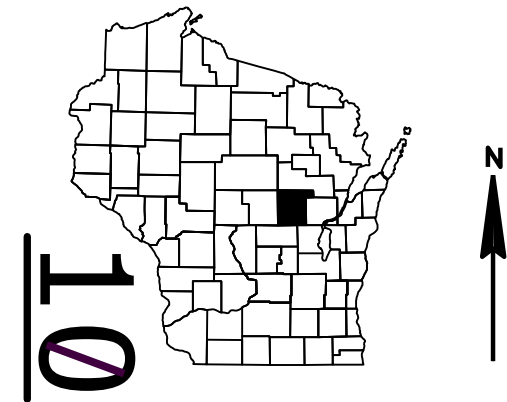


WIS
PROJECT ID: 4075-00-71
WITH: N/A
COUNTY: WAUPACA

SEPTEMBER 2023
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 = 156

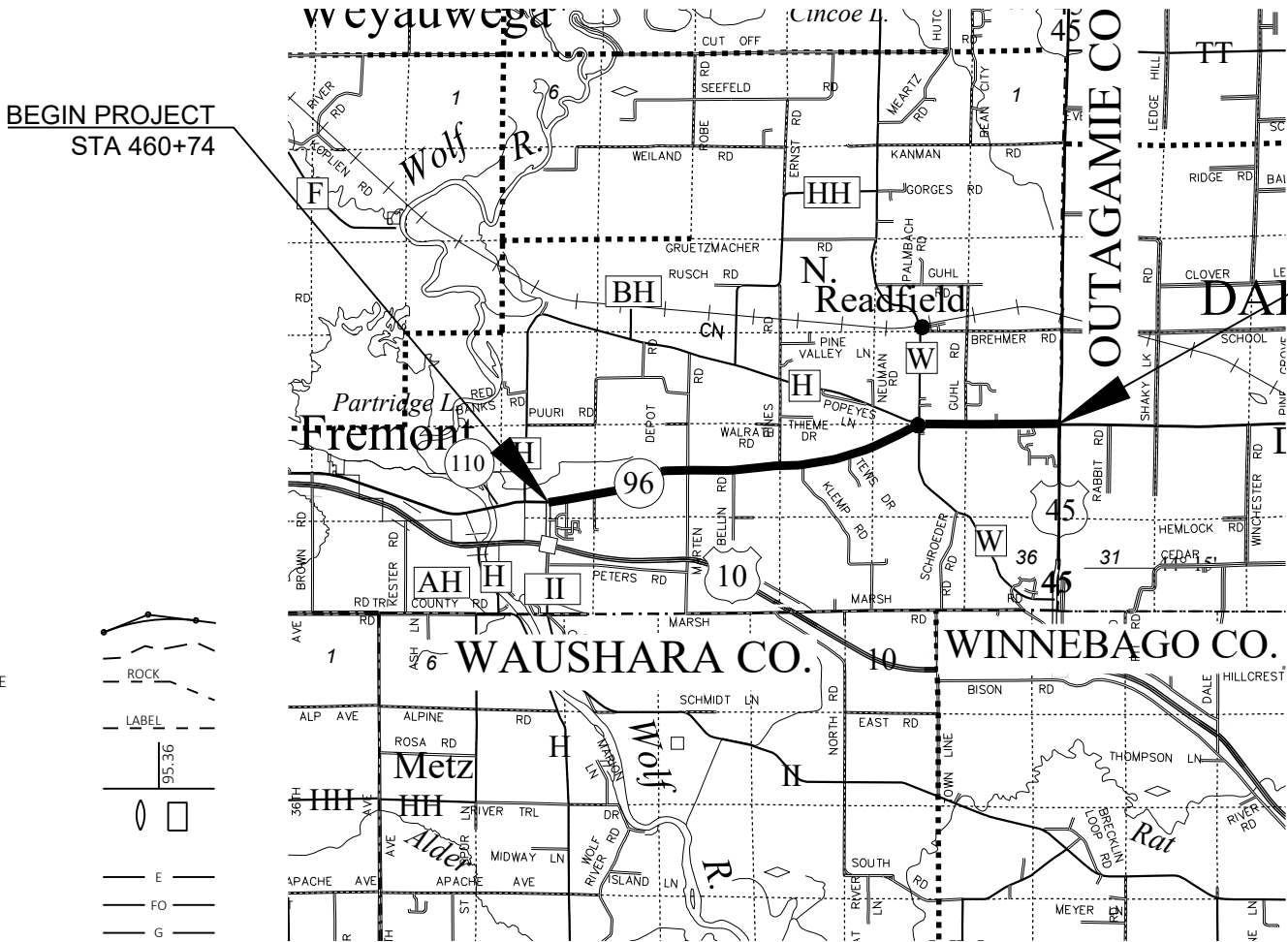


DESIGN DESIGNATION
A.A.D.T. 2024 = 3200
A.A.D.T. 2044 = 3500
D.H.V. = 10.3%
D.D. = 60/40
T. = 12.3%
DESIGN SPEED = 55 MPH
ESALS = 950,000

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



LAYOUT
SCALE 0 2 MI
TOTAL NET LENGTH OF CENTERLINE = 5.54

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COORDINATE REFERENCE SYSTEM (WISCRS), WAUPACA COUNTY, NAD83 (2011), IN U.S. SURVEY FEET. POSITIONS SHOWN ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES ARE THE SAME AS GROUND DISTANCES. ELEVATIONS ARE REFERENCED TO NAVD 88 (2012). GPS DERIVED ELEVATIONS ARE BASED ON GEOID 12A.

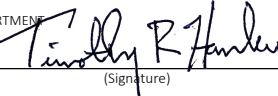
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
PLAN OF PROPOSED IMPROVEMENT
FREMONT - APPLETON
STH 110 TO USH 45
STH 96
WAUPACA COUNTY

STATE PROJECT NUMBER
4075-00-71

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
4075-00-71		

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY
Surveyor _____ SURVEYOR
Designer _____ ANTHONY BUERGER
Project Manager _____ TIMOTHY HANLEY
Regional Examiner _____ ZACH GRULING
Regional Supervisor _____ NICHOLE LYSNE

APPROVED FOR THE DEPARTMENT
DATE: 08-29-22  (Signature)

E

GENERAL NOTES

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

TOPSOIL SHALL BE PLACED 1" BELOW THE TOP OF ADJACENT CONCRETE CURBS OR SIDEWALKS.

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

PURSUANT TO CHAPTER 59 OF THE WISCONSIN STATUTES, THE CONTRACTOR SHALL CAREFULLY MAKE A SEARCH FOR EVIDENCE OF A LANDMARK IN ALL AREAS WHERE SUCH A LANDMARK MAY EXIST.

WORK WITH UTMOST CARE AND PROTECT ALL SURVEY MARKERS.REMOVAL OF ANY SURVEY MARKER IS TO BE WITH THE APPROVAL OF THE ENGINEER.

UTILITY CONTACT

COMMUNICATIONS

BRIGHTSPEED
BRAD PATRICK
224 INDUSTRIAL DR
NORTH PRAIRIE, WI 53153
PHONE: 414-573-7733
EMAIL: BRADLEY.PATRICK@BRIGHTSPEED.COM

COMMUNICATIONS

NET LEC LLC
RICK VINCENT
470 SECURITY BLVD
GREEN BAY, WI 54313
PHONE: 920-617-7316
EMAIL: RICK.VINCENT@NSIGHT.COM

COMMUNICATIONS

SPECTRUM
VINCE ALBIN
3520 DESTINATION DR
APPLETON, WI 54915
PHONE: 920-831-9249
EMAIL: VINCE.ALBIN@CHARTER.COM

ELECTRIC

WE ENERGIES
ZACH DUGA
800 S LYNNDAL DRIVE
APPLETON, WI 54912
PHONE: 920-380-3458
PHONE (MOBILE): 920-450-9314

GAS

WE ENERGIES
CODY BECKMAN
800 S LYNNDAL DRIVE
APPLETON, WI 54914
PHONE: 920-380-3422
PHONE (MOBILE): 920-428-1038

SEWER

WOLF RIVER SANITARY DISTRICT
WARD WEISS
N 125 CTH H
FREMONT, WI 54940
PHONE: 920-446-3243
EMAIL: WWEISS@CENTURYTEL.NET

DNR CONTACT

WISCONSIN DNR
CASEY JONES
625 E COUNTY ROAD Y SITE 700
OSHKOSH, WI 54901-9731
PHONE: (715) 213-6571
EMAIL: CASEY.JONES@WISCONSIN.GOV

DIGGERSHOTLINE

Dial 811 or (800)242-8511

www.DiggersHotline.com

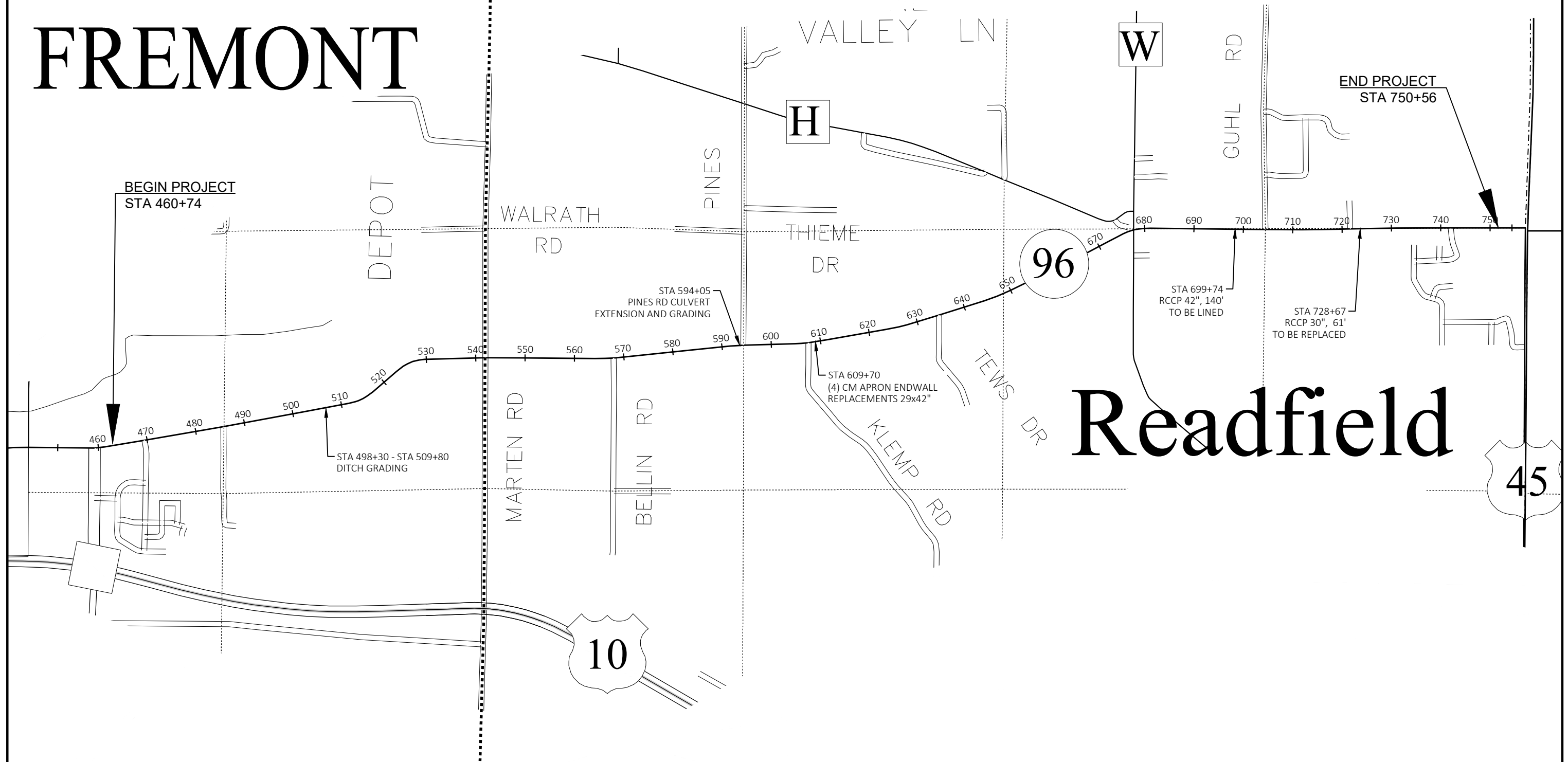
Runoff Coefficient Table

	Hydrologic Soil Group											
	A			B			C			D		
	Slope Range (Percent)											
Land Use	0 - 2	2 - 6	6 & Over	0 - 2	2 - 6	6 & Over	0 - 2	2 - 6	6 & Over	0 - 2	2 - 6	6 & Over
Row Crops	0.08	0.16	0.22	0.12	0.20	0.27	0.15	0.24	0.33	0.19	0.28	0.38
	0.22	0.30	0.38	0.26	0.34	0.44	0.30	0.37	0.50	0.34	0.41	0.56
Median Strip-Turf	0.19	0.20	0.24	0.19	0.22	0.26	0.20	0.23	0.30	0.20	0.25	0.30
	0.24	0.26	0.30	0.25	0.28	0.33	0.26	0.30	0.37	0.27	0.32	0.40
Side Slope Turf			0.25			0.27			0.28			0.30
			0.32			0.34			0.36			0.38
Pavement												
Asphalt	0.70 - 0.95											
Concrete	0.80 - 0.95											
Brick	0.70 - 0.80											
Drives, Sidewalks	0.75 - 0.85											
Roofs	0.75 - 0.95											
Gravel Roads, Shoulders	0.40 - 0.60											

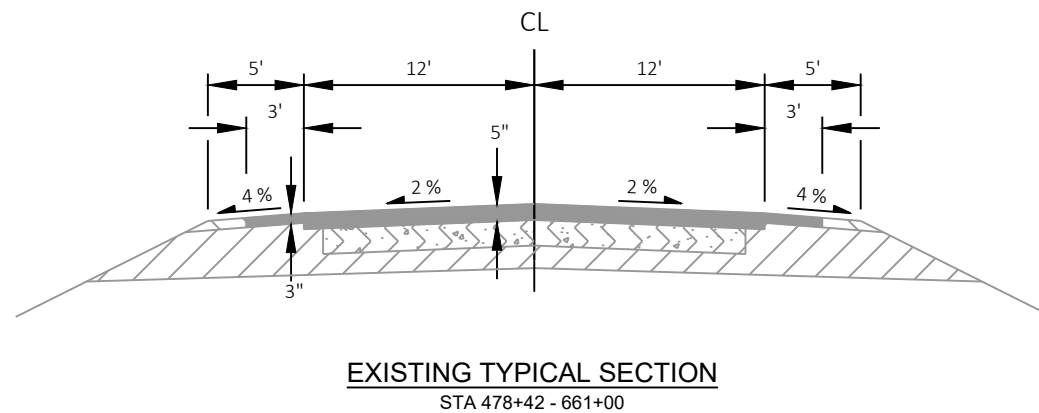
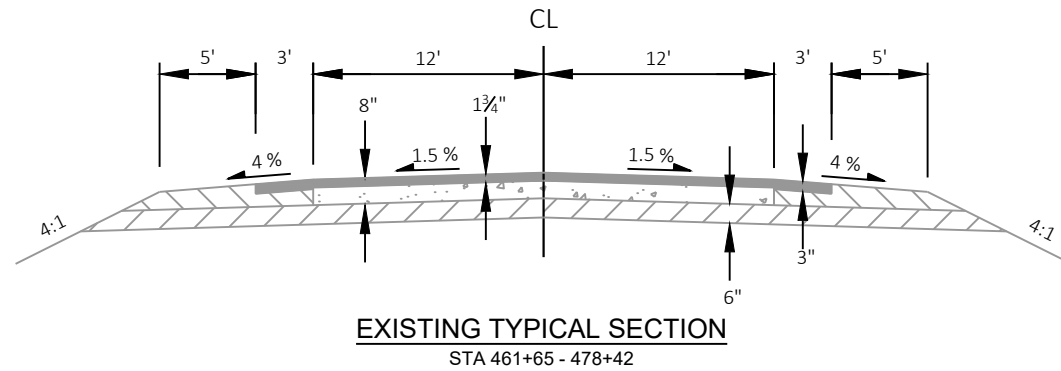
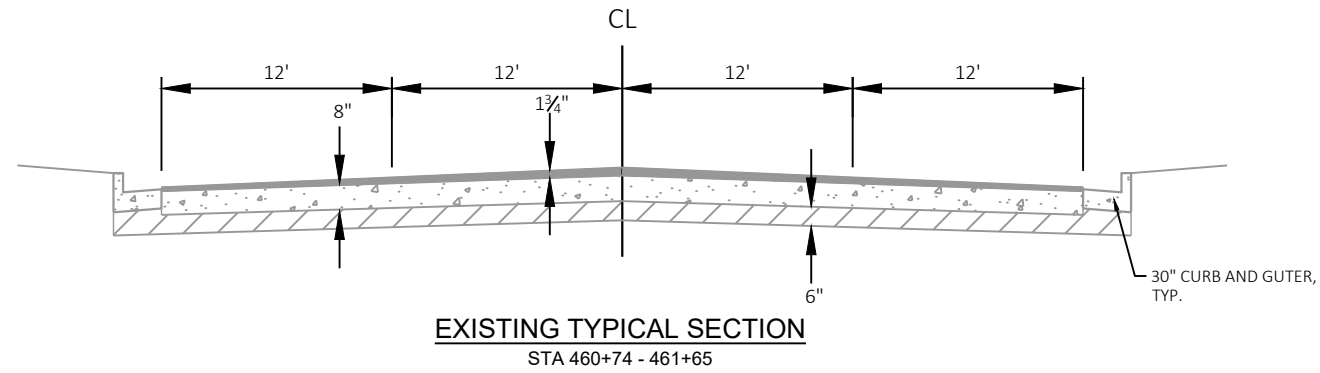
Total Project Area = 49.9 Acres
Total Area Expected To Be Disturbed By Construction Activities = 0.63 Acres

FREMONT

CALEDONIA



PROJECT NO: 4075-00-71	HWY: STH 96	COUNTY: WAUPACA	PROJECT OVERVIEW	SHEET 3	E
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LEGEND

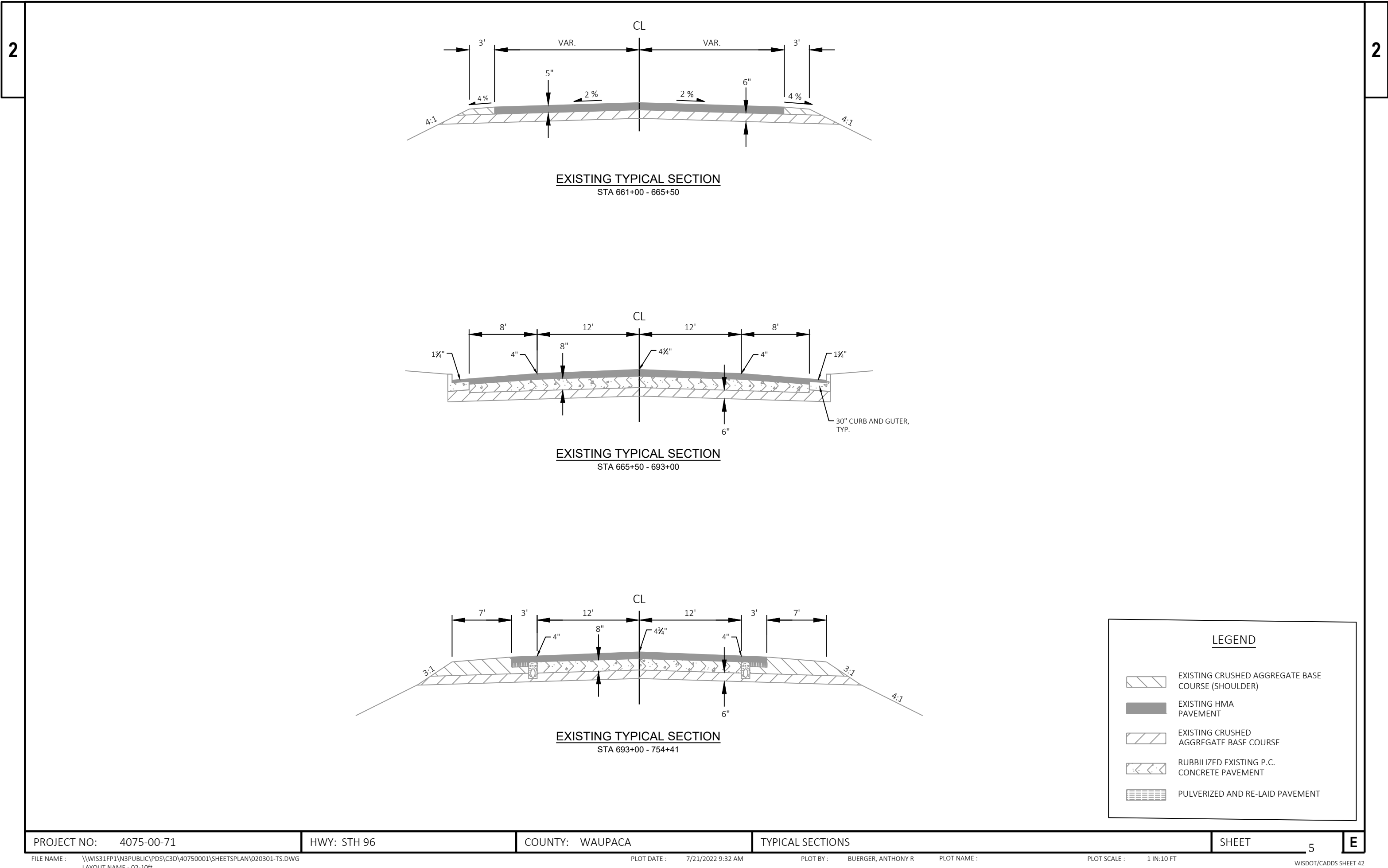
EXISTING PC CONCRETE PAVEMENT

EXISTING CRUSHED AGGREGATE BASE COURSE (SHOULDER)

EXISTING HMA PAVEMENT

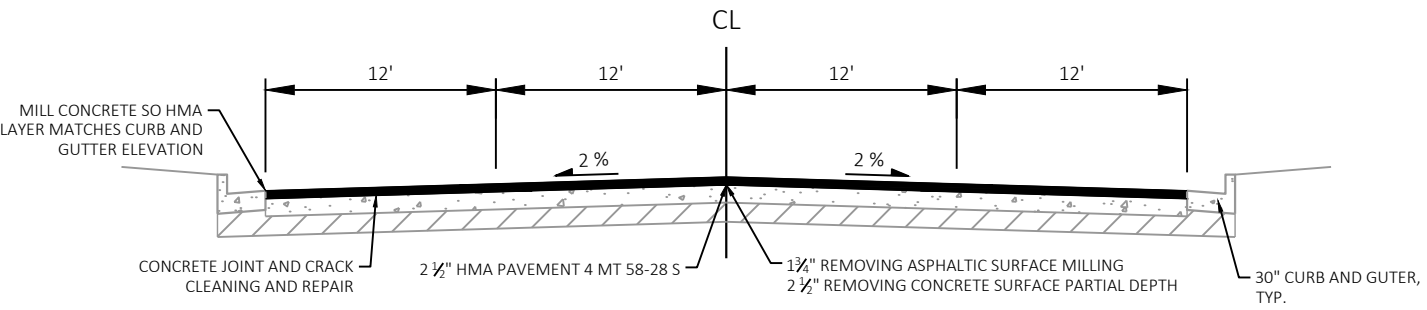
EXISTING CRUSHED AGGREGATE BASE COURSE

RUBBILIZED EXISTING P.C. CONCRETE PAVEMENT

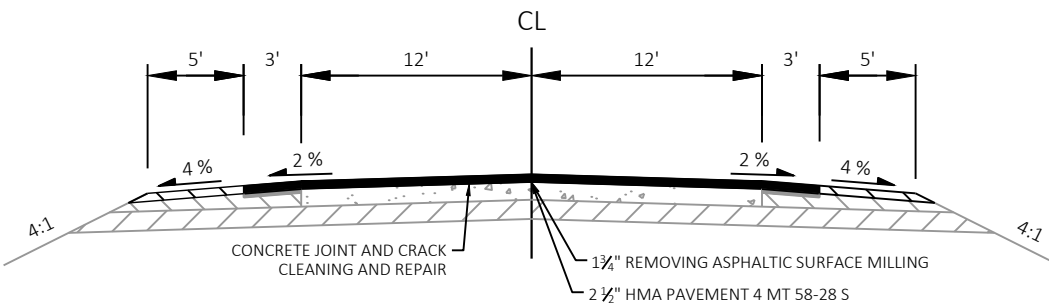


2

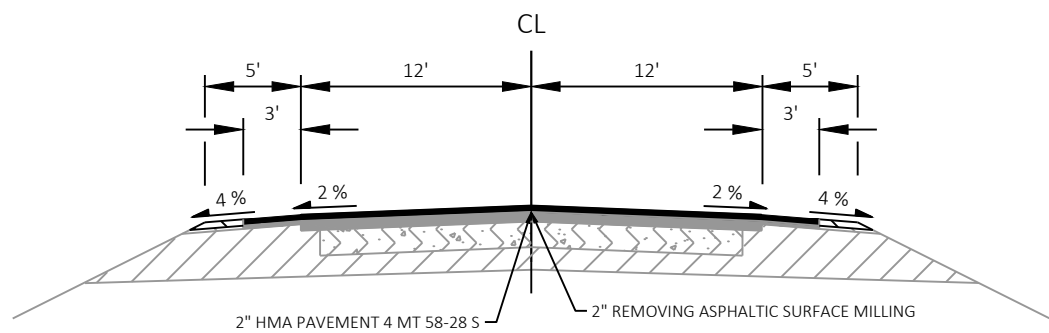
2



FINISHED TYPICAL SECTION



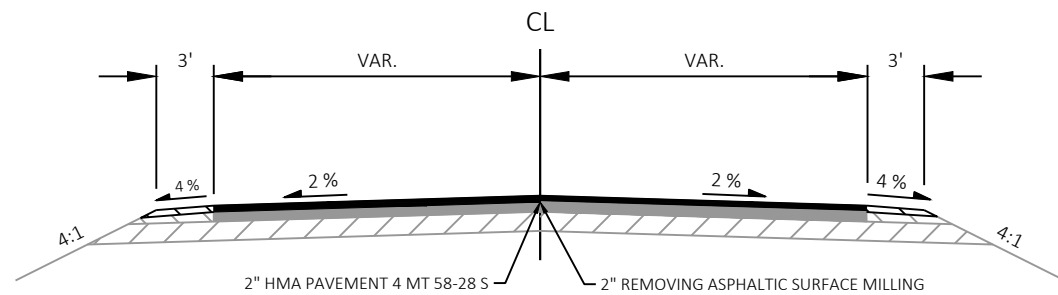
FINISHED TYPICAL SECTION



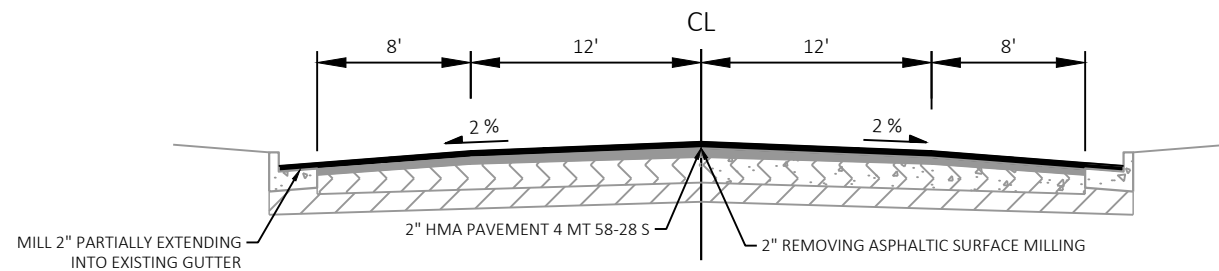
FINISHED TYPICAL SECTION
STA 478+42 - 661+00

LEGEND

- | | |
|---|---|
|  | EXISTING PC CONCRETE PAVEMENT |
|  | EXISTING CRUSHED AGGREGATE BASE COURSE (SHOULDER) |
|  | EXISTING HMA PAVEMENT |
|  | EXISTING CRUSHED AGGREGATE BASE COURSE |
|  | RUBBILIZED EXISTING P.C. CONCRETE PAVEMENT |
|  | HMA PAVEMENT |
|  | BASE AGGREGATE DENSE 3/4-INCH |



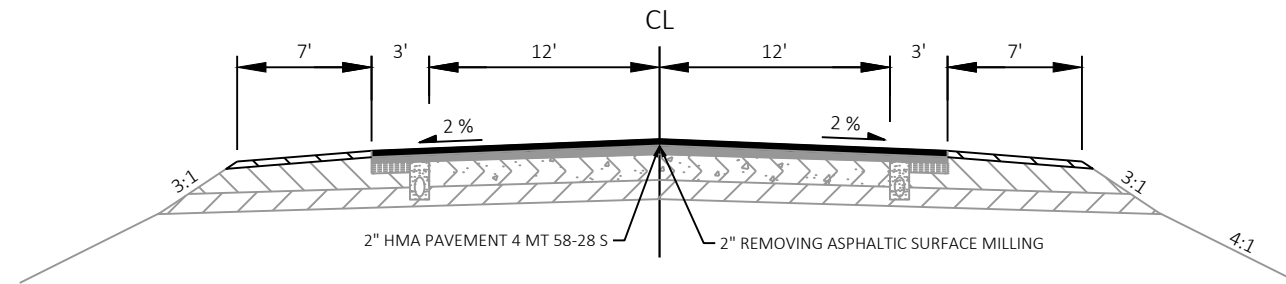
FINISHED TYPICAL SECTION
STA 661+00 - 665+50



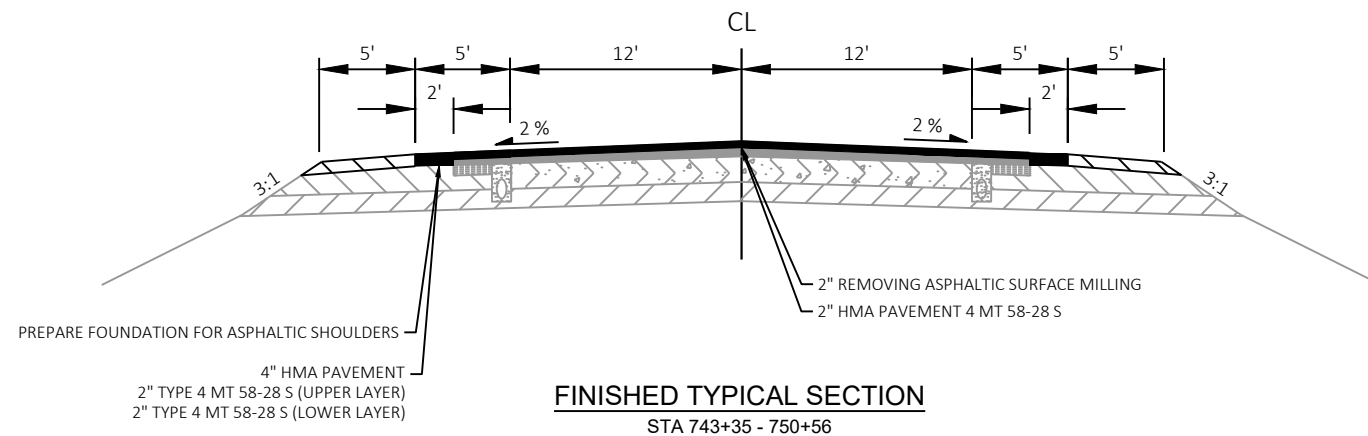
FINISHED TYPICAL SECTION
STA 665+50 - 693+11

LEGEND

- EXISTING CRUSHED AGGREGATE BASE COURSE (SHOULDER)
- EXISTING HMA PAVEMENT
- EXISTING CRUSHED AGGREGATE BASE COURSE
- RUBBLIZED EXISTING P.C. CONCRETE PAVEMENT
- HMA PAVEMENT
- BASE AGGREGATE DENSE 3/4-INCH



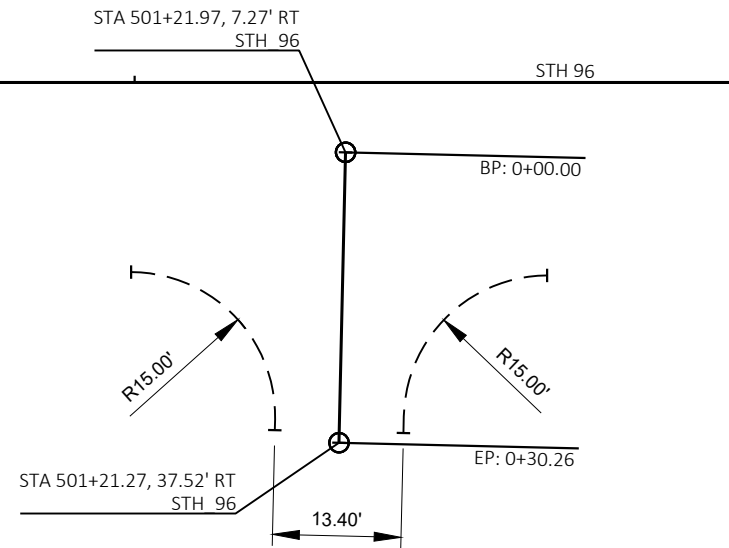
FINISHED TYPICAL SECTION
STA 693+11 - 743+35



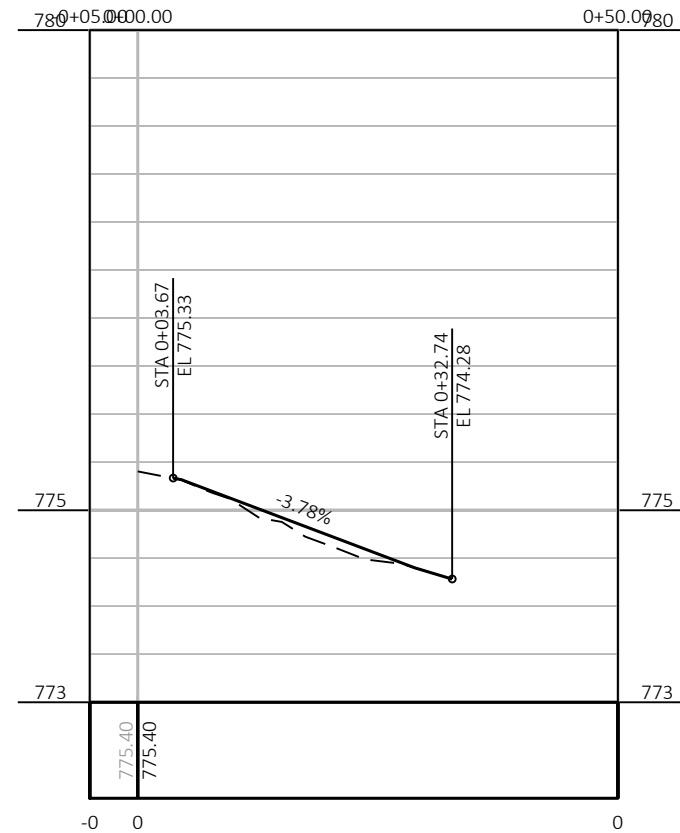
FINISHED TYPICAL SECTION
STA 743+35 - 750+56

LEGEND

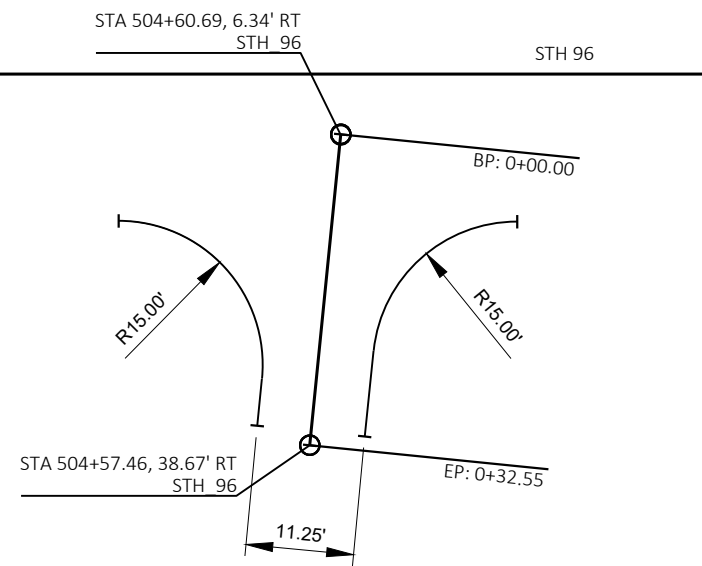
- EXISTING CRUSHED AGGREGATE BASE COURSE (SHOULDER)
- EXISTING HMA PAVEMENT
- EXISTING CRUSHED AGGREGATE BASE COURSE
- RUBBILIZED EXISTING P.C. CONCRETE PAVEMENT
- PULVERIZED AND RE-LAID PAVEMENT
- HMA PAVEMENT
- BASE AGGREGATE DENSE 3/4-INCH



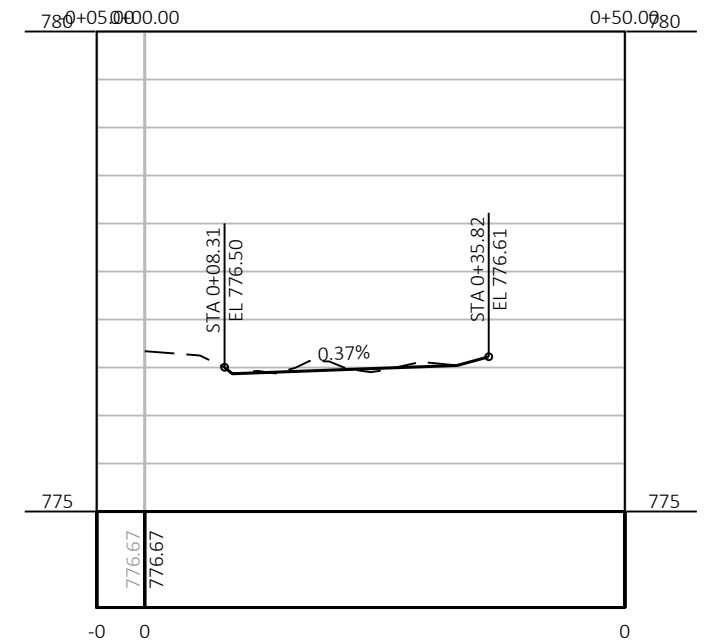
DRIVEWAY 501+22 RT PLAN VIEW



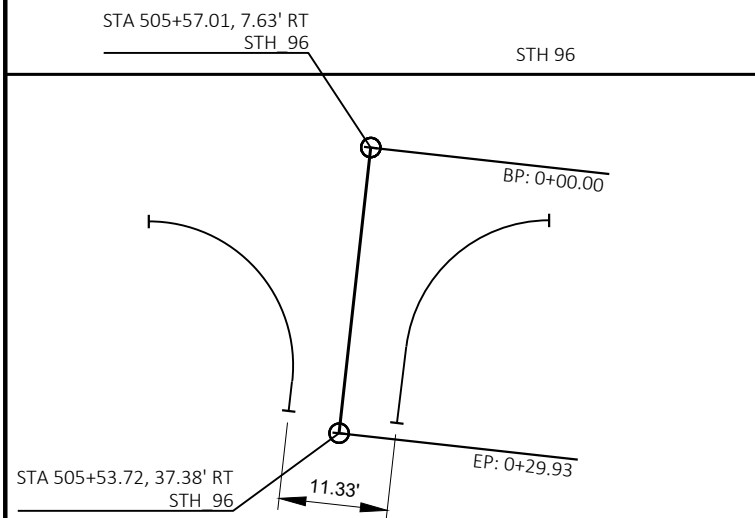
DRIVEWAY 501+22 RT PROFILE VIEW



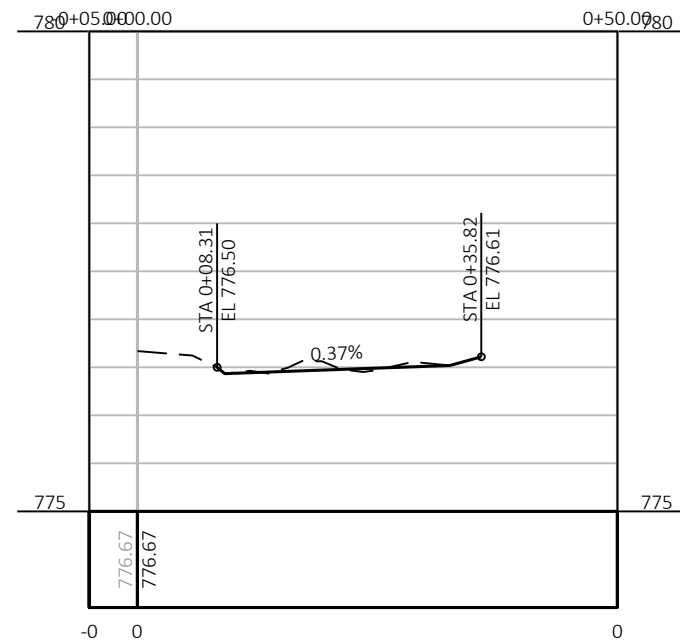
DRIVEWAY 504+60 RT PLAN VIEW



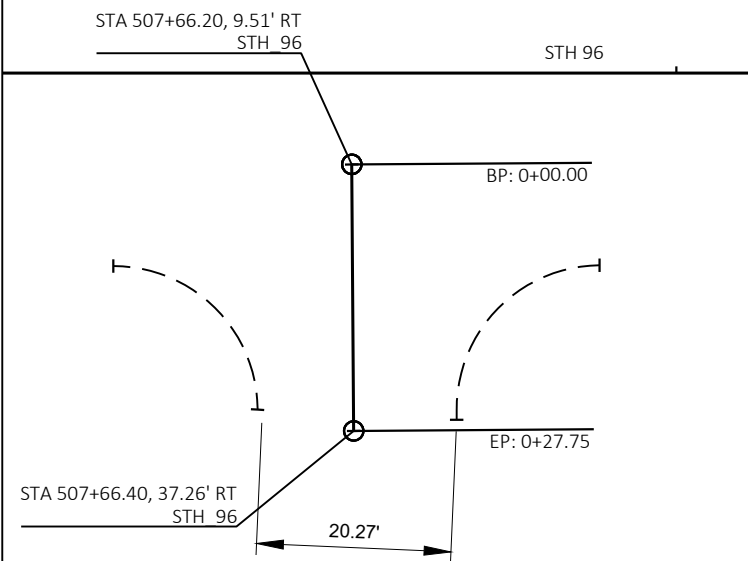
DRIVEWAY 504+60 RT PROFILE VIEW



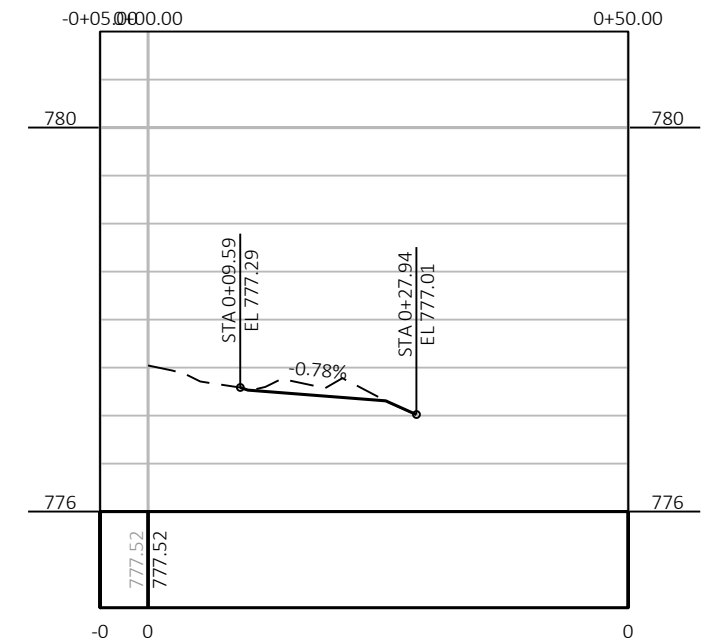
DRIVEWAY 505+56 RT PLAN VIEW



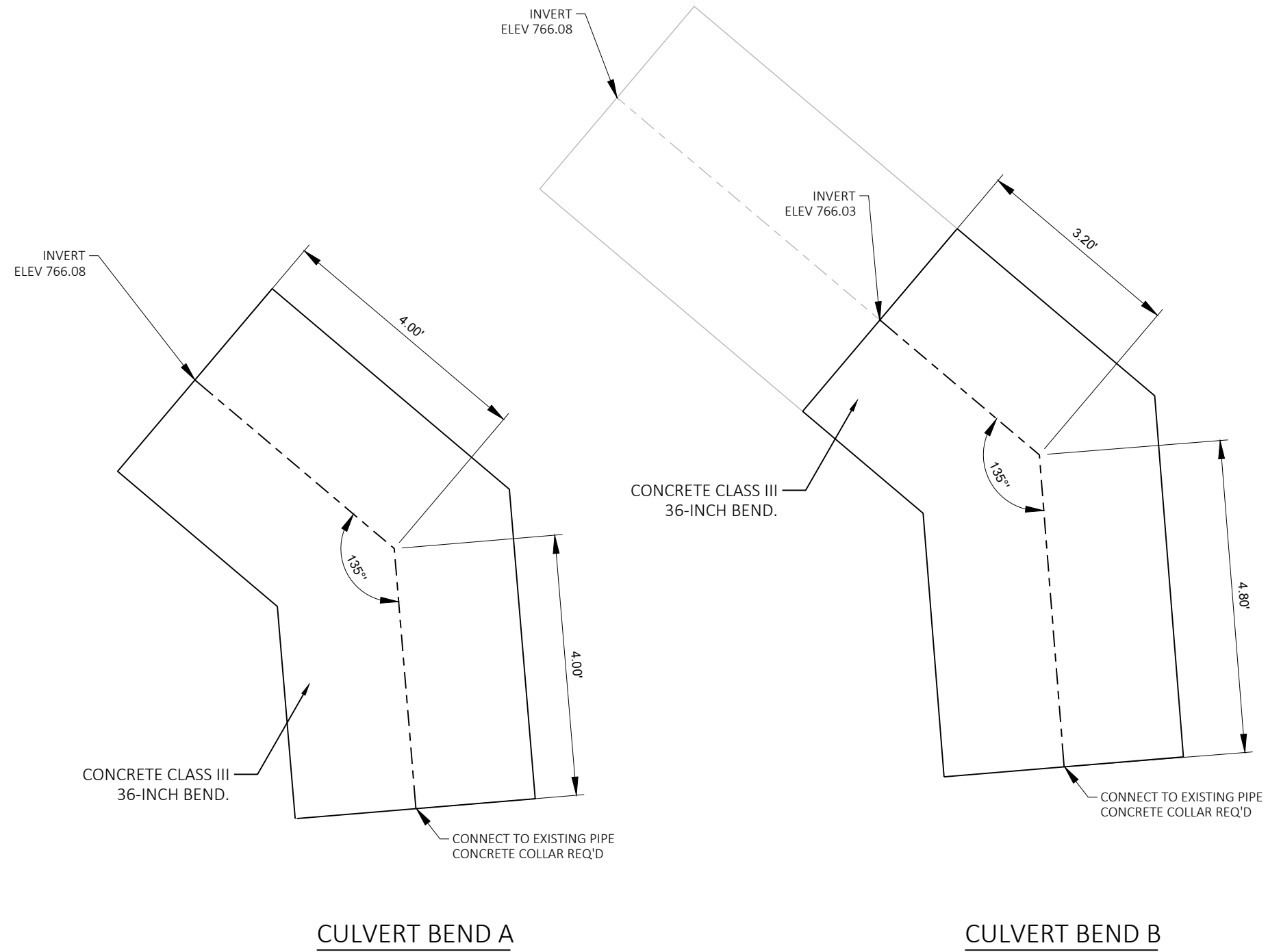
DRIVEWAY 505+56 RT PROFILE VIEW

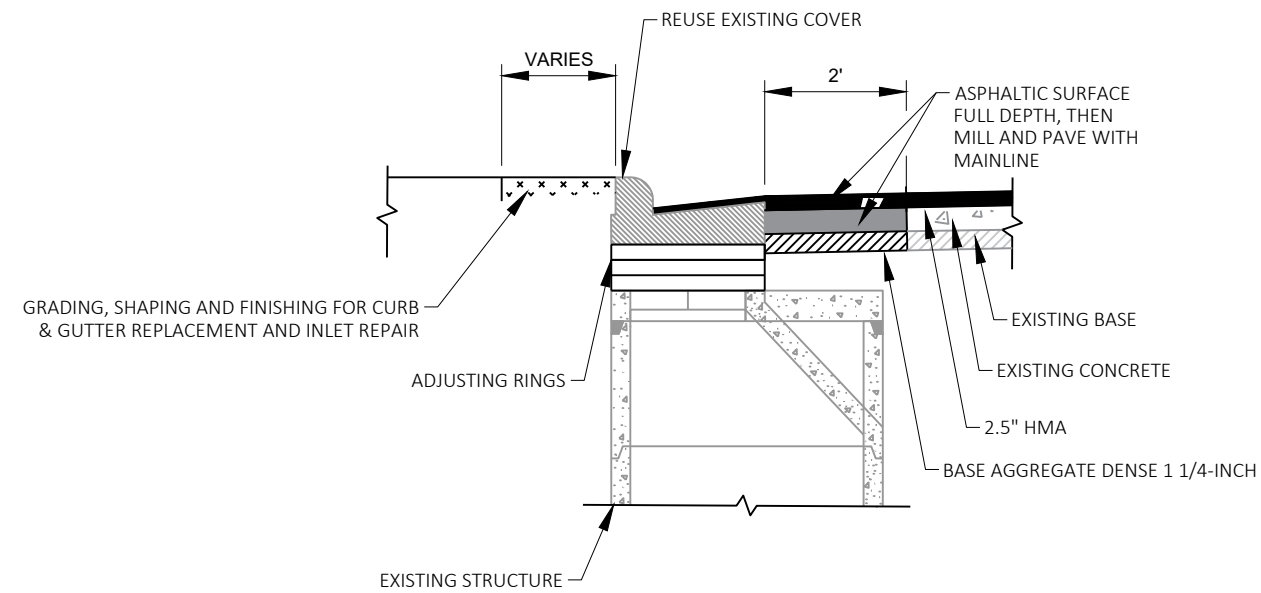


DRIVEWAY 507+66 RT PLAN VIEW



DRIVEWAY 507+66 RT PROFILE VIEW

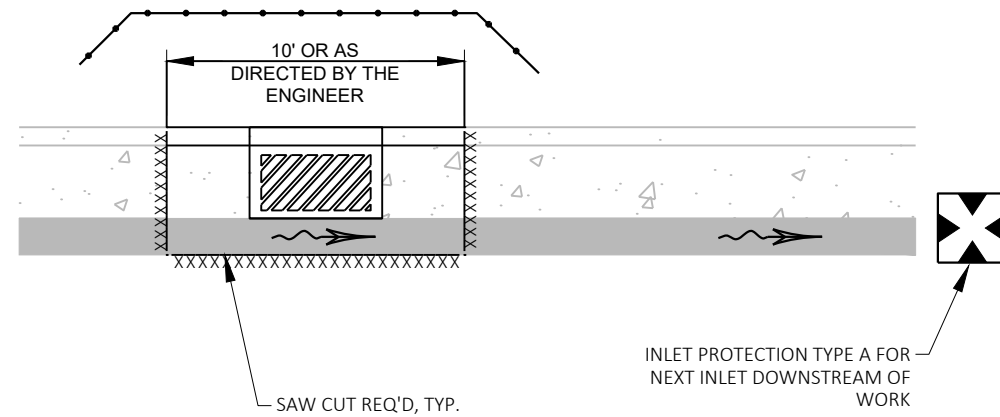




PROFILE VIEW

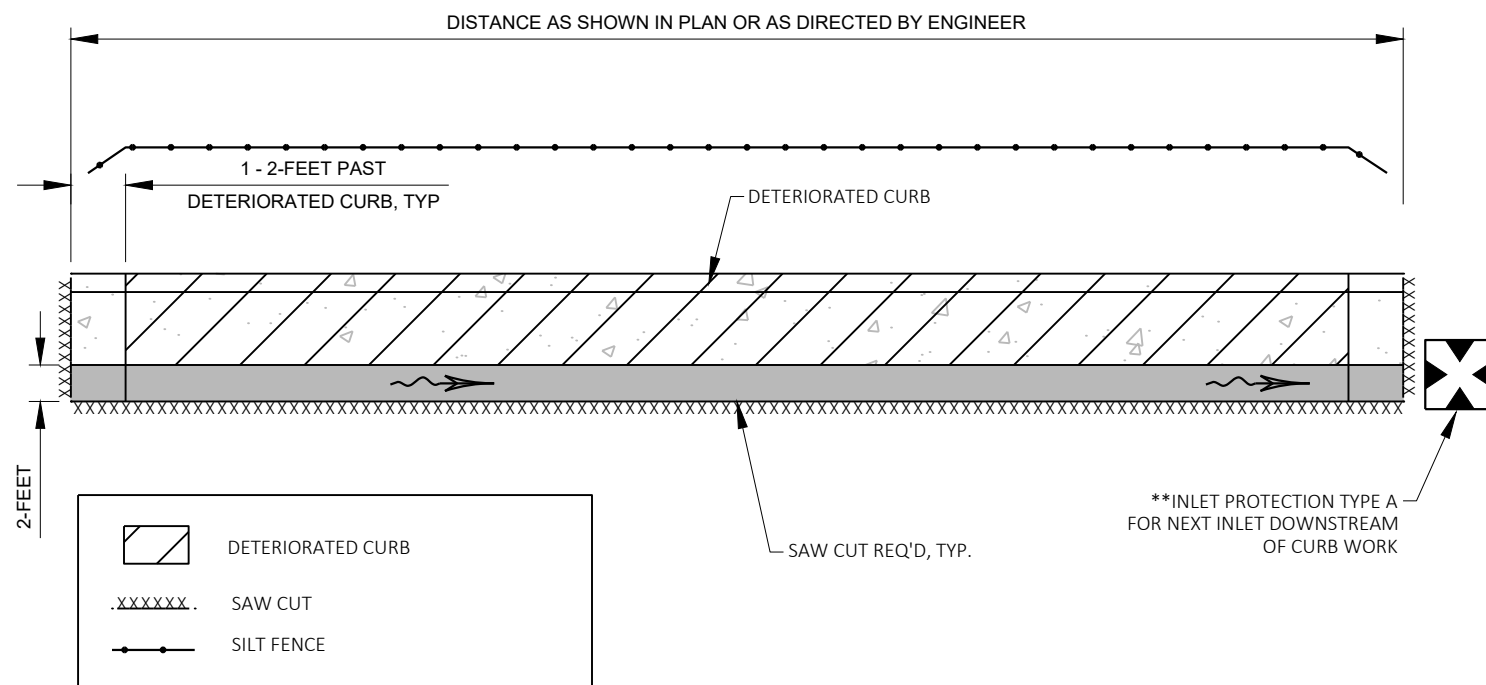
ADJUSTING INLET COVERS RECONSTRUCTING INLETS

STA 670+54 RT	STA 677+83 RT	
STA 670+54 LT	STA 678+15 LT	
STA 673+55 RT	STA 685+55 RT	STA 677+69 LT
STA 673+55 LT	STA 685+55 LT*	
STA 677+05 RT	STA 688+90 RT	
STA 677+05 LT	STA 688+90 RT	



PLAN VIEW

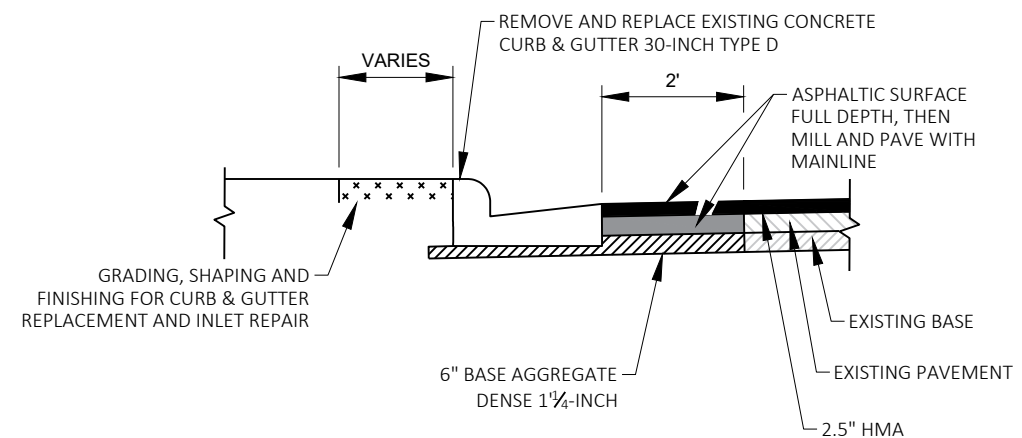
- NOTES:
- COMPLETE CURB & GUTTER AND INLET REPAIR WORK PRIOR TO PAVING OPERATIONS
 - * NEW INLET COVER TYPE H REQ'D



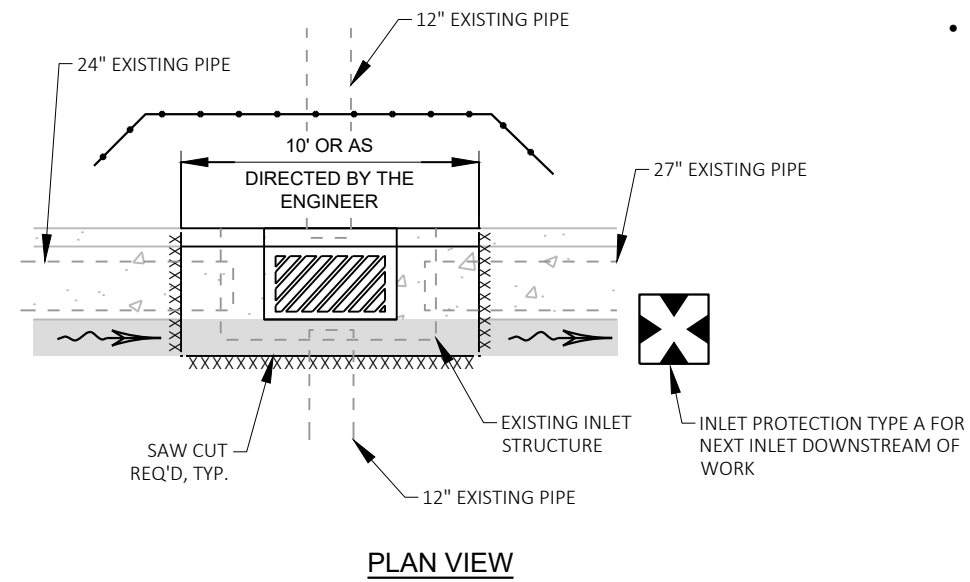
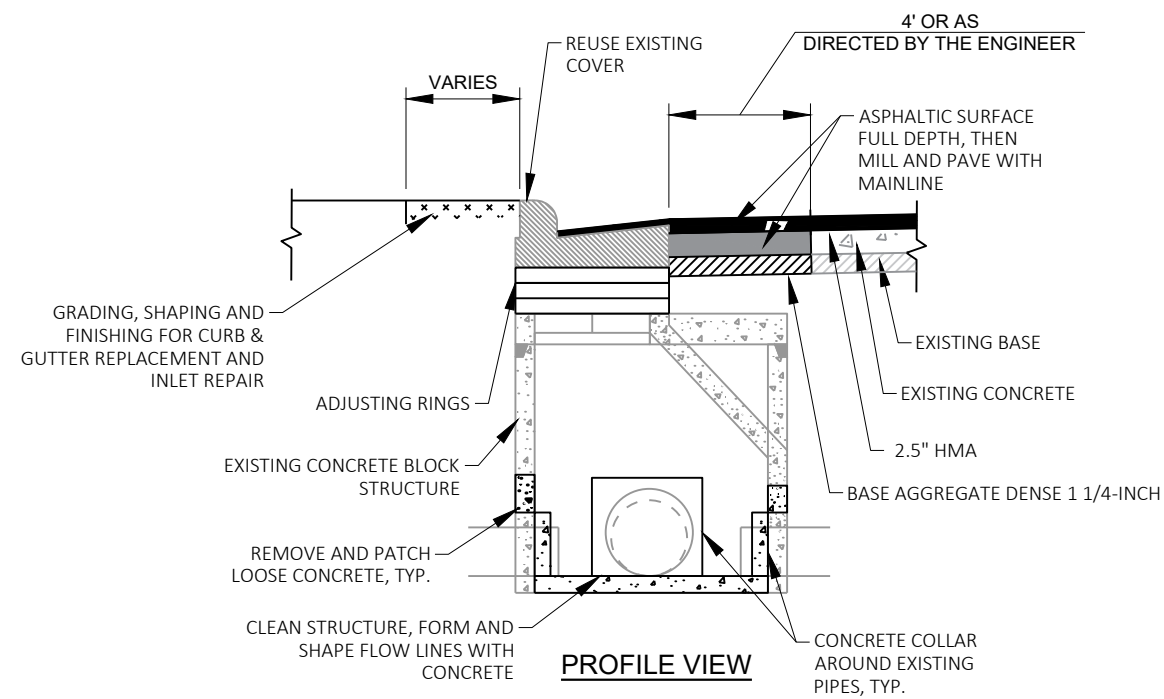
CURB AND GUTTER DETAIL

STA 460+85 LT
STA 677+27 RT

- NOTES:
- COMPLETE CURB & GUTTER AND INLET REPAIR WORK PRIOR TO PAVING OPERATIONS



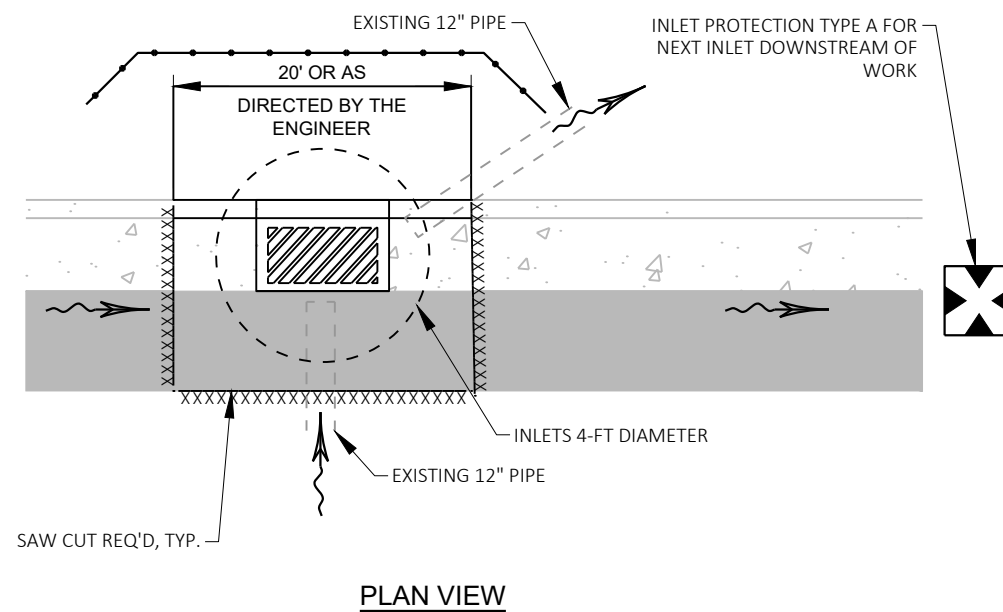
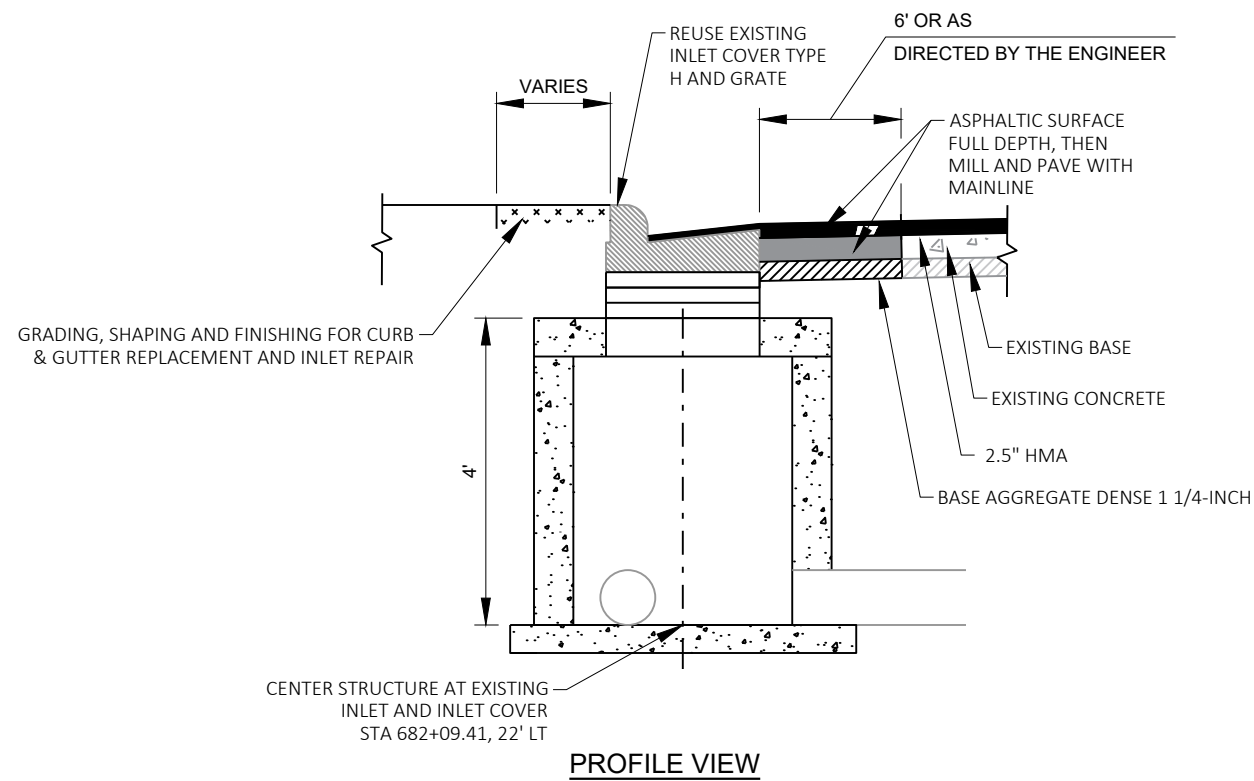
PROFILE VIEW



- NOTES:
- COMPLETE INLET REPAIR WORK PRIOR TO PAVING OPERATIONS
 - CONTRACTOR TO VERIFY PIPE SIZES AND INLET DIMENSIONS
 - ADJUSTING RINGS, REMOVE AND PATCH LOOSE CONCRETE, CLEAN, FORM AND SHAPE FLOW LINES WITH CONCRETE INCIDENTAL TO RECONSTRUCTING INLETS BID ITEM

RECONSTRUCTING INLETS

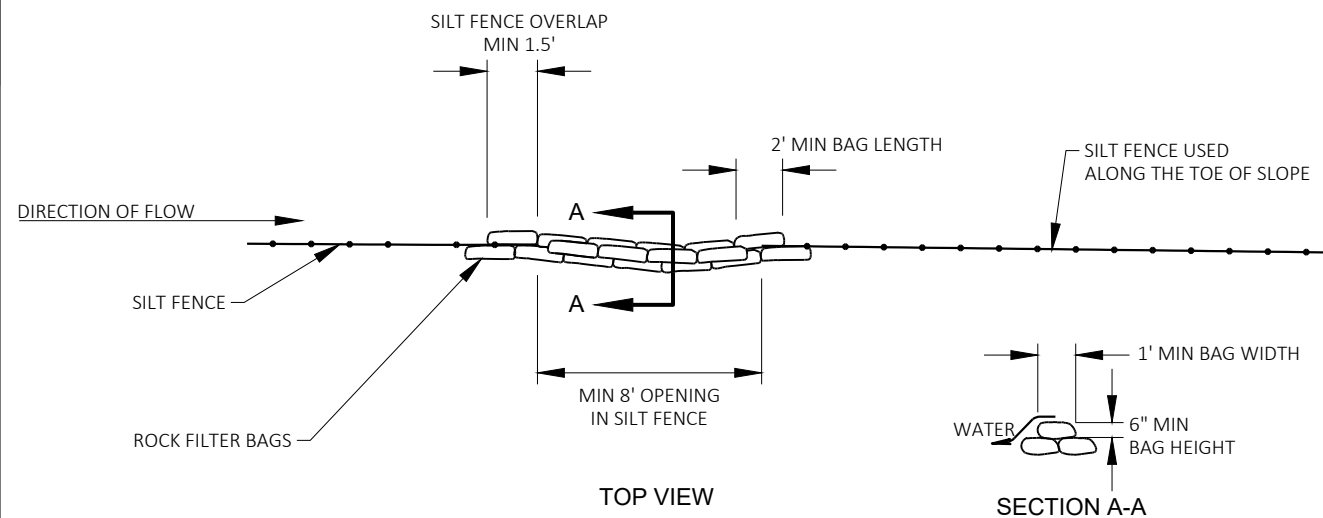
STA 682+10 RT



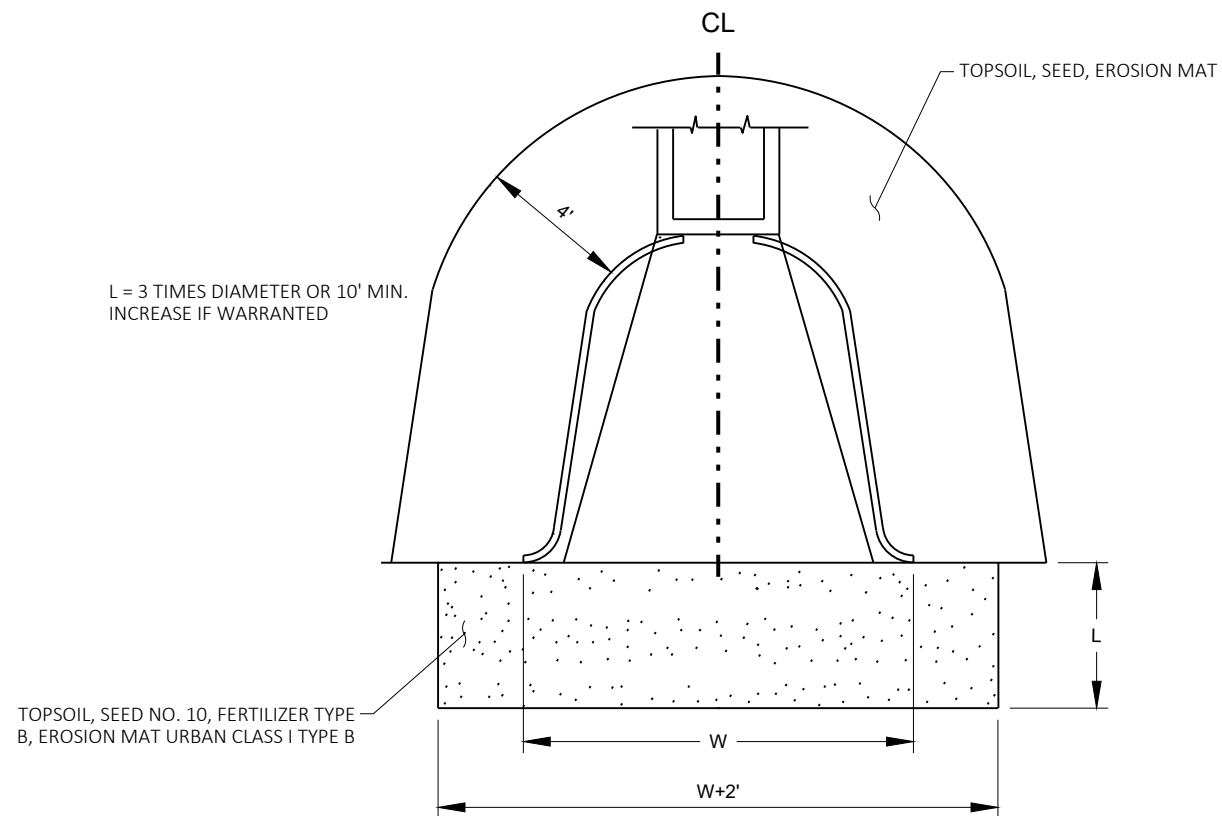
- NOTES:
- COMPLETE INLET WORK PRIOR TO PAVING OPERATIONS
 - CONTRACTOR TO VERIFY PIPE SIZES, INLET DIMENSIONS, AND INLET LOCATION.
 - REFER TO SDD "INLETS 3-FT AND 4-FT DIAMETER" FOR MORE DETAILS

INLETS 4-FT DIAMETER

STA 682+10 LT



ROCK BAGS USED FOR SILT FENCE RELIEF

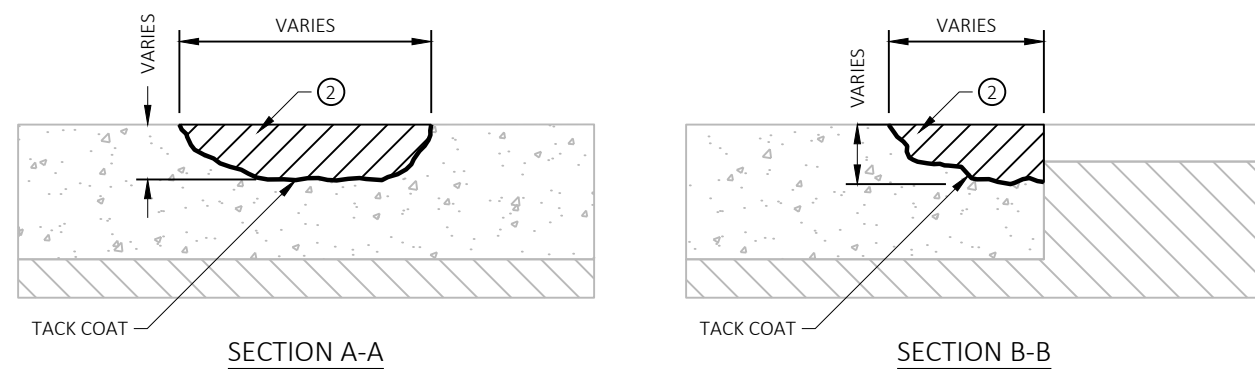
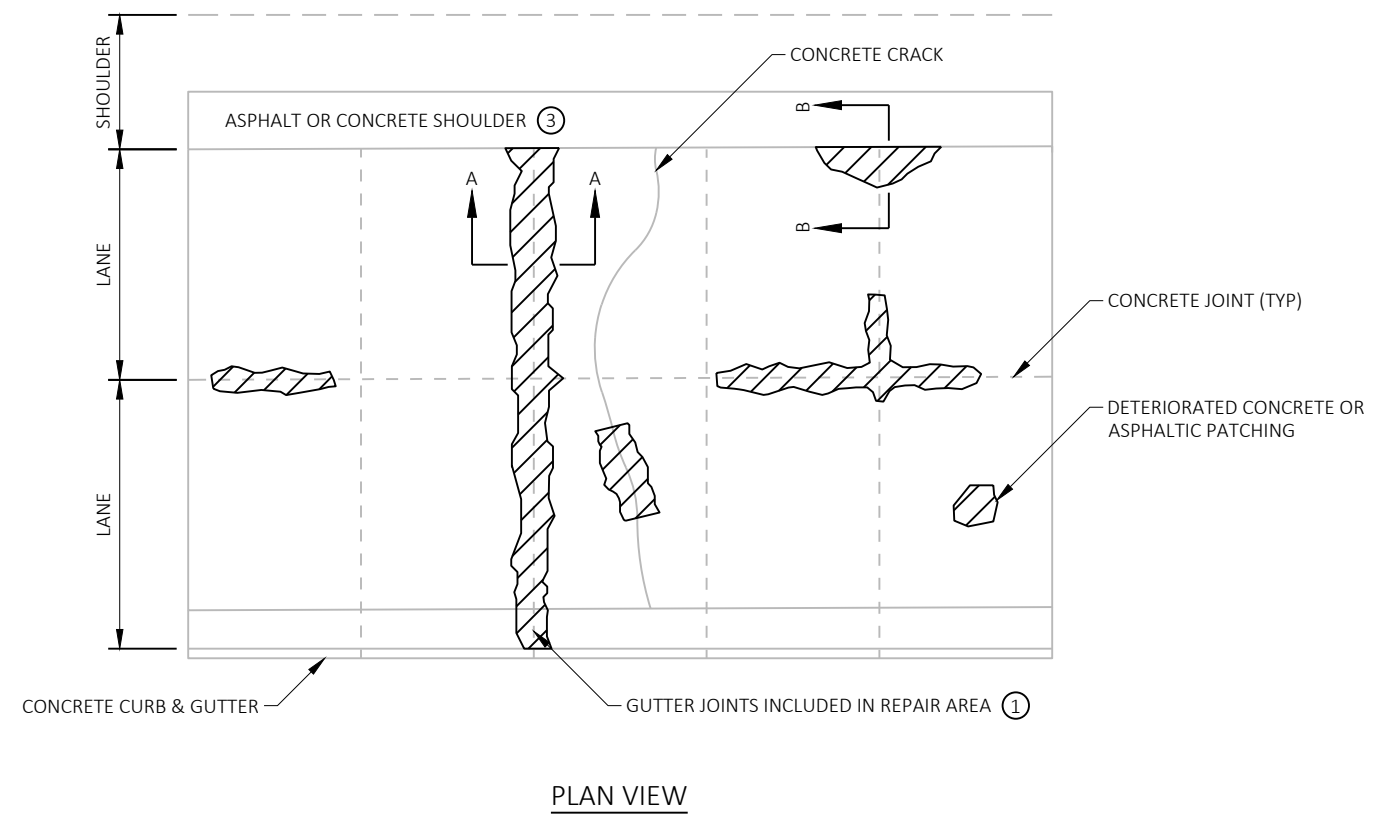
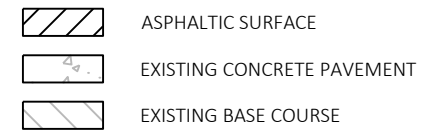


EROSION CONTROL AT PIPE ENDS

STA 609+70 LT
STA 609+70 RT
STA 728+67 RT

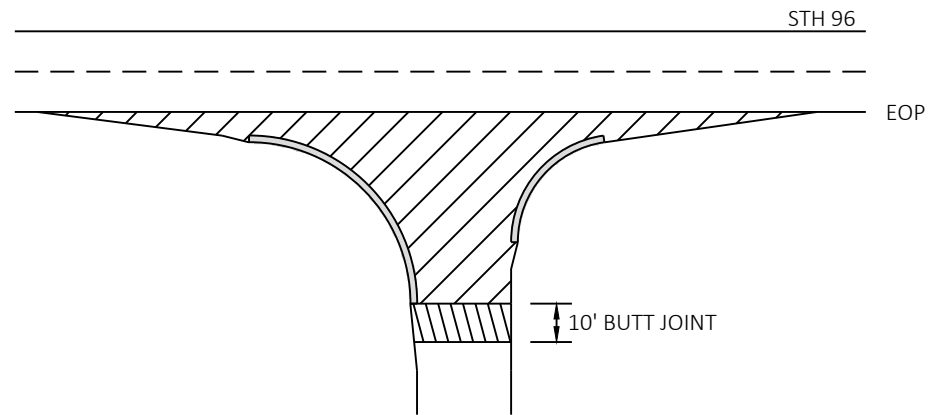
NOTES:

- ① PERFORM CONCRETE JOINT AND CRACK CLEANING AND REPAIR IF ASPHALT OVERLAY WILL BE PLACED ON CONCRETE GUTTER
- ② REMOVE UNSOUND AND DETERIORATED MATERIAL INCLUDING EXISTING ASPHALTIC PATCHING
- ③ EXISTING CONCRETE SHOULDER 5-FOOT OR LESS INCLUDED IN REPAIR AREA OF ADJACENT LANE



CONCRETE JOINT AND CRACK CLEANING AND REPAIR

SEE MISCELLANEOUS QUANTITIES FOR LOCATION



- REMOVING ASPHALTIC SURFACE MILLING
- REMOVING ASPHALTIC SURFACE BUTT JOINTS
SEE BUTT JOINT DETAIL

NOTE: WHEN MATCHING TO AN UNPAVED SURFACE
BUTT JOINT IS NOT REQUIRED

SIDE ROADS

WITH CURB AND GUTTER

WHITE TAIL DRIVE
CTH W
CROSS WINDS DRIVE

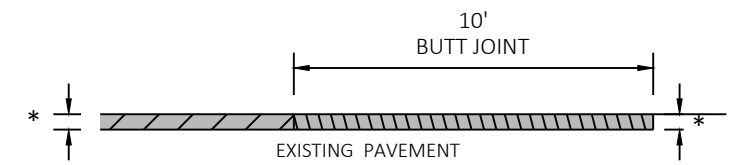
- REMOVING ASPHALTIC SURFACE MILLING
- REMOVING ASPHALTIC SURFACE BUTT JOINTS
SEE BUTT JOINT DETAIL

NOTE: WHEN MATCHING TO AN UNPAVED SURFACE
BUTT JOINT IS NOT REQUIRED

SIDE ROADS

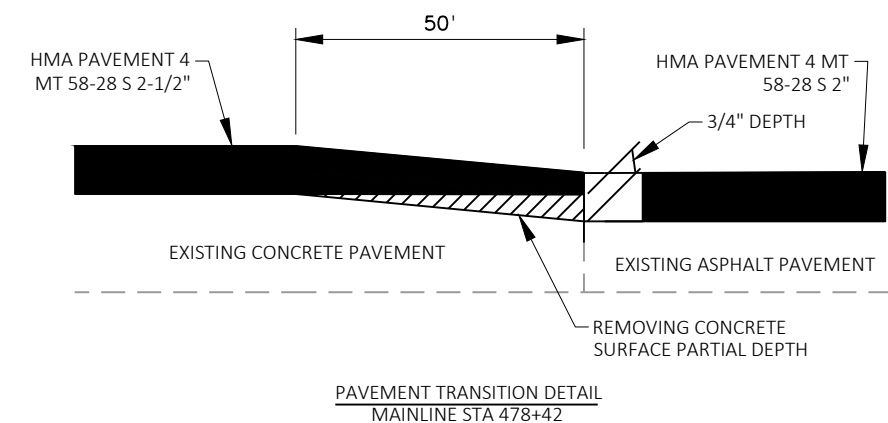
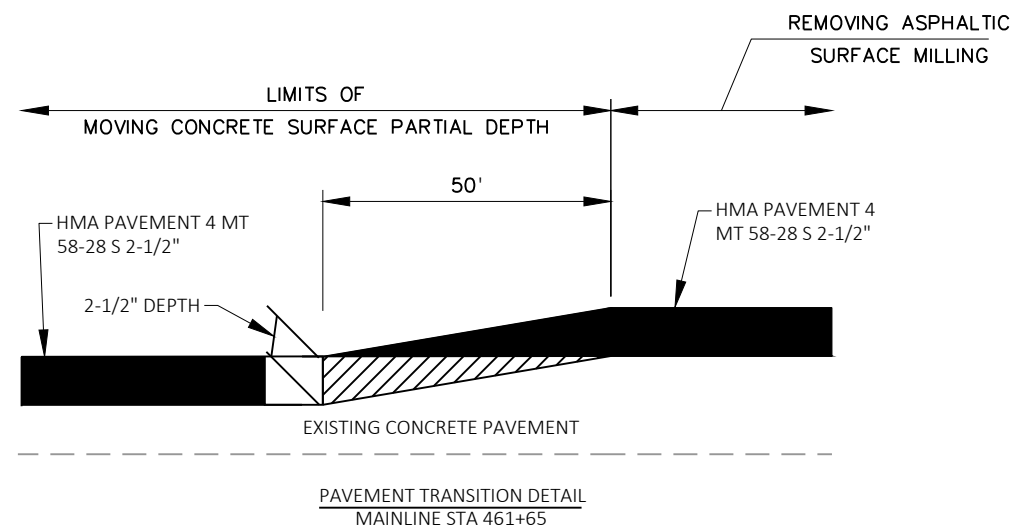
WITHOUT CURB AND GUTTER

