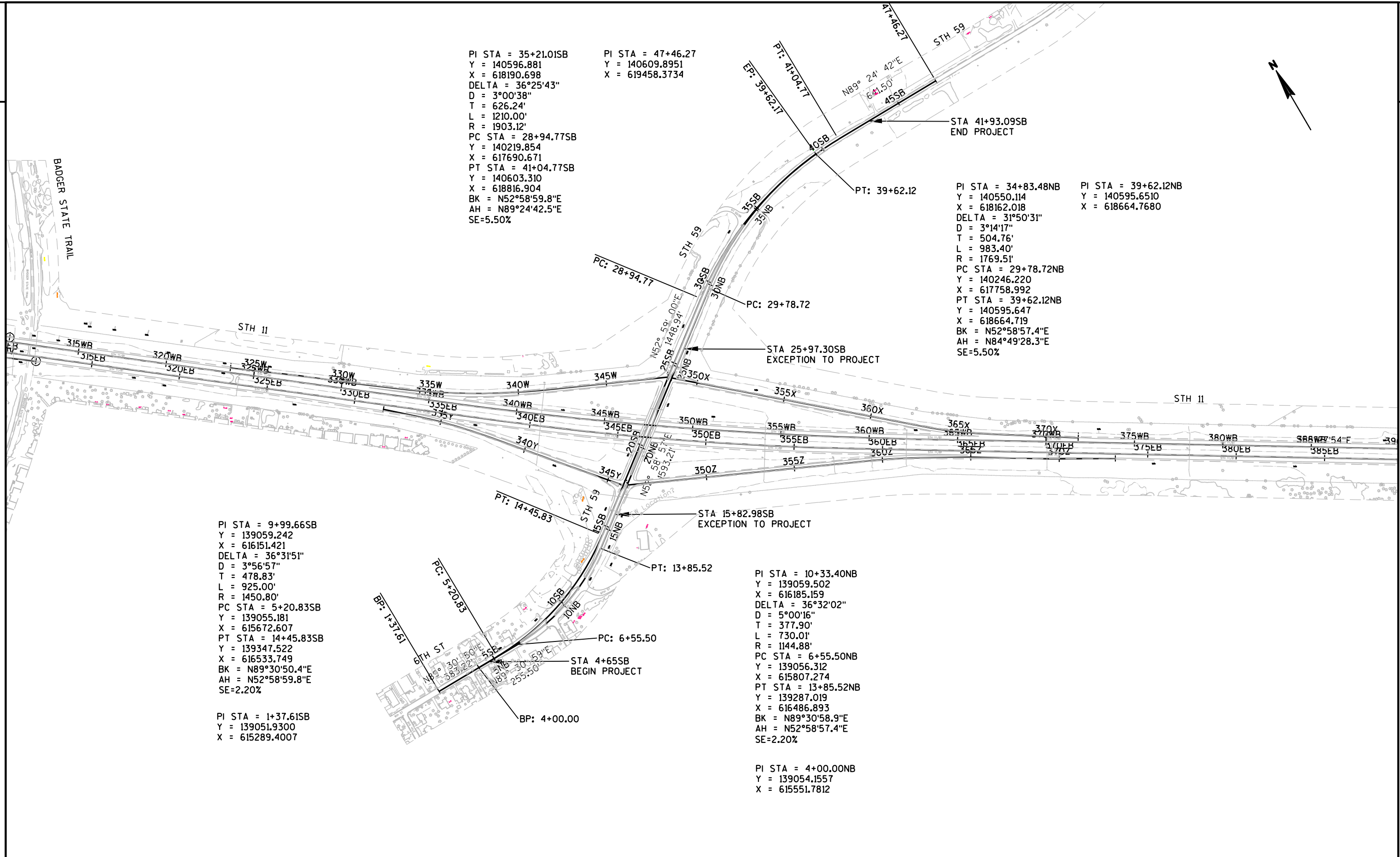
PROJECT NO: 5944-01-72 HWY: STH 81 COUNTY: GREEN DETOUR STH 81 SHEET E

FILE NAME : N:\PDS\C3D\59440102\SHEETSP\027002_DTSTH81.DWG PLOT DATE : 4/9/2019 10:18 AM PLOT BY : OLSON, RICHARD J PLOT NAME : PLOT SCALE : ##### WISDOT/CADD SHEET 42

LEGEND

- ● ● DETOUR ROUTE
- ▮/▮ EXISTING SIGN
- ▮/▮ PROPOSED SIGN





PI STA = 35+21.01SB
 Y = 140596.881
 X = 618190.698
 DELTA = 36°25'43"
 D = 3°00'38"
 T = 626.24'
 L = 1210.00'
 R = 1903.12'
 PC STA = 28+94.77SB
 Y = 140219.854
 X = 617690.671
 PT STA = 41+04.77SB
 Y = 140603.310
 X = 618816.904
 BK = N52°58'59.8"E
 AH = N89°24'42.5"E
 SE=5.50%

PI STA = 47+46.27
 Y = 140609.8951
 X = 619458.3734

PI STA = 34+83.48NB
 Y = 140550.114
 X = 618162.018
 DELTA = 31°50'31"
 D = 3°14'17"
 T = 504.76'
 L = 983.40'
 R = 1769.51'
 PC STA = 29+78.72NB
 Y = 140246.220
 X = 617758.992
 PT STA = 39+62.12NB
 Y = 140595.647
 X = 618664.719
 BK = N52°58'57.4"E
 AH = N84°49'28.3"E
 SE=5.50%

PI STA = 9+99.66SB
 Y = 139059.242
 X = 616151.421
 DELTA = 36°31'51"
 D = 3°56'57"
 T = 478.83'
 L = 925.00'
 R = 1450.80'
 PC STA = 5+20.83SB
 Y = 139055.181
 X = 615672.607
 PT STA = 14+45.83SB
 Y = 139347.522
 X = 616533.749
 BK = N89°30'50.4"E
 AH = N52°58'59.8"E
 SE=2.20%

PI STA = 1+37.61SB
 Y = 139051.9300
 X = 615289.4007

PI STA = 10+33.40NB
 Y = 139059.502
 X = 616185.159
 DELTA = 36°32'02"
 D = 5°00'16"
 T = 377.90'
 L = 730.01'
 R = 1144.88'
 PC STA = 6+55.50NB
 Y = 139056.312
 X = 615807.274
 PT STA = 13+85.52NB
 Y = 139287.019
 X = 616486.893
 BK = N89°30'58.9"E
 AH = N52°58'57.4"E
 SE=2.20%

PI STA = 4+00.00NB
 Y = 139054.1557
 X = 615551.7812

PI STA = 163+42.20BW
 Y = 141022.252
 X = 608243.532

PI STA = 184+00.44BW
 Y = 143060.916
 X = 607960.343
 DELTA = 47°14'29"
 D = 3°28'53"
 T = 719.71'
 L = 1356.93'
 R = 1645.72'
 PC STA = 176+80.73BW
 PT STA = 190+37.66BW
 SE=5.90%

PI STA = 195+23.95BW
 Y = 143750.063
 X = 606970.646
 DELTA = 1°15'28"
 D = 0°37'44"
 T = 100.03'
 L = 200.04'
 R = 9112.01'
 PC STA = 194+23.92BW
 PT STA = 196+23.97BW
 SE=2.00%

PI STA = 199+74.19BW
 Y = 143999.178
 X = 606595.590
 DELTA = 0°19'04"
 D = 0°30'58"
 T = 30.78'
 L = 61.56'
 R = 11103.53'
 PC STA = 199+43.41BW
 PT STA = 200+04.97BW

PI STA = 201+45.19BW
 Y = 144093.652
 X = 606453.053

PI STA = 208+19.76BW
 Y = 144478.875
 X = 605899.306
 DELTA = 2°45'54"
 D = 0°40'08"
 T = 206.72'
 L = 413.35'
 R = 8565.35'
 PC STA = 206+13.04BW
 PT STA = 210+26.39BW
 SE=2.00%

PI STA = 214+48.34BW
 Y = 144809.655
 X = 605369.411

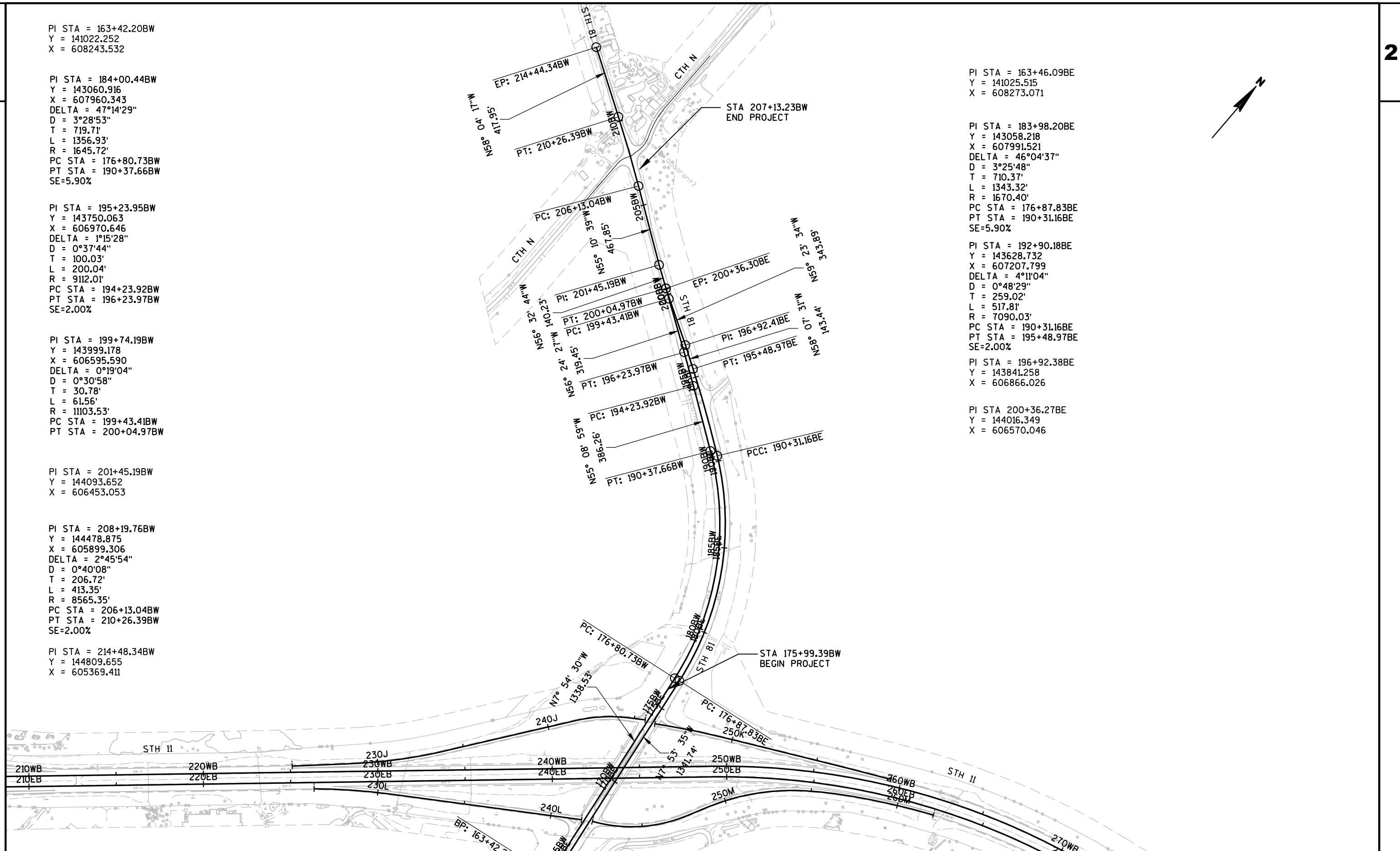
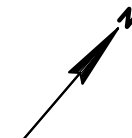
PI STA = 163+46.09BE
 Y = 141025.515
 X = 608273.071

PI STA = 183+98.20BE
 Y = 143058.218
 X = 607991.521
 DELTA = 46°04'37"
 D = 3°25'48"
 T = 710.37'
 L = 1343.32'
 R = 1670.40'
 PC STA = 176+87.83BE
 PT STA = 190+31.16BE
 SE=5.90%

PI STA = 192+90.18BE
 Y = 143628.732
 X = 607207.799
 DELTA = 4°11'04"
 D = 0°48'29"
 T = 259.02'
 L = 517.81'
 R = 7090.03'
 PC STA = 190+31.16BE
 PT STA = 195+48.97BE
 SE=2.00%

PI STA = 196+92.38BE
 Y = 143841.258
 X = 606866.026

PI STA 200+36.27BE
 Y = 144016.349
 X = 606570.046



Estimate Of Quantities

5660-00-72 5944-01-72

Line	Item	Item Description	Unit	Total	Qty	Qty
0002	204.0100	Removing Pavement	SY	24,374.000	10,234.000	14,140.000
0004	204.0110	Removing Asphaltic Surface	SY	4,031.000	2,426.000	1,605.000
0006	204.0150	Removing Curb & Gutter	LF	8,378.000	4,297.000	4,081.000
0008	204.0155	Removing Concrete Sidewalk	SY	435.000	435.000	
0010	204.0220	Removing Inlets	EACH	13.000	7.000	6.000
0012	204.0245	Removing Storm Sewer (size) 02. (18-Inch)	LF	8.000		8.000
0014	204.0245	Removing Storm Sewer (size) 01. (48-Inch)	LF	8.000		8.000
0016	205.0100	Excavation Common	CY	28,784.000	11,467.000	17,317.000
0018	213.0100	Finishing Roadway (project) 01. 5660-00-72	EACH	1.000	1.000	
0020	213.0100	Finishing Roadway (project) 02. 5944-01-72	EACH	1.000		1.000
0022	305.0110	Base Aggregate Dense 3/4-Inch	TON	1,809.000	875.000	934.000
0024	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	14,918.000	6,280.000	8,638.000
0026	305.0410	Aggregate Detours	TON	200.000	100.000	100.000
0028	312.0110	Select Crushed Material	TON	27,942.000	11,695.000	16,247.000
0030	416.0160	Concrete Driveway 6-Inch	SY	15.000	15.000	
0032	416.0180	Concrete Driveway 8-Inch	SY	150.000	150.000	
0034	416.0610	Drilled Tie Bars	EACH	56.000	56.000	
0036	455.0605	Tack Coat	GAL	1,735.000	705.000	1,030.000
0038	460.2000	Incentive Density HMA Pavement	DOL	6,290.000	2,270.000	4,020.000
0040	460.5223	HMA Pavement 3 LT 58-28 S	TON	3,772.000		3,772.000
0042	460.5224	HMA Pavement 4 LT 58-28 S	TON	6,060.000	3,545.000	2,515.000
0044	465.0115	Asphaltic Surface Detours	TON	100.000	50.000	50.000
0046	465.0120	Asphaltic Surface Driveways and Field Entrances	TON	21.000	5.000	16.000
0048	465.0400	Asphaltic Shoulder Rumble Strips	LF	6,800.000	2,044.000	4,756.000
0050	522.0118	Culvert Pipe Reinforced Concrete Class III 18-Inch	LF	8.000		8.000
0052	522.1018	Apron Endwalls for Culvert Pipe Reinforced Concrete 18-Inch	EACH	1.000		1.000
0054	522.1048	Apron Endwalls for Culvert Pipe Reinforced Concrete 48-Inch	EACH	1.000		1.000
0056	524.0648	Apron Endwalls for Culvert Pipe Salvaged 48-Inch	EACH	1.000		1.000
0058	601.0411	Concrete Curb & Gutter 30-Inch Type D	LF	8,364.000	4,283.000	4,081.000
0060	602.0405	Concrete Sidewalk 4-Inch	SF	3,807.000	3,807.000	
0062	606.0200	Riprap Medium	CY	18.000		18.000
0064	611.0624	Inlet Covers Type H	EACH	13.000	7.000	6.000
0066	611.3230	Inlets 2x3-FT	EACH	13.000	7.000	6.000
0068	611.8110	Adjusting Manhole Covers	EACH	1.000	1.000	
0070	612.0406	Pipe Underdrain Wrapped 6-Inch	LF	920.000	920.000	
0072	618.0100	Maintenance And Repair of Haul Roads (project) 01. 5660-00-72	EACH	1.000	1.000	
0074	618.0100	Maintenance And Repair of Haul Roads (project) 02. 5944-01-72	EACH	1.000		1.000

Estimate Of Quantities

5660-00-72 5944-01-72

Line	Item	Item Description	Unit	Total	Qty	Qty
0076	619.1000	Mobilization	EACH	1.000	0.400	0.600
0078	624.0100	Water	MGAL	269.000	110.000	159.000
0080	625.0500	Salvaged Topsoil	SY	12,573.000	4,423.000	8,150.000
0082	627.0200	Mulching	SY	12,573.000	4,423.000	8,150.000
0084	628.1504	Silt Fence	LF	2,240.000	2,240.000	
0086	628.1520	Silt Fence Maintenance	LF	2,240.000	2,240.000	
0088	628.1905	Mobilizations Erosion Control	EACH	4.000	2.000	2.000
0090	628.1910	Mobilizations Emergency Erosion Control	EACH	4.000	2.000	2.000
0092	628.2002	Erosion Mat Class I Type A	SY	4,548.000	2,660.000	1,888.000
0094	628.7015	Inlet Protection Type C	EACH	16.000	10.000	6.000
0096	628.7504	Temporary Ditch Checks	LF	370.000	300.000	70.000
0098	628.7555	Culvert Pipe Checks	EACH	13.000	11.000	2.000
0100	629.0210	Fertilizer Type B	CWT	8.100	3.000	5.100
0102	630.0130	Seeding Mixture No. 30	LB	226.000	80.000	146.000
0104	630.0200	Seeding Temporary	LB	113.000	40.000	73.000
0106	634.0614	Posts Wood 4x6-Inch X 14-FT	EACH	2.000		2.000
0108	634.0616	Posts Wood 4x6-Inch X 16-FT	EACH	1.000		1.000
0110	637.2210	Signs Type II Reflective H	SF	20.000		20.000
0112	642.5201	Field Office Type C	EACH	1.000	1.000	
0114	643.0300	Traffic Control Drums	DAY	21,524.000	6,148.000	15,376.000
0116	643.0420	Traffic Control Barricades Type III	DAY	3,860.000	2,948.000	912.000
0118	643.0705	Traffic Control Warning Lights Type A	DAY	7,720.000	5,896.000	1,824.000
0120	643.0715	Traffic Control Warning Lights Type C	DAY	3,044.000	1,060.000	1,984.000
0122	643.0900	Traffic Control Signs	DAY	18,609.000	7,437.000	11,172.000
0124	643.0910	Traffic Control Covering Signs Type I	EACH	5.000	2.000	3.000
0126	643.0920	Traffic Control Covering Signs Type II	EACH	2.000		2.000
0128	643.1050	Traffic Control Signs PCMS	DAY	42.000	28.000	14.000
0130	643.5000	Traffic Control	EACH	2.000	1.000	1.000
0132	645.0112	Geotextile Type DF Schedule B	SY	511.000	511.000	
0134	645.0120	Geotextile Type HR	SY	62.000		62.000
0136	645.0220	Geogrid Type SR	SY	41,236.000	17,392.000	23,844.000
0138	646.1020	Marking Line Epoxy 4-Inch	LF	24,337.000	10,270.000	14,067.000
0140	646.3020	Marking Line Epoxy 8-Inch	LF	1,108.000	304.000	804.000
0142	646.5020	Marking Arrow Epoxy	EACH	5.000		5.000
0144	646.5120	Marking Word Epoxy	EACH	1.000		1.000
0146	646.5220	Marking Symbol Epoxy	EACH	2.000		2.000
0148	646.7120	Marking Diagonal Epoxy 12-Inch	LF	254.000		254.000
0150	646.8120	Marking Curb Epoxy	LF	461.000	227.000	234.000
0152	646.8220	Marking Island Nose Epoxy	EACH	1.000	1.000	
0154	650.4000	Construction Staking Storm Sewer	EACH	13.000	7.000	6.000

Estimate Of Quantities

5660-00-72 5944-01-72

Line	Item	Item Description	Unit	Total	Qty	Qty
0156	650.4500	Construction Staking Subgrade	LF	11,012.000	5,462.000	5,550.000
0158	650.5000	Construction Staking Base	LF	11,012.000	5,462.000	5,550.000
0160	650.5500	Construction Staking Curb Gutter and Curb & Gutter	LF	8,364.000	4,283.000	4,081.000
0162	650.6000	Construction Staking Pipe Culverts	EACH	1.000		1.000
0164	650.9910	Construction Staking Supplemental Control (project) 01. 5660-00-72	LS	1.000	1.000	
0166	650.9910	Construction Staking Supplemental Control (project) 02. 5944-01-72	LS	1.000		1.000
0168	650.9920	Construction Staking Slope Stakes	LF	11,012.000	5,462.000	5,550.000
0170	690.0150	Sawing Asphalt	LF	464.000	346.000	118.000
0172	690.0250	Sawing Concrete	LF	168.000	100.000	68.000
0174	740.0440	Incentive IRI Ride	DOL	8,135.000	3,310.000	4,825.000
0176	ASP.1T0A	On-the-Job Training Apprentice at \$5.00/HR	HRS	425.000	200.000	225.000
0178	ASP.1T0G	On-the-Job Training Graduate at \$5.00/HR	HRS	350.000	125.000	225.000
0180	SPV.0060	Special 01. Adjusting Valve Boxes	EACH	3.000	3.000	

EARTHWORK SUMMARY

Division	From/To Station	Location	205.0100 Common Excavation (1)		Salvaged/Unusable Pavement Material (4)	Available Material (5)	Reduced EBS in Fill (9)	Expanded EBS Backfill (11)	Unexpanded Fill	Expanded Fill (13)	Mass Ordinate +/- (14)	Waste	208.0100 Borrow
			Cut (2)	EBS Excavation (3)ADD 5%			Factor 1.00	Factor 1.33		Factor 1.33			
Division 1													
	04+50 - 42+50	STH 59	10,363	518		10,363	518	689	592	787	9,576		
Division 1 Subtotal			10,363	518	0	10,363	518	689	592	787	9,576		
Division 2													
	50+33 - 50+37	30 th St.	150	8		150	8	10	12	16	134		
	60+30 - 60+60	6 th St.	231	12		231	12	15	19	25	206		
	70+30 - 70+80	Weiss Ln.	177	9		177	9	12	8	11	166		
Division 2 Subtotal			558	28	0	558	28	37	39	52	506	10,082	
Grand Total			10,921	546	0	10,921	546	726	631	839	10,082	10,082	
Total Common Exc			11,467										

Notes:

- (1) Common Excavation is the sum of the Cut and EBS Excavation columns. Item number 205.0100
 - (2) Salvaged/Unusable Pavement Material is included in Cut.
 - (3) EBS Excavation to be backfilled with Select Borrow material. Note: this is designers choice, can be backfilled with Borrow, or Cut as well.
 - (4) Salvaged/Unusable Pavement Material
 - 5) Available Material = Cut - Salvaged/Unusable Pavement Material
 - (6) Marsh Excavation - to be backfilled with Select Borrow Material. Note: this is designers choice, can be backfilled with Borrow, or Cut as well. Item number 205.0500
 - (7) Rock Excavation item number 205.0200
 - (8) Reduced Marsh in Fill - Excavated Marsh material is usable in Fills outside the 1:1 slope. Marsh in Fill Reduction factor = X 1X
 - (9) Reduced EBS in Fill - Excavated EBS material is usable in Fills outside the 1:1 slope. EBS in Fill Reduction factor = 1
 - (10) Expanded Marsh Backfill - This is to be filled with Select Borrow material. Marsh Backfill Factor = 1. Item number 208.1100
 - (11) Expanded EBS Backfill - This is to be filled with Select Borrow material. EBS Backfill Factor = 1.33. Item number 208.1100
 - (12) Expanded Rock Factor = X5X
 - (13) Expanded Fill Factor = 1.33
- Depending on selections:
- Expanded Fill = (Unexpanded Fill - Expanded Rock - Reduced EBS) * Fill Factor
 - Or
 - Expanded Fill = (Unexpanded Fill - Expanded Rock - Reduced Marsh) * Fill Factor
 - Or
 - Expanded Fill = (Unexpanded Fill - Expanded Rock) * Fill Factor
- (14) The Mass Ordinate + or - Qty calculated for the Division. Plus quantity indicates an excess of material within the Division. Minus indicates a shortage of material within the Division.
 - (15) Use ??? CY of material from Division ?. Borrow Excavation item number 208.0100

EARTHWORK SUMMARY

Division	From/To Station	Location	205.0100 Common Excavation (1)		Salvaged/Unusable Pavement Material (4)	Available Material (5)	Reduced EBS in Fill (9)	Expanded EBS Backfill (11)	Unexpanded Fill	Expanded Fill (13)	Mass Ordinate +/- (14)	Waste	208.0100 Borrow	Comment:
			Cut (2)	EBS Excavation (3)ADD 5%			Factor 1.00	Factor 1.00		Factor 1.25				
Division 1	175+50 - 207+00		16,492	825		16,492	825	825	1,682	2,103	14,390			
Division 1 Subtotal			16,492	825	0	16,492	825	825	1,682	2,103	14,390			
Grand Total			16,492	825	0	16,492	825	825	1,682	2,103	14,390	14,390		
Total Common Exc			17,317											

Notes:

- (1) Common Excavation is the sum of the Cut and EBS Excavation columns. Item number 205.0100
 - (2) Salvaged/Unusable Pavement Material is included in Cut.
 - (3) EBS Excavation to be backfilled with Select Borrow material. Note: this is designers choice, can be backfilled with Borrow, or Cut as well.
 - (4) Salvaged/Unusable Pavement Material
 - 5) Available Material = Cut - Salvaged/Unusable Pavement Material
 - (6) Marsh Excavation - to be backfilled with Select Borrow Material. Note: this is designers choice, can be backfilled with Borrow, or Cut as well. Item number 205.0500
 - (7) Rock Excavation item number 205.0200
 - (8) Reduced Marsh in Fill - Excavated Marsh material is usable in Fills outside the 1:1 slope. Marsh in Fill Reduction factor = X.1X
 - (9) Reduced EBS in Fill - Excavated EBS material is usable in Fills outside the 1:1 slope. EBS in Fill Reduction factor = 1
 - (10) Expanded Marsh Backfill - This is to be filled with Select Borrow material. Marsh Backfill Factor = X.3X. Item number 208.1100
 - (11) Expanded EBS Backfill - This is to be filled with Select Borrow material. EBS Backfill Factor = 1. Item number 208.1100
 - (12) Expanded Rock Factor = X.5X
 - (13) Expanded Fill Factor = 1.25
- Depending on selections:
- Expanded Fill = (Unexpanded Fill - Expanded Rock - Reduced Marsh - Reduced EBS) * Fill Factor**
 - Or Expanded Fill = (Unexpanded Fill - Expanded Rock - Reduced EBS) * Fill Factor
 - Or Expanded Fill = (Unexpanded Fill - Expanded Rock - Reduced Marsh) * Fill Factor
 - Or Expanded Fill = (Unexpanded Fill - Expanded Rock) * Fill Factor
- (14) The Mass Ordinate + or - Qty calculated for the Division. Plus quantity indicates an excess of material within the Division. Minus indicates a shortage of material within the Division.

REMOVING PAVEMENT

CATEGORY	STATION	TO	STATION	LOCATION	204. 0100 REMOVING PAVEMENT SY	REMARKS
0010	4+65SB	-	15+83SB	STH 59	4297	MAINLINE
	25+97SB	-	41+93SB	STH 59	5937	MAINLINE
TOTAL 0010					10234	

REMOVING ASPHALTIC SURFACE

CATEGORY	STATION	TO	STATION	LOCATION	204. 0110 REMOVING ASPHALTIC SURFACE SY	REMARKS
0010	4+65SB	-	15+83SB	STH 59	1677	SHOULDER & TURN LANES
	25+97SB	-	33+79SB	STH 59	749	SHOULDER & TURN LANES
TOTAL 0010					2426	

REMOVING CURB & GUTTER

204. 0150
REMOVING
CURB & GUTTER
LF

CATEGORY	STATION	TO	STATION	LOCATION	LF	REMARKS	
0010	4+65SB- LT	-	4+97SB- LT	STH 59	47	EOP	
	4+65NB- RT	-	8+81NB- RT	STH 59	440	EOP	
	5+38SB- LT	-	8+53SB- LT	STH 59	332	EOP	
	6+74SB	-	8+68SB	STH 59	402	MEDI AN	
	9+05NB- RT	-	9+29NB- RT	STH 59	51	EOP	
	9+15SB- LT	-	11+24SB- LT	STH 59	215	EOP	
	9+19SB	-	11+29SB	STH 59	442	MEDI AN	
	11+89SB	-	15+83SB	STH 59	803	MEDI AN	
	25+97SB	-	33+79SB	STH 59	1565	MEDI AN	
	TOTAL 0010					4297	

REMOVING CONCRETE SIDEWALK

204. 0155
REMOVING
CONCRETE
SIDEWALK
SY

CATEGORY	STATION	TO	STATION	LOCATION	SY	REMARKS
0010	6+74SB	-	8+68SB	STH 59	205	CONCRETE MEDI AN
	9+18SB	-	10+32SB	STH 59	110	CONCRETE MEDI AN
	11+89SB	-	12+96SB	STH 59	120	CONCRETE MEDI AN
TOTAL 0010					435	

BASE COURSE ITEMS

CATEGORY	STATION	TO	STATION	LOCATION	305.0110	305.0120	312.0110	305.0410	REMARKS
					BASE AGGREGATE DENSE 3/4- INCH TON	BASE AGGREGATE DENSE 1 1/4-INCH TON	SELECT CRUSHED MATERIAL TON	AGGREGATE DETOURS TON	
0010	4+65SB	-	15+82.98SB	STH 59	135	2500	5010		MAINLINE
	25+97.30SB	-	41+93.09SB	STH 59	720	3570	6455		MAINLINE
	70+00	-	70+80.51	WEISS LANE	20	115	230		SIDEROAD
	6+80SB		8+65SB	STH 59		45			MEDIAN 4" SIDEWALK
	9+25NB		10+40NB	STH 59		25			MEDIAN 4" SIDEWALK
	12+00NB		13+10NB	STH 59		25			MEDIAN 4" SIDEWALK
			DETOUR	STH 59				100	
TOTAL 0010					875	6280	11695	100	

CONCRETE DRIVEWAY

CATEGORY	STATION	LOCATION	416.0160	416.0180	REMARKS
			CONCRETE DRIVEWAY 6-INCH SY	CONCRETE DRIVEWAY 8-INCH SY	
0010	5+15SB-LT	2809 STH 59		150	CONCRETE DRIVEWAY
	6+30NB-RT	2820 STH 59	8		CONCRETE DRIVEWAY
	6+50SB-LT	2817 STH 59	7		CONCRETE DRIVEWAY
TOTAL 0010			15	150	

DRI LLED TIE BARS

CATEGORY	STATION	LOCATION	416.0610	REMARKS
			DRI LLED TIE BARS EACH	
0010	5+15SB-LT	2809 STH 59	56	COUNTY DRIVEWAY
TOTAL 0010			56	

ASPHALT ITEMS

CATEGORY	STATION	TO	STATION	LOCATION	460.5224 HMA PAVEMENT 4 LT 58-28 S TON	455.0605 TACK COAT GAL	465.0115 ASPHALTIC SURFACE DETOURS TON	REMARKS
0010	4+65SB	-	15+82.98SB	STH 59	1560	310		MAINLINE
0010	25+97.30SB	-	41+93.09SB	STH 59	1940	385		MAINLINE
0010	70+00	-	70+80.51 DETOUR	WEISS LANE STH 59	45	10	50	SIDEROAD
TOTAL 0010					3545	705	50	

ASPHALTIC SURFACE
DRI VEWAYS AND FIELD
ENTRANCES

CATEGORY	STATION	LOCATION	465.0120 ASPHALTIC SURFACE DRI VEWAYS AND FE' S TON	REMARKS
0010	5+30NB-RT	STH 59	2	ASPHALT DRI VEWAY
	6+50SB-LT	STH 59	1	ASPHALT DRI VEWAY
	35+00NB-RT	STH 59	2	GRAVEL FE
TOTAL 0010			5	

RUMBLE STRI PS

CATEGORY	STATION	TO	STATION	LOCATION	465.0400 ASPHALTIC SHOULDER RUMBLE STRI PS LF	REMARKS
0010	26+10NB	-	41+95NB	STH 59	1268	SHOULDER RT
	28+00SB	-	32+00SB	STH 59	320	SHOULDER LT
	36+25SB	-	41+95SB	STH 59	456	SHOULDER LT
TOTAL 0010					2044	

CONCRETE CURB & GUTTER 30-INCH TYPE D

601.0411
CONCRETE
CURB &
GUTTER
30-INCH
TYPE D

CATEGORY	STATION	TO	STATION	LOCATION	LF	REMARKS	
0010	4+65SB- LT	-	4+97SB- LT	STH 59	47	EOP	
	4+65NB- RT	-	8+81NB- RT	STH 59	440	EOP	
	5+38SB- LT	-	8+53SB- LT	STH 59	332	EOP	
	6+74SB	-	8+68SB	STH 59	390	MEDIAN	
	9+05NB- RT	-	9+29NB- RT	STH 59	51	EOP	
	9+15SB- LT	-	11+24SB- LT	STH 59	215	EOP	
	9+19SB	-	11+29SB	STH 59	442	MEDIAN	
	11+89SB	-	15+83SB	STH 59	801	MEDIAN	
	25+97SB	-	33+79SB	STH 59	1565	MEDIAN	
	TOTAL 0010					4283	

CONCRETE SIDEWALK 4-INCH

602.0405
CONCRETE
SIDEWALK
4-INCH

CATEGORY	STATION	TO	STATION	LOCATION	SF	REMARKS
0010	6+80SB	-	8+65SB	STH 59	1820	MEDIAN
	9+25NB	-	10+40NB	STH 59	992	MEDIAN
	12+00NB	-	13+10NB	STH 59	995	MEDIAN
TOTAL 0010					3807	

INLETS & COVERS

CATEGORY	STATION	LOCATION	204. 0220	611. 0624	611. 3230	REMARKS
			REMOVING INLETS EACH	INLET COVERS TYPE H EACH	INLETS 2X3- FT EACH	
0010	6+34. 90SB- 18. 2' LT	STH 59	1	1	1	EOP
	8+48. 50SB- 25. 4' LT	STH 59	1	1	1	EOP
	8+48. 70NB- 2. 4' LT	STH 59	1	1	1	MEDIAN
	8+49. 60NB- 23. 9' RT	STH 59	1	1	1	EOP
	9+19. 60SB- 32. 5' LT	STH 59	1	1	1	EOP
	11+03. 50SB- 17. 3' LT	STH 59	1	1	1	EOP
	11+24. 50NB	STH 59	1	1	1	MEDIAN
TOTAL 0010			7	7	7	

PIPE UNDERDRAIN ITEMS

CATEGORY	STATION	TO	STATION	LOCATION	612. 0406	645. 0112	REMARKS
					PIPE UNDEDRAIN WRAPPED 6- INCH LF	GEOTEXTILE TYPE DF SCHEDULE B SY	
0010	4+65NB	-	8+50NB	STH 59	385	214	
	4+65SB	-	8+50SB	STH 59	385	214	
	9+50SB	-	11+00SB	STH 59	150	83	
TOTAL 0010					920	511	

ADJUSTING MANHOLE COVERS

CATEGORY	STATION	LOCATION	611. 8110	REMARKS	<u>WATER</u>				
			ADJUSTING MANHOLE COVERS EACH		CATEGORY	LOCATION	624. 0100 WATER MGAL	REMARKS	
0010	8+94NB- 41' RT	30TH AVE	1	SANITARY MANHOLE	0010	STH 59	110		
TOTAL 0010			1		TOTAL 0010			110	

LANDSCAPE ITEMS

CATEGORY	STATION	TO	STATION	LOCATION	625.0500	627.0200	629.0210	630.0130	630.0200	REMARKS
					SALVAGED TOPSOIL SY	MULCHING SY	FERTILIZER TYPE B CWT	SEEDING MIXTURE NO. 30 LB	SEEDING TEMPORARY LB	
0010	4+65SB	-	15+83SB	STH 59	1242	1242	0.78	22	11	MAINLINE
	25+97SB	-	41+93SB	STH 59	2837	2837	1.79	51	26	MAINLINE
	70+00	-	70+81	WEISS LANE	144	144	0.09	3	1	SIDEROAD
				UNDISTRIBUTED	200	200	0.15	4	2	
TOTAL 0010					4423	4423	3	80	40	

MOBILIZATIONS EROSION CONTROL

CATEGORY	LOCATION	628.1905	628.1910	REMARKS
		MOBILIZATIONS EROSION CONTROL EACH	MOBILIZATIONS EMERGENCY EROSION CONTROL EACH	
0010	STH 59	2	2	
TOTAL 0010		2	2	

EROSION MAT CLASS I TYPE A

CATEGORY	STATION	TO	STATION	LOCATION	628.2002	REMARKS
					EROSION MAT CLASS I TYPE A SY	
0010	4+65NB-RT	-	8+80NB-RT	STH 59	460	SLOPE RT
	5+50SB-LT	-	8+50SB-LT	STH 59	330	SLOPE LT
	9+10NB-RT	-	11+20NB-RT	STH 59	280	SLOPE RT
	9+20 SB-LT	-	11+20SB-LT	STH 59	220	SLOPE LT
	11+50NB-RT	-	16+00NB-RT	STH 59	500	SLOPE RT
	11+70SB-LT	-	15+80SB-LT	STH 59	460	SLOPE LT
	32+50SB-LT	-	33+90SB-LT	STH 59	180	SLOPE LT
	34+20SB-LT	-	36+00SB-LT	STH 59	230	SLOPE LT
TOTAL 0010					2660	

SILT FENCE

628. 1504 628. 152
SILT SILT
FENCE FENCE
 MAINTENANCE

CATEGORY	STATION	TO	STATION	LOCATION	LF	LF	REMARKS
0010	9+10SB- LT	-	11+20SB- LT	STH 59	210	210	
	9+80NB- RT	-	11+30NB- RT	STH 59	150	150	
	11+70NB- RT	-	16+00NB- RT	STH 59	430	430	
	11+70SB- LT	-	15+80SB- LT	STH 59	410	410	
	32+50SB- LT	-	33+80SB- LT	STH 59	150	150	
	34+50SB- LT	-	40+50SB- LT	STH 59	370	370	
	35+10SB- RT	-	42+00SB- RT	STH 59	520	520	
TOTAL 0010					2240	2240	

INLET PROTECTION TYPE C

628. 7015
INLET
PROTECTION
TYPE C

CATEGORY	STATION	LOCATION	EACH	REMARKS
0010	4+70NB- LT	STH 59	1	
	6+35SB- LT	STH 59	1	
	8+49SB- LT	STH 59	1	
	8+49NB- LT	STH 59	1	
	8+50NB- RT	STH 59	1	
	9+20SB- LT	STH 59	1	
	11+04SB- LT	STH 59	1	
	11+24NB	STH 59	1	
	16+00SB	STH 59	1	
	16+20NB	STH 59	1	
TOTAL 0010			10	

TEMPORARY DITCH CHECKS

628. 7504
TEMPORARY
DITCH
CHECKS

CATEGORY	STATION	LOCATION	LF	REMARKS
0010	10+50SB- LT	STH 59	20	DITCH LT
	10+50NB- RT	STH 59	20	DITCH RT
	13+00NB- RT	STH 59	20	DITCH RT
	14+40NB- RT	STH 59	20	DITCH RT
	26+00SB- LT	STH 59	20	DITCH LT
	26+00NB- RT	STH 59	20	DITCH RT
	28+00SB- LT	STH 59	20	DITCH LT
	28+00NB- RT	STH 59	20	DITCH RT
	31+00NB- RT	STH 59	20	DITCH RT
	32+00SB- LT	STH 59	20	DITCH LT
	33+00NB- RT	STH 59	20	DITCH RT
	35+00SB- LT	WEISS LN	20	DITCH LT
	36+00SB- LT	STH 59	20	DITCH LT
	38+00SB- LT	STH 59	20	DITCH LT
	42+50SB- LT	STH 59	20	DITCH LT
TOTAL 0010			300	

CULVERT PIPE CHECKS

628. 7555
CULVERT
PIPE CHECKS

CATEGORY	STATION	LOCATION	EACH	REMARKS
0010	11+25NB- RT	STH 59	2	DITCH RT
	33+70SB- LT	STH 59	2	DITCH LT
	34+80NB- RT	STH 59	2	DITCH LT
	36+80SB- LT	STH 59	3	DITCH LT
	43+50SB- LT	STH 59	2	DITCH LT
TOTAL 0010			11	

TRAFFIC CONTROL

CATEGORY	STATION	LOCATION	643.0300 TRAFFIC CONTROL DRUMS DAY	643.0420 TRAFFIC CONTROL BARRICADE S TYPE III DAY	643.0705 TRAFFIC CONTROL WARNING LIGHTS TYPE A DAY	643.0715 TRAFFIC CONTROL WARNING LIGHTS TYPE C DAY	643.0900 TRAFFIC CONTROL SIGNS DAY	643.0910 TRAFFIC CONTROL COVERING SIGNS TYPE I *EACH	643.1050 TRAFFIC CONTROL SIGNS PCMS DAY	643.5000 TRAFFIC CONTROL EACH	REMARKS
0010		STH 59	5724			1060	7437	2	14	1	MAINLINE
		STH 59	424						14		WEISS LANE
	4+65SB	STH 59		268	536						MAINLINE
	30TH AVENUE	STH 59		134	268						SIDEROAD
	61/2 STREET	STH 59		134	268						SIDEROAD
	15+82SB	STH 59		402	804						MAINLINE
	STH 11	EB OFF RAMP		268	536						INTERCHANGE RAMP
	STH 11	EB ON RAMP		268	536						INTERCHANGE RAMP
	STH 11	WB ON RAMP		268	536						INTERCHANGE RAMP
	STH 11	WB OFF RAMP		268	536						INTERCHANGE RAMP
	25+97SB	STH 59		402	804						MAINLINE
	41+93SB	STH 59		268	536						MAINLINE
	WEISS LANE	STH 59		268	536						SIDEROAD
TOTAL 0010			6148	2948	5896	1060	7437	2	28	1	

*ONE CYLCE FOR TRAFFIC CONTROL SIGNS TYPE I & II DURING ROAD CLOSURE STAGE

GEOGRID TYPE SR

CATEGORY	STATION	TO	STATION	LOCATION	645. 0220 GEOGRID TYPE SR SY	REMARKS
0010	4+65SB	-	15+83SB	STH 59	7454	
	25+97SB	-	41+93SB	STH 59	9578	
	70+00	-	70+81	WEISS LANE	360	
TOTAL 0010					17392	

PAVEMENT MARKING

CATEGORY	STATION	TO	STATION	LOCATION	646. 1020 MARKING LINE EPOXY 4- INCH (WHITE) (YELLOW) LF		646. 3020 MARKING LINE EPOXY 8- INCH (WHITE) LF	646. 8120 MARKING CURB EPOXY (YELLOW) LF	646. 8220 MARKING ISLAND NOSE EPOXY (YELLOW) EACH	REMARKS
					LF	LF	LF	EACH		
0010	5+21NB	-	15+95NB	STH 59	924	890		227	1	NB Lane
	26+00NB	-	42+00SB	STH 59	1583	1850				NB Lane
	5+40SB	-	15+90SB	STH 59	960	842	245			SB Lane
	26+00SB	-	42+00SB	STH 59	1366	1855	59			SB Lane
TOTAL 0010					4833	5437	304	227	1	
PROJECT TOTAL					10270					

CONSTRUCTION STAKING STORM SEWER

650. 4000
CONSTRUCTION
STAKING
STORM SEWER

CATEGORY	STATION	LOCATION	EACH	REMARKS
0010	6+34. 90SB- 18. 2' LT	STH 59	1	2x3- FT INLET
	8+48. 50SB- 25. 4' LT	STH 59	1	2x3- FT INLET
	8+48. 70NB- 2. 4' LT	STH 59	1	2x3- FT INLET
	8+49. 60NB- 23. 9' RT	STH 59	1	2x3- FT INLET
	9+19. 60SB- 32. 5' LT	STH 59	1	2x3- FT INLET
	11+03. 50SB- 17. 3' LT	STH 59	1	2x3- FT INLET
	11+24. 50NB	STH 59	1	2x3- FT INLET
TOTAL 0010			7	

CONSTRUCTION STAKING SUPPLEMENTAL CONTROL (PROJECT)

650. 9910

CATEGORY	LOCATION	LS	REMARKS
0010	STH 59	1	
TOTAL 0010		1	

CONSTRUCTION STAKING CURB GUTTER AND CURB & GUTTER

650. 5500
CONSTRUCTION
STAKING
CURB AND
GUTTER

CATEGORY	STATION	TO	STATION	LOCATION	LF	REMARKS	
0010	4+65SB- LT		4+97SB- LT	STH 59	47		
	4+65NB- RT		8+81NB- RT	STH 59	440		
	5+38SB- LT		8+53SB- LT	STH 59	332		
	6+74SB		8+68SB	STH 59	390		
	9+05NB- RT		9+29NB- RT	STH 59	51		
	9+15SB- LT		11+24SB- LT	STH 59	215		
	9+19SB		11+29SB	STH 59	442		
	11+89SB		15+83SB	STH 59	801		
	25+97SB		33+79SB	STH 59	1565		
	TOTAL 0010					4283	

CONSTRUCTION STAKING ROADWAY

650. 4500 650. 5000 650. 9920.01
CONSTRUCTION CONSTRUCTION CONSTRUCTION
STAKING STAKING STAKING
SUBGRADE BASE SLOPE STAKES

CATEGORY	STATION	TO	STATION	LOCATION	LF	LF	LF	REMARKS
0010	4+00	-	15+97	STH 59	1197	1197	1197	MAINLINE
	26+10	-	39+62	STH 59	1352	1352	1352	MAINLINE
	4+65	-	15+83	STH 59	1118	1118	1118	MAINLINE
	25+97	-	41+93	STH 59	1596	1596	1596	MAINLINE
	50+00	-	50+58	30TH AVE	58	58	58	SIDEROAD
	60+00	-	60+60	6TH 1/2 ST	60	60	60	SIDEROAD
	70+00	-	70+81	WEISS LN	81	81	81	SIDEROAD
	TOTAL 0010					5462	5462	5462

SAWING ASPHALT

CATEGORY	STATION	LOCATION	690. 0150 SAWING ASPHALT LF	REMARKS	
0010	5+20SB- LT	STH 59	40	DRI VEWAY	
	6+50SB- LT	STH 59	10	DRI VEWAY	
	8+80SB- LT	STH 59	60	DRI VEWAY	
	11+50SB- LT	STH 59	46	DRI VEWAY	
	15+83SB	STH 59	20	MAI NLI NE	
	5+30NB- RT	STH 59	22	DRI VEWAY	
	9+00NB- RT	30TH AVE	26	SI DEROAD	
	11+50NB- RT	6TH ST	28	SI DEROAD	
	25+97. 30SB	STH 59	42	MAI NLI NE	
	70+80. 51	WEI SS LN	26	SI DEROAD	
	41+93. 09SB	STH 59	26	MAI NLI NE	
	TOTAL 0010			346	

SAWING CONCRETE

CATEGORY	STATION	LOCATION	690. 0250 SAWING CONCRETE LF	REMARKS
0010	4+65SB	STH 59	32	MAI NLI NE
	6+50SB- LT	STH 59	18	DRI VEWAY
	6+30NB- RT	STH 59	18	DRI VEWAY
	15+97NB	STH 59	32	MAI NLI NE
TOTAL 0010			100	

SPECIAL (01. ADJUSTING VALVE BOXES)

CATEGORY	STATION	TO	STATION	LOCATION	SPV. 0060 ADJUSTING VALVE BOXES EACH	REMARKS
0010	4+65	-	15+83	STH 59	3	
TOTAL 0010					3	

REMOVING PAVEMENT

CATEGORY	STATION	TO	STATION	LOCATION	204. 0100	201. 011	REMARKS
					REMOVING PAVEMENT SY	REMOVING ASPAHLTI C SURFACE SY	
0010	175+99. 39BW	-	202+95BW	STH 81	14140	1605	Main l i ne
	202+95BW	-	207+13. 23BW	STH 81			Main l i ne
TOTAL 0010					14140	1605	

REMOVING CURB & GUTTER

CATEGORY	STATION	TO	STATION	LOCATION	204. 0150	REMARKS
					REMOVING CURB & GUTTER LF	
0010	176+00BW	-	179+6BW	STH 81	751	Medi an
	180+00BW	-	193+30BW	STH 81	2706	Medi an
	193+70BW	-	196+70BW	STH 81	624	Medi an
TOTAL 0010					4081	

REMOVING STORM SEWER

CATEGORY	STATION	LOCATION	204. 0245. 01	204. 0245. 02	REMARKS
			REMOVING STORM SEWER 48- INCH LF	REMOVING STORM SEWER 18- INCH	
0010	184+02BW- 77' LT	STH 81	8		REMOVE APRON ENDWALL
	187+04BW- 57' LT	STH 81		8	REMOVE 18' PIPE
TOTAL 0010			8	8	

BASE COURSE ITEMS

CATEGORY	STATION	TO	STATION	LOCATION	305.0110 BASE AGGREGATE DENSE 3/4-INCH TON	305.0120 BASE AGGREGATE DENSE 1 1/4-INCH TON	305.041 AGGREGATE DETOURS TON	312.0110 SELECT CRUSHED MATERIAL TON	REMARKS
0010	175+99.39BW	-	211+62.02BW	STH 81	934	8638	100	16247	MAINLINE
TOTAL 0010					934	8638	100	16247	

ASPHALT PAVEMENT ITEMS

CATEGORY	STATION	TO	STATION	LOCATION	455.0605 TACK COAT GAL	460.5223 HMA PAVEMENT 3 LT 58-28 S TON	460.5224 HMA PAVEMENT 4 LT 58-28 S TON	465.0115 ASPHALTIC SURFACE DETOURS TON	REMARKS
0010	175+99.39BW	-	207+13.25BW	STH 81	1030	3772	2515	50	MAINLINE
TOTAL 0010					1030	3772	2515	50	

ASPHALTIC SURFACE
DRIVEWAYS AND FIELD
ENTRANCES

CATEGORY	STATION	LOCATION	465.0120 TON	REMARKS
0010	179+80BE-RT	STH 59	2.5	GRAVEL FE
	179+80BW-LT	STH 59	10.0	GRAVEL PE
	193+45WB-LT	STH 59	3.5	GRAVEL FE
TOTAL 0010			16	

ASPHALTIC SHOULDER RUMBLE STRIPS

465.0400
ASPHALTIC
SHOULDERS
RUMBLE
STRIPS

CATEGORY	STATION	TO	STATION	LOCATION	LF	REMARKS
0010	176+04BE	-	188+10BE	STH 81	1206	
	195+90BE	-	203+80BE	STH 81	790	
	197+00BE	-	200+00BE	STH 81	300	
	179+10BW	-	206+10BW	STH 81	2160	
	196+70BW	-	199+70BW	STH 81	300	
	TOTAL 0010					4756

CROSS DRAIN FOR CULVERT PIPES

522.0118 522.1018 522.1048 524.0648
 CULVERT APRON APRON ENDWALLS
 PIPE REINFORCED CONCRETE CLASS III 18-INCH
 APRON ENDWALLS FOR CULVERT PIPE
 APRON ENDWALLS FOR CULVERT PIPE
 ENDWALLS FOR CULVERT PIPE
 ENDWALLS FOR CULVERT PIPE
 ENDWALLS FOR CULVERT PIPE
 ENDWALLS FOR CULVERT PIPE

CATEGORY	STATION	LOCATION	LF	EACH	EACH	EACH	REMARKS
0010	184+02BW-77' LT	STH 81			1		REMOVE & REPLACE ENDWALL
	185+12BE-78' RT	STH 81				1	RESET EW & ADD JOINT TIES
	187+04BW-57' LT	STH 81	8	1			REMOVE AND REPLACE PIPE & EW
TOTAL 0010			8	1	1	1	

CONCRETE CURB & GUTTER 30-INCH TYPE D

601.0411
CONCRETE
CURB & GUTTER
30-INCH TYPE D

CATEGORY	STATION	TO	STATION	LOCATION	LF	REMARKS
0010	176+00BW	-	179+6BW	STH 81	751	Median
	180+00BW	-	193+30BW	STH 81	2706	Median
	193+70BW	-	196+70BW	STH 81	624	Median
TOTAL 0010					4081	

RIPRAP ITEMS

CATEGORY	STATION	LOCATION	606.0200	645.012	REMARKS
			RI PRAP	GEOTEXTILE	
			MEDIUM	TYPE HR	
			CY	SY	
0010	184+02BW- 77' LT	STH 81	9	28	REMOVE & REPLACE 48" ENDWALL
	185+12BE- 78' RT	STH 81	5	19	REMOVE & JOINT TIE ENDWALL
	187+04BE- 57' LT	STH 81	4	15	REMOVE & REPLACE PIPE
TOTAL 0010			18	62	

STORM INLETS AND COVERS

CATEGORY	STATION	LOCATION	204.0220	611.0624	611.3230	REMARKS
			REMOVING	INLET COVERS	INLETS	
			INLETS	TYPE H	2X3- FT	
			EACH	EACH	EACH	
0010	179+51.00BW	STH 81	1	1	1	Medi an
	179+66.90BE	STH 81	1	1	1	Medi an
	187+03.10BW	STH 81	1	1	1	Medi an
	187+25.50BE	STH 81	1	1	1	Medi an
	193+79.60BW	STH 81	1	1	1	Medi an
	194+10.20BE	STH 81	1	1	1	Medi an
TOTAL 0010			6	6	6	

WATER

CATEGORY	STATION	TO	STATION	LOCATION	624.0100	REMARKS
					WATER	
					MGAL	
0010	176+00BW	-	207+13.23BW	STH 81	159	MAINLINE & SIDEROADS
TOTAL 0010					159	

LANDSCAPE ITEMS

CATEGORY	STATION	TO	STATION	LOCATION	625.0500	627.0200	629.0210	630.0130	630.0200	REMARKS
					SALVAGED TOPSOIL SY	MULCHING SY	FERTILIZER TYPE B CWT	SEEDING MIX. NO. 30 LB	SEEDING TEMPORARY LB	
0010	175+99.39BW		207+13.23BW	STH 81	8150	8150	5.1	146	73	Mainline
TOTAL 0010					8150	8150	5.1	146	73	

MOBILIZATIONS EROSION CONTROL

CATEGORY	LOCATION	628.1905	628.1910	REMARKS
		MOBILIZATIONS EROSION CONTROL EACH	MOBILIZATIONS EMERGENCY EROSION CONTROL EACH	
0010	STH 81	2	2	
TOTAL 0010		2	2	

EROSION MAT CLASS I TYPE A

CATEGORY	STATION	TO	STATION	LOCATION	628.2002 EROSION MAT CLASS 1 TYPE A SY	REMARKS
0010	188+00BE	-	193+20BE	STH 81	588	SLOPE RT
	194+40BE	-	200+50BE	STH 81	678	SLOPE RT
	203+40BW	-	207+80BW	STH 81	489	SLOPE RT
	206+60BW	-	207+50BW	STH 81	133	SLOPE LT
TOTAL 0010					1888	

INLET PROTECTION TYPE C

CATEGORY	STATION	STATION	LOCATION	628.7015 INLET PROTECTION TYPE C EACH	REMARKS
0010	179+51BW		STH 81	1	MEDIAN C&G
0010	179+67BE		STH 81	1	MEDIAN C&G
0010	187+03BW		STH 81	1	MEDIAN C&G
0010	187+26BE		STH 81	1	MEDIAN C&G
0010	194+10BE		STH 81	1	MEDIAN C&G
0010	30+76N		CTH N	1	RADI C&G
TOTAL 0010				6	

TEMPORARY DITCH CHECKS

CATEGORY	STATION	LOCATION	628.7504 TEMPORARY DITCH CHECKS LF	REMARKS
0010	203+30BW	STH 81	20	DITCH RT
	205+90BW	STH 81	20	DITCH LT
	205+90BW	STH 81	30	DITCH RT
TOTAL 0010			70	

CULVERT PIPE CHECKS

CATEGORY	STATION	TO	LOCATION	628.7555 CULVERT PIPE CHECKS EACH	REMARKS
0010	194+10BE	-	STH 81	1	DITCH RT
0010	194+70BW	-	STH 81	1	DITCH LT
TOTAL 0010				2	

SIGNS TYPE II

CATEGORY	SIGN NUMBER	STATION	LOCATION	SIGN CODE	SIZE (INCH)	634.0614 POSTS WOOD 4x6-INCH x 14-ft	634.0616 POSTS WOOD 4x6-INCH x 16-ft	637.2210 SIGNS TYPE II REFLECTIVE H SF	REMARKS
0010	1-01	182+70BE	RT	R3-7R	30"x30"	1		6.25	RIGHT LANE MUST TURN RIGHT
0010	1-02	188+10BE	RT	R4-4	36"x30"		1	7.50	BEGIN RIGHT TURN LANE - YIELD TO BIKES
0010	2-01	189+60BE	RT	R3-7R	30"x30"	1		6.25	RIGHT LANE MUST TURN RIGHT
TOTAL 0010						2	1	20	

TRAFFIC CONTROL

CATEGORY	STATION	LOCATION	643.0300 TRAFFIC CONTROL DRUMS	643.0420 BARRICADES TYPE III	643.0705 WARNING LIGHTS TYPE A	643.0715 WARNING LIGHTS TYPE C	643.0900 TRAFFIC CONTROL SIGNS	643.091 TRAFFIC COVERING SIGNS Type 1 *EACH	643.092 TRAFFIC COVERING SIGNS Type II *EACH	643.1050 TRAFFIC CONTROL PCMS DAY	643.5000 TRAFFIC CONTROL EACH	REMARKS
0010	STH 81	MAINLINE	13392	912	1824		11172			14	1	DRUMS 50' INTERVALS
	STH 81	COUNTY PE	1984			1984						DRUMS 25' INTERVALS
	STH 11							3	2			
TOTAL 0010			15376	912	1824	1984	11172	3	2	14	1	

* ONE CYCLE FOR TRAFFIC CONTROL COVERING SIGNS TYPE I & II DURING ROAD CLOSURE STAGE

3

3

GEOGRID TYPE SR

CATEGORY	STATION	TO	STATION	LOCATION	645. 0220 GEOGRID TYPE SR SY	REMARKS
0010	175+99. 39BW	-	207+13. 25BW	STH 81	23844	Mainline
TOTAL 0010					23844	

PAVEMENT MARKING

STATION	LOCATION	646. 1020 MARKING LINE EPOXY 4- INCH (WHITE)		646. 3020 MARKING LINE EPOXY 8- INCH (WHITE)		646. 5020 MARKING ARROW EPOXY		646. 5120 MARKING WORD EPOXY		646. 5220 MARKING SYMBOL EXPOXY		646. 7120 MARKING DIAGONAL EPOXY 12- INCH (WHITE)		646. 8120 MARKING CURB EXPOXY (YELLOW)		REMARKS
		LF	(YELLOW)	LF	(WHITE)	EACH	EACH	EACH	LF	(YELLOW)	LF	(YELLOW)				
193+10BE	STH 81	2478	1905			5	1	2						234		NB LANE
207+50BE	STH 81	1328	2798	659					39	215						NB LANE
207+20BW	STH 81	3616	1942	145												SB LANE
TOTAL 0010		7422	6645	804		5	1	2	39	215				234		
PROJECT TOTAL		14067										254				

CONSTRUCTION STAKING STORM SEWER

CATEGORY	STATION	LOCATION	650. 4000 CONSTRUCTION STAKING STORM SEWER EACH	REMARKS
0010	179+51. 00BW	STH 81	1	MAINLINE
	179+66. 90BE	STH 81	1	MAINLINE
	187+03. 10BW	STH 81	1	MAINLINE
	187+25. 50BE	STH 81	1	MAINLINE
	193+79. 60BW	STH 81	1	MAINLINE
	194+10. 20BE	STH 81	1	MAINLINE
TOTAL 0010			6	

CONSTRUCTION STAKING

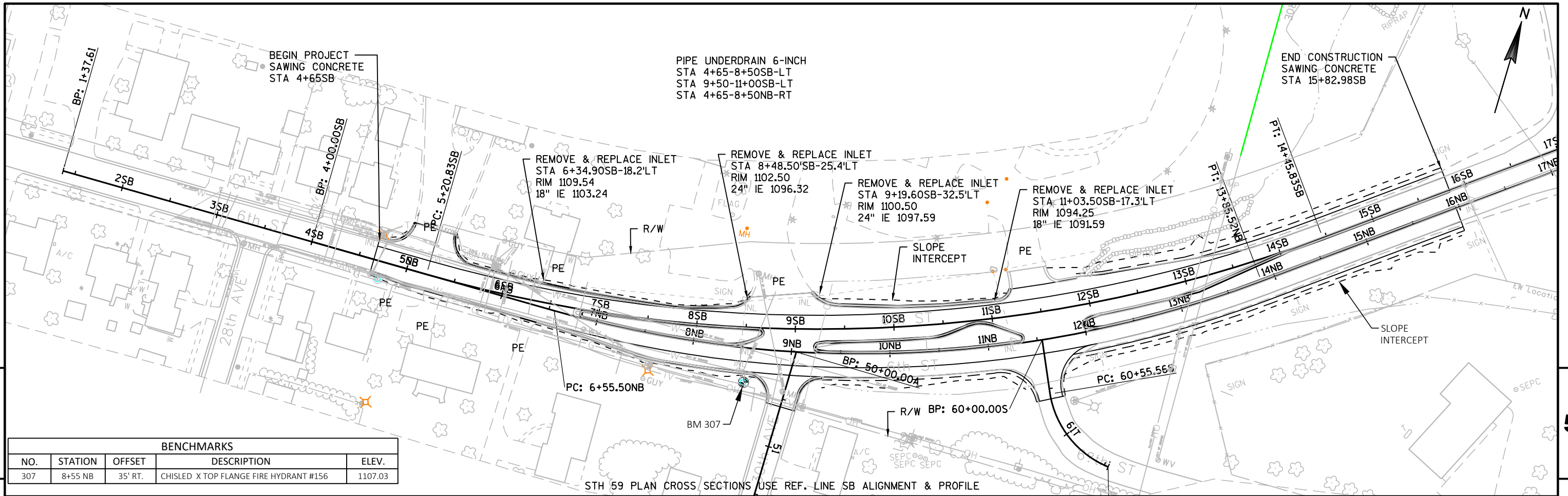
CATEGORY	STATION	TO	STATION	LOCATION	650. 4500	650. 5000	650. 5500	650. 6000	650. 9910.02	650. 9920	REMARKS
					CONSTRUCTION STAKING SUBGRADE LF	CONSTRUCTION STAKING BASE LF	CONSTRUCTION STAKING CURB & GUTTER LF	CONSTRUCTION STAKING PIPE CULVERTS LF	CONSTRUCTION STAKING SUPPLEMENTAL CONTROL LS	CONSTRUCTION STAKING SLOPE STAKES LF	
0010	176+00BE	-	200+50BE	STH 81	2450	2450				2450	MAINLINE
	176+00BW	-	207+00BW	STH 81	3100	3100		1	1	3100	MAINLINE
	176+00BW	-	179+6BW	STH 81			751				MAINLINE
	180+00BW	-	193+30BW	STH 81			2706				MAINLINE
	193+70BW	-	196+70BW	STH 81			624				MAINLINE
TOTAL 0010					5550	5550	4081	1	1	5550	

SAWING ASPHALT

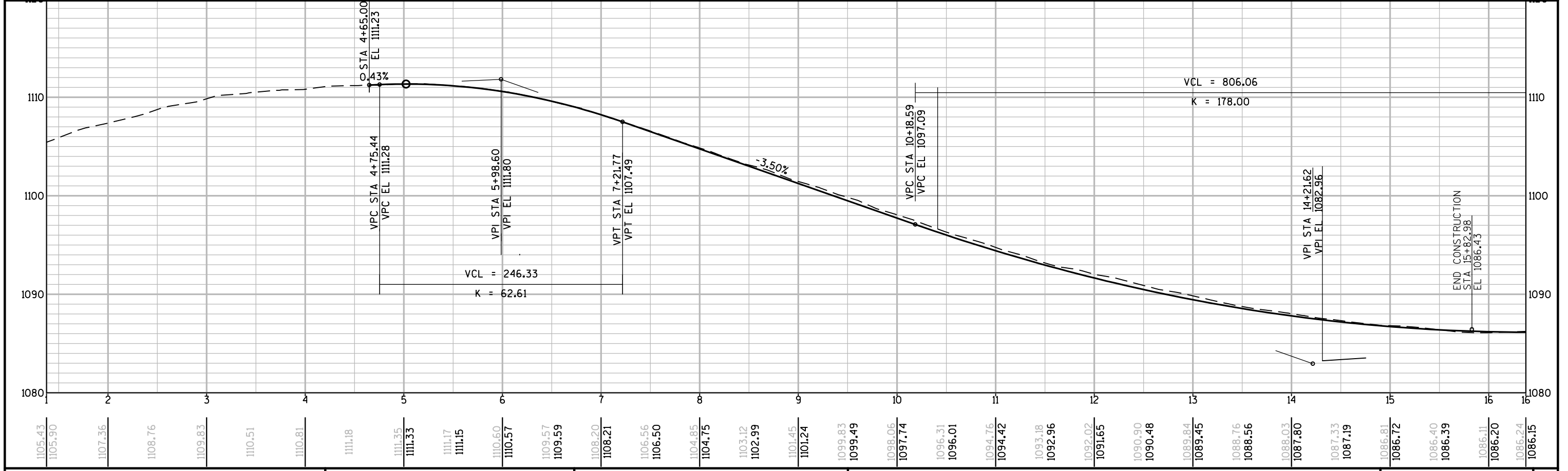
CATEGORY	STATION	LOCATION	690. 0150	REMARKS
			SAWING ASPHALT LF	
0010	193+80BE	STH 81	46	DRI VEWAY
	202+95BW	STH 81	24	ASPHALT/CONCRETE JOINT
	207+13. 25BW	STH 81	48	MAINLINE
TOTAL 0010			118	

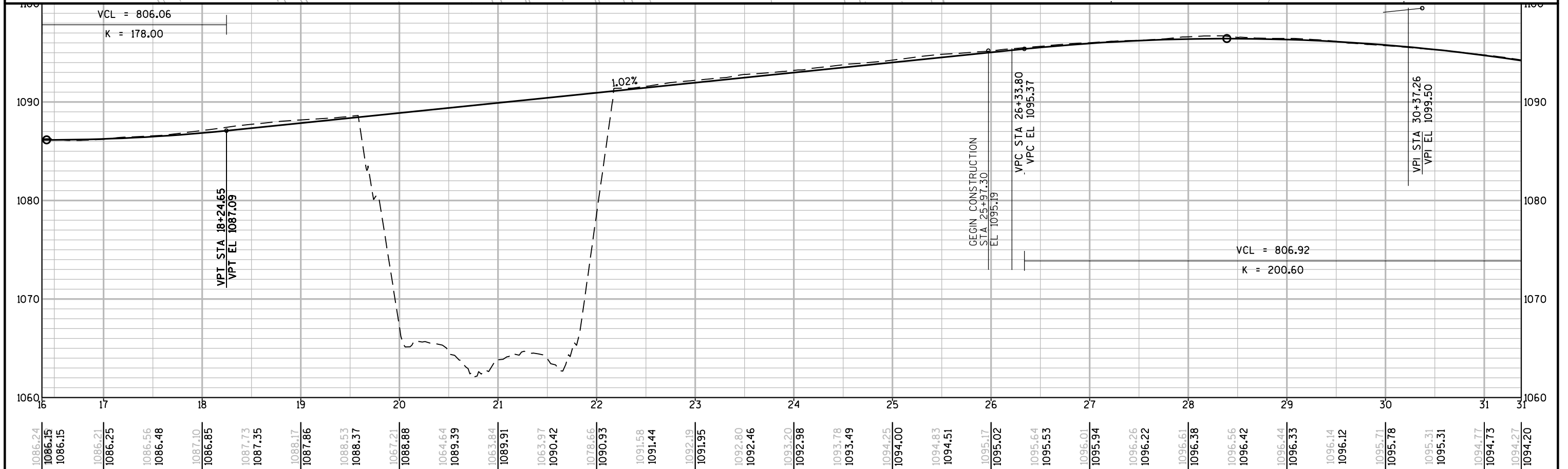
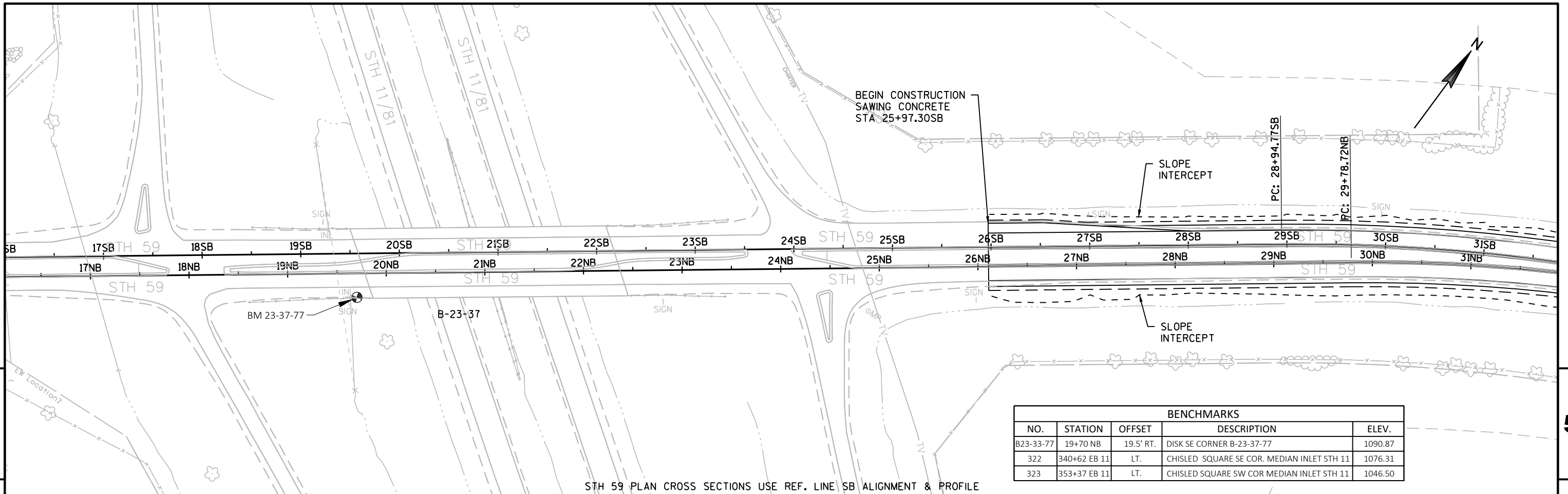
SAWING CONCRETE

CATEGORY	STATION	LOCATION	690. 0250	REMARKS
			SAWING CONCRETE LF	
0010	175+99. 39BW	STH 81	42	MAINLINE
	176+04. 10BE	STH 81	26	MAINLINE
TOTAL 0010			68	

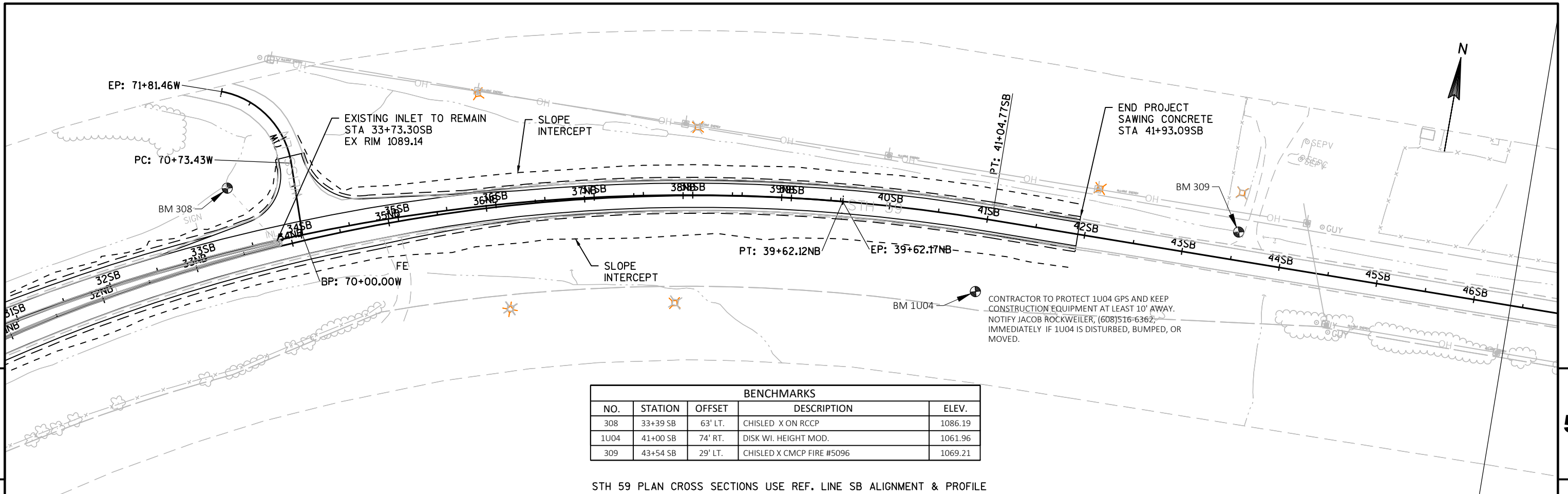


BENCHMARKS				
NO.	STATION	OFFSET	DESCRIPTION	ELEV.
307	8+55 NB	35' RT.	CHISLED X TOP FLANGE FIRE HYDRANT #156	1107.03



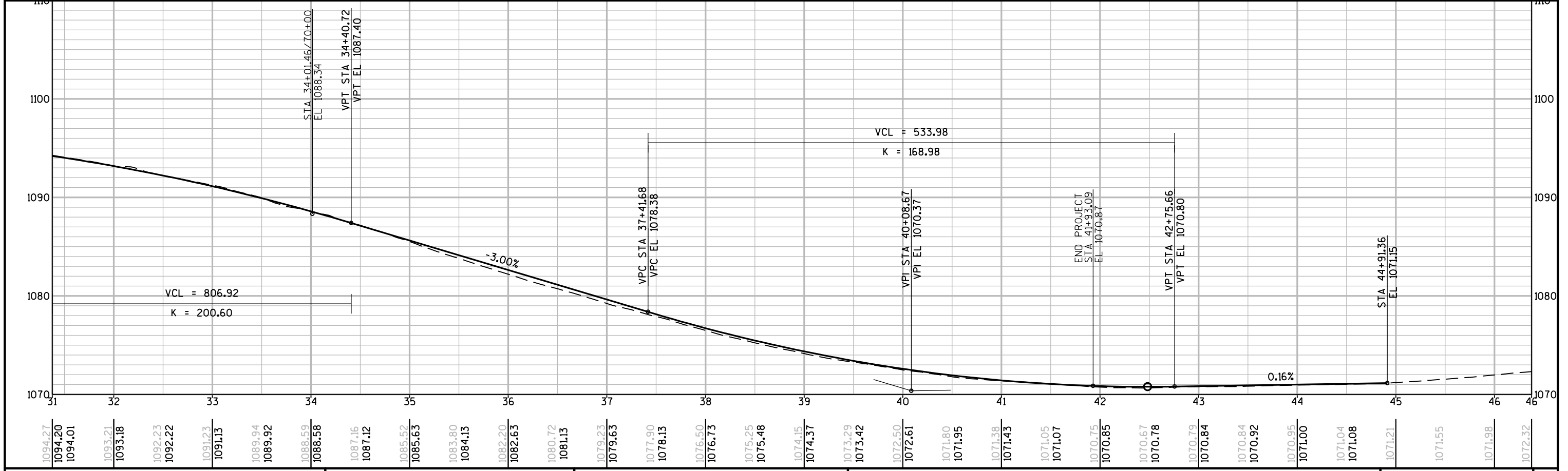


PROJECT NO: 5660-00-72 HWY: STH 59 COUNTY: GREEN PLAN AND PROFILE: STH 59SB SHEET **E**

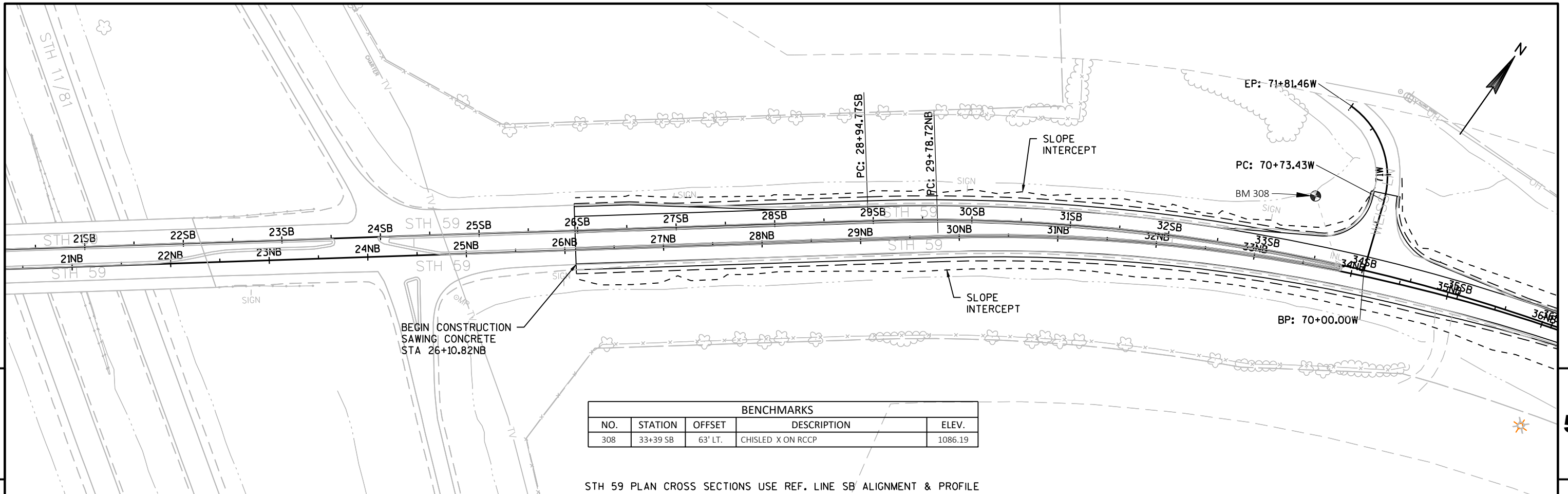


BENCHMARKS				
NO.	STATION	OFFSET	DESCRIPTION	ELEV.
308	33+39 SB	63' LT.	CHISLED X ON RCCP	1086.19
1U04	41+00 SB	74' RT.	DISK W/ HEIGHT MOD.	1061.96
309	43+54 SB	29' LT.	CHISLED X CMCP FIRE #5096	1069.21

