

MAD
WITH: PROJECT ID:

5350-01-73

COUNTY: ROCK

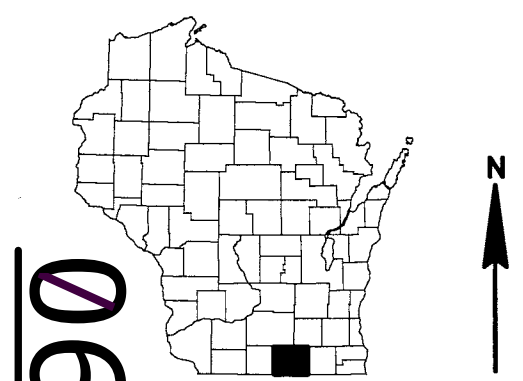
06

MARCH 2019

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 = 254



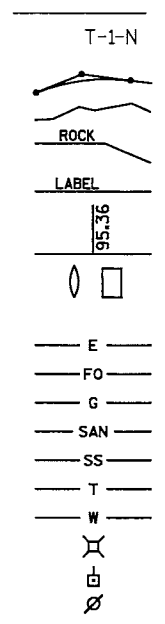
DESIGN DESIGNATION

A.A.D.T. 2018 = 5,970 - 13,200 vpd.
A.A.D.T. 2038 = 7,270 - 14,930 vpd.
D.H.V. = 1720
D.D. = 59/41
T. = 12.9%
DESIGN SPEED = 40 - 60 mph
ESALS = 3,100,000

CONVENTIONAL SYMBOLS

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

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



STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

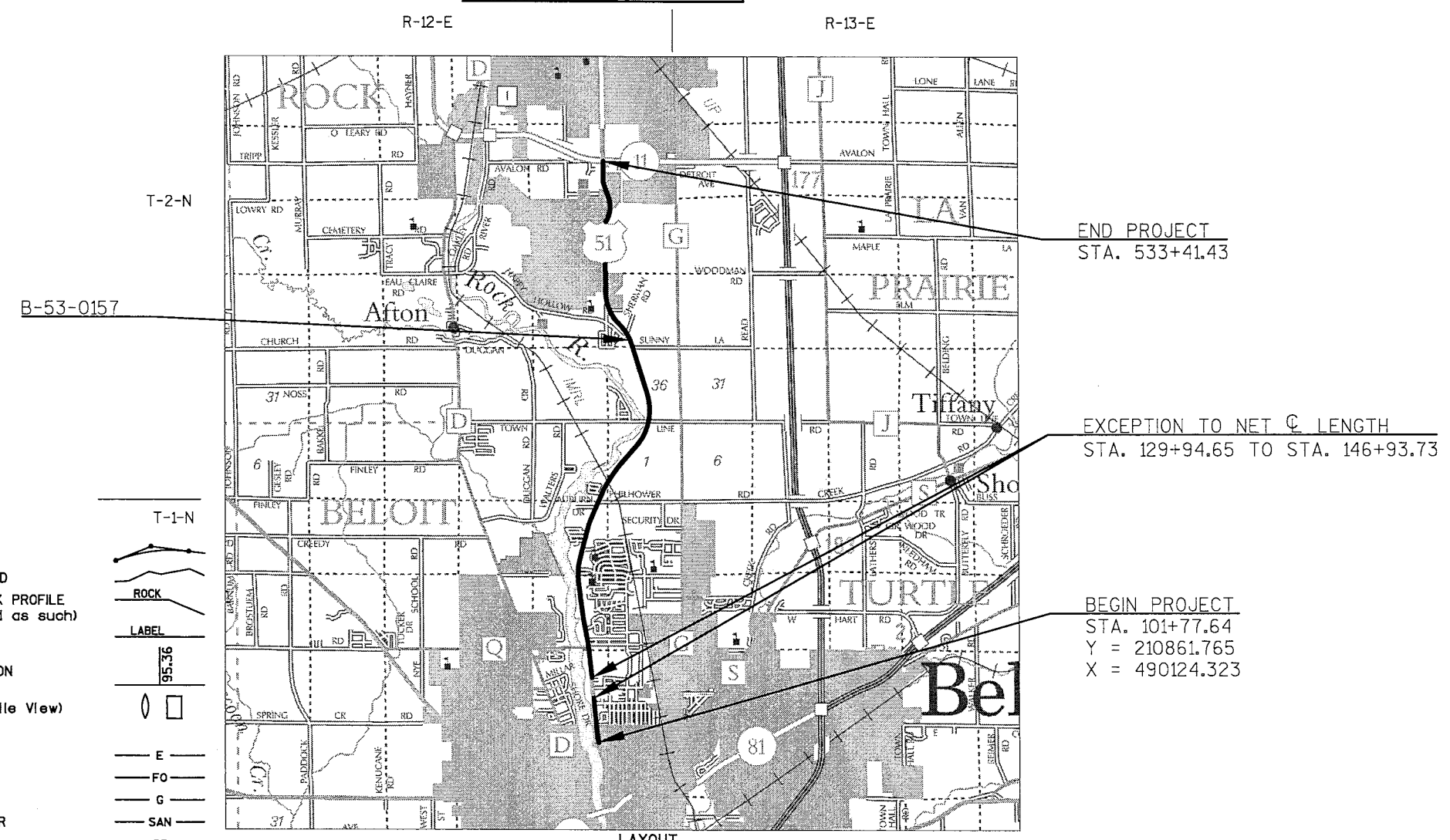
BELOIT - JANESVILLE

HENRY AVENUE TO STH 11

USH 51

ROCK COUNTY

STATE PROJECT NUMBER
5350-01-73



LAYOUT
SCALE 0 2 MILES
TOTAL NET LENGTH OF CENTERLINE = 7.853 MI

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COUNTY COORDINATES, ROCK 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.

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
5350-01-73	WISC 2019152	1

STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
PREPARED BY	
Surveyor	KL ENGINEERING, INC
Designer	DAVID SCHMIDT, P.E.
Project Manager	JIM SIMPSON, P.E.
Regional Examiner	-
Regional Supervisor	KURT JOHNSON, P.E.
APPROVED FOR THE DEPARTMENT	
DATE: 10-22-2018	
E	

GENERAL NOTES

DIMENSIONS GIVEN FOR EXISTING FEATURES SHALL BE CONSIDERED AS APPROXIMATE AND MEASURED IN THE FIELD FOR MATCHING PURPOSES.

HMA PAVEMENT CALCULATIONS ARE BASED ON 112 LB/SY/IN.

4" HMA PAVEMENT SHALL BE CONSTRUCTED WITH TWO LAYERS

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

DETAILS OF CONSTRUCTION NOT SHOWN ON THE PLAN SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER

DO NOT DRIVE EQUIPMENT OR STORE EQUIPMENT OR MATERIALS IN ENVIRONMENTALLY SENSITIVE AREAS, WETLANDS, OR WATERWAYS.

EROSION CONTROL FEATURES SHOWN ON THE PLAN SHEETS ARE AT SUGGESTED LOCATIONS. EXACT LOCATIONS WILL BE DETERMINED BY THE ENGINEER IN THE FIELD. ALL EROSION CONTROL MEASURES SHALL BE MAINTAINED UNTIL SUCH TIME AS THE ENGINEER DETERMINES THE MEASURE IS NO LONGER NECESSARY. REMOVE ITEMS AT THE ENGINEERS DIRECTION.

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

THE CONTRACTOR SHALL COORDINATE CONSTRUCTION ACTIVITIES WITH A CALL TO DIGGERS HOTLINE AND/OR A DIRECT CALL TO THE UTILITIES THAT HAVE FACILITIES IN THE AREA. NOT ALL UTILITIES ARE MEMBERS OF DIGGERS HOTLINE.

PRIOR TO PLACEMENT OF MGS RAIL, THE SHOULDERS SHALL BE IN PLACE, SHAPED AND COMPACTED.

THE LOCATION OF STOP LINES SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER.

BEAM GUARD WILL BE REPLACED THE SAME DAY IT IS REMOVED.

STANDARD ABBREVIATIONS

AP	Access Point	INTERS	Intersection
AC	Acre	INV	Invert
AGG	Aggregate	JT	Joint
ASPH	Asphaltic	LT	Left
BL	Baseline	LF	Linear Foot
BM	Bench Mark	MH	Manhole
CB	Catch Basin	MP	Marker Post
CL	Center Line	MB	Message Board
CONC	Concrete	NOM	Nominal
CO	County	NB	Northbound
CABC	Crushed Aggregate Base Course	PAVT	Pavement
CY	Cubic Yard	PERM	Permanent
CULV	Culvert	PU	Pipe Underdrain
CP	Culvert Pipe	PCC	Portland Cement Concrete
C&G	Curb and Gutter	PE	Private Entrance
DIA	Diameter	PROJ	Project
DWY	Driveway	PL	Property Line
EB	Eastbound	RL	Reference Line
ELEV	Elevation	RT	Right
EW	Endwall	R/W	Right of Way
ENT	Entrance	RDWY	Roadway
EXC	Excavation	SHLDR	Shoulder
FP	Fence Post	SB	Southbound
FERT	Fertilizer	SS	Storm Sewer
F	Fill	TEL	Telephone
FG	Finished Grade	TEMP	Temporary
FL	Flow Line	TER	Terrace
FO	Fiber Optic	TV	Television
FT	Foot	UG	Underground
HYD	Hydrant	VOL	Volume
INL	Inlet	W	Water
		WB	Westbound

DIGGERSHOTLINE

Dial 811 or (800)242-8511

www.DiggersHotline.com

UTILITY CONTACTS

WISDOT PROJECT MANAGER
JIM SIMPSON, P.E. , P.L.S
2101 WRIGHT STREET
MADISON, WI 53704
(608) 246-5628
Jim.Simpson@dot.wi.gov

WISDOT PROJECT LEADER
DAVID SCHMIDT, P.E.
2101 WRIGHT STREET
MADISON, WI 53704
(608)246-3867
david2.schmidt@dot.wi.gov

WISCONSIN DEPT OF NATURAL RESOURCES
ANDY BARTA
3911 FISH HATCHERY ROAD
FITCHBURG, WI 53711
(608)275-3308
andy.barta@wisconsin.gov

TONY MARCINIAK
ATC MANAGEMENT, INC. - ELECTRICITY
W234 N2000 RIDGEVIEW PARKWAY COURT
P.O. BOX 6113
WAUKESHA, WI 53187-0047
(262) 506-6814
tmarciniak@atcllc.com

CAROL ANASON
AT&T WISCONSIN
316 W. WASHINGTON AVE
MADISON, WI 53703
(608) 252-2385
Ca2624@att.com

MICHAEL BROLIN
ALLIANT ENERGY - GAS/PETROLEUM
SUITE 1000 4902 N BILTMORE LANE
MADISON, WI 53718
(608) 458-4871
MichaelBrolin@alliantenergy.com

MICHAEL BROLIN
ALLIANT ENERGY - ELECTRICITY
SUITE 1000
4902 N BILTMORE LANE
MADISON, WI 53718
(608) 458-4871
MichaelBrolin@alliantenergy.com

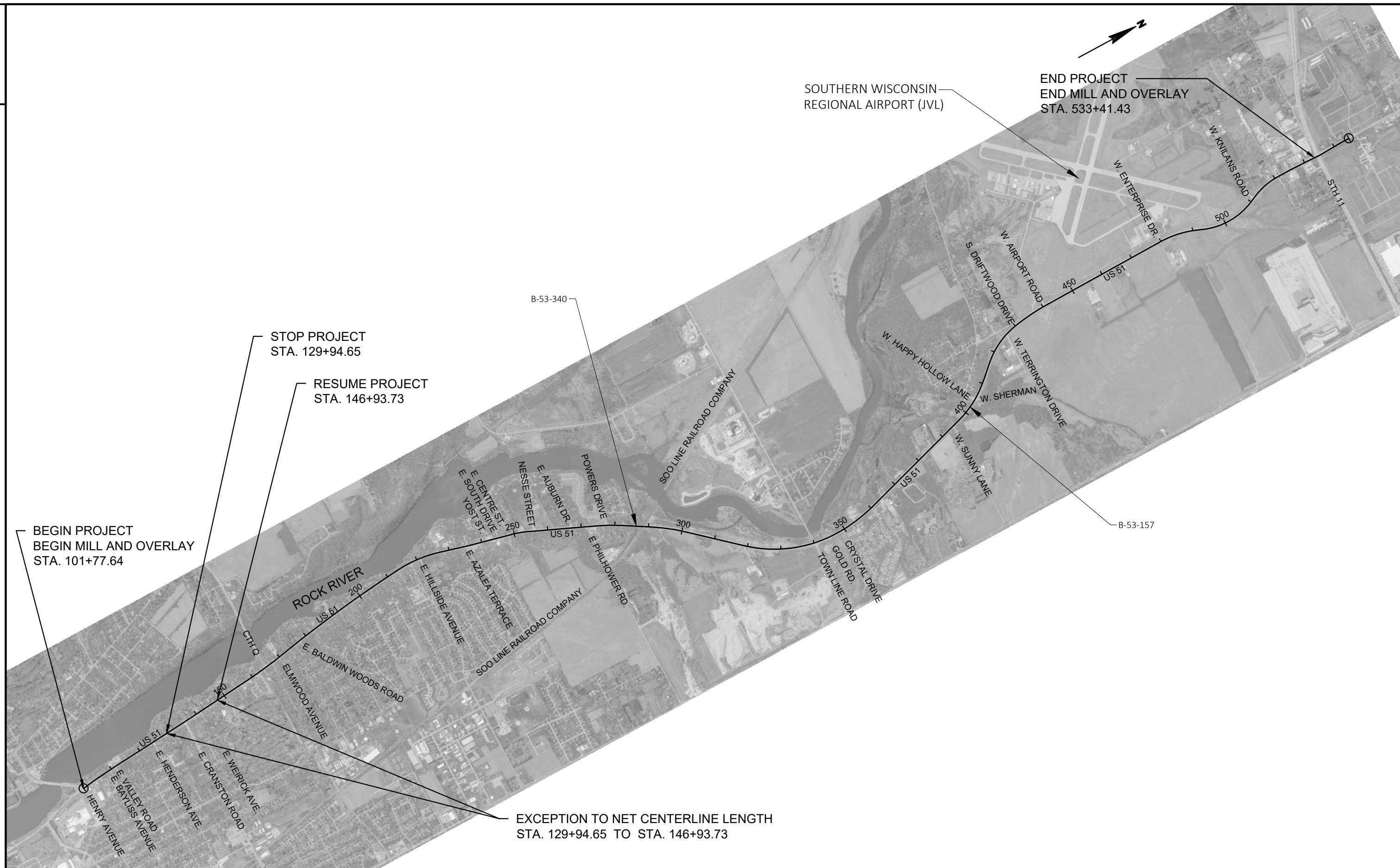
LAURA WILLIAMSON
CITY OF БЕLOIT - PUBLIC WORKS DIRECTOR
2351 SPRINGBROOK CT
BELOIT, WI 53511
(608) 364-2929
williamsonl@beloitwi.gov

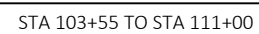
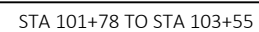
BRANDON STORM
CHARTER COMMUNICATIONS -COMMUNICATION LINE
2701 DANIEL ST.
MADISON, WI 53718
(608) 274-3822
brandon.storm@charter.com

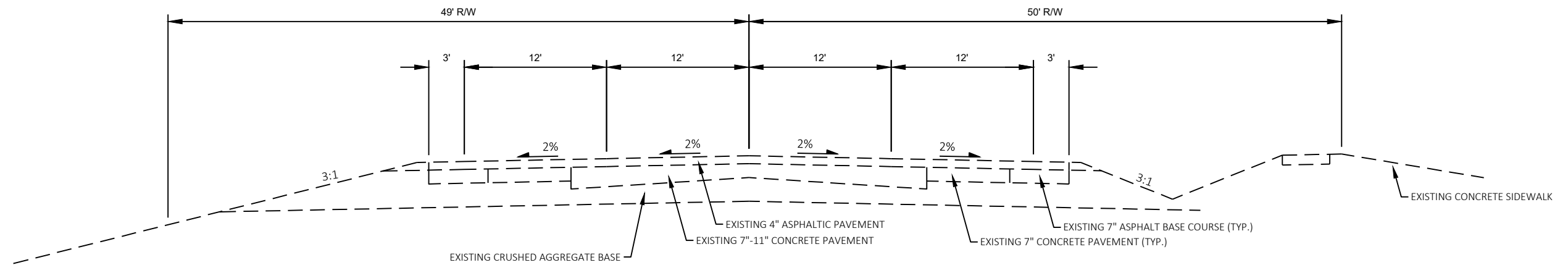
CRAIG THIESENHUSEN
CITY OF JANESVILLE - WATER
18 N JACKSON ST.
P.O. BOX 5005
JANESVILLE, WI 53545-5005
(608) 373-3471
thiesenhusenc@ci.janesville.wi.us

CRAIG THIESENHUSEN
CITY OF JANESVILLE - SEWER
18 N JACKSON ST.
P.O. BOX 5005
JANESVILLE, WI 53545-5005
(608) 373-3471
thiesenhusenc@ci.janesville.wi.us

JOE ROSE
TOWN OF БЕLOIT - PUBLIC WORKS DIRECTOR
2871 S. AFTON ROAD
BELOIT, WI 53511
(608) 364-2987
jrose@town.beloit.wi.us

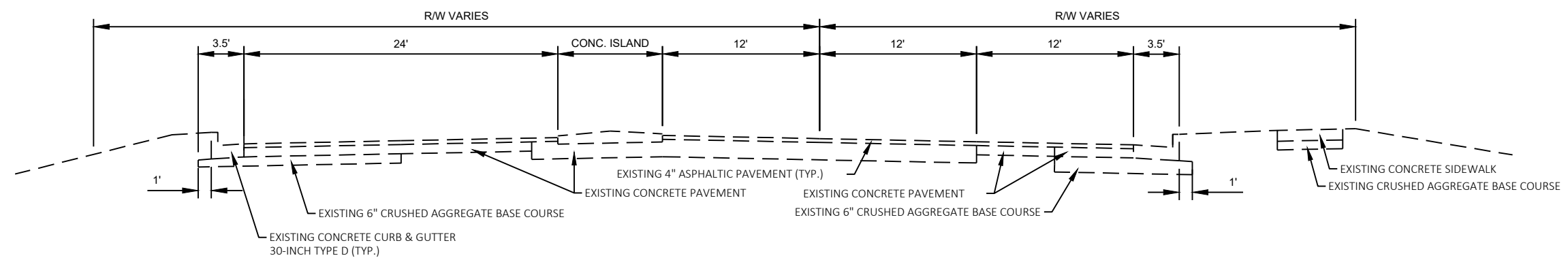






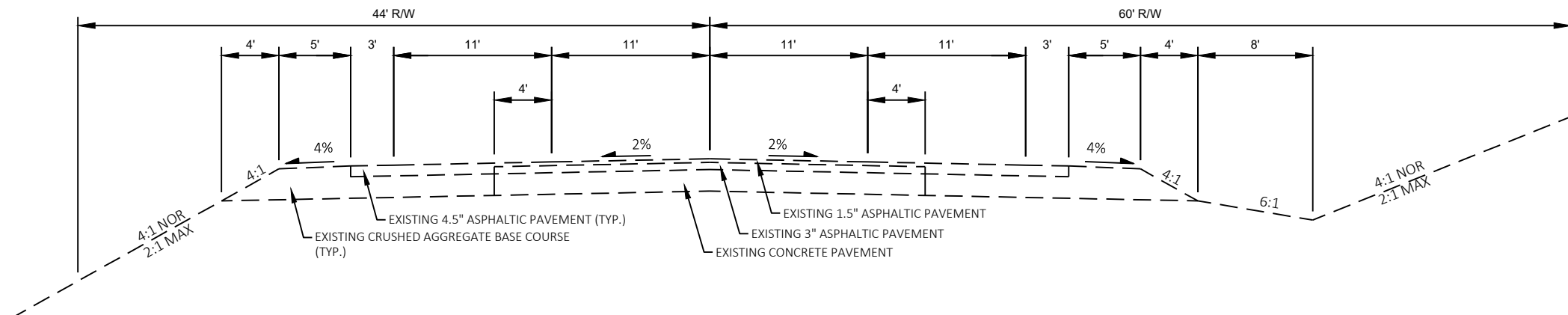
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STA 111+00 TO STA 129+95
STA 146+94 TO STA 158+65
STA 170+00 TO STA 280+00



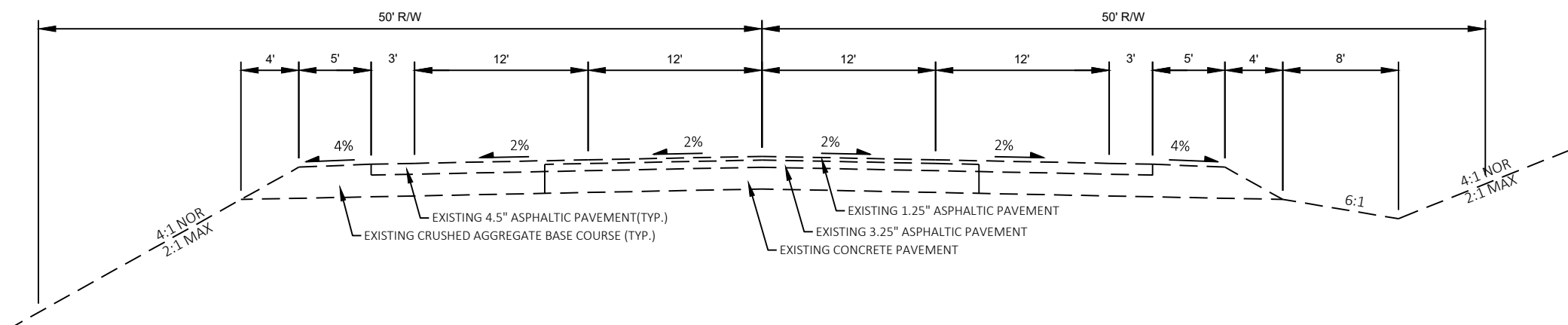
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STA 158+65 TO STA 170+00



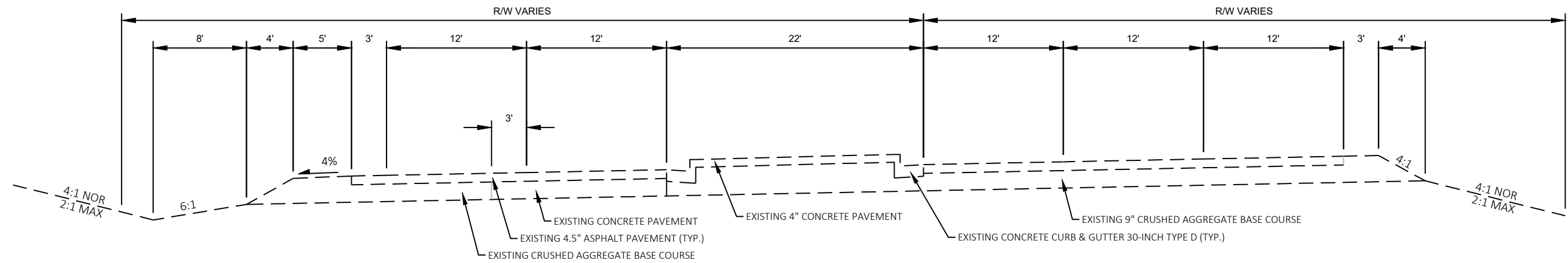
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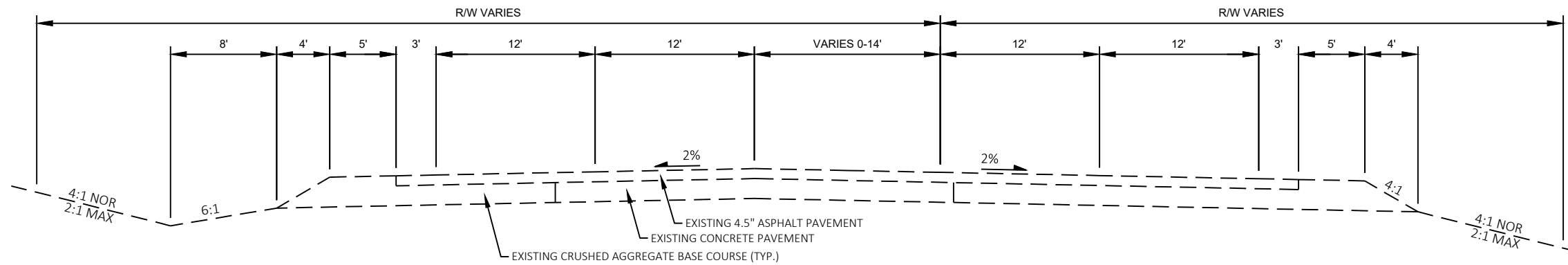
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STA 289+00 TO STA 330+00



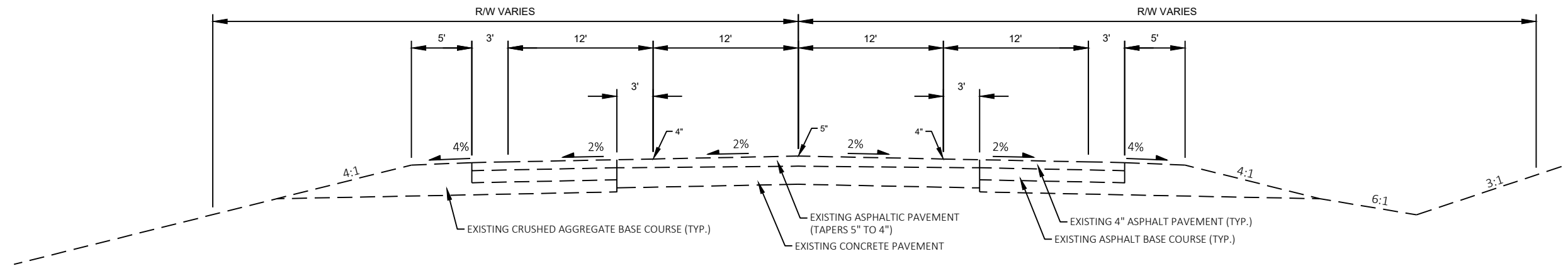
TYPICAL EXISTING SECTION USH 51

STA 330+00 TO STA 348+20



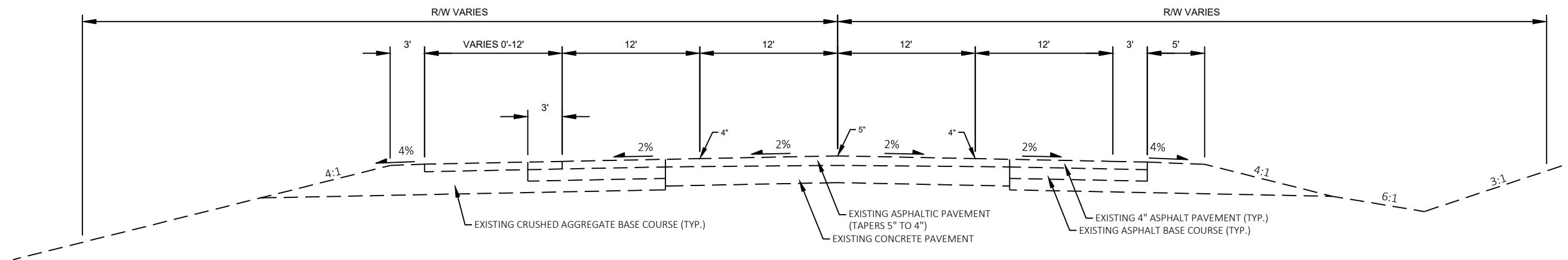
TYPICAL EXISTING SECTION USH 51

STA 348+20 TO STA 381+55



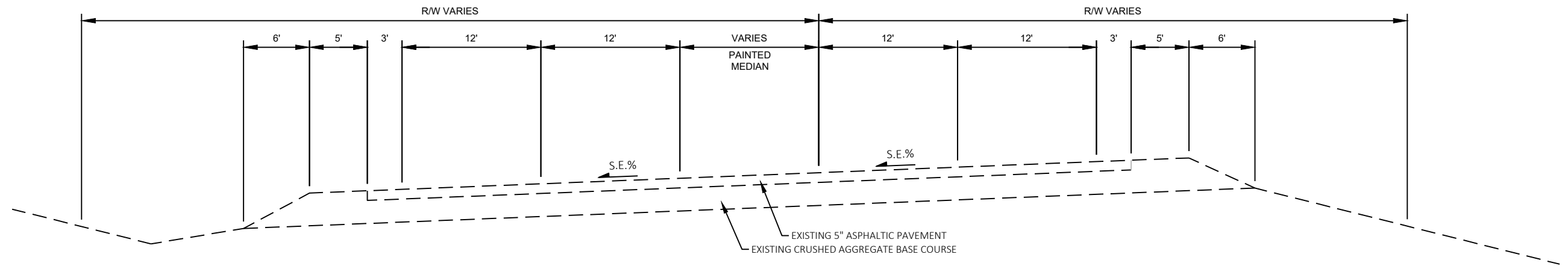
TYPICAL EXISTING SECTION USH 51

STA 381+07 TO STA 395+92
STA 412+55 TO STA 441+00
STA 447+00 TO STA 525+00



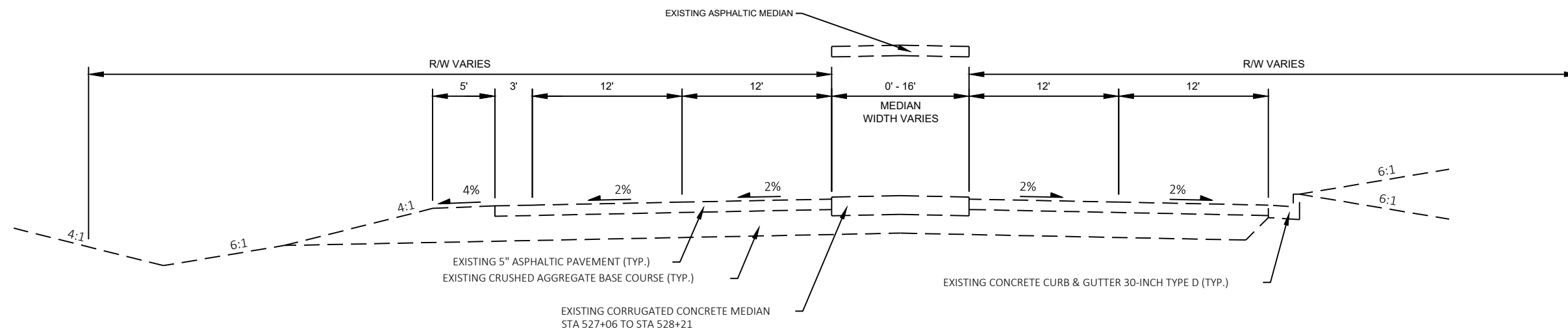
TYPICAL EXISTING SECTION USH 51

STA 441+00 TO STA 447+00



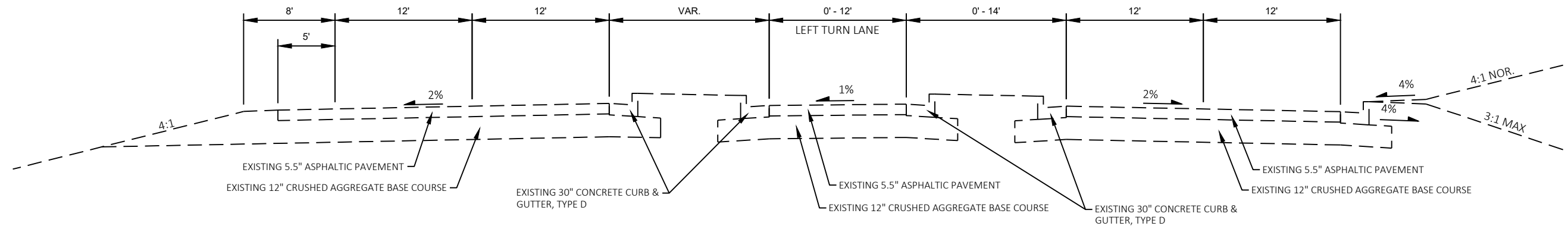
TYPICAL EXISTING SECTION USH 51

STA 395+92 TO STA 400+77
STA 402+68 TO STA 412+55



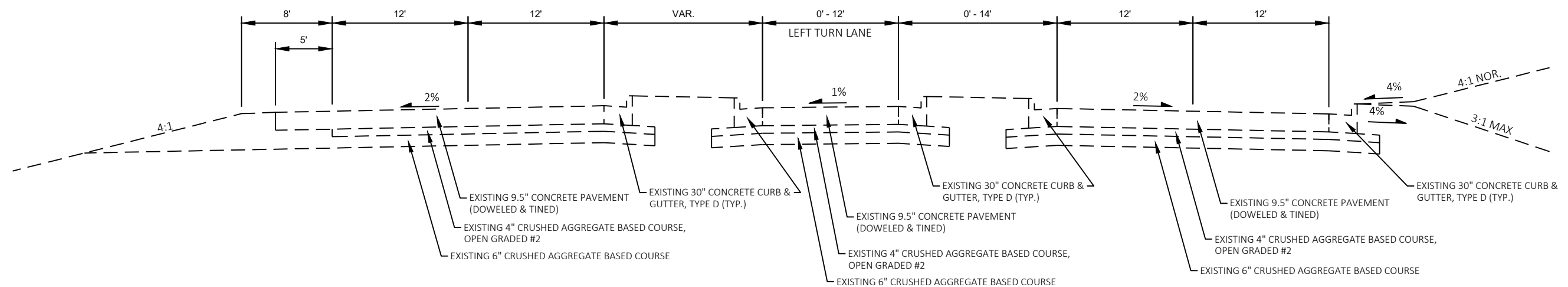
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STA 525+00 TO STA 530+30



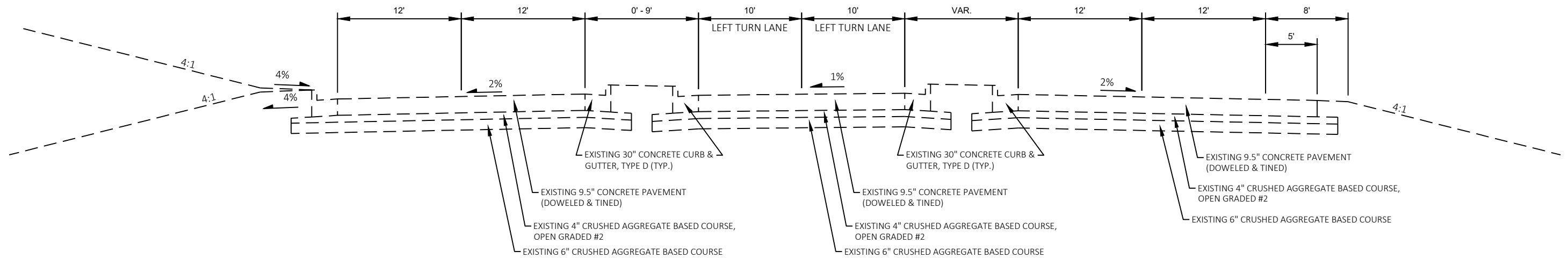
TYPICAL EXISTING SECTION USH 51

STA 530+30 TO STA 533+41



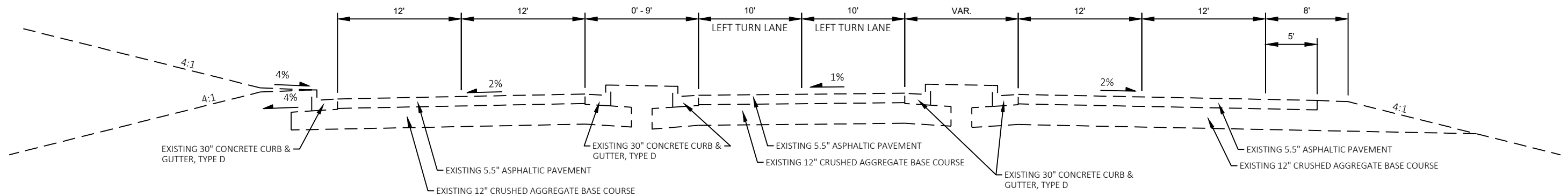
TYPICAL EXISTING SECTION USH 51

STA 533+22 TO STA 533+37



TYPICAL EXISTING SECTION USH 51

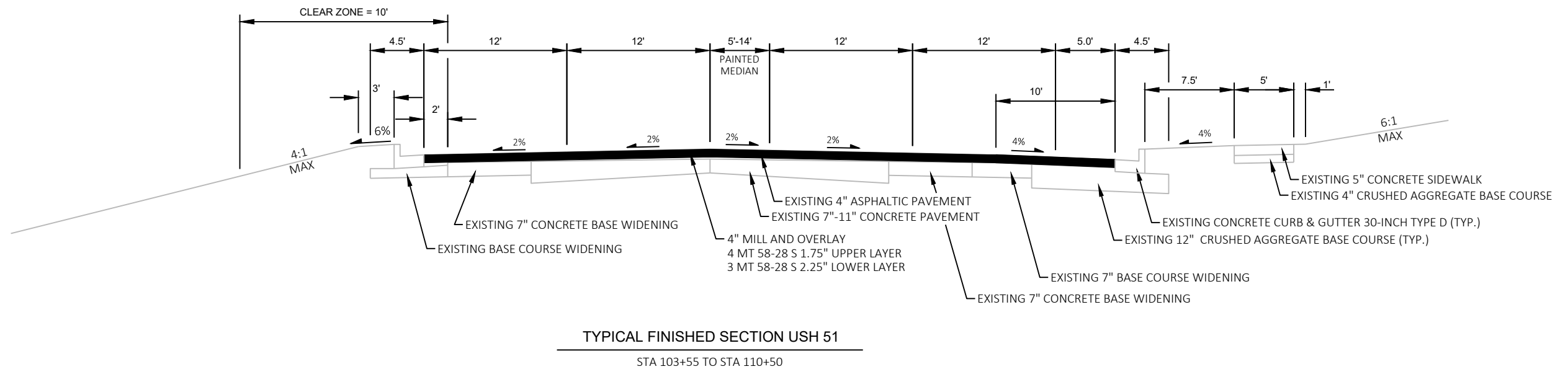
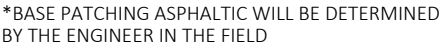
STA 534+95 TO STA 535+24



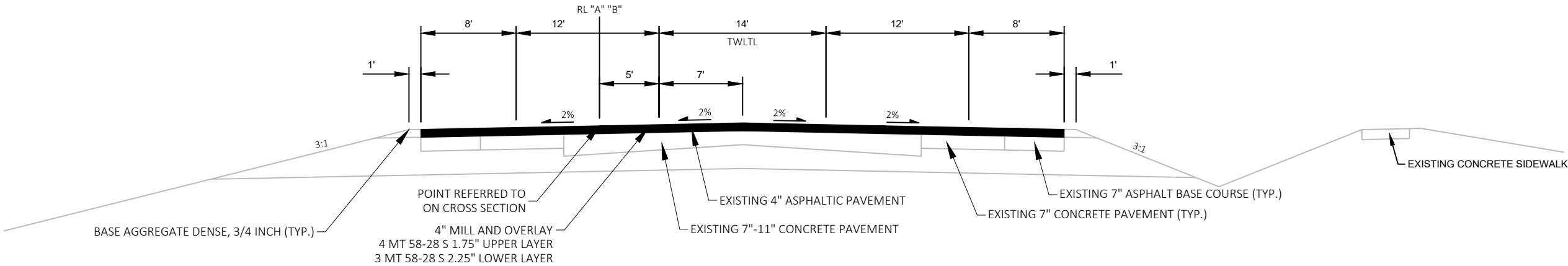
TYPICAL EXISTING SECTION USH 51

STA 535+24 TO STA 535+94

2 |



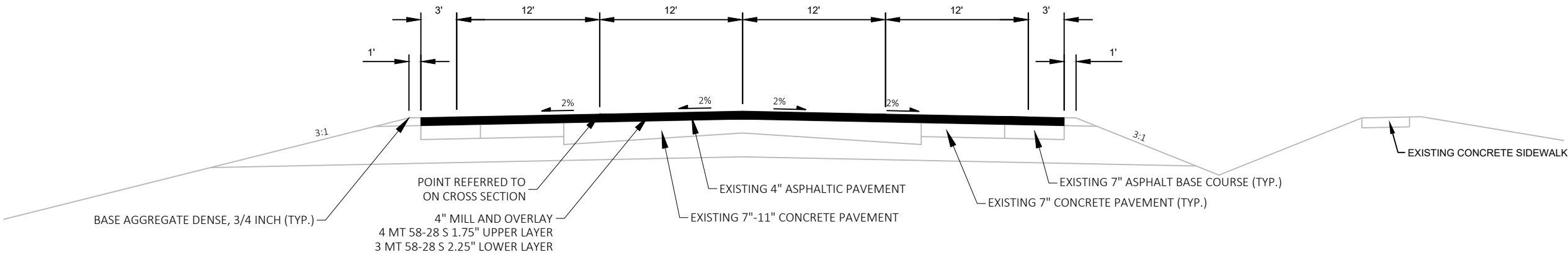
TWLTL - TWO WAY LEFT TURN LANE



TYPICAL FINISHED SECTION USH 51

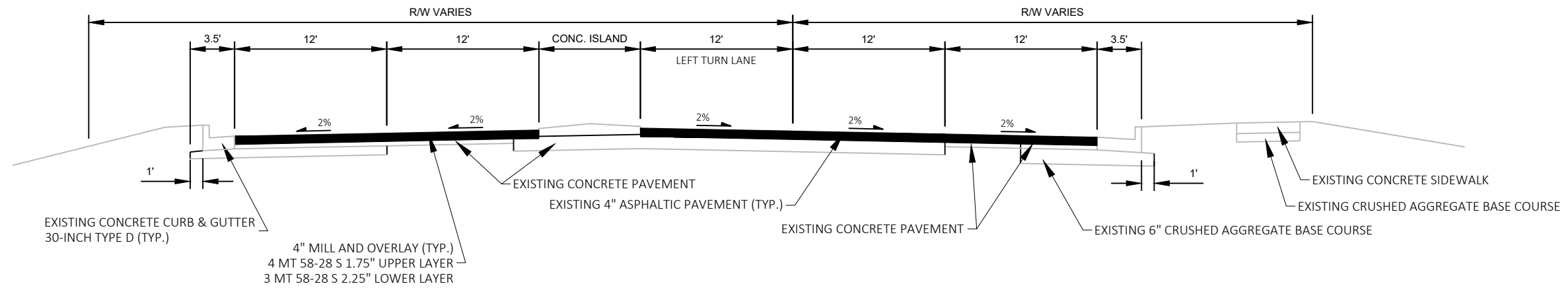
STA 110+50 TO STA 131+91
STA 170+00 TO STA 284+82

*BASE PATCHING ASPHALTIC WILL BE DETERMINED
BY THE ENGINEER IN THE FIELD



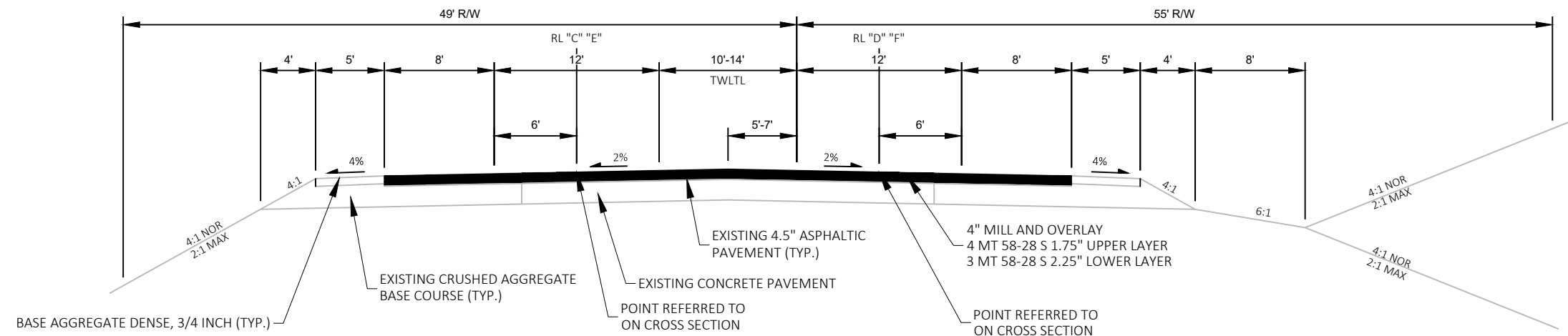
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STA 131+91 TO STA 158+65

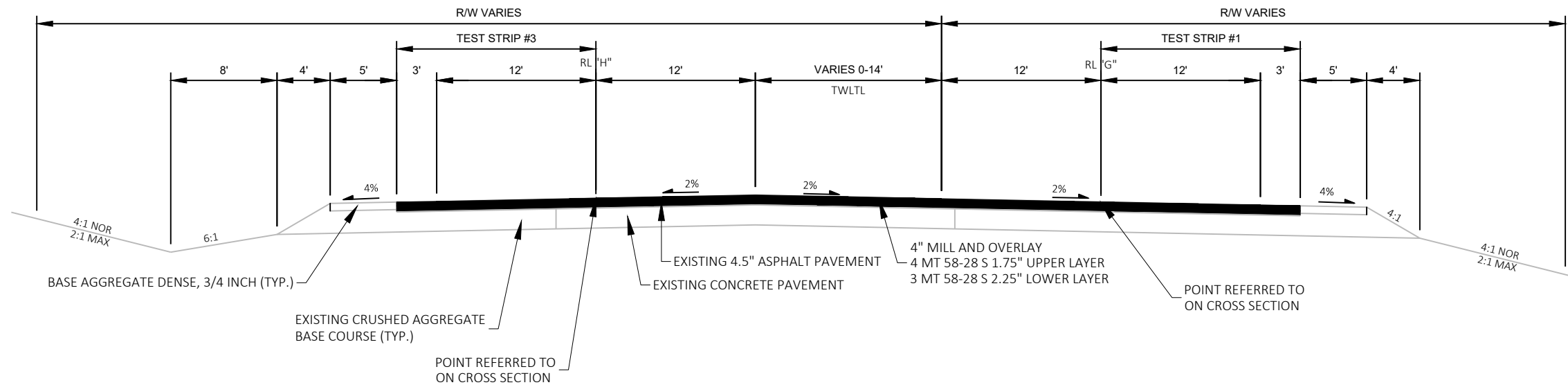
**TYPICAL FINISHED SECTION USH 51**

STA 158+65 TO STA 170+00

*BASE PATCHING ASPHALTIC WILL BE DETERMINED
BY THE ENGINEER IN THE FIELD

**TYPICAL FINISHED SECTION USH 51**

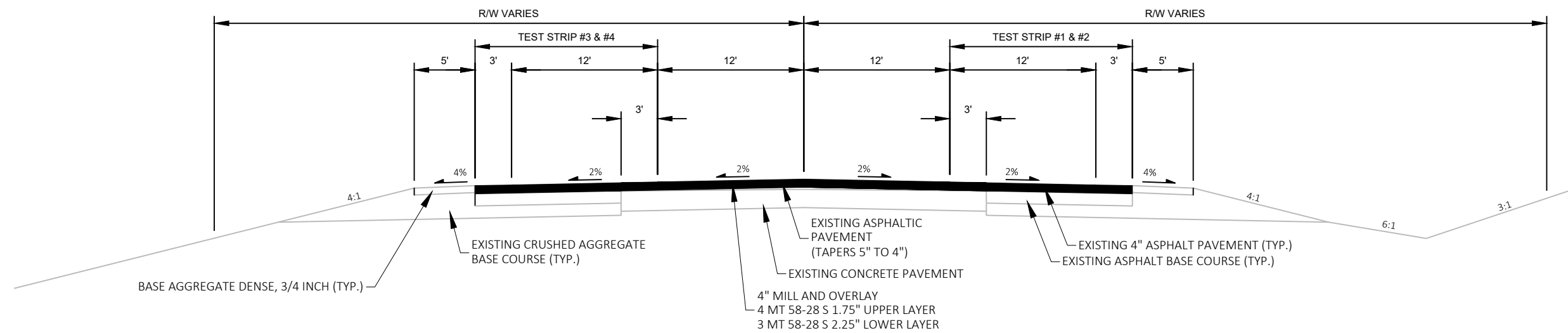
STA 284+82 TO STA 300+42



TYPICAL FINISHED SECTION USH 51

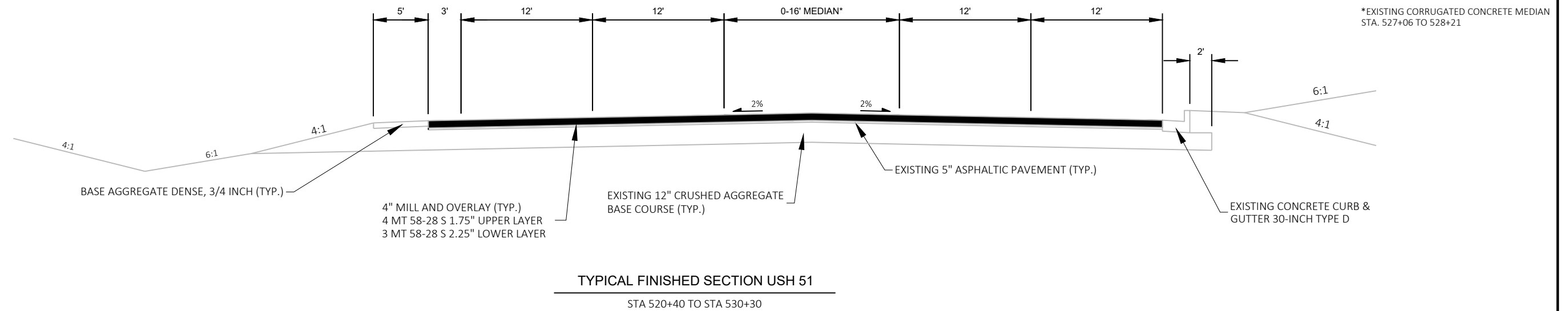
STA 348+20 TO STA 381+55

*BASE PATCHING ASPHALTIC WILL BE DETERMINED
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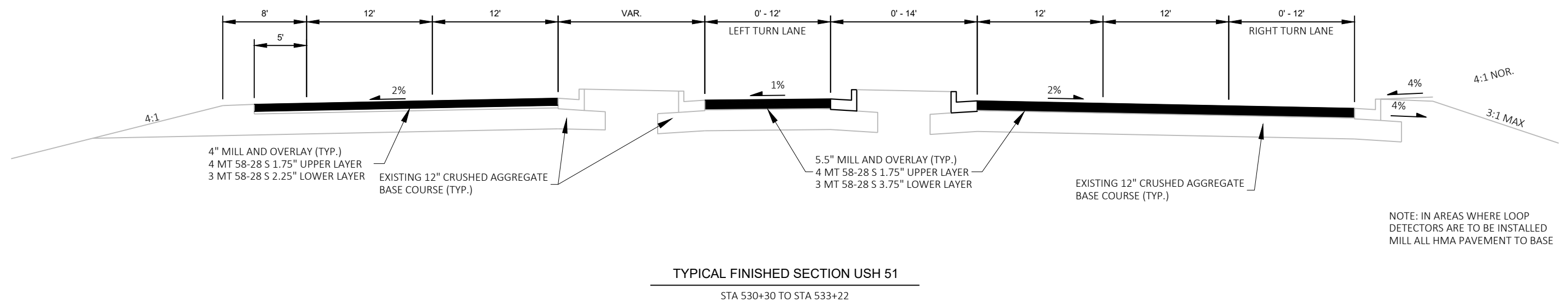


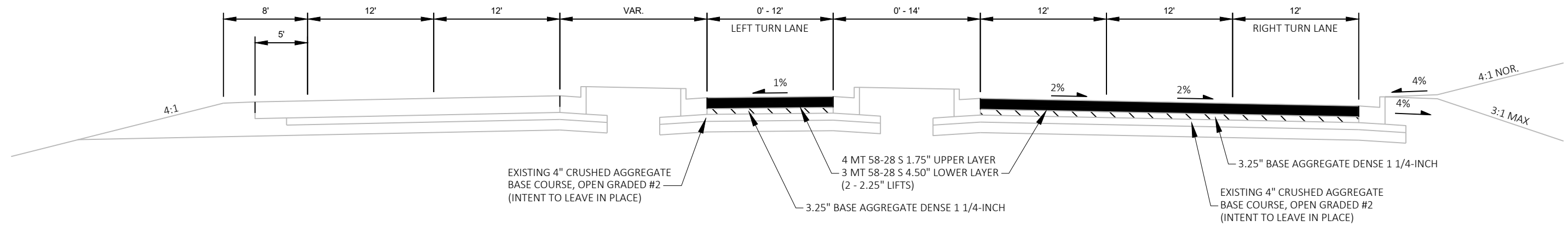
TYPICAL FINISHED SECTION USH 51

STA 381+55 TO STA 395+92
STA 412+55 TO STA 441+00
STA 447+00 TO STA 520+40



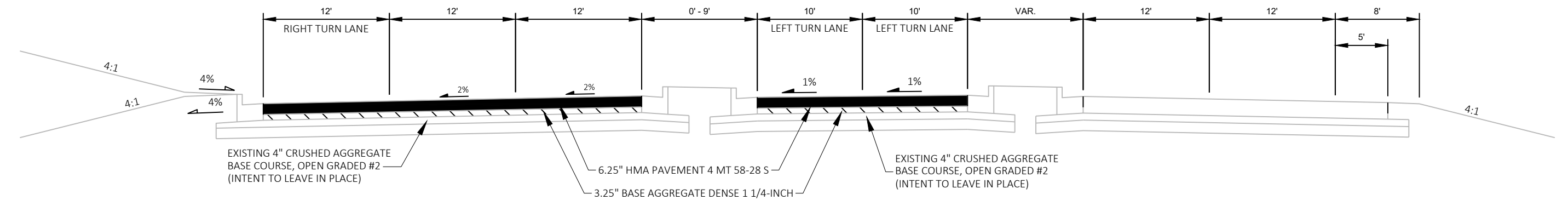
*BASE PATCHING ASPHALTIC WILL BE DETERMINED
BY THE ENGINEER IN THE FIELD





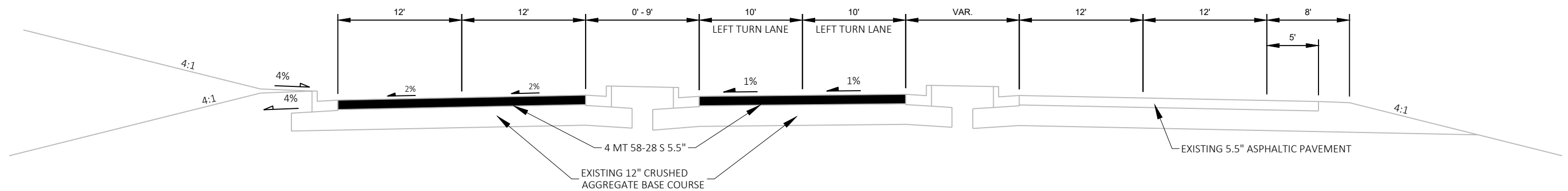
TYPICAL FINISHED SECTION USH 51

STA 533+22 TO STA 533+37



TYPICAL FINISHED SECTION USH 51

STA 534+95 TO STA 535+24



TYPICAL FINISHED SECTION USH 51

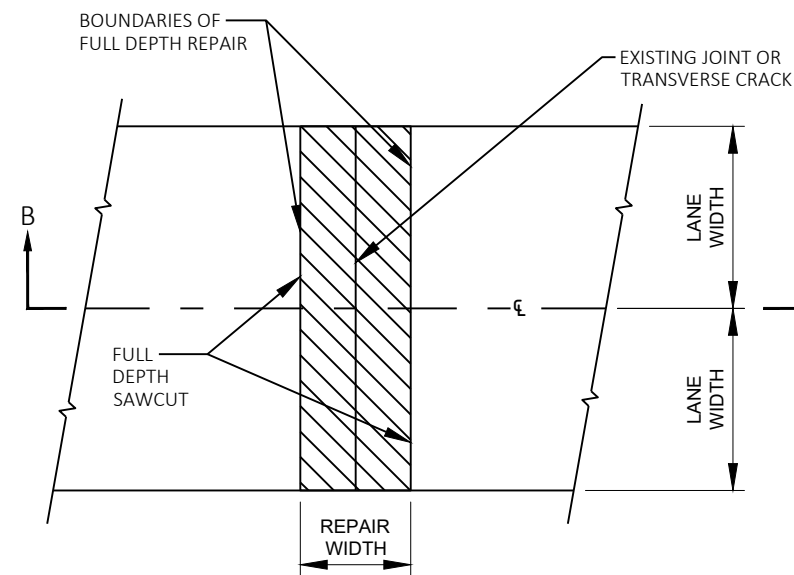
STA 535+24 TO STA 535+94

GENERAL NOTES

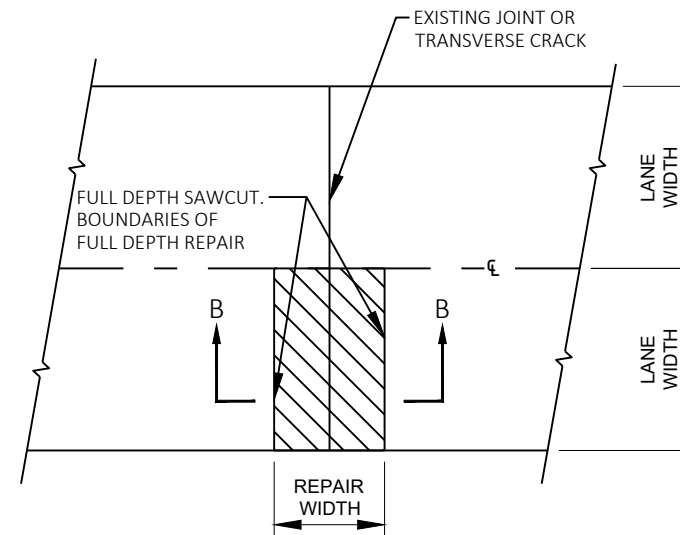
SAW CUT AND LIFT OUT EXISTING CONCRETE PAVEMENT WITHIN THE BOUNDARIES OF CONCRETE REPAIR AREAS. THE CONTRACTOR MAY MAKE ADDITIONAL SAW CUTS INSIDE THE REPAIR LIMITS TO REDUCE WEIGHT AND SIZE OF CONCRETE PIECES.

PROVIDE 4-FOOT MINIMUM DISTANCE FROM BOUNDARIES OF CONCRETE REPAIR AREAS TO ADJACENT TRANSVERSE JOINT OR CRACK.

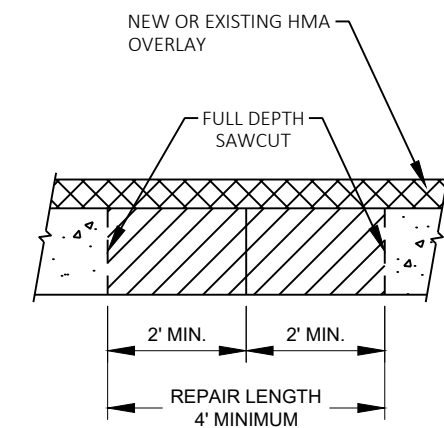
THE LENGTH OF THE REPAIRS MAY VARY FROM THE DIMENSIONS SHOWN IF THE EXISTING CONCRETE PAVEMENT IS NON-DOWELED AND THE PAVEMENT IS TO BE OVERLAID AFTER REPAIRING.



PLAN VIEW
(DOUBLE LANE REPAIR)



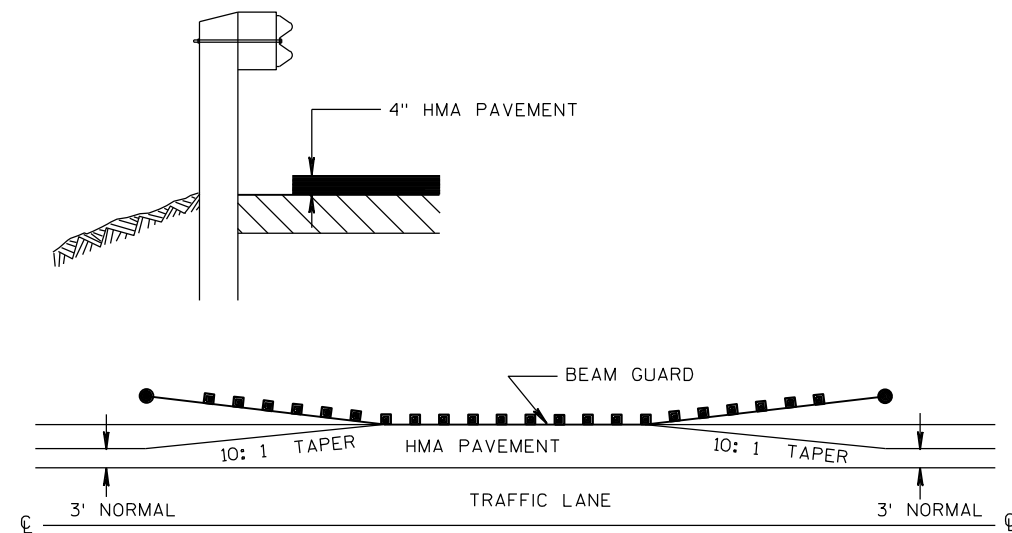
PLAN VIEW
(SINGLE LANE REPAIR)



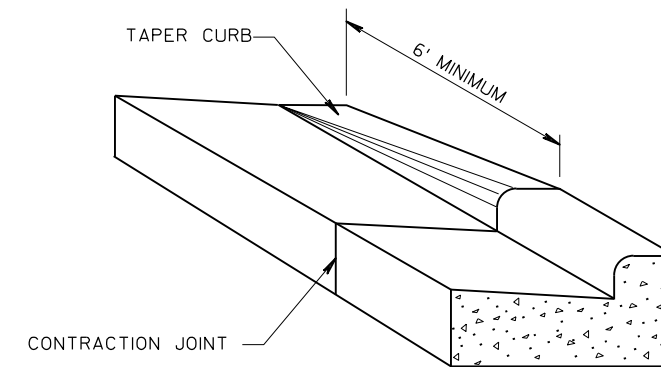
SECTION B-B
CONCRETE REMOVAL

FULL DEPTH CONCRETE PAVEMENT REMOVAL

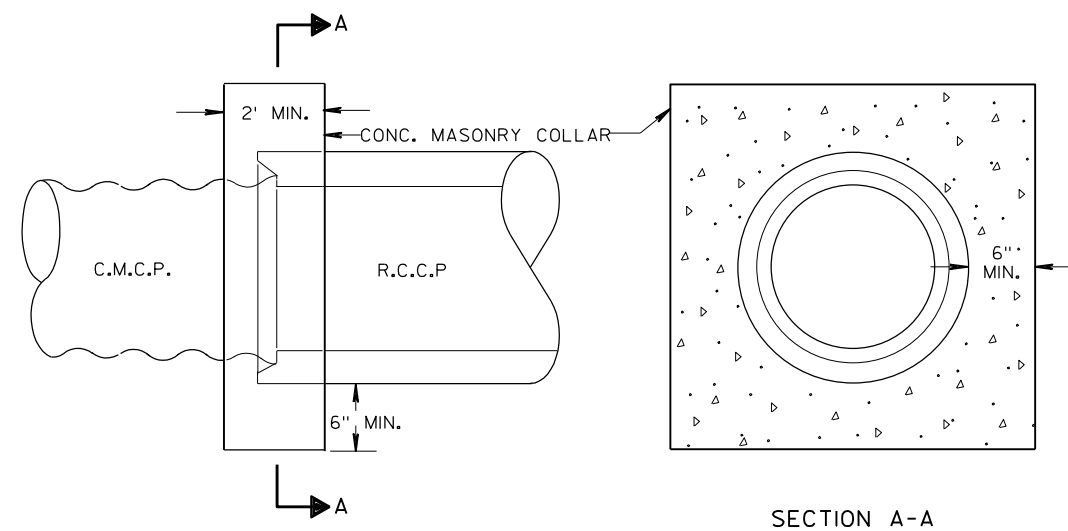
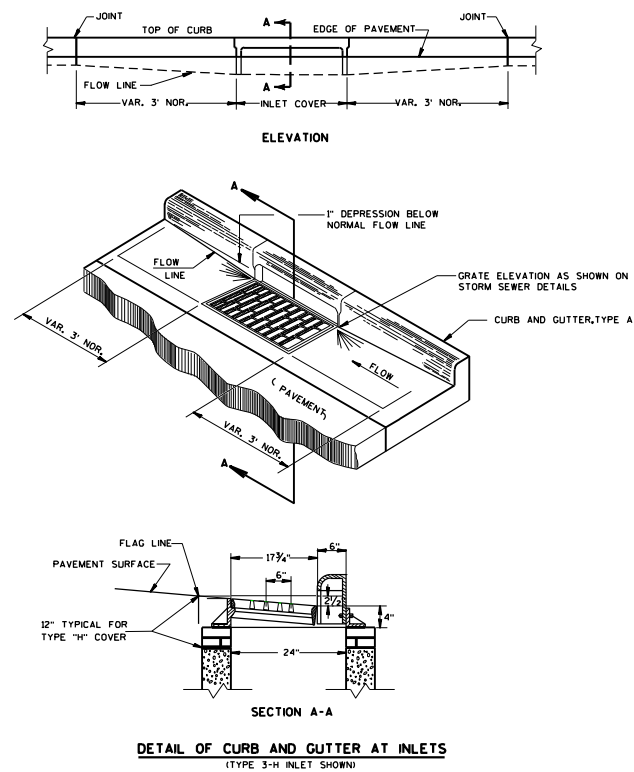
BASE PATCHING ASPHALTIC



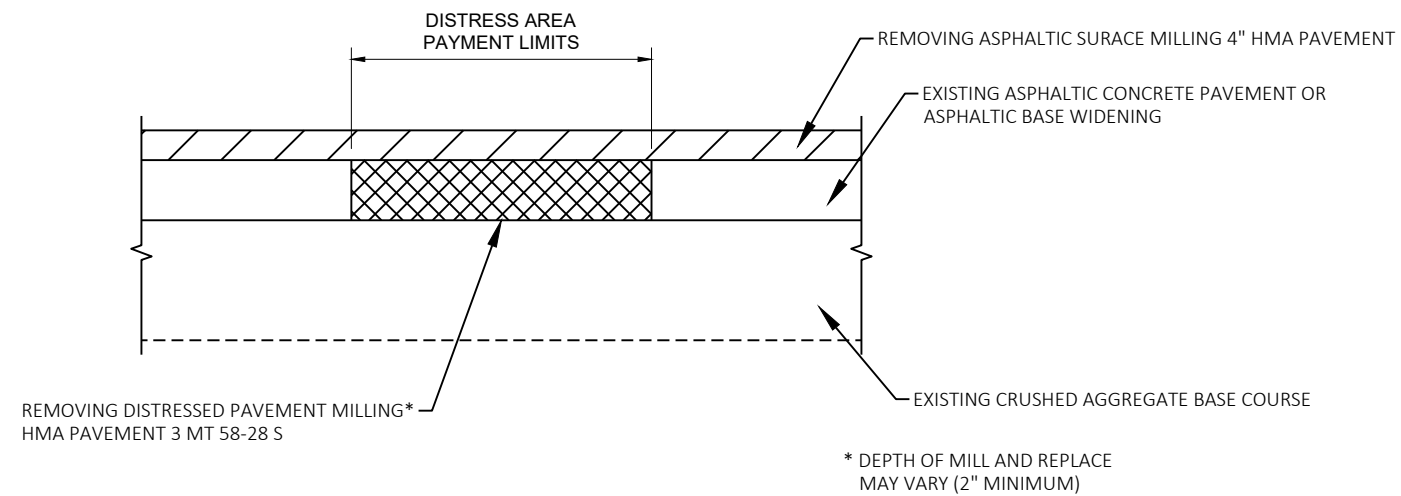
DETAIL FOR HMA SHOULDER PAVEMENT AT BEAM GUARD



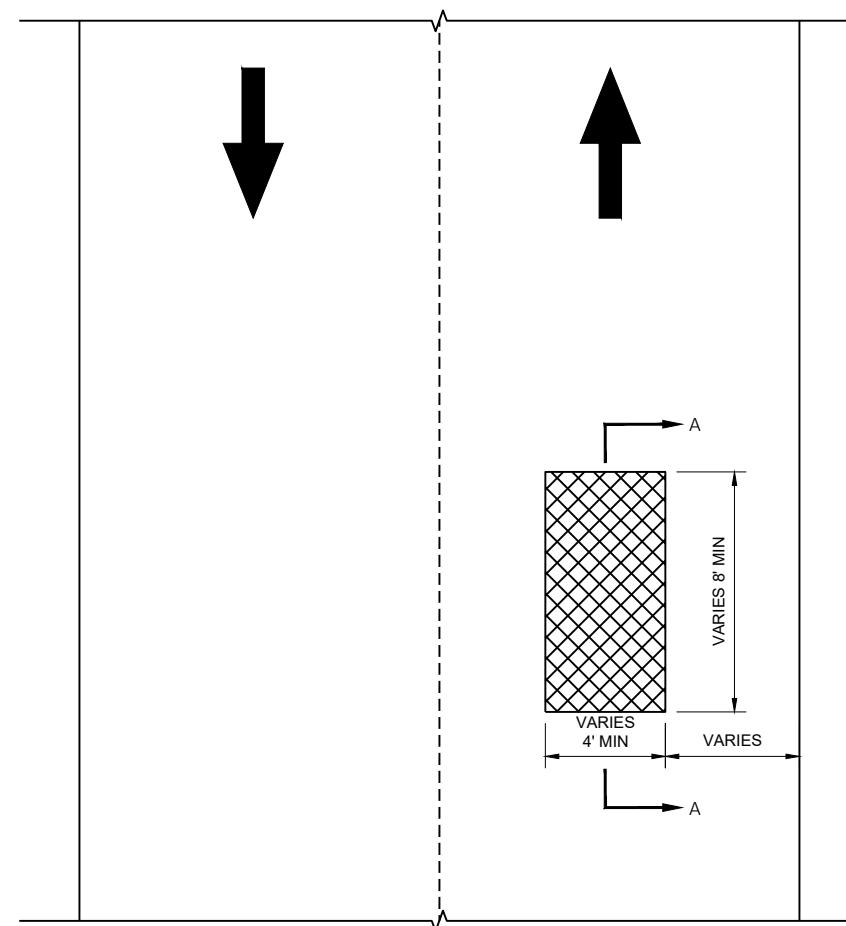
DETAIL OF CURB & GUTTER TERMINI



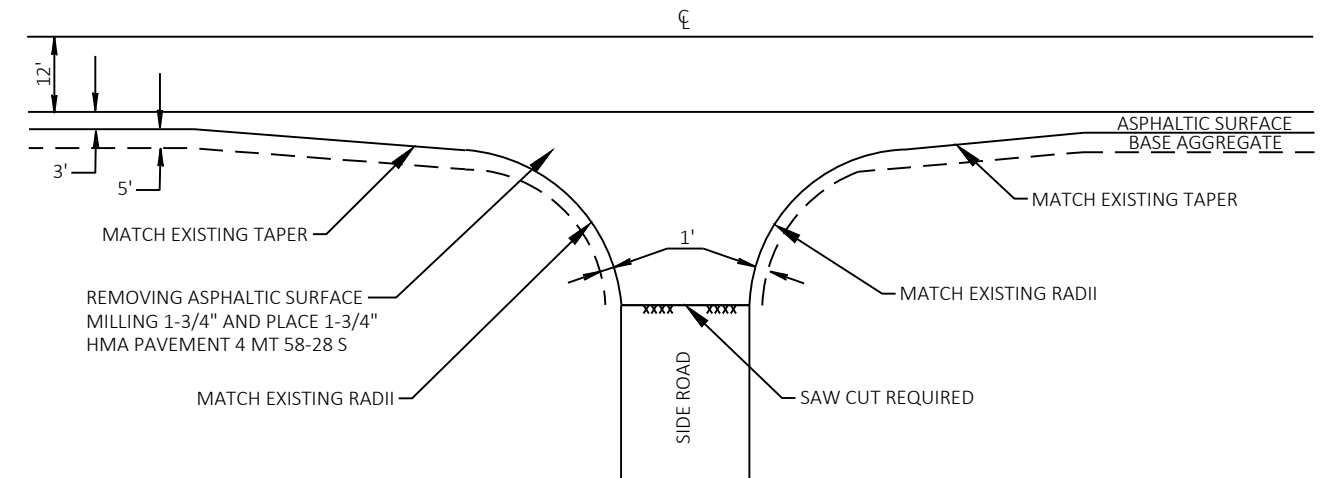
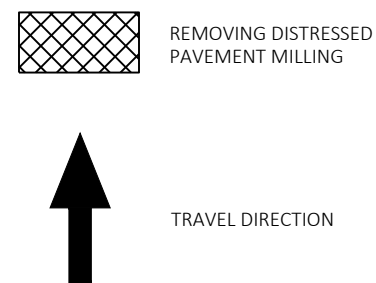
CONNECTION DETAIL R.C.C.P. TO C.M.C.P.



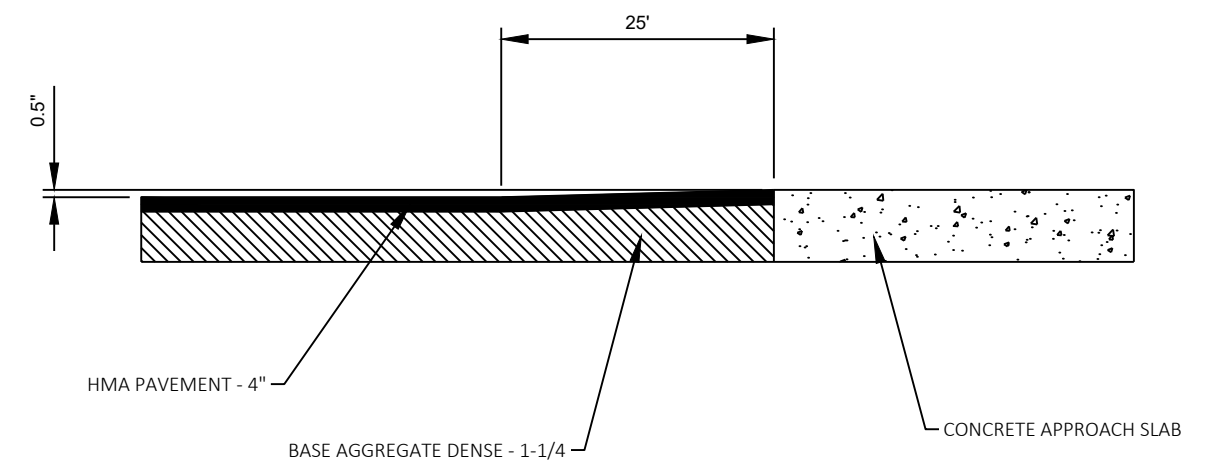
PAVEMENT SECTION AT DISTRESS AREAS
SECTION A-A



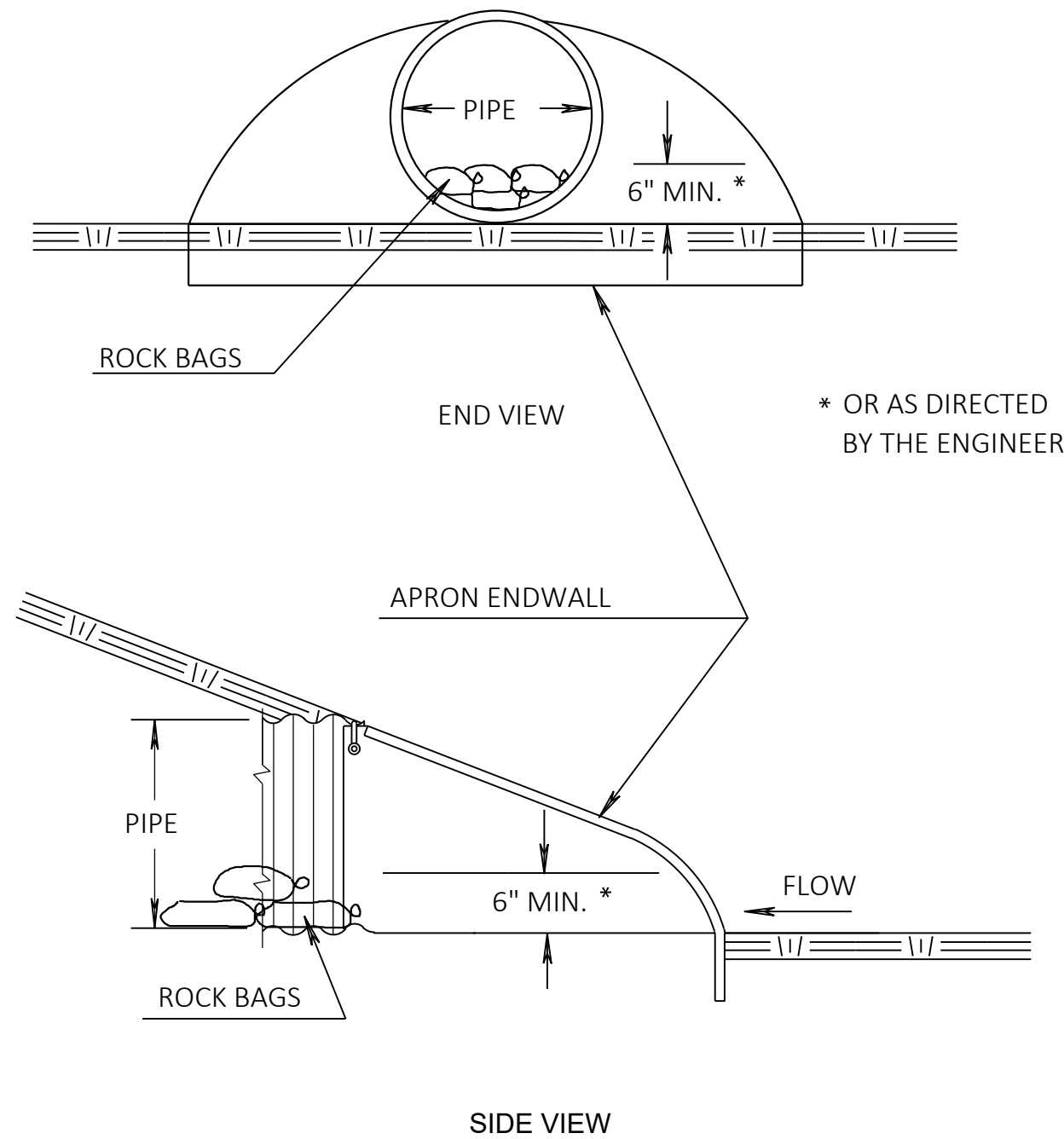
PLAN VIEW



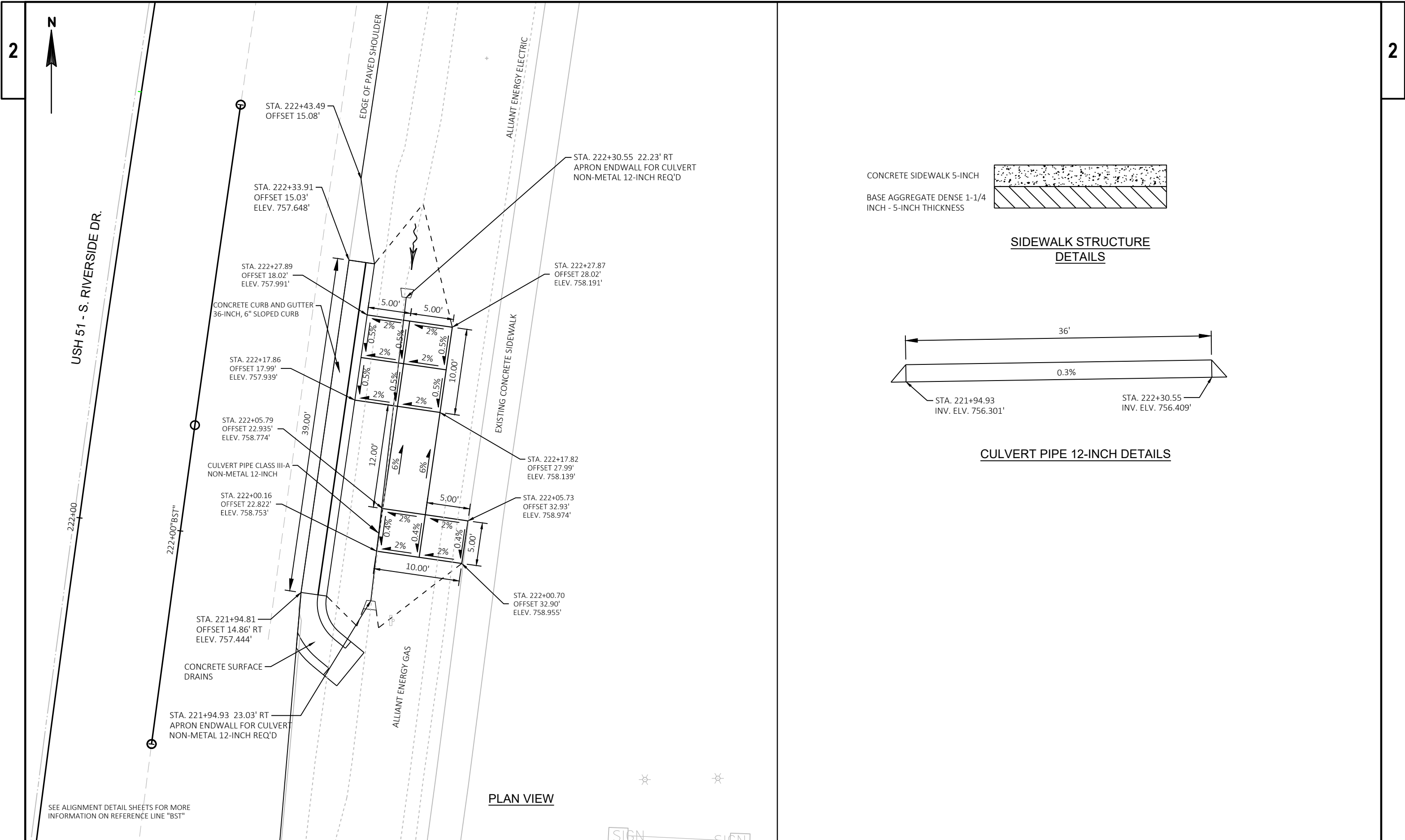
TYPICAL SIDE ROAD DETAIL

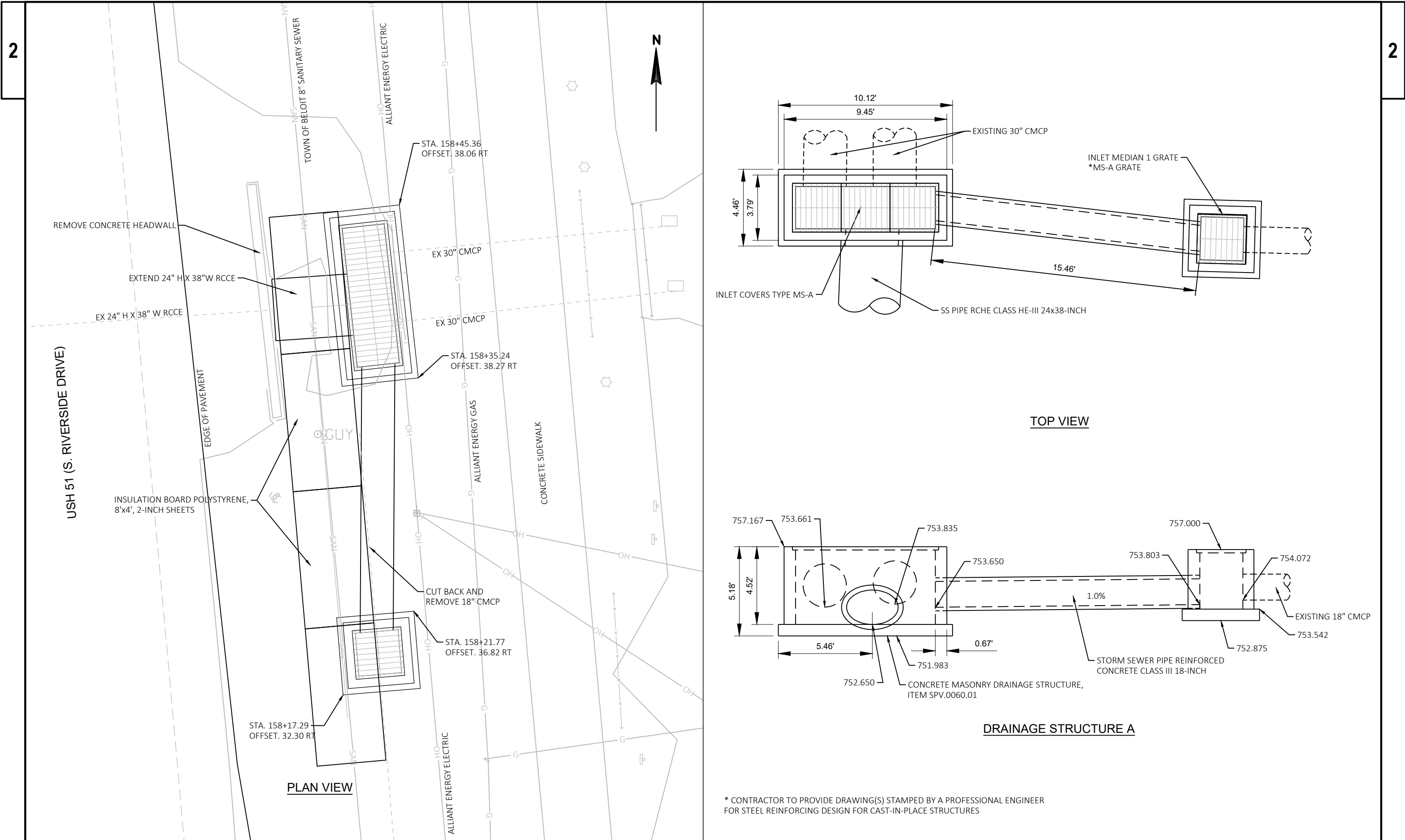


APPROACH SLAB PROFILE TRANSITION

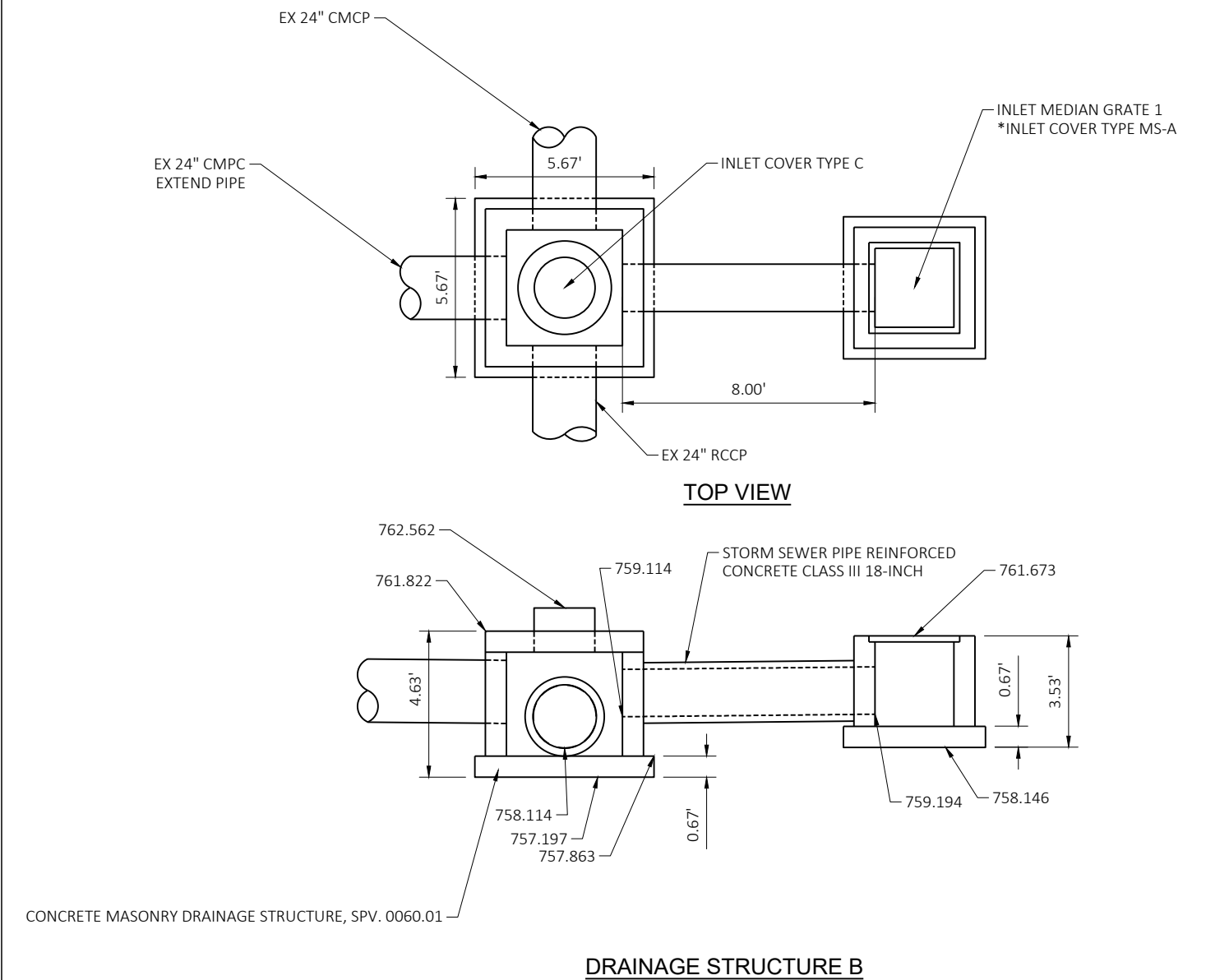
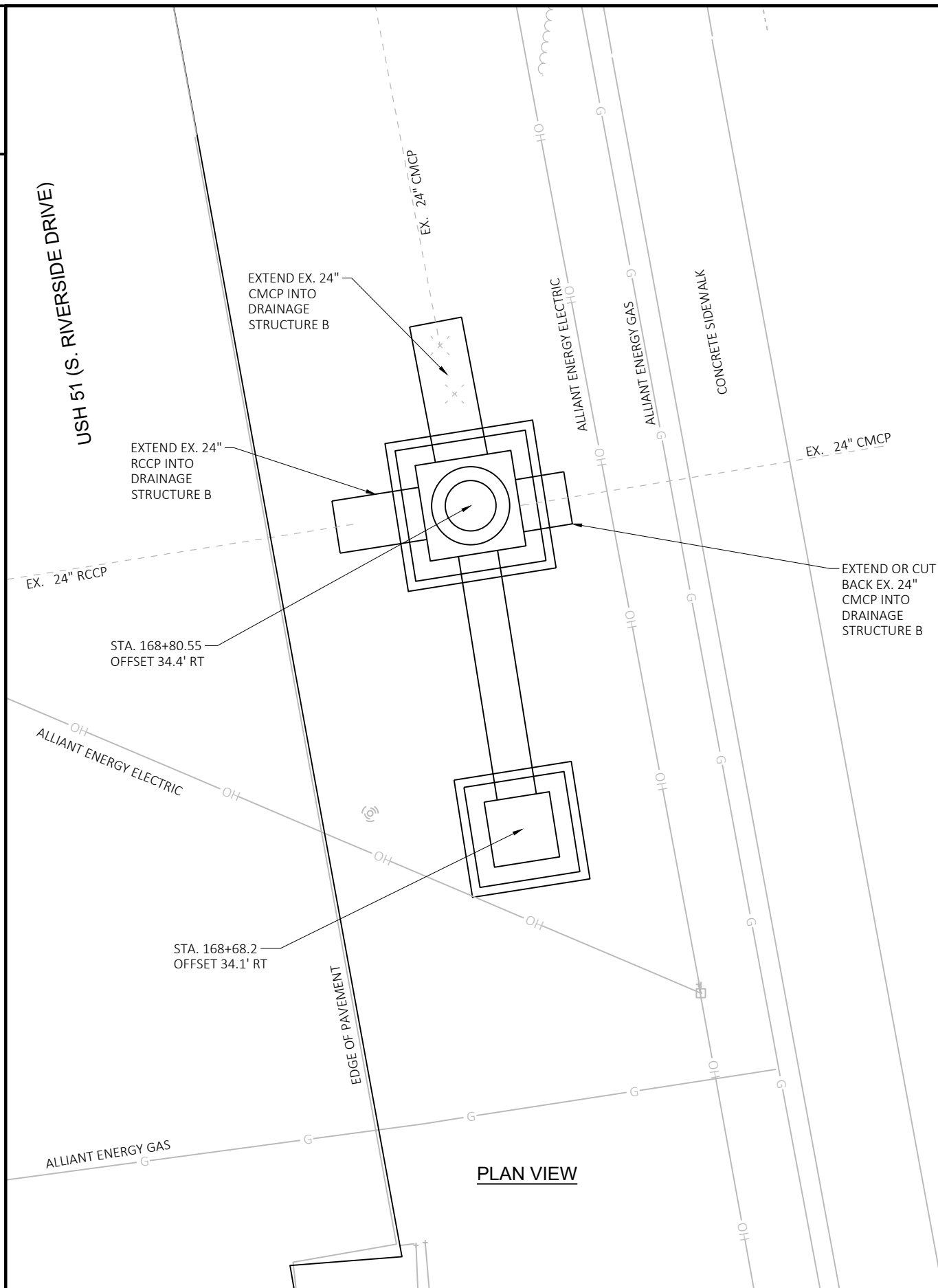


CULVERT PIPE CHECK

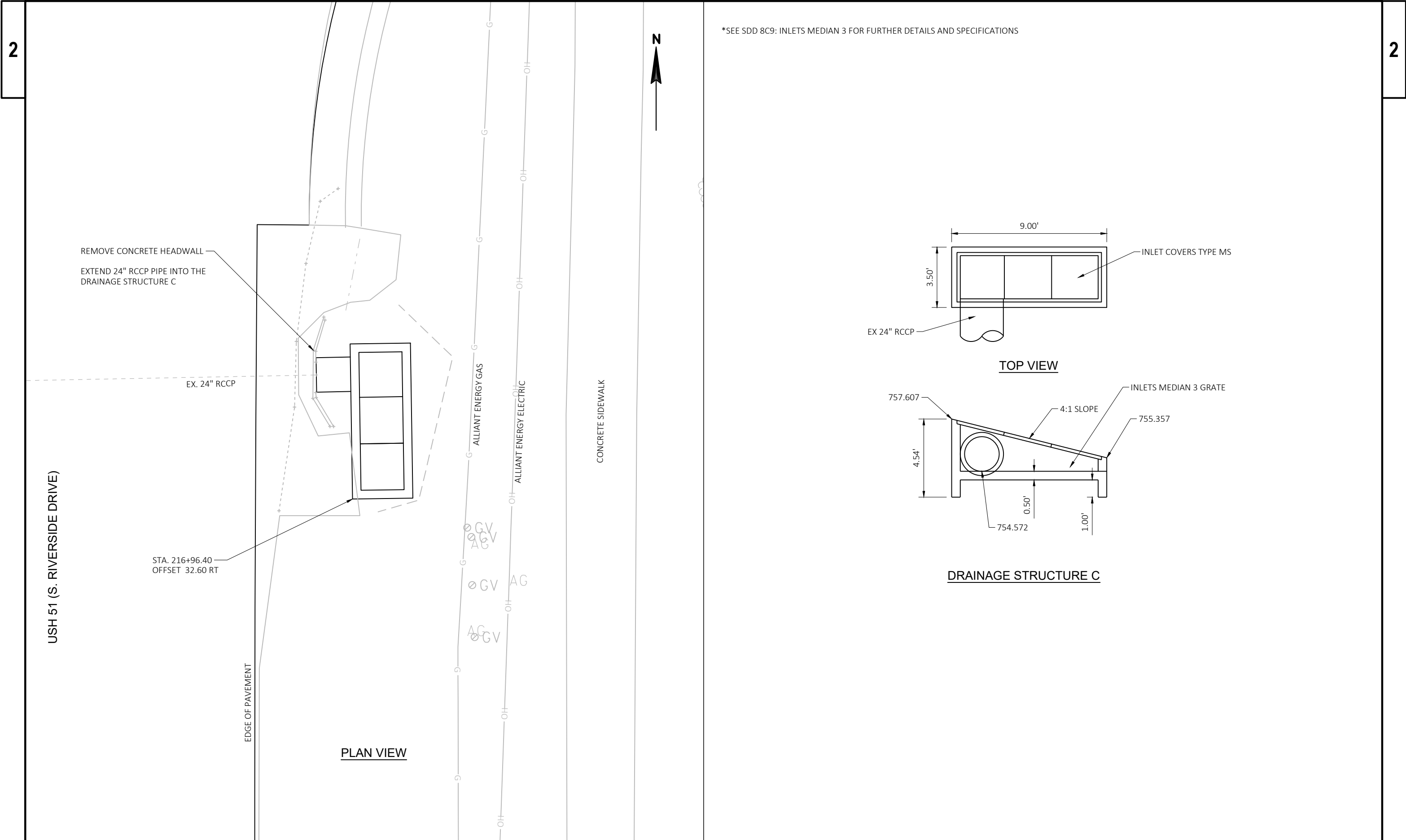


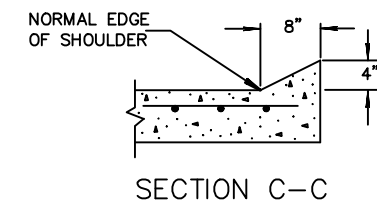


USH 51 (S. RIVERSIDE DRIVE)



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





SECTION A-A

BRIDGE ABUTMENT

2'-0"

CONCRETE PAVEMENT APPROACH SLAB

JOINT SEAL (SAME AS SECTION D-D)

16'-7"

5'-0"

3'-0"

7" (11)

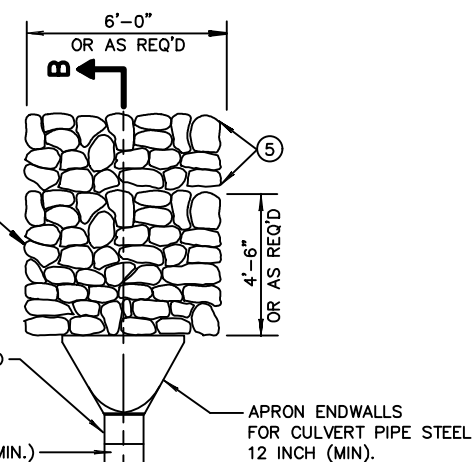
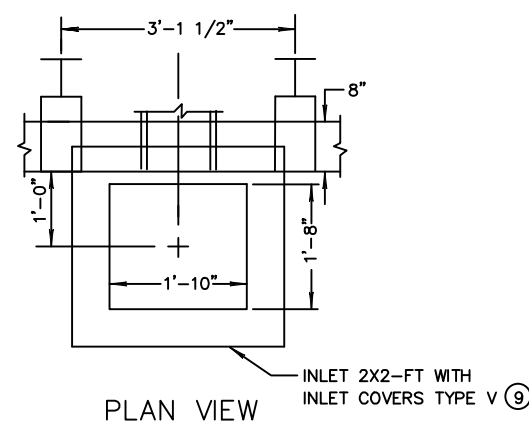
2"

4"

9

INLET 2X2-FT WITH INLET COVERS TYPE V

TOP OF CONCRETE OR ASPHALTIC PAVEMENT SHOULDER



- ① NO. 4 X 2'-0" TIE BARS SPACED AT 3'-0" CENTERS TO BE USED ONLY WHEN ADJACENT TO P.C. CONCRETE.
- ② STANDARD LONGITUDINAL JOINT WITH TIE BARS TO BE USED ONLY WHEN ADJACENT TO P.C. CONCRETE. SEE SDD 'CONCRETE PAVEMENT LONGITUDINAL JOINTS AND TIES'.
- ③ THE PIPE UNDERDRAIN MAY BE ANY ONE OF THE SIX MATERIALS LISTED IN THE SUBSECTION 612.2 OF STANDARD SPECIFICATIONS.
- ④ MINIMUM REINFORCEMENT SHALL BE 6" X 6" - W4.0 X W4.0 OR NO. 3 BARS LONGITUDINAL AND TRANSVERSE SPACING 12" C-C.
- ⑤ LIMITS OF ADDITIONAL RIPRAP MEDIUM WHEN SPECIAL DITCH IS REQUIRED.
- ⑥ GEOTEXTILE TYPE HR
- ⑦ HOT POURED SEALANT UNLESS OTHERWISE SPECIFIED.
- ⑧ THIS DIMENSION MAY VARY DEPENDING ON THE SPACING OF POSTS FOR THE MGS THRIE BEAM TRANSITION. THE TYPICAL LOCATION FOR THE SURFACE DRAIN IS WHERE THE POST SPACING IS 3'-1 1/2".
- ⑨ SEE SDD 'INLET AND MANHOLE COVERS' AND 'INLETS 2X2-FT, 2X2.5-FT, 2X3-FT, & 2.5X3-FT' FOR DETAILS.
- ⑩ SEE SDD 'MGS THRIE BEAM TRANSITION' FOR MGS POST SPACING DETAILS.
- ⑪ WHEN CONCRETE SHOULDERS ARE PROPOSED, THICKNESS OF CONCRETE SURFACE DRAIN SHALL MATCH THICKNESS OF CONCRETE SHOULDER.

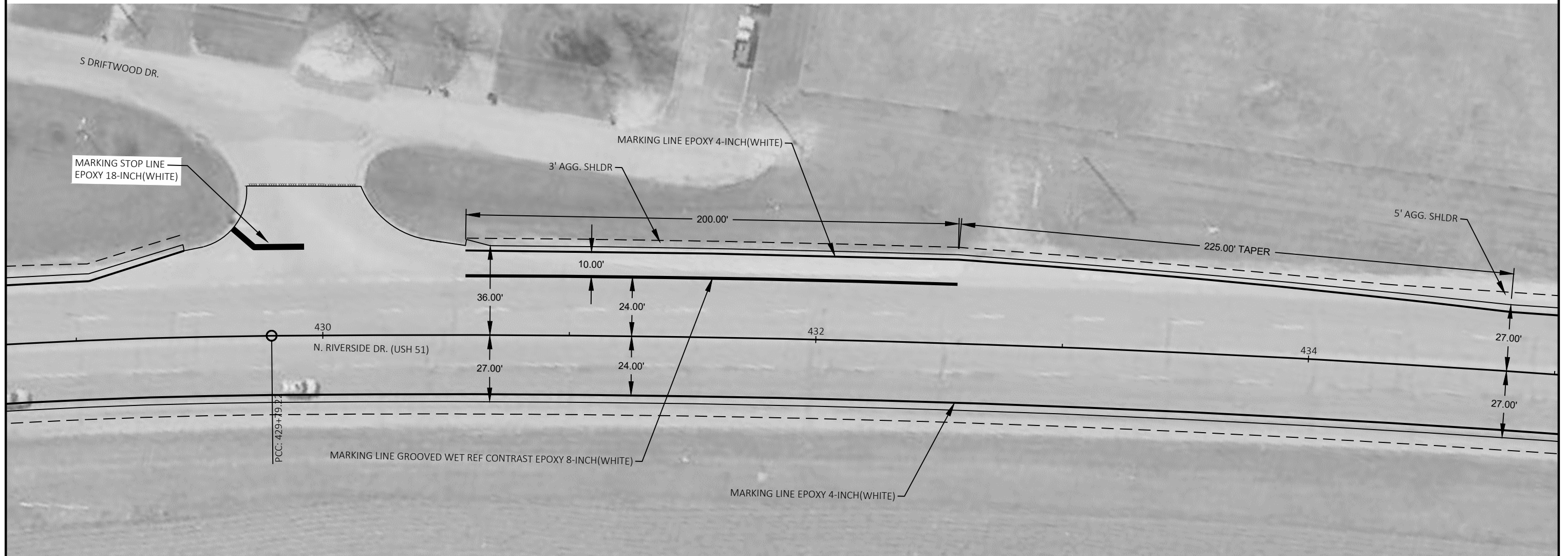


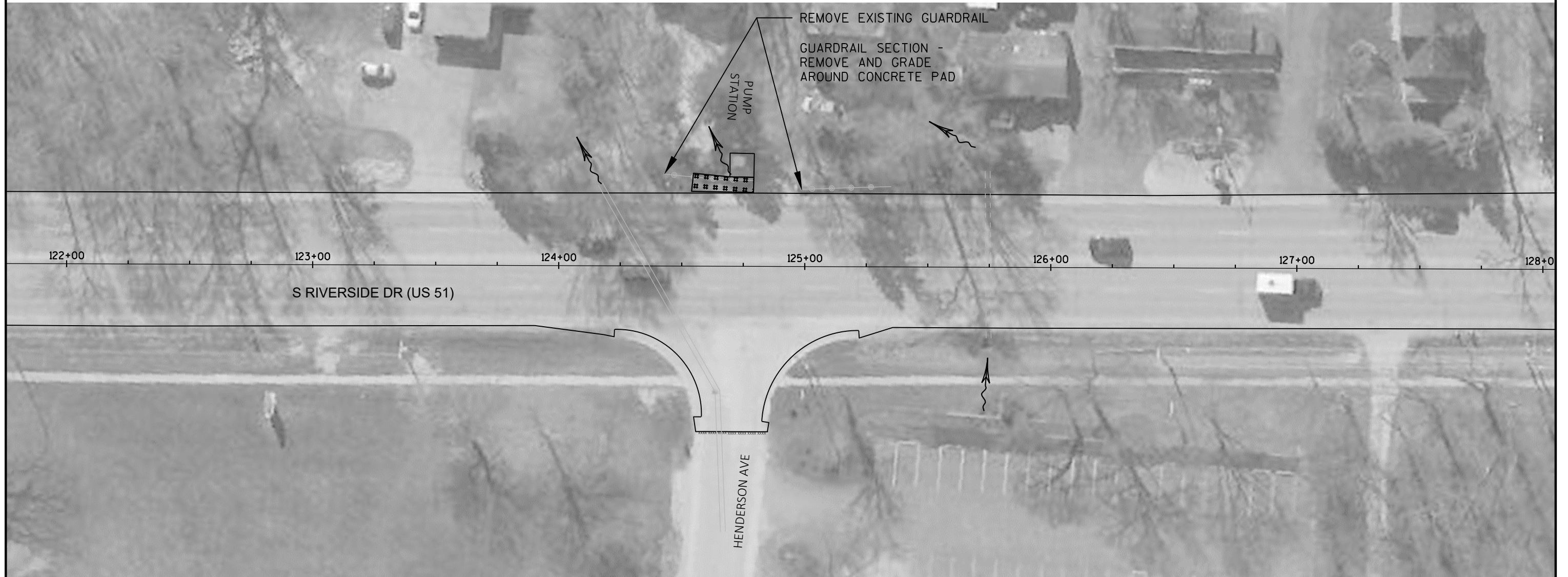
* SAW CUT 2 FEET MAX. FROM CURB AND GUTTER

FILE NAME : N:\PDS\C3D\53500103\SHEETSPLAN\021103_ID.DWG PLOT DATE : 11/9/2018 10:30 AM PLOT BY : SCHMIDT, DAVID B PLOT NAME : PLOT SCALE : 1 IN:20 FT WSDOT/CADDs SHEET 42

NOTE:
WIDEN PAVEMENT AT INTERSECTION TO DETAILS SHOWN

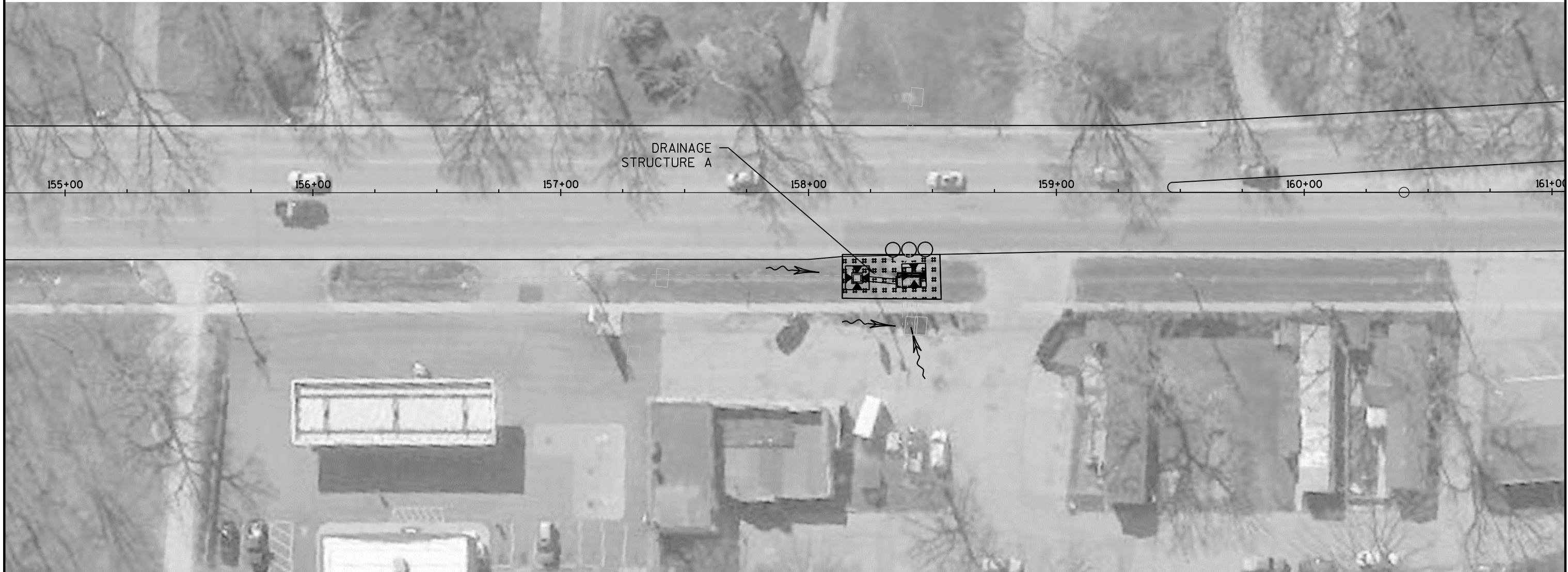
PAVEMENT MARKINGS:
DOUBLE YELLOW CENTERLINE AND LANE SKIPS NOT SHOWN





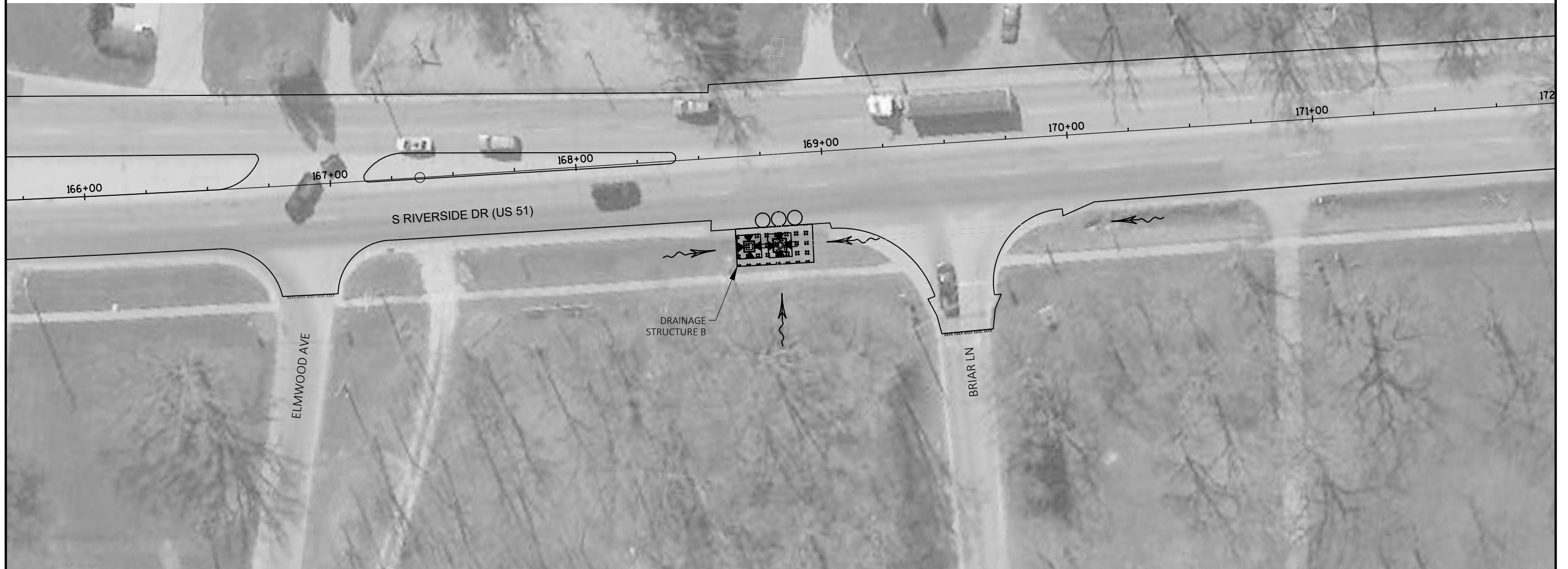
LEGEND

- ##### EROSION MAT CLASS I, TYPE A
- [] EROSION BALE, BARRIER
- - - - - RIP RAP OR STONE DITCH CHECK
- - - - - SLOPE INTERCEPT
- [X] INLET PROTECTION
- ΔΔΔΔΔ TEMPORARY DITCH CHECK
- ∞∞ CULVERT PIPE CHECK
- ~> SURFACE WATER FLOW



LEGEND

- ##### EROSION MAT CLASS I, TYPE A
- EROSION BALE, BARRIER
- o-o-o-o-o-o-o-o RIP RAP OR STONE DITCH CHECK
- - - SLOPE INTERCEPT
- ⊗ INLET PROTECTION
- △△△ TEMPORARY DITCH CHECK
- ∞ CULVERT PIPE CHECK
- ~> SURFACE WATER FLOW



LEGEND

- ##### EROSION MAT CLASS I, TYPE A
- [Symbol: Two parallel lines with a gap] EROSION BALE, BARRIER
- [Symbol: Chain of circles] RIP RAP OR STONE DITCH CHECK
- [Symbol: Dashed line] SLOPE INTERCEPT
- [Symbol: Square with an 'X'] INLET PROTECTION
- [Symbol: Three triangles pointing up] TEMPORARY DITCH CHECK
- [Symbol: Two circles] CULVERT PIPE CHECK
- [Symbol: Wavy arrow] SURFACE WATER FLOW



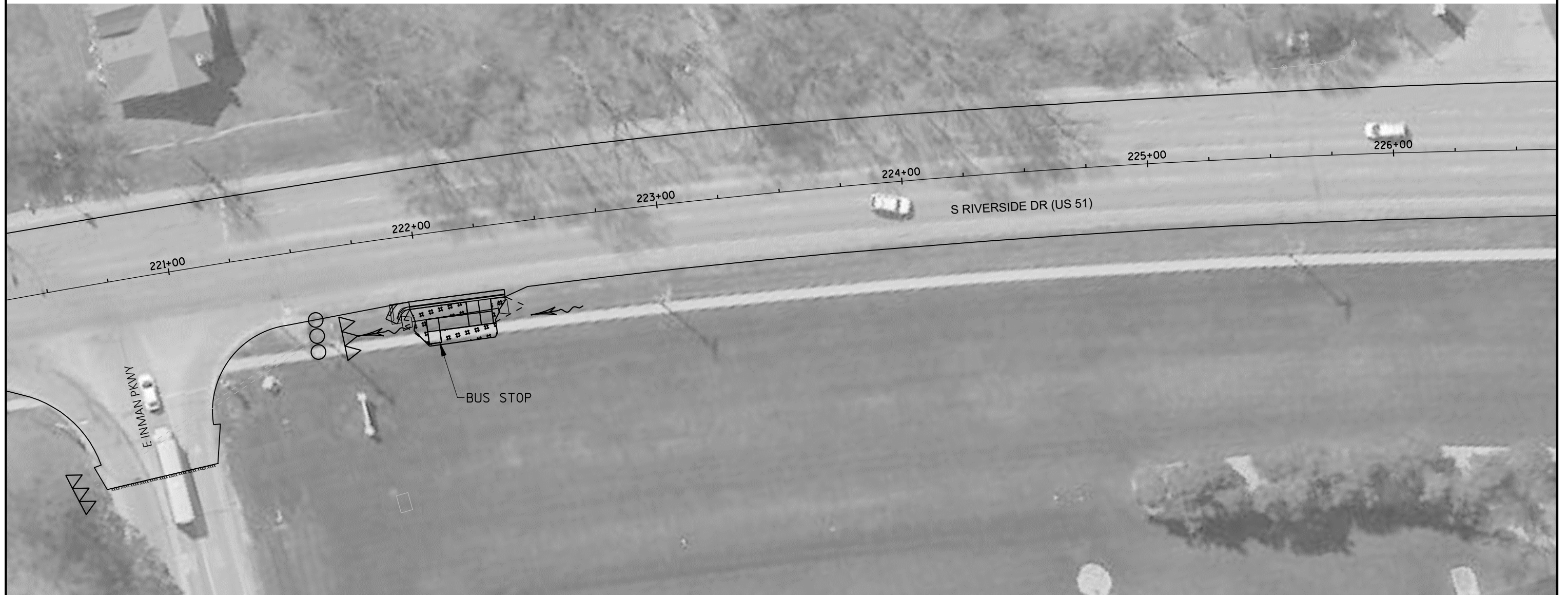
LEGEND

- ##### EROSION MAT CLASS I, TYPE A
- [] EROSION BALE, BARRIER
- o-o-o-o- RIP RAP OR STONE DITCH CHECK
- - - SLOPE INTERCEPT
- [X] INLET PROTECTION
- ΔΔΔ TEMPORARY DITCH CHECK
- ∞∞ CULVERT PIPE CHECK
- ~> SURFACE WATER FLOW



LEGEND

- ##### EROSION MAT CLASS I, TYPE A
- [Box with vertical lines] EROSION BALE, BARRIER
- x-x-x-x- RIP RAP OR STONE DITCH CHECK
- - - SLOPE INTERCEPT
- [Box with X] INLET PROTECTION
- [Box with triangles] TEMPORARY DITCH CHECK
- [Box with circles] CULVERT PIPE CHECK
- ~> SURFACE WATER FLOW



	EROSION MAT CLASS I, TYPE A
	EROSION BALE, BARRIER
	RIP RAP OR STONE DITCH CHECK
	SLOPE INTERCEPT
	INLET PROTECTION
	TEMPORARY DITCH CHECK
	CULVERT PIPE CHECK
	SURFACE WATER FLOW



LEGEND	
#####	EROSION MAT CLASS I, TYPE A
[Symbol]	EROSION BALE, BARRIER
[Symbol]	RIP RAP OR STONE DITCH CHECK
[Symbol]	SLOPE INTERCEPT
[Symbol]	INLET PROTECTION
[Symbol]	TEMPORARY DITCH CHECK
[Symbol]	CULVERT PIPE CHECK
[Symbol]	SURFACE WATER FLOW



SILT FENCE -

WETLAND:
DO NOT DISTURB

CRYSTAL DR

S RIVERSIDE DR (US 51)

LEGEND

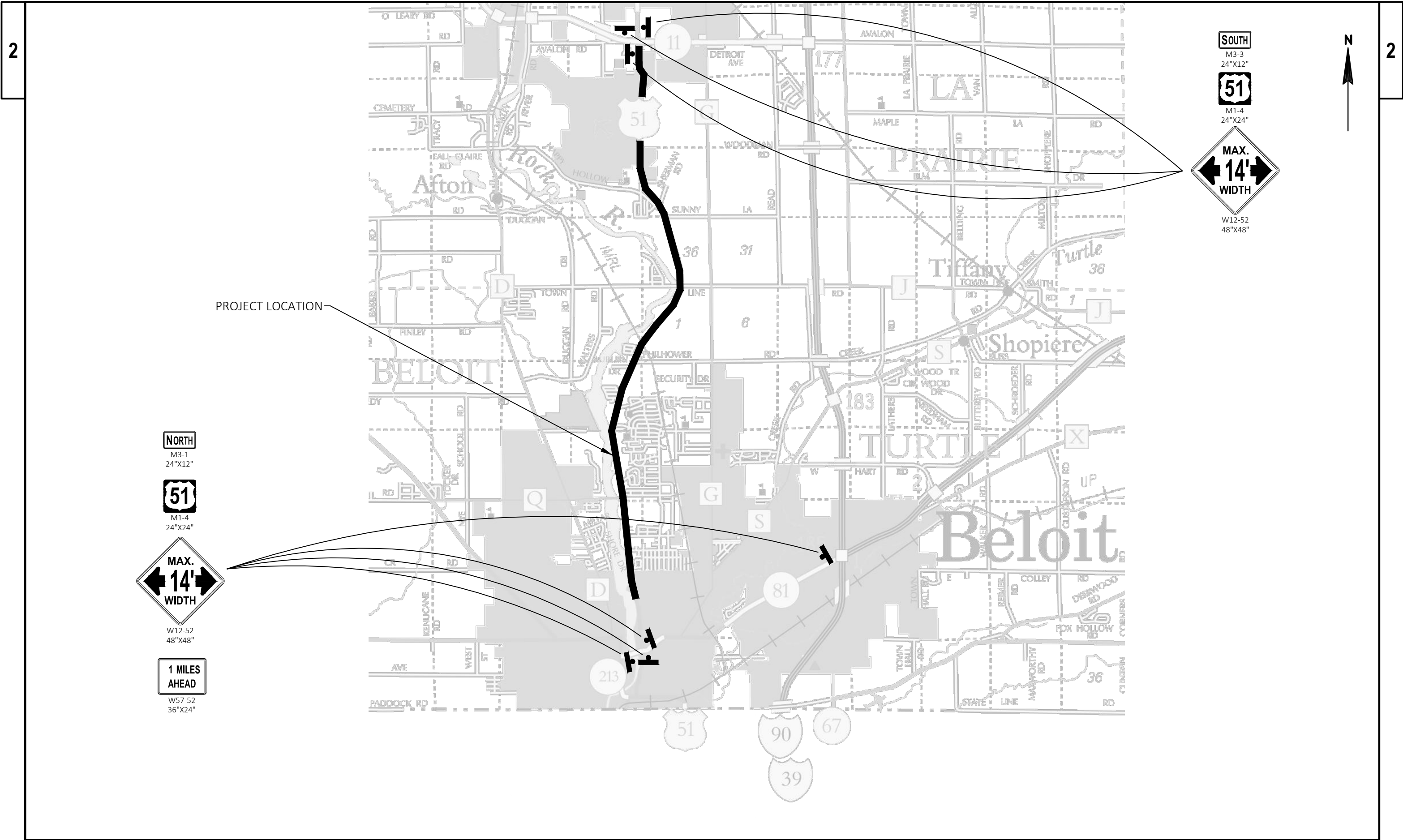


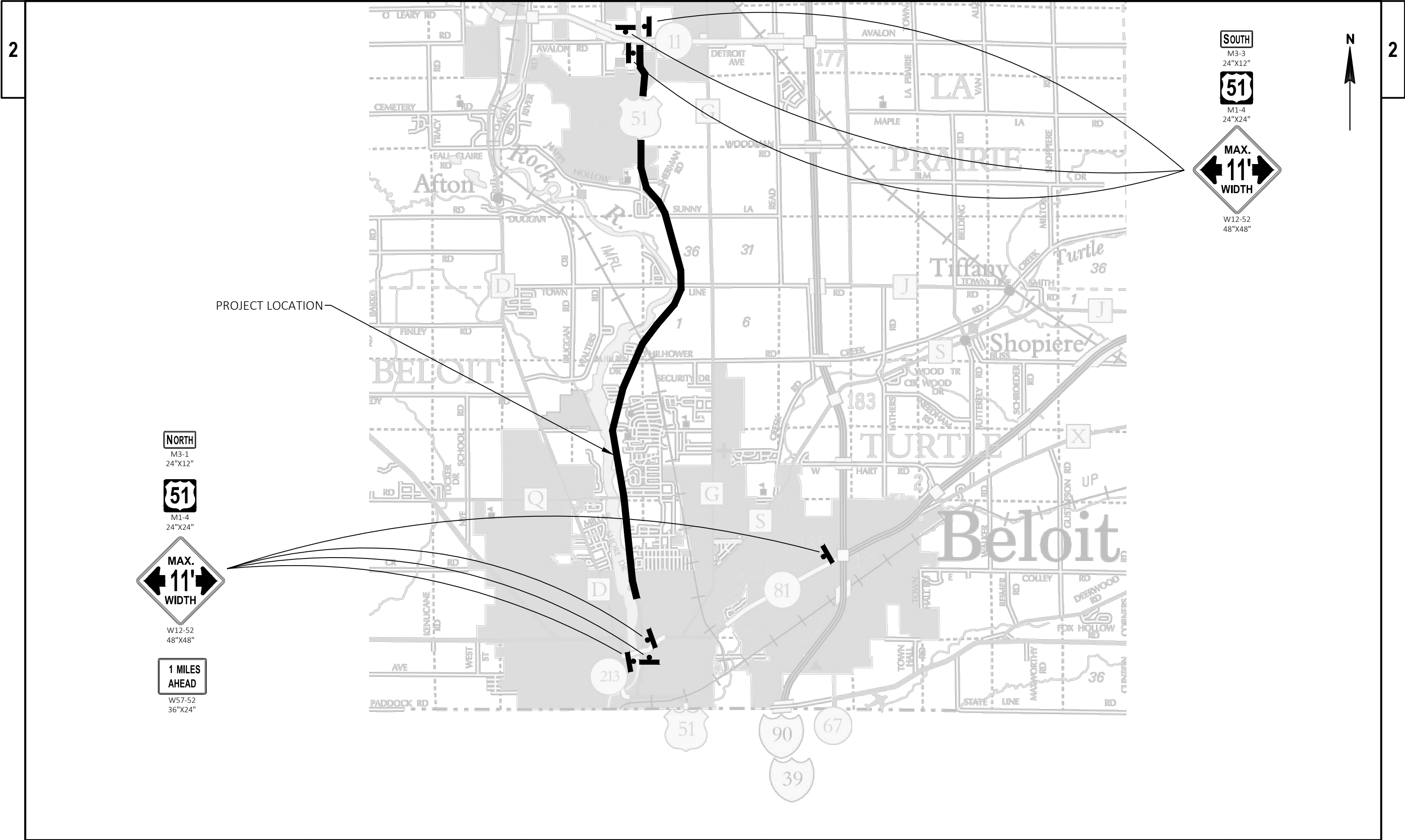
S RIVERSIDE DR (US 51)

B-53-157

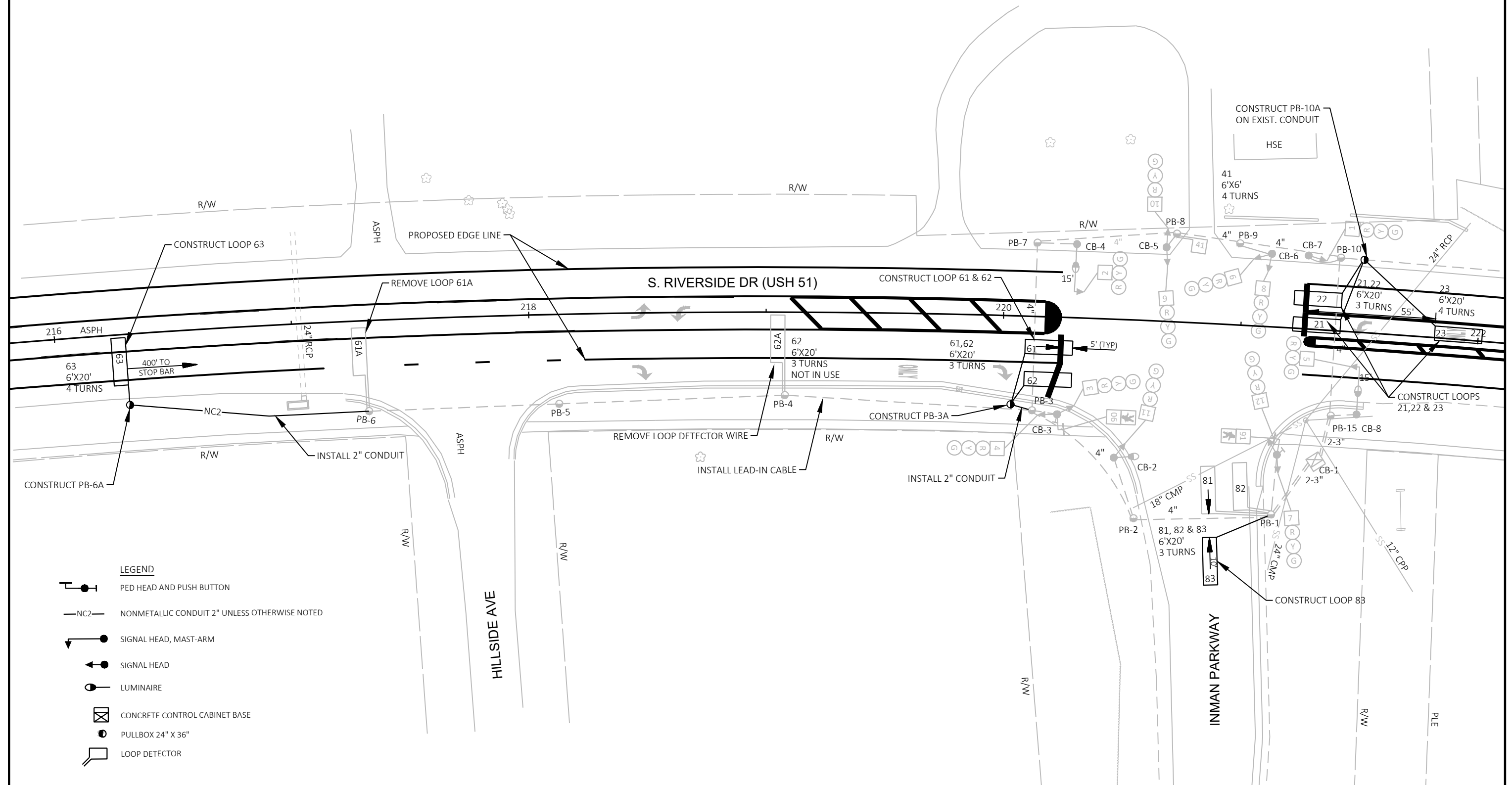
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- ##### EROSION MAT CLASS I, TYPE A
- [] EROSION BALE, BARRIER
- o-o-o-o- RIP RAP OR STONE DITCH CHECK
- - - SLOPE INTERCEPT
- [X] INLET PROTECTION
- ΔΔΔ TEMPORARY DITCH CHECK
- ∞∞ CULVERT PIPE CHECK
- ~> SURFACE WATER FLOW



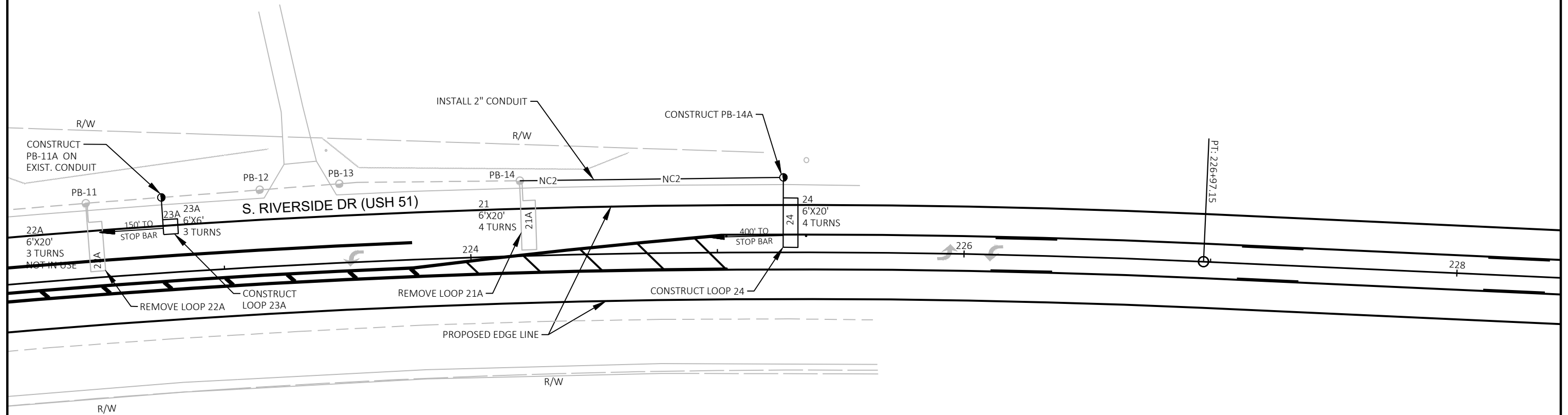
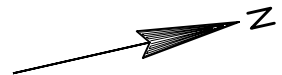


1. THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT AREA WHICH ARE NOT SHOWN.
2. THE ENGINEER MAY ADJUST THE LOCATIONS OF ITEMS UNDER THIS CONTRACT TO AVOID CONFLICT WITH EXISTING UTILITY FACILITIES.



CONSTRUCTION NOTES:

- 1. THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT AREA WHICH ARE NOT SHOWN.
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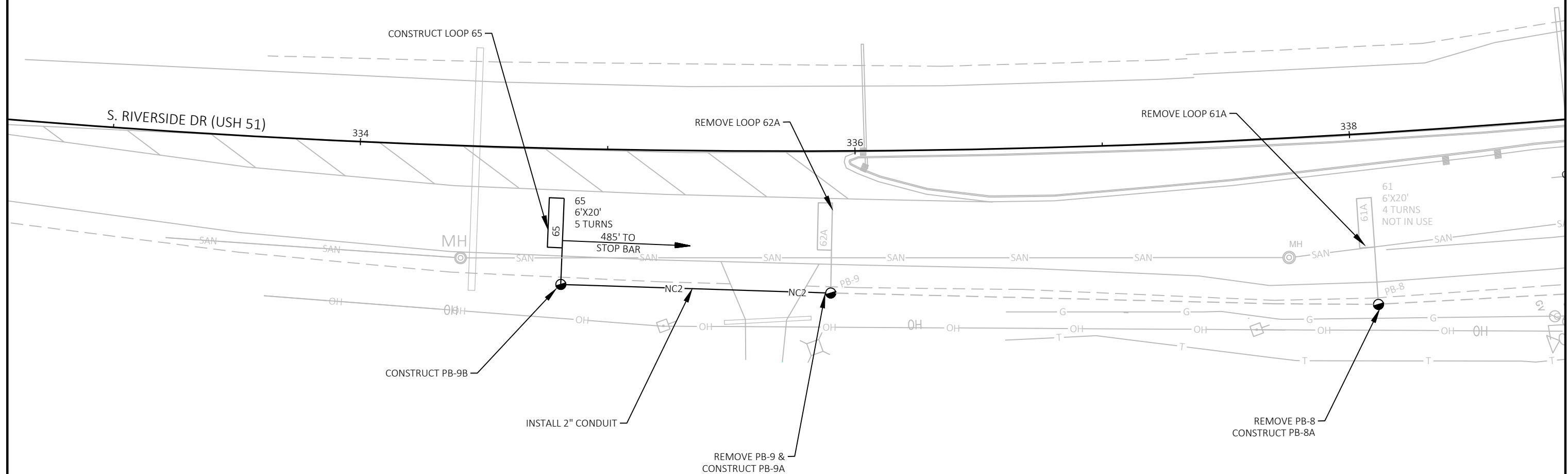
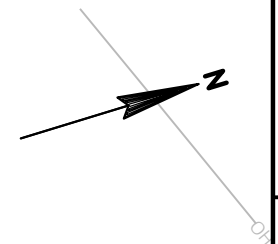


LEGEND

- PED HEAD AND PUSH BUTTON
- NONMETALLIC CONDUIT 2" UNLESS OTHERWISE NOTED
- SIGNAL HEAD, MAST-ARM
- SIGNAL HEAD
- LUMINAIRE
- CONCRETE CONTROL CABINET BASE
- PULLBOX 24" X 36"
- LOOP DETECTOR

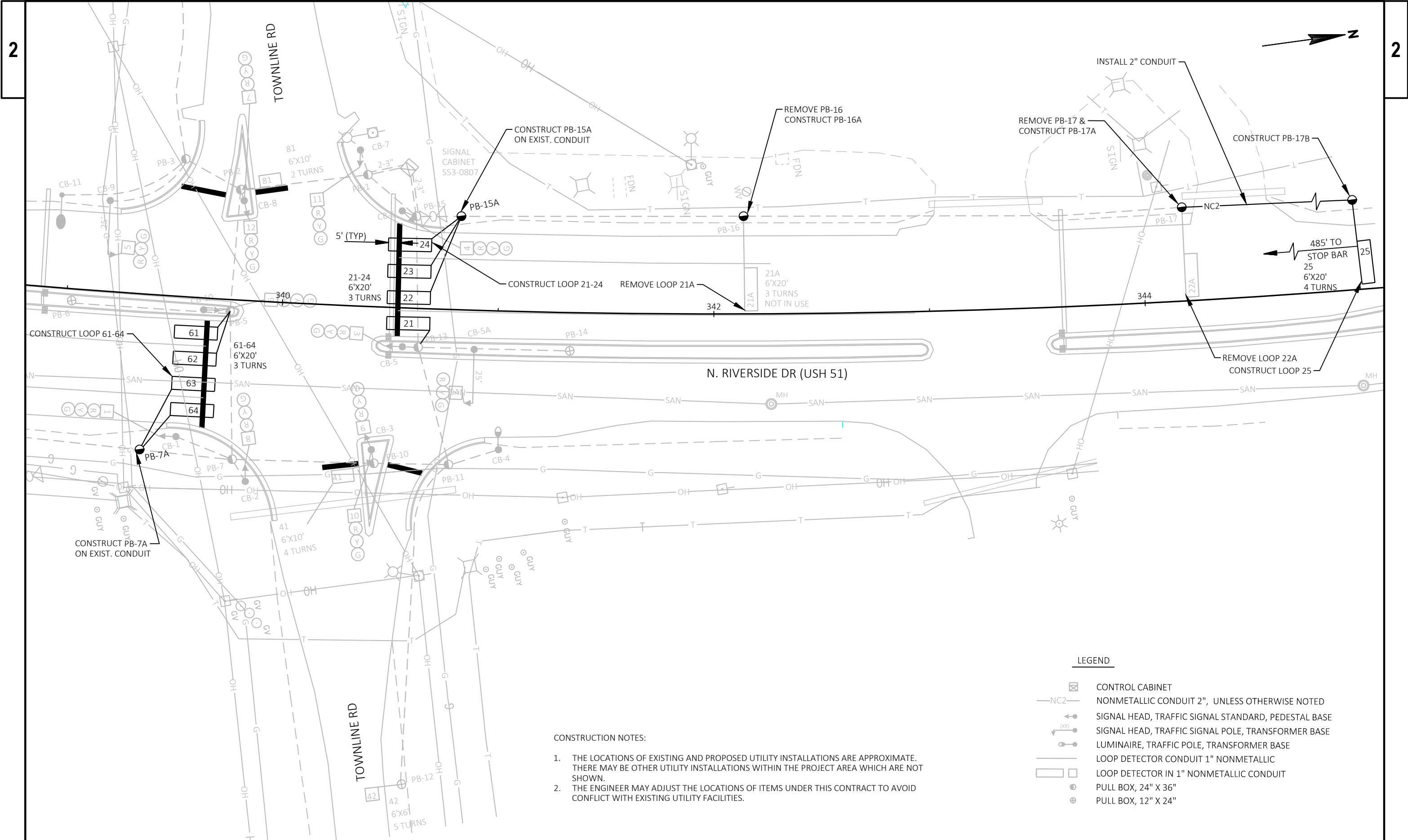
LEGEND

-  CONTROL CABINET
-  NONMETALLIC CONDUIT 2", UNLESS OTHERWISE NOTED
-  SIGNAL HEAD, TRAFFIC SIGNAL STANDARD, PEDESTAL BASE
-  SIGNAL HEAD, TRAFFIC SIGNAL POLE, TRANSFORMER BASE
-  LUMINAIRE, TRAFFIC POLE, TRANSFORMER BASE
-  LOOP DETECTOR CONDUIT 1" NONMETALLIC
-  LOOP DETECTOR IN 1" NONMETALLIC CONDUIT
-  PULL BOX, 24" X 36"
-  PULL BOX, 12" X 24"



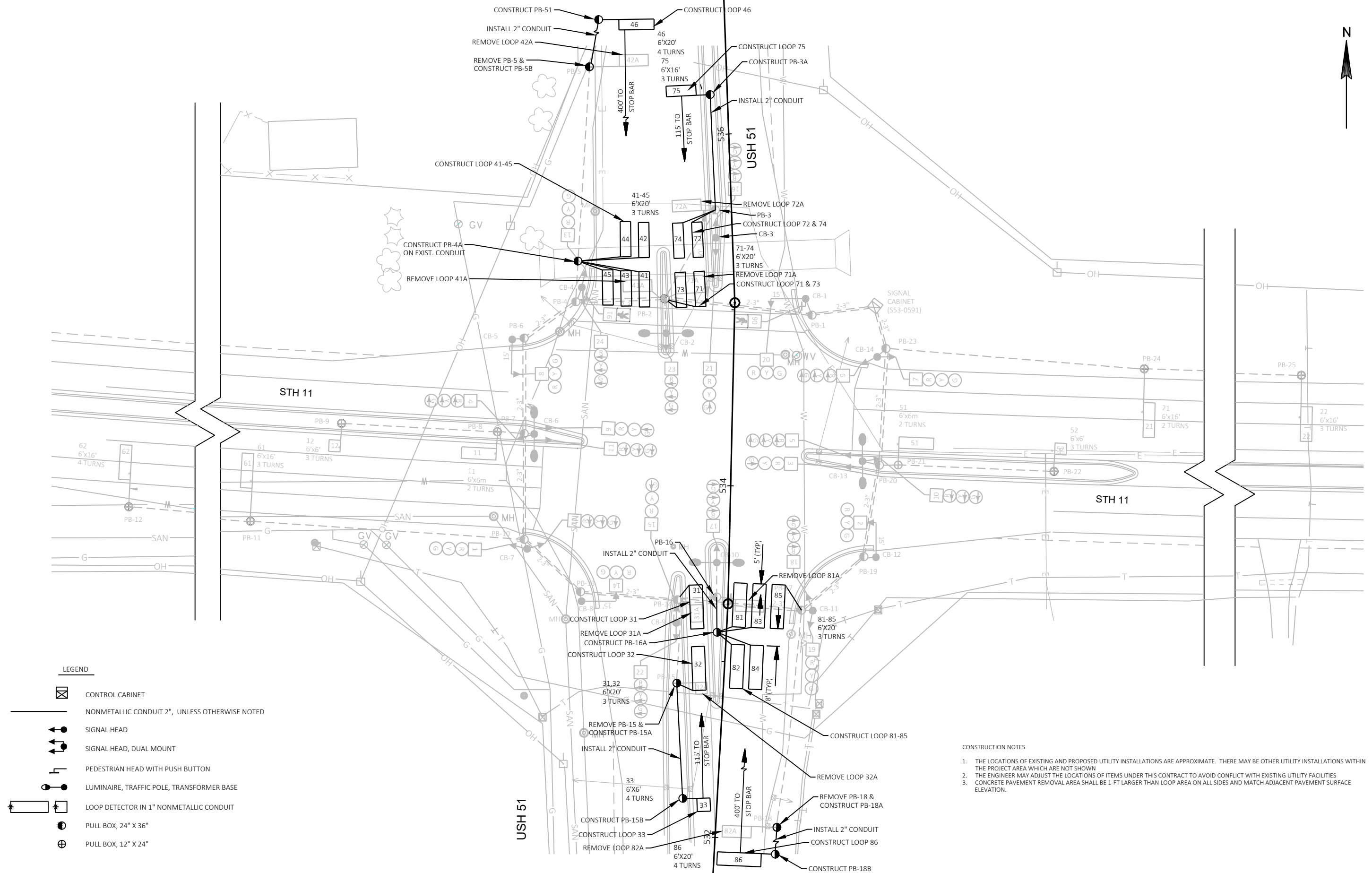
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LEGEND	
	CONTROL CABINET
	NONMETALLIC CONDUIT 2", UNLESS OTHERWISE NOTED
	SIGNAL HEAD, TRAFFIC SIGNAL STANDARD, PEDESTAL BASE
	SIGNAL HEAD, TRAFFIC SIGNAL POLE, TRANSFORMER BASE
	LUMINAIRE, TRAFFIC POLE, TRANSFORMER BASE
	LOOP DETECTOR CONDUIT 1" NONMETALLIC
	LOOP DETECTOR IN 1" NONMETALLIC CONDUIT
	PULL BOX, 24" X 36"
	PULL BOX, 12" X 24"



PROJECT NO: 5350-01-73

HWY: USH 51

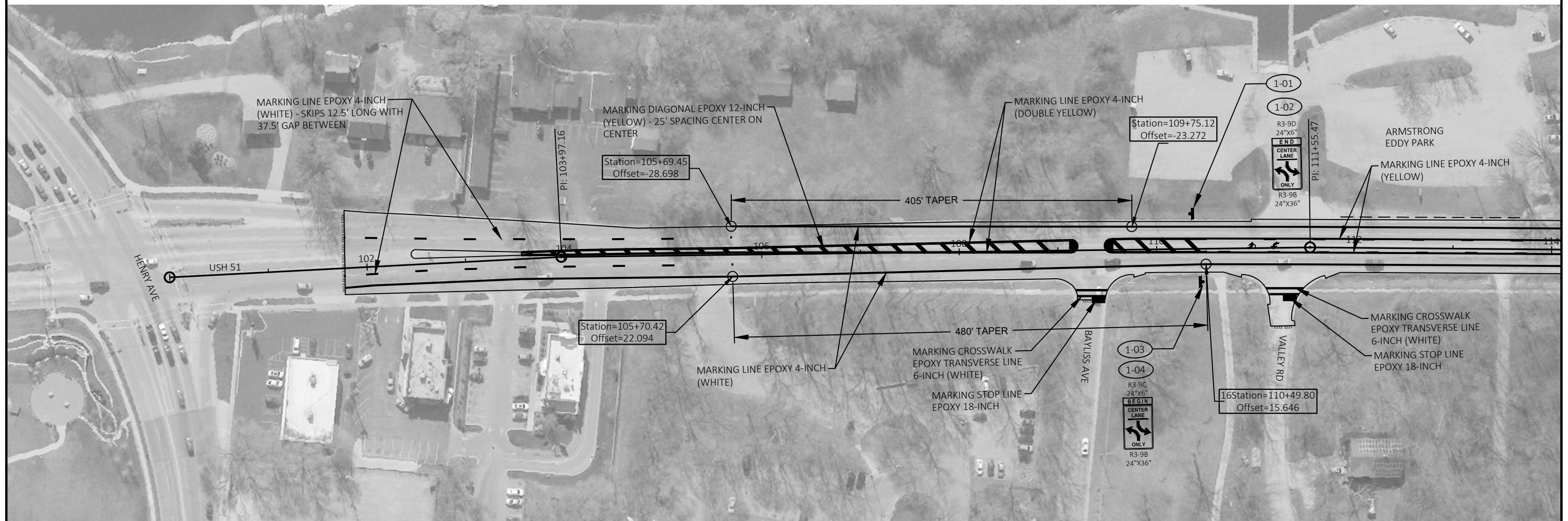
COUNTY: ROCK

TRAFFIC SIGNAL PLAN - LOOP DETECTORS STH 11

SHEET

46

E



PER SDD 15C8-B PAVEMENT MARKING (TURN LANES)
A SET OF ARROWS IS REQUIRED EVERY 400 FEET OR
NEAR INTERSECTIONS OR DRIVEWAYS WITH
TURNING TRAFFIC.