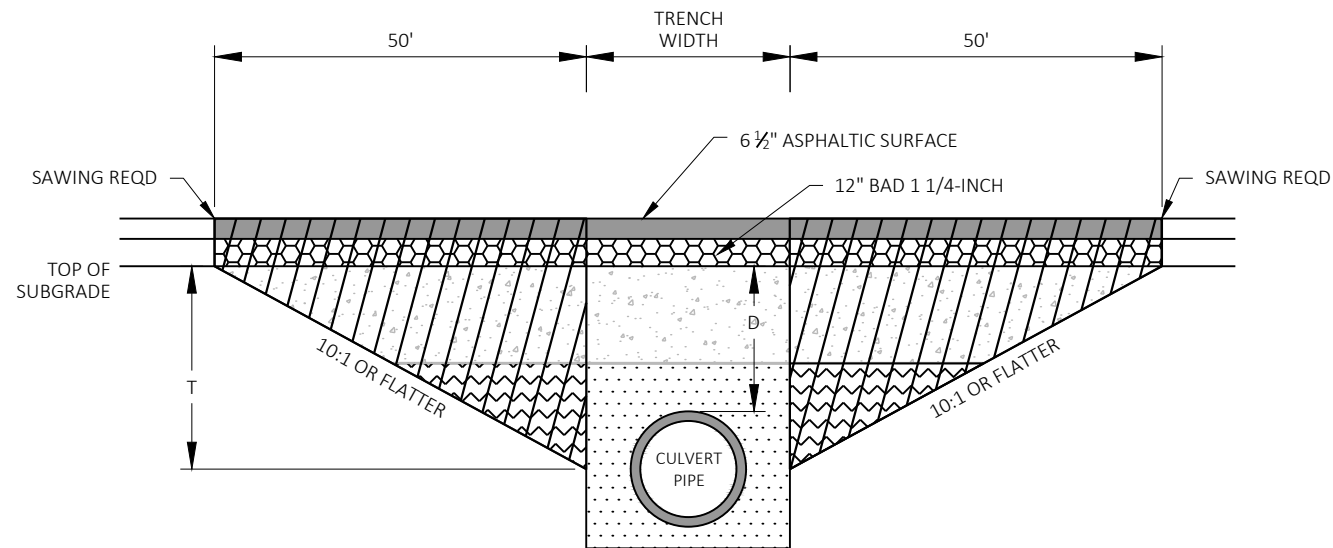
REDEMANN ROAD KLEMP ROAD
MARTEN ROAD TEWS LANE
BELLIN ROAD LEITZKE ROAD
PINES ROAD TAMARACK WAY



- HMA PAVEMENT
- REMOVING ASPHALTIC SURFACE MILLING
- REMOVING ASPHALTIC SURFACE BUTT JOINTS
(REMOVING PAVEMENT BUTT JOINTS STA 460+74)
- * 2.5" FOR MAINLINE STA 460+74
2" FOR MAINLINE AND SIDE ROADS
STA 478+42 - STA 750+56

BUTT JOINT





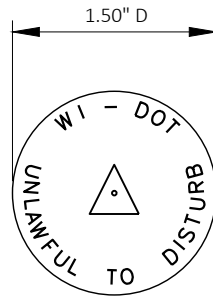
KEY	
	PROPOSED SURFACE
	PROPOSED BASE
	TRENCH BACKFILL
	TRENCH OR FOUNDATION BACKFILL
	FOUNDATION BACKFILL
	TRANSITION CUT

NOTES

TRANSITION CUT IS PAID AS EXCAVATION COMMON.
TRANSITION CUT WIDTH IS FROM SUBGRADE SHOULDER POINT TO SUBGRADE SHOULDER POINT.
BACKFILL THE TRANSITION CUT AREAS WITH FOUNDATION AND TRENCH BACKFILL AS SPECIFIED IN STANDARD SPEC 520.
PERFORM CULVERT PIPE INSTALLATION BEFORE *MILLING AND PAVING*

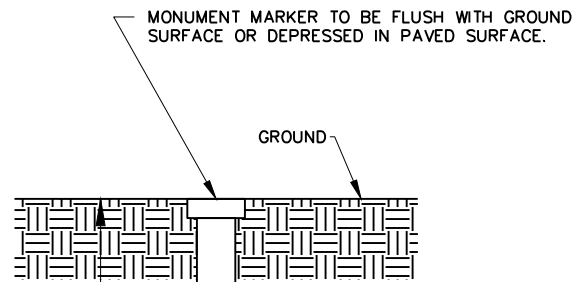
CULVERT PIPE TRANSITION

ROUTE	STA (CL)	DEPTH D (FT)	PIPE DIA (IN)	REMARKS
STH 96	728+67	1.2	30	68096006616



WIS DOT MONUMENT CAP MARKER LOGO (SSDR130)

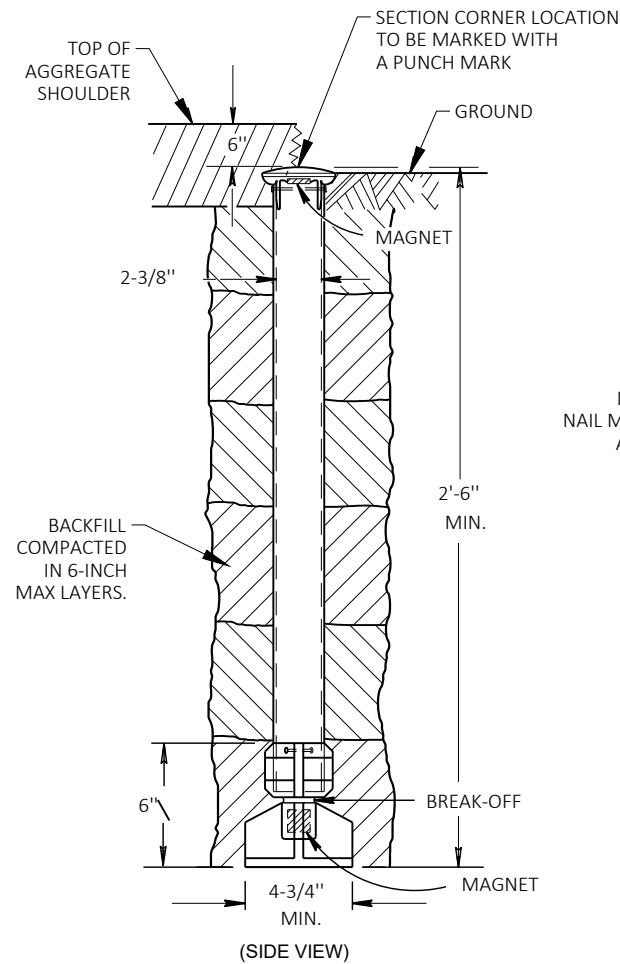
CONTRACTOR TO ORDER LANDMARK REFERENCE MONUMENTS WITH THE ABOVE STAMPING



(FRONT VIEW)

BERNSTEN DRIVABLE MONUMENT SSDR130

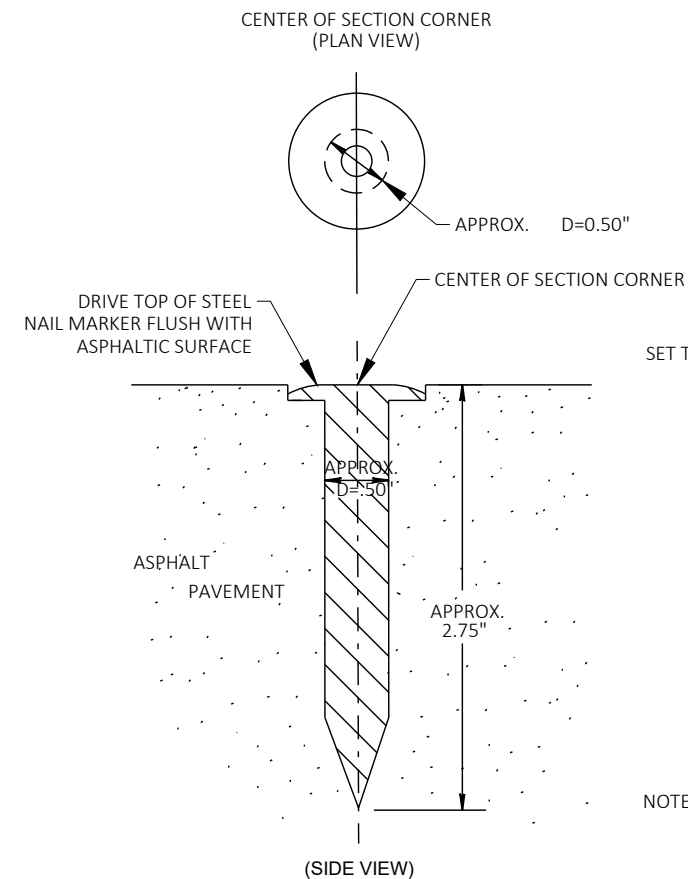
LANDMARK REFERENCE MONUMENT (TIES ONLY)



(SIDE VIEW)

OUTSIDE OF PAVEMENT

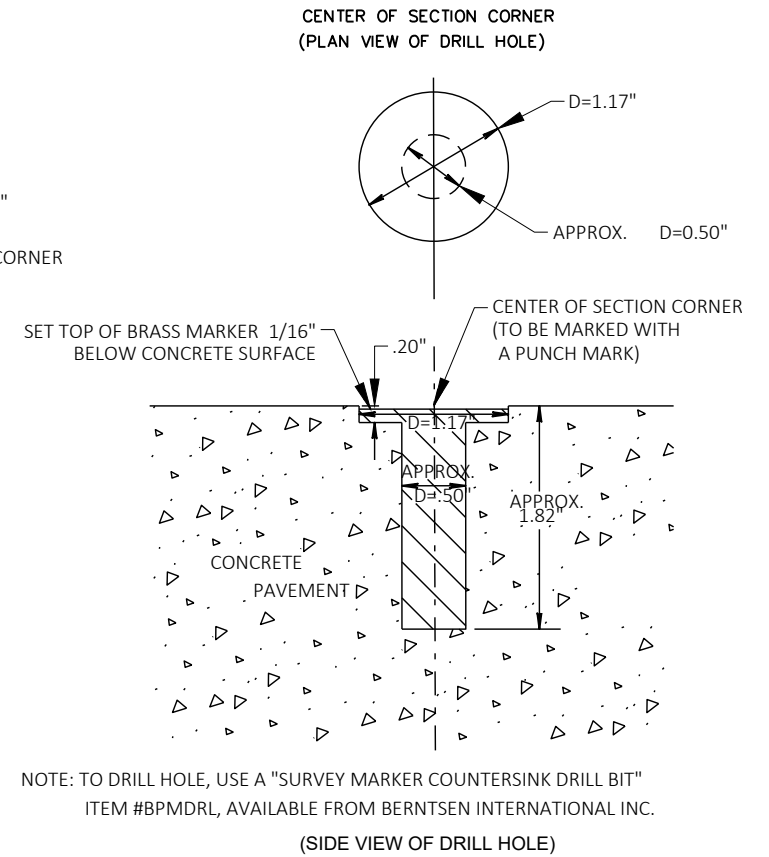
BERNTSEN A1BR30 ALUMINUM BREAK-OFF MONUMENT



(SIDE VIEW)

IN ASPHALTIC PAVEMENT

BERNTSEN SNM1 STEEL NAIL MARKER



(SIDE VIEW OF DRILL HOLE)

IN CONCRETE PAVEMENT

BERNTSEN BP - 1 BRASS MARKER WITH ANCHOR PLUG

SECTION CORNER MONUMENTS

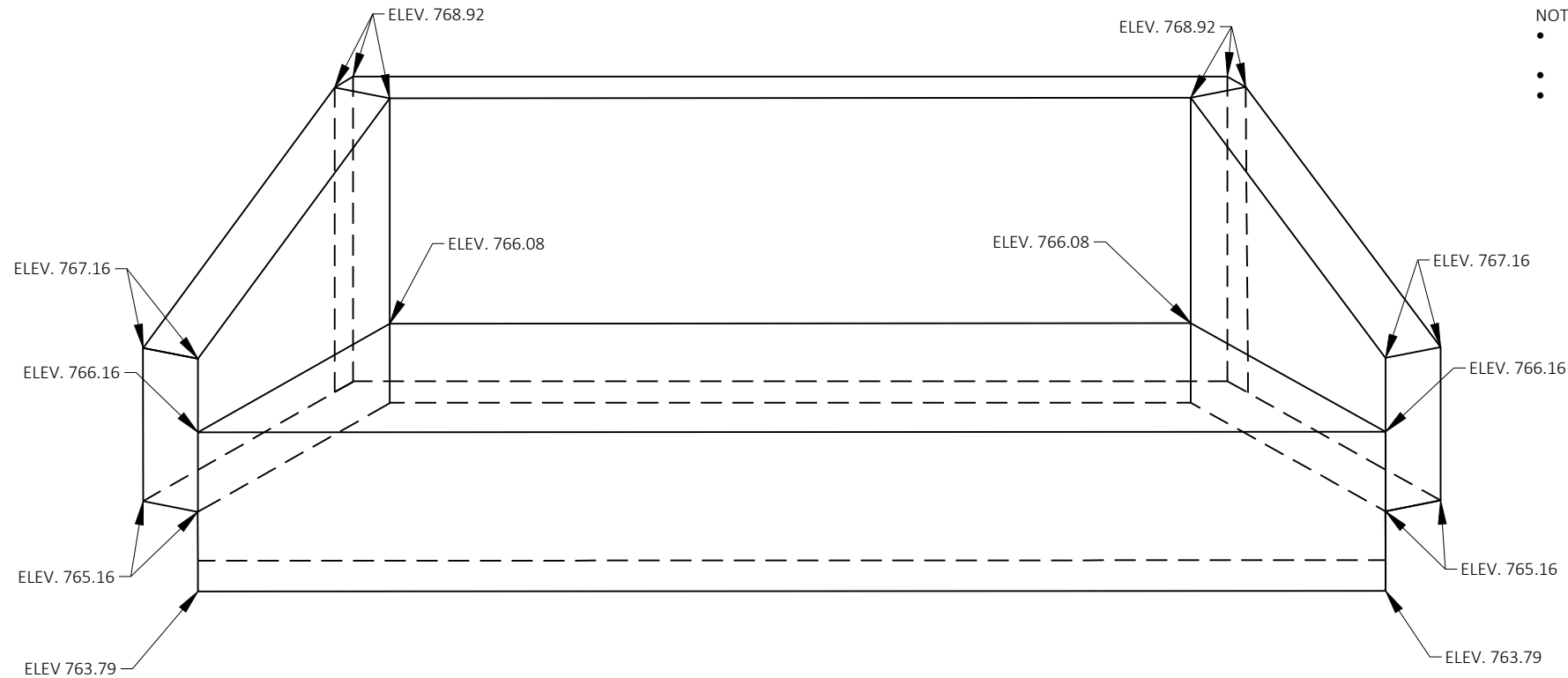
GENERAL NOTES

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.

LOCATE LANDMARK REFERENCE MONUMENTS OUTSIDE THE CONSTRUCTION LIMITS AND WITHIN WISDOT RIGHT OF WAY. LOCATION TO BE APPROVED BY THE ENGINEER.

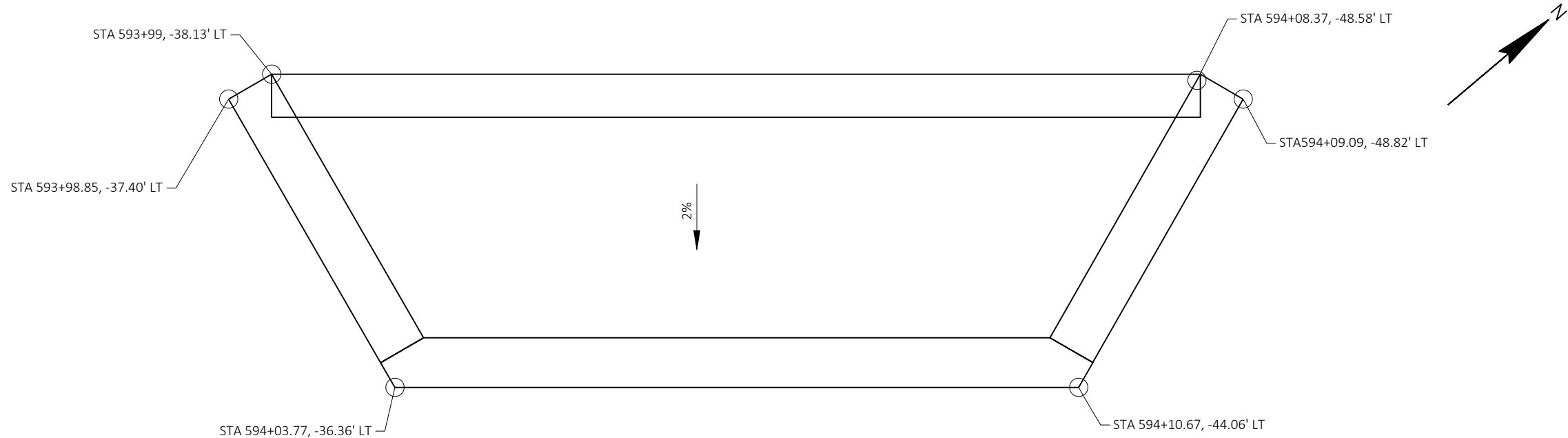
CONTRACTOR WILL SUPPLY ALL REQUIRED SURVEY MONUMENTS.

SECTION CORNER MONUMENT AND LANDMARK REFERENCE MONUMENT DETAIL

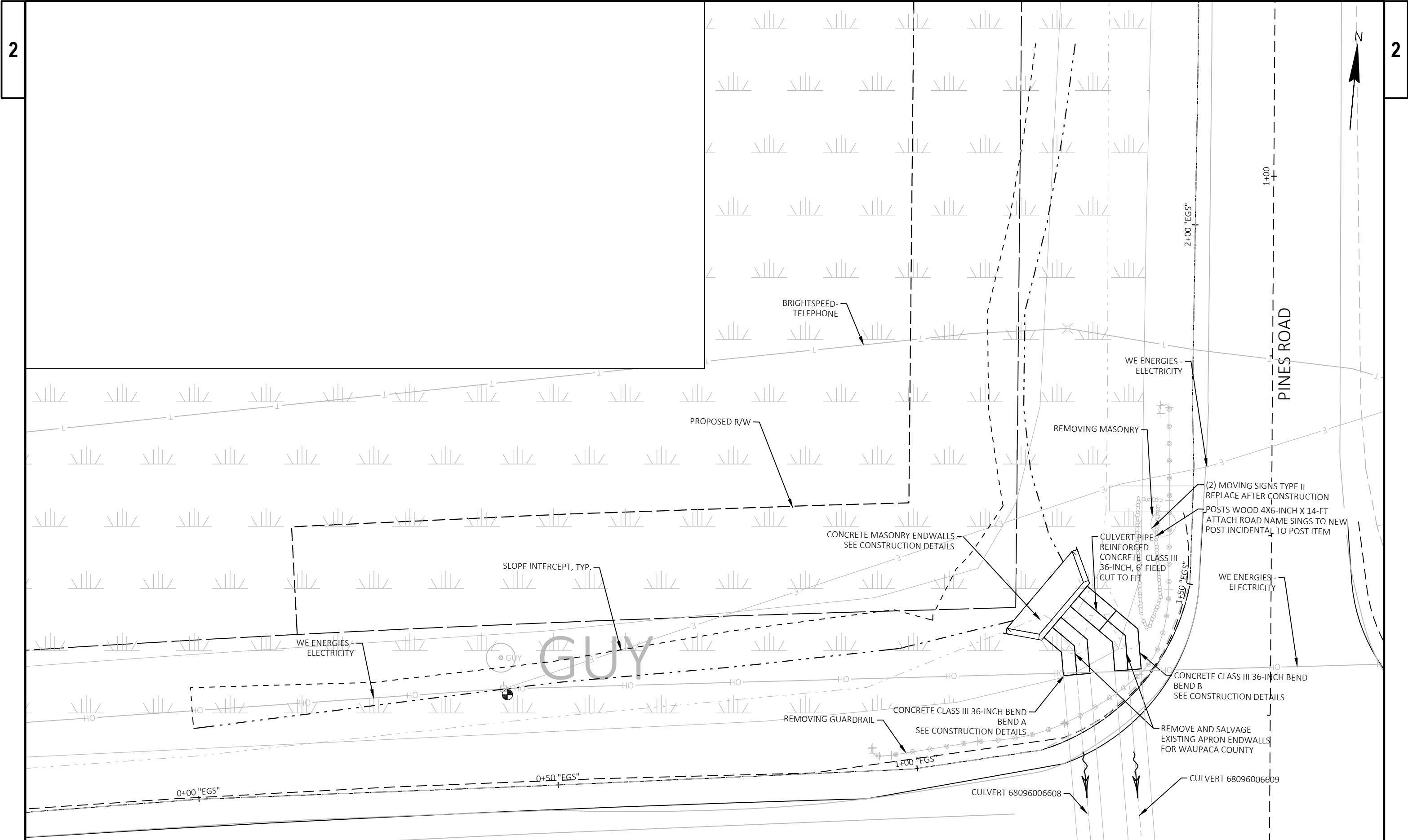


- NOTES:
- SEE SDD 8F10 "CONCRETE MASONRY ENDWALLS FOR CULVERT PIPE AND PIPE ARCH" FOR MORE DETAILS
 - STATION OFFSETS ARE FROM STH 96 MAINLINE ALIGNMENT
 - CONTRACTOR TO VERIFY OFFSETS AND ELEVATIONS

CULVERT 68096006608 & 68096006609 ENDWALL
SECTION VIEW



CULVERT 68096006608 & 68096006609 ENDWALL
PLAN VIEW

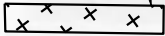




2

2

GRADING, SHAPING AND
FINISHING FOR CURB &
GUTTER REPLACEMENT
AND INLET REPAIR



TOPSOIL, SEED NO. 40, FERTILIZER TYPE B,
EROSION MAT URBAN CLASS I TYPE B.



TOPSOIL, SEED NO. 10, FERTILIZER TYPE B,
EROSION MAT URBAN CLASS I TYPE B.



SILT FENCE



DITCH LINE



SILT FENCE RELIEF, SEE CONSTRUCTION DETAILS



CULVERT PIPE CHECK



TEMPORARY DITCH CHECK

PROJECT NO: 4075-00-71

HWY: STH 96

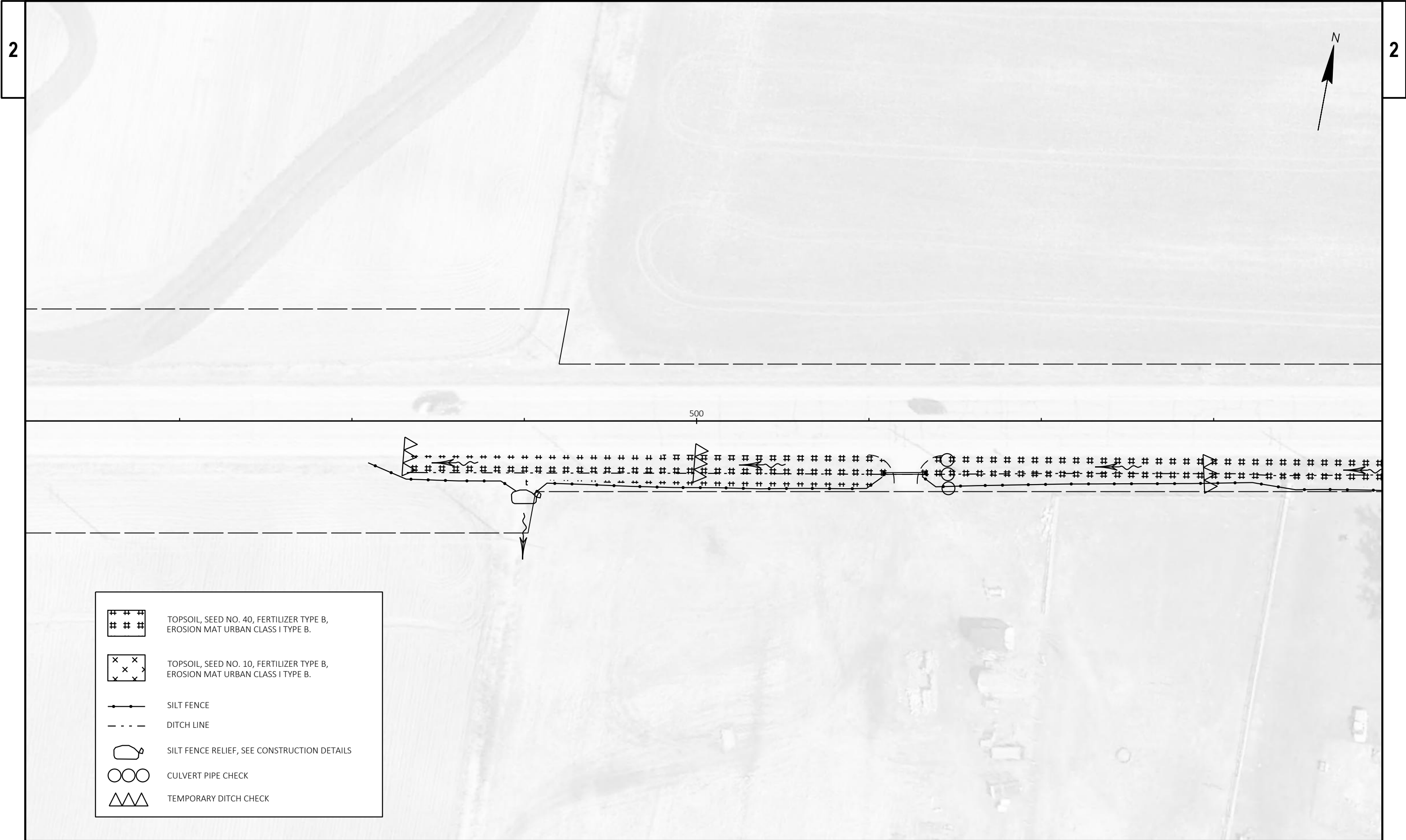
COUNTY: WAUPACA

EROSION CONTROL

SHEET

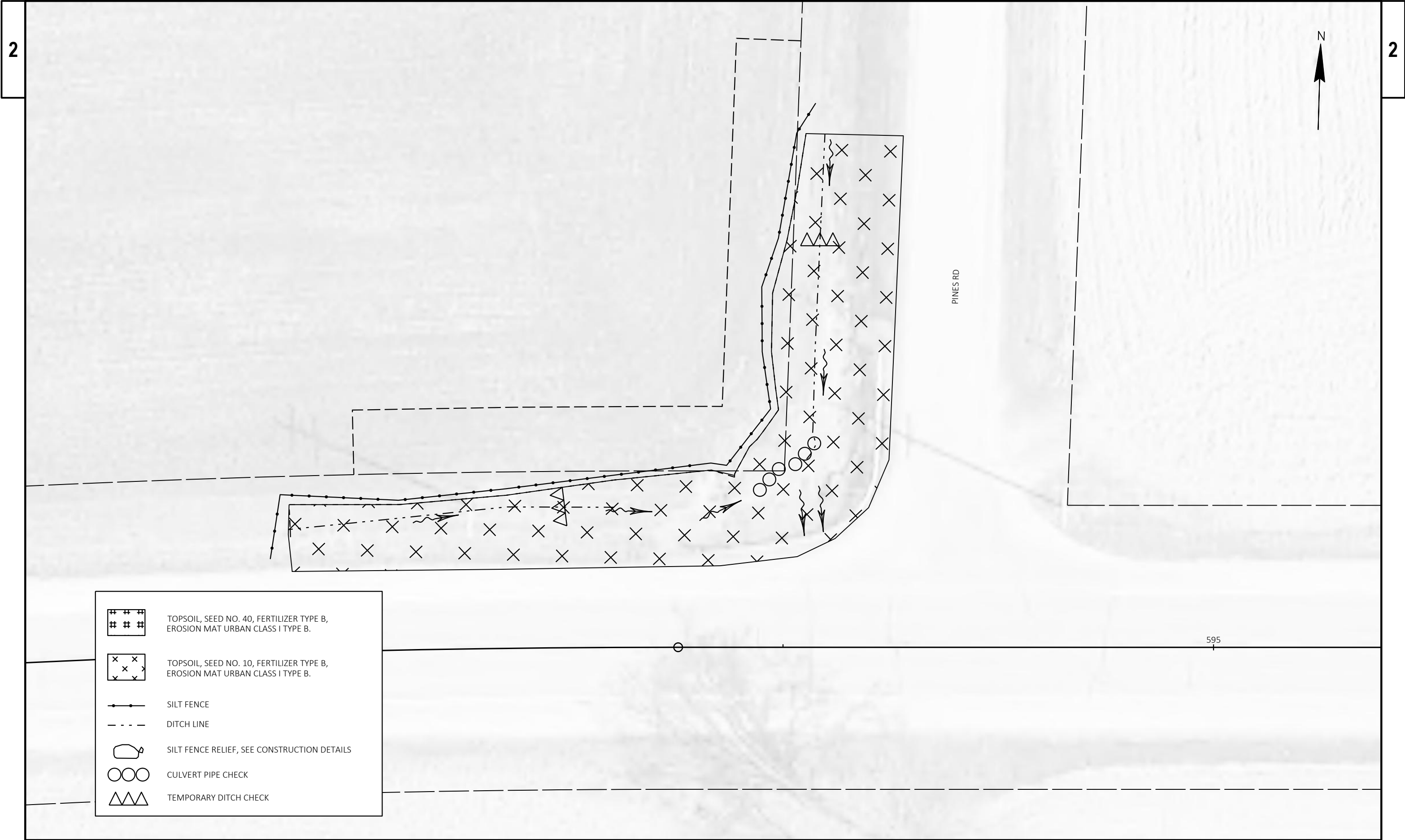
23

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	TOPSOIL, SEED NO. 40, FERTILIZER TYPE B, EROSION MAT URBAN CLASS I TYPE B.
	TOPSOIL, SEED NO. 10, FERTILIZER TYPE B, EROSION MAT URBAN CLASS I TYPE B.
	SILT FENCE
	DITCH LINE
	SILT FENCE RELIEF, SEE CONSTRUCTION DETAILS
	CULVERT PIPE CHECK
	TEMPORARY DITCH CHECK

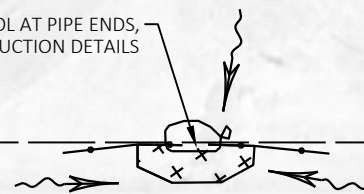


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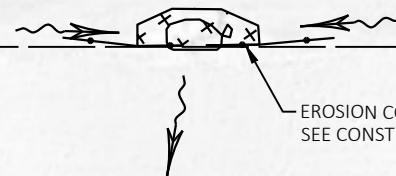
2



EROSION CONTROL AT PIPE ENDS,
SEE CONSTRUCTION DETAILS



610



EROSION CONTROL AT PIPE ENDS,
SEE CONSTRUCTION DETAILS



TOPSOIL, SEED NO. 40, FERTILIZER TYPE B,
EROSION MAT URBAN CLASS I TYPE B.



TOPSOIL, SEED NO. 10, FERTILIZER TYPE B,
EROSION MAT URBAN CLASS I TYPE B.



SILT FENCE



DITCH LINE



SILT FENCE RELIEF, SEE CONSTRUCTION DETAILS



CULVERT PIPE CHECK

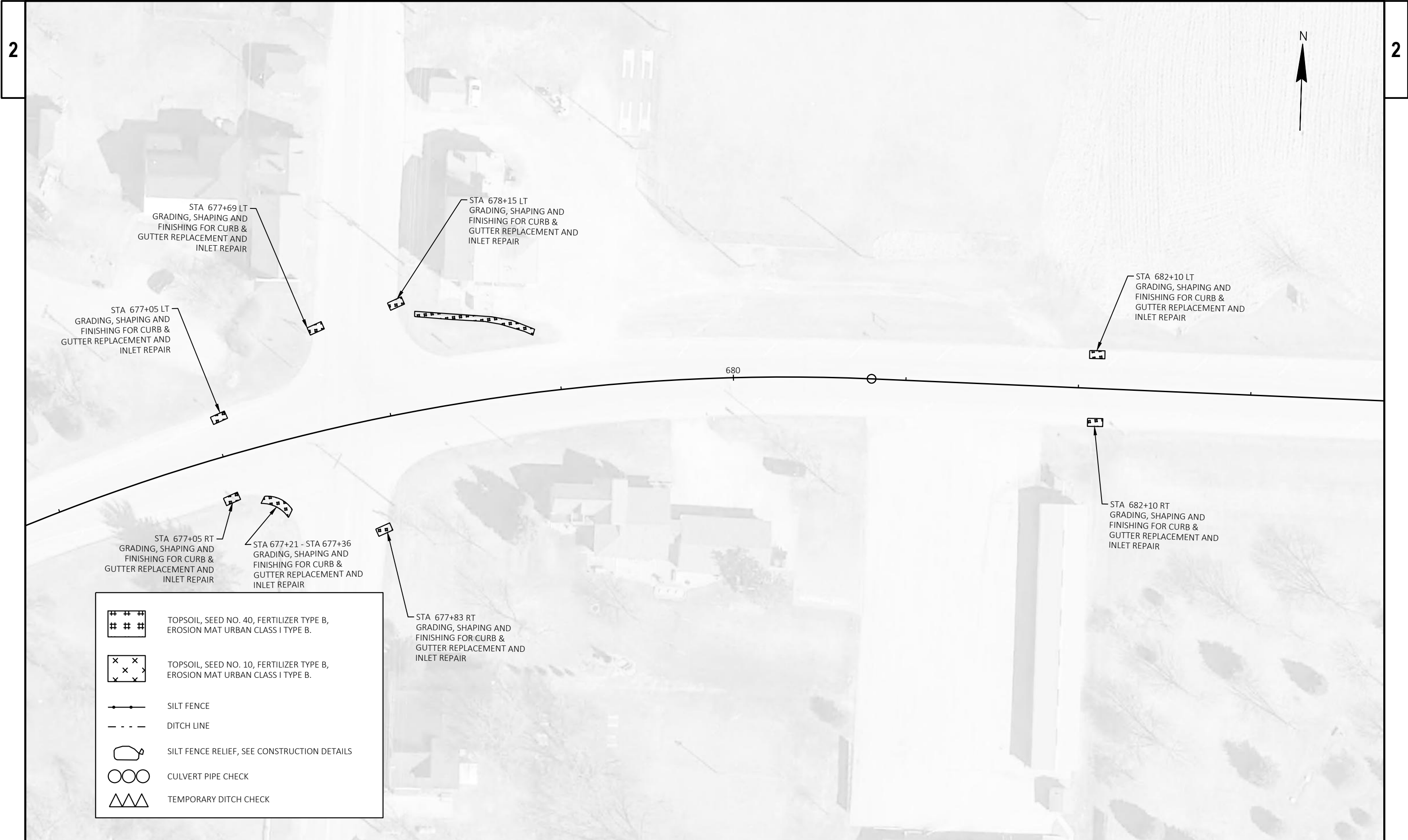


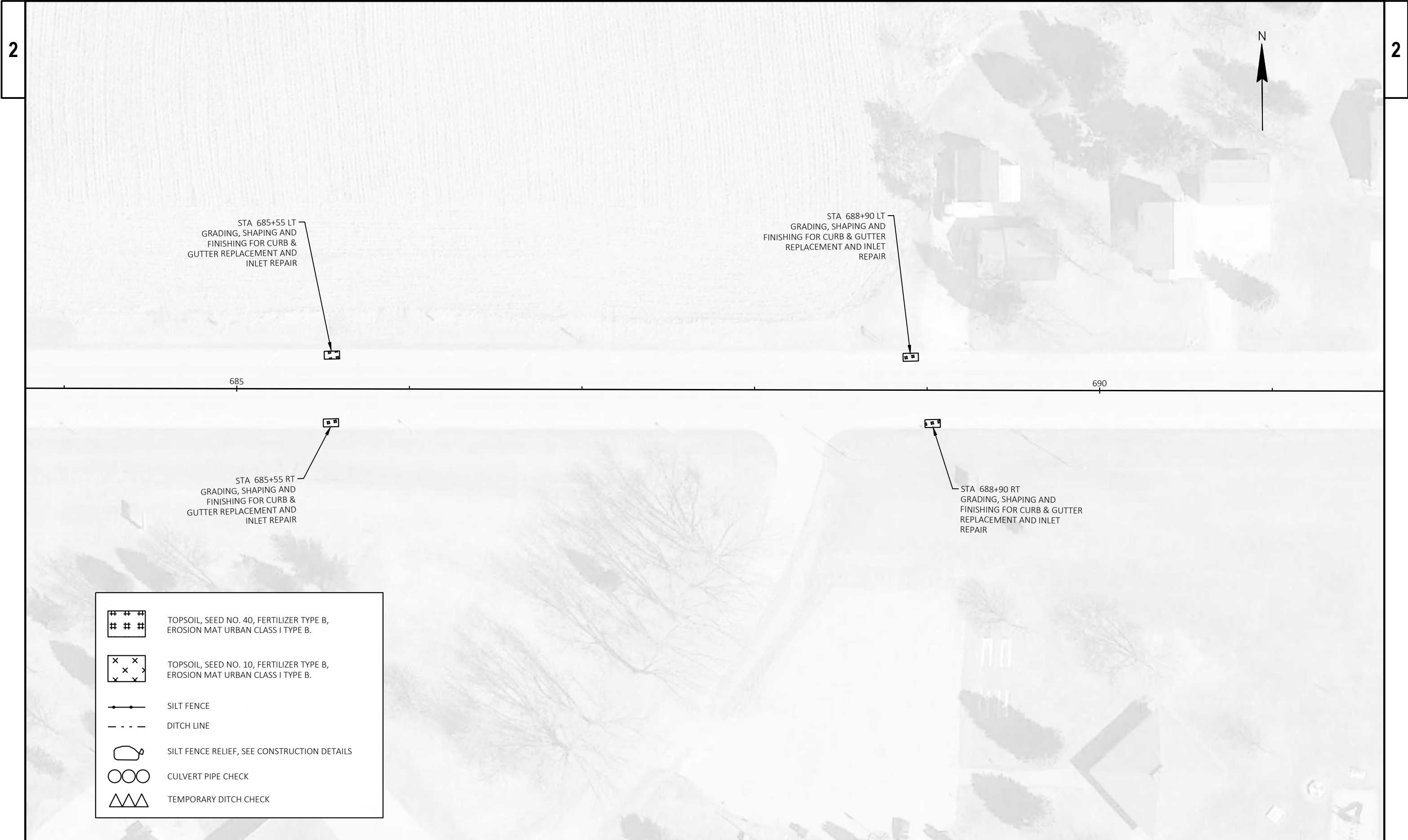
TEMPORARY DITCH CHECK



2

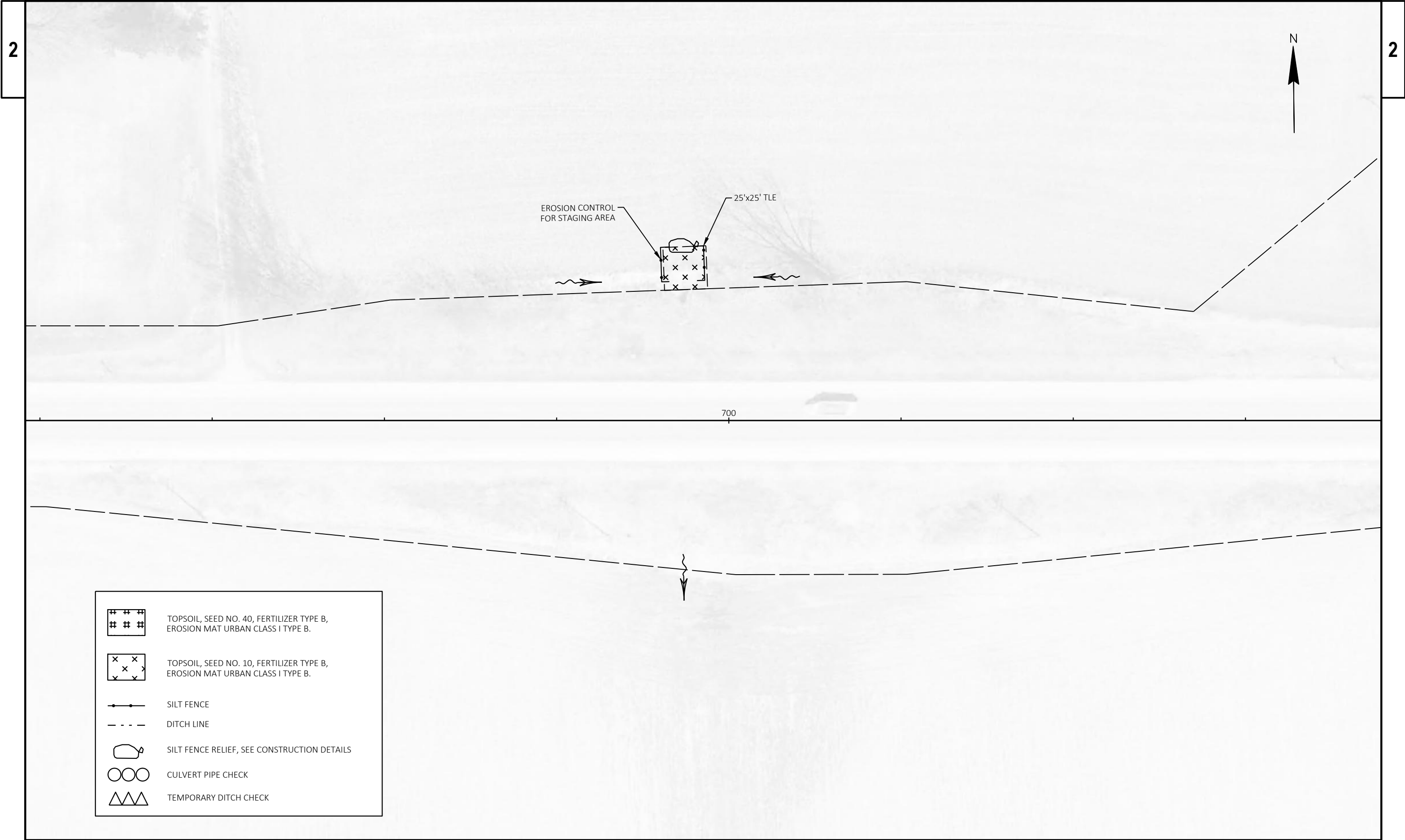
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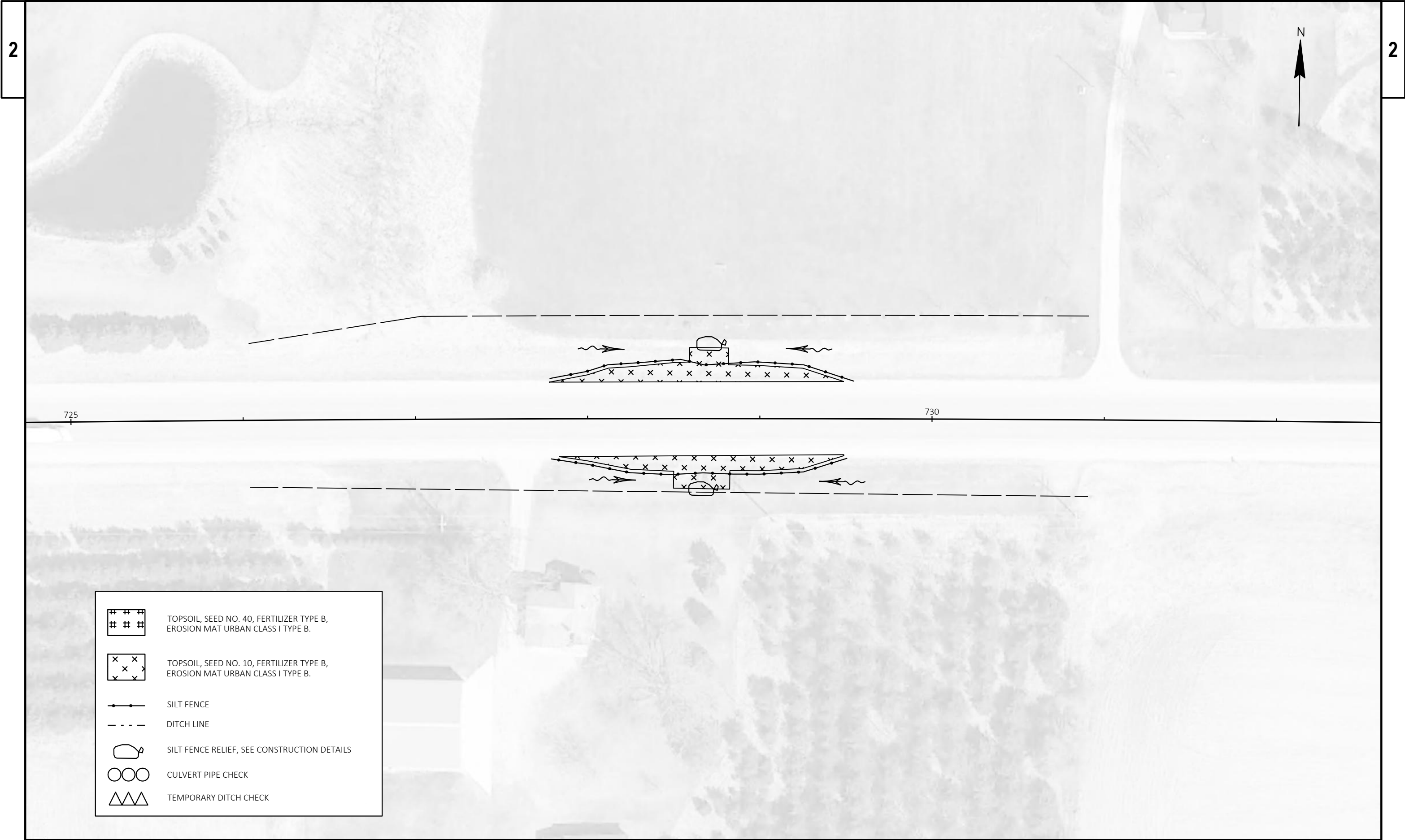


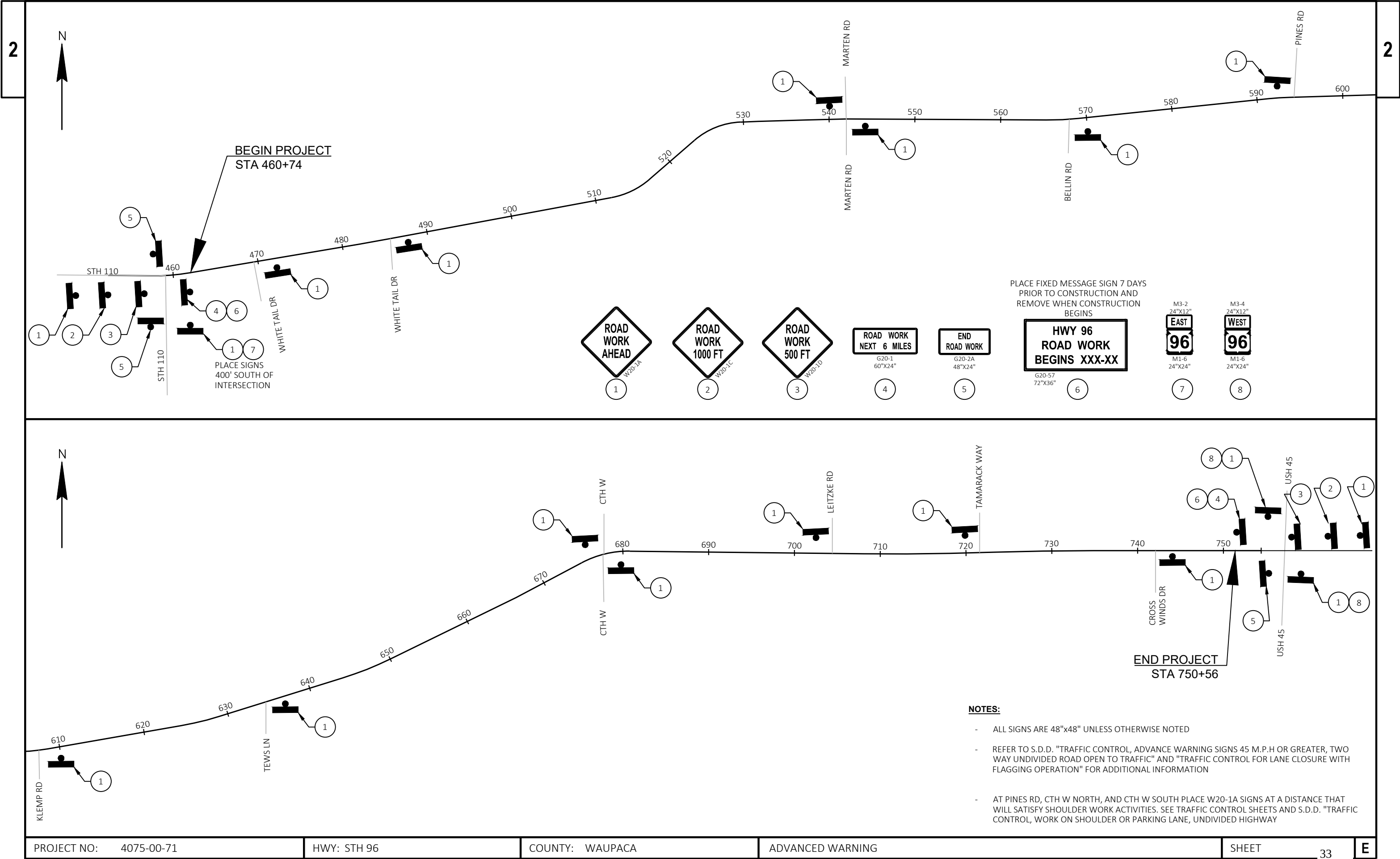


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LEGEND:

TRAFFIC CONTROL DRUM

SIGN ON PORTABLE SUPPORT

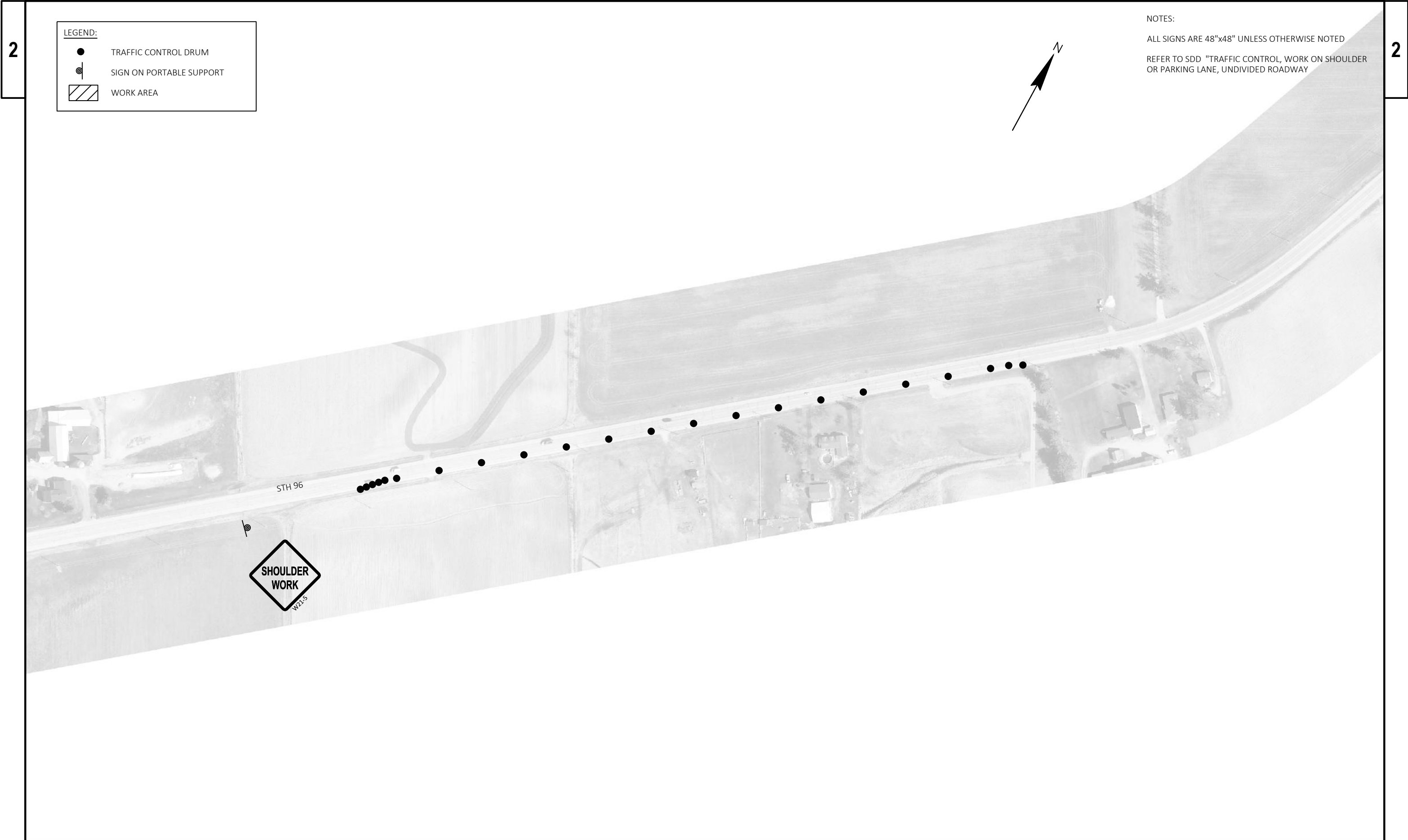
WORK AREA

NOTES:

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED

REFER TO SDD "TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY





LEGEND:

- TRAFFIC CONTROL DRUM
- ⦿ SIGN ON PORTABLE SUPPORT
- ▨ WORK AREA

NOTES:

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED

REFER TO SDD "TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY

LEGEND:

TRAFFIC CONTROL DRUM

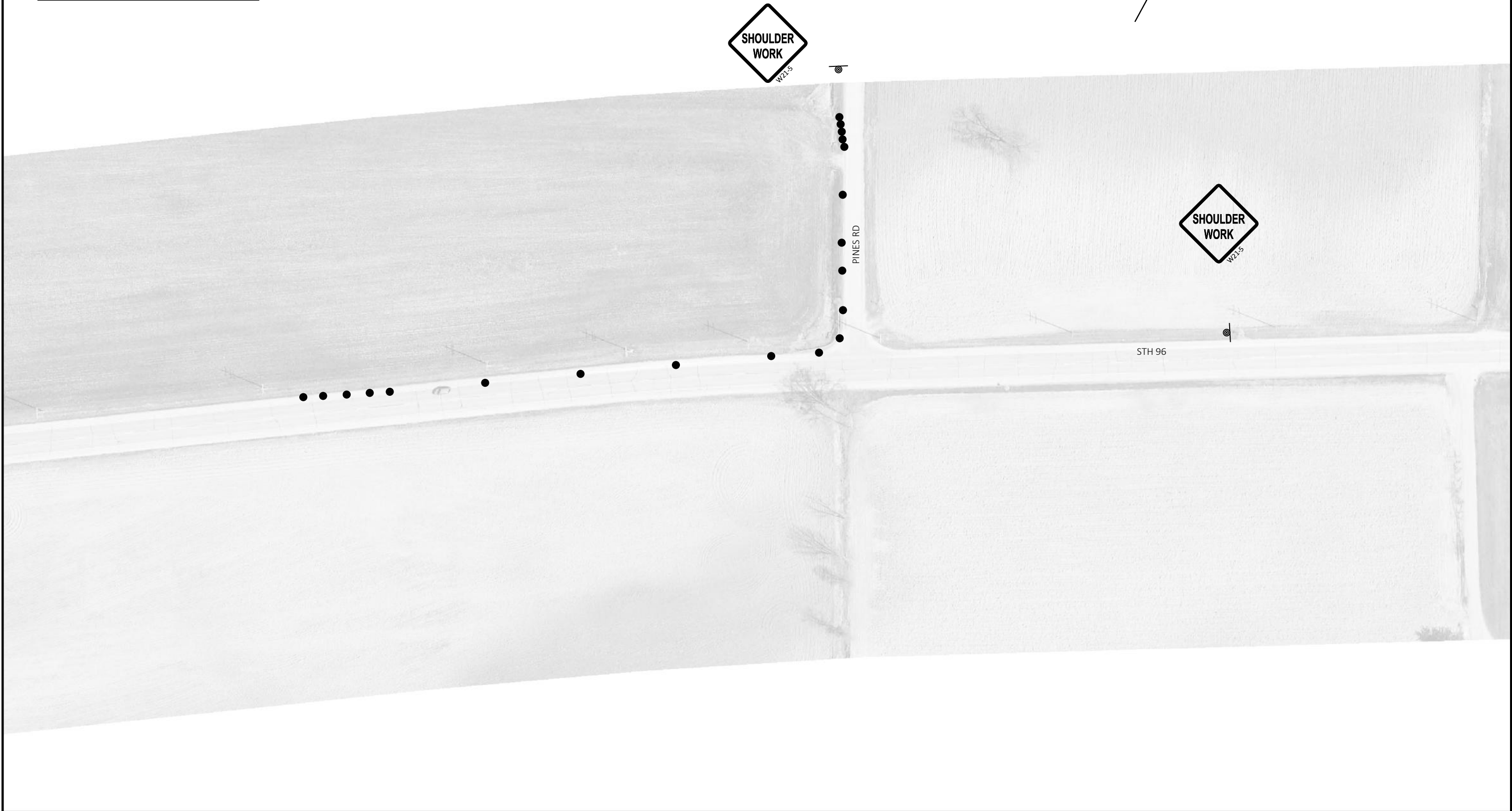
SIGN ON PORTABLE SUPPORT

WORK AREA

NOTES:

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED

REFER TO SDD "TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY



LEGEND:

TRAFFIC CONTROL DRUM

SIGN ON PORTABLE SUPPORT

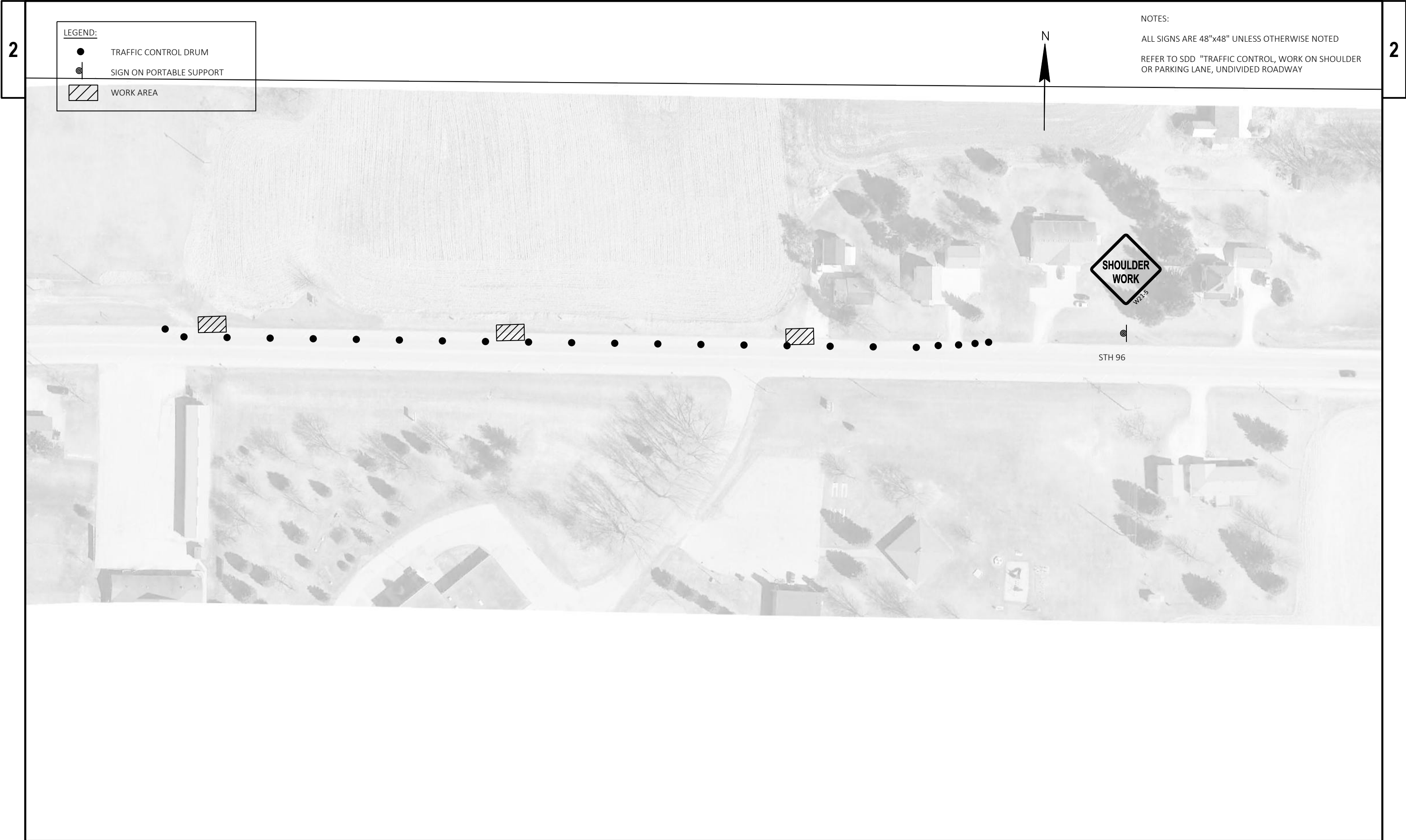
WORK AREA

NOTES:

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REFER TO SDD "TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY





LEGEND:

TRAFFIC CONTROL DRUM

SIGN ON PORTABLE SUPPORT

WORK AREA

NOTES:

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED

REFER TO SDD "TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY



LEGEND:

TRAFFIC CONTROL DRUM

SIGN ON PORTABLE SUPPORT

WORK AREA

NOTES:

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED

REFER TO SDD "TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY





Estimate Of Quantities

4075-00-71

Line	Item	Item Description	Unit	Total	Qty
0002	203.0100	Removing Small Pipe Culverts	EACH	5.000	5.000
0004	204.0100	Removing Concrete Pavement	SY	5.000	5.000
0006	204.0105	Removing Concrete Pavement Butt Joints	SY	54.000	54.000
0008	204.0109.S	Removing Concrete Surface Partial Depth	SF	8,270.000	8,270.000
0010	204.0110	Removing Asphaltic Surface	SY	39.000	39.000
0012	204.0115	Removing Asphaltic Surface Butt Joints	SY	453.000	453.000
0014	204.0120	Removing Asphaltic Surface Milling	SY	104,690.000	104,690.000
0016	204.0150	Removing Curb & Gutter	LF	35.000	35.000
0018	204.0165	Removing Guardrail	LF	160.000	160.000
0020	204.0185	Removing Masonry	CY	27.000	27.000
0022	204.9060.S	Removing (item description) 01. Underdrain Endwalls and Pipe Sections	EACH	4.000	4.000
0024	204.9060.S	Removing (item description) 02. Apron Endwall	EACH	2.000	2.000
0026	205.0100	Excavation Common	CY	432.000	432.000
0028	208.0100	Borrow	CY	178.000	178.000
0030	208.1500.S	Temporary Lane Shift During Culvert Work	EACH	2.000	2.000
0032	211.0101	Prepare Foundation for Asphaltic Paving (project) 01. 4075-00-71	EACH	1.000	1.000
0034	211.0400	Prepare Foundation for Asphaltic Shoulders	STA	16.000	16.000
0036	213.0100	Finishing Roadway (project) 01. 4075-00-71	EACH	1.000	1.000
0038	305.0110	Base Aggregate Dense 3/4-Inch	TON	1,591.000	1,591.000
0040	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	426.000	426.000
0042	455.0605	Tack Coat	GAL	7,365.000	7,365.000
0044	460.0105.S	HMA Percent Within Limits (PWL) Test Strip Volumetrics	EACH	1.000	1.000
0046	460.0110.S	HMA Percent Within Limits (PWL) Test Strip Density	EACH	1.000	1.000
0048	460.2005	Incentive Density PWL HMA Pavement	DOL	8,760.000	8,760.000
0050	460.2007	Incentive Density HMA Pavement Longitudinal Joints	DOL	14,500.000	14,500.000
0052	460.2010	Incentive Air Voids HMA Pavement	DOL	11,958.000	11,958.000
0054	460.6224	HMA Pavement 4 MT 58-28 S	TON	11,958.000	11,958.000
0056	465.0105	Asphaltic Surface	TON	147.000	147.000
0058	465.0110	Asphaltic Surface Patching	TON	500.000	500.000
0060	465.0120	Asphaltic Surface Driveways and Field Entrances	TON	77.000	77.000
0062	465.0475	Asphalt Centerline Rumble Strips 2-Lane Rural	LF	20,350.000	20,350.000
0064	504.0900	Concrete Masonry Endwalls	CY	2.600	2.600
0066	520.1012	Apron Endwalls for Culvert Pipe 12-Inch	EACH	8.000	8.000
0068	520.3312	Culvert Pipe Class III-A 12-Inch	LF	97.000	97.000
0070	520.8000	Concrete Collars for Pipe	EACH	8.000	8.000
0072	520.9700.S	Culvert Pipe Liners (size) 01. 42-Inch	LF	140.000	140.000
0074	520.9750.S	Cleaning Culvert Pipes for Liner Verification	EACH	1.000	1.000
0076	521.1242	Apron Endwalls for Pipe Arch Steel 42x29-Inch	EACH	4.000	4.000
0078	522.0136	Culvert Pipe Reinforced Concrete Class III 36-Inch	LF	6.000	6.000
0080	522.0430	Culvert Pipe Reinforced Concrete Class IV 30-Inch	LF	62.000	62.000
0082	522.1030	Apron Endwalls for Culvert Pipe Reinforced Concrete 30-Inch	EACH	2.000	2.000
0084	601.0411	Concrete Curb & Gutter 30-Inch Type D	LF	140.000	140.000
0086	611.0430	Reconstructing Inlets	EACH	2.000	2.000
0088	611.0624	Inlet Covers Type H	EACH	1.000	1.000
0090	611.3004	Inlets 4-FT Diameter	EACH	1.000	1.000
0092	611.8115	Adjusting Inlet Covers	EACH	12.000	12.000
0094	612.0206	Pipe Underdrain Unperforated 6-Inch	LF	100.000	100.000
0096	612.0806	Apron Endwalls for Underdrain Reinforced Concrete 6-Inch	EACH	4.000	4.000
0098	618.0100	Maintenance And Repair of Haul Roads (project) 01. 4075-00-71	EACH	1.000	1.000

4075-00-71

Line	Item	Item Description	Unit	Total	Qty
0100	619.1000	Mobilization	EACH	1.000	1.000
0102	621.0100	Landmark Reference Monuments	EACH	5.000	5.000
0104	624.0100	Water	MGAL	24.000	24.000
0106	625.0100	Topsoil	SY	3,445.000	3,445.000
0108	628.1504	Silt Fence	LF	2,294.000	2,294.000
0110	628.1520	Silt Fence Maintenance	LF	2,294.000	2,294.000
0112	628.1905	Mobilizations Erosion Control	EACH	6.000	6.000
0114	628.1910	Mobilizations Emergency Erosion Control	EACH	3.000	3.000
0116	628.2008	Erosion Mat Urban Class I Type B	SY	3,445.000	3,445.000
0118	628.7005	Inlet Protection Type A	EACH	17.000	17.000
0120	628.7504	Temporary Ditch Checks	LF	68.000	68.000
0122	628.7555	Culvert Pipe Checks	EACH	72.000	72.000
0124	628.7570	Rock Bags	EACH	68.000	68.000
0126	629.0210	Fertilizer Type B	CWT	1.200	1.200
0128	630.0110	Seeding Mixture No. 10	LB	17.000	17.000
0130	630.0140	Seeding Mixture No. 40	LB	30.300	30.300
0132	630.0500	Seed Water	MGAL	0.400	0.400
0134	633.5200	Markers Culvert End	EACH	8.000	8.000
0136	634.0614	Posts Wood 4x6-Inch X 14-FT	EACH	1.000	1.000
0138	638.2102	Moving Signs Type II	EACH	16.000	16.000
0140	642.5001	Field Office Type B	EACH	1.000	1.000
0142	643.0300	Traffic Control Drums	DAY	990.000	990.000
0144	643.0900	Traffic Control Signs	DAY	1,725.000	1,725.000
0146	643.0920	Traffic Control Covering Signs Type II	EACH	1.000	1.000
0148	643.1000	Traffic Control Signs Fixed Message	SF	36.000	36.000
0150	643.3105	Temporary Marking Line Paint 4-Inch	LF	20,984.000	20,984.000
0152	643.3120	Temporary Marking Line Epoxy 4-Inch	LF	20,984.000	20,984.000
0154	643.5000	Traffic Control	EACH	1.000	1.000
0156	646.1020	Marking Line Epoxy 4-Inch	LF	25,278.000	25,278.000
0158	646.1040	Marking Line Grooved Wet Ref Epoxy 4-Inch	LF	57,816.000	57,816.000
0160	646.3020	Marking Line Epoxy 8-Inch	LF	188.000	188.000
0162	646.5520	Marking Outfall Epoxy	EACH	32.000	32.000
0164	646.6120	Marking Stop Line Epoxy 18-Inch	LF	90.000	90.000
0166	648.0100	Locating No-Passing Zones	MI	5.490	5.490
0168	650.6000	Construction Staking Pipe Culverts	EACH	7.000	7.000
0170	650.8000	Construction Staking Resurfacing Reference	LF	28,982.000	28,982.000
0172	650.9911	Construction Staking Supplemental Control (project) 01. 4075-00-71	EACH	1.000	1.000
0174	650.9920	Construction Staking Slope Stakes	LF	1,336.000	1,336.000
0176	690.0150	Sawing Asphalt	LF	445.000	445.000
0178	690.0250	Sawing Concrete	LF	33.000	33.000
0180	740.0440	Incentive IRI Ride	DOL	21,960.000	21,960.000
0182	SPV.0060	Special 01. Concrete Class III 36-Inch Bend	EACH	2.000	2.000
0184	SPV.0060	Special 02. Reestablish Section Corner Monuments	EACH	5.000	5.000
0186	SPV.0090	Special 01. Grading, Shaping and Finishing for Curb & Gutter Replacement and Inlet Repai	LF	175.000	175.000
0188	SPV.0170	Special 01. Concrete Joint and Crack Cleaning and Repair	STA	38.000	38.000

REMOVING ITEMS												
			203.0100	204.0105	204.0115	204.0165	204.0185	204.9060.S.01	204.9060.S.02			
CATEGORY	STATION	TO STATION	LOCATION	REMOVING	REMOVING	REMOVING	REMOVING	REMOVING	REMOVING (ITEM	REMOVING (ITEM		
				SMALL PIPE	CONCRETE	ASPHALTIC						
				CULVERTS	PAVEMENT	SURFACE	GUARDRAIL	MASONRY	ENDWALLS AND	ENDWALLS AND		
				EACH	BUTT JOINTS	BUTT JOINTS	LF	CY	PIPE SECTIONS)	(02. APRON		REMARKS
					SY	SY			EACH	ENDWALL)		
0010	460+74		CL	-	54	-	-	-	-	-	-	BEGIN PROJECT
0010	460+74	461+12	LT	-	-	-	-	-	-	-	-	
0010	469+50		RT	-	-	58	-	-	-	-	-	WHITE TAIL DR
0010	485+60		RT	-	-	23	-	-	-	-	-	REDEMANN RD
0010	498+25	- 509+50	RT	4	-	-	-	-	-	-	-	
0010	542+00		LT	-	-	29	-	-	-	-	-	MARTIN ROAD NORTH
0010	542+00		RT	-	-	29	-	-	-	-	-	MARTIN ROAD SOUTH
0010	567+95		RT	-	-	23	-	-	-	-	-	BELLIN ROAD
0010	592+75	- 594+35	LT	-	-	23	82	27	-	-	-	PINES RD
0010	608+50	- 610+00	RT	-	-	23	-	-	-	2	-	KLEMP RD
0010	634+50		RT	-	-	18	-	-	-	-	-	TEWS LN
0010	677+15	677+30	RT	-	-	-	-	-	-	-	-	
0010	677+60		RT	-	-	50	-	-	-	-	-	CTH W SOUTH
0010	677+95		LT	-	-	50	-	-	-	-	-	CTH W NORTH
0010	678+21	- 678+92	LT	-	-	-	78	-	-	-	-	
0010	704+40		LT	-	-	27	-	-	-	-	-	LEITZKE RD
0010	721+60		LT	-	-	28	-	-	-	-	-	TAMARACK WAY
0010	728+67		LT&RT	1	-	-	-	-	4	-	-	
0010	742+10		RT	-	-	34	-	-	-	-	-	CROSS WINDS DR
0010	750+56		CL	-	-	38	-	-	-	-	-	END PROJECT
TOTAL 0010				5	54	453	160	27	4	2		

DIVISION	FROM/TO STATION	LOCATION	* 205.0100 COMMON EXCAVATION (1)		SALVAGED/ UNUSABLE PAVEMENT MATERIAL (4)	AVAILABLE MATERIAL (5)	UNEXPANDED FILL	EXPANDED FILL (13)	MASS ORDINATE +/- (14)	WASTE	208.0100 BORROW	COMMENT
			CUT (2)	EBS EXCAVATION				FACTOR 1.25				
DIVISION 1												
DITCH GRADING	498+00/509+00	RT	319	0	0	319	48	60	259	259	0	
PINES RD INTERSECTION	592+75/594+25	LT	62	0	0	62	192	240	-178	0	178	
DIVISION 1 SUBTOTAL			391	0	0	391	240	300	91	269	178	
GRAND TOTAL			391	0	0	391	240	300	91	269	178	
TOTAL COMMON EXC			391									

NOTES:

(1) COMMON EXCAVATION IS THE SUM OF THE CUT AND EBS EXCAVATION COLUMNS. ITEM NUMBER 205.0100

(2) SALVAGED/UNSUABLE PAVEMENT MATERIAL IS INCLUDED IN CUT.

(4) SALVAGED/UNUSABLE PAVEMENT MATERIAL

5) AVAILABLE MATERIAL = CUT - SALVAGED/UNUSUABLE PAVEMENT MATERIAL

(13) EXPANDED FILL FACTOR = X.6X

DEPENDING ON SELECTIONS:

EXPANDED FILL = (UNEXPANDED FILL - EXPANDED ROCK - REDUCED MARSH - REDUCED EBS) * FILL FACTOR

OR EXPANDED FILL = (UNEXPANDED FILL - EXPANDED ROCK - REDUCED EBS) * FILL FACTOR

OR EXPANDED FILL = (UNEXPANDED FILL - EXPANDED ROCK - REDUCED MARSH) * FILL FACTOR

OR EXPANDED FILL = (UNEXPANDED FILL - EXPANDED ROCK) * FILL FACTOR

(14) THE MASS ORDINATE + OR - QTY CALCULATED FOR THE DIVISION. PLUS QUANTITY INDICATES AN EXCESS OF MATERIAL WITHIN THE DIVISION. MINUS INDICATES A SHORTAGE OF MATERIAL WITHIN THE DIVISION.