STH 59 PLAN CROSS SECTIONS USE REF. LINE SB ALIGNMENT & PROFILE

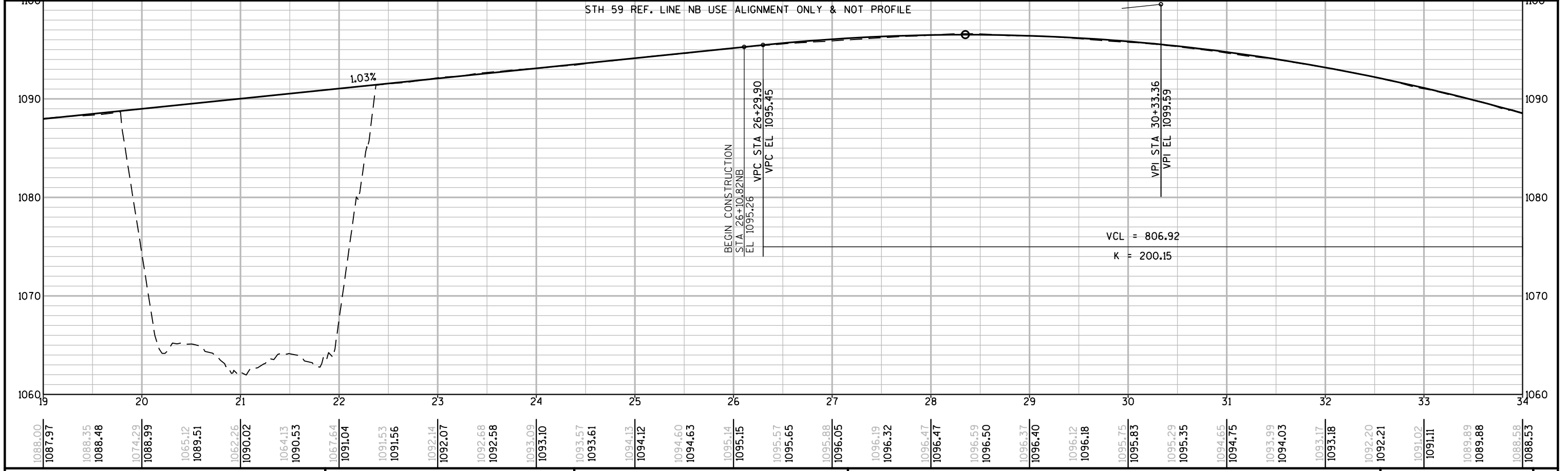


PROJECT NO: 5660-00-02 HWY: STH 59 COUNTY: GREEN PLAN AND PROFILE: STH 59SB SHEET E

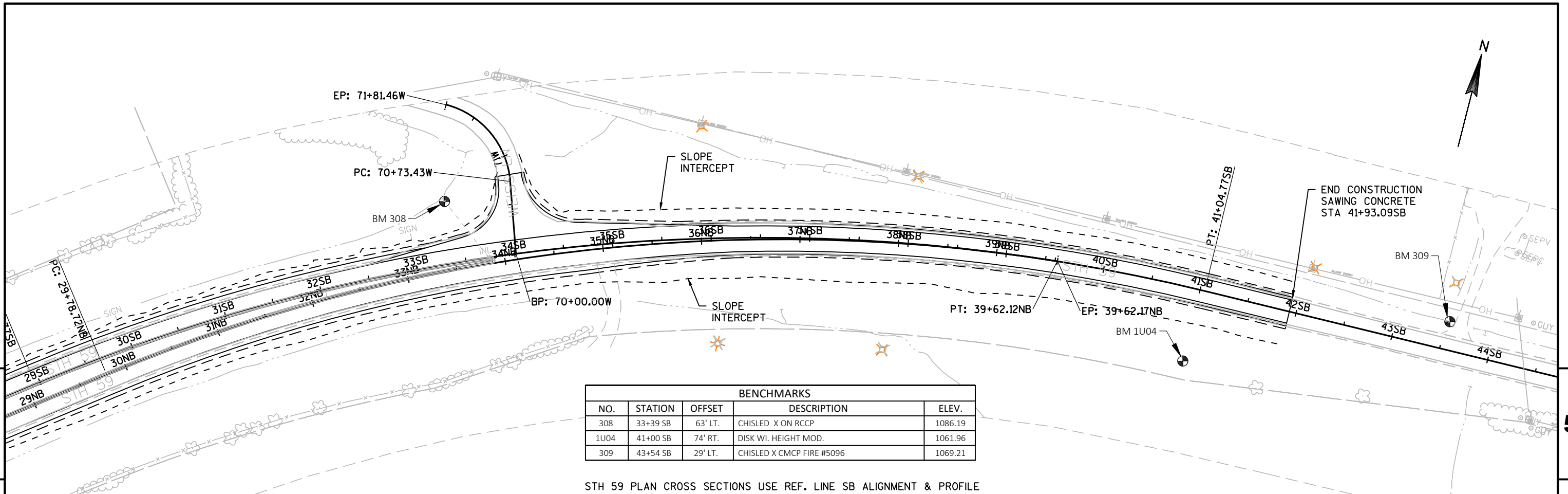


BENCHMARKS				
NO.	STATION	OFFSET	DESCRIPTION	ELEV.
308	33+39 SB	63' LT.	CHISLED X ON RCCP	1086.19

STH 59 PLAN CROSS SECTIONS USE REF. LINE SB' ALIGNMENT & PROFILE
 STH 59 REF. LINE NB USE ALIGNMENT ONLY & NOT PROFILE

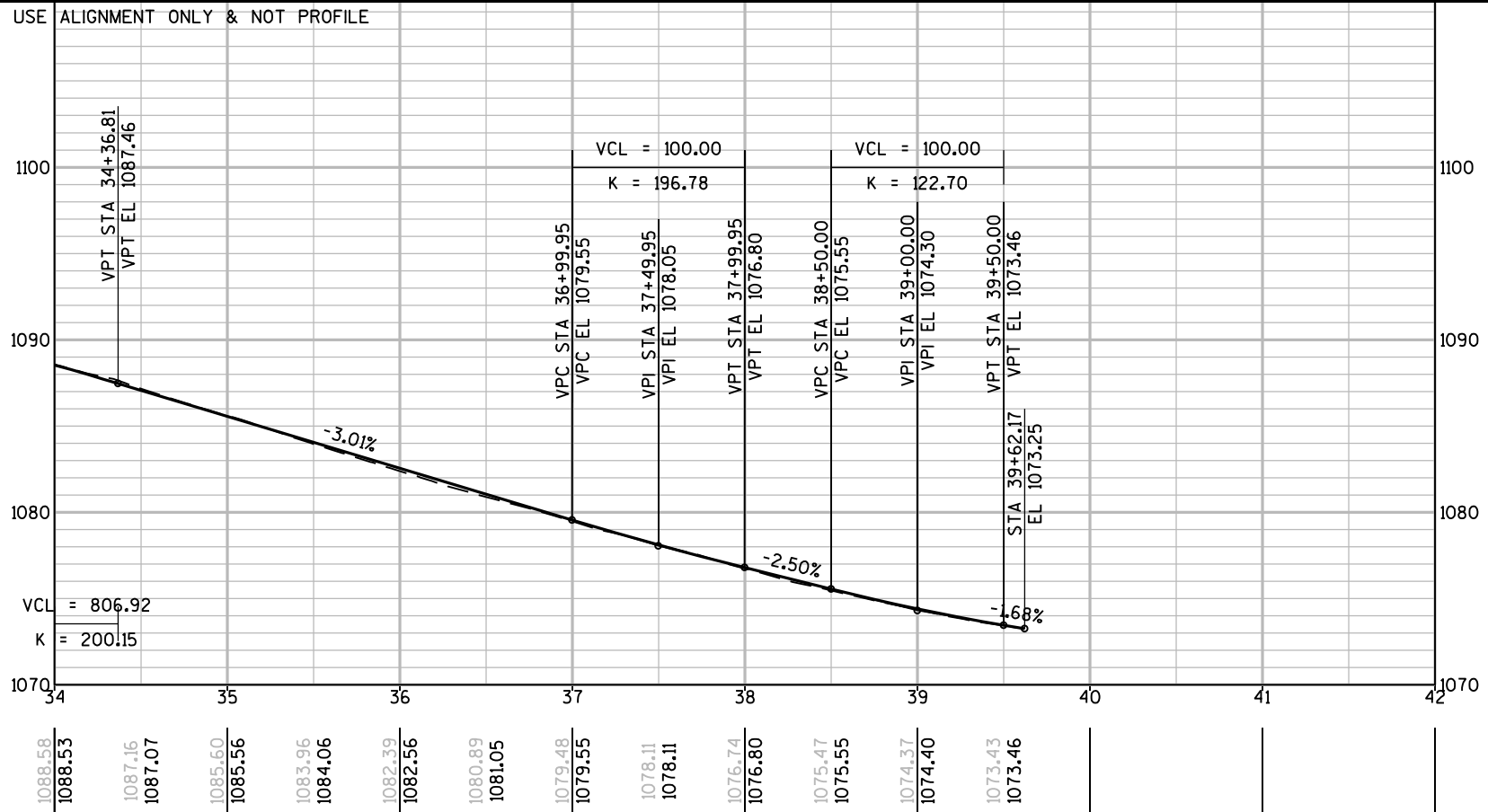


PROJECT NO: 5660-00-72 HWY: STH 59 COUNTY: GREEN PLAN AND PROFILE: STH 59NB SHEET **E**



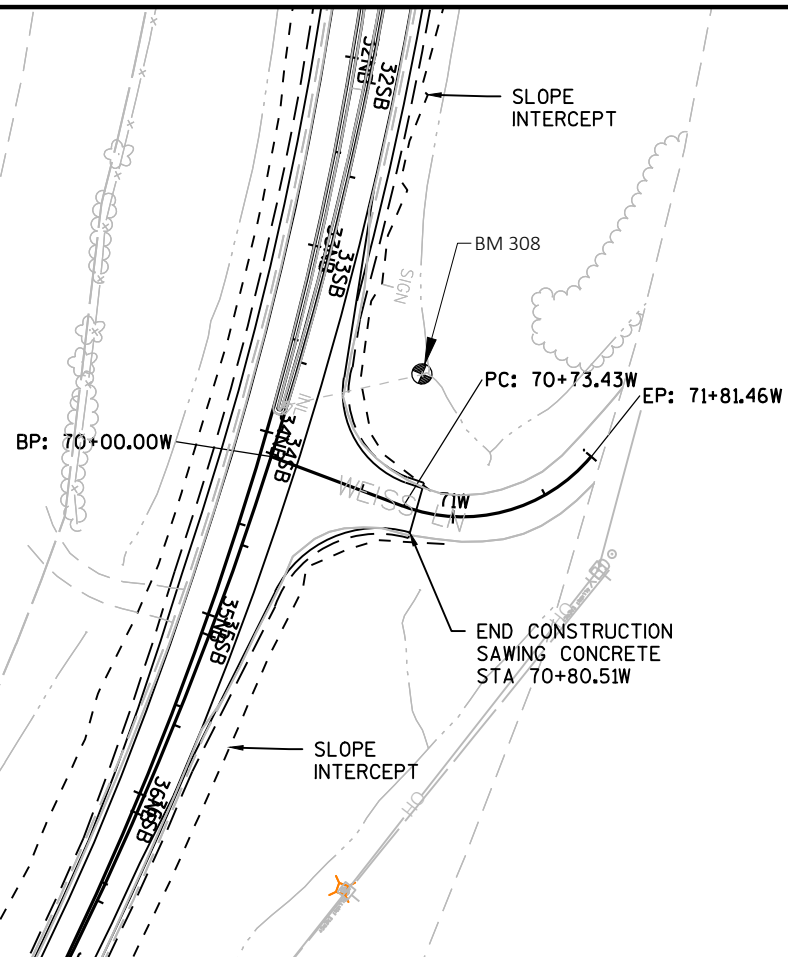
BENCHMARKS				
NO.	STATION	OFFSET	DESCRIPTION	ELEV.
308	33+39 SB	63' LT.	CHISLED X ON RCCP	1086.19
1U04	41+00 SB	74' RT.	DISK W/ HEIGHT MOD.	1061.96
309	43+54 SB	29' LT.	CHISLED X CMCP FIRE #5096	1069.21

STH 59 PLAN CROSS SECTIONS USE REF. LINE SB ALIGNMENT & PROFILE
 STH 59 REF. LINE NB USE ALIGNMENT ONLY & NOT PROFILE

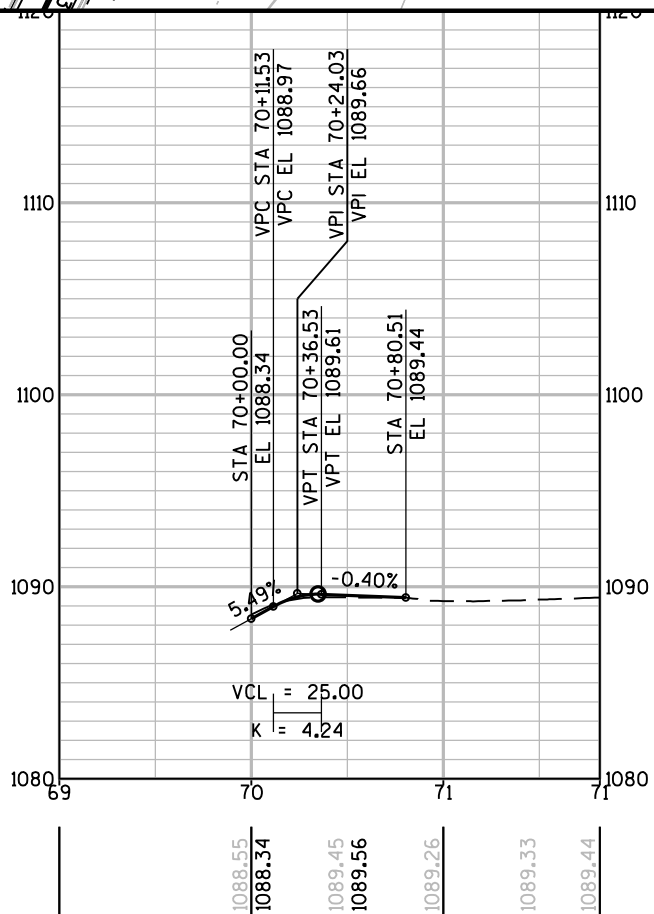


5

5



BENCHMARKS				
NO.	STATION	OFFSET	DESCRIPTION	ELEV.
308	33+39 SB	63' LT.	CHISLED X ON RCCP	1086.19



PROJECT NO:5660-00-72

HWY:STH 59

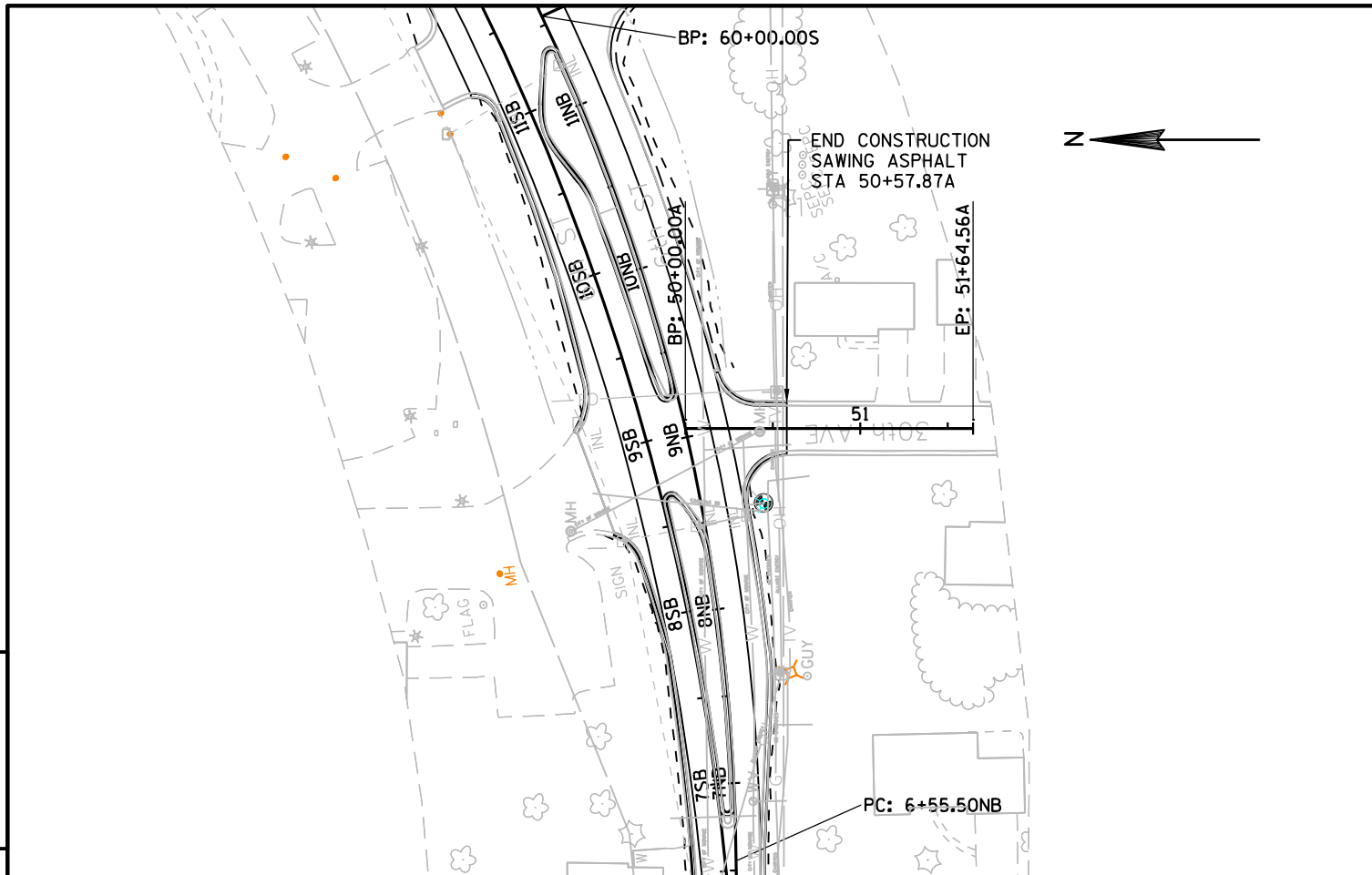
COUNTY:GREEN

PLAN AND PROFILE: WEISS LN

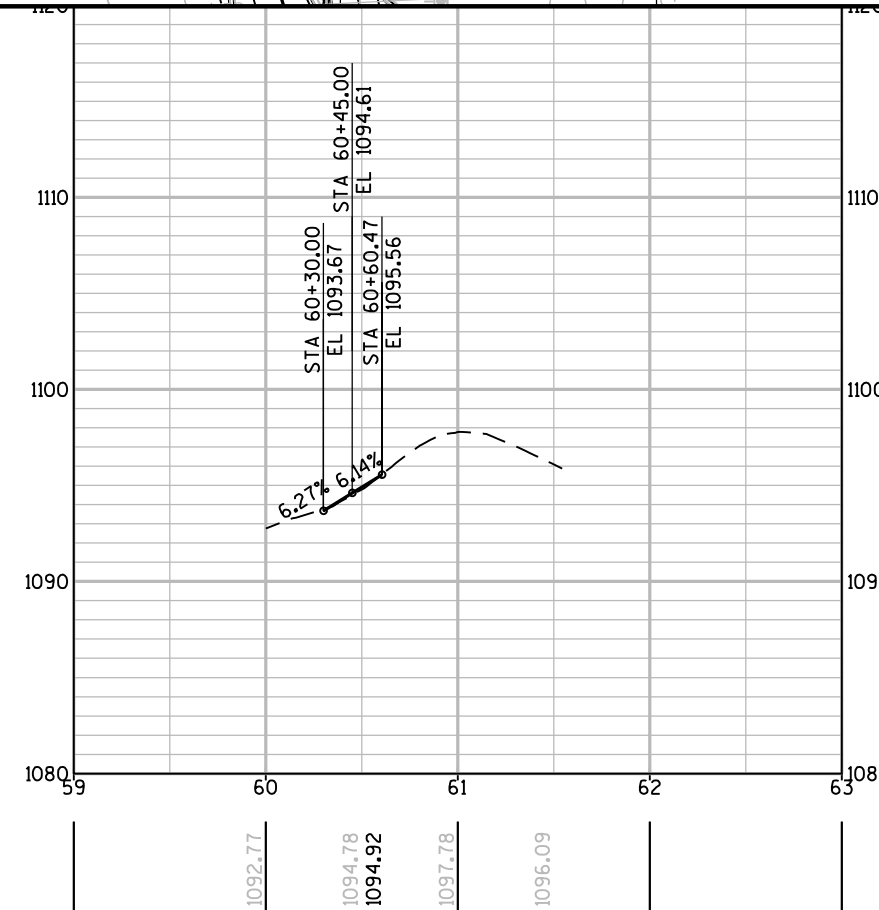
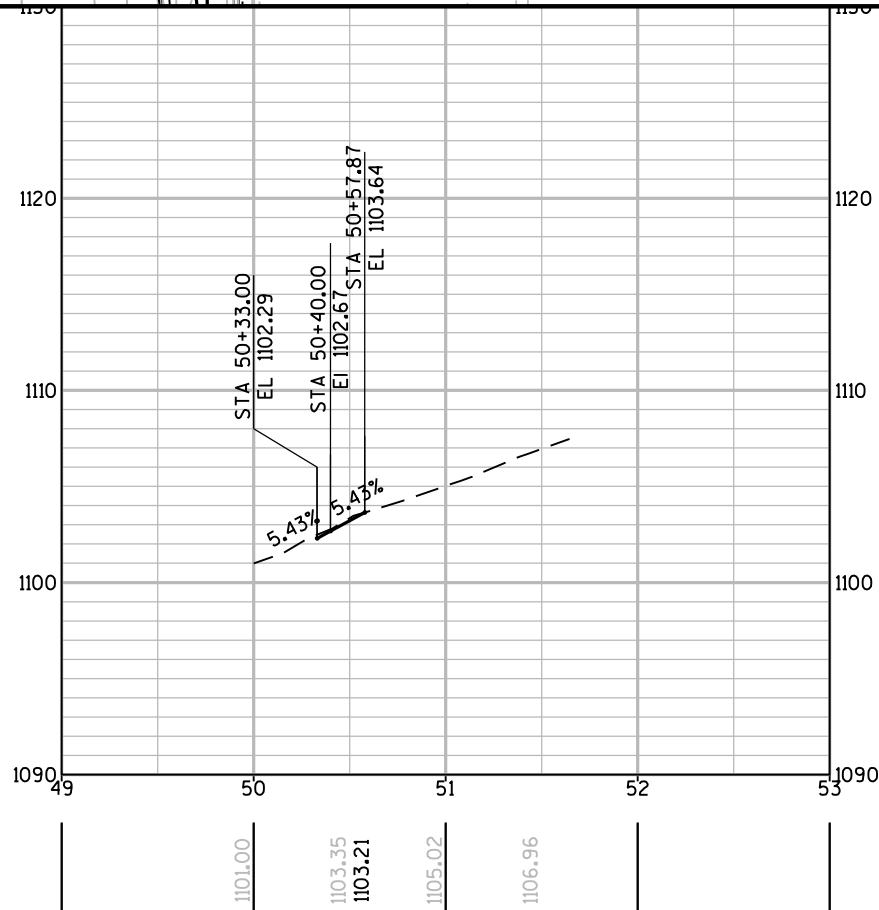
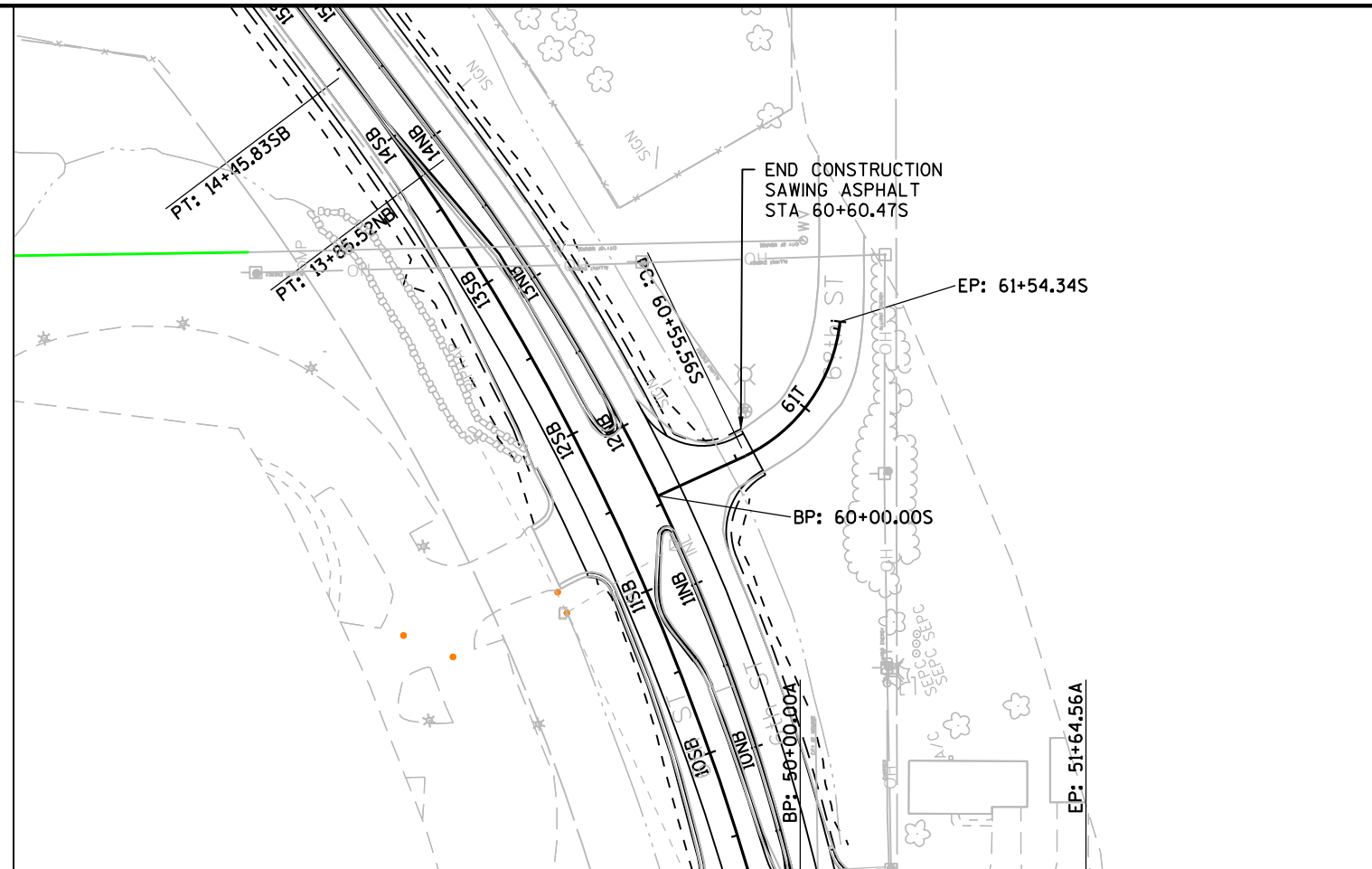
SHEET

E

5



5



PROJECT NO: 5660-00-72

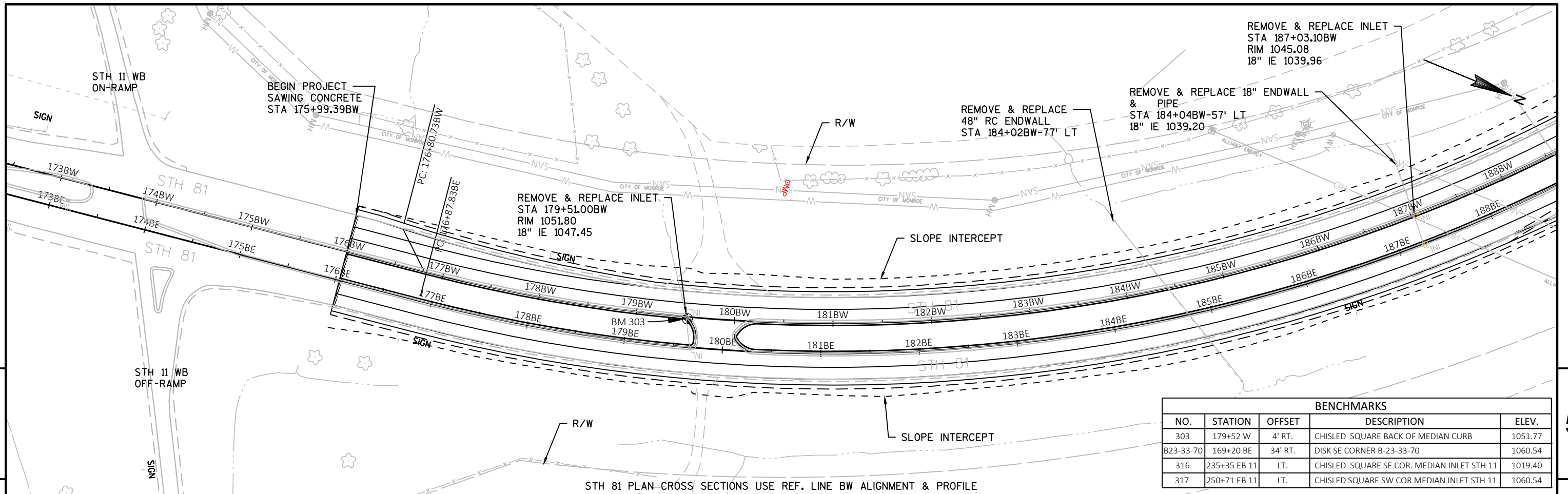
HWY: STH 59

COUNTY: GREEN

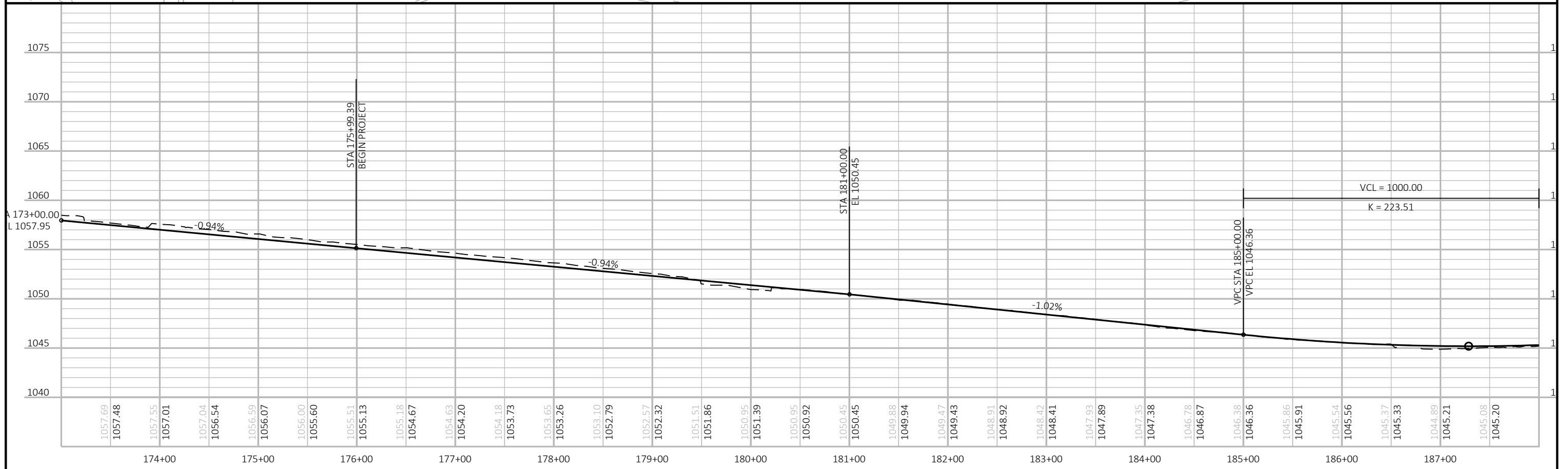
PLAN AND PROFILE: 30TH AVE - 6 1/2 ST

SHEET

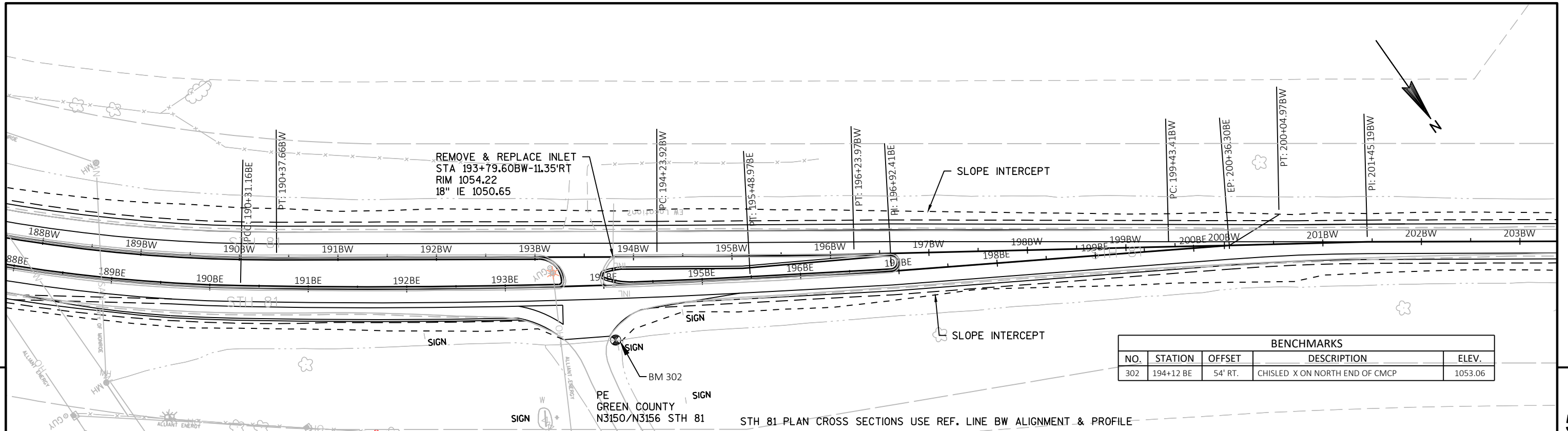
E



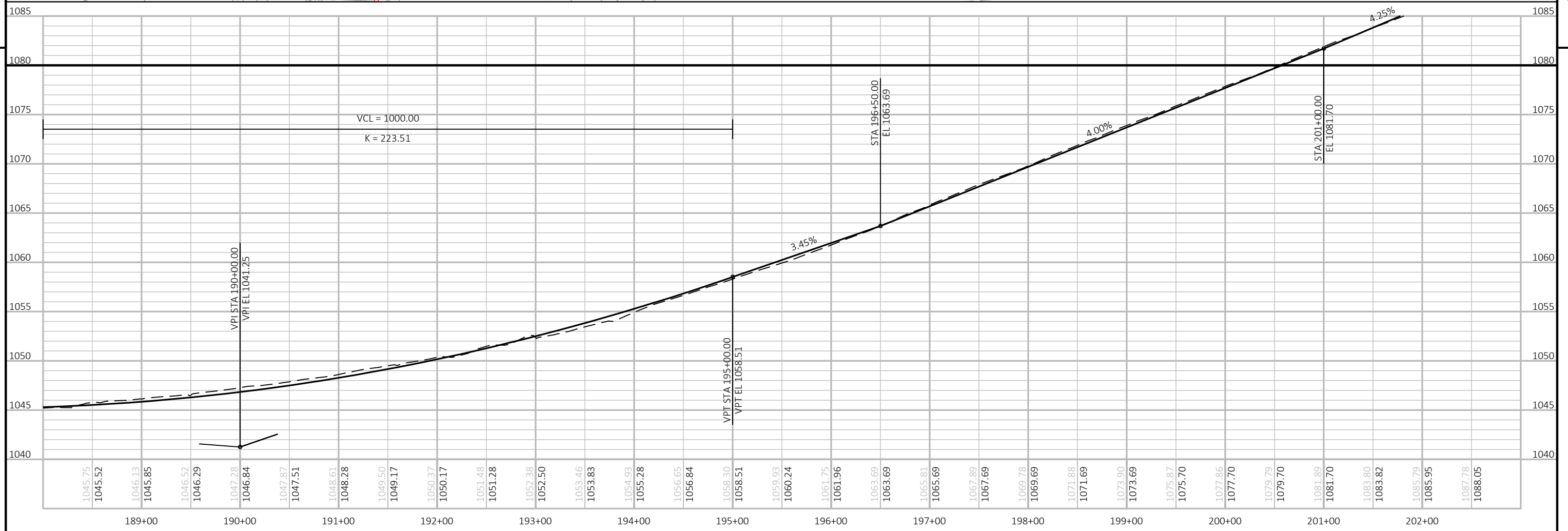
BENCHMARKS				
NO.	STATION	OFFSET	DESCRIPTION	ELEV.
303	179+52 W	4' RT.	CHISLED SQUARE BACK OF MEDIAN CURB	1051.77
B23-33-70	169+20 BE	34' RT.	DISK SE CORNER B-23-33-70	1060.54
316	235+35 EB 11	LT.	CHISLED SQUARE SE COR. MEDIAN INLET STH 11	1019.40
317	250+71 EB 11	LT.	CHISLED SQUARE SW COR MEDIAN INLET STH 11	1060.54



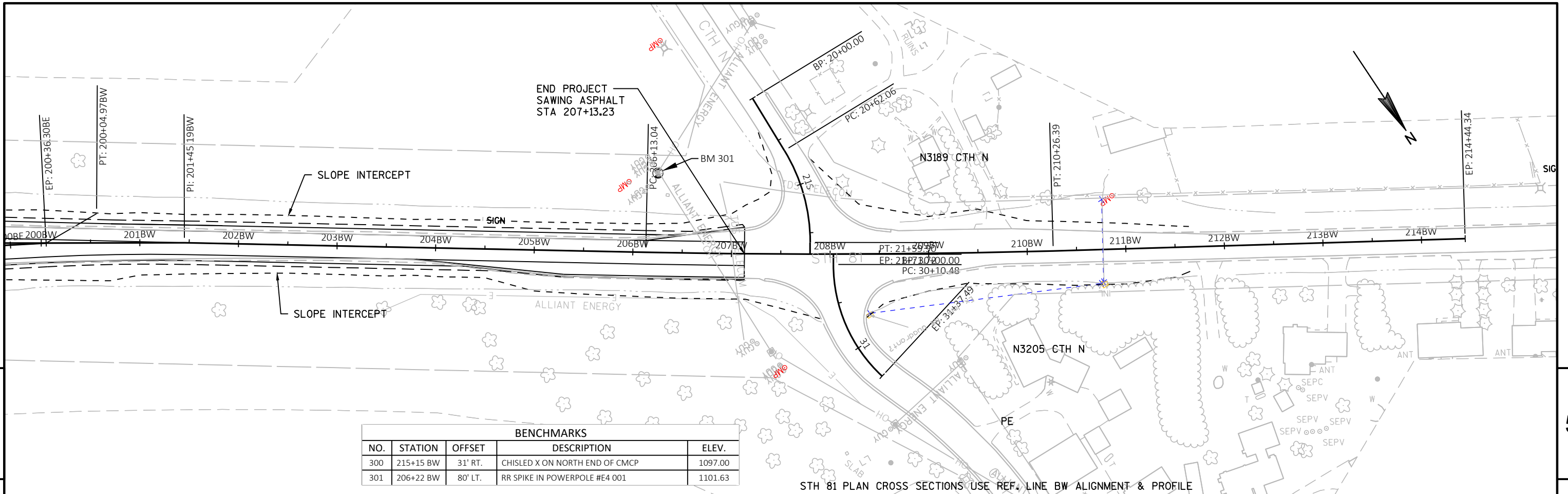
PROJECT NO: 5944-01-72 HWY: STH 81 COUNTY: GREEN PLAN AND PROFILE: STH 81 BW SHEET E



BENCHMARKS				
NO.	STATION	OFFSET	DESCRIPTION	ELEV.
302	194+12 BE	54' RT.	CHISLED X ON NORTH END OF CMCP	1053.06

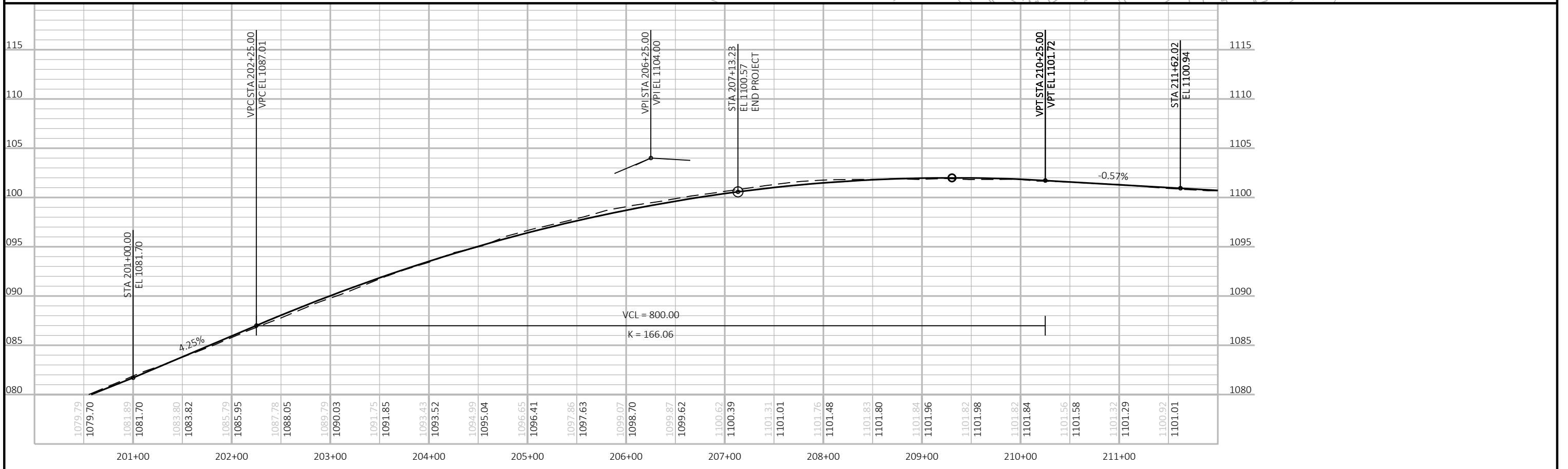


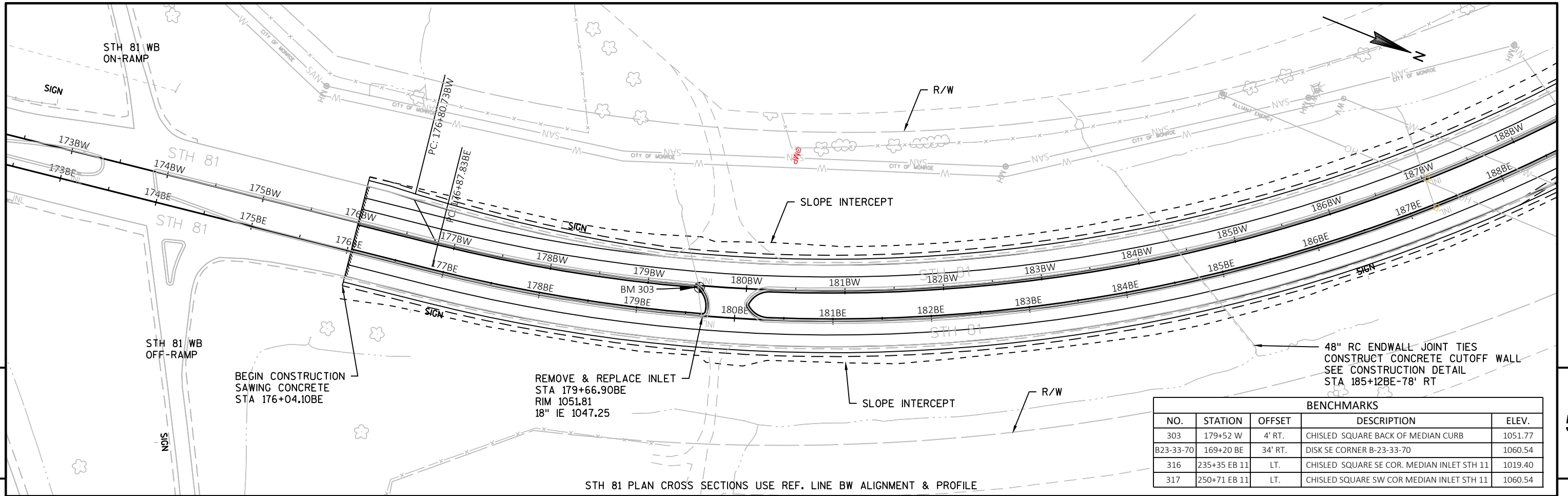
PROJECT NO: 5944-01-72 HWY: STH 81 COUNTY: GREEN PLAN AND PROFILE: STH 81 BW SHEET E



BENCHMARKS				
NO.	STATION	OFFSET	DESCRIPTION	ELEV.
300	215+15 BW	31' RT.	CHISLED X ON NORTH END OF CMCP	1097.00
301	206+22 BW	80' LT.	RR SPIKE IN POWERPOLE #E4 001	1101.63

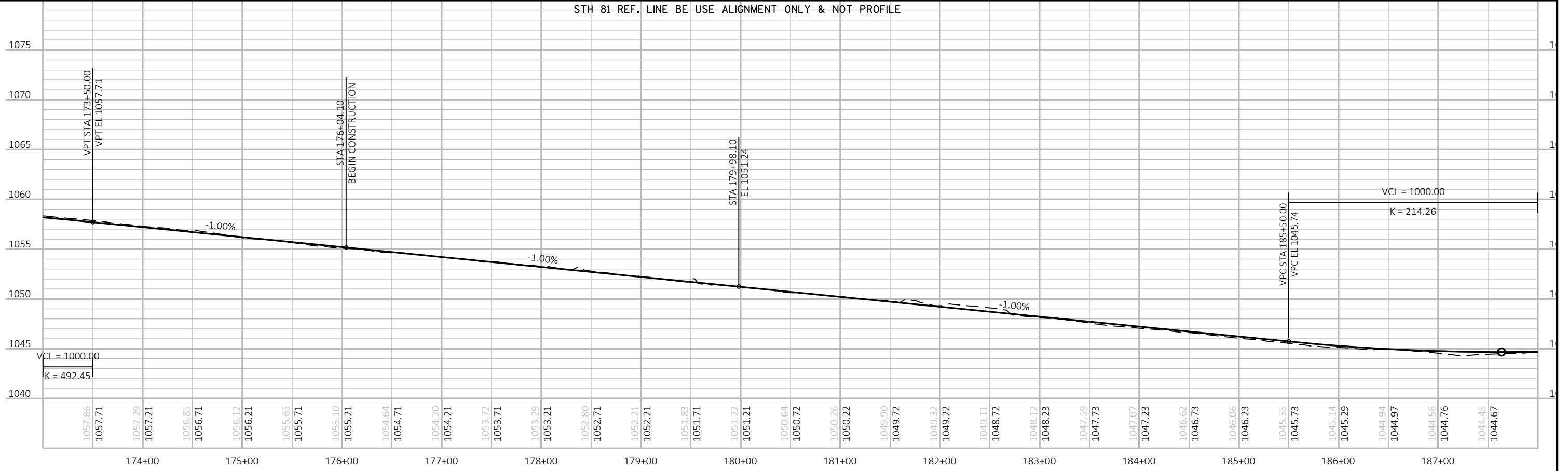
STH 81 PLAN CROSS SECTIONS USE REF. LINE BW ALIGNMENT & PROFILE



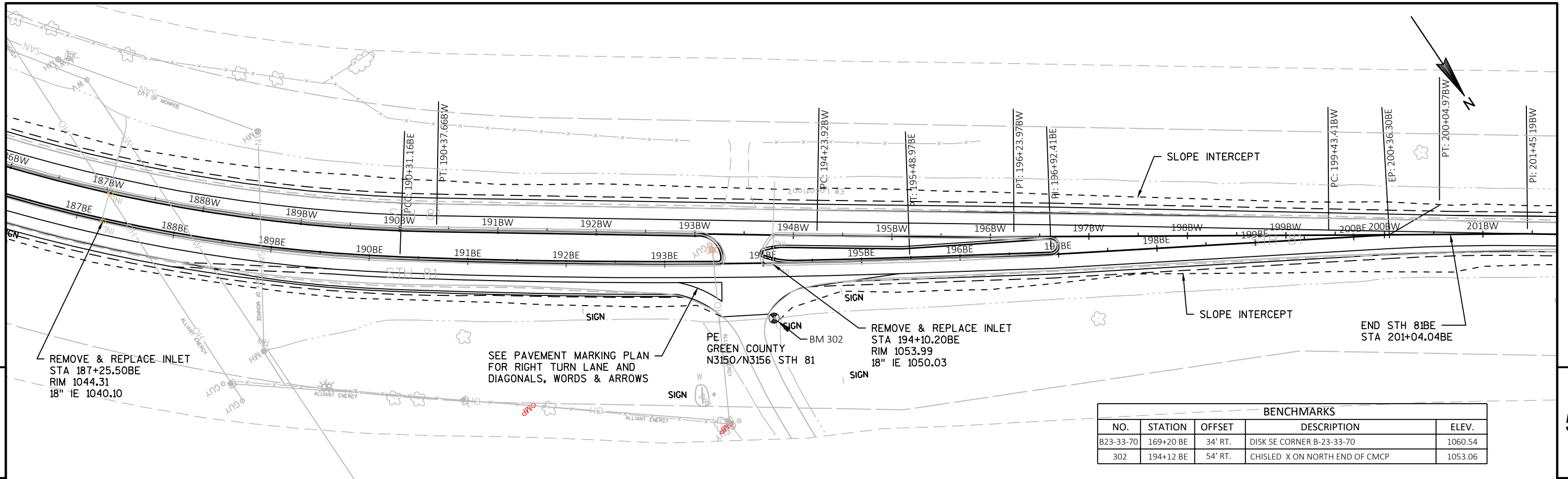


BENCHMARKS				
NO.	STATION	OFFSET	DESCRIPTION	ELEV.
303	179+52 W	4' RT.	CHISLED SQUARE BACK OF MEDIAN CURB	1051.77
B23-33-70	169+20 BE	34' RT.	DISK SE CORNER B-23-33-70	1060.54
316	235+35 EB 11	LT.	CHISLED SQUARE SE COR. MEDIAN INLET STH 11	1019.40
317	250+71 EB 11	LT.	CHISLED SQUARE SW COR MEDIAN INLET STH 11	1060.54

STH 81 PLAN CROSS SECTIONS USE REF. LINE BW ALIGNMENT & PROFILE
 STH 81 REF. LINE BE USE ALIGNMENT ONLY & NOT PROFILE

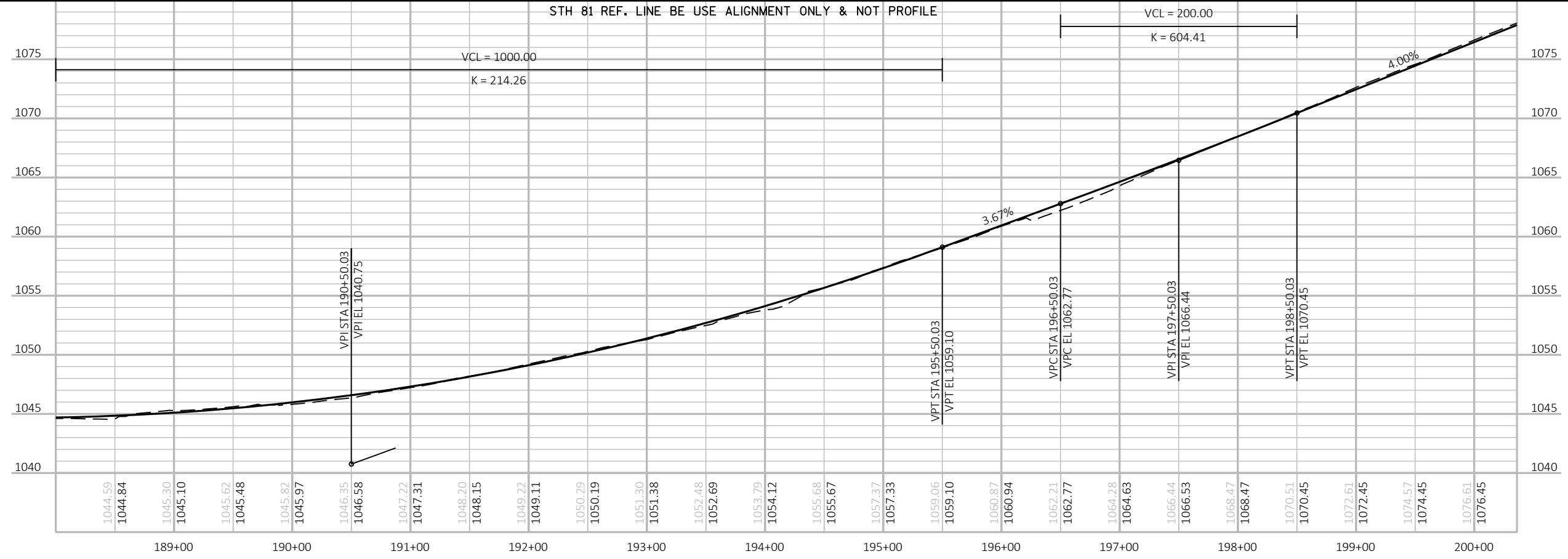


PROJECT NO: 5944-01-72 HWY: STH 81 COUNTY: GREEN PLAN AND PROFILE: STH 81 BE SHEET E



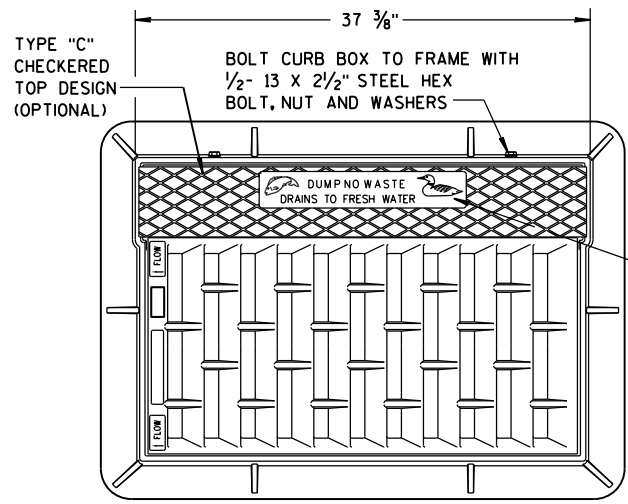
BENCHMARKS				
NO.	STATION	OFFSET	DESCRIPTION	ELEV.
B23-33-70	169+20 BE	34' RT.	DISK SE CORNER B-23-33-70	1060.54
302	194+12 BE	54' RT.	CHISLED X ON NORTH END OF CMCP	1053.06

STH 81 PLAN CROSS SECTIONS USE REF. LINE BW ALIGNMENT & PROFILE
 STH 81 REF. LINE BE USE ALIGNMENT ONLY & NOT PROFILE

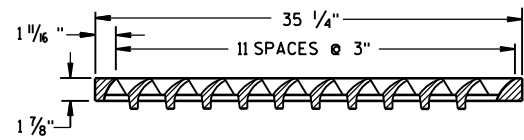
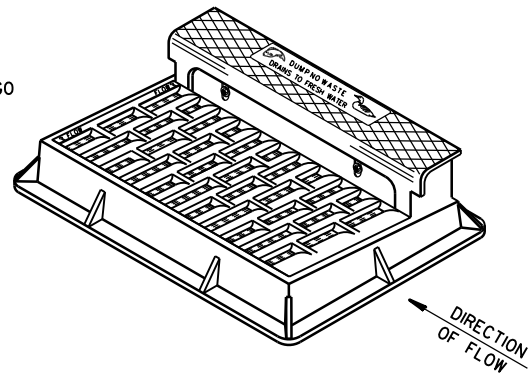


Standard Detail Drawing List

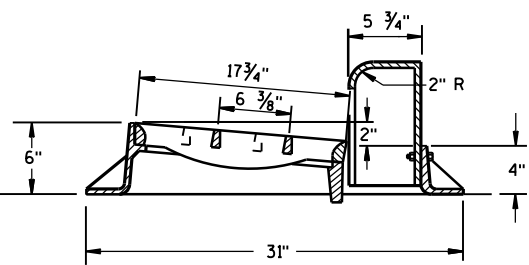
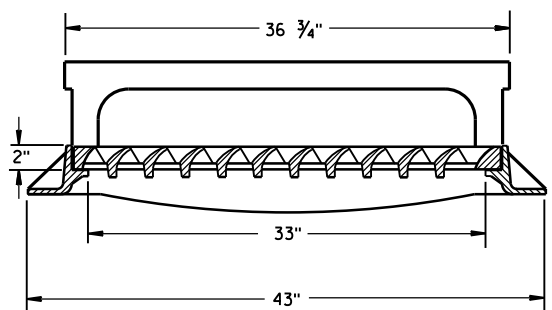
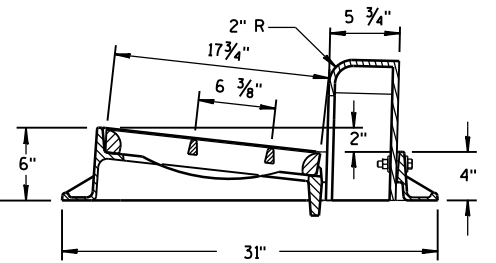
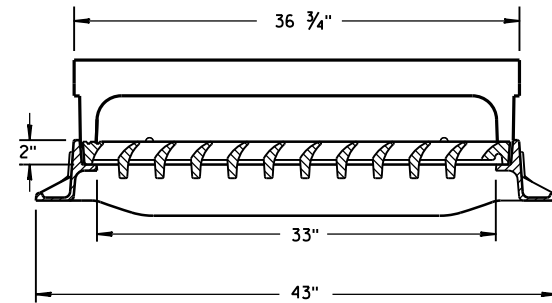
08A05-19A	INLET COVERS TYPE A, H, A-S, H-S & Z
08C07-02	INLETS 2X2-FT, 2X2.5-FT, 2X3-FT AND 2.5X3-FT
08D01-20A	CONCRETE CURB & GUTTER
08D01-20B	CONCRETE CURB, TIES AND CURB AND GUTTER APPLICATIONS
08D15-05A	EDGEDRAIN OUTLET AND OUTFALL MARKERS
08D19-02	DRIVEWAY AND SIDEWALK RAMPS TYPE Z
08D20-01	DRIVEWAYS WITH CURB & GUTTER RETURNS
08D21-01	DRIVEWAYS WITHOUT CURB & GUTTER
08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
08E10-02	INLET PROTECTION TYPE A, B, C AND D
08F01-11	APRON ENDWALLS FOR CULVERT PIPE
08F04-07	JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL
08F08-02	STEEL APRON ENDWALLS FOR CULVERT PIPE AND PIPE ARCH SLOPED CROSS DRAINS
09A01-13A	AT-GRADE SIDE ROAD INTERSECTION, TYPES "B1", "B2", "C" AND D AND TEE INTERSECTION BYPASS LANE
13A05-05A	SHOULDER RUMBLE STRIP, MILLING
13A10-02A	2-LANE RURAL SHOULDER RUMBLE STRIP, MILLING
13A10-02C	2-LANE RURAL SHOULDER RUMBLE STRIP, MILLING
13A10-02D	2-LANE RURAL SHOULDER RUMBLE STRIP, MILLING
13C18-07A	CONCRETE PAVEMENT JOINTING
15C02-07A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-07B	BARRICADES AND SIGNS FOR VARIOUS CLOSURES
15C02-07C	DETOUR SIGNING FOR MAINLINE CLOSURES
15C03-05	BARRICADES AND SIGNS FOR SIDEROAD CLOSURES
15C07-14A	PAVEMENT MARKING SYMBOLS
15C07-14B	PAVEMENT MARKING WORDS
15C07-14C	PAVEMENT MARKING ARROWS
15C08-19A	LONGITUDINAL MARKING (MAINLINE)
15C08-19B	PAVEMENT MARKING (TURN LANES)
15C11-07B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS
15C12-06	TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION
15C18-04	MEDIAN ISLAND MARKING
15C27-03B	PAVEMENT MARKING (ISLANDS)
15C29-06A	BICYCLE LANE MARKING
15C35-03A	PAVEMENT MARKING (INTERSECTIONS)
15D16-04	TRAFFIC CONTROL, EXIT RAMP CLOSURE
15D38-02A	TEMPORARY TRAFFIC CONTROL SIGN MOUNTING
15D38-02B	ATTACHMENT OF SIGNS TO POSTS
15D39-02	TRAFFIC CONTROL, DROP-OFF SIGNING



**NOTE:
GRATE IS REVERSIBLE.**

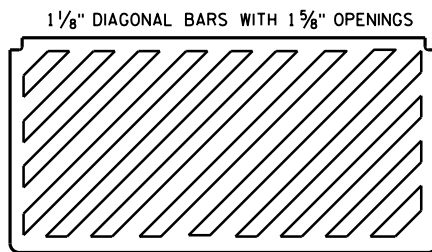


NOTE: CURB BOX HEIGHT ADJUSTABLE 6" TO 9"

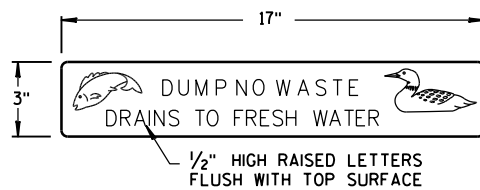


TYPE "H"

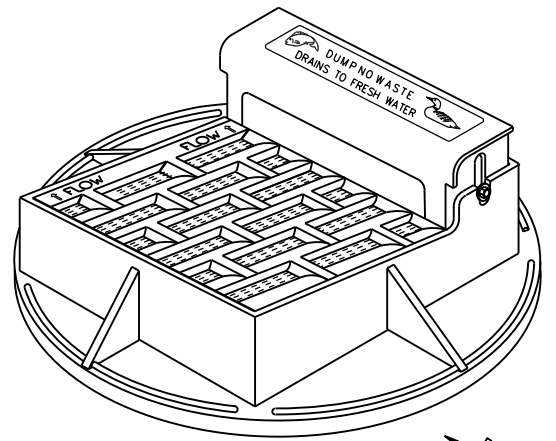
NOTE: EITHER CASTING IS ACCEPTABLE



**SPECIAL GRATE FOR
TYPE "H" COVER**
(MEASURES 35 1/4" X 17 3/4" X 2")
(NOTED AS TYPE H-S ON DRAINAGE TABLE)

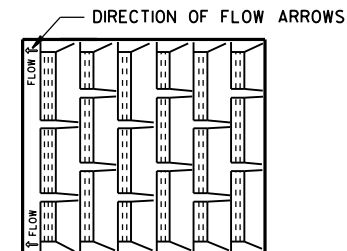


LOGO DETAIL

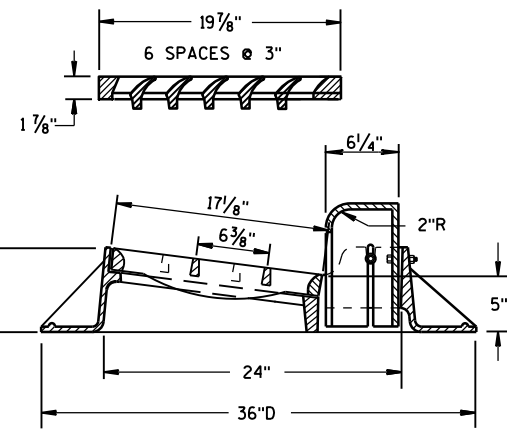
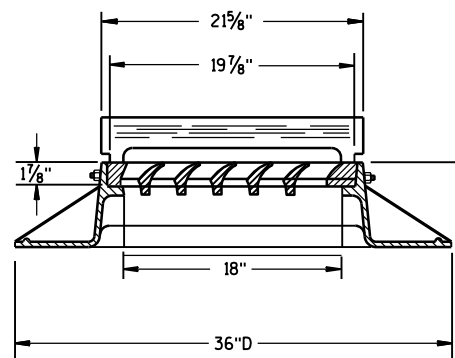


NOTE: CURB BOX ADJUSTABLE 4" TO 9"

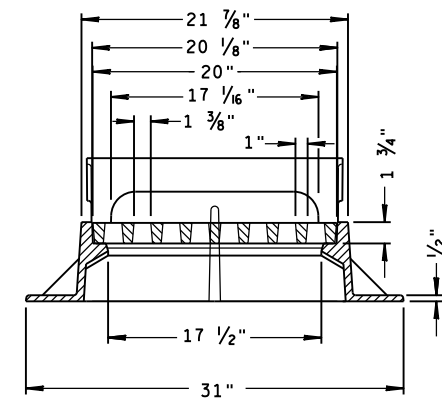
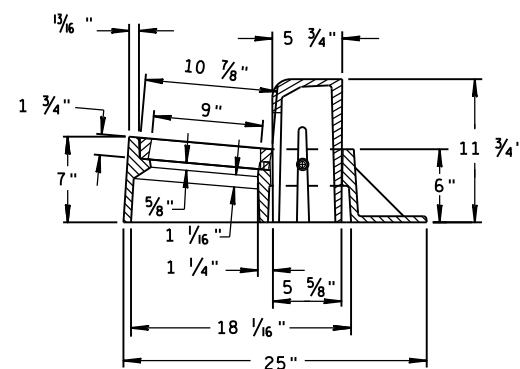
**NOTE:
GRATE IS REVERSIBLE.**



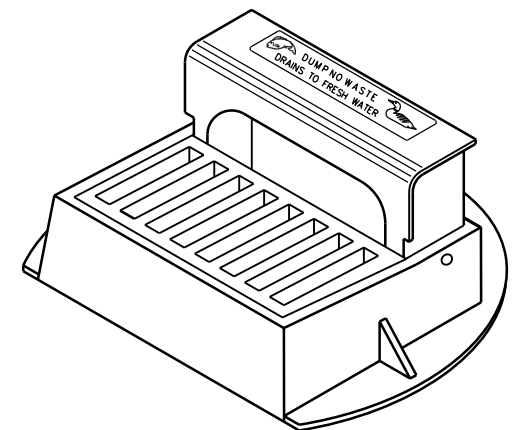
**SPECIAL GRATE FOR
TYPE "A" COVER**
(MEASURES 19 3/4" X 17" X 1 1/8")
(NOTED AS TYPE A-S ON DRAINAGE TABLE)



TYPE "A"



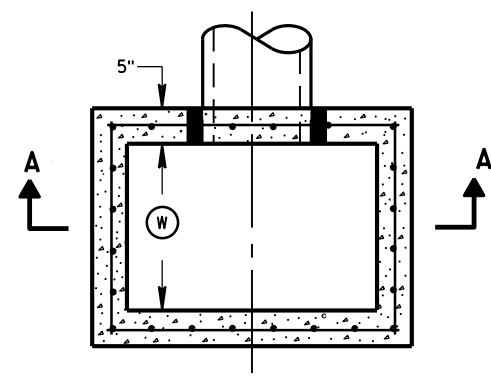
TYPE "Z"



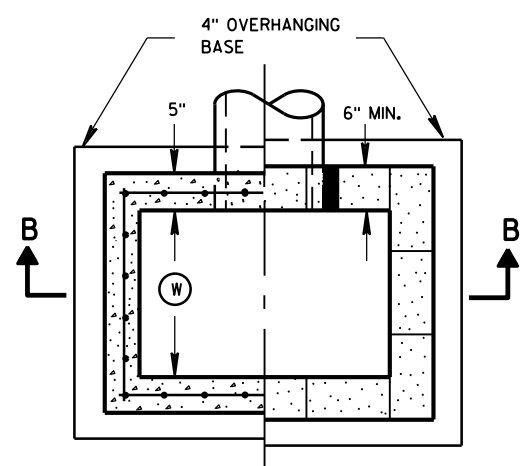
**INLET COVERS
TYPE A, H, A-S, H-S & Z**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

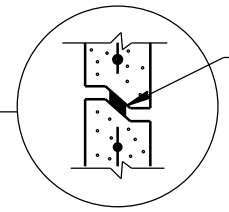
APPROVED
11-27-13
DATE
/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER
FHWA



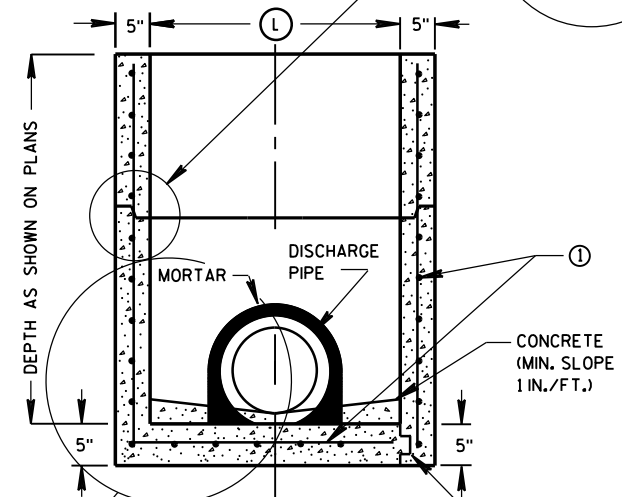
PLAN VIEW



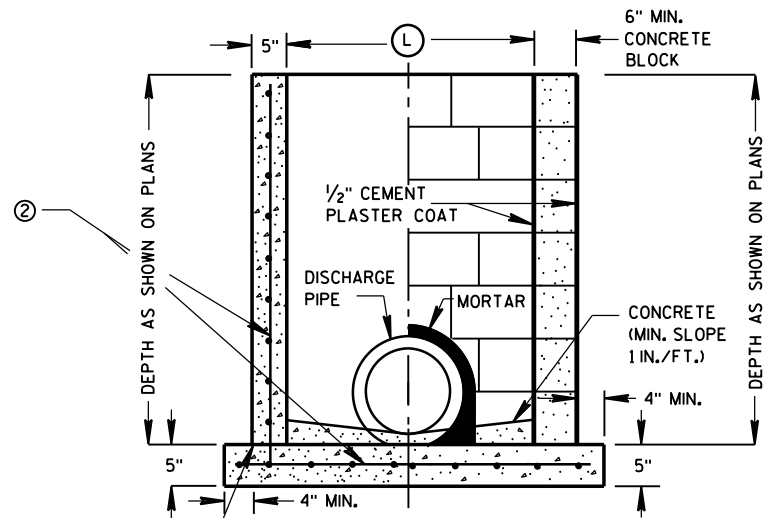
PLAN VIEW



RISER JOINTS TO BE SEALED WITH A BUTYL RUBBER SEAL PER SEALANT MANUFACTURERS RECOMMENDATIONS CONFORMING TO ASTM C 990 (TYP)



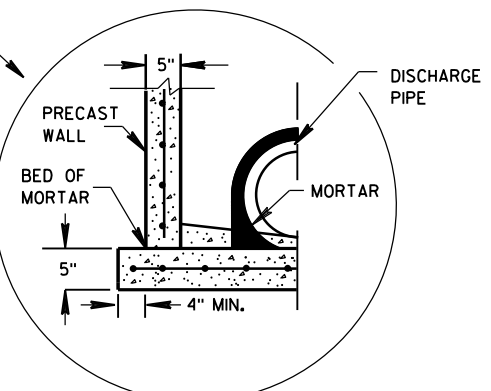
SECTION A-A



SECTION B-B

PRECAST REINFORCED CONCRETE WITH MONOLITHIC BASE
 PRECAST REINFORCED CONCRETE WITH INTEGRAL BASE
 KEYWAY

CONSTRUCTION JOINT
 CAST-IN-PLACE REINFORCED CONCRETE
 CONCRETE BLOCK WITH CAST-IN-PLACE OR PRECAST REINFORCED CONCRETE BASE ①



SEPARATE PRECAST REINFORCED CONCRETE BASE OPTION

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.

UNLESS OTHERWISE AUTHORIZED IN WRITING BY THE ENGINEER, THE CONTRACTOR SHALL NOT ORDER AND DELIVER PRECAST INLET UNITS REQUIRED FOR THE PROJECT UNTIL A LIST OF SIZES IS FURNISHED BY THE ENGINEER.

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

ALL PRECAST INLET UNITS SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF ASTM C 913.

ALL DRAINAGE STRUCTURES ARE DESIGNATED ON THE PLANS AS "MANHOLES 3X3-L", "CATCH BASINS 4-B", "INLETS 2X3-H", ETC. THE FIRST NUMBERS DESIGNATES THE SIZE OF THE STRUCTURE, AND THE FOLLOWING LETTER DESIGNATES THE TYPE OF COVER TO BE USED TO COMPRISE THE COMPLETE UNIT.

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

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

PRECAST REINFORCED RISERS SHALL HAVE A TONGUE AND GROOVE JOINT WITH TONGUE UP OR DOWN.

4" OVERHANGING BASES ARE REQUIRED FOR CAST-IN-PLACE REINFORCED CONCRETE AND CONCRETE BLOCK INSTALLATIONS. 4" OVERHANG IS REQUIRED WHEN SEPARATE PRECAST BASE IS PROVIDED. OVERHANG IS NOT REQUIRED ON PRECAST STRUCTURES WITH AN INTEGRAL OR MONOLITHIC BASE.

MAXIMUM INSIDE PIPE DIAMETER DETERMINED BY 3 INCH CLEARANCE ON EACH SIDE OF THE OUTSIDE WALL OF THE PIPE. SEE DETAIL "A". ASSUMES PIPE ENTERS PERPENDICULAR TO THE STRUCTURE.

① FOR PRECAST INLETS PROVIDE REINFORCING STEEL IN ACCORDANCE TO ASTM C 913.

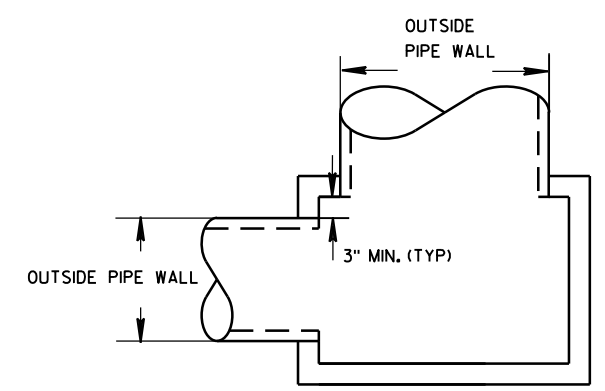
② CONTRACTOR TO PROVIDE DRAWING(S) STAMPED BY A PROFESSIONAL ENGINEER FOR STEEL REINFORCING DESIGN FOR CAST-IN-PLACE STRUCTURES.

INLET COVER MATRIX

INLET SIZE	INLET COVER TYPE		ALL A'S	ALL B'S	BW	F	ALL H'S	S	T	V	WM
	WIDTH (W) (FT)	LENGTH (L) (FT)									
2X2-FT	2	2	X	X				X		X	
2X2.5-FT	2	2.5			X			X	X	X	X
2X3-FT	2	3					X				
2.5X3-FT	2.5	3				X					

PIPE MATRIX

INLET SIZE	MAXIMUM INSIDE PIPE DIAMETER	
	WIDTH (IN)	LENGTH (IN)
2X2-FT	12	12
2X2.5-FT	12	18
2X3-FT	12	24
2.5X3-FT	18	24



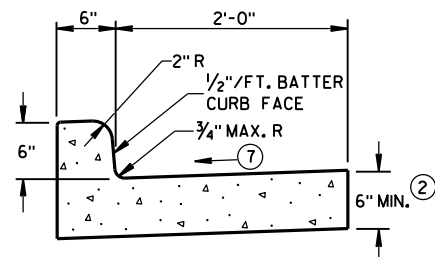
DETAIL "A"

INLETS 2X2-FT, 2X2.5-FT, 2X3-FT AND 2.5X3-FT

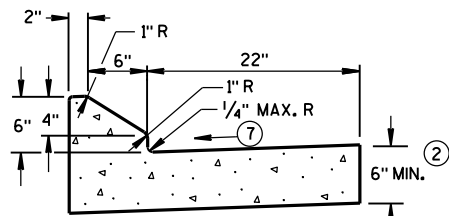
INLETS 2X2-FT, 2X2.5-FT, 2X3-FT AND 2.5X3-FT

STATE OF WISCONSIN
 DEPARTMENT OF TRANSPORTATION

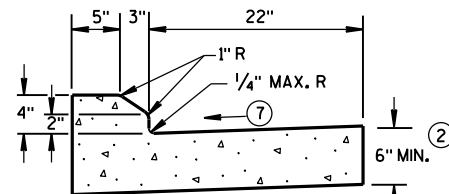
APPROVED
 Sept., 2016 /S/ Rodney Taylor
 DATE ROADWAY STANDARDS DEVELOPMENT
 FHWA UNIT SUPERVISOR



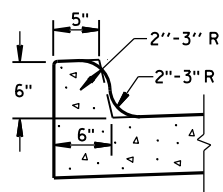
TYPES A^① & D



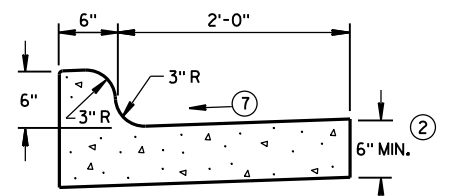
6" SLOPED CURB TYPES G^① & J



4" SLOPED CURB TYPES G^① & J

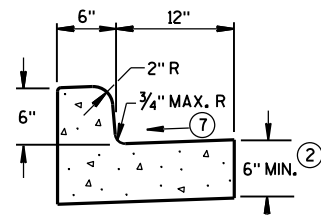


TYPES K^① & L
(OPTIONAL CURB SHAPE)



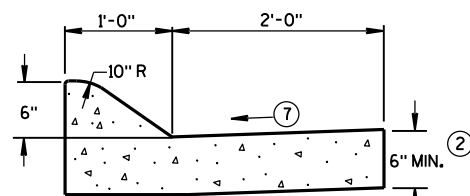
TYPES K^① & L

CONCRETE CURB & GUTTER 30"

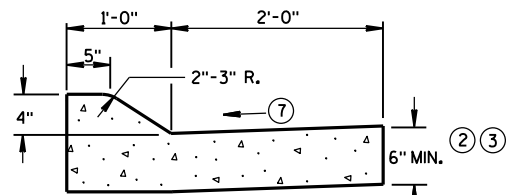


TYPES A^① & D

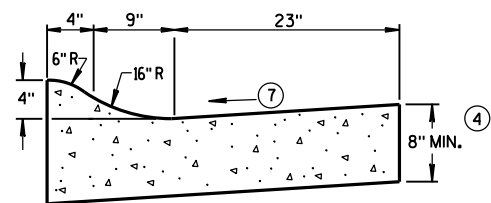
CONCRETE CURB & GUTTER 18"



6" SLOPED CURB TYPES A^① & D

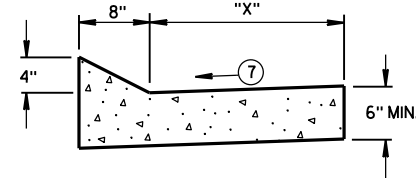


4" SLOPED CURB TYPES A^① & D



4" SLOPED CURB TYPES R^① & T^⑤

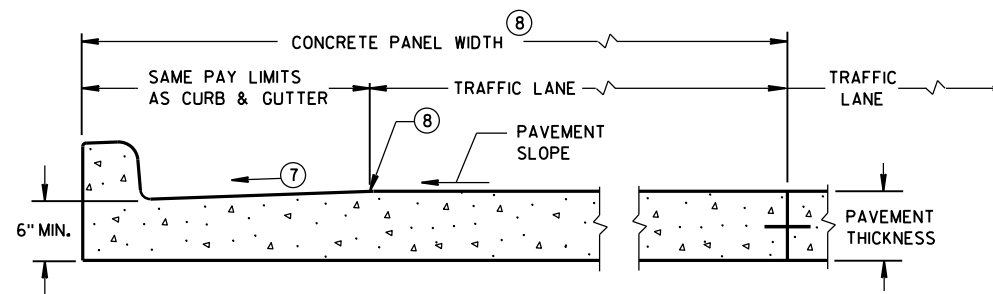
CONCRETE CURB & GUTTER 36"



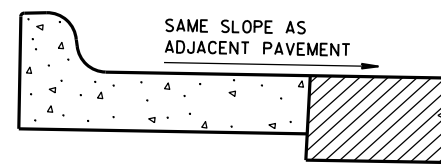
TYPES TBT & TBTT^①

CONCRETE CURB & GUTTER

TBT & TBTT	"X"
30"	22"
36"	28"



PARTIAL SECTION OF PAVEMENT
WITH INTEGRAL CURB & GUTTER



REVERSE SLOPE GUTTER^⑥
(TYPICAL FOR ALL CURB & GUTTER TYPES)

GENERAL NOTES

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

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.