SEE SDD 15c33 STOP LINE AND CROSSWALK
PAVEMENT MARKING FOR DETERMINING
LOCATIONS OF CROSSWALK MARKINGS AND STOP
BAR LOCATIONS

SIGNS NOT SHOWN ON PLANS ARE
EXISTING SIGNS TO REMAIN.



PER SDD 15C8-B PAVEMENT MARKING (TURN LANES)
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SEE SDD 15c33 STOP LINE AND CROSSWALK
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PROJECT NO: 5350-01-73

HWY: USH 51

COUNTY: ROCK

PAVEMENT MARKING AND SIGNING

SHEET

48

E

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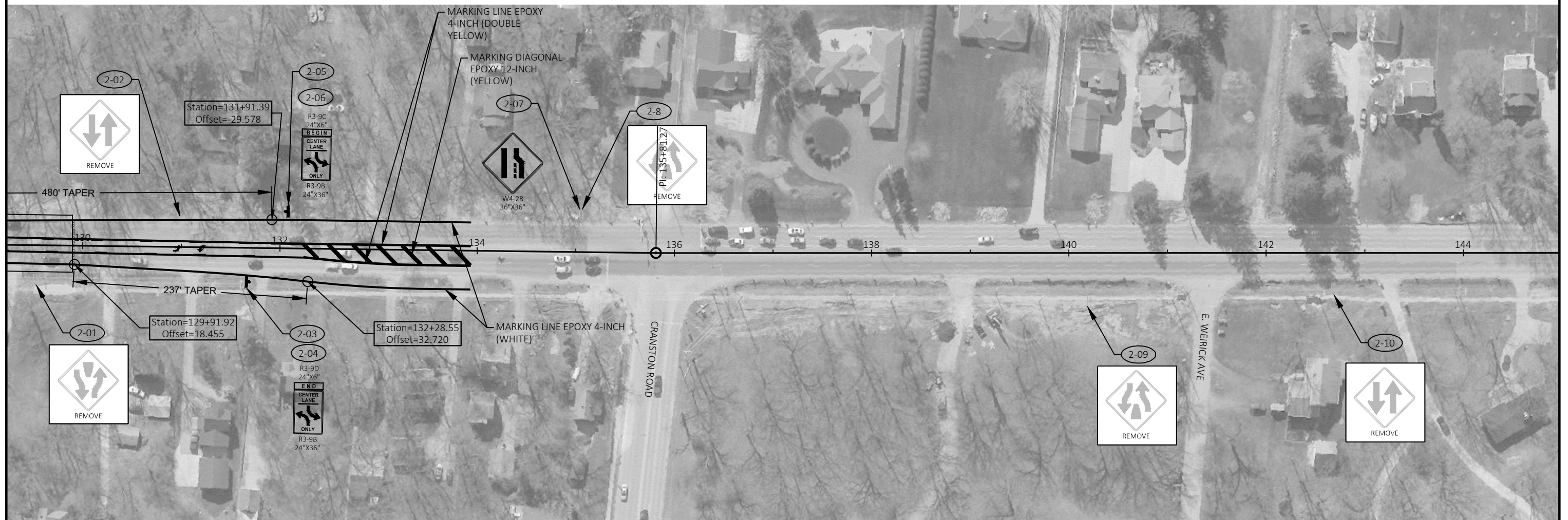
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PLOT BY : SCHMIDT, DAVID B

PLOT NAME :

PLOT SCALE : 1 IN:100 FT

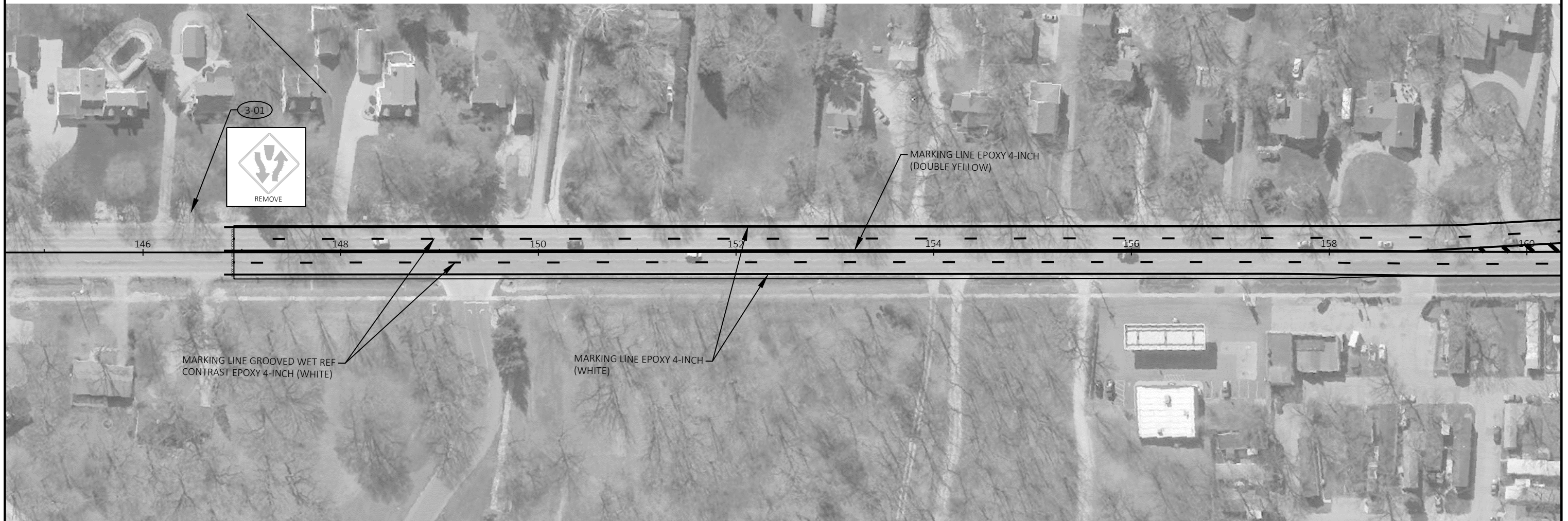
WISDOT/CADDs SHEET 42



PER SDD 15C8-B PAVEMENT MARKING (TURN LANES)
A SET OF ARROWS IS REQUIRED EVERY 400 FEET OR
NEAR INTERSECTIONS OR DRIVEWAYS WITH
TURNING TRAFFIC.

SEE SDD 15c33 STOP LINE AND CROSSWALK
PAVEMENT MARKING FOR DETERMINING
LOCATIONS OF CROSSWALK MARKINGS AND STOP
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PROJECT NO: 5350-01-73

HWY: USH 51

COUNTY: ROCK

PAVEMENT MARKING AND SIGNING

SHEET

50

E

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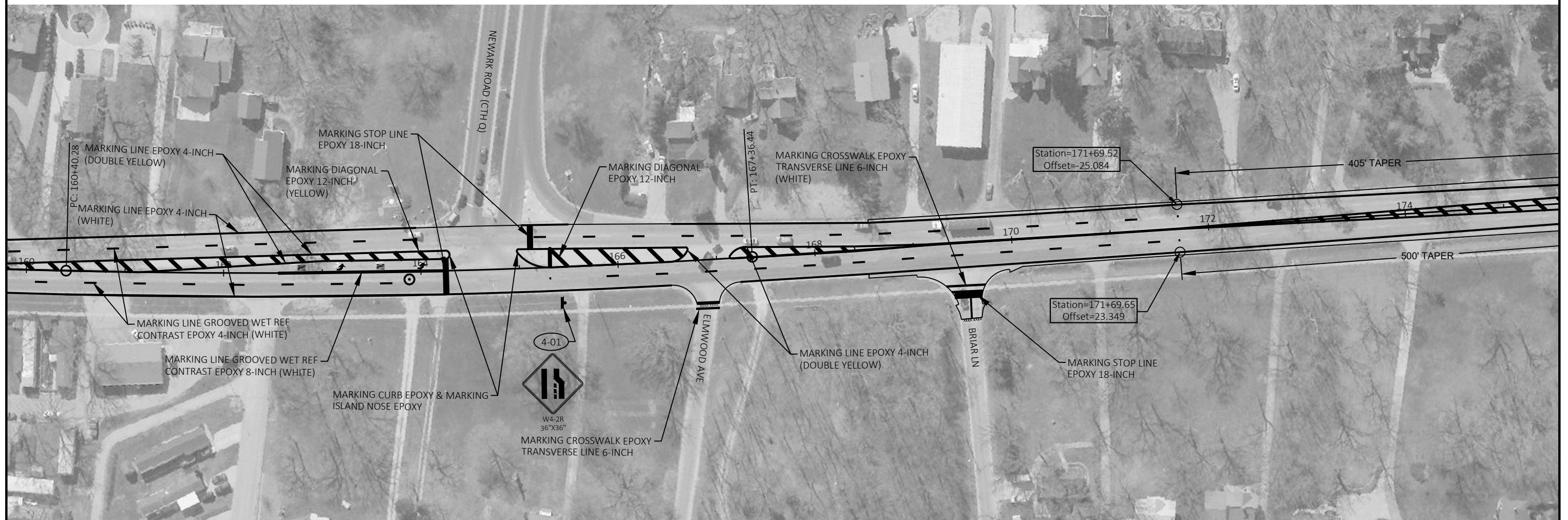
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PLOT BY : SCHMIDT, DAVID B

PLOT NAME :

PLOT SCALE : 1 IN:100 FT

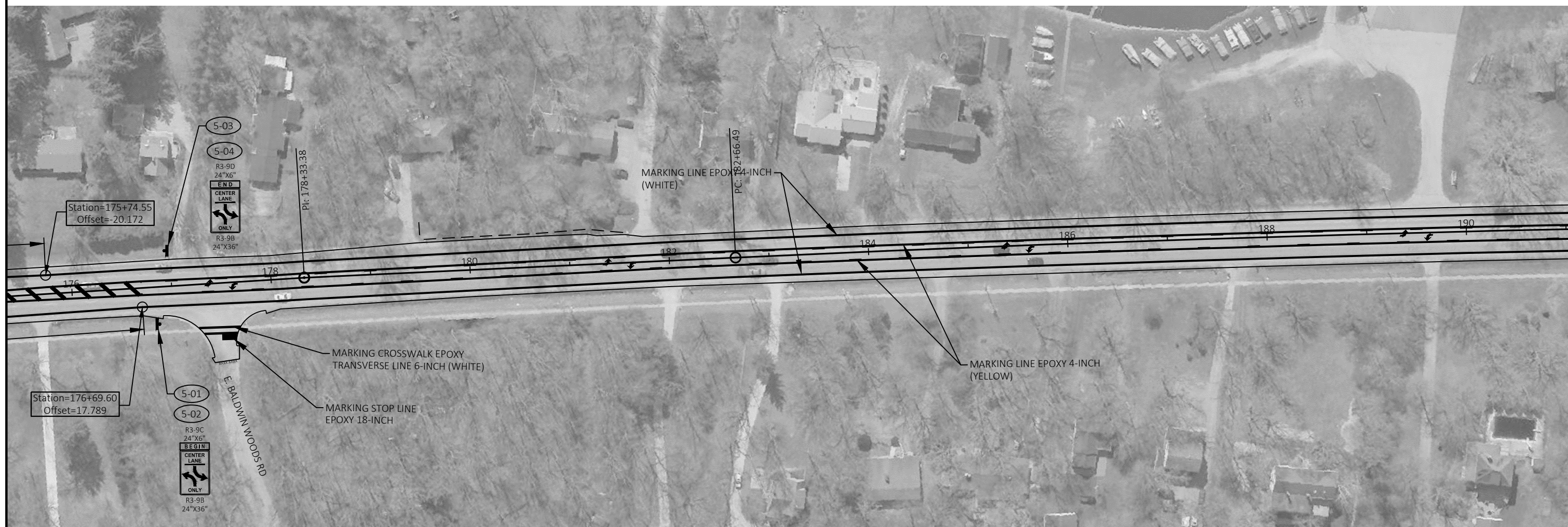
WISDOT/CADDs SHEET 42



PER SDD 15C8-B PAVEMENT MARKING (TURN LANES)
A SET OF ARROWS IS REQUIRED EVERY 400 FEET OR
NEAR INTERSECTIONS OR DRIVEWAYS WITH
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SEE SDD 15c33 STOP LINE AND CROSSWALK
PAVEMENT MARKING FOR DETERMINING
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BAR LOCATIONS

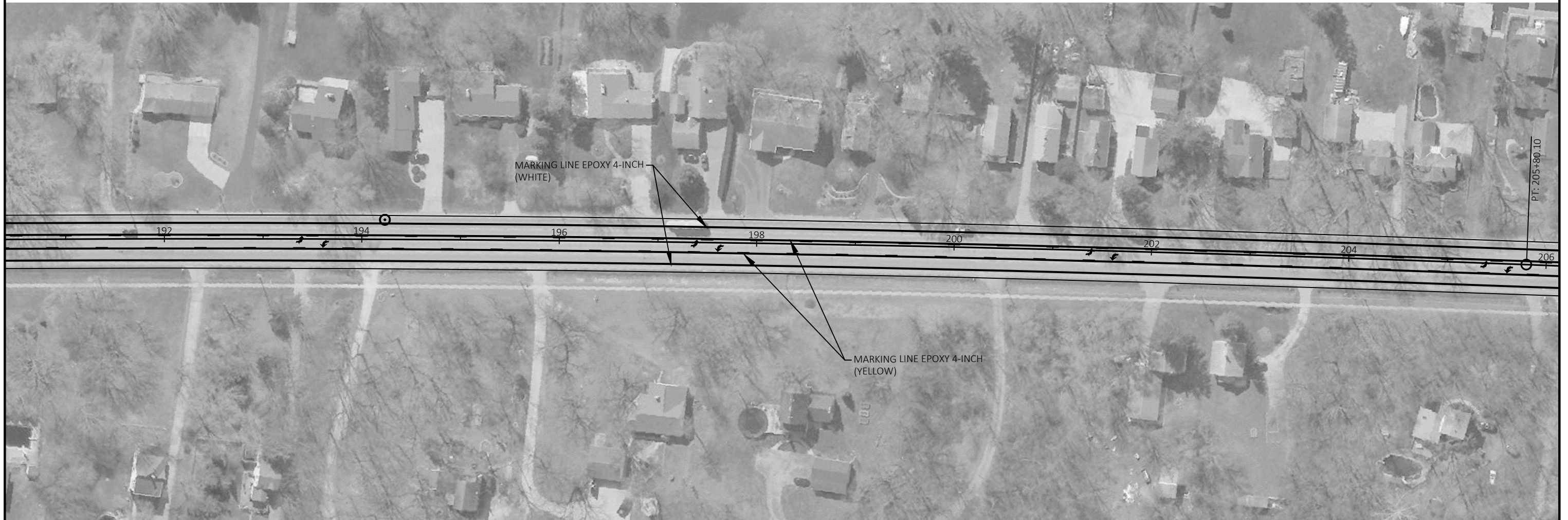
SIGNS NOT SHOWN ON PLANS ARE
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PER SDD 15C8-B PAVEMENT MARKING (TURN LANES)
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PROJECT NO: 5350-01-73

HWY: USH 51

COUNTY: ROCK

PAVEMENT MARKING AND SIGNING

SHEET

53

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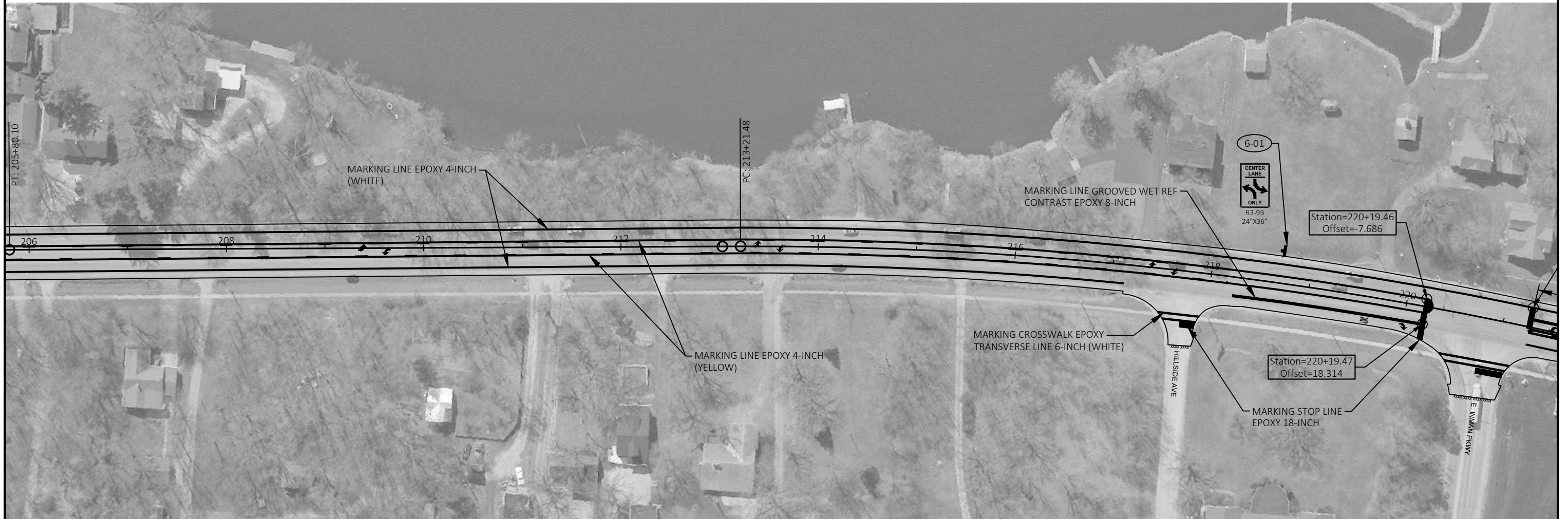
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PLOT BY : SCHMIDT, DAVID B

PLOT NAME :

PLOT SCALE : 1 IN:100 FT

WISDOT/CADDs SHEET 42



PER SDD 15C8-B PAVEMENT MARKING (TURN LANES)
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SEE SDD 15c33 STOP LINE AND CROSSWALK
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PROJECT NO: 5350-01-73

HWY: USH 51

COUNTY: ROCK

PAVEMENT MARKING AND SIGNING

SHEET

54

E

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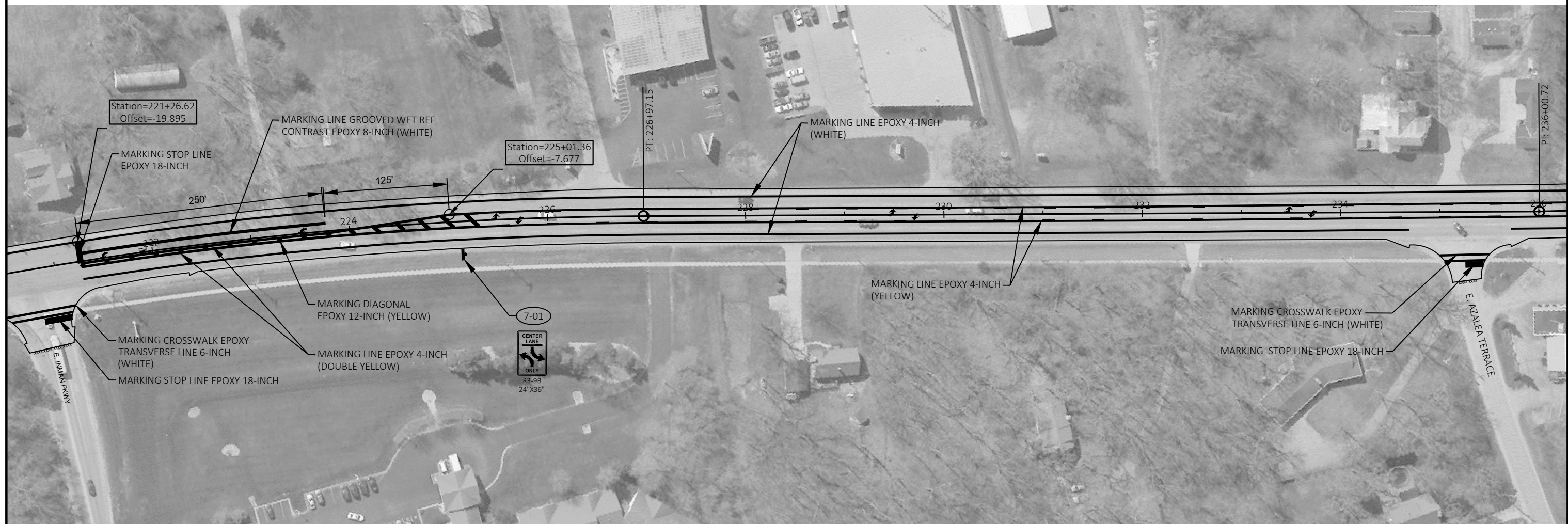
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PLOT BY: SCHMIDT, DAVID B

PLOT NAME:

PLOT SCALE: 1 IN:100 FT

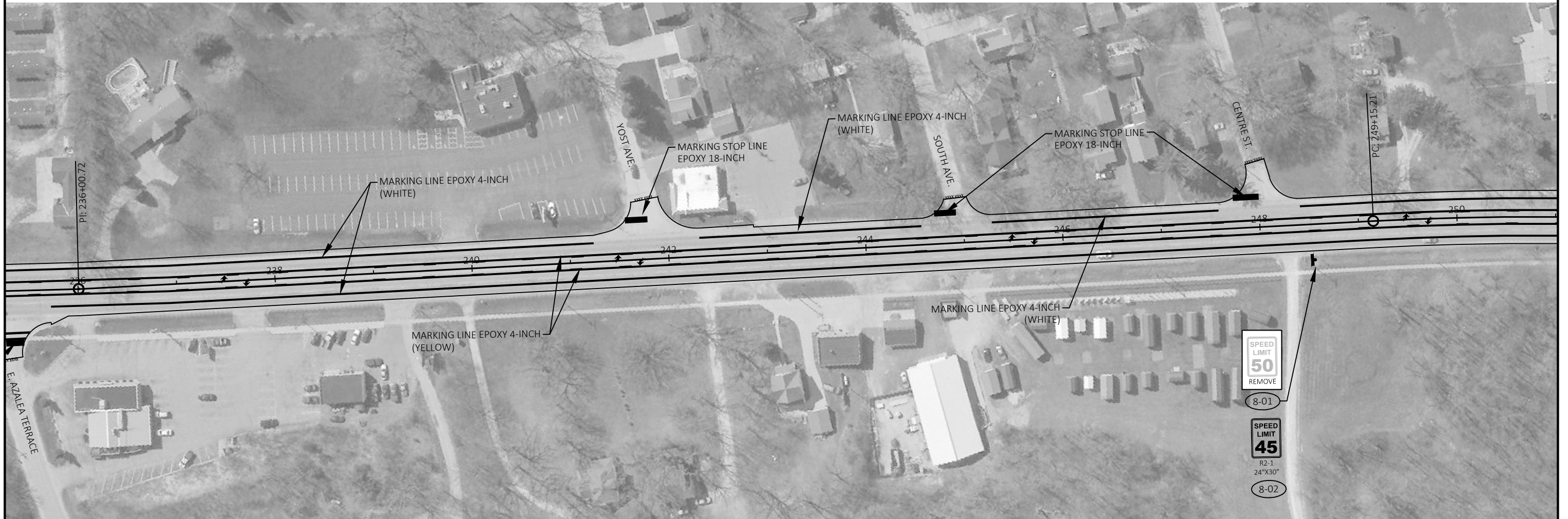
WISDOT/CADDs SHEET 42



PER SDD 15C8-B PAVEMENT MARKING (TURN LANES)
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SEE SDD 15c33 STOP LINE AND CROSSWALK
PAVEMENT MARKING FOR DETERMINING
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BAR LOCATIONS

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EXISTING SIGNS TO REMAIN.

PROJECT NO: 5350-01-73

HWY: USH 51

COUNTY: ROCK

PAVEMENT MARKING AND SIGNING

SHEET

56

E

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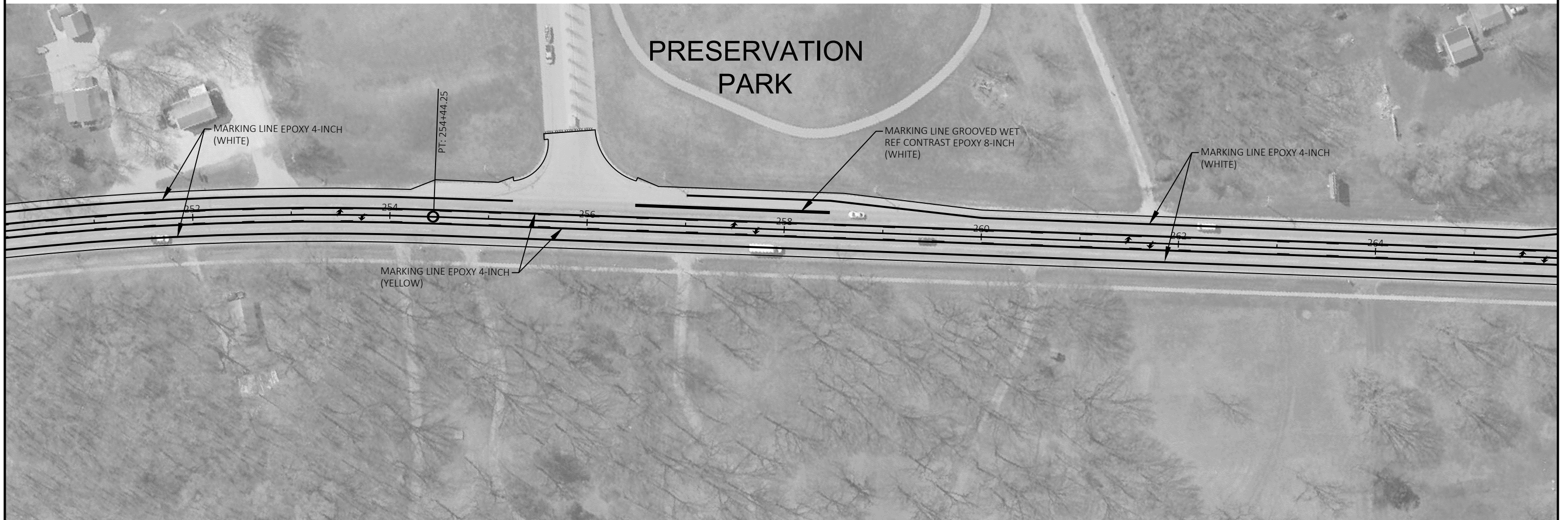
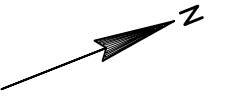
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PLOT BY: SCHMIDT, DAVID B

PLOT NAME:

PLOT SCALE: 1 IN:100 FT

WISDOT/CADDs SHEET 42



PER SDD 15C8-B PAVEMENT MARKING (TURN LANES)
A SET OF ARROWS IS REQUIRED EVERY 400 FEET OR
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TURNING TRAFFIC.

SEE SDD 15c33 STOP LINE AND CROSSWALK
PAVEMENT MARKING FOR DETERMINING
LOCATIONS OF CROSSWALK MARKINGS AND STOP
BAR LOCATIONS

SIGNS NOT SHOWN ON PLANS ARE
EXISTING SIGNS TO REMAIN.

PROJECT NO: 5350-01-73

HWY: USH 51

COUNTY: ROCK

PAVEMENT MARKING AND SIGNING

SHEET

57

E

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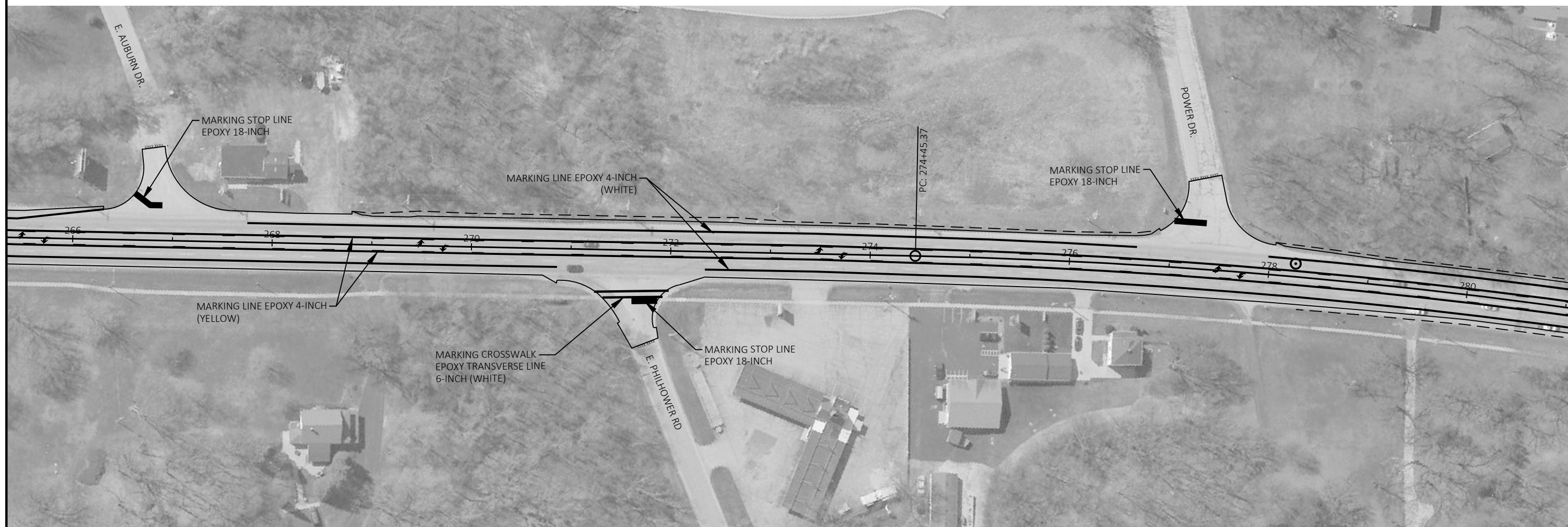
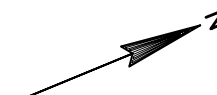
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PLOT BY : SCHMIDT, DAVID B

PLOT NAME :

PLOT SCALE : 1 IN:100 FT

WISDOT/CADDs SHEET 42



PER SDD 15C8-B PAVEMENT MARKING (TURN LANES)
A SET OF ARROWS IS REQUIRED EVERY 400 FEET OR
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TURNING TRAFFIC.

SEE SDD 15c33 STOP LINE AND CROSSWALK
PAVEMENT MAKRINGS FOR DETERMINING
LOCATIONS FOR OF CROSSWALK MARKINGS AND
STOP BAR LOCATION

SIGNS NOT SHOWN ON PLANS ARE
EXISTING SIGNS TO REMAIN.

PROJECT NO: 5350-01-73

HWY: USH 51

COUNTY: ROCK

PAVEMENT MARKING AND SIGNING

SHEET

58

E

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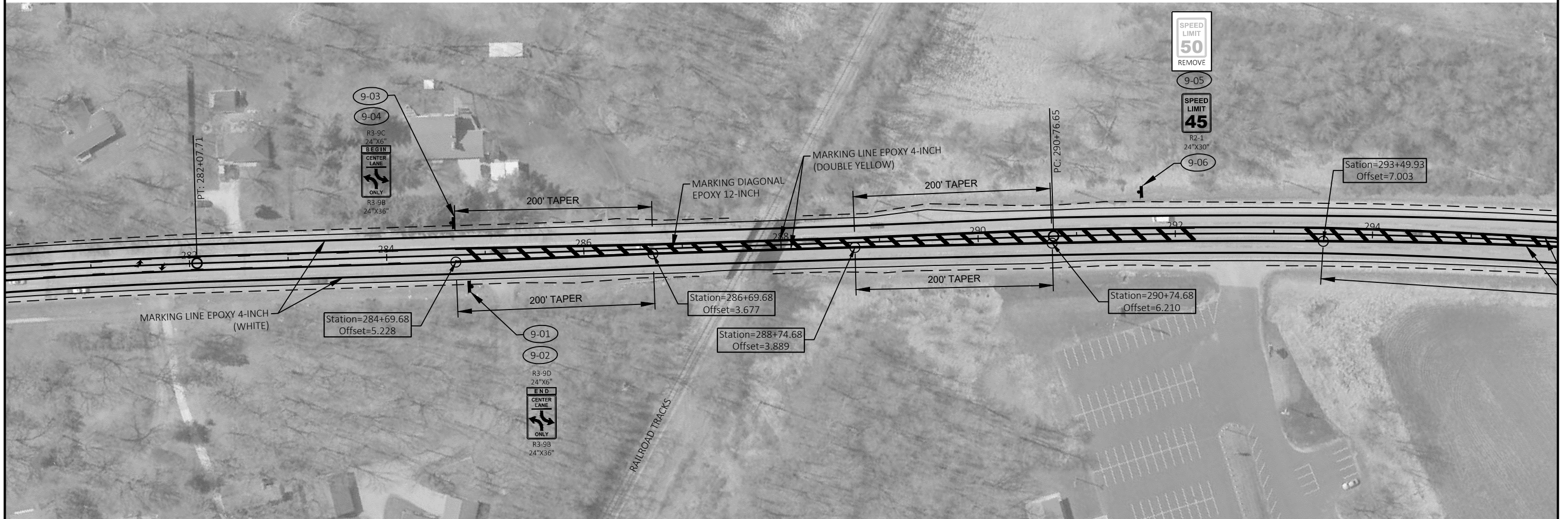
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PLOT NAME:

PLOT SCALE: 1 IN:100 FT

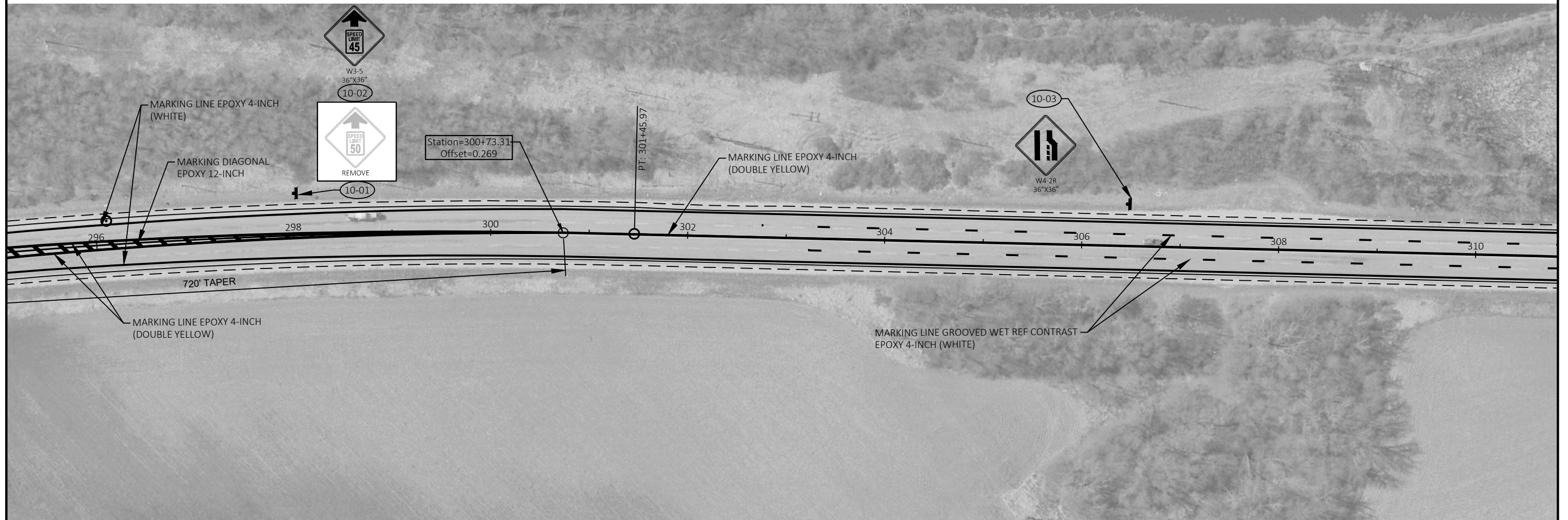
WISDOT/CADDs SHEET 42



PER SDD 15C8-B PAVEMENT MARKING (TURN LANES)
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SEE SDD 15c33 STOP LINE AND CROSSWALK
PAVEMENT MARKING FOR DETERMINING
LOCATIONS OF CROSSWALK MARKINGS AND STOP
BAR LOCATIONS

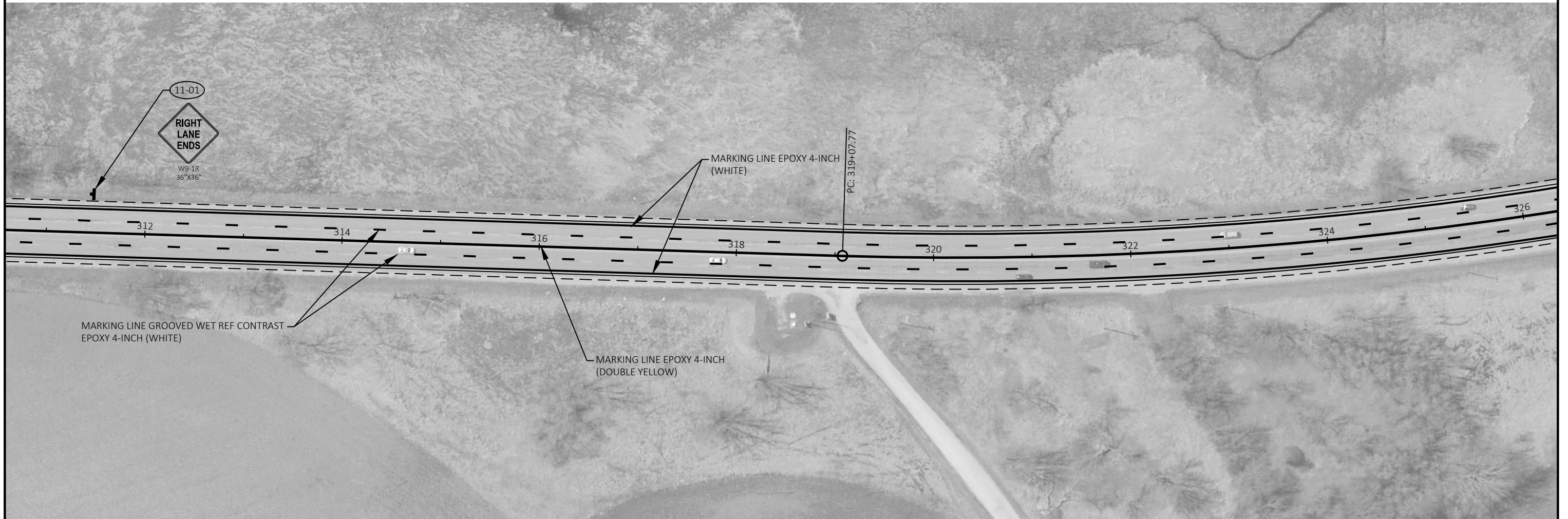
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NEAR INTERSECTIONS OR DRIVEWAYS WITH
TURNING TRAFFIC.

SEE SDD 15c33 STOP LINE AND CROSSWALK
PAVEMENT MARKING FOR DETERMINING
LOCATIONS OF CROSSWALK MARKINGS AND STOP
BAR LOCATIONS

SIGNS NOT SHOWN ON PLANS ARE
EXISTING SIGNS TO REMAIN.



PER SDD 15C8-B PAVEMENT MARKING (TURN LANES)
A SET OF ARROWS IS REQUIRED EVERY 400 FEET OR
NEAR INTERSECTIONS OR DRIVEWAYS WITH
TURNING TRAFFIC.

SEE SDD 15c33 STOP LINE AND CROSSWALK
PAVEMENT MARKING FOR DETERMINING
LOCATIONS OF CROSSWALK MARKINGS AND STOP
BAR LOCATIONS

SIGNS NOT SHOWN ON PLANS ARE
EXISTING SIGNS TO REMAIN.

PROJECT NO: 5350-01-73

HWY: USH 51

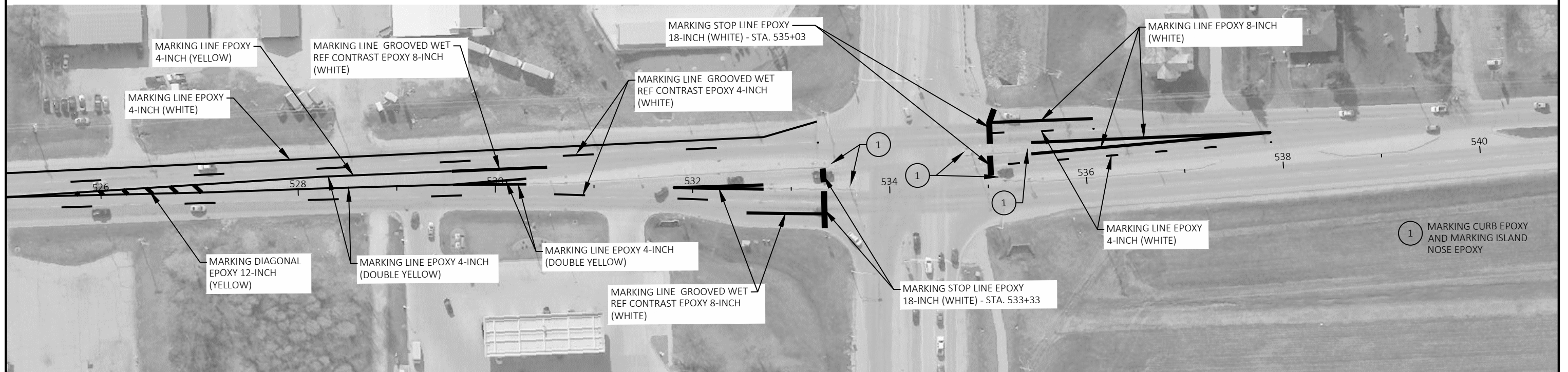
COUNTY: ROCK

PAVEMENT MARKING AND SIGNING

SHEET

61

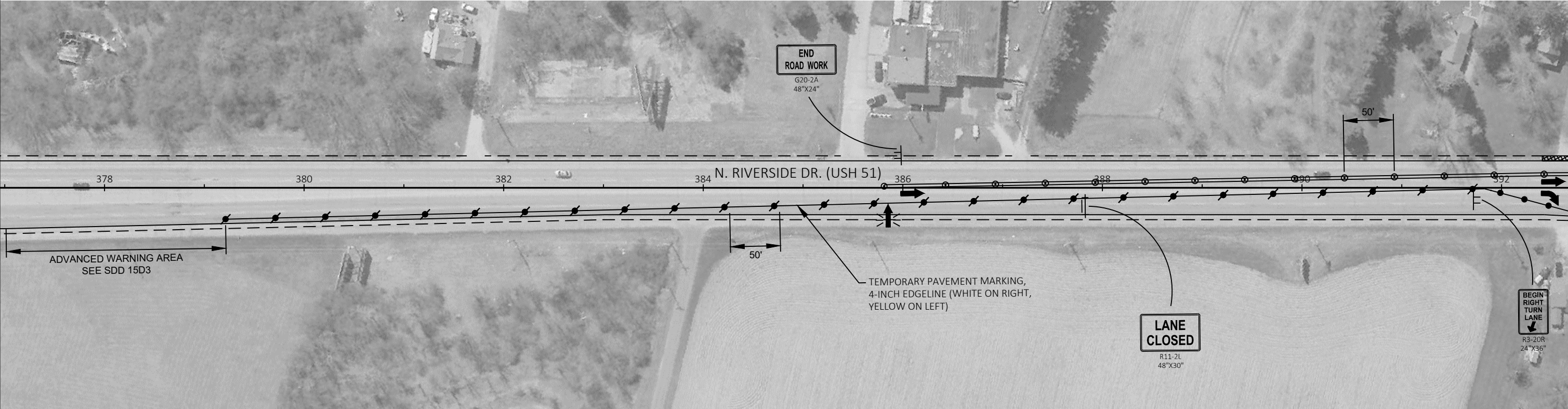
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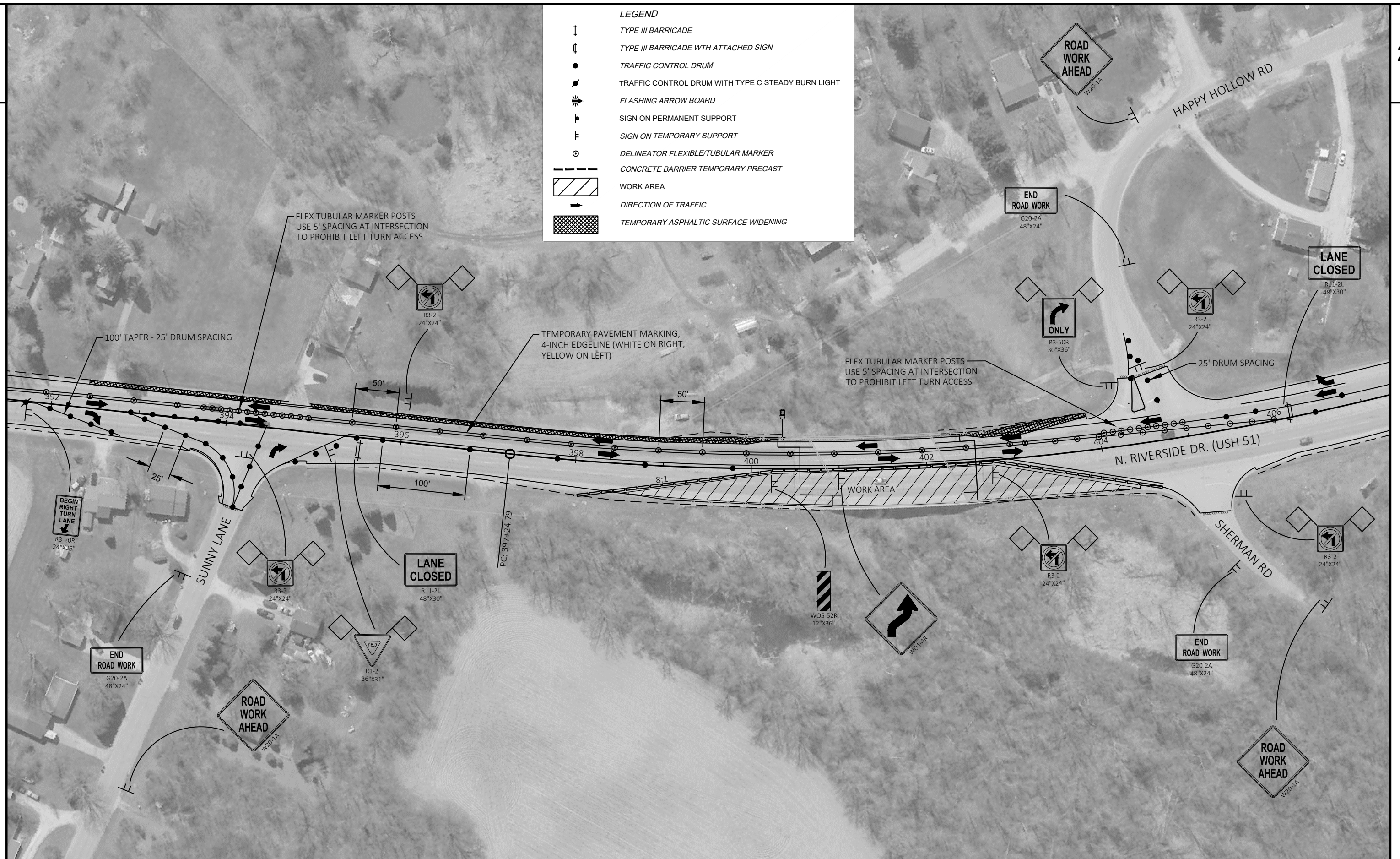


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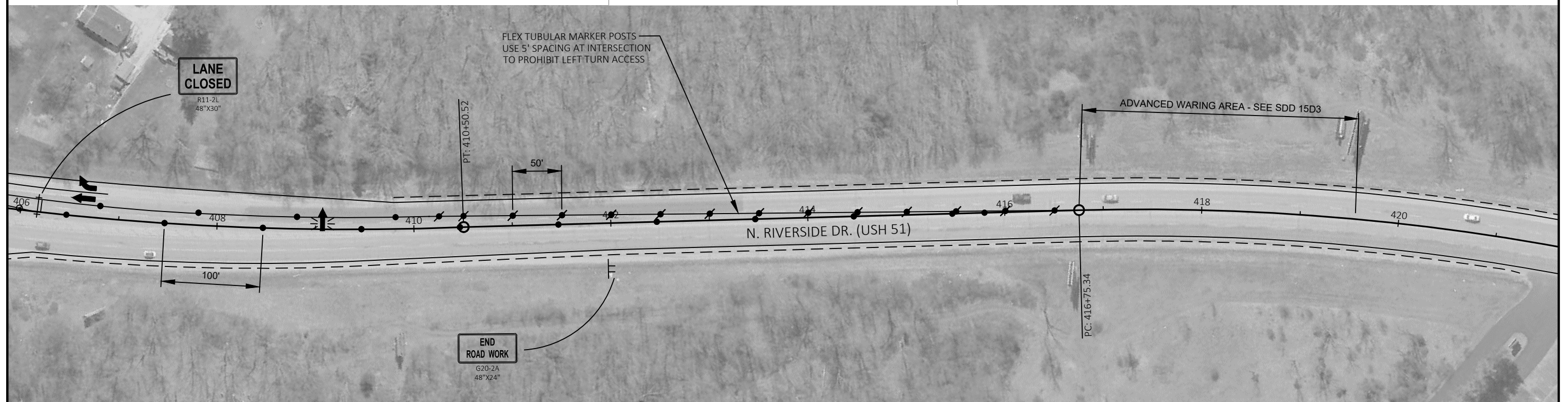
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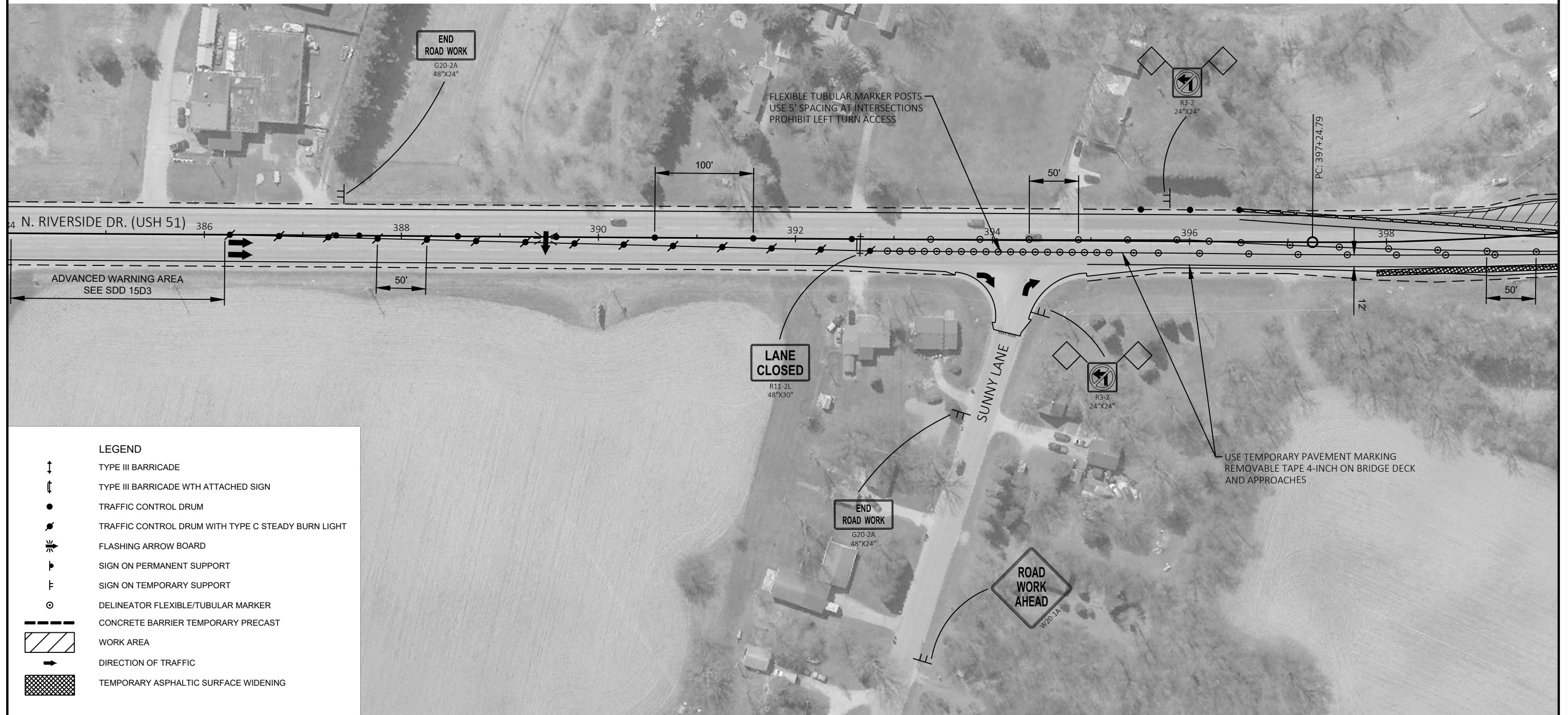
LEGEND	
	TYPE III BARRICADE
	TYPE III BARRICADE WTH ATTACHED SIGN
	TRAFFIC CONTROL DRUM
	TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
	FLASHING ARROW BOARD
	SIGN ON PERMANENT SUPPORT
	SIGN ON TEMPORARY SUPPORT
	DELINEATOR FLEXIBLE/TUBULAR MARKER
	CONCRETE BARRIER TEMPORARY PRECAST
	WORK AREA
	DIRECTION OF TRAFFIC
	TEMPORARY ASPHALTIC SURFACE WIDENING





LEGEND	
	TYPE III BARRICADE
	TYPE III BARRICADE WTH ATTACHED SIGN
	TRAFFIC CONTROL DRUM
	TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
	FLASHING ARROW BOARD
	SIGN ON PERMANENT SUPPORT
	SIGN ON TEMPORARY SUPPORT
	DELINEATOR FLEXIBLE/TUBULAR MARKER
	CONCRETE BARRIER TEMPORARY PRECAST
	WORK AREA
	DIRECTION OF TRAFFIC
	TEMPORARY ASPHALTIC SURFACE WIDENING





PROJECT NO: 5350-01-73

HWY: USH 51

COUNTY: ROCK

TRAFFIC CONTROL - B-53-157 - STAGE 2

SHEET

66

E

FILE NAME : N:\PDS\C3D\53500103\SHEETPLAN\026001_S2.DWG
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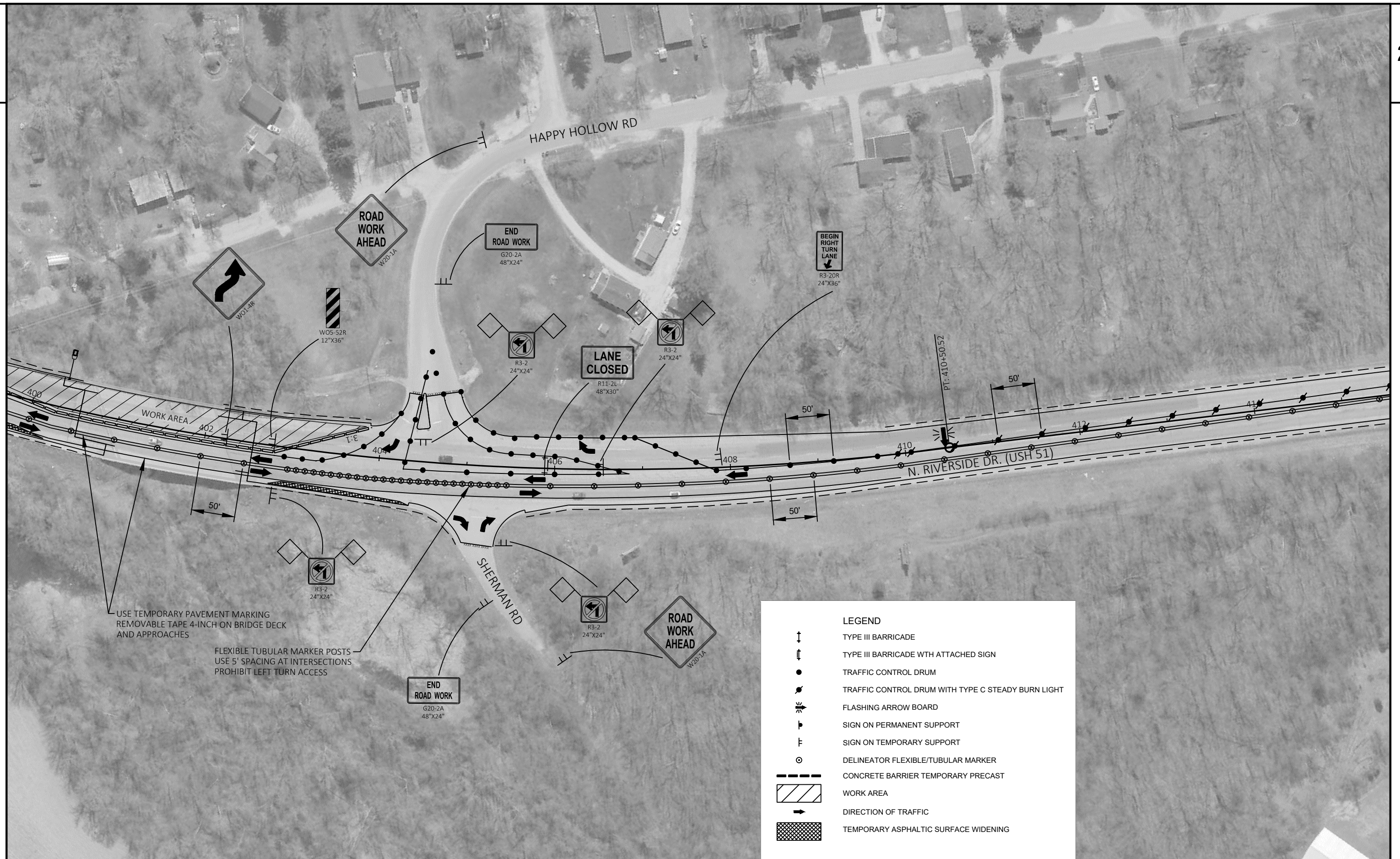
PLOT DATE : 11/9/2018 11:01 AM

PLOT BY : SCHMIDT, DAVID B

PLOT NAME :

PLOT SCALE : 1 IN:100 FT

WISDOT/CADDs SHEET 42



PROJECT NO: 5350-01-73

HWY: USH 51

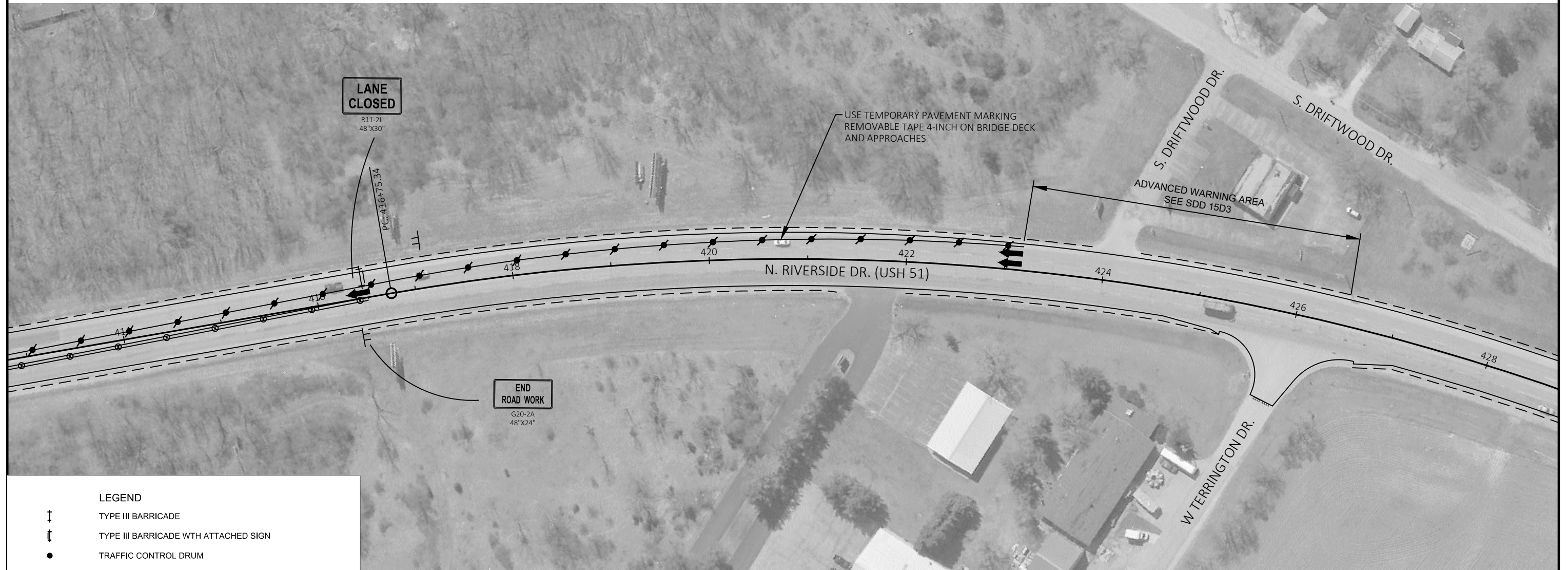
COUNTY: ROCK

TRAFFIC CONTROL - B-53-157 - STAGE 2

SHEET

67

E



PROJECT NO: 5350-01-73

HWY: USH 51

COUNTY: ROCK

TRAFFIC CONTROL - B-53-157 - STAGE 2

SHEET

68

E

FILE NAME : N:\PDS\C3D\53500103\SHEETSPLAN\026001_S2.DWG
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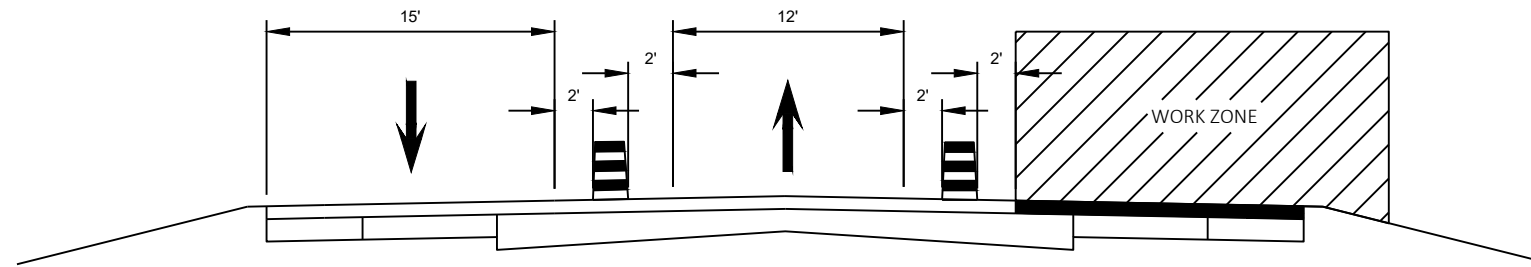
PLOT DATE : 11/9/2018 11:01 AM

PLOT BY : SCHMIDT, DAVID B

PLOT NAME :

PLOT SCALE : 1 IN:100 FT

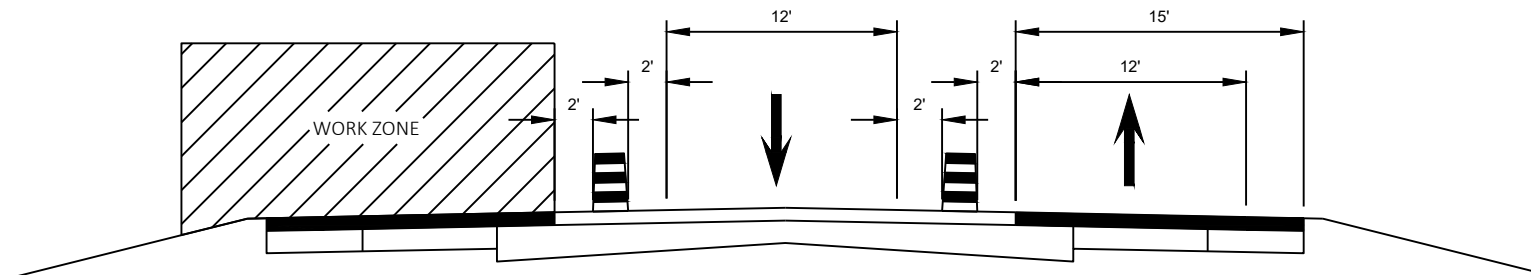
WISDOT/CADDs SHEET 42



CONSTRUCTION STAGE 1 TYPICAL SECTION - US 51 (SOUTH RIVERSIDE DR.)

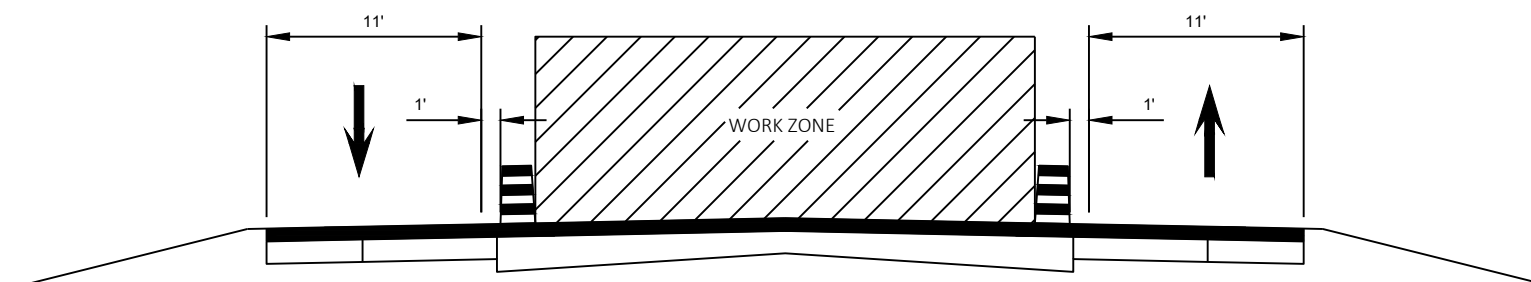
STA 112+00 TO 129+95
STA 146+94 TO 158+65
STA 170+00 TO 280+00

*TRAFFIC CONTROL - USING FOLLOWING
SDDs FOR REFERENCING TRAFFIC CONTROL
PER STAGE:
15D12-06A
15D21-06
15D23-06



CONSTRUCTION STAGE 2 TYPICAL SECTION - US 51 (SOUTH RIVERSIDE DR.)

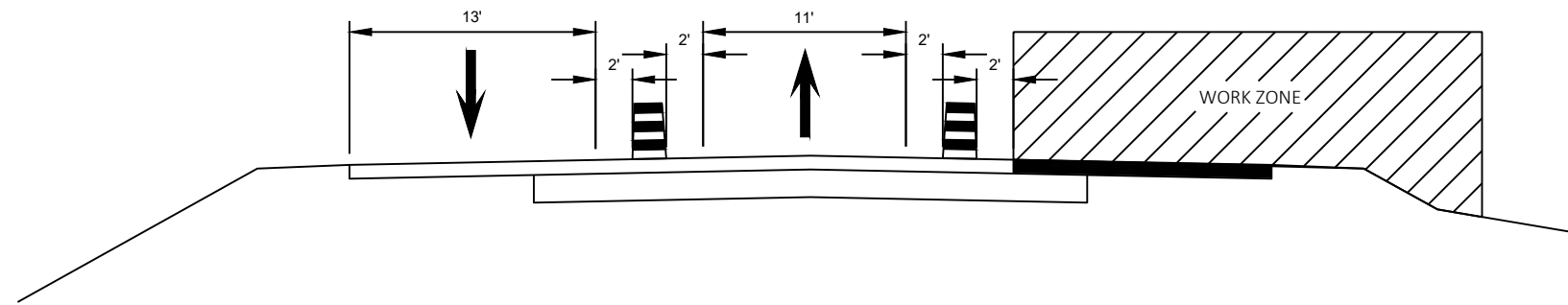
STA 112+00 TO 129+95
STA 146+94 TO 158+65
STA 170+00 TO 280+00



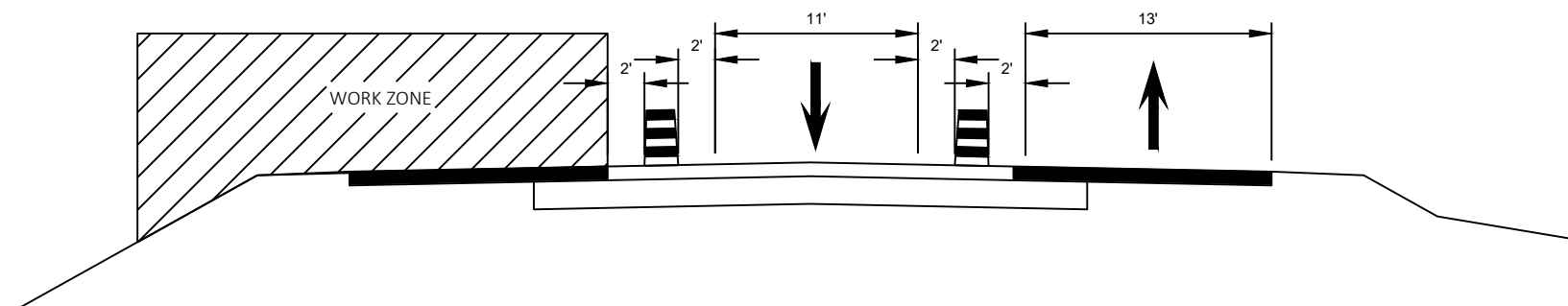
CONSTRUCTION STAGE 3 TYPICAL SECTION - US 51 (SOUTH RIVERSIDE DR.)

STA 112+00 TO 129+95
STA 146+94 TO 158+65
STA 170+00 TO 280+00

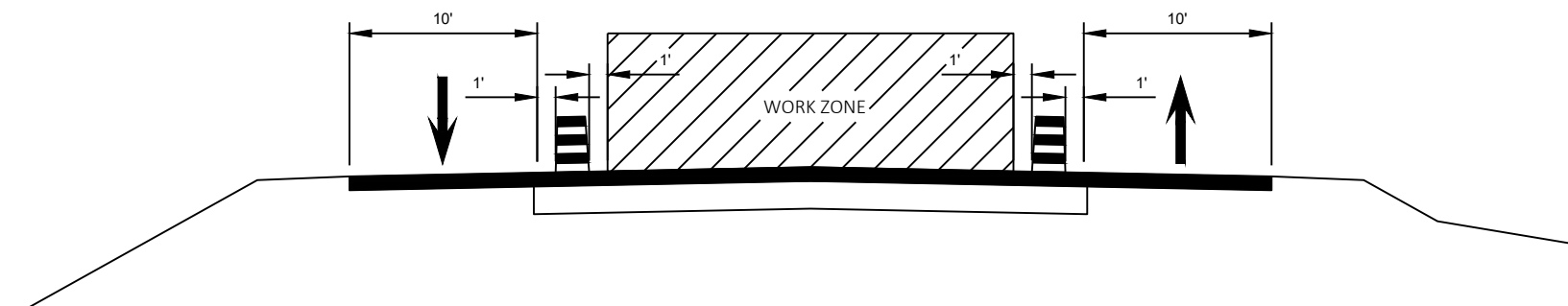
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SDDs FOR REFERENCING TRAFFIC CONTROL
PER STAGE:
15D12-06A
15D21-06
15D23-06



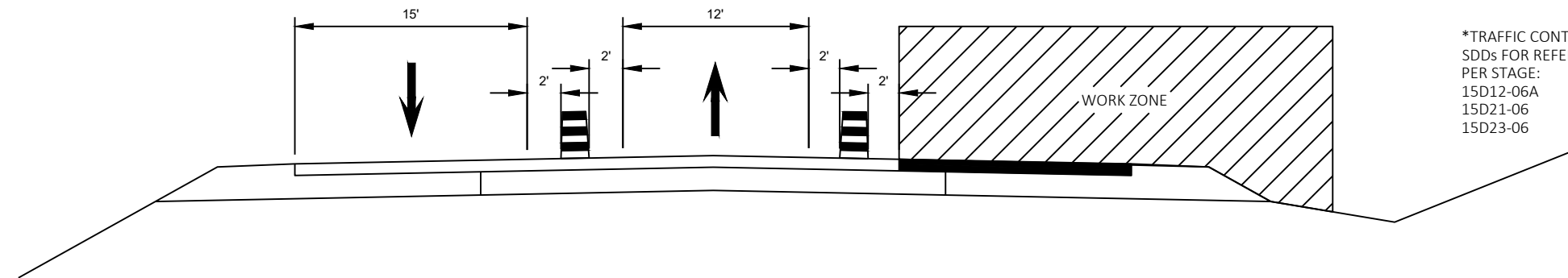
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STA 280+00 TO 289+00



CONSTRUCTION STAGE 2 TYPICAL SECTION - US 51 (SOUTH RIVERSIDE DR.)
STA 280+00 TO 289+00

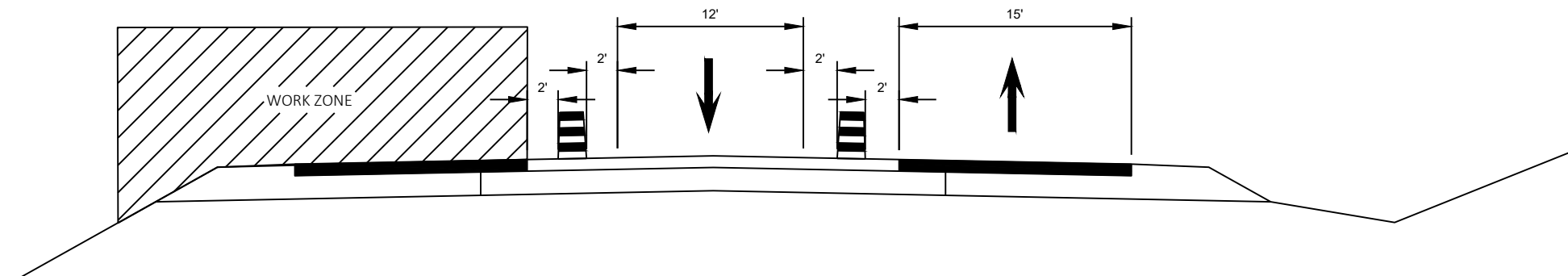


CONSTRUCTION STAGE 3 TYPICAL SECTION - US 51 (SOUTH RIVERSIDE DR.)
STA 280+00 TO 289+00

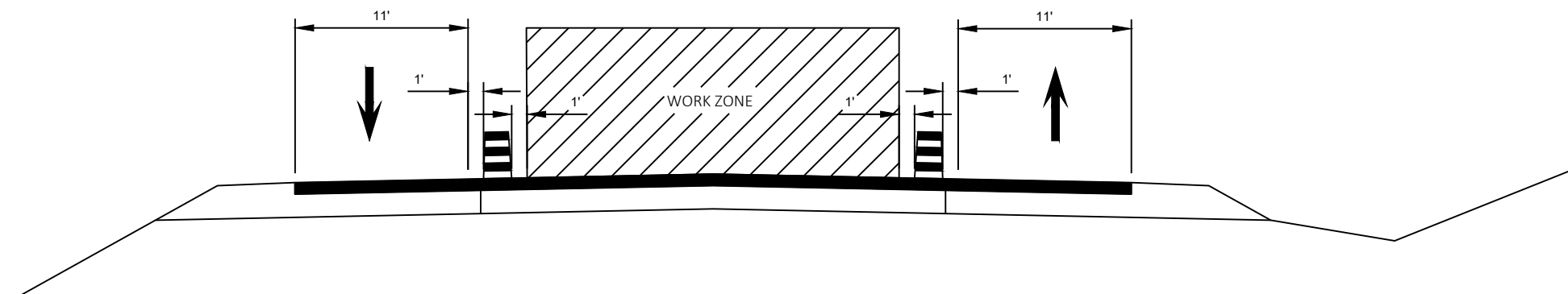


*TRAFFIC CONTROL - USING FOLLOWING
SDDs FOR REFERENCING TRAFFIC CONTROL
PER STAGE:
15D12-06A
15D21-06
15D23-06

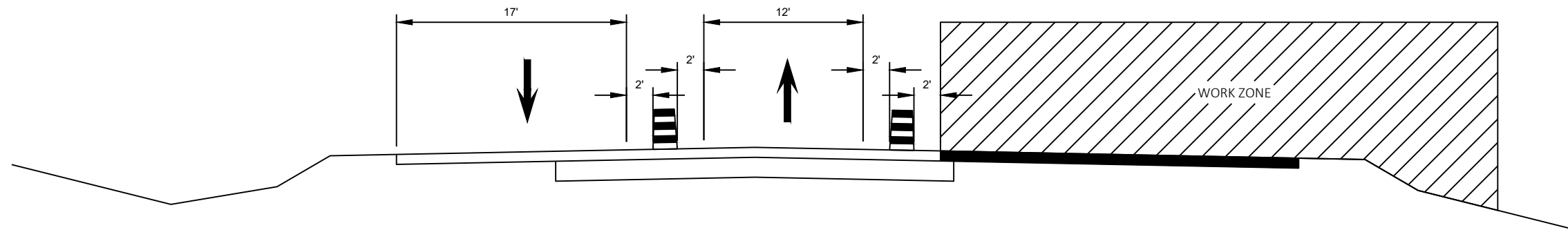
CONSTRUCTION STAGE 1 TYPICAL SECTION - US 51 (SOUTH RIVERSIDE DR.)
STA 289+00 TO 330+00



CONSTRUCTION STAGE 2 TYPICAL SECTION - US 51 (SOUTH RIVERSIDE DR.)
STA 289+00 TO 330+00

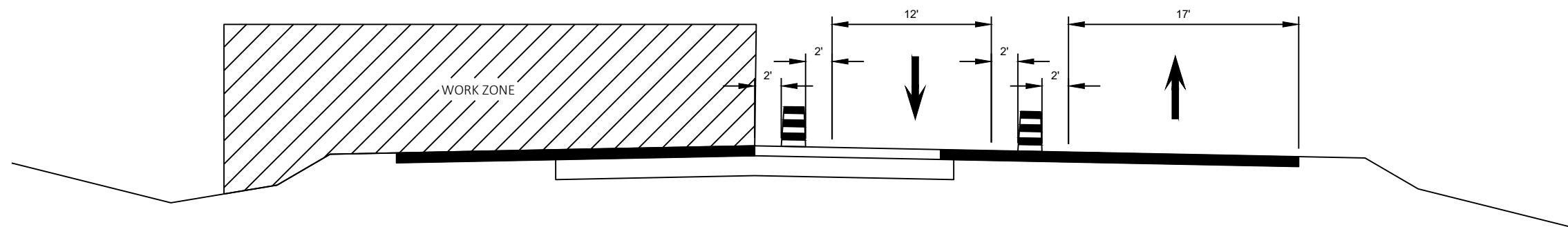


CONSTRUCTION STAGE 3 TYPICAL SECTION - US 51 (SOUTH RIVERSIDE DR.)
STA 289+00 TO 330+00

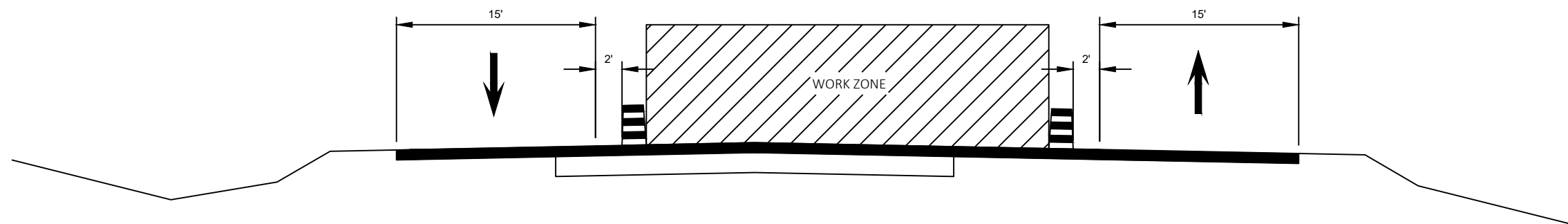


CONSTRUCTION STAGE 1 TYPICAL SECTION - USH 51 (NORTH RIVERSIDE DR.)
STA 330+00 TO 530+00

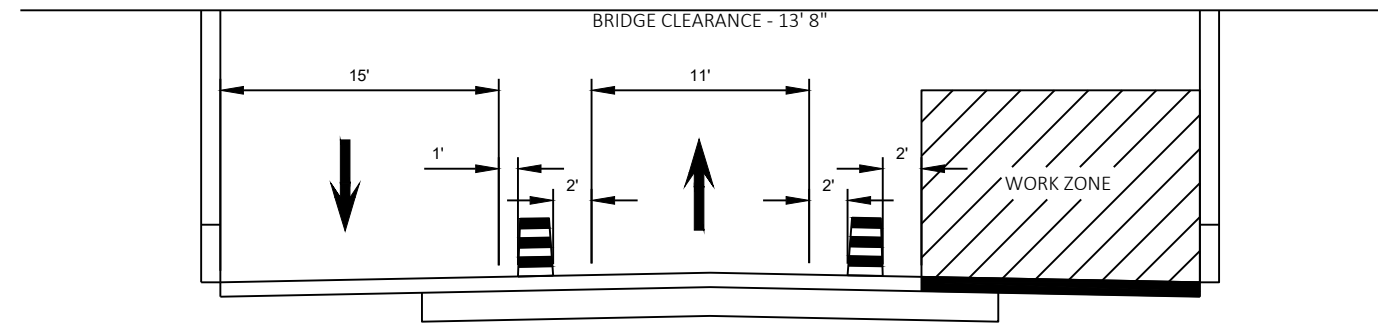
*TRAFFIC CONTROL - USING FOLLOWING
SDDs FOR REFERENCING TRAFFIC CONTROL
PER STAGE:
15D12-06A
15D21-06
15D23-06



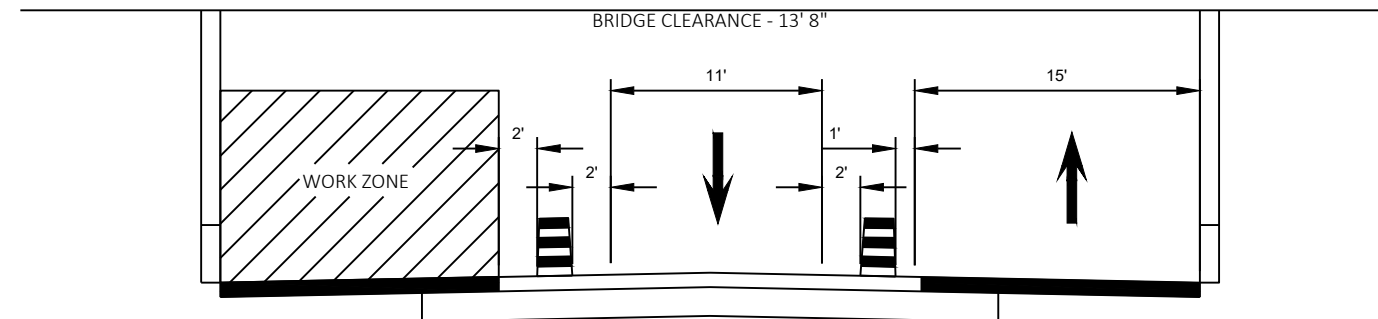
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STA 330+00 TO 530+00



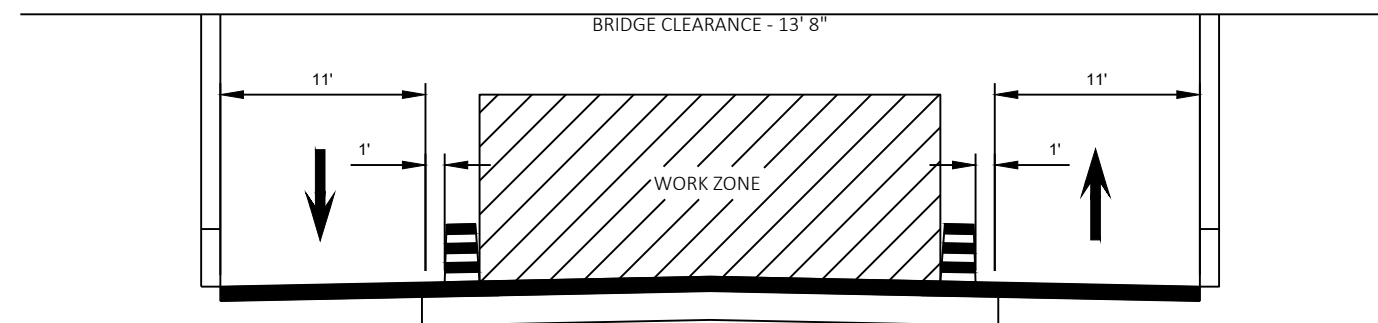
CONSTRUCTION STAGE 2 TYPICAL SECTION - USH 51 (NORTH RIVERSIDE DR.)
STA 330+00 TO 530+00



CONSTRUCTION STAGE 1 TYPICAL SECTION - US 51 (SOUTH RIVERSIDE DR.)
B-53-0340 CMSTPP RAILROAD BRIDGE

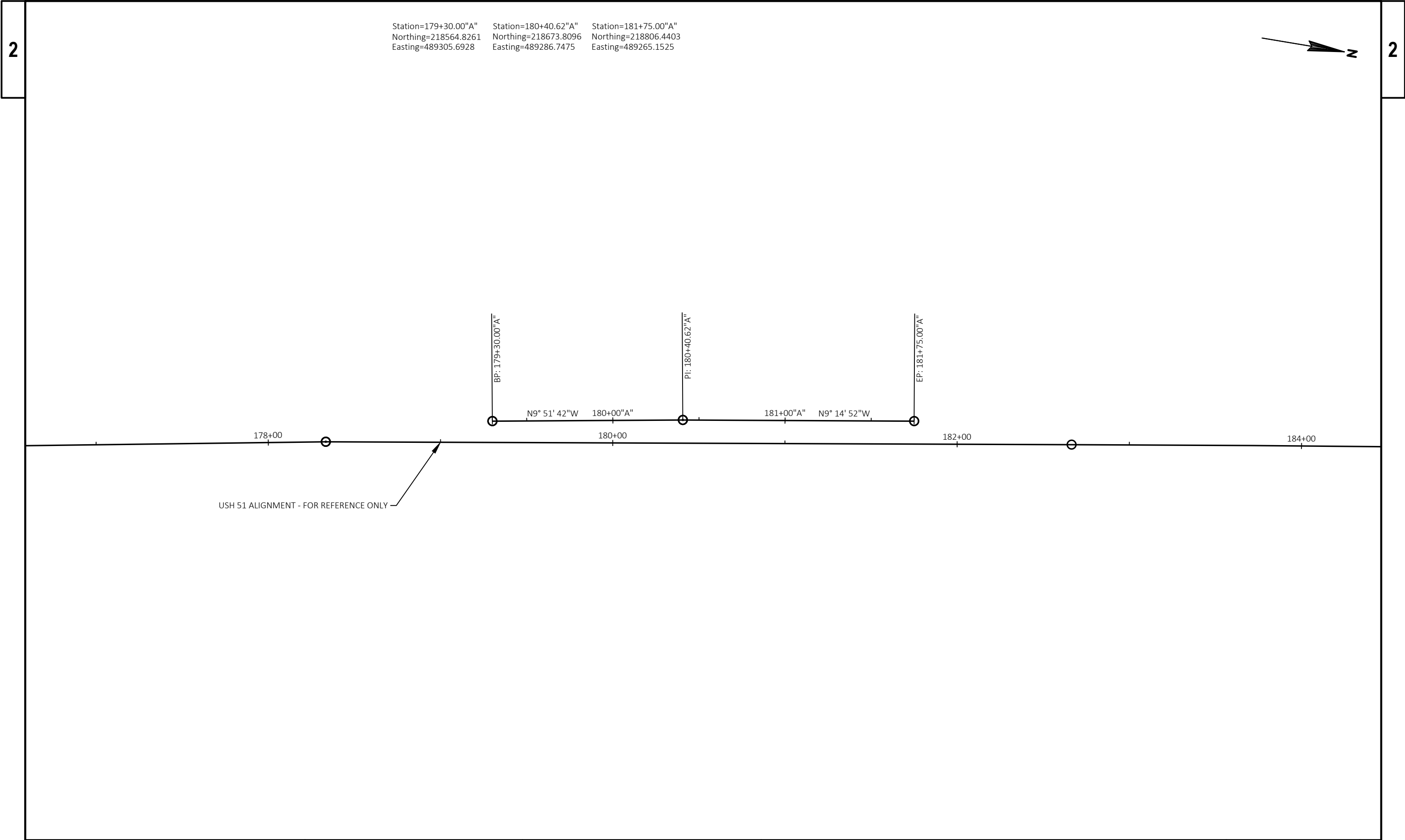


CONSTRUCTION STAGE 2 TYPICAL SECTION - US 51 (SOUTH RIVERSIDE DR.)
B-53-0340 CMSTPP RAILROAD BRIDGE



CONSTRUCTION STAGE 3 TYPICAL SECTION - US 51 (SOUTH RIVERSIDE DR.)
B-53-0340 CMSTPP RAILROAD BRIDGE

*TRAFFIC CONTROL - USING FOLLOWING
SDDs FOR REFERENCING TRAFFIC CONTROL
PER STAGE:
15D12-06A
15D21-06
15D23-06





USH 51 ALIGNMENT - FOR REFERENCE ONLY

Station=221+75.00"BST"

Northing=222781.0854

Easting=488924.4266

PI STA = 222+12.50"BST"

Y = 222818.257

X = 488929.371

DELTA = 0°43'32"

D = 0°58'03"

T = 37.50'

L = 75.00'

R = 5922.35'

PC STA = 221+75.00"BST"

PT STA = 222+50.00"BST"

Station=222+50.00"BST"

Northing=222855.3639

Easting=488934.7859

Station=269+00.00"B"

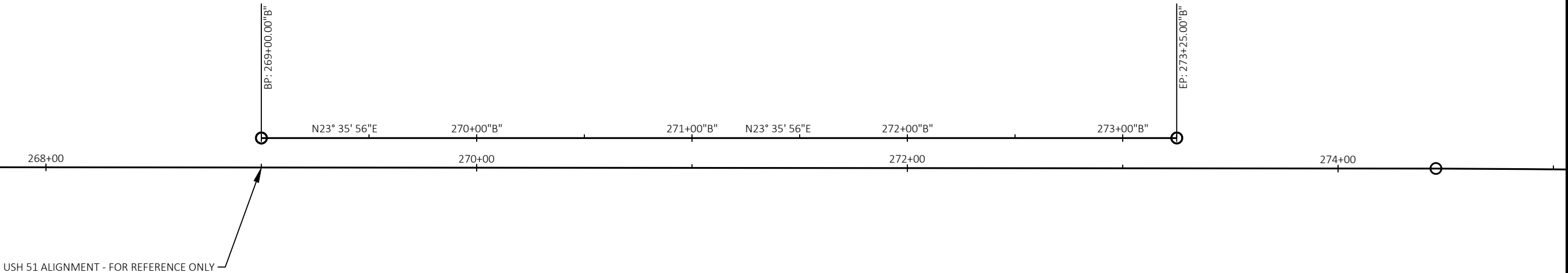
Northing=227280.4190

Easting=490313.3298

Station=273+25.00"B"

Northing=227669.8769

Easting=490483.4700





Station=285+95.00"C"
Northing=228785.9293
Easting=491089.7927

Station=286+51.51"C"
Northing=228834.2027
Easting=491119.1744

Station=287+04.97"C"
Northing=228879.7557
Easting=491147.1572

Station=287+50.00"C"
Northing=228918.0657
Easting=491170.8117

Station=288+22.00"E"
Northing=228979.6206
Easting=491208.1559

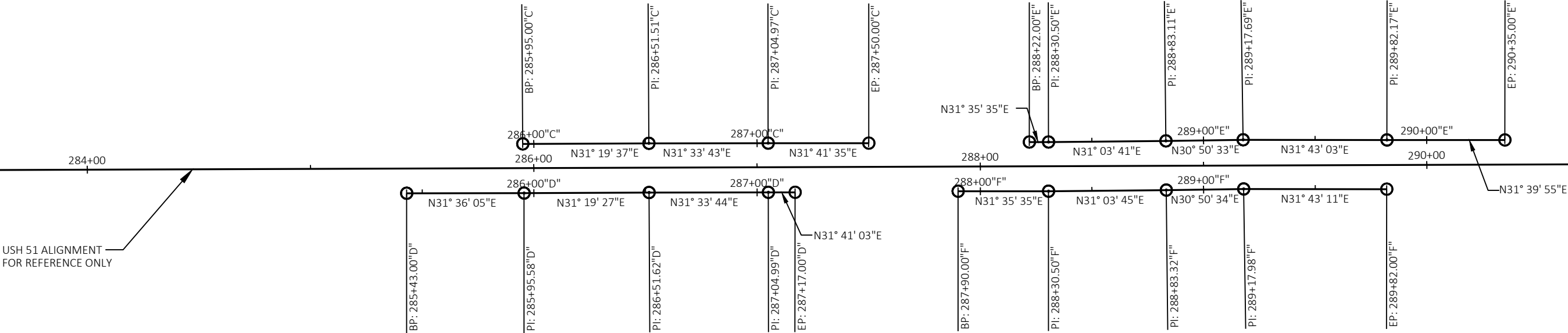
Station=288+30.50"E"
Northing=228986.8647
Easting=491212.6113

Station=288+83.11"E"
Northing=229031.9286
Easting=491239.7543

Station=289+17.69"E"
Northing=229061.6212
Easting=491257.4845

Station=289+82.17"E"
Northing=229116.4636
Easting=491291.3790

Station=290+35.00"E"
Northing=229161.4354
Easting=491319.1166



USH 51 ALIGNMENT
FOR REFERENCE ONLY

Station=285+43.00"D"
Northing=228730.1139
Easting=491081.2833

Station=285+95.58"D"
Northing=228774.8959
Easting=491108.8348

Station=286+51.62"D"
Northing=228822.7653
Easting=491137.9676

Station=287+04.99"D"
Northing=228868.2403
Easting=491165.9028

Station=287+17.00"D"
Northing=228878.4637
Easting=491172.2130

Station=287+90.00"F"
Northing=228940.8379
Easting=491210.1310

Station=288+30.50"F"
Northing=228975.3393
Easting=491231.3507

Station=288+83.32"F"
Northing=229020.5774
Easting=491258.5997

Station=289+17.98"F"
Northing=229050.3422
Easting=491276.3732

Station=289+82.00"F"
Northing=229104.7934
Easting=491310.0289

Station=347+35.00"H"
Northing=233946.5709
Easting=494127.5350

PI STA = 348+40.78"H"
Y = 234052.351
X = 494128.466
DELTA = 4°46'31"
D = 2°15'30"
T = 105.78'
L = 211.45'
R = 2537.00'
PC STA = 347+35.00"H"
PT STA = 349+46.45"H"

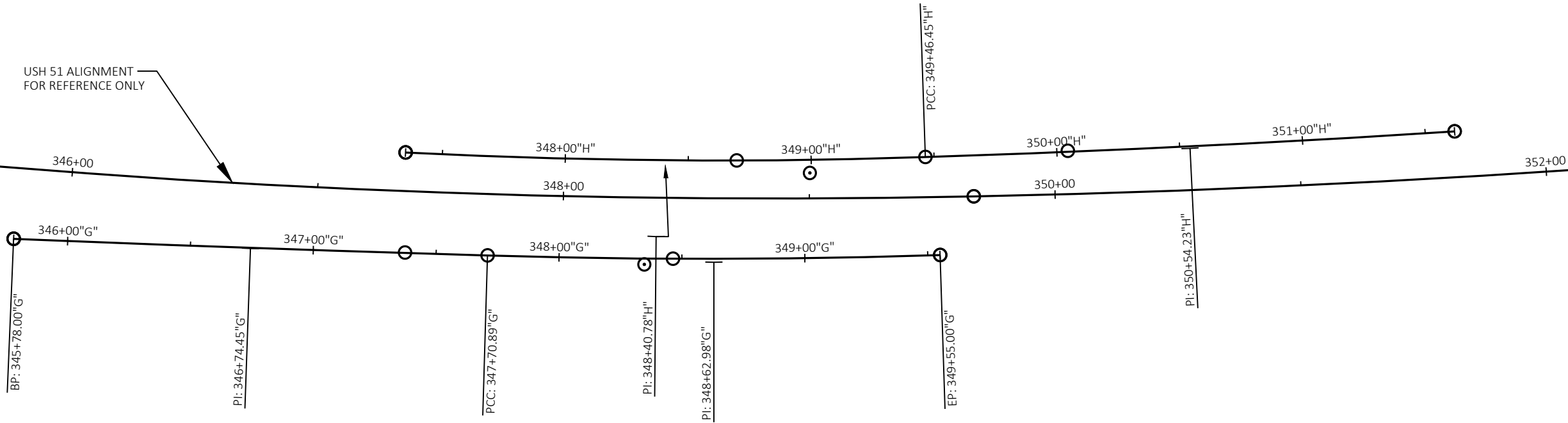
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Northing=234157.8415
Easting=494120.5885

PI STA = 350+54.23"H"
Y = 234265.327
X = 494112.562
DELTA = 1°48'34"
D = 0°50'22"
T = 107.78'
L = 215.55'
R = 6824.99'
PC STA = 349+46.45"H"
PT STA = 351+62.00"H"

Station=351+62.00"H"
Northing=234372.5055
Easting=494101.1446



USH 51 ALIGNMENT
FOR REFERENCE ONLY



Station=345+78.00"G"	PI STA = 346+74.45"G"	Station=347+70.89"G"	PI STA = 348+62.98"G"	Station=349+55.00"G"
Northing=233788.7200	Y = 233885.166	Northing=233981.6057	Y = 234073.683	Northing=234165.5186
Easting=494169.2720	X = 494169.149	Easting=494167.9800	X = 494166.864	Easting=494160.0937
	DELTA = 0°37'18"		DELTA = 3°31'17"	
	D = 0°19'20"		D = 1°54'46"	
	T = 96.45'		T = 92.08'	
	L = 192.89'		L = 184.11'	
	R = 17774.67'		R = 2995.57'	
	PC STA = 345+78.00"G"		PC STA = 347+70.89"G"	
	PT STA = 347+70.89"G"		PT STA = 349+55.00"G"	

Estimate Of Quantities

5350-01-73

Line	Item	Item Description	Unit	Total	Qty
0002	201.0110	Clearing	SY	756.000	756.000
0004	204.0100	Removing Pavement	SY	260.000	260.000
0006	204.0120	Removing Asphaltic Surface Milling	SY	271,819.000	271,819.000
0008	204.0150	Removing Curb & Gutter	LF	71.000	71.000
0010	204.0155	Removing Concrete Sidewalk	SY	278.000	278.000
0012	204.0165	Removing Guardrail	LF	1,125.000	1,125.000
0014	204.0245	Removing Storm Sewer (size) 01. 12-INCH	LF	8.000	8.000
0016	205.0100	Excavation Common	CY	93.000	93.000
0018	213.0100	Finishing Roadway (project) 01. 5350-01-73	EACH	1.000	1.000
0020	305.0110	Base Aggregate Dense 3/4-Inch	TON	6,595.000	6,595.000
0022	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	230.000	230.000
0024	305.0500	Shaping Shoulders	STA	383.000	383.000
0026	390.0203	Base Patching Asphaltic	SY	6,795.000	6,795.000
0028	415.0120	Concrete Pavement 12-Inch	SY	109.000	109.000
0030	415.0410	Concrete Pavement Approach Slab	SY	380.000	380.000
0032	416.1010	Concrete Surface Drains	CY	2.000	2.000
0034	440.4410	Incentive IRI Ride	DOL	51,120.000	51,120.000
0036	455.0605	Tack Coat	GAL	33,530.000	33,530.000
0038	460.0105.S	HMA Percent Within Limits (PWL) Test Strip Volumetrics	EACH	2.000	2.000
0040	460.0110.S	HMA Percent Within Limits (PWL) Test Strip Density	EACH	2.000	2.000
0042	460.2000	Incentive Density HMA Pavement	DOL	4,920.000	4,920.000
0044	460.2005	Incentive Density PWL HMA Pavement	DOL	34,770.000	34,770.000
0046	460.2010	Incentive Air Voids HMA Pavement	DOL	47,080.000	47,080.000
0048	460.4110.S	Reheating HMA Pavement Longitudinal Joints	LF	40,181.000	40,181.000
0050	460.6223	HMA Pavement 3 MT 58-28 S	TON	35,520.000	35,520.000
0052	460.6224	HMA Pavement 4 MT 58-28 S	TON	19,340.000	19,340.000
0054	460.6424	HMA Pavement 4 MT 58-28 H	TON	1,887.000	1,887.000
0056	465.0125	Asphaltic Surface Temporary	TON	200.000	200.000
0058	502.0717.S	Crack Sealing Epoxy	LF	1,092.000	1,092.000
0060	502.3200	Protective Surface Treatment	SY	1,207.000	1,207.000
0062	502.3210	Pigmented Surface Sealer	SY	137.000	137.000
0064	509.0301	Preparation Decks Type 1	SY	3.000	3.000
0066	509.0302	Preparation Decks Type 2	SY	1.000	1.000
0068	509.0500	Cleaning Decks	SY	1,207.000	1,207.000
0070	509.1500	Concrete Surface Repair	SF	9.000	9.000
0072	509.2000	Full-Depth Deck Repair	SY	2.000	2.000
0074	509.2500	Concrete Masonry Overlay Decks	CY	67.000	67.000
0076	509.9020.S	Epoxy Crack Sealing	LF	66.000	66.000
0078	509.9050.S	Cleaning Parapets	LF	340.000	340.000
0080	520.1012	Apron Endwalls for Culvert Pipe 12-Inch	EACH	4.000	4.000

Estimate Of Quantities

5350-01-73

Line	Item	Item Description	Unit	Total	Qty
0082	520.3412	Culvert Pipe Class III-A Non-metal 12-Inch	LF	36.000	36.000
0084	520.8000	Concrete Collars for Pipe	EACH	5.000	5.000
0086	521.3112	Culvert Pipe Corrugated Steel 12-Inch	LF	8.000	8.000
0088	601.0411	Concrete Curb & Gutter 30-Inch Type D	LF	115.000	115.000
0090	601.0557	Concrete Curb & Gutter 6-Inch Sloped 36-Inch Type D	LF	368.000	368.000
0092	602.0405	Concrete Sidewalk 4-Inch	SF	2,677.000	2,677.000
0094	602.0410	Concrete Sidewalk 5-Inch	SF	210.000	210.000
0096	602.0505	Curb Ramp Detectable Warning Field Yellow	SF	154.000	154.000
0098	603.8000	Concrete Barrier Temporary Precast Delivered	LF	744.000	744.000
0100	603.8125	Concrete Barrier Temporary Precast Installed	LF	1,428.000	1,428.000
0102	606.0200	Riprap Medium	CY	2.000	2.000
0104	608.0318	Storm Sewer Pipe Reinforced Concrete Class III 18-Inch	LF	31.000	31.000
0106	608.0324	Storm Sewer Pipe Reinforced Concrete Class III 24-Inch	LF	10.000	10.000
0108	608.2324	Storm Sewer Pipe Reinforced Concrete Horizontal Elliptical Class HE-III 24x38-Inch	LF	6.000	6.000
0110	611.0430	Reconstructing Inlets	EACH	1.000	1.000
0112	611.0612	Inlet Covers Type C	EACH	1.000	1.000
0114	611.0642	Inlet Covers Type MS	EACH	3.000	3.000
0116	611.0645	Inlet Covers Type MS-A	EACH	4.000	4.000
0118	611.0654	Inlet Covers Type V	EACH	1.000	1.000
0120	611.3220	Inlets 2x2-FT	EACH	1.000	1.000
0122	611.3901	Inlets Median 1 Grate	EACH	2.000	2.000
0124	611.3903	Inlets Median 3 Grate	EACH	1.000	1.000
0126	611.8110	Adjusting Manhole Covers	EACH	25.000	25.000
0128	611.8115	Adjusting Inlet Covers	EACH	5.000	5.000
0130	611.8120.S	Cover Plates Temporary	EACH	25.000	25.000
0132	612.0212	Pipe Underdrain Unperforated 12-Inch	LF	28.000	28.000
0134	612.0902.S	Insulation Board Polystyrene (inch) 01. 2 Inch	SY	11.000	11.000
0136	614.0010	Barrier System Grading Shaping Finishing	EACH	7.000	7.000
0138	614.0305	Steel Plate Beam Guard Class A	LF	25.000	25.000
0140	614.0340	Steel Plate Beam Guard Over Low-Fill Culverts Class A	LF	89.000	89.000
0142	614.0345	Steel Plate Beam Guard Short Radius	LF	13.000	13.000
0144	614.0370	Steel Plate Beam Guard Energy Absorbing Terminal	EACH	1.000	1.000
0146	614.0390	Steel Plate Beam Guard Short Radius Terminal	EACH	1.000	1.000
0148	614.2300	MGS Guardrail 3	LF	732.000	732.000
0150	614.2340	MGS Guardrail 3 L	LF	224.000	224.000
0152	614.2350	MGS Guardrail Short Radius	LF	25.000	25.000
0154	614.2500	MGS Thrie Beam Transition	LF	312.000	312.000

Estimate Of Quantities

5350-01-73

Line	Item	Item Description	Unit	Total	Qty
0156	614.2610	MGS Guardrail Terminal EAT	EACH	13.000	13.000
0158	614.2630	MGS Guardrail Short Radius Terminal	EACH	1.000	1.000
0160	618.0100	Maintenance And Repair of Haul Roads (project) 01. 5350-01-73	EACH	1.000	1.000
0162	619.1000	Mobilization	EACH	1.000	1.000
0164	624.0100	Water	MGAL	27.000	27.000
0166	625.0100	Topsoil	SY	2,080.000	2,080.000
0168	627.0200	Mulching	SY	130.000	130.000
0170	628.1104	Erosion Bales	EACH	5.000	5.000
0172	628.1504	Silt Fence	LF	2,403.000	2,403.000
0174	628.1520	Silt Fence Maintenance	LF	2,403.000	2,403.000
0176	628.1905	Mobilizations Erosion Control	EACH	3.000	3.000
0178	628.1910	Mobilizations Emergency Erosion Control	EACH	1.000	1.000
0180	628.2006	Erosion Mat Urban Class I Type A	SY	2,617.000	2,617.000
0182	628.7005	Inlet Protection Type A	EACH	5.000	5.000
0184	628.7504	Temporary Ditch Checks	LF	12.000	12.000
0186	628.7555	Culvert Pipe Checks	EACH	24.000	24.000
0188	629.0210	Fertilizer Type B	CWT	2.000	2.000
0190	630.0120	Seeding Mixture No. 20	LB	71.000	71.000
0192	630.0200	Seeding Temporary	LB	71.000	71.000
0194	633.5200	Markers Culvert End	EACH	3.000	3.000
0196	634.0616	Posts Wood 4x6-Inch X 16-FT	EACH	11.000	11.000
0198	634.0618	Posts Wood 4x6-Inch X 18-FT	EACH	2.000	2.000
0200	637.2210	Signs Type II Reflective H	SF	78.000	78.000
0202	637.2230	Signs Type II Reflective F	SF	45.000	45.000
0204	638.2602	Removing Signs Type II	EACH	9.000	9.000
0206	638.3000	Removing Small Sign Supports	EACH	5.000	5.000
0208	642.5201	Field Office Type C	EACH	1.000	1.000
0210	643.0300	Traffic Control Drums	DAY	60,473.000	60,473.000
0212	643.0420	Traffic Control Barricades Type III	DAY	2,842.000	2,842.000
0214	643.0500	Traffic Control Flexible Tubular Marker Posts	EACH	91.000	91.000
0216	643.0600	Traffic Control Flexible Tubular Marker Bases	EACH	91.000	91.000
0218	643.0705	Traffic Control Warning Lights Type A	DAY	5,684.000	5,684.000
0220	643.0715	Traffic Control Warning Lights Type C	DAY	4,256.000	4,256.000
0222	643.0800	Traffic Control Arrow Boards	DAY	462.000	462.000
0224	643.0900	Traffic Control Signs	DAY	6,818.000	6,818.000
0226	643.1050	Traffic Control Signs PCMS	DAY	14.000	14.000
0228	643.5000	Traffic Control	EACH	1.000	1.000
0230	645.0120	Geotextile Type HR	SY	3.000	3.000
0232	646.1020	Marking Line Epoxy 4-Inch	LF	175,420.000	175,420.000

Estimate Of Quantities

5350-01-73

Line	Item	Item Description	Unit	Total	Qty
0234	646.1545	Marking Line Grooved Wet Ref Contrast Epoxy 4-Inch	LF	12,780.000	12,780.000
0236	646.3020	Marking Line Epoxy 8-Inch	LF	590.000	590.000
0238	646.3545	Marking Line Grooved Wet Ref Contrast Epoxy 8-Inch	LF	2,815.000	2,815.000
0240	646.5020	Marking Arrow Epoxy	EACH	95.000	95.000
0242	646.5120	Marking Word Epoxy	EACH	10.000	10.000
0244	646.6120	Marking Stop Line Epoxy 18-Inch	LF	656.000	656.000
0246	646.7120	Marking Diagonal Epoxy 12-Inch	LF	2,800.000	2,800.000
0248	646.7420	Marking Crosswalk Epoxy Transverse Line 6-Inch	LF	835.000	835.000
0250	646.8120	Marking Curb Epoxy	LF	585.000	585.000
0252	646.8220	Marking Island Nose Epoxy	EACH	21.000	21.000
0254	646.9000	Marking Removal Line 4-Inch	LF	1,900.000	1,900.000
0256	646.9200	Marking Removal Line Wide	LF	50.000	50.000
0258	649.0105	Temporary Marking Line Paint 4-Inch	LF	29,780.000	29,780.000
0260	649.0150	Temporary Marking Line Removable Tape 4-Inch	LF	1,300.000	1,300.000
0262	650.8000	Construction Staking Resurfacing Reference	LF	41,464.000	41,464.000
0264	650.9000	Construction Staking Curb Ramps	EACH	17.000	17.000
0266	650.9910	Construction Staking Supplemental Control (project) 01. 5350-01-73	LS	1.000	1.000
0268	652.0225	Conduit Rigid Nonmetallic Schedule 40 2-Inch	LF	370.000	370.000
0270	652.0605	Conduit Special 2-Inch	LF	780.000	780.000
0272	652.0800	Conduit Loop Detector	LF	2,676.000	2,676.000
0274	653.0135	Pull Boxes Steel 24x36-Inch	EACH	22.000	22.000
0276	653.0905	Removing Pull Boxes	EACH	7.000	7.000
0278	655.0700	Loop Detector Lead In Cable	LF	8,592.000	8,592.000
0280	655.0800	Loop Detector Wire	LF	8,079.000	8,079.000
0282	690.0150	Sawing Asphalt	LF	1,610.000	1,610.000
0284	690.0250	Sawing Concrete	LF	584.000	584.000
0286	ASP.1T0A	On-the-Job Training Apprentice at \$5.00/HR	HRS	600.000	600.000
0288	ASP.1T0G	On-the-Job Training Graduate at \$5.00/HR	HRS	350.000	350.000
0290	SPV.0060	Special 01. Concrete Masonry Drainage Structure	EACH	2.000	2.000
0292	SPV.0060	Special 02. Install Conduit Into Existing Item	EACH	10.000	10.000
0294	SPV.0060	Special 03. Remove Loop Detector	EACH	15.000	15.000
0296	SPV.0060	Special 05. Temporary Sidewalk and Crosswalk	EACH	19.000	19.000
0298	SPV.0060	Special 06. Preparation for Concrete Masonry Drainage Structure	EACH	3.000	3.000
0300	SPV.0180	Special 01. Removing Distressed Pavement Milling	SY	8,350.000	8,350.000
0302	SPV.0195	Special 01. 4 MT Modified - Terminal Blend GTR 1	TON	1,867.000	1,867.000
0304	SPV.0195	Special 02. 4 MT Modified - Terminal Blend GTR 2	TON	1,937.000	1,937.000
0306	SPV.0195	Special 03. 4 MT Modified - Dry Process GTR	TON	1,988.000	1,988.000

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CLEARING						REMOVING CONCRETE SIDEWALK					REMOVING CURB & GUTTER							
201.0110						204.0155					204.0150							
CATEGORY	STATION	TO	STATION	LOCATION	SY	REMARKS	CATEGORY	STATION	LOCATION	SY	REMARKS	CATEGORY	STATION	TO	STATION	LOCATION	LF	REMARKS
0010	179+50	-	181+19	USH 151 LT	131		0010	109+10	BAYLISS SE	8.00		0010	109+10	-	109+17	BAYLISS AVE	15	
	269+45	-	272+66	USH 151 LT	250			109+56	BAYLISS NE	6.50			109+50	-	109+56	BAYLISS AVE	15	
	285+89	-	287+16	USH 151 RT	99			111+05	VALLEY SE	5.50			111+04	-	111+12	VALLEY RD	15	
	286+33	-	287+48	USH 151 LT	89			111+53	VALLEY NE	5.80			111+43	-	111+57	VALLEY RD	15	
	288+23	-	289+49	USH 151 LT	98			124+50	HENDERSON SE	4.70			124+47	-	124+55	HENDERSON AVE	20	
	287+91	-	289+05	USH 151 RT	89			124+94	HENDERSON NE	5.20			124+86	-	124+96	HENDERSON AVE	20	
TOTAL 0010 756								166+75	ELMWOOD SE	3.00			169+23	-	169+37	BRIAR LN	20	
								167+05	ELMWOOD NE	3.00			169+69	-	169+77	BRIAR LN	20	
								169+25	BRIAR SE	6.30			177+17	-	177+30	E BALDWIN WOODS	20	
								169+75	BRIAR NE	6.70			177+64	-	177+73	E BALDWIN WOODS	20	
								177+20	BALDWIN WOODS SE	5.90			217+40	-	217+55	HILLSIDE AVE	20	
								177+70	BALDWIN WOODS NE	5.80			217+90	-	218+00	HILLSIDE AVE	20	
								217+45	HILLSIDE SE	6.00			220+31	-	220+49	INMAN PKWY	23	
								217+95	HILLSIDE NE	5.70			221+15	-	221+50	INMAN PKWY	31	
								220+35	INMAN PKWY SE	7.40			234+90	-	235+06	E AZALEA TERRACE	22	
								234+95	AZALEA SE	6.00			235+46	-	235+58	E AZALEA TERRACE	22	
								235+55	AZALEA NE	6.10			271+17	-	271+33	E PHILHOWER RD	22	
								271+22	PHILHOWER SE	6.10			271+88	-	272+01	E PHILHOWER RD	22	
								272+00	PHILHOWER NE	6.00			339+76	-		LOOP 61	5	
								339+76	USH - MEDIAN	2.00	LOOP 21		340+64	-		LOOP 21	5	
								340+64	USH - MEDIAN	2.00	LOOP 61		521+57	-	521+66		6	
								532+20	USH 51 - MEDIAN	90.00	PB-15A TO PB		527+05	-	527+14		6	
								533+17	USH 51 - MEDIAN	20.00	PB-16 TO PB-		529+05	-	529+14		6	Driveway curb
								535+07	USH 51 - MEDIAN	54.00	PB-3 TO PB-3		530+63	-	530+72		6	
								TOTAL 0010 278.00					532+04	-	532+13		6	
													532+21	-	532+30		6	
													532+22	-		LOOP 33	5	
													532+82	-		LOOP 32	5	
													533+16	-		LOOP 81-85	5	
													533+40	-		LOOP 31	5	
													535+07	-		LOOP 71 & 73	5	
													535+57	-		LOOP 72 & 74	5	
													536+22	-		LOOP 75	5	
REMOVING PAVEMENT						TOTAL 0010 71												

REMOVING PAVEMENT						
204.0100						
CATEGORY	STATION	TO	STATION	LOCATION	SY	REMARKS
0010	533+22	-	533+38	USH 51	80	LOOP DETECTORS 81, 83, 85
0010	534+98	-	535+24	USH 51	180	LOOP DETECTORS 41, 43, 45, 71, 73
TOTAL 0010					260	

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REMOVING ASPHALTIC SURFACE MILLING

204.0120					
CATEGORY	STATION	TO	STATION	LOCATION	REMARKS
0010	101+78	-	129+95	HENRY TO CRANSTON	18,229
	146+94	-	400+50	CRANSTON TO B-52-135	168,493
	402+64	-	533+41	B-53-135 TO STH 11	85,097
TOTAL 0010					271,819

REMOVING GUARDRAIL

204.0165					
CATEGORY	STATION	TO	STATION	LOCATION	REMARKS
0010	124+43	-	125+35	LT	72
	179+71	-	180+54	-	84
	270+27	-	271+43	-	116
	286+33	-	287+48	-	148
	287+90	-	288+95	-	148
	347+59	-	349+76	-	300
0010	402+15	-	404+43	-	257
TOTAL 0010					1,125

REMOVING STORM SEWER (12-INCH)

204.0245					
CATEGORY	STATION	TO	STATION	LOCATION	REMARKS
0010	221+48	-	221+56	INMAN PKWY	8
TOTAL 0010					8

EXCAVATION COMMON

205.0100						
CATEGORY	STATION	TO	STATION	LOCATION	REMARKS	
0010	220+88		220+94	INMAN PKWY	3	LOOP DETECTOR 83
	533+22	-	535+38	USH 51	20	LOOP DETECTORS 81, 83, 85
	534+98	-	535+45	USH 51	64	LOOP DETECTORS 41, 43, 45, 71, & 73
	536+18	-	536+26	USH 51	3	LOOP DETECTORS 75
	538+98	-	539+06	USH 51	3	LOOP DETECTORS 46
TOTAL 0010					93	

SHAPING SHOULDERS

305.0500					
CATEGORY	STATION	TO	STATION	LOCATION	REMARKS
0010	111+85	-	129+95	USH 51	18
	146+94	-	158+65	USH 51	12
	170+00	-	179+46	USH 51	9
	181+19	-	269+46	USH 51	88
	272+66	-	285+90	USH 51	13
	289+05	-	330+00	USH 51	41
0010	330+00	-	346+55	USH 51	17
	346+55	-	350+94	USH 51	4
	350+94	-	378+00	USH 51	27
	378+00	-	399+07	USH 51	21
	404+36	-	533+27	USH 51	129
UNDISTRIBUTED					3
TOTAL 0010					383

BASE COURSE ITEMS

		305.0110		305.0120		REMARKS
		BASE AGGREGATE	DENSE 3/4-INCH	BASE AGGREGATE	DENSE 1 1/4-INCH	
CATEGORY	STATION	TO	STATION	LOCATION	TON	TON
0010	111+80	-	113+72	LT	30	-
	221+95	-	222+31	RT	-	7
	280+00	-	287+46	LT	100	-
	279+62	-	287+14	RT	100	-
	288+31	-	338+48	LT	710	-
	287+92	-	339+57	RT	725	-
0010	341+18	-	400+49	RT	800	-
	340+64	-	400+38	LT	860	-
	402+66	-	520+50	RT	1,660	-
	402+06	-	529+45	LT	1,610	-
	400+50	-	400+85		-	54
	402+23	-	402+64		-	53
0010	533+22		535+38	USH 51	-	14
	534+98		535+45	USH 51	-	42
UNDISTRIBUTED					-	60
TOTAL 0010					6,595	230

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CONCRETE SURFACE DRAINS

CATEGORY	STATION	TO	STATION	LOCATION	416.1010 CY	REMARKS
0010	221+41	-	221+50	INMAN PKWAY	1	
0010	221+50			BUS STOP AT INMAN	1	
TOTAL 0010					2	

ASPHALTIC SURFACE TEMPORARY

CATEGORY	STATION	TO	STATION	LOCATION	465.0125 TON	REMARKS
0010	386+00	-	417+00	B-53-157 NB	100	
STAGE 1 TOTAL					100	
0010	386+00	-	417+00	B-53-157 NB	100	
STAGE 2 TOTAL					100	
TOTAL 0010					200	

CULVERT PIPES

CATEGORY	STATION	TO	STATION	LOCATION	520.1012 APRON ENDWALLS FOR CULVERT PIPE 12-INCH EACH	520.3412 CULVERT PIPE CLASS III-A NON- METAL 12-INCH LF	521.3112 CULVERT PIPE CORRUGATED STEEL 12-INCH LF	633.5200 MARKERS CULVERT END EACH	REMARKS
0010	221+91	-	222+33	RT	2	36	-	2	BUS STOP
	221+48		221+56	RT	1	-	8	1	NE CORNER OF INMAN PKW
			400+18	LT	1	-	-	-	
TOTAL 0010					4	36	8	3	

CURB AND GUTTER

CATEGORY	STATION	TO	STATION	LOCATION	601.0411 CONCRETE CURB & GUTTER 30-INCH TYPE D LF	601.0557 CONCRETE CURB & GUTTER 6-INCH SLOPED 36-INCH TYPE D LF	REMARKS
0010	109+11	-	109+56	Bayliss Ave	34		
	111+06	-	111+56	Valley Rd	-	38	
	124+47	-	124+96	Henderson Ave	-	37	
	169+23	-	169+78	Briar Ln	-	40	
	177+17	-	177+17	E. Baldwin Woods	-	40	
	217+40	-	218+00	Hillside Ave	-	39	
	220+31	-	220+49	Inman Parkway	-	22	
	221+14		221+41	Inman Parkway	-	31	
	221+95	-	222+28	BUS STOP	-	39	
	234+90	-	235+58	E. Azalea Terrace	-	41	
	271+17	-	272+02	E. Philhower Rd	-	41	
	339+76			USH 51 - MEDIAN	5	-	LOOP 61
	340+64			USH 51 - MEDIAN	5	-	LOOP 21
	522+57	-	522+66	Inlet RT	6	-	
	527+05	-	527+14	Inlet RT	6	-	
	529+05	-	529+14	Inlet RT	6	-	
	530+63	-	530+72	Inlet RT	6	-	
	532+04	-	532+13	Inlet RT	6	-	
	532+21	-	532+30	Inlet RT	6	-	
	532+22			USH 51 - MEDIAN	5	-	LOOP 33
	532+82			USH 51 - MEDIAN	5	-	LOOP 32
	533+16			USH 51 - MEDIAN	5	-	LOOP 81-85
	533+40			USH 51 - MEDIAN	5	-	LOOP 31
	535+07			USH 51 - MEDIAN	5	-	LOOP 71 & 73
	535+57			USH 51 - MEDIAN	5	-	LOOP 72 & 74
	536+22			USH 51 - MEDIAN	5	-	LOOP 75
TOTAL 0010					115	368	

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ASPHALT PAVEMENT ITEMS

					455.0605	460.6223	460.6224	REMARKS
					TACK COAT	HMA PAVEMENT 3 MT 58-28 S	HMA PAVEMENT 4 MT 58-28 S	
CATEGORY	STATION	TO	STATION	LOCATION	GAL	TON	TON	
0010	107+78	-	129+95	HENRY TO CRANSTON	2,185	2,300	1,800	
	146+94	-	400+50	CRANSTON TO BRIDGE	20,500	21,520	12,990	
	402+63	-	533+41	BRIDGE TO PROJECT END	10,275	10,800	4,445	
	220+88		220+94	LOOP DETECTOR 83	-	-	6	INMAN PKWY
	535+00		535+45	LOOP DETECTORS	-	-	88	41-45 & 71-74
	536+18		536+26	LOOP DETECTOR 75	-	-	5	
	538+98		539+06	LOOP DETECTOR 46	-	-	6	
UNDISTRIBUTED	-		-	DISTRESSED PAVEMENT MILLING	570	900	-	
TOTAL 0010					33,530	35,520	19,340	

GTR TEST SECTIONS FOR HMA

					460.6424	SPV.0195.01	SPV.0195.02	SPV.0195.03	REMARKS
					HMA PAVEMENT 4 MT 58- 28 H	SPECIAL(.01 4 MT MODIFIED - TERMINAL BLEND GTR 1)	SPECIAL(.02 4 MT MODIFIED - TERMINAL BLEND GTR 2)	SPECIAL(.03 4 MT MODIFIED - DRY PROCESS GTR)	
CATEGORY	STATION	TO	STATION	LOCATION	TON	TON	TON	TON	
0010	290+00	-	400+55	TEST STRIP #1	-	1,867	-	-	NB OUTSIDE LANE & SHLDER
0010	402+55	-	520+00	TEST STRIP #2	-	-	1,937	-	NB OUTSIDE LANE & SHLDER
0010	290+00	-	400+55	TEST STRIP #3	1,887	-	-	-	SB OUTSIDE LANE & SHLDER
0010	402+55	-	520+00	TEST STRIP #4	-	-	-	1,988	SB OUTSIDE LANE & SHLDER
TOTAL 0010					1,887	1,867	1,937	1,988	

SPECIAL(.01 REMOVING DISTRESSED PAVEMENT MILLING)

CATEGORY	STATION	TO	STATION	LOCATION	SPV.0180.01 SY	REMARKS
0010	220+40		221+50	INMAN PKWY	200	SEE E. INMAN PKWY CONST. DETAIL
	UNDISTRUBUTED			USH 51	8150	DETERMINED BY ENGINEER IN FIELD
TOTAL 0010					8350	

BASE PATCHING ASPHALTIC

CATEGORY	STATION	LOCATION	390.0203 SY	REMARKS
0010	UNDISTRIBUTED	PROJECT	6795	DETERMINED BY ENGINEER IN FIELD
TOTAL 0010			6795	

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CONCRETE PAVEMENT 12-INCH

415.0120						
CATEGORY	STATION	TO	STATION	LOCATION	SY	REMARKS
0010	400+30	-	400+70	LT	41	CONCRETE SHOULDERS
0010	400+91	-	401+08	RT	20	CONCRETE SHOULDERS
0010	402+06	-	402+39	LT	34	CONCRETE SHOULDERS
0010	402+40	-	402+55	RT	14	CONCRETE SHOULDERS
TOTAL 0010					109	

CONCRETE SIDEWALK

602.0405 602.0410 602.0505						
CONCRETE CONCRETE CURB RAMP						
SIDEWALK SIDEWALK DETECTABLE WARNING						
4-INCH 5-INCH FIELD YELLOW						
CATEGORY	STATION	LOCATION	SF	SF	SF	REMARKS
0010	109+10	BAYLISS SE	70	-	10	
	109+56	BAYLISS NE	57	-	8	
	111+05	VALLEY SE	55	-	8	
	111+53	VALLEY NE	60	-	8	
	124+50	HENDERSON SE	47	-	8	
	124+94	HENDERSON NE	53	-	8	
	166+75	ELMWOOD SE	22	-	8	
	167+05	ELMWOOD NE	30	-	8	
	169+25	BRIAR SE	69	-	8	
	169+75	BRIAR NE	66	-	8	
	177+20	BALDWIN WOODS SE	64	-	8	
	177+70	BALDWIN WOODS NE	59	-	8	
	217+45	HILLSIDE SE	64	-	8	
	217+95	HILLSIDE NE	80	-	8	
	220+35	INMAN PKWY SE	88	-	8	
	234+95	AZALEA SE	126	-	8	
	235+55	AZALEA NE	62	-	8	
	271+22	PHILHOWER SE	66	-	8	
	272+00	PHILHOWER NE	63	-	8	
	222+00	INMAN PKWY SE	-	210	-	BUS STOP
	339+76	USH 51 - MEDIAN	18	-	-	LOOP 61
	340+64	USH 51 - MEDIAN	18	-	-	LOOP 21
	532+20	USH 51 - MEDIAN	810	-	-	PB-15A TO PB-15B
	533+17	USH 51 - MEDIAN	180	-	-	PB-16 TO PB-16A
	535+57	USH 51 - MEDIAN	450	-	-	PB-3 TO PB-3A
TOTAL 0010			2,677	210	154	

CONCRETE PAVEMENT APPROACH SLAB

415.0410						
CATEGORY	STATION	TO	STATION	LOCATION	SY	REMARKS
0010	400+55	-	400+84	B-53-157 SOUTH	187	
0010	402+23	-	402+55	B-53-157 NORTH	193	
TOTAL 0010					380	

TEMPORARY SIDEWALK AND CROSSWALK

SPV.0060.05				
CATEGORY	STATION	LOCATION	EACH	REMARKS
0010	109+16		1	
	109+52		1	
	111+09		1	
	111+50		1	
	124+52		1	
	124+91		1	
	166+79		1	
	167+01		1	
	169+30		1	
	169+72		1	
	177+24		1	
	177+69		1	
	217+47		1	
	217+95		1	
	220+40		1	
	234+99		1	
	235+52		1	
	271+25		1	
	271+94		1	
TOTAL 0010			19	

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STORM SEWER									
CATEGORY	STATION	TO	STATION	LOCATION	608.0318	608.0324	608.2324	REMARKS	
					STORM SEWER PIPE REINFORCED CONCRETE CLASS III 18-INCH LF	STORM SEWER PIPE REINFORCED CONCRETE CLASS III 24-INCH LF	STORM SEWER PIPE REINFORCED CONCRETE HORIZONTAL ELLIPTICAL CLASS HE-III 24X38-INCH LF		
0010	158+20	-	158+37	DRAINAGE STRUCTURE A	18	-	6		
	168+68	-	168+81	DRAINAGE STRUCTURE B	13	-	-		
	168+81			Drainage Structure B	-	4	-		
	168+87			Drainage Structure B	-	6	-		
TOTAL 0010					31	10	6		

DRAINAGE STRUCTURES AND INLET COVERS												
CATEGORY	STATION	LOCATION	520.8000	611.0612	611.0642	611.0645	611.0654	611.3220	611.3901	611.3903	SPV.0060.01	REMARKS
			CONCRETE COLLARS FOR PIPE EACH	INLET COVERS TYPE C EACH	INLET COVERS TYPE MS EACH	INLET COVERS TYPE MS-A EACH	INLET COVERS TYPE V EACH	INLETS 2x2-FT EACH	INLETS MEDIAN 1 GRATE EACH	INLETS MEDIAN 3 GRATE EACH	SPECIAL(.01 CONCRETE MASONRY DRAINAGE STRUCTURE) EACH	
0010	158+19	RT	-	-	-	1	-	-	1	-	-	DRAINAGE STRUCTURE A
	158+40	RT	1	-	-	2	-	-	-	-	1	DRAINAGE STRUCTURE A
	168+68	RT	-	-	-	1	-	-	1	-	-	DRAINAGE STRUCTURE B
	168+81	RT	3	1	-	-	-	-	-	-	1	DRAINAGE STRUCTURE B
	217+00	RT	1	-	3	-	-	-	-	1	-	DRAINAGE STRUCTURE C
	400+35	LT	-	-	-	-	1	1	-	-	-	B-53-157
TOTAL 0010			5	1	3	4	1	1	2	1	2	

3

RIPRAP MEDIUM

606.0200				
CATEGORY	STATION	LOCATION	CY	REMARKS
0010	400+18	B-53-157	2	CONCRETE SURFACE DRAIN DETAIL
TOTAL 0010			2	

PIPE UNDERDRAIN UNPERFORATED 12-INCH

612.0212				
CATEGORY	STATION	LOCATION	LF	REMARKS
0010	400+18	B-53-157	28	CONCRETE SURFACE DRAIN DETAIL
TOTAL 0010			28	

GEOTEXTILE TYPE HR

645.0120				
CATEGORY	STATION	LOCATION	SY	REMARKS
0010	400+35	B-53-0157	3	CONCRETE SURFACE DRAIN DETAIL
TOTAL 0010			3	

RECONSTRUCTING INLETS

611.0430				
CATEGORY	STATION	LOCATION	EACH	REMARKS
0010	529+10	RT	1	KWIK TRIP DRIVEWAY
TOTAL 0010			1	

INSULATION BOARD POLYSTYRENE (INCH)

612.0902.S				
CATEGORY	STATION	LOCATION	SY	REMARKS
0010	158+42	STRUCTURE A	11	SEE CONSTRUCTION DETAIL
TOTAL 0010			11	

ADJUSTING MANHOLE COVERS

611.8110				
CATEGORY	STATION	LOCATION	EACH	REMARKS
0010	101+92	LT	1	
	102+78	RT	1	
	105+39	RT	1	
	109+37	RT	1	
	111+04	RT	1	
	124+64	RT	1	
	124+76	RT	1	
	166+50	LT	1	
	235+23	RT	1	
	255+42	LT	1	
	241+53	LT	1	
	286+84	LT	1	
	288+87	LT	1	
	293+04	RT	1	
	334+27	RT	1	
	337+55	RT	1	
	339+69	RT	1	
	342+60	RT	1	
	349+13	RT	1	
	353+03	RT	1	
	368+99	RT	1	
	372+93	RT	1	
	376+95	RT	1	
	394+34	RT	1	
	533+16	RT	1	
TOTAL 0010			25	

ADJUSTING INLET COVERS

611.8115				
CATEGORY	STATION	LOCATION	EACH	REMARKS
0010	521+62	RT	1	
	527+09	RT	1	
	530+70	RT	1	
	532+08	RT	1	
	532+26	RT	1	
TOTAL 0010			5	

3

BEAM GUARD

					614.0010	614.0305	614.0340	614.0345	614.0370	614.0390	614.2300	614.2340	614.2350	614.2500	614.2610	614.2630
					BARRIER SYSTEM GRADING SHAPING FINISHING	STEEL PLATE BEAM GUARD CLASS A	STEEL PLATE BEAM GUARD OVER LOW- FILL CULVERTS CLASS A	STEEL PLATE BEAM GUARD SHORT RADIUS	STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL	STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL	MGS GUARDRAIL 3	MGS GUARDRAIL 3 L	MGS GUARDRAIL SHORT RADIUS	MGS THRIE BEAM TRANSITION	MGS GUARDRAIL TERMINAL EAT	MGS GUARDRAIL SHORT RADIUS TERMINAL
CATEGORY	STATION	TO	STATION	LOCATION	EACH	LF	LF	LF	EACH	EACH	LF	LF	LF	LF	EACH	EACH
0010	179+47	-	181+19	BG "A"	1	25	89	13	1	1						
	269+47	-	272+66	BG "B"	1	-	-	-	-	-	100	120	-	-	2	-
	286+34	-	287+09	BG "C"	-	-	-	-	-	-	25	-	-	39	1	-
	285+90	-	287+16	BG "D"	-	-	-	-	-	-	38	-	-	39	1	-
	288+23	-	289+49	BG "E"	-	-	-	-	-	-	38	-	-	39	1	-
	287+91	-	289+05	BG "F"	-	-	-	-	-	-	25	-	-	39	1	-
	346+55	-	349+20	BG "G"	1	-	-	-	-	-	200	-	25	-	1	1
	347+91	-	350+93	BG "H"	1	-	-	-	-	-	94	104	-	-	2	-
	399+52	-	400+54	BG "I"	1	-	-	-	-	-	13	-	-	39	1	-
	399+07	-	400+96	BG "J"	1	-	-	-	-	-	100	-	-	39	1	-
	402+15	-	403+18	BG "K"	1	-	-	-	-	-	13	-	-	39	1	-
	402+62	-	404+38	BG "L"	-	-	-	-	-	-	88	-	-	39	1	-
TOTAL 0010					7	25	89	13	1	1	732	224	25	312	13	1

FOR INFORMATION ONLY

					BORROW	TOPSOIL	MULCHING	FERTILIZER TYPE B	SEEDING MIXTURE NO. 20	SEEDING TEMPORARY
CATEGORY	STATION	TO	STATION	LOCATION	CY	CY	SY	CWT	LB	LB
0010	179+47	-	181+19	BG "A"	65.40	31.65	379.85	0.25	10.25	10.25
	269+47	-	272+66	BG "B"	143.00	75.35	907.80	0.60	24.50	24.50
	286+34	-	287+09	BG "C"	-	-	-	-	-	-
	285+90	-	287+16	BG "D"	-	-	-	-	-	-
	288+23	-	289+49	BG "E"	-	-	-	-	-	-
	287+91	-	289+05	BG "F"	-	-	-	-	-	-
	346+55	-	349+20	BG "G"	72.35	46.50	560.40	0.35	15.10	15.10
	347+91	-	350+93	BG "H"	82.60	61.30	738.40	0.45	20.00	20.00
	399+52	-	400+54	BG "I"	62.50	29.10	350.80	0.25	9.50	9.50
	399+07	-	400+96	BG "J"	19.00	16.30	196.30	0.15	5.30	5.30
	402+15	-	403+18	BG "K"	47.00	23.35	281.30	0.20	7.60	7.30
	402+62	-	404+38	BG "L"	-	-	-	-	-	-
TOTAL 0010						284	3,415	2	92	92

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CONCRETE BARRIER

CATEGORY	STATION	TO	STATION	LOCATION	603.8000	603.8125	REMARKS
					CONCRETE BARRIER TEMPORARY PRECAST DELIVERED LF	CONCRETE BARRIER TEMPORARY PRECAST INSTALLED LF	
0010	396+50	-	404+64	B-53-157	744	1428	STAGE 1/2
TOTAL 0010					744	1428	

LANDSCAPE ITEMS

					625.0100	627.0200	629.0210	630.0120	630.0200	
					TOPSOIL	MULCHING	FERTILIZER	SEEDING MIXTURE	SEEDING	
CATEGORY	STATION	TO	STATION	LOCATION	SY	SY	TYPE B	NO. 20	TEMPORARY	REMARKS
							CWT	LB	LB	
0010	214+74			BEAMGUARD REMOVAL AT PUMP HOUSE	30	30	0.0	0.8	0.8	
	158+14	-	158+54	DRAINAGE STRUCTURE A	80	-	0.1	2.2	2.2	
	168+62	-	168+94	DRAINAGE STRUCTURE B	55	-	0.0	1.5	1.5	
	179+55	-	181+44	E BALDWIN WOODS RD	270	-	0.1	5.7	5.7	
	216+92	-	217+13	DRAINAGE STRUCTURE C	30	-	0.0	0.9	0.9	
	221+95	-	222+35	E INMAN PKWY BUS STOP	35	-	0.0	1.1	1.1	
	269+00	-	273+17	E PHILHOWER RD	595	-	0.3	12.5	12.5	
	285+34	-	286+34	RAIL ROAD RT	-	-	0.0	2.1	2.1	
	285+95	-	287+37	RAIL ROAD LT	-	-	0.1	3.4	3.4	
	288+00	-	290+77	RAIL ROAD LT	-	-	0.3	13.3	13.3	
	288+23	-	290+50	RAIL ROAD RT	-	-	0.1	4.8	4.8	
	346+34	-	349+12	CRYSTAL RD LT	255	-	0.1	5.6	5.6	
	347+63	-	351+05	CRYSTAL RD RT	305	-	0.1	5.4	5.4	
	399+13	-	399+49	BRIDGE RT	110	-	0.1	3.0	3.0	
	399+30	-	400+02	BRIDGE LT	165	-	0.1	4.5	4.5	
	402+67	-	403+29	BRIDGE LT	150	-	0.1	4.0	4.0	
	UNDISTRIBUTED					-	100	-	-	-
TOTAL 0010					2,080	130	2.0	71.0	71.0	

WATER

CATEGORY	LOCATION	624.0100	REMARKS
		MGAL	
0010	PROJECT	27	BASE COURSE/SHOULDERS
TOTAL 0010		27	

COVER PLATES TEMPORARY

CATEGORY	STATION	LOCATION	611.8120.S	REMARKS
			EACH	
0010	101+92		1	
	102+78		1	
	105+39		1	
	109+37		1	
	111+04		1	
	124+64		1	
	124+76		1	
	166+50		1	
	235+23		1	
	255+42		1	
	241+53		1	
	286+84		1	
	288+87		1	
	293+04		1	
	334+27		1	
	337+55		1	
	339+69		1	
	342+60		1	
	349+13		1	
	353+03		1	
	368+99		1	
	372+93		1	
	376+95		1	
	394+34		1	
	533+16		1	
TOTAL 0010			25	

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EROSION CONTROL ITEMS

						628.1504	628.1520	REMARKS
						SILT FENCE	SILT FENCE MAINTENANCE	
CATEGORY	STATION	TO	STATION	LOCATION		LF	LF	
0010	179+55	-	181+45	E BALDWIN WOODS RD		209	209	
	269+00	-	273+17	E PHILHOWER RD		459	459	
	285+34	-	286+34	RAIL ROAD RT		110	110	
	285+95	-	287+37	RAIL ROAD LT		156	156	
	288+00	-	290+77	RAIL ROAD LT		305	305	
	288+23	-	290+50	RAIL ROAD RT		250	250	
	346+34	-	349+12	CRYSTAL RD LT		363	363	
	347+63	-	351+05	CRYSTAL RD RT		316	316	
	399+13	-	399+49	BRIDGE RT		57	57	
	399+30	-	400+02	BRIDGE LT		95	95	
	402+67	-	403+29	BRIDGE LT		83	83	
	TOTAL 0010					2,403	2,403	

EROSION MAT URBAN CLASS I TYPE A

						628.2006	REMARKS
CATEGORY	STATION	TO	STATION	LOCATION		SY	
0010	214+74			BEAMGUARD REMOVAL AT PUMP HOUSE		29	
	158+14	-	158+54	DRAINAGE STRUCTURE A		80	
	168+62	-	168+94	DRAINAGE STRUCTURE B		57	
	179+55	-	181+44	E BALDWIN WOODS RD		210	
	216+92	-	217+13	DRAINAGE STRUCTURE C		33	
	221+95	-	222+35	E INMAN PKWY BUS STOP		40	
	269+00	-	273+17	E PHILHOWER RD		463	
	285+34	-	286+34	RAIL ROAD RT		78	
	285+95	-	287+37	RAIL ROAD LT		126	
	288+00	-	290+77	RAIL ROAD LT		492	
	288+23	-	290+50	RAIL ROAD RT		177	
	346+34	-	349+12	CRYSTAL RD LT		207	
	347+63	-	351+05	CRYSTAL RD RT		201	
	399+13	-	399+49	BRIDGE RT		110	
	399+30	-	400+02	BRIDGE LT		166	
	402+67	-	403+29	BRIDGE LT		148	
	TOTAL 0010					2,617	

EROSION CONTROL ITEMS

						628.7504	628.7555	REMARKS
						TEMPORARY DITCH CHECKS	CULVERT PIPE CHECKS	
CATEGORY	STATION		LOCATION			LF	EACH	
0010	158+40		RT		-		6	DRAINAGE STRUCTURE A
	168+82		RT		-		6	DRAINAGE STRUCTURE B
	217+02		RT		-		6	DRAINAGE STRUCTURE C
	221+82		RT		12		6	BUS STOP
TOTAL 0010						12	24	

EROSION CONTROL MOBILIZATION

						628.1905	628.1910	REMARKS
						MOBILIZATIONS EROSION CONTROL	MOBILIZATIONS EMERGENCY EROSION CONTROL	
CATEGORY			LOCATION			EACH	EACH	
0010			PROJECT			3	1	
TOTAL 0010						3	1	

INLET PROTECTION TYPE A

						628.7005	REMARKS
CATEGORY	STATION		LOCATION			EACH	
0010	158+20		34 R			1	
	158+43		34 R			1	
	168+68		34 R			1	
	168+81		34 R			1	
	217+01		34 R			1	
TOTAL 0010						5	

EROSION BALES

						628.1104	REMARKS
CATEGORY	STATION		LOCATION			EACH	
0010	124+74		41 L			1	
	348+15		74 R			2	
	349+00		85 R			2	
TOTAL 0010						5	

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SIGNS TYPE II REFLECTIVE

		634.0616		634.0618		637.2210		637.2230		638.2602		638.3000			
		POSTS WOOD		POSTS WOOD		SIGNS TYPE II		SIGNS TYPE II		REMOVING		REMOVING			
		4X6-INCH X		4X6-INCH X		REFLECTIVE H		REFLECTIVE F		SIGNS TYPE II		SMALL SIGN			
		16-FT		18-FT								SUPPORTS			
CATEGORY	SIGN	STATION	LOCATION	SIGN CODE	SIZE	EACH	EACH	SF	SF	EACH	EACH	SIGN MESSAGE		REMARKS	
NUMBER					(INCH)										
0010	1-01	110+45	LT	R3-9D	24 x 6	-	-	1.0	-	-	-	END			
	1-02	110+45	LT	R3-9B	24 x 36	1	-	6.0	-	-	-	CENTER LANE LEFT TURN ONLY			
	1-03	110+45	RT	R3-9C	24 x 6	-	-	1.0	-	-	-	BEGIN			
	1-04	110+45	RT	R3-9B	24 x 36	1	-	6.0	-	-	-	CENTER LANE LEFT TURN ONLY			
	2-01	129+50	RT			-	-	-	-	1	1	DIVIDED HIGHWAY SYMBOL			
	2-02	131+00	LT			-	-	-	-	1	1	TWO-WAY TRAFFIC SYMBOL			
	2-03	131+70	RT	R3-9D	24 x 6	-	-	1.0	-	-	-	END			
	2-04	131+70	RT	R3-9B	24 x 36	1	-	6.0	-	-	-	CENTER LANE LEFT TURN ONLY			
	2-05	132+00	LT	R3-9C	24 x 6	-	-	1.0	-	-	-	BEGIN			
	2-06	132+00	LT	R3-9B	24 x 36	1	-	6.0	-	-	-	CENTER LANE LEFT TURN ONLY			
	2-07	135+00	LT	W4-2R	36 x 36	-	-	-	9.0	-	-	RIGHT LANE ENDS SYMBOL			
	2-08	135+00	LT			-	-	-	-	1	-	DIVIDED HIGHWAY SYMBOL			
	2-09	140+20	RT			-	-	-	-	1	1	DIVIDED HIGHWAY SYMBOL			
	2-10	142+70	RT			-	-	-	-	1	1	TWO-WAY TRAFFIC SYMBOL			
	3-01	146+50	LT			-	-	-	-	1	1	DIVIDED HIGHWAY SYMBOL			
	4-01	165+40	RT	W4-2R	36 x 36	1	-	-	9.0	-	-	RIGHT LANE ENDS SYMBOL			
	5-01	176+80	RT	R3-9C	24 x 6	-	-	1.0	-	-	-	BEGIN			
	5-02	176+80	RT	R3-9B	24 x 36	1	-	6.0	-	-	-	CENTER LANE LEFT TURN ONLY			
	5-03	176+80	LT	R3-9D	24 x 6	-	-	1.0	-	-	-	END			
	5-04	176+80	LT	R3-9B	24 x 36	1	-	6.0	-	-	-	CENTER LANE LEFT TURN ONLY			
	6-01	218+80	LT	R3-9B	24 x 36	1	-	6.0	-	-	-	CENTER LANE LEFT TURN ONLY			
	7-01	225+10	RT	R3-9B	24 x 36	1	-	6.0	-	-	-	CENTER LANE LEFT TURN ONLY			
	8-01	248+54	RT			-	-	-	-	1	-	SPEED LIMIT 50			
	8-02	248+54	RT	R2-1	24 x 30	-	-	5.0	-	-	-	SPEED LIMIT 45			
	9-01	284+80	RT	R3-9D	24 x 6	-	-	1.0	-	-	-	END			
	9-02	284+80	RT	R3-9B	24 x 36	1	-	6.0	-	-	-	CENTER LANE LEFT TURN ONLY			
	9-03	284+80	LT	R3-9C	24 x 6	-	-	1.0	-	-	-	BEGIN			
	9-04	284+80	LT	R3-9B	24 x 36	1	-	6.0	-	-	-	CENTER LANE LEFT TURN ONLY			
	9-05	291+65	LT			-	-	-	-	1	-	SPEED LIMIT 50			
	9-06	291+65	LT	R2-1	24 x 30	-	-	5.0	-	-	-	SPEED LIMIT 45			
	10-01	298+00	LT			-	-	-	-	1	-	SPEED LIMIT 50 AHEAD			
	10-02	298+00	LT	W3-5	36 x 36	-	-	-	9.0	-	-	SPEED LIMIT 45 AHEAD			
	10-03	306+50	LT	W4-2R	36 x 36	-	1	-	9.0	-	-	RIGHT LANE ENDS SYMBOL			
	11-01	311+50	LT	W9-1R	36 x 36	-	1	-	9.0	-	-	RIGHT LANE ENDS			
TOTAL 0010						11	2	78.0	45.0	9	5				

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TRAFFIC CONTROL ITEMS

						643.0300	643.0420	643.0500	643.0600	643.0705	643.0715	643.0800	643.0900	643.1050	REMARKS
						TRAFFIC CONTROL	TRAFFIC CONTROL	TRAFFIC CONTROL	TRAFFIC CONTROL	TRAFFIC CONTROL	TRAFFIC CONTROL	TRAFFIC CONTROL	TRAFFIC	TRAFFIC	
						DRUMS	BARRICADES TYPE	FLEXIBLE TUBULAR	FLEXIBLE TUBULAR	WARNING LIGHTS	WARNING LIGHTS	ARROW BOARDS	CONTROL SIGNS	CONTROL	
ATEGORY\	STATION	TO	STATION	LOCATION	DAYS	DAY	III	MARKER POSTS	MARKER BASES	TYPE A	TYPE C	DAY	DAY	SIGNS PCMS	
							DAY	EACH	EACH	DAY	DAY	DAY	DAY	DAY	
0010				PREWARNING*	7	-	-	-	-	-	-	-	-	14	
	92+20	-	133+57		-	1,862	84	-	-	168	168	28	350	-	
	142+04	-	287+56		-	5,376	224	-	-	448	280	28	672	-	
	272+20	-	416+64		-	6,090	224	-	-	448	350	28	630	-	
	397+24	-	533+77		-	5,082	196	-	-	392	322	28	518	-	
	386+00	-	417+00	B-53-157 NB	-	735	-	51	51	-	455	70	-	-	
STAGE 1 TOTAL						19,145	728	51	51	1,456	1,575	182	2,170	14	
	96+03	-	134+85		-	2,856	70	-	-	140	182	28	308	-	
	143+74	-	289+81		-	6,034	224	-	-	448	266	28	686	-	
	275+00	-	419+79		-	6,272	224	-	-	448	322	28	546	-	
	406+00	-	533+99		-	4,354	182	-	-	364	266	14	518	-	
	386+00	-	417+00	B-53-157 SB	-	1,470	-	40	40	-	455	70	-	-	
STAGE 2 TOTAL						20,986	700	40	40	1,400	1,491	168	2,058	-	
	92+84	-	134+84		-	2,912	140	-	-	280	210	28	350	-	
	142+04	-	289+80		-	5,740	546	-	-	1,092	266	28	910	-	
	272+19	-	419+96		-	6,216	364	-	-	728	350	28	686	-	
	400+04	-	544+75		-	5,474	364	-	-	728	364	28	644	-	
STAGE 3 TOTAL						20,342	1,414	-	-	2,828	1,190	112	2,590	-	
TOTAL 0010						60,473	2,842	91	91	5,684	4,256	462	6,818	14	

* PREWARNING IS FOR THE ENTIRE PROJECT AND IS NOT BROKEN OUT BY STAGES.

