

GRE

PROJECT ID:
WITH:

1130-44-75

COUNTY:

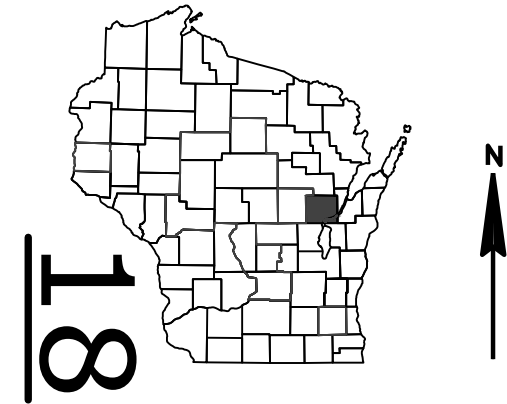
OUTAGAMIE

MAY 2025

ORDER OF SHEETS

Section No.	1	Title
Section No.	2	Typical Sections and Details (Includes Erosion Control Plans)
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 = 272



DESIGN DESIGNATION

A.A.D.T.	2023	=	74,000
A.A.D.T.	2045	=	94,900
D.H.V.		=	
D.D.		=	50/50
T.		=	12.9%
DESIGN SPEED		=	75 MPH
ESALS		=	17,000,000

CONVENTIONAL SYMBOLS

PLAN

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

PROFILE

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

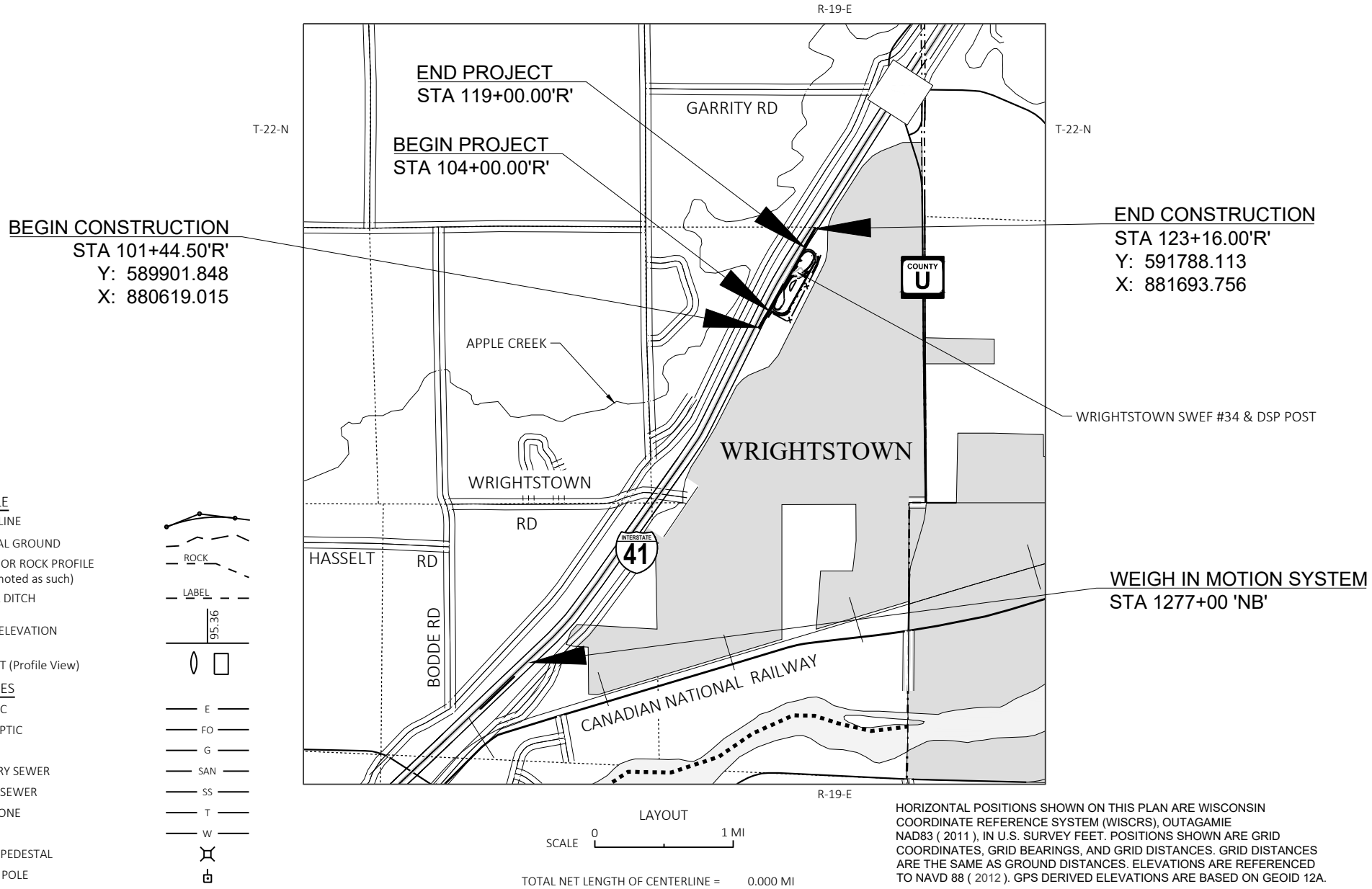
APPLETON-GREEN BAY

IH 41 WRIGHTSTOWN SWEF 34/POST - SITE

IH 41

OUTAGAMIE COUNTY

STATE PROJECT NUMBER
1130-44-75



HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COORDINATE REFERENCE SYSTEM (WISCRS), OUTAGAMIE 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 PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
1130-44-75	WISC 2025463	1

ORIGINAL PLANS PREPARED BY

KL Engineering
[A] Better Experience



STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY	Surveyor	WISDOT/KL ENGINEERING
Designer	KL ENGINEERING	
Project Manager	JOHN SPIELMACHER	
Regional Examiner		
Regional Supervisor		

APPROVED FOR THE DEPARTMENT
DATE: 1/14/2025
(Signature)

E

STANDARD ABBREVIATIONS

ADJ	ADJUST
AEW	APRON ENDWALL
ASPH	ASPHALT
AUX	AUXILLARY
AVG	AVERAGE
BAD	BASE AGGREGATE DENSE
BLDG	BUILDING
BM	BENCH MARK
C&G	CURB AND GUTTER
CONC	CONCRETE
COOP	COOPERATIVE
CP	CULVERT PIPE
CPRC	CULVERT PIPE REINFORCED CONCRETE
CSCP	CULVERT PIPE CORRUGATED STEEL
D	DEGREE OF CURVE
EAT	ENERGY ABSORBING TERMINAL
ELECT.	ELECTIRC
EMAT	EROSION MAT
EXIST	EXISTING
HMA	HOT MIX ASPHALT
INCR.	INCREMENTAL
INV	INVERT
L	LENGTH OF CURVE
LHF	LEFT HAND FORWARD
LT	LEFT
M/L	MATCHLINE
MAX	MAXIMUM
MGRS	MIDWEST GUARD RAIL SYSTEM
MIN	MINIMUM
NC	NORMAL CROWN
NOR	NORMAL
OH	OVERHEAD
PAVT	PAVEMENT
PC	POINT OF CURVE
PE	PRIVATE ENTRANCE
PI	POINT OF INTERSECTION
PNT	POINT
PT	POINT OF TANGENT
R	RADIUS OF CURVE
R/L	REFERENCE LINE
R/W	RIGHT OF WAY
RC	REVERSE CROWN
REQD	REQUIRED
RHF	RIGHT HAND FORWARD
RO	RUN OFF LENGTH
RT	RIGHT
SALV	SALVAGED
SDD	STANDARD DETAIL DRAWINGS
SE	SUPER ELEVATION
SHLD	SHOULDER
SSPRC	STORM SEWER PIPE REINFORCED CONCRETE
STA	STATION
SWEF	SAFETY WEIGHT ENFORCEMENT FACILITY
T	TANGENT LENGTH
TYP	TYPICAL
UG	UNDERGROUND
VCL	VERTICAL CURVE LENGTH
VPC	POINT OF VERTICAL CURVE
VPI	POINT OF VERTICAL INTERSECTION
VPT	POINT OF VERTICAL TANGENT
Δ	DELTA

UTILITIES

COMMUNICATIONS

LEVEL 3 COMMUNICATIONS LLC (COMMUNICATIONS)
NETWORK RELOCATIONS
1025 ELDORADO BLVD.
BROOMFIELD, CO, 80021
RELOCATIONS@LUMEN.COM

ELECTRIC

KAUKAUNA UTILITIES (ELECTRIC)
ERIC MILLER
777 ISLAND ST., P.O. BOX 1777
KAUKAUNA, WI, 54130-7077
(920) 462-0214
EMILLER@KU-WI.ORG



Dial 811 or (800)242-8511

www.DiggersHotline.com

RUNOFF COEFFICIENT TABLE

LAND USE:	HYDROLOGIC SOIL GROUP											
	A			B			C			D		
	SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)		
	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:	.08	.16	.22	.12	.20	.27	.15	.24	.33	.19	.28	.38
	.22	.30	.38	.26	.34	.44	.30	.37	.50	.34	.41	.56
MEDIAN STRIP - TURF:	.19	.20	.24	.19	.22	.26	.20	.23	.30	.20	.25	.30
	.24	.26	.30	.25	.28	.33	.26	.30	.37	.27	.32	.40
SIDE SLOPE - TURF:			.25			.27			.28			.30
			.32			.34			.36			.38
PAVEMENT:												
ASPHALT:	.70 - .95											
CONCRETE:	.80 - .95											
BRICK:	.70 - .80											
DRIVES, WALKS:	.75 - .85											
ROOFS:	.75 - .95											
GRAVEL ROADS, SHOULDERS:	.40 - .60											

TOTAL PROJECT AREA = 19.6 ACRES
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 5.2 ACRES

GENERAL NOTES

ALL RADII DIMENSIONS WITH OR WITHOUT CURB AND GUTTER ARE MEASURED TO THE EDGE OF PAVEMENT UNLESS OTHERWISE NOTED.

ALL GRADES PROVIDED ALONG RADII ARE ALONG EDGE OF PAVEMENT AT PC, PT AND MIDPOINT.

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

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

AREAS GRADED TO FINAL GRADE SHALL BE SEEDED, MULCHED, AND FERTILIZED AS SPECIFIED IN PLANS WITHIN 5 DAYS AFTER COMPLETION OF GRADING.

TEMPORARY STORAGE OF ANY EXCAVATED MATERIAL WILL NOT BE PERMITTED IN WETLANDS OR WITHIN 30' FROM EDGE OF IH 41 PAVEMENT.

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

TRAFFIC CONTROL DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS DIRECTED BY THE ENGINEER.

5 FOOT WIDE SIDEWALK REQUIRES TRANSVERSE JOINTS SPACED AT 5 FEET AND 6 FOOT WIDE SIDEWALK REQUIRES TRANSVERSE JOINTS SPACED AT 6 FEET, WIDER SIDEWALK AS ENGINEER DIRECTS.

WIRE MESH MAY BE ENCOUNTERED DURING "REMOVING CONCRETE PAVEMENT" AND IS INCLUDED IN PAYMENT OF THAT BID ITEM.

CULVERTS AND STORMSEWERS ARE SHOWN IN STORMSEWER PLAN AND SHALL BE STAKED FROM INFORMATION IN THE MISCELLANEOUS QUANTITIES TABLE.

HMA PAVEMENT, WHEN INDICATED ON THE PLANS, SHALL CONSIST OF COURSES AS FOLLOWS UNLESS OTHERWISE NOTED ON THE PLANS.

ROADWAY	TOTAL PAVEMENT THICKNESS	LOWER LAYER THICKNESS & TYPE	UPPER LAYER THICKNESS & TYPE
ACCESS ROAD EMPLOYEE PKG ACCESS	4 INCHES	2.25" 4LT 58-28S	1.75" 4LT 58-28S
SHOULDERS SWEF RAMP, LOOP INSIDE & LOOP OUTSIDE	5 INCHES	3" 3LT 58-28S	2" 4LT 58-28S
TEMPORARY RAMP CONNECTION	6 INCHES	3" ASPHALTIC SURFACE TEMP.	3" ASPHALTIC SURFACE TEMP.

DETAIL SHEET ORDER

- GENERAL NOTES
- PROJECT OVERVIEW
- TYPICAL SECTIONS
- CONSTRUCTION DETAILS
- REMOVAL PLANS
- PLAN DETAILS
- WIM DETAILS
- SIDEWALK & LANDSCAPING PLAN
- ALIGNMENT DIAGRAM
- CROSS SECTION MATCHLINES
- EROSION CONTROL PLAN
- STORM SEWER PLAN
- FIBER OPTIC UTILITY PLAN
- PERMANENT SIGNING & MARKING
- LIGHTING PLAN
- TRAFFIC CONTROL PLAN
- SOIL BORINGS

PROJECT NO: 1130-44-75

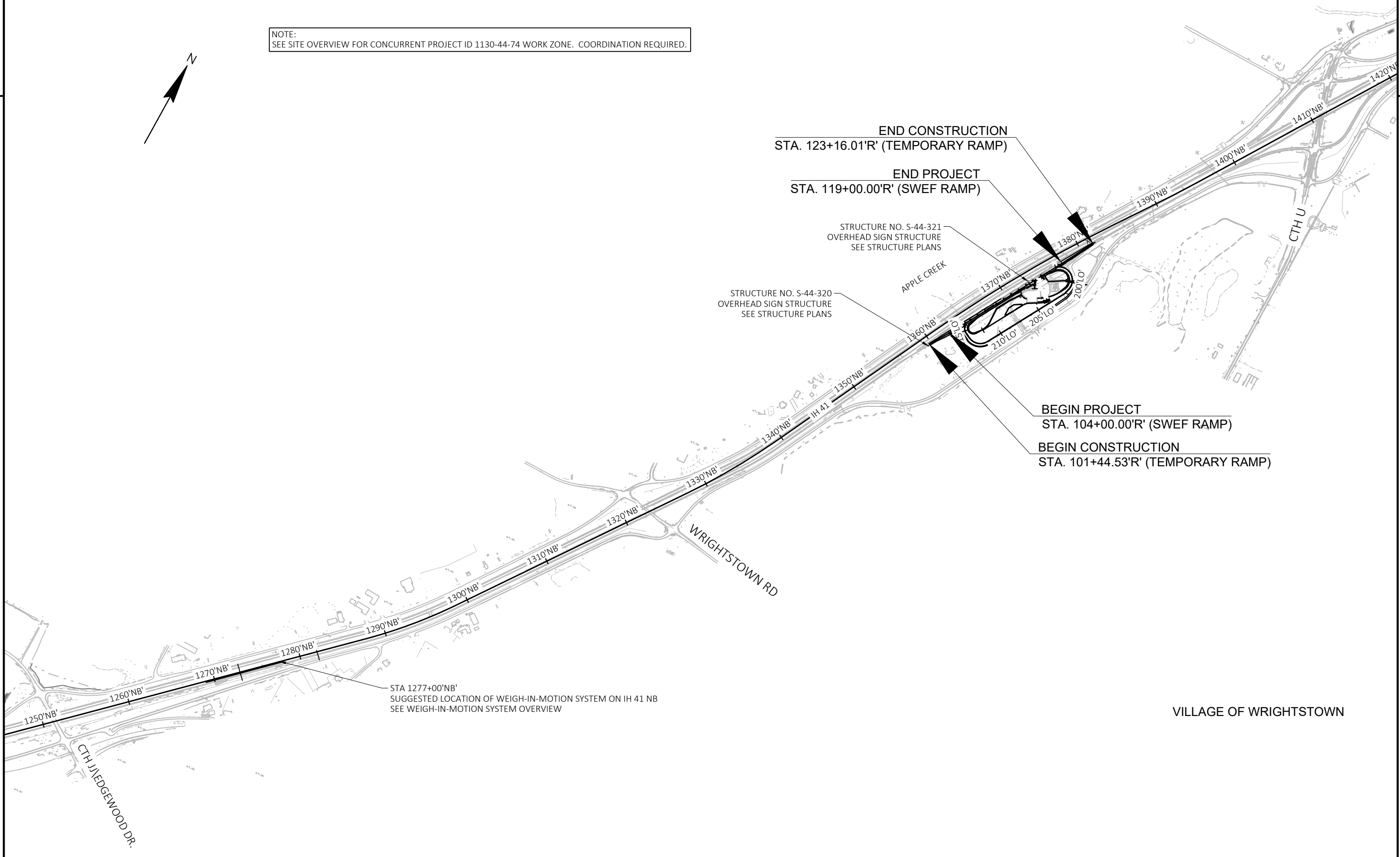
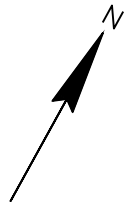
HWY: IH 41

COUNTY: OUTAGAMIE

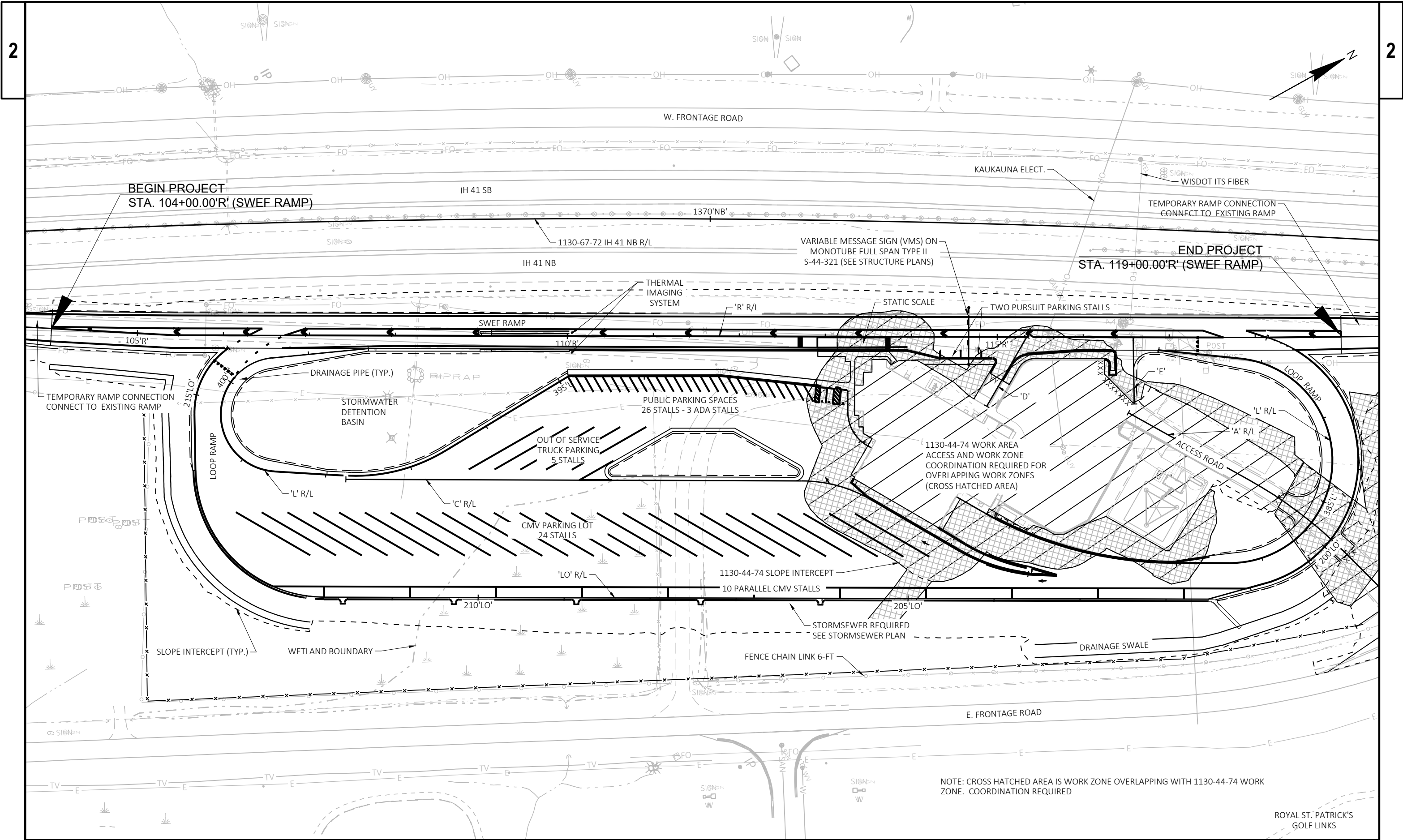
GENERAL NOTES

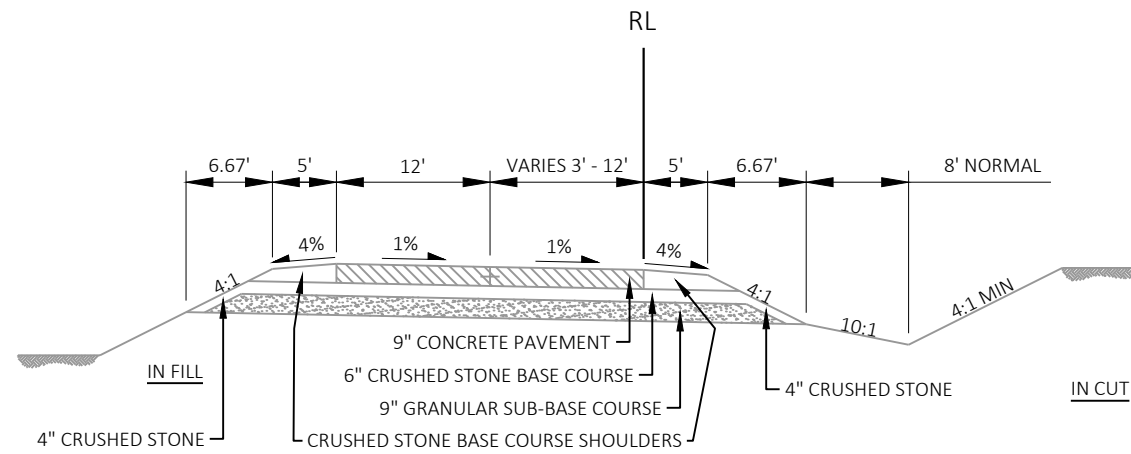
SHEET

NOTE:
SEE SITE OVERVIEW FOR CONCURRENT PROJECT ID 1130-44-74 WORK ZONE. COORDINATION REQUIRED.



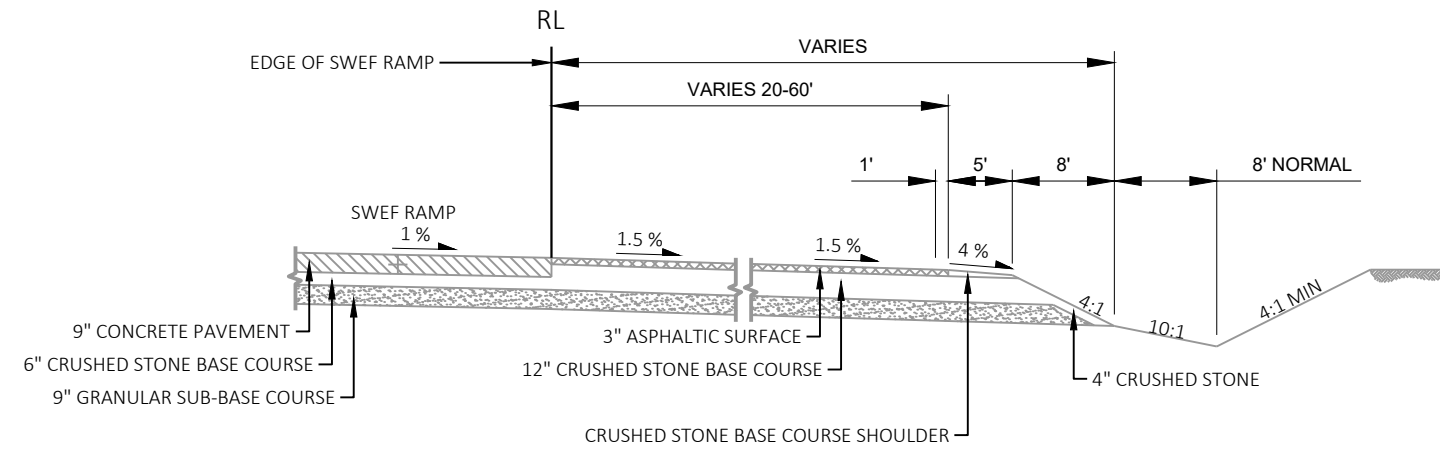
PROJECT NO: 1130-44-75	HWY: IH 41	COUNTY: OUTAGAMIE	PROJECT OVERVIEW	SHEET 3	E
------------------------	------------	-------------------	------------------	---------	---





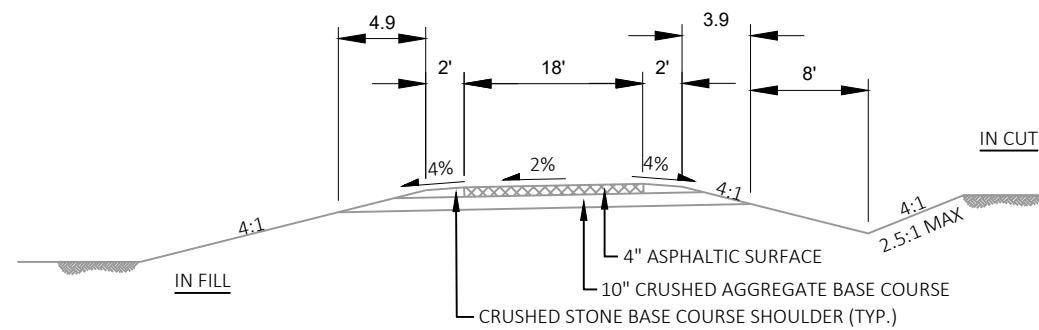
EXISTING TYPICAL SECTION, SWEF RAMP

101+45'R' - 112+21'R'
119+00'R' - 123+16'R'



EXISTING TYPICAL SECTION, SWEF RAMP

STA 112+21'R' - 119+00'R'



EXISTING TYPICAL SECTION, ACCESS ROAD

STA 22+06'A' - STA 22+49'A'

LEGEND



COLORING CONCRETE WISDOT RED

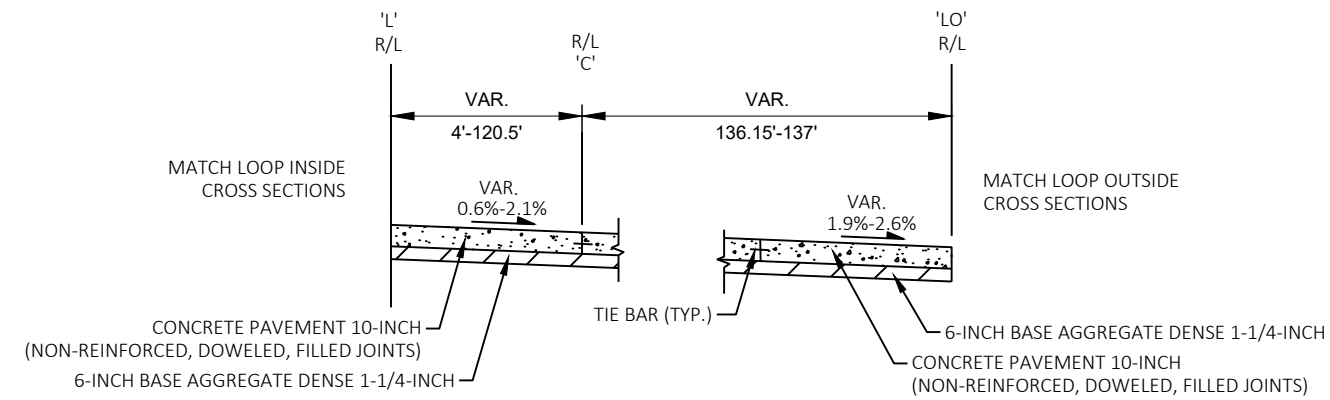


SALVAGED TOPSOIL, EROSION MAT CLASS I, TYPE A OR MULCH



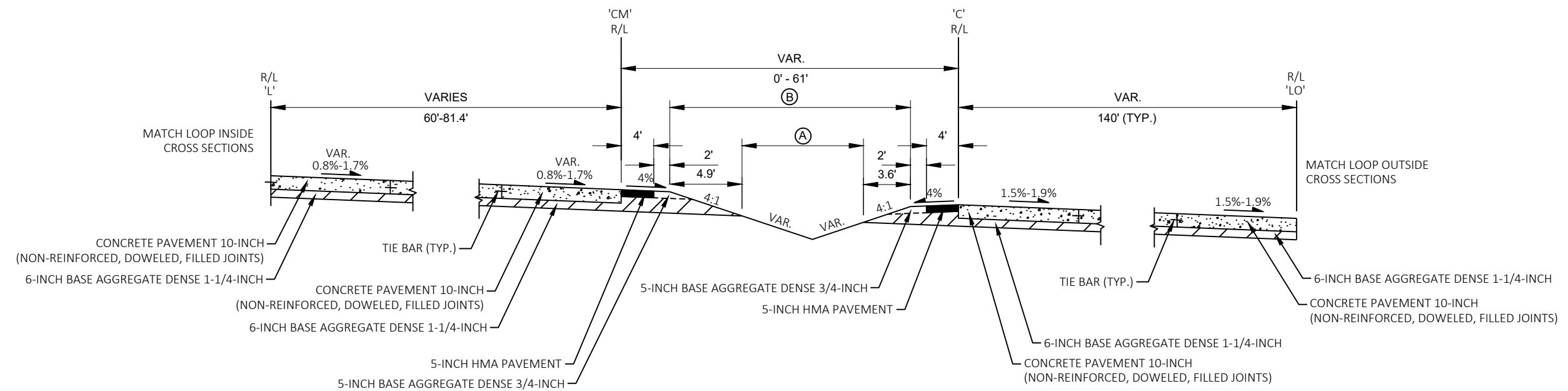
SEEDING, FERTILIZER TYPE B

NOTE: ROUT & SEAL ALL LONGITUDINAL ASPHALT TO CONCRETE PAVEMENT JOINTS



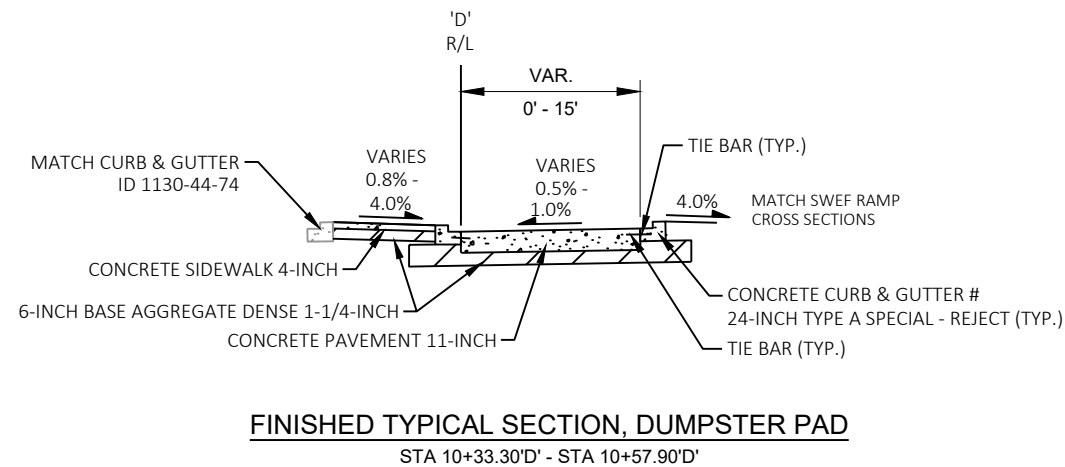
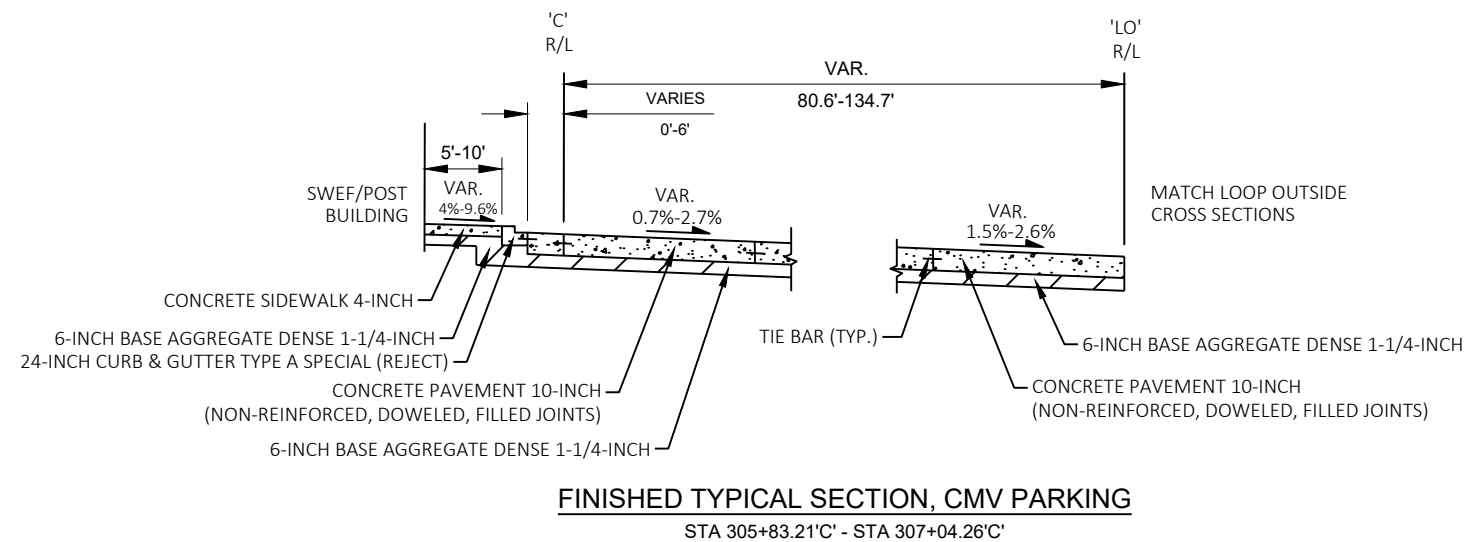
FINISHED TYPICAL SECTION, CMV PARKING

STA 300+14.05'C' - STA 303+00.00'C'
STA 305+36.20'C' - STA 305+83.21'C'



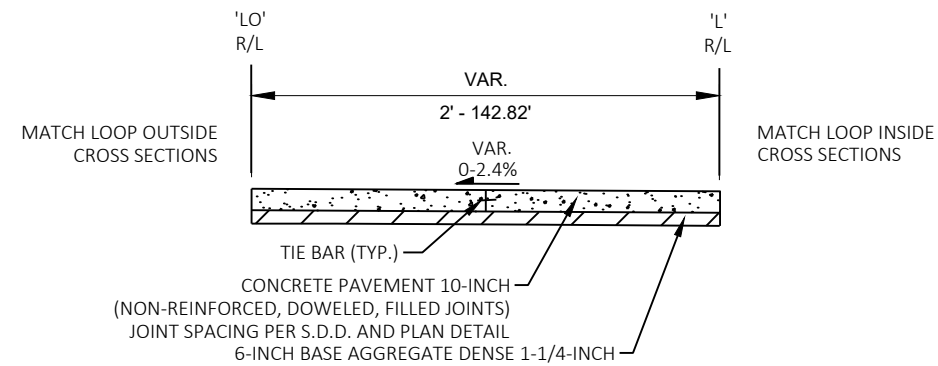
FINISHED TYPICAL SECTION, CMV PARKING

STA 303+00.00'C' - STA 305+36.20'C'

**LEGEND**

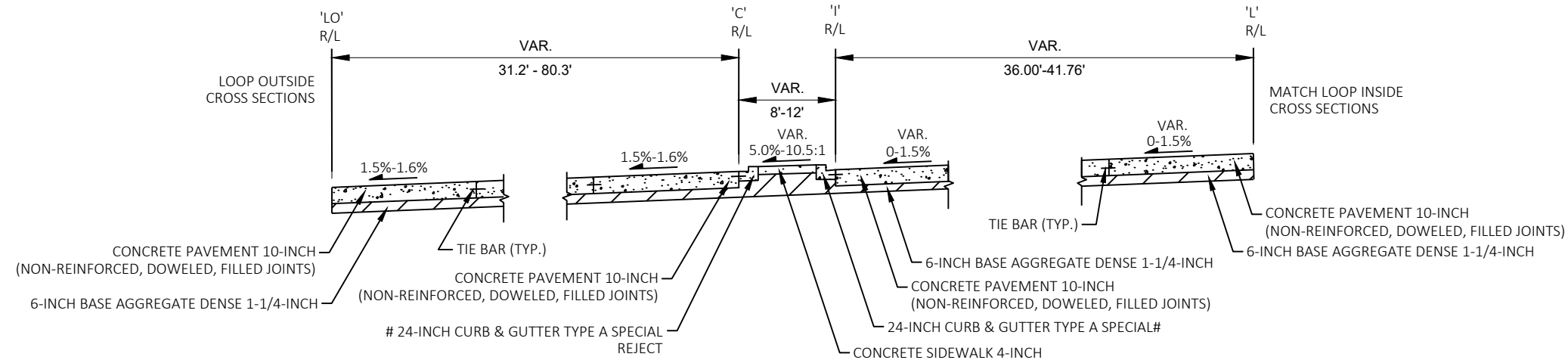
- COLORING CONCRETE WISDOT RED
- SALVAGED TOPSOIL, EROSION MAT CLASS I, TYPE A OR MULCH
- SEEDING, FERTILIZER TYPE B

NOTE: ROUT & SEAL ALL LONGITUDINAL ASPHALT TO CONCRETE PAVEMENT JOINTS
#GRADING EXTENDS 2' BEHIND BACK OF CURB, -2.0% SLOPE FOR STANDARD CURB, +2.0% FOR REJECT CURB



FINISHED TYPICAL SECTION, LOOP PAVEMENT

STA 381+80.26'L' - STA 388+55.73'L'
STA 397+62.50'L' - STA 401+69.73'L'



FINISHED TYPICAL SECTION, LOOP PAVEMENT

STA 388+55.73'L' - STA 389+65.75'L'

LEGEND



COLORING CONCRETE WISDOT RED

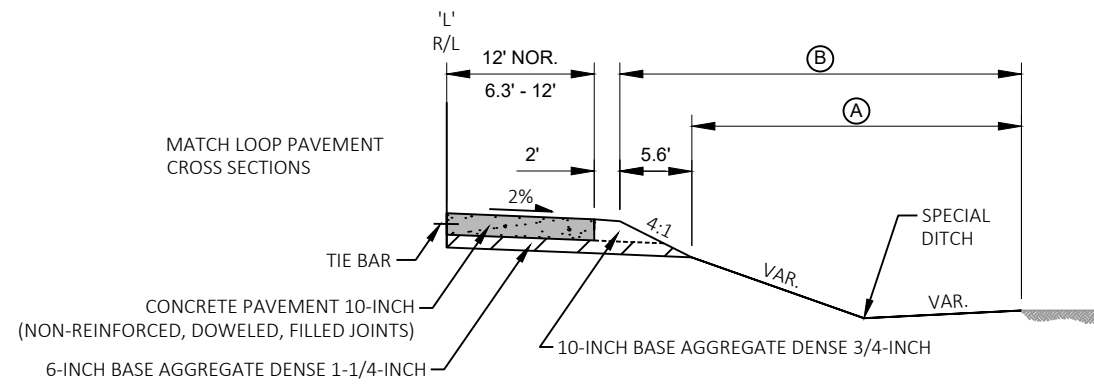


SALVAGED TOPSOIL, EROSION MAT CLASS I, TYPE A OR MULCH



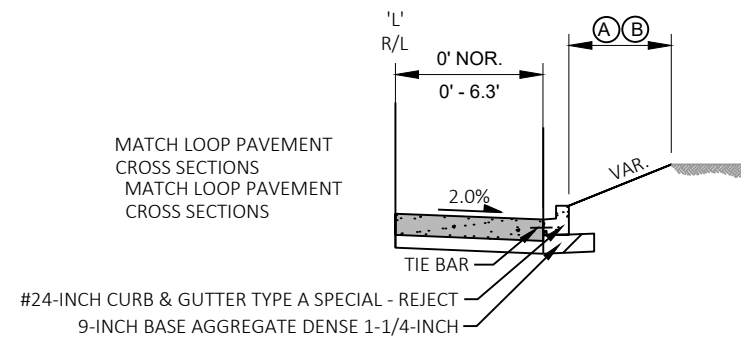
SEEDING, FERTILIZER TYPE B

NOTE: ROUT & SEAL ALL LONGITUDINAL ASPHALT TO CONCRETE PAVEMENT JOINTS
#GRADING EXTENDS 2' BEHIND BACK OF CURB, -2.0% SLOPE FOR STANDARD CURB,
+2.0% FOR REJECT CURB



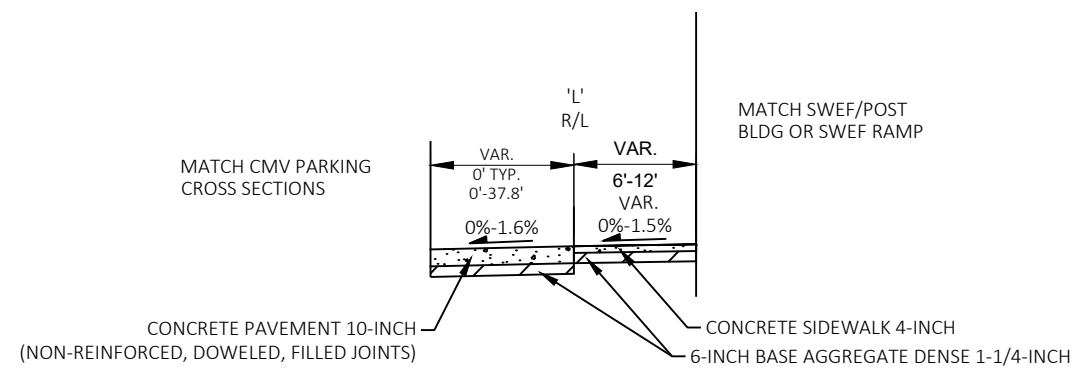
FINISHED TYPICAL SECTION, LOOP INSIDE

STA 381+80.26'L' - STA 386+62.01'L'
STA 398+00.00'L' - STA 401+69.72'L'



FINISHED TYPICAL SECTION, LOOP INSIDE

STA 386+62.01'L' - STA 389+69.75'L'



FINISHED TYPICAL SECTION, LOOP INSIDE

STA 390+90.00'L' - STA 391+94.46'L'

LEGEND



COLORING CONCRETE WISDOT RED



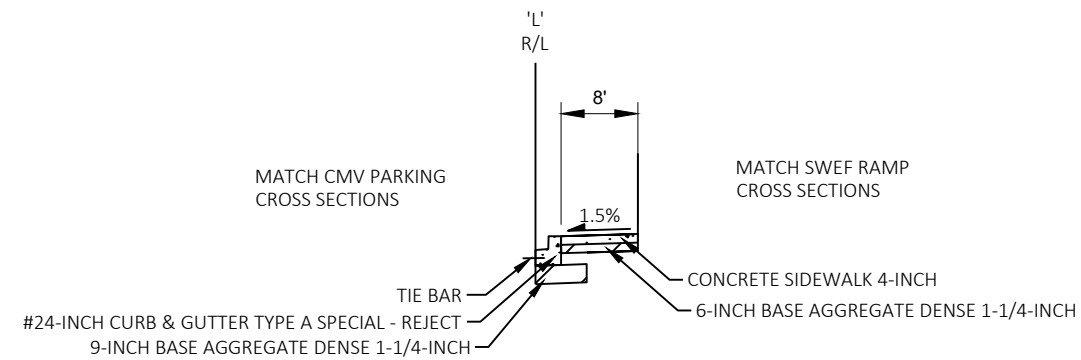
SALVAGED TOPSOIL, EROSION MAT CLASS I, TYPE A OR MULCH



SEEDING, FERTILIZER TYPE B

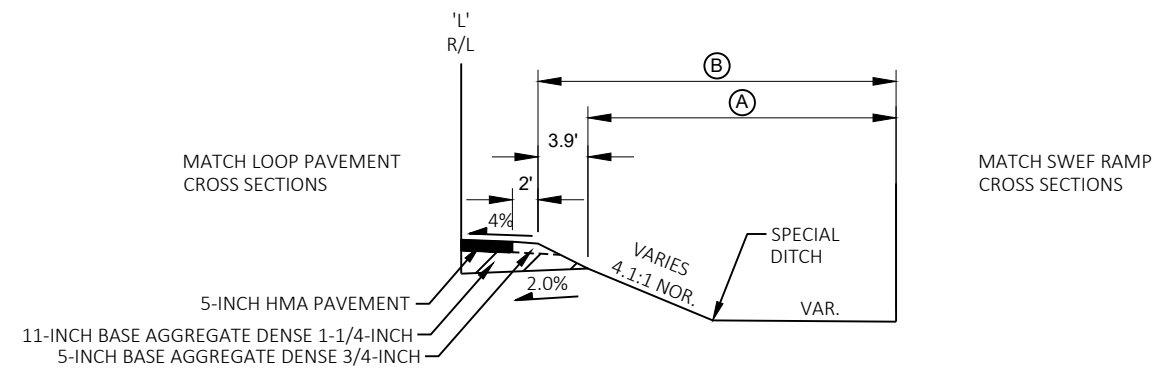
NOTE: ROUT & SEAL ALL LONGITUDINAL ASPHALT TO CONCRETE PAVEMENT JOINTS

#GRADING EXTENDS 2' BEHIND BACK OF CURB, -2.0% SLOPE FOR STANDARD CURB,
+2.0% FOR REJECT CURB



FINISHED TYPICAL SECTION, LOOP INSIDE

STA 391+94.46'L' - STA 394+88.78'L'



FINISHED TYPICAL SECTION, LOOP INSIDE

STA 394+88.78'L' - STA 398+00.00'L'

LEGEND



COLORING CONCRETE WISDOT RED



SALVAGED TOPSOIL, EROSION MAT CLASS I, TYPE A OR MULCH



SEEDING, FERTILIZER TYPE B

NOTE: ROUT & SEAL ALL LONGITUDINAL ASPHALT TO CONCRETE PAVEMENT JOINTS

#GRADING EXTENDS 2' BEHIND BACK OF CURB, -2.0% SLOPE FOR STANDARD CURB, +2.0% FOR REJECT CURB

LEGEND



COLORING CONCRETE WISDOT RED



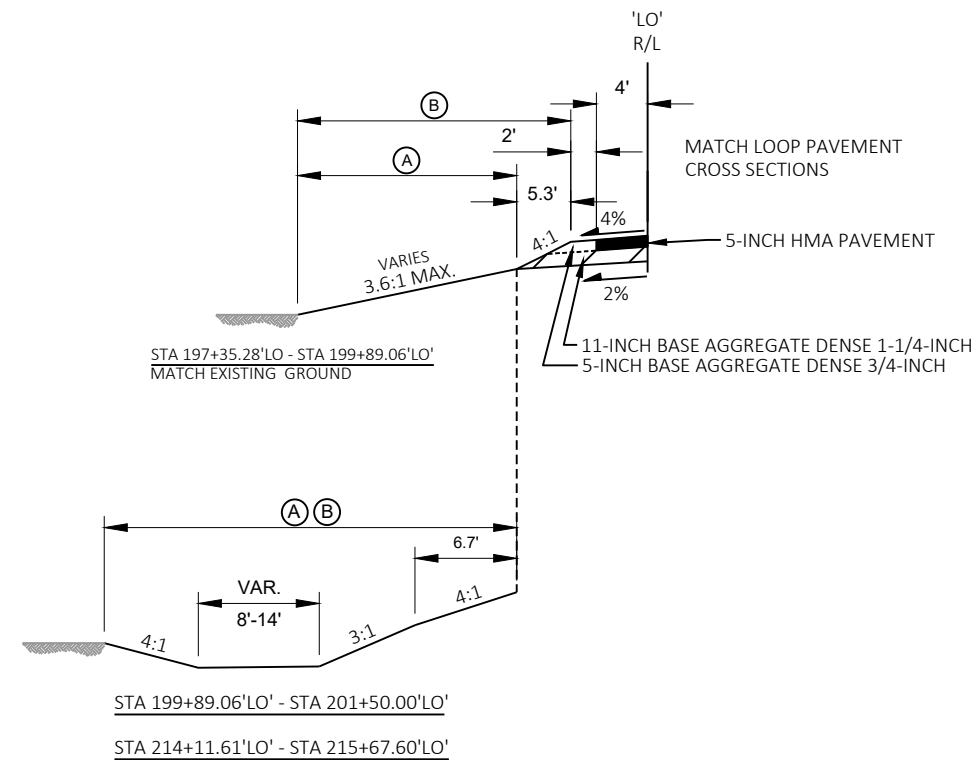
SALVAGED TOPSOIL, EROSION MAT CLASS I, TYPE A OR MULCH



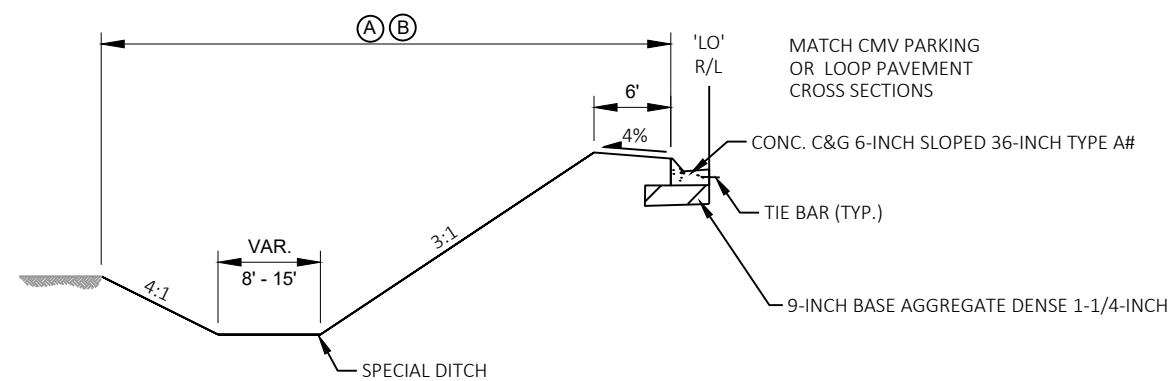
SEEDING, FERTILIZER TYPE B

NOTE: ROUT & SEAL ALL LONGITUDINAL ASPHALT TO CONCRETE PAVEMENT JOINTS

#GRADING EXTENDS 2' BEHIND BACK OF CURB, -2.0% SLOPE FOR STANDARD CURB, +2.0% FOR REJECT CURB

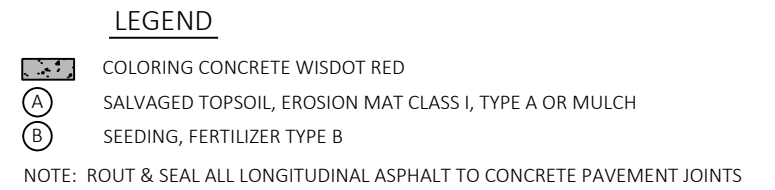


FINISHED TYPICAL SECTION, LOOP OUTSIDE

STA 197+35.28'LO' - STA 201+52.00'LO'
STA 214+11.61'LO' - STA 215+62.39'LO'

FINISHED TYPICAL SECTION, LOOP OUTSIDE

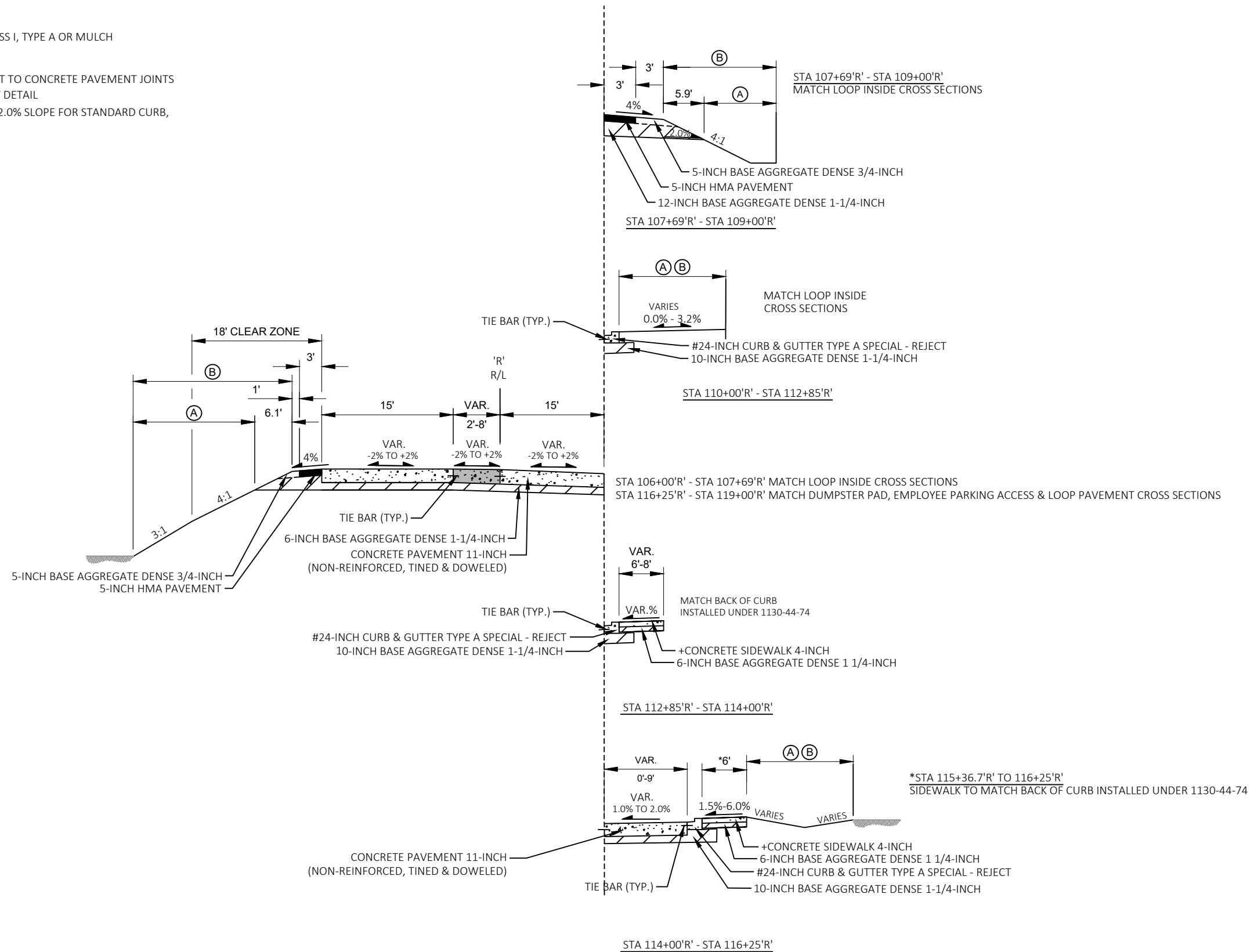
STA 201+50.00'LO' - STA 214+11.61'LO'



The diagram illustrates the cross-section of a bridge deck, showing the 'IN FILL' and 'IN CUT' conditions. The bridge deck is 15' wide, with a 2% slope on the left and a 4% slope on the right. The deck is composed of several layers: 11-inch concrete pavement (non-reinforced, tined & doweled), 6-inch base aggregate (dense 1-1/4-inch), 5-inch HMA pavement, and 5-inch base aggregate (dense 3/4-inch). A tie bar (typical) is shown across the deck. The bridge deck is supported by a 4:1 slope on the left and a 3:1 slope on the right. The diagram also shows a match loop outside cross sections for STA 104+00'R' - STA 105+32'R' and STA 105+32'R' - STA 106+00'R'.

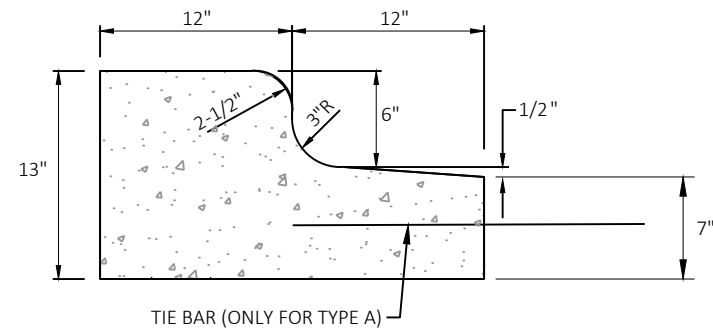
PROJECT NO: 1130-44-75		HWY: IH 41		COUNTY: OUTAGAMIE		FINISHED TYPICAL SECTION				SHEET 12		E
FILE NAME : G:\WDOTCO\22052-000 (WRIGHTSTOWN SWEF FINAL)\C3D_75\SHEETSPLAN\020302_TS_PR.DWG				PLOT DATE : 3/24/2025 12:50 PM		PLOT BY : KL ENGINEERING		PLOT NAME :		PLOT SCALE : NTS		WISDOT/CADDs SHEET 42
LAYOUT NAME - 07												

NOTE: ROUT & SEAL ALL LONGITUDINAL ASPHALT TO CONCRETE PAVEMENT JOINTS
+FOR SIDEWALK LAYOUT, SEE SIDEWALK LAYOUT DETAIL
#GRADING EXTENDS 2' BEHIND BACK OF CURB, -2.0% SLOPE FOR STANDARD CURB,
+2.0% FOR REJECT CURB



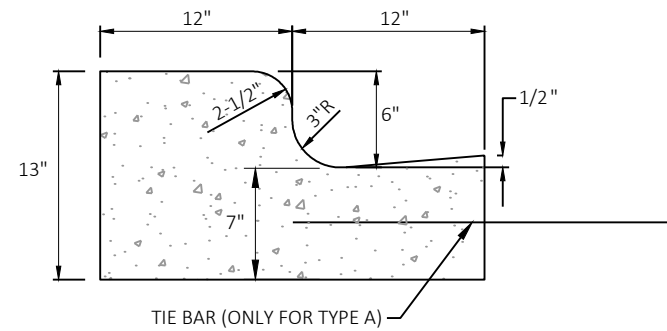
STA 107+69'R' - STA 109+12'R'
STA 110+02'R'- STA 119+00'R'



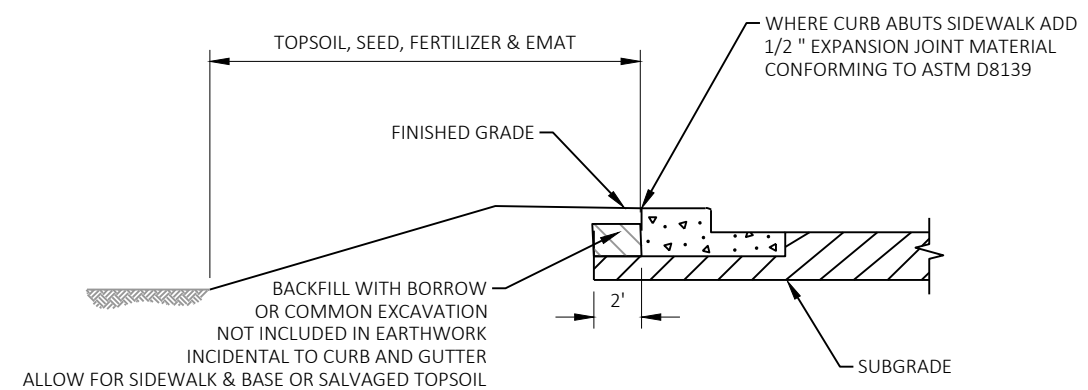


CONCRETE CURB & GUTTER 24-INCH TYPE A/D DETAIL
(REJECT)

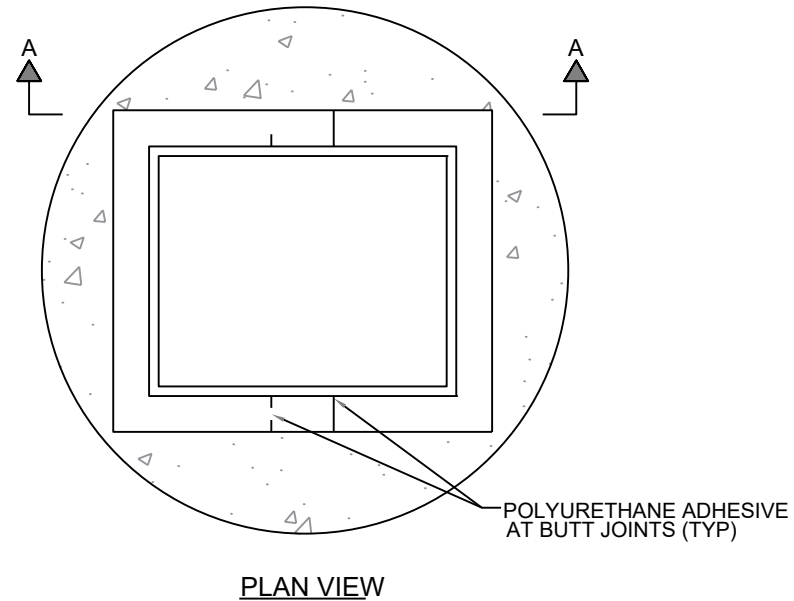
NOTE: DETAILS NOT SHOWN SHALL FOLLOW SDD "CONCRETE CURB, TIES AND CURB AND GUTTER APPLICATIONS". MINIMUM THICKNESS OF ALL CURB AND GUTTER FOR THIS CONTRACT SHALL BE 7-INCHES



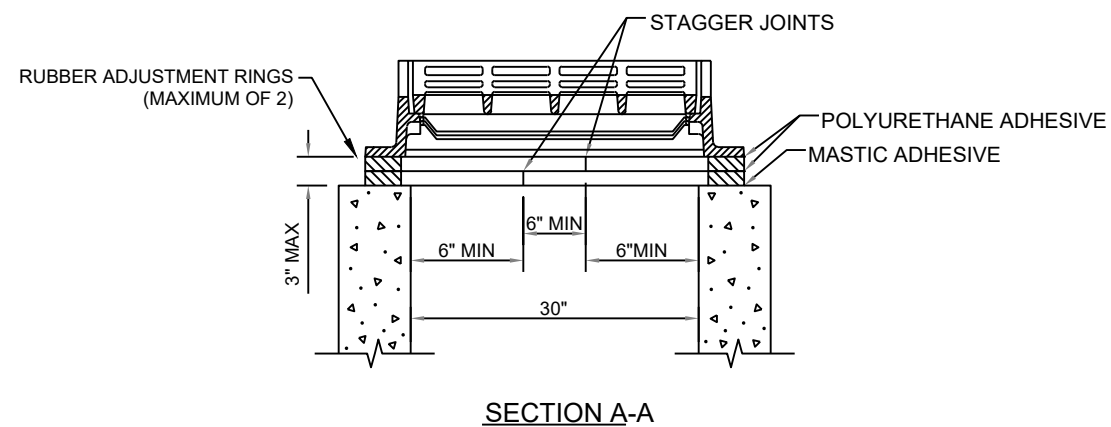
CONCRETE CURB & GUTTER 24-INCH TYPE A/D DETAIL
(STANDARD)



EXCAVATION BEHIND CURB & GUTTER



NOTE:
ALL CUTS MADE TO RUBBER ADJUSTMENT
RINGS WILL BE PERPENDICULAR AND PROVIDE
A TIGHT JOINT.



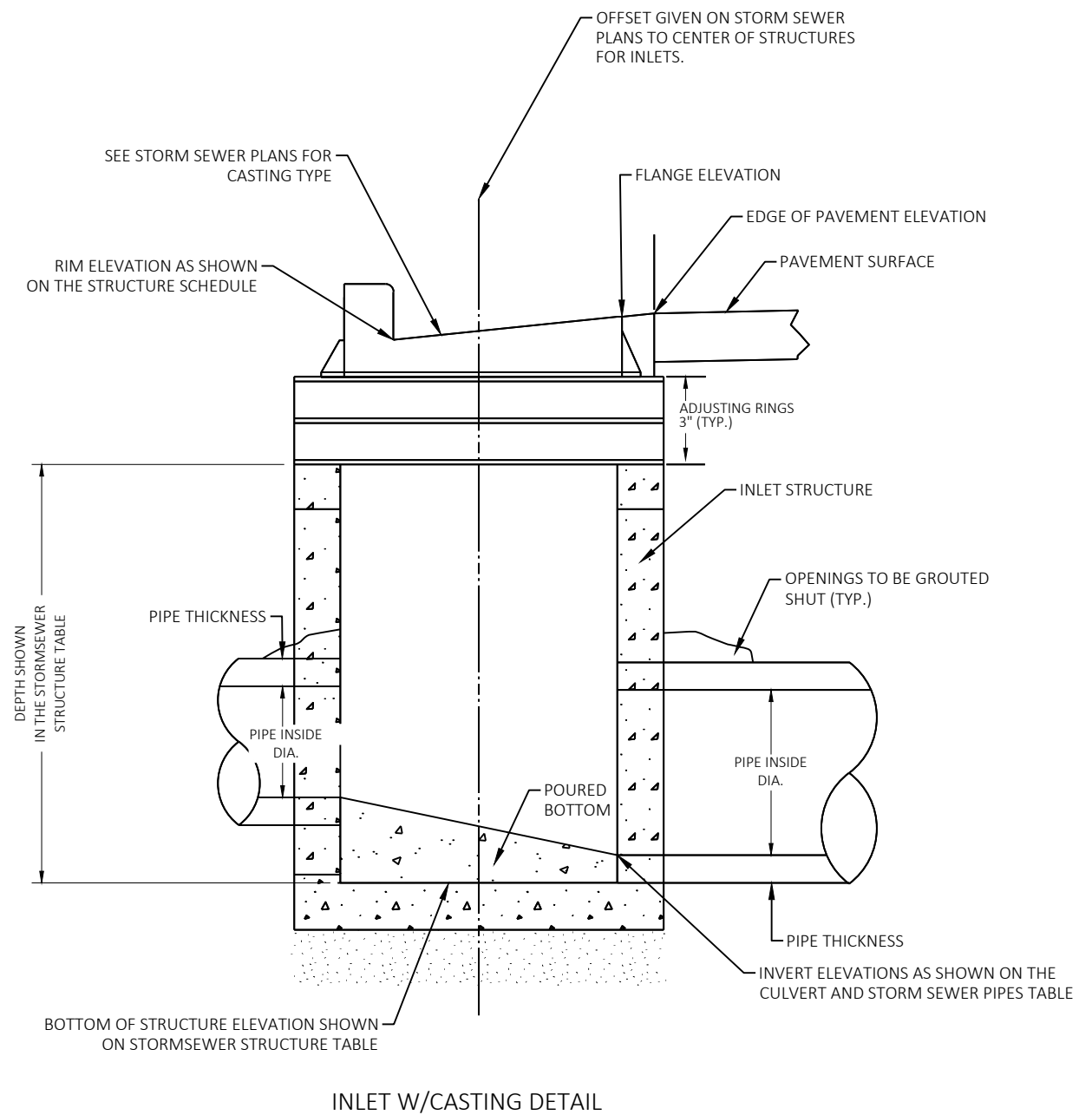
RUBBER RING CUTTING DETAIL FOR INLET

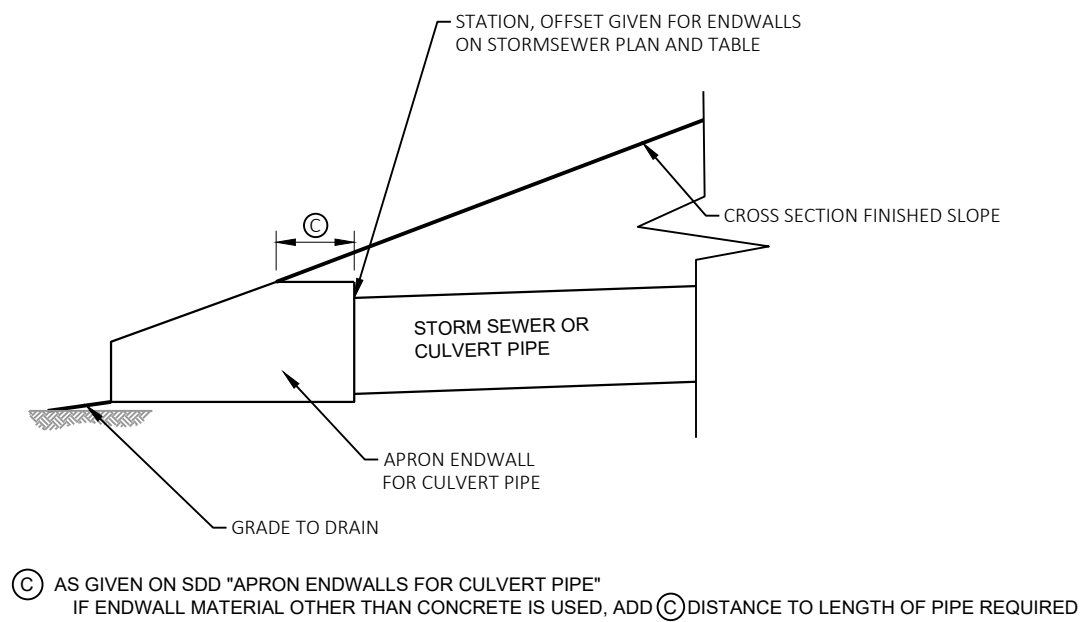
GENERAL NOTES:

GRANULAR BACKFILL REQUIRED AROUND INLET
(INCIDENTAL TO CONSTRUCTION OF INLET)

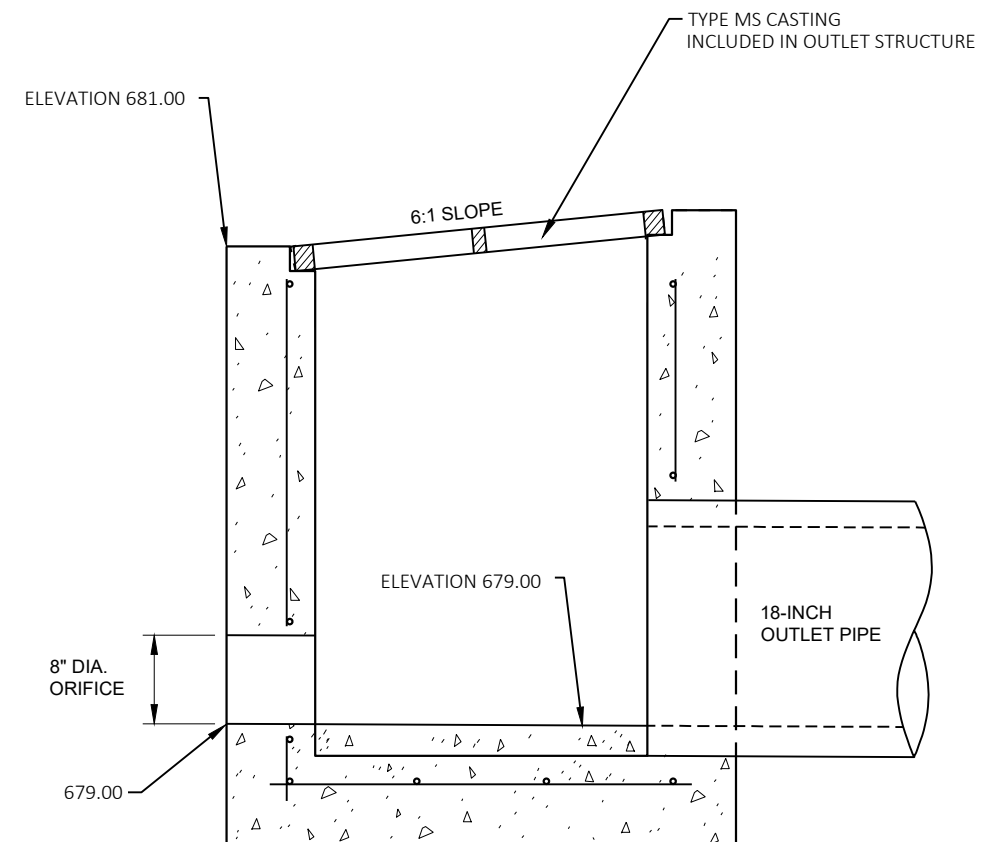
DETAILS OF CONSTRUCTION, MATERIALS, AND WORKMANSHIP NOT
SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT
REQUIREMENTS OF THE STANDARD SPECIFICATIONS, APPLICABLE
SPECIAL PROVISIONS, AND S.D.D. FOR INLETS

ASSUMED PIPE THICKNESS		
SIZE	INCH	FEET
12"	2.0"	0.17
15"	2.3"	0.19
18"	2.5"	0.21
24"	3.0"	0.25
30"	3.5"	0.29
36"	4.0"	0.33



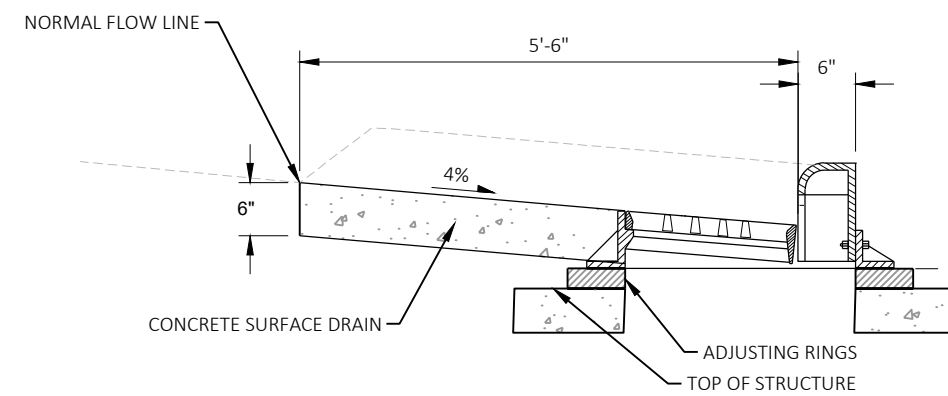
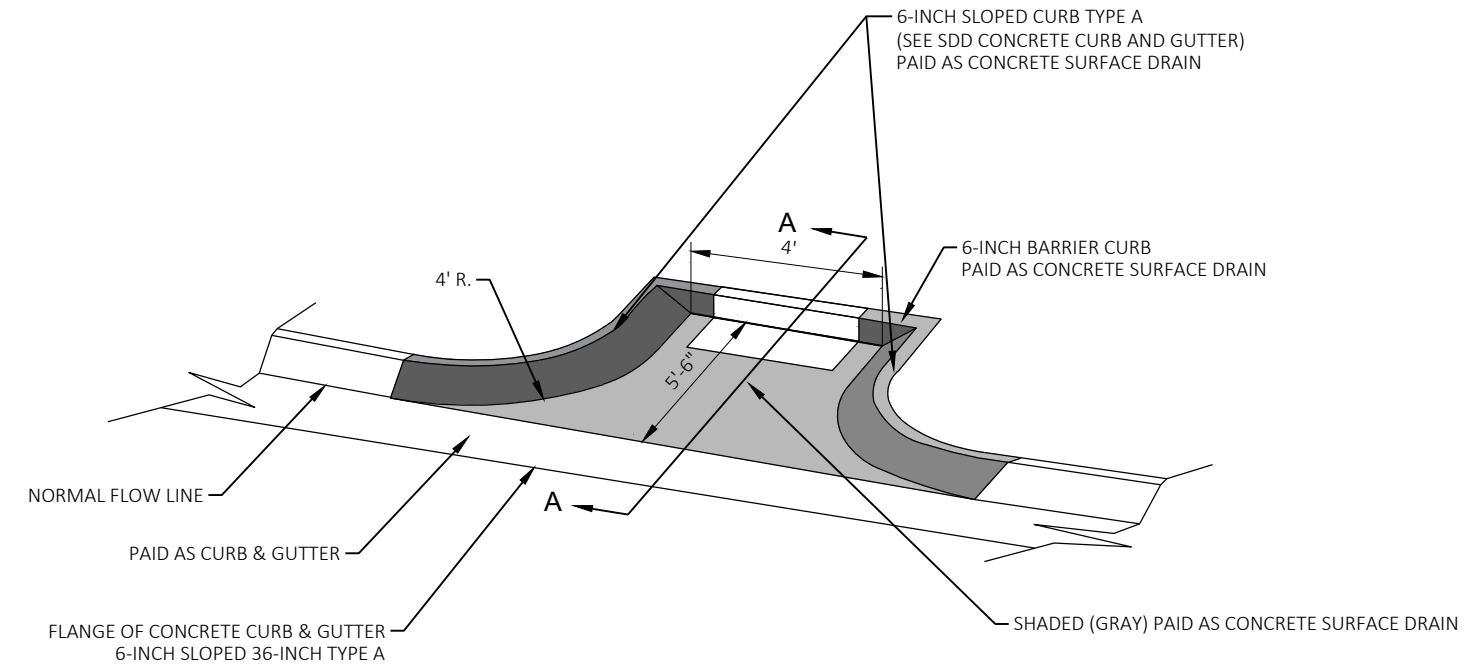


APRON ENDWALL PLACEMENT DETAIL



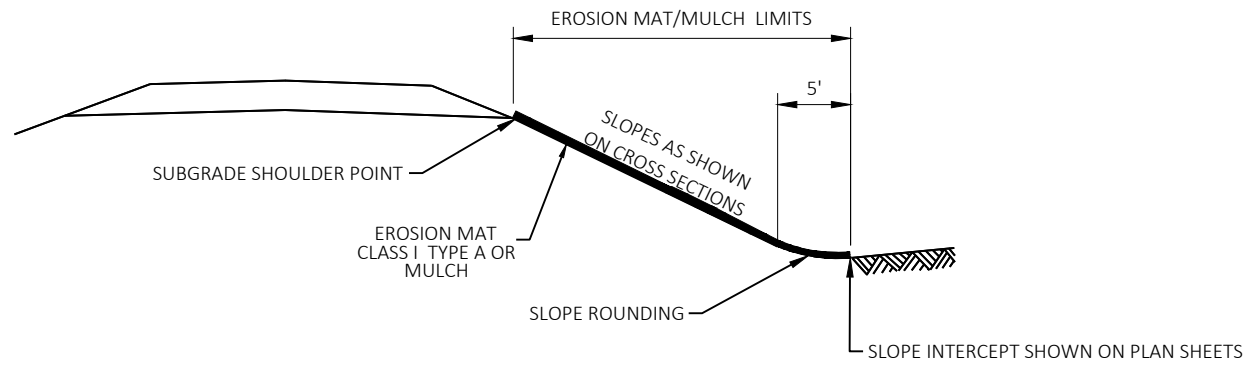
OUTLET STRUCTURE DETAIL

NOTE: FOR DETAILS NOT SHOWN, SEE SDD "INLETS MEDIAN 1 AND 2 GRATE"



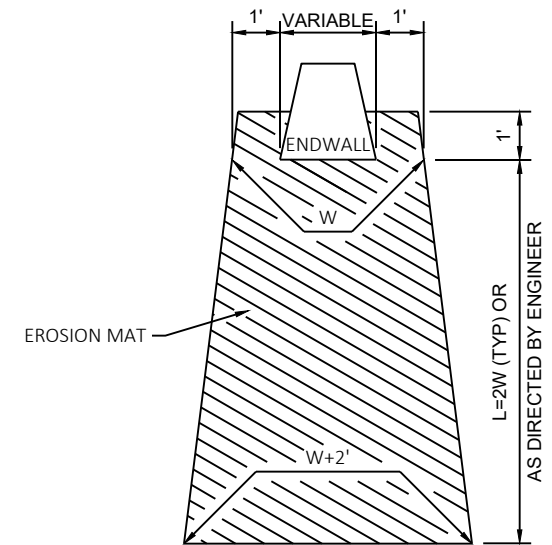
SECTION A-A

CONCRETE SURFACE DRAIN AT INLETS

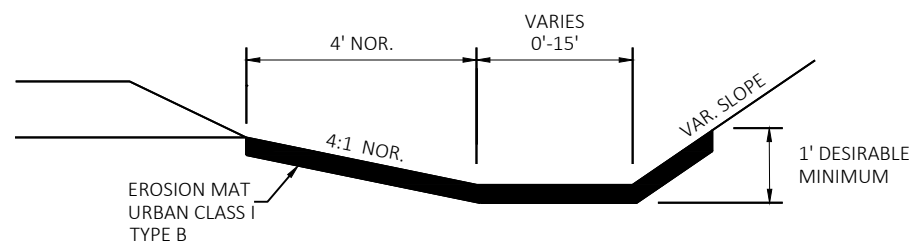


SLOPE GRADING DETAIL

SEE EROSION CONTROL PLAN FOR LOCATIONS
NOT TO SCALE

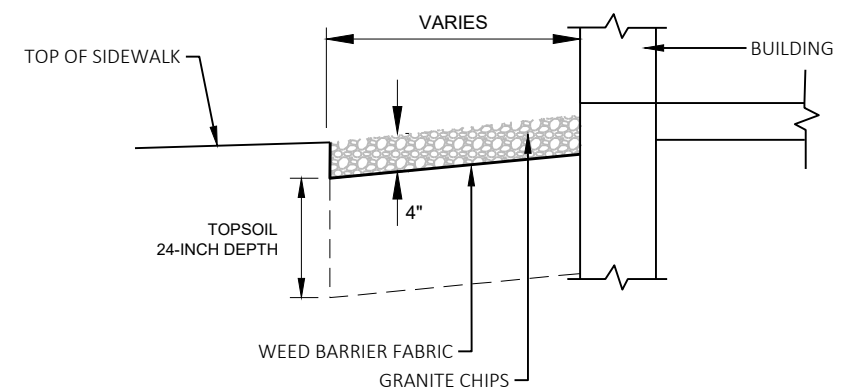


EROSION MAT TREATMENT AT CULVERTS

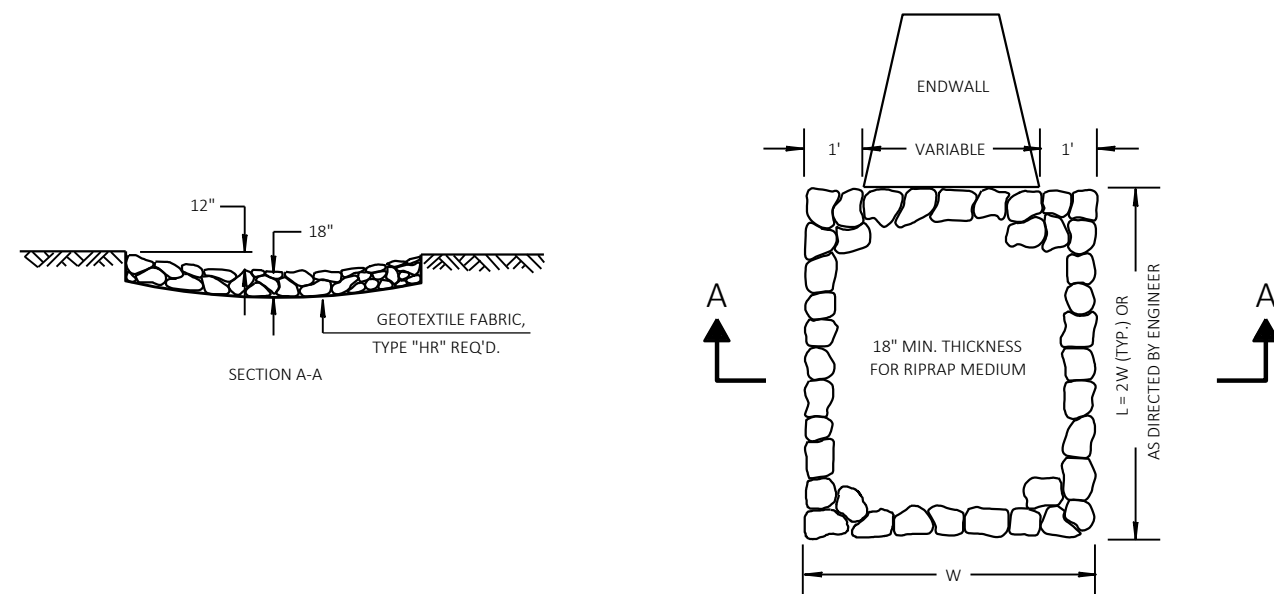


EROSION MAT DETAIL FOR DITCHES

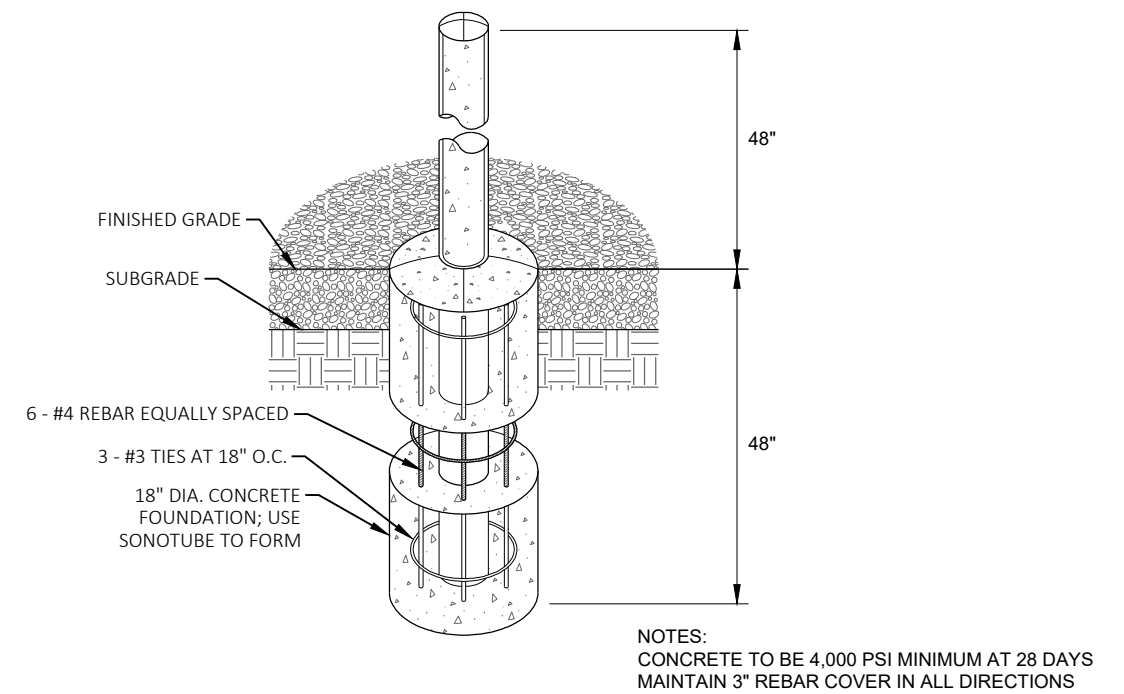
(REQ'D. IN ALL DITCHES)



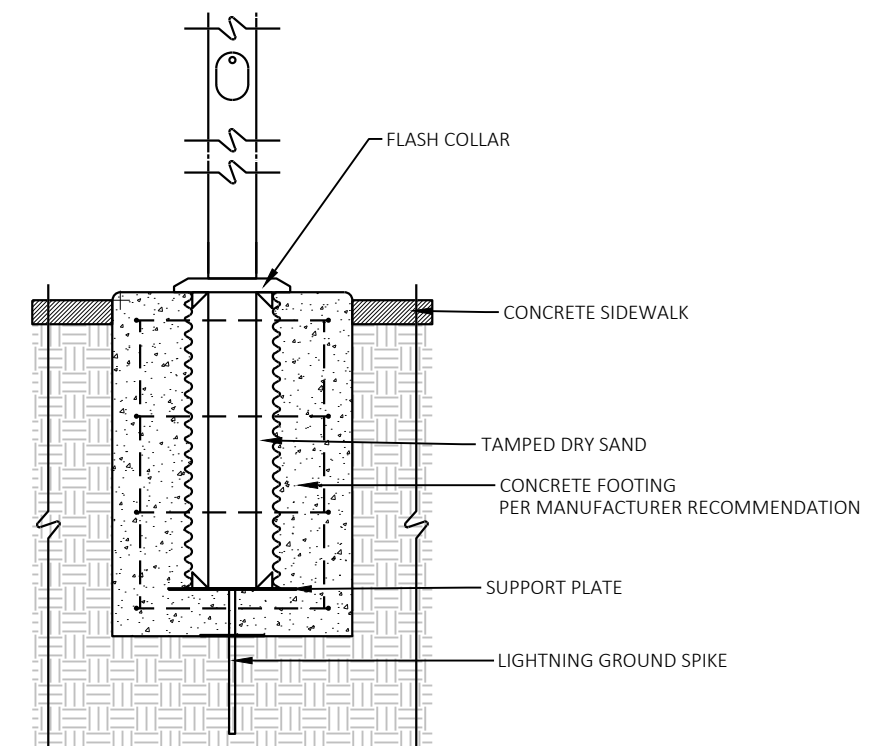
PLANTING BED DETAIL



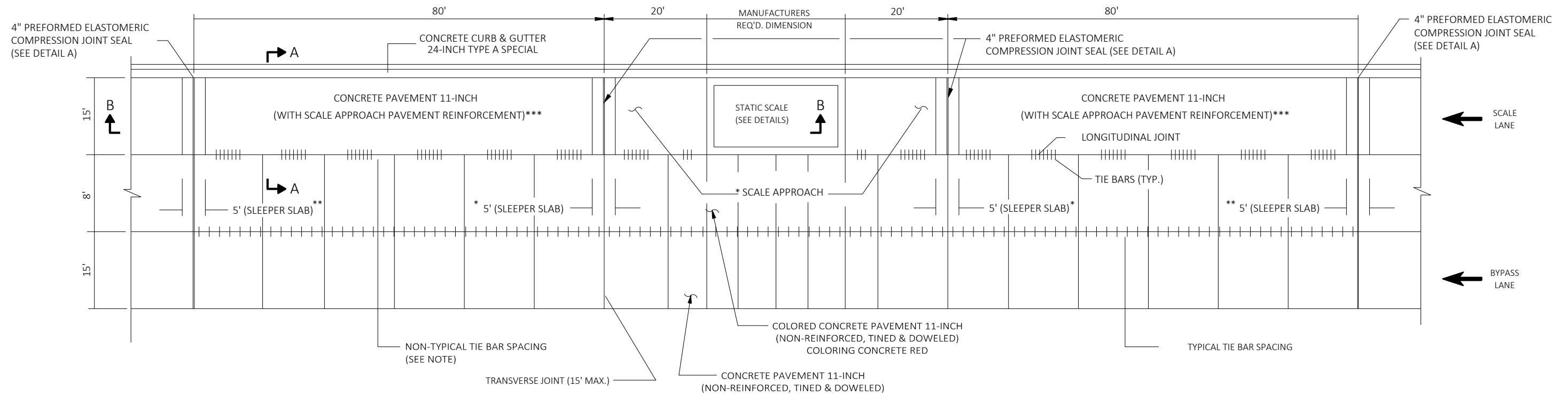
RIPRAP TREATMENT AT ENDWALLS



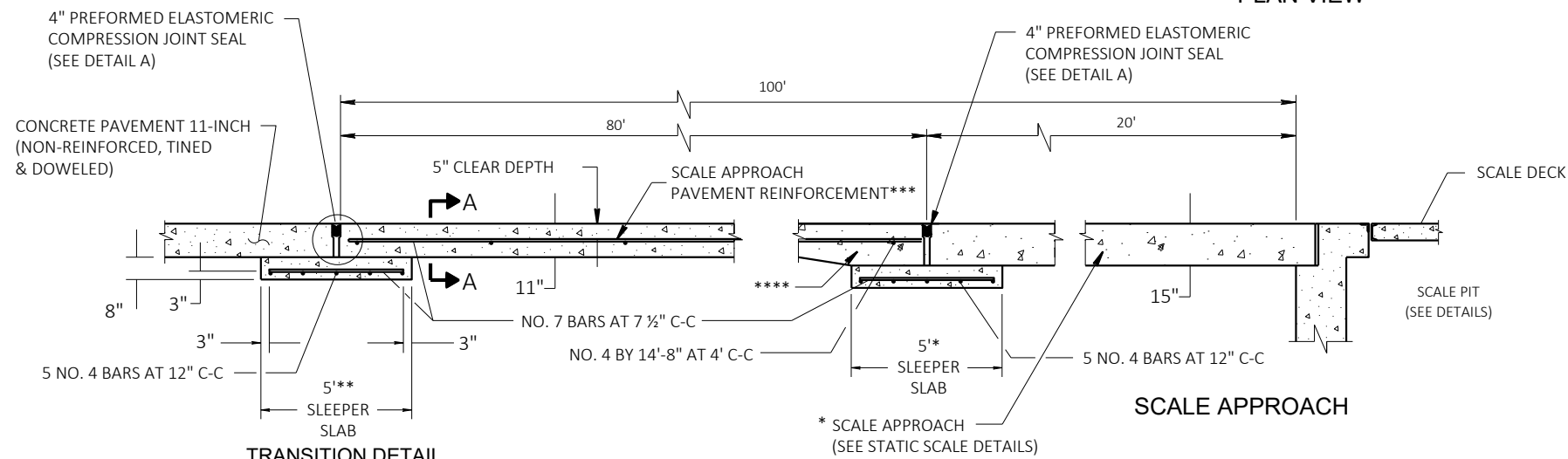
PIPE BOLLARD



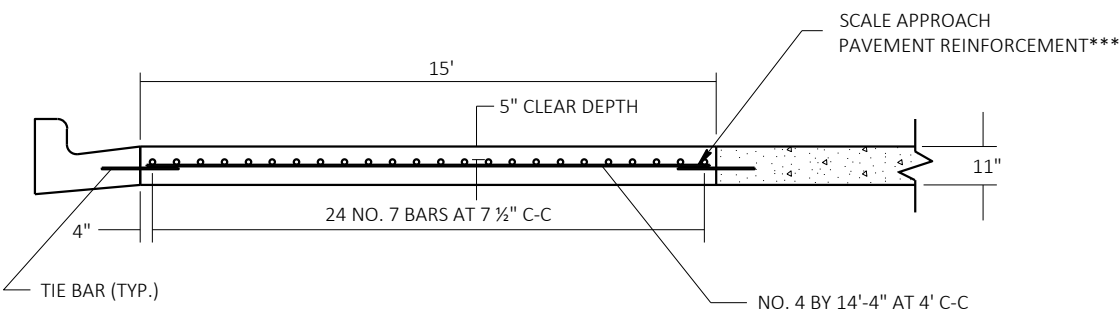
FLAG POLE



PLAN VIEW



SCALE APPROACH



PAVEMENT SECTION AT STATIC SCALE LOCATION

- * COSTS INCIDENTAL TO STATIC SCALE SYSTEM
- ** COSTS INCIDENTAL TO CONCRETE PAVEMENT 11-INCH
- *** SCALE APPROACH PAVEMENT REINFORCEMENT PAID SEPARATELY FROM CONCRETE PAVEMENT 11-INCH FOR UNDER "SCALE APPROACH PAVEMENT REINFORCEMENT"
- **** ADDITIONAL DEPTH IS INCIDENTAL TO CONCRETE PAVEMENT 11-INCH
- ***** DEPTH VARIES DEPENDING ON LOCATION

GENERAL NOTES

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

JOINT FILLER

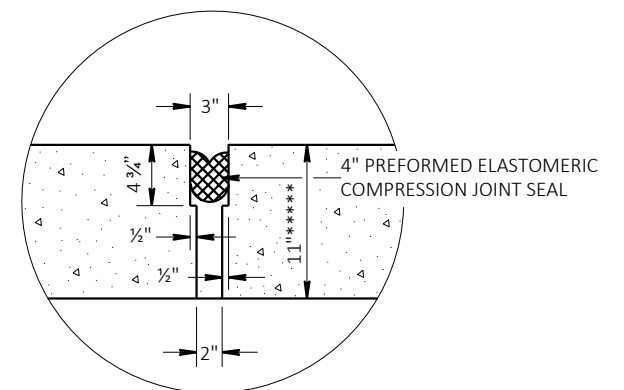
EXPANSION JOINT FILLER BETWEEN APPROACH SLAB AND ROADWAY PAVEMENT AT THE SLEEPER SLAB IS A 4 INCH PREFORMED ELASTOMERIC COMPRESSION SEAL.

STEEL REINFORCEMENT

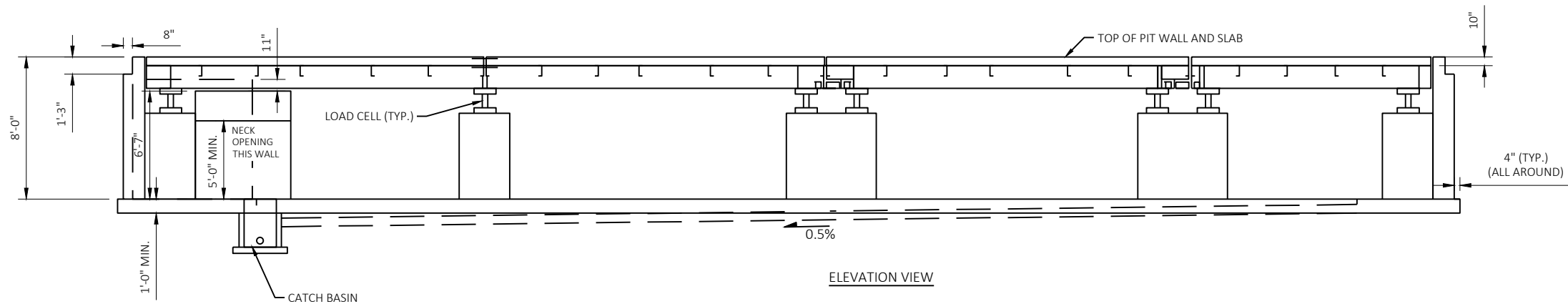
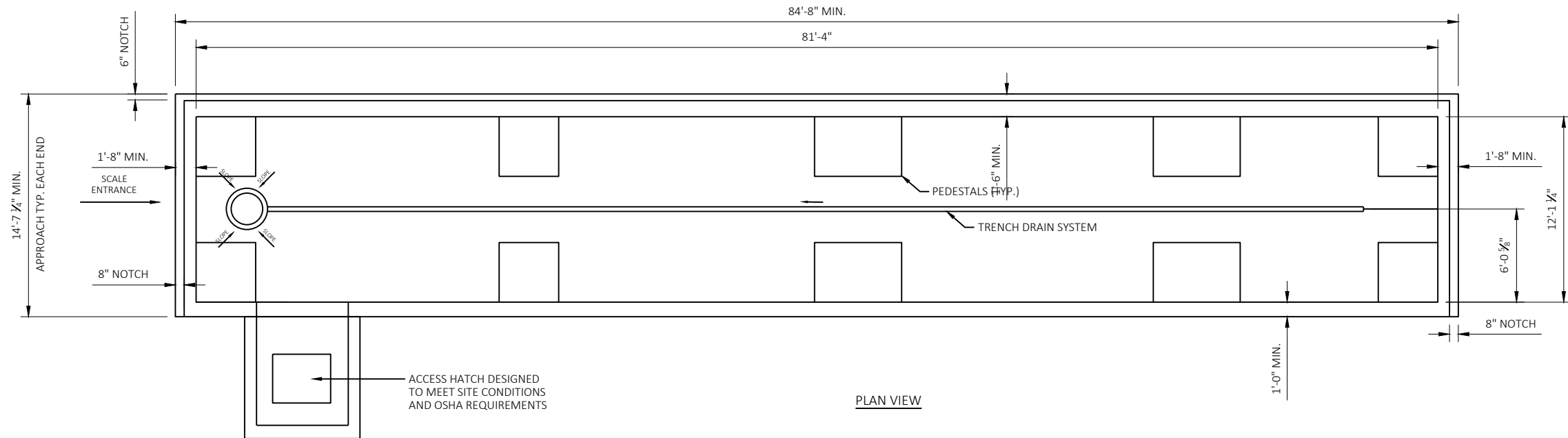
SPLICING OF NO. 7 BARS IN THE APPROACH SLAB IS PERMITTED. SPLICES SHALL BE STAGGERED, WITH A MAXIMUM OF ONE SPlice PER BAR. LAPS SHALL CONFORM TO THE STANDARD SPECIFICATIONS. REINFORCEMENT BARS SHALL BE EPOXY COATED IN CONFORMANCE WITH SUBSECTION 505.2.4 OF THE STANDARD SPECIFICATIONS.

TIE BARS

TIE BARS BETWEEN THE CRCP AND THE NON-REINFORCED DOWELED CONCRETE PAVEMENT LONGITUDINAL JOINT SHOULD ONLY BE PLACED WITHIN THE MIDDLE THIRD OF THE SLAB (15 FOOT MAX. LENGTH) BETWEEN THE TRANSVERSE JOINTS. THE SAME NUMBER OF TIE BARS THAT WOULD TYPICALLY BE USED ALONG THE LONGITUDINAL JOINTS PER S.D.D. SHOULD BE USED.



DETAIL A

**GENERAL NOTES:**

- EXCAVATION, FOUNDATION, FORMS, REBAR AND CONCRETE ARE TO BE FURNISHED BY CONTRACTOR
- THE PIT AS SHOWN IS THE MINIMUM REQUIRED TO ACCOMMODATE THE SCALE. N.I.S.T. REQUIREMENTS AND LOCAL WEIGHTS AND MEASURE REGULATIONS MAY SPECIFY ADDITIONAL INSTALLATION REQUIREMENTS. IN ORDER TO INSURE COMPLIANCE, CONSULT THE GOVERNING WEIGHTS AND MEASURE DEPARTMENT PRIOR TO INSTALLATION.
- TO COMPLY WITH SPECIFICATIONS OF N.I.S.T., ANY ENDS OF A VEHICLE SCALE INSTALLED IN ONE LOCATION FOR A PERIOD OF SIX MONTHS OR MORE SHALL HAVE A STRAIGHT APPROACH AT LEAST AS WIDE AS THE PLATFORM AND AT LEAST ONE-HALF THE LENGTH OF THE PLATFORM. NOT LESS THAN 15 FEET ON ANY APPROACH ADJACENT TO THE PLATFORM SHALL BE CONSTRUCTED OF CONCRETE OR OTHER DURABLE MATERIAL TO INSURE THAT THIS PORTION REMAINS SMOOTH AND IS IN THE SAME PLANE AS THE PLATFORM. WHERE NECESSARY FOR DRAINAGE, THE REMAINING PORTION OF THE APPROACH MAY SLOPE SLIGHTLY.
- ADEQUATE PROVISION MUST BE MADE FOR READY ACCESS TO THE PIT, ADJACENT TO THE PIT, FOR INSPECTION OR MAINTENANCE.
- VEHICLES SHOULD ENTER AND EXIT SCALE FROM APPROACHES ONLY. ALL CROSS TRAFFIC SHOULD BE RESTRICTED.
- THE WEIGHBRIDGE SHALL BE SET AND BLOCKED IN THE PIT BEFORE THE LOAD CELL ASSEMBLIES ARE INSTALLED.
- WHEN WELDING IN PIT OR WEIGHBRIDGE, LOAD CELLS MUST BE DISCONNECTED AND LOADS TAPED TO PREVENT THEM FROM TOUCHING EACH OTHER AND FROM GROUNDING.
- PROVIDE TRENCH DRAIN SYSTEM (ACO POWER DRAIN MODEL S200K OR APPROVED EQUAL) TO CONVEY RUNOFF TO CATCH BASIN.
- UNLESS NOTED OTHERWISE, ALL ITEMS SHOWN ARE INCLUDED IN BID ITEM "STATIC SCALE SYSTEM"

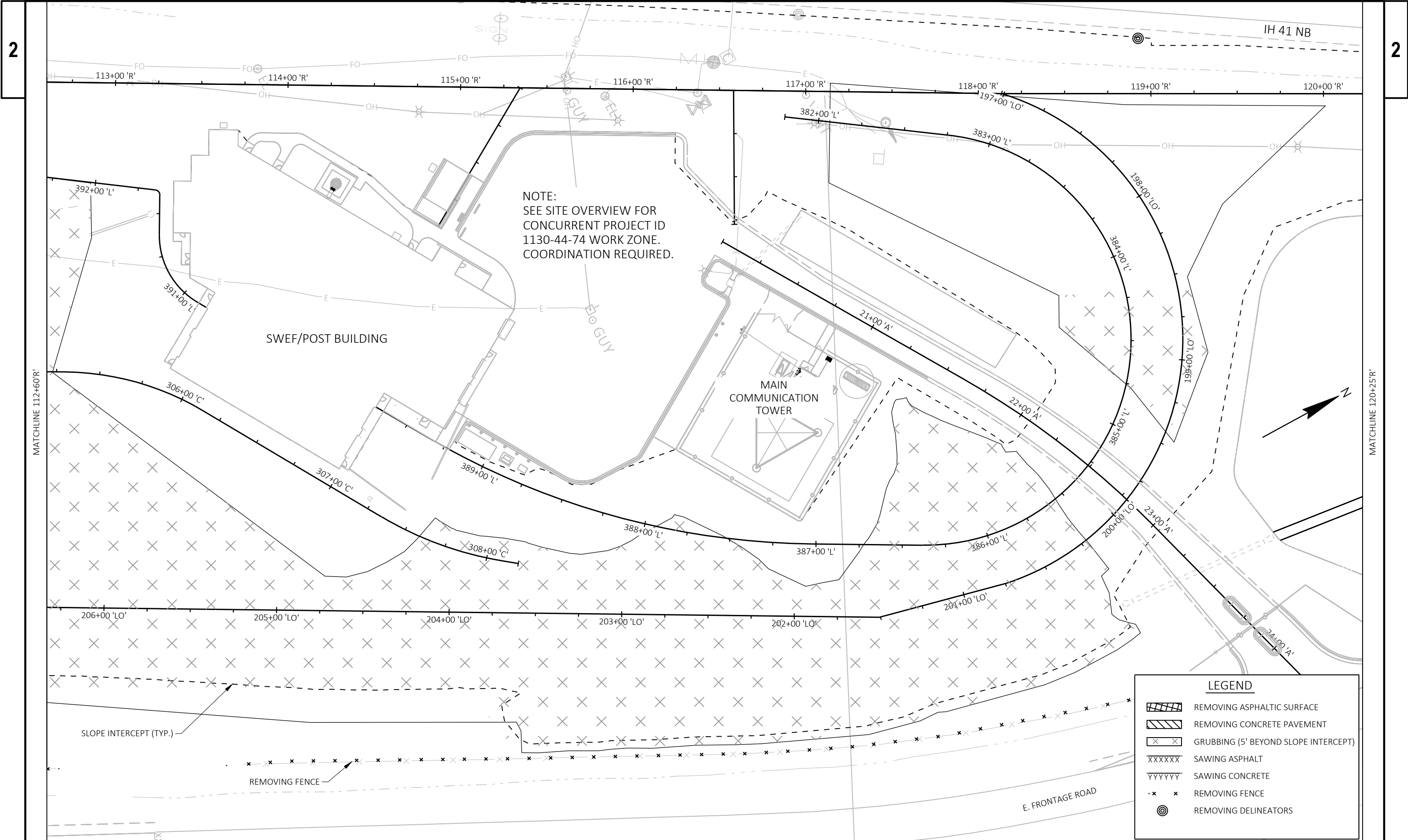
FOUNDATION PIT NOTES:

- USE 4000 PSI CONCRETE @ 28 DAYS. CONCRETE SHALL BE A MIX DESIGN UTILIZING TYPE II PORTLAND CEMENT AND NORMAL WEIGHT AGGREGATES. NO FLY ASH WILL BE ALLOWED. MAXIMUM ALLOWABLE SLUMP SHALL BE 4 1/2" CONCRETE TO BE MECHANICALLY VIBRATED TO INSURE PROPER CONSOLIDATION. USE 5-7% AIR ENTRAINMENT.
- USE A MIX DESIGN WHICH WILL DEVELOP 4000 PSI STRENGTH IN 7 DAYS ON THE APPROACHES.
- EPOXY COATED REINFORCING BARS ARE TO EQUAL ASTM A615, GRADE 60. REMOVE SCALE, LOOSE, FLAKY RUST, DIRT, AND OTHER COATINGS THAT WOULD IMPAIR BONDING. SPACE BARS PROPERLY AND TIE SECURELY IN POSITION BEFORE PLACING CONCRETE. TACK WELDING TO KEEP REINFORCING IN PLACE IS NOT PERMITTED.
- ALL CONCRETE SURFACES SHALL BE FORMED WITH WOOD OR METAL FORMS USING APPROVED METHODS. NO CONCRETE VERTICAL SURFACES SHALL BE POURED AGAINST DIRT.
- SEE APPROACH PAVEMENT DETAILS FOR PAVEMENT INCLUDED IN STATIC SCALE SYSTEM.
- WORK FROM CENTERLINES WHEN ERECTING FORMS AND PLACING FOUNDATION EMBEDMENTS.
- BOTTOM OF PIT SHOULD BE SUPPORTED ON NON-EXPANSIVE, WELL DRAINED MATERIAL CAPABLE OF SAFELY SUPPORTING 2000 PSF.
- SUITABLE CONDUIT FOR LOW VOLTAGE CONDUCTOR SHIELDED CABLE MUST PASS THROUGH THE PIT WALL. CONDUIT MUST EXTEND BEYOND PIT WALL A MINIMUM OF 2".
- ALL BACK FILL SHOULD BE PLACED IN 8" LIFTS & COMPACTED TO 95% OF MAXIMUM DENSITY PER ASTM 1557. ALL WORK TO BE IN ACCORDANCE WITH ACI 301
- PROVIDE MEANS SO THAT ADEQUATE DRAINAGE FOR THE PIT EXIT. CONNECT SUMP PUMP TO OIL/WATER SEPARATOR SYSTEM TO ENSURE THAT STANDING WATER CANNOT ACCUMULATE IN PIT OR MANHOLE.
- PROVIDE ACCESS MANHOLE AND ACCESS HATCH

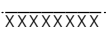
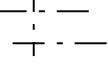
2



WISDOT/CADDS SHEET 44



PLAN DETAILS LEGEND

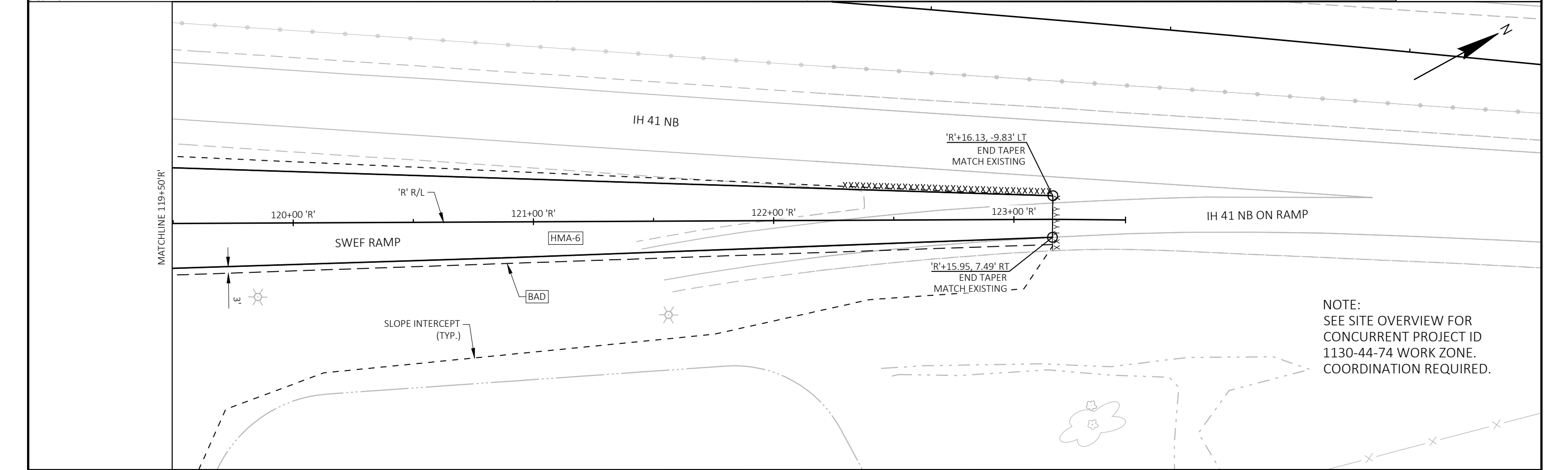
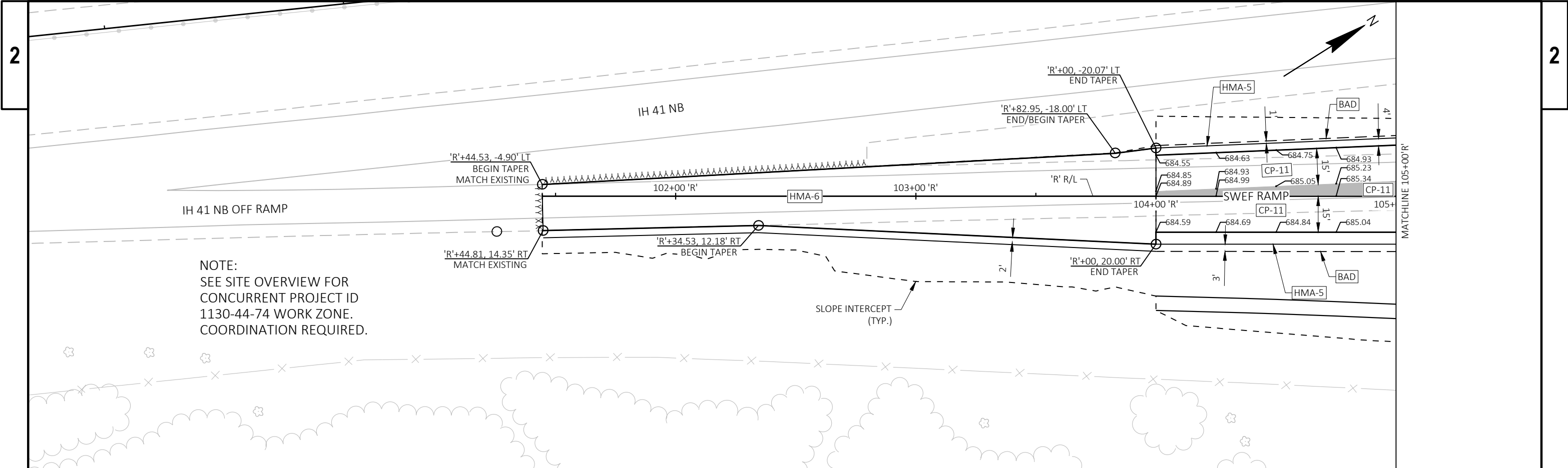
	COLORING CONCRETE WISDOT RED		BASE AGGREGATE DENSE 3/4-INCH
	CONCRETE PAVEMENT 10-INCH		SAWING ASPHALT
	CONCRETE PAVEMENT 11-INCH		SAWING CONCRETE
	CONCRETE CURB & GUTTER 6-INCH SLOPED 36-INCH TYPE A		ANTICIPATED CONCRETE JOINTING (SEE NOTE)
	CONCRETE CURB & GUTTER 24-INCH TYPE A SPECIAL		PROPOSED ELEVATION
	CONCRETE CURB & GUTTER 24-INCH TYPE D SPECIAL		PROPOSED INLET
	CONCRETE SIDEWALK 4-INCH		PROPOSED MANHOLE
	CURB RAMP DETECTABLE WARNING FIELD YELLOW		PROPOSED ENDWALL
	SLOPED MEDIAN NOSE		CRASH CUSHION PERMANENT
	HMA PAVEMENT (# - THICKNESS IN INCHES)		

NOTE:
JOINTING LOCATIONS ARE SUGGESTED AND MAY BE
ADJUSTED TO FIT CONSTRUCTION OPERATIONS.
TRANSVERSE JOINTS SHALL FOLLOW SDD "CONCRETE
PAVEMENT JOINTING" WITH 15' JOINT SPACING.