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, R AND TBTT.
- 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 USE 8" MINIMUM GUTTER THICKNESS WHEN USED WITH AN ADJACENT CONCRETE TRUCK APRON PLACED BEHIND BACK OF CURB.
- ④ 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.
- ⑤ THE FACE OF CURB IS 6" FROM THE BACK OF CURB.
- ⑥ WHEN REVERSE SLOPE GUTTER IS REQUIRED, THE LOCATION(S) WILL BE SHOWN ELSEWHERE IN THE PLAN.
- ⑦ USE 4% GUTTER CROSS SLOPE UNLESS OTHERWISE NOTED IN THE PLANS.
- ⑧ INCLUDE LONGITUDINAL JOINT AND TIE BARS ALONG LANE EDGE WHEN CONCRETE PANEL WIDTH EXCEEDS THE MAXIMUM WIDTH PER TABLE BELOW. LONGITUDINAL JOINT(S) ARE NOT ALLOWED WITHIN TRAFFIC LANES AND BIKE LANES. LONGITUDINAL JOINT MAY BE SAWED.

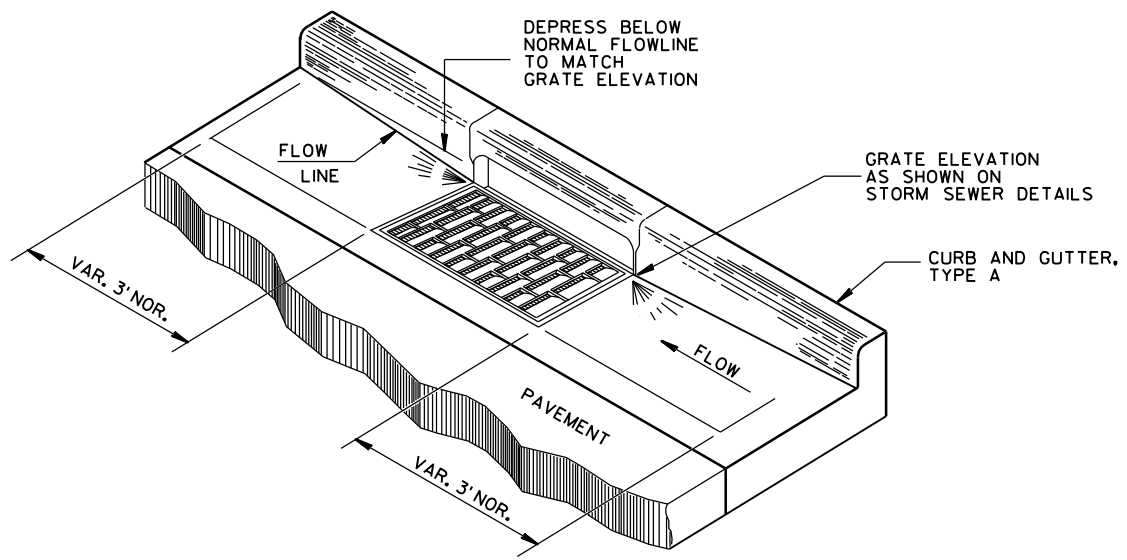
PAVEMENT THICKNESS
AND MAXIMUM CONCRETE
PANEL WIDTH TABLE

PAVEMENT THICKNESS	MAXIMUM PANEL WIDTH
LESS THAN 10"	12'
10" & ABOVE	15'

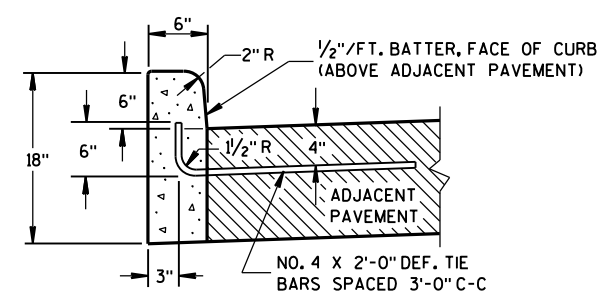
* BIKE LANE IS NOT SHOWN.

CONCRETE CURB & GUTTER

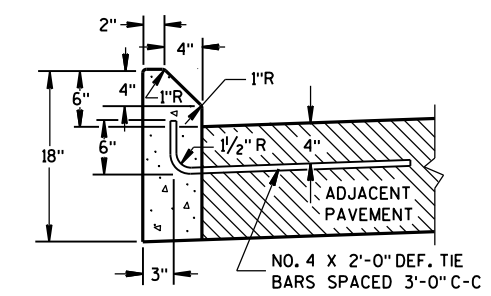
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



DETAIL OF CURB AND GUTTER AT INLETS
(TYPE H INLET COVER SHOWN)



TYPES A^① & D

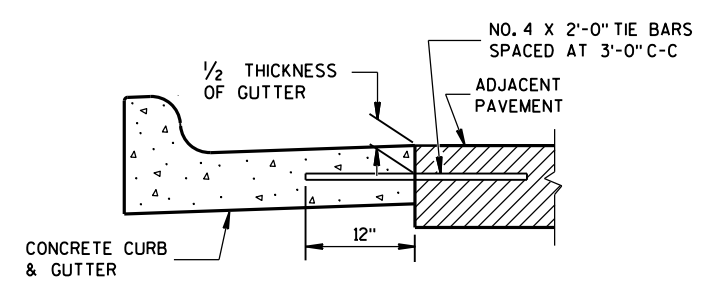


TYPES G^① & J

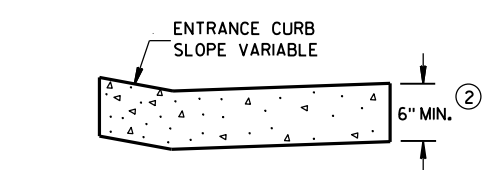
GENERAL NOTES

- 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.
- 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, R AND TBTT.
 - 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 REFER TO SDD 8D18 AND SDD 8D19 FOR ADDITIONAL DRIVEWAY ENTRANCE CURB DETAILS.

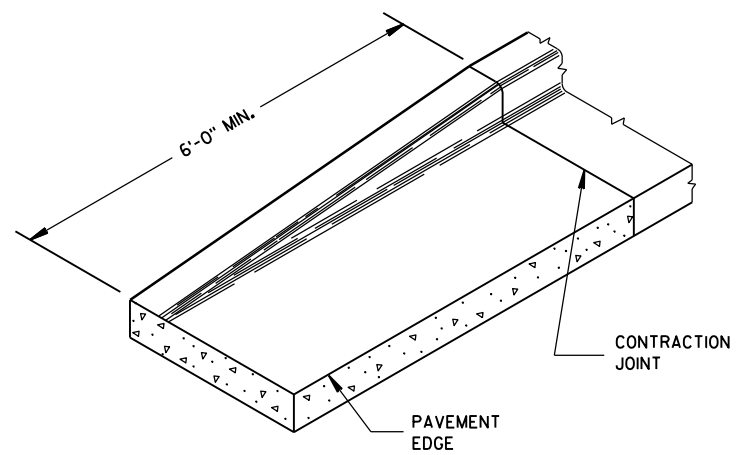
CONCRETE CURB



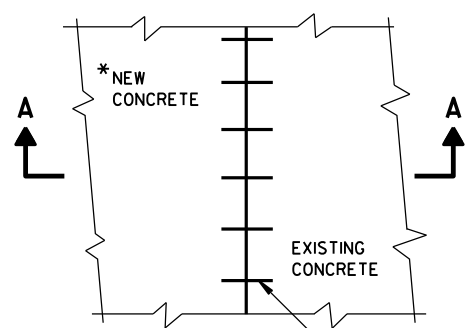
TYPICAL TIE BAR LOCATION^①



DRIVEWAY ENTRANCE CURB^⑨
(WHEN DIRECTED BY THE ENGINEER)



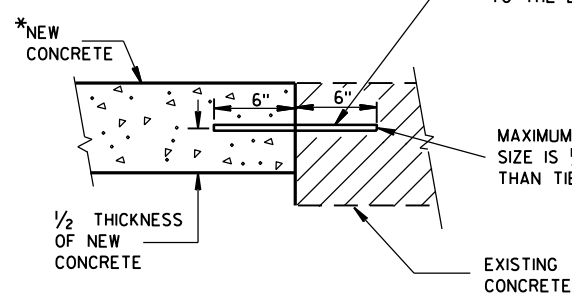
END SECTION CURB & GUTTER



PLAN VIEW

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

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



SECTION A-A
TIE BARS DRILLED INTO EXISTING PAVEMENT

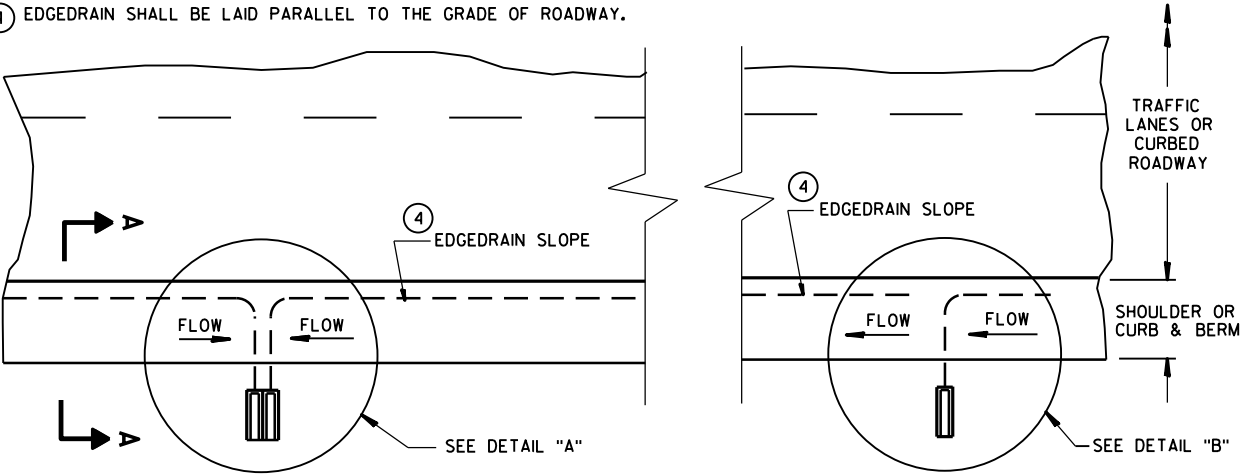
MAXIMUM DRILL HOLE SIZE IS 1/8" GREATER THAN TIE BAR DIAMETER

CONCRETE CURB, TIES AND CURB AND GUTTER APPLICATIONS	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED June, 2017 DATE	/s/ Rodney Taylor ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR
FHWA	

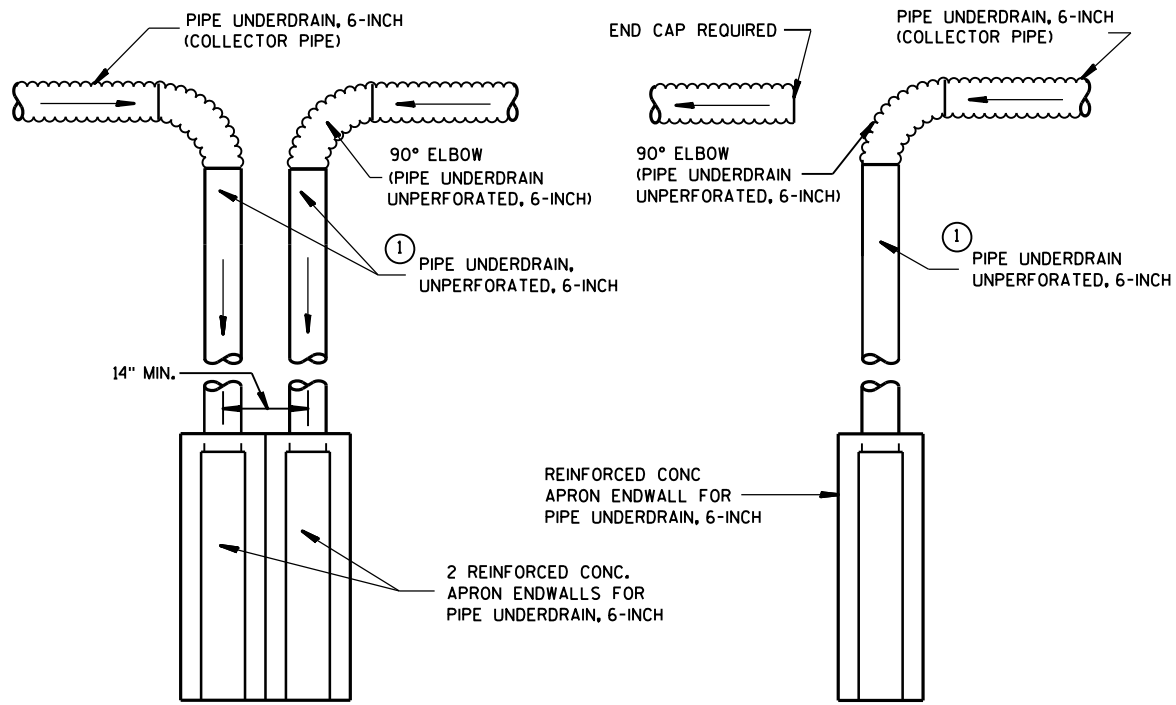
GENERAL NOTES

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.

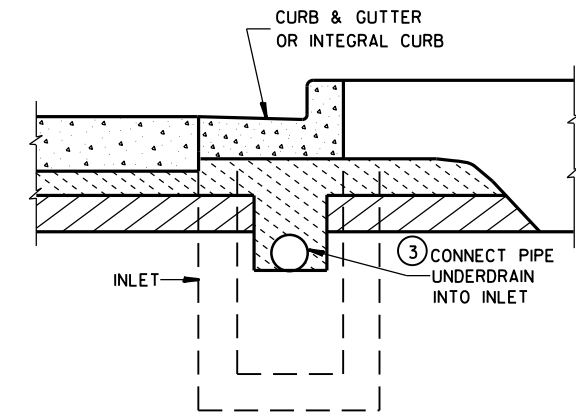
- ① UNPERFORATED PIPE UNDERDRAIN AND FITTINGS FURNISHED FOR OUTFALL PIPE SHALL MEET THE REQUIREMENTS OF ONE OF THE FOLLOWING SPECIFICATIONS:
 POLYVINYL CHLORIDE (PVC) PLASTIC DRAIN, WASTE, AND VENT PIPE AND FITTINGS, ASTM D 2665, SCHEDULE 40 PVC.
 TYPE PSM POLYVINYL CHLORIDE (PVC) SEWER PIPE AND FITTINGS, ASTM D 3034, SDR 23.5 PVC SEWER PIPE.
- ② MAXIMUM SPACING OF EDGEDRAIN OUTLETS SHALL BE 250 FEET UNLESS OTHERWISE SPECIFIED IN THE CONTRACT OR DIRECTED BY THE ENGINEER.
- ③ EDGEDRAIN SHALL BE CONNECTED TO INLETS REGARDLESS OF FLOW DIRECTION FOR DRAINAGE AND MAINTENANCE ACCESS.
- ④ EDGEDRAIN SHALL BE LAID PARALLEL TO THE GRADE OF ROADWAY.



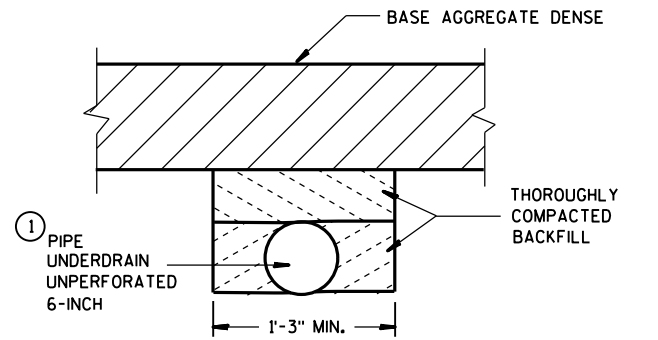
**PLAN VIEW
ROADWAY WITH SHOULDERS OR CURBS
(EDGEDRAIN OUTLETS TO ROADSIDE) ②**



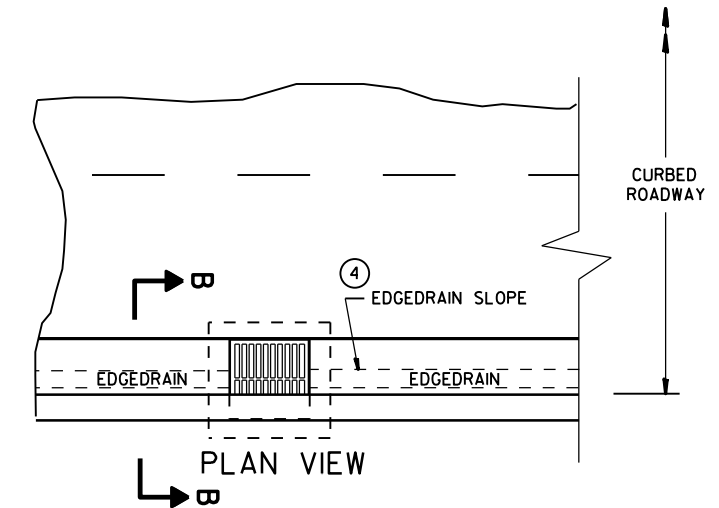
TYPICAL DRAIN OUT DETAILS



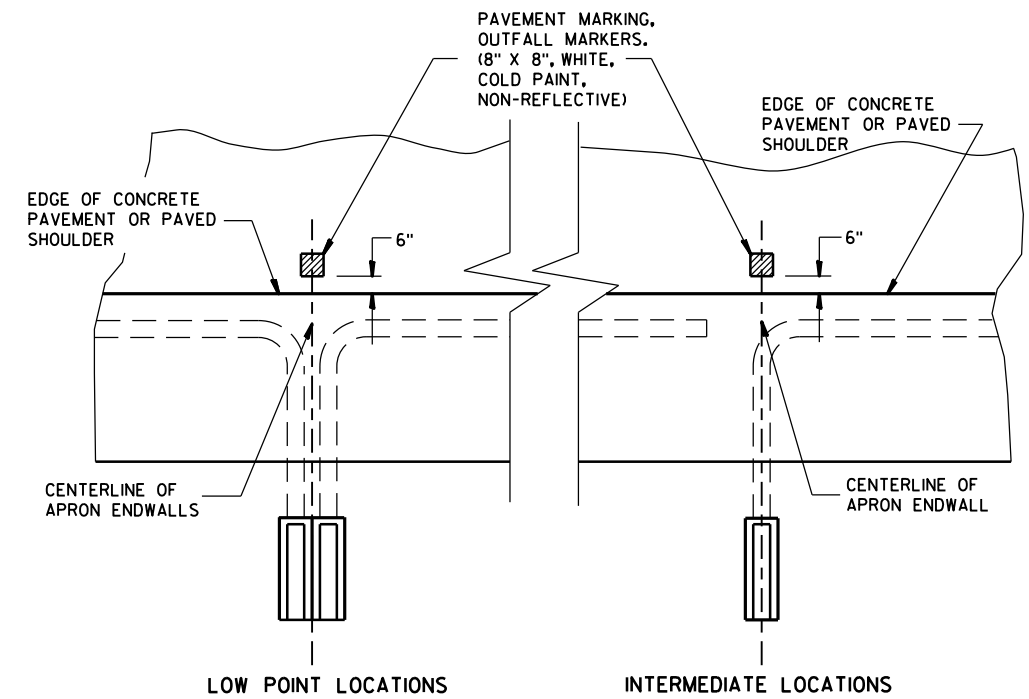
**SECTION B-B
URBAN CROSS SECTION**



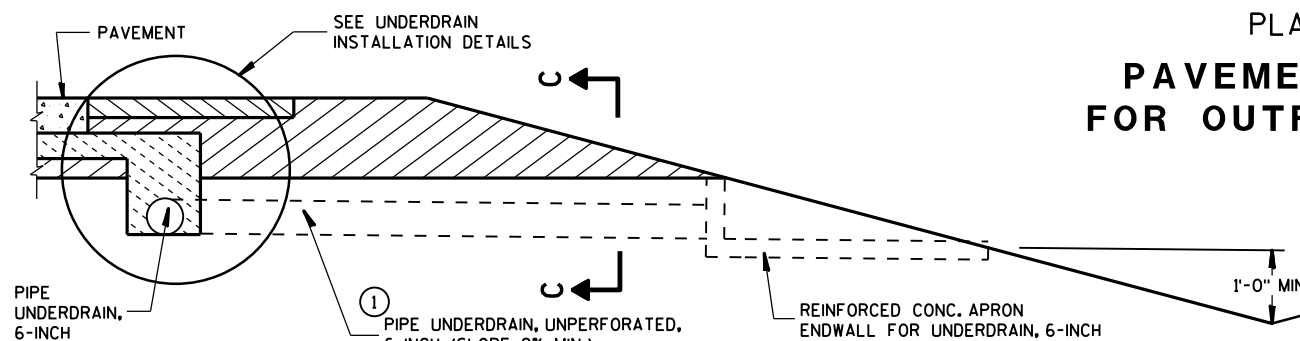
**SECTION C-C
(TRENCH FOR OUTFALL PIPE)**



**ROADWAY WITH CURBS
(EDGEDRAIN CONNECTS INTO INLET STRUCTURE)**



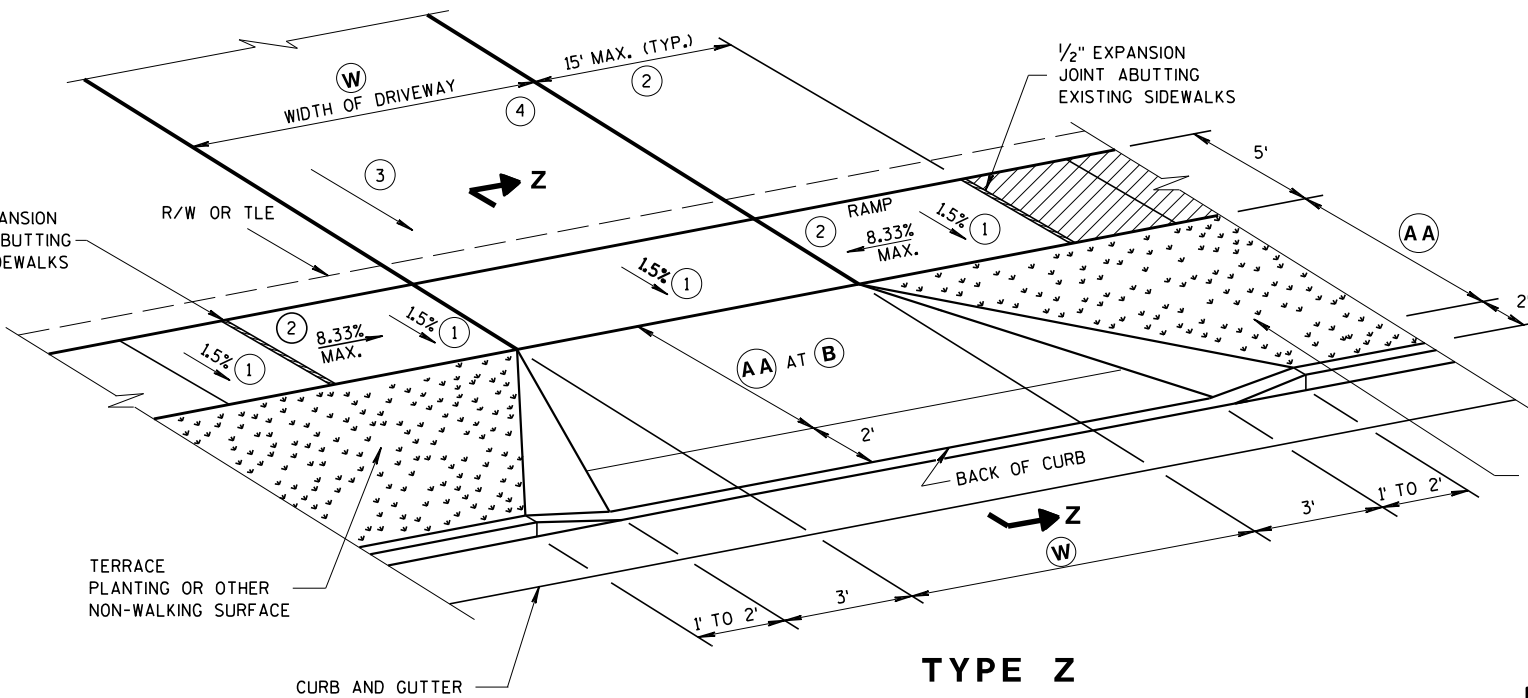
**PLAN VIEW
PAVEMENT MARKING
FOR OUTFALL MARKERS**



**SECTION A-A
RURAL CROSS SECTION**

**EDGEDRAIN OUTLET
AND OUTFALL MARKERS**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



**TYPE Z
SIDEWALK WITH WIDER TERRACE
TERRACE VARIES 7 TO 12 FEET**

TABLE Z

(A) FEET	(B) %	(B) %
4.5'	6.25% GUTTER	4% GUTTER
5.5'	11.5%	9% TO 11.5%
6.5'	9% TO 11.5%	8% TO 11.5%
7.5'	8% TO 11.5%	6% TO 11.5%
8.5'	7% TO 11.5%	6% TO 11.5%
9.5'	6% TO 11.5%	5% TO 11.5%
	5% TO 11.5%	4% TO 11.5%

GENERAL NOTES

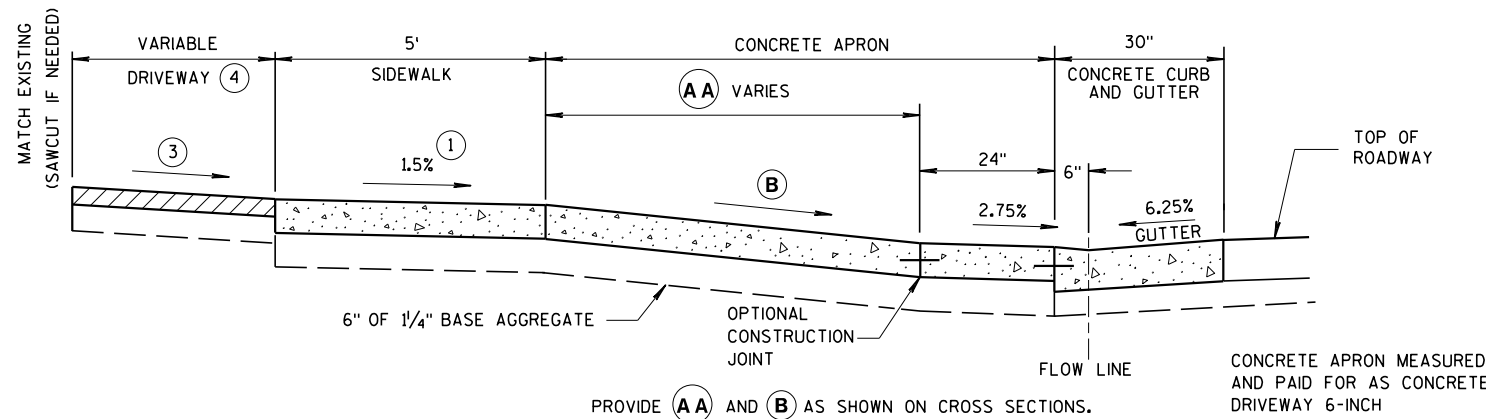
PROVIDE CONSTRUCTION JOINTS ALONG THE CENTER OF THE CONCRETE FOR DRIVEWAYS UNDER 20 FEET IN WIDTH AND AT THE THIRD POINTS OVER 20 FEET IN WIDTH.

(W) IS SHOWN ON PLAN AND PROFILE SHEETS.

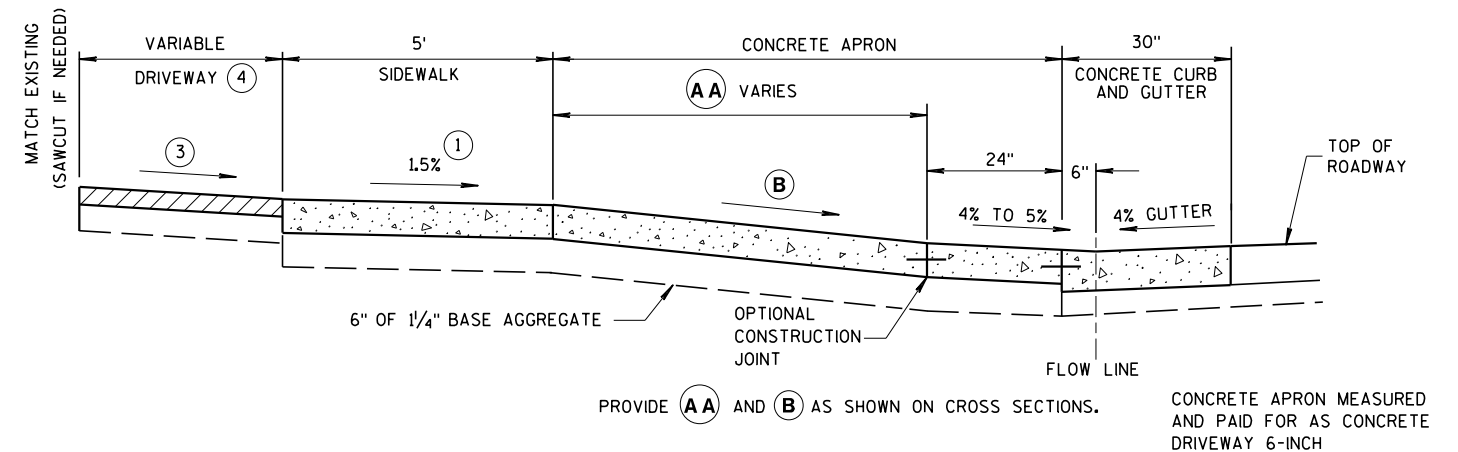
OFFSETS, ELEVATIONS, AND PERCENT GRADE ARE SHOWN ON THE CROSS SECTIONS.

- ① CONSTRUCTION TOLERANCE OF 0.5% ± FOR SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2%.
- ② THE SIDEWALK RAMP MAXIMUM RUNNING SLOPE SHALL NOT REQUIRE THE RAMP LENGTH TO EXCEED 15 FEET TO AVOID CHASING THE SLOPE INDEFINITELY WHEN CONNECTING TO STEEP GRADES. WHEN APPLYING THE 15 FOOT MAXIMUM LENGTH, THE RUNNING SLOPE OF THE SIDEWALK SHALL BE AS FLAT AS FEASIBLE AND NOT EXCEED THE LONGITUDINAL GRADE OF THE ROADWAY.
- ③ DRIVEWAY SLOPES: DESIRABLE MAXIMUM
10.5% UP AWAY FROM SIDEWALK (SAG)
8.5% DOWN AWAY FROM SIDEWALK (CREST)
ABSOLUTE MAXIMUM 15% FOR BOTH CREST AND SAG
- ④ DRIVEWAY TYPES
 - 6-INCH CONCRETE DRIVEWAY PAVEMENT OVER 6-INCH BASE AGGREGATE
 - 2-INCH TO 3-INCH ASPHALTIC SURFACE OVER 6-INCH BASE AGGREGATE
 - 6-INCH BASE AGGREGATE (MAY BE INCREASED FOR CLAY SUBGRADES)

(W): 12' MIN. - 24' MAX. RESIDENTIAL AND NON-COMMERCIAL (PE & FE)
16' MIN. - 35' MAX. COMMERCIAL (CE)



6.25% GUTTER SLOPE



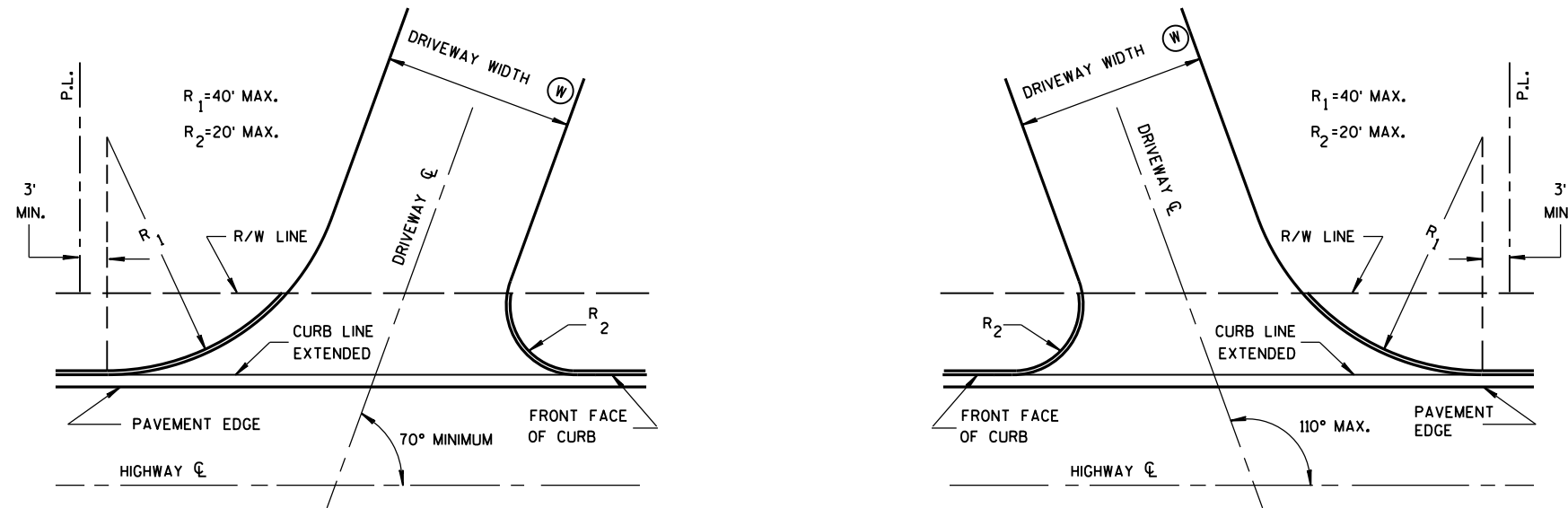
4% GUTTER SLOPE

NOTE: SIDEWALK MAY BE DEPRESSED IN DRIVEWAY AREAS FOR B VALUES NOT SHOWN IN TABLE Z.
SIDEWALK WITHIN THE LIMITS OF THE DRIVEWAY PAID FOR AS CONCRETE DRIVEWAY 6-INCH.
SEPARATE PAYMENT FOR BASE AGGREGATE WILL BE MADE.

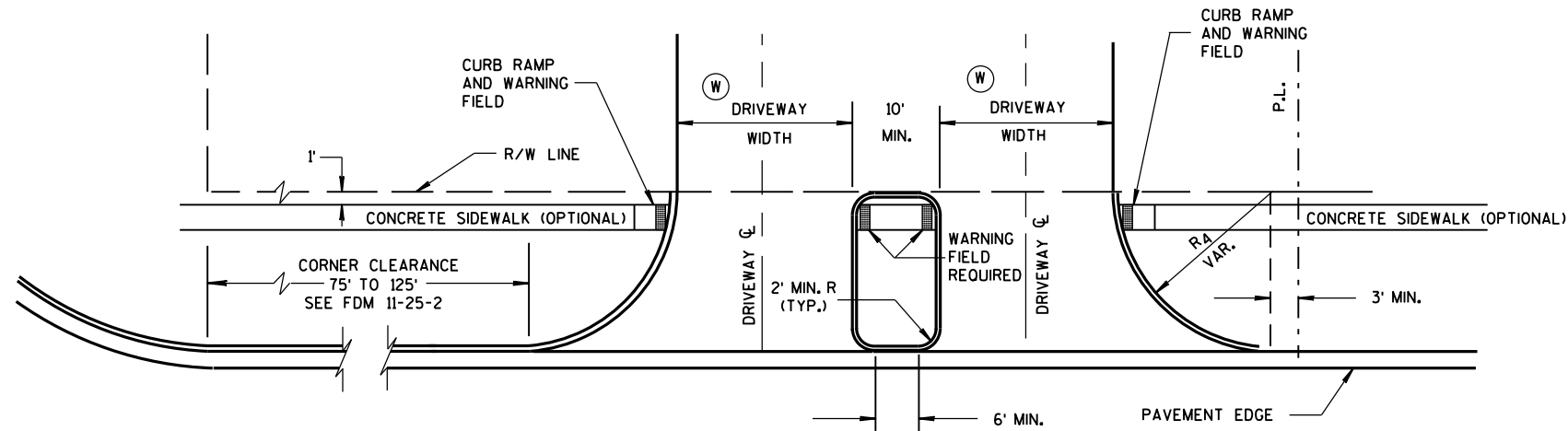
**SECTION Z-Z
DRIVEWAY DETAIL WITH CONCRETE CURB & GUTTER
(URBAN AND SUBURBAN)**

NOT TO SCALE

DRIVEWAY AND SIDEWALK RAMP TYPE Z	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED March 2018 DATE	/s/ Rodney Taylor ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR
FHWA	



**SKewed DRIVEWAY DETAILS
(COMMERCIAL AND NON-COMMERCIAL)
SIDEWALK NOT SHOWN**



**DRIVEWAY LOCATION AND SPACING DETAILS
SIDEWALK SHOWN**

NOTES

A MAXIMUM RADIUS OF 10 FEET SHALL BE USED FOR NON-COMMERCIAL PRIVATE ENTRANCES. RADII FOR COMMERCIAL DRIVEWAYS SHALL BE DETERMINED BY THE ENGINEER BASED ON TRAFFIC AND DRIVEWAY PERMIT RESTRICTIONS.

THE MINIMUM ANGLE OF INTERSECTION BETWEEN THE DRIVEWAY AND HIGHWAY CENTERLINES SHALL BE 70°.

ALL CURVILINEAR PRIVATE ENTRANCE OUTLINES SHALL BE CONTAINED WITHIN THE HIGHWAY R/W.

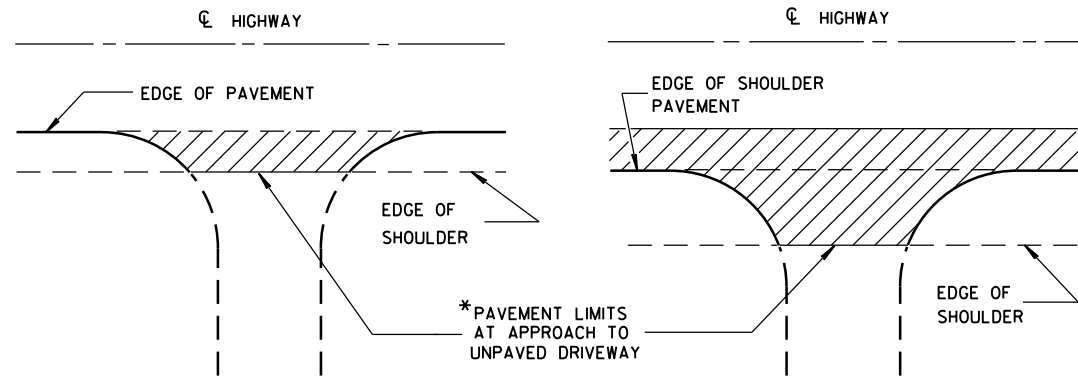
NO DRIVEWAY SHALL BE BUILT WITHIN 3 FEET OF THE PROPERTY LINE EXCEPT FOR EXISTING JOINT DRIVEWAY SHARED BY TWO OWNERS.

- Ⓜ DRIVEWAY WIDTHS:
 COMMERCIAL - 35' MAX., 16' MIN.
 RESIDENTIAL AND NON-COMMERCIAL - 24' MAX., 12' MIN.

**DRIVEWAYS WITH
CURB & GUTTER RETURNS**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
 December, 2016 /s/ Rodney Taylor
 DATE ROADWAY STANDARDS DEVELOPMENT
 FHWA UNIT SUPERVISOR

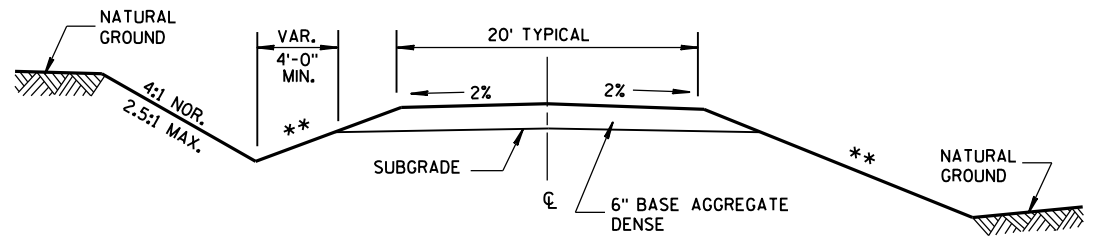


*WHERE DRIVEWAY IS PAVED, APPROACH PAVEMENT SHOULD BE EXTENDED TO MATCH DRIVEWAY PAVEMENT.

PLAN VIEW
(UNPAVED SHOULDER ON HIGHWAY)

PLAN VIEW
(PAVED SHOULDER ON HIGHWAY)

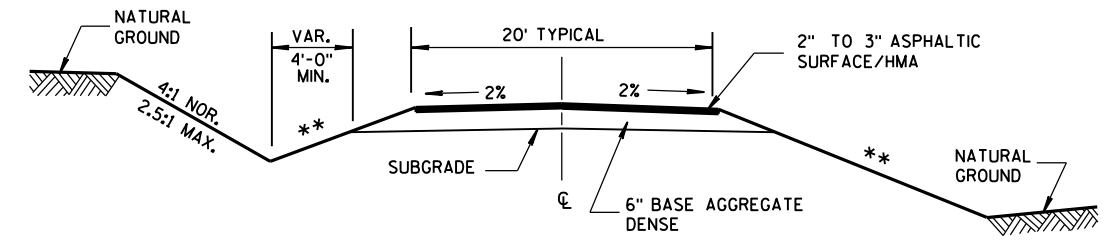
RURAL DRIVEWAY INTERSECTION DETAIL
(NO CURB & GUTTER OR SIDEWALK)



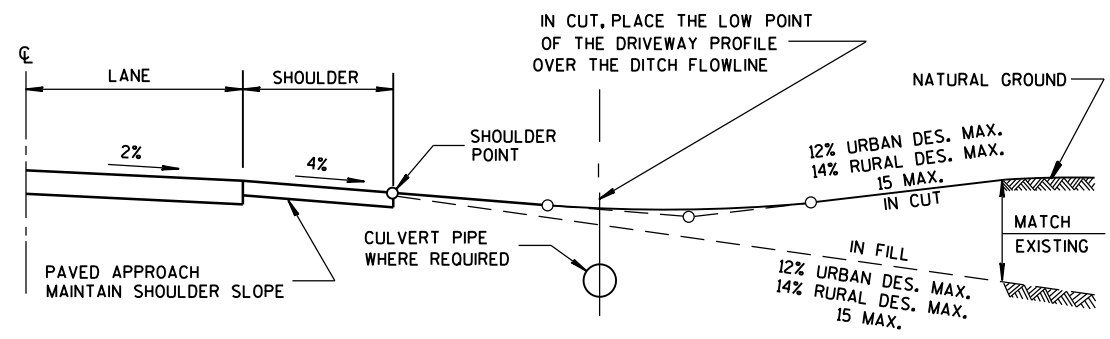
TYPICAL CROSS SECTION FOR PRIVATE DRIVE OR FIELD ENTRANCE
AGGREGATE SURFACE

** SLOPE CAN VARY WITH SPEED. SEE 11-45-2.6.2.

POSTED SPEED MPH	MAX. SLOPE
<35	4:1
≥35 TO <60	6:1
≥60	10:1



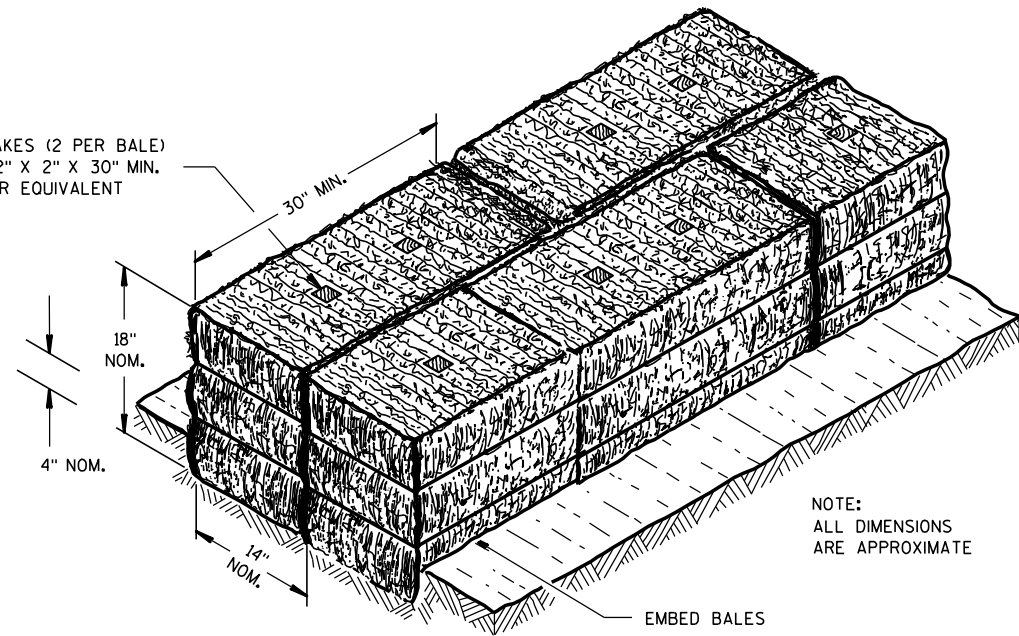
TYPICAL CROSS SECTION FOR PRIVATE DRIVE OR FIELD ENTRANCE
ASPHALTIC SURFACE



TYPICAL DRIVEWAY PROFILES

DRIVEWAYS WITHOUT CURB & GUTTER	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED December, 2016	/S/ Rodney Taylor
DATE	ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR
FHWA	

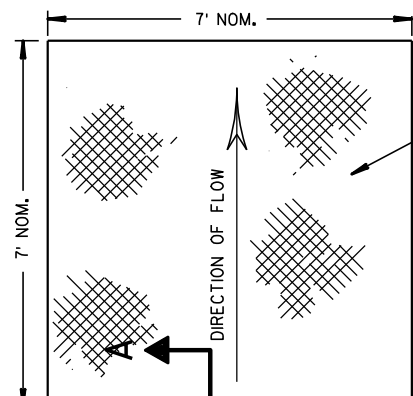
WOOD STAKES (2 PER BALE)
NOMINAL 2" X 2" X 30" MIN.
LENGTH OR EQUIVALENT



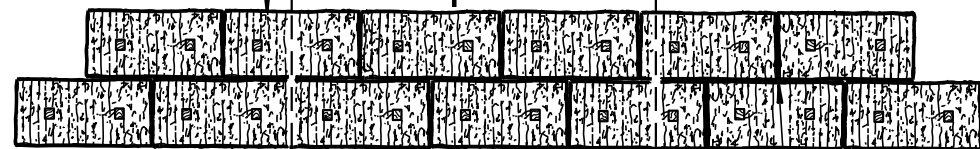
NOTE:
ALL DIMENSIONS
ARE APPROXIMATE

EMBED BALES

SECTION A-A



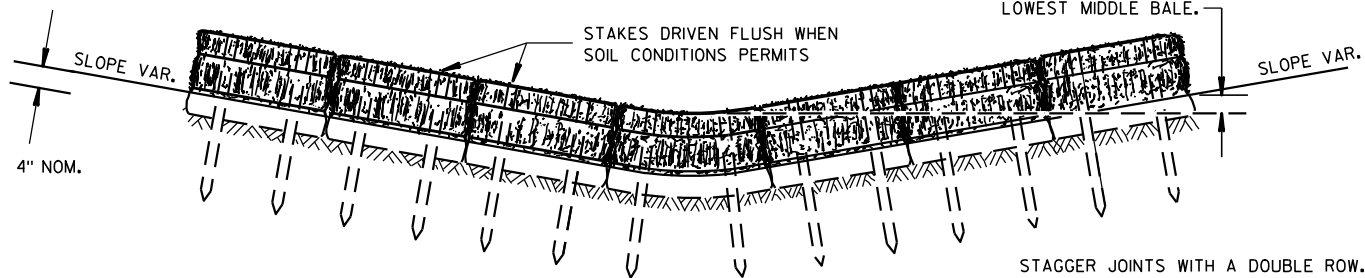
FOR SCOUR PROTECTION USE:
EROSION MAT FOR CHANNEL LINING.
LAP MAT UNDER UPSTREAM BALES
AND SECURE FABRIC WITH WOOD STAKES,
AT 3-FOOT INTERVALS.



STAGGER JOINTS BETWEEN ADJACENT
ROWS OF BALES.

PLAN VIEW

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



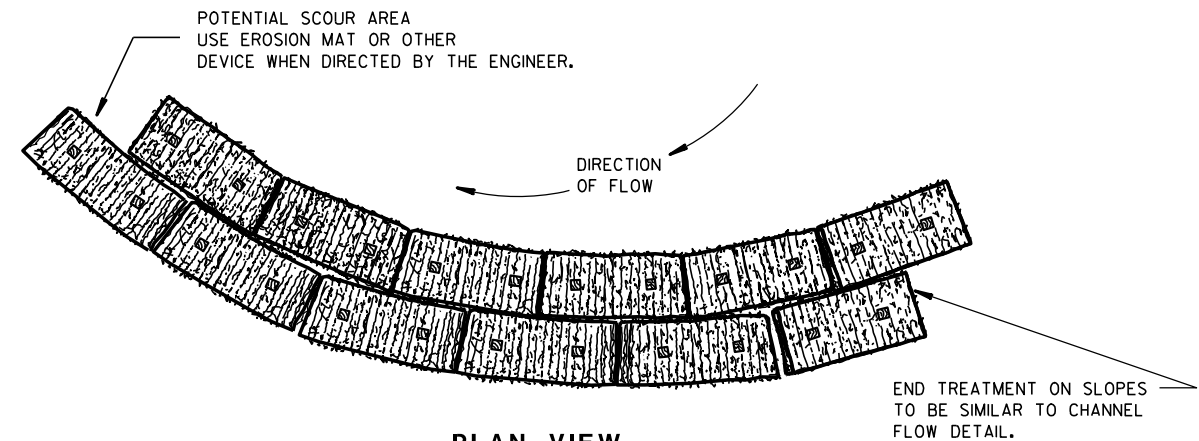
FRONT ELEVATION

TEMPORARY DITCH CHECK USING EROSION BALES ①

GENERAL NOTES

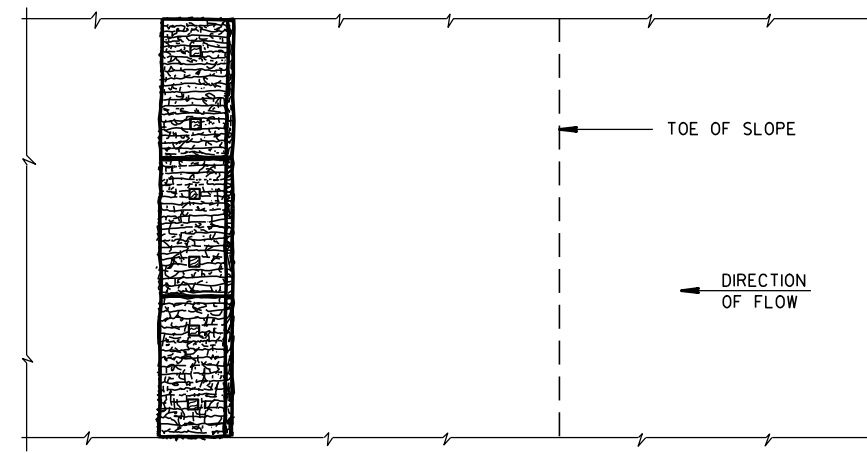
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

- 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.

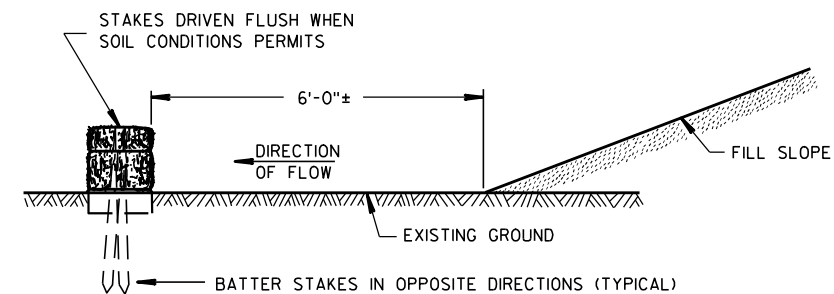


PLAN VIEW

WHEN ALTERING THE DIRECTION OF FLOW



PLAN VIEW



FRONT ELEVATION

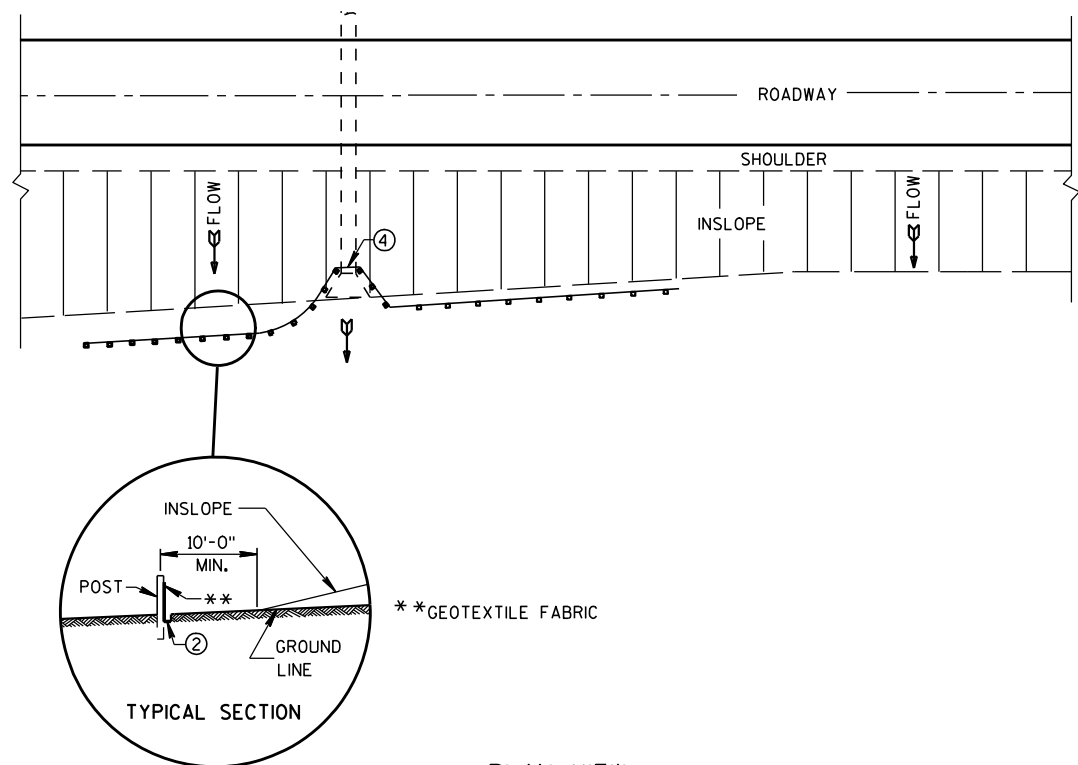
WHEN EXISTING GROUND SLOPES AWAY FROM FILL SLOPE

EROSION BALES FOR SHEET FLOW

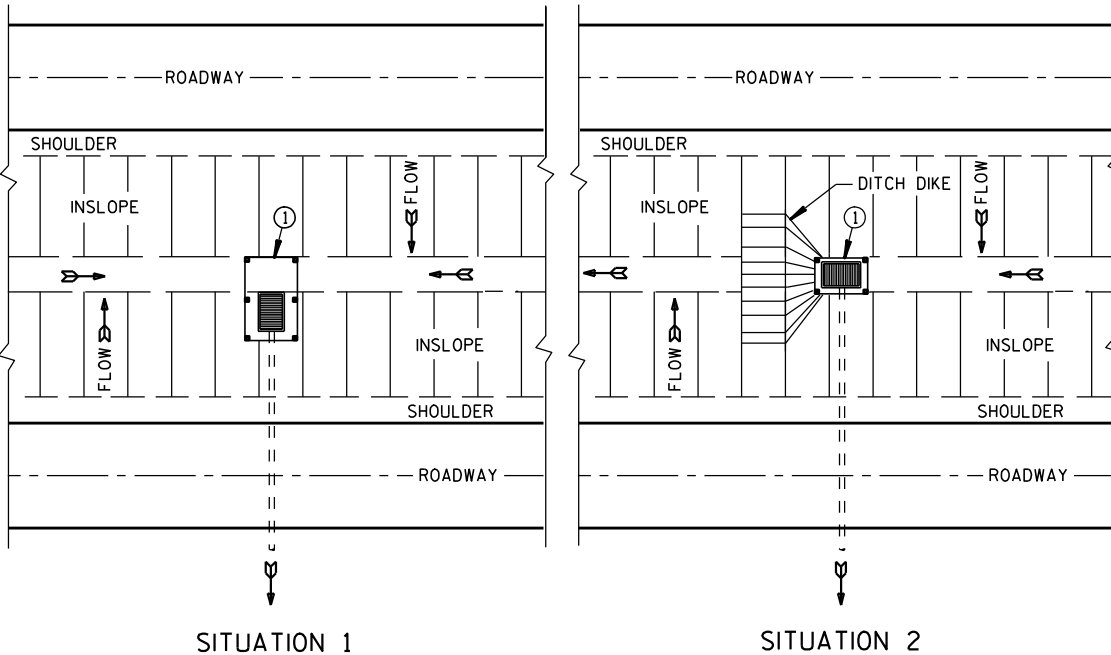
TYPICAL INSTALLATIONS OF
EROSION BALES / TEMPORARY
DITCH CHECKS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
 6/04/02 /S/ Beth Canestra
 DATE CHIEF ROADWAY DEVELOPMENT ENGINEER
 FHWA



PLAN VIEW
TYPICAL APPLICATION OF SILT FENCE

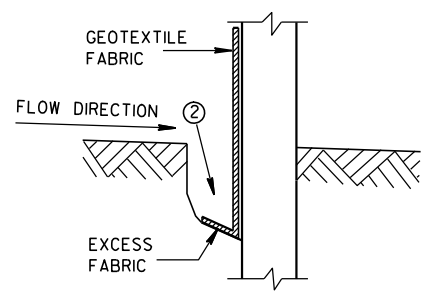


SITUATION 1 SITUATION 2
PLAN VIEW
SILT FENCE AT MEDIAN SURFACE DRAINS

GENERAL NOTES

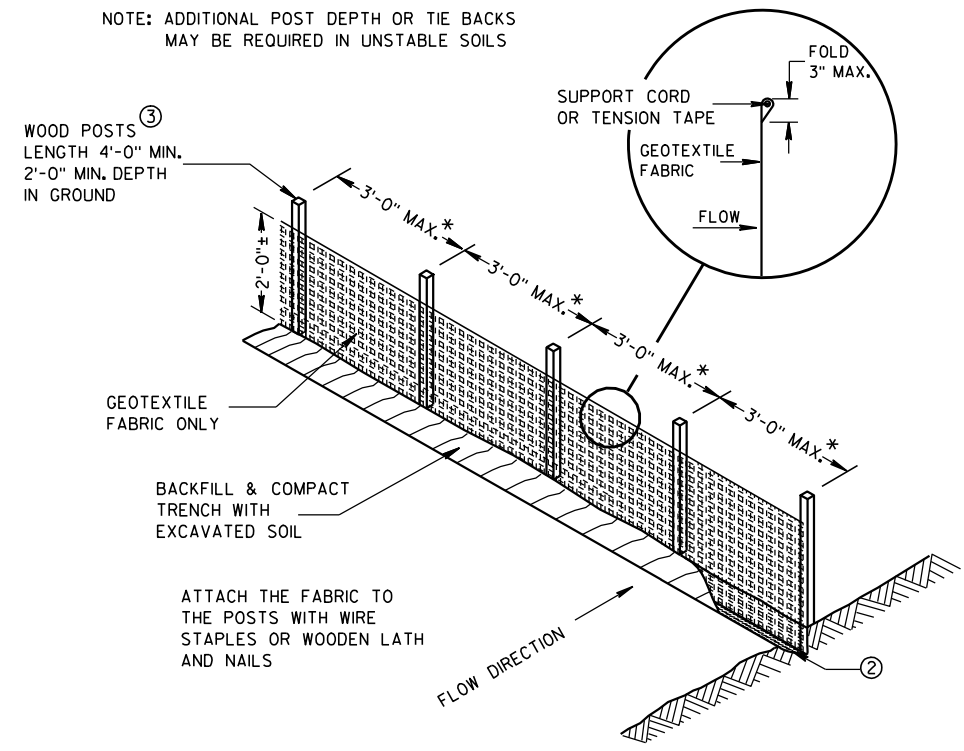
DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

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



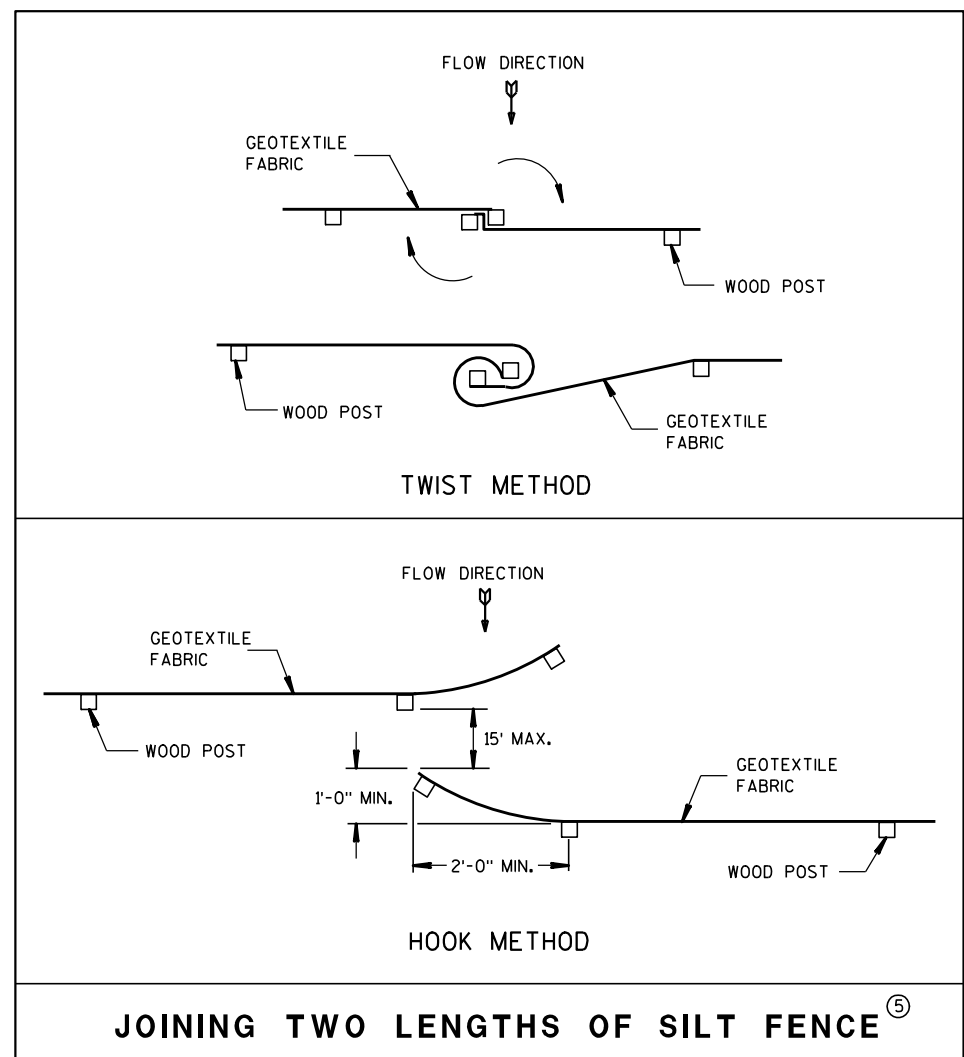
TRENCH DETAIL

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

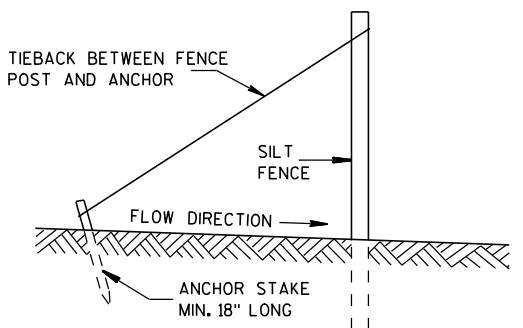


SILT FENCE

* NOTE: 8'-0" POST SPACING ALLOWED IF A WOVEN GEOTEXTILE FABRIC IS USED.

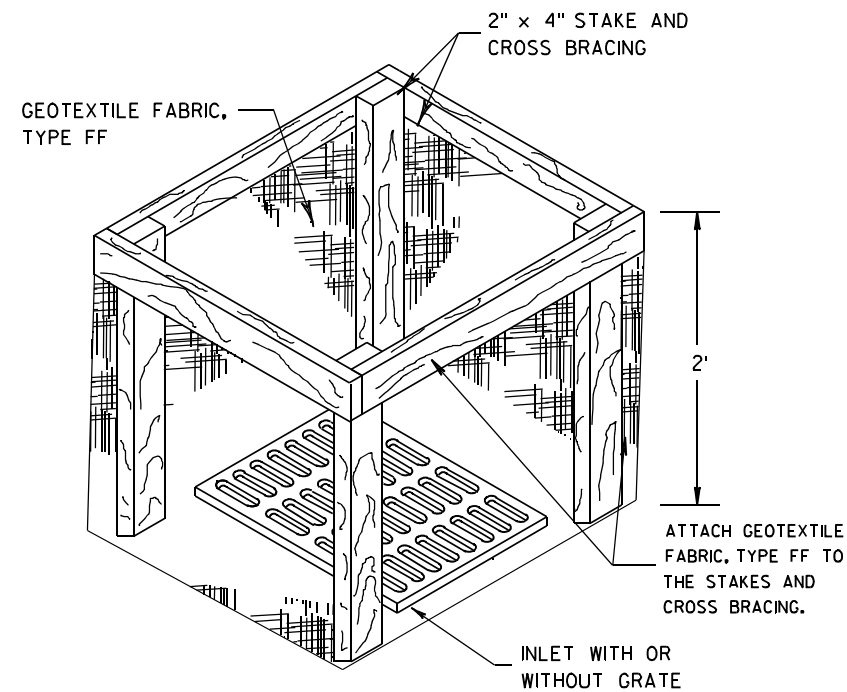
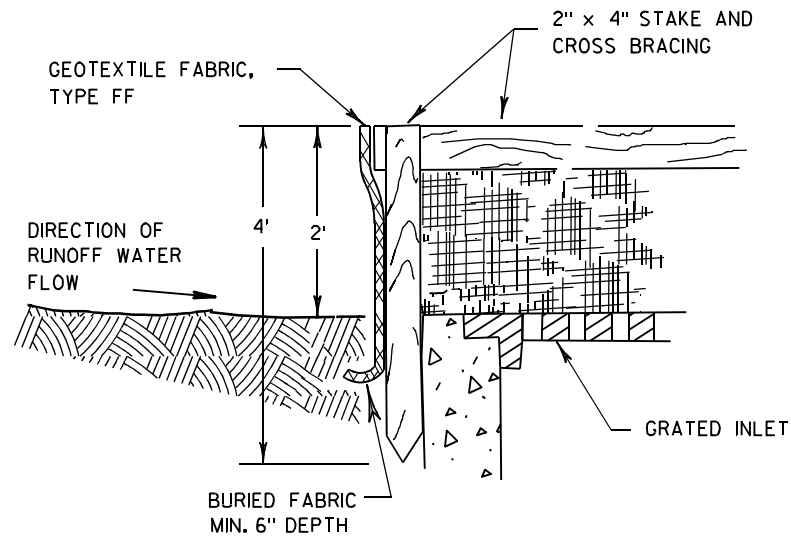


JOINING TWO LENGTHS OF SILT FENCE ⑤



SILT FENCE TIE BACK
(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 4-29-05 DATE	/S/ Beth Canestra CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA	



INLET PROTECTION, TYPE A

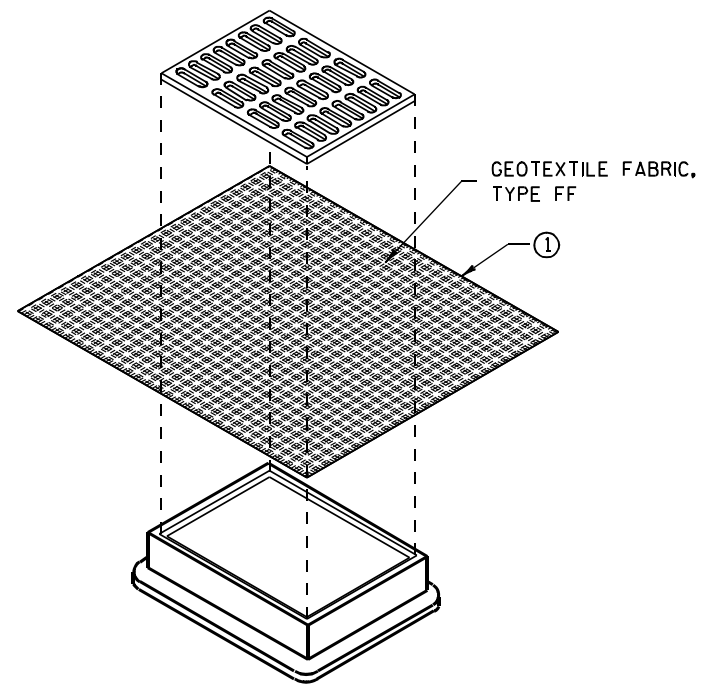
GENERAL NOTES

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

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

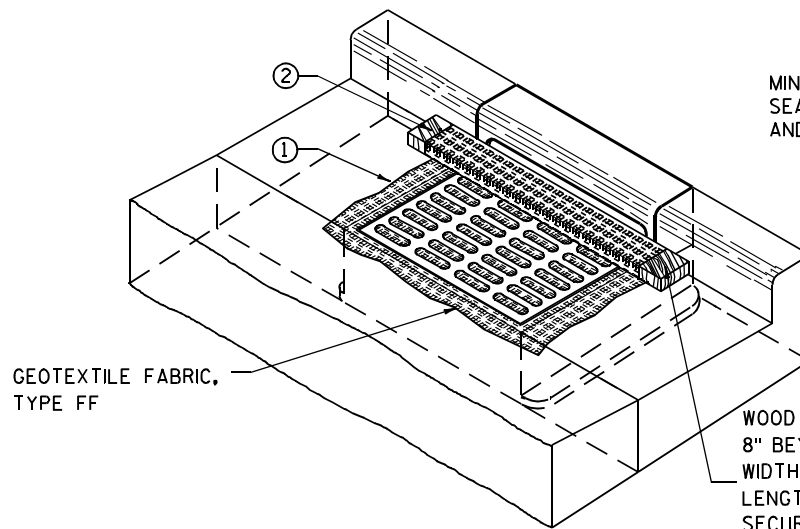
WHEN REMOVING OR MAINTAINING INLET PROTECTION, CARE SHALL BE TAKEN SO THAT THE SEDIMENT TRAPPED ON THE GEOTEXTILE FABRIC DOES NOT FALL INTO THE INLET. ANY MATERIAL FALLING INTO THE INLET SHALL BE REMOVED IMMEDIATELY.

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



**INLET PROTECTION, TYPE B
(WITHOUT CURB BOX)**

(CAN BE INSTALLED IN ANY INLET WITHOUT A CURB BOX)



INLET PROTECTION, TYPE C (WITH CURB BOX)

INSTALLATION NOTES

TYPE B & C

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

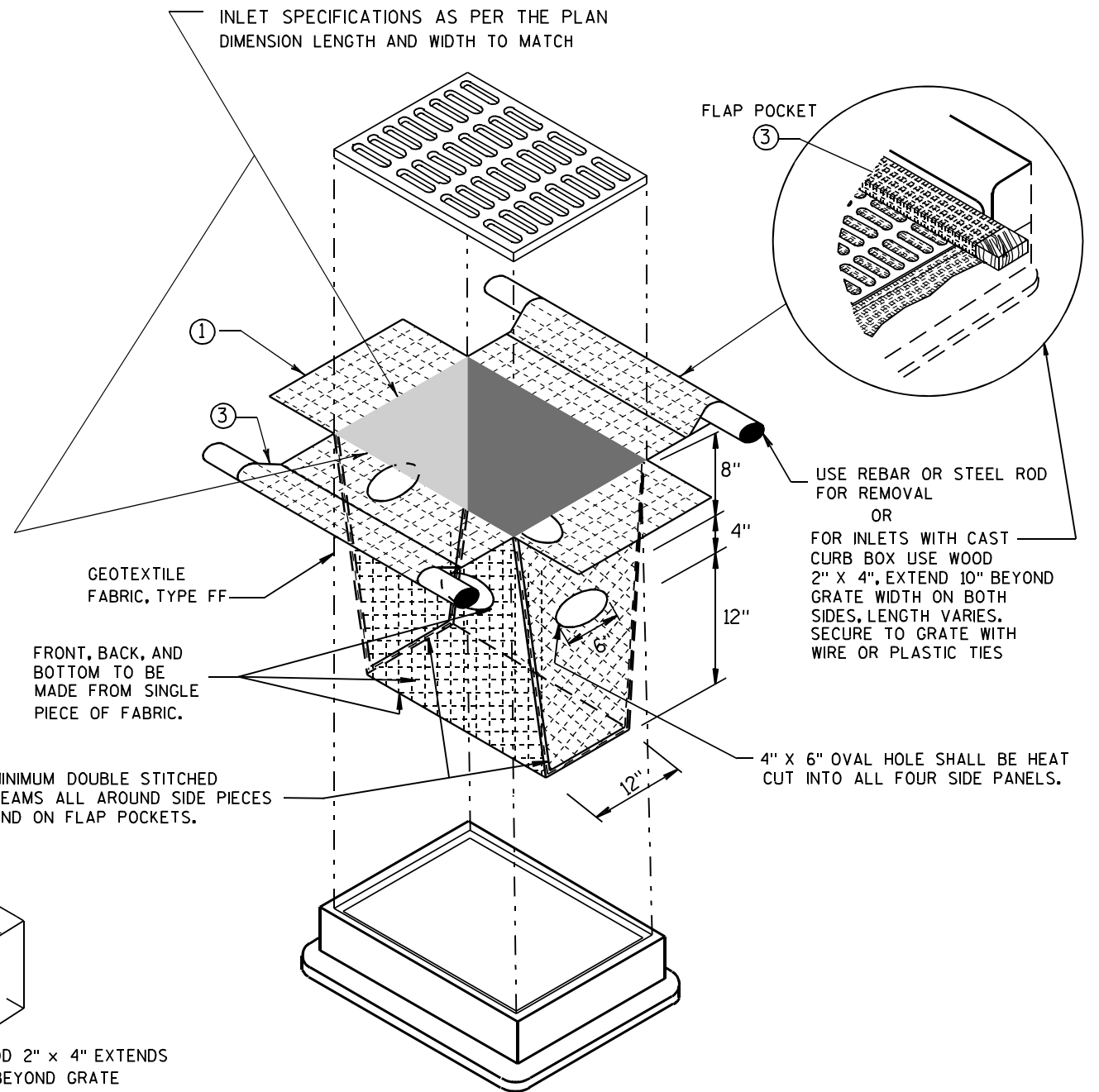
THE CONTRACTOR SHALL DEMONSTRATE A METHOD OF MAINTENANCE, USING A SEWN FLAP, HAND HOLDS OR OTHER METHOD TO PREVENT ACCUMULATED SEDIMENT FROM ENTERING THE INLET.