PAVEMENT MARKING

						646.1020	646.3020	646.1545	646.3545	646.5020	646.5120	646.6120	646.7120	646.7420	REMARKS
						MARKING LINE EPOXY	MARKING	MARKING LINE	MARKING LINE	MARKING	MARKING	MARKING STOP	MARKING	MARKING	
						4-INCH	LINE EPOXY	GROOVED WET REF	GROOVED WET	ARROW	WORD	LINE EPOXY	DIAGONAL EPOXY	CROSSWALK EPOXY	
						(WHITE)	8-INCH	CONTRAST EPOXY	REF CONTRAST	EPOXY	EPOXY	18-INCH	12-INCH	TRANSVERSE LINE	
CATEGORY	STATION	TO	STATION	LOCATION		LF	LF	4-INCH	EPOXY 8-INCH	EACH	LF	LF	(YELLOW)	LF	
0010	101+78	-	129+95	HENRY TO CRANSTON		6400	8750	-	-	12	-	-	540	200	
	146+94	-	164+00	CRANSTON TO Q (Newark Rd)		3460	3500	-	860	-	-	40	-	-	
	159+10	-	169+00	MEDIAN		-	-	-	180	2	2	40	480	-	
	164+00	-	340+00	Q TO TOWN LINE RD		33140	43540	-	2270	59	3	270	1450	635	
	340+00	-	533+16	TOWN LINE RD TO STH 11		36360	39150	-	9650	22	5	250	330	-	
	535+00		537+90	STH 11		120	-	590	-	-	-	56	-	-	
UNDISTRIBUTED						500	500	-	-	-	-	-	-	-	
TOTAL 0010						79,980	95,440	590	12,780	95	10	656	2,800	835	

PROJECT NO: 5350-01-73

HWY: USH 51

COUNTY: ROCK

MISCELLANEOUS QUANTITIES

SHEET: 95

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MEDIAN MARKINGS							
CATEGORY	STATION	TO	STATION	LOCATION	646.8120	646.8220	REMARKS
					MARKING CURB EPOXY LF	MARKING ISLAND NOSE EPOXY EACH	
0010	109+14		109+55	BAYLISS AVE	-	2	PLACED ON PAVEMENT
	102+45	-	103+55	HENRY AVE	20	2	
	164+25	-	165+30	CTH Q (NEWARK) INT.	115	1	
	335+86	-	348+13	TOWNLINE RD INT.	380	6	
	404+45	-	404+50	W. SHERMAN RD INT.	-	3	SOUTH OF INT. NORTH OF INT.
	527+05	-	533+40	STH 11 INT.	40	4	
	534+75		535+45	STH 11 INT.	30	3	

TOTAL 0010 585 21

MARKING REMOVAL

CATEGORY	STATION	TO	STATION	LOCATION	646.9000	646.9200	REMARKS
					MARKING REMOVAL LINE 4-INCH LF	MARKING REMOVAL LINE WIDE LF	
0010	129+89	-	133+93	CRANSTON INT.	1,900	50	
TOTAL 0010					1,900	50	

TEMPORARY PAVEMENT MARKING									
						649.0105	649.0150		
						TEMPORARY	TEMPORARY MARKING		
						MARKING	LINE REMOVABLE TAPE		
						LINE PAINT	4-INCH		
						4-INCH	(WHITE)	(YELLOW)	
CATEGORY	STATION	TO	STATION	LOCATION	LF	LF			REMARKS
0010	92+20	-	94+65	S1-1	245	-	-		
	130+37	-	133+57	S1-1	320	-	-		
	142+04	-	145+24	S1-2	320	-	-		
	280+99	-	287+59	S1-2	660	-	-		
	272+36	-	278+36	S1-3	600	-	-		
	410+02	-	416+62	S1-3	660	-	-		
	397+24	-	403+84	S1-4	660	-	-		
	526+36	-	528+46	S1-4	210	-	-		
	529+18	-	532+17	S1-4	300	-	-		
	386+00		417+00	B-53-157 NB	8,690				
STAGE 1 TOTAL					12,665	0	0		
0010	96+03	-	98+89	S2-1	286	-	-		
	131+65	-	134+85	S2-1	320	-	-		
	143+74	-	146+94	S2-2	320	-	-		
	283+80	-	289+80	S2-2	600	-	-		
	275+00	-	276+76	S2-3	176	-	-		
	277+84	-	281+00	S2-3	315	-	-		
	413+19	-	419+77	S2-3	660	-	-		
	406+00	-	410+00	S2-4	402	-	-		
	538+32	-	543+71	S2-4	540	-	-		
	386+00		417+00	B-53-157 SB	9,330	400	400		
STAGE 2 TOTAL					12,949	400	400		
0010	95+32	-	98+92	S3-1	360	-	-		
	131+65	-	134+85	S3-1	320	-	-		
	142+04	-	145+24	S3-2	320	-	-		
	283+80	-	289+80	S3-2	600	-	-		
	272+19	-	278+19	S3-3	600	-	-		
	413+34	-	419+94	S3-3	660	-	-		
	400+04	-	404+94	S3-4	492	-	-		
	535+28	-	539+03	S3-4	375	-	-		
	540+36	-	544+75	S3-4	439	-	-		
	STAGE 3 TOTAL					4,166	0	0	
0010	UNDISTRIBUTED				-	250	250		
TOTAL 0010					29,780	650	650		

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CONSTRUCTION STAKING

					650.8000	650.9000	650.9910	
					CONSTRUCTION STAKING RESURFACING REFERENCE	CONSTRUCTION STAKING CURB RAMPS	CONSTRUCTION STAKING SUPPLEMENTAL CONTROL (5350-01-73)	
CATEGORY	STATION	TO	STATION	LOCATION	LF	EACH	LS	REMARKS
0010	101+78	-	129+95	BEAM GUARD	2,817	-	-	
0010	146+94	-	533+41		38,647	-	-	
0010	179+46	-	404+44		-	-	1	
0010	109+09	-	271+98		-	17	-	
TOTAL 0010					41,464	17	1	

TRAFFIC SIGNAL CONDUIT SUMMARY

CATEGORY	CONDUIT	TO	CONDUIT	LOCATION	652.0225	652.0605	REMARKS
					CONDUIT RIGID NONMETALLIC	CONDUIT SPECIAL	
					SCHEDULE 40 2-INCH	2-INCH	
					LF	LF	
0010	PB-3		PB-3A	INMAN PARKWAY	10	-	
	PB-6		PB-6A	INMAN PARKWAY	100	-	
	PB-14		PB-14A	INMAN PARKWAY	110	-	
	PB-9A		PB-9B	TOWNLINE ROAD	-	120	
	PB-17A		PB-17B	TOWNLINE ROAD	-	120	
	PB-3		PB-3A	STH 11	65	-	
	PB-5A		PB-5B	STH 11	-	270	
	PB-15A		PB-15B	STH 11	65	-	
	PB-16		PB-16A	STH 11	20	-	
PB-18A		PB-18B	STH 11	-	270		
TOTAL 0010					370	780	

PULL BOXES

CATEGORY	LOCATION	NO.	LOCATION	653.0135	653.0905	REMARKS
				PULL BOXES STEEL 24X36-INCH EACH	REMOVING PULL BOXES EACH	
0010	INMAN PARKWAY	PB-3A		1	-	
	INMAN PARKWAY	PB-6A		1	-	
	INMAN PARKWAY	PB-10A		1	-	
	INMAN PARKWAY	PB-11A		1	-	
	INMAN PARKWAY	PB-14A		1	-	
	TOWNLINE ROAD	PB-7A		1	-	
	TOWNLINE ROAD	PB-8		-	1	
	TOWNLINE ROAD	PB-8A		1	-	
	TOWNLINE ROAD	PB-9		-	1	
	TOWNLINE ROAD	PB-9A		1	-	
	TOWNLINE ROAD	PB-9B		1	-	
	TOWNLINE ROAD	PB-15A		1	-	
	TOWNLINE ROAD	PB-16		-	1	
	TOWNLINE ROAD	PB-16A		1	-	
	TOWNLINE ROAD	PB-17		-	1	
	TOWNLINE ROAD	PB-17A		1	-	
	TOWNLINE ROAD	PB-17B		1	-	
	STH 11	PB-3A		1	-	
	STH 11	PB-4A		1	-	
	STH 11	PB-5A		1	-	
	STH 11	PB-5B		1	-	
	STH 11	PB-15A		1	-	
	STH 11	PB-15B		1	-	
	STH 11	PB-16A		1	-	
	STH 11	PB-18A		1	-	
	STH 11	PB-18B		1	-	
	STH 11	PB-5		-	1	
	STH 11	PB-15		-	1	
	STH 11	PB-18B		-	1	
TOTAL 0010				22	7	

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LOOP DETECTORS							LOOP DETECTORS										
CATEGORY	LOCATION	LOOP DETECTORS	652.0800	655.0700	655.0800	SPV.0060.03	CATEGORY	LOCATION	LOOP DETECTORS	652.0800	655.0700	655.0800	SPV.0060.03				
			CONDUIT LOOP DETECTOR LF	LOOP DETECTOR LEAD IN CABLE LF	LOOP DETECTOR WIRE LF	REMOVE LOOP DETECTOR EACH				CONDUIT LOOP DETECTOR LF	LOOP DETECTOR LEAD IN CABLE LF	LOOP DETECTOR WIRE LF	REMOVE LOOP DETECTOR EACH				
0010	INMAN PARKWAY	LOOP 21	75	96	202	-	0010	STH 11	LOOP 71A	-	-	-	1				
	INMAN PARKWAY	LOOP 21A	-	-	-	1		STH 11	LOOP 72	67	178	188	-				
	INMAN PARKWAY	LOOP 22	64	96	180	-		STH 11	LOOP 72A	-	-	-	1				
	INMAN PARKWAY	LOOP 23	72	75	204	-		STH 11	LOOP 73	58	120	170	-				
	INMAN PARKWAY	LOOP 23A	61	-	174	-		STH 11	LOOP 74	72	178	196	-				
	INMAN PARKWAY	LOOP 24	60	90	475	-		STH 11	LOOP 75	52	244	148	-				
								STH 11	LOOP 81	61	259	174	-				
	INMAN PARKWAY	LOOP 61	83	161	218	-		STH 11	LOOP 81A	-	-	-	1				
	INMAN PARKWAY	LOOP 61A	-	-	-	1		STH 11	LOOP 82	63	259	178	-				
	INMAN PARKWAY	LOOP 62A	-	-	-	1		STH 11	LOOP 82A	-	-	-	1				
	INMAN PARKWAY	LOOP 62	72	161	196	-		STH 11	LOOP 83	72	259	196	-				
	INMAN PARKWAY	LOOP 63	61	532	226	-		STH 11	LOOP 84	72	259	196	-				
	INMAN PARKWAY	LOOP 83	72	75	240	-											
	TOWNLINE ROAD	LOOP 21	62	83	176	-		STH 11	LOOP 85	69	190	190	-				
	TOWNLINE ROAD	LOOP 21A	-	-	-	1		STH 11	LOOP 86	60	585	224	-				
	TOWNLINE ROAD	LOOP 22	90	43	232	-	TOTAL 0010							2,676	8,592	8,079	15
	TOWNLINE ROAD	LOOP 22A	-	-	-	1											
	TOWNLINE ROAD	LOOP 23	80	43	210	-											
	TOWNLINE ROAD	LOOP 24	69	43	190	-											
	TOWNLINE ROAD	LOOP 25	71	497	246	-											
	TOWNLINE ROAD	LOOP 61	61	135	174	-											
	TOWNLINE ROAD	LOOP 61A	-	-	-	1											
	TOWNLINE ROAD	LOOP 62	72	135	196	-											
	TOWNLINE ROAD	LOOP 62A	-	-	-	1											
	TOWNLINE ROAD	LOOP 63	84	247	220	-											
	TOWNLINE ROAD	LOOP 64	73	247	198	-											
	TOWNLINE ROAD	LOOP 65	67	700	290	-											
	STH 11	LOOP 31	63	261	178	-											
	STH 11	LOOP 31A	-	-	-	1											
	STH 11	LOOP 32	62	309	176	-											
	STH 11	LOOP 32A	-	-	-	1											
	STH 11	LOOP 33	32	374	112	-											
	STH 11	LOOP 41	87	193	226	-											
	STH 11	LOOP 41A	-	-	-	1											
	STH 11	LOOP 42	87	193	226	-											
	STH 11	LOOP 42A	-	-	-	1											
	STH 11	LOOP 43	77	193	226	-											
	STH 11	LOOP 44	76	193	224	-											
	STH 11	LOOP 45	67	193	186	-											
	STH 11	LOOP 46	63	573	230	-											
	STH 11	LOOP 71	67	120	188	-											
								SPECIAL(.02 INSTALL CONDUIT INTO EXISTING ITEM)									
								SPV.0060.02									
								CATEGORY	STATION	TO	STATION	LOCATION	EACH	REMARKS			
								0010	219+00	-	220+25	PB-3	1	2" CONDUIT			
									216+00	-	217+50	PB-6	1	2" CONDUIT			
							224+00		-	226+00	PB-14	1	2" CONDUIT				
							339+50		-	340+00	PB-5	1	LOOP 61 & 62				
							340+00		-	340+50	PB-13	1	LOOP 21				
							532+00		-	533+00	PB-14	1	LOOP 31				
							532+00		-	533+00	PB-16	1	2" CONDUIT				
							532+00		-	533+00	PB-17	1	LOOP 85				
							535+00		-	536+00	PB-2	1	LOOP 71 & 73				
							535+00		-	536+00	PB-3	1	LOOP 72, 74 & 2" CONDUIT				
							TOTAL 0010							10			

PROJECT NO:	5350-01-73	HWY:	USH 51	COUNTY:	ROCK	MISCELLANEOUS QUANTITIES	SHEET:	98	E
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SAWING PAVEMENT						SAWING PAVEMENT					
CATEGORY	STATION	LOCATION	690.0150 SAWING ASPHALT LF	690.0250 SAWING CONCRETE LF	REMARKS	CATEGORY	STATION	LOCATION	690.0150 SAWING ASPHALT LF	690.0250 SAWING CONCRETE LF	REMARKS
0010	101+78	USH 51	86	-		0010	339+80	TOWN LINE RD	45	-	
	109+04	BAYLISS AVE	-	10	SIDEWALK & CURB		340+35	TOWN LINE RD	42	-	
	109+34	BAYLISS AVE	28	-			340+64	TOWN LINE RD	-	18	CONCRETE MEDIAN
	109+62	BAYLISS AVE	-	9	SIDEWALK & CURB		344+89	GOLD RD	26	-	
	111+02	VALLEY RD	-	10	SIDEWALK & CURB		349+36	CRYSTAL RD	24	-	
							359+85	ROCKVALE CT	33	-	
	111+27	VALLEY RD	25	-			374+92	BLACKHAWK TECHNICAL COLLEGE	38	-	
	111+41	LEFT SIDE OF ROAD	47	-			394+18	W SUNNY LN	26	-	
	111+58	VALLEY RD	-	10	SIDEWALK & CURB		404+36	W SHERMAN RD	16	-	
	124+47	HENDERSON AVE	-	10	SIDEWALK & CURB		404+67	W SHERMAN RD	40	-	
	124+70	HENDERSON AVE	29	-							
							405+17	W SHERMAN RD	35	-	
	124+97	HENDERSON AVE	-	10	SIDEWALK & CURB		425+83	W TERRINGTON DR	26	-	
	129+95	USH 51	54	-			429+92	S DIFTWOOD DR	47	-	
	146+94	USH 51	54	-			440+33	W AIRPORT RD	31	-	
	166+73	ELMWOOD AVE	-	10	SIDEWALK & CURB		466+63	W CHALLENGER DR	26	-	
	166+90	ELMWOOD AVE	22	-							
							479+83	E ENTERPRISE DR	36	-	
	167+06	ELMWOOD AVE	-	10	SIDEWALK & CURB		511+08	W KNILANS RD	28	-	
	169+21	BRIAR LN	-	10	SIDEWALK & CURB		533+15	USH 51	40	-	
	169+54	BRIAR LN	21	-			533+27	USH 51	41	-	
	169+81	BRIAR LN	-	10	SIDEWALK & CURB		533+40	USH 51	14	-	
	177+15	E BALDWIN WOODS RD	-	4	SIDEWALK						
							533+45	USH 51	-	115	LOOP DETECTORS 81,83,85
	177+51	E BALDWIN WOODS RD	25	-			535+00	USH 51	135	220	LOOP DETECTORS 41-45,71
	177+74	E BALDWIN WOODS RD	-	4	SIDEWALK		535+07	STH 11	-	18	CONCRETE MEDIAN
	217+40	HILLSIDE AVE	-	10	SIDEWALK & CURB		535+57	STH 11	-	18	CONCRETE MEDIAN
	217+76	HILLSIDE AVE	23	-			536+22	USH 51	52	-	LOOP 75
	218+02	HILLSIDE AVE	-	10	SIDEWALK & CURB		539+00	USH 51	60	-	LOOP 46
						TOTAL 0010 1,610 584					
	220+32	E INMAN PKWY	-	10	SIDEWALK & CURB						
	220+84	E INMAN PKWY	100	-							
	234+91	E AZALEA TERRACE	-	10	SIDEWALK & CURB						
	235+28	E AZALEA TERRACE	30	-							
	235+59	E AZALEA TERRACE	-	10	SIDEWALK & CURB						
	241+77	YOST ST	28	-							
	244+92	SOUTH AVE	23	-							
	247+97	CENTRE ST	20	-							
	255+80	PRESERVATION PARK	52	-							
	266+79	E AUBURN DR	24	-							
	271+16	E PHILHOWER RD	-	10	SIDEWALK & CURB						
	271+76	E PHILHOWER RD	24	-							
	272+02	E PHILHOWER RD	-	10	SIDEWALK & CURB						
	277+33	POWERS DR	35	-							
	339+76	TOWN LINE RD	-	18	CONCRETE MEDIAN						

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HMA PERCENT WITHIN LIMITS (PWL) TEST STRIP VOLUMETRICS

460.0105.s						
CATEGORY	STATION	TO	STATION	LOCATION	EACH	REMARKS
0010	101+77	-	533+41	PROJECT	1	UPPER LAYER
0010	101+77	-	533+41	PROJECT	1	LOWER LAYER
TOTAL 0010					2	

HMA PERCENT WITHIN LIMITS (PWL) TEST STRIP DENSITY

460.0110.s						
CATEGORY	STATION	TO	STATION	LOCATION	EACH	REMARKS
0010	101+77	-	533+41	PROJECT	2	
TOTAL 0010					2	

SPECIAL(.06 PREPARATION FOR CONCRETE MASONRY DRAINAGE STRUCTURE)

SPV.0060.06						
CATEGORY	STATION	TO	STATION	LOCATION	EACH	REMARKS
0010	158+42			Structure A	1	
0010	168+80			Structure B	1	
0010	216+96			Structure C	1	
TOTAL 0010					3	

MAINTENANCE AND REPAIR OF HAUL ROADS (PROJECT)

618.0100			
CATEGORY	LOCATION	EACH	REMARKS
0010	PRJOECT	1	
TOTAL 0010		1	

INCENTIVE IRI RIDE

440.4410						
CATEGORY	STATION	TO	STATION	LOCATION	DOL	REMARKS
0010	105+70	-	129+94		1,840	
0010	146+94	-	171+70		3,760	
0010	171+70	-	290+00		8,960	
0010	290+00	-	400+55		16,720	
0010	402+55	-	533+41		19,840	
TOTAL 0010					51,120	

INCENTIVE DENSITY HMA PAVEMENT

460.2000						
CATEGORY	STATION	TO	STATION	LOCATION	DOL	REMARKS
0010	290+00	-	520+00	GTR TEST STRIPS	4,920	
TOTAL 0010					4,920	

INCENTIVE DENSITY PWL HMA PAVEMENT

460.2005						
CATEGORY	STATION	TO	STATION	LOCATION	DOL	REMARKS
0010	101+77	-	533+41	PROJECT	34,770	TRAVEL LANES
TOTAL 0010					34,770	

INCENTIVE AIR VOIDS HMA PAVEMENT

460.2010						
CATEGORY	STATION	TO	STATION	LOCATION	DOL	REMARKS
0010	101+77	-	533+41	PROJECT	47,080	SHLDR & LANES
TOTAL 0010					47,080	

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PWL MIXTURE USE TABLE								
The following acceptance criteria are applicable for this project								
LOCATION	STATION	MIXTURE USE	UNDERLYING SURFACE	BID ITEM	TONS	THICKNESS	QUALITY MANAGEMENT PROGRAM TO BE USED FOR	
							MIXTURE ACCEPTANCE	DENSITY ACCEPTANCE
Driving Lanes, 4-12 foot lanes	101+77 - 105+70	Upper Layer	3 MT 58-28 S	4 MT 58-28 S	205	1.75"	PWL Incentive Air Voids HMA Pavement 460.2010	Incentive Density PWL HMA Pavement 460.2005
Driving Lanes, 4-12 foot lanes	101+77 - 105+70	Lower Layer	Concrete/base	3 MT 58-28 S	264	2.25"	PWL Incentive Air Voids HMA Pavement 460.2010	Incentive Density PWL HMA Pavement 460.2005
Shoulder, 5-foot	101+77 - 105+70	Upper Layer	3 MT 58-28 S	4 MT 58-28 S	21	1.75"	PWL Incentive Air Voids HMA Pavement 460.2010	Acceptance testing by department; not eligible for incentive
Shoulder, 5-foot	101+77 - 105+70	Lower Layer	Concrete/base	3 MT 58-28 S	28	2.25"	PWL Incentive Air Voids HMA Pavement 460.2010	Acceptance testing by department; not eligible for incentive
Driving Lanes, 2-12 foot lanes	105+70 - 129+94	Upper Layer	3 MT 58-28 S	4 MT 58-28 S	633	1.75"	PWL Incentive Air Voids HMA Pavement 460.2010	Incentive Density PWL HMA Pavement 460.2005
Driving Lanes, 2-12 foot lanes	105+70 - 129+94	Lower Layer	Concrete/base	3 MT 58-28 S	814	2.25"	PWL Incentive Air Voids HMA Pavement 460.2010	Incentive Density PWL HMA Pavement 460.2005
Shoulders, 2-8-foot shoulder	105+70 - 129+94	Upper Layer	3 MT 58-28 S	4 MT 58-28 S	422	1.75"	PWL Incentive Air Voids HMA Pavement 460.2010	Acceptance testing by department; not eligible for incentive
Shoulder, 2-8-foot shoulder	105+70 - 129+94	Lower Layer	Concrete/base	3 MT 58-28 S	543	2.25"	PWL Incentive Air Voids HMA Pavement 460.2010	Acceptance testing by department; not eligible for incentive
Mainline, 14-foot TWLTL	105+70 - 129+94	Upper Layer	3 MT 58-28 S	4 MT 58-28 S	370	1.75"	PWL Incentive Air Voids HMA Pavement 460.2010	Acceptance testing by department; not eligible for incentive
Mainline, 14-foot TWLTL	105+70 - 129+94	Lower Layer	Concrete/base	3 MT 58-28 S	475	2.25"	PWL Incentive Air Voids HMA Pavement 460.2010	Acceptance testing by department; not eligible for incentive
Driving Lanes, 4-12 foot lanes	146+93 - 171+70	Upper Layer	3 MT 58-28 S	4 MT 58-28 S	1295	1.75"	PWL Incentive Air Voids HMA Pavement 460.2010	Incentive Density PWL HMA Pavement 460.2005
Driving Lanes, 4-12 foot lanes	146+93 - 171+70	Lower Layer	Concrete/base	3 MT 58-28 S	1665	2.25"	PWL Incentive Air Voids HMA Pavement 460.2010	Incentive Density PWL HMA Pavement 460.2005
Shoulders, 2- 3-foot shoulders	146+93 - 171+70	Upper Layer	3 MT 58-28 S	4 MT 58-28 S	162	1.75"	PWL Incentive Air Voids HMA Pavement 460.2010	Acceptance testing by department; not eligible for incentive
Shoulders, 2- 3-foot shoulders	146+93 - 171+70	Lower Layer	Concrete/base	3 MT 58-28 S	208	2.25"	PWL Incentive Air Voids HMA Pavement 460.2010	Acceptance testing by department; not eligible for incentive
Driving Lanes, 2-12 foot lanes	171+70 - 290+00	Upper Layer	3 MT 58-28 S	4 MT 58-28 S	3092	1.75"	PWL Incentive Air Voids HMA Pavement 460.2010	Incentive Density PWL HMA Pavement 460.2005
Driving Lanes, 2-12 foot lanes	171+70 - 290+00	Lower Layer	Concrete/base	3 MT 58-28 S	3975	2.25"	PWL Incentive Air Voids HMA Pavement 460.2010	Incentive Density PWL HMA Pavement 460.2005
Mainline, 2-8-foot shoulder	171+70 - 290+00	Upper Layer	3 MT 58-28 S	4 MT 58-28 S	2061	1.75"	PWL Incentive Air Voids HMA Pavement 460.2010	Acceptance testing by department; not eligible for incentive
Mainline, 2-8-foot shoulder	171+70 - 290+00	Lower Layer	Concrete/base	3 MT 58-28 S	2650	2.25"	PWL Incentive Air Voids HMA Pavement 460.2010	Acceptance testing by department; not eligible for incentive
Mainline, 14-foot TWLTL	171+70 - 290+00	Upper Layer	3 MT 58-28 S	4 MT 58-28 S	1803	1.75"	PWL Incentive Air Voids HMA Pavement 460.2010	Acceptance testing by department; not eligible for incentive
Mainline, 14-foot TWLTL	171+70 - 290+00	Lower Layer	Concrete/base	3 MT 58-28 S	2319	2.25"	PWL Incentive Air Voids HMA Pavement 460.2010	Acceptance testing by department; not eligible for incentive

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PWL MIXTURE USE TABLE								
			The following acceptance criteria are applicable for this project					
LOCATION	STATION	MIXTURE USE	UNDERLYING SURFACE	BID ITEM	TONS	THICKNESS	QUALITY MANAGEMENT PROGRAM TO BE USED FOR	
							MIXTURE ACCEPTANCE	DENSITY ACCEPTANCE
Driving Lanes, 2-12 foot lanes	290+00 - 400+55	Upper Layer	3 MT 58-28 S	4 MT 58-28 S	2889	1.75"	PWL Incentive Air Voids HMA Pavement 460.2010	Incentive Density PWL HMA Pavement 460.2005
Driving Lane, 12-foot	290+00 - 400+55	Upper Layer	3 MT 58-28 S	4 MT 58-28 H	1445	1.75	QMP as per SS 460.	Incentive Density HMA Pavement 460.2000
Driving Lane, 12-foot	290+00 - 400+55	Upper Layer	3 MT 58-28 S	4 MT Modified - GTR 1	1445	1.75	QMP as per SS 460.	Incentive Density HMA Pavement 460.2000
Driving Lanes, 4-12 foot lanes	290+00 - 400+55	Lower Layer	Concrete/base	3 MT 58-28 S	7429	2.25"	PWL Incentive Air Voids HMA Pavement 460.2010	Incentive Density PWL HMA Pavement 460.2005
Shoulder, 3-foot	290+00 - 400+55	Upper Layer	3 MT 58-28 S	4 MT Modified - GTR 1	422	1.75	QMP as per SS 460.	Incentive Density HMA Pavement 460.2000
Shoulder, 3-foot	290+00 - 400+55	Upper Layer	3 MT 58-28 S	4 MT 58-28 H	442	1.75	QMP as per SS 460.	Incentive Density HMA Pavement 460.2000
Shoulders, 2- 3-foot shoulders	290+00 - 400+55	Lower Layer	Concrete/base	3 MT 58-28 S	929	2.25"	PWL Incentive Air Voids HMA Pavement 460.2010	Acceptance testing by department; not eligible for incentive
Mainline, 14-foot TWLTL	349+20 + 391+55	Upper Layer	3 MT 58-28 S	4 MT 58-28 S	646	1.75"	PWL Incentive Air Voids HMA Pavement 460.2010	Acceptance testing by department; not eligible for incentive
Mainline, 14-foot TWLTL	349+20 - 391+55	Lower Layer	Concrete/base	3 MT 58-28 S	830	2.25"	PWL Incentive Air Voids HMA Pavement 460.2010	Acceptance testing by department; not eligible for incentive
Driving Lanes, 2-12 foot lanes	402+55 - 520+00	Upper Layer	3 MT 58-28 S	4 MT 58-28 S	3069	1.75"	PWL Incentive Air Voids HMA Pavement 460.2010	Incentive Density PWL HMA Pavement 460.2005
Driving Lane, 12-foot	402+55 - 520+00	Upper Layer	3 MT 58-28 S	4 MT Modified - GTR 2	1535	1.75	QMP as per SS 460.	Incentive Density HMA Pavement 460.2000
Driving Lane, 12-foot	402+55 - 520+00	Upper Layer	3 MT 58-28 S	4 MT Modified - Dry	1535	1.75	QMP as per SS 460.	Incentive Density HMA Pavement 460.2000
Driving Lanes, 4-12 foot lanes	402+55 - 520+00	Lower Layer	Concrete/base	3 MT 58-28 S	7893	2.25"	PWL Incentive Air Voids HMA Pavement 460.2010	Incentive Density PWL HMA Pavement 460.2005
Shoulder, 3-foot	402+55 - 520+00	Upper Layer	3 MT 58-28 S	4 MT Modified - GTR 2	402	1.75	QMP as per SS 460.	Incentive Density HMA Pavement 460.2000
Shoulder, 3-foot	402+55 - 520+00	Upper Layer	3 MT 58-28 S	4 MT Modified - Dry	453	1.75	QMP as per SS 460.	Incentive Density HMA Pavement 460.2000
Driving Lanes, 4-12 foot lanes	520+50 - 533+41	Upper Layer	3 MT 58-28 S	4 MT 58-28 S	675	1.75"	PWL Incentive Air Voids HMA Pavement 460.2010	Incentive Density PWL HMA Pavement 460.2005
Driving Lanes, 4-12 foot lanes	520+50 - 533+41	Lower Layer	Concrete/base	3 MT 58-28 S	868	2.25"	PWL Incentive Air Voids HMA Pavement 460.2010	Incentive Density PWL HMA Pavement 460.2005
Shoulder, 3-foot	520+50 - 533+41	Upper Layer	3 MT 58-28 S	4 MT 58-28 S	42	1.75"	PWL Incentive Air Voids HMA Pavement 460.2010	Acceptance testing by department; not eligible for incentive
Shoulder, 3-foot	520+50 - 533+41	Lower Layer	Concrete/base	3 MT 58-28 S	54	2.25"	PWL Incentive Air Voids HMA Pavement 460.2010	Acceptance testing by department; not eligible for incentive



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A CURB RAMP - INSTALL DETECTABLE WARNING FIELD - SEE STANDARD DETAIL DRAWING 8D5 SHEET d: CURB RAMP TYPE 4B1

*PEDESTRIAN ACCOMMODATION - WHEN CLOSING A CURB RAMP(S), FOLLOW SDD 15D30: TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION FOR GUIDANCE ON ACCOMMODATING PEDESTRIAN WHILE CURB RAMP(S) IS CLOSED. USE THE "SIDEWALK DIVERSION" LAYOUT. PROVIDE PROPER PEDESTRIAN SIGNING, PEDESTRIAN FENCING, AND TEMPORARY CURB RAMPS WHERE NEEDED.

PEDESTRIAN ACCOMMODATION BAYLISS AVE & VALLEY RD - FOR INFORMATION ONLY
TEMPORARY PEDESTRIAN SURFACE (ASPHALT, PLYWOOD, OR PLATE): 400 SF
TEMPORARY CURB RAMP: 4 EACH
TEMPORARY PEDESTRIAN SAFETY FENCE: 300 LF

BAYLISS AVE CURB RAMP - FOR INFORMATION ONLY
EXISTING RAMP SLOPE:
SE RAMP = 3.36%
NE RAMP = -2.11%
*NOTE: A 2% CROSS-SLOPE CAN NOT BE MET ON RAMPS

VALLEY RD CURB RAMP - FOR INFORMATION ONLY
EXISTING RAMP SLOPE:
SE RAMP = 0.49%
NE RAMP = -0.71%
*NOTE: A 2% CROSS-SLOPE CAN NOT BE MET ON RAMPS



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A CURB RAMP - INSTALL DETECTABLE WARNING FIELD - SEE STANDARD DETAIL DRAWING 8D5 SHEET d: CURB RAMP TYPE 4B1

*PEDESTRIAN ACCOMMODATION - WHEN CLOSING A CURB RAMP(S), FOLLOW SDD 15D30: TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION FOR GUIDANCE ON ACCOMMODATING PEDESTRIAN WHILE CURB RAMP(S) IS CLOSED. USE THE "SIDEWALK DIVERSION" LAYOUT. PROVIDE PROPER PEDESTRIAN SIGNING, PEDESTRIAN FENCING, AND TEMPORARY CURB RAMPS WHERE NEEDED.

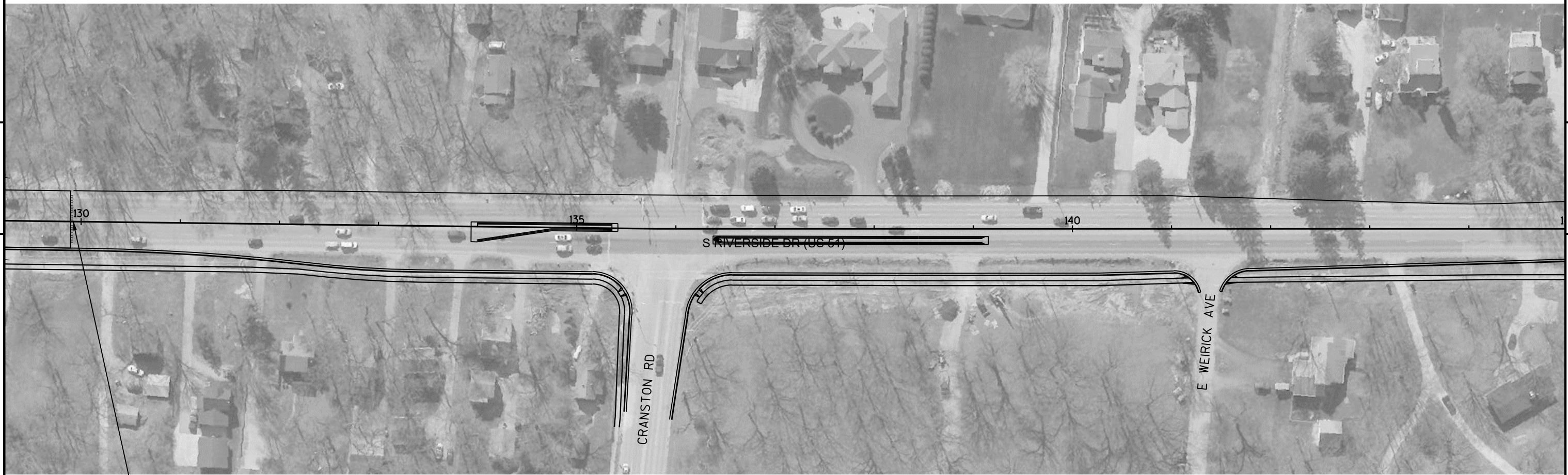
PEDESTRIAN ACCOMMODATION HENDERSON AVE - FOR INFORMATION ONLY
TEMPORARY PEDESTRIAN SURFACE (ASPHALT, PLYWOOD, OR PLATE): 200 SF
TEMPORARY CURB RAMP: 2 EACH
TEMPORARY PEDESTRIAN SAFETY FENCE: 150 LF

HENDERSON AVE CURB RAMPS - FOR INFORMATION ONLY
EXISTING RAMP SLOPES:
SE RAMP = 0.36%
NE RAMP = -3.92%
*NOTE: A 2% CROSS-SLOPE CAN NOT BE MET ON RAMPS.



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STOP CONSTRUCTION
STA 129+94

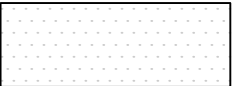


RESUME CONSTRUCTION
STA 146+93

5



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INDICATES:
ENVIRONMENTALLY
SENSITIVE AREA

SEE CONSTRUCTION DETAIL
DRAINAGE STRUCTURE A



5

NEWARK RD (CTY Q)

ALLIANT ENERGY - ELECTRICITY

ALLIANT ENERGY - GAS

ELWOOD AVE

BRIAR LN

S RIVERSIDE DR (US 51)

HO

GUY

MH

CAUTION

160

165

170

175

INDICATES:
ENVIRONMENTALLY
SENSITIVE AREA

- PEDESTRIAN ACCOMMODATION ELMWOOD AVE & BRIAR LN - FOR INFORMATION ONLY
-
- TEMPORARY PEDESTRIAN SURFACE (ASPHALT, PLYWOOD, OR PLATE): 600 SF
TEMPORARY CURB RAMP: 4 EACH
TEMPORARY PEDESTRIAN SAFETY FENCE: 240 LF
- BRIAR LN CURB RAMPS - FOR INFORMATION ONLY
- EXISTING CURB RAMP SLOPES:
SE RAMP = -1.12%
NE RAMP = 4.02%
*NOTE: 2% CROSS-SLOPE CAN BE MET ON RAMPS

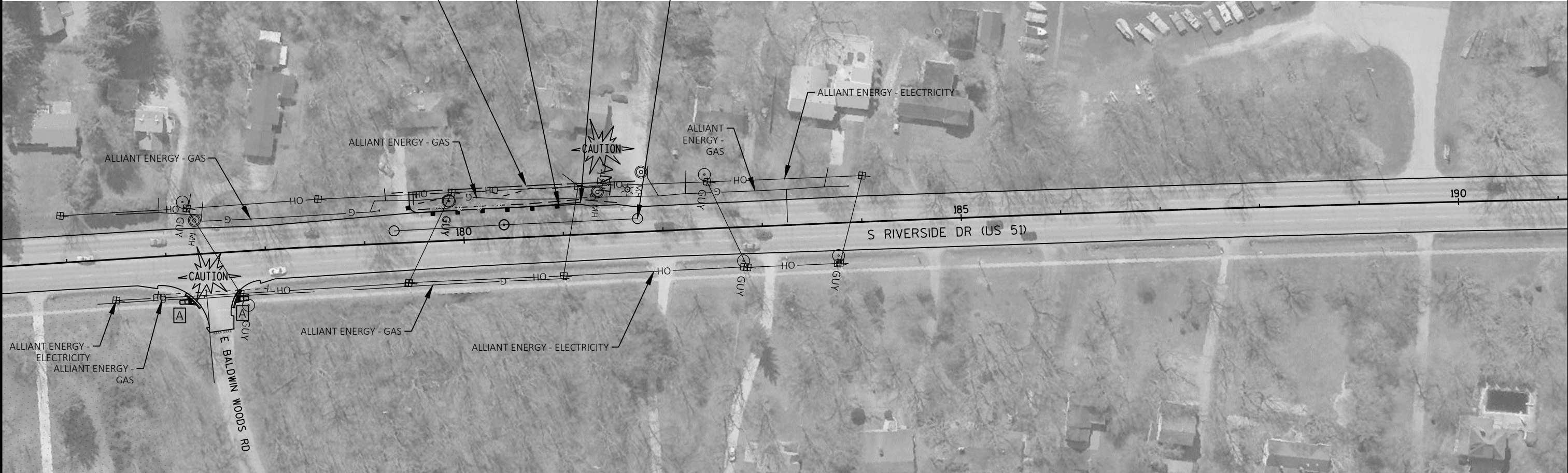


BEAM GUARD LOCATION "A"
STEEL PLATE BEAM GUARD CLASS A EAT REQUIRED
STEEL PLATE BEAM GUARD CLASS A STA. 180+43.53"A" - 180+68.53"A"
STEEL PLATE BEAM GUARD OVER LOW-FILL CULVERTS STA. 179+54.98"A" - 180+43.53"A"
-SPAN LENGTH IS 14' (SSD 14B43 SHEET A)
STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL END REQUIRED
- 8' RADIUS
-NO HEIGHT TRANSITION
-SHORT RADIUS LENGTH 13FT
-3 CRT POSTS
BARRIER SYSTEM GRADING SHAPING FINISHING REQUIRED
-SEE MISC. QUANTITIES BEAM GUARD TABLE FOR MORE INFORMATION

POST # 1
STA. 181+18.52"A", 19' LT
- 2' OFFSET TO FACE OF RAIL
- 3' TO HINGE POINT

ALIGNMENT "A" - SEE ALIGNMENT DETAIL SHEET

EX. R/W



A CURB RAMP - INSTALL DETECTABLE WARNING FIELD - SEE STANDARD DETAIL DRAWING 8D5 SHEET d: CURB RAMP TYPE 4B1

*PEDESTRIAN ACCOMMODATION - WHEN CLOSING A CURB RAMP(S), FOLLOW SDD 15D30: TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION FOR GUIDANCE ON ACCOMMODATING PEDESTRIAN WHILE CURB RAMP(S) IS CLOSED. USE THE "SIDEWALK DIVERSION" LAYOUT. PROVIDE PROPER PEDESTRIAN SIGNING, PEDESTRIAN FENCING, AND TEMPORARY CURB RAMP(S) WHERE NEEDED.



INDICATES:
ENVIRONMENTALLY
SENSITIVE AREA

PEDESTRIAN ACCOMMODATION E. BALDWIN WOODS RD - FOR INFORMATION ONLY
TEMPORARY PEDESTRIAN SURFACE (ASPHALT, PLYWOOD, OR PLATE): 325 SF
TEMPORARY CURB RAMP: 2 EACH
TEMPORARY PEDESTRIAN SAFETY FENCE: 130 LF

E. BALDWIN WOODS RD CURB RAMP(S) - FOR INFORMATION ONLY
EXISTING CURB RAMP SLOPES:
SE RAMP = 3.14%
NE RAMP = 2.61%
*NOTE: CROSS-SLOPE CAN BE MET FOR SE RAMP. CROSS SLOPE FOR NE RAMP CAN NOT BE MET.



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A CURB RAMP - INSTALL DETECTABLE WARNING FIELD - SEE STANDARD DETAIL DRAWING 8D5 SHEET d: CURB RAMP TYPE 4B1

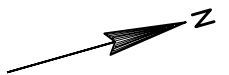
*PEDESTRIAN ACCOMMODATION - WHEN CLOSING A CURB RAMP(S), FOLLOW SDD 15D30: TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION FOR GUIDANCE ON ACCOMMODATING PEDESTRIAN WHILE CURB RAMP(S) IS CLOSED. USE THE "SIDEWALK DIVERSION" LAYOUT. PROVIDE PROPER PEDESTRIAN SIGNING, PEDESTRIAN FENCING, AND TEMPORARY CURB RAMPS WHERE NEEDED.

SEE CONSTRUCTION
DETAIL DRAINAGE
STRUCTURE C

PEDESTRIAN ACCOMMODATION HILLSIDE AVE & E. INMAN PKWY - FOR INFORMATION ONLY
TEMPORARY PEDESTRIAN SURFACE (ASPHALT, PLYWOOD, OR PLATE): 425 SF
TEMPORARY CURB RAMP: 3 EACH
TEMPORARY PEDESTRIAN SAFETY FENCE: 300 LF

HILLSIDE AVE CURB RAMPS - FOR INFORMATION ONLY
EXISTING RAMP SLOPES:
SE RAMP = -1.23%
NE RAMP = 6.27%
*NOTE: 2% CROSS-SLOPE CAN NOT BE MET ON RAMPS

INMAN PKWY CURB RAMP - FOR INFORMATION ONLY
EXISTING RAMP SLOPES:
SE RAMP = 5.70%
*NOTE: 2% CROSS-SLOPE CAN NOT BE MET ON RAMP



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SEE INSTRUCTION DETAIL: INMAN PKWY

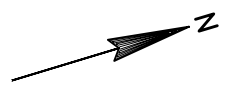
SEE CONSTRUCTION DETAIL SIDEWALK BUS STOP

A CURB RAMP - INSTALL DETECTABLE WARNING FIELD - SEE STANDARD DETAIL DRAWING 8D5 SHEET d: CURB RAMP TYPE 4B1

*PEDESTRIAN ACCOMMODATION - WHEN CLOSING A CURB RAMP(S), FOLLOW SDD 15D30: TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION FOR GUIDANCE ON ACCOMMODATING PEDESTRIAN WHILE CURB RAMP(S) IS CLOSED. USE THE "SIDEWALK DIVERSION" LAYOUT. PROVIDE PROPER PEDESTRIAN SIGNING, PEDESTRIAN FENCING, AND TEMPORARY CURB RAMPS WHERE NEEDED.

PEDESTRIAN ACCOMMODATION E. AZALEA TERRACE - FOR INFORMATION ONLY
TEMPORARY PEDESTRIAN SURFACE (ASPHALT, PLYWOOD, OR PLATE): 350 SF
TEMPORARY CURB RAMP: 2 EACH
TEMPORARY PEDESTRIAN SAFETY FENCE: 150 LF

E. AZALEA TERRACE CURB RAMPS - FOR INFORMATION ONLY
EXISTING CURB RAMP SLOPES:
SE RAMP= 11.10%
NE RAMP= 4.21%
*NOTE: 2% CROSS-SLOPE CAN NOT BE MET ON RAMPS

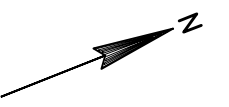


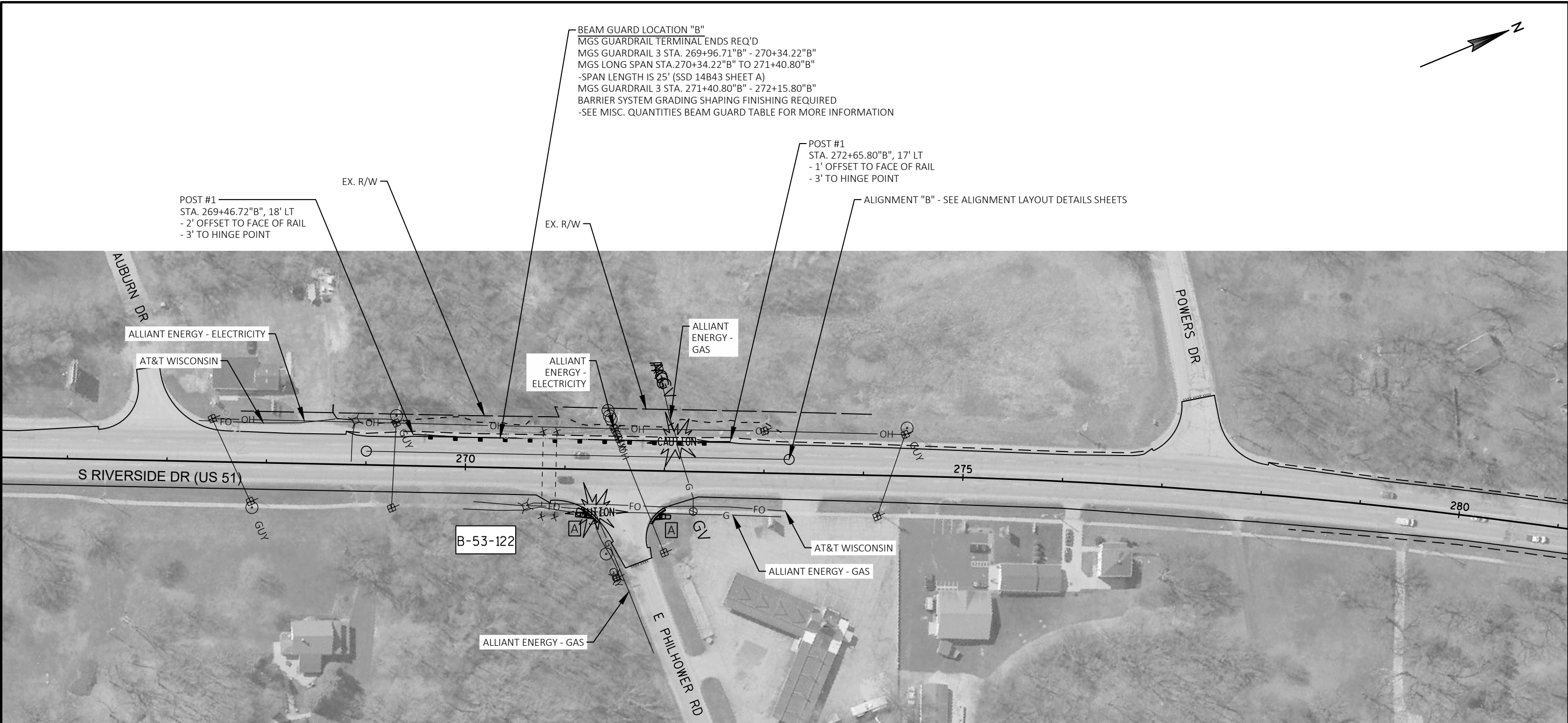
PEDESTRIAN ACCOMMODATION BAYLISS AVE & VALLEY RD - FOR INFORMATION ONLY

- TEMPORARY PEDESTRIAN SURFACE (ASPHALT, PLYWOOD, OR PLATE): XX SF
- TEMPORARY CURB RAMP: 4 EACH
- TEMPORARY PEDESTRIAN SAFETY FENCE: XX LF

A CURB RAMP - INSTALL DETECTABLE WARNING FIELD - SEE STANDARD DETAIL DRAWING 8D5 SHEET d: CURB RAMP TYPE 4B1

*PEDESTRIAN ACCOMMODATION - WHEN CLOSING A CURB RAMP(S), FOLLOW SDD 15D30: TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION FOR GUIDANCE ON ACCOMMODATING PEDESTRIAN WHILE CURB RAMP(S) IS CLOSED. USE THE "SIDEWALK DIVERSION" LAYOUT. PROVIDE PROPER PEDESTRIAN SIGNING, PEDESTRIAN FENCING, AND TEMPORARY CURB RAMPS WHERE NEEDED.





BEAM GUARD LOCATION "B"
MGS GUARDRAIL TERMINAL ENDS REQ'D
MGS GUARDRAIL 3 STA. 269+96.71"B" - 270+34.22"B"
MGS LONG SPAN STA.270+34.22"B" TO 271+40.80"B"
-SPAN LENGTH IS 25' (SSD 14B43 SHEET A)
MGS GUARDRAIL 3 STA. 271+40.80"B" - 272+15.80"B"
BARRIER SYSTEM GRADING SHAPING FINISHING REQUIRED
-SEE MISC. QUANTITIES BEAM GUARD TABLE FOR MORE INFORMATION

POST #1
STA. 269+46.72"B", 18' LT
- 2' OFFSET TO FACE OF RAIL
- 3' TO HINGE POINT

POST #1
STA. 272+65.80"B", 17' LT
- 1' OFFSET TO FACE OF RAIL
- 3' TO HINGE POINT

ALIGNMENT "B" - SEE ALIGNMENT LAYOUT DETAILS SHEETS

ALLIANT ENERGY - ELECTRICITY

AT&T WISCONSIN

ALLIANT ENERGY - ELECTRICITY

ALLIANT ENERGY - GAS

B-53-122

AT&T WISCONSIN

ALLIANT ENERGY - GAS

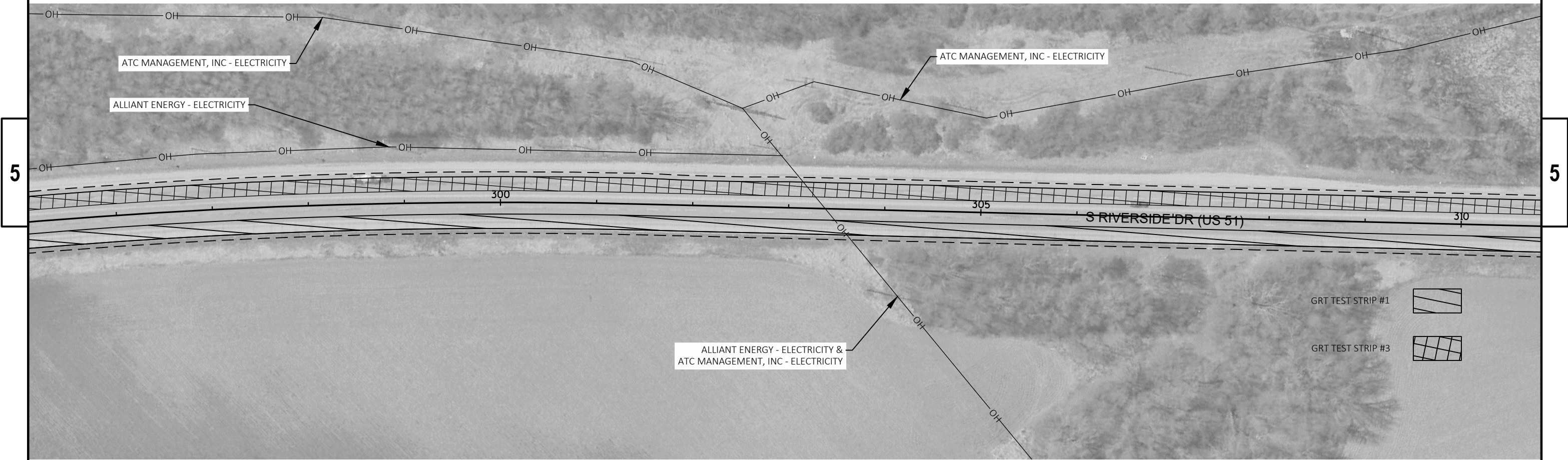
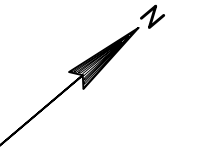
ALLIANT ENERGY - GAS

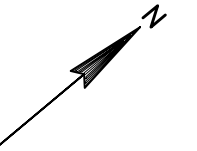
A CURB RAMP - INSTALL DETECTABLE WARNING FIELD - SEE STANDARD DETAIL DRAWING 8D5 SHEET d: CURB RAMP TYPE 4B1

*PEDESTRIAN ACCOMMODATION - WHEN CLOSING A CURB RAMP(S), FOLLOW SDD 15D30: TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION FOR GUIDANCE ON ACCOMMODATING PEDESTRIAN WHILE CURB RAMP(S) IS CLOSED. USE THE "SIDEWALK DIVERSION" LAYOUT. PROVIDE PROPER PEDESTRIAN SIGNING, PEDESTRIAN FENCING, AND TEMPORARY CURB RAMPS WHERE NEEDED.

PEDESTRIAN ACCOMMODATION E. PHILHOWER RD - FOR INFORMATION ONLY
TEMPORARY PEDESTRIAN SURFACE (ASPHALT, PLYWOOD, OR PLATE): 250 SF
TEMPORARY CURB RAMP: 2 EACH
TEMPORARY PEDESTRIAN SAFETY FENCE: 180 LF

E. PHILHOWER RD CURB RAMPS - FOR INFORMATION ONLY
EXISTING CURB RAMP SLOPES:
SE RAMP= -0.94%
NE RAMP= 3.64%
*NOTE: 2% CROSS-SLOPE CAN BE FOR BOTH RAMPS





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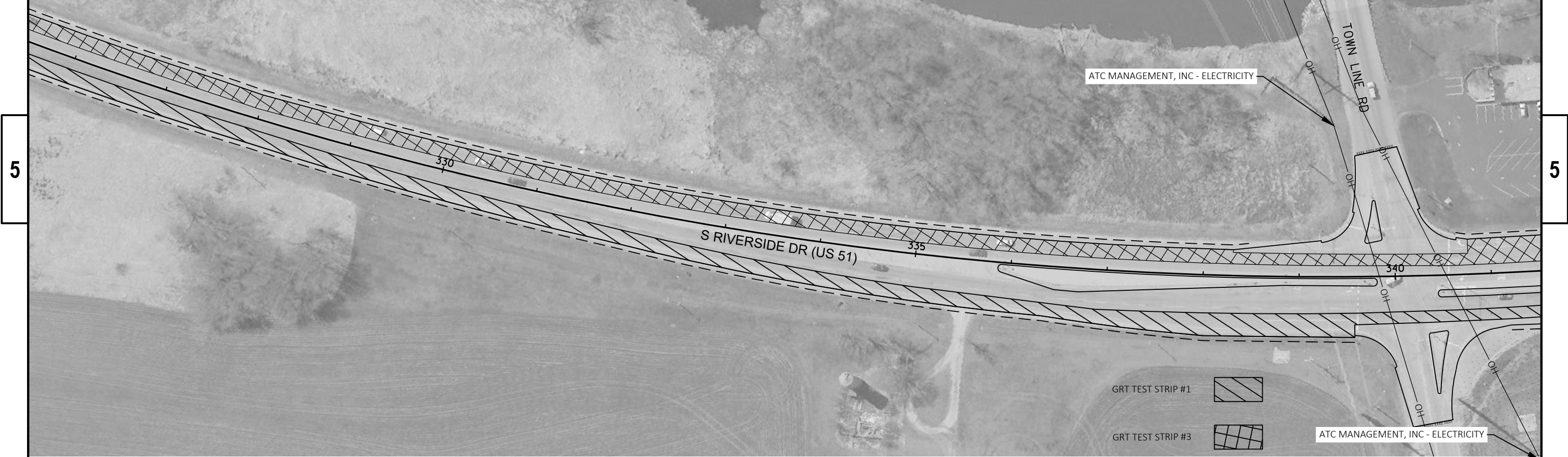


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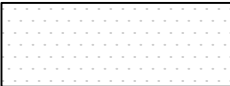
TRAFFIC CONTROL:
FOLLOW SDD 15D21: TRAFFIC CONTROL, INTERSECTION WITHIN
SINGLE LANE CLOSURE, WHEN STAGING LANE SINGLE CLOSURE FOR
STAGE 1 & 2 AT TOWNLINE ROAD

FOLLOW SDD 15D23: TRAFFIC CONTROL, INTERSECTION WITHIN
TWO LANE CLOSURE FOR STAGE 3 AT TOWNLINE ROAD



GRT TEST STRIP #1

GRT TEST STRIP #3



INDICATES:
ENVIRONMENTALLY
SENSITIVE AREA



POST #1
STA. 347+91.34"H", 22' LT
-2' OFFSET TO FACE OF RAIL
-5' TO HINGE POINT

ALIGNMENT H
SEE ALIGNMENT LAYOUT DETAILS SHEETS

EX. R/W

EX. R/W

EX. R/W

POST #1
STA. 350+92.70"H", 20' LT
-0' OFFSET TO FACE OF RAIL
-3' TO HINGE POINT

BEAM GUARD LOCATION "H"
MGS GUARDRAIL TERMINAL EAT REQ'D
MGS GUARDRAIL LONG SPAN STA. 348+41.73"H" - 349+45.41"H"
MGS GUARDRAIL 3 STA. 349+45.41"H" - 350+42.58"H"
BARRIER SYSTEM GRADING SHAPING FINISHING REQUIRED
-SEE MISC. QUANTITIES BEAM GUARD TABLE FOR MORE INFORMATION

GRT TEST STRIP #1



GRT TEST STRIP #3



ALLIANT ENERGY - GAS

ALLIANT
ENERGY
- GAS

ALLIANT ENERGY - GAS

ALLIANT
ENERGY -
ELECTRICITY

ALLIANT
ENERGY -
ELECTRICITY

WETLAND

*WETLAND - DO
NOT DISTURB

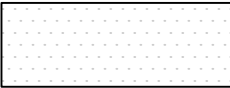
ALIGNMENT G
SEE ALIGNMENT LAYOUT DETAILS SHEETS

POST #1
STA. 346+55.24"G", 22' RT
-2' OFFSET TO RAIL FACE
-5' TO HINGE POINT

BEAM GUARD LOCATION "G"
MGS GUARDRAIL TERMINAL EAT REQ'D
MGS GUARDRAIL 3 STA. 347+05.18"G" - 348+98.05"G"
MGS GUARDRAIL SHORT RADIUS REQ'D
-16' RADIUS
BARRIER SYSTEM GRADING SHAPING FINISHING REQUIRED
-SEE MISC. QUANTITIES BEAM GUARD TABLE FOR MORE INFORMATION

EX. R/W

INDICATES:
ENVIRONMENTALLY
SENSITIVE AREA



5

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PROJECT NO: 5350-01-73

HWY: USH 51

COUNTY: ROCK

PLAN SHEETS - RIVERSIDE DR.

SHEET

119

E

FILE NAME : N:\PDS\3D\53500103\SHEETS\PLAN\050201_PN.DWG
LAYOUT NAME - 050201_PN - SHEET - (17)

PLOT DATE : 11/9/2018 12:25 PM

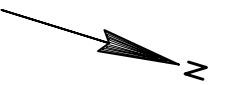
PLOT BY : SCHMIDT, DAVID B

PLOT NAME :

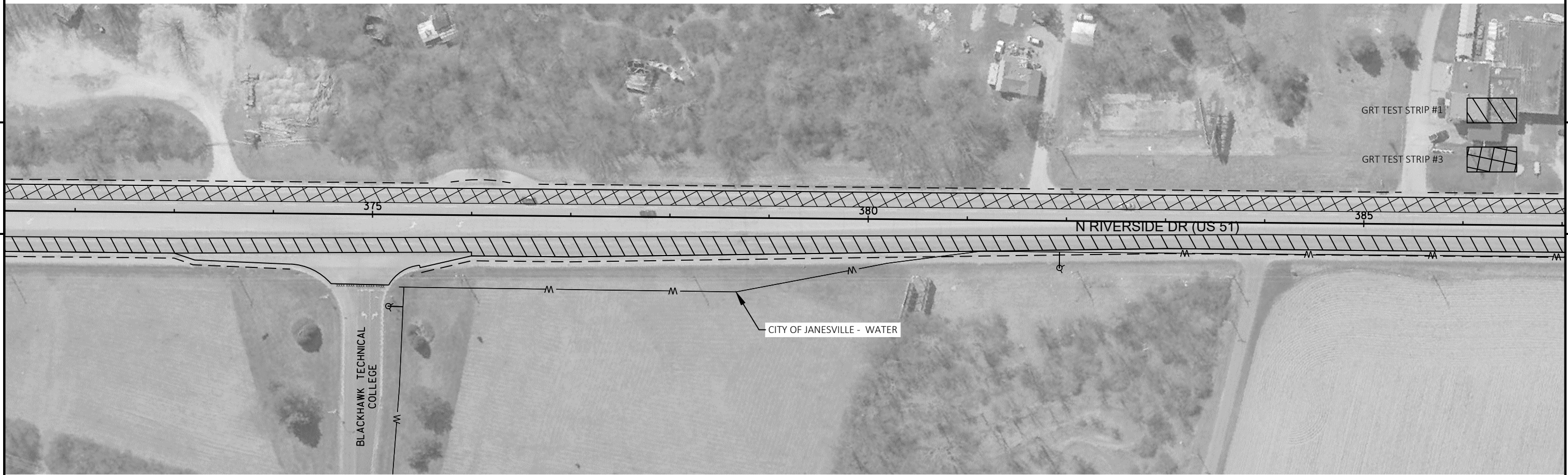
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WISDOT/CADDs SHEET 44

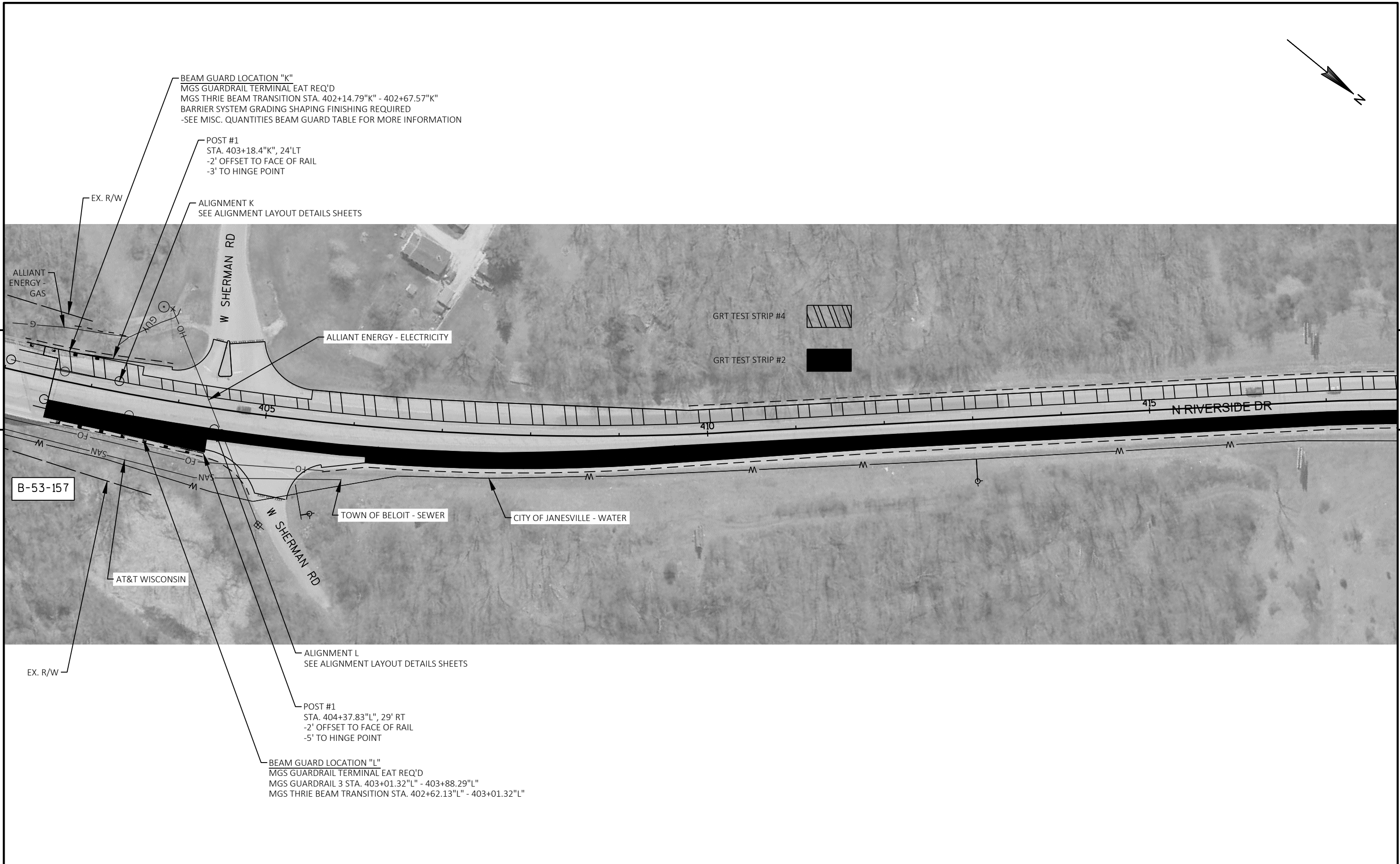




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GRT TEST STRIP #4



GRT TEST STRIP #2



N RIVERSIDE DR (US 51)

450

455

460

NVS

SAN

SAN

CITY OF JANESVILLE - WATER

CITY OF JANESVILLE - SEWER

PROJECT NO: 5350-01-73

HWY: USH 51

COUNTY: ROCK

PLAN SHEETS - RIVERSIDE DR.

SHEET

126

E

FILE NAME : N:\PDS\3D\53500103\SHEETS\PLAN\050201_PN.DWG
LAYOUT NAME - 050201_PN - SHEET - (24)

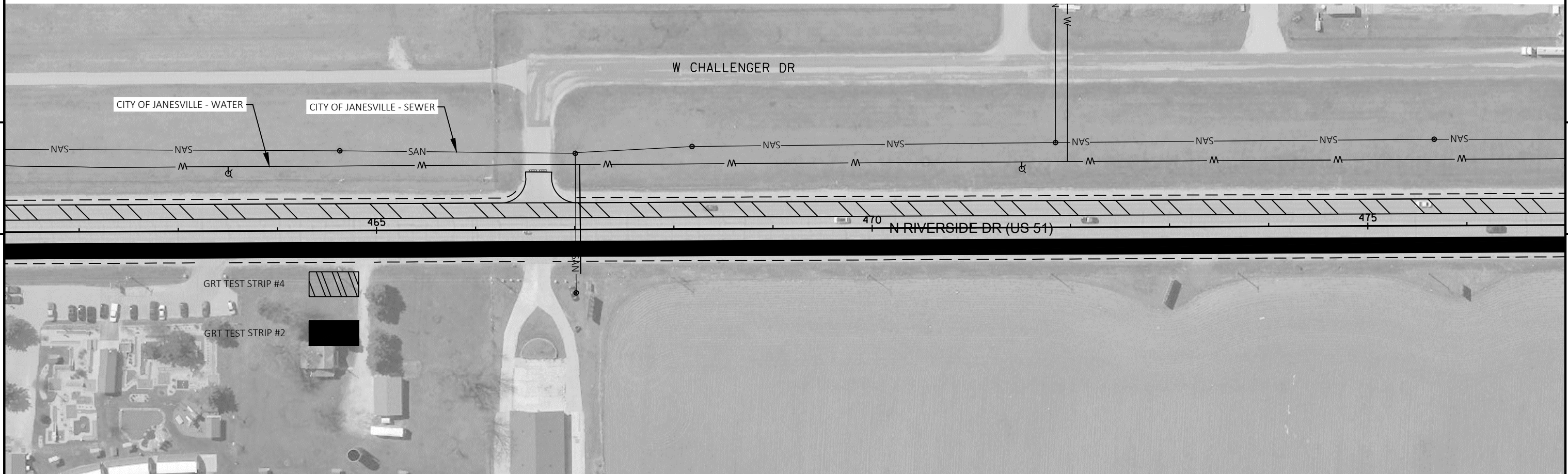
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PLOT BY : SCHMIDT, DAVID B

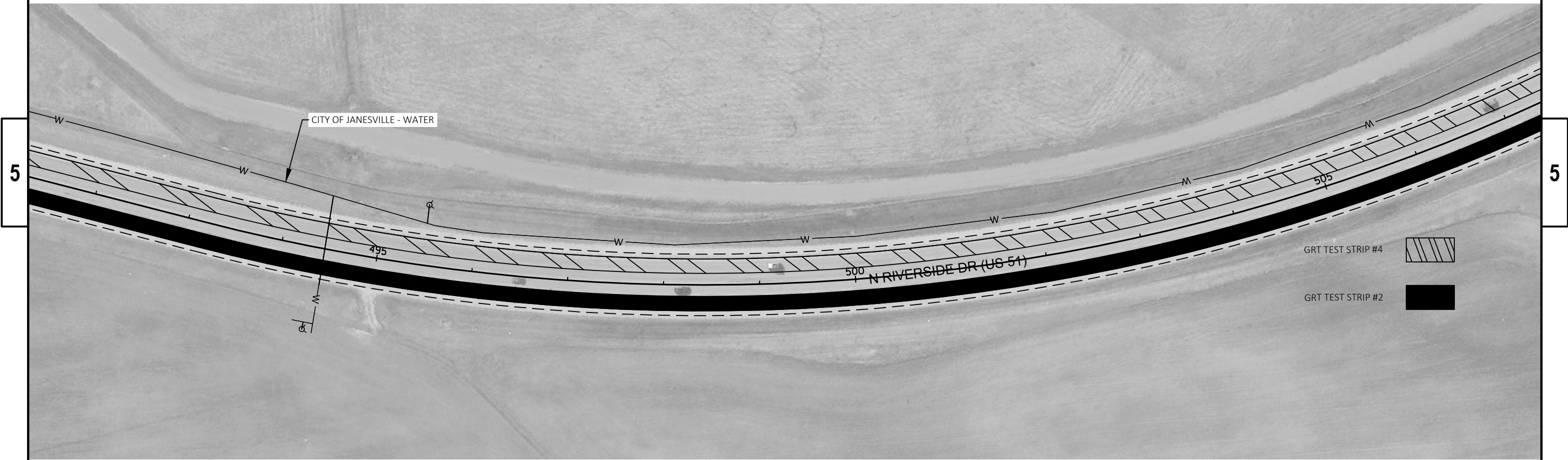
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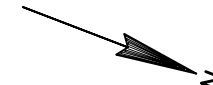
PLOT SCALE : 1 IN:100 FT

WISDOT/CADDs SHEET 44







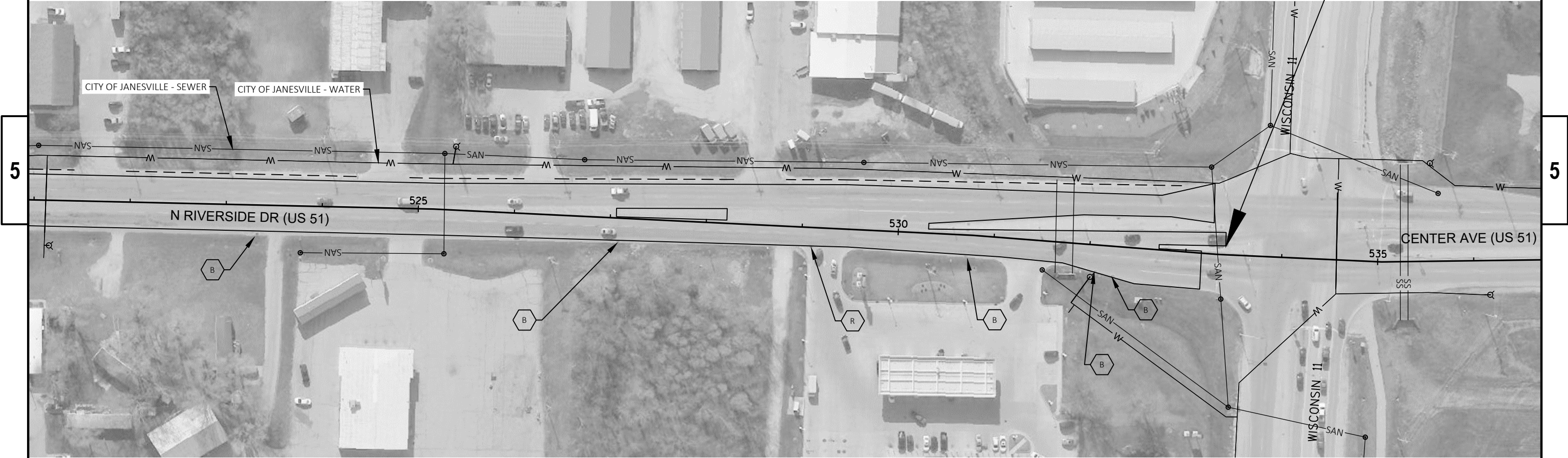




TRAFFIC CONTROL:
FOLLOW SDD 15D21: TRAFFIC CONTROL, INTERSECTION WITHIN
SINGLE LANE CLOSURE, WHEN STAGING LANE SINGLE CLOSURE FOR
STAGE 1 & 2 AT WISCONSIN 11

FOLLOW SDD 15D23: TRAFFIC CONTROL, INTERSECTION WITHIN
TWO LANE CLOSURE FOR STAGE 3 AT WISCONSIN 11

END PROJECT
STA 533+41.43



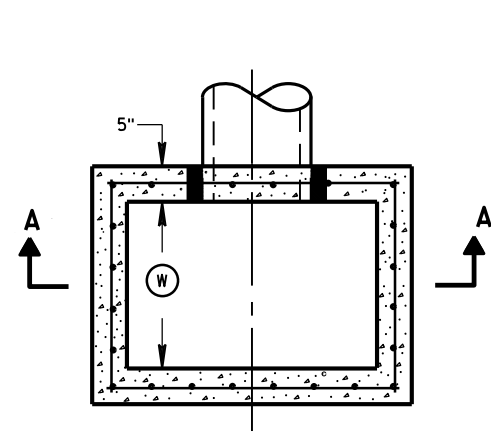
-  - REMOVE THE NECESSARY CURB & GUTTER TO ADJUST INLET COVER
- ADJUST INLET COVER
- CONCRETE CURB & GUTTER 6-INCH SLOPED 30-INCH TYPE D
-  - REMOVE THE NECESSARY CURB & GUTTER
- RECONSTRUCT INLET
- CONCRETE CURB & GUTTER 6-INCH SLOPED 30-INCH TYPE D

Standard Detail Drawing List

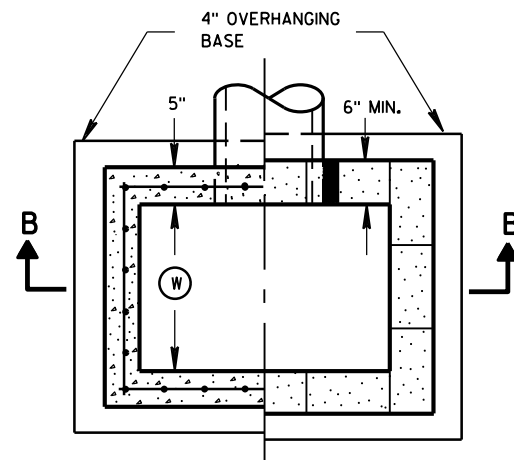
08C07-02	INLETS 2X2-FT, 2X2.5-FT, 2X3-FT AND 2.5X3-FT
08C08-02	INLETS MEDIAN 1 AND 2 GRATE
08C09-02	INLETS MEDIAN 3 AND 4 GRATE
08D01-20A	CONCRETE CURB & GUTTER
08D05-19B	CURB RAMPS TYPES 2 AND 3
08D05-19C	CURB RAMPS TYPES 4A AND 4A1
08D05-19D	CURB RAMPS TYPE 4B AND 4B1
08D05-19F	CURB RAMPS RADIAL DETECTABLE WARNING FIELD APPLICATIONS
08D05-19G	CURB RAMPS RECTANGULAR AND RADIAL DETECTABLE WARNING PLATES
08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
08E10-02	INLET PROTECTION TYPE A, B, C AND D
08F04-07	JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL
09B16-01	PULL BOX NON-CONDUCTIVE
09F08-04	LOOP DETECTOR PLACED IN CRUSHED AGGREGATE BASE (NEW ASPHALTIC PAVEMENT)
13B02-08A	CONCRETE PAVEMENT APPROACH SLAB
13C01-19	CONCRETE PAVEMENT LONGITUDINAL JOINTS AND TIES
14B15-11A	STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATION & ELEMENTS
14B15-11B	STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATION & ELEMENTS
14B15-11C	STEEL PLATE BEAM GUARD, CLASS "A", INSTALLATION & ELEMENTS
14B24-09A	STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL
14B24-09B	STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL
14B24-09C	STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL
14B25-01	STEEL PLATE BEAM GUARD, CLASS "A", OVER LOW FILL CULVERTS
14B27-01A	STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL
14B27-01B	STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL
14B27-01C	STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL
14B29-01	SAFETY EDGE
14B42-06A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-06B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-06C	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-06D	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B43-04A	MIDWEST GUARDRAIL SYSTEM LONG SPAN MGS (L)
14B43-04C	MIDWEST GUARDRAIL SYSTEM LONG SPAN MGS (L)
14B44-04A	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-04B	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-04C	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B45-05A	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05B	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05C	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05D	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B53-01A	SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)
14B53-01B	SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)
14B53-01C	SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)
14B53-01D	SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)
14B53-01E	SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)
14B53-01F	SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)
14B53-01G	SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)
14B53-01H	SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)
14B53-01I	SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)
15C04-05	TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 M.P.H. OR GREATER TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC
15C05-05	TRAFFIC CONTROL, ADVANCE WARNING SIGNS 40 M.P.H. OR LESS
15C07-14B	PAVEMENT MARKING WORDS
15C07-14C	PAVEMENT MARKING ARROWS
15C08-19A	LONGITUDINAL MARKING (MAINLINE)
15C08-19B	PAVEMENT MARKING (TURN LANES)
15C08-19C	PAVEMENT MARKING (TURN LANES)
15C18-04	MEDIAN ISLAND MARKING
15C19-05B	MOVING PAVEMENT MARKING OPERATION MULTI-LANE UNDIVIDED ROADWAY
15C27-03A	DOUBLE ARROW WARNING SIGN PLACEMENT
15C27-03B	PAVEMENT MARKING (ISLANDS)
15C33-03	STOP LINE AND CROSSWALK PAVEMENT MARKING
15C35-03A	PAVEMENT MARKING (INTERSECTIONS)
15D03-04	TRAFFIC CONTROL, LANE CLOSURE, SPEEDS GREATER THAN 40 M.P.H. WITH BARRIER
15D12-06A	TRAFFIC CONTROL, LANE CLOSURE
15D21-06	TRAFFIC CONTROL, INTERSECTION WITHIN SINGLE LANE CLOSURE
15D23-06	TRAFFIC CONTROL, INTERSECTION WITHIN TWO LANE CLOSURE

Standard Detail Drawing List

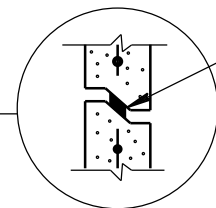
15D30-04A	TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION
15D30-04B	TRAFFIC CONTROL, TEMPORARY ADA COMPLIANT PEDESTRIAN ACCOMMODATION
15D30-04C	TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION
15D38-02A	TEMPORARY TRAFFIC CONTROL SIGN MOUNTING
15D38-02B	ATTACHMENT OF SIGNS TO POSTS



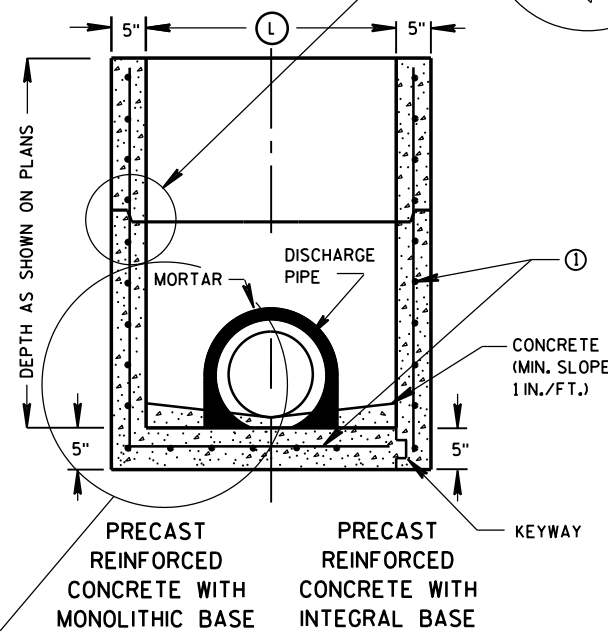
PLAN VIEW



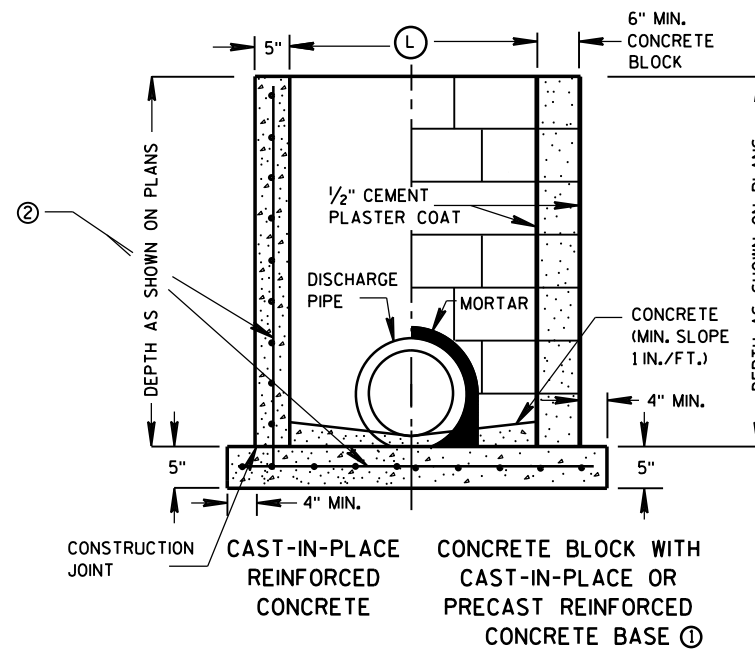
PLAN VIEW



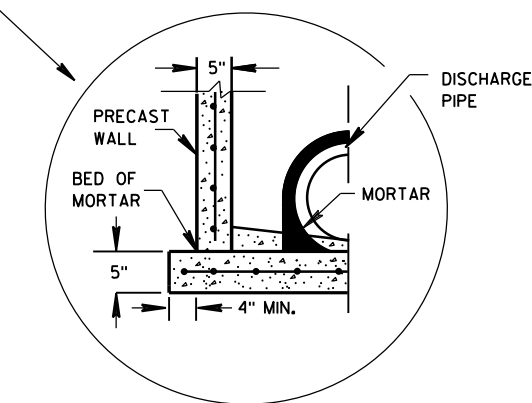
RISER JOINTS TO BE SEALED WITH A BUTYL RUBBER SEAL PER SEALANT MANUFACTURERS RECOMMENDATIONS CONFORMING TO ASTM C 990 (TYP)



SECTION A-A



SECTION B-B



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.

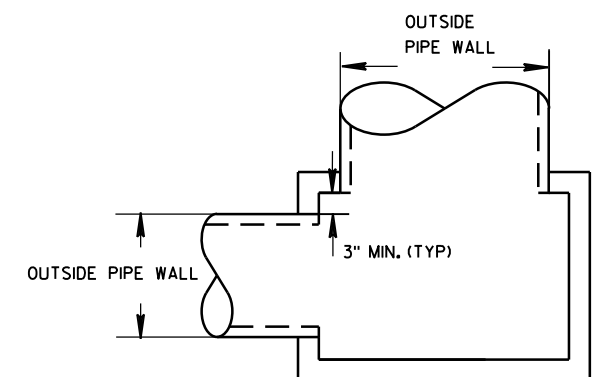
2 CONTRACTOR TO PROVIDE DRAWING(S) STAMPED BY A PROFESSIONAL ENGINEER FOR STEEL REINFORCING DESIGN FOR CAST-IN-PLACE STRUCTURES.

INLET COVER MATRIX

INLET SIZE		INLET COVER TYPE	ALL A'S	ALL B'S	BW	F	ALL H'S	S	T	V	WM
	WIDTH ① (FT)	LENGTH ② (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



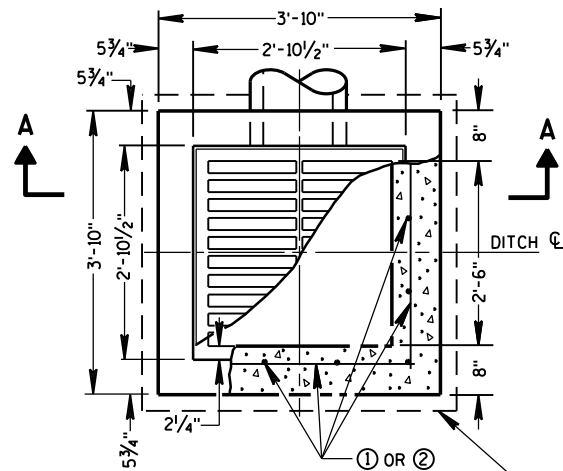
DETAIL "A"

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

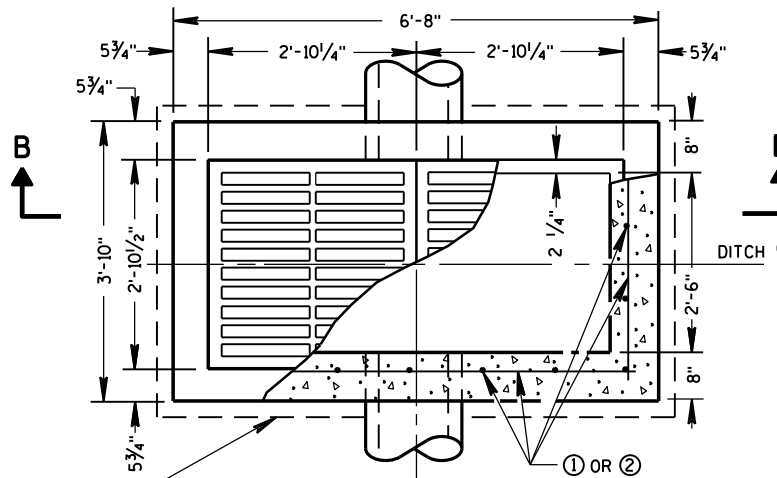
APPROVED
Sept., 2016 /S/ Rodney Taylor
DATE ROADWAY STANDARDS DIVISION
FHWA UNIT SUPERVISOR 134

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

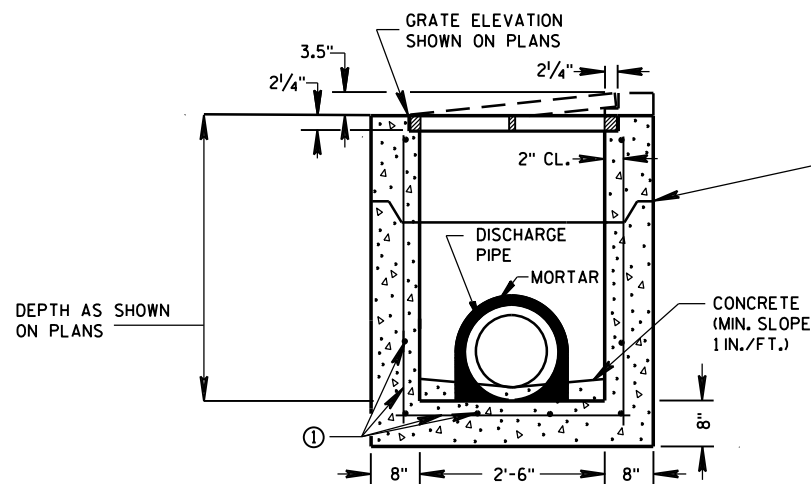


PLAN VIEW

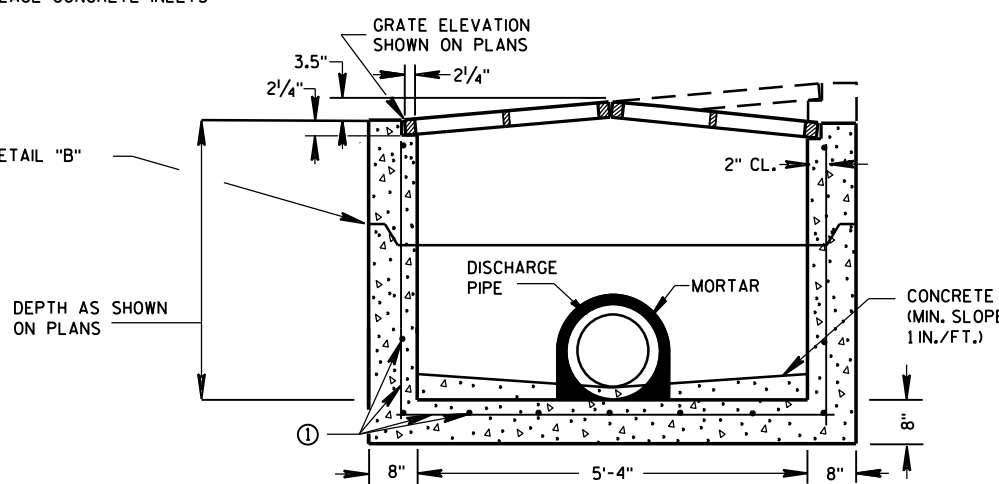
4" OVERHANGING BASE ON REINFORCED CAST-IN-PLACE CONCRETE INLETS



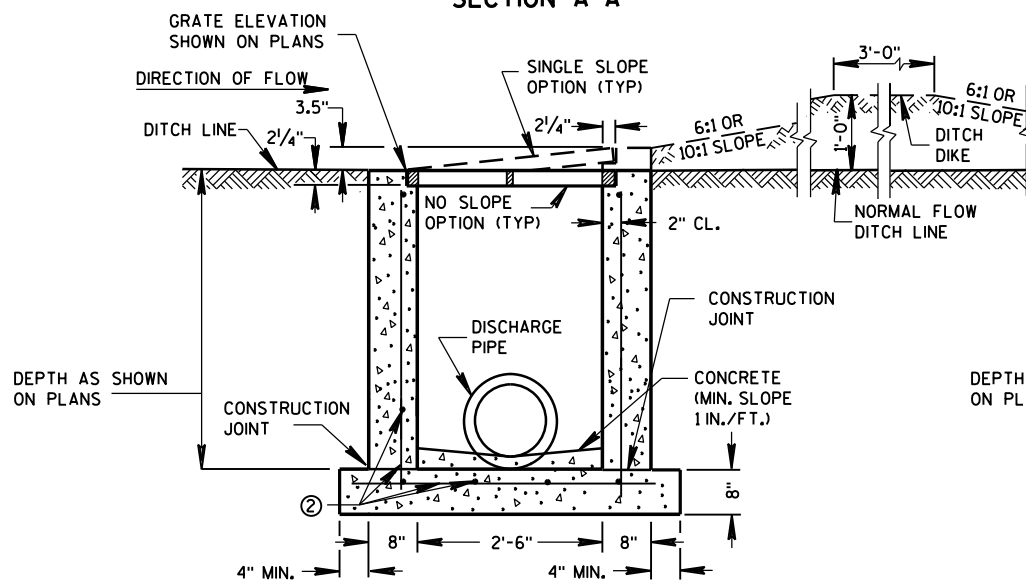
PLAN VIEW



PRECAST REINFORCED CONCRETE SECTION A-A

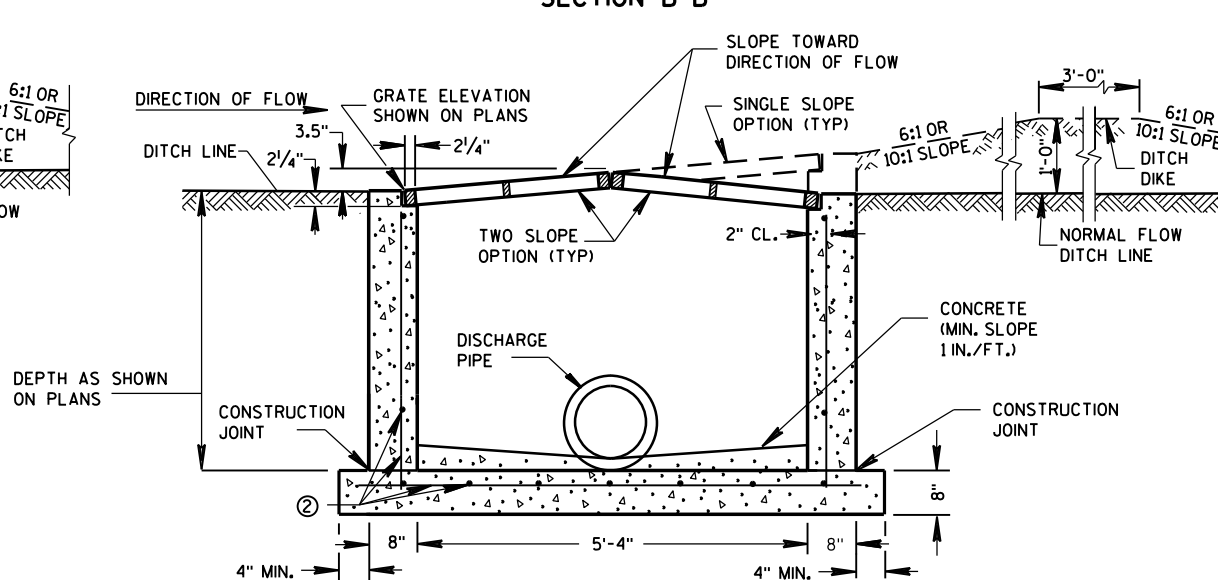


PRECAST REINFORCED CONCRETE SECTION B-B



REINFORCED CAST-IN-PLACE CONCRETE SECTION A-A

INLETS MEDIAN 1 GRATE



REINFORCED CAST-IN-PLACE CONCRETE SECTION B-B

INLETS MEDIAN 2 GRATE

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 INLETS WHICH MAY INCLUDE PRECAST REINFORCED CONCRETE INLETS, SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

ALL MEDIAN INLETS ARE DESIGNATED ON THE PLANS AS "INLETS, IG-MS", ETC. THE FIRST NUMBER AND LETTER DESIGNATE THE TYPE OF STRUCTURE, AND THE FOLLOWING LETTERS DESIGNATE 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.

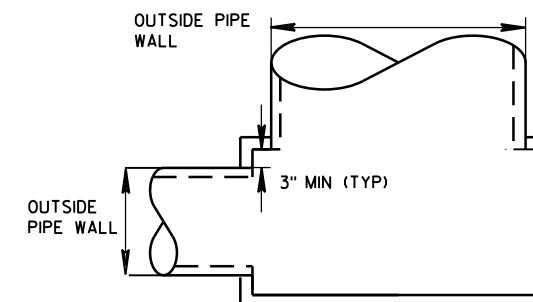
ALL PRECAST INLET UNITS SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF ASTM C 913.

MAXIMUM INSIDE PIPE DIAMETER DETERMINED BY 3" 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.

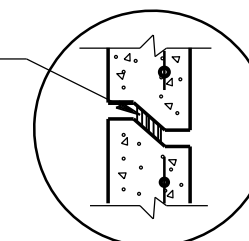
PIPE MATRIX

INLET SIZE	MAXIMUM INSIDE PIPE DIAMETER	
	WIDTH (IN)	LENGTH (IN)
1 GRATE	18	18
2 GRATE	18	42



DETAIL "A"

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



DETAIL "B"

INLETS MEDIAN 1 AND 2 GRATE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sept., 2016 /S/ Rodney Taylor
DATE ROADWAY STANDARDS UNIT SUPERVISOR
FHWA 135 ENT



6



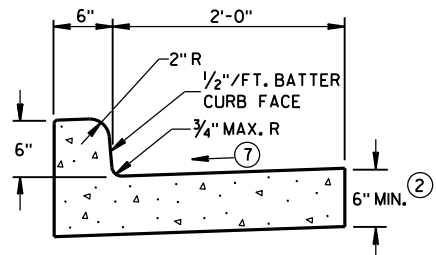
6

APPROVED
Sept., 2016
DATE

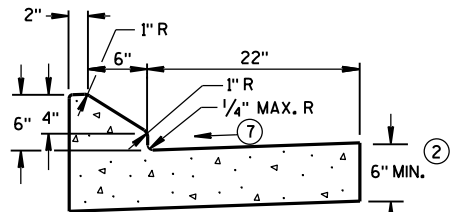
/s/ Rodney Taylor
ROADWAY STANDARDS 136 ENT
UNIT SUPERVISOR

FHWA

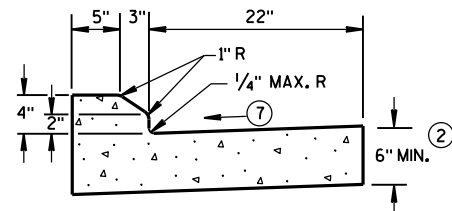
BASES SHALL BE PLACED ON A BED OF MATERIAL AT LEAST 6 INCHES IN DEPTH, WHICH MEETS THE REQUIREMENTS OF FOUNDATION BACKFILL. THIS BEDDING SHALL BE COMPACTED AND PROVIDE UNIFORM SUPPORT FOR THE ENTIRE AREA OF THE BASE.



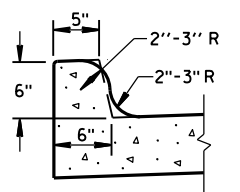
TYPES A^① & D



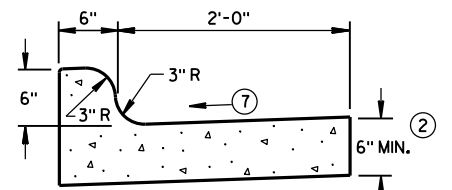
6" SLOPED CURB TYPES G^① & J



4" SLOPED CURB TYPES G^① & J

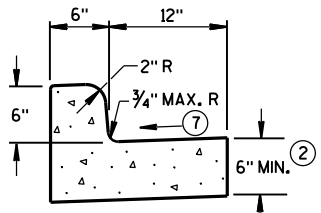


TYPES K^① & L
(OPTIONAL CURB SHAPE)



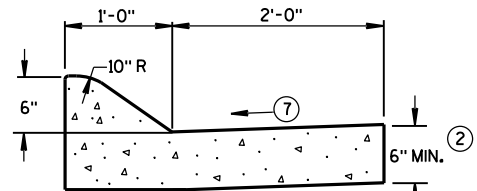
TYPES K^① & L

CONCRETE CURB & GUTTER 30"

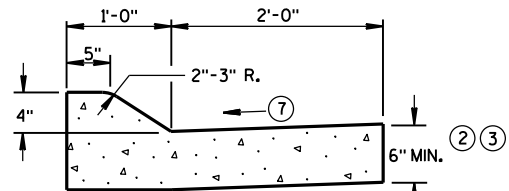


TYPES A^① & D

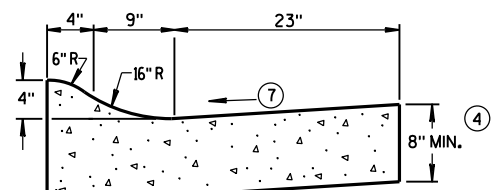
CONCRETE CURB & GUTTER 18"



6" SLOPED CURB TYPES A^① & D

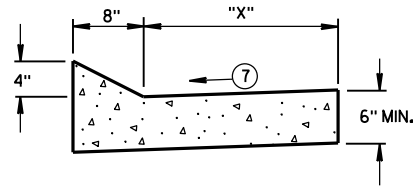


4" SLOPED CURB TYPES A^① & D



4" SLOPED CURB TYPES R^① & T^⑤

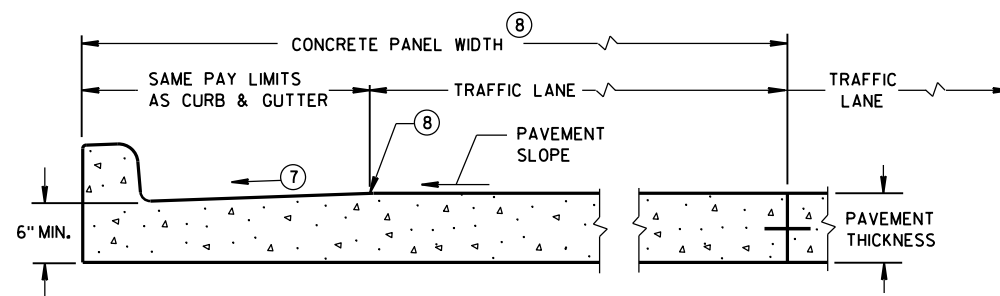
CONCRETE CURB & GUTTER 36"



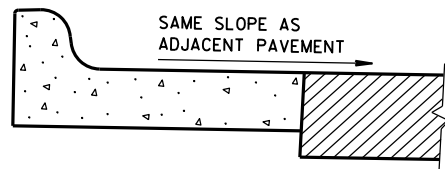
TYPES TBT & TBTT^①

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.

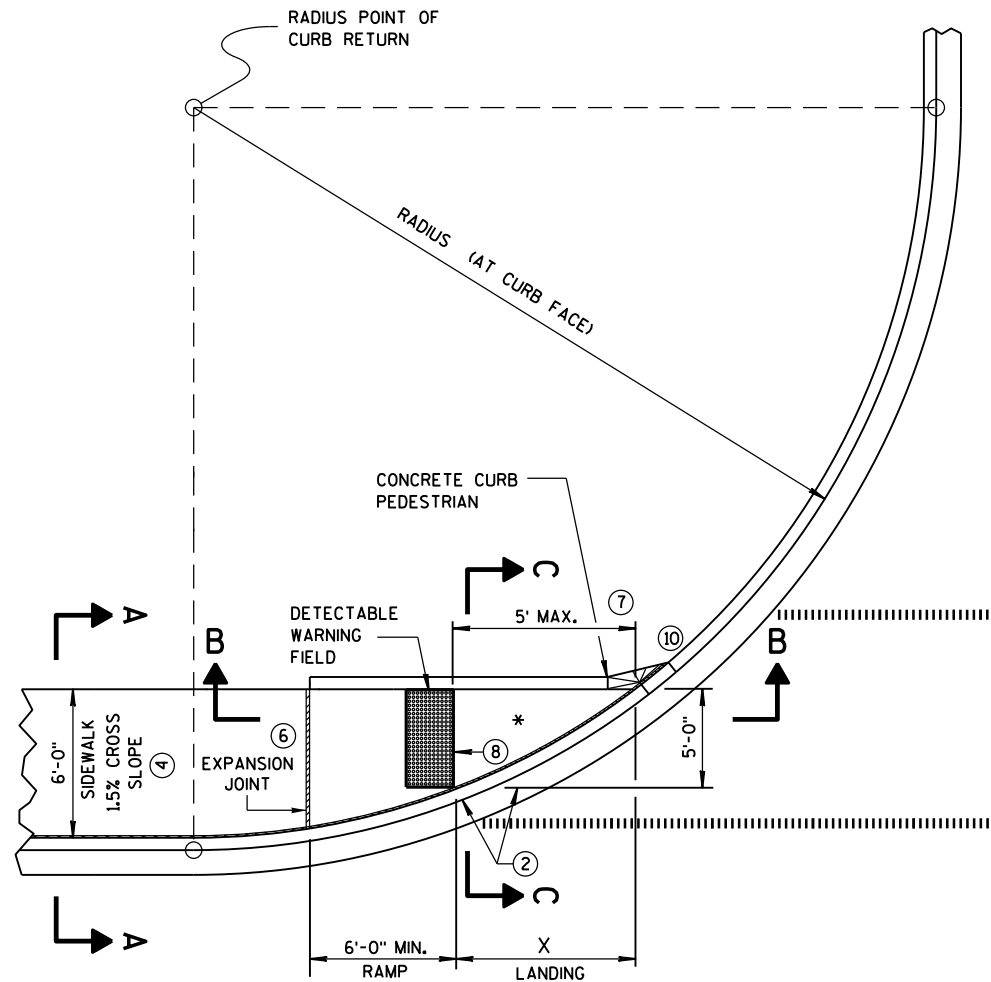
PAVEMENT THICKNESS AND MAXIMUM CONCRETE PANEL WIDTH TABLE

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

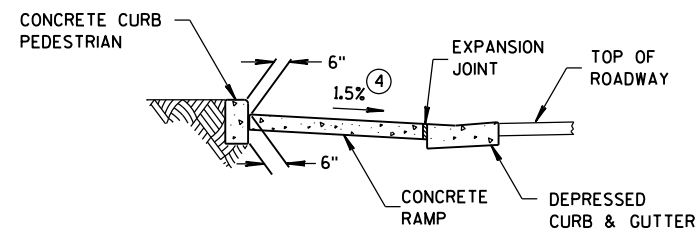
* BIKE LANE IS NOT SHOWN.

CONCRETE CURB & GUTTER

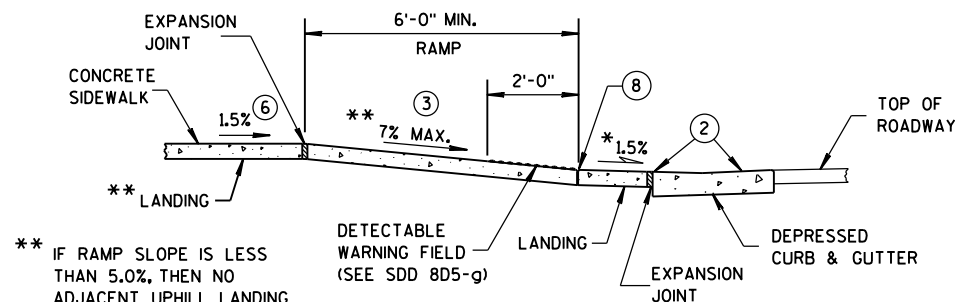
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



CURB RAMP TYPE 4A
PLAN VIEW



SECTION C-C FOR TYPE 4A



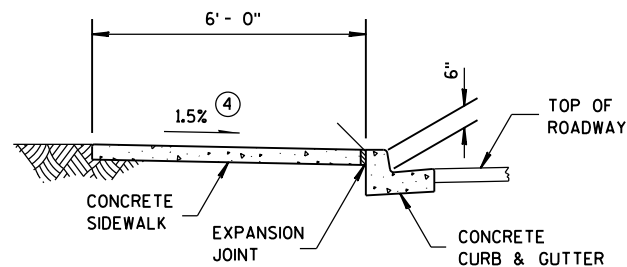
SECTION B-B FOR TYPE 4A

** IF RAMP SLOPE IS LESS THAN 5.0%, THEN NO ADJACENT UPHILL LANDING IS REQUIRED

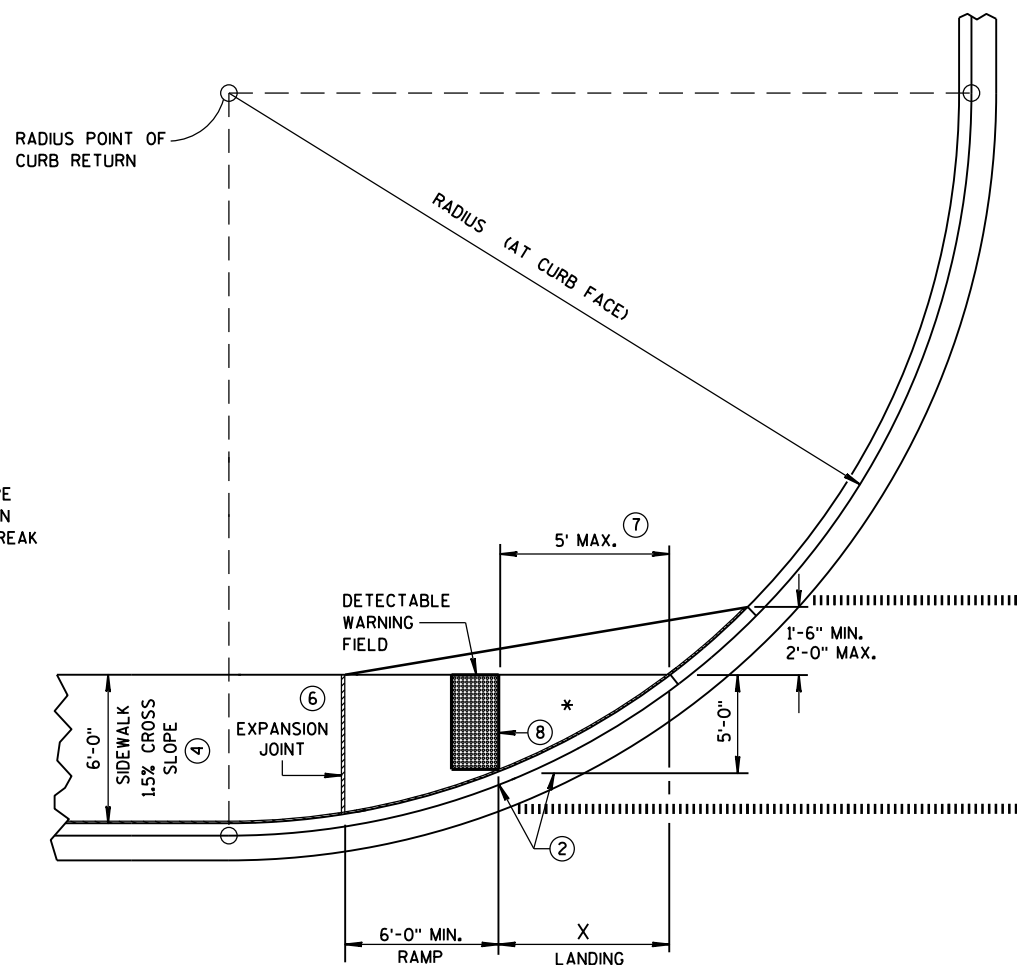
* MAXIMUM 2.0% SLOPE IN ALL DIRECTIONS IN FRONT OF GRADE BREAK

RADIUS (AT CURB FACE)	X
10 FEET	4'-7"
15 FEET	6'-5½"

INTERMEDIATE RADII CAN BE INTERPOLATED



SECTION A-A FOR TYPE 4A



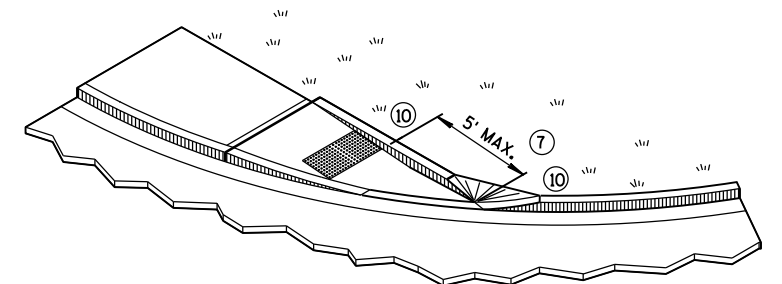
CURB RAMP TYPE 4A1
PLAN VIEW

GENERAL NOTES

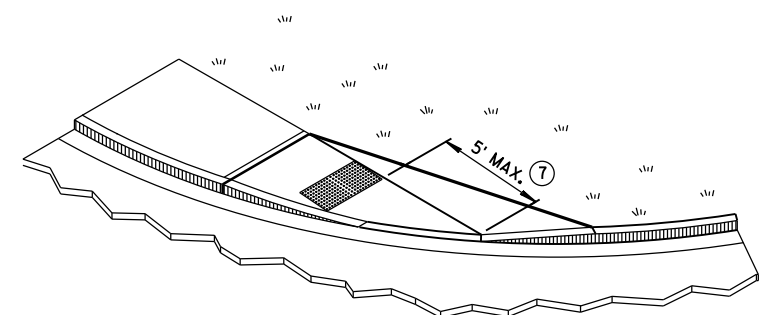
AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF RAMP ACCESS AREAS.

DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

- GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN ¼-INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL MATCH THE RAMP SLOPE, MINIMALLY 1.5% AND NOT TO EXCEED 7%. WHEN ADJACENT TO 1.5% LANDING, CONSTRUCT CURB HEAD OPENING AT 1.5% IN THE DIRECTION OF PEDESTRIAN TRAVEL.
- ABSOLUTE MAXIMUM 12H:1V (8.33%) CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE AND NOT TO EXCEED 11% GRADE CHANGE.
- ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.
- PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LANDING SIZE IS 5 FEET X 5 FEET.
- WHEN THIS GRADE BREAK DISTANCE EXCEEDS 5 FEET, USE RADIAL DETECTABLE WARNING FIELD PER SDD 8D5-f.
- PROVIDE GRADE BREAK PERPENDICULAR TO DIRECTION OF WHEELCHAIR TRAVEL.
- INSTALL TRANSITION NOSE. (INCIDENTAL TO OTHER PAY ITEMS). DO NOT MARK TRANSITION NOSE.



ISOMETRIC VIEW FOR TYPE 4A



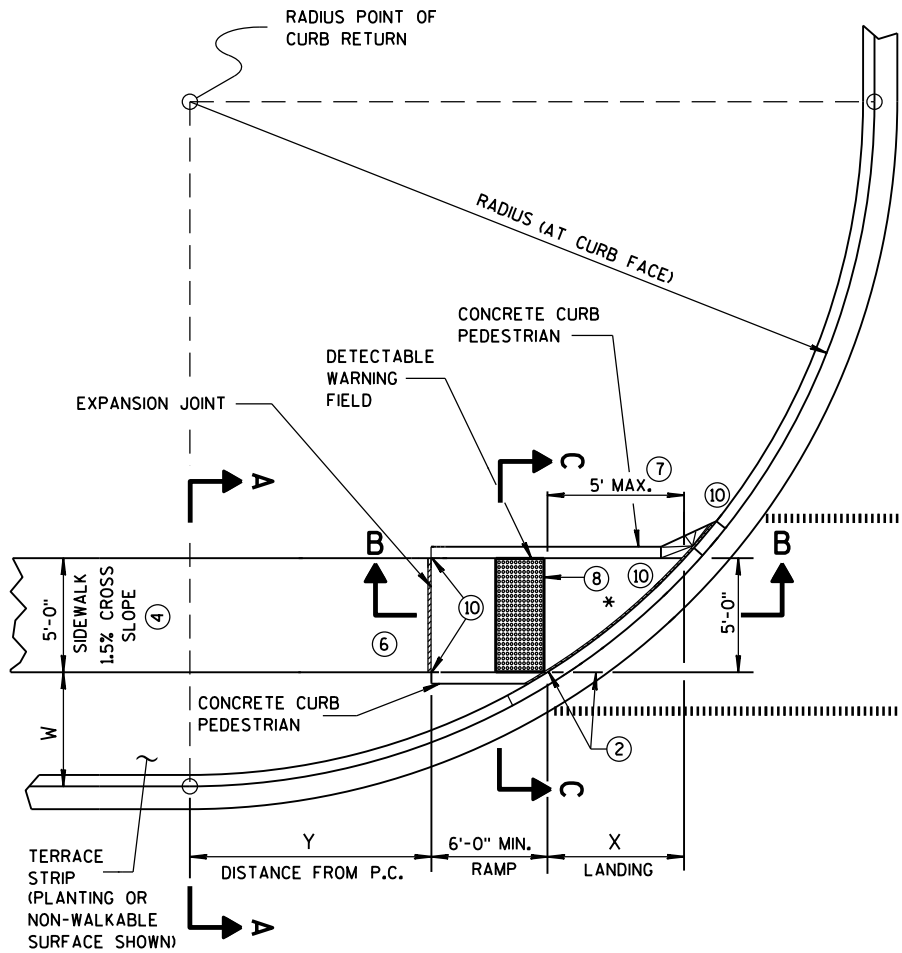
ISOMETRIC VIEW FOR TYPE 4A1

LEGEND

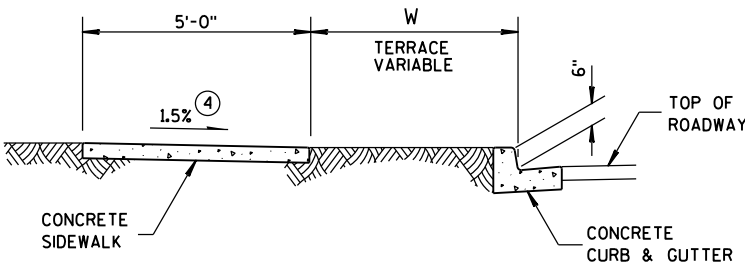
- 1/2" EXPANSION JOINT-SIDEWALK
- CONTRACTION JOINT FIELD LOCATED
- PAVEMENT MARKING CROSSWALK (WHITE)

CURB RAMPS
TYPES 4A AND 4A1

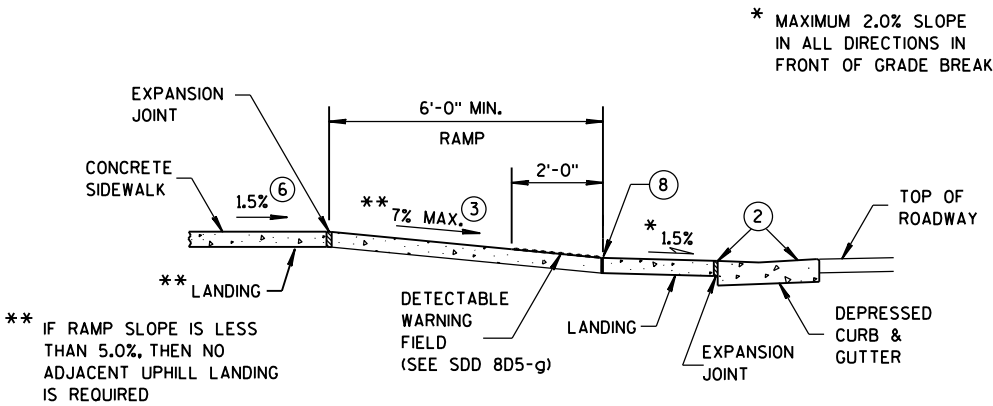
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 139



**CURB RAMP TYPE 4B
PLAN VIEW**



SECTION A-A FOR TYPE 4B



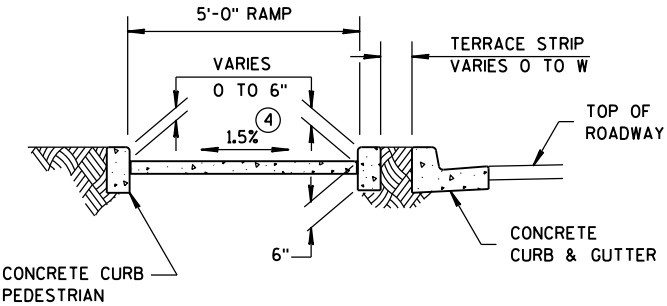
SECTION B-B FOR TYPE 4B

RADIUS (AT CURB FACE)	W = 3' - 0"		W = 4' - 0"		W = 5' - 0"		W = 6' - 0"		W = 7' - 0"		W = 8' - 0"		W = 9' - 0"		W = 10' - 0"	
	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y
10 FEET	2'-10 1/4"	0'-5"	2'-1"	1'-4 1/2"	1'-5"	2'-1"	0'-10"	2'-7 1/2"	0'-3 1/4"	3'-0 1/4"						
15 FEET	4'-6 3/4"	2'-1 3/4"	3'-9"	3'-5 1/4"	3'-1 1/4"	4'-6"	2'-6 3/4"	5'-4 1/2"	2'-1"	6'-1"	1'-8"	6'-8 1/2"	1'-3 1/4"	7'-2 1/2"	0'-10 3/4"	7'-7 1/4"
20 FEET	5'-9 3/4"	3'-6 1/2"	4'-11 1/2"	5'-1 3/4"	4'-3 1/4"	6'-5 1/2"	3'-8 3/4"	7'-7"	3'-3"	8'-6 1/2"	2'-10"	9'-4 1/2"	2'-5 1/2"	10'-1 1/4"	2'-1 1/4"	10'-9"
30 FEET			6'-9 1/4"	7'-11 1/4"	6'-0 1/4"	9'-8"	5'-5"	11'-1 3/4"	4'-10 3/4"	12'-5 3/4"	4'-5 1/2"	13'-7 3/4"	4'-0 3/4"	14'-8 1/2"	3'-8 1/2"	15'-8 1/4"
40 FEET									6'-1 3/4"	15'-8 1/2"	5'-8"	17'-2"	5'-3"	18'-5 3/4"	4'-10 3/4"	19'-8 1/4"
50 FEET															5'-10 1/4"	23'-2"

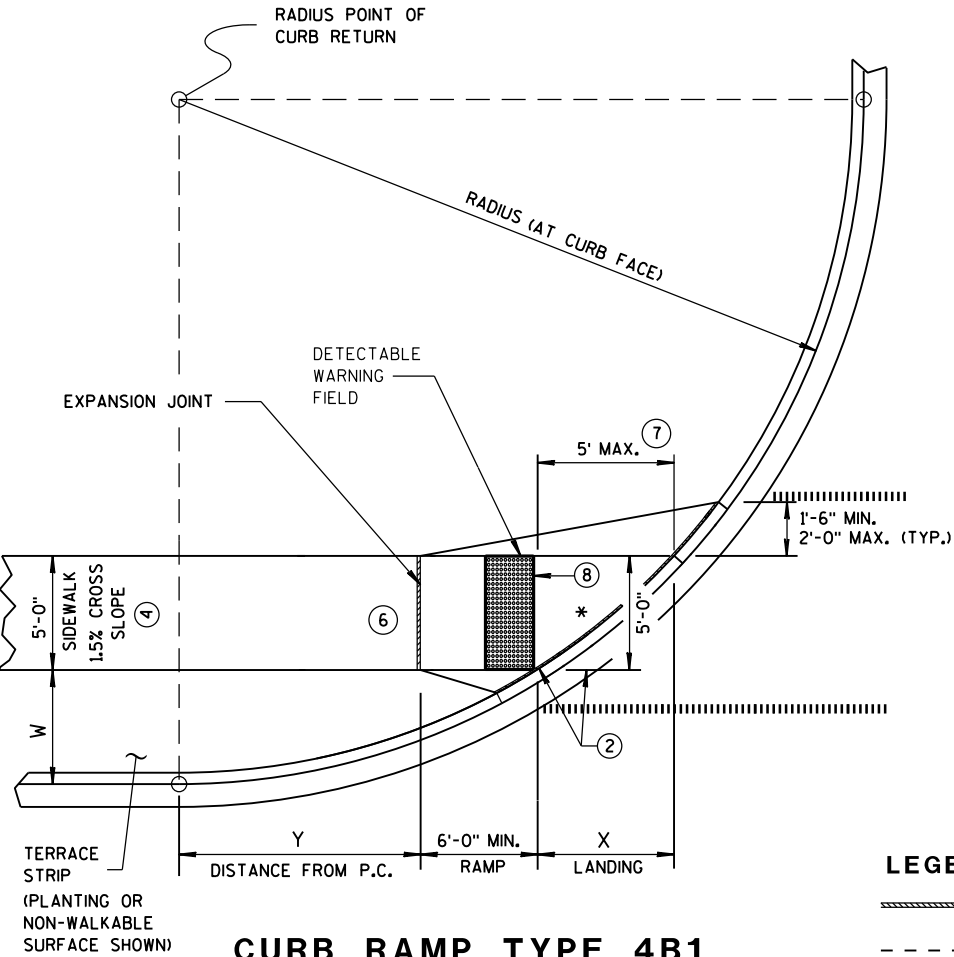
INTERMEDIATE RADII CAN BE INTERPOLATED
DIMENSION "Y" IS CALCULATED BASED ON 6'-0" RAMP LENGTH
DIMENSION "X" IS CALCULATED BASED ON 5'-0" SIDEWALK WIDTH

GENERAL NOTES

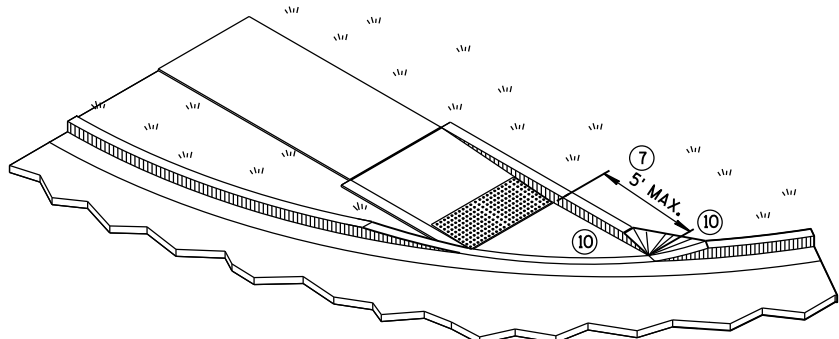
- AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF RAMP ACCESS AREAS.
- DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.
- GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN 1/4-INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL MATCH THE RAMP SLOPE, MINIMALLY 1.5% AND NOT TO EXCEED 7%. WHEN ADJACENT TO 1.5% LANDING, CONSTRUCT CURB HEAD OPENING AT 1.5% IN THE DIRECTION OF PEDESTRIAN TRAVEL.
- ABSOLUTE MAXIMUM 12H:1V (8.33%) CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE AND NOT TO EXCEED 11% GRADE CHANGE.
- ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.
- PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LANDING SIZE IS 5 FEET X 5 FEET.
- WHEN THIS GRADE BREAK DISTANCE EXCEEDS 5 FEET, USE RADIAL DETECTABLE WARNING FIELD PER SDD 8D5-f.
- PROVIDE GRADE BREAK PERPENDICULAR TO DIRECTION OF WHEELCHAIR TRAVEL.
- INSTALL TRANSITION NOSE. (INCIDENTAL TO OTHER PAY ITEMS). DO NOT MARK TRANSITION NOSE.



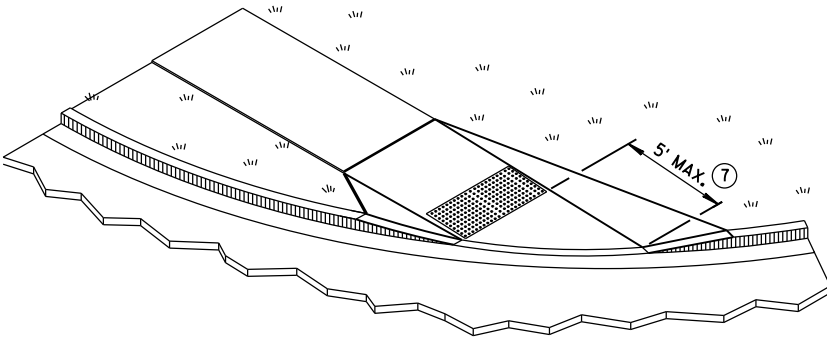
SECTION C-C FOR TYPE 4B



**CURB RAMP TYPE 4B1
PLAN VIEW**



ISOMETRIC VIEW FOR TYPE 4B



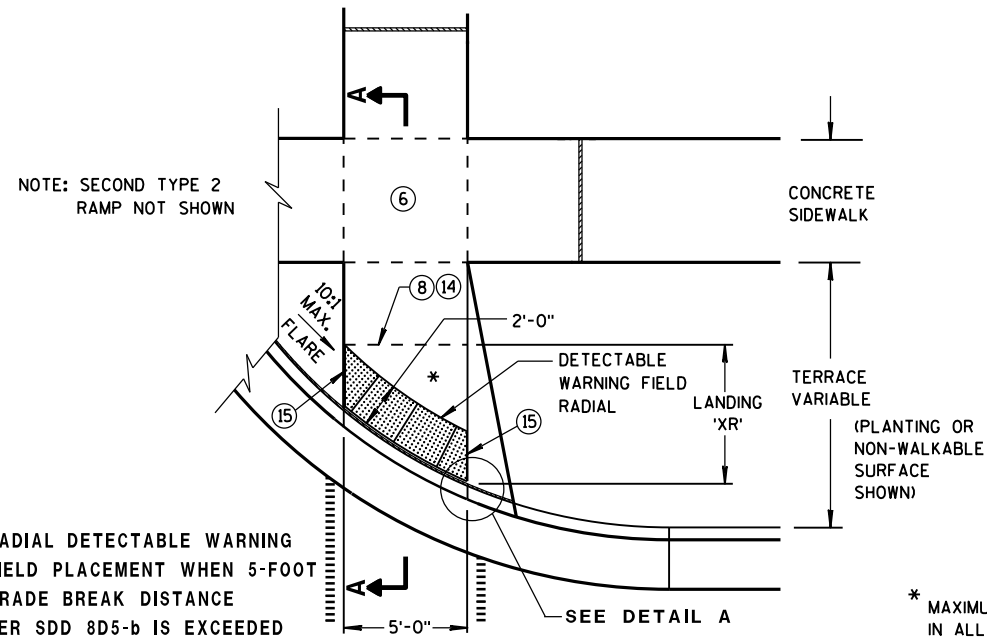
ISOMETRIC VIEW FOR TYPE 4B1

LEGEND

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

**CURB RAMPS
TYPE 4B AND 4B1**

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DEPARTMENT OF TRANSPORTATION

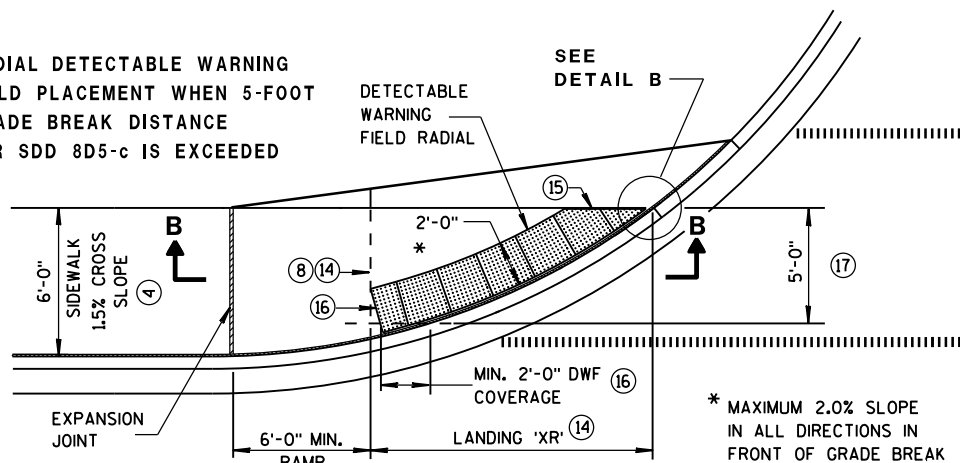


TYPE 2 RAMP PLAN VIEW

(GRADE BREAK DISTANCE GREATER THAN 5 FEET)

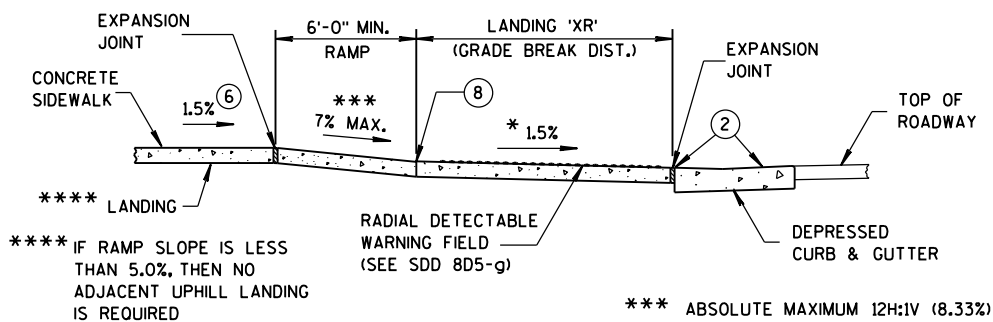
(ON LINE WITH SIDEWALK)

RADIAL DETECTABLE WARNING FIELD PLACEMENT WHEN 5-FOOT GRADE BREAK DISTANCE PER SDD 8D5-c IS EXCEEDED



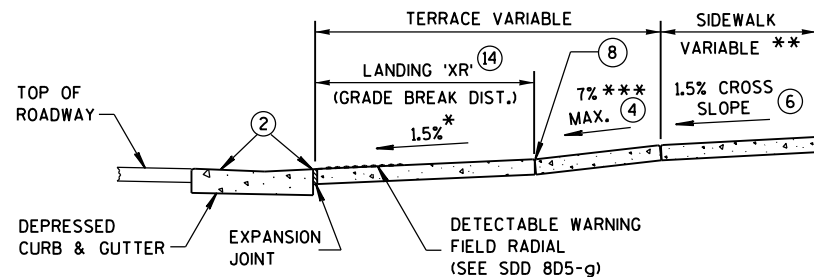
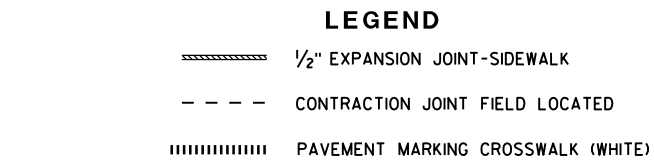
CURB RAMP TYPE 4A1 PLAN VIEW

(GRADE BREAK DISTANCE GREATER THAN 5 FEET)



SECTION B-B FOR TYPE 4A1

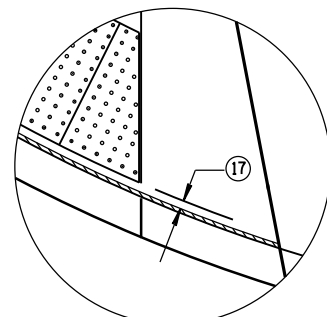
* MAXIMUM 2.0% SLOPE IN ALL DIRECTIONS IN FRONT OF GRADE BREAK



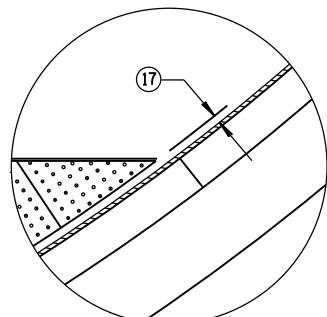
** WIDTH SHOWN ELSEWHERE IN THE PLANS

*** ABSOLUTE MAXIMUM 12H:1V (8.33%)

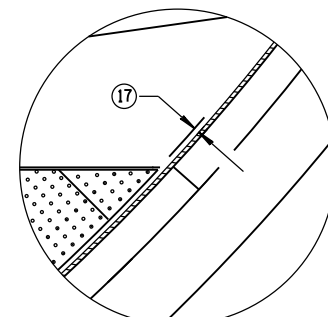
SECTION A-A



DETAIL A



DETAIL B



DETAIL C

GENERAL NOTES

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

DETECTABLE WARNING FIELDS (DWFs) THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

APPLY RADIAL DETECTABLE WARNING PLACEMENT SIMILARLY FOR TYPE 4A AND 4A1 CURB RAMPS AND SIMILARLY FOR TYPE 4B AND 4B1 CURB RAMPS. TYPE 4A AND 4B CURB RAMPS ARE NOT SHOWN.

REFER TO SDD 8D5-g FOR ADDITIONAL RADIAL PLATE REQUIREMENTS.

FIELD CUTS AT INTERMEDIATE JOINTS WITHIN THE RADIAL DETECTABLE WARNING FIELD ARE PROHIBITED.

DETERMINE FINAL RADIAL WARNING FIELD CONFIGURATION AND ITS INDIVIDUAL PLATE LOCATIONS. PERFORM PRE-LAYOUT PRIOR TO PLACEMENT IN PLASTIC CONCRETE. FOLLOW MANUFACTURER'S PRODUCT LIST AND INSTALLATION RECOMMENDATIONS.

(2) GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN 1/4-INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL MATCH THE RAMP SLOPE, MINIMALLY 1.5% AND NOT TO EXCEED 7%. WHEN ADJACENT TO 1.5% LANDING, CONSTRUCT CURB HEAD OPENING AT 1.5% IN THE DIRECTION OF PEDESTRIAN TRAVEL.

(3) ABSOLUTE MAXIMUM 12H:1V (8.33%) CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE AND NOT TO EXCEED 11% GRADE CHANGE.

(4) ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

(6) PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LANDING SIZE IS 5 FEET X 5 FEET.

(8) PROVIDE GRADE BREAK PERPENDICULAR TO DIRECTION OF WHEELCHAIR TRAVEL.

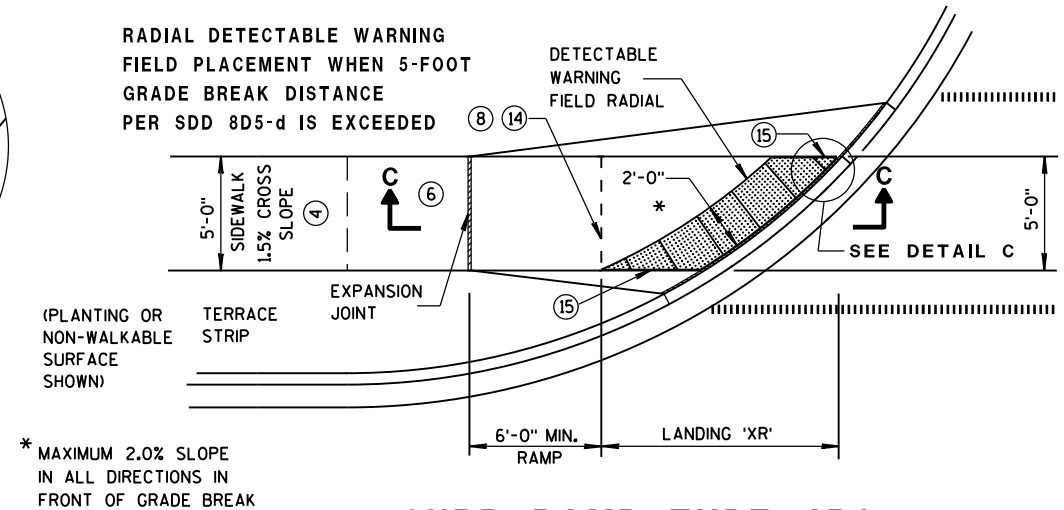
(14) CONSULT ENGINEER IF GRADE BREAK LOCATION (END OF LANDING DIMENSION 'XR') REQUIRES FIELD ADJUSTMENT WHEN ESTABLISHING FINAL RADIAL DETECTABLE WARNING FIELD LOCATION.

(15) FIELD SAW CUTS ALONG RADIAL DETECTABLE WARNING PLATES WILL BE NECESSARY TO MATCH EACH CURB RAMP EDGE. AVOID CUTTING THROUGH DOMES WHENEVER POSSIBLE. MAKE FIELD CUTS TRUE TO LINE AND WITHIN 1/8" DEVIATION. SMOOTH EDGES OF FIELD CUT PLATES.

(16) USE 1'X 2' RECTANGULAR END PLATE AT END OF TYPE 4A1 RAMP AND PROVIDE MINIMUM 2'-0" DETECTABLE WARNING FIELD COVERAGE (IN DIRECTION OF PEDESTRIAN TRAVEL) ALONG THE ENTIRE CURB RAMP WIDTH.