* ITEM USED ELSEWERE IN PLAN

208.1500.5				
208.1500.5 TEMPORARY LANE SHIFT DURING CULVERT WORK				
CATEGORY	STATION	LOCATION	EACH	REMARKS
0010	728+67	LT	1	
0010	728+67	RT	1	
TOTAL 0010			2	

BASE AGGREGATE DENSE - 3/4-INCH							
					305.0110	624.0100	
					BASE		
					AGGREGATE		
					DENSE 3/4-		
					INCH	WATER	
CATEGORY	STATION	TO	STATION	LOCATION	TON	MGAL	REMARKS
0010	461+65	-	478+42	LT&RT	160	-	
0010	478+42	-	500+00	LT&RT	80	-	
0010	500+00		525+00	LT&RT	93	-	
0010	525+00		550+00	LT&RT	93	-	
0010	550+00		575+00	LT&RT	93	-	
0010	575+00		600+00	LT&RT	93	-	
0010	600+00		625+00	LT&RT	93	-	
0010	625+00		650+00	LT&RT	93	-	
0010	650+00	-	661+00	LT&RT	41	-	
0010	661+00		665+50	LT&RT	25	-	
0010	665+50	-	693+11	LT&RT	0	-	
0010	693+11	-	725+00	LT&RT	420	-	
0010	725+00		743+35	LT&RT	240	-	
0010	743+35	-	750+56	LT&RT	67	-	
0010	PROJECT WIDE			LT&RT	-	24	
				TOTAL 0010	1,591	24	

<u>PREPARE FOUNDATION</u>								
					211.0101.01 PREPARE FOUNDATION FOR ASPHALTIC PAVING (PROJECT)(01. 4075-00-71) EACH	211.0400 PREPARE FOUNDATION FOR ASPHALTIC SHOULDERS STA	213.0100.01 FINISHING ROADWAY (PROJECT)(01. 4075-00-71) EACH	
CATEGORY	STATION	TO	STATION	LOCATION				REMARKS
0010	743+35	-	750+56	LT&RT	-	16	-	
0010	PROJECT WIDE				1	-	1	
				TOTAL 0010	1	16	1	

PAVEMENT ITEMS										
					204.0109.S REMOVING CONCRETE SURFACE PARTIAL DEPTH	204.0120 REMOVING ASPHALTIC SURFACE MILLING	455.0605 TACK COAT	460.6224 HMA PAVEMENT 4 MT 58-28 S	465.0110 ASPHALTIC SURFACE PATCHING	
CATEGORY	STATION	TO	STATION	LOCATION	SF	SY	GAL	TON	TON	REMARKS
0010	460+74	-	461+65	LT&RT	6,770	490	34	68	-	MAINLINE
0010	461+65		478+42	LT&RT	1,500	5,590	400	790	-	MAINLINE
0010	478+42	-	541+47	LT&RT	-	21,020	1,480	2,360	-	MAINLINE
0010	541+47	-	593+79	LT&RT	-	17,440	1,230	1,960	-	MAINLINE
0010	593+79	-	661+00	LT&RT	-	22,410	1,570	2,510	-	MAINLINE
0010	661+00	-	665+50	LT&RT	-	1,750	123	196	-	MAINLINE
0010	665+50	-	693+11	LT&RT	-	12,280	860	1,380	-	MAINLINE
0010	693+11	-	743+35	LT&RT	-	16,750	1,180	1,880	-	MAINLINE
0010	743+35		750+56	LT&RT	-	2,730	191	341	-	MAINLINE
0010	468+70	-	470+21	RT	-	730	51	82	-	WHITE TAIL DR
0010	468+70	-	470+21	LT	-	540	38	60	-	PASSING LANE
0010	485+17	-	486+02	RT	-	150	11	17	-	REDEMANN RD
0010	541+46	-	542+42	LT	-	190	13	21	-	MARTEN RD N
0010	541+46	-	542+42	RT	-	210	15	24	-	MARTEN RD S
0010	567+34	-	568+54	RT	-	140	10	15	-	BELLIN RD
0010	593+79	-	594+88	LT	-	160	11	18	-	PINES RD
0010	606+98	-	608+04	RT	-	130	9	15	-	KLEMP RD
0010	634+11	-	635+11	RT	-	130	9	15	-	TOEWS LN
0010	677+24	-	678+41	LT	-	430	30	48	-	CTH W N
0010	677+10	-	677+23	RT	-	390	27	43	-	CTH W S
0010	703+92	-	705+03	LT	-	210	15	23	-	LEITZKE RD
0010	720+70	-	722+59	LT	-	340	24	38	-	TAMARACK WAY
0010	740+64	-	743+17	RT	-	480	34	54	-	CROSS WINDS DR
0010	UNDISTRIBUTED				LT&RT	-	-	-	-	500
TOTAL 0010					8,270	104,690	7,365	11,958	500	

PWL MIXTURE USE TABLE

LOCATION	STATION	MIXTURE USE	UNDERLYING SURFACE	BID ITEM	*TONS	THICKNESS	QUALITY MANAGEMENT PROGRAM TO BE USED	
							MIXTURE ACCEPTANCE	DENSITY ACCEPTANCE
12-FOOT DRIVING LANES	460+74 - 461+65	UPPER LAYER	MILLED CONCRETE SURFACE	HMA PAVEMENT 4 MT 58-28 S	34	2.50"	460.2010 INCENTIVE AIR VOIDS HMA PAVEMENT	ACCEPTANCE TESTING BY THE DEPARTMENT; NOT ELIGIBLE FOR INCENTIVE
12-FOOT DRIVING LANES	461+65 - 478+42	UPPER LAYER	MILLED HMA SURFACE	HMA PAVEMENT 4 MT 58-28 S	626	2.50"	460.2010 INCENTIVE AIR VOIDS HMA PAVEMENT	ACCEPTANCE TESTING BY THE DEPARTMENT; NOT ELIGIBLE FOR INCENTIVE
12-FOOT DRIVING LANES	478+42 - 750+56	UPPER LAYER	MILLED HMA SURFACE	HMA PAVEMENT 4 MT 58-28 S	8128	2.00"	460.2010 INCENTIVE AIR VOIDS HMA PAVEMENT	460.2005 INCENTIVE DENSITY PWL HMA PAVEMENT
VARIABLE 12-FOOT TO 3-FOOT PAVED SHOULDER	460+74 - 478+42	UPPER LAYER	MILLED CONCRETE SURFACE/ MILLED HMA SURFACE	HMA PAVEMENT 4 MT 58-28 S	258	2.00"	460.2010 INCENTIVE AIR VOIDS HMA PAVEMENT	ACCEPTANCE TESTING BY THE DEPARTMENT; NOT ELIGIBLE FOR INCENTIVE
3-FOOT PAVED SHOULDER	478+42 - 661+00	UPPER LAYER	MILLED HMA SURFACE	HMA PAVEMENT 4 MT 58-28 S	1363	2.00"	460.2010 INCENTIVE AIR VOIDS HMA PAVEMENT	ACCEPTANCE TESTING BY THE DEPARTMENT; NOT ELIGIBLE FOR INCENTIVE
VARIABLE 3-FOOT TO 8=FOOT PAVED SHOULDER	661+00 665+50	UPPER LAYER	MILLED HMA SURFACE	HMA PAVEMENT 4 MT 58-28 S	62	2.00"	460.2010 INCENTIVE AIR VOIDS HMA PAVEMENT	ACCEPTANCE TESTING BY THE DEPARTMENT; NOT ELIGIBLE FOR INCENTIVE
8-FOOT PAVED SHOULDER	665+50 - 693+11	UPPER LAYER	MILLED HMA SURFACE	HMA PAVEMENT 4 MT 58-28 S	550	2.00"	460.2010 INCENTIVE AIR VOIDS HMA PAVEMENT	ACCEPTANCE TESTING BY THE DEPARTMENT; NOT ELIGIBLE FOR INCENTIVE
3-FOOT PAVED SHOULDER	693+11 - 754+41	UPPER LAYER	MILLED HMA SURFACE	HMA PAVEMENT 4 MT 58-28 S	375	2.00"	460.2010 INCENTIVE AIR VOIDS HMA PAVEMENT	ACCEPTANCE TESTING BY THE DEPARTMENT; NOT ELIGIBLE FOR INCENTIVE
3-FOOT PAVED SHOULDER	743+35 750+56	UPPER LAYER	MILLED HMA SURFACE	HMA PAVEMENT 4 MT 58-28 S	54	2.00"	460.2010 INCENTIVE AIR VOIDS HMA PAVEMENT	ACCEPTANCE TESTING BY THE DEPARTMENT; NOT ELIGIBLE FOR INCENTIVE
2-FOOT SHOULDER WIDENING	743+35 - 750+56	UPPER LAYER	HMA SURFACE	HMA PAVEMENT 4 MT 58-28 S	36	2.00"	460.2010 INCENTIVE AIR VOIDS HMA PAVEMENT	ACCEPTANCE TESTING BY THE DEPARTMENT; NOT ELIGIBLE FOR INCENTIVE
2-FOOT SHOULDER WIDENING	743+35 - 750+56	LOWER LAYER	BASE AGGREGATE	HMA PAVEMENT 4 MT 58-28 S	36	2.00"	460.2010 INCENTIVE AIR VOIDS HMA PAVEMENT	ACCEPTANCE TESTING BY THE DEPARTMENT; NOT ELIGIBLE FOR INCENTIVE
INTERSECTIONS	406+74 - 750+56	UPPER LAYER	MILLED HMA SURFACE	HMA PAVEMENT 4 MT 58-28 S	413	2.00"	460.2010 INCENTIVE AIR VOIDS HMA PAVEMENT	ACCEPTANCE TESTING BY THE DEPARTMENT; NOT ELIGIBLE FOR INCENTIVE

*QUANTITIES ARE APPROXIMATE

3

ASPHALT CENTERLINE RUMBLE STRIP

465.0475
ASPHALT
CENTERLINE
RUMBLE STRIPS
2-LANE RURAL

CATEGORY	STATION	TO	STATION	LOCATION	LF	REMARKS
0010	464+50	-	465+54	CL	104	WHITE TAIL DRIVE
0010	469+54	-	483+60	CL	1406	REDEMANN ROAD
0010	487+60	-	539+99	CL	5239	MARTEN ROAD
0010	543+99	-	565+95	CL	2196	BELLIN ROAD
0010	569+95	-	592+35	CL	2240	PINES ROAD
0010	596+35	-	605+50	CL	915	KLEMP ROAD
0010	609+50	-	632+50	CL	2300	TEWS LANE
0010	636+50	-	648+90	CL	1240	COMMERCIAL DRIVEWAY
0010	650+90	-	663+00	CL	1210	SPEED REDUCTION
0010	696+50	-	702+40	CL	590	LEITZKE ROAD
0010	706+40	-	719+60	CL	1320	TAMARACK WAY
0010	723+60	-	739+50	CL	1590	SPEED REDUCTION
TOTAL 0010					20,350	

CURB AND GUTTER WORK

						*	*	*	*	*		
				204.0100	204.0150	205.0100	305.0120	465.0105	601.0411	690.0150	690.0250	
				REMOVING	REMOVING		BASE		CONCRETE			
				CONCRETE	CURB &	EXCAVATION	AGGREGATE	ASPHALTIC	GUTTER 30-	SAWING	SAWING	
				PAVEMENT	GUTTER	COMMON	DENSE 1 1/4-	SURFACE	INCH TYPE D	ASPHALT	CONCRETE	
CATEGORY	STATION	TO	STATION	LOCATION	SY	LF	CY	TON	LF	LF	LF	REMARKS
0010	460+74	-	460+94	LT	5	20	3	2	2	20	-	33
0010	677+21	-	677+36	RT	-	15	5	2	3	15	28	-
TOTAL 0010					5	35	8	4	5	35	28	33

*ITEM USED ELSEWHERE IN PLAN

3

INLET WORK

				*	*	*	*	*	*	*	*	*			
				204.0110	305.0120	465.0105	520.8000	601.0411	611.0430	611.0624	611.3004	611.8115	690.0150		
				REMOVING ASPHALTIC SURFACE	BASE AGGREGATE DENSE 1 1/4- INCH	ASPHALTIC SURFACE	CONCRETE COLLARS FOR PIPE EACH	CONCRETE CURB & GUTTER 30- INCH TYPED LF	RECONSTRUCTING INLETS EACH	INLET COVERS TYPE H EACH	INLETS 4- FT DIAMETER EACH	ADJUSTING INLET COVERS EACH	SAWING ASPHALT LF		
CATEGORY	STATION	TO	STATION	LOCATION	SY	TON	TON	LF	EACH	EACH	EACH	EACH	LF	REMARKS	
0010	670+54			LT&RT	3	1	2	-	14	-	-	2	46		
0010	673+55			LT&RT	3	1	2	-	14	-	-	2	46		
0010	677+05			LT&RT	3	1	2	-	14	-	-	2	46		
0010	677+69			LT	5	2	3	-	7	1	-	-	27	CTH W NORTH	
0010	677+83			RT	3	1	2	-	7	-	-	1	23	CTH W SOUTH	
0010	678+15			LT	3	1	2	-	7	-	-	1	23	CTH W NORTH	
0010	682+10			LT	5	2	3	2	7	-	1	-	27		
0010	682+10			RT	5	2	3	4	7	1	-	-	27		
0010	685+55			LT	3	1	2	-	7	-	1	1	23		
0010	685+55			RT	3	1	2	-	7	-	-	1	23		
0010	688+90			LT&RT	3	1	2	-	14	-	-	2	46		
TOTAL 0010					39	14	25	6	105	2	1	1	12	357	

*ITEM USED ELSEWHERE IN PLAN

PROJECT NO: 4075-00-71

HWY: STH 96

COUNTY: WAUPACA

MISCELLANEOUS QUANTITIES

SHEET

47

E

REFERENCE MONUMENTS

			621.0100	SPV.0060.02 SPECIAL (02. REESTABLISH	
			LANDMARK REFERENCE MONUMENTS	SECTION CORNER MONUMENTS)	
CATEGORY	STATION	LOCATION	EACH	EACH	REMARKS
0010	541+95	CL	1	1	
0010	568+00	CL	1	1	
0010	677+79	LT	1	1	
0010	704+38	LT	1	1	
0010	730+92	RT	1	1	
		TOTAL 0010	5	5	

TRANSITION CUT

			*	*	*	*	
			205.0100	305.0120	465.0105	690.0150	
			EXCAVATION COMMON	BASE AGGREGATE DENSE 1 1/4- INCH	ASPHALTIC SURFACE	SAWING ASPHALT	
ATEGORY	STATION	LOCATION	CY	TON	TON	LF	REMARKS
0010	728+67	LT&RT	33	230	117	60	
		TOTAL 0010	33	230	117	60	
*ITEM USED ELSEWHERE IN PLAN							

DRIVEWAY WORK

					*		
					305.0120	465.0120	
					BASE	ASPHALTIC	
					AGGREGATE	SURFACE	
					DENSE 1 1/4- INCH	DRIVEWAYS AND FIELD ENTRANCES	
CATEGORY	STATION	TO	STATION	LOCATION	TON	TON	REMARKS
0010	501+22			RT	12	0	
0010	504+60			RT	13	7	
0010	505+56			RT	13	7	
0010	507+66			RT	16	0	
0010	649+90			RT	124	63	
0010	UNDISTRIBUTED				-	-	
				TOTAL 0010	178	77	
*ITEM USED ELSEW HERE IN PLAN							

3

3

CULVERT ITEMS

					* 504.0900 520.1012 520.3312 520.8000 520.9700.5.01 520.9750.5 521.1242 522.0136 522.0430 522.1030 612.0206 612.0806 633.5200 SPV.0060.01															
					CONCRETE MASONRY ENDWALLS		APRON FOR CULVERT PIPE 12-INCH	** CULVERT PIPE CLASS III-A 12-INCH	CONCRETE COLLARS FOR PIPE	CULVERT PIPE LINERS (SIZE) (01. 42-INCH)	CLEANING CULVERT PIPES FOR LINER VERIFICATION	APRON ENDWALLS FOR PIPE ARCH STEEL 42X29-INCH	CULVERT PIPE REINFORCED CONCRETE CLASS III 36-INCH	CULVERT PIPE REINFORCED CONCRETE CLASS IV 30-INCH	ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 30-INCH	PIPE UNDERDRAIN UNPERFORATED 6-INCH	ENDWALLS FOR UNDERDRAIN REINFORCED CONCRETE 6-INCH	MARKERS CULVERT END	SPECIAL (01. CONCRETE CLASS III 36-INCH BEND)	
CATEGORY	STATION	TO	STATION	LOCATION	CY	EACH	LF	EACH	LF	EACH	EACH	LF	LF	EACH	LF	EACH	EACH	EACH	REMARKS	
0010	498+25	-	509+50	RT	-	8	97	-	-	-	-	-	-	-	-	-	-	-		
0010	592+75	-	594+25	LT	2.6	-	-	2	-	-	-	6	-	-	-	-	-	2	2	
0010	609+65	-	609+74	LT&RT	-	-	-	-	-	-	4	-	-	-	-	-	-	2	-	
0010		699+74		LT&RT	-	-	-	-	140	1	-	-	-	-	-	-	-	2	-	
0010		728+67		RT	-	-	-	-	-	-	-	-	62	2	100	4	2	-		
0010	693+00	-	750+56	LT&RT	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
TOTAL 0010					2.6	8	97	2	140	1	4	6	62	2	100	4	8	2	UNDERDRAIN	

*ITEM USED ELSEWHERE IN PLAN
**MINIMUM WALL THICKNESS FOR CORRUGATED STEEL 0.064"

EROSION CONTROL

					625.0100	628.1504	628.1520	628.1905	628.1910	628.2008	628.7005	628.7504	628.7555	628.7570	629.0210	630.0110	630.0140	630.0500			
					MOBILIZATIONS																
					TOPSOIL	SILT FENCE	SILT FENCE MAINTENANCE	MOBILIZATIONS EROSION CONTROL	EMERGENCY EROSION CONTROL	EROSION MAT URBAN CLASS I TYPE B	INLET PROTECTION TYPE A	TEMPORARY DITCH CHECKS	CULVERT PIPE CHECKS	ROCK BAGS	FERTILIZER TYPE B	SEEDING MIXTURE NO. 10	SEEDING MIXTURE NO. 40	SEED WATER			
CATEGORY	STATION	TO	STATION	LOCATION	SY	LF	LF	EACH	EACH	SY	EACH	LF	EACH	EACH	CWT	LB	LB	MGAL	REMARKS		
0010	460+74	-	460+94	LT	-	-	-	-	-	-	1	54	-	-	-	-	-	-	CURB & GUTTER REPAIR		
0010	498+25	-	509+50	RT	1,790	1,050	1,050	-	-	1,790	-	-	24	-	-	-	24.2	-			
0010	592+75	-	594+25	LT	507	220	220	-	-	507	-	-	24	-	0.40	6.9	-	-	PINES RD INT		
0010	609+25		610+00	LT&RT	60	100	100	-	-	60	-	-	-	36	0.10	0.9	-	-			
0010	670+54			LT&RT	-	-	-	-	-	-	2	-	-	-	-	-	-	-	INLET WORK		
0010	673+55			LT&RT	-	-	-	-	-	-	2	-	-	-	-	-	-	-	INLET WORK		
0010	677+05			LT&RT	-	-	-	-	-	-	2	-	-	-	-	-	-	-	INLET WORK		
0010	677+15	-	677+30	RT	-	-	-	-	-	-	1	-	-	-	-	-	-	-	CURB & GUTTER REPAIR		
0010	677+69			LT	-	-	-	-	-	-	1	-	-	-	-	-	-	-	INLET WORK		
0010	677+83			RT	-	-	-	-	-	-	1	-	-	-	-	-	-	-	INLET WORK		
0010	678+15			LT	-	-	-	-	-	-	1	-	-	-	-	-	-	-	INLET WORK		
0010	682+10			LT	-	-	-	-	-	-	1	-	-	-	-	-	-	-	INLET WORK		
0010	682+10			RT	-	-	-	-	-	-	1	-	-	-	-	-	-	-	INLET WORK		
0010	685+55			LT&RT	-	-	-	-	-	-	2	-	-	-	-	-	-	-	INLET WORK		
0010	688+90			LT&RT	-	-	-	-	-	-	2	-	-	-	-	-	-	-	INLET WORK		
0010	699+50		700+00	LT	70	75	75	-	-	70	-	-	-	18	0.10	1.0	-	-			
0010	728+25		729+00	RT	329	390	390	-	-	329	-	-	9	-	0.30	4.5	-	-			
0010	PROJECT WIDE			LT&RT	-	-	-	6	3	-	-	-	-	-	-	-	-	0.4			
	UNDISTRIBUTED			LT&RT	689	459	459	-	-	689	-	14	15	14	0.30	3.4	6.1	-			
TOTAL 0010					3,445	2,294	2,294	6	3	3,445	17	68	72	68	1.2	17	30.3	0.4			

TRAFFIC CONTROL SIGNS							643.0900	643.0920	643.1000	
							TRAFFIC CONTROL SIGNS	TRAFFIC CONTROL COVERING SIGNS TYPE II	TRAFFIC CONTROL SIGNS FIXED MESSAGE	
CATEGORY	SIGN CODE	MESSAGE	DETAIL	STATION USED	NUMBER SIGNS REQUIRED	DAYS NEEDED	DAY	EACH	SF	REMARKS
0010	R3-6L	LEFT TURN / STRAIGHT LANE	SHOULDER CLOSURE	STA 460+74 - STA 461+12	1.00	1.00	1			
0010	W20-5A	RIGHT LANE CLOSED AHEAD	SHOULDER CLOSURE	STA 460+74 - STA 461+12	1.00	1.00	1	1	-	COVERING 1 SIGN FOR 1 CYCLE
0010	W21-5	SHOULDER WORK	SHOULDER CLOSURE	STA 498+25 - STA 509+50	1.00	5.00	5	-	-	
0010	W21-5	SHOULDER WORK	SHOULDER CLOSURE	STA 592+75 - STA 594+25	1.00	4.00	4	-	-	
0010	W21-5	SHOULDER WORK	SHOULDER CLOSURE	PINES ROAD	1.00	4.00	4	-	-	
0010	G20-2A	END ROADWORK	SHOULDER CLOSURE - STAGE 1	STA 665+00 - STA 695+00	1.00	5.00	5	-	-	
0010	W21-5	SHOULDER WORK	SHOULDER CLOSURE - STAGE 1	STA 665+00 - STA 695+00	3.00	5.00	15	-	-	
0010	G20-2A	END ROADWORK	SHOULDER CLOSURE - STAGE 2	STA 665+00 - STA 695+00	1.00	5.00	5	-	-	
0010	W21-5	SHOULDER WORK	SHOULDER CLOSURE - STAGE 2	STA 665+00 - STA 695+00	2.00	5.00	10	-	-	
0010	G20-2A	END ROADWORK	SHOULDER CLOSURE - STAGE 3	STA 665+00 - STA 695+00	2.00	5.00	10	-	-	
0010	W21-5	SHOULDER WORK	SHOULDER CLOSURE - STAGE 3	STA 665+00 - STA 695+00	3.00	5.00	15	-	-	
0010	W20-1A	ROAD WORK AHEAD	ADVANCED WARNING	-	18.00	50.00	900	-	-	
0010	W201-C	ROAD WORK 1000 FT	ADVANCED WARNING	-	2.00	50.00	100	-	-	
0010	W20-1D	ROAD WORK 500 FT	ADVANCED WARNING	-	2.00	50.00	100	-	-	
0010	G20-1	ROAD WORK NEXT 7 MILES	ADVANCED WARNING	-	2.00	50.00	100	-	-	
0010	G20-2A	END ROADWORK	ADVANCED WARNING	-	3.00	50.00	150	-	-	
0010	M1-6	96	ADVANCED WARNING	-	3.00	50.00	150	-	-	
0010	M3-2	EAST	ADVANCED WARNING	-	2.00	50.00	100	-	-	
0010	M3-4	WEST	ADVANCED WARNING	-	1.00	50.00	50	-	-	
0010	G20-57	HWY 96 ROADWORK BEGINS XX	ADVANCED WARNING	-	-	-	-	-	36	
TOTAL 0010					50	445	1,725	1	36	

TRAFFIC CONTROL										
CATEGORY	STATION	TO	STATION	LOCATION	NUMBER DRUMS NEEDED	DAYS NEEDED	643.0300	643.5000	648.0100	REMARKS
							TRAFFIC CONTROL DRUMS DAY	TRAFFIC CONTROL EACH	LOCATING NO- PASSING ZONES MI	
0010	460+70	-	461+12	LT	15	1	15	-	-	
0010	498+25	-	509+50	RT	22	10	220	-	-	
0010	592+75	-	594+25	LT	20	10	200	-	-	
0010	665+00	-	695+00	STAGE1	50	5	250	-	-	
0010	665+00	-	695+00	STAGE2	9	5	45	-	-	
0010	665+00	-	695+00	STAGE3	52	5	260	-	-	
0010	PROJECT WIDE				-	-	-	1	5.49	
TOTAL 0010					168	36	990	1	5.49	

PAVEMENT MARKING															
				634.0614	638.2102	638.2102	646.1020	646.1040	646.1040	646.3040	646.5520	646.6120	643.3120	643.3105	
				POSTS	MOVING	MOVING	MARKING LINE	MARKING LINE	MARKING LINE			MARKING STOP	TEMPORARY	TEMPORARY	
				WOOD 4X6-	SIGNS TYPE II	SIGNS TYPE II	EPOXY 4-INCH	REF EPOXY 4-	REF EPOXY 4-	REF EPOXY 8-	MARKING	LINE EPOXY 18-	MARKING LINE	MARKING LINE	
				INCH X 14-FT				INCH	INCH	INCH	OUTFALL EPOXY	INCH	EPOXY 4-INCH	PAINT 4-INCH	
					(NO	OTHER	(FINAL -	(FINAL - WHITE)	(FINAL - WHITE)	(FINAL - WHITE)	(FINAL - WHITE)	(FINAL - WHITE)	(FINAL -YELLOW)	(MILLED	
					PASSING)		YELLOW)						(PRIOR TO	SURFACE)	
							(AFTER RUMBLE						RUMBLE STRIP)		
							STRIP)								
CATEGORY	STATION	TO	STATION	LOCATION	EACH	EACH	LF	LF	LF	LF	EACH	LF	LF	LF	REMARKS
0010	460+74	-	469+46	LT&RT	-	1	1,744	74	1,744	188	-	38	1,744	1,744	DOUBLECL
0010	469+46	-	477+40	LT&RT	-	-	993	-	1,588	-	-	-	858	858	SOLID/DASHED CL
0010	477+40	-	503+00	LT&RT	-	1	640	-	5,120	-	-	-	205	205	DASHED CL
0010	503+00	-	513+58	LT&RT	-	-	1,323	-	2,116	-	-	-	1,143	1,143	SOLID/DASHED CL
0010	513+58	-	527+66	LT&RT	-	-	2,816	-	2,816	-	-	-	2,816	2,816	DOUBLECL
0010	527+66	-	537+98	LT&RT	-	-	1,290	-	2,064	-	-	-	1,115	1,115	SOLID/DASHED CL
0010	537+98	-	598+42	LT&RT	-	2	1,511	-	12,088	-	-	-	484	484	DASHED CL
0010	598+42	-	604+70	LT&RT	1	-	785	-	1,256	-	-	-	679	679	SOLID/DASHED CL
0010	604+70	-	608+81	LT&RT	-	-	103	-	822	-	-	-	33	33	DASHED CL
0010	608+81	-	615+79	LT&RT	-	1	873	-	1,396	-	-	-	754	754	SOLID/DASHED CL
0010	615+79	-	618+26	LT&RT	-	-	62	-	494	-	-	-	20	20	DASHED CL
0010	618+26	-	621+68	LT&RT	-	1	428	-	684	-	-	-	370	370	SOLID/DASHED CL
0010	621+68	-	628+59	LT&RT	-	-	173	-	1,382	-	-	-	56	56	DASHED CL
0010	628+59	-	634+33	LT&RT	-	-	718	-	1,148	-	-	-	620	620	SOLID/DASHED CL
0010	634+33	-	638+42	LT&RT	-	1	103	-	818	-	-	-	33	33	DASHED CL
0010	638+42	-	648+70	LT&RT	-	1	1,285	-	2,056	-	-	-	1,111	1,111	SOLID/DASHED CL
0010	648+70	-	650+00	LT&RT	-	-	260	-	260	-	-	-	260	260	DOUBLECL
0010	650+00	-	667+86	LT&RT	-	2	2,233	-	3,572	-	-	-	1,929	1,929	SOLID/DASHED CL
0010	667+86	-	677+36	LT&RT	-	-	1,900	-	1,900	-	-	27	1,900	1,900	DOUBLECL
0010	678+47	-	690+07	LT&RT	-	1	1,450	-	2,320	-	-	25	1,253	1,253	SOLID/DASHED CL
0010	690+07	-	697+42	LT&RT	-	1	184	-	1,470	-	4	-	59	59	DASHED CL
0010	697+42	-	707+05	LT&RT	-	-	1,204	-	1,926	-	6	-	1,041	1,041	SOLID/DASHED CL
0010	707+05	-	709+36	LT&RT	-	-	462	-	462	-	2	-	462	462	DOUBLECL
0010	709+36	-	720+92	LT&RT	-	-	1,445	-	2,312	-	6	-	1,249	1,249	SOLID/DASHED CL
0010	720+92	-	745+05	LT&RT	-	2	604	-	4,826	-	12	-	194	194	DASHED CL
0010	745+05	-	750+56	LT&RT	-	-	689	-	1,102	-	2	-	596	596	SOLID/DASHED CL
TOTAL 0010					1	16	25,278		57,816	188	32	90	20,984	20,984	

3

3

STAKING									
					650.6000	650.8000	650.9911.01	650.9920	
					CONSTRUCTION STAKING PIPE CULVERTS EACH	CONSTRUCTION STAKING RESURFACING REFERENCE LF	CONSTRUCTION STAKING SUPPLEMENTAL CONTROL (PROJECT) (01. 4075-00-71) EACH	CONSTRUCTION STAKING SLOPE STAKES LF	
CATEGORY	STATION	TO	STATION	LOCATION	EACH	LF	EACH	LF	REMARKS
0010	498+25	-	509+50	RT	4	-	-	1,116	
0010	592+75	-	594+25	LT	2	-	-	220	
0010	609+65	-	609+74	LT&RT	-	-	-	-	
0010		699+74		LT&RT	-	-	-	-	
0010		728+67		RT	1	-	-	-	
0010	PROJECT WIDE				-	28,982	1	-	
	TOTAL 0010				7	28,982	1	1,336	

SPV.0090.01													
SPV.0090.01 SPECIAL (01. GRADING, SHAPING AND FINISHING FOR CURB & GUTTER REPLACEMENT AND INLET REPAIR}													
CATEGORY	STATION TO	STATION	LOCATION	LF	COMMON CY	TOPSOIL SY	SEED #40 LBS	FERTILIZER CWT	FROSION MAT URBAN CLASS I TYPE B SY	SILT FENCE LF	SILT FENCE MAINTENANCE LF	REMARKS	
0010	460+74	- 460+94	LT	20	2.22	4.44	0.06	0.0028	4.44	24.00	24.00		
0010		670+54	LT	10	1.11	2.22	0.03	0.0014	2.22	14.00	14.00		
0010		670+54	RT	10	1.11	2.22	0.03	0.0014	2.22	14.00	14.00		
0010		673+55	LT	10	1.11	2.22	0.03	0.0014	2.22	14.00	14.00		
0010		673+55	RT	10	1.11	2.22	0.03	0.0014	2.22	14.00	14.00		
0010		677+05	LT	10	1.11	2.22	0.03	0.0014	2.22	14.00	14.00		
0010		677+05	RT	10	1.11	2.22	0.03	0.0014	2.22	14.00	14.00		
0010	677+21	- 677+36	RT	15	1.67	3.33	0.05	0.0021	3.33	19.00	19.00		
0010		677+69	LT	10	1.11	2.22	0.03	0.0014	2.22	14.00	14.00		
0010		677+83	RT	10	1.11	2.22	0.03	0.0014	2.22	14.00	14.00		
0010		678+15	LT	10	1.11	2.22	0.03	0.0014	2.22	14.00	14.00		
0010		682+10	LT	20	2.22	4.44	0.06	0.0028	4.44	24.00	24.00		
0010		682+10	RT	10	1.11	2.22	0.03	0.0014	2.22	14.00	14.00		
0010		685+55	LT	10	1.11	2.22	0.03	0.0014	2.22	14.00	14.00		
0010		685+55	RT	10	1.11	2.22	0.03	0.0014	2.22	14.00	14.00		
0010		688+90	LT	10	1.11	2.22	0.03	0.0014	2.22	14.00	14.00		
0010		688+90	RT	10	1.11	2.22	0.03	0.0014	2.22	14.00	14.00		
TOTAL 0010				175									

** FOR INFORMATION ONLY

21.67

SPV.0170.01						
SPV.0170.01						
SPECIAL {01.						
CONCRETE JOINT						
AND CRACK						
CLEANING AND						
REPAIR}						
CATEGORY	STATION	TO	STATION	LOCATION	STA	REMARKS
0010	460+74	-	461+65		4	
	461+65		478+55		34	
TOTAL 0010					38	

TRANSPORTATION PROJECT PLAT NO: 4075-00-21-4.01

THAT PART OF THE SE 1/4 OF THE NE 1/4 OF SECTION 28, T21N, R14E, TOWN OF CALEDONIA, WAUPACA COUNTY, WISCONSIN

RELOCATION ORDER - STH 96, FREMONT - APPLETON (STH 110 TO USH 45), WAUPACA COUNTY

TO PROPERLY ESTABLISH, LAY OUT, WIDEN, ENLARGE, EXTEND, CONSTRUCT, IMPROVE, OR MAINTAIN A PORTION OF THE HIGHWAY DESIGNATED ABOVE, THE STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION DEEMS IT NECESSARY TO RELOCATE OR CHANGE SAID HIGHWAY AND ACQUIRE CERTAIN LANDS AND INTERESTS OR RIGHTS IN LANDS FOR THE ABOVE PROJECT.

TO EFFECT THIS CHANGE, PURSUANT TO AUTHORITY GRANTED UNDER SECTION 84.02 (3), 84.09, AND 84.30, WISCONSIN STATUTES, THE DEPARTMENT OF TRANSPORTATION HEREBY ORDERED THAT:

1. THAT PORTION OF SAID HIGHWAY AS SHOWN ON THIS PLAT IS Laid OUT AND ESTABLISHED TO THE LINES AND WIDTHS AS SO SHOWN FOR THE ABOVE PROJECT.
2. THE LANDS OR INTERESTS OR RIGHTS IN LANDS AS SHOWN ON THIS PLAT ARE REQUIRED BY THE DEPARTMENT FOR THE ABOVE PROJECT AND SHALL BE ACQUIRED IN THE NAME OF THE STATE OF WISCONSIN, PURSUANT TO THE PROVISIONS OF SECTION 84.09 (1) OR (2), WISCONSIN STATUTES.

NOTES:

POSITIONS SHOWN ON THIS PLAT ARE WISCONSIN COORDINATE REFERENCE SYSTEM COORDINATES (WISCRS), WAUPACA 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.

ALL NEW RIGHT-OF-WAY MONUMENTS WILL BE TYPE 2 (TYPICALLY 3/4" X 24" IRON REBARs), UNLESS OTHERWISE NOTED, AND WILL BE PLACED PRIOR TO THE COMPLETION OF THE PROJECT.

ALL RIGHT-OF-WAY LINES DEPICTED IN THE NON ACQUISITION AREAS ARE INTENDED TO BE ESTABLISH EXISTING RIGHT-OF-WAY LINES AS DETERMINED FROM PREVIOUS PROJECTS. OTHER RECORDED DOCUMENTS, OR FROM CENTRELINE OF EXISTING PAVEMENTS.

RIGHT-OF-WAY BOUNDARIES ARE DEFINED WITH COURSES OF THE PERIMETER OF THE HIGHWAY LANDS REFERENCED TO THE U.S. PUBLIC LAND SURVEY SYSTEM OR OTHER "SURVEYS" OF PUBLIC RECORD DIMENSIONING FOR THE NEW RIGHT-OF-WAY IS MEASURED ALONG AND PERPENDICULAR TO THE NEW REFERENCE LINES.

AN EASEMENT FOR HIGHWAY PURPOSES (HE), AS LONG AS SO USED, INCLUDING THE RIGHT TO PRESERVE, PROTECT, REMOVE, OR PLANT THEREON ANY VEGETATION THAT THE HIGHWAY AUTHORITIES MAY DEEM DESIRABLE.

PROPERTY LINES SHOWN ON THIS PLAT ARE DRAWN FROM DATA DERIVED FROM MAPS AND DOCUMENTS OF PUBLIC RECORD AND/OR EXISTING OCCUPATIONAL LINES. THIS PLAT MAY NOT BE A TRUE REPRESENTATION OF EXISTING PROPERTY LINES, EXCLUDING RIGHT-OF-WAY, AND SHOULD NOT BE USED AS A SUBSTITUTE FOR AN ACCURATE FIELD SURVEY.

FOR THE CURRENT ACCESS/DRIVEWAY INFORMATION, CONTACT THE PLANNING UNIT OF THE WISCONSIN DEPARTMENT OF TRANSPORTATION OFFICE IN RHINELANDER, WI.

PARCEL AND UTILITY IDENTIFICATION NUMBERS MAY NOT POINT TO ALL AREAS OF ACQUISITION, AS NOTED ON THE TPP DETAIL PAGES.

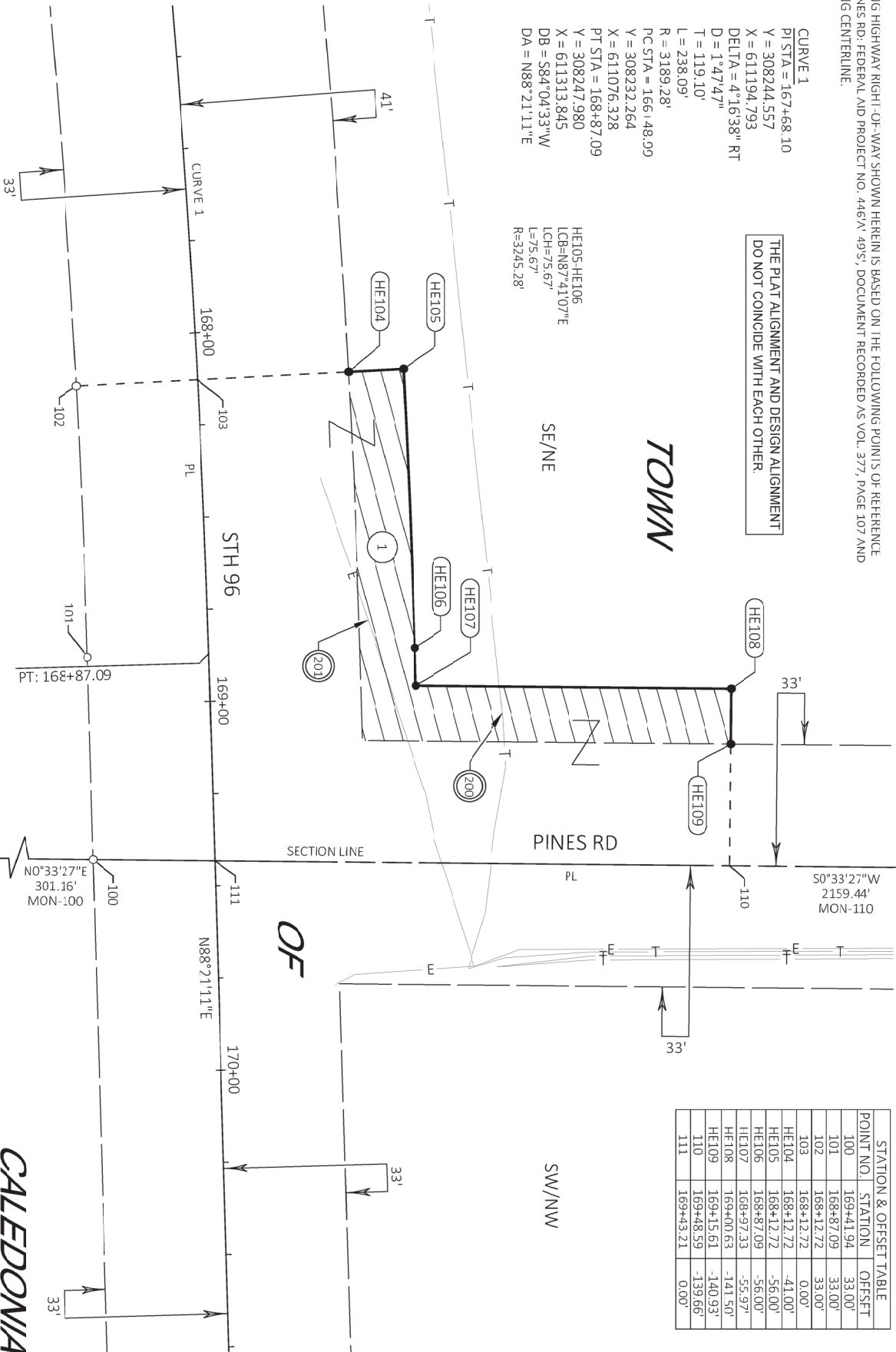
EXISTING HIGHWAY RIGHT-OF-WAY SHOWN HEREIN IS BASED ON THE FOLLOWING POINTS OF REFERENCE FOR STH 96: FEDERAL AID PROJECT NO. 446A-49'S, DOCUMENTED RECORDED AS VOL. 377, PAGE 107 AND EXISTING CENTERLINE.

EXISTING HIGHWAY RIGHT-OF-WAY SHOWN HEREIN IS BASED ON THE FOLLOWING POINTS OF REFERENCE FOR PINES RD: FEDERAL AID PROJECT NO. 446A-49'S, DOCUMENT RECORDED AS VOL. 377, PAGE 107 AND EXISTING CENTERLINE.

THE PLAT ALIGNMENT AND DESIGN ALIGNMENT DO NOT COINCIDE WITH EACH OTHER.

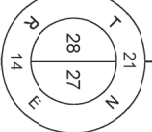
CURVE 1
PI STA = 167+68.10
Y = 308244.557
X = 611194.793
DELTA = 4°16'38" RT
D = 1'47'47"
T = 119.10'
L = 238.09'
R = 3189.28'
PC STA = 166+48.99
Y = 308232.264
X = 611076.328
PT STA = 168+87.09
Y = 308247.980
X = 611313.845
DB = 584°04'33"W
DA = N88°21'11"E
R = 3245.28'

HE105-HE106
LCB=N87°41'07"E
LCH=75.67'
L=75.67'
R=3245.28'



101-102
LCB=S87°41'07"W
LCH=73.59'
L=73.59'
R=3156.28'

FOUND HARRISON MONUMENT
Y = 307915.422
X = 611366.700



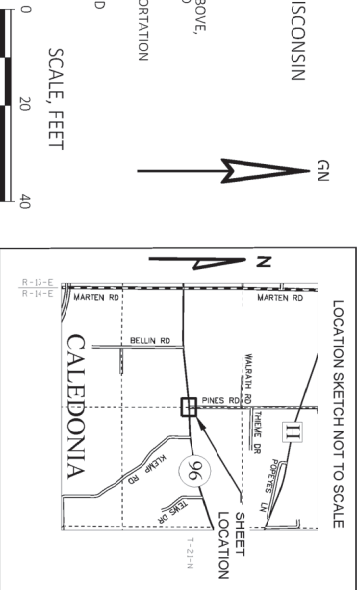
STATION & OFFSET TABLE			
POINT NO.	STATION	OFFSET	
100	169+41.94	33.00'	
101	168+87.09	33.00'	
102	168+12.72	33.00'	
103	168+12.72	0.00'	
HE104	168+12.72	-41.00'	
HE105	168+12.72	-56.00'	
HE106	168+87.09	-56.00'	
HE107	168+97.33	-55.97'	
HE108	169+00.63	-141.50'	
HE109	169+15.61	-140.93'	
110	169+48.59	-139.66'	
111	169+43.21	0.00'	

CALEDONIA

COURSE TABLE		
COURSE	BEARING	DISTANCE
100-101	S88°21'11"W	54.86'
101-102	SEE CURVE DATA	
102-103	N02°58'58"W	33.00'
103-HE104	N02°58'58"W	41.00'
HE104-HE105	N02°58'58"W	15.00'
HE105-HE106	SEE CURVE DATA	
HE106-HE107	N88°31'07"E	10.24'
HE107-HE108	N00°33'27"E	85.60'
HE108-HE109	S89°26'33"E	33.00'
HE109-110	S00°33'27"W	139.76'
110-111	S00°33'27"W	33.02'

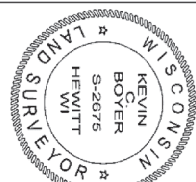
CONVENTIONAL UTILITY SYMBOLS	
WATER	—W—
TELEPHONE	—T—
OVERHEAD TRANSMISSION LINES	—OH—
ELECTRIC	—E—
CABLE TELEVISION	—TV—
SEWER	—S—
SANITARY SEWER	—SS—
STORM SEWER	—SS—
ELECTRIC TOWER	⊠
CONVENTIONAL ABBREVIATIONS	
ACCESS RIGHTS	AR
ACRES	AC
ALUMINUM	ALUM
AND OTHERS	ET AL
BACK	BK
BLOCK	BLK
CENTERLINE	C/L
CERTIFIED SURVEY MAP	CSM
CONCRETE	CONC
COUNTY	CO
COUNTY TRUNK HIGHWAY	CTH
DISTANCE	DIST
CORNER	COR
DOCUMENT NUMBER	DOC
EASEMENT	EASE
EXISTING	EX
GRID NORTH	GN
HIGHWAY EASEMENT	HE
IDENTIFICATION	ID
LAND CONTRACT	LC
LEFT	LT
MONUMENT	MON
NATIONAL GEODETIC SURVEY	NGS
NUMBER	NO
OUTLOT	OL
PAGE	P
POINT OF TANGENCY	PT
PERMANENT LIMITED	PLE
EASEMENT	PDB
POINT OF BEGINNING	PC
POINT OF CURVATURE	PC

CURVE DATA ABBREVIATIONS	
LONG CHORD	LCB
LONG CHORD BEARING	LCH
RADIUS	R
DEGREE OF CURVE	D
CENTRAL ANGLE	Δ
TANGENT OF CURVE	T
DIRECTION AHEAD	DA
DIRECTION BACK	DB
CONVENTIONAL SYMBOLS	
SECTION LINE	---
QUARTER LINE	---
SIXTEENTH LINE	---
NEW REFERENCE LINE	---
NEW R/W LINE	---
EXISTING R/W OR HE LINE	---
PROPERTY LINE	---
LOT, TIE & OTHER	---
WAGON LINES	---
SLOPE INTERCITY	---
CORPORATE LIMITS	---
UNDERGROUND UTILITY (CONCRETE, ELECTRIC, ETC)	---
NEW R/W (FEET OR IN)	---
TEMPORARY LIMITED EASEMENT AREA	---
SECTION CORNER	⊙
NON-MONUMENTED R/W POINT	○
FOUND IRON PIN (1-INCH UNLESS NOTED)	⊙
GEODETIC SURVEY MONUMENT	⊙
SIXTEENTH CORNER MONUMENT	⊙
OFF-PREMISE SIGN	⊙
ELECTRIC POLE	⊙
TELEPHONE POLE (TYPICAL)	⊙
PEDESTAL (LABEL TYPE TV, TEL, ELEC, ETC)	⊙
ACCESS RESTRICTED BY ACQUISITION	---
NO ACCESS (BY STATUTORY AUTHORITY)	---
ACCESS RESTRICTED (BY PREVIOUS PROJECT OR CONTROL)	---
NO ACCESS (NEW HIGHWAY)	---
PARCEL NUMBER	⊙
UTILITY NUMBER	⊙
PARALLEL OFFSETS	---



Doc No: 905187
Recorded on
4/12/2022 10:08 AM
MICHAEL MAZEMKE
WAUPACA COUNTY
REGISTER OF DEEDS
Fee Amount:
This document has been electronically recorded

RESERVED FOR REGISTER OF DEEDS
PROJECT NUMBER 4075-00-21-4.01
AMENDMENT NO. __



SIGNATURE: *Kevin C. Boyer* DATE: 4/7/2022
PRINT NAME: KEVIN C. BOYER
REGISTRATION NUMBER: S-2675
THIS PLAT AND RELOCATION ORDER ARE APPROVED FOR THE WISCONSIN DEPARTMENT OF TRANSPORTATION
SIGNATURE: *Brent L. Stella* DATE: 4/7/2022
PRINT NAME: Brent L. Stella

R/W PROJECT NUMBER: 4075-00-21		EXHIBIT NUMBER: 1	
TILE ACQUISITION EXHIBIT			
FREMONT - APPLETON			
STH 110 TO USH 45			
STH 96		WAUPACA COUNTY	
PART OF THE SE 1/4 OF THE SE 1/4 OF SECTION 23, T21N, R14E, TOWN OF CALEDONIA, WAUPACA COUNTY, WISCONSIN			

NOTES:
THIS EXHIBIT IS A GRAPHIC REPRESENTATION AND IS FOR REFERENCE PURPOSES ONLY.
REFER TO THE CONVEYANCE DOCUMENT FOR PARCEL RELATED DETAILS.

EXISTING MONUMENTS			
POINT	Y (NORTHING)	X (EASTING)	DESCRIPTION
IP748	310507.389	621502.785	3/4" IRON ROD FND.
IP749	310506.485	621602.095	1-1/4" O.D. IRON PIPE FND

200

CENTURYTEL OF THE MIDWEST-WISCONSIN, LLC (COMMUNICATION)
V. 522 PG. 248 DOC. 383224 - PAR 2

202

WE ENERGIES (GAS)
NO RECORD OF EASEMENT - PAR 2

FOUND BROKEN SURVEY NAIL
Y = 310614.725
X = 619273.685

FOUND SURVEY NAIL
Y = 310599.212
X = 621938.152

SCHEDULE OF LANDS & INTERESTS REQUIRED				OWNERS NAMES ARE SHOWN FOR REFERENCE PURPOSES ONLY AND ARE SUBJECT TO CHANGE PRIOR TO THE TRANSFER OF LAND INTERESTS TO THE DEPARTMENT			
PARCEL NUMBER	OWNER(S)	INTEREST REQUIRED	HE S.F.				
2	STACY R. PARI	TILE	625				

UTILITY INTERESTS REQUIRED		
UTILITY NUMBER	UTILITY OWNER(S)	INTEREST REQUIRED
200	CENTURYTEL OF THE MIDWEST-WISCONSIN, LLC (COMMUNICATION)	RELEASE OF RIGHTS
202	WE ENERGIES (GAS)	RELEASE OF RIGHTS

THIS MAP IS APPROVED FOR THE DEPARTMENT OF TRANSPORTATION
NORTH CENTRAL - WISCONSIN RAPIDS

SIGNATURE: *Brent L Stella* DATE: 4-12-22

PRINT NAME: Brent L Stella

PI STA = 459+70.03
Y = 306165.388
X = 598276.735
DELTA = 10°10'20" LT
D = 2°14'24"
T = 227.66'
L = 454.13'
R = 2557.97'
PC STA = 457+42.36
PT STA = 461+96.50
SE = N.C.



5

5

MARKING LINE
GROOVED WET REF
EPOXY 8-INCH, 88'

STA 460+85 LT
CURB AND GUTTER
30-INCH REPAIRS, 38'

STA 464+45 LT
ASPHALT PE

MARKING LINE
GROOVED WET REF
EPOXY 4-INCH (WHITE)

STA 472+45 LT
GRAVEL FE

STA 461+65
PAVEMENT TRANSITION

BEGIN CONSTRUCTION
STA 460+74
X = 598,379.53
Y = 306,185.76
BUTT JOINT REQ'D

MARKING LINE
GROOVED WET REF
EPOXY 8-INCH 100'

MARKING STOP LINE
EPOXY 18-INCH, 38'

STA 472+30 RT
GRAVEL FE

END CONSTRUCTION
STA 469+50, 72' RT
BUTT JOINT REQ'D

WHITE TRAIL DR

PROJECT NO: 4075-00-71

HWY: STH 96

COUNTY: WAUPACA

PLAN

SHEET

55

E

FILE NAME : \\WIS31FP1\N3PUBLIC\PD\SC3D\40750001\SHEETSPLAN\050201-PN.DWG
LAYOUT NAME - 01

PLOT DATE : 6/29/2023 3:53 PM

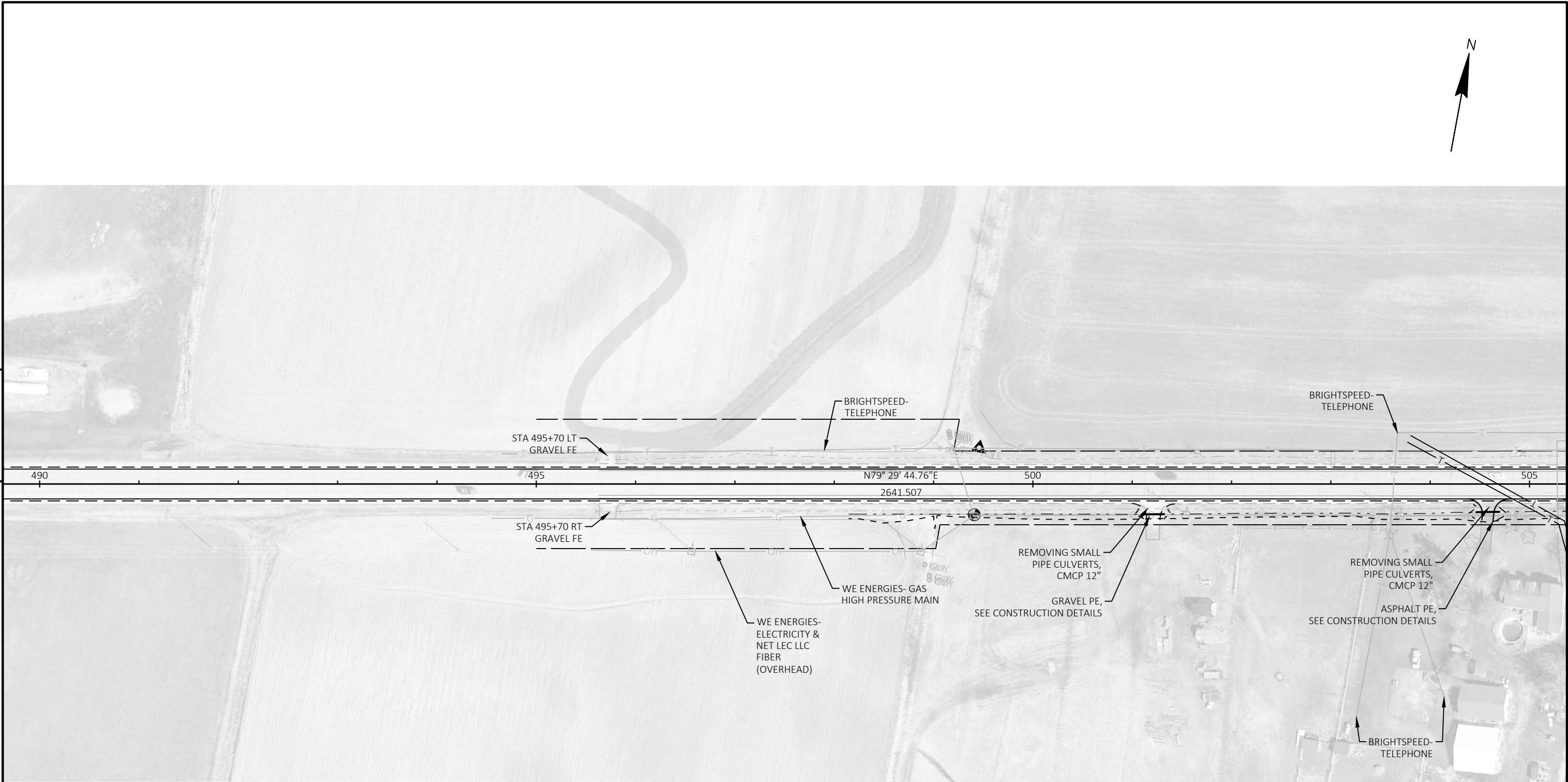
PLOT BY : BUERGER, ANTHONY R

PLOT NAME :

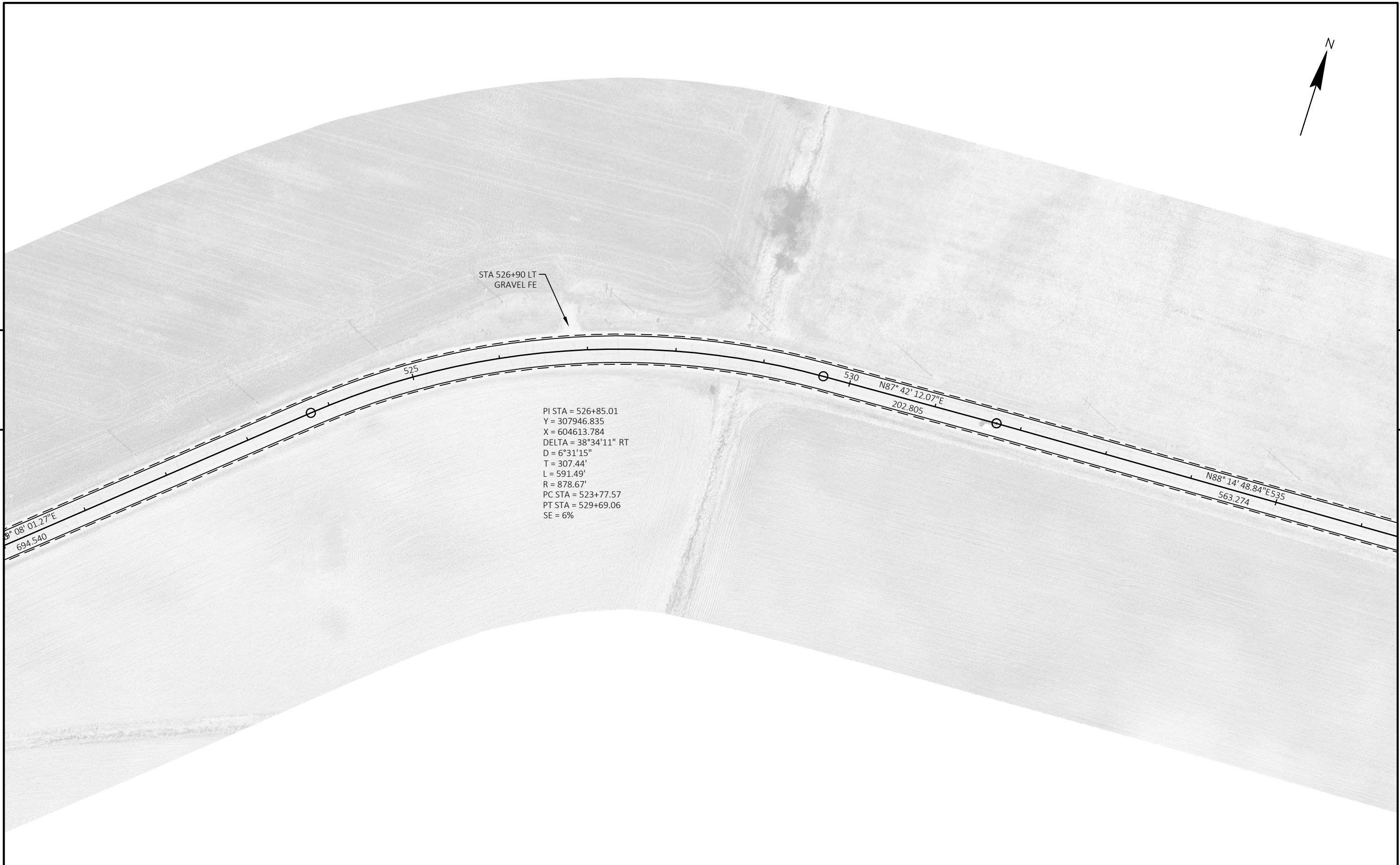
PLOT SCALE : 1 IN:100 FT

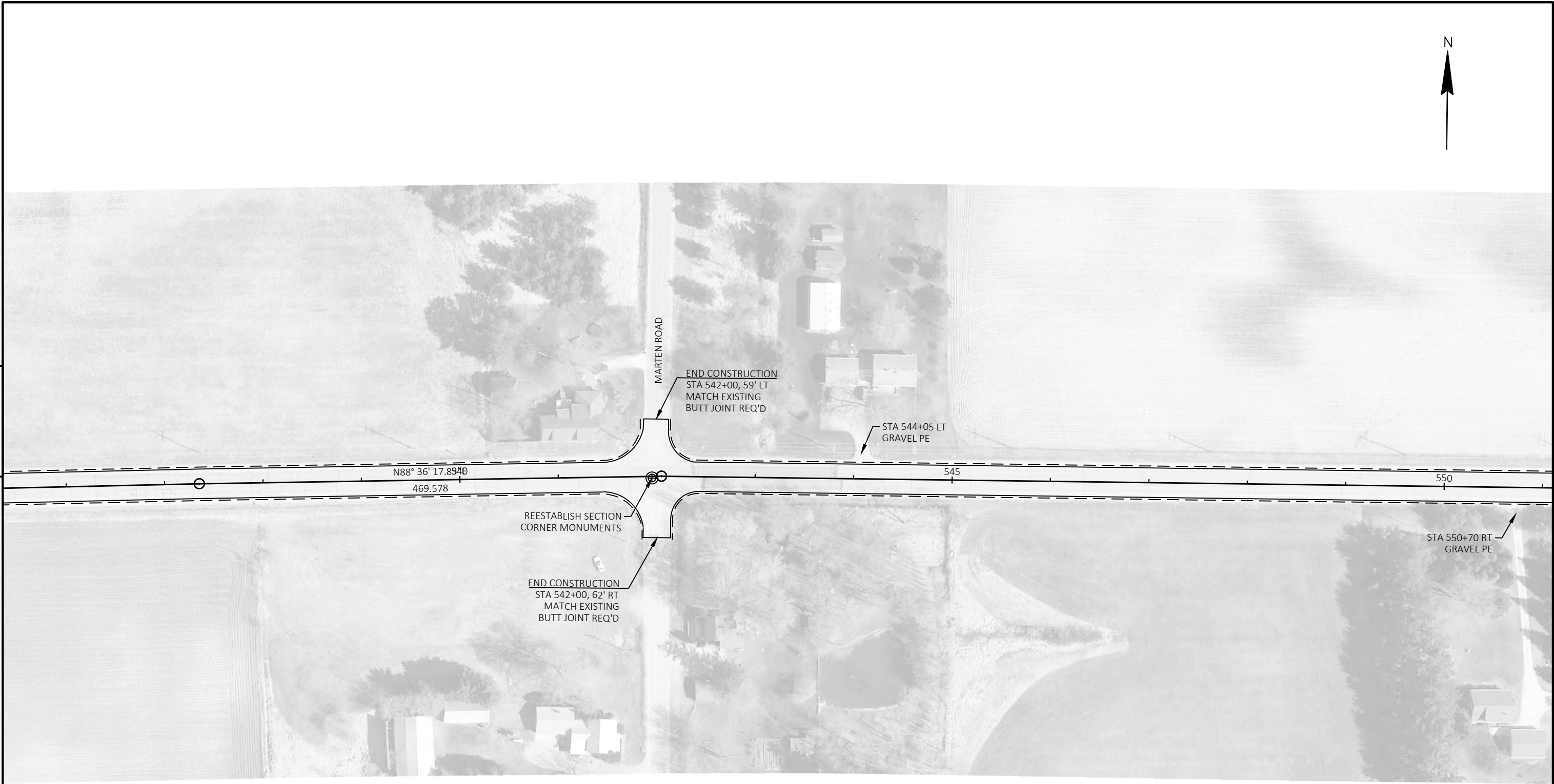
WISDOT/CADDs SHEET 44













PROJECT NO: 4075-00-71	HWY: STH 96	COUNTY: WAUPACA	PLAN	SHEET 61	E
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PI STA = 567+21.97
Y = 307982.907
X = 608673.296
DELTA = 6°13'16" LT
D = 1°39'04"
T = 188.57'
L = 376.78'
R = 3470.14'
PC STA = 565+33.40
PT STA = 569+10.17
SE = 3%

STA 574+80 LT
GRAVEL PE

STA 576+00 LT
GRAVEL PE

N84° 04' 32.73"E 580
2227.361

STA 574+55 RT
GRAVEL FE

END CONSTRUCTION
STA 567+95, 50' RT
MATCH EXISTING
BUTT JOINT REQ'D

BELLIN RD

REESTABLISH SECTION
CORNER MONUMENTS

PROJECT NO: 4075-00-71

HWY: STH 96

COUNTY: WAUPACA

PLAN

SHEET

62

E

FILE NAME : \\WIS31FP1\N3PUBLIC\PD\SC3D\40750001\SHEETS\PLAN\050201-PN.DWG
LAYOUT NAME - 08

PLOT DATE : 6/29/2023 4:00 PM

PLOT BY : BUERGER, ANTHONY R

PLOT NAME :

PLOT SCALE : 1 IN:100 FT

WISDOT/CADDs SHEET 44





PROJECT NO: 4075-00-71	HWY: STH 96	COUNTY: WAUPACA	PLAN	SHEET 65	E
------------------------	-------------	-----------------	------	----------	---



PI STA = 626+69.86
Y = 308624.527
X = 614578.821
DELTA = 7°25'26" LT
D = 1°37'13"
T = 229.42'
L = 458.20'
R = 3536.31'
PC STA = 624+40.44
PT STA = 628+98.64
SE = 3%

STA 628+60 LT
GRAVEL FE

STA 632+55 LT
GRAVEL FE

STA 634+60 LT
GRAVEL FE

STA 632+55 RT
GRAVEL PE

END CONSTRUCTION
STA 634+50, 54' RT
MATCH EXISTING
BUTT JOINT REQ'D

TEWS LN

N72° 41' 36.79"E

1501.447

630

635

640

PROJECT NO: 4075-00-71

HWY: STH 96

COUNTY: WAUPACA

PLAN

SHEET

66

E

FILE NAME : \\WIS31FP1\N3PUBLIC\PDS\C3D\40750001\SHEETSPLAN\050201-PN.DWG
LAYOUT NAME - 12

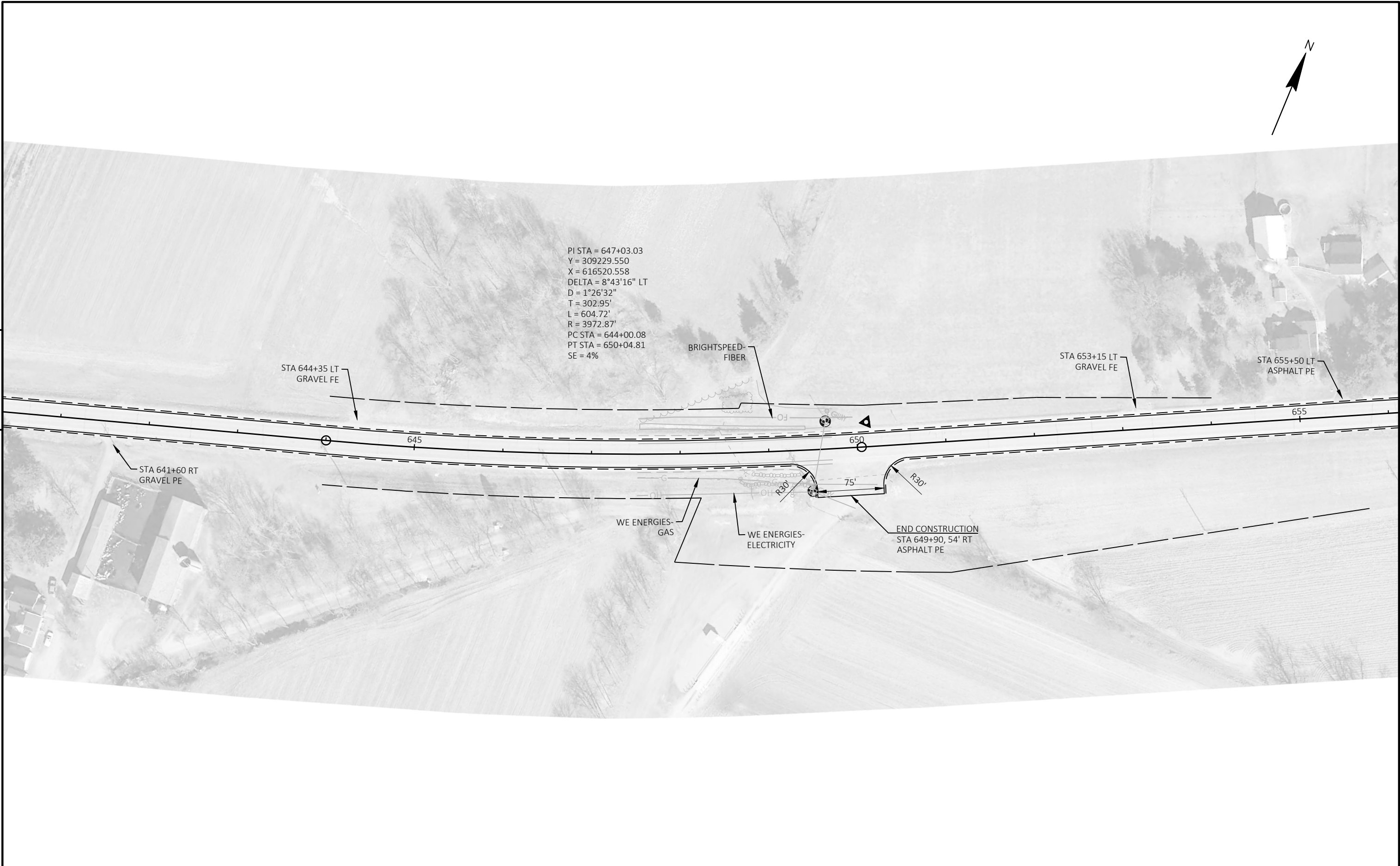
PLOT DATE : 6/29/2023 4:02 PM

PLOT BY : BUERGER, ANTHONY R

PLOT NAME :

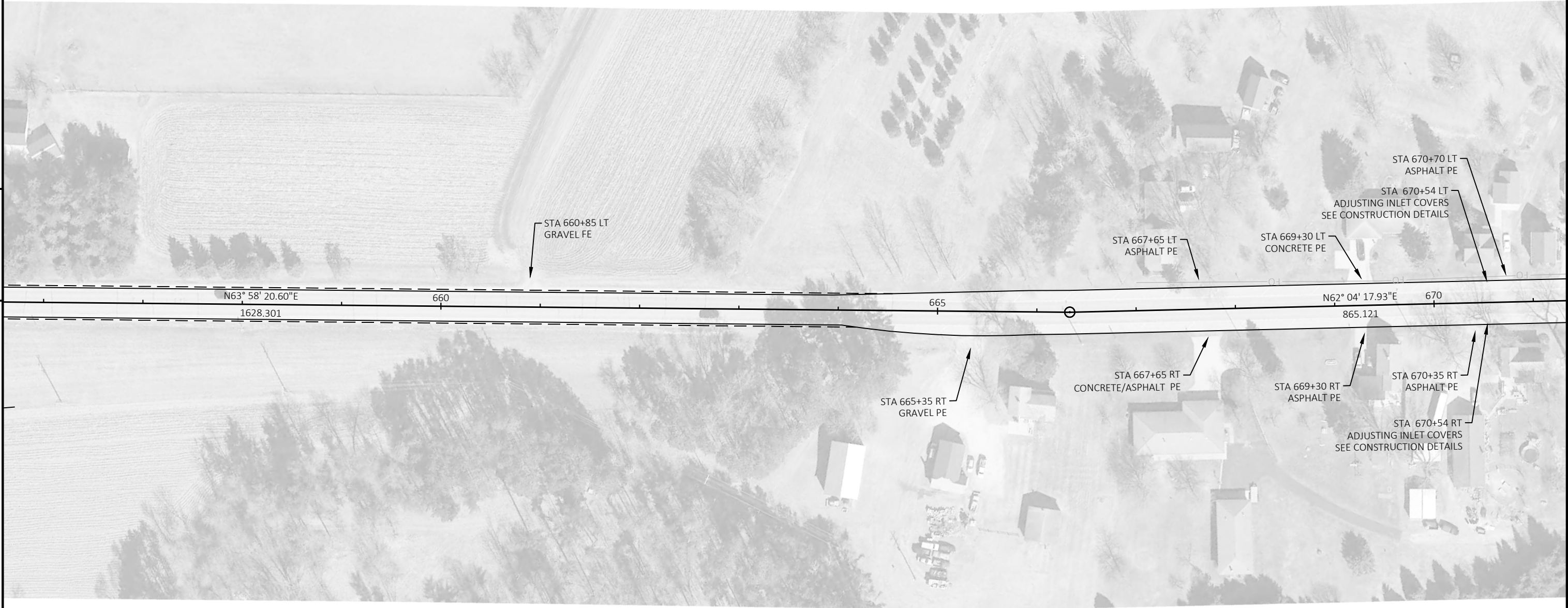
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WISDOT/CADDs SHEET 44



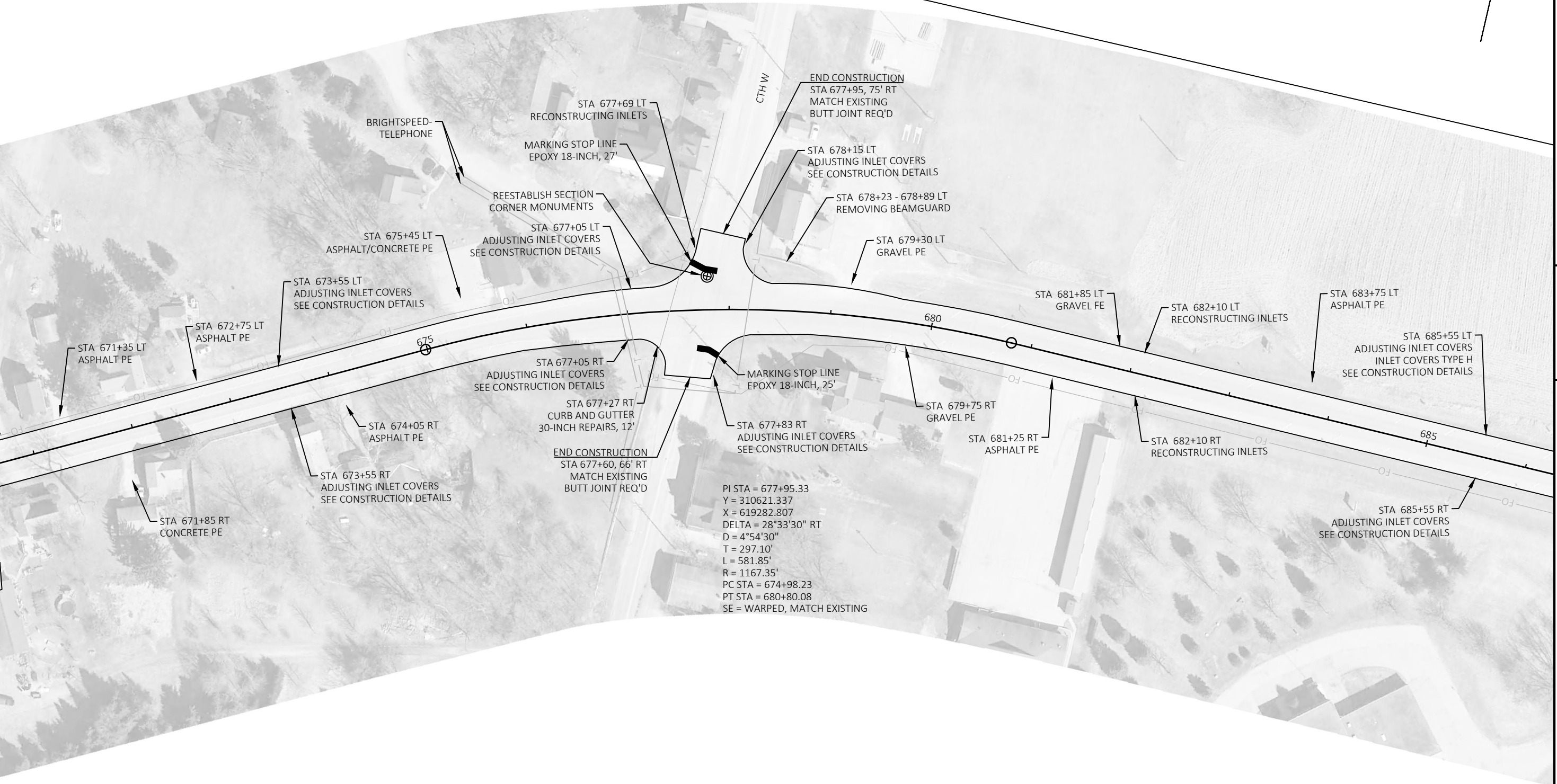


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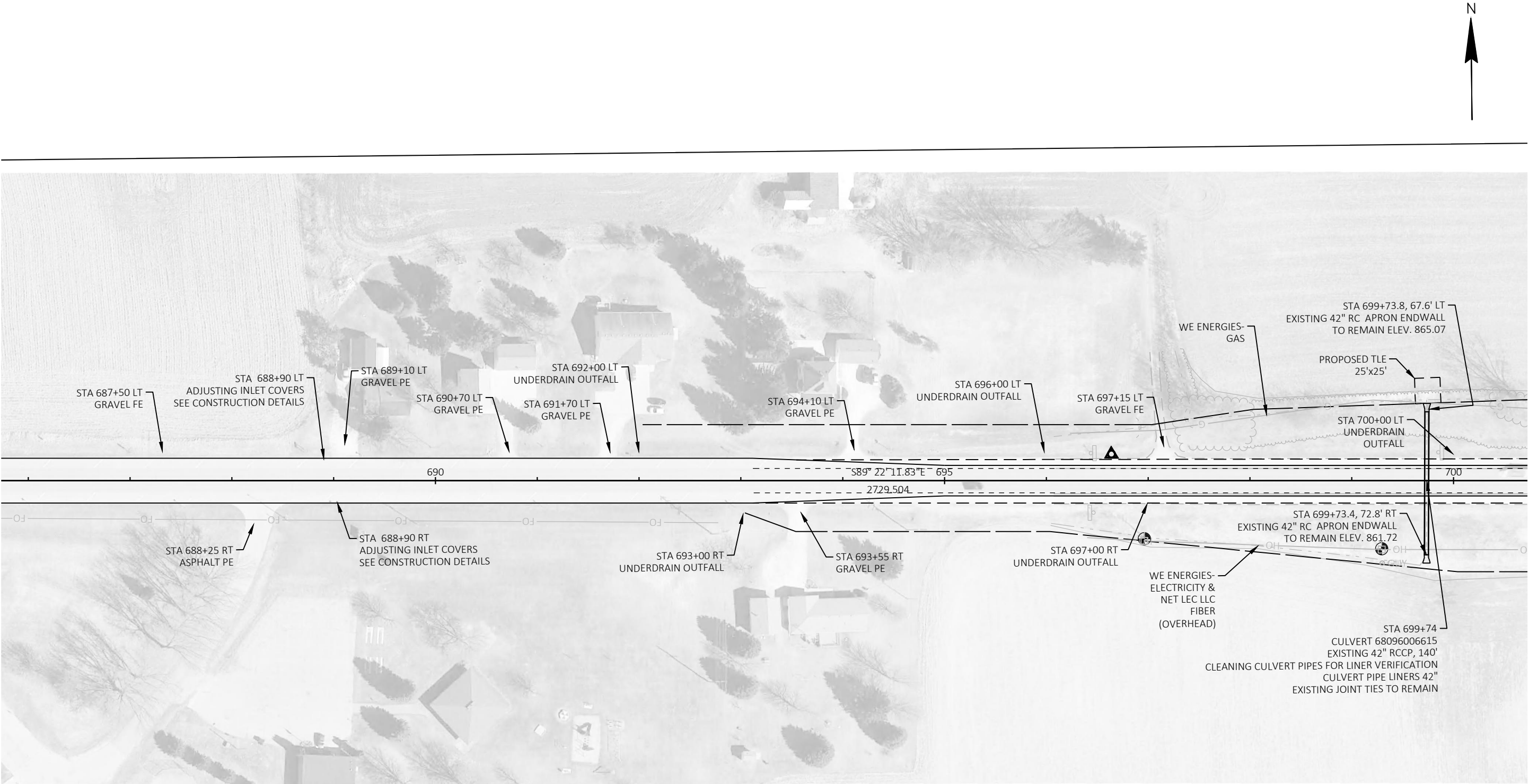
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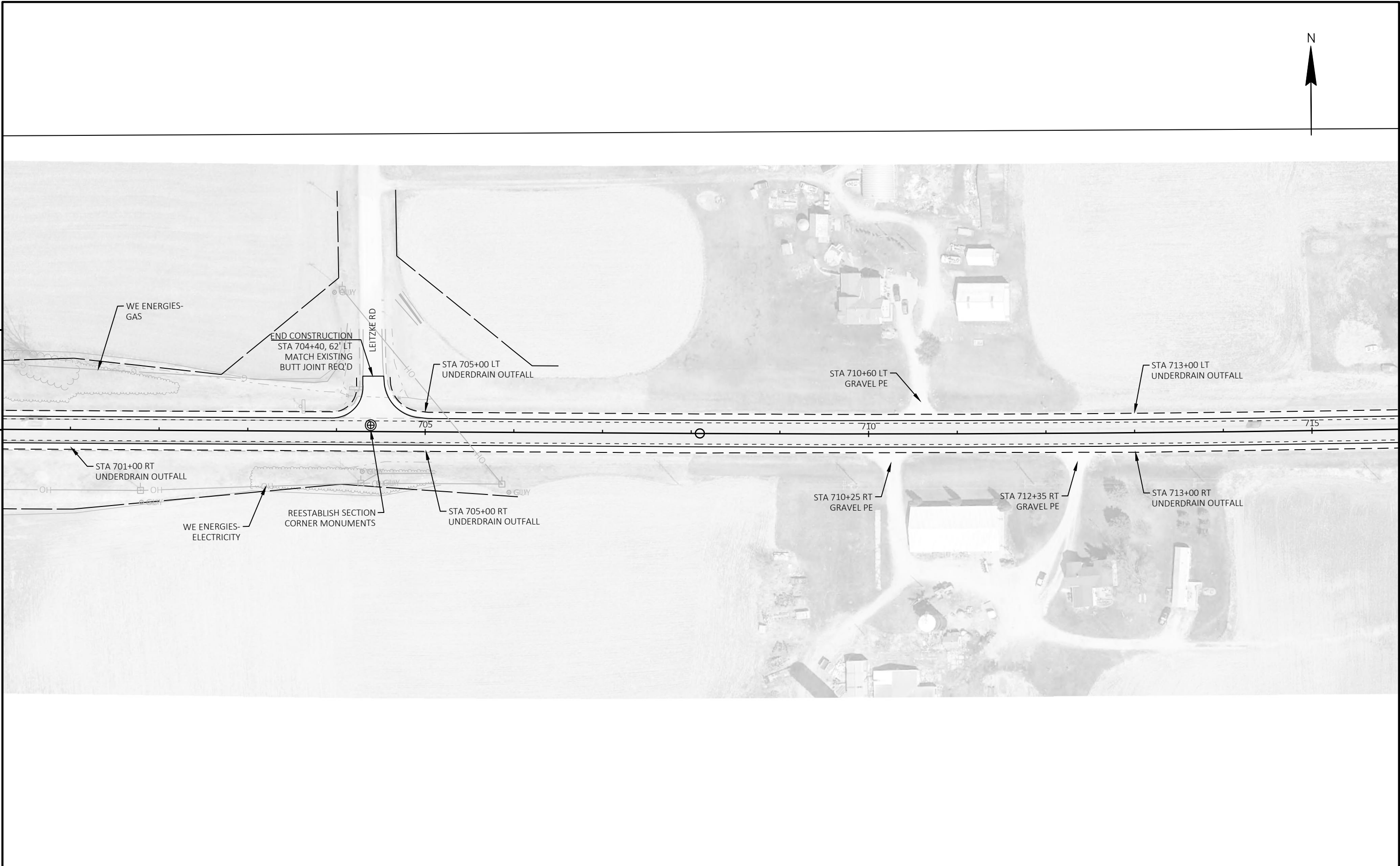


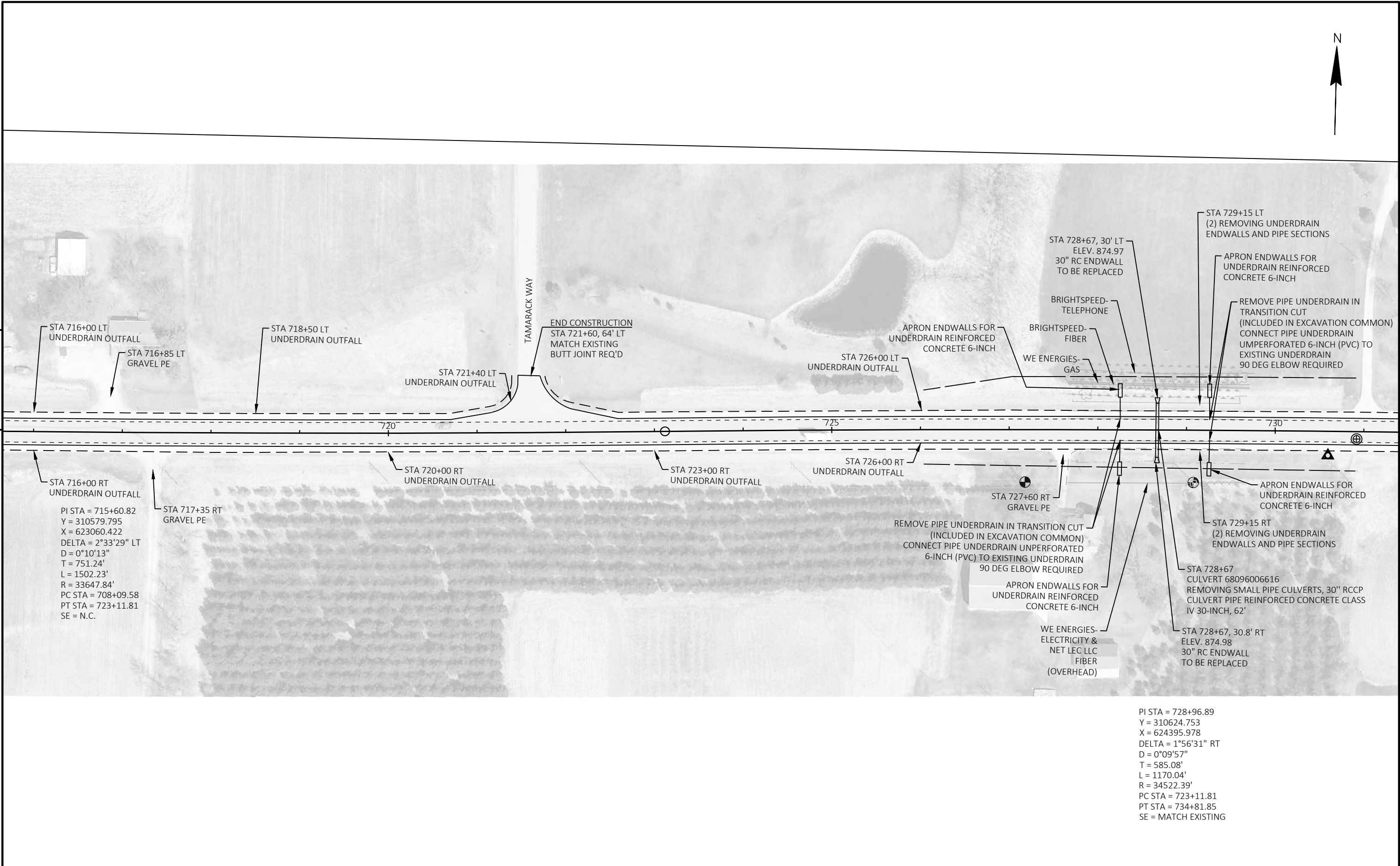
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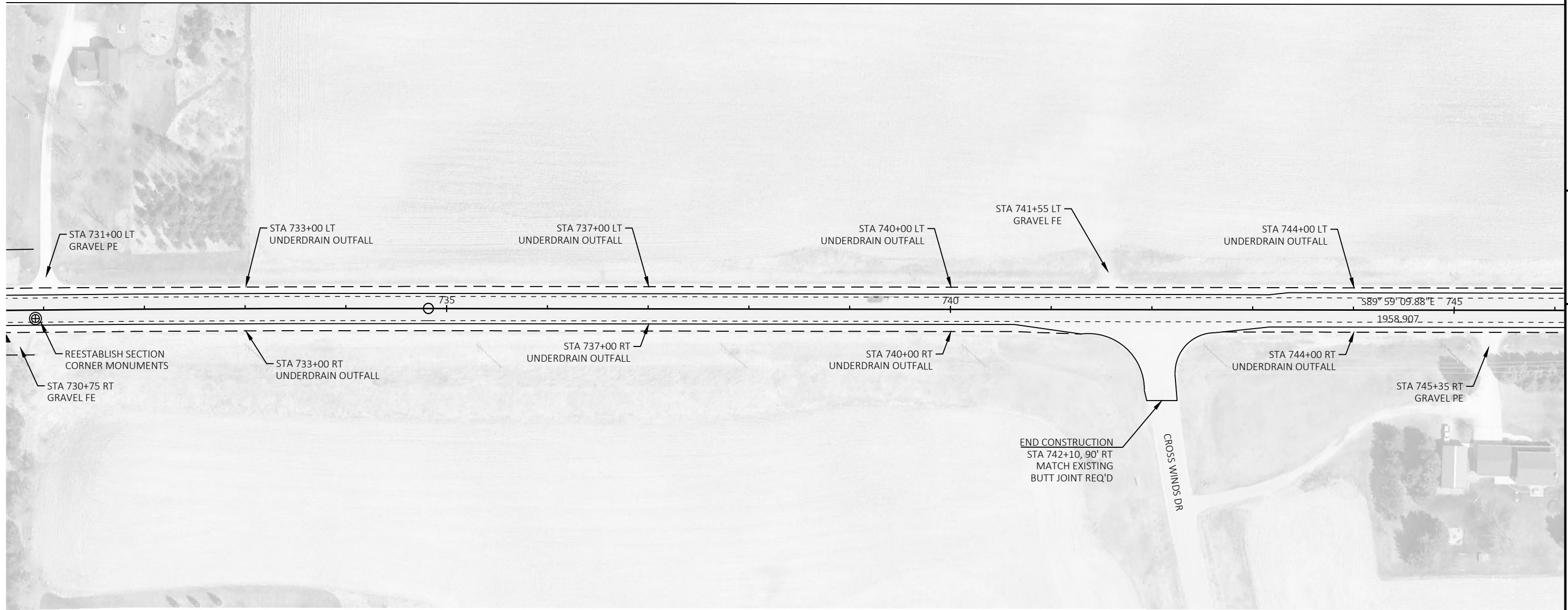
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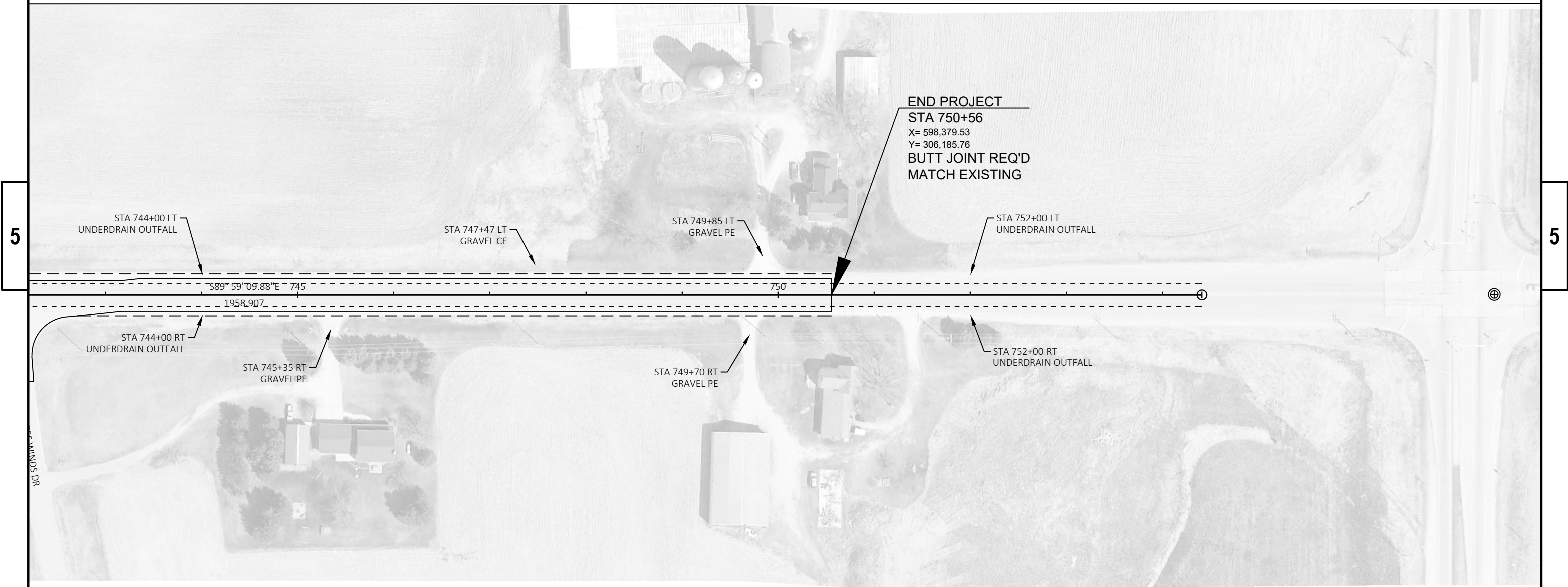


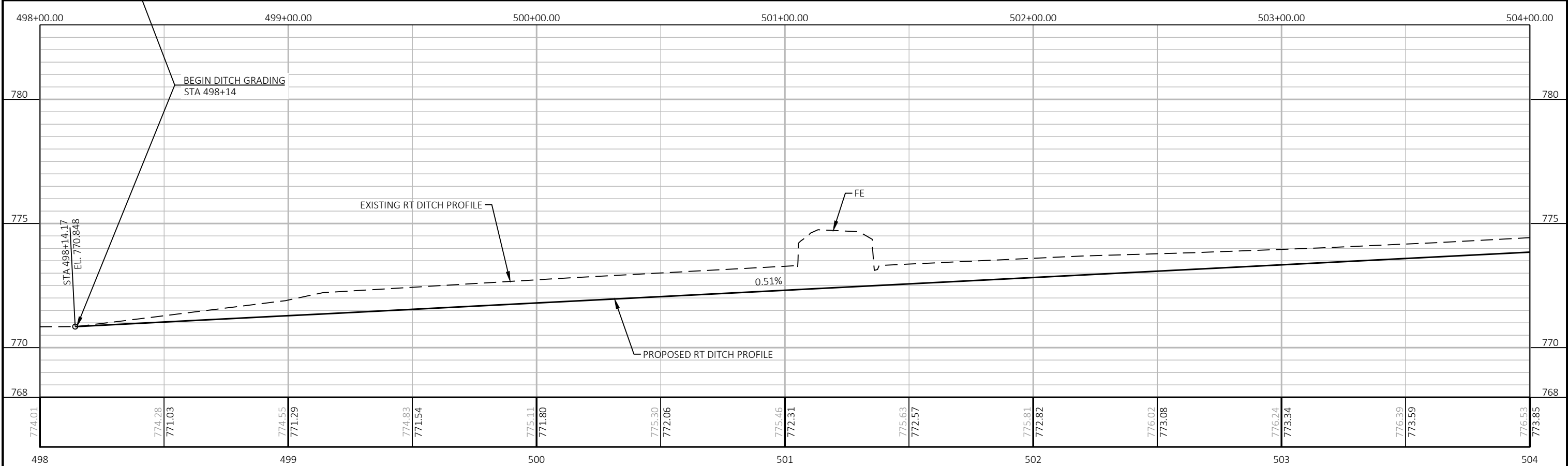
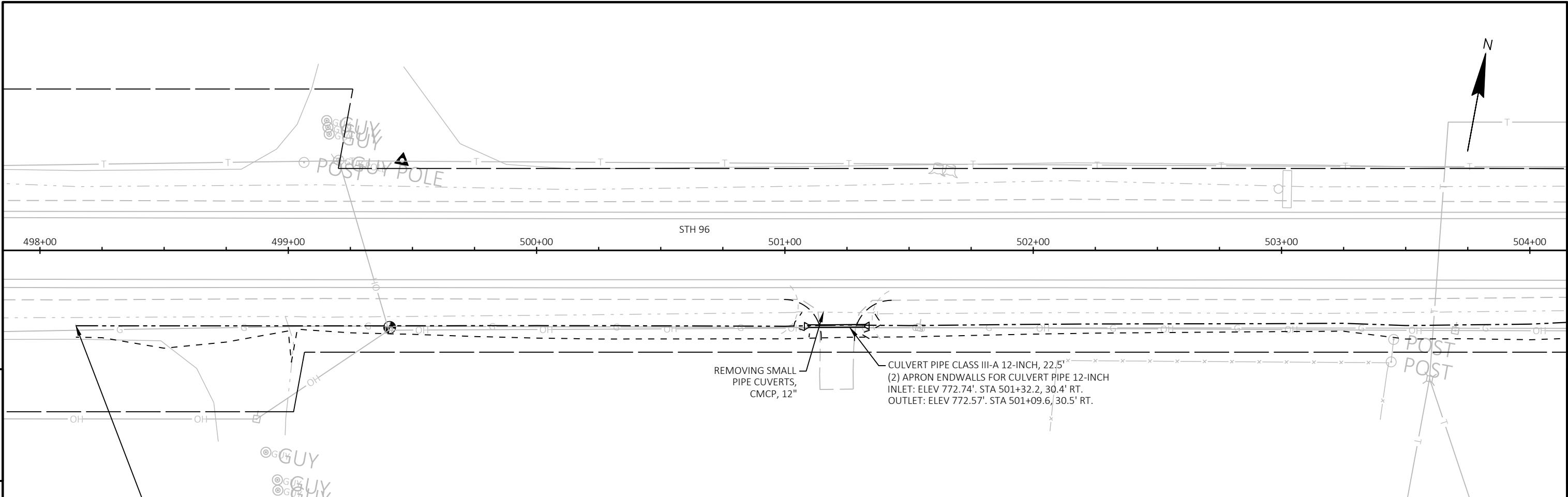




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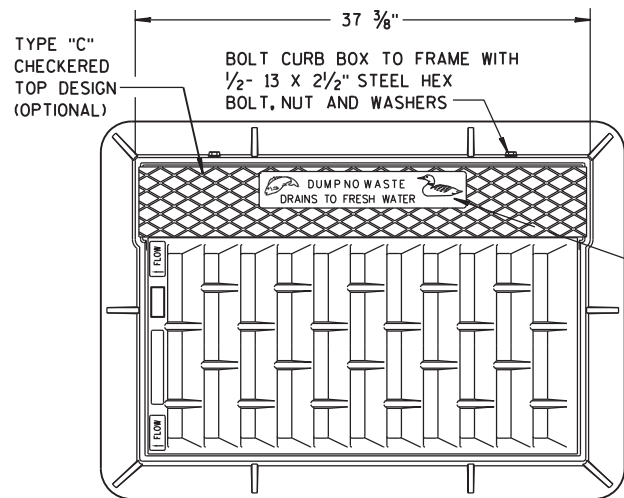
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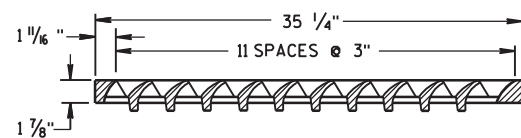
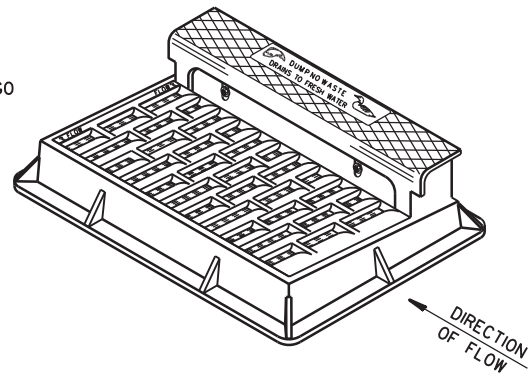


Standard Detail Drawing List

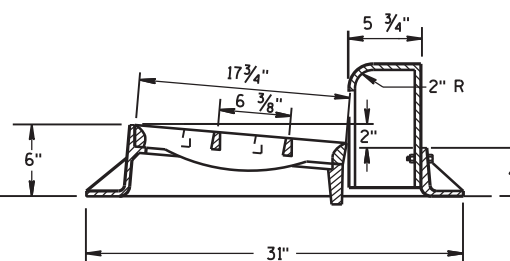
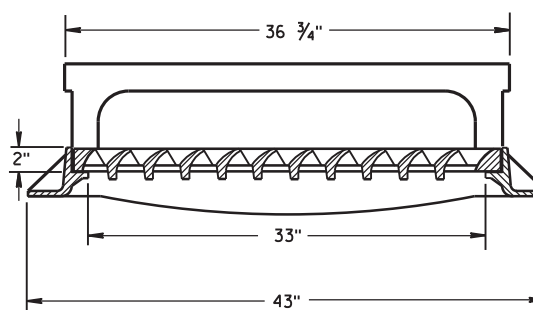
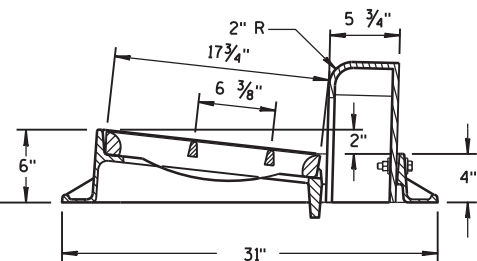
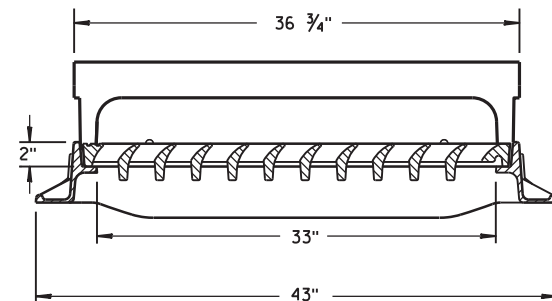
08A05-19A	INLET COVERS TYPE A, H, A-S, H-S & Z
08C06-02	INLETS 3-FT AND 4-FT DIAMETER
08D01-22A	CONCRETE CURB & GUTTER
08D01-22B	CONCRETE CURB, TIES AND CURB AND GUTTER APPLICATIONS
08D15-05A	EDGEDRAIN OUTLET AND OUTFALL MARKERS
08D15-05B	EDGEDRAIN AND BASE AGGREGATE OPEN GRADED
08D15-05C	EDGEDRAIN AND BASE AGGREGATE OPEN GRADED
08D21-01	DRIVEWAYS WITHOUT CURB & GUTTER
08D22-01	DRIVEWAYS WITHOUT CURB & GUTTER RESURFACING PROJECTS RURAL
08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
08E10-02	INLET PROTECTION TYPE A, B, C AND D
08E15-01	CULVERT PIPE CHECK
08F01-11	APRON ENDWALLS FOR CULVERT PIPE
08F02-01	APRON ENDWALLS FOR PIPE ARCH AND ELLIPTICAL PIPE
08F04-08	JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL
08F06-04	REINFORCED CONCRETE APRON ENDWALL FOR PIPE UNDERDRAIN
08F10-02	CONCRETE MASONRY ENDWALLS FOR CULVERT PIPE AND PIPE ARCH
13A11-03A	2-LANE RURAL CENTER LINE RUMBLE STRIP, MILLING
13A11-03B	2-LANE RURAL CENTER LINE RUMBLE STRIP, MILLING
13C19-03	HMA LONGITUDINAL JOINTS
14B29-01	SAFETY EDGE
15A03-02A	FLEXIBLE MARKER POST FOR CULVERT END
15A03-02B	FLEXIBLE MARKER POST FOR CULVERT END
15C04-05	TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 M.P.H. OR GREATER TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC
15C08-22A	LONGITUDINAL MARKING (MAINLINE)
15C08-22B	TEMPORARY LONGITUDINAL PAVEMENT MARKING
15C08-22C	PAVEMENT MARKING (TURN LANES)
15C08-22D	PAVEMENT MARKING (TURN LANES)
15C09-12A	SIGNING AND PAVEMENT MARKING DETAILS FOR RAILROAD-HIGHWAY GRADE CROSSINGS
15C11-10B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS
15C12-09A	TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION
15C19-07A	MOVING PAVEMENT MARKING OPERATION TWO-LANE TWO-WAY ROADWAY
15C19-07B	MOVING PAVEMENT MARKING OPERATION MULTI-LANE UNDIVIDED ROADWAY
15C33-04	STOP LINE AND CROSSWALK PAVEMENT MARKING
15C35-05A	PAVEMENT MARKING (INTERSECTIONS)
15D28-04	TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY
15D44-02	TRAFFIC CONTROL, SIGNING ON ROADWAYS WITH MILLED SURFACES
15D48-01	TRAFFIC CONTROL, LANE SHIFT IN FLAGGING OPERATION
15D51-01	TRAFFIC CONTROL, MOBILE OPERATIONS ON AN UNDIVIDED ROADWAY
16A01-07	LANDMARK REFERENCE MONUMENTS AND COVERS



NOTE:
GRATE IS REVERSIBLE.