TYPE D

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

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

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



INLET PROTECTION, TYPE D

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

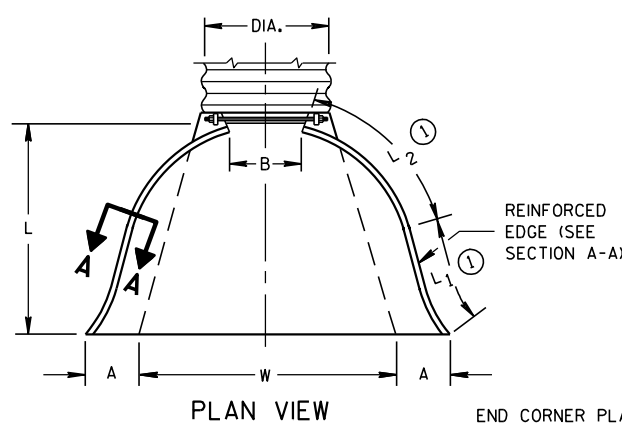
INLET PROTECTION TYPE A, B, C, AND D	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 10/16/02 DATE	/S/ Beth Connestra CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA	

METAL APRON ENDWALLS											
PIPE DIA. (IN.)	MIN. THICK. (Inches)		DIMENSIONS (Inches)							APPROX. SLOPE	BODY
	STEEL	ALUM.	A (±1")	B (MAX.)	H (±1")	L (±1 1/2")	L1	L2	W (±2")		
12	.064	.060	6	6	6	21	12	17 1/2	24	2 1/2 to 1	1 Pc.
15	.064	.060	7	8	6	26	14	21 3/4	30	2 1/2 to 1	1 Pc.
18	.064	.060	8	10	6	31	15	28 1/4	36	2 1/2 to 1	1 Pc.
21	.064	.060	9	12	6	36	18	29 5/8	42	2 1/2 to 1	1 Pc.
24	.064	.075	10	13	6	41	18	37 1/4	48	2 1/2 to 1	1 Pc.
30	.079	.075	12	16	8	51	18	52 1/4	60	2 1/2 to 1	1 Pc.
36	.079	.105	14	19	9	60	24	59 3/4	72	2 1/2 to 1	2 Pc.
42	.109	.105	16	22	11	69	24	75 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	120	2 to 1	3 Pc.
66	.109x	.105x	18	36	12	87	—	120	144	2 to 1	3 Pc.
72	.109x	.105x	18	39	12	87	—	126	162	2 to 1	3 Pc.
78	.109x	.105x	18	42	12	87	—	132	180	1 1/2 to 1	3 Pc.
84	.109x	.105x	18	45	12	87	—	138	216	1 1/2 to 1	3 Pc.
90	.109x	.105x	18	37	12	87	—	144	270	1 1/2 to 1	3 Pc.
96	.109x	.105x	18	35	12	87	—	150	324	1 1/2 to 1	3 Pc.

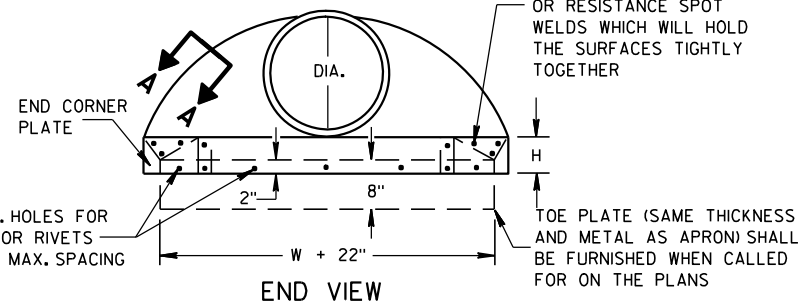
* EXCEPT CENTER PANEL SEE GENERAL NOTES

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 1/4-35	98 1/4-100	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	30-35	72-78	21-27	99	102	5 1/2	2 to 1	
72	7	30-35	78	21	99	108	6	2 to 1	
78	7 1/2	30-35	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	

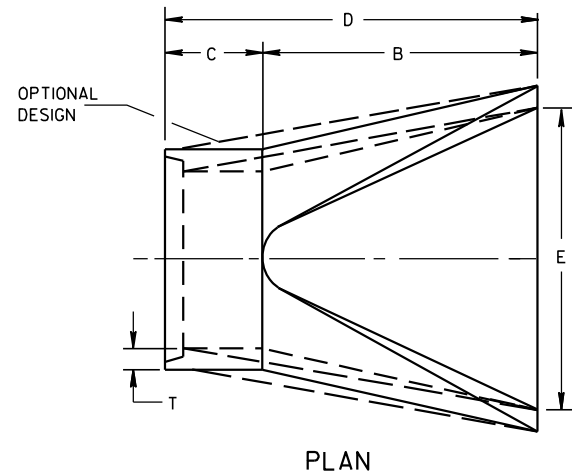
* MINIMUM
** MAXIMUM



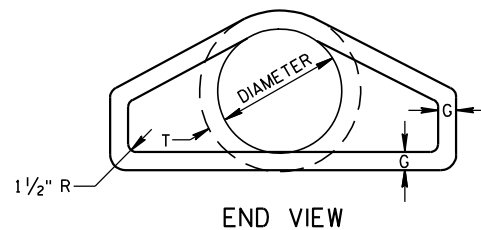
END CORNER PLATES MAY BE FASTENED TO APRON PROPER BY BOLTS, RIVETS, OR RESISTANCE SPOT WELDS WHICH WILL HOLD THE SURFACES TIGHTLY TOGETHER



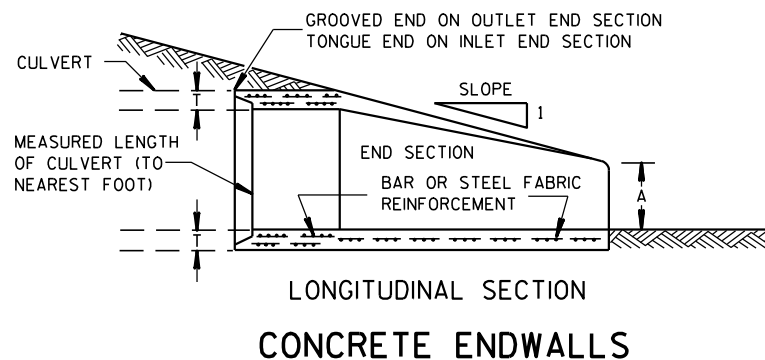
SIDE ELEVATION
METAL ENDWALLS



PLAN

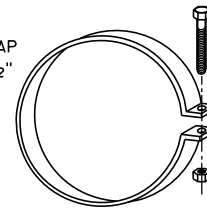


END VIEW

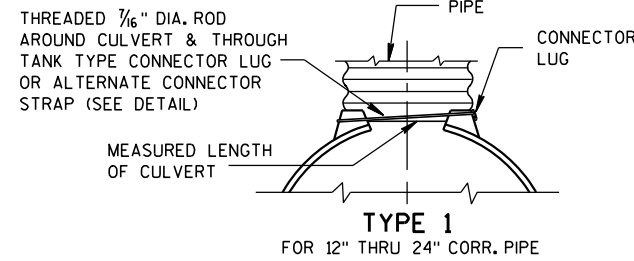


LONGITUDINAL SECTION
CONCRETE ENDWALLS

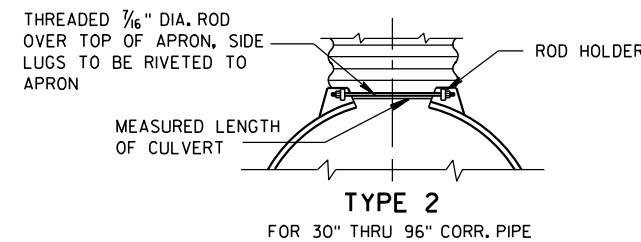
1" WIDE, 12 GA. (0.109" THICK) GALVANIZED STRAP WITH STANDARD 6" X 1/2" BAND BOLT AND NUT



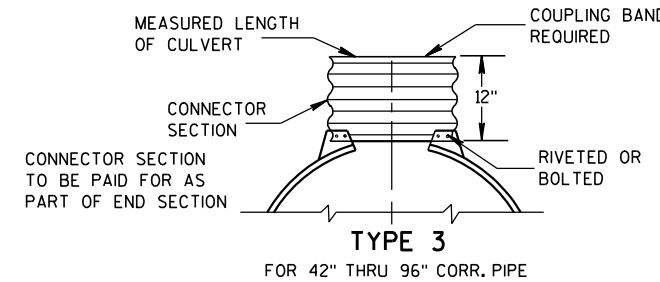
ALTERNATE FOR TYPE 1 CONNECTION
END SECTION CONNECTOR STRAP



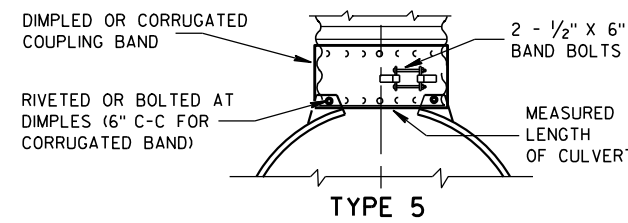
TYPE 1
FOR 12" THRU 24" CORR. PIPE



TYPE 2
FOR 30" THRU 96" CORR. PIPE



TYPE 3
FOR 42" THRU 96" CORR. PIPE



TYPE 5
ALTERNATE FOR:
ALL SIZES CORRUGATED CIRCULAR PIPE

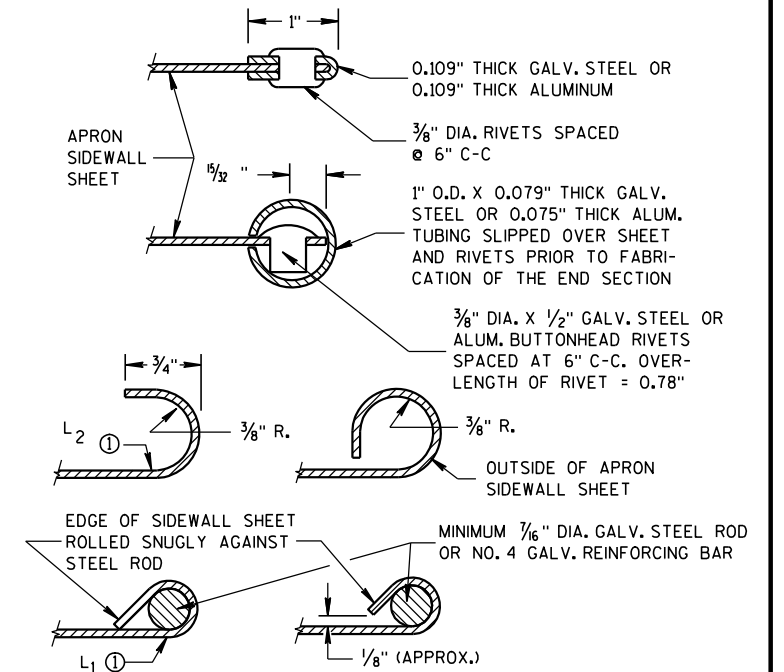
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL, AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

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

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

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

CONNECTION DETAILS



SECTION A-A

GENERAL NOTES

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

CONCRETE CULVERT ENDWALLS MAY NOT BE USED WITH GALVANIZED STEEL OR ALUMINUM CULVERT PIPE OR VICE 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.

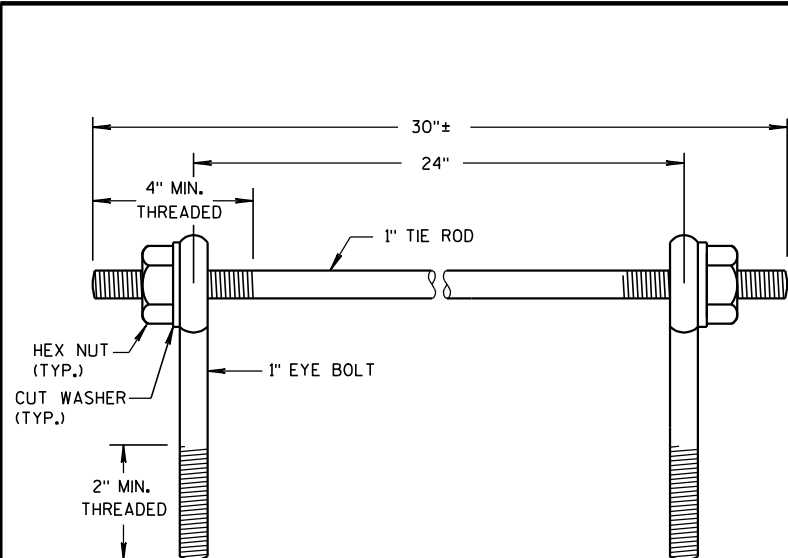
WHERE TWO OR MORE PIPES WITH APRON ENDWALLS ARE LAID ADJACENT TO EACH OTHER, THEY SHALL BE SEPARATED BY A DISTANCE SUFFICIENT TO PROVIDE A MINIMUM CLEARANCE OF 6 INCHES BETWEEN APRON ENDWALLS.

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

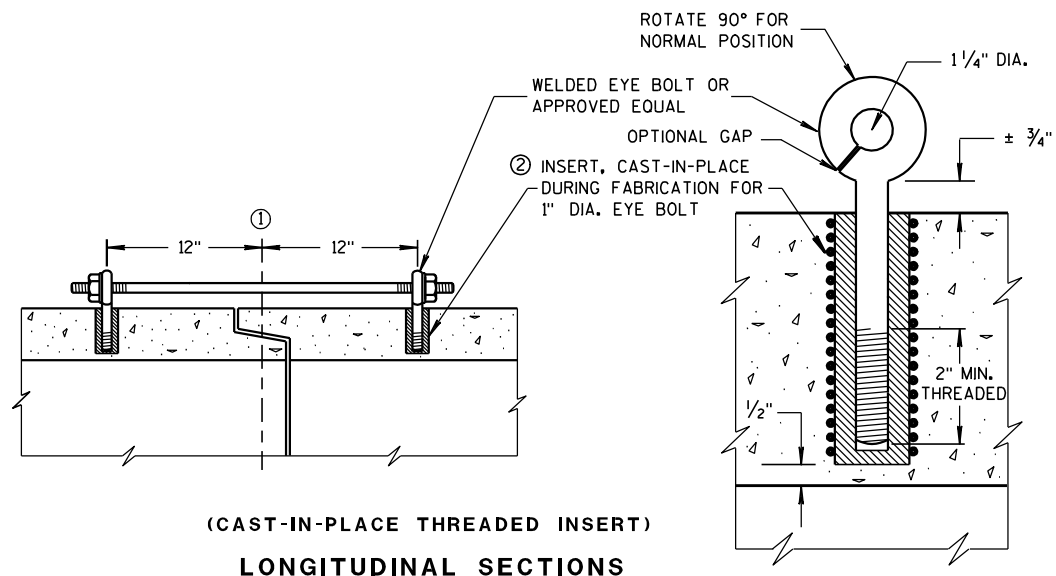
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



EYE BOLTS AND TIE ROD

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



(CAST-IN-PLACE THREADED INSERT)
LONGITUDINAL SECTIONS

GENERAL NOTES

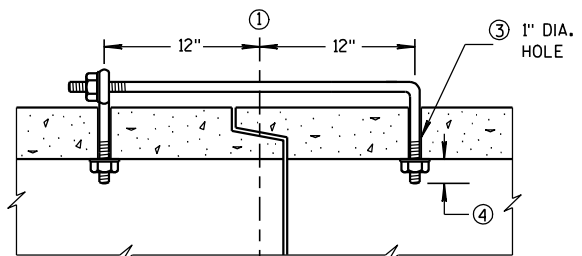
DETAILS OF CONSTRUCTION, MATERIALS, AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

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.

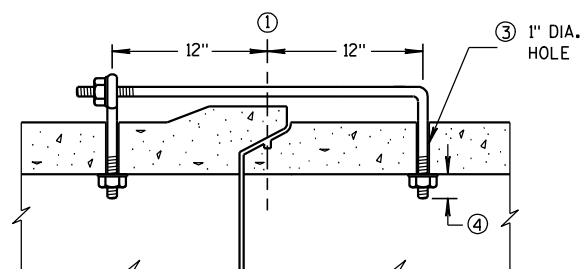
DETAILED DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR JOINT TIES SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.

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

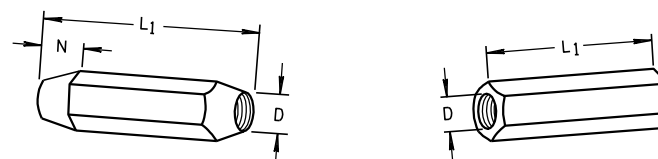
EYE BOLT DIMENSION TABLE

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"	

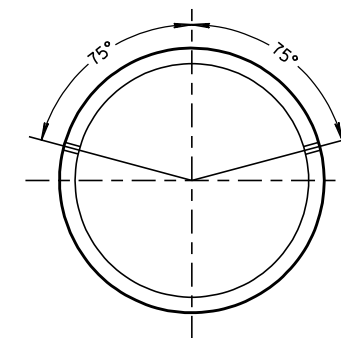
ADJUSTABLE TIE ROD TABLE

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 1/6

DIMENSIONS SHOWN ARE IN INCHES

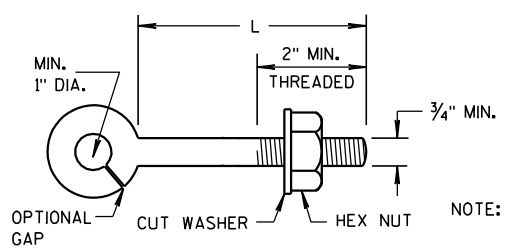


TAPERED PLAIN
RIGHT AND LEFT THREADS
SLEEVE NUTS



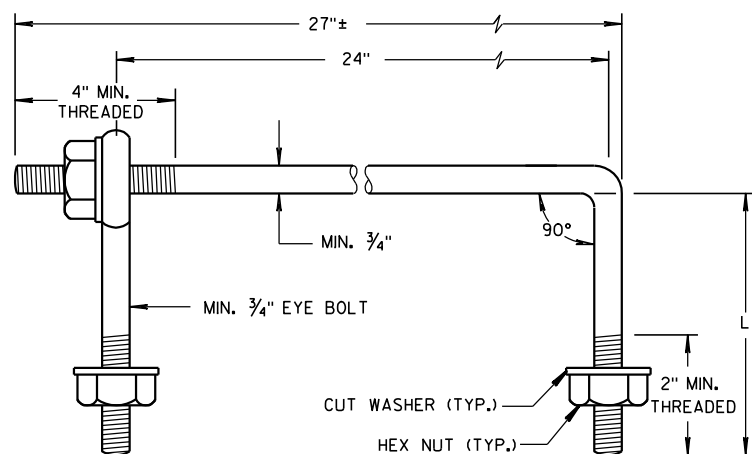
PLACEMENT OF (2) CAST-IN-PLACE
INSERTS OR HOLES DURING FABRICATION
FOR PIPE SECTIONS REQUIRING TIE RODS

TRANSVERSE SECTION



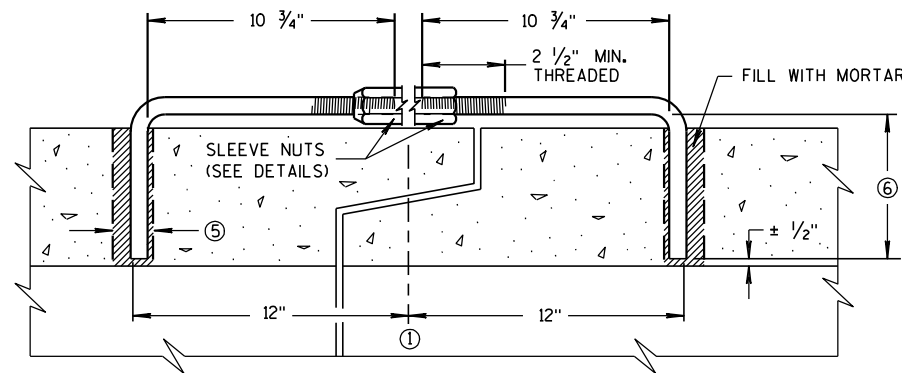
EYE BOLT

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

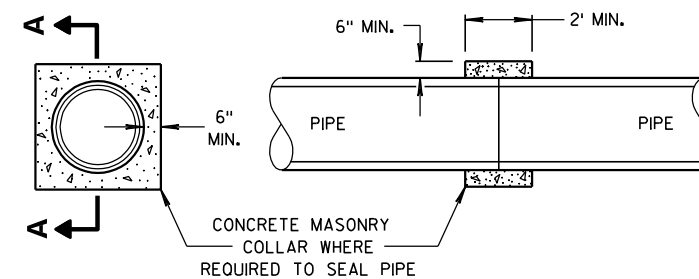


EYE BOLT AND TIE ROD

(JOINT TIES FOR 18" TO 66" DIA. CONCRETE PIPE)
EYE BOLT AND TIE ROD ASSEMBLY (ALTERNATE NO. 2)



LONGITUDINAL SECTION
(JOINT TIES FOR 12" TO 108" DIA. CONCRETE PIPE)
ADJUSTABLE TIE ROD (ALTERNATE NO. 3)

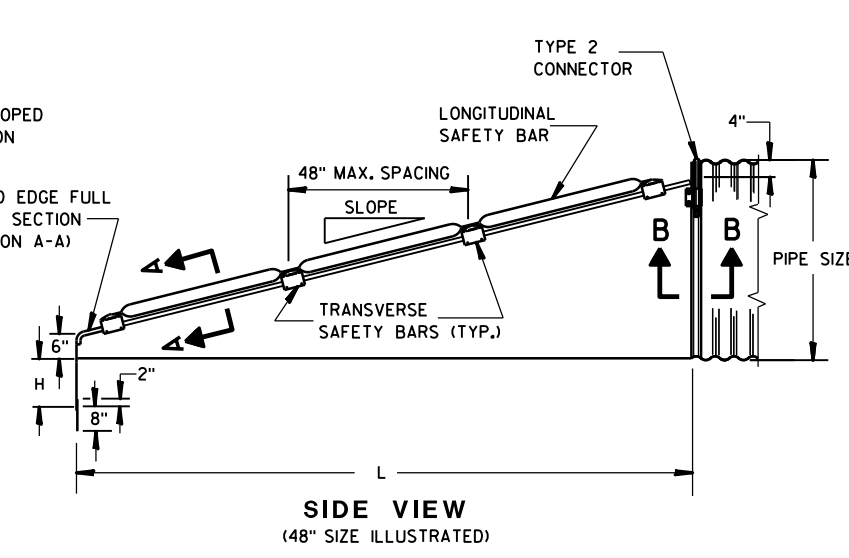
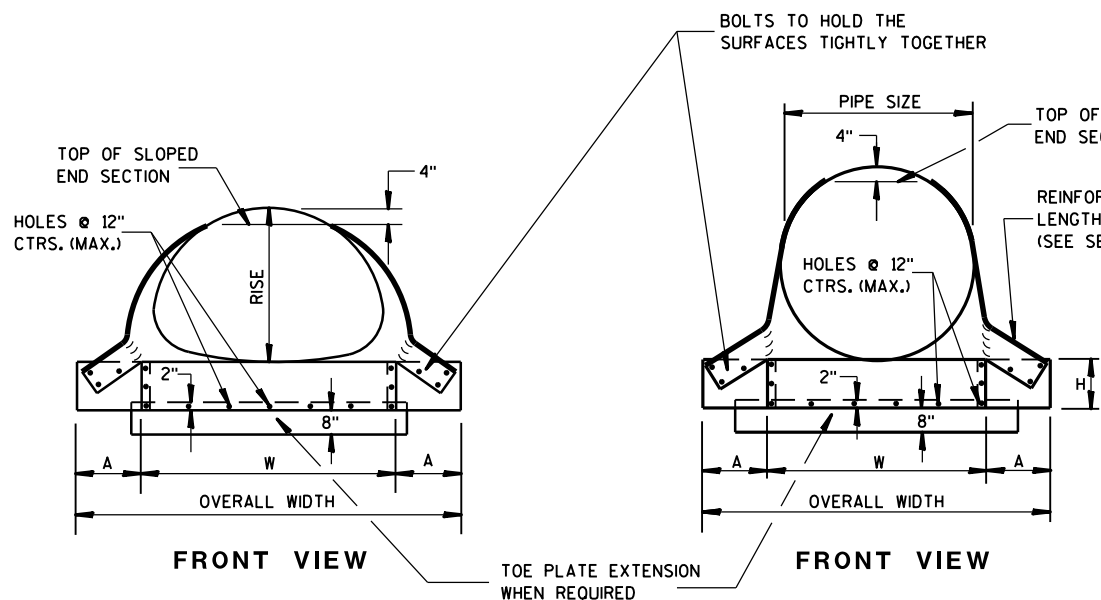


SECTION A-A
CONCRETE COLLAR DETAIL

JOINT TIES FOR CONCRETE
PIPE AND CONCRETE
COLLAR DETAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
6/5/2012 /S/ Jerry H. Zogg
DATE ROADWAY STANDARDS DEVELOPMENT
ENGINEER
FHWA



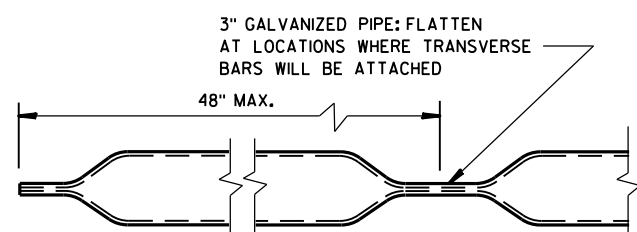
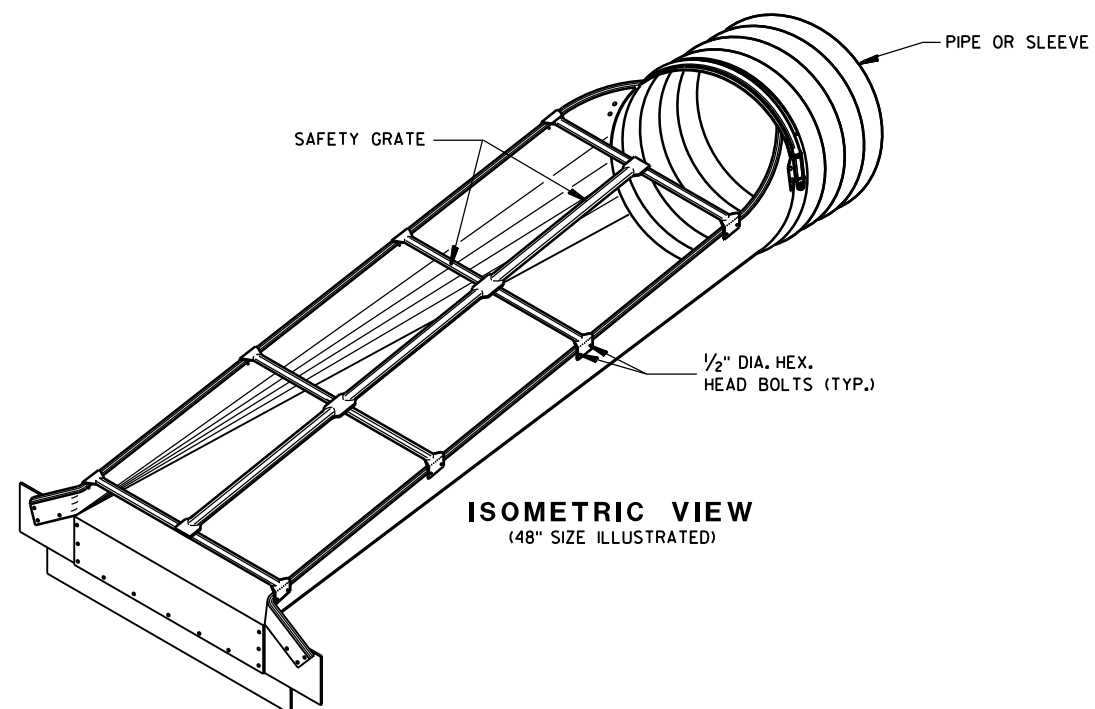
GENERAL NOTES

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.

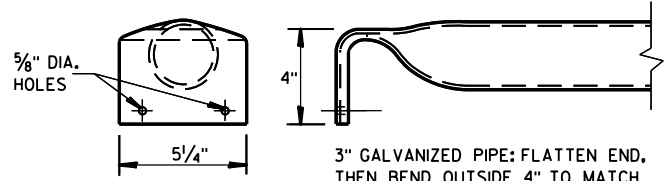
SAFETY GRATES SHALL BE FABRICATED FROM 3-INCH DIAMETER GALVANIZED PIPE MEETING THE REQUIREMENTS OF ASTM A-53, GRADE B, SCHEDULE 40 OR APPROVED EQUAL. THE LONGITUDINAL BAR SHALL BE WELDED TO THE TRANSVERSE BARS WHERE THE BARS CROSS. THE NUMBER OF TRANSVERSE BARS REQUIRED WILL VARY DEPENDING ON THE LENGTH OF THE END SECTION.

SLOPED STEEL ENDWALLS LOCATED AT THE ENDS OF CONCRETE CULVERT PIPE SHALL BE FURNISHED WITH STEEL ADAPTER SLEEVES.

STEEL APRON ENDWALLS FOR CULVERT PIPE CROSS DRAINS										
PIPE DIA. (IN.)	MIN. THICK. IN.	GAGE	DIMENSIONS (inches)				L DIMENSIONS			
			A	H	W	OVERALL WIDTH	SLOPE	LENGTH INCHES	SLOPE	LENGTH INCHES
36	.109	12	12	9	42	66	4:1	104	6:1	156
42	.109	12	16	12	48	80	4:1	128	6:1	192
48	.109	12	16	12	54	86	4:1	152	6:1	228
54	.109	12	16	12	60	92	4:1	176	6:1	264
60	.109	12	16	12	66	98	4:1	200	6:1	300

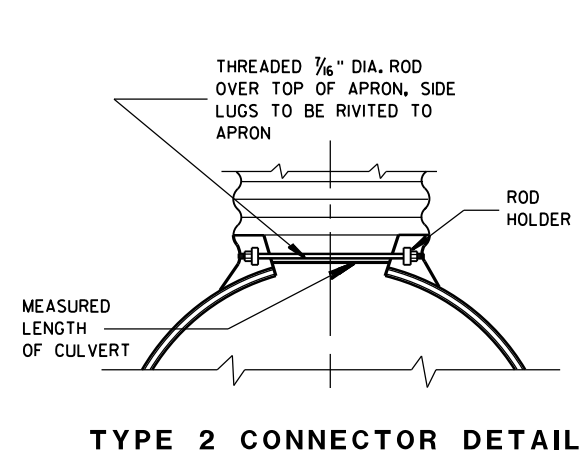


LONGITUDINAL SAFETY BAR

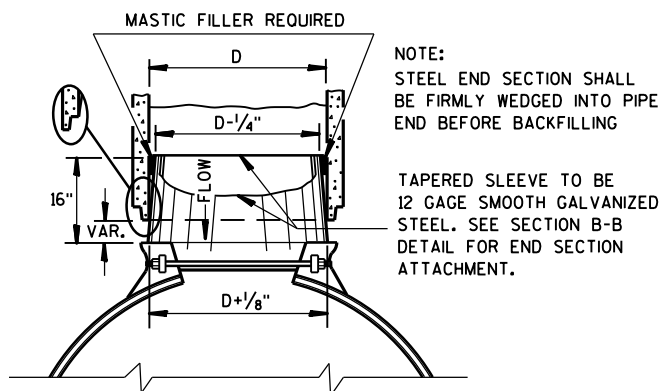


TRANSVERSE SAFETY BAR

STEEL APRON ENDWALLS FOR PIPE ARCH SLOPED CROSS DRAINS												
EQUIV. DIA. (IN.)	INCHES		MIN. THICK. IN.	GAGE	DIMENSIONS (inches)				L DIMENSIONS			
	SPAN	RISE			A	H	W	OVERALL WIDTH	SLOPE	LENGTH INCHES	SLOPE	LENGTH INCHES
30	35	24	.079	14	12	9	41	65	4:1	56	6:1	84
36	42	29	.109	12	12	9	48	72	4:1	76	6:1	114
42	49	33	.109	12	16	12	55	87	4:1	92	6:1	138
48	57	38	.109	12	16	12	63	95	4:1	112	6:1	168
54	64	43	.109	12	16	12	70	102	4:1	132	6:1	198
60	71	47	.109	12	16	12	77	109	4:1	148	6:1	222



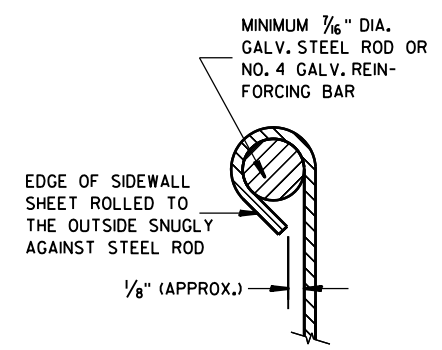
TYPE 2 CONNECTOR DETAIL



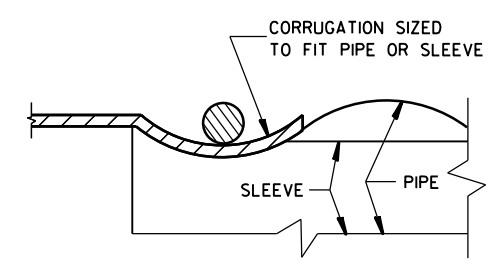
STEEL ADAPTER SLEEVE FOR CONCRETE PIPE

NOTE: STEEL END SECTION SHALL BE FIRMLY WEDGED INTO PIPE END BEFORE BACKFILLING

TAPERED SLEEVE TO BE 12 GAGE SMOOTH GALVANIZED STEEL. SEE SECTION B-B DETAIL FOR END SECTION ATTACHMENT.



SECTION A-A

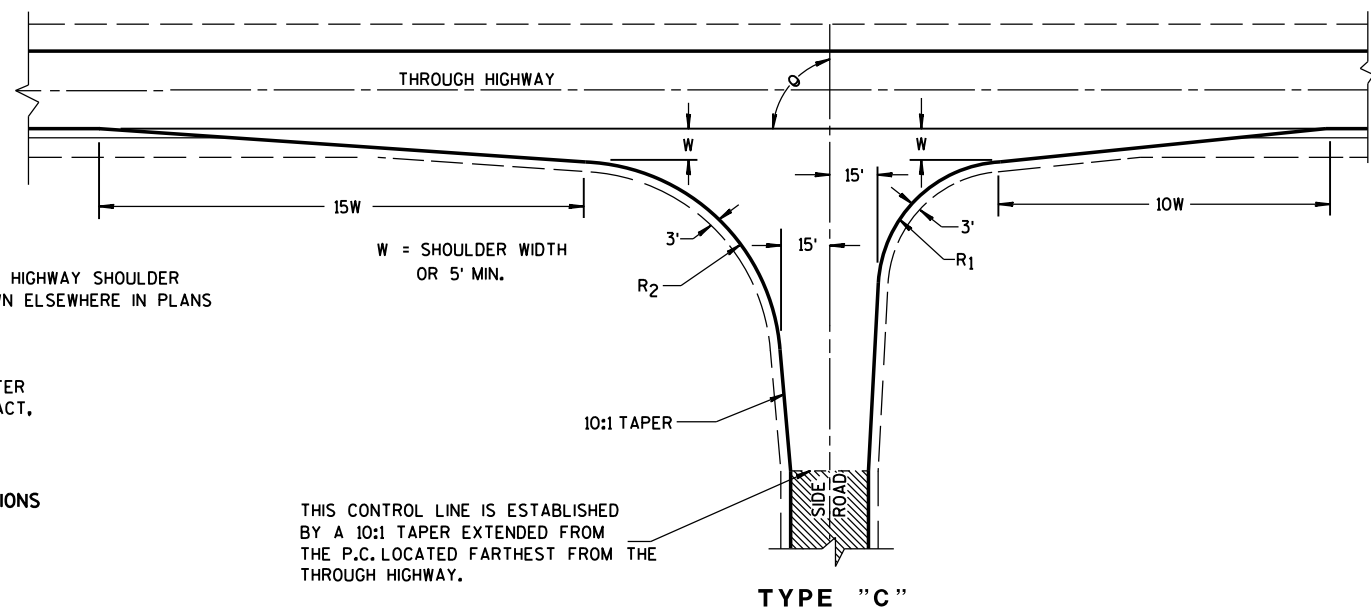
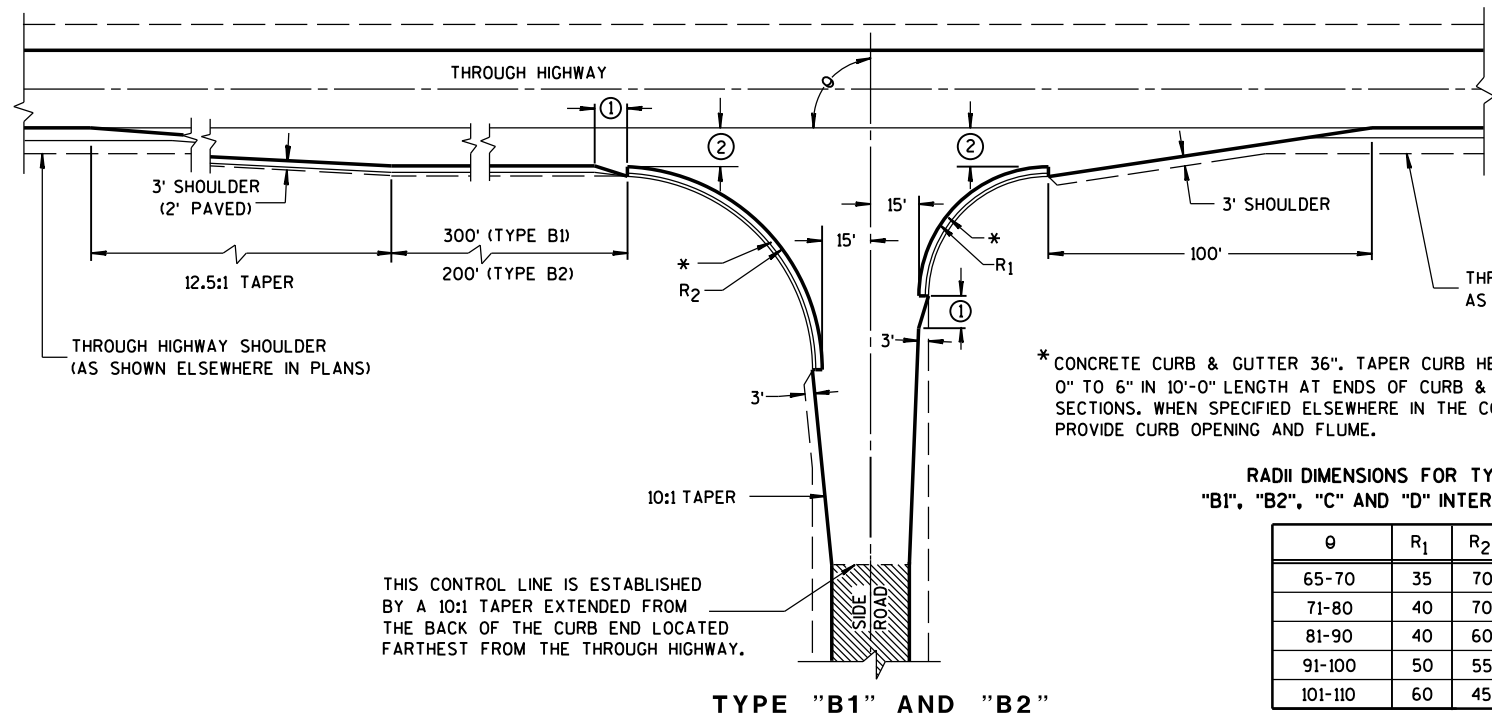


SECTION B-B

STEEL APRON ENDWALLS FOR CULVERT PIPE AND PIPE ARCH SLOPED CROSS DRAINS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
DATE 6/5/2012 /S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT ENGINEER



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

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.

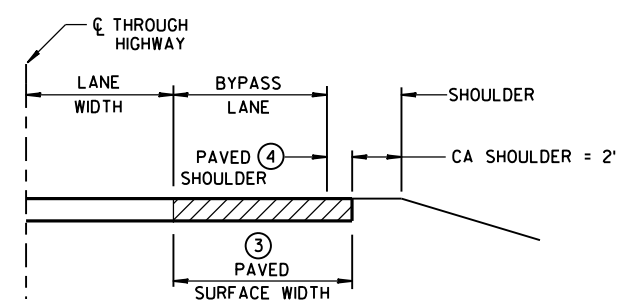
WHEN THE SIDE ROAD IS PRESENTLY PAVED, NEW PAVEMENT SHALL BE PLACED TO THE LIMITS OF DESIGN AS SHOWN AND BEYOND, IF NECESSARY, TO MEET EXISTING PAVEMENT.

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

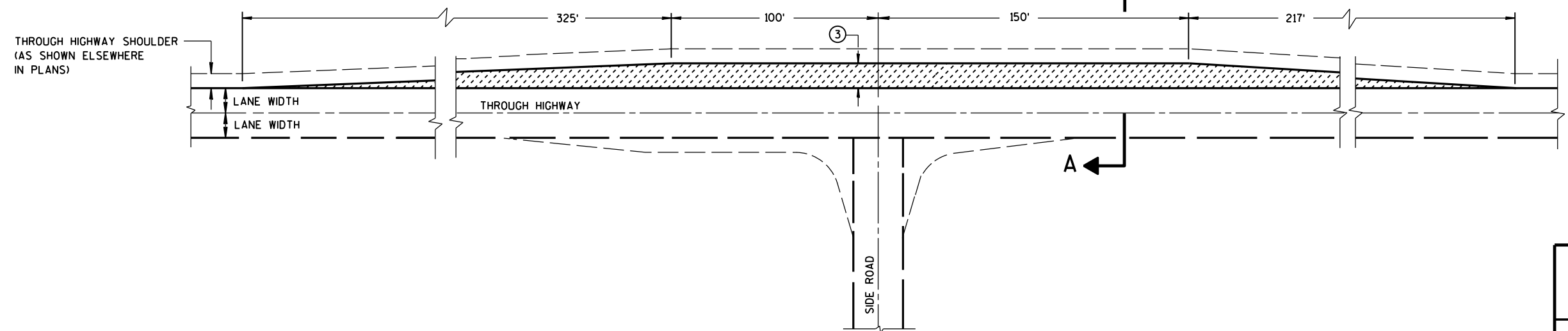
EXISTING PAVED SURFACE

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.

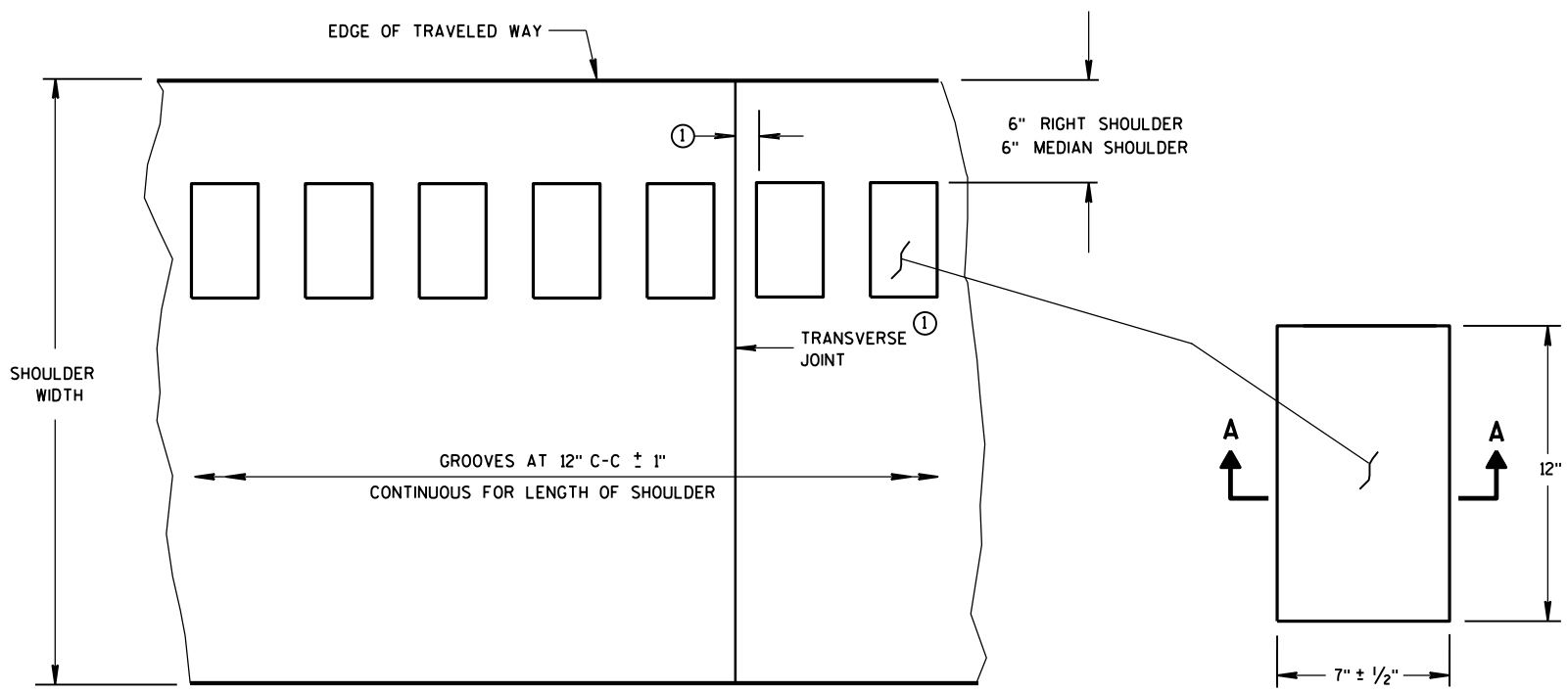


SECTION A-A (SHOWING BYPASS LANE AND SHOULDER)

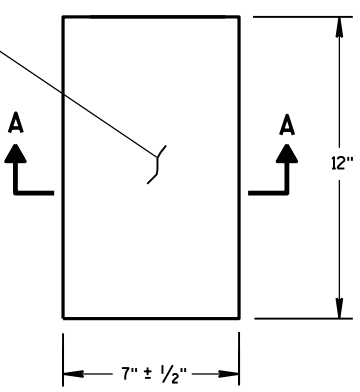


TEE INTERSECTION BYPASS LANE DETAIL

AT-GRADE SIDE ROAD INTERSECTION, TYPES "B1", "B2", "C" AND "D" AND TEE INTERSECTION BYPASS LANE
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION



PLAN VIEW
SHOULDER WITH GROOVES



PLAN VIEW
(SINGLE GROOVE)

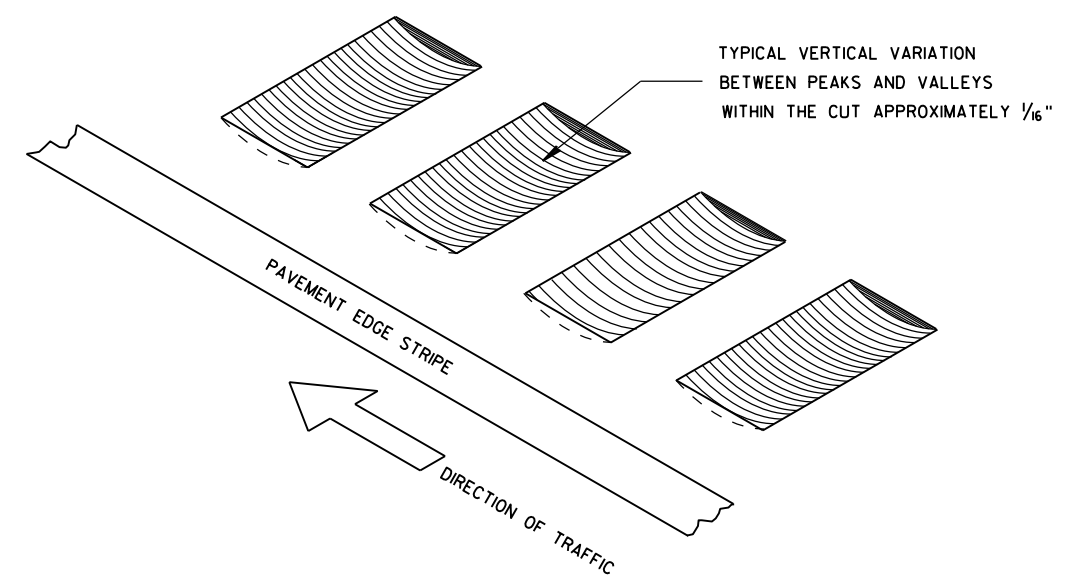
PLACEMENT DETAIL FOR MILLED RUMBLE STRIP

GENERAL NOTES

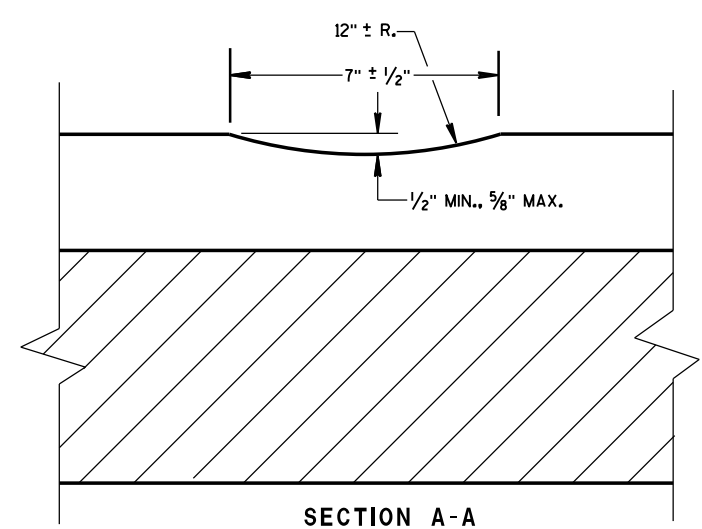
DETAILS OF CONSTRUCTION SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

RUMBLE STRIPS ON EXPRESSWAYS
DO NOT INSTALL RUMBLE STRIPS ACROSS SIDE ROAD INTERSECTIONS, COMMERCIAL DRIVEWAYS, PRIVATE DRIVEWAYS OR ADJACENT TO RIGHT TURN LANES, LEFT TURN LANES, TURN LANE TAPERS, BRIDGE DECKS, BRIDGE APPROACHES, OR 100 FEET IN ADVANCE OF RAILROAD CROSSING. THE ATTACHED STANDARD DETAIL DRAWING SHOWS THE LOCATION OF THE RUMBLE STRIPS AT INTERCHANGE AREAS.

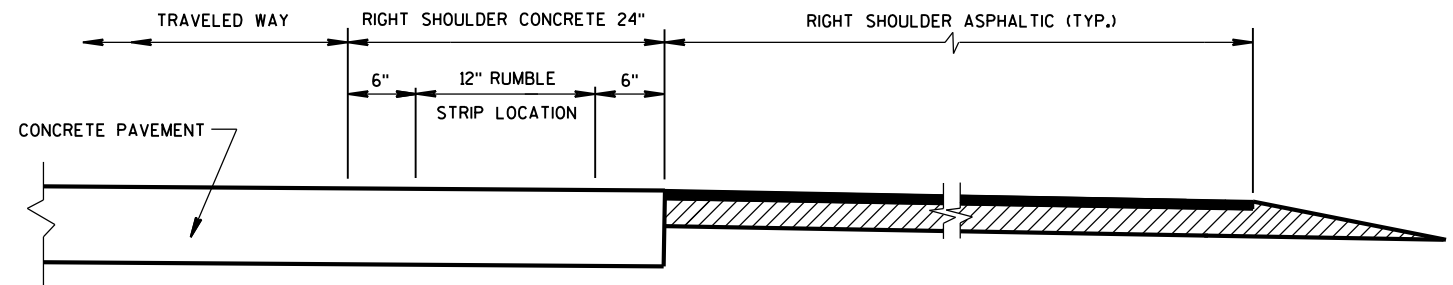
① CONCRETE PAVEMENT - RUMBLE STRIPS SHALL BE A MINIMUM OF 6" AWAY FROM TRANSVERSE JOINTS.



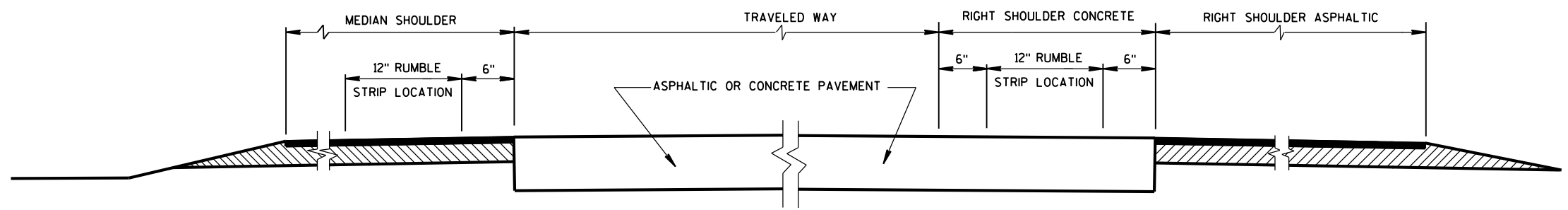
ISOMETRIC



SECTION A-A



SECTION VIEW
CONCRETE PAVEMENT EXTENDS INTO RIGHT SHOULDER)



SECTION VIEW
TYPICAL LOCATIONS OF SHOULDER RUMBLE STRIPS
IN RURAL DIVIDED HIGHWAYS
(ONE ROADWAY IS SHOWN)

SHOULDER RUMBLE STRIP,
MILLING

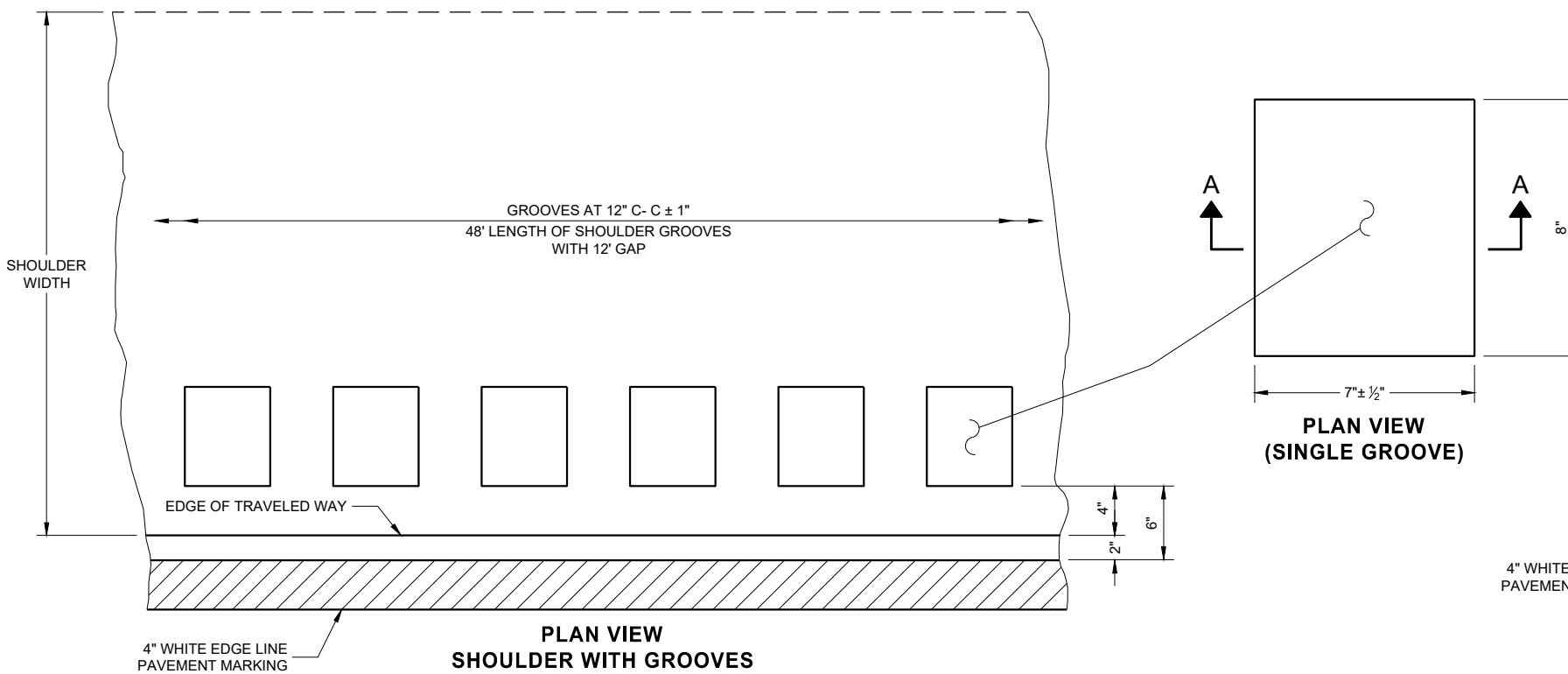
STATE OF WISCONSIN
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6

6

S.D.D. 13 A 5-5a

S.D.D. 13 A 5-5a



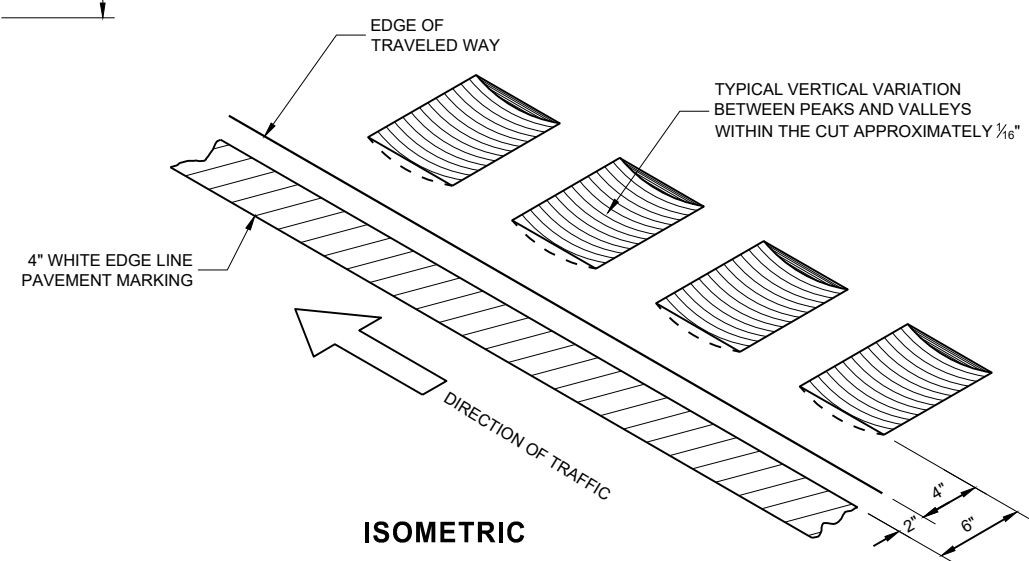
PLAN VIEW SHOULDER WITH GROOVES
 PLAN VIEW (SINGLE GROOVE)

GENERAL NOTES

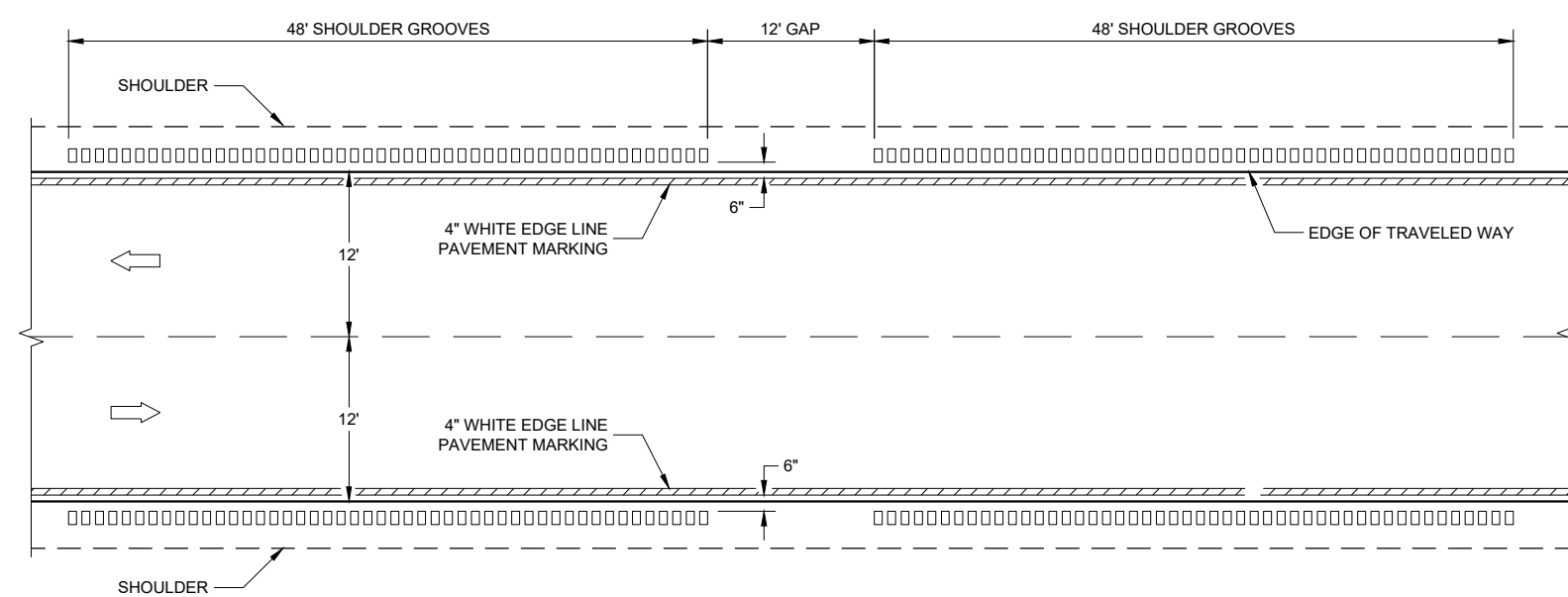
DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

DO NOT MILL SHOULDER GROOVES THROUGH ANY INTERSECTION, MARKED CROSSWALK, NON-MOTORIZED PATH CROSSING, OR SNOWMOBILE CROSSING.

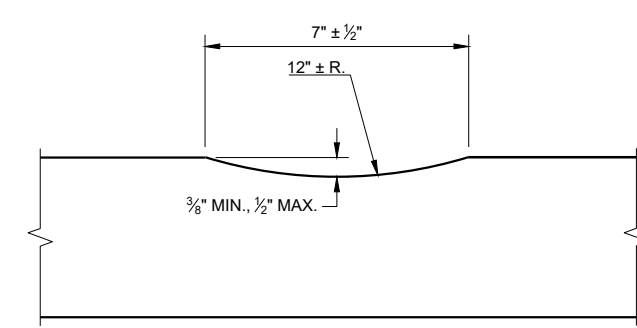
- ① SHOULDER GROOVES MAY BE OMITTED IN AREAS WITH HIGH CONCENTRATIONS OF DRIVEWAYS. WHEN DIRECTED BY THE ENGINEER.



ISOMETRIC



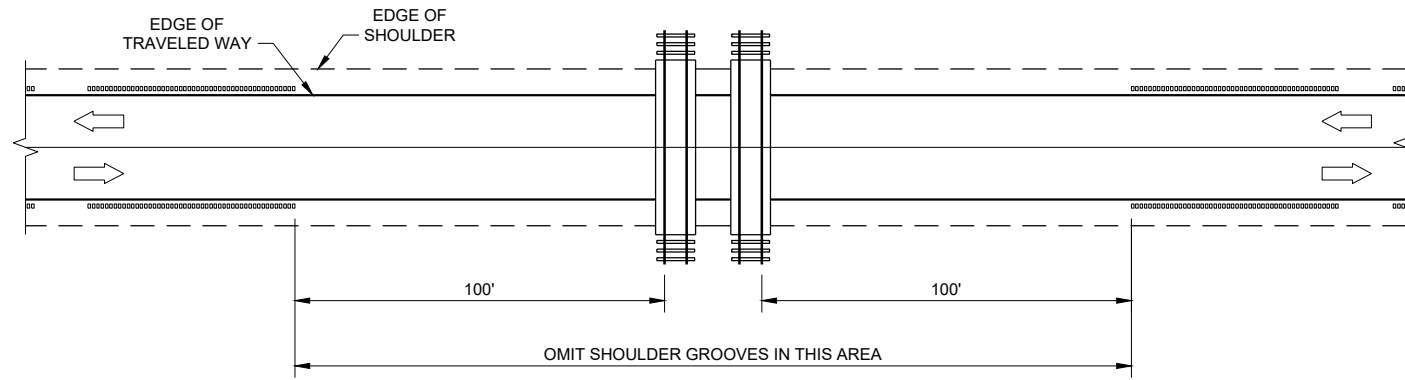
TYPE 1
 2 - LANE SHOULDER RUMBLE STRIP



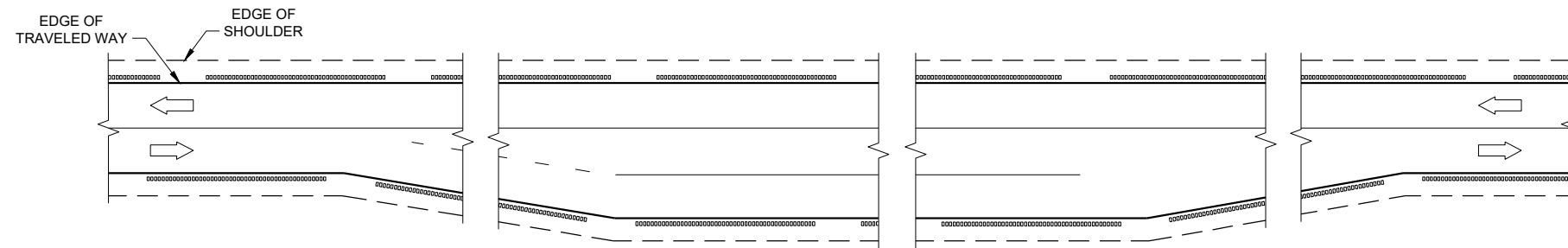
SECTION A - A

ZIMMERMAN
ENGINEERING

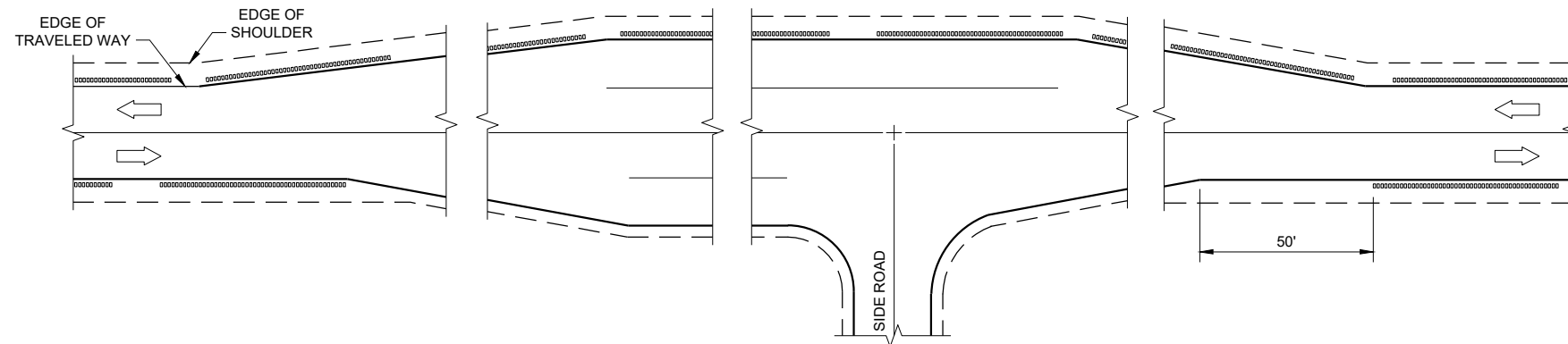
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SHOULDER GROOVES AT RAILROADS



SHOULDER GROOVES AT PASSING AND CLIMBING LANES



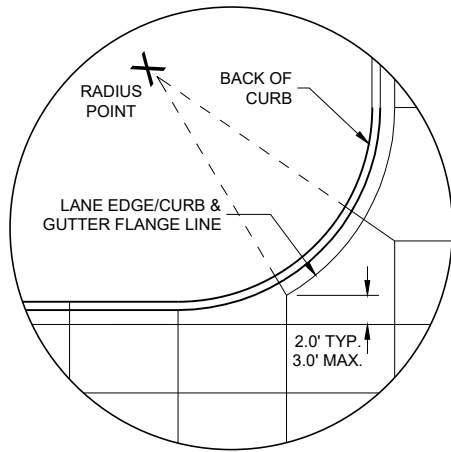
SHOULDER GROOVES AT BYPASS LANES

2018 E R R O R R E P O R T
R M E R M

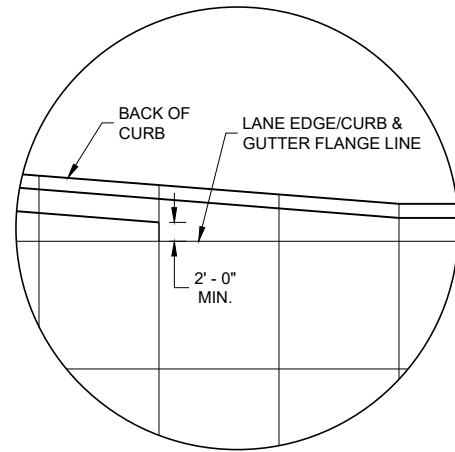
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
7/2018 /S/ Rodney Taylor
DATE ROADWAY STANDARDS DEVELOPMENT
ENGINEER

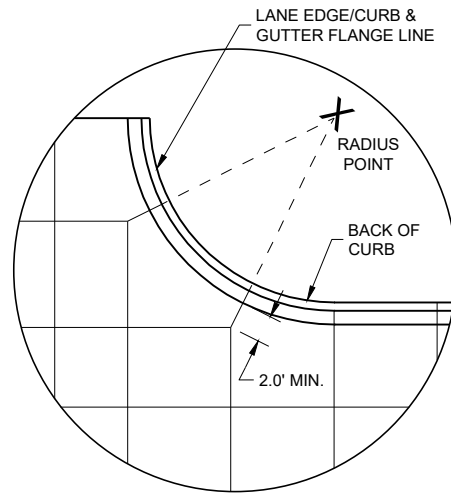
FHWA



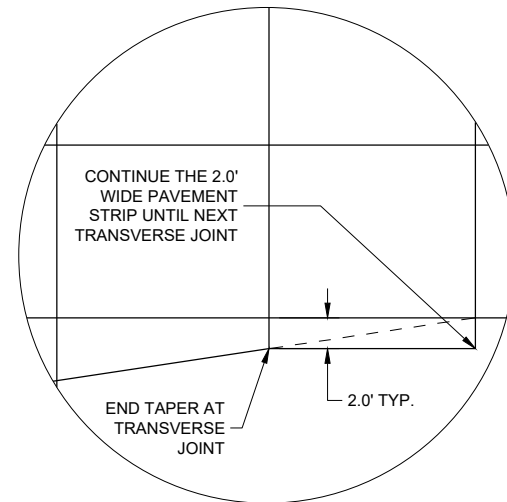
DETAIL "A"



DETAIL "B"



DETAIL "C"

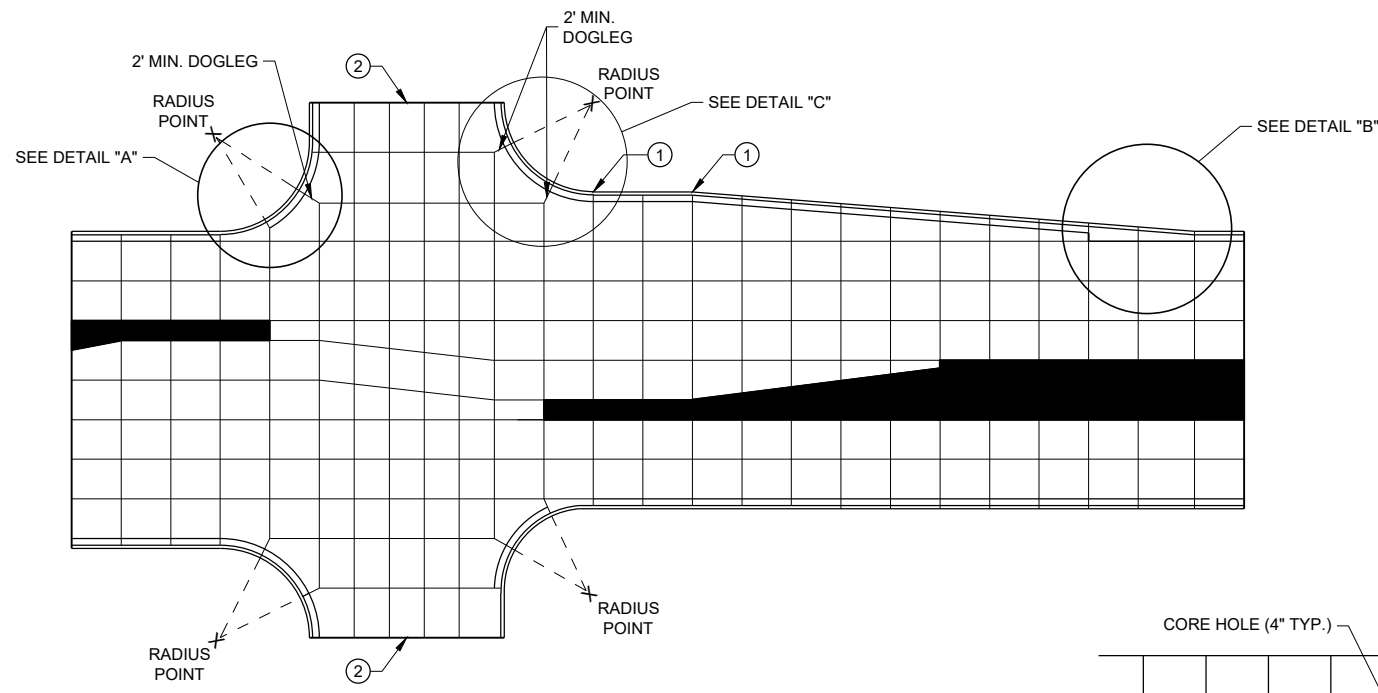


DETAIL "D"

GENERAL NOTES

- THE PRIMARY ROADWAY CONTROLS THE TRANSVERSE JOINT PATTERN.
- ALIGN NEW JOINTS WITH EXISTING JOINTS OR CRACKS.
- CONSTRUCT TRANSVERSE JOINTS PERPENDICULAR TO THE ROADWAY.
- ADJUST TRANSVERSE JOINTS TO ALIGN WITH UTILITY FIXTURES (E.G MANHOLES AND INLETS) IN THE PAVEMENT STRUCTURE WHEN POSSIBLE. WATER VALVES DO NOT REQUIRE JOINT ADJUSTMENT.
- AVOID SLABS LESS THAN 2 FEET WIDE OR GREATER THAN 15 FEET WIDE.
- SEE TABLE FOR TRANSVERSE JOINT SPACING. JOINT SPACING SPECIFIED IS MAXIMUM AND ACTUAL SPACING CAN BE ADJUSTED TO ACCOMMODATE INTERSECTIONS.
- AVOID ANGLES LESS THAN 60° BY DOGLEGGING JOINTS THROUGH CURVE RADIUS POINTS. USE 90° ANGLES WHEN POSSIBLE.
- CORRELATE LONGITUDINAL JOINTS WITH LANE LINES WHEN POSSIBLE.

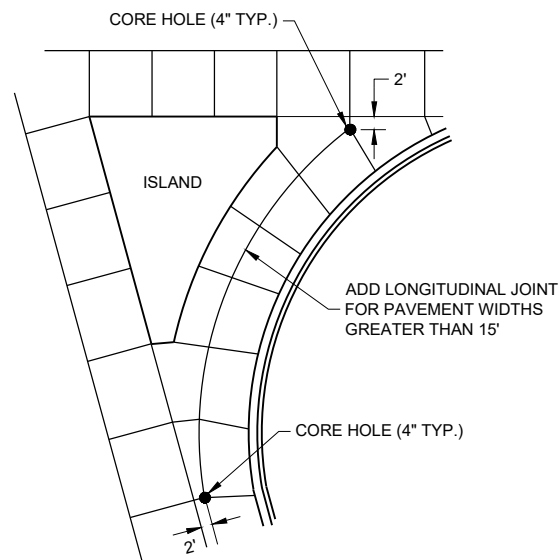
- ① PROVIDE TRANSVERSE JOINTS AT ALL PAVEMENT WIDTH CHANGES.
- ② CONSTRUCT DOWELED EXPANSION JOINT ON THE SIDE ROAD OF AN INTERSECTION IF THE SIDE ROAD IS CONCRETE PAVEMENT AND GREATER THAN 300 FEET IN LENGTH. ALIGN EXPANSION JOINT WITH EDGE OF RADIUS.
- ③ THE ENGINEER MAY APPROVE SLIGHT VARIATIONS FROM THESE JOINTING DETAILS.