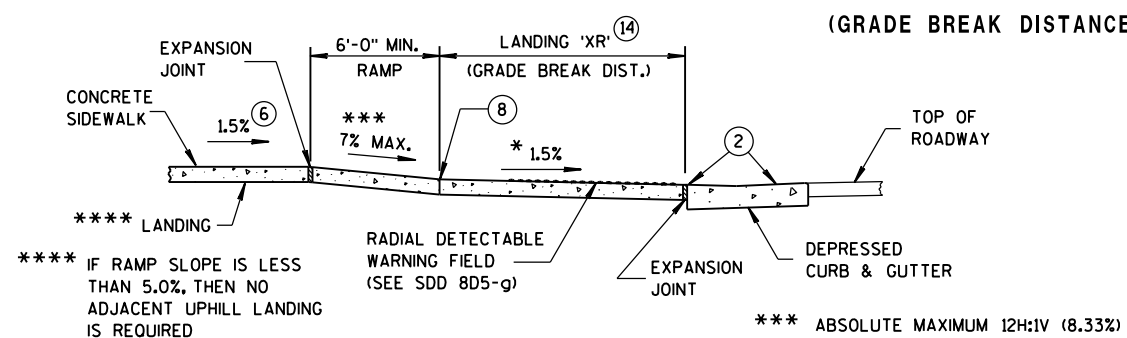
(17) A MAXIMUM 3-INCH CONCRETE BORDER WIDTH IS ALLOWABLE IN FRONT OF RADIAL DETECTABLE WARNING FIELD FOR CONSTRUCTABILITY PURPOSES. CONCRETE BORDER WIDTH MAY VARY UP TO 1 INCH.

RADIAL DETECTABLE WARNING FIELD PLACEMENT WHEN 5-FOOT GRADE BREAK DISTANCE PER SDD 8D5-d IS EXCEEDED



CURB RAMP TYPE 4B1 PLAN VIEW

(GRADE BREAK DISTANCE GREATER THAN 5 FEET)



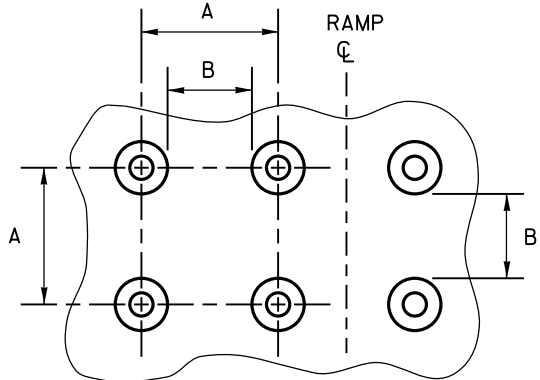
SECTION C-C FOR TYPE 4B1

**CURB RAMPS
RADIAL DETECTABLE WARNING
FIELD APPLICATIONS**

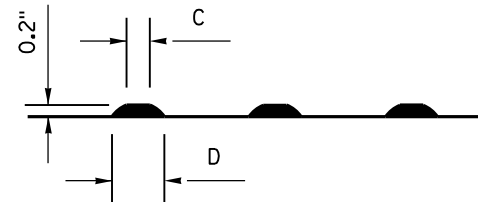
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 141

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

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

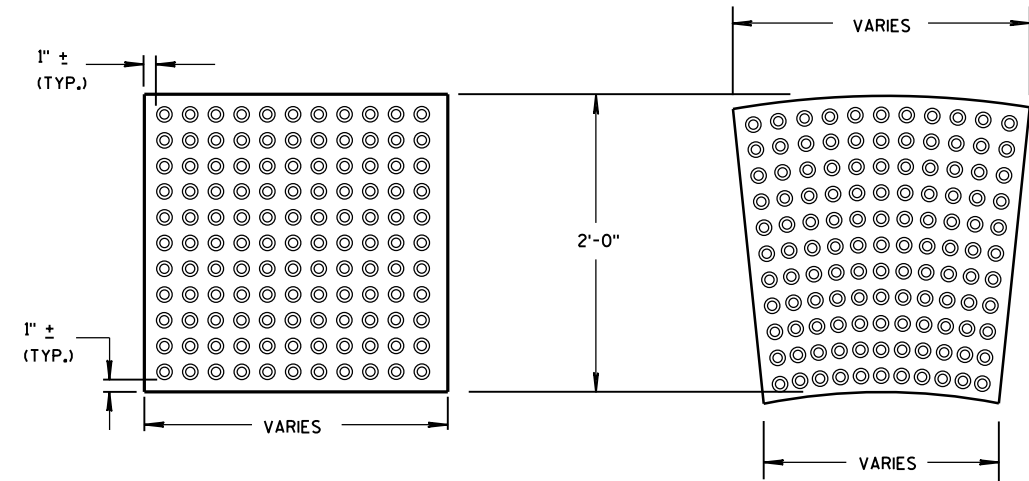


PLAN VIEW



ELEVATION VIEW

TRUNCATED DOMES
DETECTABLE WARNING PATTERN DETAIL



RECTANGULAR PLATES
RADIAL PLATES
DETECTABLE WARNING FIELDS (TYPICAL)

PLAN VIEW

GENERAL NOTES

DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

PLACE ALL DETECTABLE WARNING FIELD SYSTEMS IN ACCORDANCE TO THE MANUFACTURER'S RECOMMENDATION.

FIELD CUTS AT INTERMEDIATE JOINTS WITHIN THE RADIAL DETECTABLE WARNING FIELD ARE PROHIBITED.

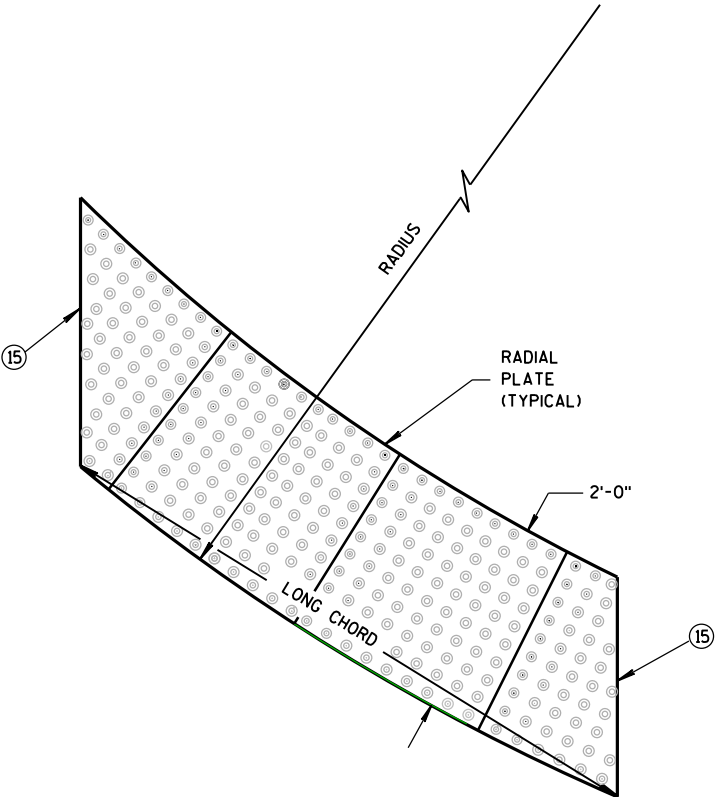
DETERMINE FINAL RADIAL WARNING FIELD CONFIGURATION AND ITS INDIVIDUAL PLATE LOCATIONS. PERFORM PRE-LAYOUT PRIOR TO PLACEMENT IN PLASTIC CONCRETE. FOLLOW MANUFACTURER'S PRODUCT LIST AND INSTALLATION RECOMMENDATIONS.

FOR RADIAL DETECTABLE WARNING FIELD APPLICATIONS WHERE STANDARD RADIAL PLATES ARE NOT AVAILABLE AT AN INTERSECTION CURB RADIUS, A COMBINATION OF SQUARE OR RECTANGULAR PLATES AND RADIAL PLATES MAY BE USED TO FORM RADIAL CONFIGURATION. RADIAL WEDGES IN COMBINATION WITH SQUARE PANELS ARE ALSO ACCEPTABLE. FOLLOW MANUFACTURER'S RECOMMENDATIONS.

REFER TO CONTRACT AND STANDARD SPECIFICATIONS FOR FIELD CUTTING REQUIREMENTS.

DO NOT EMBED IN CONCRETE ANY FIELD-CUT PLATES WITH CUT EDGES SHORTER THAN 6 INCHES. CONSULT WITH MANUFACTURER FOR RE-DRILLING AND ANCHORING REQUIREMENTS OF FIELD-CUT PLATES.

15 FIELD SAW CUTS ALONG RADIAL DETECTABLE WARNING PLATES WILL BE NECESSARY TO MATCH EACH CURB RAMP EDGE. AVOID CUTTING THROUGH DOMES WHENEVER POSSIBLE. MAKE FIELD CUTS TRUE TO LINE AND WITHIN 1/8" DEVIATION. SMOOTH EDGES OF FIELD CUT PLATES.

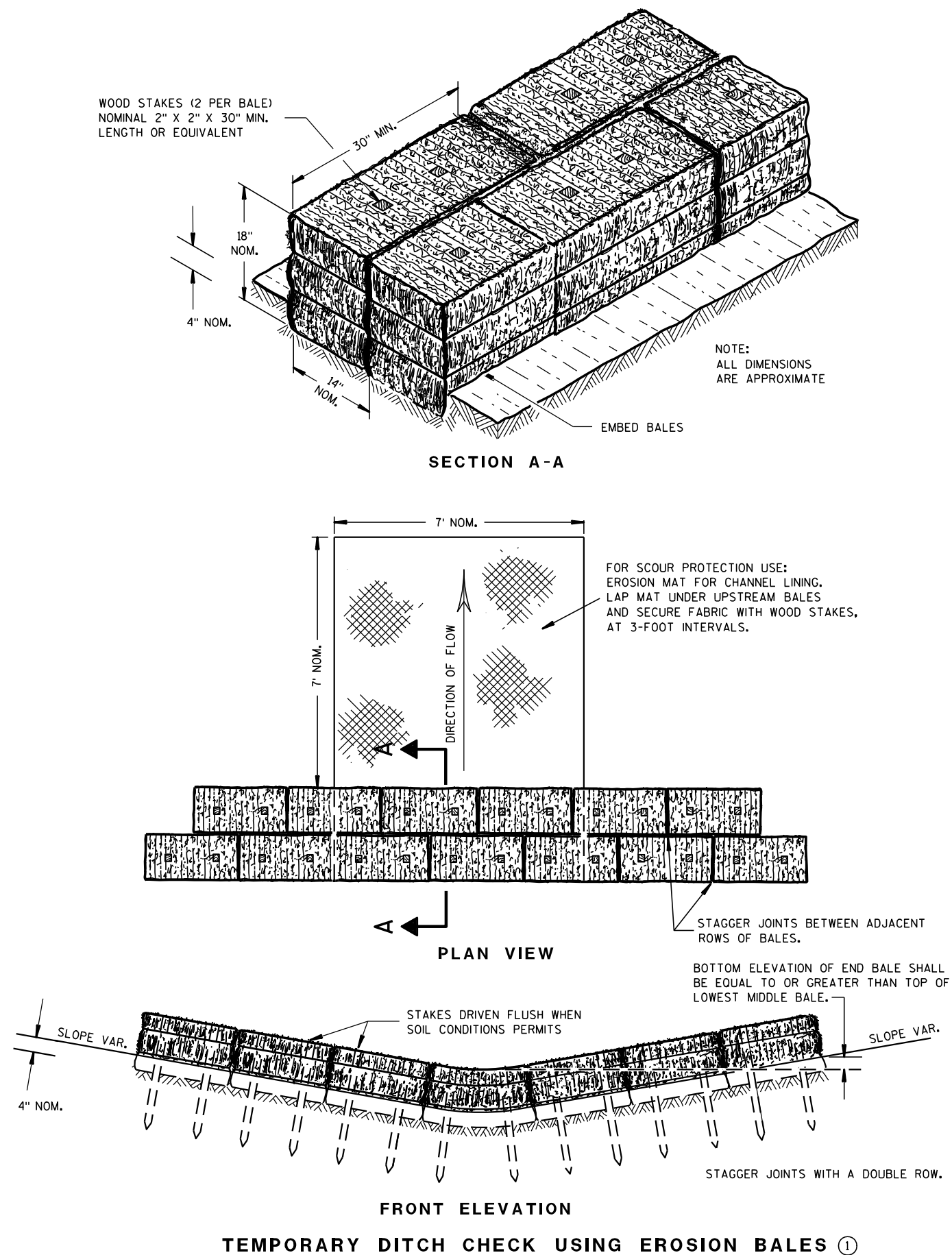


RADIAL DETECTABLE
WARNING FIELD ATTRIBUTES

CURB RAMPS
RECTANGULAR AND RADIAL
DETECTABLE WARNING PLATES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

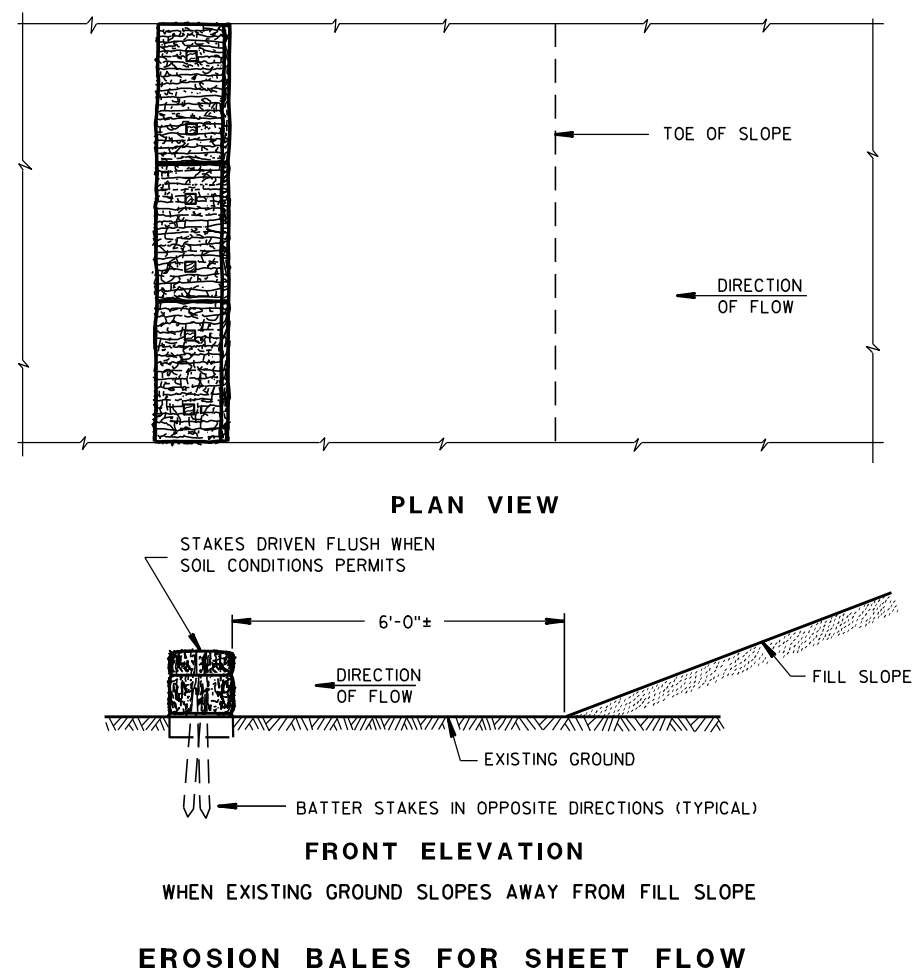
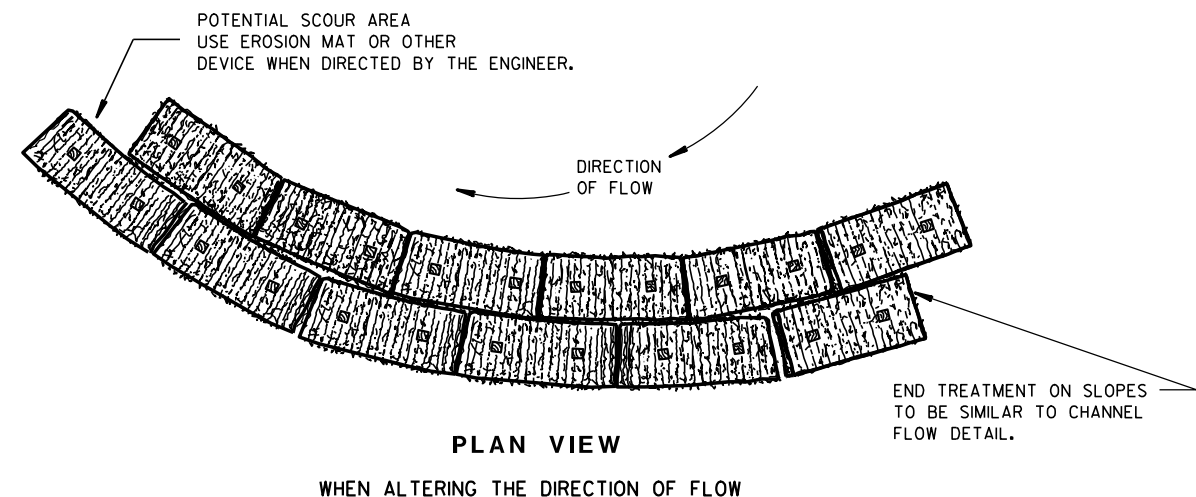
APPROVED
June, 2017 /S/ Rodney Taylor
DATE ROADWAY STANDARDS UNIT SUPERV 142 ENT
FHWA



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 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.

TYPICAL INSTALLATIONS OF
EROSION BALES / TEMPORARY
DITCH CHECKS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

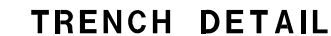
6/04/02
DATE

/S/ Beth Conn
CHIEF ROADWAY DEVELOPER 143 ENGINEER

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- ① HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.
- ② FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
- ③ WOOD POSTS SHALL BE A MINIMUM SIZE OF 1½" X 1½" OF OAK OR HICKORY.
- ④ SILT FENCE TO EXTEND ACROSS THE TOP OF THE PIPE.
- ⑤ CONSTRUCT SILT FENCE FROM A CONTINUOUS ROLL IF POSSIBLE BY CUTTING LENGTHS TO AVOID JOINTS. IF A JOINT IS NECESSARY USE ONE OF THE FOLLOWING TWO METHODS; A) OVERLAP THE END POSTS AND TWIST, OR ROTATE, AT LEAST 180 DEGREES, B) HOOK THE END OF EACH SILT FENCE LENGTH.



SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

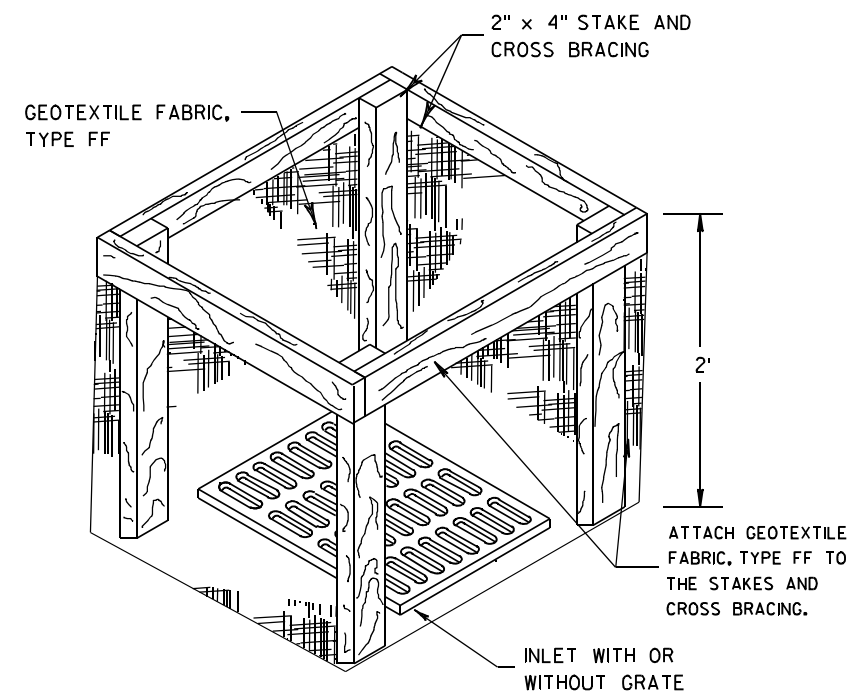
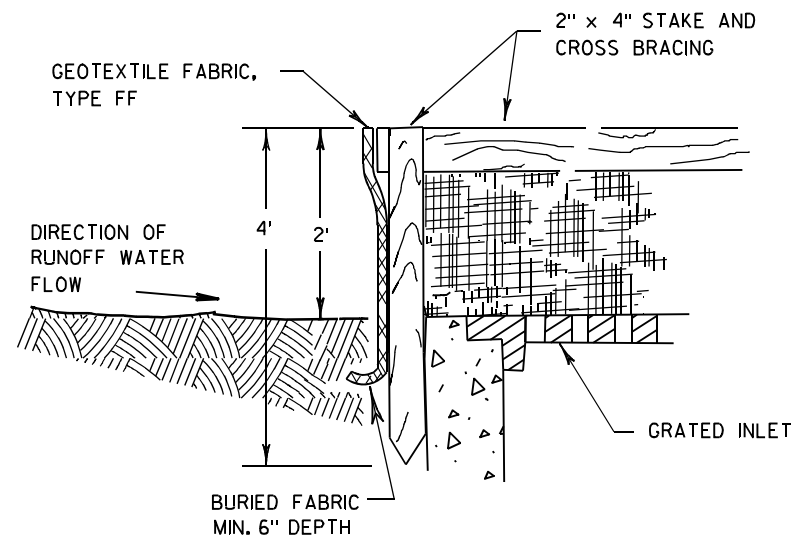
APPROVED
4-29-05
DATE

/S/ Beth Connolly
CHIEF ROADWAY DEVELOPMENT

144

ENGINEER

FHWA



INLET PROTECTION, TYPE A

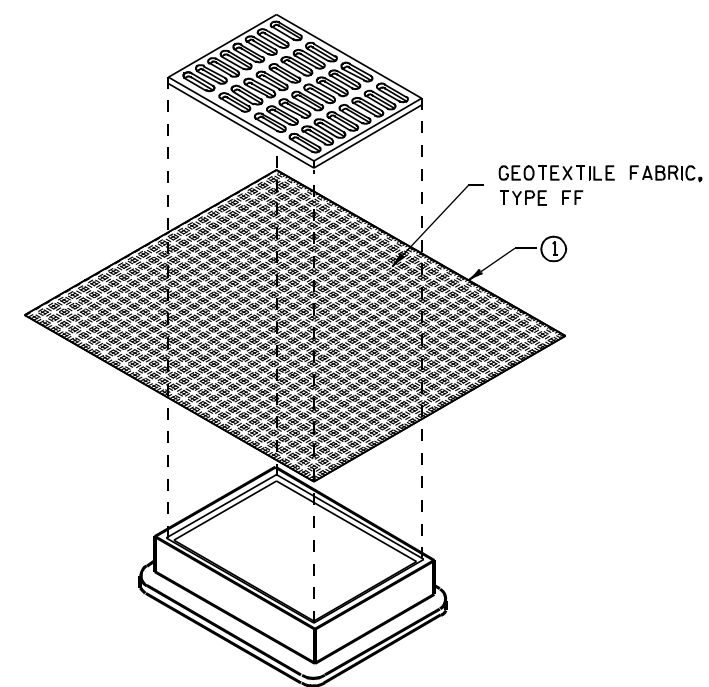
GENERAL NOTES

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.

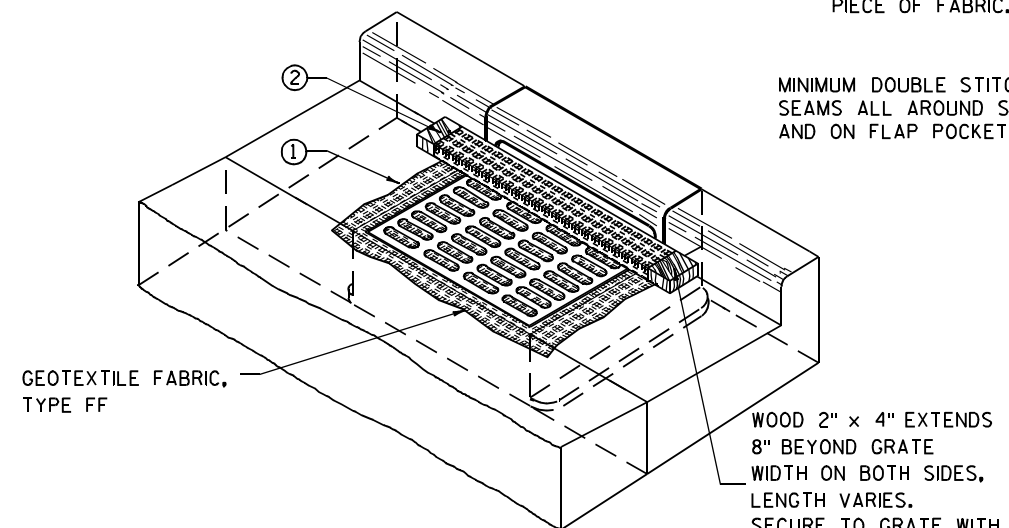
WHEN REMOVING OR MAINTAINING INLET PROTECTION, CARE SHALL BE TAKEN SO THAT THE SEDIMENT TRAPPED ON THE GEOTEXTILE FABRIC DOES NOT FALL INTO THE INLET. ANY MATERIAL FALLING INTO THE INLET SHALL BE REMOVED IMMEDIATELY.

- 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.

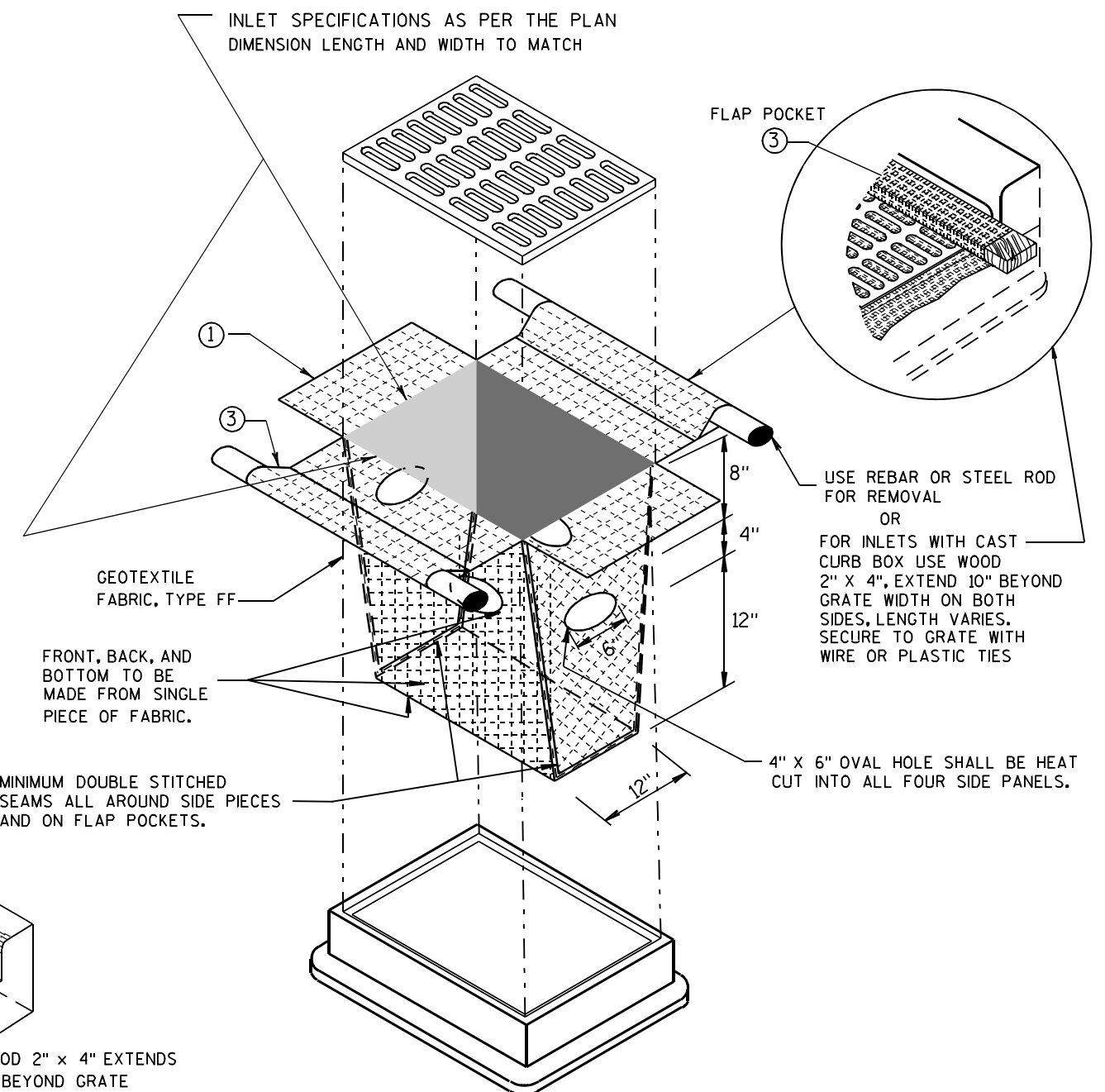
THE CONTRACTOR SHALL DEMONSTRATE A METHOD OF MAINTENANCE, USING A SEWN FLAP, HAND HOLDS OR OTHER METHOD TO PREVENT ACCUMULATED SEDIMENT FROM ENTERING THE INLET.

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

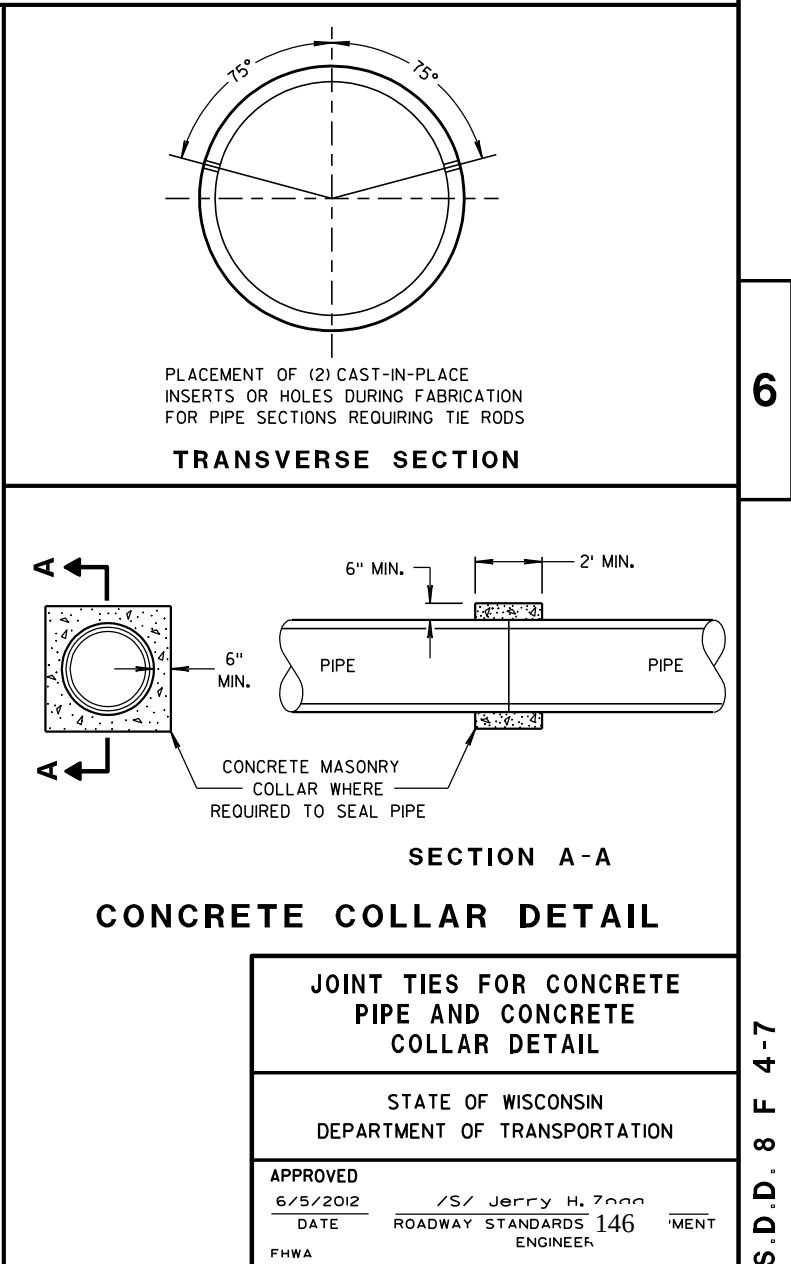
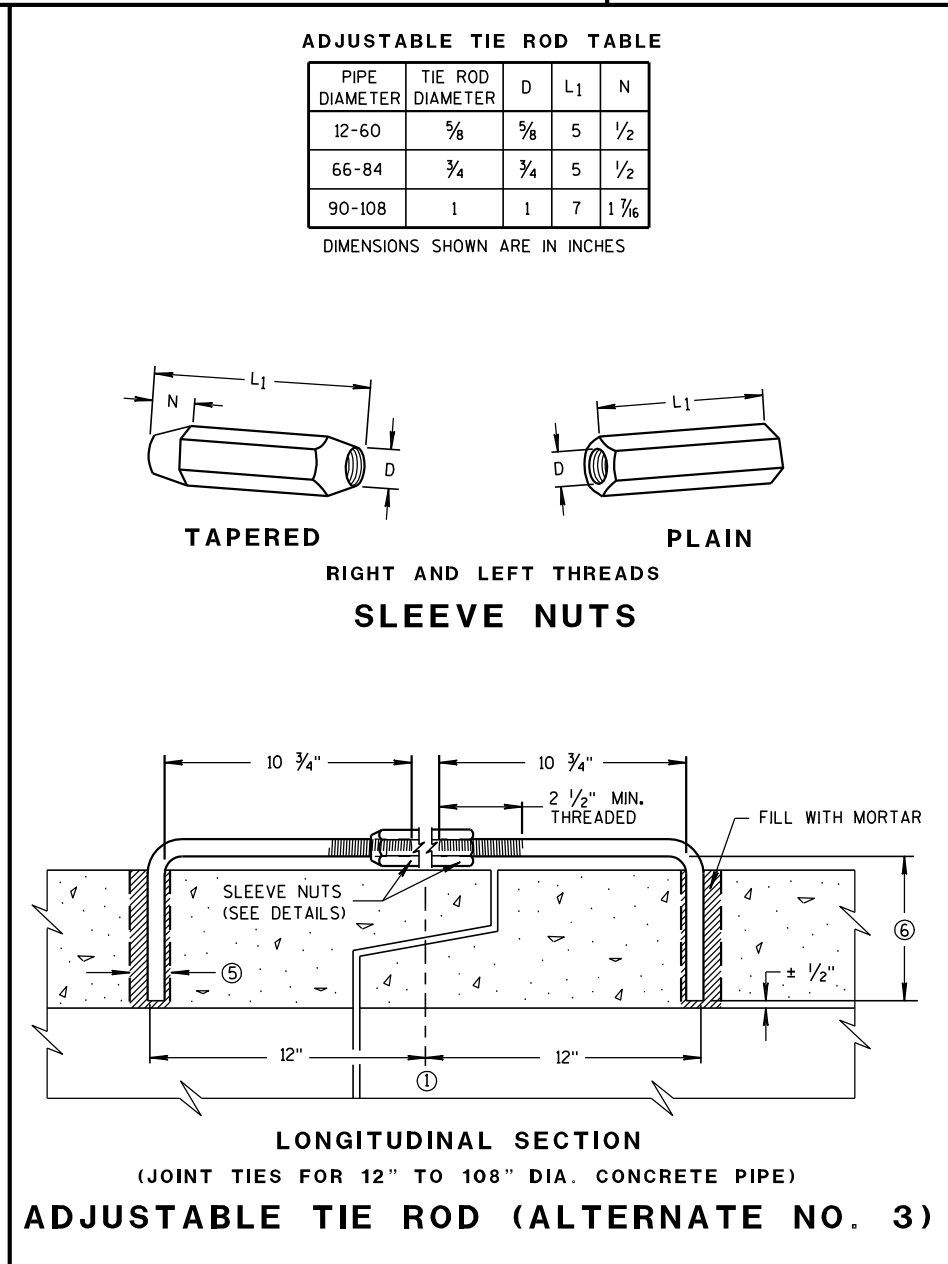
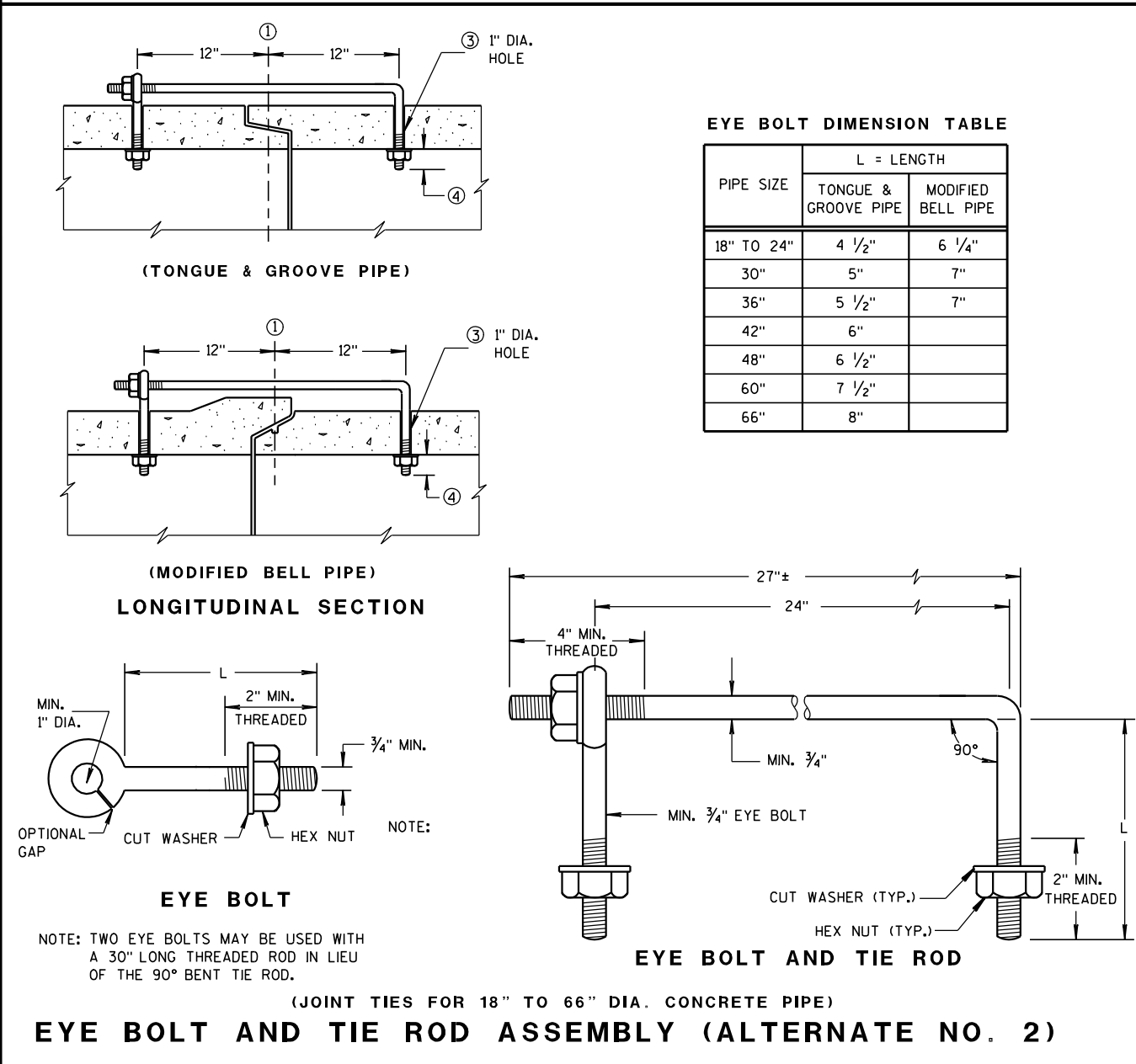
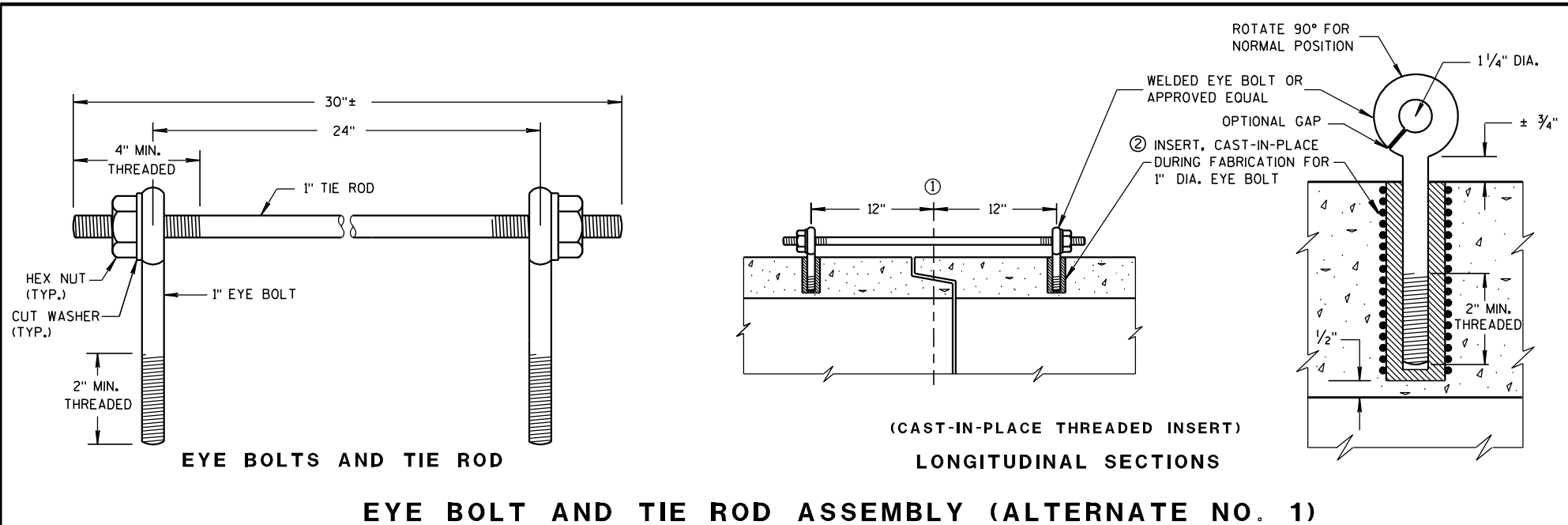
DATE _____

/S/ Beth Cannon

145

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CHIEF ROADWAY DEVELOPMENT ENGINEER



6

* THE ACTUAL WEIGHT OF THE COVER OR BOX ONLY
MAY VARY NOT TO EXCEED 100 LBS INDIVIDUALLY.

** DIAMETER VARIES FROM TOP TO BOTTOM
WITH THE DIAMETER LARGER AT THE BOTTOM
TO PREVENT FROST HEAVE

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

PROVIDE AN OPENING FOR TOOL ASSISTED COVER REMOVAL NOT LARGE ENOUGH TO PERMIT
PASSAGE OF A SPHERE MORE THAN 1/2" DIAMETER

COVER SHALL BE MAGNETICALLY LOCATABLE.

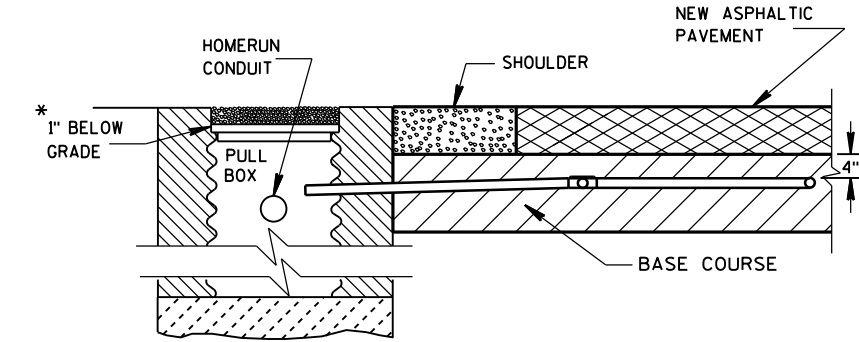
ENTRANCE HOLES INTO PULL BOXES SHALL BE CUT WITH A CIRCULAR HOLE SAW OR HYDRAULIC CONDUIT PUNCH. HOLE SIZE SHALL BE THE OUTSIDE DIAMETER OF THE CONDUIT THAT IS TO FIT IN THE OPENING PLUS NO MORE THAN 1/4".

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

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

S.D.D. 9 B 16-1





SECTION A-A
NO CURB & GUTTER

DETECTOR LOOP INSTALLATION DETAIL

*RECESS PULL BOX SO THAT THE COVER IS 3" BELOW GRADE IN SHOULDER AREAS OF CRUSHED AGGREGATE. BACKFILL OVER COVER WITH THE CRUSHED AGGREGATE TO BRING THE AREA TO GRADE LEVEL.

GENERAL NOTES

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

LOOP SIZE, LOCATION, NUMBER OF TURNS OF WIRE AND ASSOCIATED SIGNAL PHASE SHALL BE AS SHOWN ON THE PLANS.

PITCH LEAD-OUT CONDUIT TO DRAIN TO ROADSIDE PULL BOX.

SPLICES SHALL BE INSTALLED BY USING CAST IN PLACE SPLICE KITS LISTED ON THE DEPARTMENTS APPROVED PRODUCTS LIST OR AN ENGINEER APPROVED EQUAL. NON-INSULATED BUTT SPLICES TO FIT #12 AWG STRANDED WIRE SHALL BE USED. SPLICES SHALL BE SOLDERED AND INSULATED FROM EACH OTHER AS PER INSTRUCTIONS INCLUDED IN THE SPLICE KIT.

MEASURE GROUND RESISTANCE USING A MEGGER. REPLACE LOOP WIRE NOT ATTAINING A READING OF INFINITY TO GROUND.

AFTER SPLICING THE LOOP WIRE TO THE LOOP LEAD-IN CABLE, THE CONTRACTOR SHALL MEASURE INDUCTANCE, GROUND RESISTANCE AND WIRE RESISTANCE AT THE CABINET END OF THE LEAD-IN CABLE AND FURNISH A COPY OF THE READINGS TO THE PROJECT ENGINEER FOR EVALUATION.

LOOP DETECTOR LEADS SHALL BE IDENTIFIED WITH THEIR ASSOCIATED LOOP BY USE OF WATERPROOF TAGS AT BOTH ENDS OF THE CABLE. A LISTING OF THE CABLE IDENTIFICATION PER INDIVIDUAL LOOP LEAD-IN SHALL BE PLACED IN THE CABINET.

THE #12 AWG LOOP WIRE FROM THE LOOP TO THE ROADSIDE PULL BOX, SHALL BE HAND TWISTED AT LEAST 3 TWISTS PER FOOT BEFORE INSTALLATION.

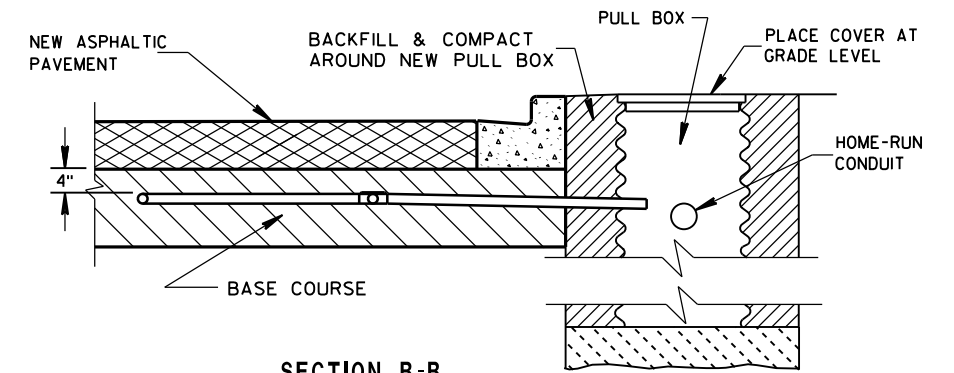
SPLICES OF LOOP WIRE TO LEAD-IN CABLE SHALL BE MADE ONLY IN PULL BOXES AT THE SIDE OF THE ROAD.

THE #12 AWG LOOP WIRE SHALL BE INSTALLED FROM THE ROADSIDE PULL BOX, THROUGH THE LOOP DUCT, BACK TO THE ROADSIDE PULL BOX, AND BE INSTALLED IN ONE, NON-SPLICED, CONTINUOUS LENGTH.

PROTECTION OF THE CONDUIT AND CONDULET SHALL BE REQUIRED AFTER INSTALLATION AND BEFORE THE ASPHALTIC PAVEMENT IS PLACED.

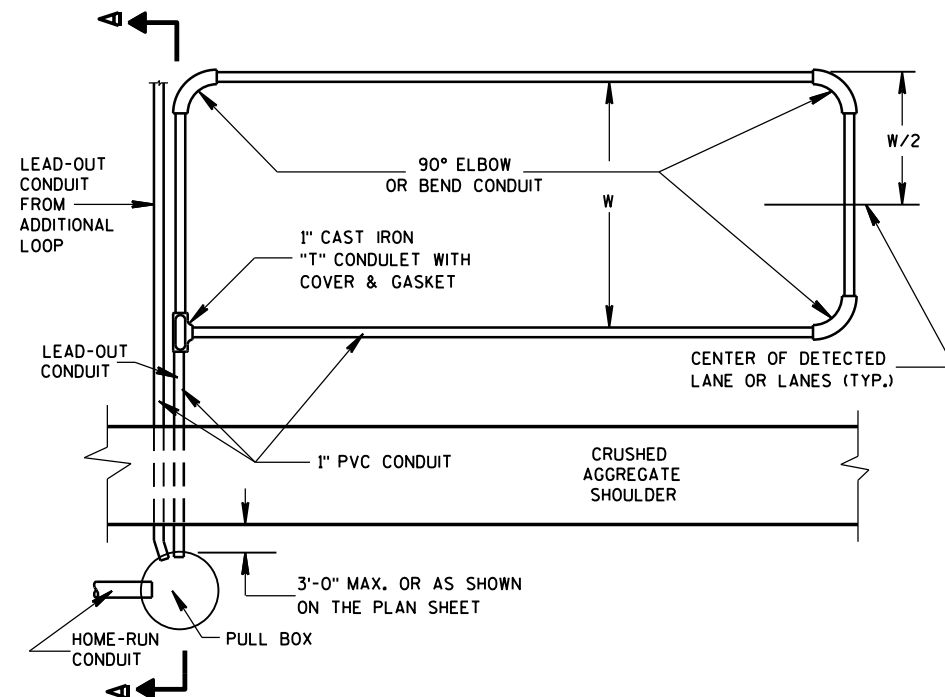
WHEN MULTIPLE LAYERS OF ASPHALTIC PAVEMENT ARE TO BE PLACED, LOOPS MAY BE INSTALLED BY SAWING A TWO INCH WIDE SLOT IN THE FIRST LAYER, DIG OUT THE ASPHALTIC MATERIAL AND BASE COURSE, PLACE THE LOOP, FILL THE SLOT WITH BASE COURSE MATERIAL AND NEW ASPHALTIC MATERIAL AND TAMP THE ASPHALTIC MATERIAL IN PLACE.

SHOULD TRAFFIC BE ALLOWED TO USE THE AREA OF ROADWAY WITH THE NEWLY INSTALLED LOOP BEFORE THE PLACEMENT OF THE NEXT LAYER OF ASPHALTIC PAVEMENT, THE SLOT/PAVEMENT OPENING SHALL BE SEALED WITH HOT POURED ELASTIC TYPE MATERIAL CONFORMING TO THE REQUIREMENTS OF THE "SPECIFICATION FOR JOINT SEALANTS, HOT POURED, FOR CONCRETE AND ASPHALT PAVEMENTS, ASTM DESIGNATION: D3405".

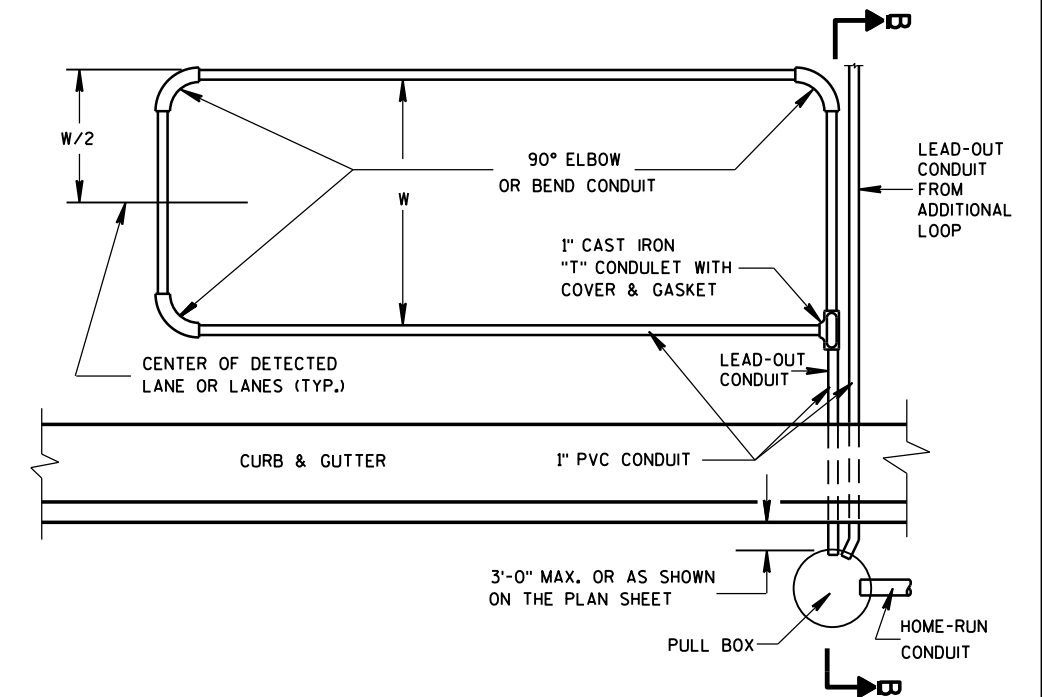


SECTION B-B
CURB & GUTTER

LOOP DETECTOR INSTALLATION DETAIL



TYPICAL PLAN OF LOOP DETECTOR

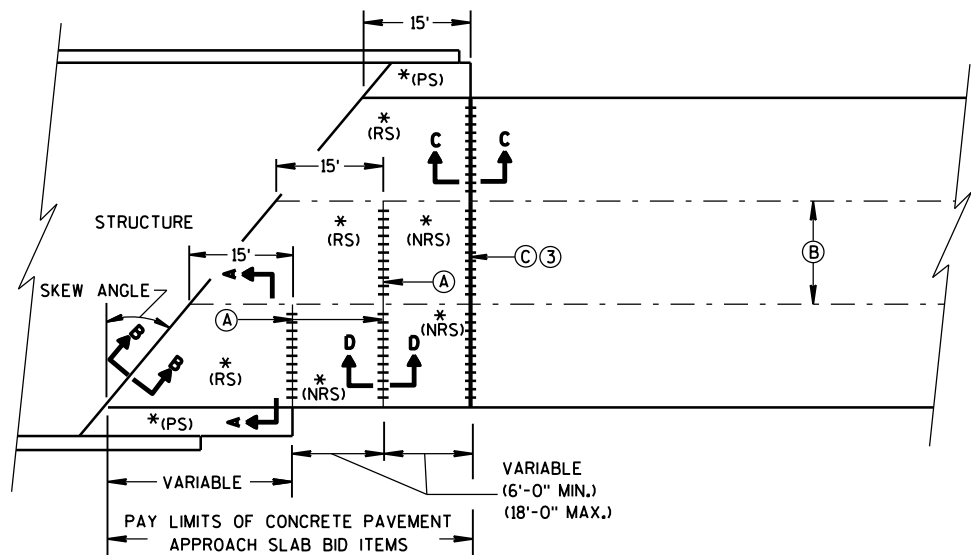


TYPICAL PLAN OF LOOP DETECTOR

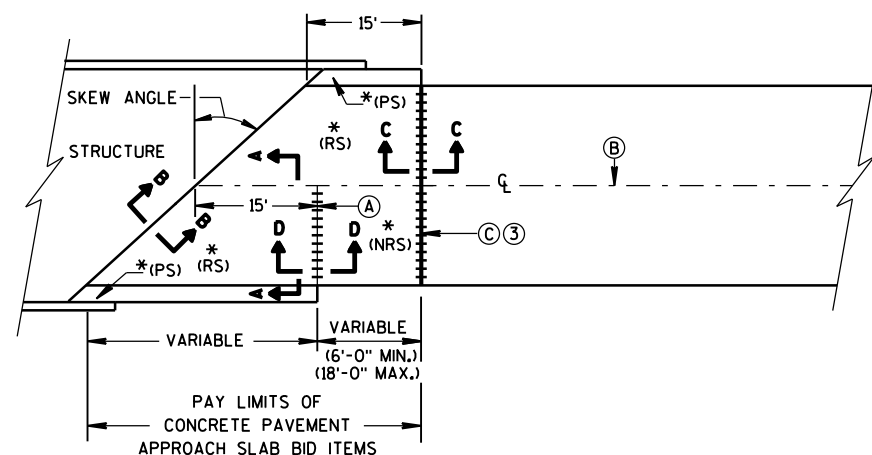
LOOP DETECTOR PLACED
IN CRUSHED AGGREGATE BASE
(NEW ASPHALTIC PAVEMENT)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

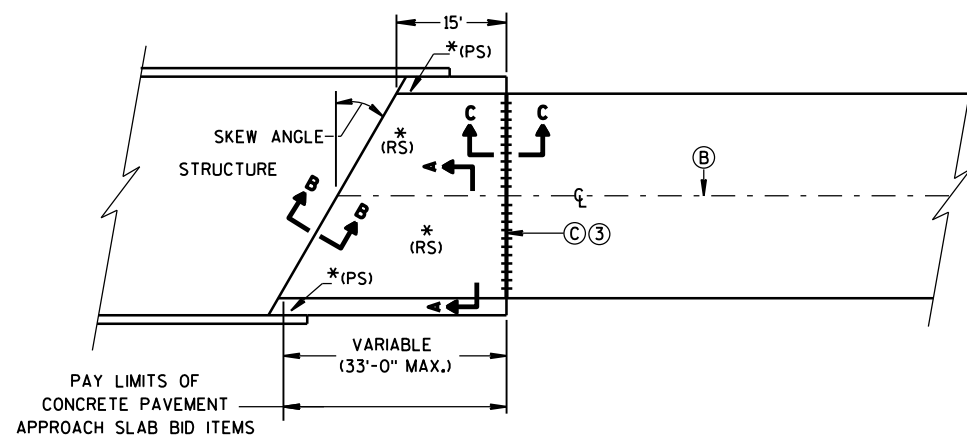
APPROVED
DATE
/S/ Ahmet Demirbilek
STATE ELECTRICAL 148
FHWA



**SKewed APPROACH
(PAVEMENT MORE THAN 2 LANES)**



**SKews > 20°
(PAVEMENT WIDTH ≤ 30')**

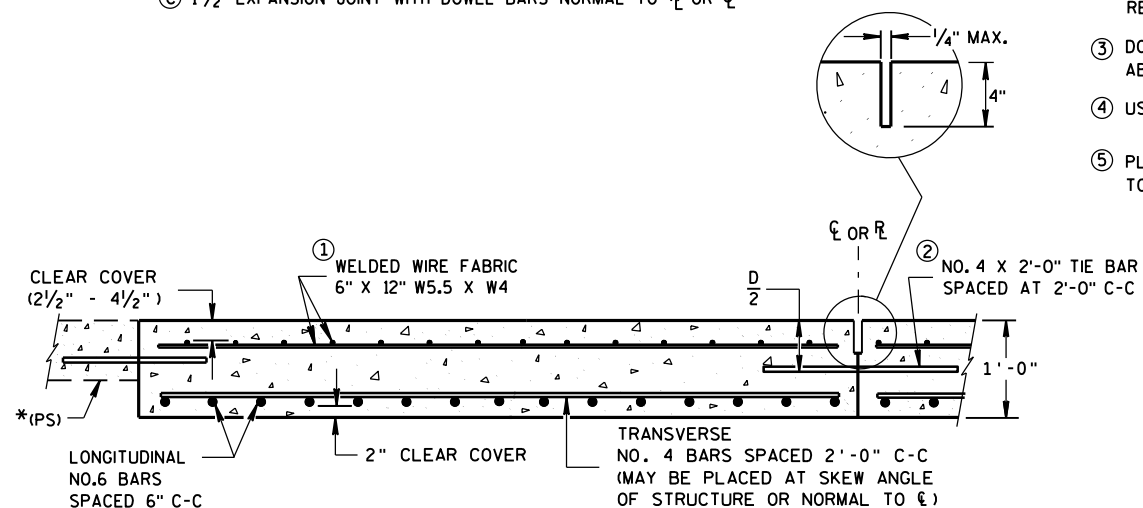


**SKews ≤ 20°
(PAVEMENT WIDTH ≤ 30')
APPROACH SLAB AND ADJACENT PAVEMENT**

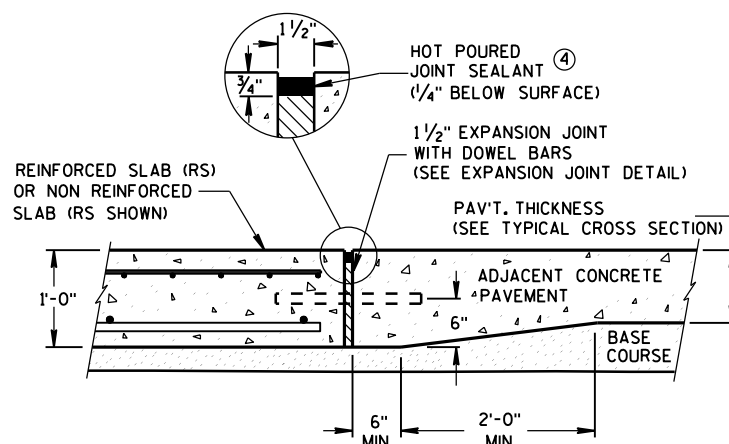
* (RS) = REINFORCED CONCRETE SLAB
* (PS) = PAVED CONCRETE SHOULDER OR CONCRETE DRAINAGE SLAB
(SEE DETAILS ELSEWHERE IN THE PLAN)
* (NRS) = NON-REINFORCED CONCRETE SLAB

*** STANDARD DOWEL BAR DIAMETER
(SEE SDD 13C11, & SDD 13C13)

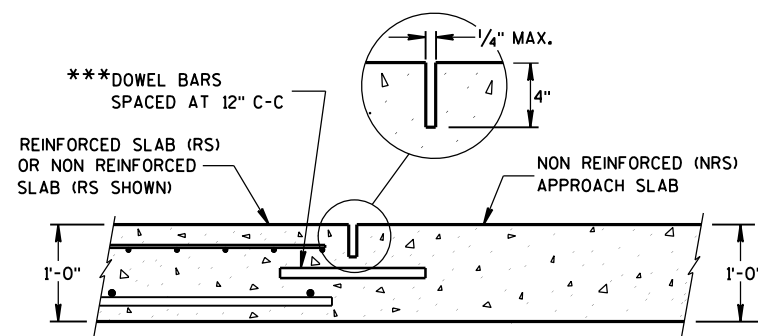
- (A) STANDARD CONTRACTION JOINT NORMAL TO ℓ OR ℓ_c
(B) STANDARD LONGITUDINAL JOINT WITH TIE BARS.
(C) 1½" EXPANSION JOINT WITH DOWEL BARS NORMAL TO ℓ OR ℓ_c



**SECTION A-A
REINFORCEMENT POSITIONING DETAIL**



**SECTION C-C
TRANSITION DETAIL
APPROACH SLAB TO ADJACENT PAVEMENT**



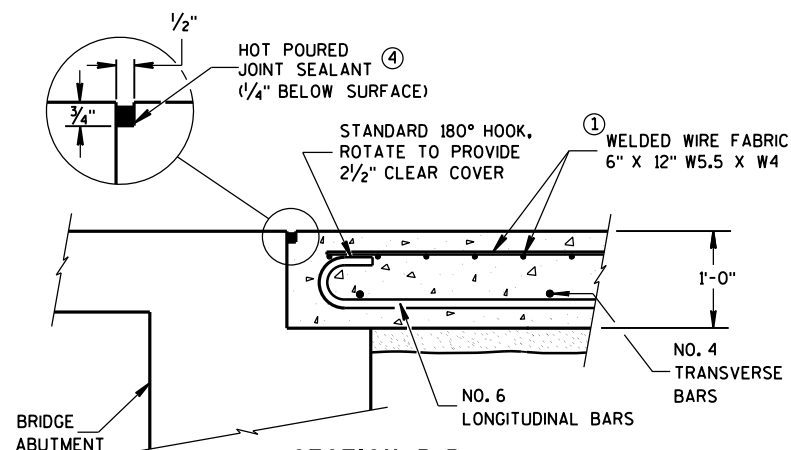
**SECTION D-D
CONTRACTION JOINT**

GENERAL NOTES

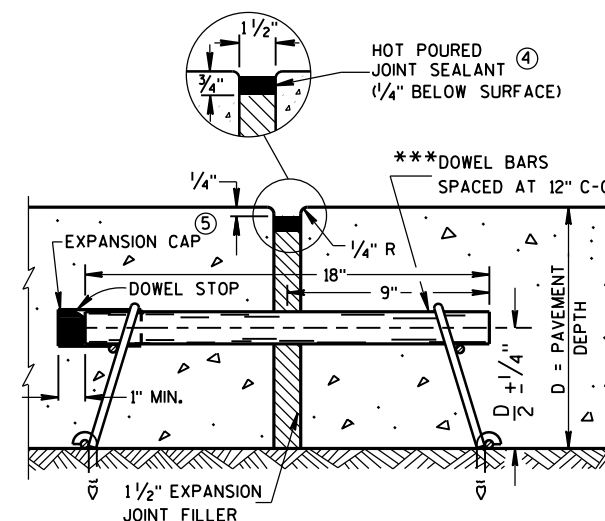
THE CONTRACTOR MAY SPLICE NO. 6 BARS IN THE APPROACH SLAB FOR SKEWED STRUCTURES ONLY. STAGGER SPLICES WITH A MAXIMUM OF ONE SPLICE PER BAR. THE LENGTH OF LAP IS 20 INCHES.

TACK WELD DOWEL BARS TO THE BASKETS ON ALTERNATE ENDS.

- THE CONTRACTOR MAY USE NO. 4 BARS SPACED AT 2'-0" C-C IN BOTH THE LONGITUDINAL AND TRANSVERSE DIRECTIONS FOR TOP REINFORCEMENT AS AN ALTERNATIVE TO THE WELDED WIRE FABRIC.
- THE CONTRACTOR MAY OMIT TIE BARS BETWEEN REINFORCED SLABS WHERE SLAB REINFORCEMENT BARS EXTEND ACROSS THE CENTERLINE OR REFERENCE LINE.
- DO NOT CONSTRUCT AN EXPANSION JOINT OR INSTALL DOWEL BARS WHEN ABUTTING AN HMA PAVEMENT.
- USE A JOINT SEALANT MEETING THE REQUIREMENTS OF ASTM D6690.
- PLACE EXPANSION CAP ON THE END OF THE DOWEL THAT IS NOT TACK WELDED TO THE BASKET. DO NOT FORCE DOWEL BAR PAST THE DOWEL STOP.



**SECTION B-B
BEND DETAIL
BOTTOM REINFORCEMENT**

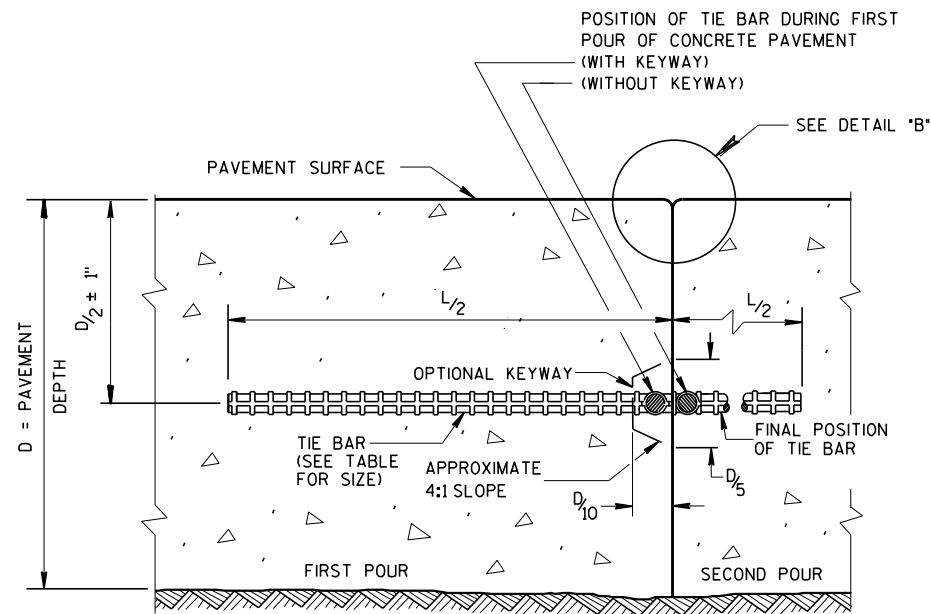


EXPANSION JOINT DETAIL

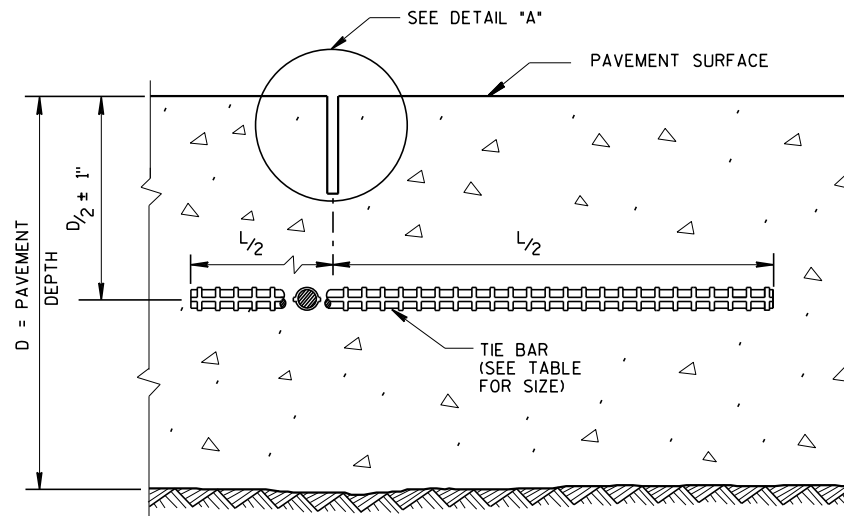
**CONCRETE PAVEMENT
APPROACH SLAB**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June, 2015 /S/ Peter Kemp, P.E.
DATE
PAVEMENT SUPEP 149
FHWA



CONSTRUCTION JOINT



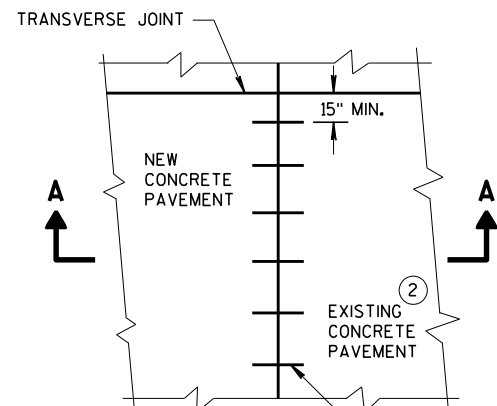
SAWED JOINT

GENERAL NOTES

CREATE A LONGITUDINAL JOINT FOR PAVEMENT WIDTHS GREATER THAN 15 FEET.

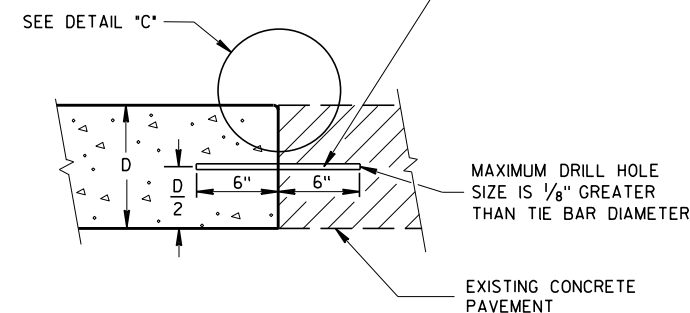
CORRELATE LONGITUDINAL JOINTS WITH LANE LINES WHEN POSSIBLE.

- ① ANCHOR TIE BARS INTO DRILLED HOLES WITH AN EPOXY.
- ② PAVEMENT THAT WAS IN PLACE PRIOR TO THE CONTRACT.

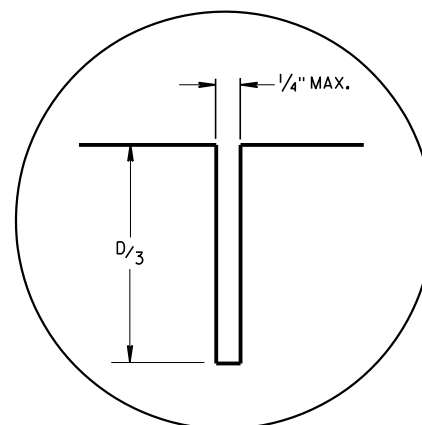


PLAN VIEW

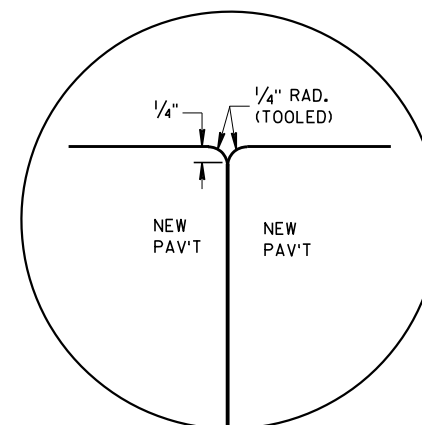
NO. 6 TIE BARS SPACED 30" C-C, INSTALLED PERPENDICULAR TO THE LONGITUDINAL JOINT. ①



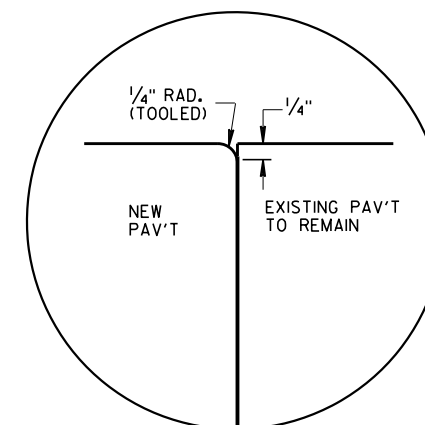
SECTION A-A
LONGITUDINAL CONSTRUCTION JOINT
TIE BARS ANCHORED
INTO EXISTING PAVEMENT



DETAIL "A"



DETAIL "B"



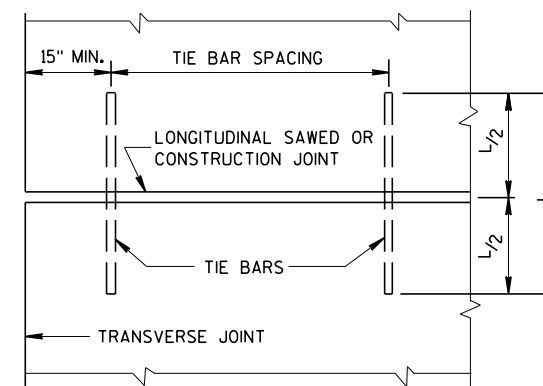
DETAIL "C"

TIE BAR TABLE

PAVEMENT DEPTH (D)	TIE BAR SIZE	TIE BAR LENGTH (L)	MAX. TIE BAR SPACING
< 10 1/2"	NO. 4	30"	36"
≥ 10 1/2"	NO. 5	36"	36"
	NO. 4 *	30"	24" **

* SUBSTITUTE BENT BARS AT LONGITUDINAL JOINTS WHEN EQUIPMENT LIMITATIONS DURING CONSTRUCTION WARRANT (e.g. AUXILIARY LANES OR TURN LANES)

** CONFORM TO 15" MINIMUM SPACING FROM TRANSVERSE JOINTS; SPACING BETWEEN TIE BARS WILL BE 30" AT TRANSVERSE JOINTS.



PLAN VIEW
SHOWING LOCATION OF TIE BARS

CONCRETE PAVEMENT
LONGITUDINAL JOINTS AND TIES

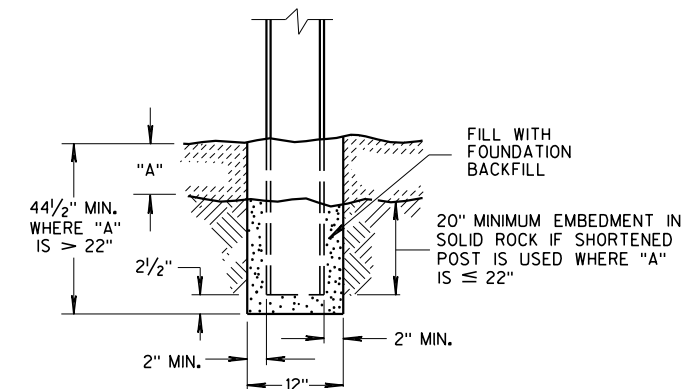
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
March 2018 /S/ Peter Kern
DATE PAVEMENT SUPE 150
FHWA

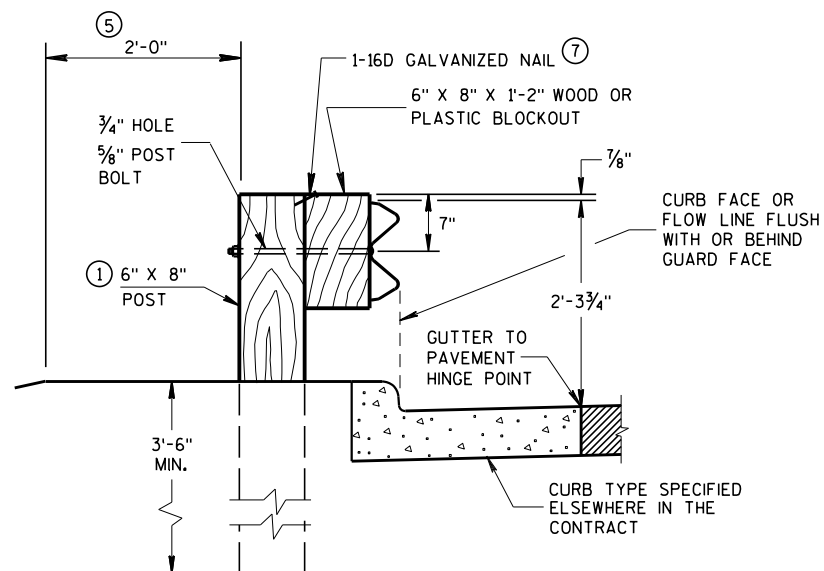
GENERAL NOTES

- W6 X 9 OR W6 X 8.5 STEEL POSTS AND NOTCHED PLASTIC BLOCKOUTS ARE ACCEPTABLE ALTERNATIVES FOR 6" X 8" WOOD POSTS WITH WOOD OR PLASTIC BLOCKOUTS. USE APPROVED NOTCHED PLASTIC BLOCKOUTS WITH STEEL POSTS. APPROVED PLASTIC BLOCKOUT DESIGNS MAY VARY FROM THIS TYPICAL DETAIL WHEN USED IN CONJUNCTION WITH STEEL POSTS. DO NOT MIX STEEL POSTS AND WOOD POSTS IN A SINGLE INSTALLATION.
- USE STRUCTURAL STEEL POSTS CONFORMING TO ASTM A 36. GALVANIZED POSTS ACCORDING TO AASHTO M 111. EITHER SET THE POSTS IN DRILLED HOLES OR DRIVE TO GRADE. REMOVE MUSHROOMING CAUSED BY DRIVING AND REPAIR DAMAGED SPELTER COATING ON GALVANIZED POSTS.
- INSTALL STEEL POSTS WITH HOLES ON APPROACHING TRAFFIC SIDE.
- USE EITHER WOOD OR APPROVED PLASTIC BLOCKOUTS ON WOOD POSTS.
- IF THE DISTANCE FROM BACK OF POST TO SHOULDER HINGE POINT IS LESS THAN 2 FEET INSTALL LONGER POST AT HALF POST SPACING, W BEAM (LHW).
- IF ROCK IS ENCOUNTERED DURING EXCAVATION, THE ENGINEER MAY APPROVE USING A 12 INCH DIAMETER POST HOLE EXTENDING 20 INCHES DEEP INTO THE ROCK. PLACE GRANULAR MATERIAL IN THE BOTTOM OF THE HOLE APPROXIMATELY 2 1/2 INCHES DEEP. CUT THE POSTS TO LENGTH AND PLACE IN THE HOLE. BACKFILL WITH MATERIAL EXCAVATED FROM THE HOLE AND COMPACT ADEQUATELY.
- WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.

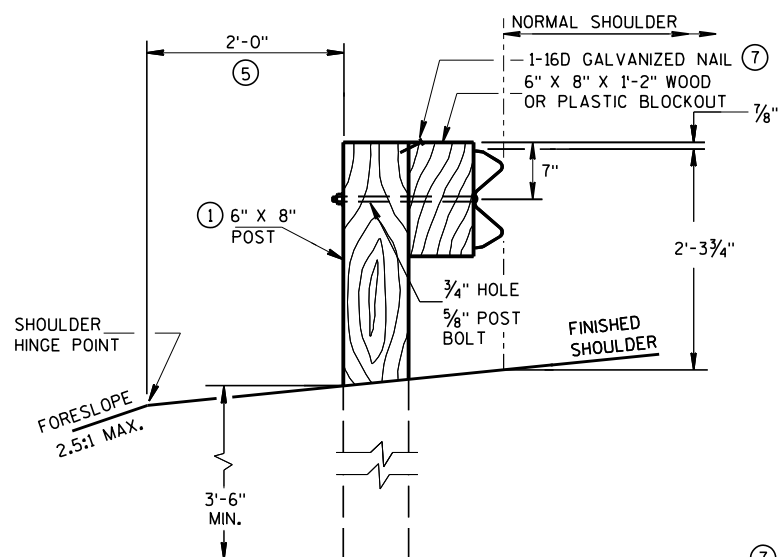
INSTALL BEAM GUARD SECTIONS AND ALL NECESSARY HARDWARE ACCORDING TO THE APPLICABLE PLAN AND CURRENT STANDARD AND SUPPLEMENTAL SPECIFICATIONS. ALL DIMENSIONS ARE SUBJECT TO MANUFACTURER'S TOLERANCES EXCEPT WHERE ALLOWABLE TOLERANCES ARE SHOWN.



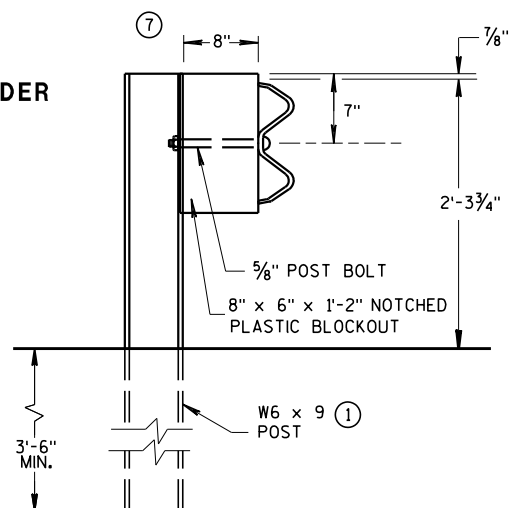
END VIEW
SETTING STEEL OR WOOD POST IN ROCK ⑥



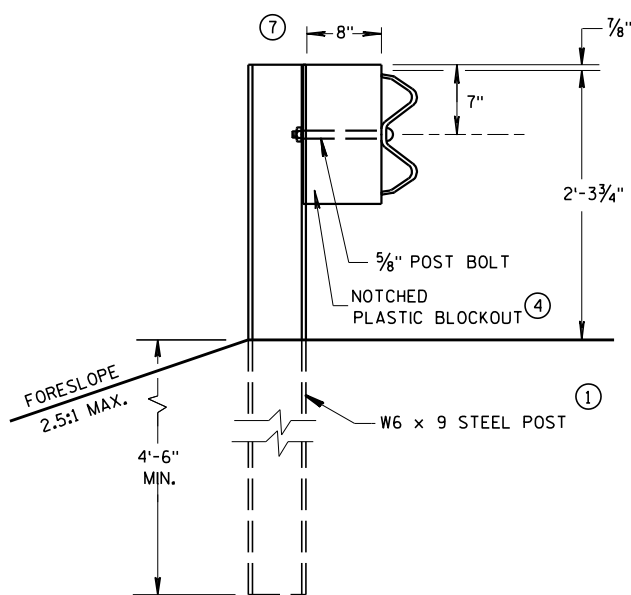
END VIEW
LOCATED ALONG A CURBED ROADWAY



END VIEW
LOCATED ALONG A ROADWAY SHOULDER
STANDARD INSTALLATION

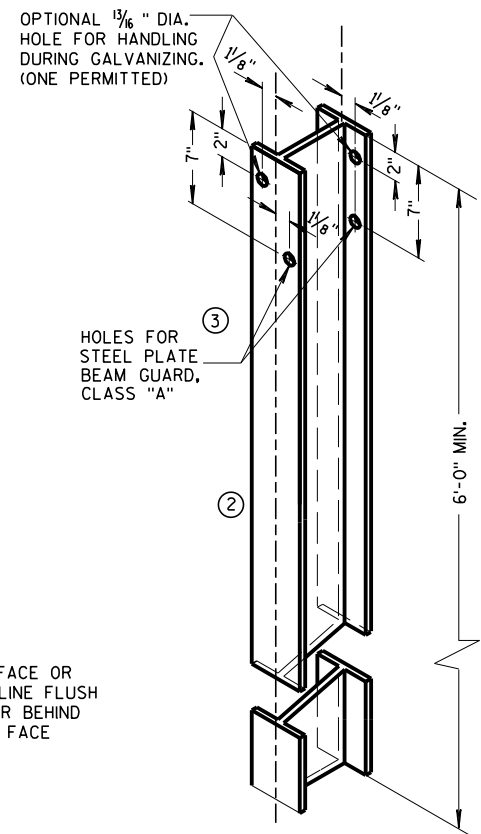


END VIEW
STEEL POST & NOTCHED
PLASTIC BLOCKOUT ALTERNATIVE
STANDARD INSTALLATION



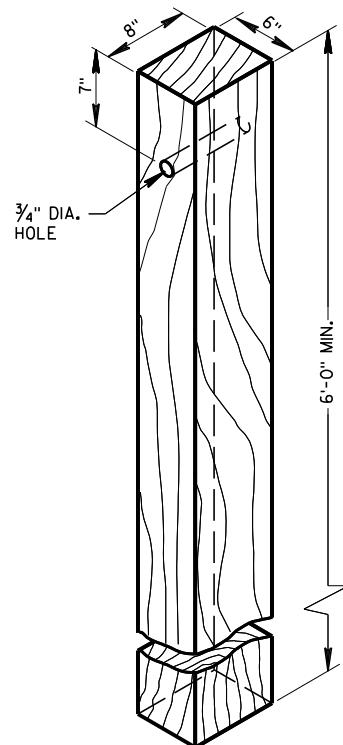
END VIEW
LONGER POST AT HALF
POST SPACING W BEAM
(LHW)

TYPICAL INSTALLATION OF STEEL PLATE BEAM GUARD

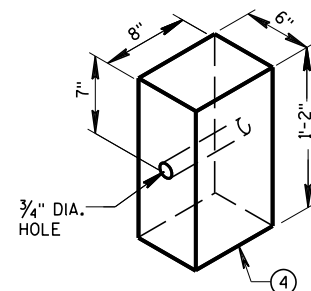


STEEL POST &
HOLE PUNCHING DETAIL
(W6 X 9) ①

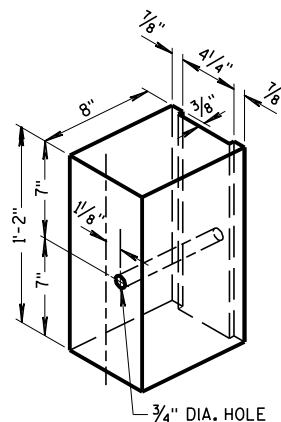
ALL HOLES 1/8" DIAMETER EXCEPT AS NOTED



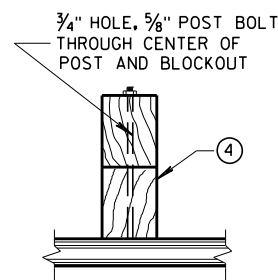
WOOD POST
(6"X8") NOMINAL



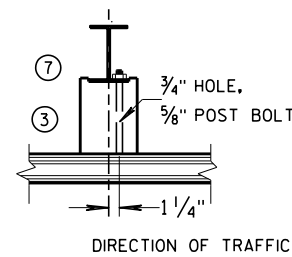
WOOD OR PLASTIC
BLOCKOUT FOR
WOOD POSTS



TYPICAL NOTCHED
PLASTIC BLOCKOUT
FOR STEEL POSTS ①



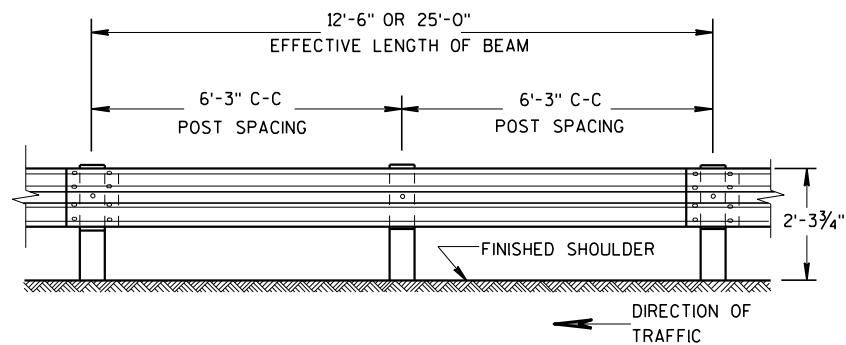
PLAN VIEW
WOOD POST, BLOCKOUT & BEAM



PLAN VIEW
STEEL POST, NOTCHED
PLASTIC BLOCKOUT & BEAM

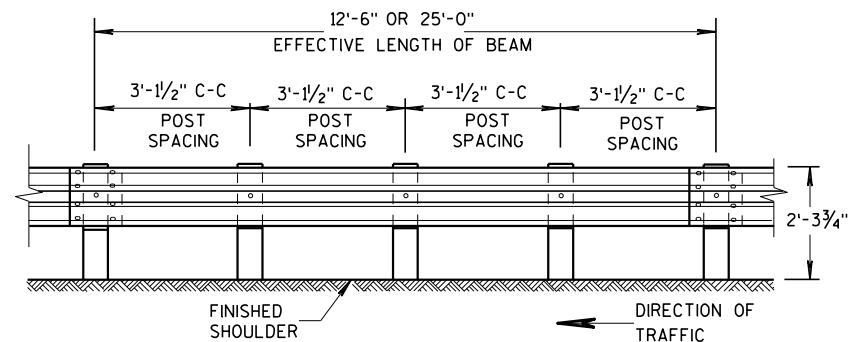
STEEL PLATE BEAM GUARD,
CLASS "A"
INSTALLATION & ELEMENTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



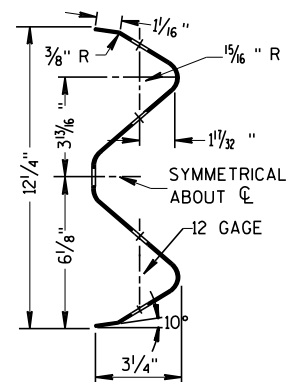
FRONT VIEW

POST SPACING STANDARD INSTALLATION

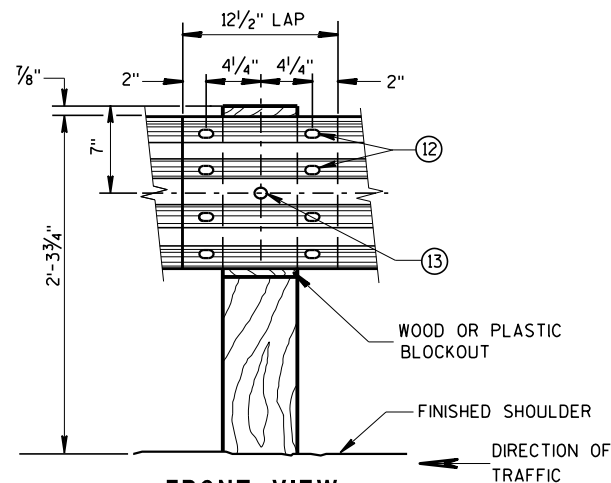


FRONT VIEW

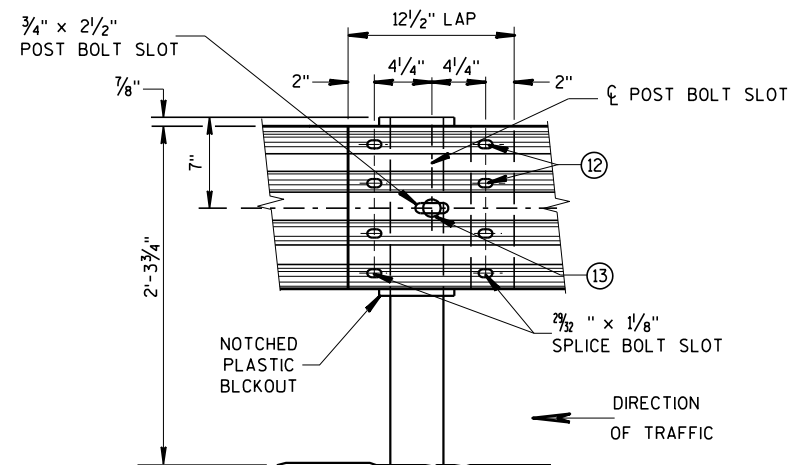
POST SPACING FOR LONGER POST
AT HALF POST SPACING W BEAM (LHW)



SECTION THRU W BEAM



FRONT VIEW
BEAM SPLICE AT WOOD POST
AND POST MOUNTING DETAIL

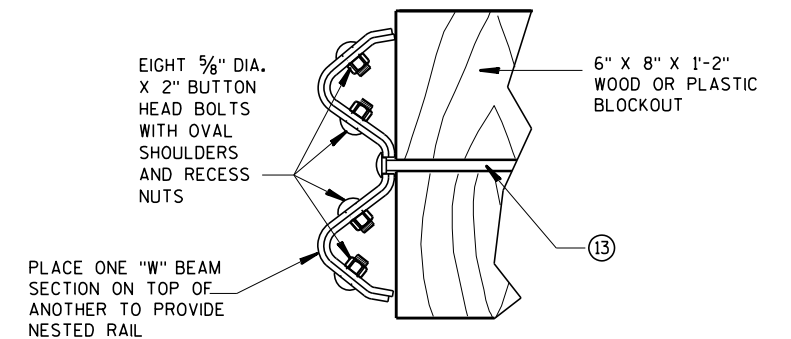


FRONT VIEW
BEAM SPLICE AT STEEL POST
TYPICAL SPlicing DETAILS
OF STEEL PLATE BEAM GUARD

GENERAL NOTES

FURNISH GUARDRAIL DEFLECTORS FROM APPROVED PRODUCTS LIST.

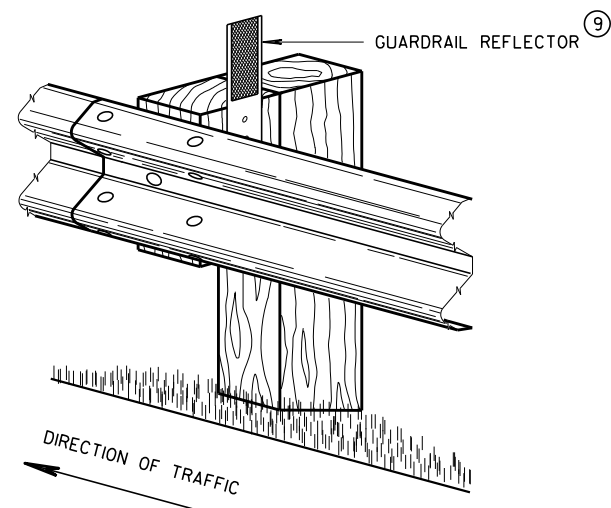
- ⑨ DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINA. START REFLECTORS AT POST #9 AND SPACE EVENLY EVERY 100 FEET (MAX.) TO THE END OF GUARDRAIL RUN, USING A MINIMUM OF 3 REFLECTORS.
- ⑫ 8 - 5/8" ϕ X 2" BUTTON HEAD BOLTS WITH OVAL SHOULDERS & RECESS NUTS.
- ⑬ 5/8" DIA. BUTTON HEAD BOLT AND RECESS NUT WITH 5/8" DIA. F844 FLAT WASHER UNDER NUT.



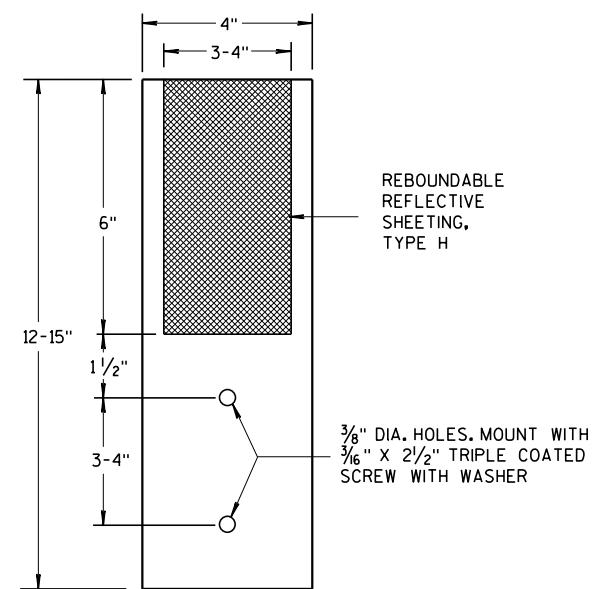
NESTED W BEAM (NW)

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

* USE DOUBLE SIDED WHITE GUADRAIL REFLECTORS ON ROADWAYS WITH BI-DIRECTIONAL TRAFFIC (NO MEDIAN). USE SINGLE SIDED WHITE (RIGHT SIDE) AND SINGLE SIDED YELLOW (LEFT SIDE) ON ROADWAYS WITH MEDIAN SEPARATION.



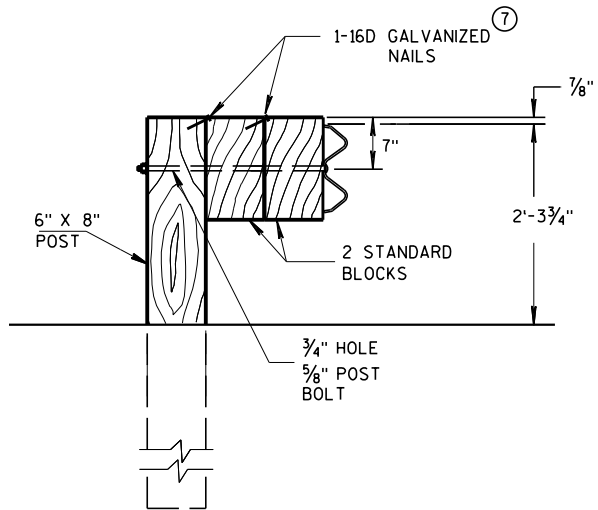
4" X 12" GUARDRAIL REFLECTOR DETAIL
AND TYPICAL INSTALLATION *



4"x 12" GUARDRAIL REFLECTOR

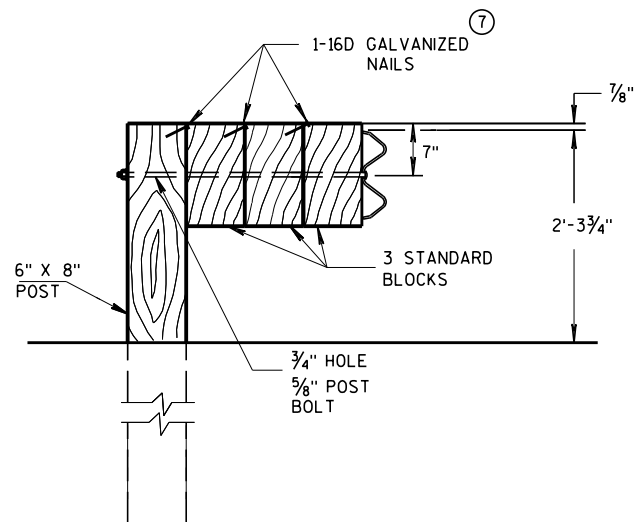
STEEL PLATE BEAM GUARD,
CLASS "A",
INSTALLATION & ELEMENTS

STATE OF WISCO 152
DEPARTMENT OF TRANSPORTATION



DETAIL FOR DOUBLE BLOCKS

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

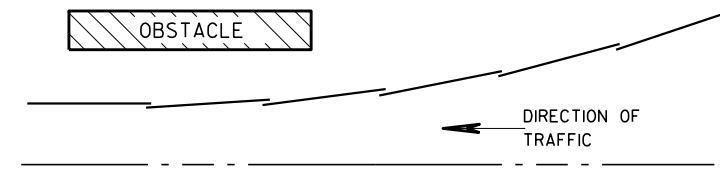


DETAIL FOR TRIPLE BLOCKS

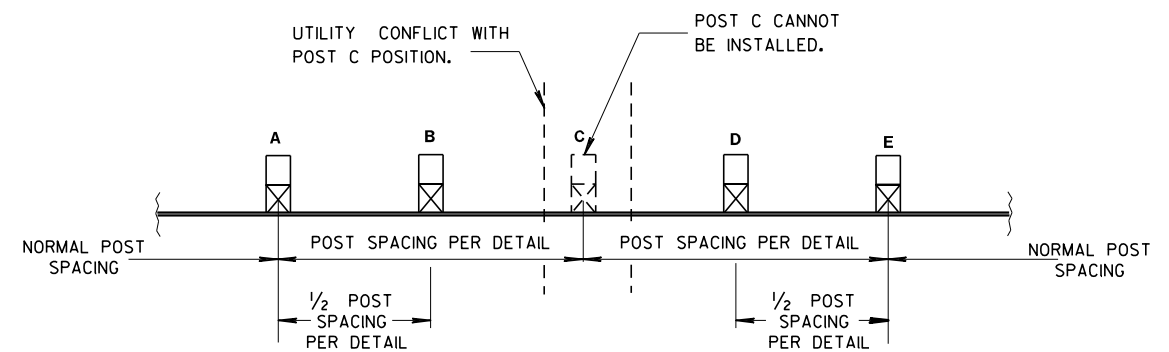
TRIPLE BLOCK DETAIL IS LIMITED TO ONE
LOCATION WITHIN A BEAM GUARD RUN.

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

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



PLAN VIEW BEAM LAPPING DETAIL



POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2017 /S/ Rodney Taylor
DATE ROADWAY STANDARDS 153 UNIT SUPERVISOR
FHWA

BILL OF MATERIALS

NOTE NO.	DESCRIPTION
①	WOOD BREAKAWAY TERMINAL POST: 5 1/2" X 7 1/2" X 3'-9"
②	STEEL TUBE TS 8" X 6" X 0.188", 6'-0"
④	WOOD BREAKAWAY CRT POST: 6" X 8" X 6'-0"
⑤	WOOD OFFSET BLOCKS: 6' X 8" X 1'-2"
⑥	PIPE SLEEVE: 2" X 5 1/2" STANDARD PIPE
⑦	BEARING PLATE
⑧	BCT CABLE ASSEMBLY
⑨	CABLE ANCHOR BOX
⑩	STRUT & YOKE
⑪	STEEL PLATE BEAM, END PANEL 12 GA.
⑫	STEEL PLATE BEAM: 12 GA. 13'-6 1/2"
⑬	IMPACT HEAD
⑭	0.040" ALUMINUM SHEET WITH REFLECTIVE SHEETING TYPE F PER SECTION 637 OF THE STANDARD SPECIFICATIONS

GENERAL NOTES

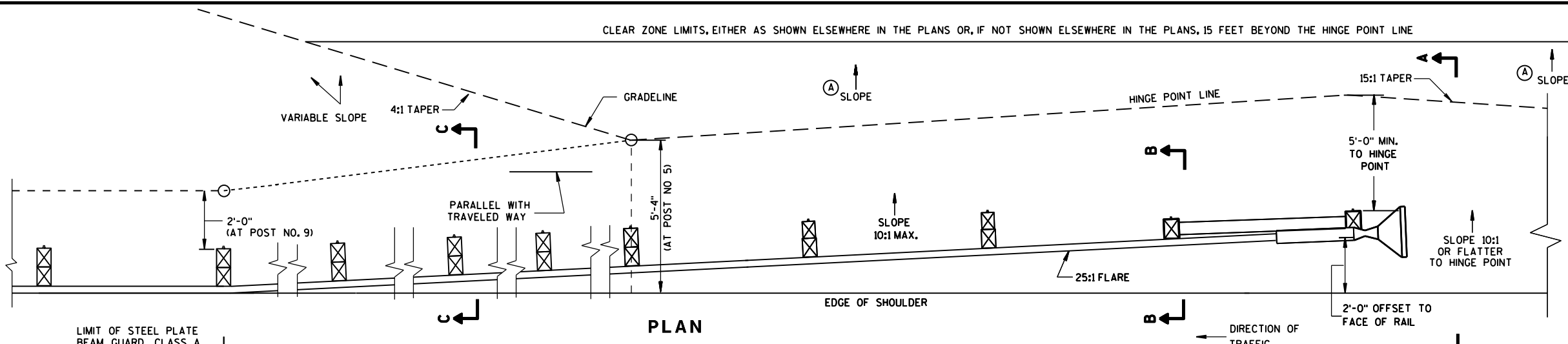
FOLLOW MANUFACTURE'S BOLTING RECOMMENDATIONS.

- (A) THE SLOPE IN THE AREA BOUNDED BY THE GRADELINE, THE HINGE POINT LINE (HPL), AND THE CLEAR ZONE LIMITS (CZL) SHALL BE 4:1 OR FLATTER.
- (B) AFTER FINAL ASSEMBLY, RECHECK CABLE TO BE SURE IT IS TAUT AND HAS NOT RELAXED.
- (D) THE TOP OF THE STEEL TUBE ON POSTS 1 AND 2 SHALL NOT BE MORE THAN 3" ABOVE THE FINISH GROUND ELEVATION.
- (E) THE CENTER OF THE UPPER 3 1/2" DIAMETER HOLE ON POST 3 THROUGH 8 SHALL BE 3/4" ABOVE THE FINISHED GROUND LINE.
- (F) ATTACH ALUMINUM SHEET TO E.A.T. HEAD USING 4 STAINLESS STEEL SELF-TAPPING SCREWS, ONE SCREW PER CORNER.

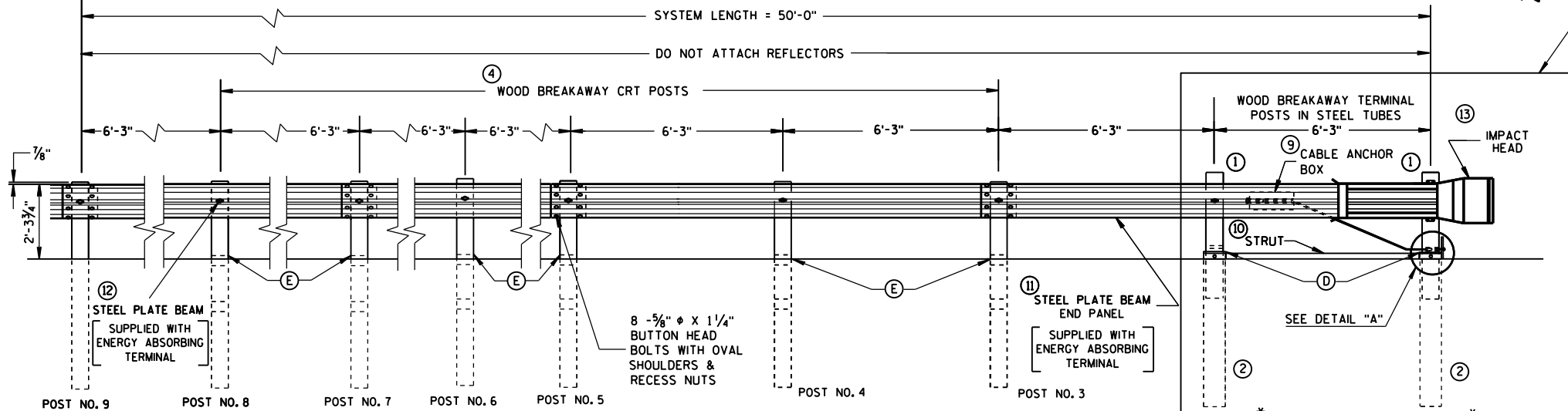
STEEL POSTS SHALL NOT BE ALLOWED FOR USE WITH ENERGY ABSORBING TERMINALS.

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

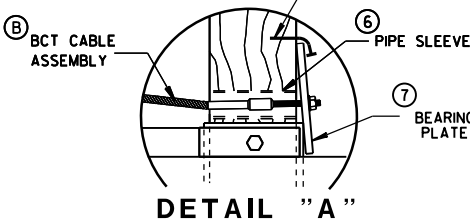
* DO NOT ATTACH BLOCKOUTS TO POSTS 1 AND 2.



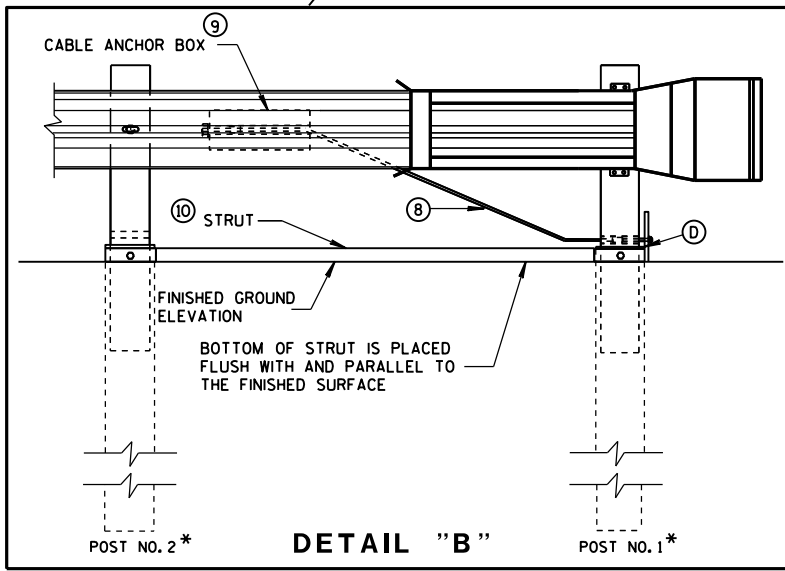
PLAN



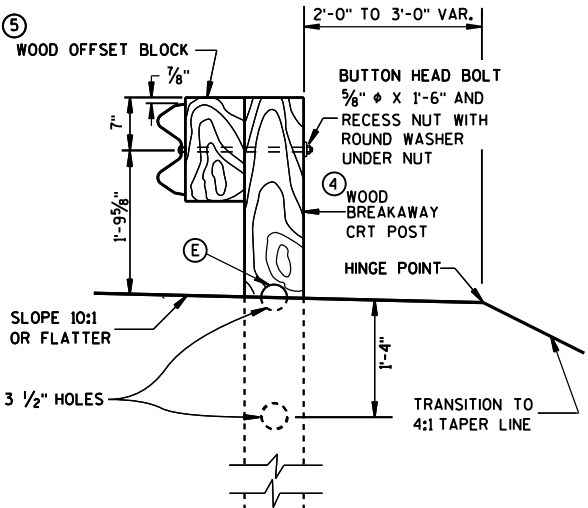
ELEVATION



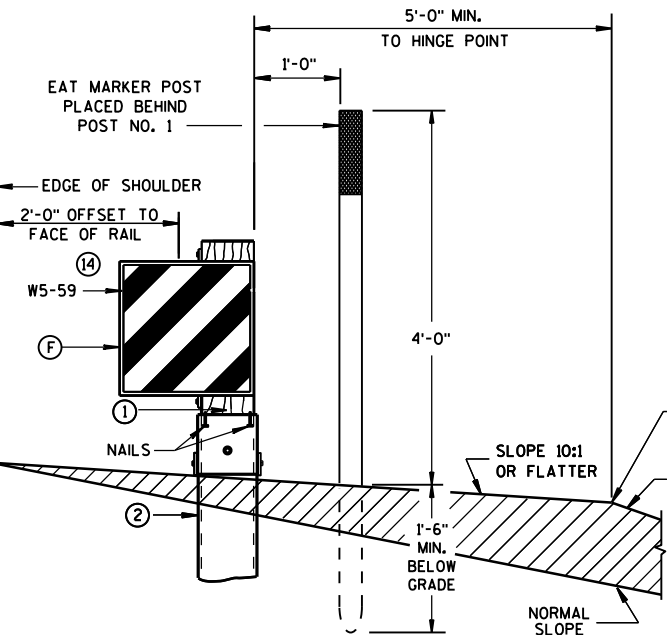
DETAIL "A"



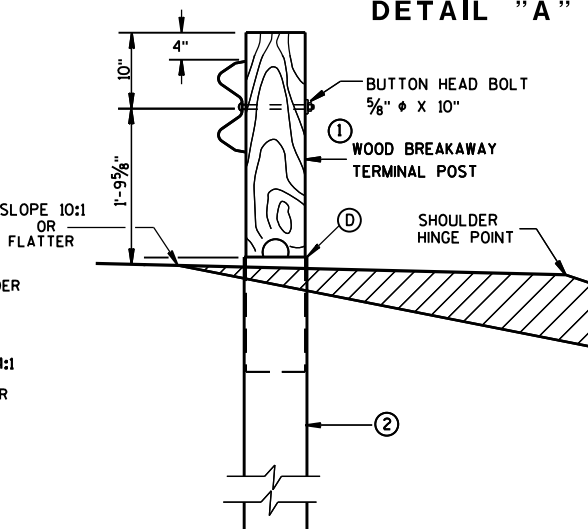
DETAIL "B"



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



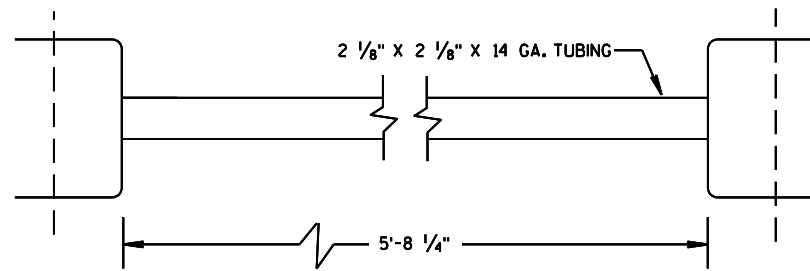
SECTION A-A
TYPICAL AT POST NO. 1*



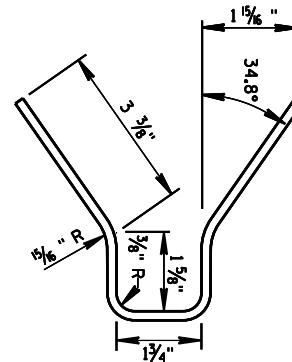
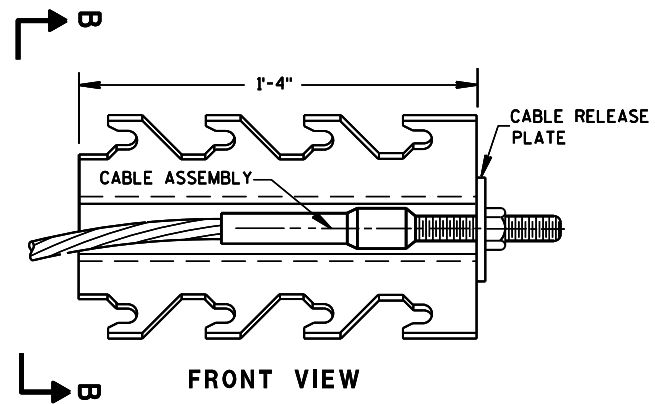
SECTION B-B
TYPICAL AT POST NO. 2*

STEEL PLATE BEAM GUARD
ENERGY ABSORBING TERMINAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

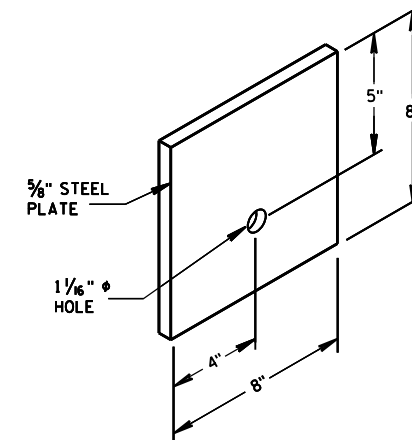


⑩ STRUT DETAIL



SECTION B-B

⑨ CABLE ANCHOR BOX

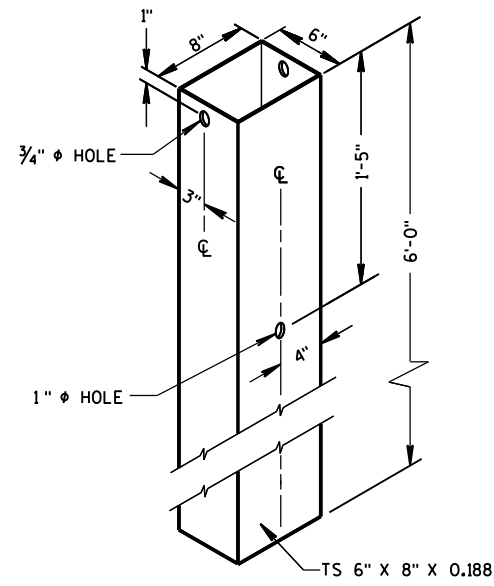


⑦ STEEL BEARING PLATE

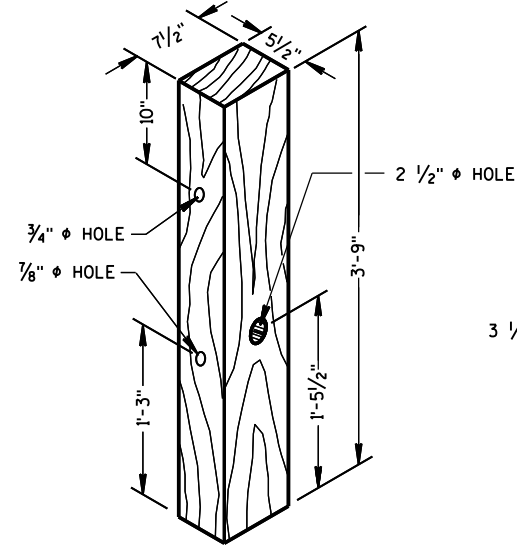
STEEL PLATE BEAM GUARD
ENERGY ABSORBING TERMINAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

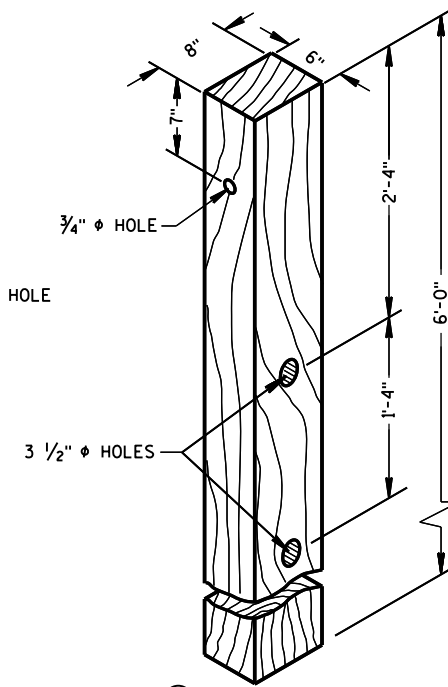
155



② **72" STEEL TUBE**
(POSTS NO. 1-4)

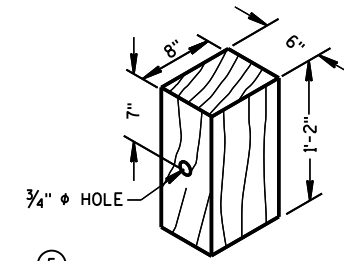


① **TERMINAL POST**



④ **CRT POST**
(POSTS NO'S 5-8)

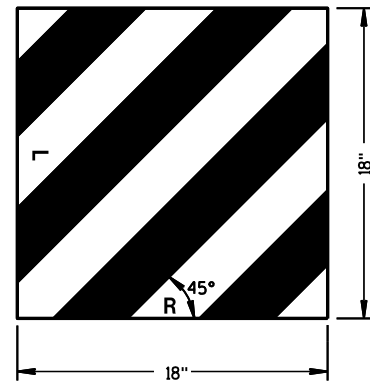
WOOD BREAKAWAY POSTS



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

GENERAL NOTES

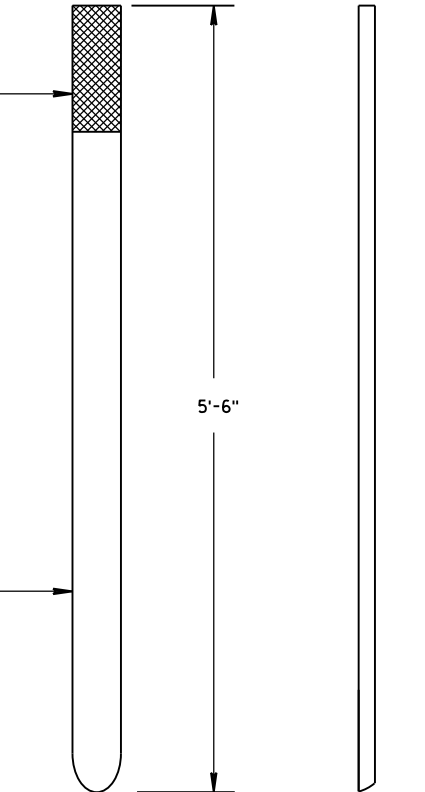
WHEN ROCK IS ENCOUNTERED DURING EXCAVATION, A 12 INCH DIA. POST HOLE EXTENDING 20 INCHES DEEP INTO THE ROCK MAY BE USED IF APPROVED BY THE ENGINEER. GRANULAR MATERIAL SHALL BE PLACED IN THE BOTTOM OF THE HOLE APPROXIMATELY 2 1/2" INCHES DEEP TO PROVIDE DRAINAGE. THE SOIL TUBES SHALL BE FIELD CUT TO LENGTH,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



⑭ **REFLECTIVE SHEETING DETAILS**

TYPE H
YELLOW REFLECTIVE
SHEETING 3" X 9".
SEE STANDARD
SPECIFICATION 637.

E.A.T. MARKER
POST (YELLOW)
SEE APPROVED
PRODUCTS LIST



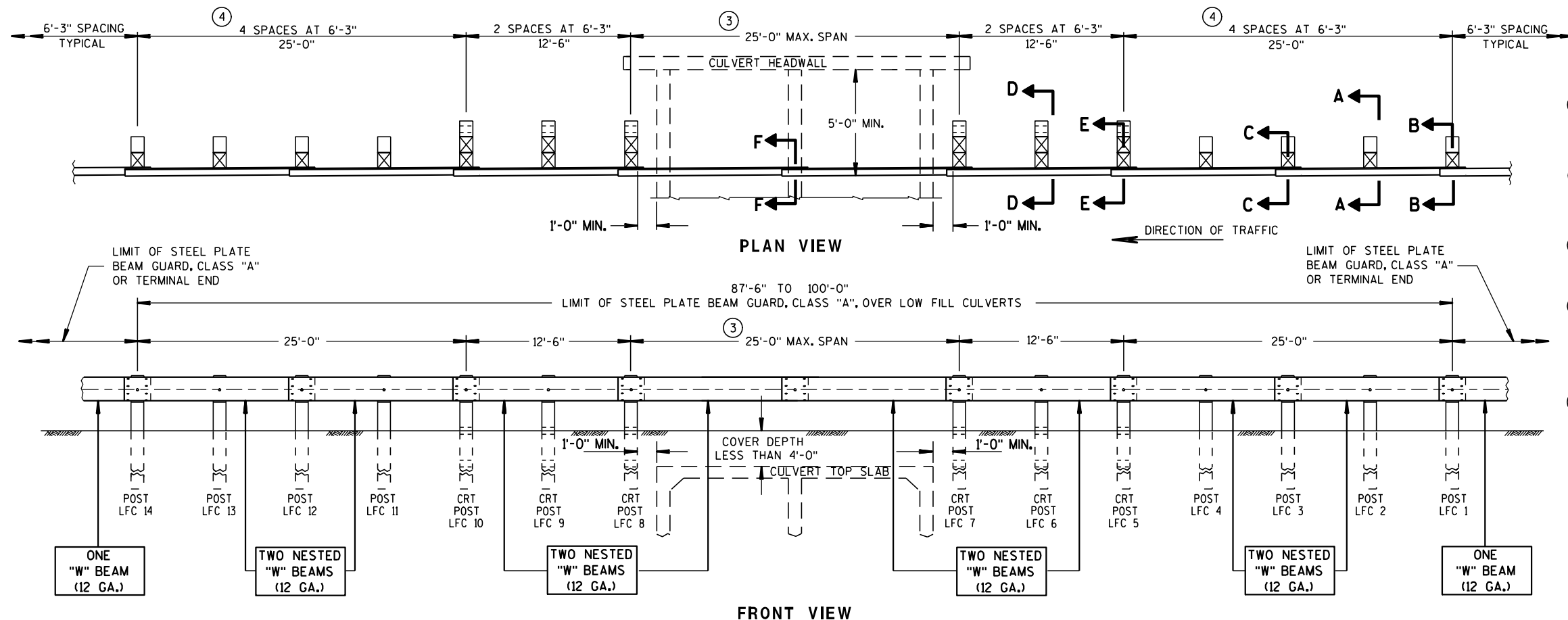
FRONT VIEW SIDE VIEW

E.A.T. MARKER POST

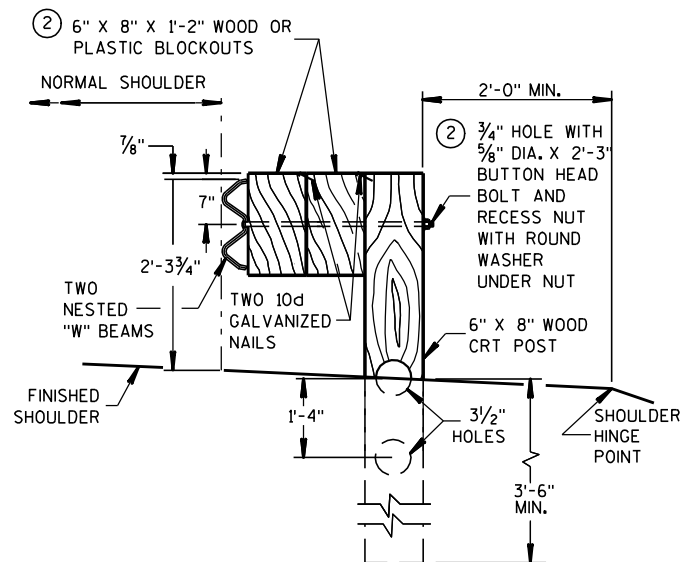
**STEEL PLATE BEAM GUARD
ENERGY ABSORBING TERMINAL**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

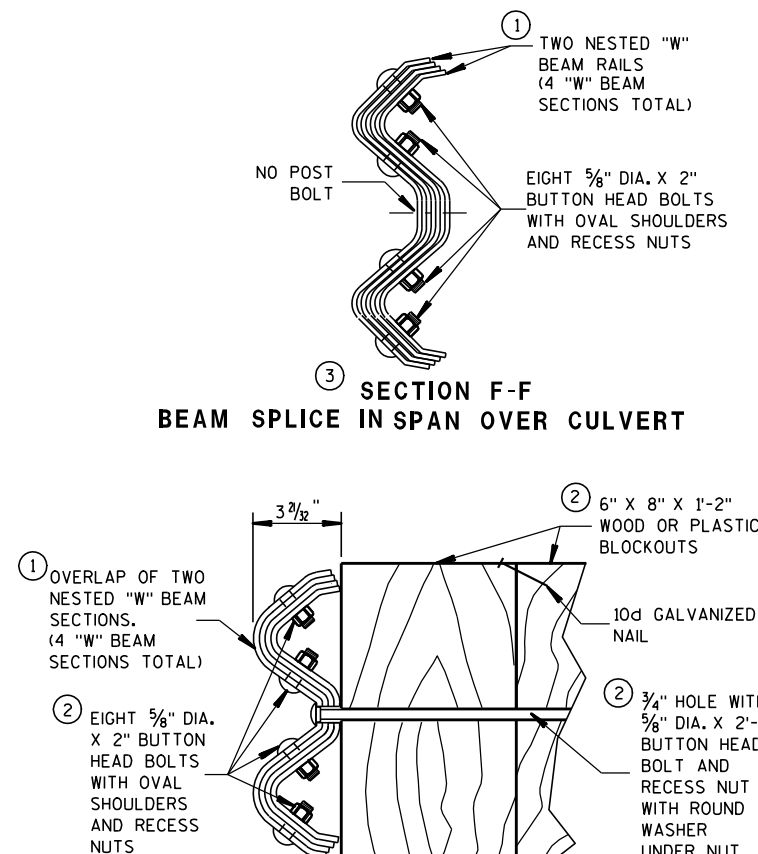
APPROVED
June 2017 /S/ Rodney Taylor
DATE ROADWAY STANDARDS 156 ENT
FHWA UNIT SUPERVISOR



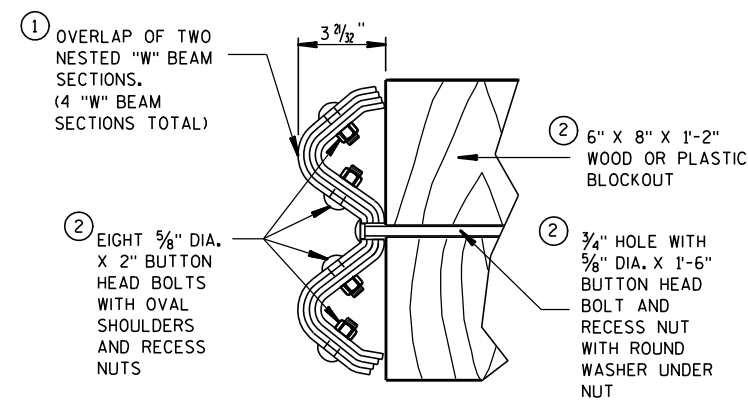
TYPICAL INSTALLATION OF STEEL PLATE BEAM GUARD OVER LOW FILL CULVERTS



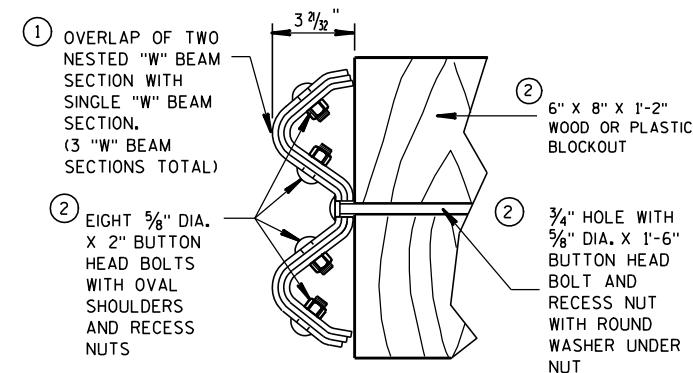
SECTION D-D
TYPICAL CRT POST LFC 6 AND 9



SECTION E-E
TYPICAL CRT POST LFC 5, 7, 8 AND 10



SECTION C-C
TYPICAL AT POSTS LFC 3 AND 12

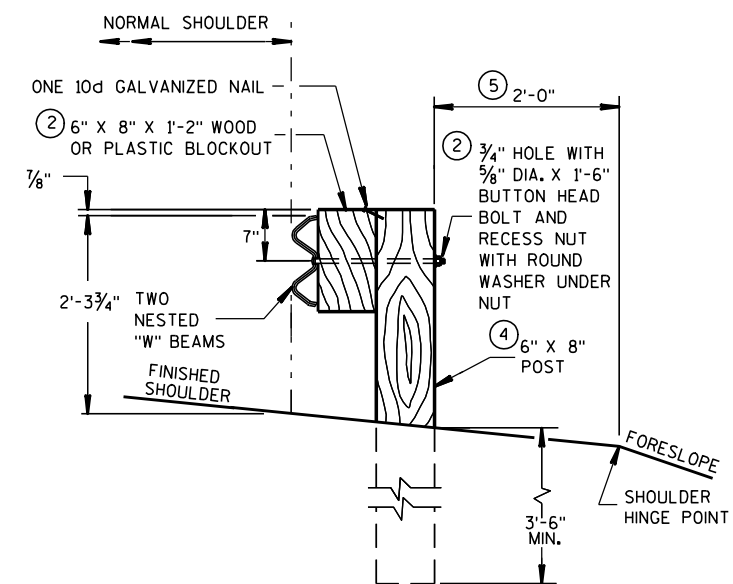


SECTION B-B
TYPICAL AT POSTS LFC 1 AND 14

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 MAINTAIN THE NESTING OF EACH NESTED PAIR OF "W" BEAM SECTIONS THROUGH SPLICES. ORIENTATE NESTED "W" BEAM SPLICES IN THE DIRECTION OF TRAFFIC AS THE PLAN VIEW SHOWS. SEE S.D.D. 14 B 15 FOR SPLICE INSTALLATION.
- ② THE CONTRACTOR MAY USE APPROVED PLASTIC BLOCKOUTS IN LIEU OF WOOD BLOCKOUTS. SEE S.D.D. 14 B 15 FOR TYPICAL BLOCKOUT, SPLICE AND REFLECTOR INSTALLATIONS. USE BOLT SIZES AND LENGTHS AS SHOWN ON THIS DETAIL.
- ③ PROVIDE 12'-6", 18'-9" AND 25'-0" SPANS ONLY. USE A MAXIMUM OF ONE SPLICE LOCATED ANYWHERE WITHIN THE SPAN SECTION. LOCATE ALL OTHER SPLICES AT BEAM GUARD POSTS.
- ④ IN THE FIRST AND LAST 25 FOOT SECTIONS (POSTS LFC 1-4 & LFC 11-14), THE CONTRACTOR MAY USE W6 X 9 OR W6 X 8.5 STEEL POSTS WITH NOTCHED PLASTIC BLOCKOUTS OR 6" X 8" WOOD POSTS WITH EITHER WOOD OR PLASTIC BLOCKOUTS. DO NOT MIX STEEL POSTS WITH NOTCHED PLASTIC BLOCKOUTS AND WOOD POSTS WITH EITHER WOOD OR PLASTIC BLOCKOUTS IN THE SAME INSTALLATION.
- ⑤ WHERE EXISTING CONDITIONS DO NOT PERMIT THE APPROPRIATE EARTHWORK, THE PLAN TYPICAL SECTIONS OR DETAILS MAY SHOW, OR THE ENGINEER MAY ALLOW, THE REDUCTION OR ELIMINATION OF THE 2 FOOT DISTANCE TO THE HINGE POINT. BUILD AS THE PLAN SHOWS OR ENGINEER DIRECTS. IF THE 2 FOOT DISTANCE TO THE HINGE POINT IS REDUCED OR ELIMINATED, INCREASE THE POST SOIL DEPTH TO 4'-6" OR MORE.

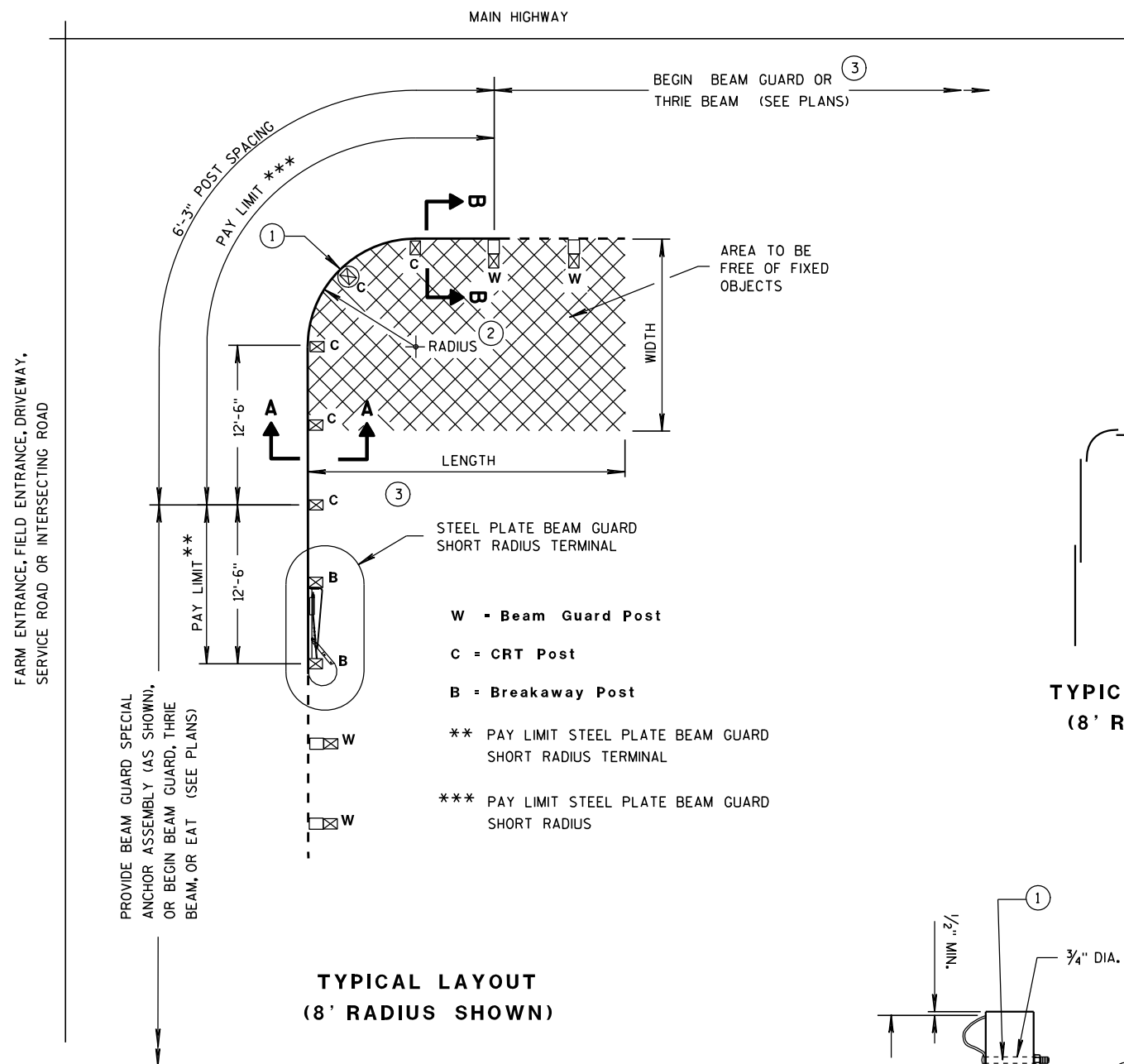


SECTION A-A
TYPICAL AT POST LFC 2, 4, 11, 13

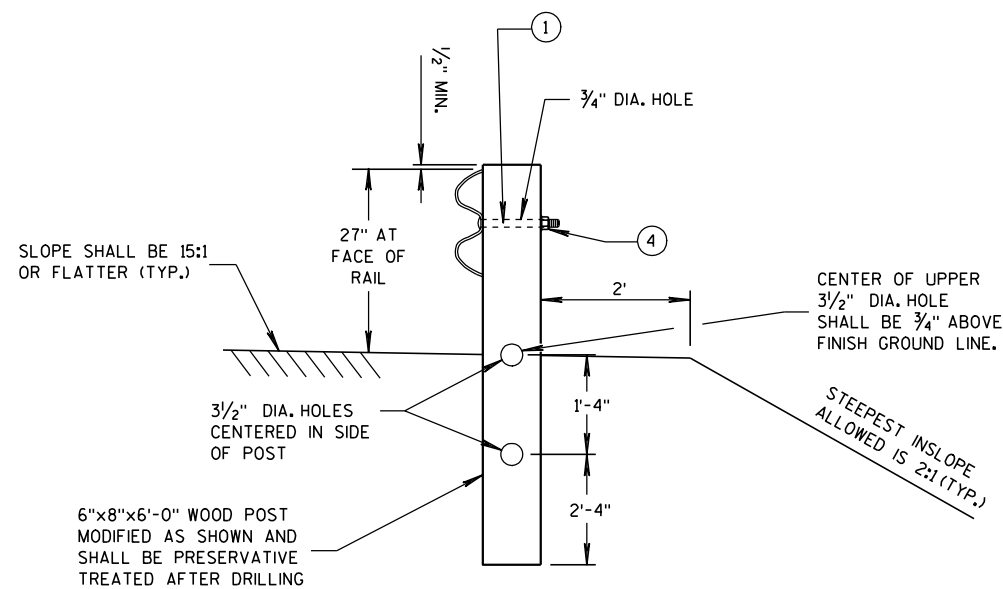
**STEEL PLATE BEAM GUARD,
CLASS "A", OVER LOW
FILL CULVERTS**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
12/8/00 /S/ John Have-
DATE CHIEF ROADWAY DEVELOP 157 GINEER
FHWA



**TYPICAL LAYOUT
(8' RADIUS SHOWN)**



**SECTION A-A
(CRT POST)**

STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL

GENERAL NOTES

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

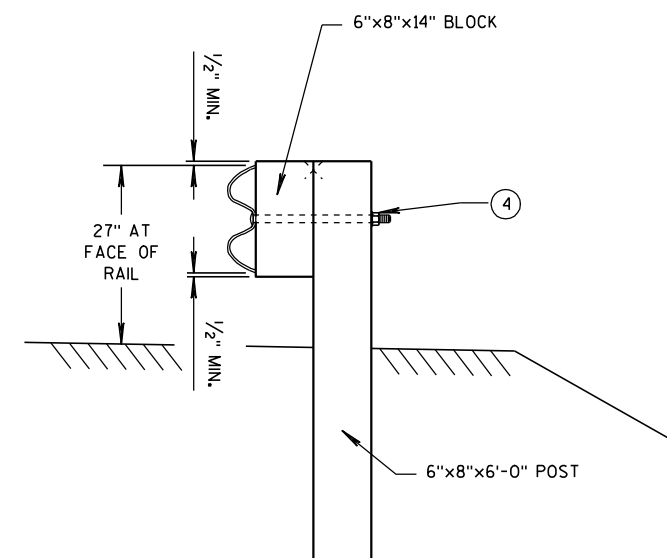
SHOP BEND CURVED RAIL SECTIONS.

SEE STANDARD DETAIL DRAWING 14 B 15 FOR OTHER DETAIL.

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

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

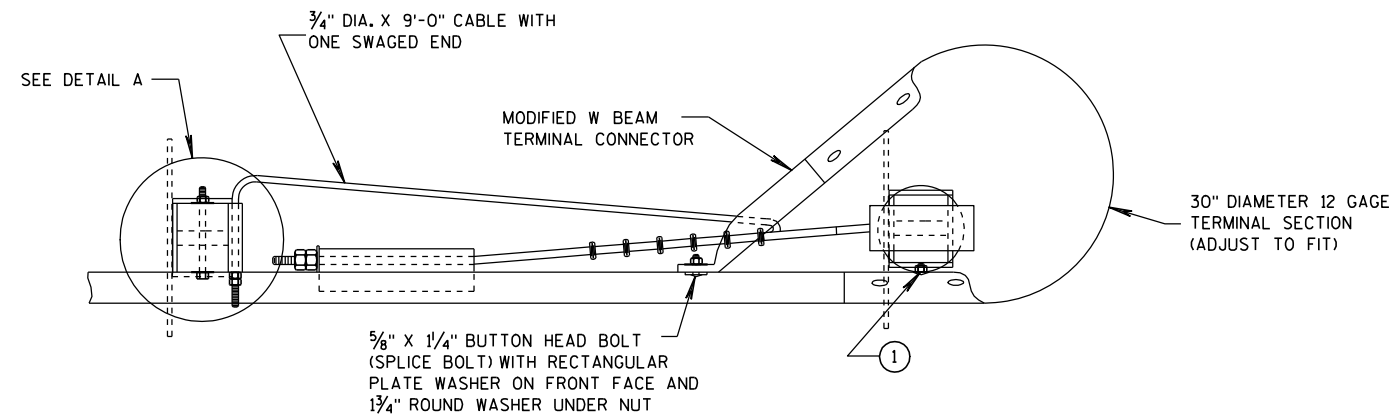
* THE NUMBER OF RAILS IS BASED ON A 90° INTERSECTION. SEE PLAN FOR NON 90° INSTALLATIONS.