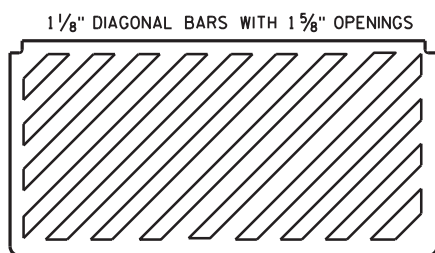


NOTE: CURB BOX HEIGHT ADJUSTABLE 6" TO 9"

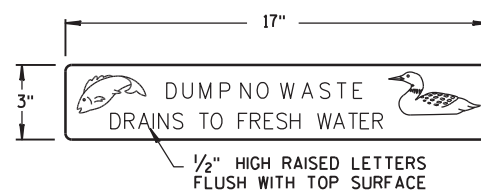


TYPE "H"

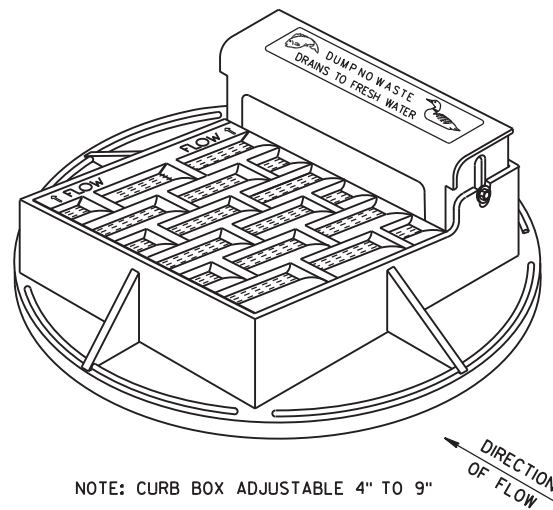
NOTE: EITHER CASTING IS ACCEPTABLE



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

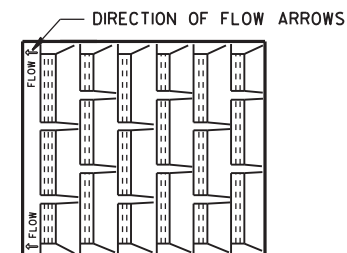


LOGO DETAIL

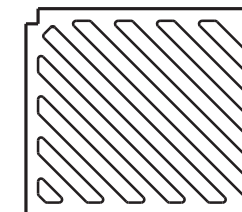


NOTE: CURB BOX ADJUSTABLE 4" TO 9"

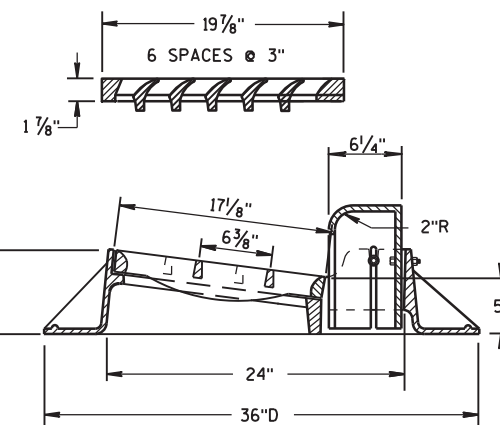
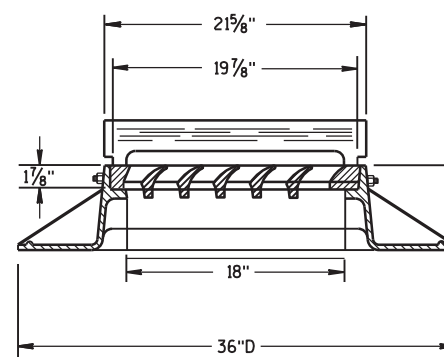
NOTE:
GRATE IS REVERSIBLE.



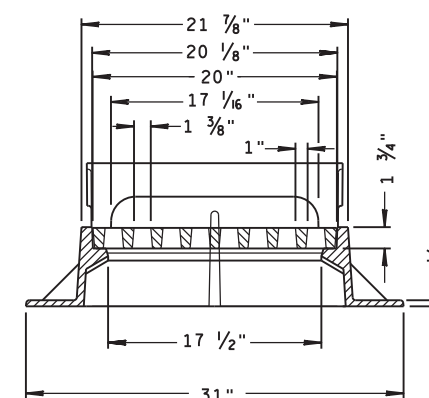
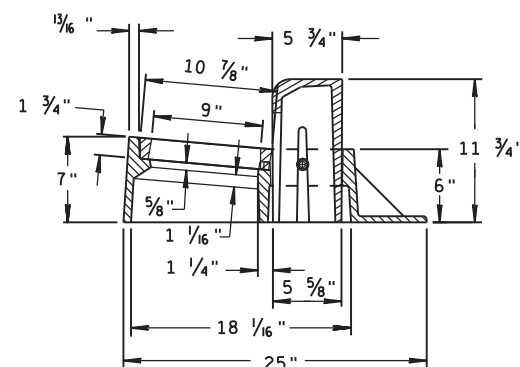
1" DIAGONAL BARS
WITH 1 1/2" OPENINGS



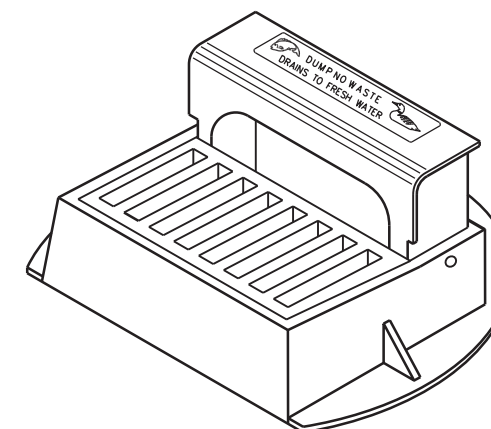
SPECIAL GRATE FOR
TYPE "A" COVER
(MEASURES 19 3/4" X 17" X 1 1/8")
(NOTED AS TYPE A-S ON DRAINAGE TABLE)



TYPE "A"



TYPE "Z"

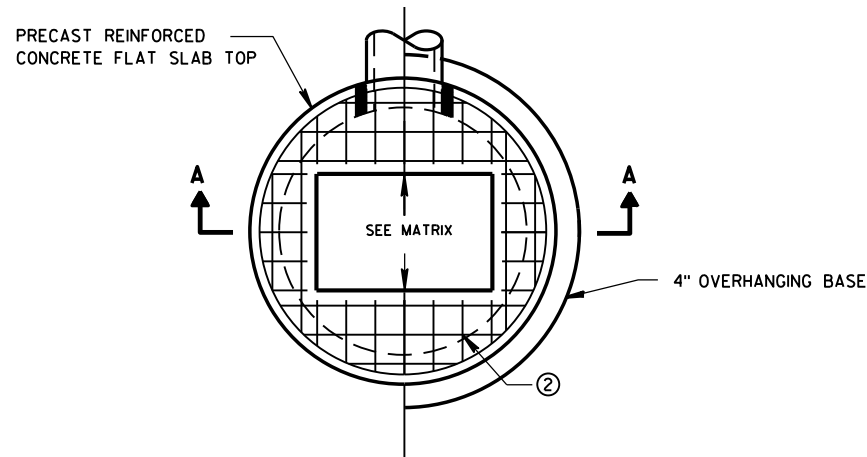


INLET COVERS
TYPE A, H, A-S, H-S & Z

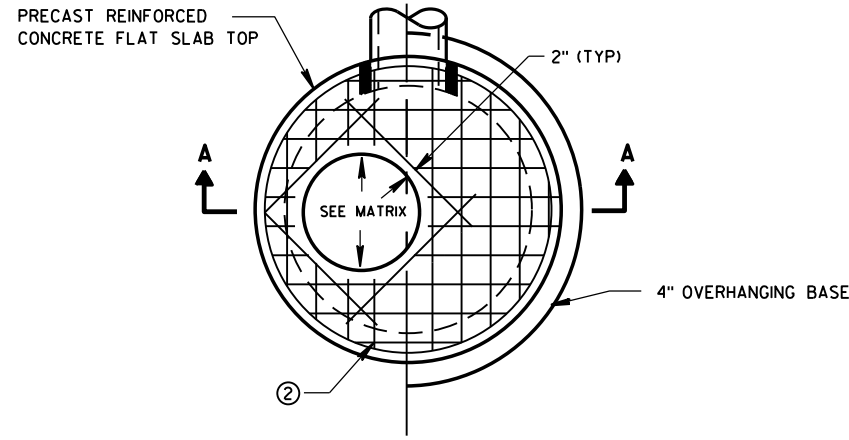
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
11-27-13
DATE
FHWA

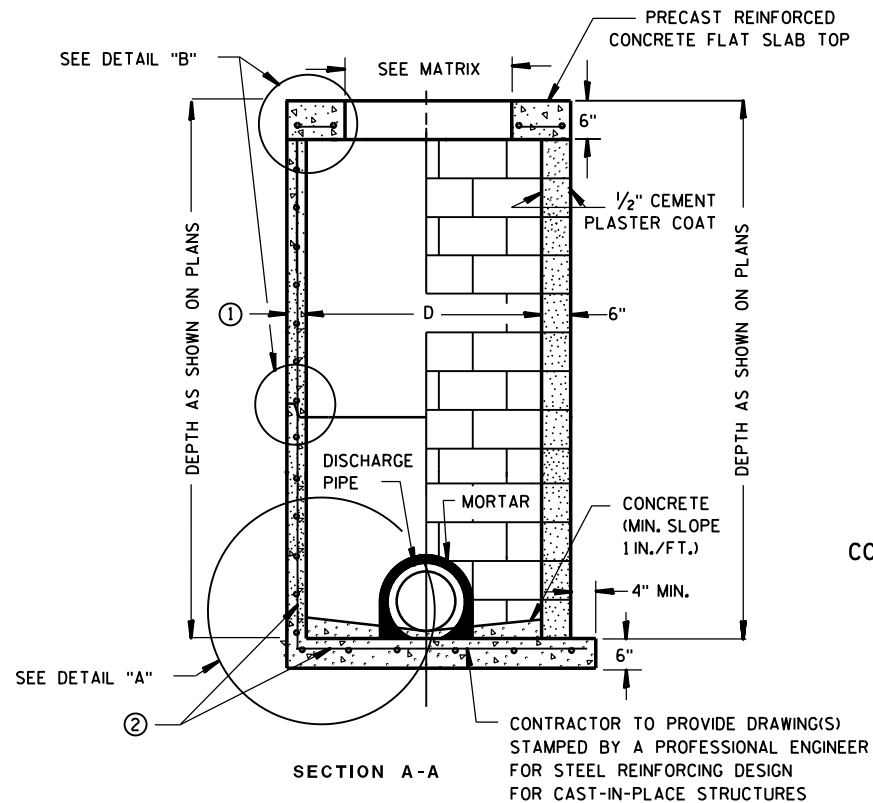
/S/ Jerry H. Zogg
ROADWAY STANDARDS ENGINEER
78 ENT



PLAN VIEW RECTANGULAR OPENING

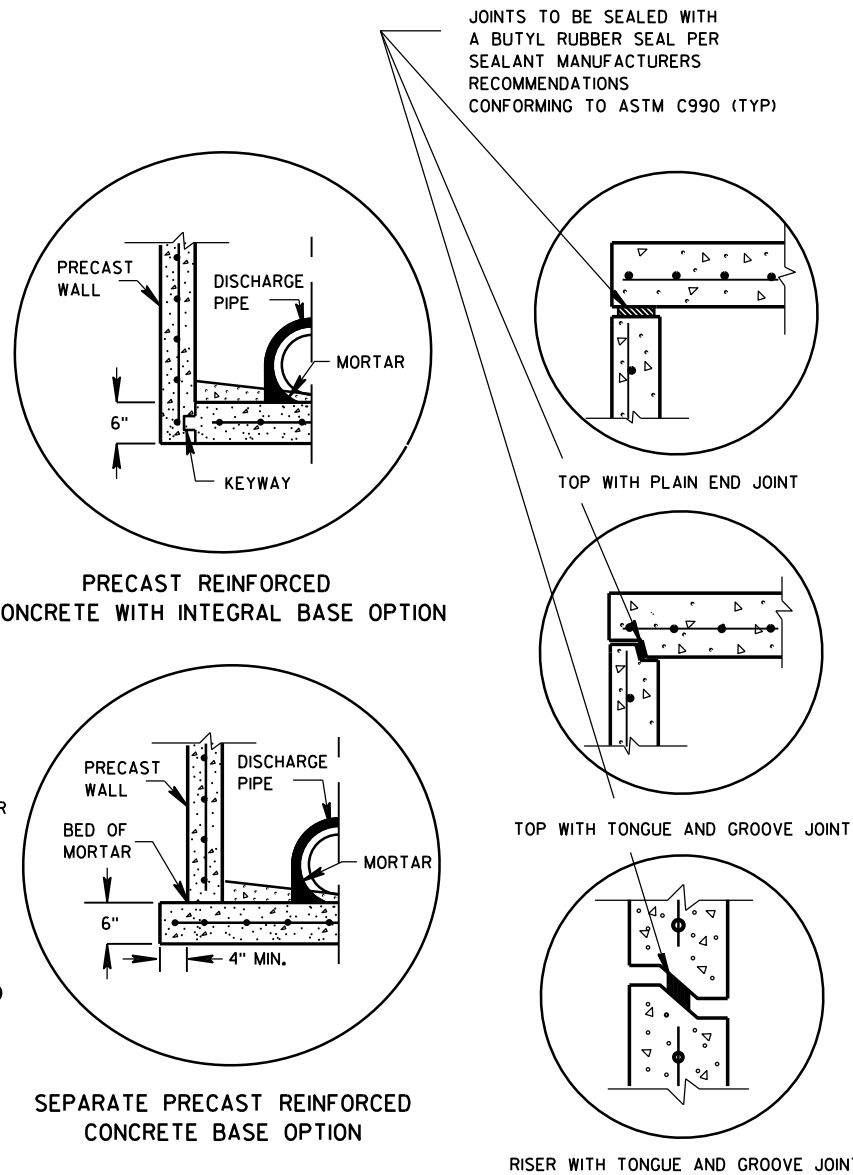


PLAN VIEW CIRCULAR OPENING



PRECAST REINFORCED CONCRETE WITH MONOLITHIC BASE **CONCRETE BLOCK WITH CAST-IN-PLACE OR PRECAST REINFORCED CONCRETE BASE ②**

CIRCULAR INLETS W/ FLAT TOP



DETAIL "A"

DETAIL "B"

INLETS 3-FT AND 4-FT DIAMETER

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 DRAINAGE STRUCTURES ARE DESIGNATED ON THE PLANS AS "MANHOLES 3X3-L", "CATCH BASINS 4-B", "INLETS 2X3-H", ETC. THE FIRST NUMBERS DESIGNATE 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.

ALL PRECAST INLET UNITS SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF AASHTO DESIGNATION M199.

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

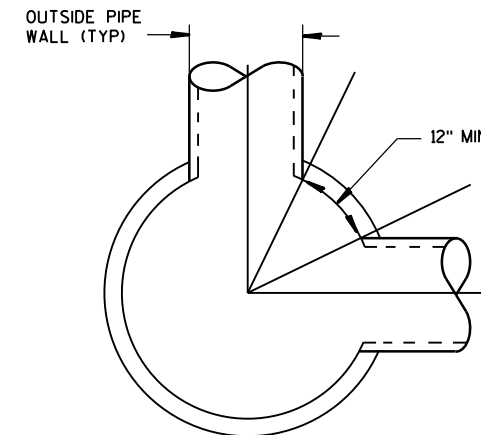
4" OVERHANGING BASES ARE REQUIRED FOR ALL CONCRETE BLOCK INSTALLATIONS. 4" OVERHANG IS REQUIRED WHEN SEPARATE PRECAST BASE IS PROVIDED. OVERHANG IS NOT REQUIRED ON PRECAST STRUCTURES WITH AN INTEGRAL OR MONOLITHIC BASE.

FOR ADDITIONAL CONFIGURATIONS, MAINTAIN A MINIMUM OF 12 INCHES AS MEASURED FROM THE INSIDE OF THE STRUCTURE WALL BETWEEN THE OUTSIDE PIPE WALLS OF ADJACENT PIPES. SEE DETAIL "C".

- ① MINIMUM WALL THICKNESS SHALL BE 4-IN FOR 3-FT DIAMETER AND 5-IN FOR 4-FT DIAMETER PRECAST INLETS.
- ② FOR PRECAST CATCH BASINS PROVIDE REINFORCING STEEL IN ACCORDANCE TO AASHTO M199.

INLET COVER OPENING MATRIX

	INLET COVER TYPE	ALL A'S	ALL B'S	BW	C	F	ALL H'S	S	T	V	WM	Z
INLET SIZE	OPENING SIZE (FT)											
3-FT	2 DIA.				X							X
	2X2	X	X					X		X		
4-FT	2 DIA.				X							X
	2X2	X	X					X		X		
	2X2.5			X				X	X	X	X	
	2X3						X					
	2.5X3					X						



DETAIL "C"

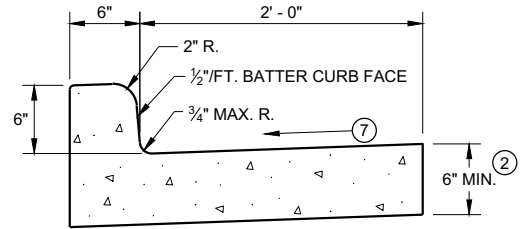
PIPE MATRIX

INLET SIZE	MAXIMUM INSIDE PIPE DIAMETER FOR TWO PIPES	
	180° SEPARATION (IN)	90° SEPARATION (IN)
3-FT	15	12
4-FT	24	18

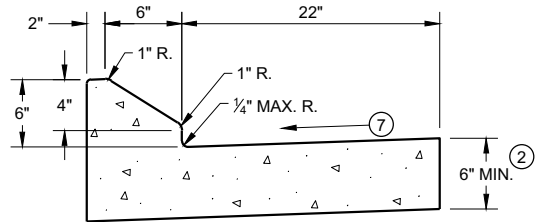
INLETS 3-FT AND 4-FT DIAMETER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

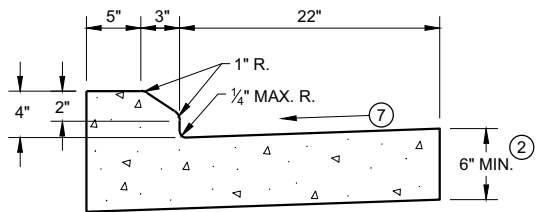
APPROVED
Sept., 2016 /S/ Rodney Taylor
DATE ROADWAY STANDARDS UNIT SUPERVISOR
FHWA 79 ENT



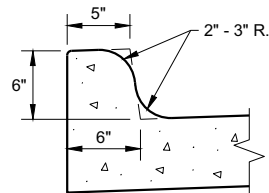
TYPES A^① & D



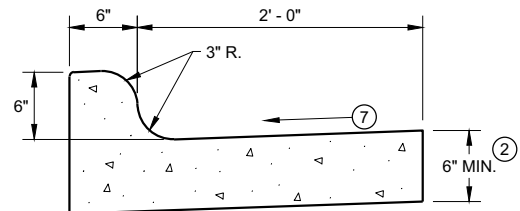
6" SLOPED CURB TYPES G^① & J



4" SLOPED CURB TYPES G^① & J

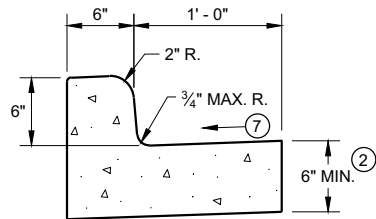


TYPES K^① & L
(OPTIONAL CURB SHAPE)



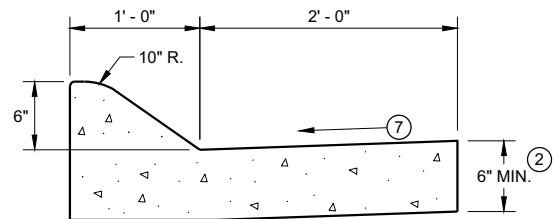
TYPES K^① & L

CONCRETE CURB AND GUTTER 30"

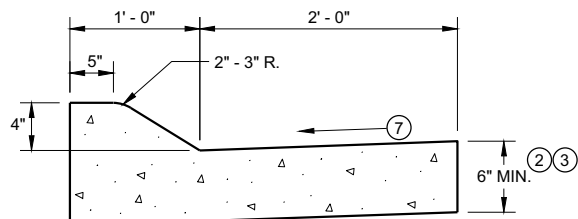


TYPES A^① & D

CONCRETE CURB AND GUTTER 18"

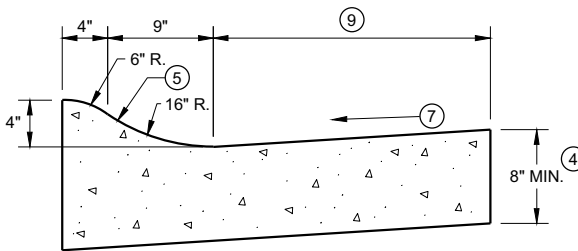


6" SLOPED CURB TYPES A^① & D



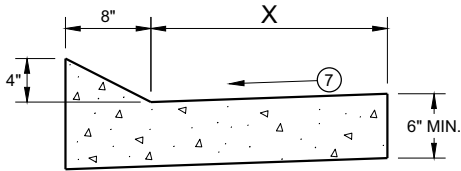
4" SLOPED CURB TYPES A^① & D

CONCRETE CURB AND GUTTER 36"



4" SLOPED CURB TYPES R^① & T

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

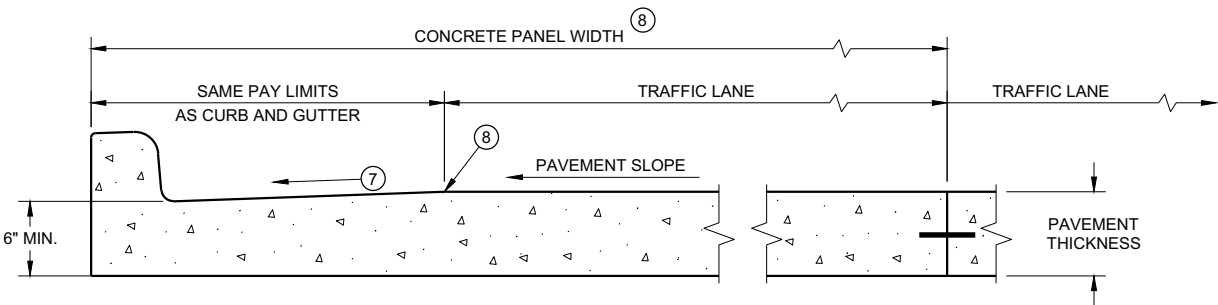


TYPES TBT & TBTT^①

CONCRETE CURB AND GUTTER

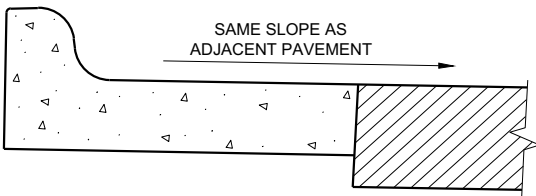
PAVEMENT THICKNESS
AND MAXIMUM CONCRETE
PANEL WIDTH TABLE

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



PARTIAL SECTION OF PAVEMENT *
WITH INTEGRAL CURB AND GUTTER

* BIKE LANE IS NOT SHOWN



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

GENERAL NOTES

DETAILS OF CONSTRUCTION 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.

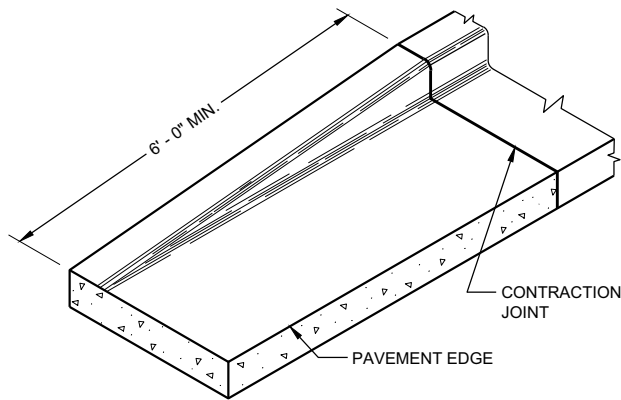
INTEGRAL CURB AND GUTTER SHALL CONFORM TO THE DETAILS SHOWN FOR CONCRETE CURB AND GUTTER INCLUDING THE TRANSVERSE GUTTER SLOPE.

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

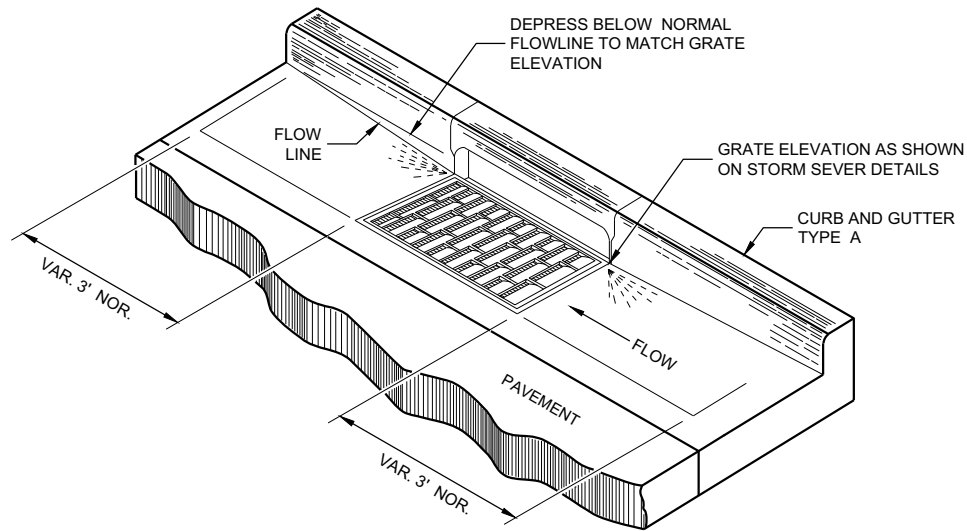
- ① TIE BARS ARE REQUIRED FOR CURB AND GUTTERS TYPES A, G, K, R, AND TBTT.
- ② THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 6" MINIMUM GUTTER THICKNESS IS MAINTAINED.
- ③ USE 8" MINIMUM GUTTER THICKNESS WHEN USED WITH 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 UNLESS OTHERWISE NOTED, FOR STAKING PURPOSES 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.
- ⑨ CONCRETE CURB AND GUTTER 4-INCH SLOPED 30-INCH TYPE "R" AND "T" = 17 INCHES
CONCRETE CURB AND GUTTER 4-INCH SLOPED 36-INCH TYPE "R" AND "T" = 23 INCHES

CONCRETE CURB AND GUTTER

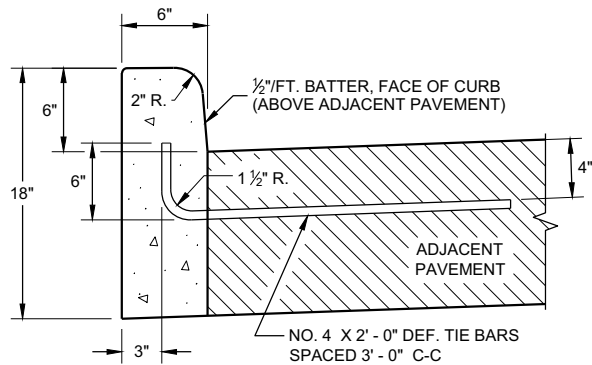
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



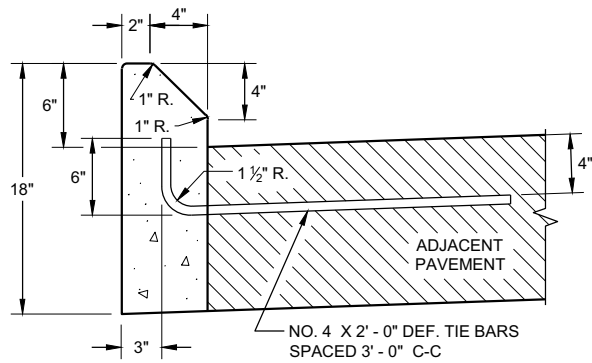
END SECTION CURB AND GUTTER



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

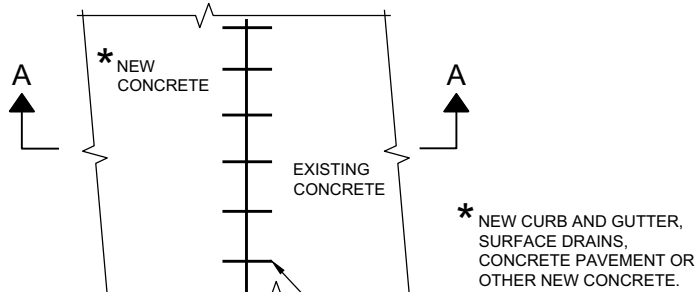


TYPES A^① & D

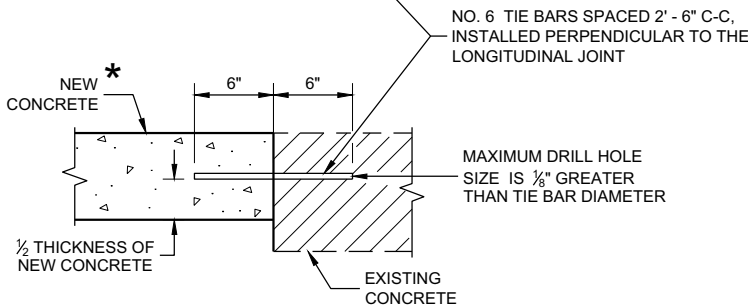


TYPES G^① & J

CONCRETE CURB



PLAN VIEW



SECTION A - A

TIE BARS DRILLED
INTO EXISTING PAVEMENT

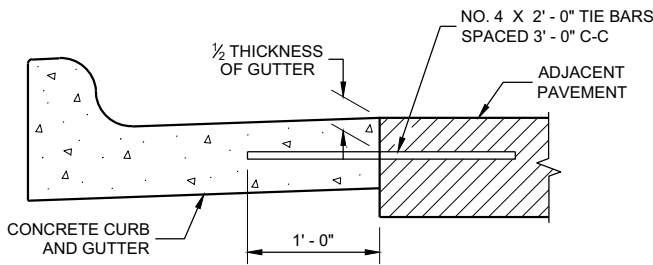
GENERAL NOTES

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

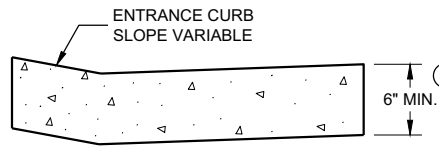
PAVEMENT TIES AND TIE BARS SHALL BE EPOXY COATED IN CONFORMANCE WITH SUBSECTION 505.2.6.2 OF THE STANDARD SPECIFICATIONS.

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

- ① TIE BARS ARE REQUIRED FOR CURB AND GUTTERS 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.
- ⑨ REFER TO SDD 08D18 AND 08D19 FOR ADDITIONAL DRIVEWAY ENTRANCE CURB DETAILS.



TYPICAL TIE BAR LOCATION^①

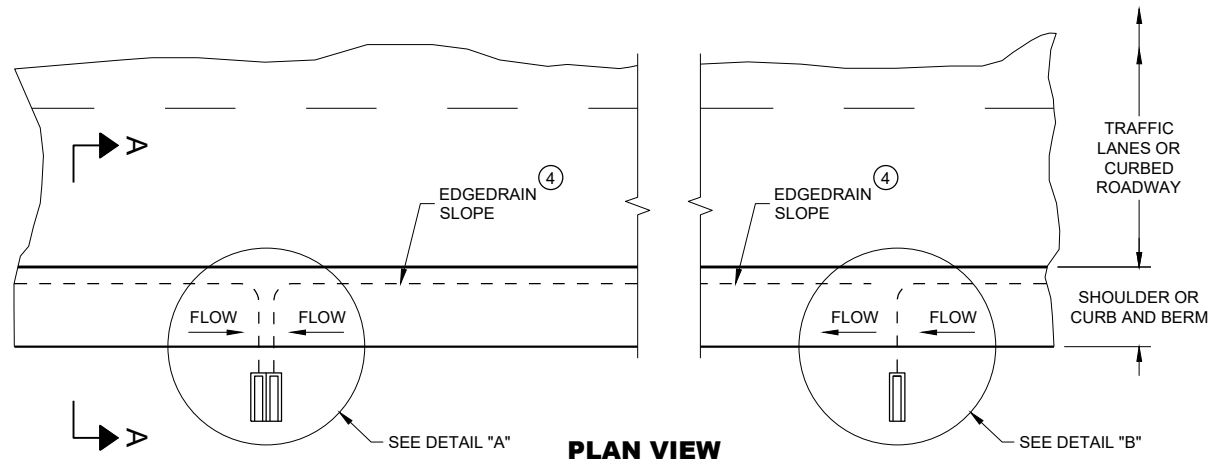


DRIVEWAY ENTRANCE CURB^⑨
(WHEN DIRECTED BY THE ENGINEER)

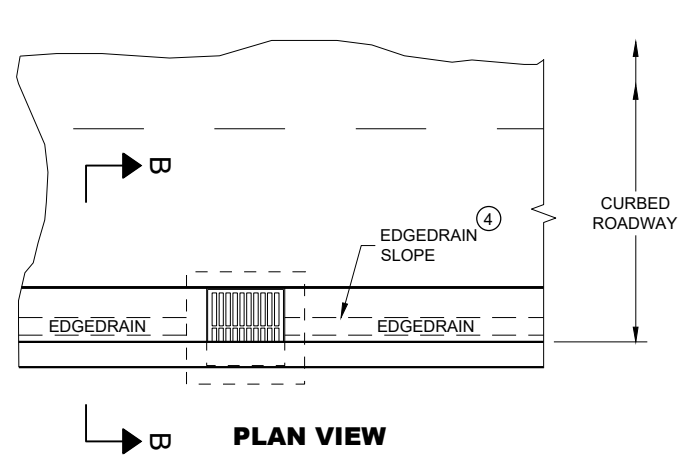
CONCRETE CURB, TIES
AND CURB AND GUTTER
APPLICATIONS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

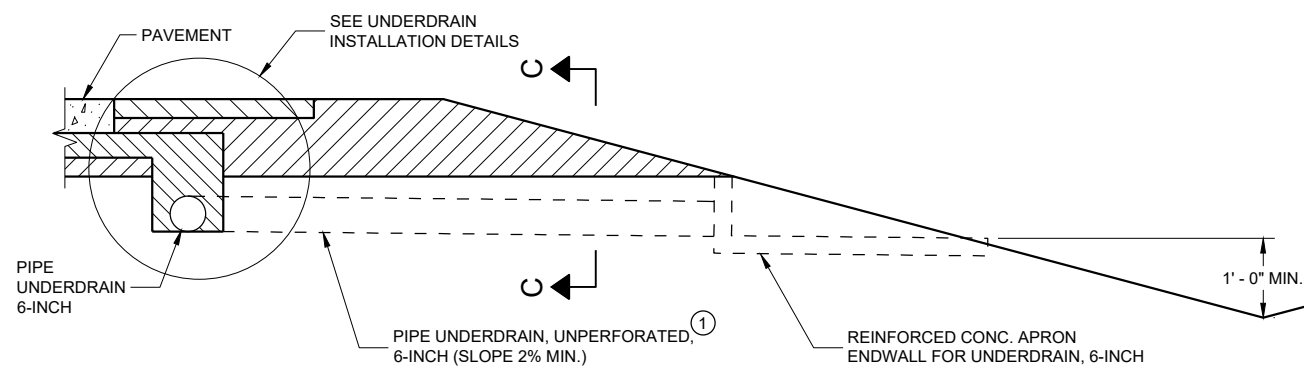
APPROVED
February 2021 /S/ Rodney Taylor
DATE ROADWAY STANDARDS DEVELOPMENT ENGINEER 81
FHWA



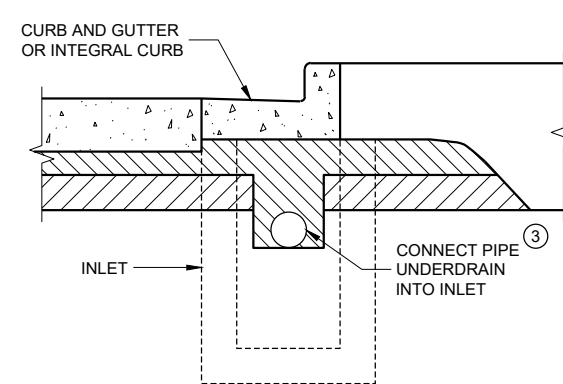
**ROADWAY WITH SHOULDERS OR CURBS
(EDGEDRAIN CONNECTS TO ROADSIDE) ②**



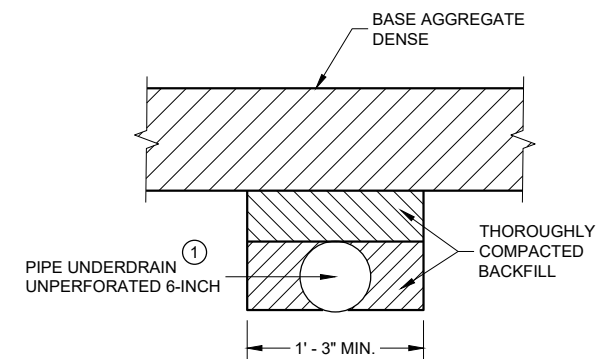
**ROADWAY WITH CURBS
(EDGEDRAIN CONNECTS INTO INLET STRUCTURE)**



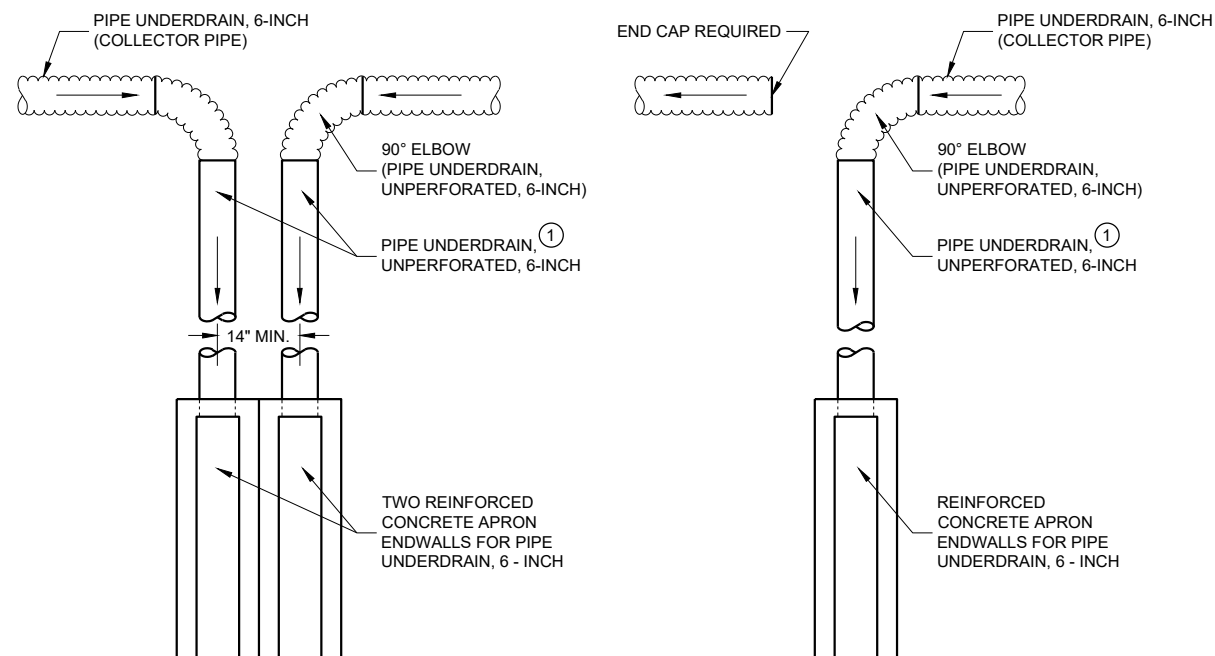
**SECTION A - A
RURAL CROSS SECTION**



**SECTION B - B
URBAN CROSS SECTION**



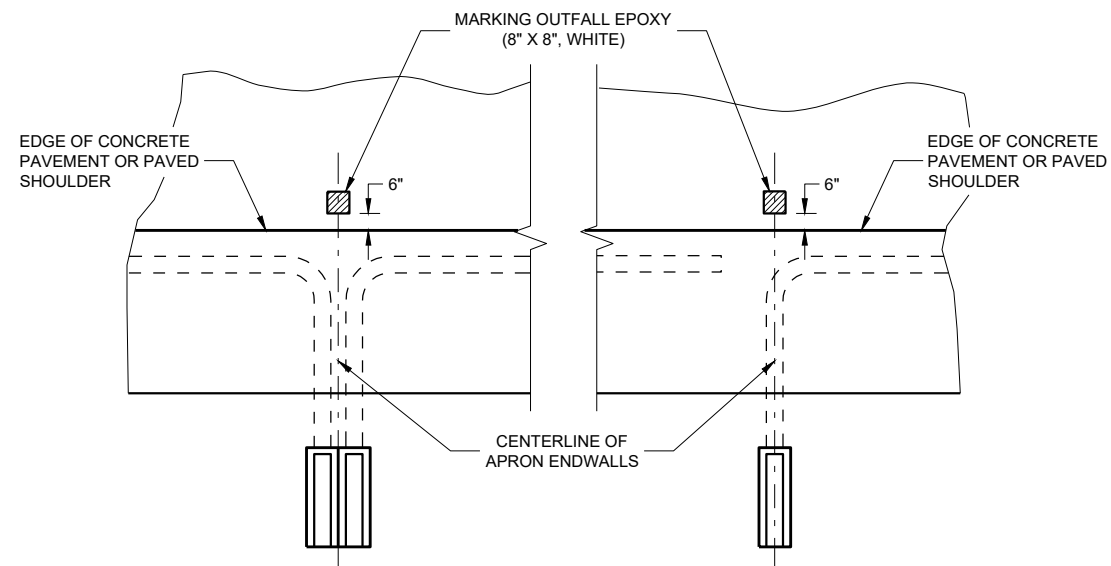
**SECTION C - C
TRENCH FOR OUTFALL PIPE**



DETAIL "A"
TO BE USED AT LOW POINT LOCATIONS

DETAIL "B"
TO BE USED AT INTERMEDIATE LOCATIONS

TYPICAL DRAIN OUT DETAILS



PAVEMENT MARKINGS FOR OUTFALL MARKERS

GENERAL NOTES

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

- ① UNPERFORATED PIPE UNDERDRAIN AND FITTINGS FURNISHED FOR OUTFALL PIPE SHALL MEET THE REQUIREMENTS OF ONE OF THE FOLLOWING SPECIFICATIONS:

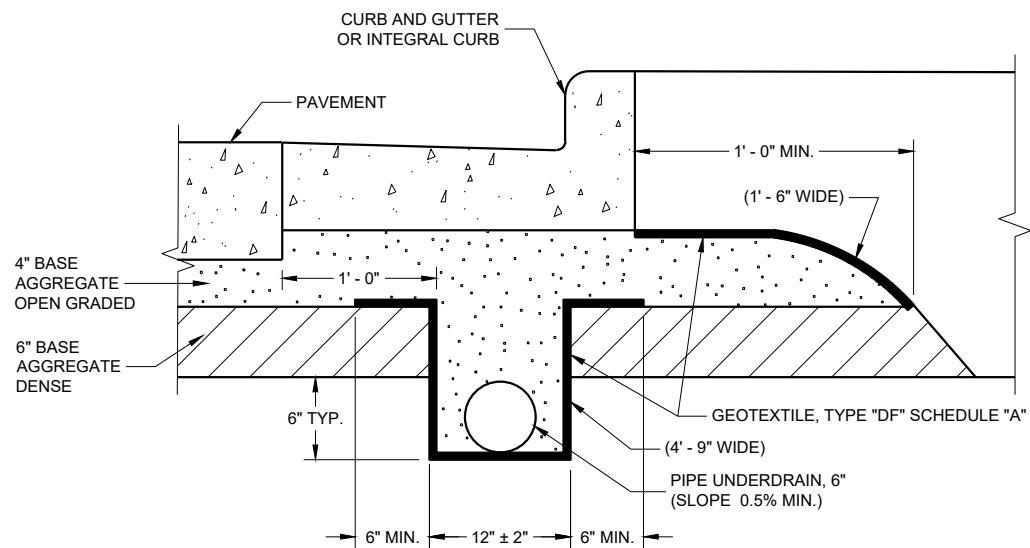
POLYVINYL CHLORIDE (PVC) PLASTIC DRAIN, WASTE, AND VENT PIPE AND FITTINGS, ASTM D 2665, SCHEDULE 40 PVC.

TYPE PSM POLYVINYL CHLORIDE (PVC) SEWER PIPE AND FITTINGS, ASTM D 3034, SDR 23.5 PVC SEWER PIPE.

- ② MAXIMUM SPACING OF EDGEDRAIN OUTLETS SHALL BE 250 FEET UNLESS OTHERWISE SPECIFIED IN THE CONTRACT OR DIRECTED BY THE ENGINEER.
- ③ EDGEDRAIN SHALL BE CONNECTED TO INLETS REGARDLESS OF FLOW DIRECTION FOR DRAINAGE AND MAINTENANCE ACCESS.
- ④ EDGEDRAIN SHALL BE LAID PARALLEL TO THE GRADE OF ROADWAY.

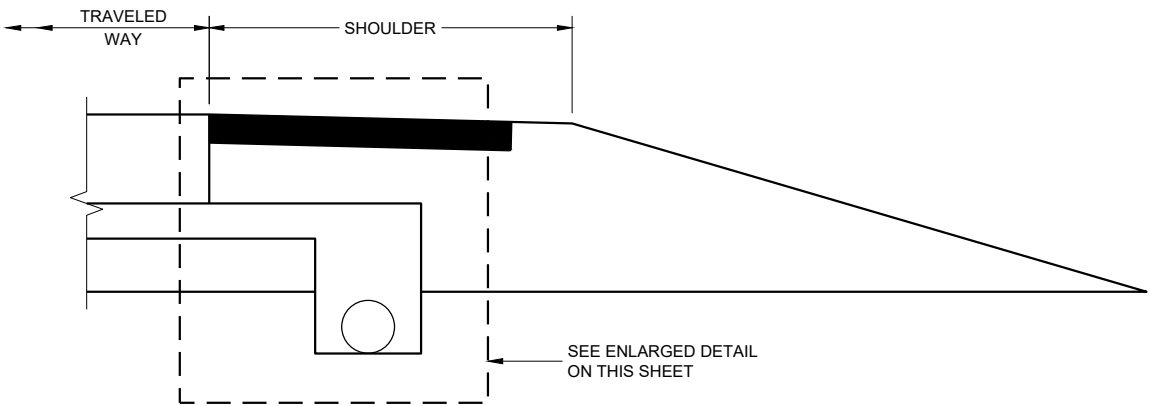
**EDGEDRAIN OUTLET
AND OUTFALL MARKERS**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



EDGEDRAIN IN URBAN ROADWAY

②



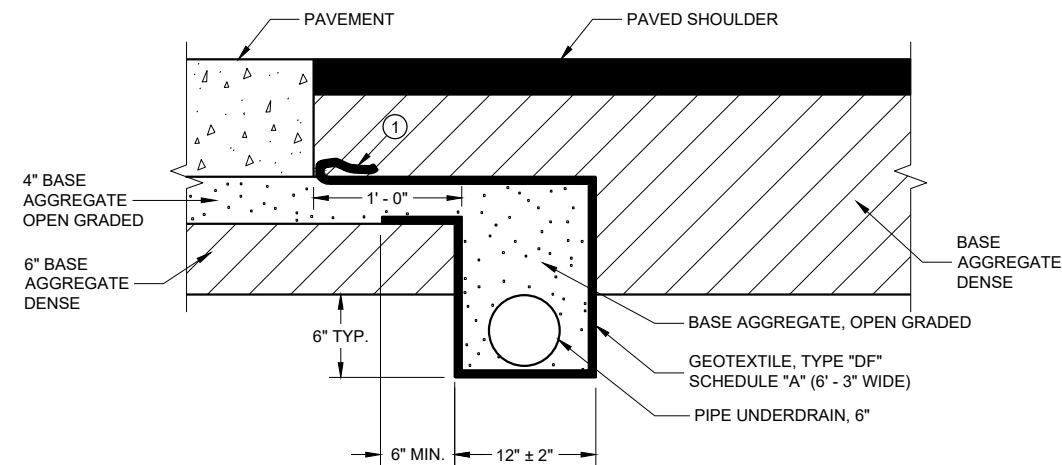
RURAL CROSS SECTION

GENERAL NOTES

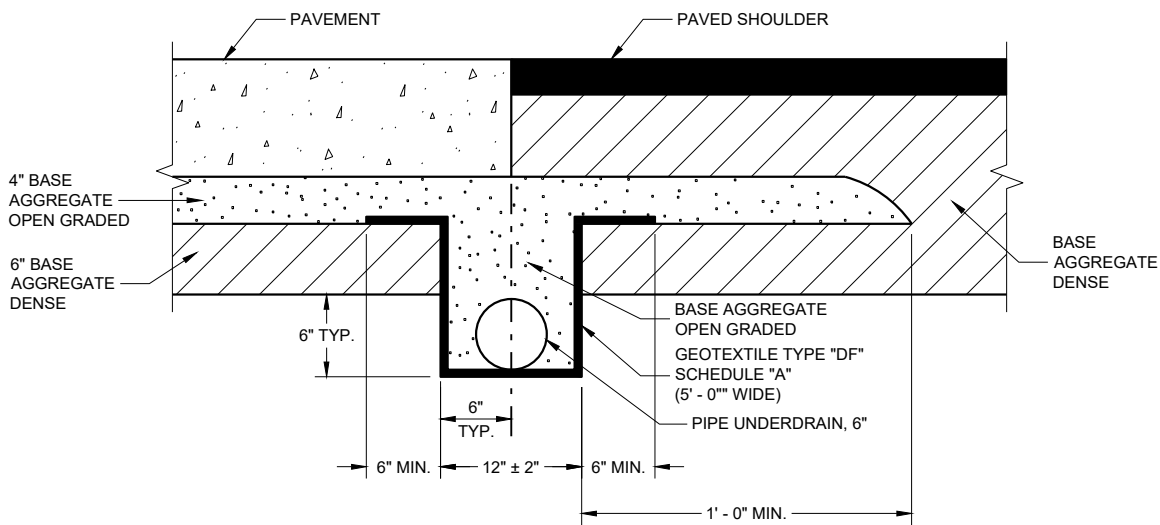
THE DIMENSIONS SHOWN ON THE TYPICAL CROSS SECTIONS WILL GOVERN IN THE EVENT THERE IS A CONFLICT WITH THE DETAILS SHOWN ON THIS DRAWING.

PIPE UNDERDRAIN SHALL BE LAID PARALLEL TO THE GRADE OF THE ROADWAY.

- ① FOLD OVER EXCESS GEOTEXTILE AT THIS LOCATION.
- ② TOTAL GEOTEXTILE WIDTH IS 6'-3" FOR PAYMENT.



POST PAVING INSTALLATION
(QUANTITIES ARE BASED ON THIS DETAIL)

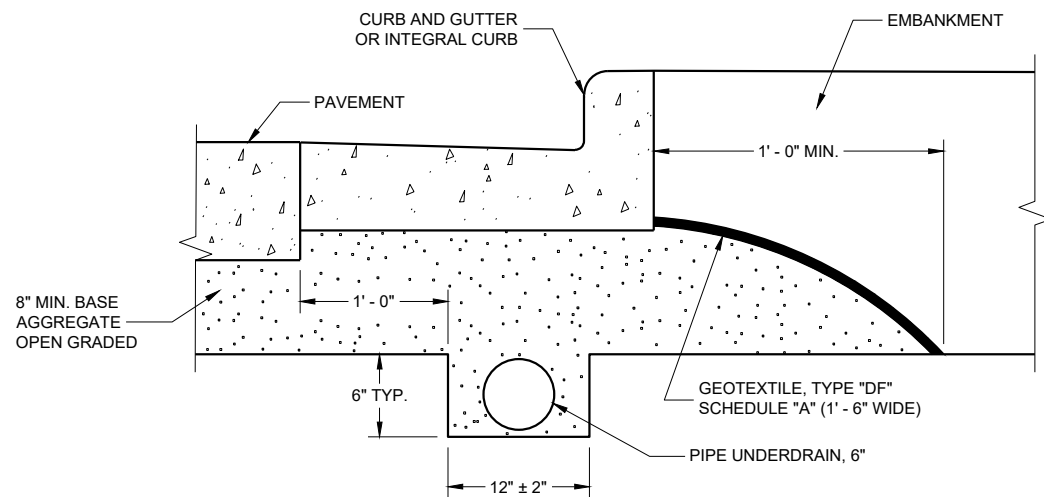


PRE-PAVING INSTALLATION ALTERNATIVE

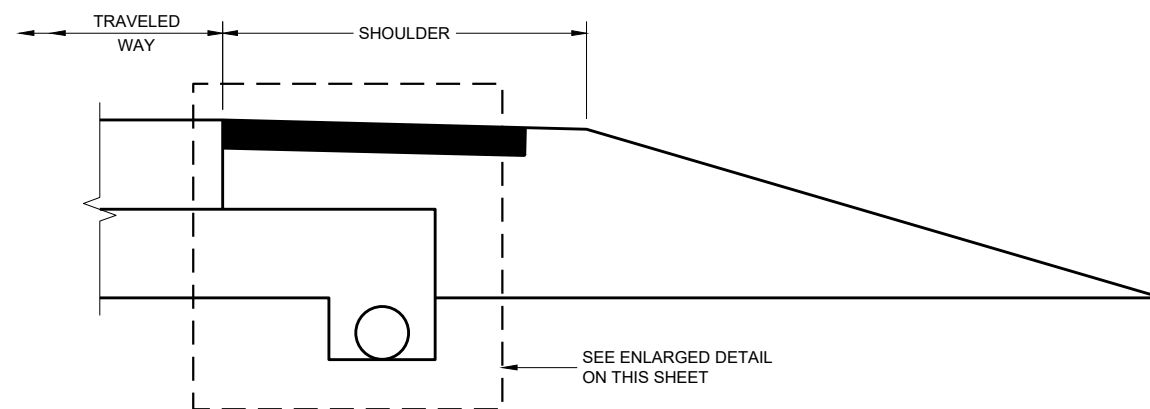
EDGEDRAIN IN RURAL ROADWAY

EGEDRAIN AND BASE
AGGREGATE OPEN GRADED

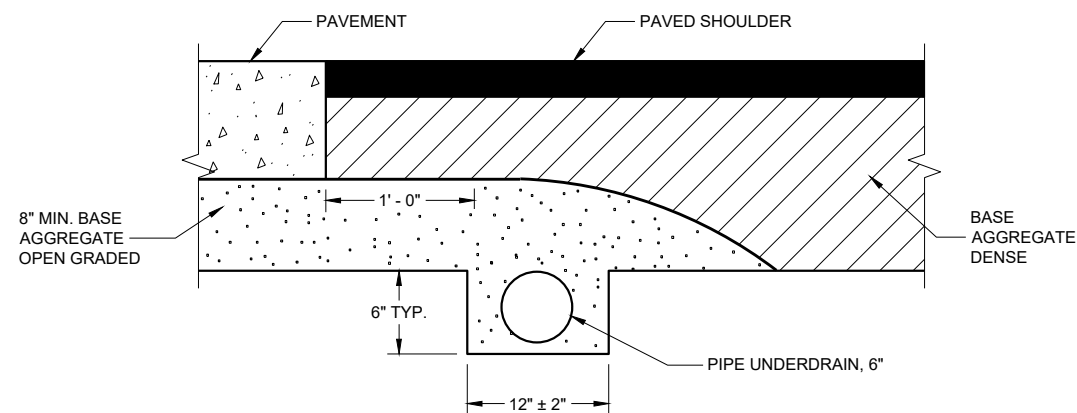
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



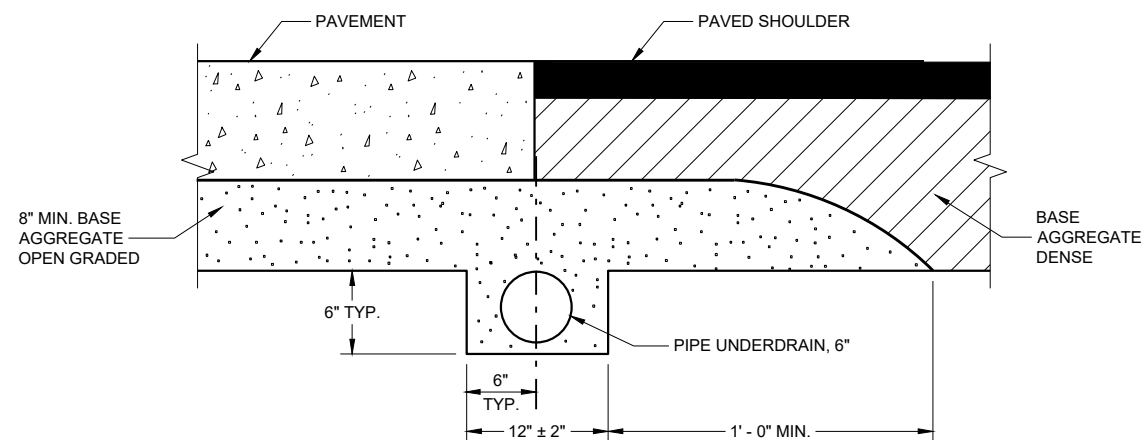
EDGEDRAIN IN URBAN ROADWAY



RURAL CROSS SECTION



POST PAVING INSTALLATION
(QUANTITIES ARE BASED ON THIS DETAIL)



PRE-PAVING INSTALLATION ALTERNATIVE

EDGEDRAIN IN RURAL ROADWAY

GENERAL NOTES

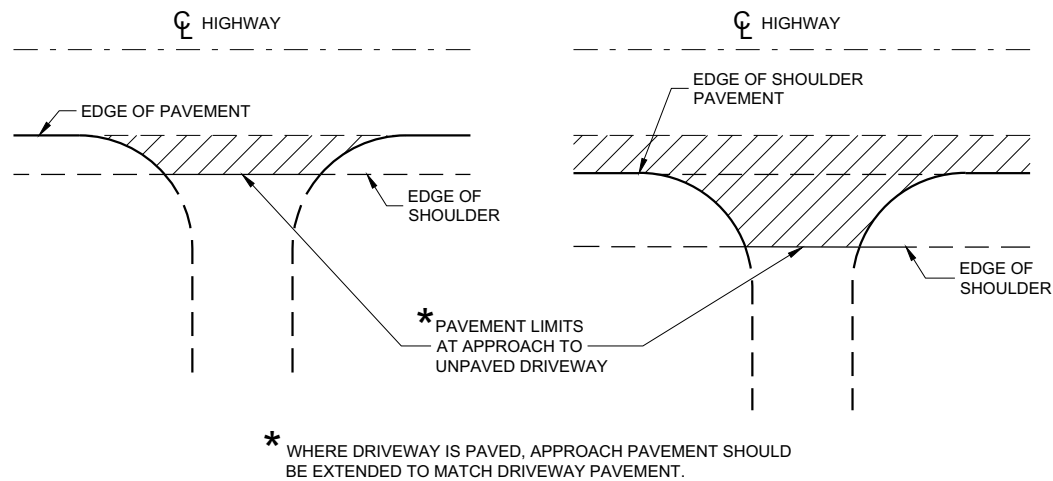
THE DIMENSIONS SHOWN ON THE TYPICAL CROSS SECTIONS WILL GOVERN IN THE EVENT THERE IS A CONFLICT WITH THE DETAILS SHOWN ON THIS DRAWING.

PIPE UNDERDRAIN SHALL BE LAID PARALLEL TO THE GRADE OF THE ROADWAY.

**EDGEDRAIN AND BASE
AGGREGATE OPEN GRADED**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

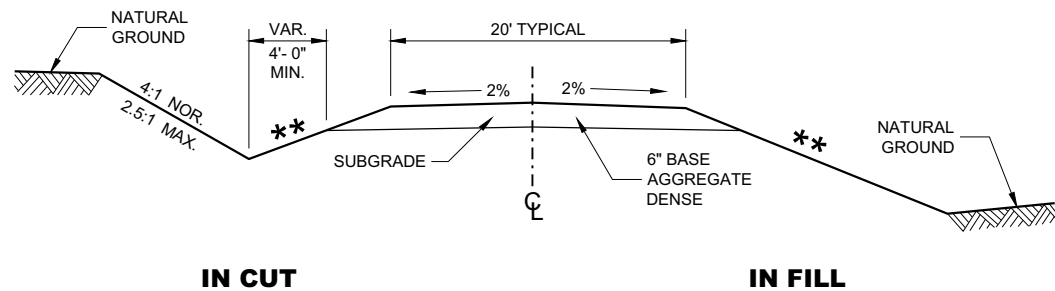
APPROVED
September 2015 /S/ Peter Kemp, P.E.
DATE PAVEMENT SUPERVISOR 84
FHWA



PLAN VIEW
(UNPAVED SHOULDER ON HIGHWAY)

PLAN VIEW
(PAVED SHOULDER ON HIGHWAY)

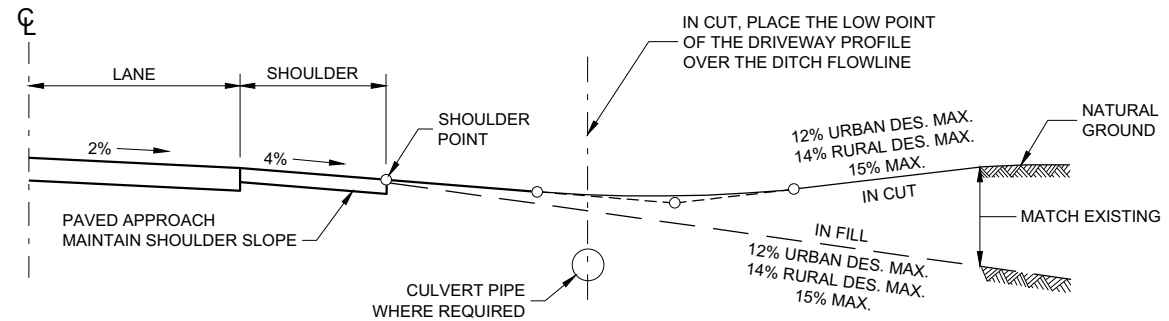
**RURAL DRIVEWAY INTERSECTION DETAIL
(NO CURB AND GUTTER OR SIDEWALK)**



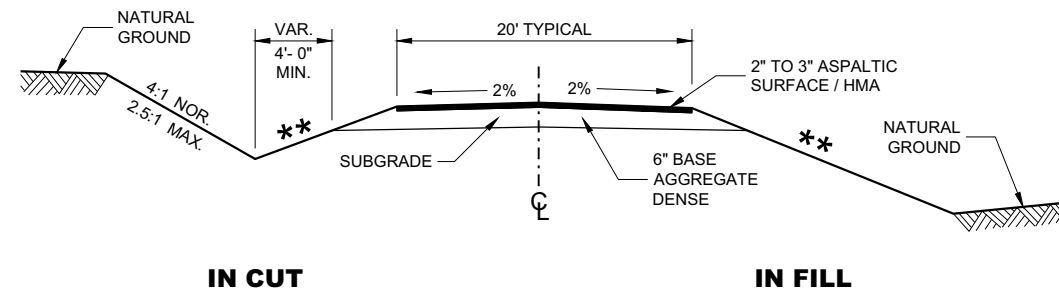
**TYPICAL CROSS SECTION FOR
PRIVATE DRIVE OR FIELD ENTRANCE
AGGREGATE SURFACE**

****** SLOPE CAN VARY WITH
SPEED. SEE 11-45-30.6.2

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



TYPICAL DRIVEWAY PROFILES

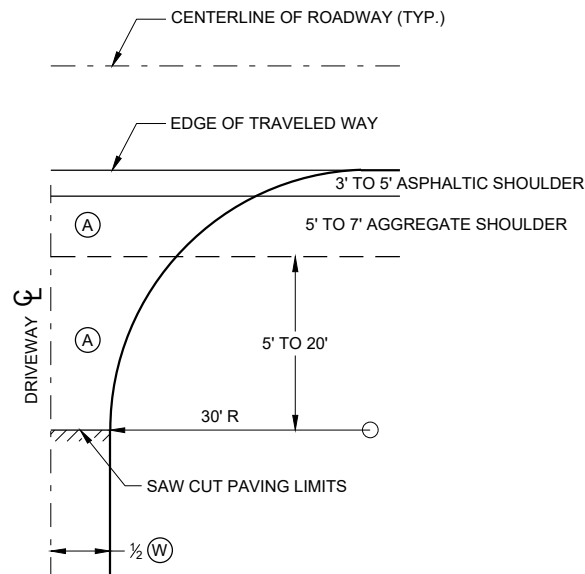


**TYPICAL CROSS SECTION FOR
PRIVATE DRIVE OR FIELD ENTRANCE
ASPHALTIC SURFACE**

**DRIVEWAYS WITHOUT
CURB AND GUTTER**

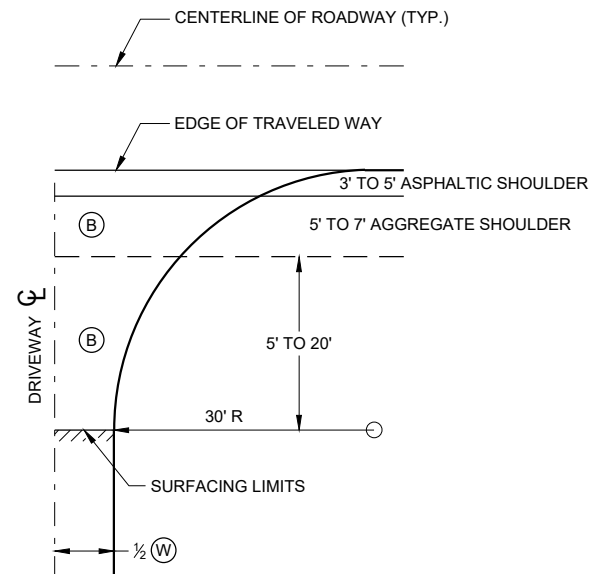
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
December 2017 /S/ Rodney Taylor
DATE ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR
FHWA 85

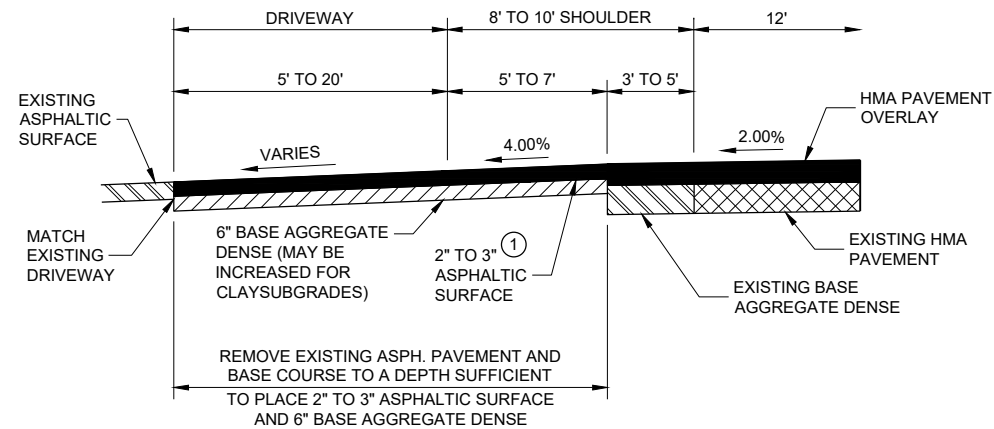


**PLAN VIEW
HALF SECTION**

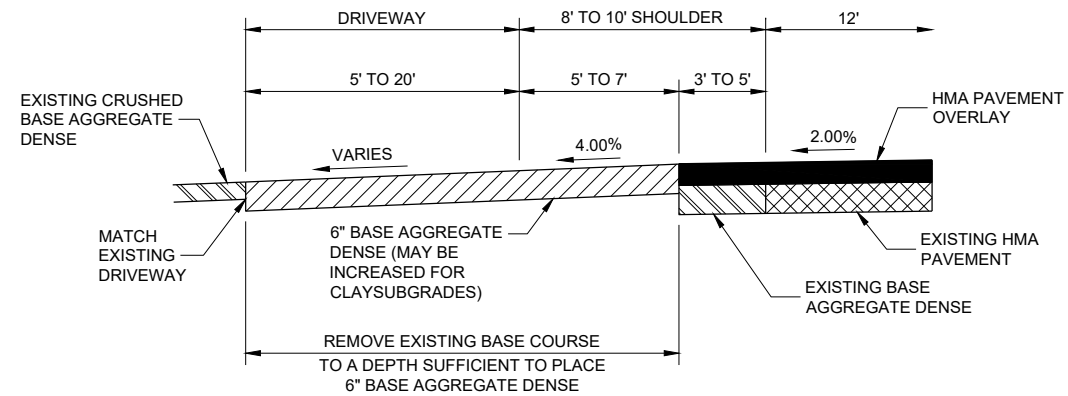
- (A) : PAID FOR AS ASPHALTIC SURFACE DRIVEWAYS AND FIELD ENTRANCES. (TON)
- (B) : PAID FOR AS BASE AGGREGATE DENSE 1 1/4" (TON)
- (W) : DRIVEWAY WIDTH 16' MIN. - 24' MAX.



**PLAN VIEW
HALF SECTION**



**PROFILE VIEW
RURAL ENTRANCE
WITH ASPHALTIC SURFACE
RESURFACING PROJECTS**



**PROFILE VIEW
RURAL ENTRANCE
WITH AGGREGATE SURFACE
6" BASE AGGREGATE DENSE
RESURFACING PROJECTS**

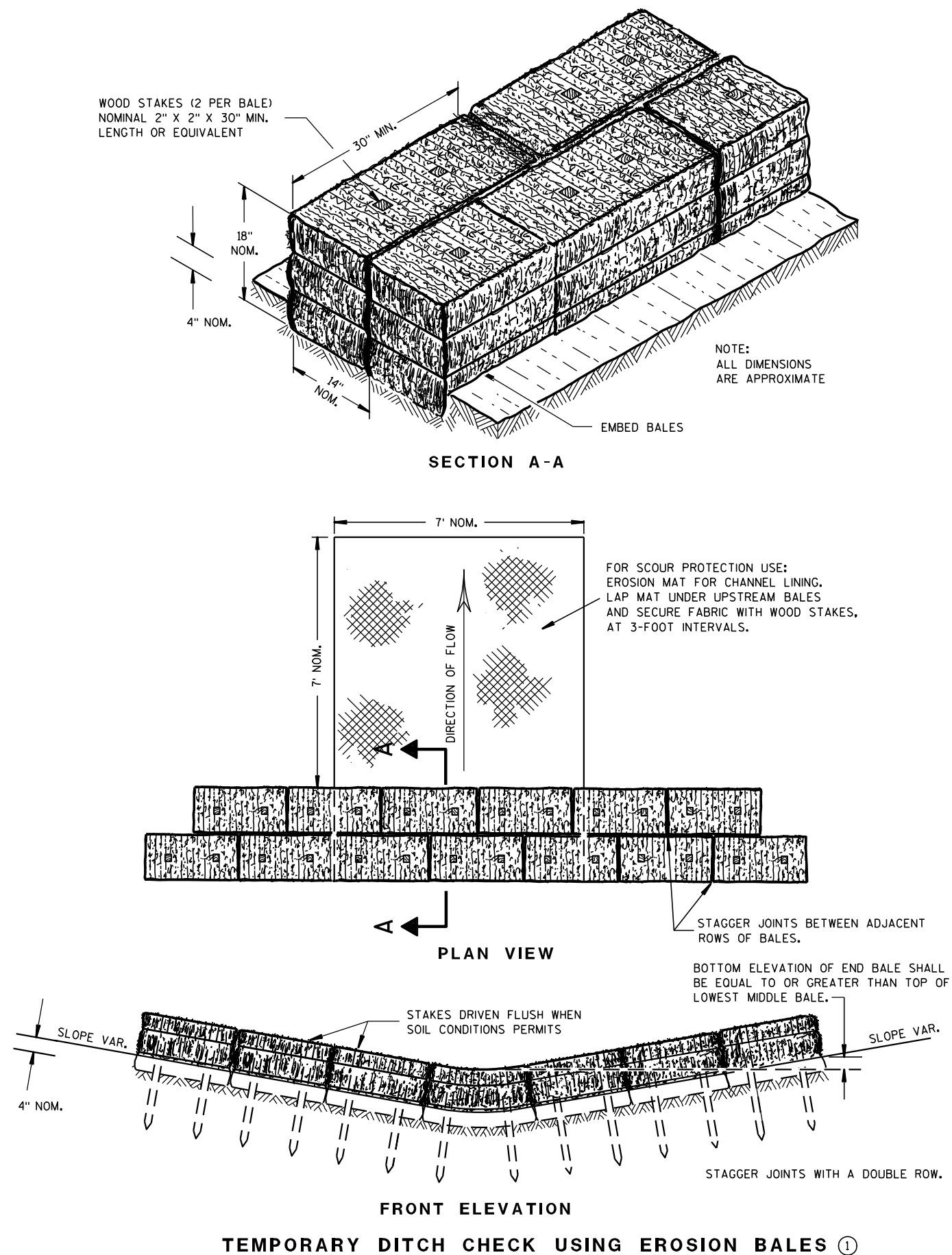
GENERAL NOTES

- ① DESIGN WILL DETERMINE FINAL DRIVEWAY ASPHALTIC THICKNESS BASED ON TYPE OF USAGE AND LOADINGS.