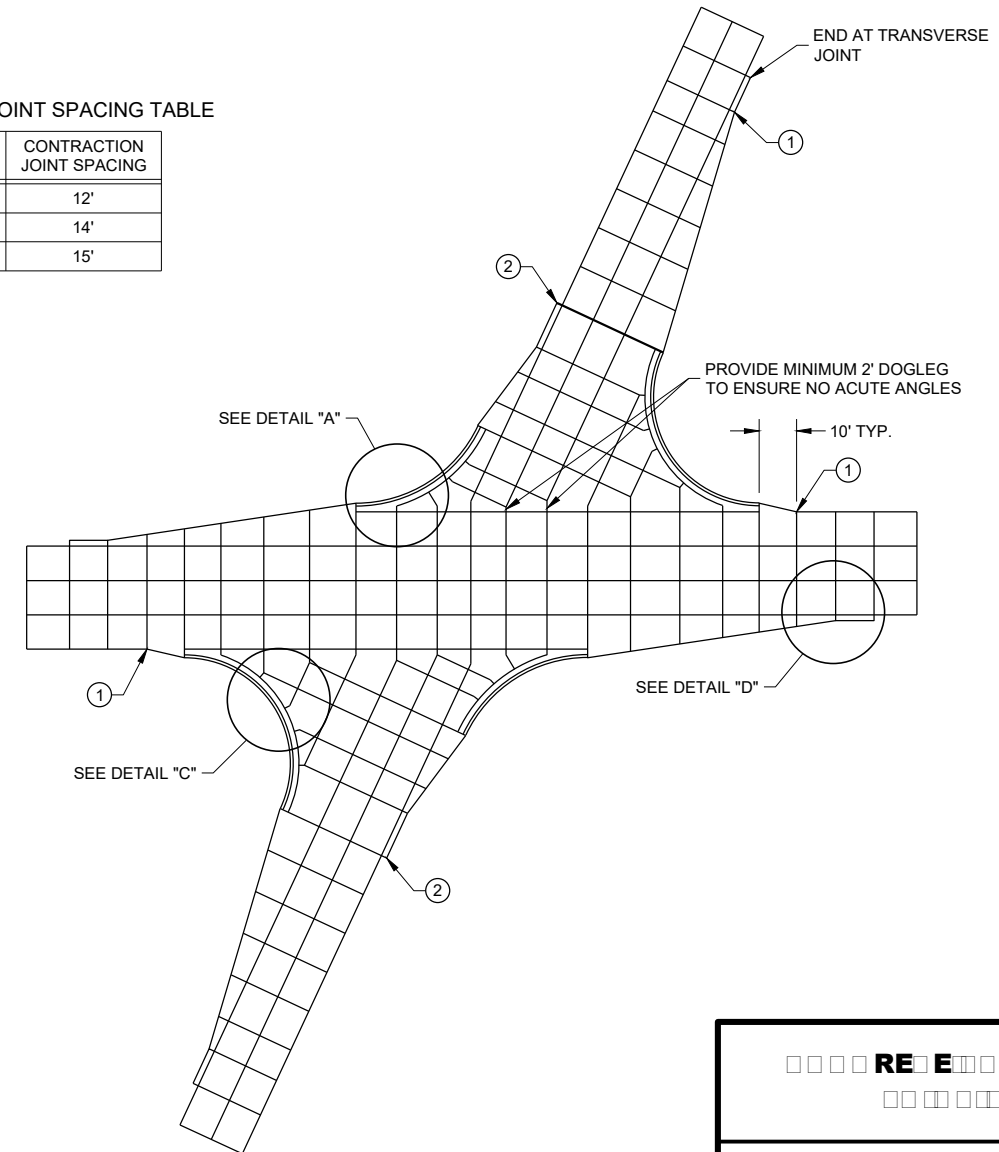
STANDARD INTERSECTION

PAVEMENT DEPTH AND JOINT SPACING TABLE

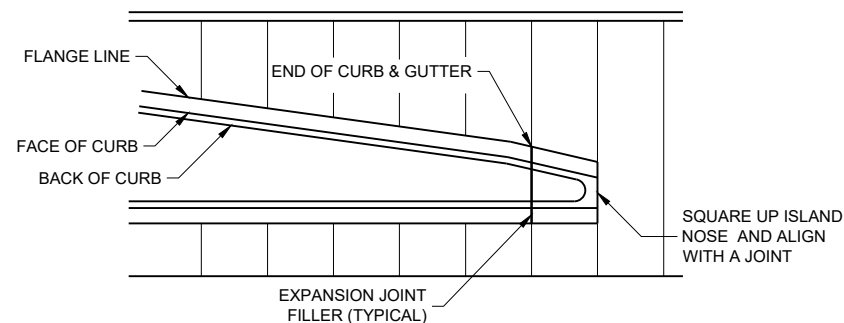
PAVEMENT DEPTH (D)	CONTRACTION JOINT SPACING
6", 6 1/2"	12'
7", 7 1/2"	14'
8" & ABOVE	15'



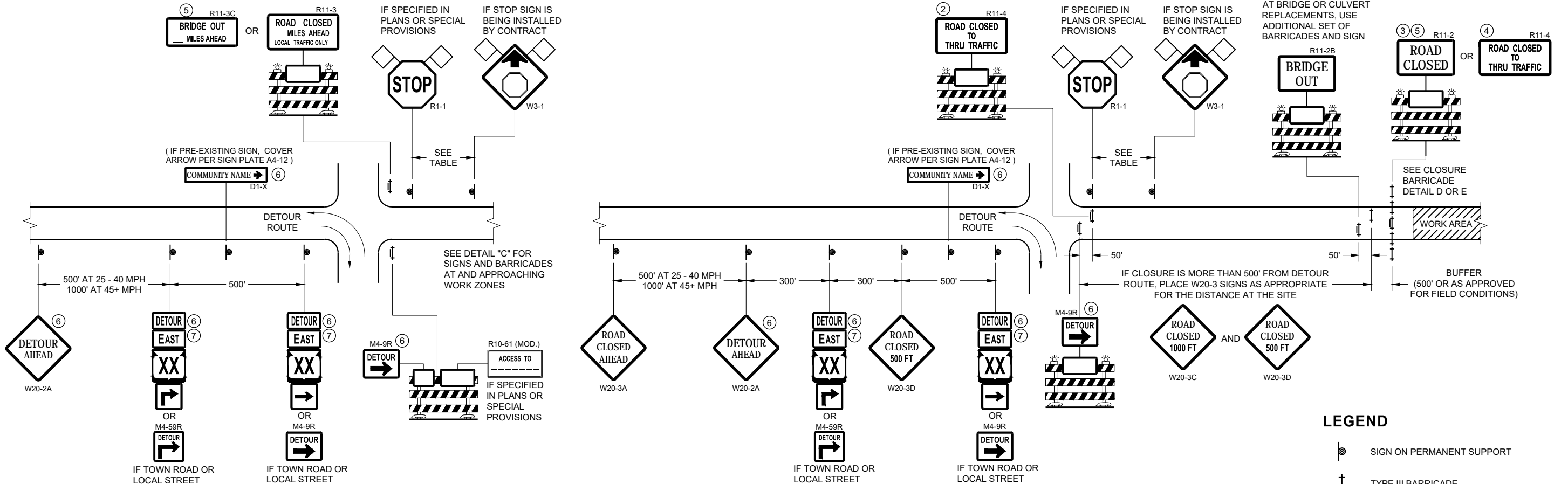
LARGE RIGHT TURN



SKEWED INTERSECTION

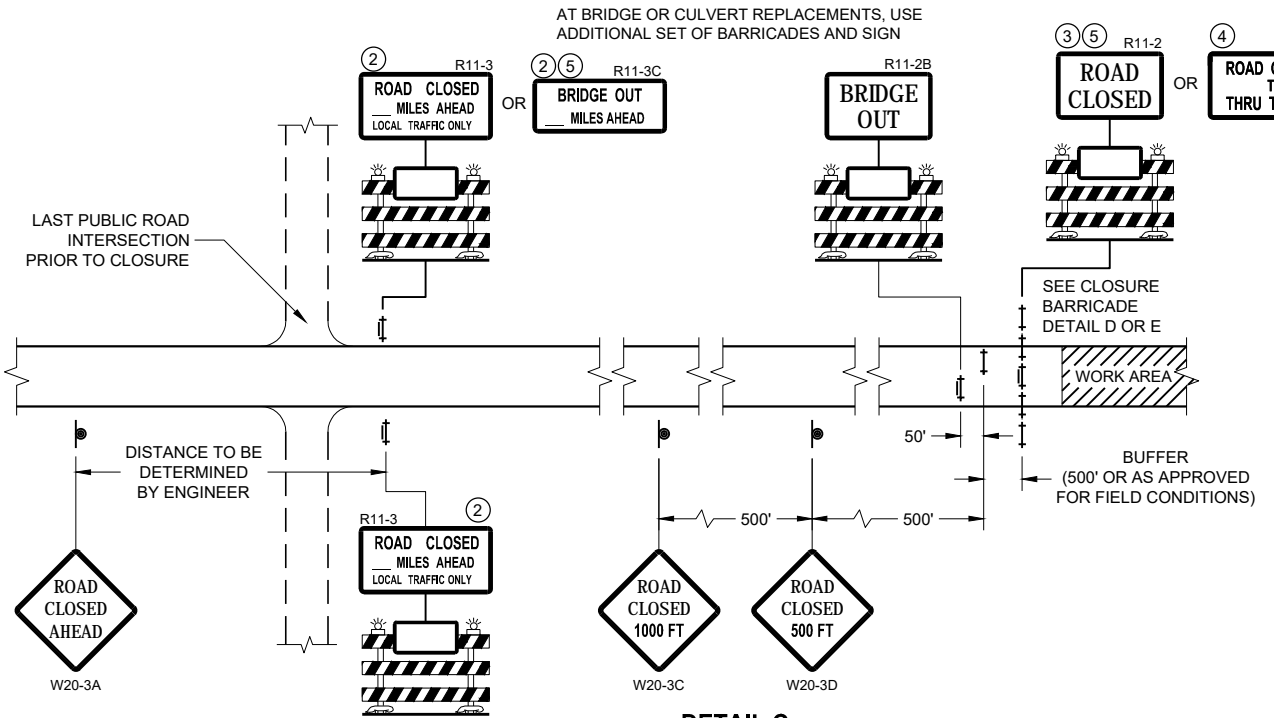


APPROACH TO MEDIAN



DETAIL A
MAINLINE CLOSURE WITH POSTED DETOUR
 WORK ZONE GREATER THAN OR EQUAL TO 1/2 MILE FROM
 DETOUR ROUTE (1000 FEET IF URBAN)

DETAIL B
MAINLINE CLOSURE WITH POSTED DETOUR
 WORK ZONE LESS THAN 1/2 MILE FROM
 DETOUR ROUTE (1000 FEET IF URBAN)



DETAIL C
MAINLINE CLOSURE, NO POSTED DETOUR

SPEED LIMIT (MPH)	"STOP AHEAD" ADVANCE WARNING DISTANCE (FT)
25	200
30	200
35	350
40	350
45	500
50	550
55	750

SEE SDD 15C2-SHEET "b"
 FOR GENERAL NOTES
 AND FOOTNOTES ① THROUGH ⑦

LEGEND

- SIGN ON PERMANENT SUPPORT
- TYPE III BARRICADE
- TYPE III BARRICADE WITH ATTACHED SIGN
- TYPE "A" WARNING LIGHT (FLASHING)
- WORK AREA
- FLAGS, 16" X 16" MIN. (ORANGE)

M4 - 8
 M3 - X
 M1 - 4 OR M1 - 6 OR M1 - 5A
 M05 - 1 OR M06 - 1

RR DE D
 RM E RE

STATE OF WISCONSIN
 DEPARTMENT OF TRANSPORTATION

APPROVED
 November 2018 /S/ Andrew Heidtke
 DATE DATE WORK ZONE ENGINEER

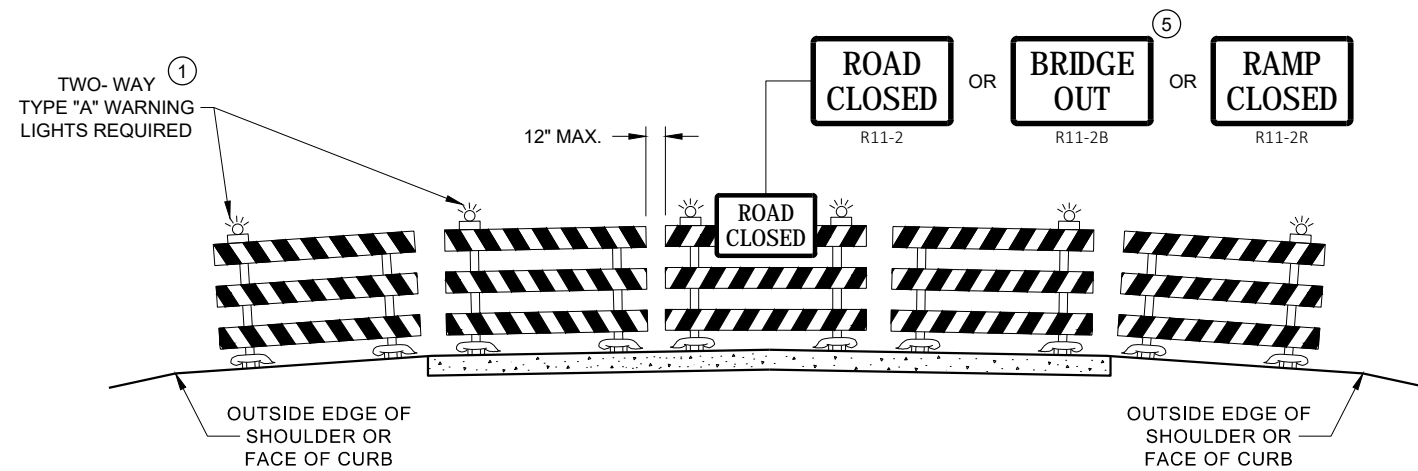
FHWA

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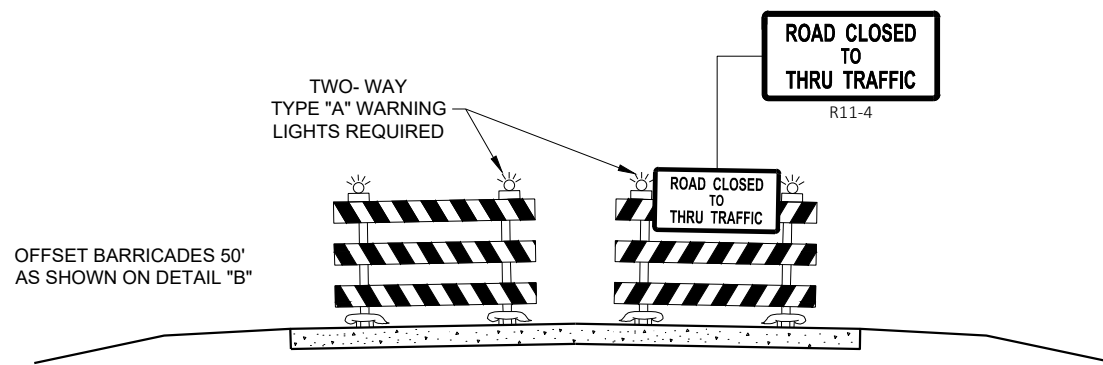
6

DD
 2

DD
 2



**DETAIL D
ROAD CLOSURE BARRICADE DETAIL
APPROACH VIEW**



**DETAIL E
LANE CLOSURE BARRICADE DETAIL
APPROACH VIEW**

SEE SDD 15C2 - SHEET "a" FOR LEGEND

RR DE D R R RE

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

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

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

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

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

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

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

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

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

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

- R11 - 2 SHALL BE 48" X 30"
- R11 - 3 SHALL, R11 - 4 AND R10 - 61 SHALL BE 60" X 30"
- M4 - 9 SHALL BE 30" X 24"
- M3 - X SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M4 - 8 SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M1 - 4, M1 - 5A AND M1 - 6 SHALL BE 24" X 24" (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS)
- MO5 - 1 AND MO6 - 1 SHALL BE 21" X 21" (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS)
- D1 - X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS.
- R1 - 1 SHALL BE 36" X 36"

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

RR DE D R R RE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2018 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER

FHWA

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

LEGEND

- SIGN ON PERMANENT SUPPORT
- WORK AREA
- M4 - 8
- M3 - X
- M1 - 4
- M1 - 6
- M1 - 5A
- M05 - 1
- M06 - 1
- M06 - 1

DE ER DE

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

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

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

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

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

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

SIGN SIZES SHALL BE AS FOLLOWS:

- M3-X SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M4-8 SHALL BE 24" X 12" (30" X 15" IF NEEDED TO MATCH EXISTING SIGNS)
- M1-4, M1-5A AND M1-6 SHALL BE 24" X 24" (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS)
- M05-1 AND M06-1 SHALL BE 21" X 21" (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS)
- M4-9 AND M4-59 SHALL BE 30" X 24"
- M4-8a SHALL BE 24" X 18"
- G20-51 SHALL BE 60" X 24"
- W20-2 SHALL BE 48" X 48"
- D1-X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS.

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

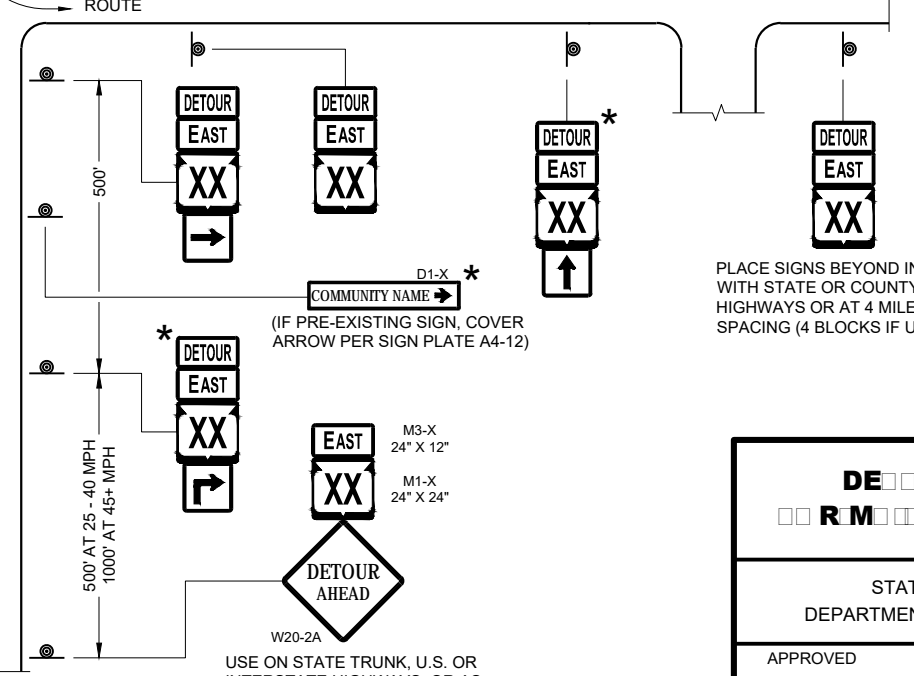
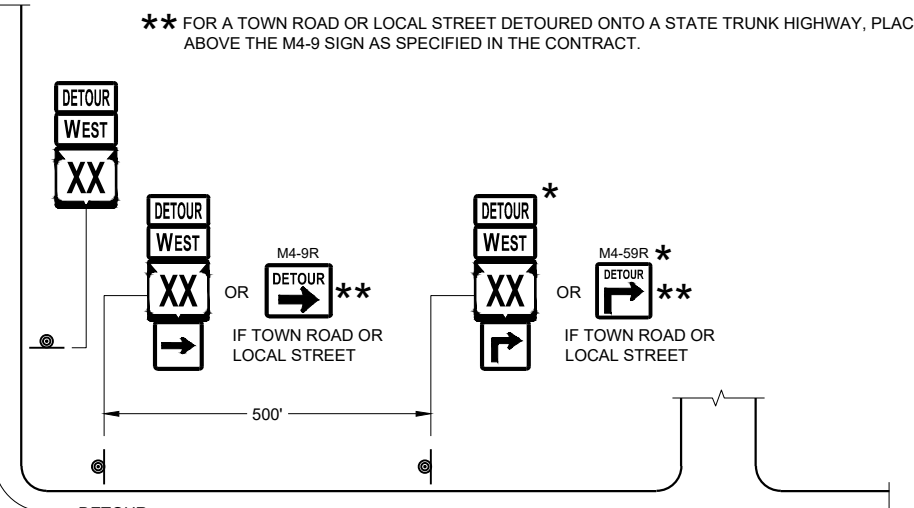
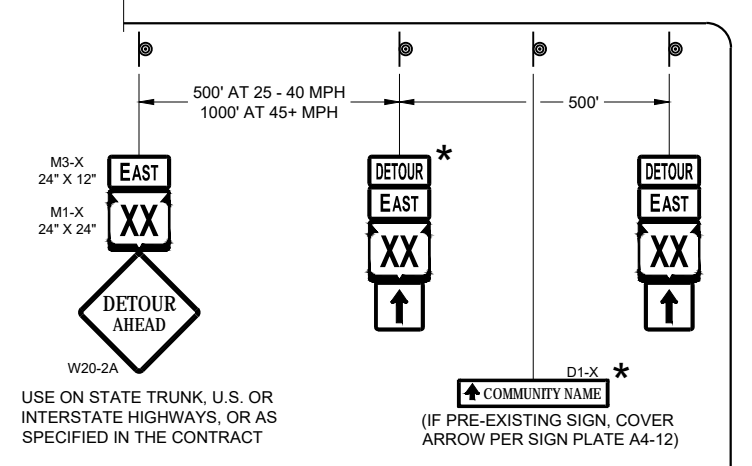
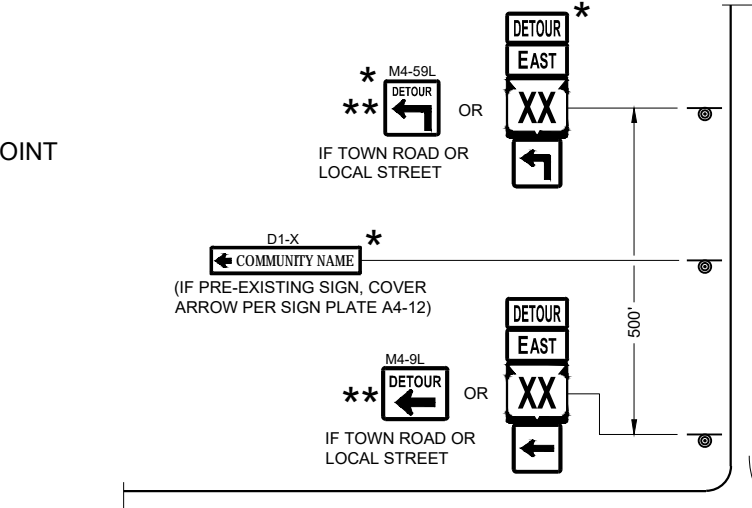
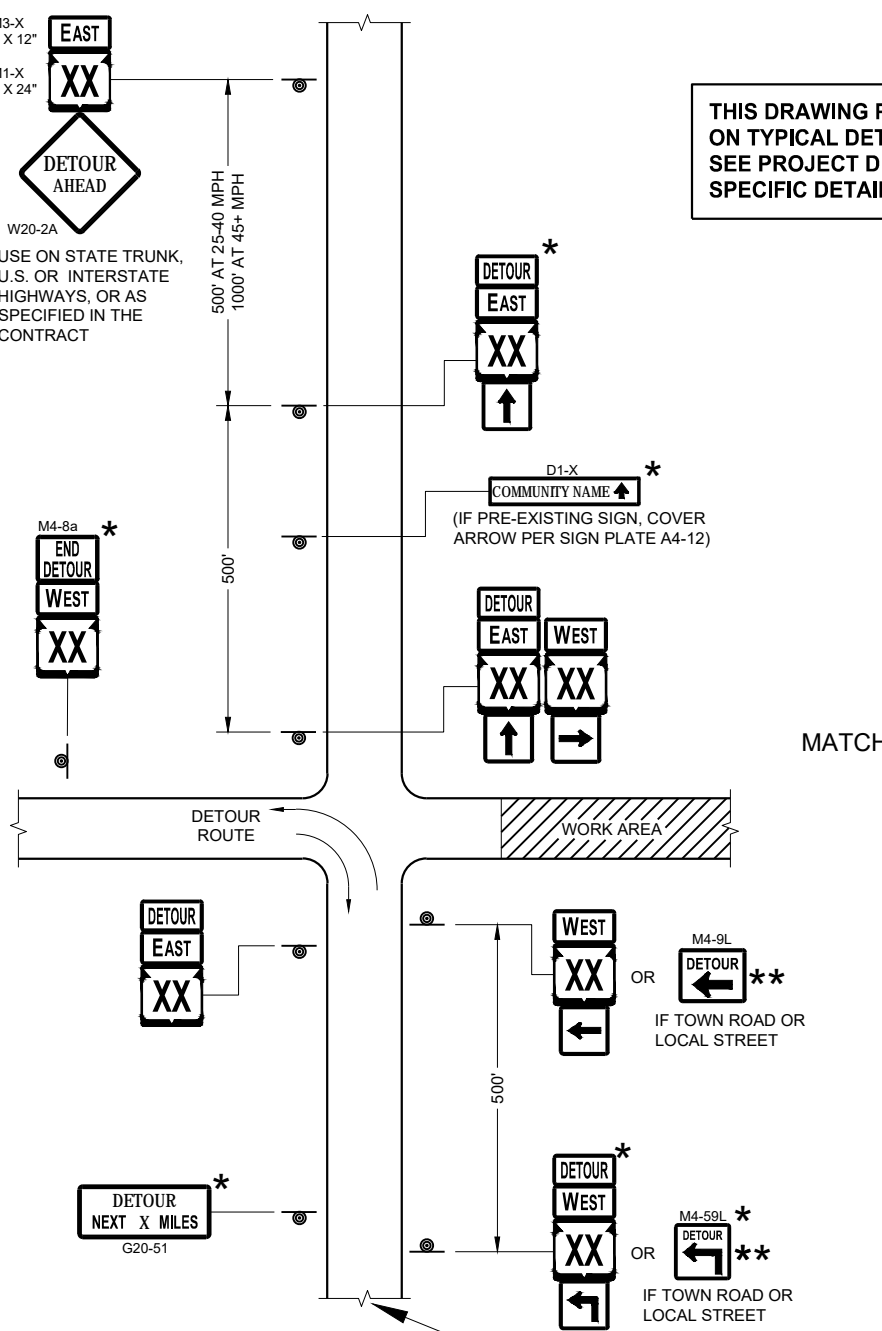
** FOR A TOWN ROAD OR LOCAL STREET DETOURED ONTO A STATE TRUNK HIGHWAY, PLACE A ROAD NAME PLAQUE ABOVE THE M4-9 SIGN AS SPECIFIED IN THE CONTRACT.

6

6

DD
2

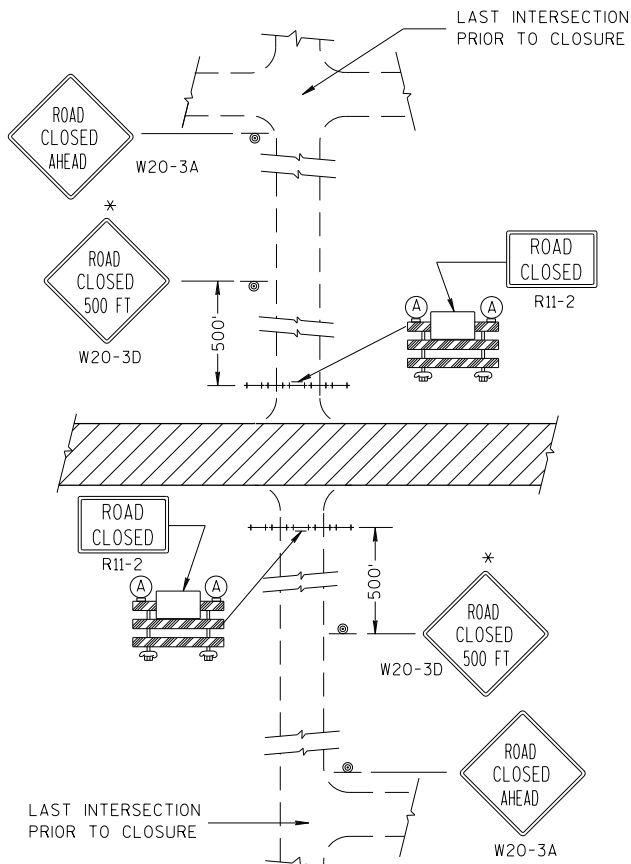
DD
2



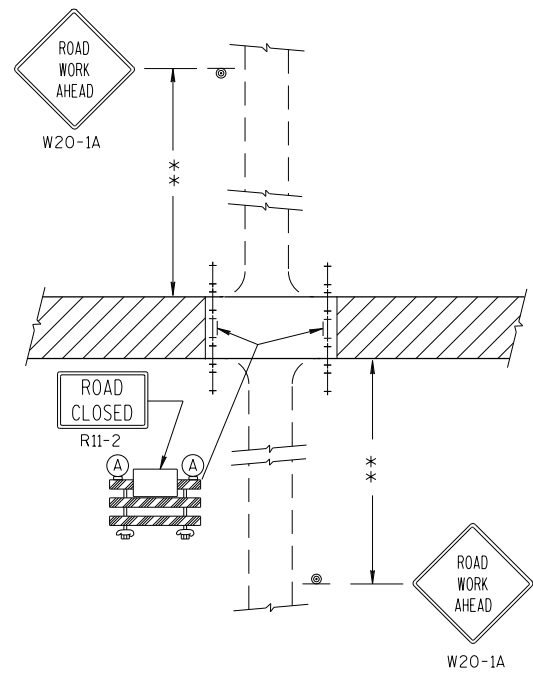
SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS AND DETAIL A OR B ON SDD SHEET 15C02 - SHEET "a"

**DETAIL F
DETOUR SIGNING**

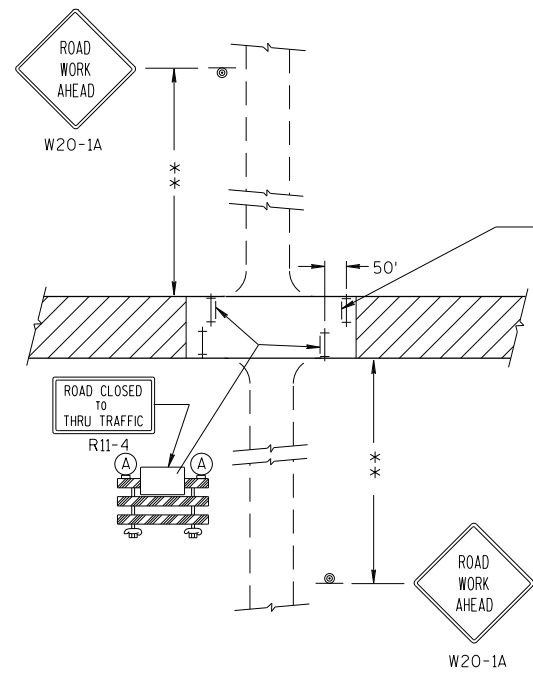
DE ER DE	
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STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED November 2018 DATE	/S/ Andrew Heidtke WORK ZONE ENGINEER
FHWA	



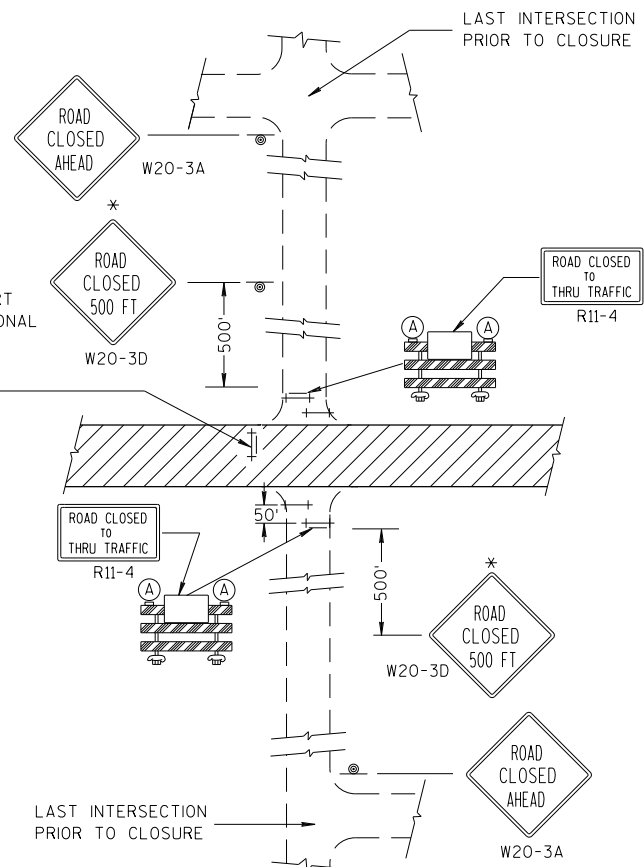
DETAIL 1
(NO ACCESS TO PROJECT)



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



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



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

GENERAL NOTES

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

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

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

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

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

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

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

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

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

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

R11-2 SHALL BE 48" X 30".

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

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

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

LEGEND

- ⊙ SIGN ON PERMANENT SUPPORT
- TYPE III BARRICADE
- TYPE III BARRICADE WITH ATTACHED SIGN
- (A) TYPE "A" WARNING LIGHT (FLASHING)
- ▨ WORK AREA

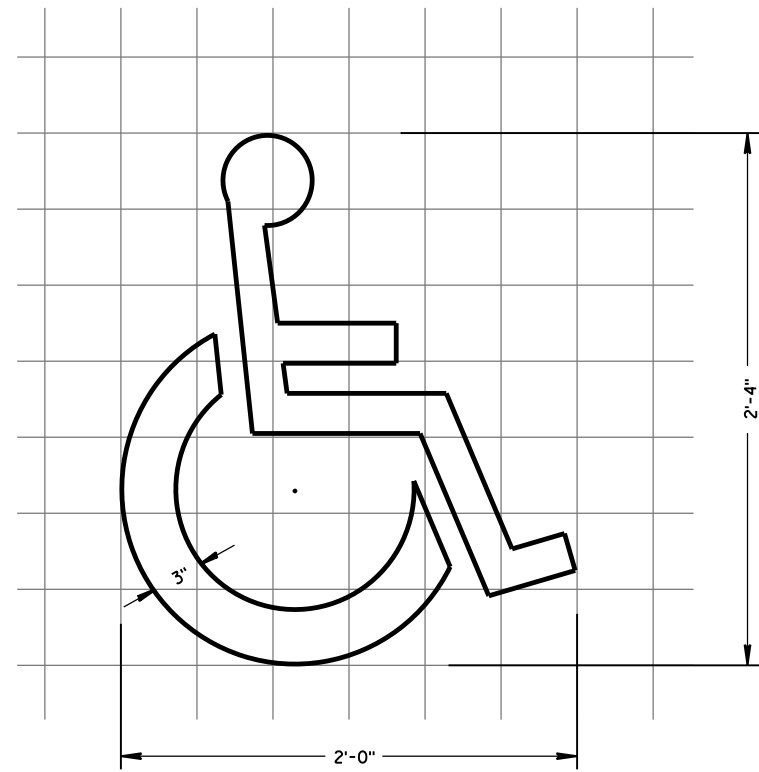
**BARRICADES AND SIGNS
FOR
SIDEROAD CLOSURES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

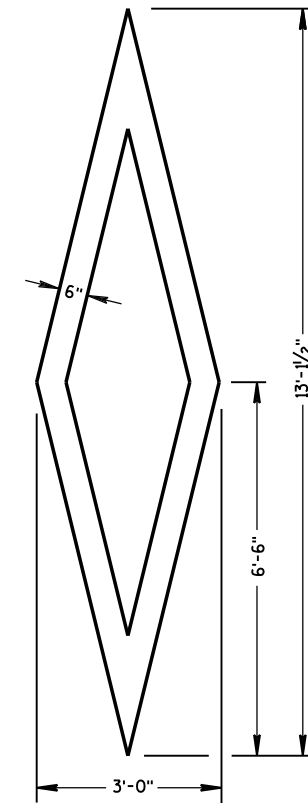
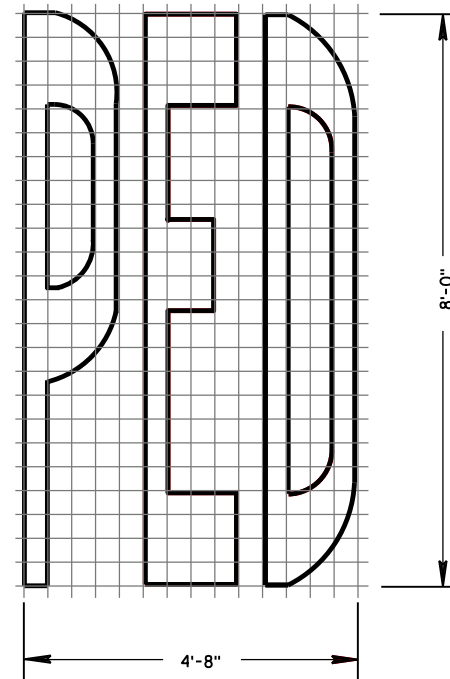
APPROVED
DATE 7/2018 /S/ Andrew Heidtke
WORK ZONE ENGINEER
FHWA

GENERAL NOTES

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



HANDICAP SYMBOL



PREFERENTIAL LANE SYMBOL

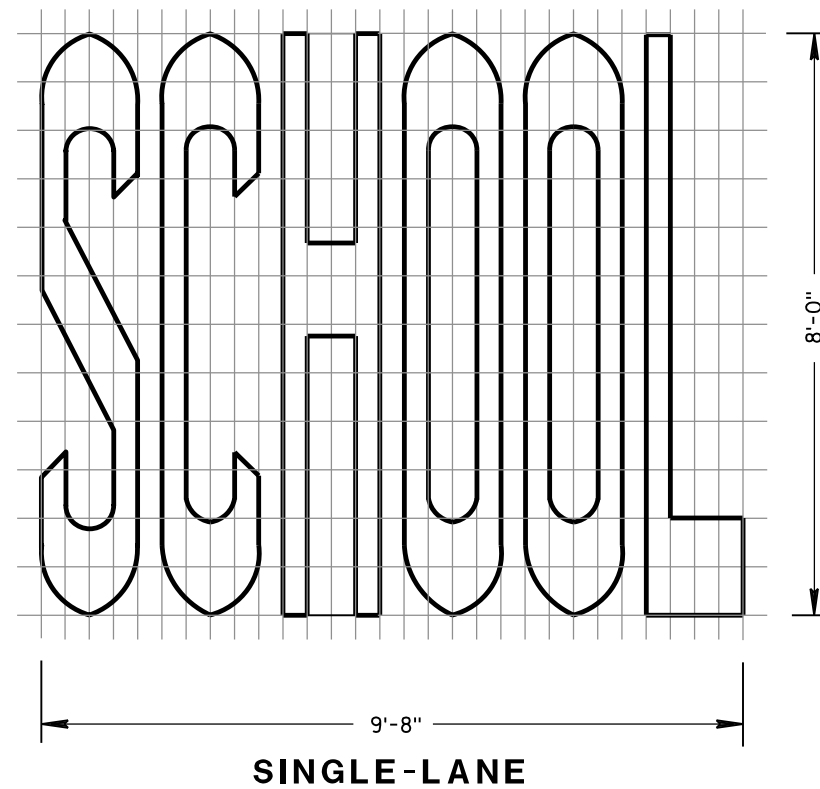
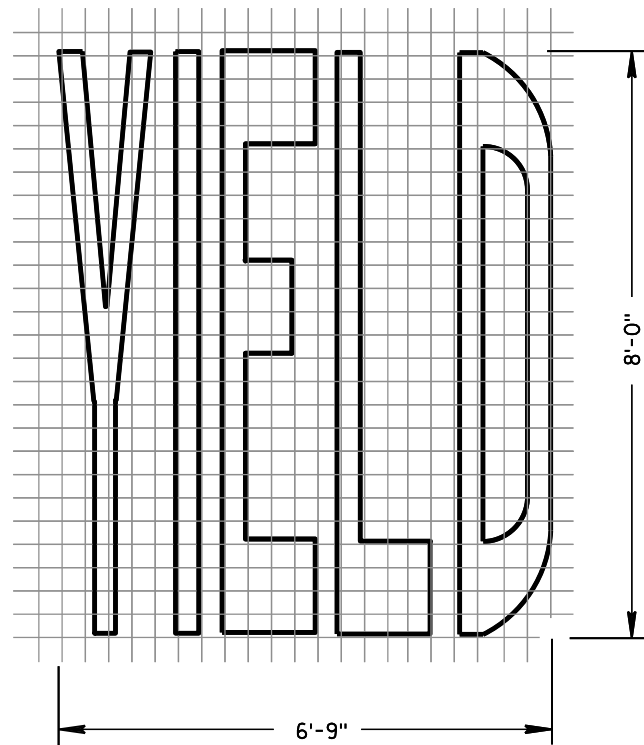
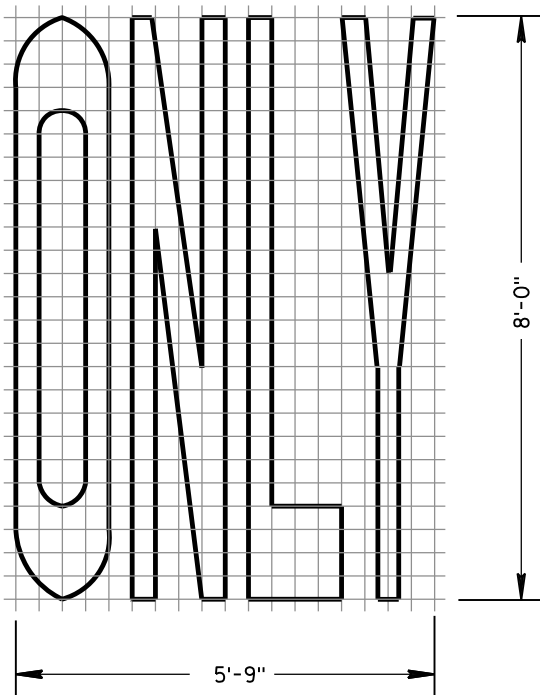
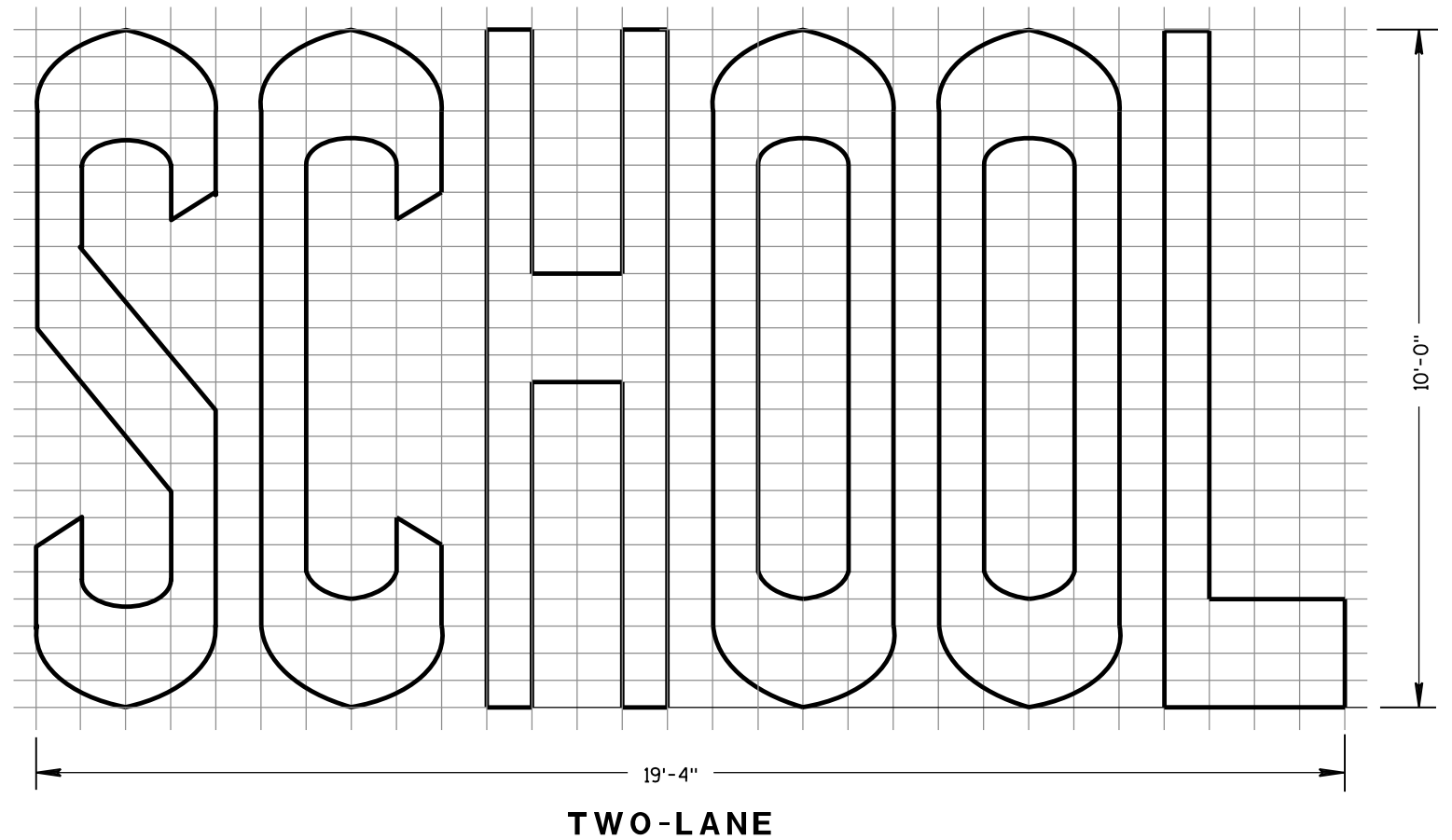
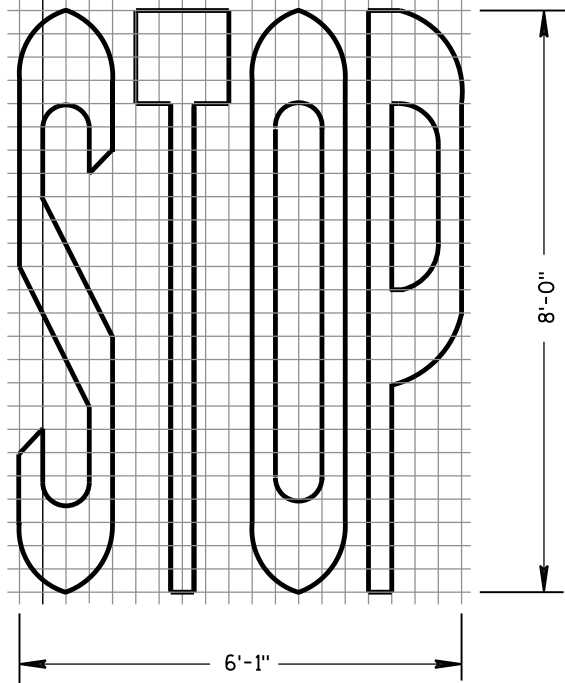
PAVEMENT MARKING SYMBOLS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2017 /S/ Matthew R. Rauch
DATE STATE SIGNING AND MARKING ENGINEER
FHWA

GENERAL NOTES

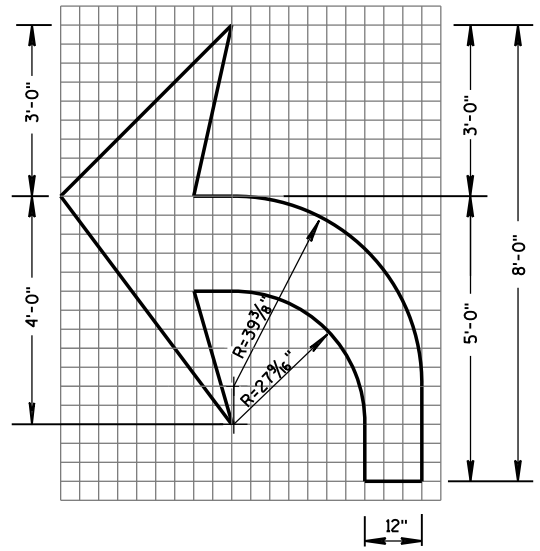
DETAILS OF INSTALLATION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.



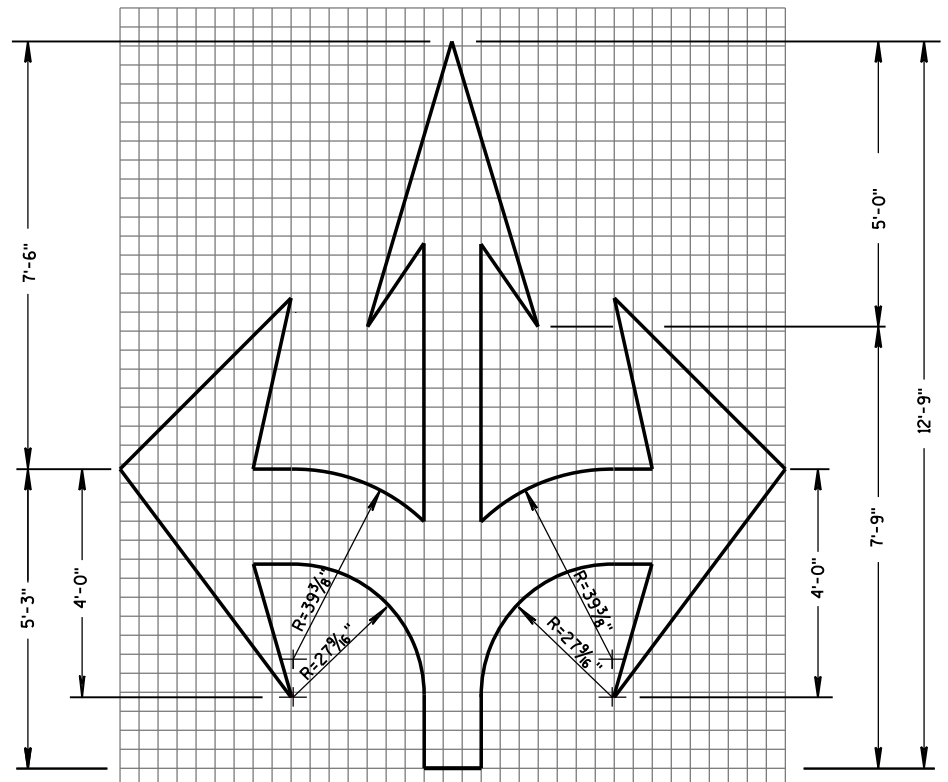
PAVEMENT MARKING WORDS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

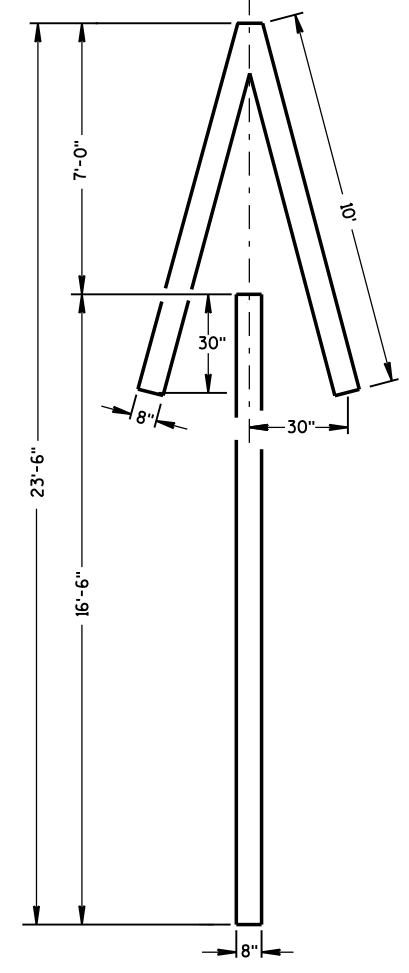
APPROVED
June 2017 /S/ Matthew R. Rauch
DATE STATE SIGNING AND MARKING ENGINEER
FHWA



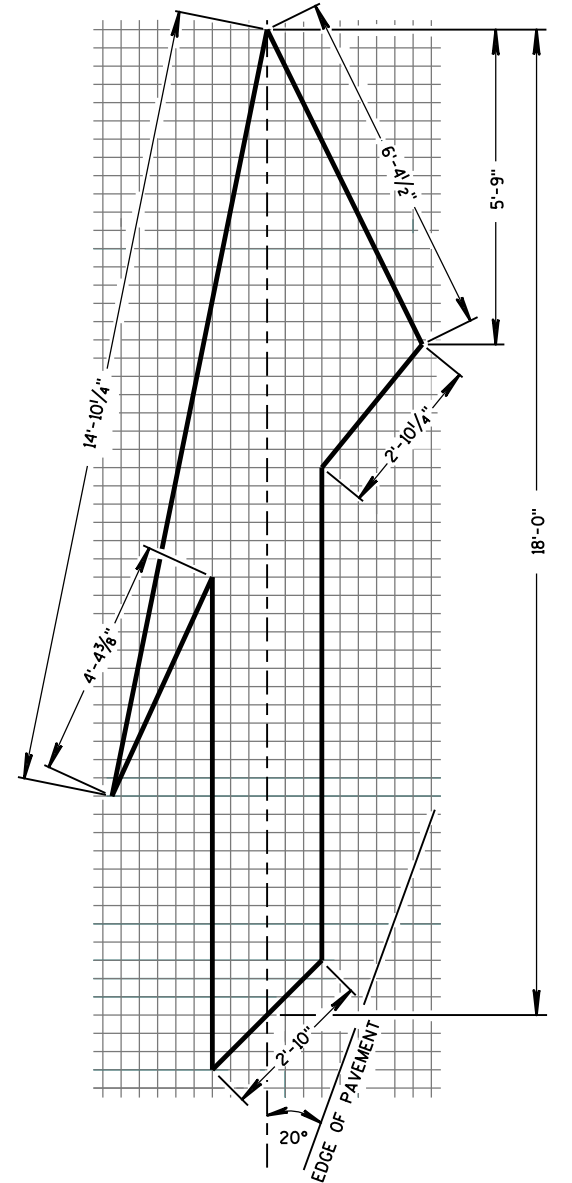
TYPE 2



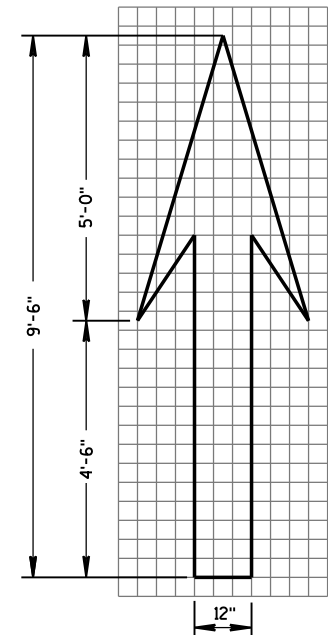
TYPE 6



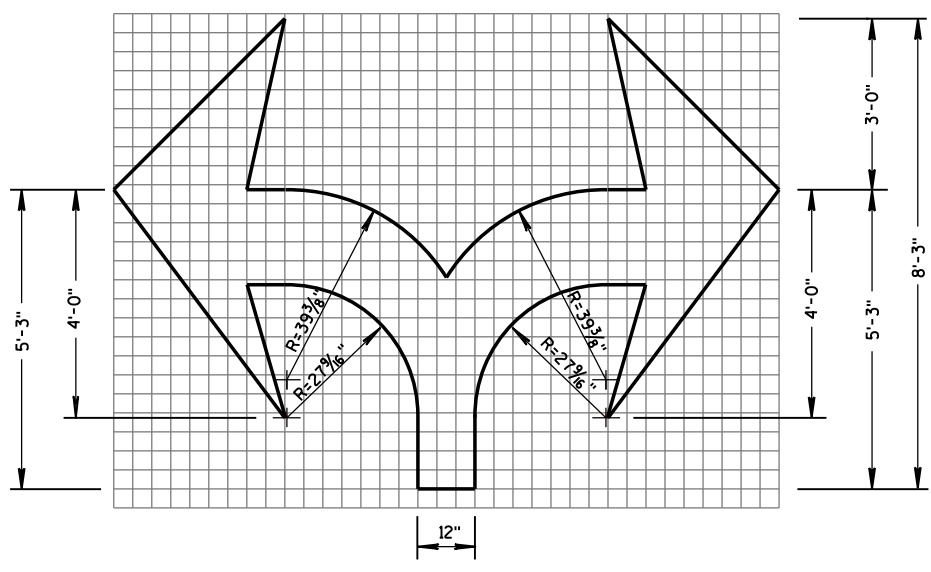
TYPE 4



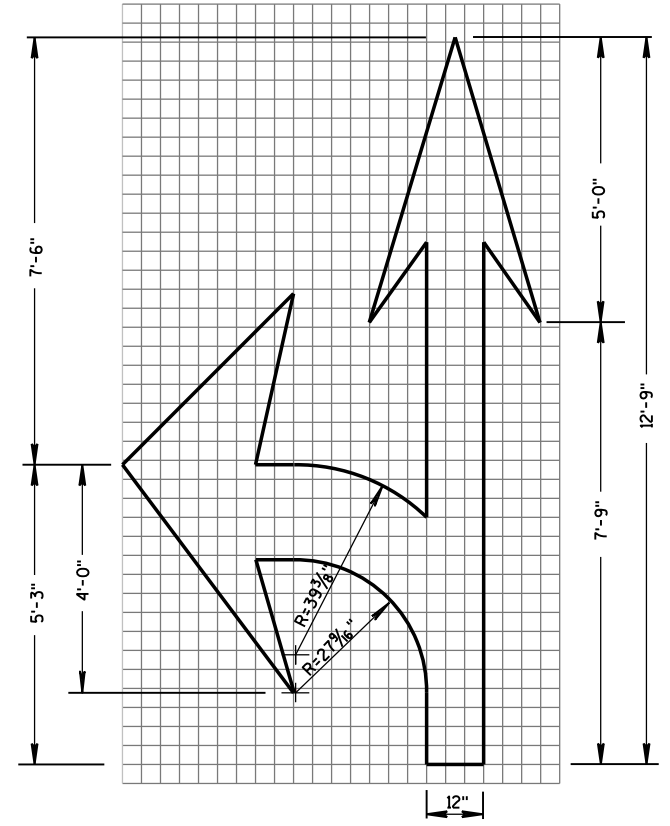
TYPE 5 LANE DROP ARROW



TYPE 1



TYPE 7

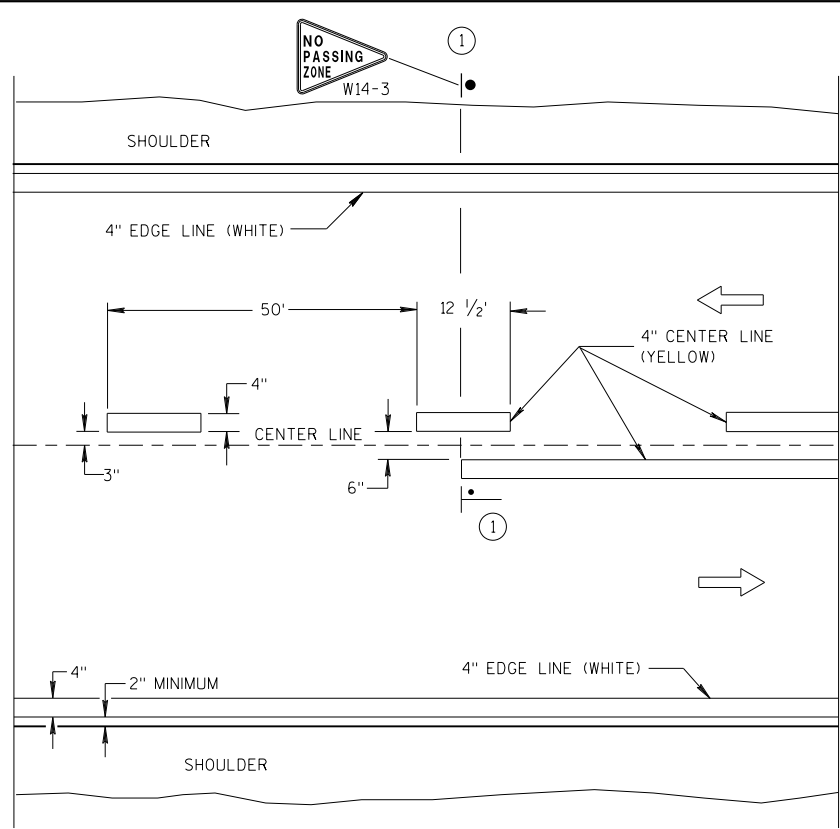


TYPE 3

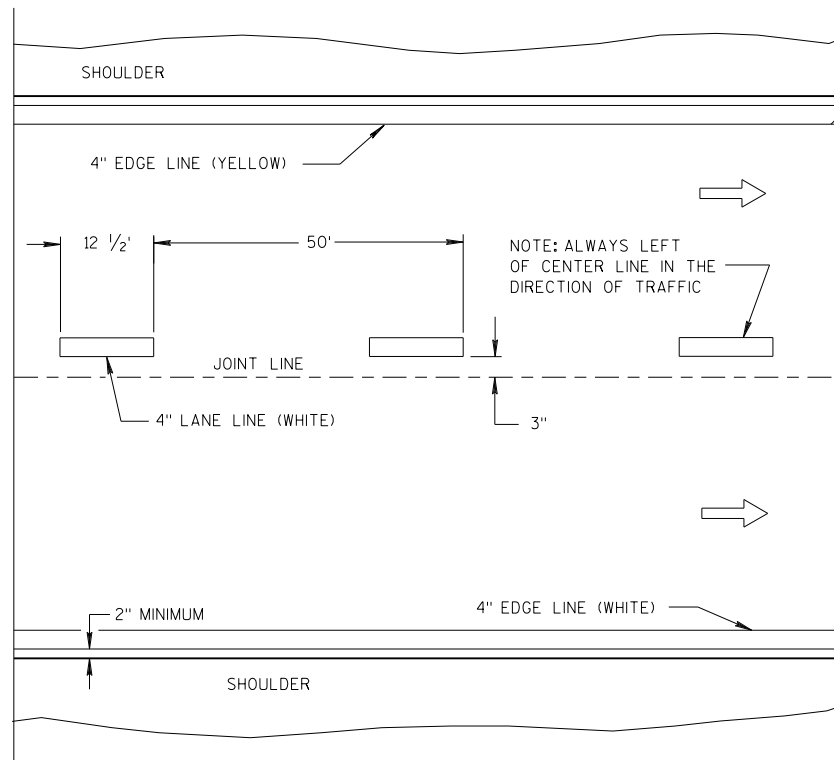
GENERAL NOTES

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

PAVEMENT MARKING ARROWS	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED June 2017 DATE	/s/ Matthew R. Rauch STATE SIGNING AND MARKING ENGINEER
FHWA	

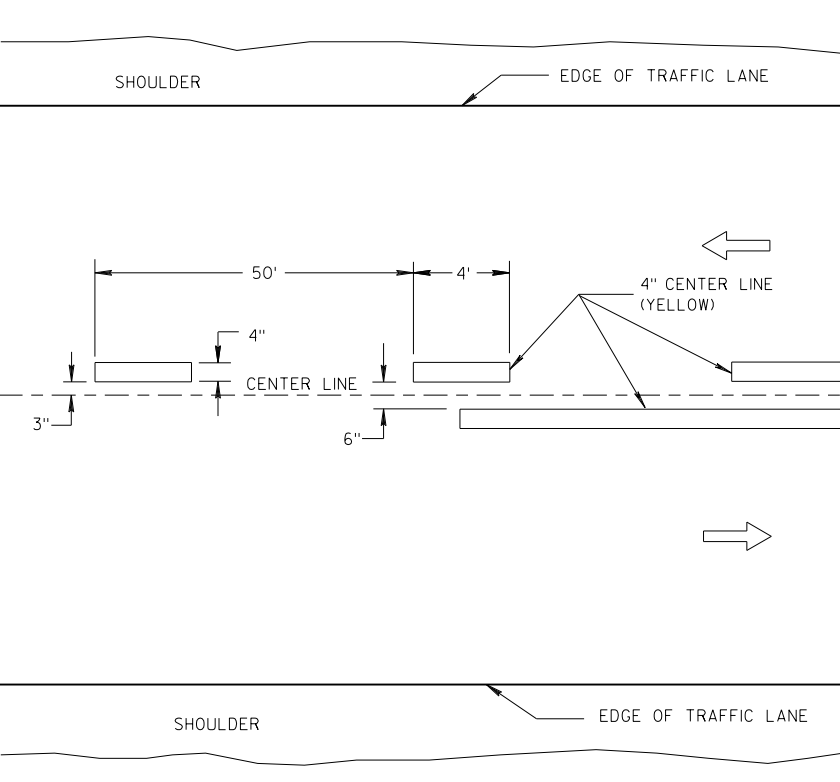


TWO WAY TRAFFIC

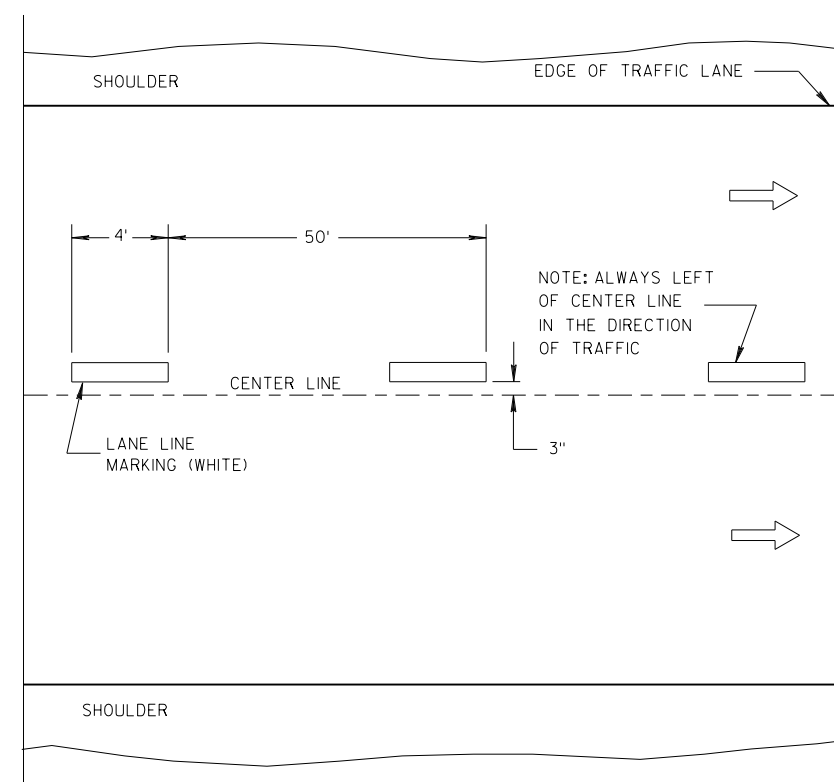


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY PAVEMENT MARKING

GENERAL NOTES

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

① LOCATE THE NO PASSING ZONE W14-3 SIGN WITHIN 50 FEET OF THE "T" MARKING.

NOTE

ARROW SYMBOL (→) SHOWS DIRECTION OF TRAVEL

LEGEND

- "T" MARKING
- POST MOUNTED SIGN

LONGITUDINAL MARKING (MAINLINE)

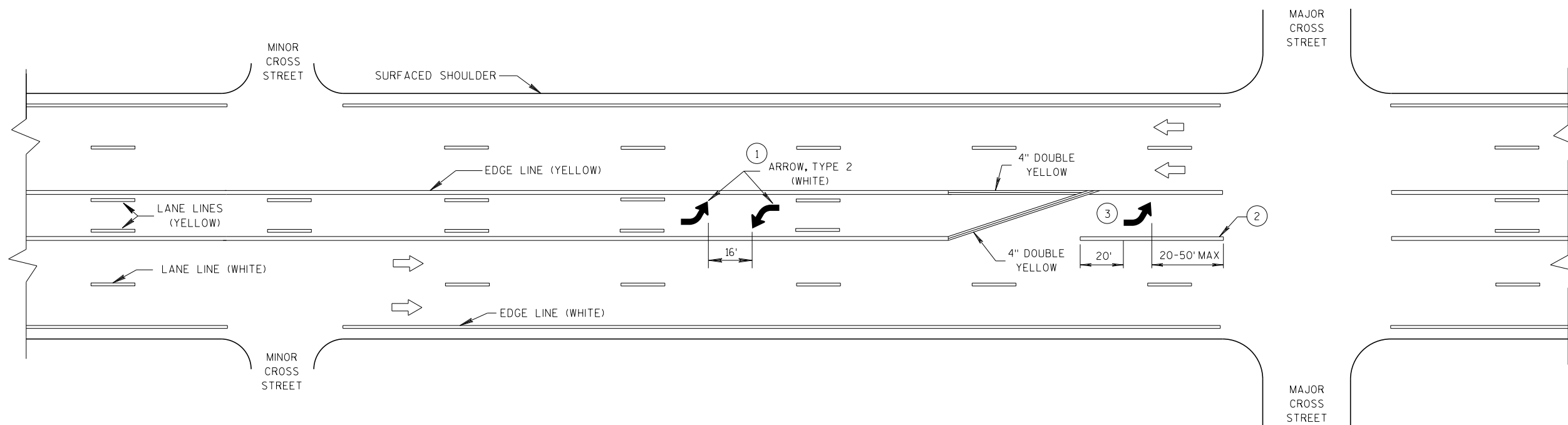
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
7/2018 /S/ Matthew R. Rauch
DATE STATE SIGNING AND MARKING ENGINEER
FHWA

GENERAL NOTES

- ① A SET OF ARROWS IS REQUIRED EVERY 400 FEET OR NEAR INTERSECTIONS OR DRIVEWAYS WITH TURNING TRAFFIC.
- ② 8" WHITE
- ③ TURN BAY LENGTH OF LESS THAN 48' DOES NOT REQUIRE PAVEMENT ARROWS OR TEXT

➔ DIRECTION OF TRAFFIC



TWO WAY LEFT TURN LANE

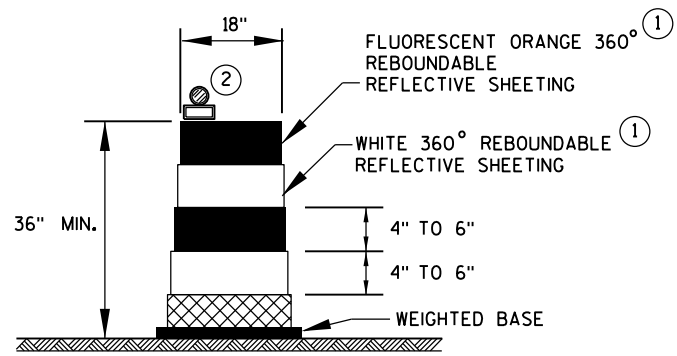
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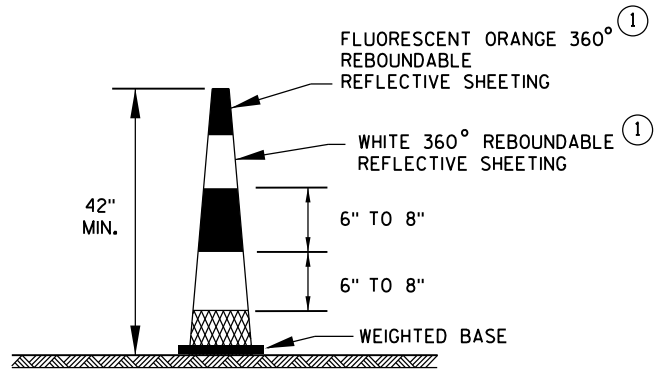
S.D.D. 15 C 8-19b

S.D.D. 15 C 8-19b

<p>PAVEMENT MARKING (TURN LANES)</p>
<p>STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION</p>



DRUM

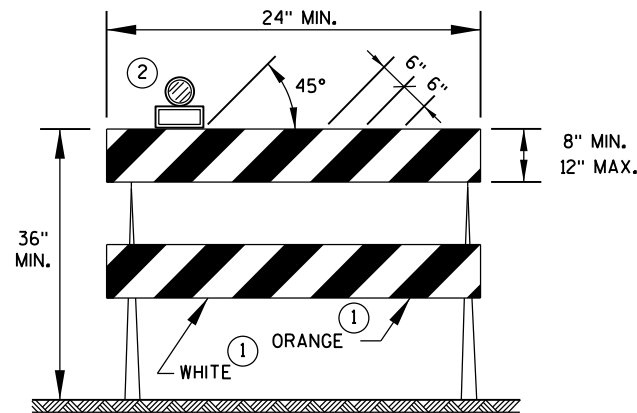


42" CONE

DO NOT USE IN TAPERS
 1/2 SPACING OF DRUMS

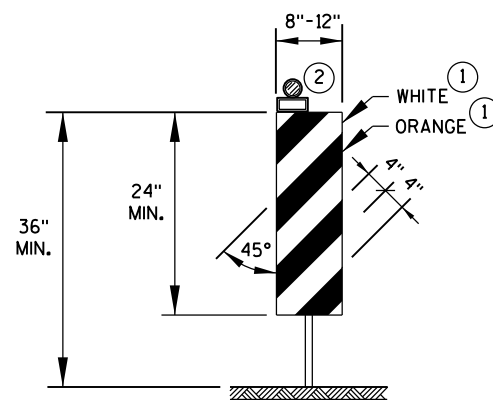
GENERAL NOTES

- ① REFLECTIVE SHEETING SHALL FOLLOW THE REQUIREMENTS IN THE APPROVED PRODUCTS LISTING FOR SIGN SHEETING.
- ② LOCATION OF WARNING LIGHTS WHEN SHOWN ON THE PLAN.



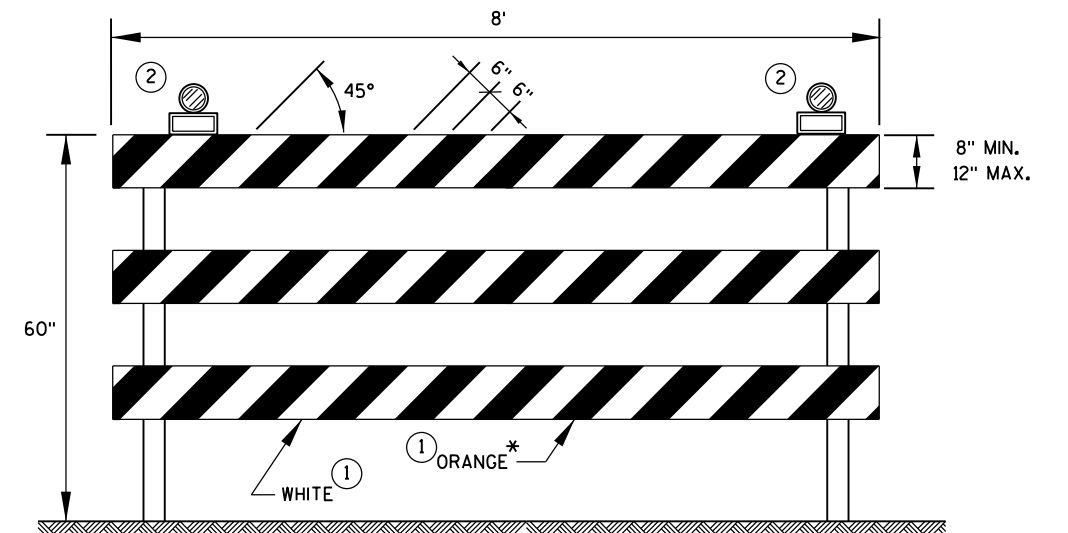
TYPE 2 BARRICADE

FOR RAILS LESS THAN 36" LONG, 4" WIDE STRIPES MAY BE USED. ALL STRIPES SHALL SLOPE DOWNWARD TO THE TRAFFIC SIDE FOR CHANNELIZATION.



VERTICAL PANEL

THE STRIPES SHALL SLOPE DOWNWARD TO THE TRAFFIC SIDE FOR CHANNELIZATION.



TYPE 3 BARRICADE

IF SIGN MOUNTED, DO NOT COVER MORE THAN 50% OF THE TOP TWO RAILS OR 33% OF THE TOTAL AREA OF THE THREE RAILS.





* IF USED FOR A PERMANENT APPLICATION, USE RED SHEETING.

6

6

CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED June 2017 DATE	/S/ Andrew Heidtke WORK ZONE ENGINEER
FHWA	

LEGEND

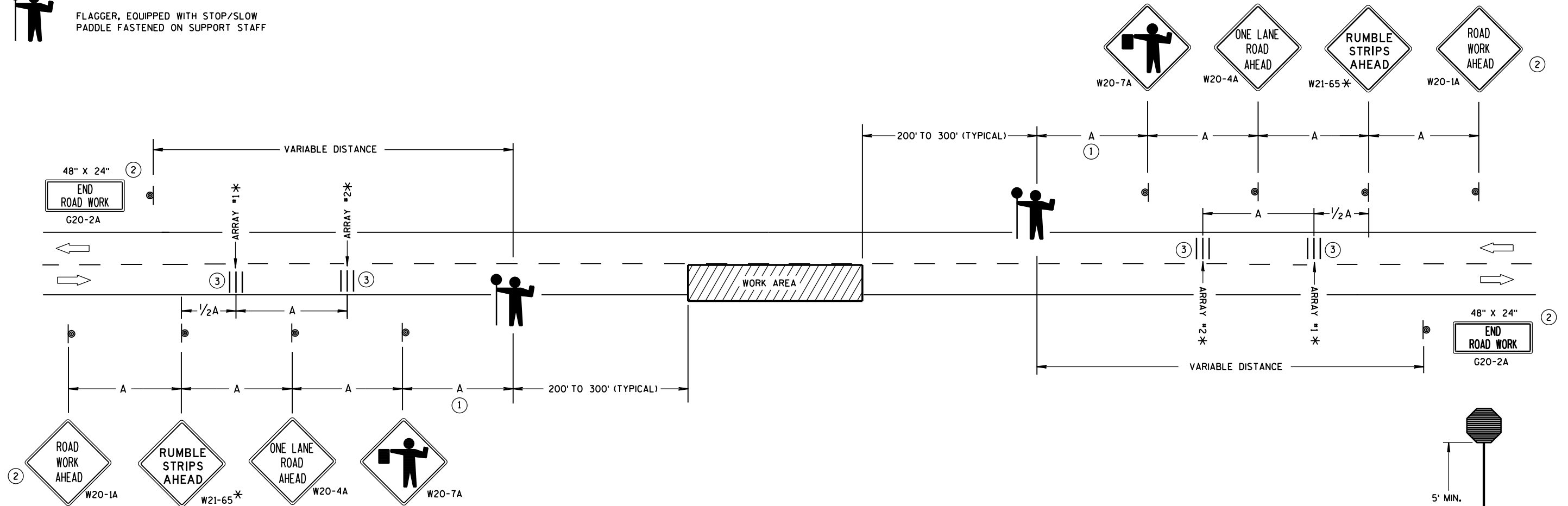
-  SIGN ON PORTABLE OR PERMANENT SUPPORT
-  DIRECTION OF TRAFFIC
-  WORK AREA
-  FLAGGER, EQUIPPED WITH STOP/SLOW PADDLE FASTENED ON SUPPORT STAFF

SIGN AND TEMPORARY RUMBLE STRIP ARRAY SPACING TABLE

SPEED LIMIT	SPACING A
25-35 MPH	200'
35-40 MPH	350'
45-55 MPH	500'



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



TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION

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.

"W0" SIGNS ARE THE SAME AS "W" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

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.

INSTALL TEMPORARY RUMBLE STRIPS PER MANUFACTURER'S RECOMMENDATIONS. PLACE ADVANCE SIGNING PRIOR TO INSTALLING TEMPORARY RUMBLE STRIPS.

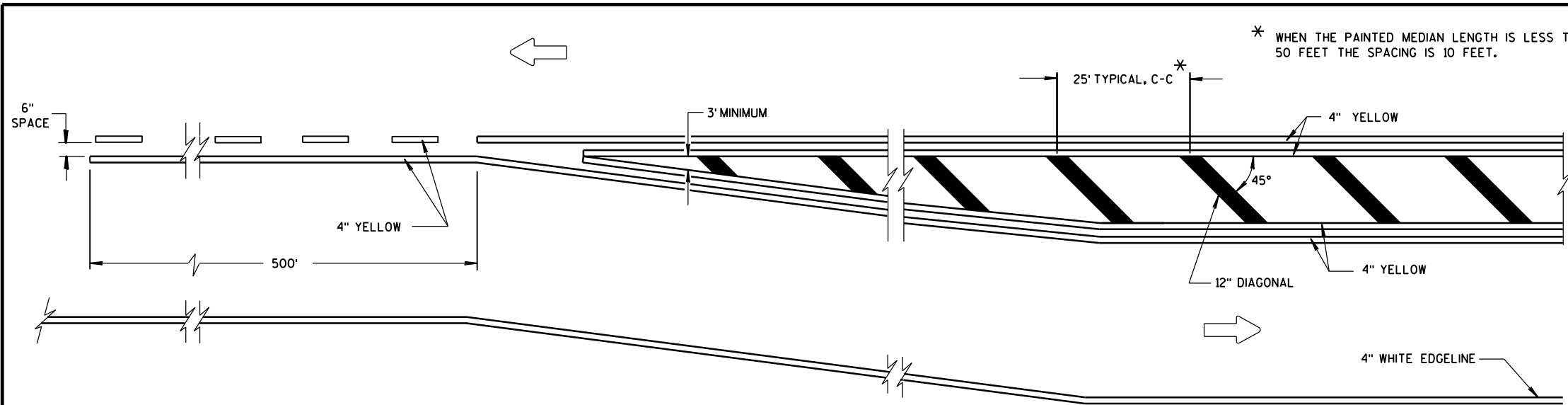
ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED.