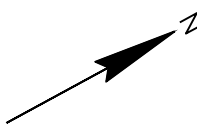
'E' R/L LAYOUT POINTS						
POINT NUMBER	STATION	OFFSET	ELEVATION	NORTHING	EASTING	DESC.
20	10+38.37	20.00' LT	688.04	591210.95	881420.43	20' RAD.
21	10+38.47	22.00' RT	691.69	591173.90	881400.65	END NOSE
22	10+41.97	34.23' RT	691.38	591161.47	881397.94	SAWCUT
23	10+44.51	19.94' RT	691.17	591172.86	881406.94	PAVEMENT
24	10+64.31	23.00' LT	0.00	591201.33	881444.70	20' RAD. BAD SHLD
25	10+76.31	1.45' RT	690.61	591174.11	881443.71	SAWCUT

'L' R/L LAYOUT POINTS						
POINT NUMBER	STATION	OFFSET	ELEVATION	NORTHING	EASTING	DESC.
1	389+17.54	5.00' RT	693.62	590973.61	881481.78	4' RAD
2	388+61.51	39.59' LT	691.45	590973.00	881555.00	4' RADIUS
3	385+48.34	20.42' RT	681.52	591263.53	881653.02	8' RADIUS
4	384+75.68	37.03' RT	679.73	591301.67	881611.25	25' RADIUS

'R' R/L LAYOUT POINTS						
POINT NUMBER	STATION	OFFSET	ELEVATION	NORTHING	EASTING	DESC.
10	116+34.52	19.00' RT	691.69	591181.56	881382.16	4' RAD.
11	116+25.56	30.99' RT	691.47	591167.88	881388.23	5' RAD.
12	115+91.89	15.00' RT	691.68	591146.33	881357.82	TAPER POINT
13	115+37.97	43.95' RT	693.18	591085.14	881356.70	25' RAD.
14	114+94.64	29.00' RT	693.27	591054.66	881322.46	5' RAD.
15	114+33.57	24.00' RT	692.89	591003.84	881288.23	END TAPER
16	113+95.68	15.00' RT	692.87	590975.20	881261.85	BEGIN TAPER
17	113+73.53	15.00' RT	692.75	590955.87	881251.02	SCALE CORNER



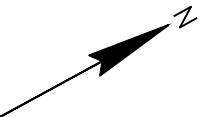
2



28

WISDOT/CADDS SHEET 44

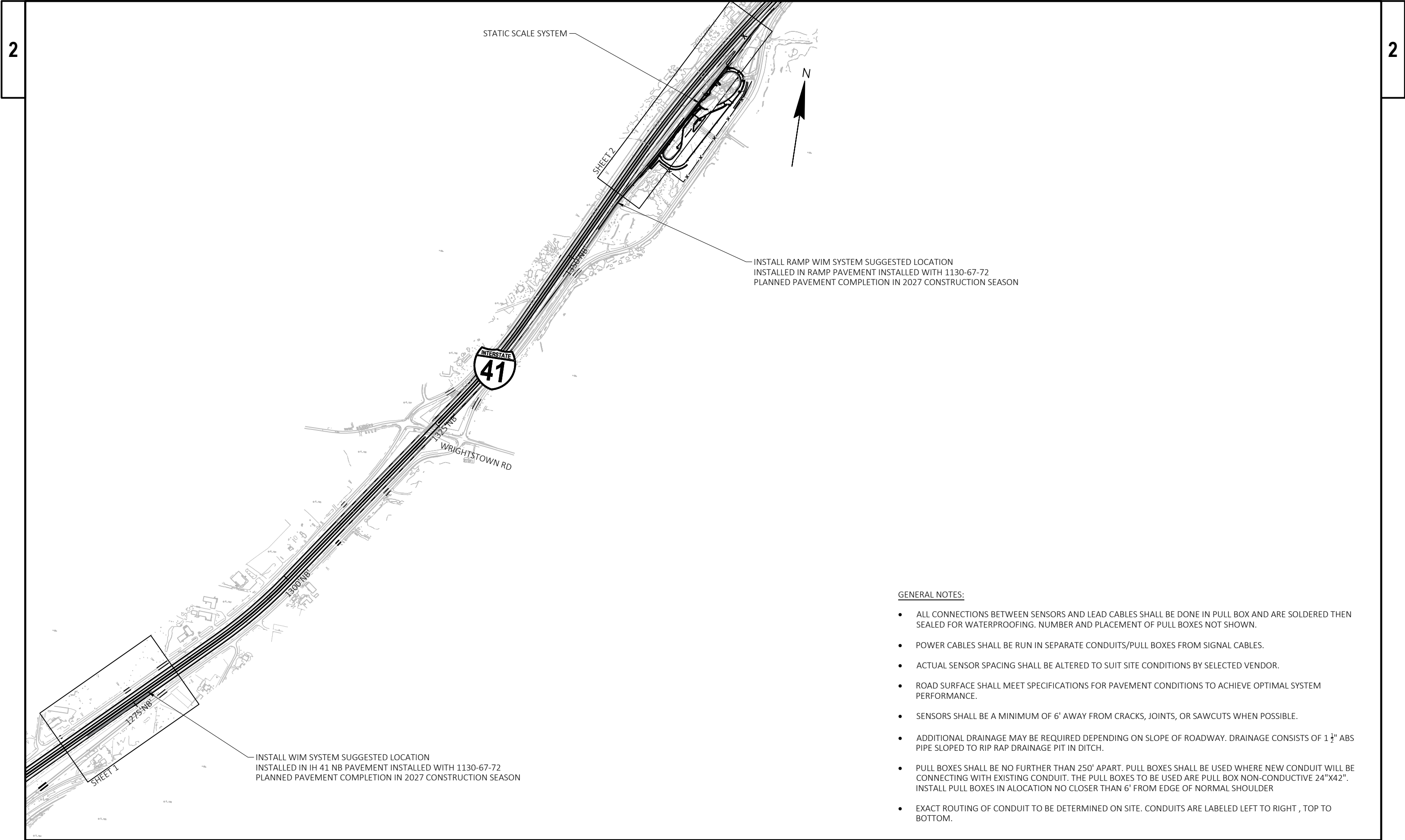
2



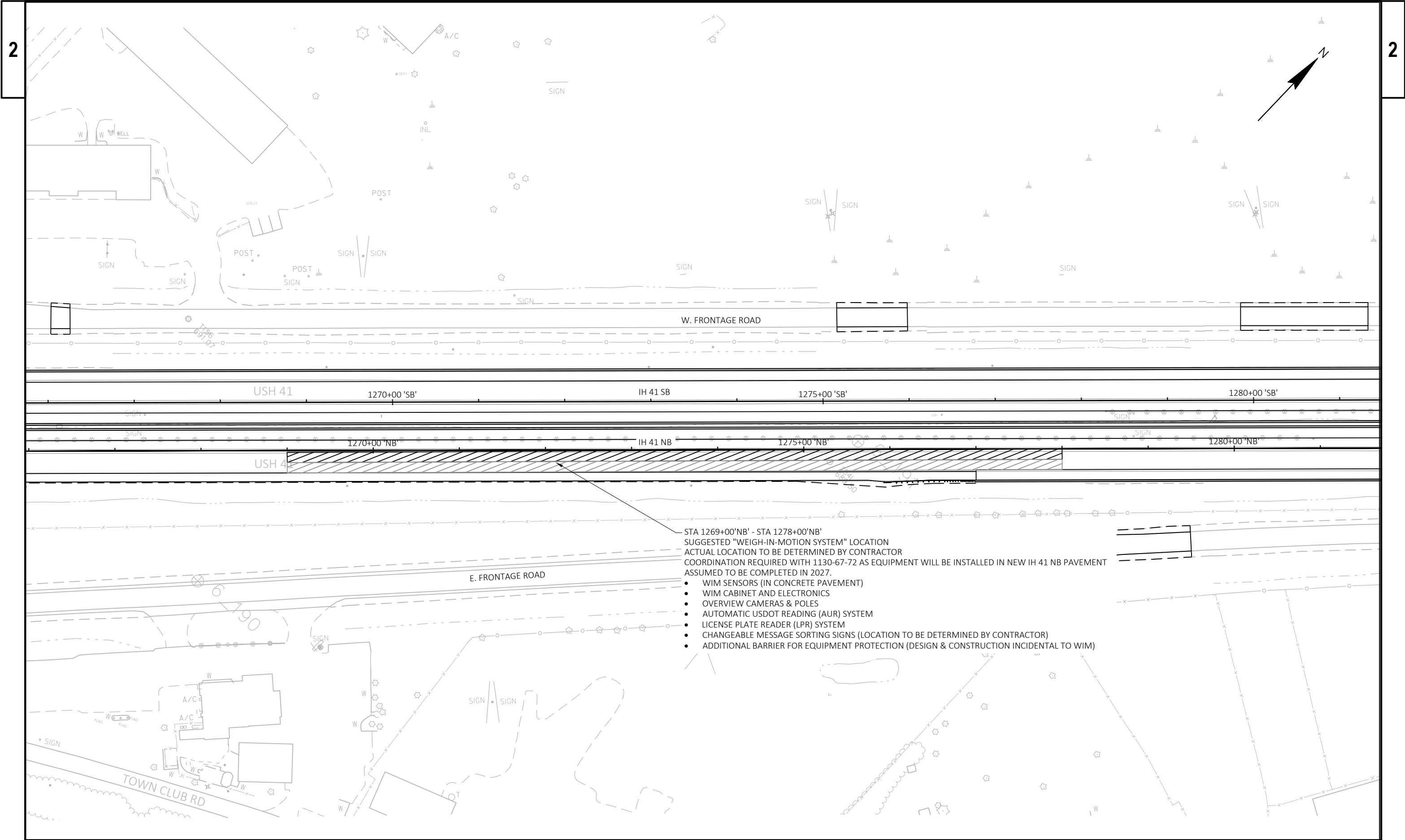
29

E

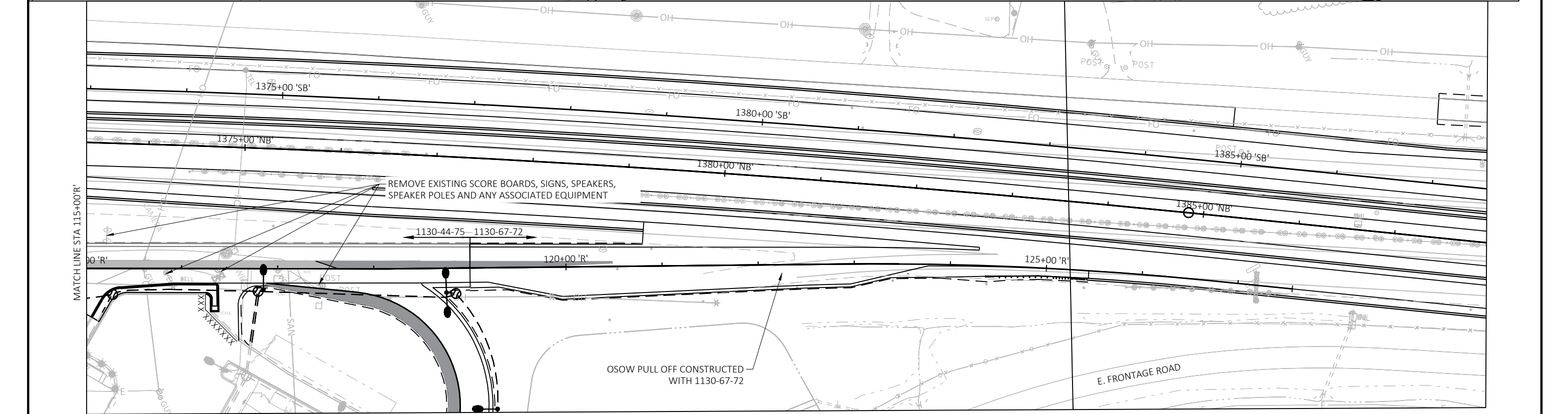
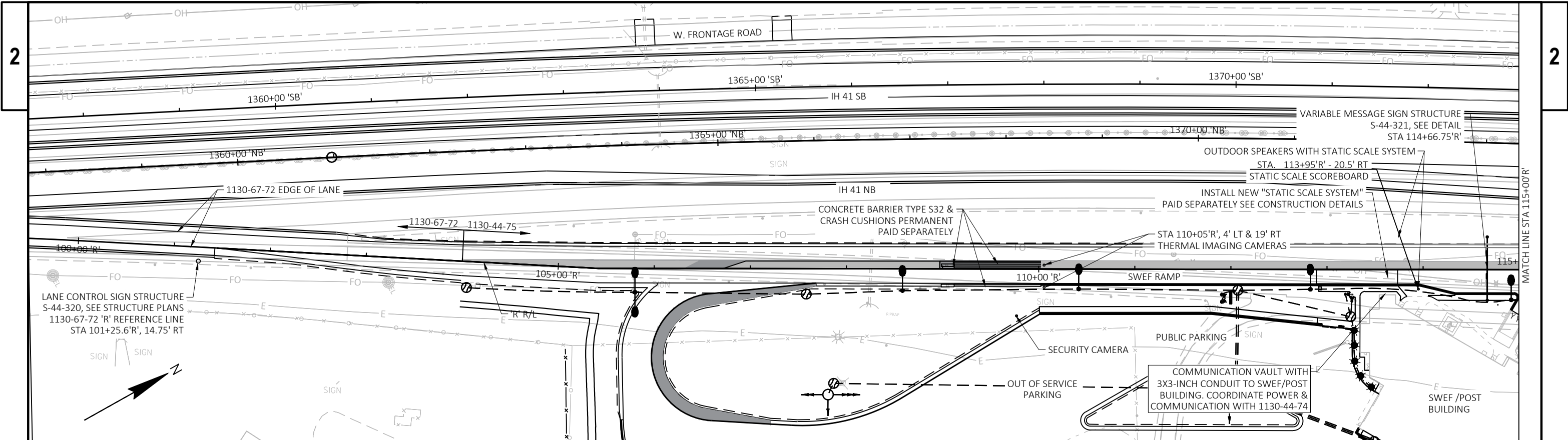
WISDOT/CADDS SHEET 44

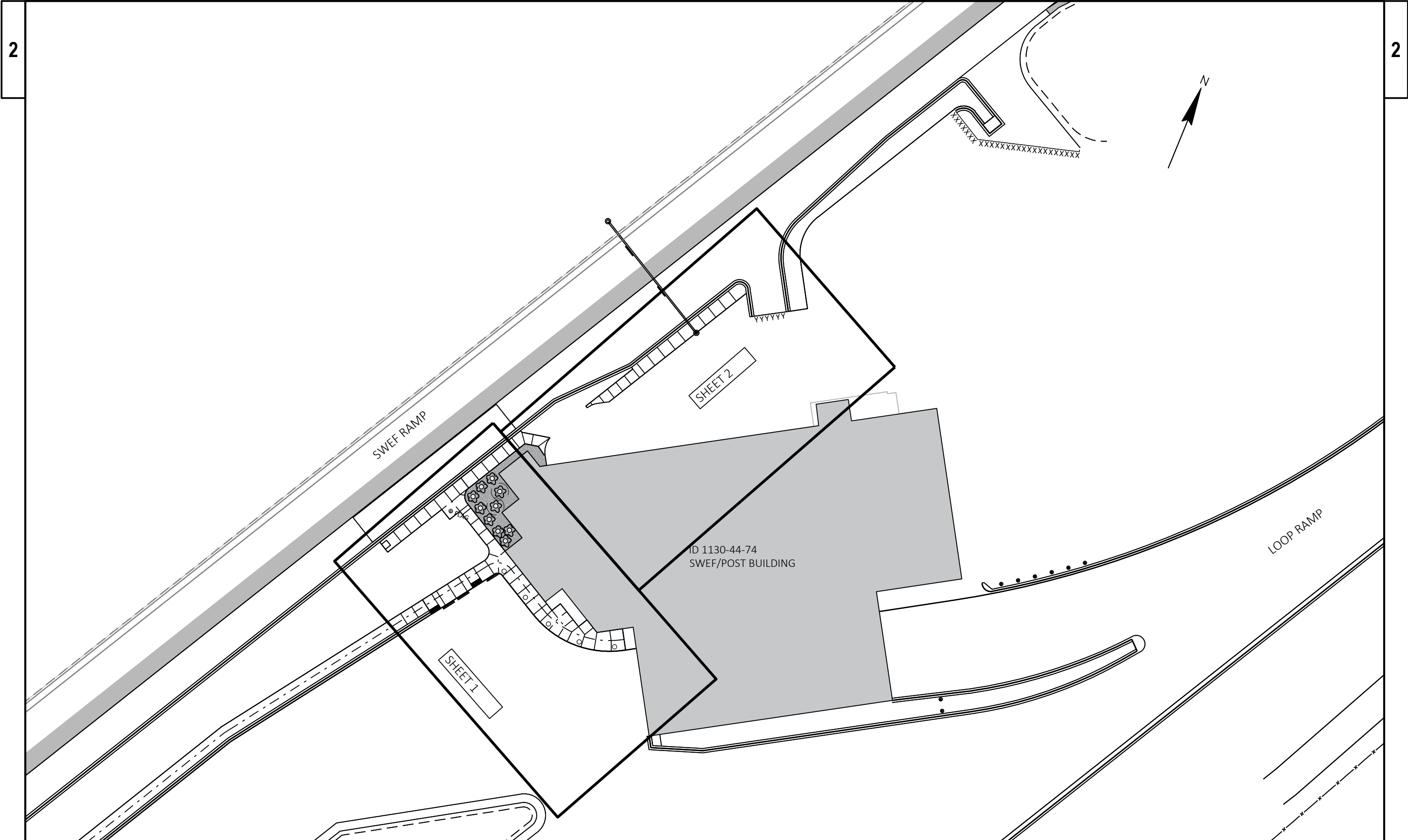


- GENERAL NOTES:
- ALL CONNECTIONS BETWEEN SENSORS AND LEAD CABLES SHALL BE DONE IN PULL BOX AND ARE SOLDERED THEN SEALED FOR WATERPROOFING. NUMBER AND PLACEMENT OF PULL BOXES NOT SHOWN.
 - POWER CABLES SHALL BE RUN IN SEPARATE CONDUITS/PULL BOXES FROM SIGNAL CABLES.
 - ACTUAL SENSOR SPACING SHALL BE ALTERED TO SUIT SITE CONDITIONS BY SELECTED VENDOR.
 - ROAD SURFACE SHALL MEET SPECIFICATIONS FOR PAVEMENT CONDITIONS TO ACHIEVE OPTIMAL SYSTEM PERFORMANCE.
 - SENSORS SHALL BE A MINIMUM OF 6' AWAY FROM CRACKS, JOINTS, OR SAWCUTS WHEN POSSIBLE.
 - ADDITIONAL DRAINAGE MAY BE REQUIRED DEPENDING ON SLOPE OF ROADWAY. DRAINAGE CONSISTS OF 1 1/2" ABS PIPE SLOPED TO RIP RAP DRAINAGE PIT IN DITCH.
 - PULL BOXES SHALL BE NO FURTHER THAN 250' APART. PULL BOXES SHALL BE USED WHERE NEW CONDUIT WILL BE CONNECTING WITH EXISTING CONDUIT. THE PULL BOXES TO BE USED ARE PULL BOX NON-CONDUCTIVE 24"X42". INSTALL PULL BOXES IN ALOCATION NO CLOSER THAN 6' FROM EDGE OF NORMAL SHOULDER
 - EXACT ROUTING OF CONDUIT TO BE DETERMINED ON SITE. CONDUITS ARE LABELED LEFT TO RIGHT , TOP TO BOTTOM.



- STA 1269+00'NB' - STA 1278+00'NB'
SUGGESTED "WEIGH-IN-MOTION SYSTEM" LOCATION
ACTUAL LOCATION TO BE DETERMINED BY CONTRACTOR
COORDINATION REQUIRED WITH 1130-67-72 AS EQUIPMENT WILL BE INSTALLED IN NEW IH 41 NB PAVEMENT
ASSUMED TO BE COMPLETED IN 2027.
- WIM SENSORS (IN CONCRETE PAVEMENT)
 - WIM CABINET AND ELECTRONICS
 - OVERVIEW CAMERAS & POLES
 - AUTOMATIC USDOT READING (AUR) SYSTEM
 - LICENSE PLATE READER (LPR) SYSTEM
 - CHANGEABLE MESSAGE SORTING SIGNS (LOCATION TO BE DETERMINED BY CONTRACTOR)
 - ADDITIONAL BARRIER FOR EQUIPMENT PROTECTION (DESIGN & CONSTRUCTION INCIDENTAL TO WIM)

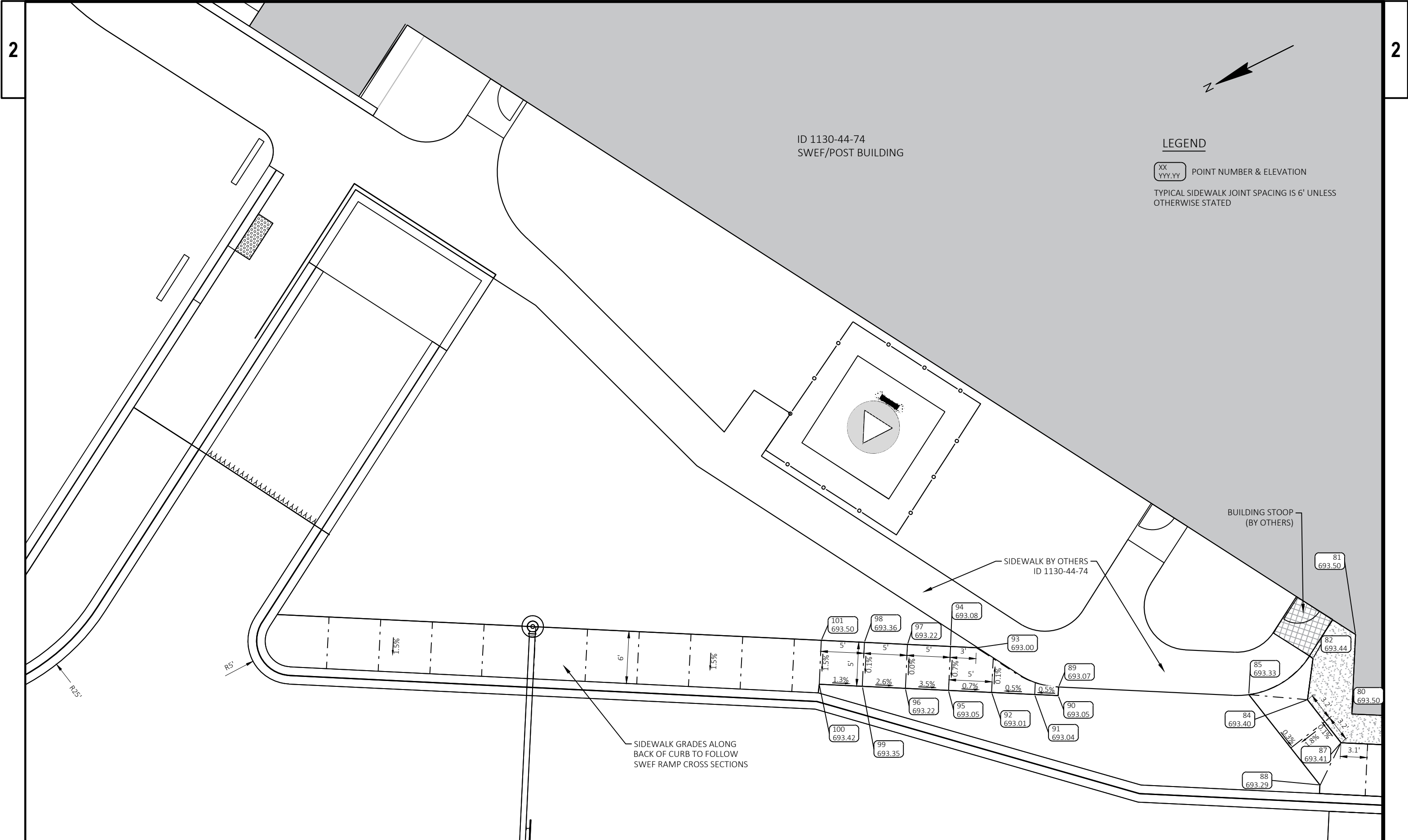




2

2





LEGEND

XX
YYY.YY POINT NUMBER & ELEVATION
TYPICAL SIDEWALK JOINT SPACING IS 6' UNLESS OTHERWISE STATED

SHEET 1 R/L 'L'					
POINT NUMBER	STATION	OFFSET	ELEVATION	NORTHING	EASTING
1	390+89.78	0.00'	693.47	590880.39	881337.10
2	390+89.75	5.00' RT	693.49	590884.69	881334.55
3	390+96.42	5.00' RT	693.47	590881.89	881329.23
4	390+96.42	0.00'	693.43	590877.30	881331.22
5	391+04.44	0.00'	693.38	590874.78	881323.62
6	391+04.44	5.00' RT	693.45	590879.64	881322.47
7	391+10.76	0.00'	693.34	590873.76	881317.39
8	391+10.76	5.00' RT	693.42	590878.74	881316.94
9	391+17.66	0.00'	693.30	590873.66	881310.50
10	391+17.66	5.00' RT	693.41	590878.65	881310.81
11	391+22.38	0.00'	693.30	590874.20	881305.82
12	391+22.38	5.00' RT	693.39	590879.13	881306.65
13	391+22.38	5.65' RT	693.41	590879.77	881306.76
14	391+27.66	0.00'	693.33	590875.38	881300.67
15	391+27.66	5.00' RT	693.40	590880.18	881302.07
16	391+27.66	6.99' RT	693.43	590882.09	881302.63
17	391+33.24	0.00'	693.36	590877.27	881295.43
18	391+33.24	5.00' RT	693.44	590881.86	881297.41
19	391+37.78	0.00'	693.38	590879.28	881291.36
20	391+37.83	5.00' RT	693.46	590883.67	881293.76
21	391+43.78	0.00'	693.41	590882.21	881286.12
22	391+43.78	5.00' RT	693.48	590886.57	881288.56
23	391+49.78	0.00'	693.44	590885.14	881280.88
24	391+49.77	5.00' RT	693.49	590889.50	881283.33
25	391+55.78	0.00'	693.47	590888.07	881275.65
26	391+55.77	5.00' RT	693.51	590892.43	881278.09
27	391+60.75	0.00'	693.50	590890.50	881271.31
28	391+60.75	5.00' RT	693.51	590894.86	881273.75
29	391+62.95	0.00'	693.51	590890.80	881269.18
30	391+63.35	5.00' RT	693.54	590895.37	881267.04
31	391+63.35	7.71' RT	693.56	590897.91	881266.09
32	391+64.43	9.87' RT	693.51	590897.59	881261.41
33	391+65.15	0.00'	693.53	590889.61	881267.39
34	391+65.15	5.00' RT	693.60	590892.49	881263.31
35	391+65.29	7.87' RT	693.51	590894.03	881260.88
36	391+71.63	0.00'	693.58	590884.31	881263.65
37	391+71.63	5.00' RT	693.61	590887.20	881259.57
38	391+71.63	7.86' RT	693.63	590888.85	881257.24
39	391+76.63	0.00'	693.62	590880.23	881260.77
40	391+76.63	5.00' RT	693.65	590883.12	881256.69

SHEET 1 R/L 'L'					
POINT NUMBER	STATION	OFFSET	ELEVATION	NORTHING	EASTING
41	391+76.63	7.86' RT	693.67	590884.77	881254.35
42	391+79.81	0.04' RT	693.64	590877.66	881258.90
43	391+79.81	5.00' RT	693.68	590880.52	881254.85
44	391+79.81	7.87' RT	693.70	590882.17	881252.51
45	391+85.81	0.04' RT	693.69	590872.76	881255.44
46	391+85.81	5.00' RT	693.73	590875.62	881251.39
47	391+85.81	7.87' RT	693.75	590877.27	881249.05
48	391+91.81	0.00'	693.74	590867.83	881252.01
49	391+91.81	5.00' RT	693.78	590870.72	881247.93
50	391+91.81	7.88' RT	693.80	590872.38	881245.57
51	391+94.46	0.00'	693.76	590865.67	881250.48
52	391+94.46	5.00' RT	693.80	590868.55	881246.40
53	391+94.46	7.89' RT	693.82	590870.22	881244.04
54	391+99.46	0.00'	693.80	590861.58	881247.60
55	391+99.46	2.00' RT	693.85	590862.74	881245.96
56	391+99.46	5.00' RT	693.88	590864.47	881243.51
57	391+99.46	7.90' RT	693.93	590866.14	881241.15
58	392+05.46	2.00' RT	694.23	590857.84	881242.50
59	392+05.46	5.00' RT	694.28	590859.57	881240.05
60	392+05.46	7.90' RT	694.32	590861.24	881237.68
61	392+11.46	2.00' RT	694.44	590852.94	881239.04
62	392+11.46	5.00' RT	694.48	590854.67	881236.59
63	392+11.46	7.91' RT	694.53	590856.35	881234.21

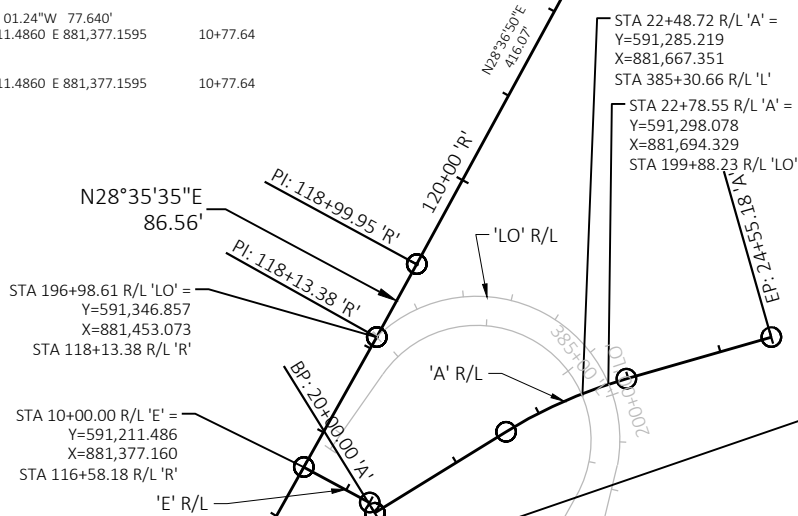
SHEET 1 R/L 'R'					
POINT NUMBER	STATION	OFFSET	ELEVATION	NORTHING	EASTING
64	113+34.44	48.86' RT	693.51	590905.21	881261.42
65	113+29.44	48.85' RT	693.49	590900.85	881258.97
66	113+34.44	42.86' RT	693.48	590908.15	881256.19
67	113+29.44	42.85' RT	693.46	590903.79	881253.74
68	113+34.44	36.86' RT	693.45	590911.09	881250.96
69	113+29.44	36.85' RT	693.44	590906.73	881248.51
70	113+34.44	30.86' RT	693.42	590914.02	881245.72
71	113+29.44	30.85' RT	693.41	590909.66	881243.28
72	113+34.44	28.90' RT	693.41	590914.98	881244.02
73	113+29.44	28.90' RT	693.40	590910.62	881241.57
74	113+23.44	28.90' RT	693.39	590905.39	881238.64
75	113+23.44	23.00' RT	693.36	590908.27	881233.49
77	113+34.40	22.88' RT	693.36	590917.89	881238.75
78	113+35.91	24.46' RT	693.37	590918.43	881240.87
79	113+39.44	23.00' RT	693.36	590922.23	881241.32
80	113+26.17	26.17' RT	693.38	590909.10	881237.59

SHEET 2 R/L 'R'					
POINT NUMBER	STATION	OFFSET	ELEVATION	NORTHING	EASTING
80	113+71.44	26.39' RT	693.50	590948.48	881259.93
81	113+71.44	35.61' RT	693.50	590943.97	881267.96
82	113+76.24	32.60' RT	693.44	590949.62	881267.69
84	113+76.64	27.79' RT	693.40	590952.33	881263.70
85	113+83.46	28.07' RT	693.33	590958.14	881267.27
87	113+72.53	23.00' RT	693.41	590951.09	881257.50
88	113+74.74	18.00' RT	693.29	590955.46	881254.22
89	114+05.53	27.90' RT	693.07	590977.47	881277.91
90	114+05.53	26.90' RT	693.05	590977.96	881277.04
91	114+08.26	26.90' RT	693.04	590980.34	881278.38
92	114+13.26	26.90' RT	693.01	590984.70	881280.82
93	114+15.25	32.00' RT	693.00	590983.95	881286.25
94	114+18.26	32.00' RT	693.08	590986.57	881287.72
95	114+18.26	26.90' RT	693.05	590989.06	881283.27
96	114+23.26	26.90' RT	693.22	590993.42	881285.71
97	114+23.26	32.00' RT	693.22	590990.93	881290.16
98	114+28.26	32.00' RT	693.36	590995.29	881292.61
99	114+28.26	26.90' RT	693.35	590997.79	881288.16
100	114+33.26	26.90' RT	693.42	591002.15	881290.60
101	114+33.26	32.00' RT	693.50	590999.65	881295.05
109	113+23.44	23.00' RT	693.36	590908.27	881233.49

ACCESS ROAD ('A' R/L)		
Begin 'A'		
N 591,163.8792 E 881,451.0726	20+00.00	
Line (1)		
N58° 16' 31.16"E 160.628'		
N 591,248.3434 E 881,587.7002	21+60.63	
Line (1)		
Curve (2)		
BC N 591,248.3434 E 881,587.7002	21+60.63	
CTR N 590,823.0511 E 881,850.6193		
PI N 591,284.6895 E 881,646.4929		
Direction Back N58° 16' 31.16"E		
Radius 500.000'		
Delta 15°44'29"(RT)		
Length 137.370'		
Tangent 69.120'		
Chord Direction N66° 08' 45.72"E Distance 136.938'		
Direction Ahead N74° 01' 00.29"E		
EC N 591,303.7222 E 881,712.9411	22+98.00	
Curve (2)		
Line (3)		
N74° 01' 00.29"E 157.178'		
N 591,347.0021 E 881,864.0427	24+55.18	
Line (3)		
N 591,347.0021 E 881,864.0427	24+55.18	
End 'A'		

SWEF RAMP ('R' R/L)		
Begin 'R'		
N 589,901.8480 E 880,619.0147	101+44.53	
Line (1)		
N32° 16' 04.46"E 255.411'		
N 590,117.8134 E 880,755.3731	103+99.94	
Line (1)		
Line (2)		
N32° 16' 04.46"E 141.966'		
N 590,237.8545 E 880,831.1658	105+41.91	
Line (2)		
Line (3)		
N29° 16' 58.31"E 1,271.478'		
N 591,346.8573 E 881,453.0732	118+13.38	
Line (3)		
Line (4)		
N28° 35' 35.18"E 86.560'		
N 591,422.8610 E 881,494.4998	118+99.95	
Line (4)		
Line (5)		
N28° 36' 49.96"E 416.067'		
N 591,788.1126 E 881,693.7563	123+16.01	
Line (5)		
Line (6)		
N29° 22' 28.05"E 30.470'		
N 591,814.6651 E 881,708.7023	123+46.48	
Line (6)		
N 591,814.6651 E 881,708.7023	123+46.48	
End 'R'		

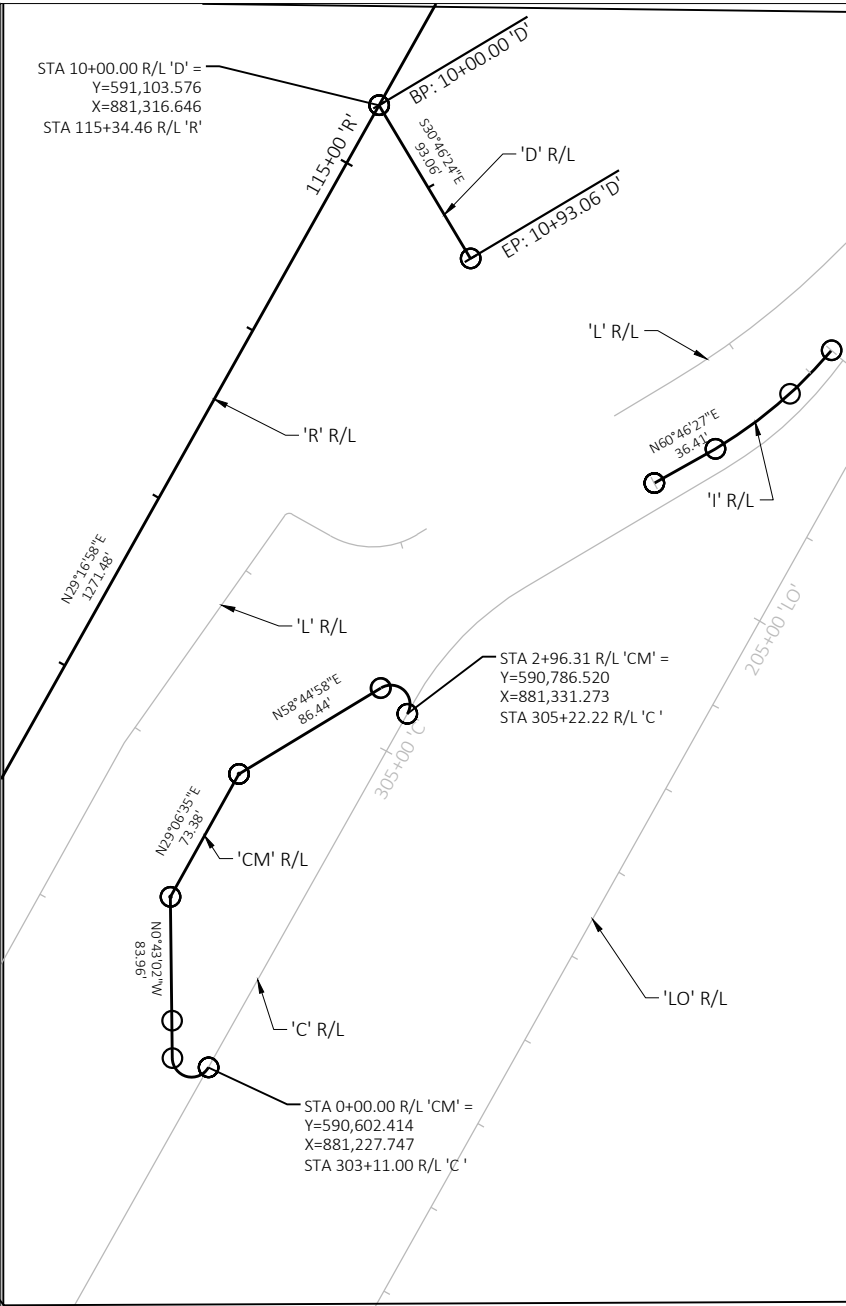
EMPLOYEE PARKING ACCESS ('E' R/L)		
Begin 'E'		
N 591,174.7576 E 881,445.5630	10+00.00	
Line (1)		
N61° 46' 01.24"W 77.640'		
N 591,211.4860 E 881,377.1595	10+77.64	
Line (1)		
N 591,211.4860 E 881,377.1595	10+77.64	
End 'E'		



SEE NEXT SHEET FOR 'C', 'L', 'LO' INFORMATION

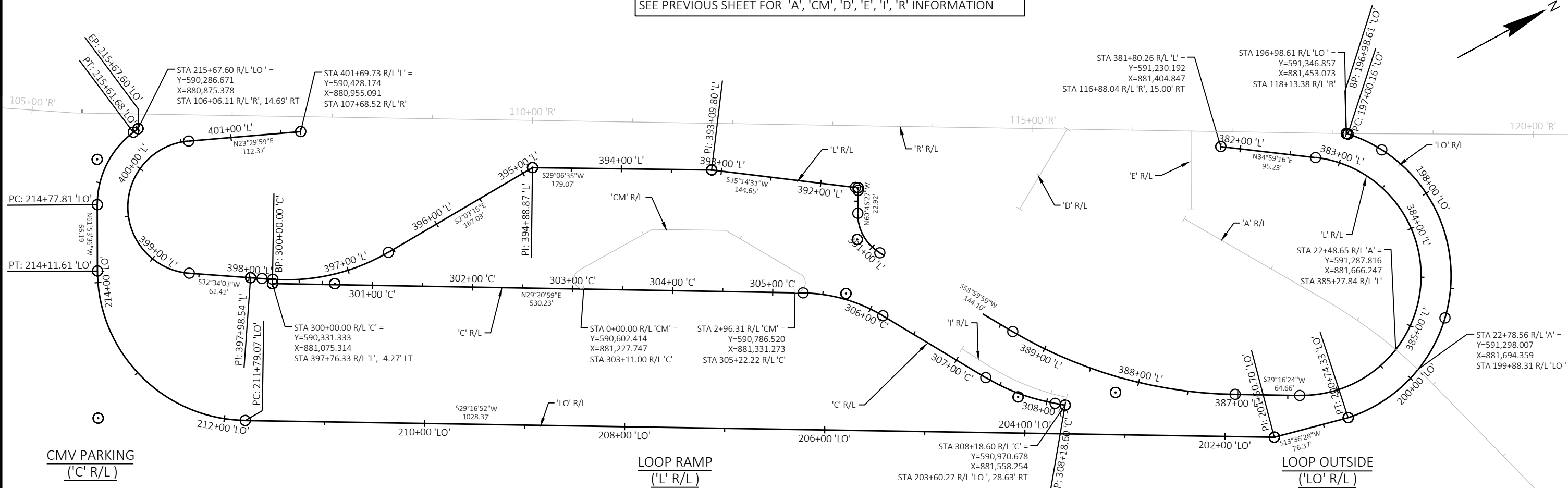
DUMPSTER PAD ('D' R/L)		
Begin 'D'		
N 591,023.6152 E 881,364.2616	10+00.00	
Line (1)		
N30° 46' 23.81"W 93.065'		
N 591,103.5762 E 881,316.6458	10+93.06	
Line (1)		
N 591,103.5762 E 881,316.6458	10+93.06	
End 'D'		

'CM', 'D', & 'I' DIAGRAM DETAIL



ISLAND ('I' R/L)			CMV MEDIAN ('CM' R/L)		
Begin 'I'			Begin 'CM'		
N 590,906.7244 E 881,459.8603	0+00.00		N 590,602.4141 E 881,227.7472	0+00.00	
Line (1)			Curve (1)		
N60° 46' 26.96"E 36.408'			BC N 590,602.4141 E 881,227.7472	0+00.00	
N 590,924.5008 E 881,491.6339	0+36.41		CTR N 590,607.3155 E 881,219.0308		
Line (1)			PI N 590,569.9597 E 881,209.4976		
Curve (2)			Direction Back S29° 20' 59.12"W		
BC N 590,924.5008 E 881,491.6339	0+36.41		Radius 10.000'		
CTR N 591,129.8242 E 881,369.5980			Delta 149°55'59"(RT)		
PI N 590,945.0818 E 881,526.2611			Length 26.168'		
Direction Back N59° 16' 28.08"E			Tangent 37.234'		
Radius 238.852'			Chord Direction N75° 41' 01.36"W Distance		
Delta 19°08'43"(LT)			19.315'		
Length 79.812'			Direction Ahead N0° 43' 01.85"W		
Tangent 40.282'			EC N 590,607.1903 E 881,209.0316	0+26.17	
Chord Direction N49° 42' 06.42"E Distance			Curve (1)		
79.442'			Line (2)		
Direction Ahead N40° 07' 44.77"E			N0° 43' 01.85"W 83.958'		
EC N 590,975.8810 E 881,552.2231	1+16.22		N 590,691.1417 E 881,207.9807	1+10.13	
Curve (2)			Line (2)		
N 590,975.8810 E 881,552.2231	1+16.22		Line (3)		
End 'I'			**Non-Tangent** Radial Bearing S89° 16' 58.15"W		
			N29° 06' 35.11"E 73.381'		
			N 590,755.2542 E 881,243.6795	1+83.51	
			Line (3)		
			Non-Tangent Radial Bearing S89° 16' 58.15"W		
			N58° 44' 58.39"E 86.441'		
			N 590,800.0979 E 881,317.5784	2+69.95	
			Line (4)		
			Curve (5)		
			BC N 590,800.0979 E 881,317.5784	2+69.95	
			CTR N 590,791.6024 E 881,322.7337		
			PI N 590,820.7818 E 881,351.6638		
			Direction Back N58° 44' 58.39"E		
			Radius 9.937'		
			Delta 152°00'34"(RT)		
			Length 26.364'		
			Tangent 39.870'		
			Chord Direction S45° 14' 44.60"E Distance		
			19.285'		
			Direction Ahead S30° 45' 32.41"W		
			EC N 590,786.5202 E 881,331.2730	2+96.31	
			Curve (5)		
			N 590,786.5202 E 881,331.2730	2+96.31	
			End 'CM'		

SEE PREVIOUS SHEET FOR 'A', 'CM', 'D', 'E', 'I', 'R' INFORMATION

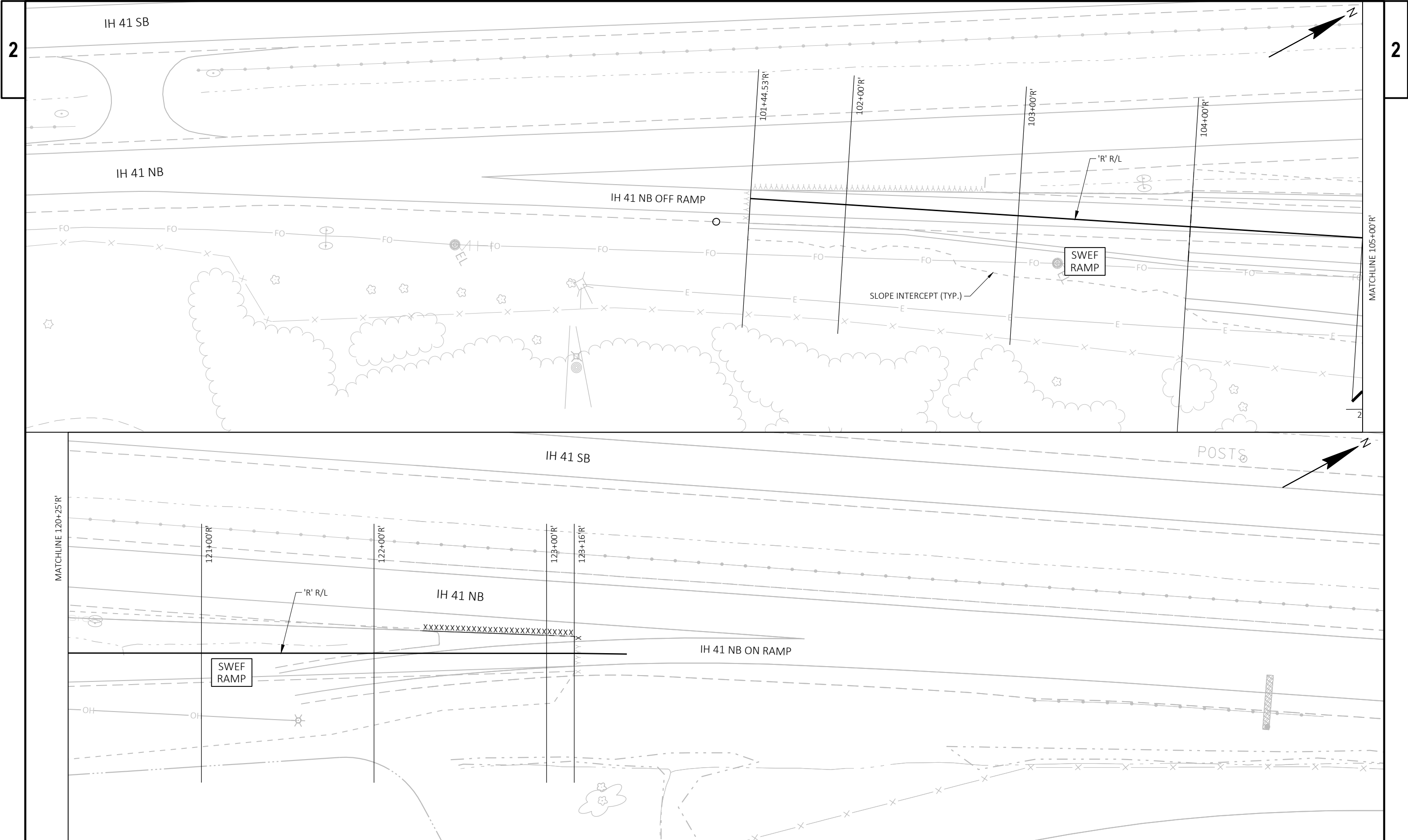


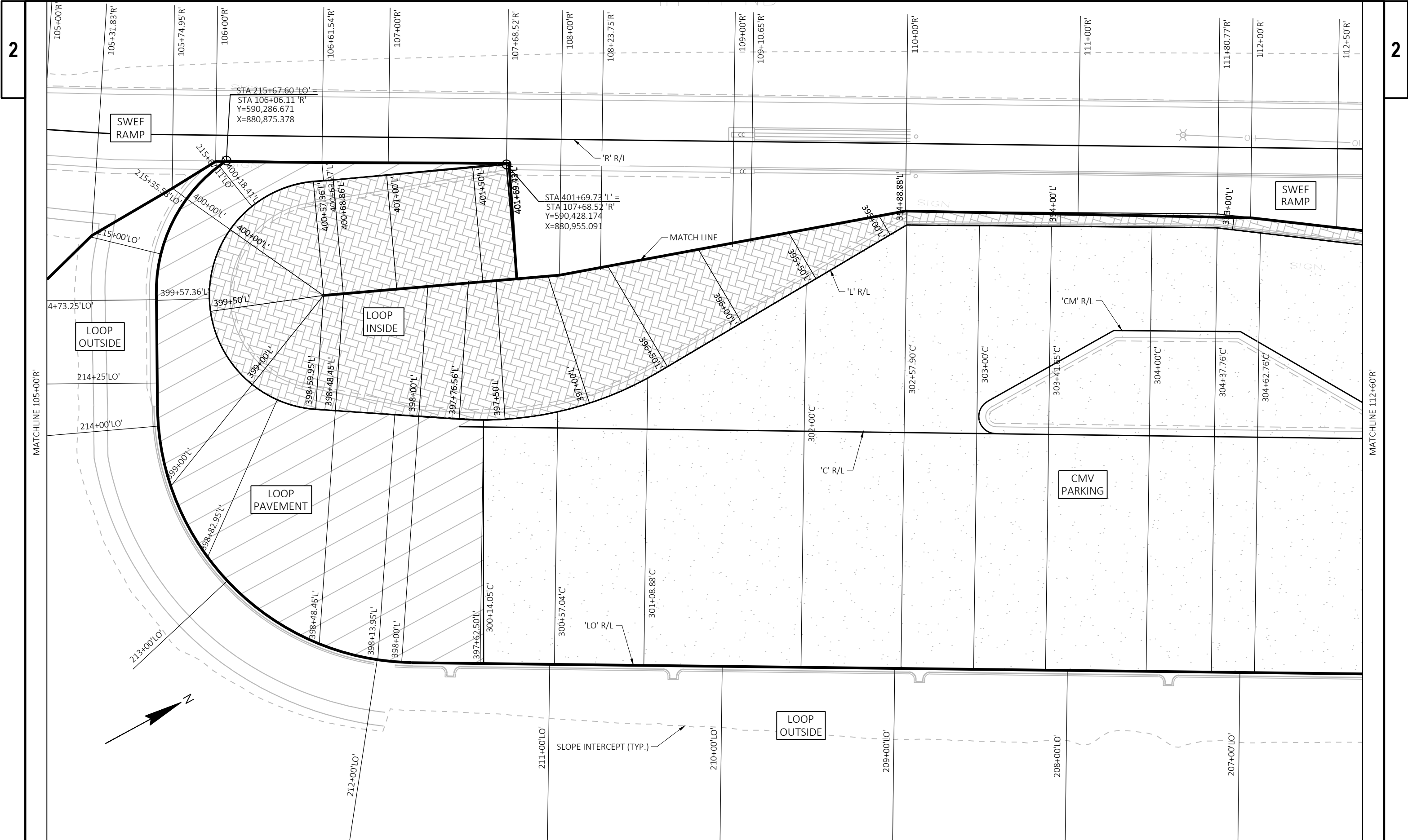
Begin 'C'		
N 590,331.3330 E 881,075.3140	300+00.00	
Line (1)		
N29° 20' 59.05"E 530.226'		
N 590,793.5015 E 881,335.1987	305+30.23	
Line (1)		
Curve (2)		
BC N 590,793.5015 E 881,335.1987	305+30.23	
CTR N 590,715.0792 E 881,474.6618		
PI N 590,830.8860 E 881,356.2206		
Direction Back N29° 20' 59.05"E		
Radius 160.000'		
Delta 30°00'43"(RT)		
Length 83.809'		
Tangent 42.890'		
Chord Direction N44° 21' 20.47"E Distance 82.854'		
Direction Ahead N59° 21' 41.89"E		
EC N 590,852.7434 E 881,393.1229	306+14.04	
Curve (2)		
Line (3)		
N59° 21' 41.89"E 120.144'		
N 590,913.9708 E 881,496.4949	307+34.18	
Line (3)		
Curve (4)		
BC N 590,913.9708 E 881,496.4949	307+34.18	
CTR N 591,086.0510 E 881,394.5714		
PI N 590,933.1164 E 881,528.8188		
Direction Back N59° 21' 41.89"E		
Radius 200.000'		
Delta 21°16'38"(LT)		
Length 74.271'		
Tangent 37.568'		
Chord Direction N48° 43' 22.92"E Distance 73.845'		
Direction Ahead N38° 05' 03.95"E		
EC N 590,962.6866 E 881,551.9919	308+08.45	
Curve (4)		
Line (5)		
N38° 05' 03.95"E 10.153'		
N 590,970.6781 E 881,558.2545	308+18.60	
Line (5)		
N 590,970.6781 E 881,558.2545	308+18.60	
End 'C'		

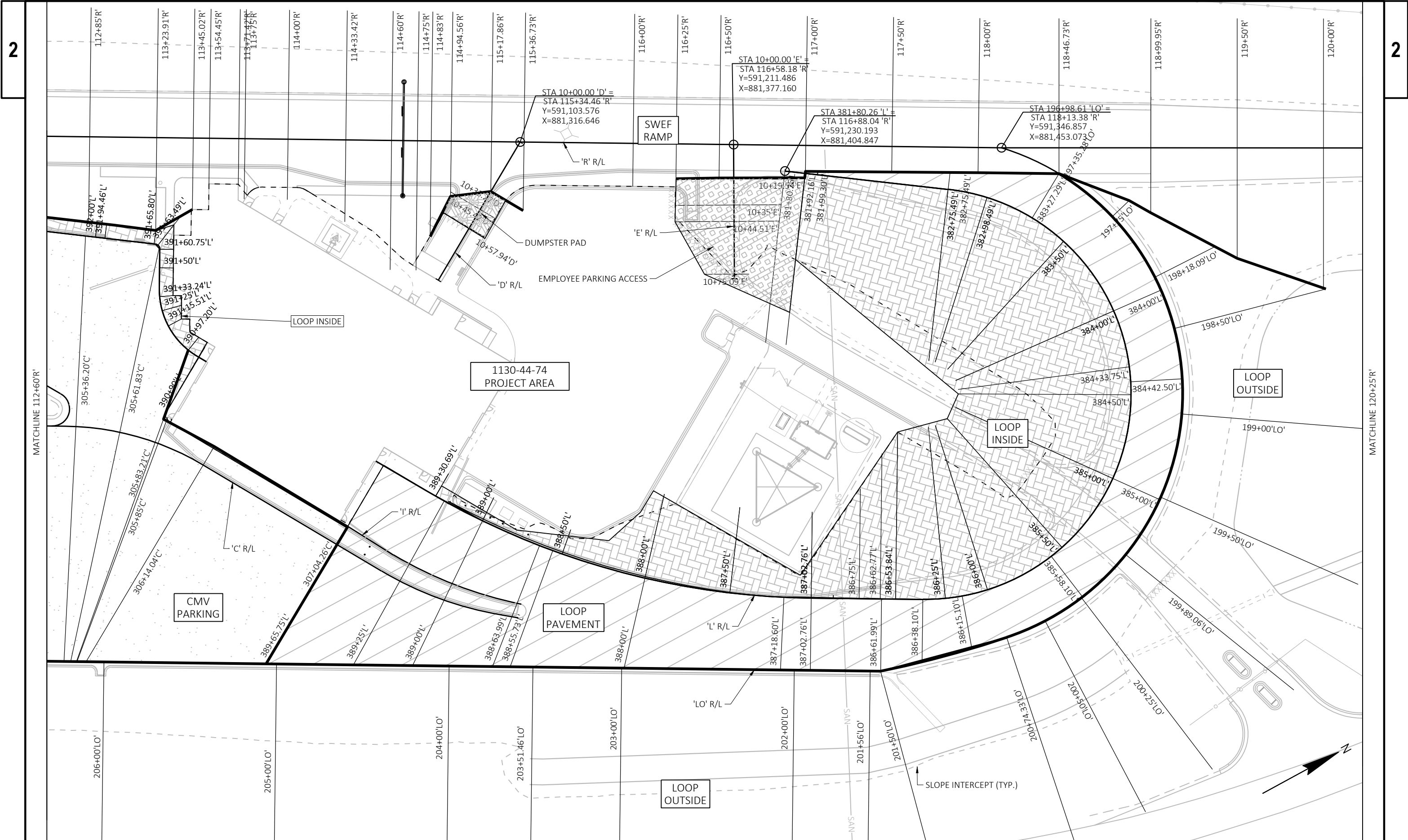
Begin 'L'		
N 591,230.1916 E 881,404.8469	381+80.26	
Line (1)		
N34° 59' 15.59"E 95.228'		
N 591,308.2096 E 881,459.4506	382+75.49	
Line (1)		
Curve (2)		
BC N 591,308.2096 E 881,459.4506	382+75.49	
CTR N 591,239.8566 E 881,557.1135		
PI N 593,265.0819 E 882,829.0396		
Direction Back N34° 59' 15.59"E		
Radius 119.206'		
Delta 174°17'09"(RT)		
Length 362.609'		
Tangent 2,388.540'		
Chord Direction S57° 52' 10.07"E Distance 238.117'		
Direction Ahead S29° 16' 24.27"W		
EC N 591,181.5673 E 881,661.0969	386+38.10	
Curve (2)		
Line (3)		
S29° 16' 24.27"W 64.657'		
N 591,125.1671 E 881,629.4810	387+02.76	
Line (3)		
Curve (4)		
BC N 591,125.1671 E 881,629.4810	387+02.76	
CTR N 591,345.2070 E 881,236.9476		
PI N 591,020.9918 E 881,571.0841		
Direction Back S29° 16' 24.27"W		
Radius 450.000'		
Delta 29°43'35"(RT)		
Length 233.471'		
Tangent 119.426'		
Chord Direction S44° 08' 11.84"W Distance 230.861'		
Direction Ahead S58° 59' 59.42"W		
EC N 590,959.4824 E 881,468.7158	389+36.23	
Curve (4)		
Line (5)		
S58° 59' 59.42"W 144.100'		
N 590,885.2648 E 881,345.1979	390+80.33	
Line (5)		

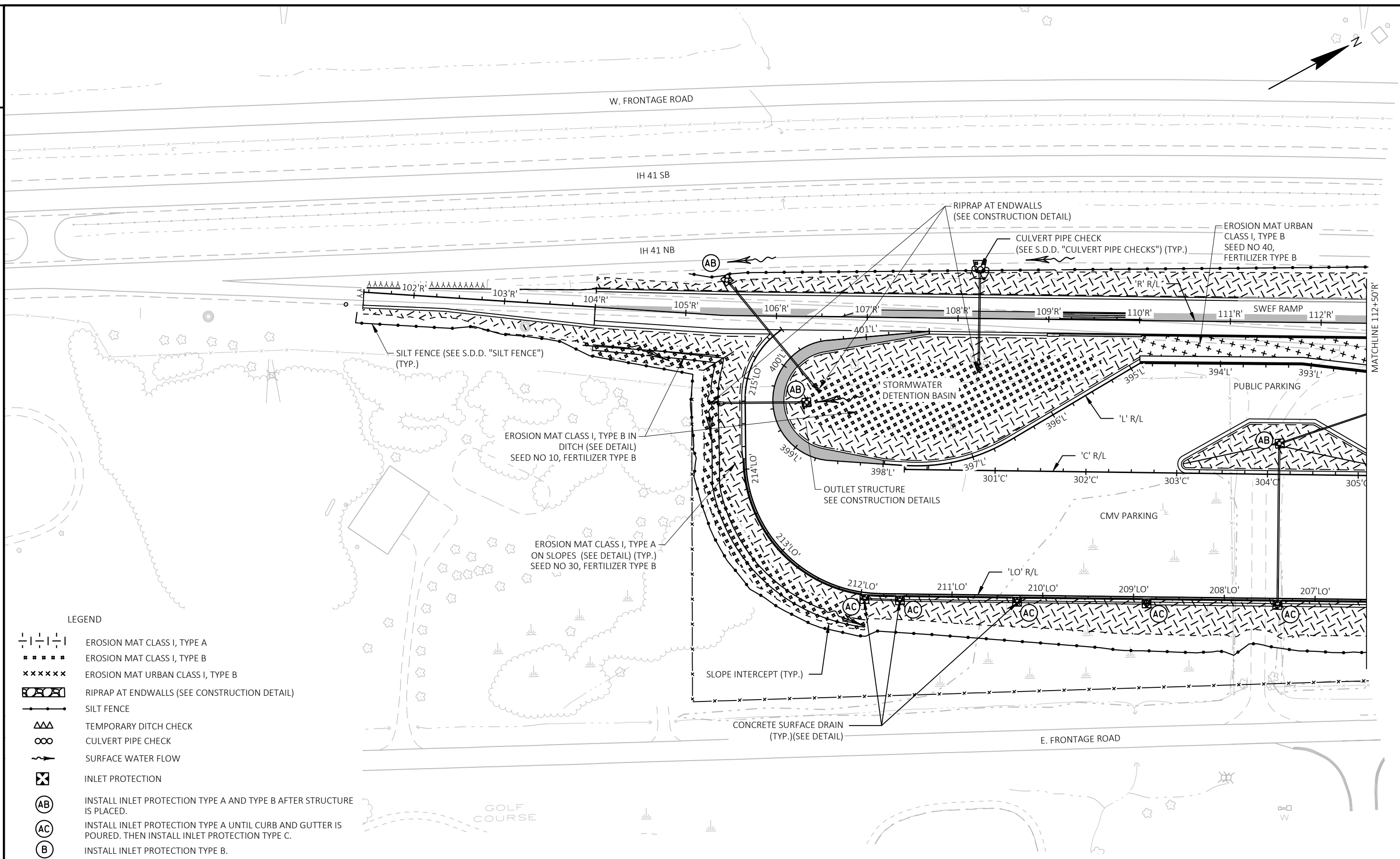
Line (6)		
Non-Tangent Radial Bearing S31° 00' 00.58"E		
S58° 55' 49.63"W 10.143'		
N 590,880.0303 E 881,336.5101	390+90.47	
Line (6)		
Curve (7)		
BC N 590,880.0303 E 881,336.5101	390+90.47	
CTR N 590,918.5747 E 881,313.2866		
PI N 590,866.5423 E 881,314.1239		
Direction Back S58° 55' 49.63"W		
Radius 45.000'		
Delta 60°17'43"(RT)		
Length 47.356'		
Tangent 26.136'		
Chord Direction S89° 04' 41.25"W Distance 45.201'		
Direction Ahead N60° 46' 27.13"W		
EC N 590,879.3031 E 881,291.3152	391+37.83	
Curve (7)		
Line (8)		
N60° 46' 27.13"W 22.924'		
N 590,890.4957 E 881,271.3096	391+60.75	
Line (8)		
Curve (9)		
BC N 590,890.4957 E 881,271.3096	391+60.75	
CTR N 590,887.8775 E 881,269.8449		
PI N 590,891.8142 E 881,268.9529		
Direction Back N60° 46' 27.13"W		
Radius 3.000'		
Delta 83°59'01"(LT)		
Length 4.397'		
Tangent 2.700'		
Chord Direction S77° 14' 02.13"W Distance 4.014'		
Direction Ahead S35° 14' 31.39"W		
EC N 590,889.6086 E 881,267.3947	391+65.15	
Curve (9)		
Line (10)		
S35° 14' 31.39"W 144.650'		
N 590,771.4701 E 881,183.9272	393+09.80	
Line (10)		
Line (11)		
Non-Tangent Radial Bearing N54° 45' 28.61"W		
S29° 06' 35.11"W 179.072'		
N 590,615.0166 E 881,096.8114	394+88.87	
Line (11)		
Line (12)		
Non-Tangent Radial Bearing N54° 45' 28.61"W		
S2° 03' 15.22"E 167.034'		
N 590,448.0899 E 881,102.7988	396+55.90	
Line (12)		
Curve (13)		
BC N 590,448.0899 E 881,102.7988	396+55.90	
CTR N 590,440.9209 E 880,902.9274		
PI N 590,386.0306 E 881,105.0248		
Direction Back S2° 03' 15.22"E		
Radius 200.000'		
Delta 34°29'56"(RT)		
Length 120.423'		
Tangent 62.099'		
Chord Direction S15° 11' 42.54"W Distance 118.612'		
Direction Ahead S32° 26' 40.30"W		
EC N 590,333.6243 E 881,071.7096	397+76.33	
Curve (13)		
Line (14)		
S32° 26' 40.30"W 22.217'		
N 590,314.8748 E 881,059.7903	397+98.54	
Line (14)		
Line (15)		
Non-Tangent Radial Bearing S57° 33' 19.70"E		
S32° 34' 03.16"W 61.409'		
N 590,263.1216 E 881,026.7341	398+59.95	
Line (15)		
Curve (16)		
BC N 590,263.1216 E 881,026.7341	398+59.95	
CTR N 590,298.7410 E 880,970.9681		
PI N 589,559.8704 E 880,577.5472		
Direction Back S32° 34' 03.16"W		
Radius 66.171'		
Delta 170°55'56"(RT)		
Length 197.410'		
Tangent 834.465'		
Chord Direction N61° 57' 58.96"W Distance 131.928'		
Direction Ahead N23° 29' 58.92"E		
EC N 590,325.1263 E 880,910.2852	400+57.36	
Curve (16)		

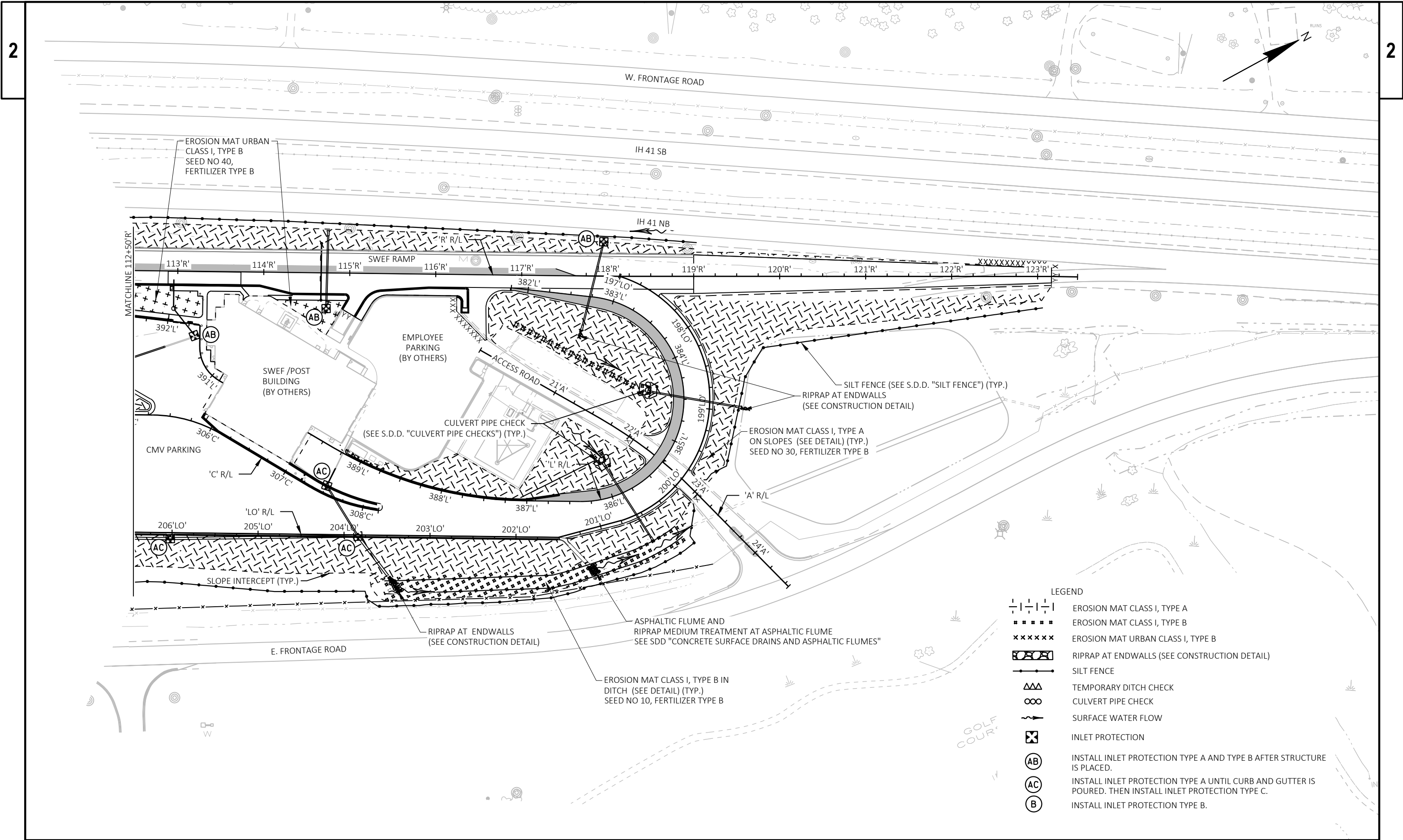
Begin 'LO'		
N 591,346.8573 E 881,453.0732	196+98.61	
Line (1)		
N46° 02' 41.85"E 1.559'		
N 591,347.9392 E 881,454.1952	197+00.16	
Line (1)		
Curve (2)		
BC N 591,347.9392 E 881,454.1952	197+00.16	
CTR N 591,240.1354 E 881,557.0542		
PI N 591,663.3555 E 881,784.7747		
Direction Back N46° 02' 40.69"E		
Radius 149.002'		
Delta 143°52'38"(RT)		
Length 374.164'		
Tangent 456.914'		
Chord Direction S61° 43' 00.48"E Distance 283.320'		
Direction Ahead S10° 13' 18.34"W		
EC N 591,213.6937 E 881,703.6915	200+74.33	
Curve (2)		
Line (3)		
Non-Tangent Radial Bearing S79° 46' 41.66"E		
S13° 36' 27.59"W 76.371'		
N 591,139.4669 E 881,685.7236	201+50.70	
Line (3)		
Line (4)		
Non-Tangent Radial Bearing S79° 46' 41.66"E		
S29° 16' 51.90"W 1,028.369'		
N 590,242.4920 E 881,182.7541	211+79.07	
Line (4)		
Curve (5)		
BC N 590,242.4920 E 881,182.7541	211+79.07	
CTR N 590,315.8561 E 881,051.9196		
PI N 590,114.3123 E 881,110.8787		
Direction Back S29° 16' 51.90"W		
Radius 150.000'		
Delta 88°49'32"(RT)		
Length 232.544'		
Tangent 146.956'		
Chord Direction S73° 41' 37.79"W Distance 209.947'		
Direction Ahead N61° 53' 36.33"W		
EC N 590,183.5453 E 880,981.2527	214+11.61	
Curve (5)		

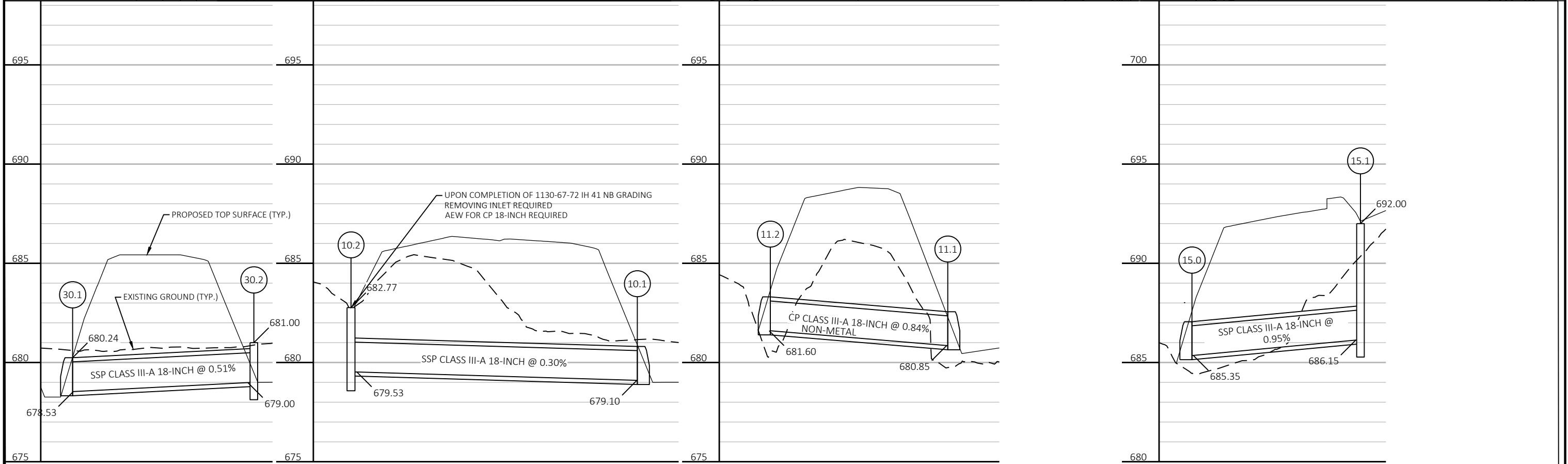
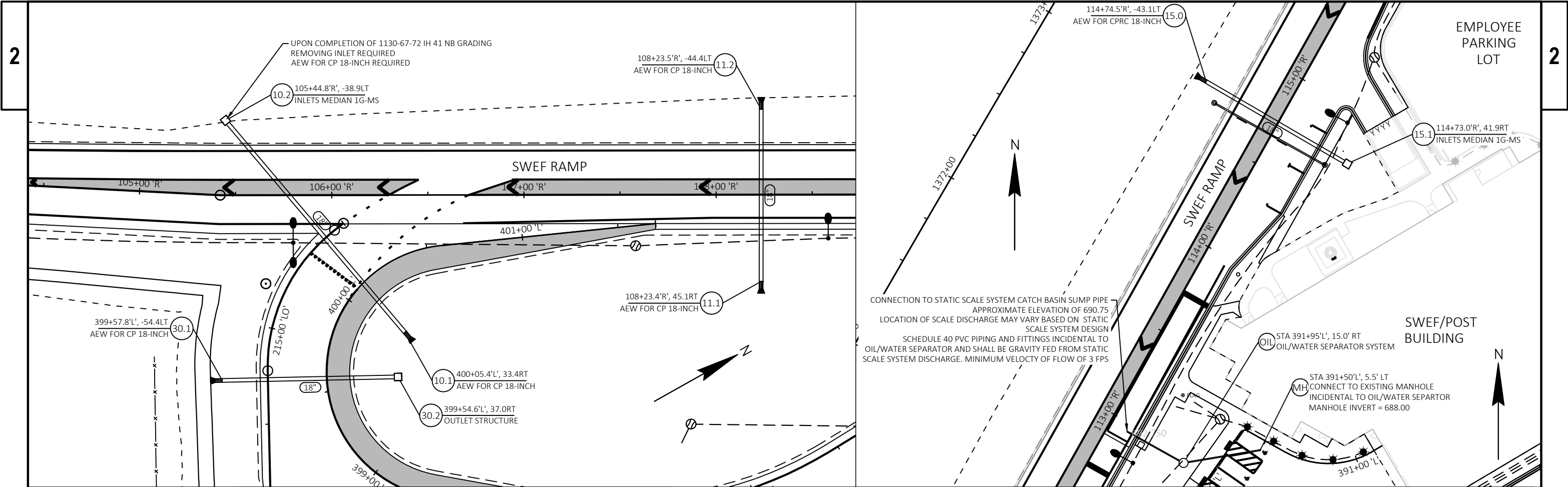


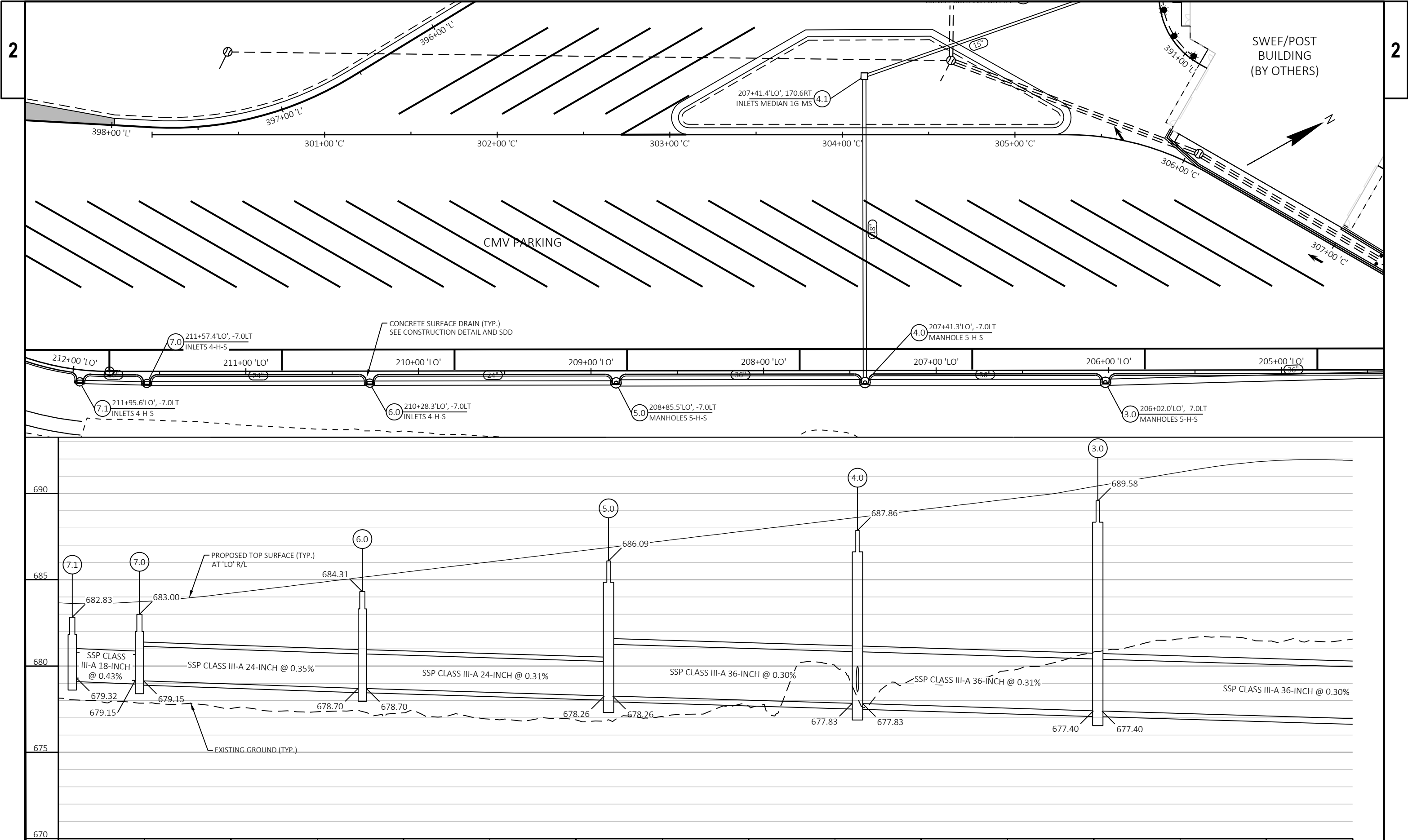


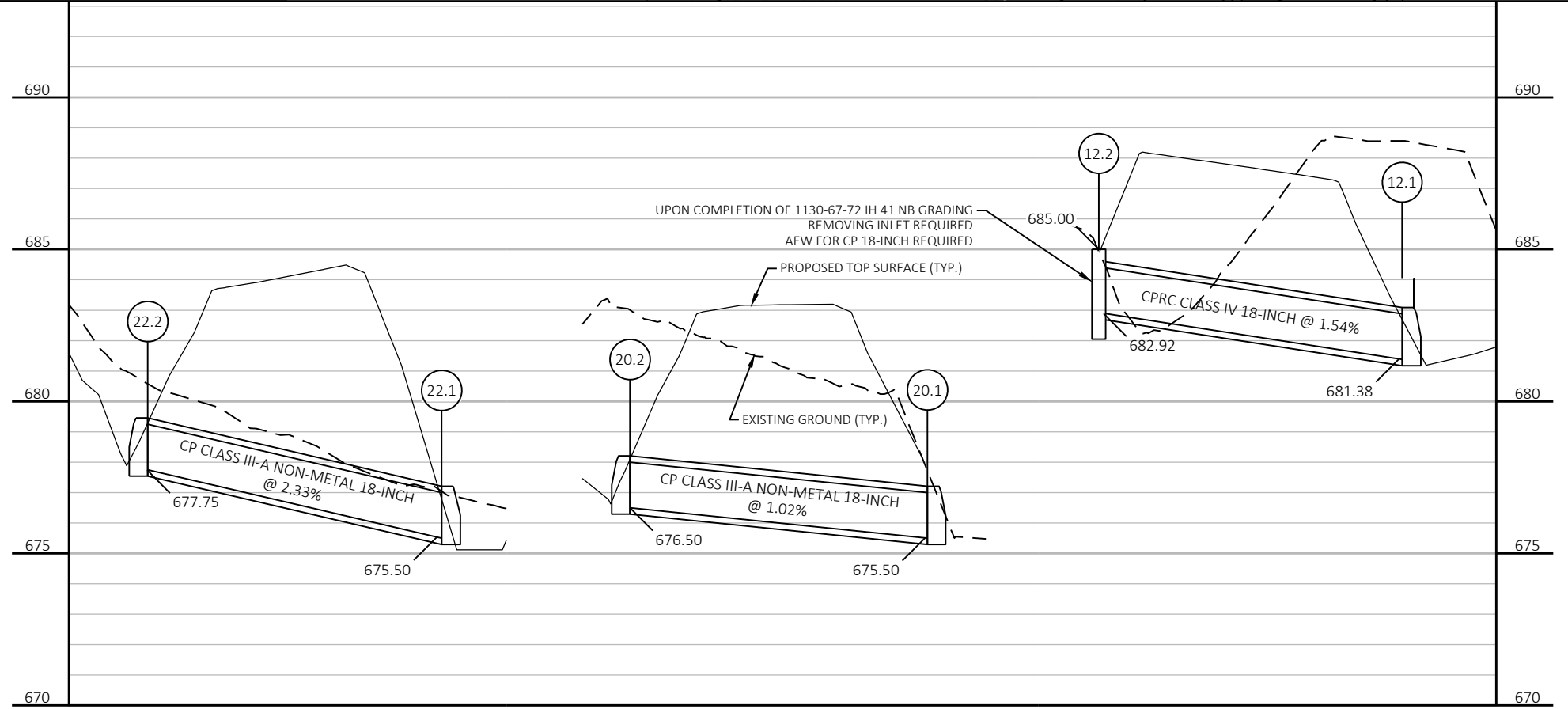
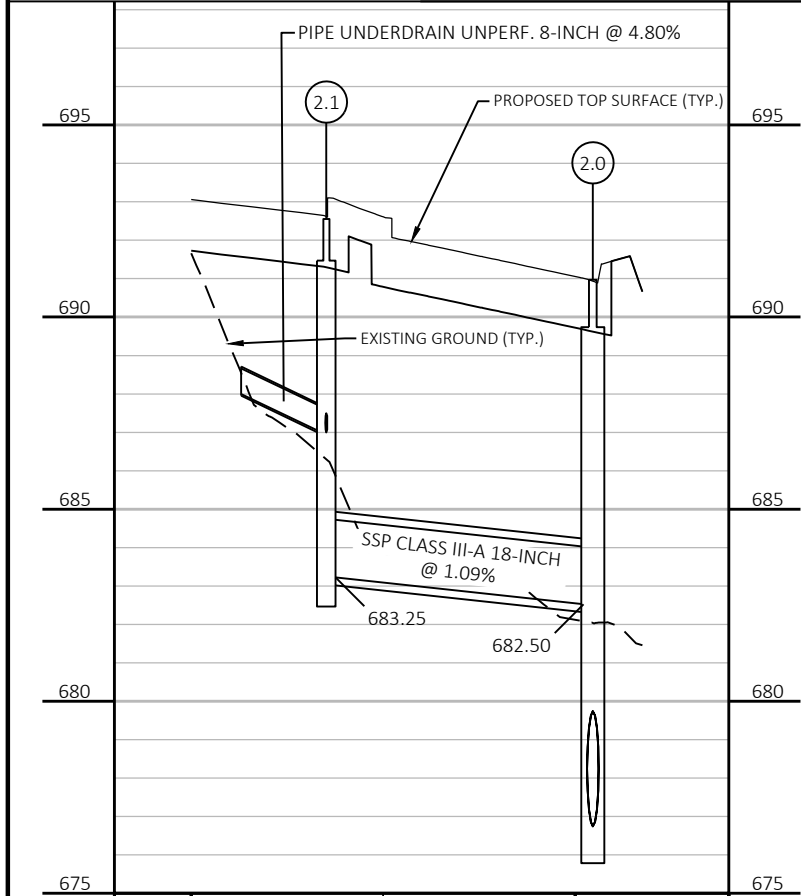
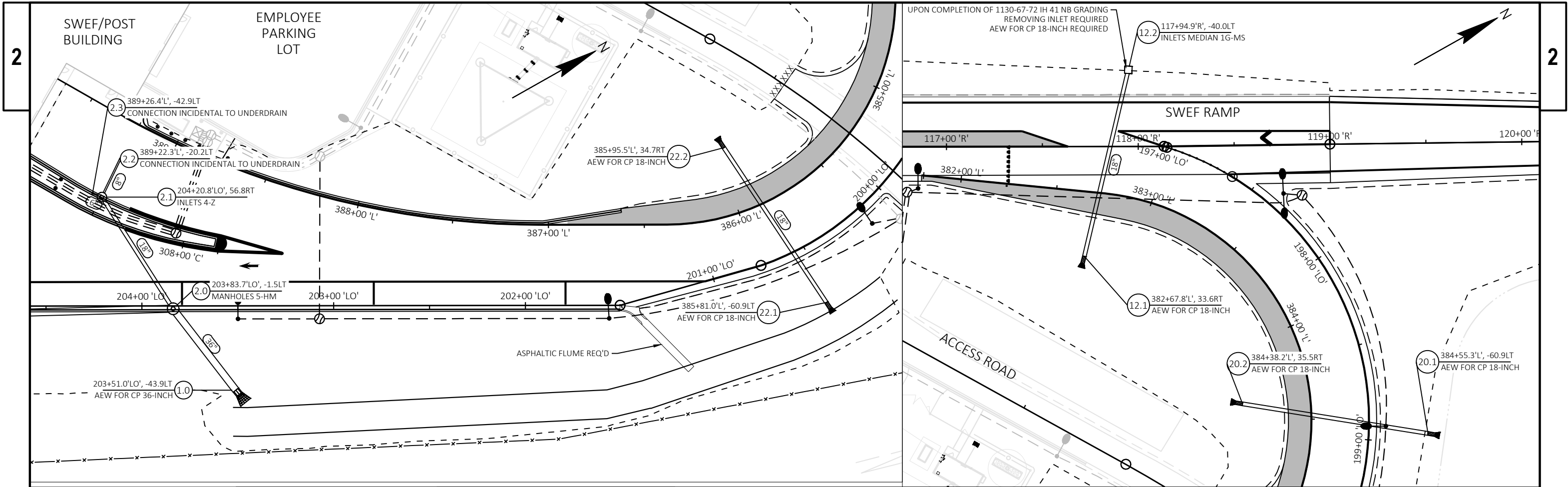












PROJECT NO: 1130-44-75

HWY: IH 41

COUNTY: OUTAGAMIE

STORMSEWER PLAN

SHEET

48

E

FILE NAME : G:\WDOTCO\22052-000 (WRIGHTSTOWN SWEF FINAL)\C3D 75\SHEETSPLAN\022501-SS.DWG

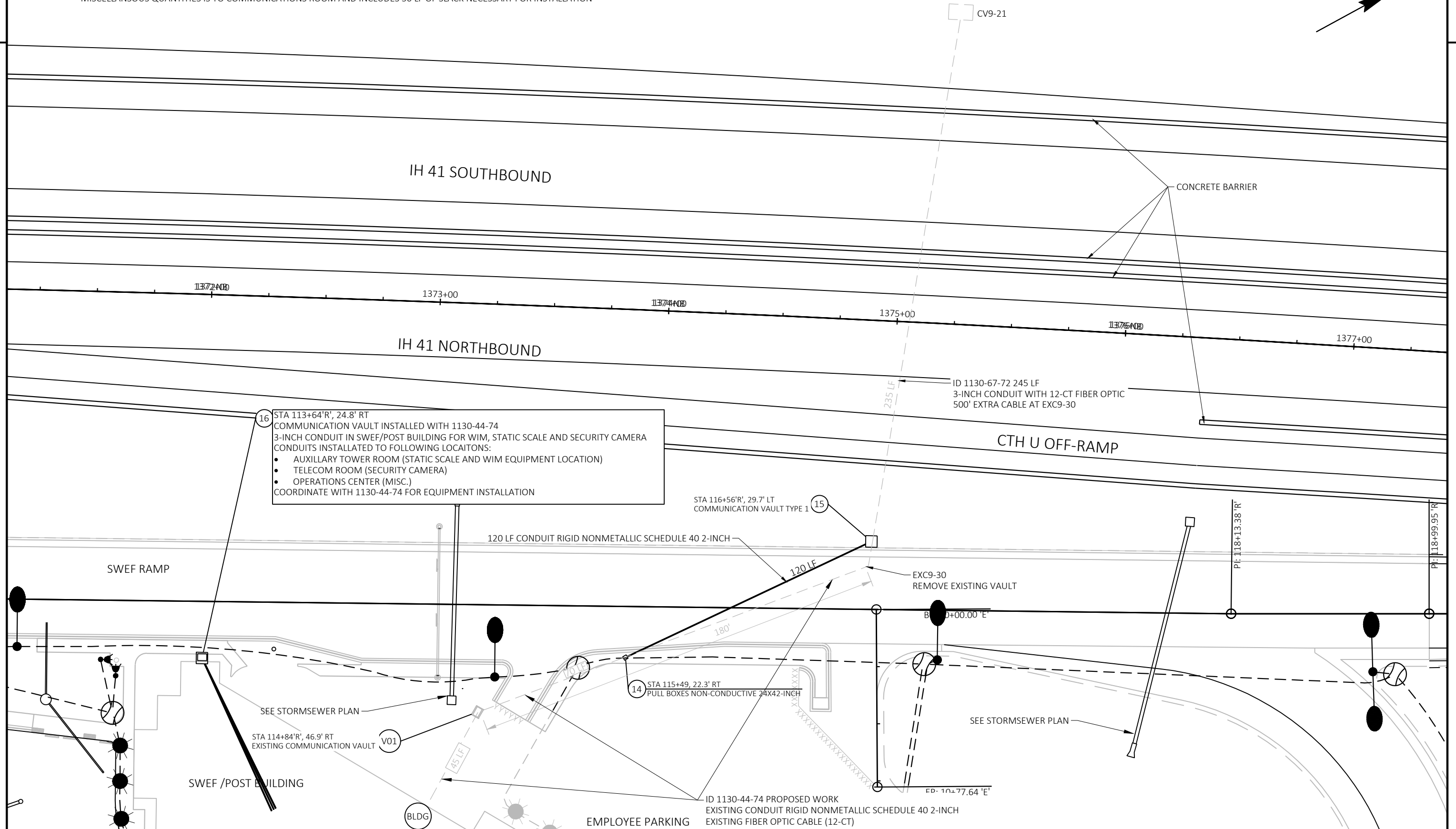
PLOT DATE : 3/24/2025 2:26 PM

PLOT BY : JON BLOMQUIST

PLOT NAME :

PLOT SCALE : 1"=50'

NOTE: EDGE OF BUILDING TO COMMUNICATIONS ROOM ESTIMATED TO BE 60 LF. "BLDG" STRUCTURE LISTED IN MISCELLANEOUS QUANTITIES IS TO COMMUNICATIONS ROOM AND INCLUDES 50 LF OF SLACK NECESSARY FOR INSTALLATION



PROJECT NO: 1130-44-75

HWY: IH 41

COUNTY: OUTAGAMIE

FIBER OPTIC COMMUNICATIONS UTILITY PLAN

SHEET

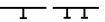
49

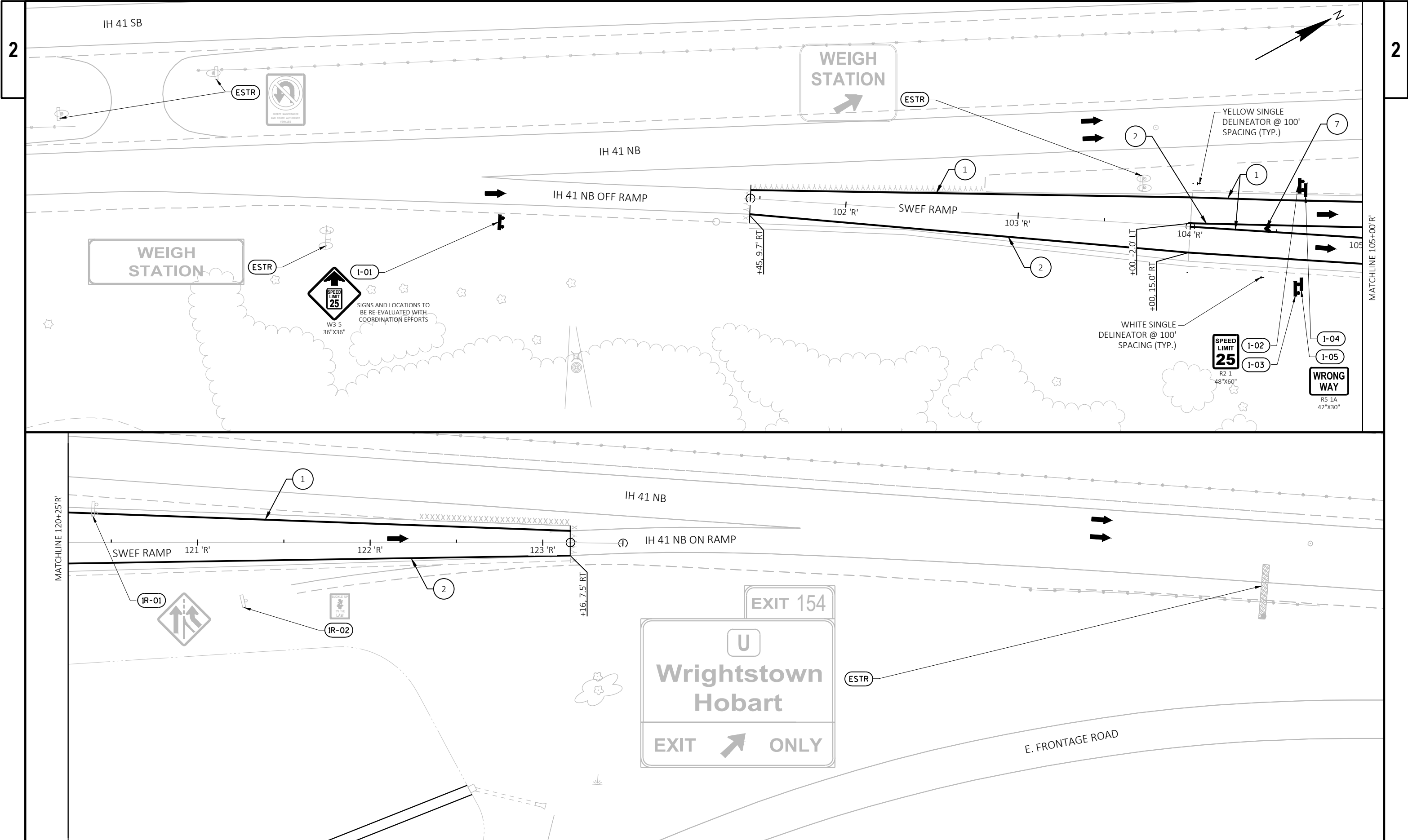
E

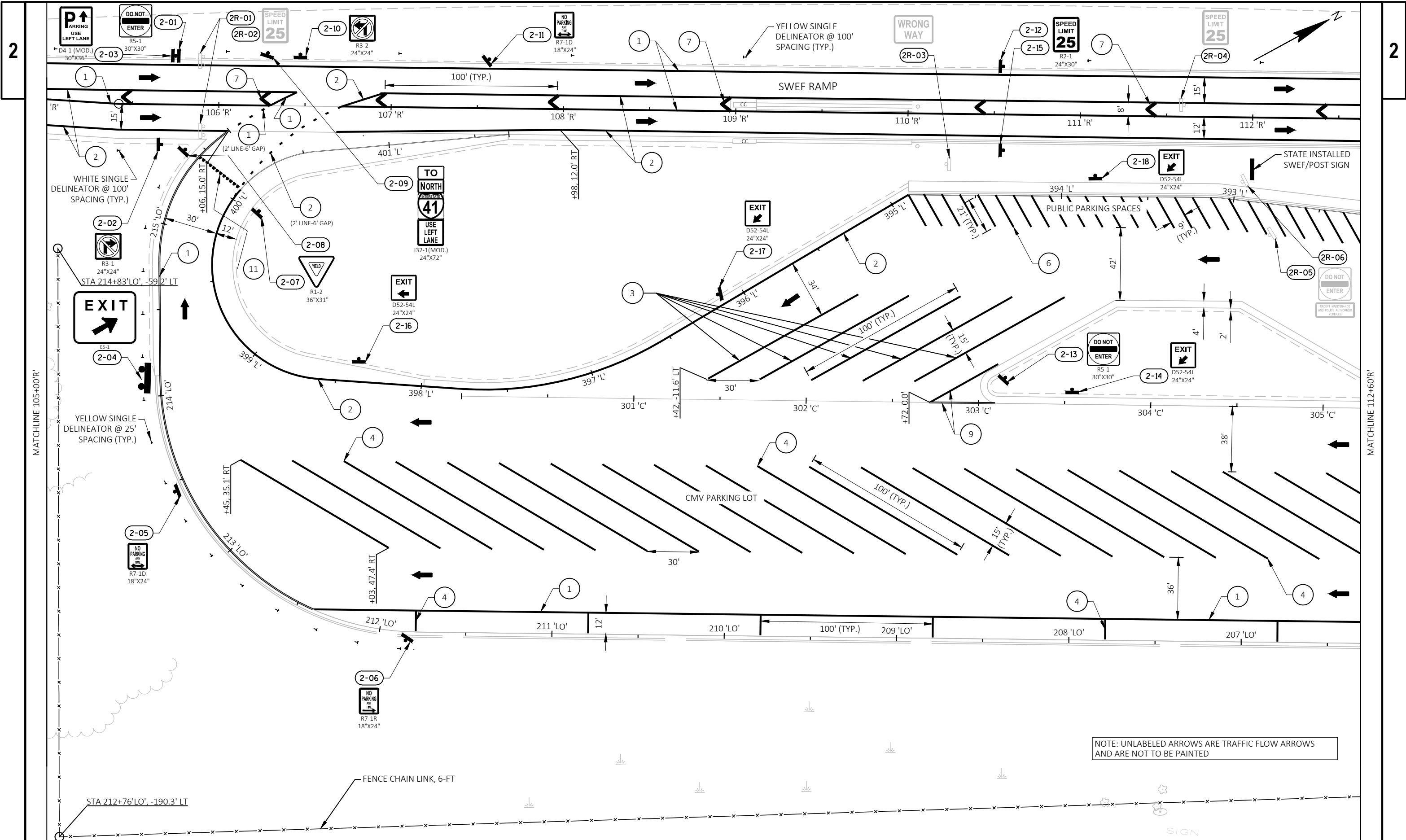
PAVEMENT MARKING LEGEND

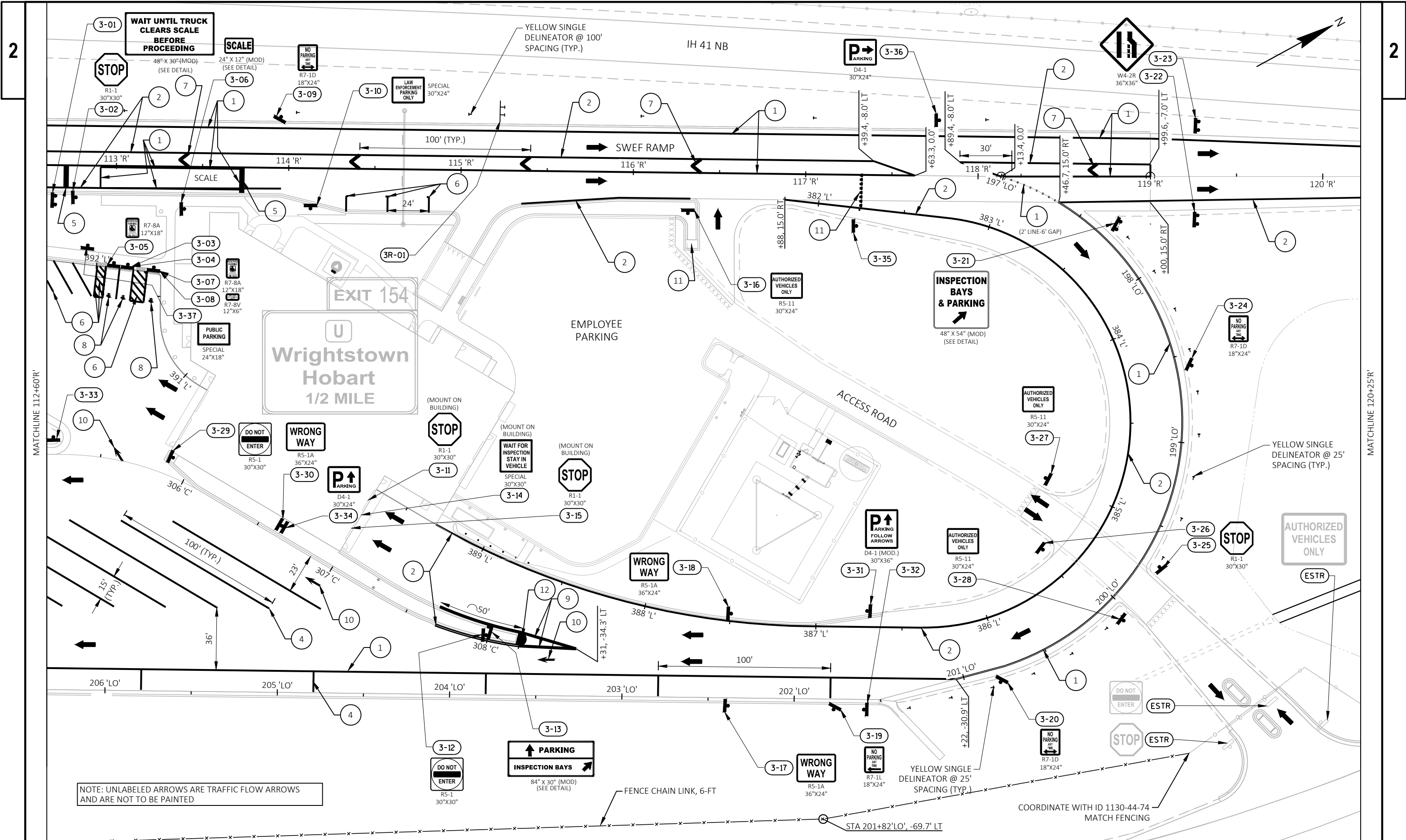
- ① PAVEMENT MARKING EPOXY 6-INCH (YELLOW)
- ② PAVEMENT MARKING EPOXY 6-INCH (WHITE)
- ③ PAVEMENT MARKING EPOXY 6-INCH (RED)
- ④ PAVEMENT MARKING DIAGONAL EPOXY 6-INCH (WHITE)
- ⑤ PAVEMENT MARKING STOP LINE EPOXY 18-INCH (WHITE)
- ⑥ PAVEMENT MARKING PARKING STALL EPOXY (WHITE)
- ⑦ PAVEMENT MARKING CHEVRON EPOXY 24-INCH (WHITE)
- ⑧ MARKING SYMBOL EPOXY (WHITE)
- ⑨ PAVEMENT MARKING EPOXY 10-INCH (WHITE)
- ⑩ MARKING ARROW EPOXY (WHITE)
- ⑪ PAVEMENT MARKING YIELD LINE EPOXY 18-INCH (WHITE)
- ⑫ MARKING ISLAND NOSE EPOXY (YELLOW)

PERMANENT SIGNING LEGEND

-  EXISTING SIGN MOUNTED ON POST(S)
-  PROPOSED SIGN MOUNTED ON POST(S)
-  PROPOSED SIGN MOUNTED ON STEEL SUPPORT(S)
-  DENOTES SIGN NUMBER
-  DENOTES SIGN NUMBER TO BE REMOVED
-  DENOTES SIGN NUMBER TO BE MOVED
-  EXISTING SIGN TO REMAIN
- XX" x XX" INDICATES SIGN SIZE
-  SINGLE/ DOUBLE DELINEATOR
-  TRAFFIC FLOW ARROW



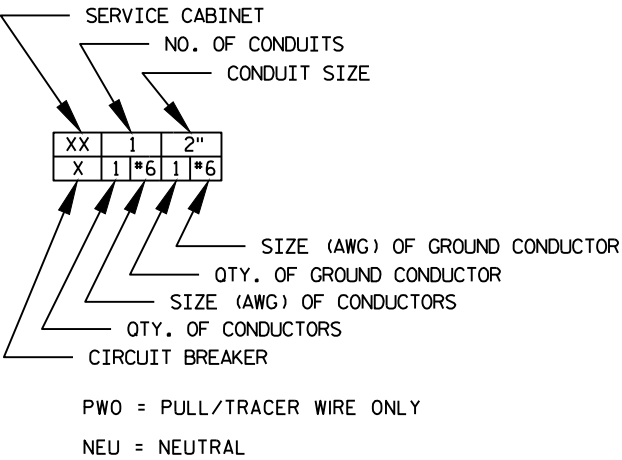




GENERAL STREET LIGHTING NOTES:

- 1) THE ENGINEER SHALL APPROVE THE FINAL LOCATION FOR ALL CONCRETE BASES IN THE FIELD PRIOR TO CONSTRUCTION.
- 2) THE LOCATION OF EXISTING AND PROPOSED UTILITIES AS SHOWN ON THE PLANS ARE APPROXIMATE. IN ADDITION, THERE MAY BE OTHER UTILITIES WITHIN THE PROJECT AREA WHICH ARE NOT SHOWN. THE CONTRACTOR SHALL VERIFY THE LOCATIONS OF ALL UTILITIES PRIOR TO CONSTRUCTION.
- 3) NO SPLICES ALLOWED IN PULLBOXES.
- 4) PHOTOCONTROL ON LIGHTING CABINET.

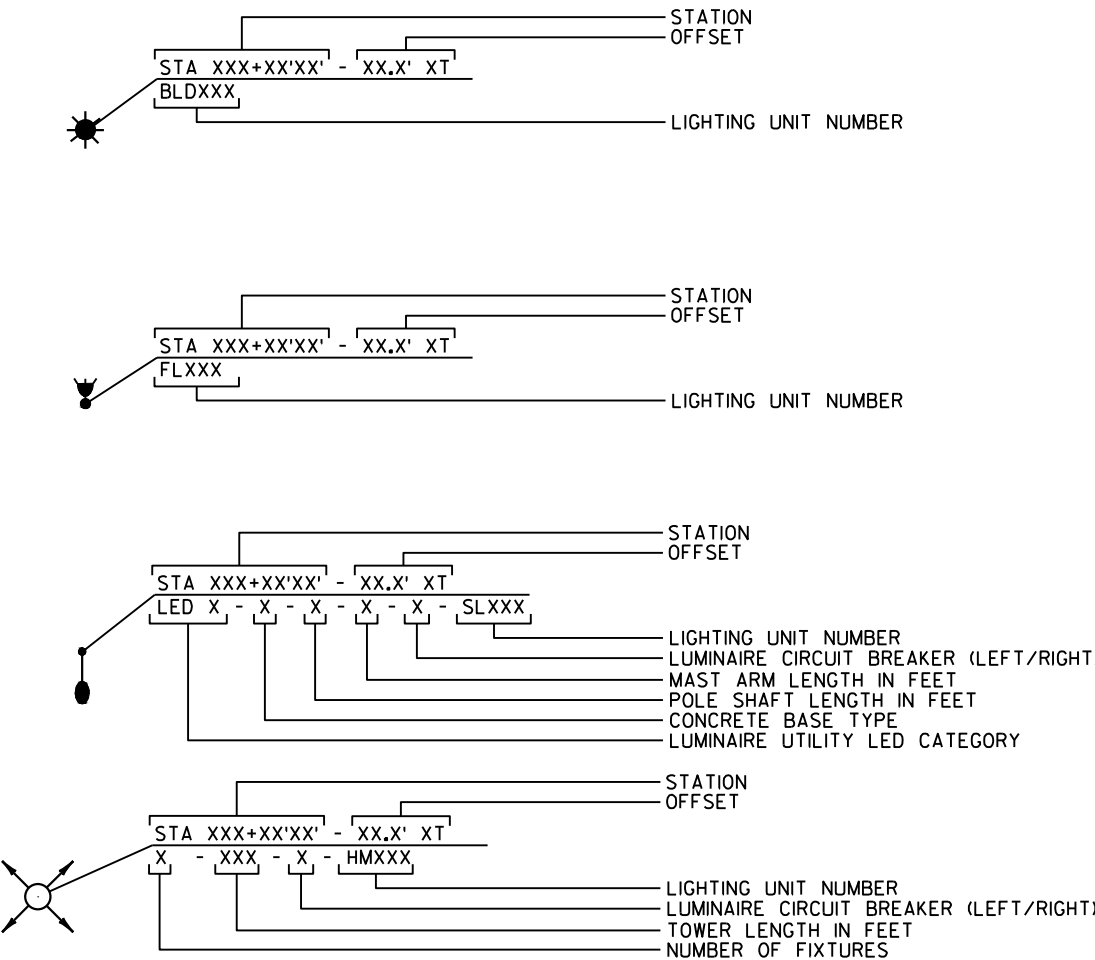
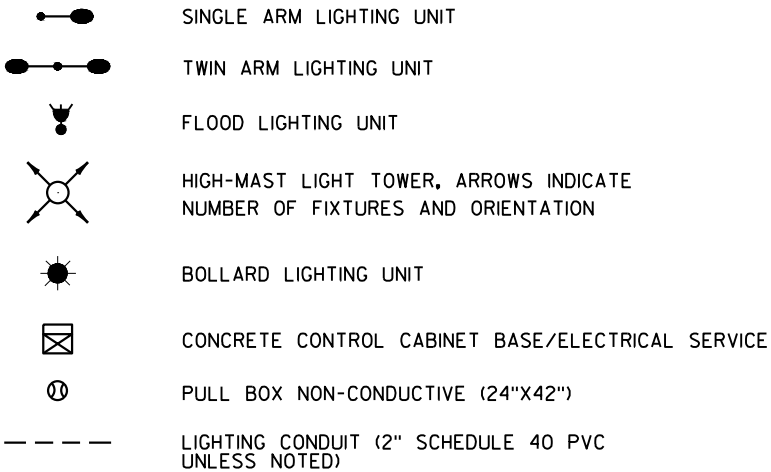
CONDUIT/CONDUCTOR LEGEND



CONDUCTOR COLOR LEGEND

CBI800	
STREET LIGHTING CONDUCTORS	
A	- BLACK
B	- RED
C	- BLUE
D	- BROWN
HIGH MAST LIGHTING CONDUCTORS	
E	- ORANGE
F	- YELLOW
240V PHASE TO PHASE	
BOLLARD LIGHTING CONDUCTORS	
G	- BLACK
H	- RED
120V PHASE TO NEUTRAL	
FLOOD LIGHTING CONDUCTORS	
I	- BLUE
120V PHASE TO NEUTRAL	

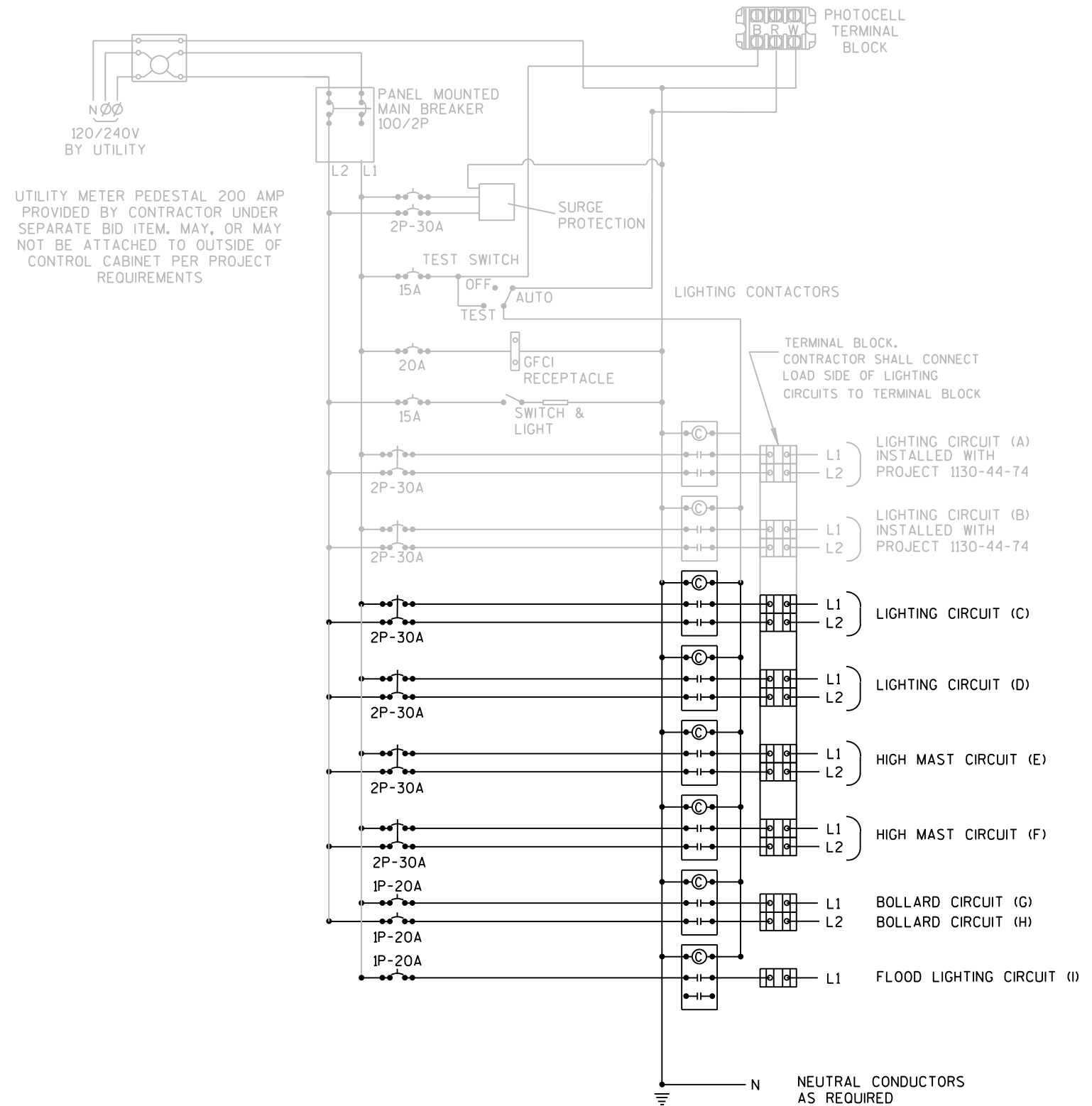
LEGEND:



GENERAL NOTES (APPLIES TO THIS CONSTRUCTION DETAIL)

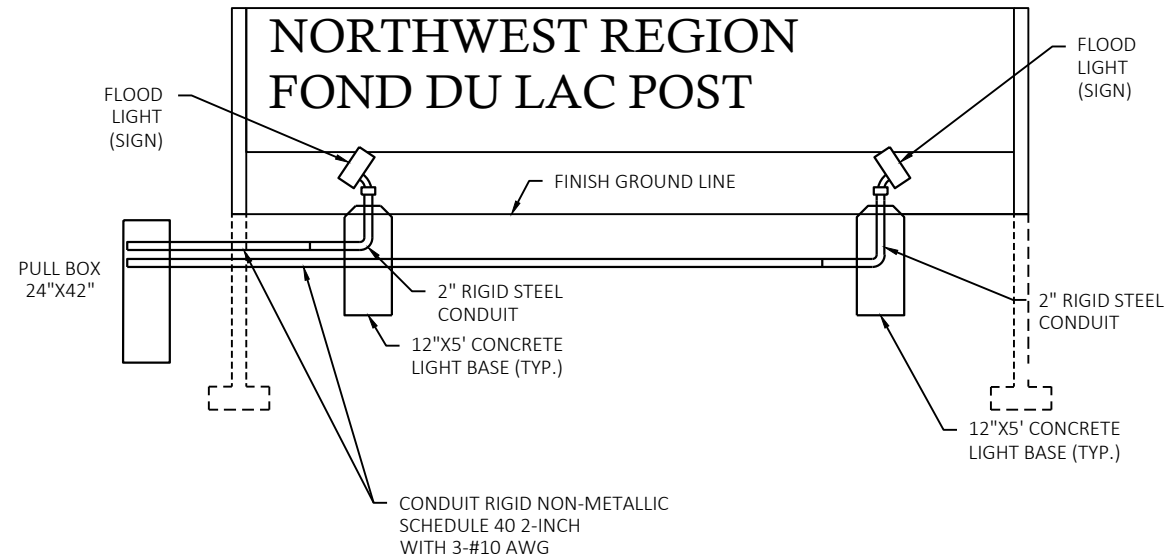
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

A COMPLETE LIGHTING OR ELECTRICAL PLAN SHALL BE SECURELY PLACED IN THE DOCUMENT HOLDER ATTACHED TO THE DOOR.
LIGHTING CONTROL CABINET INSTALLED WITH PROJECT ID 1130-67-72.

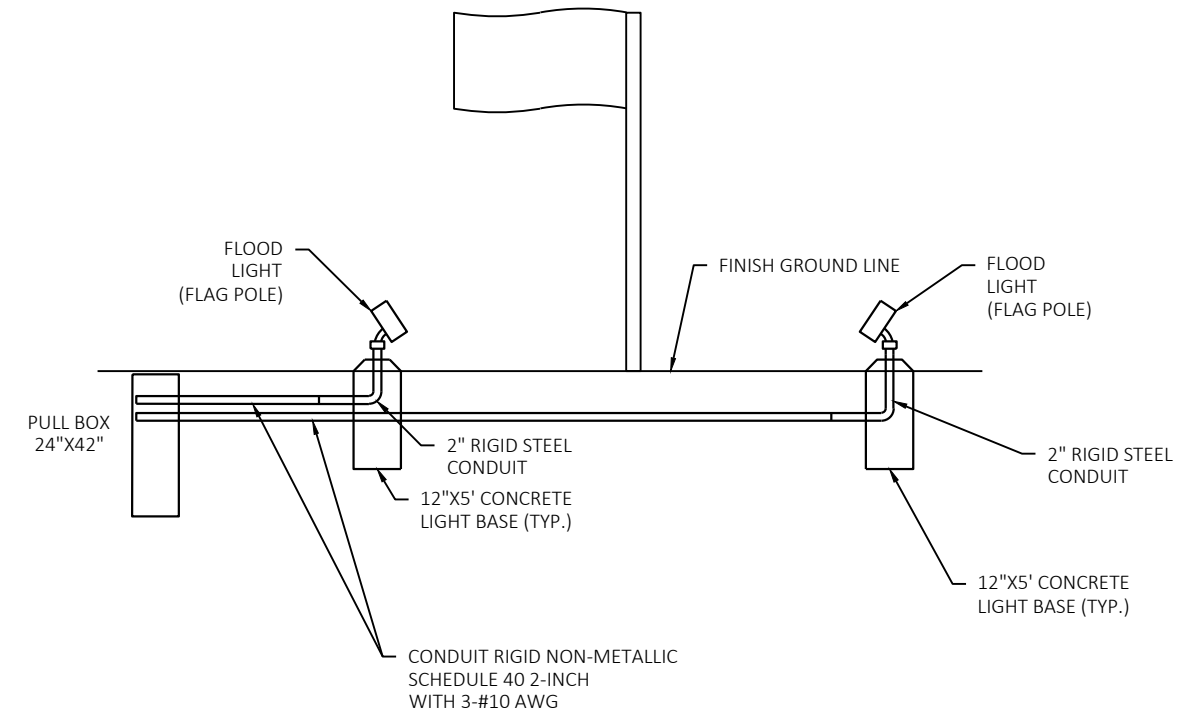


LIGHTING CONTROL CABINET - SCHEMATICS
CB1800 659.2130

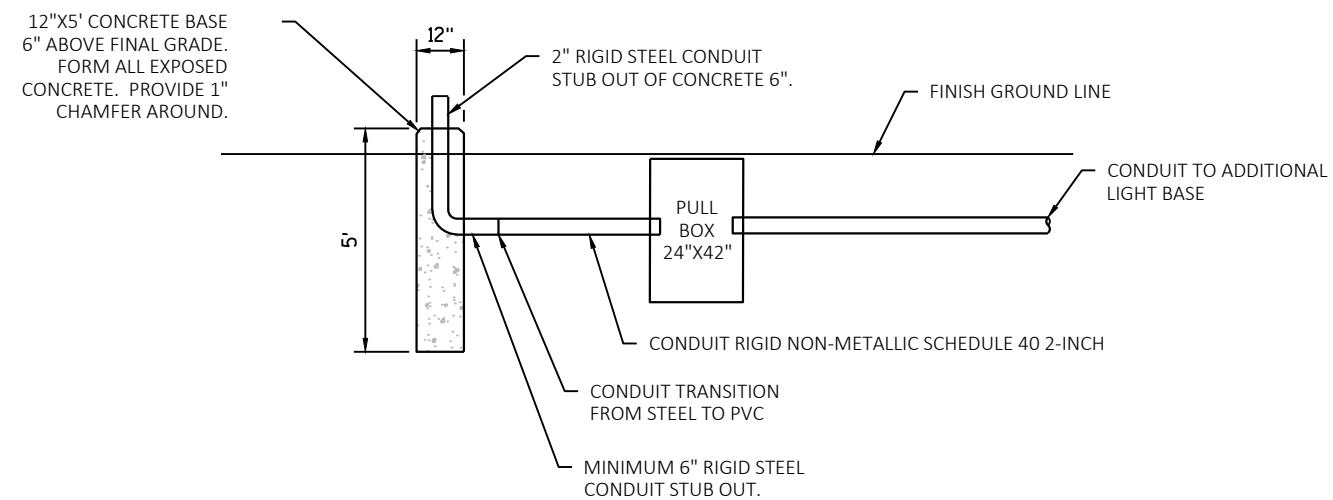
SHEET 2 OF 9



FLOOD LIGHT (SIGN) DETAIL
NOT TO SCALE



FLOOD LIGHT (FLAG POLE) DETAIL
NOT TO SCALE



FLOOD LIGHT BASE DETAIL (TYP.)
NOT TO SCALE

CONSTRUCTION NOTES:

- 1) SIGN AND FLAG POLE TO BE INSTALLED BY OTHERS.
- 2) RIGID METALLIC CONDUIT, CONCRETE BASE, AND LUMINAIRE ARE ALL INCIDENTAL TO THE FLOOD LIGHT (TYPE) BID ITEM

SHEET 3 OF 9

PROJECT NO: 1130-44-75

HWY: IH 41

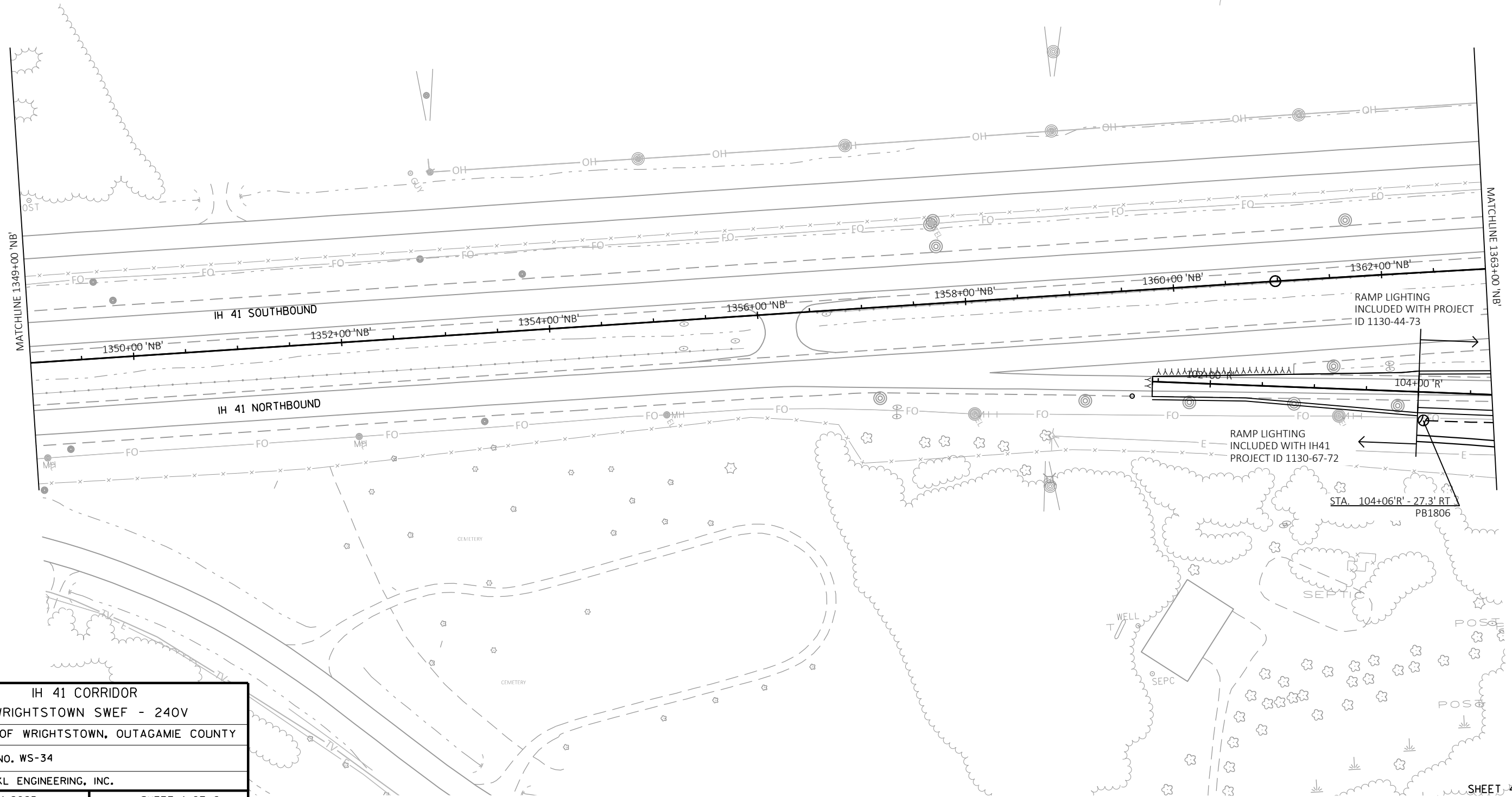
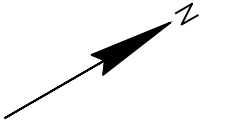
COUNTY: OUTAGAMIE

LIGHTING PLAN

SHEET

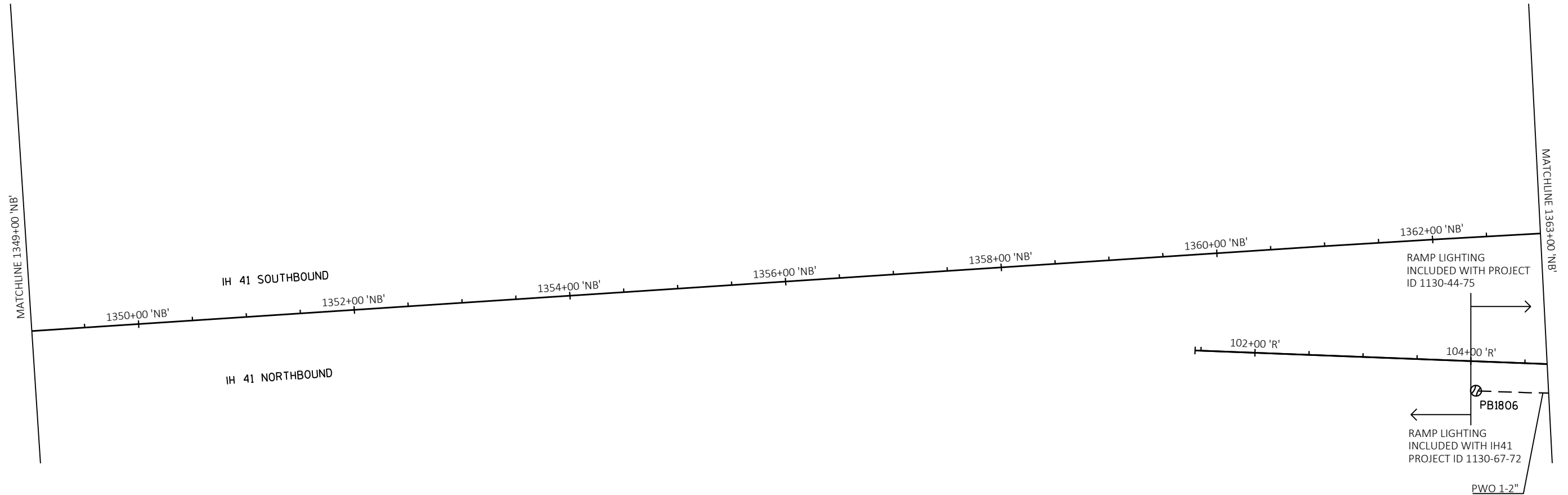
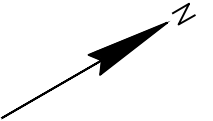
56

E



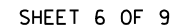
IH 41 CORRIDOR	
WRIGHTSTOWN SWEF - 240V	
VILLAGE OF WRIGHTSTOWN, OUTAGAMIE COUNTY	
LIGHTING NO. WS-34	
DESIGNER: KL ENGINEERING, INC.	
DATE: 02-01-2025	SHEET 1 OF 6

PROJECT NO: 1130-44-75	HWY: IH 41	COUNTY: OUTAGAMIE	LIGHTING PLAN	SHEET 57	E
------------------------	------------	-------------------	---------------	----------	---



IH 41 CORRIDOR	
WRIGHTSTOWN SWEF - 240V	
VILLAGE OF WRIGHTSTOWN, OUTAGAMIE COUNTY	
LIGHTING NO. WS-34	
DESIGNER: KL ENGINEERING, INC.	
DATE: 02-01-2025	SHEET 2 OF 6

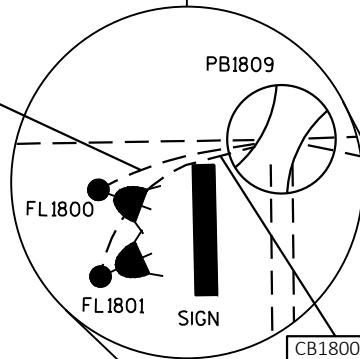
PROJECT NO: 1130-44-75	HWY: IH 41	COUNTY: OUTAGAMIE	LIGHTING PLAN	SHEET 58	E
------------------------	------------	-------------------	---------------	----------	---



CONSTRUCTION NOTES:

1) ITEMS SHOWN IN GRAY INSTALLED WITH 1130-44-74.