**DRIVEWAYS WITHOUT CURB
AND GUTTER RESURFACING
PROJECTS RURAL**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

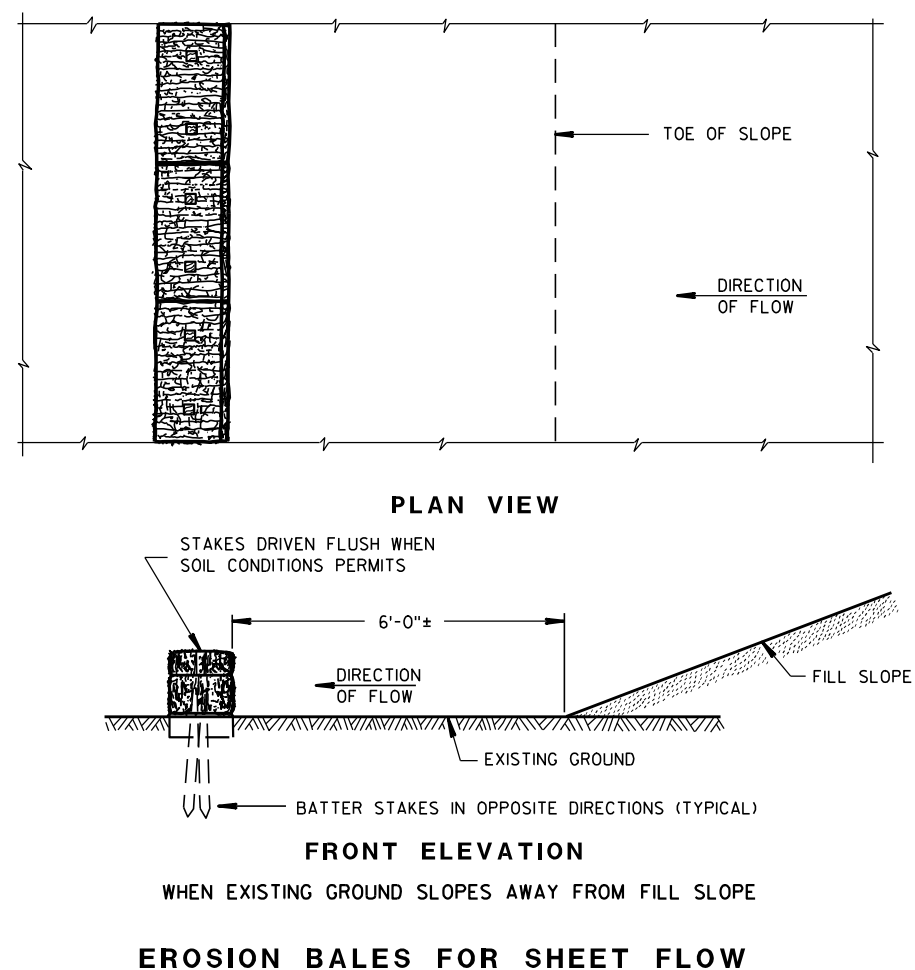
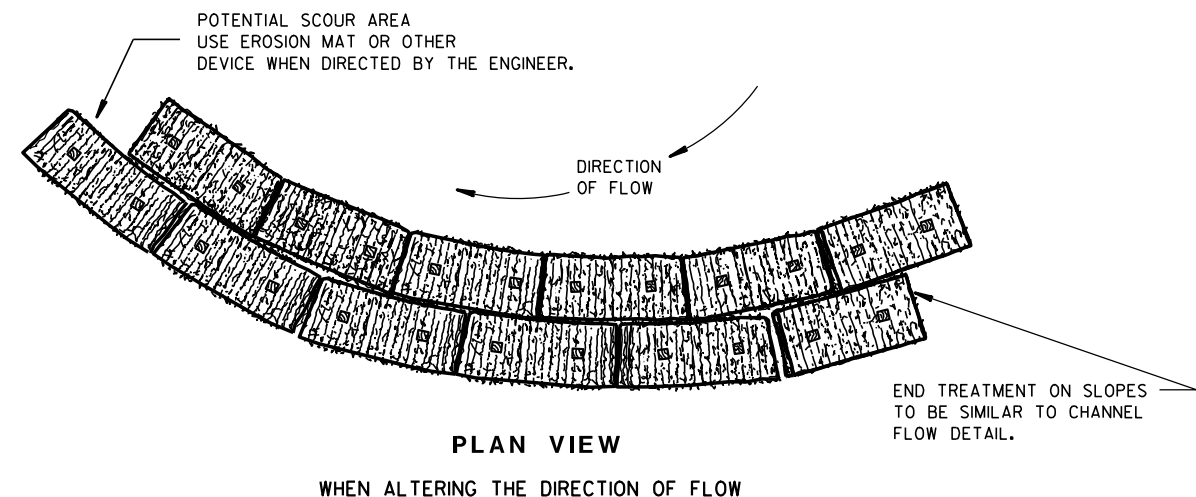
APPROVED
December 2016 /S/ Rodney Taylor
DATE ROADWAY STANDARDS DEVELOPMENT ENGINEER 86
FHWA



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 Connors
CHIEF ROADWAY DEVELOPER

ENGINEER

FHWA



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



SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
4-29-05
DATE

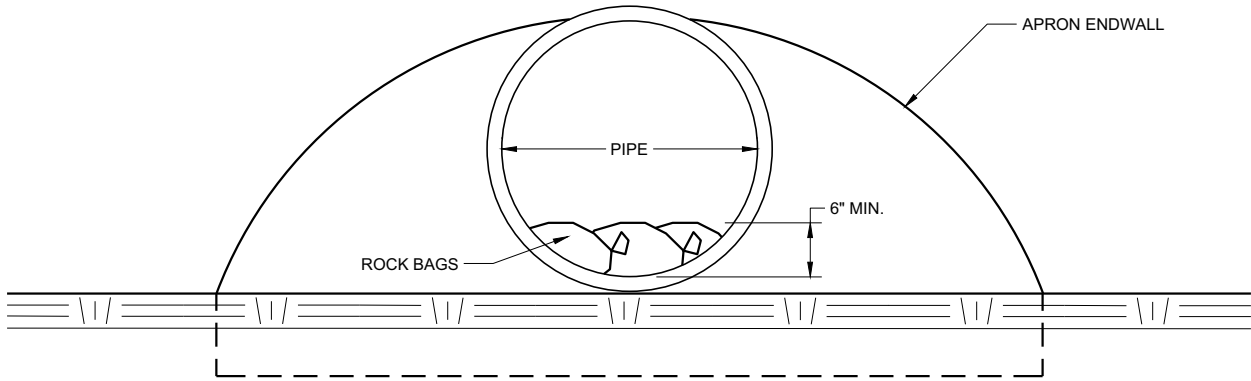
/S/ Beth Connolly
CHIEF ROADWAY DEVELOPMENT

88

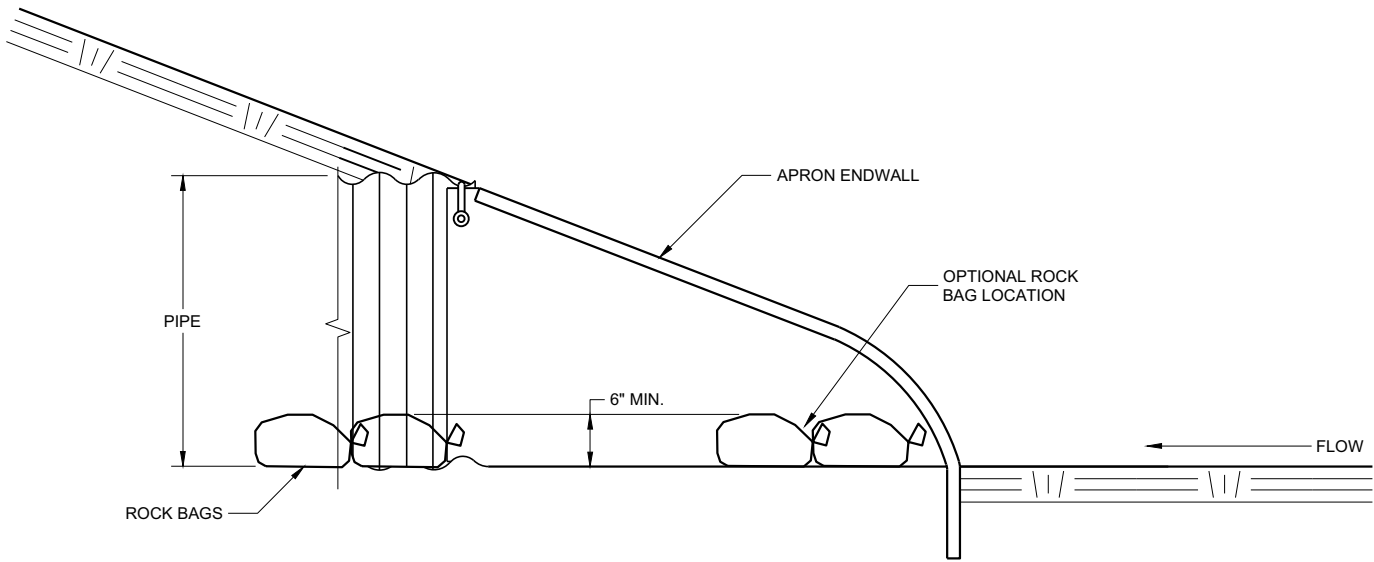
ENGINEER

FHWA

S.D.D. 8 E 10-2



END VIEW



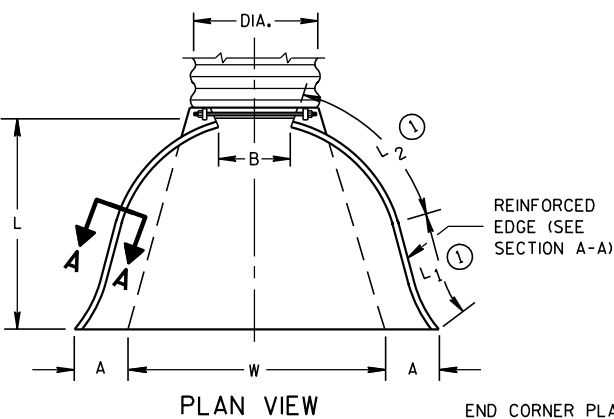
SIDE VIEW

CULVERT PIPE CHECK
(INSTALL ON INLET END ONLY)

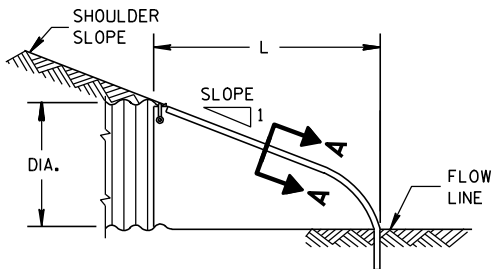
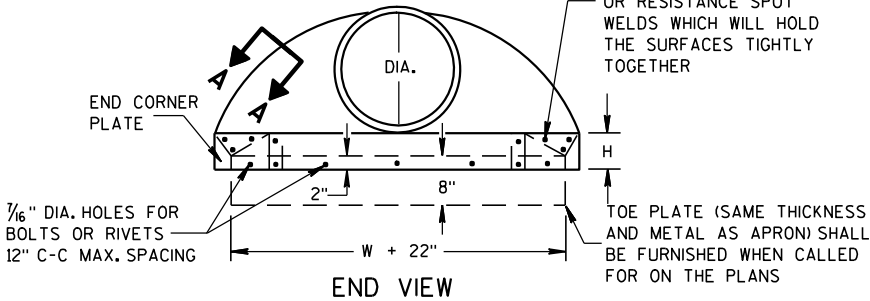
CULVERT PIPE CHECK	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED May 2019 DATE	/S/ Daniel Schave EROSION CONTROL ENGR 90
FHWA	

METAL APRON ENDWALLS												
PIPE DIA. (IN.)	MIN. THICK. (Inches)		DIMENSIONS (Inches)							APPROX. SLOPE		BODY
	STEEL	ALUM.	A (±1")	B (MAX.)	H (±1")	L (±1 1/2")	L1 ①	L2 ①	W (±2")			
12	.064	.060	6	6	6	21	12	17 1/2	24	2 1/2 to 1	1	1 Pc.
15	.064	.060	7	8	6	26	14	21 3/4	30	2 1/2 to 1	1	1 Pc.
18	.064	.060	8	10	6	31	15	28 1/4	36	2 1/2 to 1	1	1 Pc.
21	.064	.060	9	12	6	36	18	29 5/8	42	2 1/2 to 1	1	1 Pc.
24	.064	.075	10	13	6	41	18	37 1/4	48	2 1/2 to 1	1	1 Pc.
30	.079	.075	12	16	8	51	18	52 1/4	60	2 1/2 to 1	1	1 Pc.
36	.079	.105	14	19	9	60	24	59 3/4	72	2 1/2 to 1	2	Pc.
42	.109	.105	16	22	11	69	24	75 5/8	84	2 1/2 to 1	2	Pc.
48	.109	.105	18	27	12	78	24	81	90	2 1/4 to 1	3	Pc.
54	.109	.105	18	30	12	84	30	85 1/2	102	2 1/4 to 1	3	Pc.
60	.109x	.105x	18	33	12	87	—	—	114	2 to 1	3	Pc.
66	.109x	.105x	18	36	12	87	—	—	120	2 to 1	3	Pc.
72	.109x	.105x	18	39	12	87	—	—	126	2 to 1	3	Pc.
78	.109x	.105x	18	42	12	87	—	—	132	1 1/2 to 1	3	Pc.
84	.109x	.105x	18	45	12	87	—	—	138	1 1/2 to 1	3	Pc.
90	.109x	.105x	18	37	12	87	—	—	144	1 1/2 to 1	3	Pc.
96	.109x	.105x	18	35	12	87	—	—	150	1 1/2 to 1	3	Pc.

* EXCEPT CENTER PANEL
SEE GENERAL NOTES



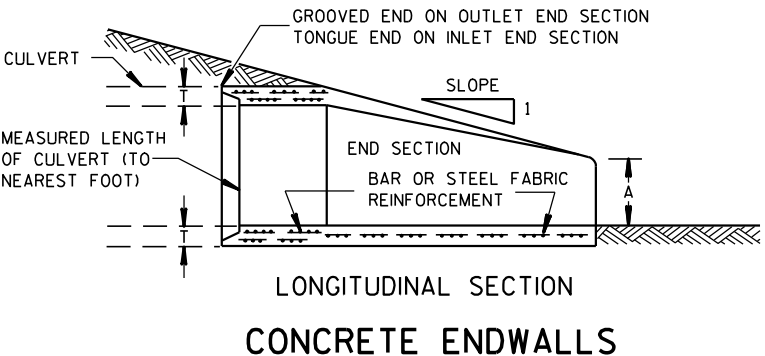
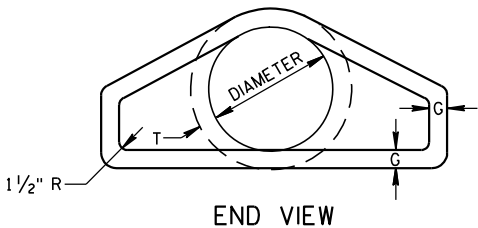
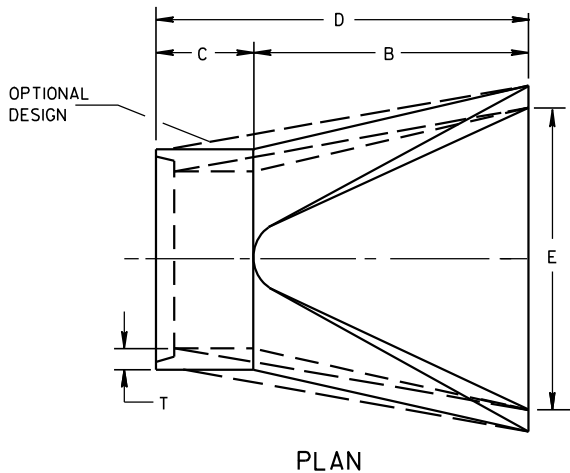
END CORNER PLATES MAY
BE FASTENED TO APRON
PROPER BY BOLTS, RIVETS,
OR RESISTANCE SPOT
WELDS WHICH WILL HOLD
THE SURFACES TIGHTLY
TOGETHER



SIDE ELEVATION
METAL ENDWALLS

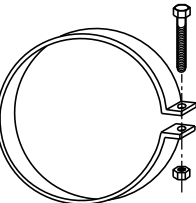
REINFORCED CONCRETE APRON ENDWALLS												
PIPE DIA. (IN.)	DIMENSIONS (Inches)							APPROX. SLOPE				
	T	A	B	C	D	E	G					
12	2	4	24	48 7/8	72 7/8	24	2	3 to 1				
15	2 1/4	6	27	46	73	30	2 1/4	3 to 1				
18	2 1/2	9	27	46	73	36	2 1/2	3 to 1				
21	2 3/4	9	36	37 1/2	73 1/2	42	2 3/4	3 to 1				
24	3	9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

* MINIMUM
** MAXIMUM

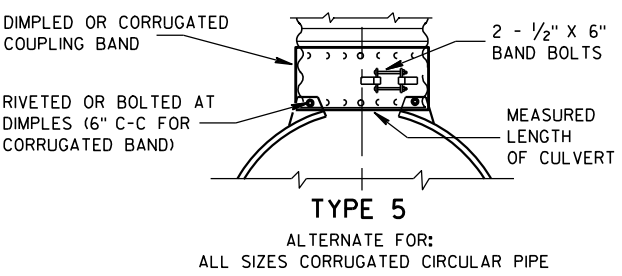
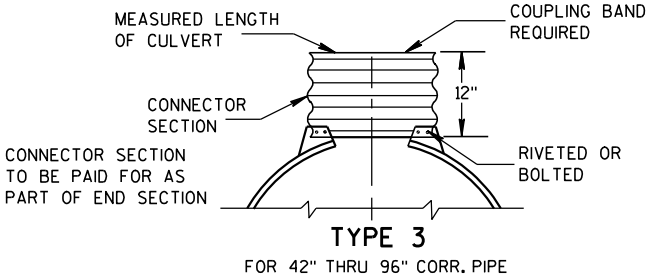
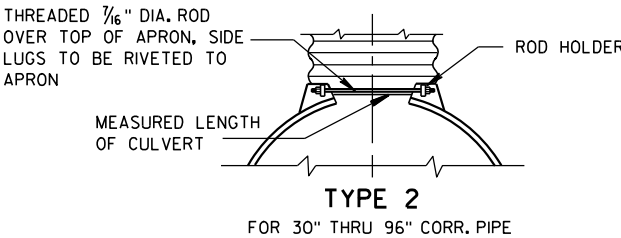
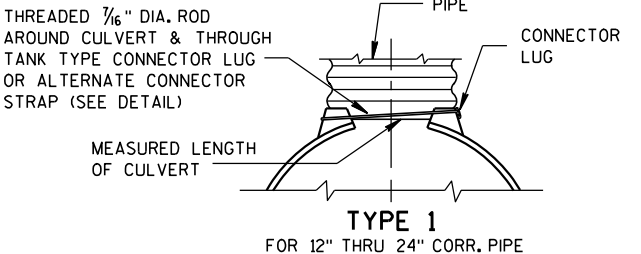


LONGITUDINAL SECTION
CONCRETE ENDWALLS

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



ALTERNATE FOR TYPE 1 CONNECTION
END SECTION CONNECTOR STRAP



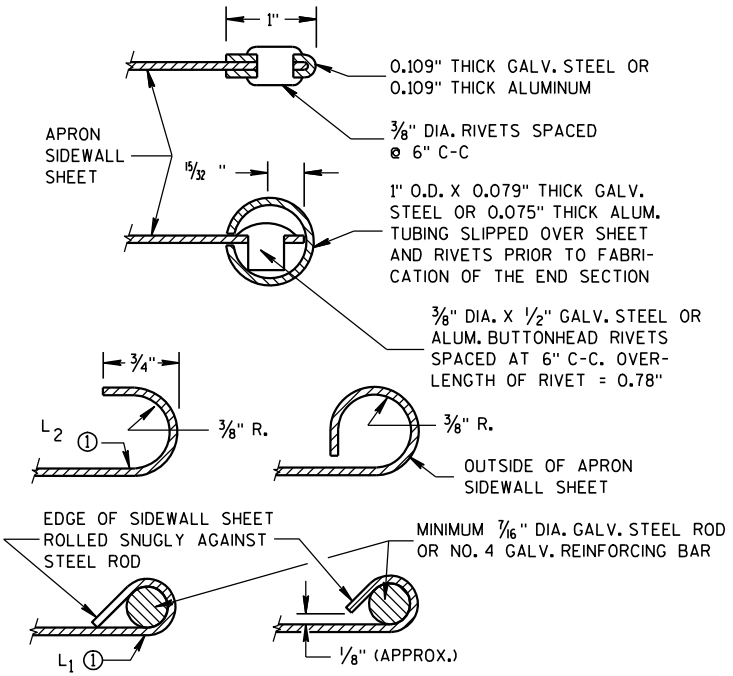
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL,
AND CORRUGATED BAND FITS INSIDE ENDWALL.
DIMPLED BAND MAY BE USED WITH HELICALLY
CORRUGATED PIPE.

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

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

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

CONNECTION DETAILS



SECTION A-A

GENERAL NOTES

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

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

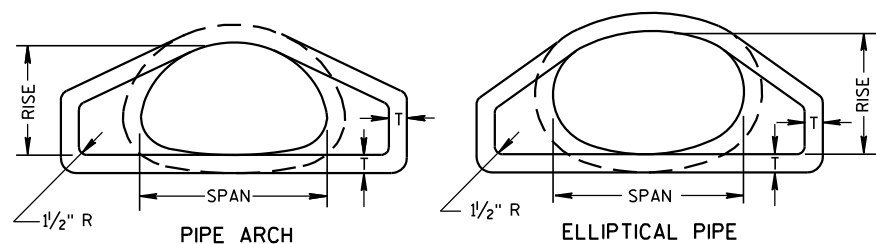
ALL THREE PIECE STEEL APRON ENDWALLS FOR 60" DIAMETER PIPE AND
LARGER SHALL HAVE 0.109" SIDES AND 0.138" CENTER PANELS. ALL
THREE PIECE ALUMINUM APRON ENDWALLS FOR 60" DIAMETER PIPE AND
LARGER SHALL HAVE 0.105" SIDES AND 0.134" CENTER PANELS. THE WIDTH
OF CENTER PANELS SHALL BE GREATER THAN 20 PERCENT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

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

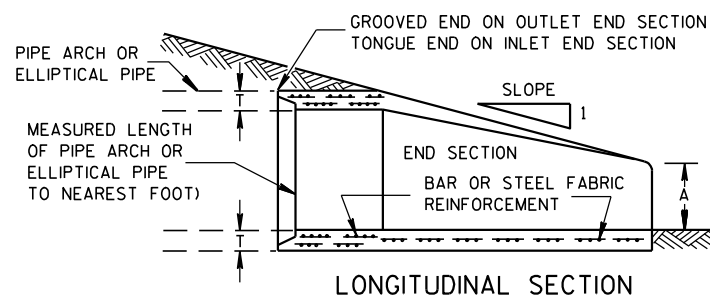
WHERE TWO OR MORE PIPES WITH APRON ENDWALLS ARE LAID ADJACENT
TO EACH OTHER, THEY SHALL BE SEPARATED BY A DISTANCE SUFFICIENT
TO PROVIDE A MINIMUM CLEARANCE OF 6 INCHES BETWEEN APRON ENDWALLS.

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

APRON ENDWALLS FOR CULVERT PIPE			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
APPROVED	11/30/94	/S/ Rory L. Rhinehart	NEER
	DATE	CHIEF ROADWAY DEVELOP	
FHWA			

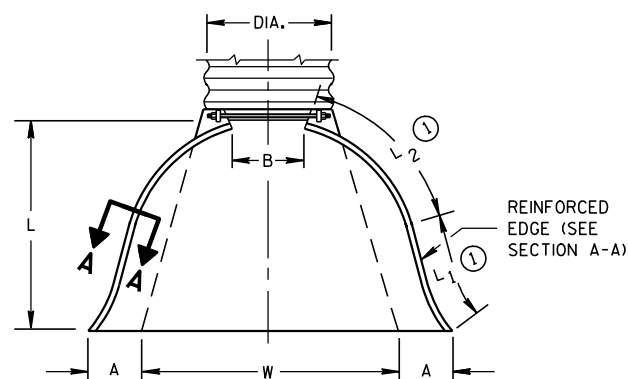


END VIEW



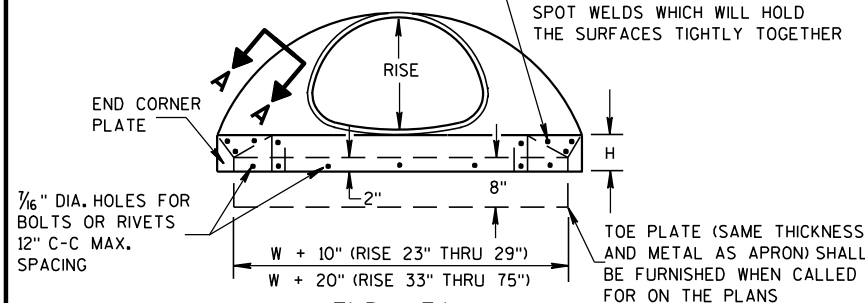
LONGITUDINAL SECTION

CONCRETE ENDWALLS

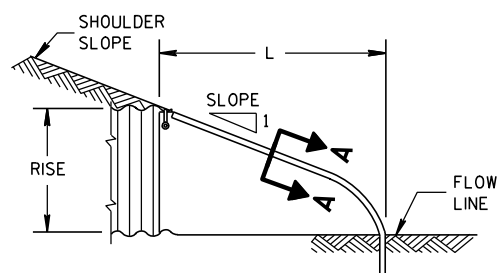
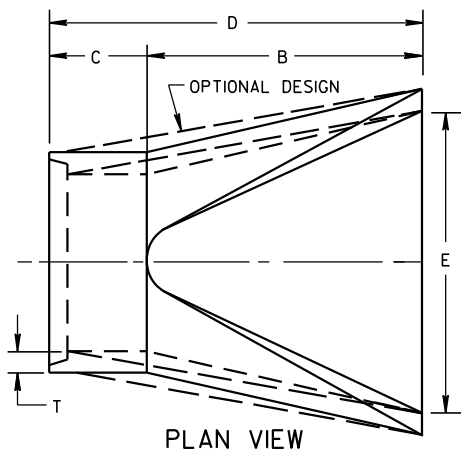


PLAN VIEW

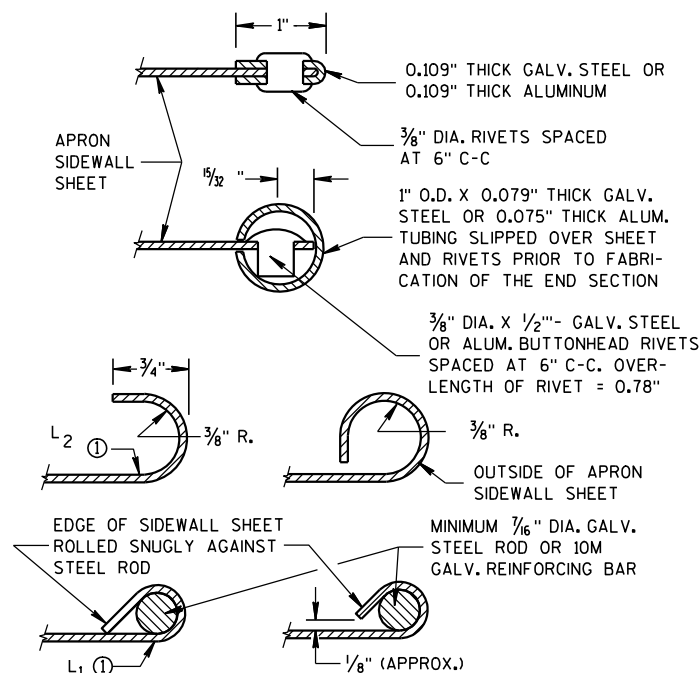
END CORNER PLATES MAY BE FASTENED TO APRON PROPER BY BOLTS, RIVETS, OR RESISTANCE SPOT WELDS WHICH WILL HOLD THE SURFACES TIGHTLY TOGETHER



END VIEW

SIDE ELEVATION
METAL ENDWALLS

PLAN VIEW



SECTION A-A

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

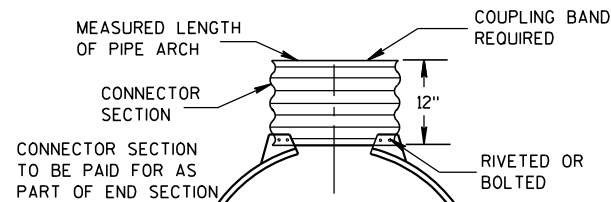
3" X 1" CORRUGATIONS													
EQUIV. DIA. (Inches)	(Inches)		MIN. THICK. (Inches)		DIMENSIONS (Inches)							APPROX. SLOPE	BODY
	SPAN	RISE	STEEL	ALUM.	A (±1")	B (MAX.)	H (±1")	L (±1 1/2")	L ₁ ⓪	L ₂ ⓪	W (±2")		
48	53	41	.109	.105	18	26	12	63	24	72¾	90	2½ to 1	2 Pc.
54	60	46	.109	.105	18	30	12	70	30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

NOTE: ALL SPLICES TO BE LAP RIVETED OR BOLTED.

* EXCEPT CENTER PANEL
SEE GENERAL NOTES

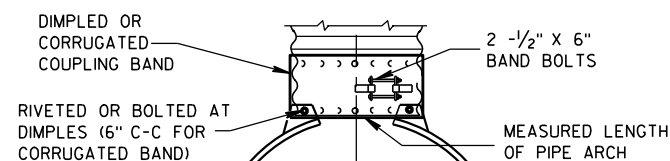
TYPE 2

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



TYPE 3

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



TYPE 5

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

CONNECTION DETAILS

REINFORCED CONCRETE PIPE ARCH

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

REINFORCED CONCRETE ELLIPTICAL PIPE

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

**NOMINAL SIZE

GENERAL NOTES

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

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

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

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

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

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

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

APPROVED

11/30/94

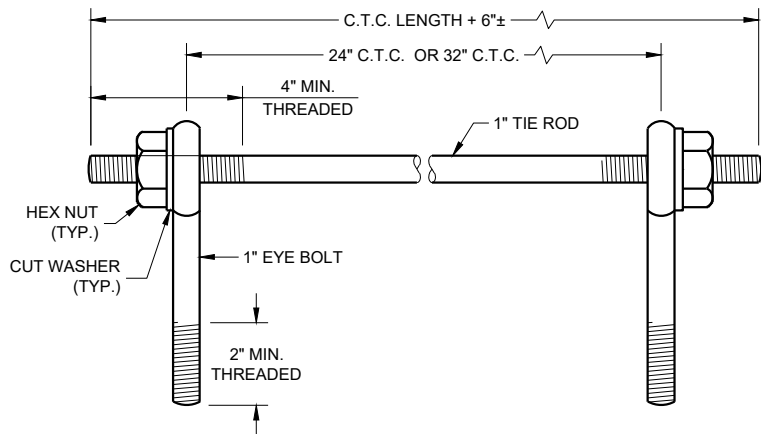
DATE

/S/ Rory L. Rhinehart

CHIEF ROADWAY DEVELOPER

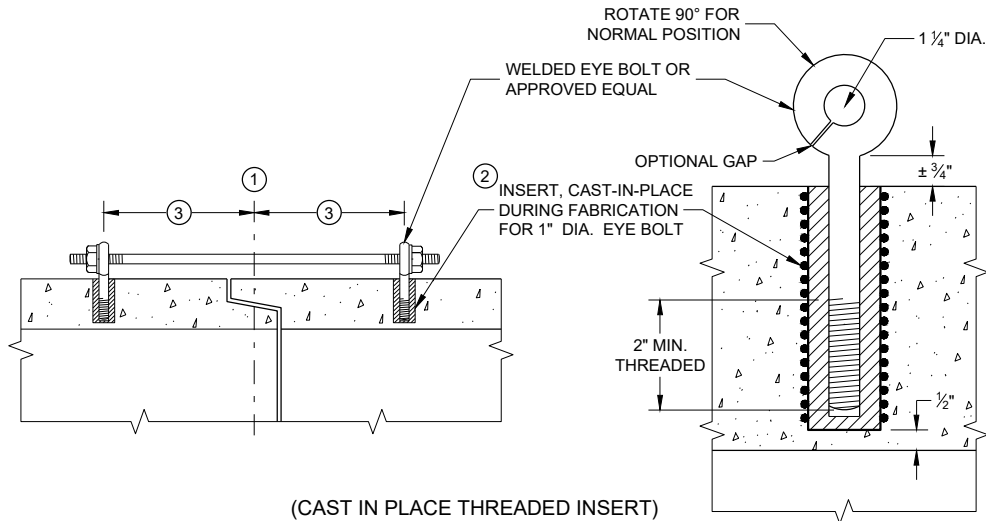
ENGINEER

FHWA



EYE BOLTS AND TIE ROD

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



(CAST IN PLACE THREADED INSERT)

LONGITUDINAL SECTIONS

GENERAL NOTES

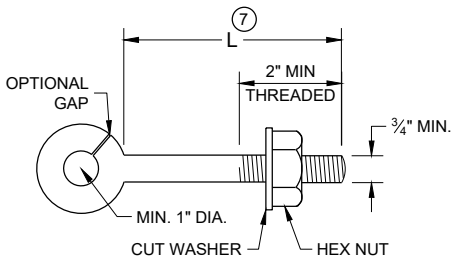
DETAILS OF CONSTRUCTION, MATERIALS, AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

CONCRETE CULVERT AND STORM SEWER PIPE SHALL BE TIED TOGETHER IN THE MANNER ILLUSTRATED BY THIS DETAIL AT LOCATIONS DESIGNATED IN THE STANDARD SPECIFICATIONS AND THE PLAN. THE CONTRACTOR MAY USE EITHER ALTERNATE 1, 2 OR 3 FOR DRAINAGE STRUCTURES. ONLY ALTERNATE 1 AND 3 MAY BE USED FOR CATTLE PASSES, UNLESS OTHERWISE STATED IN THE CONTRACT. THE MATERIALS, FABRICATION AND WORK NECESSARY TO TIE THE PIPE BY THIS DETAIL WILL BE CONSIDERED INCIDENTAL TO THE PIPE AND APRON ENDWALLS IF REQUIRED.

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

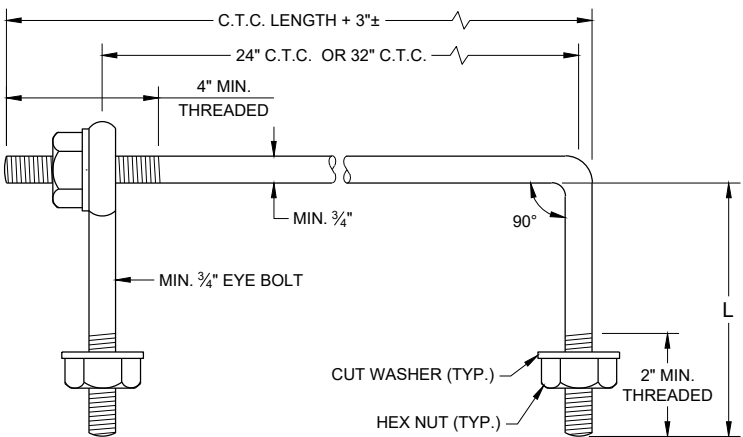
JOINT TIES TO BE HOT-DIP GALVANIZED PER ASTM A 153.

- 1 CENTER LINE OF TONGUE AND GROOVE OR BELL AND SPIGOT JOINTS.
- 2 THE INSIDE OF THE THREADED INSERTS SHALL BE CLEAN TO ALLOW THE INSERTION OF THREADED EYE BOLTS.
- 3 HOLES SHALL BE CAST-IN-PLACE OR DRILLED PER THE APPLICABLE DETAIL, AND EQUAL DISTANCE FROM THE CENTERLINE OF THE JOINT.
- 4 BOLT PROJECTION INSIDE OF PIPE SHALL NOT EXCEED 2 INCHES.
- 5 OPENING TO BE ROD DIAMETER PLUS 1 INCH.
- 6 LENGTH ADEQUATE TO EXTEND TO WITHIN 1/2 INCH OF THE INNER SURFACE OF THE PIPE.
- 7 EYE BOLT LENGTH DETERMINED BY WALL THICKNESS, BELL THICKNESS AND BOLT PROJECTION INSIDE PIPE.

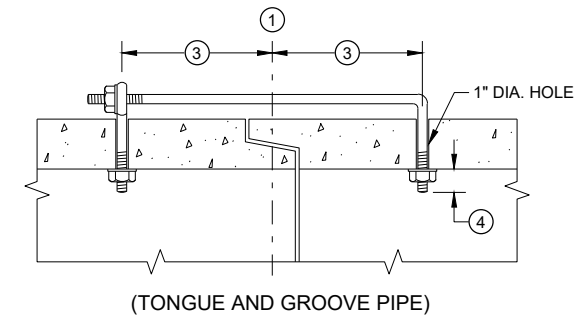


EYE BOLT 7

NOTE: TWO EYE BOLTS MAY BE USED WITH A 30" OR 38" LONG THREADED ROD IN LIEU OF THE 90° BENT TIE ROD.



EYE BOLT AND TIE ROD

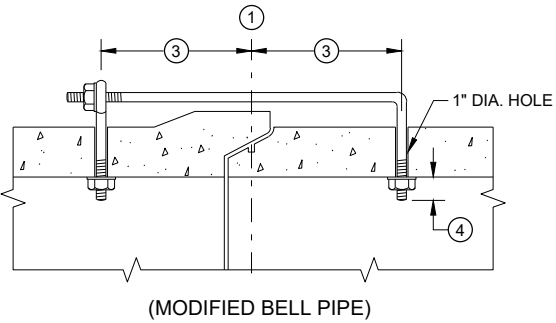


(TONGUE AND GROOVE PIPE)

LONGITUDINAL SECTION

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

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

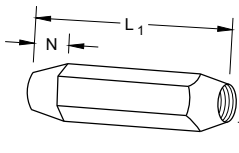


(MODIFIED BELL PIPE)

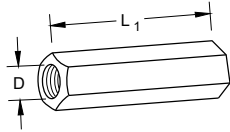
ADJUSTABLE TIE ROD TABLE

PIPE DIAMETER	TIE ROD DIAMETER	D	L ₁	N
12 - 60	5/8	5/8	5	1/2
66 - 84	3/4	3/4	5	1/2
90 - 144	1	1	7	1 1/16

DIMENSIONS SHOWN ARE IN INCHES

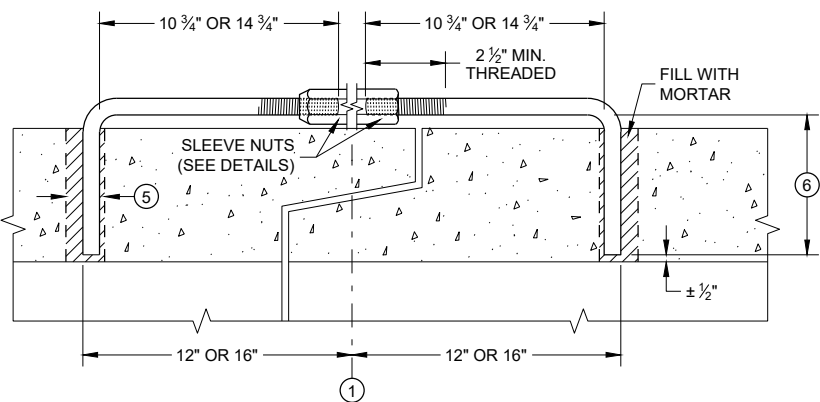


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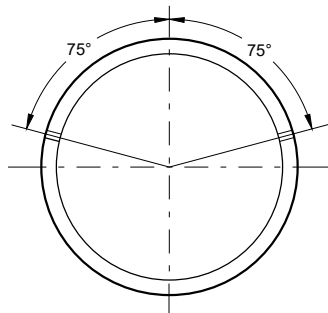
PLAIN

RIGHT AND LEFT THREADS
SLEEVE NUTS



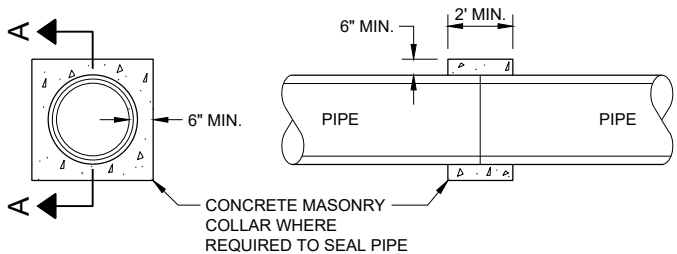
LONGITUDINAL SECTION

ADJUSTABLE TIE ROD (ALTERNATE NO. 3)



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

TRANSVERSE SECTION



SECTION A - A

CONCRETE COLLAR DETAIL

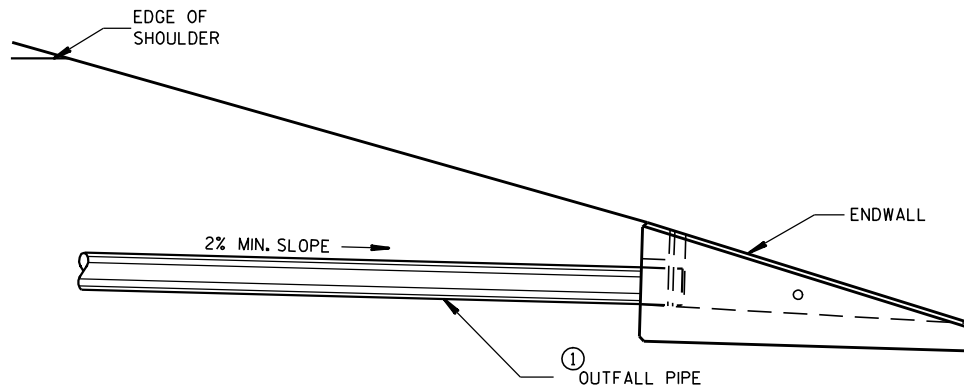
JOINT TIES FOR CONCRETE
PIPE AND CONCRETE
COLLAR DETAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

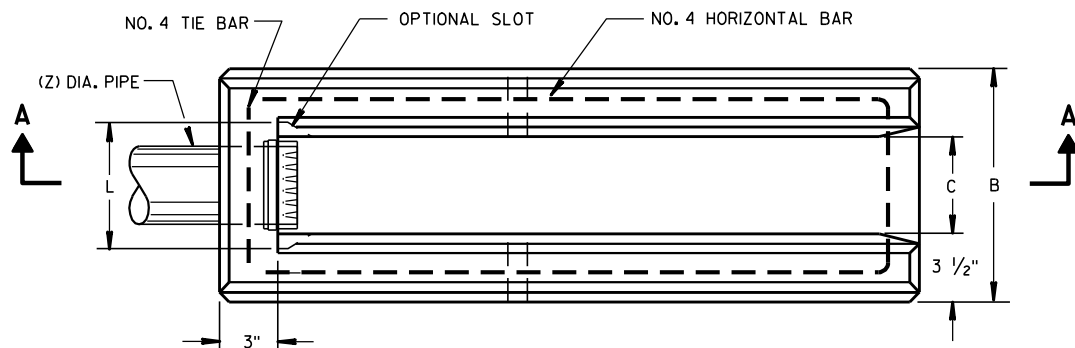
APPROVED
November 2021 /S/ Rodney Taylor
DATE ROADWAY STANDARDS DEVELOPMENT ENGINEER 93
FHWA

DIMENSIONS IN INCHES											
PIPE DIA.	A	B	C	D	E	F	G	H	J	L	Z
**4	6	12	5 1/4	9	8	32	36	11	2 3/8	6 1/2	4
6	8	14	7 1/4	11	10	42	44	13	3 5/8	8 1/2	6

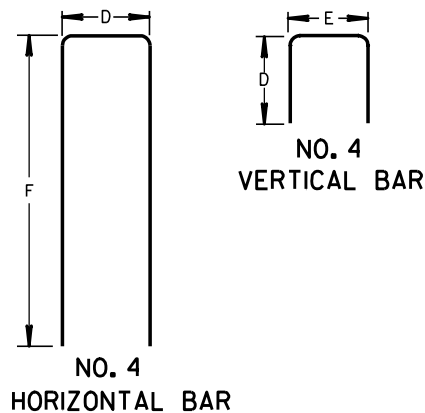
** APRON ENDWALL FOR 6 INCH DIAMETER PIPE MAY BE SUBSTITUTED FOR THIS SIZE PROVIDED THE HOLE IN THE HEADWALL IS SIZED AND LOCATED TO CONFORM TO THE 4 INCH DIAMETER PIPE DIMENSIONS (C & J)



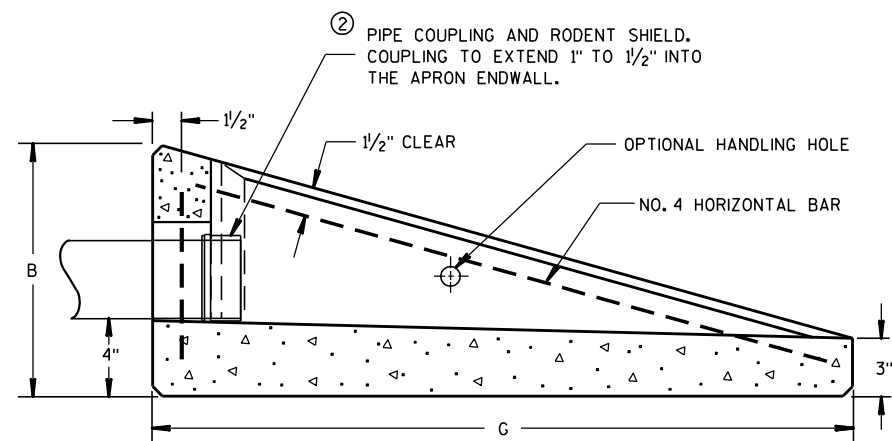
INSTALLATION DETAIL



PLAN VIEW

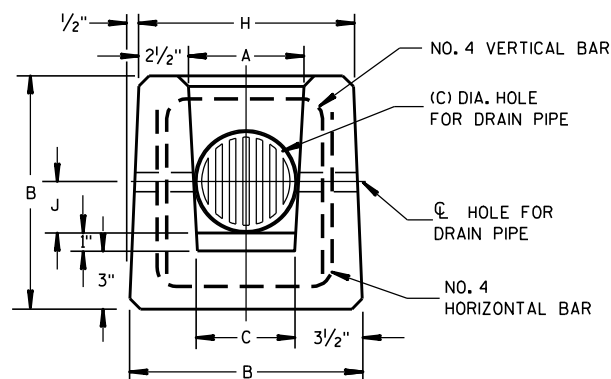


BAR STEEL REINFORCEMENT DETAILS



SECTION A-A

CONCRETE APRON ENDWALL FOR UNDERDRAIN



END VIEW

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.

ALTERNATIVE DESIGNS WHICH PROVIDE EQUIVALENT CAPACITY AND STRENGTH MAY BE USED WHEN APPROVED BY THE ENGINEER. ENDWALL MAY BE EITHER PRECAST OR CAST-IN-PLACE CONCRETE.

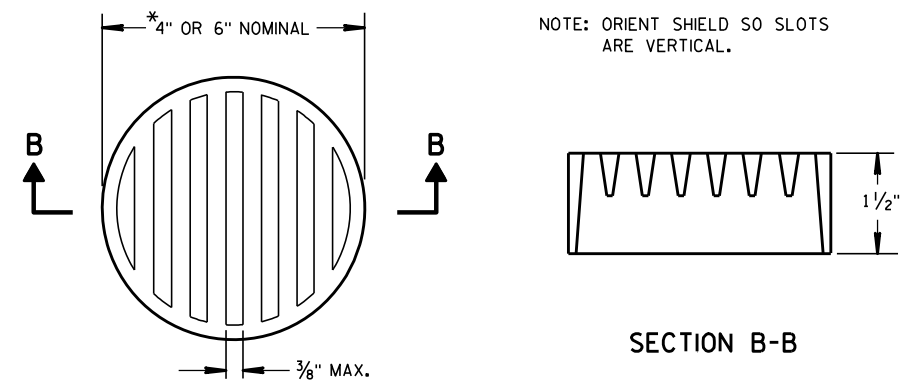
THE UNDERDRAIN PIPE SHALL BE FULLY INSERTED AND SEALED INTO THE ENDWALL WITH CEMENT MORTAR PRIOR TO BACKFILLING AROUND THE STRUCTURE.

THE UPPERMOST POINT OF THE ENDWALL SHALL BE PLACED FLUSH WITH THE ROADWAY SLOPE. ADJACENT EMBANKMENT SLOPES SHALL BE SHAPED TO FIT THE SIDES AND TOE OF THE ENDWALL. EXACT PLACEMENT OF THE OUTFALL PIPE AND ENDWALL SHALL BE DETERMINED BY THE ENGINEER TO MATCH THE ELEVATIONS AND FLOW DIRECTION OF THE ROADSIDE DITCH.

- ① THE OUTFALL PIPE UNDERDRAIN AND FITTINGS SHALL CONFORM TO THE REQUIREMENTS OF THE SPECIFICATION FOR POLY (VINYL CHORIDE) (PVC) PLASTIC DRAIN, WASTE AND VENT PIPE AND FITTINGS, ASTM DESIGNATION: D 2665, SCHEDULE 40 PVC OR THE STANDARD SPECIFICATION FOR TYPE PSM POLY (VINYL CHORIDE) (PVC) SEWER PIPE AND FITTINGS, ASTM DESIGNATION: D 3034, TYPE PSM SDR 23.5 PVC SEWER PIPE, ALL JOINTS SHALL BE SOLVENT WELDED.

THE OUTFALL PIPE INCLUDING ALL FITTINGS AND THE RODENT SHIELD SHALL BE MEASURED AND PAID FOR AS PIPE UNDERDRAIN UNPERFORATED.

- ② THE RODENT SHIELD SHALL BE A PVC GRATE SIMILAR TO THIS DETAIL. THE GRATE IS COMMERCIALY AVAILABLE AS A FLOOR STRAINER. A PIPE COUPLING IS REQUIRED FOR THE ATTACHMENT OF THIS SHIELD TO THE OUTFALL PIPE. THE SHIELD SHALL BE FASTENED TO THE PIPE COUPLING WITH TWO OR MORE NO. 10 X 1-INCH STAINLESS STEEL SHEET METAL SCREWS.



② RODENT SHIELD

*NOTE: DIMENSIONS ARE APPROXIMATE. THE GRATE IS SIZED TO FIT INTO A PIPE COUPLING.

**REINFORCED
CONCRETE APRON ENDWALL
FOR PIPE UNDERDRAIN**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

3/10/98
DATE

FHWA

/S/ Rory L. Rhin...
CHIEF ROADWAY DEVELOPER

INEER

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.

FILL SLOPES FLATTER THAN 2 ½:1 SHALL BE WARPED TO MEET THE TOP OF THE WINGWALLS.

ALL STEEL REINFORCEMENT AND WELDED STEEL WIRE FABRIC SHALL BE EMBEDDED 2 INCHES CLEAR UNLESS OTHERWISE NOTED.

1 MINIMUM REINFORCEMENT SHALL BE 6" X 6" - W4.0 X W4.0 OR NO. 3 BARS SPACED 12" C-C IN BOTH DIRECTIONS.

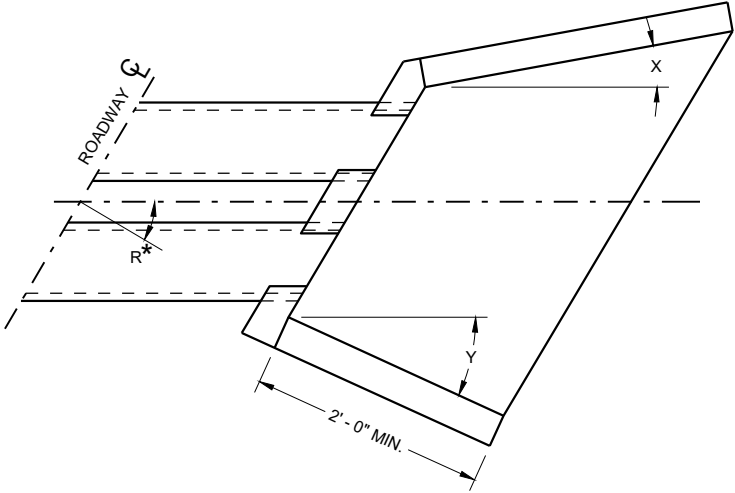
2 THE SPACE BETWEEN PIPES SHALL BE AS FOLLOWS:

DIAMETER OR SPAN	SPACE
UP TO AND INCLUDING 48"	2' - 0"
OVER 48" TO 72"	½ DIA. OR SPAN
OVER 72"	3' - 0"

- 3 LIMITS OF TRENCH BACKFILL
- 4 LIMITS OF FOUNDATION BACKFILL
- 5 FOUNDATION AND TRENCH BACKFILL ARE MATERIALS INCLUDED IN PAYMENT FOR CULVERT PIPE, PIPE ARCH, CULVERT PIPE REINFORCED CONCRETE HORIZONTAL ELLIPSE OR CONCRETE MASONRY ENDWALLS.
- 6 DO NOT PLACE FOUNDATION BACK FILL OR ANY OTHER GRANULAR BACKFILL AROUND OR BELOW CUT OFF WALL. POUR CUT OFF WALL AGAINST NATIVE SOIL
- 7 MINIMUM HEIGHT SHALL BE THE GREATER OF 1'- 0" OR ¼ HEIGHT OF CULVERT PIPE.

TRENCH BACKFILL

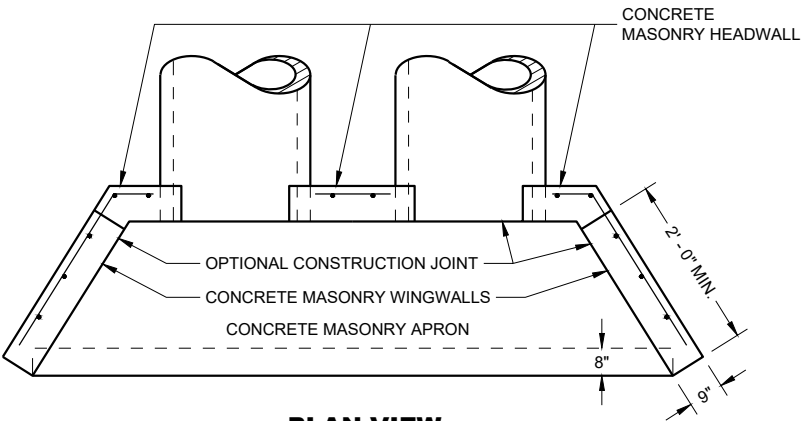
FOUNDATION BACKFILL



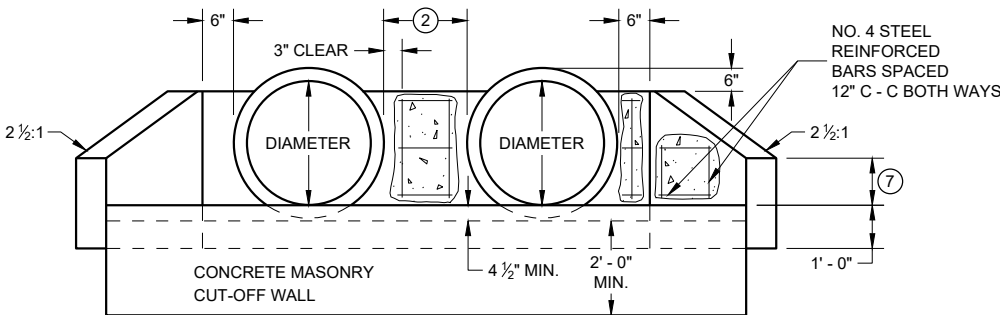
INLET			OUTLET		
R*	X	Y	R*	X	Y
0 - 7°	30°	30°	0 - 15°	15°	15°
8 - 22°	25°	30°	16 - 45°	10°	15°
23 - 37°	20°	30°	46 - 75°	5°	15°
38 - 52°	15°	30°	OVER 75°	0°	15°
53 - 67°	10°	30°			
68 - 82°	5°	30°			
OVER 82°	0°	30°			

R* = NUMBER OF DEGREES RIGHT OR LEFT HAND FORWARD

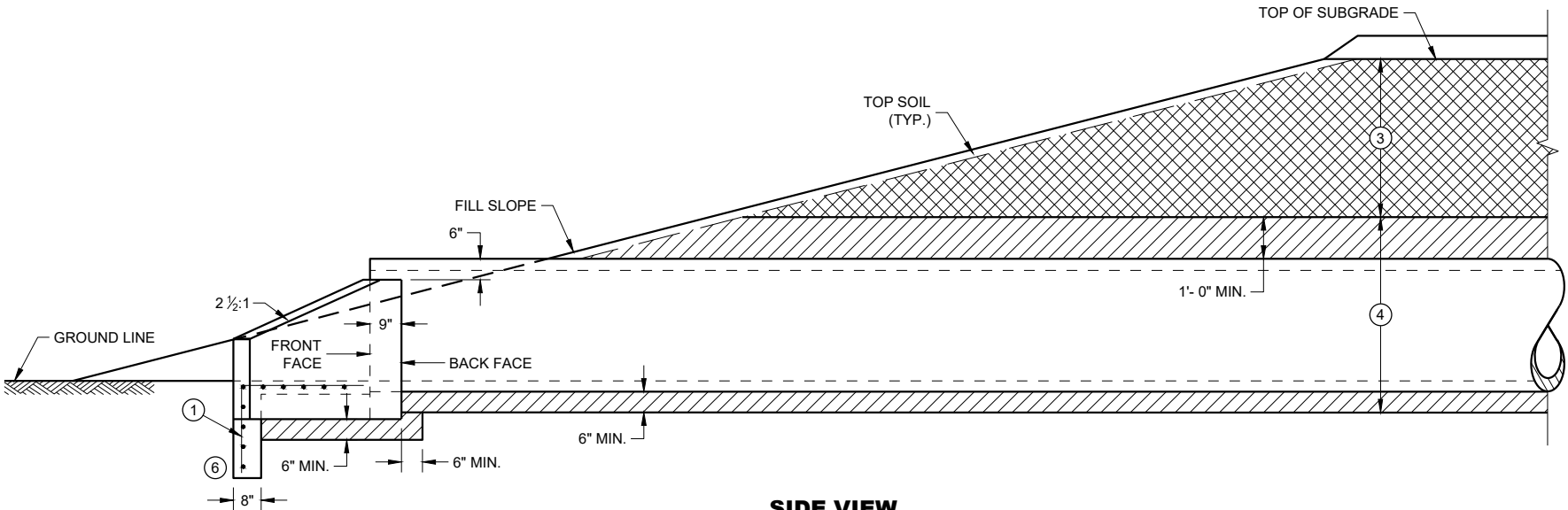
WINGWALL ANGLE DETAILS



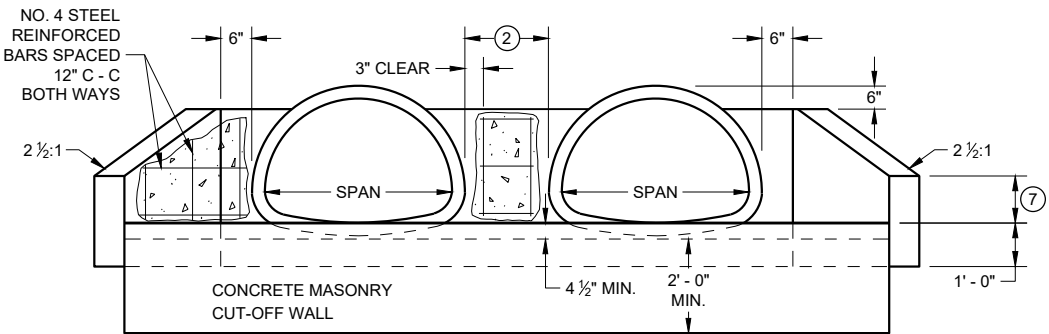
PLAN VIEW



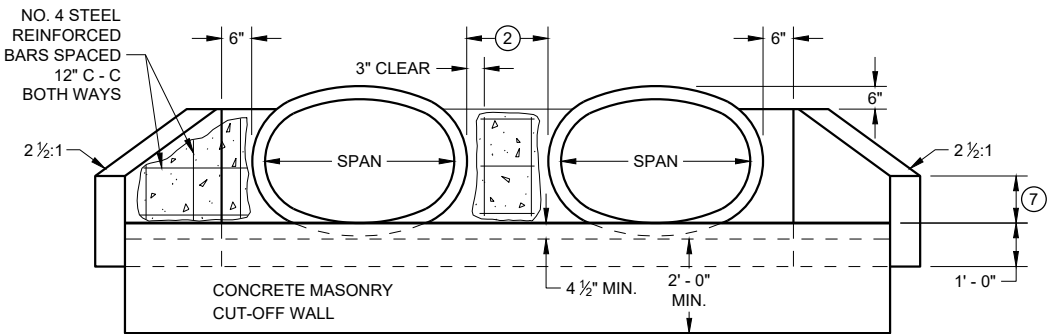
END VIEW
CIRCULAR PIPE



SIDE VIEW
CIRCULAR PIPE, PIPE ARCH OR HORIZONTAL ELLIPSE



END VIEW
PIPE ARCH

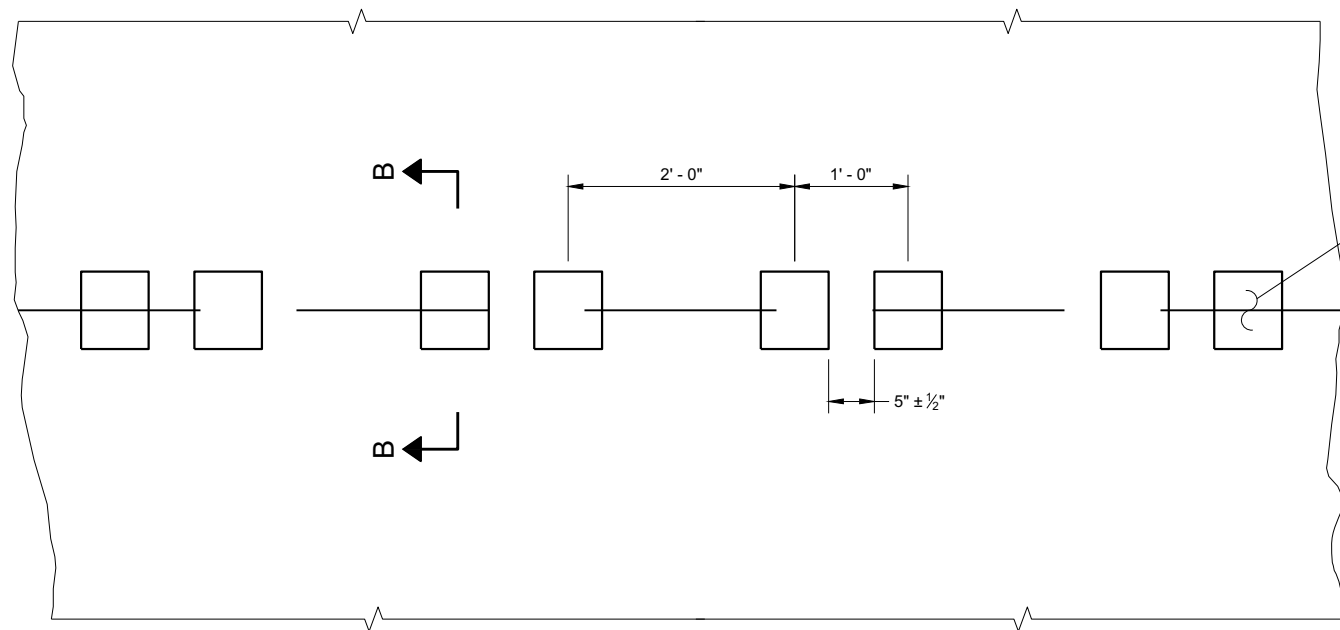


END VIEW
HORIZONTAL ELLIPSE

CONCRETE MASONRY
ENDWALLS FOR CULVERT
PIPE AND PIPE ARCH

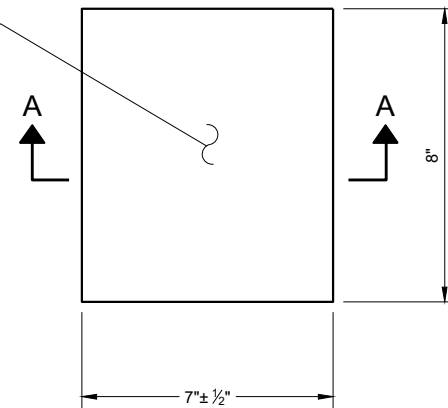
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2022 /S/ Rodney Taylor
DATE ROADWAY STANDARDS DEVE 95
ENGINEER
FHWA



PLAN VIEW
SHOULDER WITH GROOVES

PLACEMENT DETAIL FOR TYPE 1 MILLED RUMBLE STRIP



PLAN VIEW
(SINGLE GROOVE)

GENERAL NOTES

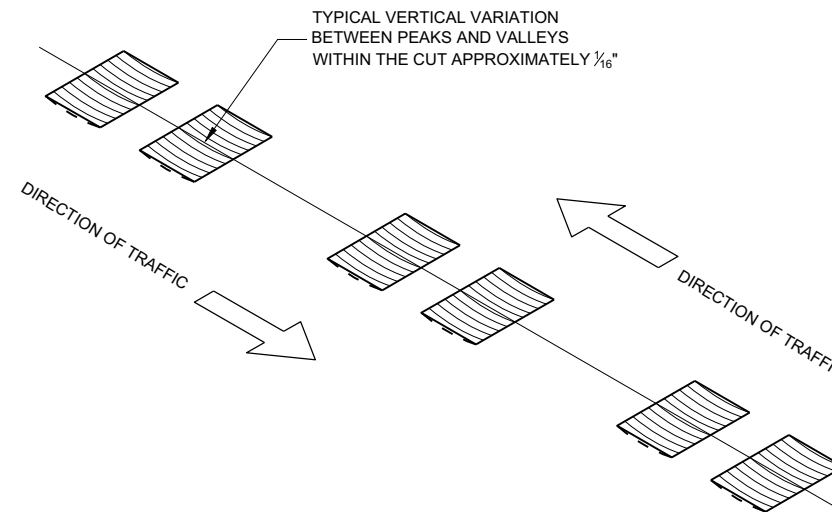
DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

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

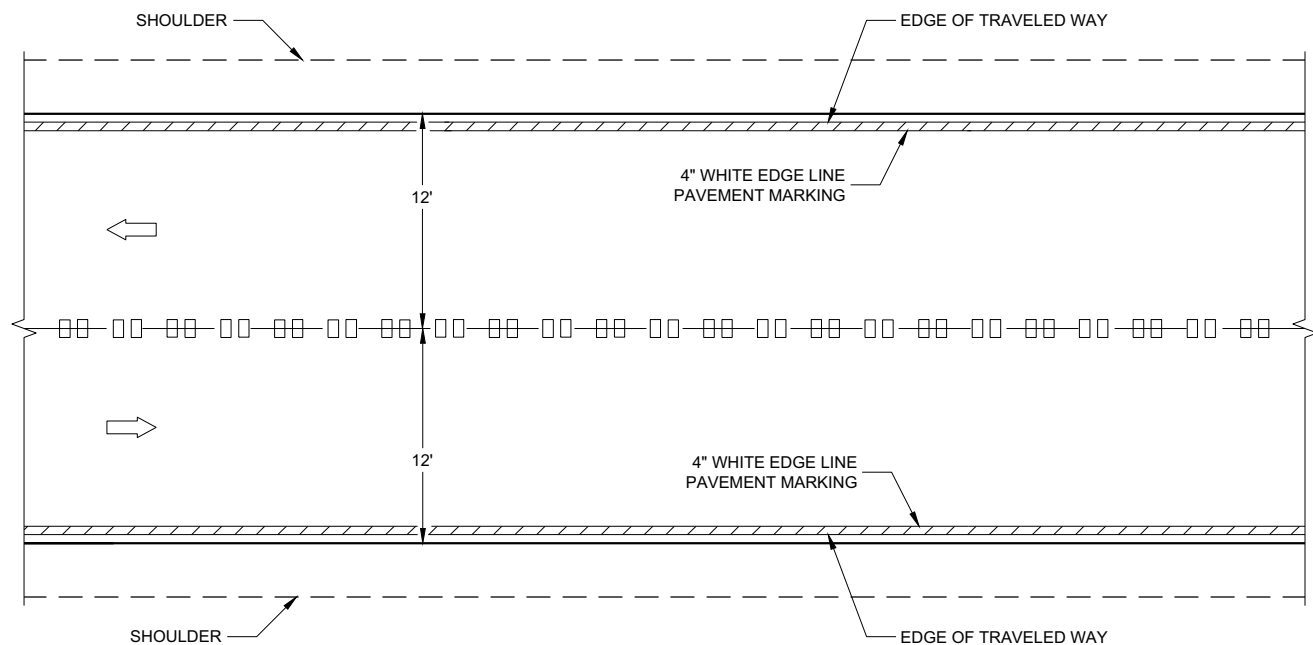
INSTALL PAVEMENT MARKING AFTER THE GROOVES ARE INSTALLED.

SEE SIGNING PLAN FOR SIGN REQUIREMENTS THAT MAY BE NEEDED.

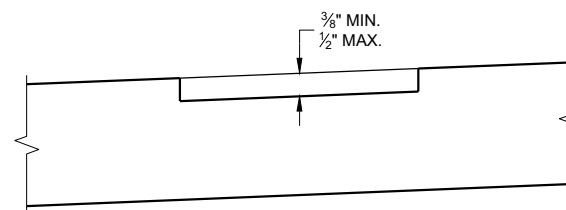
- ① CENTERLINE GROOVES MAY BE OMITTED IN AREAS WITH HIGH CONCENTRATIONS OF DRIVEWAYS. WHEN DIRECTED BY THE ENGINEER.



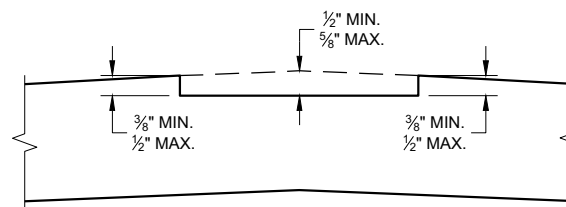
ISOMETRIC



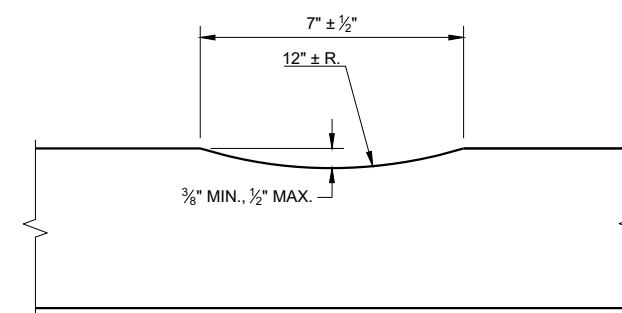
CENTERLINE GROOVES ON TWO-WAY ROADWAYS



SECTION B - B
SUPERELEVATED ROADWAY



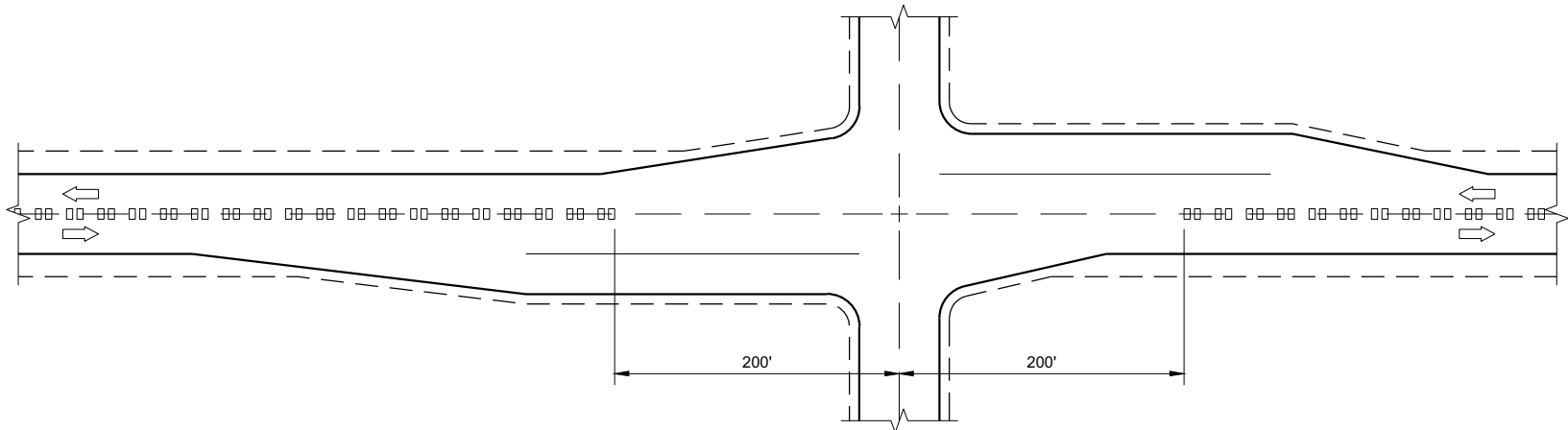
SECTION B - B
CROWNED ROADWAY



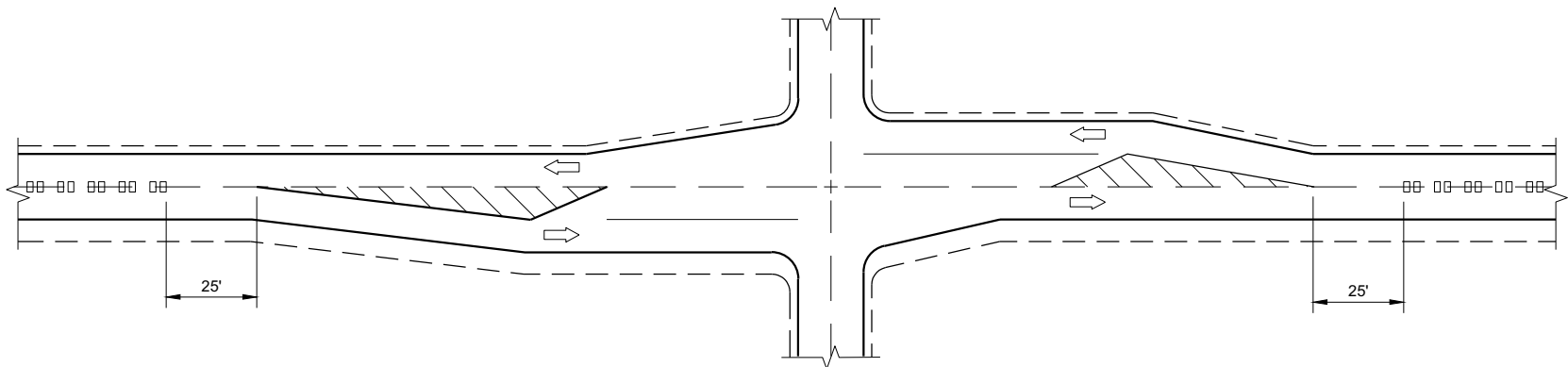
SECTION A - A

**2-LANE RURAL
CENTER LINE RUMBLE STRIP,
MILLING**

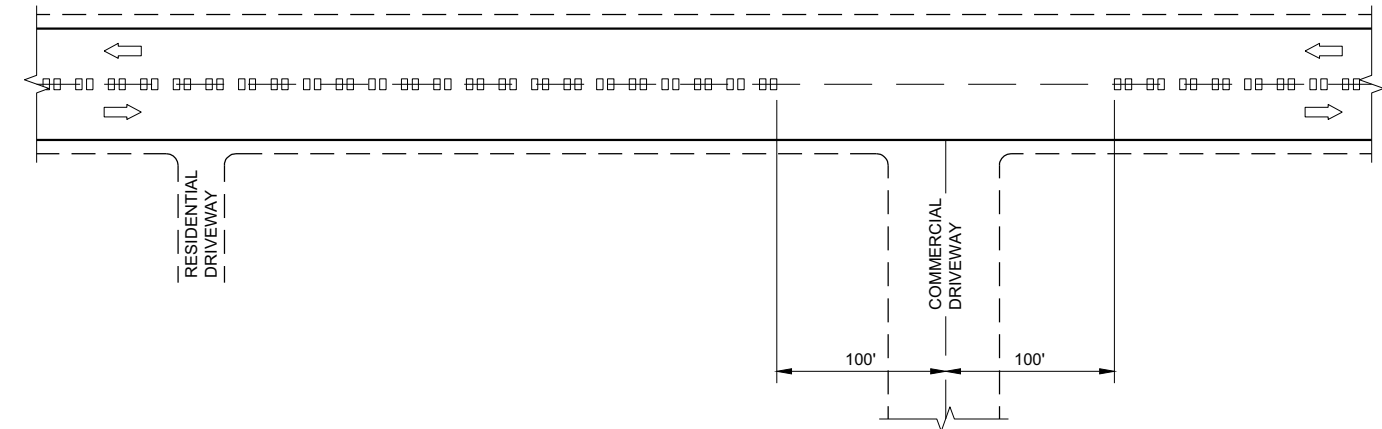
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 196



CENTERLINE GROOVES AT INTERSECTIONS



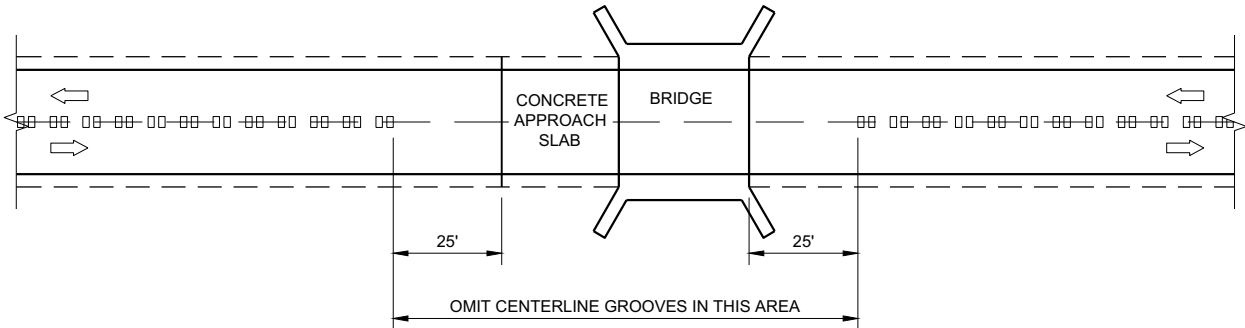
CENTERLINE GROOVES AT INTERSECTIONS
(WITH LEFT TURN LANES)



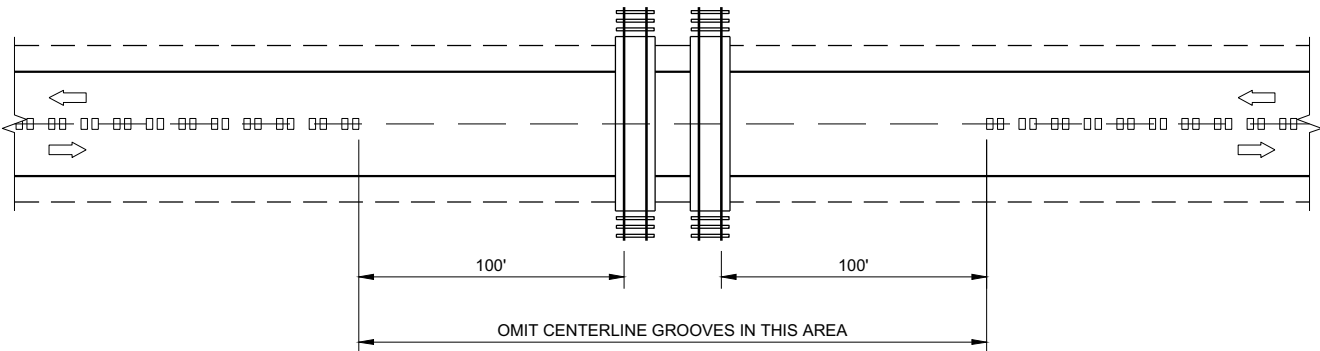
CENTERLINE GROOVES AT DRIVEWAYS^①

GENERAL NOTES

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



CENTERLINE GROOVES AT BRIDGES



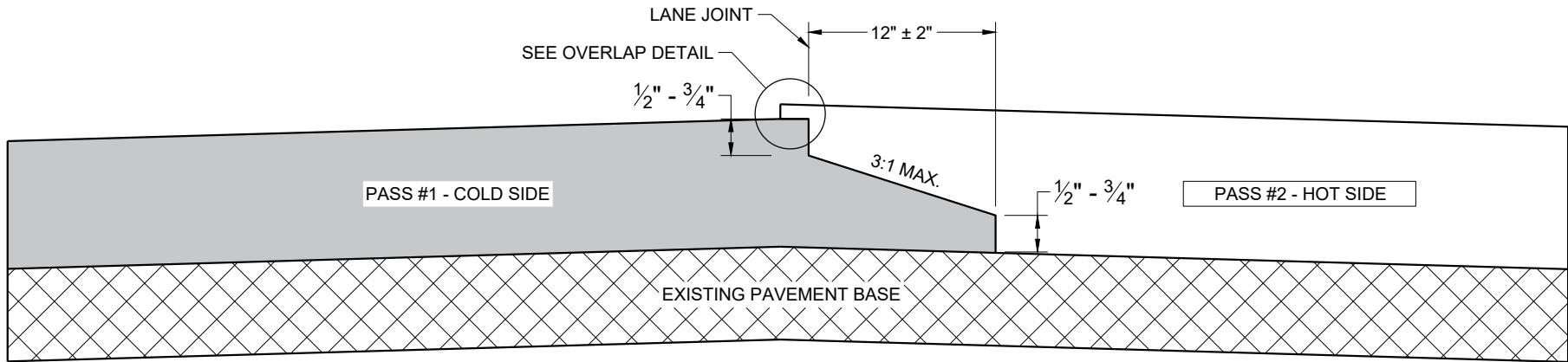
CENTERLINE GROOVES AT RAILROADS

2-LANE RURAL
CENTERLINE RUMBLE STRIP,
MILLING

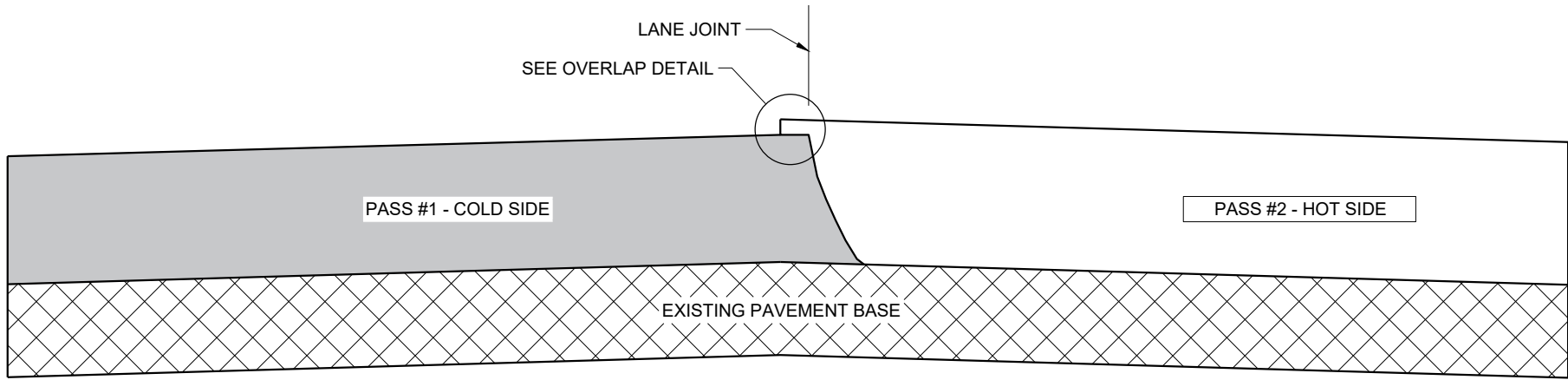
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

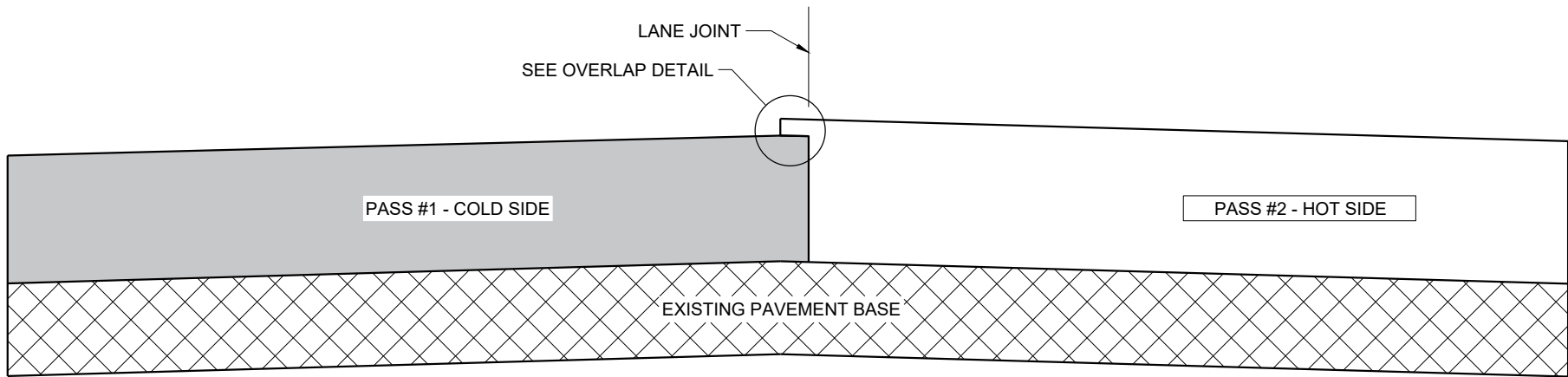
FHWA



TYPICAL PAVEMENT CROSS SECTION
NOTCHED WEDGE JOINT



TYPICAL PAVEMENT CROSS SECTION
VERTICAL JOINT



TYPICAL PAVEMENT CROSS SECTION
VERTICAL JOINT (MILLED)

GENERAL NOTES

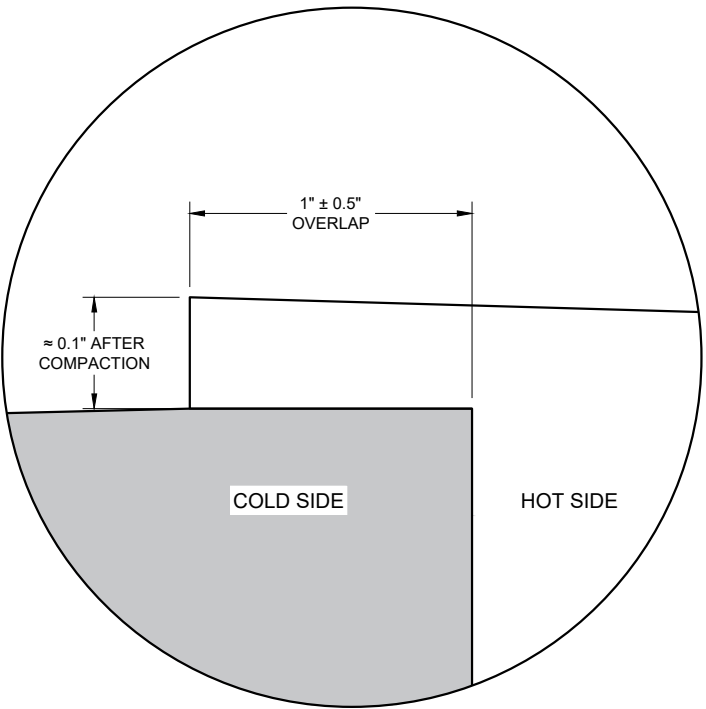
IN ADDITION TO THE DETAILS PROVIDED IN THIS DRAWING, CONFORM TO STANDARD SPECIFICATION 450.3.2.8 FOR WHEN A NOTCHED WEDGE JOINT IS REQUIRED AND FOR GENERAL JOINT CONSTRUCTION REQUIREMENTS.