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, REMOVE TEMPORARY RUMBLE STRIPS PRIOR TO COVERING OR REMOVING ALL ADVANCE SIGNING.

* UTILIZE TEMPORARY RUMBLE STRIPS WHEN FLAGGING OPERATION IS ANTICIPATED TO BE STATIONARY IN EXCESS OF TWO HOURS.

- ① FOR A MOVING WORK OPERATION, SIGNING AND TEMPORARY RUMBLE STRIPS (IF USED) SHALL BE REESTABLISHED (AS SIMULTANEOUSLY AS PRACTICAL) AT APPROXIMATELY 3,500 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.
- ③ EACH TEMPORARY RUMBLE STRIP ARRAY CONSISTS OF THREE RUMBLE STRIPS SPACED ACCORDING TO MANUFACTURER'S RECOMMENDATION, PLACED TRANSVERSE ACROSS THE LANE AT LOCATIONS SHOWN.

TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED June 2017 DATE	/S/ Andrew Heldtke WORK ZONE ENGINEER
FHWA	

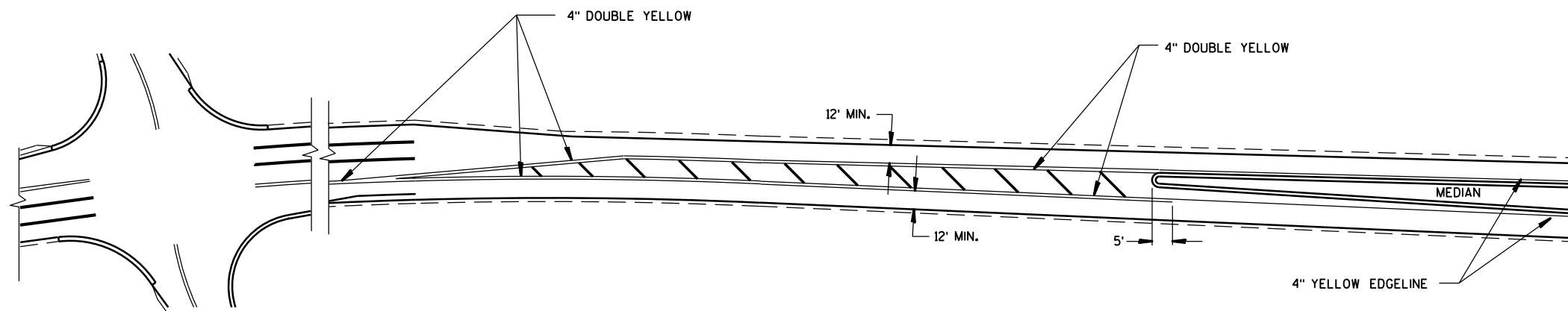


MEDIAN ISLAND DETAIL

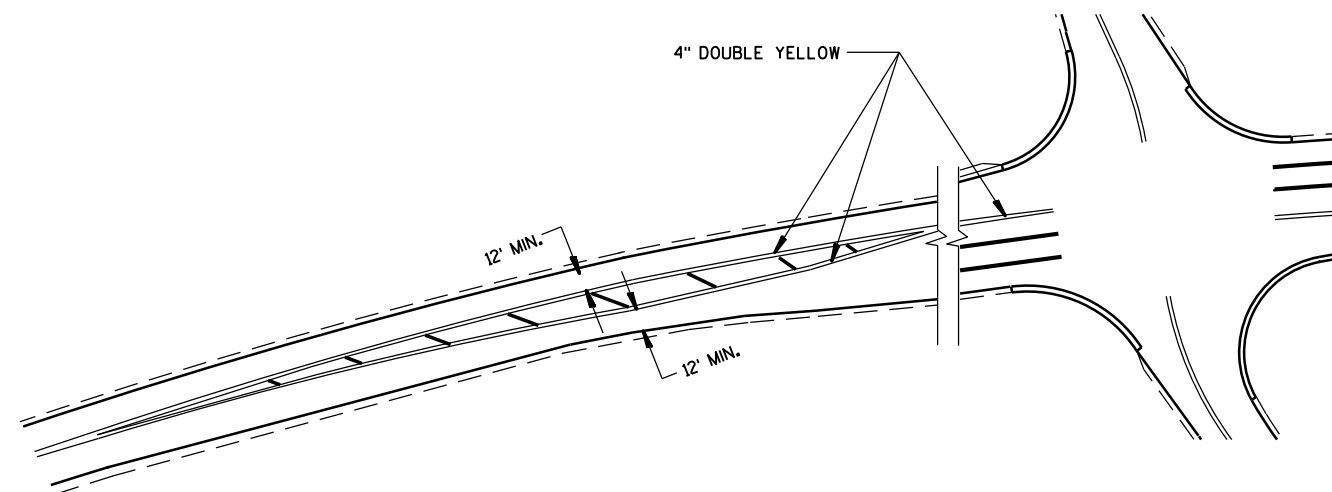
GENERAL NOTE

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

➔ DIRECTION OF TRAVEL



APPROACH MARKINGS FOR OTHER MEDIAN TYPES



NON APPROACH MARKINGS

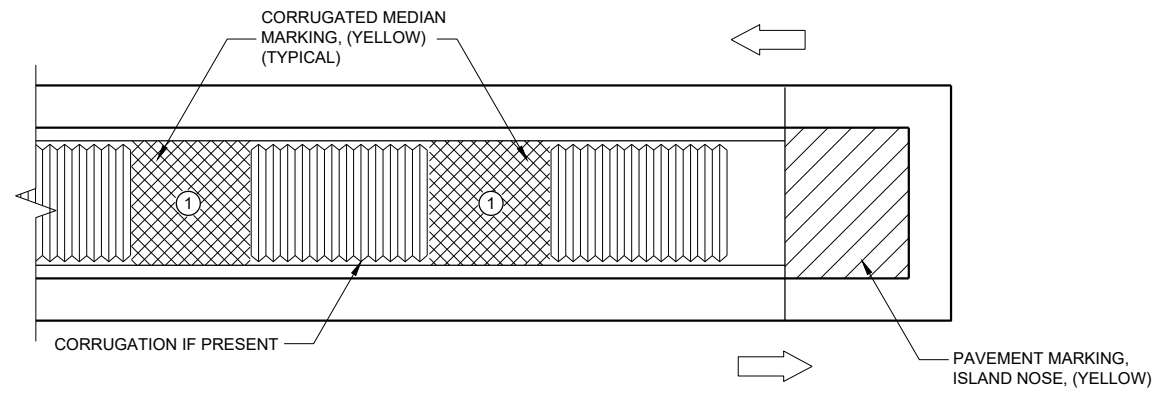
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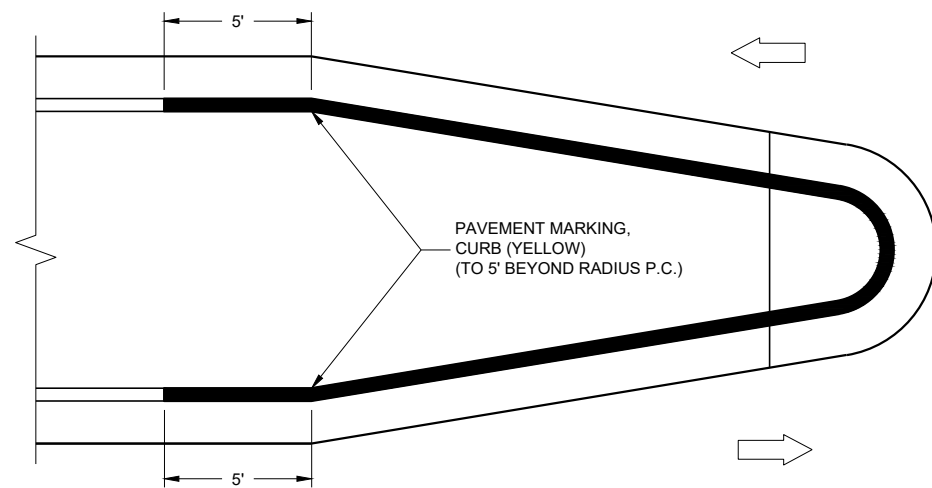
S.D.D. 15 C 18-4

S.D.D. 15 C 18-4

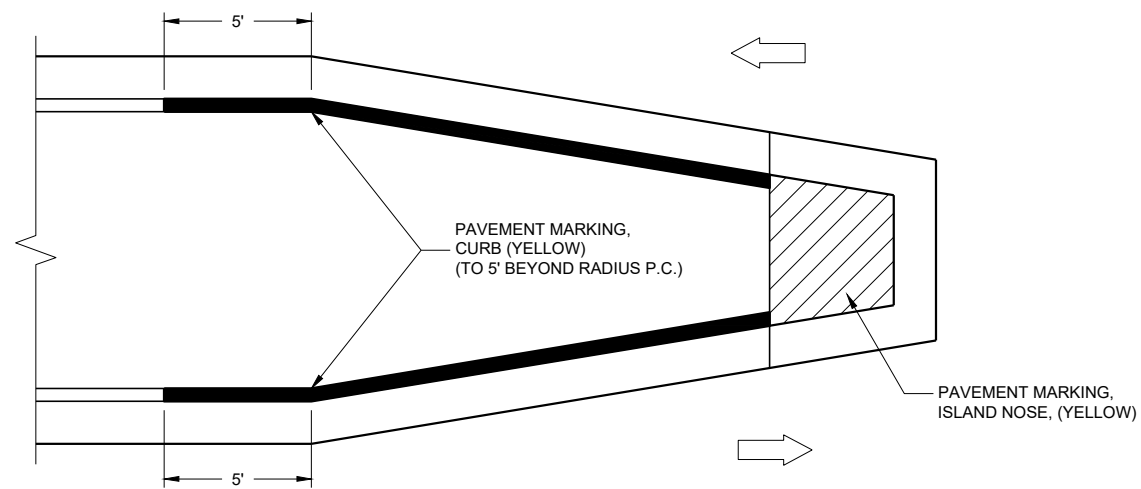
MEDIAN ISLAND MARKING	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED June 2017 DATE	/S/ Matthew Rauch STATE SIGNING AND MARKING ENGINEER
FHWA	



MEDIAN ISLAND WITH SQUARE BLUNT NOSE



MEDIAN ISLAND WITH ROUND BLUNT NOSE







MEDIAN ISLAND WITH SLOPED NOSE

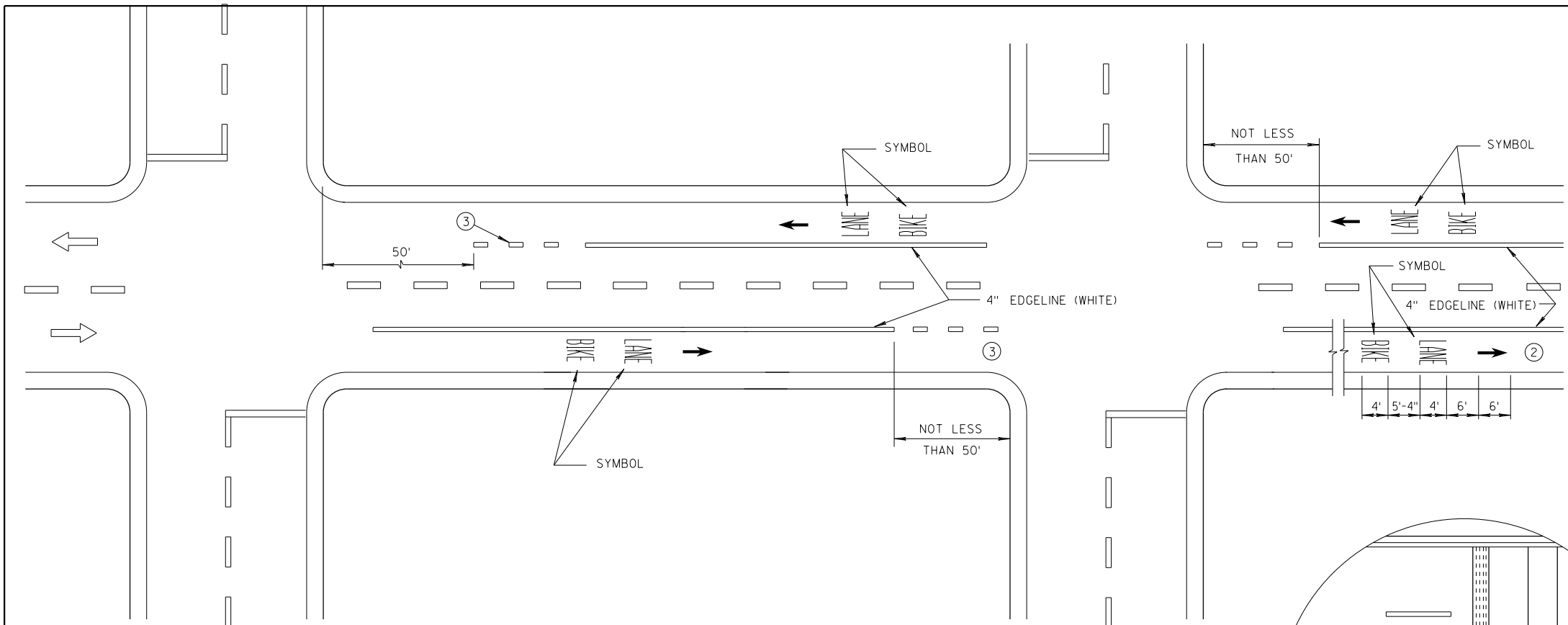
TYPICAL PLACEMENT OF PAVEMENT MARKING ON MEDIAN ISLANDS

GENERAL NOTES

WHEN CONCRETE CORRUGATED MEDIAN IS CONSTRUCTED TO SEPARATE TRAFFIC OPERATING IN THE OPPOSING DIRECTION, YELLOW PAVEMENT MARKING SHALL BE APPLIED TO THE FLAT PORTION OF THE CONCRETE CORRUGATED MEDIAN. THE ITEM OF PAVEMENT MARKING, CONCRETE CORRUGATED MEDIAN, WILL BE MEASURED IN PLACE AND ACCEPTED IN ACCORDANCE WITH THE CONTRACT AND PAID FOR AT THE CONTRACT UNIT PRICE PER SQUARE FOOT.

-  ISLAND NOSE MARKING
-  CURB MARKING
-  CORRUGATED MEDIAN MARKING
-  DIRECTION OF TRAVEL

EME M R D	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 7/2018 DATE	/S/ Matthew R. Rauch STATE SIGNING AND MARKING ENGINEER
FHWA	

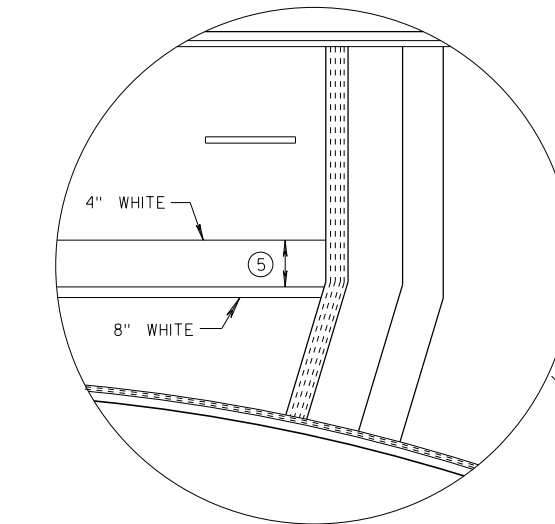


GENERAL NOTES

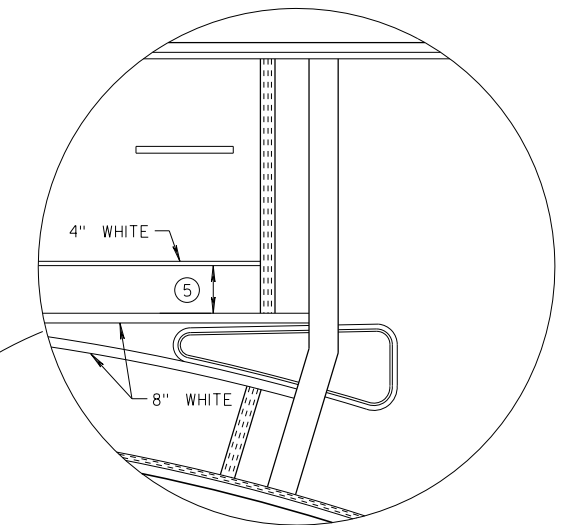
- ① DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO STANDARD SPECIFICATIONS AND SPECIAL PROVISIONS.
- ② MINIMUM OF ONE PER BLOCK. MAXIMUM OF 250 FEET.
- ③ DOTTED LINES (3' LINE, 9' GAP) SHOULD BE USED 50 FEET TO 200 FEET IN ADVANCE OF AN INTERSECTION WHERE THERE IS NO RIGHT TURN ONLY LANE AND THERE IS HEAVY RIGHT TURN TRAFFIC OR THERE IS A NEAR-SIDE BUS STOP. AT OTHER INTERSECTIONS WHERE RIGHT TURN TRAFFIC IS LIGHT TO MODERATE, A SOLID LINE CAN BE USED UP TO THE INTERSECTION.
- ④ IF SIGNED AND/OR MARKED AS A BICYCLE FACILITY INCLUDE SECOND LINE OF LINE-SPACE MARKING, OTHERWISE DO NOT.
- ⑤ BIKE ACCOMODATION IS TYPICALLY 5 FEET WIDE AND A MINIMUM OF 4 FEET FROM A LONGITUDINAL JOINT. USE 5 FEET AT 45 MPH.
- ⑥ OMIT THESE MARKINGS FOR WIDER TURN LANE APPLICATIONS (MINIMUM OF 15 FEET WIDE TURN LANE).
- ⑦ REFER TO CONTRACT PLANS FOR LANE WIDTH.

➔ DIRECTION OF TRAVEL

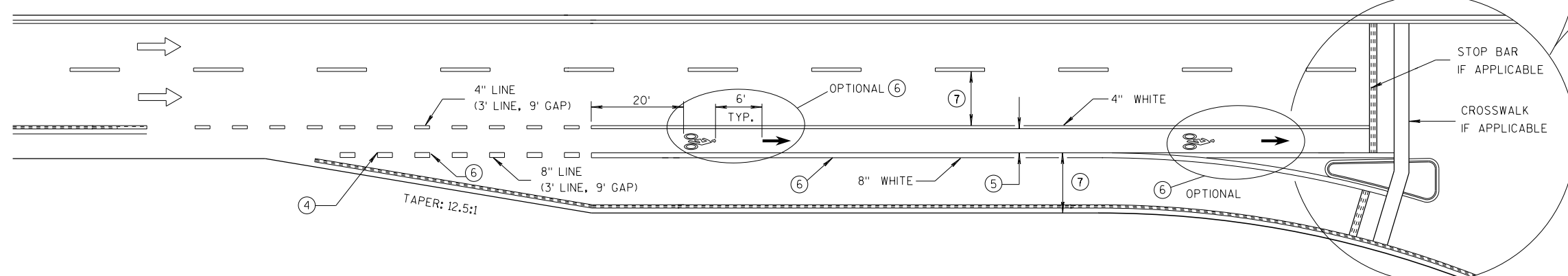
**DESIGNATED BICYCLE LANE
NO PARKING**



4 LANE DIVIDED WITHOUT ISLAND



4 LANE DIVIDED WITH ISLAND

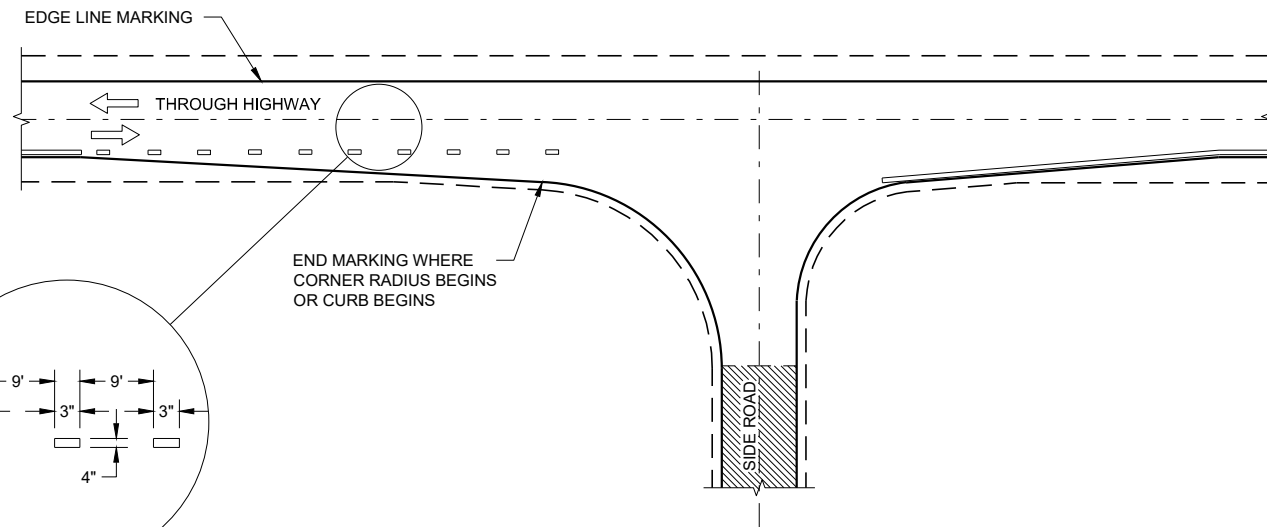


**BIKE LANE - FOR 2-LANE ROADWAYS AND 4-LANE DIVIDED ROADWAYS
(4-LANE DIVIDED WITH RIGHT TURN LANE SHOWN)**

BICYCLE LANE MARKING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
DATE 7/2018 /S/ Matthew R. Rauch
STATE SIGNING AND MARKING ENGINEER
FHWA



END MARKING WHERE CORNER RADIUS BEGINS OR CURB BEGINS

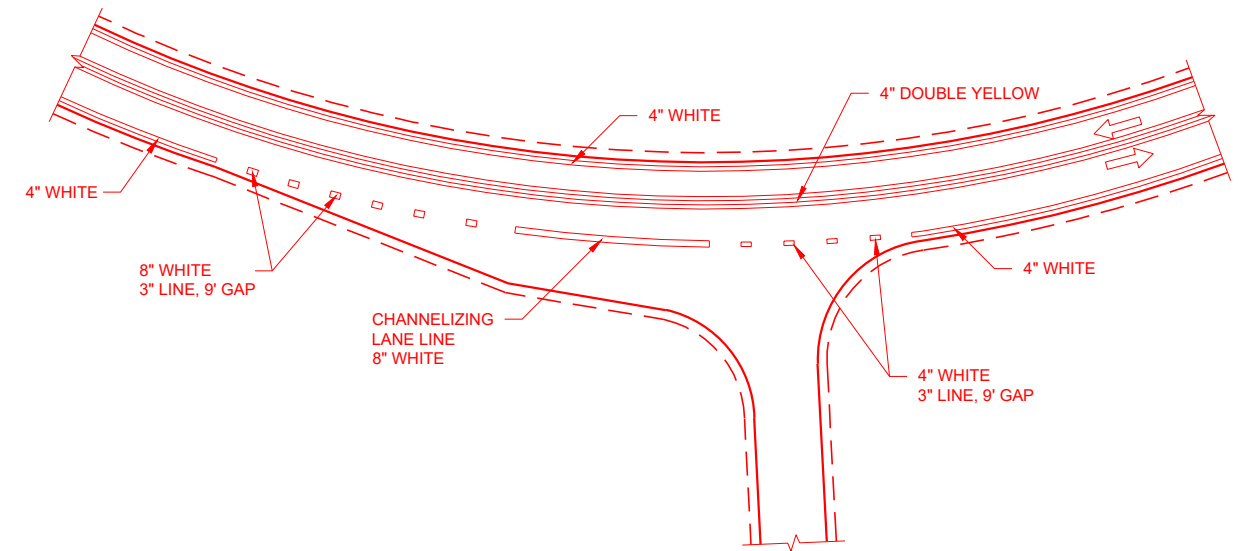
M R E R E

E E R E

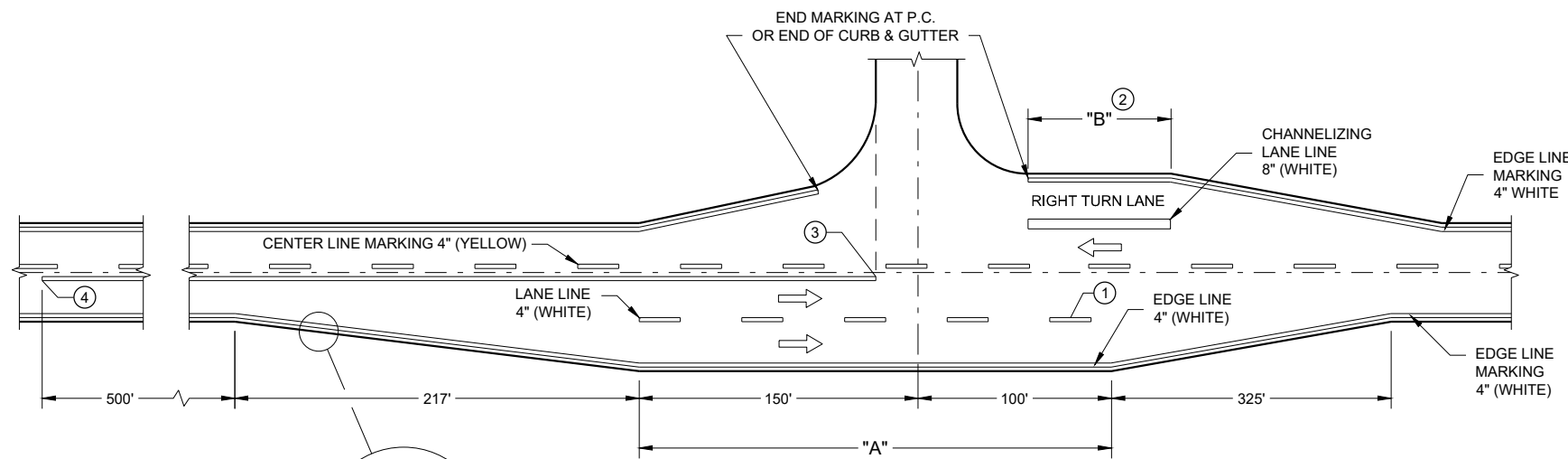
OMIT EDGE LINES THROUGH INTERSECTIONS. CONTINUE EDGE LINES THROUGH DRIVEWAYS.

- 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 BARRIER LINE ENDS AT SIDE ROAD PAVEMENT / SURFACE EDGE EXTENSION.
- ④ BARRIER LINE STARTS 500 FEET PRIOR TO THE BYPASS TAPER

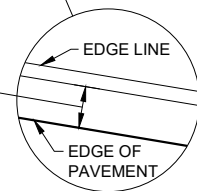
ARROW SYMBOL (→) SHOWS DIRECTION OF TRAVEL



E R E DE R E



BYPASS LANE PAVED SHOULDER WIDTH (AS SHOWN ELSEWHERE IN PLANS) - PLUS 2 INCHES



M R E R E

E R E R R E R E

E M R
E R E

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

- TYPE III BARRICADE
- TYPE III BARRICADE WITH ATTACHED SIGN
- TRAFFIC CONTROL DRUM
- SIGN ON PERMANENT SUPPORT
- TYPE "A" WARNING LIGHT (FLASHING)
- DIRECTION OF TRAFFIC

E E R E

THIS RAMP CLOSURE DETAIL IS TYPICAL FOR CLOSING A RIGHT SIDE EXIT RAMP. FOR A LEFT SIDE EXIT RAMP, REVERSE THE TRAFFIC CONTROL.

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

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

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

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.

PLACE TEMPORARY PAVEMENT MARKING, REMOVABLE TAPE IF RAMP CLOSURE IS TO BE IN PLACE 4 OR MORE CONTINUOUS DAYS AND NIGHTS.

WORK AREAS WITH A DROP OFF ALONG THE EDGE OF AN OPEN TRAVEL LANE SHALL BE LEVELED WITH TEMPORARY FILL WHEN THE CONTRACTOR IS NOT WORKING ADJACENT TO THE TRAVEL LANE. DRUMS SHALL BE PLACED ENTIRELY OUTSIDE THE TRAVEL LANE, ALLOWING THE FULL UNOBSTRUCTED LANE WIDTH, WHEN WORK IS NOT IN PROGRESS.

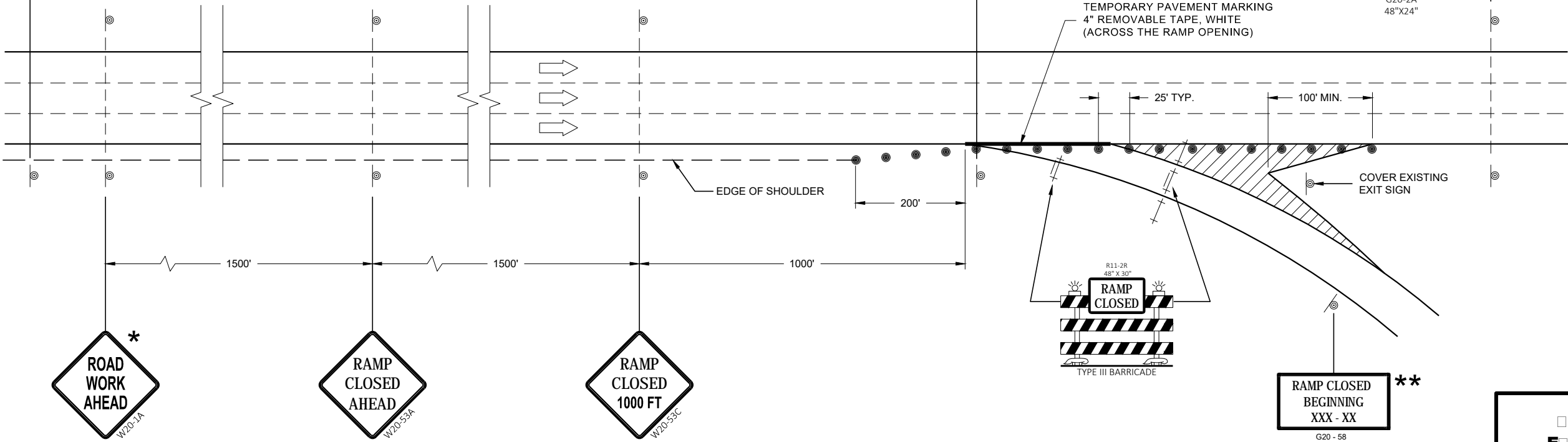
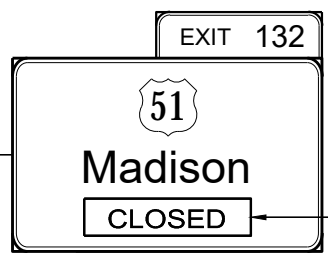
WHERE MEDIAN BARRIER IS IN PLACE, SIGNS SHOWN ON LEFT SIDE OF ROADWAY MAY BE OMITTED FOR RIGHT SIDE RAMP CLOSURES OF LESS THAN 12 - HOUR DURATION.

* W20 - 1A AND G20 - 2A SIGNS ARE NOT REQUIRED IF THE RAMP CLOSURE IS WITHIN A LARGER WORK ZONE WHERE THESE SIGNS ARE ALREADY PRESENT.

** PLACE "RAMP CLOSED BEGINNING" SIGN OR PCMS 7 CALENDAR DAYS PRIOR TO CLOSURE OR AS DIRECTED BY THE ENGINEER. SEE WISCONSIN STANDARD SIGN PLATES FOR SIGN LAYOUT.



OR



R M R E

E R M R E

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2018 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER

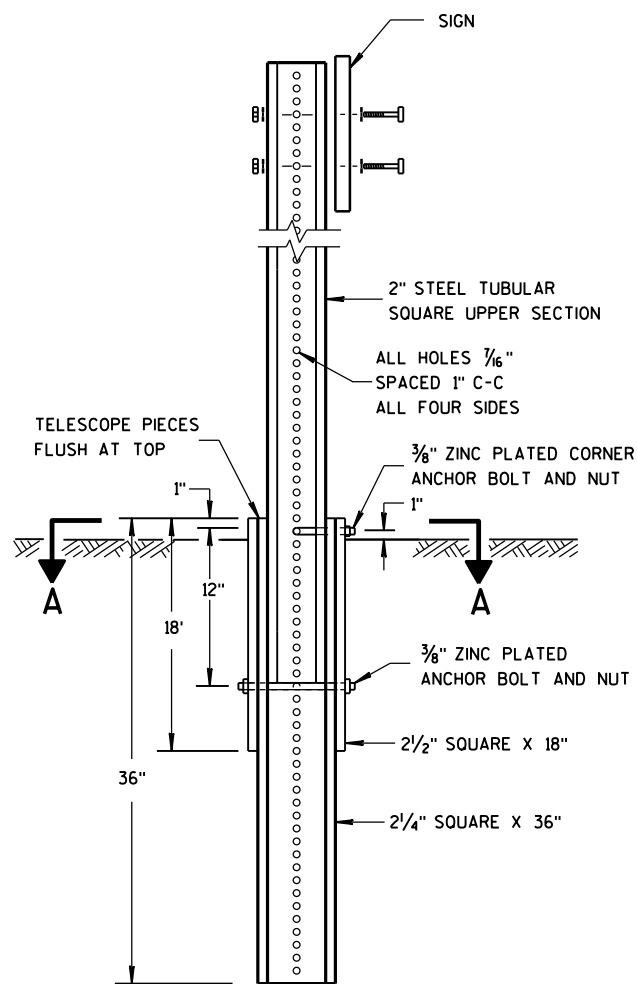
FHWA

6

6

DD

DD



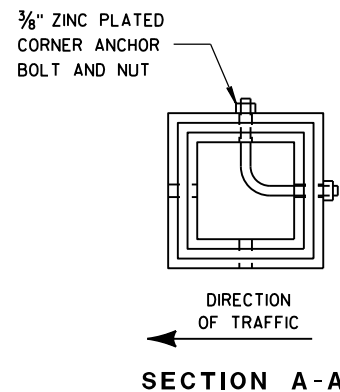
DETAIL OF TUBULAR STEEL SIGN POST

TUBULAR STEEL POSTS

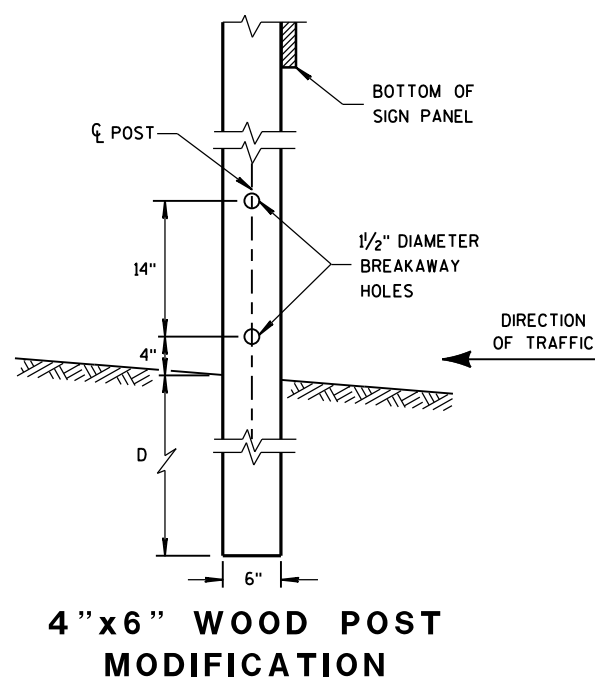
AREA OF SIGN INSTALLATION (SQ. FT.)	NUMBER OF REQUIRED TUBULAR STEEL POSTS
9 OR LESS	1
GREATER THAN 9 LESS THAN OR EQUAL TO 18	2
GREATER THAN 18 LESS THAN OR EQUAL TO 27	3

SIGNS WIDER THAN 3 FEET OR LARGER THAN 9 SQ. FT. SHALL BE MOUNTED ON MULTIPLE POSTS (SEE ABOVE TABLE).

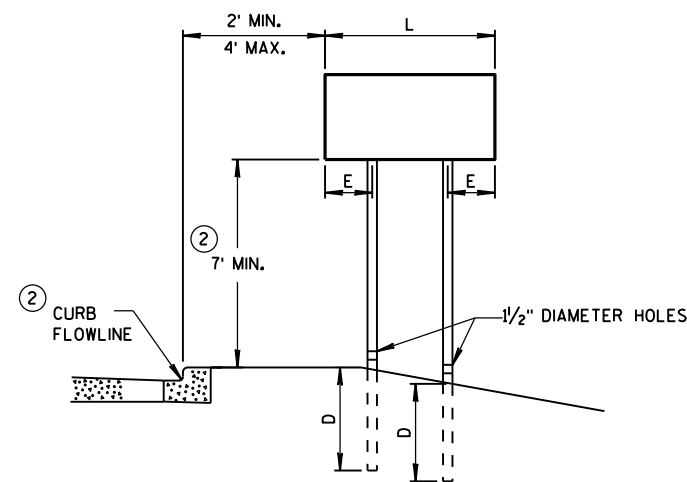
SIGNS LARGER THAN 27 SQ. FT. SHALL NOT BE MOUNTED ON TUBULAR STEEL POSTS.



SECTION A-A



4" X 6" WOOD POST MODIFICATION

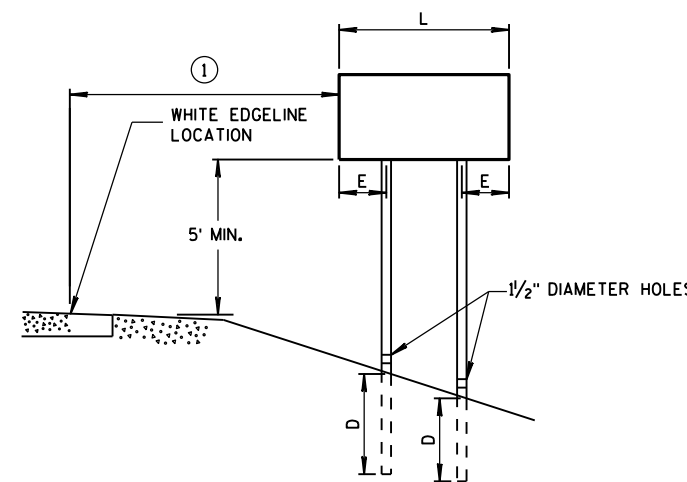


URBAN AREA

POST MOUNTING DETAIL FOR TEMPORARY TRAFFIC CONTROL FIXED MESSAGE SIGNS

WOOD POST EMBEDMENT DEPTH

AREA OF SIGN INSTALLATION (SQ. FT.)	D (MIN)
20 OR LESS	4'
GREATER THAN 20	5'



RURAL AREA

4" X 6" WOOD POST

POST SPACING REQUIREMENTS		NUMBER OF WOOD POSTS REQUIRED
L	E	
48" OR LESS AND LESS THAN 20 SQ. FT.	-	1
LESS THAN 60"	12"	2
60" TO 120"	L/5	2
GREATER THAN 120" LESS THAN 168"	12"	3
168" AND GREATER	12"	4

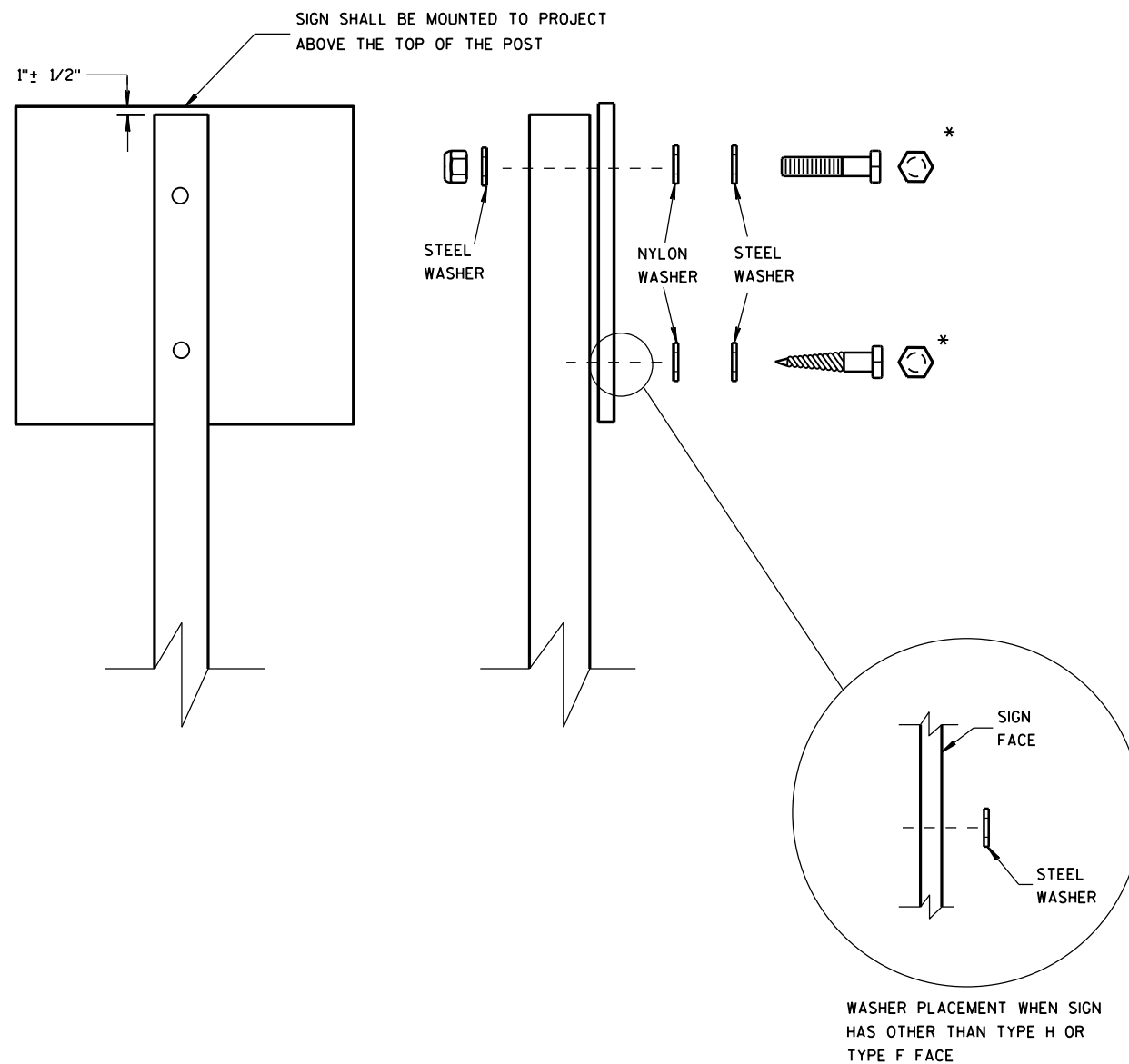
SEE NOTE ③

GENERAL NOTES

- ① 6 FEET FROM THE EDGE OF PAVEMENT (EDGE LINE LOCATION) UNLESS OTHERWISE DIRECTED BY THE PROJECT ENGINEER. LATERAL OFFSET SHOULD BE ADJUSTED TO AVOID THE DITCH FLOWLINE.
- ② 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. IF NO SIDEWALK AND NO PARKING, VERTICAL CLEARANCE MAY BE REDUCED TO 5 FOOT MINIMUM. OFFSET OF SIGNS IS MEASURED FROM THE CURB FLOWLINE.
- ③ FOR SIGNS REQUIRING 4 POSTS, SPACE INTERMEDIATE POSTS EVENLY.

TEMPORARY TRAFFIC CONTROL SIGN MOUNTING

STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION



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 - 3/32" (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM BODY/MANDREL O.D. FLANGE .720-.765 INCH, GRIP RANGE .042-.375 INCH

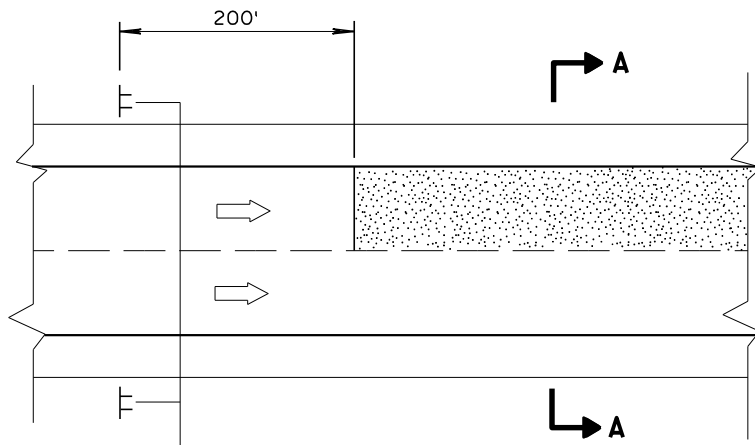
WASHERS (ALL POSTS) -

1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL

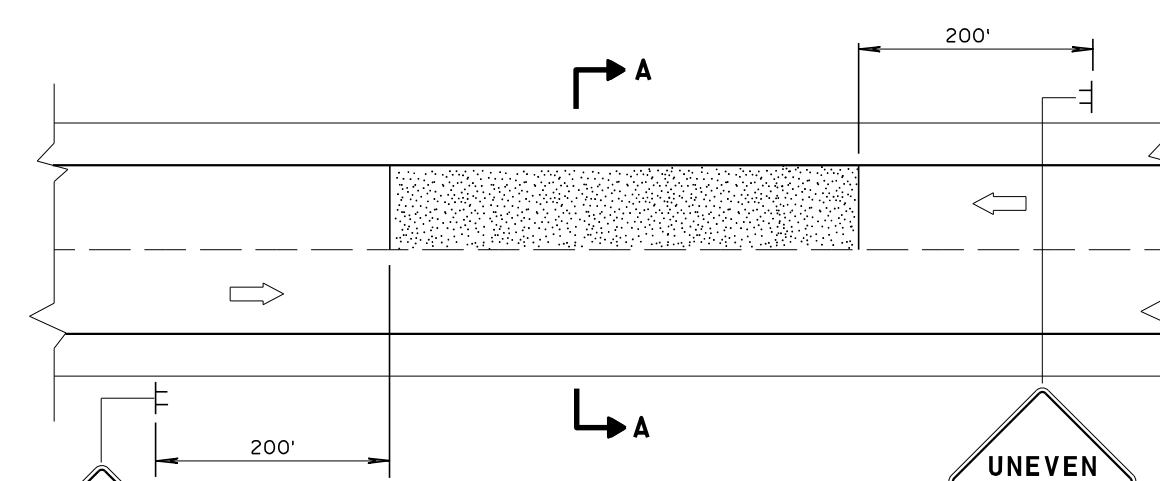
1-1/4" O.D. X 3/8" I.D. X .080 NYLON FOR ALL TYPE H SIGNS

* 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. FOR A SINGLE POST INSTALLATION, ALL SIGNS GREATER THAN 9 SQ. FT. REQUIRE THE USE OF 3 FASTENERS.

ATTACHMENT OF SIGNS TO POSTS	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED June 2017 DATE	/s/ Andrew Heidtke WORK ZONE ENGINEER
FHWA	



MULTI-LANE

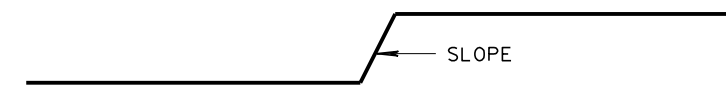


TWO-WAY TWO LANE

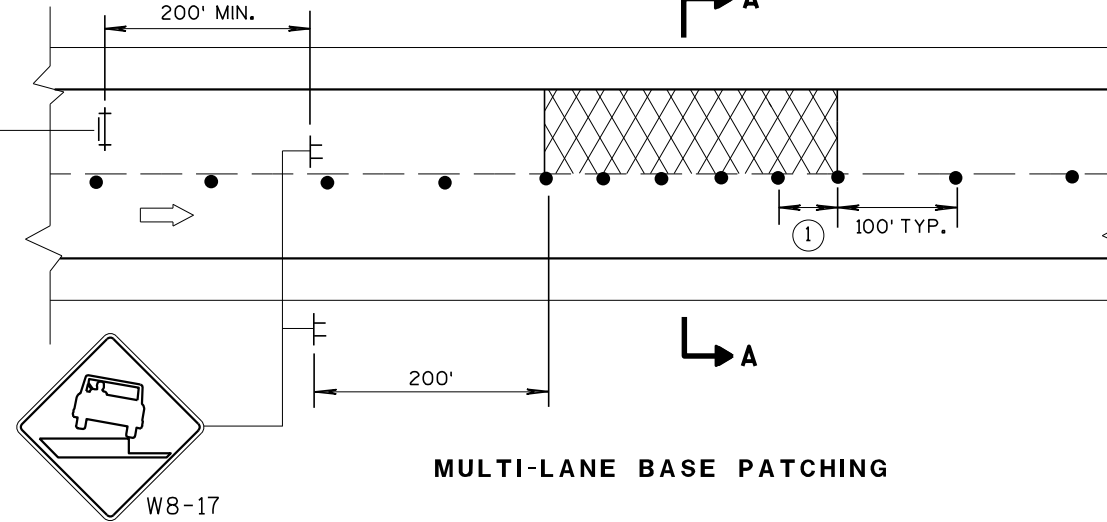
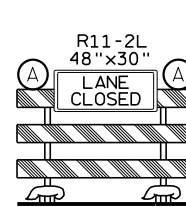


SECTION A-A

OR



SECTION A-A



MULTI-LANE BASE PATCHING

ADJACENT LANE DROP-OFFS

GENERAL NOTES

FOR SPOT LOCATIONS USE ENGINEERING JUDGEMENT WHEN PLACING ADDITIONAL SIGNS.

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

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



WARNING LIGHTS ARE NOT REQUIRED IF THE LANE CLOSURE IS A DAYTIME ONLY OPERATION.

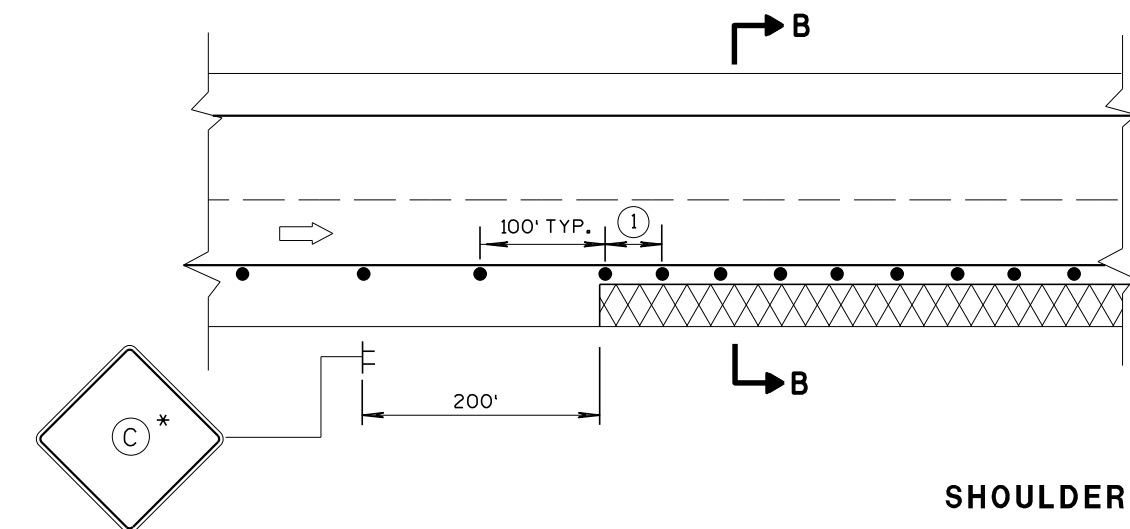
* IF THE DROP-OFF IS CONTINUOUS ALONG THE PROJECT, PLACE ADDITIONAL SIGNS EVERY 1 MILE AND AFTER EACH ENTRANCE RAMP.

① USE CLOSER SPACING WHEN DELINEATING DROP-OFF.

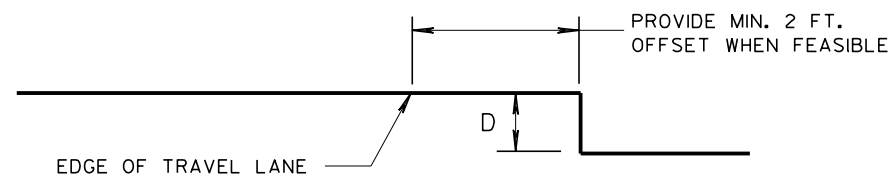
LEGEND

- ⊥ TYPE III BARRICADE WITH ATTACHED SIGN
- ⊥ SIGN ON TEMPORARY SUPPORT
- TRAFFIC CONTROL DRUM
- ⓐ TYPE "A" WARNING LIGHT (FLASHING)
- ➡ DIRECTION OF TRAFFIC
- ▨ WORK AREA WITH DROP-OFF
- ▩ MILLED SURFACE

D	SIGN (C)
< 2" WITH A SLOPE STEEPER THAN 3:1	 LOW SHOULDER W08-9
2" < 6" WITH A SLOPE STEEPER THAN 3:1	 SHOULDER DROP-OFF W8-9A PROVIDE A 3:1 OR FLATTER SLOPE OF MATERIAL ADJACENT TO THE PAVEMENT



SHOULDER DROP-OFFS



SECTION B-B

TRAFFIC CONTROL,
DROP-OFF SIGNING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

March 2018
DATE

/s/ Andrew Heidtke
WORK ZONE ENGINEER

FHWA

EARTHWORK TABLE 1

Division – STH59 SB

STATION	Real Station	Distance	AREA (SF)				Incremental Vol (CY) (Unadjusted)				Cumulative Vol (CY)				
			Cut	Salvaged/ Pavement Material	Fill	EBS	Cut	Salvaged/ Pavement Material	Fill	EBS	Cut 1.00 Note 1	Expanded Fill 1.33	Expanded EBS Backfill 1.00 Note 5	Reduced EBS in Fill 1.00 Note 7	Mass Ordinate Note 8
04+50	450.00	0.00	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	
04+66	466.00	16.00	74.73	0.00	0.15	0.00	22	0	0	0	22	0	0	0	22
04+96	496.00	30.00	106.70	0.00	2.63	0.00	101	0	2	0	123	2	0	0	121
05+50	550.00	54.00	88.53	0.00	0.17	0.00	195	0	3	0	318	6	0	0	312
06+00	600.00	50.00	84.51	0.00	0.00	0.00	160	0	0	0	478	6	0	0	472
06+50	650.00	50.00	75.41	0.00	0.80	0.00	148	0	1	0	626	7	0	0	619
07+00	700.00	50.00	70.07	0.00	0.51	0.00	135	0	1	0	761	9	0	0	753
07+50	750.00	50.00	83.43	0.00	0.43	0.00	142	0	1	0	903	10	0	0	893
08+00	800.00	50.00	92.47	0.00	0.51	0.00	163	0	1	0	1,066	11	0	0	1,055
08+50	850.00	50.00	112.63	0.00	0.69	0.00	190	0	1	0	1,256	12	0	0	1,244
09+00	900.00	50.00	159.51	0.00	0.35	0.00	252	0	1	0	1,508	14	0	0	1,494
09+50	950.00	50.00	127.81	0.00	2.77	0.00	266	0	3	0	1,774	18	0	0	1,757
10+00	1000.00	50.00	121.57	0.00	3.54	0.00	231	0	6	0	2,005	25	0	0	1,980
10+50	1050.00	50.00	117.62	0.00	2.82	0.00	221	0	6	0	2,226	33	0	0	2,193
11+00	1100.00	50.00	119.63	0.00	1.19	0.00	220	0	4	0	2,446	38	0	0	2,408
11+50	1150.00	50.00	181.84	0.00	0.00	0.00	279	0	1	0	2,725	40	0	0	2,686
12+00	1200.00	50.00	128.26	0.00	4.04	0.00	287	0	4	0	3,012	45	0	0	2,968
12+50	1250.00	50.00	126.57	0.00	1.76	0.00	236	0	5	0	3,248	52	0	0	3,197
13+00	1300.00	50.00	119.70	0.00	2.11	0.00	228	0	4	0	3,476	56	0	0	3,420
13+50	1350.00	50.00	103.76	0.00	3.14	0.00	207	0	5	0	3,683	63	0	0	3,620
14+00	1400.00	50.00	94.41	0.00	3.45	0.00	183	0	6	0	3,867	71	0	0	3,796
14+50	1450.00	50.00	95.05	0.00	8.29	0.00	175	0	11	0	4,042	85	0	0	3,957
15+00	1500.00	50.00	91.58	0.00	28.81	0.00	173	0	34	0	4,215	131	0	0	4,084
15+50	1550.00	50.00	91.68	0.00	24.23	0.00	170	0	49	0	4,385	197	0	0	4,188
15+82	1582.00	32.00	88.06	0.00	7.94	0.00	107	0	19	0	4,491	222	0	0	4,269
16+00	1600.00	18.00	19.10	0.00	1.43	0.00	36	0	3	0	4,527	226	0	0	4,301

EARTHWORK TABLE 3

Division – 30th Ave

STATION	Real Station	Distance	AREA (SF)				Incremental Vol (CY) (Unadjusted)				Cumulative Vol (CY)				
			Cut	Salvaged/ Pavement Material	Fill	EBS	Cut	Salvaged/ Pavement Material	Fill	EBS	Cut 1.00	Expanded Fill 1.33	Expanded EBS Backfill 1.00	Reduced EBS in Fill 1.00	Mass Ordinate
50+33	5033.00	0.00	680.00	0.00	0.88	0.00	0	0	0	0	0	0	0	0	0
50+40	5040.00	7.00	60.00	0.00	0.19	0.00	96	0	0	0	96	0	0	0	96
50+57	5057.00	17.00	112.00	0.00	0.01	0.00	54	0	0	0	150	0	0	0	150
							150	0	0	0					

Division – 6th St

STATION	Real Station	Distance	AREA (SF)				Incremental Vol (CY) (Unadjusted)				Cumulative Vol (CY)				
			Cut	Salvaged/ Pavement Material	Fill	EBS	Cut	Salvaged/ Pavement Material	Fill	EBS	Cut 1.00	Expanded Fill 1.33	Expanded EBS Backfill 1.00	Reduced EBS in Fill 1.00	Mass Ordinate
60+30	6030.00	0.00	606.13	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0
60+45	6045.00	15.00	58.44	0.00	34.33	0.00	185	0	10	0	185	13	0	0	172
60+60	6060.00	15.00	109.99	0.00	0.00	0.00	47	0	10	0	231	25	0	0	206
							231	0	19	0					

Division – WeissLn

STATION	Real Station	Distance	AREA (SF)				Incremental Vol (CY) (Unadjusted)				Cumulative Vol (CY)				
			Cut	Salvaged/ Pavement Material	Fill	EBS	Cut	Salvaged/ Pavement Material	Fill	EBS	Cut 1.00	Expanded Fill 1.33	Expanded EBS Backfill 1.00	Reduced EBS in Fill 1.00	Mass Ordinate
70+30	7030.00	0.00	172.49	0.00	0.98	0.00	0	0	0	0	0	0	0	0	0
70+50	7050.00	20.00	87.62	0.00	4.90	0.00	96	0	2	0	96	3	0	0	93
70+80	7080.00	30.00	58.38	0.00	4.86	0.00	81	0	5	0	177	10	0	0	167
							177	0	8	0					

9

9

Division -- WIS 81 BW New

STATION	Real Station	Distance	AREA (SF)				Incremental Vol (CY) (Unadjusted)				Cumulative Vol (CY)						
			Cut	Salvaged/Pavement	Unusable Material	Fill	EBS	Cut	Salvaged/Pavement	Unusable Material	Fill	EBS	Cut 1.00	Expanded Fill 1.25	Expanded EBS Backfill 1.00	Reduced in Fill 1.00	EBS Mass Ordinate
174+00	17400.00	50.00	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0	
174+50	17450.00	50.00	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0	
175+00	17500.00	50.00	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0	
175+50	17550.00	50.00	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0	
176+00	17600.00	50.00	159.31	0.00	4.53	0.00	148	0	4	0	148	5	0	0	0	142	
176+50	17650.00	50.00	176.77	0.00	1.71	0.00	311	0	6	0	459	12	0	0	0	446	
177+00	17700.00	50.00	178.11	0.00	0.29	0.00	329	0	2	0	787	15	0	0	0	773	
177+50	17750.00	50.00	173.98	0.00	0.62	0.00	326	0	1	0	1,113	16	0	0	0	1,097	
178+00	17800.00	50.00	168.49	0.00	2.21	0.00	317	0	3	0	1,430	19	0	0	0	1,411	
178+50	17850.00	50.00	160.03	0.00	5.07	0.00	304	0	7	0	1,735	28	0	0	0	1,707	
179+00	17900.00	50.00	153.52	0.00	6.88	0.00	290	0	11	0	2,025	41	0	0	0	1,983	
179+50	17950.00	50.00	145.45	0.00	9.56	0.00	277	0	15	0	2,302	60	0	0	0	2,241	
180+00	18000.00	50.00	176.03	0.00	6.60	0.00	298	0	15	0	2,599	79	0	0	0	2,520	
180+50	18050.00	50.00	146.31	0.00	12.08	0.00	298	0	17	0	2,898	101	0	0	0	2,797	
181+00	18100.00	50.00	146.18	0.00	11.96	0.00	271	0	22	0	3,169	129	0	0	0	3,040	
181+50	18150.00	50.00	143.70	0.00	11.75	0.00	268	0	22	0	3,437	156	0	0	0	3,281	
182+00	18200.00	50.00	146.55	0.00	9.91	0.00	269	0	20	0	3,706	181	0	0	0	3,525	
182+50	18250.00	50.00	148.50	0.00	10.53	0.00	273	0	19	0	3,979	205	0	0	0	3,774	
183+00	18300.00	50.00	150.92	0.00	12.09	0.00	277	0	21	0	4,256	231	0	0	0	4,025	
183+50	18350.00	50.00	151.29	0.00	12.59	0.00	280	0	23	0	4,536	259	0	0	0	4,277	
184+00	18400.00	50.00	147.26	0.00	13.90	0.00	276	0	25	0	4,813	290	0	0	0	4,522	
184+50	18450.00	50.00	143.12	0.00	14.70	0.00	269	0	26	0	5,081	323	0	0	0	4,758	
185+00	18500.00	50.00	144.34	0.00	11.81	0.00	266	0	25	0	5,348	354	0	0	0	4,994	
185+50	18550.00	50.00	147.96	0.00	27.76	0.00	271	0	37	0	5,618	400	0	0	0	5,219	
186+00	18600.00	50.00	151.18	0.00	51.71	0.00	277	0	74	0	5,895	492	0	0	0	5,404	
186+50	18650.00	50.00	156.85	0.00	48.04	0.00	285	0	92	0	6,180	607	0	0	0	5,573	
187+00	18700.00	50.00	151.35	0.00	60.16	0.00	285	0	100	0	6,466	732	0	0	0	5,733	
187+50	18750.00	50.00	163.37	0.00	54.33	0.00	291	0	106	0	6,757	865	0	0	0	5,892	
188+00	18800.00	50.00	165.05	0.00	47.46	0.00	304	0	94	0	7,061	983	0	0	0	6,079	
188+50	18850.00	50.00	157.24	0.00	27.42	0.00	298	0	69	0	7,360	1,069	0	0	0	6,290	
189+00	18900.00	50.00	159.85	0.00	9.96	0.00	294	0	35	0	7,653	1,113	0	0	0	6,541	
189+50	18950.00	50.00	166.03	0.00	9.72	0.00	302	0	18	0	7,955	1,135	0	0	0	6,820	
190+00	19000.00	50.00	165.32	0.00	7.52	0.00	307	0	16	0	8,262	1,155	0	0	0	7,106	
190+50	19050.00	50.00	170.48	0.00	7.86	0.00	311	0	14	0	8,573	1,173	0	0	0	7,400	
191+00	19100.00	50.00	164.80	0.00	34.86	0.00	310	0	40	0	8,883	1,223	0	0	0	7,661	
191+50	19150.00	50.00	173.20	0.00	71.31	0.00	313	0	98	0	9,196	1,345	0	0	0	7,851	
192+00	19200.00	50.00	145.50	0.00	81.36	0.00	295	0	141	0	9,491	1,522	0	0	0	7,969	
192+50	19250.00	50.00	152.07	0.00	77.65	0.00	276	0	147	0	9,767	1,706	0	0	0	8,061	
193+00	19300.00	50.00	183.82	0.00	69.01	0.00	311	0	136	0	10,078	1,876	0	0	0	8,202	
193+50	19350.00	50.00	182.89	0.00	0.35	0.00	340	0	64	0	10,417	1,956	0	0	0	8,461	
194+00	19400.00	50.00	184.21	0.00	2.99	0.00	340	0	3	0	10,757	1,960	0	0	0	8,797	
194+50	19450.00	50.00	161.33	0.00	8.00	0.00	320	0	10	0	11,077	1,973	0	0	0	9,104	
195+00	19500.00	50.00	159.02	0.00	1.71	0.00	297	0	9	0	11,374	1,984	0	0	0	9,390	
195+50	19550.00	50.00	155.16	0.00	1.79	0.00	291	0	3	0	11,665	1,988	0	0	0	9,677	
196+00	19600.00	50.00	150.19	0.00	1.89	0.00	283	0	3	0	11,947	1,992	0	0	0	9,955	
196+50	19650.00	50.00	166.39	0.00	0.29	0.00	293	0	2	0	12,241	1,995	0	0	0	10,246	
197+00	19700.00	50.00	144.98	0.00	0.19	0.00	288	0	0	0	12,529	1,995	0	0	0	10,533	
197+50	19750.00	50.00	150.89	0.00	0.00	0.00	274	0	0	0	12,803	1,996	0	0	0	10,807	
198+00	19800.00	50.00	143.39	0.00	0.00	0.00	272	0	0	0	13,075	1,996	0	0	0	11,080	
198+50	19850.00	50.00	141.76	0.00	0.00	0.00	264	0	0	0	13,339	1,996	0	0	0	11,344	
199+00	19900.00	50.00	135.86	0.00	0.00	0.00	257	0	0	0	13,596	1,996	0	0	0	11,601	
199+50	19950.00	50.00	129.71	0.00	0.00	0.00	246	0	0	0	13,842	1,996	0	0	0	11,847	

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PROJECT NO:5944-01-72

HWY: STH 81

COUNTY: GREEN

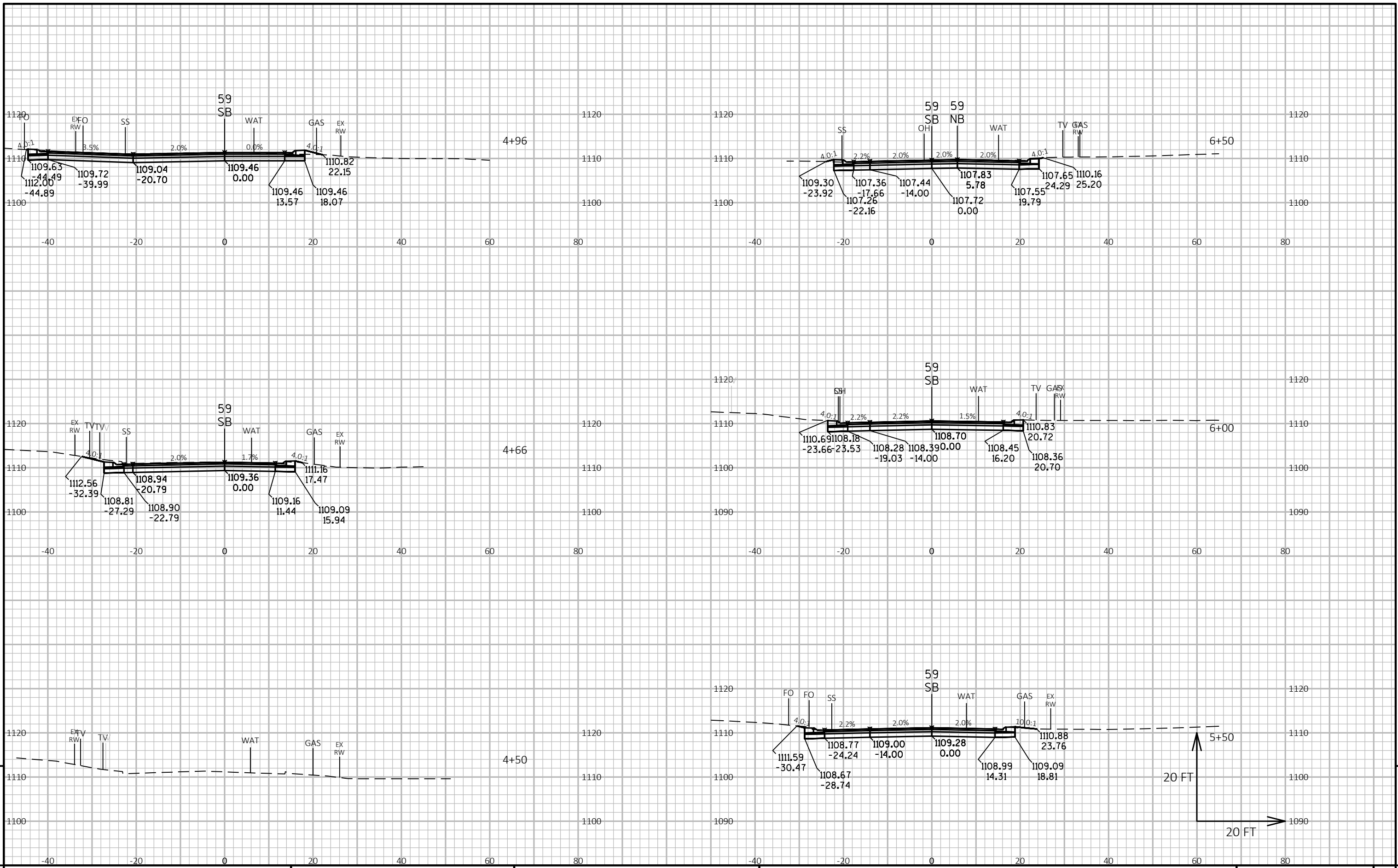
EARTHWORK DATA: STH 81

SHEET

E

Division -- WIS 81 BW New

STATION	Real Station	Distance	AREA (SF)				Incremental Vol (CY) (Unadjusted)				Cumulative Vol (CY)				
			Cut	Salvaged/Unusable Pavement Material	Fill	EBS	Cut	Salvaged/Unusable Pavement Material	Fill	EBS	Cut 1.00	Expanded Fill 1.25	Expanded EBS Backfill 1.00	Reduced EBS in Fill 1.00	Mass Ordinate
200+00	20000.00	50.00	122.96	0.00	0.08	0.00	234	0	0	0	14,076	1,996	0	0	12,081
200+50	20050.00	50.00	115.51	0.00	0.24	0.00	221	0	0	0	14,297	1,996	0	0	12,301
201+00	20100.00	50.00	98.58	0.00	0.00	0.00	198	0	0	0	14,495	1,996	0	0	12,499
201+50	20150.00	50.00	87.57	0.00	0.03	0.00	172	0	0	0	14,668	1,996	0	0	12,671
202+00	20200.00	50.00	79.34	0.00	0.00	0.00	155	0	0	0	14,822	1,996	0	0	12,826
202+50	20250.00	50.00	71.69	0.00	0.00	0.00	140	0	0	0	14,962	1,996	0	0	12,966
203+00	20300.00	50.00	74.48	0.00	0.00	0.00	135	0	0	0	15,097	1,996	0	0	13,101
203+50	20350.00	50.00	82.76	0.00	0.00	0.00	146	0	0	0	15,243	1,996	0	0	13,247
204+00	20400.00	50.00	85.15	0.00	0.32	0.00	155	0	0	0	15,398	1,997	0	0	13,402
204+50	20450.00	50.00	92.97	0.00	0.22	0.00	165	0	1	0	15,563	1,997	0	0	13,566
205+00	20500.00	50.00	102.68	0.00	1.82	0.00	181	0	2	0	15,745	2,000	0	0	13,745
205+50	20550.00	50.00	102.68	0.00	7.64	0.00	190	0	9	0	15,935	2,011	0	0	13,924
206+00	20600.00	50.00	102.21	0.00	11.41	0.00	190	0	18	0	16,124	2,033	0	0	14,092
206+50	20650.00	50.00	96.74	0.00	16.47	0.00	184	0	26	0	16,309	2,065	0	0	14,244
207+00	20700.00	50.00	101.63	0.00	16.30	0.00	184	0	30	0	16,492	2,103	0	0	14,389
							16,492	0	1,682	0					



PROJECT NO: 5660-00-72

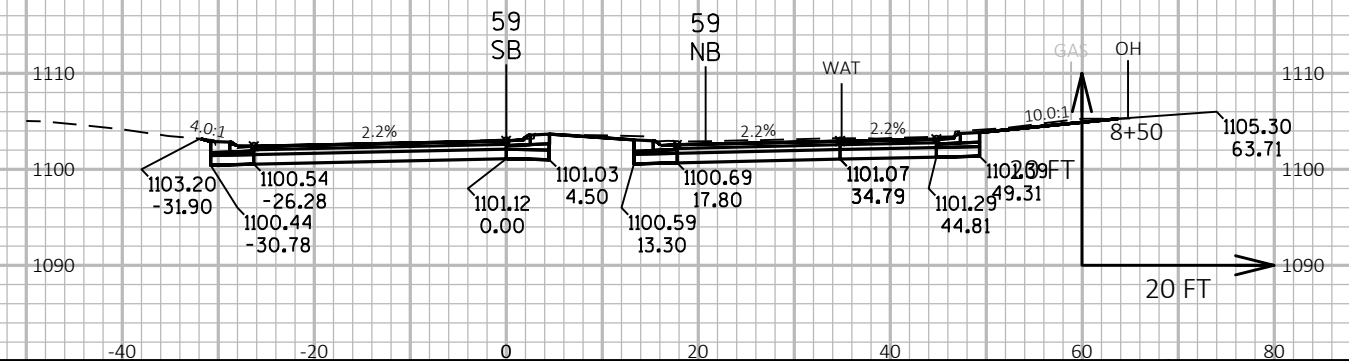
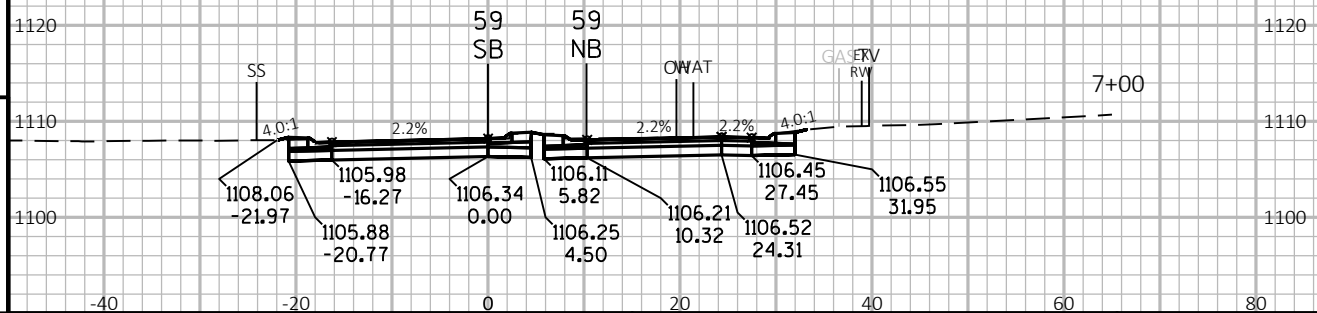
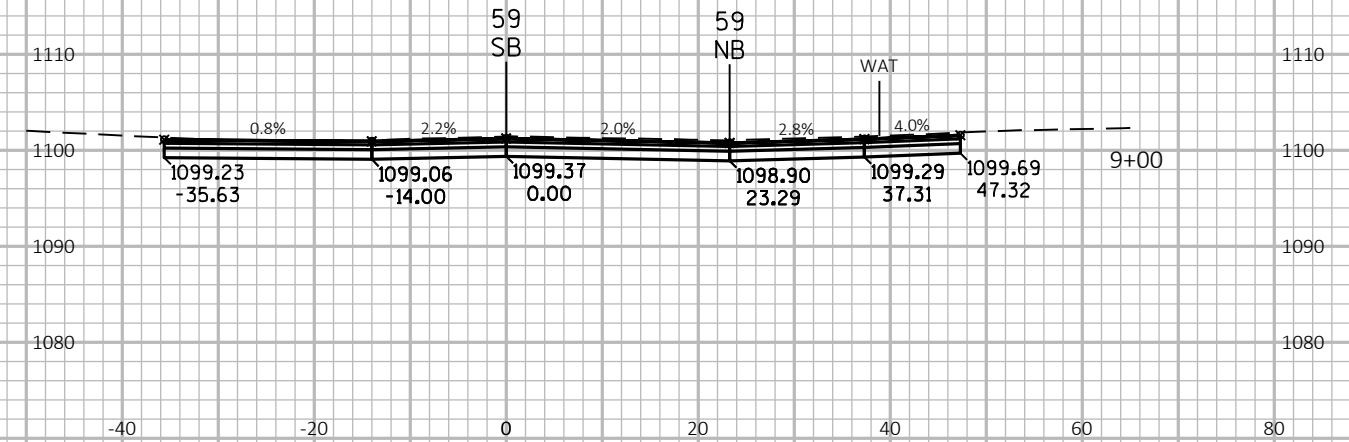
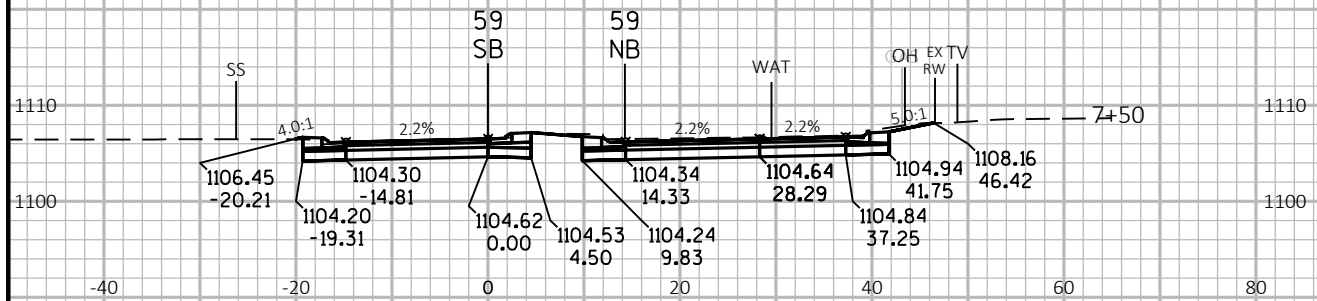
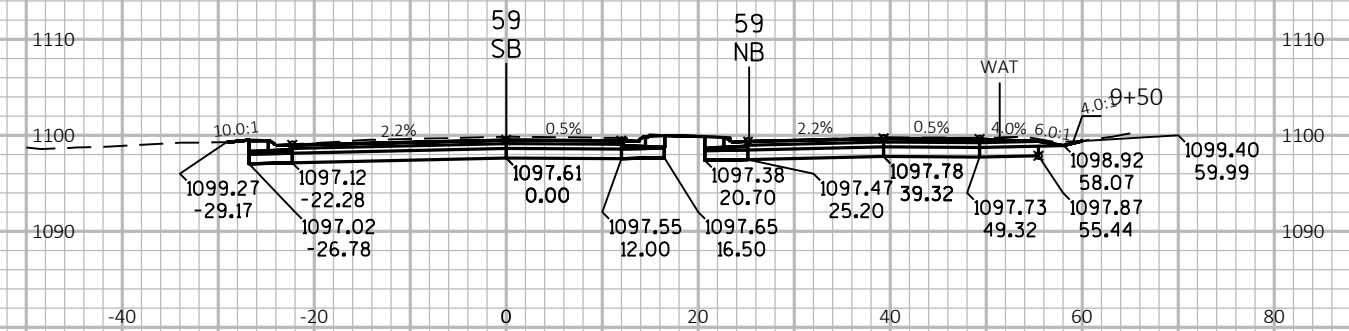
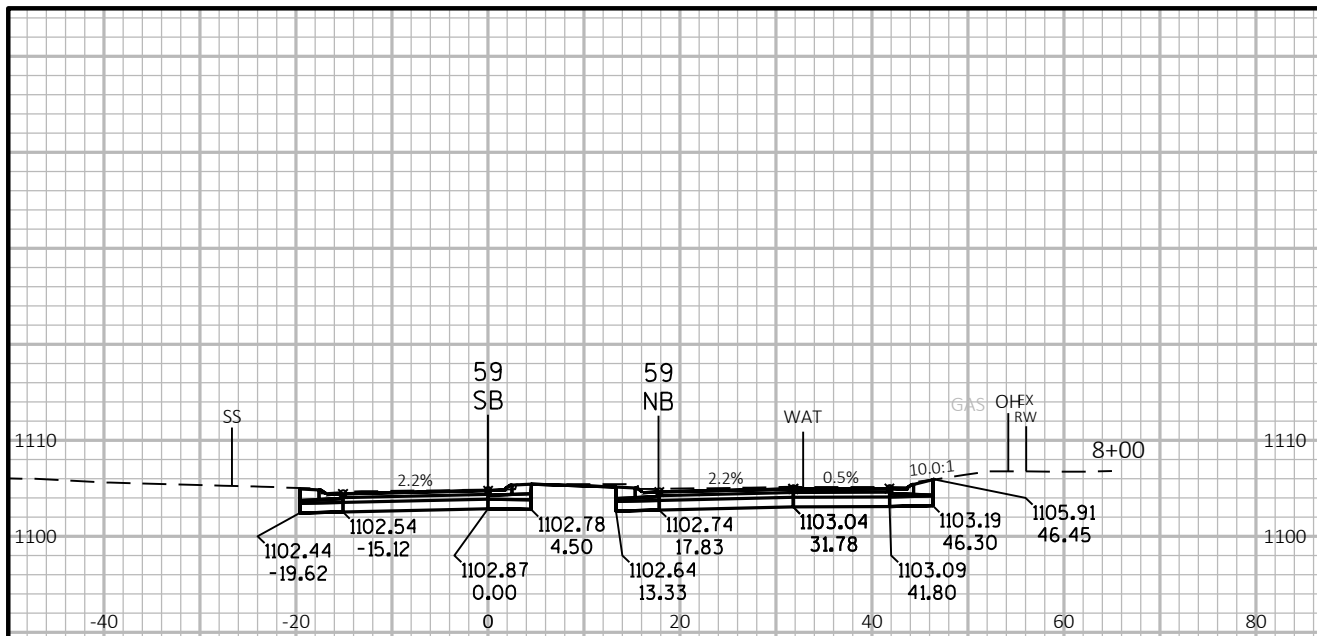
HWY: STH 59