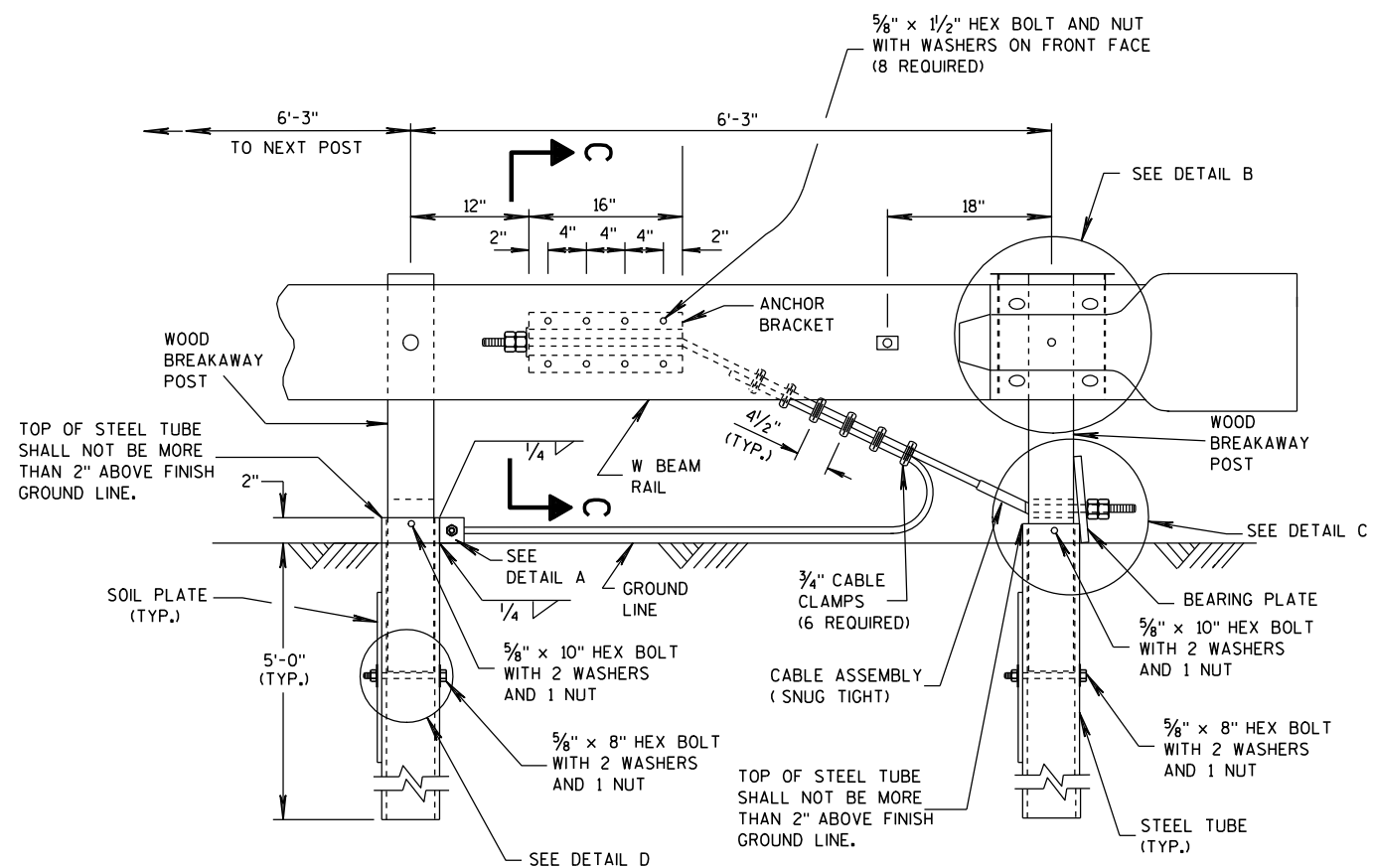
**SECTION B-B
(BEAM GUARD POST)**

**STEEL PLATE BEAM GUARD
SHORT RADIUS TERMINAL**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



PLAN VIEW

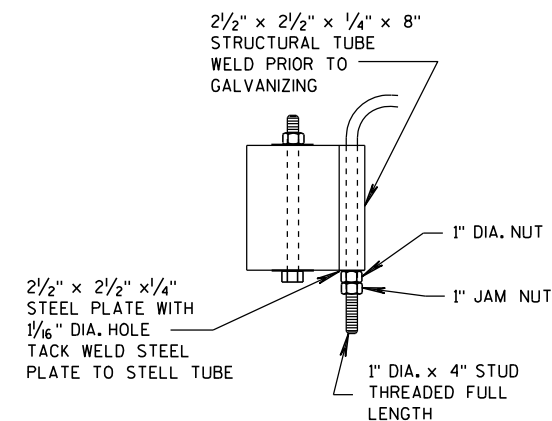


ELEVATION VIEW

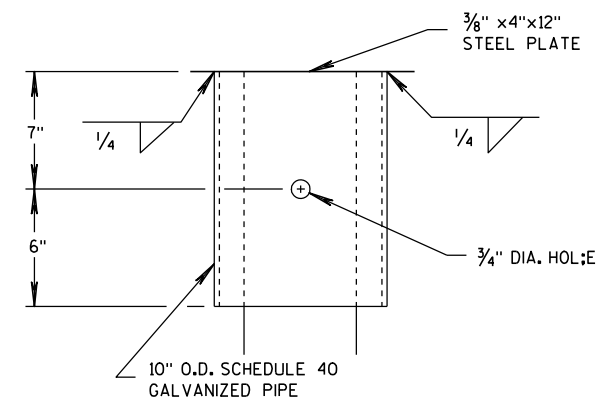
STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL

GENERAL NOTES

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



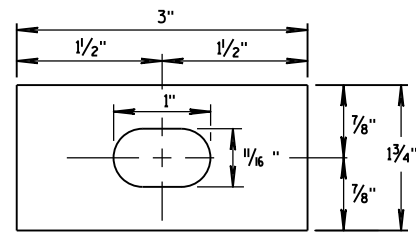
DETAIL A



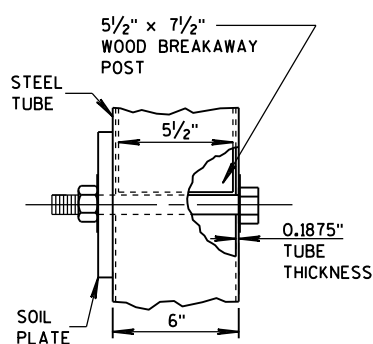
DETAIL B

(BEAM GUARD AND TERMINAL SECTION NOT SHOWN)

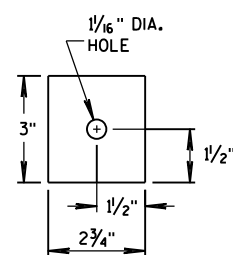
STEEL PLATE BEAM GUARD
SHORT RADIUS TERMINALSTATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



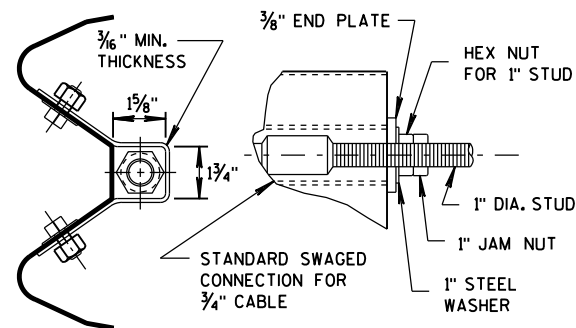
**RECTANGULAR
PLATE WASHER**



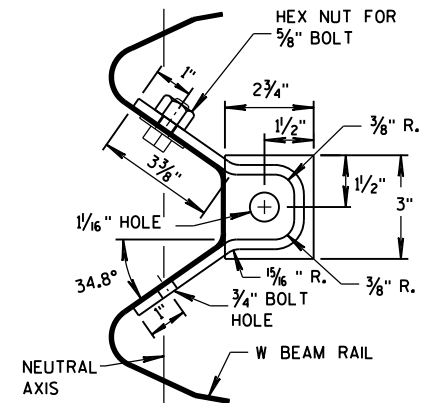
DETAIL D



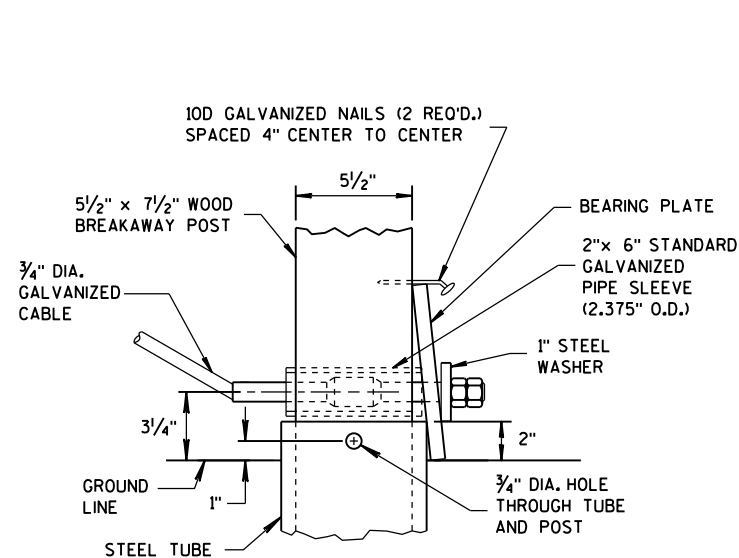
END PLATE



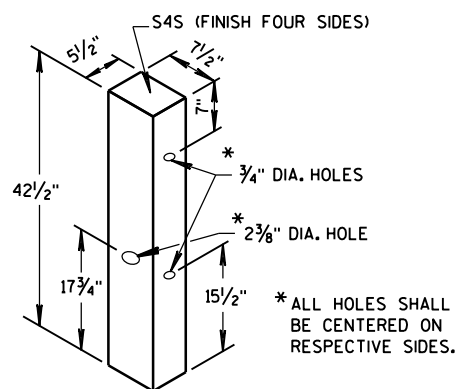
**SECTION C-C
(END PLATE REMOVED)**



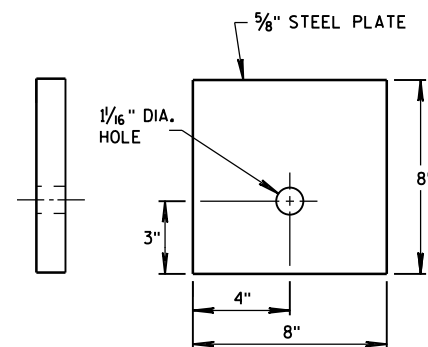
ANCHOR BRACKET



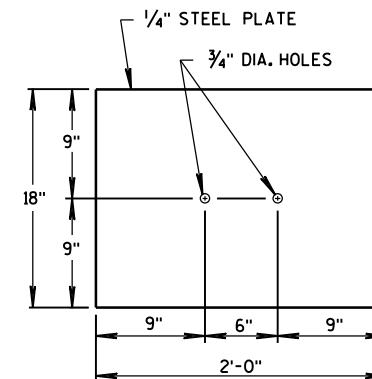
DETAIL C



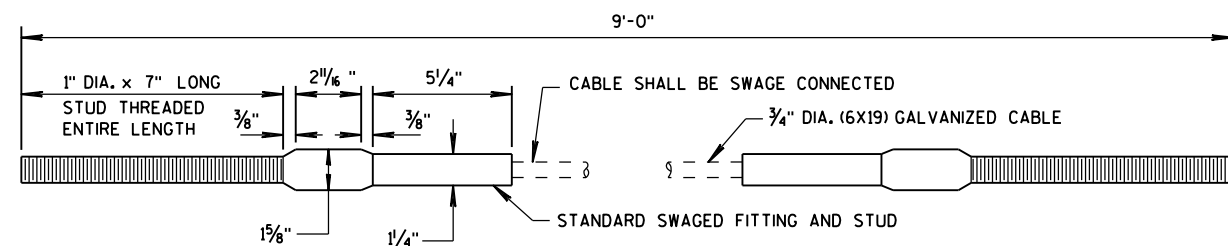
WOOD BREAKAWAY POST



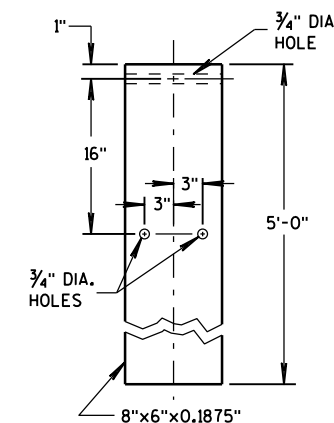
BEARING PLATE



SOIL PLATE



CABLE ASSEMBLY



STEEL TUBE

**STEEL PLATE BEAM GUARD
SHORT RADIUS TERMINAL**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

12/18/08

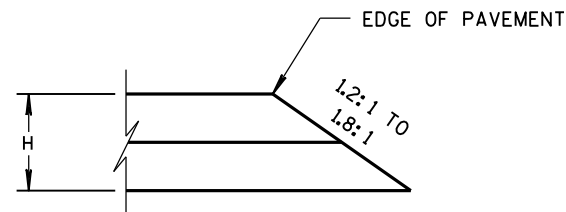
DATE

FHWA

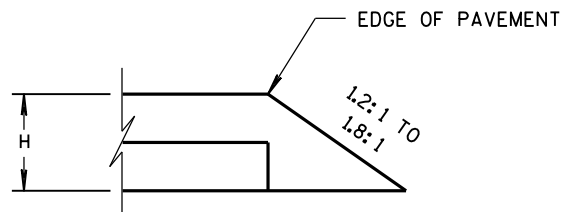
/S/ Jerry H. Zogg

ROADWAY STANDARDS

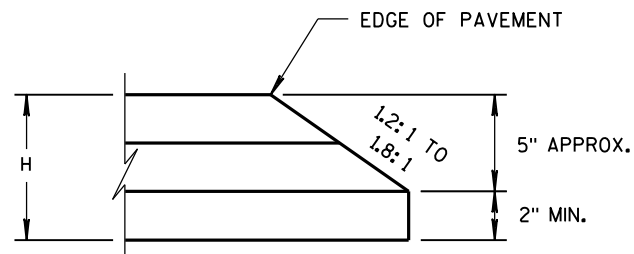
ENGINEER



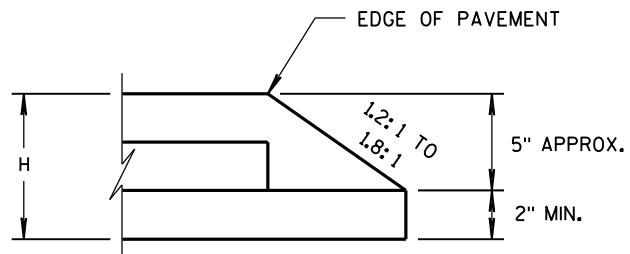
CONSTRUCTED WITH FINAL TWO LAYERS
FOR H 5" OR LESS



CONSTRUCTED WITH FINAL LAYER
FOR H 5" OR LESS

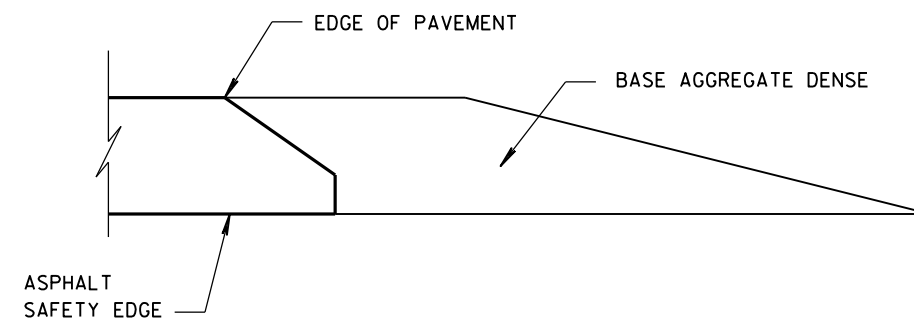


CONSTRUCTED WITH FINAL TWO LAYERS
FOR H GREATER THAN 5"



CONSTRUCTED WITH FINAL LAYER
FOR H GREATER THAN 5"

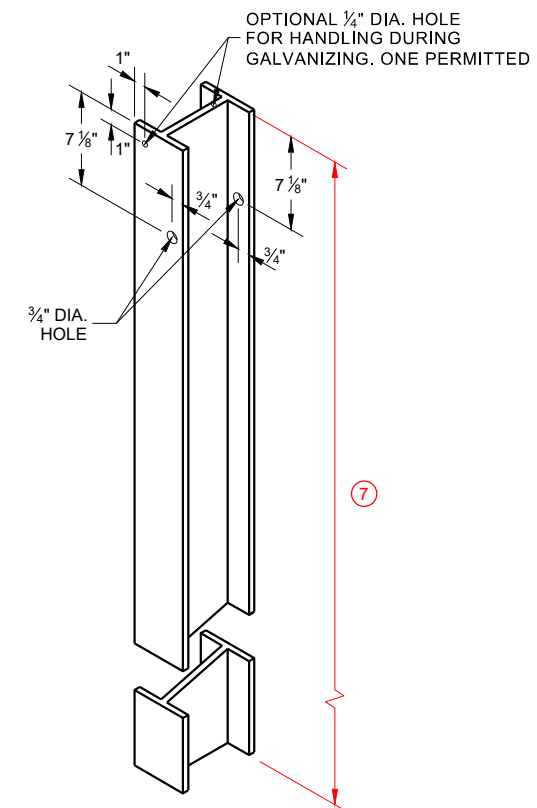
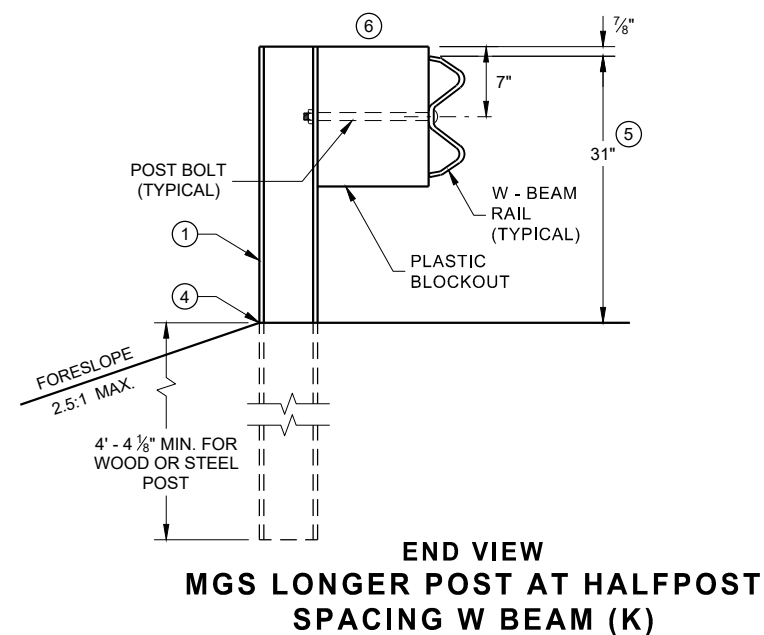
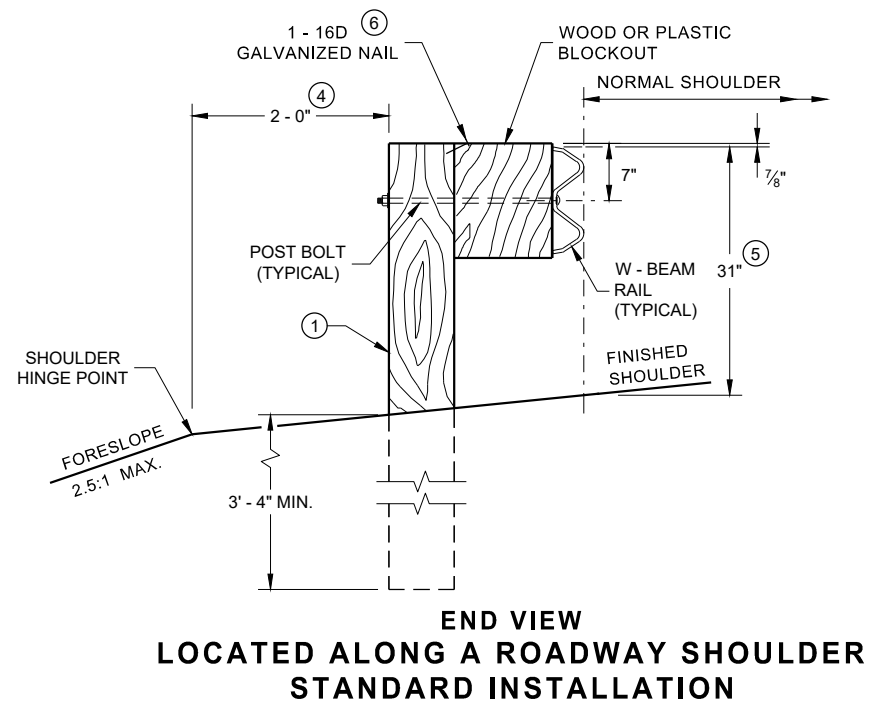
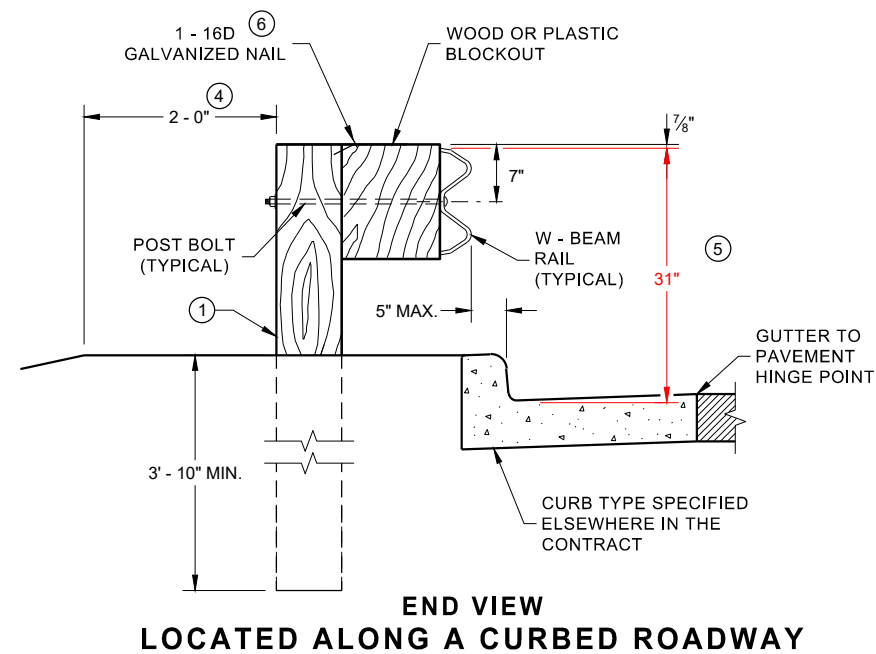
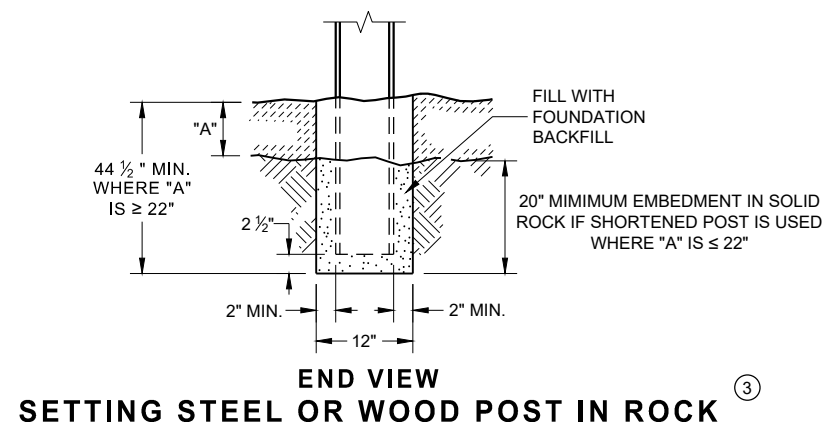
HMA PAVEMENT AND HMA OVERLAYS



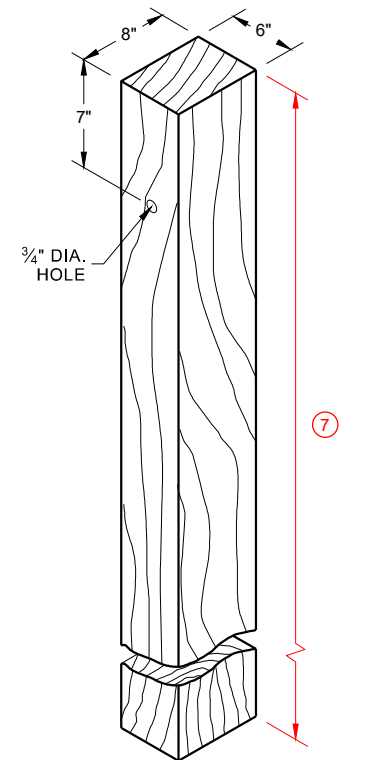
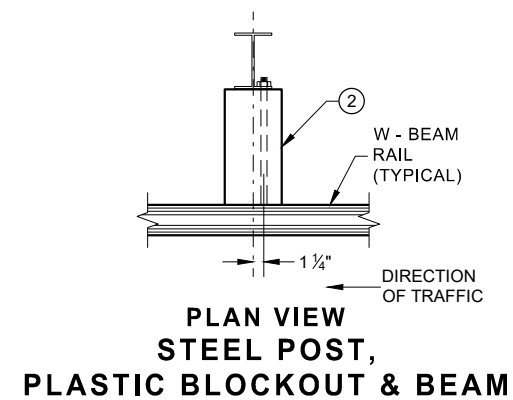
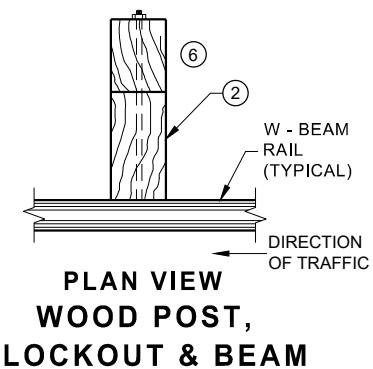
FINISHED SHOULDER AGGREGATE PLACEMENT

SAFETY EDGE _{SM}		
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION		
APPROVED DATE 11/30/2012	/S/ Jerry H. Zoaga ROADWAY STANDARDS ENGINEER	161 ENT
FHWA		

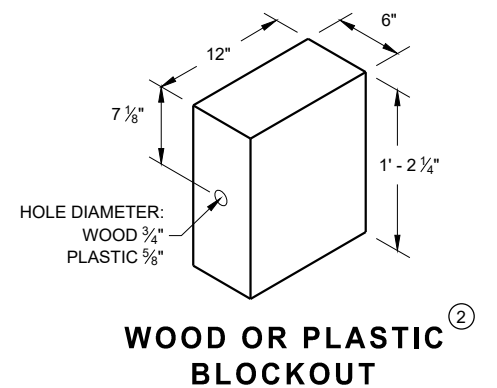
- ① WOOD OR STEEL POSTS (w6X9 OR w6X8.5) MAY BE USED. DO NOT INTERMIX WOOD AND STEEL POSTS. INSTALL STEEL POSTS WITH HOLES ON APPROACHING TRAFFIC SIDE.
- ② USE WOOD OR APPROVED PLASTIC BLOCKOUTS. WOOD BLOCKOUTS MAY BE CONSTRUCTED OUT OF TWO OR MORE WOOD BLOCKOUTS. SEE ALTERNATE WOOD BLOCKOUT DETAIL. DIMENSIONS OF APPROVED PLASTIC BLOCKOUTS MAY VARY.
- ③ IF ROCK IS ENCOUNTERED DURING EXCAVATION, PROVIDE A HOLE 12 INCHES IN DIAMETER EXTENDING 20 INCHES DEEP INTO THE ROCK. PLACE APPROXIMATELY 2 1/2" INCHES OF GRANULAR MATERIAL IN THE BOTTOM OF THE HOLE. CUT THE POSTS THE TO LENGTH AND INSTALL. BACKFILL WITH EXCAVATED MATERIAL AND COMPACT. BACKFILL IS TO BE FREE OF LARGE ROCKS.
- ④ WHEN THE DISTANCE FROM BACK OF POST TO SHOULDER HINGE POINT IS LESS THAN 2 FEET INSTALL LONGER POST AT HALF POST SPACING (K).
- ⑤ FOR NEW MGS INSTALLATION TOP OF W-BEAM RAIL TOLERANCE IS $\pm 1"$. FOR EXISTING MGS INSTALLATION TOP OF W-BEAM IS BETWEEN 27 3/4" TO 32".
- ⑥ WHEN USING STEEL POST AND WOOD BLOCKOUTS INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.
- ⑦ TOTAL POST LENGTH FOR TYPE K IS 7' - 0".
TOTAL POST LENGTH FOR OTHER MGS TYPES IS 6' - 0".



**STEEL POST & HOLE
PUNCHING DETAIL
(W 6 X 9) ①**

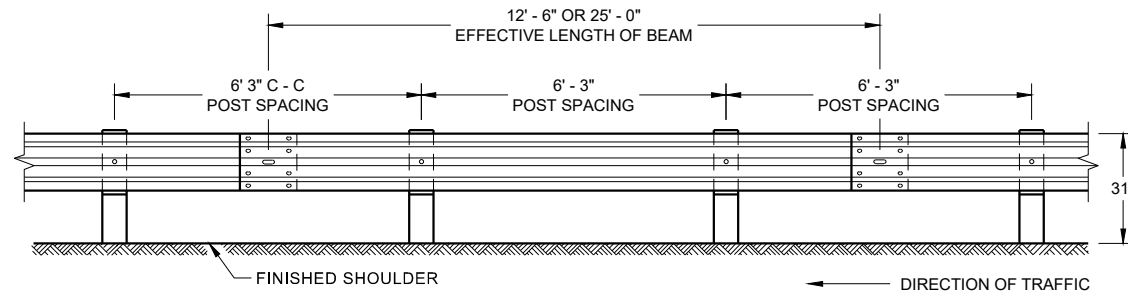


WOOD POST (6" X 8") NOMINAL ⁽¹⁾

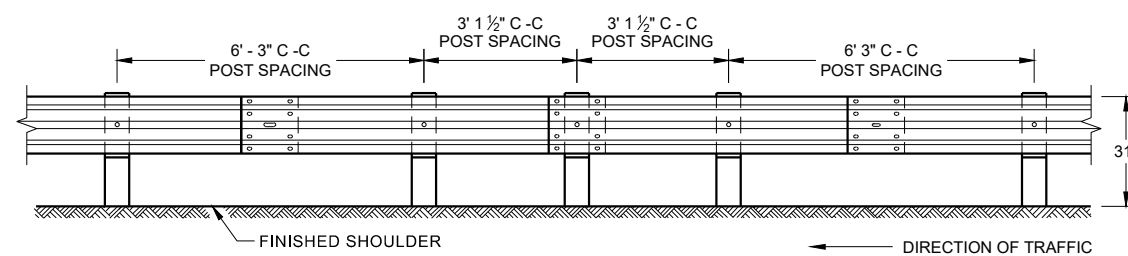


MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

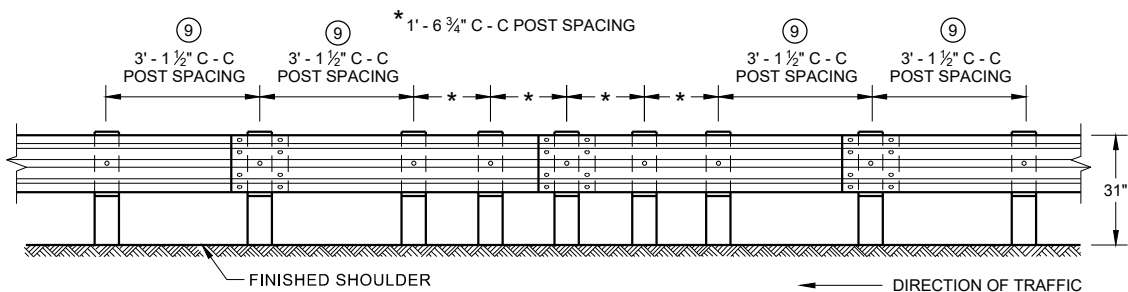
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 162



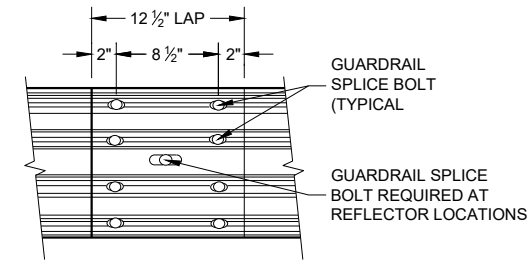
**FRONT VIEW
POST SPACING STANDARD INSTALLATION**



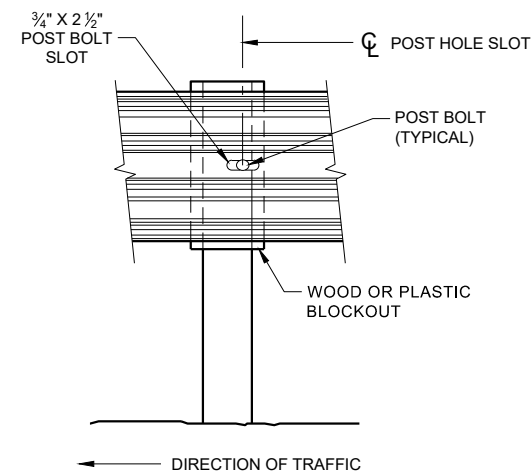
**FRONT VIEW
HALF POST SPACING (HS) AND
HALF POST SPACING WITH LONGER POSTS (K)**



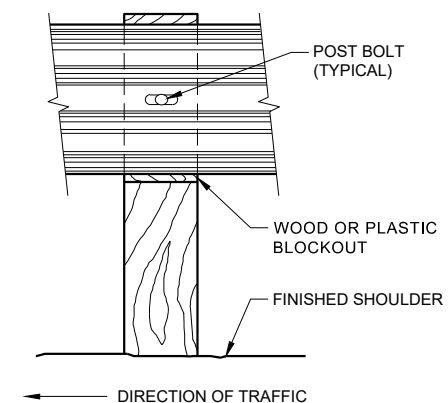
**FRONT VIEW
QUARTER POST SPACING (QS)**



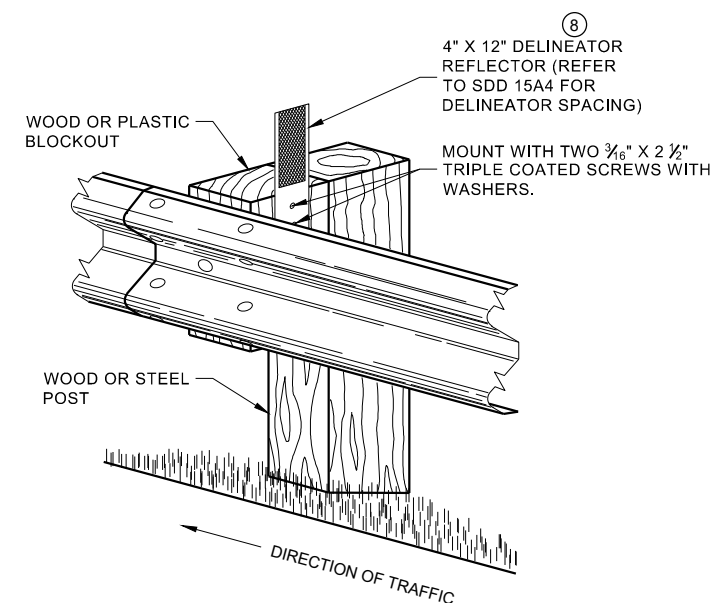
**FRONT VIEW
MID-SPAN BEAM SPLICE**



FRONT VIEW AT STEEL POST



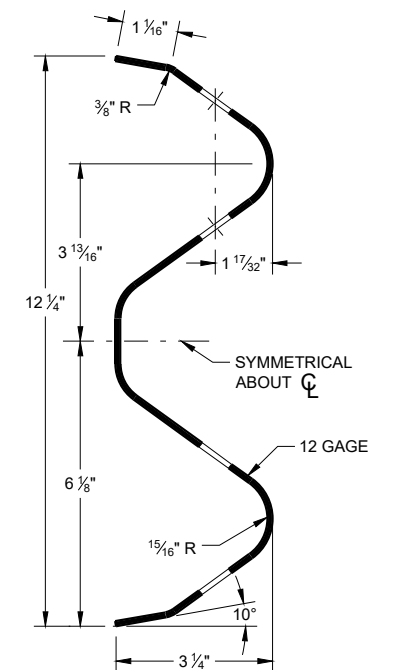
FRONT VIEW AT WOOD POST



**ONE SIDED REFLECTOR DETAIL
AND TYPICAL INSTALLATION**

GENERAL NOTES

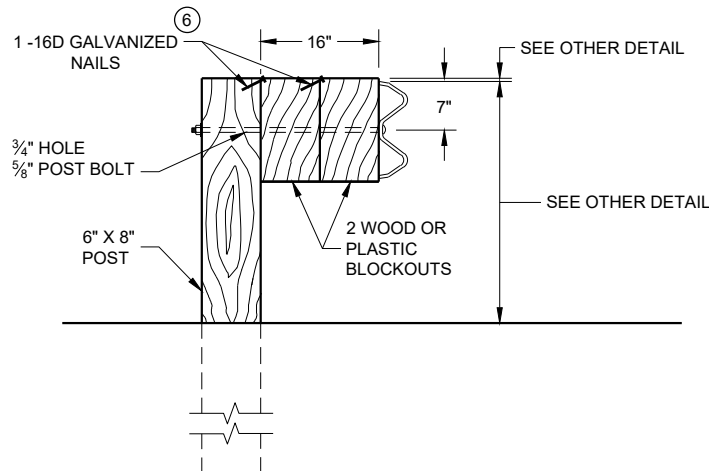
- ⑧ DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL. RAIL SPLICE LOCATIONS ARE THE ONLY ACCEPTABLE LOCATIONS FOR REFLECTORS.
 - ⑨ 25 FEET OF HALF POST SPACING IS REQUIRED ON APPROACH AND DEPARTURE ENDS OF QUARTER POST SPACING.
- POST BOLTS ARE A 3/8" DIAMETER ASTM A307 GUARDRAIL BOLT. A POST BOLT REQUIRES 3/4" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT AND 3/4" DIAMETER F844 FLAT WASHER. POST BOLTS MAY BE LONGER IF MULTIPLE BLOCKOUTS ARE BEING USED.
- GUARD RAIL SPLICE BOLTS ARE A 3/8" DIAMETER ASTM A307 GUARDRAIL HEAD BOLT. A GUARDRAIL SPLICE BOLT REQUIRES 3/4" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT.



SECTION THRU W-BEAM RAIL

**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

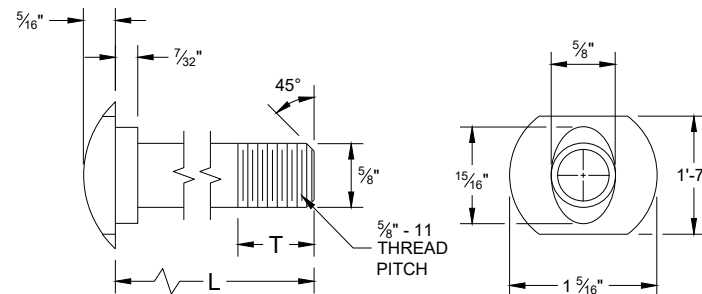
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DETAIL FOR 16" BLOCKOUT DEPTH

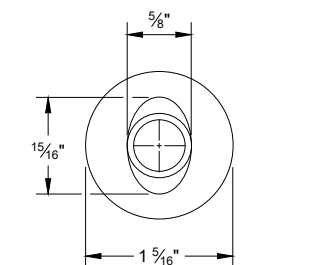
IT IS ACCEPTABLE TO USE BLOCKOUTS UP TO 16" DEEP TO INCREASE THE POST OFFSET TO AVOID UNDERGROUND OBSTACLES. THERE IS NO LIMIT TO THE NUMBER OF POSTS THAT CAN HAVE ADDITIONAL BLOCKOUTS UP TO 16" DEEP.

- NOTE:
1. ALL FILLETS SHALL HAVE A MINIMUM RADIUS OF $\frac{3}{16}$ ".
 2. IF THE BOLT EXTENDS MORE THAN $\frac{1}{4}$ " FROM THE NUT THE BOLT SHOULD BE TRIMMED BACK.

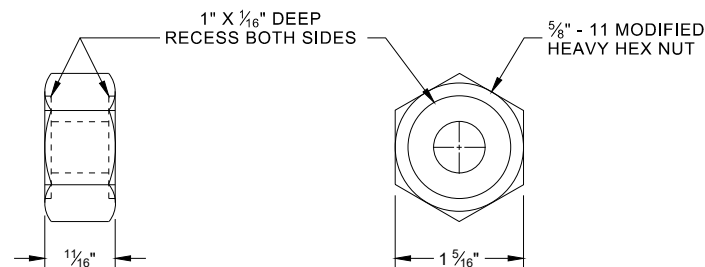


POST BOLT TABLE

L	T (MIN.)
1 1/4"	1 1/8"
2"	1 3/4"
10"	4"
14"	4 1/16"
18"	4"
21"	4 1/16"
25"	4"

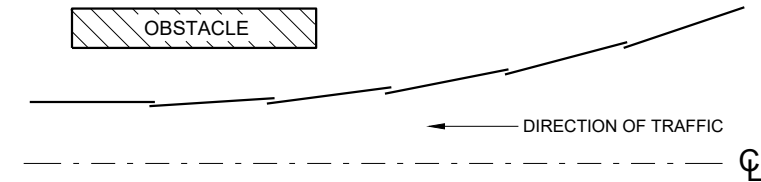


ALTERNATE BOLT HEAD

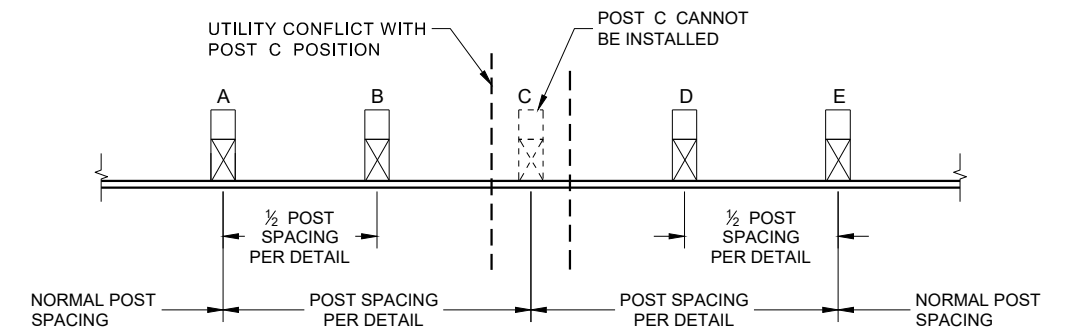


POST BOLT, SPLICE BOLT AND RECESS NUT

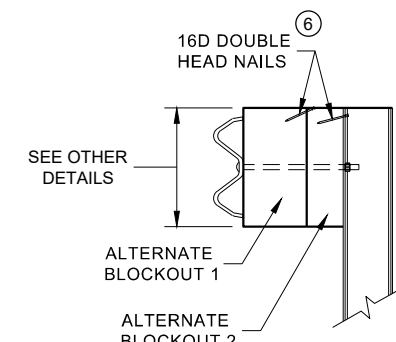
- ⑥ WHEN USING STEEL POST AD WOOD BLOCKOUTS, INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.



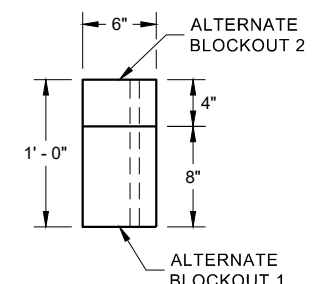
PLAN VIEW
BEAM LAPPING DETAIL



POST DRIVING FOR CONTINUOUS
UNDERGROUND OBSTRUCTION



SIDE VIEW



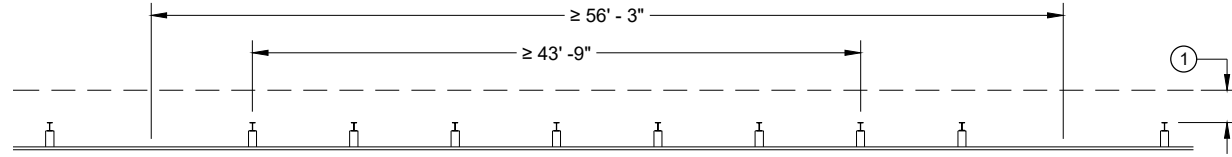
PLAN VIEW

ALTERNATE WOOD
BLOCKOUT DETAIL

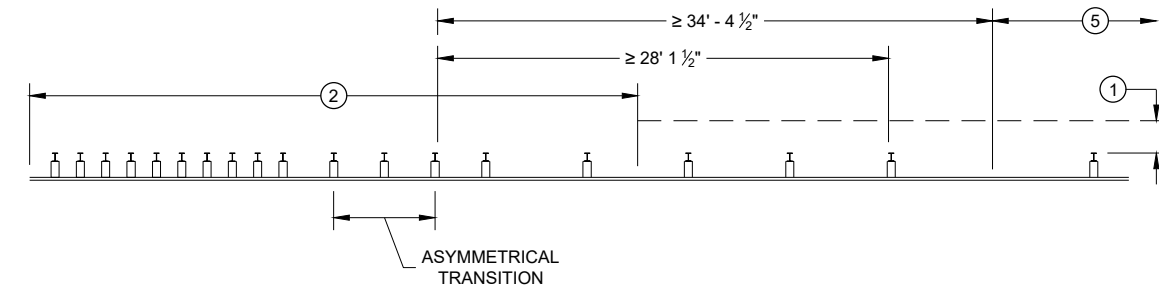
- NOTES: UNDER SPECIAL CIRCUMSTANCES, SUCH AS AVOIDING OBSTACLES THAT ARE NOT RELOCATED, IT IS ACCEPTABLE TO INSTALL ADDITIONAL BLOCKOUTS TO OBTAIN UP TO 36" DEPTH FOR ONE OR TWO POSTS IN A SECTION OF GUARDRAIL.
- DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT OR CAUSES A FIXED OBJECT TO BE WITHIN THE DEFLECTION DISTANCE OF THE BARRIER.

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

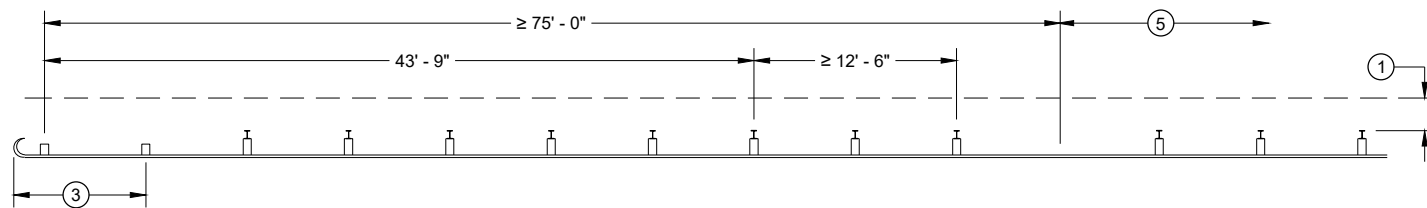
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 164



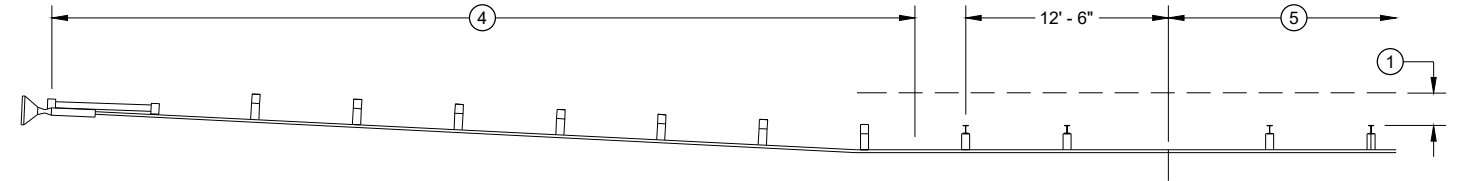
MISSING POST IN NORMAL BEAM GUARD RUN



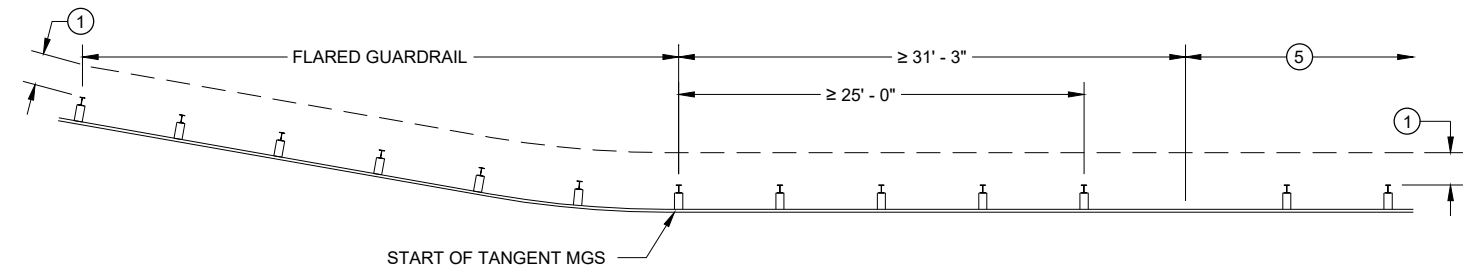
MISSING POST NEAR APPROACH THRIE BEAM TRANSITION



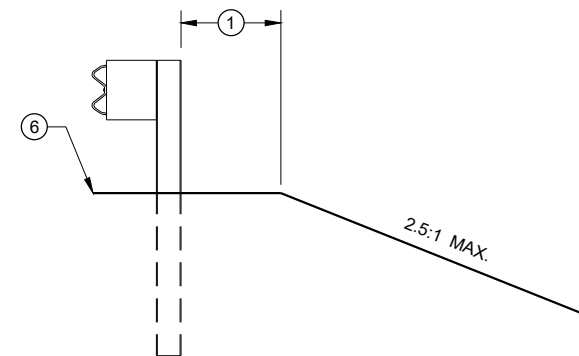
MISSING POST IN NORMAL BEAM GUARD RUN
NEAR TYPE 2 TERMINAL



MISSING POST IN NORMAL BEAM GUARD RUN NEAR EAT



MISSING POST IN NORMAL BEAM GUARD RUN
NEAR FLARED BEAM GUARD



CROSS SECTION VIEW

- ① MINIMUM OF 2 FEET OF GRADING BEHIND POST.
- ② SEE SDD 14B45 FOR MORE DETAILS.
- ③ SEE SDD 14B47 FOR MORE DETAILS.
- ④ SEE SDD 14B44 FOR MORE DETAILS.
- ⑤ SEE MISSING POST IN NORMAL BEAM GUARD RUN FOR DISTANCE TO NEXT MISSING POST AND AREA FOR WELL DRAINED, COMPACTED SOILS.
- ⑥ SEE PLAN FOR SHOULDER DESIGN.

**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
7/2018
DATE
/S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT
UNIT SUPERVISOR 165
FHWA

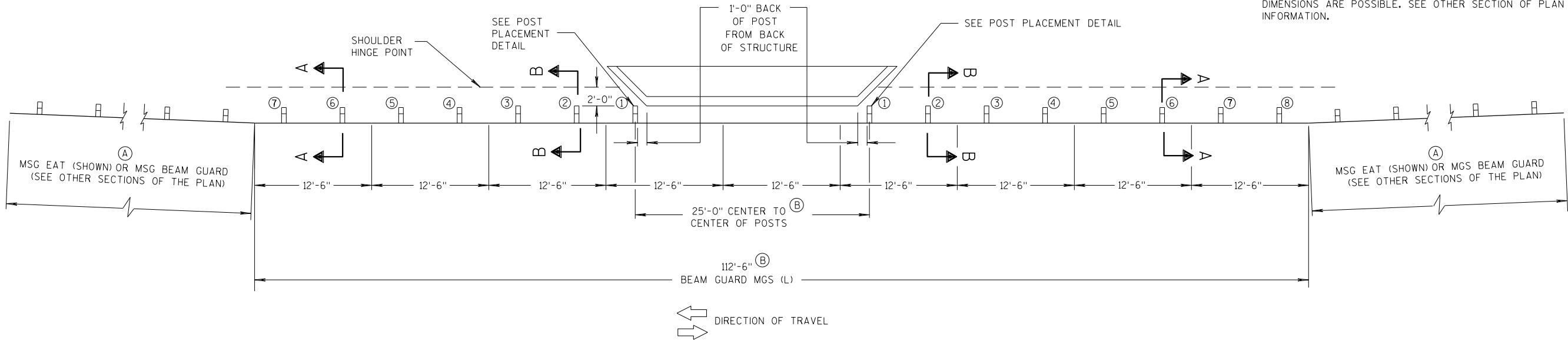
GENERAL NOTES

POSTS 1 THROUGH 3 ARE CRT POSTS.
ALL OTHER POSTS SHALL BE WOOD OR STEEL.

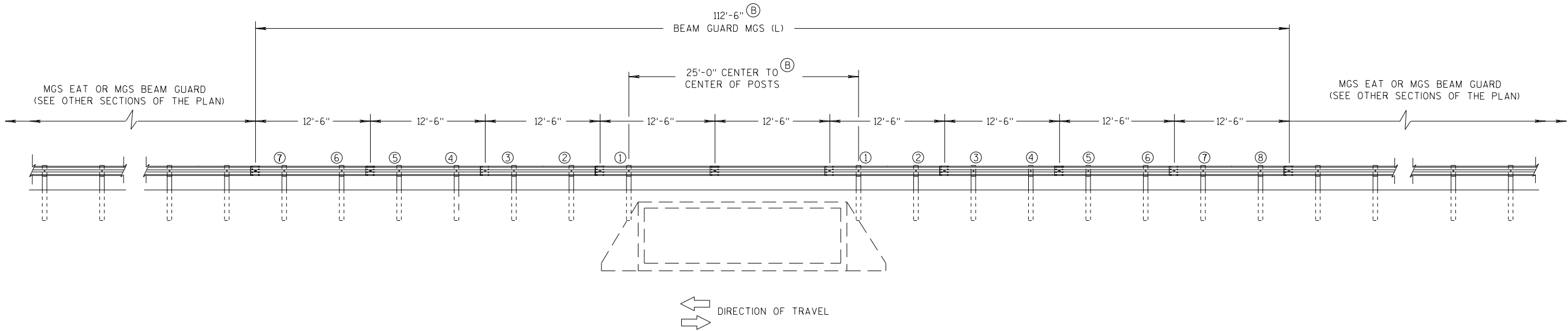
SEE SDD 14 B 42 FOR MORE DETAILS.

(A) FLARE FOR MGS EAT SHOWN, IF INSTALLING MGS NO FLARE NEEDED.

(B) VALUES SHOWN ON DRAWING REPRESENT THE MAXIMUM LENGTH. SHORTER DIMENSIONS ARE POSSIBLE. SEE OTHER SECTION OF PLAN FOR MORE INFORMATION.



PLAN VIEW

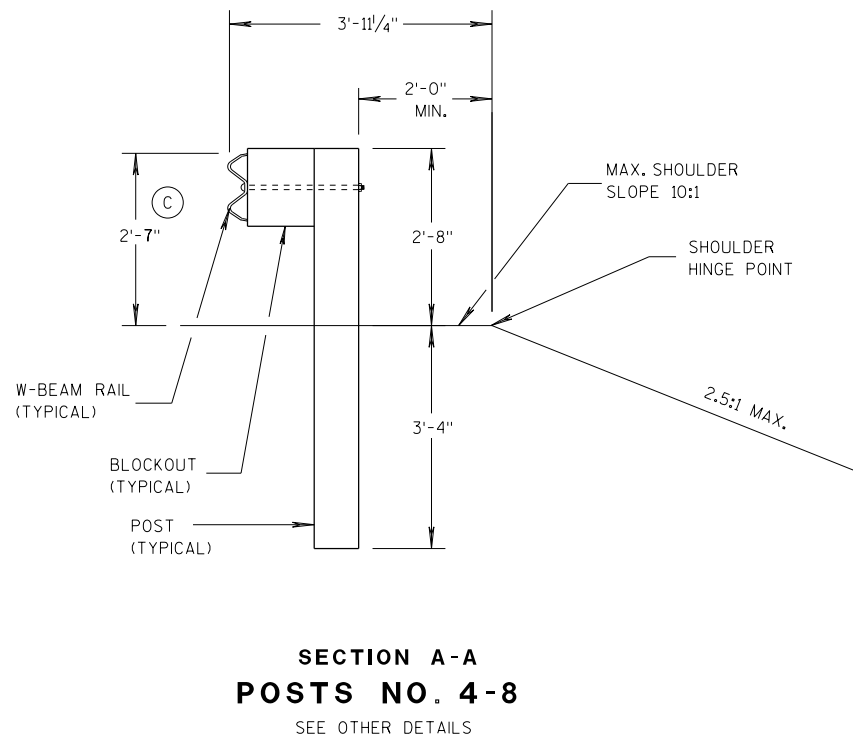
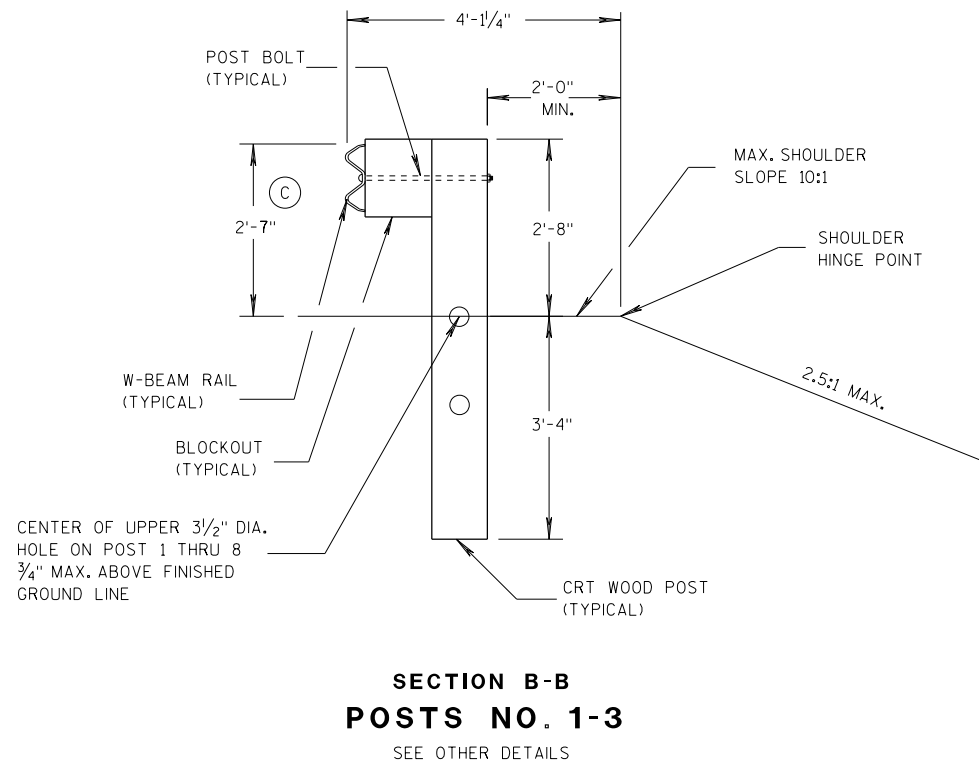
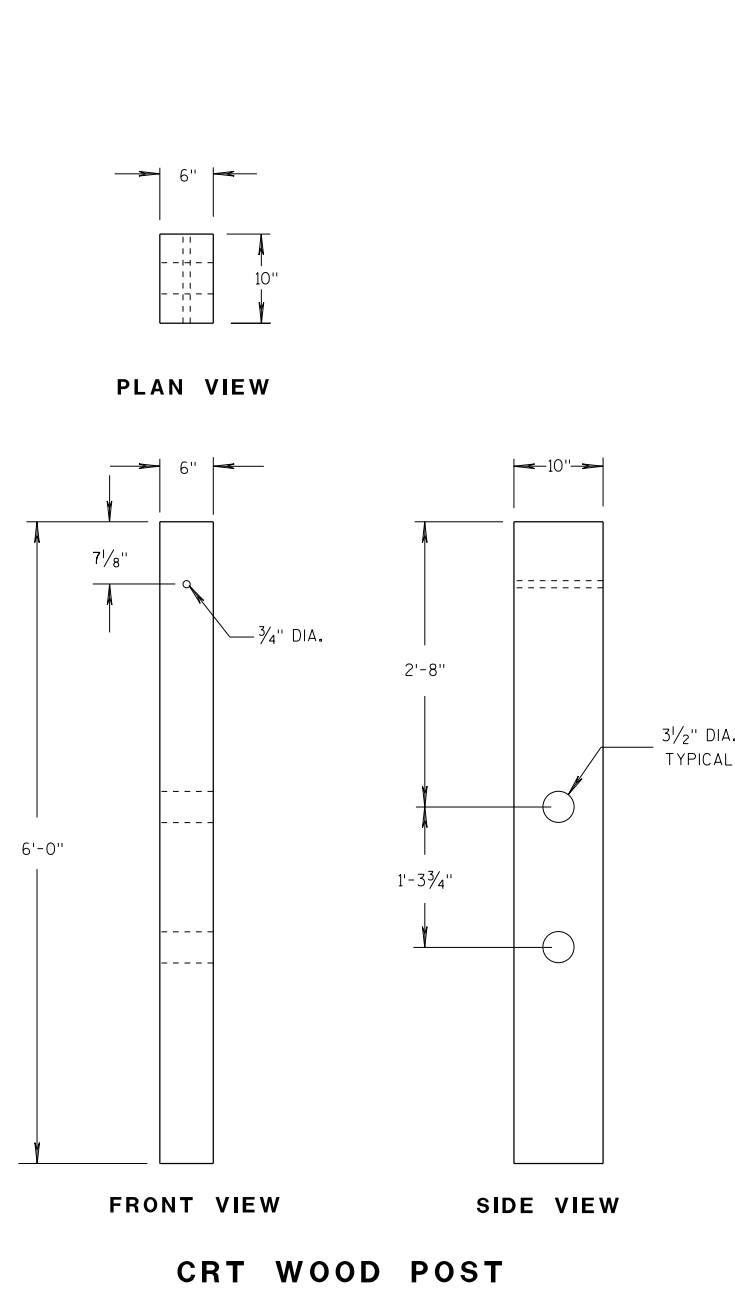


ELEVATION VIEW

MIDWEST GUARDRAIL SYSTEM LONG SPAN MGS (L) TWO-WAY TRAFFIC

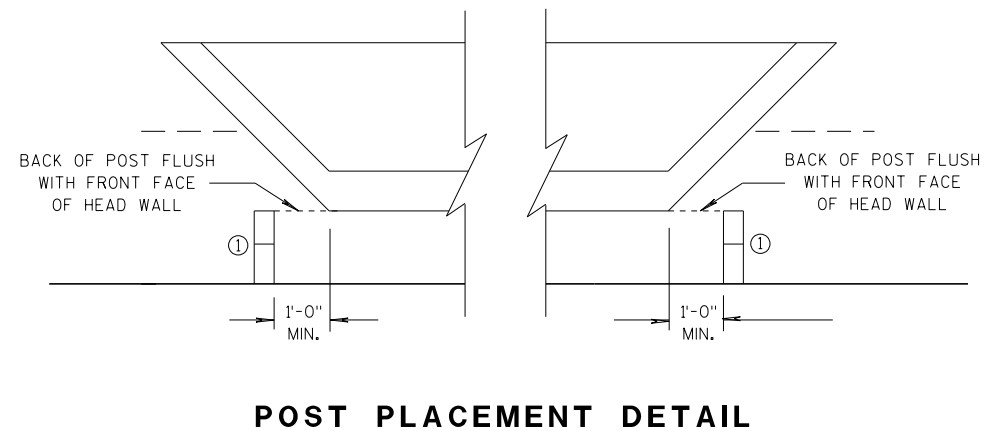
MIDWEST GUARDRAIL SYSTEM
LONG SPAN MGS (L)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



GENERAL NOTES

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



MIDWEST GUARDRAIL SYSTEM LONG SPAN MGS (L)			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
APPROVED			
07/2018	/S/ Rodney Taylor		
DATE	ROADWAY STANDARDS D 167	NT	
FHWA	ENGINEER		

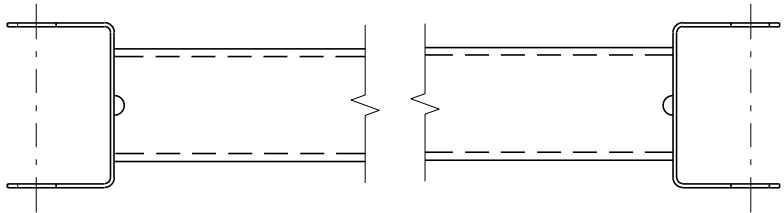
- (A) THE SLOPE IN THE AREA BOUNDED BY THE GRADELINE, THE HINGE POINT LINE (HPL) AND THE CLEAR ZONE LIMITS (CZL) SHALL BE 4:1 OR FLATTER.
- (B) AFTER FINAL ASSEMBLY, RECHECK CABLE TO BE SURE IT IS TAUT AND HAS NOT RELAXED
- (C) DIFFERENT MANUFACTURERS REQUIRE DIFFERENT PERFORATED W - BEAM RAIL END PANELS. SEE MANUFACTURER'S INFORMATION.
- (D) ATTACH ALUMINUM SHEET TO E.A.T. HEAD USING 4 STAINLESS STEEL SELF - TAPPING SCREWS, ONE SCREW PER CORNER.
- (E) HARDWARE MAY VARY BETWEEN MANUFACTURER. SEE MANUFACTURER'S DRAWING FOR INFORMATION.

DIMENSIONS MAY VARY, MANUFACTURER'S INFORMATION.

THE CENTER OF THE UPPER 3 1/2" DIAMETER HOLE ON POST NUMBER 3 THROUGH POST 9 IS TO BE FLUSH WITH THE GROUND LINE UP TO A MAXIMUM OF 2" ABOVE GROUND LINE. WOOD BLOCKS ON POSTS NUMBERED 3 THROUGH 9 MAY BE ADJUSTED UP TO 3" ABOVE THE TOP OF POST.

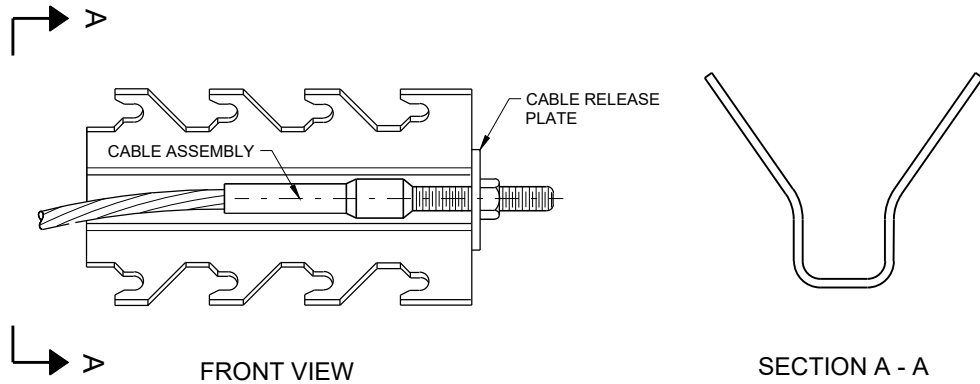


STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 168

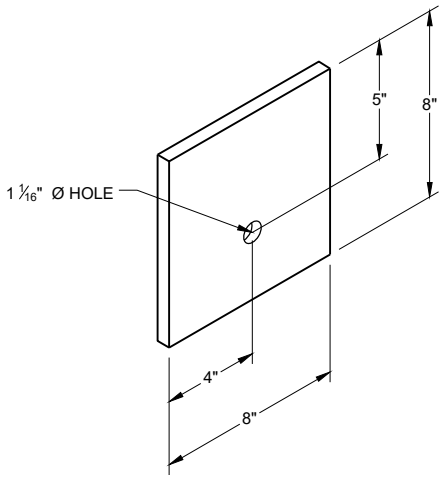


GENERIC GROUND STRUT⁹ ^E

BILL OF MATERIALS	
PART NO.	DESCRIPTION MATERIALS PROVIDED BY MGS EAT MANUFACTURER. SEE MANUFACTURER'S DETAILS FOR MORE INFORMATION.
①	UPPER POST NO. 1 6" X 6" TUBE
②	LOWER POST NO. 1
③	WOOD CRT
④	WOOD BLOCKOUT
⑤	PIPE SLEEVE
⑥	BEARING PLATE
⑦	BCT CABLE ASSEMBLY
⑧	ANCHOR CABLE BOX
⑨	GROUND STRUT
⑩	PERFORATED W-BEAM RAIL END PANEL, 12'-6" LONG.
⑪	STANDARD W-BEAM RAIL. MULTIPLE SECTIONS REQUIRED. SECTIONS VARY IN LENGTH.
⑫	IMPACT HEAD
⑬	EAT MARKER POST - YELLOW (SEE APPROVED PRODUCTS LIST)
⑭	SOIL PLATE
⑮	UPPER POST NO. 2
⑯	LOWER POST NO. 2



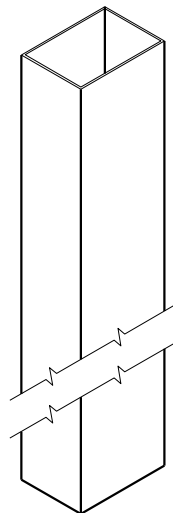
GENERIC ANCHOR CABLE BOX⁹ ^E



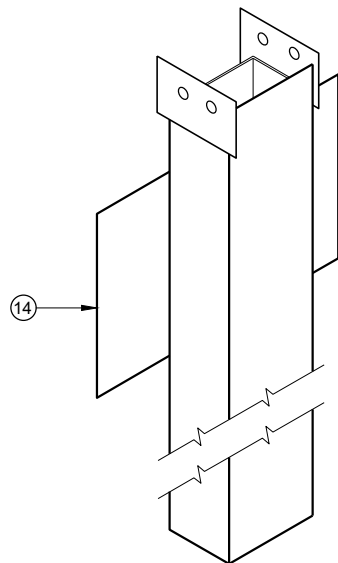
BEARING PLATE⁶ ^E

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

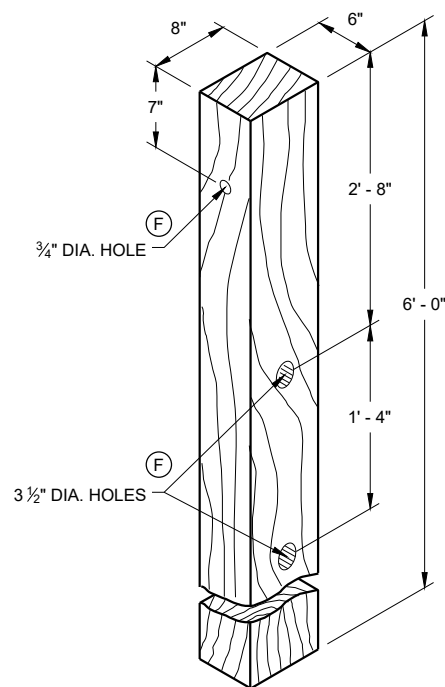
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 169



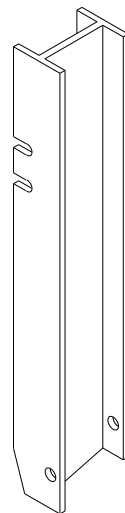
UPPER POST NO. 1 ⁽¹⁾ (E)



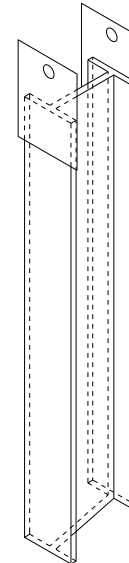
LOWER POST NO. 1 ⁽²⁾ (E)



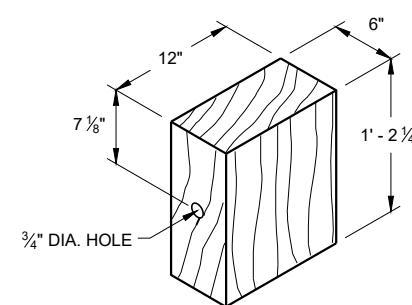
WOOD CRT POST ⁽³⁾ (E)
POSTS NUMBER 3-9



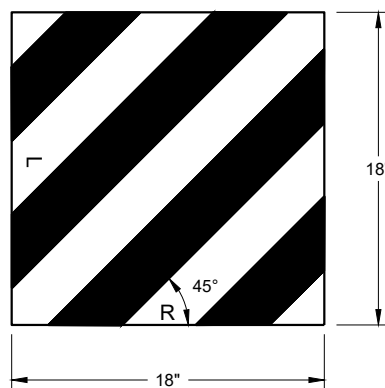
UPPER POST NO. 2 ⁽¹⁵⁾ (E)



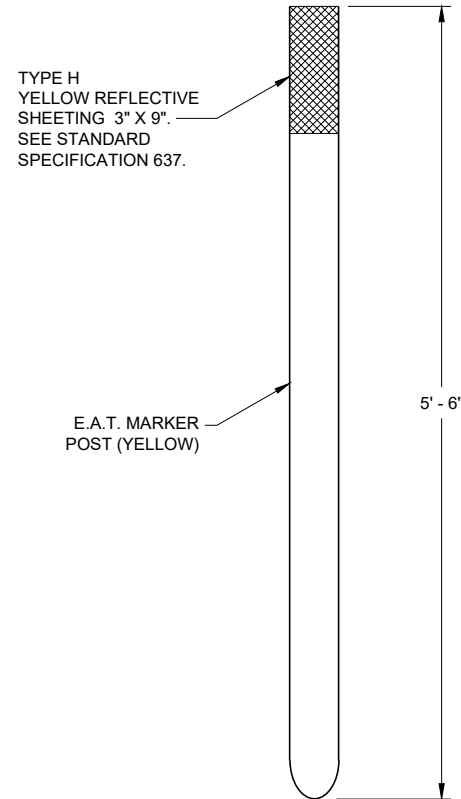
LOWER POST NO. 2 ⁽¹⁶⁾ (E)



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

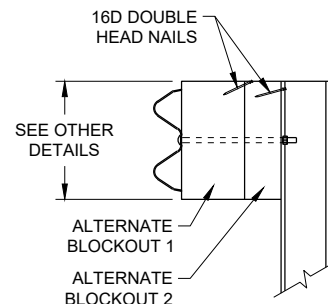


REFLECTIVE SHEETING DETAIL ^(E)



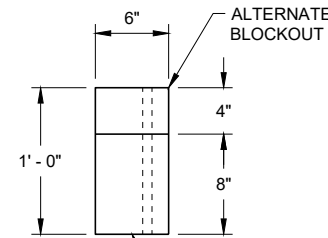
FRONT VIEW SIDE VIEW

E.A.T. MARKER POST ⁽¹³⁾



SIDE VIEW

ALTERNATE WOOD
BLOCKOUT DETAIL

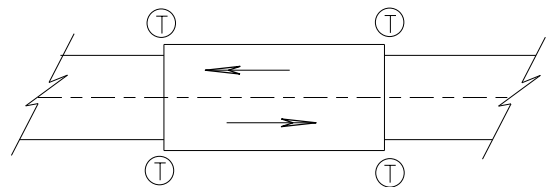


TOP VIEW

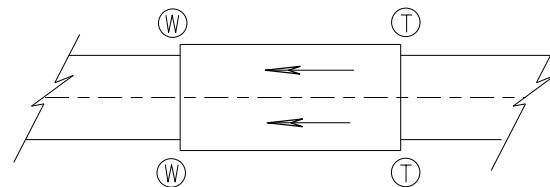
**MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
7/2018 DATE
/S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT
UNIT SUPERVISOR 170
FHWA



TWO WAY TRAFFIC



ONE WAY TRAFFIC

(T) THRIE BEAM CONNECTION

(W) W-BEAM CONNECTION WHEN REQUIRED

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

GENERAL NOTES

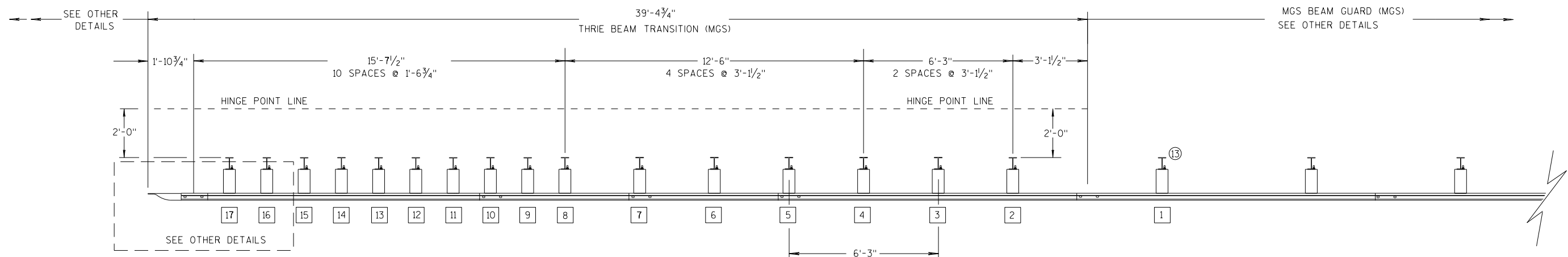
IF ROCK IS ENCOUNTERED, REMOVE ROCK TO FULL DEPTH OF POST PLUS 2 1/2", AND 12" DIAMETER AROUND POST. SEE 14B42 FOR MORE DETAILS.

TRANSITION USES STEEL POSTS ONLY.

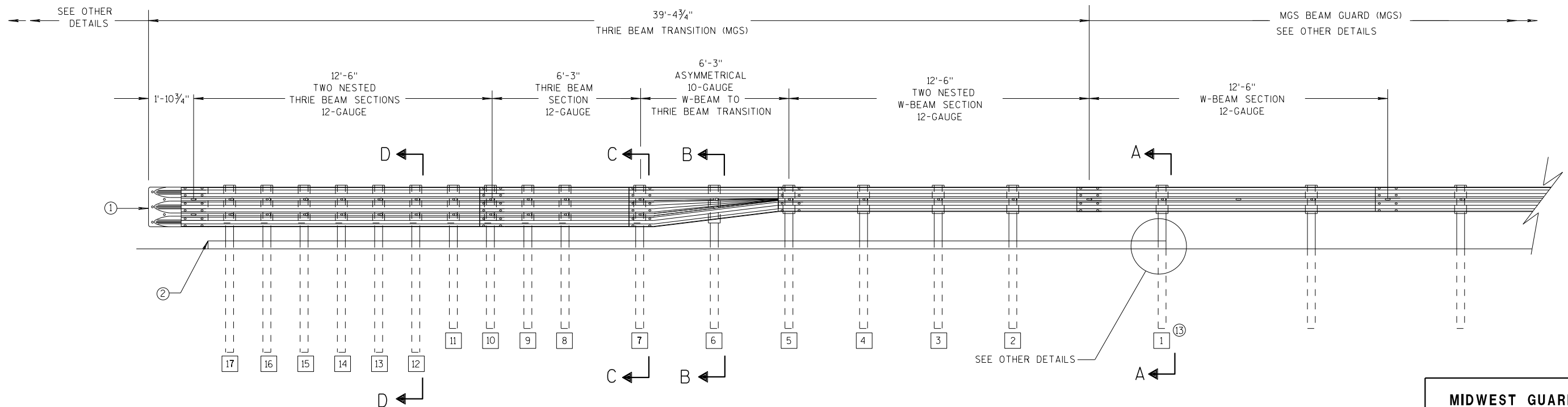
SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

POST 2 THROUGH 17 USES STEEL POST ONLY

- ① BRIDGE RAILING TYPE "W" DOES NOT REQUIRE A TERMINAL CONNECTOR.
- ② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- ⑬ STEEL OR WOOD POST IS ACCEPTABLE AT POST 1. SEE SDD14B42



PLAN VIEW



ELEVATION VIEW

MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 171

6

- S.D.D. 14 B 45-5b**

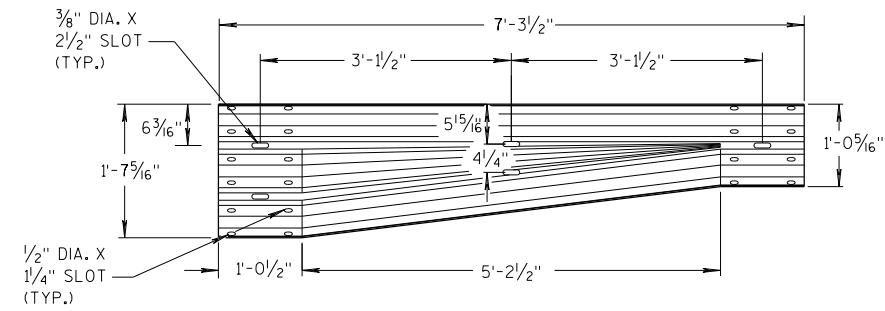


S.D.D. 14 B 45-5b

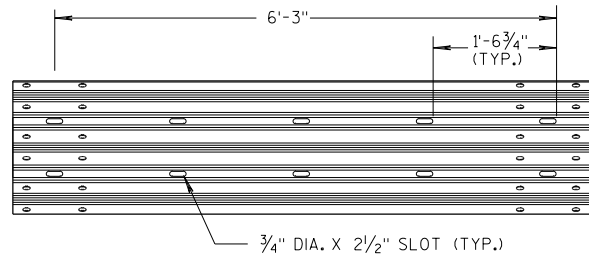


S.D.D. 14 B 45-5b

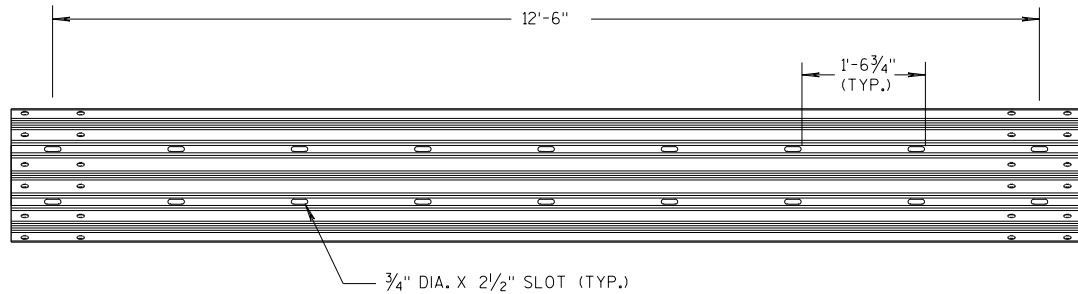




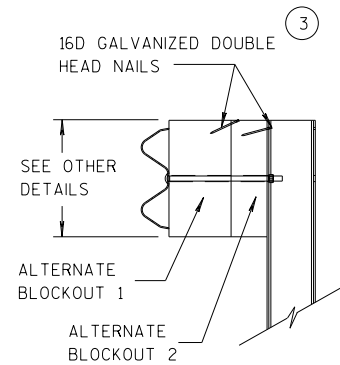
W-BEAM TO THRIE BEAM TRANSITION SECTION



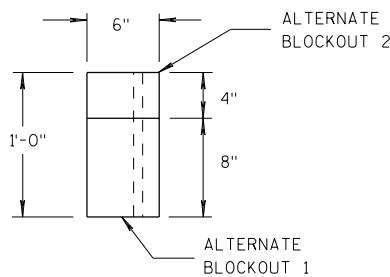
6'-3" THRIE BEAM SECTION



12'-6" THRIE BEAM SECTION

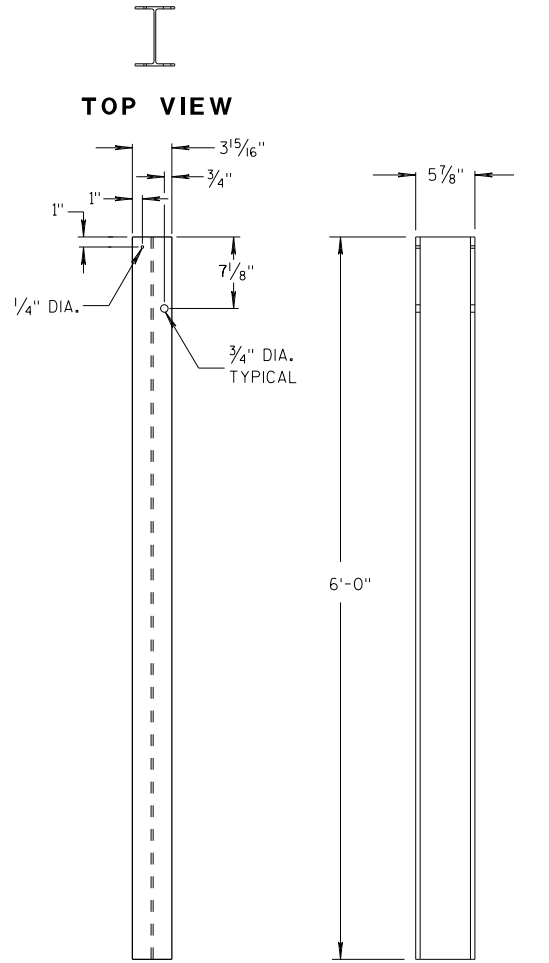


SIDE VIEW



TOP VIEW

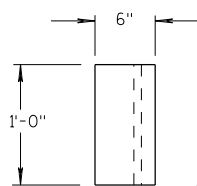
ALTERNATE WOOD BLOCKOUT DETAIL



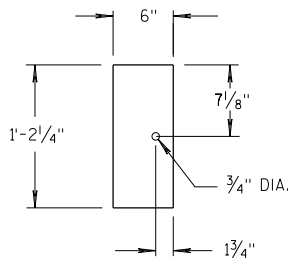
FRONT VIEW

SIDE VIEW

STEEL POSTS 1-5

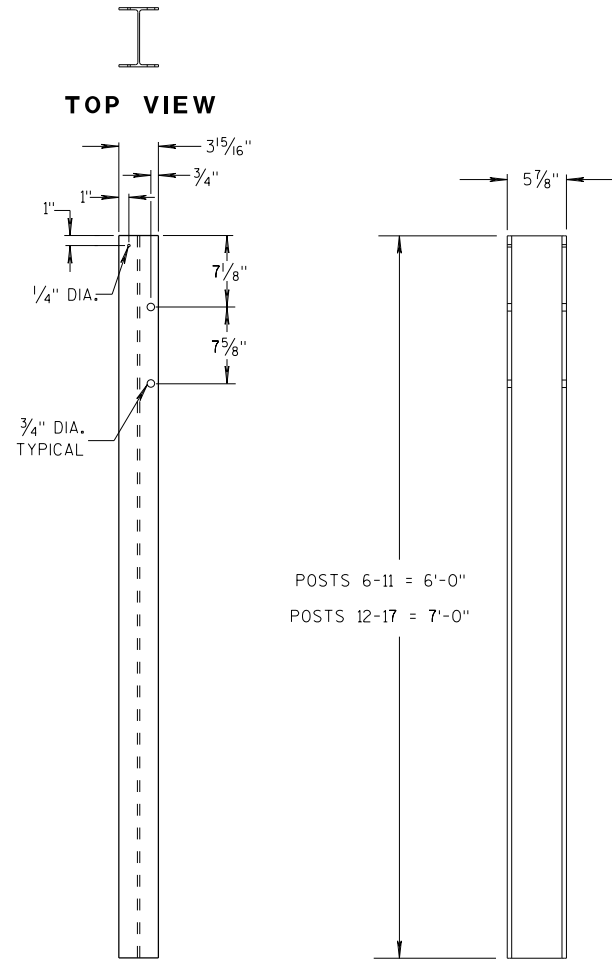


TOP VIEW



FRONT VIEW

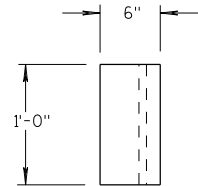
BLOCKOUT POSTS 1-5



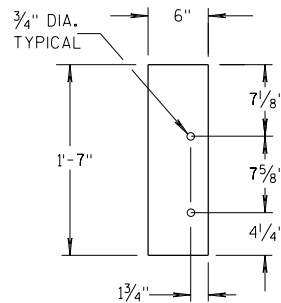
FRONT VIEW

SIDE VIEW

STEEL POSTS 6-17



TOP VIEW



FRONT VIEW

BLOCKOUT POSTS 6-17

GENERAL NOTES

STEEL POSTS ARE W6X9 OR W6X8.5.

BOLT HOLES FOR POST ARE ON FRONT AND OF SIDE OF POST.

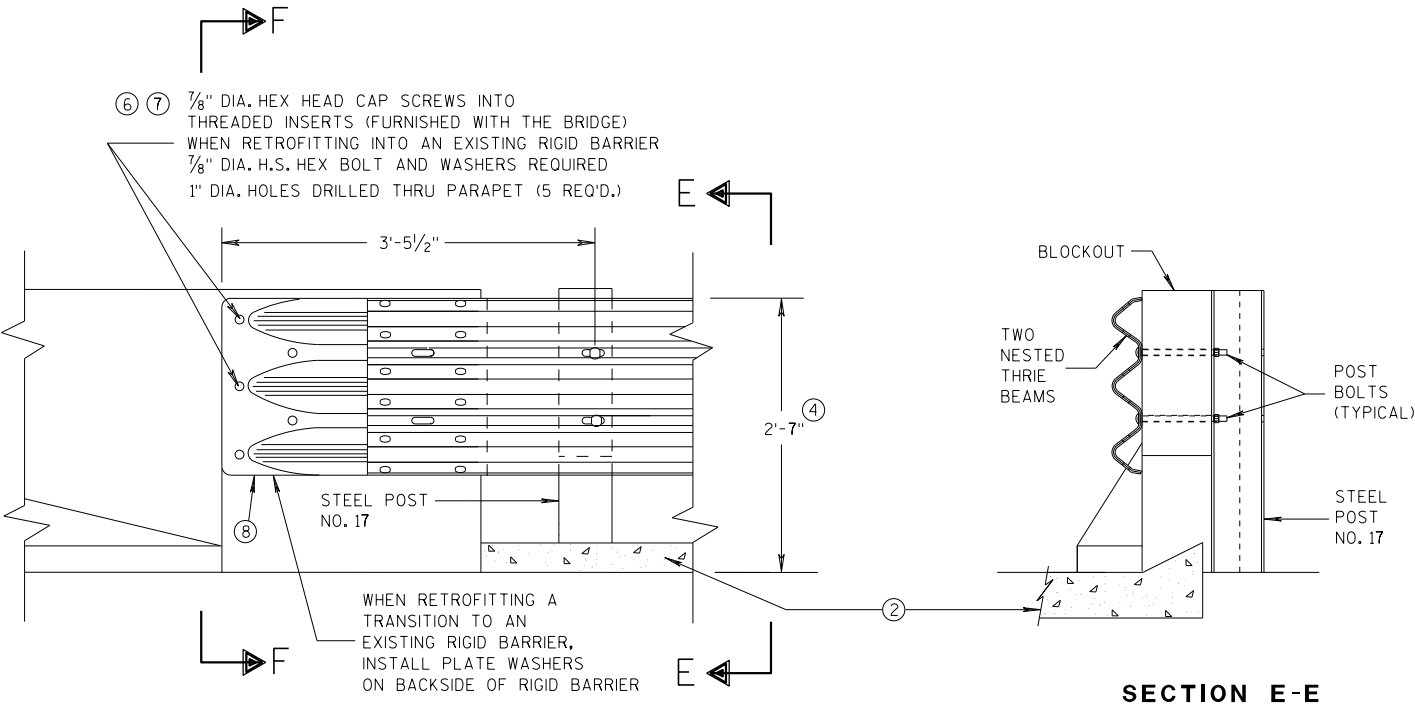
③ WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.

⑤ WOOD BLOCKS MAY BE CONSTRUCTED OUT OF 2 WOOD BLOCKS. SEE ALTERNATE WOOD BLOCK DETAIL.

⑬ STEEL OR WOOD POST IS ACCEPTABLE AT POST 1. SEE SDD 14B42.

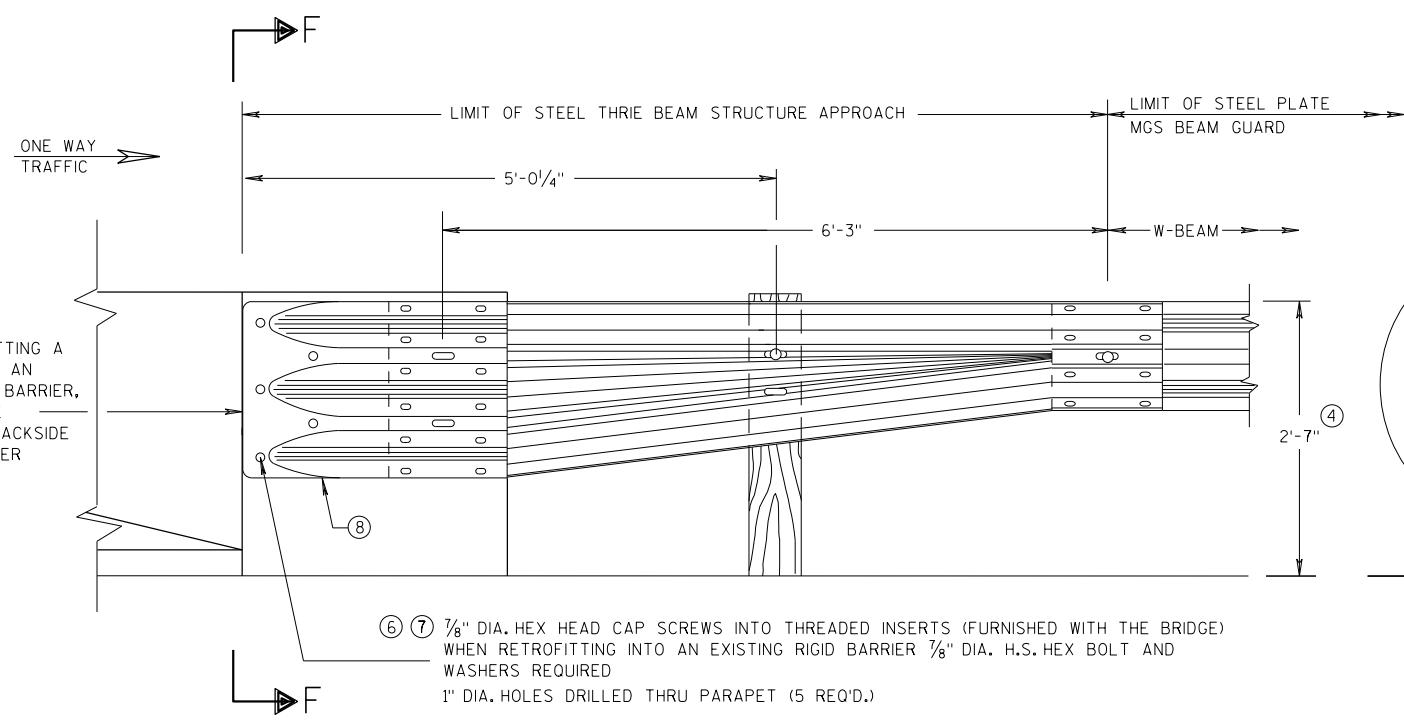
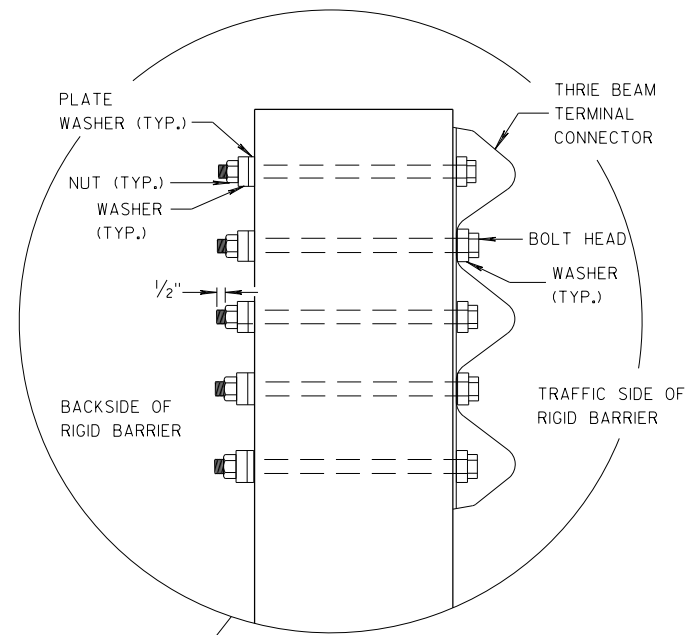
**MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

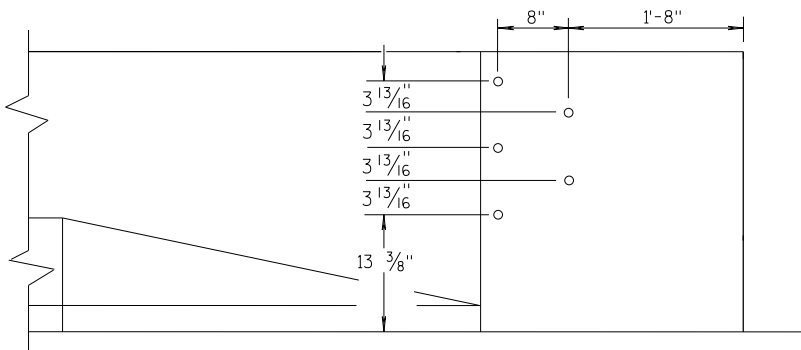


GENERAL NOTES

- THESE ARE TYPICAL CONNECTION DETAILS. ADJUST THE POSTION OF CONNECTIONS TO EXISTING BRIDGES TO FIT THE ACTUAL BRIDGE AND SITE DIMENSIONS.
- ② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- ④ TOLERANCE FOR TOP OF BEAM IS $\pm 1"$.
- ⑥ DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.
- ⑦ BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X 5/8" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.
- ⑧ THE RECESS FOR A W-BEAM CONNECTION, WHICH EXISTS ON SOME PARAPETS OF THIS TYPE, SHALL BE FILLED WITH A TREATED TIMBER BLOCKOUT. BLOCKOUT SIZE IS 1'-6" X 2'-0" X 3 1/2".

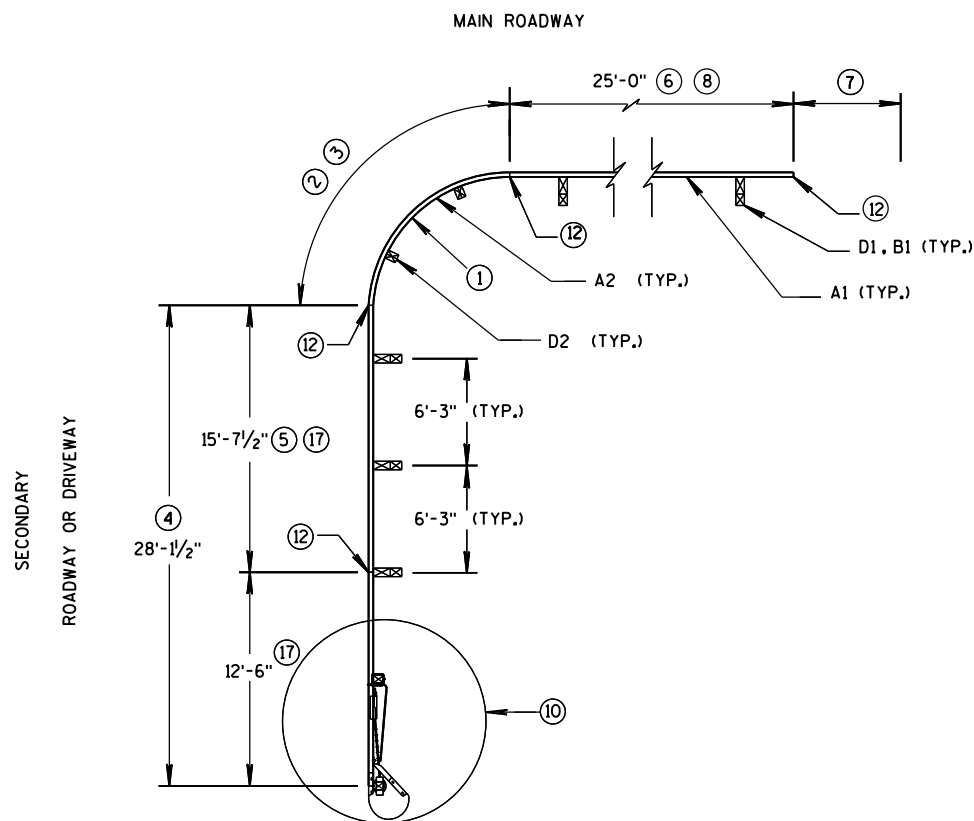


SECTION F-F

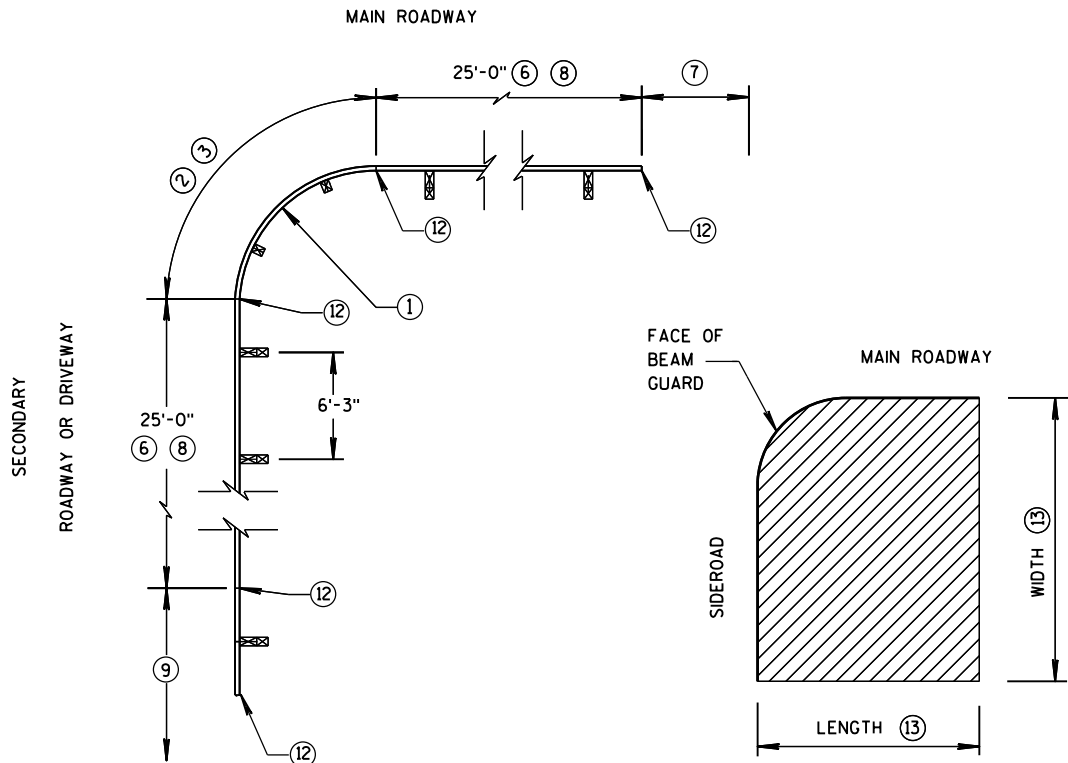


DRILL HOLE LOCATION

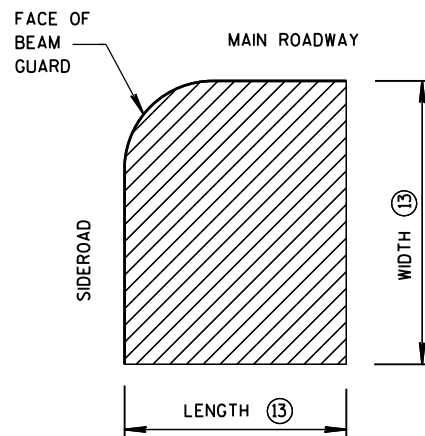
MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
APPROVED 07/2018 DATE	/S/ Rodney Taylor ROADWAY STANDARDS UNIT SUPERVISOR		
FHWA	174	NT	



SHORT RADIUS BEAM GUARD WITH
SHORT RADIUS TERMINAL ON
SECONDARY ROAD OR DRIVEWAY
PLAN VIEW



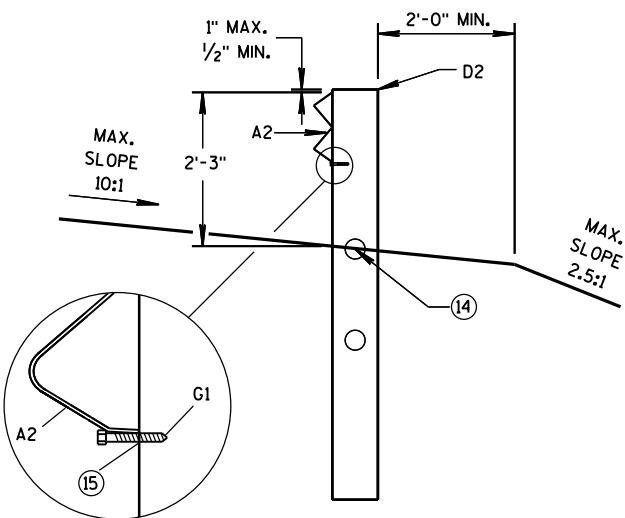
SHORT RADIUS BEAM GUARD WITH
EAT, ADDITIONAL BEAM GUARD
OR
TRANSITION TO RIGID BARRIER
ON SECONDARY ROAD OR
DRIVEWAY
PLAN VIEW



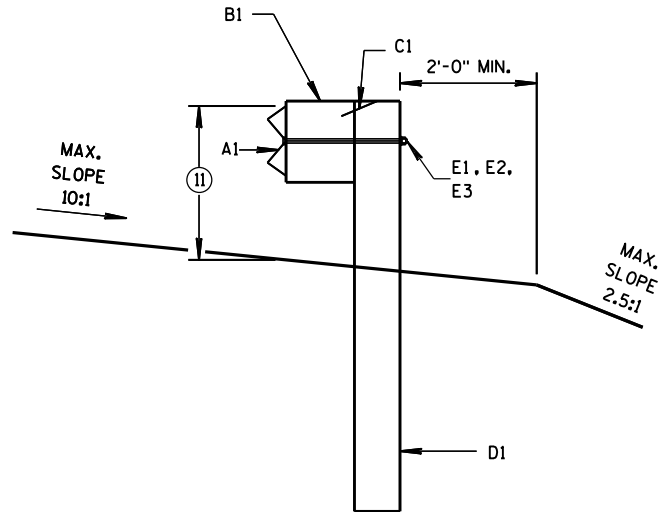
AREA FREE OF
FIXED OBJECTS FOR
RADIUS 32' AND LESS

TABLE FOR RADIUS OF 32' AND LESS

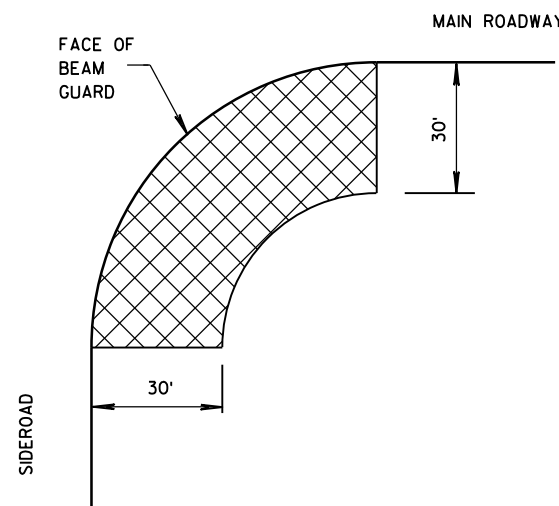
RADIUS FT	LENGTH FT	WIDTH FT
8	25	15
16	30	15
24	40	20
32	50	30



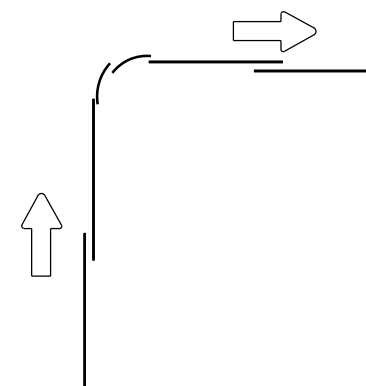
CONTROLLED RELEASE
TERMINAL POST (CRT) IN RADIUS



BEAM GUARD POSTS
IN HEIGHT TRANSITION



AREA FREE OF FIXED OBJECTS
RADIUS GREATER THAN 32'



LAP SPLICE DETAIL

GENERAL NOTES

SEE PLANS FOR OTHER BARRIER SYSTEM AND LOCATION SPECIFICS.

SEE 14B42 FOR MORE INFORMATION ON BEAM GUARD INSTALLATION, PARTS, MATERIALS, AND INSTALLATION INFORMATION.

GALVANIZE PARTS AFTER FABRICATION.

WELDING IS TO FOLLOW CURRENT REQUIREMENTS OF THE AMERICAN WELDING SOCIETY STRUCTURAL WELDING CODE ANSI/AWS D1.1

UNLESS NOTED OTHERWISE, ALL PLATES ARE FLAT AND FREE OF WARP.

UNLESS NOTED OTHERWISE, ALL EDGES ARE SMOOTH, STRAIGHT AND VERITCAL.

ALL CUTS AND HOLES, EXCEPT IN BEAM GUARD RAIL ARE TO BE MACHINED OR MACHINE FLAME CUTS.

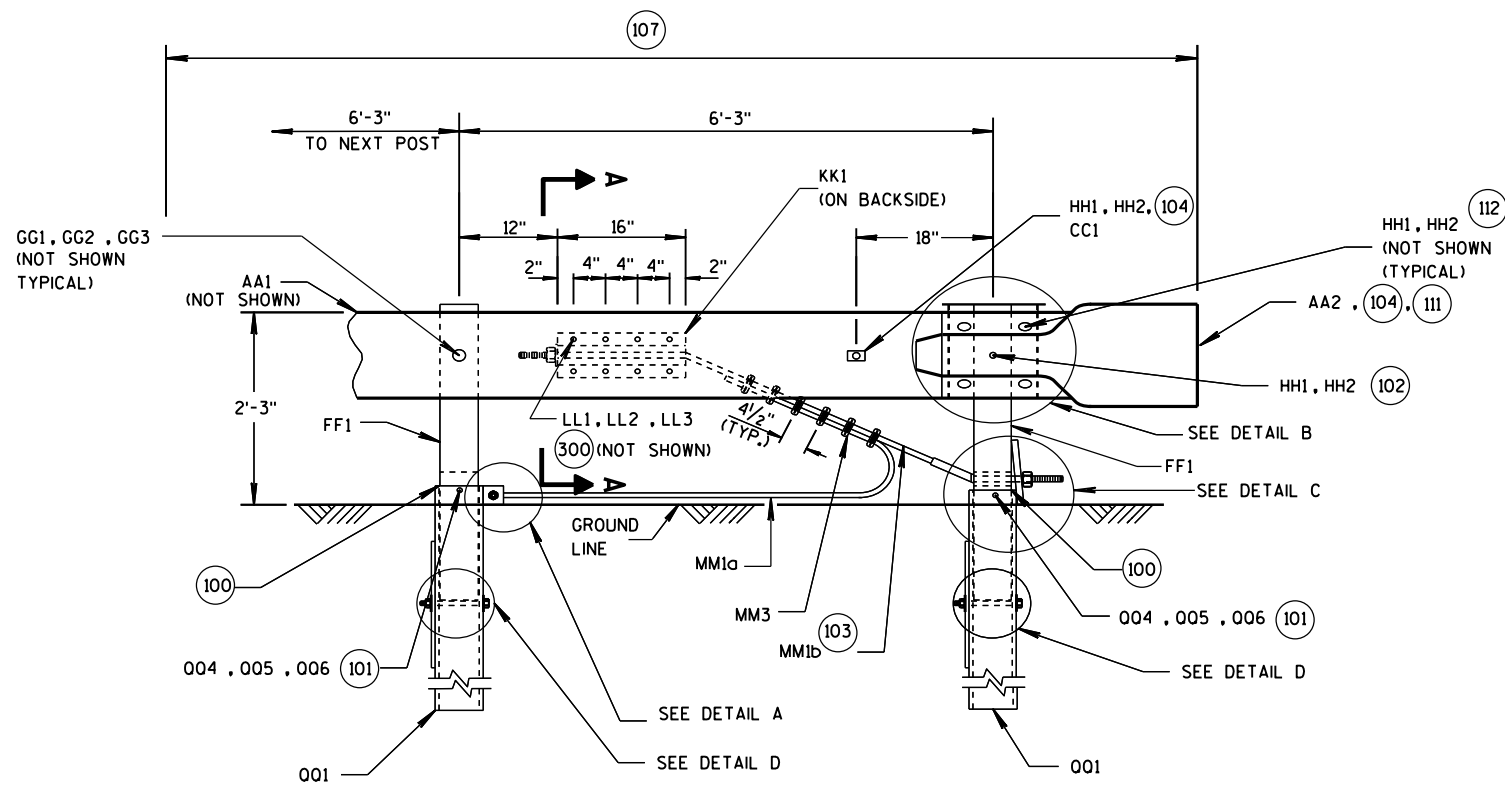
UNLESS NOTED OTHERWISE CUT OR PROVIDE BOLTS THAT ARE 1/4" TO 1/2" BEYOND THE NUT

DRAWINGS ARE NOT TO SCALE.

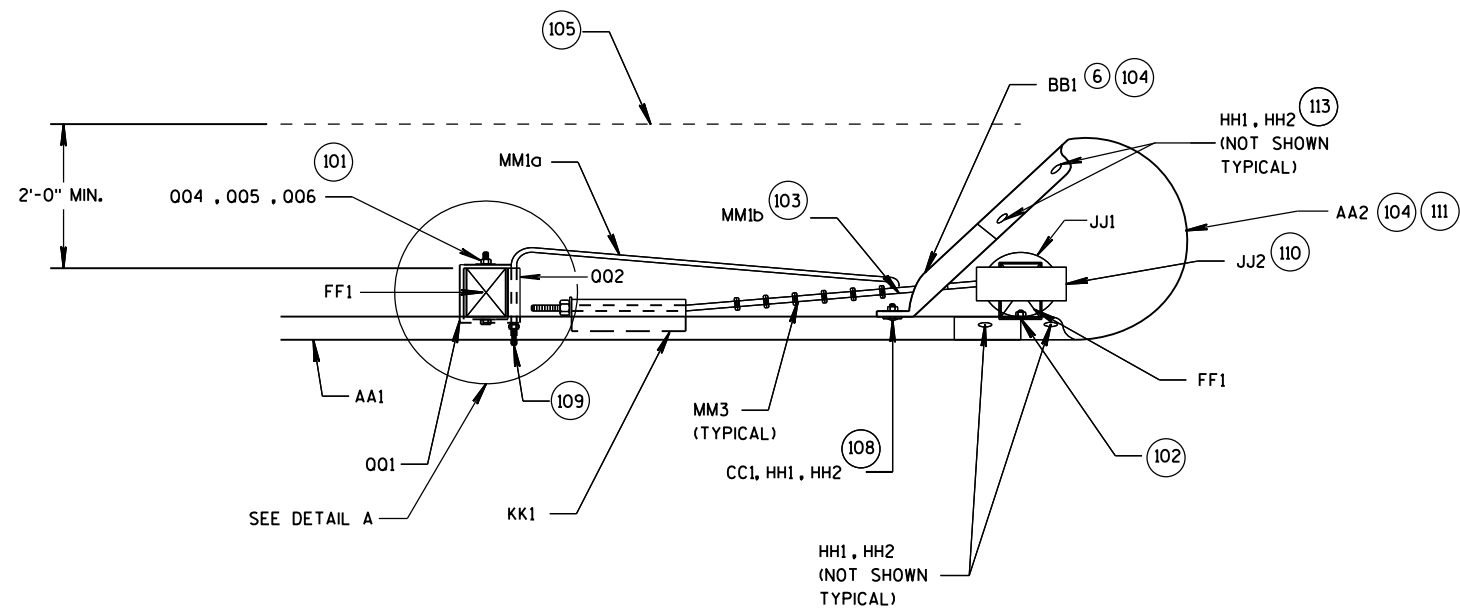
- RADIUS MEASURE FROM INSIDE OF RAIL. LENGTH OF BEAM GUARD SHORT RADIUS GUARD MEASURED ALONG TRAFFIC SIDE OF RAIL. RADIUS BETWEEN 8 FEET TO 150 FEET. SEE PLAN FOR REQUIRED RADIUS. BEAM GUARD RAIL IN RADIUS IS SHOP BENT. ODD RAIL LENGTH OR FIELD CUTS MAY BE REQUIRED.
- CONTROLLED RELEASE TERMINAL (CRT) POSTS ARE USED IN THE RADIUS. CONTROLLED RELEASE TERMINAL (CRT) POSTS ARE SPACED 6'-3". SEE PLAN FOR NUMBER OF CONTROLLED RELEASE TERMINAL (CRT) POSTS.
- WITHIN RADIUS BEAM GUARD RAILS ARE NOT BOLTED TO POSTS. BEAM GUARD RAILS RESTED ON TOP OF LAG SCREW.
- MINIMUM LENGTH OF BEAM GUARD ALONG SIDE ROAD OR DRIVEWAY TO INSTALL SHORT RADIUS TERMINAL. BEAM GUARD IS PAID FOR WITH BEAM GUARD ITEM.
- ODD LENGTH OF BEAM GUARD REQUIRED TO INSTALL SHORT RADIUS TERMINAL.
- MINIMUM AMOUNT OF BEAM GUARD TO BE INSTALLED PRIOR TRANSITION TO RIGID BARRIER, ADDITIONAL BEAM GUARD, OR EAT. BEAM GUARD PAID FOR WITH BEAM GUARD ITEM. SEE PLANS FOR MORE DETAIL.
- BEAM GUARD, EAT OR TRANSITION TO RIGID BARRIER. SEE PLAN.
- TOP OF BEAM GUARD BY THE RADIUS IS 27". HEIGHT OF BEAM GUARD IS 31" BY TRANSITION TO RIGID BARRIER, ADDITIONAL BEAM GUARD OR EAT.
- ADDITIONAL BEAM GUARD, EAT OR TRANSITION TO RIGID BARRIER. BEAM GUARD SHOWN. SEE PLAN FOR DETAILS.
- SHORT RADIUS TERMINAL (SEE OTHER DETAILS)
- HEIGHT VARIES. SEE NOTE (8) AND (17).
- BEAM GUARD RAIL SPLICE LOCATION. SPLICE LOCATION REQUIRE PART F1 AND F2. SEE SDD 14B42 FOR DETAILS.
- SEE TABLE FOR VALUES.
- MAXIMUM HEIGHT FOR CENTER OF HOLE IS 3/4" ABOVE FINISHED GROUND ±1".
- DRILL 15/64" DIA. PILOT HOLE. DO NOT HAMMER LAG SCREW INTO POST.
- SMALL SIGNS ON BREAKAWAY HARDWARE ARE ACCEPTABLE.
- TOP OF RAIL HEIGHT IS 27" WHEN USING A SHORT RADIUS TERMINAL.

SHORT RADIUS BEAM GUARD
(MGS) SHORT RADIUS
TERMINAL (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

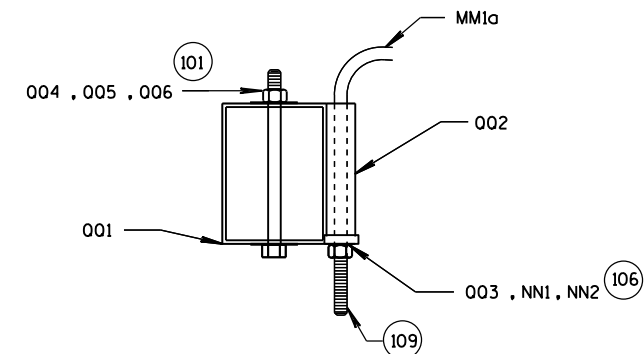


**SHORT RADIUS TERMINAL
PROFILE VIEW**

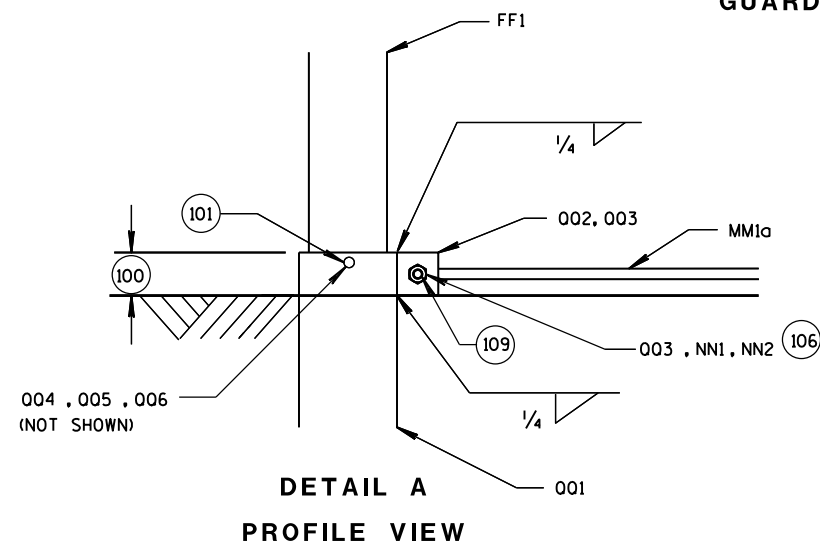


**SHORT RADIUS TERMINAL
TOP VIEW**

- (100) TOP OF FOUNDATION TUBE 2 INCHES MAXIMUM ABOVE FINISHED GROUND.
- (101) WASHERS REQUIRED BETWEEN BOLT HEAD AND FOUNDATION TUBE AND BETWEEN NUT AND FOUNDATION TUBE.
- (102) SPLICE BOLT AND NUT CONNECTS BEAM GUARD RAIL, W-BEAM END SECTION BUFFER, AND STEEL PIPE ASSEMBLY. NO WASHER REQUIRED. SEE DETAIL B.
- (103) CABLE IS TAUT.
- (104) ADJUST AA2 AND BB1 TO FIT.
- (105) BREAK POINT OF SHOULDER.
- (106) TACK WELD CABLE CONNECTOR TUBE PLATE TO CABLE CONNECTION TUBE. SEE DETAIL A PROFILE VIEW.
- (107) PAY LIMIT FOR BEAM GUARD.
- (108) SQUARE WASHER BETWEEN HEAD OF BOLT AND TRAFFIC FACE OF BEAM GUARD. ROUND WASHER REQUIRED BETWEEN NUT AND BB1.
- (109) CUT OR PROVIDE THREADED STUD THAT IS FLUSH WITH FACE OF BEAM GUARD RAIL KK1 (PLUS OR MINUS 1/2" TOLERANCE). DEBURR AFTER CUTTING.
- (110) SEE STEEL PIPE ASSEMBLY DETAILS.
- (111) ATTACH UU2 WITH UU3. SHOP APPLY UU1 TO UU2.
- (112) FOUR HH1 AND HH2 REQUIRED TO ATTACH AA1 TO AA2.
- (113) FOUR HH1 AND HH2 REQUIRED TO ATTACH AA2 TO BB1.



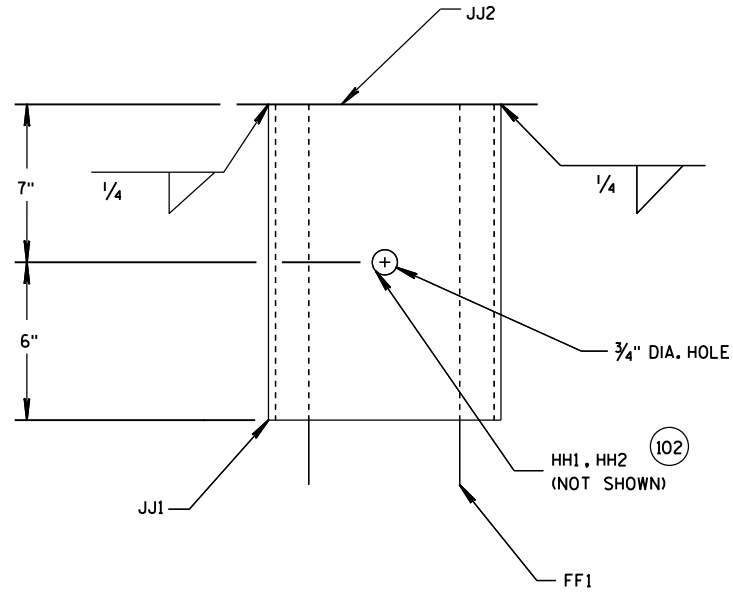
**DETAIL A
TOP VIEW
(WOOD BREAKAWAY AND BEAM
GUARD RAIL POSTS NOT SHOWN)**



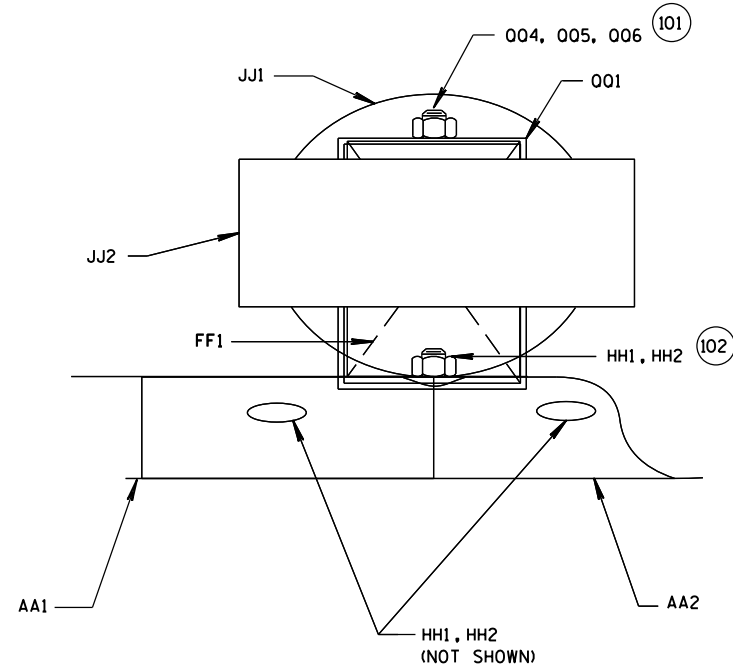
**DETAIL A
PROFILE VIEW**

**STEEL PLATE BEAM GUARD
SHORT RADIUS TERMINAL
MGS**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 176

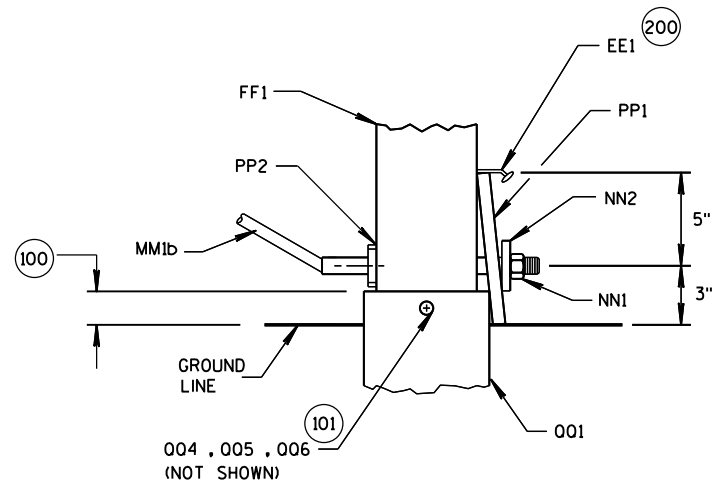


DETAIL B
PROFILE VIEW OF STEEL PIPE ASSEMBLY
 (BEAM GUARD AND W-BEAM
 END SECTION NOT SHOWN)

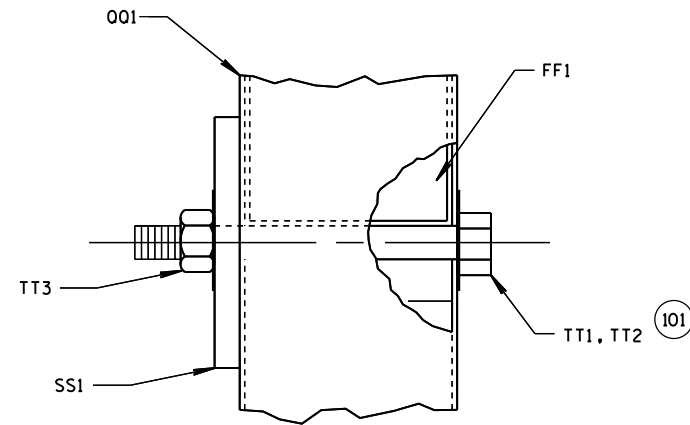


DETAIL B
PLAN VIEW OF STEEL PIPE ASSEMBLY

(200) 2 NAILS SPACED 4 INCHES CENTER TO CENTER.



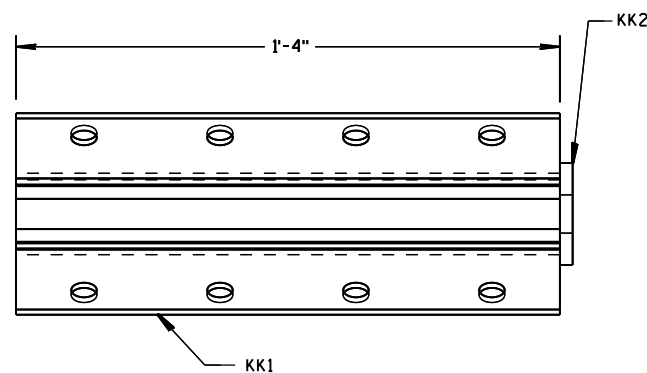
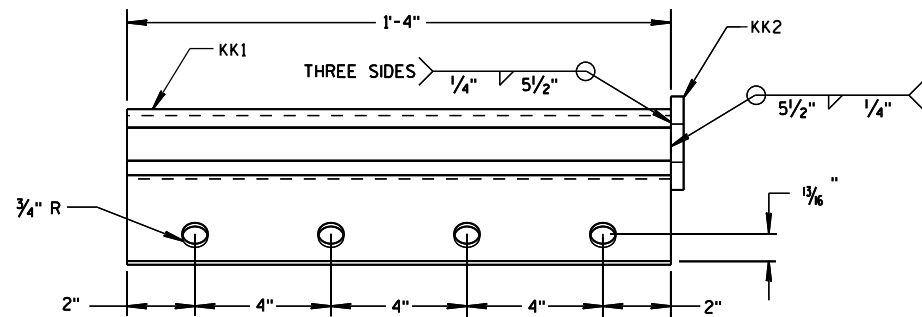
DETAIL C
PROFILE VIEW



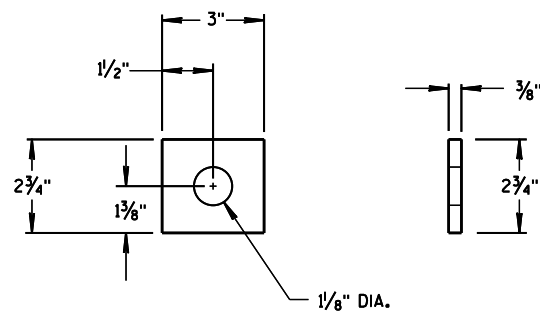
DETAIL D
PROFILE VIEW

**SHORT RADIUS BEAM GUARD
 (MGS) SHORT RADIUS
 TERMINAL (MGS)**

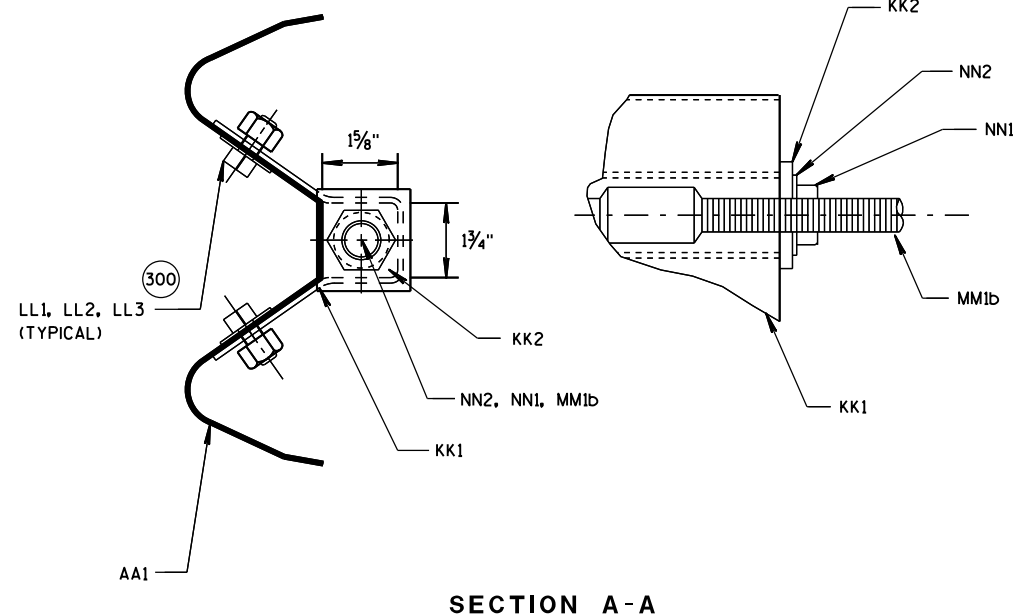
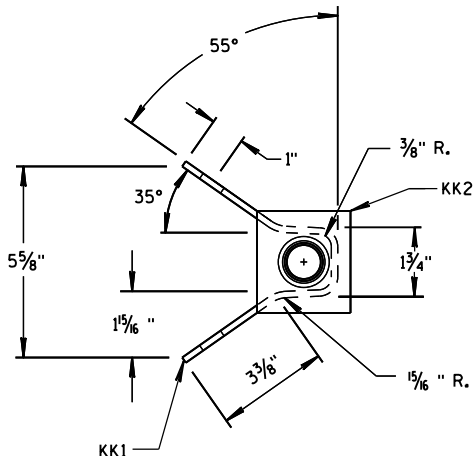
STATE OF WISCONSIN
 DEPARTMENT OF TRANSPORTATION 177



ANCHOR BRACKET (KK1, KK2)



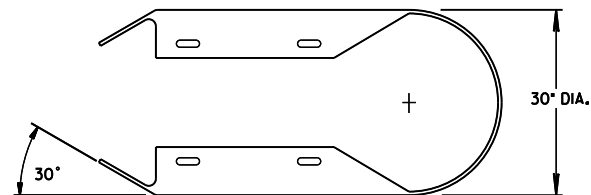
ANCHOR BRACKET BEARING PLATE (KK2)



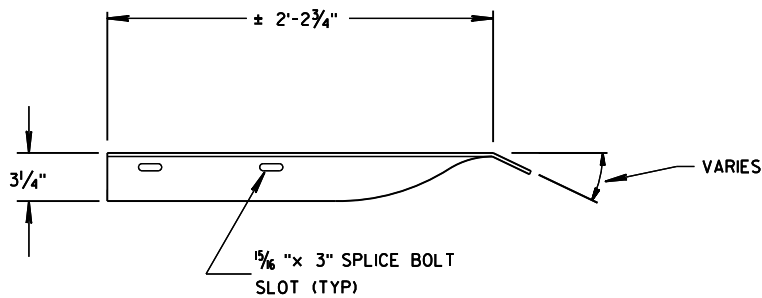
300 WASHERS REQUIRED BETWEEN BOLT HEAD AND BEAM GUARD RAIL AND BETWEEN NUT AND ANCHOR BRACKET. EIGHT LL1 AND LL3 REQUIRED. SIXTEEN LL2 REQUIRED.

SHORT RADIUS BEAM GUARD
(MGS) SHORT RADIUS
TERMINAL (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 178

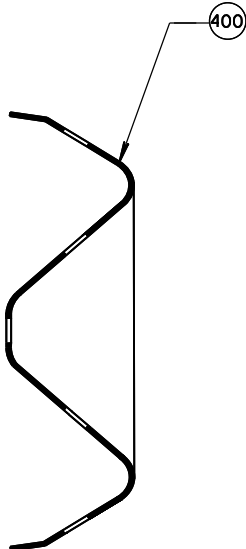


TOP VIEW

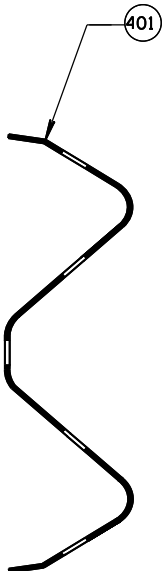


TOP VIEW

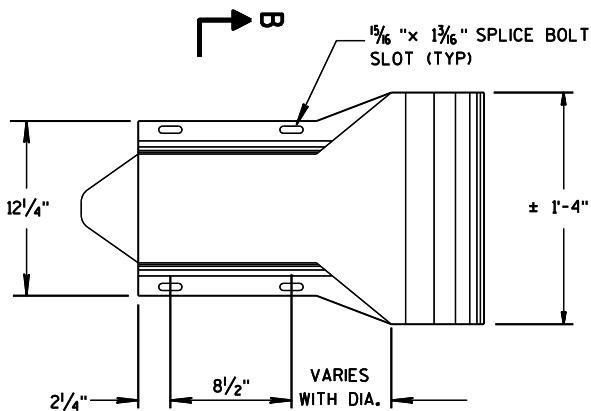
400 CROSS SECTION OF PART IS TO FIT OVER AA1.
401 CROSS SECTION OF PART IS TO FIT OVER OR UNDER AA1.



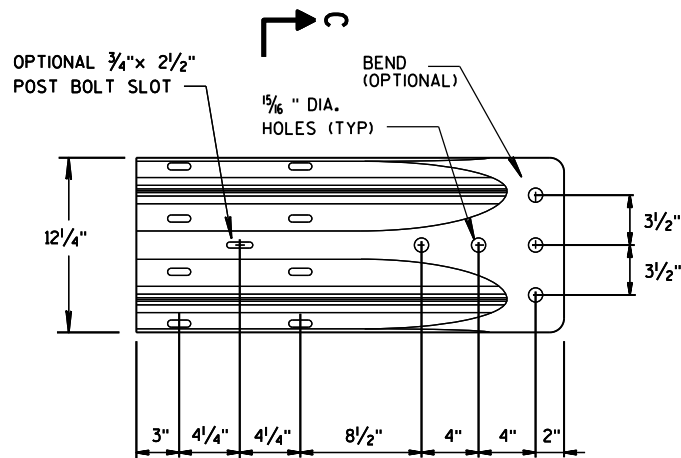
SECTION B-B



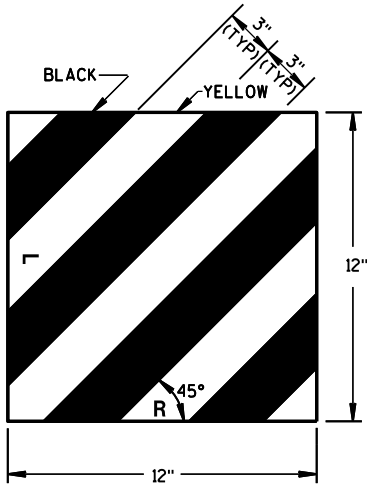
SECTION C-C



W-BEAM
END SECTION BUFFER (AA2)
PROFILE VIEW



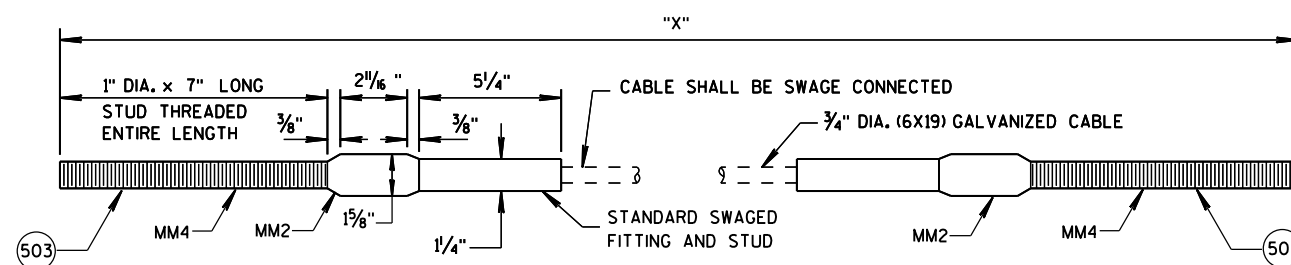
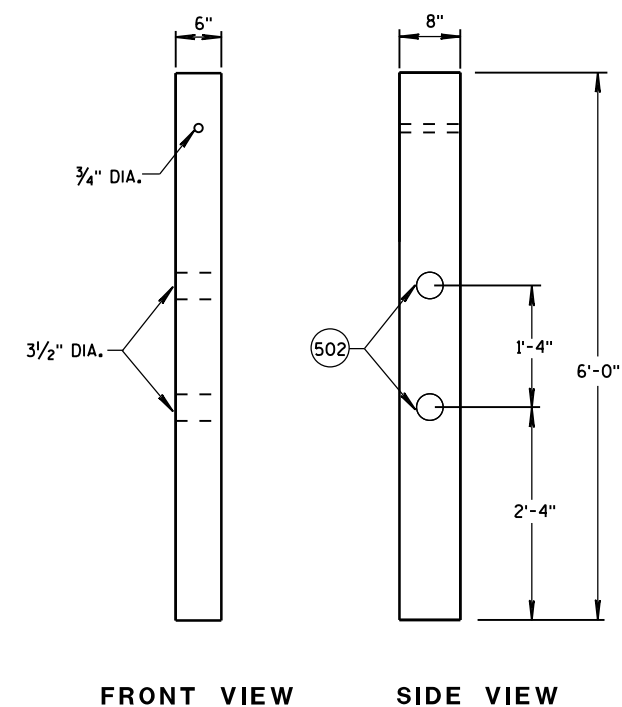
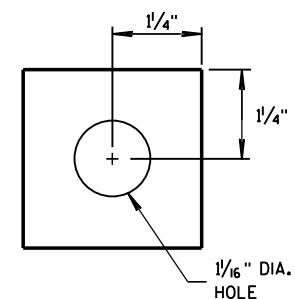
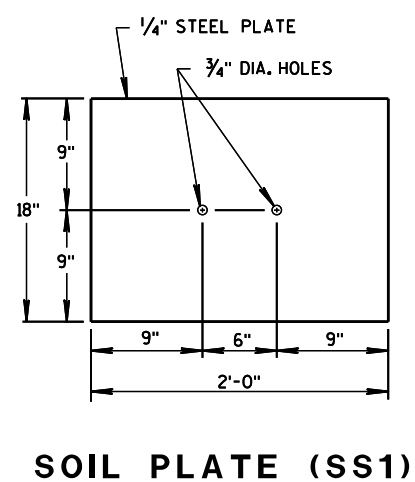
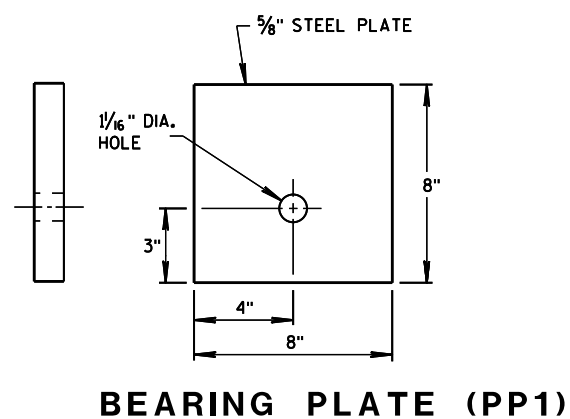
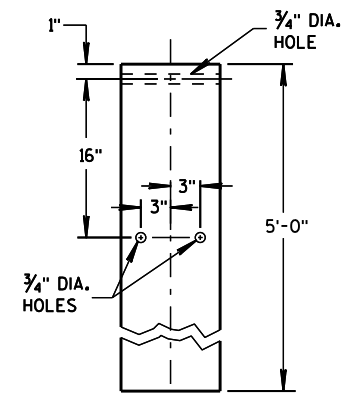
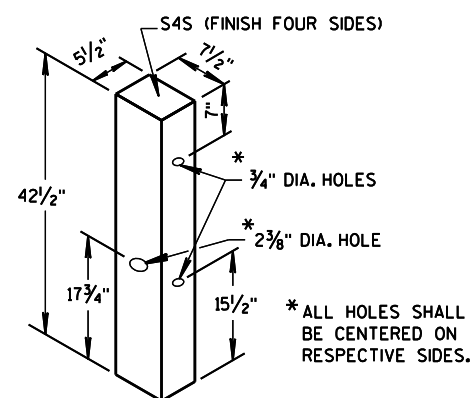
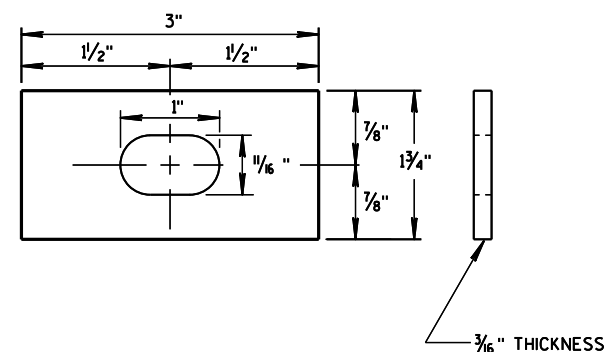
W-BEAM
TERMINAL CONNECTOR (BB1)
PROFILE VIEW



REFLECTIVE SHEETING
(UU1, UU2)

SHORT RADIUS BEAM GUARD
(MGS) SHORT RADIUS
TERMINAL (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 179



"X" LENGTH	
MM1a	9'-0"
MM1b	6'-8"

SHORT RADIUS BEAM GUARD
(MGS) SHORT RADIUS
TERMINAL (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 180

BILL OF MATERIALS - SHORT RADIUS BEAM GUARD (MGS)

PART	DESCRIPTION	MATERIALS SPECIFICATIONS	NOTES
A1	BEAM GUARD RAIL	AASHTO M180, CLASS A, TYPE 2	
		APPROVED PRODUCER	
A2	BEAM GUARD RAIL - SHOP BENT	INDICATE ON BACK OF RAIL RADIUS THAT RAIL WAS BENT TO. SHOP BEND RADIUS IS TO THE NEAREST FOOT. FOLLOW AASHTO M180 ON HOW TO MARK RADIUS INFORMATION.	
		AASHTO M180, CLASS A, TYPE 2	
		APPROVED PRODUCER	
B1	BLOCK - WOOD	WISDOT SPEC. 614	SEE SDD 14B42
C1	NAIL	ASTM A153 HOT DIP CLASS D	
		ASTM F1667 TYPE 1 STYLE 12 (16 DOUBLE HEAD)	
D1	POST-STRONG POST-WOOD	WISDOT SPEC. 614	SEE SDD 14B42
D2	POST-CRT-WOOD	WISDOT SPEC. 614	
E1	POST BOLT	ASTM A307 GRADE A OR SAE J429 GRADE 2	5/8" DIA. SEE SDD 14B42 FOR BOLT GEOMETRY
		AASHTO M180	
		GALV. HOT DIP TO AASHTO M232 CLASS C/ASTM A153 CLASS C/ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1/ASTM B695 CLASS 50, TYPE 1	
		UNC	
E2	POST BOLT-WASHER	ASTM F436 TYPE 1 (HARDEN TYPICALLY USED WITH STEEL) OR ASTM F844 (UNHARDENED TYPICALLY WITH WOOD)	5/8" DIA.
		GALV. AASHTO M111/ASTM A 123 OR GALV. HOT DIP, TO AASHTO M232 CLASS C/ASTM A153 CLASS C/ASTM F2329	
E3	POST BOLT - NUT		5/8" DIA. SEE SDD 14B42 FOR GEOMETRY
		AASHTO M180 DOUBLE RECESSED HEAVY HEX HEAD	
		GALV. HOT DIP TO AASHTO M232 CLASS C/ASTM A153 CLASS C/ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1/ASTM B695 CLASS 50, TYPE 1	
		UNC	
		OVER TAPPED NUTS OVER-SIZE AS SPECIFIED IN AASHTO 291 / ASTM A 563	
		ASTM A563 GRADE A HEAVY HEX HEAD	
F1	SPLICE BOLT	GALV. HOT DIP TO AASHTO M232 CLASS C/ASTM A153 CLASS C/ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1/ASTM B695 CLASS 50, TYPE 1	5/8" DIA. SEE SDD 14B42 FOR GEOMETRY AND OTHER INFORMATION
		ASTM A307 GRADE A OR SAE J429 GRADE 2	
		UNC	
		AASHTO M180	

PART	DESCRIPTION	MATERIALS SPECIFICATIONS	NOTES
F2	SPLICE BOLT - NUT	ASTM A563 GRADE A	5/8" DIA. SEE SDD 14B42 FOR GEOMETRY
		AASHTO M180 DOUBLE RECESSED HEAVY HEX HEAD	
		GALV. HOT DIP TO AASHTO M232 CLASS C/ASTM A153 CLASS C/ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1/ASTM B695 CLASS 50, TYPE 1	
		OVER TAPPED NUTS OVER-SIZE AS SPECIFIED IN AASHTO 291 / ASTM A 563	
G1	LAG SCREW	UNC	
		ASTM A308 GRADE A ASTM A153 CLASS D	
H1	DELINEATOR - BEAM GUARD		3/8" DIA. 3" LONG
H2	DELINEATION - SHEETING		SEE SDD 14B42 FOR MORE INFORMATION
J1	FOUNDATION BACKFILL	YELLOW OR WHITE	
		WISDOT SPEC 637 TYPE SH	
AA1	BEAM GUARD RAIL - PUNCHED	APPROVED PRODUCT LIST	
		STANDARD SPEC. 614	
AA2	BEAM GUARD RAIL - END SECTION BUFFER	AASHTO M180, CLASS A, TYPE 2	
		APPROVED PRODUCER	
BB1	BEAM GUARD RAIL - TERMINAL CONNECTOR MODIFIED	AASHTO M180, CLASS A, TYPE 2	
		APPROVED PRODUCER	
CC1	SHORT RADIUS - SQUARE WASHER	AASHTO M180	
		GALV. AASHTO M111 / ASTM A123	
EE1	NAIL	ASTM A153 HOT DIP CLASS D	
		ASTM F1667 TYPE 1 STYLE 12 (16 DOUBLE HEADED)	
FF1	POST - BCT - WOOD	S4S FINISH ON 4 SIDES	
		WISDOT SPEC. 614	
GG1	POST BOLT	ASTM A307 GRADE A OR SAE J429 GRADE 2	3/8" DIA. SEE SDD 14B42 FOR GEOMETRY
		AASHTO M180	
		GALV. HOT DIP TO AASHTO M232 CLASS C/ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1/ASTM B695 CLASS 50, TYPE 1	
GG2	POST BOLT - WASHER	UNC	
		ASTM F436 TYPE 1 (HARDEN TYPICALLY USED WITH STEEL) OR ASTM F844 (UNHARDENED TYPICALLY WITH WOOD)	
		GALV. AASHTO M111 / ASTM A123 OR 5 GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329	3/8" DIA.

SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)

STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

BILL OF MATERIALS - SHORT RADIUS BEAM GUARD (MGS)

PART	DESCRIPTION	MATERIALS SPECIFICATIONS	NOTES
GG3	POST BOLT - NUT	ASTM A563 GRADE A	3/8" DIA.
		AASHTO M180 DOUBLE RECESSED HEAVY HEX HEAD	SEE 14B42 FOR GEOMETRY
		GALV. HOT DIP TO AASHTO M232 CLASS C/ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1/ASTM B695 CLASS 50, TYPE 1	
		UNC	
		OVER TAPPED NUTS OVER-SIZE AS SPECIFIED IN AASHTO 291 / ASTM A 563	
		ASTM A563 GRADE A HEAVY HEX HEAD	
HH1	SPLICE BOLT	GALV. HOT DIP TO AASHTO M232 CLASS C/ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1/ASTM B695 CLASS 50, TYPE 1	3/8" DIA. SEE 14B42 FOR GEOMETRY
		ASTM A307 GRADE A OR SAE J429 GRADE 2	
		UNC	
		AASHTO M180 HEAD GEOMETRY	
HH2	SPLICE BOLT - NUT	ASTM A563 GRADE A	3/8" DIA.
		AASHTO M180 DOUBLE RECESSED HEAVY HEX HEAD	SEE 14B42 FOR GEOMETRY
		GALV. HOT DIP TO AASHTO M232 CLASS C/ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1/ASTM B695 CLASS 50, TYPE 1	
		OVER TAPPED NUTS OVER-SIZE AS SPECIFIED IN AASHTO 291 / ASTM A 563	
		UNC	
JJ1	PIPE - STEEL	ASTM A53 GALVANIZED GRADE B SCHEDULE 40	10" O.D.
JJ2	TOP PLATE	ASTM A36 MIN STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI OR ASTM A709 MAX STRENGTH 50 KSI OR ASTM A992 MAX STRENGTH 50 KSI	DIMENSIONS 3/8" X 4" X 1'-0"
		GALV. AASHTO M111 / ASTM A123	
KK1	ANCHOR BRACKET	ASTM A36 MIN STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI OR ASTM A709 MAX STRENGTH 50 KSI OR ASTM A992 MAX STRENGTH 50 KSI	
		GALV. AASHTO M111 / ASTM A123	
KK2	ANCHOR BRACKET - BEARING PLATE	ASTM A36 MIN STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI OR ASTM A709 MAX STRENGTH 50 KSI OR ASTM A992 MAX STRENGTH 50 KSI	
		GALV. AASHTO M111 / ASTM A123	
LL1	ANCHOR BRACKET - BOLT	ASTM A307 GRADE B HEAVY HEX HEAD OR SAE J429 GRADE 2 HEAVY HEX HEAD	5/8" DIA.
		GALV. HOT DIP TO AASHTO M232 CLASS C/ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1/ASTM B695 CLASS 50, TYPE 1	
		UNC	
LL2	ANCHOR BRACKET - WASHER	ASTM F436 TYPE 1 (HARDEN WASHER ONLY)	5/8" DIA.
		GALV. AASHTO M111 / ASTM A123 OR 5 GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329	
LL3	ANCHOR BRACKET - NUT	ASTM A563 GRADE A	5/8" DIA.
		GALV. HOT DIP TO AASHTO M232 CLASS C/ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1/ASTM B695 CLASS 50, TYPE 1	
		OVER TAPPED NUTS OVER-SIZE AS SPECIFIED IN AASHTO 291 / ASTM A563	
		UNC	

PART	DESCRIPTION	MATERIALS SPECIFICATIONS	NOTES
MM1a	ANCHOR CABLE	AASHTO M30 / ASTM A741 INDEPENDENT WIRE CORE (IWRC) OR WIRE STRAND CORE (WCS), IMPROVED PLOW STEEL (IPS), 6X19, TYPE II OR IIC CLASS C ZINC COATED	
MM1b	ANCHOR CABLE	AASHTO M30 / ASTM A741 INDEPENDENT WIRE CORE (IWRC) OR WIRE STRAND CORE (WCS), IMPROVED PLOW STEEL (IPS), 6X19, TYPE II OR IIC CLASS C ZINC COATED	
MM2	ANCHOR CABLE - SWAGE FITTING	ASTM A576 GRADE 1035	
		SWAGE FITTINGS ARE TO BE FACTORY SWEDGED. WITH A BREAKING STRENGTH 40,000 LBS.	
		GALV. AASHTO M111 / ASTM A123	
MM2	ANCHOR CABLE - SWAGE FITTING	ASME B30.26 FORGED, CAST, OR DIE STAMPED WITH THE FOLLOWING INTO CONNECTION: NAME OF MANUFACTURER OR TRADEMARK OF CONNECTION'S MANUFACTURER, SIZE OR RATED LOAD, GRADE.	
MM3	WIRE ROPE CABLE CLAMPS	FF-C-450D TYPE 1 CLASS 1	3/4"
		ASTM A153 HOT DIP CLASS D	
MM4	ANCHOR CABLE - SWAGE FITTING - STUD	ASTM F3125 GRADE A325 TYPE 1 OR SAE GRADE 5 OR ASTM A449 TYPE 1 HEAVY HEX HEAD	
		GALV. HOT DIP TO AASHTO M232 CLASS C/ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1/ASTM B695 CLASS 50, TYPE 1	
		UNC	
NN1	ANCHOR CABLE - NUT	ASTM A563 GRADE A	1" DIA.
		AASHTO M180 DOUBLE RECESSED HEAVY HEX HEAD	
		GALV. HOT DIP TO AASHTO M232 CLASS C/ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1/ASTM B695 CLASS 50, TYPE 1	
		OVER TAPPED NUTS OVER-SIZE AS SPECIFIED IN AASHTO 291 / ASTM A563	
NN2	ANCHOR CABLE - NUT - WASHER	UNC	1" DIA.
		ASTM F436 TYPE 1 (HARDEN WASHER ONLY)	
		GALV. AASHTO M111 / ASTM A123 OR 5 GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329	
PP1	BEARING PLATE AT POST	ASTM A36 MIN STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI OR ASTM A709 MAX STRENGTH 50 KSI OR ASTM A992 MAX STRENGTH 50 KSI	
		GALV. AASHTO M111 / ASTM A123	
PP2	PIPE - STEEL	ASTM A53 GALVANIZED GRADE B SCHEDULE 40	2" DIA. x 6" LONG
QQ1	FOUNDATION TUBE	ASTM A500 GRADE B	8" X 6" X 3/16"
		GALV. AASHTO M111 / ASTM A123	
QQ2	SHORT RADIUS - FOUNDATION TUBE - ANCHOR CABLE - TUBE	ASTM A500 GRADE B	DIMENSIONS 2 1/2" X 2 1/4" X 1/4" X 8"
		GALV. AASHTO M111 / ASTM A123	

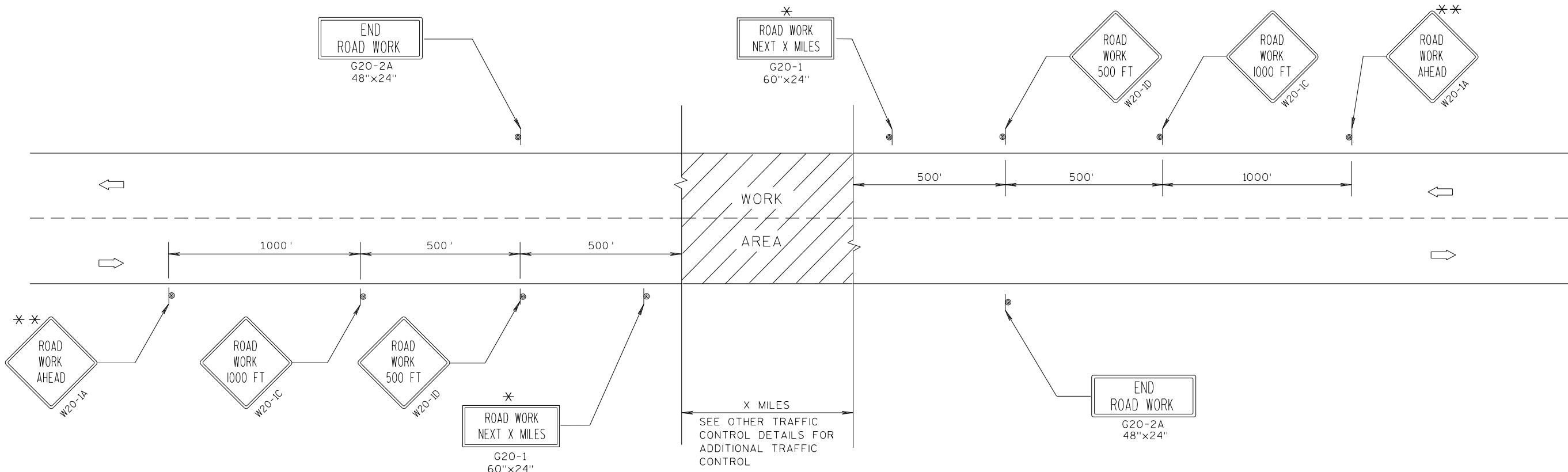
SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)

STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION 182

BILL OF MATERIALS - SHORT RADIUS BEAM GUARD (MGS)

PART	DESCRIPTION	MATERIALS SPECIFICATIONS	NOTES
003	SHORT RADIUS - SOIL TUBE - ANCHOR CABLE - TUBE - END PLATE	ASTM A36 MIN STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI OR ASTM A709 MAX STRENGTH 50 KSI OR ASTM A992 MAX STRENGTH 50 KSI	DIMENSIONS 2 1/2" X 2 1/2" X 1/4"
		GALV. AASHTO M111 / ASTM A123	
004	GROUND STRUT AND YOKE - BOLT	GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1 / ASTM B695 CLASS 50, TYPE 1	5/8" DIA.
		ASTM A307 GRADE B HEAVY HEX HEAD OR SAE J429 GRADE 2 HEAVY HEX HEAD	
		UNC	
005	GROUND PLATE AND YOKE - WASHER	ASTM F436 TYPE 1 (HARDEN WASHER ONLY)	5/8" DIA.
		GALV. AASHTO M111 / ASTM A123 OR 5 GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329	
006	GROUND STRUT AND YOKE - NUT	HEAVY HEX	5/8" DIA.
		UNC	
		ASTM A563 GRADE A	
		OVER TAPPED NUTS AS SPECIFIED IN AASHTO 291 / ASTM A 563	
		GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1 / ASTM B695 CLASS 50, TYPE 1	
SS1	SOIL PLATE	ASTM A36 MIN STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI OR ASTM A709 MAX STRENGTH 50 KSI OR ASTM A992 MAX STRENGTH 50 KSI	
		GALV. AASHTO M111 / ASTM A123	
TT1	SOIL PLATE - BOLT	ASTM A307 GRADE B HEAVY HEX HEAD OR SAE J429 GRADE 2 HEAVY HEX HEAD	5/8" DIA.
		GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1 / ASTM B695 CLASS 50, TYPE 1	
		UNC	
TT2	SOIL PLATE - WASHER	ASTM F436 TYPE 1 (HARDEN WASHER ONLY)	5/8" DIA.
		GALV. AASHTO M111 / ASTM A123 OR 5 GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329	
TT3	SOIL PLATE - NUT	GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1 / ASTM B695 CLASS 50, TYPE 1	5/8" DIA.
UU1	OBJECT MARKER - SHEETING	MUTCD / WISDOT OBJECT MARKER TYPE 3	PATTERN AND COLOR FOR SHEETING SHEETING TYPE FOR MARKER
		WISDOT SPEC 637 TYPE F	
		APPROVED PRODUCT LIST	
UU2	OBJECT MARKER - ALUMINUM PLATE	WISDOT SPEC 637 ALUMINUM PLATE	MATERIAL AND THICKNESS OF MATERIALS
UU3	OBJECT MARKER - SCREWS	STAINLESS SELF-TAPPING SCREWS	
VV1	FOUNDATION BACKFILL	WISDOT SPEC 614	

SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)		
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION		
APPROVED June 2017 DATE	/S/ Rodney Taylor ROADWAY STANDARDS & UNIT SUPERVISOR	183 NT
FHWA		



TYPICAL SIDEROAD APPROACH WARNING SIGN DETAIL

GENERAL NOTES

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

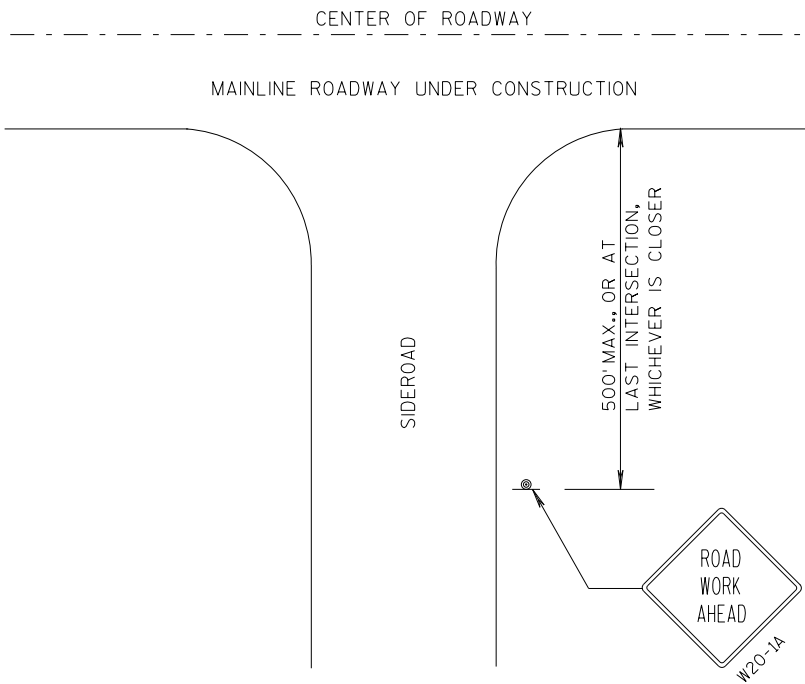
THE SPACING BETWEEN TRAFFIC CONTROL SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND SHOULD PROVIDE A MINIMUM OF 200 FEET (500 FEET DESIRABLE) CLEARANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED.

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

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

- * OMIT G20-1 SIGNS IF LENGTH OF WORK AREA IS 2 MILES OR LESS.
- * * PLACE ADDITIONAL W20-1A "ROAD WORK AHEAD" SIGN IF WORK AREA WITHIN THE PROJECT IS SEPARATED BY MORE THAN 2 MILES FROM PREVIOUS WORK AREA.



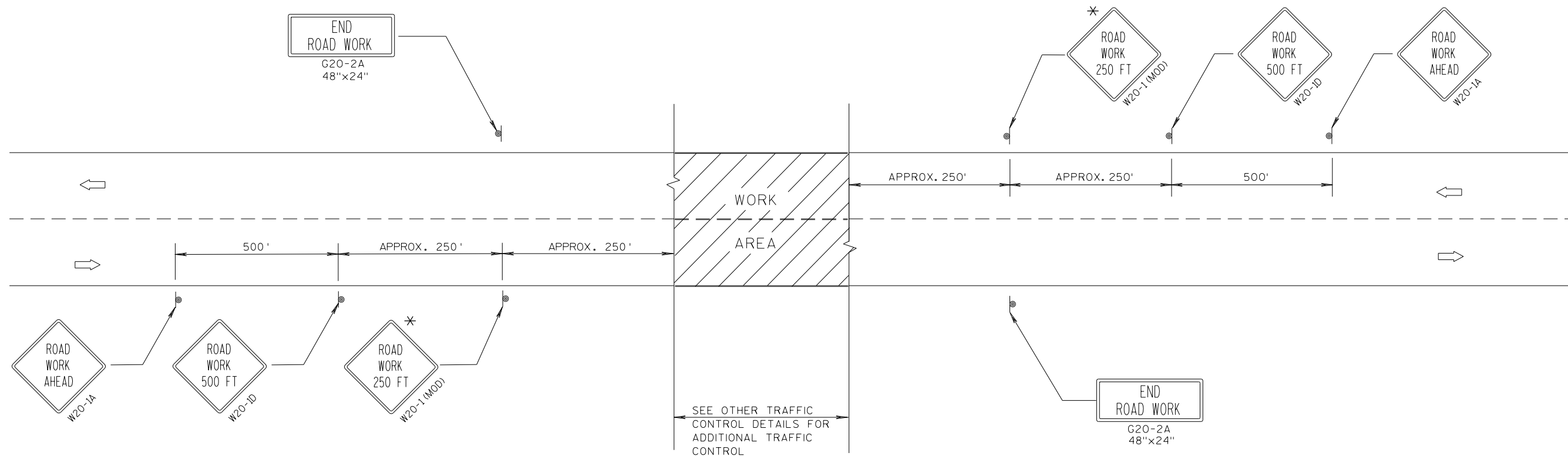
LEGEND

- ⊙ SIGN ON PERMANENT SUPPORT
- ➡ DIRECTION OF TRAFFIC
- ▨ WORK AREA

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
7/2018 /S/ Andrew Heidtke
DATE WORK ZONE ENGI 184
FHWA



TYPICAL SIDEROAD APPROACH WARNING SIGN DETAIL

GENERAL NOTES

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

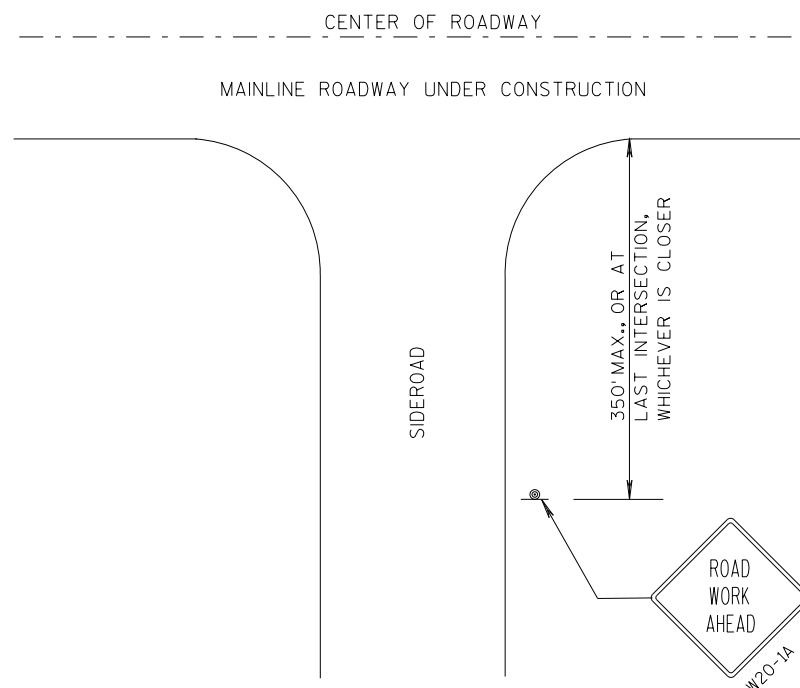
THE SPACING BETWEEN TRAFFIC CONTROL SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND SHOULD PROVIDE A DESIRABLE MINIMUM OF 200 FEET CLEARANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED. IF NECESSARY DUE TO SPACE CONSTRAINTS, 36"x36" SIGNS MAY BE USED INSTEAD OF 48"x48" SIGNS.

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

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

* THE THIRD W20-1 SIGN IS REQUIRED ONLY IF THERE IS AN INTERSECTION BETWEEN THE "ROAD WORK 500 FT" SIGN AND THE WORK ZONE. ADJUST THE PLACEMENT OF THIS SIGN BASED ON INTERSECTION LOCATION AND OTHER FIELD CONDITIONS.



LEGEND

- SIGN ON PERMANENT SUPPORT
- DIRECTION OF TRAFFIC
- WORK AREA

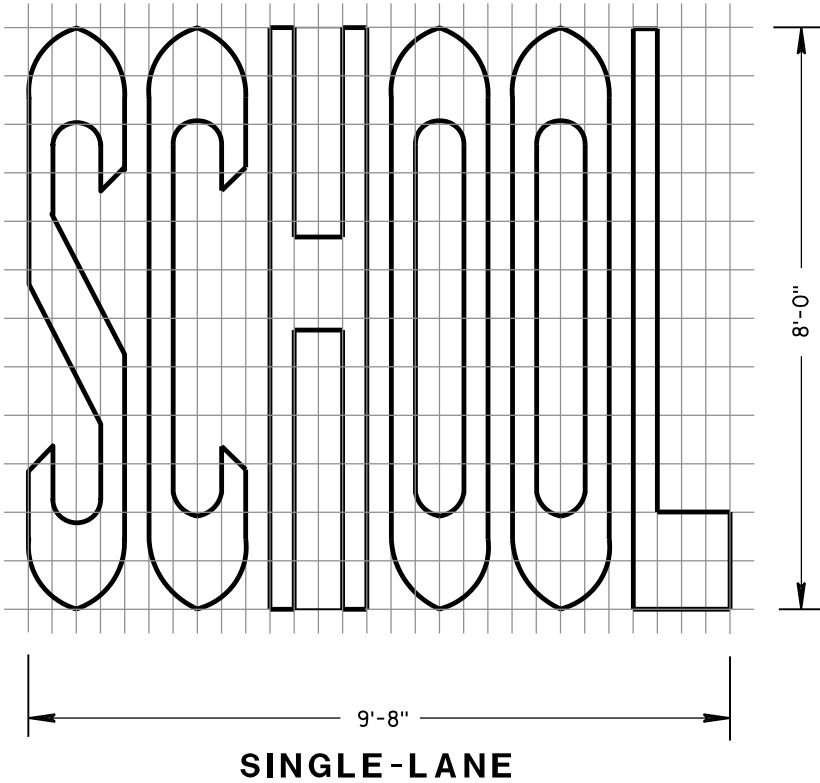
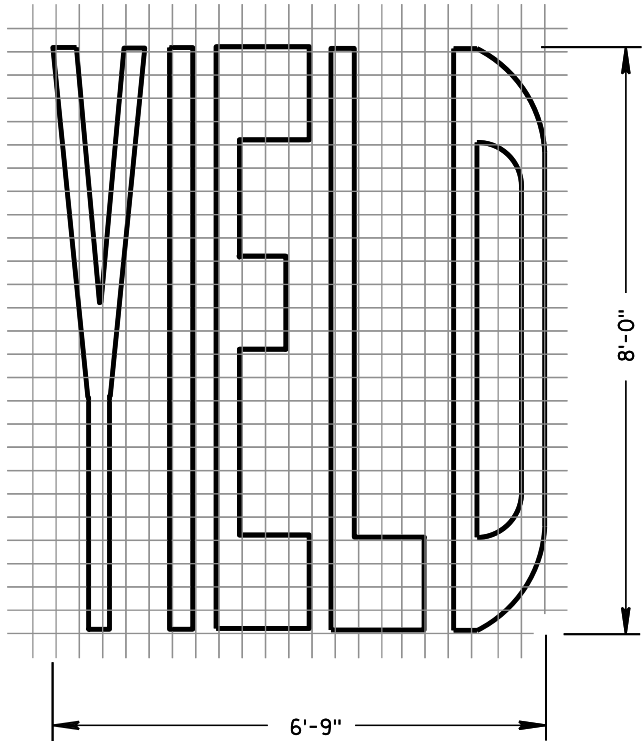
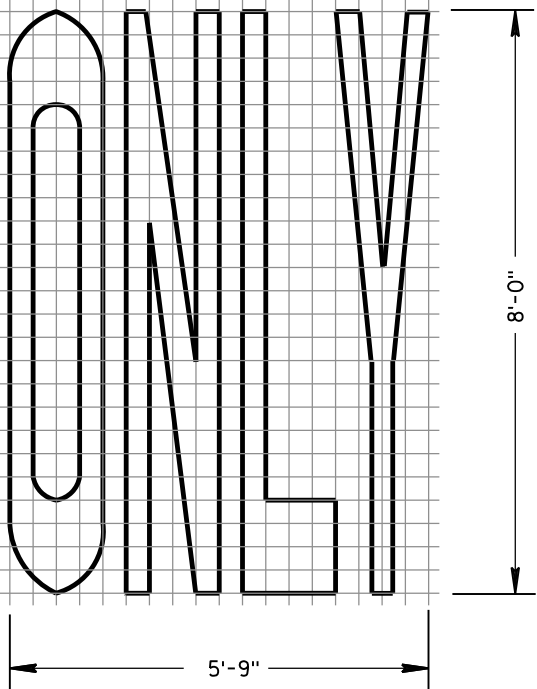
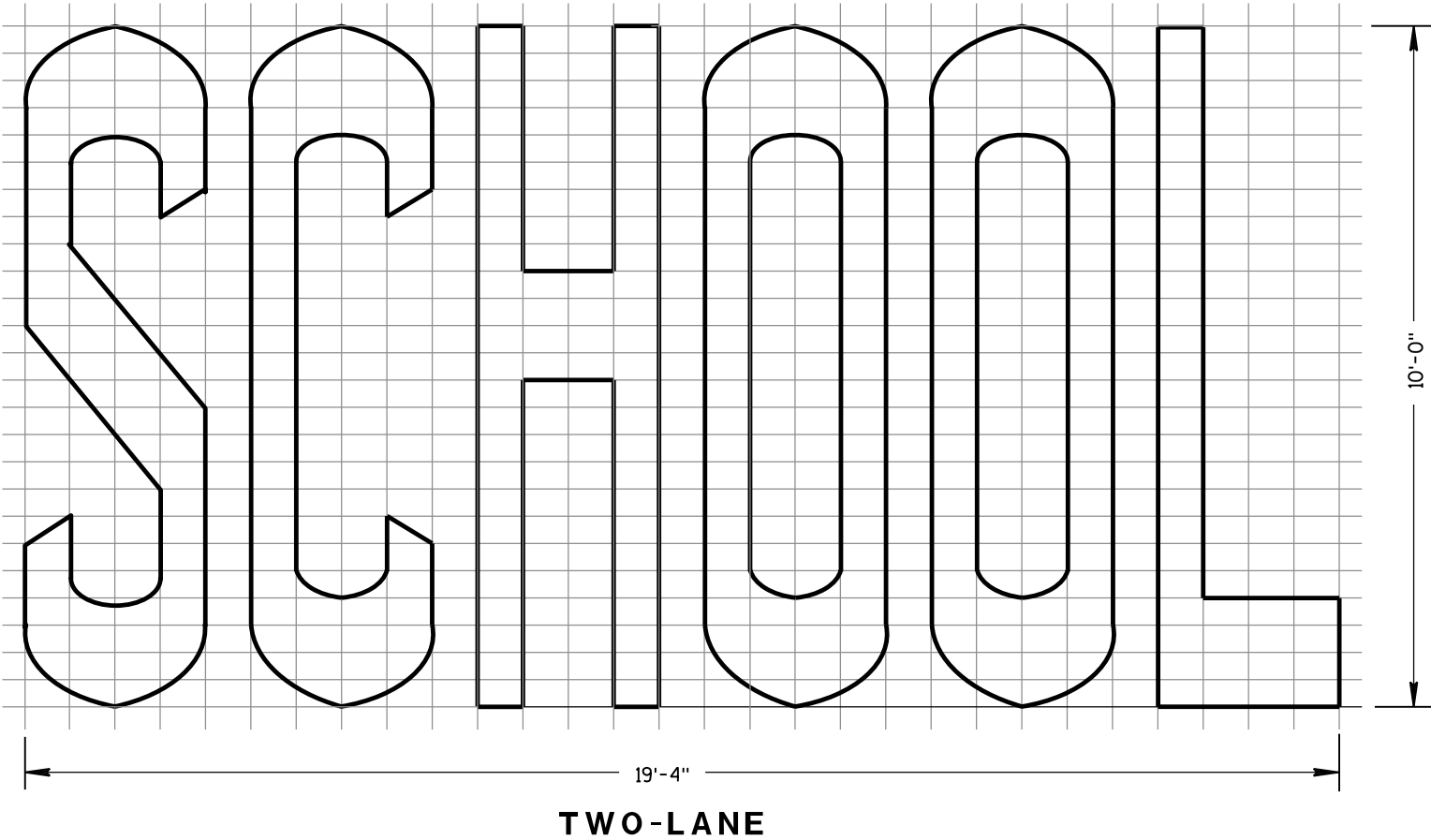
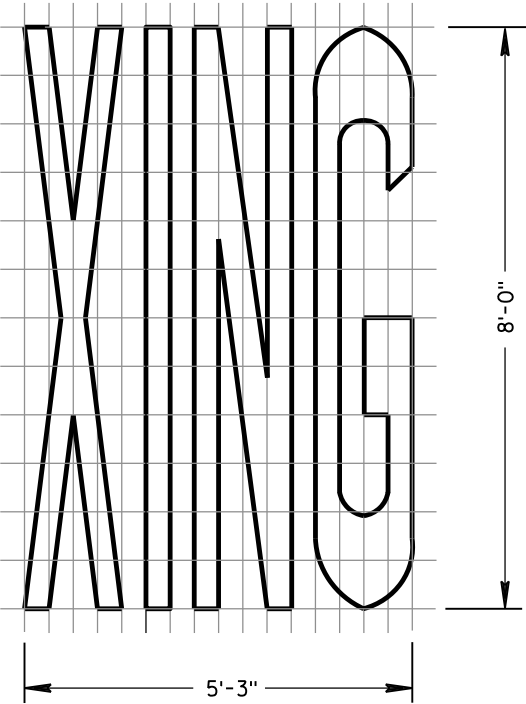
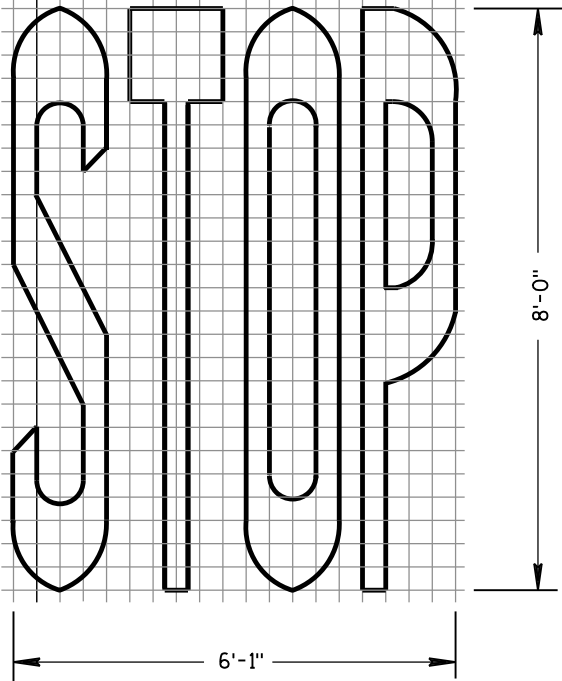
**TRAFFIC CONTROL. ADVANCE
WARNING SIGNS 40 M.P.H.
OR LESS TWO-WAY UNDIVIDED
ROAD OPEN TO TRAFFIC**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

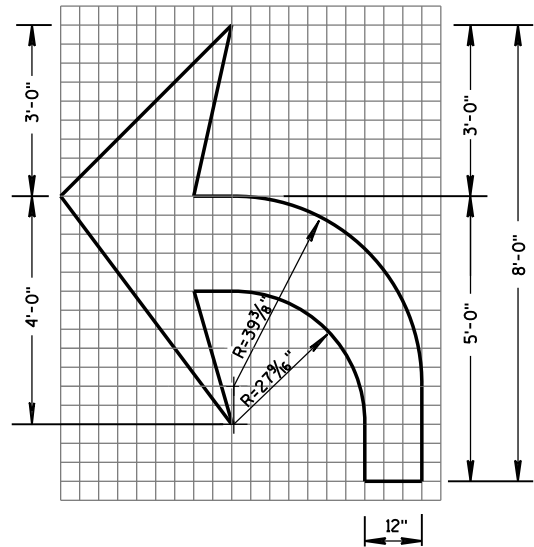
APPROVED
DATE 7/2018 /S/ Andrew Heidtke
WORK ZONE ENGR 185
FHWA

GENERAL NOTES

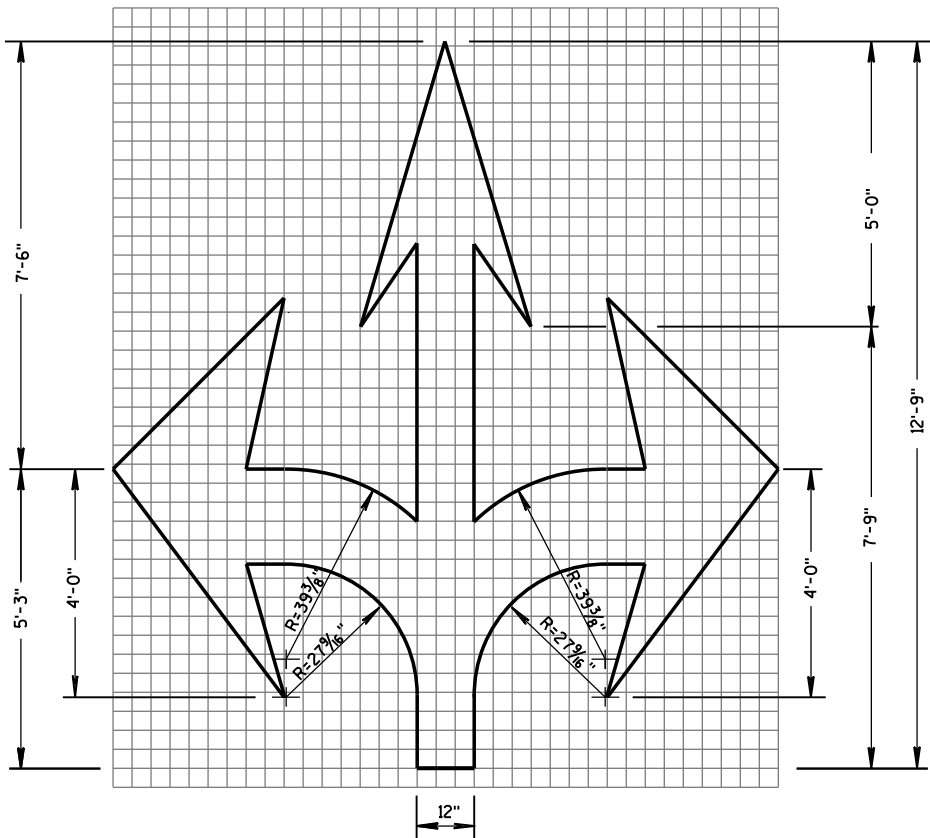
DETAILS OF INSTALLATION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.



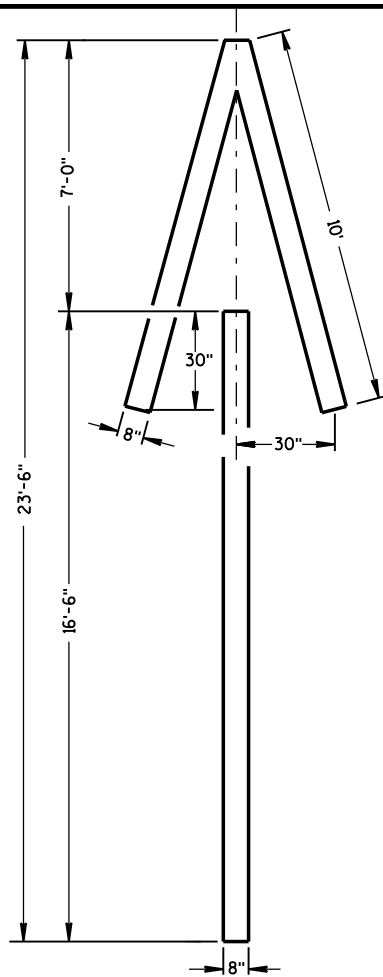
PAVEMENT MARKING WORDS			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
APPROVED			
June 2017	/S/ Matthew R. Rauch		
DATE	STATE SIGNING AND MARK	186	EER
FHWA			



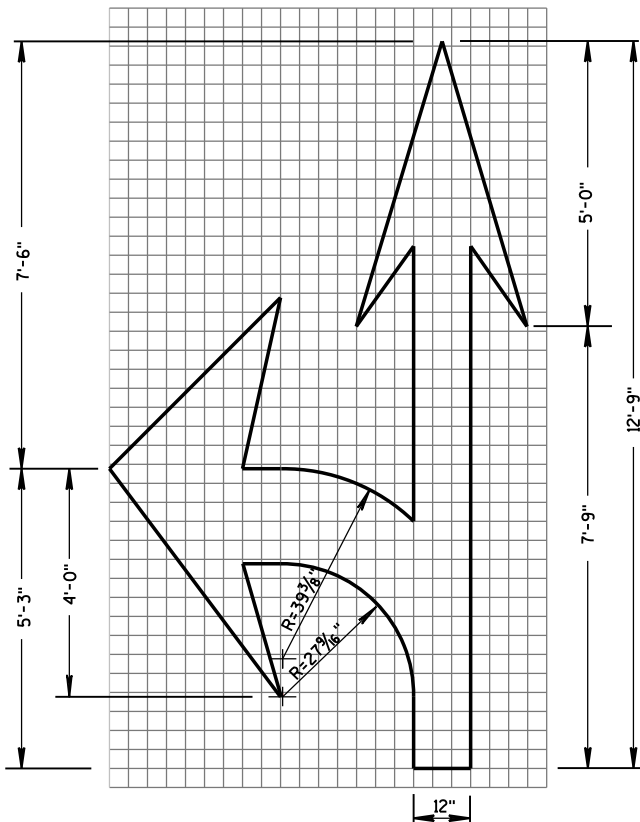
TYPE 2



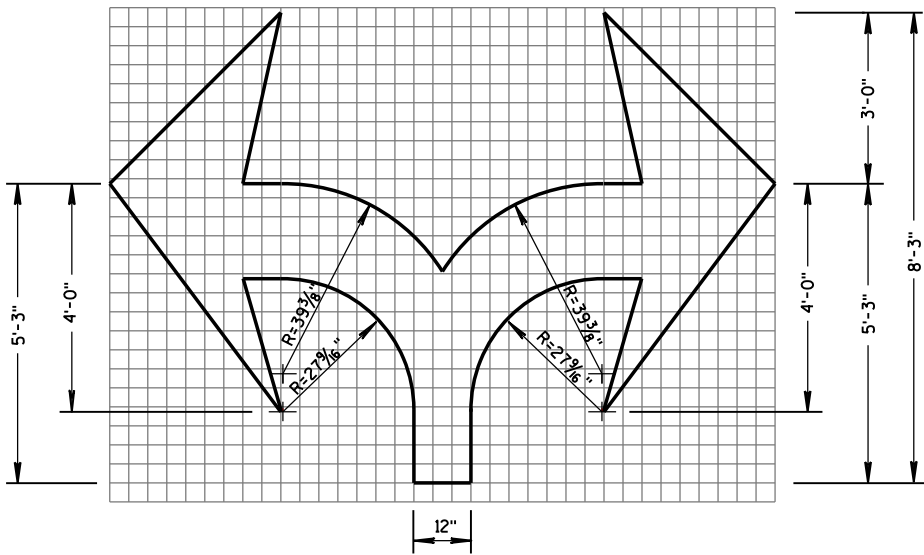
TYPE 6



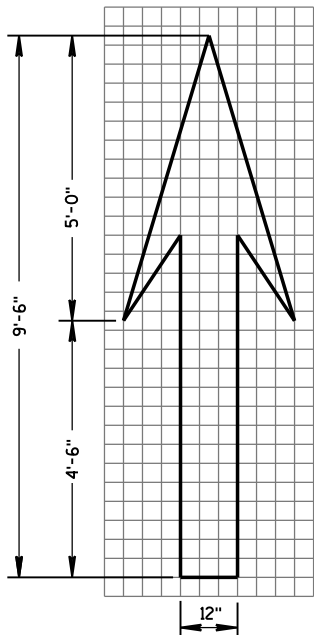
TYPE 4



TYPE 3



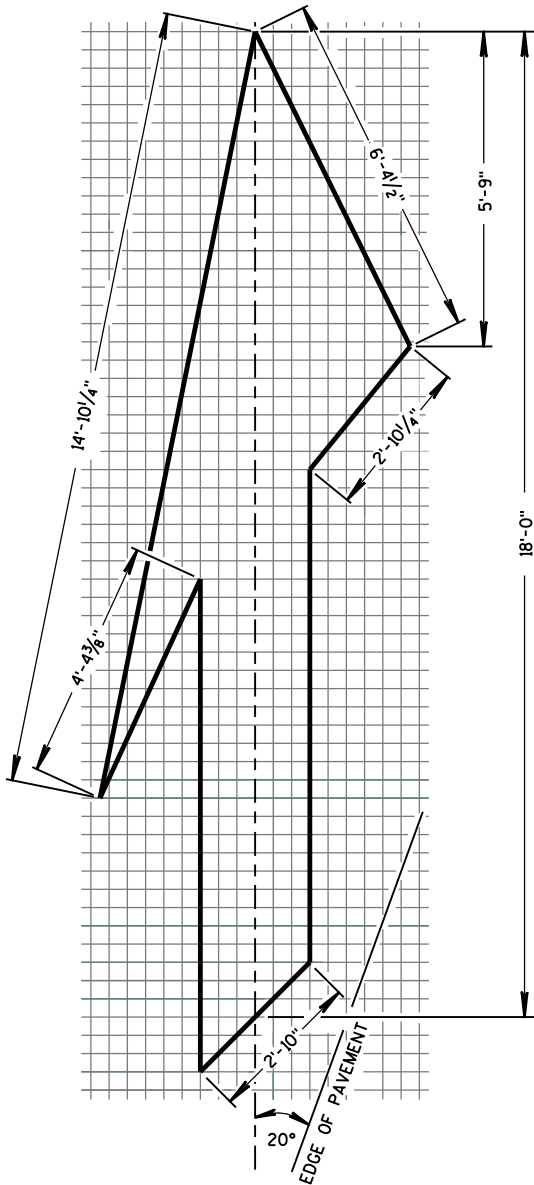
TYPE 7



TYPE 1

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.

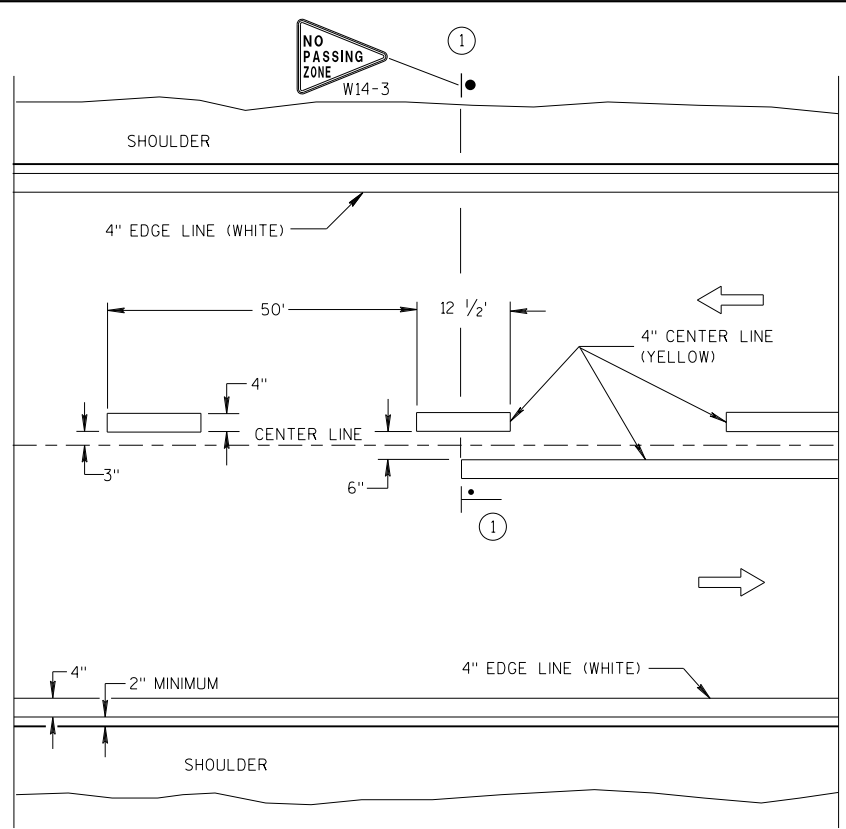


TYPE 5 LANE DROP ARROW

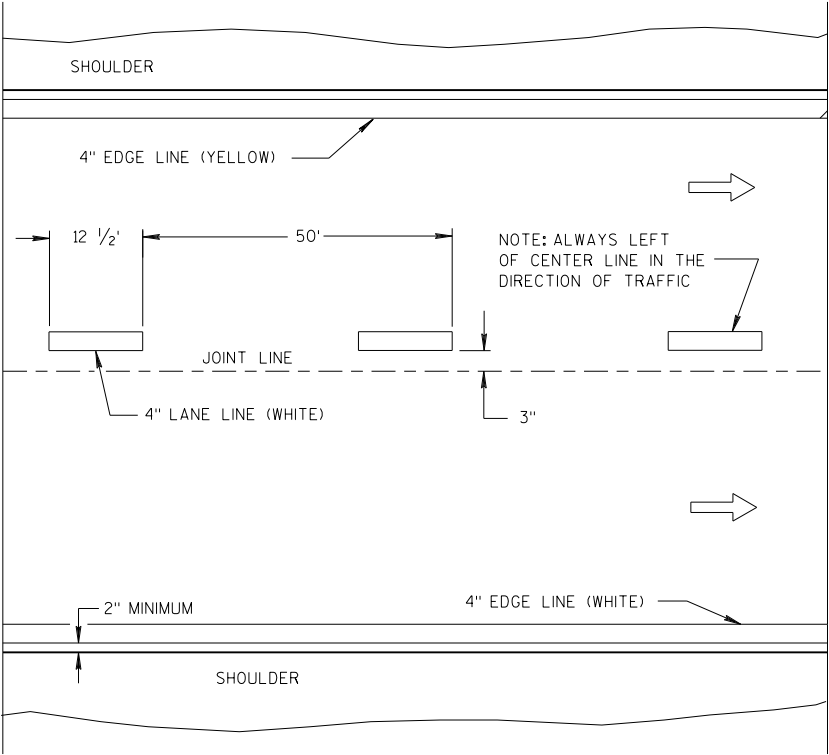
PAVEMENT MARKING ARROWS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2017 /S/ Matthew R. Rauch
DATE STATE SIGNING AND MAR 187
FHWA

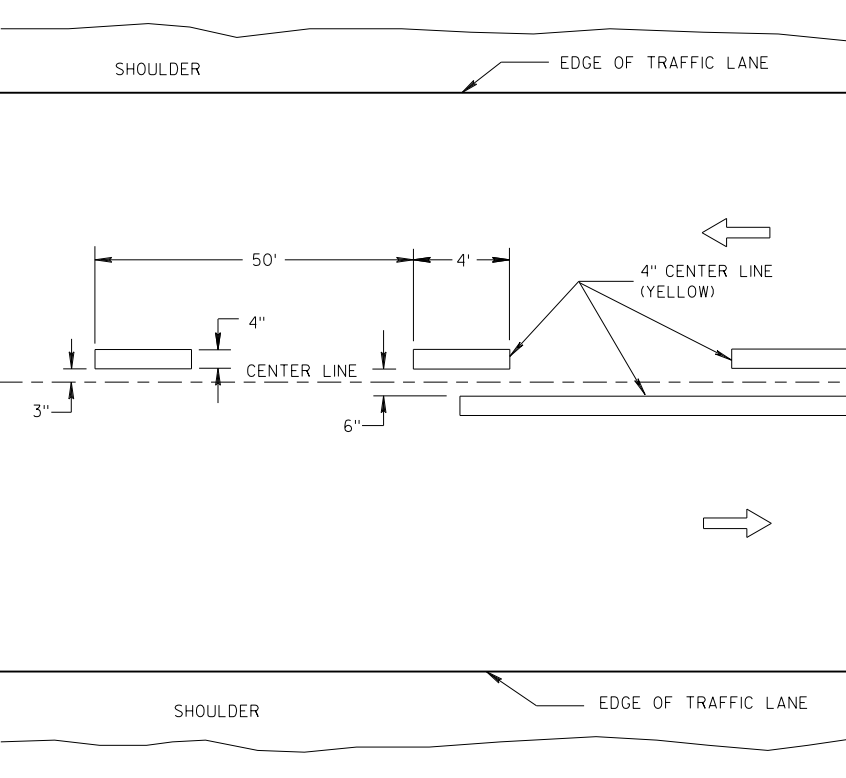


TWO WAY TRAFFIC

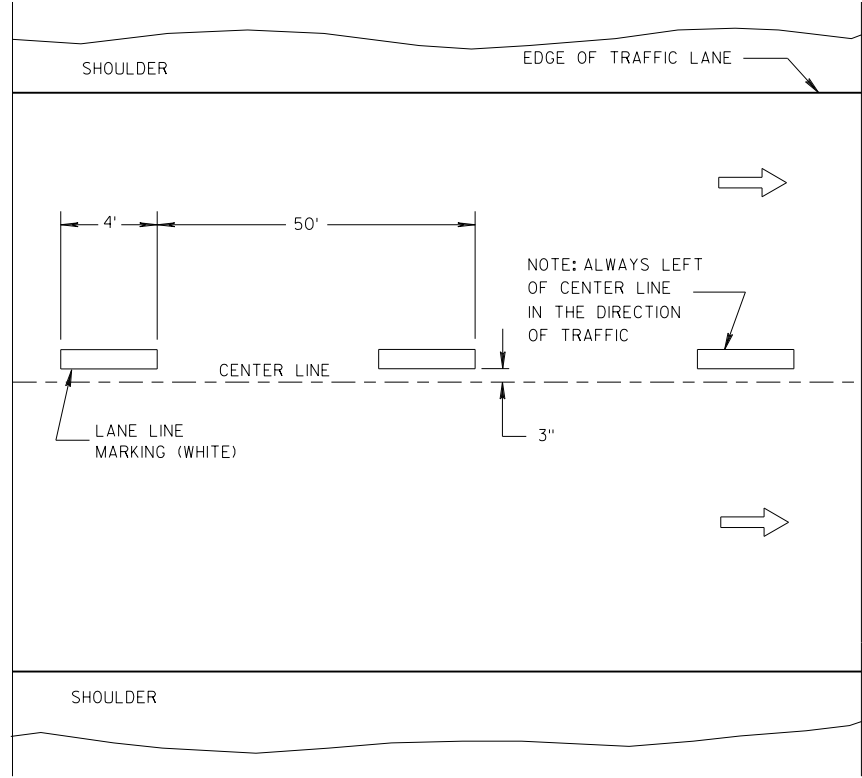


ONE WAY TRAFFIC

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

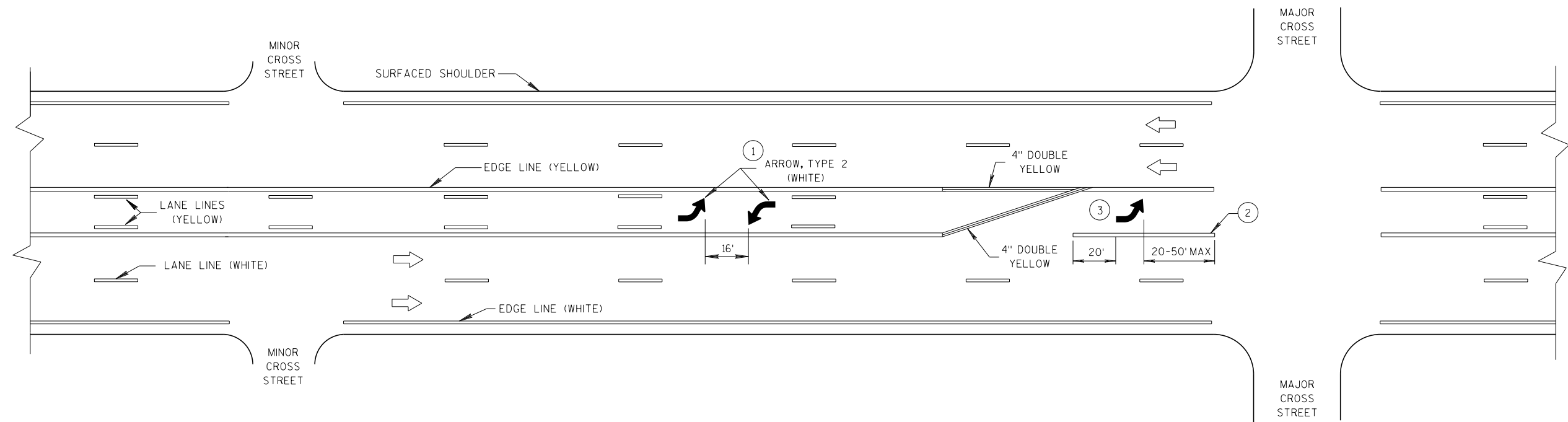
- "T" MARKING
- POST MOUNTED SIGN

LONGITUDINAL MARKING (MAINLINE)			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
APPROVED			
7/2018	/S/ Matthew R. Rauch		
DATE	STATE SIGNING AND MAR 188		
FHWA	INEER		

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

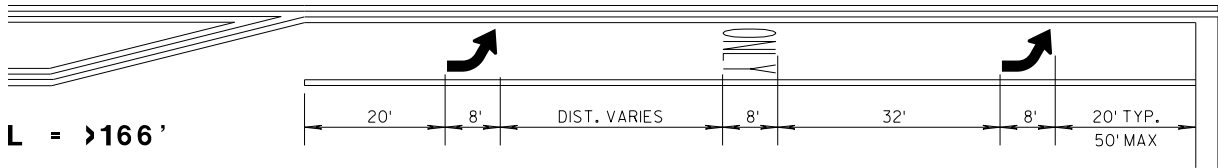
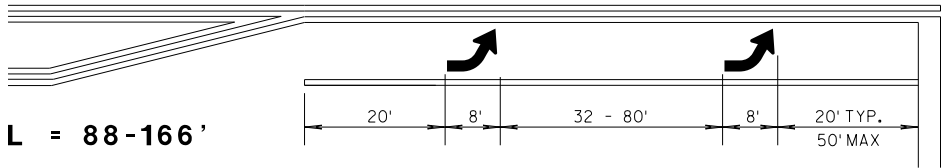
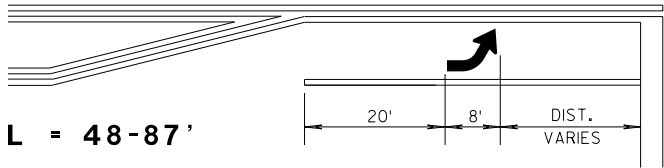
➔ DIRECTION OF TRAFFIC



TWO WAY LEFT TURN LANE

TURN LANE OPTIONS

LENGTH OF TURN BAY (L) OF 0-47' DOES NOT REQUIRE PAVEMENT MARKING ARROWS OR WORDS

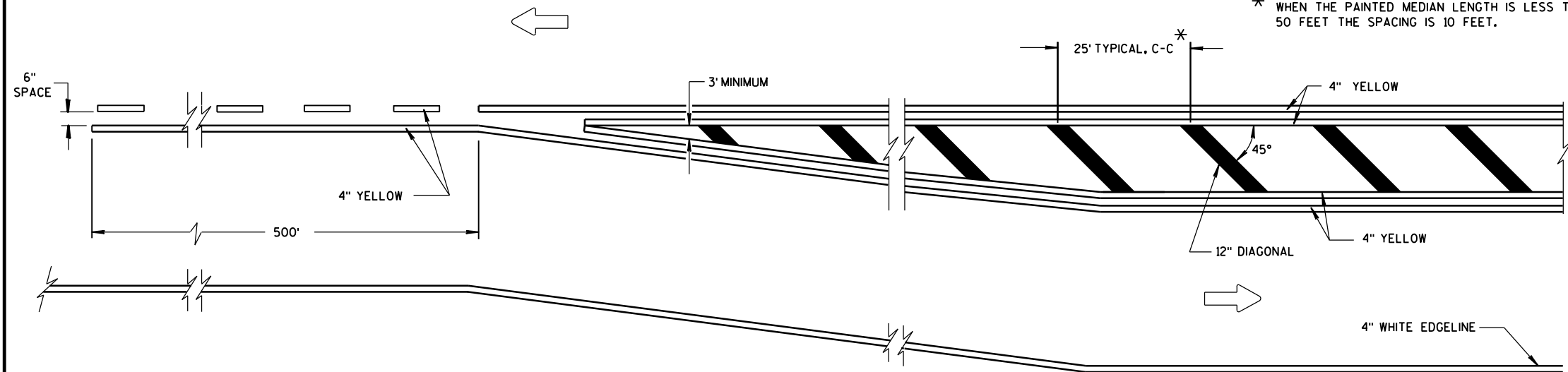


*(SEE TURN LANE OPTIONS FOR PLACEMENT OF PAVEMENT MARKING ARROWS AND WORDS)

GENERAL NOTES

- ① 8" WHITE
 - ② QUANTITY AND LOCATION OF TYPE 3 ARROW ARE THE SAME AS THE TYPE II ARROWS IN THE ADJACENT TURN LANE. FOR TURN LANES WITH A PHYSICAL SEPARATION, THE ARROWS AND ONLY MARKING ARE ELIMINATED.
- ➡ DIRECTION OF TRAFFIC
- L** = LENGTH OF TURN BAY

PAVEMENT MARKING (TURN LANES)
STATE OF WISCONSIN DEPARTMENT OF TRANSPORT 190

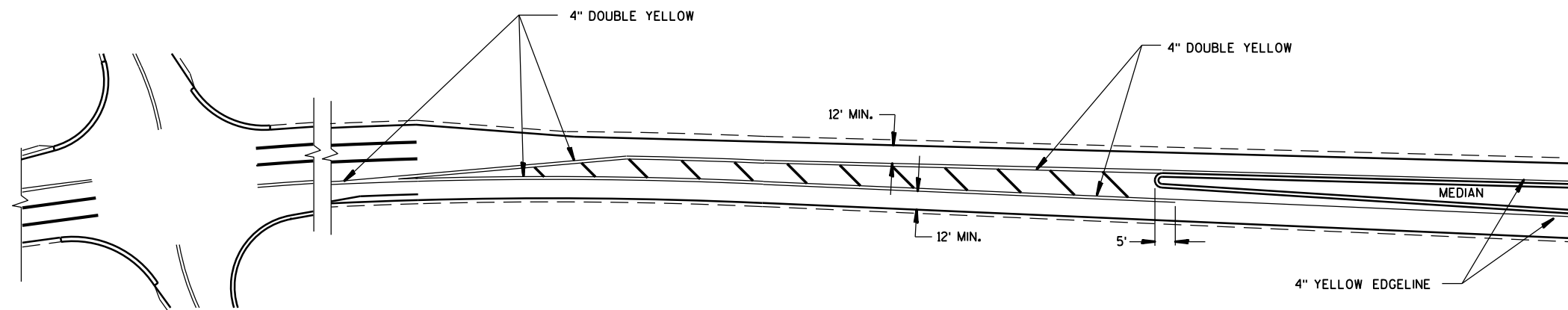


MEDIAN ISLAND DETAIL

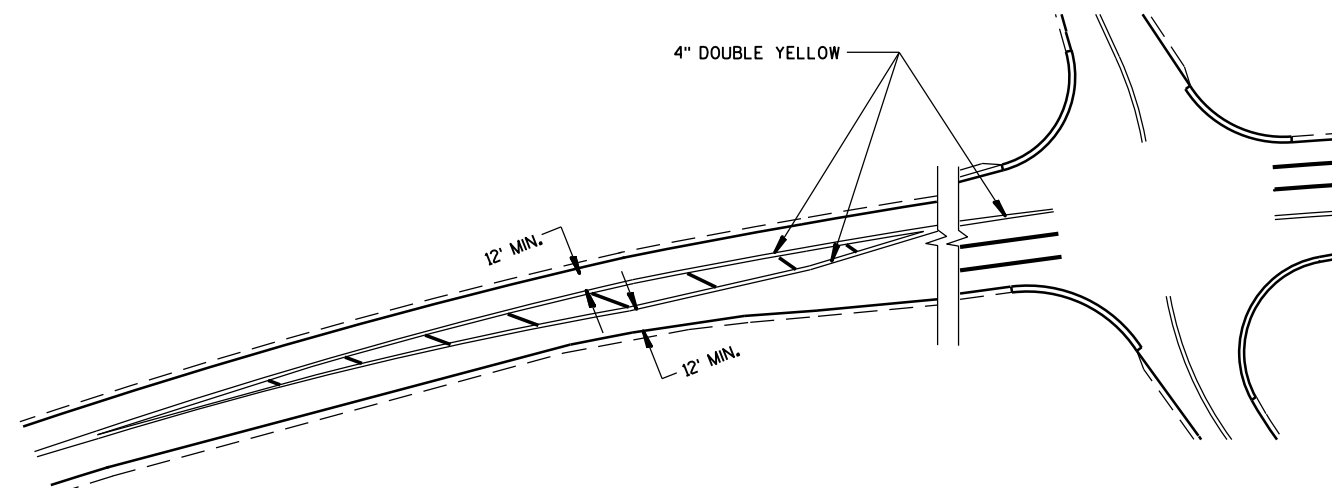
GENERAL NOTE

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

➡ DIRECTION OF TRAVEL



APPROACH MARKINGS FOR OTHER MEDIAN TYPES

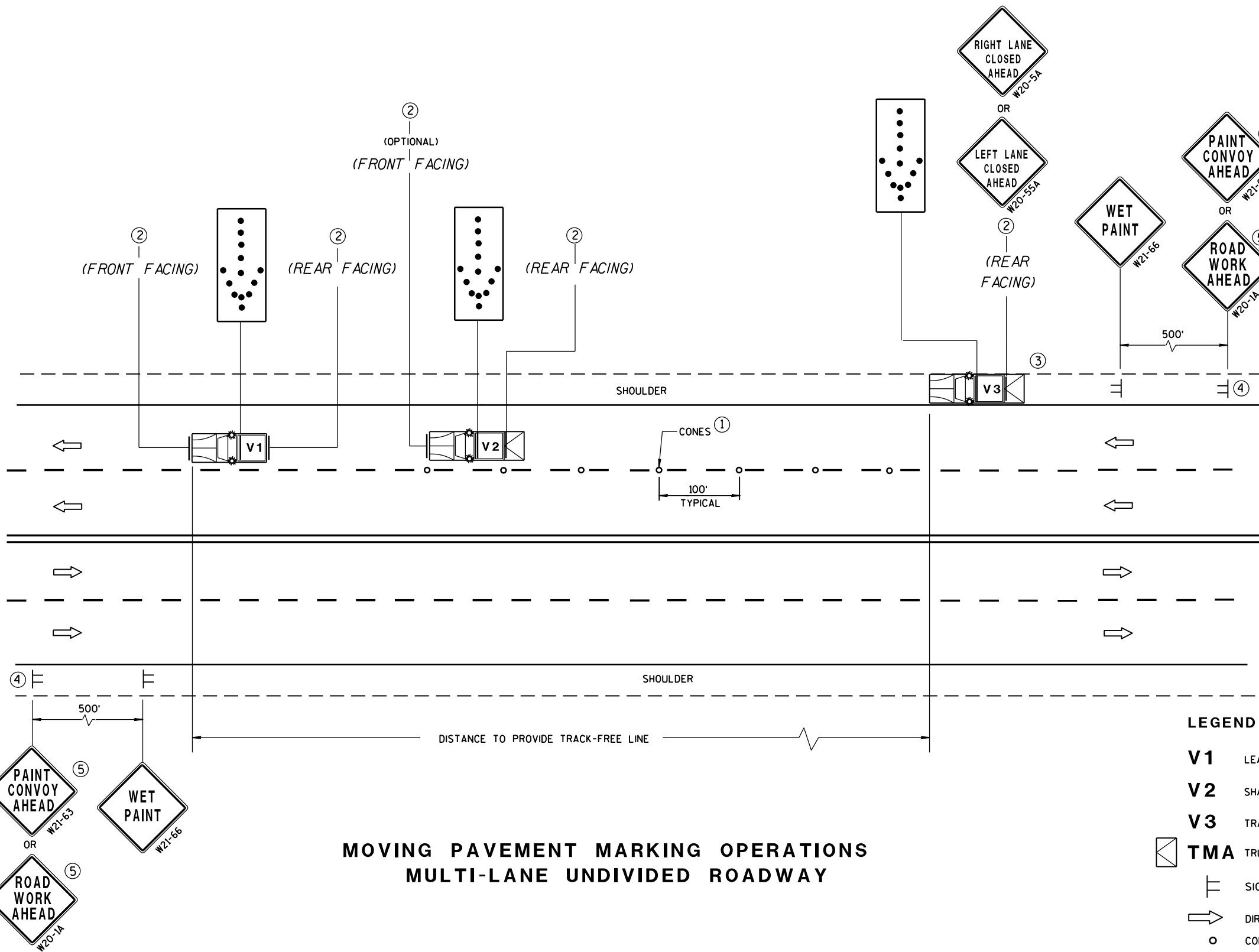


NON APPROACH MARKINGS

MEDIAN ISLAND MARKING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2017 /S/ Matthew Rauch
DATE STATE SIGNING AND MARK 191 ER
FHWA



MOVING PAVEMENT MARKING OPERATIONS
MULTI-LANE UNDIVIDED ROADWAY

GENERAL NOTES

ALL VEHICLES SHALL BE EQUIPPED WITH TWO 360 DEGREE HIGH INTENSITY YELLOW FLASHING LIGHTS OR STROBE LIGHTS AND OPERATED WITH HEADLIGHTS TURNED ON.

ALL VEHICLES SHALL BE EQUIPPED WITH REAR FACING TYPE B OR C FLASHING ARROW PANEL. SIGNS PLACED ON VEHICLES MUST NOT OBSCURE THE ARROW PANEL.

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

IF SPEED LIMIT IS 40 MPH OR LESS STATIONARY SIGNS MAY BE OMITTED IF CONES ARE USED.

ALTERNATE SIGN MESSAGES, SUCH AS "PAINT CREW AHEAD" OR "ROAD PAINTING AHEAD" MAY BE USED.

DISTANCE BETWEEN VEHICLES MAY VARY ACCORDING TO TERRAIN, SIGHT DISTANCE, PAINT DRYING TIME, AND OTHER FACTORS. WHENEVER ADEQUATE STOPPING SIGHT DISTANCE EXISTS TO THE REAR, SHADOW VEHICLES SHOULD MAINTAIN THE MINIMUM DISTANCE FROM THE WORK VEHICLE AND PROCEED AT THE SAME SPEED AS THE WORK VEHICLE. SHADOW VEHICLES SHOULD SLOW DOWN IN ADVANCE OF VERTICAL OR HORIZONTAL CURVES THAT RESTRICT SIGHT DISTANCE.

WHEN WORK ACTIVITY BLOCKS THE LEFT LANE, REVERSE TRAFFIC CONTROL.

WHEN A RAMP INTERSECTS THE FACILITY ON WHICH THE WORK IS BEING PERFORMED, PROVIDE ADDITIONAL TRAFFIC CONTROLS AS SPECIFIED IN THE CONTRACT OR AS APPROVED BY THE ENGINEER.

USE AN ATTENUATOR ON THE REARMOST VEHICLE THAT BLOCKS ALL OR PART OF THE TRAFFIC LANE.

FOR EDGE LINE MARKING OR IF CONES ARE NOT USED, POSITION THE REARMOST SHADOW VEHICLE ON THE SHOULDER AS SHOWN IN THE MUTCD IF THE SHOULDER HAS ADEQUATE WIDTH.

WHEN NO WORK ACTIVITY IS TAKING PLACE, REMOVE OR TURN THE STATIONARY WARNING SIGNS AWAY FROM TRAFFIC.

THIS DRAWING SHALL BE USED FOR CENTERLINE OR EDGE LINE OR LANELINE MARKING FOR MULTILANE UNDIVIDED ROADWAYS.

- ① CONES MAY BE OMITTED ON PAINTED LINE IF APPROVED BY THE ENGINEER. CONSIDER PAVEMENT MARKING DRY OR CURE TIMES AND TRAFFIC VOLUME.
- ② USE STANDARD SIGN W21-64 WITH APPROPRIATE ARROW.
 OR 
- ③ OPTIONAL TRUCK-MOUNTED ATTENUATOR.
- ④ SIGNS SHALL BE REPEATED APPROXIMATELY EVERY THREE MILES.
- ⑤ IF CONSTRUCTION WORK ZONE SIGNS ARE IN PLACE, W20-1 OR W21-63 ARE NOT REQUIRED.

LEGEND

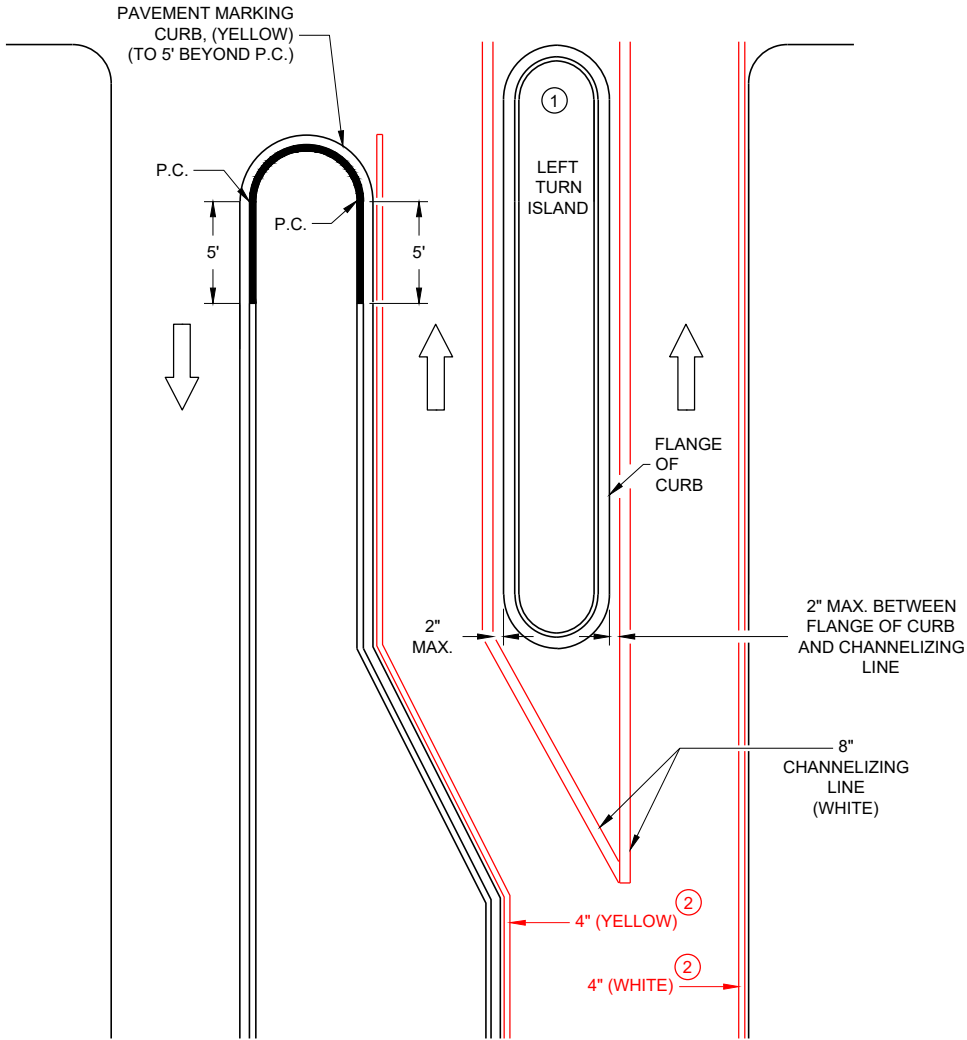
- V1 LEAD VEHICLE
- V2 SHADOW VEHICLE
- V3 TRAIL VEHICLE WITH TMA
- TMA TRUCK-MOUNTED ATTENUATOR
-  SIGN ON TEMPORARY SUPPORT
-  DIRECTION OF TRAFFIC
-  CONES
-  FLASHING ARROW PANEL (MERGE)

MOVING PAVEMENT MARKING
OPERATION
MULTI-LANE UNDIVIDED ROADWAY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sept., 2017 /S/ Andrew Heidtke
DATE WORK ZONE ENGIN 192
FHWA

REQUIREMENTS FOR EDGE LINES		
POSTED SPEED	IS THERE CONTINUOUS LIGHTING?	
	YES	NO
≤ 30 MPH	NO	OPTIONAL
35 OR 40 MPH	OPTIONAL	RECOMMENDED
≥ 45 MPH	RECOMMENDED	REQUIRED



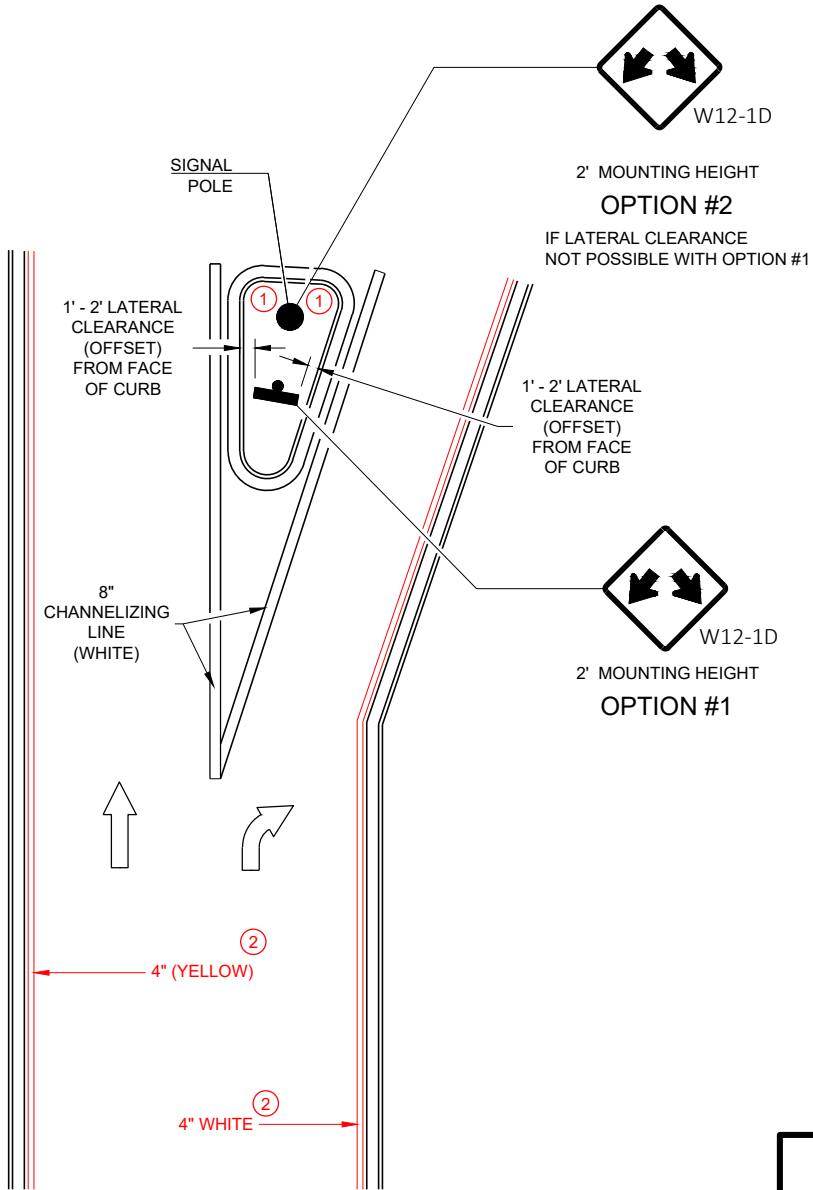
LEFT TURN & MEDIAN ISLAND

GENERAL NOTES

APPLIES TO ISLANDS AT LEFT TURNS AT ONE WAY ROADWAYS AS WELL.
SEE MISCELLANEOUS QUANTITIES FOR SIGN SIZE.

- ① MARK CURB NOSES YELLOW.
- ② MARK ACCORDING TO TABLE.

DIRECTION OF TRAVEL



RIGHT TURN ISLAND

**DOUBLE ARROW
WARNING SIGN PLACEMENT**

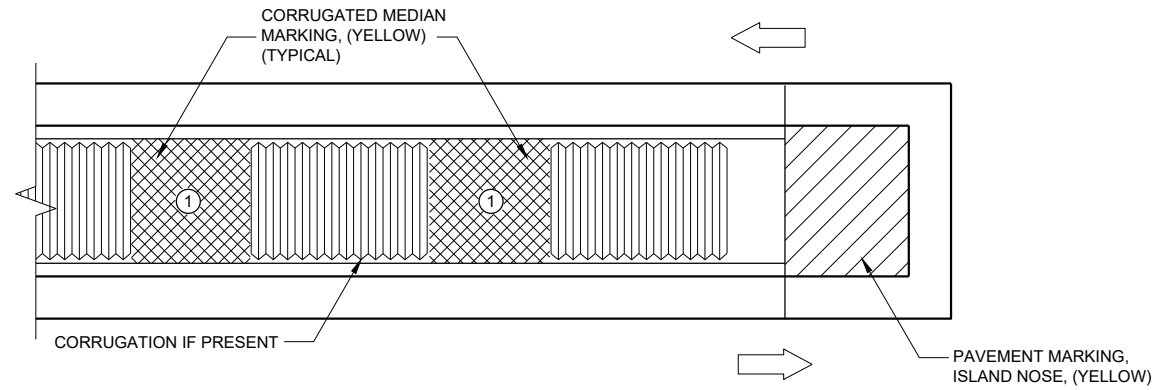
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
7/2018
DATE

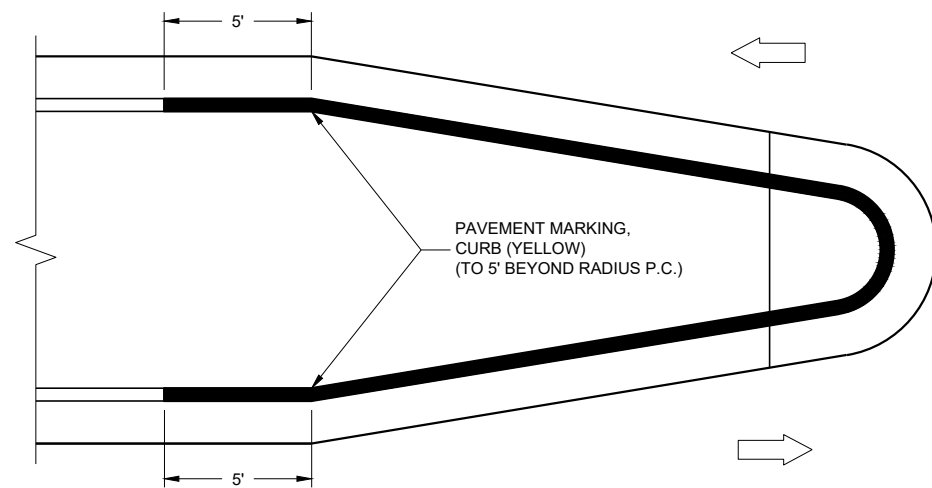
/S/ Matthew R. Rauch
STATE SIGNING AND MAP ENGINEER

193

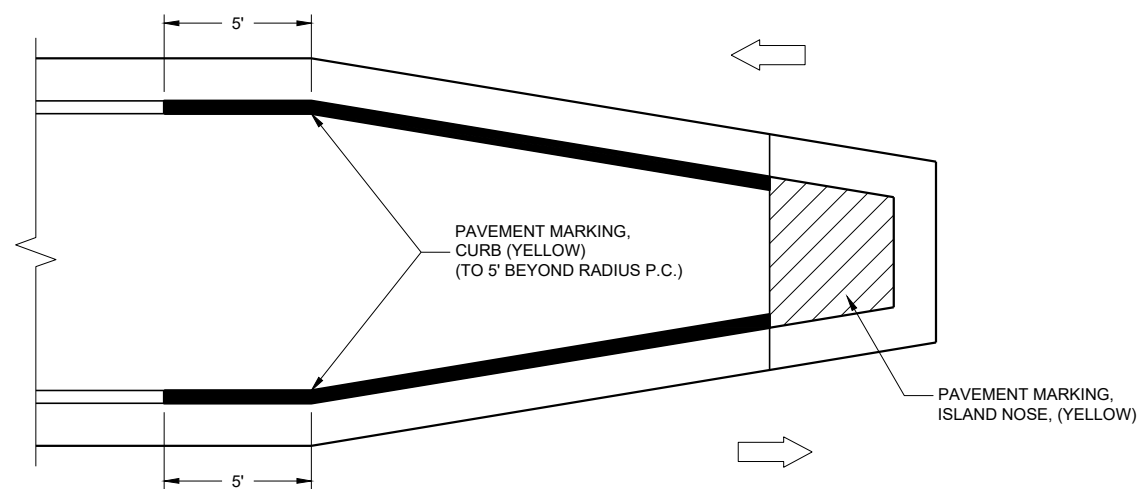
FHWA



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

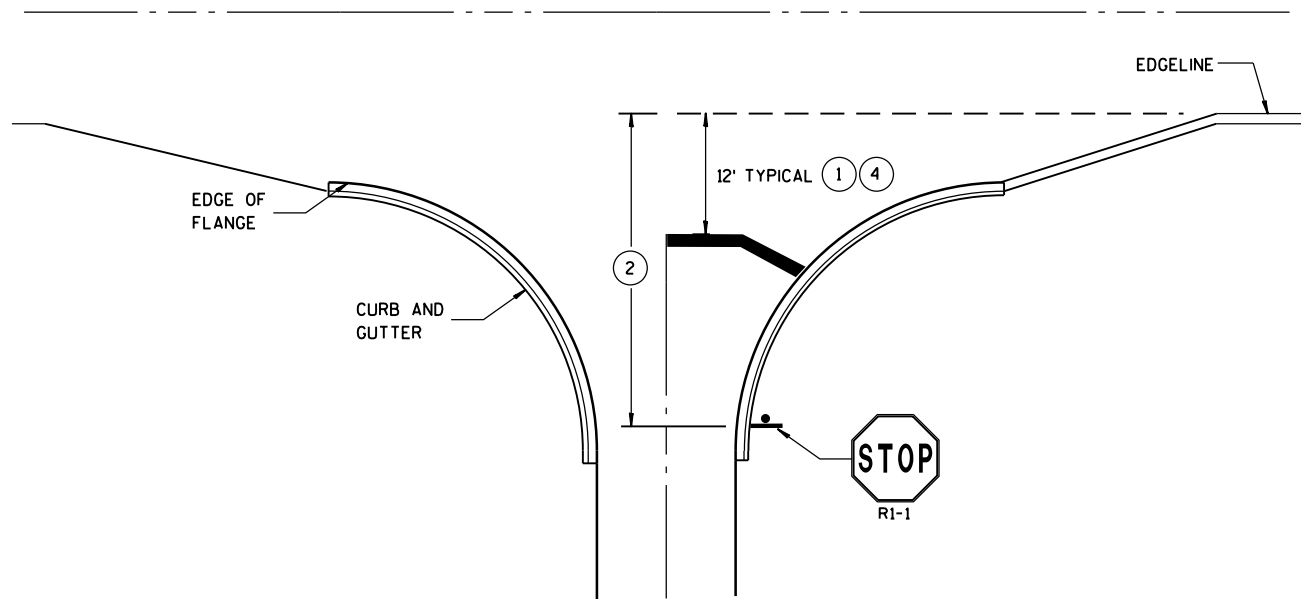
WHEN CONCRETE CORRUGATED MEDIAN IS CONSTRUCTED TO SEPARATE TRAFFIC OPERATING IN THE OPPOSING DIRECTION, YELLOW PAVEMENT MARKING SHALL BE APPLIED TO THE FLAT PORTION OF THE CONCRETE CORRUGATED MEDIAN. THE ITEM OF PAVEMENT MARKING, CONCRETE CORRUGATED MEDIAN, WILL BE MEASURED IN PLACE AND ACCEPTED IN ACCORDANCE 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

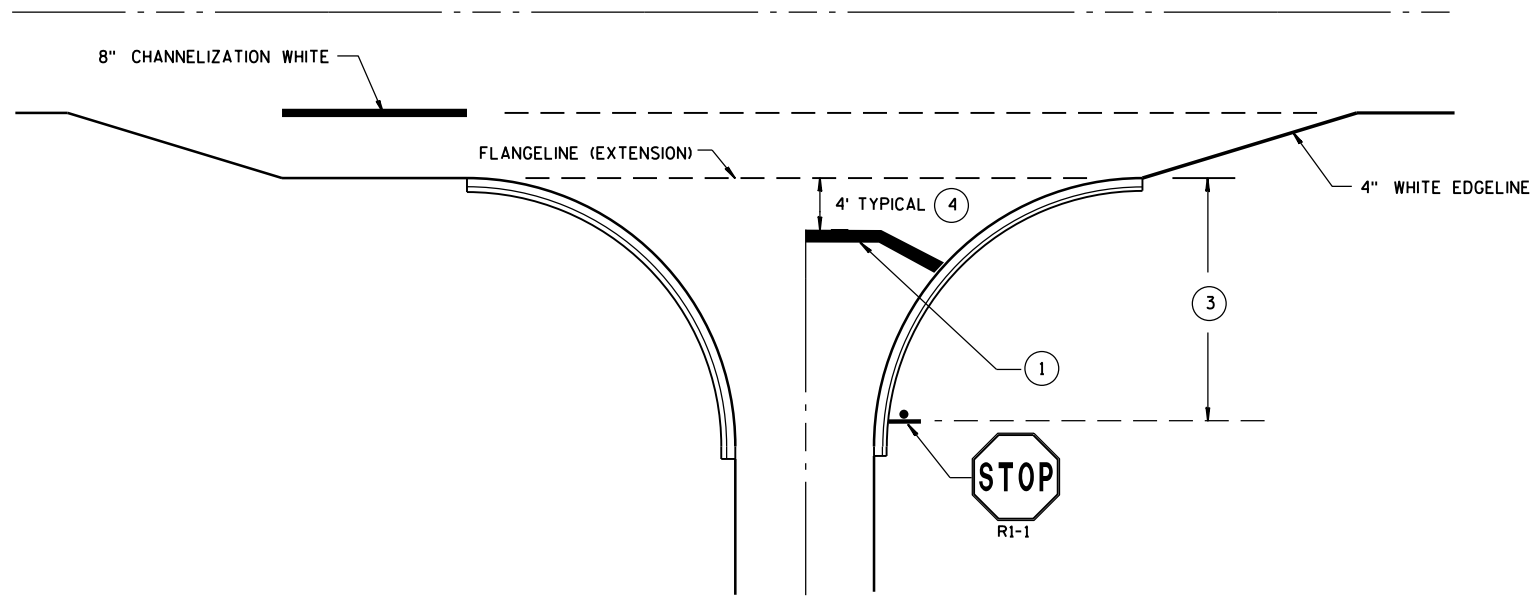
PAVEMENT MARKINGS
(ISLANDS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
7/2018 /S/ Matthew R. Rauch
DATE STATE SIGNING AND MAP ENGINEER 194
FHWA



TYPICAL STOP LINE PAVEMENT MARKING
WITH CURB AND GUTTER

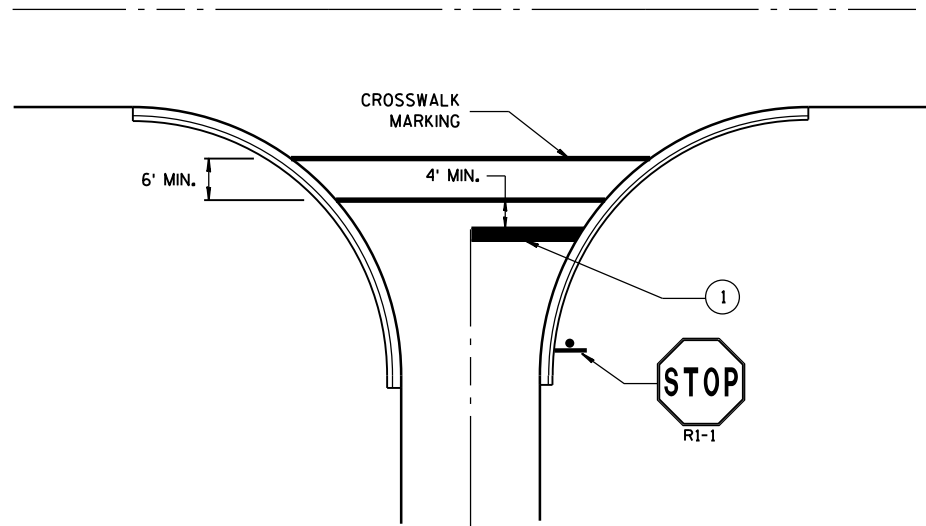


TYPICAL STOP LINE PAVEMENT MARKING
FOR SIDEROADS WITH RIGHT TURN LANE

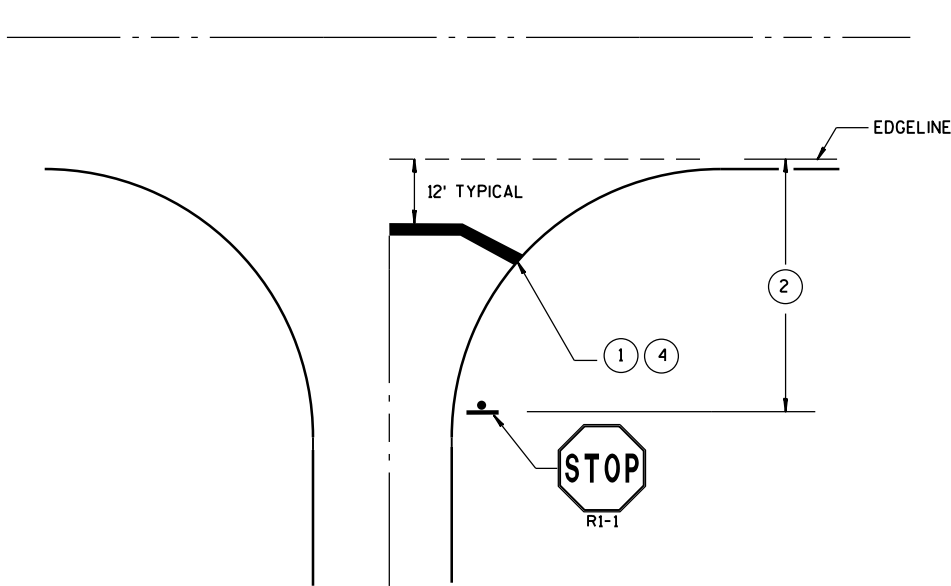
GENERAL NOTES

STOP SIGN SHALL BE PLACED A MINIMUM OF 6 FEET TO A MAXIMUM OF 50 FEET FROM THE EDGE LINE LOCATION.

- 1 18-INCH STOP LINES MAY BE DELETED OR ADDED BY THE PROJECT ENGINEER BASED ON VISIBILITY AND SIGHT LINES.
- 2 IF STOP SIGN IS LESS THAN OR EQUAL TO 40 FEET FROM THE EDGE LINE THAN NO STOP LINE IS REQUIRED.
- 3 IF STOP SIGN IS LESS THAN OR EQUAL TO 30 FEET FROM THE FLANGELINE EXTENSION THAN NO STOP LINE IS REQUIRED.
- 4 MOVE CLOSER TO EDGE OF TRAVEL LANE AS NEEDED FOR VISIBILITY AND SIGHT LINES. (NO CLOSER THAN 4 FEET).

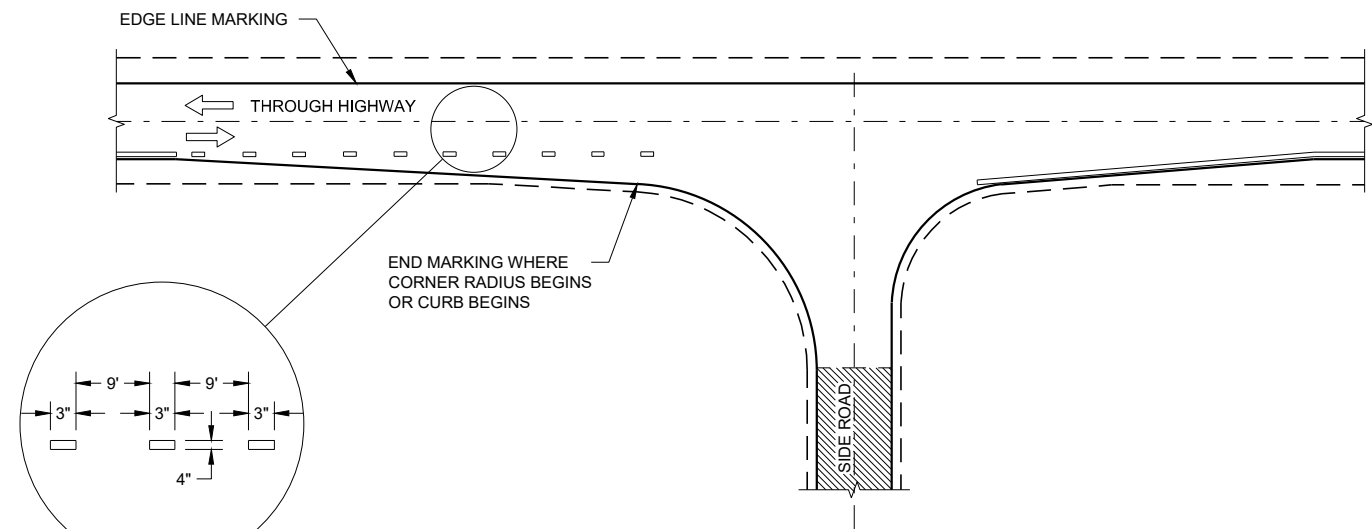


TYPICAL STOP LINE PAVEMENT MARKING
FOR SIDEROADS WITH CROSSWALK MARKING

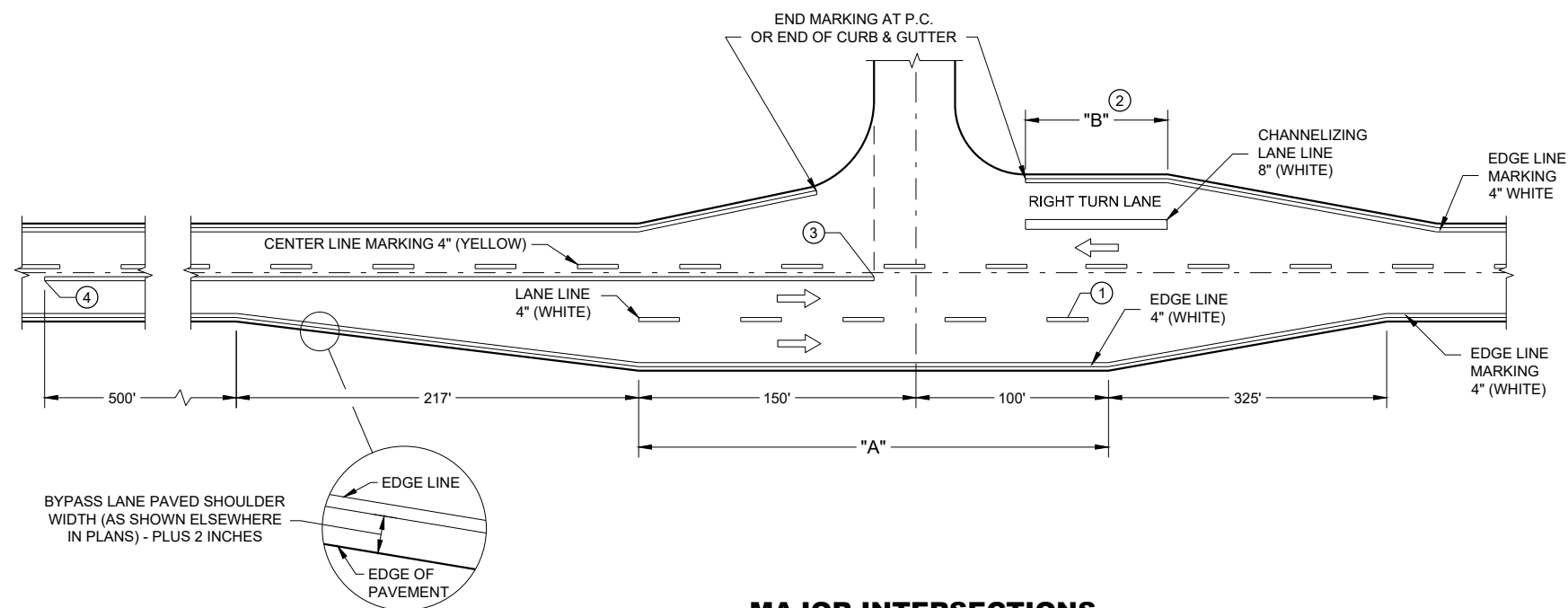


TYPICAL STOP LINE PAVEMENT MARKING
WITHOUT CURB AND GUTTER

STOP LINE AND CROSSWALK PAVEMENT MARKING			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
APPROVED			
DATE	Sept., 2017	/S/ Matthew R. Rauch	VEER
FHWA	STATE SIGNING AND MAR 195		



MINOR INTERSECTION



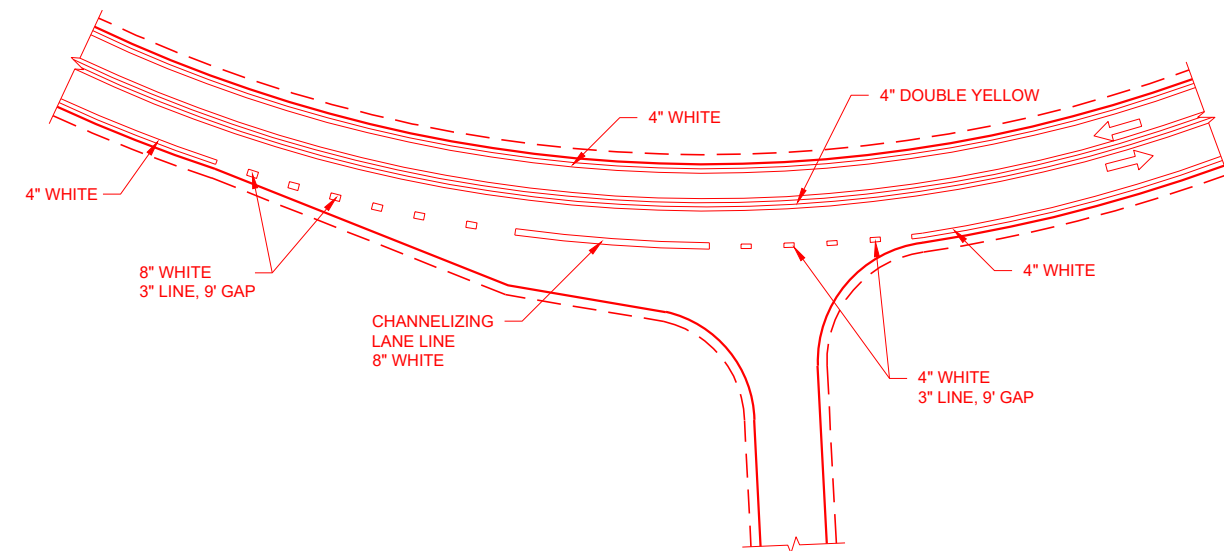
MAJOR INTERSECTIONS
(INTERSECTION WITH FULL RIGHT TURN LANE OR BYPASS LANE)

GENERAL NOTES

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



INTERSECTION ON OUTSIDE OF CURVE

PAVEMENT MARKING
(INTERSECTIONS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

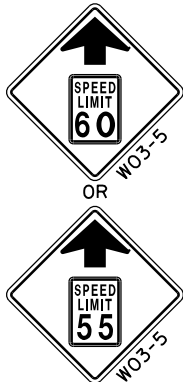
LEGEND

- SIGN ON PERMANENT SUPPORT
- TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
- TRAFFIC CONTROL DRUM
- FLASHING ARROW BOARD
- REMOVING PAVEMENT MARKING
- CONCRETE BARRIER TEMPORARY PRECAST
- DIRECTION OF TRAFFIC
- WORK AREA

L, TAPER LENGTH (MPH)						
SPEED (MPH)	W, LATERAL OFFSET (FT)					
	10	11	12	13	14	15
45	450	495	540	585	630	675
50	500	550	600	650	700	750
55	550	605	660	715	770	825
60	600	660	720	780	840	900
65	650	715	780	845	910	975
70	700	770	840	910	980	1050



INSTALL ON EACH APPROACH AT THE CLOSEST INTERSECTION WITH A STATE OR COUNTY TRUNK HIGHWAY, OR AS DIRECTED BY THE ENGINEER. WIDTH ON SIGN TO BE APPROX. 1 FOOT LESS THAN AVAILABLE WIDTH (OMIT IF AVAILABLE WIDTH IS MORE THAN 16 FEET).



LOCATED 2600 FEET IN ADVANCE OF R2-1 SIGN AND 500 FEET BEYOND THE "ROAD WORK 1 MILE" SIGN.



OR



R2-1 48"x60" (BLACK AND WHITE) LOCATED 500 FEET BEYOND W20-5G SIGN.

IF THE REGULATORY SPEED HAS BEEN REDUCED, A SPEED LIMIT SIGN SHALL BE LOCATED 1500 FEET BEYOND THE END OF THE ACCELERATION LANE OF EACH ENTRANCE RAMP. THERE SHOULD BE A SPEED LIMIT SIGN INCORPORATED A MINIMUM OF EVERY 2 OR 3 MILES.

* INCLUDE RESUME SPEED LIMIT SIGN A MINIMUM OF 200 FEET (500 FEET DESIRABLE) AFTER END ROAD WORK SIGNS.

GENERAL NOTES

THIS LANE CLOSURE IS TYPICAL FOR CLOSING RIGHT LANE - REVERSE FOR CLOSING LEFT LANE.

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 SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND TO PROVIDE A MINIMUM OF 200 FEET (500 FEET DESIRABLE) CLEARANCE TO EXISTING SIGNS.

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED.

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

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

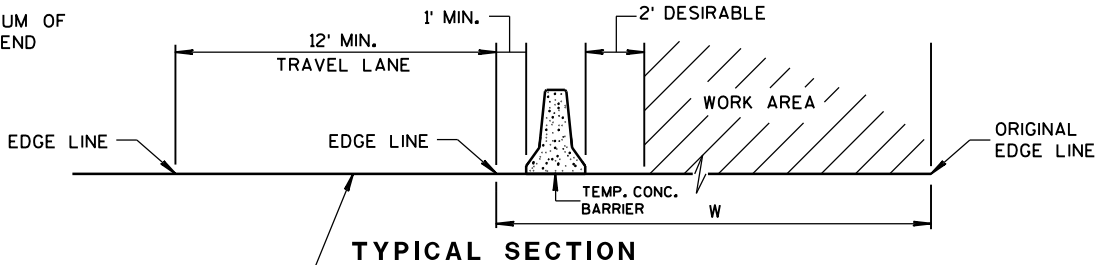
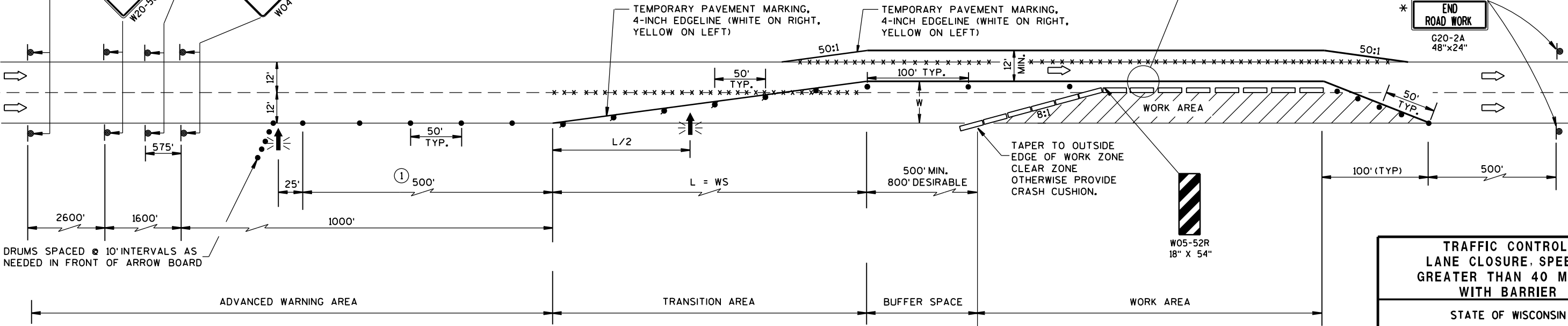
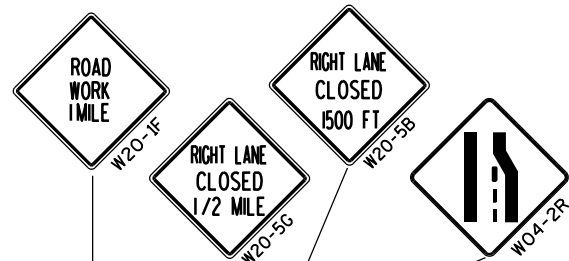
1 CONSIDER ROADWAY GEOMETRICS WHEN LOCATING SIGNS AND ARROW BOARD SO THE DRIVER HAS A CLEAR VIEW OF THE ARROW BOARD AND LANE CLOSURE DRUMS FOR A MINIMUM 1500 FEET IN FRONT OF DRUM TAPER.

FOR A LANE CLOSURE THAT IS IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS, THE ADVANCED WARNING SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS.

REMOVE PAVEMENT MARKINGS IF LANE CLOSURE IS TO BE IN PLACE FOR 4 OR MORE CONTINUOUS DAYS AND NIGHTS.

IF THE HORIZONTAL ALIGNMENT IS SUCH THAT A CURVE MAY REQUIRE ADDITIONAL DELINEATION, THE DEVICE SPACING MAY BE DECREASED TO 50 FEET.

ADJUSTMENTS IN BUFFER SPACE NEED TO BE INCORPORATED WHEN THE LANE CLOSURE OCCURS NEAR AN INTERCHANGE EXIT OR ENTRANCE RAMP OR INTERSECTION. THE LANE CLOSURE MUST TAKE PLACE FAR ENOUGH IN ADVANCE OF AN EXIT OR ENTRANCE RAMP TO STILL ALLOW FOR ADEQUATE BUFFER SPACE. THE MINIMUM LENGTH OF THE BUFFER SPACE BEFORE AN EXIT RAMP SHOULD BE 1/2 THE LENGTH OF THE TRANSITION AREA. THE ENTRANCE RAMP SHOULD BE FOLLOWED BY THE ORIGINAL BUFFER SPACE LENGTH OF 800 FEET DESIRABLE PRIOR TO ANOTHER TRAFFIC CONTROL CHANGE SUCH AS A CROSSOVER MANEUVER.



TRAFFIC CONTROL, LANE CLOSURE, SPEEDS GREATER THAN 40 M.P.H. WITH BARRIER	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED Sept., 2016 DATE	/S/ Peter Amakobe Atepe STATEWIDE WORK ZOI 197 SAFETY ENGIN IC
FHWA	

LEGEND

- TYPE III BARRICADE WITH ATTACHED SIGN
- SIGN ON PERMENENT SUPPORT
- TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
- TRAFFIC CONTROL DRUM
- FLASHING ARROW BOARD
- TYPE "A" WARNING LIGHT (FLASHING)
- REMOVING PAVEMENT MARKING
- DIRECTION OF TRAFFIC
- WORK AREA

GENERAL NOTES

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

THE SPACING BETWEEN SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND TO PROVIDE A MINIMUM OF 200 FEET, (500 FEET DESIREABLE) DISTANCE TO EXISTING SIGNS.

THIS LANE CLOSURE IS TYPICAL FOR CLOSING RIGHT LANE - REVERSE FOR CLOSING LEFT LANE.

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED.

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

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. NO WARNING LIGHTS SHALL BE WORKING ON "COVERED" OR "DOWNED" SIGNS.

CONSIDER GEOMETRICS WHEN LOCATING SIGNS AND ARROW BOARD SO THE DRIVER HAS A CLEAR VIEW OF THE ARROW BOARD AND LANE CLOSURE DRUMS FOR A MINIMUM 1500 FEET IN FRONT OF DRUMS.

FOR A LANE CLOSURE THAT IS IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS, THE ADVANCED WARNING SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS.

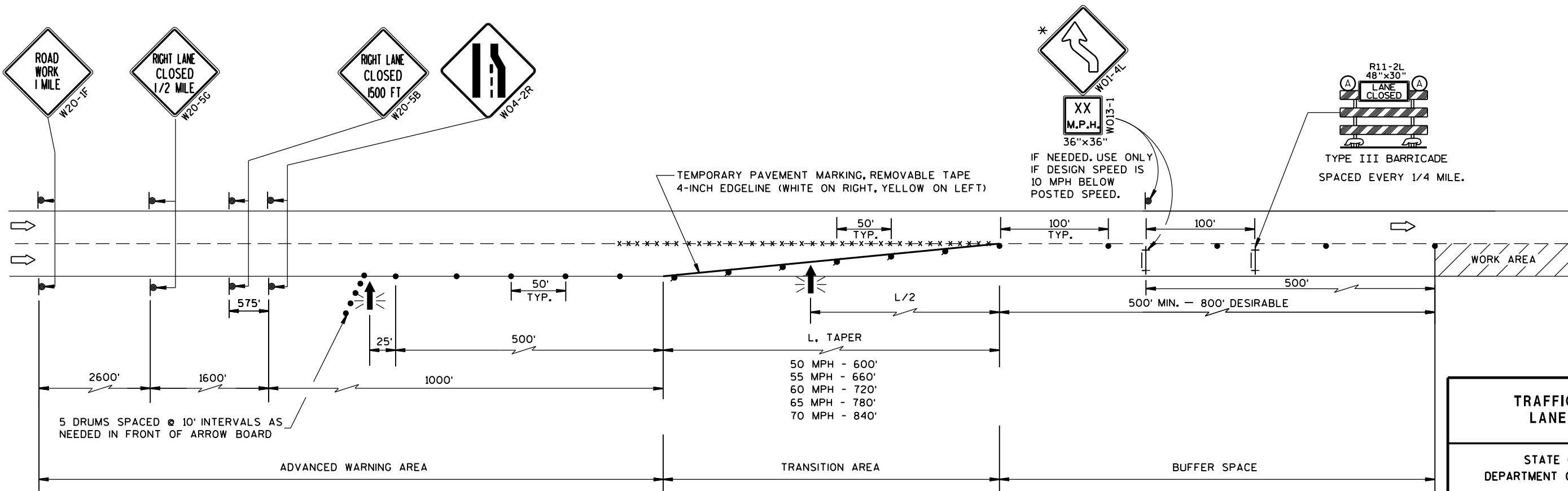
REMOVE PAVEMENT MARKINGS IF LANE CLOSURE IS TO BE IN PLACE FOR LONGER THAN 4 OR MORE DAYS AND NIGHTS.

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

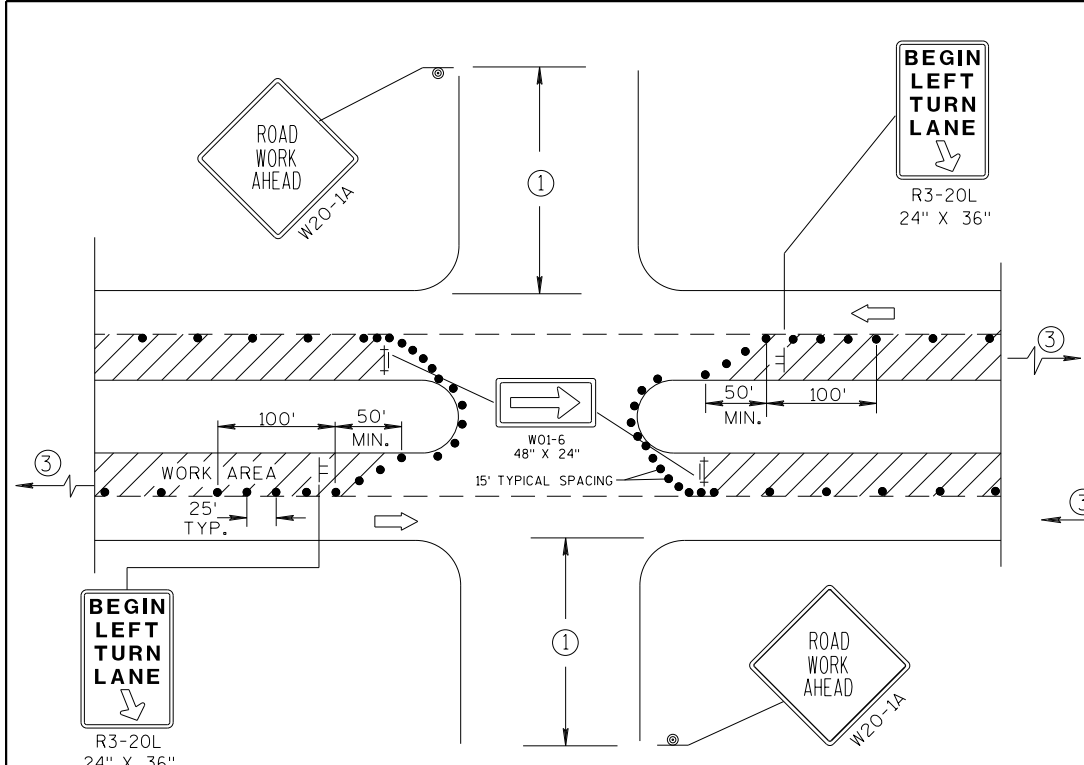
IF THE HORIZONTAL ALIGNMENT IS SUCH THAT A CURVE MAY REQUIRE ADDITIONAL DELINEATION, THE DEVICE SPACING MAY BE DECREASED TO 50 FEET.

ADJUSTMENTS IN BUFFER SPACE NEED TO BE INCORPORATED WHEN THE LANE CLOSURE OCCURS NEAR AN INTERCHANGE EXIT OR ENTRANCE RAMP. THE LANE CLOSURE MUST MUST TAKE PLACE FAR ENOUGH IN ADVANCE OF AN EXIT OR ENTRANCE RAMP TO STILL ALLOW FOR ADEQUATE BUFFER SPACE. THE MINIMUM LENGTH OF THE BUFFER SPACE BEFORE AN EXIT RAMP SHOULD BE 1/2 THE LENGTH OF THE TRANSITION AREA. THE ENTRANCE RAMP SHOULD BE FOLLOWED BY THE ORIGINAL BUFFER SPACE LENGTH OF 800 FEET DESIRABLE PRIOR TO ANOTHER TRAFFIC CONTROL CHANGE SUCH AS A CROSSOVER MANEUVER.

* THE LEFT REVERSE CURVE SIGN (W01-4L) IS ONLY REQUIRED WHEN THIS DETAIL IS USED IN COMBINATION WITH "SINGLE LANE CROSSOVER" DETAIL.

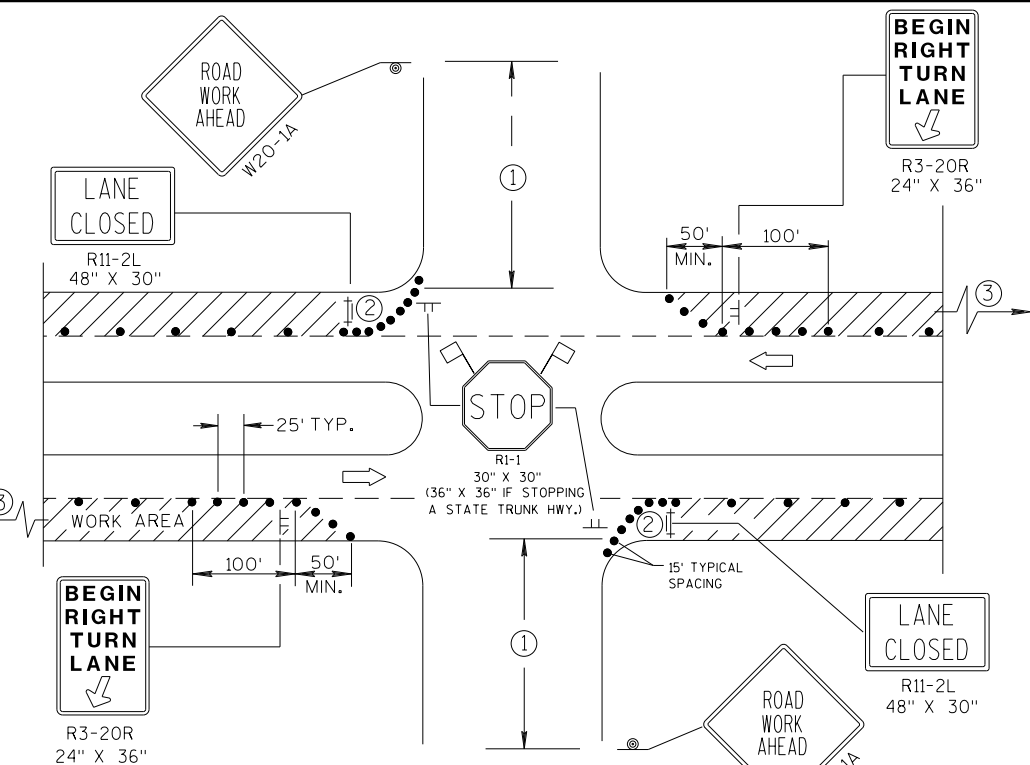


TRAFFIC CONTROL, LANE CLOSURE	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED March 2016 DATE	/S/ Peter Amakobe Atepe STATEWIDE WORK ZONE SAFETY ENGINEER 198 FHWA



DETAIL A
FOR LEFT LANE CLOSURE AT
INTERSECTION OR MEDIAN OPENING

PROVIDE TURN LANES AT
INTERSECTIONS WHENEVER
STAGING OF WORK ALLOWS.
TAPER AND TURN LANE
LENGTHS BASED ON FIELD
CONDITIONS AS APPROVED
BY THE ENGINEER.



DETAIL B
FOR RIGHT LANE CLOSURE
AT INTERSECTION

GENERAL NOTES

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

THE SPACING BETWEEN 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.

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED. IF NECESSARY DUE TO SPACE CONSTRAINTS IN URBAN AREAS, 36" X 36" SIGNS MAY BE USED IF APPROVED BY DISTRICT TRAFFIC UNIT.

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

SIGN LAYOUTS SHALL BE IN ACCORDANCE WITH THE FHWA'S MANUAL OF STANDARD HIGHWAY SIGNS OR THE WISCONSIN STANDARD SIGN PLATES.

SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS, OR THAT WILL BE PLACED IN A CLOSED LANE, 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.

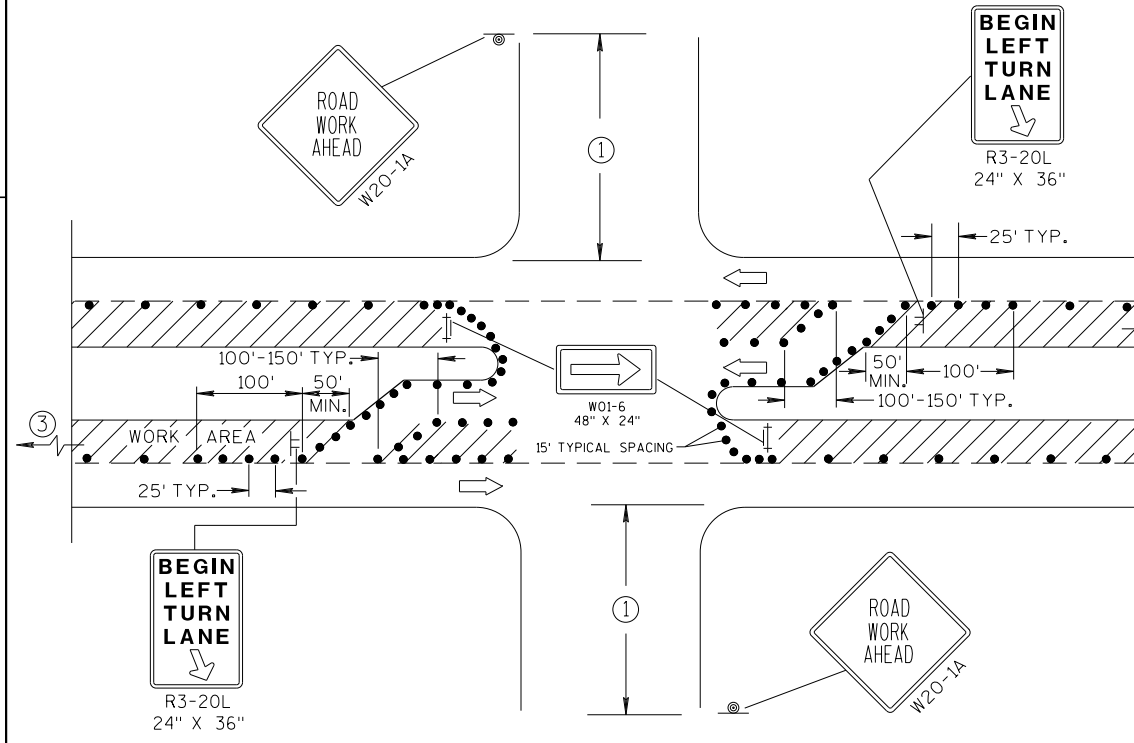
CHANNELIZING DEVICES PLACED ADJACENT TO WORK AREA SHALL BE PULLED BACK FROM THE TRAVEL LANE WHEN WORK IS NOT IN PROGRESS.

BARRICADES IN A CLOSED LANE 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.

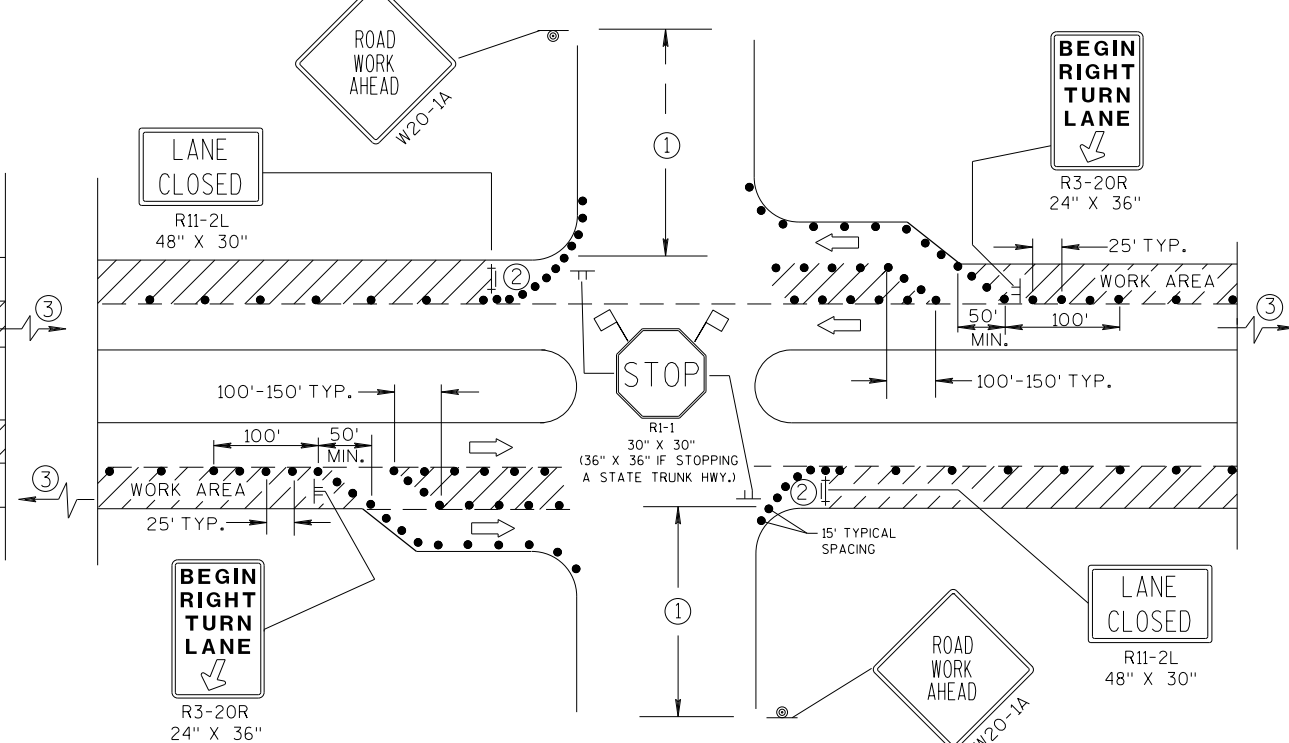
- ① 500' TYPICAL OR AT LAST INTERSECTION, WHICHEVER IS CLOSER.
350' IF 35-40 MPH.
200' IF 25-30 MPH.
- ② ALSO USE BARRICADE AND 15-FOOT TYPICAL DRUM SPACING AT COMMERCIAL DRIVEWAYS.
- ③ SEE SEPARATE LANE CLOSURE DETAIL FOR ADDITIONAL TRAFFIC CONTROL.

LEGEND

- TRAFFIC CONTROL DRUM
- ⊙ SIGN ON PERMANENT SUPPORT
- ≡ SIGN ON TEMPORARY SUPPORT (5' MIN. MOUNTING HEIGHT)
- ⋈ TYPE III BARRICADE WITH ATTACHED SIGN AND TYPE "A" WARNING LIGHT (FLASHING)
- ➡ DIRECTION OF TRAFFIC
- 🚩 FLAGS, 16" X 16" MIN., (ORANGE)
- ▨ WORK AREA



DETAIL C
FOR LEFT LANE CLOSURE AT INTERSECTION OR
MEDIAN OPENING (WITH LEFT TURN BAY OPEN)

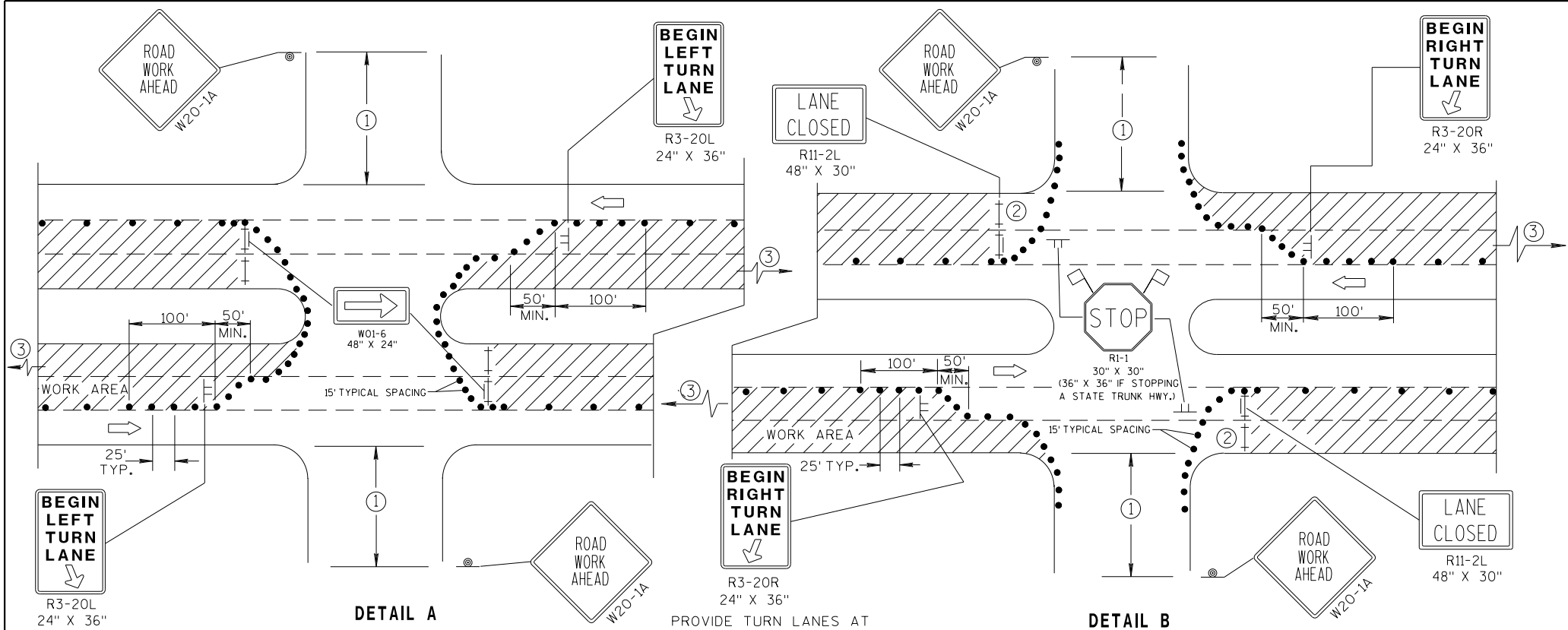


DETAIL D
FOR RIGHT LANE CLOSURE AT INTERSECTION
(WITH RIGHT TURN BAY OPEN)

TRAFFIC CONTROL,
INTERSECTION WITHIN
SINGLE LANE CLOSURE

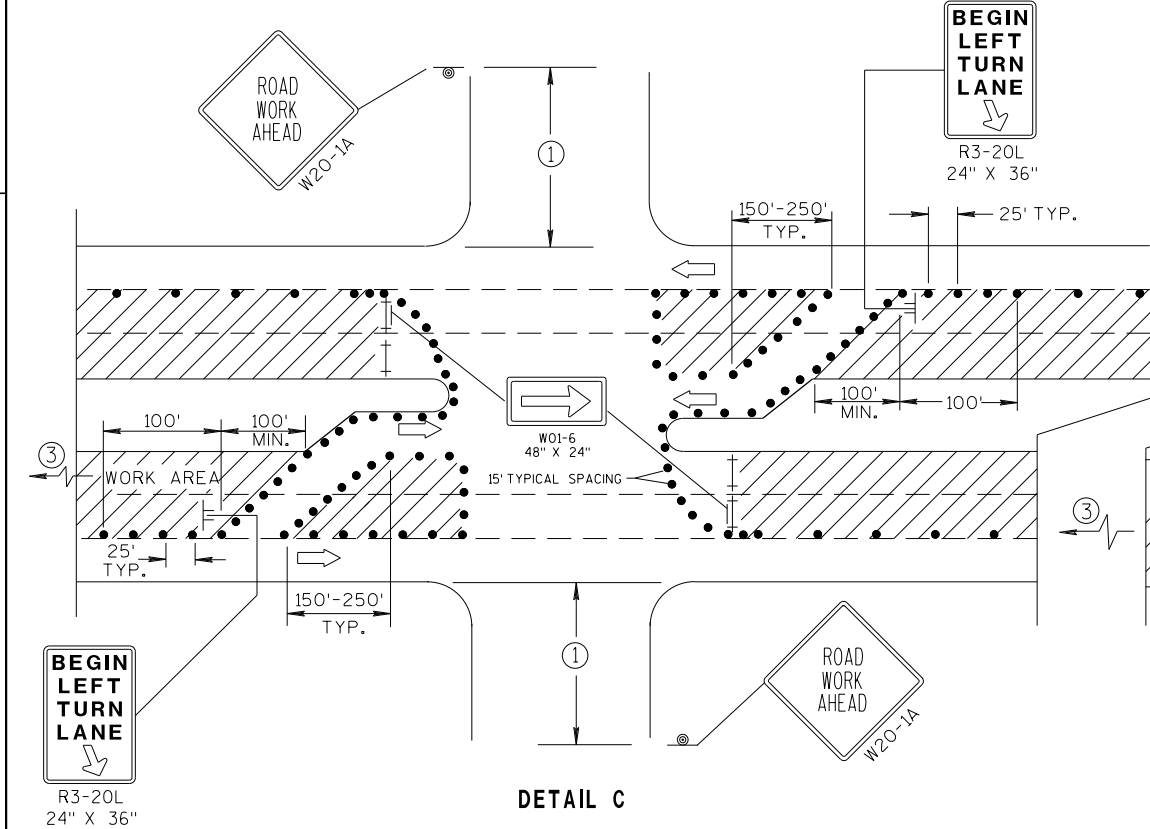
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
7/2018 /S/ Andrew Heidtke
DATE WORK ZONE ENG 199
FHWA

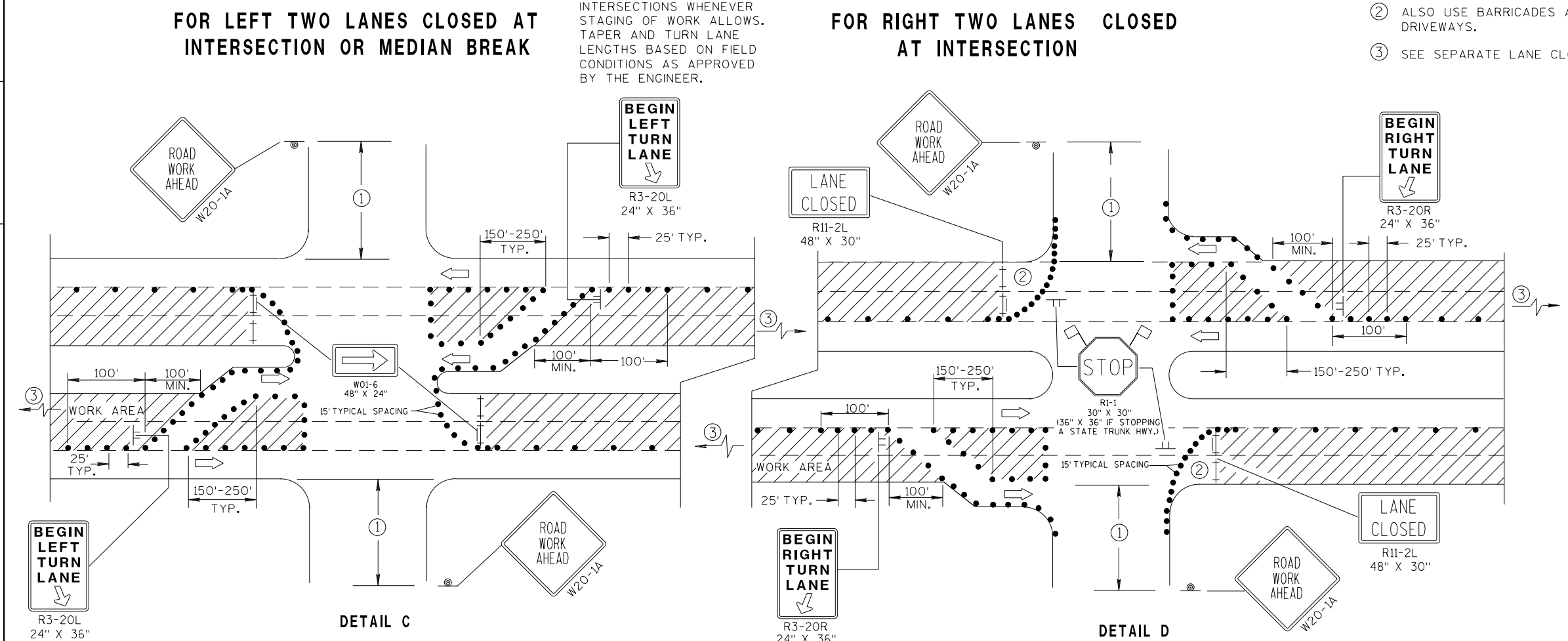


DETAIL A
FOR LEFT TWO LANES CLOSED AT INTERSECTION OR MEDIAN BREAK

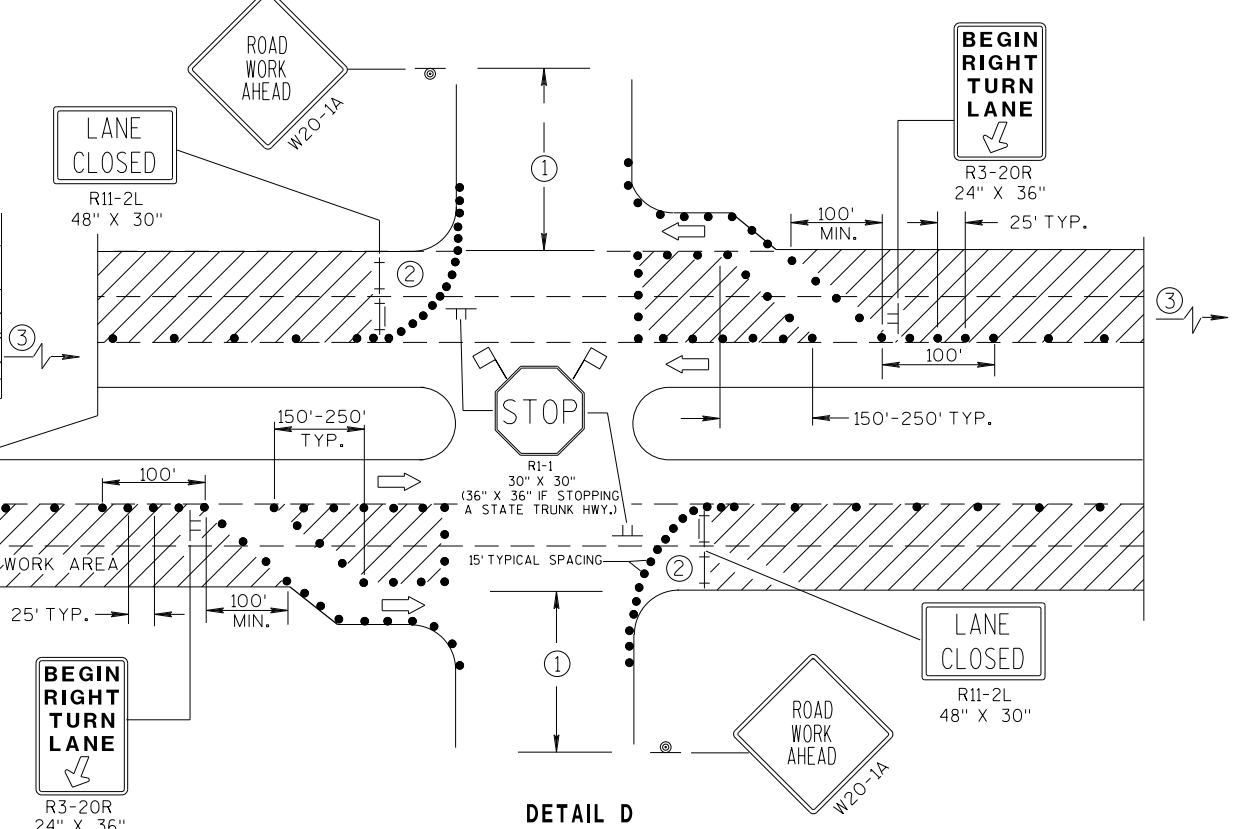
PROVIDE TURN LANES AT INTERSECTIONS WHENEVER STAGING OF WORK ALLOWS. TAPER AND TURN LANE LENGTHS BASED ON FIELD CONDITIONS AS APPROVED BY THE ENGINEER.



DETAIL C
FOR LEFT TWO LANES CLOSED AT INTERSECTION OR MEDIAN BREAK (WITH LEFT TURN BAY OPEN)



DETAIL B
FOR RIGHT TWO LANES CLOSED AT INTERSECTION



DETAIL D
FOR RIGHT TWO LANES CLOSED AT INTERSECTION (WITH RIGHT TURN BAY OPEN)

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 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.

ALL SIGNS ARE 48"X48" UNLESS OTHERWISE NOTED. IF NECESSARY DUE TO SPACE CONSTRAINTS IN URBAN AREAS, 36" X 36" SIGNS MAY BE USED IF APPROVED BY DISTRICT TRAFFIC UNIT.

SIGN LAYOUTS SHALL BE IN ACCORDANCE WITH THE FHWA'S MANUAL OF STANDARD SIGNS OR THE WISCONSIN STANDARD SIGN PLATES.

SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS, OR THAT WILL BE PLACED IN A CLOSED LANE, 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.

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

BARRICADES IN A CLOSED LANE 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.

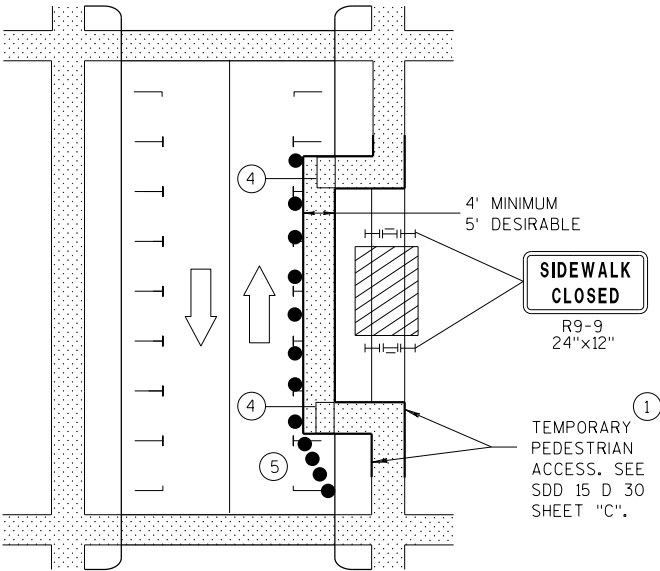
- ① 500 FEET TYPICAL OR AT LAST INTERSECTION, WHICHEVER IS CLOSER. 350 FEET IF 35-40 MPH. 200 FEET IF 25-30 MPH.
- ② ALSO USE BARRICADES AND 15-FOOT TYPICAL DRUM SPACING AT COMMERCIAL DRIVEWAYS.
- ③ SEE SEPARATE LANE CLOSURE DETAIL FOR ADDITIONAL TRAFFIC CONTROL.