CB1800	1	2"
I	2	#10 2 #10
NEU	2	#10 -- --



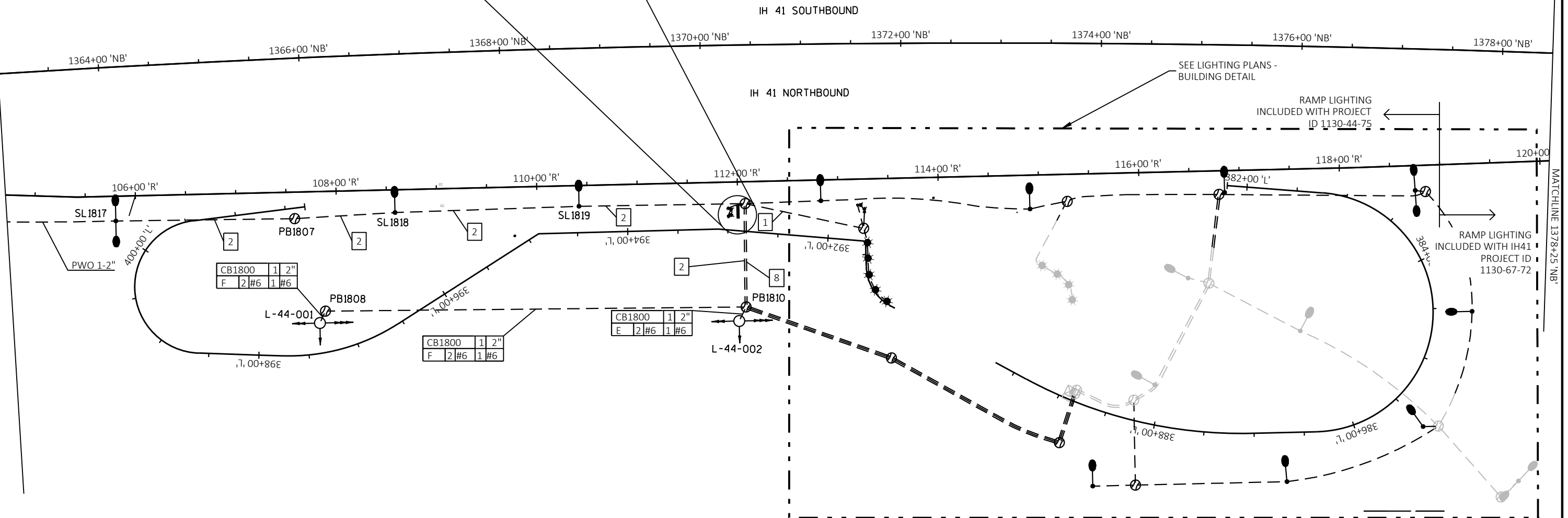
CB1800	1	2"
I	1	#10 1 #10
NEU	1	#10 -- --

1	=	CB1800	1	2"
		G	1	#10 1 #10
		NEU	1	#10 -- --

2	=	CB1800	1	2"
		C	2	#8 1 #8
		D	2	#8 -- --

8	=	CB1800	1	2"
		G	1	#10 1 #10
		NEU	1	#10 -- --
		I	1	#10 1 #10
		NEU	1	#10 -- --

MATCHLINE 1363+00 'NB'



MATCHLINE 1378+25 'NB'

IH 41 CORRIDOR	
WRIGHTSTOWN SWEF - 240V	
VILLAGE OF WRIGHTSTOWN, OUTAGAMIE COUNTY	
LIGHTING NO. WS-34	
DESIGNER: KL ENGINEERING, INC.	
DATE: 02-01-2025	SHEET 4 OF 6

PROJECT NO: 1130-44-75	HWY: IH 41	COUNTY: OUTAGAMIE	LIGHTING PLAN	SHEET 7 OF 9	SHEET 60	E
------------------------	------------	-------------------	---------------	--------------	----------	---

FILE NAME : G:\WDOTCO\22052-000 (WRIGHTSTOWN SWEF FINAL)\C3D_75\SHEETSPLAN\023601-LP.DWG
LAYOUT NAME - 02 (A)

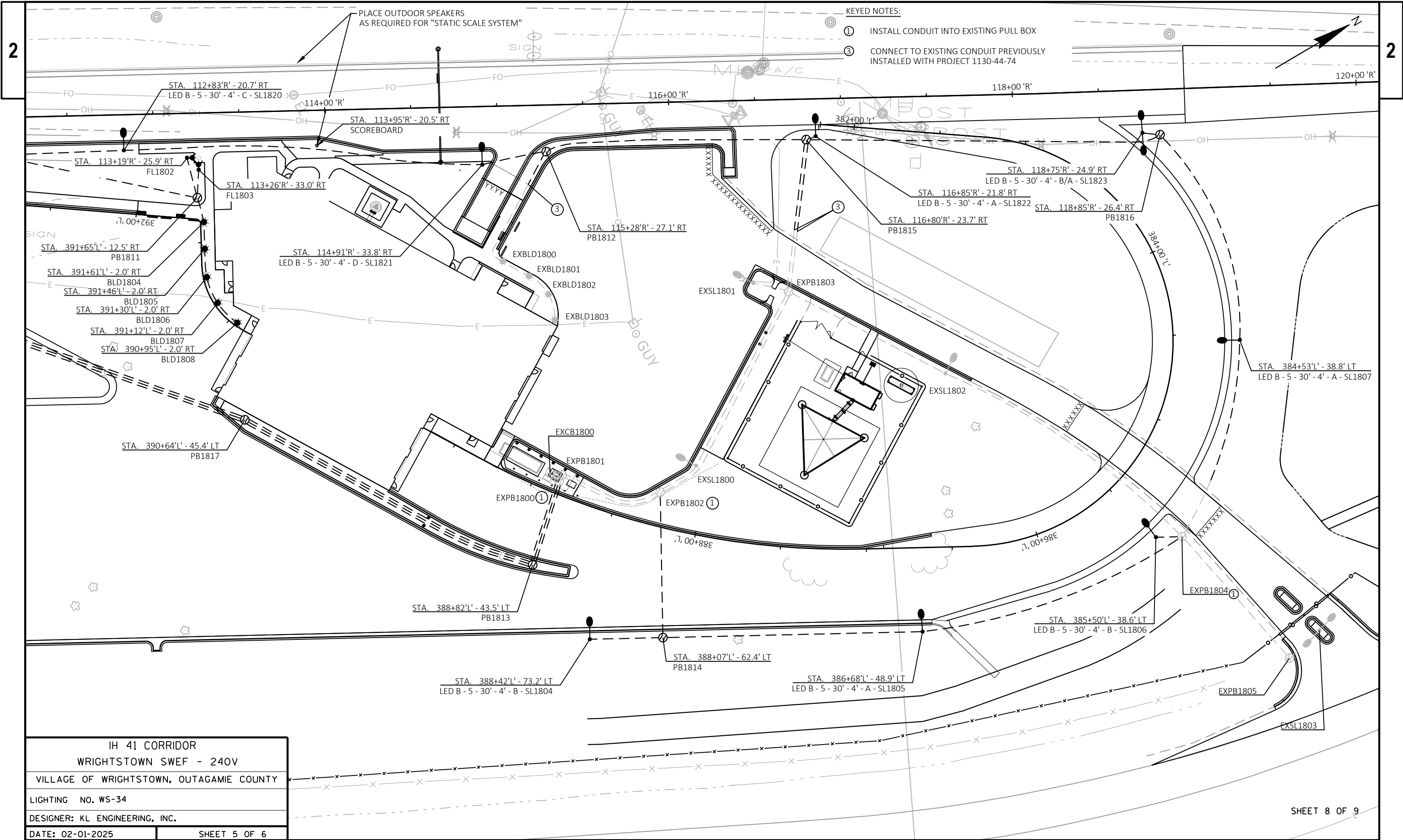
PLOT DATE : 3/26/2025 10:39 AM

PLOT BY : KL ENGINEERING

PLOT NAME :

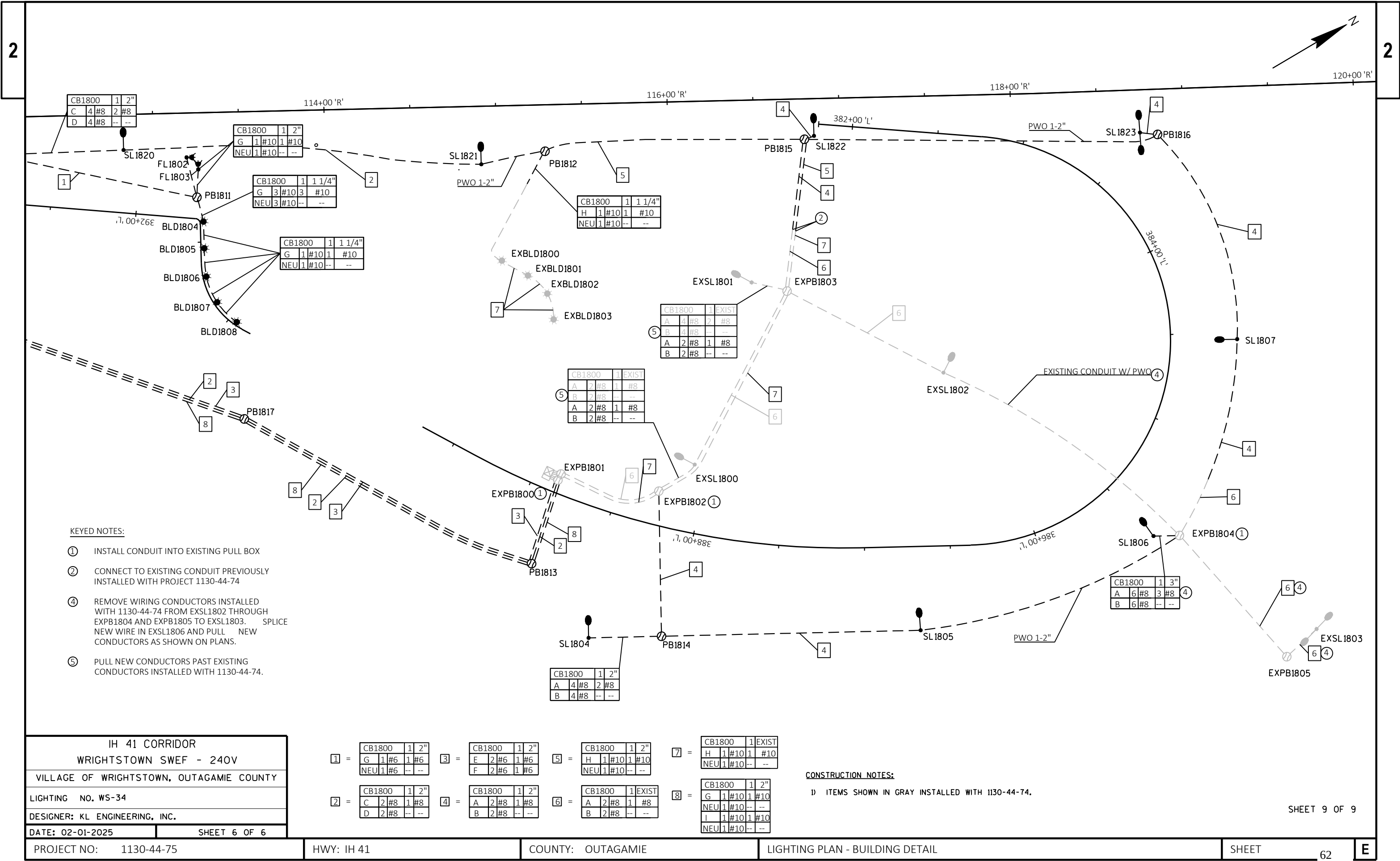
PLOT SCALE : 1 IN:100 FT

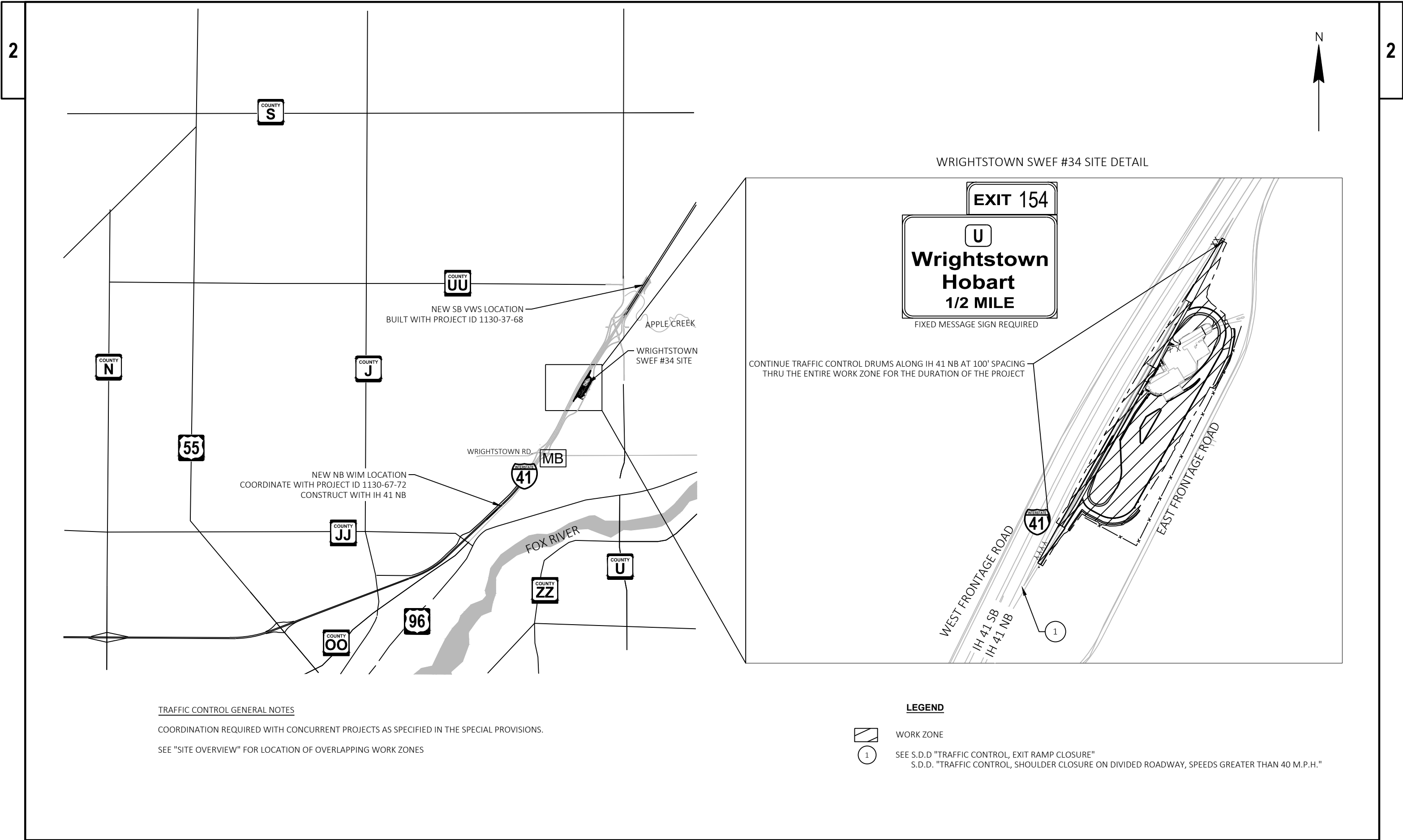
WISDOT/CADDs SHEET 42

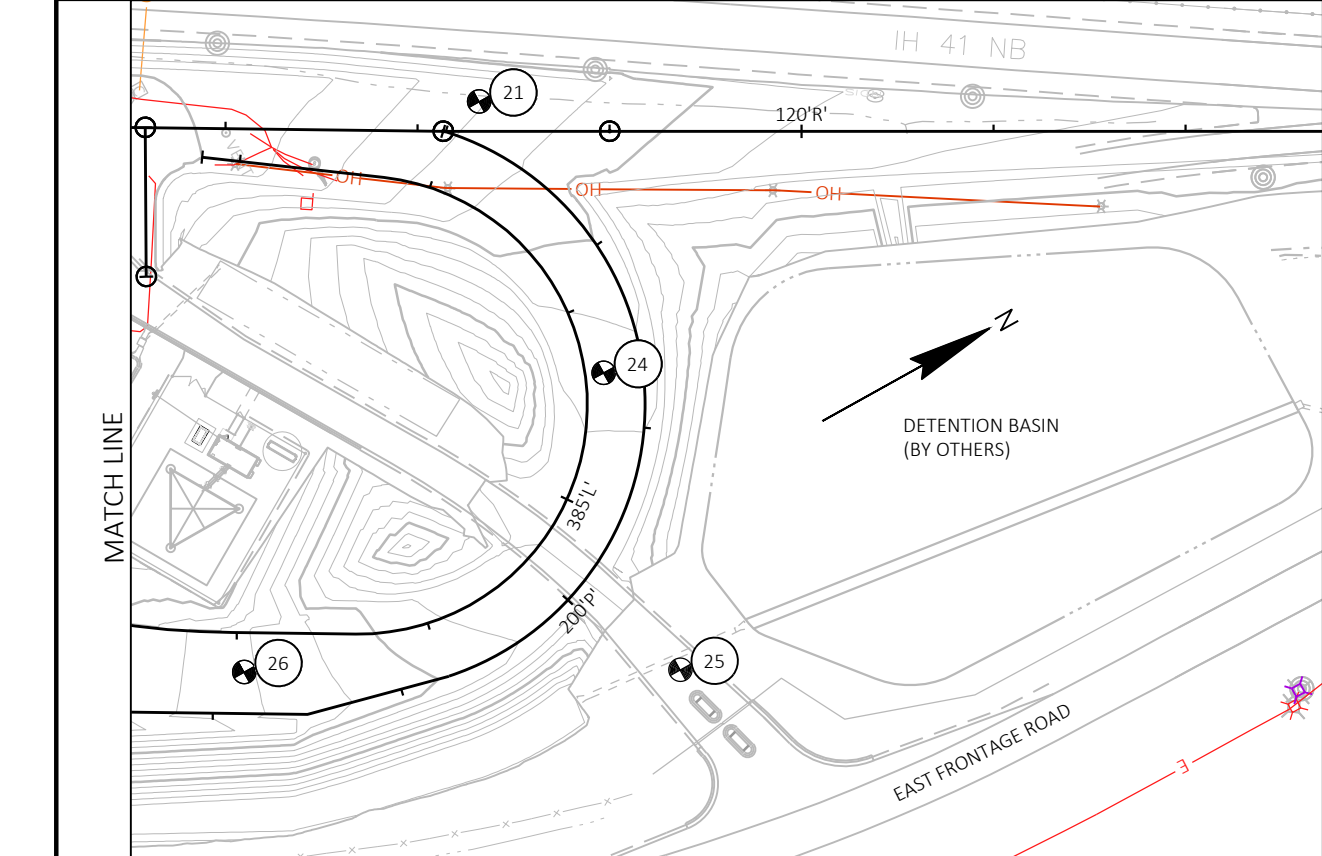
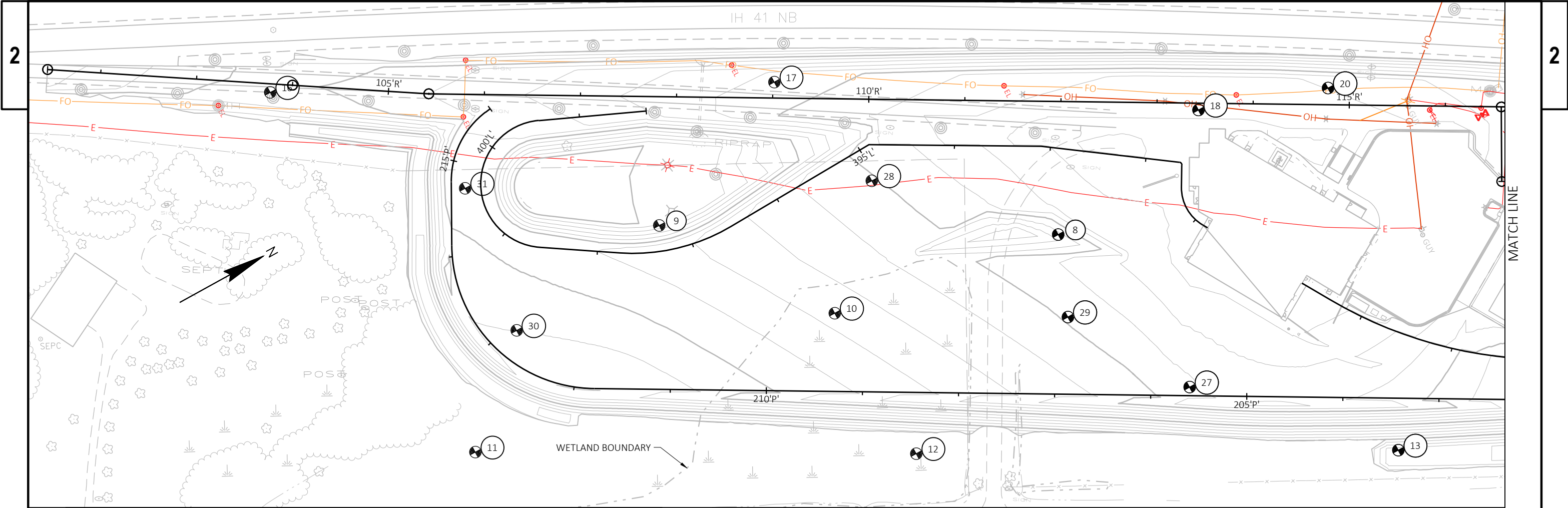


IH 41 CORRIDOR	
WRIGHTSTOWN SWEF - 240V	
VILLAGE OF WRIGHTSTOWN, OUTAGAMIE COUNTY	
LIGHTING NO. WS-34	
DESIGNER: KL ENGINEERING, INC.	
DATE: 02-01-2025	SHEET 5 OF 6

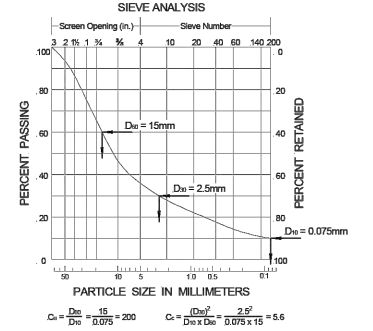
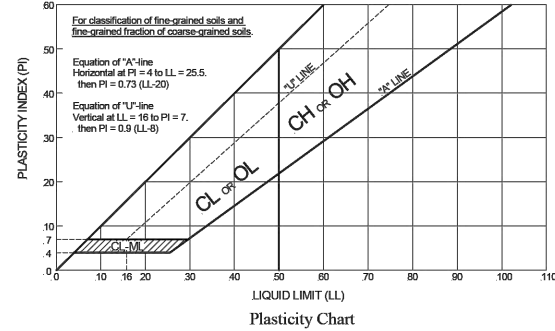
PROJECT NO: 1130-44-75	HWY: IH 41	COUNTY: OUTAGAMIE	LIGHTING PLAN - BUILDING DETAIL	SHEET 61	E
------------------------	------------	-------------------	---------------------------------	----------	---







Boring Summary				
Number	Northing	Easting	Elevation	Description
8	590743.0454	881273.1799	684.27	40' High Mast Lighting Foundation
9	590383.0118	881066.1720	680.25	40' High Mast Lighting Foundation
10	590499.6956	881233.6945	678.06	20' Subgrade Design
11	590102.0705	881181.6297	677.62	20' Drainage Pond
12	590504.1948	881402.5949	676.10	20' Drainage Pond
13	590946.3998	881639.5504	679.13	20' Drainage Pond
16	590093.8593	880750.8752	684.44	20' Subgrade Design
17	590559.5469	880992.4708	684.71	20' Subgrade Design
18	590933.1597	881229.2213	686.87	30' Scale Pit
20	591062.4815	881273.7455	685.11	20' Subgrade Design
21	591370.5994	881448.5130	681.87	20' Subgrade Design
24	591359.9700	881603.5688	684.70	20' Subgrade Design
25	591320.9823	881758.4157	676.59	20' Subgrade Design
26	591120.9482	881650.7284	680.53	20' Subgrade Design
27	590787.1112	881477.9916	681.81	20' Subgrade Design
28	590599.5083	881131.2084	681.10	20' Subgrade Design
29	590710.7816	881353.3379	679.88	20' Subgrade Design
30	590200.4386	881091.0508	679.94	20' Subgrade Design
31	590224.1755	880935.6021	680.74	20' Subgrade Design

UNIFIED SOIL CLASSIFICATION SYSTEM ASTM Designations: D 2487, D2488						AMERICAN ENGINEERING TESTING, INC.																																															
Criteria for Assigning Group Symbols and Group Names Using Laboratory Tests ^A				Soil Classification		Notes																																															
				Group Symbol	Group Name ^B																																																
Coarse-Grained Soils More than 50% retained on No. 200 sieve	Gravels More than 50% coarse fraction retained on No. 4 sieve	Clean Gravels Less than 5% fines ^C	Cu≥4 and 1≤Cc≤3 ^E	GW	Well graded gravel ^F	^A Based on the material passing the 3-in (75-mm) sieve. ^B If field sample contained cobbles or boulders, or both, add “with cobbles or boulders, or both” to group name. ^C Gravels with 5 to 12% fines require dual symbols: GW-GM well-graded gravel with silt GW-GC well-graded gravel with clay GP-GM poorly graded gravel with silt GP-GC poorly graded gravel with clay ^D Sands with 5 to 12% fines require dual symbols: SW-SM well-graded sand with silt SW-SC well-graded sand with clay SP-SM poorly graded sand with silt SP-SC poorly graded sand with clay ^E Cu = D ₆₀ /D ₁₀ , Cc = $\frac{(D_{30})^2}{D_{10} \times D_{60}}$ ^F If soil contains ≥15% sand, add “with sand” to group name. ^G If fines classify as CL-ML, use dual symbol GC-GM, or SC-SM. ^H If fines are organic, add “with organic fines” to group name. ^I If soil contains ≥15% gravel, add “with gravel” to group name. ^J If Atterberg limits plot is hatched area, soils is a CL-ML silty clay. ^K If soil contains 15 to 29% plus No. 200 add “with sand” or “with gravel”, whichever is predominant. ^L If soil contains ≥30% plus No. 200, predominantly sand, add “sandy” to group name. ^M If soil contains ≥30% plus No. 200, predominantly gravel, add “gravelly” to group name. ^N PI≥4 and plots on or above “A” line. ^O PI<4 or plots below “A” line. ^P PI plots on or above “A” line. ^Q PI plots below “A” line. ^R Fiber Content description shown below.																																															
		Gravels with Fines more than 12% fines ^C	Fines classify as ML or MH	GM	Silty gravel ^{F,G,H}																																																
	Sands 50% or more of coarse fraction passes No. 4 sieve	Clean Sands Less than 5% fines ^D	Cu≥6 and 1≤Cc≤3 ^E	SW	Well-graded sand ^I																																																
			Cu<6 and 1>Cc>3 ^E	SP	Poorly-graded sand ^I																																																
		Sands with Fines more than 12% fines ^D	Fines classify as ML or MH	SM	Silty sand ^{G,H,I}																																																
			Fines classify as CL or CH	SC	Clayey sand ^{G,H,I}																																																
Fine-Grained Soils 50% or more passes the No. 200 sieve (see Plasticity Chart below)	Silts and Clays Liquid limit less than 50	inorganic	PI>7 and plots on or above “A” line ^e	CL	Lean clay ^{K,L,M}																																																
			PI<4 or plots below “A” line ^e	ML	Silt ^{K,L,M}																																																
		organic	Liquid limit – oven dried <0.75 Liquid limit – not dried	OL	Organic clay ^{K,L,M,N} Organic silt ^{K,L,M,O}																																																
	Silts and Clays Liquid limit 50 or more	inorganic	PI plots on or above “A” line	CH	Fat clay ^{K,L,M}																																																
			PI plots below “A” line	MH	Elastic silt ^{K,L,M}																																																
		organic	Liquid limit – oven dried <0.75 Liquid limit – not dried	OH	Organic clay ^{K,L,M,P} Organic silt ^{K,L,M,Q}																																																
Highly organic soil			Primarily organic matter, dark in color, and organic in odor	PT	Peat ^R																																																
SIEVE ANALYSIS  For classification of fine-grained soils and fine-grained fraction of coarse-grained soils: Equation of “A”-line Horizontal at PI = 4 to LL = 25.5, then PI = 0.73 (LL-20) Equation of “U”-line Vertical at LL = 16 to PI = 7, then PI = 0.9 (LL-8) 							ADDITIONAL TERMINOLOGY NOTES USED BY AET FOR SOIL IDENTIFICATION AND DESCRIPTION																																														
<table><tr><th>Term</th><th>Grain Size Particle Size</th></tr><tr><td>Boulders</td><td>Over 12"</td></tr><tr><td>Cobbles</td><td>3" to 12"</td></tr><tr><td>Gravel</td><td>#4 sieve to 3"</td></tr><tr><td>Sand</td><td>#200 to #4 sieve</td></tr><tr><td>Fines (silt & clay)</td><td>Pass #200 sieve</td></tr></table>		Term	Grain Size Particle Size	Boulders	Over 12"	Cobbles	3" to 12"	Gravel	#4 sieve to 3"	Sand	#200 to #4 sieve	Fines (silt & clay)	Pass #200 sieve	<table><tr><th>Term</th><th>Gravel Percentages Percent</th></tr><tr><td>A Little Gravel</td><td>3% - 14%</td></tr><tr><td>With Gravel</td><td>15% - 29%</td></tr><tr><td>Gravelly</td><td>30% - 50%</td></tr></table>		Term	Gravel Percentages Percent	A Little Gravel	3% - 14%	With Gravel	15% - 29%	Gravelly	30% - 50%	<table><tr><th>Term</th><th>Consistency of Plastic Soils N-Value, BPF</th></tr><tr><td>Very Soft</td><td>less than 2</td></tr><tr><td>Soft</td><td>2 - 4</td></tr><tr><td>Firm</td><td>5 - 8</td></tr><tr><td>Stiff</td><td>9 - 15</td></tr><tr><td>Very Stiff</td><td>16 - 30</td></tr><tr><td>Hard</td><td>Greater than 30</td></tr></table>		Term	Consistency of Plastic Soils N-Value, BPF	Very Soft	less than 2	Soft	2 - 4	Firm	5 - 8	Stiff	9 - 15	Very Stiff	16 - 30	Hard	Greater than 30	<table><tr><th>Term</th><th>Relative Density of Non-Plastic Soils N-Value, BPF</th></tr><tr><td>Very Loose</td><td>0 - 4</td></tr><tr><td>Loose</td><td>5 - 10</td></tr><tr><td>Medium Dense</td><td>11 - 30</td></tr><tr><td>Dense</td><td>31 - 50</td></tr><tr><td>Very Dense</td><td>Greater than 50</td></tr></table>		Term	Relative Density of Non-Plastic Soils N-Value, BPF	Very Loose	0 - 4	Loose	5 - 10	Medium Dense	11 - 30	Dense	31 - 50	Very Dense	Greater than 50
Term	Grain Size Particle Size																																																				
Boulders	Over 12"																																																				
Cobbles	3" to 12"																																																				
Gravel	#4 sieve to 3"																																																				
Sand	#200 to #4 sieve																																																				
Fines (silt & clay)	Pass #200 sieve																																																				
Term	Gravel Percentages Percent																																																				
A Little Gravel	3% - 14%																																																				
With Gravel	15% - 29%																																																				
Gravelly	30% - 50%																																																				
Term	Consistency of Plastic Soils N-Value, BPF																																																				
Very Soft	less than 2																																																				
Soft	2 - 4																																																				
Firm	5 - 8																																																				
Stiff	9 - 15																																																				
Very Stiff	16 - 30																																																				
Hard	Greater than 30																																																				
Term	Relative Density of Non-Plastic Soils N-Value, BPF																																																				
Very Loose	0 - 4																																																				
Loose	5 - 10																																																				
Medium Dense	11 - 30																																																				
Dense	31 - 50																																																				
Very Dense	Greater than 50																																																				
<table><tr><th>Moisture/Frost Condition (MC Column)</th></tr><tr><td>D (Dry):</td><td>Absence of moisture, dusty, dry to touch.</td></tr><tr><td>M (Moist):</td><td>Damp, although free water not visible. Soil may still have a high water content (over “optimum”).</td></tr><tr><td>W (Wet/ Waterbearing):</td><td>Free water visible intended to describe non-plastic soils. Waterbearing usually relates to sands and sand with silt.</td></tr><tr><td>F (Frozen):</td><td>Soil frozen</td></tr></table>		Moisture/Frost Condition (MC Column)	D (Dry):	Absence of moisture, dusty, dry to touch.	M (Moist):	Damp, although free water not visible. Soil may still have a high water content (over “optimum”).	W (Wet/ Waterbearing):	Free water visible intended to describe non-plastic soils. Waterbearing usually relates to sands and sand with silt.	F (Frozen):	Soil frozen	<table><tr><th>Layering Notes</th></tr><tr><td>Laminations:</td><td>Layers less than ½" thick of differing material or color.</td></tr><tr><td>Lenses:</td><td>Pockets or layers greater than ½" thick of differing material or color.</td></tr></table>		Layering Notes	Laminations:	Layers less than ½" thick of differing material or color.	Lenses:	Pockets or layers greater than ½" thick of differing material or color.	<table><tr><th>Peat Description</th></tr><tr><td>Term</td><td>Fiber Content (Visual Estimate)</td></tr><tr><td>Fibric Peat:</td><td>Greater than 67%</td></tr><tr><td>Hemic Peat:</td><td>33 – 67%</td></tr><tr><td>Sapric Peat:</td><td>Less than 33%</td></tr></table>		Peat Description	Term	Fiber Content (Visual Estimate)	Fibric Peat:	Greater than 67%	Hemic Peat:	33 – 67%	Sapric Peat:	Less than 33%	<table><tr><th>Organic Description (if no lab tests)</th></tr><tr><td colspan="2">Soils are described as <i>organic</i>, if soil is not peat and is judged to have sufficient organic fines content to influence the Liquid Limit properties. <i>Slightly organic</i> used for borderline cases.</td></tr><tr><td colspan="2">Root Inclusions</td></tr><tr><td>With roots:</td><td>Judged to have sufficient quantity of roots to influence the soil properties.</td></tr><tr><td>Trace roots:</td><td>Small roots present, but not judged to be in sufficient quantity to significantly affect soil properties.</td></tr></table>		Organic Description (if no lab tests)	Soils are described as <i>organic</i> , if soil is not peat and is judged to have sufficient organic fines content to influence the Liquid Limit properties. <i>Slightly organic</i> used for borderline cases.		Root Inclusions		With roots:	Judged to have sufficient quantity of roots to influence the soil properties.	Trace roots:	Small roots present, but not judged to be in sufficient quantity to significantly affect soil properties.														
Moisture/Frost Condition (MC Column)																																																					
D (Dry):	Absence of moisture, dusty, dry to touch.																																																				
M (Moist):	Damp, although free water not visible. Soil may still have a high water content (over “optimum”).																																																				
W (Wet/ Waterbearing):	Free water visible intended to describe non-plastic soils. Waterbearing usually relates to sands and sand with silt.																																																				
F (Frozen):	Soil frozen																																																				
Layering Notes																																																					
Laminations:	Layers less than ½" thick of differing material or color.																																																				
Lenses:	Pockets or layers greater than ½" thick of differing material or color.																																																				
Peat Description																																																					
Term	Fiber Content (Visual Estimate)																																																				
Fibric Peat:	Greater than 67%																																																				
Hemic Peat:	33 – 67%																																																				
Sapric Peat:	Less than 33%																																																				
Organic Description (if no lab tests)																																																					
Soils are described as <i>organic</i> , if soil is not peat and is judged to have sufficient organic fines content to influence the Liquid Limit properties. <i>Slightly organic</i> used for borderline cases.																																																					
Root Inclusions																																																					
With roots:	Judged to have sufficient quantity of roots to influence the soil properties.																																																				
Trace roots:	Small roots present, but not judged to be in sufficient quantity to significantly affect soil properties.																																																				

01CLS021 (01/08)

AMERICAN ENGINEERING TESTING, INC.



SUBSURFACE BORING LOG

AET No: P-0016383		Log of Boring No. B-06 (p. 1 of 2)											
Project: Project ID 1130-44-73; Wrightstown SWEF/Post; IH 41; Outagamie County													
DEPTH IN FEET	ELEV. FEET	Surface Elevation 686.6 MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS					
								WC	qp	LL	PL	%-#200	
1	686.1	SILTY SAND with organics, fine grained, dark brown, moist (SM)	TOPSOIL GLACIO-LACUSTRINE DEPOSITS	5	M	SS	14						
2	684.6	SILTY SAND, fine to medium grained, brown, moist, loose, with trace organics (SM)		21	M	SS	20						
3		SAND WITH SILT, fine grained, brown, moist, medium dense (SP-SM)		17	M	SS	22						
4													
5													
6													
7	679.6												
8		SILTY SAND, fine grained, brown, moist to waterbearing, loose (SM)		7	M	SS	20						
9													
10													
11				5	M	SS	24						
12													
13				7	M	SS	17						
14	672.1												
15		SAND, fine grained, brown, waterbearing, loose (SP)		8	W	SS	14						
16													
17													
18													
19													
20													
21				5	W	SS	17						
22													
23	663.6												
		SAND, fine to medium grained, brown, waterbearing, loose (SP)											
DEPTH: DRILLING METHOD		WATER LEVEL MEASUREMENTS							NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG				
0-48.0' 3.25" HSA		DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL					
		9/7/22	1500	16.5	14.5	14.2	None	13.4					
		9/7/22	1510	16.5	14.5	13.8	None	13.0					
BORING COMPLETED: 9/7/22													
DR: MD LG: KS Rig: 57													
03/2011													01-DHR-060

AET CORP W-ELEV P-0016383.GPJ AET+CPT+WELL GDT 12/6/22



SUBSURFACE BORING LOG

AET No:		P-0016383		Log of Boring No.				B-06 (p. 2 of 2)					
Project:		Project ID 1130-44-73; Wrightstown SWEF/Post; IH 41; Outagamie County											
DEPTH IN FEET	ELEV. FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS					
								WC	qp	LL	PL	%-#200	
25		SAND, fine to medium grained, brown, waterbearing, loose (SP) (continued)		6	W		SS	16					
26													
27													
28													
29													
30		SAND, fine grained, brown, waterbearing, dense (SP)	GLACIO-LACUSTRINE DEPOSITS	7	W		SS	21					
31													
32													
33	653.6												
34													
35		Sandy LEAN CLAY, a little gravel, brown, hard (CL)	TILL	34	W		SS	20	10	>4.5			
36	650.7												
37		SAND, fine grained, brown, waterbearing, dense (SP)	GLACIO-LACUSTRINE DEPOSITS	648.6									
38													
39		Sandy LEAN CLAY, a little gravel, brown, hard, with lenses of sand (CL)	TILL	47	W		SS	20	13	>4.5			
40	646.1												
41		SAND WITH SILT, fine grained, brown, waterbearing, dense (SP-SM)	GLACIO-LACUSTRINE DEPOSITS	643.6									
42													
43		LEAN CLAY with sand, a little gravel, brown, hard (CL)	TILL	38	W		SS	34	13	3.75			
44													
45													
46													
47													
48		End of boring at 50.0 feet											
49													
50	636.6												

AET_CORP W-ELEV P-0016383.GPJ AET+CPT+WELL.GDT 12/6/22

03/2011

01-DHR-060

AET CORP W-ELEV P-0016383.GPJ AET+CPT+WELL GDT 12/6/22



SUBSURFACE BORING LOG

AET No:		P-0016383		Log of Boring No.										B-07 (p. 1 of 2)				
Project:		Project ID 1130-44-73; Wrightstown SWEF/Post; IH 41; Outagamie County																
DEPTH IN FEET	ELEV. FEET	Surface Elevation 686.6 MATERIAL DESCRIPTION		GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS									
									WC	qp	LL	PL	%-#200					
1	685.8	SILTY SAND with organics, fine grained, a little gravel, dark brown, moist (SM)		TOPSOIL GLACIO-LACUSTRINE DEPOSITS	4	M	SS	15	14	2.0								
2	682.1	SILTY SAND, fine grained, brown, moist, very loose to loose (SM)			7	M	SS	18										
3		SAND WITH SILT, fine grained, brown, moist, loose (SP-SM)			6	M	SS	20										
4																		
5	679.6	SILTY SAND, fine grained, brown, moist to waterbearing, loose to medium dense (SM)			10	M	SS	20										
6																		
7																		
8																		
9	672.1	SAND, fine grained, brown, waterbearing, loose (SP)			13	M	SS	19										
10																		
11																		
12																		
13	670.5	LEAN CLAY with sand, reddish brown, stiff (CL)		TILL	10	M/W	SS	19										
14																		
15																		
16																		
17	668.6	SAND, fine grained, brown, waterbearing, medium dense (SP)		GLACIO-LACUSTRINE DEPOSITS	9	W	SS	17										
18																		
19																		
20																		
21	665.8	SILTY CLAYEY SAND, fine grained, brown, waterbearing, medium dense (SC-SM)		TILL	13	W	SS	18										
22																		
23																		
24																		
25	663.6	LEAN CLAY with sand, brown, very stiff, with lenses of sand (CL)																
DEPTH:		DRILLING METHOD		WATER LEVEL MEASUREMENTS									NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG					
0-14.5'		3.25" HSA		DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL								
14.5-39.5'		w/ DM		9/8/22	1420	16.5	14.5	14.1	None	13.1								
				9/8/22	1430	16.5	14.5	13.4	None	12.4								
BORING COMPLETED: 9/8/22																		
DR: MD LG: KS Rig: 57																		

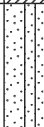
AET CORP W-ELEV P-0016383.GPJ AET+CPT+WELL.GDT 12/6/22

03/2011

01-DHR-060



SUBSURFACE BORING LOG

AET No: P-0016383		Log of Boring No. B-07 (p. 2 of 2)											
Project: Project ID 1130-44-73; Wrightstown SWEF/Post; IH 41; Outagamie County													
DEPTH IN FEET	ELEV. FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS					
								WC	qp	LL	PL	%-#200	
25	658.6	LEAN CLAY with sand, brown, very stiff, with lenses of sand (CL) <i>(continued)</i>							15	>4.5			
26													
27													
28													
29	648.6	LEAN CLAY with sand, a little gravel, brown, very stiff, with lenses of sand (CL)							22	>4.5			
30													
31													
32													
33													
34													
35													
36													
37	645.8	SAND WITH SILT, fine grained, brown, waterbearing, dense (SP-SM)							15	2.75			
38													
39													
40	645.1	LEAN CLAY with sand, a little gravel, brown, hard (CL)							17	4.0			
41													
		<i>End of boring at 41.5 feet</i>											

AET CORP W-ELEV P-0016383.GPJ AET+CPT+WELL.GDT 12/6/22

03/2011

01-DHR-060



SUBSURFACE BORING LOG

AET No: P-0016383		Log of Boring No. B-08 (p. 1 of 2)											
Project: Project ID 1130-44-73; Wrightstown SWEF/Post; IH 41; Outagamie County													
DEPTH IN FEET	ELEV. FEET	Surface Elevation 684.3 MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS					
								WC	qp	LL	PL	%-#200	
1	683.8	FILL, silty sand with organics, fine grained, dark brown, moist (SM)	FILL/ TOPSOIL FILL	4	M	SS	18						
2		FILL, silty sand, fine grained, brown, moist, with trace organics, with lenses of lean clay (SM)											
3	681.3				12	M	SS	14					
4	680.8	FILL, silty sand, fine to medium grained, a little gravel, dark brown and brown, moist (SM)	GLACIO-LACUSTRINE DEPOSITS										
5	679.1	SILTY SAND, fine grained, brown, moist, medium dense (SM)	TILL	11	M	SS	23	19					
6	678.3	LEAN CLAY with sand, brown, firm (CL)						21	1.25				
7	677.3	Sandy LEAN CLAY, brown, stiff (CL)	GLACIO-LACUSTRINE DEPOSITS										
8		SILTY SAND, fine grained, brown, moist, loose (SM)		8	M	SS	24	18					
9	674.8												
10		SILT, brown, moist, loose (ML)		7	M	SS	24	23					
11	672.3												
12		SILTY SAND, fine grained, brown, moist to waterbearing, very loose to loose (SM)		7	MFW	SS	21						
13													
14													
15				4	W	SS	20						
16													
17													
18	666.3												
19		SAND WITH SILT, fine grained, brown, waterbearing, very loose (SP-SM)											
20													
21				4	W	SS	20						
22													
23	661.3												
		SILTY SAND, fine grained, brown, waterbearing, loose (SM)											
DEPTH: 0-14.5'		DRILLING METHOD: 3.25" HSA	WATER LEVEL MEASUREMENTS						NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG				
			DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL					WATER LEVEL
14.5-39.5'		w/ DM	9/7/22	0910	16.5	14.5	14.2	None					13.4
			9/7/22	0920	16.5	14.5	13.1	None					12.8
BORING COMPLETED: 9/7/22													
DR: MD LG: KS Rig: 57													

AET CORP W-ELEV P-0016383.GPJ AET+CPT+WELL.GDT 12/6/22

03/2011

01-DHR-060



SUBSURFACE BORING LOG

AET No:		P-0016383		Log of Boring No.		B-08 (p. 2 of 2)								
Project:		Project ID 1130-44-73; Wrightstown SWEF/Post; IH 41; Outagamie County												
DEPTH IN FEET	ELEV. FEET	MATERIAL DESCRIPTION		GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS					
									WC	qp	LL	PL	%-#200	
25	656.3	SILTY SAND, fine grained, brown, waterbearing, loose (SM) (continued)			5	W		SS	19					
26														
27														
28														
29	651.3	SAND, fine to medium grained, gray, waterbearing, loose, with lenses of lean clay (SP)			5	W		SS	18					
30														
31														
32														
33	646.3	CLAYEY SAND, fine to medium grained, a little gravel, brown, waterbearing, medium dense, with lenses of lean clay (SC)		TILL	24	W		SS	19					
34														
35														
36														
37	642.8	LEAN CLAY with sand, a little gravel, brown, very stiff (CL)			30	W		SS	24	15	4.0			
38														
39														
40														
41		End of boring at 41.5 feet												

AET CORP W-ELEV P-0016383.GPJ AET+CPT+WELL.GDT 12/6/22

03/2011

01-DHR-060



SUBSURFACE BORING LOG

AET No: P-0016383

Log of Boring No. B-09 (p. 1 of 2)

Project: Project ID 1130-44-73; Wrightstown SWEF/Post; IH 41; Outagamie County

DEPTH IN FEET	ELEV. FEET	Surface Elevation 680.3 MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS				
								WC	qp	LL	PL	%-#200
1	679.3	Sandy SILT with organics, dark brown, moist (OL)	TOPSOIL	6	M	SS	20					
2		SILTY SAND, fine grained, brown, moist, loose (SM)	GLACIO-LACUSTRINE DEPOSITS	8	M	SS	20					
4	675.8			8	M	SS	22					
5		SAND WITH SILT, fine grained, brown, moist, loose (SP-SM)		8	M	SS	22					
7	673.3			7	MEW	SS	20					
8		SILTY SAND, fine grained, brown, moist to waterbearing, loose (SM)		3	W	SS	12					
10	670.8			8	W	SS	15					
11		SAND, fine grained, brown, waterbearing, very loose to loose (SP)		6	W	SS	20					
12				9	W	SS	24					
13												
14												
15												
16												
17												
18												
19												
20												
21												
22												
23												

DEPTH: 0-9.5'

DRILLING METHOD: 3.25" HSA

DATE: 9/7/22

TIME: 0720

SAMPLED DEPTH: 11.5

CASING DEPTH: 9.5

CAVE-IN DEPTH: 9.2

DRILLING FLUID LEVEL: None

WATER LEVEL: 8.8

9.5-39.5'

w/ DM

9/7/22

0730

11.5

9.5

8.3

None

8.0

BORING COMPLETED: 9/7/22

DR: KS LG: JB Rig: 57

NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG

03/2011

01-DHR-060



SUBSURFACE BORING LOG

AET No: P-0016383

Log of Boring No. B-09 (p. 2 of 2)

Project: Project ID 1130-44-73; Wrightstown SWEF/Post; IH 41; Outagamie County

DEPTH IN FEET	ELEV. FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS				
								WC	qp	LL	PL	%-#200
25		SAND, fine grained, brown, waterbearing, very loose to loose (SP) (continued)		6	W	SS	17					
26												
27												
28	652.3											
29		SAND, fine to medium grained, a little gravel, brown, waterbearing, medium dense, with lenses of lean clay (SP)		26	W	SS	24					
30												
31												
32												
33	647.3											
34		Sandy LEAN CLAY, a little gravel, brown, hard (CL)	TILL									
35				37	W	SS	24	13	2.25			
36												
37												
38	642.3											
39		LEAN CLAY with sand, brown, very stiff (CL)		24	W	SS	24	18	2.0			
40												
41	638.8											
		End of boring at 41.5 feet										

03/2011

01-DHR-060



SUBSURFACE BORING LOG

AET No: P-0016383		Log of Boring No. B-10 (p. 1 of 1)												
Project: Project ID 1130-44-73; Wrightstown SWEF/Post; IH 41; Outagamie County														
DEPTH IN FEET	ELEV. FEET	Surface Elevation 678.1 MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS						
								WC	qp	LL	PL	%-#200		
1	677.1	SILTY SAND with organics, fine grained, dark brown, moist (SM)	TOPSOIL	5	M	SS	16							
2		SILTY SAND, fine grained, brown, moist to waterbearing, loose to medium dense (SM)	GLACIO-LACUSTRINE DEPOSITS	8	M	SS	14							
3														
4														
5														
6	672.1				17	M/W	SS	18						
7		SAND, fine to medium grained, brown, waterbearing, medium dense (SP)		11	W	SS	18							
8	670.1	SAND, fine grained, brown, waterbearing, very loose to loose (SP)		7	W	SS	16							
9														
10														
11				5	W	SS	22							
12				2	W	SS	14							
13														
14				6	W	SS	18							
15														
16				6	W	SS	18							
17														
18				6	W	SS	18							
19														
20	658.1			5	W	SS	16							
		End of boring at 20.0 feet												
DEPTH: DRILLING METHOD		WATER LEVEL MEASUREMENTS							NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG					
0-18.0' 3.25" HSA		DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL						
		9/6/22	1410	6.0	4.0	5.4	None	5.3						
		9/6/22	1420	6.0	4.0	4.4	None	4.3						
BORING COMPLETED: 9/6/22														
DR: KS LG: JB Rig: 57														
03/2011													01-DHR-060	

AET CORP W-ELEV P-0016383.GPJ AET-CPT-WELL.GDT 12/6/22



SUBSURFACE BORING LOG

AET No: P-0016383		Log of Boring No. B-11 (p. 1 of 1)														
Project: Project ID 1130-44-73; Wrightstown SWEF/Post; IH 41; Outagamie County																
DEPTH IN FEET	ELEV. FEET	Surface Elevation 677.6 MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS								
								WC	qp	LL	PL	%-#200				
1	677.1	Sandy SILT with organics, dark brown, moist (OL)	TOPSOIL TILL	4	M		SS	14	23							
		LEAN CLAY, reddish brown, soft (CL)														
2	675.6	LEAN CLAY with sand, reddish brown with gray mottling, stiff (CL)		11	M		SS	18	17							
3																
4	673.6	SILTY SAND, fine grained, brown, moist to waterbearing, loose to medium dense (SM)	GLACIO-LACUSTRINE DEPOSITS	25	M		SS	22								
5																
6																
7																
8																
9																
10																
11																
12																
13																
14																
15																
16	661.6	SAND WITH SILT, fine grained, brown, waterbearing, medium dense (SP-SM)		12	W		SS	24								
17																
18	659.6	SAND, fine grained, brown, waterbearing, loose (SP)		7	W		SS	22								
19																
20	657.6	<i>End of boring at 20.0 feet</i>														
DEPTH: DRILLING METHOD		WATER LEVEL MEASUREMENTS								NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG						
0-18.0' 3.25" HSA		DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL								
		9/6/22	1630	12.0	10.0	8.7	None	8.6								
		9/6/22	1640	12.0	10.0	8.5	None	7.9								
BORING COMPLETED: 9/6/22																
DR: KS LG: JB Rig: 57																
03/2011															01-DHR-060	

AET CORP W-ELEV P-0016383.GPJ AET-CPT-WELL.GDT 12/6/22



SUBSURFACE BORING LOG

AET No: P-0016383Log of Boring No. B-12 (p. 1 of 1)

Project: Project ID 1130-44-73; Wrightstown SWEF/Post; IH 41; Outagamie County

DEPTH IN FEET	ELEV. FEET	Surface Elevation 676.1 MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS				
								WC	qp	LL	PL	%-#200
1	675.1	Sandy SILT with organics, dark brown, moist (OL)	TOPSOIL	2	M	SS	16					
2		SILTY SAND, fine grained, brown, moist, very loose to medium dense (SM)	GLACIO-LACUSTRINE DEPOSITS	8	M	SS	18					48
3				14	M	SS	20					
4												
5												
6												
7				12	M/W	SS	18					
8												
9				7	W	SS	17					
10												
11				6	W	SS	14					50
12												
13				4	W	SS	22					
14												
15				10	W	SS	20					
16												
17				3	W	SS	20					
18												
19				3	W	SS	16					15
20	656.1	End of boring at 20.0 feet										

DEPTH: 0-18.0'

DRILLING METHOD: 3.25" HSA

DATE: 9/6/22

TIME: 1315

SAMPLED DEPTH: 12.0

CASING DEPTH: 10.0

CAVE-IN DEPTH: 8.9

DRILLING FLUID LEVEL: None

WATER LEVEL: 8.0

9/6/22

1325

12.0

10.0

7.0

None

6.7

BORING COMPLETED: 9/6/22

DR: KS LG: JB Rig: 57

NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG

AET CORP W-ELEV P-0016383.GPJ AET-CPT+WELL.GDT 12/6/22

03/2011

01-DHR-060



SUBSURFACE BORING LOG

AET No: P-0016383Log of Boring No. B-13 (p. 1 of 1)

Project: Project ID 1130-44-73; Wrightstown SWEF/Post; IH 41; Outagamie County

DEPTH IN FEET	ELEV. FEET	Surface Elevation 679.1 MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS				
								WC	qp	LL	PL	%-#200
1	678.1	FILL, silty sand with organics, fine grained, brown, moist (SM)	FILL/ TOPSOIL	7	M	SS	16					
2	677.1	FILL, sand with silt, fine to medium grained, yellowish brown, moist (SP-SM)	FILL									
3		SAND, fine grained, brown, moist to waterbearing, very loose to loose (SP)	GLACIO-LACUSTRINE DEPOSITS	7	M	SS	18					
4												
5				8	M	SS	20					
6												
7				4	M/W	SS	18					
8												
9				6	W	SS	14					4
10												
11				5	W	SS	19					
12												
13				5	W	SS	16					
14												
15				7	W	SS	20					
16												
17				9	W	SS	14					
18												
19				6	W	SS	16					
20	659.1	End of boring at 20.0 feet										

DEPTH: 0-18.0'

DRILLING METHOD: 3.25" HSA

DATE: 9/6/22

TIME: 1300

SAMPLED DEPTH: 12.0

CASING DEPTH: 10.0

CAVE-IN DEPTH: 9.7

DRILLING FLUID LEVEL: None

WATER LEVEL: 8.1

9/6/22

1310

12.0

10.0

8.8

None

7.3

BORING COMPLETED: 9/6/22

DR: KS LG: JB Rig: 57

NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG

AET CORP W-ELEV P-0016383.GPJ AET-CPT+WELL.GDT 12/6/22

03/2011

01-DHR-060



SUBSURFACE BORING LOG

AET No: P-0016383		Log of Boring No. B-16 (p. 1 of 1)											
Project: Project ID 1130-44-73; Wrightstown SWEF/Post; IH 41; Outagamie County													
DEPTH IN FEET	ELEV. FEET	Surface Elevation 684.4 MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS					
								WC	qp	LL	PL	%-#200	
1		FILL, gravelly silty sand, fine to coarse grained, grayish brown, moist (SM)	FILL	21	M	SS	19						
2													
3	681.0			19	M	SS	18						
4	679.9	FILL, sand with silt, fine to medium grained, a little gravel, brown, moist (SP-SM)	GLACIO-LACUSTRINE DEPOSITS										
5	679.3												
6	678.5	FILL, silty sand, fine to medium grained, brown, moist (SM)		7	M	SS	19						
7	677.4	SILTY SAND, fine grained, brown, moist (SM)						31	1.25				
8		LEAN CLAY, reddish brown (CL)	GLACIO-LACUSTRINE DEPOSITS										
9		LEAN CLAY with sand, reddish brown with gray mottling, soft to stiff (CL)		4	M	SS	24	23	1.25				
10													
11	673.7	Sandy SILT, brown, moist, loose (ML)		9	M	SS	24	23	2.25				
12	672.4		GLACIO-LACUSTRINE DEPOSITS					21					
13		SAND WITH SILT, fine grained, brown, moist to waterbearing, very loose to loose (SP-SM)		5	M/W	SS	22						
14													
15													
16	667.9			4	W	SS	18						
		End of boring at 16.5 feet											
DEPTH: DRILLING METHOD		WATER LEVEL MEASUREMENTS							NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG				
0-14.5' 3.25" HSA		DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL					
		9/9/22	0940	16.5	14.5	13.6	None	13.0					
		9/9/22	0950	16.5	14.5	13.0	None	12.4					
BORING COMPLETED: 9/9/22													
DR: MD LG: KS Rig: 57													

AET CORP W-ELEV P-0016383.GPJ AET+CPT+WELL.GDT 12/6/22

03/2011

01-DHR-060



SUBSURFACE BORING LOG

AET No: P-0016383		Log of Boring No. B-17 (p. 1 of 1)											
Project: Project ID 1130-44-73; Wrightstown SWEF/Post; IH 41; Outagamie County													
DEPTH IN FEET	ELEV. FEET	Surface Elevation 684.7 MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS					
								WC	qp	LL	PL	%-#200	
1		FILL, gravelly silty sand, fine to coarse grained, grayish brown, moist (SM)	FILL	16	M	SS	16						
2													
3	681.0			28	M	SS	16						
4	680.2	FILL, silty sand with gravel, fine to medium grained, brown and dark brown, moist (SM)	GLACIO-LACUSTRINE DEPOSITS										
5	679.2												
6		FILL, silty clayey sand, fine to medium grained, brown and dark brown, moist (SC-SM)		14	M	SS	20						
7	677.7												
8		SILTY SAND, fine grained, brown, moist, medium dense (SM)	GLACIO-LACUSTRINE DEPOSITS	12	M	SS	20						
9		SAND, fine grained, brown, moist to waterbearing, loose to medium dense (SP)											
10				7	M	SS	18						
11													
12			GLACIO-LACUSTRINE DEPOSITS										
13				10	M/W	SS	16						
14													
15													
16	668.2			5	W	SS	16						
		End of boring at 16.5 feet											
DEPTH: DRILLING METHOD		WATER LEVEL MEASUREMENTS							NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG				
0-14.5' 3.25" HSA		DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL					
		9/9/22	1020	16.5	14.5	13.6	None	12.9					
		9/9/22	1030	16.5	14.5	13.4	None	12.4					
BORING COMPLETED: 9/9/22													
DR: MD LG: KS Rig: 57													

AET CORP W-ELEV P-0016383.GPJ AET+CPT+WELL.GDT 12/6/22

03/2011

01-DHR-060



SUBSURFACE BORING LOG

AET No: **P-0016383**

Log of Boring No. **B-18 (p. 1 of 2)**

Project: **Project ID 1130-44-73; Wrightstown SWEF/Post; IH 41; Outagamie County**

DEPTH IN FEET	ELEV. FEET	Surface Elevation 686.9 MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS						
								WC	qp	LL	PL	%-#200		
1	686.5	4.75 inches of bituminous pavement FILL, silty gravel with sand, grayish brown, moist (GM)	PAVEMENT FILL		M	DS								
2	684.5													
3		SAND WITH SILT, fine grained, brown, moist, medium dense (SP-SM)	GLACIO- LACUSTRINE DEPOSITS	23	M	SS	17							
4	682.4													
5	681.0	SILTY SAND, fine grained, reddish brown, moist, medium dense (SM)		15	M	SS	19							
6		SAND WITH SILT, fine grained, brown, moist, medium dense (SP-SM)												
7	679.9													
8		SAND, fine grained, brown, moist, very loose to loose (SP)		10	M	SS	17							
9														
10				4	M	SS	17							
11														
12	674.9													
13		SILTY SAND, fine grained, brown, moist to waterbearing, very loose (SM)		3	W	SS	20							
14														
15				3	W	SS	8							
16														
17														
18	668.9													
19		SAND, fine grained, brown, waterbearing, very loose (SP)												
20				3	W	SS	24							
21														
22														
23	663.9													
		LEAN CLAY with sand, a little gravel, brown, stiff, with lenses of sand (CL)	TILL											

DEPTH: 0-14.5' 3.25" HSA

14.5-29.5' w/ DM

BORING
COMPLETED: 9/9/22

DR: MD LG: KS Rig: 57

DATE

9/9/22

TIME

1100

1110

SAMPLED
DEPTH

16.5

16.5

CASING
DEPTH

14.5

14.5

CAVE-IN
DEPTH

14.3

14.0

DRILLING
FLUID LEVEL

None

None

WATER
LEVEL

14.2

13.6

NOTE: REFER TO
THE ATTACHED
SHEETS FOR AN
EXPLANATION OF
TERMINOLOGY ON
THIS LOG

03/2011

01-DHR-060



SUBSURFACE BORING LOG

AET No: **P-0016383**

Log of Boring No. **B-18 (p. 2 of 2)**

Project: **Project ID 1130-44-73; Wrightstown SWEF/Post; IH 41; Outagamie County**

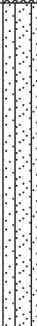
DEPTH IN FEET	ELEV. FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS						
								WC	qp	LL	PL	%-#200		
25		LEAN CLAY with sand, a little gravel, brown, stiff, with lenses of sand (CL) (continued)	TILL (continued)	10	W	SS	22	13	2.25					
26														
27														
28	658.9													
29		Sandy LEAN CLAY, a little gravel, brown, very stiff, with lenses of sand (CL)												
30				21	W	SS	18	21	2.75					
31	655.4													
		End of boring at 31.5 feet												

03/2011

01-DHR-060



SUBSURFACE BORING LOG

AET No: P-0016383		Log of Boring No. B-19 (p. 1 of 1)												
Project: Project ID 1130-44-73; Wrightstown SWEF/Post; IH 41; Outagamie County														
DEPTH IN FEET	ELEV. FEET	Surface Elevation 687.8 MATERIAL DESCRIPTION		GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS					
									WC	qp	LL	PL	%-#200	
1	685.3	FILL, gravelly silty sand, fine to coarse grained, grayish brown, moist (SM)		FILL	24	M		SS	16					
2														
3		SILTY SAND, fine grained, brown, moist, medium dense (SM)		GLACIO-LACUSTRINE DEPOSITS	17	M		SS	16					
4														
5														
6														
7														
8														
9	678.3			20	M		SS	24						
10														
11														
12														
13														
14	673.3	SAND WITH SILT, fine grained, brown, moist, medium dense (SP-SM)		16	M		SS	19						
15														
16														
17														
18														
19	671.3	LEAN CLAY with sand, a little gravel, brown, very stiff (CL)		TILL	19	M		SS	24	13	3.0			
20														
21														
22														
		End of boring at 16.5 feet												
DEPTH: DRILLING METHOD		WATER LEVEL MEASUREMENTS								NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG				
0-14.5' 3.25" HSA		DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL						
		9/12/22	1100	16.5	14.5	14.5	None	None						
BORING COMPLETED: 9/12/22														
DR: MD LG: KS Rig: 57														

AET CORP W-ELEV P-0016383.GPJ AET-CPT-WELL.GDT 12/6/22

03/2011

01-DHR-060



SUBSURFACE BORING LOG

AET No: P-0016383		Log of Boring No. B-20 (p. 1 of 1)											
Project: Project ID 1130-44-73; Wrightstown SWEF/Post; IH 41; Outagamie County													
DEPTH IN FEET	ELEV. FEET	Surface Elevation 685.1 MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS					
								WC	qp	LL	PL	%-#200	
1	684.7	SILTY SAND with organics, fine grained, a little gravel, dark brown, moist (SM) SAND, fine grained, brown, moist, loose (SP)	TOPSOIL GLACIO-LACUSTRINE DEPOSITS	6	M	SS	16						
2				9	M	SS	19						
3													
4													
5						10	M	SS	19				
6													
7						8	M	SS	21				
8													
9	675.6	SILTY SAND, fine grained, brown, waterbearing, very loose (SM)											
10				3	W	SS	19						
11													
12													
13						4	W	SS	21				
14													
15						4	W	SS	23				
16	668.6												
		End of boring at 16.5 feet											
DEPTH: DRILLING METHOD		WATER LEVEL MEASUREMENTS							NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG				
0-14.5' 3.25" HSA		DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL					
		9/9/22	1200	11.5	9.5	9.4	None	9.4					
		9/9/22	1210	11.5	9.5	9.4	None	9.4					
BORING COMPLETED: 9/9/22													
DR: MD LG: KS Rig: 57													

AET CORP W-ELEV P-0016383.GPJ AET-CPT-WELL.GDT 12/6/22

03/2011

01-DHR-060



SUBSURFACE BORING LOG

AET No: P-0016383		Log of Boring No. B-21 (p. 1 of 1)													
Project: Project ID 1130-44-73; Wrightstown SWEF/Post; IH 41; Outagamie County															
DEPTH IN FEET	ELEV. FEET	Surface Elevation 681.9 MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS							
								WC	qp	LL	PL	%-#200			
1	681.5	SILTY SAND with organics, fine to medium grained, dark brown, moist (SM)	TOPSOIL GLACIO-LACUSTRINE DEPOSITS	3	M	SS	16	25							
2	679.9	SAND WITH SILT, fine grained, brown, moist, very loose (SP-SM)													
3	678.4	SILTY SAND, fine grained, brown, moist, loose (SM)													
4	677.4	Sandy SILT, brown, moist, loose (ML)													
5		SILTY SAND, fine grained, brown, waterbearing, very loose to medium dense (SM)		4	M	SS	18								
6															
7															
8															
9				11	M	SS	19								
10															
11															
12															
13	668.7	CLAYEY SAND, fine grained, brown, waterbearing, loose (SC)	TILL	10	W	SS	24								
14	667.4														
15		SILTY SAND, fine grained, brown, waterbearing, medium dense (SM)	GLACIO-LACUSTRINE DEPOSITS	11	W	SS	19								
16	665.4														
		End of boring at 16.5 feet													
DEPTH: DRILLING METHOD		WATER LEVEL MEASUREMENTS							NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG						
0-14.5' 3.25" HSA		DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL							
		9/9/22	1300	16.5	14.5	14.0	None	11.2							
		9/9/22	1310	16.5	14.5	14.0	None	10.1							
BORING COMPLETED: 9/9/22															
DR: MD LG: KS Rig: 57															

AET CORP W-ELEV P-0016383.GPJ AET-CPT+WELL.GDT 12/6/22

03/2011

01-DHR-060



SUBSURFACE BORING LOG

AET No: P-0016383		Log of Boring No. B-24 (p. 1 of 1)													
Project: Project ID 1130-44-73; Wrightstown SWEF/Post; IH 41; Outagamie County															
DEPTH IN FEET	ELEV. FEET	Surface Elevation 684.7 MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS							
								WC	qp	LL	PL	%-#200			
1	684.2	SILTY SAND with organics, fine grained, a little gravel, dark brown, moist (SM)	TOPSOIL GLACIO-LACUSTRINE DEPOSITS	5	M	SS	14								
2		SILTY SAND, fine grained, brown, moist, loose (SM)													
3				5	M	SS	18								
4	681.0	LEAN CLAY with sand, reddish brown (CL)						21	2.0						
5	680.2	CLAYEY SAND, fine grained, brown, moist (SC)	GLACIO-LACUSTRINE DEPOSITS	18	M	SS	17								
6	679.9	SAND WITH SILT, fine grained, brown, moist, medium dense (SP-SM)													
7	677.7	SILTY SAND, fine grained, brown, moist, medium dense (SM)		16	M	SS	20								
8															
9			TILL	14	M	SS	17								
10															
11	673.8	LEAN CLAY with sand, reddish brown, (CL)						12	4.0						
12	672.7	SILTY SAND, fine grained, brown, waterbearing, medium dense (SM)		19	W	SS	22								
13			GLACIO-LACUSTRINE DEPOSITS												
14	670.2	SAND, fine to medium grained, brown, waterbearing, medium dense (SP)		14	W	SS	20								
15	668.6	CLAYEY SAND, fine grained, brown, waterbearing, medium dense (SC)													
16	666.7	CLAYEY SAND, fine to medium grained, a little gravel, brown, waterbearing, medium dense, with lenses of lean clay (SC)		20	W	SS	24								
17			TILL												
18	663.2	End of boring at 21.5 feet													
19															
20															
21															
DEPTH: DRILLING METHOD		WATER LEVEL MEASUREMENTS							NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG						
0-19.5' 3.25" HSA		DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL							
		9/9/22	0710	16.5	14.5	13.3	None	12.3							
		9/9/22	0720	16.5	14.5	12.4	None	11.7							
BORING COMPLETED: 9/9/22															
DR: MD LG: KS Rig: 57															

AET CORP W-ELEV P-0016383.GPJ AET-CPT+WELL.GDT 12/6/22

03/2011

01-DHR-060



SUBSURFACE BORING LOG

AET No: P-0016383Log of Boring No. B-26 (p. 1 of 1)

Project: Project ID 1130-44-73; Wrightstown SWEF/Post; IH 41; Outagamie County

DEPTH IN FEET	ELEV. FEET	Surface Elevation 680.5 MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS				
								WC	qp	LL	PL	%-#200
1	679.6	SILTY SAND with organics, fine grained, dark brown, moist (SM)	TOPSOIL	5	M	SS	19					
2	678.5	SILTY SAND, fine grained, brown, moist, loose (SM)	GLACIO-LACUSTRINE DEPOSITS									
3		SAND WITH SILT, fine grained, brown, moist, very loose (SP-SM)		4	M	SS	17					
4	676.0											
5		SAND, fine grained, brown, moist to waterbearing, loose to medium dense (SP)		7	M	SS	17					
6												
7												
8				13	M/W	SS	17					
9												
10				9	W	SS	16					
11												
12	668.5	SAND WITH SILT, fine grained, brown, waterbearing, loose (SP-SM)		9	W	SS	18					
13												
14	666.0	SILTY SAND, fine grained, brown, waterbearing, very loose (SM)		4	W	SS	18					
15												
16												
17												
18												
19												
20				4	W	SS	19					
21	659.0	End of boring at 21.5 feet										

DEPTH:	DRILLING METHOD	WATER LEVEL MEASUREMENTS							NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG
0-19.5'	3.25" HSA	DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL	
		9/8/22	0700	11.5	9.5	9.1	None	8.2	
		9/8/22	0710	11.5	9.5	8.7	None	7.6	
BORING COMPLETED: 9/8/22									
DR: MD LG: KS Rig: 57									

AET CORP W-ELEV P-0016383.GPJ AET+CPT+WELL.GDT 12/6/22

03/2011

01-DHR-060



SUBSURFACE BORING LOG

AET No: P-0016383Log of Boring No. B-27 (p. 1 of 1)

Project: Project ID 1130-44-73; Wrightstown SWEF/Post; IH 41; Outagamie County

DEPTH IN FEET	ELEV. FEET	Surface Elevation 681.8 MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS				
								WC	qp	LL	PL	%-#200
1	680.9	Sandy SILT with organics, dark brown, moist (OL)	TOPSOIL	5	M	SS	17					
2		SAND WITH SILT, fine grained, brown, moist, loose (SP-SM)	GLACIO-LACUSTRINE DEPOSITS									
3				5	M	SS	17					
4	677.3											
5		SILTY SAND, fine grained, brown, moist, loose (SM)		5	M	SS	19					
6												
7	674.8	SAND, fine to medium grained, brown, moist to waterbearing, loose to medium dense (SP)		10	M/W	SS	17					
8												
9												
10				25	W	SS	17					
11												
12	669.8	SAND, fine grained, brown, waterbearing, very loose to loose (SP)		6	W	SS	18					
13												
14												
15				5	W	SS	19					
16												
17												
18												
19												
20												
21	660.3	End of boring at 21.5 feet		3	W	SS	18					

DEPTH:	DRILLING METHOD	WATER LEVEL MEASUREMENTS							NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG
0-19.5'	3.25" HSA	DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL	
		9/8/22	0830	11.5	9.5	9.2	None	8.8	
		9/8/22	0840	11.5	9.5	8.9	None	8.4	
BORING COMPLETED: 9/8/22									
DR: MD LG: KS Rig: 57									

AET CORP W-ELEV P-0016383.GPJ AET+CPT+WELL.GDT 12/6/22

03/2011

01-DHR-060



SUBSURFACE BORING LOG

AET No: P-0016383		Log of Boring No. B-28 (p. 1 of 1)											
Project: Project ID 1130-44-73; Wrightstown SWEF/Post; IH 41; Outagamie County													
DEPTH IN FEET	ELEV. FEET	Surface Elevation 681.1 MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS					
								WC	qp	LL	PL	%-#200	
1	680.9	FILL, silty sand with organics, fine grained, dark brown, moist (SM)	FILL/ TOPSOIL FILL	6	M	SS	15						
2		FILL, sand with silt, fine grained, brown, moist (SP-SM)											
3				19	M	SS	18						
4	676.6												
5		SILTY SAND, fine grained, brown, moist to waterbearing, very loose to loose (SM)	GLACIO- LACUSTRINE DEPOSITS	8	M	SS	20						
6													
7													
8				4	M	SS	24						
9													
10				6	W	SS	18						
11													
12													
13				5	W	SS	17						
14													
15													
16				3	W	SS	16						
17													
18	663.1												
19		SAND, fine grained, brown, waterbearing, very loose (SP)											
20													
21	659.6			4	W	SS	16						
		End of boring at 21.5 feet											
DEPTH: DRILLING METHOD		WATER LEVEL MEASUREMENTS								NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG			
0-19.5' 3.25" HSA		DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL					
		9/8/22	1010	11.5	9.5	9.2	None	8.4					
		9/8/22	1020	11.5	9.5	8.6	None	7.9					
BORING COMPLETED: 9/8/22													
DR: MD LG: KS Rig: 57													
03/2011												01-DHR-06	

AET_CORP_W-ELEV_P-0016383.GPJ AET+CPT+WELL.GDT 12/6/22



SUBSURFACE BORING LOG

AET No: P-0016383		Log of Boring No. B-29 (p. 1 of 1)												
Project: Project ID 1130-44-73; Wrightstown SWEF/Post; IH 41; Outagamie County														
DEPTH IN FEET	ELEV. FEET	Surface Elevation 679.9 MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS						
								WC	qp	LL	PL	%-#200		
1	679.3	Sandy SILT with organics, dark brown, moist (OL)	TOPSOIL											
2	677.9	LEAN CLAY, brown, firm (CL)	TILL	5	M	SS	16							
3		LEAN CLAY, mottled brown and gray, firm (CL)		7	M	SS	22	31	2.0					
4	675.4													
5		SILTY SAND, fine grained, brown, moist, loose (SM)	GLACIO-LACUSTRINE DEPOSITS	10	M	SS	21							
6														
7	672.9													
8		SAND WITH SILT, fine grained, brown, moist to waterbearing, loose (SP-SM)		7	M/W	SS	20							
9														
10				6	W	SS	20							
11														
12	667.9													
13		SAND, fine grained, brown, waterbearing, loose (SP)		8	W	SS	17							
14	665.4													
15		SILTY SAND, fine grained, brown, waterbearing, loose (SM)		7	W	SS	17							
16														
17														
18														
19														
20														
21	658.4			8	W	SS	17							
		End of boring at 21.5 feet												
DEPTH: 0-19.5'		DRILLING METHOD: 3.25" HSA	WATER LEVEL MEASUREMENTS						NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG					
			DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL					
			9/8/22	0910	11.5	9.5	9.1	None	8.7					
			9/8/22	0920	11.5	9.5	8.0	None	7.6					
BORING COMPLETED: 9/8/22														
DR: MD LG: KS Rig: 57														

03/2011

01-DHR-06

AET_CORP_W-ELEV_P-0016383.GPJ AET+CPT+WELL.GDT 12/6/22



SUBSURFACE BORING LOG

AET No:		P-0016383		Log of Boring No.						B-30 (p. 1 of 1)				
Project:		Project ID 1130-44-73; Wrightstown SWEF/Post; IH 41; Outagamie County												
DEPTH IN FEET	ELEV. FEET	Surface Elevation 679.9		GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS					
		MATERIAL DESCRIPTION							WC	qp	LL	PL	%-#200	
1	679.4	SILTY SAND with organics, fine grained, dark brown, moist (SM)		TOPSOIL GLACIO-LACUSTRINE DEPOSITS	3	M	SS	15	33	0.25				
2	677.9	SILTY SAND, fine grained, brown, moist, very loose (SM)												
3		SAND WITH SILT, fine grained, brown, moist, very loose (SP-SM)												
4	675.4			4	M	SS	17							
5	674.5	SILTY SAND, fine grained, brown, moist, very loose (SM)		4	M	SS	24							
6	673.9	LEAN CLAY with sand, mottled brown and gray, soft (CL)		TILL GLACIO-LACUSTRINE DEPOSITS										
7		SILTY SAND, fine grained, brown, moist to waterbearing, medium dense (SM)												
8					11	M/W	SS	19						
9														
10				12	W	SS	17							
11														
12	667.9													
13		SAND WITH SILT, fine grained, brown, waterbearing, loose to medium dense (SP-SM)		12	W	SS	17							
14														
15				6	W	SS	18							
16														
17														
18	661.9													
19		SAND WITH SILT, fine to coarse grained, a little gravel, brown, waterbearing, medium dense (SP-SM)		TILL										
20														
21	658.4				19	W	SS	16						
		End of boring at 21.5 feet												
DEPTH: DRILLING METHOD		WATER LEVEL MEASUREMENTS								NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG				
0-19.5' 3.25" HSA		DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL						
		9/8/22	1100	11.5	9.5	9.0	None	8.7						
		9/8/22	1110	11.5	9.5	8.4	None	7.5						
BORING COMPLETED: 9/8/22														
DR: MD LG: KS Rig: 57														

AET CORP WELEV P-0016383.GPJ AET-CPT-WELL.GDT 12/8/22

03/2011

01-DHR-060



SUBSURFACE BORING LOG

AET No: P-0016383		Log of Boring No. B-31 (p. 1 of 1)										
Project: Project ID 1130-44-73; Wrightstown SWEF/Post; IH 41; Outagamie County												
DEPTH IN FEET	ELEV. FEET	Surface Elevation 680.7 MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS				
								WC	qp	LL	PL	%-#200
1	680.1	SILTY SAND with organics, fine grained, dark brown, moist (SM)	TOPSOIL	6	M	SS	16	11				
2	679.1	Sandy SILT, brown, moist, loose (ML)	GLACIO-LACUSTRINE DEPOSITS					16				
	678.2	Sandy LEAN CLAY, reddish brown with gray mottling (CL)	TILL					16	2.25			
3		SILTY SAND, fine grained, brown, moist, loose (SM)	GLACIO-LACUSTRINE DEPOSITS	9	M	SS	16					
4	676.2											
5		SAND WITH SILT, fine grained, brown, moist, loose (SP-SM)		6	M	SS	21					
6												
7	673.7											
8		SILTY SAND, fine grained, brown, moist to waterbearing, very loose (SM)		4	M	SS	18					
9												
10												
11				4	W	SS	18					
12	668.7											
13		SAND WITH SILT, fine grained, brown, waterbearing, loose (SP-SM)		8	W	SS	20					
14												
15												
16				8	W	SS	16					
17												
18	662.7											
19		SAND, fine to medium grained, brown, waterbearing, very loose (SP)										
20				4	W	SS	18					
21	659.2											
		End of boring at 21.5 feet										
DEPTH: DRILLING METHOD		WATER LEVEL MEASUREMENTS							NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG			
0-19.5' 3.25" HSA		DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL				
		9/9/22	0800	11.5	9.5	9.7	None	None				
		9/9/22	0810	11.5	9.5	9.1	None	9.0				
BORING COMPLETED: 9/9/22												
DR: MD LG: KS Rig: 57												

AET CORP WELEV P-0016383.GPJ AET-CPT-WELL.GDT 12/8/22

03/2011

01-DHR-060



SUBSURFACE BORING LOG

AET No: P-0016383		Log of Boring No. B-32 (p. 1 of 2)											
Project: Project ID 1130-44-73; Wrightstown SWEF/Post; IH 41; Outagamie County													
DEPTH IN FEET	ELEV. FEET	Surface Elevation 687.3 MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS					
								WC	qp	LL	PL	%-#200	
1		FILL, gravelly silty sand, fine to coarse grained, grayish brown, moist (SM)	FILL	24	M	SS	17						
2	685.0												
3	684.4	FILL, clayey sand, fine grained, brown, moist (SC)	GLACIO-LACUSTRINE DEPOSITS	14	M	SS	22						
4		SILTY SAND, fine grained, brown, moist, very loose to medium dense (SM)											
5													
6					6	M	SS	20					
7													
8					4	M	SS	20					
9													
10													
11				8	M	SS	17						
12	675.3												
13		SAND WITH SILT, fine grained, brown, moist to waterbearing, loose (SP-SM)		8	M	SS	18						
14	672.8												
15		SILTY SAND, fine grained, brown, waterbearing, loose (SM)		6	W	SS	17						
16													
17													
18	669.3												
19		SAND, fine grained, brown, waterbearing, very loose to medium dense (SP)											
20													
21				3	W	SS	20						
22													
23													
DEPTH: DRILLING METHOD		WATER LEVEL MEASUREMENTS							NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG				
0-14.5' 3.25" HSA		DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL					
14.5-39.5' w/ DM		9/12/22	0930	16.5	14.5	14.4	None	14.0					
		9/12/22	0940	16.5	14.5	14.0	None	13.6					
BORING COMPLETED: 9/12/22													
DR: MD LG: KS Rig: 57													

03/2011

01-DHR-060



SUBSURFACE BORING LOG

AET No:		P-0016383		Log of Boring No.										B-32 (p. 2 of 2)				
Project:		Project ID 1130-44-73; Wrightstown SWEF/Post; IH 41; Outagamie County																
DEPTH IN FEET	ELEV. FEET	MATERIAL DESCRIPTION		GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS									
									WC	qp	LL	PL	%-#200					
25		SAND, fine grained, brown, waterbearing, very loose to medium dense (SP) (continued)			4	W		SS	24									
26																		
27																		
28																		
29																		
30					22	W		SS	18									
31																		
32																		
33																		
34																		
35					16	W		SS	20									
36																		
37																		
38	649.3																	
39		LEAN CLAY with sand, brown, hard (CL)		TILL	44	W		SS	24	15	>4.5							
40	647.2																	
41	646.3																	
	645.8	SAND, fine to medium grained, brown, waterbearing, dense (SP)		GLACIO-LACUSTRINE DEPOSITS														
		LEAN CLAY with sand, brown, hard (CL)		TILL														
		End of boring at 41.5 feet																

NET CORP W-ELEV P-0016383.GPJ AET-PCP1+WELL.GDT 12/6/22

AET CORP W-ELEV P-0016383.GPJ AET+CPT+WELL.GDT 12/6/22

03/2011

01-DHR-060

Estimate Of Quantities

1130-44-75					
Line	Item	Item Description	Unit	Total	Qty
0002	201.0205	Grubbing	STA	36.000	36.000
0004	203.0100	Removing Small Pipe Culverts	EACH	3.000	3.000
0006	204.0100	Removing Concrete Pavement	SY	1,660.000	1,660.000
0008	204.0110	Removing Asphaltic Surface	SY	1,280.000	1,280.000
0010	204.0170	Removing Fence	LF	1,750.000	1,750.000
0012	204.0180	Removing Delineators and Markers	EACH	16.000	16.000
0014	204.0195	Removing Concrete Bases	EACH	2.000	2.000
0016	204.0220	Removing Inlets	EACH	2.000	2.000
0018	204.0241	Site Clearance (parcel) 001. 1130-44-75	EACH	1.000	1.000
0020	204.9060.S	Removing (item description) 002. Removing Communications Vault	EACH	1.000	1.000
0022	204.9090.S	Removing (item description) 001. Removing Electrical Conductors From Existing Conduit	LF	295.000	295.000
0024	205.0100	Excavation Common	CY	10,000.000	10,000.000
0026	208.0100	Borrow	CY	81,000.000	81,000.000
0028	213.0100	Finishing Roadway (project) 001. 1130-44-75	EACH	1.000	1.000
0030	214.0100	Obliterating Old Road	STA	2.000	2.000
0032	305.0110	Base Aggregate Dense 3/4-Inch	TON	1,500.000	1,500.000
0034	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	14,630.000	14,630.000
0036	405.0100	Coloring Concrete WisDOT Red	CY	625.000	625.000
0038	415.0100	Concrete Pavement 10-Inch	SY	22,210.000	22,210.000
0040	415.0110	Concrete Pavement 11-Inch	SY	6,450.000	6,450.000
0042	415.4100	Concrete Pavement Joint Filling	SY	22,840.000	22,840.000
0044	415.6000.S	Rout and Seal	LF	3,860.000	3,860.000
0046	416.0620	Drilled Dowel Bars	EACH	15.000	15.000
0048	455.0605	Tack Coat	GAL	350.000	350.000
0050	460.2000	Incentive Density HMA Pavement	DOL	300.000	300.000
0052	460.5223	HMA Pavement 3 LT 58-28 S	TON	190.000	190.000
0054	460.5224	HMA Pavement 4 LT 58-28 S	TON	175.000	175.000
0056	465.0125	Asphaltic Surface Temporary	TON	761.000	761.000
0058	465.0315	Asphaltic Flumes	SY	25.000	25.000
0060	520.1018	Apron Endwalls for Culvert Pipe 18-Inch	EACH	11.000	11.000
0062	520.1036	Apron Endwalls for Culvert Pipe 36-Inch	EACH	1.000	1.000
0064	520.3418	Culvert Pipe Class III-A Non-metal 18-Inch	LF	285.000	285.000
0066	520.8000	Concrete Collars for Pipe	EACH	2.000	2.000
0068	522.0418	Culvert Pipe Reinforced Concrete Class IV 18-Inch	LF	100.000	100.000
0070	522.1018	Apron Endwalls for Culvert Pipe Reinforced Concrete 18-Inch	EACH	1.000	1.000
0072	530.1112	Culvert Pipe Corrugated Polypropylene 12-Inch	LF	69.000	69.000
0074	531.2030	Drilling Shaft 30-Inch	LF	26.000	26.000
0076	531.2042	Drilling Shaft 42-Inch	LF	18.000	18.000
0078	531.2048	Drilling Shaft 48-Inch	LF	44.000	44.000
0080	531.4500	Foundation High Mast 100-FT (structure) 001. L-44-001	EACH	1.000	1.000
0082	531.4500	Foundation High Mast 100-FT (structure) 002. L-44-002	EACH	1.000	1.000
0084	531.5130	Foundation Single-Shaft Type MC-III (structure) 001. S-44-320	EACH	1.000	1.000
0086	531.5220	Foundation Single-Shaft Type MF-II (structure) 001. S-44-321	EACH	2.000	2.000
0088	532.4500	High Mast 100-FT (structure) 001. L-44-001	EACH	1.000	1.000
0090	532.4500	High Mast 100-FT (structure) 002. L-44-002	EACH	1.000	1.000
0092	532.5130	Monotube Cantilever Type III (structure) 001. S-44-320	EACH	1.000	1.000
0094	532.5220	Monotube Full Span Type II (structure) 001. S-44-321	EACH	1.000	1.000
0096	601.0555	Concrete Curb & Gutter 6-Inch Sloped 36-Inch Type A	LF	1,270.000	1,270.000

Estimate Of Quantities

1130-44-75

Line	Item	Item Description	Unit	Total	Qty
0098	602.0405	Concrete Sidewalk 4-Inch	SF	9,850.000	9,850.000
0100	602.0505	Curb Ramp Detectable Warning Field Yellow	SF	20.000	20.000
0102	602.3010	Concrete Surface Drains	CY	7.000	7.000
0104	603.1132	Concrete Barrier Type S32	LF	180.000	180.000
0106	606.0200	Riprap Medium	CY	30.000	30.000
0108	608.3015	Storm Sewer Pipe Class III-A 15-Inch	LF	137.000	137.000
0110	608.3018	Storm Sewer Pipe Class III-A 18-Inch	LF	606.000	606.000
0112	608.3024	Storm Sewer Pipe Class III-A 24-Inch	LF	272.000	272.000
0114	608.3036	Storm Sewer Pipe Class III-A 36-Inch	LF	555.000	555.000
0116	611.0627	Inlet Covers Type HM	EACH	1.000	1.000
0118	611.0639	Inlet Covers Type H-S	EACH	6.000	6.000
0120	611.0642	Inlet Covers Type MS	EACH	4.000	4.000
0122	611.0666	Inlet Covers Type Z	EACH	1.000	1.000
0124	611.2005	Manholes 5-FT Diameter	EACH	4.000	4.000
0126	611.3004	Inlets 4-FT Diameter	EACH	4.000	4.000
0128	611.3901	Inlets Median 1 Grate	EACH	4.000	4.000
0130	612.0206	Pipe Underdrain Unperforated 6-Inch	LF	6.000	6.000
0132	612.0208	Pipe Underdrain Unperforated 8-Inch	LF	22.000	22.000
0134	614.0800	Crash Cushions Permanent	EACH	2.000	2.000
0136	616.0206	Fence Chain Link 6-FT	LF	1,765.000	1,765.000
0138	618.0100	Maintenance and Repair of Haul Roads (project) 001. 1130-44-75	EACH	1.000	1.000
0140	619.1000	Mobilization	EACH	1.000	1.000
0142	620.0300	Concrete Median Sloped Nose	SF	150.000	150.000
0144	624.0100	Water	MGAL	250.000	250.000
0146	625.0100	Topsoil	SY	125.000	125.000
0148	625.0500	Salvaged Topsoil	SY	22,370.000	22,370.000
0150	627.0200	Mulching	SY	10,000.000	10,000.000
0152	628.1104	Erosion Bales	EACH	50.000	50.000
0154	628.1504	Silt Fence	LF	6,000.000	6,000.000
0156	628.1520	Silt Fence Maintenance	LF	48,000.000	48,000.000
0158	628.1905	Mobilizations Erosion Control	EACH	8.000	8.000
0160	628.1910	Mobilizations Emergency Erosion Control	EACH	8.000	8.000
0162	628.2002	Erosion Mat Class I Type A	SY	21,060.000	21,060.000
0164	628.2004	Erosion Mat Class I Type B	SY	5,500.000	5,500.000
0166	628.2008	Erosion Mat Urban Class I Type B	SY	2,200.000	2,200.000
0168	628.7005	Inlet Protection Type A	EACH	14.000	14.000
0170	628.7010	Inlet Protection Type B	EACH	6.000	6.000
0172	628.7015	Inlet Protection Type C	EACH	8.000	8.000
0174	628.7555	Culvert Pipe Checks	EACH	30.000	30.000
0176	628.7560	Tracking Pads	EACH	2.000	2.000
0178	629.0210	Fertilizer Type B	CWT	20.000	20.000
0180	630.0110	Seeding Mixture No. 10	LB	200.000	200.000
0182	630.0130	Seeding Mixture No. 30	LB	890.000	890.000
0184	630.0140	Seeding Mixture No. 40	LB	50.000	50.000
0186	630.0200	Seeding Temporary	LB	200.000	200.000
0188	630.0300	Seeding Borrow Pit	LB	500.000	500.000
0190	630.0500	Seed Water	MGAL	630.000	630.000
0192	632.0201	Shrubs (species, root, size) 001. Everlow Yew, CG, #5	EACH	2.000	2.000
0194	632.0201	Shrubs (species, root, size) 002. Bush Cinquefoil, CG, #5	EACH	3.000	3.000

Estimate Of Quantities

1130-44-75

Line	Item	Item Description	Unit	Total	Qty
0196	632.0201	Shrubs (species, root, size) 003. Gro-Low Sumac, CG, #5	EACH	5.000	5.000
0198	632.9101	Landscape Planting Surveillance and Care Cycles	EACH	16.000	16.000
0200	633.0100	Delineator Posts Steel	EACH	49.000	49.000
0202	633.0500	Delineator Reflectors	EACH	49.000	49.000
0204	633.1000	Delineators Barrier Wall	EACH	9.000	9.000
0206	633.5200	Markers Culvert End	EACH	12.000	12.000
0208	634.0612	Posts Wood 4x6-Inch X 12-FT	EACH	1.000	1.000
0210	634.0614	Posts Wood 4x6-Inch X 14-FT	EACH	36.000	36.000
0212	634.0616	Posts Wood 4x6-Inch X 16-FT	EACH	17.000	17.000
0214	634.0618	Posts Wood 4x6-Inch X 18-FT	EACH	5.000	5.000
0216	637.2210	Signs Type II Reflective H	SF	339.790	339.790
0218	637.2230	Signs Type II Reflective F	SF	27.000	27.000
0220	638.2601	Removing Signs Type I	EACH	1.000	1.000
0222	638.2602	Removing Signs Type II	EACH	8.000	8.000
0224	638.3000	Removing Small Sign Supports	EACH	11.000	11.000
0226	638.3100	Removing Structural Steel Sign Supports	EACH	2.000	2.000
0228	643.0300	Traffic Control Drums	DAY	22,420.000	22,420.000
0230	643.0420	Traffic Control Barricades Type III	DAY	6,500.000	6,500.000
0232	643.0705	Traffic Control Warning Lights Type A	DAY	4,180.000	4,180.000
0234	643.0800	Traffic Control Arrow Boards	DAY	1,020.000	1,020.000
0236	643.0900	Traffic Control Signs	DAY	7,700.000	7,700.000
0238	643.0910	Traffic Control Covering Signs Type I	EACH	3.000	3.000
0240	643.1000	Traffic Control Signs Fixed Message	SF	70.000	70.000
0242	643.5000	Traffic Control	EACH	1.000	1.000
0244	645.0120	Geotextile Type HR	SY	350.000	350.000
0246	646.2020	Marking Line Epoxy 6-Inch	LF	10,814.000	10,814.000
0248	646.4020	Marking Line Epoxy 10-Inch	LF	250.000	250.000
0250	646.5020	Marking Arrow Epoxy	EACH	3.000	3.000
0252	646.5220	Marking Symbol Epoxy	EACH	3.000	3.000
0254	646.6120	Marking Stop Line Epoxy 18-Inch	LF	30.000	30.000
0256	646.6220	Marking Yield Line Epoxy 18-Inch	EACH	27.000	27.000
0258	646.7020	Marking Diagonal Epoxy 6-Inch	LF	2,632.000	2,632.000
0260	646.7220	Marking Chevron Epoxy 24-Inch	LF	176.000	176.000
0262	646.8220	Marking Island Nose Epoxy	EACH	2.000	2.000
0264	646.8320	Marking Parking Stall Epoxy	LF	843.000	843.000
0266	650.4000	Construction Staking Storm Sewer	EACH	20.000	20.000
0268	650.5500	Construction Staking Curb Gutter and Curb & Gutter	LF	60.000	60.000
0270	650.6000	Construction Staking Pipe Culverts	EACH	3.000	3.000
0272	650.7000	Construction Staking Concrete Pavement	LF	3,299.000	3,299.000
0274	650.8501	Construction Staking Electrical Installations (project) 001. 1130-44-75	EACH	1.000	1.000
0276	650.9000	Construction Staking Curb Ramps	EACH	2.000	2.000
0278	650.9500	Construction Staking Sidewalk (project) 001. 1130-44-75	EACH	1.000	1.000
0280	650.9911	Construction Staking Supplemental Control (project) 001. 1130-44-75	EACH	1.000	1.000
0282	650.9920	Construction Staking Slope Stakes	LF	6,150.000	6,150.000
0284	652.0215	Conduit Rigid Nonmetallic Schedule 40 1 1/4-Inch	LF	115.000	115.000
0286	652.0225	Conduit Rigid Nonmetallic Schedule 40 2-Inch	LF	4,610.000	4,610.000
0288	652.0235	Conduit Rigid Nonmetallic Schedule 40 3-Inch	LF	10.000	10.000
0290	652.0700.S	Install Conduit into Existing Item	EACH	3.000	3.000
0292	653.0164	Pull Boxes Non-Conductive 24x42-Inch	EACH	13.000	13.000

Estimate Of Quantities

1130-44-75

Line	Item	Item Description	Unit	Total	Qty
0294	653.0900	Adjusting Pull Boxes	EACH	3.000	3.000
0296	654.0105	Concrete Bases Type 5	EACH	13.000	13.000
0298	655.0610	Electrical Wire Lighting 12 AWG	LF	2,206.000	2,206.000
0300	655.0615	Electrical Wire Lighting 10 AWG	LF	7,776.000	7,776.000
0302	655.0620	Electrical Wire Lighting 8 AWG	LF	14,575.000	14,575.000
0304	655.0625	Electrical Wire Lighting 6 AWG	LF	4,289.000	4,289.000
0306	657.0255	Transformer Bases Breakaway 11 1/2-Inch Bolt Circle	EACH	13.000	13.000
0308	657.0305	Poles Type 2	EACH	2.000	2.000
0310	657.0322	Poles Type 5-Aluminum	EACH	11.000	11.000
0312	657.0715	Luminaire Arms Truss Type 4 1/2-Inch Clamp 15-FT	EACH	13.000	13.000
0314	659.0400	Luminaires High Mast Lighting LED	EACH	6.000	6.000
0316	659.1120	Luminaires Utility LED B	EACH	13.000	13.000
0318	660.0500	High Mast Lowering Assembly (structure) 001. L-44-001	EACH	1.000	1.000
0320	660.0500	High Mast Lowering Assembly (structure) 002. L-44-002	EACH	1.000	1.000
0322	671.0300	Fiber Optic Cable Marker	EACH	2.000	2.000
0324	673.0105	Communication Vault Type 1	EACH	1.000	1.000
0326	673.0200	Tracer Wire Marker Posts	EACH	2.000	2.000
0328	674.0300	Remove Cable	LF	745.000	745.000
0330	674.0400	Reinstall Cable	LF	745.000	745.000
0332	690.0150	Sawing Asphalt	LF	350.000	350.000
0334	690.0250	Sawing Concrete	LF	30.000	30.000
0336	715.0603	Incentive Strength Concrete Barrier	DOL	90.000	90.000
0338	715.0720	Incentive Compressive Strength Concrete Pavement	DOL	8,420.000	8,420.000
0340	740.0440	Incentive IRI Ride	DOL	1,140.000	1,140.000
0342	ASP.1T0A	On-the-Job Training Apprentice at \$5.00/HR	HRS	2,400.000	2,400.000
0344	ASP.1T0G	On-the-Job Training Graduate at \$5.00/HR	HRS	4,400.000	4,400.000
0346	SPV.0035	Special 001. Granite Chips	CY	15.000	15.000
0348	SPV.0060	Special 001. Static Scale System	EACH	1.000	1.000
0350	SPV.0060	Special 002. Static Scale System Warranty Maintenance	EACH	1.000	1.000
0352	SPV.0060	Special 003. Pipe Bollard	EACH	8.000	8.000
0354	SPV.0060	Special 004. Concrete Wheel Stop	EACH	3.000	3.000
0356	SPV.0060	Special 005. Oil/Water Separator System	EACH	1.000	1.000
0358	SPV.0060	Special 006. Flag Pole	EACH	1.000	1.000
0360	SPV.0060	Special 007. Outlet Structure	EACH	1.000	1.000
0362	SPV.0060	Special 008. Weigh-in-Motion System	EACH	1.000	1.000
0364	SPV.0060	Special 009. Weigh-In-Motion System Warranty Maintenance	EACH	1.000	1.000
0366	SPV.0060	Special 010. Electrical Service, Wrightstown SWEF Mainline WIM	EACH	1.000	1.000
0368	SPV.0060	Special 011. Security Camera	EACH	1.000	1.000
0370	SPV.0060	Special 050. Install Lighted Bollard	EACH	5.000	5.000
0372	SPV.0060	Special 051. Flood Light (Sign)	EACH	2.000	2.000
0374	SPV.0060	Special 052. Flood Light (Flag Pole)	EACH	2.000	2.000
0376	SPV.0060	Special 053. Modify Existing Lighting Controls	EACH	1.000	1.000
0378	SPV.0090	Special 001. Concrete Curb & Gutter 24-Inch Type A	LF	1,600.000	1,600.000
0380	SPV.0090	Special 002. Concrete Curb & Gutter 24-Inch Type D	LF	60.000	60.000
0382	SPV.0090	Special 003. Construction Staking Fence	LF	1,765.000	1,765.000
0384	SPV.0180	Special 001. Scale Approach Pavement Reinforcement	SY	270.000	270.000
0386	SPV.0180	Special 002. Weed Barrier Fabric	SY	120.000	120.000

GRUBBING

201.0205 GRUBBING					
CATEGORY	STATION	TO	STATION	LOCATION	STA
0010	384+20	-	384+90	'L'	1
0010	385+50	-	389+25	'L'	4
0010	395+00	-	401+69	'L'	7
0010	300+14	-	307+50	'C'	8
0010	200+25	-	215+62	'LO'	16
PROJECT TOTAL					36

LIGHTING REMOVALS

204.9090.S.001 REMOVING ELECTRICAL CONDUCTORS FROM EXISTING CONDUIT			
FROM	-	TO	LF
CATEGORY 0010			
EXSL 1802	-	EXPB 1804	170
EXPB 1804	-	EXPB 1805	95
EXPB 1805	-	EXSL 1803	30
PROJECT TOTAL			295

MISCELLANEOUS REMOVALS

					203.0100 REMOVING SMALL PIPE CULVERTS	204.0100 REMOVING CONCRETE PAVEMENT	204.0110 REMOVING ASPHALTIC SURFACE	204.0170 REMOVING FENCE	204.0180 REMOVING DELINEATORS AND MARKERS	204.0220 REMOVING INLETS	204.0241.001 SITE CLEARANCE (1130-44-75)
CATEGORY	STATION	TO	STATION	LOCATION	EACH	SY	SY	LF	EACH	EACH	EACH
0010	101+45	-	104+00	'R'	-	1,390	-	-	3	1	-
0010	104+00	-	119+00	'R'	2	-	680	-	11	1	-
0010	119+00	-	123+16	'R'	-	270	-	-	2	-	-
0010	381+85	-	389+66	'L'	-	-	-	-	-	-	-
0010	397+63	-	401+70	'L'	-	-	-	-	-	-	-
0010	300+14	-	308+19	'C'	-	-	600	-	-	-	-
0010	197+35	-	215+62	'LO'	1	-	-	1,750	-	-	-
0010	UNDISTRIBUTED				-	-	-	-	-	-	1
PROJECT TOTAL					3	1,660	1,280	1,750	16	2	1

OBLITERATING OLD ROAD

214.0100 OBLITERATING OLD ROAD					
CATEGORY	STATION	TO	STATION	LOCATION	STA
0010	207+60	-	207+60	'LO'	2
PROJECT TOTAL					2

EARTHWORK SUMMARY

CATEGORY	DIVISION	FROM/TO STATION	LOCATION	205.0100 COMMON EXCAVATION (1)		SALVAGED/ UNUSABLE PAVEMENT MATERIAL (4)	AVAILABLE MATERIAL (5)	UNEXPANDED FILL	EXPANDED FILL (6)	MASS ORDINATE +/- (7)	WASTE (8)	(8)208.0100 BORROW	COMMENT
				CUT (2)	EBS EXCAVATION (3)				FACTOR 1.25				
DIVISION 1													
0010	'C' R/L	300+14.05/307+04.26	CMV PARKING	137	--	--	137	36,453	45,566	-45,434	--	45,434	
0010	'D' R/L	10+33.27/10+57.94	DUMPSTER PAD	16	--	--	--	6	8	9	--	--	
0010	'E' R/L	10+19.54/10+75.09	EMPLOYEE PARKING ACCESS	27	--	--	--	20	25	-16	--	16	
0010	'L' R/L	381+80.26/401+69.73	LOOP INSIDE	4,770	--	--	4,770	3,948	4,935	-165	--	165	
0010	'L' R/L	381+80.26/401+69.73	LOOP PAVEMENT	546	--	--	546	7,786	9,733	-9,187	--	9,187	
0010	'LO' R/L	197+35.28/215+62.39	LOOP OUTSIDE	1,540	--	--	1,540	10,225	12,781	-11,241	--	11,241	
0010	'R' R/L	101+44.53/123+16.00	SWEF & TEMP. RAMP	2,619	--	354	2,265	13,437	16,796	-14,531	354	14,531	
0010			UNDISTRIBUTED		345	--	--	--	--	--	--	426	
CAT 0010 TOTAL				10,000		354	9,258	71,875	89,844	-80,565	354	81,000	
PROJECT 1130-44-75 TOTAL				10,000		354	7,035	71,875	89,844	-80,565	354	81,000	

PROJECT TOTALS

TOTAL COMMON EXCAVATION 205.0100 (CY)	10,000
TOTAL BORROW 208.0100 (CY)	81,000

- (1) COMMON EXCAVATION IS THE SUM OF THE CUT AND EBS EXCAVATION COLUMNS. ITEM NUMBER 205.0100
- (2) SALVAGED/UNSUABLE PAVEMENT MATERIAL IS ESTMATED, INCLUDED IN CUT
- (3) EBS EXCAVATION TO BE BACKFILLED WITH BORROW, EBS WAS ASSUMED AS WASTE
- (4) SALVAGED/UNUSABLE PAVEMENT MATERIAL IS ESTIMATED AND ASSUMED WASTE
- (5) AVAILABLE MATERIAL = CUT - SALVAGED/UNUSUABLE PAVEMENT MATERIAL
- (6) EXPANDED FILL = UNEXPANDED FILL * 1.25
- (7) THE MASS ORDINATE + OR - QTY CALCULATED FOR THE PROJECT. + QUANTITY INDICATES AN EXCESS OF MATERIAL. - INDICATES A SHORTAGE OF MATERIAL .
- (8) WASTE MAY BE UTILIZED AS BORROW IF DETERMINED TO BE SUITABLE BY ENGINEER.