COUNTY: GREEN

CROSS SECTIONS: STH 59

SHEET

E



PROJECT NO: 5660-00-72

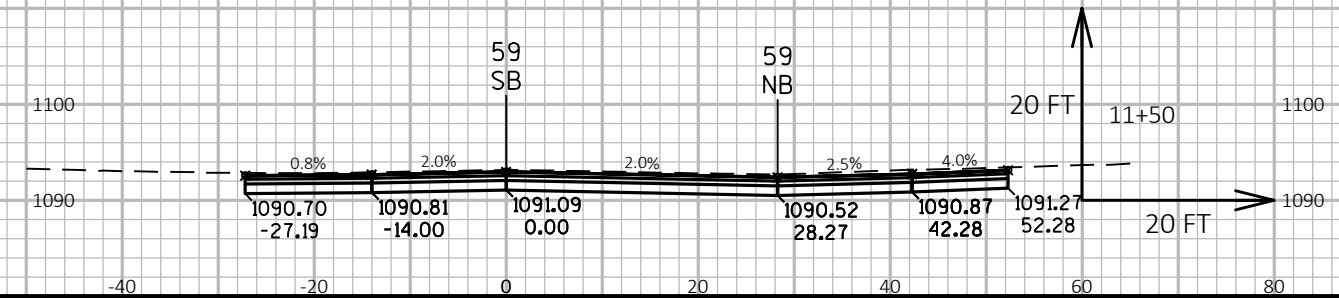
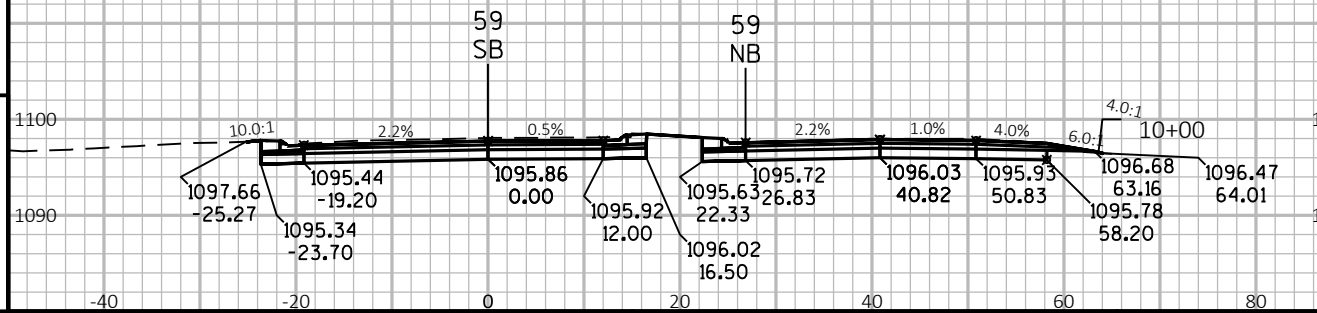
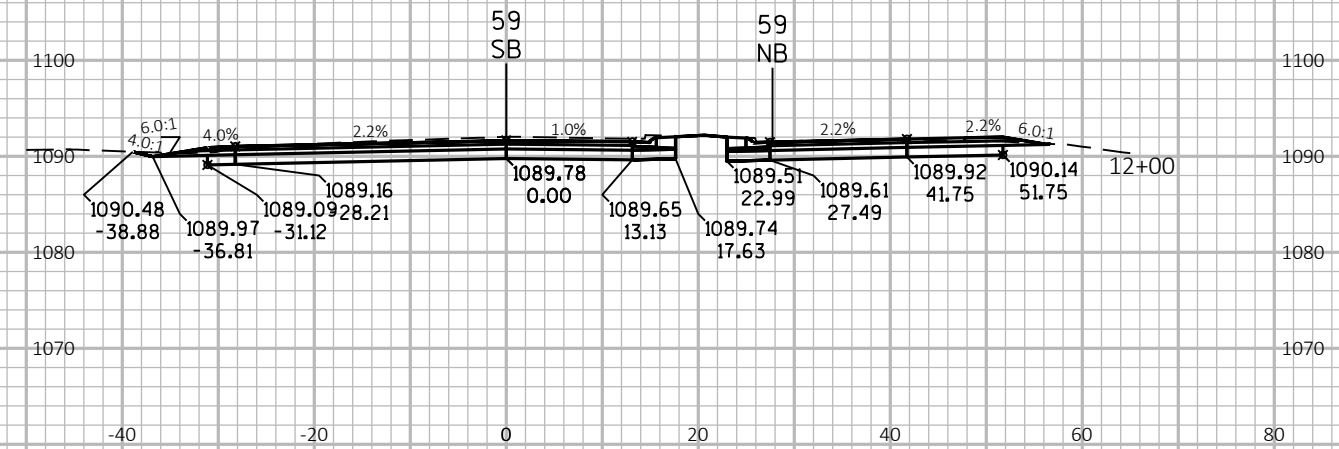
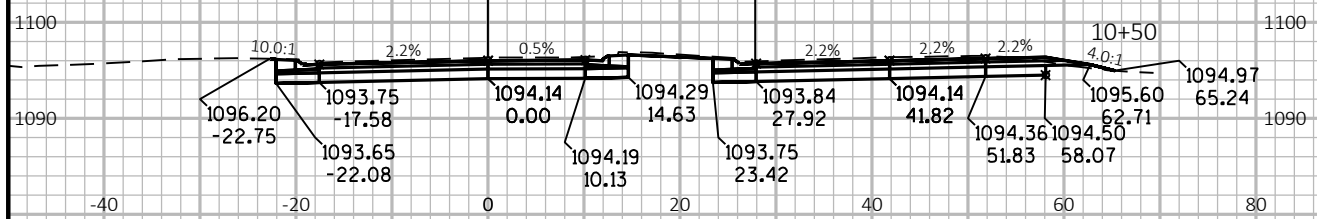
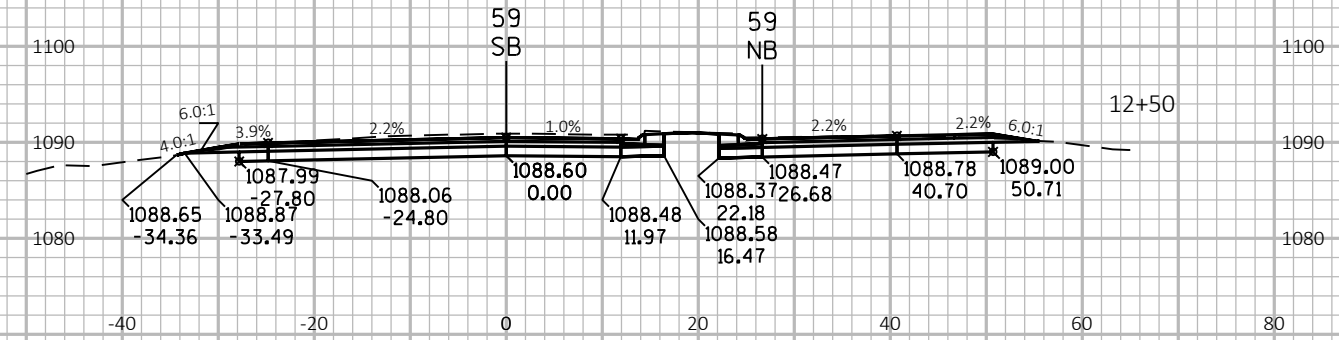
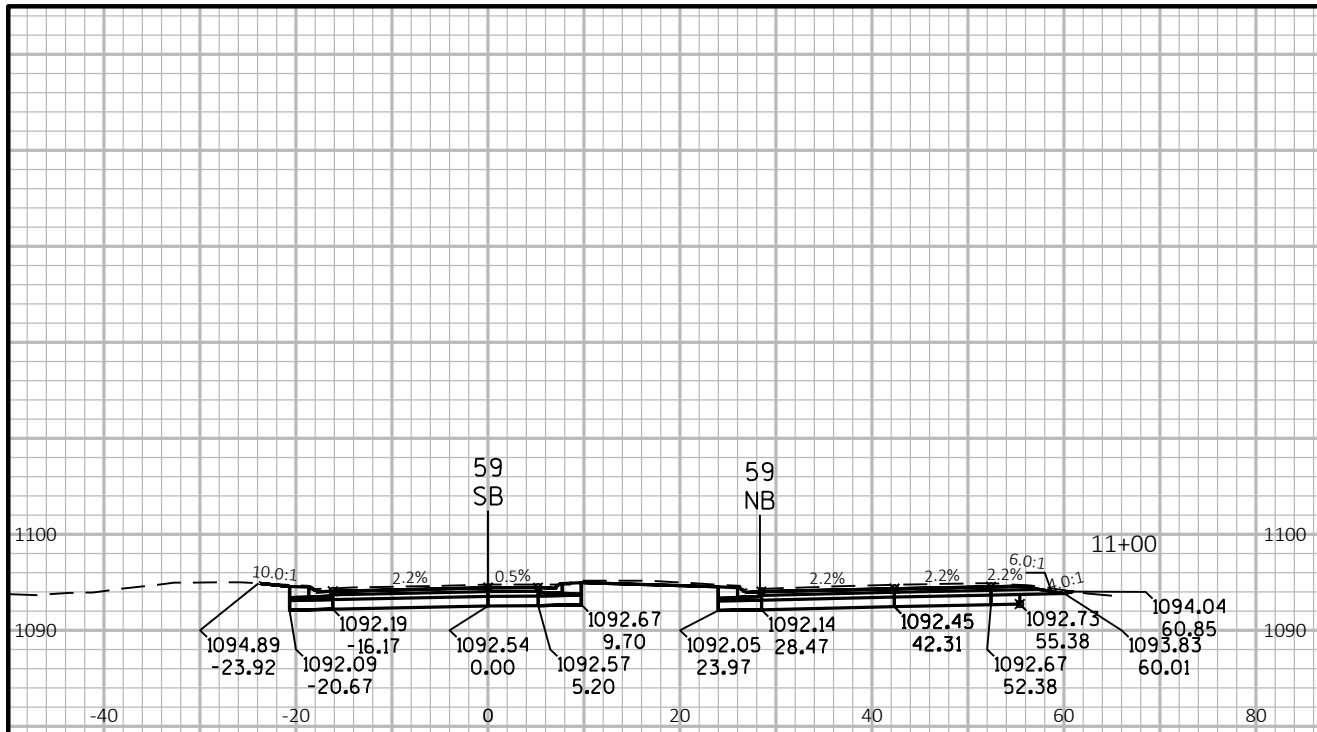
HWY: STH 59

COUNTY: GREEN

CROSS SECTIONS: STH 59

SHEET

E



PROJECT NO: 5660-00-72

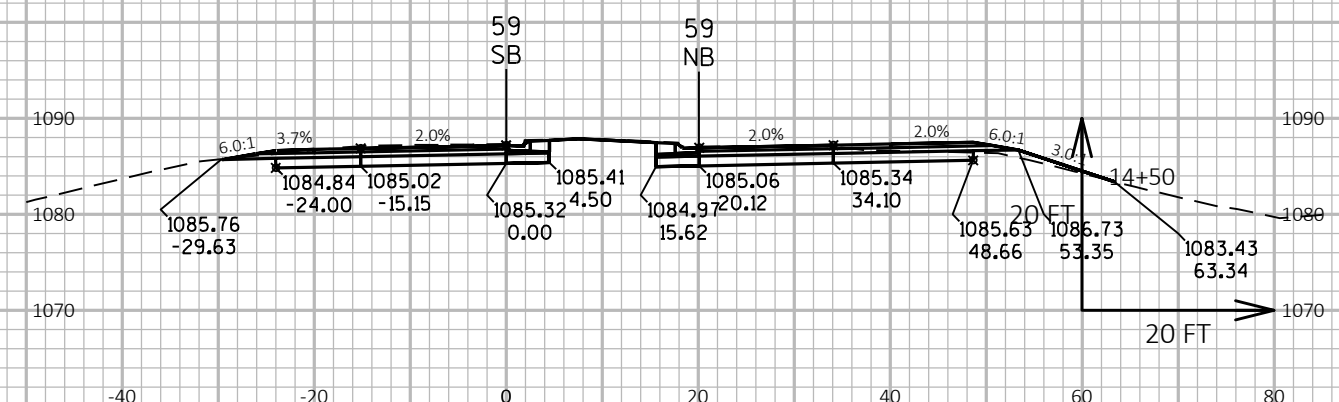
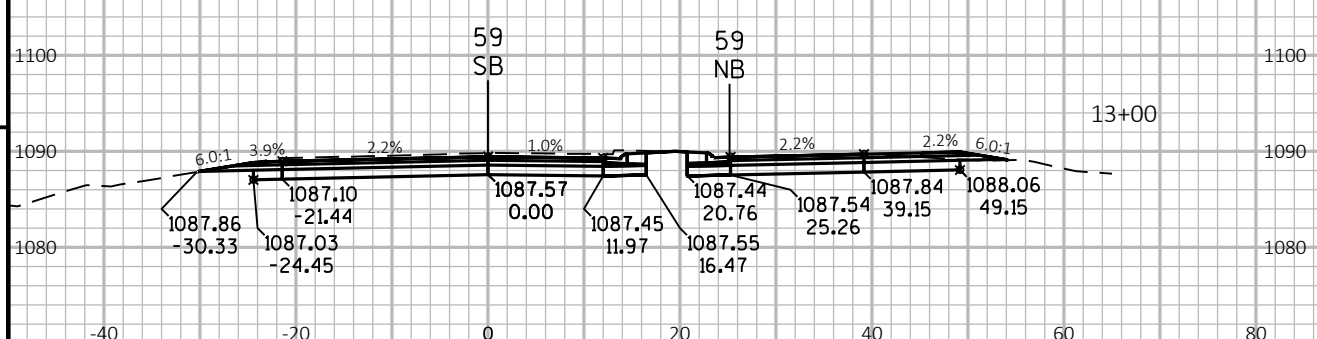
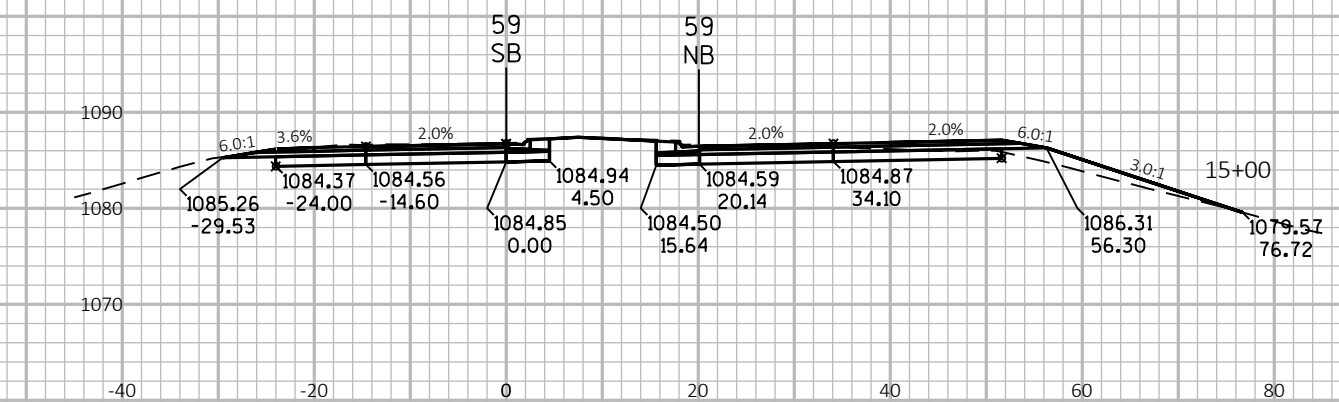
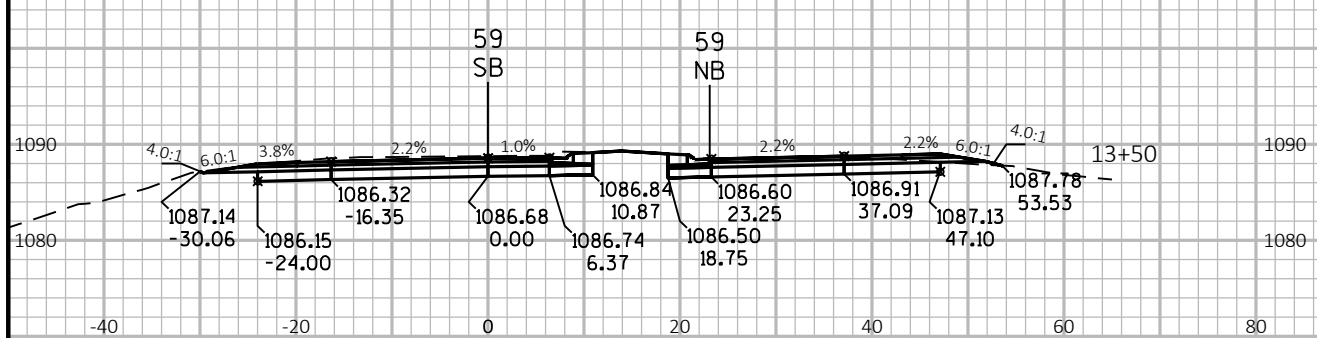
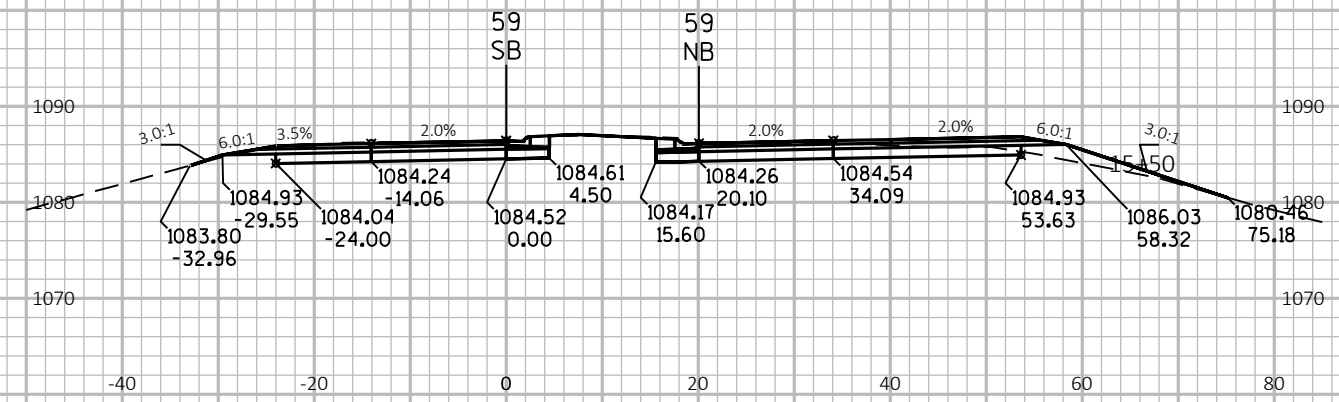
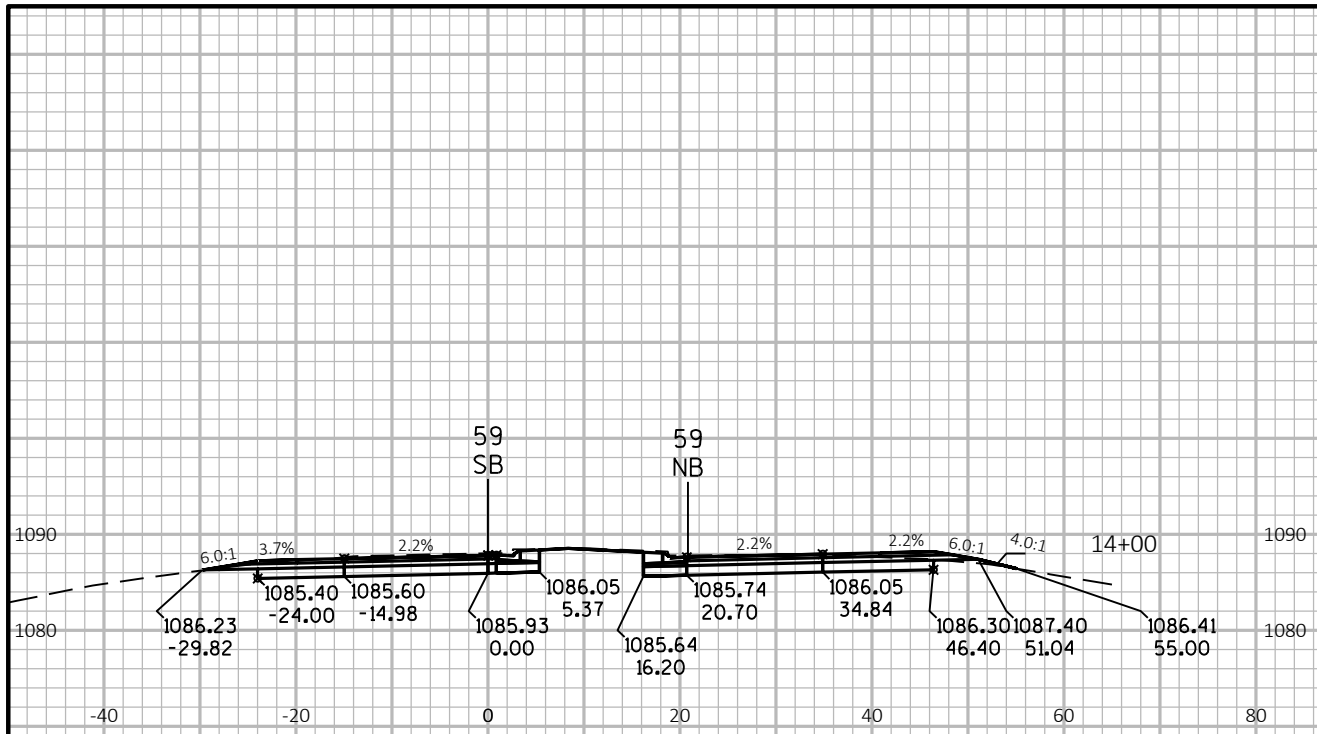
HWY: STH 59

COUNTY: GREEN

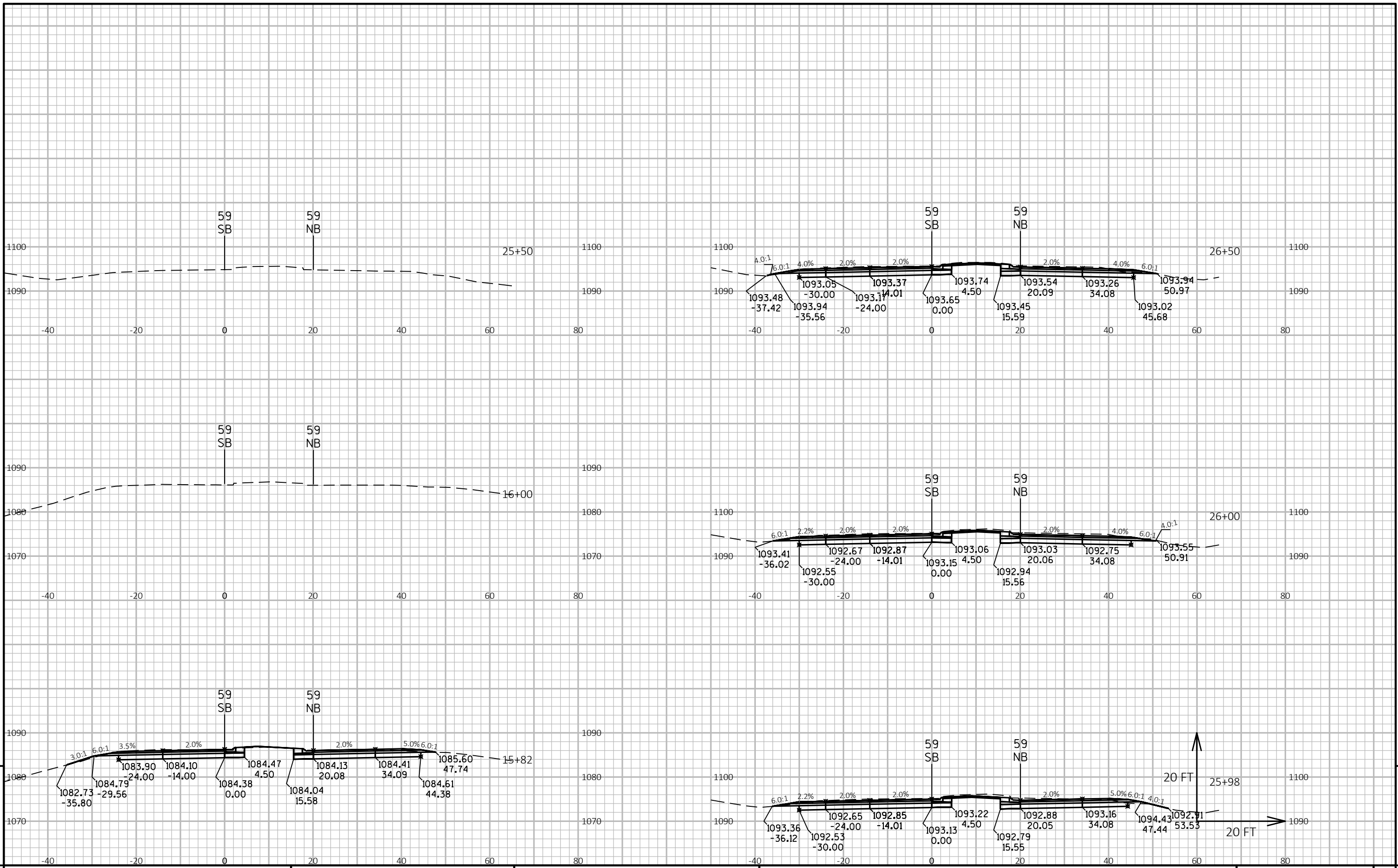
CROSS SECTIONS: STH 59

SHEET

E



PROJECT NO: 5660-00-72 HWY: STH 59 COUNTY: GREEN CROSS SECTIONS: STH 59 SHEET 9



PROJECT NO: 5660-00-72

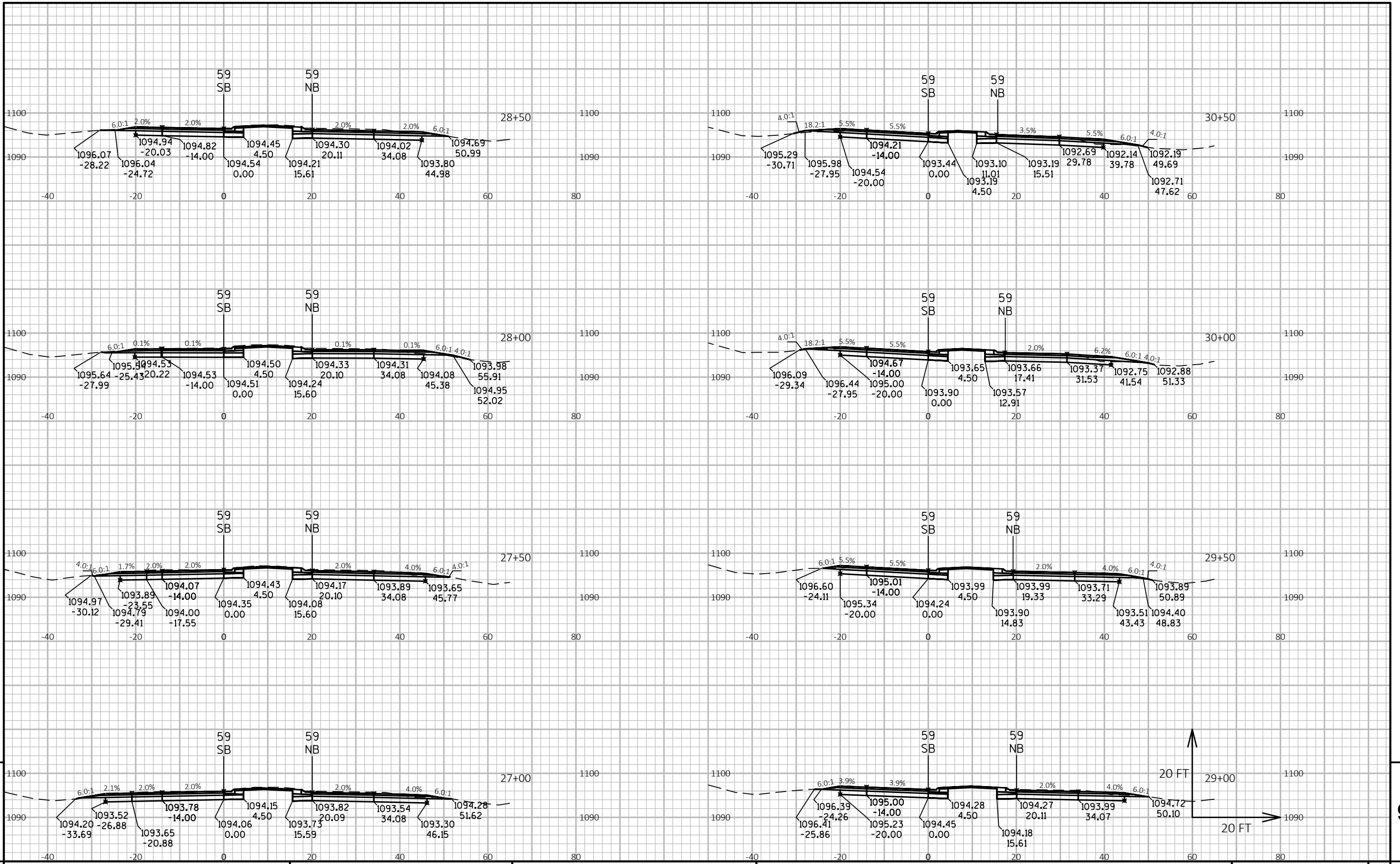
HWY: STH 59

COUNTY: GREEN

CROSS SECTIONS: STH 59

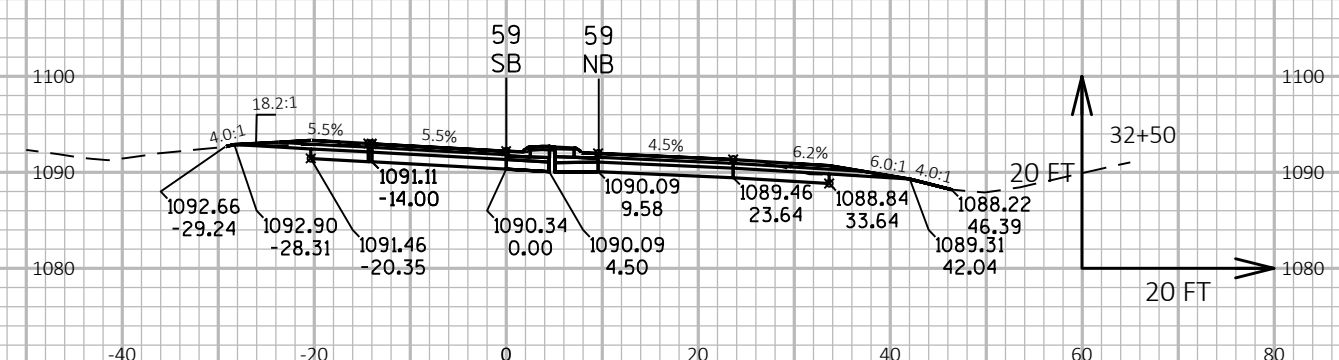
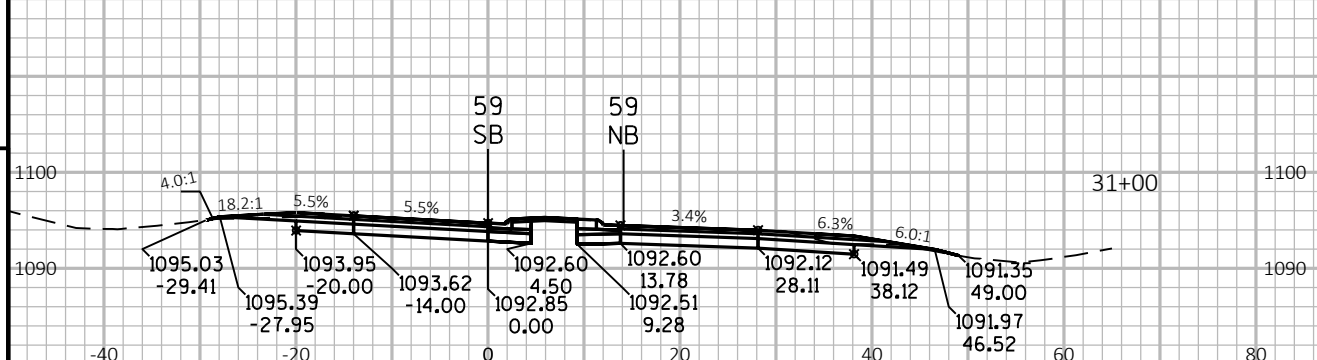
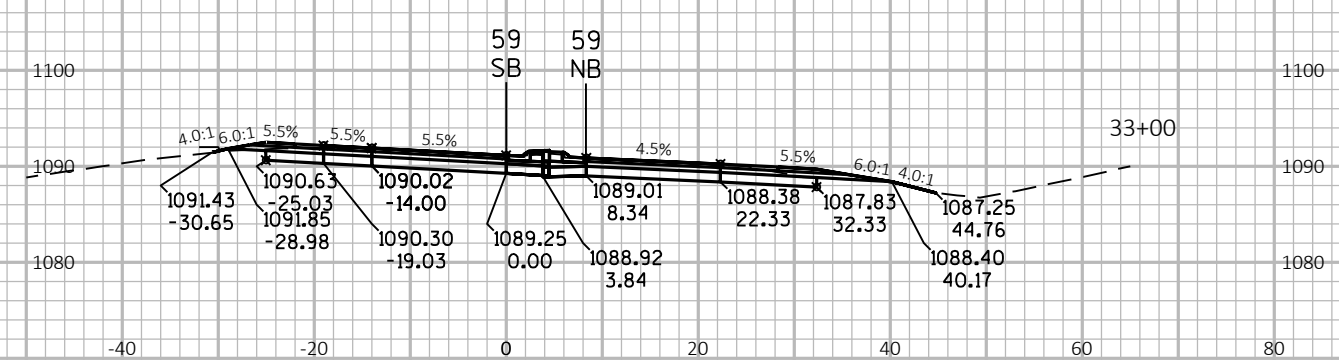
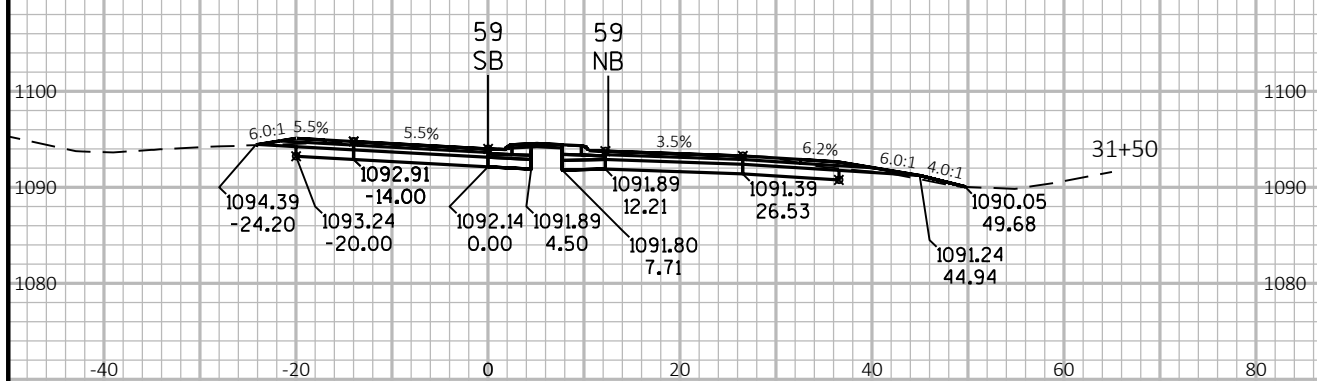
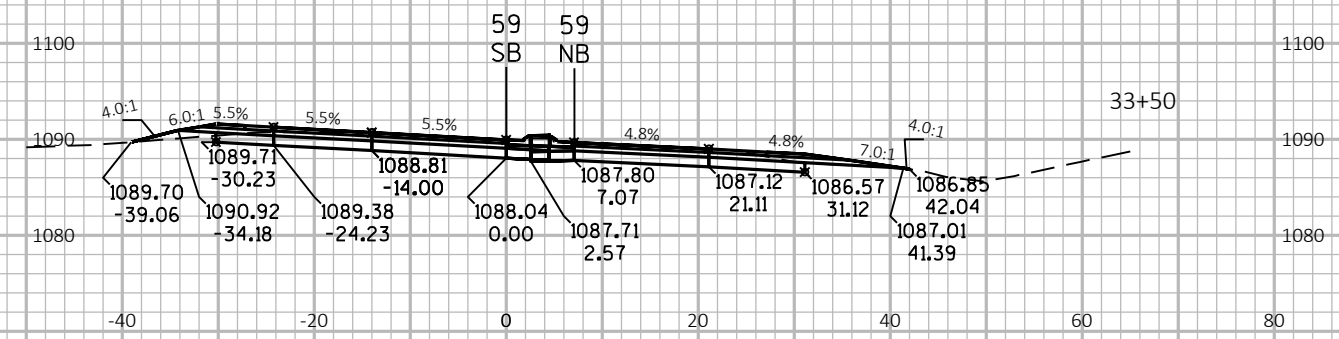
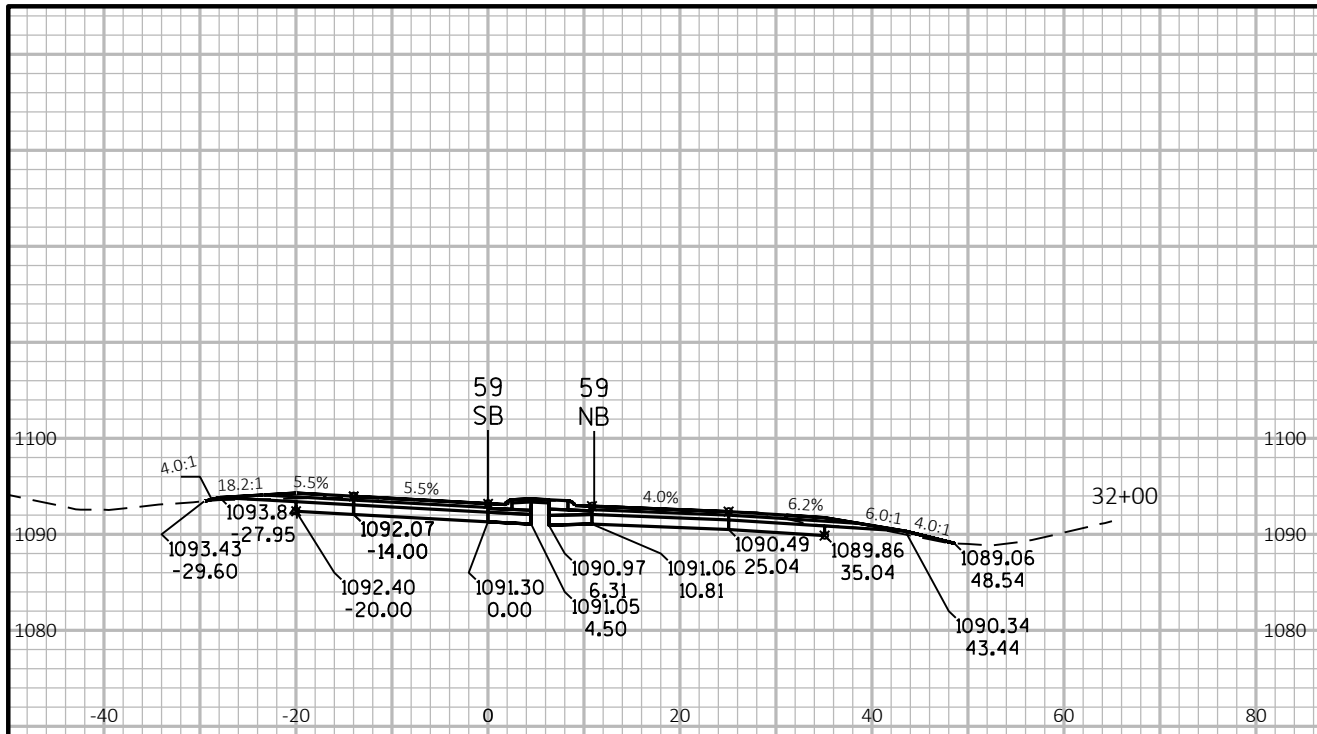
SHEET

E

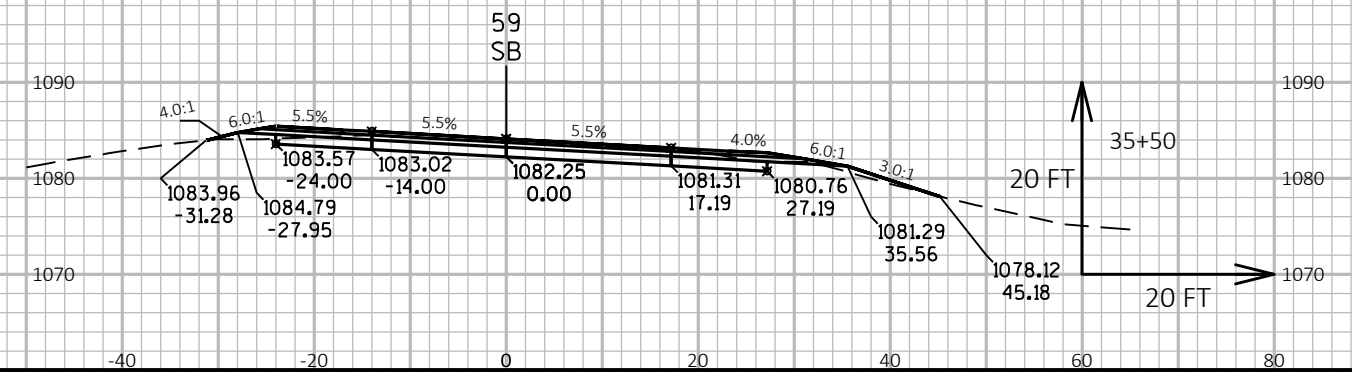
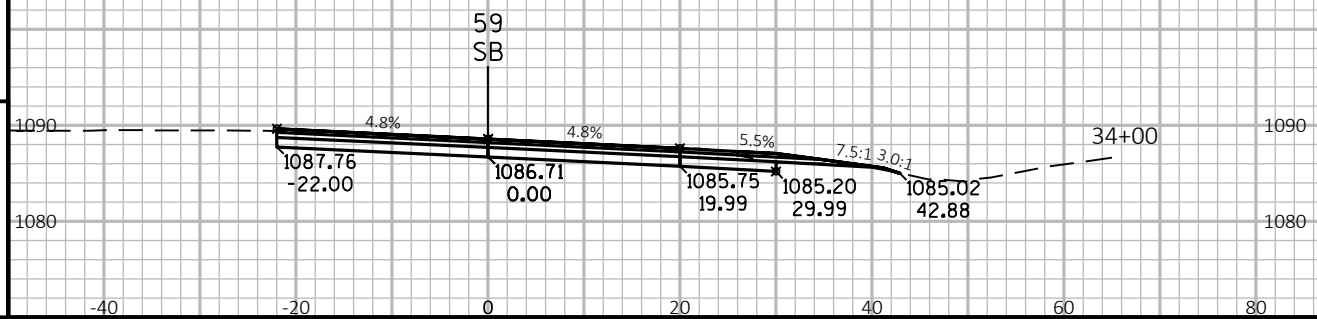
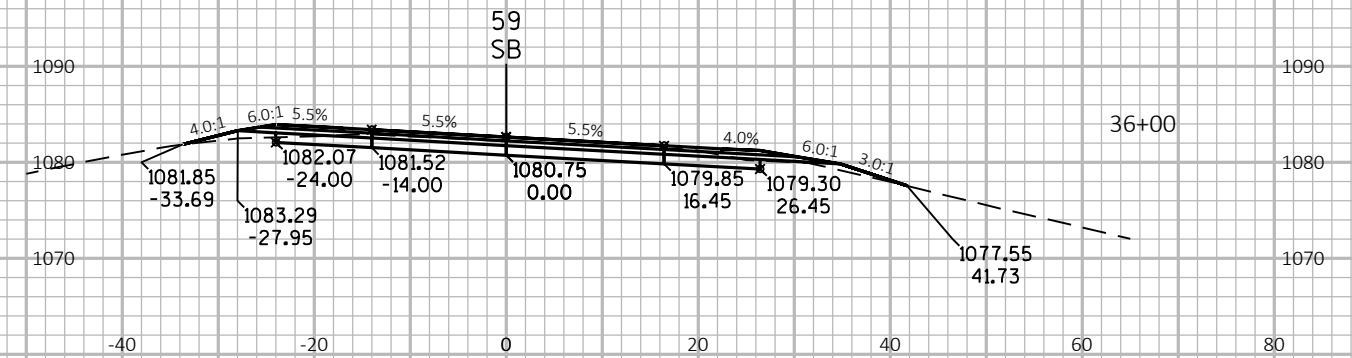
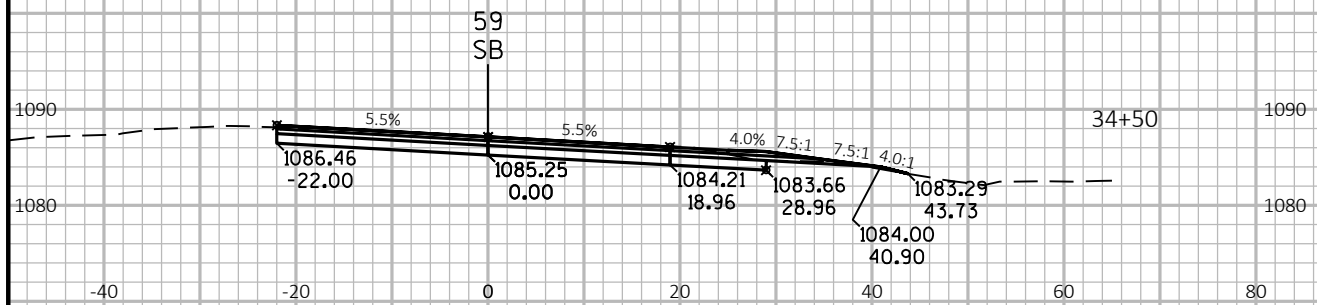
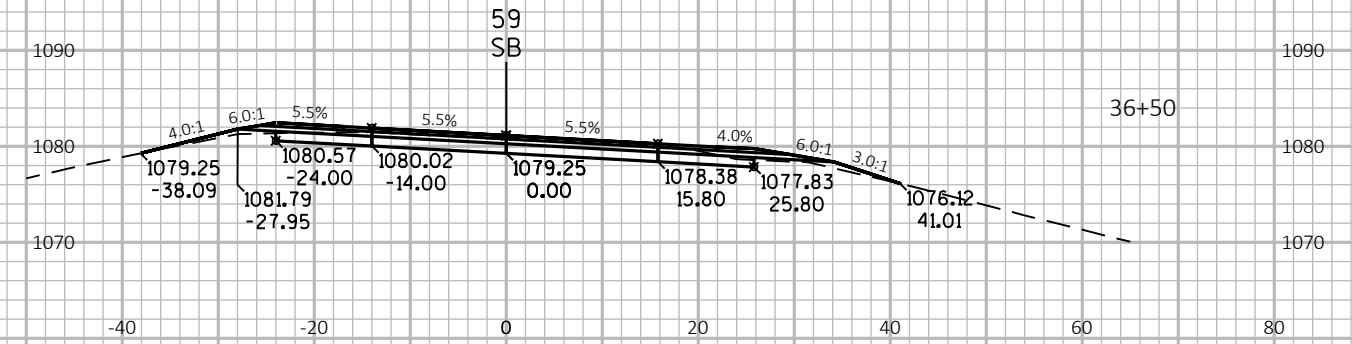
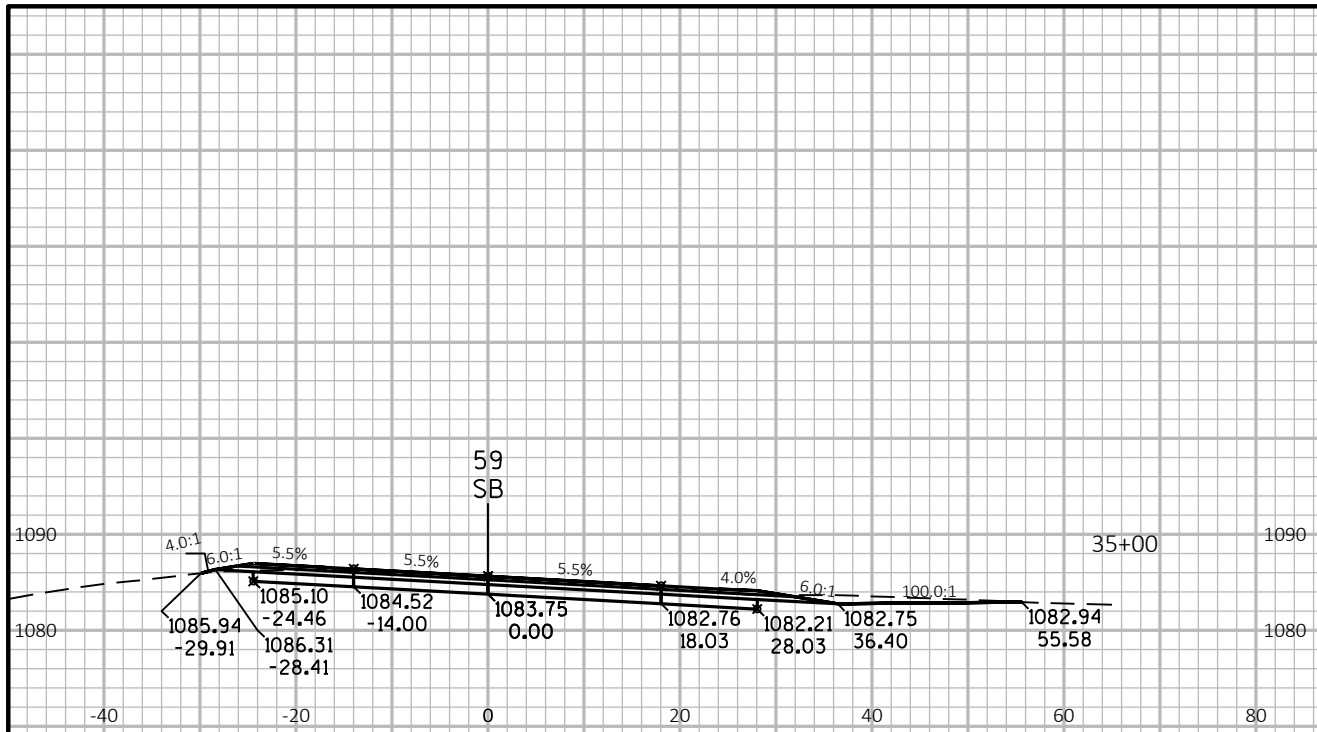


PROJECT NO: 5660-00-72	HWY: STH 59	COUNTY: GREEN	CROSS SECTIONS: STH 59	SHEET 9
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FILE NAME : N:\PDS\C3D\56600002\DESIGN\XSECTIONS\STH59_XSECTION_EMRA.DWG PLOT DATE : 2/14/2019 4:54 PM PLOT BY : BHUIYAN, MOHAMMAD E PLOT NAME : LAYOUT NAME - Section Sheet - (85) PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:20 FT VERT. WISDOT/CADD SHEET 49



PROJECT NO: 5660-00-72 HWY: STH 59 COUNTY: GREEN CROSS SECTIONS: STH 59 SHEET 9



PROJECT NO: 5660-00-72

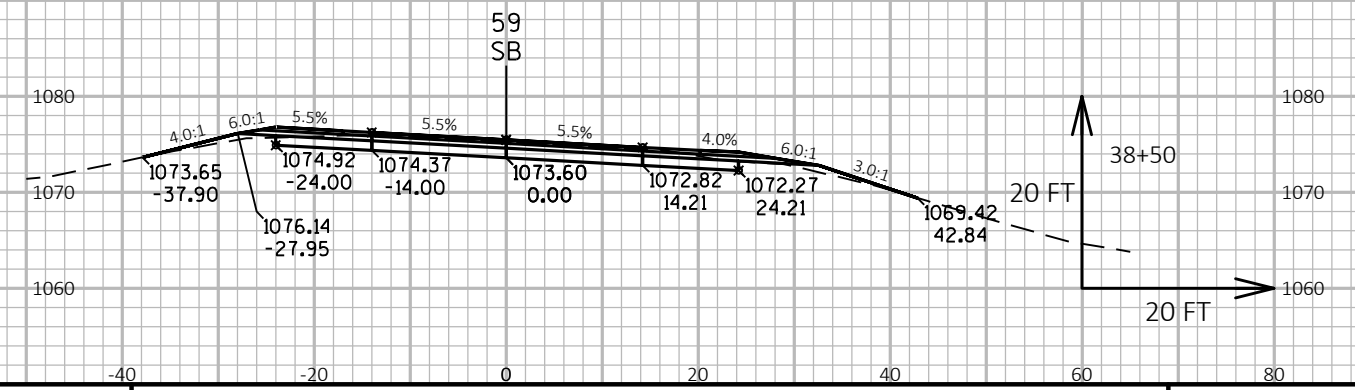
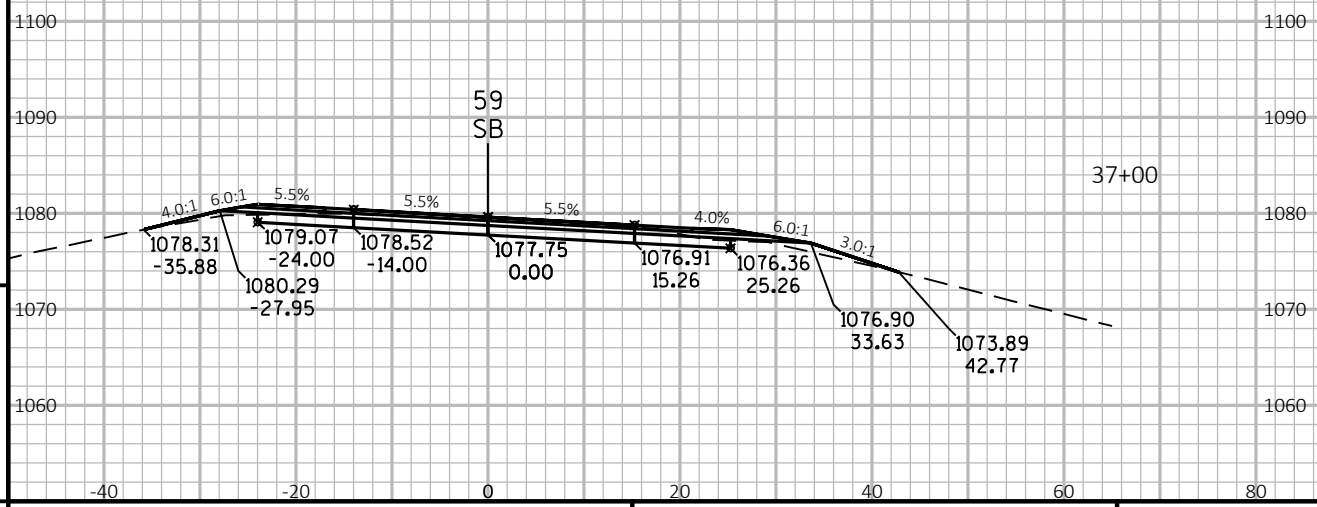
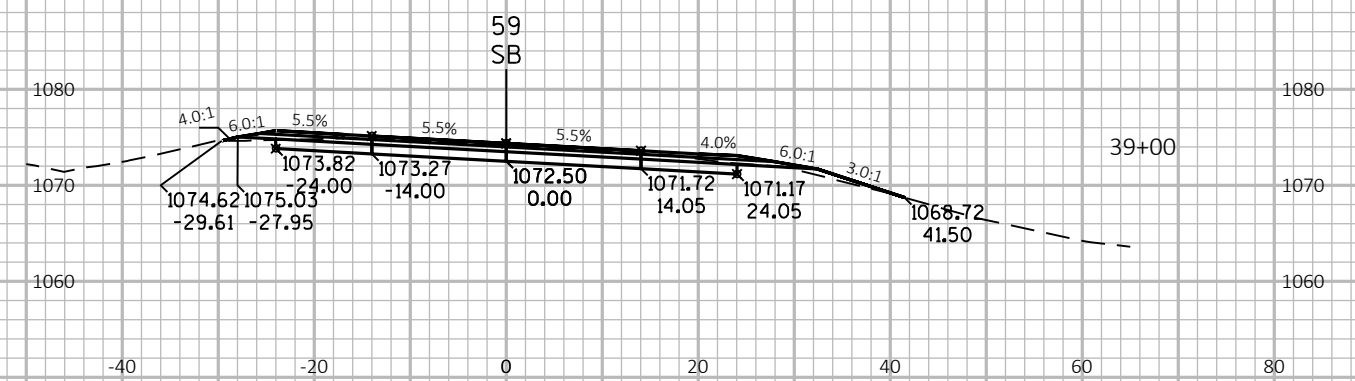
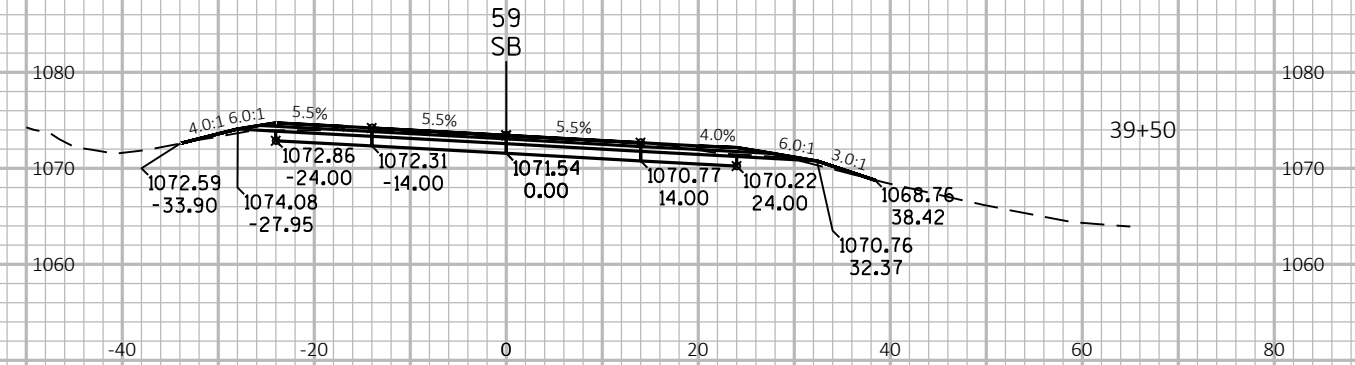
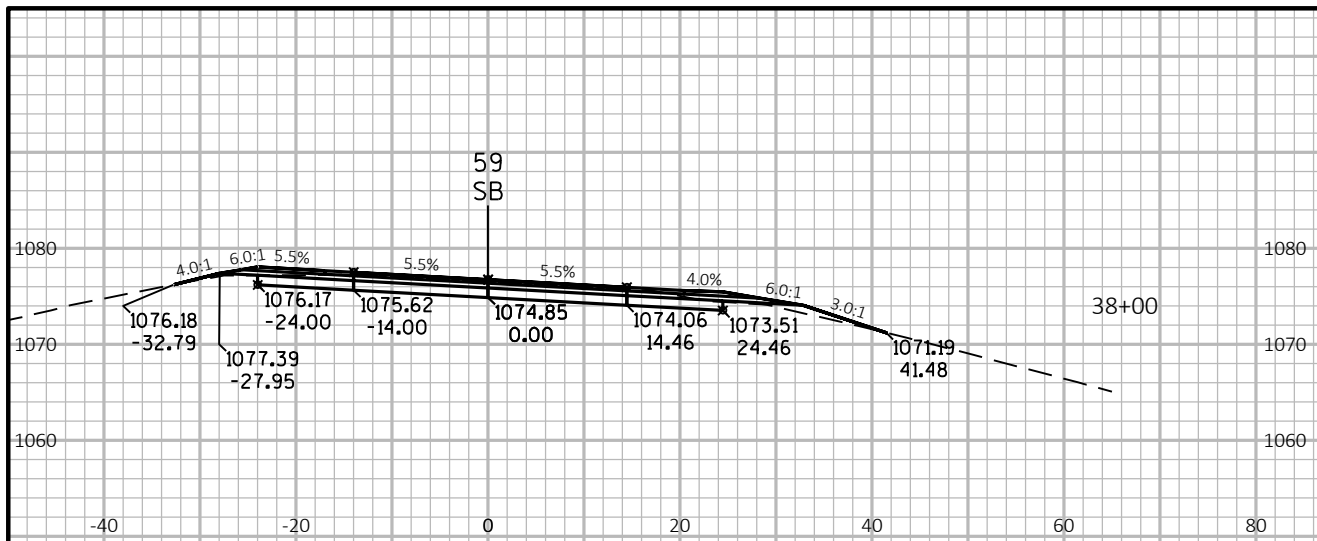
HWY: STH 59

COUNTY: GREEN

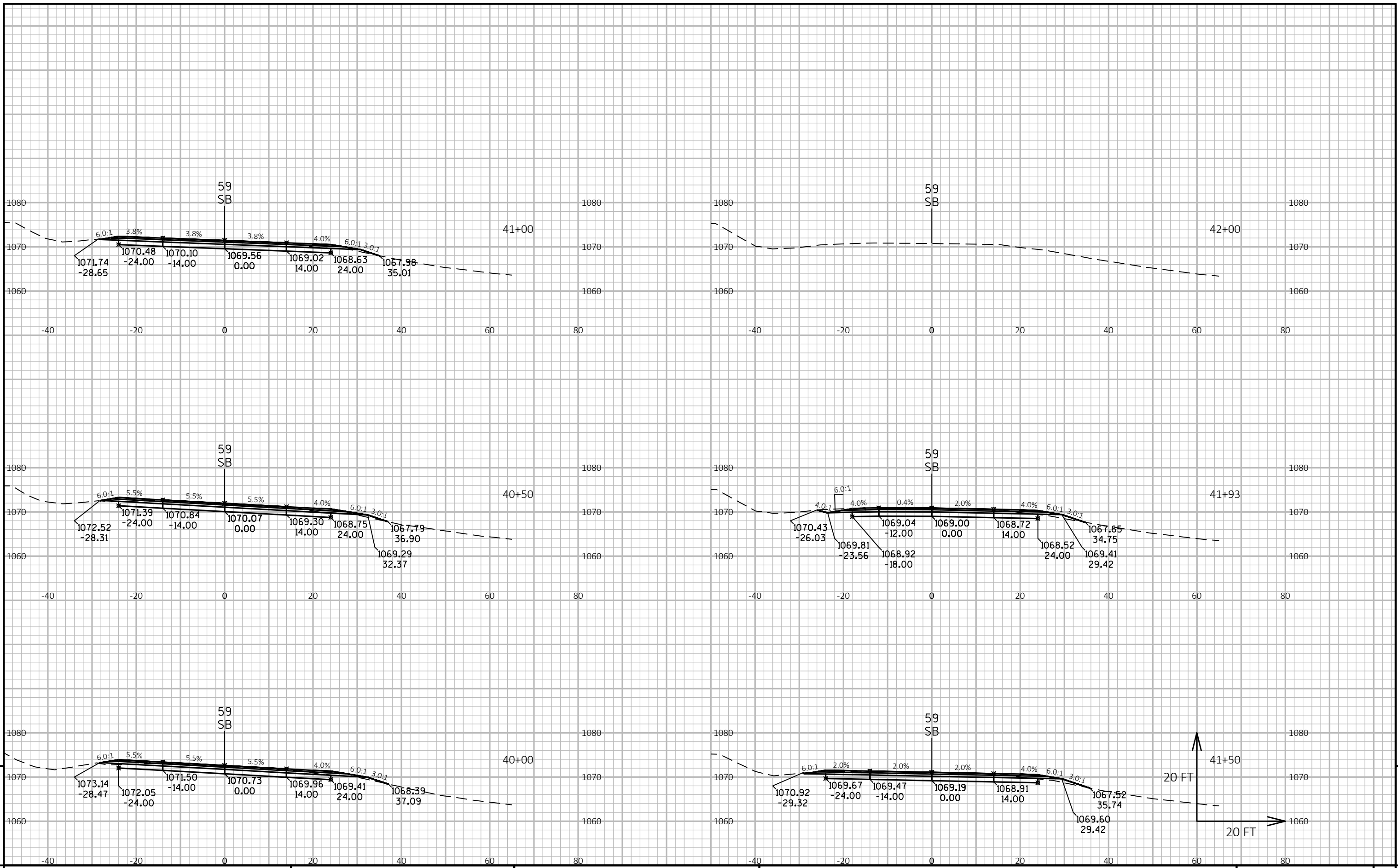
CROSS SECTIONS: STH 59

SHEET

E



PROJECT NO: 5660-00-72 HWY: STH 59 COUNTY: GREEN CROSS SECTIONS: STH 59 SHEET E



PROJECT NO: 5660-00-72

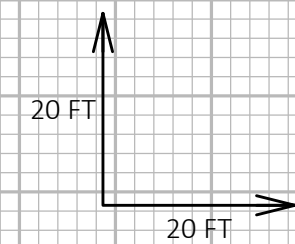
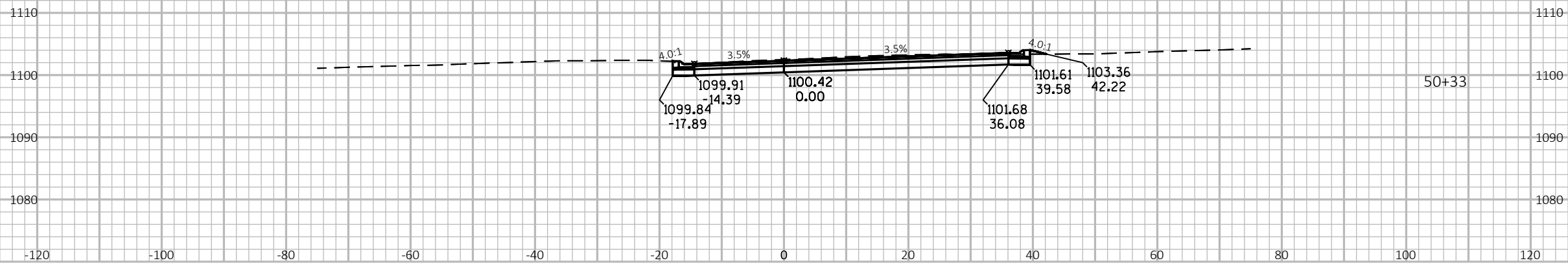
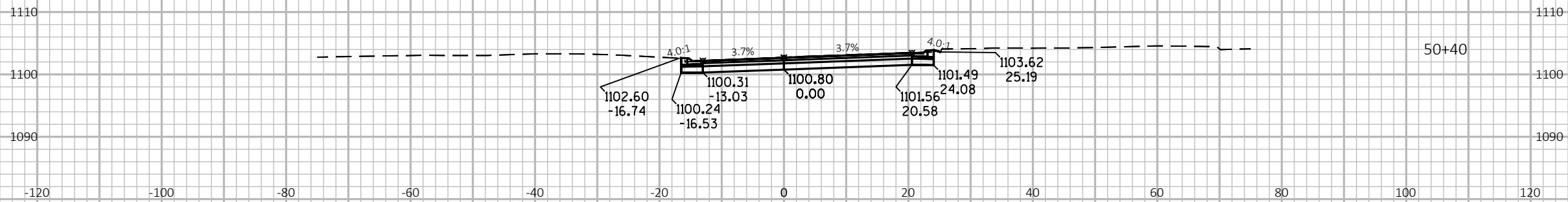
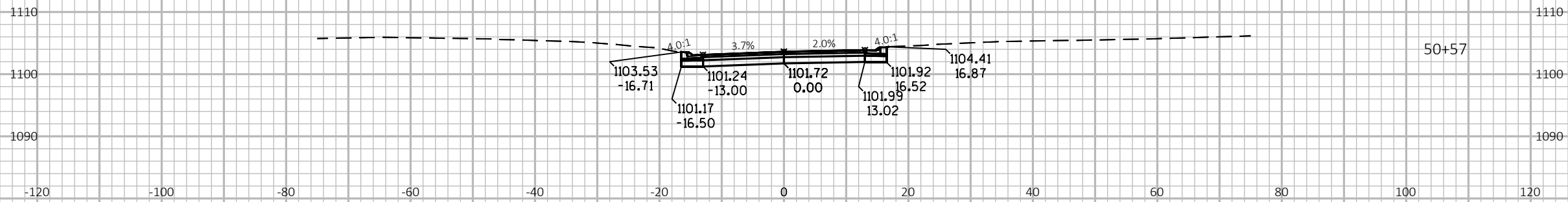
HWY: STH 59

COUNTY: GREEN

CROSS SECTIONS: STH 59

SHEET

E

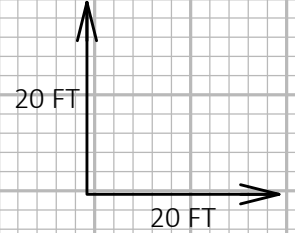
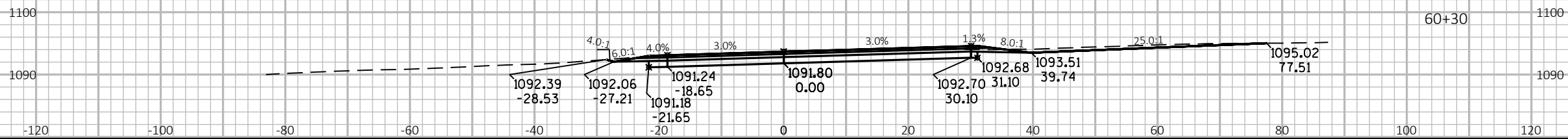
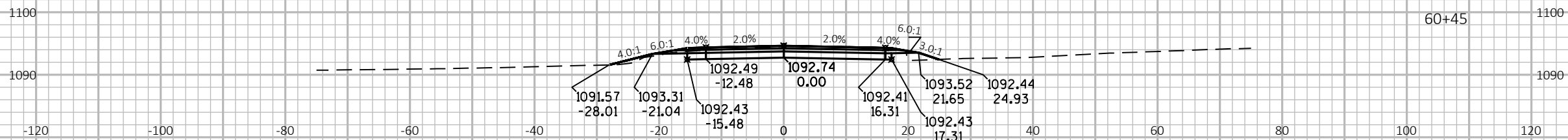
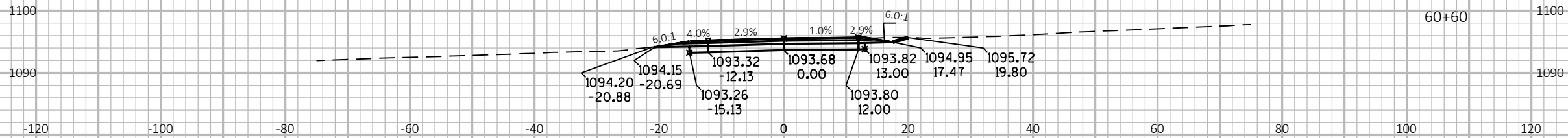


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PROJECT NO: 5660-00-72 HWY: STH 59 COUNTY: GREEN CROSS SECTIONS: 30TH AVENUE SHEET E

FILE NAME : N:\PDS\C3D\56600002\DESIGN\XSECTIONS\STH59_XSECTION_EMРАН.DWG PLOT DATE : 2/14/2019 4:56 PM PLOT BY : BHUIYAN, MOHAMMAD E PLOT NAME : PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:20 FT VERT. WISDOT/CADD SHEET 49



PROJECT NO: 5660-00-72

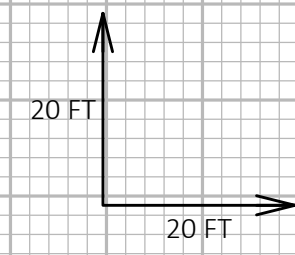
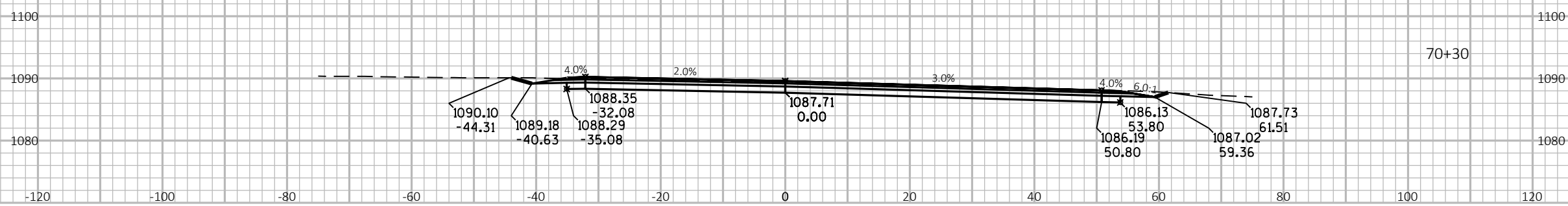
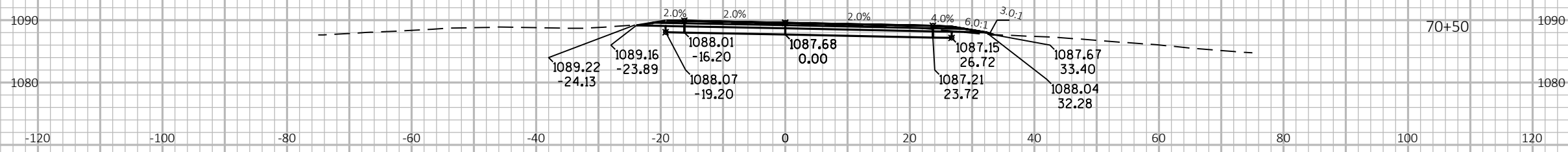
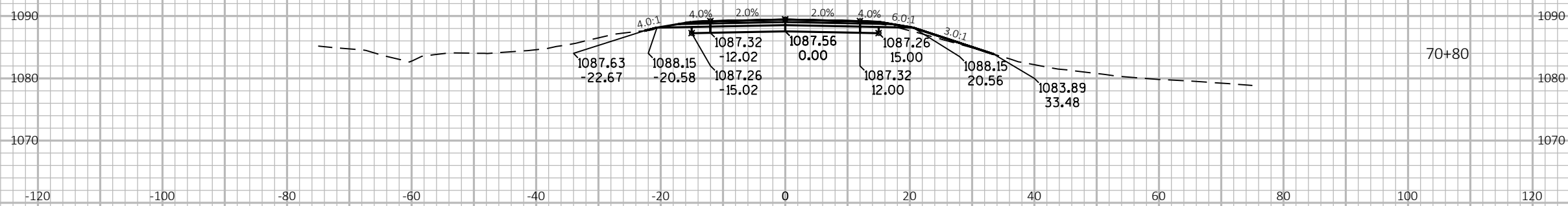
HWY: STH 59

COUNTY: GREEN

CROSS SECTIONS: 6TH ST.