LEGEND

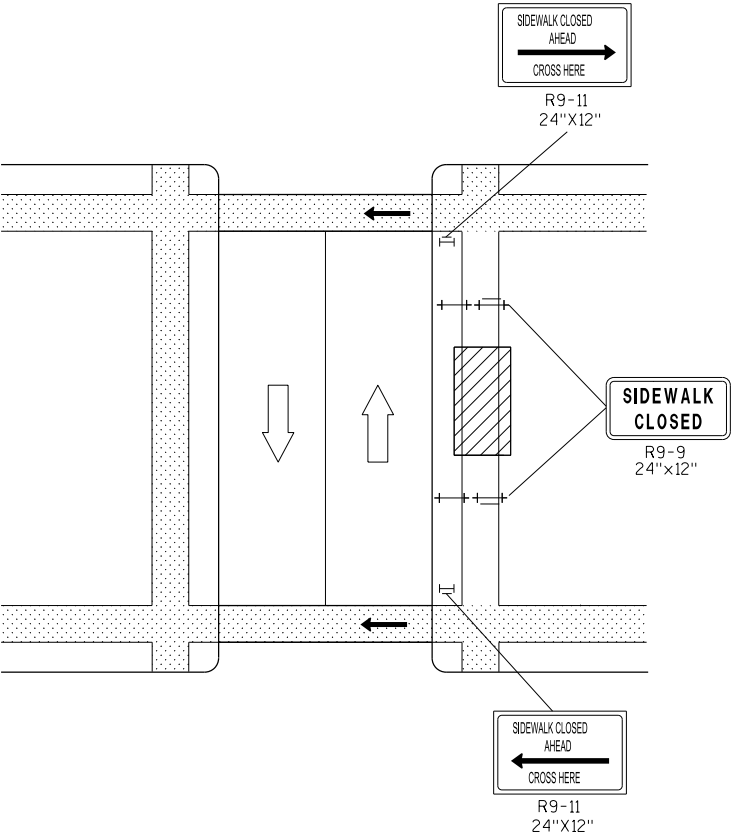
- TRAFFIC CONTROL DRUM
- ⊙ SIGN ON PERMANENT SUPPORT
- ⊢ SIGN ON TEMPORARY SUPPORT (5' MIN. MOUNTING HEIGHT)
- ⊢ TYPE III BARRICADE
- ⊢ TYPE III BARRICADE WITH ATTACHED SIGN AND TYPE "A" WARNING LIGHT (FLASHING)
- ➡ DIRECTION OF TRAFFIC
- 🚩 FLAGS, 16" X 16" MIN., (ORANGE)
- ▨ WORK AREA

TRAFFIC CONTROL, INTERSECTION WITHIN TWO LANE CLOSURE	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED DATE 7/2018 FHWA	/S/ Andrew Heidtke WORK ZONE ENG 200

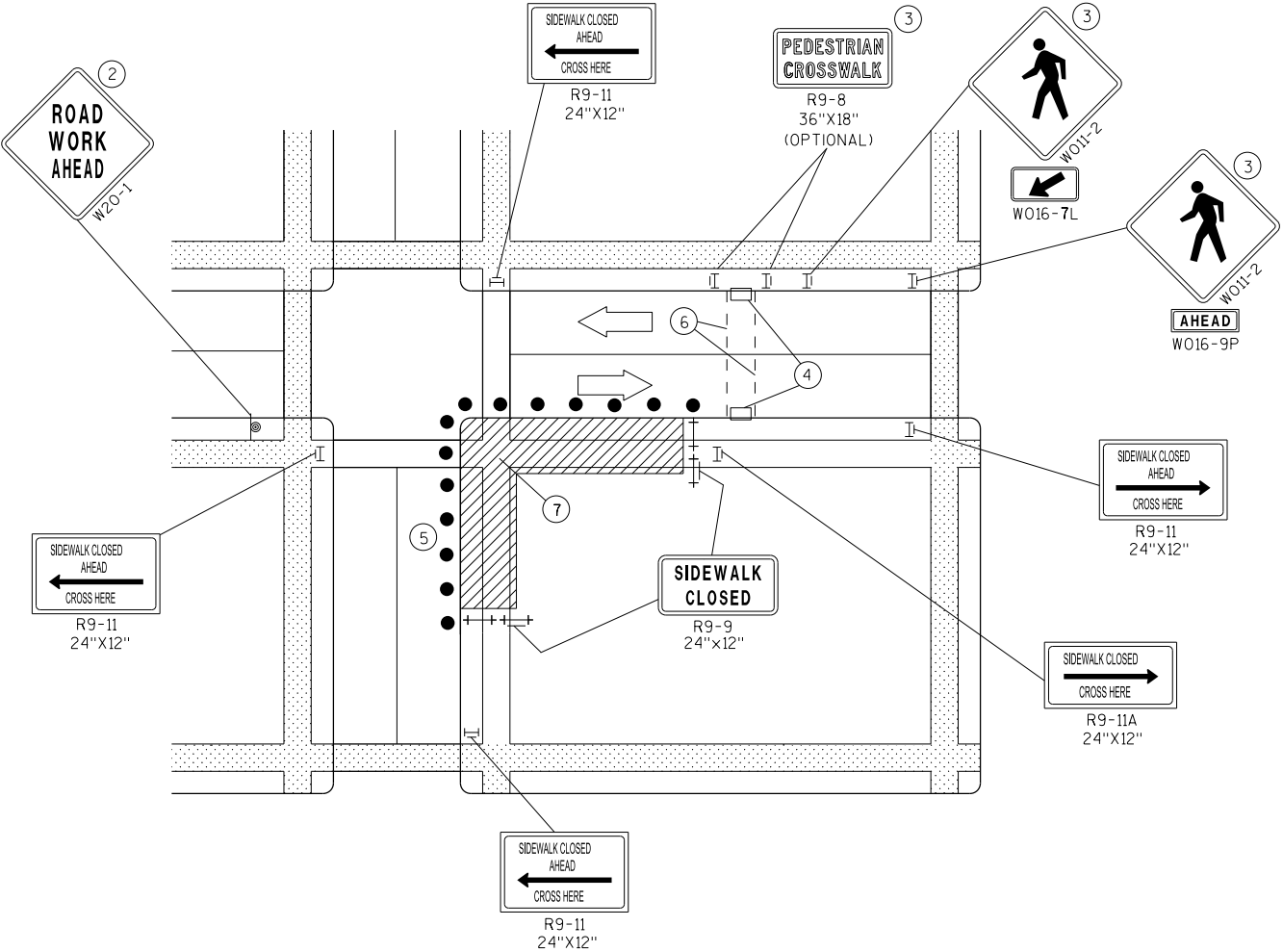
NOTE: MAY BE USED ON ROADWAY WITH POSTED SPEED OF LESS THAN 40 MPH.



MID-BLOCK SIDEWALK CLOSURE
IN PARKING LANE

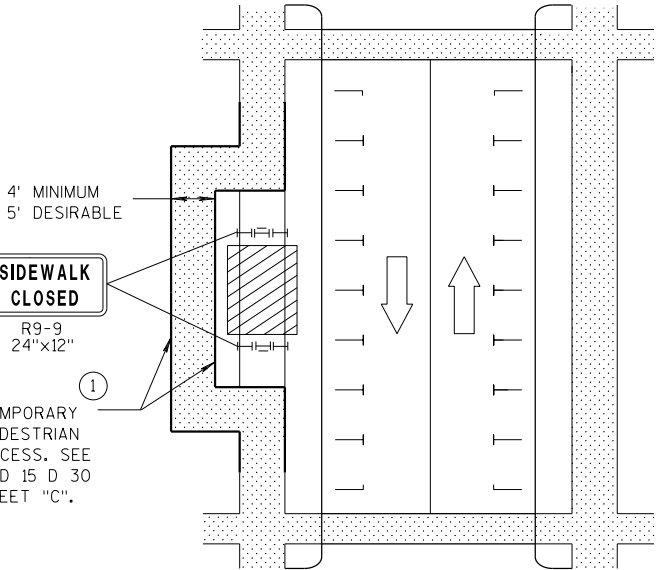


MID-BLOCK SIDEWALK CLOSURE



CORNER SIDEWALK CLOSURE WITH TEMPORARY CROSSWALK

NOTE: LAYOUT SAME AS ABOVE.



SIDEWALK DIVERSION

GENERAL NOTES

WHEN CLOSING OR RELOCATING CROSSWALKS OR SIDEWALKS, PROVIDE DETECTABLE TEMPORARY FACILITIES AND INCLUDE ACCESSIBILITY FEATURES CONSISTENT WITH EXISTING PEDESTRIAN FACILITIES.

TEMPORARY TRAFFIC CONTROL DEVICES FOR PEDESTRIANS ARE SHOWN. OTHER DEVICES MAY BE NECESSARY TO CONTROL VEHICULAR TRAFFIC. STAGE WORK, AS NECESSARY, TO PROVIDE A TEMPORARY PEDESTRIAN ACCESS ROUTE AT ALL TIMES. FOR ROADWAYS WITH NO AVAILABLE DETOURS, MAINTAIN ONE OPEN SIDEWALK AT ALL TIMES.

"WO" SIGN IS THE SAME AS "W" SIGN EXCEPT THE BACKGROUND IS ORANGE.

FOR NIGHTTIME CLOSURE USE TYPE "A" FLASHING WARNING LIGHTS ON BARRICADES, SUPPORTING SIGNS AND CLOSING SIDEWALK. USE TYPE "C" STEADY BURN LIGHTS ON CHANNELIZING DEVICES SEPARATING THE WORK AREA FROM VEHICULAR TRAFFIC.

PEDESTRIAN TRAFFIC SIGNAL DISPLAY CONTROLLING CLOSED CROSSWALK SHALL BE COVERED OR DEACTIVATED.

POST MOUNTED SIGNS LOCATED ADJACENT TO A SIDEWALK SHALL HAVE A 7 FOOT MINIMUM CLEARANCE FROM THE BOTTOM OF THE SIGN TO THE SIDEWALK SURFACE.

ALTERNATE SIDEWALK WORK BETWEEN LEFT AND RIGHT SIDE OF ROADWAY TO MAINTAIN PEDESTRIAN ACCESS.

- IF SIDEWALK CLOSURE AFFECTS AN ACCESSIBLE AND DETECTABLE FACILITY, MAINTAIN ACCESSIBILITY AND DETECTABILITY ALONG THE ALTERNATE PEDESTRIAN ROUTE.
- "ROAD WORK AHEAD" SIGNS ARE NOT REQUIRED IF THE SIDEWALK CLOSURE OCCURS WITHIN A LARGER WORK ZONE WHERE ADVANCE WARNING SIGNS ARE ALREADY PRESENT, OR IF THE WORK AREA AND EQUIPMENT ARE MORE THAN 2 FEET BEHIND THE CURB.
- IF TEMPORARY PEDESTRIAN CROSSWALK IS NOT PROVIDED, OMIT R9-8 AND WO11-2 SIGN ASSEMBLIES. IF PROVIDED INCLUDE ON BOTH SIDES OF THE CROSSWALK.
- TEMPORARY CURB RAMPS. SEE SDD 15 D 30 SHEET "B".
- DRUMS OR BARRICADES AT 25 FOOT SPACING. STREET PARKING SHALL BE PROHIBITED FOR AT LEAST 50 FEET IN ADVANCE OF THE MID-BLOCK CROSSWALK.
- TEMPORARY PAVEMENT MARKING FOR CROSSWALK LINES.
- LIMIT WORK TO ONE QUADRANT AT A TIME TO MINIMIZE PEDESTRIAN DISRUPTION.

LEGEND

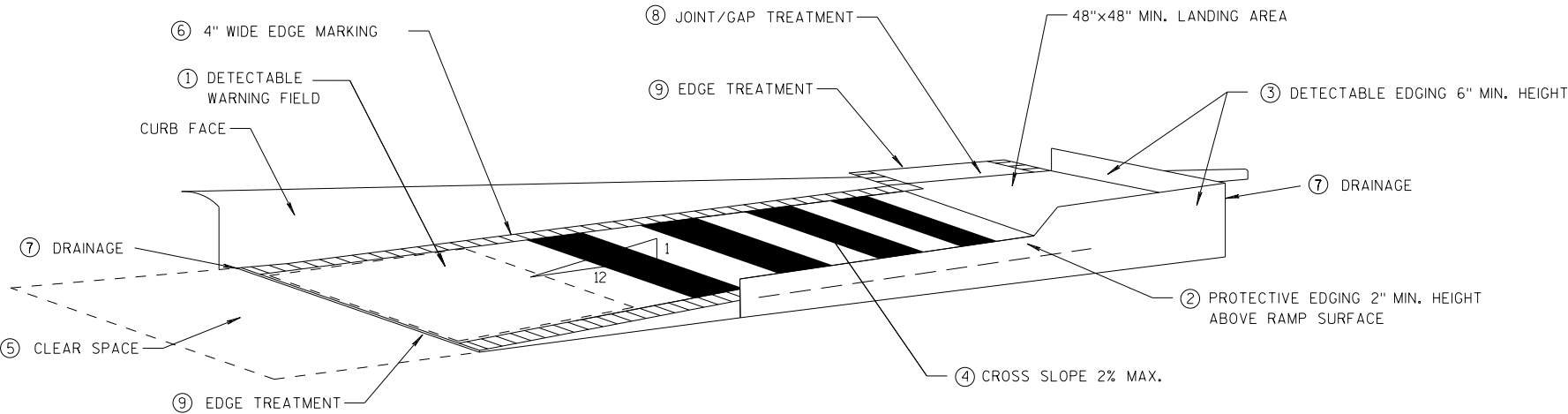
	SIGN ON PERMANENT SUPPORT		DIRECTION OF TRAFFIC
	UNDER PEDESTRIAN TRAFFIC		TRAFFIC CONTROL DRUM
	WORK AREA		
	PEDESTRIAN CHANNELIZATION DEVICE		
	TYPE II BARRICADE WITH/WITHOUT SIGN (ALL WITH ONE WARNING LIGHT, TYPE A, LOW-INTENSITY FLASHING)		
	TYPE III BARRICADE WITH/WITHOUT SIGN (ALL WITH ONE WARNING LIGHT, TYPE A, LOW-INTENSITY FLASHING)		

TRAFFIC CONTROL,
PEDESTRIAN ACCOMMODATION

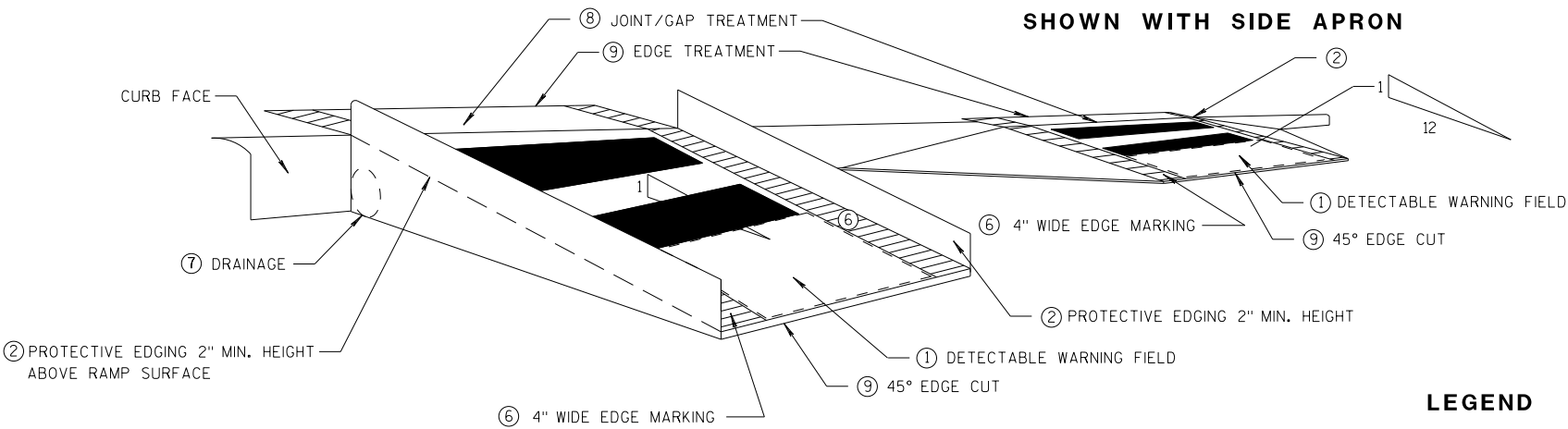
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

- NOTIFY THE BUS COMPANY 7 DAYS IN ADVANCE OF THE BUS STOP RELOCATION.
ALTERNATE SIDEWALK WORK BETWEEN LEFT AND RIGHT SIDE OF ROADWAY TO MAINTAIN PEDESTRIAN ACCESS.
- 1 CURB RAMPS SHALL BE 48" MIN. WIDTH WITH A FIRM, STABLE AND SLIP RESISTANT SURFACE. INSTALL CONTRASTING DETECTABLE WARNING FIELD AT PEDESTRIAN STREET CROSSINGS. REFER TO SDD 805 SHEET "E".
 - 2 PROTECTIVE EDGING WITH A 2" MIN. HEIGHT SHALL BE INSTALLED WHEN A CURB RAMP OR LANDING PLATFORM HAS A VERTICAL DROP OF 6" OR GREATER OR HAS A SIDE APRON SLOPE STEEPER THAN 1:3 (33%). PROTECTIVE EDGING SHOULD BE CONSIDERED WHEN CURB RAMPS OR LANDING PLATFORMS HAVE A VERTICAL DROP OF 3" OR MORE.
 - 3 DETECTABLE EDGING WITH 6" MIN. HEIGHT AND CONTRASTING COLOR SHALL BE INSTALLED ON ALL CURB RAMP LANDINGS WHERE THE WALKWAY CHANGES DIRECTION (TURNS).
 - 4 CURB RAMPS AND LANDINGS SHALL HAVE A 1:50 (2%) MAX. CROSS-SLOPE.
 - 5 CLEAR SPACE OF 48"x48" MIN. SHALL BE PROVIDED ABOVE AND BELOW THE CURB RAMP.
 - 6 THE CURB RAMP WALKWAY EDGE SHALL BE MARKED WITH A YELLOW COLOR, 4" WIDE MARKING, UNLESS A CONTRASTING DETECTABLE WARNING FIELD IS PROVIDED.
 - 7 DO NOT RESTRICT WATER FLOW IN THE GUTTER SYSTEM.
 - 8 LATERAL JOINTS OR GAPS BETWEEN SURFACES SHALL BE LESS THAN 1/2" WIDTH.
 - 9 CHANGES BETWEEN SURFACE HEIGHTS SHALL NOT EXCEED 1/2". LATERAL EDGES SHALL BE VERTICAL UP TO 1/4" HIGH, AND BEVELED AT 1:2 BETWEEN 1/4" AND 1/2".
 - 10 5' WIDE MIN. WITH PEDSETRIAN SAFETY FENCE, 10' WIDE MIN. WITHOUT PEDESTRIAN SAFETY FENCE.

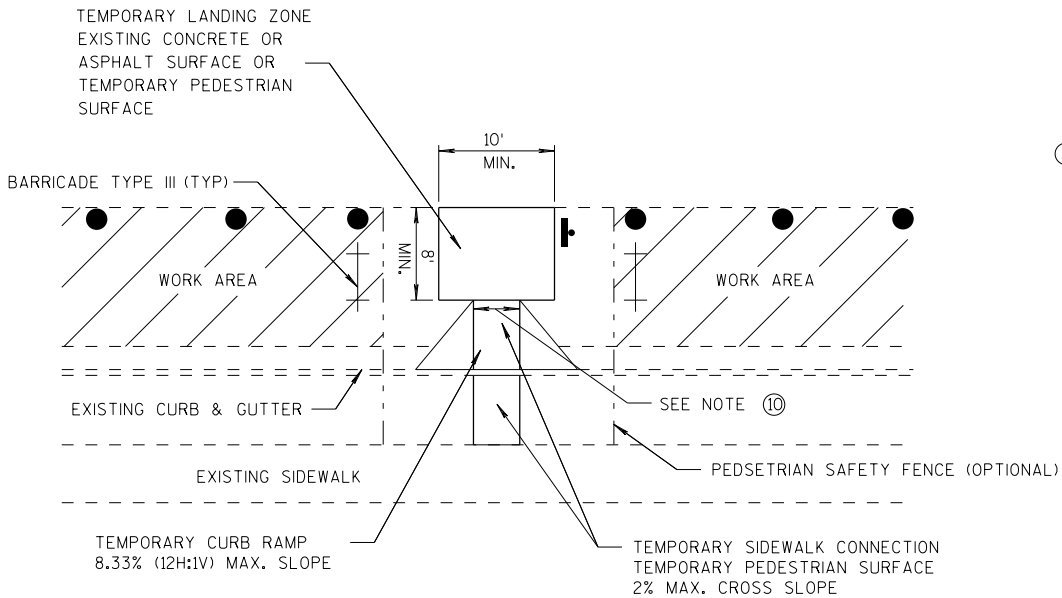


TEMPORARY CURB RAMP
PARALLEL TO CURB



SHOWN WITH PROTECTIVE EDGE

TEMPORARY CURB RAMP
PERPENDICULAR TO CURB



TEMPORARY BUS STOP PAD

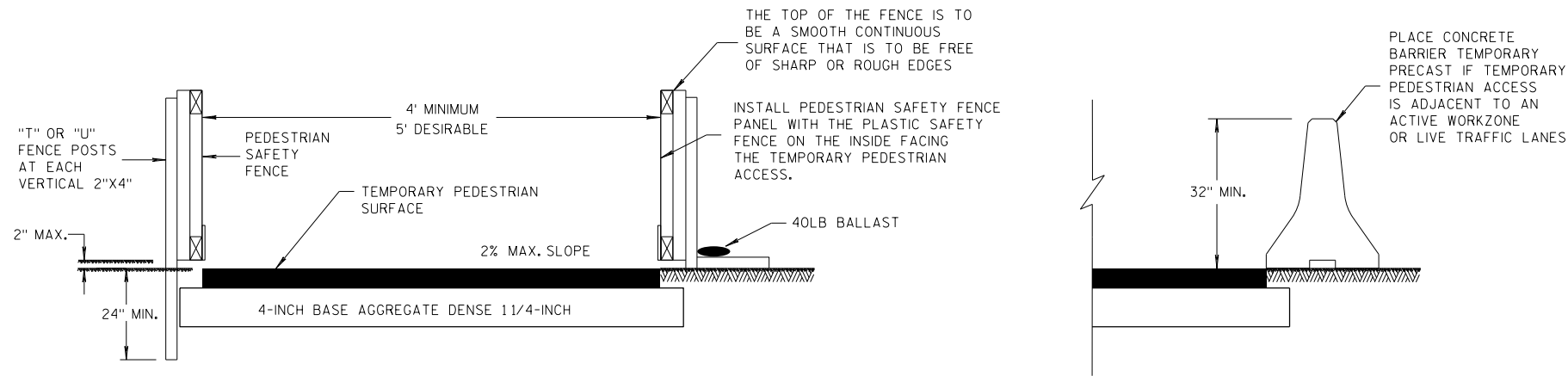
LEGEND

- WORK AREA (hatched box)
- TYPE III BARRICADE (vertical line with cross-ticks)
- TRAFFIC CONTROL DRUM (solid black circle)

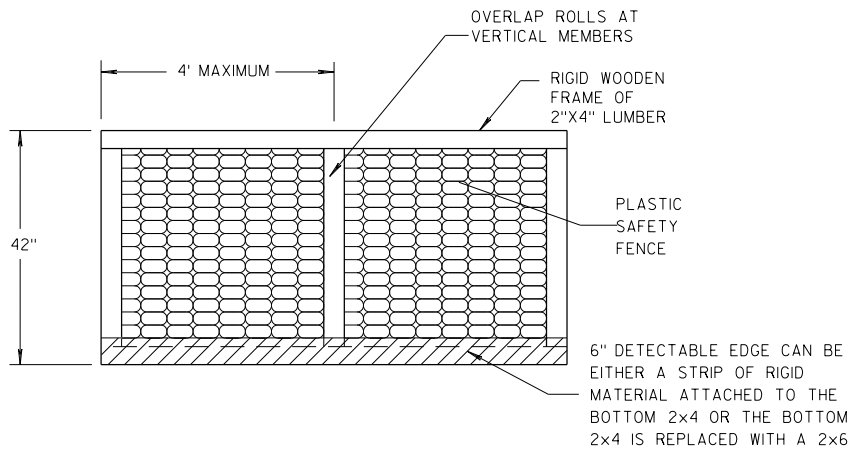
TRAFFIC CONTROL,
TEMPORARY ADA COMPLIANT
PEDESTRIAN ACCOMMODATION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

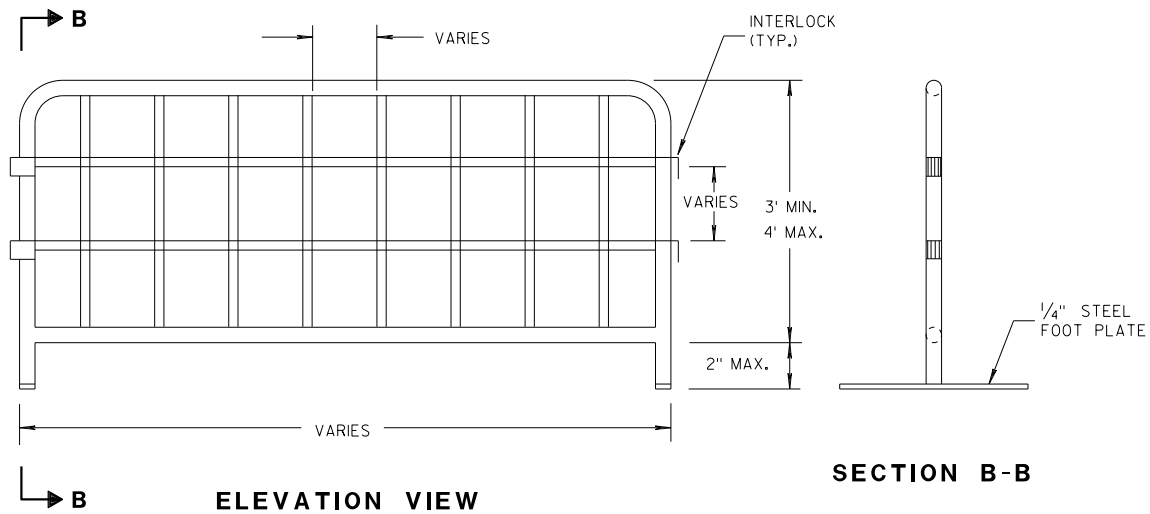
APPROVED
DATE 7/2018 /S/ Andrew Heidtke
WORK ZONE ENG 202
FHWA



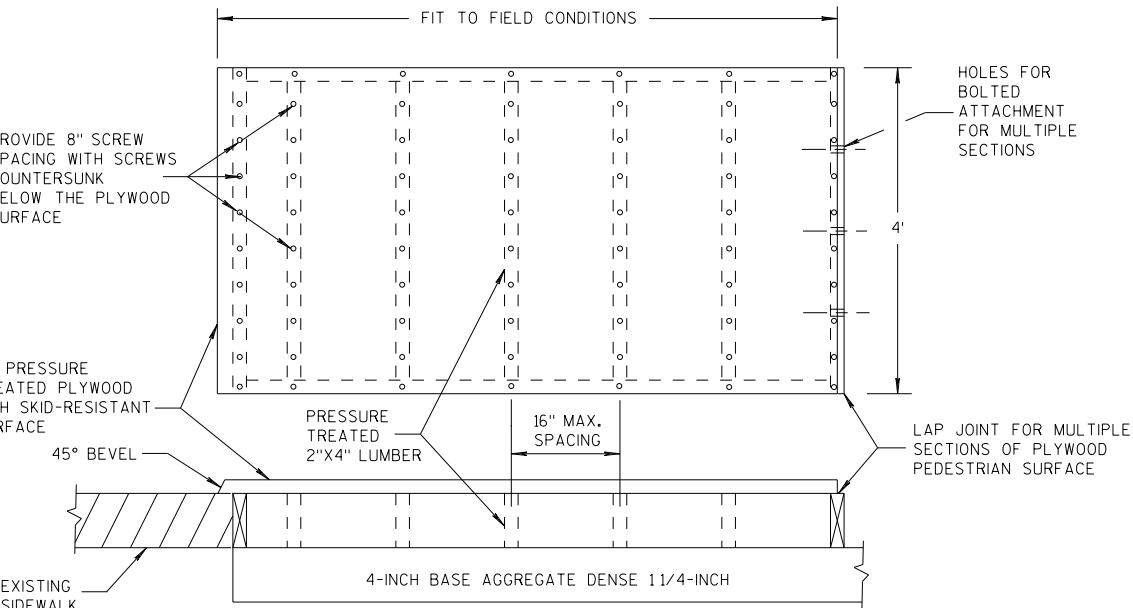
TEMPORARY PEDESTRIAN ACCESS



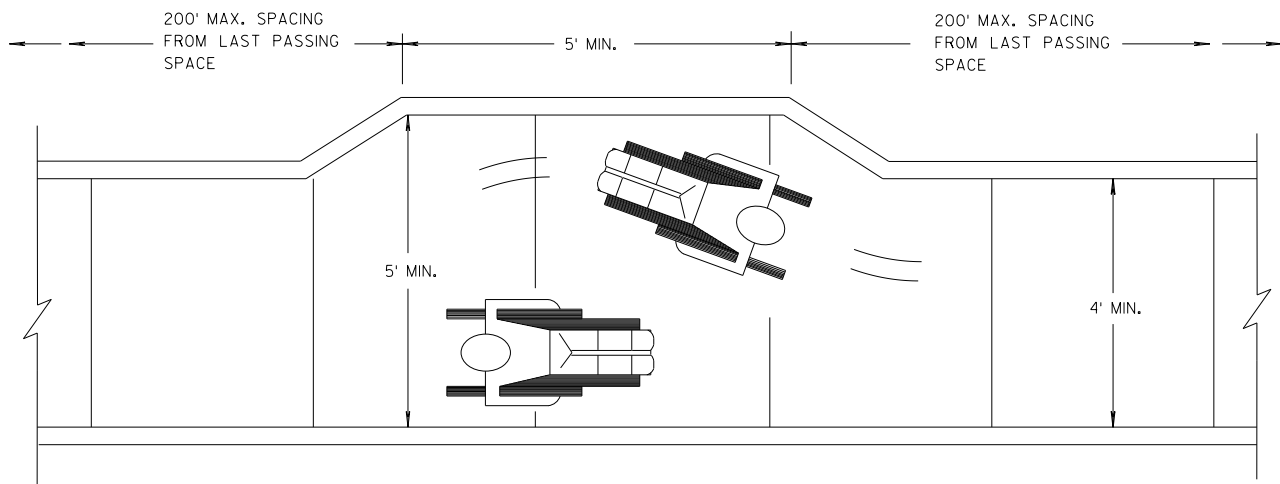
PEDESTRIAN SAFETY FENCE



TEMPORARY PEDESTRIAN STEEL BARRICADE

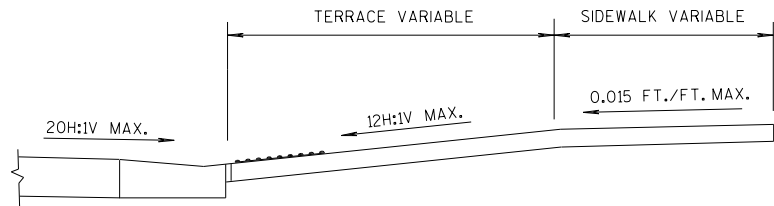


TEMPORARY PEDESTRIAN SURFACE PLYWOOD

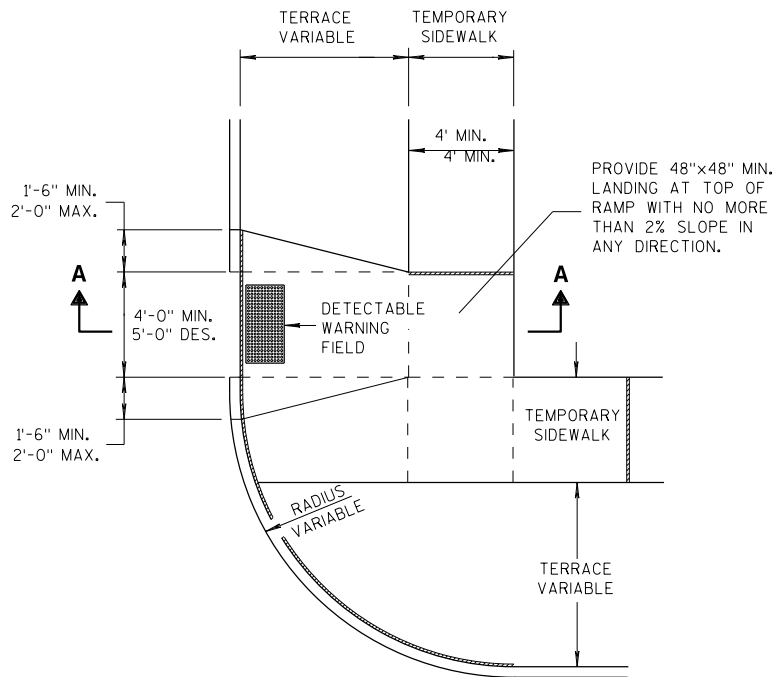


NARROW SIDEWALK PASSING DETAIL

- GENERAL NOTES**
- ① INTERCHANGEABLE WITH THE PEDESTRIAN SAFETY FENCE.



SECTION A-A



PLAN VIEW

TEMPORARY TYPE 3 RAMP
(OUTSIDE OF CROSSWALK AREA)

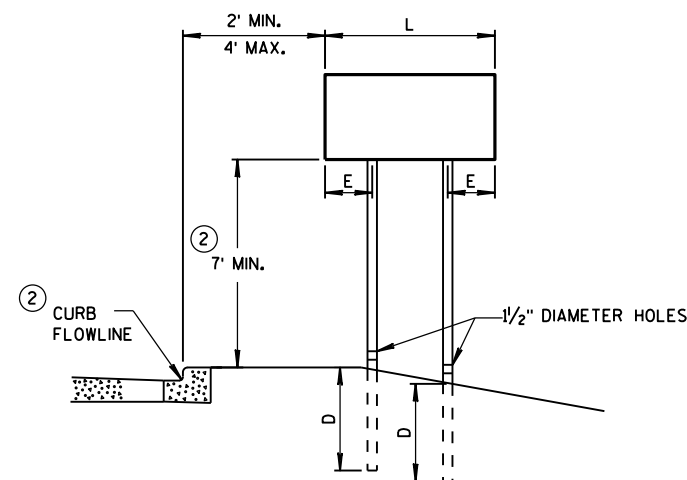
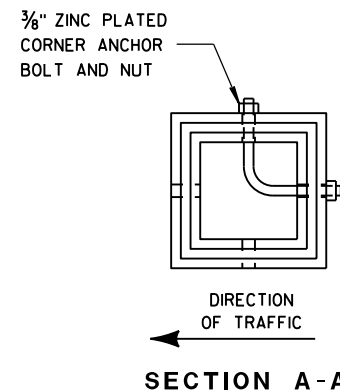
TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 7/2018 DATE	/S/ Andrew Heidtke WORK ZONE ENG 203
FHWA	



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

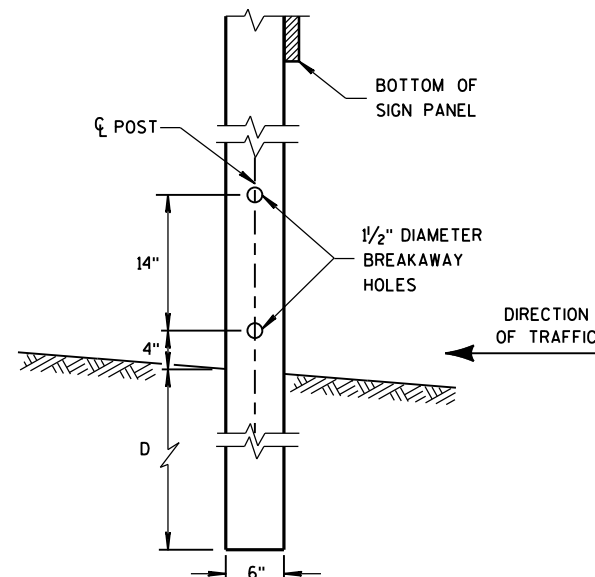


URBAN AREA

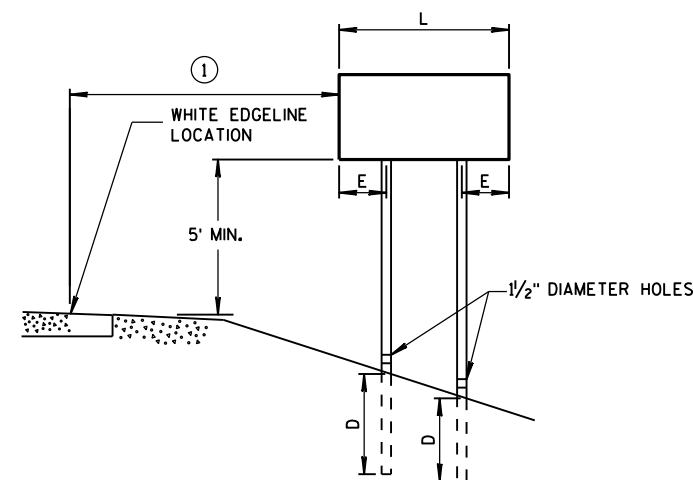
POST MOUNTING DETAIL FOR TEMPORARY TRAFFIC CONTROL FIXED MESSAGE SIGNS

WOOD POST
EMBEDMENT DEPTH

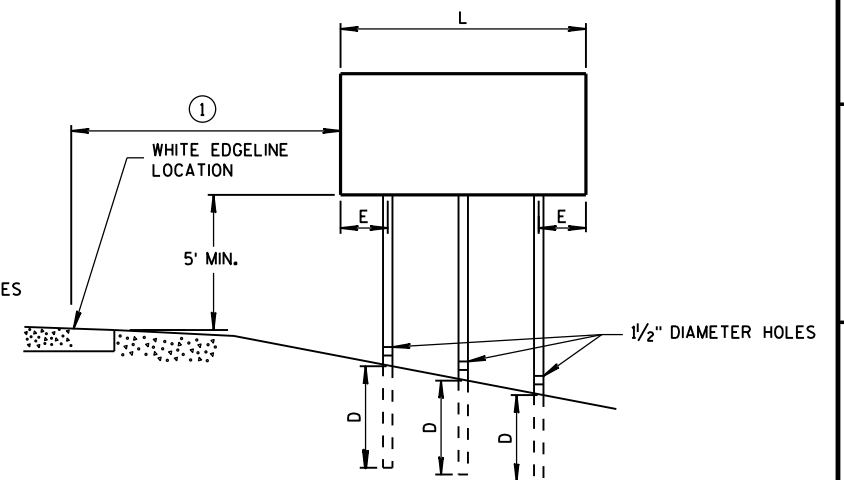
AREA OF SIGN INSTALLATION (SQ. FT.)	D (MIN)
20 OR LESS	4'
GREATER THAN 20	5'



4" x 6" WOOD POST MODIFICATION



RURAL AREA



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.

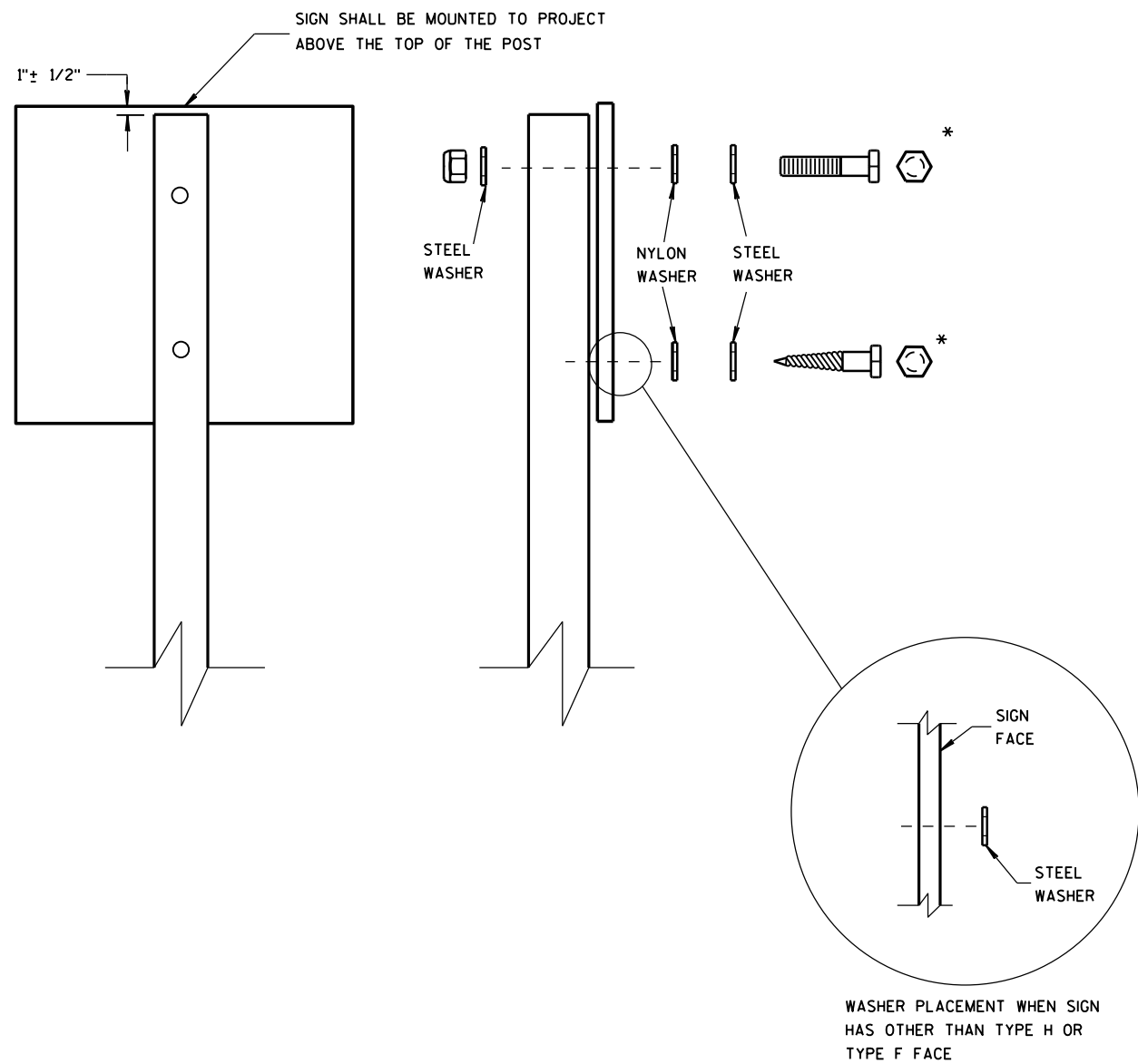
4" X 6" WOOD POST

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)

TEMPORARY TRAFFIC CONTROL SIGN MOUNTING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 204



NUTS, BOLTS AND LAGS USED FOR MOUNTING SIGNS SHALL HAVE HEXAGONAL HEADS AND SHALL BE EITHER:

- A. HOT DIP GALVANIZED IN ACCORDANCE WITH ASTM DESIGNATION: A 153, CLASS D, OR SC 3
- B. ELECTRO-GALVANIZED IN ACCORDANCE WITH ASTM DESIGNATION: B 633, TYPE III, SC 3

THREADS ON BOLTS AND NUTS SHALL BE MANUFACTURED WITH SUFFICIENT ALLOWANCE FOR THE CADMIUM PLATE OR GALVANIZED COATING TO PERMIT THE NUTS TO RUN FREELY ON THE BOLTS.

- WOOD POSTS (4" x 4" or 4" x 6")
- LAG SCREWS - 3/8" x 3"
 - MACHINE BOLTS - 5/16" x 6-1/2" OR 7" LENGTH W/ NUTS

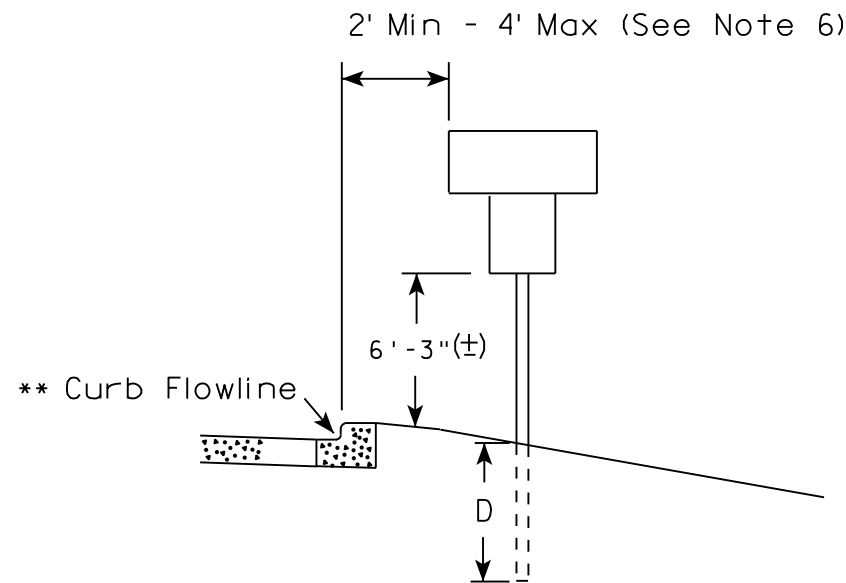
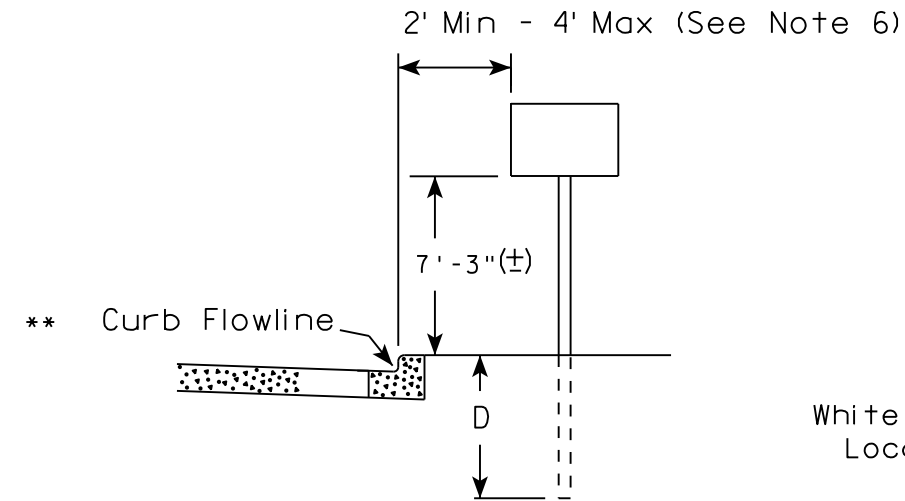
- SQUARE STEEL POSTS (2" x 2")
- MACHINE BOLTS - 3/8" x 3-1/4" LENGTH W/ NUTS
 - RIVETS - 9/32" (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM BODY/MANDREL O.D. FLANGE .720-.765 INCH, GRIP RANGE .042-.375 INCH

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

* 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.

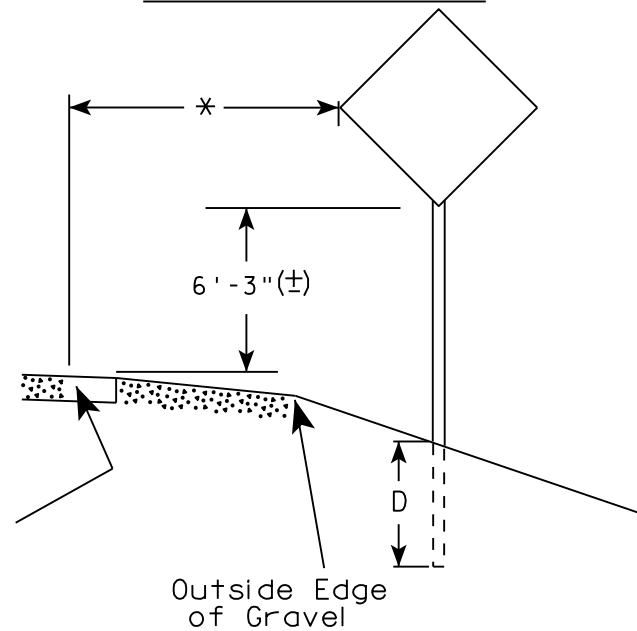
ATTACHMENT OF SIGNS TO POSTS	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED June 2017 DATE	/S/ Andrew Heidtke WORK ZONE ENC 205
FHWA	

URBAN AREA

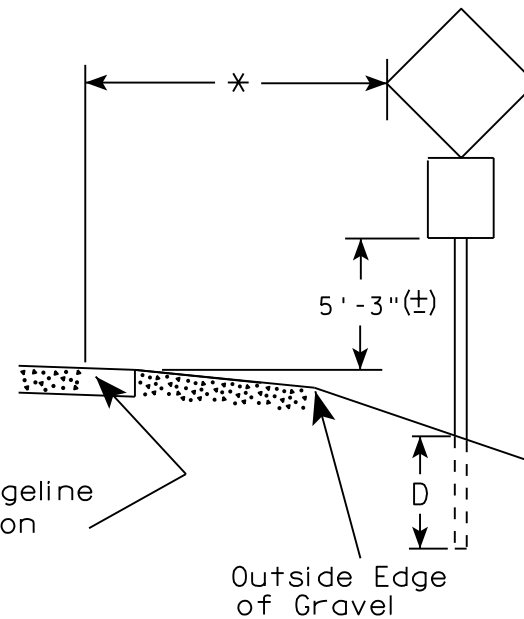


White Edgeline
Location

RURAL AREA (See Note 2)



White Edgeline
Location



Outside Edge
of Gravel

POST EMBEDMENT DEPTH

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

GENERAL NOTES

1. Signs wider than 4 feet or 20 sq.ft or larger, shall be mounted on multiple posts. Refer to plate A4-4.
2. If signs are mounted on barrier wall, see A4-10 sign plate.
3. For expressways and freeways, mounting height is 7'-3" (±) or 6'-3" (±) depending upon existence of a sub-sign.
4. J-Assemblies are considered to be one sign for mounting height.
5. Minimum mounting height for signs mounted on traffic signal poles is 5'-3" (±).
6. Offset distance shall be consistent with existing signs or consistent throughout length of project.
7. The (±) tolerance for mounting height is 3 inches.
8. Folding signs shall be mounted at a height of 5'-3" (±) or as directed by the Engineer.
9. The Double Arrow sign (W12-1) shall be mounted at a height of 2'-3" (±). The Chevron sign (W1-8), Roundabout Chevron panel (R6-4B), Enhanced Reference Markers, Clearance Markers (W5-52), Mile Markers (D10 series), In Road Object Markers (W5-54) & End of Road Markers (W5-56) shall be mounted at a height of 4'-3" (±).

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

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

TYPICAL INSTALLATION
OF PERMANENT TYPE II
SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 8/21/17 PLATE NO. A4-3.21

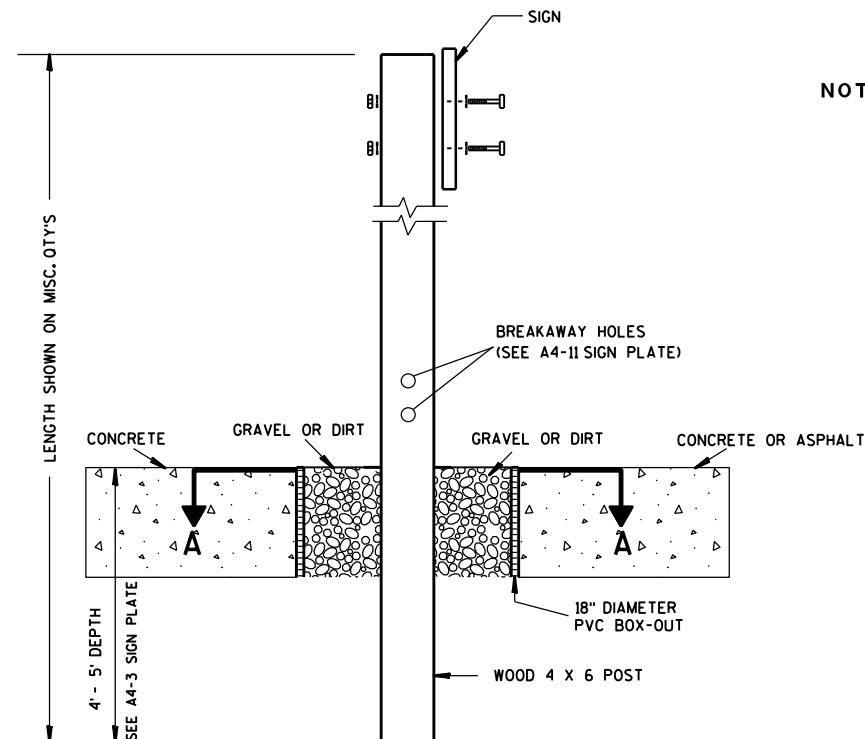
PROJECT NO:

HWY:

COUNTY:

SHEET NO: 206

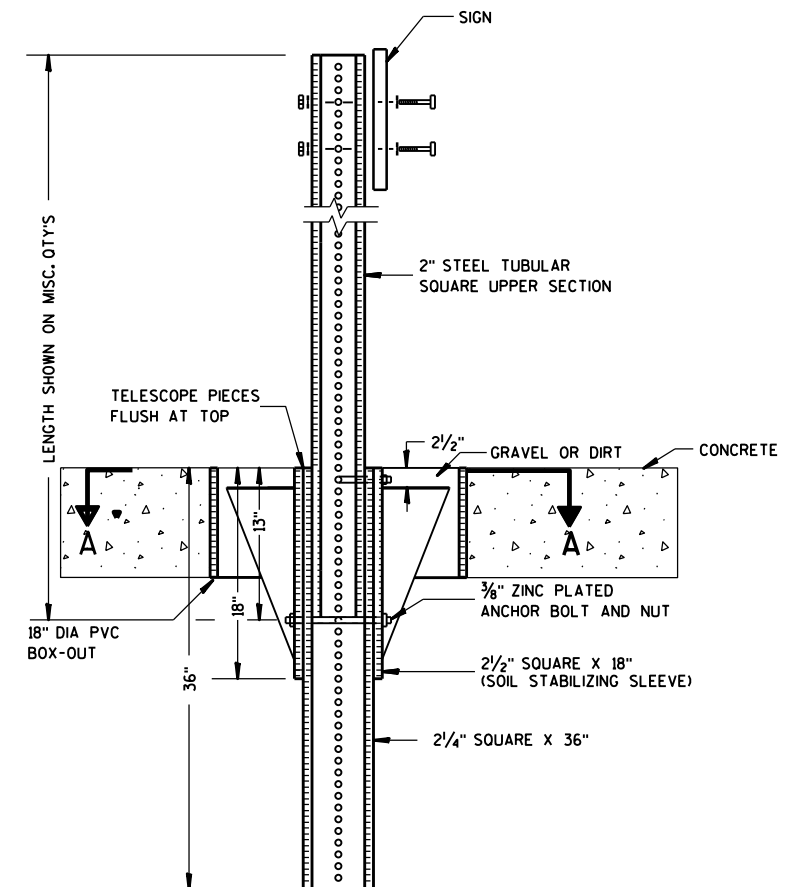
E



ELEVATION VIEW

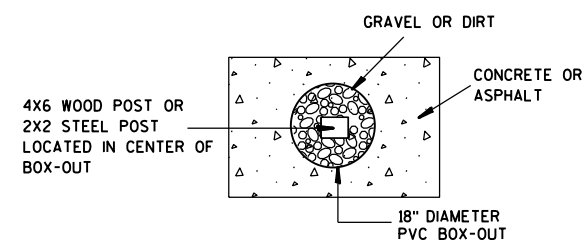
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

- NOTES: 1. ALL MATERIAL TO BE APPROVED BY ENGINEER PRIOR TO INSTALLATION
2. SEE SIGN PLATE A4-8 FOR SIGN HARDWARE REQUIREMENTS
3. 18 INCH X 18 INCH SQUARE BOX-OUTS MAY BE USED FOR INSTALLATIONS IN EXISTING CONCRETE OR ASPHALT LOCATIONS.



ELEVATION VIEW

DETAIL OF STEEL 2 X 2 SIGN POST IN BOX-OUT



PLAN VIEW

FOR NEW CONCRETE/ASPHALT INSTALLATIONS

SIGN POST BOX-OUTS A4-3B

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 1/27/14 PLAT 207 A4-3B.1

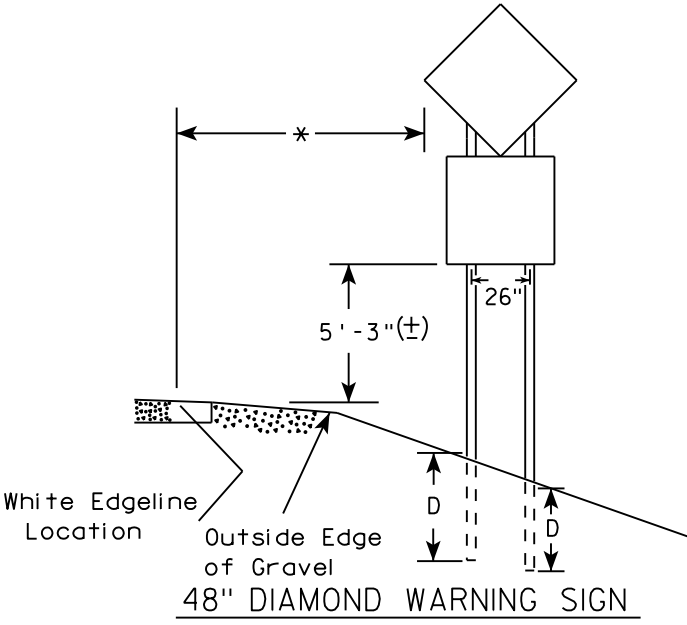
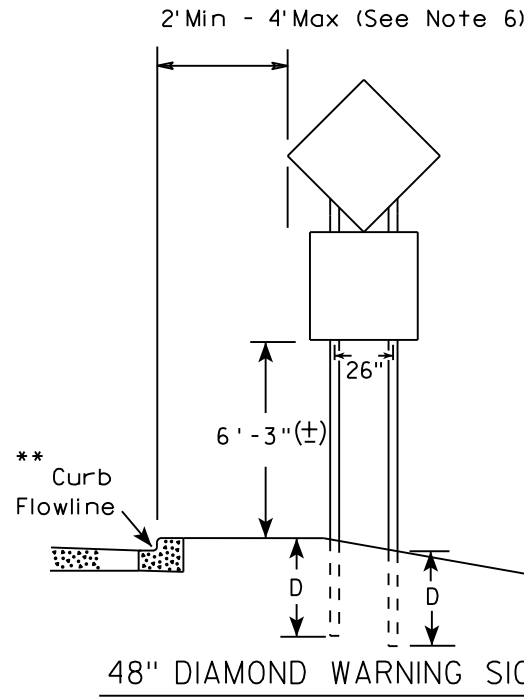
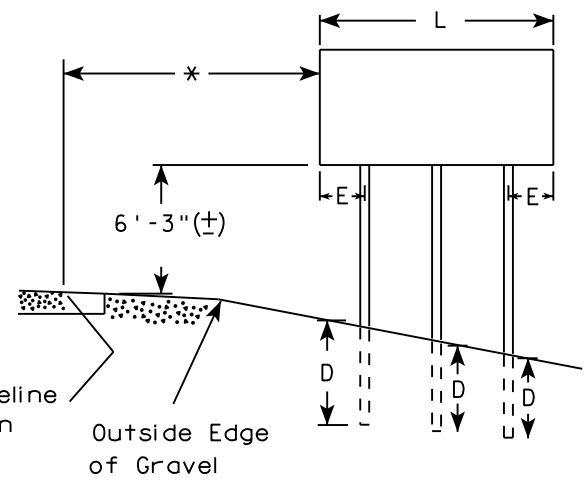
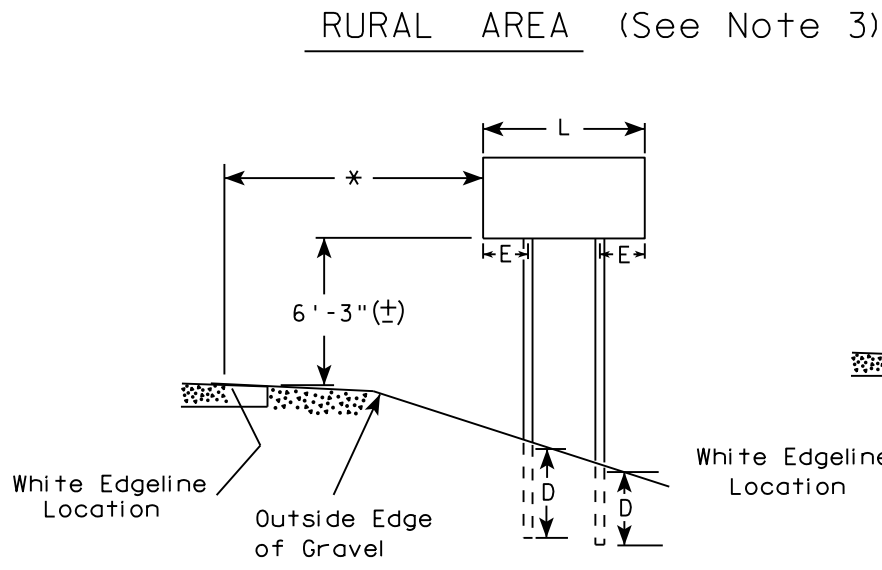
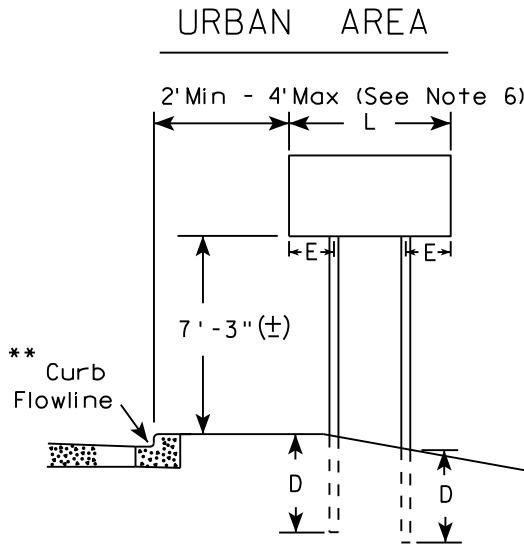
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E



SIGN SHAPE OTHER THAN DIAMOND (TWO POSTS REQUIRED)	
L	E
Greater than 48" Less than 60"	12"
60" to 108"	L/5

SIGN SHAPE OTHER THAN DIAMOND (THREE POSTS REQUIRED)	
L	E
Greater than 108" to 144"	12"

POST EMBEDMENT DEPTH

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

TYPICAL INSTALLATION
OF TYPE II SIGNS
ON MULTIPLE POSTS

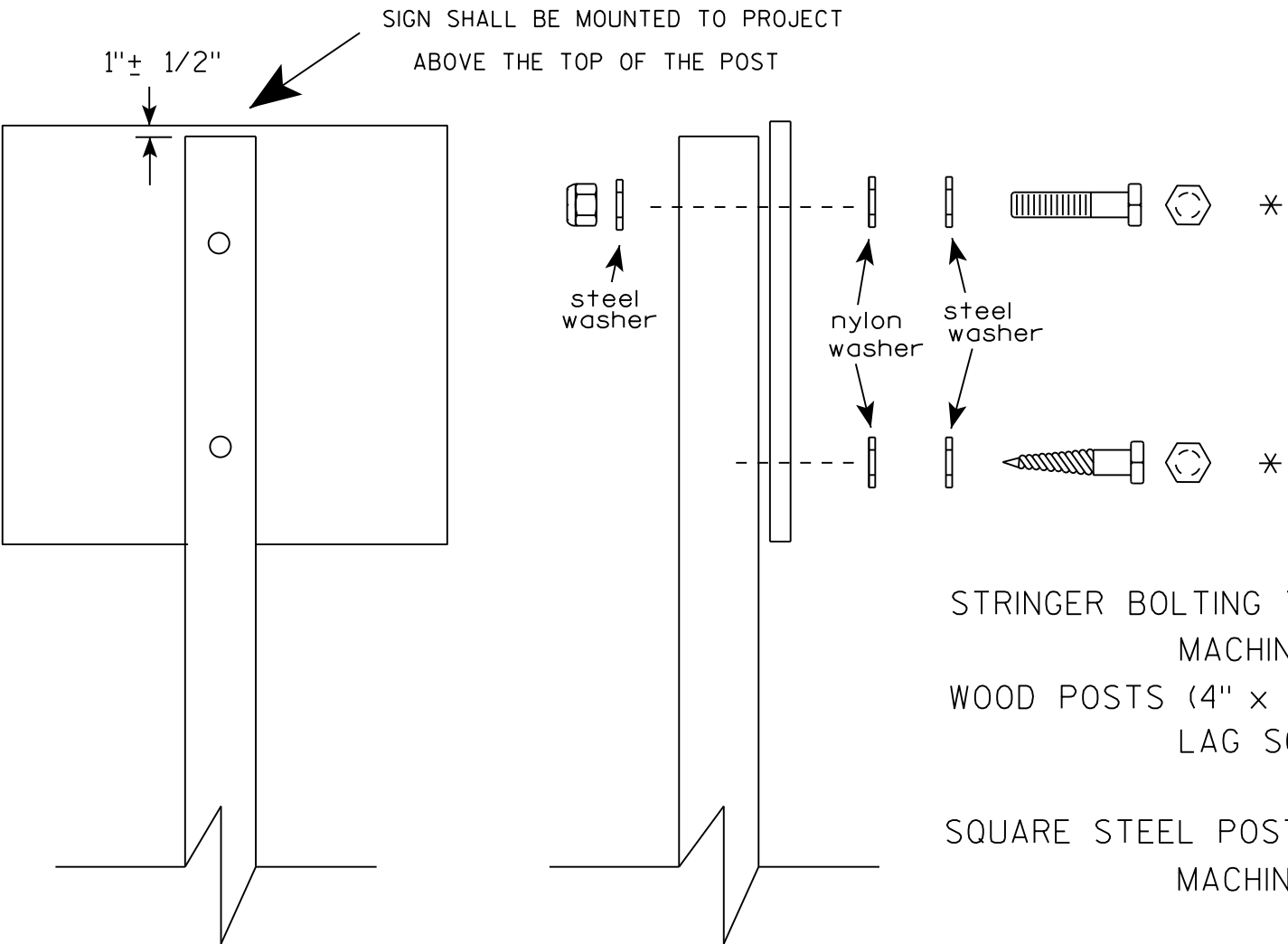
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 8/21/17 PLATE NO. A4-4.15

- GENERAL NOTES
1. For 3 or 4 post installations, individual post spacing shall be greater than 3'-6".
 2. See tables below for required number of posts.
 3. For expressways and freeways, mounting height is 7'-3" (±) or 6'-3" (±) depending upon existence of sub-sign.
 4. The (±) tolerance for mounting height is 3 inches.
 5. J-Assemblies are considered to be one sign for mounting height.
 6. Offset distance shall be consistent with existing signs or consistent throughout length of project.
 7. Folding signs shall be mounted at a height of 5'-3" (±) or as directed by the engineer.
 8. The Double Arrow sign (W12-1) shall be mounted at a height of 2'-3" (±). The Chevron sign (W1-8), Roundabout Chevron panel (R6-4B), Clearance Markers (W5-52), Mile Markers (D10 series), In Road Object Markers (W5-54) & End of Road Markers (W5-56) shall be mounted at a height of 4'-3" (±).

- * 6 feet from edge of a paved shoulder or 12 feet from the edge of pavement (edge line location) or 2 feet from outside edge of gravel, whichever is greater unless directed by project engineer.
- ** The existence of curb and gutter does not in itself mandate the vertical clearance illustrated. That height is typically measured where there is sidewalk adjacent to the roadway or parking is permitted. In the absence of sidewalk vertical clearance is measured from the top of the curb. Offset of signs is measured from the flow line.
- *** See A4-3 sign plate for signs 4' or less in width and less than 20 S.F. in area.



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.

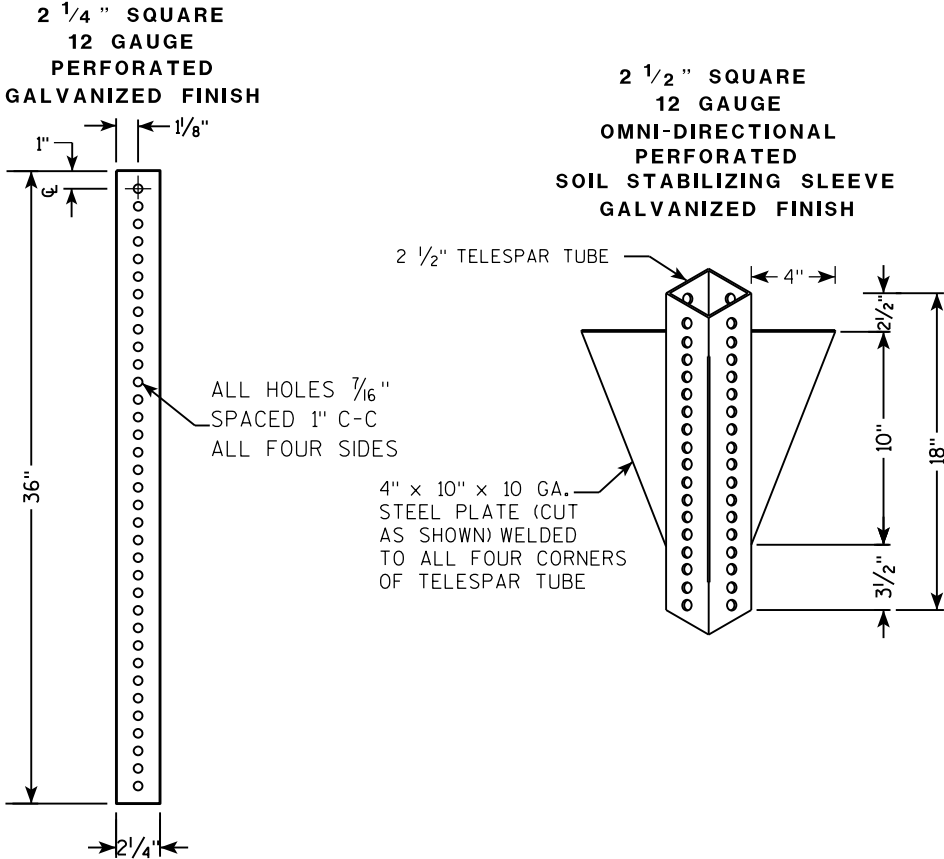
Threads on bolts and nuts shall be manufactured with sufficient allowance for the cadmium plate or galvanized coating to permit the nuts to run freely on the bolts.

- STRINGER BOLTING TO ALUMINUM SIGNS (SEE SIGN PLATE A4-18)
- MACHINE BOLTS - 5/16" X 1-3/4" Length w/ lock nuts
- WOOD POSTS (4" x 4" or 4" x 6")
- LAG SCREWS - 3/8" X 3" (NO STRINGERS ON BACK OF SIGN)
 - 3/8" X 4" (STRINGERS ON BACK OF SIGN)
- SQUARE STEEL POSTS (2" x 2")
- MACHINE BOLTS - 3/8" X 3-1/4" Length w/ nuts (NO STRINGER ON BACK OF SIGN)
 - 3/8" X 5" Length w/ nuts (STRINGERS ON BACK OF SIGN)
- RIVETS - 9/32" (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM BODY/MANDREL
- O.D. FLANGE .720-.765 INCH, GRIP RANGE .042-.375 INCH
- WASHERS (ALL POSTS) -
- 1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL
 - 1-1/4" O.D. X 3/8" I.D. X .080 NYLON

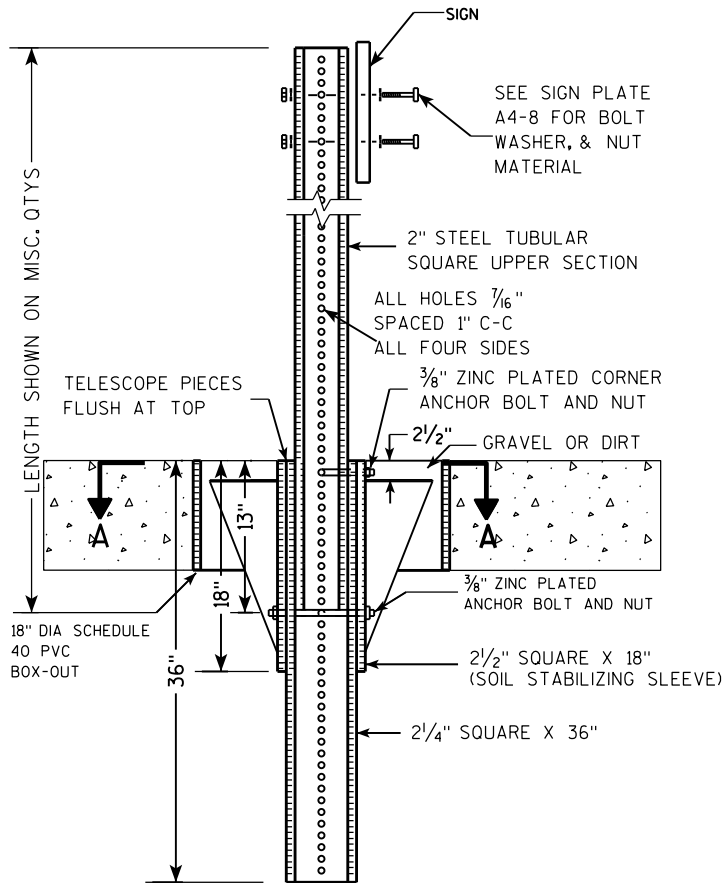
* Two different fastening systems are shown for illustration purposes. On any individual sign, either one or the other system shall be used. Actual number of fasteners per sign varies with the sign area, but normally there are two. For a single post installation, all signs greater than 9 sq. ft. require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

ATTACHMENT OF SIGNS TO POSTS	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> For State Traffic Engineer
DATE 8/11/16	PLATE NO. A4-8.8 209

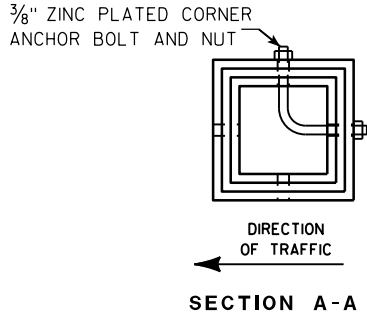
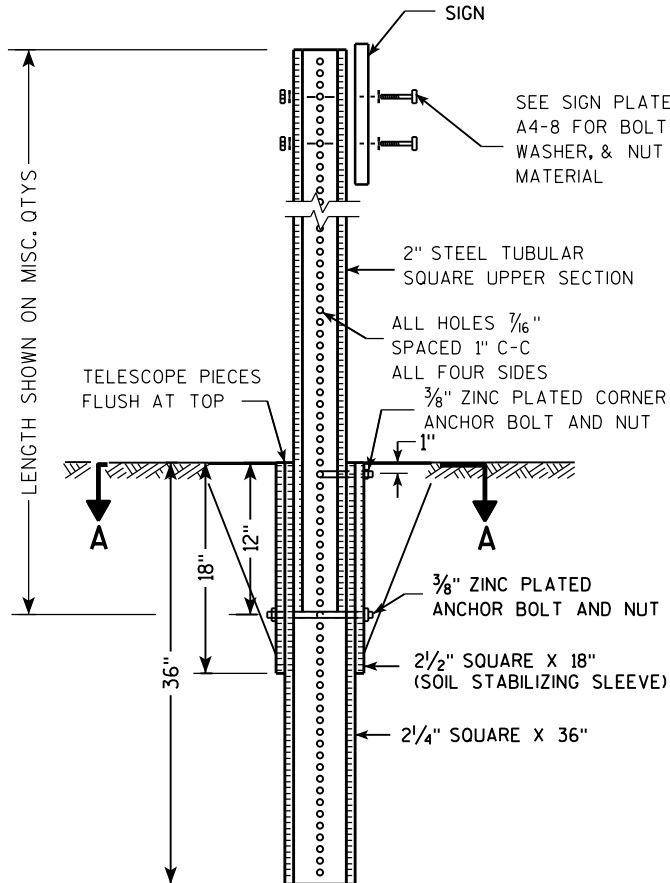
TELESCOPIC TUBING ANCHORS
TWO PIECE SYSTEM



DETAIL OF TUBULAR STEEL SIGN POST
(IN POURED CONCRETE OR ASPHALT)



DETAIL OF TUBULAR STEEL SIGN POST
(IN LOCATIONS OTHER THAN POURED CONCRETE OR ASPHALT)



Area of Sign Installation (Sq. Ft.)	Number of Required 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).

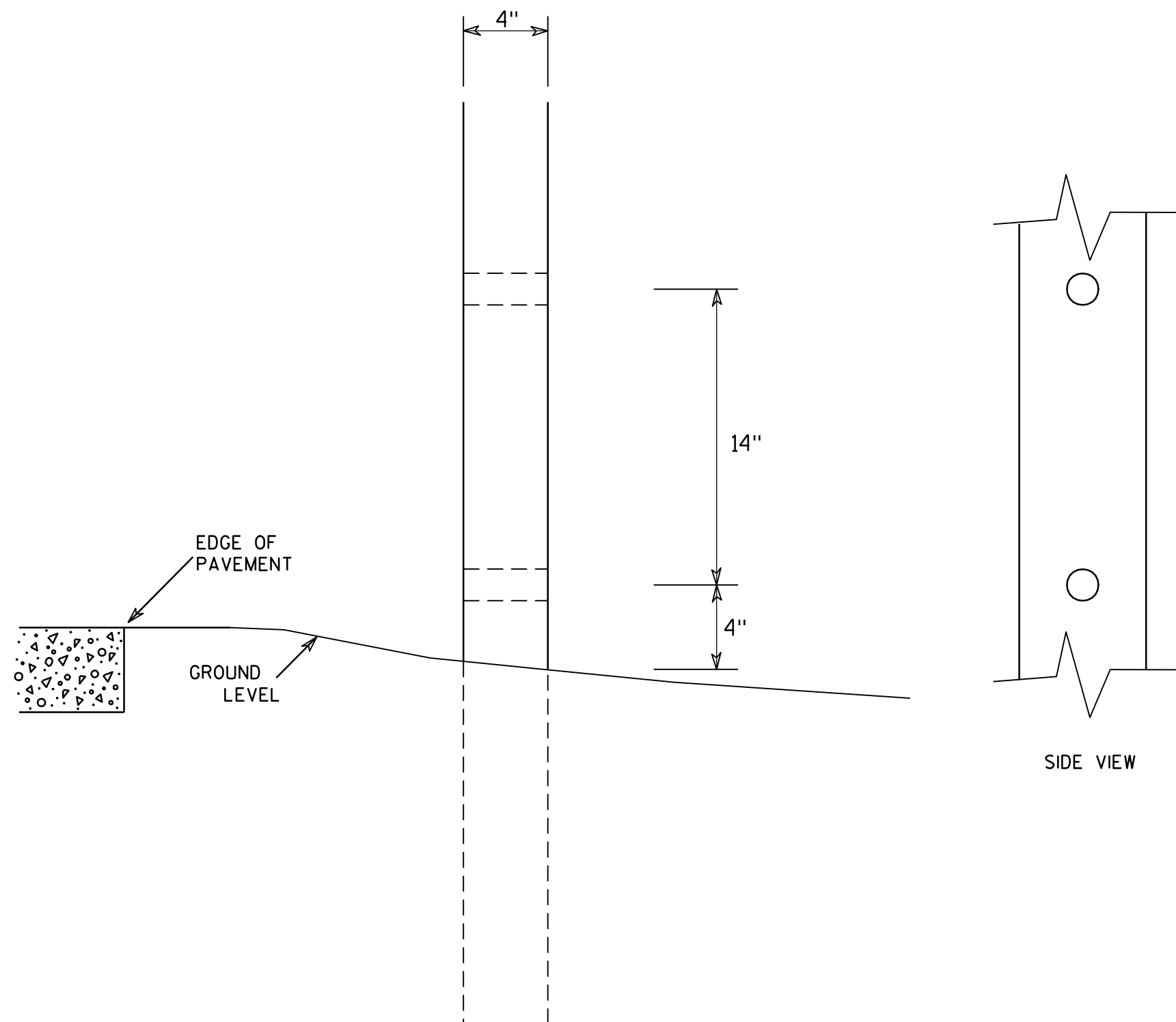
TUBULAR STEEL
SIGN POST
A4-9

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 2/05/15 PLAT 14-9.9

7



GENERAL NOTES

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

SIDE VIEW

4 X 6 WOOD POST
MODIFICATIONS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Chester J Spang
for State Traffic Engineer

DATE 3/27/97

PLATE NO. A4-11.2

PROJECT NO:

HWY:

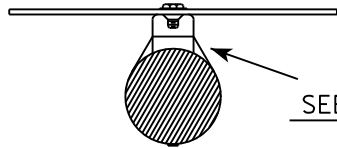
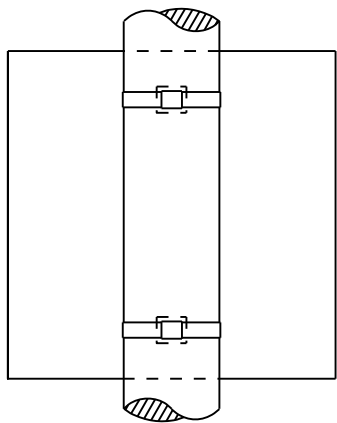
COUNTY:

SHEET NO: 211

11

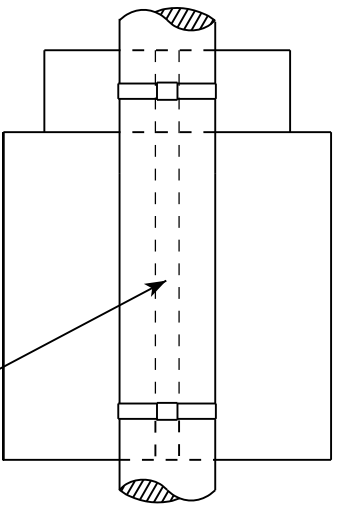
BANDING

SINGLE SIGN

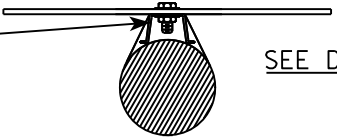


SEE DETAIL A

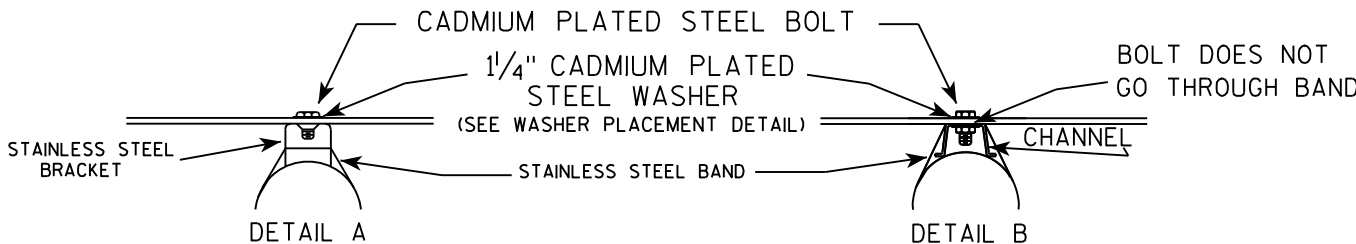
"J" ASSEMBLY



CHANNEL
SEE TYPICAL PANEL
INSTALLATION SHEET



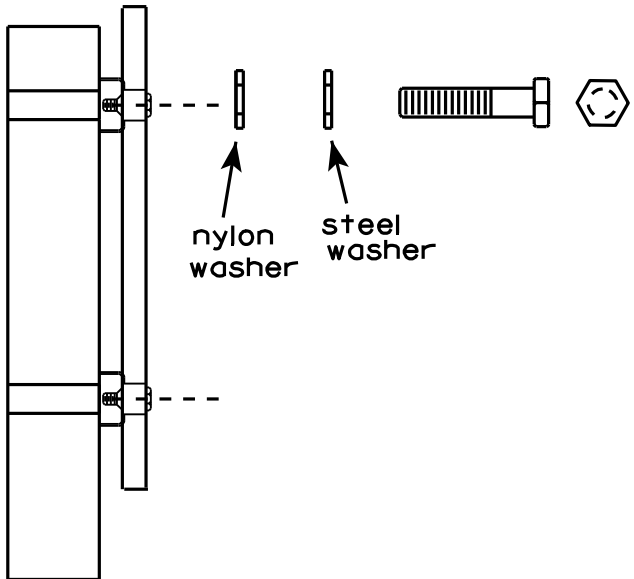
SEE DETAIL B



GENERAL NOTES

1. Any sign over 3 feet in width shall use the V-Block banding method. See A5-10 standard plate.
2. Signs 3 feet or greater in height shall have three bracket bands installed. Signs less than 3 feet in height shall have two bracket bands installed.
3. Banding and assembly bracket shall be stainless steel. All bands shall be $\frac{3}{4}$ " in width and 0.025" thickness.

WASHER PLACEMENT



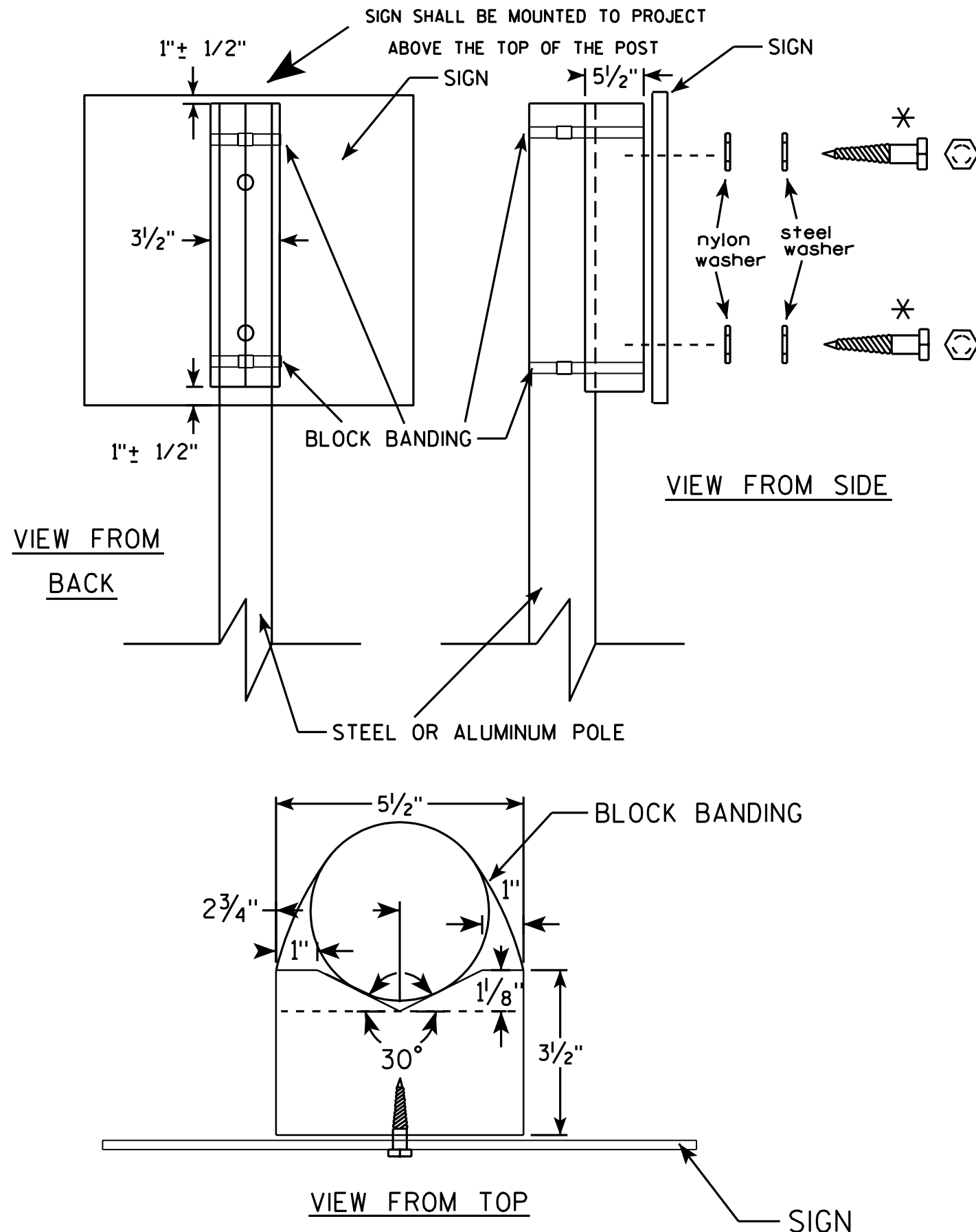
WASHERS (ALL POSTS) -
1-1/4" O.D. X $\frac{3}{8}$ " I.D. X $\frac{1}{16}$ " STEEL
1-1/4" O.D. X $\frac{3}{8}$ " I.D. X .080 NYLON
FOR ALL TYPE H SIGNS

STANDARD SIGN
SIGN BANDING DETAILS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 8/16/13 PLATE NO. A5-9.3



GENERAL NOTES

1. WOOD 4"x6" POST MATERIAL SHALL CONFORM TO 507.2.2 OF THE WISDOT STANDARD SPECIFICATIONS
2. BLOCK BANDING AND CLIPS SHALL BE STAINLESS STEEL, 3/4" WIDTH AND 0.025" THICKNESS
3. SIGNS 3' OR GREATER IN HEIGHT SHALL UTILIZE 3 BLOCK BANDS. SIGNS UNDER 3' IN HEIGHT SHALL UTILIZE 2 BLOCK BANDS
4. ACTUAL NUMBER OF FASTENERS PER SIGN VARIES WITH THE SIGN AREA, BUT NORMALLY THERE ARE TWO. FOR SIGNS GREATER THAN 9 S.F. 3 FASTENERS SHALL BE USED.
5. ALL SIGN MOUNTING BOLTS AND WASHERS SHALL BE EITHER:
 - a. Hot dip or mechanically galvanized in accordance with ASTM Designation: A 153, Class D, or
 - b. Cadmium plated in accordance with ASTM Designation : B 766 TYPE 3, Class 12, or
 - c. Electro-galvanized in accordance with ASTM Designation : B 633, TYPE III, SC 3.
6. ALL BOLTS SHALL HAVE HEXAGONAL HEADS.
7. STEEL WASHERS SHALL BE 1 1/4" O.D. X 3/8" I.D. X 1/16"
8. NYLON WASHERS SHALL BE 1 1/4" O.D. X 3/8" I.D. X .080 FOR TYPE H OR TYPE F FACE SIGN

* LAG BOLTS SHALL BE 3/8" X 2 1/2"

BLOCK BANDING DETAIL (V-BLOCK OPTION)

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

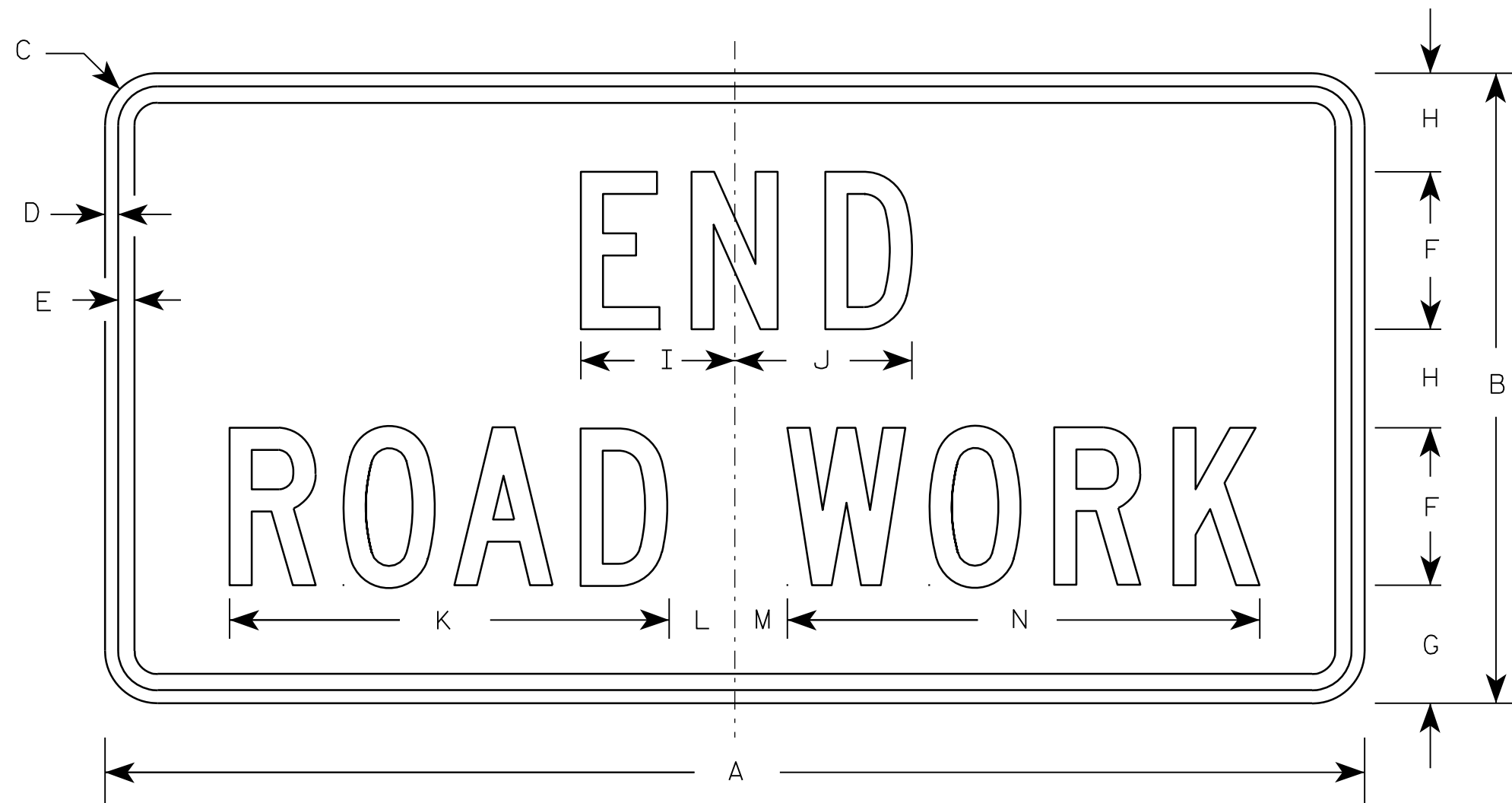
DATE 7/12/07 PLATE NO. A5-10.1

PROJECT NO:

SHEET NO: 213

E

7



G20-2A

NOTES

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

Metric equivalent
for this sign is:

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

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.	Area sq. m.
1	36	18	1 1/8	3/8	1/2	4	3 3/4	2 1/2	4 1/8	4 1/8	11 1/8	2	1	12 1/8													4.5	0.41
2	48	24	1 1/2	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0	0.72
3	48	24	1 1/2	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0	0.72
4	48	24	1 1/2	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0	0.72
5	48	24	1 1/2	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0	0.72

STANDARD SIGN
G20-2A

WISCONSIN DEPT OF TRANSPORTATION

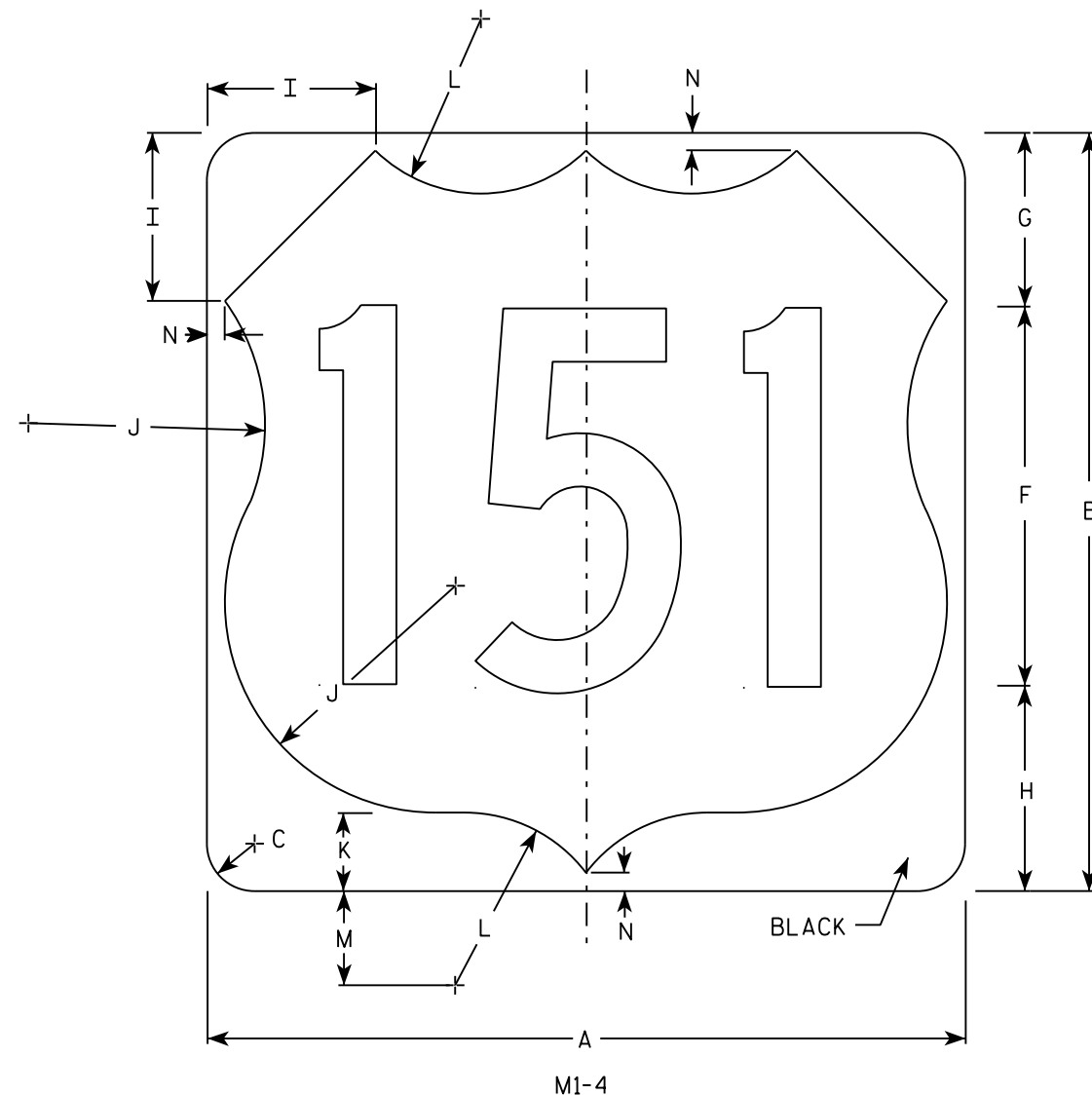
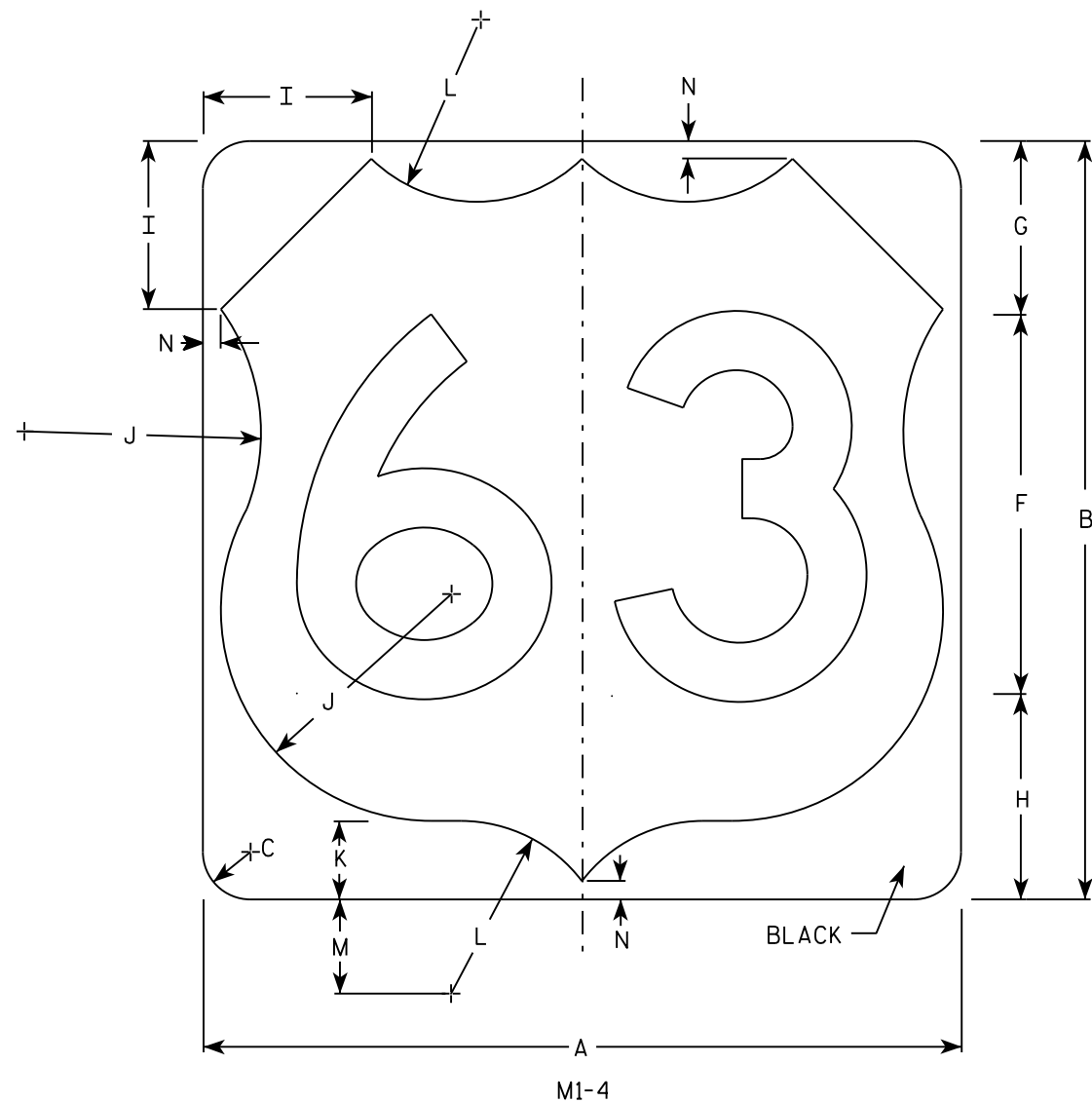
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 9/30/09 PLATE NO. G20-2A.8

7

NOTES

1. Sign is Type II - Type H Reflective
2. Color:
Background - White
Message - Black
3. Message Series - D except 3 number signs Series C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.



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

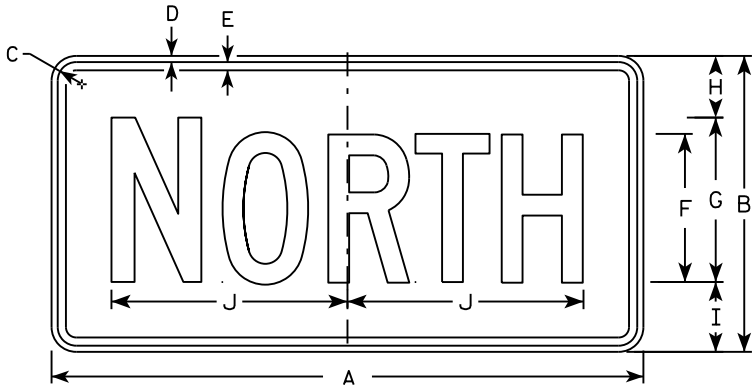
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 215	E
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USH MARKER
M1-4 FOR ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

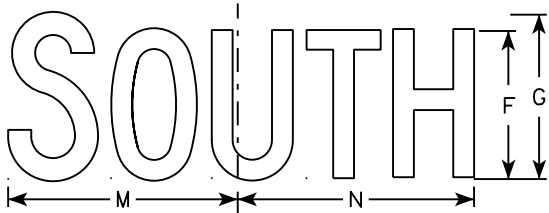
DATE 3/16/18 PLATE NO. M1-4.10



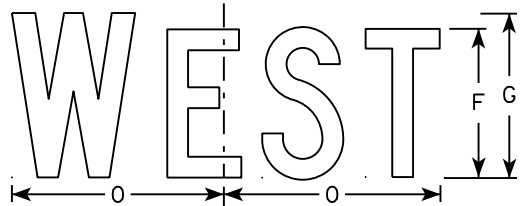
M3-1
MM3-1
MP3-1



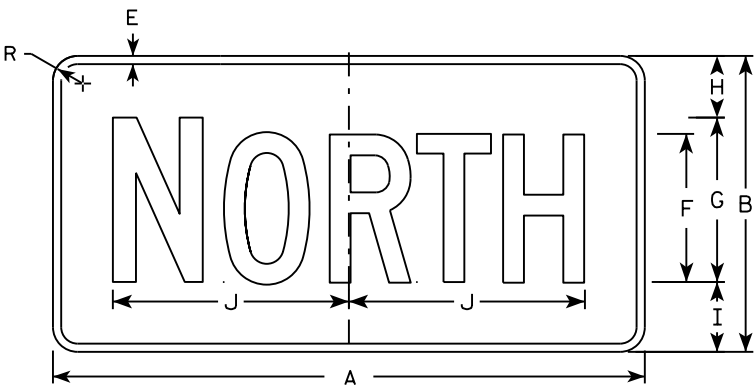
M3-2
MM3-2
MP3-2



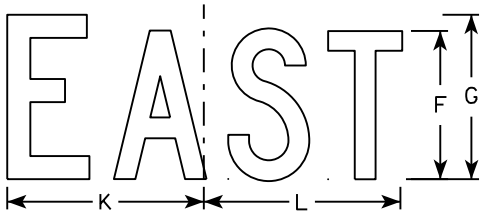
M3-3
MM3-3
MP3-3



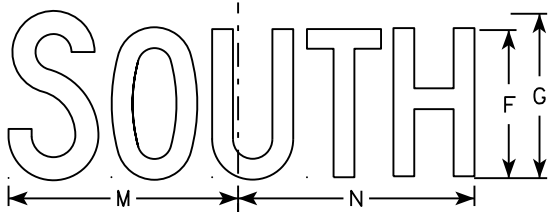
M3-4
MM3-4
MP3-4



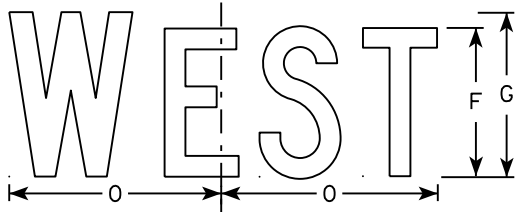
MB3-1
MK3-1
MN3-1



MB3-2
MK3-2
MN3-2



MB3-3
MK3-3
MN3-3



MB3-4
MK3-4
MN3-4

NOTES

1. All Signs Type II - Type H
2. Color:
Background - See note 5
Message - See note 5
3. Message Series - C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. M3-1 thru M3-4 Background - White
Message - Black
MB3-1 thru MB3-4 Background - Blue
Message - White
MK3-1 thru MK3-4 Background - Green
Message - White
MM3-1 thru MM3-4 Background - White
Message - Green
MN3-1 thru MN3-4 Background - Brown
Message - White
MP3-1 thru MP3-4 Background - White
Message - Blue
6. Note the first letter of each direction is larger than the remainder of the message.

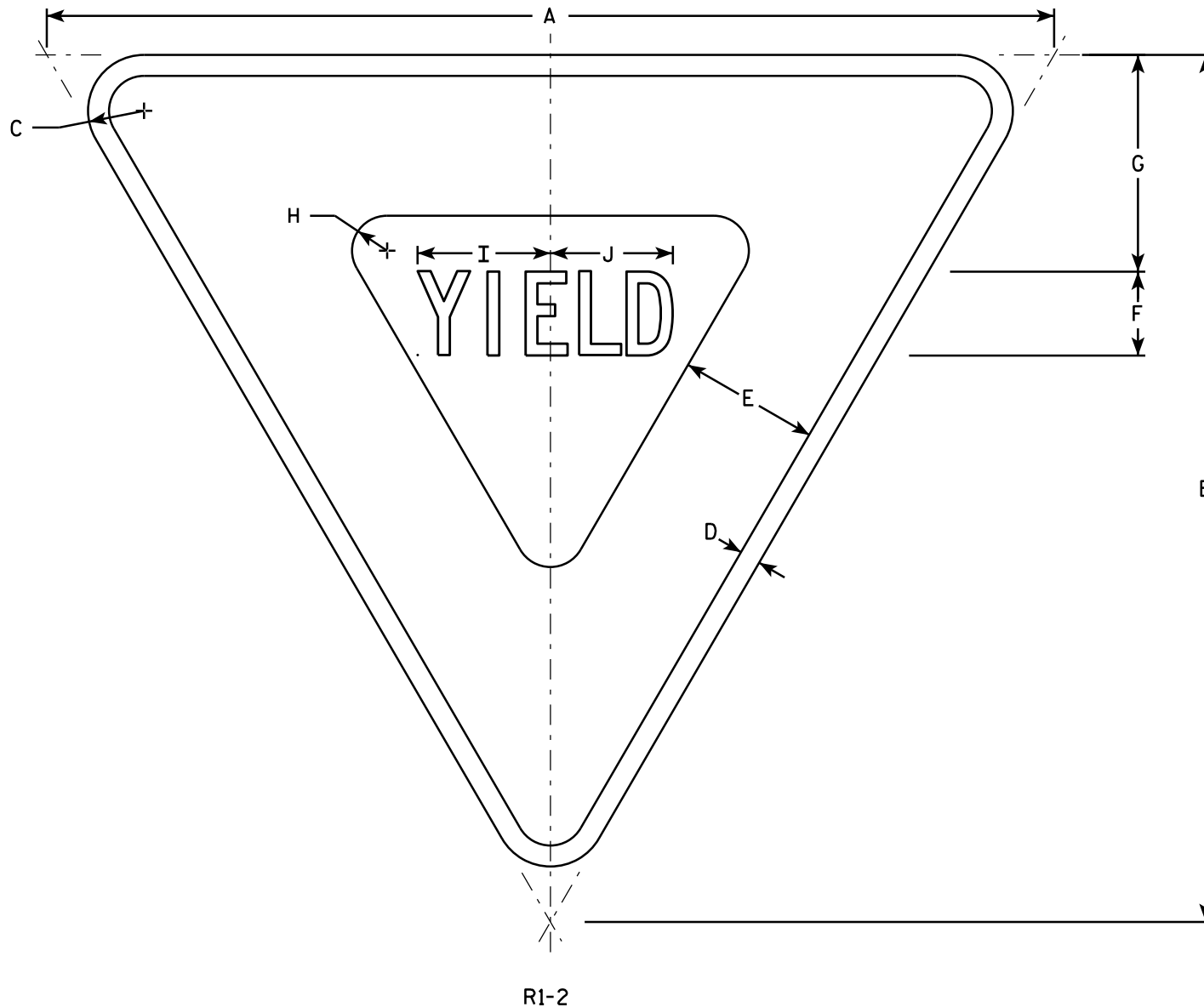
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	24	12	1 1/8	3/8	3/8	6	7	2 1/4	2 3/4	10 1/4	7 7/8	8 3/8	10 1/4	9 3/4	8 3/4			1 1/2									2.00
3	36	18	1 1/8	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13			1 1/2									4.5
4	36	18	1 1/8	3/8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

STANDARD SIGNS
M3-1 thru M3-4
SERIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED
Matthew R. Rauch
for State Traffic Engineer

DATE 10/15/15 PLATE NO. 216 M3-1.14



NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - White
Message - See note 5
3. Message Series - C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. The border strip and word message are reflectorized red.

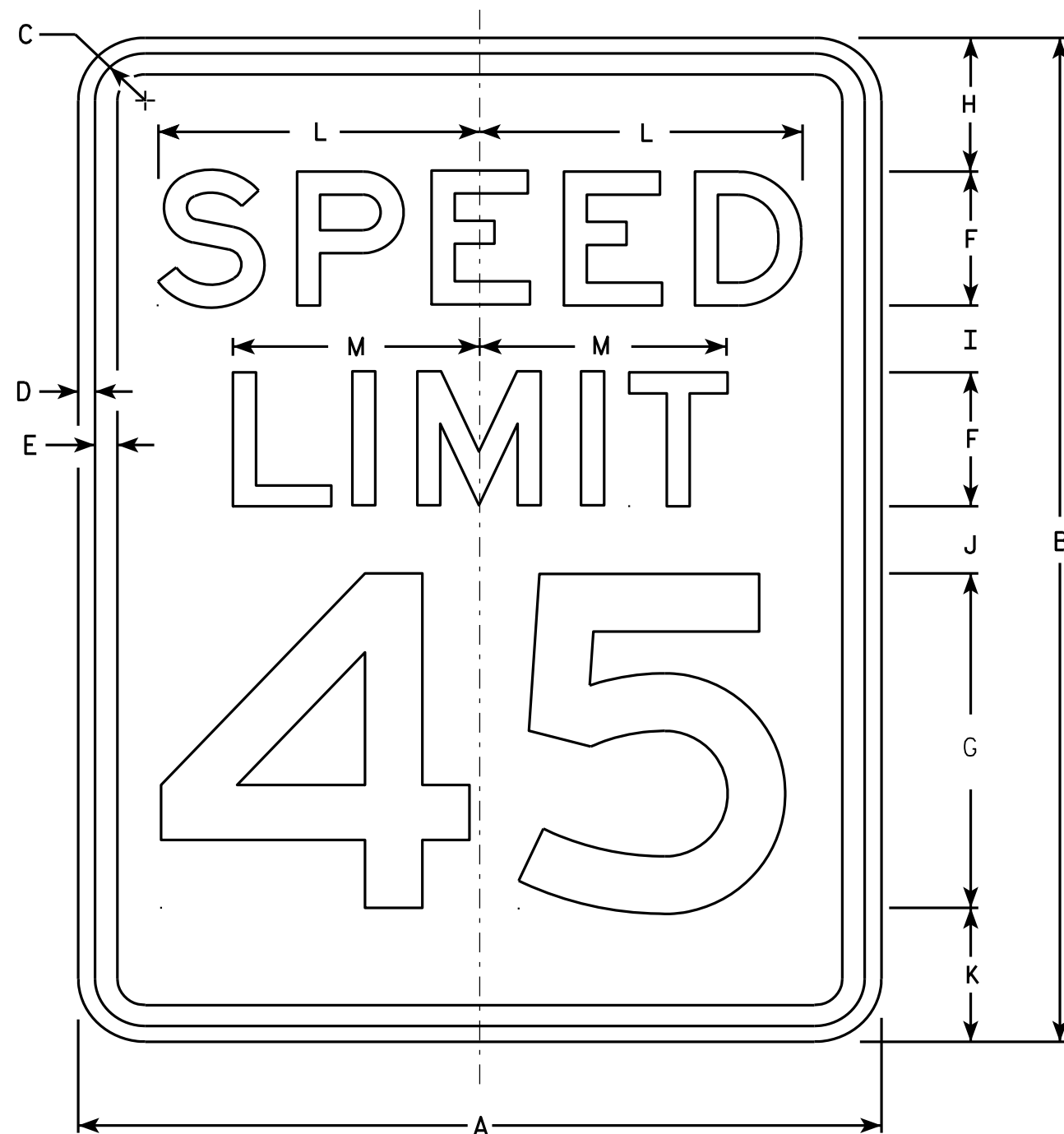
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	30	26	1 1/2	5/8	4	2 1/2	6 3/8	7/8	4	3 5/8																	2.71
2S	36	31	2	3/4	5	3	7 3/4	1 1/4	4 3/4	4 3/8																	3.88
2M	48	42	3	1	6	4	9 3/4	2	6 1/4	5 7/8																	7.00
3	48	42	3	1	6	4	9 3/4	2	6 1/4	5 7/8																	7.00
4	48	42	3	1	6	4	9 3/4	2	6 1/4	5 7/8																	7.00
5	60	52	3	1 1/2	8	5	13	2 1/2	7 7/8	7 1/4																	10.83
6																											
7	18	15 1/2	1	3/8	2 1/2	1 1/2	3 7/8	5/8	2 3/8	2 1/4																	0.97

STANDARD SIGN
R1-2

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 10/13/14 PLATE 217 P1-2.12



R2-1

NOTES

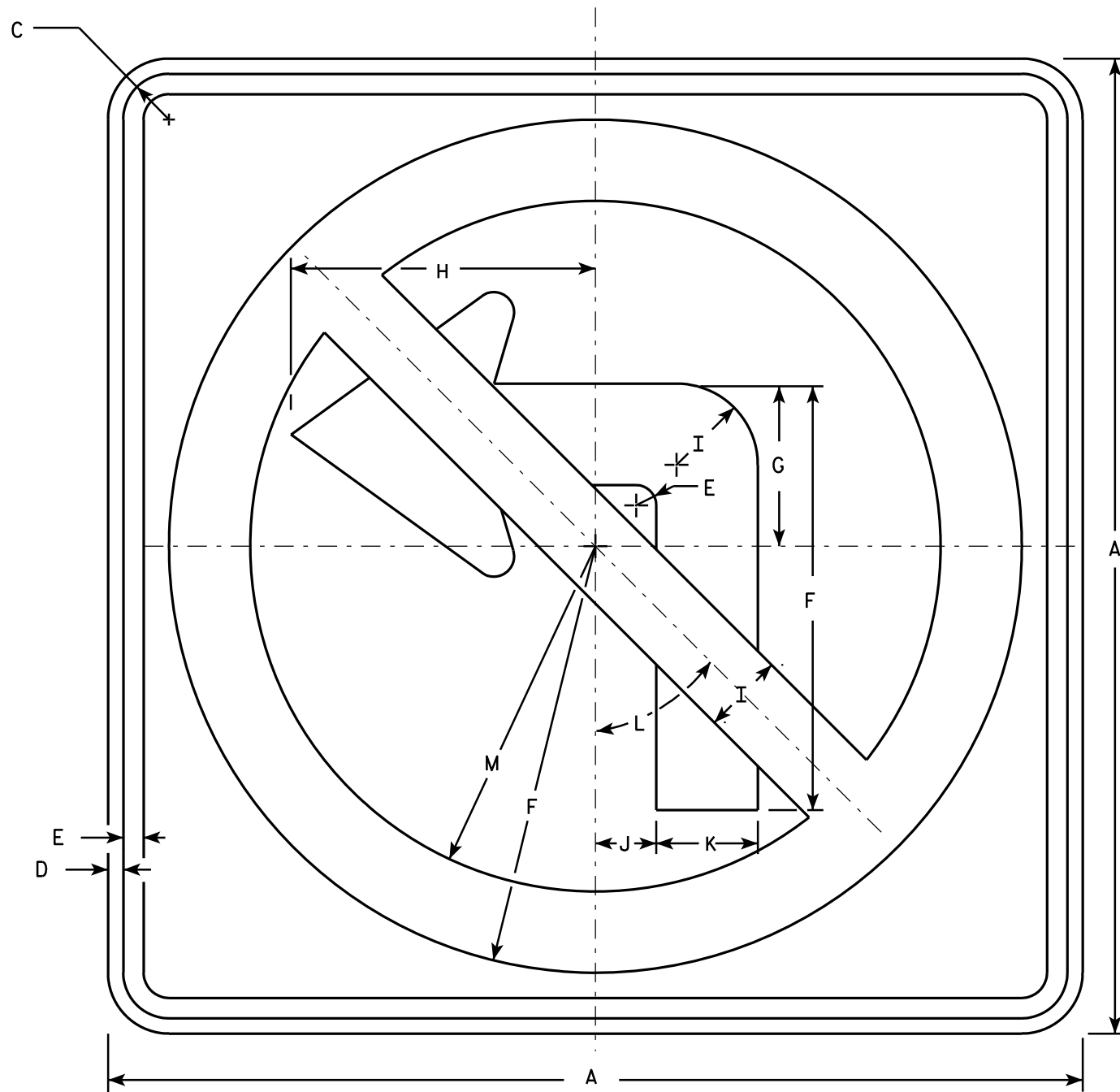
1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - White
Message - Black
3. Message Series - E
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Substitute appropriate numerals and optically adjust spacing to achieve proper balance.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	18	24	1 1/8	3/8	1/2	3	8	3	2	2	3	7 1/4	5 1/2														3.0
2S	24	30	1 1/8	3/8	1/2	4	10	3	2 1/4	3 3/8	3 3/8	9 5/8	7 3/8														5.0
2M	30	36	1 3/8	1/2	5/8	5	12	5	2 1/2	2 1/2	4	12	9 1/4														7.5
3	36	48	1 3/8	1/2	5/8	6	14	6	5	5	6	14 3/8	11														12.0
4	36	48	1 3/8	1/2	5/8	6	14	6	5	5	6	14 3/8	11														12.0
5	48	60	2 1/4	3/4	1	8	20	6	4 1/2	6 3/4	6 3/4	19 1/4	14 5/8														20.0

STANDARD SIGN
R2-1

WISCONSIN DEPT OF TRANSPORTATION
APPROVED *Matthew R. Rauch*
For State Traffic Engineer
DATE 5/26/10 PLATE NO. R2-1.13

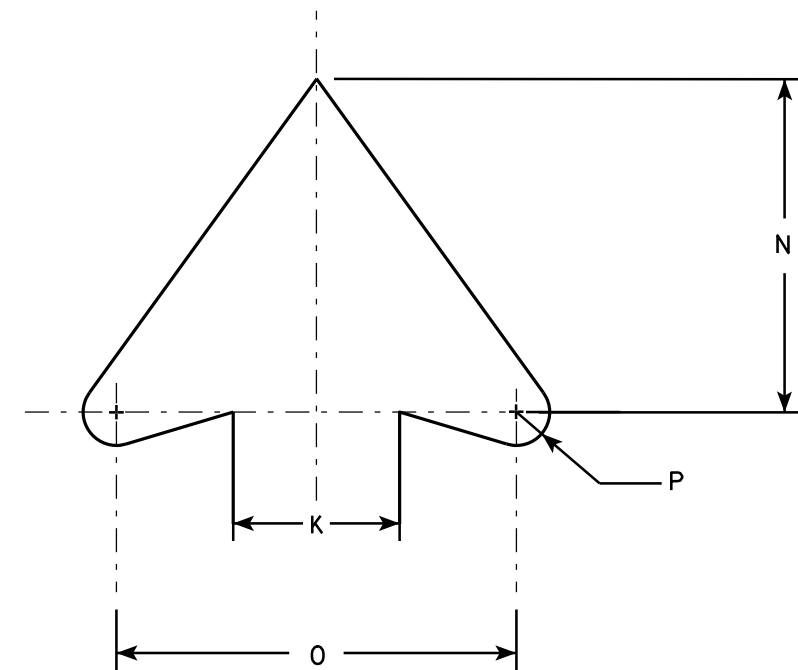
PROJECT NO: HWY: COUNTY: SHEET NO: 218 E



R3-2

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - White
Message - See note 4
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. Border & Arrow are non reflective black, the circle with diagonal bar is reflective red.



ARROW DETAIL

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	24		1 1/8	3/8	1/2	10 1/2	4	7 1/2	2	1 1/2	2 1/2	45°	8 1/2	5	6	1/2											4.0
2S	24		1 1/8	3/8	1/2	10 1/2	4	7 1/2	2	1 1/2	2 1/2	45°	8 1/2	5	6	1/2											4.0
2M	36		1 5/8	5/8	3/4	15 3/4	6	11 1/4	3	2 1/4	3 3/4	45°	12 3/4	7 1/2	9	3/4											9.0
3	36		1 5/8	5/8	3/4	15 3/4	6	11 1/4	3	2 1/4	3 3/4	45°	12 3/4	7 1/2	9	3/4											9.0
4	36		1 5/8	5/8	3/4	15 3/4	6	11 1/4	3	2 1/4	3 3/4	45°	12 3/4	7 1/2	9	3/4											9.0
5	48		2 1/4	3/4	1	21	8	15	4	3	5	45°	17	10	12	1											16.0

STANDARD SIGN R3-2

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 12/08/10 PLATE NO. R3-2.10

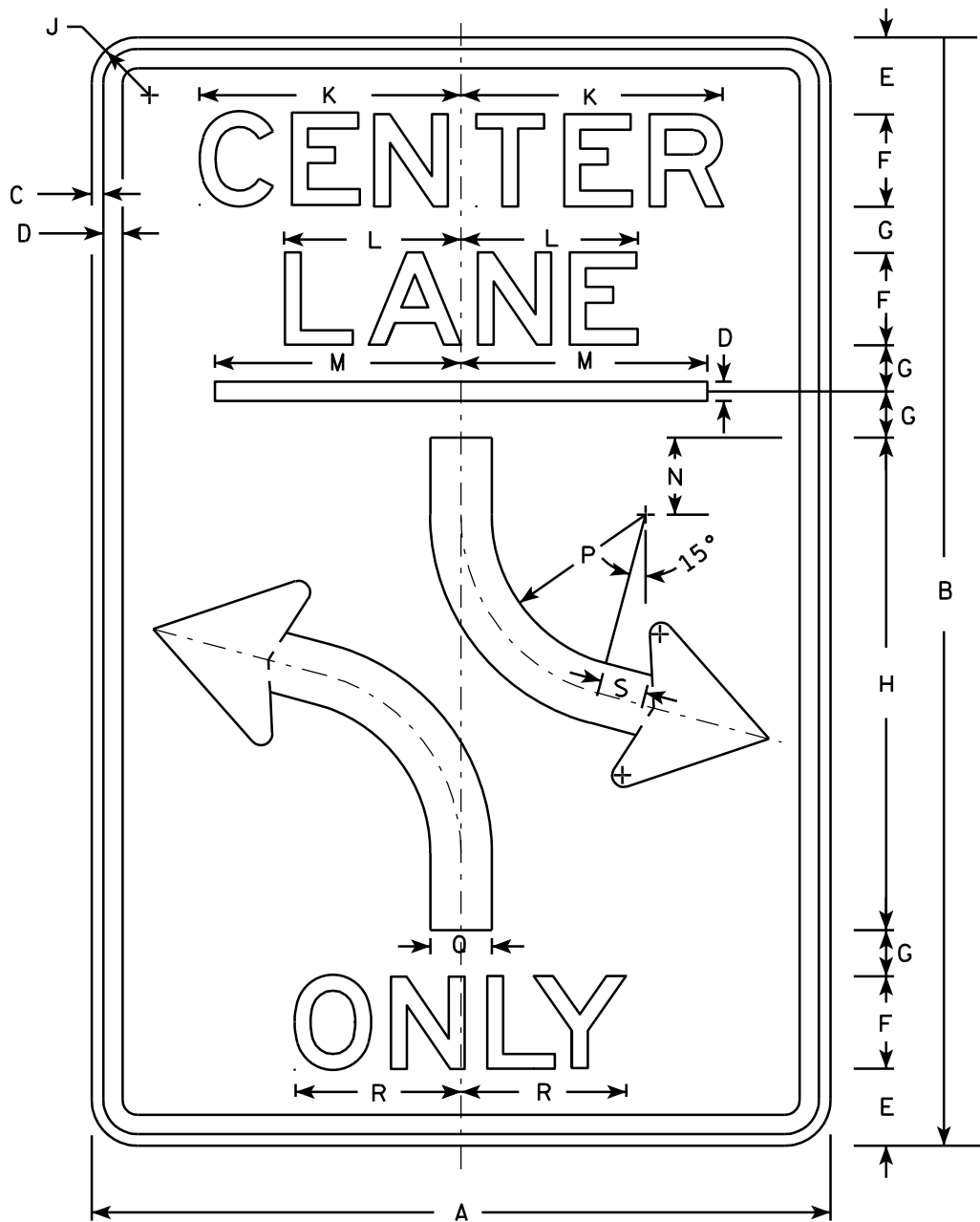
PROJECT NO:

HWY:

COUNTY:

SHEET NO: 219

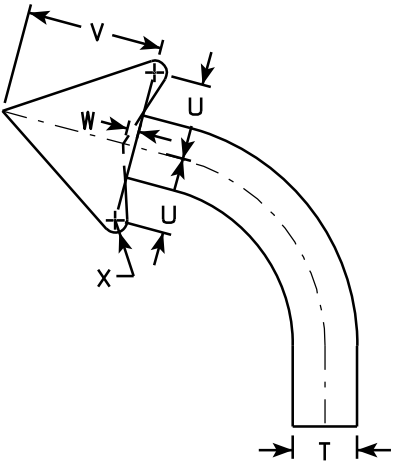
E



R3-9B

NOTES

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



ARROW DETAIL

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	24	36	$\frac{3}{8}$	$\frac{1}{2}$	2 $\frac{1}{2}$	3	1 $\frac{1}{2}$	16		1 $\frac{1}{2}$	8 $\frac{1}{2}$	5 $\frac{3}{4}$	8	2 $\frac{1}{2}$		6	2	5 $\frac{1}{8}$	1 $\frac{1}{2}$		2 $\frac{3}{8}$	4 $\frac{3}{8}$	$\frac{3}{8}$				6.0
2M	24	36	$\frac{3}{8}$	$\frac{1}{2}$	2 $\frac{1}{2}$	3	1 $\frac{1}{2}$	16		1 $\frac{1}{2}$	8 $\frac{1}{2}$	5 $\frac{3}{4}$	8	2 $\frac{1}{2}$		6	2	5 $\frac{1}{8}$	1 $\frac{1}{2}$		2 $\frac{3}{8}$	4 $\frac{3}{8}$	$\frac{3}{8}$				6.0
3	36	48	$\frac{5}{8}$	$\frac{7}{8}$	3 $\frac{1}{2}$	5	1 $\frac{1}{2}$	20		2 $\frac{1}{4}$	14 $\frac{1}{8}$	9 $\frac{1}{2}$	12	3		4	3	9 $\frac{7}{8}$	2		3 $\frac{1}{2}$	6 $\frac{1}{8}$	$\frac{1}{2}$				12.0
4																											
5																											

PROJECT NO:

HWY:

COUNTY:

SHEET NO: 220

E

STANDARD SIGN
R3-9B

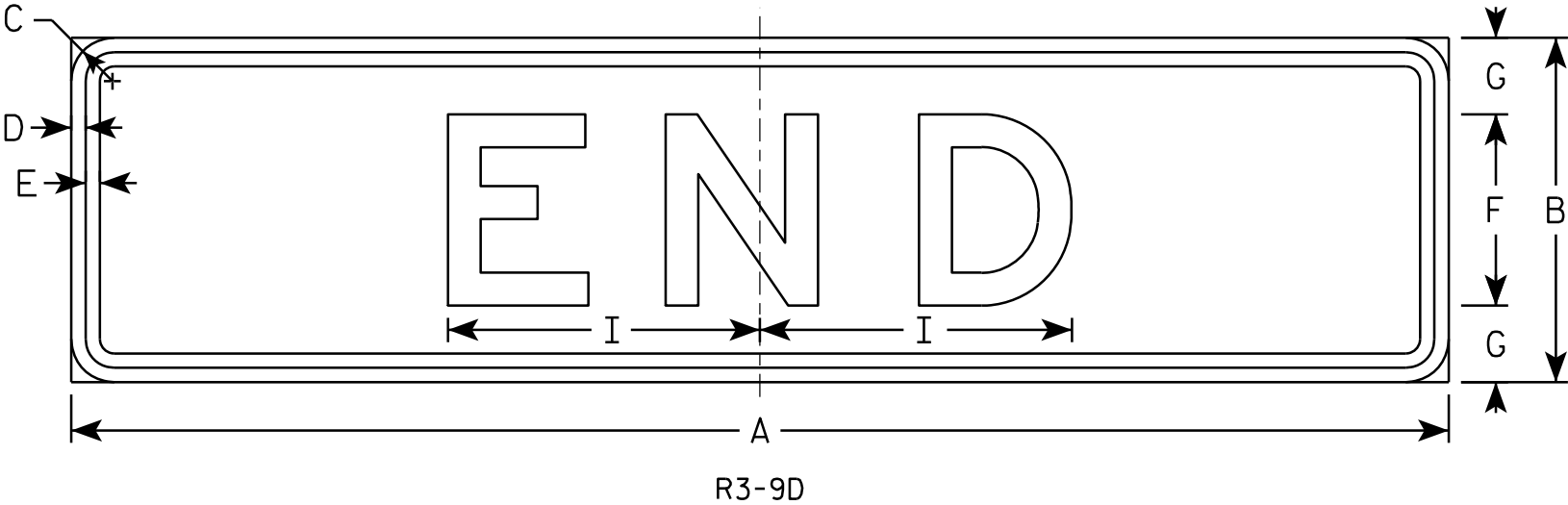
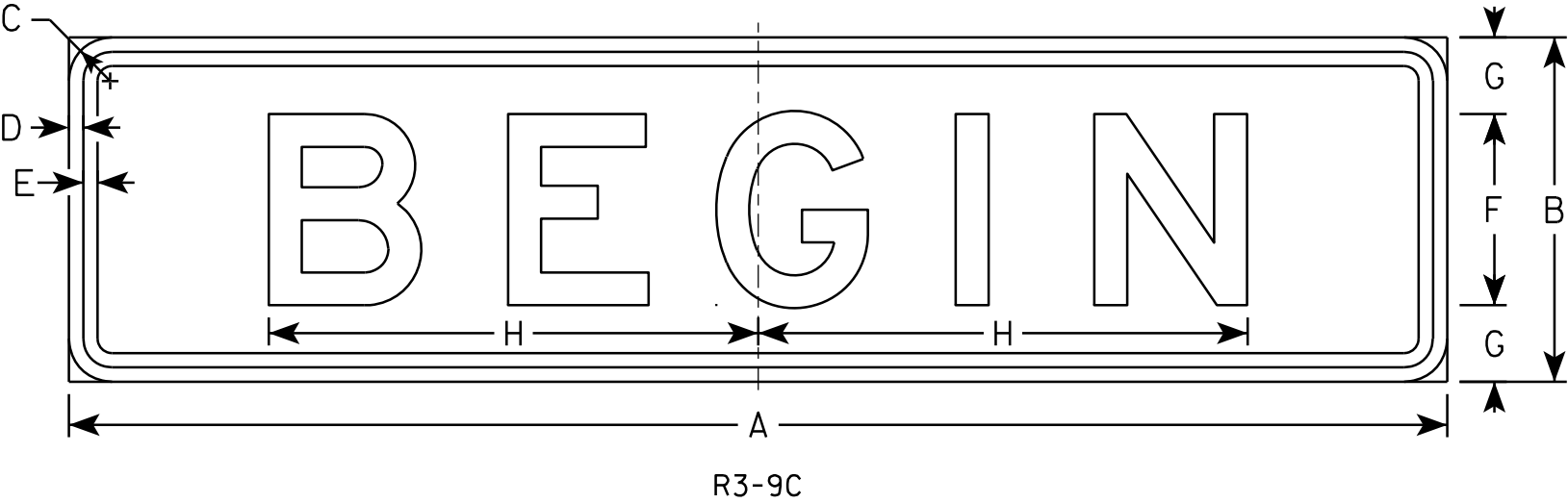
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 3/24/2011 PLATE NO. R3-9B.5

NOTES

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



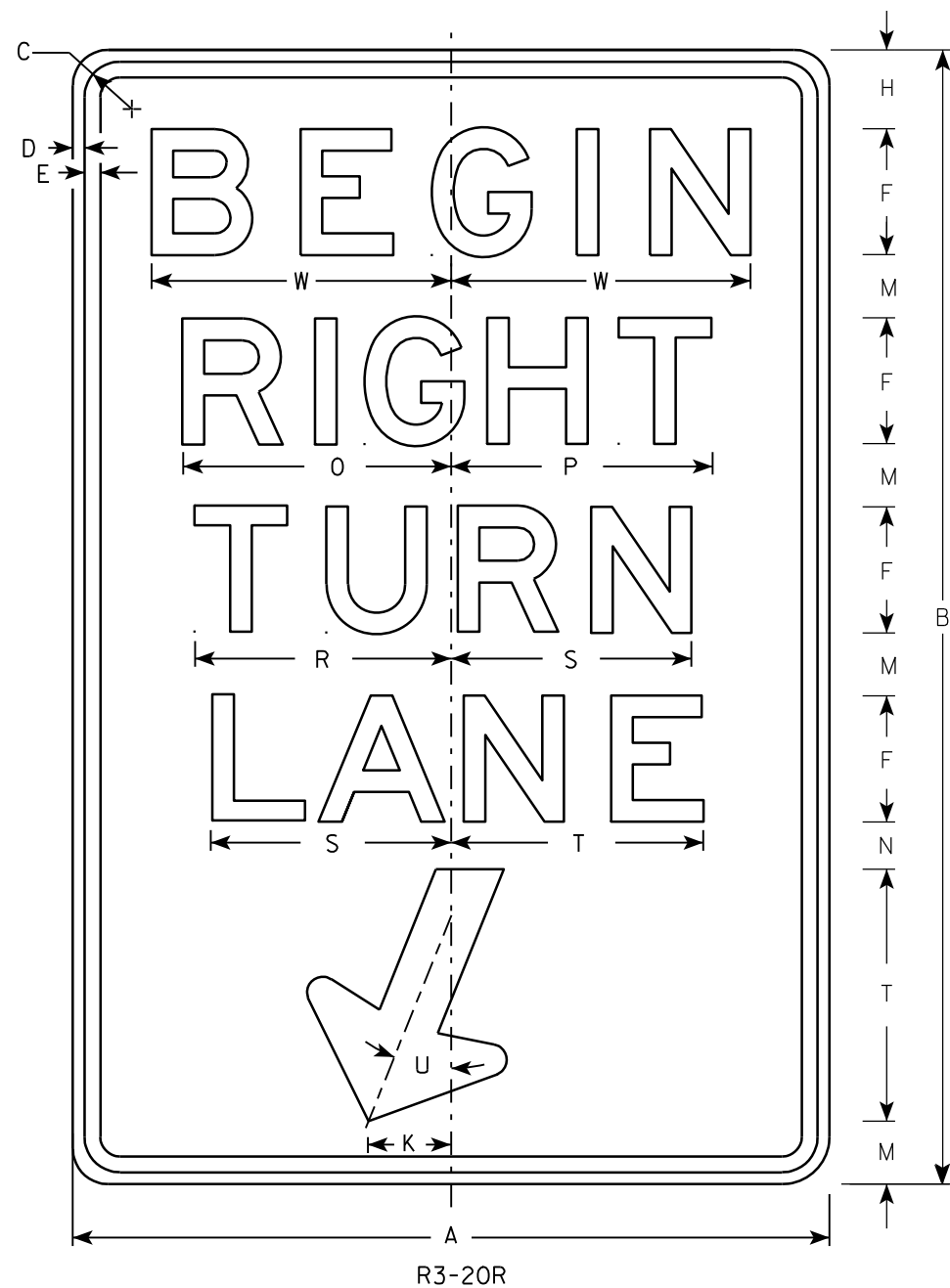
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	24	6	1 1/8	3/8	3/8	3	1 1/2	7 3/4	4 7/8																		1.0
2M	24	6	1 1/8	3/8	3/8	3	1 1/2	7 3/4	4 7/8																		1.0
3	36	9	1 1/8	3/8	3/8	5	2	12 3/4	8 1/8																		1.86
4																											
5																											

STANDARD SIGN
R3-9C & R3-9D

WISCONSIN DEPT OF TRANSPORTATION

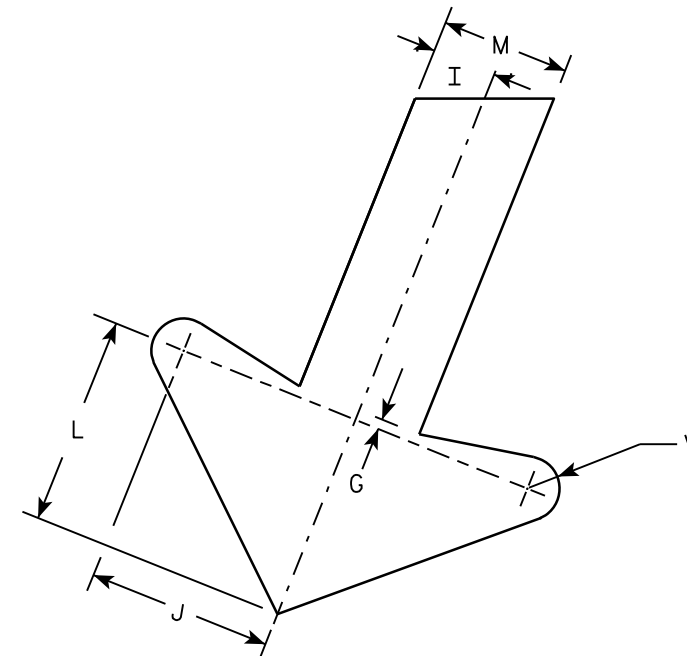
APPROVED
Matthew R. Rauch
for State Traffic Engineer

DATE 3/24/2011 PLATE NO. R3-9C.2



NOTES

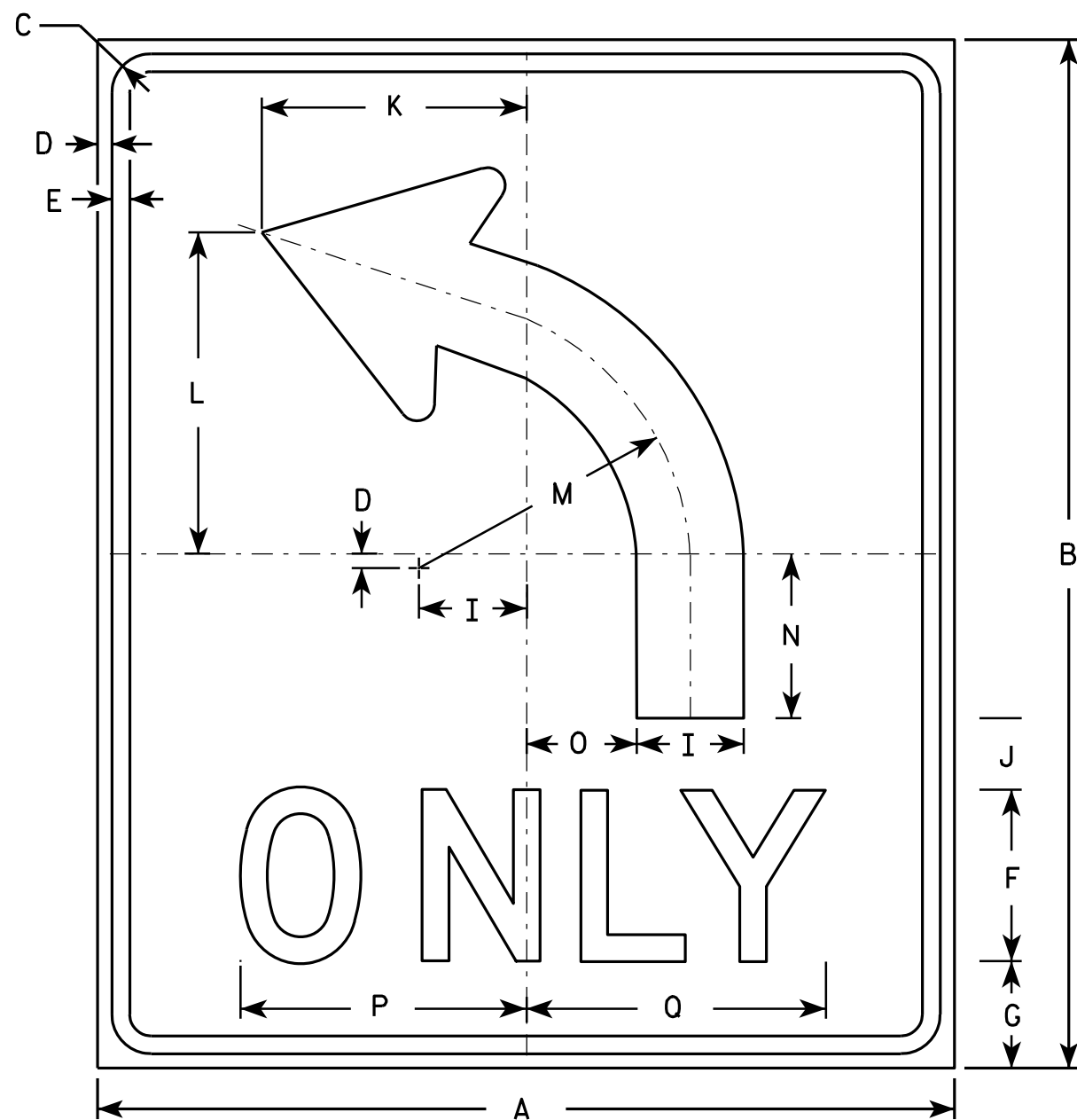
1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - White
Message - Black
3. Message Series - E
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as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



ARROW DETAIL

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	24	36	1 1/8	3/8	1/2	4	1/4	2 1/2	1	2 7/8	2 5/8	3 1/4	2	1 1/2	8 1/2	8 1/4		8 1/8	7 5/8	8	22°	1/2	9 1/2				6.0
2M	24	36	1 1/8	3/8	1/2	4	1/4	2 1/2	1	2 7/8	2 5/8	3 1/4	2	1 1/2	8 1/2	8 1/4		8 1/8	7 5/8	8	22°	1/2	9 1/2				6.0
3	36	54	1 3/4	1/2	5/8	6	3/8	3 3/4	1 1/2	4 1/4	4	4 7/8	3	2 1/4	12 3/4	12 1/2		12 1/4	11 1/2	12	22°	3/4	13 1/4				13.5
4																											
5																											

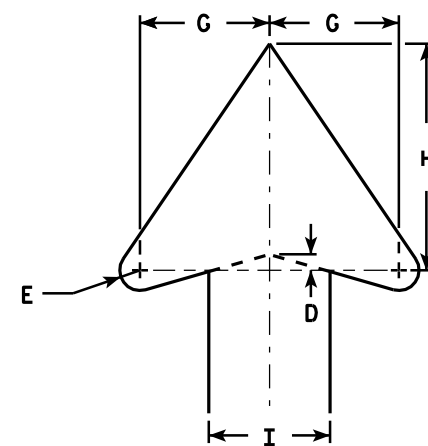
STANDARD SIGN R3-20R	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> For State Traffic Engineer
DATE 10/18/10	PLATE NO. R3-20R.6



R3-50L

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - White
Message - Black
3. Message Series - D
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. R3-50R is the same as R3-50L except curved portion of arrow points right.