BASE AGGREGATE AND HMA PAVEMENT												
				305.0110	305.0120	455.0605	460.5223	460.5224	465.0125	465.0315	624.0100	
				BASE AGGREGATE DENSE 3/4-INCH	BASE AGGREGATE DENSE 1 1/4-INCH	TACK COAT	HMA PAVEMENT 3 LT 58-28 S	HMA PAVEMENT 4 LT 58-28 S	ASPHALTIC SURFACE TEMPORARY	ASPHALTIC FLUMES	WATER	
CATEGORY	STATION	TO	STATION	LOCATION	TON	TON	GAL	TON	TON	TON	SY	MGAL
0010	101+45	-	104+00	'R'	48	602	-	-	-	257	-	10
0010	104+00	-	119+00	'R'	155	3,508	178	80	80	-	-	56
0010	119+00	-	123+16	'R'	48	1,114	-	-	-	504	-	18
0010	381+85	-	389+66	'L'	99	1,606	-	-	-	-	-	26
0010	397+63	-	401+70	'L'	590	1,416	-	-	-	-	-	31
0010	300+14	-	308+19	'C'	130	5,112	39	18	18	-	-	81
0010	197+35	-	215+62	'LO'	128	518	74	34	34	-	22	10
0010	10+35	-	10+60	'D'	-	20	-	-	-	-	-	0
0010	10+00	-	10+75.09	'E'	23	100	-	19	20	-	-	2
0010	22+06	-	22+37	'A'	11	20	18	9	7	-	-	0
0010	22+79	-	23+04	'A'	11	20	27	13	10	-	-	0
				UNDISTRIBUTED	256	264	14	17	6	-	3	11
				TOTAL 0010	1,500	14,300	350	190	175	761	25	245
0020	300+14	-	308+19	'C'	-	330	-	-	-	-	-	5
				TOTAL 0020	0	330	0	0	0	0	0	5
				PROJECT TOTAL	1,500	14,630	350	190	175	761	25	250

CONCRETE PAVEMENT & MISC. CONCRETE ITEMS																					
					405.0100	415.0100	415.0110	415.4100	415.6000.S	416.0620	601.0555 CONCRETE CURB & GUTTER 6-INCH SLOPED 36-INCH TYPE A	602.0405	602.0505	602.3010	620.0300	650.5500	650.7000	650.9000	SPV.0090.001	SPV.0090.002	SPV.0180.001
					COLORING CONCRETE WISDOT RED	CONCRETE PAVEMENT 10-INCH	CONCRETE PAVEMENT 11-INCH	CONCRETE PAVEMENT JOINT FILLING	ROUT AND SEAL	DRILLED DOWEL BARS EACH		CONCRETE SIDEWALK 4-INCH	CURB RAMP DETECTABLE WARNING FIELD YELLOW	CONCRETE SURFACE DRAINS	CONCRETE MEDIAN SLOPED NOSE	CONSTRUCTION STAKING CURB GUTTER AND CURB & GUTTER	CONSTRUCTION STAKING CONCRETE PAVEMENT	CONSTRUCTIO N STAKING CURB RAMPS	CONCRETE CURB & GUTTER 24-INCH TYPE A	CONCRETE CURB & GUTTER 24-INCH TYPE D	SCALE APPROACH PAVEMENT REINFORCEMENT
CATEGORY	STATION	TO	STATION	R/L	CY	SY	SY	SY	LF		LF	SF	SF	CY	SF	LF	LF	EACH	LF	LF	SY
0010	101+45	-	104+00	'R'	-	-	-	-	-	-	-	-	-	-	--	-	-	-	-	-	-
0010	104+00	-	119+00	'R'	364	-	6,426	146	845	-	-	2,400	-	-	-	--	1,500	-	658	--	270
0010	119+00	-	123+16	'R'	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0010	381+85	-	389+66	'L'	107	12,000	-	12,000	781	-	-	2,940	-	-	53	-	781	-	-	-	-
0010	397+63	-	401+70	'L'	154	5,000	-	5,000	407	-	-	995	-	-	--	-	407	2	-	-	-
0010	300+14	-	308+19	'C'	-	4,585	-	4,585	-	-	-	1,775	20	-	42	-	586	--	650	-	-
0010	197+35	-	215+62	'LO'	-	-	-	423	1,827	-	1,270	-	-	7	-	-	-	-	-	-	-
0010	10+35	-	10+60	'D'	-	-	24	-	-	15	-	-	-	-	--	-	25	-	-	-	-
0010	10+00	-	10+75.09	'E'	-	-	-	-	-	-	-	-	-	-	55	60	-	-	-	60	-
TOTAL 0010					625	21,590	6,450	22,155	3,860	15	1,270	8,110	20	7.0	150	60	3,299	2	1,310	60	270
0020	300+14	-	308+19	'C'	-	620	-	685	-	-	-	1,740	-	-	-	-	-	-	290	-	-
TOTAL 0020					0	620	0	685	0	0	0	1,740	0	0	0	0	0	0	290	0	0
PROJECT TOTAL					625	22,210	6,450	22,840	3,860	15	1,270	9,850	20	7.0	150	60	3,299	2	1,600	60	270

3

CONCRETE BARRIER												
				633.1000	603.1132	614.0800						
				DELINEATORS	CONCRETE	CRASH			OBJECT	CRASH		
				BARRIER	BARRIER	CUSHIONS	BACK		MARKING	TEST	TRAFFIC	CRASH
				WALL	TYPE S32	PERMANENT	WIDTH		PATTERN	LEVEL	DIRECTION	CUSHION
CATEGORY	STATION	TO	STATION	LOCATION	EACH	LF	EACH				LOCATION	SHIELDS
0010	109+12	-	110+02	'R'	9	180	2	6	OM-3C (W05-58M)	TL-2	UNIDIRECTIONAL	THERMAL IMAGING SYSTEM
PROJECT TOTAL					9	180	2					

RIRPAP									
					606.0200	645.0120			
					RIPRAP	GEOTEXTILE			
CATEGORY	STATION	TO	STATION	LOCATION	MEDIUM	TYPE HR			
					CY	SY	REMARKS		
0010	197+35	-	215+62	'LO'	25	260	CULVERT & FLUME ENDS		
				UNDISTRIBUTED	5	90	UNDISTRIBUTED		
PROJECT TOTAL					30	350			

3

CULVERT AND STORMSEWER PIPES																
							520.3418	522.0418	530.1112	608.3015	608.3018	608.3024	608.3036	612.0206	612.0208	650.6000
							CULVERT PIPE	CULVERT PIPE	CULVERT PIPE	STORM SEWER	STORM SEWER	STORM SEWER	STORM SEWER	PIPE	PIPE	
							CLASS III-A	REINFORCED	CORRUGATED	PIPE	PIPE	PIPE	PIPE	UNDERDRAIN	UNDERDRAIN	CONSTRUCTION
							NON-METAL	CONCRETE	POLYPROPYLENE	CLASS III-A	CLASS III-A	CLASS III-A	CLASS III-A	UNPERFORATED	UNPERFORATED	STAKING PIPE
							18-INCH	18-INCH	12-INCH	15-INCH	18-INCH	24-INCH	36-INCH	6-INCH	8-INCH	CULVERTS
CATEGORY	FROM	TO	R/L	INLET	OUTLET	FT/FT	LF	LF	LF	LF	LF	LF	LF	LF	LF	EACH
STRUCT.	STRUCT.			ELEV	ELEV											
0010	2.0	-	1.0	'LO'	676.74	676.50	0.004	-	-	-	-	-	54	-	-	-
0010	2.1	-	2.0	'L'	683.25	682.50	0.011	-	-	-	69	-	-	-	-	-
0010	2.2	-	2.1	'L'	688.00	686.94	0.048	-	-	-	-	-	-	-	22	-
0010	2.3	-	2.1	'L'	688.00	686.94	0.048	-	-	-	-	-	-	6	-	-
0010	3.0	-	2.0	'LO'	677.40	676.74	0.003	-	-	-	-	-	218	-	-	-
0010	4.0	-	3.0	'LO'	677.83	677.40	0.003	-	-	-	-	-	139	-	-	-
0010	4.1	-	4.0	'C'	680.95	678.50	0.014	-	-	-	178	-	-	-	-	-
0010	4.2	-	4.1	'L'	686.83	682.59	0.031	-	-	137	-	-	-	-	-	-
0010	5.0	-	4.0	'LO'	678.26	677.83	0.003	-	-	-	-	-	144	-	-	-
0010	6.0	-	5.0	'LO'	678.70	678.26	0.003	-	-	-	-	143	-	-	-	-
0010	7.0	-	6.0	'LO'	679.15	678.70	0.004	-	-	-	-	129	-	-	-	-
0010	7.1	-	7.0	'LO'	679.32	679.15	0.004	-	-	-	39	-	-	-	-	-
0010	10.2	-	10.1	'R'	679.53	679.10	0.003	-	-	-	144	-	-	-	-	--
0010	11.2	-	11.1	'R'	681.60	680.85	0.008	90	-	-	--	-	-	-	-	1
0010	12.2	-	12.1	'R'	682.10	681.38	0.007	-	100	-	-	-	-	-	-	-
0010	12.2	-	12.1	'L'	683.50	682.25	0.018	-	-	69	-	-	-	-	-	-
0010	15.1	-	15.0	'R'	686.15	685.35	0.010	-	-	-	85	-	-	-	-	-
0010	20.2	-	20.1	'L'	676.50	675.50	0.010	98	-	-	--	-	-	-	-	1
0010	22.2	-	22.1	'A'	677.75	675.50	0.023	97	-	-	--	-	-	-	-	1
0010	30.2	-	30.1	'L'	679.00	678.53	0.005	--	-	-	91	-	-	-	-	--
PROJECT TOTAL							285	100	69	137	606	272	555	6	22	3

STORMSEWER STRUCTURES AND ENDWALLS																					
								520.1018	520.1036	520.8000	522.1018	611.0627	611.0639	611.0642	611.0666	611.2005	611.3004	611.3901	633.5200	650.4000	
								APRON	APRON		APRON										
								ENDWALLS FOR	ENDWALLS	CONCRETE	ENDWALLS						MANHOLES	INLETS	INLETS		CONSTRUCTION
								CULVERT PIPE	FOR CULVERT	COLLARS FOR	FOR CULVERT PIPE						5-FT	4-FT	MEDIAN 1	MARKERS	STAKING
								18-INCH	PIPE	PIPE	CONCRETE	INLET COVERS	INLET COVERS	INLET COVERS	INLET COVERS		DIAMETER	DIAMETER	GRATE	CULVERT END	SEWER
CATEGORY	STRUCTURE NO.	* STATION	* OFFSET	R/L	** RIM ELEVATION	*** BOTTOM OF STRUCTURE ELEVATION	**** DEPTH FT	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	
0010	1.0	203+51.00	43.9' LT	'LO'	-	676.50	--	-	1	-	-	--	-	-	-	-	-	--	-	1	
0010	2.0	203+83.75	1.50' LT	'LO'	690.97	676.45	14.27	-	-	-	-	1	-	-	-	1	--	-	-	1	
0010	2.1	204+20.81	56.76' RT	'LO'	692.56	682.96	9.06	-	-	-	-	-	-	-	1	-	1	-	-	1	
0010	2.2	389+22.31	20.20' LT	'L'	-	-	--	-	-	1	-	-	-	-	-	-	-	-	-	1	
0010	2.3	389+26.40	42.9' LT	'L'	-	-	--	-	-	1	-	-	-	-	-	-	-	-	-	1	
0010	3.0	206+02.02	7.00' LT	'LO'	689.58	677.21	12.12	-	-	-	-	-	1	-	-	1	--	-	-	1	
0010	4.0	207+41.27	7.01' LT	'LO'	687.86	677.54	10.07	-	-	-	-	-	1	-	-	1	-	-	-	1	
0010	4.1	207+41.40	170.60' RT	'LO'	686.00	680.66	5.55	-	-	-	-	-	-	1	-	-	-	1	--	1	
0010	5.0	208+85.53	7.00' LT	'LO'	686.09	677.97	7.87	-	-	-	-	-	1	-	-	1	--	-	-	1	
0010	6.0	210+28.26	7.00' LT	'LO'	684.31	678.45	5.53	-	-	-	-	-	1	-	-	-	1	-	-	1	
0010	7.0	211+57.39	7.00' LT	'LO'	683.00	678.90	3.77	-	-	-	-	-	1	-	-	-	1	-	-	1	
0010	7.1	211+95.60	7.02' LT	'LO'	682.83	679.11	3.35	-	-	-	-	-	1	-	-	-	1	-	-	1	
0010	10.1	399+57.80	54.40' LT	'LO'	--	679.10	--	1	-	-	-	-	-	--	-	-	-	--	1	1	
0010	10.2	105+44.79	38.92' LT	'R'	682.77	679.24	3.74	1	-	-	-	-	-	1	-	-	-	1	1	1	
0010	11.1	108+23.50	44.40' LT	'R'	-	680.85	--	1	-	-	-	-	-	-	-	-	-	-	1	-	
0010	11.2	108+23.40	45.10' RT	'R'	--	681.60	--	1	-	-	-	-	-	-	-	-	-	-	1	-	
0010	12.1	382+67.83	33.65' RT	'L'	-	681.38	--	1	-	-	-	-	-	-	-	-	-	-	1	1	
0010	12.2	117+94.89	39.99' LT	'R'	685.00	682.72	2.49	1	-	-	-	-	-	1	-	-	-	1	1	1	
0010	15.0	114+74.46	43.08' LT	'R'	-	685.35	--	-	-	-	1	-	-	-	-	-	-	-	-	1	
0010	15.1	114+73.00	41.91' RT	'R'	692.00	685.94	6.27	-	-	-	-	-	-	1	-	-	-	1	--	1	
0010	20.1	384+55.26	60.86' LT	'L'	-	675.50	-	1	-	-	-	-	-	-	-	-	-	-	1	-	
0010	20.2	384+38.17	35.47' RT	'L'	-	676.50	-	1	-	-	-	-	-	-	-	-	-	-	1	-	
0010	22.1	385+81.04	60.94' LT	'L'	-	675.50	-	1	-	-	-	-	-	-	-	-	-	-	1	-	
0010	22.2	385+95.46	34.66' RT	'L'	-	677.75	-	1	-	-	-	-	-	-	-	-	-	-	1	-	
0010	30.1	399+57.80	54.4' LT	'L'	--	678.53	-	1	-	-	-	-	-	-	-	-	-	-	1	1	
0010	30.2	399+54.61	37.02' RT	'L'	681.00	678.79	2.42	-	-	-	-	-	-	--	-	-	-	--	--	1	
PROJECT TOTAL								11	1	2	1	1	6	4	1	4	4	4	12	20	

REMARKS:
*STATIONS AND OFFSETS ARE TO CENTER OF STRUCTURE
**RIM ELEV IS AT THE FLOW LINE OF THE CASTING
***THE BOTTOM OF STRUCTURE ELEVATION OF THE LOWEST PIPE FLOW LINE MINUS THE THICKNESS OF THE PIPE OR THE FLOWLINE OF AN ENDWALL
****DEPTH = RIM ELEV - (COVER HEIGHT - 3-INCH ADJUSTMENT RING HEIGHT + PIPE THICKNESS) - BOTTOM OF STRUCTURE

<u>FENCING</u>						
					616.0206 FENCE CHAIN LINK 6-FT LF	SPV.0090.003 CONSTRUCTION STAKING FENCE LF
CATEGORY	STATION	TO	STATION	LOCATION	LF	LF
0010	197+35	-	215+62	'LO'	1,765	1,765
0010	UNDISTRIBUTED				-	-
PROJECT TOTAL					1,765	1,765

MOBILIZATIONS				
PROJECT	CATEGORY	LOCATION	628.1905 MOBILIZATIONS EROSION CONTROL EACH	628.1910 MOBILIZATIONS EMERGENCY EROSION CONTROL EACH
1130-44-75	0010	PROJECT 1130-44-75	8	8
PROJECT TOTAL			8	8

EROSION CONTROL																
					627.0200	628.1104	628.1504	628.1520	628.2002	628.2004	628.2008	628.7005	628.7010	628.7015	628.7555	628.7560
						EROSION		SILT FENCE	EROSION MAT	EROSION MAT	EROSION MAT	INLET	INLET	INLET	CULVERT PIPE	
CATEGORY	STATION	TO	STATION	LOCATION	MULCHING SY	BALES EACH	SILT FENCE LF	MAINTENANCE LF	CLASS I TYPE A SY	CLASS I TYPE B SY	URBAN CLASS I TYPE B SY	PROTECTION TYPE A EACH	PROTECTION TYPE B EACH	PROTECTION TYPE C EACH	CHECKS EACH	TRACKING PADS EACH
0010	101+45	-	104+00	'R'	-	-	555	4,440	240	-	-	-	-	-	-	-
0010	104+00	-	119+00	'R'	-	-	1,510	12,080	4,200	800	1,075	3	3	-	10	-
0010	119+00	-	123+16	'R'	-	-	805	6,440	1,220	-	-	-	-	-	-	-
0010	381+85	-	389+66	'L'	-	-	-	-	2,840	500	-	-	-	-	14	-
0010	397+63	-	401+70	'L'	-	-	-	-	2,720	1,445	900	1	1	-	-	-
0010	300+14	-	308+19	'C'	-	-	-	-	550	290	-	2	2	-	-	-
0010	197+35	-	215+62	'LO'	-	-	2,030	16,240	6,250	2,025	-	8	-	8	-	-
0010	10+35	-	10+60	'D'	-	-	-	-	-	25	-	-	-	-	-	-
0010	10+00	-	10+75.09	'E'	-	-	-	-	-	-	-	-	-	-	-	-
0010			UNDISTRIBUTED		10,000	50	1,100	8,800	3,040	415	225	-	-	-	6	2
PROJECT TOTAL					10,000	50	6,000	48,000	21,060	5,500	2,200	14	6	8	30	2

FINISHING ITEMS															
					625.0100	625.0500	629.0210	630.0110	630.0130	630.0140	630.0200	630.0300	630.0500	SPV.0035.001	SPV.0180.002
					TOPSOIL	SALVAGED TOPSOIL	FERTILIZER	SEEDING	SEEDING	SEEDING	SEEDING	SEEDING			
CATEGORY	STATION	TO	STATION	LOCATION	SY	SY	TYPE B CWT	MIXTURE NO. 10 LB	MIXTURE NO. 30 LB	MIXTURE NO. 40 LB	TEMPORARY LB	BORROW PIT LB	SEED WATER MGAL	GRANITE CHIPS CY	WEED BARRIER FABRIC SY
0010	101+45	-	104+00	'R'	125	548	0.3	-	25	-	-	-	12.3	13	116
0010	104+00	-	119+00	'R'	-	4,118	2.6	1	144	40	-	-	92.4	-	-
0010	119+00	-	123+16	'R'	-	157	0.1	-	7	-	-	-	3.5	-	-
0010	381+85	-	389+66	'L'	-	2,927	1.8	1	130	-	-	-	65.7	-	-
0010	397+63	-	401+70	'L'	-	4,163	2.6	39	122	-	-	-	93.4	-	-
0010	300+14	-	308+19	'C'	-	3,748	2.4	34	112	-	-	-	84.1	-	-
0010	197+35	-	215+62	'LO'	-	6,493	4.1	79	160	-	-	-	145.7	-	-
0010	10+35	-	10+60	'D'	-	172	0.1	-	8	-	-	-	3.9	-	-
0010	10+00	-	10+75.09	'E'	-	-	0.0	-	-	-	-	-	-	-	-
0010			UNDISTRIBUTED		-	44	5.5	46	181	10	200	500	129	2	4
PROJECT TOTAL					125	22,370	20.0	200	890	50	200	500	630	15	120

3

SWEF LANDSCAPING						
CATEGORY	LOCATION	632.0201.003	632.0201.001	632.0201.002	632.9101	REMARKS
		SHRUBS			LANDSCAPE	
		GRO-LOW	EVERRLOW YEW	BUSH CINQUEFOIL,	PLANTING	
		SUMAC, CG, #5	CG, #5	CG, #5	SURVEILLANCE AND	
		EACH	EACH	EACH	CARE CYCLES	
0010	SWEF/POST	5	2	3	16	BUILDING LANDSCAPING
PROJECT TOTAL		5	2	3	16	

DELINEATORS					
CATEGORY	LOCATION	OFFSET	633.0100	633.0500	
			DELINEATOR POSTS STEEL EACH	DELINEATOR REFLECTORS (YELLOW) EACH	(WHITE) EACH
0010	STA. 104+00 'R' - STA. 119+00 'R'	LEFT	15	15	---
0010	STA. 104+00 'R' - STA. 119+00 'R'	RIGHT	3	---	3
0010	STA. 197+50 'LO' - 201+50 'LO'	LEFT	16	16	---
0010	STA. 211+75 'LO' - 215+50 'LO'	LEFT	15	15	---
PROJECT TOTAL				46	3
			49	49	

3

SIGNING REMOVALS							
SIGN #	SIGN CODE	204.0195 REMOVING CONCRETE BASES EACH	638.2601 REMOVING SIGNS TYPE I EACH	638.2602 REMOVING SIGNS TYPE II EACH	638.3000 REMOVING SMALL SIGN SUPPORTS EACH	638.3100 REMOVING STRUCTURAL STEEL SIGN SUPPORTS EACH	REMARKS
CATAGORY 0010							
1R-01	W4-3R	-	-	1	2	-	ENTERING ROADWAY ADDED LANE SYMBOL FROM RIGHT
1R-02	R5-53A	-	-	1	1	-	BUCKLE UP IT'S THE LAW
2R-01	R2-1	-	-	1	2	-	SPEED LIMIT 25 MPH
2R-02	R2-1	-	-	1	2	-	SPEED LIMIT 25 MPH
2R-03	R5-1A	-	-	1	1	-	WRONG WAY
2R-04	R2-1	-	-	1	1	-	SPEED LIMIT 25 MPH
2R-05	R5-1	-	-	1	1	-	DO NOT ENTER
2R-06	R5-1	-	-	1	1	-	DO NOT ENTER
3R-01	E3-1	2	1	-	-	2	EXIT 154 - CTH U WRIGHTSTOWN/HOBART 1/2 MILE
PROJECT TOTAL		2	1	8	11	2	

TRAFFIC CONTROL										
CATEGORY	LOCATION	DAYS	643.0300	643.0420	643.0705	643.0800	643.0900	643.0910	643.1000	643.5000
			TRAFFIC CONTROL DRUMS DAY	TRAFFIC CONTROL BARRICADES TYPE III DAY	TRAFFIC CONTROL WARNING LIGHTS TYPE A DAY	TRAFFIC CONTROL ARROW BOARDS DAY	TRAFFIC CONTROL SIGN DAY	+ TRAFFIC CONTROL COVERING SIGNS TYPE I EACH	TRAFFIC CONTROL SIGNS FIXED MESSAGE SF	TRAFFIC CONTROL EACH
0010	IH 41	510	21,420	4,080	4,080	1,020	7,650	3	-	-
0010	UNDISTRIBUTED		1,000	2,420	100	-	50	-	70	1
PROJECT TOTAL			22,420	6,500	4,180	1,020	7,700	3	70	1
+SINGLE CYCLE										

PERMANENT SIGNING TYPE II											
			637.2210	637.2230	634.0612	634.0614	634.0616	634.0618			
SIGN #	SIGN CODE	SIGN SIZE	SIGN SIZE WXH IN	SIGN TYPE II		POSTS WOOD 4X6-INCH				SIGN MOUNTED ON/SAME POST AS	REMARKS
				REFLECTIVE H SF	REFLECTIVE F SF	12 FT EACH	14 FT EACH	16 FT EACH	18 FT EACH		
CAT. 0010											
1-01	W3-5	2S	36X36	---	9.00	---	---	2	---	---	SPEED LIMIT 25 AHEAD (ARROW)
1-02	R2-1	5	48X60	20.00	---	---	---	---	2	1-04	SPEED LIMIT 25 MPH
1-03	R2-1	5	48X60	20.00	---	---	---	---	2	1-05	SPEED LIMIT 25 MPH
1-04	R5-1A	5	42X30	8.75	---	---	---	---	---	1-02	WRONG WAY
1-05	R5-1A	5	42X30	8.75	---	---	---	---	---	1-03	WRONG WAY
2-01	R5-1	2S	30X30	6.25	---	---	1	---	---	---	DO NOT ENTER
2-02	R3-1	2S	24X24	4.00	---	---	1	---	---	---	NO RIGHT TURN SYMBOL
2-03	D4-1 (MOD.)	Custom	30X36	7.50	---	---	---	1	---	---	EXIT RIGHT LANE ONLY
2-04	D5-1	2S	48X48	16.00	---	---	---	2	---	---	EXIT WITH ARROW
2-05	R7-1D	2S	18X24	3.00	---	---	1	---	---	---	NO PARKING ANY TIME (DOUBLE ARROW)
2-06	R7-1R	2S	18X24	3.00	---	---	1	---	---	---	NO PARKING ANY TIME (RIGHT ARROW)
2-07	R1-2	2S	36X31	3.88	---	---	---	1	---	---	YIELD
2-08	R1-2	2S	36X31	3.88	---	---	---	1	---	---	YIELD
2-09	SPECIAL	Custom	24X72	12.00	---	---	---	---	1	---	EXIT RIGHT LANE ONLY
2-10	R3-2	2S	24X24	4.00	---	---	---	1	---	---	NO LEFT TURN SYMBOL
2-11	R7-1D	2S	18X24	3.00	---	---	1	---	---	---	NO PARKING ANY TIME (DOUBLE ARROW)
2-12	R2-1	2S	24X30	5.00	---	---	1	---	---	---	SPEED LIMIT 25 MPH
2-13	R5-1	2S	30X30	6.25	---	---	1	---	---	---	DO NOT ENTER
2-14	D52-54	2S	24X24	4.00	---	---	1	---	---	---	EXIT WITH LEFT DOWN ARROW
2-15	R2-1	2S	24X30	5.00	---	---	1	---	---	---	SPEED LIMIT 25 MPH
2-16	D52-54	2S	24X24	4.00	---	---	1	---	---	---	EXIT WITH LEFT DOWN ARROW
2-17	D52-54	2S	24X24	4.00	---	---	1	---	---	---	EXIT WITH LEFT DOWN ARROW
2-18	D52-54	2S	24X24	4.00	---	---	1	---	---	---	EXIT WITH LEFT DOWN ARROW
3-01	SPECIAL	Custom	48X30	10.00	---	---	1	---	---	---	WAIT UNTIL TRUCK CLEARS SCALE BEFORE PROCEEDING
3-02	R1-1	2S	30X30	5.18	---	---	1	---	---	---	STOP SIGN
3-03	R7-8A	2S	12X18	1.50	---	---	1	---	---	3-04	RESERVED PARKING HANDICAPPED, THIS SPACE
3-04	R7-8V	2S	12X6	.50	---	---	---	---	---	3-03	VAN ACCESSIBLE PLAQUE
3-05	R7-8A	2S	12X18	1.50	---	1	---	---	---	---	RESERVED PARKING HANDICAPPED, THIS SPACE
3-06	SCALE	Custom	24X12	2.00	---	---	1	---	---	---	SCALE
3-07	R7-8A	2S	12X18	1.50	---	---	1	---	---	3-08	RESERVED PARKING HANDICAPPED, THIS SPACE
3-08	R7-8V	2S	12X6	.50	---	---	---	---	---	3-07	VAN ACCESSIBLE PLAQUE
3-09	R7-1D	2S	18X24	3.00	---	---	1	---	---	---	NO PARKING ANY TIME (DOUBLE ARROW)
3-10	SPECIAL	Custom	30X24	5.00	---	---	1	---	---	---	LAW ENFORCEMENT PARKING ONLY
3-11	R1-1	2S	30X30	5.18	---	---	---	---	---	---	STOP SIGN
3-12	R5-1	2S	30X30	6.25	---	---	---	---	---	3-13	DO NOT ENTER
3-13	SPECIAL	Custom	84X30	17.50	---	---	2	---	---	3-12	PARKING AHEAD ARROW & INSPECTION BAY RIGHT TILT UP ARROW
3-14	SPECIAL	Custom	30X30	6.25	---	---	---	---	---	---	WAIT FOR INSPECTION STAY IN VEHICLE
3-15	R1-1	2S	30X30	5.18	---	---	---	---	---	---	STOP SIGN
3-16	R5-11	Custom	30X24	5.00	---	---	1	---	---	---	AUTHORIZED VEHICLES ONLY
3-17	R5-1A	2S	36X24	6.00	---	---	1	---	---	---	WRONG WAY
3-18	R5-1A	2S	36X24	6.00	---	---	1	---	---	---	WRONG WAY
3-19	R7-1L	2S	18X24	3.00	---	---	1	---	---	---	NO PARKING ANY TIME (LEFT ARROW)
3-20	R7-1D	2S	18X24	3.00	---	---	1	---	---	---	NO PARKING ANY TIME (DOUBLE ARROW)
3-21	PARK1	Custom	54X48	18.00	---	---	---	2	---	---	INSPECTION AND PARKING UP RIGHT TILT ARROW
3-22	W4-2R	2S	36X36	---	9.00	---	---	2	---	---	LANE REDUCTION TRANSITION SYMBOL (RIGHT)
3-23	W4-2R	2S	36X36	---	9.00	---	---	2	---	---	LANE REDUCTION TRANSITION SYMBOL (RIGHT)
3-24	R7-1D	2S	18X24	3.00	---	---	1	---	---	---	NO PARKING ANY TIME (DOUBLE ARROW)
3-25	R1-1	2S	30X30	5.18	---	---	1	---	---	---	STOP SIGN
3-26	R1-1	2S	30X30	5.18	---	---	1	---	---	---	STOP SIGN
3-27	R5-11	Custom	30X24	5.00	---	---	1	---	---	---	AUTHORIZED VEHICLES ONLY
3-28	R5-11	Custom	30X24	5.00	---	---	1	---	---	---	AUTHORIZED VEHICLES ONLY
3-29	R5-1	2S	30X30	6.25	---	---	1	---	---	---	DO NOT ENTER
3-30	R5-1A	2S	36X24	6.00	---	---	1	---	---	3-34	WRONG WAY
3-31	R5-11 MOD	Custom	30X36	7.50	---	---	---	1	---	---	PUBLIC PARKING FOLLOW ARROWS
3-32	R5-11 MOD	Custom	30X36	7.50	---	---	---	1	---	---	PUBLIC PARKING FOLLOW ARROWS
3-33	D52-54	2S	24X24	4.00	---	---	1	---	---	---	EXIT WITH LEFT DOWN ARROW
3-34	D4-1	2S	30X24	5.00	---	---	---	---	---	3-30	PARKING WITH ARROW (AHEAD)
3-35	R1-2	2S	36X31	3.88	---	---	---	1	---	---	YIELD
3-36	D4-1	2S	30X24	5.00	---	---	1	---	---	---	PARKING WITH ARROW (RIGHT)
3-37	SPECIAL	Custom	24X18	3.00	---	---	1	---	---	---	PUBLIC PARKING
PROJECT TOTALS:				339.79	27.00	1	36	17	5		

PERMANENT PAVEMENT MARKING																
					646.2020			646.4020 MARKING LINE EPOXY	646.5020 MARKING ARROW EPOXY	646.5220 MARKING SYMBOL EPOXY	646.6120 MARKING STOP LINE EPOXY	646.6220 MARKING YIELD LINE EPOXY	646.7020 MARKING DIAGONAL EPOXY 6-INCH	646.7220 MARKING CHEVRON EPOXY	646.8220 MARKING ISLAND NOSE EPOXY	646.8320 MARKING PARKING STALL EPOXY
CATEGORY	STATION	TO	STATION	LOCATION	WHITE LF	YELLOW LF	RED LF	WHITE LF	WHITE EACH	WHITE EACH	WHITE LF	WHITE EACH	WHITE LF	WHITE LF	WHITE EACH	LF
0010	101+45	-	104+00	'R'	255	256	-	-	-	-	-	-	-	-	-	-
0010	104+00	-	119+00	'R'	2,511	3,166	-	-	-	-	30	11	-	176	-	33
0010	119+00	-	123+16	'R'	416	416	-	-	-	-	-	-	-	-	-	-
0010	381+85	-	389+66	'L'	752	685	-	166	-	-	-	-	-	-	2	-
0010	397+63	-	401+70	'L'	680	427	-	-	-	-	-	16	-	-	-	-
0010	300+14	-	308+19	'C'	-	750	500	84	3	-	-	-	2,500	-	-	-
0010	197+35	-	215+62	'LO'	-	-	-	-	-	-	-	-	132	-	-	-
0010	10+35	-	10+60	'D'	-	-	-	-	-	-	-	-	-	-	-	-
0010	10+00	-	10+75.09	'E'	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL 0010					4,614	5,700	500	250	3	0	30	27	2,632	176	2	33
0020	300+14	-	308+19	'C'	-	-	-	-	-	3	-	-	-	-	-	810
TOTAL 0020						0		0	0	3	0	0	0	0	0	810
PROJECT TOTAL						10,814		250	3	3	30	27	2632	176	2	843

CONSTRUCTION STAKING				
		650.9500.001	650.9911.001	650.9920
		CONSTRUCTION STAKING SIDEWALK (1130-44-75)	CONSTRUCTION STAKING SUPPLEMENTAL CONTROL (1130-44-75)	CONSTRUCTION STAKING SLOPE STAKES
CATEGORY	LOCATION	EACH	EACH	LF
0010	1130-44-75	1	1	6,150
PROJECT TOTAL		1	1	6,150

3

LIGHTING CONDUIT AND WIRE										
		652.0215	*652.0225	652.0235	**655.0610	655.0615	655.0620	655.0625		
		CONDUIT RIGID NONMETALLIC			ELECTRICAL WIRE					
		SCHEDULE 40			LIGHTING					
FROM	-	TO	1 1/4-INCH	2-INCH	3-INCH	12 AWG	10 AWG	8 AWG	6 AWG	REMARKS
			LF	LF	LF	LF	LF	LF	LF	
CATEGORY 0010										
EXCB 1800	-	EXPB 1800	--	--	--	--	--	--	168	EXISTING CONDUIT
EXCB 1800	-	EXPB 1800	--	--	--	--	--	140	--	EXISTING CONDUIT
EXCB 1800	-	EXPB 1800	--	--	--	--	168	--	--	EXISTING CONDUIT
EXPB 1800	-	PB 1813	--	55	--	--	--	--	426	--
EXPB 1800	-	PB 1813	--	55	--	--	--	355	--	--
EXPB 1800	-	PB 1813	--	55	--	--	426	--	--	--
PB 1813	-	PB 1817	--	190	--	--	--	--	1,236	--
PB 1813	-	PB 1817	--	190	--	--	--	1,030	--	--
PB 1813	-	PB 1817	--	190	--	--	1,236	--	--	--
PB 1817	-	PB 1810	--	150	--	--	--	--	996	--
PB 1817	-	PB 1810	--	150	--	--	--	830	--	--
PB 1817	-	PB 1810	--	150	--	--	996	--	--	--
PB 1810	-	HM L-44-00	--	15	--	--	--	--	84	--
PB 1810	-	PB 1808	--	420	--	--	--	--	1,308	--
PB 1808	-	HM L-44-00	--	10	--	--	--	--	69	--
PB 1810	-	PB 1809	--	110	--	--	--	630	--	--
PB 1810	-	PB 1809	--	110	--	--	756	--	--	--
PB 1809	-	FL 1800	--	20	--	--	198	--	--	--
PB 1809	-	FL 1801	--	25	--	--	114	--	--	--
PB 1809	-	SL 1819	--	155	--	--	--	840	--	--
SL 1819	-	SL 1818	--	185	--	--	--	975	--	--
SL 1818	-	PB 1807	--	105	--	--	--	590	--	--
PB 1807	-	SL 1817	--	180	--	--	--	965	--	--
SL 1817	-	PB 1806	--	185	--	--	--	--	--	PULLWIRE ONLY
PB 1809	-	PB 1811	--	135	--	--	453	--	--	--
PB 1811		FL 1802	--	25	--	--	114	--	--	
PB 1811		FL 1803	--	15	--	--	84	--	--	
PB 1811	-	BLD 1804	15	--	--	--	279	--	--	
BLD 1804	-	BLD 1805	20	--	--	--	108	--	--	
BLD 1805	-	BLD 1806	20	--	--	--	108	--	--	
BLD 1806	-	BLD 1807	20	--	--	--	108	--	--	--
BLD 1807	-	BLD 1808	20	--	--	--	108	--	--	--
PB 1809	-	SL 1820	--	80	--	--	--	930	--	--
SL 1820	-	SL 1821	--	220	--	--	--	1,150	--	--
SL 1821	-	PB 1812	--	40	--	53	--	--	--	TRACER WIRE ONLY
PB 1812		EXBLD 1800	20	--	--	--	249	--	--	EXISTING CONDUIT
EXBLD 1800		EXBLD 1801	--	--	--	--	99	--	--	EXISTING CONDUIT
EXBLD 1801		EXBLD 1802	--	--	--	--	99	--	--	EXISTING CONDUIT
EXBLD 1802		EXBLD 1803	--	--	--	--	99	--	--	EXISTING CONDUIT
PB 1812		PB 1815	--	155	--	--	513	--	--	--
PROJECT SUBTOTAL			115	3375	0	53	6315	8435	4287	

3

LIGHTING CONDUIT AND WIRE (CONTINUED)										
		652.0215	*652.0225	652.0235	**655.0610	655.0615	655.0620	655.0625		
		CONDUIT RIGID NONMETALLIC			ELECTRICAL WIRE					
		SCHEDULE 40			LIGHTING					
FROM	-	TO	1 1/4-INCH	2-INCH	3-INCH	12 AWG	10 AWG	8 AWG	6 AWG	REMARKS
			LF	LF	LF	LF	LF	LF	LF	
CATEGORY 0010										
	PB 1815	EXPB 1803	--	55	--	--	--	530	--	EXISTING CONDUIT
	PB 1815	EXPB 1803	--	55	--	--	318	--	--	EXISTING CONDUIT
	PB 1815	SL 1822	--	10	--	--	--	115	--	--
	PB 1815	PB 1816	--	210	--	226	--	--	--	TRACER WIRE ONLY
	PB 1816	SL 1823	--	10	--	--	--	115	--	--
	PB 1816	SL 1807	--	135	--	--	--	740	--	--
	SL 1807	EXPB 1804	--	85	--	--	--	665	--	EXISTING CONDUIT
	EXPB 1804	SL 1806	--	--	10	--	--	345	--	--
	EXPB 1804	SL 1805	--	165	--	178	--	--	--	TRACER WIRE ONLY
	SL 1805	PB 1814	--	160	--	--	--	865	--	--
	PB 1814	EXPB 1802	--	85	--	--	--	505	--	--
	PB 1814	SL 1804	--	35	--	--	--	480	--	--
	EXPB 1804	EXPB 1805	--	--	--	--	--	580	--	--
	EXPB 1805	EXSL 1803	--	--	--	--	--	190	--	PULLWIRE ONLY
	EXCB 1800	EXPB 1801	--	--	--	--	84	--	--	EXISTING CONDUIT
	EXPB 1801	EXPB 1802	--	--	--	--	243	--	--	EXISTING CONDUIT
	EXPB 1802	EXSL 1800	--	--	--	--	--	265	--	EXISTING CONDUIT
	EXPB 1802	EXPB 1803	--	--	--	--	483	--	--	EXISTING CONDUIT
	EXPB 1803	EXSL 1801	--	--	--	--	--	190	--	EXISTING CONDUIT
	EXPB 1803	PB 1815	--	55	--	--	--	555	--	EXISTING CONDUIT
	EXPB 1803	PB 1815	--	55	--	--	333	--	--	EXISTING CONDUIT
PROJECT SUBTOTAL			0	1,115	10	404	1,461	6,140	0	
PROJECT TOTAL			115	4,490	10	457	7,776	14,575	4,287	

* ADDITIONAL QUANTITIES FOUND IN "FIBER OPTIC INSTALLATION" TABLE

** ADDITIONAL QUANTITIES FOUND IN "STREET LIGHTS" TABLE

LIGHTING CONTROL					
CABINET	STATION	OFFSET	R/L	650.8501.01	SPV.0060.053
NUMBER				CONSTRUCTION STAKING	MODIFY EXISTING
				ELECTRICAL INSTALLATIONS	LIGHTING
				(1130-44-75)	CONTROLS
				EACH	EACH
CATEGORY 0010					
EXCB1800	49+92'E'	48.0'	LT	1	1
PROJECT TOTAL				1	1

STREET LIGHTS														
					654.0105	657.0255	657.0305	657.0322	657.0715	659.1120	SPV.0060.050	SPV.0060.051	SPV.0060.052	* 655.0610
					CONCRETE	TRANSFORMER BASES		POLES	LUMINAIRE ARMS		INSTALL			WIRE
					BASES	BREAKAWAY 11 1/2-INCH	POLES	TYPE 5	TRUSS TYPE 4 1//2-INCH	LUMINAIRES	LIGHTED	FLOOD LIGHT	FLOOD LIGHT	LIGHTING
					TYPE 5	BOLT CIRCLE	TYPE 2	ALUMINUM	CLAMP 15-FT	UTILITY LED B	BOLLARD	(SIGN)	(FLAG POLE)	12AWG
LIGHT	STATION	OFFSET	R/L		EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	LF
NUMBER														
CATEGORY 0010														
SL	1804	388+42'L'	73.2'	LT	1	1	--	1	1	1	--	--	--	159
SL	1805	386+68'L'	48.9'	LT	1	1	--	1	1	1	--	--	--	159
SL	1806	385+50'L'	38.6'	LT	1	1	--	1	1	1	--	--	--	159
SL	1807	384+53'L'	38.8'	LT	1	1	--	1	1	1	--	--	--	159
SL	1817	105+80'R'	24.7'	RT	1	1	--	1	2	2	--	--	--	159
SL	1818	108+58'R'	22.7'	RT	1	1	--	1	1	1	--	--	--	159
SL	1819	110+42'R'	20.7'	RT	1	1	--	1	1	1	--	--	--	159
SL	1820	112+83'R'	20.7'	RT	1	1	--	1	1	1	--	--	--	159
SL	1821	114+91'R'	33.8'	RT	1	1	--	1	1	1	--	--	--	159
SL	1822	116+85'R'	21.8'	RT	1	1	--	1	1	1	--	--	--	159
SL	1823	118+75'R'	24.9'	RT	1	1	--	1	2	2	--	--	--	159
BLD	1804	391+62'L'	3.5'	RT	--	--	--	--	--	--	1	--	--	--
BLD	1805	391+46'L'	3.5'	RT	--	--	--	--	--	--	1	--	--	--
BLD	1806	391+30'L'	3.5'	RT	--	--	--	--	--	--	1	--	--	--
BLD	1807	391+12'L'	3.5'	RT	--	--	--	--	--	--	1	--	--	--
BLD	1808	390+95'L'	3.5'	RT	--	--	--	--	--	--	1	--	--	--
FL	1800	111+90'R'	26.2'	RT	--	--	--	--	--	--	--	1	--	--
FL	1801	111+90'R'	34.2'	RT	--	--	--	--	--	--	--	1	--	--
FL	1802	113+19'R'	25.9'	RT	--	--	--	--	--	--	--	--	1	--
FL	1803	113+26'R'	33.0'	RT	--	--	--	--	--	--	--	--	1	--
SCOREBOARD	113+95'R'	20.5'	RT		1	1	1	--	--	--	--	--	--	--
CAMERA	395+10'L'	11'	RT		1	1	1	--	--	--	--	--	--	--
PROJECT TOTAL					13	13	2	11	13	13	5	2	2	1749
* ADDITIONAL QUANTITIES FOUND IN "LIGHTING CONDUIT AND WIRE" TABLE														

LIGHTING PULLBOXES							
				652.0700.S	*653.0164	653.0900	
				INSTALL CONDUIT	PULL BOXES		
				INTO EXISTING	NON-CONDUCTIVE	ADJUSTING	
				ITEM	24X42-INCH	PULL BOXES	
PULLBOX	STATION	OFFSET	R/L	EACH	EACH	EACH	
NUMBER							
CATEGORY 0010							
EXPB 1800	49+90'E'	41.0'	LT	--	1	--	
EXPB 1802	49+99'E'	1.4'	RT	--	1	--	
EXPB 1804	22+90'A'	17.2'	RT	--	1	--	
PB 1806	104+06'R'	27.3'	RT	--	1	--	
PB 1807	401+58'L'	10.4'	RT	--	1	--	
PB 1808	397+24'L'	40.6'	RT	--	1	--	
PB 1809	112+07'R'	21.9'	RT	--	1	--	
PB 1810	392+76'L'	75.0'	LT	--	1	--	
PB 1811	391+65'L'	12.5'	RT	--	1	--	
PB 1812	115+28'R'	27.1'	RT	--	1	--	
PB 1813	388+82'L'	43.5'	LT	--	1	--	
PB 1814	388+07'L'	62.4'	LT	--	1	--	
PB 1815	116+80'R'	23.7'	RT	1	--	1	
PB 1816	118+85'R'	26.4'	RT	1	--	1	
PB 1817	390+64'L'	45.4'	LT	1	--	1	
PROJECT TOTAL				3	12	3	

* ADDITIONAL QUANTITIES FOUND IN "FIBER OPTIC INSTALLATION" TABLE

SAWING						
					690.0150	690.0250
					SAWING	SAWING
					ASPHALT	CONCRETE
CATEGORY	STATION	TO	STATION	LOCATION	LF	LF
0010	101+45	-	104+00	'R'	160	15
0010	104+00	-	119+00	'R'	110	15
0010	10+00	-	10+75.09	'E'	80	-
PROJECT TOTAL					350	30

HIGH MAST LIGHTING ITEMS

659.0400							660.0500.001	660.0500.002
LUMINAIRES							HIGH MAST	HIGH MAST
HIGH MAST							LOWERING	LOWERING
LIGHTING LED							ASSEMBLY	ASSEMBLY
							(L-44-001)	(L-44-002)
LIGHT UNIT	STATION	OFFSET	R/L	EACH	EACH	EACH		
CATEGORY 0010								
L-44-01	392+82'L'	89.5'	LT	3	1	--		
L-44-02	397+34'L'	30.0'	RT	3	--	1		
PROJECT TOTAL				6	1	1		

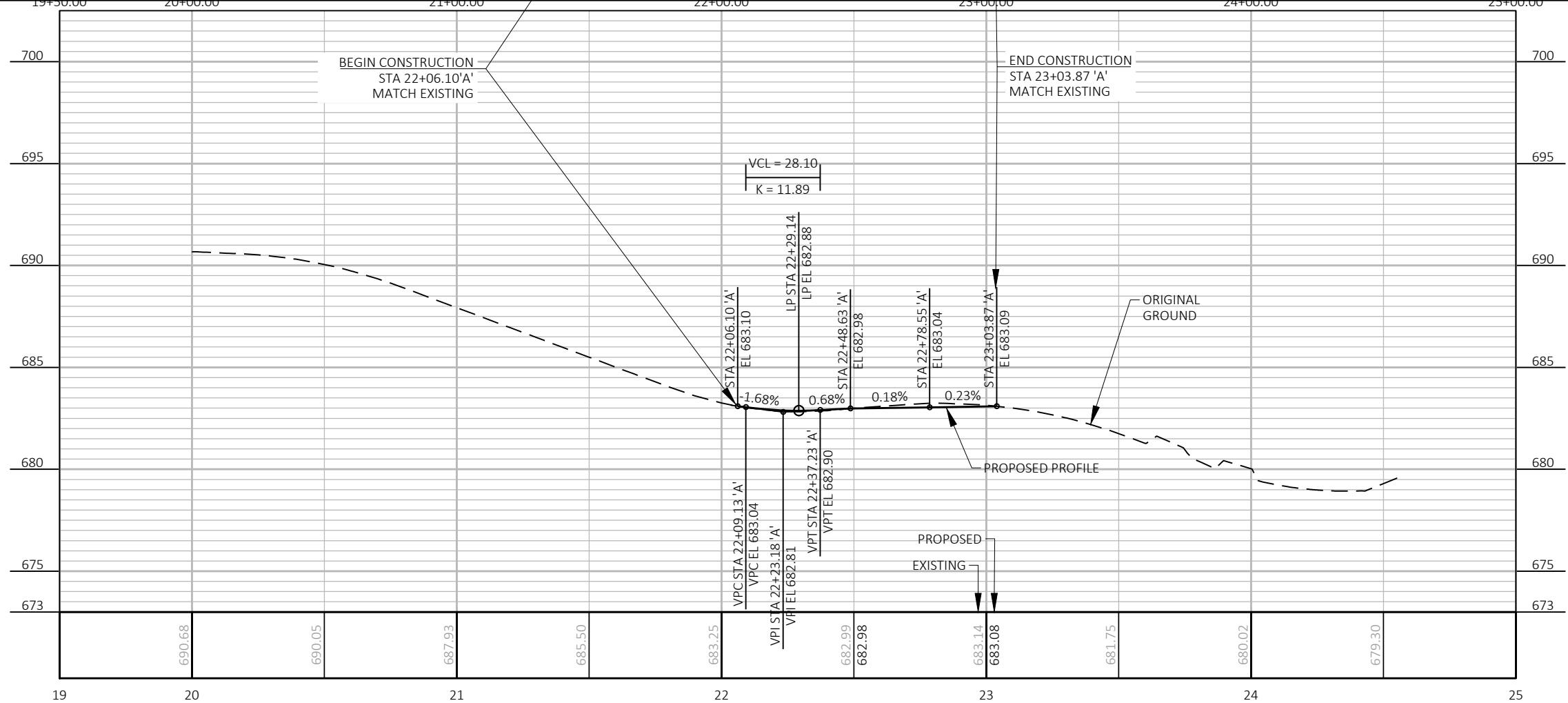
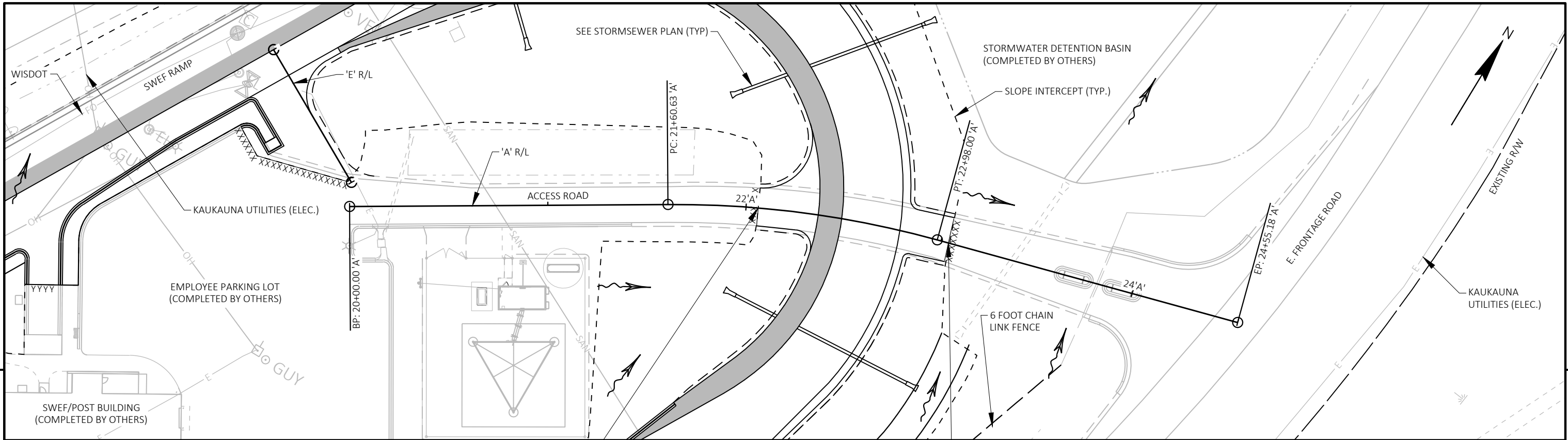
FIBER OPTIC INSTALLATION

				204.9060.S.002	*652.0225	*653.0164	671.0300	673.0105	673.0200	674.0300	674.0400
				REMOVING	CONDUIT RIGID	PULL BOXES			TRACER		
				COMMUNICATIONS	NONMETALLIC	NON-			WIRE		
				VAULT	SCHEDULE 40	CONDUCTIVE	FIBER OPTIC	COMMUNICATION	MARKER	REMOVE	REINSTALL
CATEGORY	STUCTURE	STATION	O/S	LF	2-INCH	24X42-INCH	CABLE MARKER	VAULT TYPE 1	POSTS	CABLE	CABLE
					LF	EACH	EACH	EACH	EACH	LF	LF
0010	14	114+49'R'	22.3' RT	--	--	1	--	--	--	--	--
0010	15	116+55'R'	30.0' LT	--	--	--	2	1	2	--	--
0010	EXC9-30 TO CV9-21			1	--	--	--	--	--	745	--
0010	14 TO 15			--	120	--	--	--	--	--	--
0010	CV9-21 TO 15			--	--	--	--	--	--	--	--
0010	CV9-21 TO BLDG			--	--	--	--	--	--	--	745
PROJECT TOTAL				1	120	1	2	1	2	745	745

* ADDITIONAL QUANTITIES LISTED IN "LIGHTING CONDUIT AND WIRE" & "LIGHTING PULLBOXES" TABLES

EACH SPECIAL ITEMS

SPV.0060.001		SPV.0060.002	SPV.0060.003	SPV.0060.004	SPV.0060.005	SPV.0060.006	SPV.0060.007	SPV.0060.008	SPV.0060.009	SPV.0060.010	SPV.0060.011
STATIC SCALE		STATIC SCALE	STATIC SCALE	CONCRETE	OIL/WATER	FLAG POLE	OUTLET	WEIGH IN	WEIGH-IN-	ELECTRICAL	SECURITY CAMERA
SYSTEM		SYSTEM	WARRANTY	WHEEL STOP	SEPARATOR		STRUCTURE	MOTION SYSTEM	MOTION SYSTEM	SERVICE,	
CATEGORY	LOCATION	SYSTEM	MAINTENANCE	PIPE BOLLARD	SYSTEM	EACH	EACH	EACH	MAINTENANCE	WIM	EACH
0010	1130-44-75	1	1	8	3	1	1	1	1	1	1
PROJECT TOTAL		1	1	8	3	1	1	1	1	1	1



PROJECT NO: 1130-44-75

HWY: IH 41

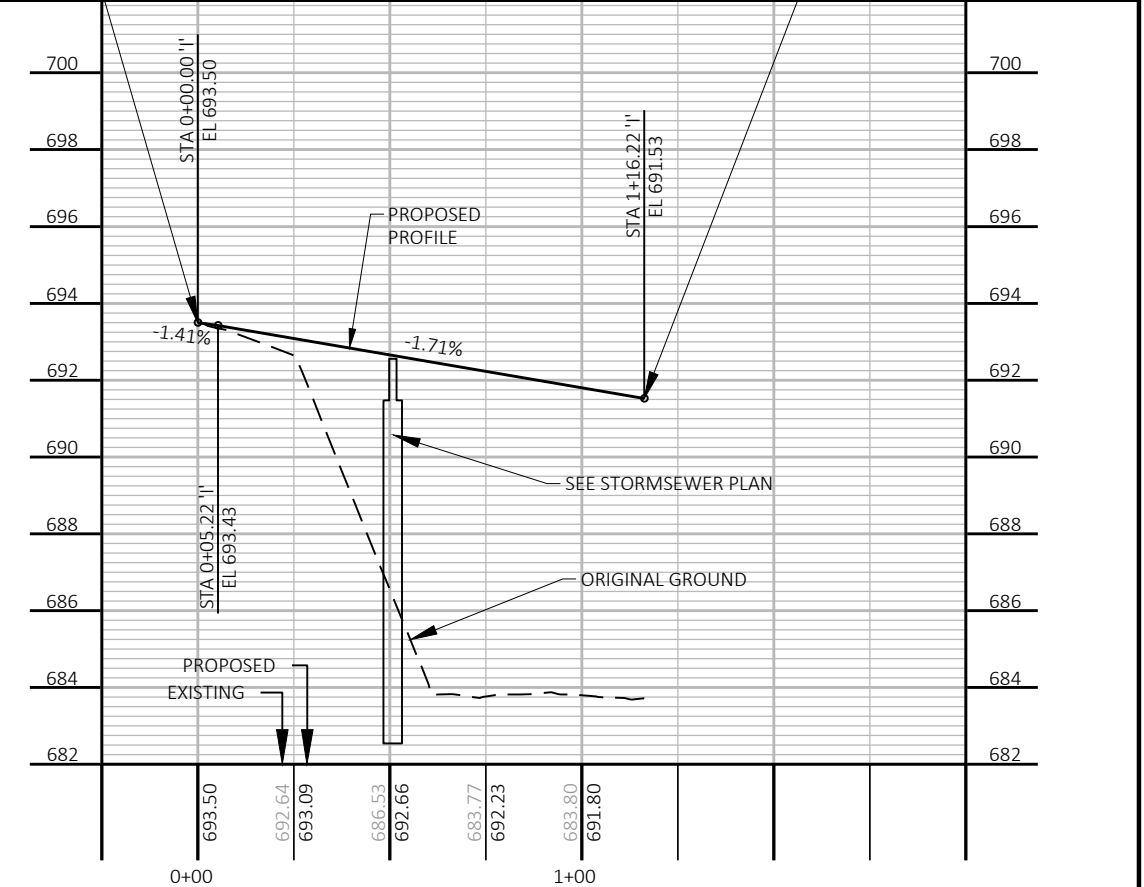
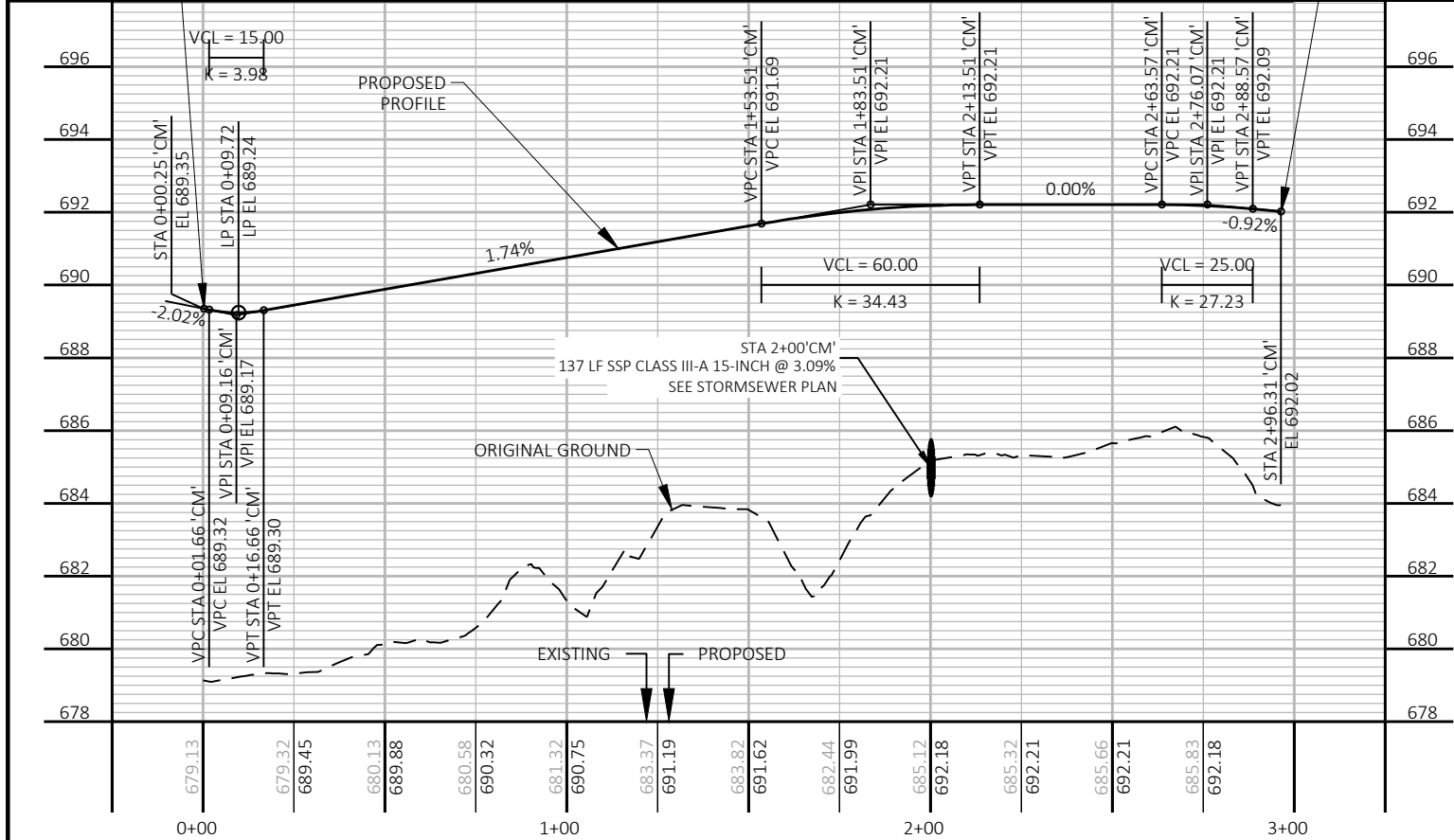
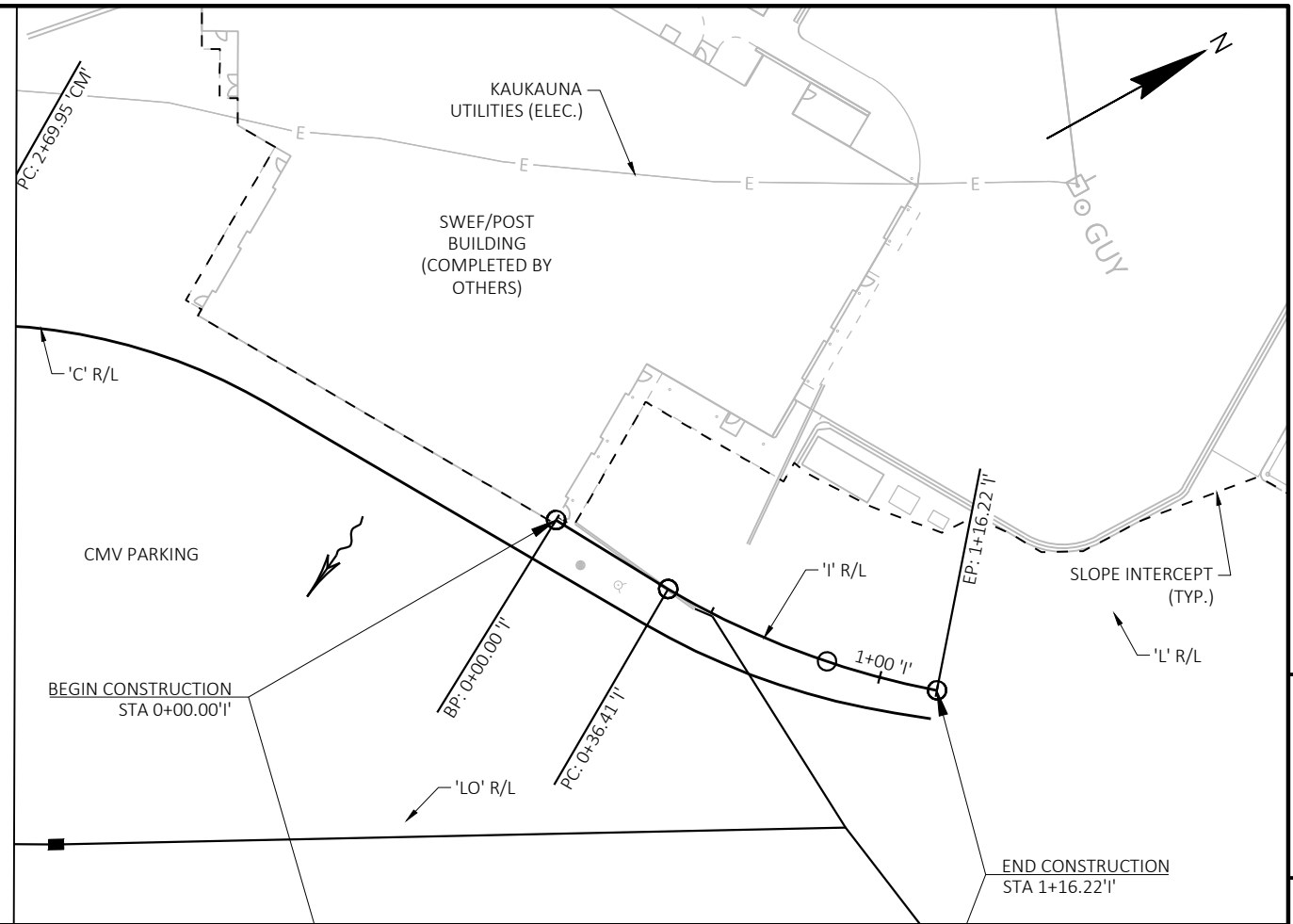
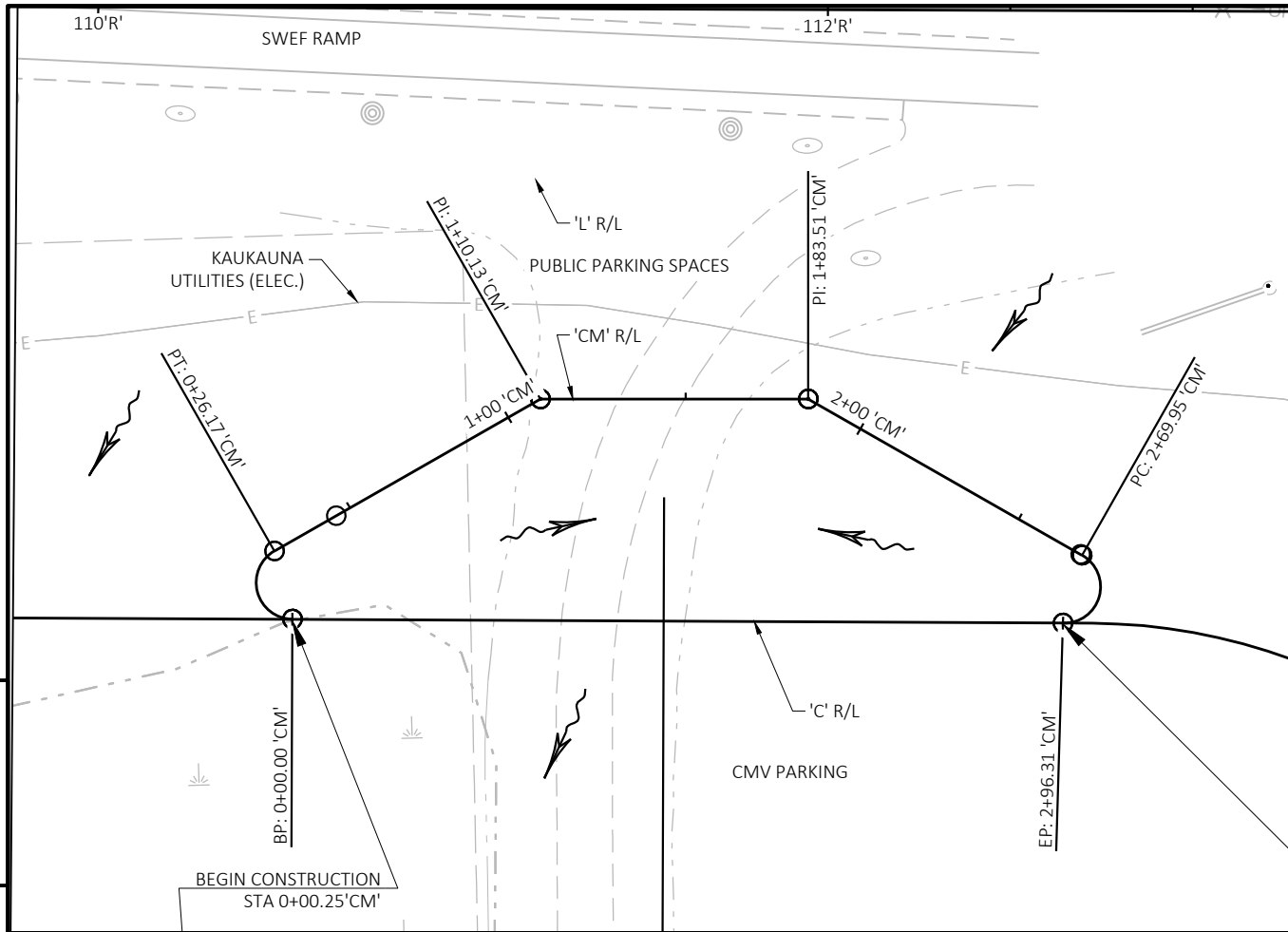
COUNTY: OUTAGAMIE

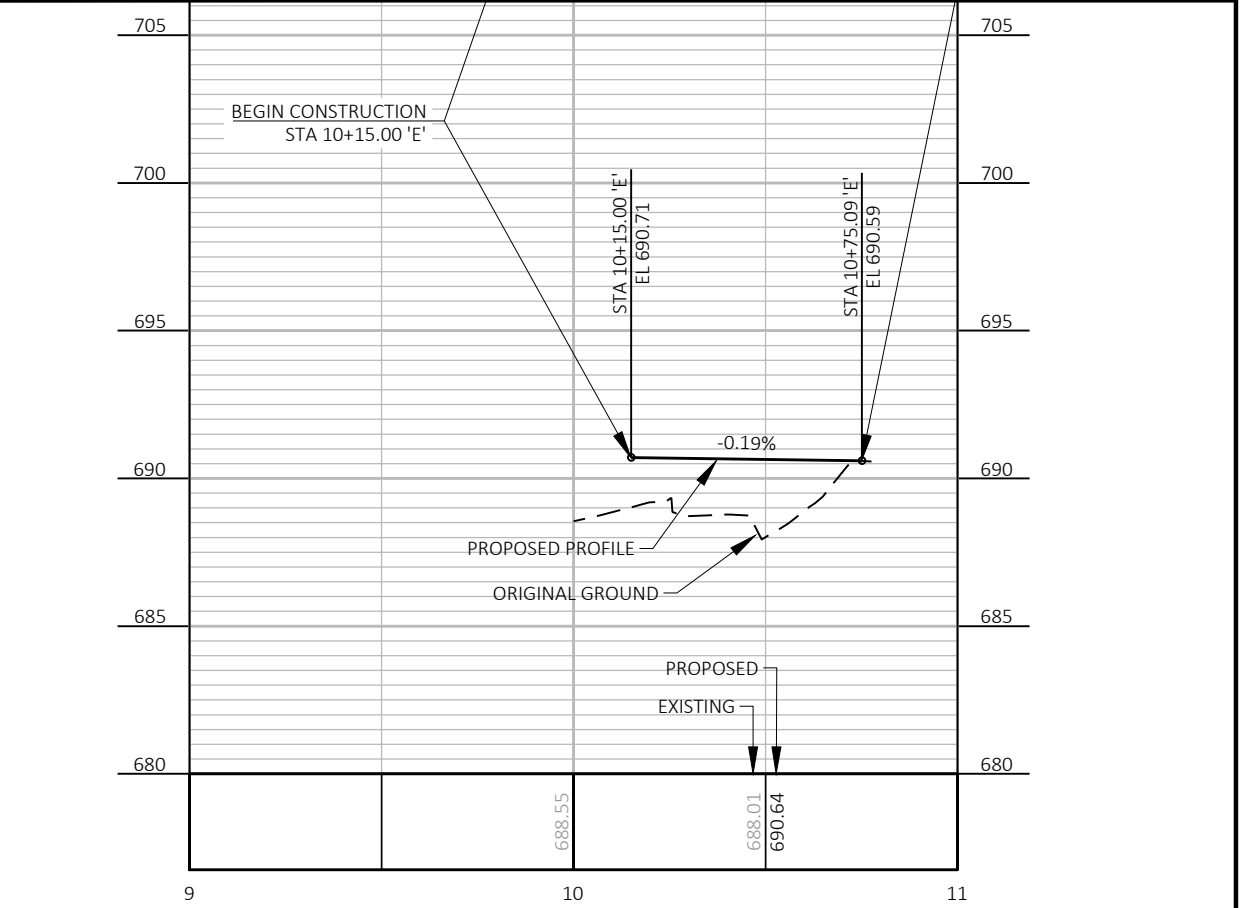
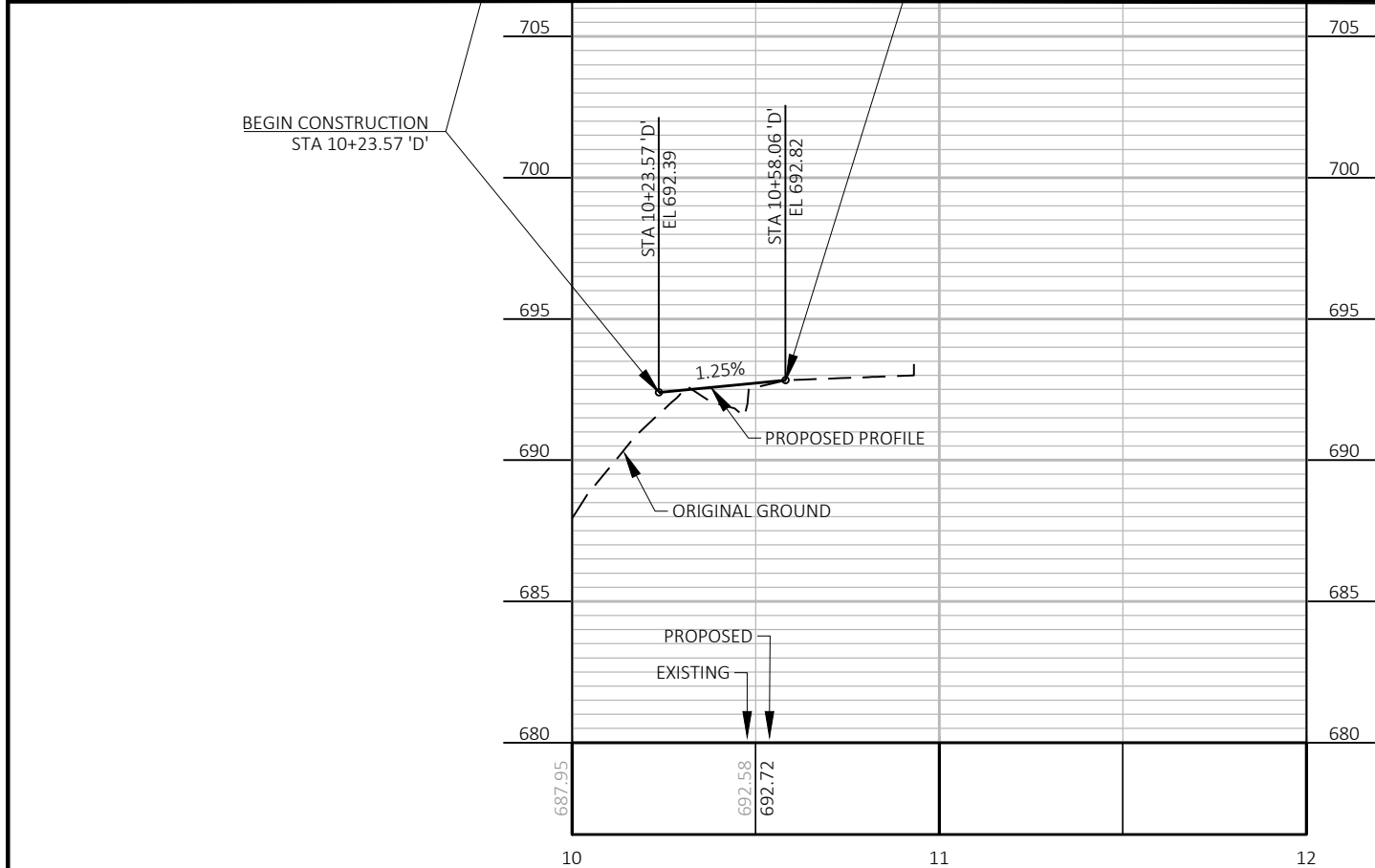
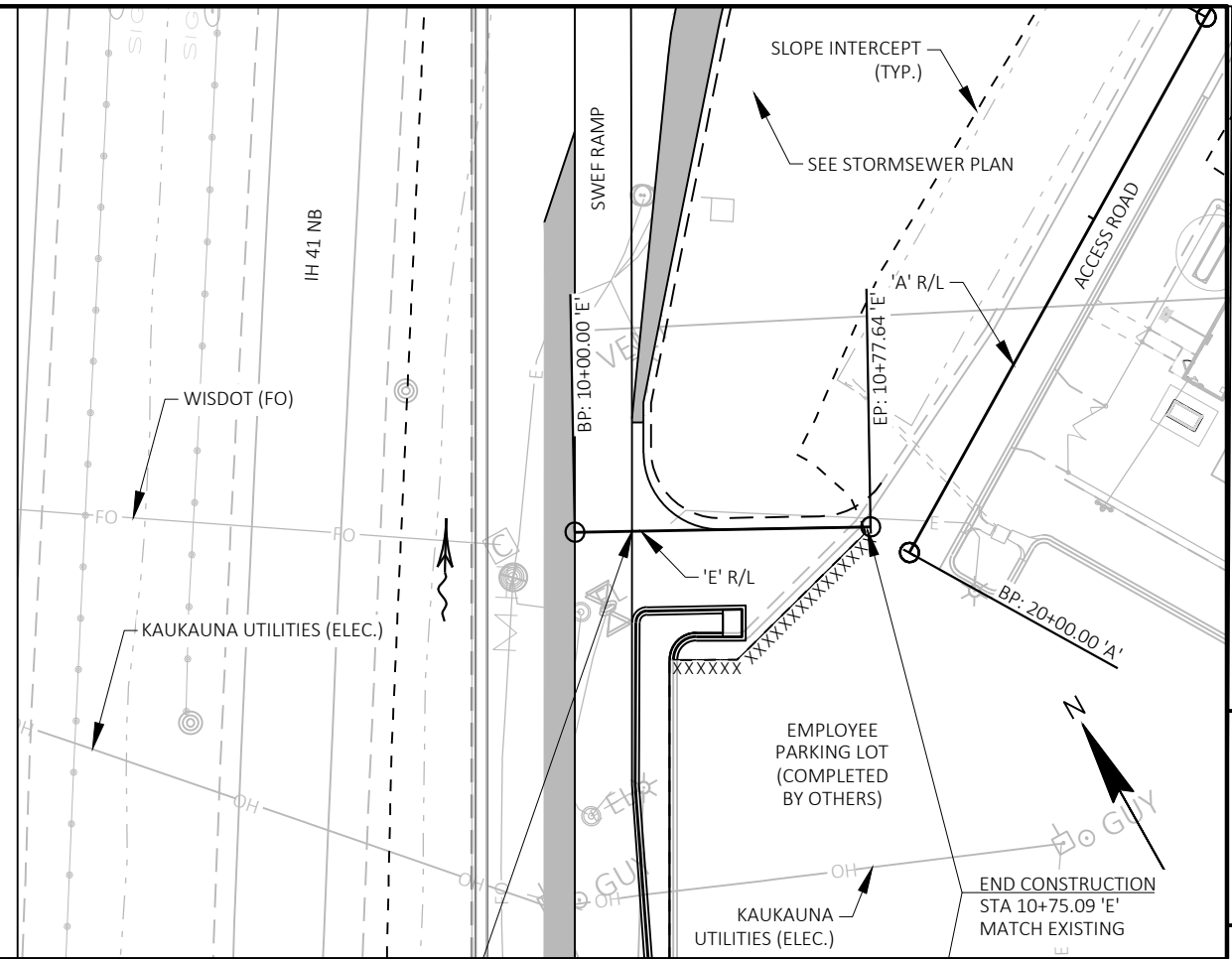
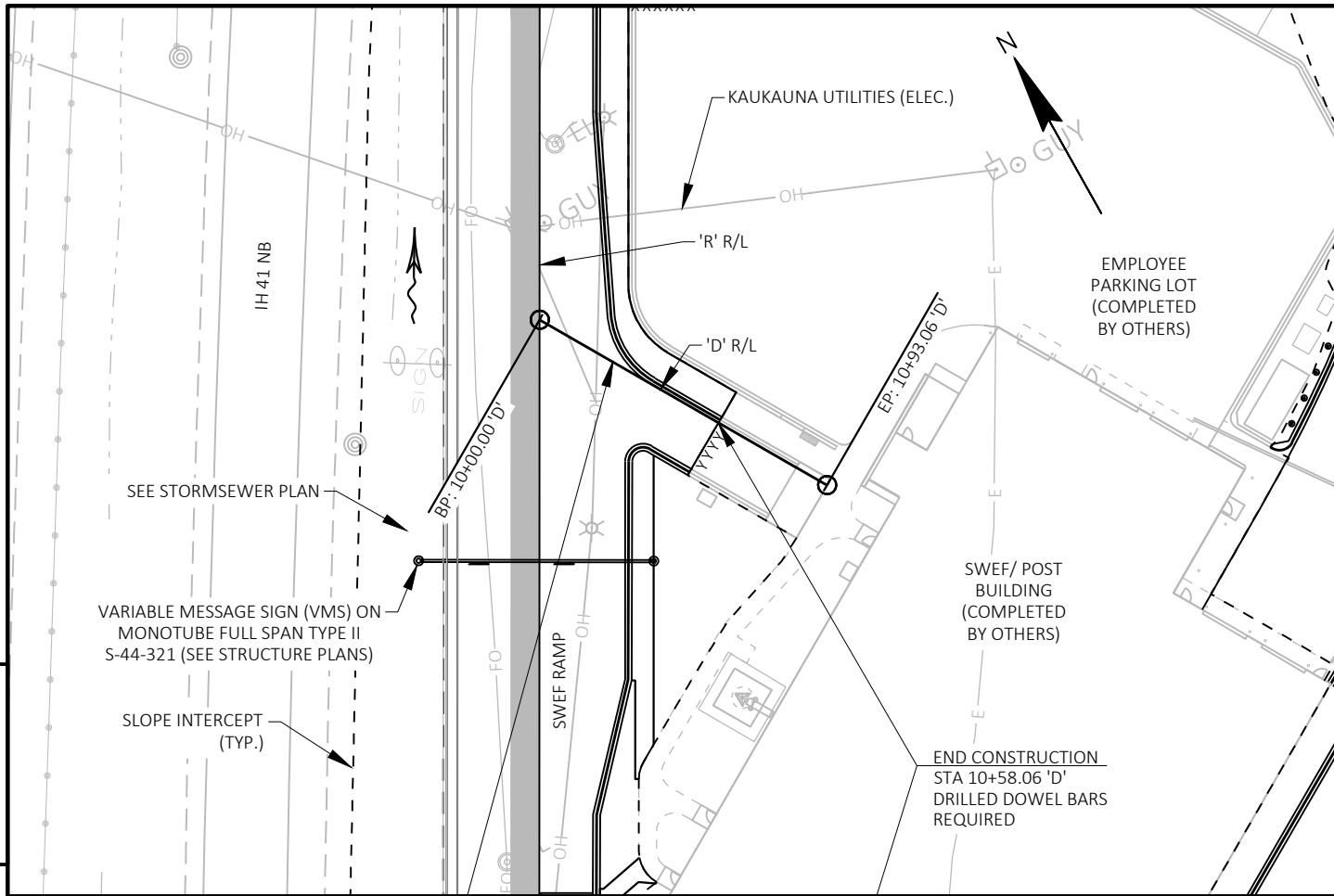
PLAN AND PROFILE: ACCESS ROAD ('A' R/L)

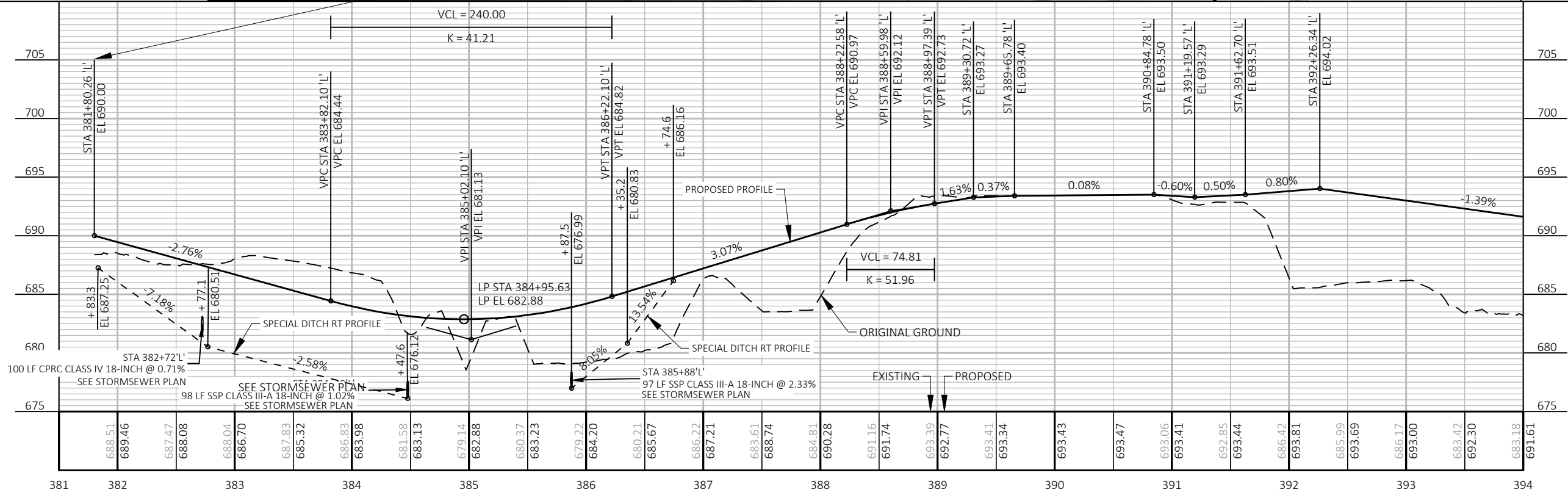
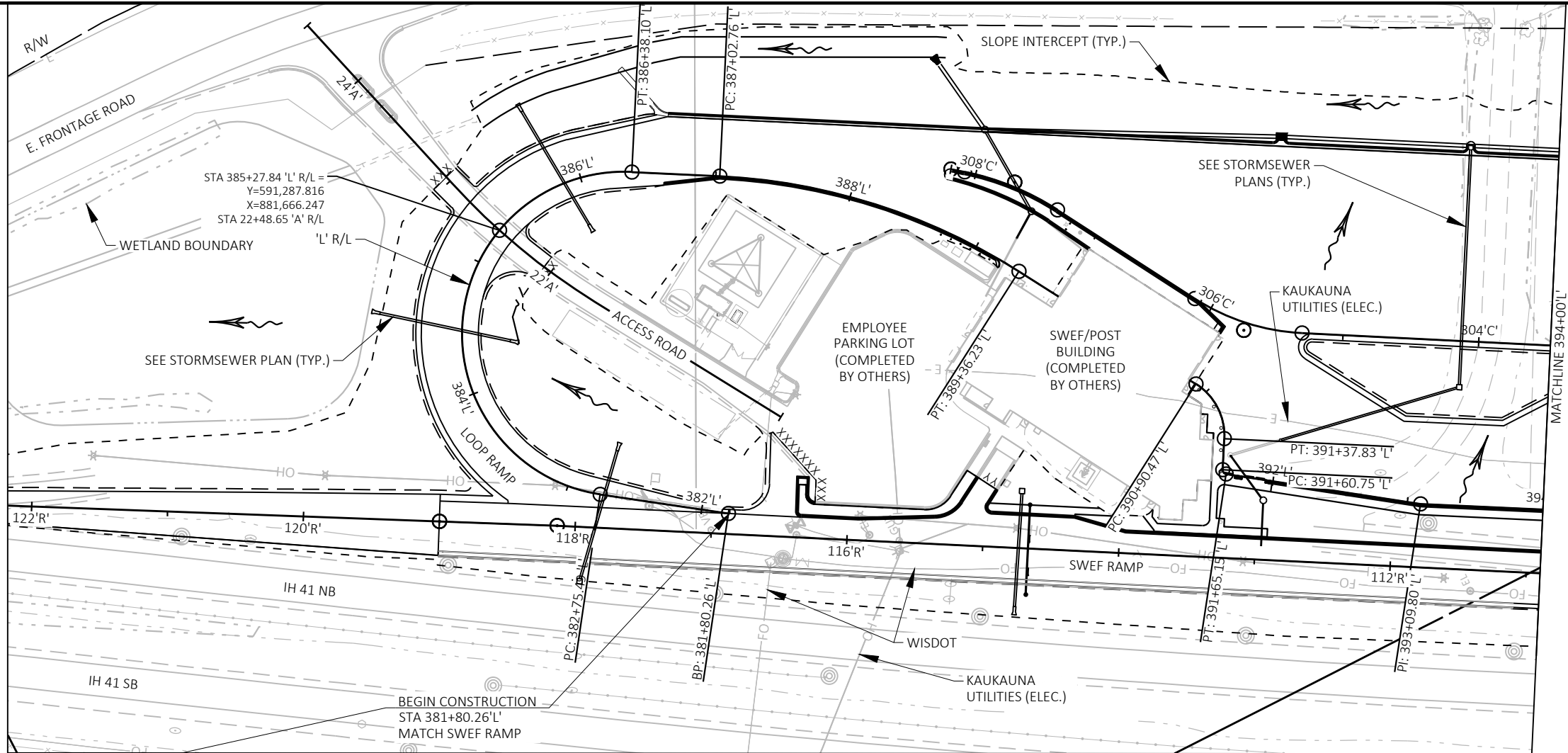
SHEET

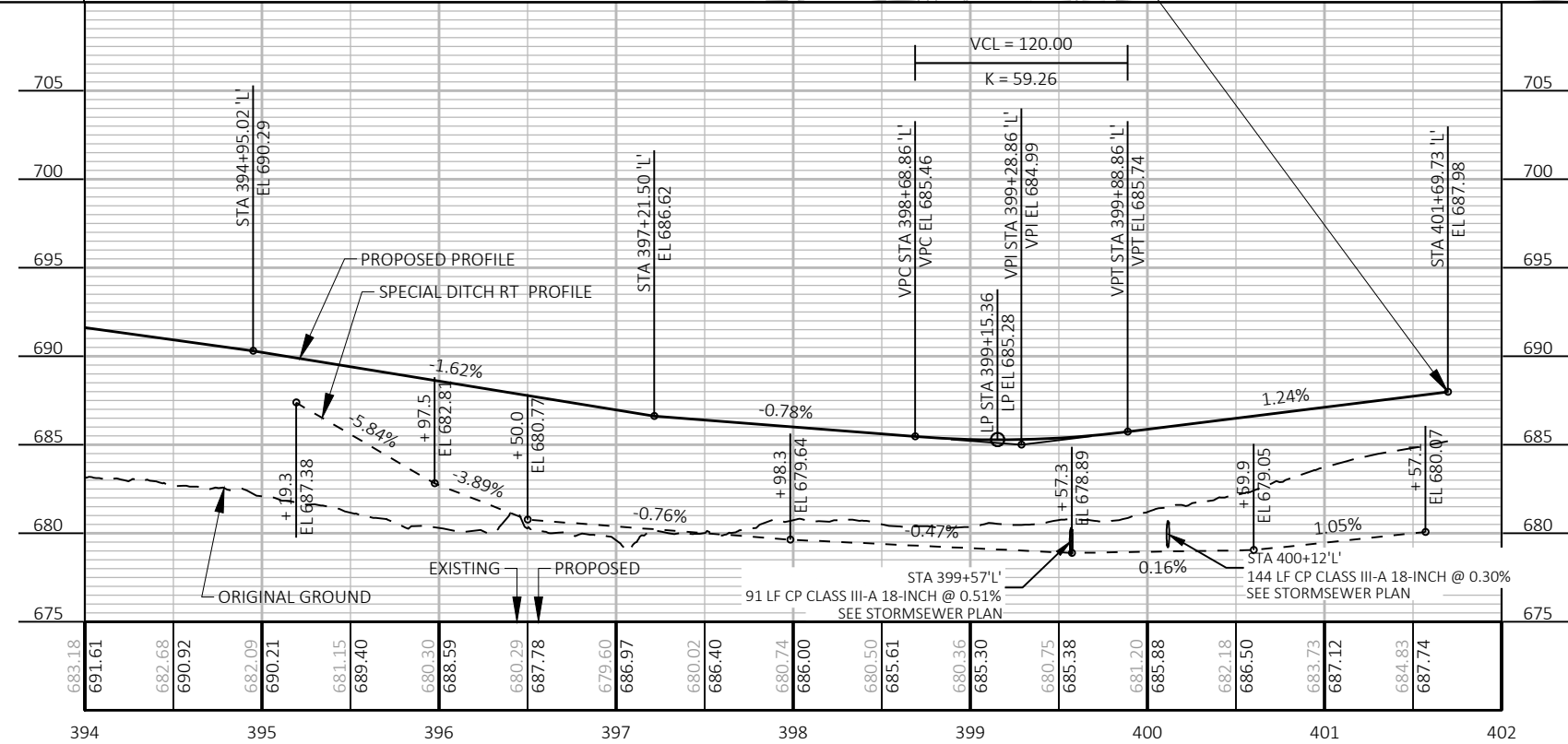
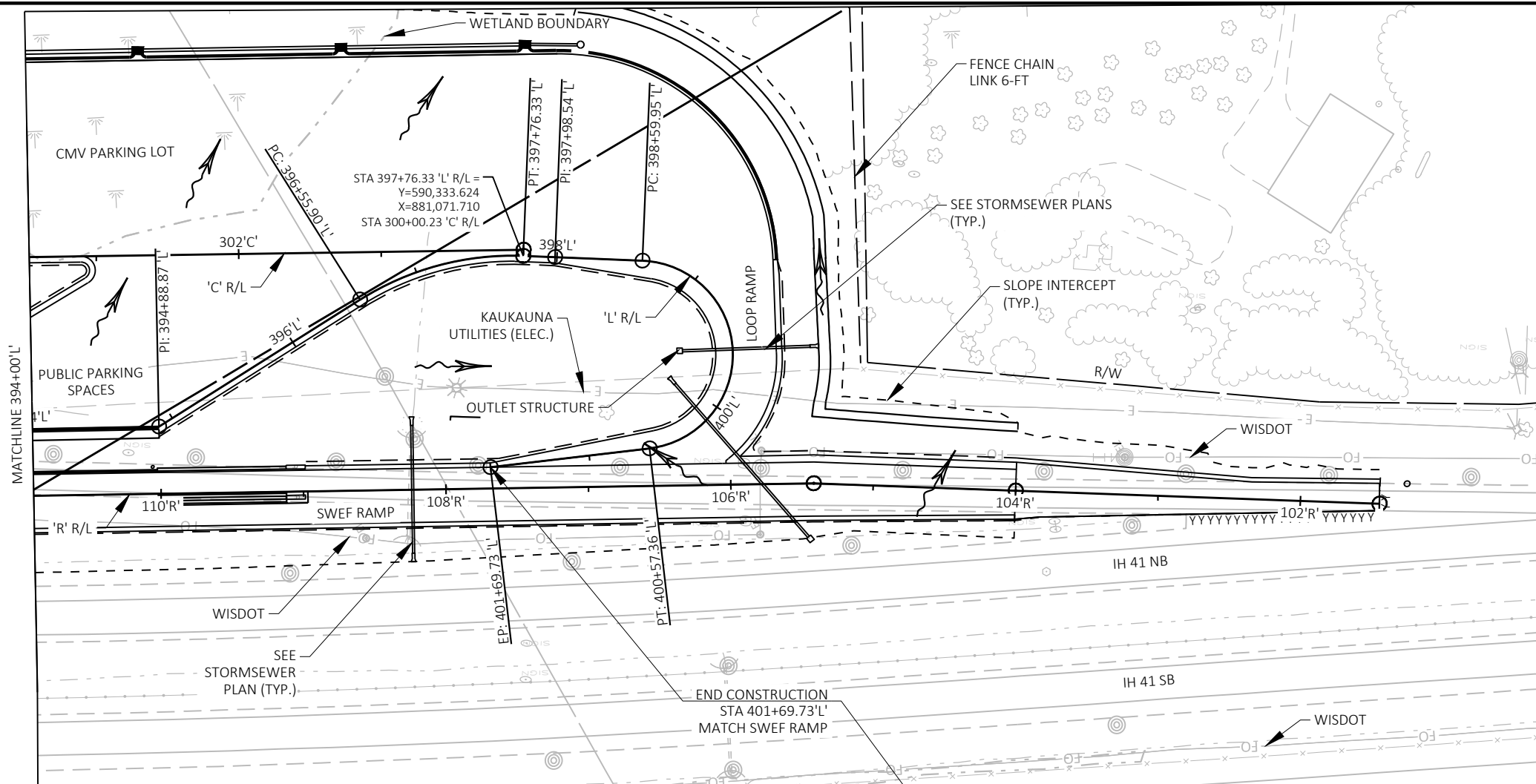
96

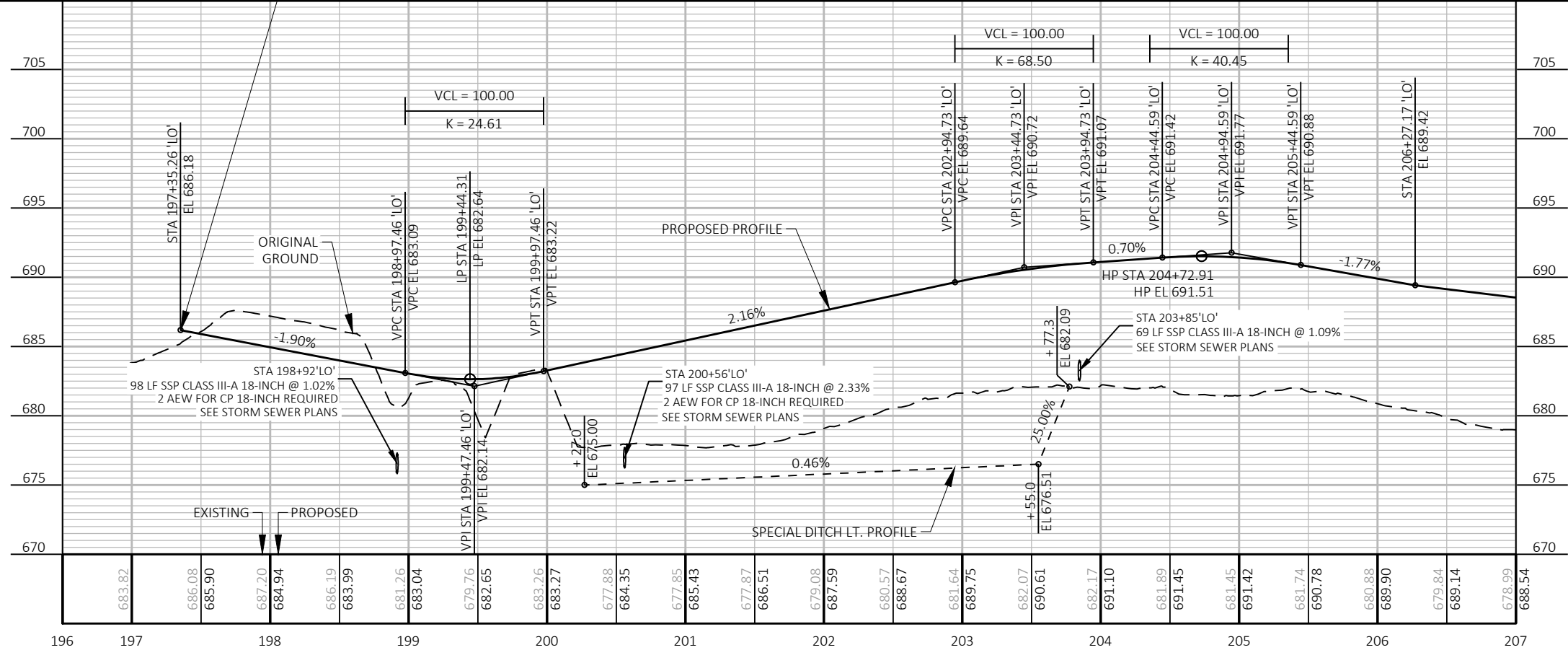
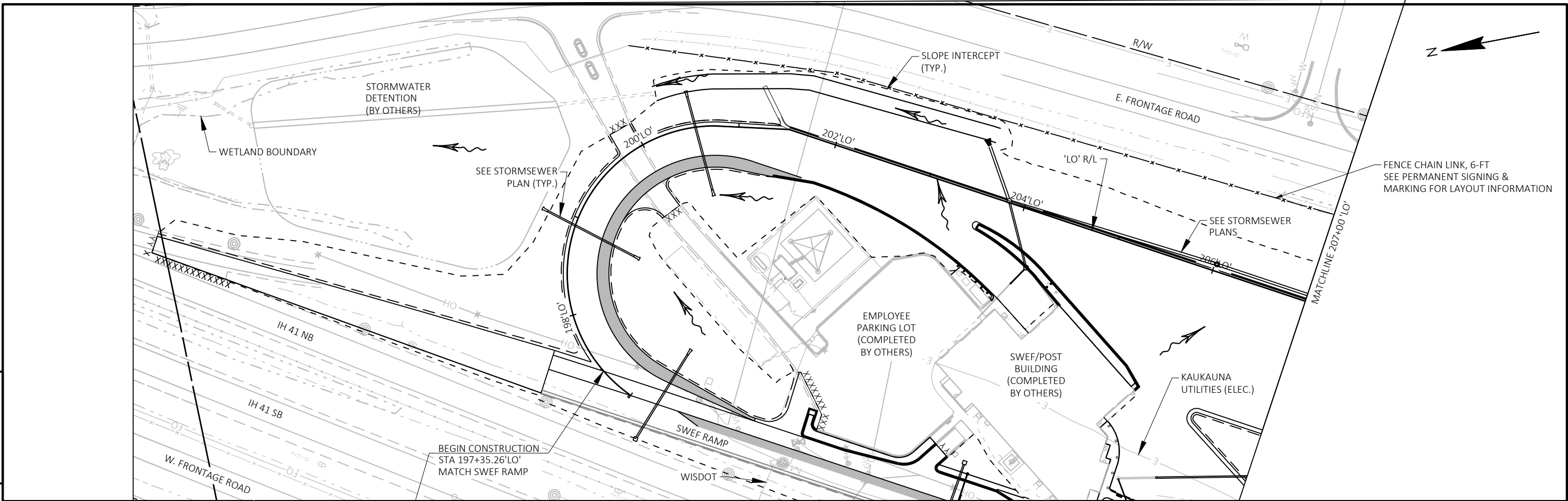
E



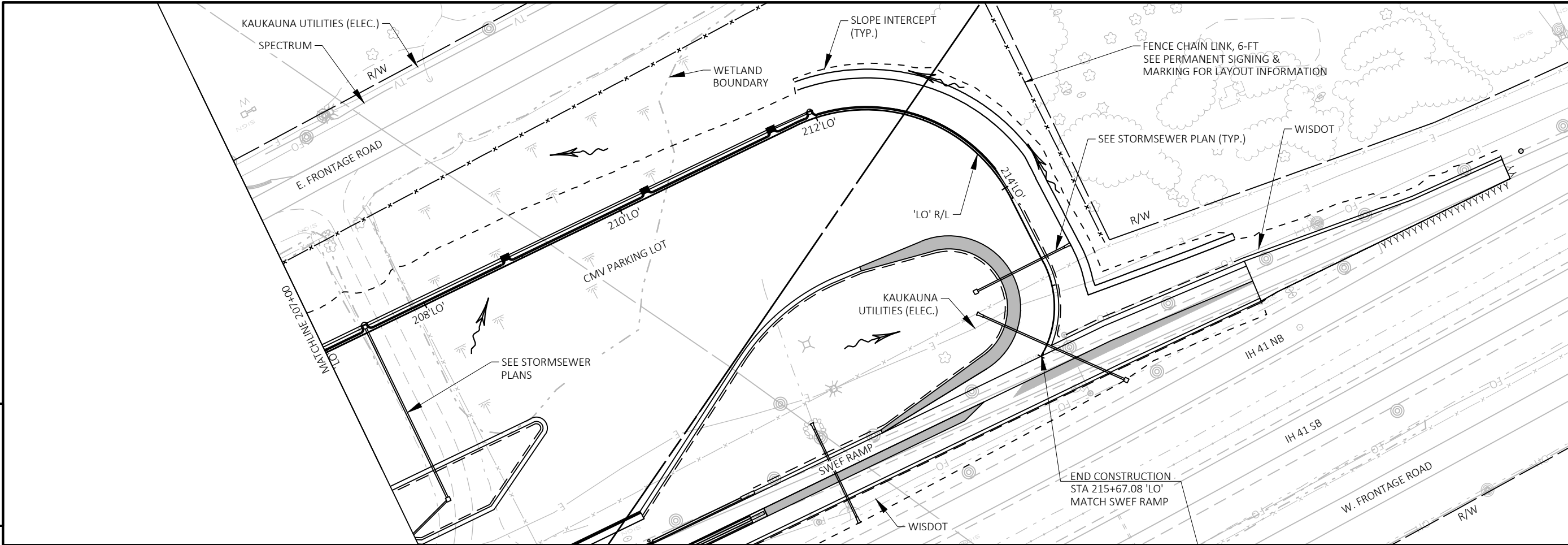




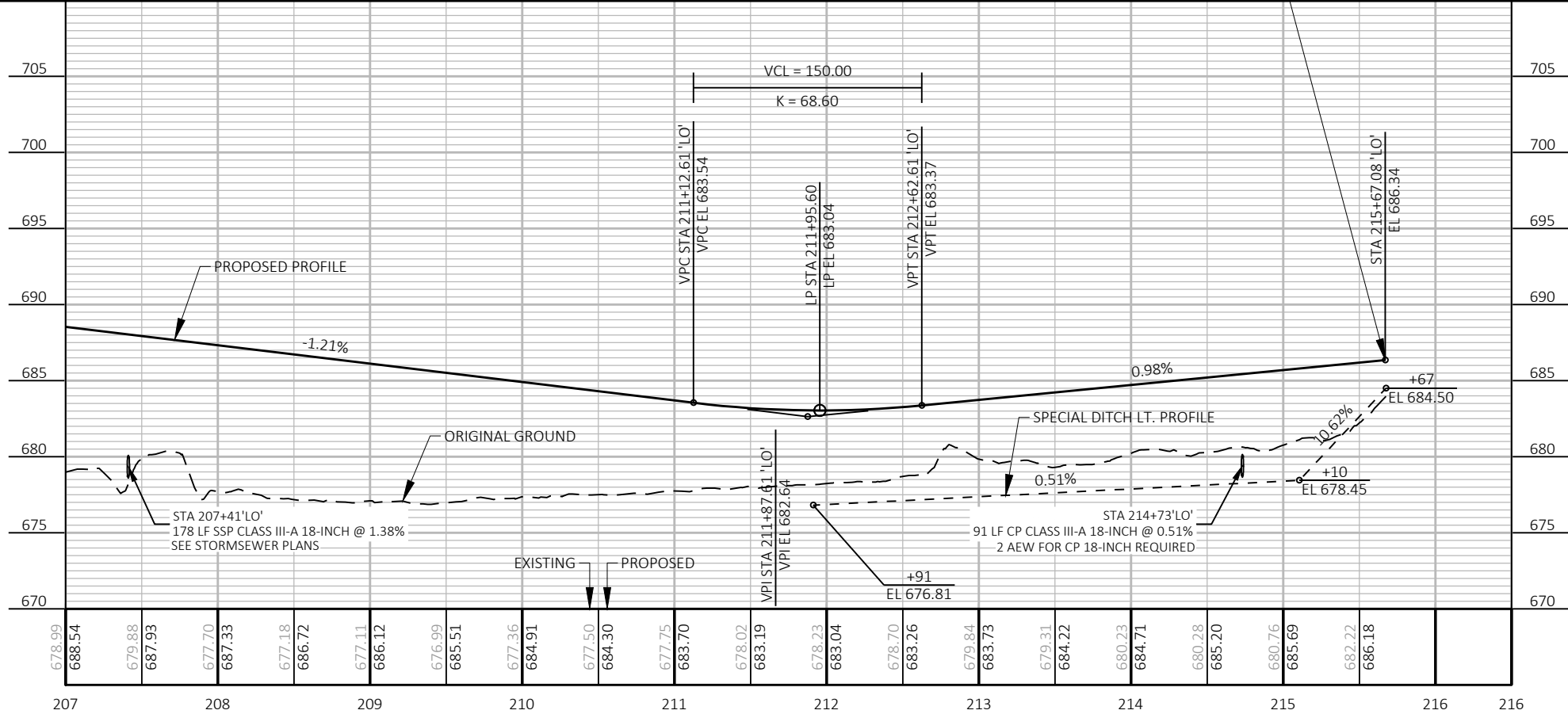


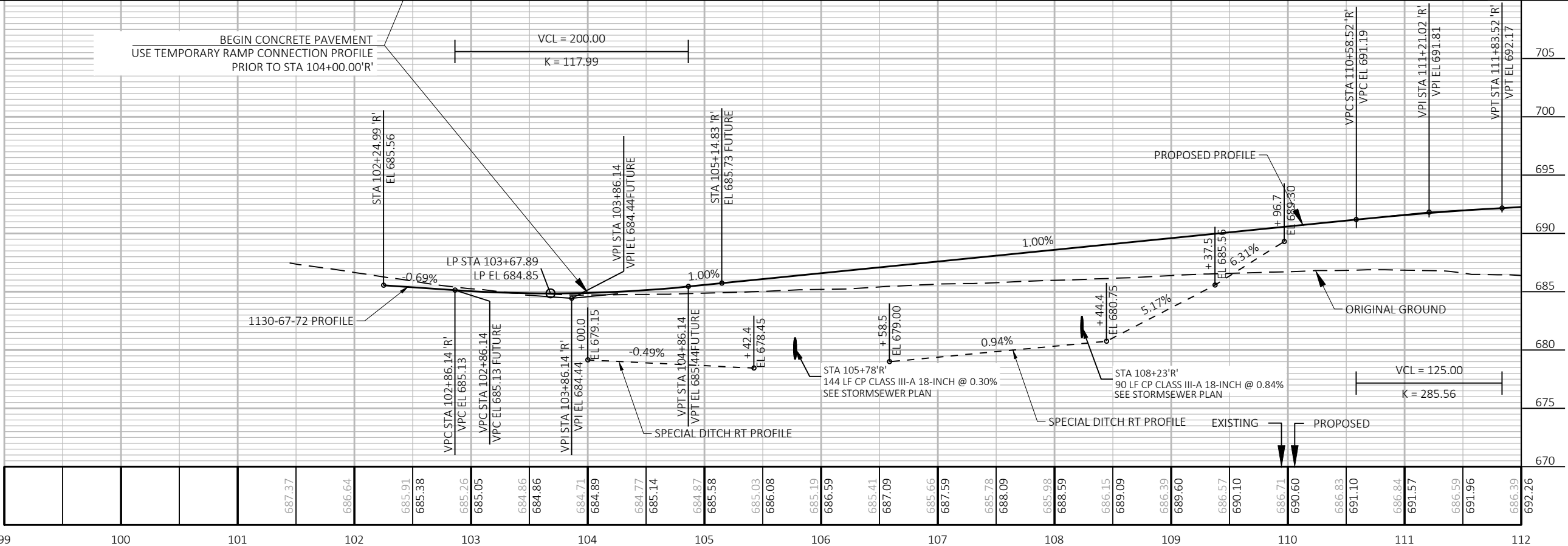
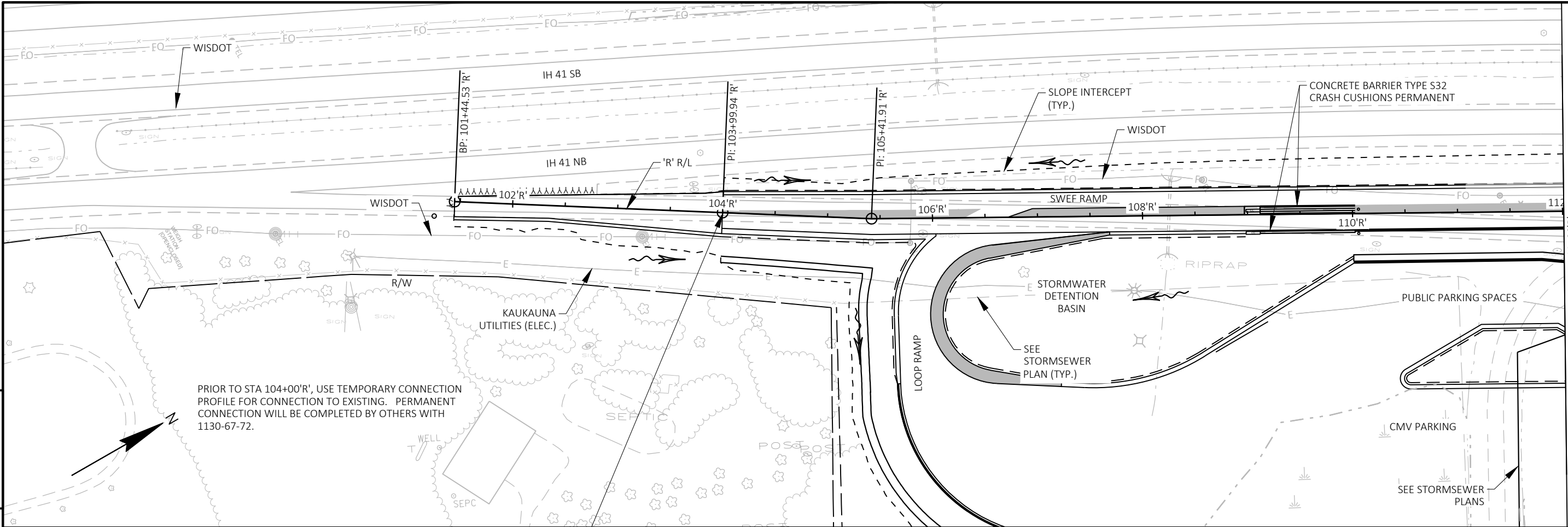


5

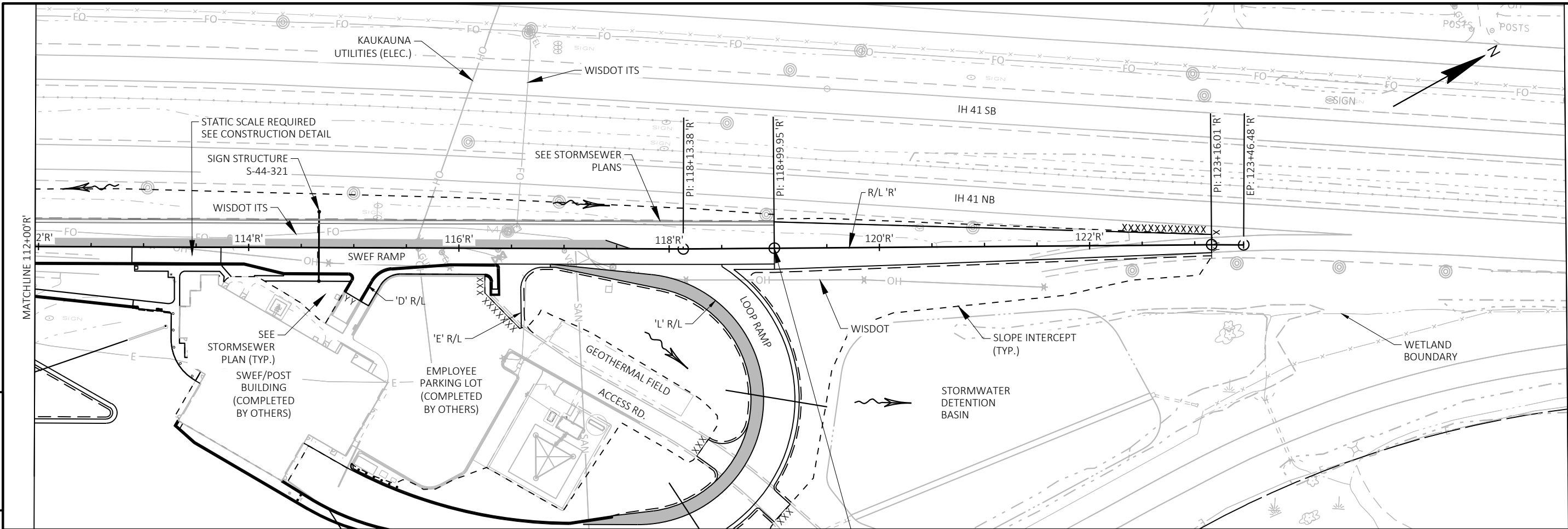


5

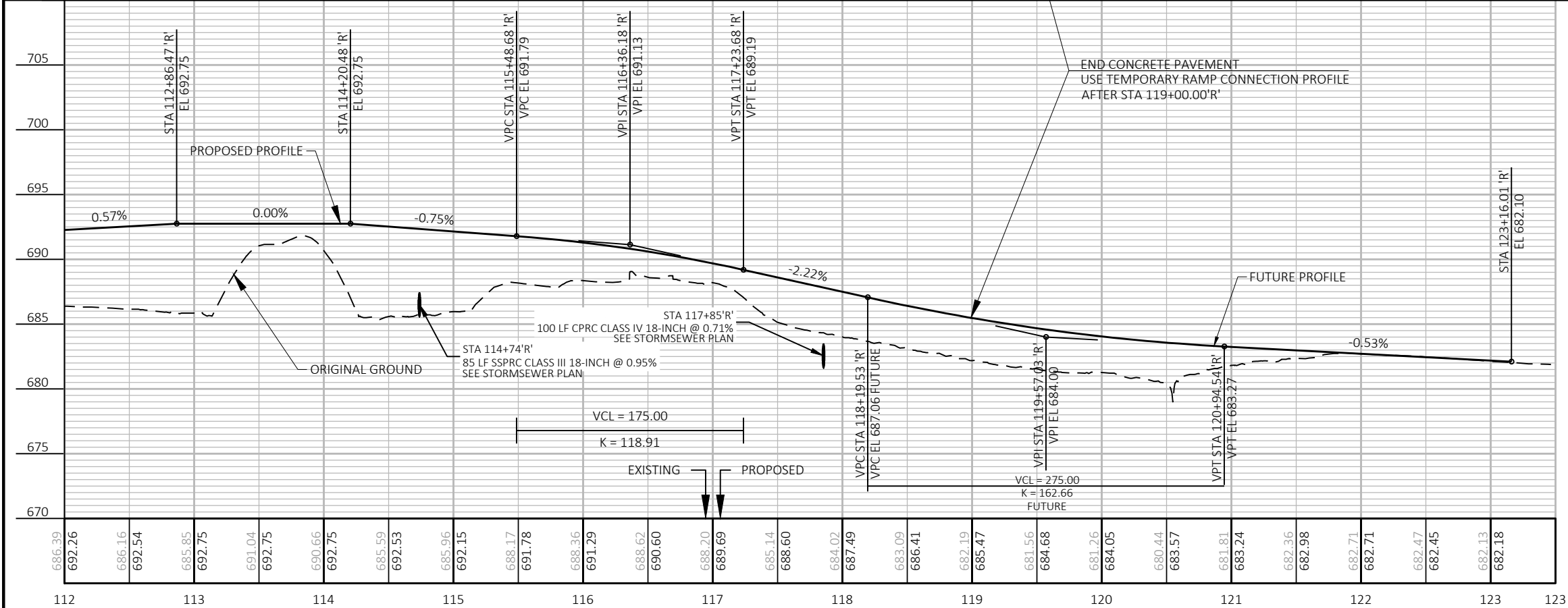


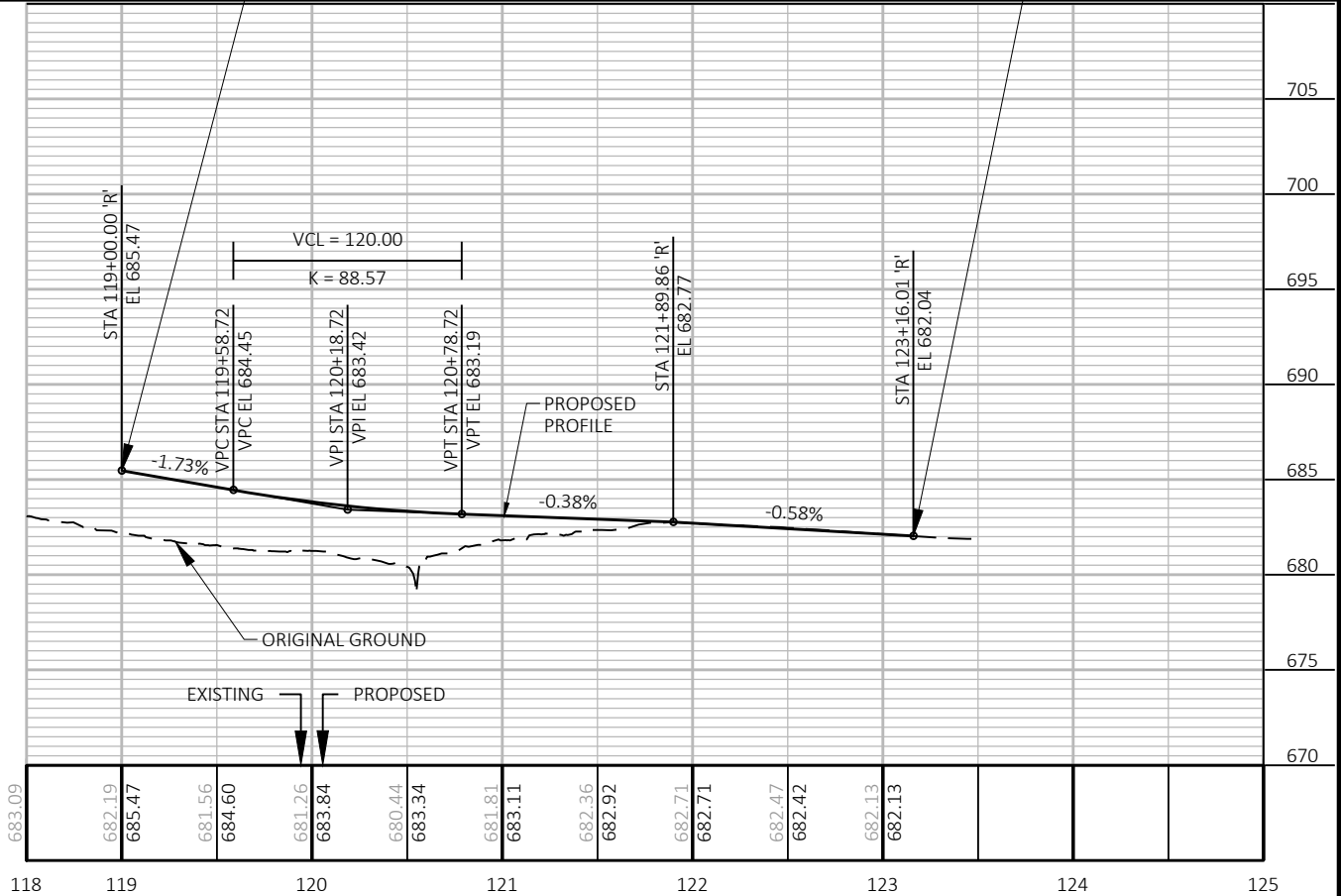
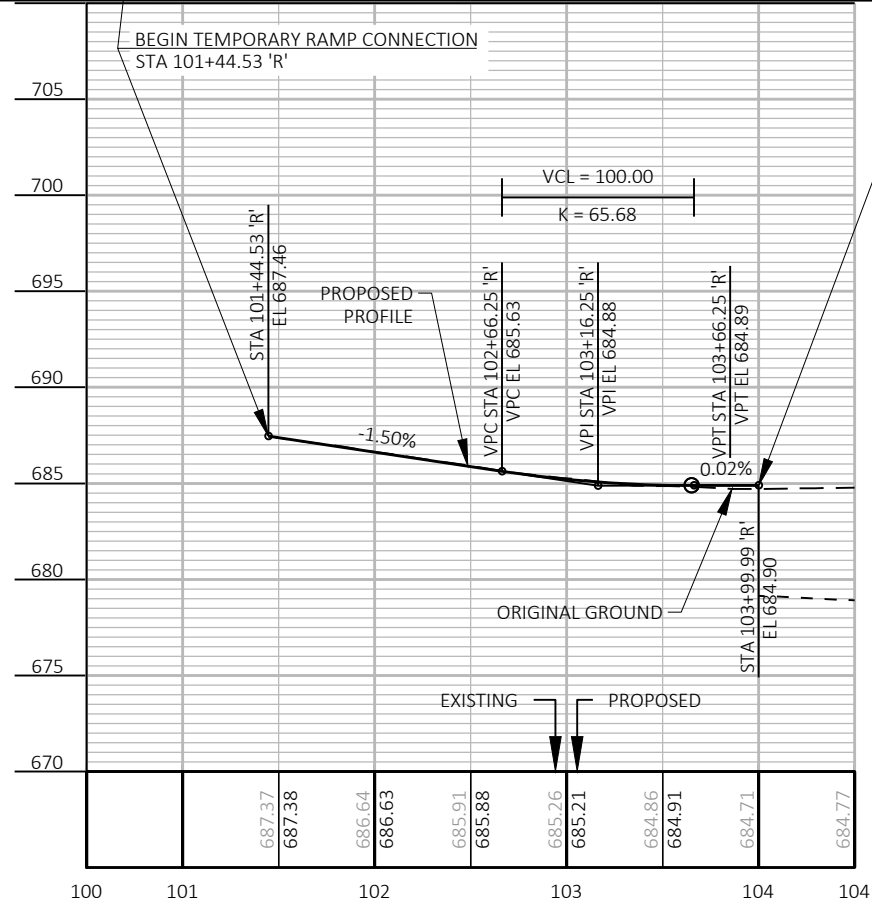
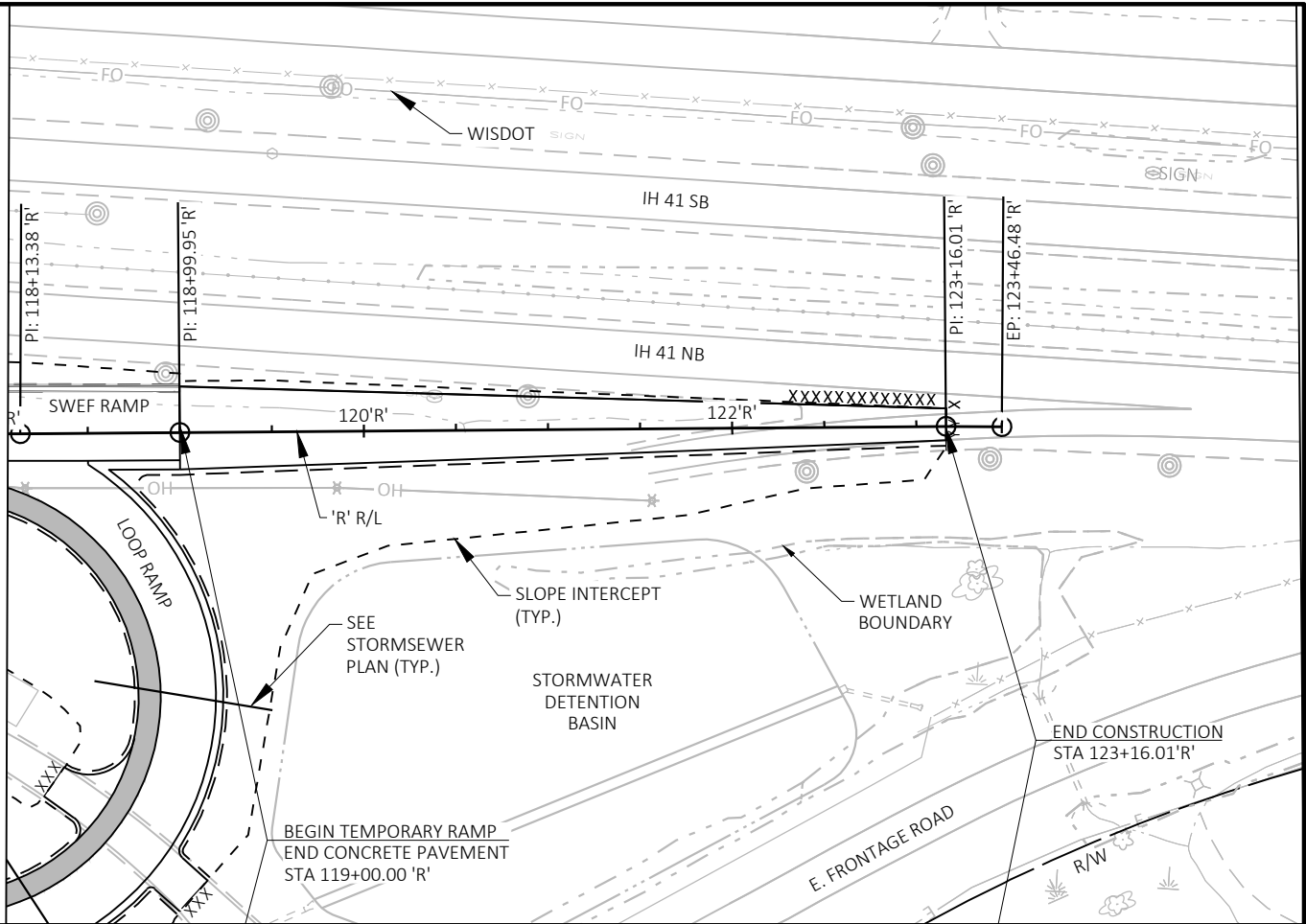
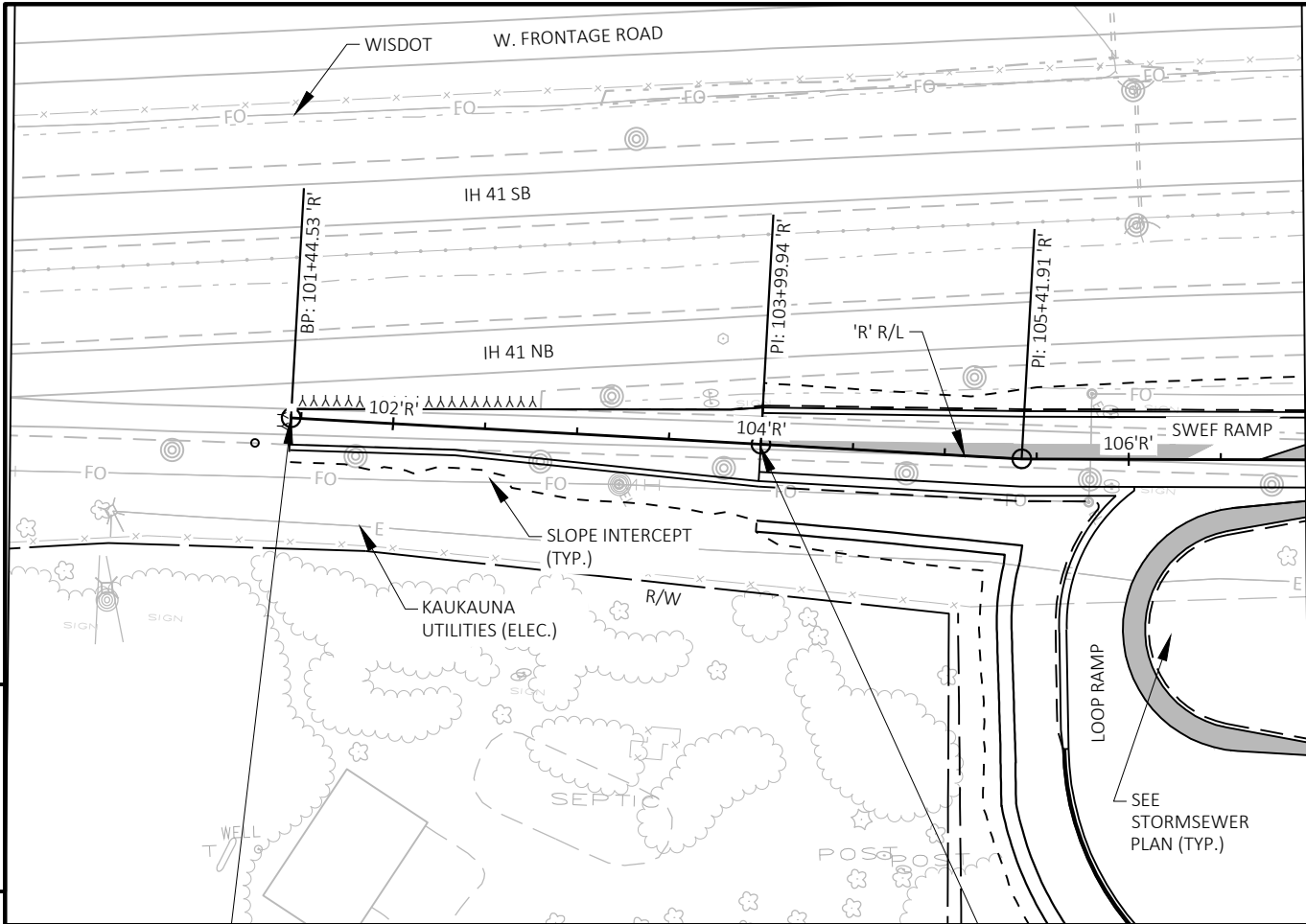


5



5



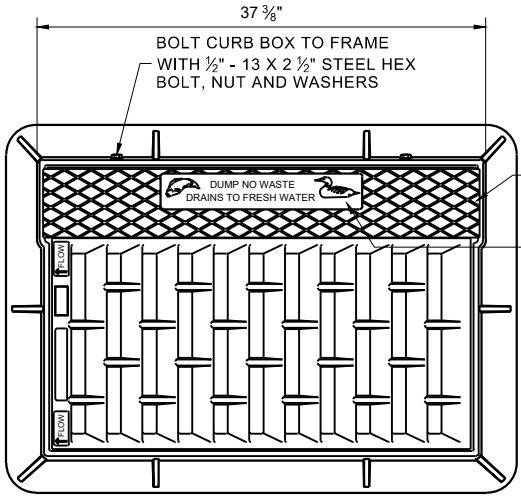


Standard Detail Drawing List

08A05-21A	INLET COVERS TYPE A, H, A-S, H-S & Z
08A05-21B	INLET COVERS TYPE B, B-A, C, MS, MS-A, & WM
08A05-21C	INLET COVERS TYPE F, HM, HM-S, S, T, HM-GJ & HM-GJ-S
08B09-04	MANHOLES 3-FT, 4-FT, 5-FT, 6-FT, 7-FT, 8-FT, 9-FT, 10-FT DIAMETER
08C06-03	INLETS 3-FT AND 4-FT DIAMETER
08C08-03	INLETS MEDIAN 1 AND 2 GRATE
08D01-23A	CONCRETE CURB & GUTTER
08D01-23B	CONCRETE CURB, TIES AND CURB AND GUTTER APPLICATIONS
08D04-07	CONCRETE SURFACE DRAINS & ASPHALTIC FLUMES
08D05-21A	CURB RAMPS TYPES 1 AND 1-A
08D05-21B	CURB RAMPS TYPES 2 AND 3
08D05-21C	CURB RAMPS TYPES 4A AND 4A1
08D05-21D	CURB RAMPS TYPE 4B AND 4B1
08D05-21E	CURB RAMPS TYPES 5, 6, 7A, 7B & 8
08D05-21F	CURB RAMPS RADIAL DETECTABLE WARNING FIELD APPLICATIONS
08D05-21G	CURB RAMPS RECTANGULAR AND RADIAL DETECTABLE WARNING PLATES
08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
08E10-02	INLET PROTECTION TYPE A, B, C AND D
08E14-01	TRACKING PAD
08E15-01	CULVERT PIPE CHECK
08F01-11	APRON ENDWALLS FOR CULVERT PIPE
08F04-08	JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL
09B02-10	CONDUIT
09B16-03	PULL BOX NON-CONDUCTIVE
09C02-09	CONCRETE BASES, TYPES 1, 2, 5, & 6
09C03-04	TRANSFORMER/PEDESTAL BASES
09E01-15D	POLE MOUNTINGS FOR LIGHTING UNITS, TYPE 5 (30 FEET)
09E01-15G	HARDWARE DETAILS FOR POLE MOUNTINGS
09E03-06	NON-FREEWAY LIGHTING UNIT POLE WIRING
09F04-05	LOOP DETECTOR INSTALLED IN NEW CONCRETE PAVEMENT ROUND CSCP PULLBOX
09F09-05	LOOP DETECTOR PLACED IN CRUSHED AGGREGATE BASE (NEW CONCRETE PAVEMENT)
09H09-02	COMMUNICATION VAULT TYPE 1
10A14-03A	ELECTRICAL DETAILS HIGH MAST LIGHTING
10A14-03B	ELECTRICAL DETAILS HIGH MAST LIGHTING
11B02-02	CONCRETE MEDIAN NOSE
12A03-10	NAME PLATE (STRUCTURES)
12A04-03	STRUCTURE IDENTIFICATION PLAQUES, RAMP GATES, SIGN BRIDGES & OVERHEAD SIGN SUPPORTS & TRAFFIC SIGNALS
13C01-19	CONCRETE PAVEMENT LONGITUDINAL JOINTS AND TIES
13C04-17	URBAN NON-DOWELED CONCRETE PAVEMENT
13C11-14A	RURAL DOWELED CONCRETE PAVEMENT
13C11-14B	RURAL DOWELED CONCRETE PAVEMENT
13C13-11	URBAN DOWELED CONCRETE PAVEMENT
13C18-08A	CONCRETE PAVEMENT JOINTING
13C18-08B	CONCRETE PAVEMENT STEEL REINFORCEMENT
13C18-08C	CONCRETE PAVEMENT JOINT TYPES
13C18-08D	CONCRETE PAVEMENT JOINTING AT UTILITY FIXTURES
13C18-08E	CONCRETE PAVEMENT JOINTING AND STEEL REINFORCEMENT IN ROUNDABOUTS
13C18-08F	CONCRETE PAVEMENT INTERSECTION BOXOUT FOR INTEGRAL CURB AND GUTTER
13C18-08G	CONCRETE PAVEMENT JOINTING ACCELERATION/DECELERATION LANE
14A02-01	TREE PLANTING DETAIL
14B32-11A	CONCRETE BARRIER SINGLE SLOPE (CBSS)
14B32-11B	CONCRETE BARRIER SINGLE SLOPE (CBSS)
14B32-11C	CONCRETE BARRIER SINGLE SLOPE (CBSS)
14B32-11D	CONCRETE BARRIER SINGLE SLOPE (CBSS)
14B32-11E	CONCRETE BARRIER SINGLE SLOPE (CBSS)
14B32-11F	CONCRETE BARRIER SINGLE SLOPE (CBSS)
14B32-11G	CONCRETE BARRIER SINGLE SLOPE (CBSS)
14B32-11H	CONCRETE BARRIER SINGLE SLOPE (CBSS)
15A03-02A	FLEXIBLE MARKER POST FOR CULVERT END
15A03-02B	FLEXIBLE MARKER POST FOR CULVERT END
15A04-08B	BARRIER WALL DELINEATOR WITH REFLECTIVE SHEETING
15A04-08C	DELINEATOR POST WITH REFLECTIVE SHEETING
15A04-08E	DELINEATOR POST WITH REFLECTIVE SHEETING
15B03-15A	FENCE CHAIN LINK
15B03-15B	FENCE CHAIN LINK
15C02-09A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES

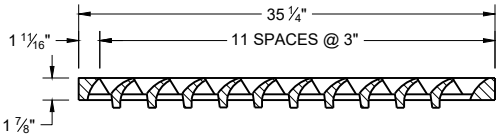
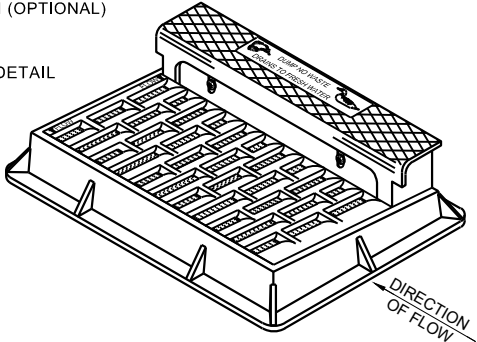
Standard Detail Drawing List

15C02-09E	OFF RAMP LANE CLOSURE
15C07-16A	PAVEMENT MARKING SYMBOLS
15C07-16B	PAVEMENT MARKING WORDS
15C07-16C	PAVEMENT MARKING ARROWS
15C20-02	YIELD MARKING
15D16-06	TRAFFIC CONTROL, EXIT RAMP CLOSURE
15D27-03	TRAFFIC CONTROL, SHOULDER CLOSURE ON DIVIDED ROADWAY, SPEEDS GREATER THAN 40 MPH
15D29-06	TRAFFIC CONTROL, VEHICLE ENTRANCE/EXIT OR HAUL ROAD

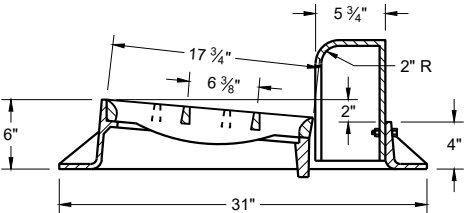
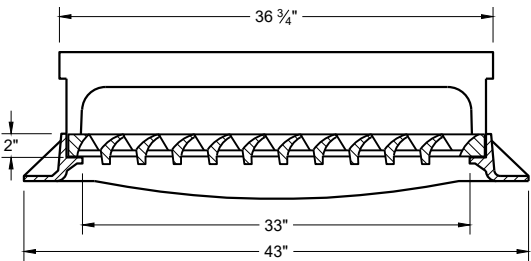
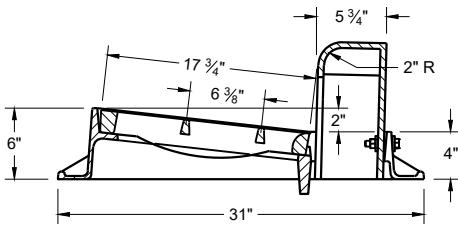
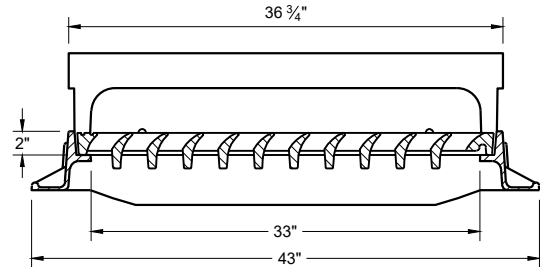


NOTE: EITHER CASTING IS ACCEPTABLE

TYPE "C" CHECKERED TOP DESIGN (OPTIONAL)
SEE LOGO DETAIL

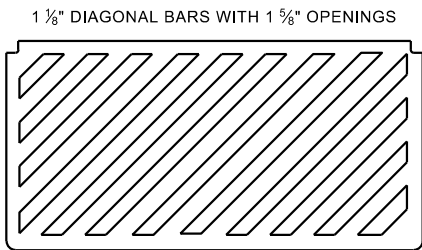


NOTE: CURB BOX HEIGHT ADJUSTABLE 6" - 9"

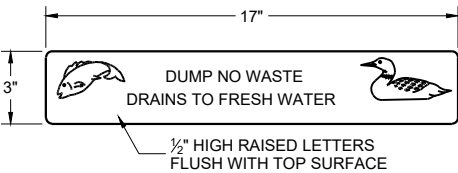


TYPE "H"

NOTE: EITHER CASTING IS ACCEPTABLE



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



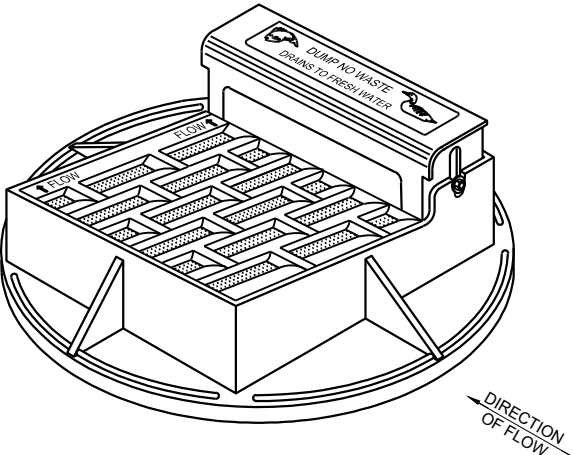
LOGO DETAIL

GENERAL NOTES

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

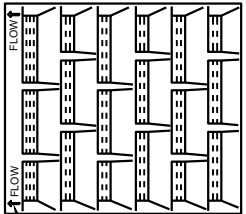
DETAIL DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR CATCH BASIN, MANHOLE AND INLET COVERS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

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

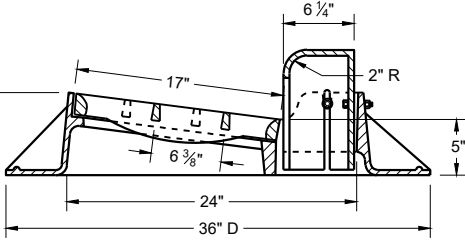
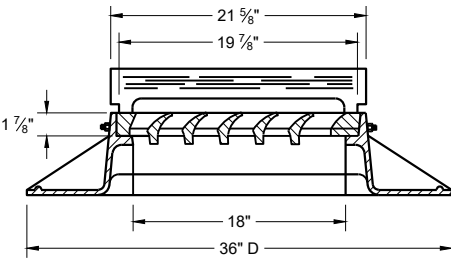
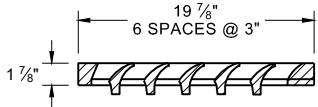


NOTE: CURB BOX HEIGHT ADJUSTABLE 6" - 9"

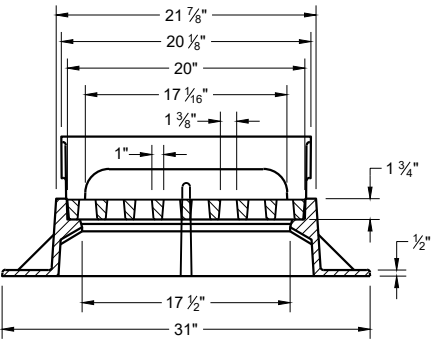
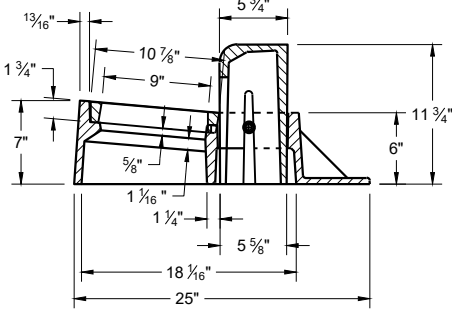
NOTE: EITHER CASTING IS ACCEPTABLE



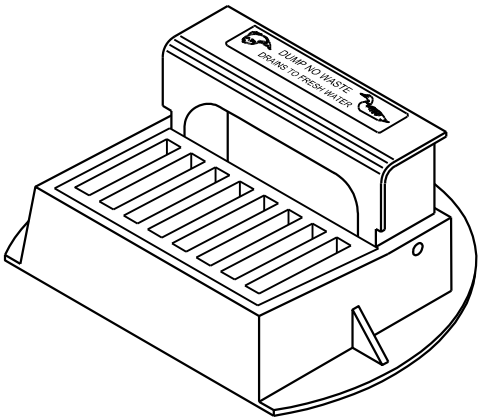
DIRECTION OF FLOW ARROWS



TYPE "A"



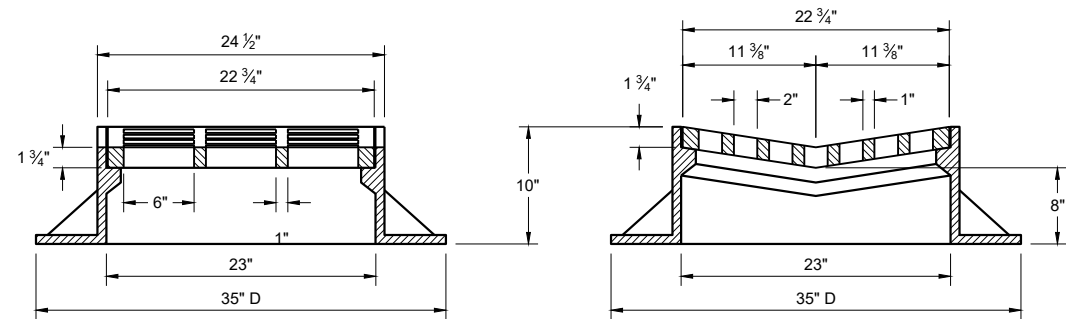
TYPE "Z"



INLET COVERS
TYPES A, H, A-S, H-S AND Z

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

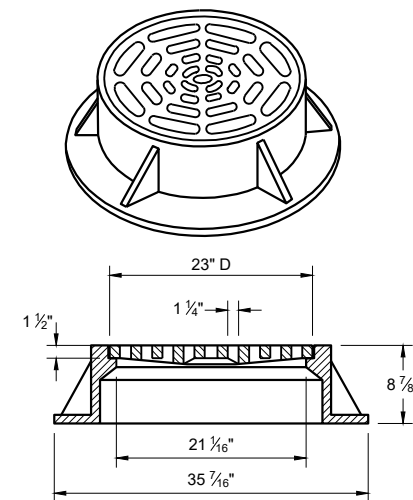
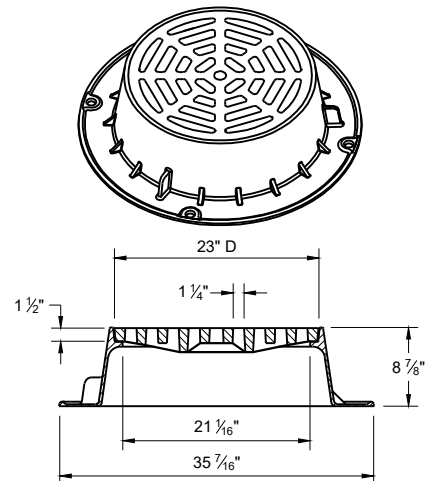
APPROVED
December 2023 /S/ Rodney Taylor
DATE ROADWAY STANDARDS DEVELOPMENT
FHWA UNIT SUPERVISOR



TYPE "B"

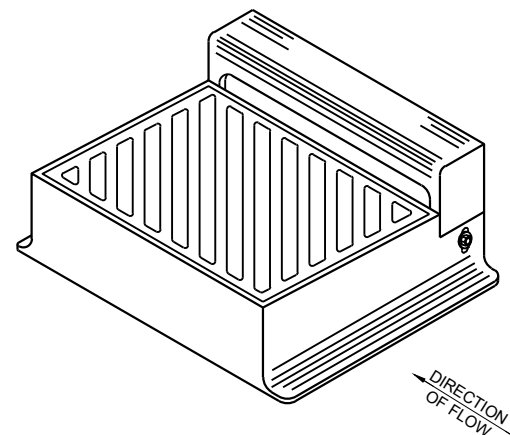
**ALTERNATIVE GRATE FOR
TYPE "B" COVER**

USE WHERE PEDESTRIAN OF BICYCLE TRAFFIC IS POSSIBLE
NOTED AS TYPE B - A ON THE DRAINAGE TABLE

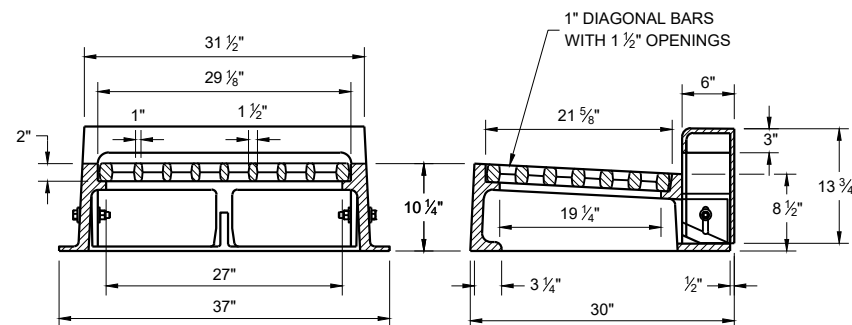


TYPE "C"

NOTE: EITHER CASTING IS ACCEPTABLE



DIAGONAL SLOTS SHALL BE ORIENTED TO THE
DIRECTION OF FLOW AS ILLUSTRATED.
GRATES ARE MANUFACTURED TO BE REVERSIBLE.