FOR ALL LONGITUDINAL JOINTS, ENSURE THE PAVER SCREED OVERLAPS THE PREVIOUSLY PLACED PAVEMENT BY $1" \pm 0.5"$ AND THE HOT SIDE OF THE JOINT REMAINS HIGHER THAN THE COLD SIDE BY APPROXIMATELY 0.1" AFTER FINAL COMPACTION. (IT WILL BE FLUSH WHEN PAVING IN ECHELON.)

ONLY REMOVE THE LONGITUDINAL NOTCHED WEDGE JOINT FOR SMA PAVEMENT OR AS DIRECTED BY THE ENGINEER TO ADDRESS SPECIFIC LENGTHS OF JOINT DAMAGED BY TRAFFIC.

WHEN MILLING BACK OR REMOVING ANY LONGITUDINAL JOINT, LIMIT THE MATERIAL REMOVED TO 2" FROM THE TOP NOTCH OR FROM THE VERTICAL JOINT EDGE ON THE COLD SIDE OF THE JOINT.

USE LONGITUDINAL MILLED JOINT AS PLANS SHOW OR THE AS THE ENGINEER DIRECTS.

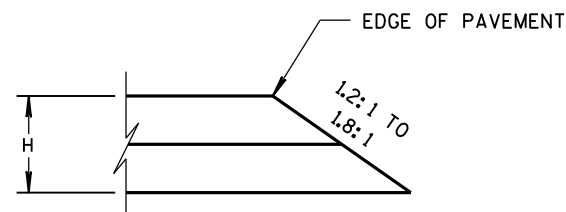


OVERLAP DETAIL (TYPICAL)

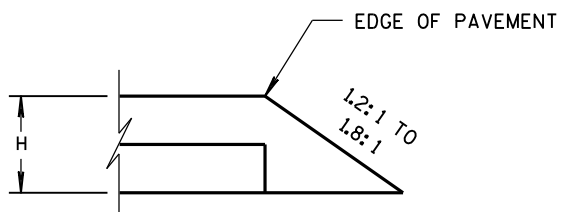
HMA LONGITUDINAL JOINTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

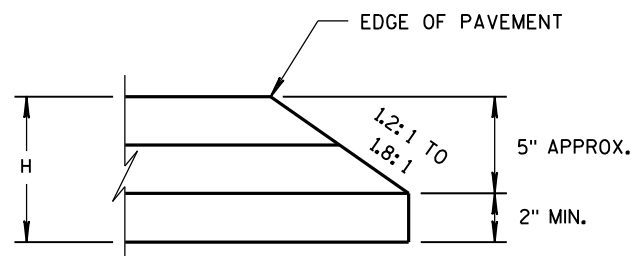
APPROVED
November 2020 /S/ Steven Hefel
DATE HMA PAVEMENT ENGIN 98
FHWA



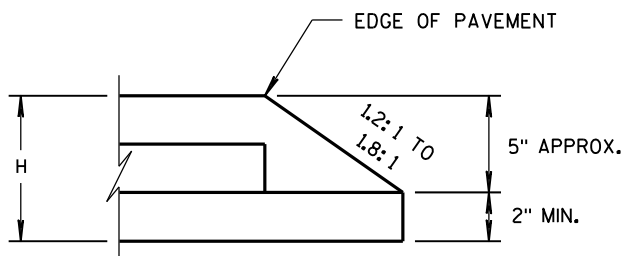
CONSTRUCTED WITH FINAL TWO LAYERS
FOR H 5" OR LESS



CONSTRUCTED WITH FINAL LAYER
FOR H 5" OR LESS

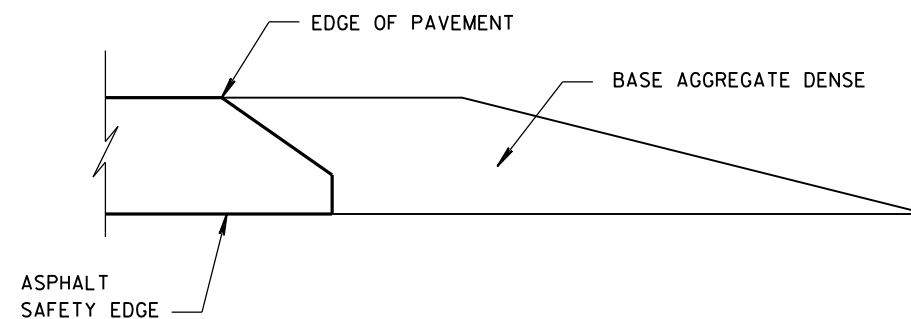


CONSTRUCTED WITH FINAL TWO LAYERS
FOR H GREATER THAN 5"



CONSTRUCTED WITH FINAL LAYER
FOR H GREATER THAN 5"

HMA PAVEMENT AND HMA OVERLAYS



FINISHED SHOULDER AGGREGATE PLACEMENT

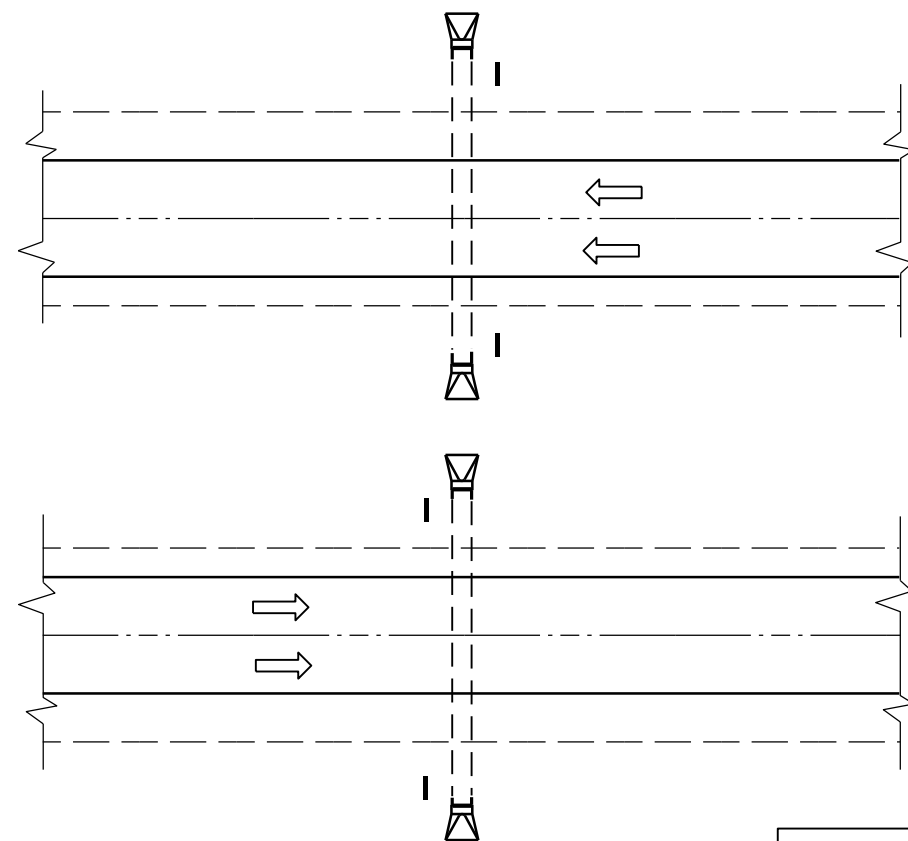
SAFETY EDGE_{SM}

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

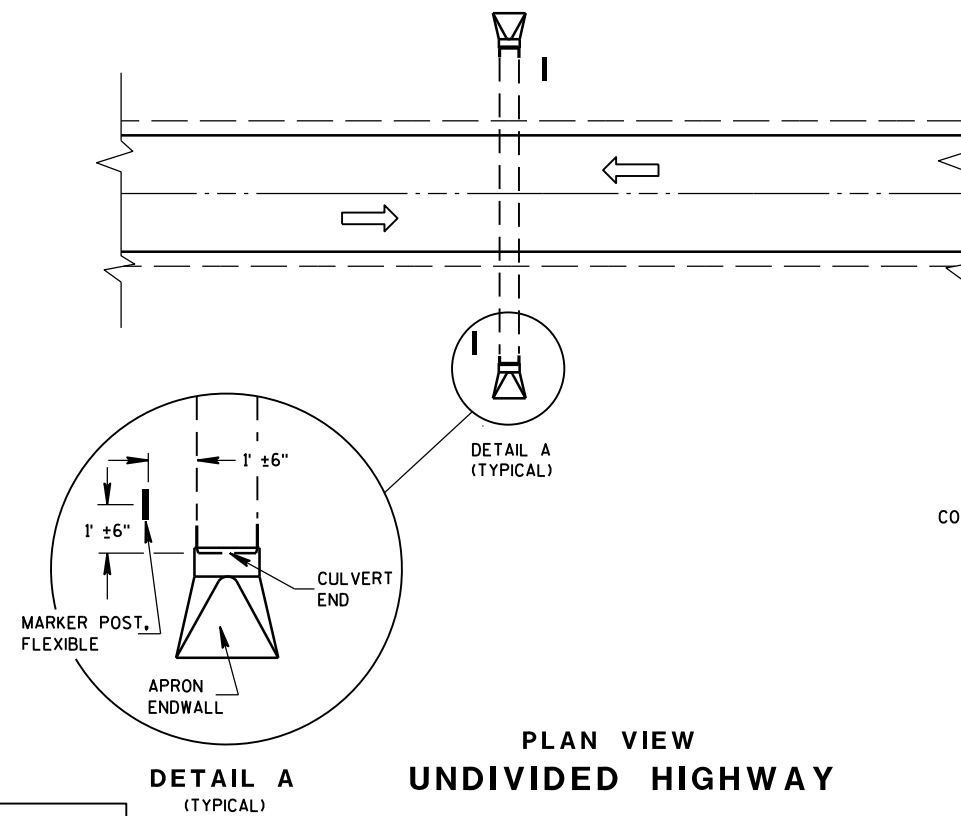
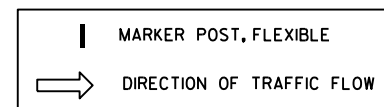
APPROVED
11/30/2012
DATE
FHWA

/s/ Jerry H. Zoaga
ROADWAY STANDARDS
ENGINEER

ENT



PLAN VIEW
DIVIDED HIGHWAY

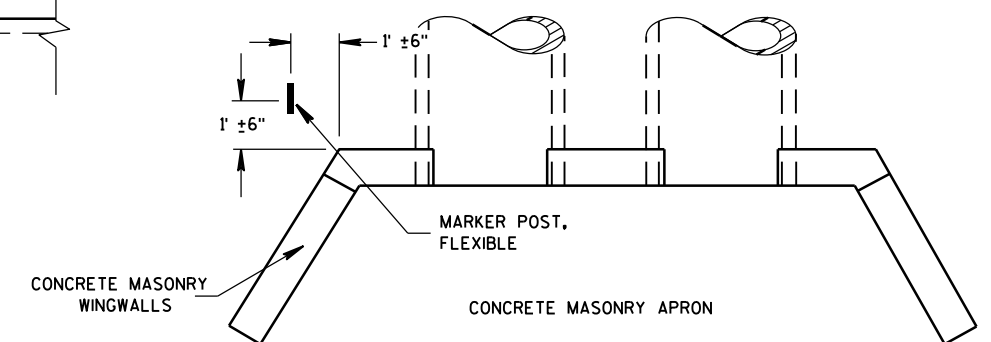


PLAN VIEW
UNDIVIDED HIGHWAY

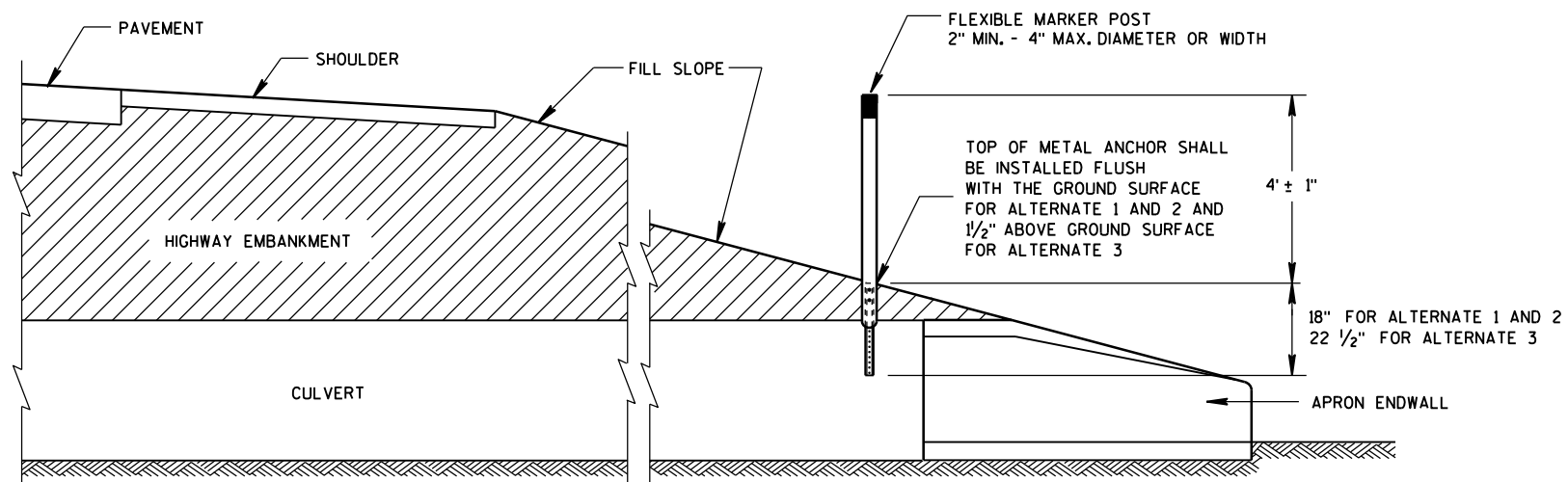
FLEXIBLE MARKER POST LOCATION

GENERAL NOTES

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



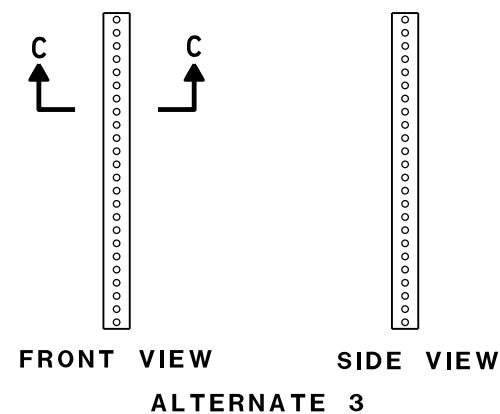
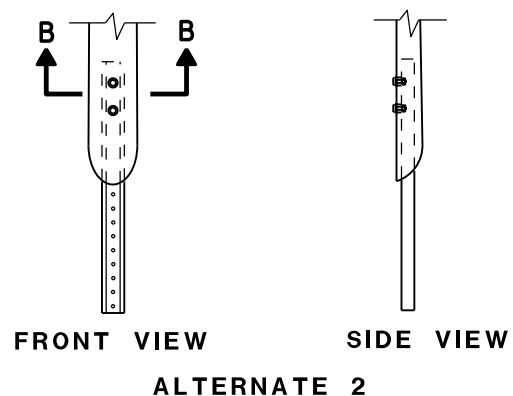
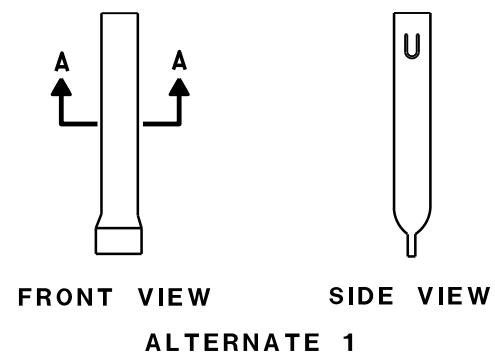
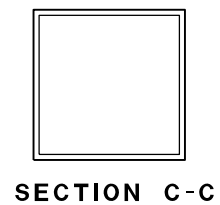
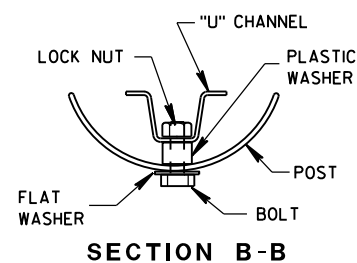
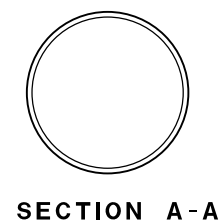
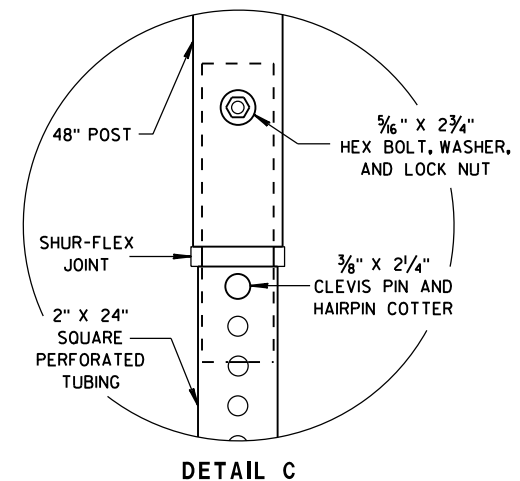
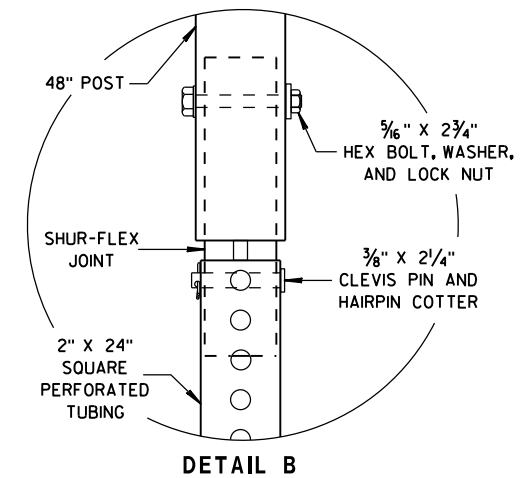
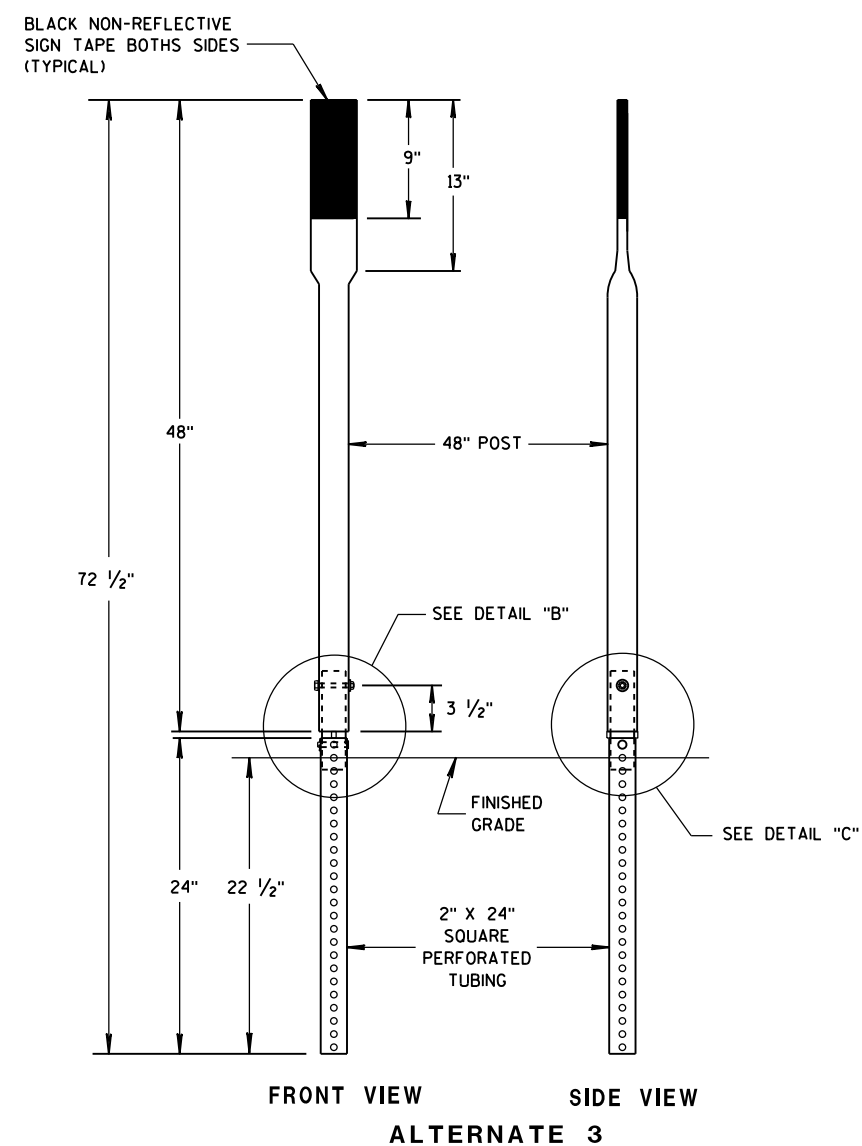
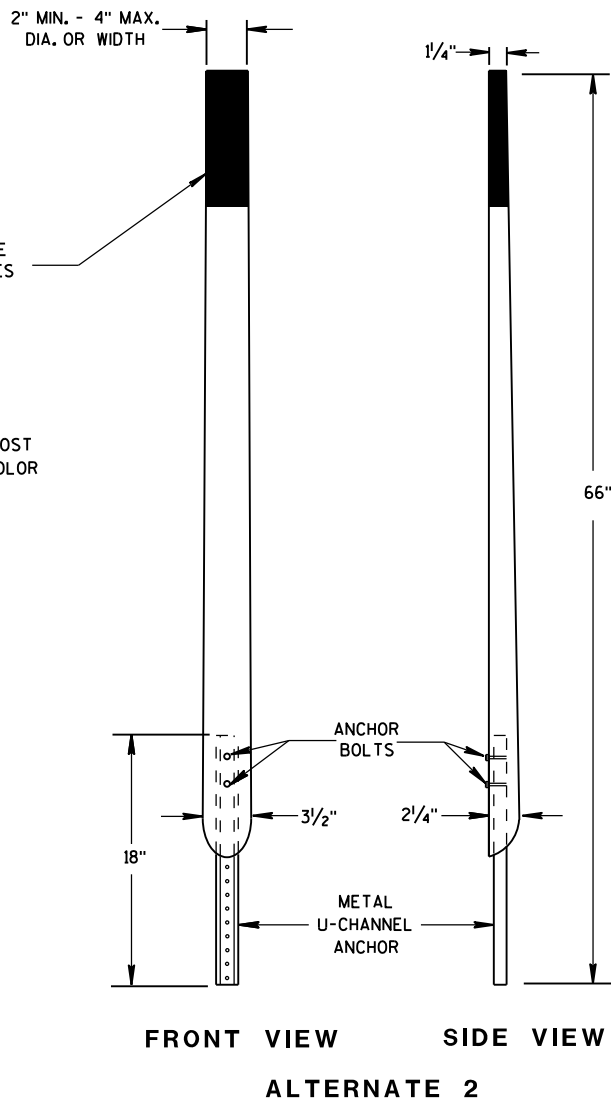
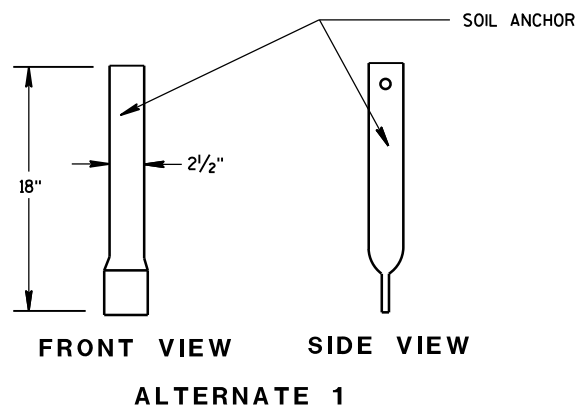
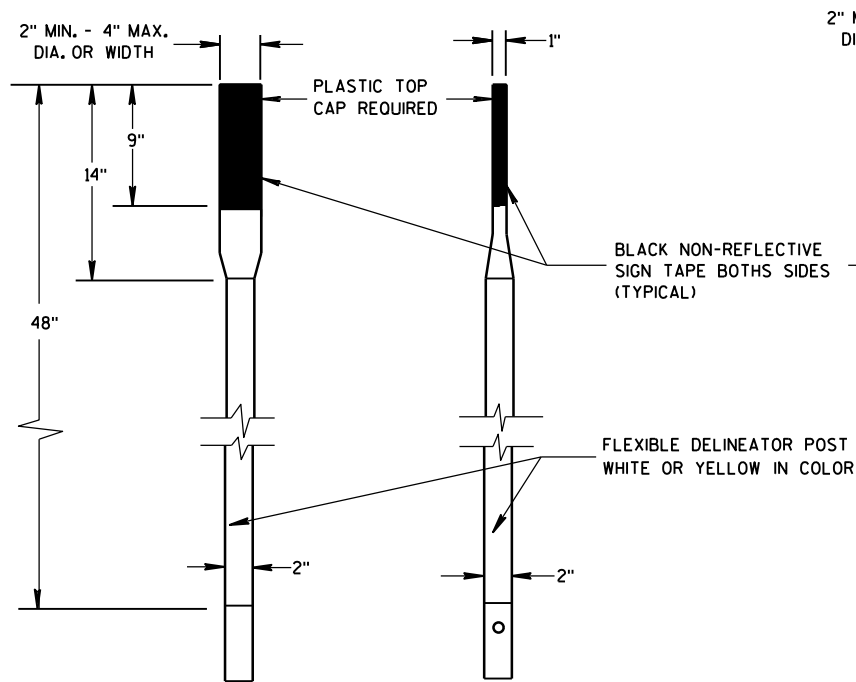
PLAN VIEW
CONCRETE MASONRY ENDWALLS FOR
CULVERT PIPE AND PIPE ARCH



CROSS SECTION
FLEXIBLE MARKER POST

FLEXIBLE MARKER POST
FOR CULVERT END

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 100



FLEXIBLE MARKER POST FOR CULVERT END

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

10/1/2012
DATE

FHWA

/S/ Travis Feltes
STATE TRAFFIC ENGINEER 101

IGN

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" X 48" UNLESS OTHERWISE NOTED.

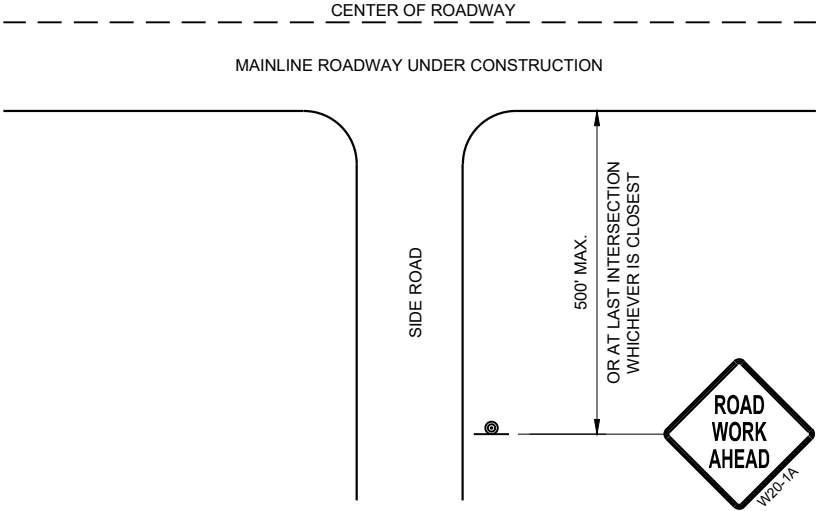
SIGNS THAT WILL BE IN PLACE LESS THAN SEVEN CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

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 REESTABLISHED.

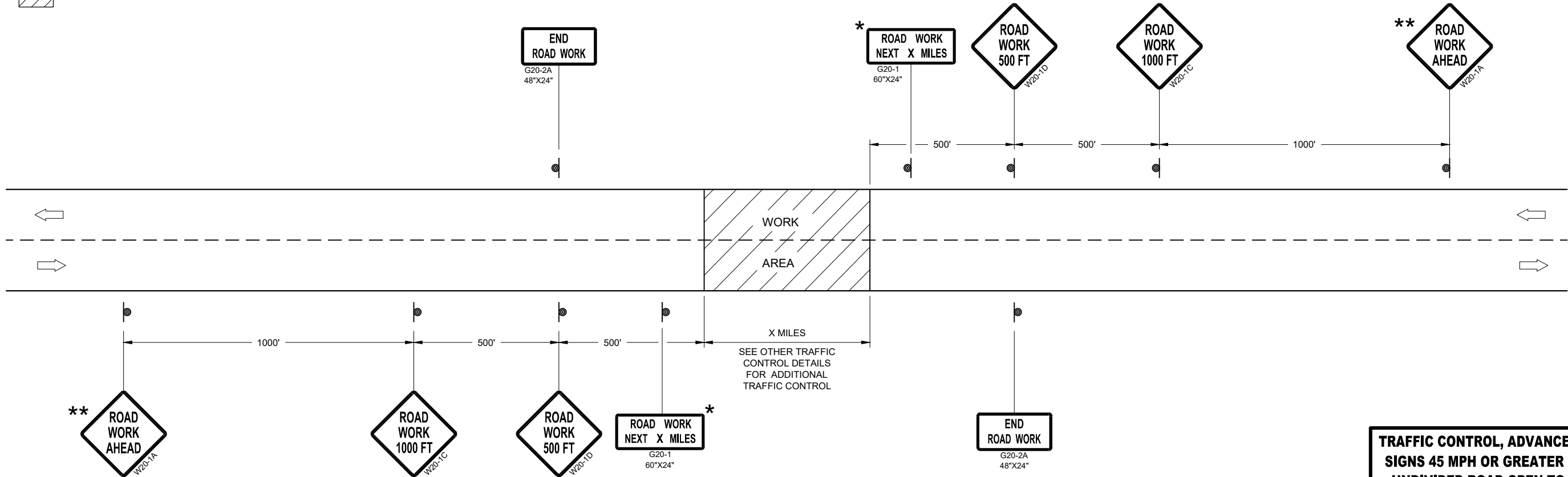
- * OMIT G20-1 SIGNS IF LENGTH OF WORK AREA IS 2 MILES OR LESS
- ** PLACE AN ADDITIONAL W20-1A "ROAD WORK AHEAD" SIGN IF WORK AREA WITHIN THE PROJECT IS SEPARATED BY MORE THAN 2 MILES FROM PREVIOUS WORK AREA.

LEGEND

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



TYPICAL SIDE ROAD APPROACH
WARNING SIGN DETAIL

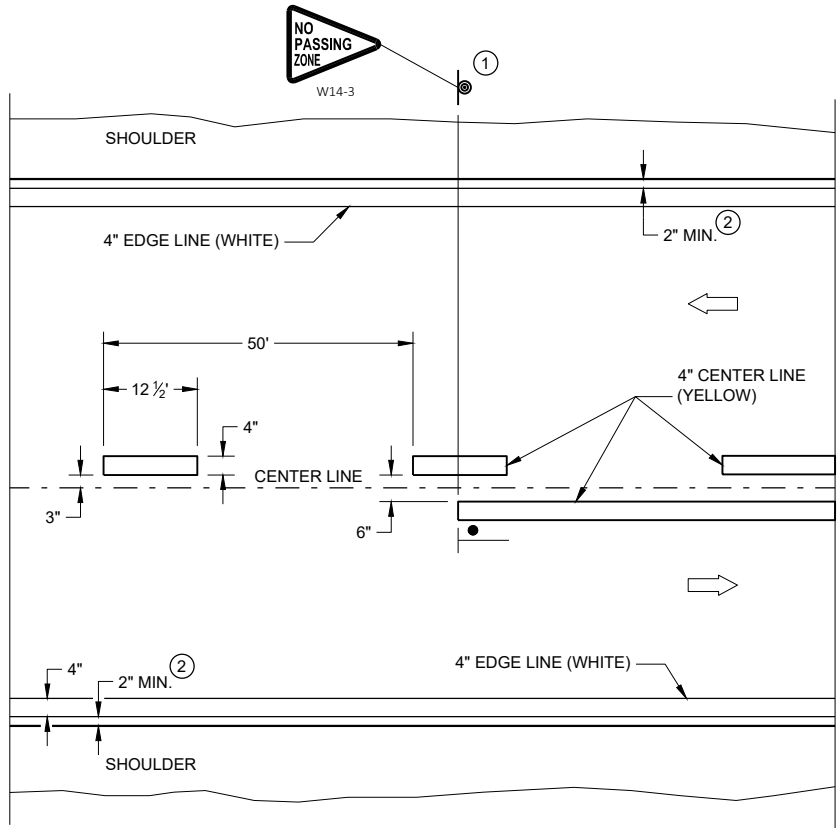


TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45MPH OR GREATER

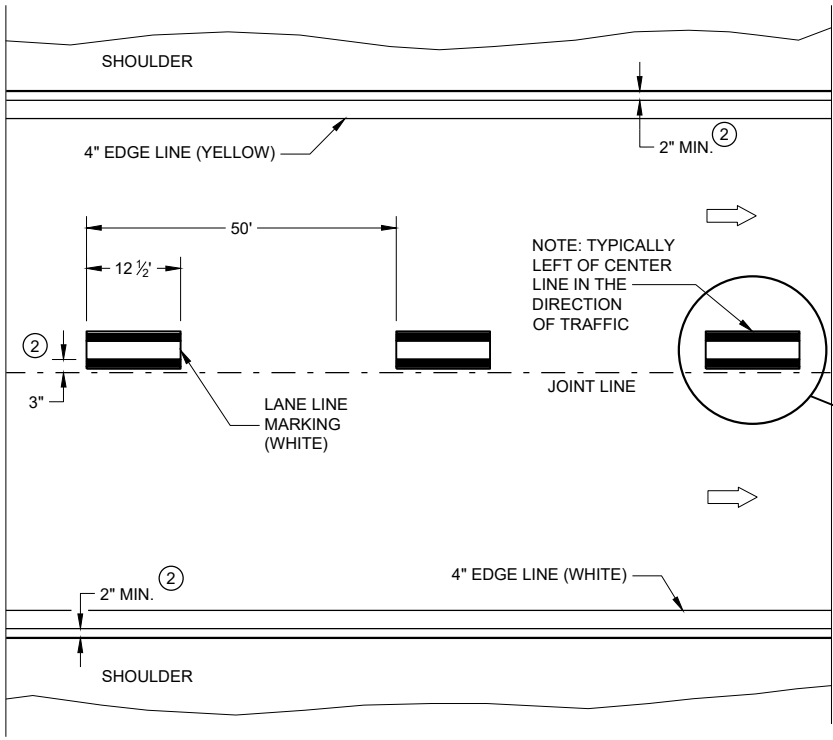
TRAFFIC CONTROL, ADVANCE WARNING
SIGNS 45 MPH OR GREATER TWO-WAY
UNDIVIDED ROAD OPEN TO TRAFFIC

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
July 2018 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER 102
FHWA



TWO WAY TRAFFIC



ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING

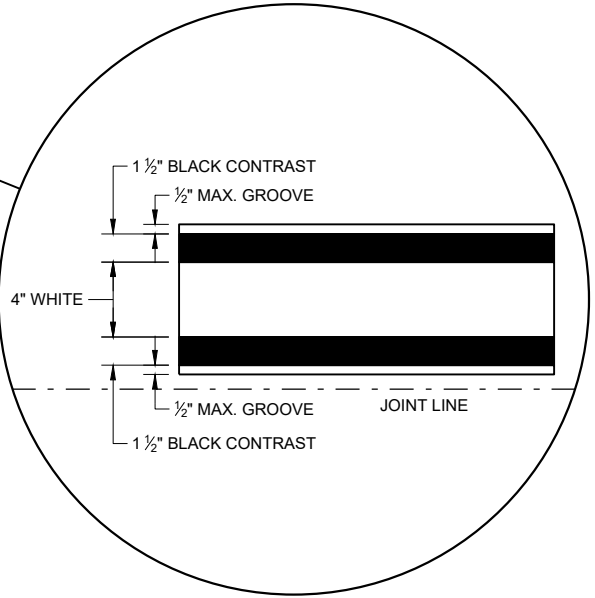
GENERAL NOTES

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
- ② MEASURE FROM EDGE OF MARKING TO JOINT LINE. THIS DOES NOT INCLUDE SPACE NEEDED FOR GROOVING OPERATIONS.

LEGEND

- "T" MARKING
- SIGN ON PERMANENT SUPPORT
- DIRECTION OF TRAFFIC

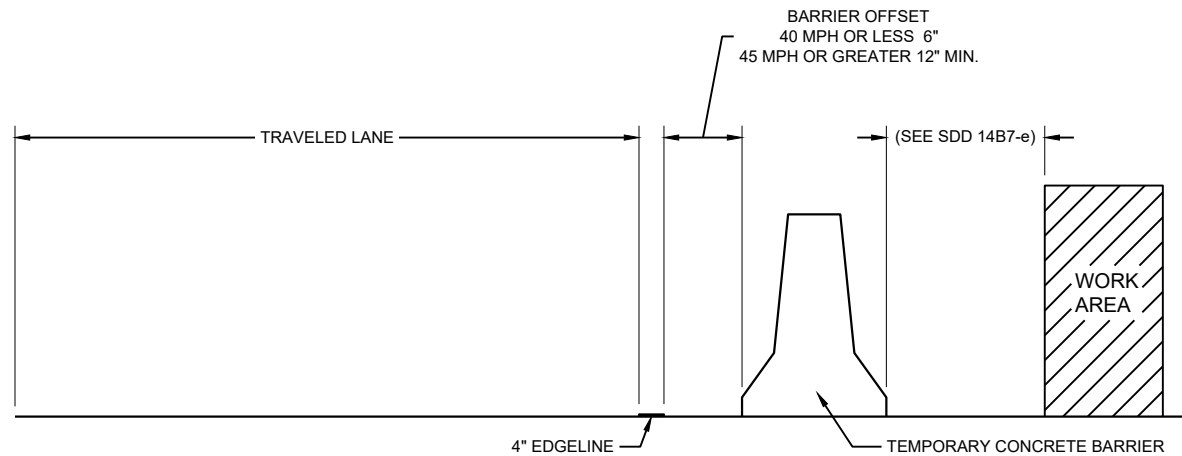


PERMANENT LONGITUDINAL PAVEMENT MARKINGS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2022
DATE
/S/ Jeannie Silver
STATEWIDE SIGNING AND N
ENGINEER

FHWA 103



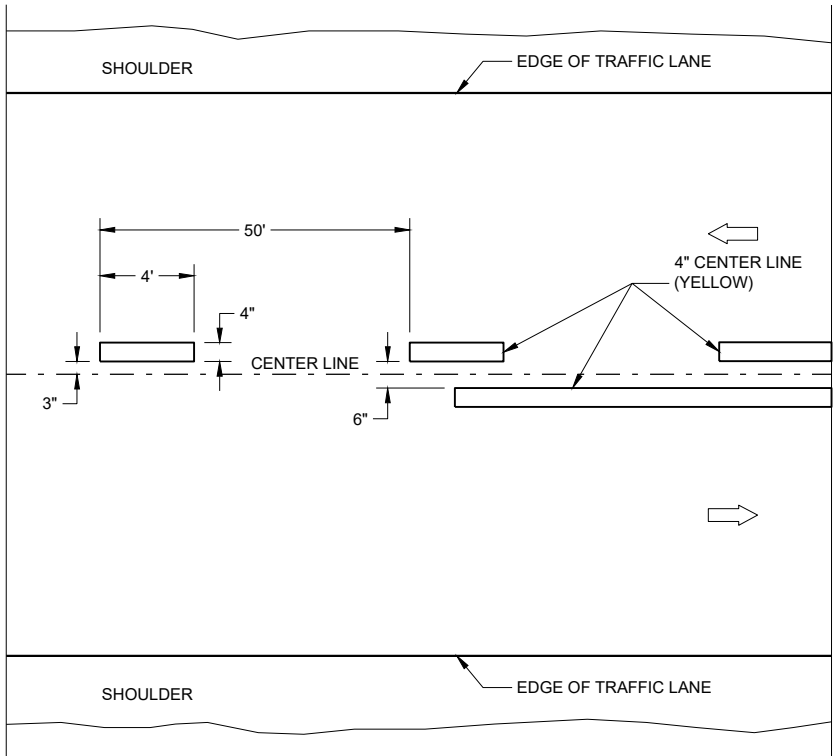
TEMPORARY BARRIER OFFSET FROM EDGE LINE

GENERAL NOTES

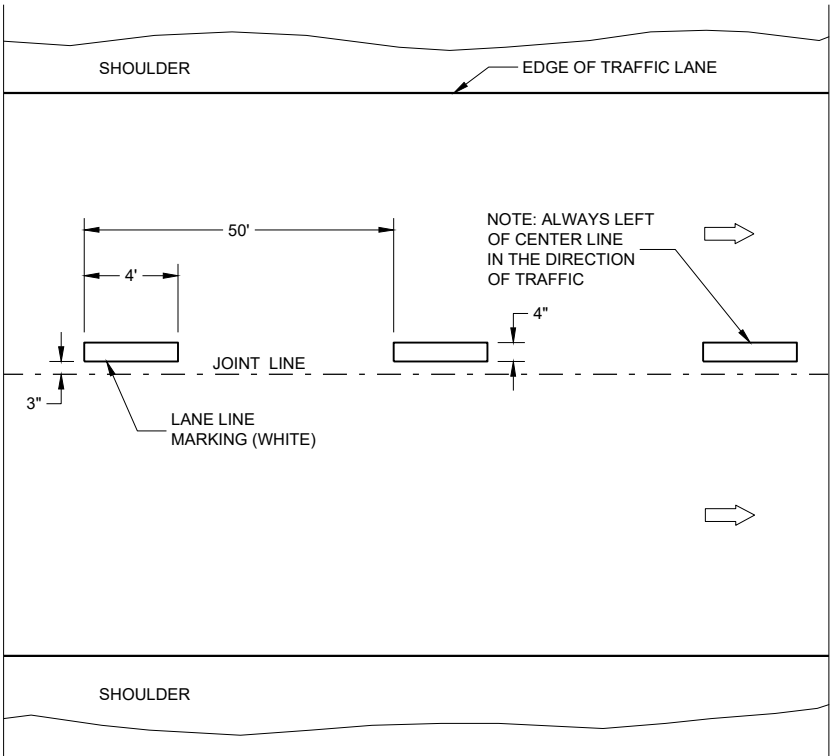
DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO STANDARD SPECIFICATIONS AND SPECIAL PROVISIONS.

LEGEND

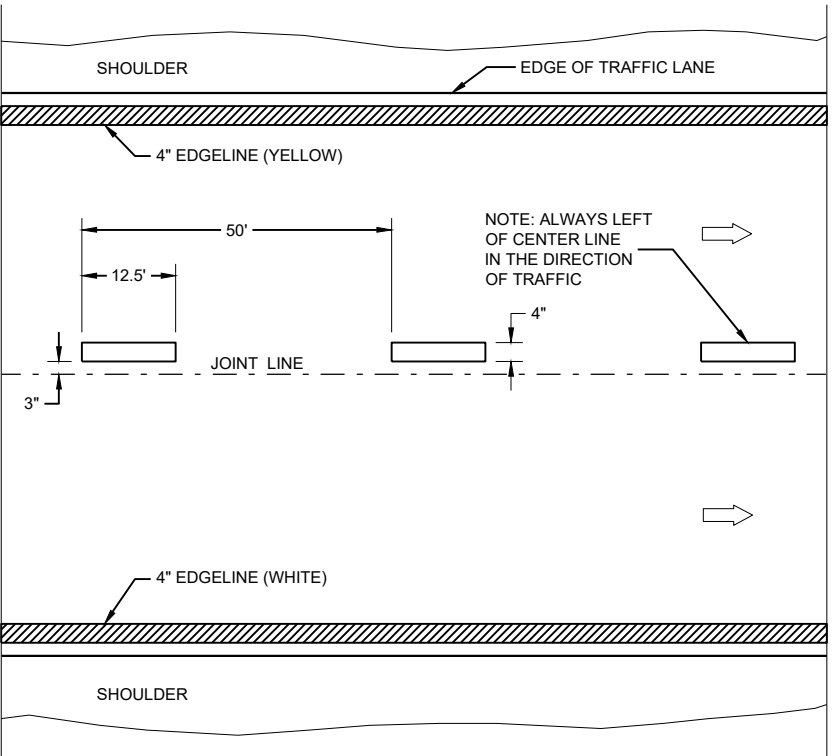
DIRECTION OF TRAFFIC



TWO WAY TRAFFIC



ONE WAY TRAFFIC



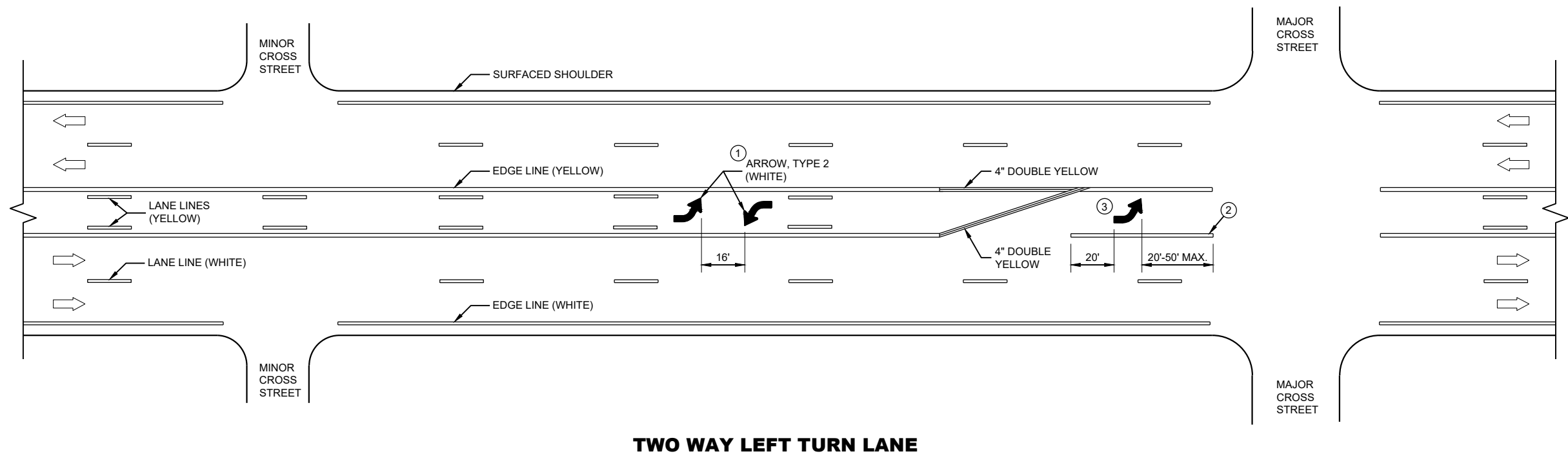
FREEWAYS AND EXPRESSWAYS

TEMPORARY PAVEMENT MARKING

TEMPORARY LONGITUDINAL PAVEMENT MARKING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2022 /S/ Jeannie Silver
DATE STATEWIDE SIGNING AND MARKING ENGINEER



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.

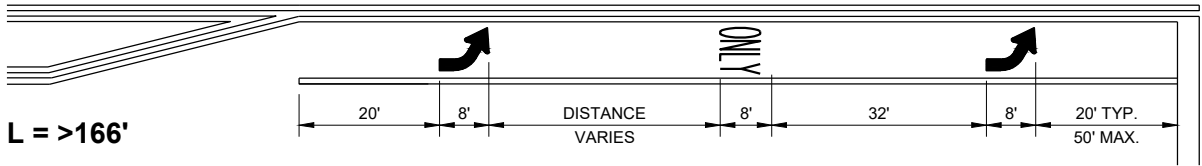
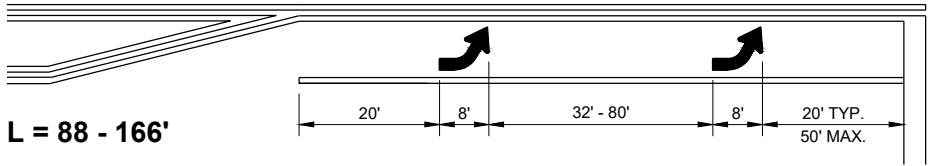
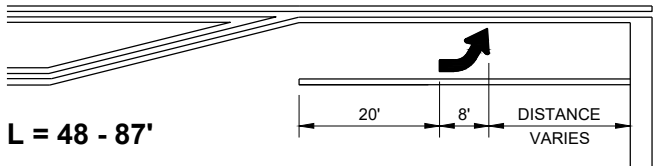
➡ DIRECTION OF TRAFFIC

**PAVEMENT MARKING
(TURN LANES)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 105

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

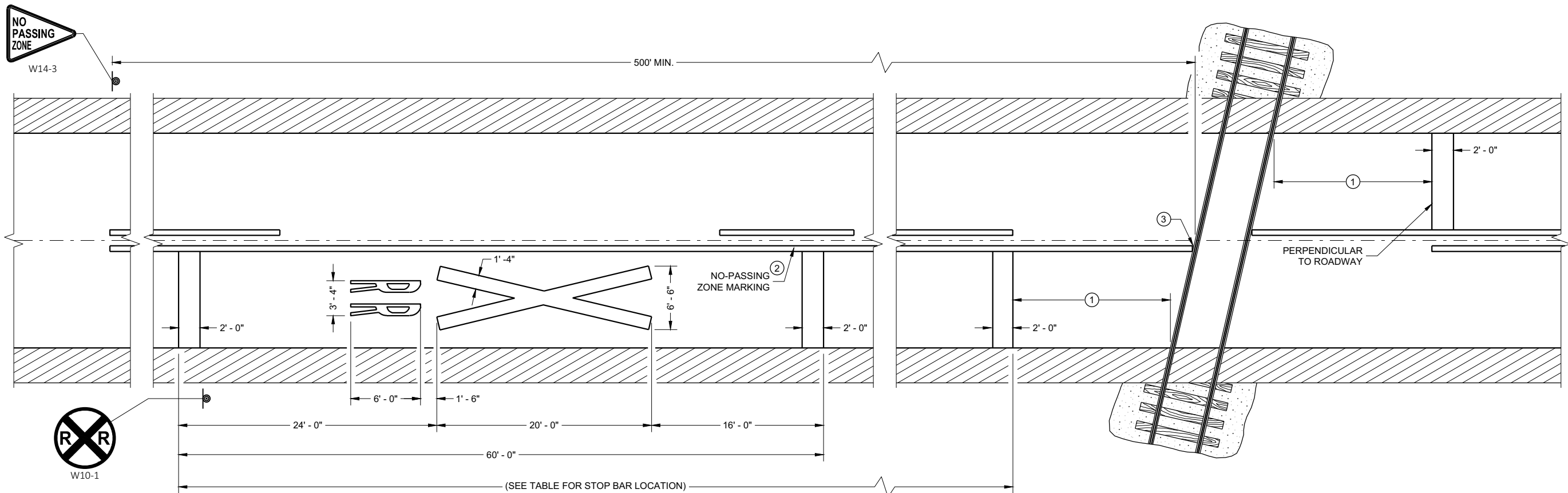
- ① 8" WHITE
- ② QUANTITY AND LOCATION OF TYPE 3 ARROWS ARE THE SAME AS THE TYPE II ARROWS IN THE ADJACENT TURN LANE. FOR TURN LANES WITH A PHYSICAL SEPARATION IN THE SAME DIRECTION OF TRAVEL, THE ARROWS AND "ONLY" MARKING MAY BE ELIMINATED.

➡ DIRECTION OF TRAFFIC

L = LENGTH OF TURN BAY

PAVEMENT MARKING (TURN LANES)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 106



PAVEMENT MARKING

LEGEND

 SIGN ON PERMANENT SUPPORT

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.

ON MULTI-LANE ROADS THE TRANSVERSE BANDS SHOULD EXTEND ACROSS ALL APPROACH LANES, AND INDIVIDUAL R X R SYMBOLS SHOULD BE USED IN EACH APPROACH LANE.

CENTER OR LANE LINES AND NO-PASSING ZONE MARKINGS SHOWN ON THIS DRAWING ARE REQUIRED AND PAID FOR UNDER OTHER ITEMS IN THE CONTRACT.

TRACE EXISTING SYMBOL WHERE EXISTING SYMBOLS ARE PLACED.

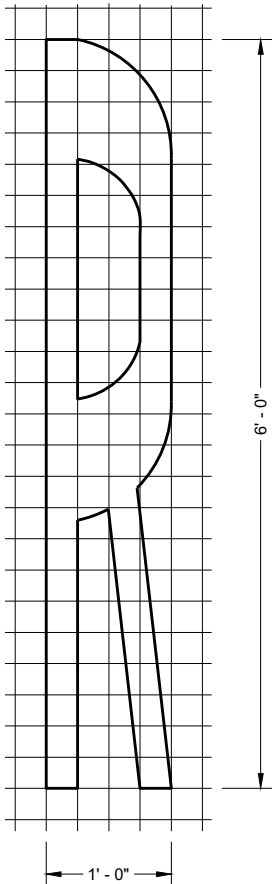
- ① MINIMUM 8' FROM ANY RAILROAD WARNING DEVICES (SIGNAL , GATES, ETC.) OR 25' FROM THE NEAREST RAIL, WHICHEVER DISTANCE IS GREATER.
- ② 500' MINIMUM. MARKING LIMITS MAY BE EXTENDED AS DIRECTED BY THE ENGINEER TO MEET ADJACENT NO-PASSING ZONE MARKINGS.
- ③ FOR MULTIPLE TRACK CROSSINGS, THE BARRIER LINE SHALL EXTEND TO THE NEAR RAIL OF THE FURTHEST TRACK IN THE DIRECTION OF HIGHWAY TRAVEL.

DISTANCE TABLE

TABLE BASED UPON 2C-4 WISCONSIN SUPPLEMENT OF MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

POSTED SPEED (M.P.H.)	DIMENSION RANGE (FEET)
25	150* - 250'
30	200* - 300'
35	250* - 450'
40	300* - 500'
45	400* - 650'
50	550* - 800'
55	750* - 1000'
60	1000* - 1250'
65	1000* - 1250'

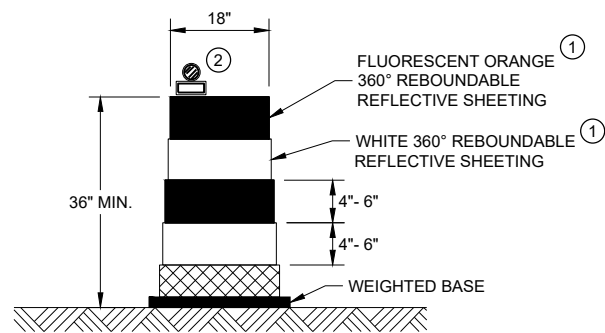
* THE MINIMUM DISTANCES IN THE TABLE ARE DESIRABLE AND SHOULD BE USED. THE DISTANCES MAY BE INCREASED UP TO THE MAXIMUM TO ALLOW FOR FIELD CONDITIONS SUCH AS THE CLOSED PROXIMITY OF DRIVEWAYS, BRIDGES, SIDE ROADS OR OTHER FEATURES THAT WOULD PROHIBIT THE MINIMUM DISTANCES FROM BEING USED.



SIGNING AND PAVEMENT MARKING DETAILS FOR RAILROAD - HIGHWAY GRADE CROSSINGS

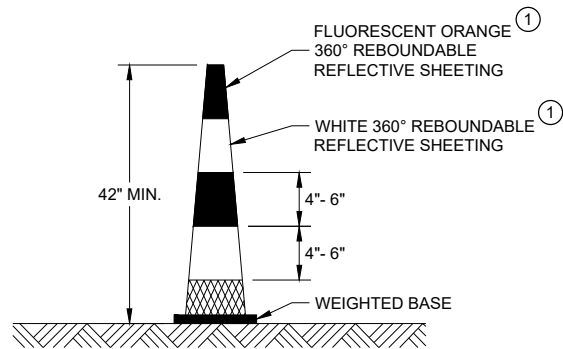
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2021 /S/ Matthew R. Rauch
DATE STATE SIGNING AND MAP ENGINEER 107
FHWA



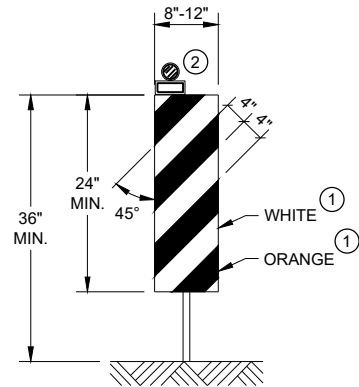
DRUM

BALLAST WIDTHS
RANGE FROM 24"-36"



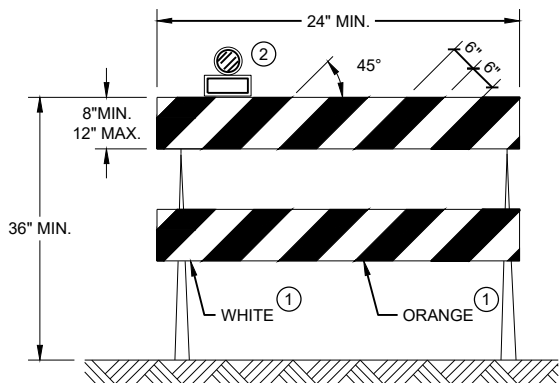
42" CONE

DO NOT USE IN TAPERS
½ SPACING OF DRUMS
BALLAST WIDTHS
RANGE FROM 14"-20"



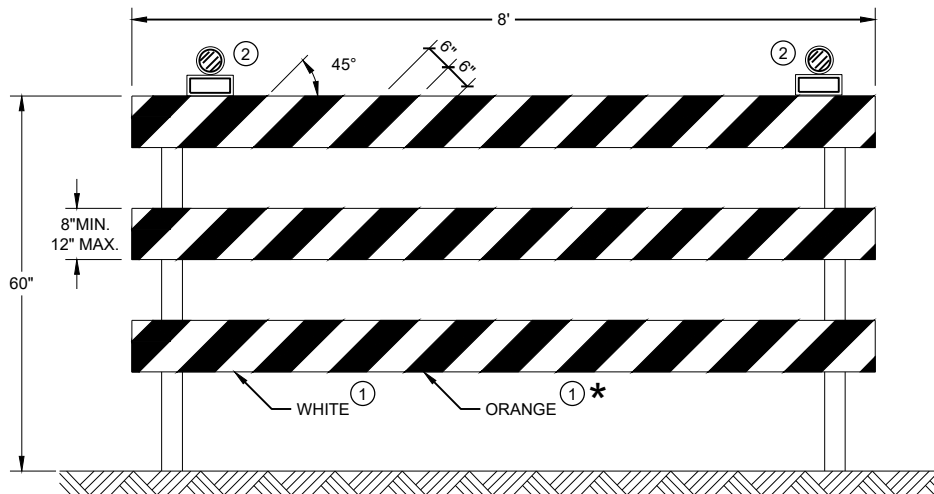
VERTICAL PANEL

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



TYPE II BARRICADE

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



TYPE III BARRICADE

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

* IF USED FOR A PERMANENT APPLICATION USE RED SHEETING.

GENERAL NOTES

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

**CHANNELIZING DEVICES
DRUMS, CONES, BARRICADES
AND VERTICAL PANELS**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2022 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER 108

FHWA

LEGEND

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

GENERAL NOTES

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

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

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

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

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

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

FLAGGING

FLAGGERS SHALL BE IN SIGHT OF EACH OTHER OR IN DIRECT COMMUNICATION AT ALL TIMES. THEY SHALL BE EQUIPPED WITH STOP/SLOW PADDLES FASTENED ON SUPPORT STAFFS. WHEN THE FLAGGING OPERATION IS NOT IN EFFECT REMOVE TEMPORARY PORTABLE RUMBLE STRIPS PRIOR TO COVERING OR REMOVING ALL ADVANCE SIGNING.

- ① FOR MOVING WORK OPERATIONS, POST ADDITIONAL W20-7A FLAGGER SIGNS AT APPROXIMATELY 3,500' INTERVALS IN THE MOVING WORK OPERATION OR AS APPROVED BY THE ENGINEER.
- ② SIGN NOT REQUIRED IF FLAGGING OPERATION OCCURS WITHIN A SIGNED ROAD WORK ZONE AREA.

WHEN THE DISTANCE BETWEEN FLAGGERS EXCEEDS 2 MILES, A PILOT CAR IS REQUIRED. WHEN CURVES REDUCE SIGHT DISTANCE BELOW 400', A PILOT CAR IS REQUIRED.

TEMPORARY PORTABLE RUMBLE STRIPS

UTILIZE TEMPORARY PORTABLE RUMBLE STRIPS ON ALL FLAGGING OPERATIONS.

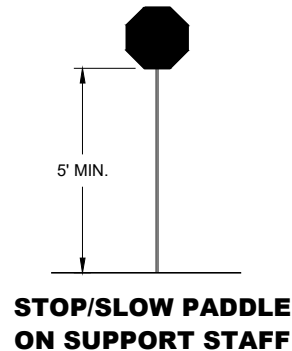
- ③ EACH TEMPORARY PORTABLE RUMBLE STRIP ARRAY CONSISTS OF THREE RUMBLE STRIPS PLACED TRANSVERSE ACROSS THE LANE AT THE LOCATIONS SHOWN. WITHIN EACH ARRAY, SPACING BETWEEN RUMBLE STRIPS SHALL BE 15 FEET ON CENTER

ONLY USE TEMPORARY PORTABLE RUMBLE STRIPS FROM THE APPROVED PRODUCTS LIST.

INSTALL TEMPORARY RUMBLE STRIPS PER MANUFACTURER'S RECOMMENDATIONS.

PLACE ADVANCE SIGNING PRIOR TO INSTALLING TEMPORARY RUMBLE STRIPS.

DO NOT INSTALL TEMPORARY PORTABLE RUMBLE STRIPS ON GRAVEL, MILLED SURFACES, OR ASPHALT THAT HAS BEEN PAVED LESS THAN 12 HOURS.

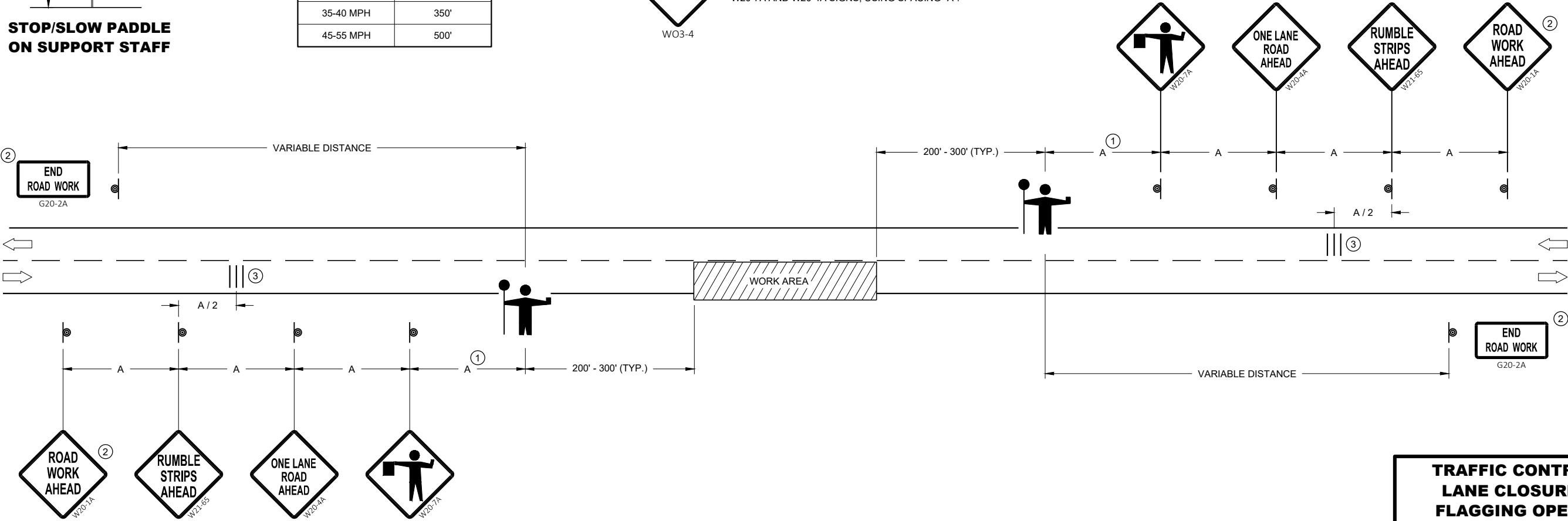


SIGN AND TEMPORARY RUMBLE STRIP ARRAY SPACING TABLE

SPEED LIMIT	SPACING "A"
25-30 MPH	200'
35-40 MPH	350'
45-55 MPH	500'



USE OF W03-4 SIGN IS OPTIONAL. WHEN USED, THIS SIGN SHALL BE LOCATED BETWEEN THE W20-7A AND W20-4A SIGNS, USING SPACING "A".



TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED May 2022 DATE	/S/ Andrew Heidtke WORK ZONE ENGINEER 109
FHWA	

LEGEND

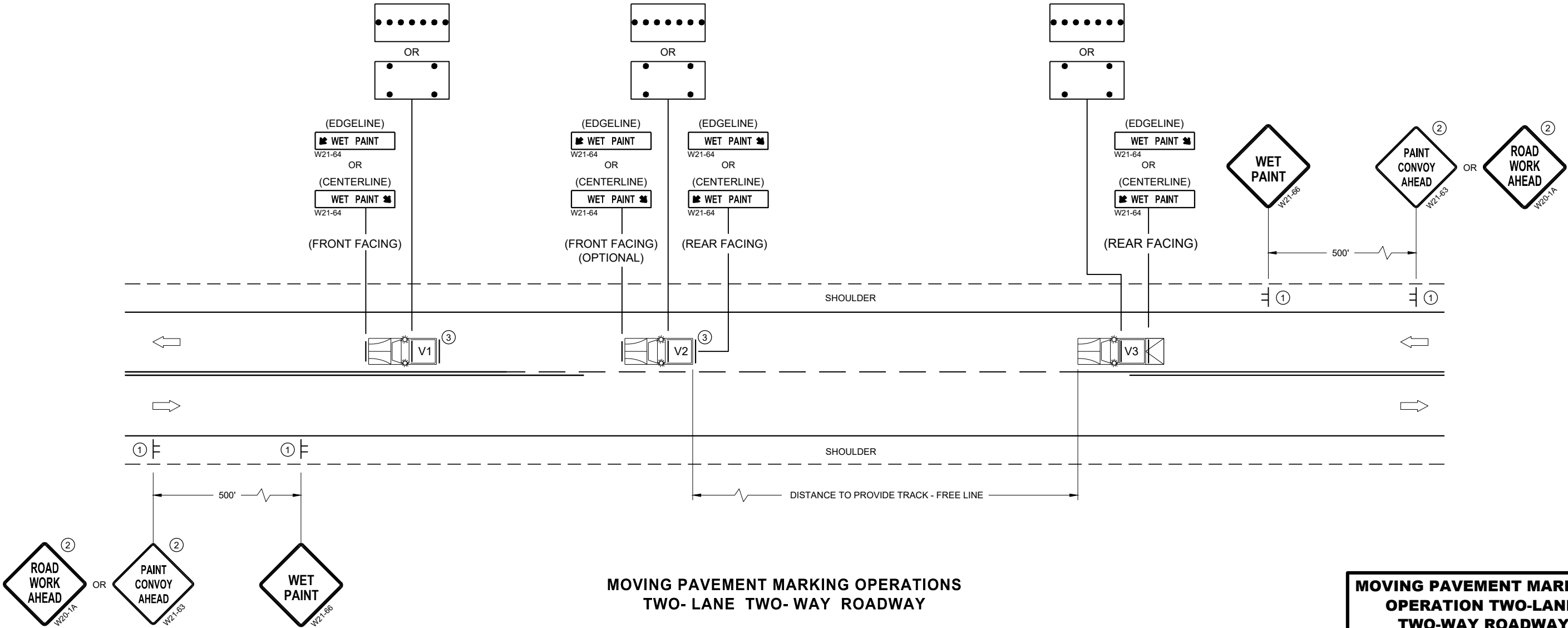
- V1 LEAD VEHICLE
- V2 MARKING VEHICLE
- V3 SHADOW VEHICLE
-  TRUCK MOUNTED ATTENUATOR (TMA)
-  SIGN ON TEMPORARY SUPPORT
-  DIRECTION OF TRAFFIC
-  FLASHING ARROW PANEL (CAUTION)

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 OPERATING IN CAUTION MODE. SIGNS PLACED ON VEHICLES MUST NOT OBSCURE THE ARROW PANEL.
- ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE SPECIFIED.
- 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 AND HORIZONTAL CURVES THAT RESTRICT SIGHT DISTANCE.
- THE WORK AND SHADOW VEHICLES SHOULD PULL OVER PERIODICALLY TO ALLOW TRAFFIC TO PASS.

- WHEN NO WORK ACTIVITY IS TAKING PLACE, REMOVE OR LAY STATIONARY SIGNS AND SUPPORTS FLAT ON THE GRADE WITH UPRIGHTS ORIENTED PARALLEL TO AND DOWNSTREAM FROM TRAFFIC.
- CONES SHOULD BE USED BETWEEN THE MARKING AND SHADOW VEHICLE AT 100 FOOT SPACING. CONES MAY BE OMITTED ON PAINTED LINE IF APPROVED BY THE ENGINEER. CONSIDER PAVEMENT MARKING DRY OR CURE TIMES AND TRAFFIC VOLUME.
- CONES SHALL BE A MINIMUM OF 28" FOR WET PAVEMENT MARKING .

- ① SIGNS SHALL BE REPEATED APPROXIMATELY EVERY THREE MILES.
- ② IF CONSTRUCTION WORK ZONE SIGNS ARE IN PLACE, W20-1A OR W21-63 ARE NOT REQUIRED.
- ③ V1 AND V2 CAN BE SWITCHED SO THAT THE MARKER IS THE LEAD VEHICLE.



MOVING PAVEMENT MARKING OPERATIONS
TWO-LANE TWO-WAY ROADWAY

MOVING PAVEMENT MARKING
OPERATION TWO-LANE
TWO-WAY ROADWAY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2022 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER 110
FHWA

LEGEND

- V1

LEAD VEHICLE
- V2

MARKING VEHICLE
- V3

SHADOW VEHICLE
- TRUCK MOUNTED ATTENUATOR (TMA)
- SIGN ON TEMPORARY SUPPORT
- DIRECTION OF TRAFFIC
- FLASHING ARROW PANEL (MERGE)
- FLASHING ARROW PANEL (CAUTION)

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.

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 AND HORIZONTAL CURVES THAT RESTRICT SIGHT DISTANCE.

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

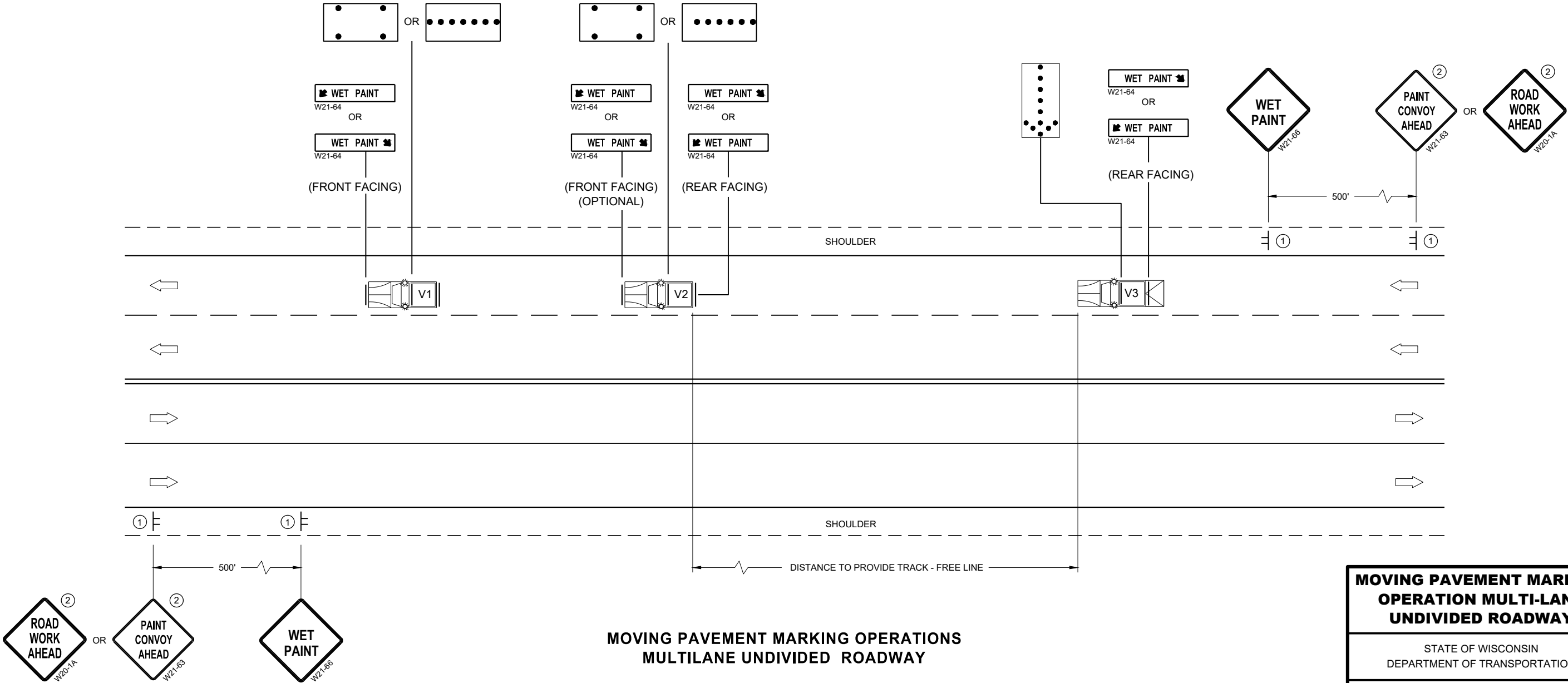
WHEN A RAMP INTERSECTS THE FACILITY ON WHICH THE WORK IS BEING PERFORMED, PROVIDE ADDITIONAL TRAFFIC CONTROLS AS SPECIFIED IN THE CONTRACT OR AS APPROVED BY THE ENGINEER.

WHEN NO WORK ACTIVITY IS TAKING PLACE, REMOVE OR LAY STATIONARY SIGNS AND SUPPORTS FLAT ON THE GRADE WITH UPRIGHTS ORIENTED PARALLEL TO AND DOWNSTREAM FROM TRAFFIC.

CONES SHOULD BE USED BETWEEN THE MARKING AND SHADOW VEHICLES AT 100 FOOT SPACING. CONES MAY BE OMITTED ON PAINTED LINE IF APPROVED BY THE ENGINEER. CONSIDER PAVEMENT MARKING DRY OR CURE TIMES AND TRAFFIC VOLUME.

CONES SHALL HAVE A MINIMUM HEIGHT OF 28" FOR WET PAVEMENT MARKINGS.

- ① SIGNS SHALL BE REPEATED APPROXIMATELY EVERY THREE MILES.
- ② IF CONSTRUCTION WORK ZONE SIGNS ARE IN PLACE, W20-1A OR W21-63 ARE NOT REQUIRED.

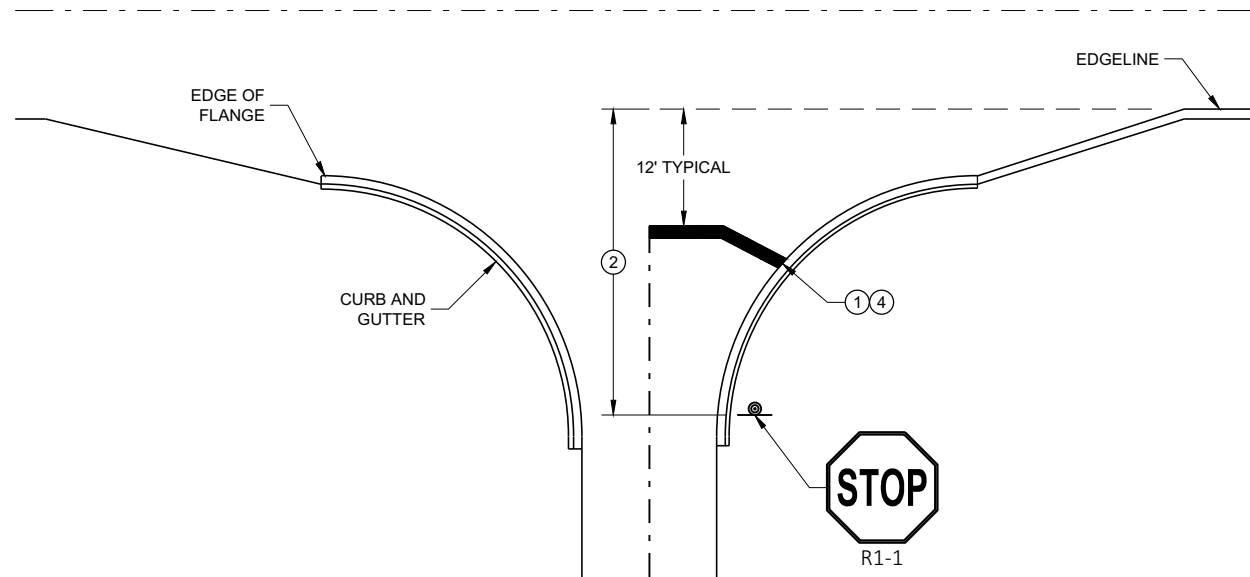


MOVING PAVEMENT MARKING
OPERATION MULTI-LANE
UNDIVIDED ROADWAY

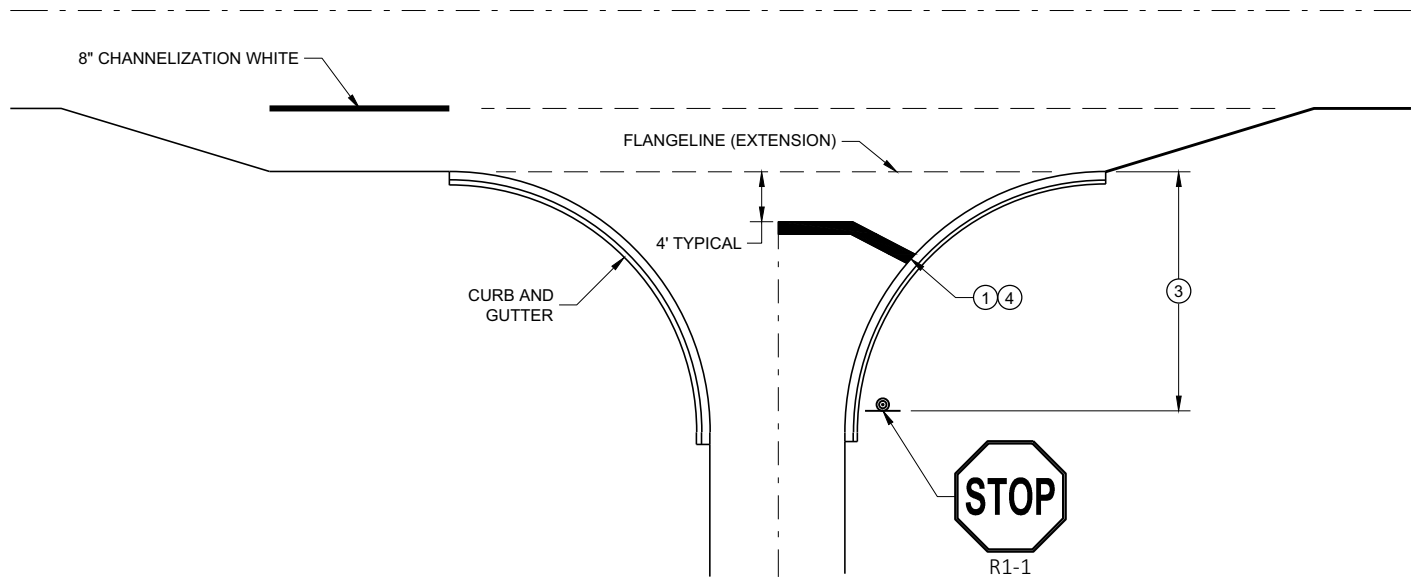
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2022 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER 111

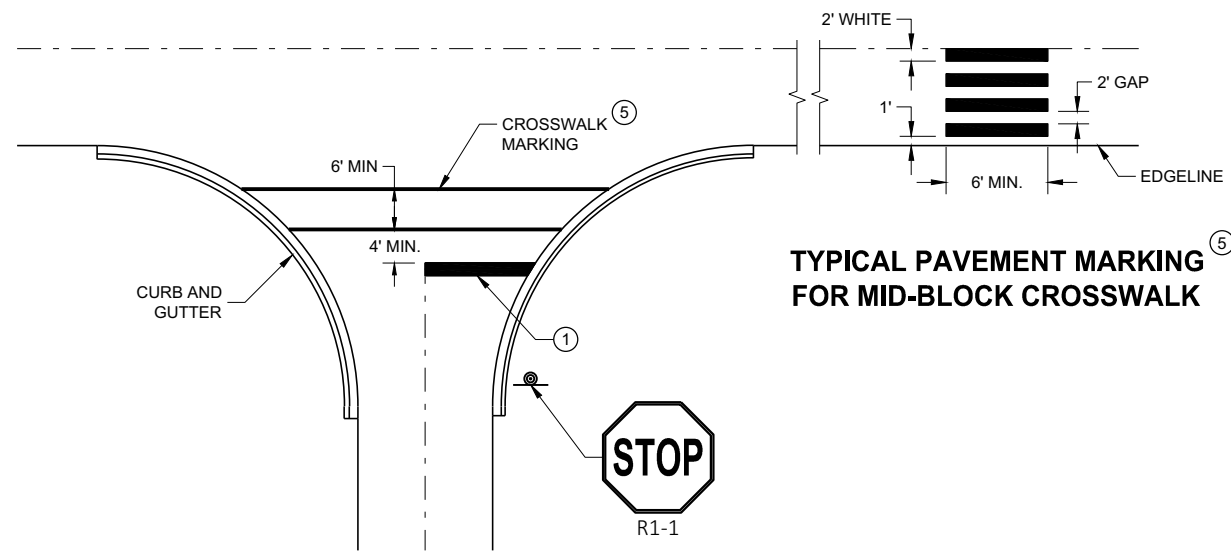
FHWA



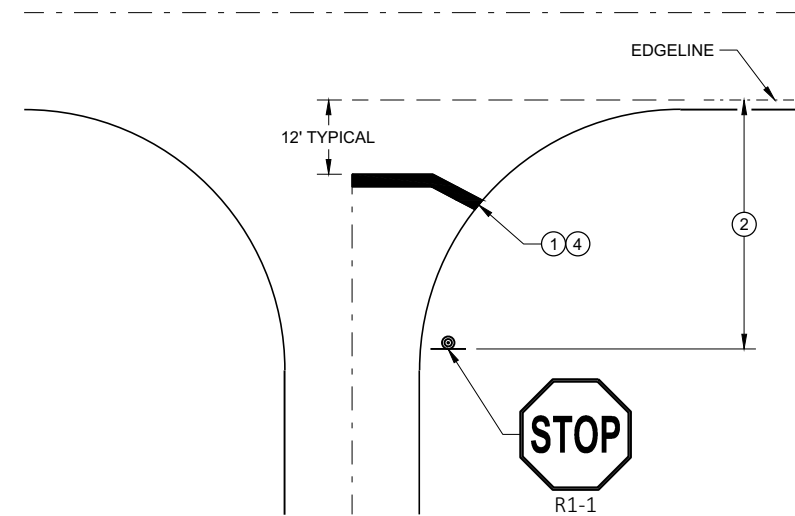
TYPICAL STOP LINE PAVEMENT MARKING
WITH CURB AND GUTTER



TYPICAL STOP LINE PAVEMENT MARKING
FOR SIDEROADS WITH RIGHT TURN LANE



TYPICAL STOP LINE PAVEMENT MARKING FOR
SIDEROADS WITH CROSSWALK MARKING



TYPICAL STOP LINE PAVEMENT MARKING
WITHOUT CURB AND GUTTER

GENERAL NOTES

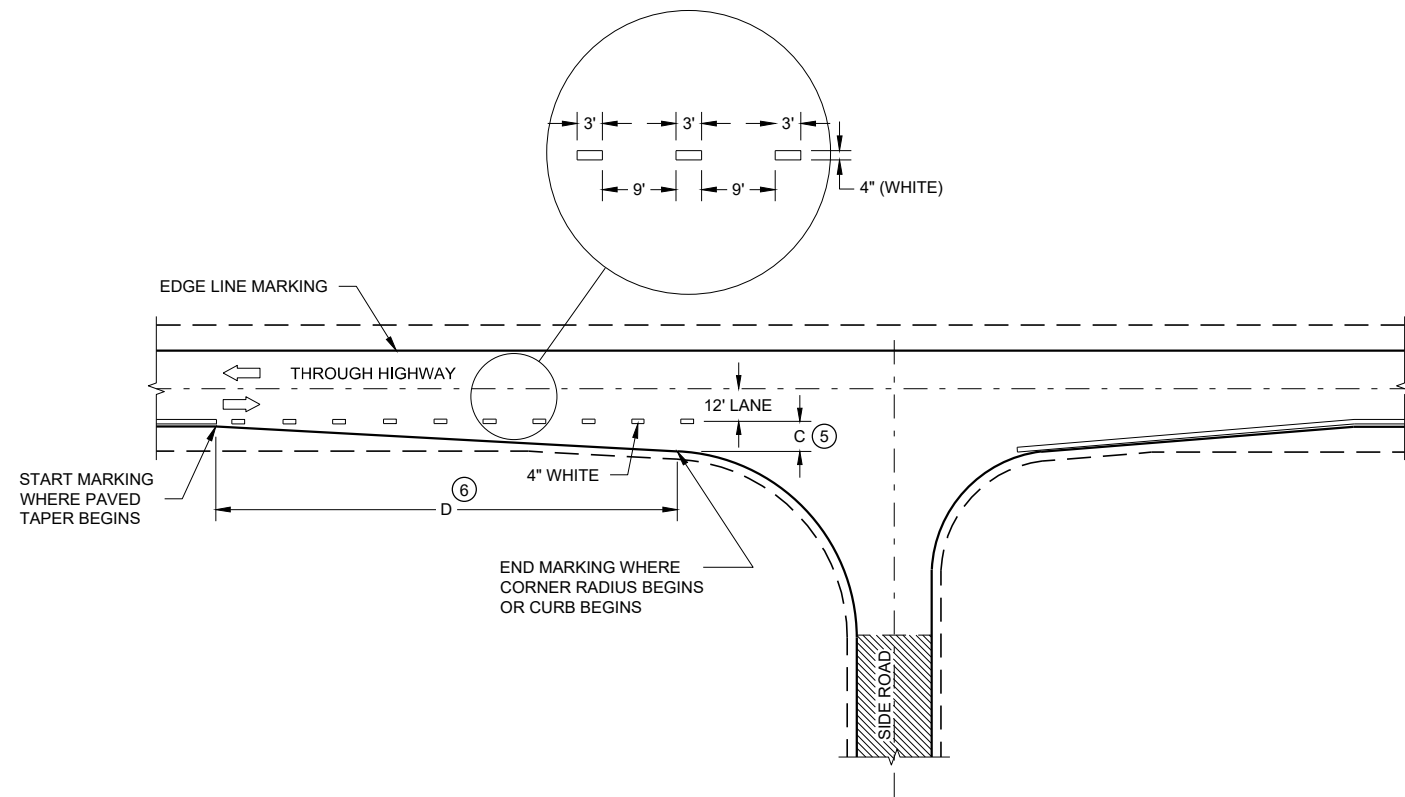
STOP SIGN SHALL BE PLACED A MINIMUM OF 6 FEET TO A MAXIMUM OF 50 FEET FROM THE EDGE LINE LOCATION.