ARROW DETAIL

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	O	R	S	T	U	v	W	X	Y	Z	Area sq. ft.
1																											
2S	30	36	1 3⁄8	1⁄2	5⁄8	6	4	7	3 3⁄4	2 1⁄2	9 1⁄4	11 1⁄4	9 1⁄2	5 3⁄4	3 7⁄8	10	10 1⁄2										7.5
2M	30	36	1 3⁄8	1⁄2	5⁄8	6	4	7	3 3⁄4	2 1⁄2	9 1⁄4	11 1⁄4	9 1⁄2	5 3⁄4	3 7⁄8	10	10 1⁄2										7.5
3																											
4																											
5																											

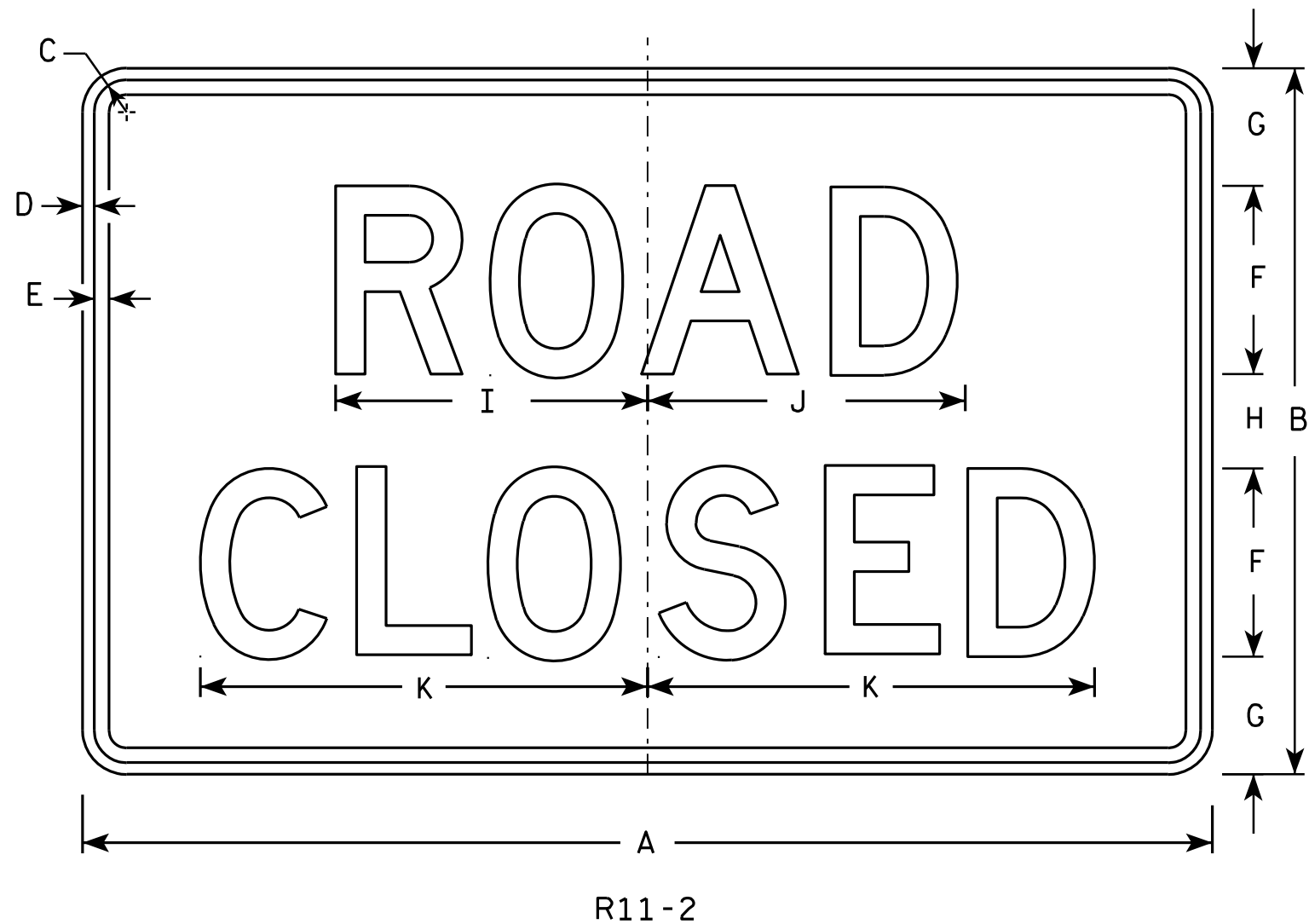
PROJECT NO:	HWY:	COUNTY:	SHEET NO: 223	E
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STANDARD SIGN
R3-50

WISCONSIN DEPT OF TRANSPORTATION

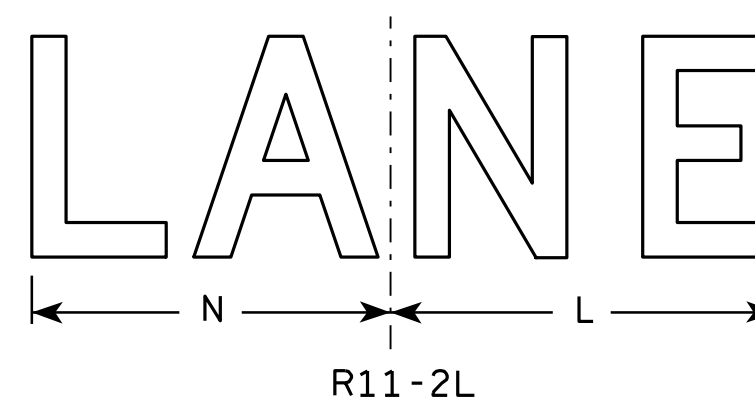
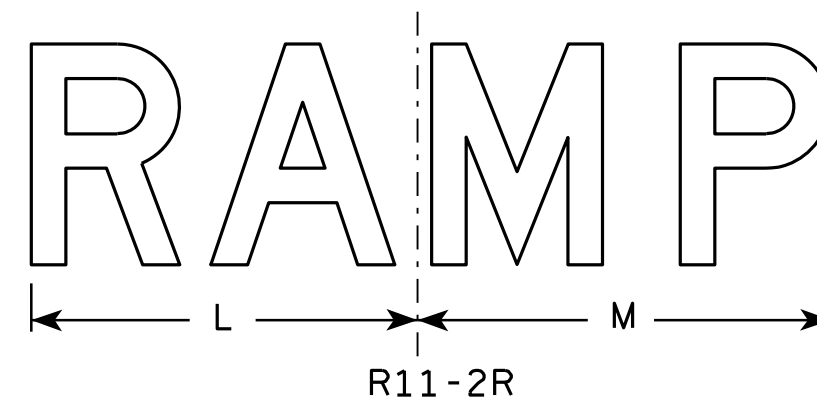
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 3/24/2011 PLATE NO. R3-50.2



NOTES

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

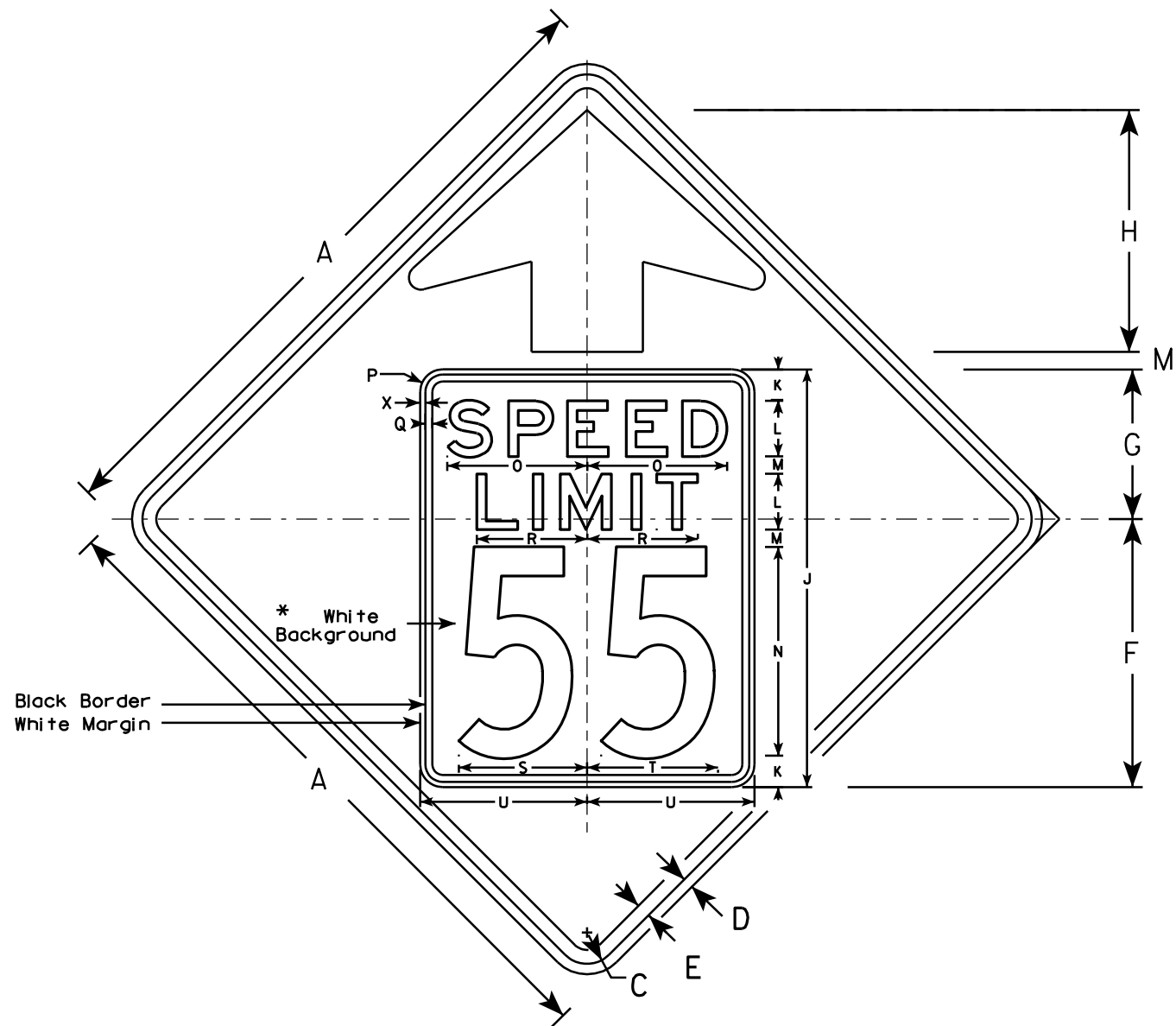


SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	48	30	1 3⁄8	1⁄2	5⁄8	8	5	4	13 1⁄4	13 1⁄2	19	14	15	13													10.0
2M	48	30	1 3⁄8	1⁄2	5⁄8	8	5	4	13 1⁄4	13 1⁄2	19	14	15	13													10.0
3	48	30	1 3⁄8	1⁄2	5⁄8	8	5	4	13 1⁄4	13 1⁄2	19	14	15	13													10.0
4	48	30	1 3⁄8	1⁄2	5⁄8	8	5	4	13 1⁄4	13 1⁄2	19	14	15	13													10.0
5	48	30	1 3⁄8	1⁄2	5⁄8	8	5	4	13 1⁄4	13 1⁄2	19	14	15	13													10.0

STANDARD SIGN R11-2

WISCONSIN DEPT OF TRANSPORTATION
APPROVED *Matthew R. Rauch*
for State Traffic Engineer
DATE 4/1/11 PLATE NO. R11-2.10

PROJECT NO: HWY: COUNTY: SHEET NO: 224 E

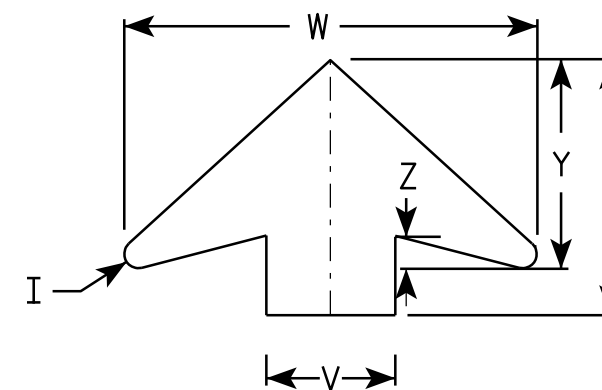


W3-5

NOTES

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

*Speed Limit Sign shall have a White Background



ARROW DETAIL

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	36		1 5⁄8	5⁄8	3⁄4	14 1⁄2	9 1⁄2	11 1⁄2	5⁄8	24	2	3	1	12	7 1⁄8	1 1⁄2	3⁄8	5 3⁄4	7 1⁄4	7 1⁄8	9	6	19 1⁄4	3⁄8	9 3⁄4	1 5⁄8	9.0
2M	36		1 5⁄8	5⁄8	3⁄4	14 1⁄2	9 1⁄2	11 1⁄2	5⁄8	24	2	3	1	12	7 1⁄8	1 1⁄2	3⁄8	5 3⁄4	7 1⁄4	7 1⁄8	9	6	19 1⁄4	3⁄8	9 3⁄4	1 5⁄8	9.0
3	36		1 5⁄8	5⁄8	3⁄4	14 1⁄2	9 1⁄2	11 1⁄2	5⁄8	24	2	3	1	12	7 1⁄8	1 1⁄2	3⁄8	5 3⁄4	7 1⁄4	7 1⁄8	9	6	19 1⁄4	3⁄8	9 3⁄4	1 5⁄8	9.0
4	48		2 1⁄4	3⁄4	1	19 1⁄4	10 3⁄4	17 3⁄8	7⁄8	30	2 1⁄4	4	1 1⁄4	15	10	1 5⁄8	1⁄2	8	9 1⁄4	9 3⁄8	12	8	25 5⁄8	3⁄8	13	2	16.0
5	48		2 1⁄4	3⁄4	1	19 1⁄4	10 3⁄4	17 3⁄8	7⁄8	30	2 1⁄4	4	1 1⁄4	15	10	1 5⁄8	1⁄2	8	9 1⁄4	9 3⁄8	12	8	25 5⁄8	3⁄8	13	2	16.0

STANDARD SIGN

W3-5

WISCONSIN DEPT OF TRANSPORTATION

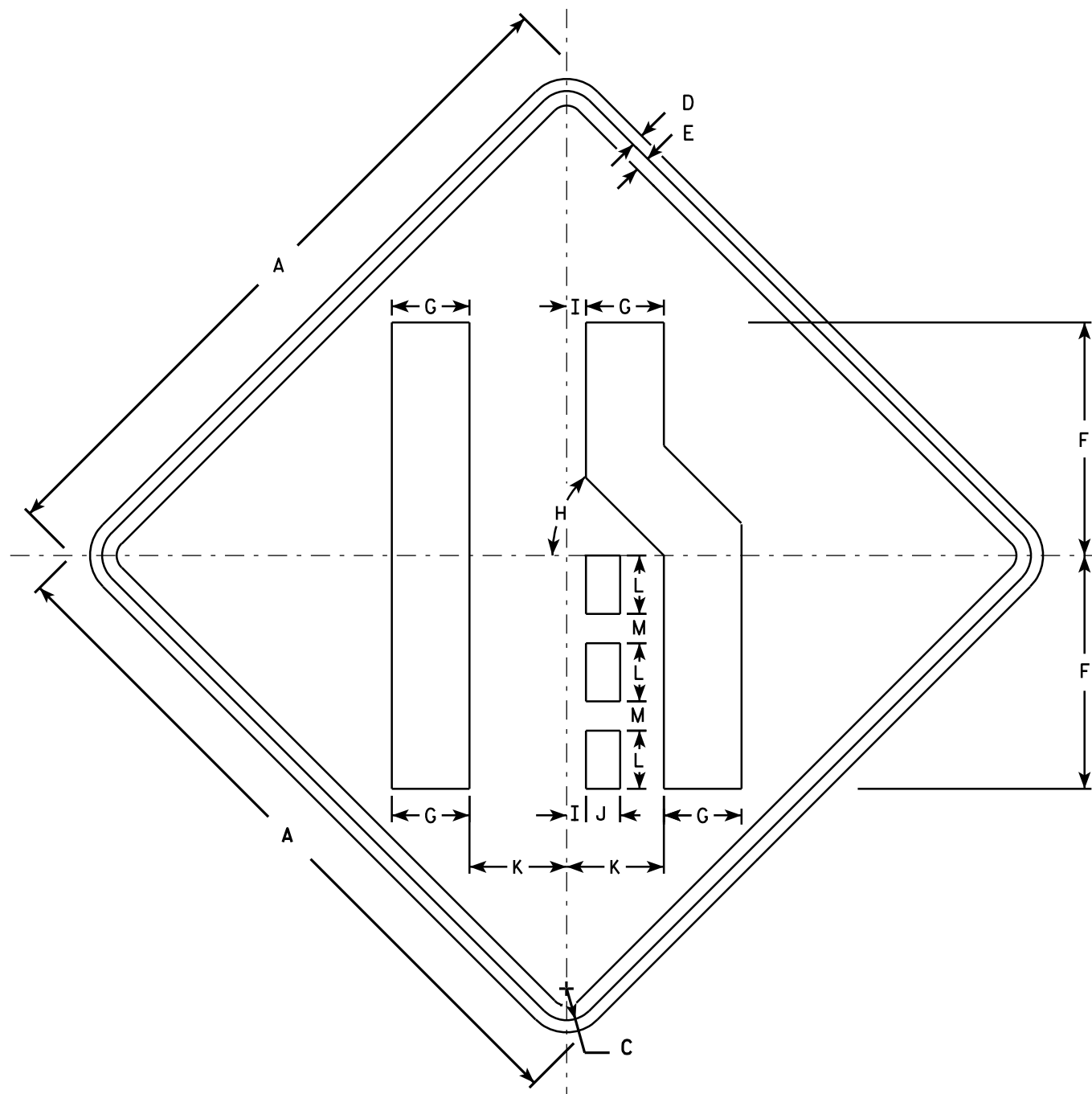
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 5/29/12 PLATE NO. W3-5.5

PROJECT NO:

SHEET NO: 225

E



W4-2R

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Yellow
Message - Black
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. W4-2L is the same as W4-2R except the symbols is reversed along the vertical centerline.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	30		1 3⁄8	1⁄2	5⁄8	10	3 3⁄8	45°	7⁄8	1 1⁄2	4 1⁄4	2 1⁄2	1 1⁄4														6.25
2S	36		1 5⁄8	5⁄8	3⁄4	12	4	45°	1	1 3⁄4	5	3	1 1⁄2														9.0
2M	36		1 5⁄8	5⁄8	3⁄4	12	4	45°	1	1 3⁄4	5	3	1 1⁄2														9.0
3	36		1 5⁄8	5⁄8	3⁄4	12	4	45°	1	1 3⁄4	5	3	1 1⁄2														9.0
4	48		2 1⁄4	3⁄4	1	16	5 3⁄8	45°	1 1⁄4	2 3⁄8	6 3⁄4	4	2														16.0
5	48		2 1⁄4	3⁄4	1	16	5 3⁄8	45°	1 1⁄4	2 3⁄8	6 3⁄4	4	2														16.0

STANDARD SIGN W4-2

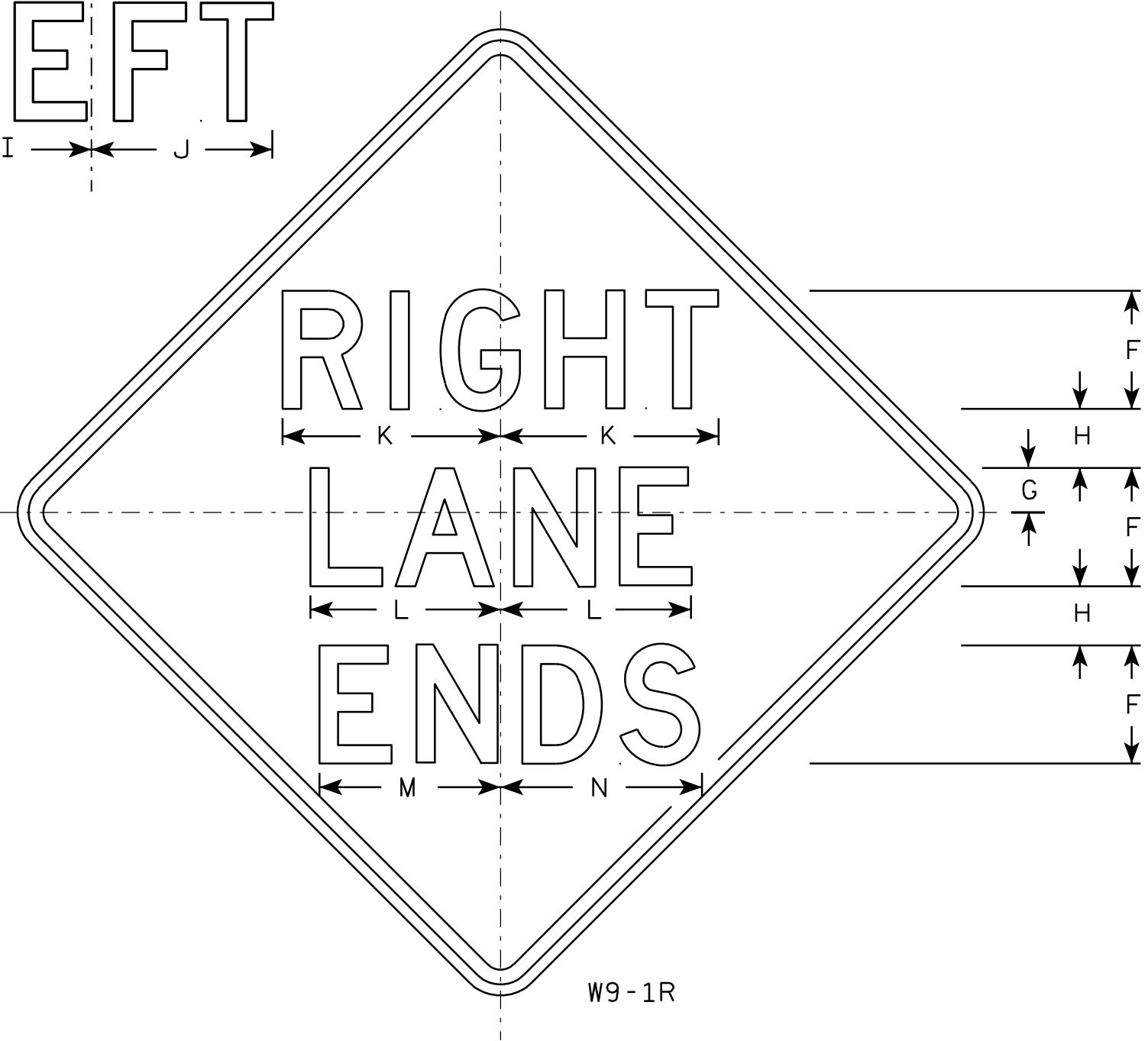
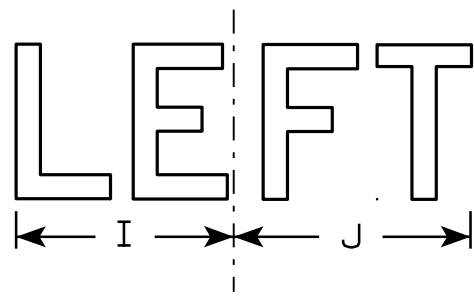
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 3/12/13 PLATE NO. W4-2.14

PROJECT NO:

SHEET NO: 226



W9-1R

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Yellow
Message - Black
3. Message Series - D
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. W9-1L same as W9-1R except the word Left replaces Right.

7

7

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	30		1 ³ / ₈	1/2	⁵ / ₈	5	1 1/2	2 1/2	7 1/8	7 5/8	9 1/4	8 1/8	7 5/8	8 5/8													6.25
2S	36		1 ⁵ / ₈	⁵ / ₈	³ / ₄	6	2	3	8 1/2	9 1/8	11	9 3/4	9	10 3/8													9.0
2M	36		1 ⁵ / ₈	⁵ / ₈	³ / ₄	6	2	3	8 1/2	9 1/8	11	9 3/4	9	10 3/8													9.0
3	36		1 ⁵ / ₈	⁵ / ₈	³ / ₄	6	2	3	8 1/2	9 1/8	11	9 3/4	9	10 3/8													9.0
4	36		1 ⁵ / ₈	⁵ / ₈	³ / ₄	6	2	3	8 1/2	9 1/8	11	9 3/4	9	10 3/8													9.0
5	48		2 1/4	³ / ₄	1	8	3	4	11 1/4	12 1/4	14 3/4	12 7/8	12 1/4	13 5/8													16.0

PROJECT NO:

SHEET NO: 227

E

STANDARD SIGN

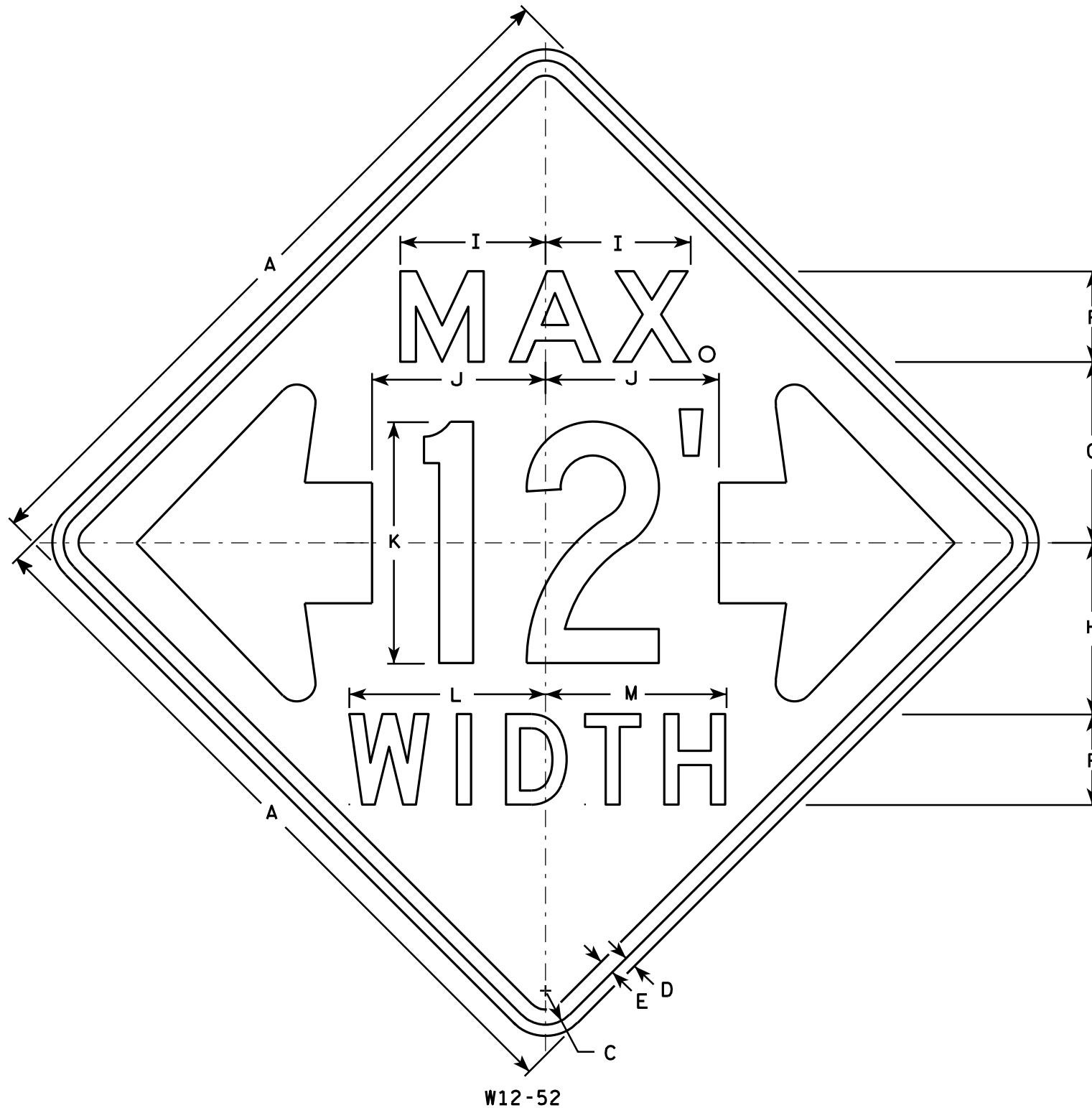
W9-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 03/18/13

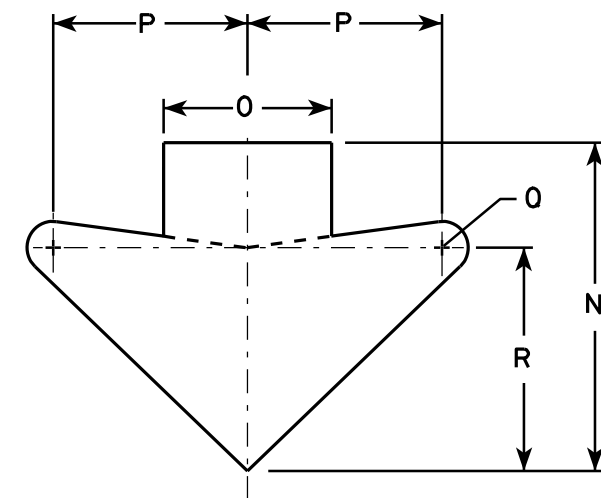
PLATE NO. W9-1.8



W12-52

NOTES

1. Sign Is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Orange
Message - Black
3. Message Series - See note 5
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. The top line is series E, the numerals are series C, and the bottom line is series D.
6. Substitute appropriate numerals and adjust spacing as required.



ARROW DETAIL

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	48		2 1/4	3/4	1	6	12	11 3/8	9 5/8	11 1/2	16	13	12	15 5/8	8	9 1/4	1 1/4	10 5/8									16.0
2M	48		2 1/4	3/4	1	6	12	11 3/8	9 5/8	11 1/2	16	13	12	15 5/8	8	9 1/4	1 1/4	10 5/8									16.0
3																											
4																											
5																											

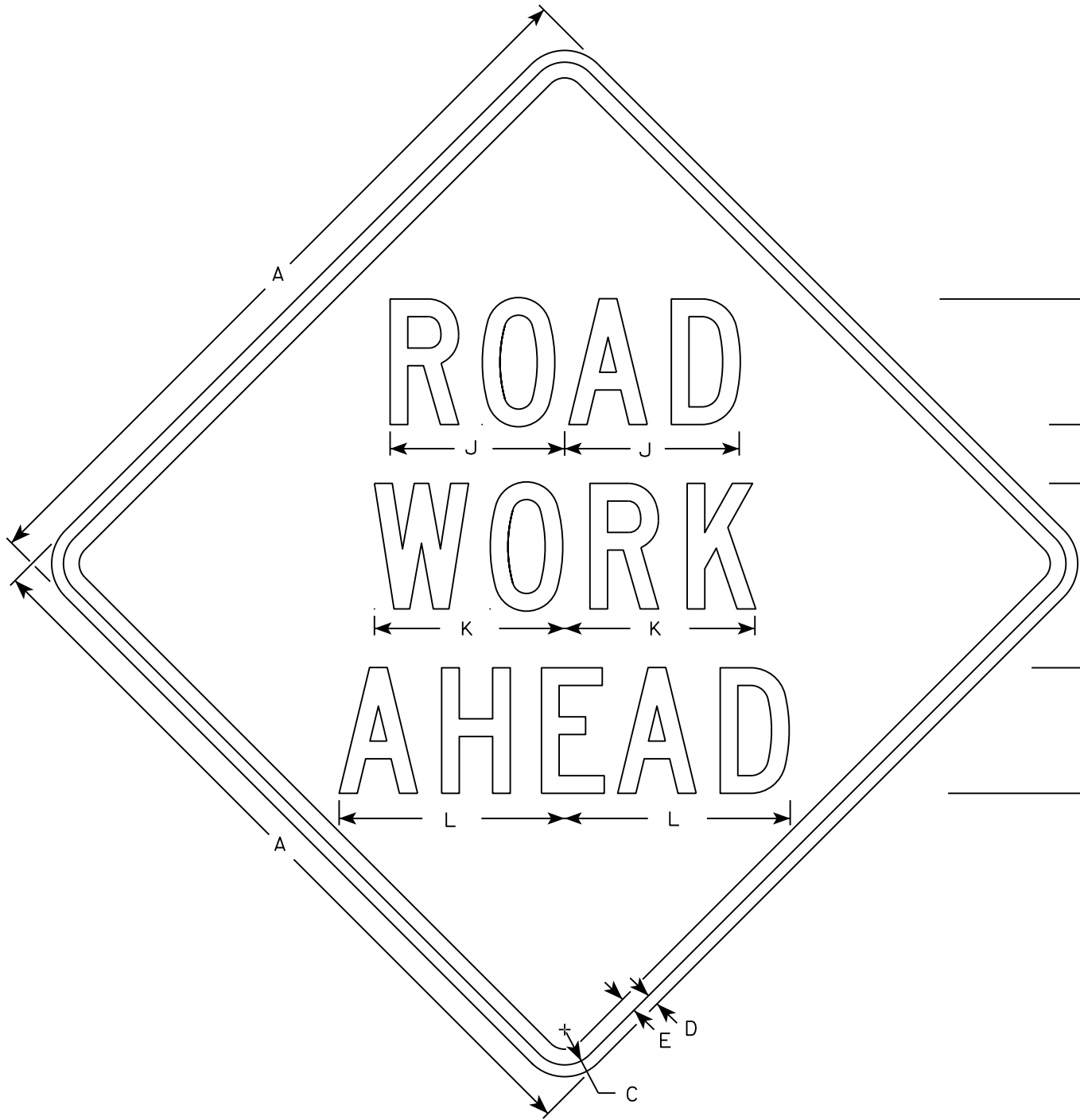
STANDARD SIGN
W12-52

WISCONSIN DEPT OF TRANSPORTATION

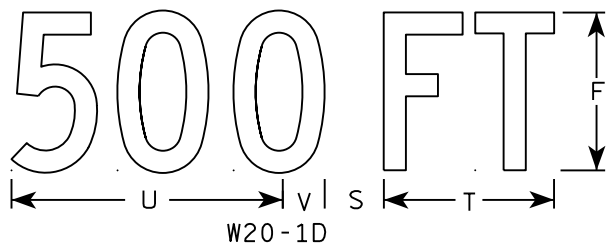
APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 3/16/11 PLATE NO. W12-52.7

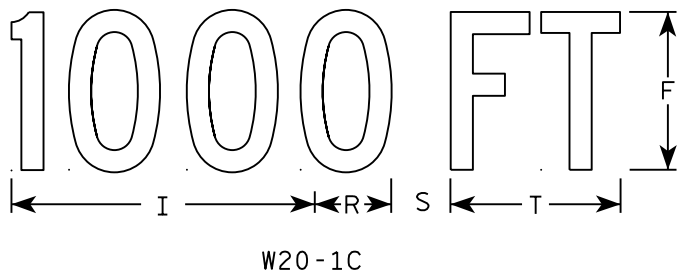
PROJECT NO: HWY: COUNTY: SHEET NO: 228 E



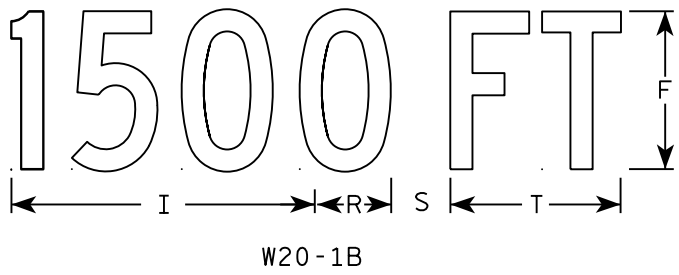
W20-1A



W20-1D



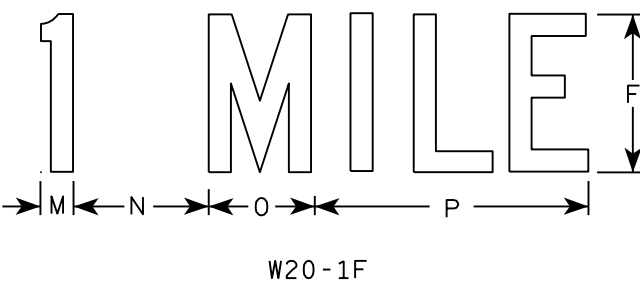
W20-1C



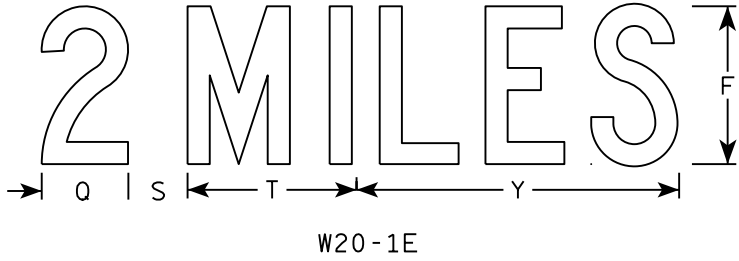
W20-1B



W20-1G



W20-1F



W20-1E

NOTES

- 1. Sign is Type II - Type F Reflective
- 2. Color:
Background - Orange
Message - Black
- 3. Message Series - C
- 4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36		1 3/8	1/2	5/8	5	2 5/8	3 1/4	10 1/8	7	7 5/8	8 7/8	1 1/8	4 1/2	3 1/2	9		2 1/2	2 1/4	5 5/8	9	1 3/8	8	1 3/4	10 3/4	6	9.0
2S	48		2 1/4	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0
2M	48		2 1/4	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0
3	48		2 1/4	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0
4	48		2 1/4	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0
5	48		2 1/4	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0

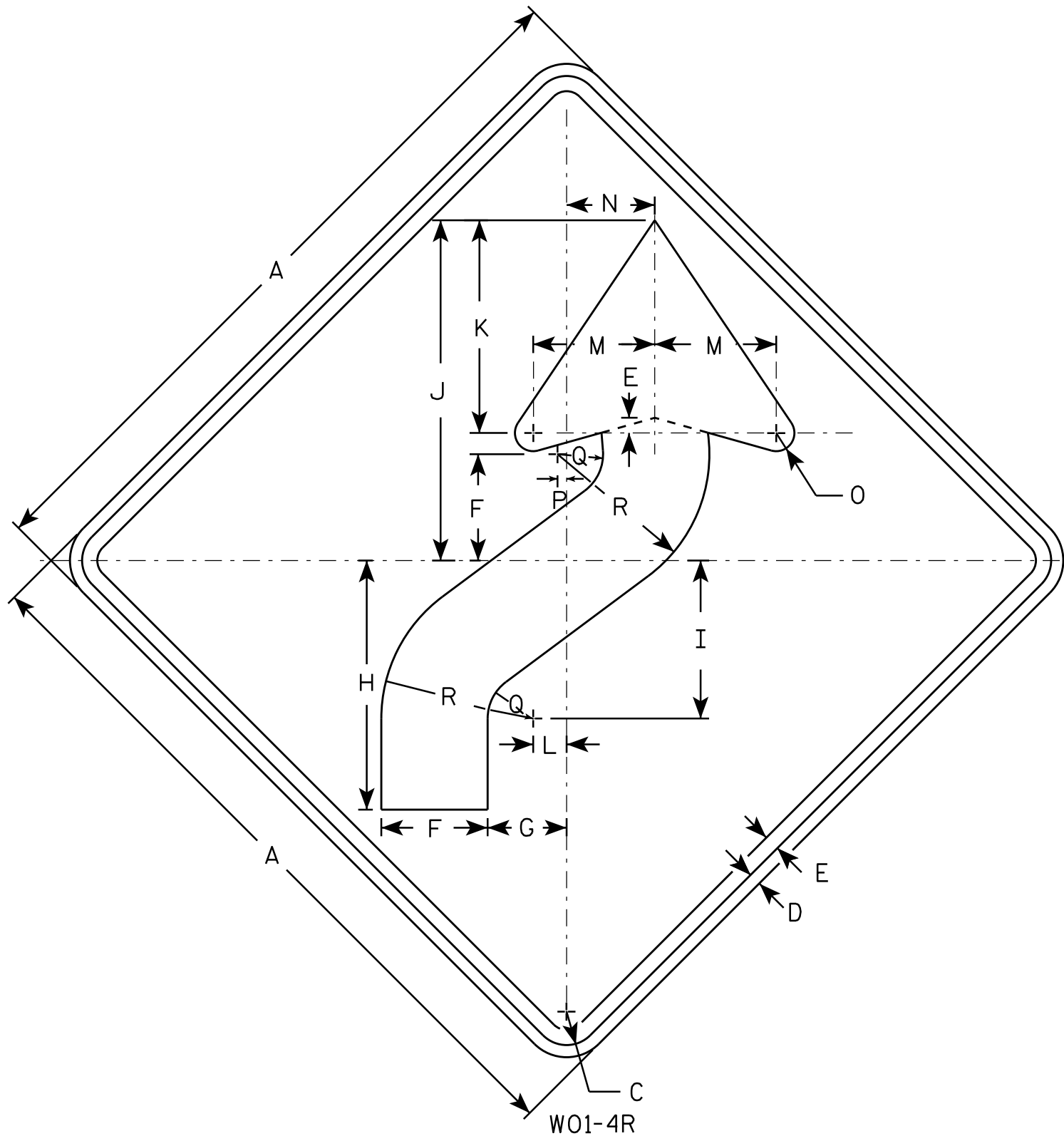
STANDARD SIGN
W20-1A, B, C, D, F & G

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 5/07/15 PLATE NO. W20-1.10

229



NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Orange
Message - Black
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. W01-4L is the same as W01-4R except the arrow is reversed along the vertical centerline.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36		1 5/8	5/8	3/4	5 1/4	4	12 3/8	7 7/8	16 7/8	10 1/2	1 5/8	6	4 1/2	1	1/2	2 1/4	7 1/2									9.0
2S	48		2 1/4	3/4	1	7	5 1/4	16 1/2	10 1/2	22 1/2	14	2 1/4	8	6	1 1/4	5/8	3	10									16.0
2M	48		2 1/4	3/4	1	7	5 1/4	16 1/2	10 1/2	22 1/2	14	2 1/4	8	6	1 1/4	5/8	3	10									16.0
3	48		2 1/4	3/4	1	7	5 1/4	16 1/2	10 1/2	22 1/2	14	2 1/4	8	6	1 1/4	5/8	3	10									16.0
4	48		2 1/4	3/4	1	7	5 1/4	16 1/2	10 1/2	22 1/2	14	2 1/4	8	6	1 1/4	5/8	3	10									16.0
5	48		2 1/4	3/4	1	7	5 1/4	16 1/2	10 1/2	22 1/2	14	2 1/4	8	6	1 1/4	5/8	3	10									16.0

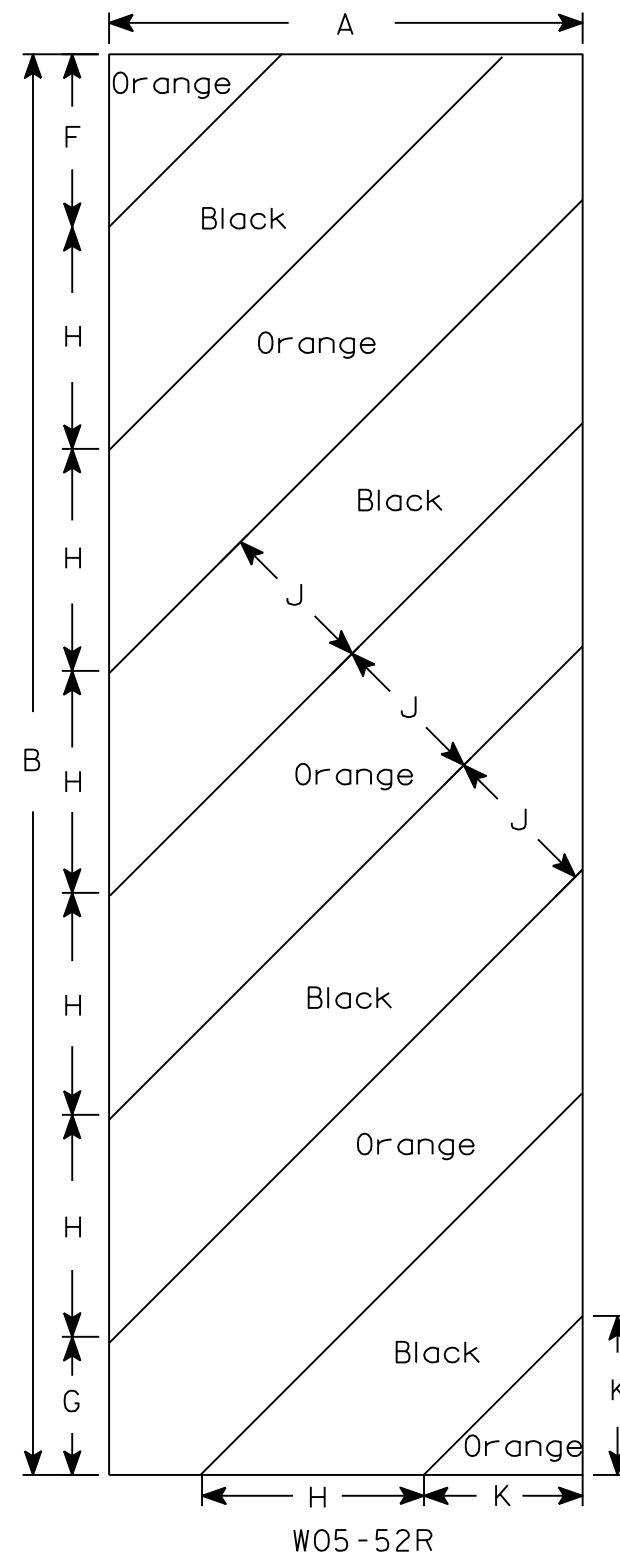
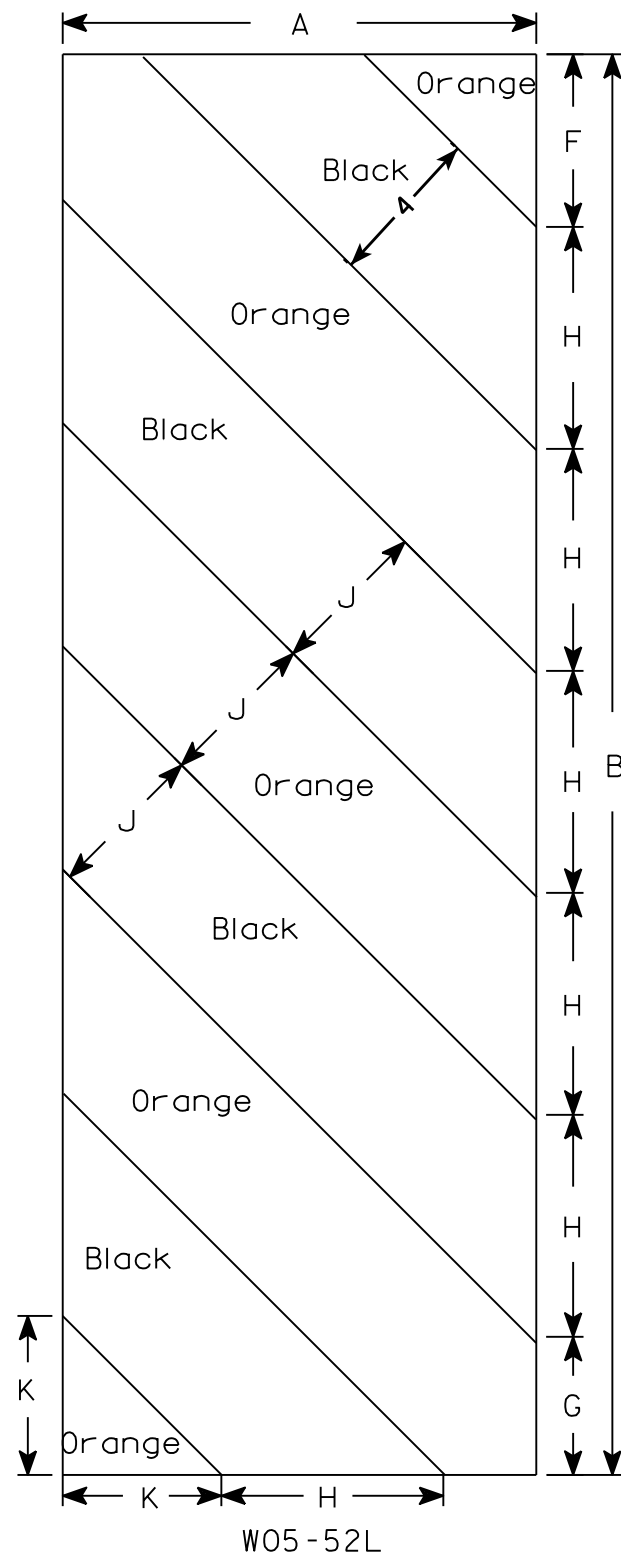
STANDARD SIGN W01-4

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 11/18/13 PLATE NO. W01-4.1
230

PROJECT NO: HWY: COUNTY: SHEET NO: E



NOTES

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

[illegible]

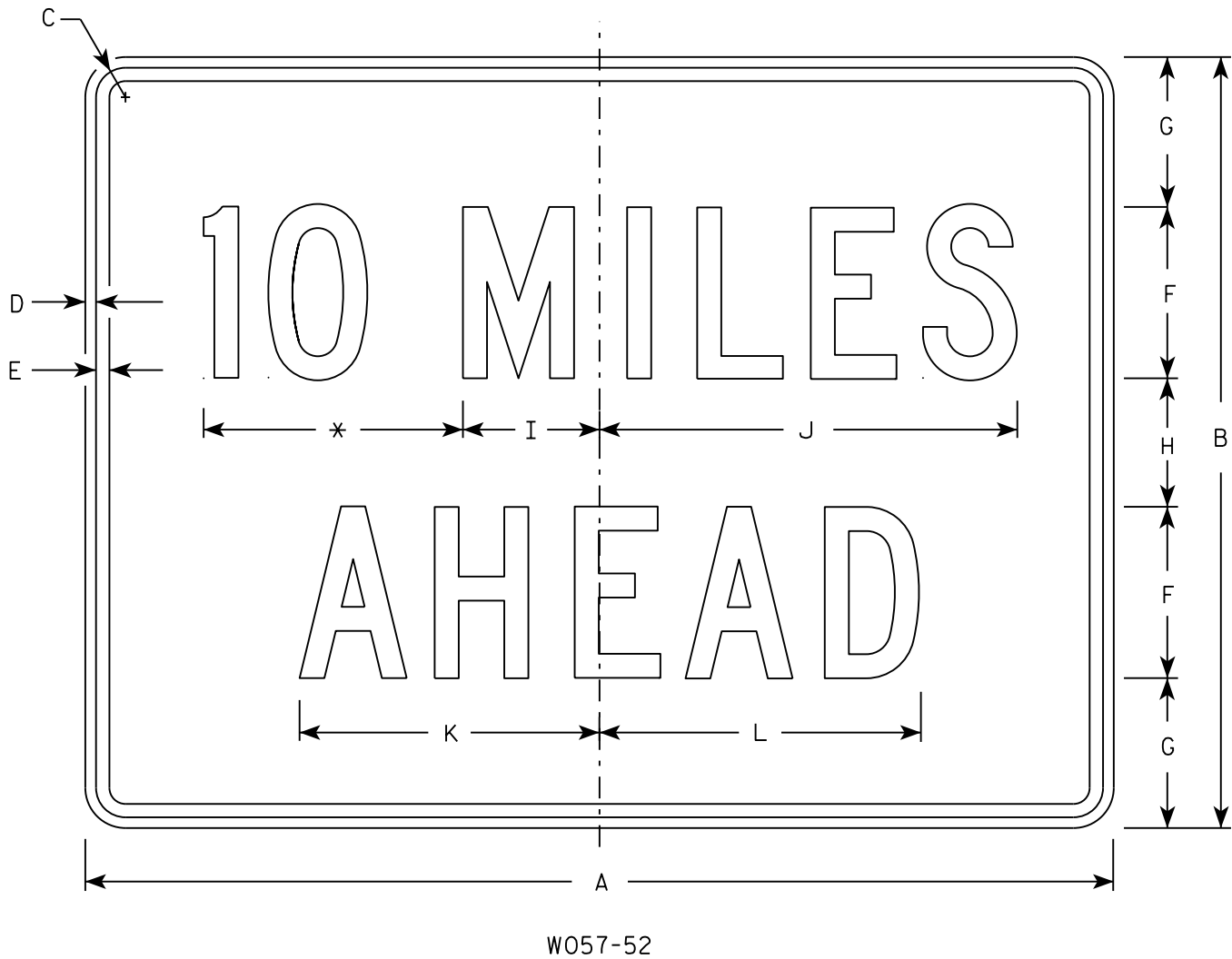
STANDARD SIGN
W05-52L & W05-52R

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch

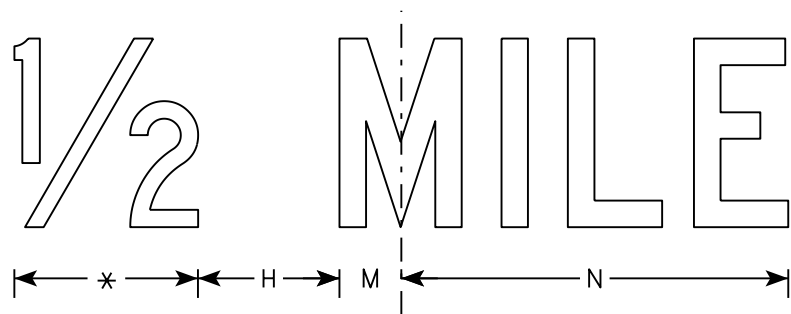
DATE 11/20/13 PLATE 231 ^W5-52.1

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

- 1. Sign is Type II - Type F Reflective
- 2. Color:
Background - Orange
Message - Black
- 3. Message Series - C
- 4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
- 5. Substitute appropriate numerals to the nearest quarter mile and optically adjust spacing to achieve proper balance.



* See note 5

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36	24	1 1/8	3/8	1/2	6	4 1/2	3	4 3/4	14 5/8	10 5/8	11 3/8	2	12													6.0
2S	48	36	1 3/8	1/2	5/8	8	7	6	6 3/8	19 1/2	14	15	2 3/4	16 3/8													12.0
2M	48	36	1 3/8	1/2	5/8	8	7	6	6 3/8	19 1/2	14	15	2 3/4	16 3/8													12.0
3	48	36	1 3/8	1/2	5/8	8	7	6	6 3/8	19 1/2	14	15	2 3/4	16 3/8													12.0
4	48	36	1 3/8	1/2	5/8	8	7	6	6 3/8	19 1/2	14	15	2 3/4	16 3/8													12.0
5	48	36	1 3/8	1/2	5/8	8	7	6	6 3/8	19 1/2	14	15	2 3/4	16 3/8													12.0

STANDARD SIGN
W057-52

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

for State Traffic Engineer

DATE 3/21/17 PLATE NO. W057-52.2

LIST OF DRAWINGS

1. GENERAL PLAN
2. GENERAL NOTES, DETAILS & QUANTITIES
3. MAINTENANCE OF TRAFFIC

DESIGN DATA

LIVE LOAD:
DESIGN LOAD _____ HS20
INVENTORY RATING _____ HS16
OPERATING RATING _____ HS27
MAX. STD. PERMIT VEHICLE LOAD _____ 190 KIPS

MATERIAL PROPERTIES:
CONCRETE MASONRY
OVERLAY DECKS _____ f'c = 4,000 PSI

TRAFFIC DATA

USH 51

A.D.T. (2018) = 7,100-10,400
A.D.T. (2038) = 9,900-12,900
DESIGN SPEED: 60 MPH

LEGEND

- REFERENCE LINE
CENTER LINE
- REMOVE AND REPLACE NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER AT PARAPET AND ABUTMENT JOINTS. ITEM SHALL BE INCLUDED WITH "CONCRETE MASONRY OVERLAY DECKS".
- CLEAN AND FILL TRANSVERSE AND LONGITUDINAL CRACKS IN THE DECK AFTER 1" MILL USING "CRACK SEALING EPOXY" BID ITEM AS DIRECTED BY THE FIELD ENGINEER.
- SEAL VERTICAL CRACKS IN THE ABUTMENTS AND PARAPETS USING "EPOXY CRACK SEALING" BID ITEM AS DIRECTED BY THE FIELD ENGINEER.
- AS DETERMINED BY FIELD ENGINEER.

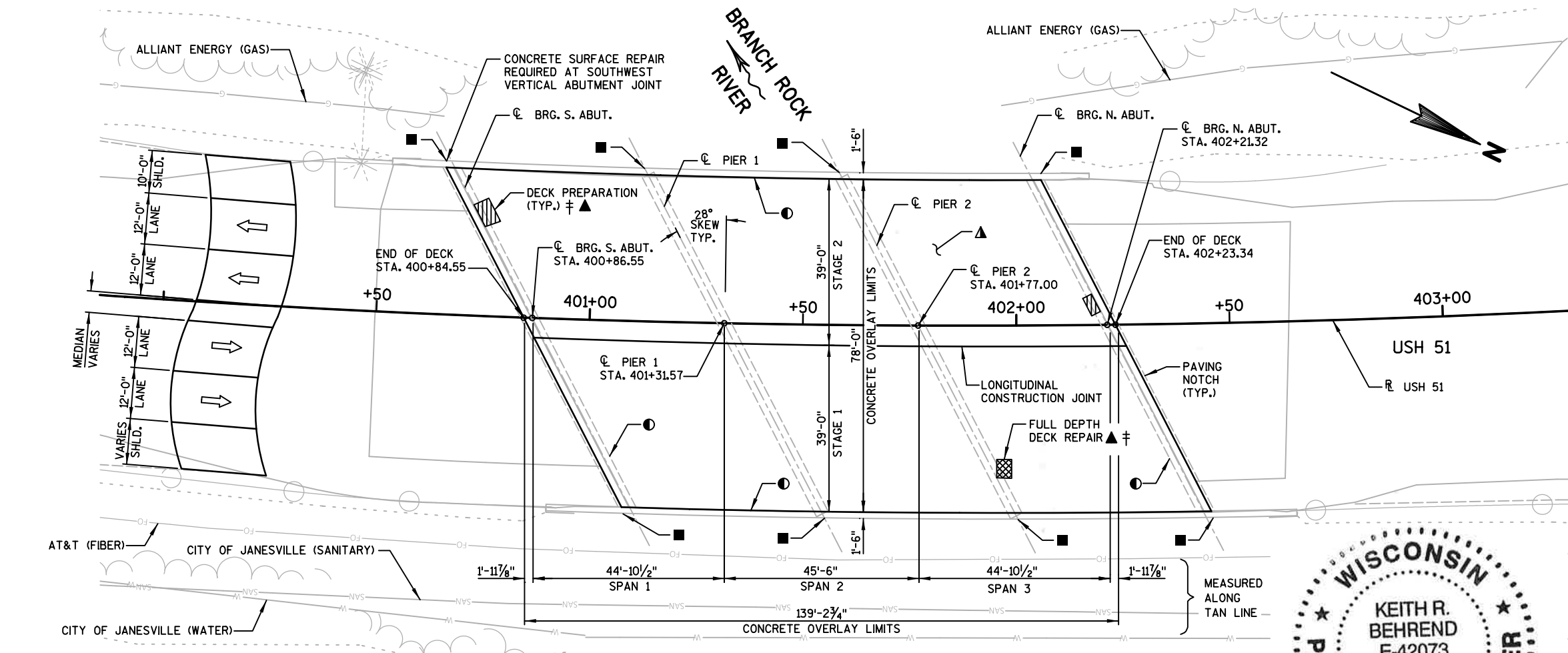
STRUCTURE DESIGN CONTACTS

WISDOT PROJECT MANAGER:
JIM SIMPSON (608) 246-5628

BRIDGE OFFICE CONTACT:
WILLIAM DREHER (608) 266-8489

DESIGN CONSULTANT CONTACT:
KEITH BEHREND (608) 251-4843

NO.	DATE	REVISION	BY
1	11/13/18	1	W.C. Dreher
SA STRAND ASSOCIATES			
910 WEST WINGRA DRIVE MADISON, WISCONSIN 53715 (608)-251-4843 (608) 251-8655 FAX WWW.STRAND.COM			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
ACCEPTED <i>William C. Dreher</i> SDR 11/13/18 CHIEF STRUCTURES DESIGN ENGINEER DATE			
STRUCTURE B-53-157			
USH 51 OVER BR ROCK RIVER			
COUNTY	ROCK	TOWN/VILLAGE	ROCK
DESIGN SPEC. REHABILITATION N/A			
DESIGNED BY	EJC	DESIGN CK'D.	BMO
DRAWN BY	DTH	PLANS CK'D.	KRB
GENERAL PLAN			SHEET 1 OF 3 233



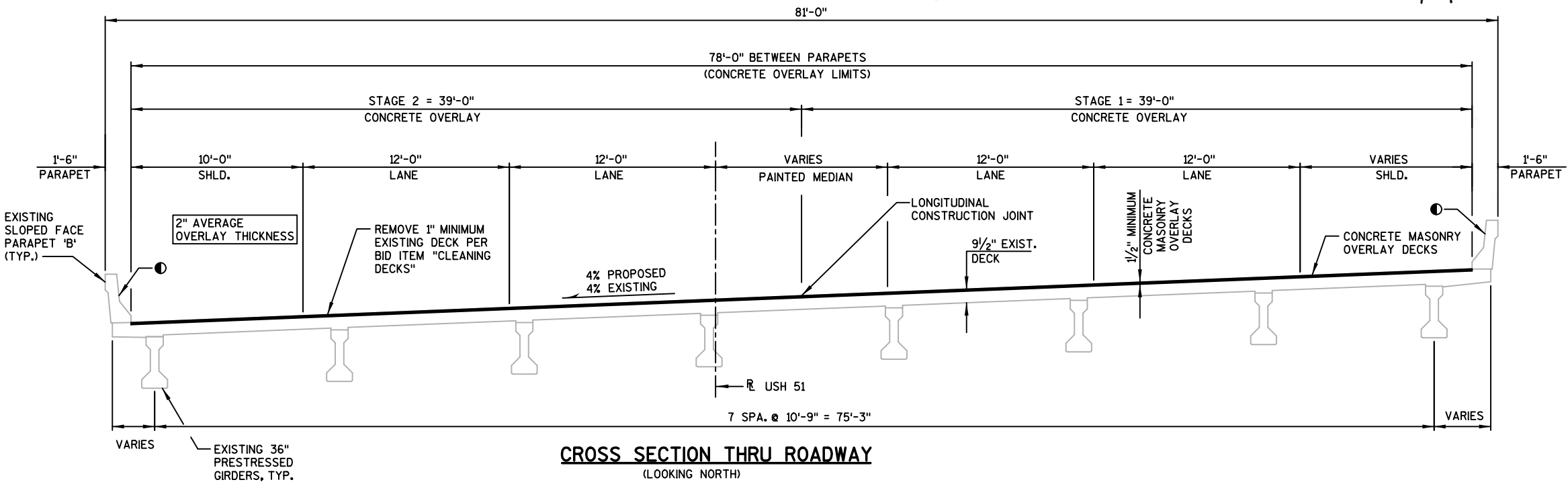
PLAN

(CONCRETE OVERLAY 3 SPAN - 36\"/>



DECK PREPARATION AREAS SHOWN ON PLAN ARE BASED ON INFRARED THERMOGRAPHIC DECK SURVEY COMPLETED DATE: 6/16/2015

NOTE:
SEE ROADWAY PLANS FOR CONCRETE PAVEMENT APPROACH SLAB, MGS GUARDRAIL, CONCRETE SURFACE DRAIN, AND ROADWAY IMPROVEMENT DETAILS.

CROSS SECTION THRU ROADWAY
(LOOKING NORTH)

TOTAL ESTIMATED QUANTITIES

BID ITEM NUMBER	BID ITEMS	S. ABUT	N. ABUT.	SUPERSTRUCTURE	TOTAL	UNIT
502.0717.S	CRACK SEALING EPOXY	---	---	1,092	1,092	LF
502.3200	PROTECTIVE SURFACE TREATMENT	---	---	1,207	1,207	SY
502.3210	PIGMENTED SURFACE SEALER	---	---	137	137	SY
509.0301	PREPARATION DECKS TYPE 1	---	---	3	3	SY
509.0302	PREPARATION DECKS TYPE 2	---	---	1	1	SY
509.0500	CLEANING DECKS	---	---	1,207	1,207	SY
509.1500	CONCRETE SURFACE REPAIR	9	---	---	9	SF
509.2000	FULL-DEPTH DECK REPAIR	---	---	2	2	SY
509.2500	CONCRETE MASONRY OVERLAY DECKS	---	---	67	67	CY
509.9020.S	EPOXY CRACK SEALING	6	6	54	66	LF
509.9050.S	CLEANING PARAPETS	---	---	340	340	LF

ALL ITEMS ARE CATEGORY 0020.

GENERAL NOTES

THE PROPOSED WORK INCLUDES CONCRETE SURFACE REPAIRS, CRACK SEALING AND PLACING A CONCRETE OVERLAY.

DRAWINGS SHALL NOT BE SCALED.

DIMENSIONS SHOWN ARE BASED ON THE ORIGINAL STRUCTURE PLANS.

PROTECTIVE SURFACE TREATMENT SHALL BE APPLIED TO THE ENTIRE TOP SURFACE OF THE NEW CONCRETE OVERLAY.

PIGMENTED SURFACE SEALER SHALL BE APPLIED TO THE TOP, ROADWAY FACE, AND ENDS OF THE EXISTING SLOPED FACE PARAPET 'B' AFTER ALL WORK IS COMPLETED FOR "CLEANING PARAPETS" AND "EPOXY CRACK SEALING" BID ITEMS.

A MINIMUM OF 1-INCH OF CONCRETE SHALL BE REMOVED FROM THE ENTIRE BRIDGE DECK UNDER THE BID ITEM "CLEANING DECKS."

PREPARATION DECKS TYPE 1, PREPARATION DECKS TYPE 2, FULL-DEPTH DECK REPAIR, AND CONCRETE SURFACE REPAIR AREAS ARE BASED ON THE PLANS AND AS DETERMINED BY THE FIELD ENGINEER. DECK PREPARATION AND FULL-DEPTH DECK REPAIRS SHALL BE FILLED WITH "CONCRETE MASONRY OVERLAY DECKS".

CLEAN AND FILL EXISTING LONGITUDINAL AND TRANSVERSE CRACKS IN DECK WITH PENETRATING EPOXY UNDER BID ITEM "CRACK SEALING EPOXY" AS DIRECTED BY THE FIELD ENGINEER.

CLEAN AND FILL EXISTING CRACKS IN ABUTMENTS AND PARAPETS WITH PENETRATING EPOXY UNDER BID ITEM "EPOXY CRACK SEALING" AS DIRECTED BY THE FIELD ENGINEER.

PROFILE GRADE LINE SHALL BE DETERMINED IN THE FIELD BASED ON A MINIMUM OVERLAY THICKNESS OF 1/2" PLACED ABOVE THE DECK SURFACE AFTER "CLEANING DECKS". EXPECTED AVERAGE OVERLAY THICKNESS IS 2". IF EXPECTED AVERAGE OVERLAY THICKNESS IS EXCEEDED BY MORE THAN 1/2", CONTACT THE STRUCTURES DESIGN SECTION.

ALL CONCRETE REMOVAL NOT COVERED WITH A CONCRETE OVERLAY SHALL BE DEFINED BY A 1-INCH DEEP SAW CUT.

SEE ROADWAY PLANS FOR ADDITIONAL TRAFFIC CONTROL PLANS AND STAGED CONSTRUCTION DETAILS.

ALL DIMENSIONS ARE IN FEET AND INCHES UNLESS OTHERWISE NOTED. ALL STATIONS ARE IN FEET.

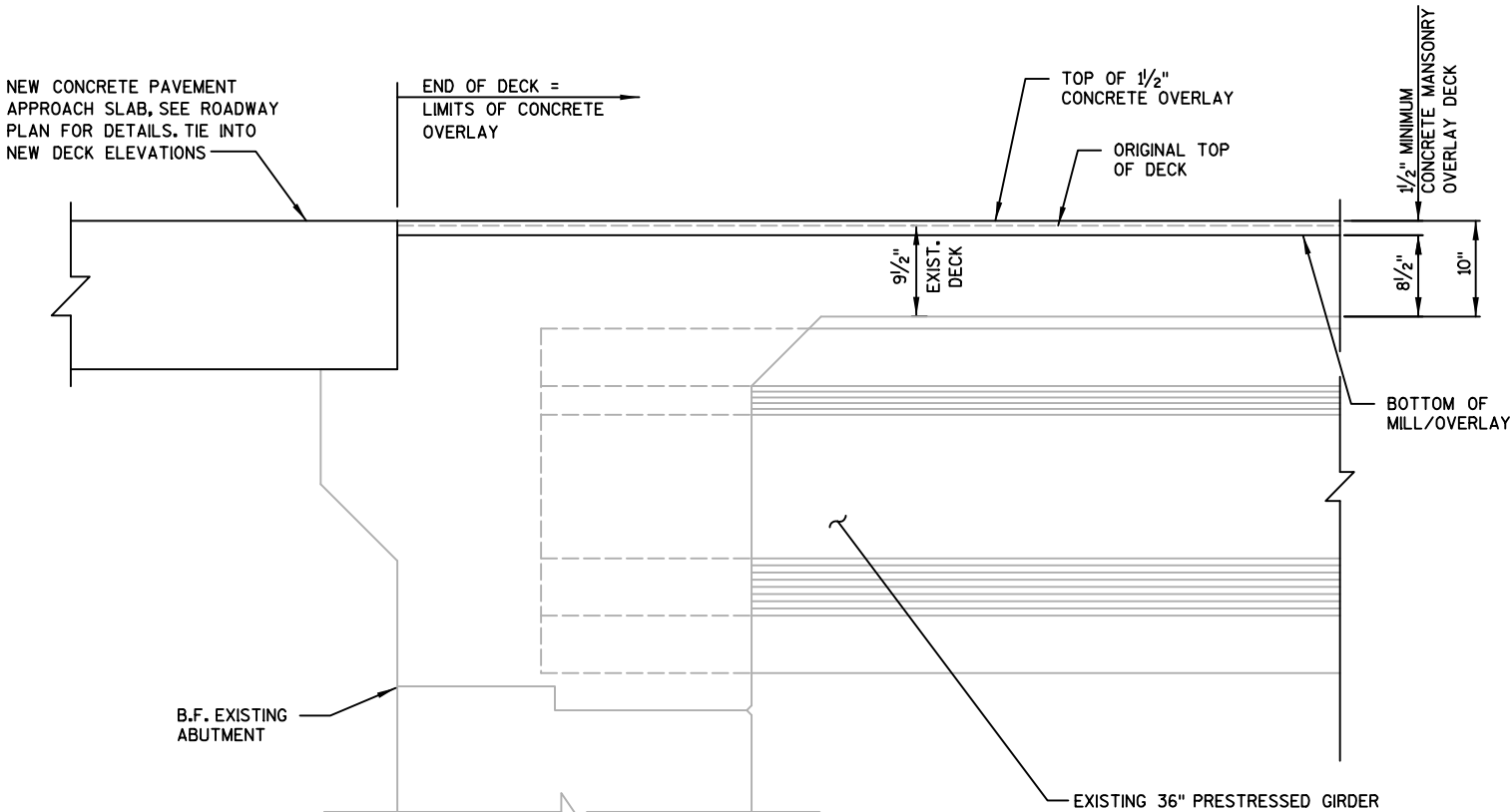
AN INFRARED THERMOGRAPHIC DECK SURVEY WAS COMPLETED FOR THIS BRIDGE IN 2015 AND IS AVAILABLE FROM THE WISDOT SW REGION UPON REQUEST.

LEGEND

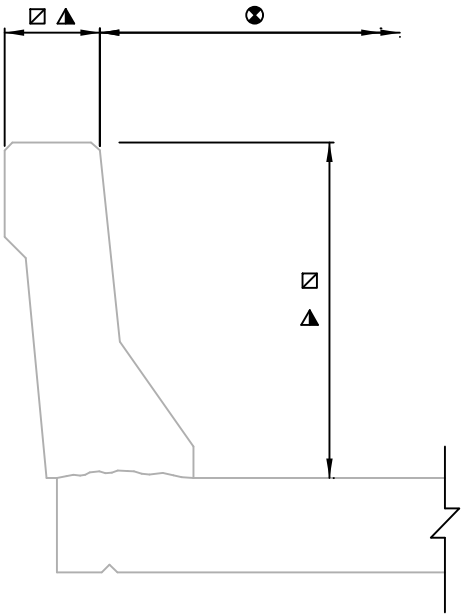
☒ "CLEANING PARAPETS" LIMITS. CLEAN FULL LENGTH OF PARAPTETS.

▲ "PIGMENTED SURFACE SEALER" LIMITS. APPLY TO TOP, ROADWAY FACE, AND ENDS OF PARAPETS, FULL LENGTH.

⊗ "PROTECTIVE SURFACE TREATMENT" LIMITS. APPLY TO ENTIRE TOP SURFACE OF THE NEW CONCRETE OVERLAY.



END OF DECK DETAIL

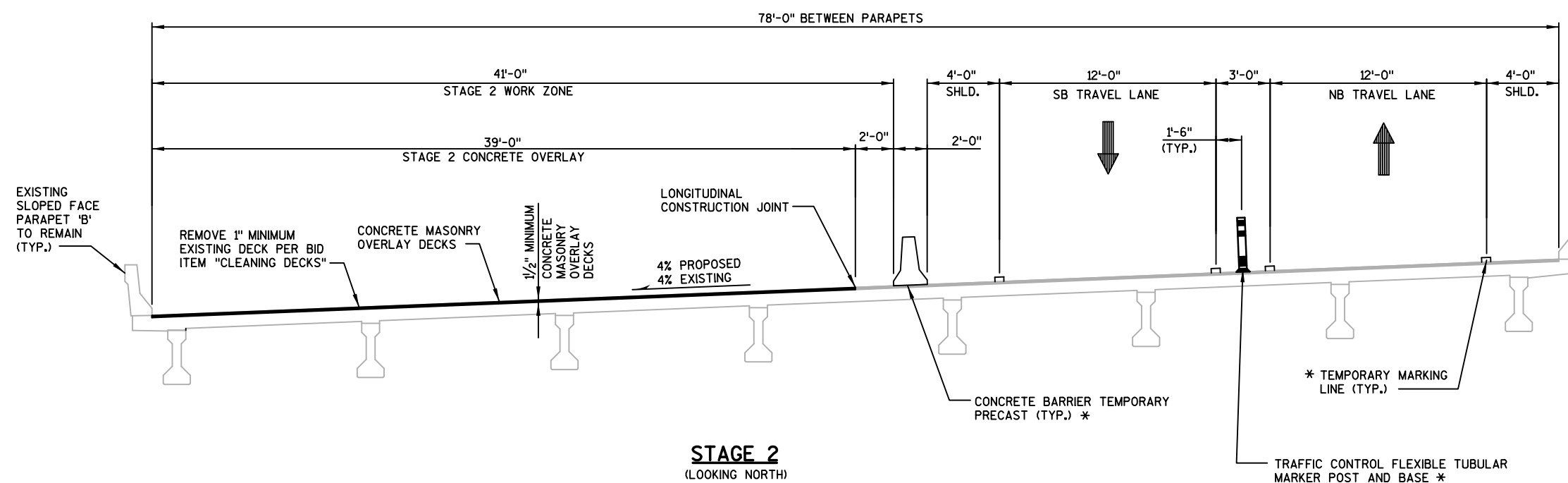
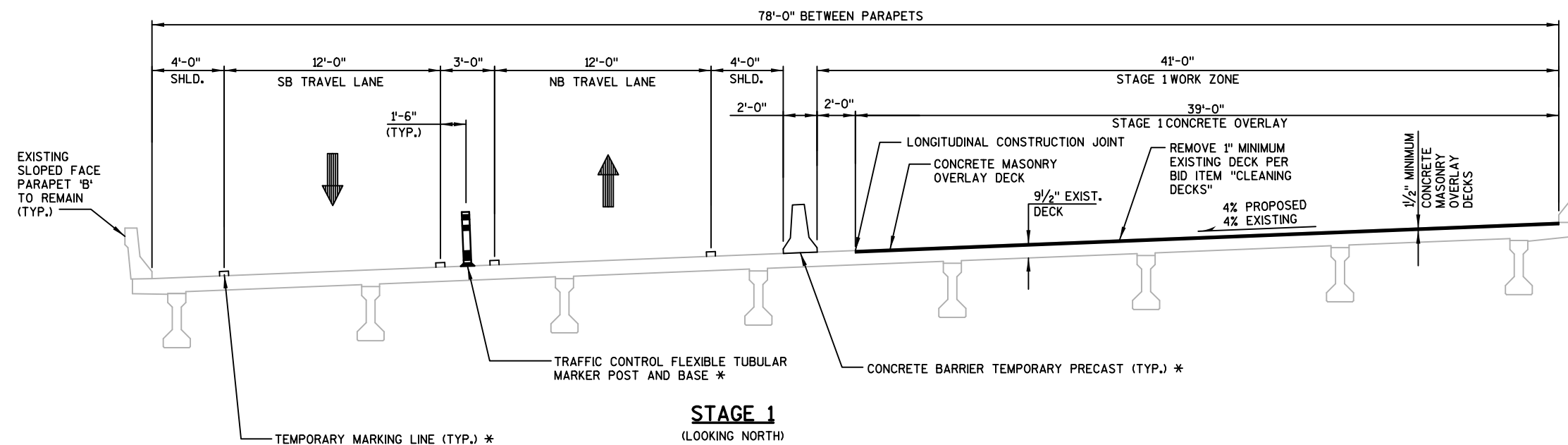


PARAPET REPAIR DETAIL

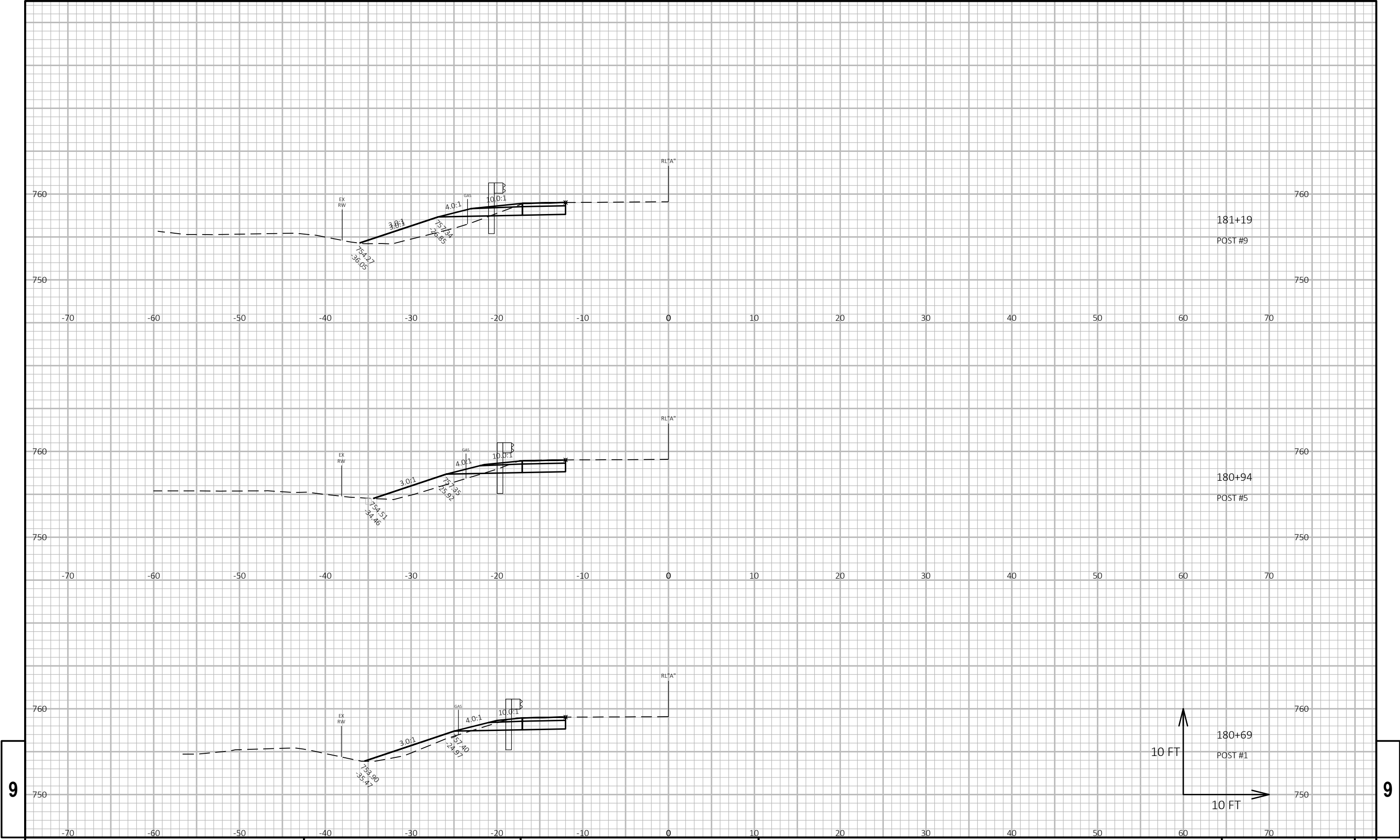
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-53-157			
DRAWN BY		ECB	PLANS CK'D. KRB
GENERAL NOTES, DETAILS & QUANTITIES		SHEET 2 234	

LEGEND

* PAID FOR UNDER CATEGORY 0010. SEE ROADWAY PLANS FOR ADDITIONAL INFORMATION.

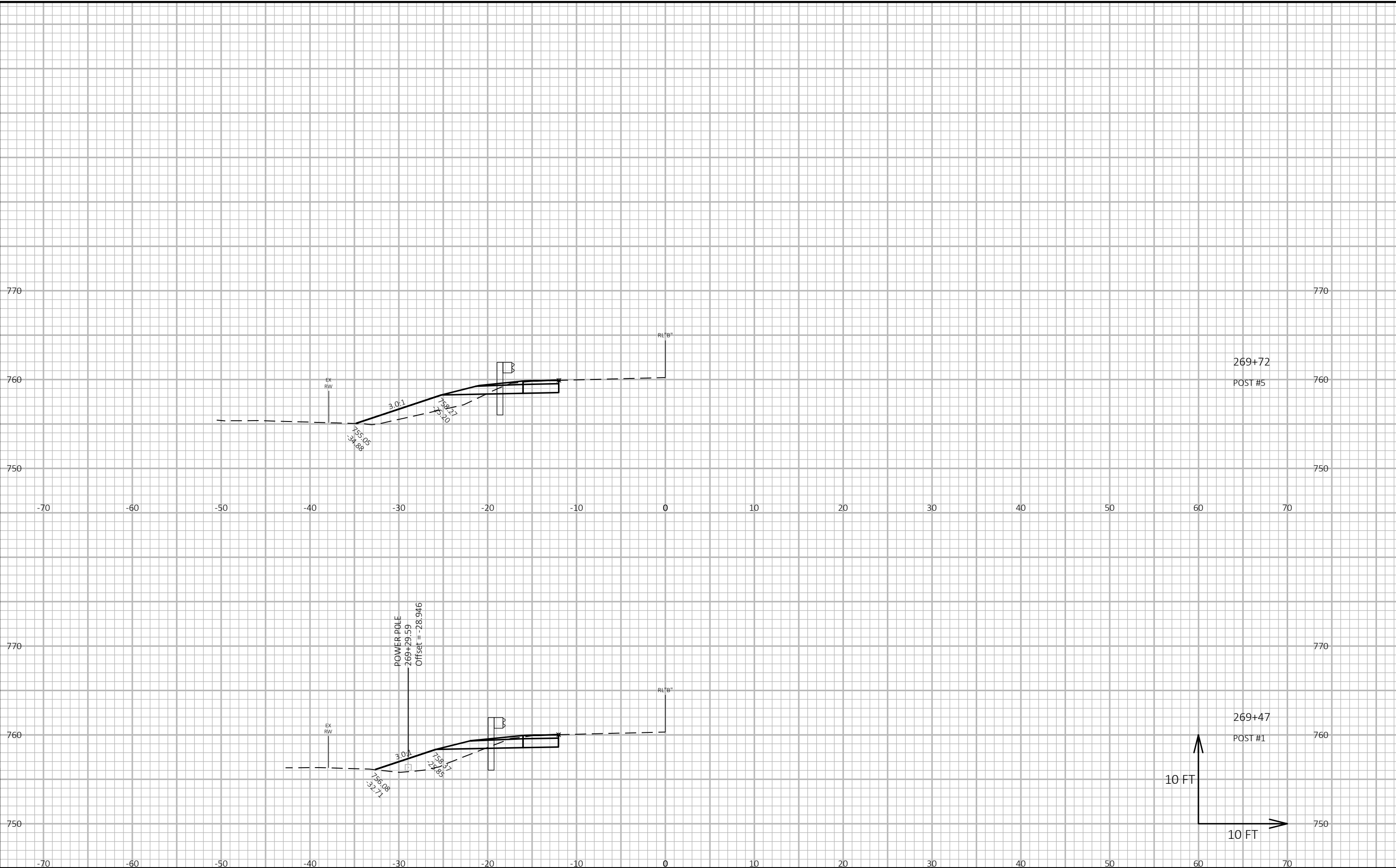


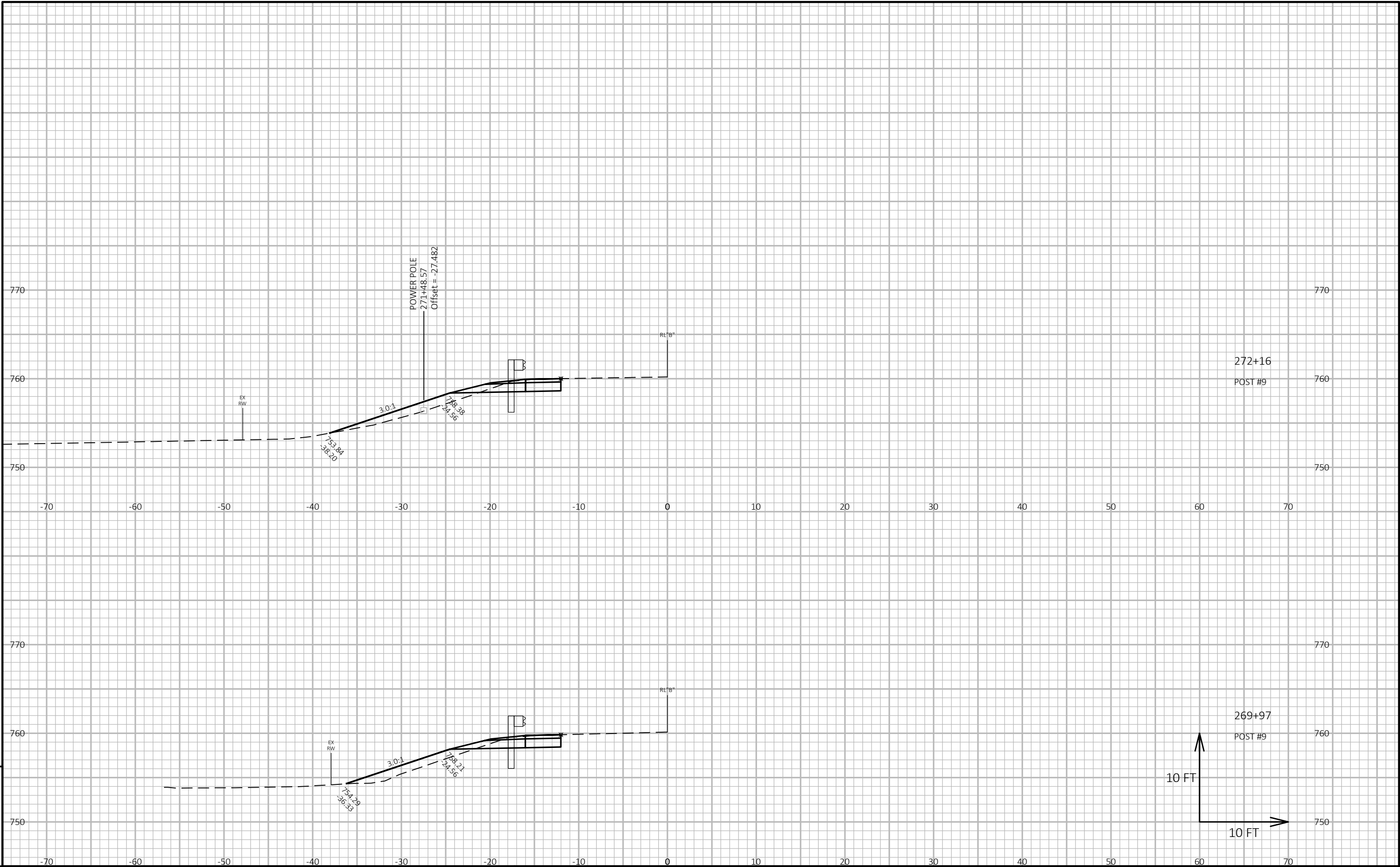
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-53-157			
DRAWN BY		ECB	PLANS CK'D. KRB
MAINTENANCE OF TRAFFIC		SHEET 3 235	

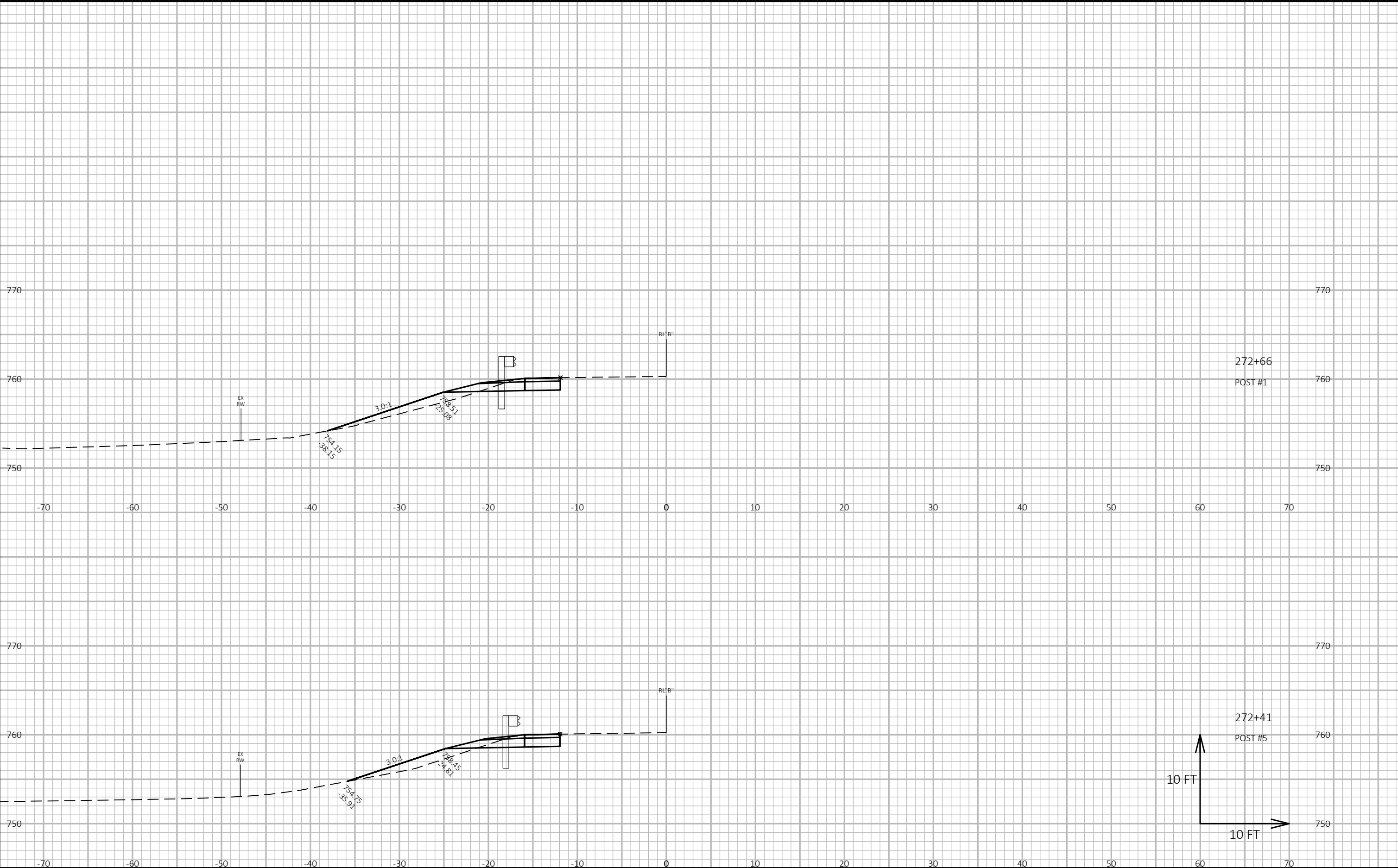


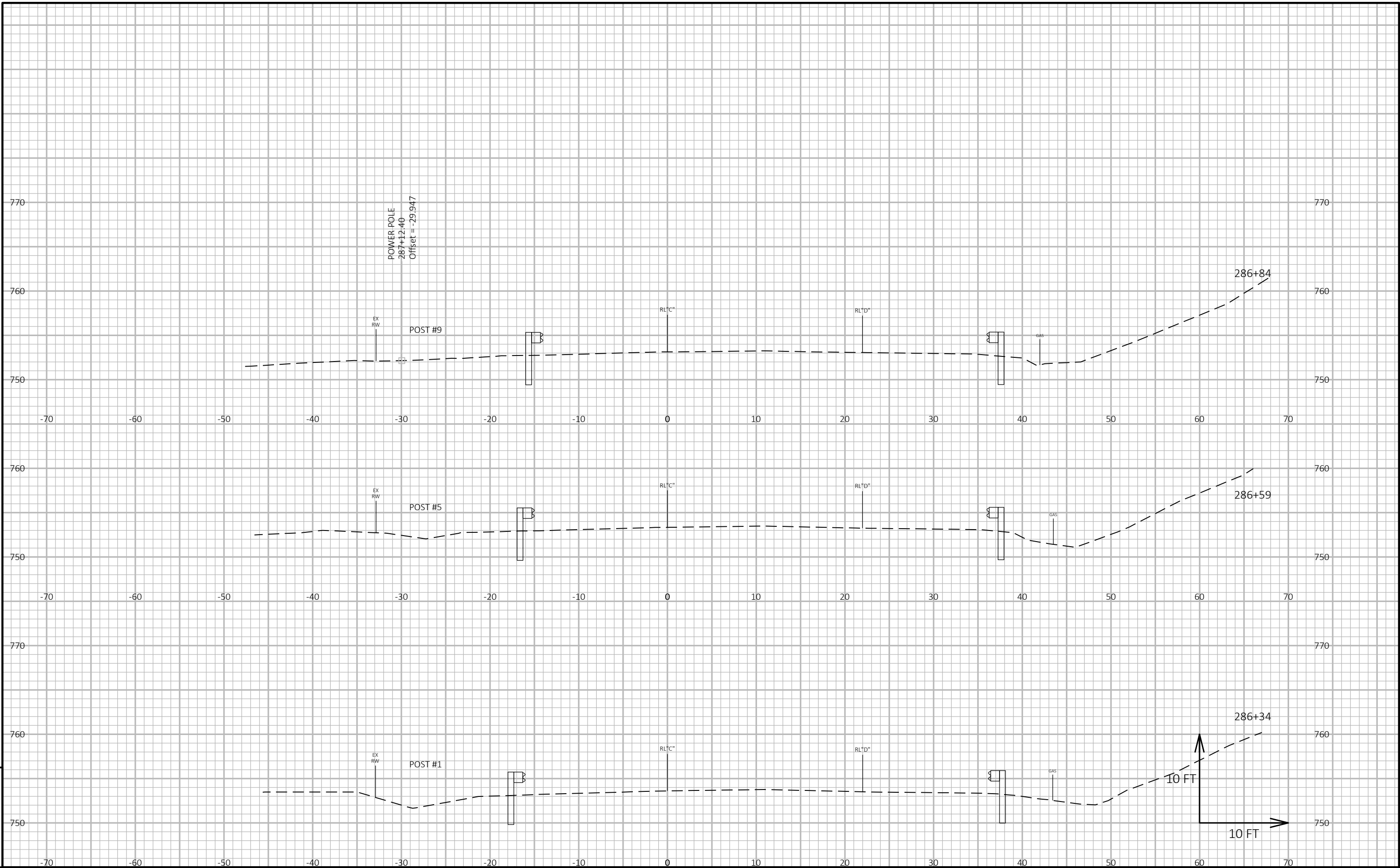
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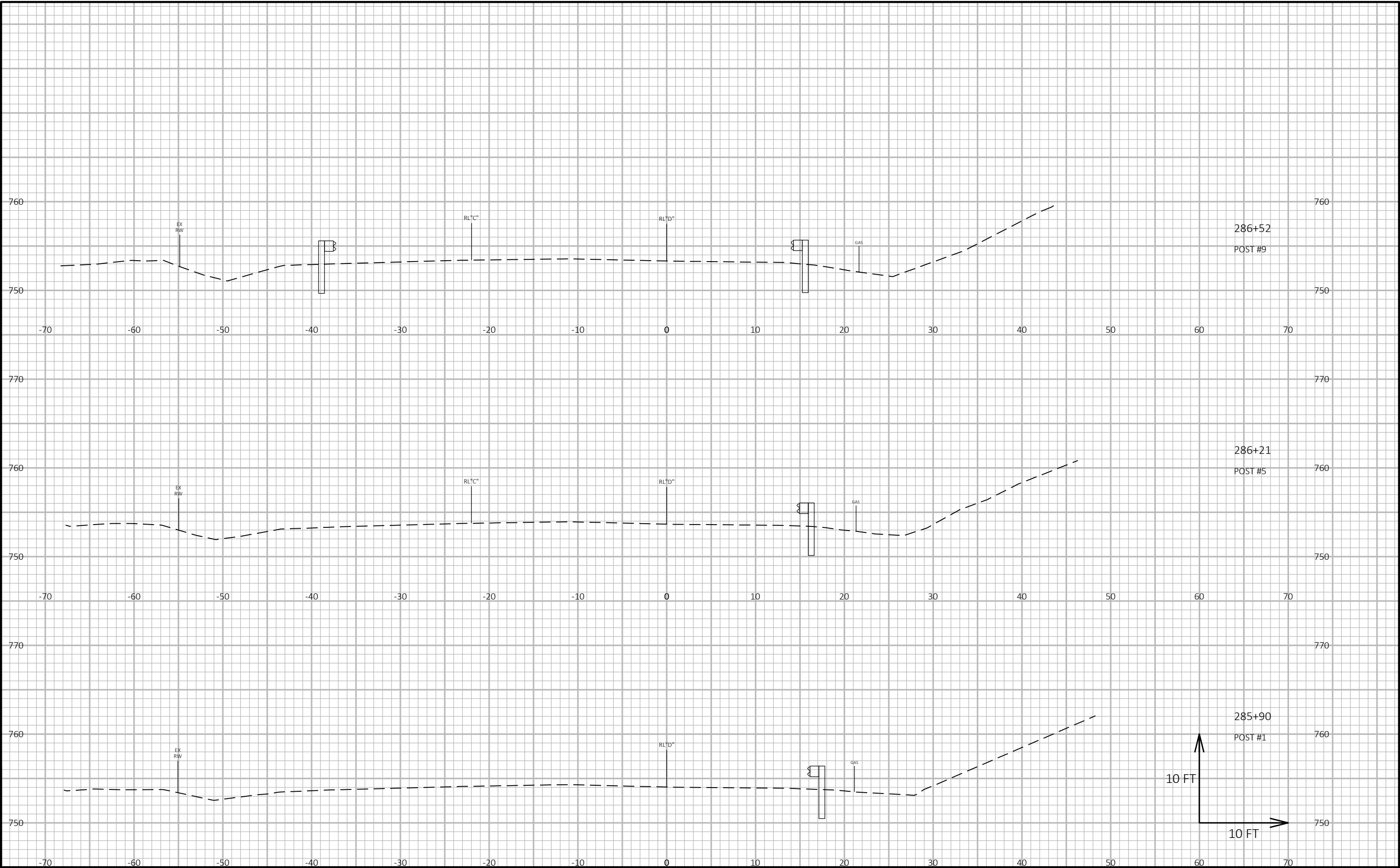
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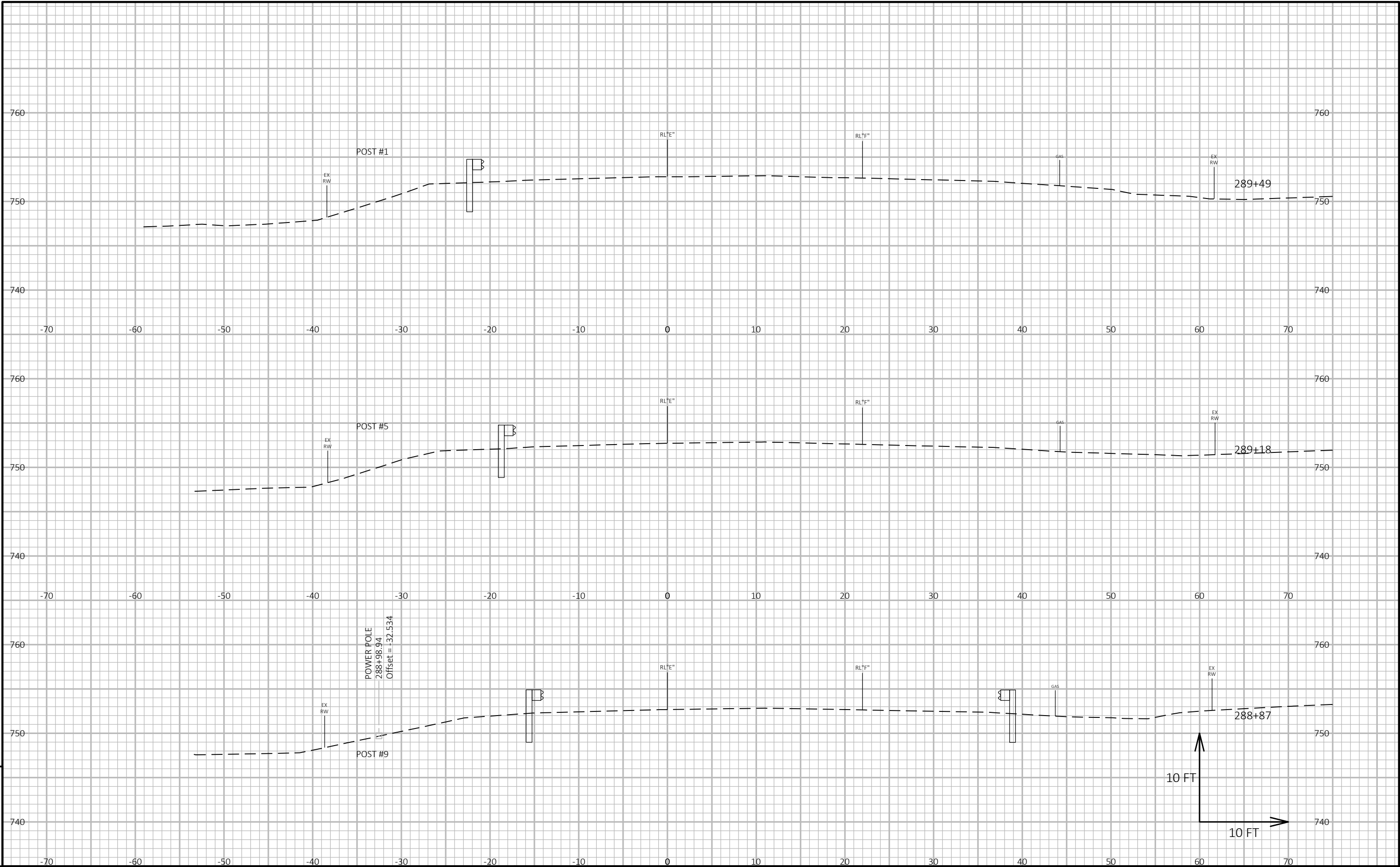


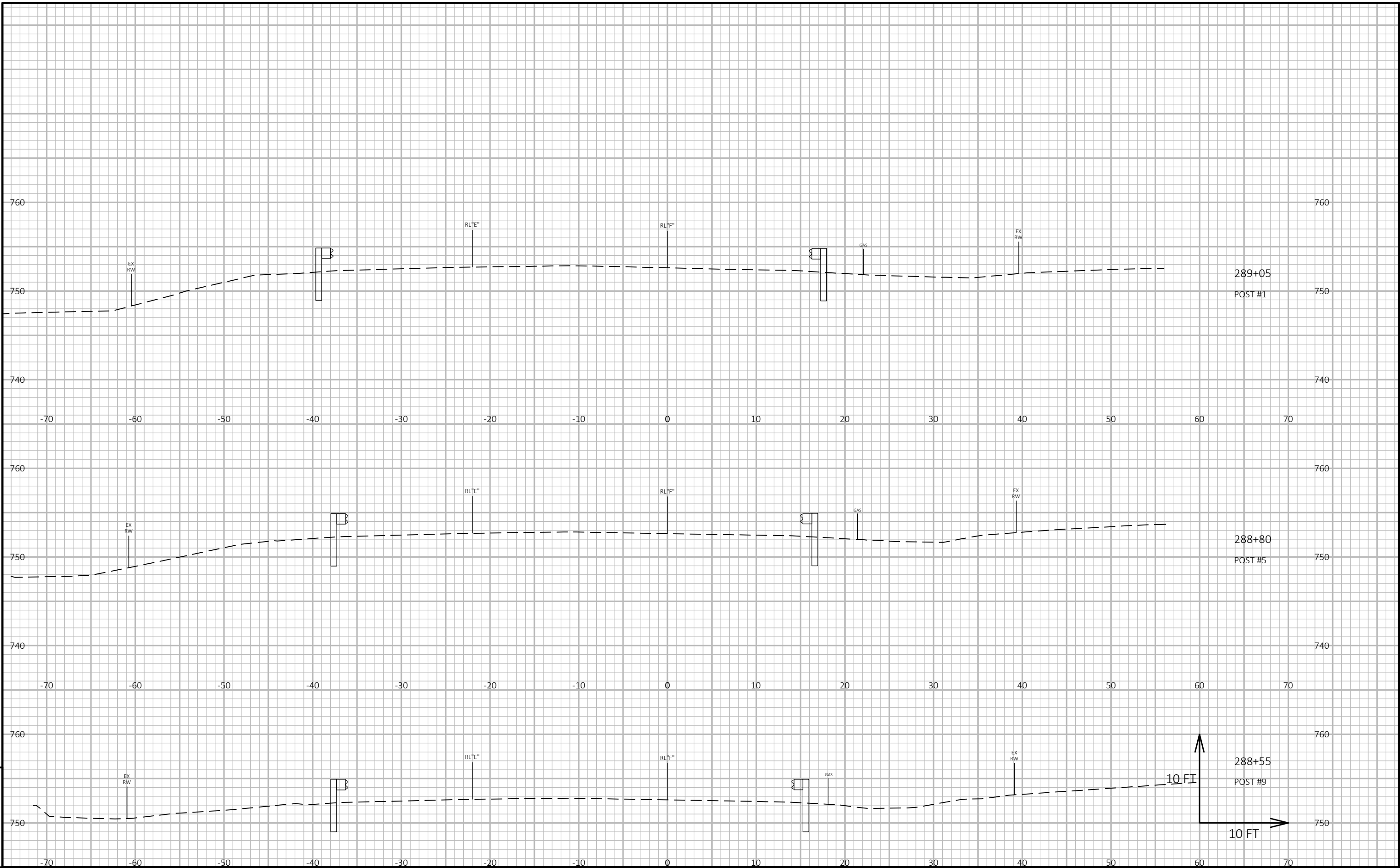


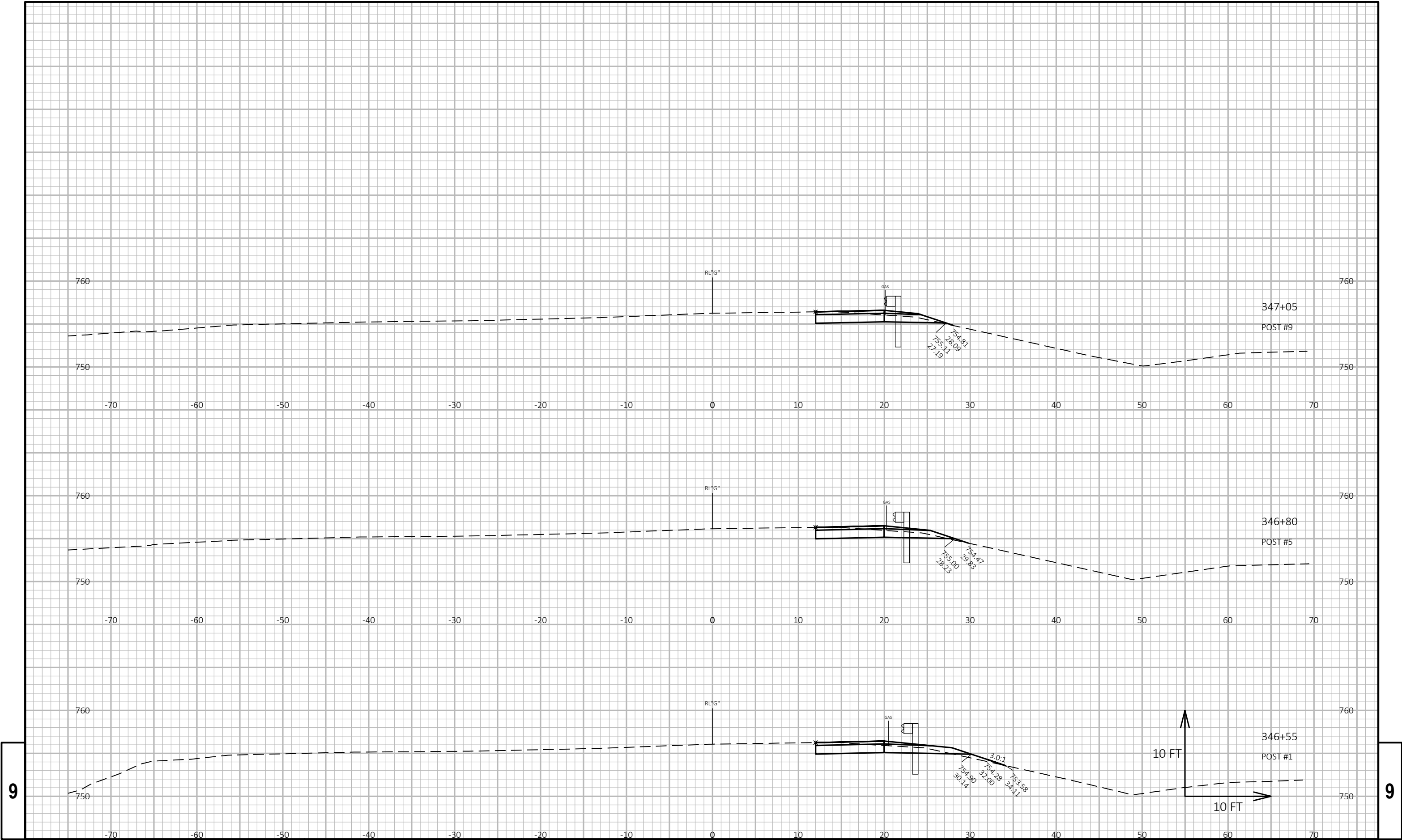






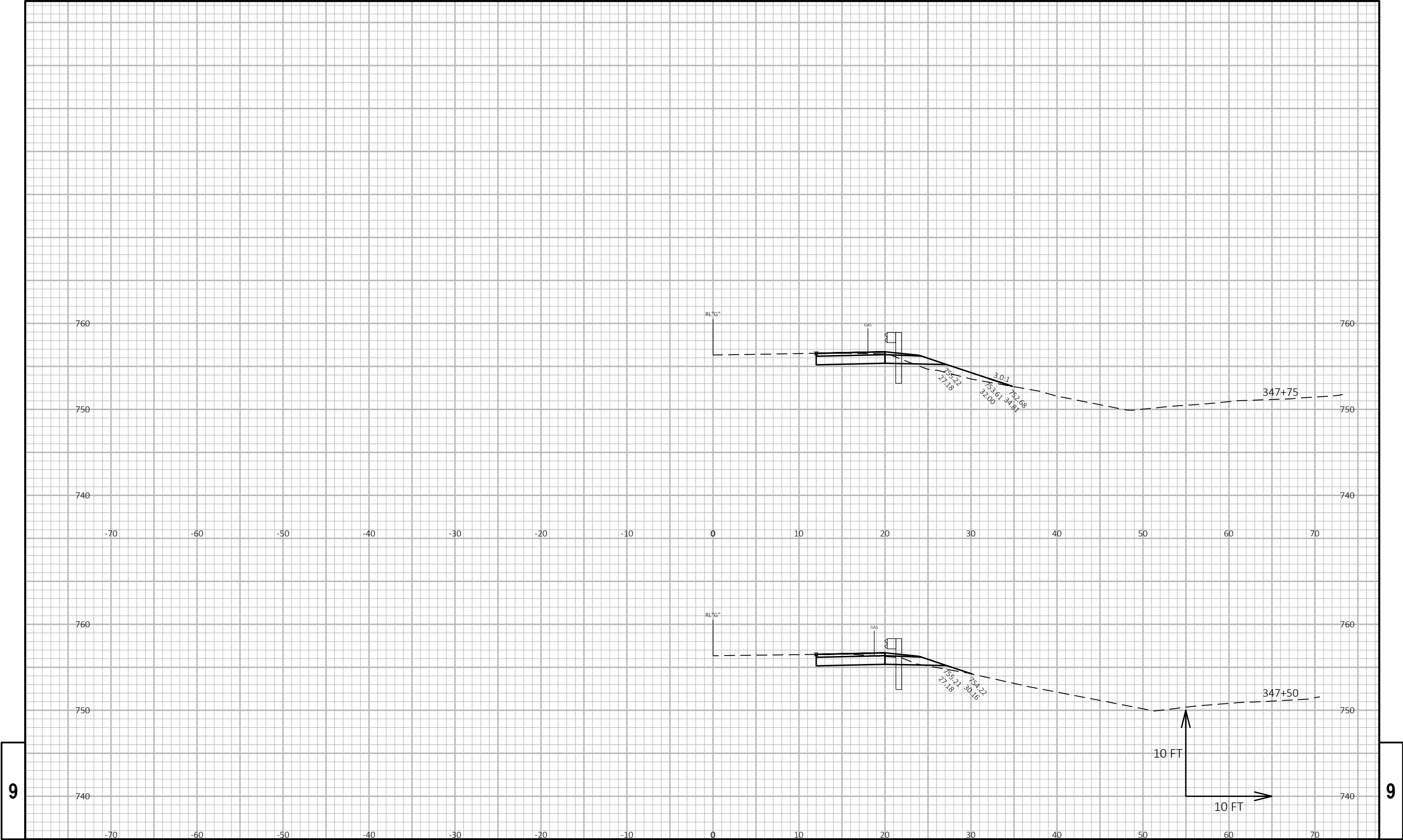


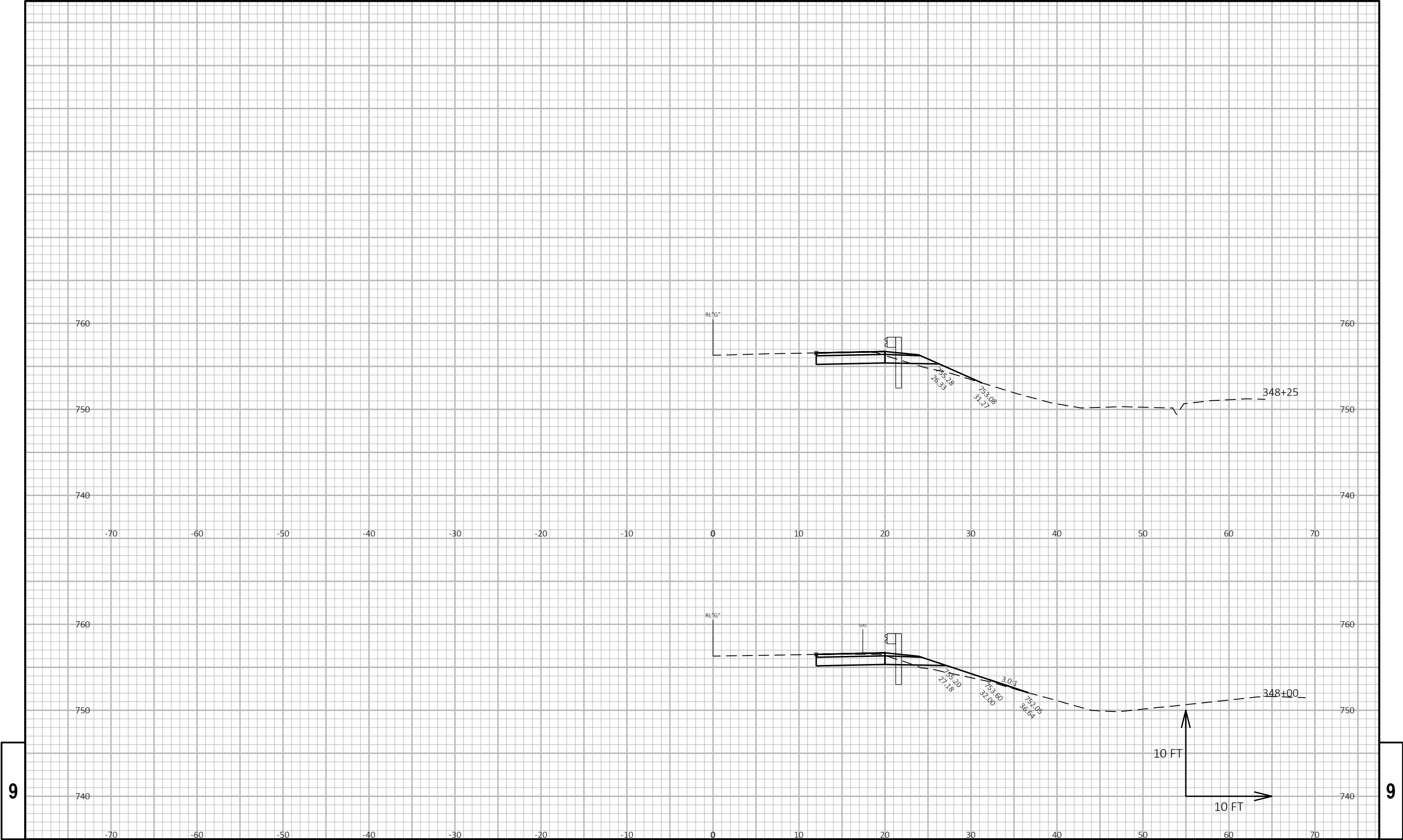




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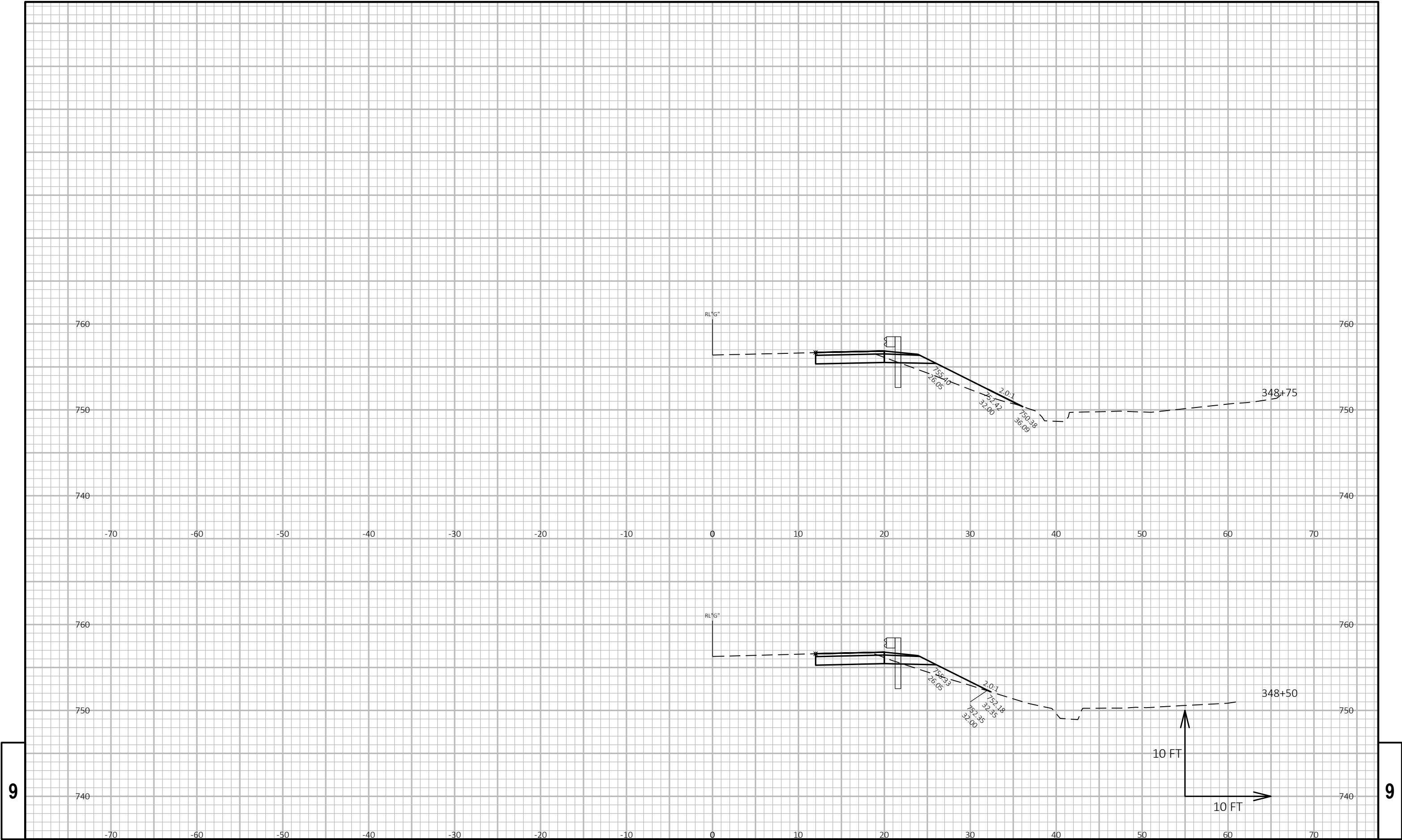
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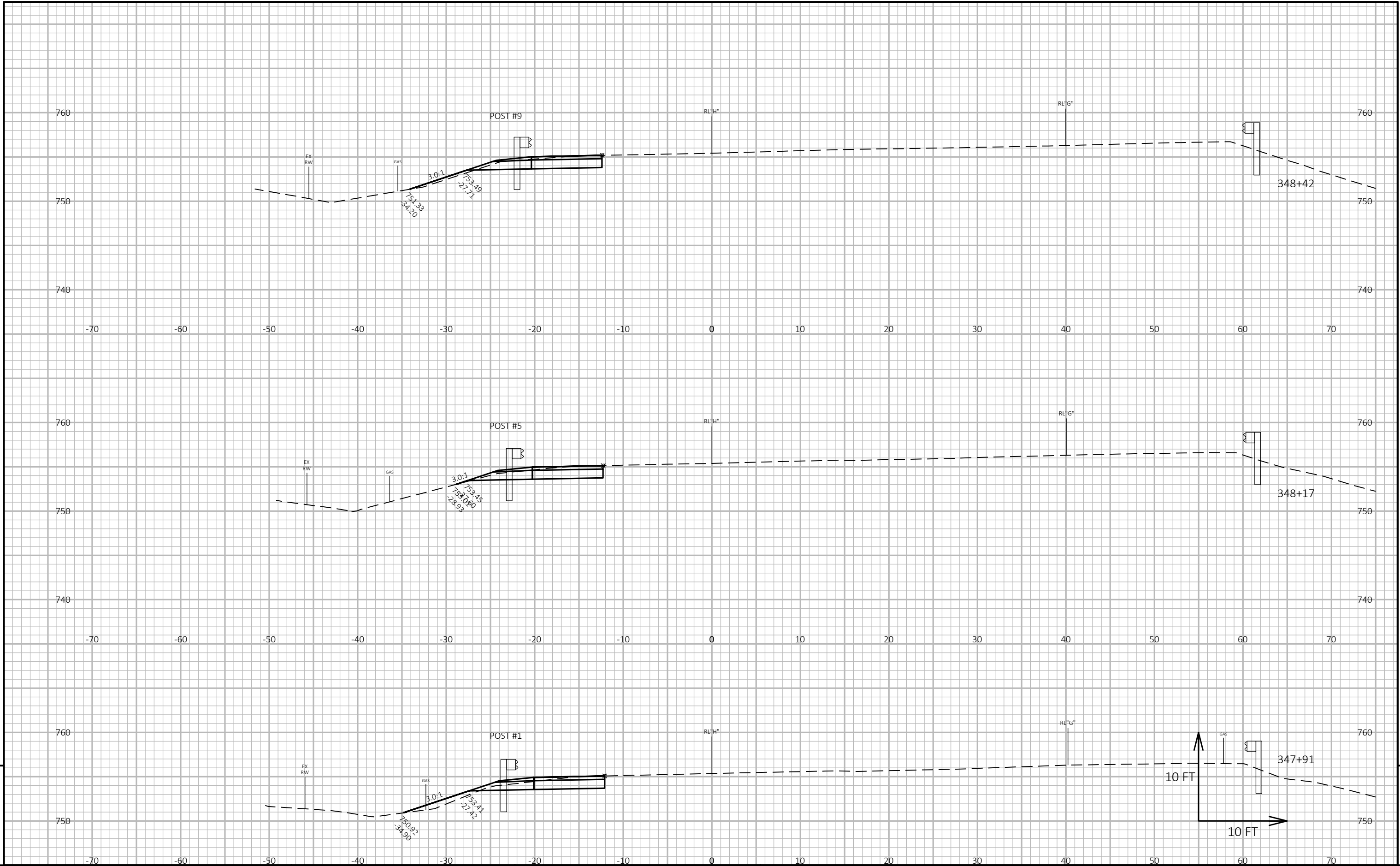
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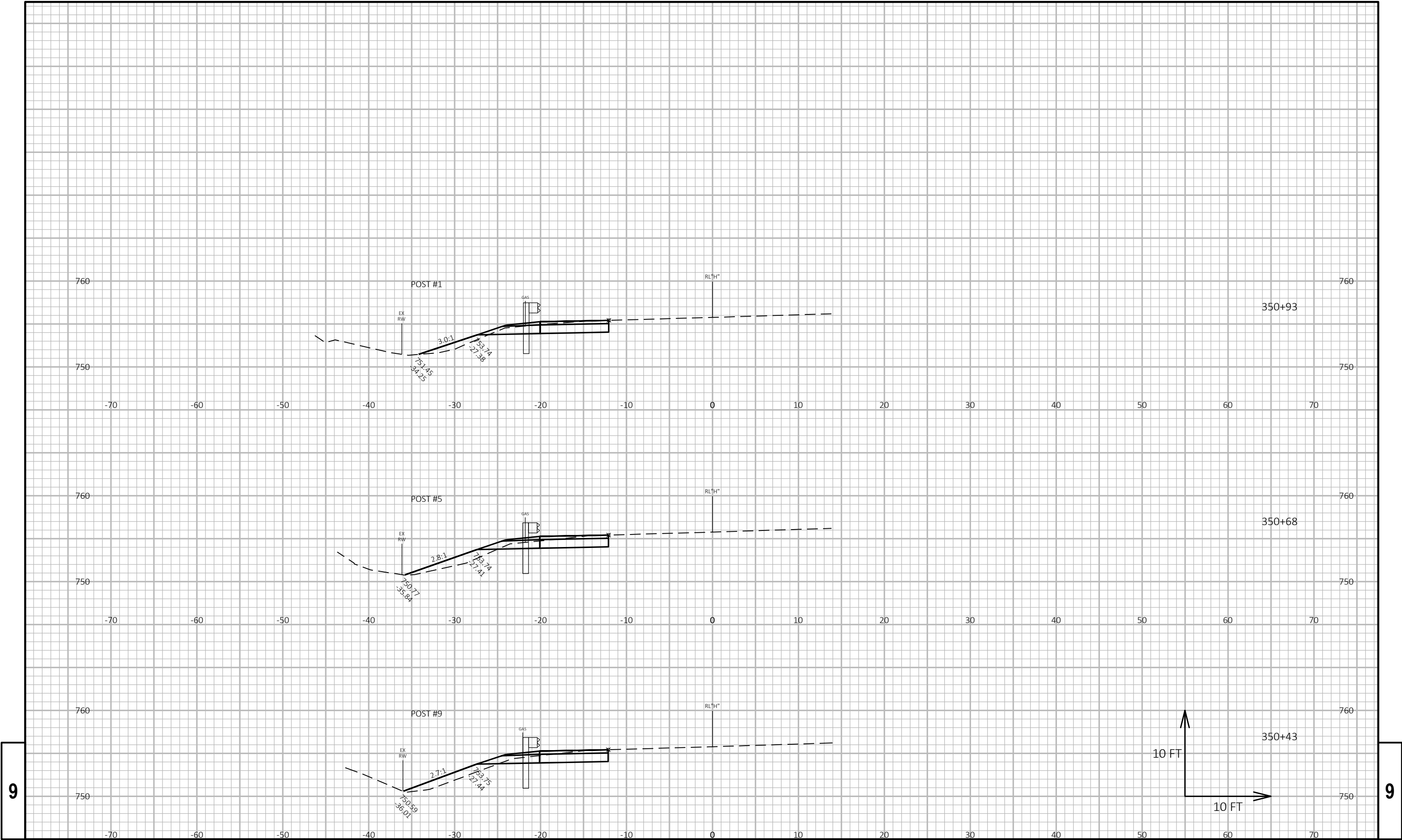
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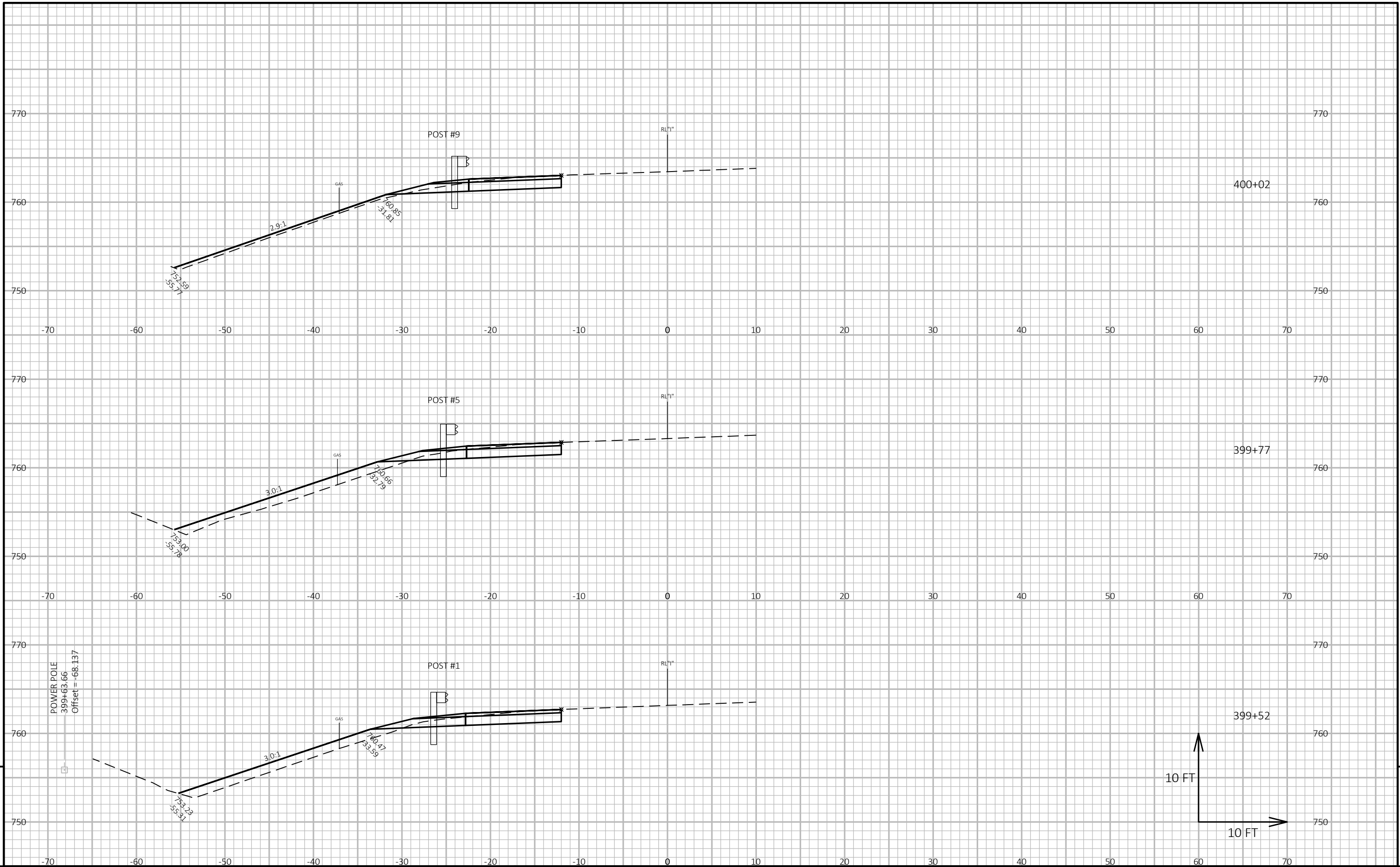
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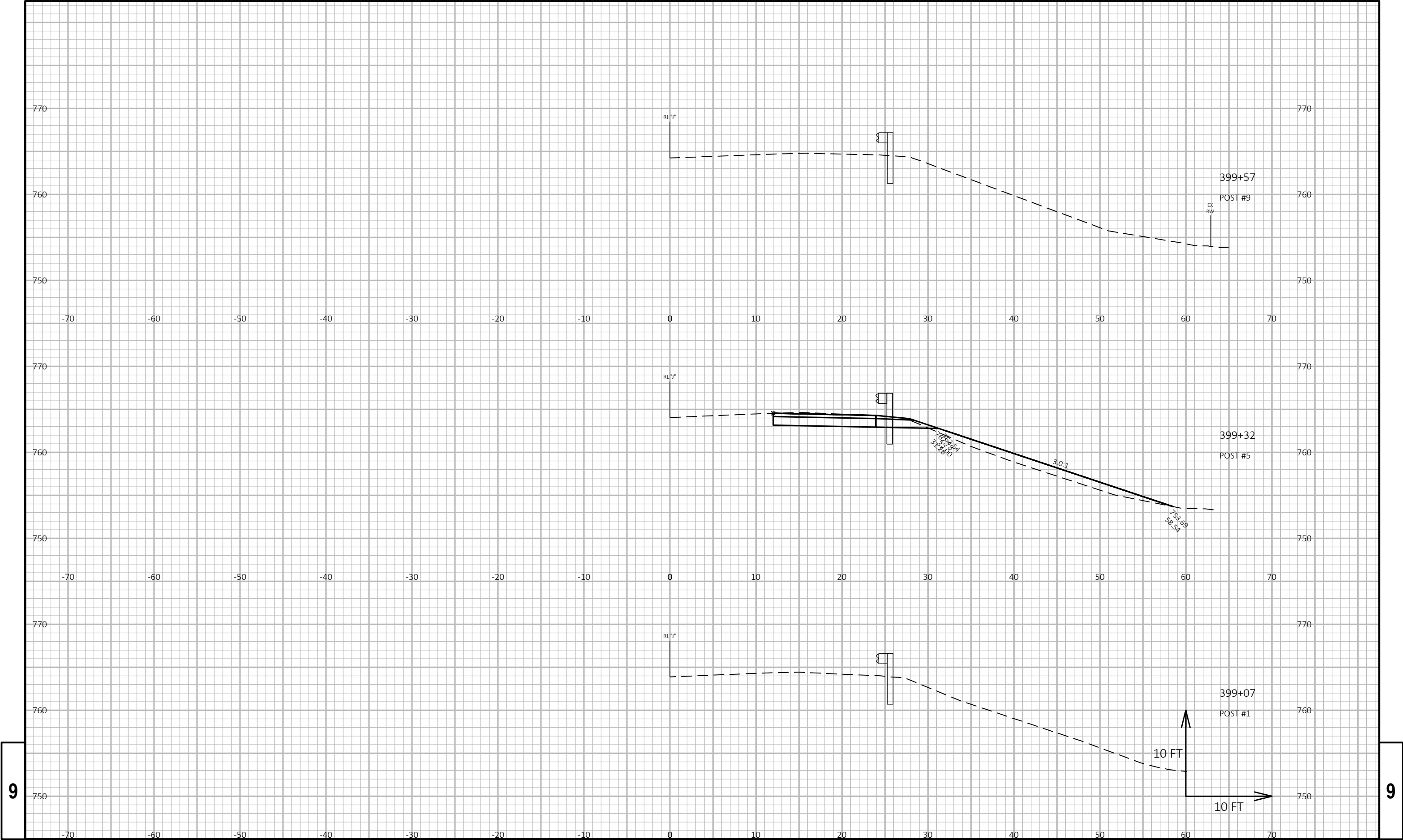




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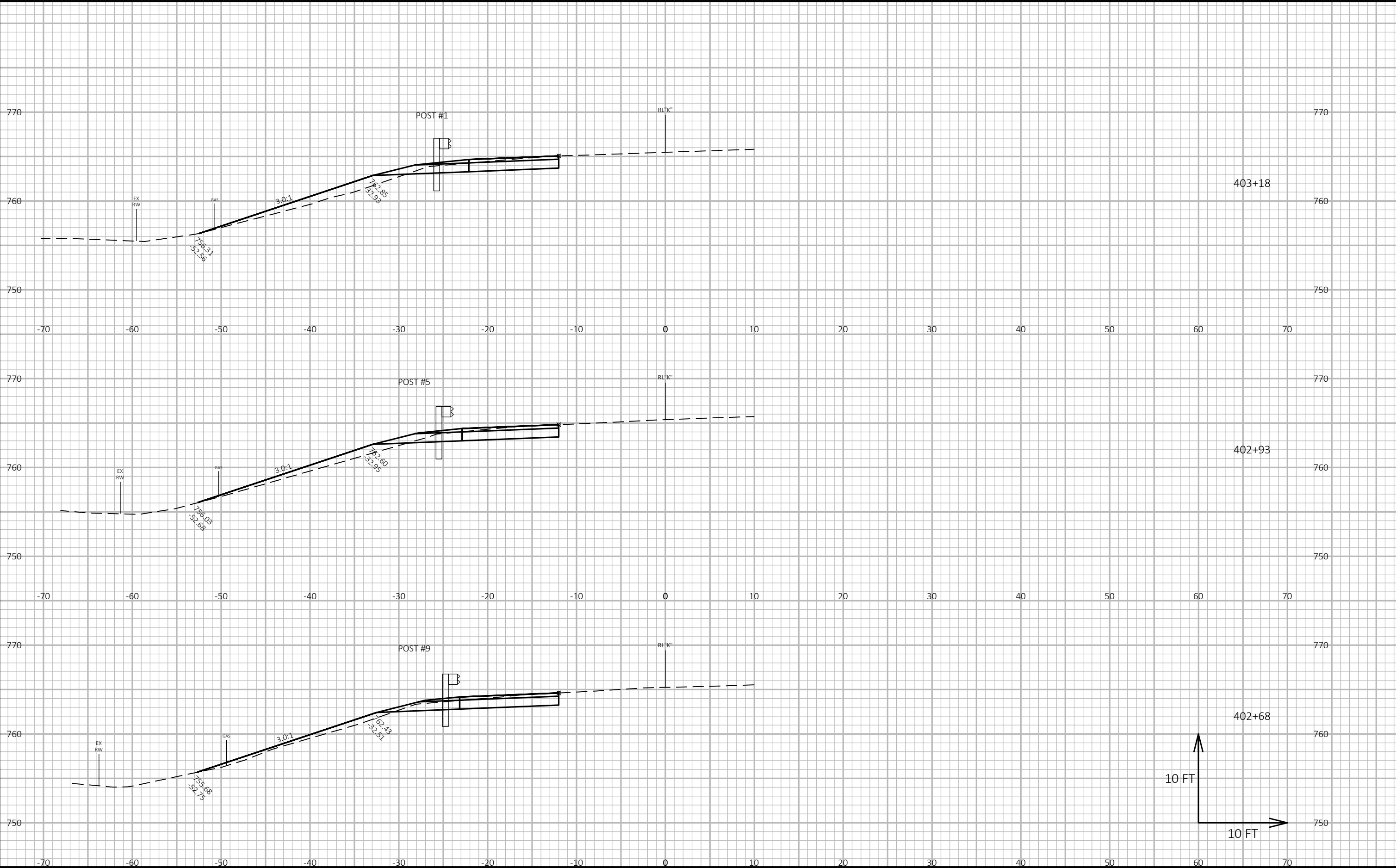
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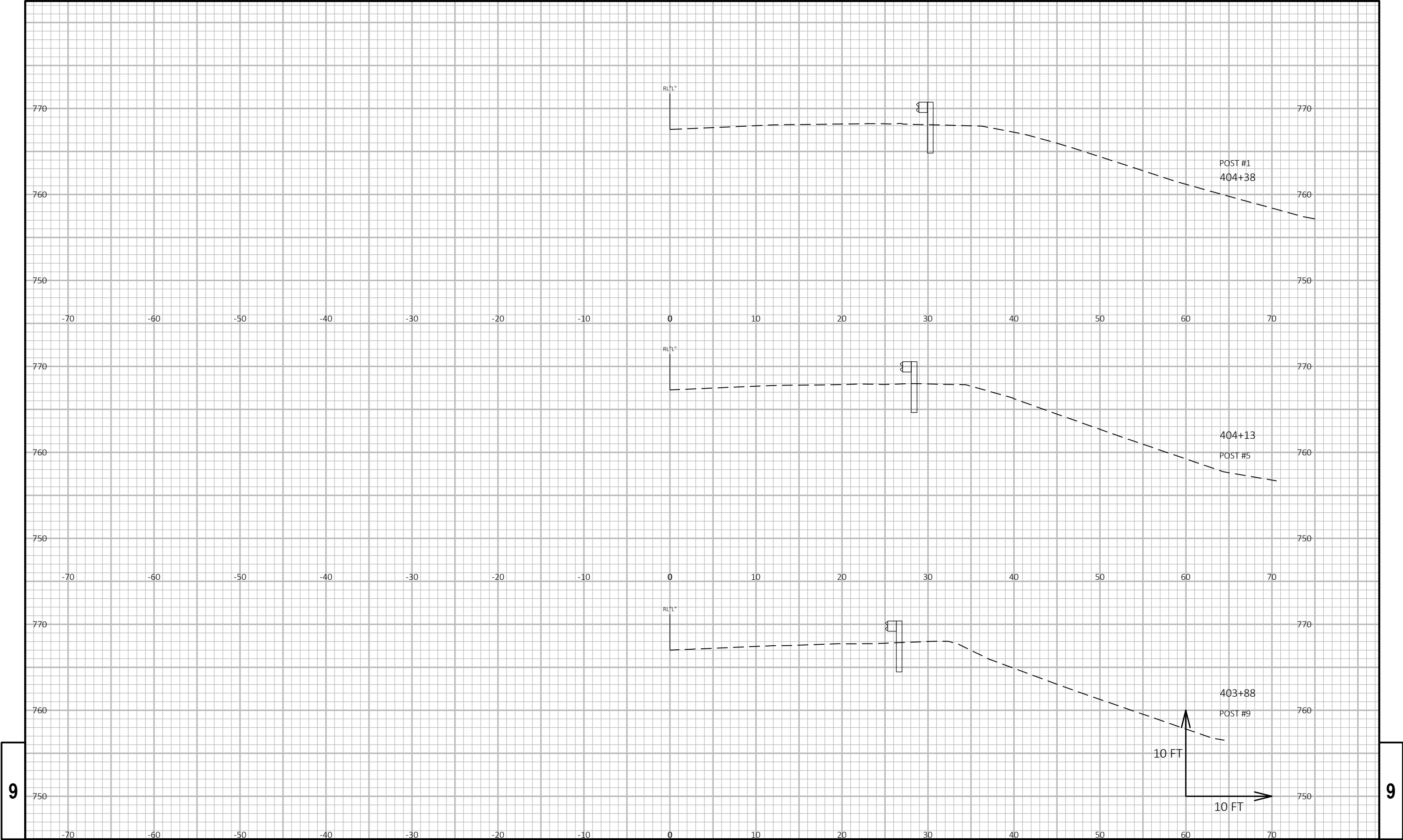




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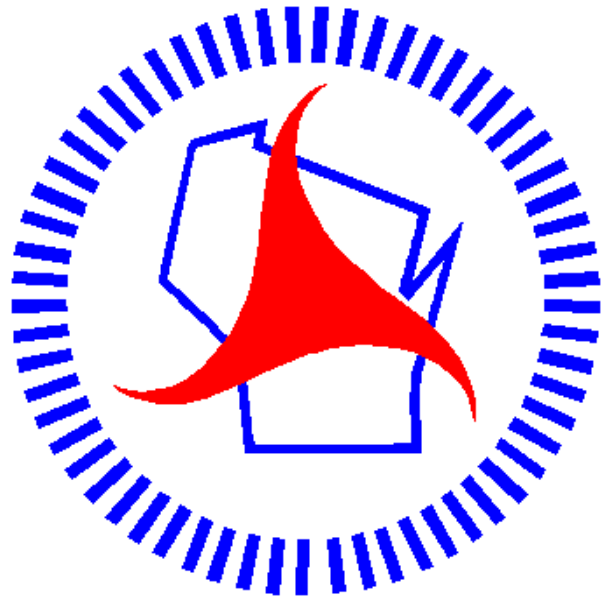
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Wisconsin Department of Transportation

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