TYPE "WM"

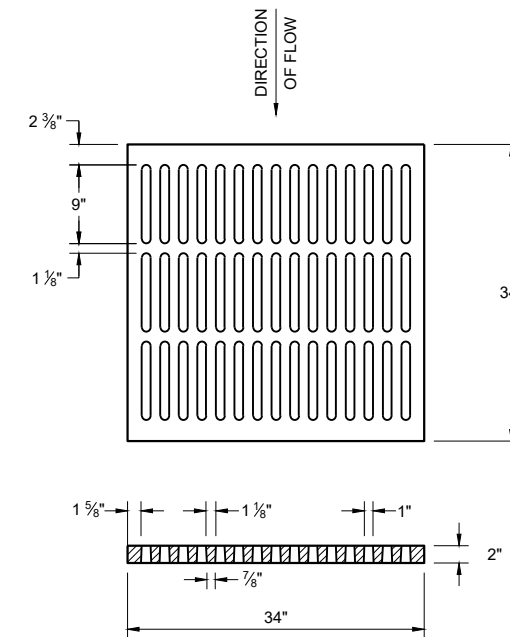
NOTE: CURB BOX HEIGHT ADJUSTABLE 6" - 9"

GENERAL NOTES

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

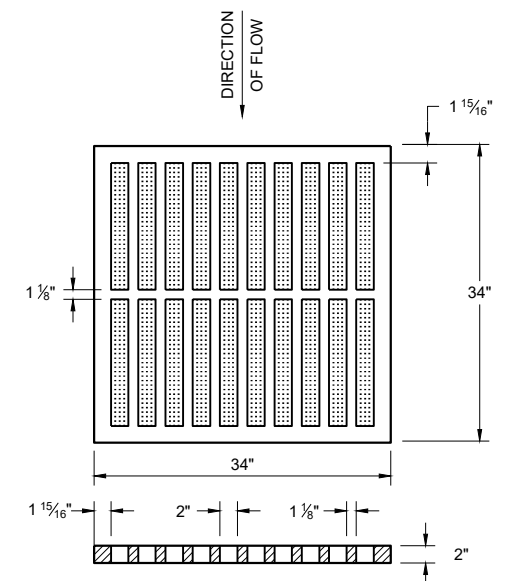
DETAIL DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR CATCH BASIN, MANHOLE AND INLET COVERS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

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



ALTERNATIVE TYPE "MS"

USE WHERE PEDESTRIAN OF BICYCLE TRAFFIC IS PERMITTED
NOTED AS TYPE MS-A ON THE DRAINAGE TABLE



TYPE "MS"

USE ON FREEWAYS AND EXPRESSWAYS
NOTED AS TYPE MS ON THE DRAINAGE TABLE

**INLET COVERS
TYPES B, B-A, C,
MS, MS-A AND WM**

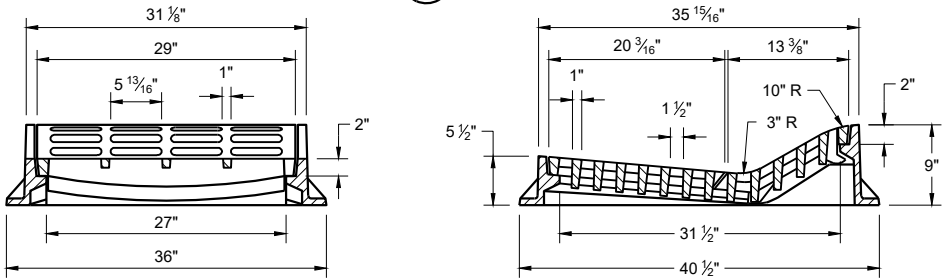
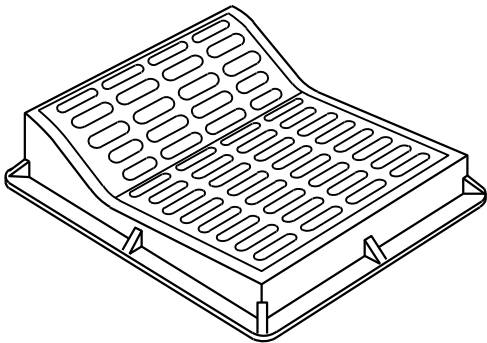
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
December 2023 /S/ Rodney Taylor
DATE ROADWAY STANDARDS DEVELOPMENT
FHWA UNIT SUPERVISOR

GENERAL NOTES

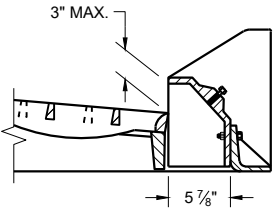
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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



TYPE "F"

USE WITH TYPES "A" AND "D" CONCRETE CURB AND GUTTER, 36"

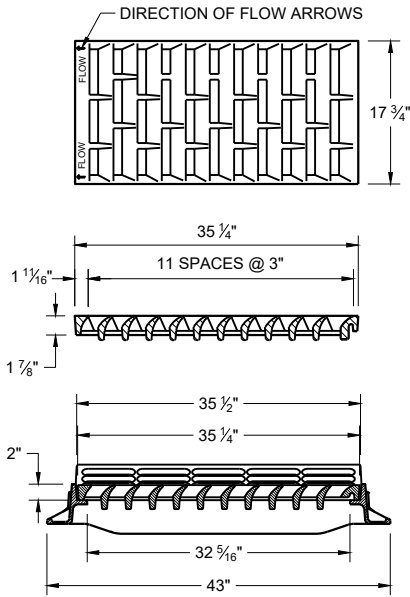


ALTERNATIVE CURB BOX
FOR TYPE "HM" COVER

USE WITH TYPES "G" AND "J" CONCRETE CURB AND GUTTER, 30 INCH
NOTED AS TYP "HM-GJ" ON DRAINAGE TABLE

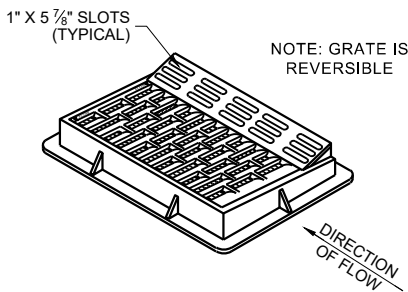
NOTE:
SPECIAL GRATE FOR THE TYPE "H" COVER MAY ALSO BE USED FOR THE TYPE "HM-GJ" COVER.

NOTED AS TYPE HM-GJ-S ON THE DRAINAGE TABLE.

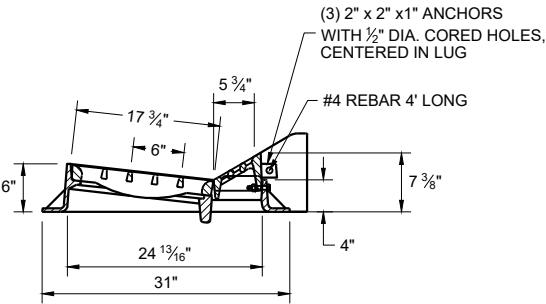


TYPE "HM"

USE WITH TYPES "A" AND "D" CONCRETE CURB AND GUTTER, 36"

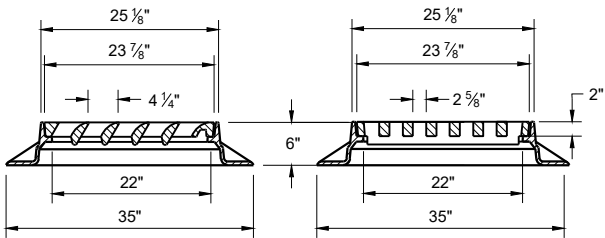
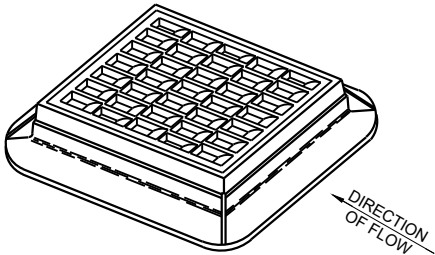


NOTE: GRATE IS REVERSIBLE

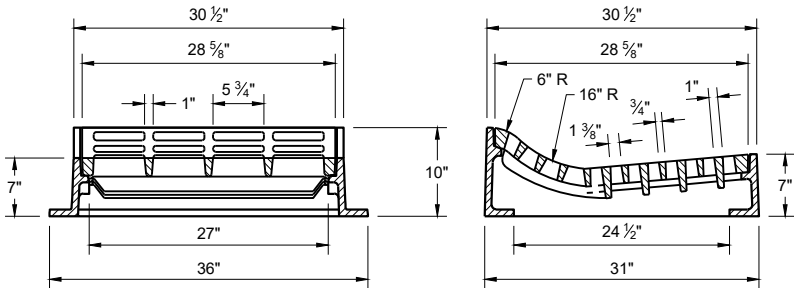
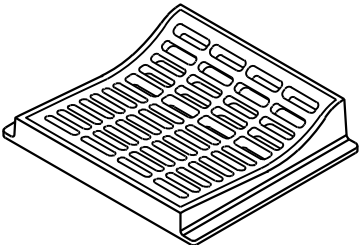


NOTE:
SPECIAL GRATE FOR THE TYPE "H" COVER MAY ALSO BE USED FOR THE TYPE "HM-GJ" COVER.

NOTED AS TYPE HM-GJ-S ON THE DRAINAGE TABLE.



TYPE "S"



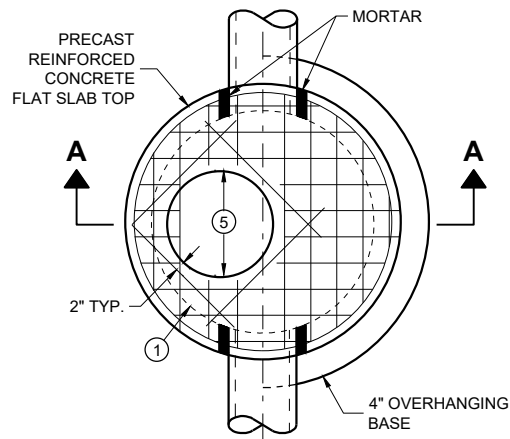
TYPE "T"

USE WITH TYPES "R" AND "T" CONCRETE CURB AND GUTTER, 36"

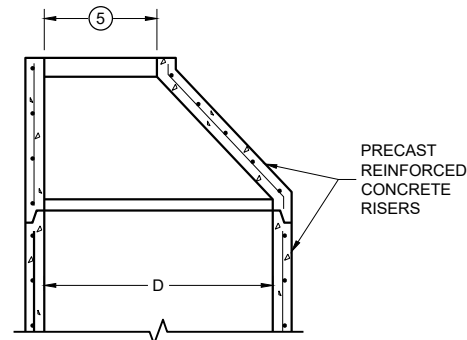
INLET COVERS
TYPES F, HM, HM-S, S, T,
HM-GJ AND HM-GJ-S

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

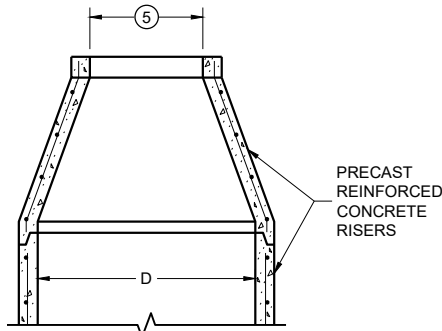
APPROVED
December 2023 /S/ Rodney Taylor
DATE ROADWAY STANDARDS DEVELOPMENT
FHWA UNIT SUPERVISOR



PLAN VIEW
CIRCULAR OPENING



OPTIONAL PRECAST
REINFORCED CONCRETE
ECCENTRIC TOP



OPTIONAL PRECAST
REINFORCED CONCRETE
CONCENTRIC TOP

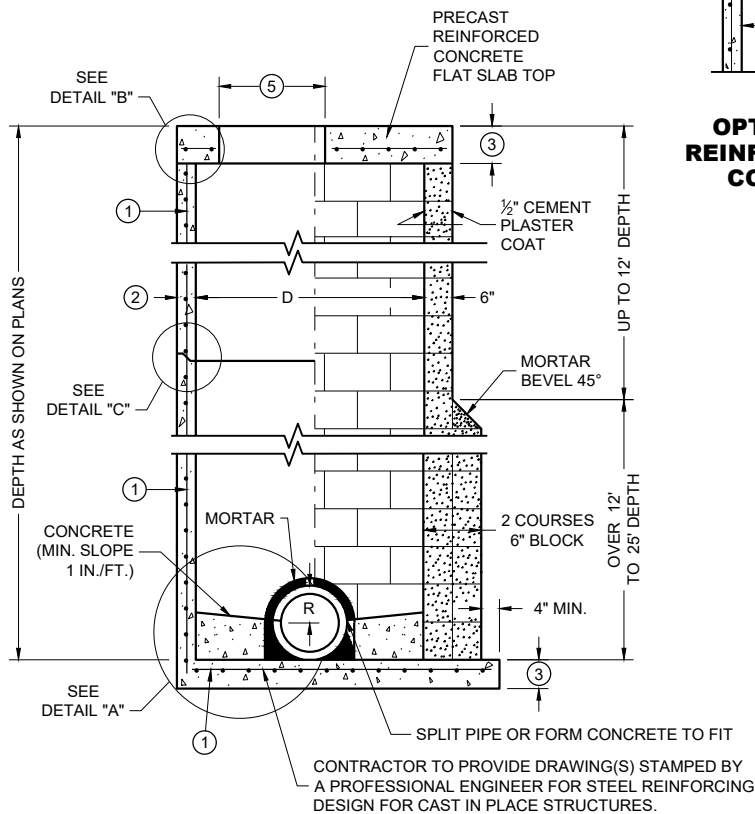
MANHOLE COVER OPENING MATRIX

MANHOLE COVER OPENING SIZE (FT.)	MANHOLE COVER TYPE	C	ALL JS	K	L	M
2 DIA.	5	X	X		X	
3 DIA.				X		X

PIPE MATRIX

MANHOLE SIZE (DIA.)	MAXIMUM INSIDE PIPE DIAMETER FOR TWO PIPES		MINIMUM WALL THICKNESS (IN)	MINIMUM PRECAST FLAT SLAB TOP AND BASE THICKNESS
	180° SEPARATION (IN)	90° SEPARATION (IN)		
3-FT	15	12	4	6
4-FT	24	18	4	6
5-FT	36	24	5	8
6-FT	42	36	6	8
7-FT	48	36/42 *	7	8
8-FT	60	42	8	8
9-FT	66	54	9	10
10-FT	72	60	10	10

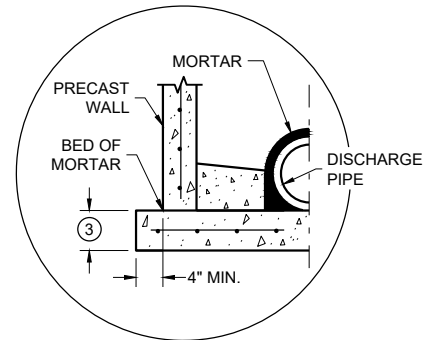
*A 36" PIPE AND A 42" PIPE CAN BE PLACED WITHIN 90 DEGREES.
SEE MINIMUM HORIZONTAL PIPE SEPARATION DETAIL.



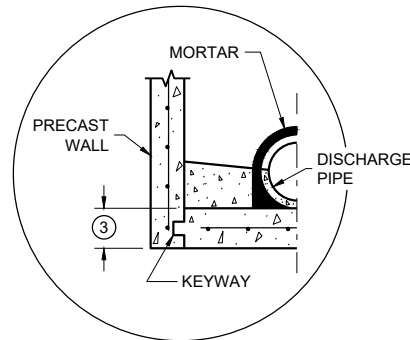
SECTION A - A

PRECAST REINFORCED
CONCRETE WITH
MONOLITHIC BASE

CONCRETE BLOCK WITH
CAST IN PLACE OR
PRECAST REINFORCED
CONCRETE BASE 1

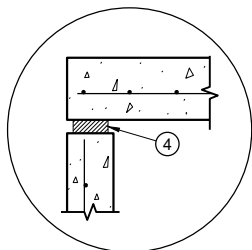


SEPARATE PRECAST REINFORCED
CONCRETE BASE OPTION

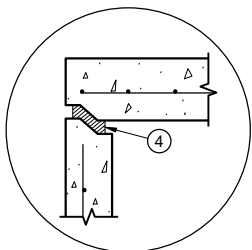


PRECAST REINFORCED CONCRETE
WITH INTEGRAL BASE OPTION

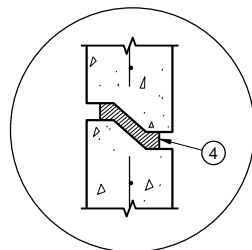
DETAIL "A"



TOP WITH PLAIN
END JOINT



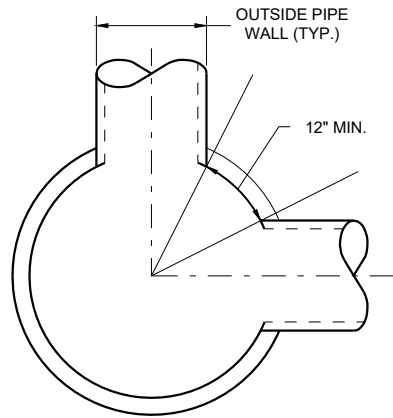
TOP WITH TONGUE
AND GROOVE JOINT



RISER WITH TONGUE
AND GROOVE JOINT

DETAIL "B"

DETAIL "C"



MINIMUM HORIZONTAL
PIPE SEPARATION

DETAIL "D"

GENERAL NOTES

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

UNLESS OTHERWISE AUTHORIZED IN WRITING BY THE ENGINEER, THE CONTRACTOR SHALL NOT ORDER AND DELIVER PRECAST MANHOLE 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.

PRECAST REINFORCED CONCRETE CONE TOPS (ECCENTRIC OR CONCENTRIC) OR PRECAST REINFORCED CONCRETE FLAT SLAB TOPS MAY BE USED ON CONCRETE BLOCK STRUCTURES.

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

STEPS MEETING AASHTO M199 AND THE FOLLOWING REQUIREMENTS SHALL BE INSTALLED IN ALL STRUCTURES OVER 5 FEET IN DEPTH: 16 INCH C-C MAXIMUM SPACING; PROJECT A MINIMUM CLEAR DISTANCE OF 4 INCHES FROM THE WALL AT THE POINT OF EMBEDMENT; MINIMUM LENGTH OF 10 INCHES; MINIMUM WALL EMBEDMENT OF 3 INCHES. FERROUS METAL STEPS NOT PAINTED OR TREATED TO RESIST CORROSION SHALL HAVE A MINIMUM CROSS SECTIONAL IMENSION OF 1 INCH.

STEPS OF APPROVED POLYPROPYLENE PLASTIC COATED REINFORCEMENT BAR ARE ACCEPTABLE. REINFORCING BAR MUST BE A MINIMUM OF 1/2 INCH AND MEET THE REQUIREMENTS OF ASTM A615.

CERTIFICATION SHALL BE PROVIDED THAT INSTALLED STEPS WHEN TESTED IN ACCORDANCE WITH SECTION 10 OF AASHTO T280 CAN WITHSTAND A VERTICAL LOAD OF 800 LBS. AND A HORIZONTAL LOAD OF 400 LBS.

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

ALL PRECAST MANHOLE 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.

CONCRETE BLOCK WILL NOT BE PERMITTED FOR STRUCTURES GREATER THAN 4 FEET IN DIAMETER.

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.

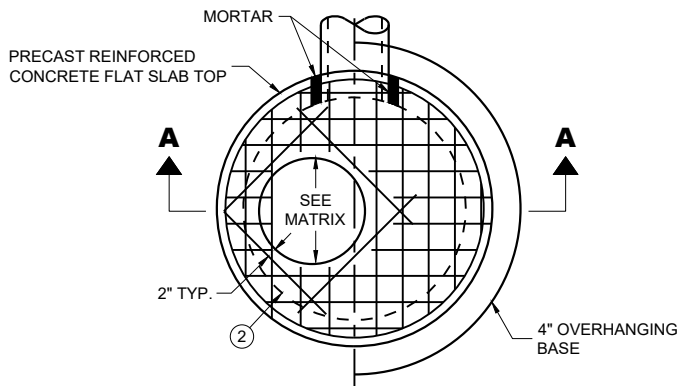
FOR ADDITIONAL CONFIGURATIONS, MAINTAIN A MINIMUM OF 12 INCHES AS MEASURED FROM THE INSIDE OF THE STRUCTURE WALL BETWEEN THE OUTSIDE PIPE WALLS OF ADJACENT PIPES. SEE DETAIL "D".

- 1 FOR PRECAST MANHOLES AND REINFORCED CONCRETE BASES PROVIDE REINFORCING STEEL IN ACCORDANCE TO AASHTO M199.
- 2 SEE PIPE MATRIX TABLE FOR MINIMUM WALL THICKNESS FOR PRECAST MANHOLES
- 3 SEE PIPE MATRIX TABLE FOR MINIMUM THICKNESS OF PRECAST FLAT SLAB TOPS AND BASES.
- 4 JOINTS TO BE SEALED WITH A BUTYL RUBBER SEAL PER SEALANT MANUFACTURERS RECOMMENDATIONS CONFORMING TO ASTM C 990 OR RUBBER GASKETS CONFORMING TO ASTM C443.
- 5 SEE MANHOLE COVER OPENING MATRIX.

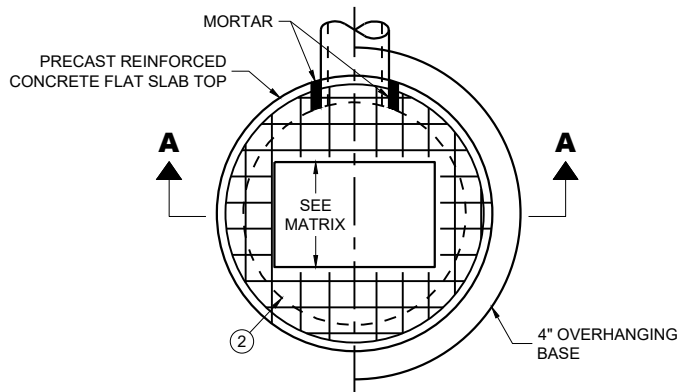
MANHOLES, 3-FT, 4-FT
5-FT, 6-FT, 7-FT, 8-FT, 9-FT
AND 10-FT DIAMETER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

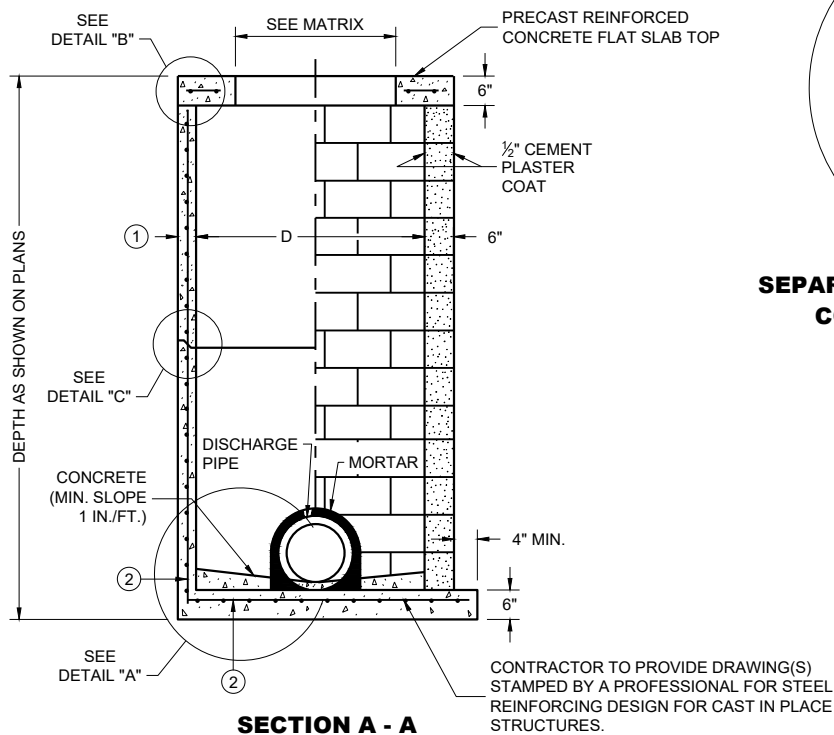
APPROVED
December 2023 /S/ Rodney Taylor
DATE ROADWAY STANDARDS DEVELOPMENT
FHWA UNIT SUPERVISOR



PLAN VIEW CIRCULAR OPENING



PLAN VIEW RECTANGULAR OPENING



SECTION A - A

PRECAST REINFORCED CONCRETE WITH MONOLITHIC BASE

CONCRETE BLOCK WITH CAST IN PLACE OR PRECAST REINFORCED CONCRETE BASE ②

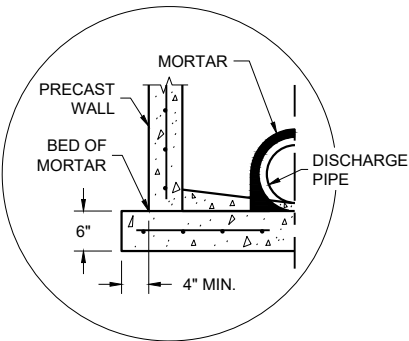
CIRCULAR INLETS WITH FLAT TOP

CATCH BASIN COVER OPENING MATRIX

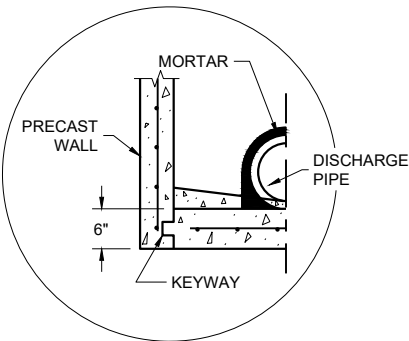
INLET SIZE	INLET COVER TYPE	ALL A'S	ALL B'S	BW	C	F	ALL H'S	S	T	V	WM	Z
	OPENING SIZE (FT.)											
3-FT	2 DIA.				X							X
	2 X 2	X	X					X		X		
4-FT	2 DIA.				X							X
	2 X 2	X	X					X		X		
	2 X 2.5			X				X	X	X	X	
	2 X 3						X					
	2.5 X 3					X						

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

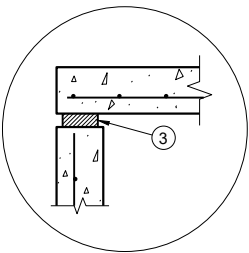


SEPARATE PRECAST REINFORCED CONCRETE BASE OPTION

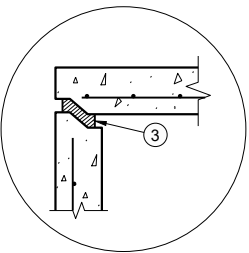


PRECAST REINFORCED CONCRETE WITH INTEGRAL BASE OPTION

DETAIL "A"

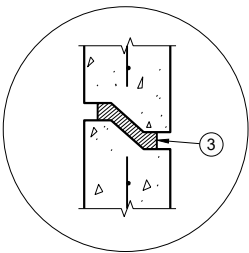


TOP WITH PLAIN END JOINT



TOP WITH TONGUE AND GROOVE JOINT

DETAIL "B"



RISER WITH TONGUE AND GROOVE JOINT

DETAIL "C"

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.

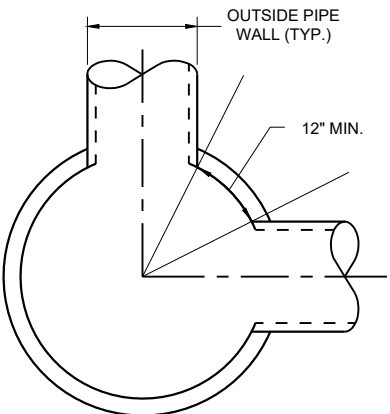
ALL PRECAST INLET UNITS SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF AASHTO DESIGNATION M199.

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 "D".

- ① MINIMUM WALL THICKNESS SHALL BE 4 INCHES FOR 3-FT DIAMETER AND 5 INCHES FOR 4-FT DIAMETER PRECAST INLETS.
- ② FOR PRECAST INLETS AND REINFORCED CONCRETE BASES PROVIDE REINFORCING STEEL IN ACCORDANCE TO AASHTO M199.
- ③ JOINTS TO BE SEALED WITH A BUTYL RUBBER SEAL PER SEALANT MANUFACTURERS RECOMMENDATIONS CONFORMING TO ASTM C 990 OR RUBBER GASKETS CONFORMING TO ASTM C443.

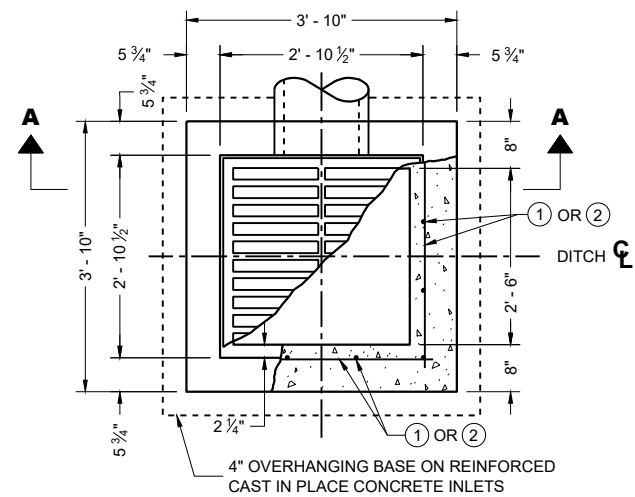


MINIMUM HORIZONTAL PIPE SEPARATION
DETAIL "D"

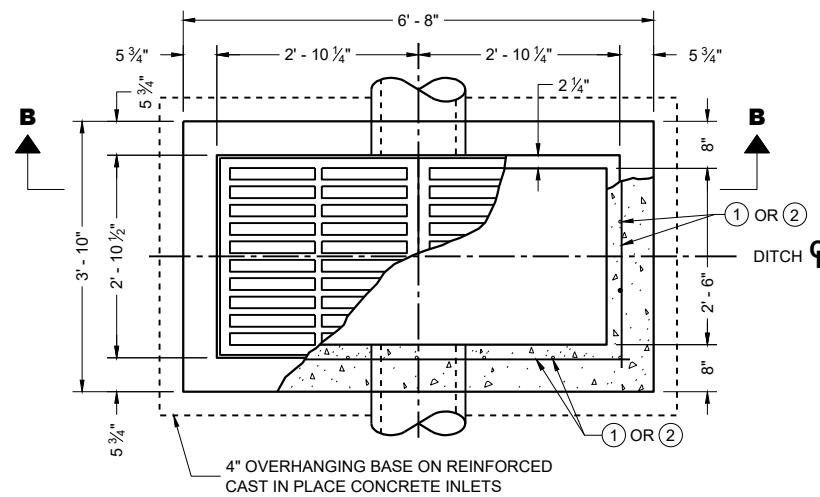
**INLETS 3-FT
AND 4-FT DIAMETER**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

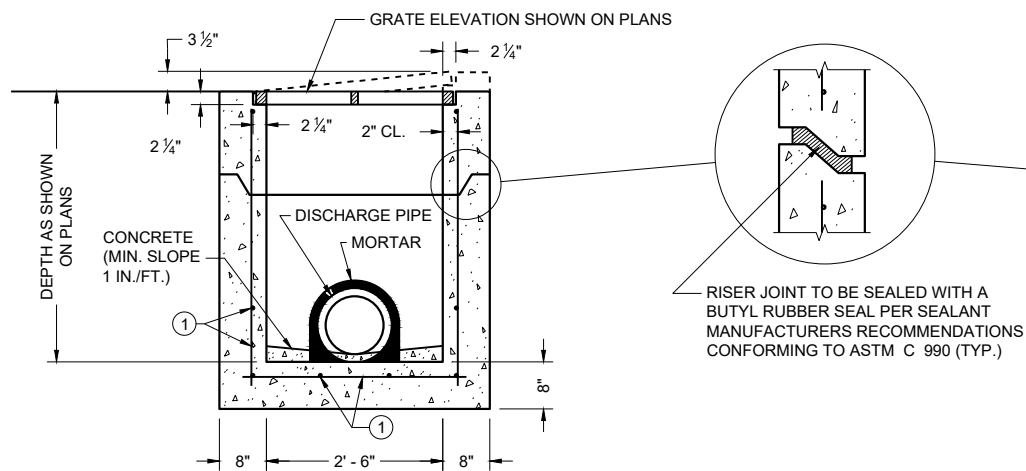
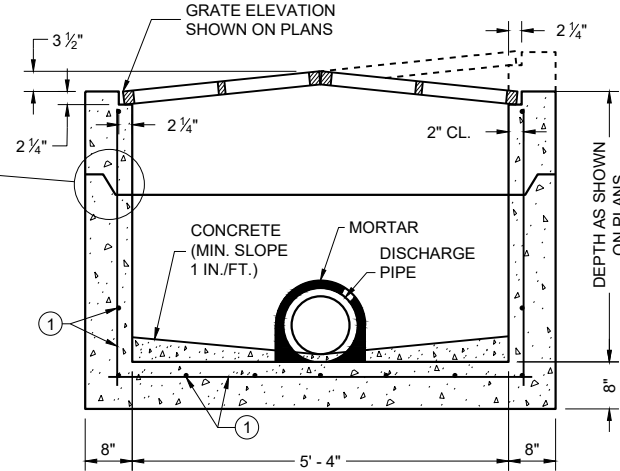
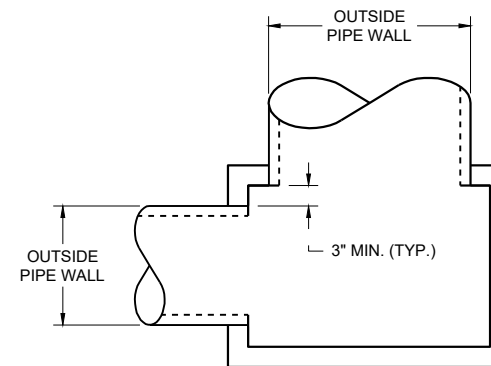
APPROVED
December 2023 /S/ Rodney Taylor
DATE ROADWAY STANDARDS DEVELOPMENT
FHWA UNIT SUPERVISOR



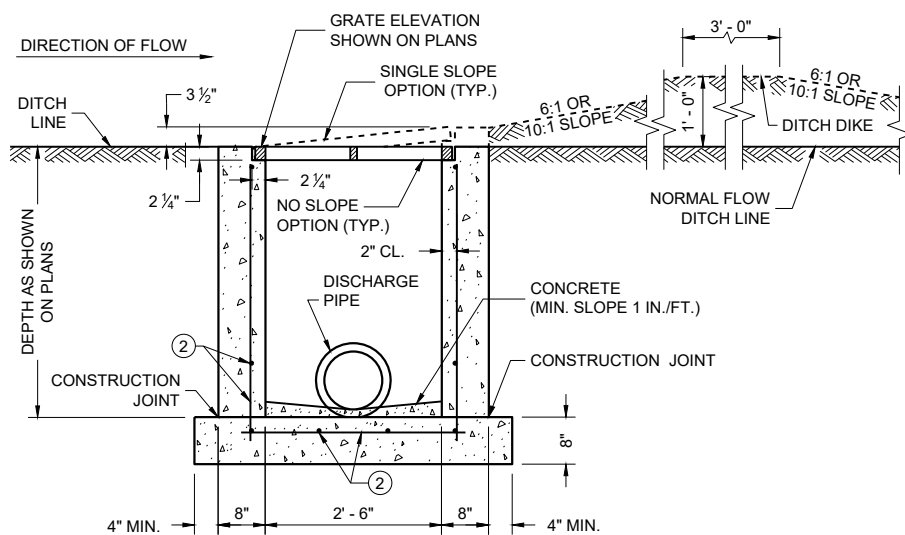
PLAN VIEW



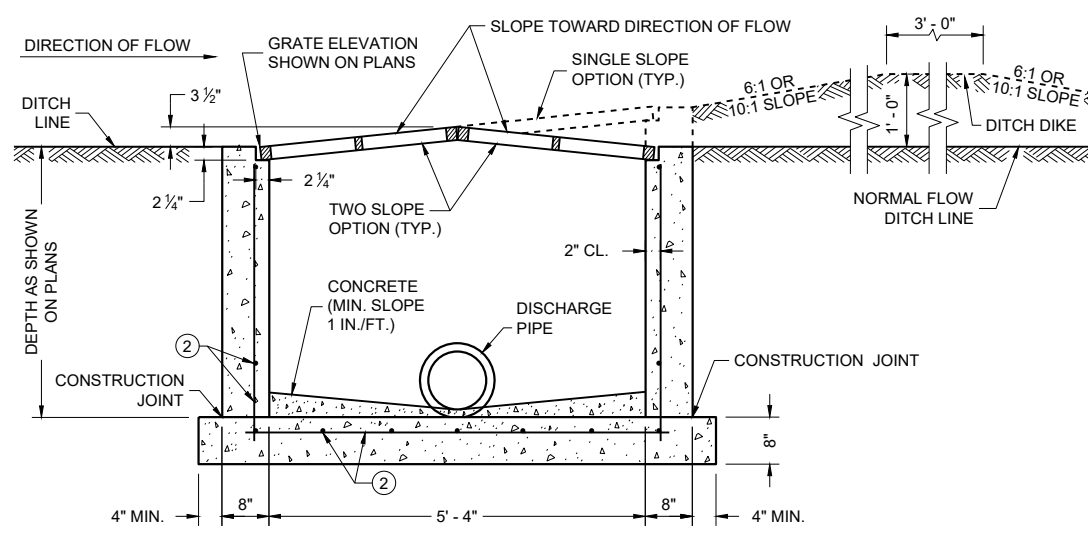
PLAN VIEW

PRECAST REINFORCED CONCRETE
SECTION A - APRECAST REINFORCED CONCRETE
SECTION B - B

DETAIL "A"

REINFORCED CAST IN PLACE CONCRETE
SECTION A - A

INLETS MEDIAN 1 GRATE

REINFORCED CAST IN PLACE CONCRETE
SECTION B - B

INLETS MEDIAN 2 GRATE

GENERAL NOTES

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

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

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

ALL MEDIAN INLETS ARE DESIGNATED ON THE PLANS AS "INLETS, 1G-MS", ETC. THE FIRST NUMBER AND LETTER DESIGNATE THE TYPE OF STRUCTURE, AND THE FOLLOWING LETTERS DESIGNATE THE TYPE OF COVER TO BE USED TO COMPRISE THE COMPLETE UNIT.

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

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

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

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

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

- ① FOR PRECAST INLETS AND REINFORCED CONCRETE BASES PROVIDE REINFORCING STEEL IN ACCORDANCE TO ASTM C 913.
- ② CONTRACTOR TO PROVIDE DRAWING(S) STAMPED BY A PROFESSIONAL ENGINEER FOR STEEL REINFORCING DESIGN FOR CAST-IN-PLACE STRUCTURES.

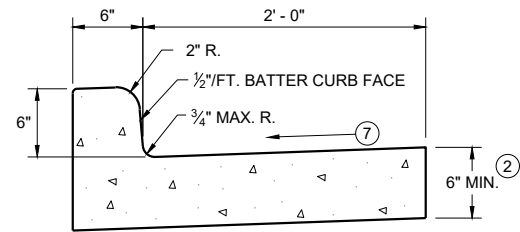
PIPE MATRIX

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

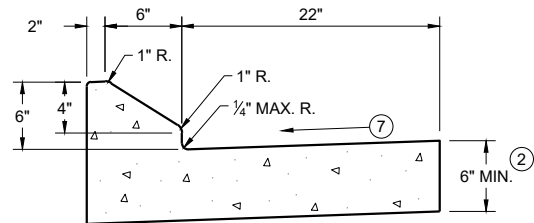
INLETS
MEDIAN 1 AND 2 GRATE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

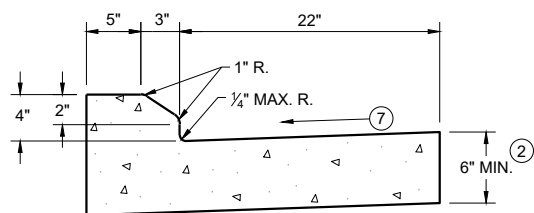
APPROVED
December 2023 /S/ Rodney Taylor
DATE ROADWAY STANDARDS DEVELOPMENT
FHWA UNIT SUPERVISOR



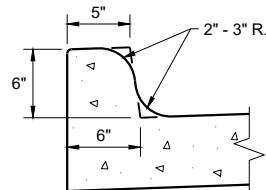
TYPES A^① & D



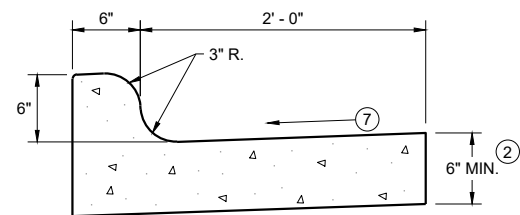
6" SLOPED CURB TYPES G^① & J



4" SLOPED CURB TYPES G^① & J

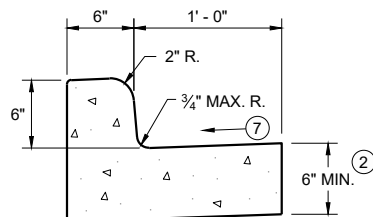


TYPES K^① & L
(OPTIONAL CURB SHAPE)



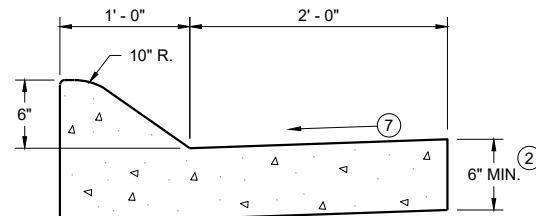
TYPES K^① & L

CONCRETE CURB AND GUTTER 30"

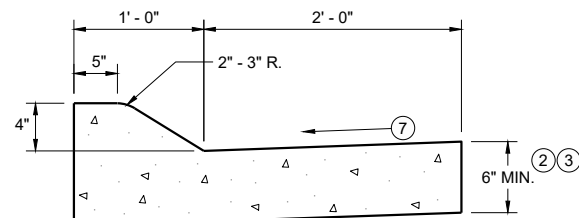


TYPES A^① & D

CONCRETE CURB AND GUTTER 18"

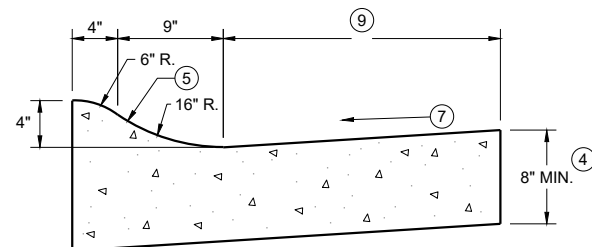


6" SLOPED CURB TYPES A^① & D



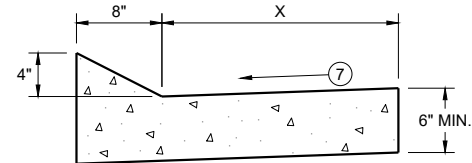
4" SLOPED CURB TYPES A^① & D

CONCRETE CURB AND GUTTER 36"



4" SLOPED CURB TYPES R^① & T

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

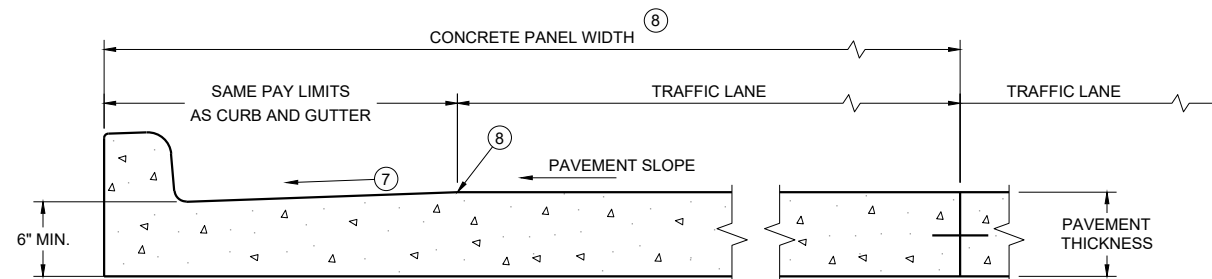


TYPES TBT & TBTT^①

CONCRETE CURB AND GUTTER

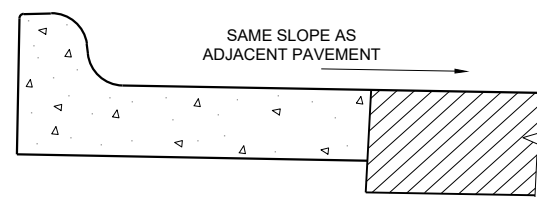
PAVEMENT THICKNESS
AND MAXIMUM CONCRETE
PANEL WIDTH TABLE

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.

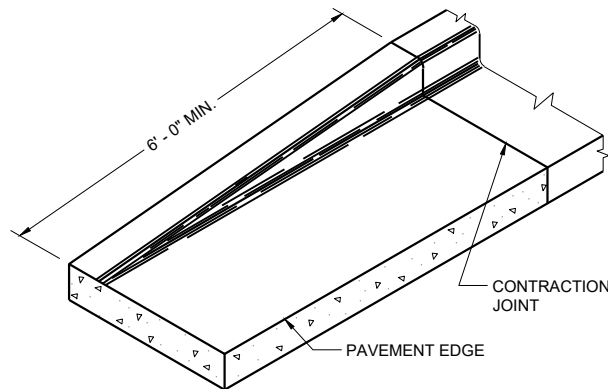
INTEGRAL CURB AND GUTTER SHALL CONFORM TO THE DETAILS SHOWN FOR CONCRETE CURB AND GUTTER INCLUDING THE TRANSVERSE GUTTER SLOPE.

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

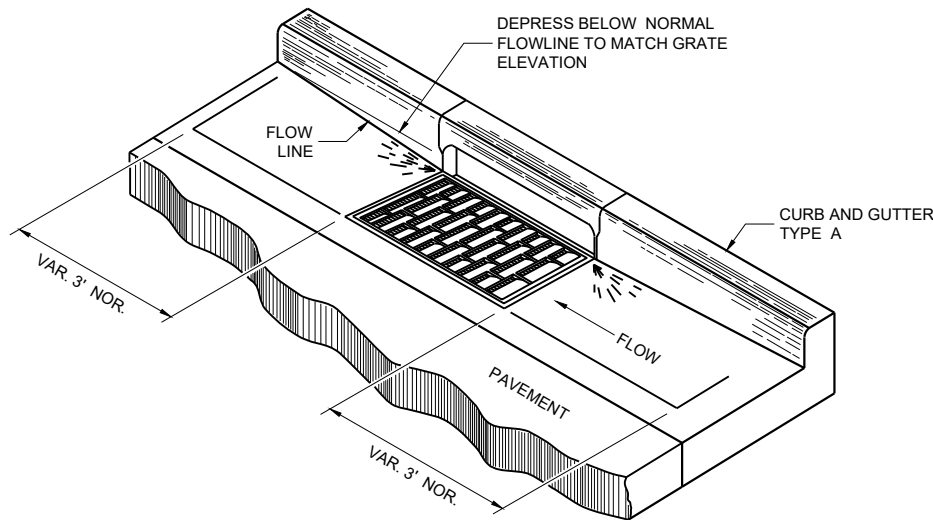
- ① TIE BARS ARE REQUIRED FOR CURB AND GUTTERS TYPES A, G, K, R, AND TBTT.
- ② THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 6" MINIMUM GUTTER THICKNESS IS MAINTAINED.
- ③ USE 8" MINIMUM GUTTER THICKNESS WHEN USED WITH 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

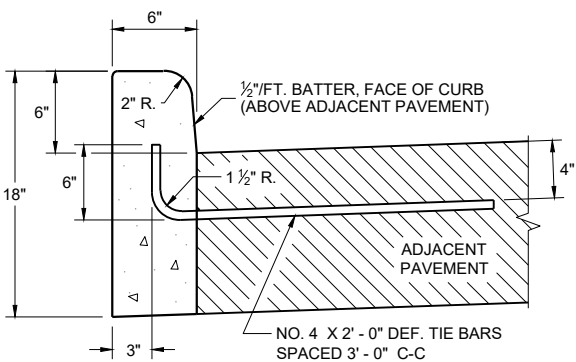
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



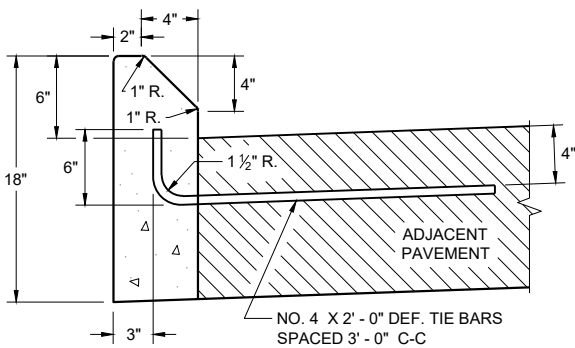
END SECTION CURB AND GUTTER



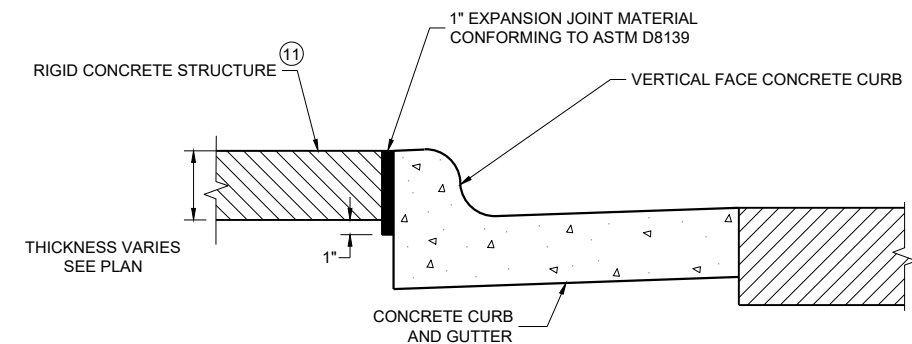
DETAIL OF CURB AND GUTTER AT INLETS
(TYPICAL H INLET COVER SHOWN)



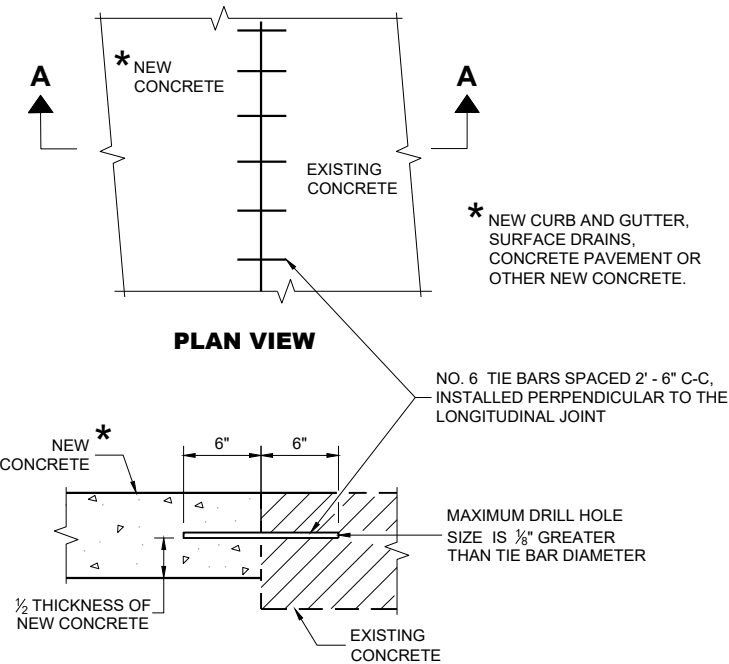
TYPES A^① & D



TYPES G^① & J
CONCRETE CURB



EXPANSION JOINT DETAIL FOR VERTICAL CURB ABUTTING A RIGID STRUCTURE^⑪



SECTION A - A
TIE BARS DRILLED INTO EXISTING PAVEMENT

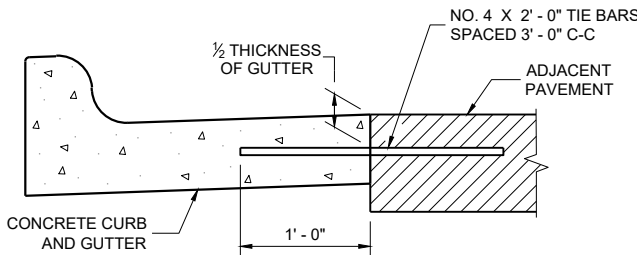
GENERAL NOTES

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

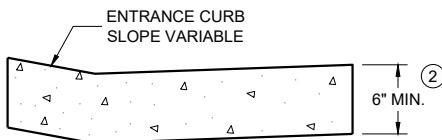
PAVEMENT TIES AND TIE BARS SHALL BE EPOXY COATED IN CONFORMANCE WITH SUBSECTION 505.2.6.2 OF THE STANDARD SPECIFICATIONS.

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.
- ⑩ REFER TO SDD 08D18 AND 08D19 FOR ADDITIONAL DRIVEWAY ENTRANCE CURB DETAILS.
- ⑪ PLACE 1" THICK EXPANSION JOINT MATERIAL BETWEEN VERTICAL FACE CURB TYPES EXTENDING FROM THE TOP OF CURB TO 1 INCH BELOW THE ADJOINING CONCRETE SURFACE. RIGID CONCRETE STRUCTURES INCLUDE RAISED CONCRETE MEDIANS, CONCRETE SAFETY ISLANDS, SPLITTER ISLANDS, OR LOCATIONS IDENTIFIED ON THE PLANS.



TYPICAL TIE BAR LOCATION^①



DRIVEWAY ENTRANCE CURB^⑩
(WHEN DIRECTED BY THE ENGINEER)

CONCRETE CURB, TIES AND CURB AND GUTTER APPLICATIONS

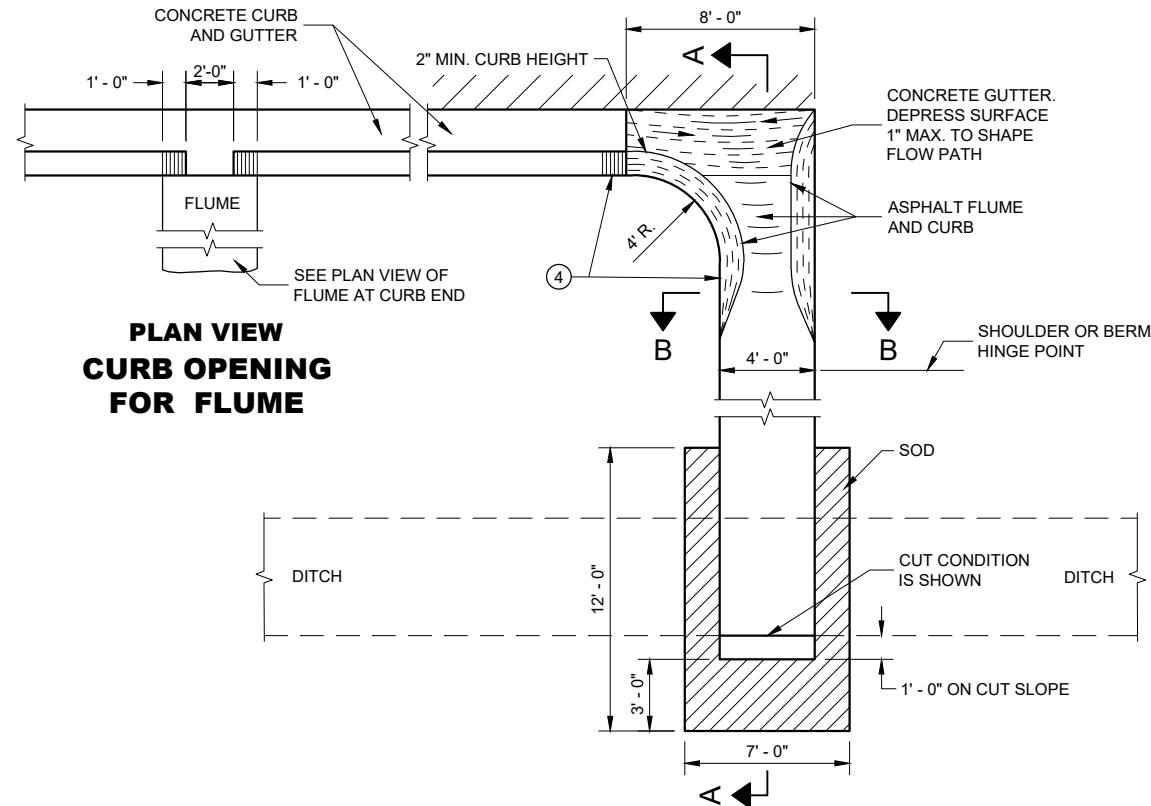
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2023
DATE /S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT
UNIT SUPERVISOR

FHWA

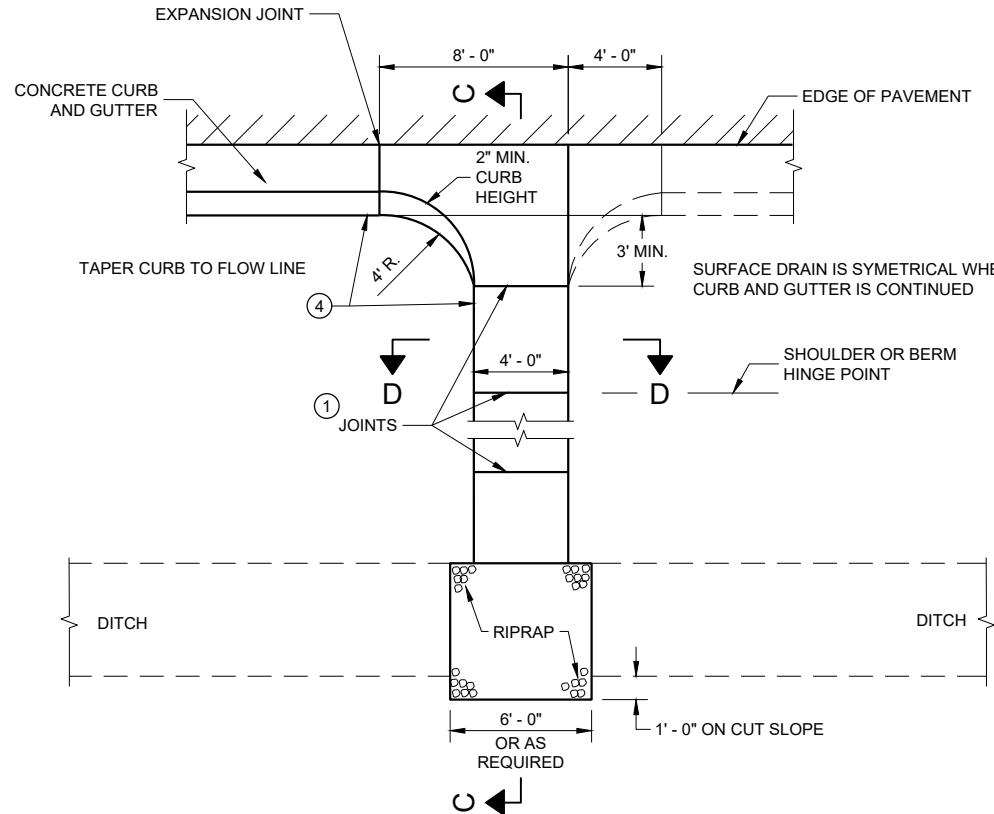
NOTE: TAPER CURB ENDS TO GUTTER IN 1' - 0"

ASPHALTIC FLUME



PLAN VIEW
CURB OPENING
FOR FLUME

PLAN VIEW
FLUME AT CURB END



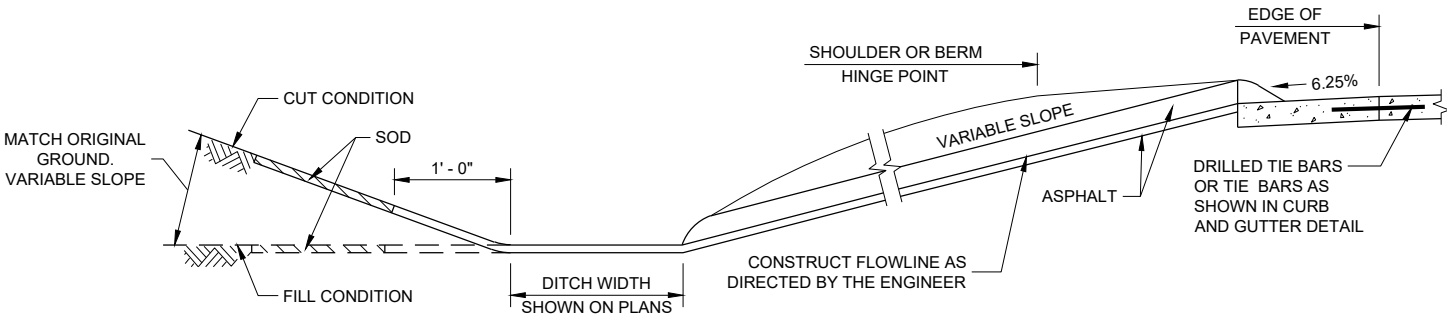
PLAN VIEW
CONCRETE SURFACE DRAIN

GENERAL NOTES

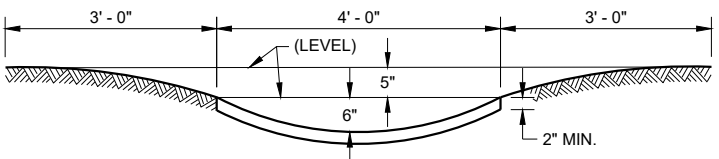
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

4" X 4" - W3.0 X W3.0 CONCRETE REINFORCEMENT SHALL BE IN ACCORDANCE WITH AASHTO SPECIFICATION M55.

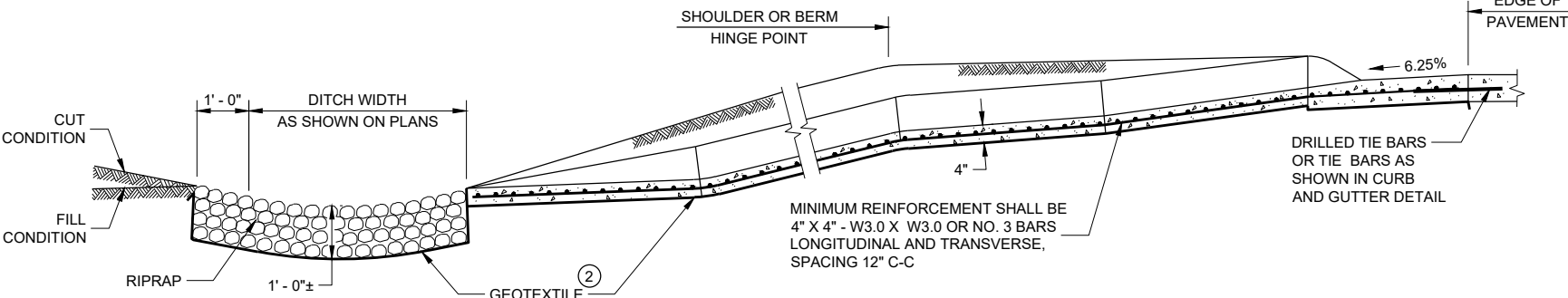
- JOINTS SHALL BE 1/8" TO 1/4" WIDE BY 1 1/2" DEEP AND SPACED AT UNIFORM INTERVALS OF APPROXIMATELY 4 FEET.
- GEOTEXTILE TYPE "R" SHALL UNDERLAY THE FULL LENGTH AND WIDTH OF THE CONCRETE SURFACE DRAIN AND RIPRAP.
- CONCRETE SURFACE DRAIN WITHOUT CURB AND GUTTER MAY BE USED ON BACKSLOPES WHEN SPECIFIED.
- ANGLE OF FLUME IN RELATION TO BACK OF CURB TO BE CONSTRUCTED PER THE PLAN DETAILS OR AS DIRECTED BY THE ENGINEER. ANGLE OF FLUME MAY BE OTHER THAN 90 DEGREES AS SHOWN.



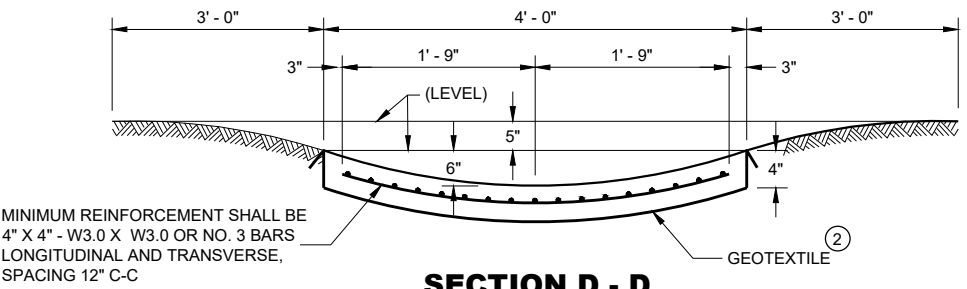
SECTION A - A



SECTION B - B



SECTION C - C



SECTION D - D

CONCRETE SURFACE
DRAINS AND
ASPHALTIC FLUMES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

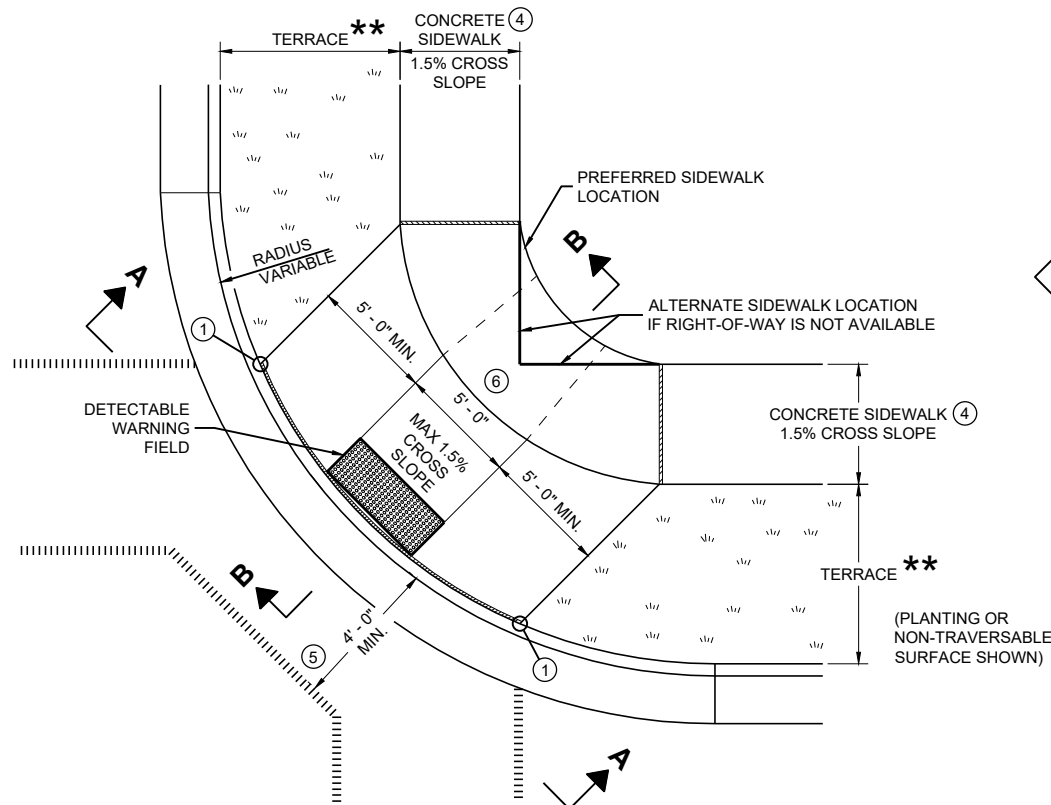
May 2023

DATE

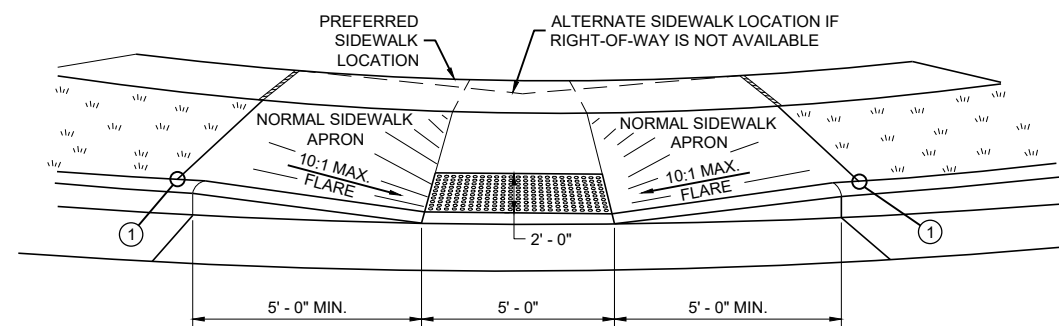
FHWA

/S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT
ENGINEER

117

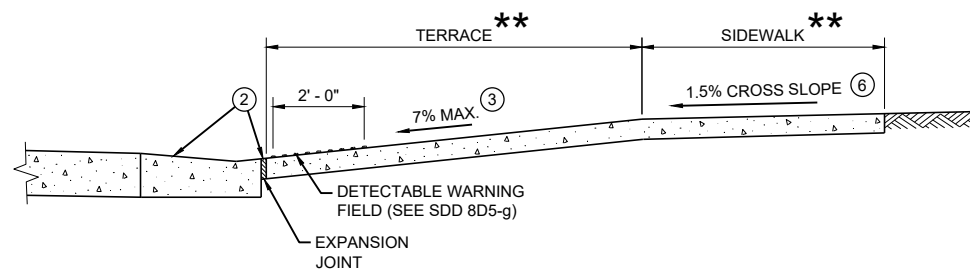


PLAN VIEW
CURB RAMP TYPE 1
(CENTER OF CORNER RADIUS)

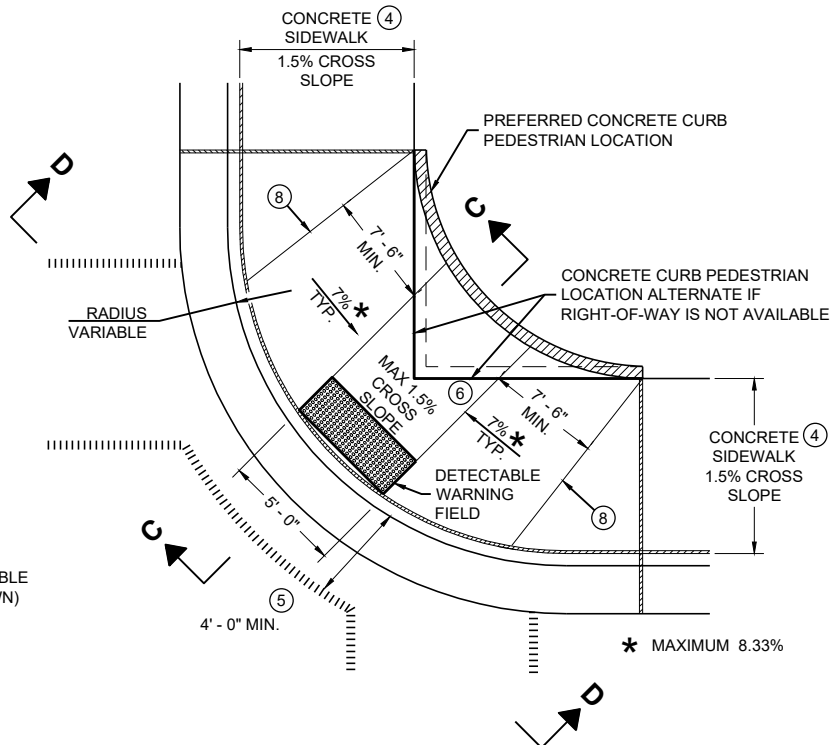


VIEW A - A FOR TYPE 1

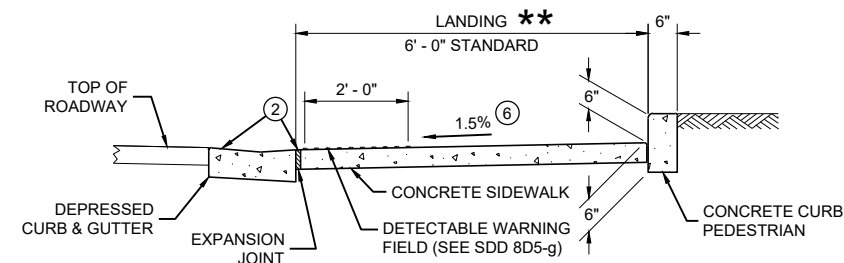
** WIDTH SHOWN ELSEWHERE
IN THE PLANS



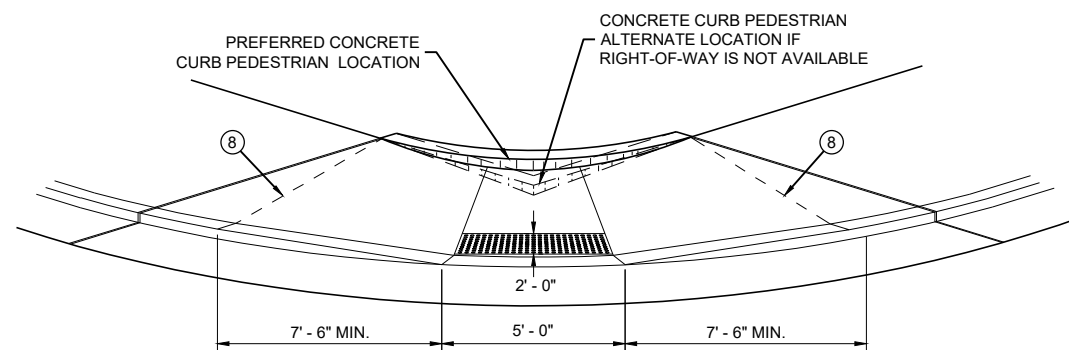
SECTION B - B FOR TYPE 1



PLAN VIEW
CURB RAMP TYPE 1 - A
(NO TERRACE)



SECTION C - C FOR TYPE 1 - A



VIEW D - D FOR TYPE 1 - A

GENERAL NOTES

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

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.

WHEN NECESSARY, THE SIDEWALK ELEVATION MAY BE LOWERED TO MEET THE HIGH POINT ON THE RAMP.

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

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

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

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

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

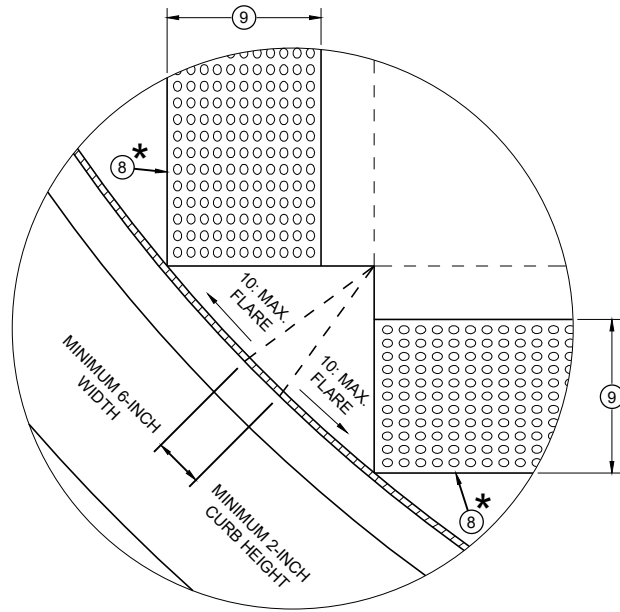
- ① THIS POINT IS AN EXTENSION OF OUTSIDE EDGE OF APPROACHING SIDEWALK WHERE IT MEETS THE BACK OF CONCRETE CURB. POINT LOCATION MAY BE ADJUSTED TO ALIGN WITH BEGINNING OF FULL-HEIGHT CURB IF THIS DISTANCE IS SHORT.
- ② GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN 1/4 - INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL MATCH THE RAMP SLOPE, MINIMALLY 1.5% AND NOT TO EXCEED 7%. WHEN ADJACENT TO 1.5% LANDING, CONSTRUCT CURB HEAD OPENING AT 1.5% IN THE DIRECTION OF PEDESTRIAN TRAVEL.
- ③ MAXIMUM 8.33% CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE AND NOT TO EXCEED 11% GRADE CHANGE.
- ④ ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.
- ⑤ PROVIDE A LEVEL LANDING IN THE STREET AND GUTTER AREA (2% MAXIMUM SLOPE IN ANY DIRECTION). WHEN THE GUTTER SLOPE EXCEEDS 2%, CONSTRUCT THE LEVEL LANDING IN THE STREET AREA. 4 FOOT WIDTH IS MEASURED FROM THE FLANGE LINE
- ⑥ PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LEVEL LANDING SIZE IS 5 FEET BY 5 FEET.
- ⑧ PROVIDE GRADE BREAK PERPENDICULAR TO DIRECTION OF WHEELCHAIR TRAVEL.

LEGEND

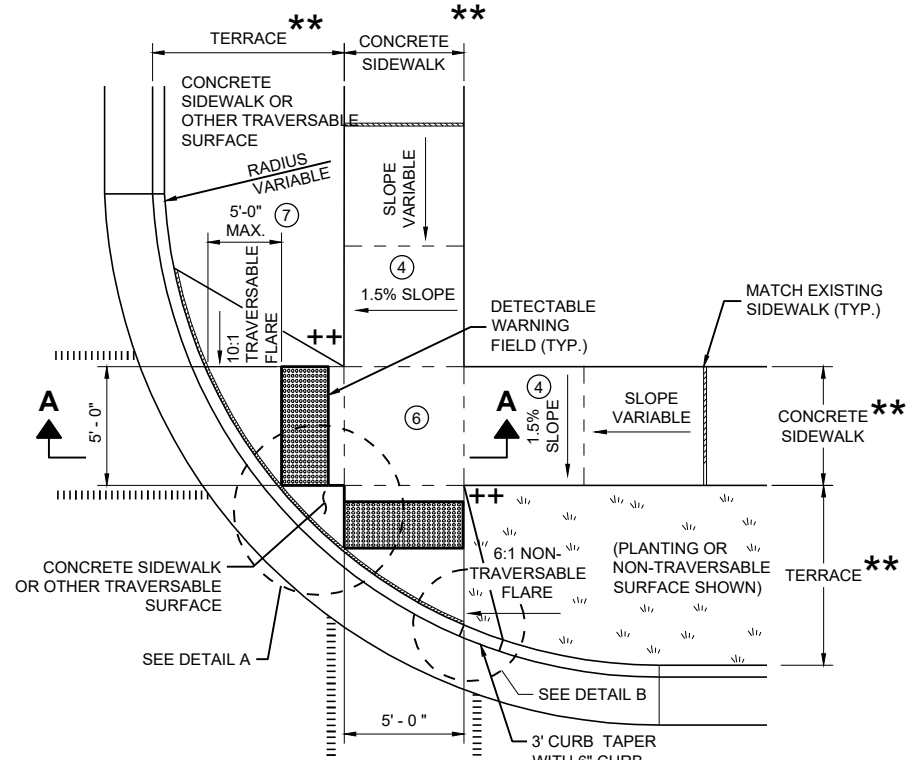
- ===== 1/2" EXPANSION JOINT SIDEWALK
- - - - - CONTRACTION JOINT FIELD LOCATED
- ||||||| PAVEMENT MARKING CROSSWALK (WHITE)

CURB RAMPS TYPE 1 AND 1-A

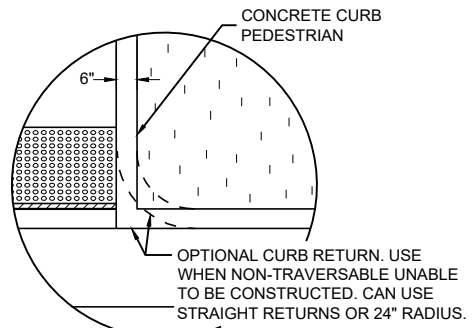
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



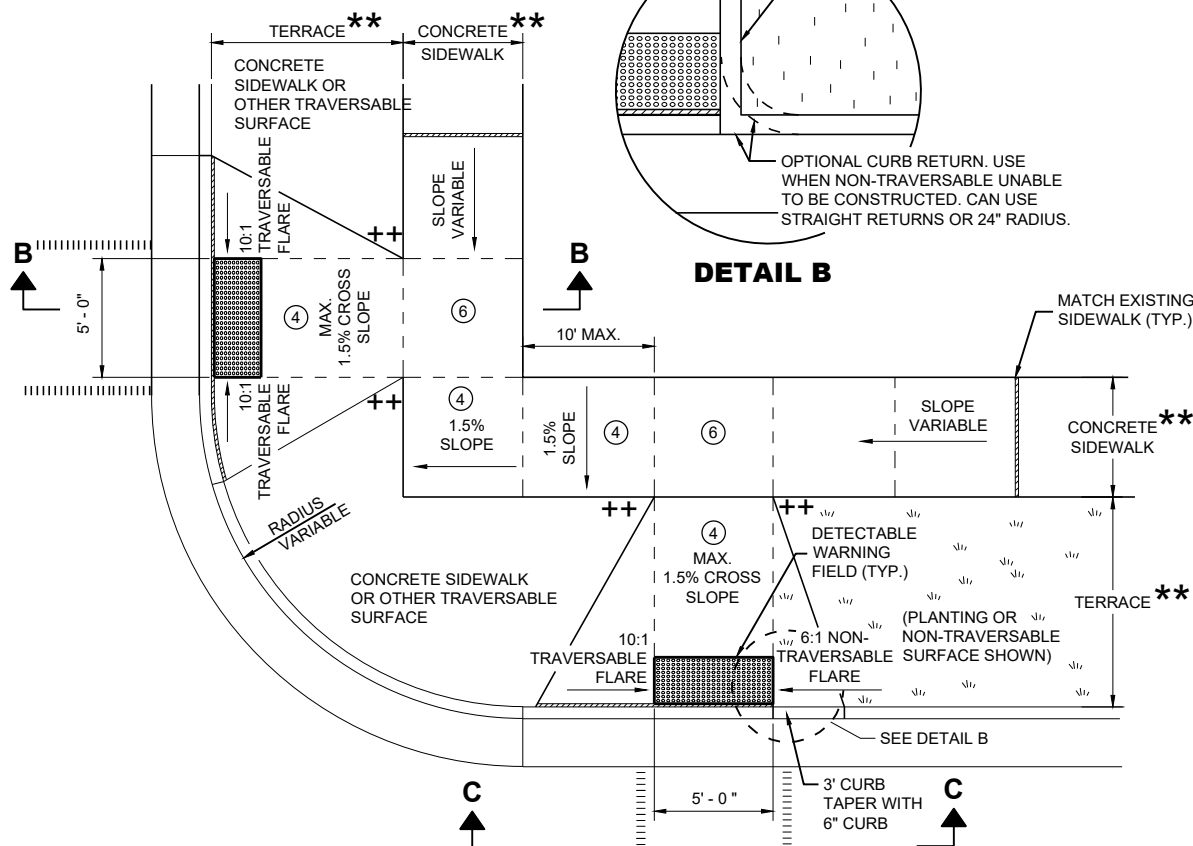
DETAIL A



PLAN VIEW
CURB RAMP TYPE 2
(CENTER OF CORNER RADIUS)



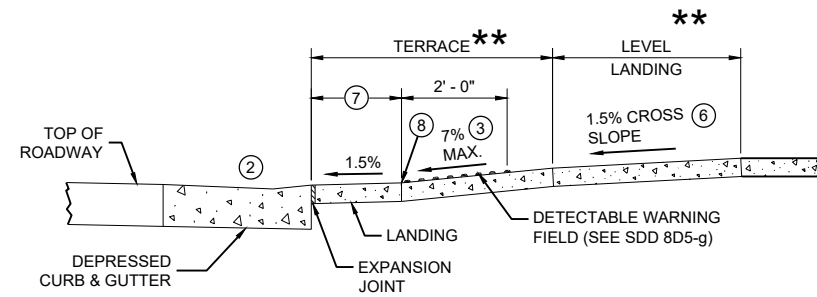
DETAIL B



PLAN VIEW
CURB RAMP TYPE 3
(OUTSIDE OF CROSSWALK AREA)

GENERAL NOTES

- AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF RAMP ACCESS AREAS.
- 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.
- DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE SHALL BE FROM THE SAME MANUFACTURER.
- ② GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN 1/4 - INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL MATCH THE RAMP SLOPE, MINIMALLY 1.5% AND NOT TO EXCEED 7%. WHEN ADJACENT TO 1.5% LANDING, CONSTRUCT CURB HEAD OPENING AT 1.5% IN THE DIRECTION OF PEDESTRIAN TRAVEL.
 - ③ AN 8.33% CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE (2.67% OR LESS) AND NOT TO EXCEED 11% GRADE CHANGE.
 - ④ ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.
 - ⑥ PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LEVEL LANDING SIZE IS 5 FEET X 5 FEET.
 - ⑦ WHEN GRADE BREAK DISTANCE EXCEEDS 5 FEET, USE RADIAL DETECTABLE WARNING FIELD PER SDD 8D5-f.
 - ⑧ PROVIDE GRADE BREAK PERPENDICULAR TO DIRECTION OF WHEELCHAIR TRAVEL.
 - ⑨ WHEN DISTANCE IS LESS THAN 6' - 0", IT MAY BE DIFFICULT TO ACHIEVE A 7% SLOPE OR FLATTER ALONG THE RAMP. REDUCE CURB HEIGHT IN TRIANGLE AREA TO ACHIEVE 7% SLOPE OR FLATTER ON RAMP. CONSTRUCT 2-INCH MINIMUM CURB HEIGHT BETWEEN 10:1 FLARES.

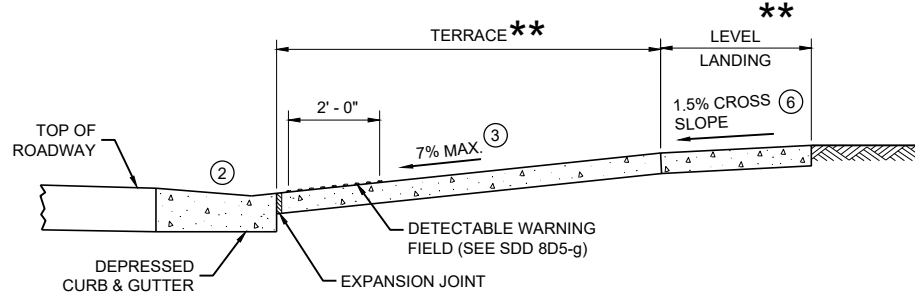


SECTION A - A FOR TYPE 2

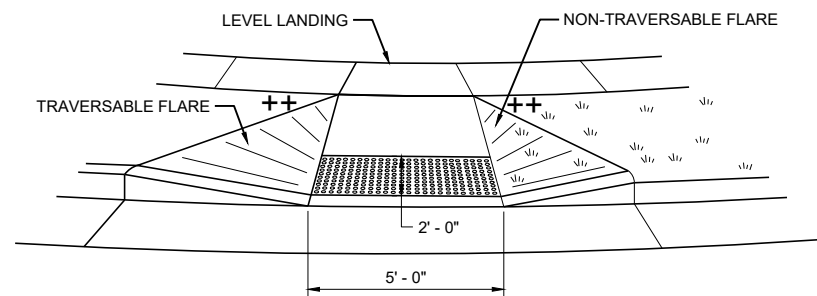
- ★ MAXIMUM 2.0% SLOPE IN ALL DIRECTIONS IN FRONT OF GRADE BREAK
- ★★ WIDTH SHOWN ELSEWHERE IN THE PLANS
- ++ CONSTRUCT 6" WEDGE TO AVOID CONCRETE BREAKAGE

LEGEND

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



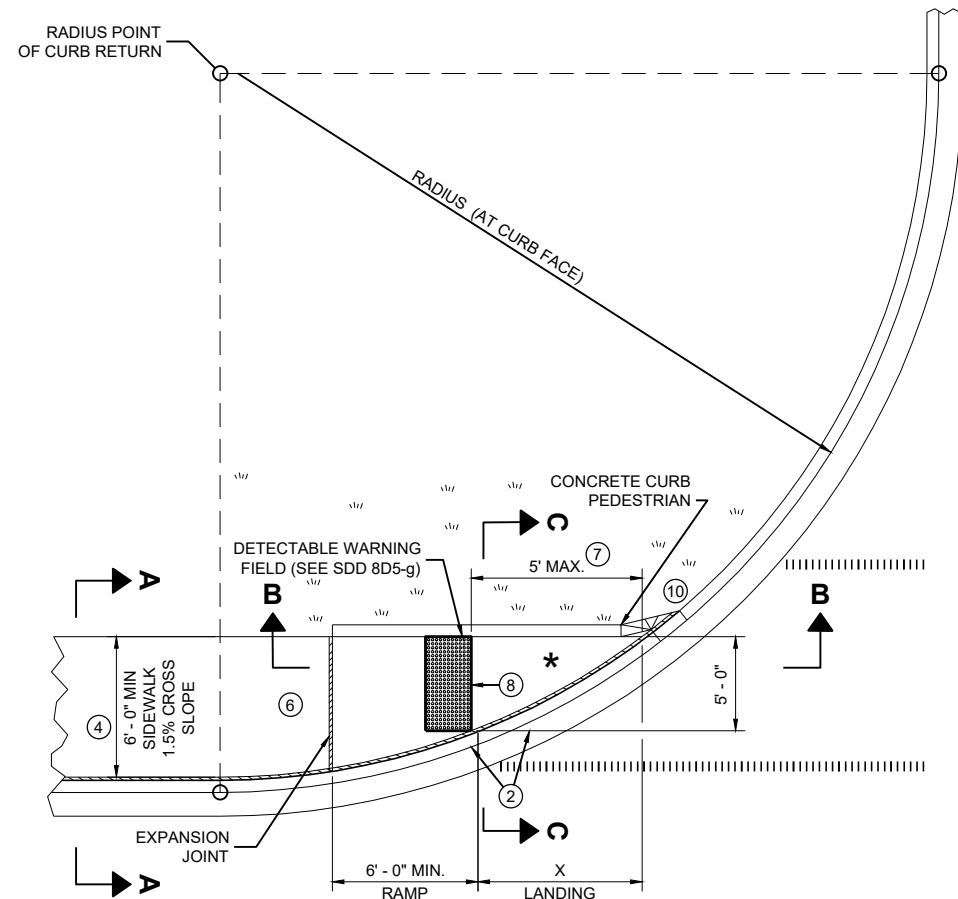
SECTION B - B FOR TYPE 3



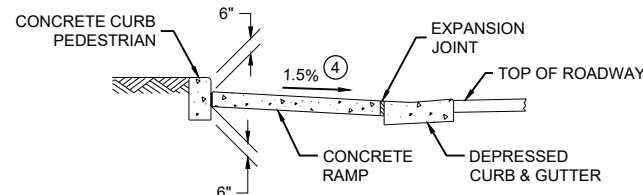
VIEW C - C FOR TYPE 3

CURB RAMPS
TYPE 2 AND 3

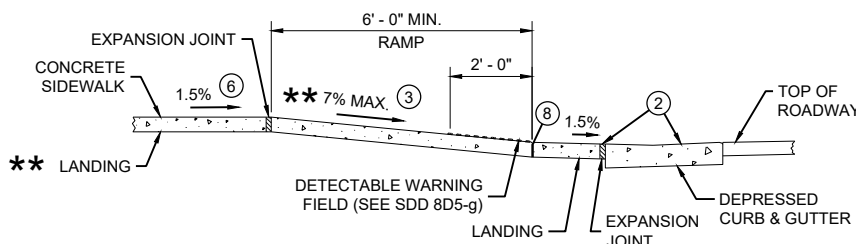
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



PLAN VIEW
CURB RAMP TYPE 4A



SECTION C - C FOR TYPE 4A

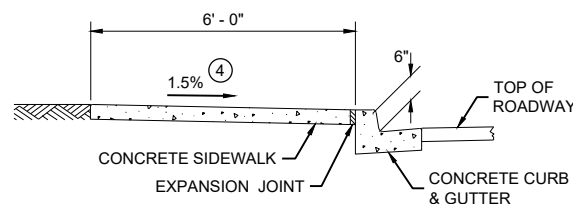


SECTION B - B FOR
TYPE 4A AND TYPE 4A1

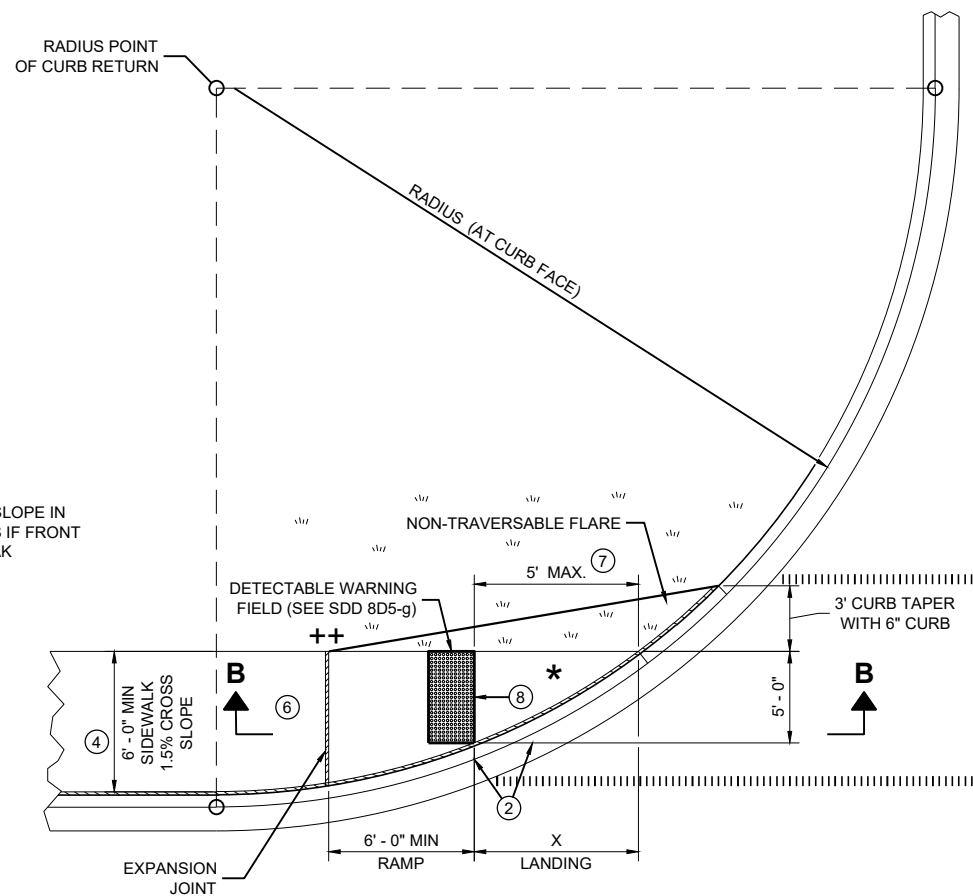
** IF RAMP SLOPE IS LESS THAN 5.0%, THEN NO ADJACENT UPHILL LANDING IS REQUIRED

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

INTERMEDIATE RADII CAN BE INTERPOLATED



SECTION A - A FOR TYPE 4A



PLAN VIEW
CURB RAMP TYPE 4A1

++ CONSTRUCT 6" WEDGE TO AVOID CONCRETE BREAKAGE

GENERAL NOTES

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

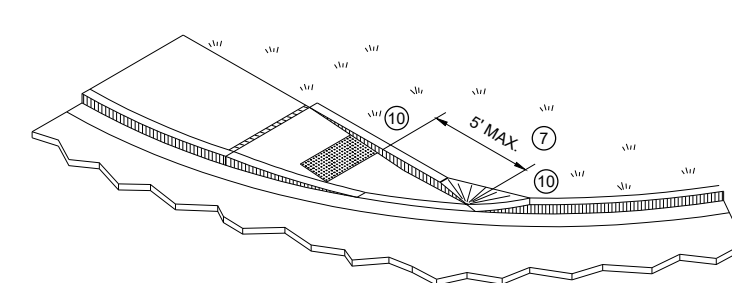
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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

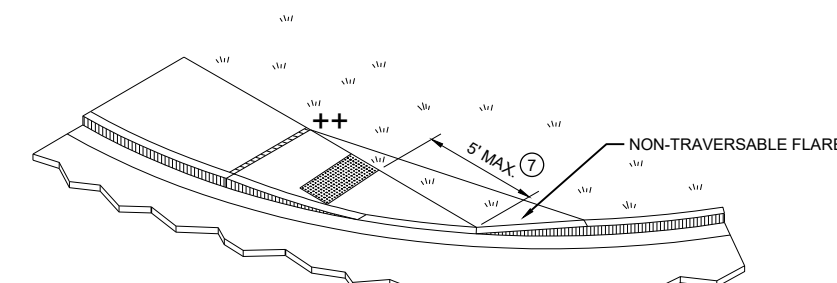
- GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN 1/4 - INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL MATCH THE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

LEGEND

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



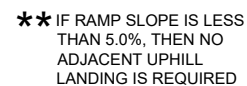
ISOMETRIC VIEW FOR TYPE 4A



ISOMETRIC VIEW FOR TYPE 4A1

CURB RAMPS TYPE 4A AND 4A1

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



SECTION B - B FOR TYPE 4B AND TYPE 4B1

RADIUS (AT CURB FACE)	W = 3' - 0"		W = 4' - 0"		W = 5' - 0"		W = 6' - 0"		W = 7' - 0"		W = 8' - 0"		W = 9' - 0"		W = 10' - 0"	
	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y
10 FEET	2' - 10 ¼"	0' - 5"	2' - 1"	1' - 4 ½"	1' - 5"	2' - 1"	0' - 10"	2' - 7 ½"	0' - 3 ¼"	3' - 0 ¼"						
15 FEET	4' - 6 ¾"	2' - 1 ¾"	3' - 9"	3' - 5 ¾"	3' - 1 ¼"	4' - 6"	2' - 6 ¾"	5' - 4 ½"	2' - 1"	6' - 1"	1' - 8"	6' - 8 ½"	1' - 3 ¾"	7' - 2 ½"	0' - 10 ¾"	7' - 7 ½"
20 FEET			4' - 11 ½"	5' - 1 ¾"	4' - 3 ¾"	6' - 5 ½"	3' - 8 ¾"	7' - 7"	3' - 3"	8' - 6 ½"	2' - 10"	9' - 4 ½"	2' - 5 ½"	10' - 1 ¼"	2' - 1 ½"	10' - 9"
30 FEET									4' - 10 ¾"	12' - 5 ¾"	4' - 5 ½"	13' - 7 ¾"	4' - 0 ¾"	14' - 8 ½"	3' - 8 ½"	15' - 8 ½"
40 FEET															4' - 10 ¾"	19' - 8 ½"

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



++ CONSTRUCT 6" WEDGE TO
AVOID CONCRETE BREAKAGE

GENERAL NOTES

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

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.

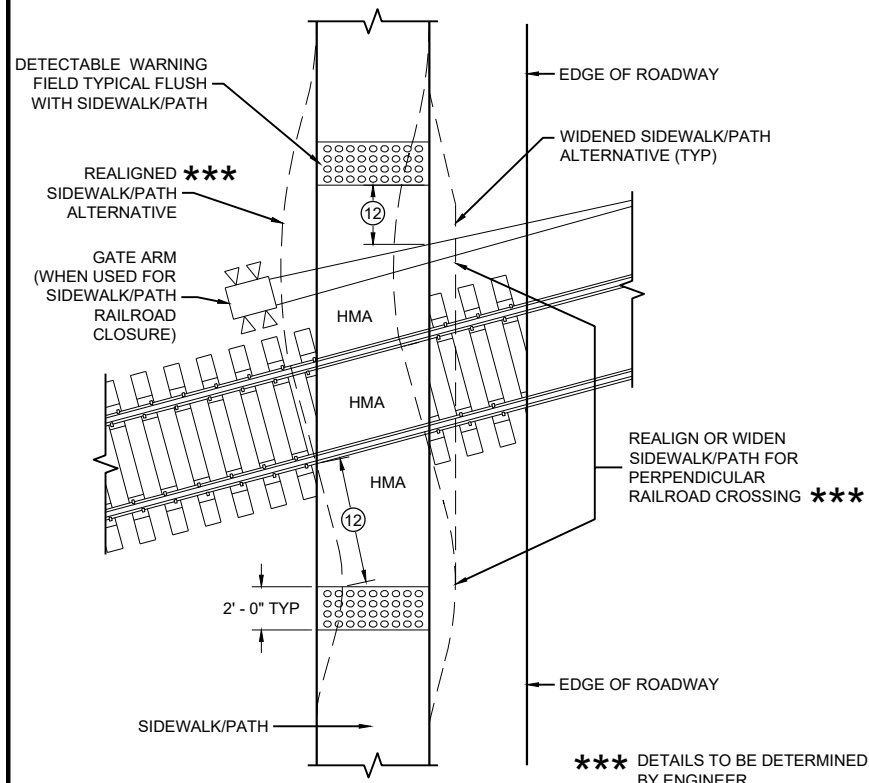
DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

- ② GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN $\frac{1}{4}$ - INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL MATCH THE RAMP SLOPE, MINIMALLY 1.5% AND NOT TO EXCEED 7%. WHEN ADJACENT TO 1.5% LANDING, CONSTRUCT CURB HEAD OPENING AT 1.5% IN THE DIRECTION OF PEDESTRIAN TRAVEL.
- ③ AN 8.33% CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE AND NOT TO EXCEED 11% GRADE CHANGE.
- ④ $\pm 0.5\%$ CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.
- ⑥ PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LEVEL LANDING SIZE IS 5 FEET BY 5 FEET.
- ⑦ WHEN THIS GRADE BREAK DISTANCE EXCEEDS 5 FEET, USE RADIAL DETECTABLE WARNING FIELD PER SDD 8D5-f.
- ⑧ PROVIDE GRADE BREAK PERPENDICULAR TO DIRECTION OF WHEELCHAIR TRAVEL.
- ⑩ INSTALL TRANSITION NOSE (INCIDENTAL TO OTHER PAY ITEMS). DO NOT MARK TRANSITION NOSE.



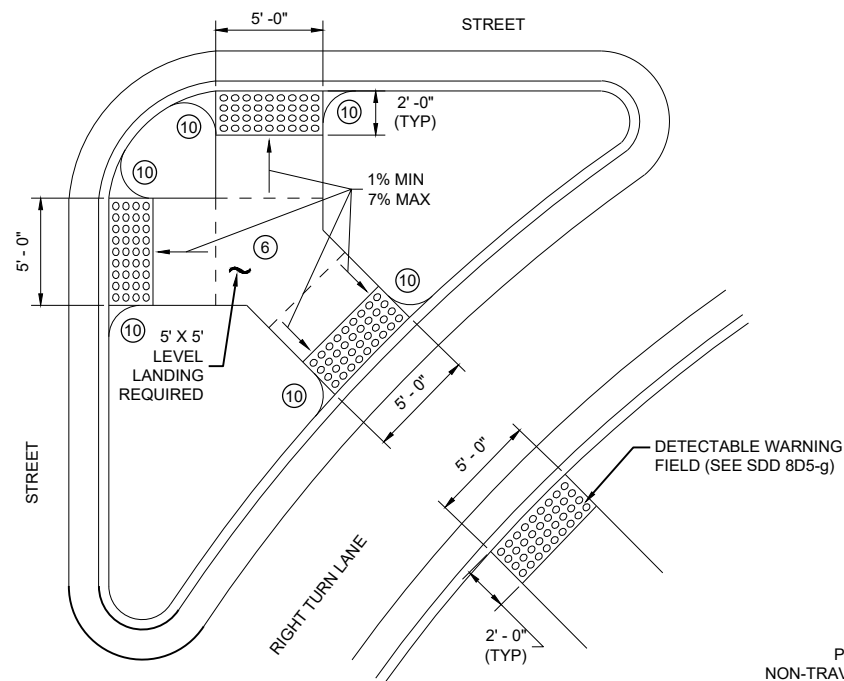
CURB RAMPS TYPE 4B AND 4B1

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



CURB RAMP TYPE 8

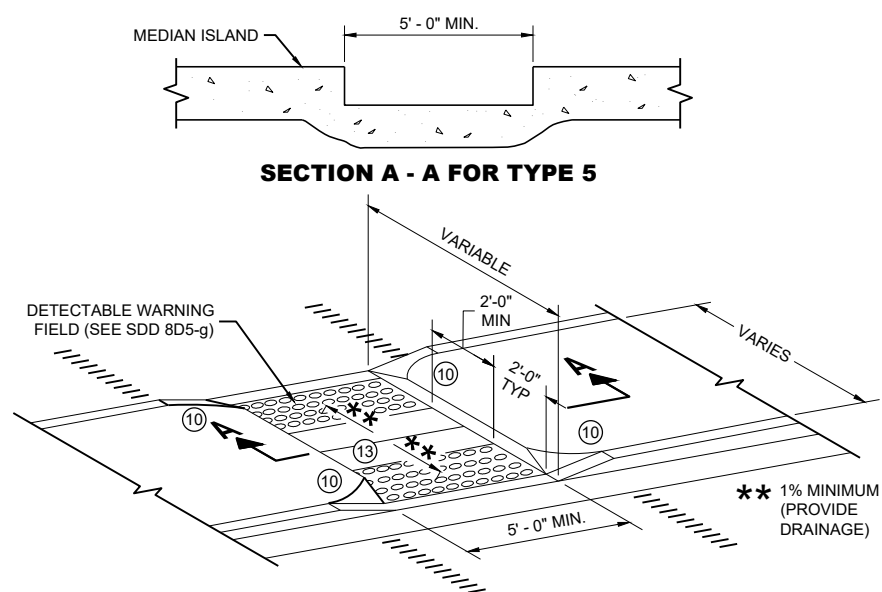
DETECTABLE WARNINGS FOR SIDEWALKS OR SHARED USE PATHS AT RAILROAD CROSSINGS



CURB RAMP TYPE 6

DETECTABLE WARNING AT ISLANDS

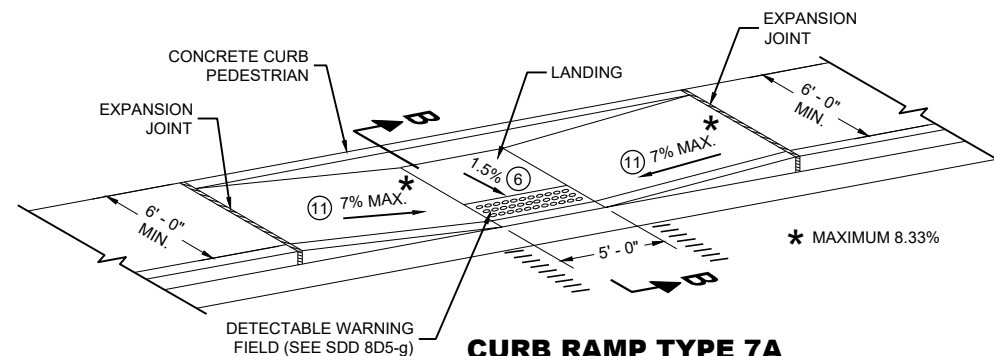
REFER TO GENERAL NOTES ② AND ③
FOR ALL ISLAND CURB RAMPS



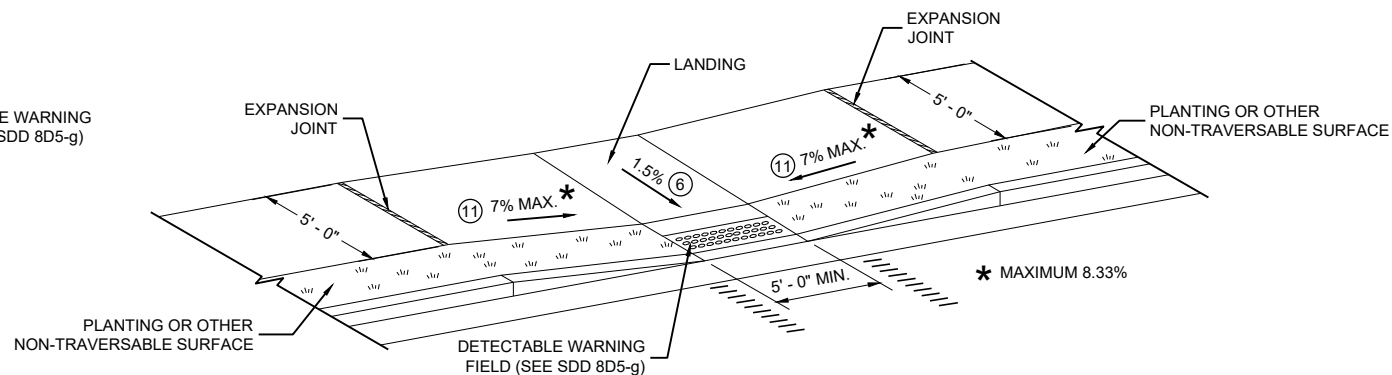
SECTION A - A FOR TYPE 5

CURB RAMP TYPE 5

MEDIAN ISLAND NON-ELEVATED PEDESTRIAN CROSSING



CURB RAMP TYPE 7A FOR INTERSECTIONS AND MID BLOCK CROSSINGS



CURB RAMP TYPE 7B FOR INTERSECTIONS AND MID BLOCK CROSSINGS

GENERAL NOTES

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

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.

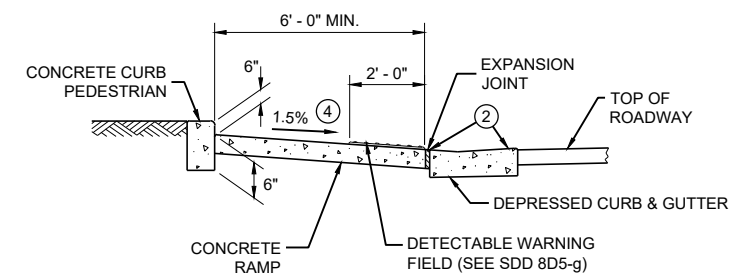
SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2%.

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

- ② GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN 1/8 INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL MATCH THE RAMP SLOPE, MINIMALLY 1.5% AND NOT TO EXCEED 7%. WHEN ADJACENT TO 1.5% LANDING, CONSTRUCT CURB HEAD OPENING AT 1.5% IN THE DIRECTION OF PEDESTRIAN TRAVEL.
- ③ AN 8.33% CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE AND NOT TO EXCEED 11% GRADE CHANGE.
- ④ $\pm 0.5\%$ CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.
- ⑥ PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LEVEL LANDING SIZE IS 5 FEET BY 5 FEET.
- ⑩ INSTALL TRANSITION NOSE (INCIDENTAL TO OTHER PAY ITEMS). DO NOT MARK TRANSITION NOSE.
- ⑪ SLOPE SIDEWALK TOWARD LANDING AS SHOWN WHERE THERE IS NO TERRACE OR WHERE THE TERRACE WIDTH IS LESS THAN 6 FEET WIDE.
- ⑫ THE EDGE OF THE DETECTABLE WARNING FIELD NEAREST TO A RAILROAD CROSSING SHALL BE 1.5 FEET $\pm 0.1'$ FROM THE FACE OF THE GATE ARM IF THE GATE ARM EXTENDS ACROSS THE SIDEWALK/PATH. WHERE THERE IS NO PEDESTRIAN GATE, THE EDGE OF THE DETECTABLE WARNING FIELD NEAREST TO THE RAILROAD TRACK IS 15 FEET MAXIMUM AND 12 FEET MINIMUM, 15 FEET TYPICAL FROM THE NEAREST RAIL.
- ⑬ DO NOT INSTALL DETECTABLE WARNING FIELDS AT THE EDGES OF STREET-LEVEL PEDESTRIAN REFUGE ISLANDS IF A MINIMUM 2 FOOT CONCRETE SURFACE WITHOUT DETECTABLE WARNINGS (MEASURED IN THE DIRECTION OF PEDESTRIAN TRAVEL) CANNOT BE ACHIEVED.

LEGEND

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

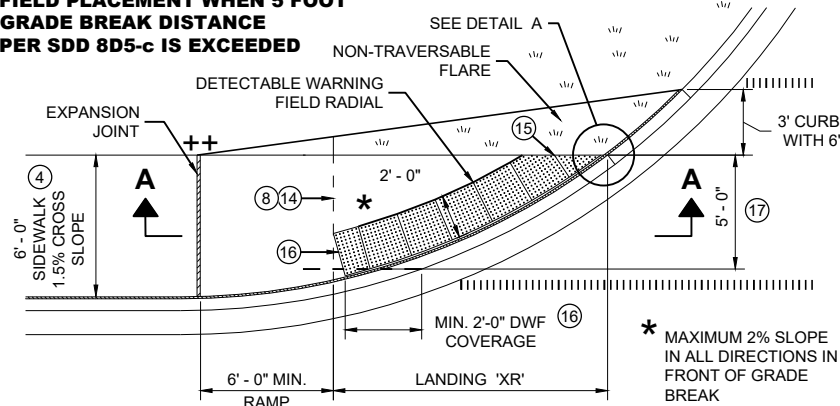


SECTION B - B FOR TYPE 7A

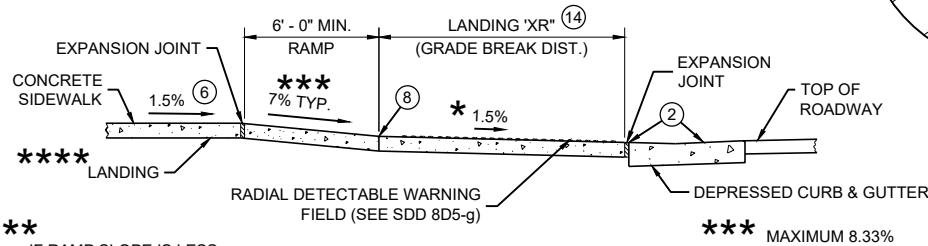
CURB RAMPS TYPE 5, 6, 7A, 7B & 8

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



**PLAN VIEW
CURB RAMP TYPE 4A1
(GRADE BREAK DISTANCE GREATER THAN 5 FEET)**

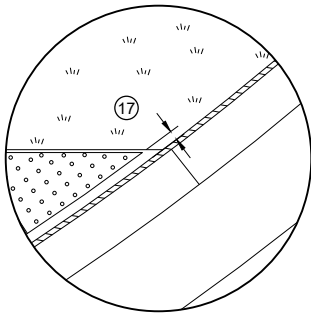


SECTION A - A FOR TYPE 4A1

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

LEGEND

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



DETAIL A

GENERAL NOTES

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

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.