SHEET

E



PROJECT NO: 5660-00-72

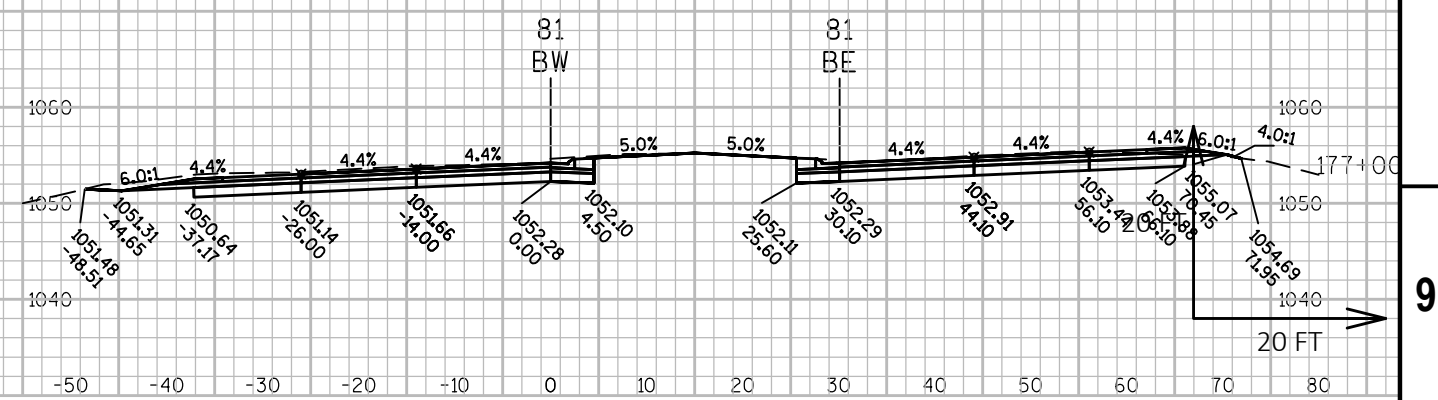
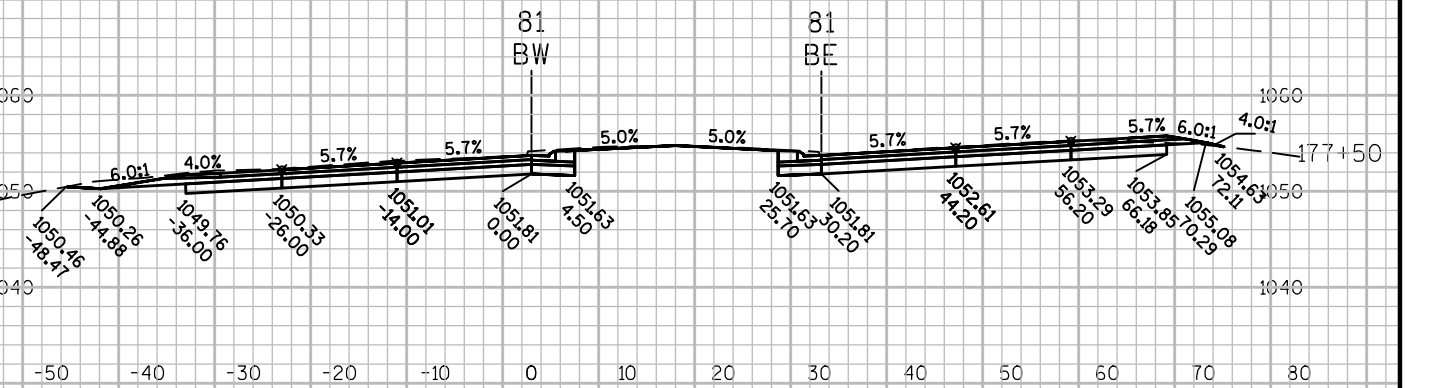
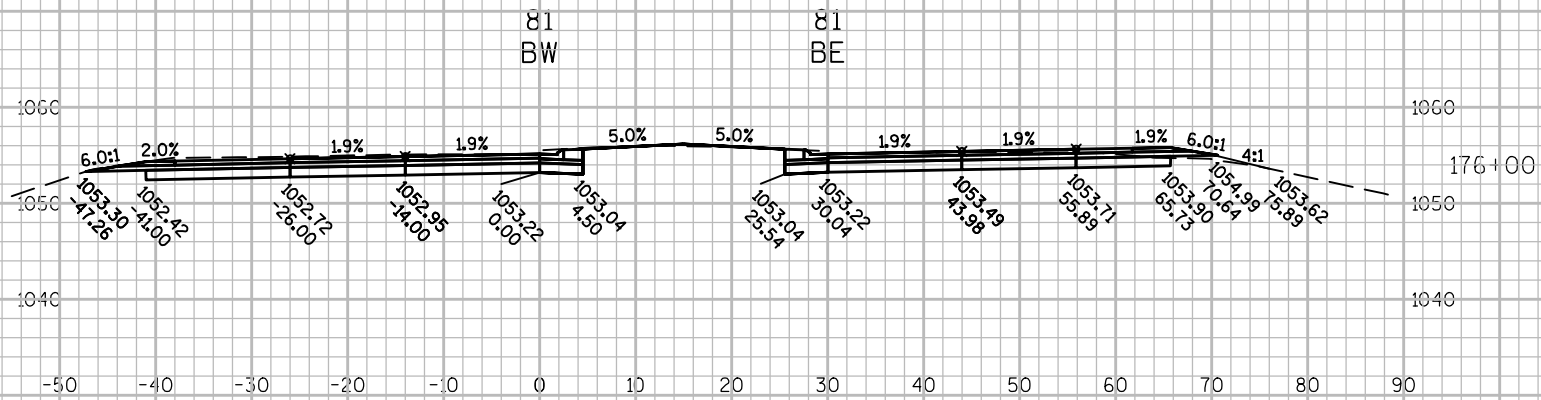
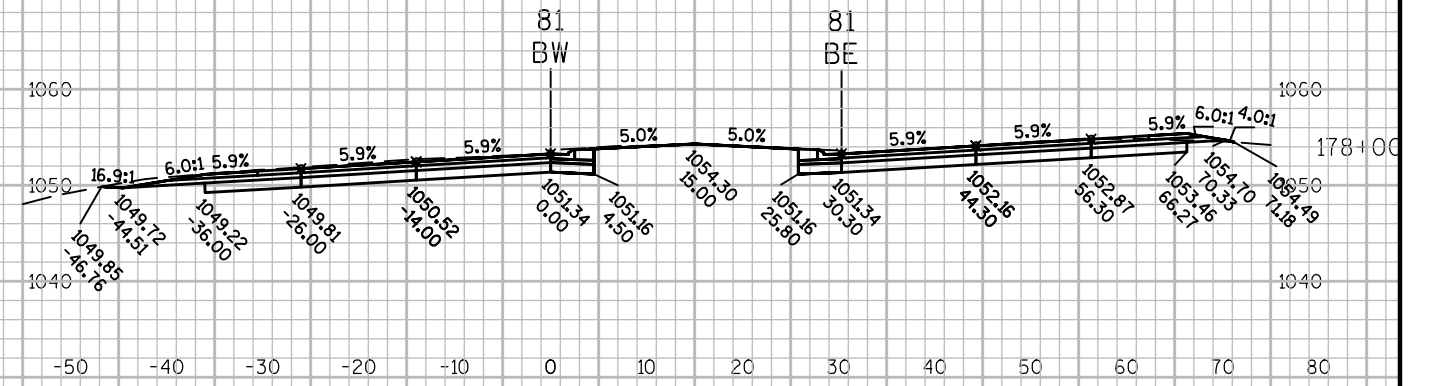
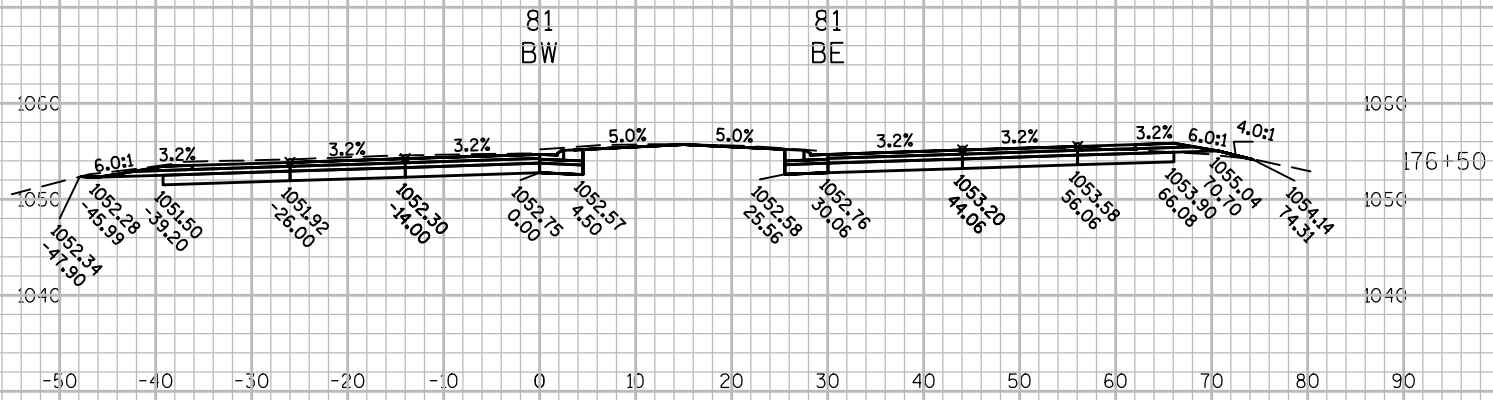
HWY: STH 59

COUNTY: GREEN

CROSS SECTIONS: WEISS LN

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PROJECT NO:5944-01-72

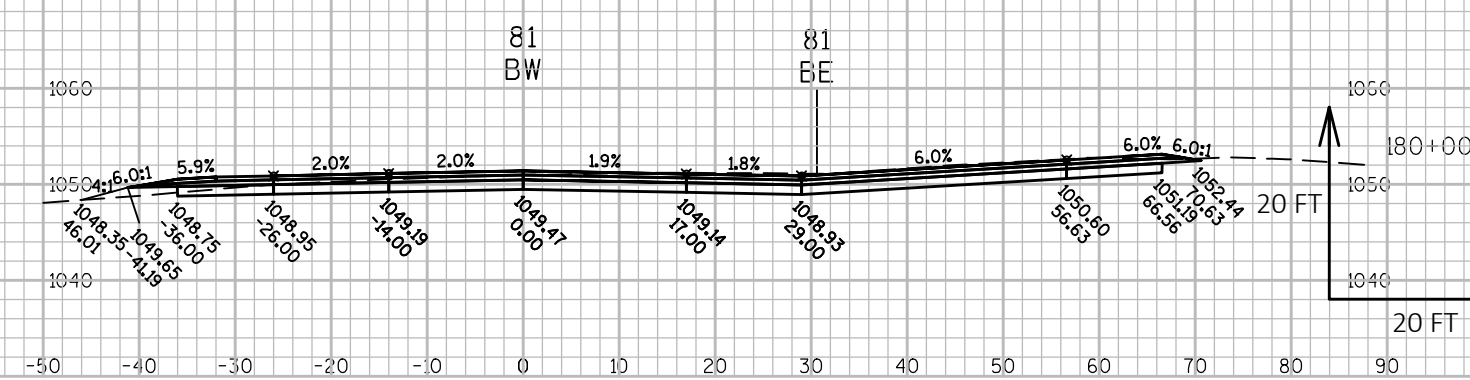
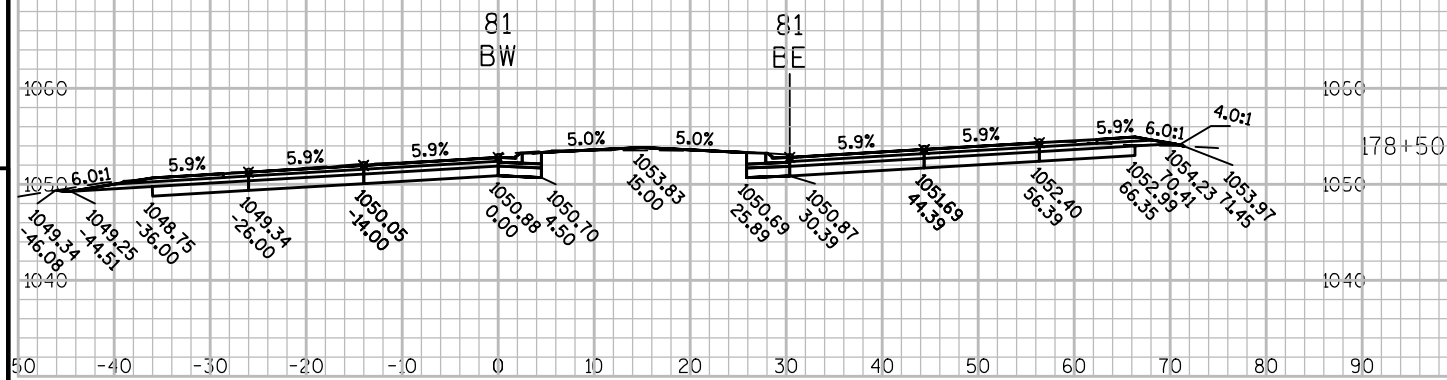
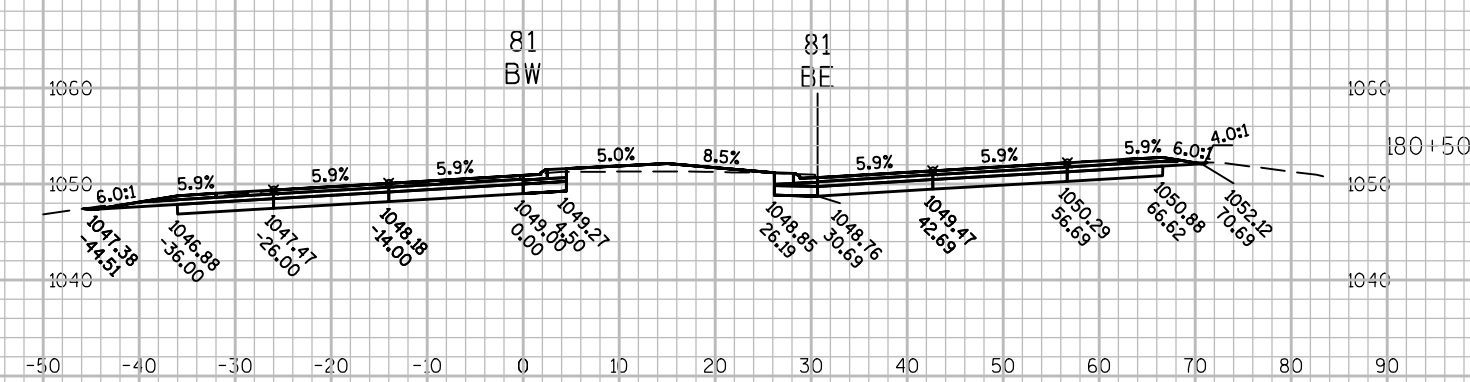
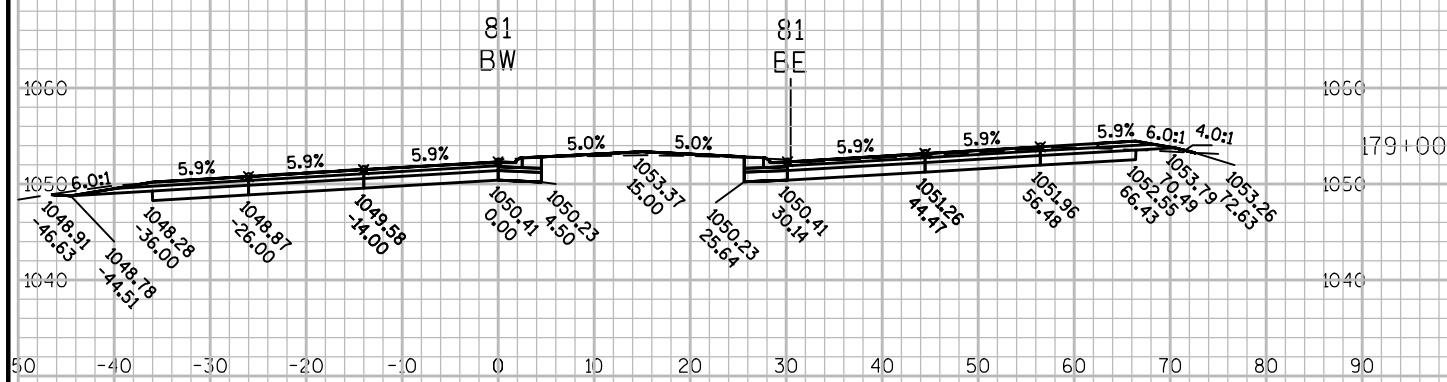
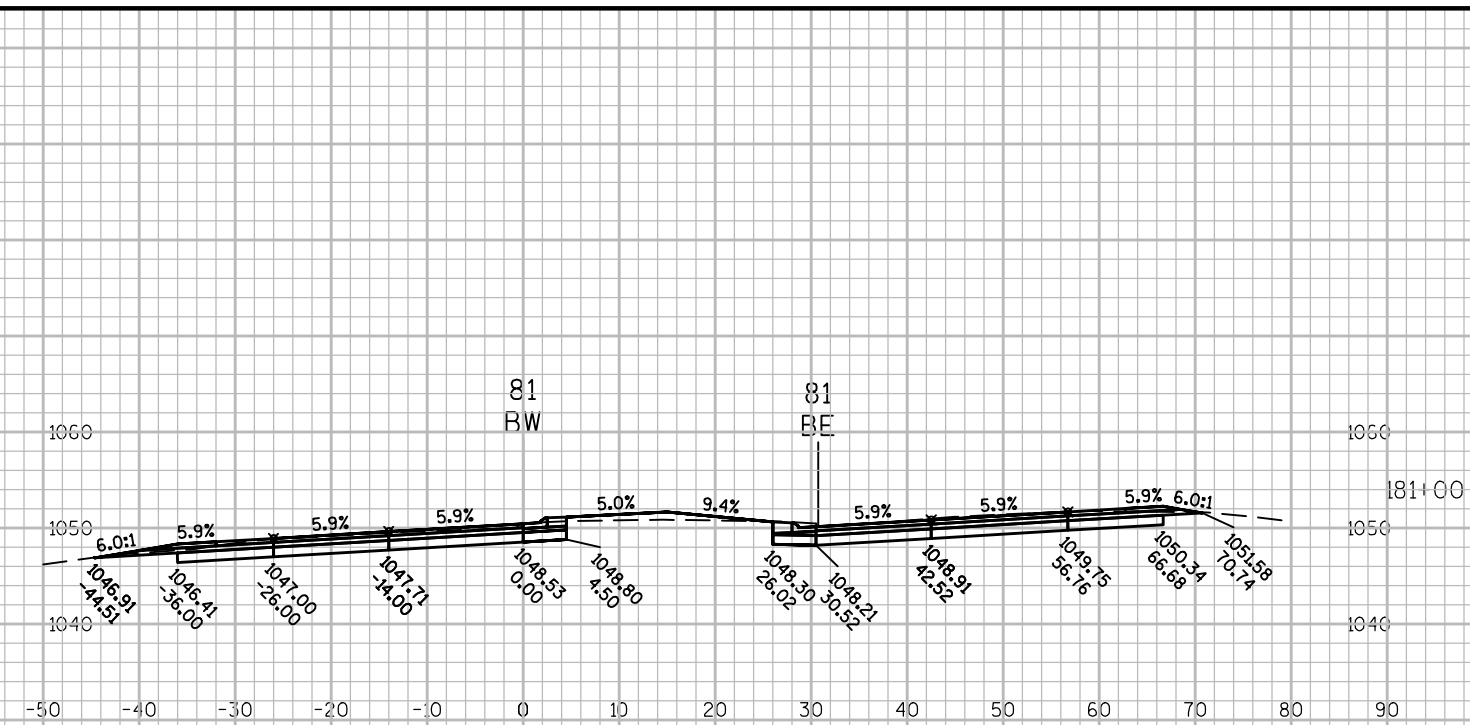
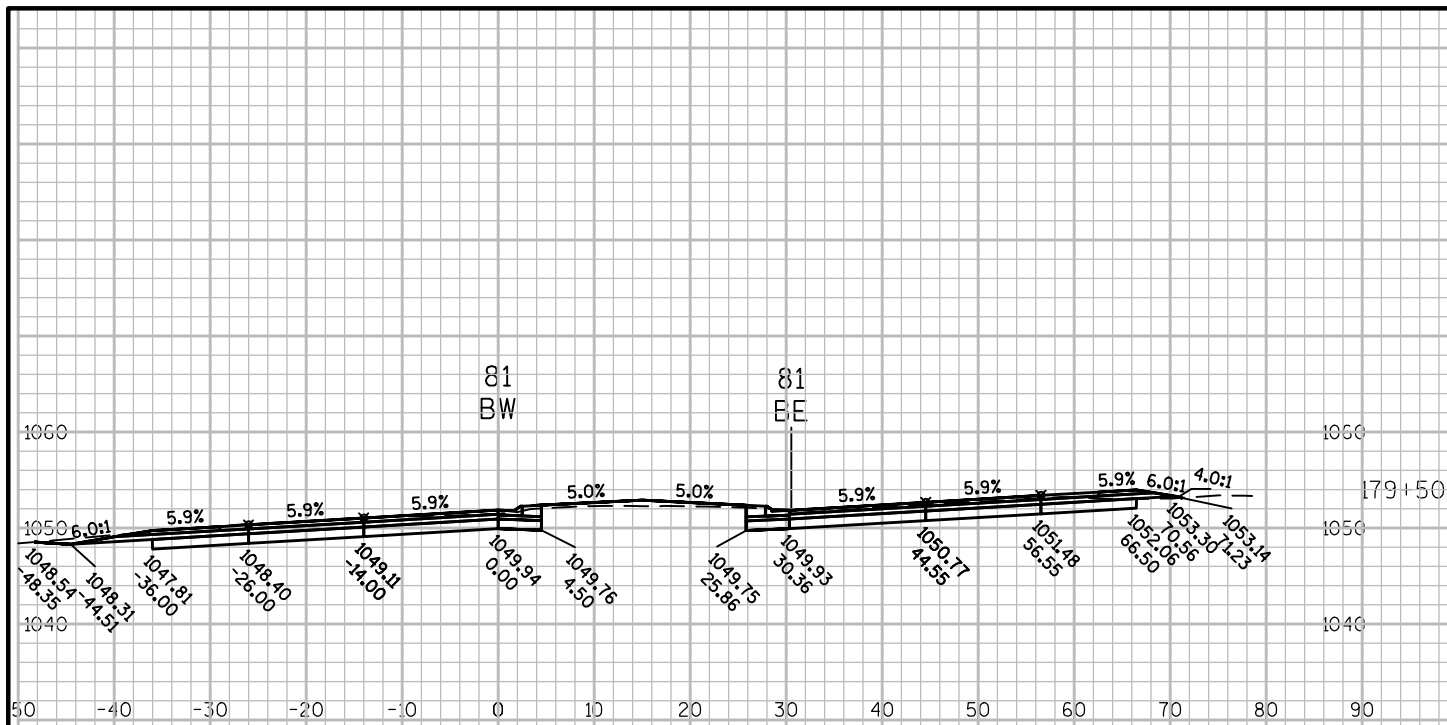
HWY: STH 81

COUNTY: GREEN

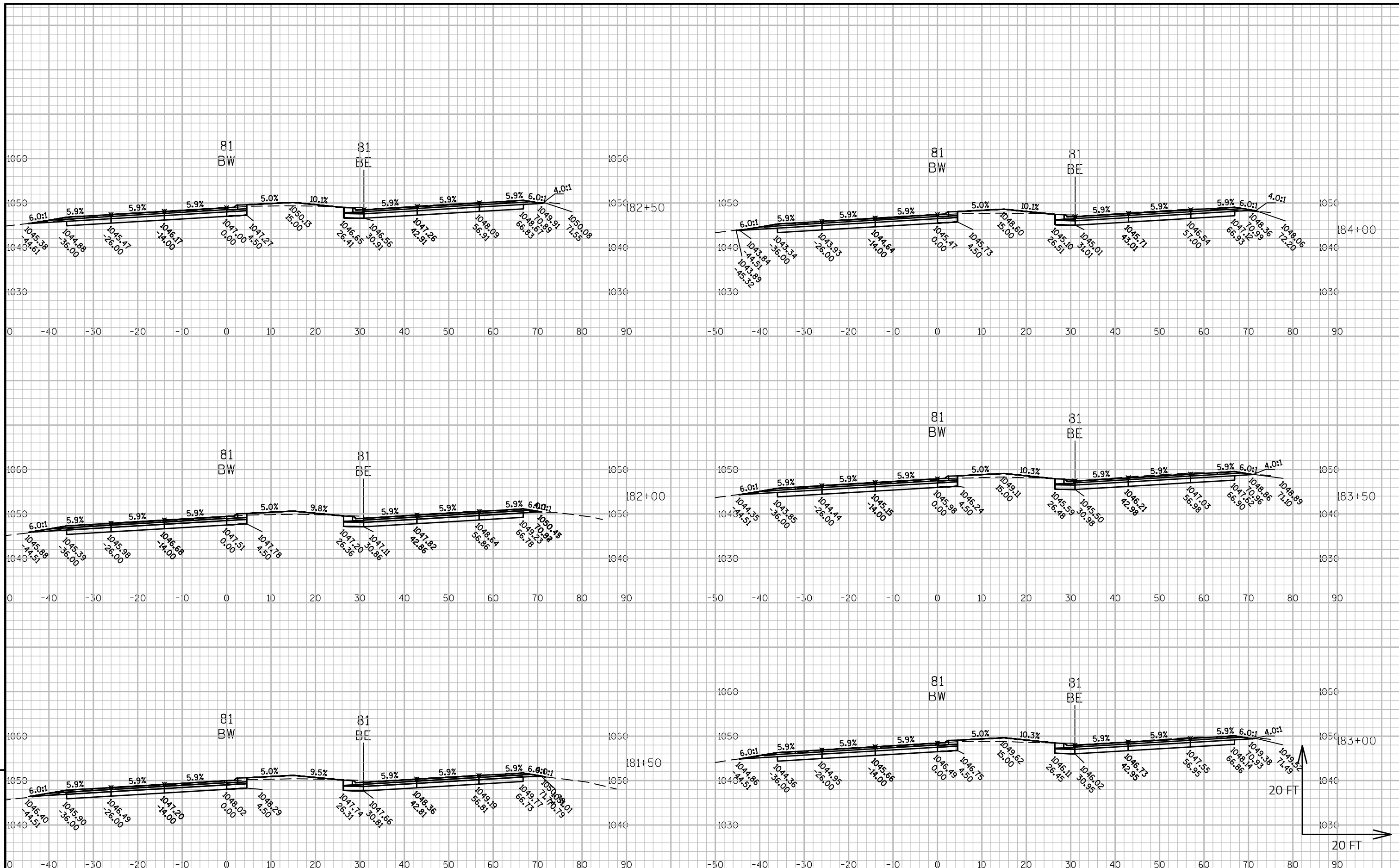
CROSS SECTIONS: STH 81

SHEET

E



PROJECT NO:5944-01-72	HWY: STH 81	COUNTY: GREEN	CROSS SECTIONS: STH 81	SHEET	E
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PROJECT NO:5944-01-72

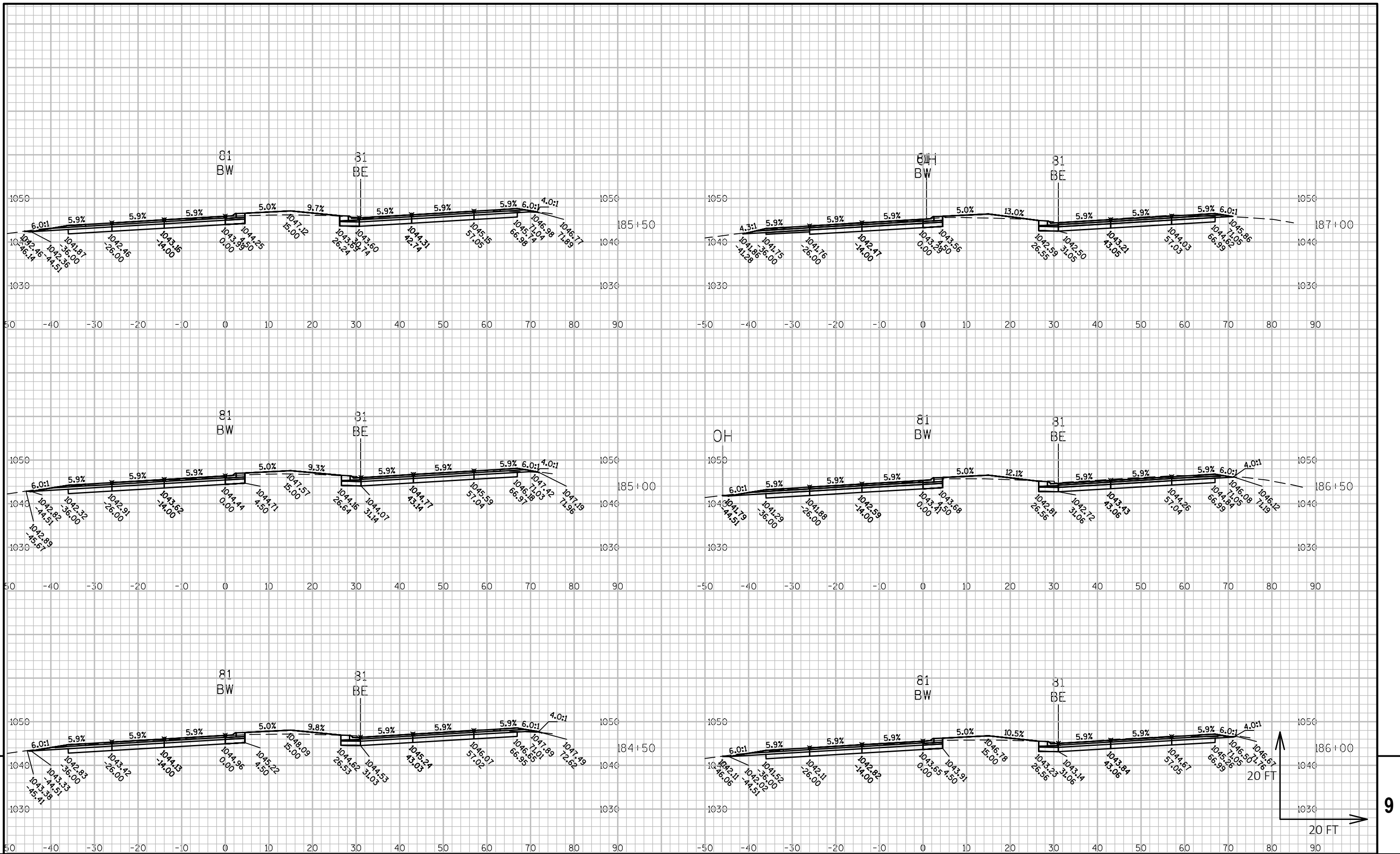
HWY: STH 81

COUNTY: GREEN

CROSS SECTIONS: STH 81

SHEET

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PROJECT NO:5944-01-72

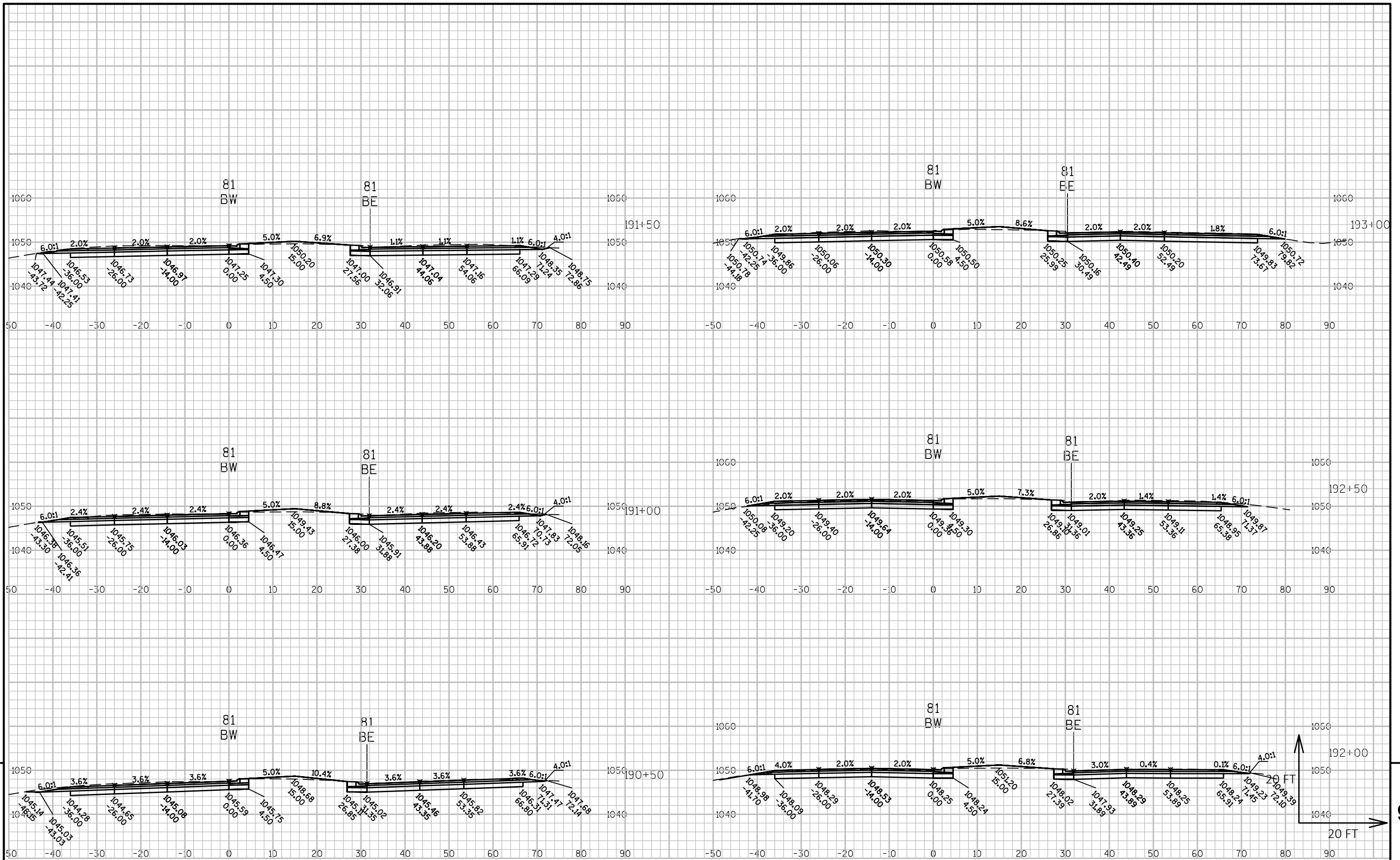
HWY: STH 81

COUNTY: GREEN

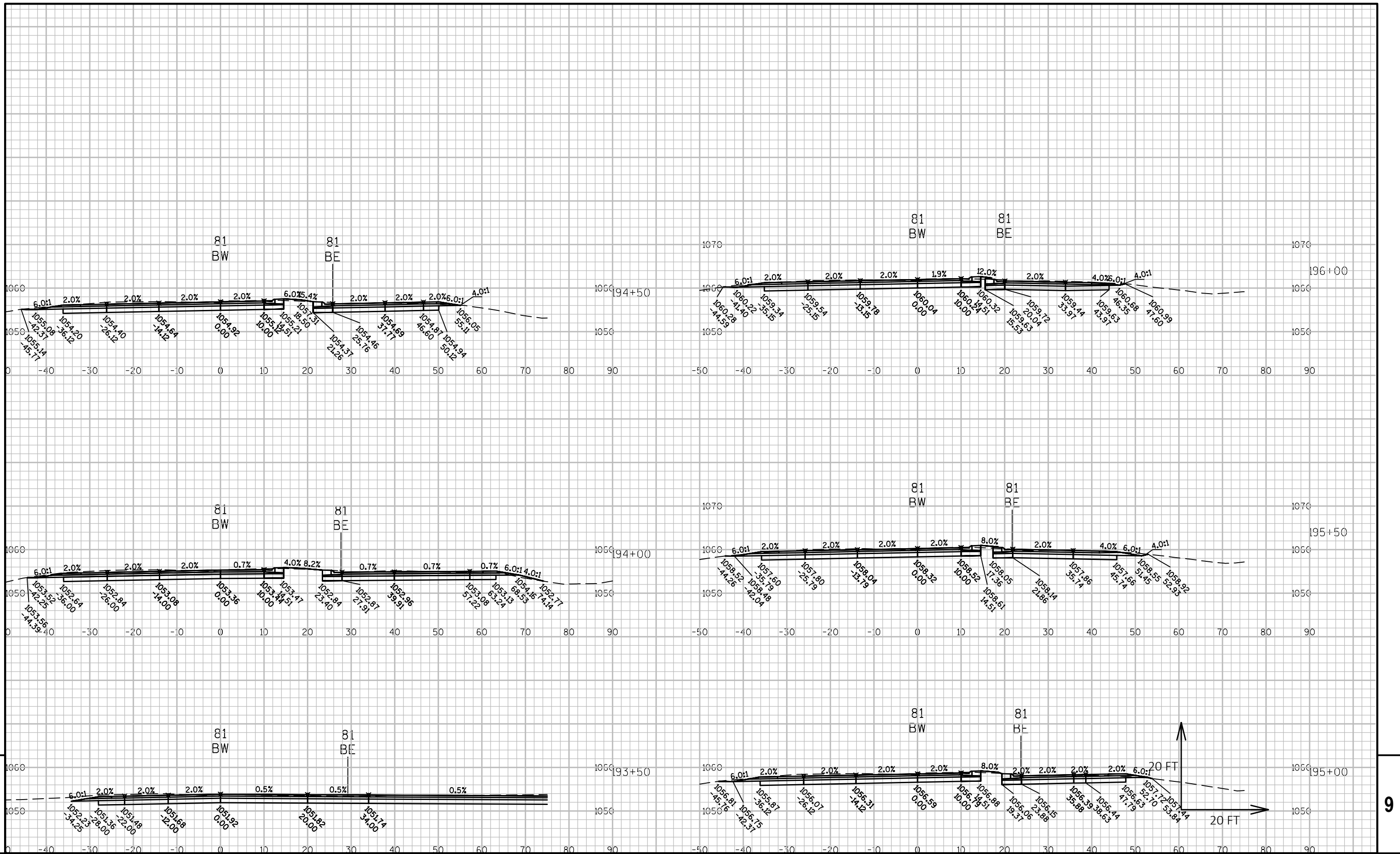
CROSS SECTIONS: STH 81

SHEET

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PROJECT NO:5944-01-72	HWY: STH 81	COUNTY: GREEN	CROSS SECTIONS: STH 81
SHEET			E



PROJECT NO:5944-01-72

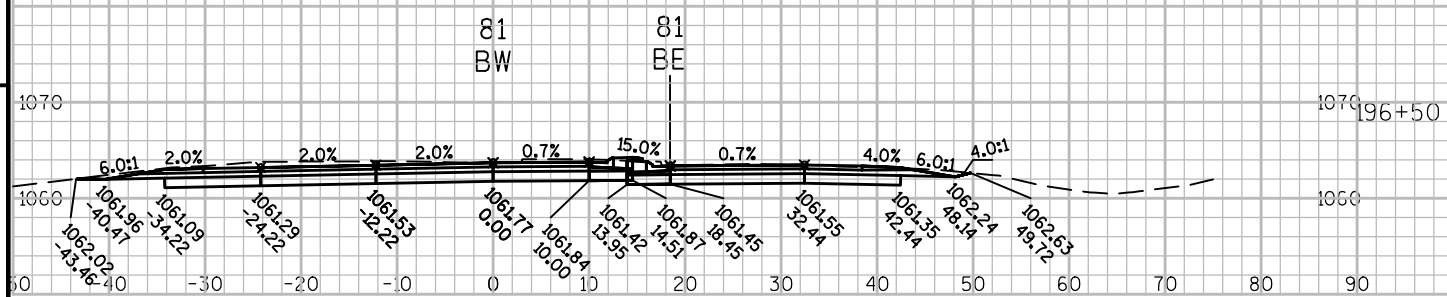
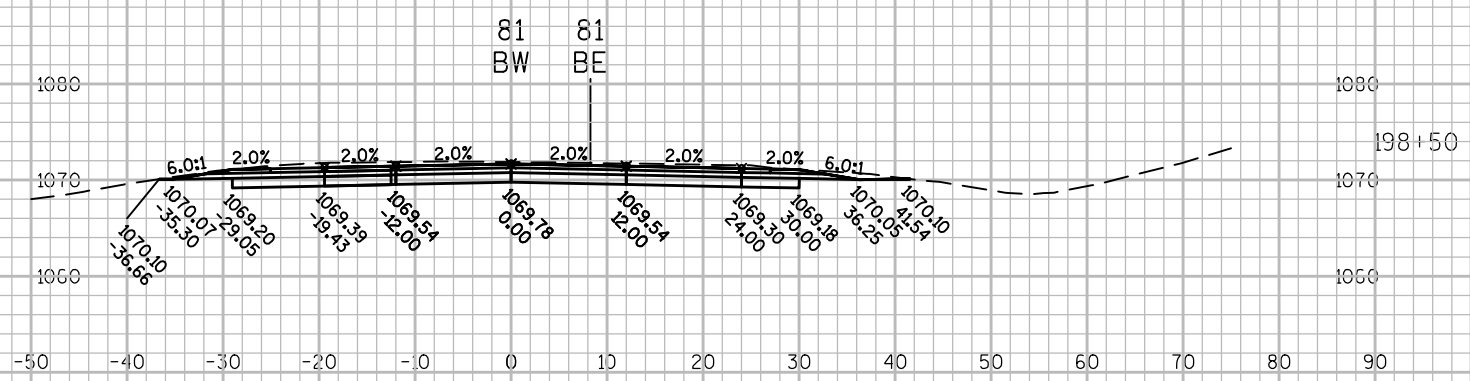
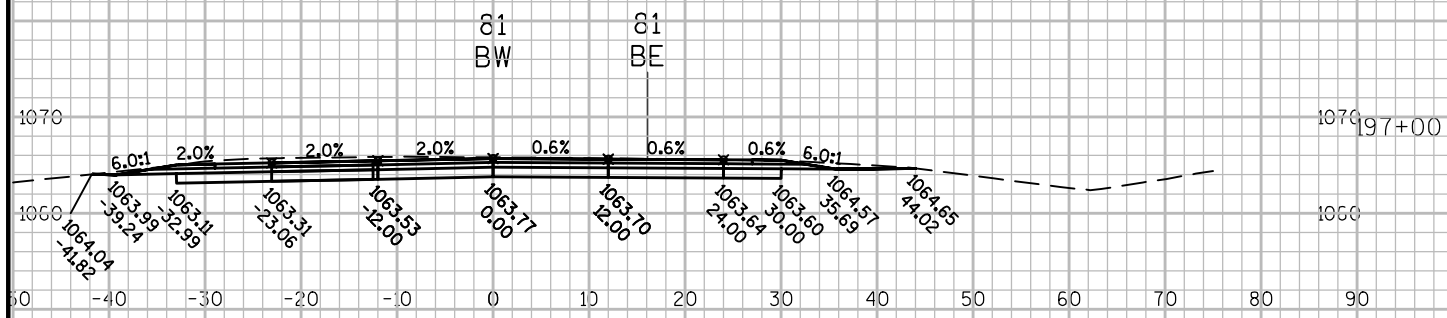
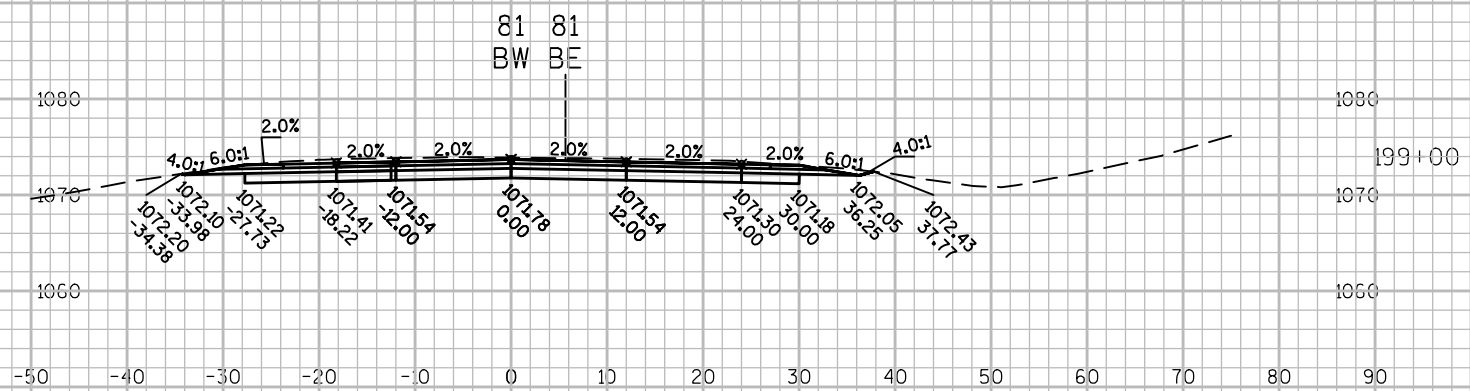
HWY: STH 81

COUNTY: GREEN

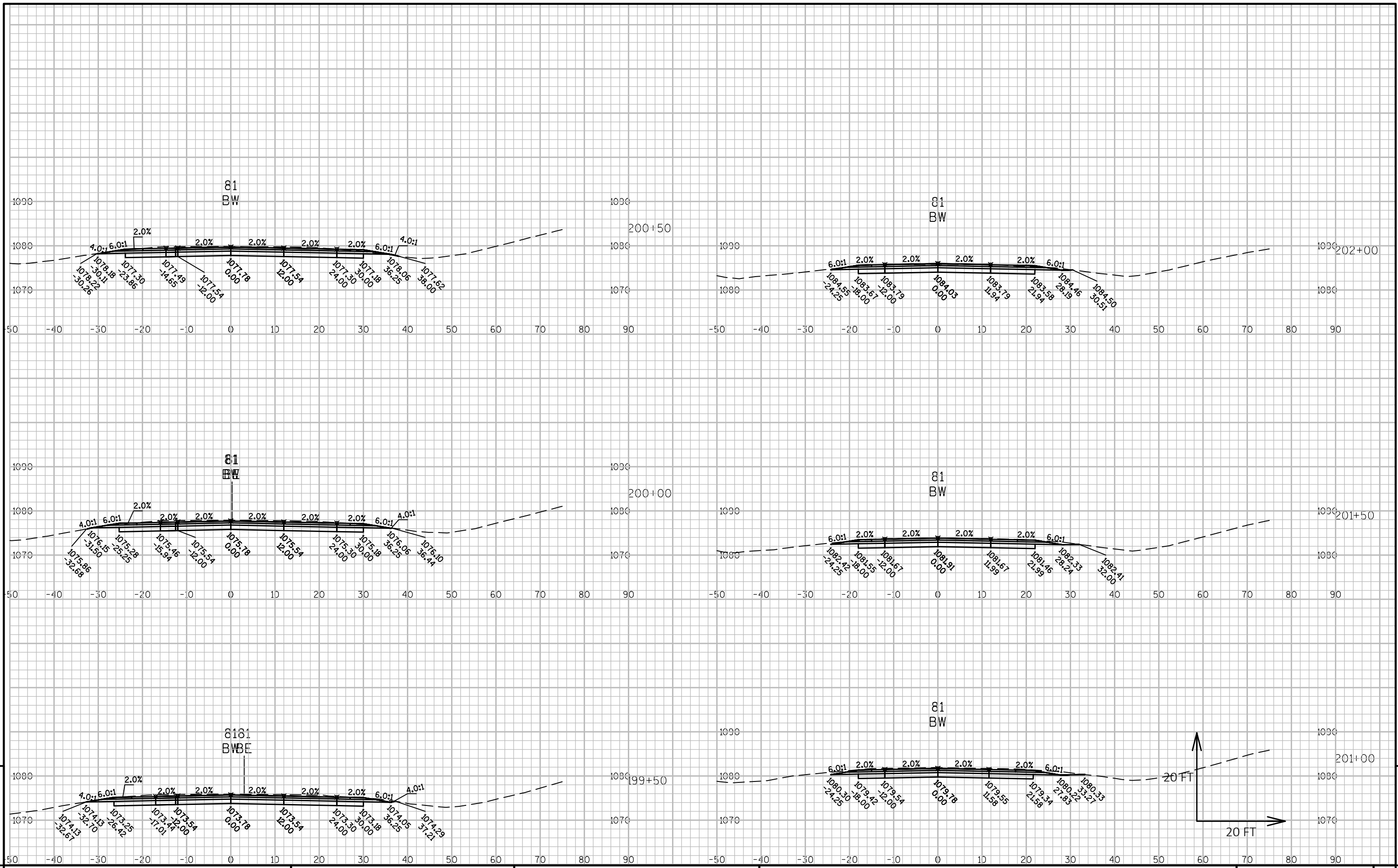
CROSS SECTIONS: STH 81

SHEET

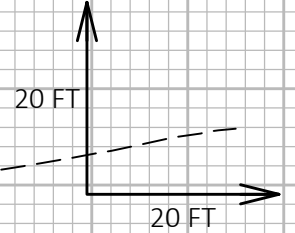
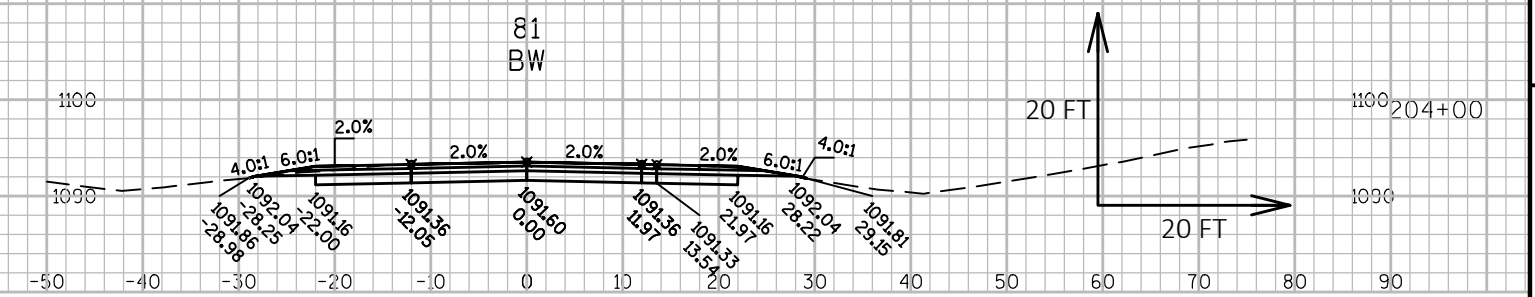
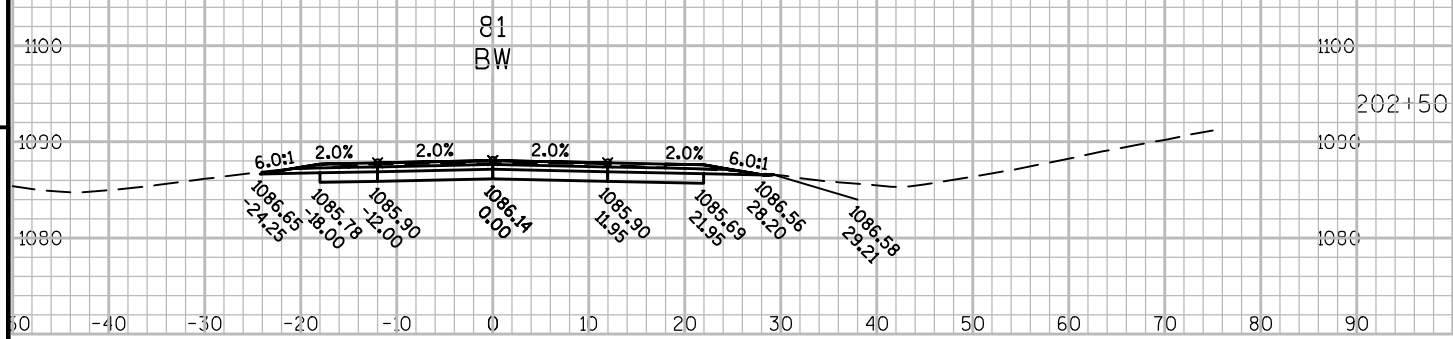
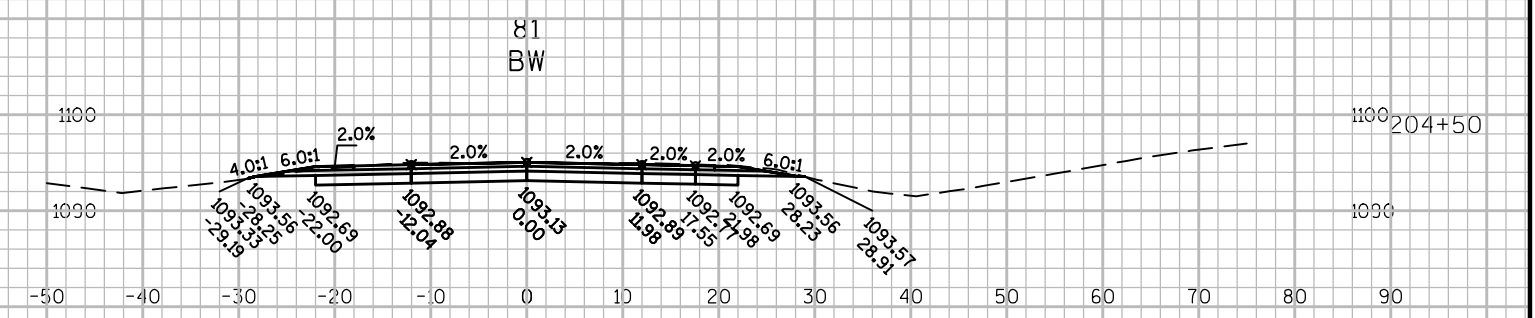
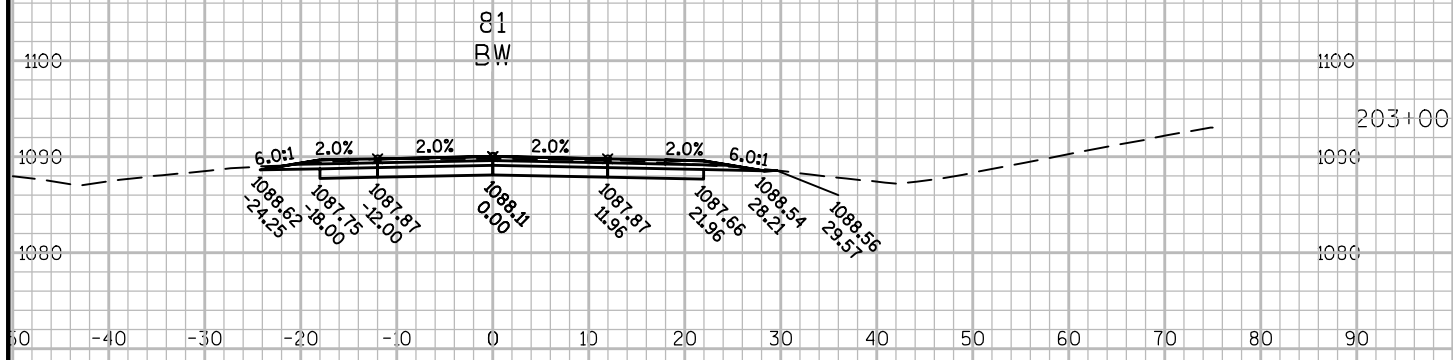
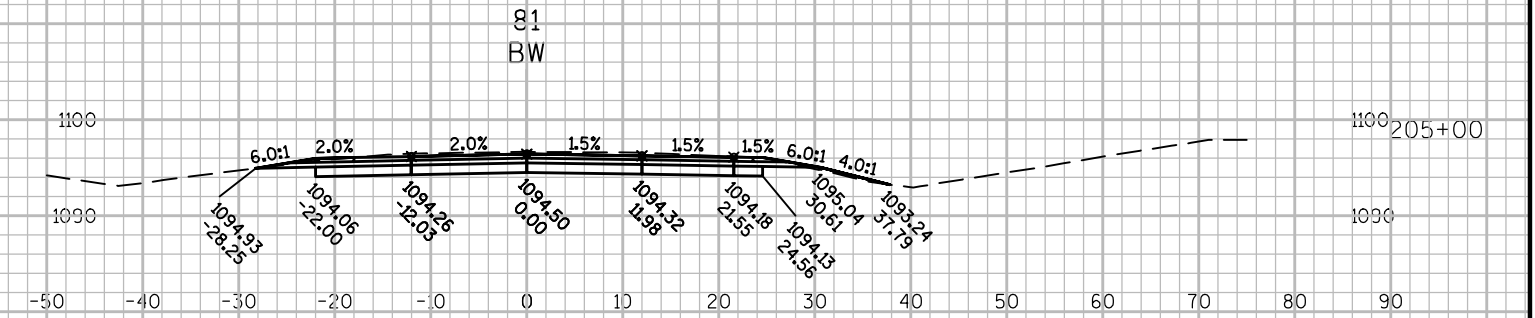
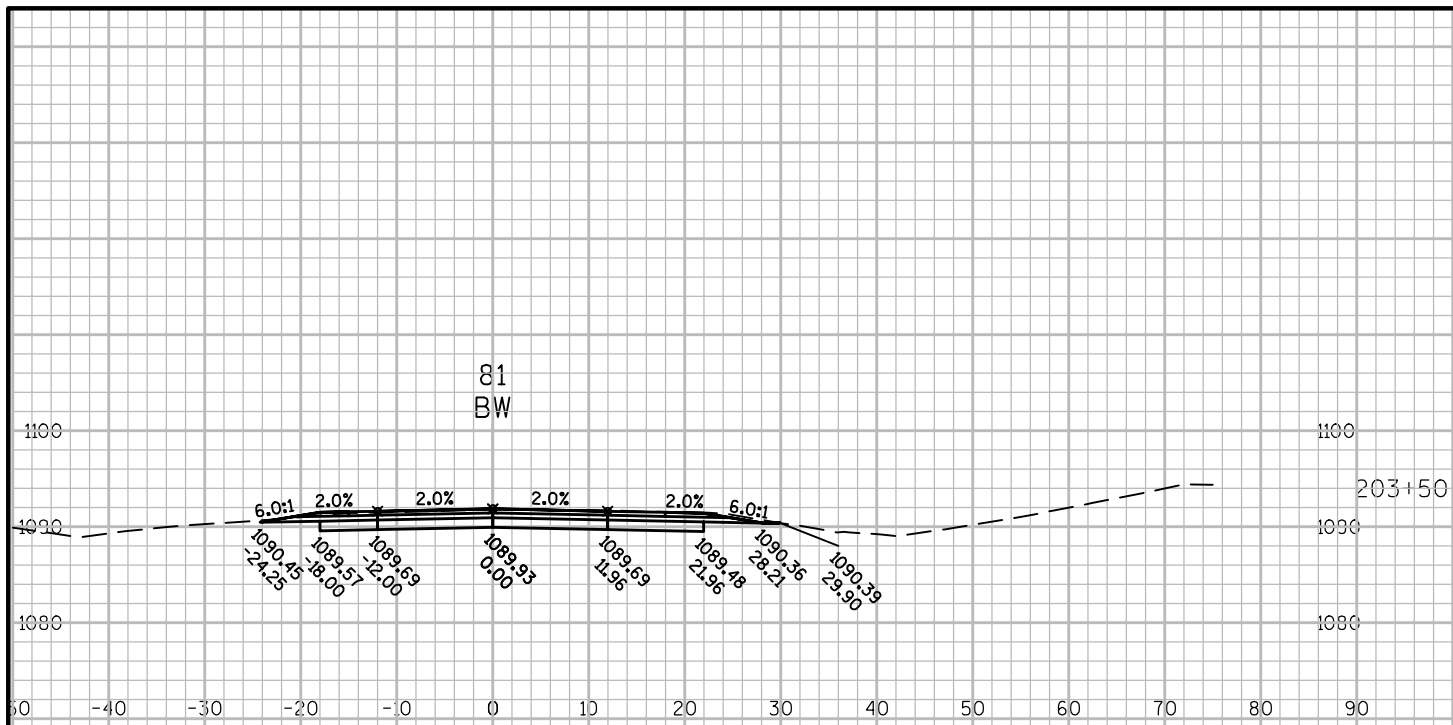
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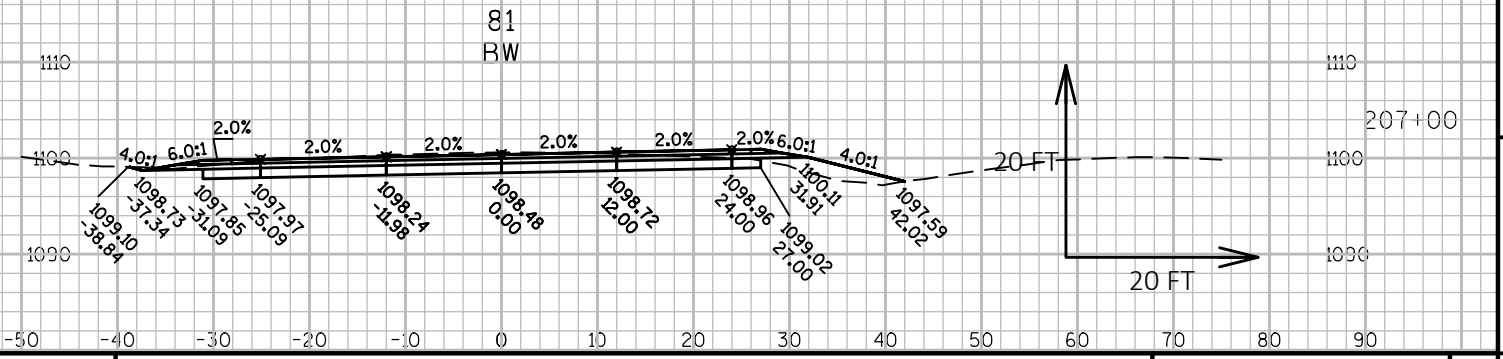
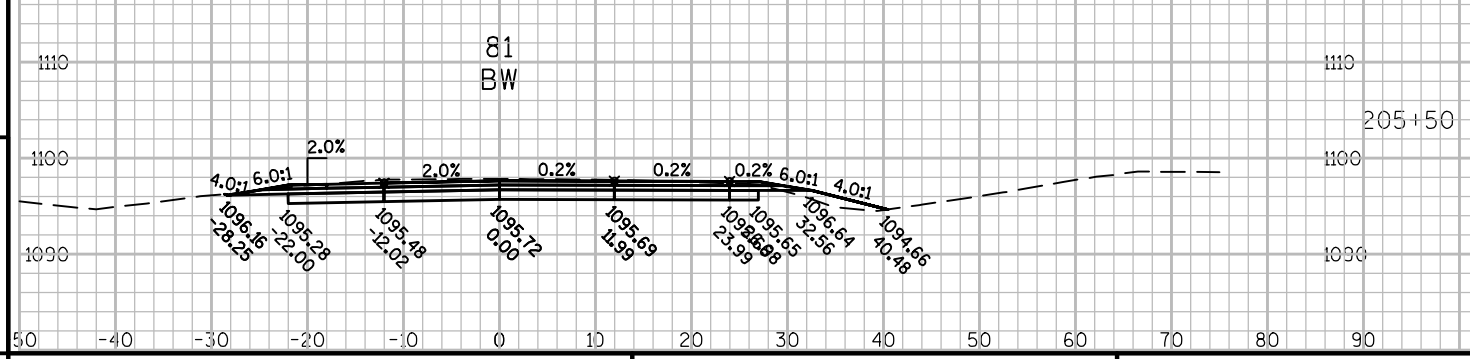
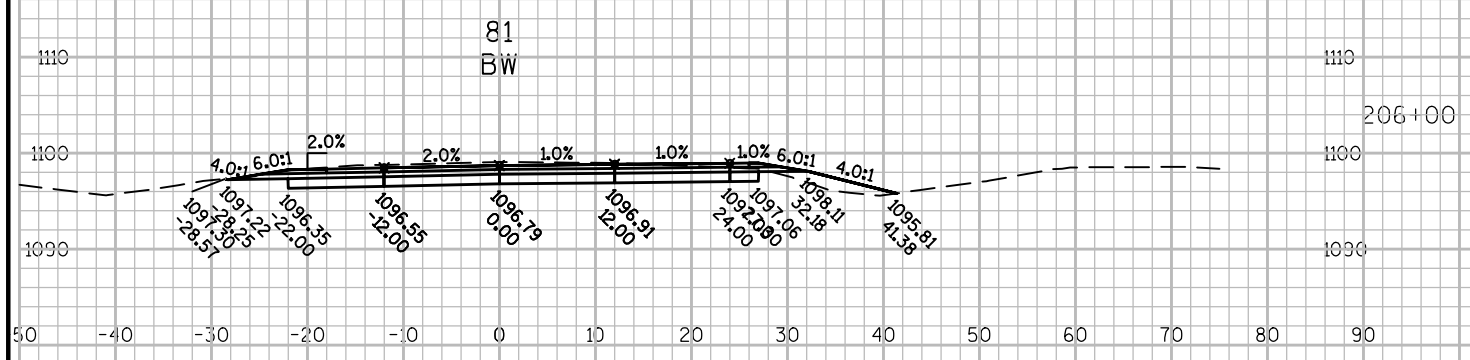
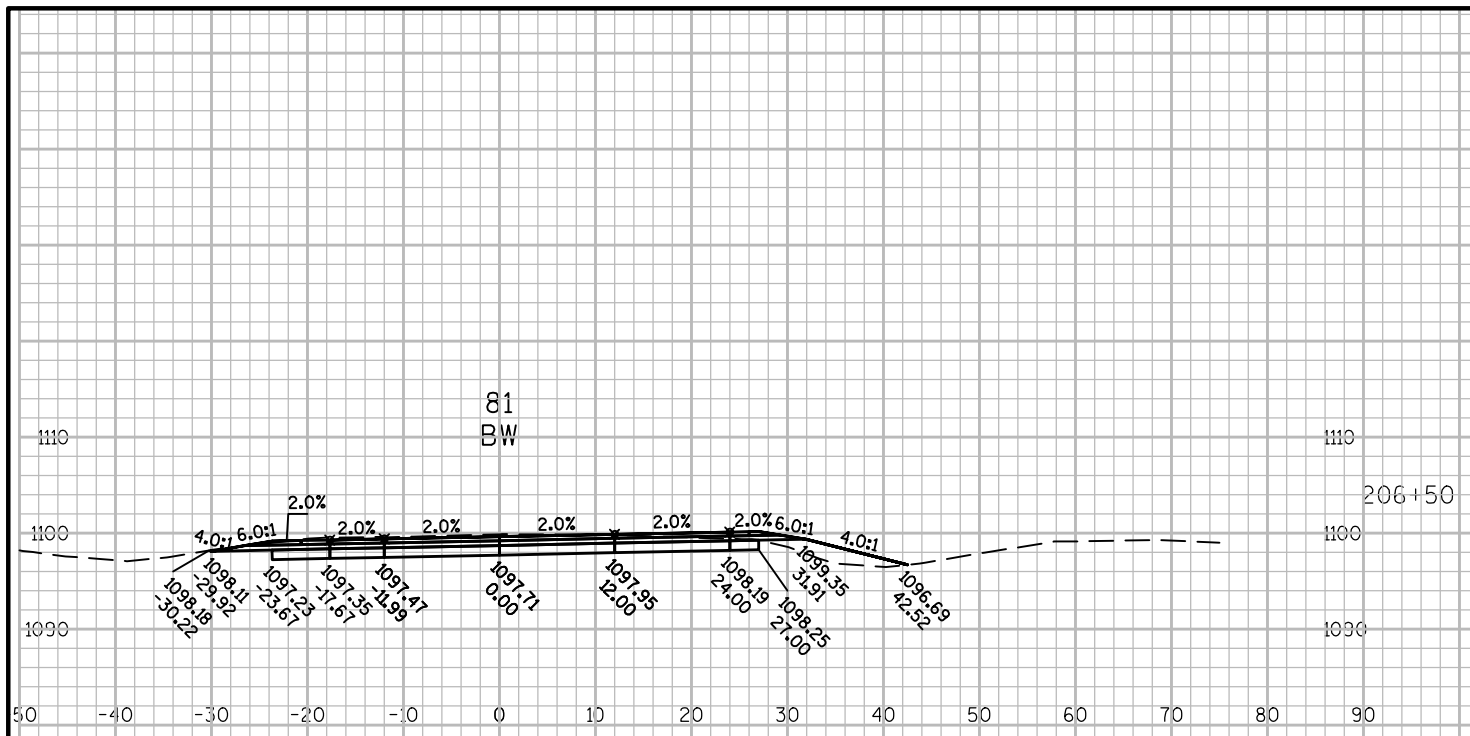
PROJECT NO:5944-01-72 HWY: STH 81 COUNTY: GREEN CROSS SECTIONS: STH 81 SHEET E



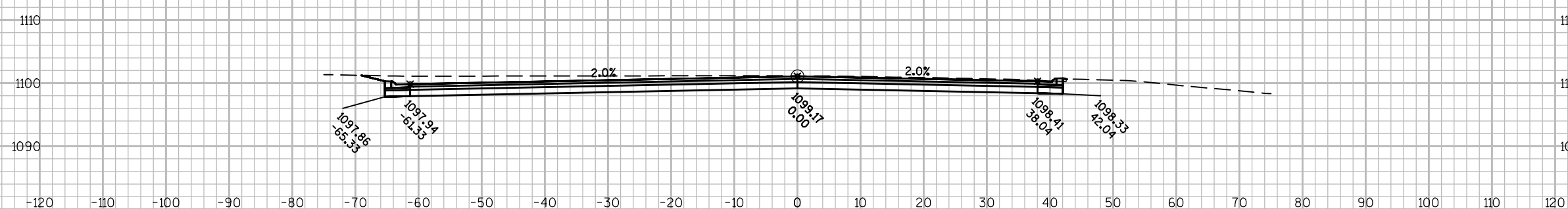
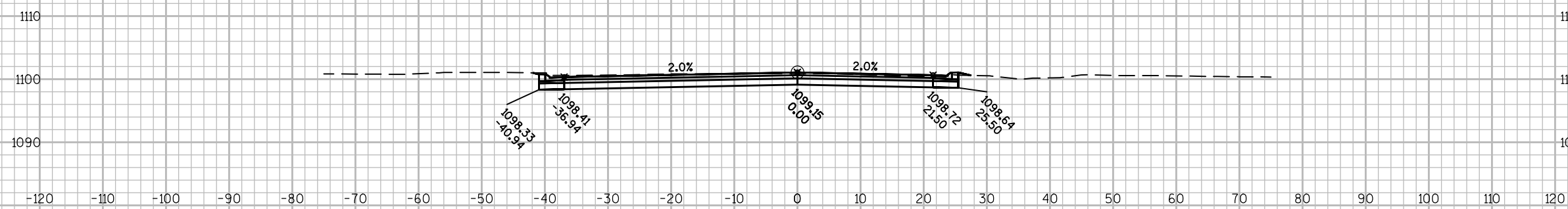
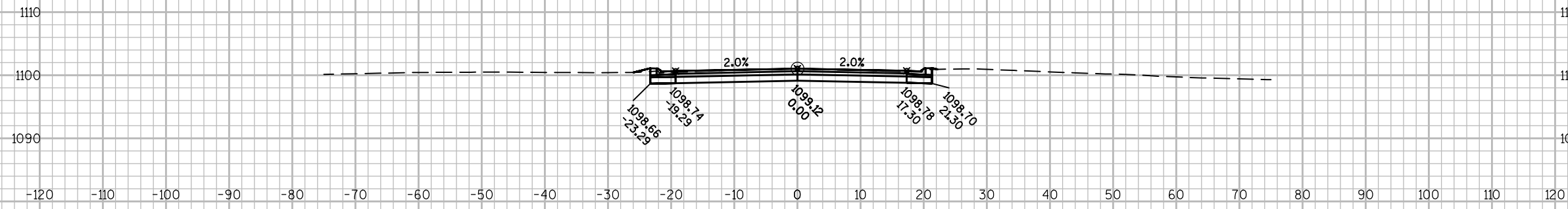
PROJECT NO:5944-01-72 HWY: STH 81 COUNTY: GREEN CROSS SECTIONS: STH 81 SHEET E



PROJECT NO:5944-01-72 HWY: STH 81 COUNTY: GREEN CROSS SECTIONS: STH 81 SHEET E

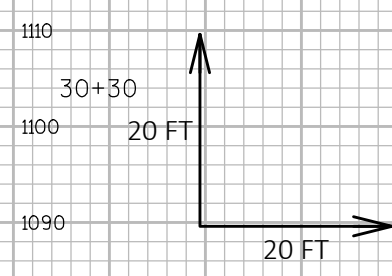


PROJECT NO:5944-01-72 HWY: STH 81 COUNTY: GREEN CROSS SECTIONS: STH 81 SHEET E



1110
30+75
1100
1090

1110
30+50
1100
1090

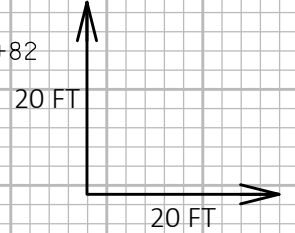
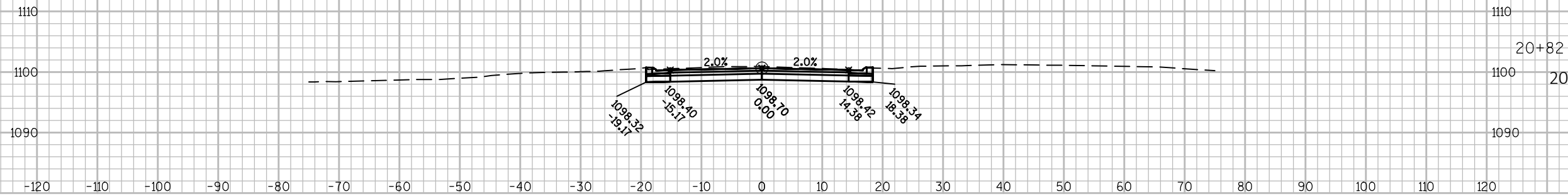
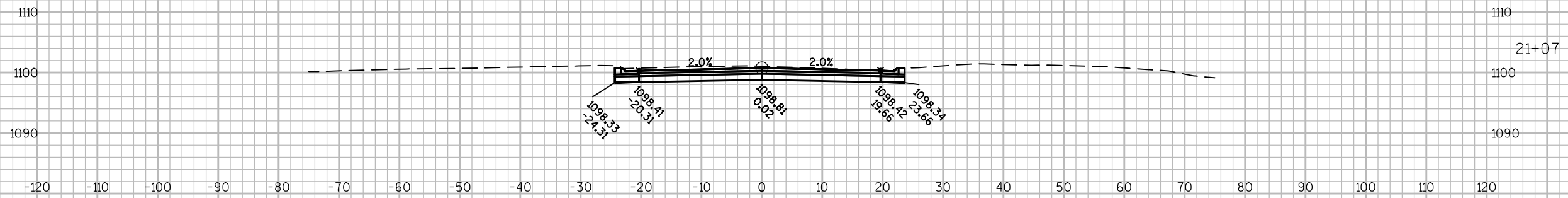
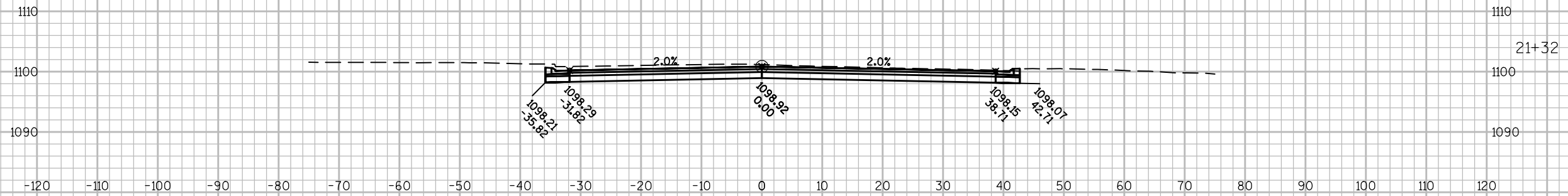


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PROJECT NO:5944-01-72 HWY: STH 81 COUNTY: GREEN CROSS SECTIONS: STH 81 SHEET E

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PROJECT NO:5944-01-72

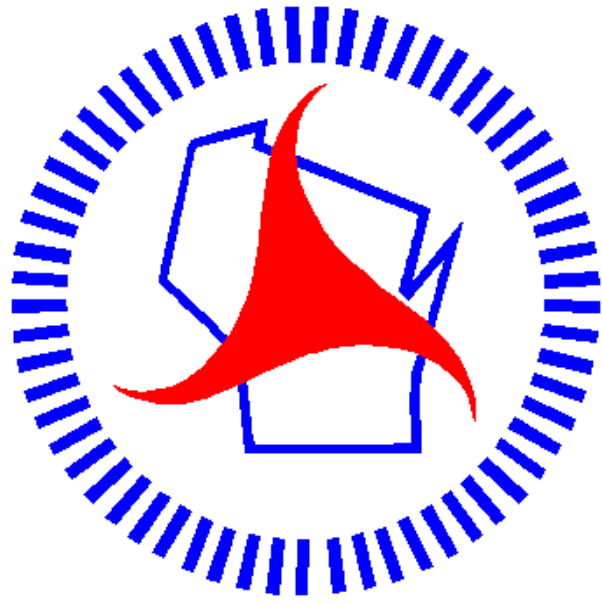
HWY: STH 81

COUNTY: GREEN

CROSS SECTIONS: STH 81

SHEET

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