- ① 18-INCH STOP LINES MAY BE DELETED OR ADDED BY THE REGION MARKING ENGINEER BASED ON VISIBILITY AND SIGHT LINES.
- ② NO STOP LINE IS REQUIRED IF STOP SIGN IS LESS THAN OR EQUAL TO 40 FEET FROM THE EDGE LINE.
- ③ NO STOP LINE IS REQUIRED IF STOP SIGN IS LESS THAN OR EQUAL TO 30 FEET FROM THE FLANGELINE EXTENSION.
- ④ MOVE CLOSER TO THE EDGE OF TRAVEL LINE AS NEEDED FOR VISIBILITY AND SIGHT LINES (NO CLOSER THAN 4 FEET).
- ⑤ LADDER BAR CROSSWALKS SHOULD ONLY BE USED FOR MID BLOCK CROSSINGS. USE 2 - 6" TRANSVERSE LINES INSTEAD.

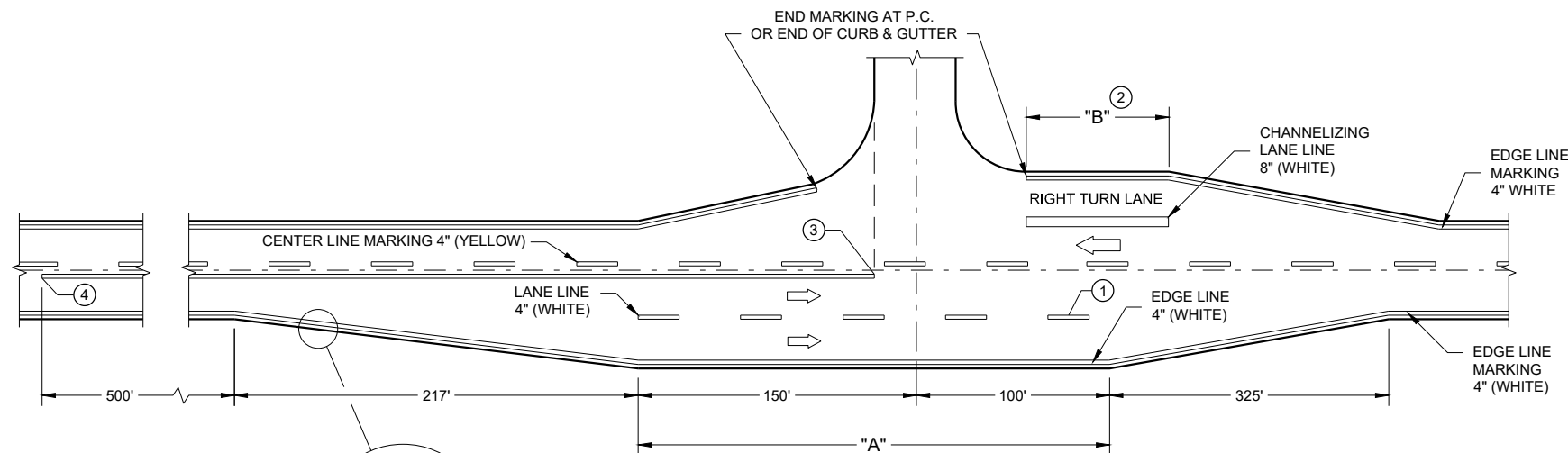
STOP LINE AND CROSSWALK
PAVEMENT MARKING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2019 /S/ Matthew Rauch
DATE STATE SIGNING AND MAP ENGINEER 112
FHWA



MINOR INTERSECTION



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

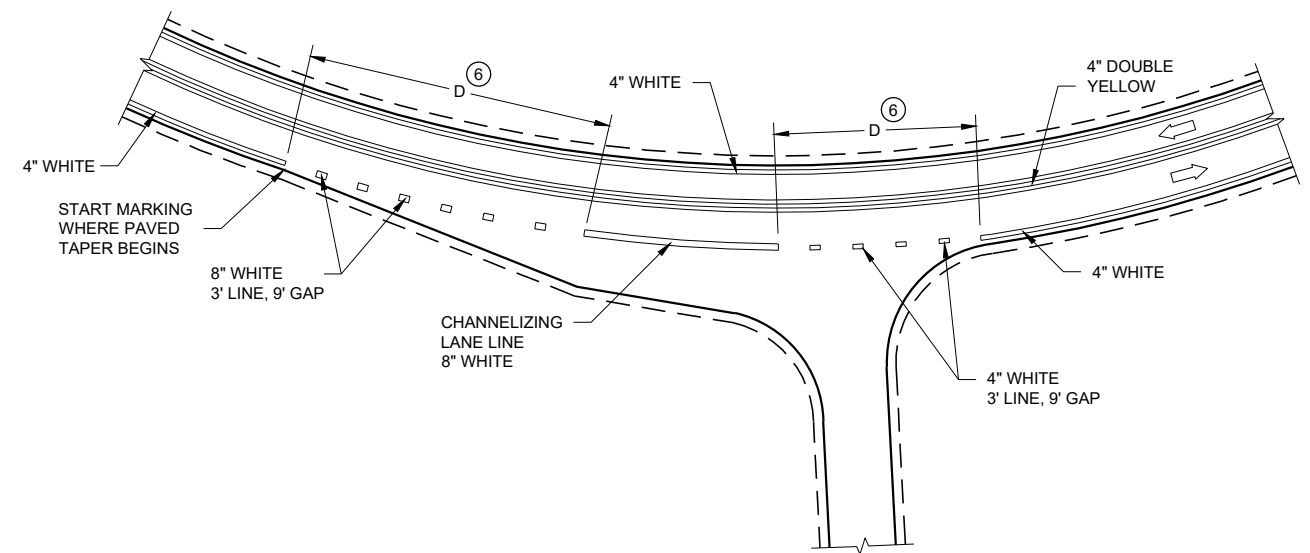
GENERAL NOTES

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.
- ⑤ WHEN DISTANCE "C" IS LESS THAN 4 FEET, OMIT DOTTED EXTENSION.
- ⑥ WHEN DISTANCE "D" IS LESS THAN 50 FEET, OMIT DOTTED EXTENSION.

LEGEND

➡ 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
-  DIRECTION OF TRAFFIC
-  WORK ZONE

GENERAL NOTES

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 THE REGIONAL TRAFFIC UNIT.

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

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

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

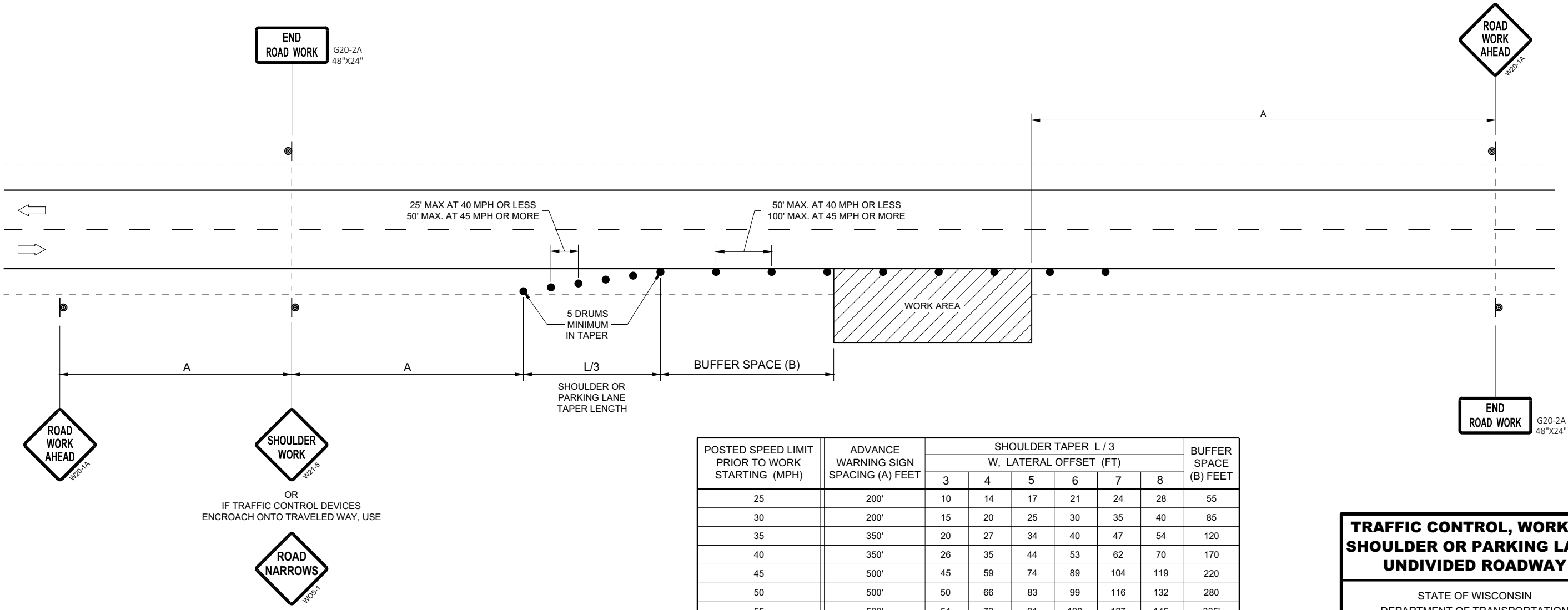
CHANNELIZING DEVICES PLACED ADJACENT TO WORK AREA SHALL BE PULLED BACK FROM THE TRAVEL LANE WHEN WORK IS NOT IN PROGRESS.

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

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

6

6



POSTED SPEED LIMIT PRIOR TO WORK STARTING (MPH)	ADVANCE WARNING SIGN SPACING (A) FEET	SHOULDER TAPER L / 3 W, LATERAL OFFSET (FT)						BUFFER SPACE (B) FEET
		3	4	5	6	7	8	
25	200'	10	14	17	21	24	28	55
30	200'	15	20	25	30	35	40	85
35	350'	20	27	34	40	47	54	120
40	350'	26	35	44	53	62	70	170
45	500'	45	59	74	89	104	119	220
50	500'	50	66	83	99	116	132	280
55	500'	54	73	91	109	127	145	335'

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2020 /S/ Andrew Heidtke
DATE STATEWIDE WORK ZONE T
SAFETY ENGINEER 114

FHWA

GENERAL NOTES

DRAWING NOT TO SCALE. ALL SIGNS AND POSTS ON THIS SHEET SHALL BE PAID FOR WITH 'TRAFFIC CONTROL SIGNS' BID ITEM. ALL SIDE ROADS WHICH ARE UNDER CONSTRUCTION OF CURB AND GUTTER AND/OR GRADING SHALL BE ADEQUATELY SIGNED.

ALL SIGNS AND DEVICES SHALL BE IN CONFORMANCE WITH THE WISCONSIN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (WMUTCD). SIGN LAYOUTS SHALL BE IN ACCORDANCE WITH THE WISDOT STANDARD SIGN PLATES.

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

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

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

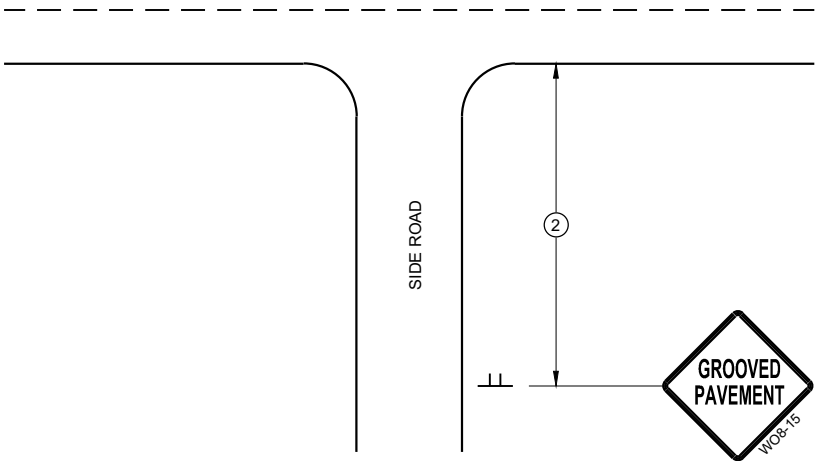
ALL SIGNS INAPPROPRIATE TO THE STATUS OF THE CONTROL ZONE, INCLUDING PRE-EXISTING SIGNS IN THE VICINITY, SHALL BE COVERED OR REMOVED AS DIRECTED BY THE ENGINEER.

SEE 15C34 FOR ADDITIONAL TRAFFIC CONTROL SIGNING WHEN CENTERLINE PAVEMENT MAKINGS ARE MISSING. 'DO NOT PASS' SIGNS MUST BE INSTALLED ON THE SAME DAY AS MILLING OPERATIONS.

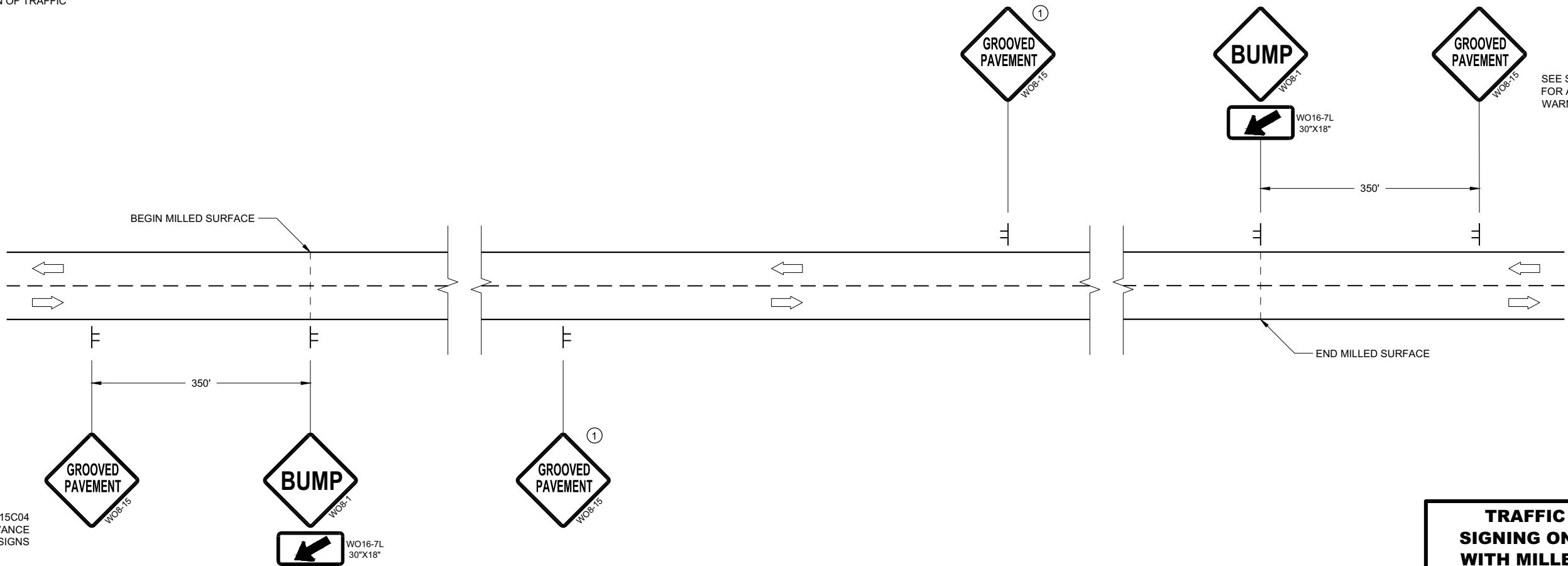
- ① PLACE SIGNS 350' IN ADVANCE OF MILLED SURFACES AND AT 1 MILE INTERVALS, OR AS DIRECTED BY THE ENGINEER.
- ② PLACE SIGN 200' MIN. FROM INTERSECTION AND 200' MIN. AFTER ADVANCE WARNING SIGN SHOWN IN SDD 15C04.

LEGEND

-  SIGN ON TEMPORARY SUPPORT
-  DIRECTION OF TRAFFIC



TYPICAL SIDE ROAD APPROACH
SIGN DETAIL



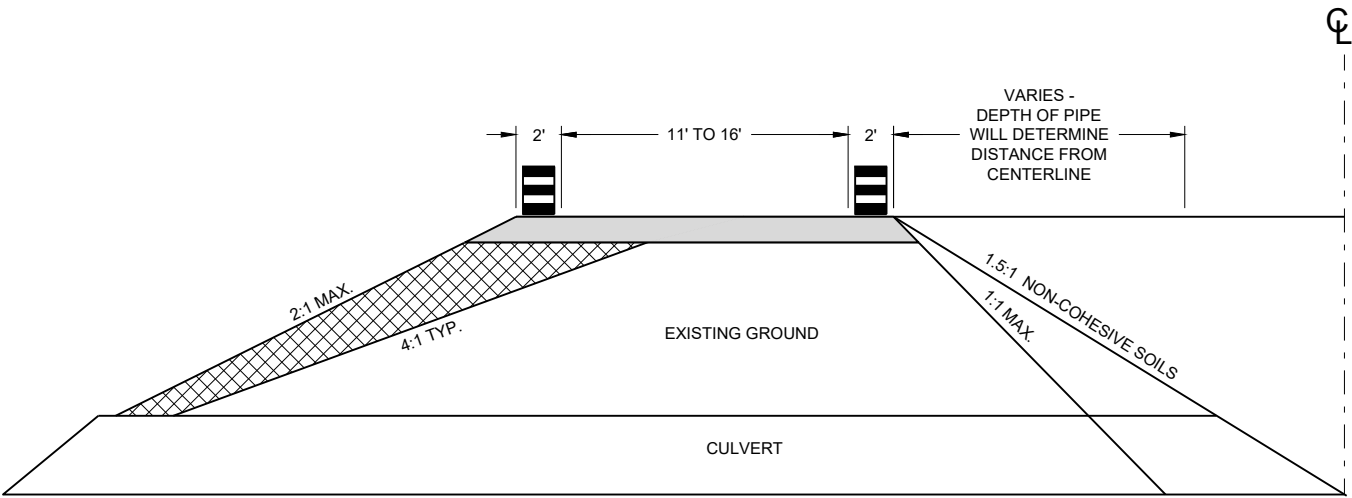
DETAIL FOR SIGNING ON MILLED SURFACES

TRAFFIC CONTROL,
SIGNING ON ROADWAYS
WITH MILLED SURFACES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2020 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER 115

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CROSS SECTION

GENERAL NOTES

USE 1:1 FOR COHESIVE CLAYS AND SILTS, LOAMS, SANDY CLAYS AND ANGULAR GRAVEL SOILS.
USE 1.5:1 FOR NON-COHESIVE SOILS.

THE TAPER SHOULD EXTEND ACROSS THE SHOULDER UNLESS DOING SO WOULD GREATLY CONFLICT WITH THE WORK OPERATION.

ALL LANE CLOSURE SIGNS SHALL BE REMOVED OR COVERED AND ALL DEVICES REMOVED BEYOND THE SHOULDER WHEN WORK IS NOT IN PROGRESS AND THE LANE IS RESTORED TO A SAFE OPERATING CONDITION.

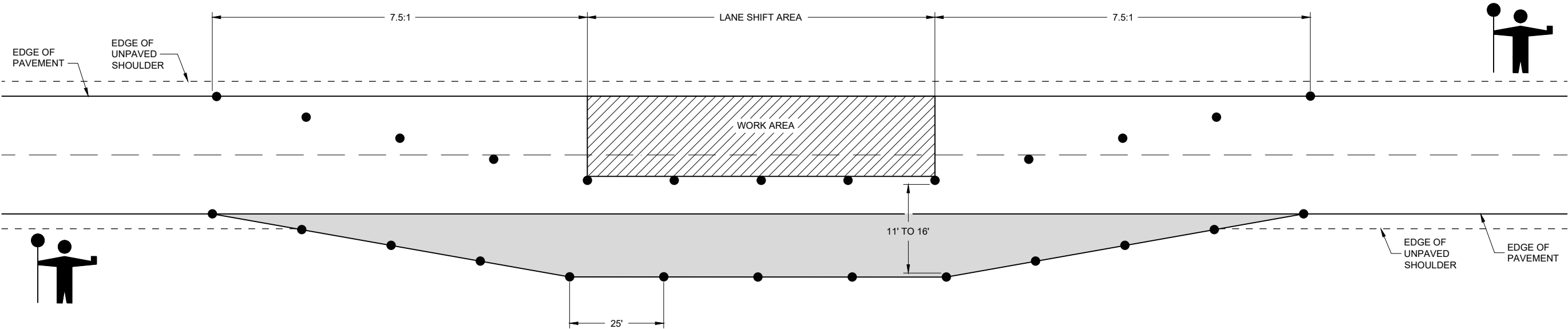
CHANNELIZING DEVICES PLACED ADJACENT TO WORK AREA SHALL BE PULLED BACK FROM TRAVEL LANE WHEN WORK IS NOT IN PROGRESS.

USE WITH SDD 15C12 "TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATIONS"

USE WITH SDD 15D45 "SIGNING ON ROADWAYS WITH LOOSE GRAVEL"

LEGEND

- DRUM WITHOUT WARNING LIGHT
- 6" BASE AGGREGATE DENSE 1 1/4" - INCIDENTAL TO LANE SHIFT ITEM
- FILL - INCIDENTAL TO LANE SHIFT ITEM
- WORK AREA
- FLAGGER, EQUIPPED WITH STOP/SLOW PADDLE FASTENED ON SUPPORT STAFF



LANE SHIFT IN FLAGGING OPERATION

TRAFFIC CONTROL,
TEMPORARY LANE SHIFT
DURING CULVERT WORK

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2021 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER 116

FHWA

LEGEND

- V1

WORK VEHICLE
- V2

SHADOW VEHICLE
- 

TRUCK MOUNTED ATTENUATOR (TMA)
- 

FLASHING ARROW PANEL (CAUTION)
- 

WORK AREA
- 

DIRECTION OF TRAFFIC

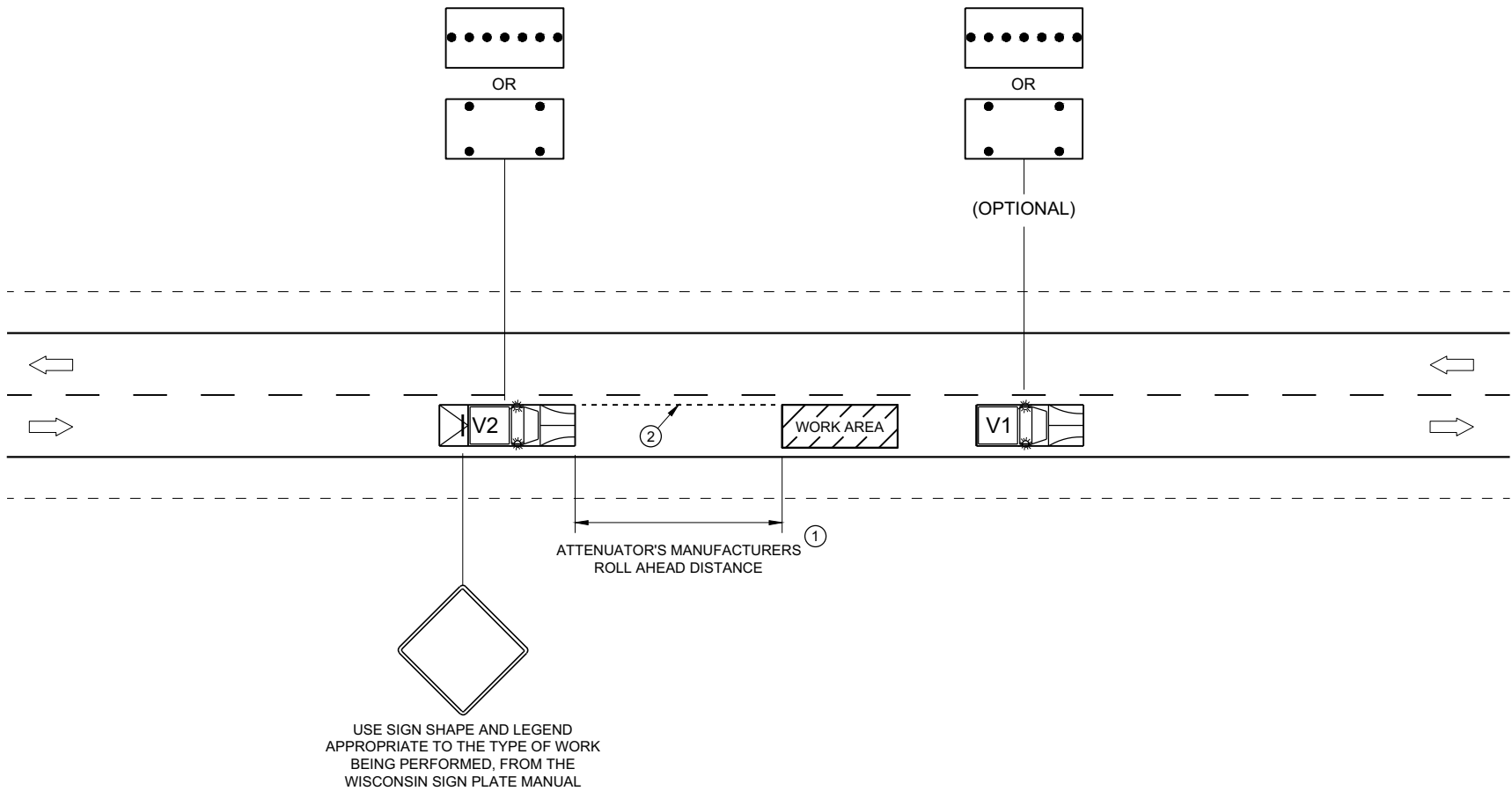
POSTED SPEED PRIOR TO WORK STARTING (MPH)	DECISION SIGHT DISTANCE (D)
0 - 25	550'
30	550'
35	700'
40	700'
45	900'
50	900'
55	1200'

GENERAL NOTES

- ALL SIGNS ARE 48"X48" UNLESS OTHERWISE NOTED.
- MOBILE IS WORK THAT MOVES CONTINUOUSLY OR MOVES AT LEAST THE DECISION SIGHT DISTANCE EVERY 15 MINUTES.
- ALL VEHICLES SHALL BE EQUIPPED WITH TWO 360 DEGREE HIGH INTENSITY YELLOW FLASHING LIGHTS OR STROBE LIGHTS AND OPERATED WITH HEADLIGHTS TURNED ON.
- ALL ARROW PANELS SHALL BE REAR FACING, TYPE "B" OR "C", AND DISPLAYING THE FLASHING CAUTION MODE. SIGNS PLACED ON VEHICLES MUST NOT OBSCURE THE ARROW PANEL.
- USE AN ATTENUATOR ON THE REARMOST VEHICLE THAT BLOCKS ALL OR PART OF THE TRAFFIC LANE.
- ①

DISTANCE BETWEEN VEHICLES MAY INCREASE FROM THE ATTENUATOR'S ROLL AHEAD BASED ON TERRAIN, SIGHT DISTANCE, 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.
- ②

ALIGN LEFT SIDE OF SHADOW VEHICLE WITH EDGE OF WORK AREA.



TRAFFIC CONTROL,
MOBILE OPERATIONS ON
AN UNDIVIDED ROADWAY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

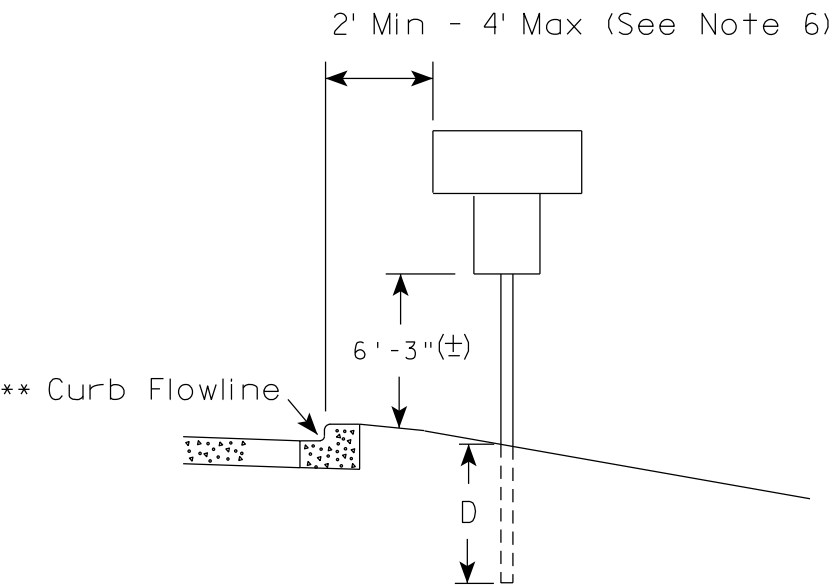
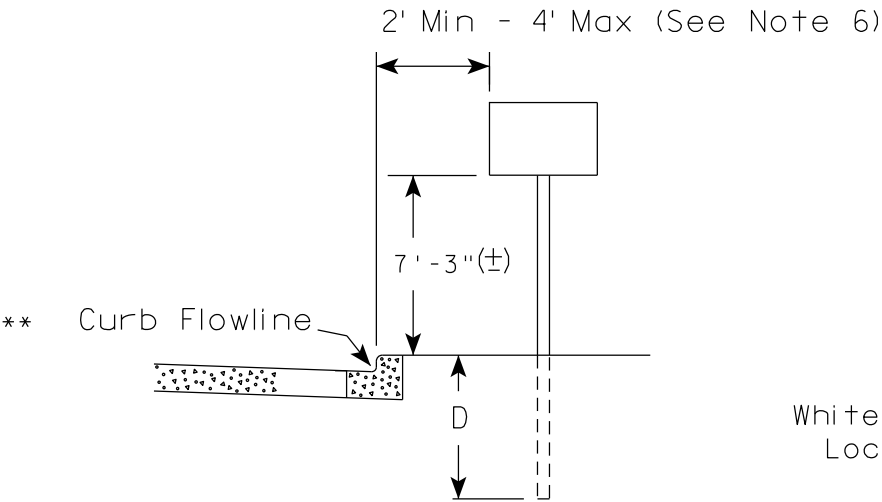
APPROVED
February 2021
DATE

/S/ Andrew Heidtke
STATEWIDE WORK ZONE T
SAFETY ENGINEER 117

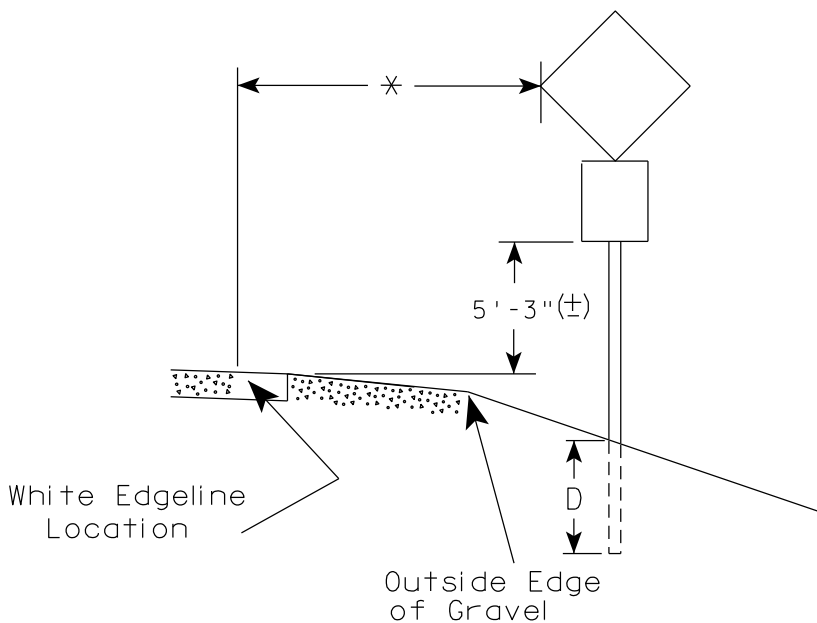
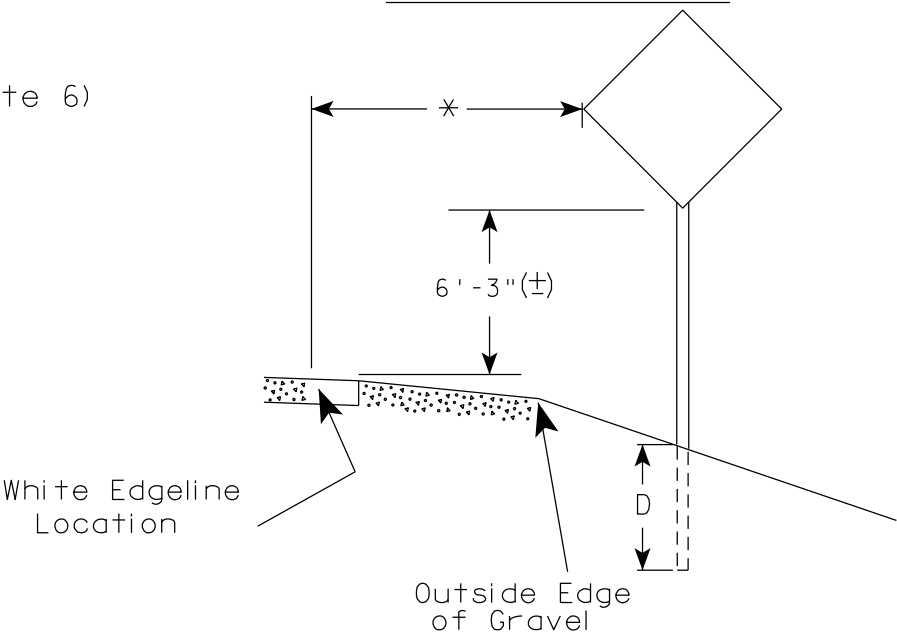
FHWA



URBAN AREA



RURAL AREA (See Note 2)



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 or behind barrier wall, see A4-10 sign plate.
The Double Arrow sign (W12-1D) 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" (±).
3. For expressways and freeways, mounting height is 7'- 3" (±) or 6'-3" (±) depending upon existence of a sub-sign.
4. Minimum mounting height for signs mounted on traffic signal poles is 5'- 3" (±).
5. Offset distance shall be consistent with existing signs or consistent throughout length of project.
6. The (±) tolerance for mounting height is 3 inches.
7. Folding signs shall be mounted at a height of 5'-3" (±) or as directed by the 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.

* 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.

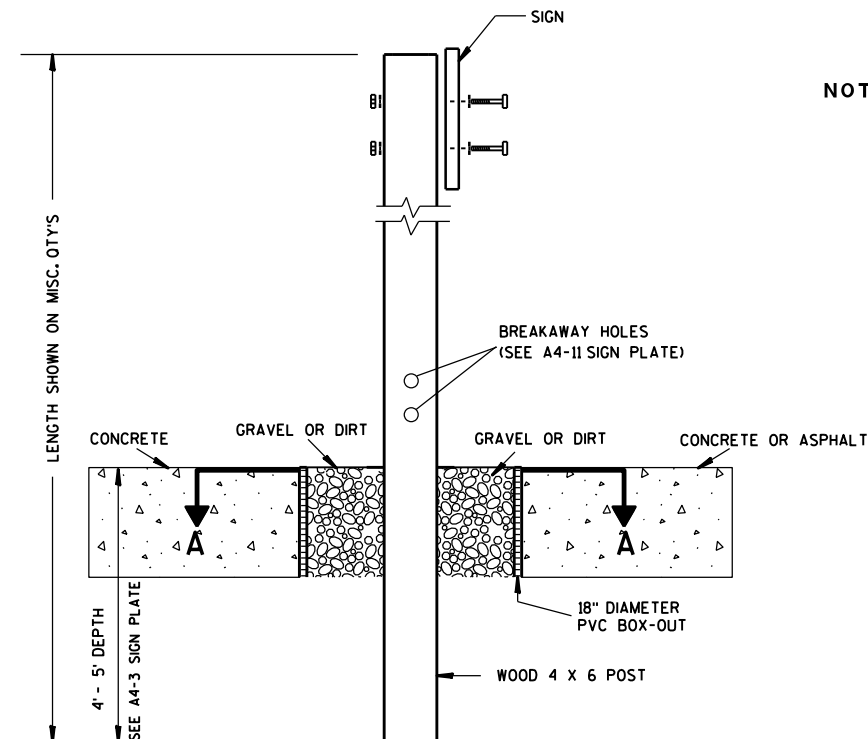
POST EMBEDMENT DEPTH	
Area of Sign Installation (Sq.Ft.)	D (Min)
20 or Less	4'
Greater than 20	5'

TYPICAL INSTALLATION
OF PERMANENT TYPE II
SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

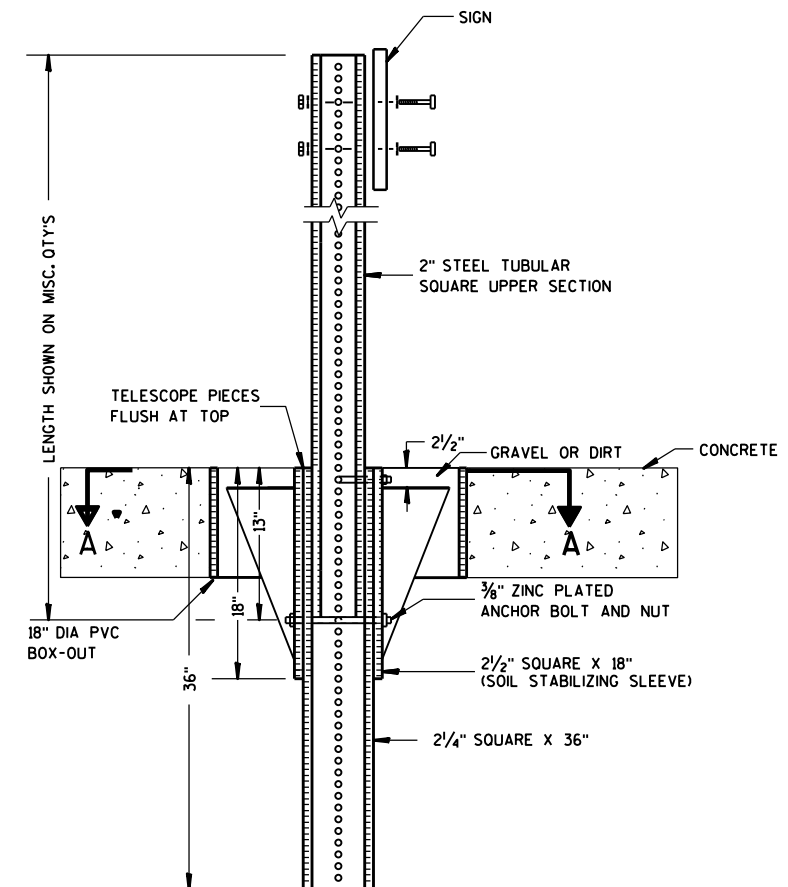
DATE 5/13/2020 PLATE NO. A4-3.22



ELEVATION VIEW

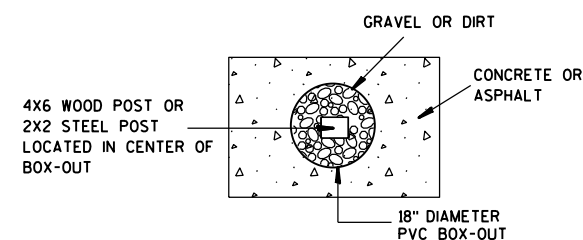
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

- 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 120 A4-3B.1

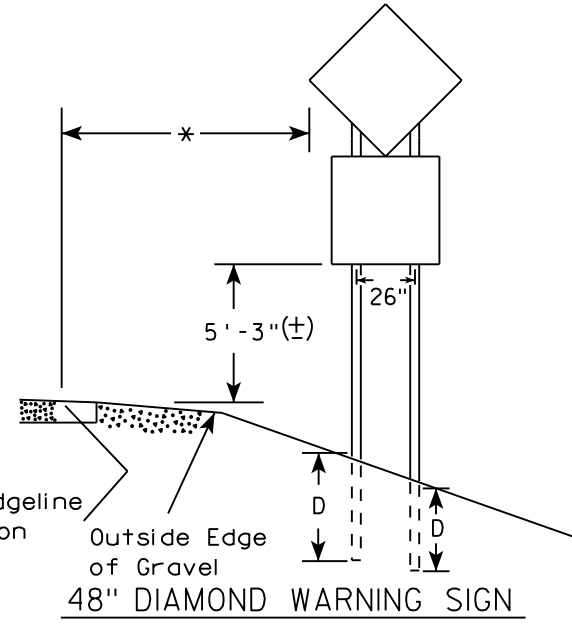
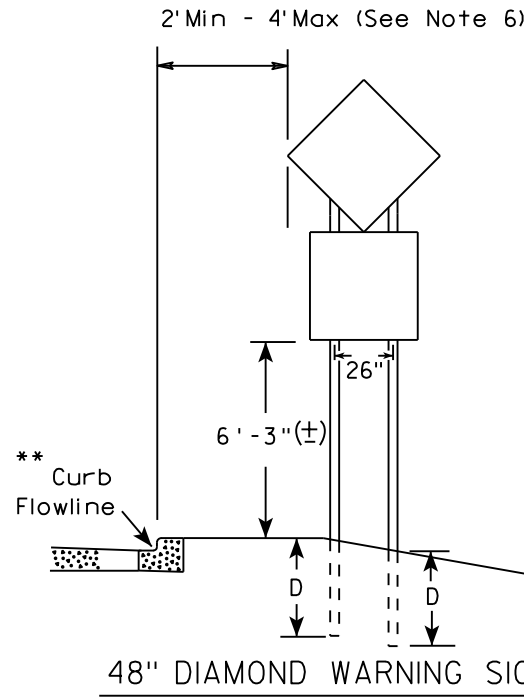
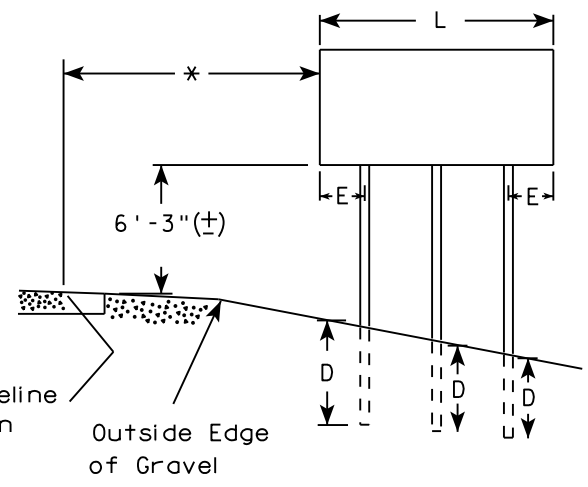
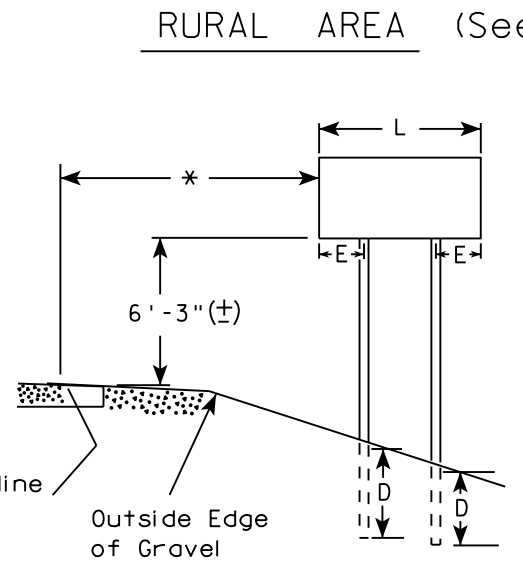
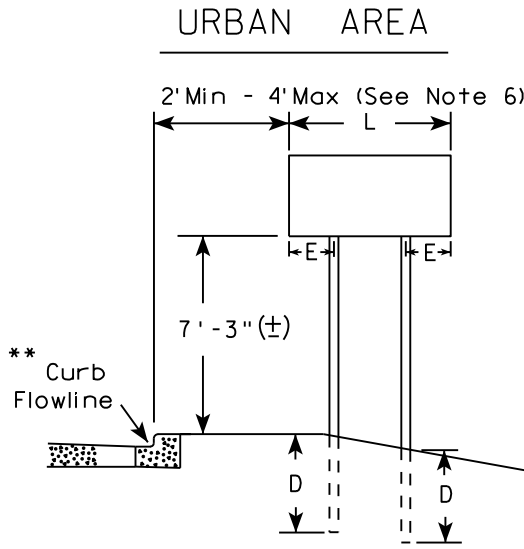
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E



- 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.

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

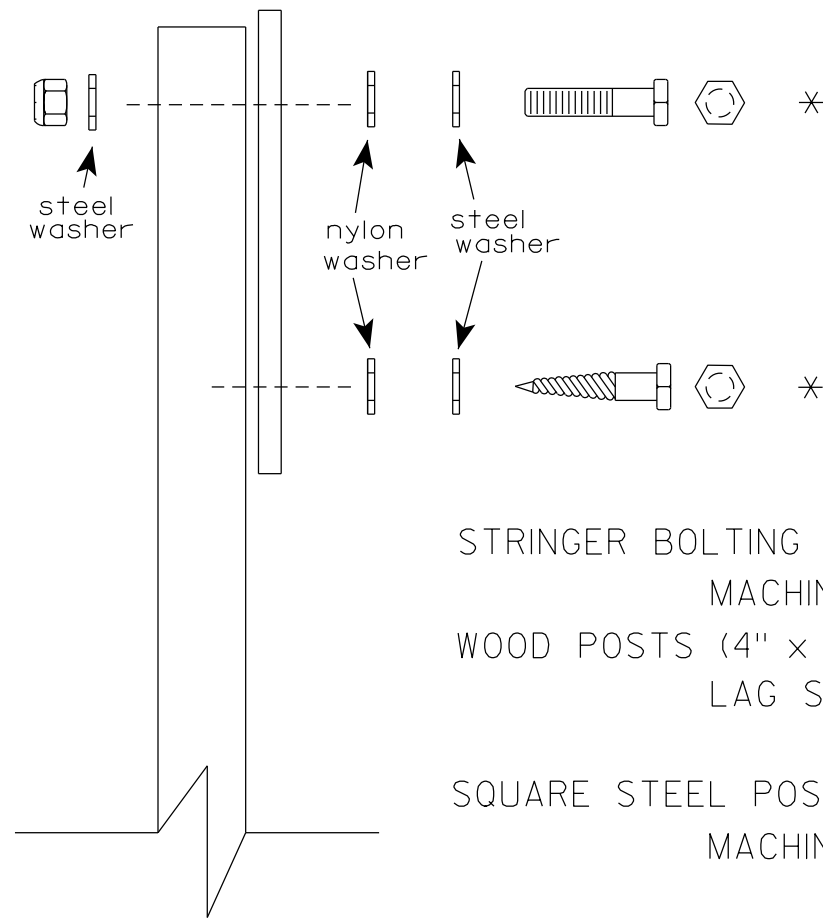
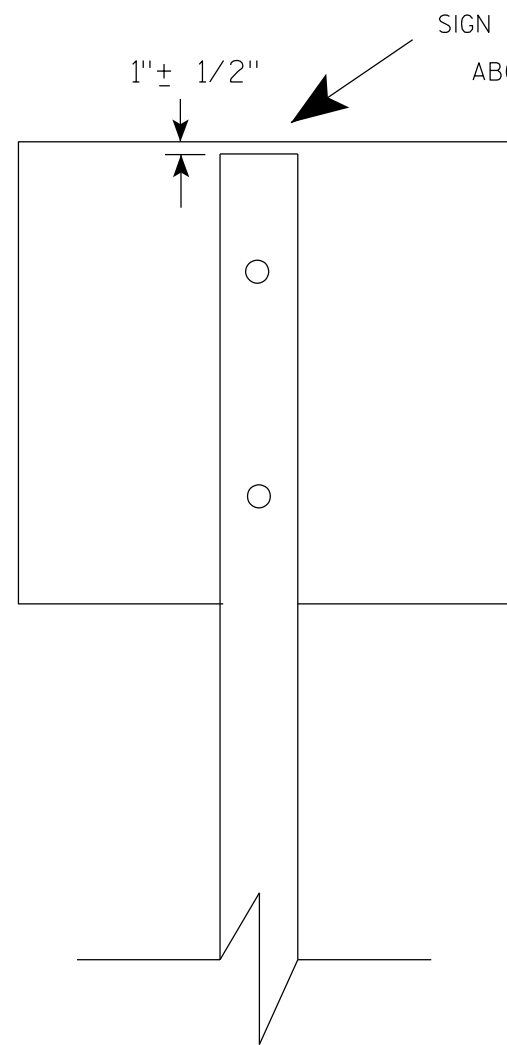
Area of Sign Installation (Sq. Ft.)	D (Min)
20 or Less	4'
Greater than 20	5'

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



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.

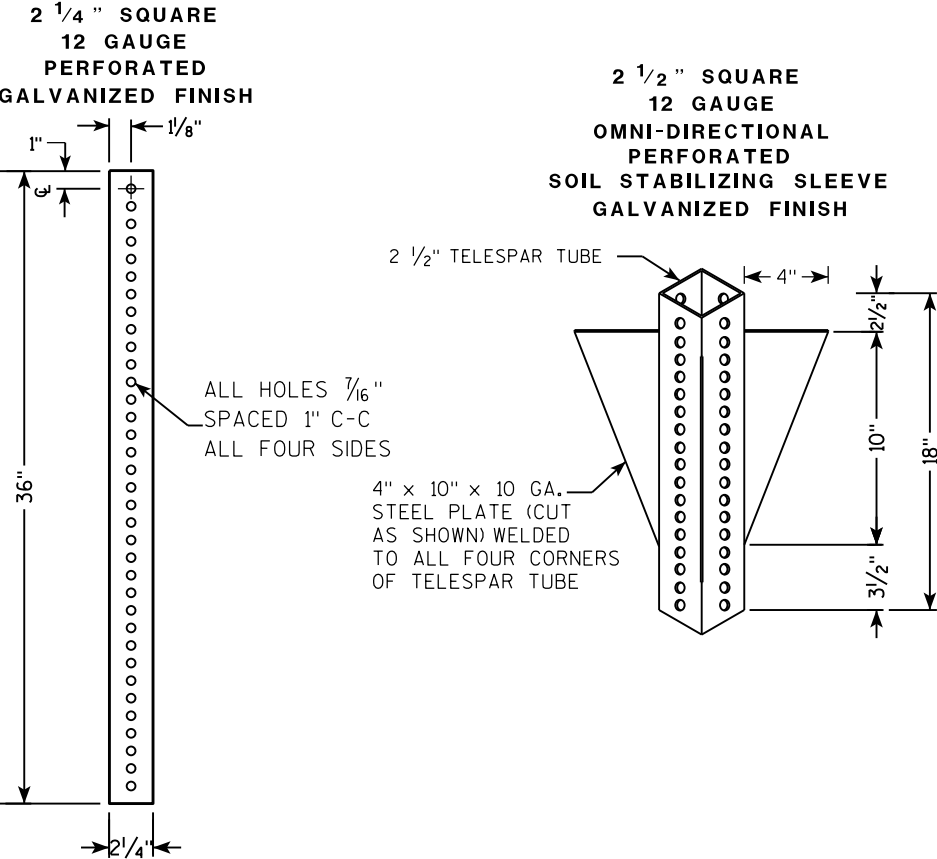
Threads on bolts and nuts shall be manufactured with sufficient allowance for the cadmium plate or galvanized coating to permit the nuts to run freely on the bolts.

- STRINGER BOLTING TO ALUMINUM SIGNS (SEE SIGN PLATE A4-18)
- MACHINE BOLTS - $\frac{5}{16}$ " X 1-3/4" Length w/ lock nuts
- WOOD POSTS (4" x 6")
- LAG SCREWS - $\frac{3}{8}$ " X 3" (NO STRINGERS ON BACK OF SIGN)
 $\frac{3}{8}$ " X 4" (STRINGERS ON BACK OF SIGN)
- SQUARE STEEL POSTS (2" x 2")
- MACHINE BOLTS - $\frac{3}{8}$ " X 3-1/4" Length w/ nuts (NO STRINGER ON BACK OF SIGN)
 $\frac{3}{8}$ " X 5" Length w/ nuts (STRINGERS ON BACK OF SIGN)
- RIVETS - $\frac{9}{32}$ " (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 $\frac{3}{8}$ " I.D. X $\frac{1}{16}$ " STEEL
 - 1-1/4" O.D. X $\frac{3}{8}$ " I.D. X .080 NYLON

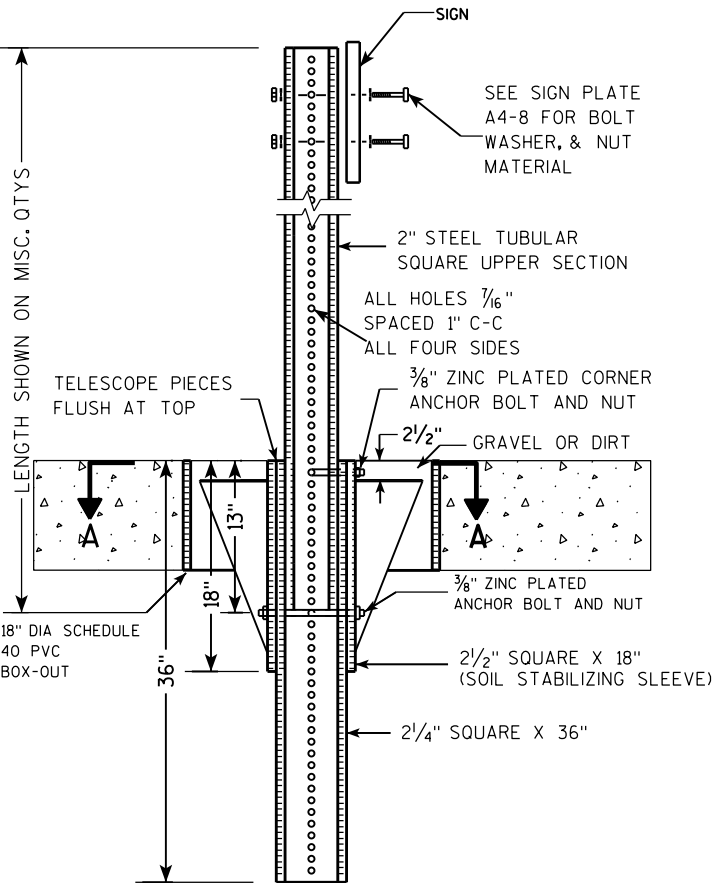
* Two different fastening systems are shown for illustration purposes. On any individual sign, either one or the other system shall be used. Actual number of fasteners per sign varies with the sign area, but normally there are two. For a single post installation, all signs greater than 9 sq. ft. require 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 4/1/2020	PLATE NO. A4-8.9

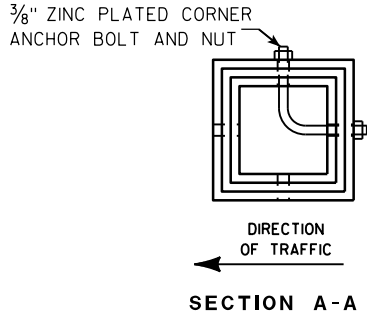
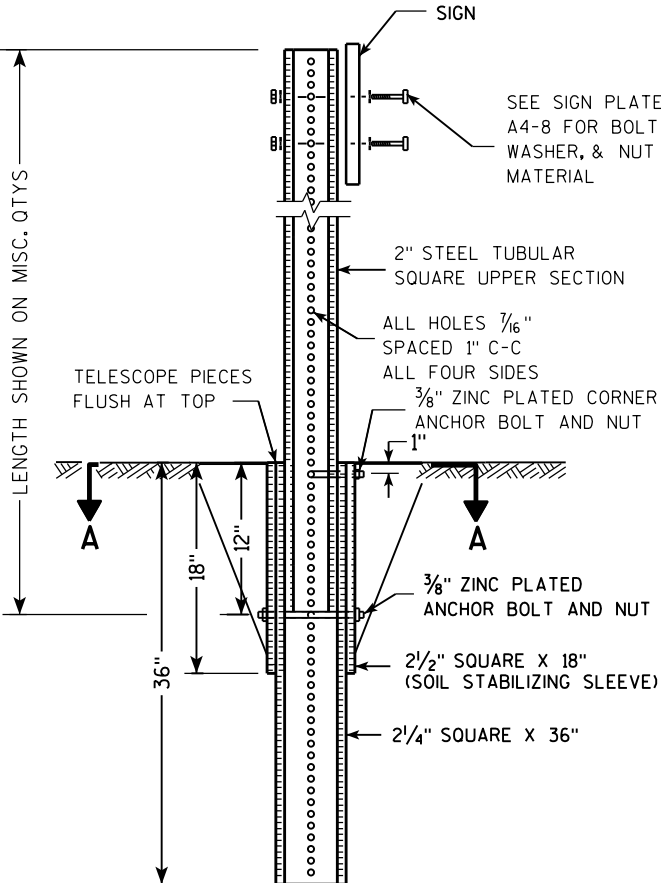
TELESCOPIC TUBING ANCHORS
TWO PIECE SYSTEM



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).

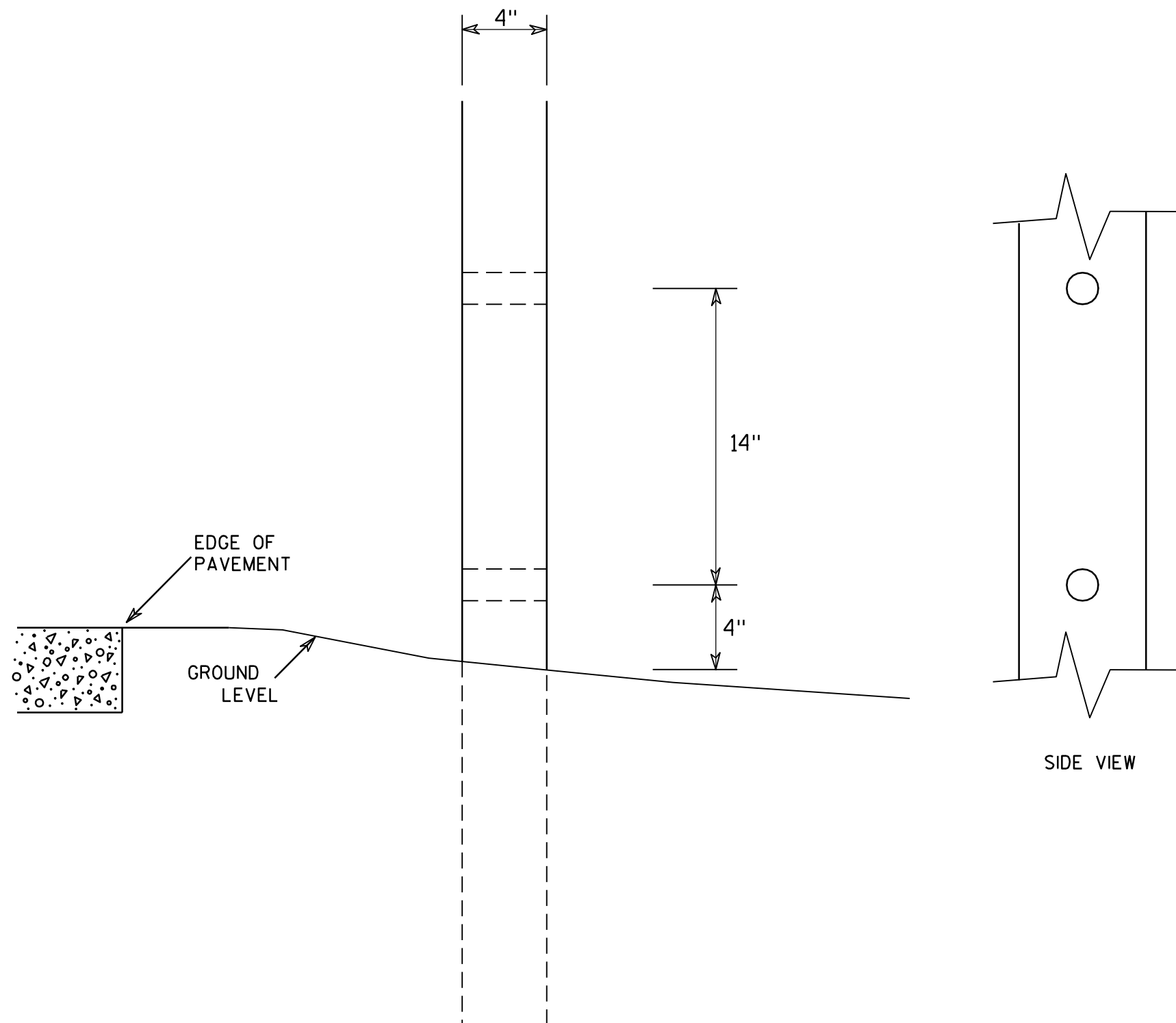
TUBULAR STEEL
SIGN POST
A4-9

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 2/05/15 PLAT 123 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.

7

4 X 6 WOOD POST MODIFICATIONS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Chester J. Spang
for State Traffic Engineer

DATE 3/27/97

PLATE NO. A4-11.2

PROJECT NO:

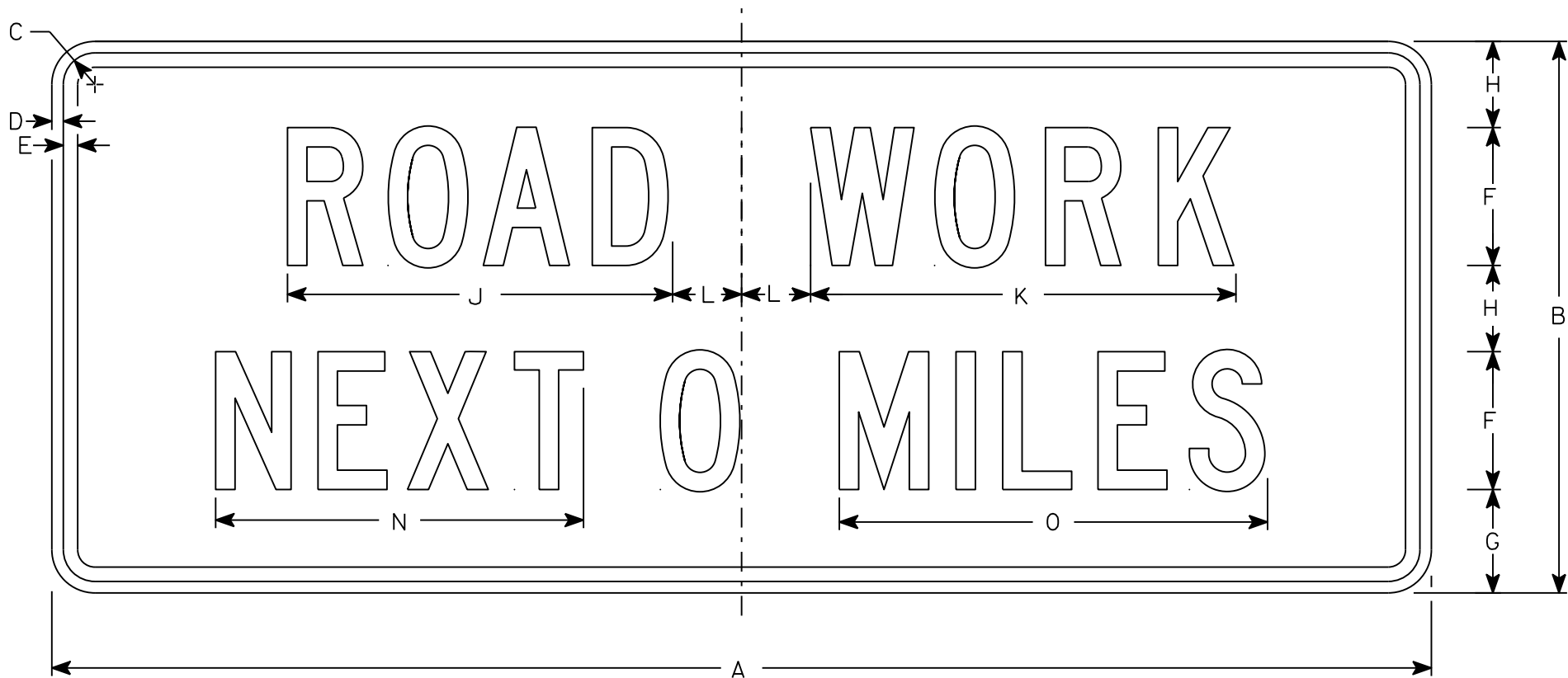
HWY:

COUNTY:

SHEET NO: 124

E

7



G20-1

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. Round distance to nearest whole Mile and substitute appropriate numerals and optically adjust spacing to achieve proper balance

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																											
2	60	24	1 3⁄8	1⁄2	5⁄8	6	4 1⁄2	3 3⁄4		16 3⁄4	18 1⁄2	3		16	18 5⁄8												10
3																											
4	60	24	1 3⁄8	1⁄2	5⁄8	6	4 1⁄2	3 3⁄4		16 3⁄4	18 1⁄2	3		16	18 5⁄8												10
5																											

PROJECT NO:

HWY:

COUNTY:

SHEET NO: 125

E

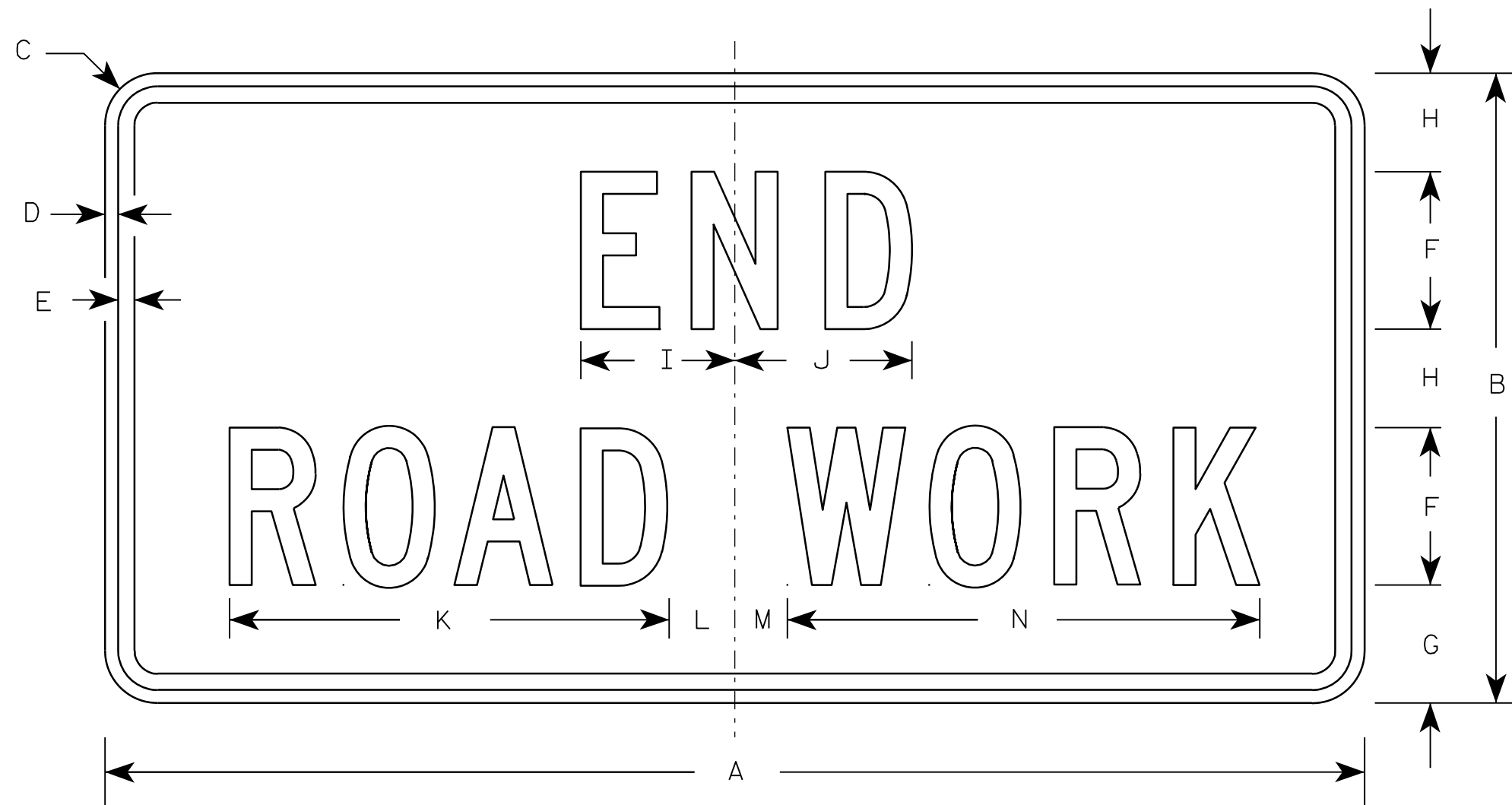
STANDARD SIGN
G20-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 3/14/17 PLATE NO. G20-1.8

7



G20-2A

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 m ²
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

NOTES

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

7

PROJECT NO:

HWY:

COUNTY:

SHEET NO: 126

E

NOTES

- 1. Sign is Type II - Type F Reflective
- 2. Color:
 - Background - Orange
 - Message - Black
- 3. Message Series - D
- 4. Substitute appropriate numeral and adjust spacing to achieve proper balance.



G20-57

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																											
3	72	36	1 1/8	1/2	5/8	6	5	4	15 5/8	1 5/8	5	9 1/4	21 1/4	3 1/2	1 1/2	23 1/4		29 7/8	1 3/4	3 1/4	28 1/2						18.0
4	96	48	2 1/4	3/4	1	8	6 1/2	5 1/2	20 5/8	2 1/4	6	12 1/4	28 1/4	4 3/8	1 5/8	31		39 1/4	2	4	37 7/8						32.0
5																											

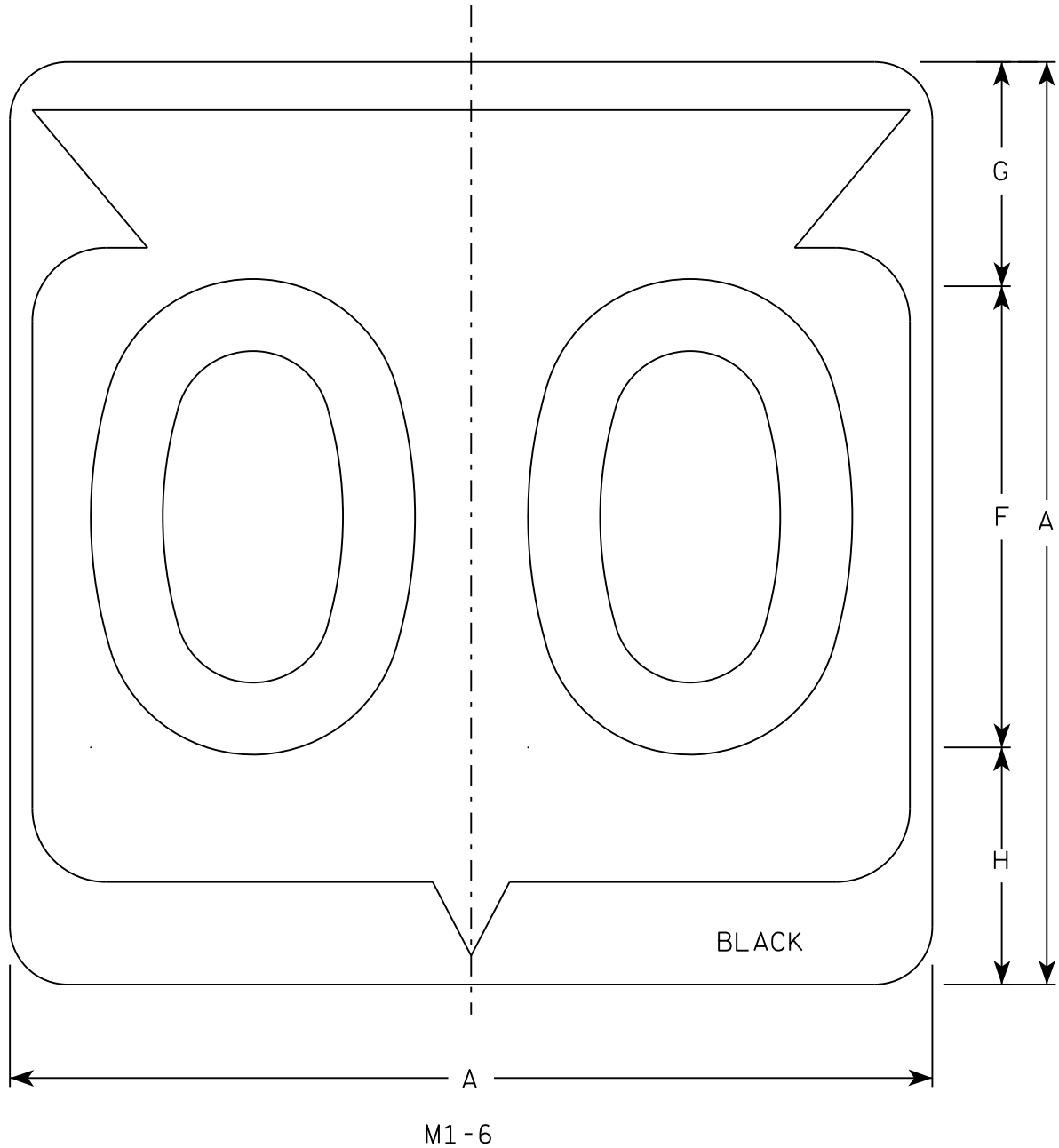
STANDARD SIGN
G20-57

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

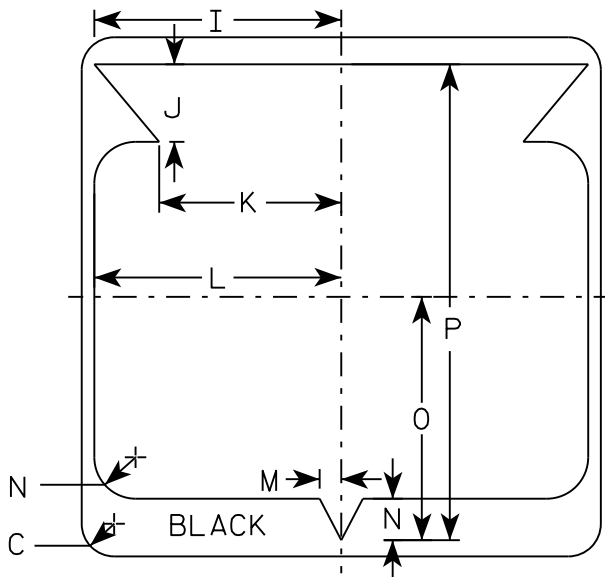
DATE 1/22/19 PLATE NO. G20-57.3

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.



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

PROJECT NO:

HWY:

COUNTY:

SHEET NO: 128

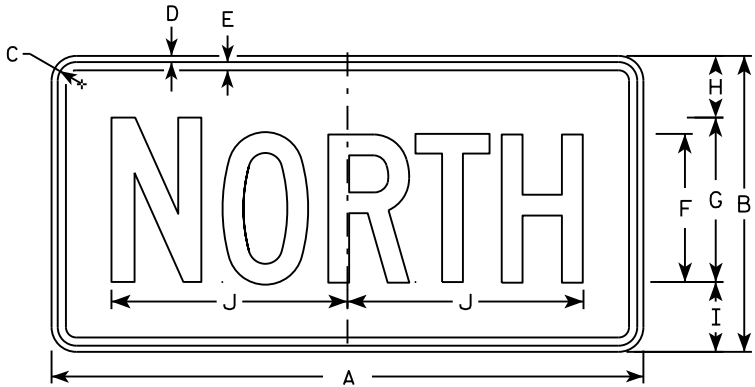
E

STATE ROUTE MARKER
M1-6 FOR ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED
Matthew R. Rauch
for State Traffic Engineer

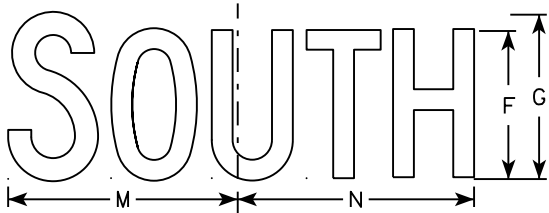
DATE 3/16/18 PLATE NO. M1-6.10



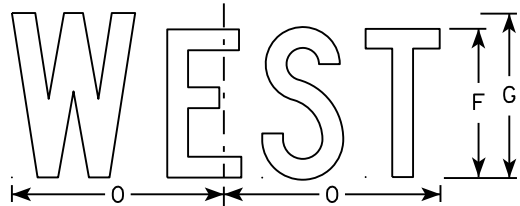
M3-1
MM3-1
MP3-1



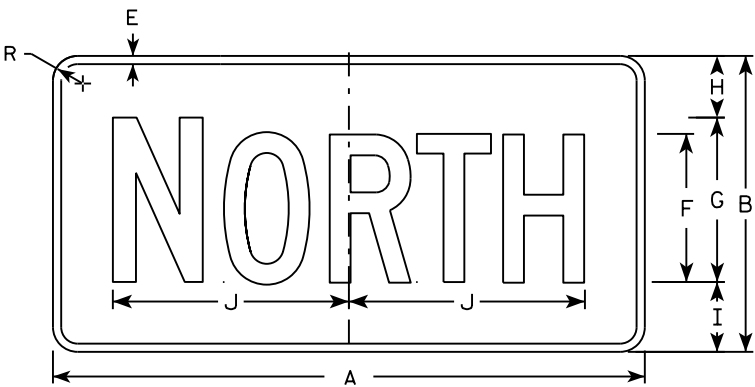
M3-2
MM3-2
MP3-2



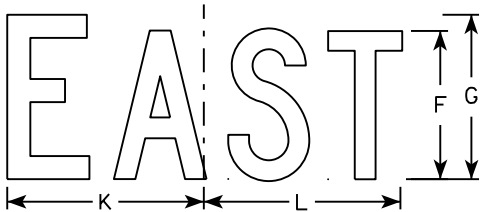
M3-3
MM3-3
MP3-3



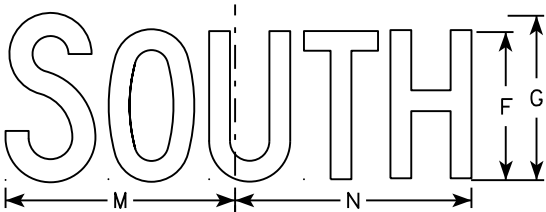
M3-4
MM3-4
MP3-4



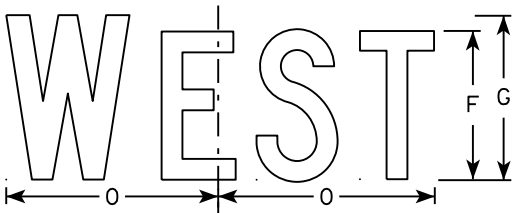
MB3-1
MK3-1
MN3-1



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.

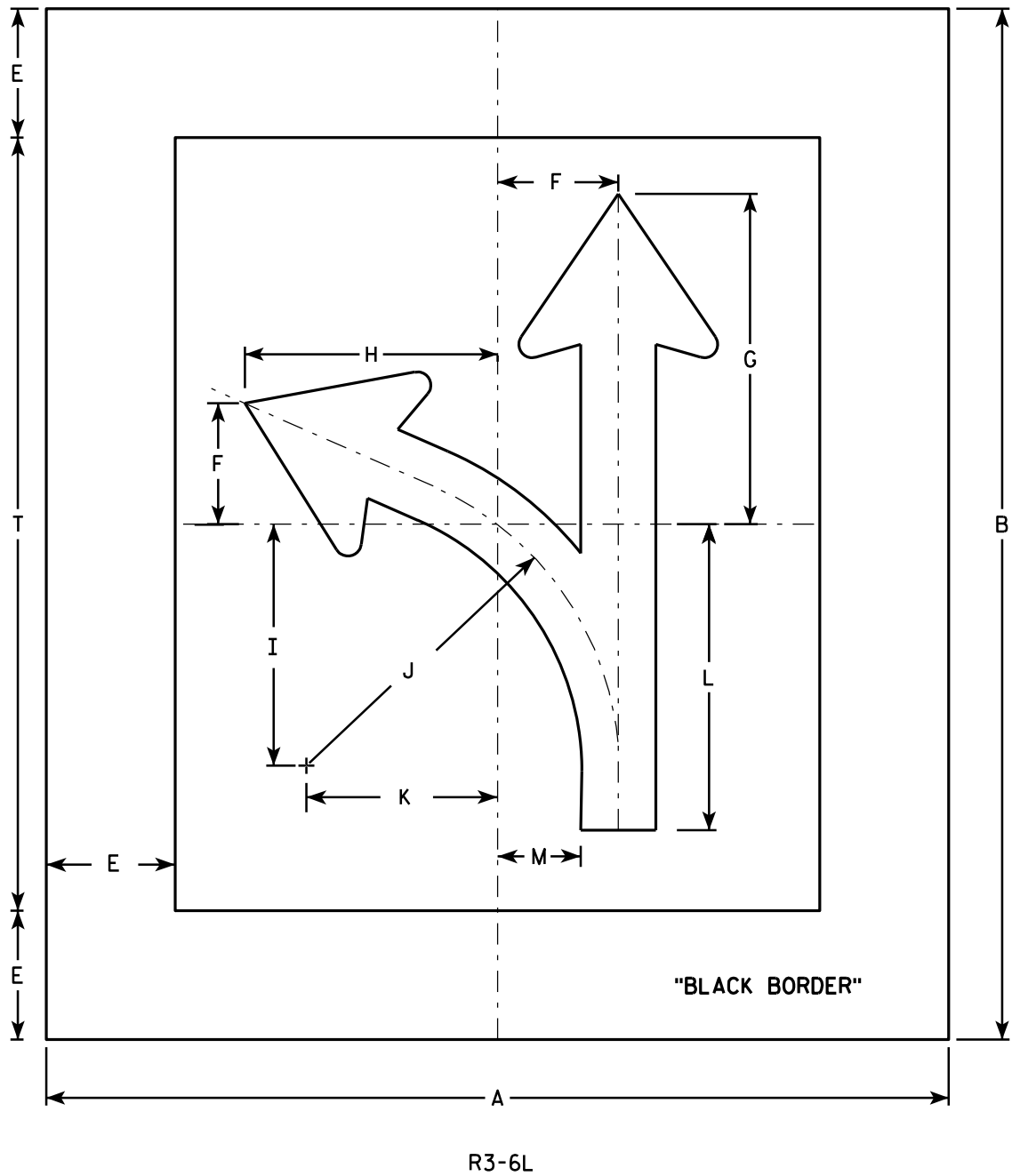
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	24	12	1 1/8	3/8	3/8	6	7	2 1/4	2 3/4	10 1/4	7 7/8	8 3/8	10 1/4	9 3/4	8 3/4			1 1/2									2.00
3	36	18	1 1/8	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13			1 1/2									4.5
4	36	18	1 1/8	3/8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

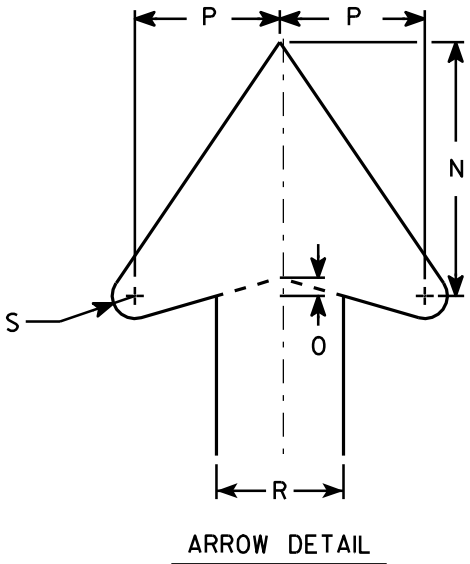
APPROVED
Matthew R. Rauch
for State Traffic Engineer

DATE 10/15/15 PLATE NO. 129 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 - Black
3. Corners may be square or rounded when base material is plywood. When base material is metal, the corners shall be rounded.
4. R3-6R is the same as R3-6L except curved portion of arrow points right.
5. The 6" border is non-reflective black.