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

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

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

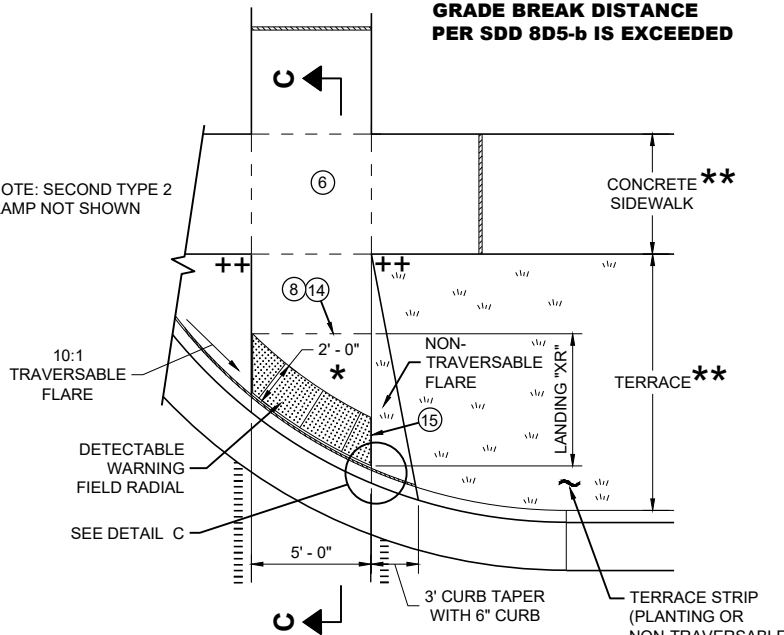
FIELD CUTS AT INTERMEDIATE JOINTS WITHIN THE RADIAL DETECTABLE WARNING FIELD ARE PROHIBITED.

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

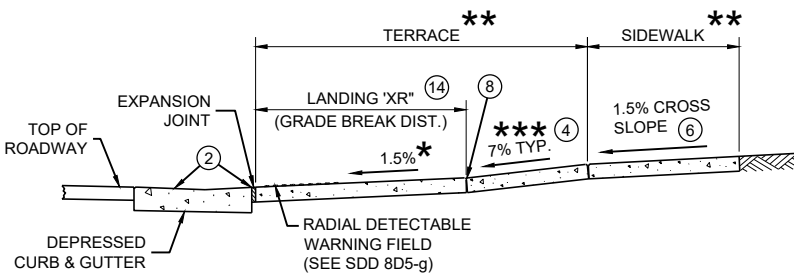
- 2 GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN 1/4" INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL MATCH THE RAMP SLOPE, MINIMALLY 1.5% AND NOT TO EXCEED 7%. WHEN ADJACENT TO 1.5% LANDING, CONSTRUCT CURB HEAD OPENING AT 1.5% IN THE DIRECTION OF PEDESTRIAN TRAVEL.
- 3 AN 8.33% CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE AND NOT TO EXCEED 11% GRADE CHANGE.
- 4 ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.
- 6 PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LANDING SIZE IS 5 FEET BY 5 FEET.
- 8 PROVIDE GRADE BREAK PERPENDICULAR TO DIRECTION OF WHEELCHAIR TRAVEL.
- 14 CONSULT ENGINEER IF GRADE BREAK LOCATION (END OF LANDING DIMENSION "XR") REQUIRES FIELD ADJUSTMENT WHEN ESTABLISHING FINAL RADIAL DETECTABLE WARNING FIELD LOCATION.
- 15 FIELD SAW CUTS ALONG RADIAL DETECTABLE WARNING PLATES WILL BE NECESSARY TO MATCH EACH CURB RAMP EDGE. AVOID CUTTING THROUGH DOMES WHENEVER POSSIBLE. MAKE FIELD CUTS TRUE TO LINE AND WITHIN 1/2" DEVIATION. SMOOTH EDGES OF FIELD CUT PLATES.
- 16 USE 1' X 2" RECTANGULAR END PLATE AT END OF TYPE 4A1 RAMP AND PROVIDE MINIMUM 2' - 0" DETECTABLE WARNING FIELD COVERAGE (IN DIRECTION OF PEDESTRIAN TRAVEL) ALONG THE ENTIRE CURB RAMP WIDTH.
- 17 A MAXIMUM 3 INCH CONCRETE BORDER WIDTH IS ALLOWABLE IN FRONT OF RADIAL DETECTABLE WARNING FIELD FOR CONSTRUCTABILITY PURPOSES. CONCRETE BORDER WIDTH MAY VARY UP TO 1 INCH.

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

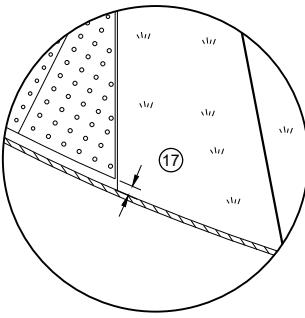
NOTE: SECOND TYPE 2
RAMP NOT SHOWN



**PLAN VIEW
CURB RAMP TYPE 2
(GRADE BREAK DISTANCE GREATER THAN 5 FEET)
(ON LINE WITH SIDEWALK)**



SECTION C - C FOR TYPE 2



DETAIL C

*** MAXIMUM 2% SLOPE
IN ALL DIRECTIONS IN
FRONT OF GRADE
BREAK

** WIDTH SHOWN ELSEWHERE
IN THE PLANS

*** MAXIMUM 8.33%

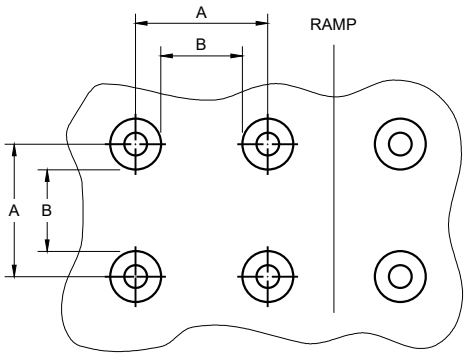
++ CONSTRUCT 6" WEDGE TO
AVOID CONCRETE BREAKAGE

**CURB RAMPS
RADIAL DETECTABLE WARNING**

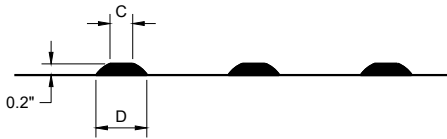
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

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

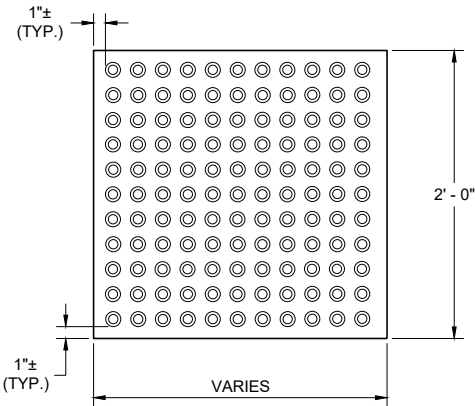


PLAN VIEW

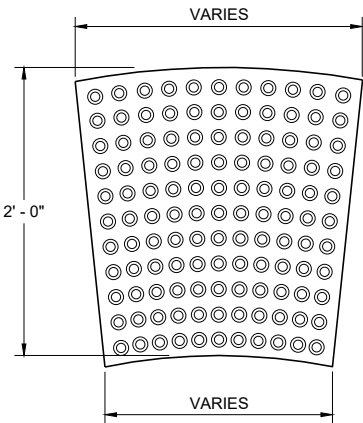


ELEVATION VIEW

TRUNCATED DOMES
DETECTABLE WARNING PATTERN DETAIL

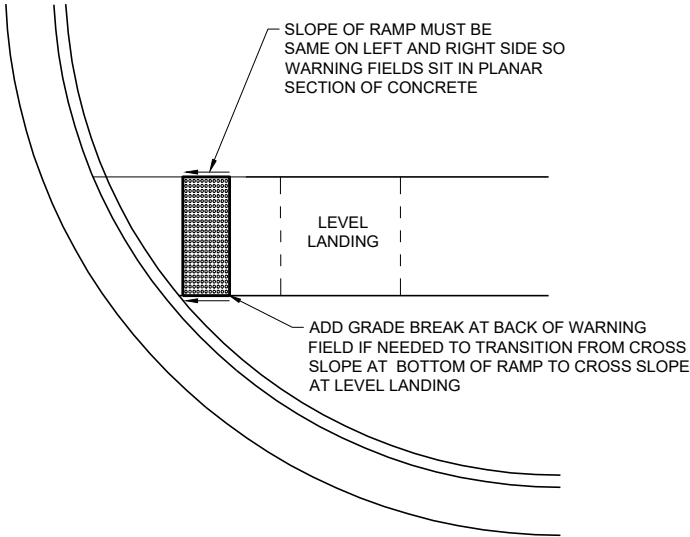


RECTANGULAR
PLATES



RADIAL
PLATES

PLAN VIEW
DETECTABLE WARNING FIELDS (TYPICAL)



DETECTABLE WARNING FIELD
PLANAR INSTALLATION

GENERAL NOTES

DETECTABLE WARNING FIELDS THAT ARE INSTALLED AT A CURB RAMP SHALL BE FROM THE SAME MANUFACTURER.

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

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

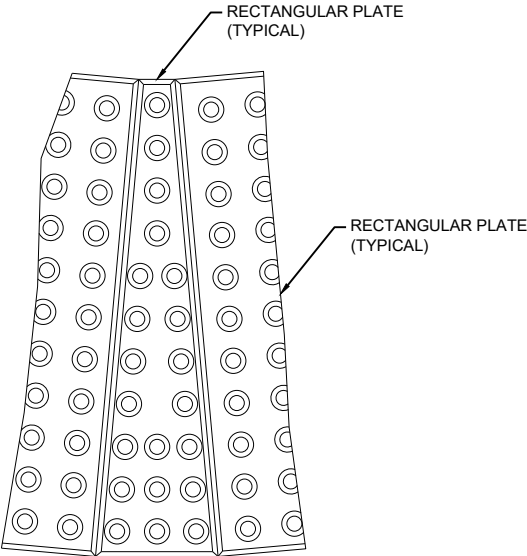
DETERMINE FINAL RADIAL WARNING FIELD CONFIGURATION AND ITS INDIVIDUAL PLATE LOCATIONS. PERFORM PRE-LAYOUT PRIOR TO PLACEMENT IN PLASTIC CONCRETE. FOLLOW MANUFACTURER'S PRODUCT LIST AND INSTALLATION RECOMMENDATIONS.

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

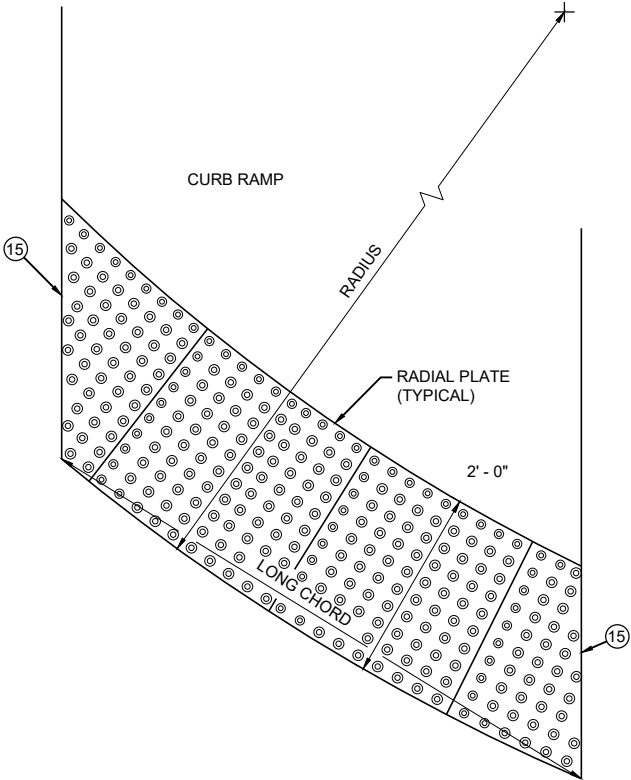
REFER TO CONTRACT AND STANDARD SPECIFICATIONS FOR FIELD CUTTING REQUIREMENTS.

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

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



PLAN VIEW
RADIAL WEDGE PLATE
CONNECTION DETAIL



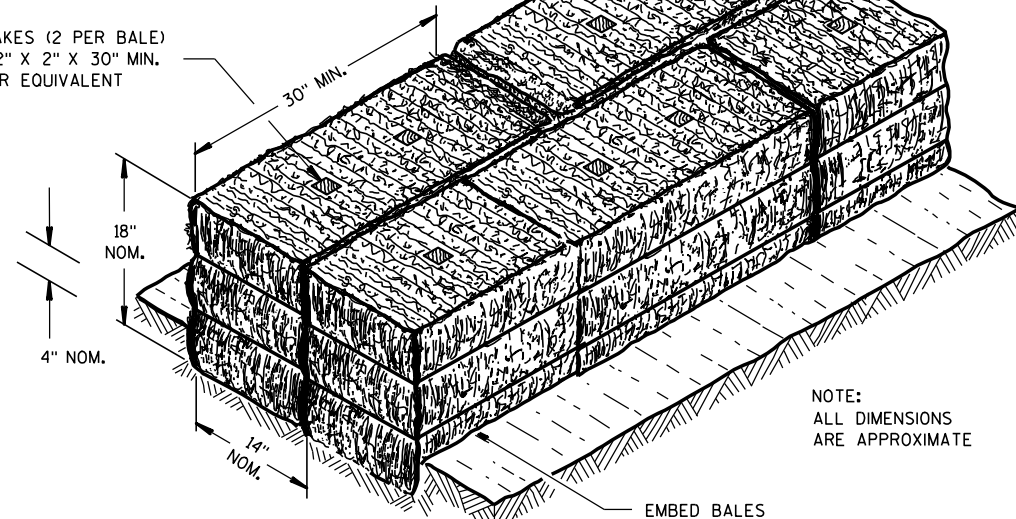
PLAN VIEW
RADIAL DETECTABLE
WARNING FIELD ATTRIBUTES

CURB RAMPS
RECTANGULAR AND RADIAL
DETECTABLE WARNING PLATES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

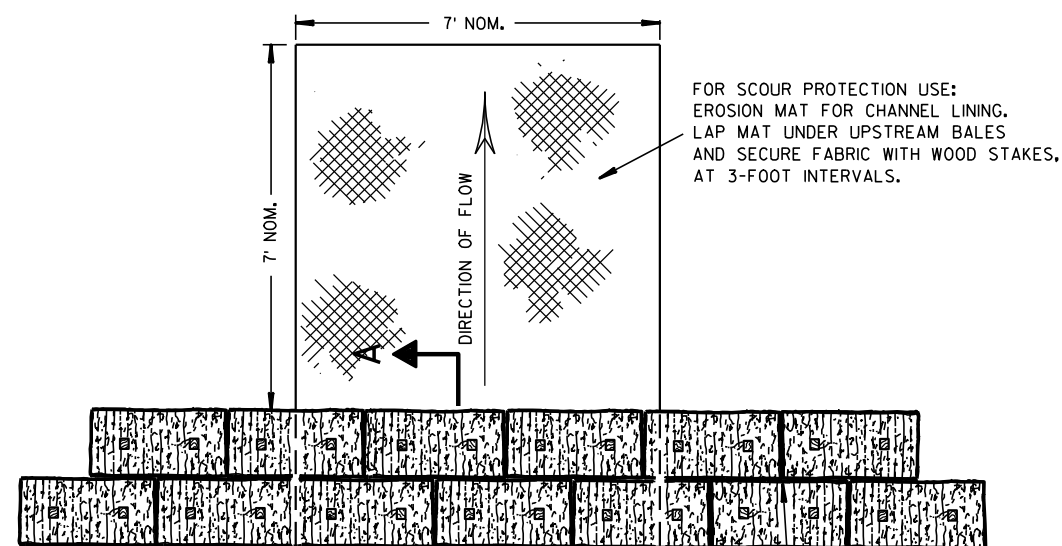
APPROVED
July 2023 /S/ Rodney Taylor
DATE ROADWAY STANDARDS DEVELOPMENT
FHWA UNIT SUPERVISOR

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

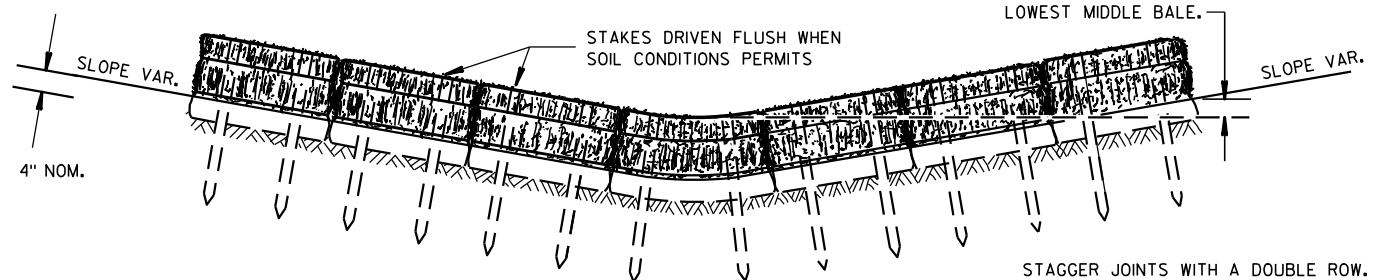


NOTE:
ALL DIMENSIONS
ARE APPROXIMATE

SECTION A-A



PLAN VIEW



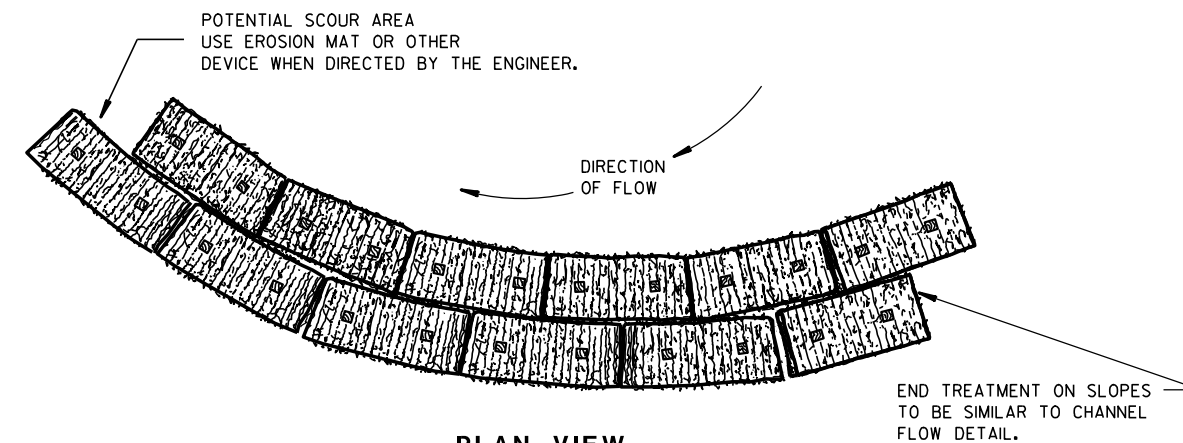
FRONT ELEVATION

TEMPORARY DITCH CHECK USING EROSION BALES ①

GENERAL NOTES

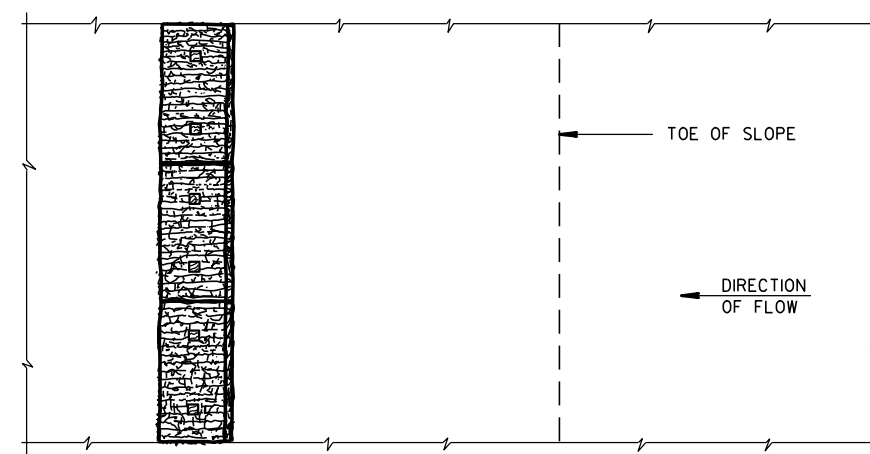
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

- ① TEMPORARY DITCH CHECKS EITHER EROSION BALES OR MANUFACTURED SHALL BE PAID FOR UNDER THE BID ITEM OF TEMPORARY DITCH CHECK. THE DEPARTMENT WILL NOT PAY FOR TEMPORARY DITCH CHECKS CONSTRUCTED OF A SINGLE ROW OF EROSION BALES.

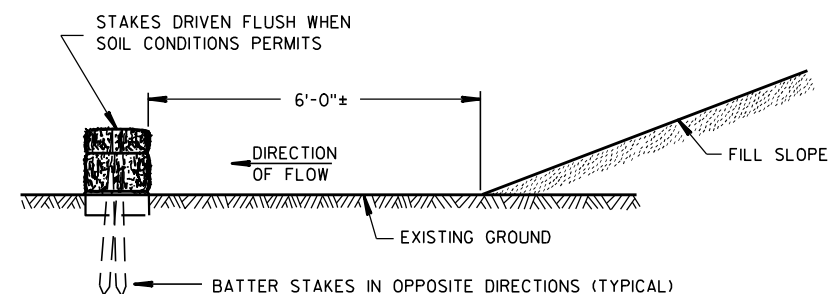


PLAN VIEW

WHEN ALTERING THE DIRECTION OF FLOW



PLAN VIEW



FRONT ELEVATION

WHEN EXISTING GROUND SLOPES AWAY FROM FILL SLOPE

EROSION BALES FOR SHEET FLOW

TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

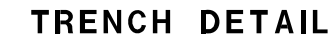
6/04/02
DATE

FHWA

/S/ Beth Conn-----
CHIEF ROADWAY DEVELOPER 125 ENGINEER



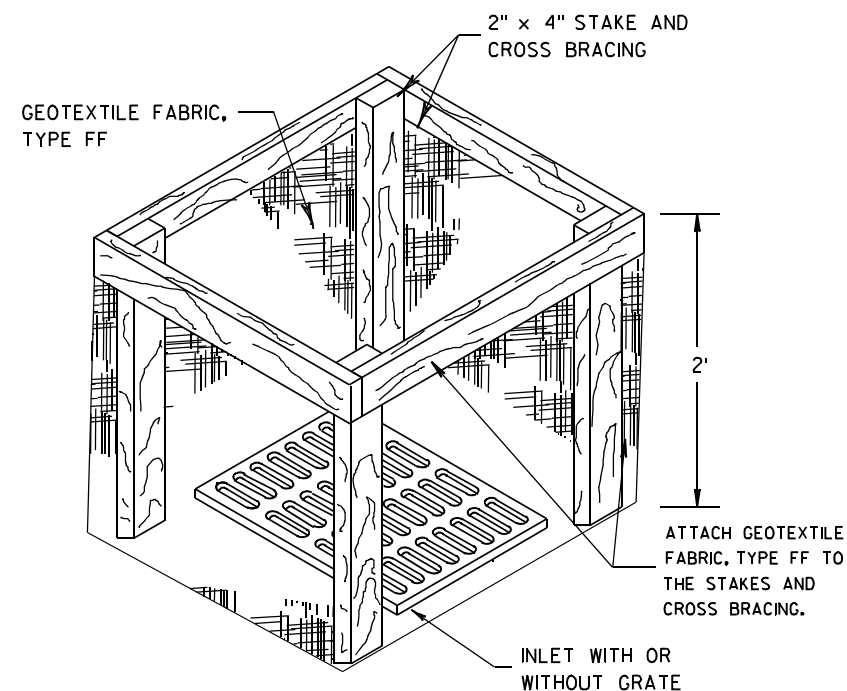
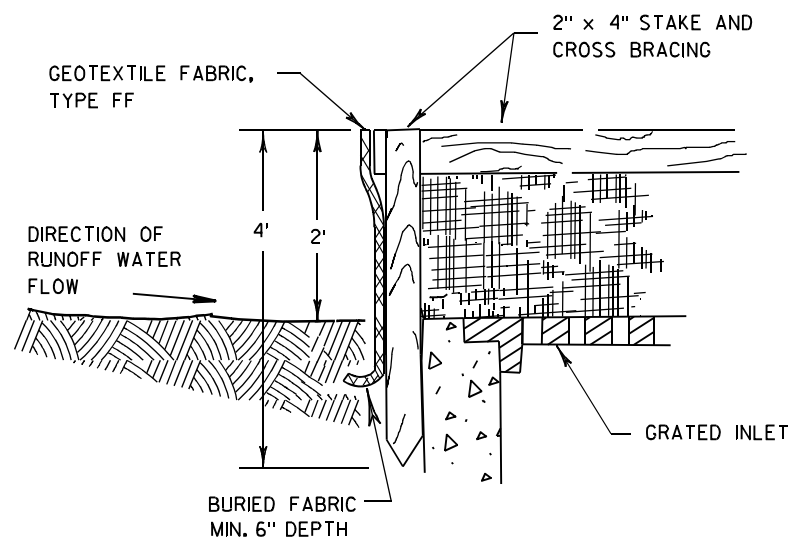
- ① HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.
- ② FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
- ③ WOOD POSTS 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 Cannata
CHIEF ROADWAY DEVELOPMENT **126** INCHES
FHWA



INLET PROTECTION, TYPE A

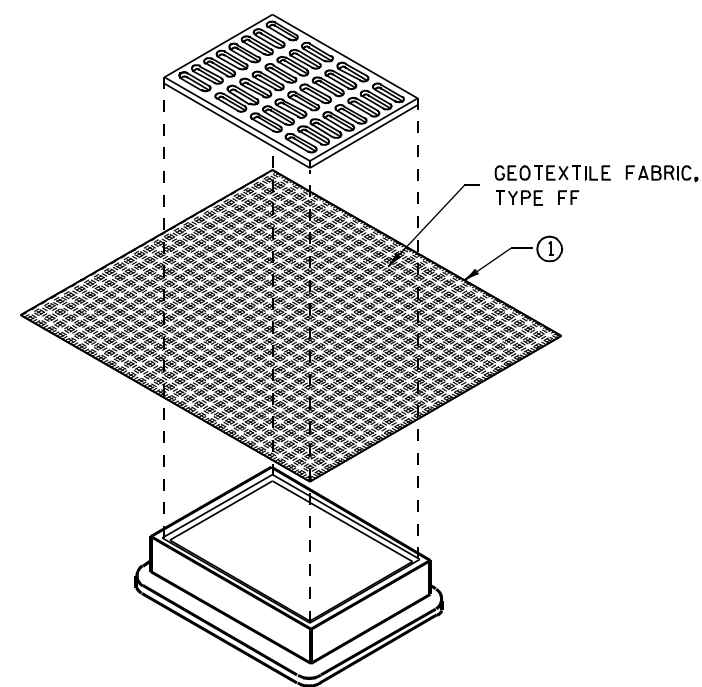
GENERAL NOTES

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

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

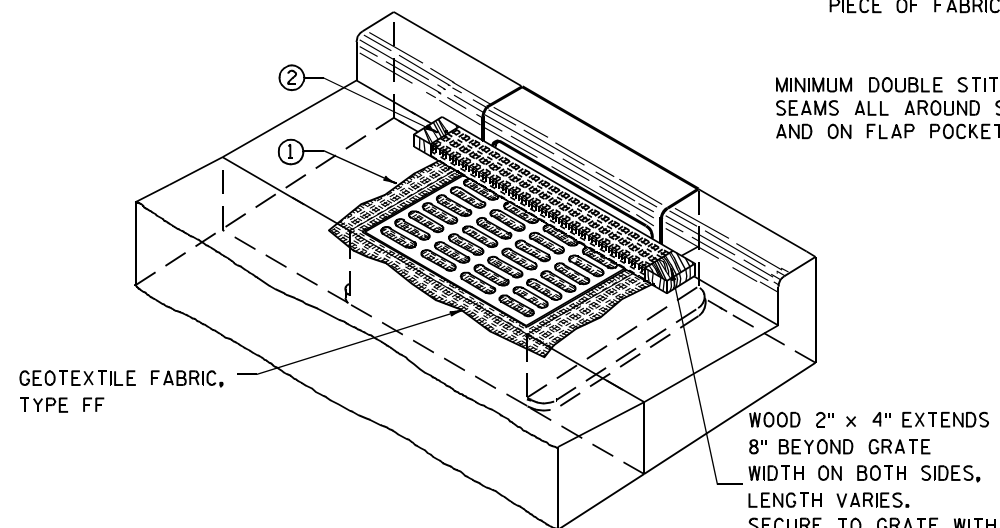
WHEN REMOVING OR MAINTAINING INLET PROTECTION, CARE SHALL BE TAKEN SO THAT THE SEDIMENT TRAPPED ON THE GEOTEXTILE FABRIC DOES NOT FALL INTO THE INLET. ANY MATERIAL FALLING INTO THE INLET SHALL BE REMOVED IMMEDIATELY.

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



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

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



INLET PROTECTION, TYPE C (WITH CURB BOX)

INSTALLATION NOTES

TYPE B & C

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

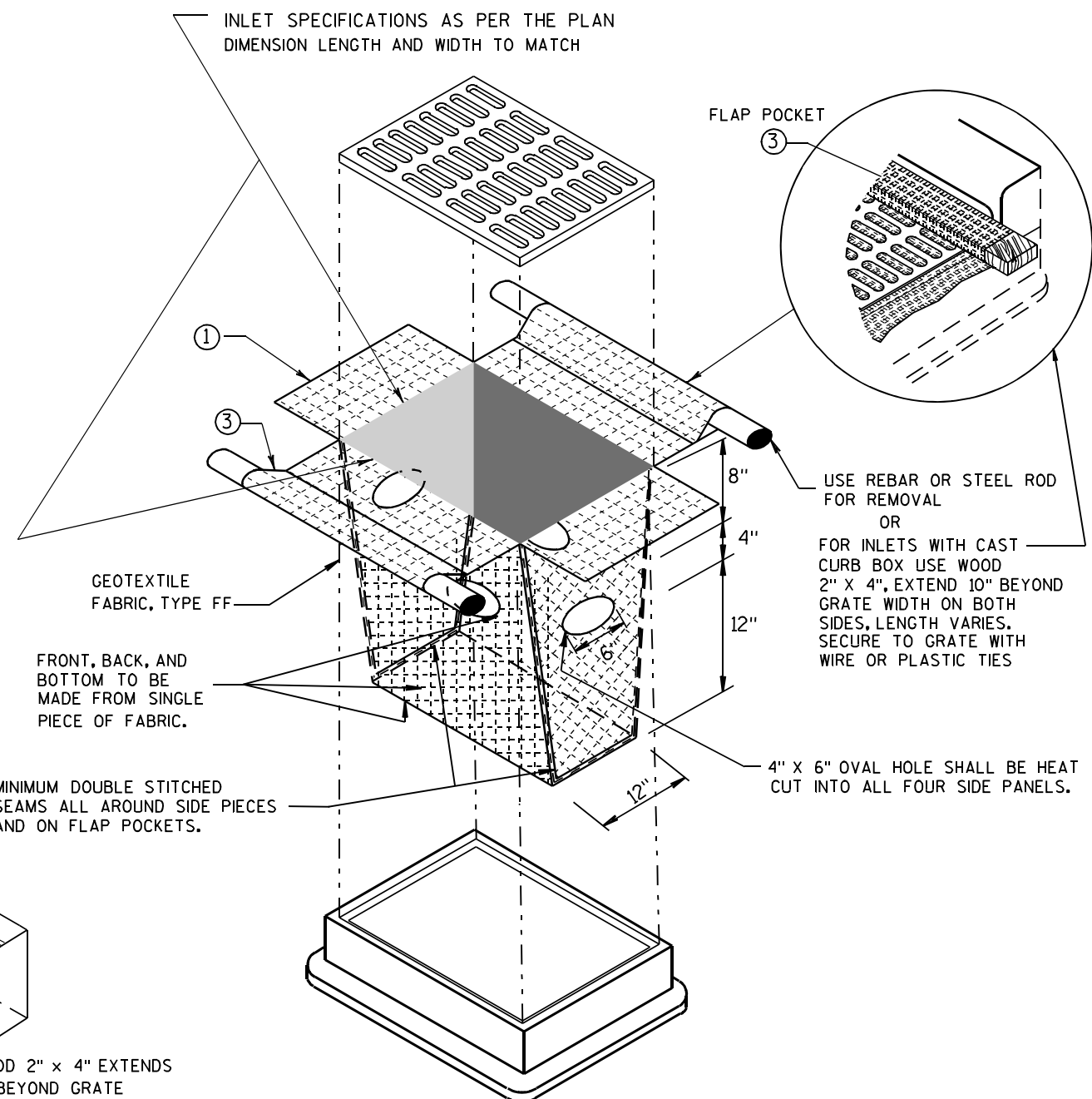
THE CONTRACTOR SHALL DEMONSTRATE A METHOD OF MAINTENANCE, USING A SEWN FLAP, HAND HOLDS OR OTHER METHOD TO PREVENT ACCUMULATED SEDIMENT FROM ENTERING THE INLET.

TYPE D

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

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

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



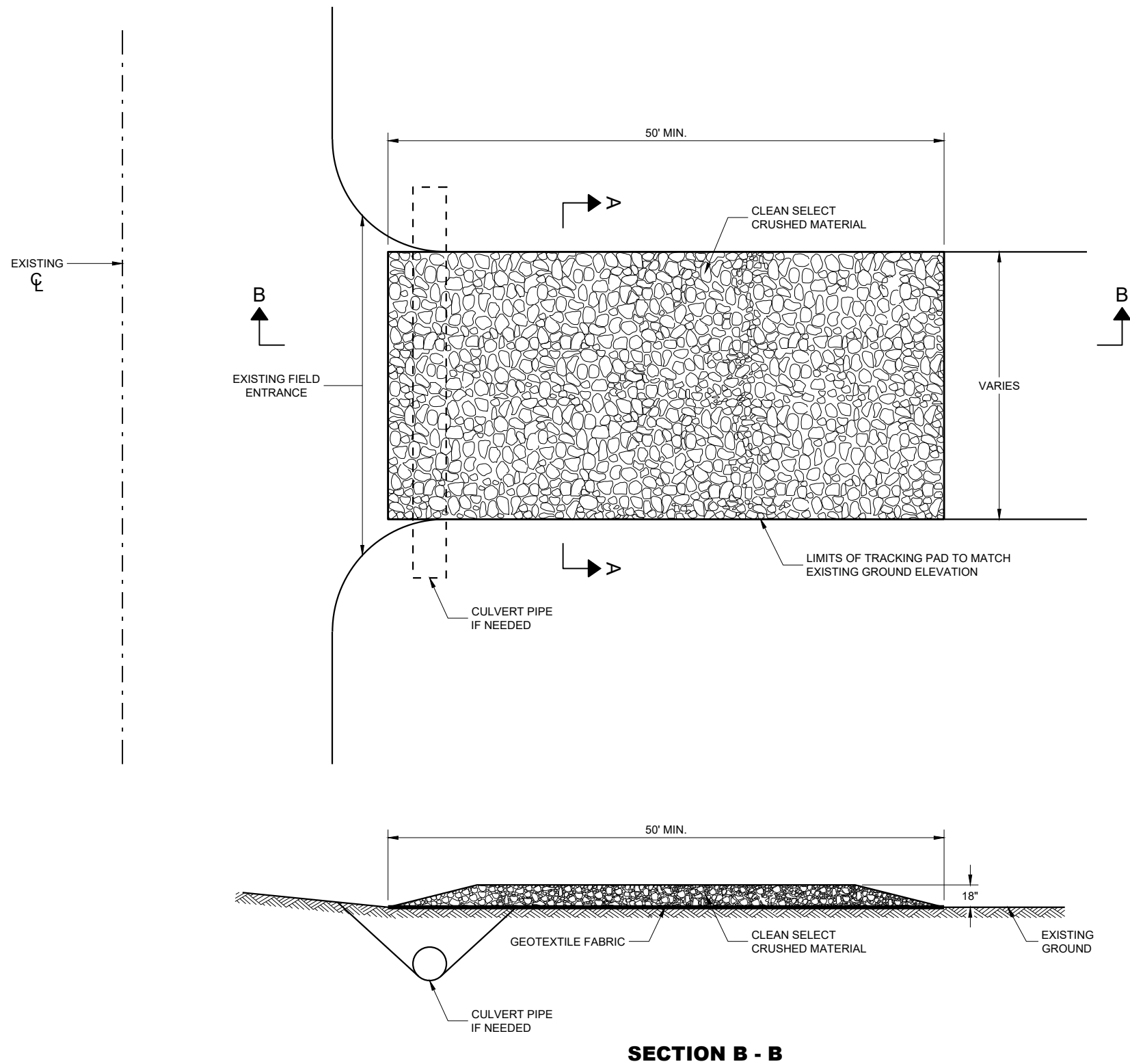
INLET PROTECTION, TYPE D

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

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
10/16/02 /S/ Beth Connolly
DATE 127
FHWA CHIEF ROADWAY DEVELOPMENT ENGINEER



GENERAL NOTES

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

TRACKING PAD SHALL BE INSPECTED DAILY. DEFICIENT AREAS SHALL BE REPAIRED OR REPLACED IMMEDIATELY.

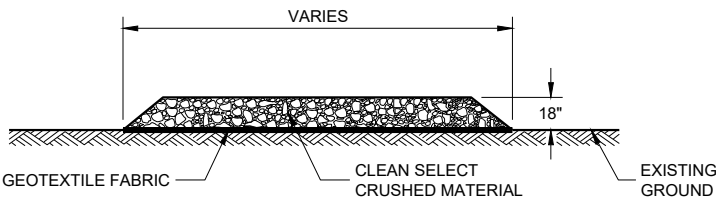
TRACKING PAD TO BE REMOVED AFTER CONSTRUCTION IS COMPLETED.

TRACKING PAD SHALL BE THE FULL WIDTH OF THE EGRESS POINT.

SURFACE WATER MUST BE PREVENTED FROM PASSING THROUGH THE TRACKING PAD. FLOWS SHALL BE DIVERTED AWAY, AROUND OR CONVEYED UNDER THE TRACKING PAD.

CULVERT PIPE OR OTHER BMP USED TO DIVERT WATER AWAY, AROUND OR UNDER THE TRACKING PAD SHALL BE DESIGNED TO CONVEY THE 2 YEAR - 24 HOUR EVENT.

THE COST OF ADDITIONAL BMP TO DIVERT WATER ARE INCIDENTAL TO THE TRACKING PAD BID ITEM.



SECTION A - A

TRACKING PAD

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

3/24/2011

DATE

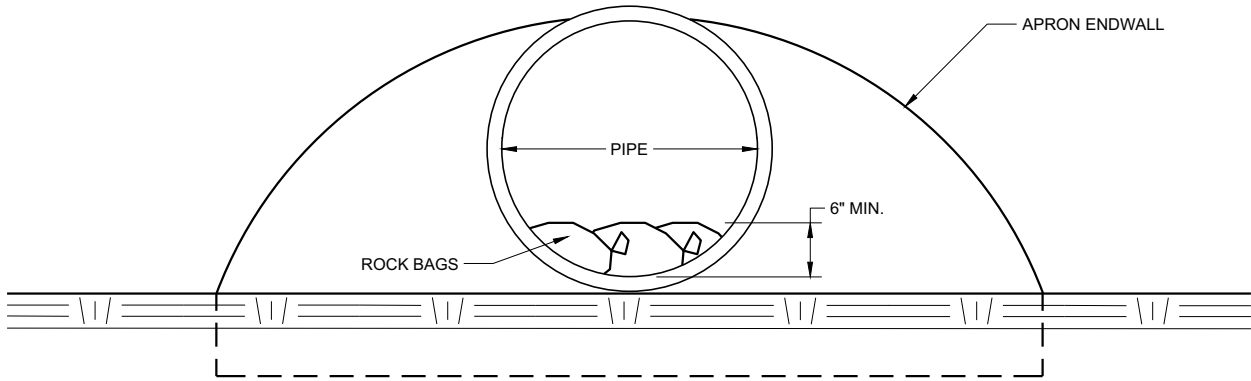
/S/ Jerry H. Zogg

ROADWAY STANDARDS DEVE

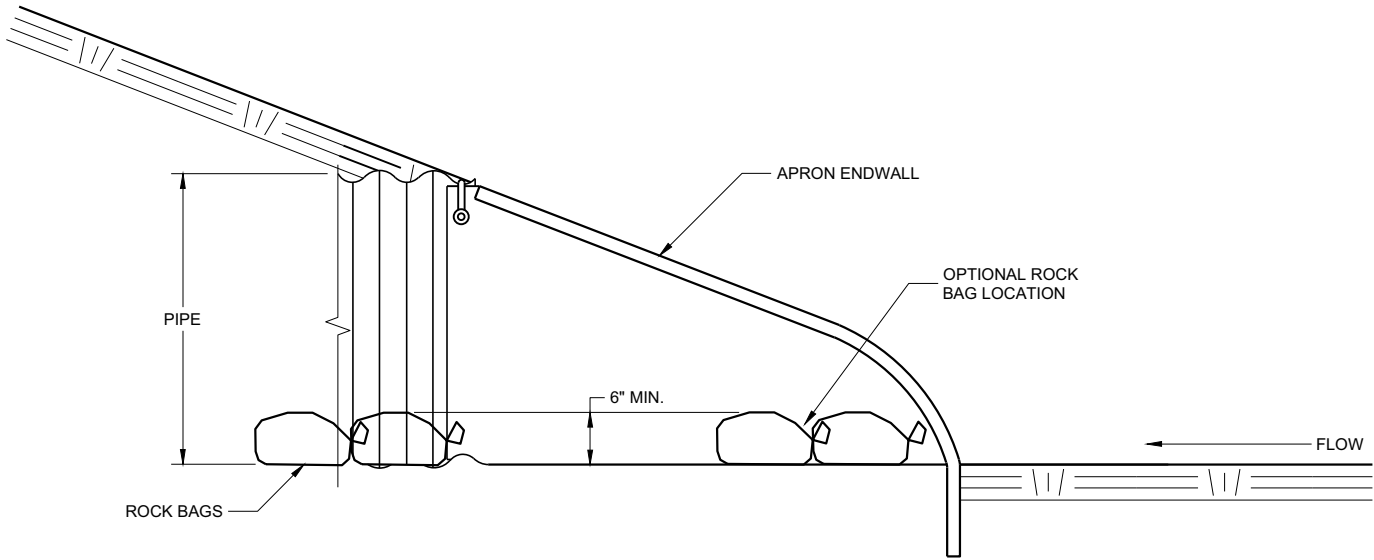
ENGINEER

128

FHWA



END VIEW



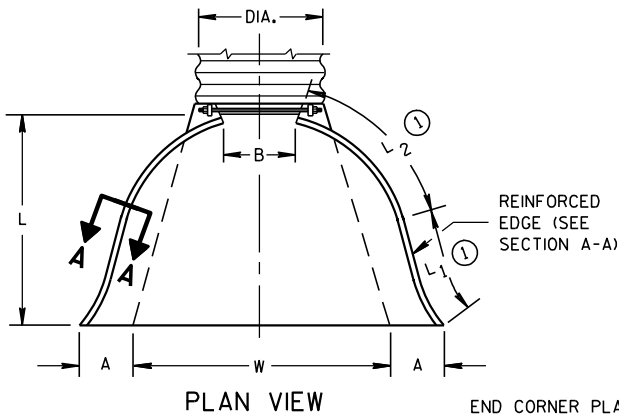
SIDE VIEW

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 ENGI 129
FHWA	

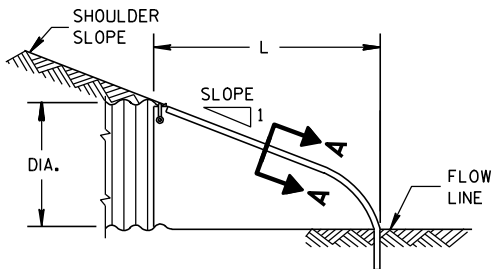
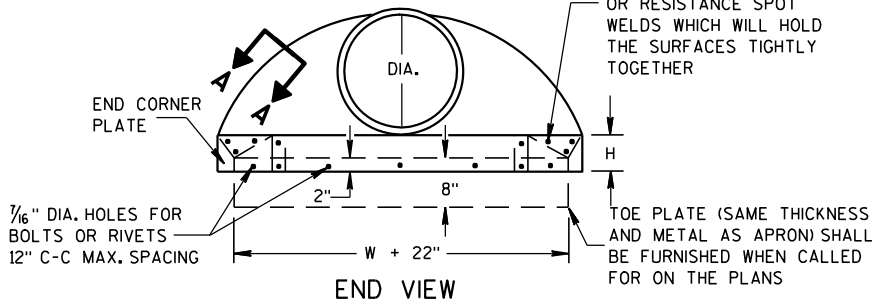
METAL APRON ENDWALLS											
PIPE DIA. (IN.)	MIN. THICK. (Inches)		DIMENSIONS (Inches)						APPROX. SLOPE	BODY	
	STEEL	ALUM.	A (±1")	B (MAX.)	H (±1")	L (±1½")	L ₁ ①	L ₂ ①			W (±2")
12	.064	.060	6	6	6	21	12	17½	24	2½ to 1	1 Pc.
15	.064	.060	7	8	6	26	14	21¾	30	2½ to 1	1 Pc.
18	.064	.060	8	10	6	31	15	28¼	36	2½ to 1	1 Pc.
21	.064	.060	9	12	6	36	18	29⅝	42	2½ to 1	1 Pc.
24	.064	.075	10	13	6	41	18	37¼	48	2½ to 1	1 Pc.
30	.079	.075	12	16	8	51	18	52¼	60	2½ to 1	1 Pc.
36	.079	.105	14	19	9	60	24	59¾	72	2½ to 1	2 Pc.
42	.109	.105	16	22	11	69	24	75⅝	84	2½ to 1	2 Pc.
48	.109	.105	18	27	12	78	24	81	90	2¼ to 1	3 Pc.
54	.109	.105	18	30	12	84	30	85½	102	2¼ 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	1½ to 1	3 Pc.
84	.109x	.105x	18	45	12	87	—	—	138	1½ to 1	3 Pc.
90	.109x	.105x	18	37	12	87	—	—	144	1½ to 1	3 Pc.
96	.109x	.105x	18	35	12	87	—	—	150	1½ 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

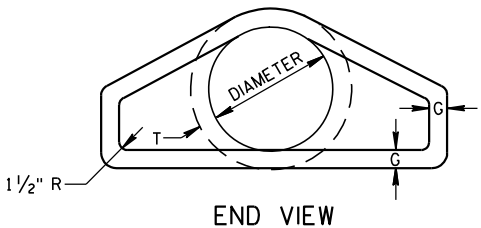
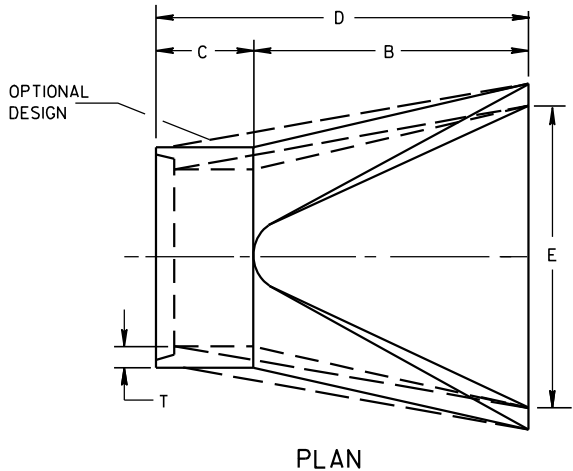
TOE PLATE (SAME THICKNESS AND METAL AS APRON) SHALL BE FURNISHED WHEN CALLED FOR ON THE PLANS



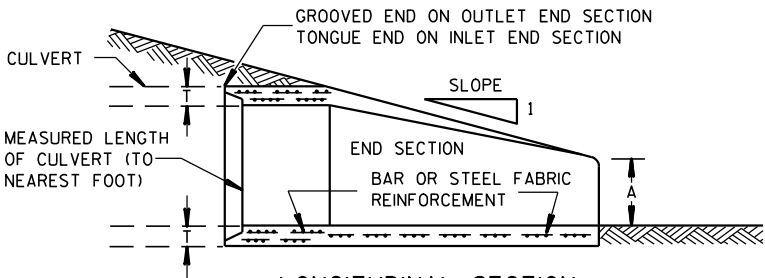
SIDE ELEVATION
METAL ENDWALLS

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 ¹ / ₂ to 1	
60	6	30-35	60	39	99	96	5	2 to 1	
66	6 ¹ / ₂	30-35	72-78	21-27	99	102	5 ¹ / ₂	2 to 1	
72	7	24-36	78	21	99	108	6	2 to 1	
78	7 ¹ / ₂	24-36	78	21	99	114	6 ¹ / ₂	2 to 1	
84	8	36	90 ¹ / ₂	21	111 ¹ / ₂	120	6 ¹ / ₂	1 ¹ / ₂ to 1	
90	8 ¹ / ₂	41	87 ¹ / ₂	24	111 ¹ / ₂	132	6 ¹ / ₂	1 ¹ / ₂ to 1	

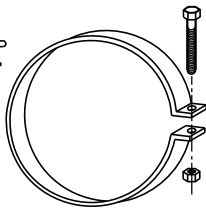
* MINIMUM
** MAXIMUM



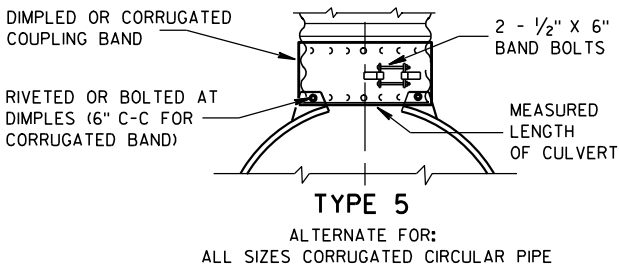
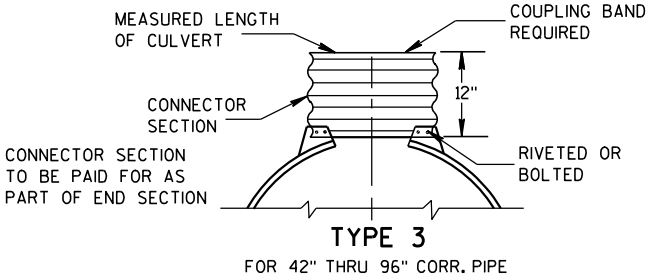
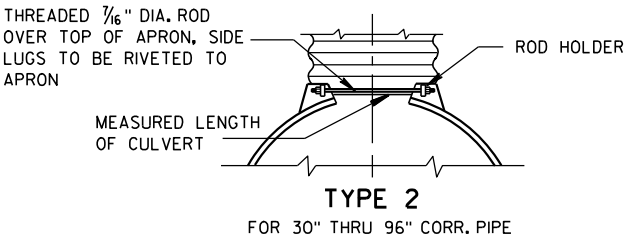
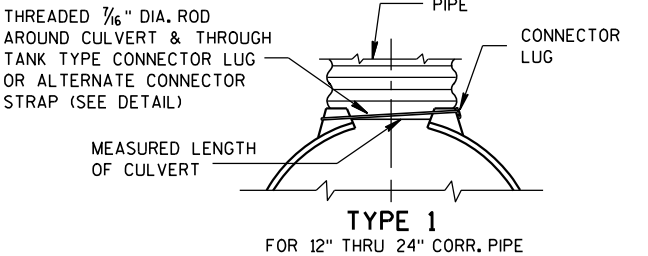
LONGITUDINAL SECTION
CONCRETE ENDWALLS



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



ALTERNATE FOR TYPE 1 CONNECTION
END SECTION CONNECTOR STRAP



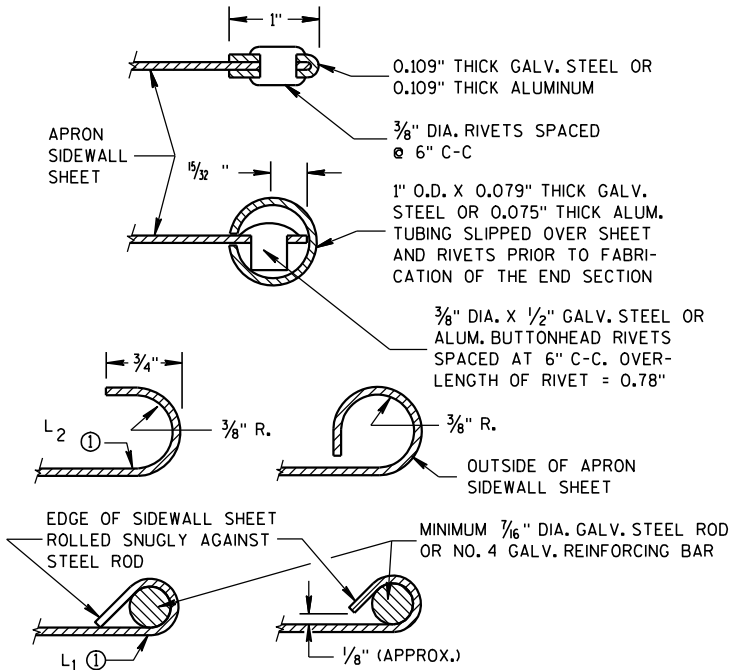
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL, AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

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

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

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

CONNECTION DETAILS



SECTION A-A

GENERAL NOTES

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

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

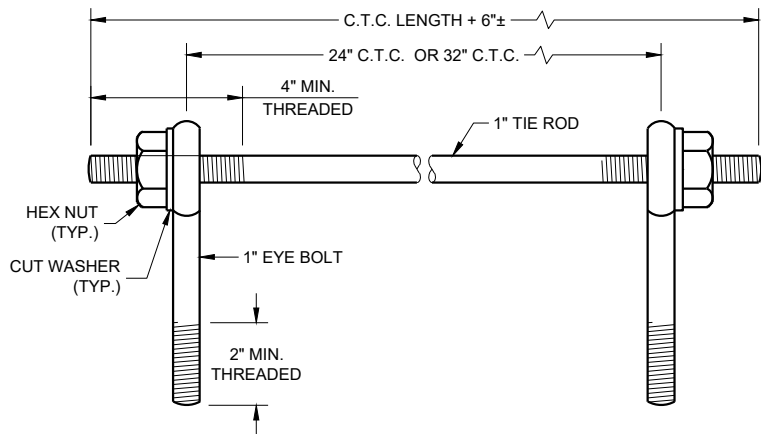
ALL THREE PIECE STEEL APRON ENDWALLS FOR 60" DIAMETER PIPE AND LARGER SHALL HAVE 0.109" SIDES AND 0.138" CENTER PANELS. ALL THREE PIECE ALUMINUM APRON ENDWALLS FOR 60" DIAMETER PIPE AND LARGER SHALL HAVE 0.105" SIDES AND 0.134" CENTER PANELS. THE WIDTH OF CENTER PANELS SHALL BE GREATER THAN 20 PERCENT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

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

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

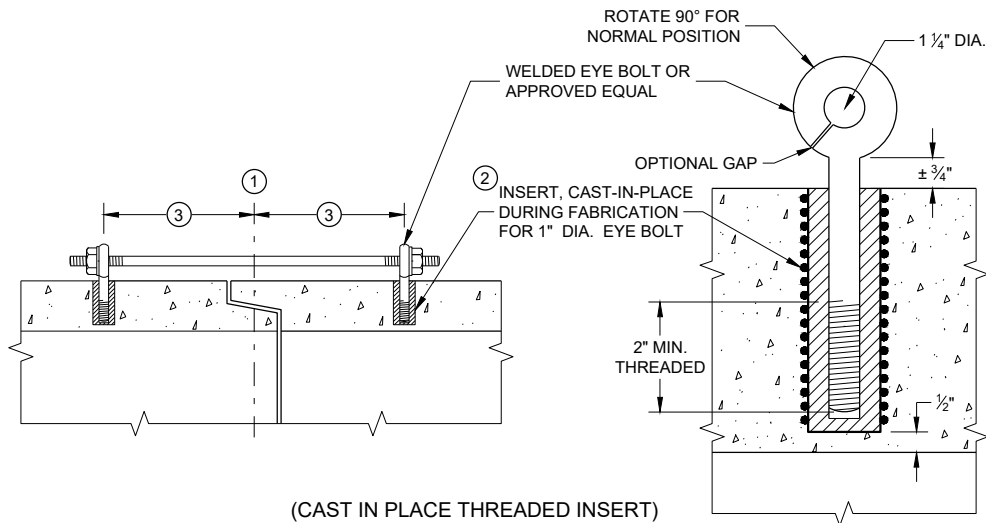
① FOR PIPE SIZES UP TO 60" DIAMETER, A 180° ROLLED EDGE MAY BE USED INSTEAD OF STEEL ROD REINFORCEMENT. SEE SECTION A-A.

APRON ENDWALLS FOR CULVERT PIPE			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
APPROVED 11/30/94 DATE	/S/ Rory L. Rhinehart CHIEF ROADWAY DEVELOP	130	NEER
FHWA			



EYE BOLTS AND TIE ROD

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



(CAST IN PLACE THREADED INSERT)

LONGITUDINAL SECTIONS

GENERAL NOTES

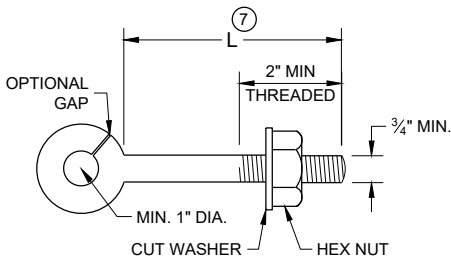
DETAILS OF CONSTRUCTION, MATERIALS, AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

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.

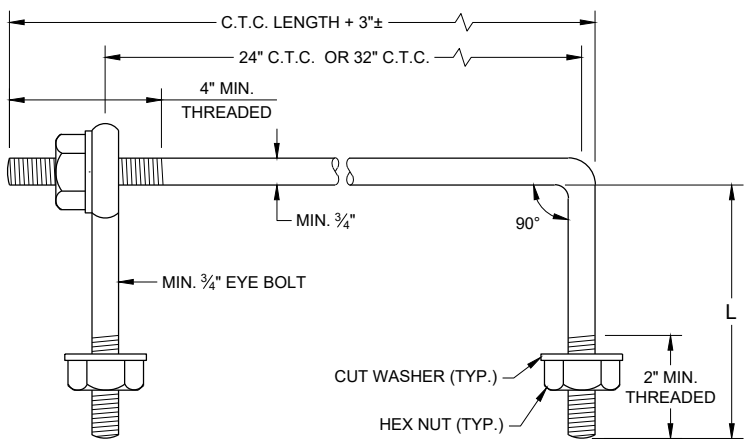
JOINT TIES TO BE HOT-DIP GALVANIZED PER ASTM A 153.

- 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.

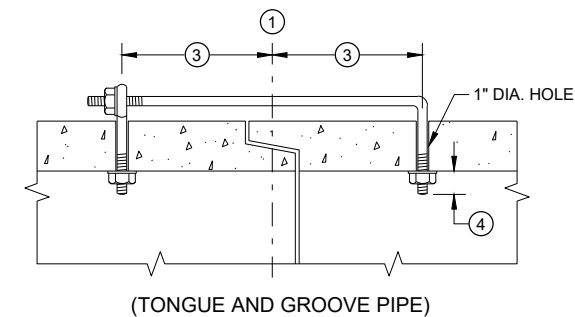


EYE BOLT 7

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

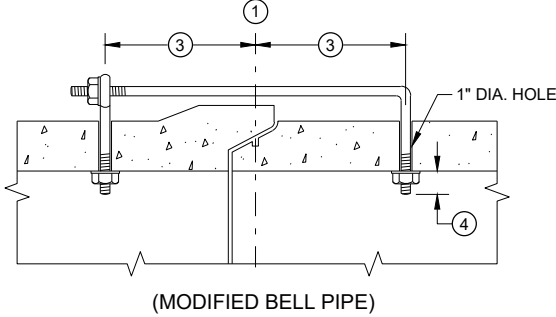


(TONGUE AND GROOVE PIPE)

LONGITUDINAL SECTION

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

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

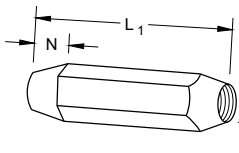


(MODIFIED BELL PIPE)

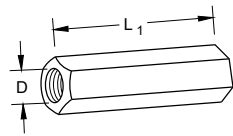
ADJUSTABLE TIE ROD TABLE

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

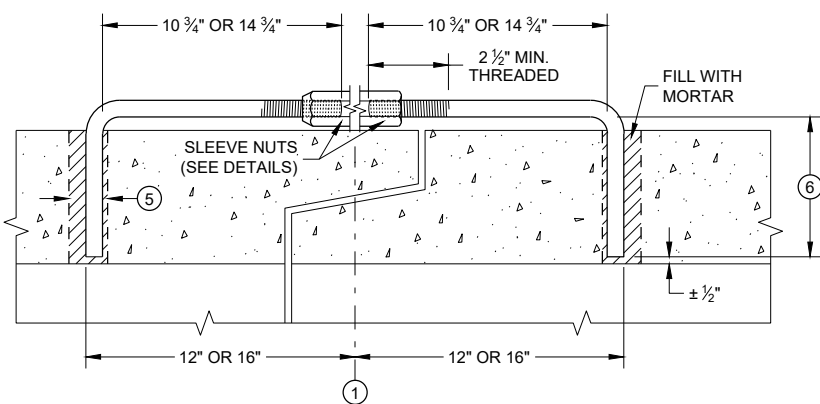


TAPERED



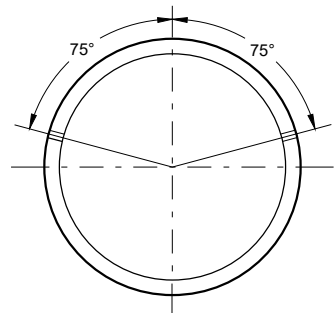
PLAIN

RIGHT AND LEFT THREADS
SLEEVE NUTS



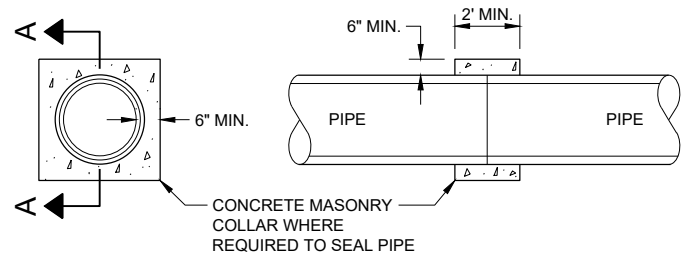
LONGITUDINAL SECTION

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



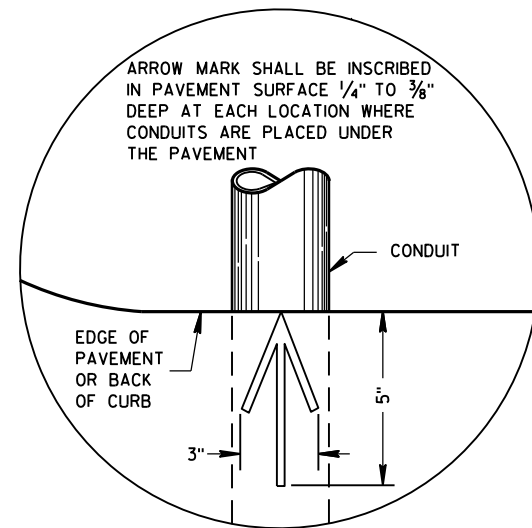
SECTION A - A

CONCRETE COLLAR DETAIL

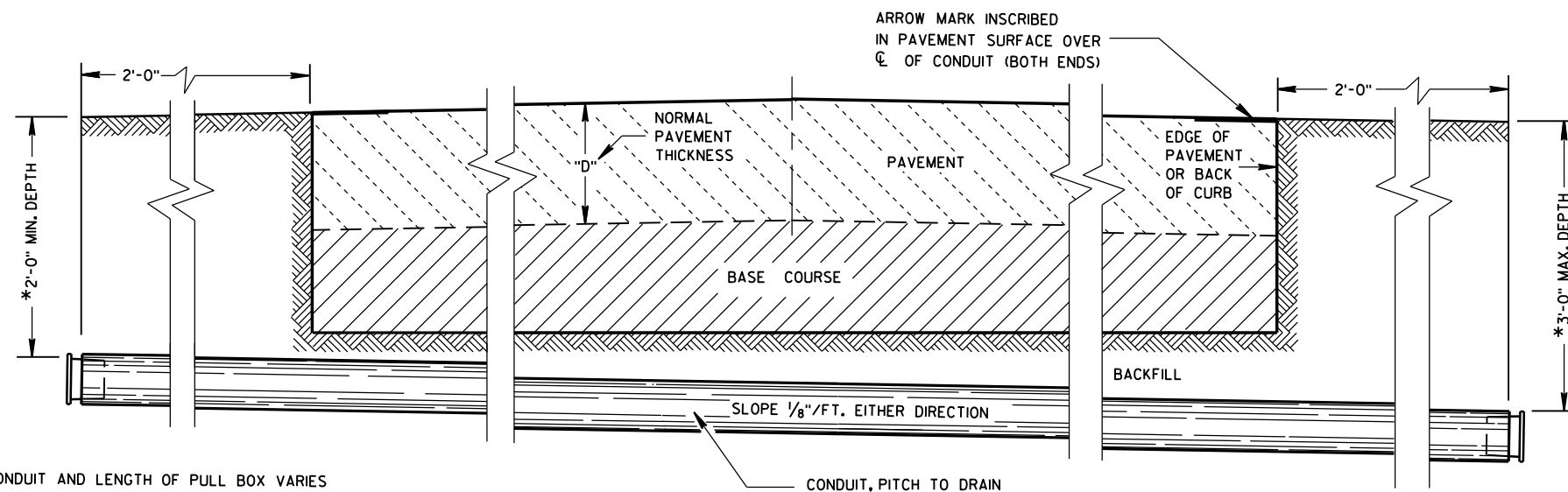
JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2021 /S/ Rodney Taylor
DATE ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA 131



PLAN VIEW
ARROW MARK



SIDE ELEVATION
DETAIL FOR CONDUIT UNDER PAVED HIGHWAYS

*DEPTH OF CONDUIT AND LENGTH OF PULL BOX VARIES
WITH HEIGHT OF CURB USED. ALSO SEE PULL BOX S.D.D. 9B4

GENERAL NOTES

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

METALLIC (STANDARD SPECIFICATION 652.2.2) OR NONMETALLIC (STANDARD SPECIFICATION 652.2.3) CONDUIT SHALL BE FURNISHED AND PLACED AS SHOWN.

DEPTH OF CONDUIT INSTALLED BELOW THE TRAVELED WAY SHALL BE 24 INCHES MINIMUM AND 36 INCHES MAXIMUM.

DEPTH OF CONDUIT INSTALLED THAT IS NOT BELOW THE TRAVELED WAY SHALL BE 18 INCHES MINIMUM AND 36 INCHES MAXIMUM.

ANY EXCEPTION TO THE MAXIMUM DEPTH SHALL BE ONLY WITH THE WRITTEN APPROVAL OF THE ENGINEER.

THE TRENCH SHALL NOT BE BACKFILLED PRIOR TO INSPECTION OF THE CONDUIT.

ALL METALLIC CONDUIT RACEWAY ENDS SHALL BE REAMED AND THREADED.

ALL METALLIC CONDUIT IN WHICH WIRE OR CABLE IS TO BE INSTALLED SHALL BE BUSHED WITH APPROVED THREADED BUSHINGS BEFORE INSTALLATION OF THE WIRE OR CABLE.

ALL METALLIC CONDUITS IN WHICH WIRE OR CABLE IS NOT TO BE INSTALLED SHALL BE CAPPED WITH THREADED PROTECTIVE CAPS, AS APPROVED BY THE ENGINEER.

ALL NONMETALLIC CONDUIT SHALL BE CAPPED OR PLUGGED IMMEDIATELY AFTER INSTALLATION AND SHALL REMAIN CAPPED OR PLUGGED UNTIL WIRE/CABLES ARE INSTALLED.

NONMETALLIC CONDUITS IN WHICH WIRE OR CABLE IS NOT BEING INSTALLED SHALL REMAIN CAPPED OR PLUGGED.

BENDING OF PVC ELECTRICAL CONDUIT SHALL BE ACCOMPLISHED BY USING A BLANKET OR EMERSION TYPE TANK DESIGNED FOR THE PURPOSE OF BENDING PVC ELECTRICAL CONDUIT.

ALL CUT ENDS SHALL BE TRIMMED INSIDE AND OUTSIDE TO REMOVE ALL ROUGH EDGES ON NONMETALLIC CONDUIT. (SEE NEC 347.5)

WHEN REQUIRED TO CONNECT NONMETALLIC CONDUIT TO METALLIC CONDUIT, ONLY U.L. LISTED ADAPTER FITTINGS SHALL BE USED.

PRIOR TO CONDUIT ACCEPTANCE, CONDUIT CAPS OR PLUGS SHALL BE REMOVED, AND THE CAPS, PLUGS AND CONDUIT ENDS SHALL BE THOROUGHLY CLEANED AND THEN THE CAPS OR PLUGS REINSTALLED TO ENSURE THAT THE CAPS OR PLUGS CAN BE EASILY REMOVED IN THE FUTURE.

ALL CONDUIT BEING FURNISHED AND INSTALLED SHALL HAVE THE U.L. LABEL FIRMLY ATTACHED.

CONDUIT RUNS SHALL BE THE SAME SIZE OF CONDUIT FROM ONE END TO THE OTHER (FROM PULL BOX TO PULL BOX-OR-JUNCTION BOX TO JUNCTION BOX-OR-BASE TO BASE, ETC.).

TRACER WIRE SHALL BE INSTALLED AS STATED IN THE STANDARD SPECIFICATION, ITEM 652.3.1.1.

ALL CONDUIT RUNS SHALL BE STRAIGHT (WITHOUT BENDS) FROM PULL BOX TO PULL BOX, PULL BOX TO BASE AND BASE TO BASE AS SHOWN ON THE PLANS.

CONDUIT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

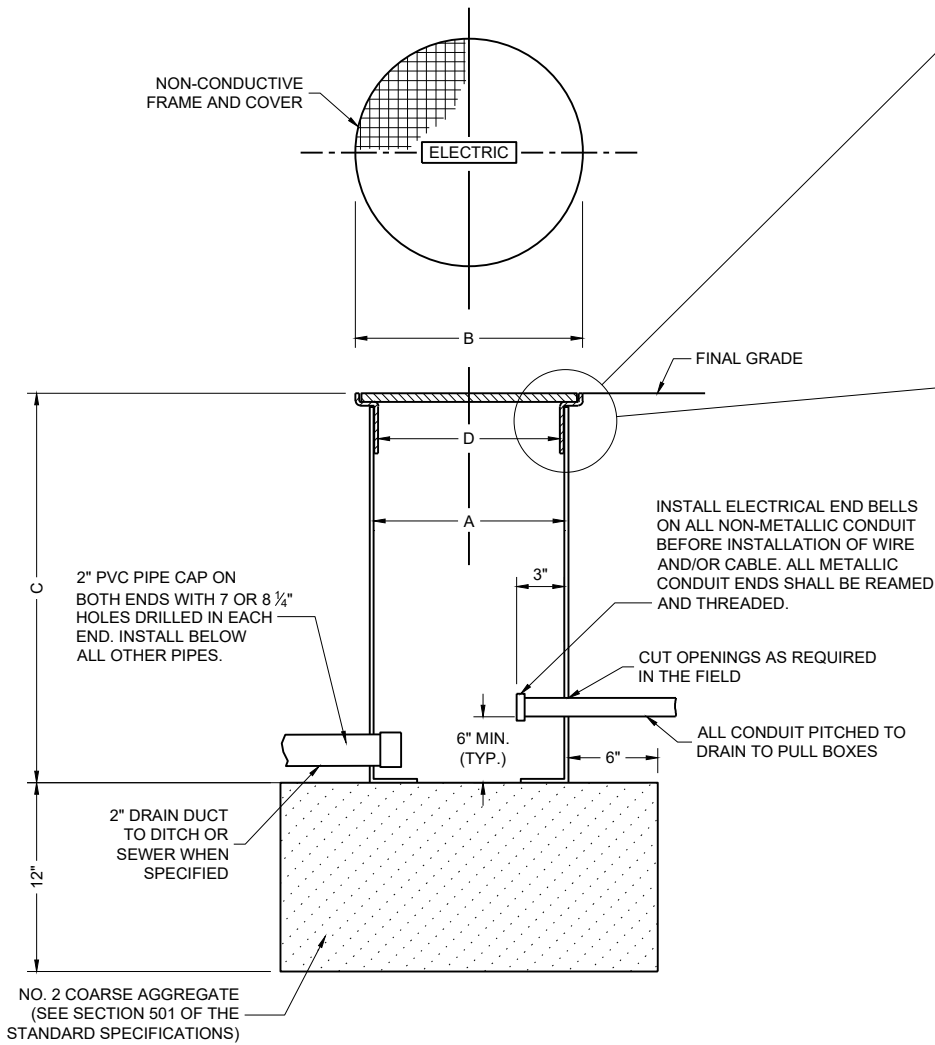
APPROVED
March, 2017 /S/ Ahmet Demirbilek
DATE STATE ELECTRICAL 132
FHWA

TABLE OF NOMINAL DIMENSIONS
AND WEIGHTS

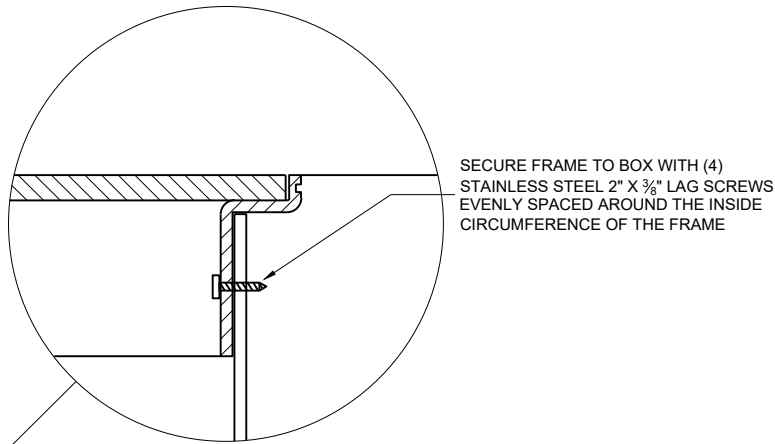
DIMENSION IN INCHES		NON- CONDUCTIVE PULL BOX	
BOX DIAMETER ** (INSIDE)	A	24	24
BOX OVERALL OUTSIDE DIAMETER	B	27	27
BOX LENGTH	C	36	42
FRAME OPENING	D	22 ½	22 ½
WEIGHT IN POUNDS *			
COVER		50	50
BOX ONLY		75	85

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

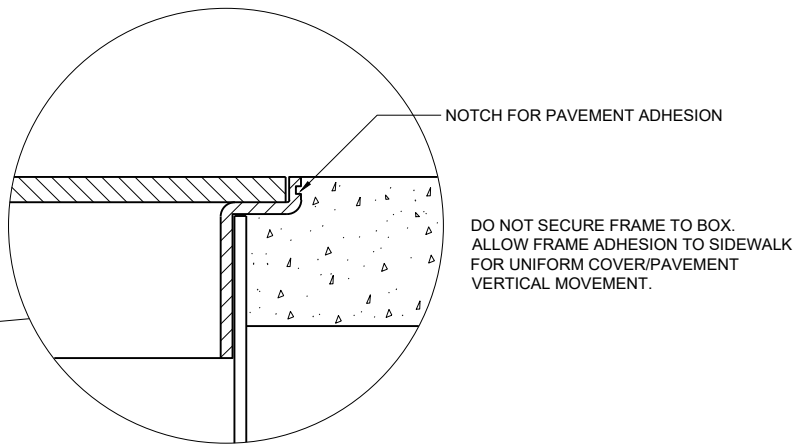
** DIAMETER VARIES FROM TOP TO BOTTOM WITH THE DIAMETER LARGER AT THE BOTTOM TO PREVENT FROST HEAVE.



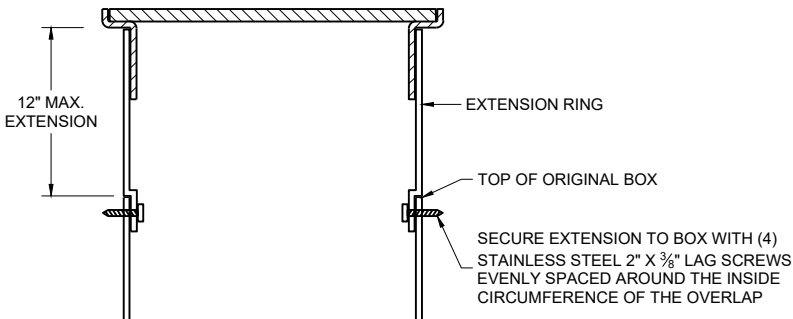
NON-CONDUCTIVE PULL BOX



INSTALLED IN SOD
OR CRUSHED AGGREGATE



INSTALLED IN SIDEWALK



BOX EXTENSION

GENERAL NOTES

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

ALL BOXES, FRAMES AND COVERS SHALL BE SUITABLE FOR TIER 15 LOADING AS SPECIFIED IN ANSI/SCTE 77.

PROVIDE AN OPENING FOR TOOL ASSISTED COVER REMOVAL NOT LARGE ENOUGH TO PERMIT PASSAGE OF A SPHERE MORE THAN ½" DIAMETER

ENSURE COVER SURFACE IS SKID RESISTANT WITH A COEFFICIENT OF FRICTION OF AT LEAST 0.5 AND VERTICAL SURFACE DISCONTINUITIES LESS THAN ¼".

COVER SHALL BE MAGNETICALLY LOCATABLE.

BOXES AND EXTENSIONS ARE TRIMMABLE FOR CUSTOM LENGTHS. TRIMMED PIECES SHALL MAINTAIN A UNIFORM LENGTH.

ENTRANCE HOLES INTO PULL BOXES SHALL BE CUT WITH A CIRCULAR HOLE SAW OR HYDRAULIC CONDUIT PUNCH. HOLE SIZE SHALL BE THE OUTSIDE DIAMETER OF THE CONDUIT THAT IS TO FIT IN THE OPENING PLUS NO MORE THAN ¼".

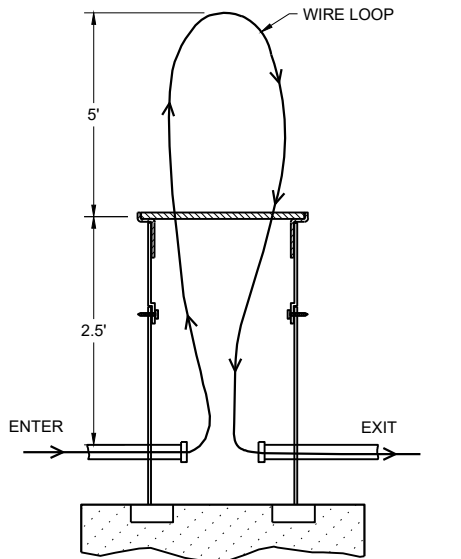
THE CONTRACTOR SHALL NOT INSTALL WIRE IN ANY PULL BOX UNTIL ITS INSTALLATION HAS BEEN INSPECTED AND ACCEPTED BY THE ENGINEER.

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

ENTIRE BOX MUST BE CONSTRUCTED OF NON-CONDUCTIVE MATERIALS WITH THE EXCEPTION OF STAINLESS STEEL FASTENERS AND MAGNETIC LOCATABLE DEVICE.

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

LABEL ON COVER SHALL READ "ELECTRIC" FOR SIGNAL AND LIGHTING SYSTEMS, "WISDOT ITS" FOR COMMUNICATIONS AND ITS EQUIPMENT SYSTEMS.



MEASUREMENT DETAIL FOR
WIRE/CABLE IN THE PULL BOX

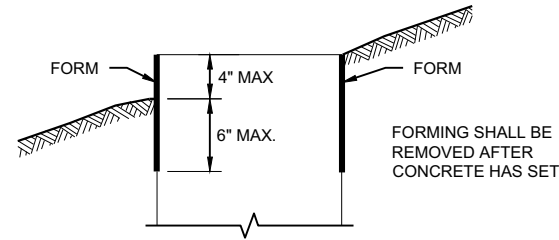
PULL BOXES
NON-CONDUCTIVE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2024 /S/ Ahmet Demirelek
DATE STATE ELECTRICAL ENGINEER

FHWA

FORM DEPTH SHALL BE NO MORE THAN 6" BELOW GRADE ON THE LOWER SIDE OF BASE



FORMING DETAIL

QUANTITY REQUIREMENTS	CONCRETE BASE TYPE		
	1	2	5 & 6
APPROX. CUBIC YARDS OF CONCRETE	0.40	0.57	0.40
LBS. OF HOOP BAR STEEL	NONE	23	16
LBS. OF VERTICAL BAR STEEL	NONE	60	18

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

BASES SHALL BE EXCAVATED BY USE OF A CIRCULAR AUGER.

TOP SURFACES OF CONCRETE BASES SHALL BE TROWEL FINISHED SMOOTH AND LEVEL.

CONDUIT SIZES AND LOCATIONS SHALL BE SHOWN ON THE PLANS

THE FINAL OR TERMINATING CONCRETE BASE IN A CONDUIT RUN SHALL HAVE A 6" EXIT STUB INSTALLED FOR FUTURE CABLING USE. THE EXIT STUB SHALL BE SIZED AS USED THROUGHOUT THE CONDUIT RUN AS SHOWN AT THE ENTRANCE OF THE BASE.

ENDS OF CONDUIT INSTALLED BELOW GRADE FOR FUTURE USE SHALL BE CAPPED IF METALLIC OR PLUGGED IF NON-METALLIC.

MINIMUM BENDING RADIUS OF CONDUIT IS EQUAL TO 6X THE DIAMETER.

CONDUIT HEIGHT ABOVE CONCRETE BASES SHALL BE 1 INCH. ALL METALLIC CONDUIT ENDS SHALL BE REAMED AND THREADED.

ALL CONDUIT ENDS AT THE TOP OF CONCRETE BASES SHALL BE CAPPED IF METALLIC OR PLUGGED IF NON-METALLIC IMMEDIATELY AFTER PLACEMENT AND BEFORE CONCRETE IS POURED. CONDUITS IN WHICH WIRE OR CABLE IS NOT INSTALLED SHALL REMAIN CAPPED OR PLUGGED.

GENERAL NOTES

BELL ENDS SHALL BE INSTALLED ON ALL PVC CONDUIT EXPOSED AT THE TOP OF CONCRETE BASES BEFORE INSTALLATION.

WHEN REQUIRED TO CONNECT NON-METALLIC CONDUIT TO METALLIC CONDUIT, ONLY ADAPTER FITTINGS, U.L. LISTED FOR ELECTRICAL USE, SHALL BE USED.

IF A BASE REQUIRES A DEEP FORM BECAUSE OF LOOSE DIRT OR FILL, THE FORM SHALL BE REMOVED BEFORE BACKFILLING AROUND THE BASE. BACKFILL SHALL BE TAMPED TIGHT AGAINST THE BARE CONCRETE BASE IN LAYERS OF 1 FOOT OR LESS.

A NO. 4 AWG STRANDED COPPER EQUIPMENT GROUNDING CONDUCTOR SHALL BE EXOTHERMICALLY WELDED TO THE EQUIPMENT GROUNDING ELECTRODE (GROUND ROD) FOR TYPE 2, TYPE 5 AND TYPE 6 BASES.

THE EQUIPMENT GROUNDING CONDUCTOR SHALL BE FURNISHED AND INSTALLED TO ENTER ALL BASE TYPES THROUGH A 1 INCH CONDUIT INSTALLED FOR GROUNDING PURPOSES, LEAVING A 4 FOOT COIL OF WIRE ABOVE THE CONCRETE BASE. THE EQUIPMENT GROUNDING CONDUCTOR SHALL BE NEATLY COILED AND THE COILS TIED TOGETHER.

ANCHOR RODS SHALL BE THREADED 12" IN LENGTH ON EACH END OF THE ROD. ANCHOR RODS SHALL BE MANUFACTURED IN ACCORDANCE WITH SECTION 654.2.1 OF THE STANDARD SPECIFICATIONS.

WASHERS AND LOCK WASHERS ARE REQUIRED ON ALL ANCHOR RODS.

WHEN ANCHOR RODS USING THE ALTERNATE "L" BEND ARE FURNISHED, THE 4 INCH "L" BEND SHALL BE IN ADDITION TO THE SPECIFIED ANCHOR ROD BAR LENGTH. THE "L" BEND SHALL NOT BE THREADED.

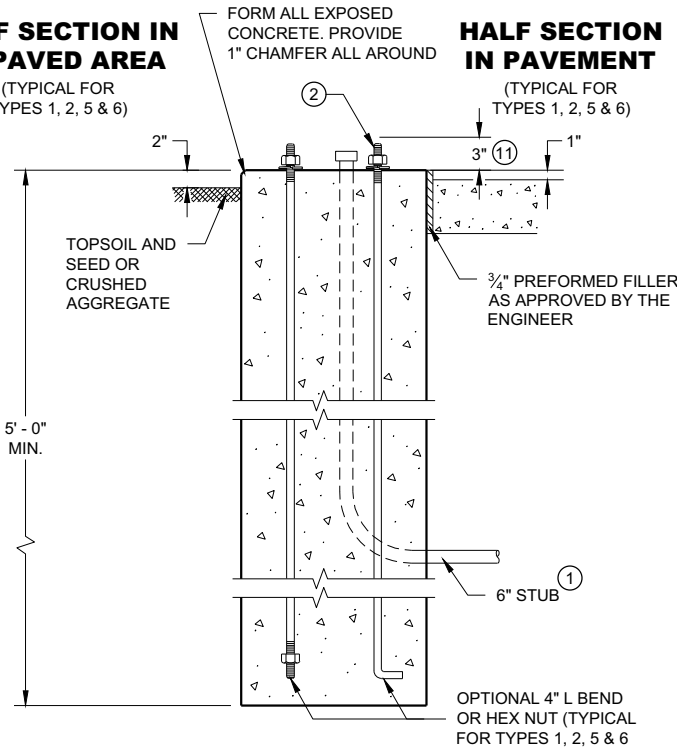
ANCHOR RODS SHALL BE INSTALLED WITH MISALIGNMENTS OF LESS THAN 1:40 FROM VERTICAL.

WELDING OF THE ANCHOR RODS TO THE CAGE IS UNACCEPTABLE. TIE WIRES SHALL BE USED.

BAR STEEL REINFORCEMENT SHALL BE COATED WITH POWDERED EPOXY RESIN IN ACCORDANCE WITH SECTION 505 OF THE STANDARD SPECIFICATIONS (LATEST EDITION).

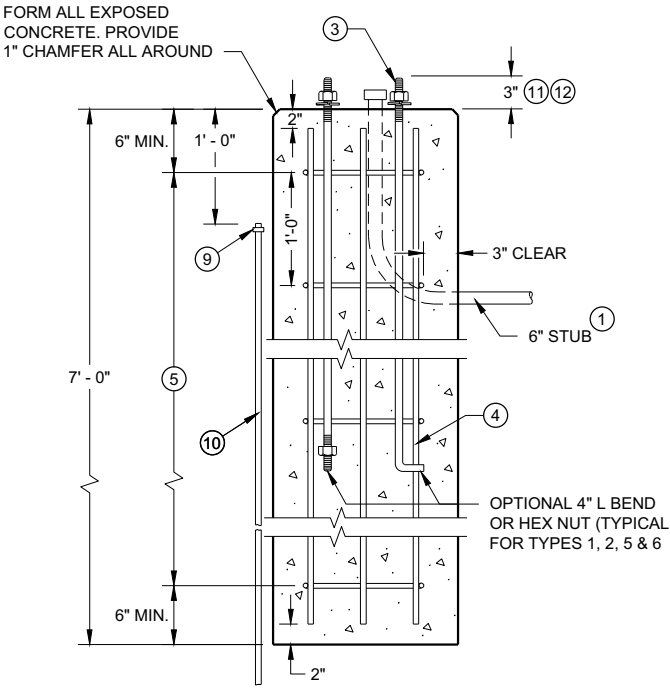
- 1 THE MINIMUM DEPTH OF CONDUIT EXITING THE CONCRETE BASE AND INSTALLED BELOW THE TRAVELED WAY SHALL BE 24 INCHES. THE MINIMUM DEPTH OF CONDUIT EXITING THE CONCRETE BASE THAT IS NOT INSTALLED BELOW THE TRAVELED WAY SHALL BE 18 INCHES. THE MAXIMUM DEPTH OF ALL CONDUIT SHALL BE 36 INCHES EXCEPT WITH WRITTEN APPROVAL OF THE ENGINEER.
- 2 (4) 1" DIA. X 3' - 6" ANCHOR RODS.
- 3 (4) 1" DIA. X 5' - 0" ANCHOR RODS.
- 4 (6) NO. 6 X 6' - 8" BAR STEEL REINFORCEMENT.
- 5 (7) NO. 4 X 5' - 1" BAR STEEL REINFORCEMENT @ 1' - 0" C - C.
- 6 (4) 1" DIA. X 3' - 6" ANCHOR RODS.
- 7 (6) NO. 4 X 4' - 8" BAR STEEL REINFORCEMENT.
- 8 (5) NO. 4 X 5' - 1" BAR STEEL REINFORCEMENT @ 1' - 0" C - C.
- 9 EXOTHERMIC CONNECTION TO EQUIPMENT GROUNDING CONDUCTOR
- 10 5/8" DIA. X 8' - 0" COPPERCLAD EQUIPMENT GROUNDING ELECTRODE REQUIRED
- 11 ANY ANCHOR ROD PROJECTION SHORTER THAN 2 3/4" OR LONGER THAN 3 1/2" SHALL REQUIRE THE BASE TO BE REMOVED AND REPLACED AT THE CONTRACTOR'S EXPENSE.
- 12 FOR NON - BREAKAWAY INSTALLATIONS, 4 1/2" ± ANCHOR ROD PROJECTION WITH THE USE OF LEVELING NUTS. RODENT SCREEN REQUIRED.

HALF SECTION IN UNPAVED AREA



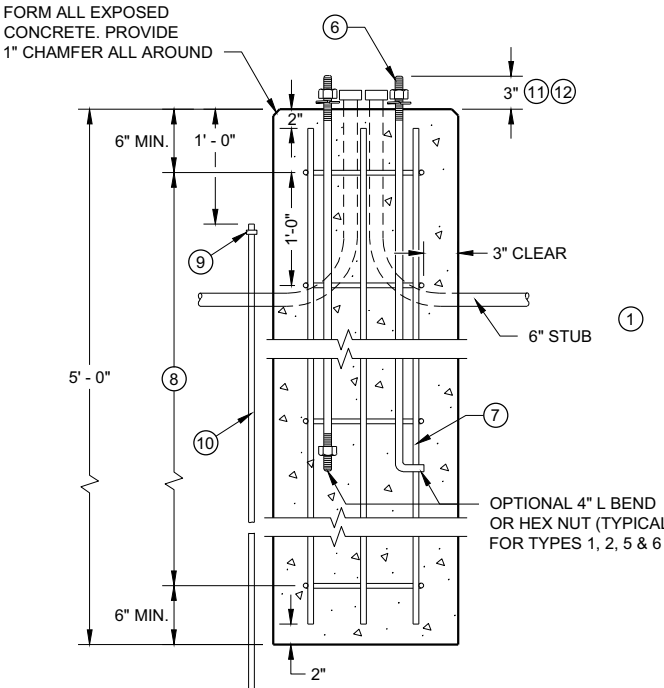
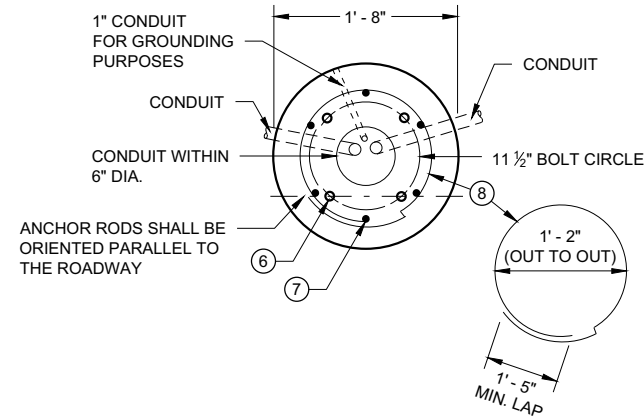
TYPE 1

HALF SECTION IN PAVEMENT



TYPE 2

CONCRETE BASES



TYPE 5 & 6

GENERAL NOTES

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

FOUR (4) BOLTS SHALL BE FURNISHED WITH EACH TRANSFORMER BASE. BOLTS SHALL BE 1" DIAMETER, 4" IN LENGTH, WITH WASHERS, LOCK WASHERS AND NUTS. BOLTS, NUTS AND WASHERS SHALL BE MANUFACTURED IN ACCORDANCE WITH SECTION 531.2.2 OF THE STANDARD SPECIFICATIONS.

LEVELING SHIMS, IF NEEDED, SHALL BE DESIGNED FOR THE PURPOSE AND USED UNDER CAST BASES WHEN PLUMBING POLES OR STANDARDS DURING INSTALLATION. THE USE OF WASHERS IN LIEU OF PROPER LEVELING SHIMS IS NOT ACCEPTABLE.

SHIM LENGTH SHALL BE LONG ENOUGH TO COMPLETELY COVER THE AREA UNDER THE LENGTH AND WIDTH OF THE BASE MOUNTING FLANGE.

DOUBLE NUTTING IS NOT ACCEPTABLE FOR LEVELING OR MOUNTING PURPOSES.

A NEMA APPROVED, U.L. LISTED, COPPER WITH BRASS OR STAINLESS STEEL SET SCREW, DIRECT BURY RATED, MECHANICAL CONNECTOR (LUG), SIZED TO ACCEPT AWG. #10 TO #4 COPPER STRANDED WIRE SHALL BE FURNISHED AND INSTALLED IN THE PEDESTAL AND TRANSFORMER BASES.

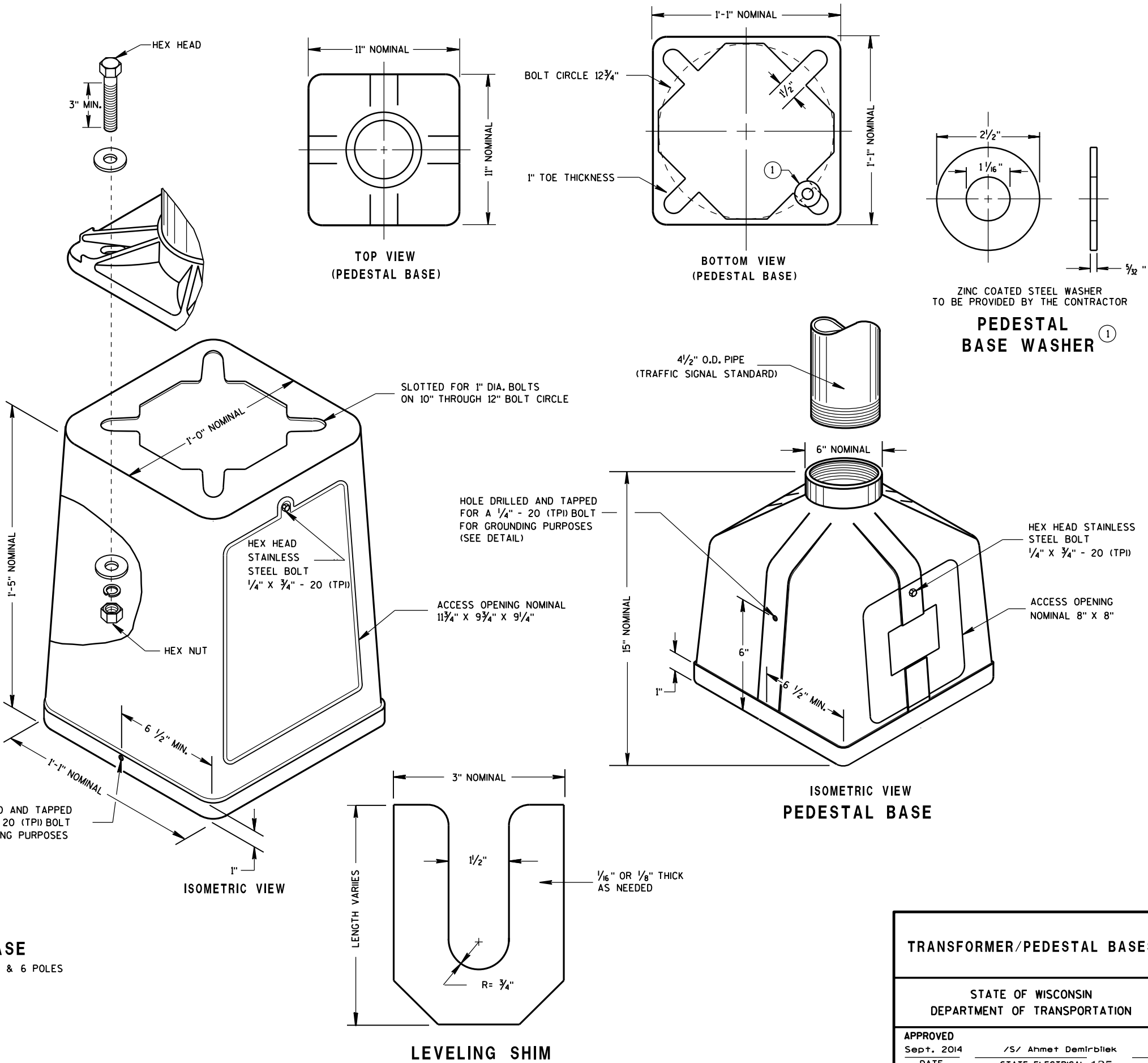
THE MECHANICAL CONNECTOR SHALL BE INSTALLED USING A 1/4" - 20 (TPI) STAINLESS STEEL HEX HEAD BOLT OF SUFFICIENT LENGTH TO FIRMLY ATTACH THE LUG TO THE BASE.

SHOULD THE MANNER OF ATTACHMENT OF THE LUG REQUIRE WASHERS, HEX NUTS, LOCK WASHER - THEY SHALL BE STAINLESS STEEL AS IS THE BOLT. THE MANNER OF ATTACHMENT SHALL NOT BLOCK ACCESSIBILITY TO WIRE PLACEMENT IN THE CONNECTOR.

PEDESTAL BASE COLLAR THREADING SHALL BE TAPERED AND IN ACCORDANCE WITH NATIONAL PIPE THREADING DIMENSIONS.

BASE COLLAR THREADING SHALL EXTEND INTO THE BASE COLLAR WITH SUFFICIENT DEPTH TO ACCEPT THE INSTALLATION OF TRAFFIC SIGNAL STANDARDS TO A DEPTH OF 1/2", THEN TIGHTENING TO A POINT OF BEING IMMOVABLE.

THE ACCESS DOOR SHALL BE OF THE SAME MATERIAL AS THE BASE.



6

6

S.D.D. 9 C 3-4

S.D.D. 9 C 3-4

TYPICAL MECHANICAL
CONNECTOR LUG
TO BE FURNISHED WITH EACH BASE

TRANSFORMER BASE
INTENDED FOR USE WITH TYPE 2, 3, 4, 5 & 6 POLES

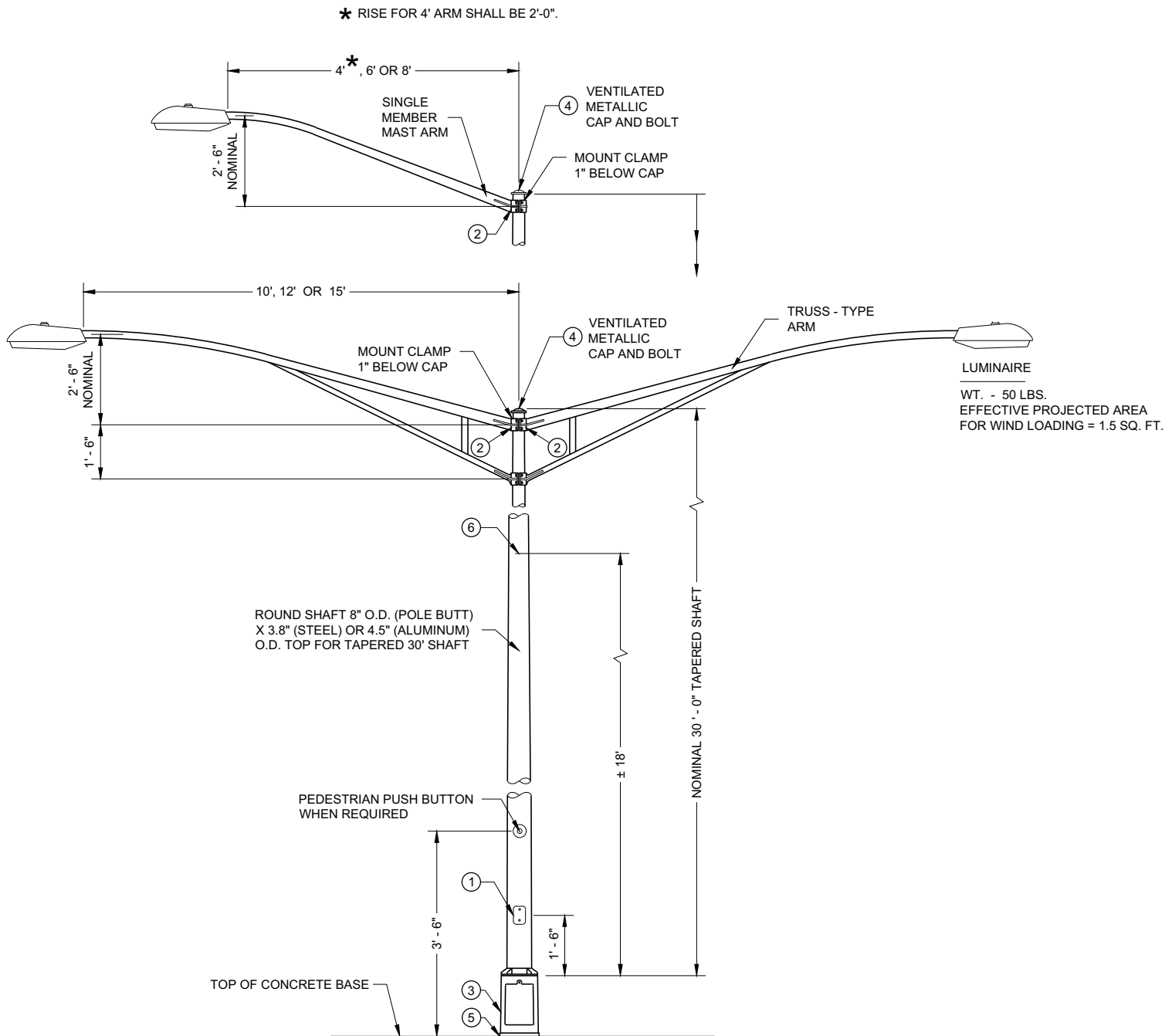
ISOMETRIC VIEW
PEDESTAL BASE

LEVELING SHIM

TRANSFORMER/PEDESTAL BASES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sept. 2014 /S/ Ahmet Demirbilek
DATE STATE ELECTRICAL 135
FHWA



**TYPE 5 POLE MOUNTING CONFIGURATION
(MAXIMUM LOAD)
LIGHTING ONLY**

GENERAL NOTES

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

SECTION 657, POLES, OF THE STANDARD SPECIFICATIONS SHALL APPLY TO THIS DRAWING.

ALL TYPE 5 POLE MOUNTINGS SHALL BE DESIGNED TO INCLUDE TWIN 15' ARMS WITH LUMINAIRES.

POLES SHALL BE GALVANIZED STEEL OR ALUMINUM, AS CALLED FOR IN THE CONTRACT.

TYPE 5 ALUMINUM POLES SHALL BE CONSTRUCTED OF 6063 - T6 ALUMINUM ALLOY. SLEEVEING INSIDE THE POLE IS NOT ACCEPTABLE.

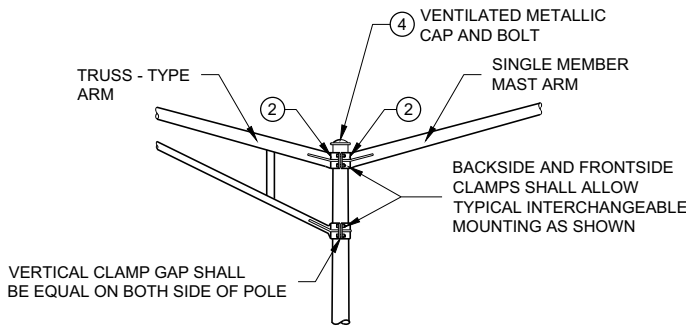
TYPE 5 ALUMINUM POLES SHALL HAVE A MINIMUM WALL THICKNESS OF 0.1888".

TYPE 5 STEEL POLES SHALL HAVE A MINIMUM WALL THICKNESS OF U.S. STANDARD 11 GAGE (0.1196").

THE SLIPFITTER END OF THE LUMINAIRE MAST ARM SHALL BE A NOMINAL 2 3/8 INCHES IN OUTSIDE DIAMETER. THE STRAIGHT PORTION OF THE SLIPFITTER END OF THE LUMINAIRE MAST ARM SHALL BE A NOMINAL 12 INCHES IN LENGTH.

WHEN TRANSFORMER BASES ARE USED, WIRE CONNECTIONS SHALL BE MADE IN THE TRANSFORMER BASE.

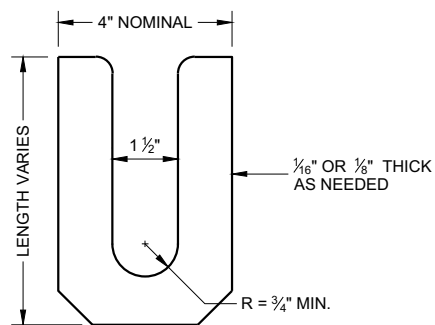
- ① 4" X 6" REINFORCED HANDHOLE AND COVER ASSEMBLY WITH TWO (2) 3/4" X 3/4" - 20 TPI , STAINLESS STEEL, HEX HEAD BOLTS.
- ② GROMMETS. 1" CHASE NIPPLES OR 1" CLOSE CONDUIT NIPPLES WITH BUSHINGS SHALL BE PROVIDED FOR 1 3/8" HOLE IN POLE SHAFT FOR WIRING.
- ③ CAST ALUMINUM TRANSFORMER BASE, WHEN REQUIRED.
- ④ FURNISH AND INSTALL VENTILATED, CAST METALLIC (ALUMINUM ALLOY) CAPS. FASTEN CAPS WITH ONE (1) 3/4" X 3/4" - 20 TPI STAINLESS STEEL, HEX HEAD BOLT.
- ⑤ SHIMMING, IF NEEDED, SHALL BE LOCATED BETWEEN THE CONCRETE FOUNDATION AND POLE.
- ⑥ INTERNAL DUMBBELL - TYPE VIBRATION DAMPER.



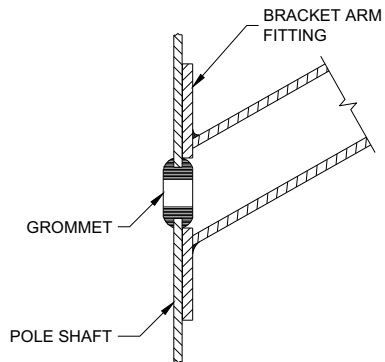
INTERCHANGEABLE MOUNTING DETAIL

**POLE MOUNTINGS FOR
LIGHTING UNITS, TYPE 5
(30 FEET)**

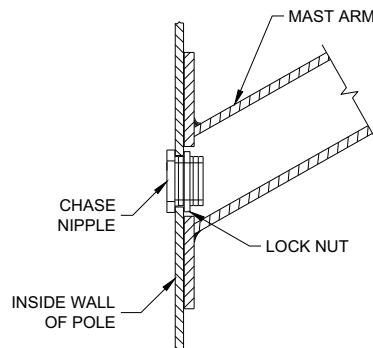
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



LEVELING SHIM
SHALL BE ALUMINUM



TYPICAL APPLICATION OF GROMMET IN POLE SHAFT



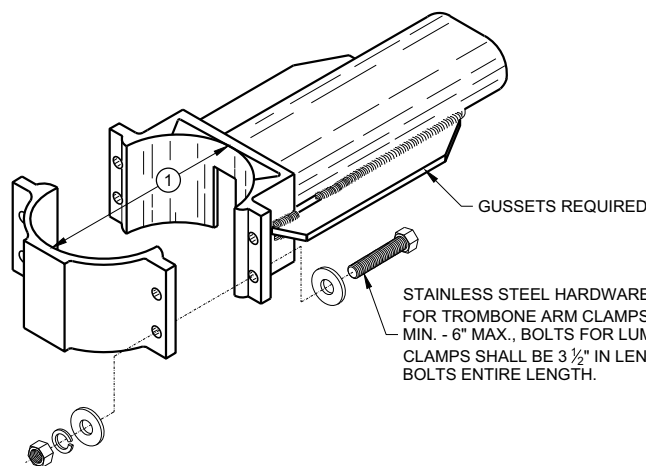
TYPICAL APPLICATION OF CHASE NIPPLE IN POLE SHAFT

GENERAL NOTES

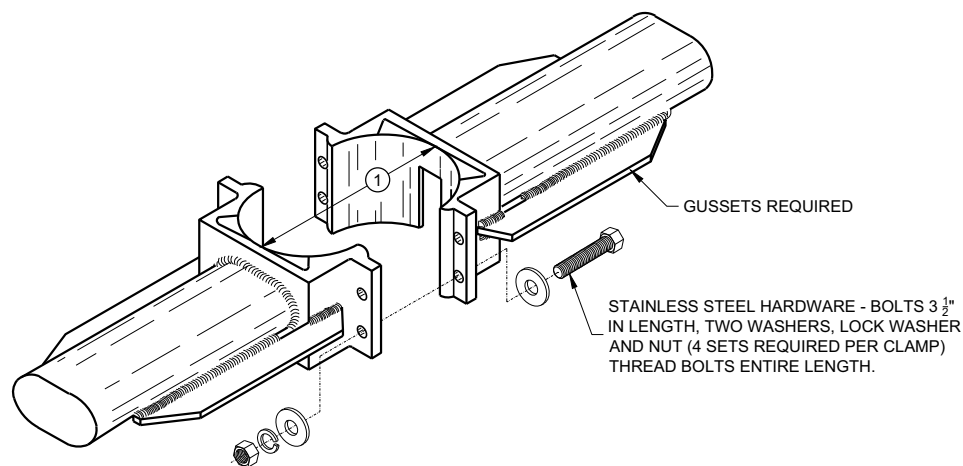
CLAMP BOLT-NUT TIGHTENING TORQUE SHALL BE INDICATED BY INDENT STAMPING (1/2 INCH NUMERALS AND LETTERS) OR WEATHERPROOF PRINTING ON THE INSIDE OF THE CLAMP THAT IS WELDED TO THE ARM MEMBER.

- 1 4.5" I.D. FOR LUMINAIRE MAST ARM CLAMP. 6.625" I.D. FOR TROMBONE MAST ARM CLAMP.
- 2 INDIVIDUAL BASE PLATE ANCHOR ROD COVERS. (4 REQUIRED)
- 3 BASE PLATE SLOTTED TO ACCEPT 11" THROUGH 12" BOLT CIRCLE USING 1" DIAMETER ANCHOR RODS.
- 4 LEVELING SHIMS, DESIGNED FOR THE PURPOSE, SHALL BE USED WHEN PLUMBING POLES. THE USE OF WASHERS IN LIEU OF PROPER LEVELING SHIMS IS NOT ACCEPTABLE. LEVELING SHIMS SHALL BE USED ONLY BETWEEN THE TOP OF THE CONCRETE BASE AND A METALLIC BASE PLATE.

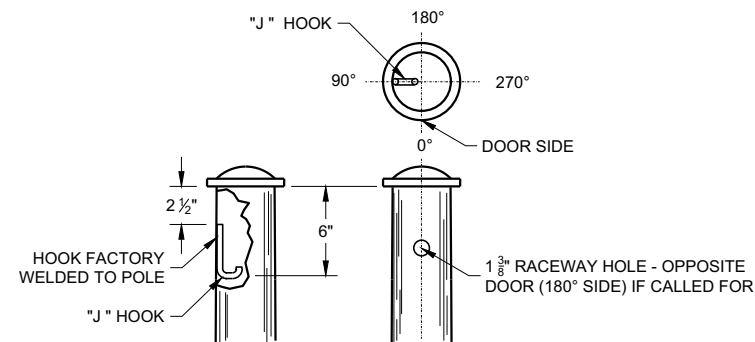
SHIMS SHALL BE LONG ENOUGH AND WIDE ENOUGH TO COMPLETELY COVER THE AREA UNDER THE LENGTH AND WIDTH OF THE BASE MOUNTING FLANGE.



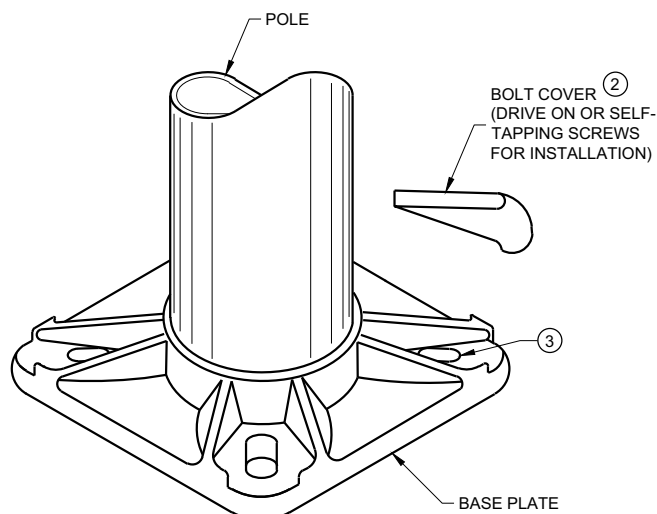
TYPICAL TROMBONE MAST ARM AND SINGLE LUMINAIRE MAST ARM MOUNTING CLAMP



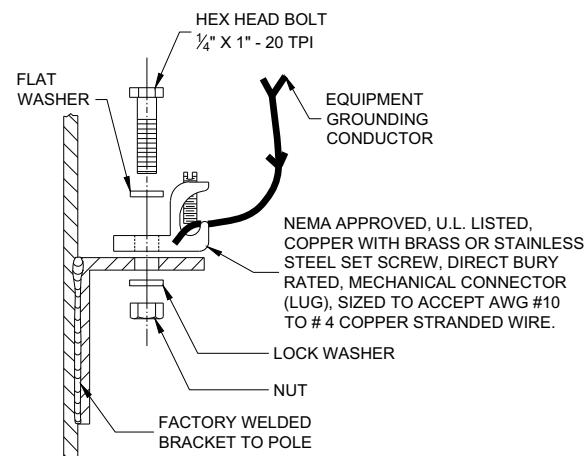
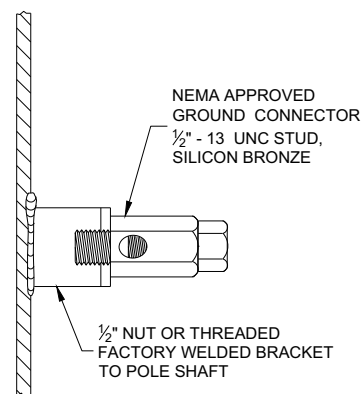
TYPICAL LUMINAIRE MAST ARM (DOUBLE) MOUNTING BRACKETS



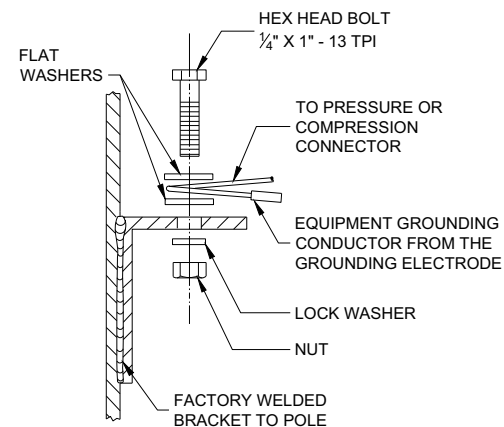
TYPICAL "J" HOOK LOCATION



BASE PLATE



TYPICAL GROUNDING CONNECTIONS
NUT, BOLT AND WASHERS SHALL BE STAINLESS STEEL



HARDWARE DETAILS FOR POLE MOUNTING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

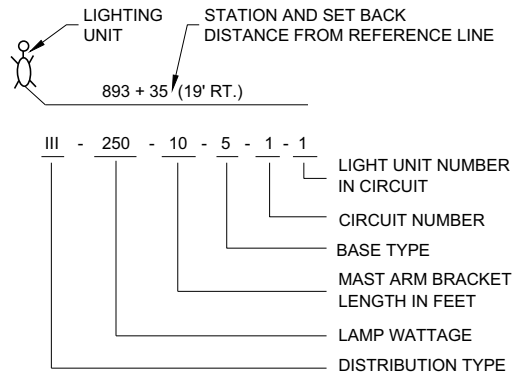
APPROVED
November 2018 /S/ Ahmet Demirbilek
DATE STATE ELECTRICAL ENGI 137
FHWA

GENERAL NOTES

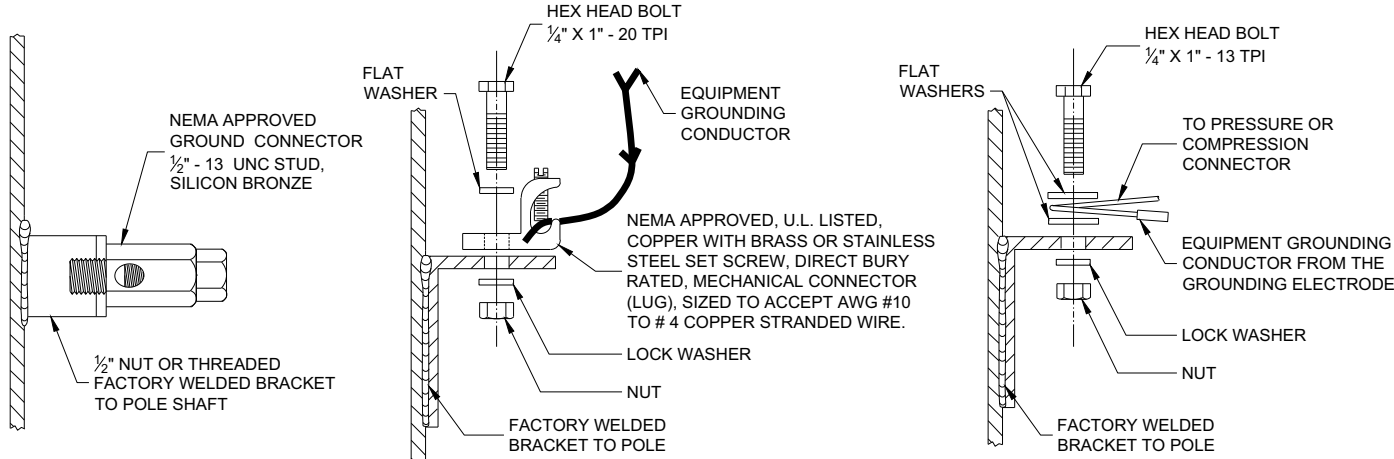
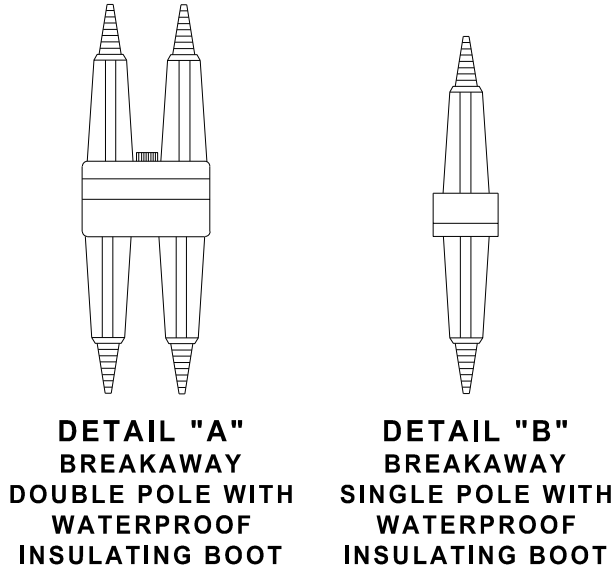
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

THE EQUIPMENT GROUND CONNECTOR SHALL BE TAPED WITH 3 WRAPS (MINIMUM) OF APPROVED RUBBER TAPE AND 3 WRAPS (MINIMUM) OF APPROVED VINYL TAPE TO COVER SHARP WIRE ENDS AFTER THE CONNECTION IS COMPLETED.

WHEN TRANSFORMER BASES ARE USED, ALL WIRING CONNECTIONS SHALL OCCUR WITHIN THE TRANSFORMER BASES.

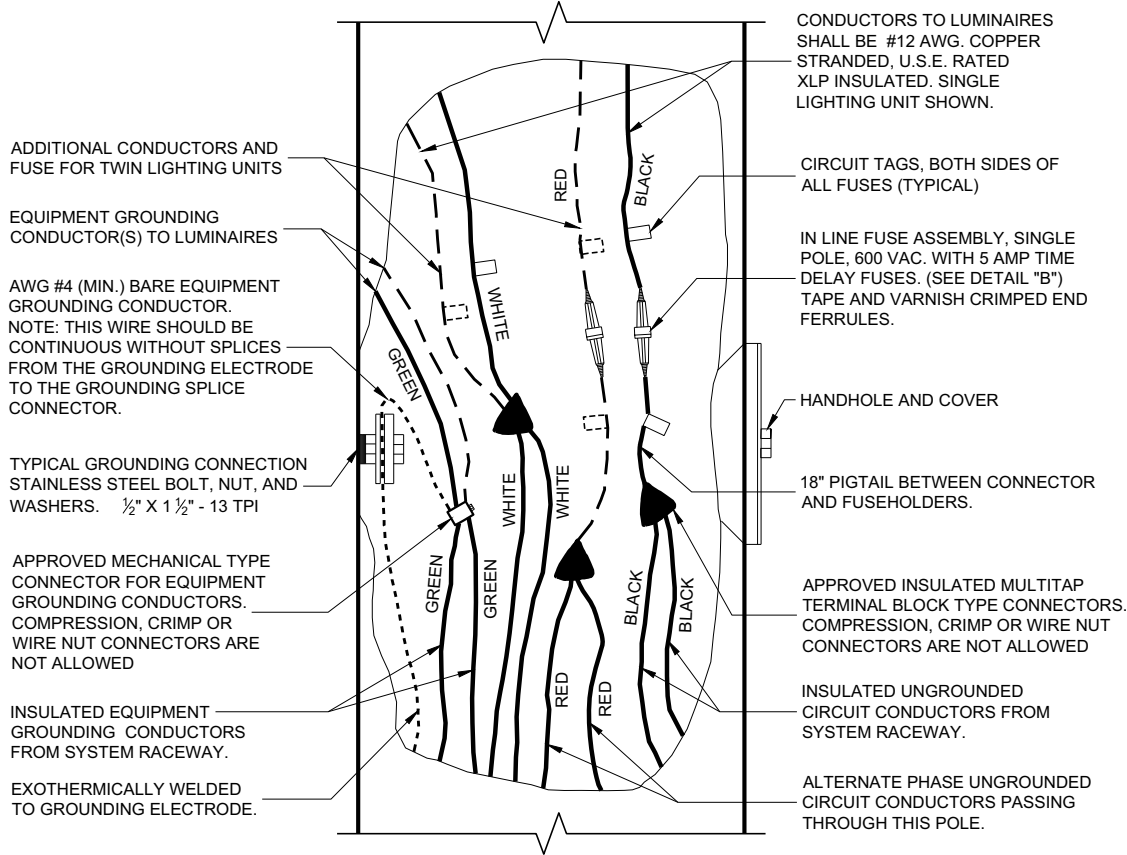


LIGHTING UNIT CODE (TYPICAL)

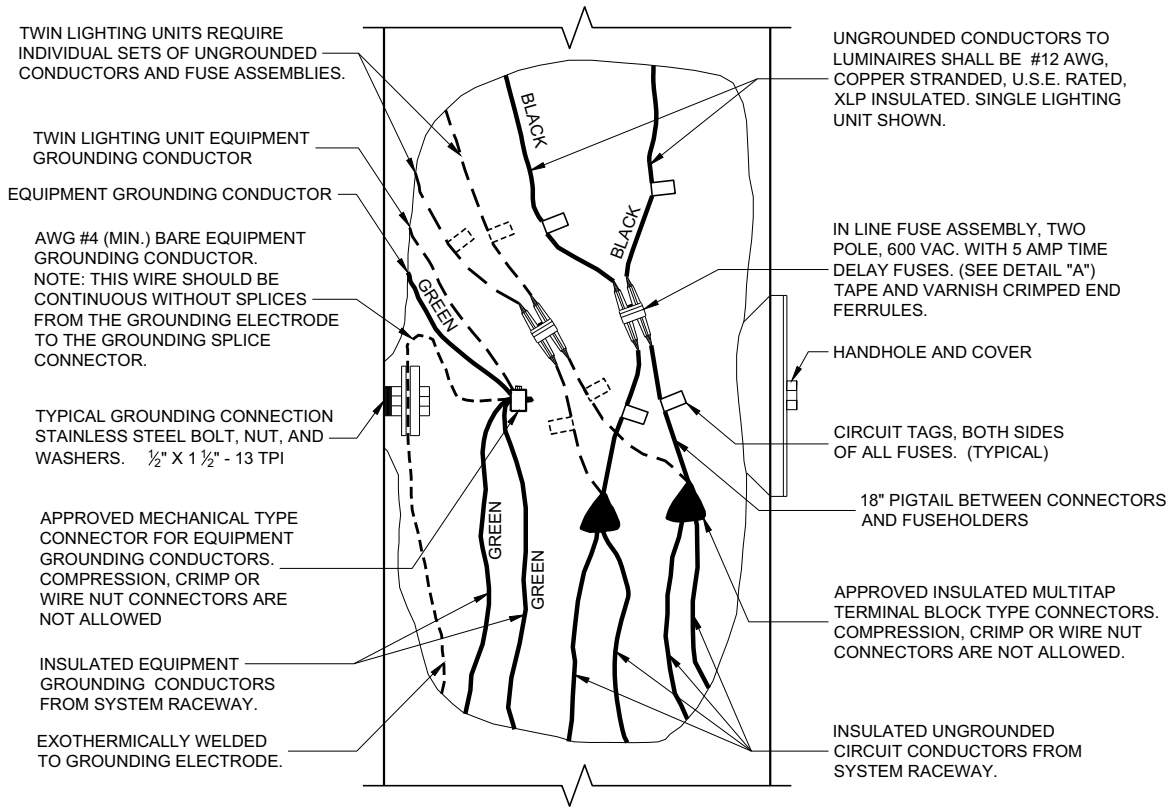


TYPICAL GROUNDING CONNECTIONS

NUT, BOLT AND WASHERS SHALL BE STAINLESS STEEL



3 WIRE - 120, 240 OR 480 VAC (UNGROUND ED CONDUCTORS) WITH GROUNDING CONDUCTOR AND EQUIPMENT GROUNDING CONDUCTOR

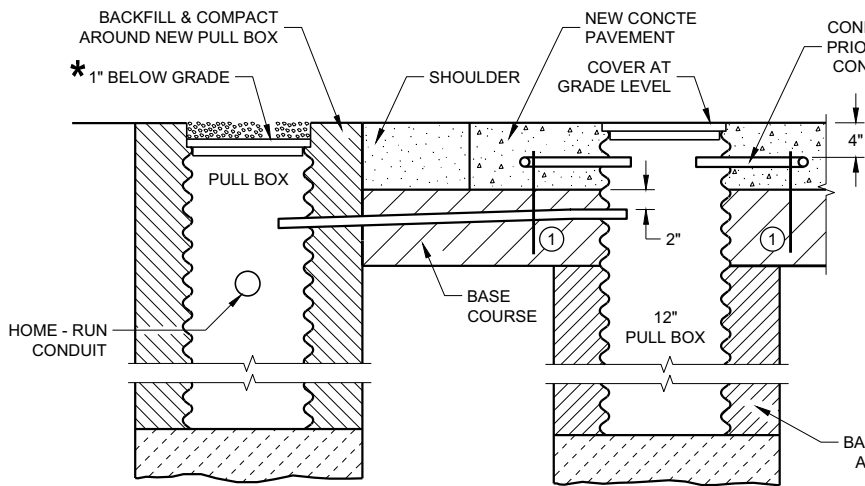


2 WIRE - 240 OR 480 VAC (UNGROUND ED CONDUCTORS) WITH EQUIPMENT GROUNDING CONDUCTOR

NON - FREEWAY LIGHTING UNIT POLE WIRING

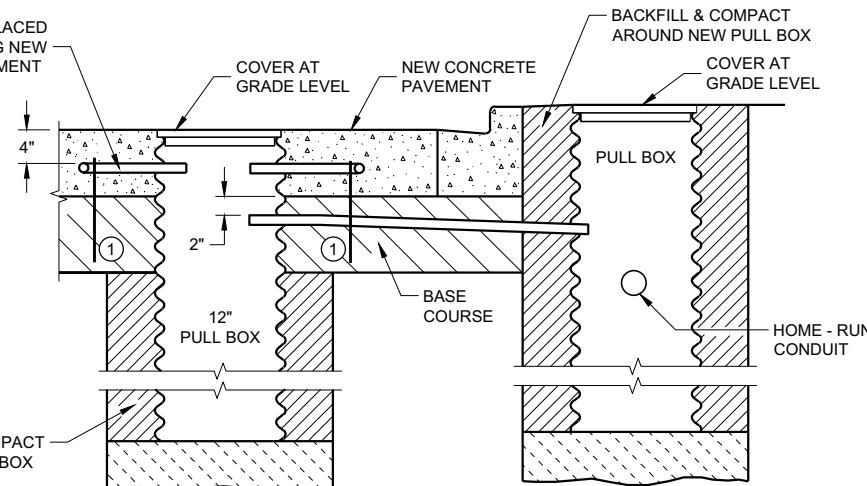
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2018 /S/ Ahmet Demirbilek
DATE STATE ELECTRICAL ENGI 138
FHWA



**SECTION A - A
NO CURB AND GUTTER
LOOP DETECTOR INSTALLATION DETAIL**

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



**SECTION B - B
CURB AND GUTTER
LOOP DETECTOR INSTALLATION DETAIL**

GENERAL NOTES

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

PITCH LEAD OUT CONDUIT TO DRAIN TO ROADSIDE PULL BOX.

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

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

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

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

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

ANY PVC LEADOUT CONDUIT CONTAINING MORE THAN ONE TWISTED PAIR OF LOOP LEAD WIRE SHALL BE 2".

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

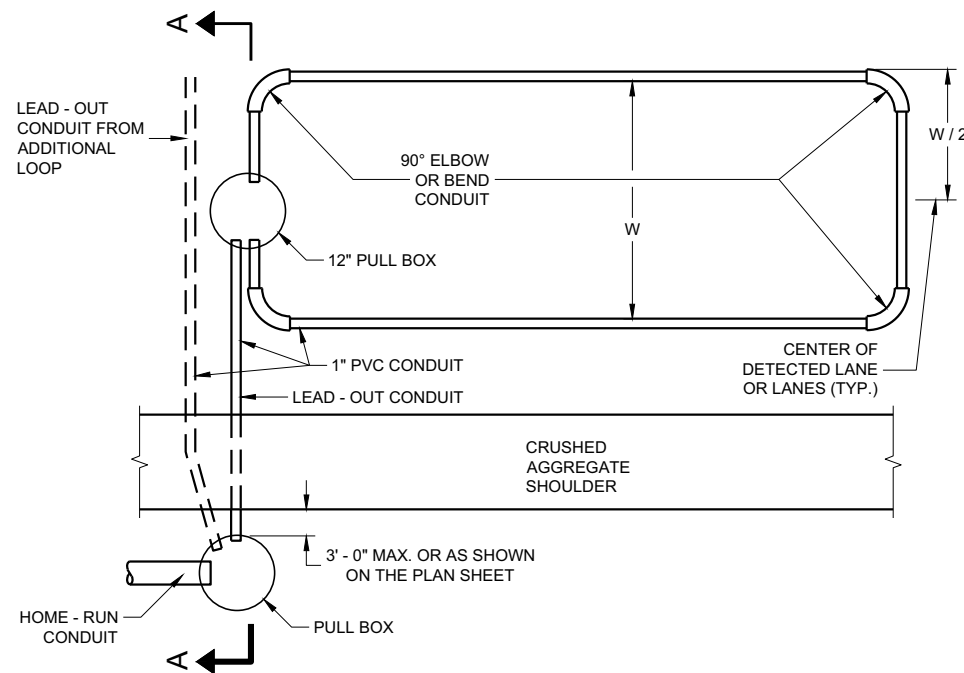
SPLICES OF LOOP WIRE TO LEAD-IN CABLE SHALL BE MADE ONLY IN PULL BOXES AT THE SIDE OF THE ROAD.

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

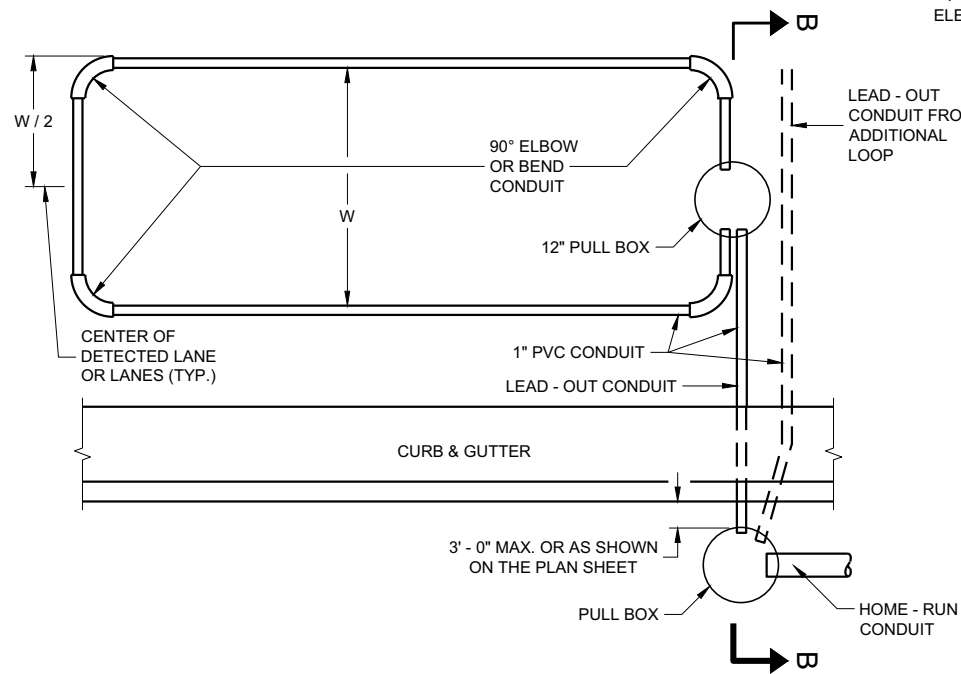
PROTECTION OF THE PULL BOX IN THE BASE COURSE, AND THE RELATED CONDUITS SHALL BE REQUIRED AFTER INSTALLATION AND BEFORE NEW CONCRETE PAVEMENT IS POURED.

12" PULL BOXES IN PAVEMENT SHALL BE CORRUGATED STEEL ONLY.

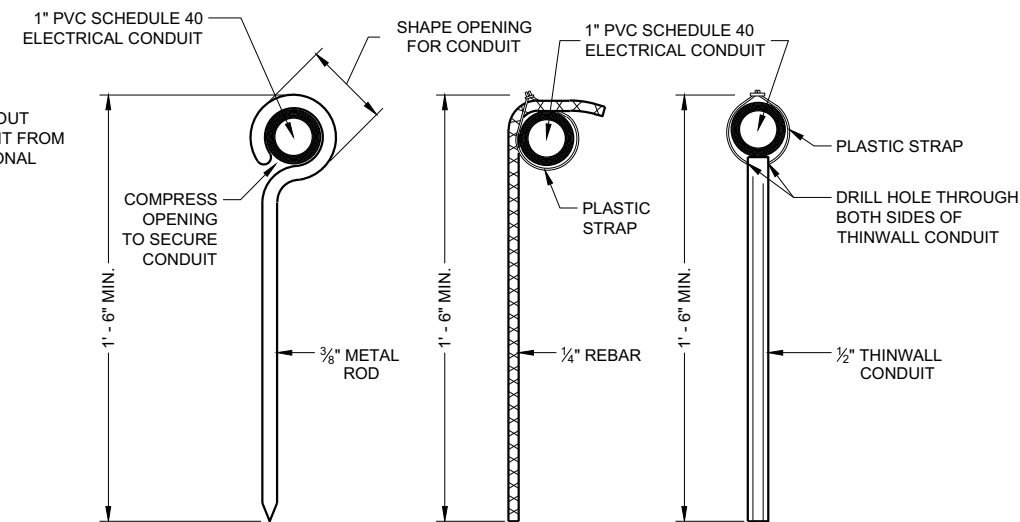
① HOLD DOWN PINS TO HOLD CONDUIT DURING POUR.



**TYPICAL PLAN OF LOOP DETECTOR
WITH 12" PULLBOX**



**TYPICAL PLAN OF LOOP DETECTOR
WITH 12" PULLBOX**

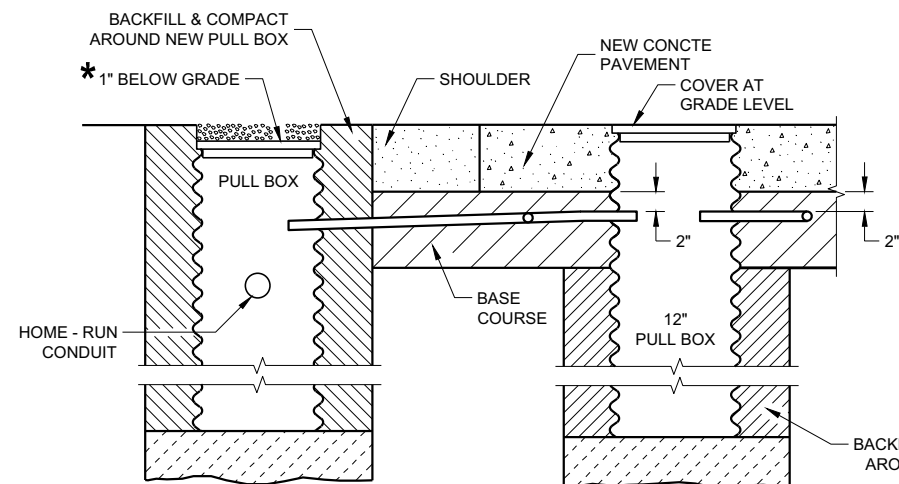


TYPICAL DETAILS FOR HOLD DOWN PINS ①

LOOP DETECTOR INSTALLED IN NEW CONCRETE PAVEMENT ROUND CSCP PULLBOX

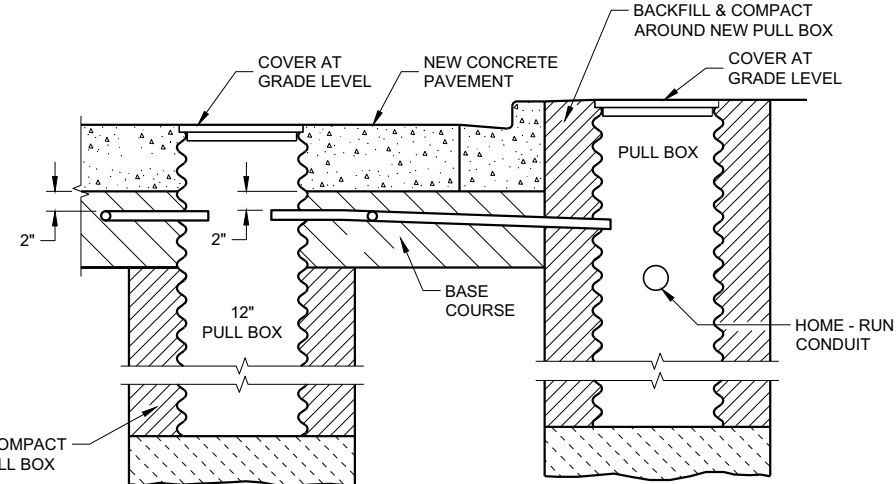
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2018 /S/ Ahmet Demirebilek
DATE STATE ELECTRICAL ENGI 139
FHWA



SECTION A - A
NO CURB AND GUTTER
LOOP DETECTOR INSTALLATION DETAIL

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



SECTION B - B
CURB AND GUTTER
LOOP DETECTOR INSTALLATION DETAIL

GENERAL NOTES

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

PITCH LEAD OUT CONDUIT TO DRAIN TO ROADSIDE PULL BOX.

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

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

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

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

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

ANY PVC LEADOUT CONDUIT CONTAINING MORE THAN ONE TWISTED PAIR OF LOOP LEAD WIRE SHALL BE 2".

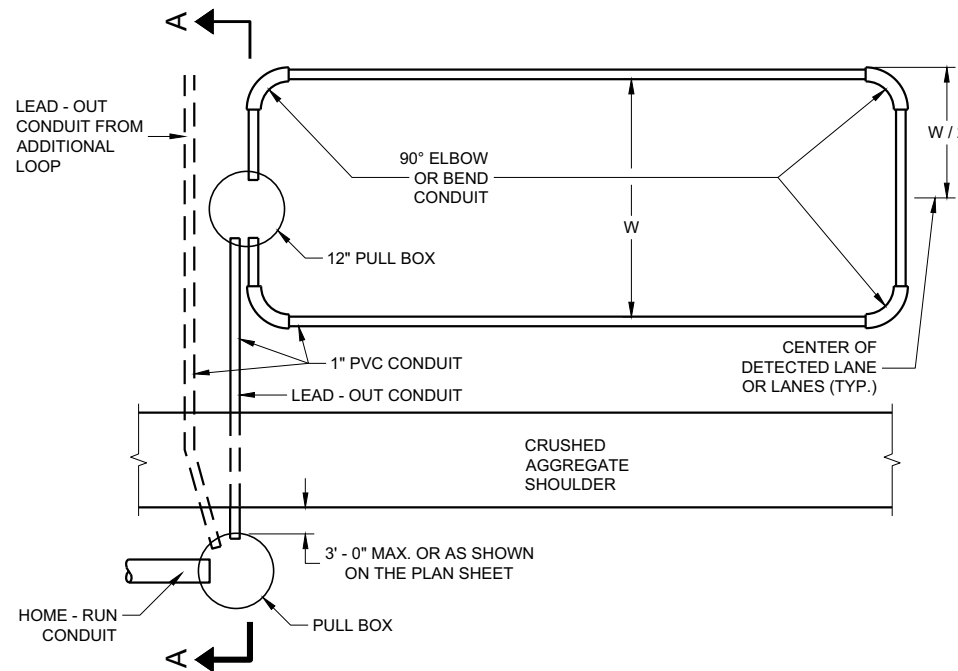
THE #12 AWG LOOP WIRE FROM THE LOOP TO THE ROADSIDE PULL BOX, SHALL BE HAND TWISTED AT LEAST 3 TWISTS PER FOOT BEFORE INSTALLATION.

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

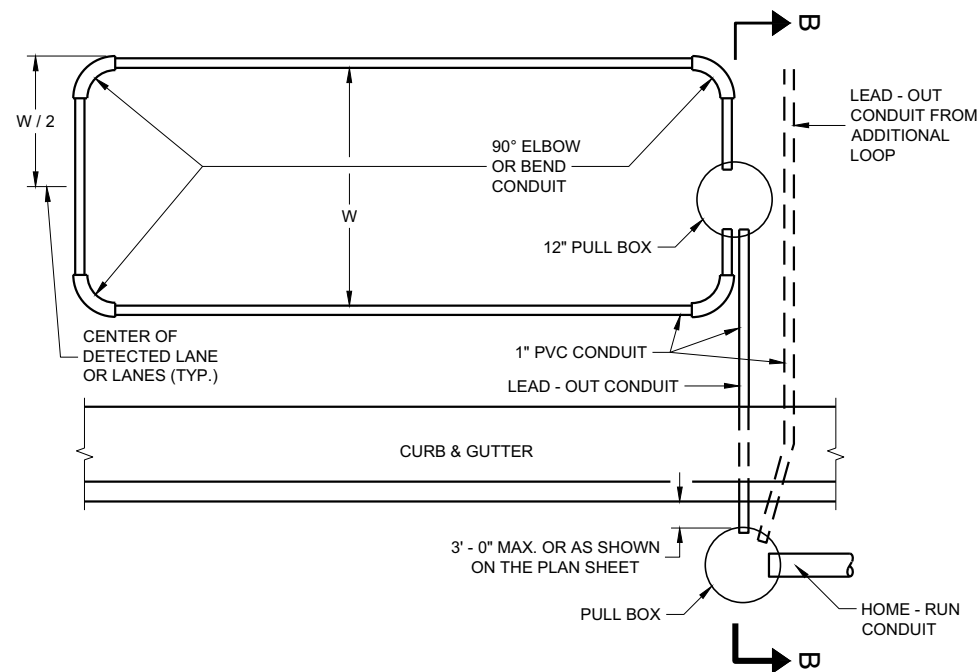
THE #12 AWG LOOP WIRE SHALL BE INSTALLED FROM THE ROADSIDE PULL BOX, INTO THE PULL BOX IN THE PAVEMENT, THROUGH THE LOOP CONDUIT, BACK TO THE ROADSIDE PULL BOX, AND BE INSTALLED IN ONE NON-SPLICED CONTINUOUS LENGTH.

PROTECTION OF THE CONDUIT, CONDULET, PULL BOX SHALL BE REQUIRED AFTER INSTALLATION AND BEFORE NEW CONCRETE PAVEMENT IS POURED.

12" PULL BOXES IN PAVEMENT SHALL BE CORRUGATED STEEL ONLY.



TYPICAL PLAN OF LOOP DETECTOR
WITH 12" PULLBOX

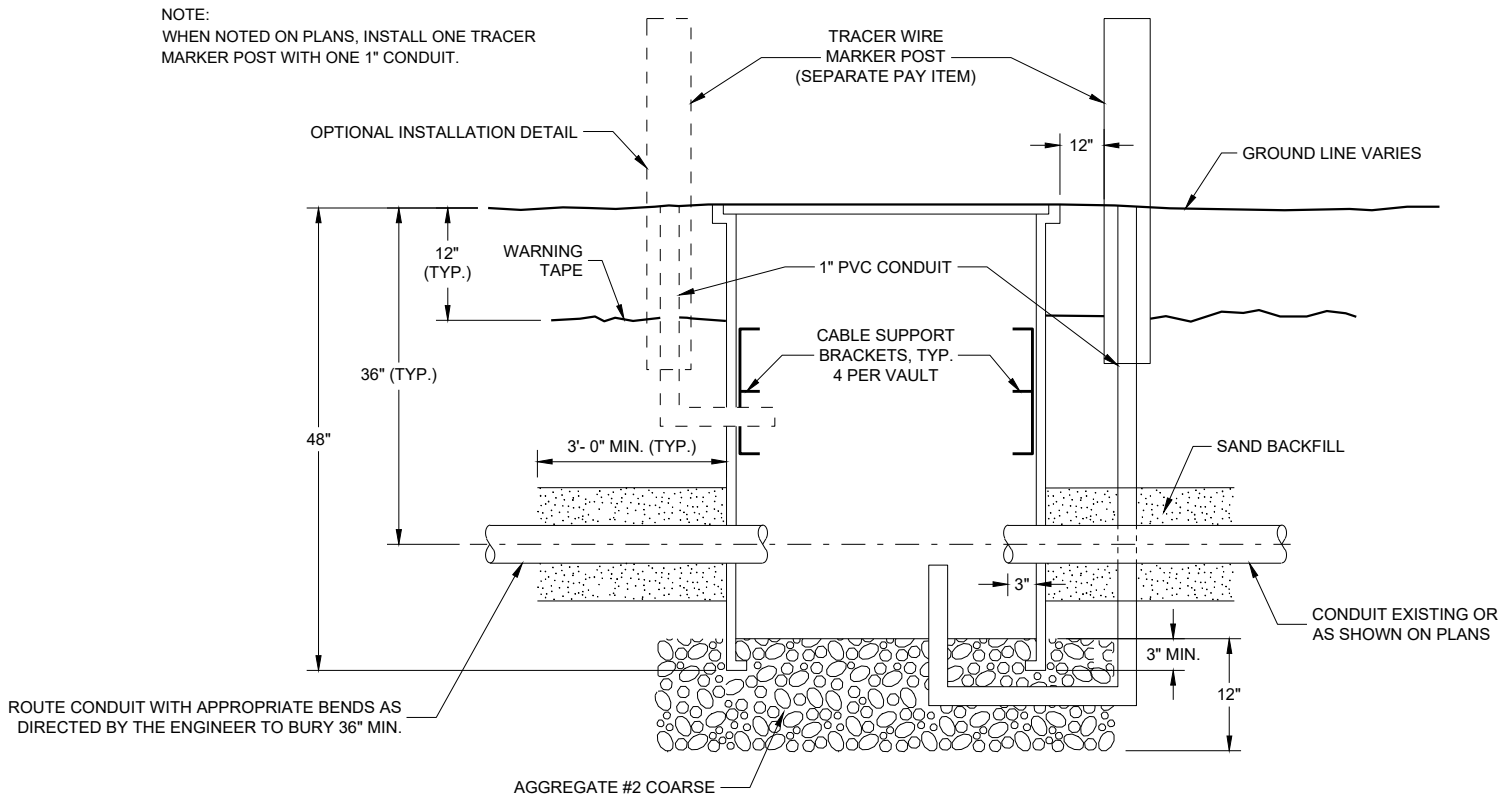


TYPICAL PLAN OF LOOP DETECTOR
WITH 12" PULLBOX

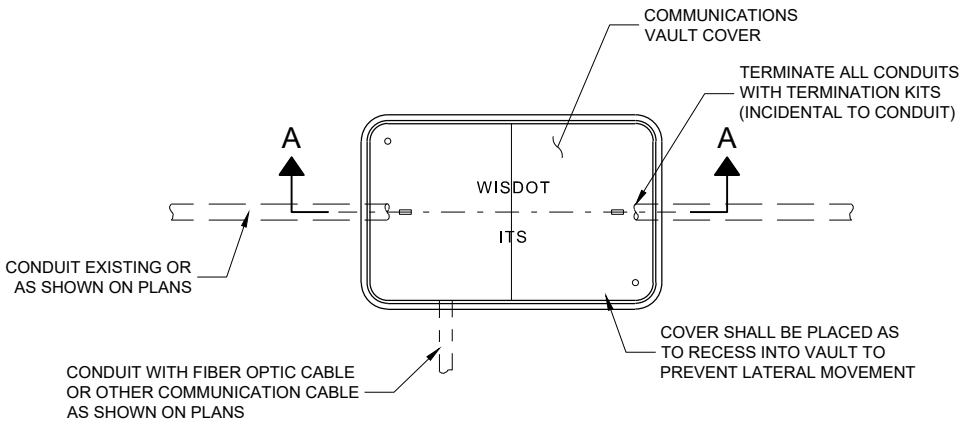
LOOP DETECTOR PLACED IN
CRUSHED AGGREGATE BASE
(NEW CONCRETE PAVEMENT)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2018 /S/ Ahmet Demirelek
DATE STATE ELECTRICAL ENGI 140
FHWA



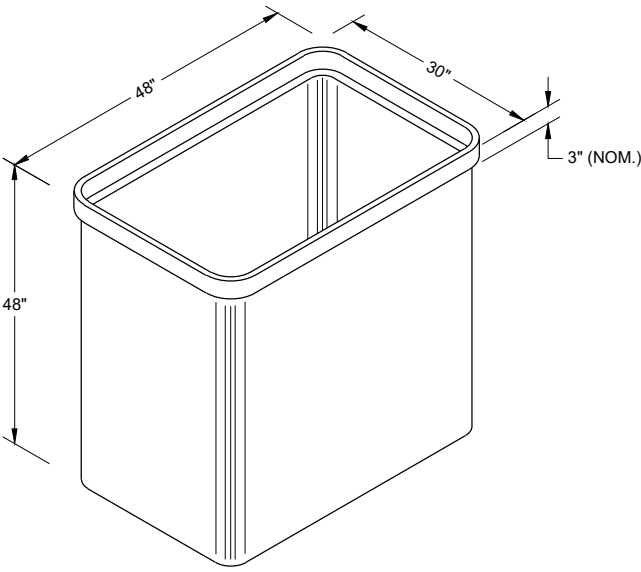
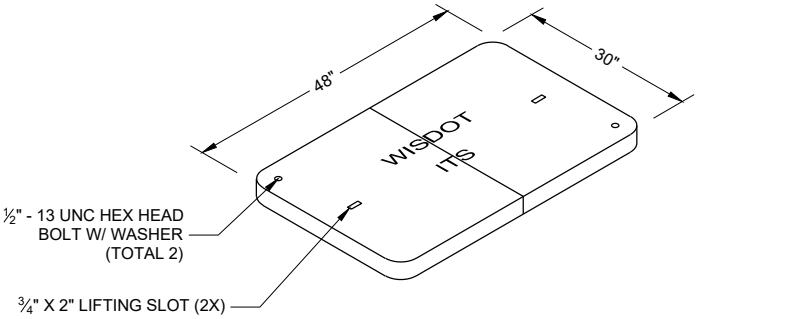
SECTION A - A



PLAN VIEW
COMMUNICATIONS VAULT TYPE 1

GENERAL NOTES

- PROVIDE VAULT WITH OPEN BASE.
- COVER SHALL HAVE A MINIMUM DESIGN LOAD OF 15,000 LBS AND SHALL LOCK.
- ALL OPENINGS IN STRUCTURE MUST BE MACHINED AT TIME OF FABRICATION, OR PUNCH DRIVEN AT TIME OF PLACEMENT.
- VAULTS SHALL BE OF ONE-PIECE CONSTRUCTION. TWO-PIECE/STACKABLE VAULTS WILL NOT BE PERMITTED.
- FIELD PLACEMENT OF COMMUNICATIONS VAULTS SHALL BE AS DIRECTED BY THE ENGINEER.
- FIBER TRACER MARKER POSTS SHALL BE CONSTRUCTED WITH HIGH-IMPACT PLASTIC MATERIAL WHICH IS FADE RESISTANT AND UV STABLE. ALL HARDWARE SHALL BE STAINLESS STEEL AND CONTAIN A MINIMUM OF FIVE STANDARD TERMINALS.



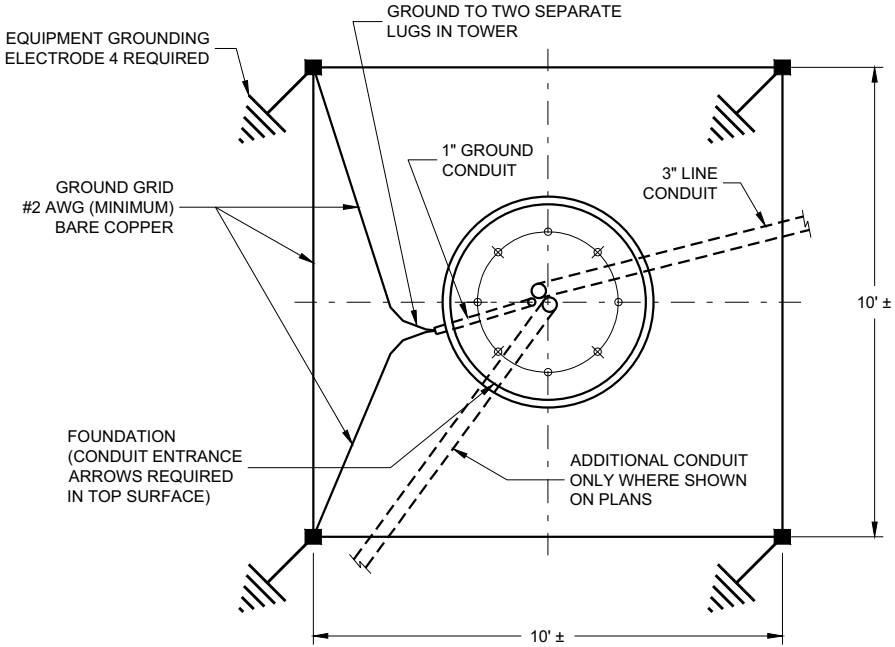
ISOMETRIC VIEW

COMMUNICATION VAULT
TYPE 1

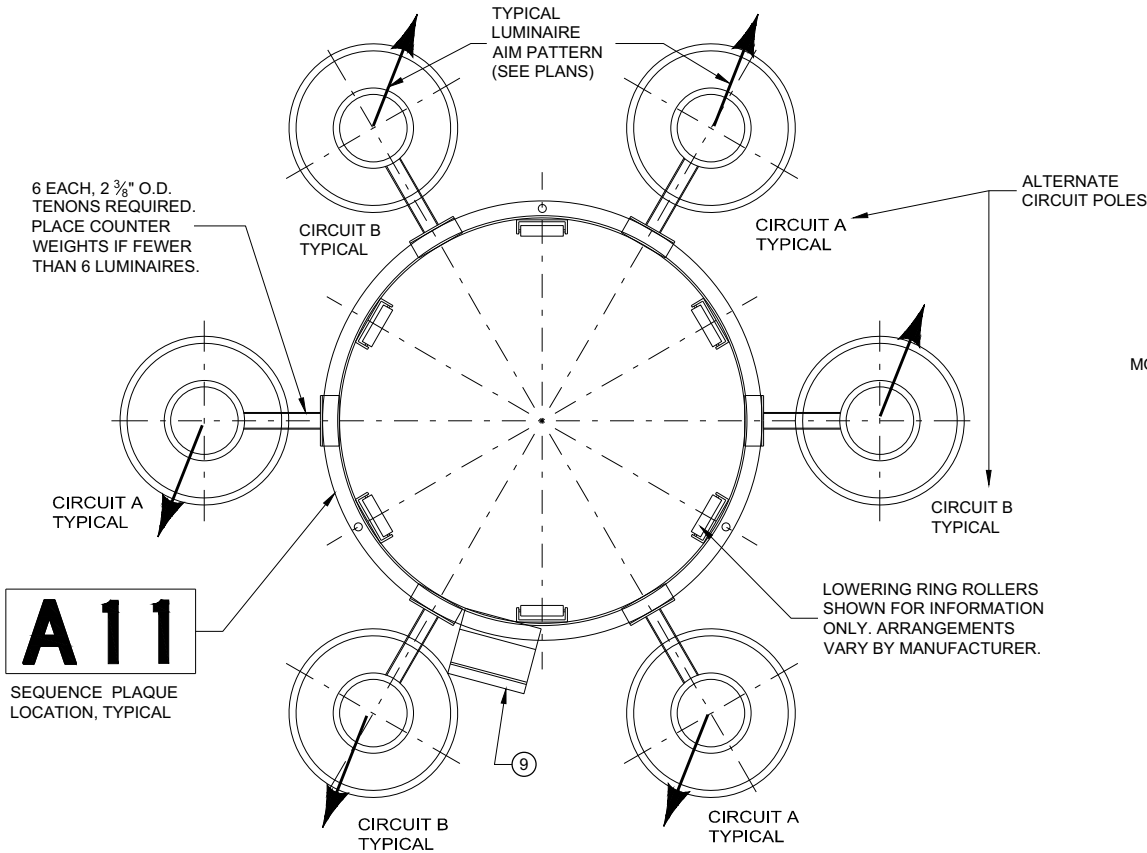
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2017 /S/ Ahmet Demirbilek
DATE STATE ELECTRICAL ENGI 141

FHWA



EQUIPMENT GROUNDING GRID AND FOUNDATION ELECTRICAL DETAILS



LOWERING RING OPTICS PLAN
1 - ϕ CASE SHOWN; 3 - ϕ CASE SIMILAR

OVER CURRENT AND POWER CORD SCHEDULE

LINE VOLTAGE	HAND HOLE BREAKERS	INDIVIDUAL LUMINAIRE FUSES	POWER CORD	PRONGS ON LOAD BREAK DISCONNECT
1 - ϕ 120 / 240VAC: 3 WIRE	2 - 30A, 1P, 277VAC	20A	10 - 3 + GND "SO"	A, B, N, GND
1 - ϕ 240 / 480VAC: 3 WIRE	2 - 30A, 1P, 277VAC	10A	10 - 3 + GND "SO"	A, B, N, GND
3 - ϕ 480Y / 277VAC: 4 WIRE	3 - 30A, 1P, 277VAC	10A	10 - 4 + GND "SO"	X, Y, Z, N, GND
3 - ϕ 208Y / 120VAC: 4 WIRE	3 - 30A, 1P, 277VAC	20A	10 - 4 + GND "SO"	X, Y, Z, N, GND
1 - ϕ 480VAC: 2 WIRE	1 - 20A, 2P, 600VAC	5A	10 - 3 + GND "SO"	A, B, N, GND

GENERAL NOTES

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

IN CASES WHERE THE PLANS SHOW LINE IN/LINE OUT DISTRIBUTION SYSTEMS, FURNISH FEED-THROUGH LUGS IN THE CIRCUIT BREAKER ENCLOSURE.

THE PLANS WILL SHOW WHICH CIRCUIT LEG(S) ARE CONNECTED TO EACH INSTALLATION.

FIELD RECODING OF UNGROUNDED CONDUCTORS IN TYPE "SO" CABLE MAY BE REQUIRED TO CONFORM TO SYSTEM COLOR CODING AS SHOWN IN THE PLANS.

USE TIME DELAY FUSE PER LUMINAIRE MANUFACTURER RECOMMENDATION.

CIRCUIT BREAKERS SHALL BE MINIMUM 14 kAIC AT THE VOLTAGE SHOWN.

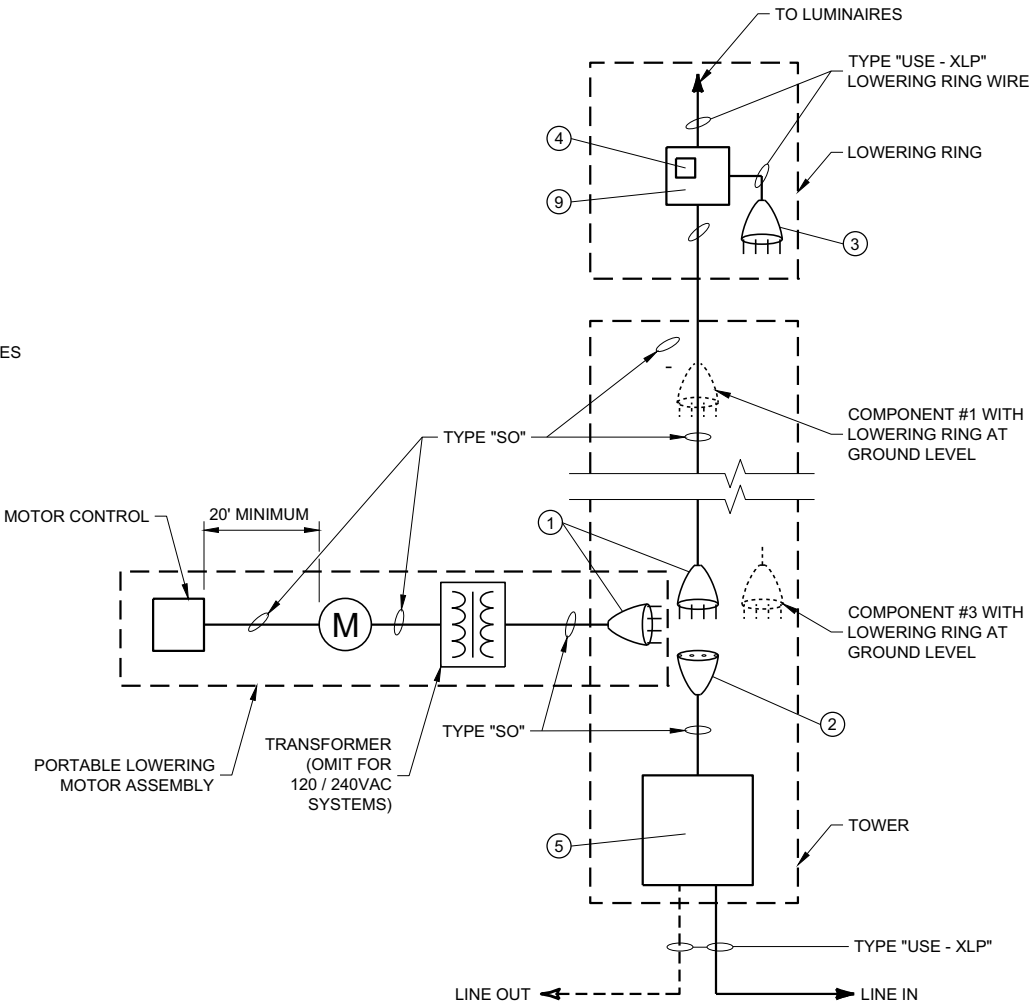
LOADBREAK DISCONNECTS SHALL BE MELTRIC TYPE "DR", 30 AMP, 600 VOLT. DO NOT SUBSTITUTE. FURNISH "FDP" FINGER/PALM DRAW PLATES (APPLIES TO THE PLUG AND RECEPTACLE ONLY, NOT TO THE APPLIANCE INLET). FURNISH "LP" MOISTURE PROTECTION (APPLIES TO THE PLUG ONLY, NOT TO THE RECEPTACLE OR THE APPLIANCE INLET).

SURGE ARRESTORS SHALL BE 650 VAC, 2P OR 3P AS REQUIRED.

CIRCUIT BREAKER ENCLOSURES SHALL BE NEMA 1, 100 AMP, 600 VOLT, 2P OR 3P AS REQUIRED, SURFACE MOUNT. IN ALL SYSTEMS, FURNISH A MINIMUM 4 - TERMINAL GROUND BUS. IN ISOLATED NEUTRAL SYSTEMS, ADDITIONALLY FURNISH A MINIMUM 1-TERMINAL NEUTRAL BUS. BUSES SHALL BE RATED FOR NO. 10 AWG THROUGH NO. 2 AWG CU.

LEGEND

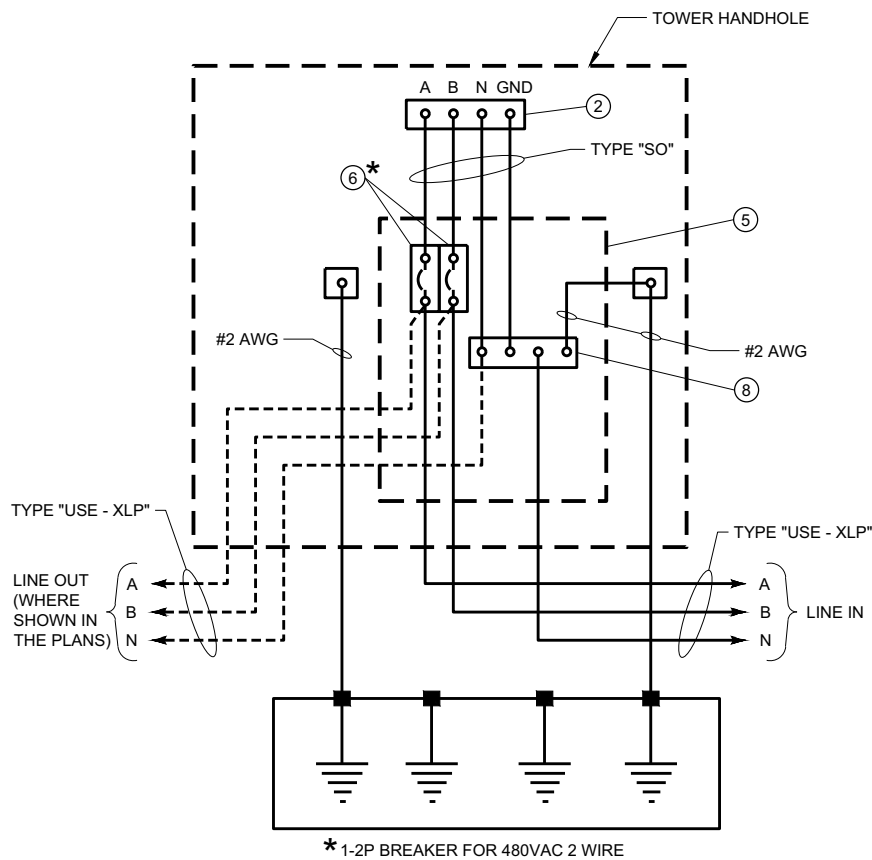
- P POLE (ELECTRICAL CIRCUIT)
- ϕ PHASE (ELECTRICAL CURRENT)
- EQUIPMENT GROUNDING ELECTRODE
- EXOTHERMIC WELD
- ① LOADBREAK DISCONNECT - MALE PLUG
- ② LOADBREAK DISCONNECT - FEMALE RECEPTACLE
- ③ LOADBREAK DISCONNECT - MALE APPLIANCE INLET
- ④ SURGE ARRESTOR - 2P OR 3P AS REQUIRED
- ⑤ CIRCUIT BREAKER ENCLOSURE
- ⑥ CIRCUIT BREAKER
- ⑦ CIRCUIT BREAKER ENCLOSURE NEUTRAL BUS
- ⑧ CIRCUIT BREAKER ENCLOSURE EQUIPMENT GROUNDING BUS
- ⑨ LOWERING RING JUNCTION BOX (WEEP HOLE REQUIRED)
- ⑩ TERMINAL STRIP



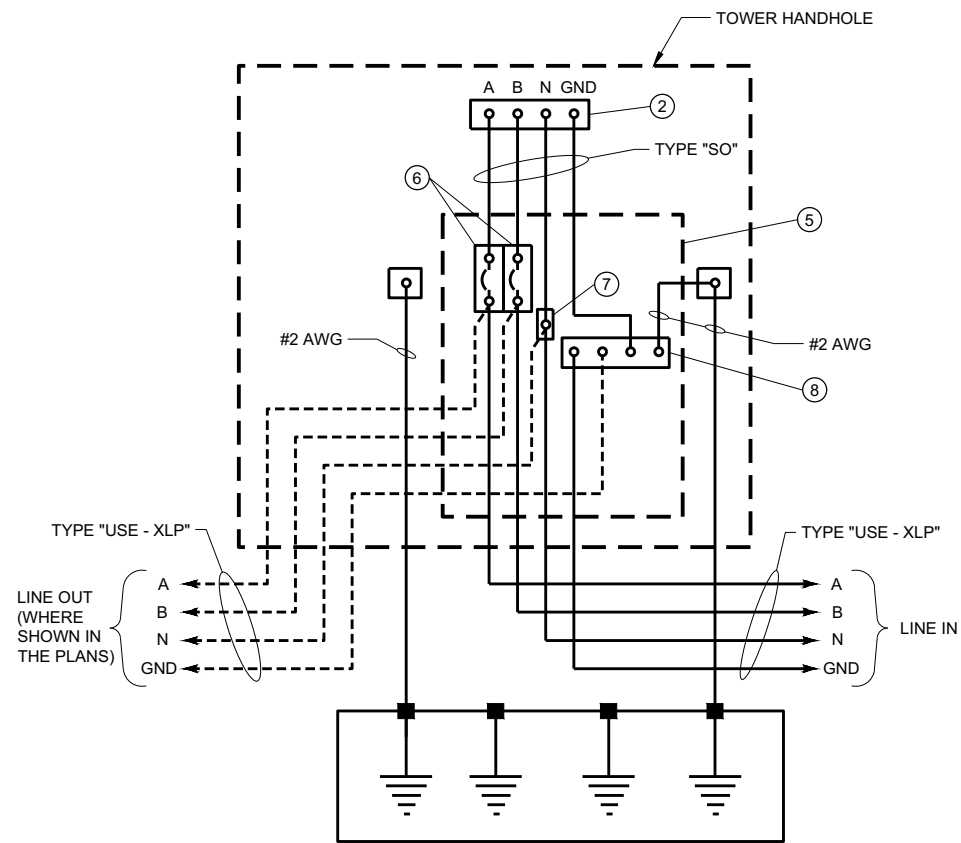
ONE LINE DIAGRAM
ANY LINE VOLTAGE PER OVER CURRENT AND POWER CORD SCHEDULE

ELECTRICAL DETAILS
HIGH MAST LIGHTING

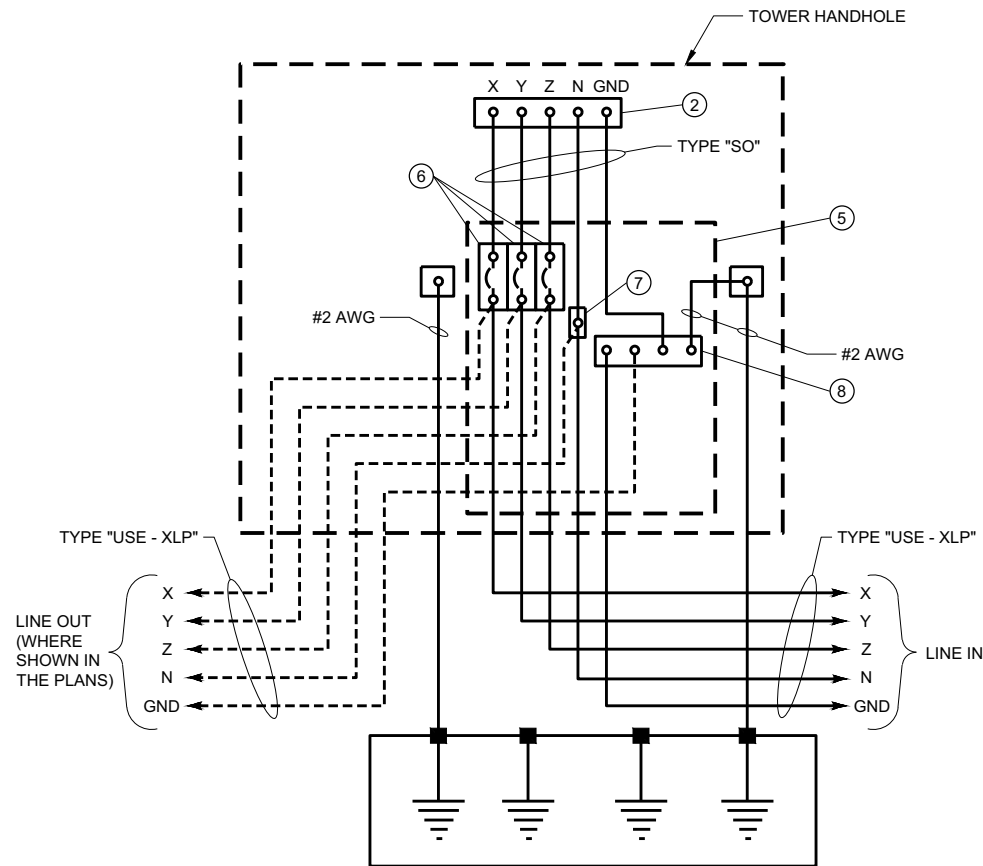
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 142



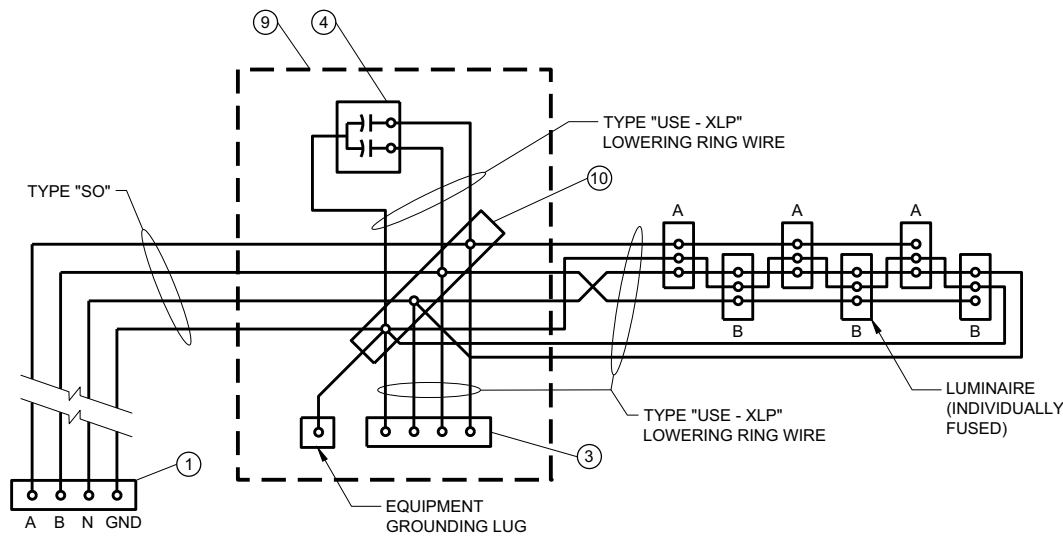
TYPICAL WIRING DIAGRAM-HANDHOLE
GROUNDED NEUTRAL SYSTEM
1 - ϕ 240 / 480VAC 3 WIRE OR 480VAC 2 WIRE



TYPICAL WIRING DIAGRAM-HANDHOLE
ISOLATED NEUTRAL SYSTEM
1 - ϕ 120 / 240VAC OR 240 / 480VAC 3 WIRE



TYPICAL WIRING DIAGRAM-HANDHOLE
ISOLATED NEUTRAL SYSTEM
3 - ϕ 480 / 277VAC 4 WIRE OR 3 - ϕ 208Y / 120VAC 4 WIRE



LOWERING RING JUNCTION BOX
WIRING DIAGRAM
TYPICAL 1 - ϕ CASE SHOWN; 3 - ϕ CASE SIMILAR

LEGEND

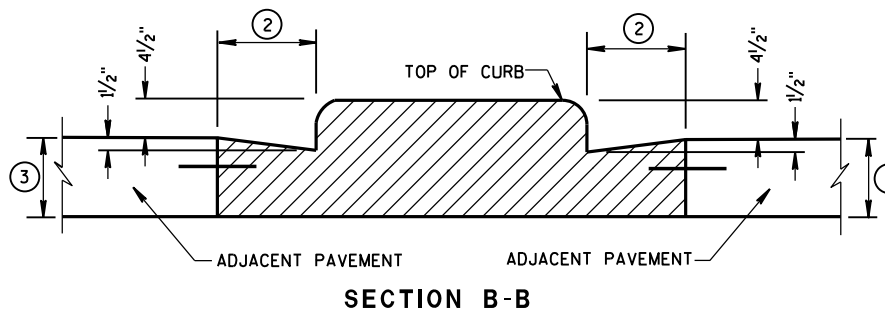
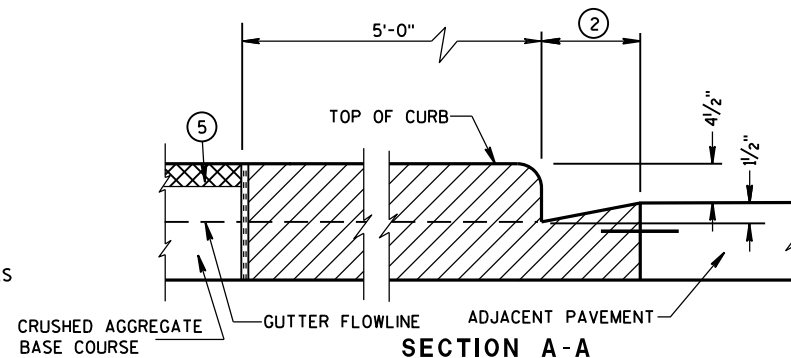
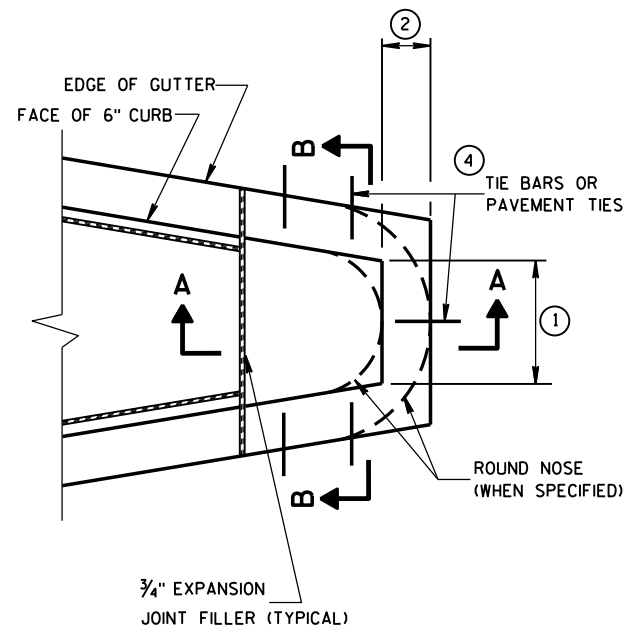
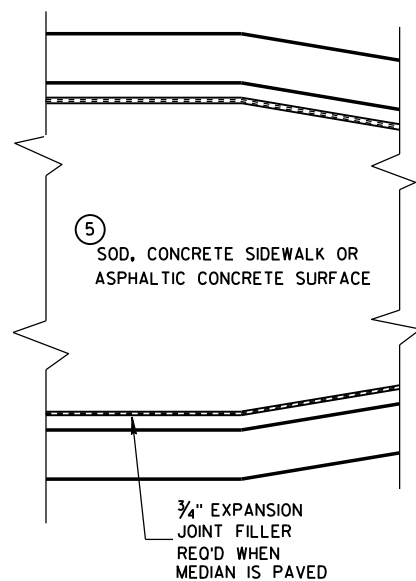
- | | |
|----------------|--------------------------------|
| A, B, X, Y, Z, | UNGROUNDING CIRCUIT CONDUCTORS |
| N | GROUNDED CIRCUIT CONDUCTORS |
| GND | EQUIPMENT GROUNDING CONDUCTOR |
| P | POLE (ELECTRICAL CIRCUIT) |
| ϕ | PHASE (ELECTRICAL CURRENT) |
| AIC | AMPERE INTERRUPTING CAPACITY |
| | HANDHOLE GROUND LUG |
| | CIRCUIT BREAKER 1P |
| | SURGE ARRESTOR |
| | FUSED LUMINAIRE |
| | EQUIPMENT GROUNDING ELECTRODE |
| | TERMINAL |
| | SPLICE |
| | CONDUCTOR |
| | EXOTHERMIC WELD |

- | | |
|---|---|
| ① | LOADBREAK DISCONNECT - MALE PLUG |
| ② | LOADBREAK DISCONNECT - FEMALE RECEPTACLE |
| ③ | LOADBREAK DISCONNECT - MALE APPLIANCE INLET |
| ④ | SURGE ARRESTOR - 2P OR 3P AS REQUIRED |
| ⑤ | CIRCUIT BREAKER ENCLOSURE |
| ⑥ | CIRCUIT BREAKER |
| ⑦ | CIRCUIT BREAKER ENCLOSURE NEUTRAL BUS |
| ⑧ | CIRCUIT BREAKER ENCLOSURE EQUIPMENT GROUNDING BUS |
| ⑨ | LOWERING RING JUNCTION BOX (WEEP HOLE REQUIRED) |
| ⑩ | TERMINAL STRIP |

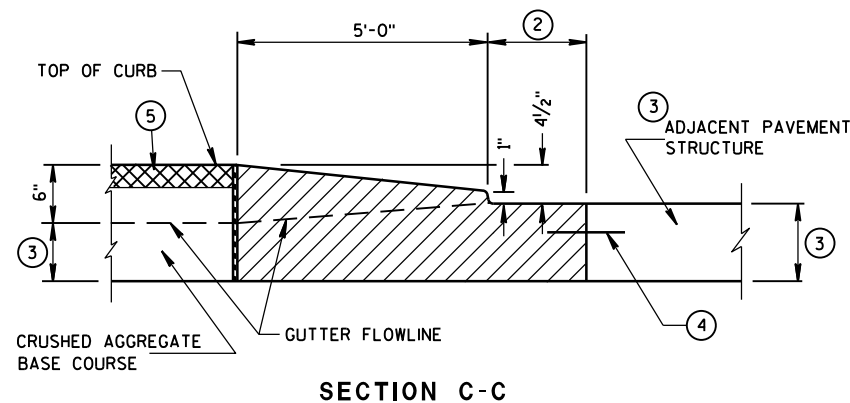
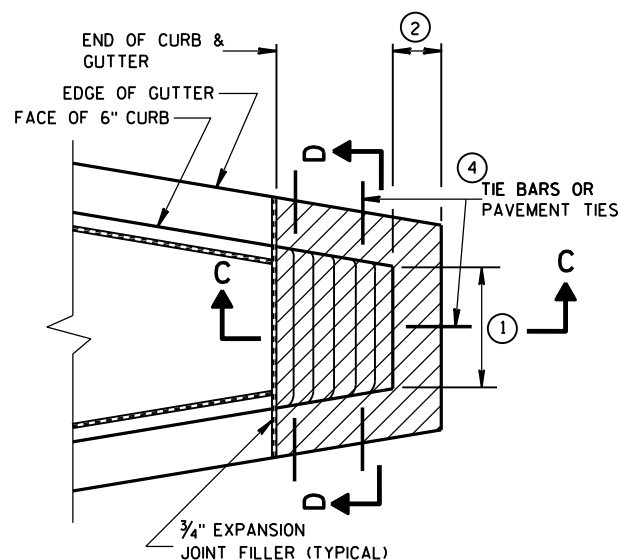
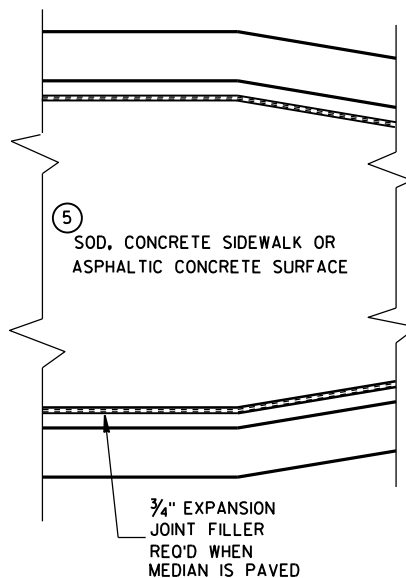
ELECTRICAL DETAILS
HIGH MAST LIGHTING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

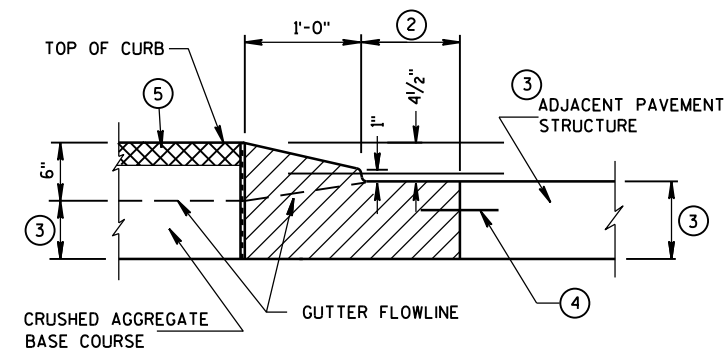
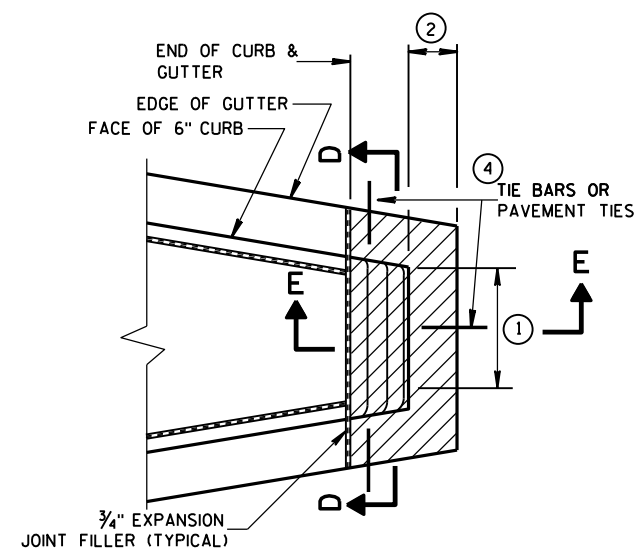
APPROVED
November 2018 /S/ Ahmet Demirelek
DATE STATE ELECTRICAL ENGI 143
FHWA



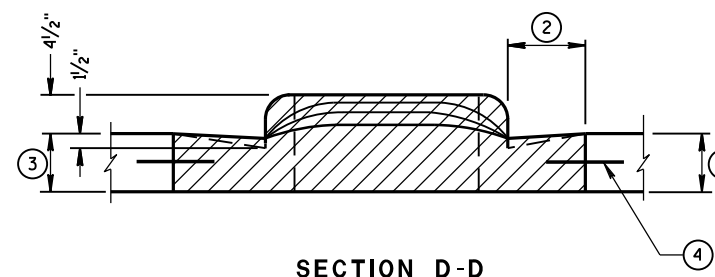
CONCRETE MEDIAN BLUNT NOSE DETAIL



CONCRETE MEDIAN SLOPED NOSE TYPE 1



CONCRETE MEDIAN SLOPED NOSE TYPE 2



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 SEE PLAN FOR MEDIAN NOSE WIDTH AND RADIUS (FOR ROUND NOSE ALTERNATE).
- ② WIDTH OF GUTTER TO MATCH EXISTING ADJACENT GUTTER OR AS SPECIFIED ELSEWHERE IN THE PLAN.
- ③ DEPTH EQUAL TO ADJACENT PAVEMENT. ADJACENT PAVEMENT STRUCTURE DETAILS ARE SHOWN ON THE PLAN. TYPICAL OPTIONS ARE:
 - (1) NEW OR EXISTING CONCRETE PAVEMENT.
 - (2) ASPHALTIC CONCRETE PAVEMENT OVER NEW OR EXISTING CONCRETE BASE COURSE.
 - (3) ASPHALTIC CONCRETE PAVEMENT OVER CRUSHED AGGREGATE BASE COURSE.

- ④ TIE BARS OR PAVEMENT TIES REQUIRED IN NEW CONCRETE PAVEMENT OR CONCRETE BASE COURSE. TIE BARS SHALL BE NO. 4 X 2'-0" SPACED AT 2'-0" C-C.

PAVEMENT TIES REQUIRED IN EXISTING CONCRETE BASE COURSE. PAVEMENT TIES SHALL BE NO. 6 X 1'-0" SPACED AT 3'-0" C-C INSTALLED ON A HORIZONTAL SKEW OF 6:1. THE DIRECTION OF SKEW SHALL ALTERNATE AFTER EVERY ONE OR TWO BARS.

- ⑤ SURFACE TYPE AND DETAILS ARE SHOWN ELSEWHERE IN THE PLAN.

CONCRETE MEDIAN NOSE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

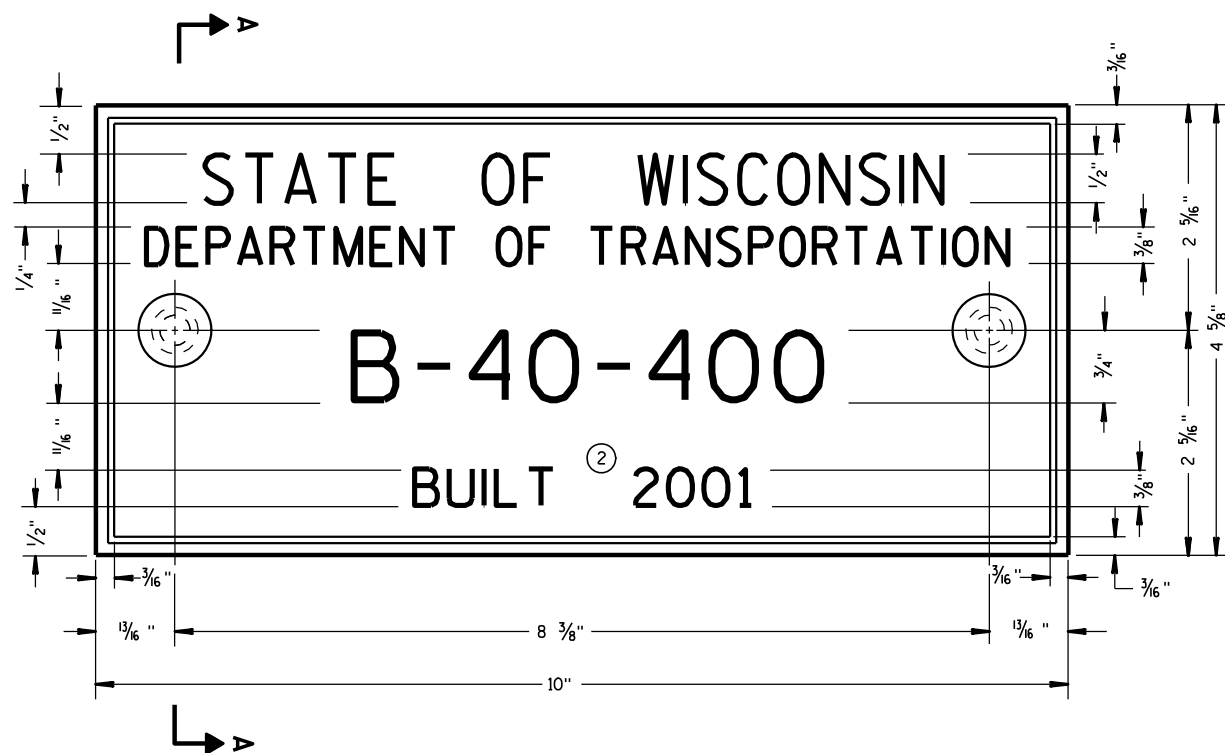
6/8/2006

DATE

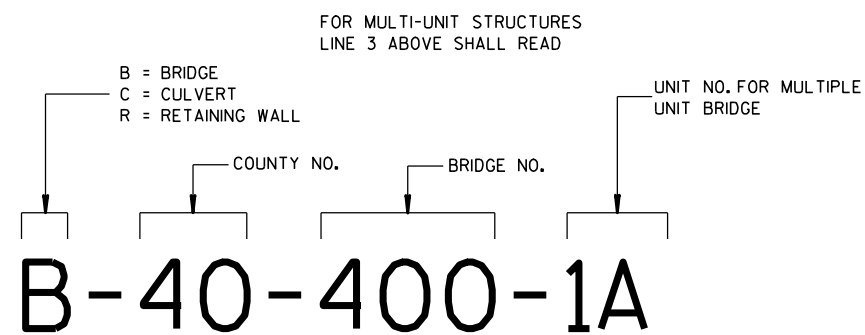
FHWA

/S/ Jerry H. Zogg
ROADWAY STANDARDS & 144
ENGINEER

4T



TYPICAL NAME PLATE
(BRIDGES, CULVERTS, AND RETAINING WALLS)



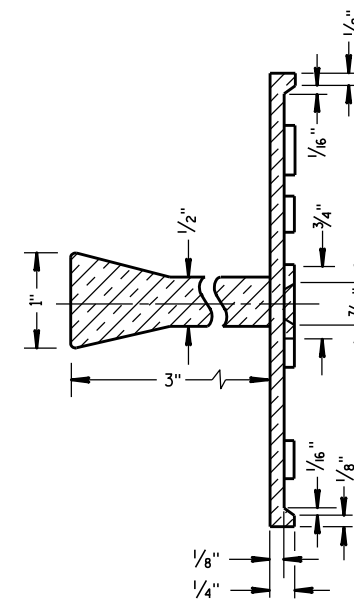
**NUMBERING DESIGNATION
MULTI-UNIT STRUCTURES**

GENERAL NOTES

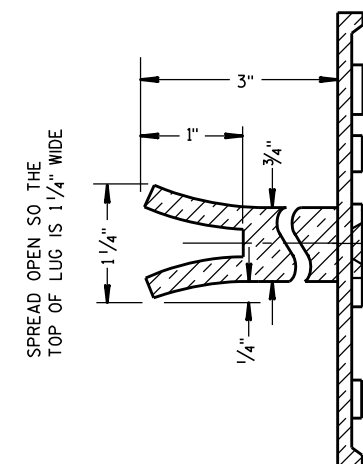
NAME PLATES TO BE INSTALLED ON BRIDGES, CULVERTS, AND RETAINING WALLS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS.

THE BRIDGE NUMBER AND YEAR BUILT SHOWN ON THIS DRAWING ARE EXAMPLES ONLY. SEE CONSTRUCTION PLANS FOR INDIVIDUAL NUMBERING AND YEAR BUILT.

- ① EPOXY RESIN SHALL BE FROM AN APPROVED MANUFACTURER AND USED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
- ② REHABILITATION OF AN EXISTING STRUCTURE SHOULD USE THE DATE OF ORIGINAL STRUCTURE CONSTRUCTION.

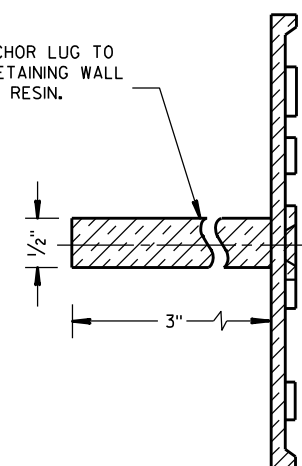


SECTION A-A



ALTERNATE LUG

- ① ADHERE ANCHOR LUG TO PRECAST RETAINING WALL WITH EPOXY RESIN.



ALTERNATE LUG
(FOR ATTACHMENT TO PRECAST STRUCTURES)

**NAME PLATE
(STRUCTURES)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

3/26/10
DATE

FHWA

/S/ Scot Beck
CHIEF STRUCTURAL DEVELOPER

145

JEER

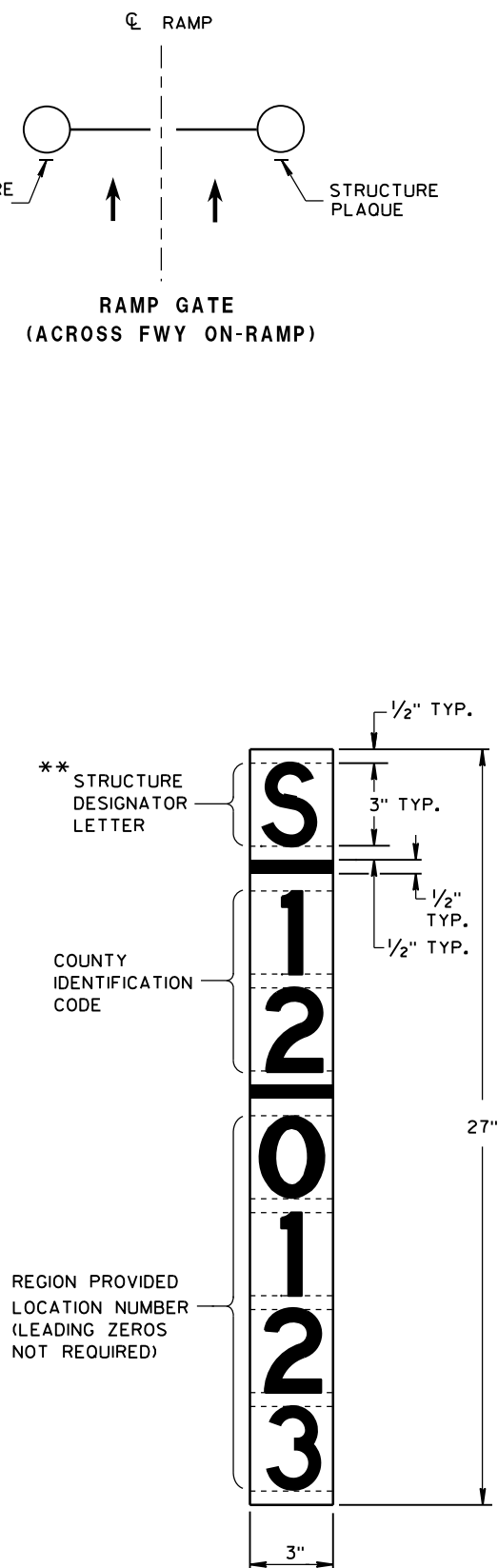
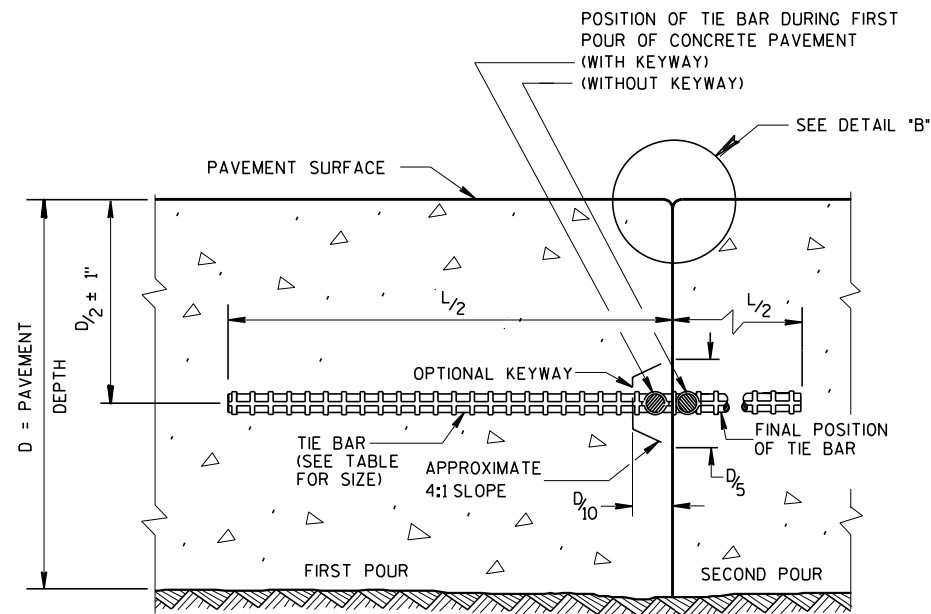
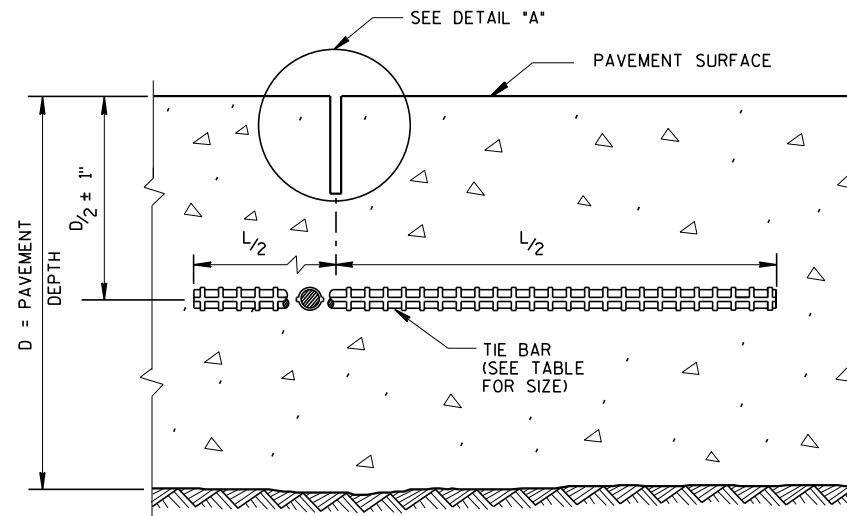


Diagram illustrating the dimensions of a 27" wide sign. The sign displays the characters S, 1, 2, 0, 2, 7, 7. The total width is 27". The spacing between characters is indicated as 1/2" TYP. (typical). The spacing between the first and second characters (S and 1) is specifically marked as 3".

APPROVED
12/4/2012 /S/ Travis Feltes
DATE STATE TRAFFIC ENGINE 146 SIGN
FHWA



CONSTRUCTION JOINT



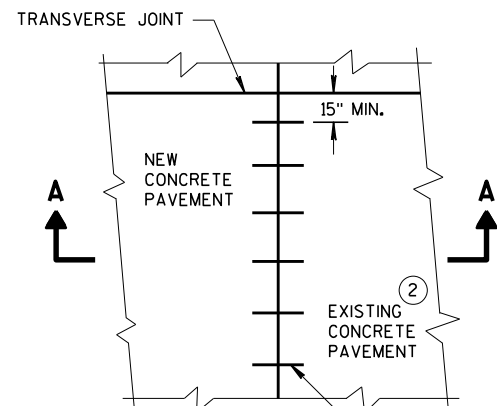
SAWED JOINT

GENERAL NOTES

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

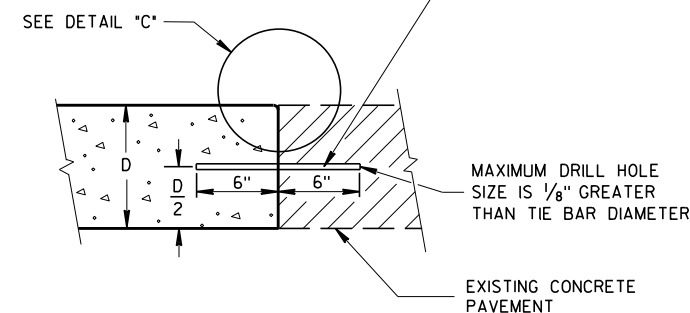
CORRELATE LONGITUDINAL JOINTS WITH LANE LINES WHEN POSSIBLE.

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

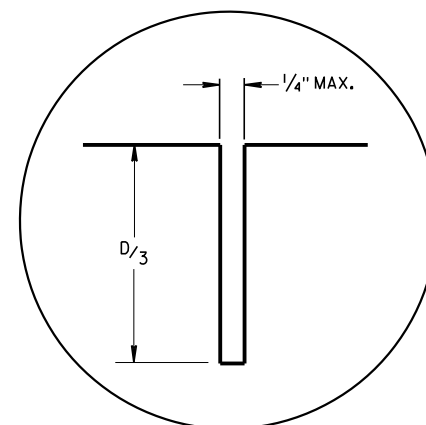


PLAN VIEW

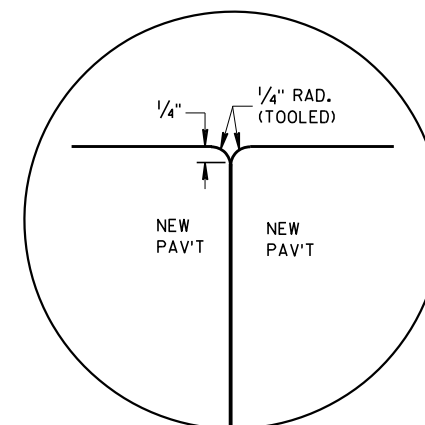
NO. 6 TIE BARS SPACED 30" C-C, INSTALLED PERPENDICULAR TO THE LONGITUDINAL JOINT. ①



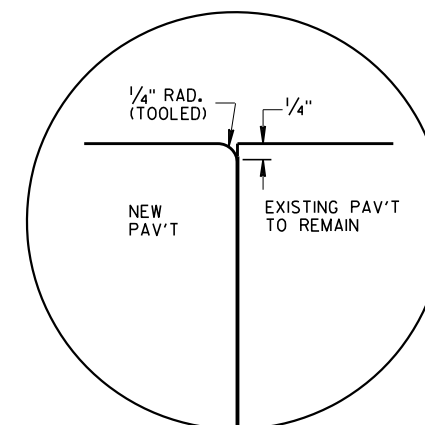
SECTION A-A
LONGITUDINAL CONSTRUCTION JOINT
TIE BARS ANCHORED
INTO EXISTING PAVEMENT



DETAIL "A"



DETAIL "B"



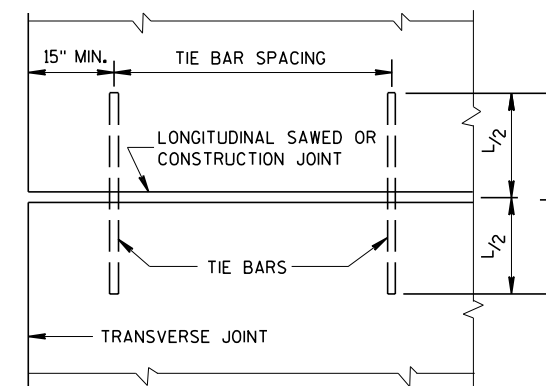
DETAIL "C"

TIE BAR TABLE

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

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

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

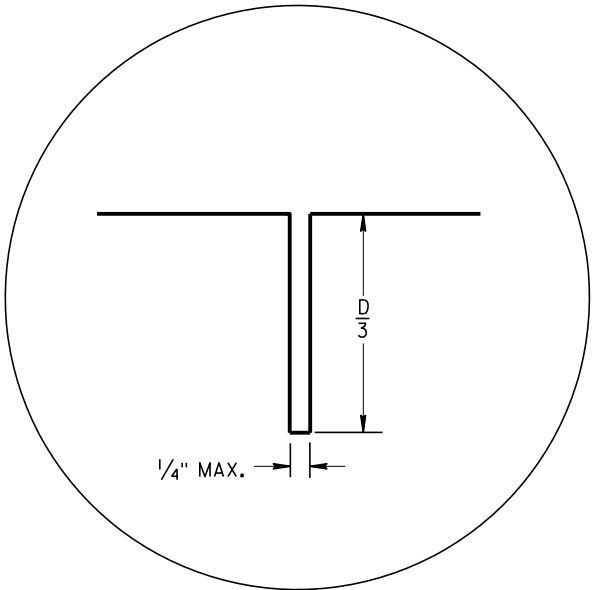


PLAN VIEW
SHOWING LOCATION OF TIE BARS

CONCRETE PAVEMENT
LONGITUDINAL JOINTS AND TIES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

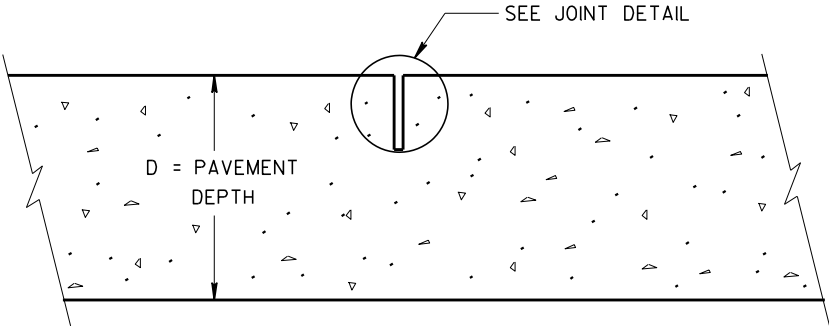
APPROVED
March 2018 /S/ Peter Kern
DATE PAVEMENT SUPE 147
FHWA



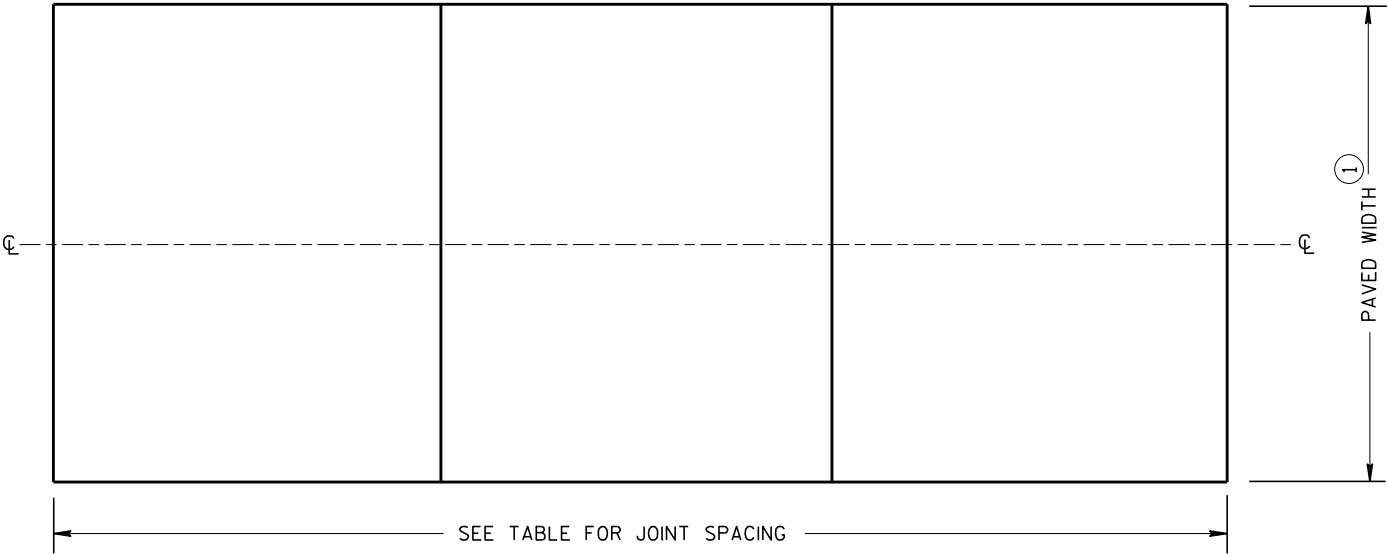
JOINT DETAIL

PAVEMENT DEPTH AND JOINT SPACING TABLE

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



CONTRACTION JOINT

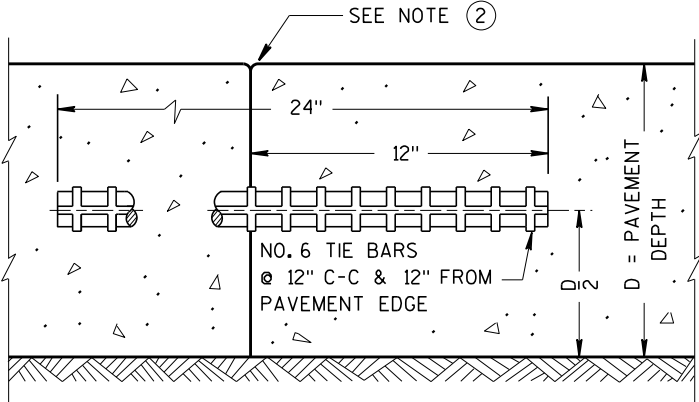


CONTRACTION JOINT LOCATIONS

GENERAL NOTES

CONTRACTION JOINTS
CONSTRUCT TRANSVERSE CONTRACTION JOINTS NORMAL TO THE CENTERLINE.
LOCATE AND ORIENT CONTRACTION JOINTS THROUGH INTERSECTIONS AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

- CONSTRUCTION JOINTS
LOCATE CONSTRUCTION JOINTS A MINIMUM OF 6 FEET FROM THE NEAREST CONTRACTION JOINT AND ALIGN PARALLEL TO THE CONTRACTION JOINTS.
FORM OR SAW CONSTRUCTION JOINTS.
THE CONTRACTOR MAY INSERT TIE BARS THROUGH THE HEADER BOARD AFTER THE CONCRETE HAS BEEN PLACED.
- ① REFER TO TYPICAL CROSS SECTIONS FOR PAVED WIDTH AND LOCATION OF LONGITUDINAL JOINTS.
 - ② PROVIDE A SMOOTH VERTICAL FACE FOR THE ENTIRE DEPTH OF THE PAVEMENT WHEN FORMING CONSTRUCTION JOINTS. PROVIDE A 1/4-INCH RADIUS AT FORMED JOINTS.

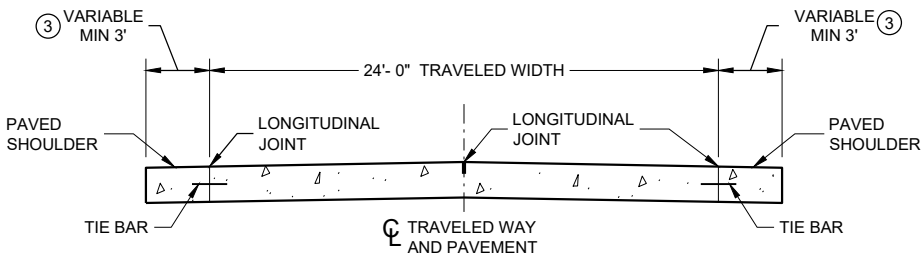


TIED TRANSVERSE CONSTRUCTION JOINT

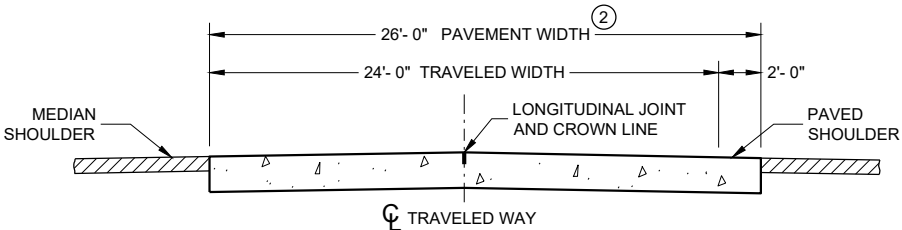
URBAN
NON-DOWELED CONCRETE
PAVEMENT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

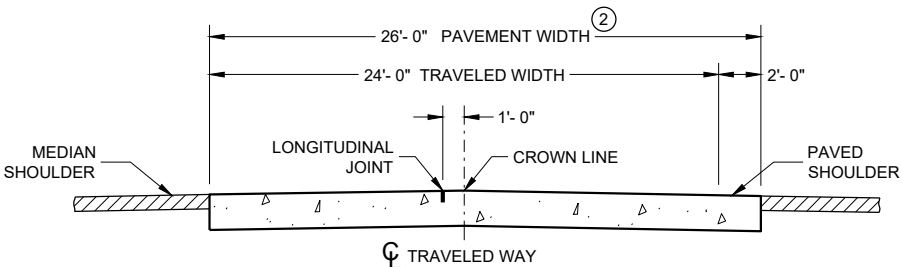
APPROVED
March 2018 /S/ Peter Kemper
DATE PAVEMENT SUP 148
FHWA



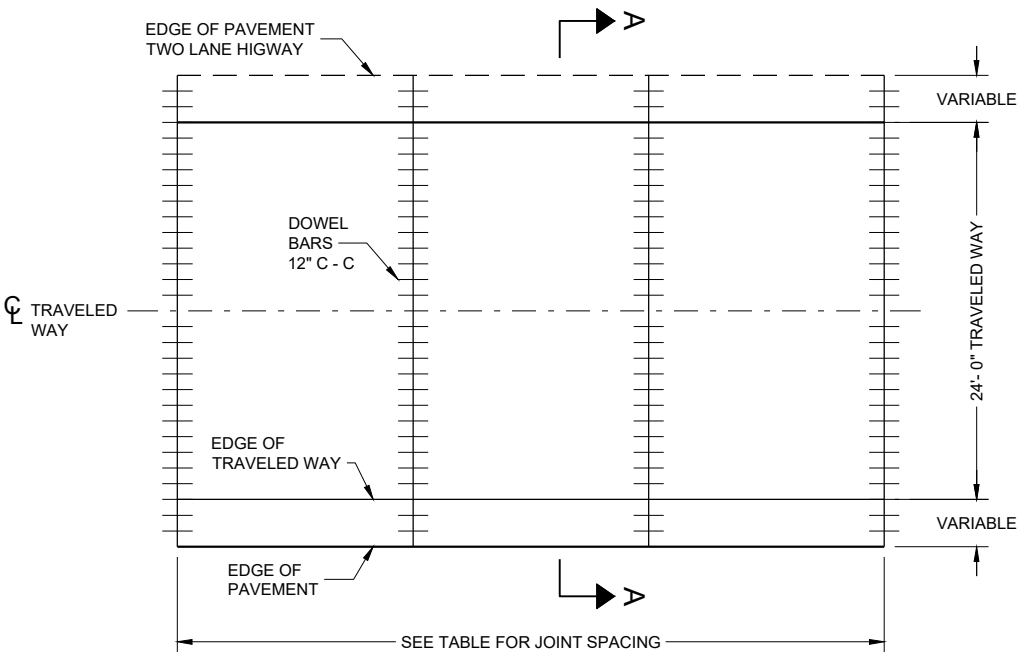
SECTION A - A
TWO-LANE TWO-WAY HIGHWAY



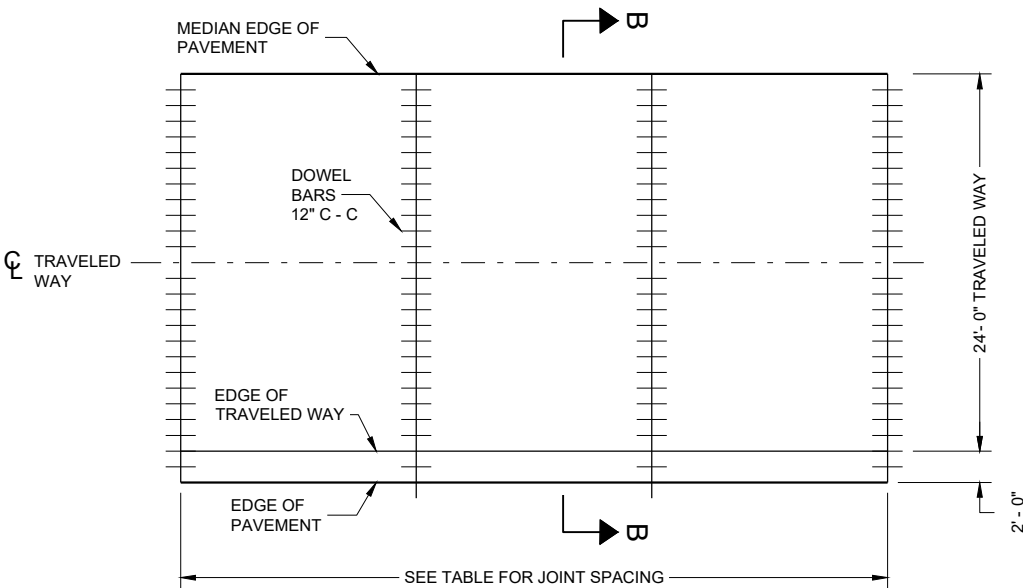
SECTION B - B
DIVIDED HIGHWAY



ALTERNATIVE SECTION B - B
DIVIDED HIGHWAY



CONTRACTION JOINT LAYOUT FOR
TWO-LANE TWO-WAY HIGHWAY



CONTRACTION JOINT LAYOUT FOR
DIVIDED HIGHWAY

GENERAL NOTES

CONTRACTION JOINTS

CONSTRUCT TRANSVERSE CONTRACTION JOINTS NORMAL TO THE CENTERLINE. SHOW THE LOCATION OF CONTRACTION JOINTS THROUGH INTERSECTIONS ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

INSTALL DOWEL BARS PARALLEL TO THE PAVEMENT CENTERLINE AND PAVEMENT SURFACE.

FOR PAVEMENT SLABS OF VARYING WIDTHS, LOCATE THE OUTER MOST DOWEL BAR SO THAT THE CENTER OF THE BAR IS A MINIMUM OF 6 INCHES FROM AND A MAXIMUM OF 18 INCHES FROM THE FREE EDGE OF PAVEMENT.

CONSTRUCTION JOINTS

LOCATE CONSTRUCTION JOINTS A MINIMUM OF 6 FEET FROM THE NEAREST CONTRACTION JOINT AND ALIGN PARALLEL TO THE CONTRACTION JOINTS.

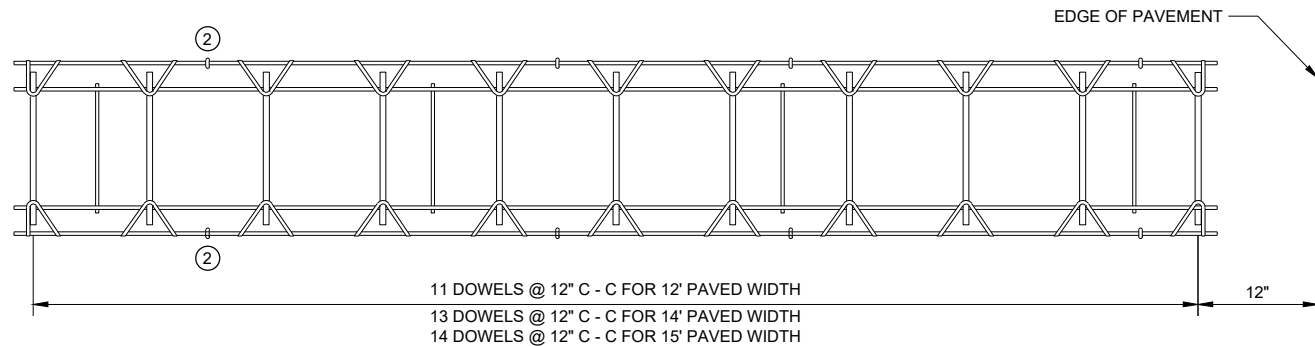
- 1 REFER TO TYPICAL CROSS SECTIONS FOR ADDITIONAL DETAILS.
- 2 MEASURE THE ENTIRE PAVED WIDTH INCLUDING THE PORTION(S) LABELED "PAVED SHOULDER" AS CONCRETE PAVEMENT.
- 3 SHOULDER WIDTHS LESS THAN 3 FEET SHALL BE PAVED INTEGRAL TO THE MAINLINE CONCRETE PAVEMENT, SEE SECTION B-B.

PAVEMENT DEPTH, DOWEL BAR SIZE
AND JOINT SPACING TABLE

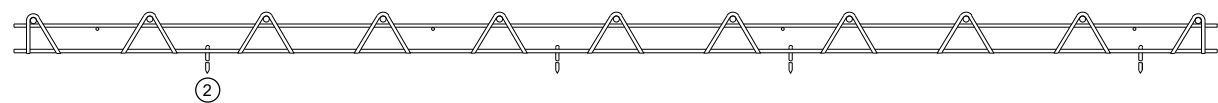
PAVEMENT DEPTH (D)	DOWEL BAR DIAMETER	CONTRACTION JOINT SPACING
6", 6 1/2"	NONE	12'
7", 7 1/2"	1"	14'
8" & ABOVE	1 1/4"	15'

RURAL DOWELED
CONCRETE PAVEMENT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 149

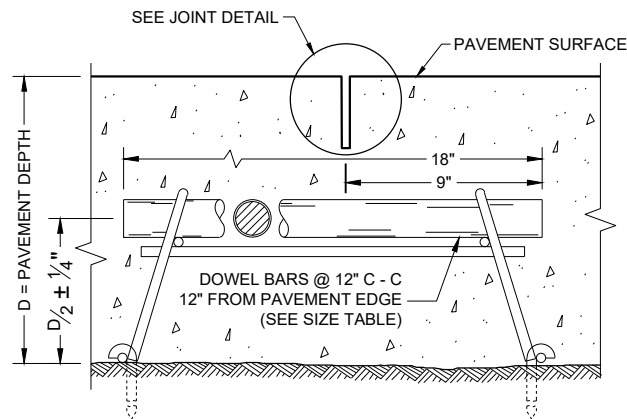


PLAN VIEW

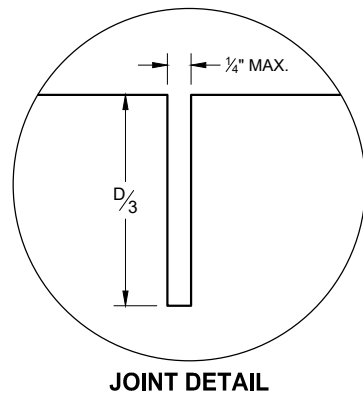


SIDE VIEW
(NORMAL TO CENTERLINE)

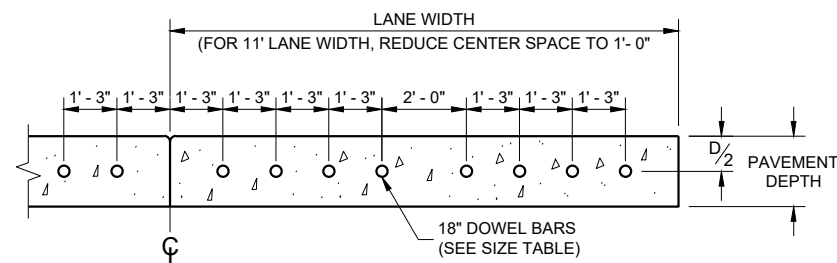
CONTRACTION JOINT DOWEL ASSEMBLY ①



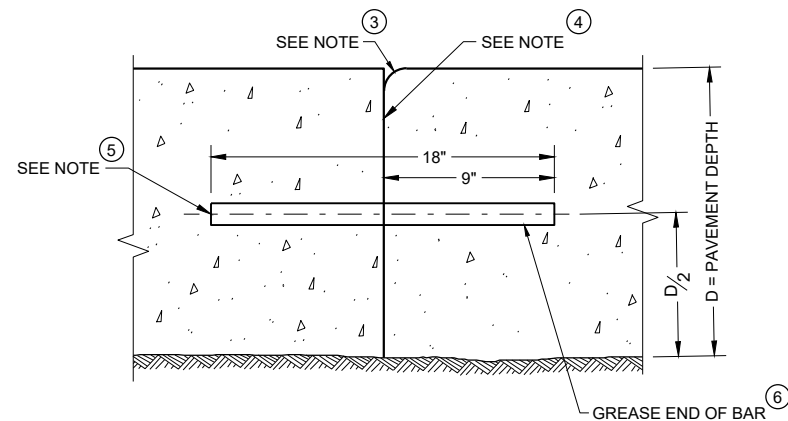
DOWELED CONTRACTION JOINT



JOINT DETAIL



DRILLED DOWEL BAR CONSTRUCTION JOINT ⑦



TRANSVERSE CONSTRUCTION JOINT

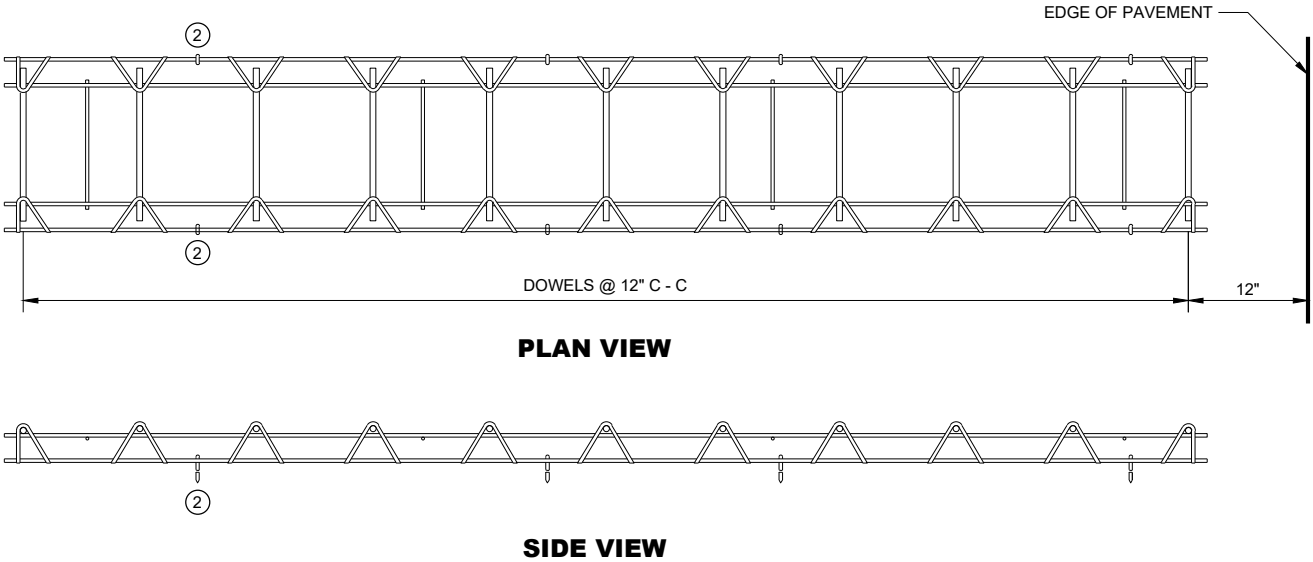
GENERAL NOTES

- ① OBTAIN THE ENGINEER'S APPROVAL FOR THE USE OF ALTERNATIVE DESIGNS OF THE DOWEL ASSEMBLY. USE MECHANICAL DOWEL BAR INSERTERS OR DOWEL ASSEMBLIES WHEN CONSTRUCTION CONTRACTION JOINTS.
- ② SECURE BASKETS WITH ANCHORS TO HOLD DOWEL BARS IN THE CORRECT POSITION AND ALIGNMENT. TYPE, LOCATION, NUMBER AND LENGTH OF ANCHORS ARE DEPENDENT UPON FIELD CONDITIONS.
- ③ FORM OR SAW CONSTRUCTION JOINTS. PROVIDE A $1/4"$ RADIUS AT FORMED JOINTS.
- ④ PROVIDE A SMOOTH VERTICAL FACE FOR THE ENTIRE DEPTH OF THE PAVEMENT WHEN FORMING CONSTRUCTION JOINTS.
- ⑤ INSTALL DOWEL BARS AT CONSTRUCTION JOINTS BY FORMING OR DRILLING. INSTALL FORMED DOWEL BARS 12 INCHES C - C AND 12 INCHES FROM PAVEMENT EDGE. REMOVE EXCESS CONCRETE FROM THE FREE END OF THE DOWEL BAR IF DOWEL BARS ARE FORMED THROUGH A HEADER BOARD. INSTALL DRILLED DOWEL BARS ACCORDING TO THE "DRILLED DOWEL BAR CONSTRUCTION JOINT" DETAIL.
- ⑥ APPLY A THIN UNIFORM COATING OF SURFACE TREATMENT TO THE FREE END OF DOWEL BARS TO PREVENT BONDING.
- ⑦ ANCHOR DOWEL BARS AND TIE BARS INTO DRILLED HOLES WITH AN EPOXY. MAXIMUM DRILLED HOLE SIZE IS $1/8"$ GREATER THAN DOWEL BAR DIAMETER, 9 INCHES IN LENGTH.

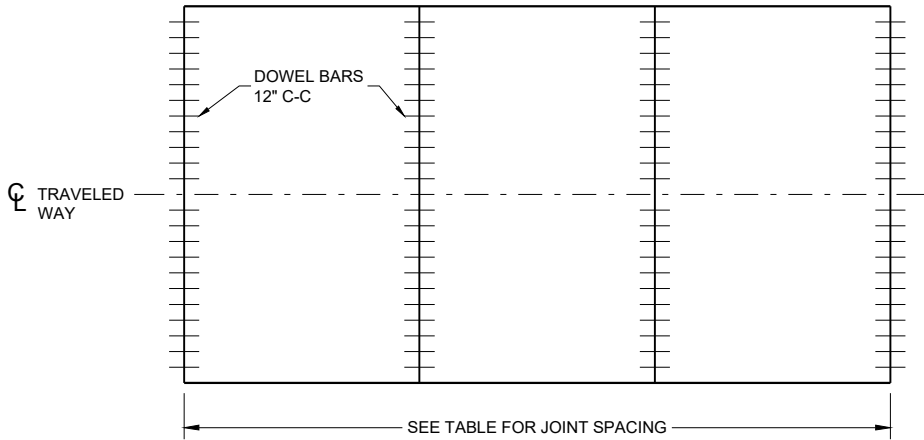
RURAL DOWELED
CONCRETE PAVEMENT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

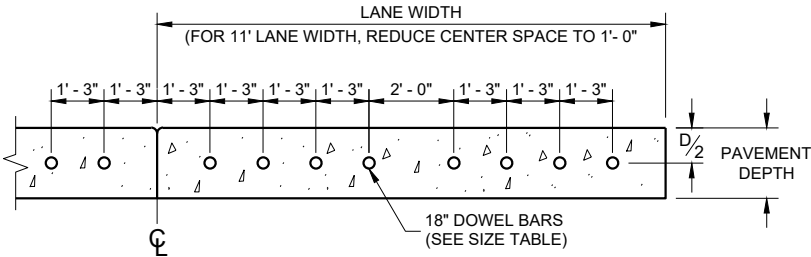
APPROVED
November 2022 /S/ Peter Kemp P.E.
DATE PAVEMENT SUPERVISOR 150
FHWA



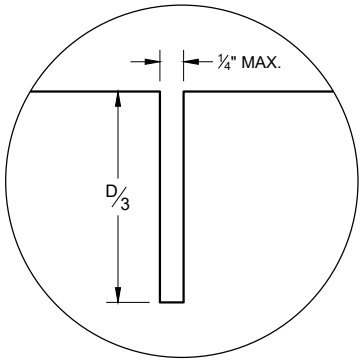
CONTRACTION JOINT DOWEL ASSEMBLY ①



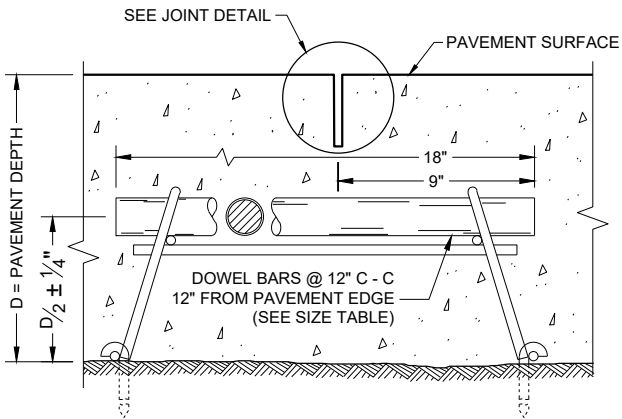
CONTRACTION JOINT LOCATIONS



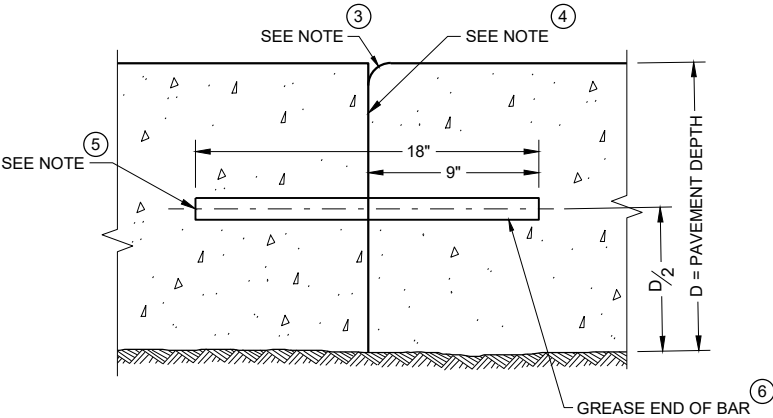
DRILLED DOWEL BAR CONSTRUCTION JOINT ⑦



JOINT DETAIL



DOWELED CONTRACTION JOINT



TRANSVERSE CONSTRUCTION JOINT

GENERAL NOTES

CONTRACTION JOINTS

CONSTRUCT TRANSVERSE CONTRACTION JOINTS NORMAL TO THE CENTERLINE. SHOW THE LOCATION OF CONTRACTION JOINTS THROUGH INTERSECTIONS ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

INSTALL DOWEL BARS PARALLEL TO THE PAVEMENT CENTERLINE AND PAVEMENT SURFACE.

FOR PAVEMENT SLABS OF VARYING WIDTHS, LOCATE THE OUTER MOST DOWEL BAR SO THAT THE CENTER OF THE BAR IS A MINIMUM OF 6 INCHES FROM AND A MAXIMUM OF 18 INCHES FROM THE FREE EDGE OF PAVEMENT.

CONSTRUCTION JOINTS

LOCATE CONSTRUCTION JOINTS A MINIMUM OF 6 FEET FROM THE NEAREST CONTRACTION JOINT AND ALIGN PARALLEL TO THE CONTRACTION JOINTS.

- ① OBTAIN THE ENGINEER'S APPROVAL FOR THE USE OF ALTERNATIVE DESIGNS OF THE DOWEL ASSEMBLY. USE MECHANICAL DOWEL BAR INSERTERS OR DOWEL ASSEMBLIES WHEN CONSTRUCTION CONTRACTION JOINTS.
- ② SECURE BASKETS WITH ANCHORS TO HOLD DOWEL BARS IN THE CORRECT POSITION AND ALIGNMENT. TYPE, LOCATION, NUMBER AND LENGTH OF ANCHORS ARE DEPENDENT UPON FIELD CONDITIONS.
- ③ FORM OR SAW CONSTRUCTION JOINTS. PROVIDE A $1/4"$ RADIUS AT FORMED JOINTS.
- ④ PROVIDE A SMOOTH VERTICAL FACE FOR THE ENTIRE DEPTH OF THE PAVEMENT WHEN FORMING CONSTRUCTION JOINTS.
- ⑤ INSTALL DOWEL BARS AT CONSTRUCTION JOINTS BY FORMING OR DRILLING. INSTALL FORMED DOWEL BARS 12 INCHES C - C AND 12 INCHES FROM PAVEMENT EDGE. REMOVE EXCESS CONCRETE FROM THE FREE END OF THE DOWEL BAR IF DOWEL BARS ARE FORMED THROUGH A HEADER BOARD. INSTALL DRILLED DOWEL BARS ACCORDING TO THE "DRILLED DOWEL BAR CONSTRUCTION JOINT" DETAIL.
- ⑥ APPLY A THIN UNIFORM COATING OF SURFACE TREATMENT TO THE FREE END OF DOWEL BARS TO PREVENT BONDING.
- ⑦ ANCHOR DOWEL BARS AND TIE BARS INTO DRILLED HOLES WITH AN EPOXY. MAXIMUM DRILLED HOLE SIZE IS $1/8"$ GREATER THAN DOWEL BAR DIAMETER, 9 INCHES IN LENGTH.

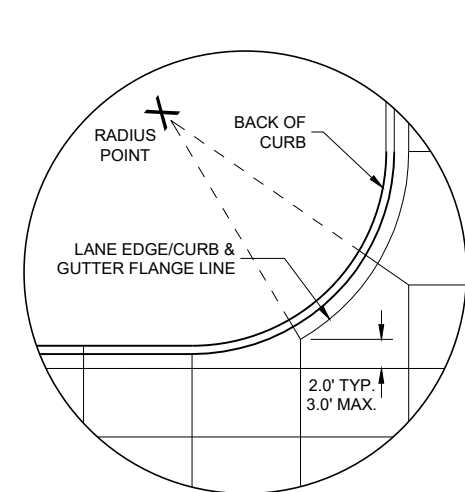
PAVEMENT DEPTH, DOWEL BAR SIZE AND JOINT SPACING TABLE

PAVEMENT DEPTH (D)	DOWEL BAR DIAMETER	CONTRACTION JOINT SPACING
6", 6 1/2"	NONE	12'
7", 7 1/2"	1"	14'
8" & ABOVE	1 1/4"	15'

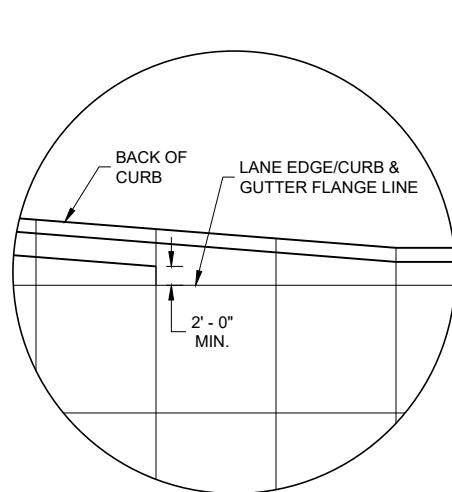
URBAN DOWELED CONCRETE PAVEMENT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

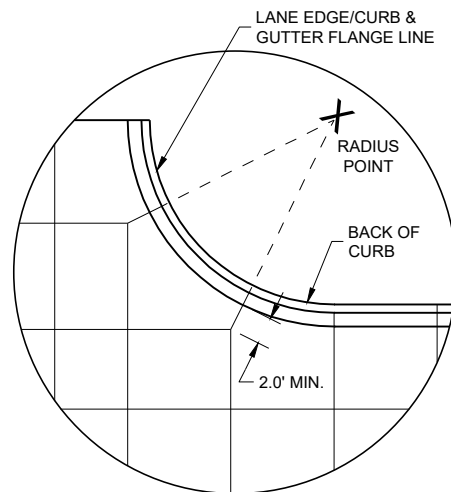
APPROVED
November 2022 /S/ Peter Kemp P.E.
DATE PAVEMENT SUPERVISOR 151
FHWA



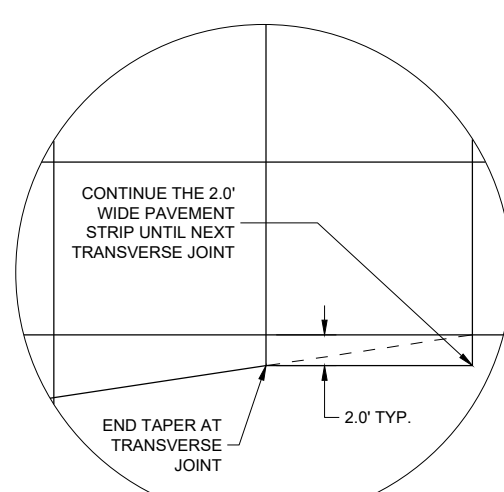
DETAIL "A"



DETAIL "B"



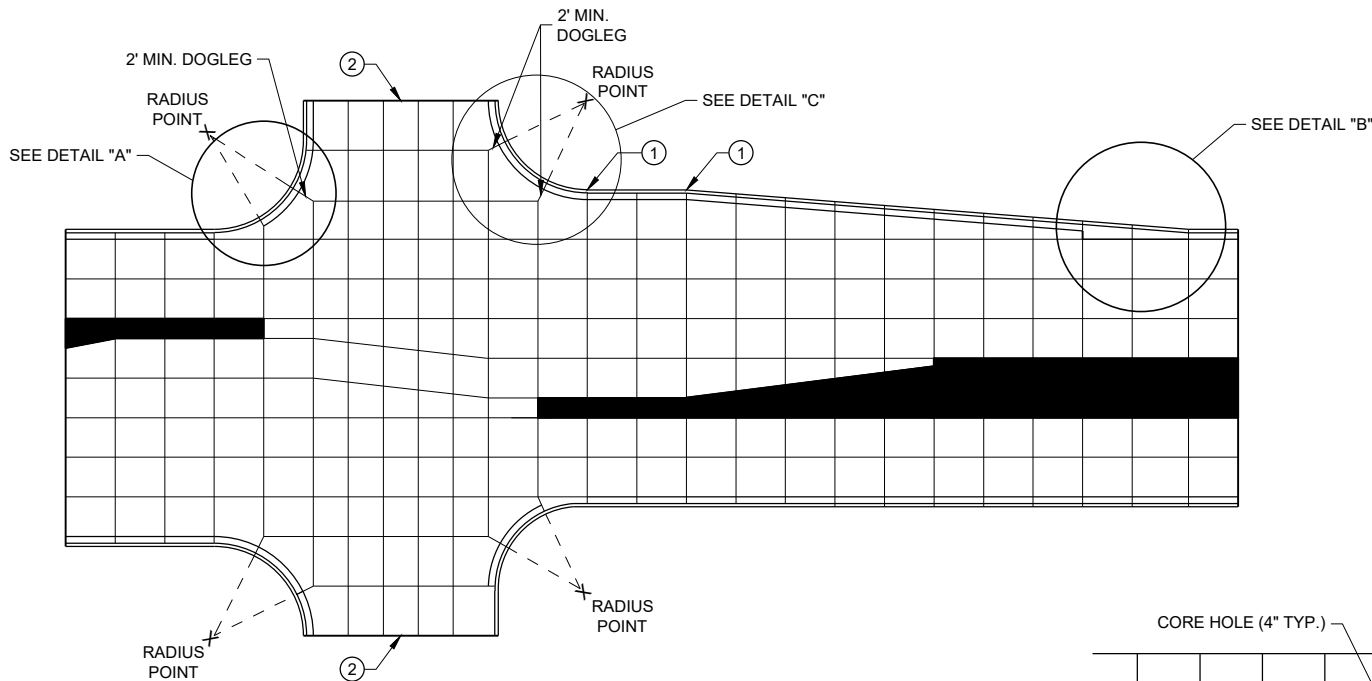
DETAIL "C"



DETAIL "D"

GENERAL NOTES

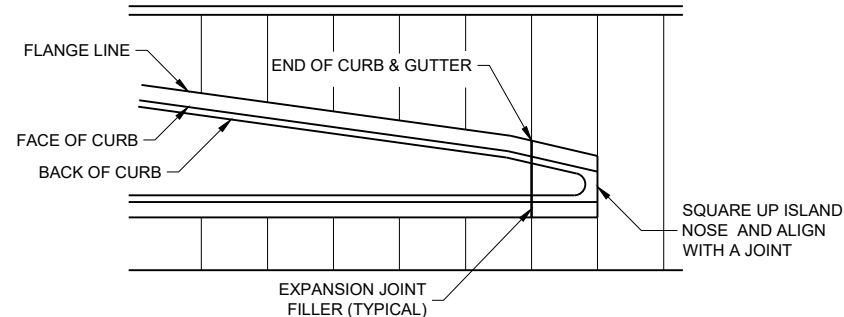
- THE PRIMARY ROADWAY CONTROLS THE TRANSVERSE JOINT PATTERN.
- ALIGN NEW JOINTS WITH EXISTING JOINTS OR CRACKS.
- CONSTRUCT TRANSVERSE JOINTS PERPENDICULAR TO THE ROADWAY.
- ADJUST TRANSVERSE JOINTS TO ALIGN WITH UTILITY FIXTURES (E.G MANHOLES AND INLETS) IN THE PAVEMENT STRUCTURE WHEN POSSIBLE. WATER VALVES DO NOT REQUIRE JOINT ADJUSTMENT.
- AVOID SLABS LESS THAN 2 FEET WIDE OR GREATER THAN 15 FEET WIDE.
- SEE TABLE FOR TRANSVERSE JOINT SPACING. JOINT SPACING SPECIFIED IS MAXIMUM AND ACTUAL SPACING CAN BE ADJUSTED TO ACCOMMODATE INTERSECTIONS.
- AVOID ANGLES LESS THAN 60° BY DOGLEGGING JOINTS THROUGH CURVE RADIUS POINTS. USE 90° ANGLES WHEN POSSIBLE.
- CORRELATE LONGITUDINAL JOINTS WITH LANE LINES WHEN POSSIBLE.
- 1 PROVIDE TRANSVERSE JOINTS AT ALL PAVEMENT WIDTH CHANGES.
 - 2 CONSTRUCT DOWELED EXPANSION JOINT ON THE SIDE ROAD OF AN INTERSECTION IF THE SIDE ROAD IS CONCRETE PAVEMENT AND GREATER THAN 300 FEET IN LENGTH. ALIGN EXPANSION JOINT WITH EDGE OF RADIUS.
 - 3 THE ENGINEER MAY APPROVE SLIGHT VARIATIONS FROM THESE JOINTING DETAILS.