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	42	48			6	5 5/8	15 3/8	11 3/4	11 1/4	14 1/2	8 7/8	14 1/4	3 7/8	7	1/2	4		3 1/2	5/8	36						14.0	
2M	42	48			6	5 5/8	15 3/8	11 3/4	11 1/4	14 1/2	8 7/8	14 1/4	3 7/8	7	1/2	4		3 1/2	5/8	36						14.0	
3																											
4																											
5																											

PROJECT NO:

HWY:

COUNTY:

SHEET NO: 130

E

STANDARD SIGN
R3-6

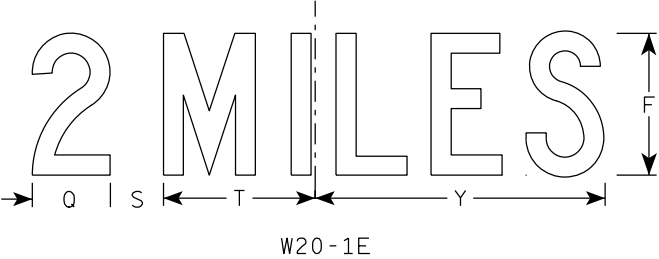
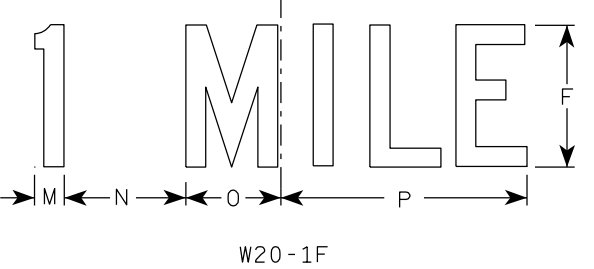
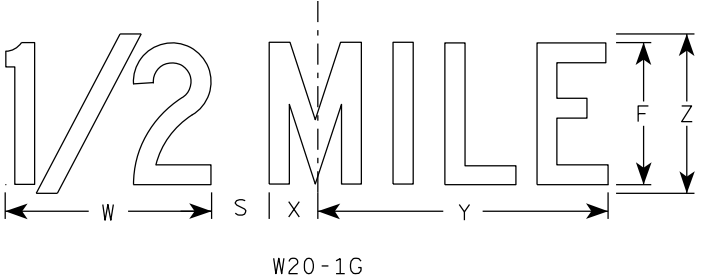
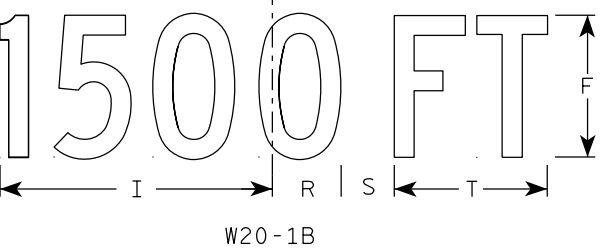
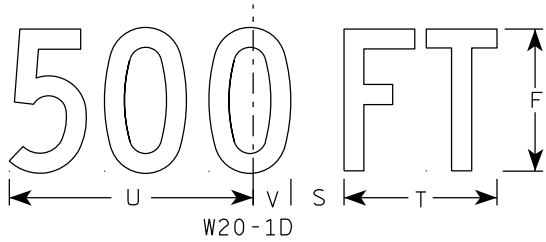
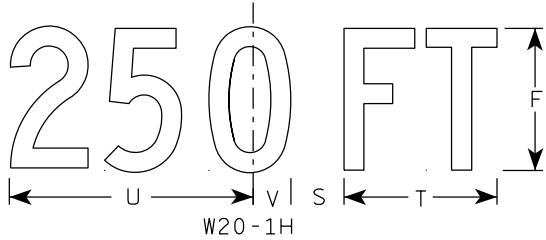
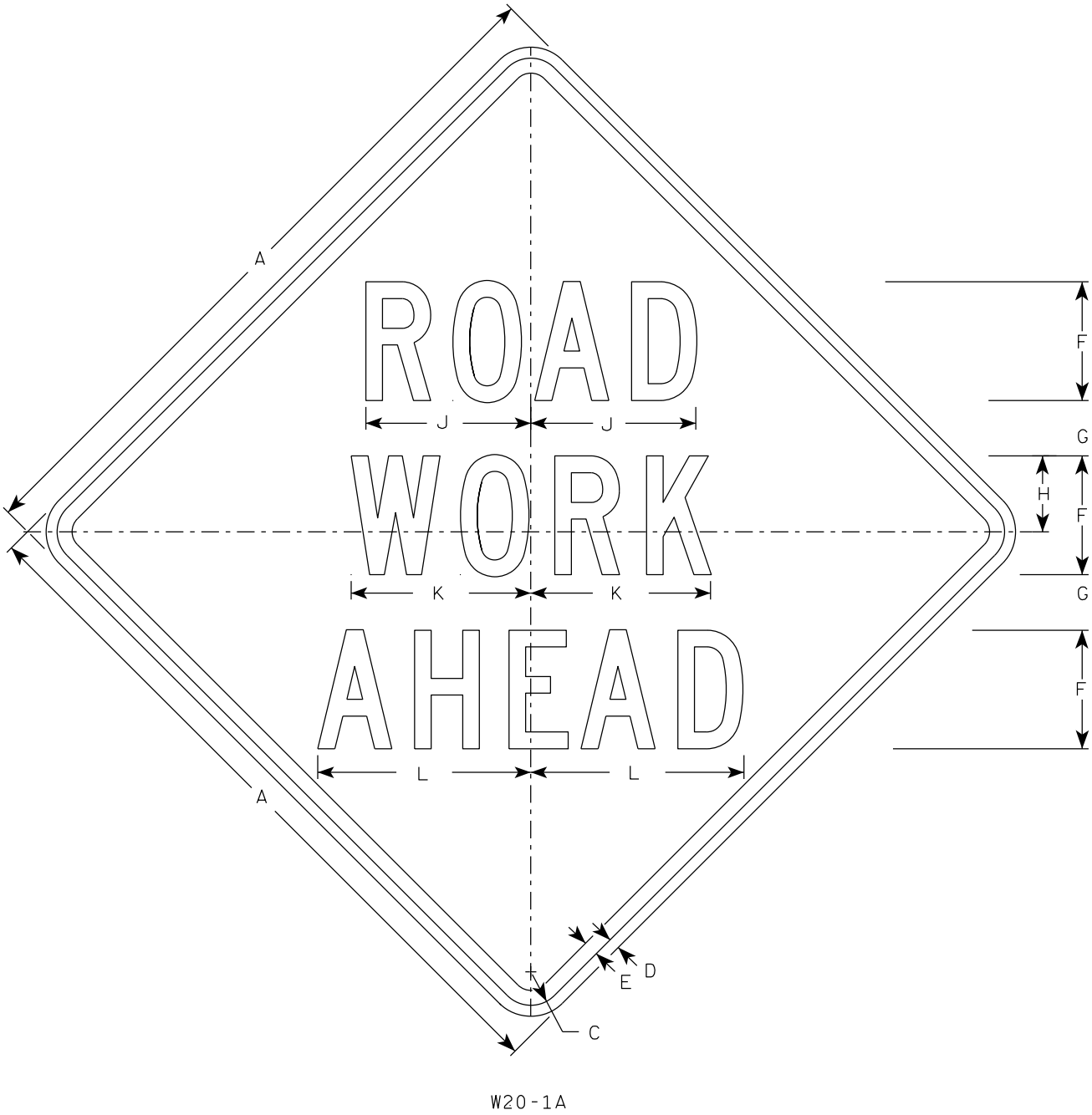
WISCONSIN DEPT OF TRANSPORTATION

APPROVED
Matthew R. Rauch
for State Traffic Engineer

DATE 3/17/2011 PLATE NO. R3-6.5

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	A _{req} sq. ft.
1	36		1 5/8	5/8	3/4	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	3 1/4	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, E, F, G & H

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer
DATE 3/25/2020 PLATE NO. W20-1.11

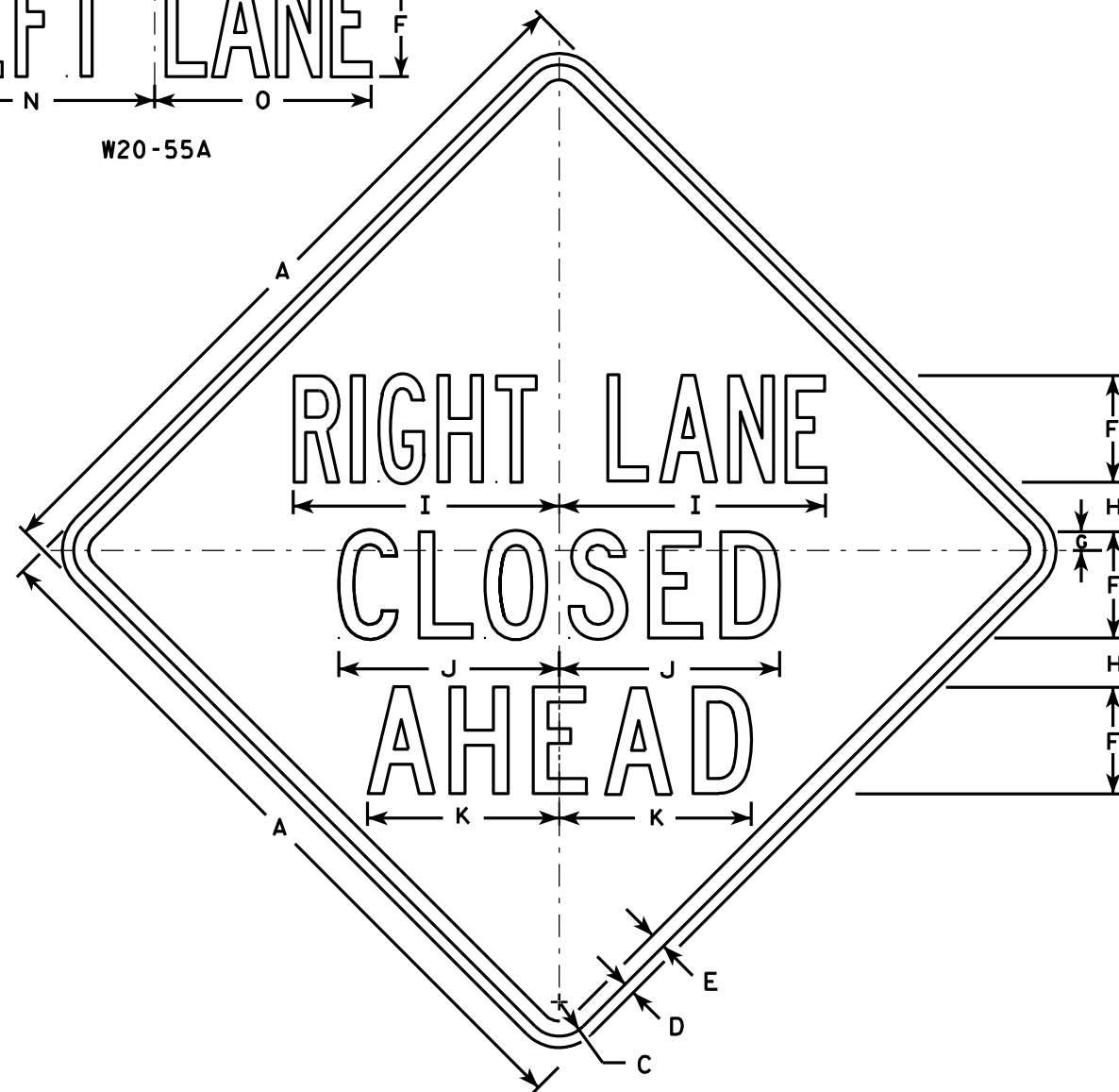
PROJECT NO: SHEET NO: 131 E

CENTER LANE

W20-56A

LEFT LANE

W20-55A



W20-5A

500 FT

W20-5D

1000 FT

W20-5C

1500 FT

W20-5B

1/2 MILE

W20-5G

1 MILE

W20-5F

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. "----- LANE" is Series B.
All other copy is Series C.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36	6	1 5/8	5/8	3/4	5	7/8	2 1/2	13 1/8	10 3/4	9 1/2	14 1/4	13 5/8	12	12	1 3/8	1 1/8	4 1/2	3 1/2	9	1 7/8	5 5/8	10 1/8	2 1/2	1 3/4	8	9.0
2S	48	8	2 1/4	3/4	1	7	1 1/4	3 1/4	17 1/2	14 3/8	12 5/8	19	18 3/8	16	14 1/4	1 7/8	1 1/2	6	4 5/8	12	2 5/8	7 1/2	13 1/2	3 3/8	2 3/8	10 5/8	16.0
2M	48	8	2 1/4	3/4	1	7	1 1/4	3 1/4	17 1/2	14 3/8	12 5/8	19	18 3/8	16	14 1/4	1 7/8	1 1/2	6	4 5/8	12	2 5/8	7 1/2	13 1/2	3 3/8	2 3/8	10 5/8	16.0
3	48	8	2 1/4	3/4	1	7	1 1/4	3 1/4	17 1/2	14 3/8	12 5/8	19	18 3/8	16	14 1/4	1 7/8	1 1/2	6	4 5/8	12	2 5/8	7 1/2	13 1/2	3 3/8	2 3/8	10 5/8	16.0
4	48	8	2 1/4	3/4	1	7	1 1/4	3 1/4	17 1/2	14 3/8	12 5/8	19	18 3/8	16	14 1/4	1 7/8	1 1/2	6	4 5/8	12	2 5/8	7 1/2	13 1/2	3 3/8	2 3/8	10 5/8	16.0
5	48	8	2 1/4	3/4	1	7	1 1/4	3 1/4	17 1/2	14 3/8	12 5/8	19	18 3/8	16	14 1/4	1 7/8	1 1/2	6	4 5/8	12	2 5/8	7 1/2	13 1/2	3 3/8	2 3/8	10 5/8	16.0

PROJECT NO:

HWY:

COUNTY:

STANDARD SIGN
W20-5A, B, C, D, F & G

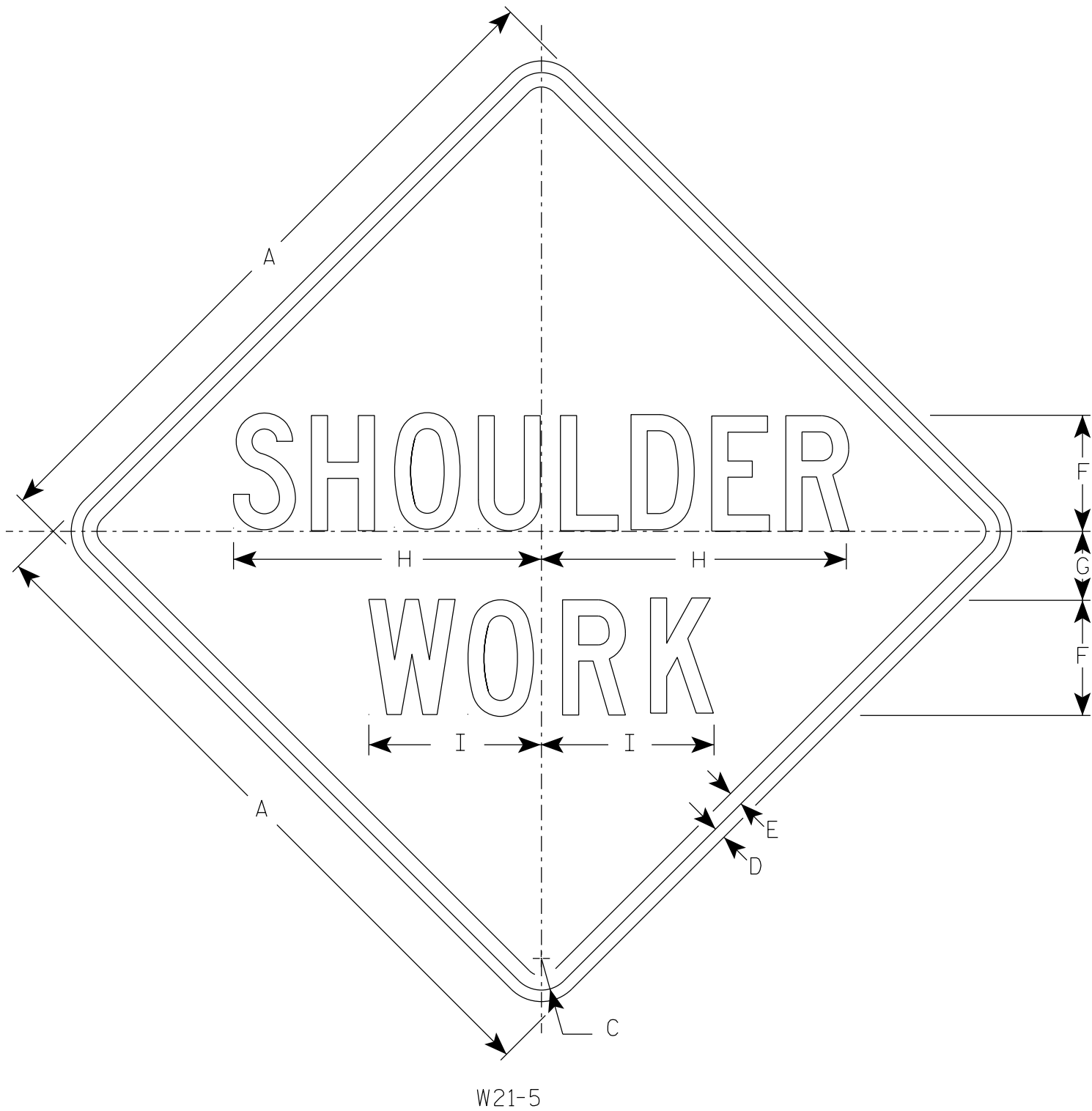
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 3/18/11 PLATE NO. W20-5.11

SHEET NO: 132

E



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 5/8	5/8	3/4	6	3 1/2	16	9																		9.0
2S	48		2 1/4	3/4	1	8	5	21 3/8	11 1/4																		16.0
2M	48		2 1/4	3/4	1	8	5	21 3/8	11 1/4																		16.0
3	48		2 1/4	3/4	1	8	5	21 3/8	11 1/4																		16.0
4	48		2 1/4	3/4	1	8	5	21 3/8	11 1/4																		16.0
5	48		2 1/4	3/4	1	8	5	21 3/8	11 1/4																		16.0

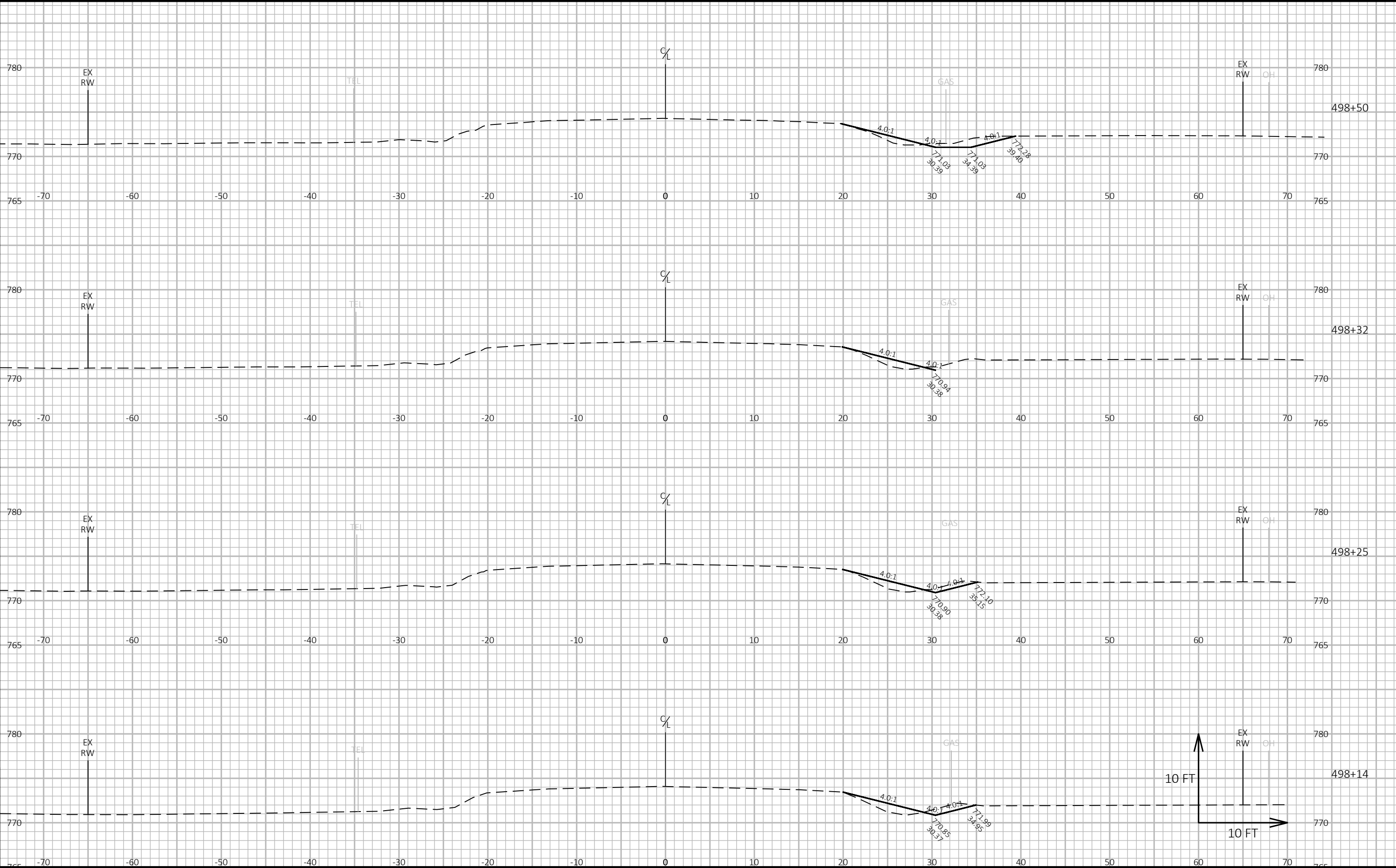
STANDARD SIGN

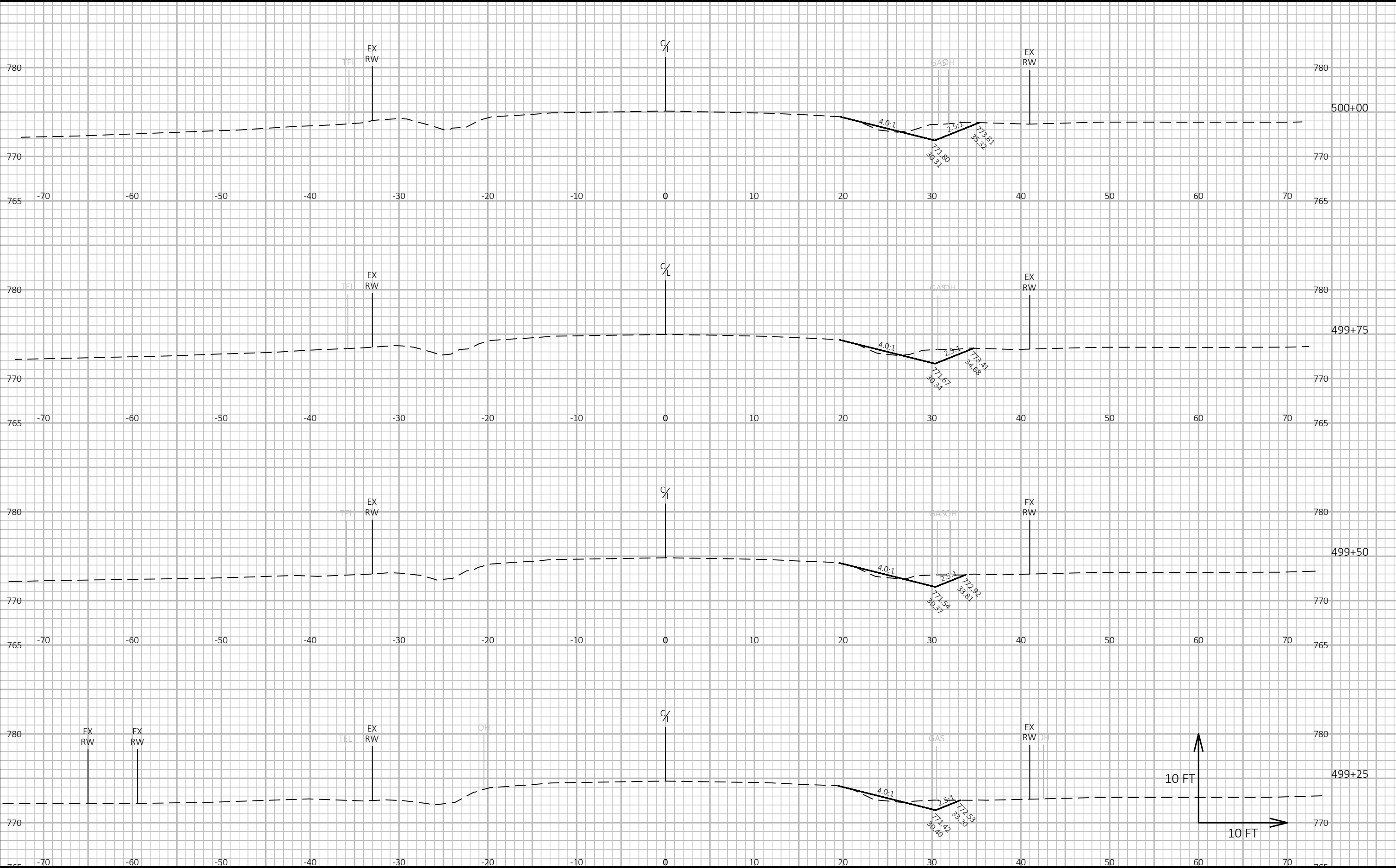
W21-5

WISCONSIN DEPT OF TRANSPORTATION

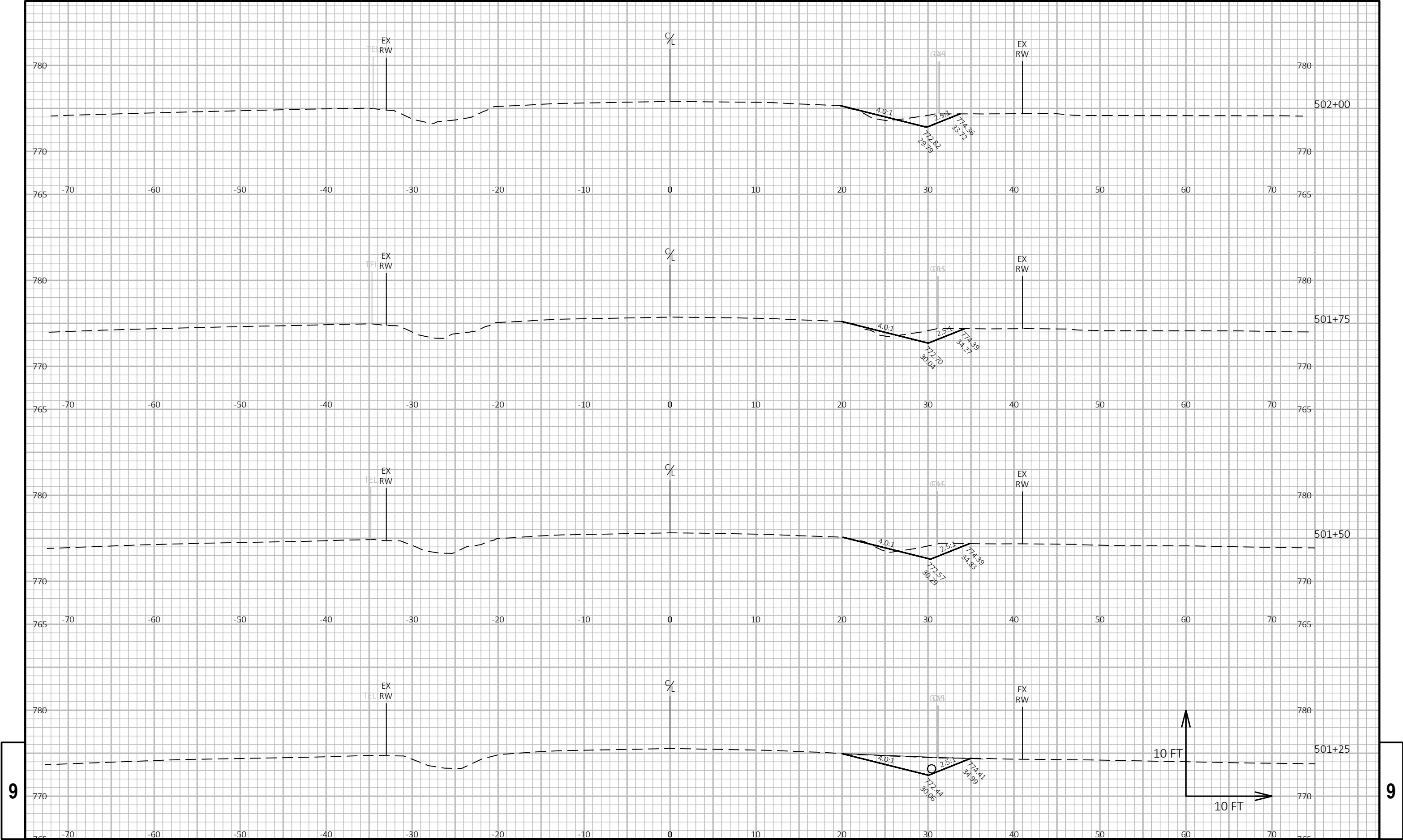
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 4/30/2020 PLATE NO. W21-5.6



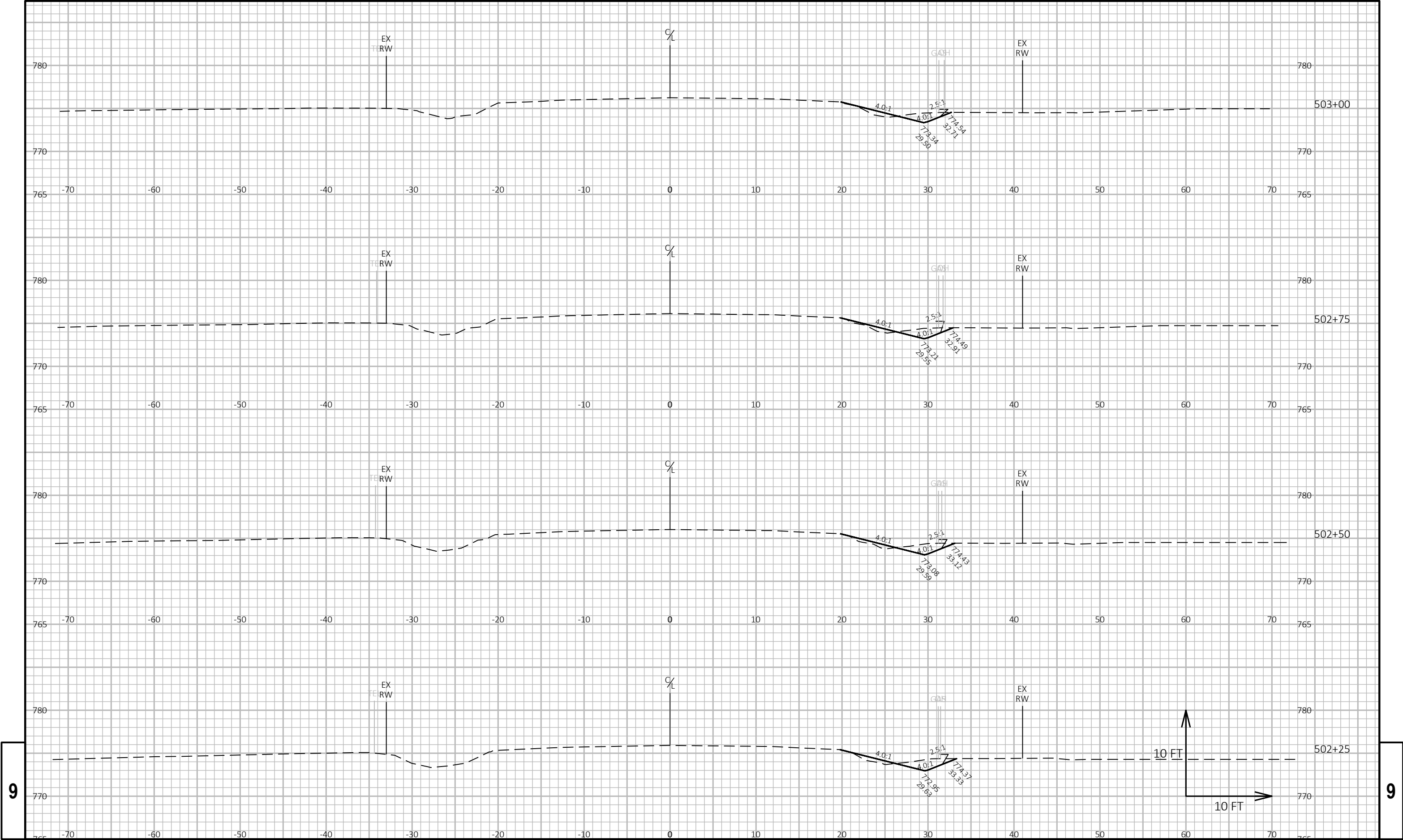






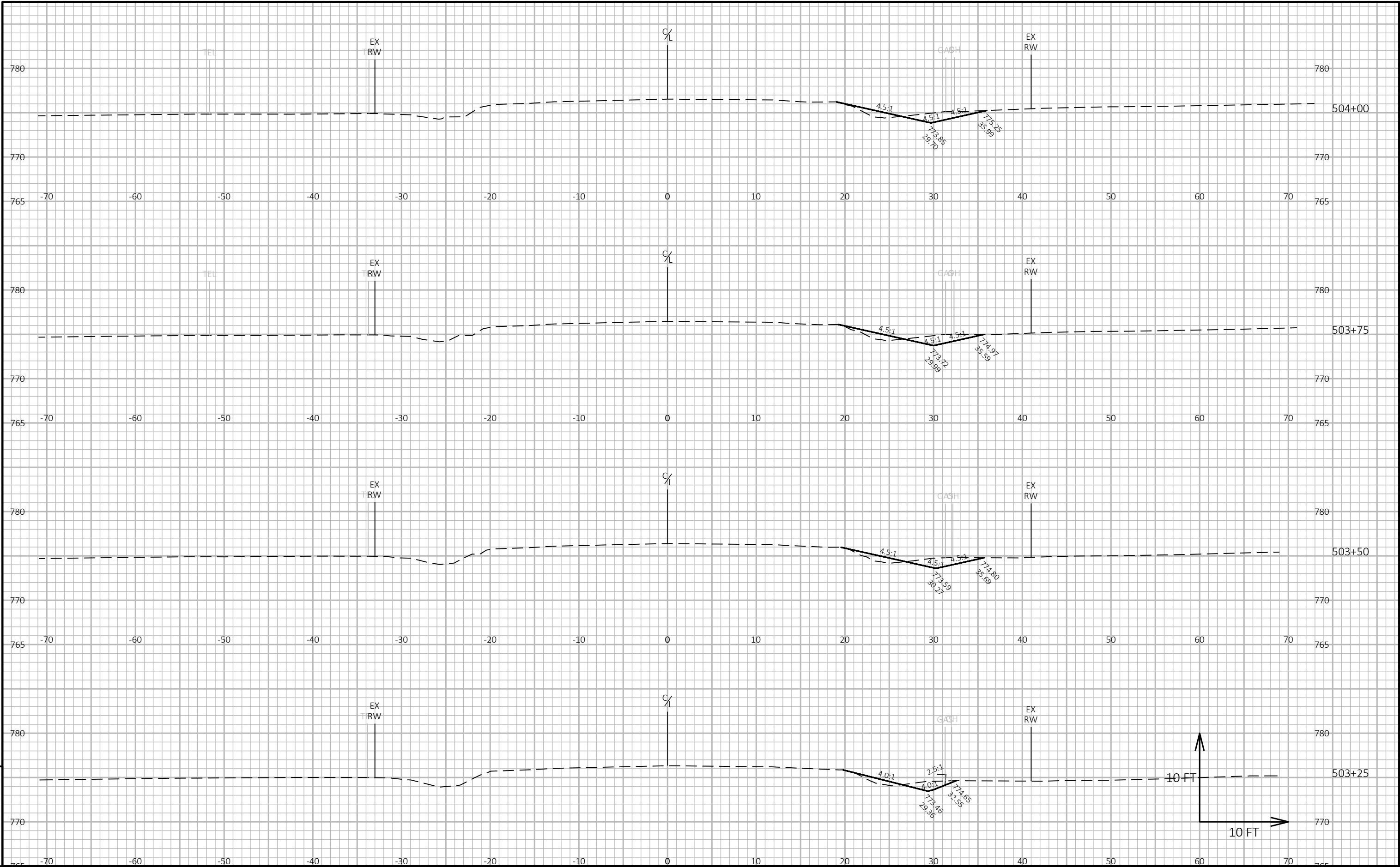
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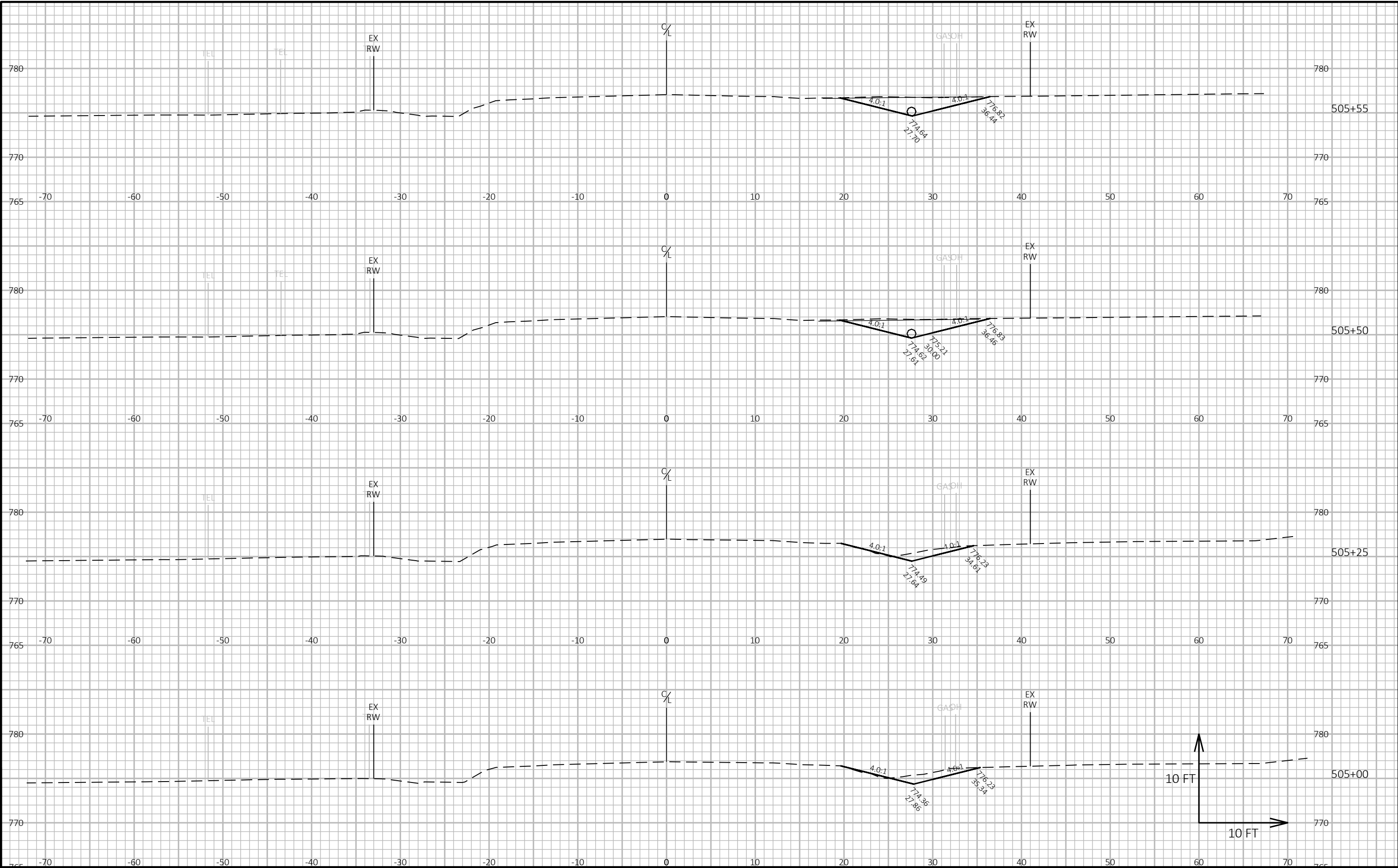
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9

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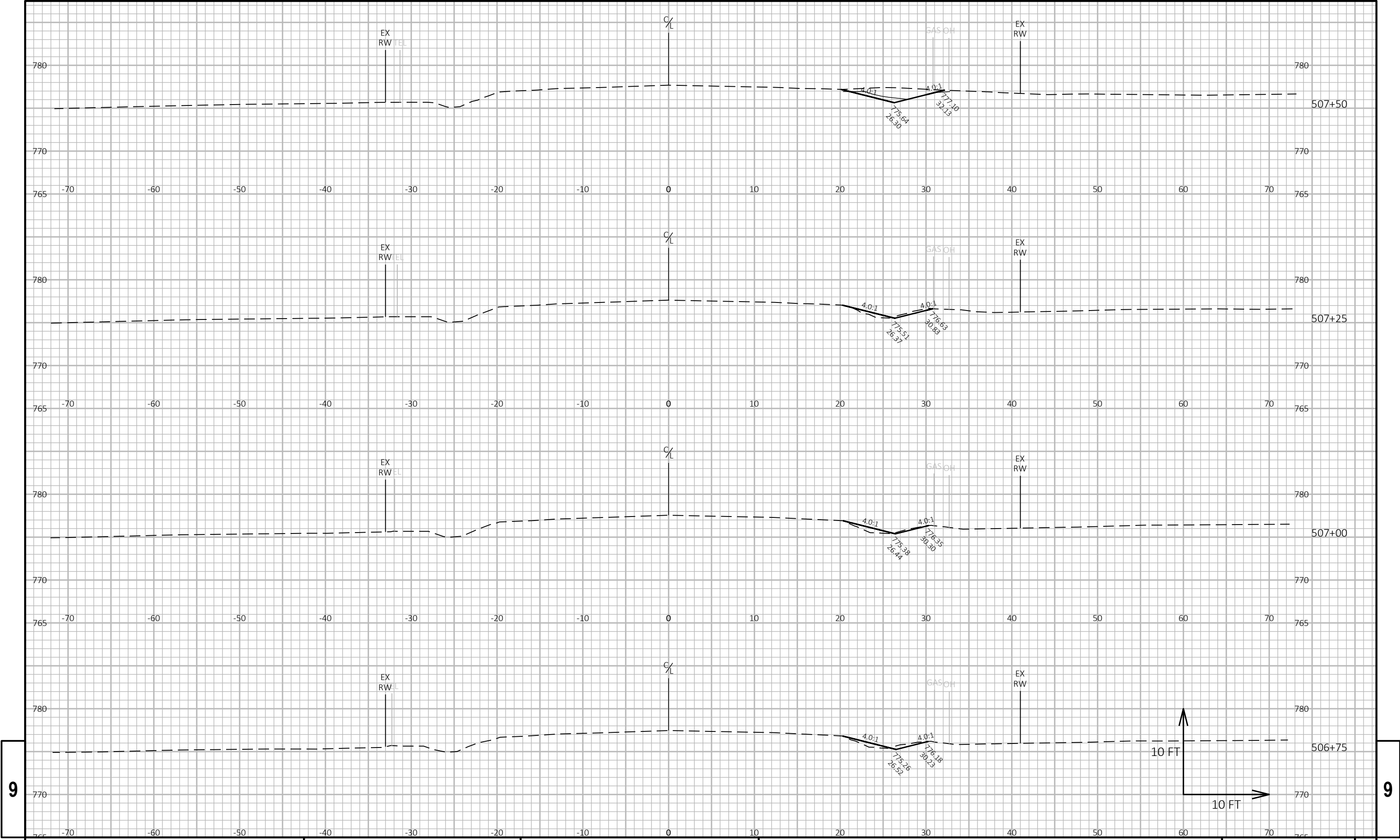






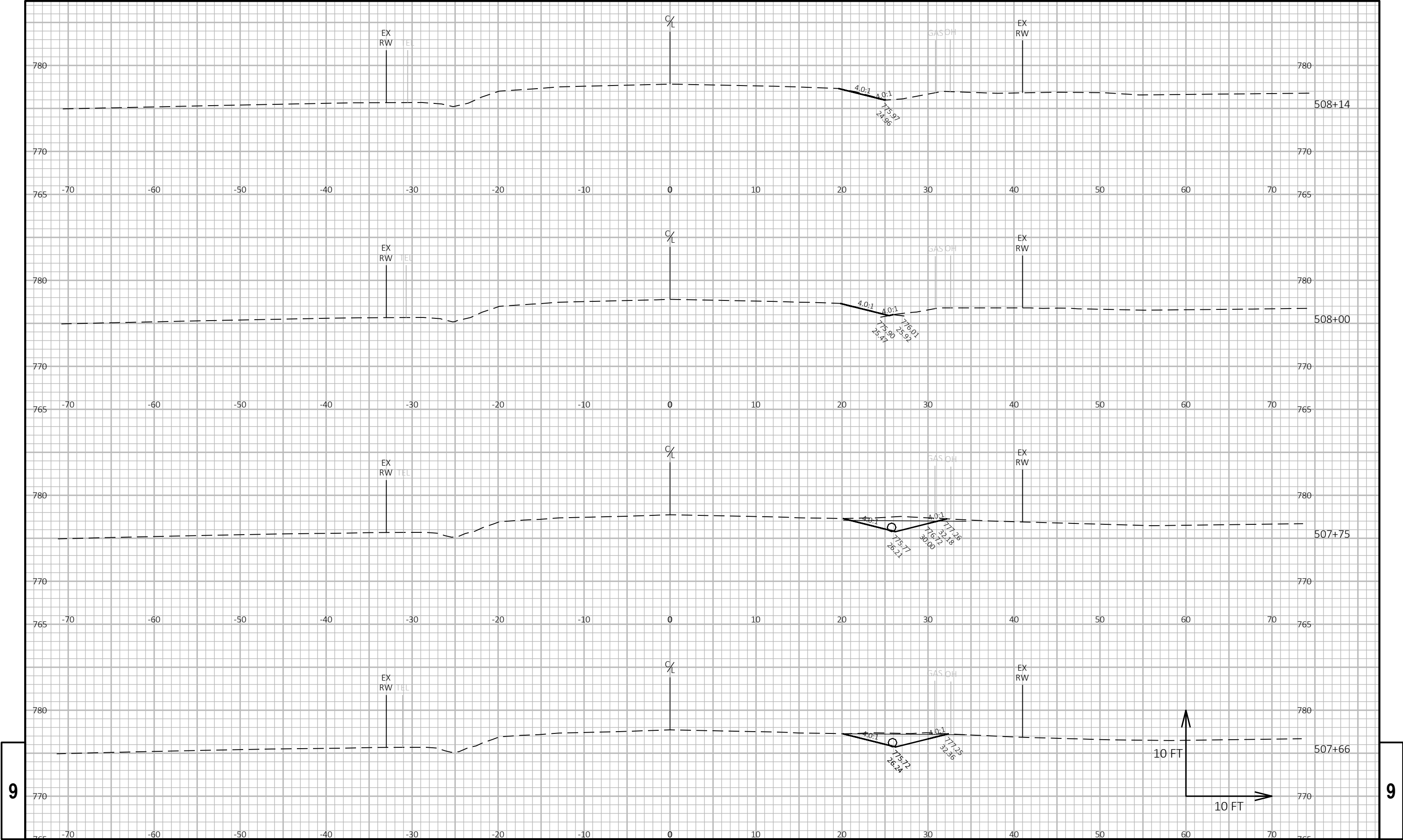
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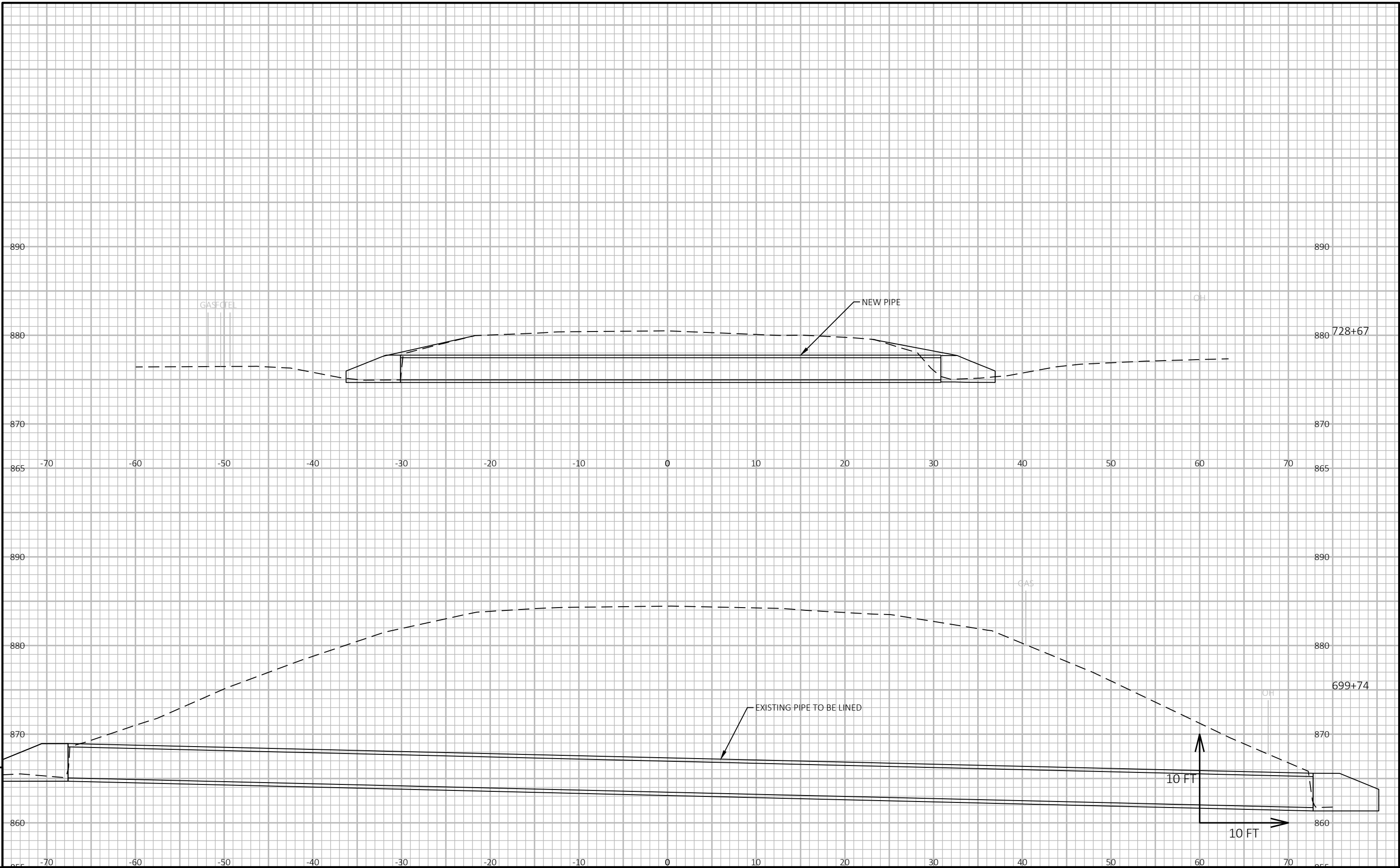
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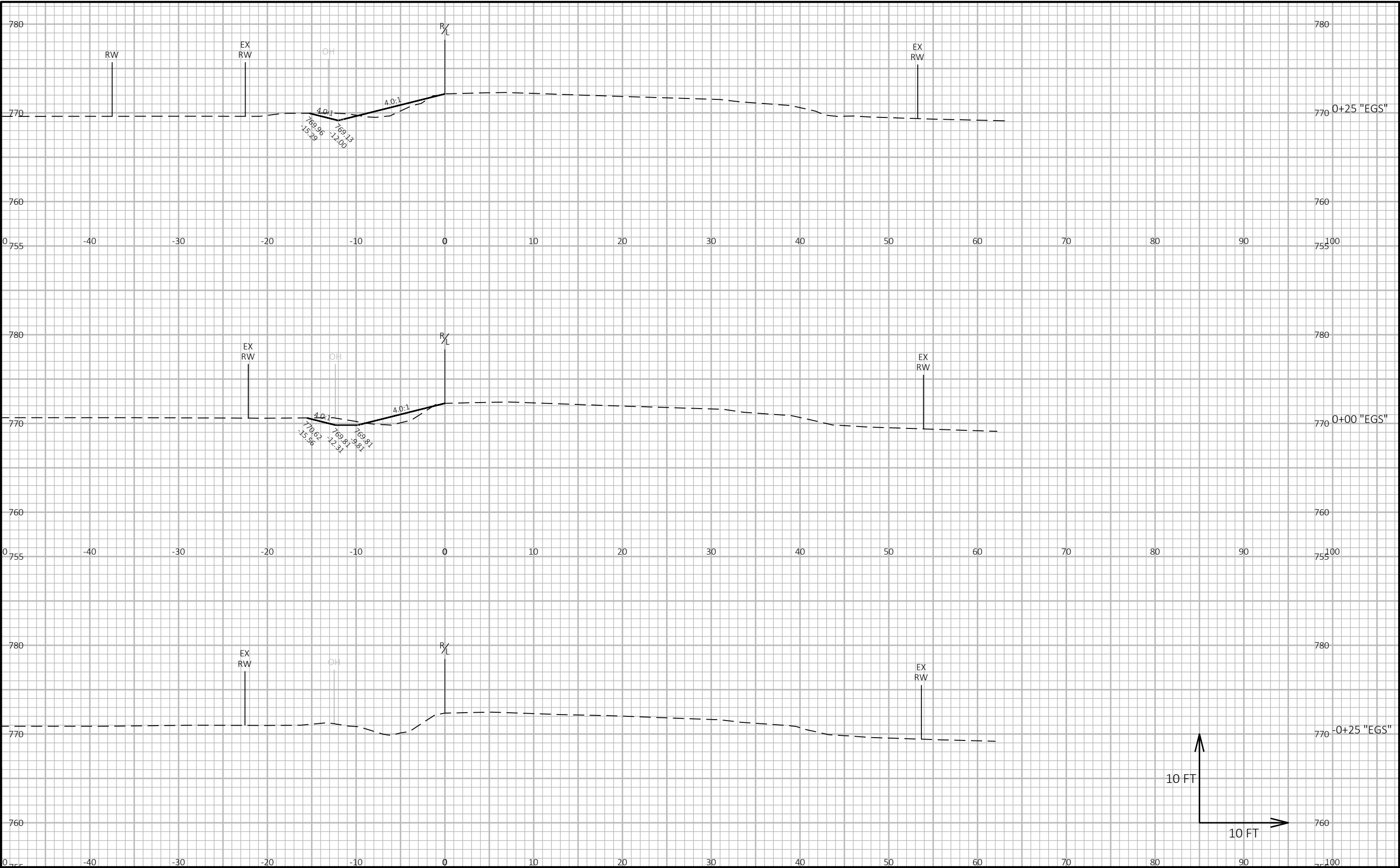
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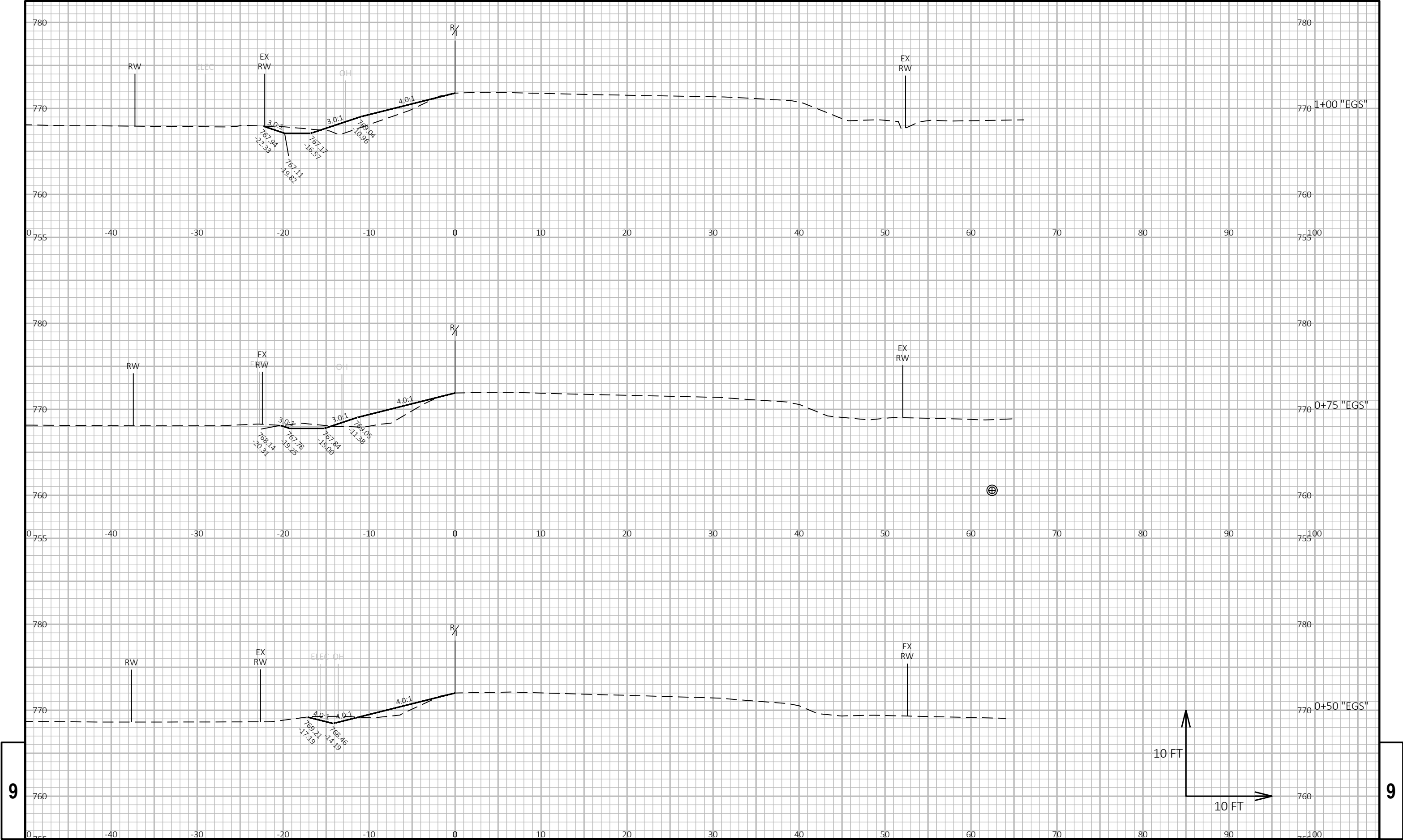


9

9

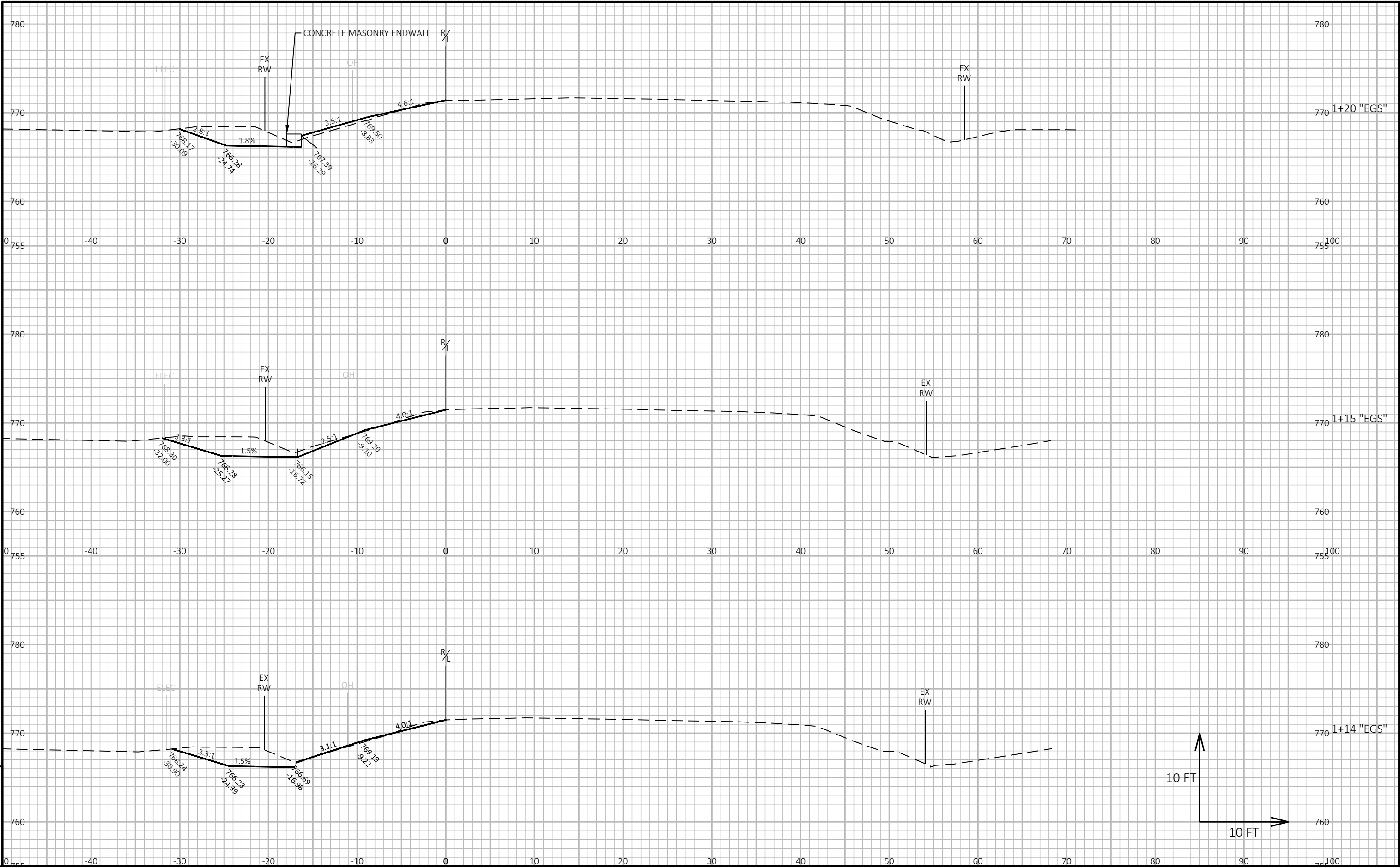


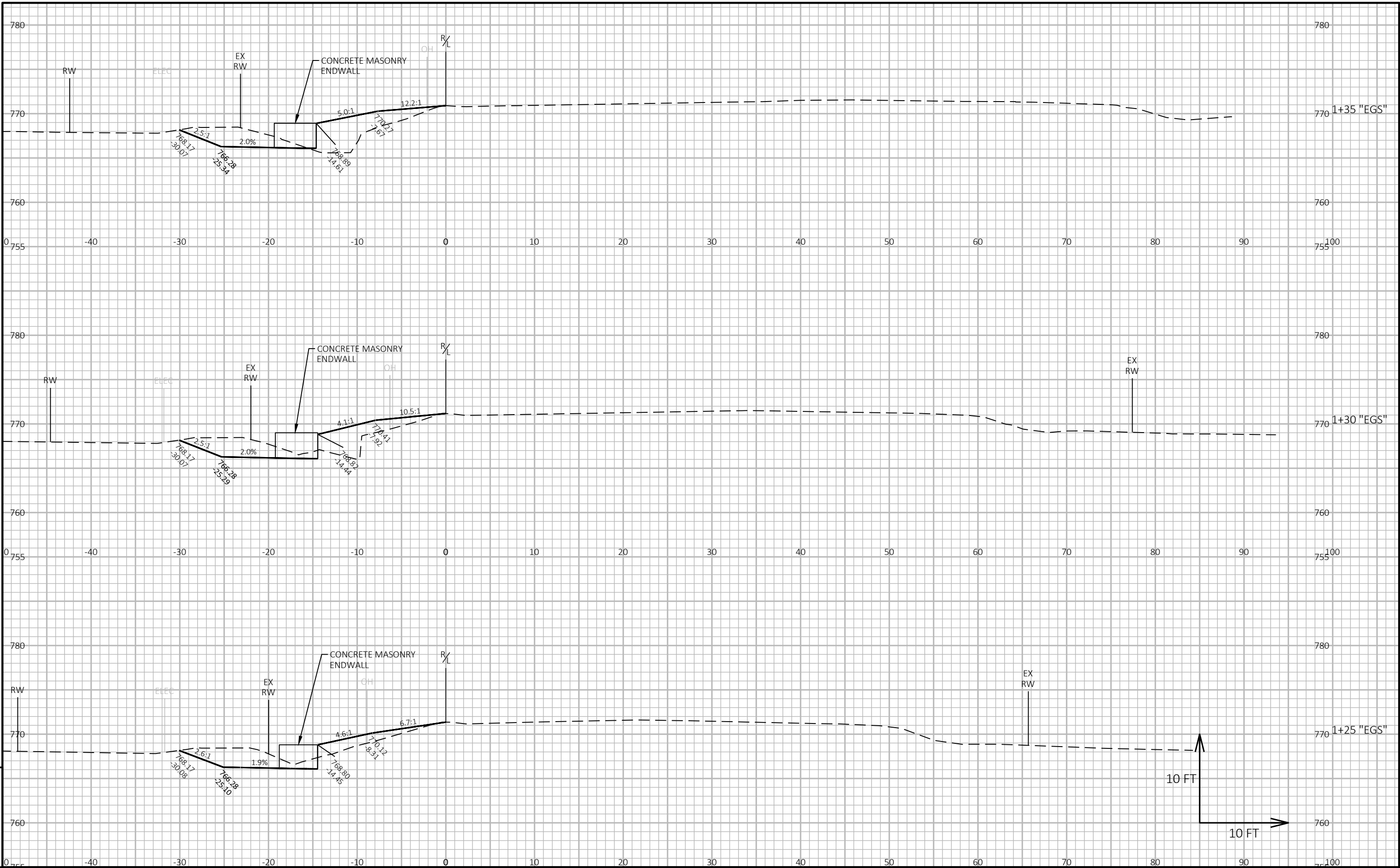


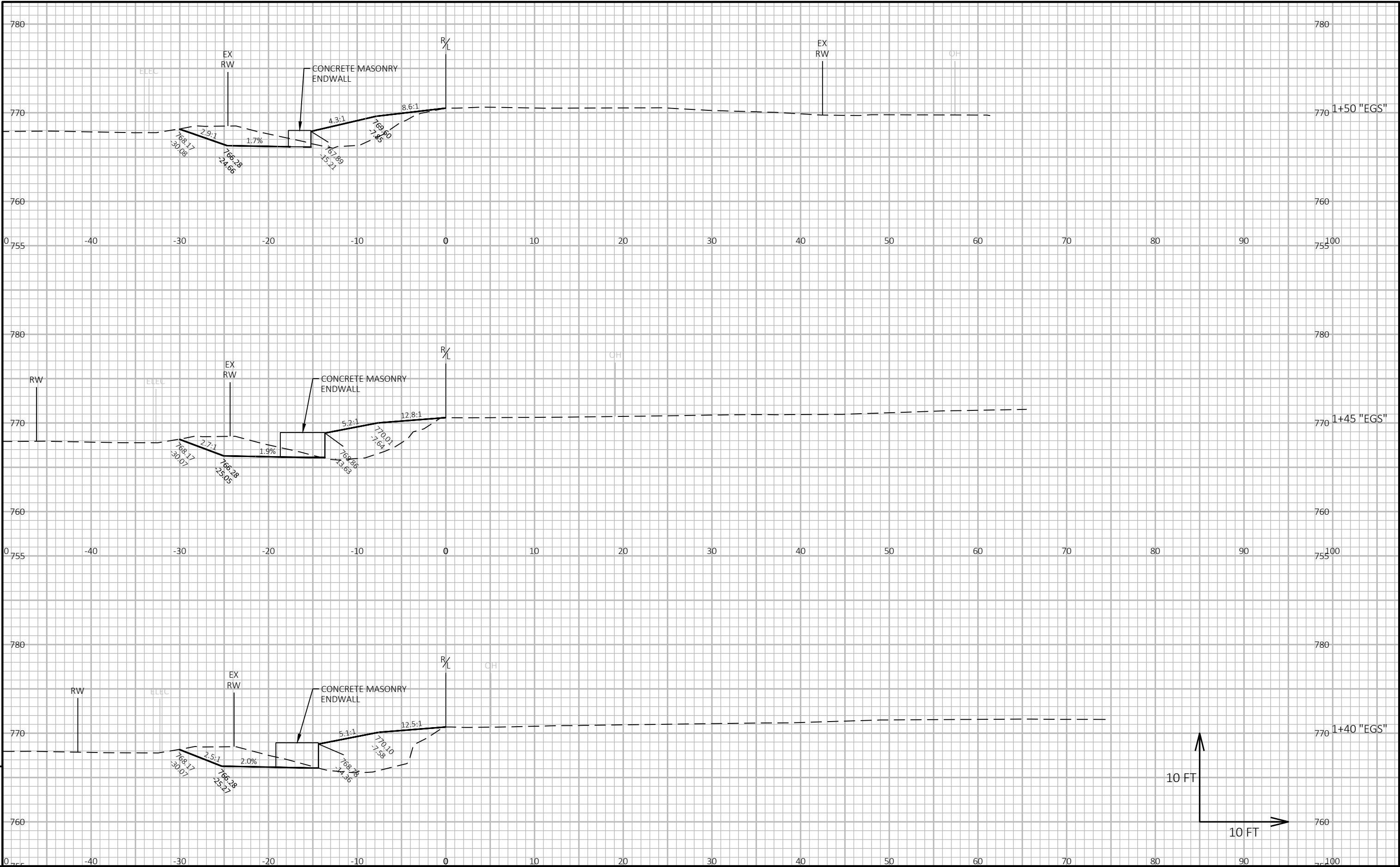


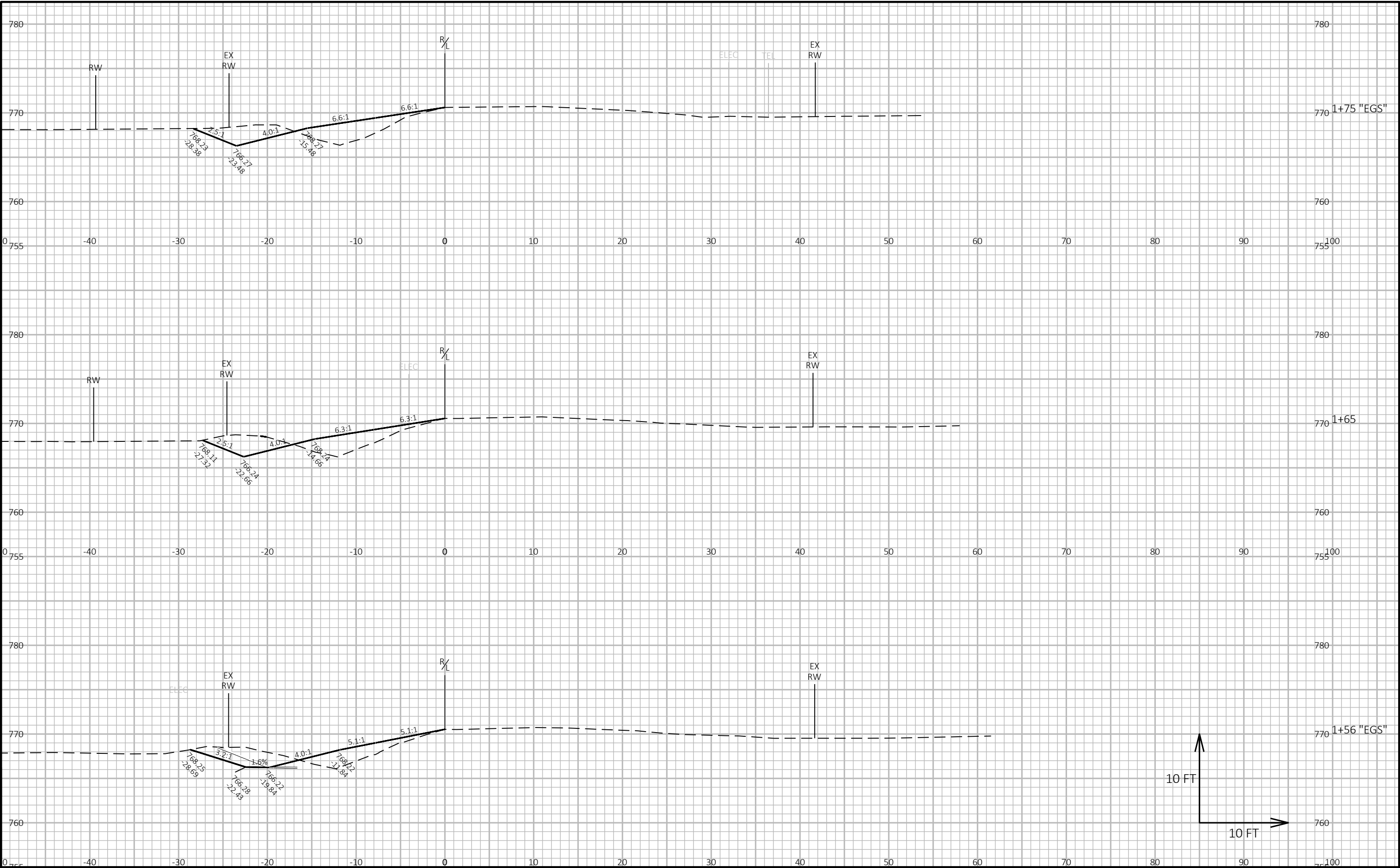
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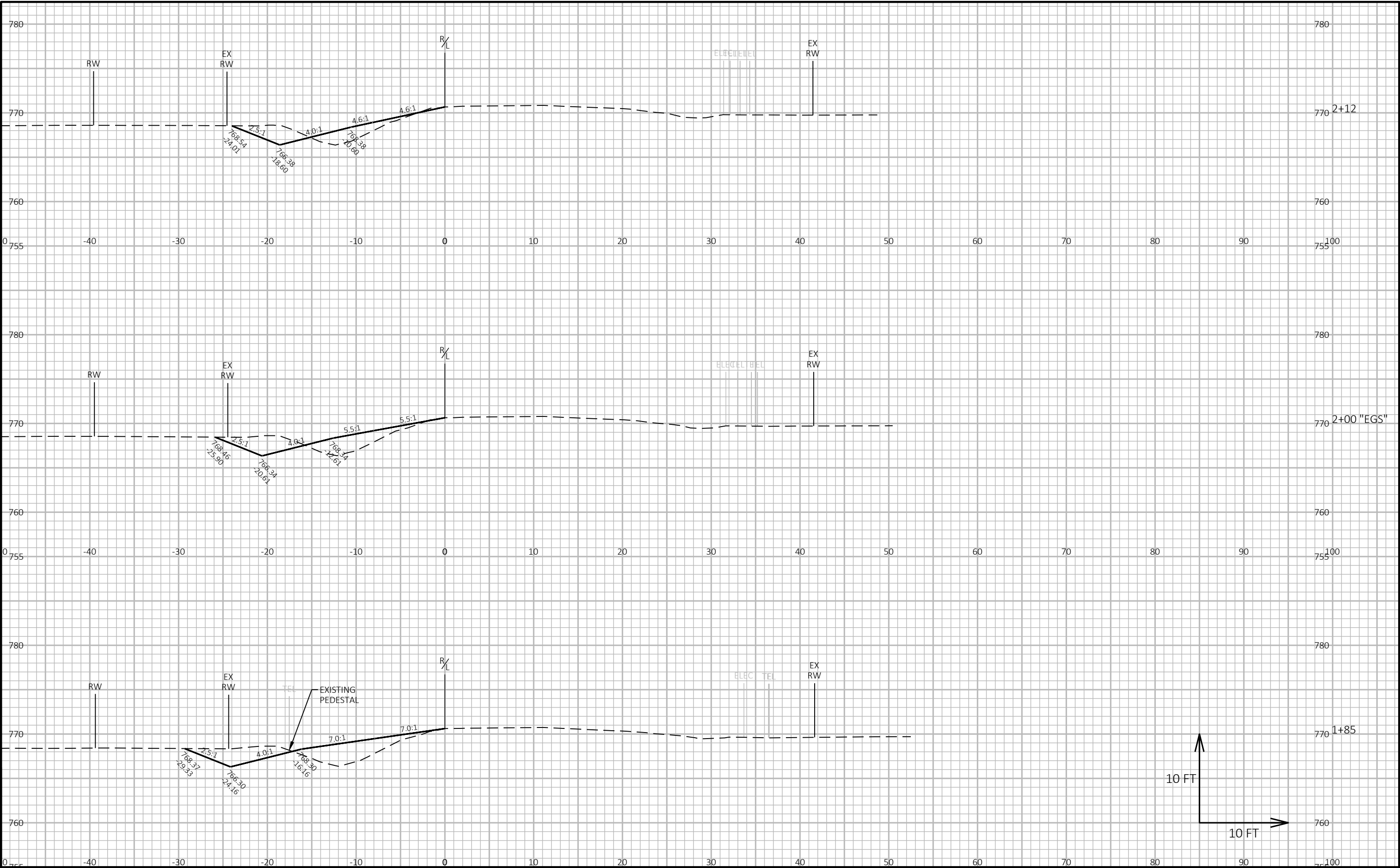
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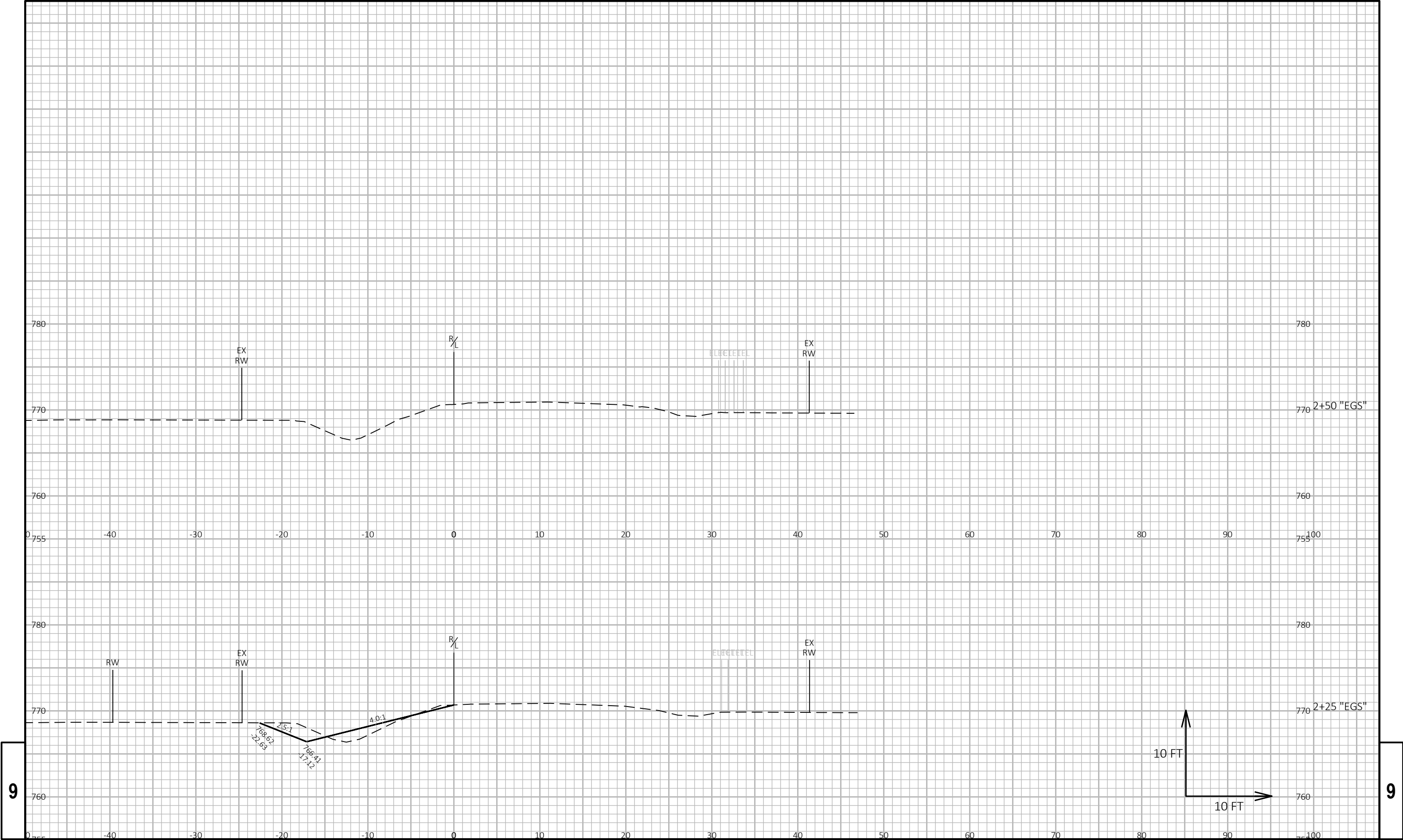








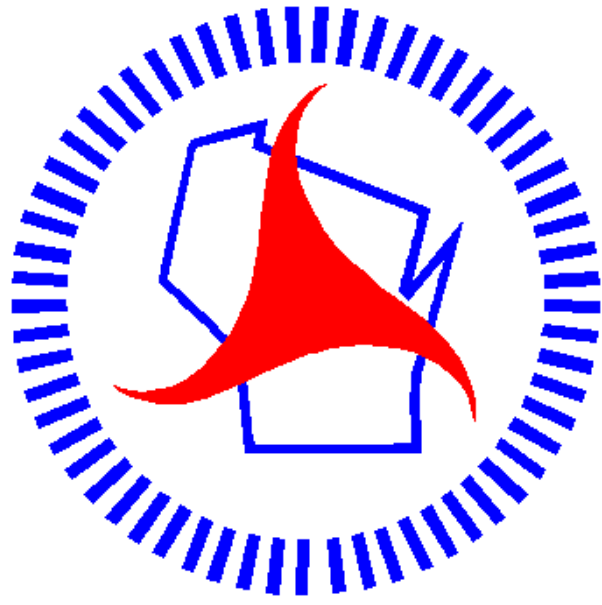




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9

Notes



Wisconsin Department of Transportation

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