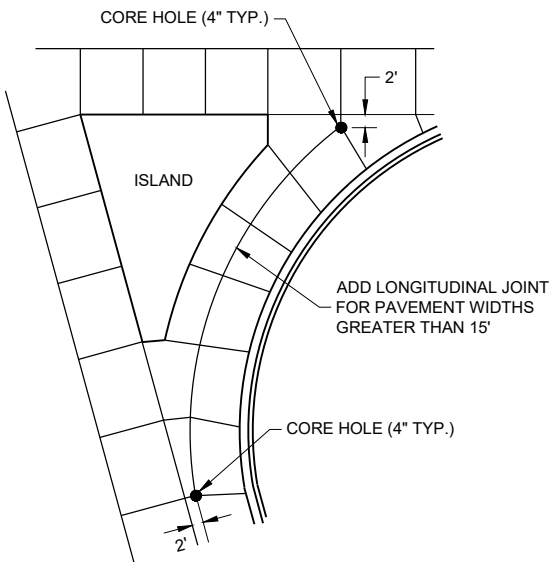
STANDARD INTERSECTION

PAVEMENT DEPTH AND JOINT SPACING TABLE

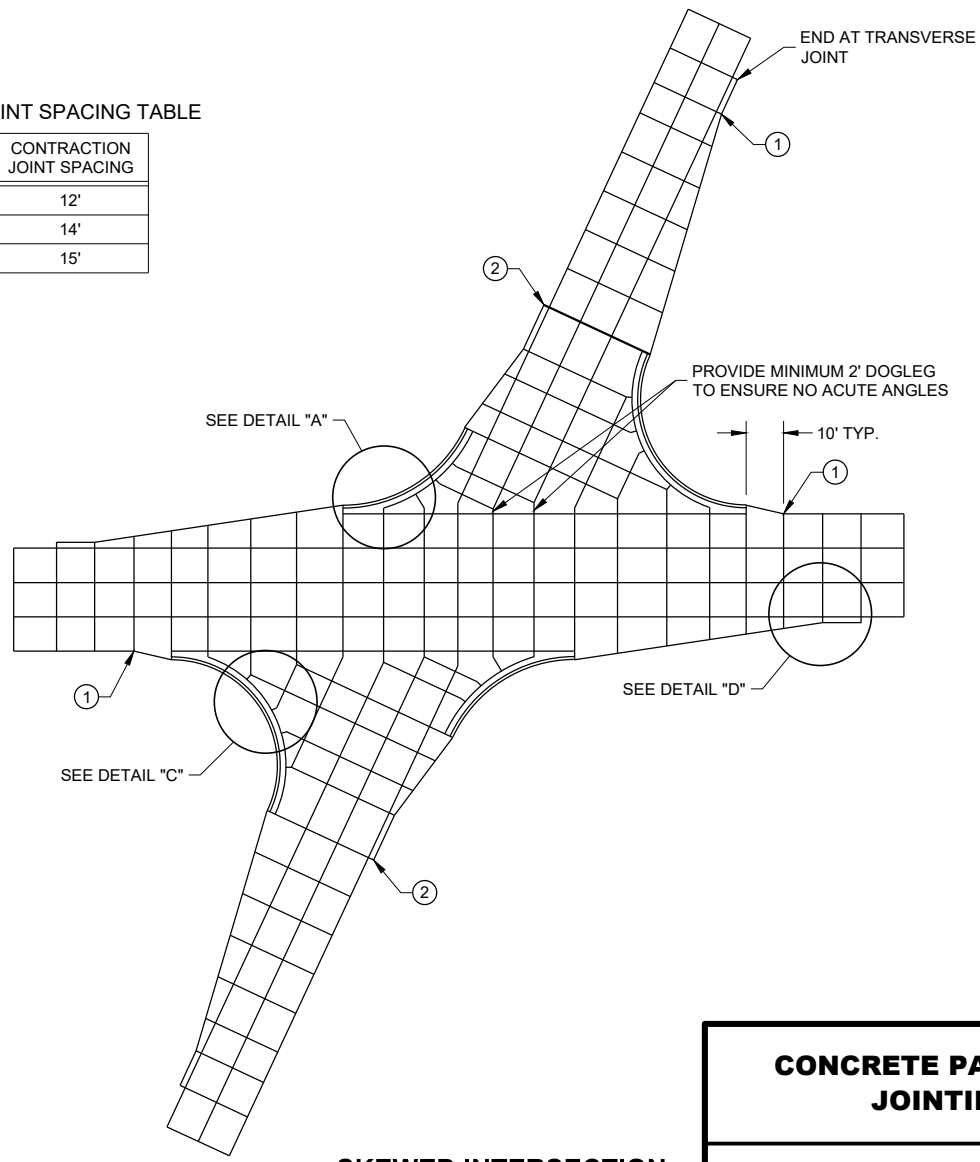
PAVEMENT DEPTH (D)	CONTRACTION JOINT SPACING
6", 6 1/2"	12'
7", 7 1/2"	14'
8" & ABOVE	15'



APPROACH TO MEDIAN



LARGE RIGHT TURN



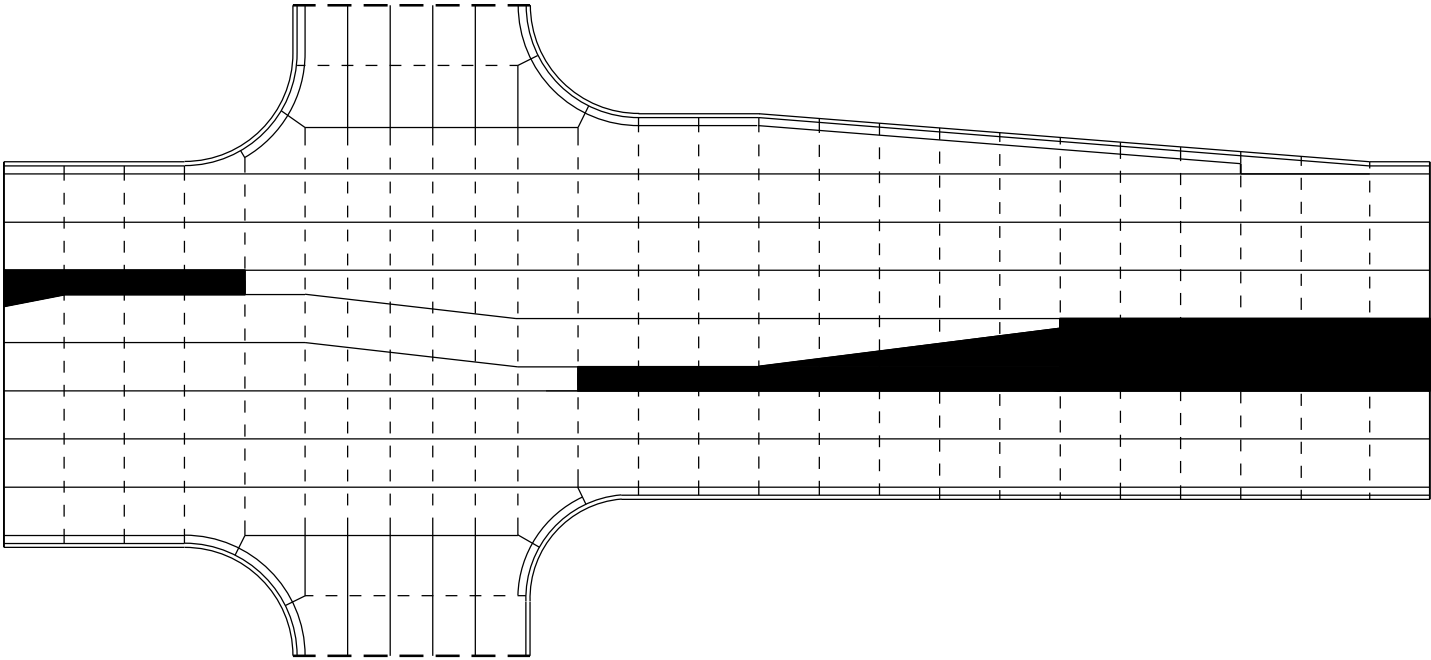
SKEWED INTERSECTION

CONCRETE PAVEMENT JOINTING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

LEGEND

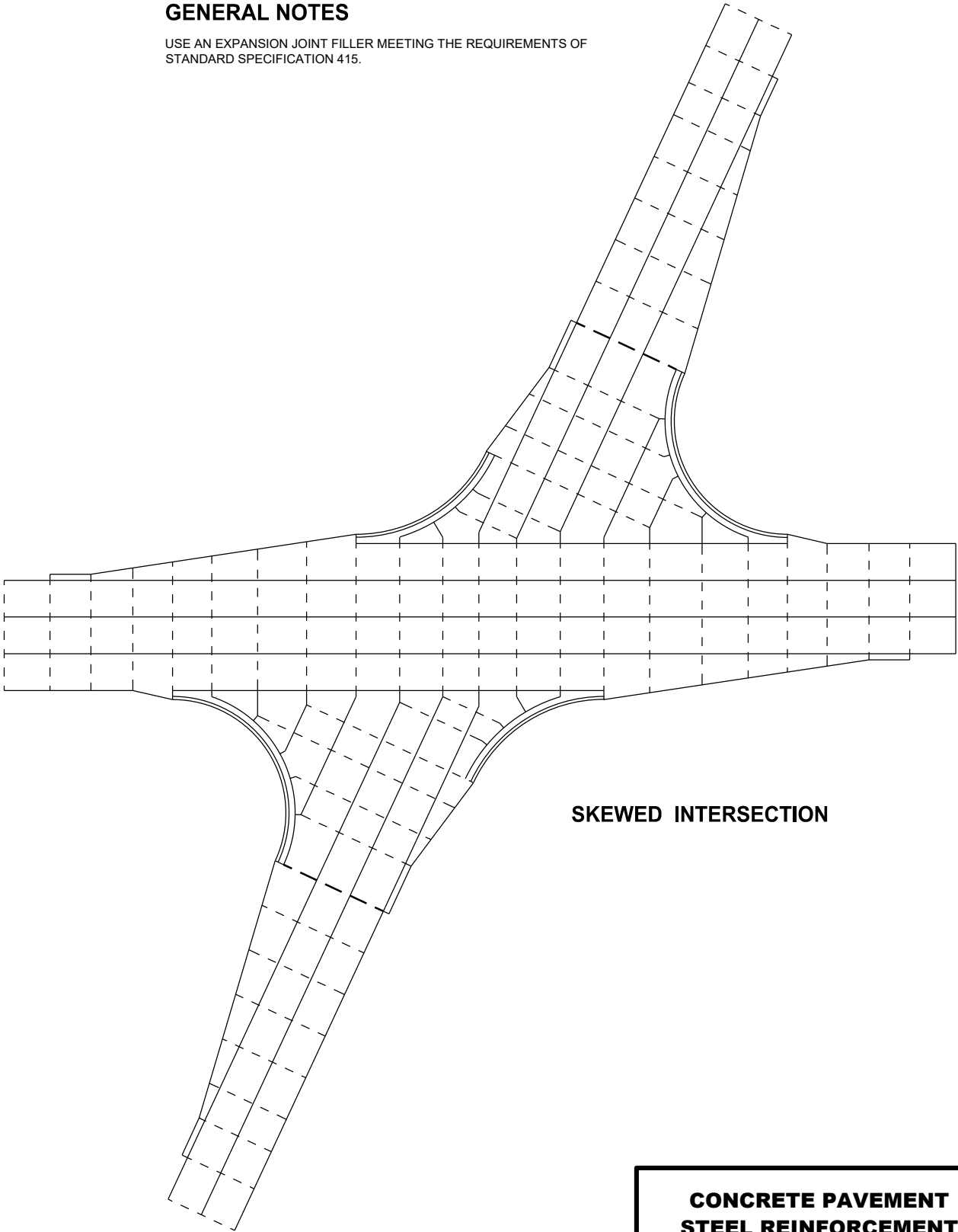
- POTENTIAL DOWELED EXPANSION JOINT
- DOWELED JOINT
- TIED JOINT



STANDARD INTERSECTION

GENERAL NOTES

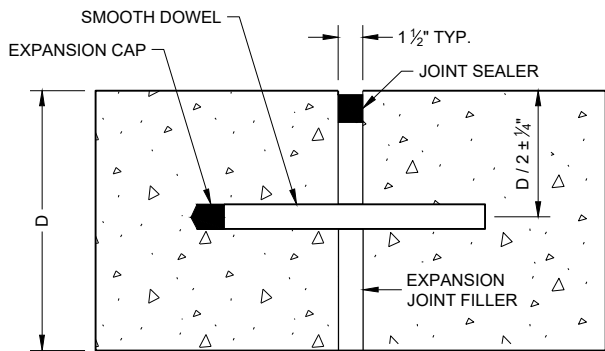
USE AN EXPANSION JOINT FILLER MEETING THE REQUIREMENTS OF STANDARD SPECIFICATION 415.



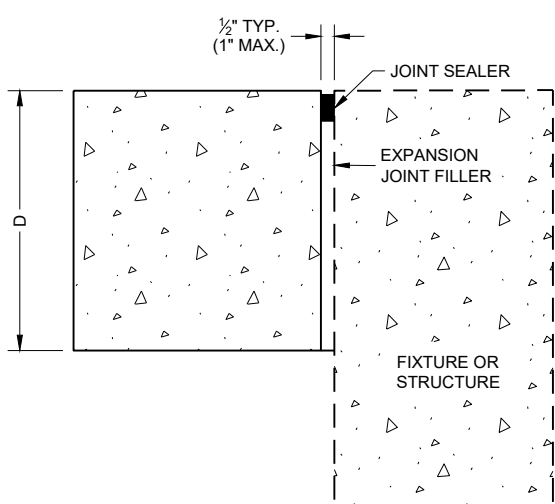
SKEWED INTERSECTION

CONCRETE PAVEMENT
STEEL REINFORCEMENT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 153

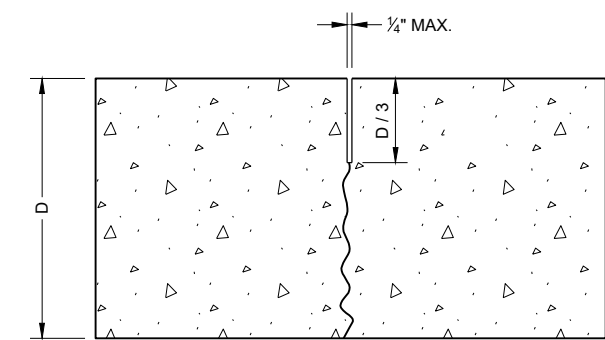


DOWELED TRANSVERSE ①

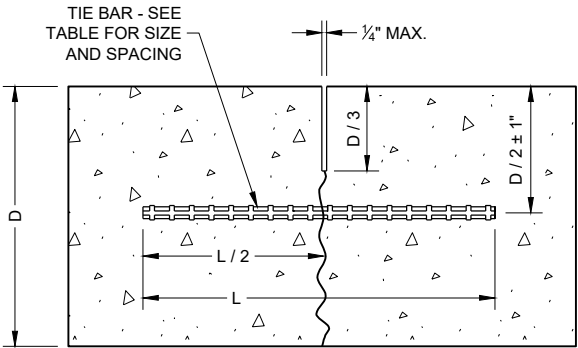


UNTIED - LONGITUDINAL

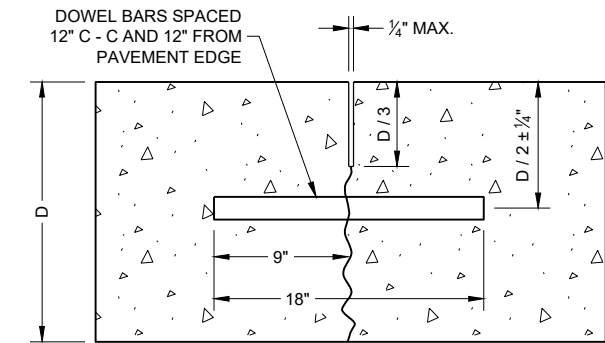
EXPANSION JOINTS



UNDOWELED TRANSVERSE



TIED LONGITUDINAL



DOWELED TRANSVERSE

CONTRACTION JOINTS ②

TIE BAR TABLE

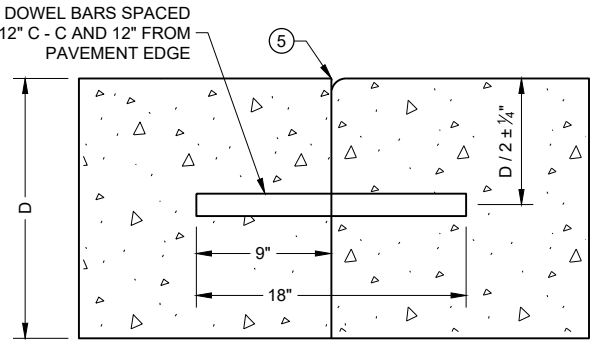
PAVEMENT DEPTH (D)	TIE BAR SIZE	TIE BAR LENGTH (L)	MAX. TIE BAR SPACING
< 10 1/2"	NO. 4	30"	36"
≥ 10 1/2"	NO. 5	36"	36"
	NO. 4 *	30"	24" **

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

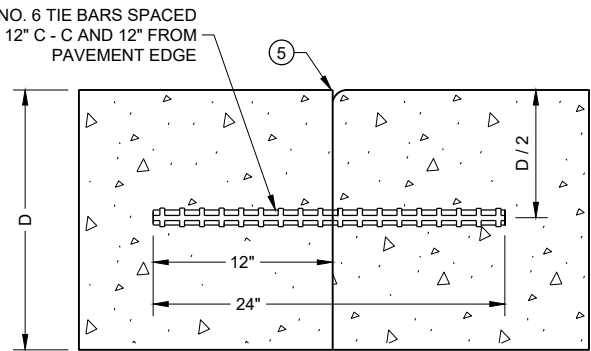
** CONFORM TO 15" MINIMUM SPACING FROM TRANSVERSE JOINTS; SPACING BETWEEN TIE BARS WILL BE 30" AT TRANSVERSE JOINTS.

GENERAL NOTES

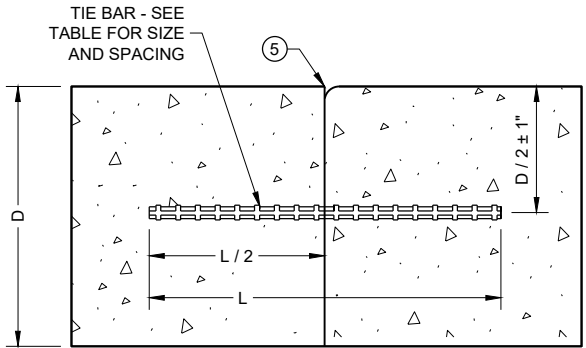
- ① USE DOWELED EXPANSION JOINTS ON SIDE ROADS AT INTERSECTIONS (TO ISOLATE THE SIDE ROAD FROM THE THROUGH STREET) IF THE SIDE ROAD IS CONCRETE PAVEMENT AND GREATER THAN 300 FEET IN LENGTH.
- ② SPACE CONTRACTION JOINTS IN ACCORDANCE WITH SDD 13C4, 13C11 OR 13C13.
- ③ LOCATE CONSTRUCTION JOINTS A MINIMUM OF 6 FEET FROM THE NEAREST CONTRACTION JOINT AND ALIGN PARALLEL TO CONTRACTION JOINTS.
- ④ CONSTRUCTION JOINTS CAN BE FORMED OR SAWED.
- ⑤ IF JOINT IS FORMED, PROVIDE A 1/4" RADIUS.
- ⑥ ANCHOR TIE BARS INTO DRILLED HOLES WITH AN EPOXY.



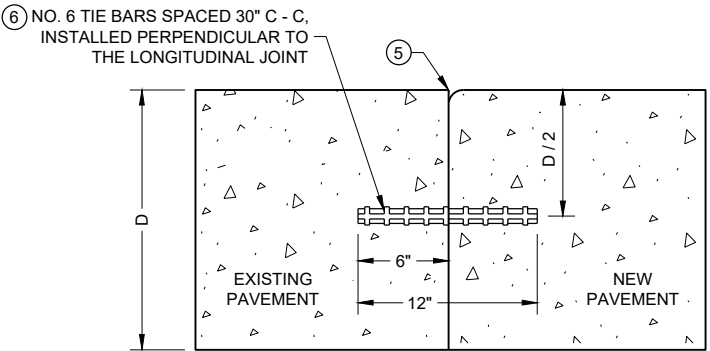
DOWELED TRANSVERSE ③



TIED TRANSVERSE ③
(FOR USE ON NON-DOWELED PAVEMENTS ONLY)



TIED LONGITUDINAL

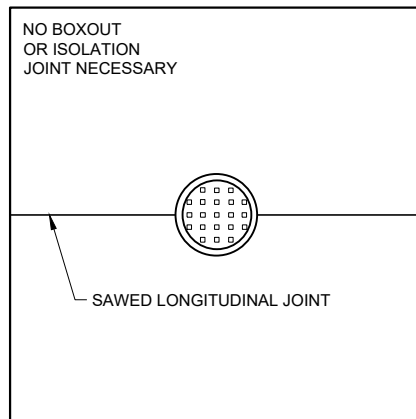


TIED LONGITUDINAL TO EXISTING

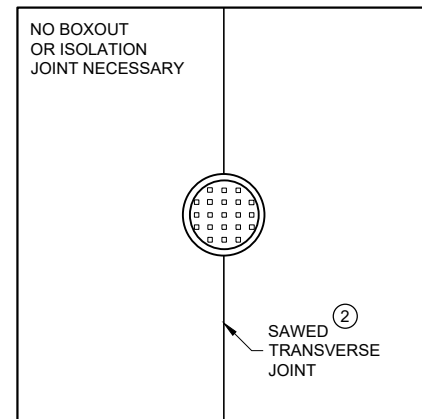
CONSTRUCTION JOINTS ④

**CONCRETE PAVEMENT
JOINT TYPES**

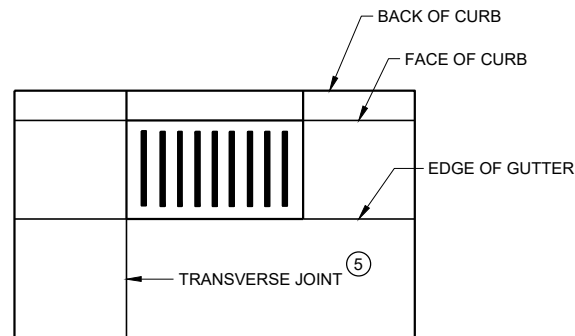
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 154



MANHOLE WITH
LONGITUDINAL JOINT



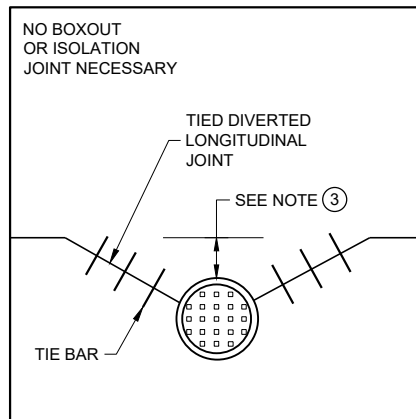
MANHOLE WITH
TRANSVERSE JOINT



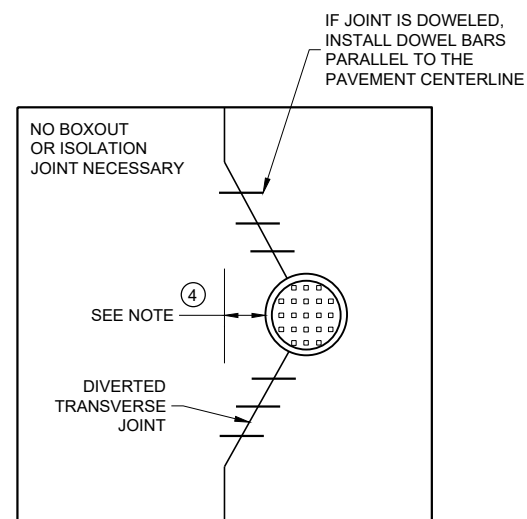
INLET WITH
TRANSVERSE JOINT

GENERAL NOTES

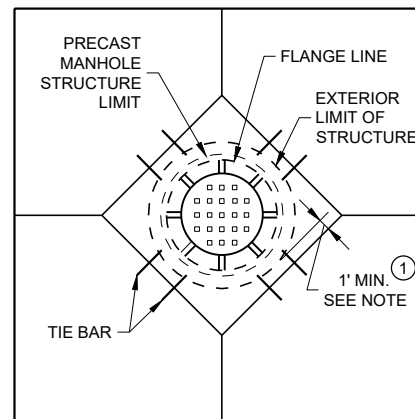
- ① USE BOXOUTS WHEN UTILITY STRUCTURE IS IN THE PATH OF CONSTRUCTION JOINTS. PROVIDE A 1 FOOT MINIMUM CLEARANCE BETWEEN THE EXTERIOR LIMIT OF THE STRUCTURE TO THE DIAMOND BOXOUT.
- ② ADJUST TRANSVERSE JOINT TO INTERSECT MANHOLE IF POSSIBLE.
- ③ IF DISTANCE BETWEEN THE LONGITUDINAL JOINT AND THE EDGE OF MANHOLE IS 2 FEET OR LESS, DIVERT THE LONGITUDINAL JOINT AT A 2:1 TAPER RATE TO THE CENTER OF THE MANHOLE. IF THE DISTANCE IS GREATER THAN 2 FEET, DO NOT DIVERT THE JOINT AND SAW AS NORMAL. PLACE REINFORCEMENT REBAR AROUND THE MANHOLE.
- ④ IF THE DISTANCE FROM THE EDGE OF THE MANHOLE TO THE NEAREST TRANSVERSE JOINT IS LESS 4 FEET OR LESS, REDIRECT JOINT TO INTERSECT THE CENTER OF THE MANHOLE. IF DISTANCE IS GREATER THAN 4 FEET, DO NOT DIVERT THE JOINT AND SAW AS NORMAL. PLACE REINFORCEMENT REBAR AROUND THE MANHOLE.
- ⑤ ALIGN TRANSVERSE JOINT WITH ONE EDGE OF INLET WHEN PRACTICAL.



MANHOLE WITH DIVERTED
LONGITUDINAL CONTRACTION JOINT



MANHOLE WITH DIVERTED
TRANSVERSE CONTRACTION JOINT



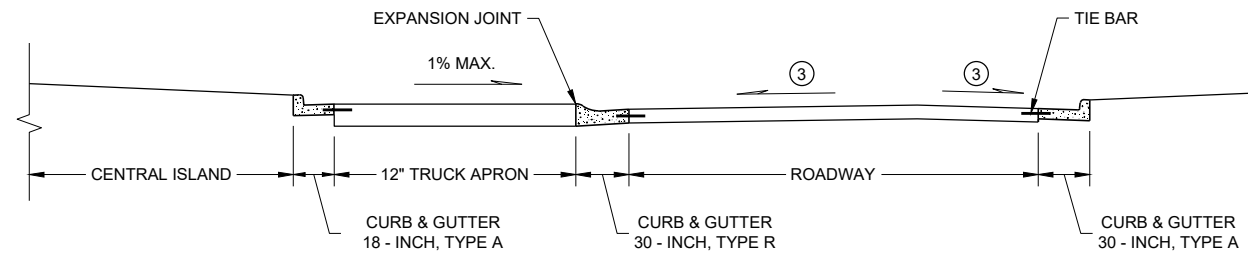
DIAGONAL MANHOLE BOXOUT
FOR CONSTRUCTION JOINTS

CONCRETE PAVEMENT JOINTING AT UTILITY FIXTURES

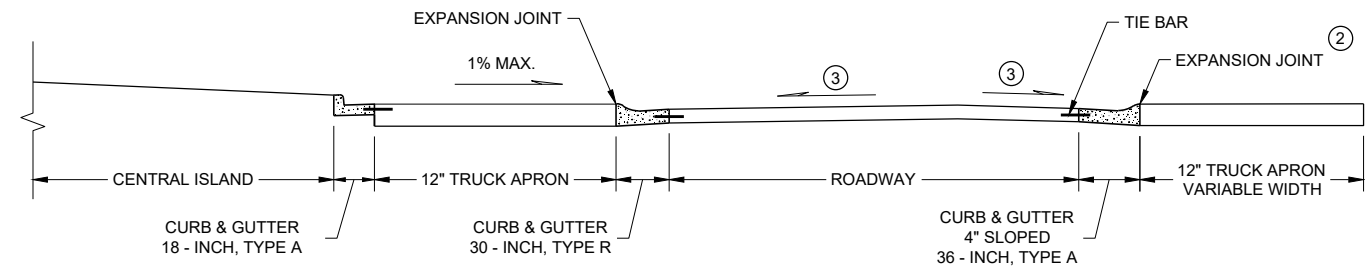
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2023 /S/ Peter Kemp P.E.
DATE PAVEMENT SUPERVISOR 155

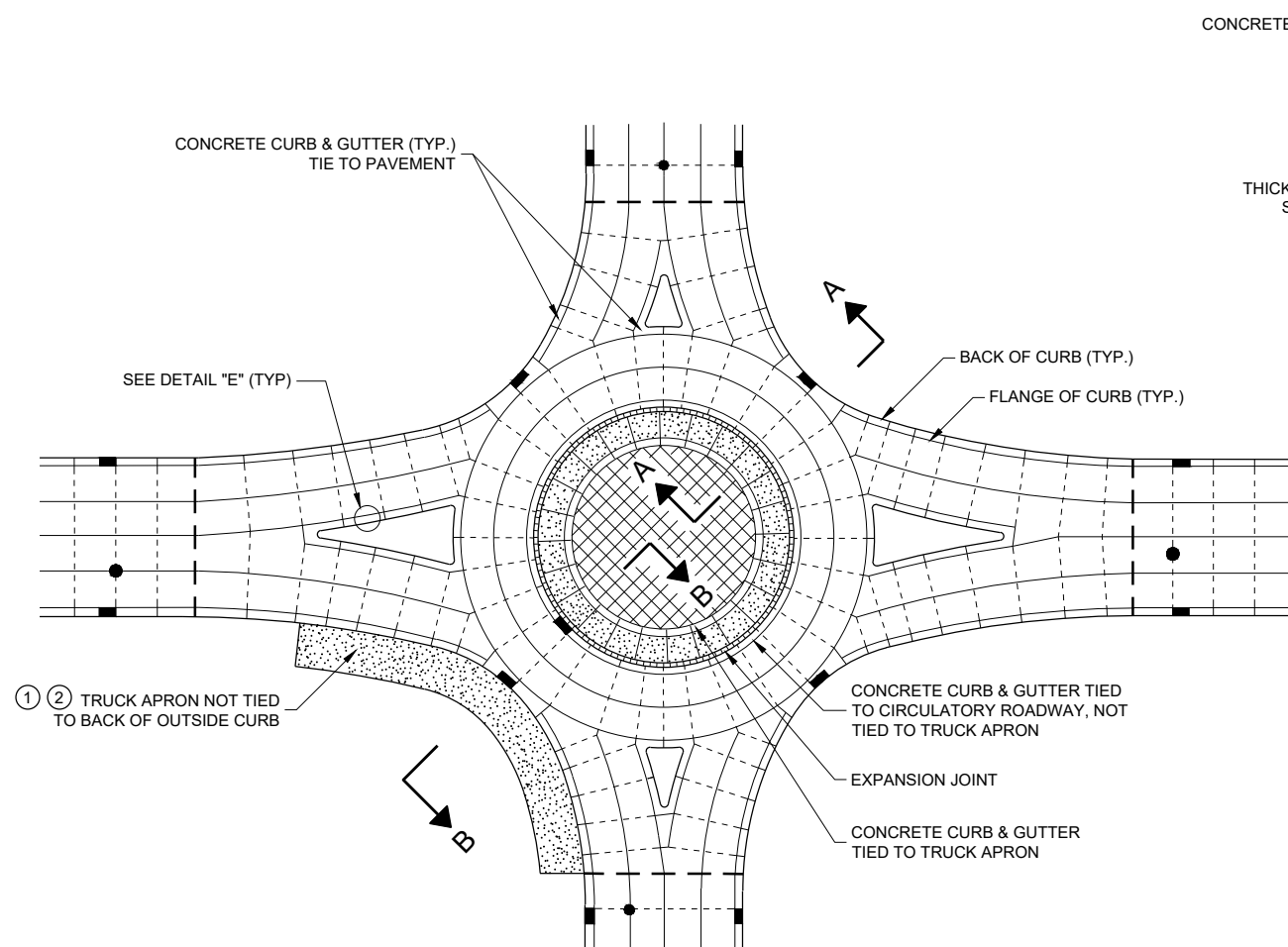
FHWA



SECTION A - A



SECTION B - B



ISOLATED CIRCLE JOINT LAYOUT FOR ROUNDABOUTS

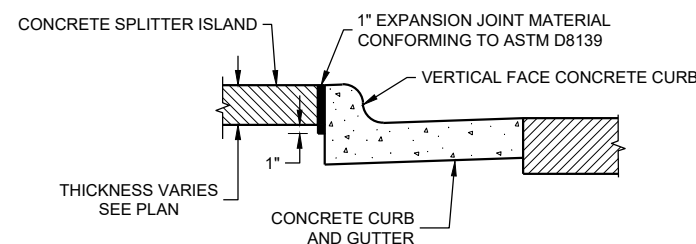
GENERAL NOTES

MAXIMUM JOINT SPACING IS IN ACCORDANCE WITH THE TABLE SHOWN ON SDD 13C18 - SHEET "a"

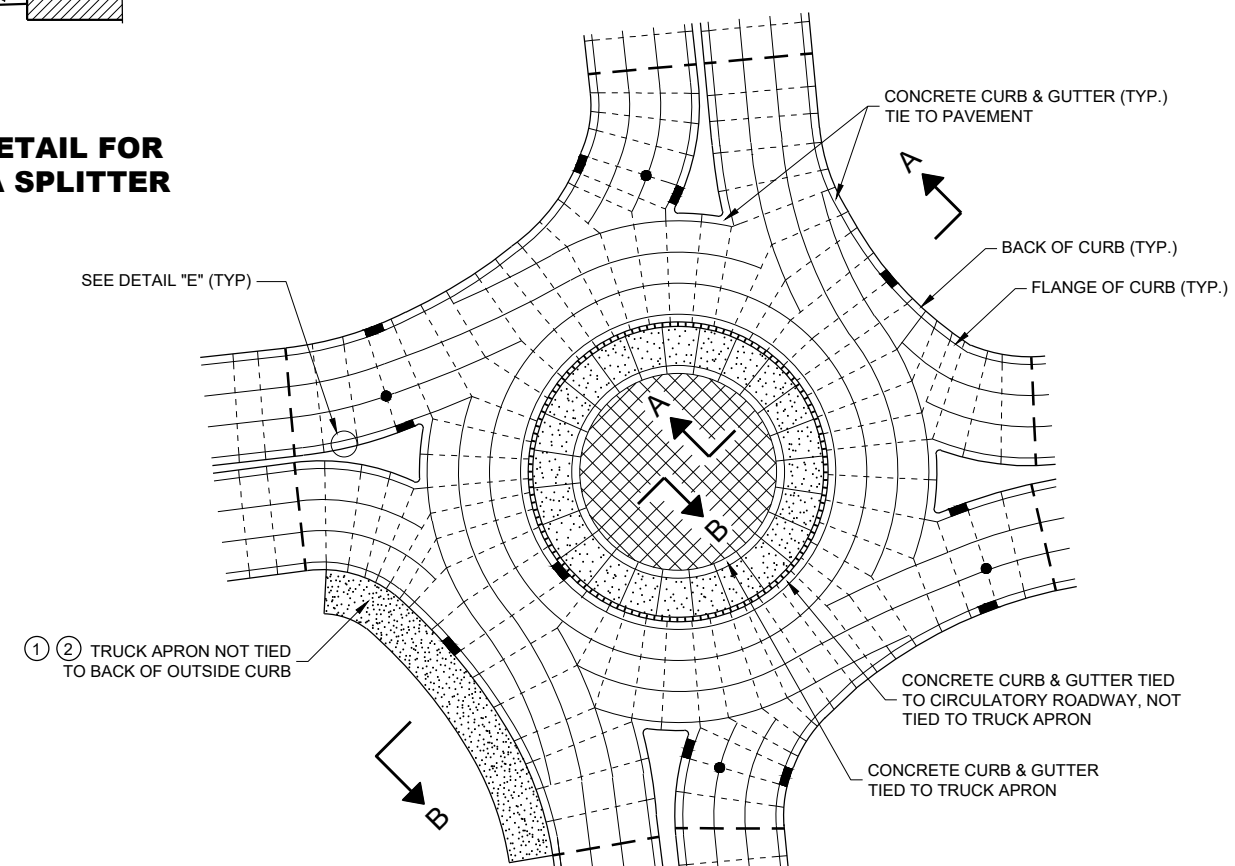
USE EXPANSION JOINT FILLER MEETING THE REQUIREMENTS OF STANDARD SPECIFICATION 415.

DO NOT DOWEL OR TIE THE TRUCK APRON TRANSVERSE JOINTS.

- ① DESIGNER DETERMINES SIZE AND LOCATION(S) OF TRUCK APRON TO ACCOMMODATE TRACKING OF OVERSIZE / OVERWEIGHT VEHICLES.
- ② TIE THE OUTSIDE TRUCK APRON TO THE BACK SIDE OF CURB ONLY WHEN ENTIRE TRUCK APRON IS LESS THAN 3 FEET.
- ③ CONFORM TO PLAN CONSTRUCTION DETAILS FOR CIRCULATORY ROADWAY CROSS SLOPE.



DETAIL 'E'
EXPANSION JOINT DETAIL FOR VERTICAL CURB AT A SPLITTER ISLAND



PINWHEEL JOINT LAYOUT FOR ROUNDABOUTS

LEGEND

- DOWELED JOINT
- TIED JOINT
- ===== EXPANSION JOINT
- — — — — POTENTIAL DOWELED EXPANSION JOINT
- [Pattern] TRUCK APRON
- [Pattern] CENTRAL ISLAND
- ● UTILITY STRUCTURES

CONCRETE PAVEMENT JOINTING AND STEEL REINFORCEMENT IN ROUNDABOUTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2023 /S/ Peter Kemp P.E.
DATE PAVEMENT SUPERVISOR 156
FHWA

LEGEND

DOWELED JOINT

————

TIED JOINT

=====

EXPANSION JOINT

— — — —

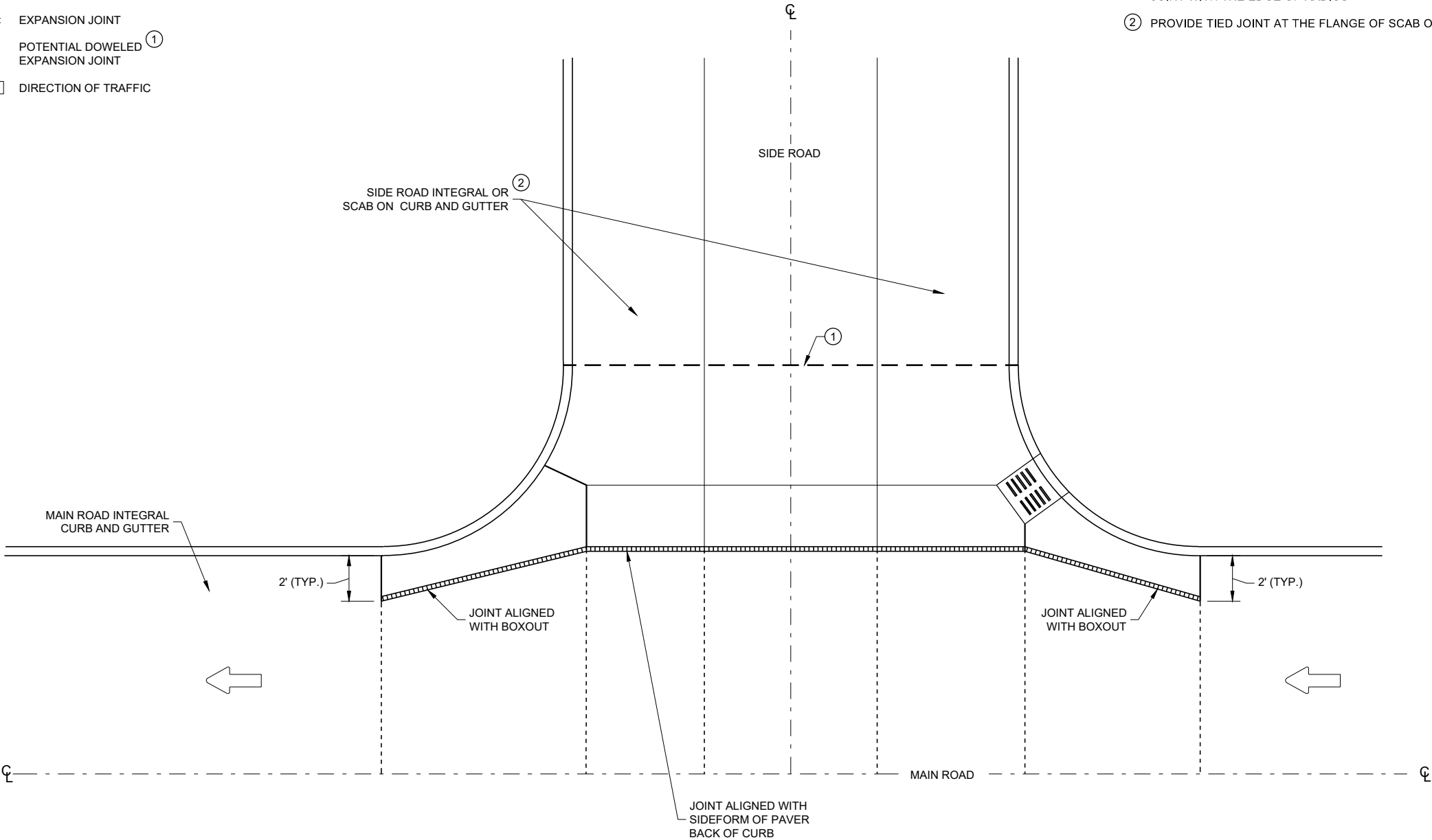
POTENTIAL DOWELED
EXPANSION JOINT ①

←

DIRECTION OF TRAFFIC

GENERAL NOTES

- ① CONSTRUCT DOWELED EXPANSION JOINT ON THE SIDE ROAD OF AN INTERSECTION IF THE SIDE ROAD IS CONCRETE PAVEMENT AND GREATER THAN 300 FEET IN LENGTH. ALIGN EXPANSION JOINT WITH THE EDGE OF RADIUS.
- ② PROVIDE TIED JOINT AT THE FLANGE OF SCAB ON CURB IF SCAB ON CURB AND GUTTER IS USE.

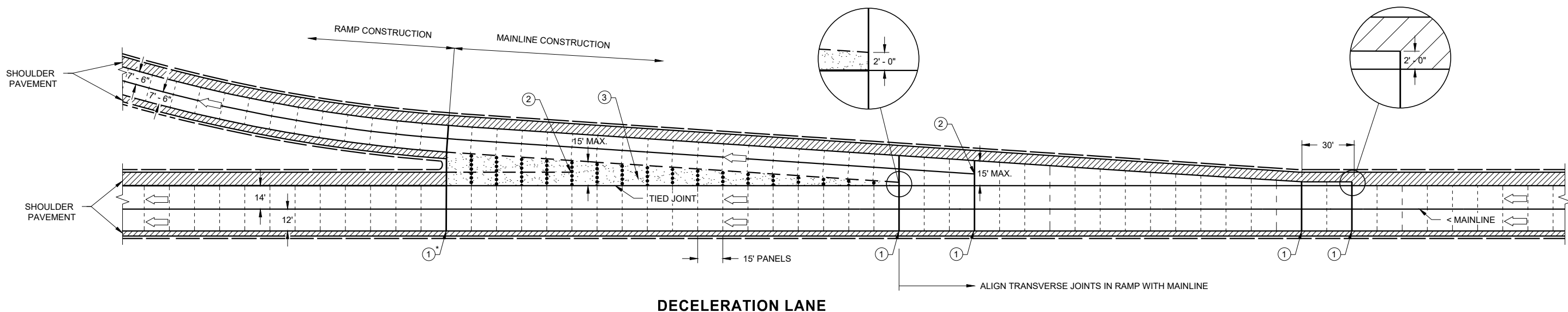


INTERSECTION BOXOUT FOR INTEGRAL CURB AND GUTTER

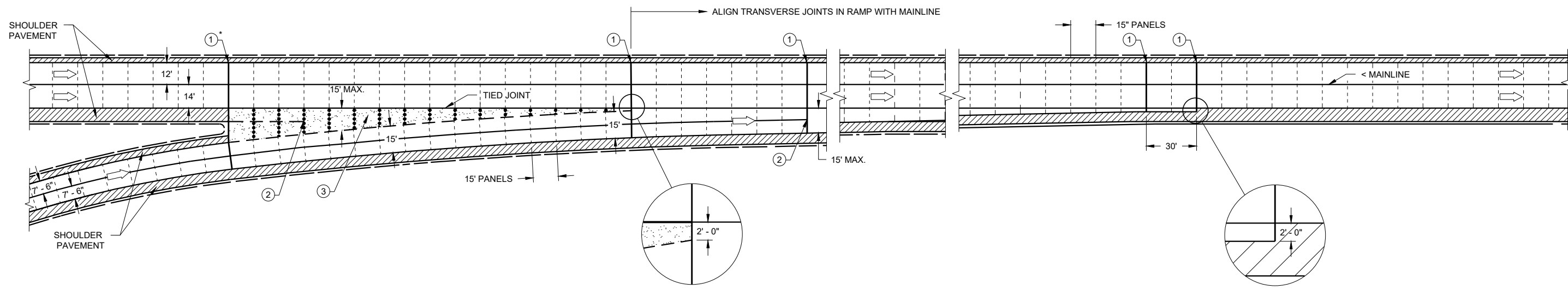
CONCRETE PAVEMENT
INTERSECTION BOXOUT FOR
INTEGRAL CURB AND GUTTER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2023 /S/ Peter Kemp P.E.
DATE PAVEMENT SUPERVISOR 157
FHWA



DECELERATION LANE



ACCELERATION LANE

GENERAL NOTES

PAVEMENT AND BASE THICKNESS, PANEL LENGTHS, JOINTS AND REINFORCEMENT FOR THE DECELERATION AND ACCELERATION LANES, INCLUDING TAPERS, SHALL BE THE SAME AS THE MAINLINE, EXCEPT WHERE OTHERWISE NOTED.

ALL REINFORCEMENT BARS SHALL BE EPOXY COATED CONFORMING TO SUBSECTION 505.2.6 OF THE STANDARD SPECIFICATIONS.

LANE AND SHOULDER WIDTHS MAY VARY FROM SHOWN. SEE CONSTRUCTION PLANS FOR ACTUAL PROPOSED WIDTHS.

- ① CRITICAL TRANSVERSE JOINT LOCATIONS AT PAVEMENT WIDTH CHANGES.
(①* IS NOT A CRITICAL TRANSVERSE JOINT WHEN ASPHALTIC GORE IS INSTALLED).
- ② STOP LONGITUDINAL JOINT WITH CORE HOLE (2" TYP.) WHEN IT MEETS THE FIRST TRANSVERSE JOINT LESS THAN 15' WIDE OR STOP LONGITUDINAL JOINT WHEN IT MEETS 2' AWAY FROM THE TIED JOINT OF THE MAINLINE.
- ③ DISREGARD THE JOINT DETAILS IN AND AROUND THE GORE WHEN ASPHALTIC GORE IS INSTALLED.

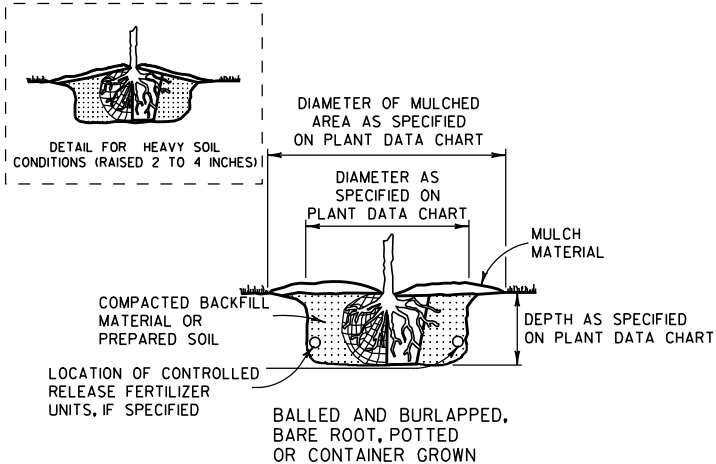
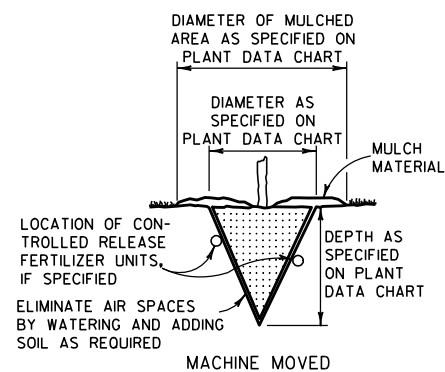
LEGEND

- DOWELED JOINT
- UNDOWELED JOINT
- TIED JOINT
- - - - UNTIED JOINT
- [Pattern] GORE
- ➡ DIRECTION OF TRAVEL

CONCRETE PAVEMENT JOINTING
ACCELERATION/
DECELERATION LANE

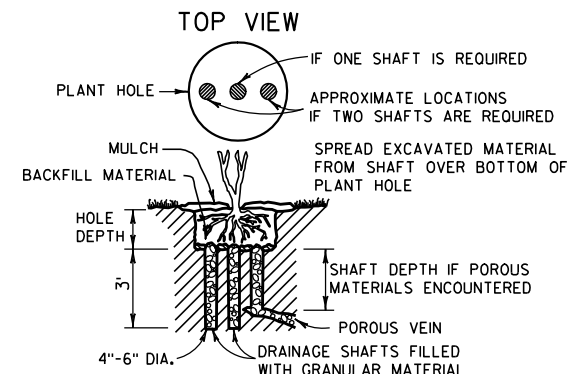
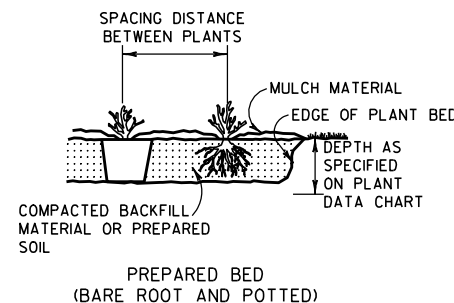
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2023 /S/ Peter Kemp P.E.
DATE PAVEMENT SUPERVISOR 158
FHWA



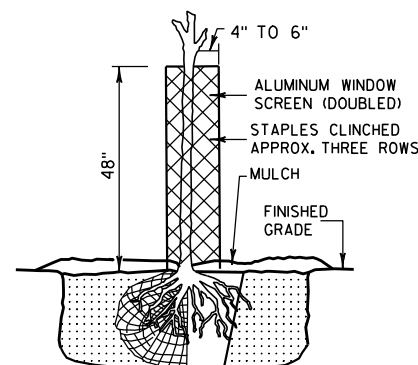
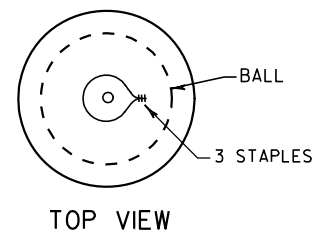
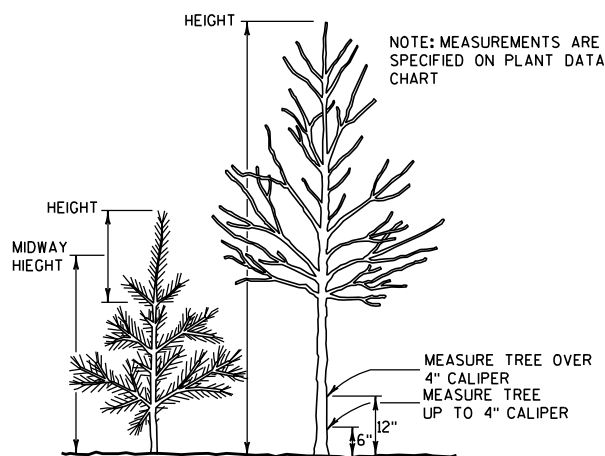
ACCOMMODATE ROOTS
(SMOOTH AND STAGHORN SUMAC)

NOTE:
1) ENGINEER SHALL REQUIRE 3 SLITS IN POT TO SPEED DETERIORATION
2) METAL, PLASTIC OR OTHER NONDEGRADABLE POTS SHALL BE REMOVED PRIOR TO PLANTING

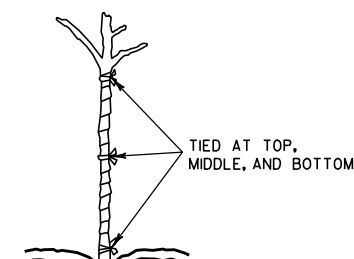


NOTE:
DRAINAGE SHAFT AS SPECIFIED ON PLANT DATA CHART

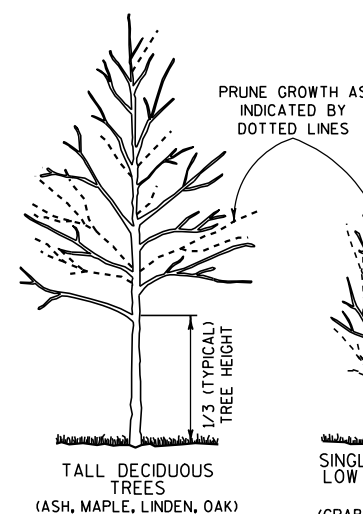
DRAINING



RODENT PROTECTION



WRAPPING



SINGLE STEMMED
LOW DECIDUOUS
TREES
(CRABS AND OTHER
SINGLE STEM TYPE)

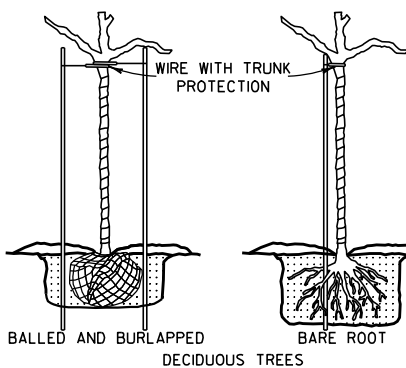
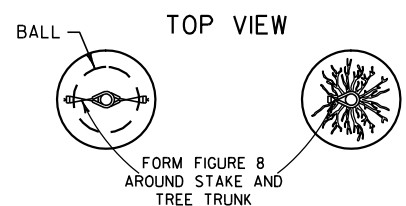
MULTI-STEMMED
LOW DECIDUOUS
TREES OR
LARGE SHRUBS
(HAWTHORN, SERVICEBERRY)

SHRUBS
(GRAY DOGWOOD
ARROWWOOD VIBURNUM)

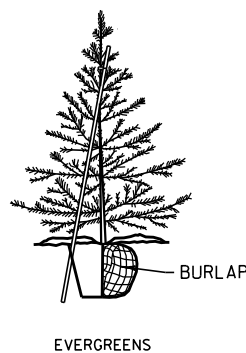
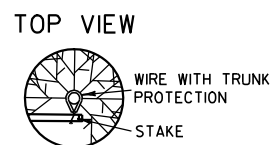
SUMAC

PRUNE LEAST VIGOROUS OF TWO LEADERS BACK TO MAIN TRUNK
REMOVE BROKEN BRANCHES
TREE TYPE EVERGREENS (PINE, SPRUCE, FIR) EVERGREENS USUALLY ARE NOT PRUNED

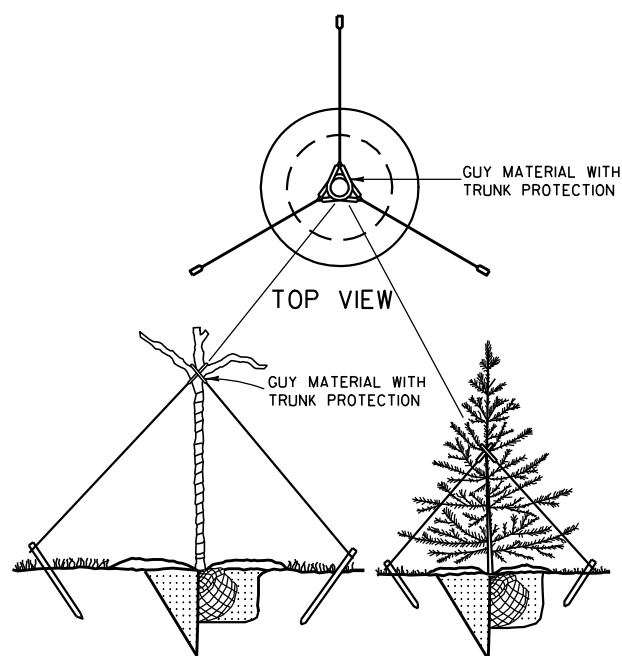
PRUNING



BRACING

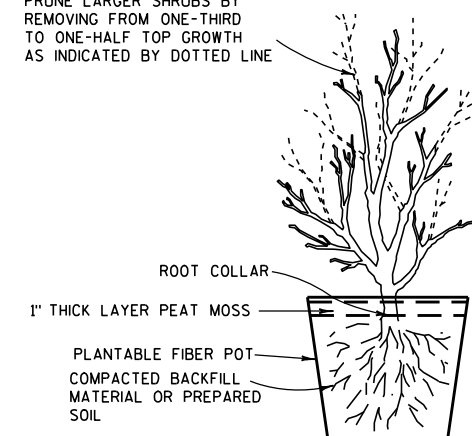


NOTE: BRACING STAKE
1) SHALL BE DRIVEN INTO THE GROUND AS CLOSE TO THE TREE AS POSSIBLE WITHOUT DAMAGING THE BRANCHES.
2) MAY BE DRIVEN AT SUCH AN ANGLE THAT IT DOES NOT PENETRATE THE BALL OR POT.
3) SHALL NOT PROTRUDE ABOVE THE TOP OF THE TREE; AND
4) SHALL HAVE A HOLE NEAR THE TOP TO HOLD THE WIRE IN PLACE.



GUYING

PRUNE LARGER SHRUBS BY REMOVING FROM ONE-THIRD TO ONE-HALF TOP GROWTH AS INDICATED BY DOTTED LINE



POTTING

NOTES

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

BRACING, WRAPPING, GUYING, RODENT PROTECTION, FERTILIZER AND MULCH SHALL BE USED ONLY WHEN SPECIFIED ON THE PLANT DATA CHART (PART OF PLAN) OR SPECIAL PROVISIONS.

TREE PLANTING DETAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

4/11/94

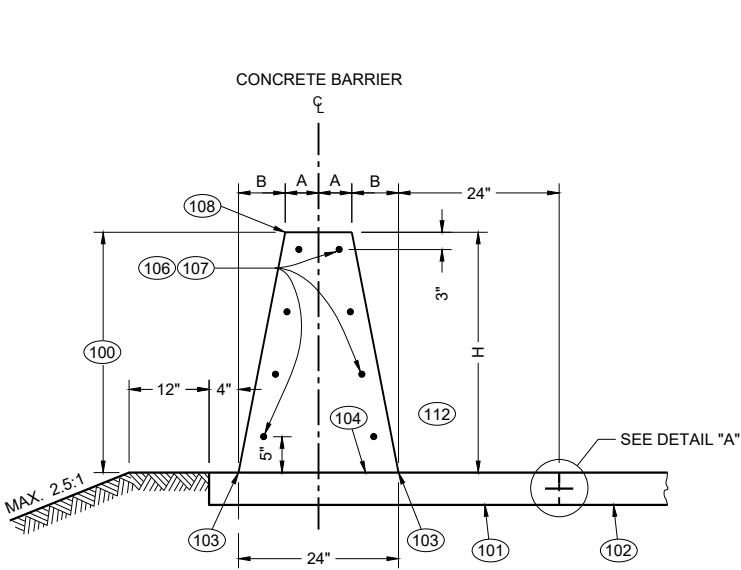
DATE

/S/ Rory L. Rhinehart

CHIEF METHODS DEVELOPER

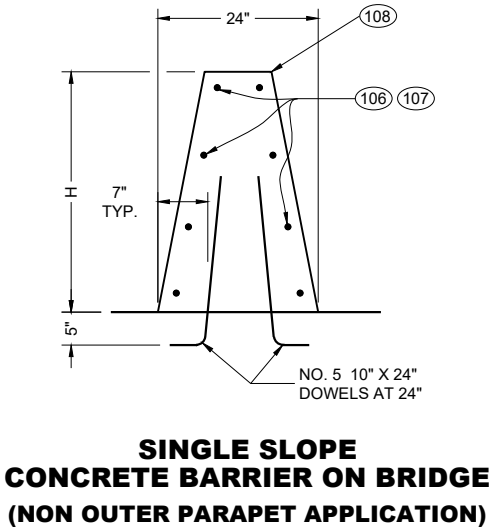
FHWA

SINER

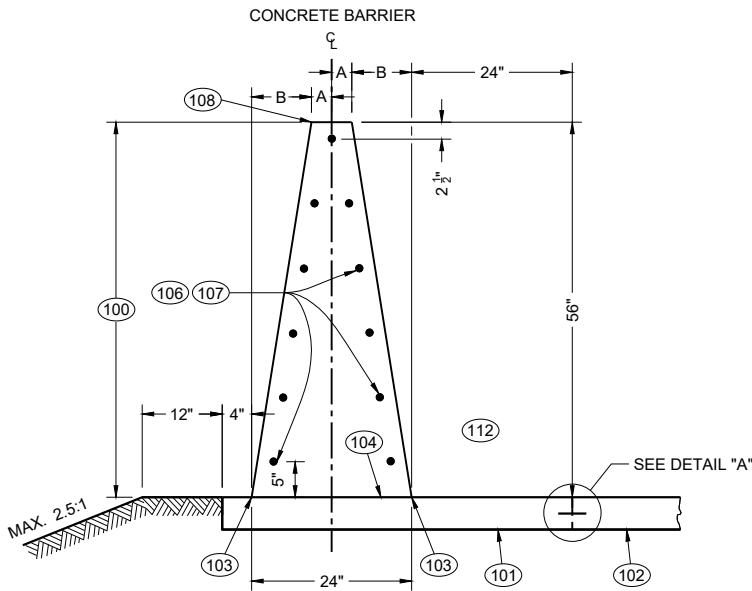


**32 - INCH, 36 - INCH OR 42 - INCH
SINGLE SLOPE CONCRETE BARRIER**
(TYPE S32, TYPE S36, TYPE S42)

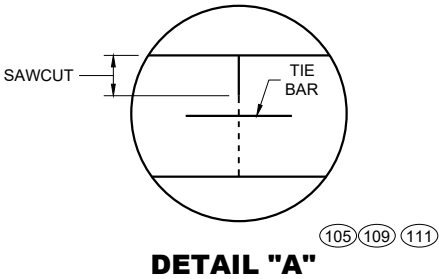
TABLE "A"			
BARRIER HEIGHT H INCHES	A INCHES	B INCHES	NUMBER OF NO. 5 BARS EACH
32	7	5	8
36	6 ¼	5 ¾	8
42	5 ¼	6 ¾	10
56	3	9	11



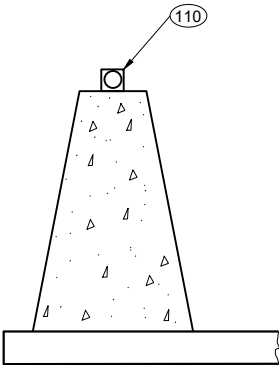
**SINGLE SLOPE
CONCRETE BARRIER ON BRIDGE**
(NON OUTER PARAPET APPLICATION)



**56 - INCH SINGLE
SLOPE CONCRETE BARRIER**
(TYPE S56)



DETAIL "A"



DELINEATION

GENERAL NOTES

WHERE THE CONCRETE BARRIER IS ADDED TO THE FACE OF EXISTING CONCRETE STRUCTURE, MATCH EXISTING WEEP HOLES.

LOCATE EXPANSION JOINTS IN CONCRETE BARRIER SHALL AT ALL DECK AND PRINCIPAL WALL JOINTS. FILL EXPANSION JOINT WITH EXPANSION JOINT MATERIAL. SEAL THE EXPANSION JOINT CONFORMING TO STANDARD SPECIFICATION 415.2.6.

PLACE BARRIER PERPENDICULAR TO SHOULDER GRADE, UNLESS INDICATED IN PLAN.

4000 PSI CONCRETE AIR ENTRAINMENT PER STANDARD SPECIFICATION 501.

2" CLEAR COVER TYPICAL

ANCHORS ARE REQUIRED AT CONCRETE BARRIER ENDS AND AT INTERRUPTIONS IN CONCRETE BARRIER. ANCHOR MAY BE AS SHOWN IN THIS SDD OR DETAIL SHOWN ON SDD 14B33. ANCHORS INCIDENTAL TO CBSS.

PROVIDE A 1" DEEP CONTRACTION JOINT IN BARRIER PAD AND BARRIER. JOINT IS TO MATCH ADJACENT CONCRETE JOINTS. NO DOWEL BARS ARE REQUIRED FOR BARRIER PAD. IF ADJACENT TO ASPHALT, CONTRACTION JOINT IS REQUIRED EVERY 15'.

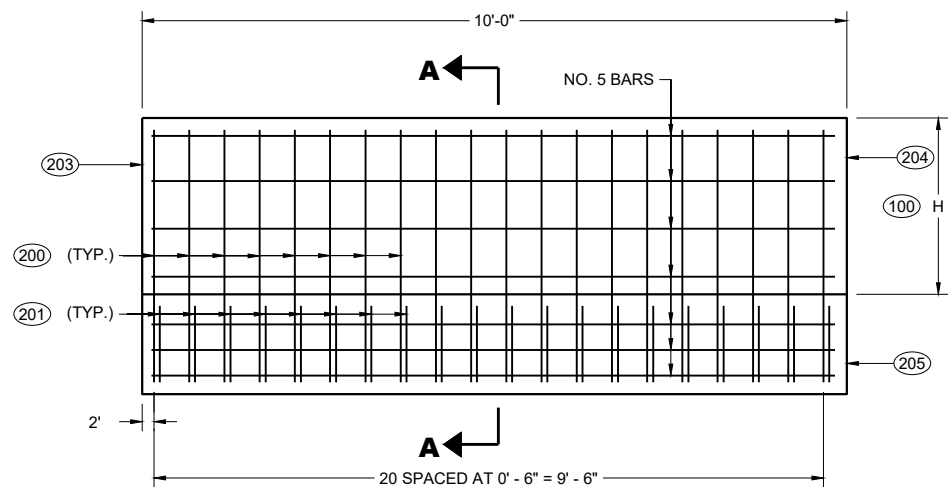
ALL REBAR SHALL BE EPOXY COATED M31 TYPE S. SEE STANDARD SPECIFICATION 505.

CONCRETE BARRIER, UPPER CONCRETE BARRIER, LOWER CONCRETE BARRIER, CONCRETE BARRIER PAD, AND FOOTINGS ARE TERMS USED TO DESCRIBE PARTS OF SINGLE SLOPE CONCRETE BARRIER BID ITEMS. THESE PARTS ARE INCIDENTAL TO THE SINGLE SLOPE CONCRETE BARRIER BID ITEMS.

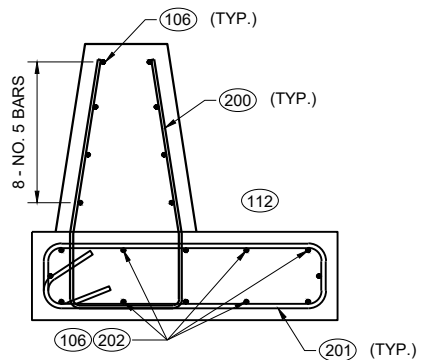
- (100) CONCRETE BARRIER
- (101) CONCRETE BARRIER PAD
- (102) PAVEMENT
- (103) WHERE VERTICAL ROADWAY OFFSET IS GREATER THAN 1 ½", USE TYPE A SINGLE SLOPE BARRIER.
- (104) OPTIONAL CONSTRUCTION JOINT.
- (105) CONSTRUCTION JOINTS MAY BE ELIMINATED WHEN CONCRETE SHOULDER IS LESS THAT 10'.
- (106) STAGGER LAPPING OF LONGITUDINAL STEEL. MINIMUM OVERLAP OF STEEL IS 2' BARS AT LAPS TO BE FIRMLY TIED OR CONNECTED.
- (107) NO. 5 CONTINUOUS BARS EVENLY SPACED (SEE TABLE "A").
- (108) USE ¾" BEVEL OR 1" RADIUS ON ALL EXPOSED SHARP EDGES UNLESS OTHERWISE NOTED.
- (109) CONCRETE BARRIER PAD UNDER CBSS MAY BE PLACED SEPARATELY OR PLACED WITH CONCRETE SHOULDER AND SAWED ½ DEPTH. CONCRETE BARRIER PAD AND SAWING OF CONCRETE SHOULDER IS INCIDENTAL TO CONCRETE BARRIER BID ITEM. CONCRETE BARRIER PAD MINIMUM DEPTH IS 6", OR EQUAL TO THE DEPTH OF THE CONCRETE SHOULDER.
- (110) SEE SDD 15A04 FOR DELINEATOR DETAILS AND SPACING.
- (111) SEE SDD 13C01 FOR DETAILS TYPING CONCRETE BARRIER TO ADJACENT CONCRETE
- (112) TRAFFIC SIDE

**CONCRETE BARRIER
SINGLE SLOPE (CBSS)**

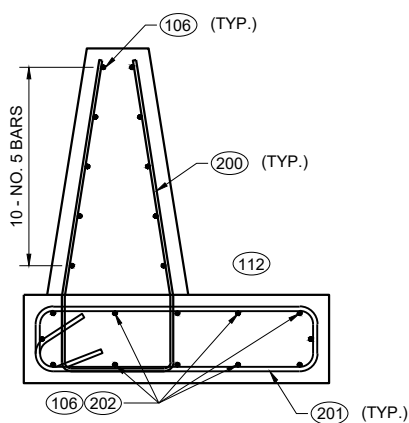
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



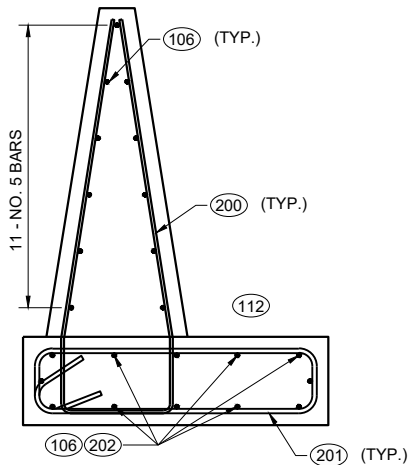
END ANCHOR SINGLE SLOPE CONCRETE BARRIER



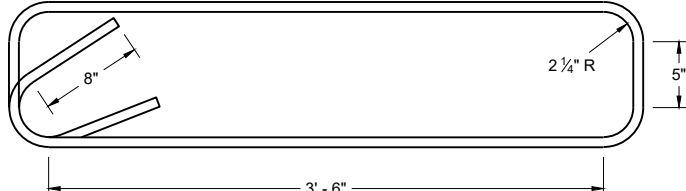
32" AND 36" CBSS



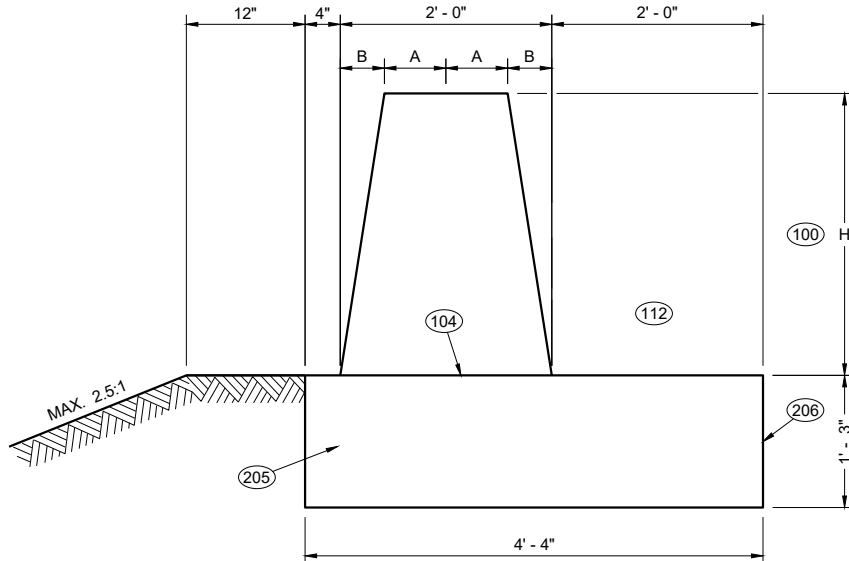
42" CBSS



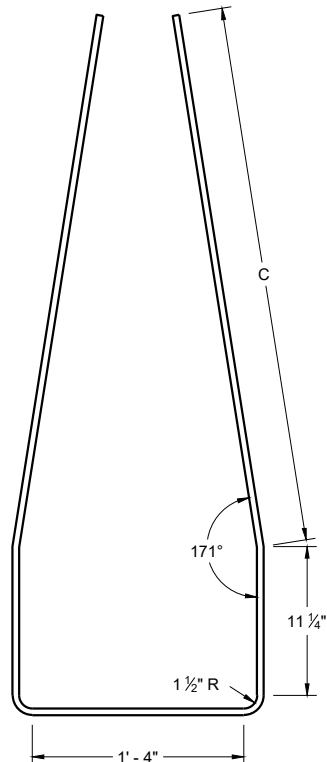
56" CBSS



STIRRUP BAR BENDING DETAIL



SECTION A - A



V1 BAR BENDING DETAIL

TABLE "B"

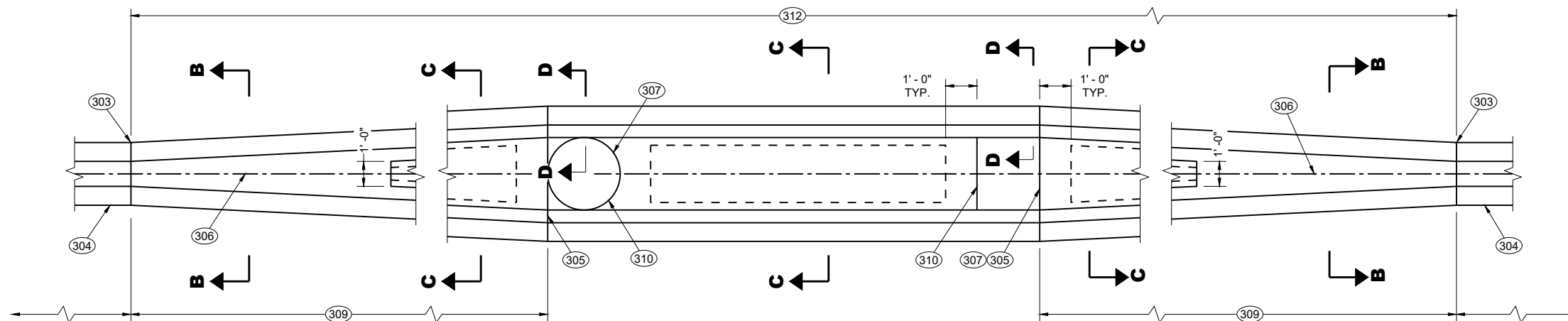
BARRIER HEIGHT H INCHES	C INCHES
32	2' - 6"
36	2' - 11"
42	3' - 4"
56	4' - 6 1/2"

GENERAL NOTES

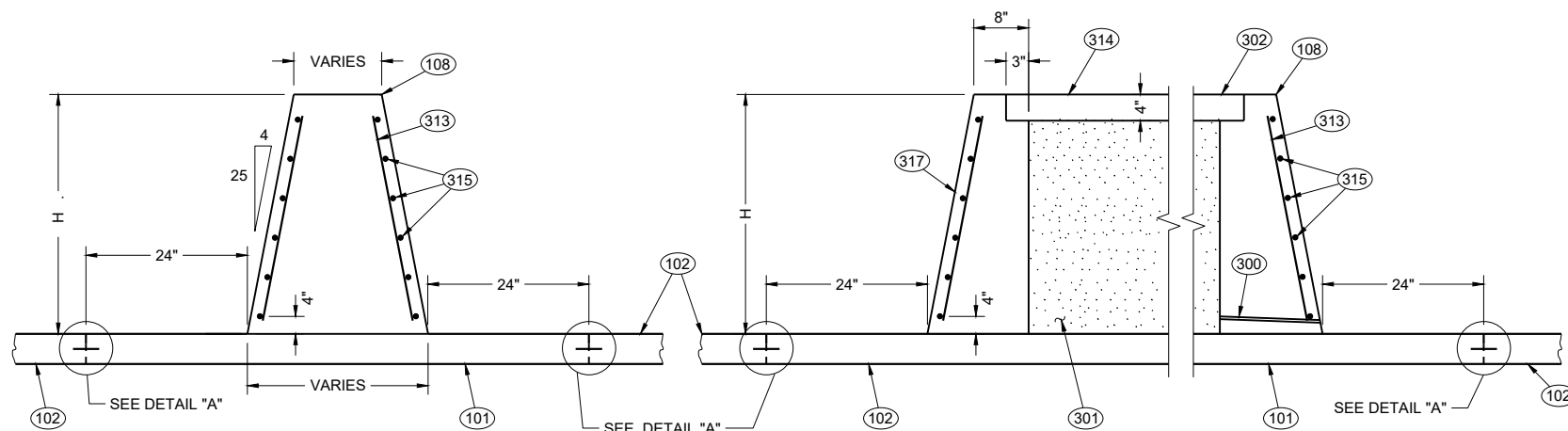
- (200) V1 BARS ARE NO. 5 BARS. (SEE BAR BENDING DETAIL)
- (201) STIRRUPS ARE NO. 6 BARS. (SEE BAR BENDING DETAIL)
- (202) TWELVE (12) NO. 5 BARS EVENLY SPACED
- (203) END OF INSTALLATION OR EXPANSION JOINT.
- (204) SEE COLD JOINT DETAIL TO CONNECT END ANCHOR SINGLE SLOPE CONCRETE BARRIER TO SINGLE SLOPE CONCRETE BARRIER.
- (205) FOOTING
- (206) DO NOT TIE TO FOOTING TO ADJACENT PAVEMENT.

CONCRETE BARRIER
SINGLE SLOPE (CBSS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

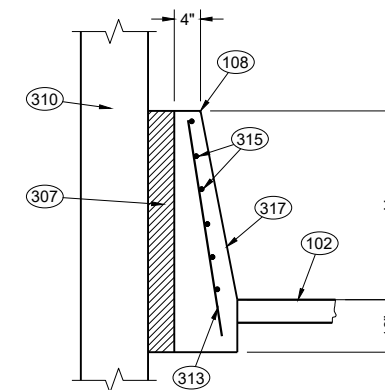


**LARGE FIXED OBJECTS PROTECTION
(TYPE S32, TYPE S36, TYPE S42, TYPE S56)**

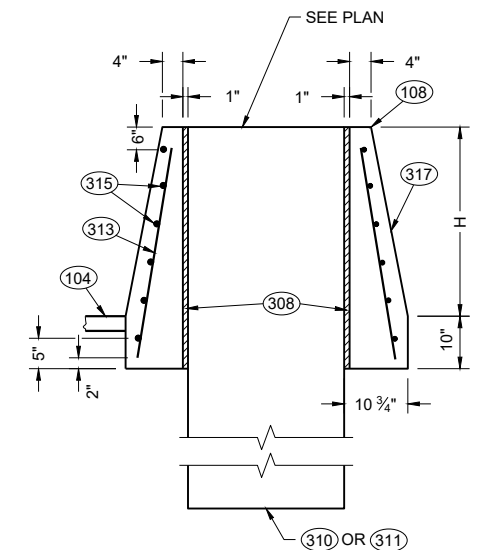


SECTION B - B

SECTION C - C



SECTION D - D



SECTION E - E

TABLE "C"

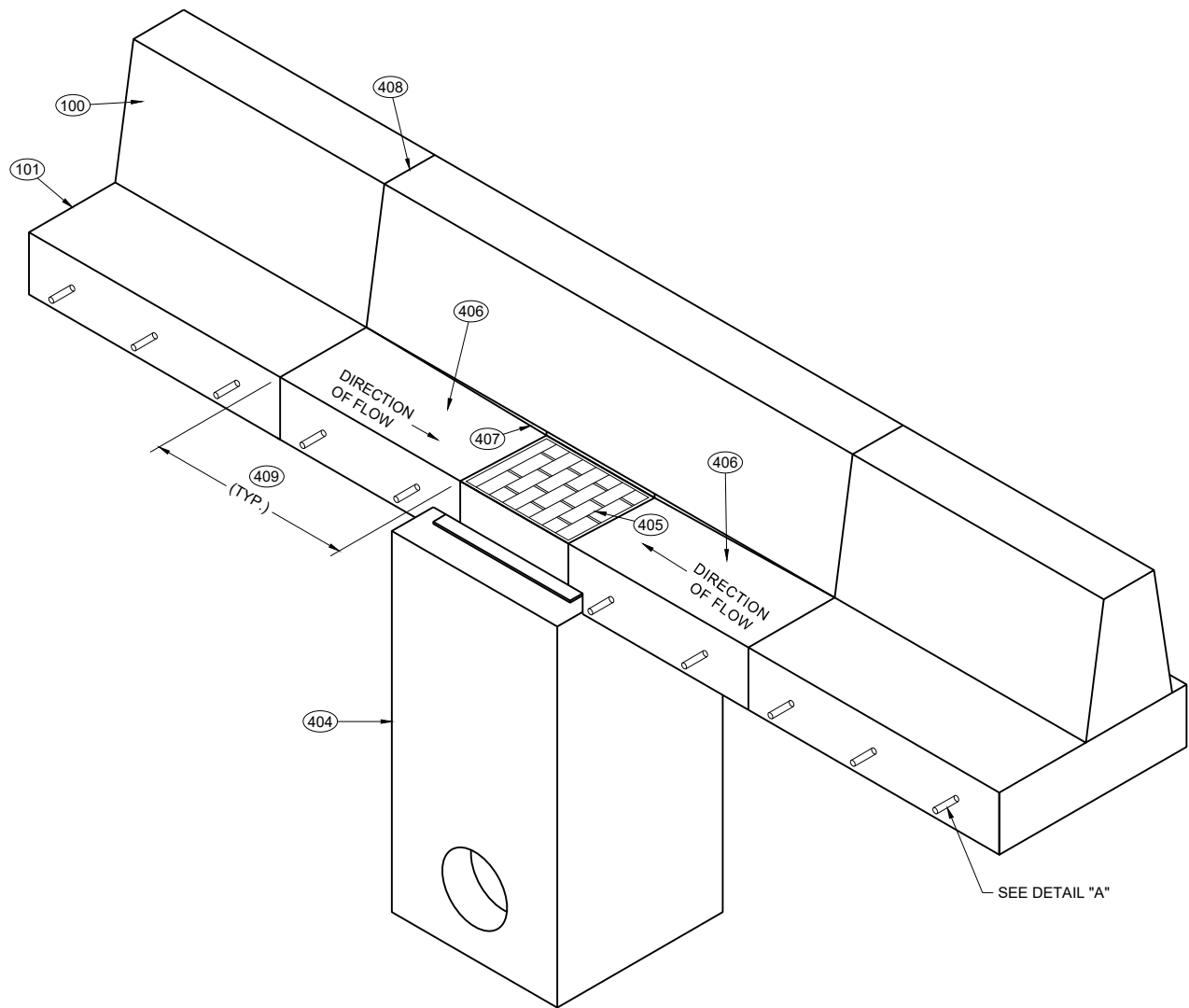
BARRIER HEIGHT H INCHES	BAR SIZE	NUMBER OF BARS EACH
32	4	6
36	4	6
42	5	6
56	5	6

GENERAL NOTES

- (300) INSTALL 1 INCH DIAMETER DRAIN PIPE EVERY 20 FEET OF CROSS SECTION B-B. MINIMUM ONE DRAIN CAVITY.
- (301) BETWEEN CONCRETE BARRIER WALLS FILL WITH FOUNDATION BACKFILL.
- (302) LEVEL THE TOP OF CONCRETE BARRIER CAP ACROSS TOP OF BARRIER. ADJUST HEIGHT OF CONCRETE BARRIER WALL ON LOW SIDE OF OFFSET OR SUPERELEVATED ROADWAYS TO PROVIDE LEVEL GRADE ACROSS TOP OF CONCRETE CAP.
- (303) USE COLD JOINTS BETWEEN FIXED OBJECT PROTECTION AND CONCRETE BARRIER ANCHOR.
- (304) INSTALL END ANCHOR SINGLE SLOPE CONCRETE BARRIER.
- (305) SEE COLD JOINT DETAIL
- (306) CENTERLINE OF CONCRETE BARRIER.
- (307) INSTALL 4" EXPANDED POLYSTYRENE BETWEEN COLUMN AND CONCRETE BARRIER.
- (308) INSTALL 1" EXPANDED POLYSTYRENE BETWEEN PEDESTAL AND CONCRETE BARRIER.
- (309) 20:1 MIN. TRANSITION.
- (310) COLUMN
- (311) PEDESTAL
- (312) LIMITS OF PAYMENT FOR LARGE FIXED OBJECT PROTECTION (SEE PLAN)
- (313) NO. 4 BARS SPACED 12" CENTER TO CENTER (TYP.)
- (314) USE NO. 3 BAR SPACED 12 INCHES CENTER TO CENTER (PLACED IN EACH DIRECTION) OR EQUIVALENT WIRE MESH.
- (315) SEE TABLE "C" FOR BAR INFORMATION
- (316) ELECTRICAL PULL BOX FOR SIGN FLUSH WITH TOP OF CONCRETE BARRIER.
- (317) VARIABLE SLOPE

**CONCRETE BARRIER
SINGLE SLOPE (CBSS)**

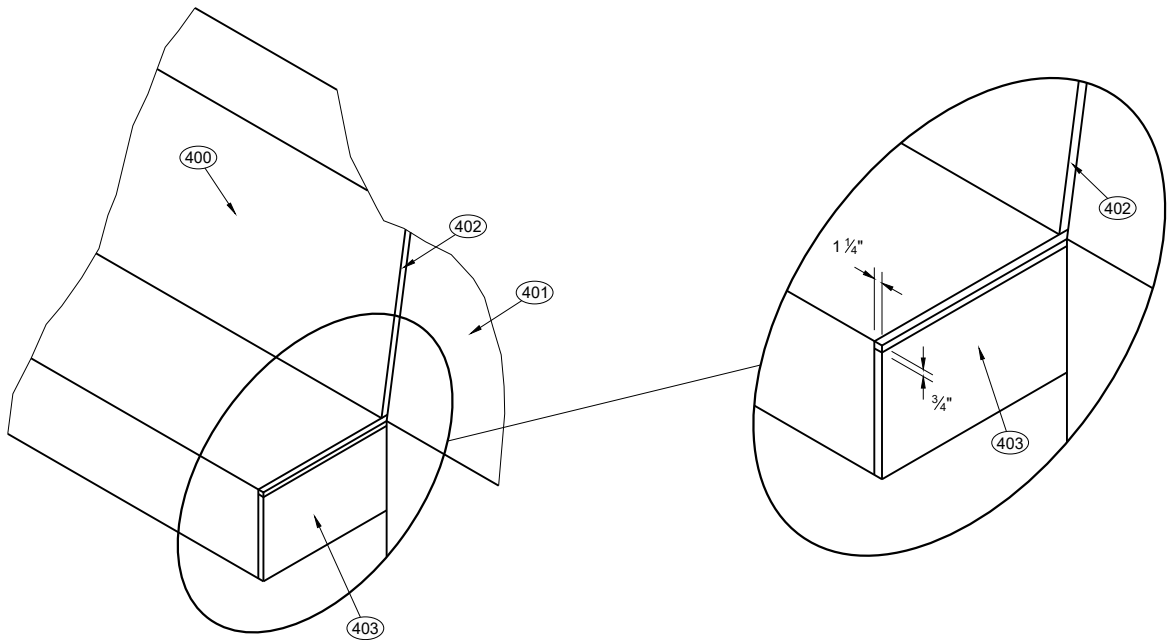
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



DRAINAGE DETAIL

GENERAL NOTES

- (400) END ANCHOR SINGLE SLOPE CONCRETE BARRIER.
- (401) PARAPET, SIGN BRIDGE BASE, LIGHT POLE BASE OR OTHER OBJECT SINGLE SLOPE CONCRETE BARRIER CANNOT TIE INTO.
- (402) JOINT SEAL CONFORMING TO STANDARD SPECIFICATION 415.2.6
- (403) EXPANSION JOINT MATERIAL.
- (404) INLET (SEE PLAN)
- (405) INLET COVER BW (SEE PLAN)
- (406) WARP PAN TO MATCH INLET COVER.
- (407) EXTEND BARRIER SLOPE TO INLET. SEE PLAN FOR THE LENGTH OF EXTENSION.
- (408) CONTRACTION JOINT.
- (409) WHEN ADJACENT TO CONCRETE PAVEMENT OR SHOULDER, JOINT SHOULD MATCH CONCRETE JOINTS. OTHERWISE, 3' (TYP.). SEE SDD 13C18 FOR MORE INFORMATION.



EXPANSION JOINT DETAIL

CONCRETE BARRIER
SINGLE SLOPE (CBSS)

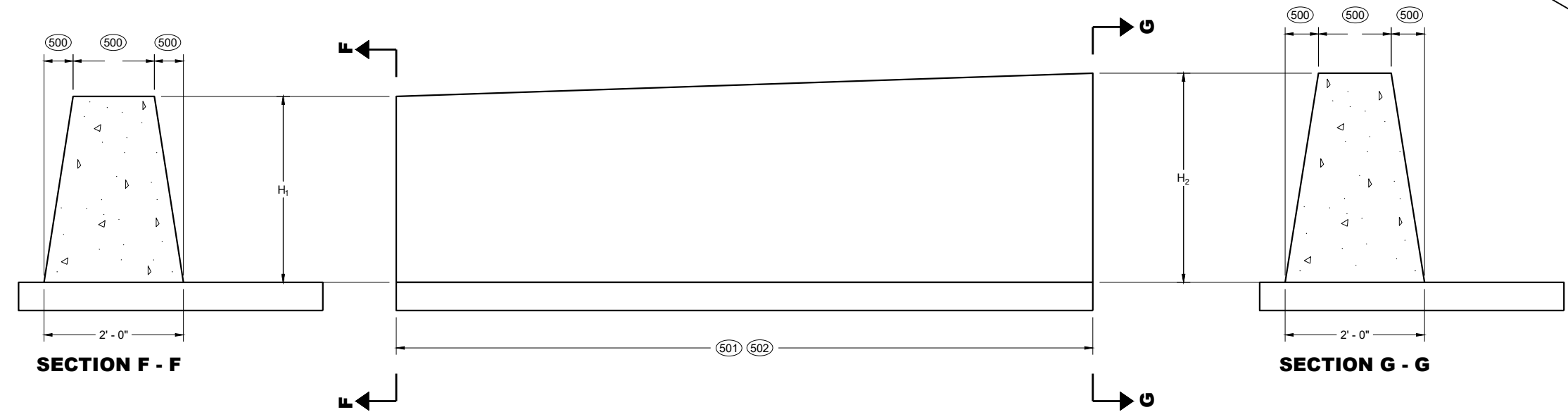
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

USE COLD JOINT TO CONNECT MULTIPLE HEIGHT TRANSITIONS.

- 500 SEE TABLE "A" FOR DIMENSIONS
- 501 SEE TABLE "D"
- 502 MULTIPLE HEIGHT TRANSITION MAY BE USED IN SEQUENCE TO GET APPROPRIATE HEIGHT.
- 503 COLD JOINT
- 504 BARRIER REBAR (SEE OTHER DETAILS FOR BAR SIZE, QUANTITY AND LOCATION). SINGLE SLOPE BARRIER SHOWN. SIMILAR DETAIL CAN BE USED FOR COLD JOINT IN

- 505 END ANCHORS AND TRANSITIONS.
- 506 NO. 5 REBAR FOR SPLICE. 3' OF SPLICE REBAR IS LAPPED AND TIED TO BARRIER REBAR. EXTEND 3' OF SPLICE REBAR BEYOND END OF POUR. ALL BARS ARE FIRMLY TIED OR CONNECTED. EVERY REBAR IN THE BARRIER SECTION REQUIRES A SPLICE BAR.
- 507 END OF POUR.
- 508 LAP AND TIE 3' OF NEXT POUR'S REBAR TO SPLICE REBAR.



COLD JOINT DETAIL

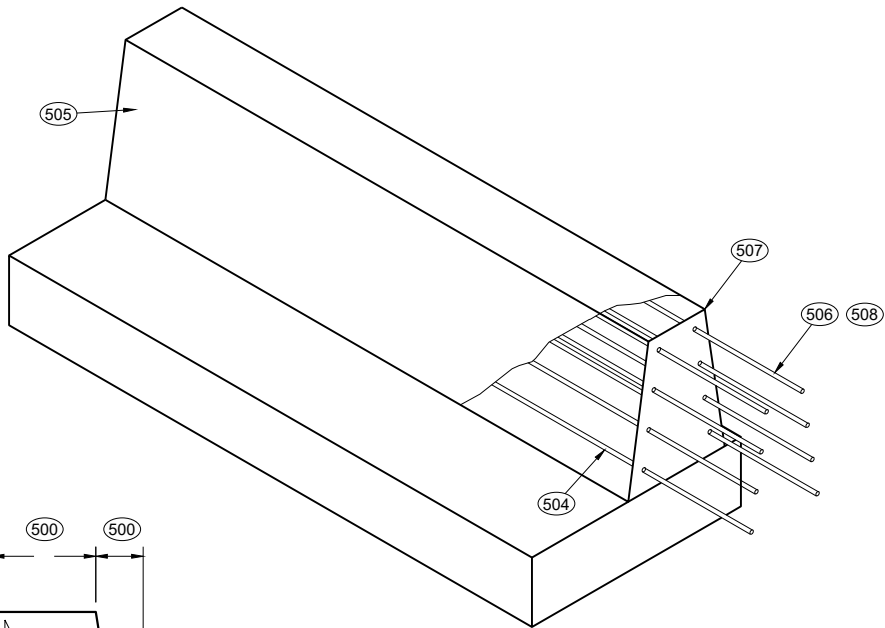
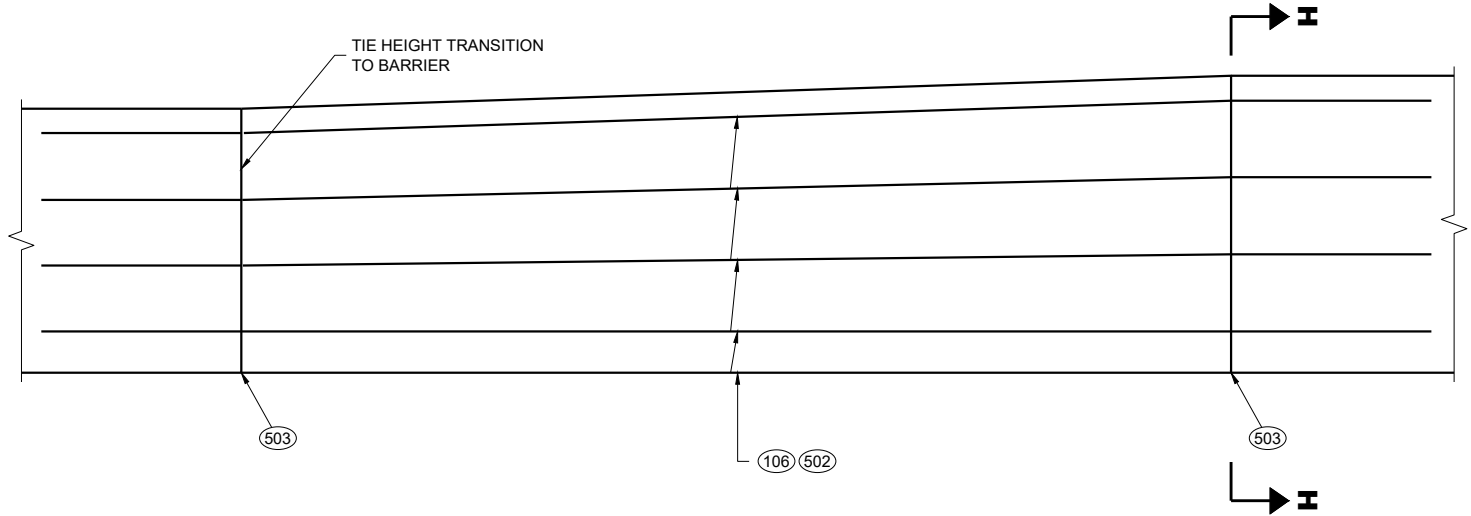


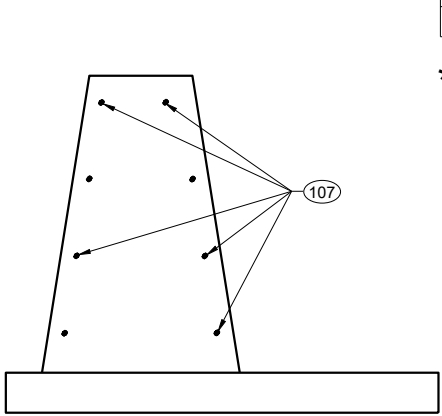
TABLE "D"

H ₁	H ₂	L *	NUMBER OF NO. 5 BARS
32"	36"	10' - 0"	8
36"	42"	10' - 6"	10
42"	56"	24' - 6"	11

* LENGTH OF DOUBLE COLD JOINT INCLUDED IN THE TOTAL LENGTH OF CBSS.



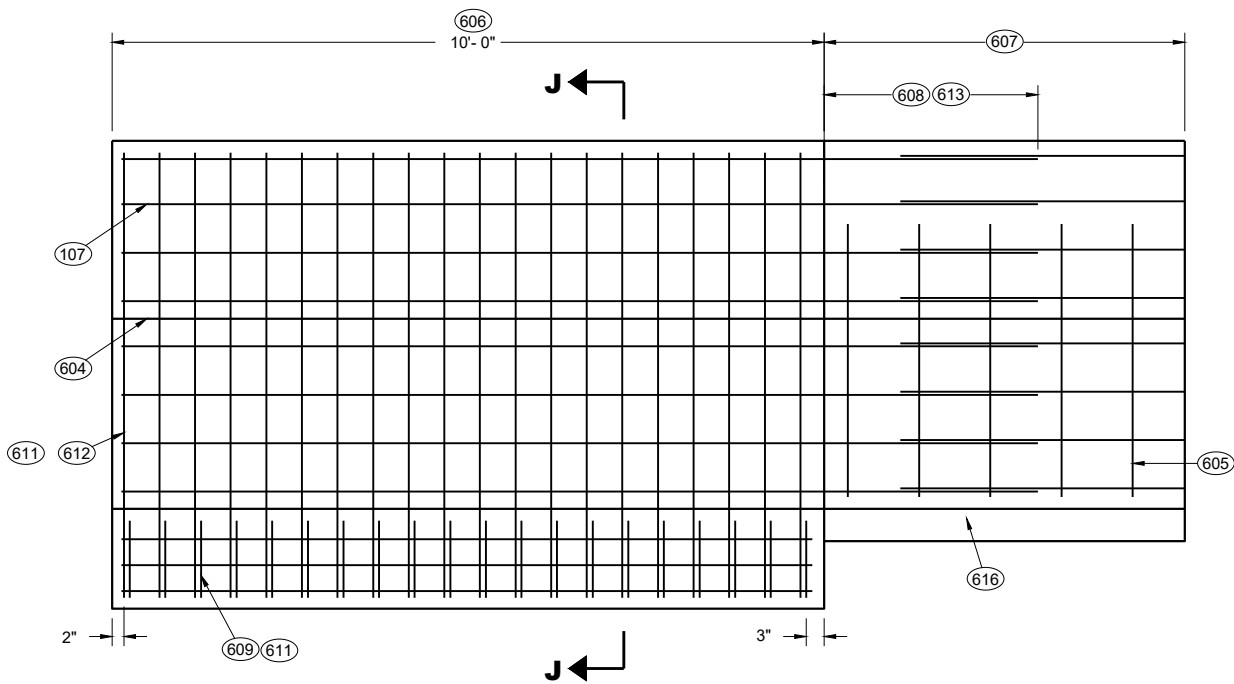
STEEL REINFORCEMENT DETAIL



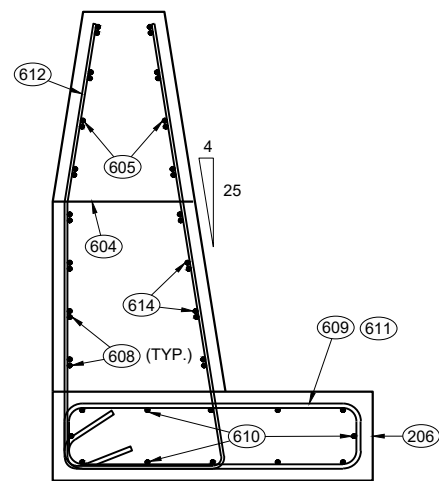
SECTION H - H

CONCRETE BARRIER
SINGLE SLOPE (CBSS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

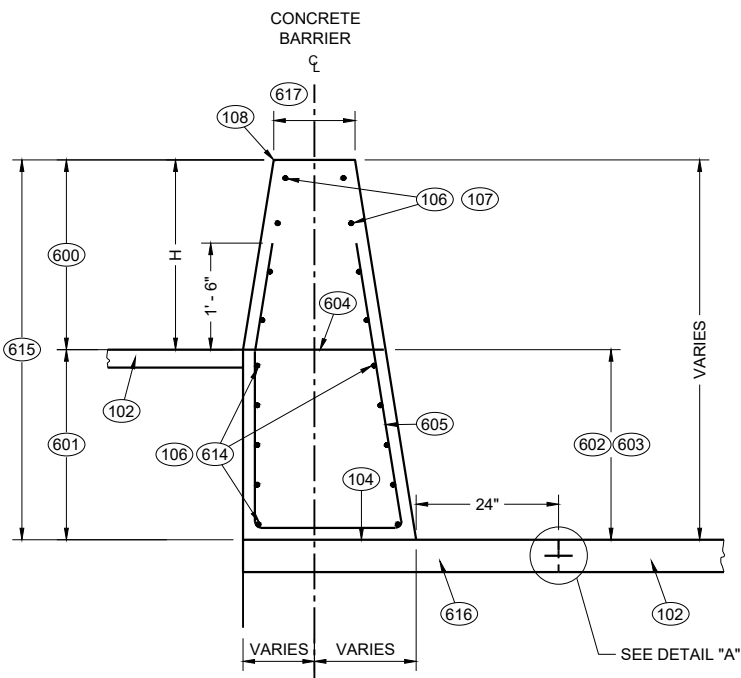


**END ANCHOR MEDIAN BARRIER
AND RETAINING WALL**

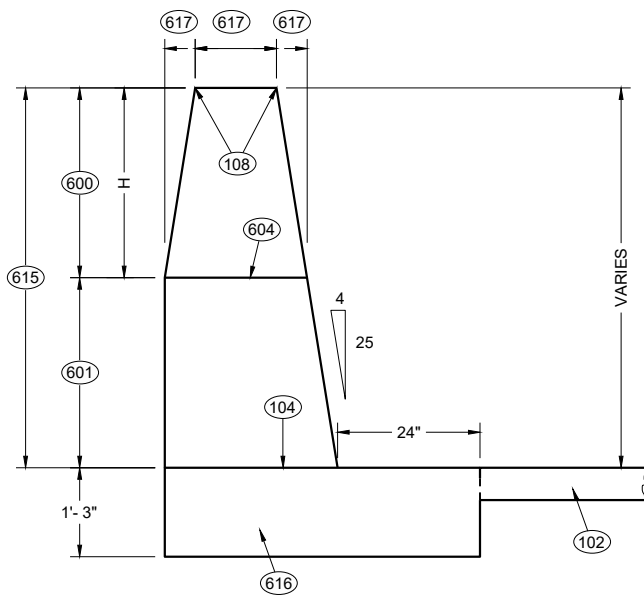


**SECTION J - J
END ANCHOR AND MEDIAN WALL END
ANCHOR REINFORCEMENT DETAIL**

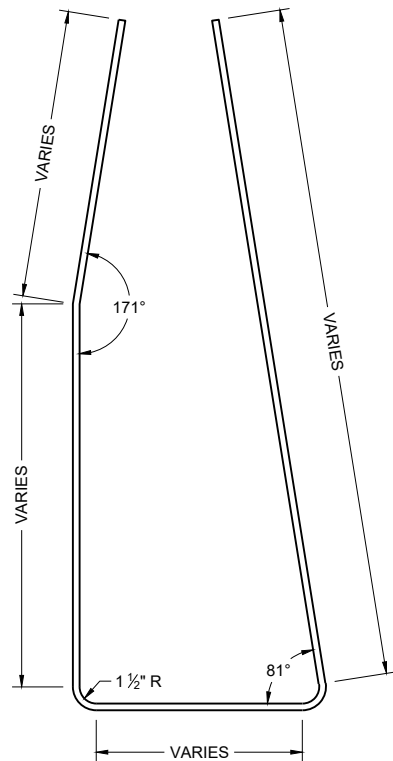
- GENERAL NOTES**
- (600) UPPER CONCRETE BARRIER
 - (601) LOWER CONCRETE BARRIER
 - (602) MAX HEIGHT 36".
 - (603) VERTICAL OFFSET FROM TOP ROADWAY SURFACES
 - (604) OPTIONAL CONSTRUCTION JOINT WHEN HEIGHT IS GREATER THAN 1 ½".
 - (605) NO. 4 BARRIER LOOP BARS ARE NOT REQUIRED FOR ROADWAY OFFSETS ARE LESS THAN 1'- 0", EXCEPT WHEN USED IN ANCHORS. BARRIER LOOP BARS ARE SPACED 12" CENTER TO CENTER OUTSIDE OF MEDIAN BARRIER AND RETAINING WALL END ANCHOR.
 - (606) SINGLE SLOPE CONCRETE BARRIER AND RETAINING WALL ANCHOR
 - (607) SINGLE SLOPE CONCRETE BARRIER AND RETAINING WALL (SEE OTHER DETAILS)
 - (608) NO. 5 REBAR 3' OF LAP OF LONGITUDINAL STEEL.
 - (609) NO. 6 REBAR END ANCHOR FOOTING LOOP
 - (610) TWELVE (12) NO. 5 BARS EVENLY SPACED.
 - (611) SS ANCHOR END LOOP AND END ANCHOR FOOTING LOOP ARE SPACED 6" CENTER TO CENTER.
 - (612) END ANCHOR LOOP BAR IS NO. 5 REBAR.
 - (613) SEE COLD JOINT DETAIL.
 - (614) SEE TABLE "E" FOR REQUIRED REBAR
 - (615) TOTAL BARRIER HEIGHT (SEE PLAN FOR HEIGHT)
 - (616) FOR SOME LOCATIONS, NO PAN IS NEEDED. SEE OTHER DETAILS.
 - (617) SEE TABLE "A" FOR DIMENSIONS



**SINGLE SLOPE CONCRETE
BARRIER AND RETAINING WALL
(TYPE S32A, TYPE S36A, TYPE S42A, TYPE S56A)
(BETWEEN ADJACENT ROADWAYS)**



**SECTION J - J
MEDIAN BARRIER AND RETAINING
WALL END ANCHOR DIMENSIONS**



**LOOP BAR
BENDING DETAIL**



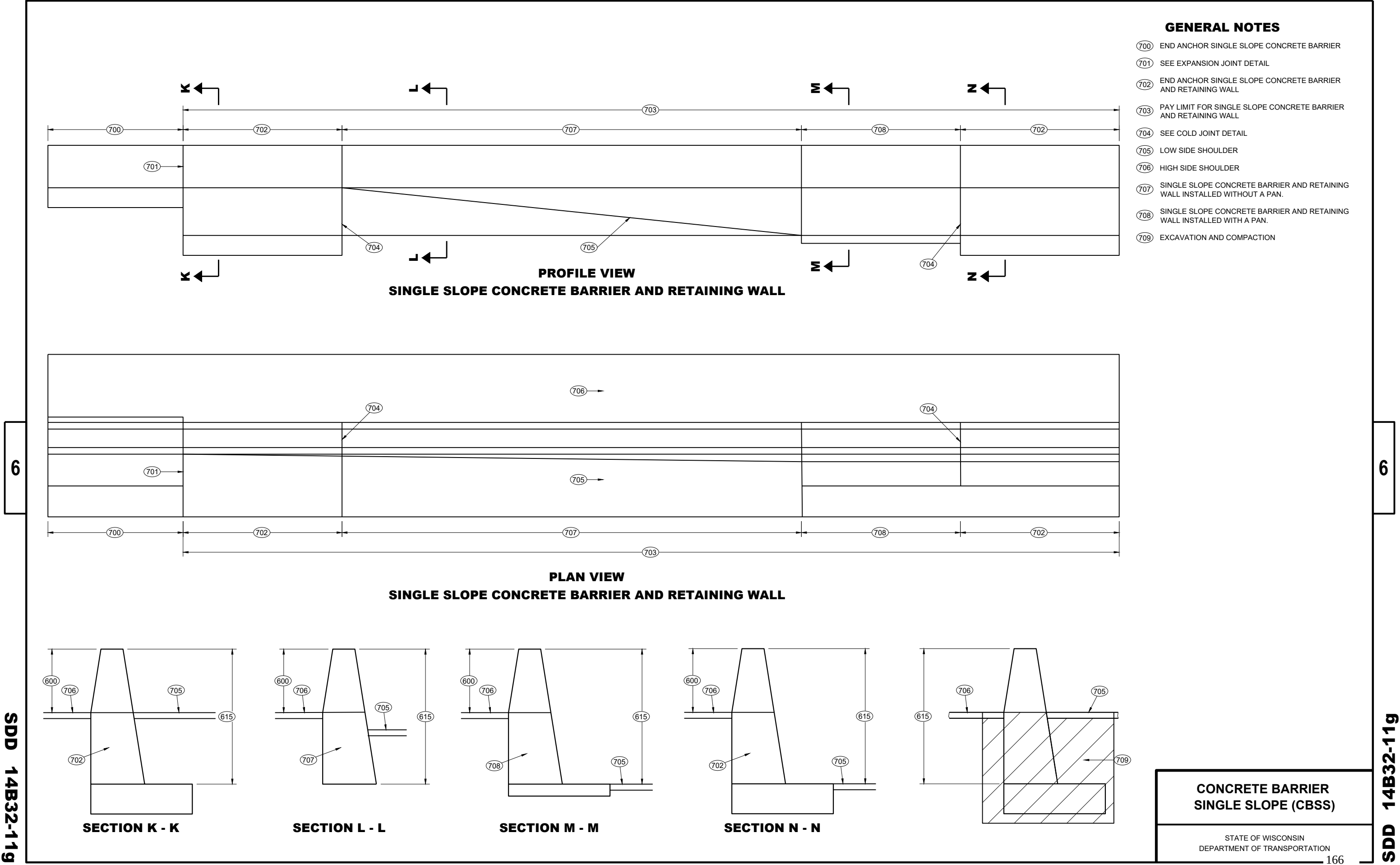
**END ANCHOR STIRRUP BAR
BENDING DETAIL**

TABLE "E"

HEIGHT BETWEEN ROADWAY	QUANTITY OF NO. 6 BARS
0 TO 3"	0
GREATER THAN 3" TO 8"	2
GREATER THAN 8" TO 12"	4
GREATER THAN 12" TO 36"	8

**CONCRETE BARRIER
SINGLE SLOPE (CBSS)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

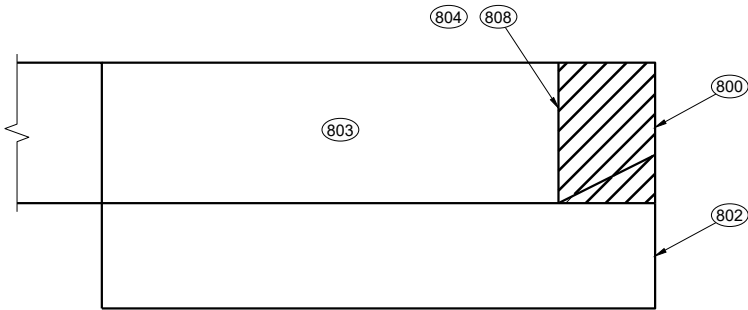


6

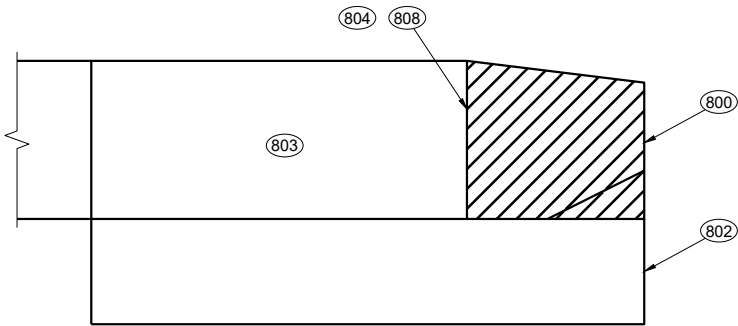
6

SDD 14B32-11g

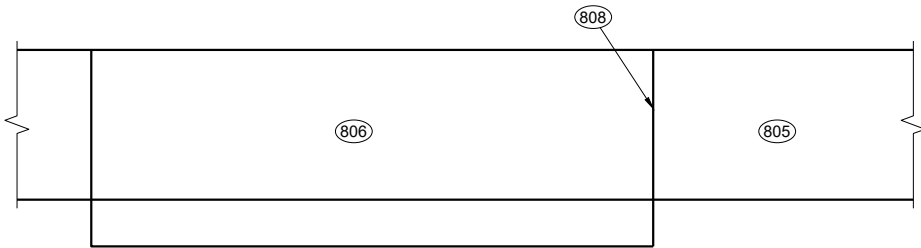
SDD 14B32-11g



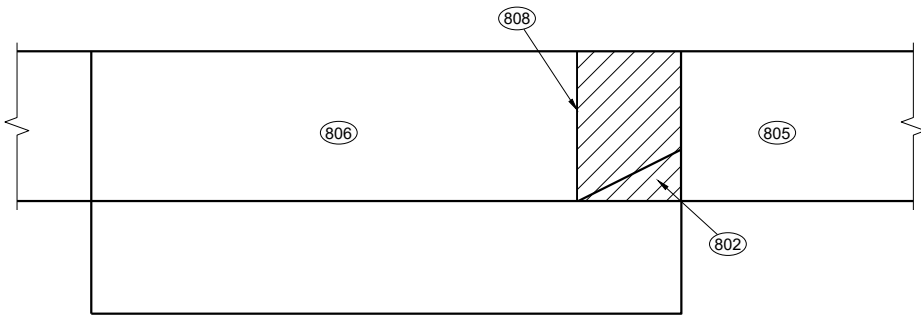
REMOVAL AREA OF
32" CONCRETE THRIE BEAM ANCHORAGE



REMOVAL AREA OF CONCRETE THRIE BEAM
ANCHORAGE WITH HEIGHT GREATER THAN 32"



CONCRETE BARRIER EXTENSION NEAR END ANCHORAGE



CONCRETE BARRIER EXTENSION NEAR THRIE BEAM TERMINAL

RETROFIT OR REPAIR SINGLE SLOPE CONCRETE BARRIER

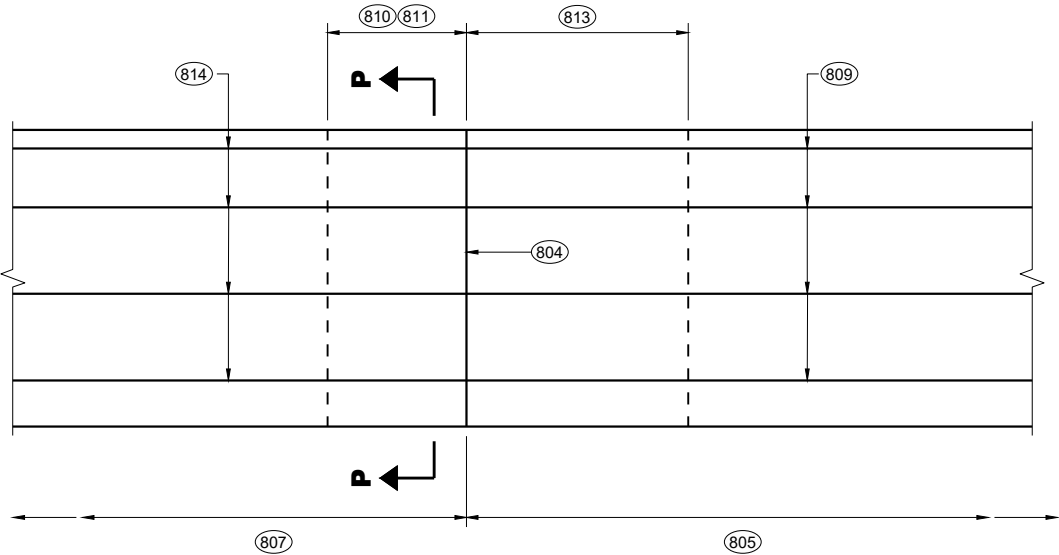
GENERAL NOTES

END ANCHORAGE MAY OR MAY NOT BE PRESENT ON EXISTING BARRIER.

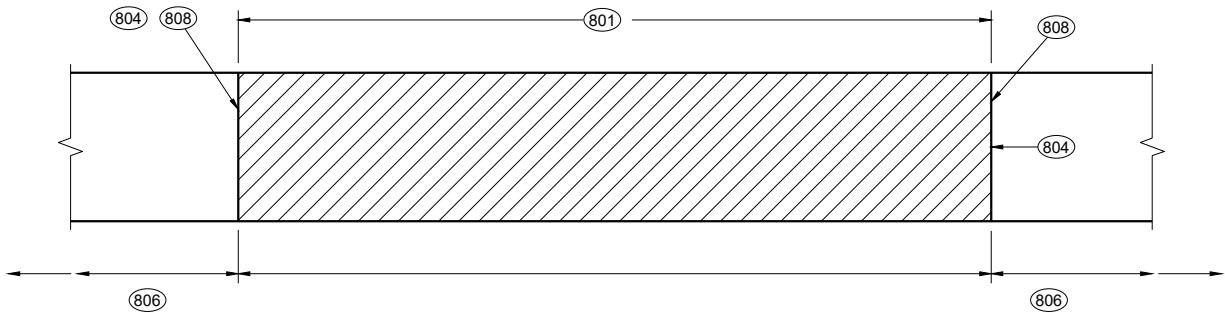
REMOVE THRIE BEAM ANCHORAGE AS SHOWN.

- 800 AREA OF BARRIER REMOVAL AN NEW CONCRETE AND STEEL IS INSTALLED.
- 801 MINIMUM LENGTH OF REMOVAL IS 15'
- 802 FOOTING BELOW GROUND MAY REMAIN IN PLACE.
- 803 CONCRETE BARRIER SINGLE SLOPE THRIE BEAM ANCHOR TO REMAIN.
- 804 SAW CUT
- 805 NEW SINGLE SLOPE CONCRETE BARRIER.
- 806 CONCRETE BARRIE SINGLE SLOPE TO REMAIN.

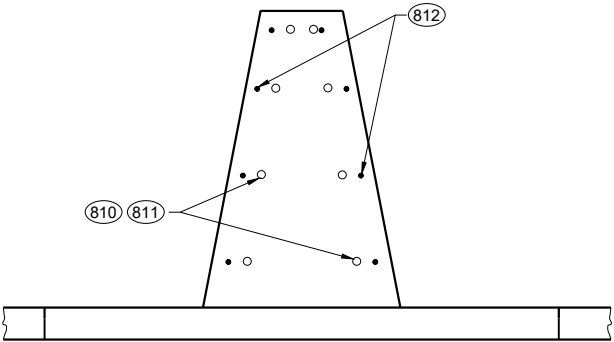
- 807 SINGLE SLOPE CONCRETE BARRIER OR CONCRETE BARRIER SINGLE SLOPE THRIE BEAM ANCHOR TO REMAIN.
- 808 SEE CONNECTION DETAIL.
- 809 NO. 5 CONTINUOUS BAR.
- 810 3' MIN. DRILL HOLES. USES NO. 5 ADHESIVE ANCHORS.
- 811 THE NUMBER OF DRILL HOLES IS EQUAL TO THE NUMBER OF HORIZONTAL REBAR IN BARRIER. DRILL HOLES ARE TO BE A MINIMUM OF 4" FROM EDGE OF CONCRETE.
- 812 EXISTING REBAR IN EXISTING BARRIER OR END ANCHOR.
- 813 3' BAR OVERLAP
- 814 EXISTING REINFORCEMENT



CONNECTION DETAIL
SINGLE SLOPE CONCRETE BARRIER TO
NEW SINGLE SLOPE CONCRETE BARRIER



BARRIER REMOVAL AND REPLACEMENT



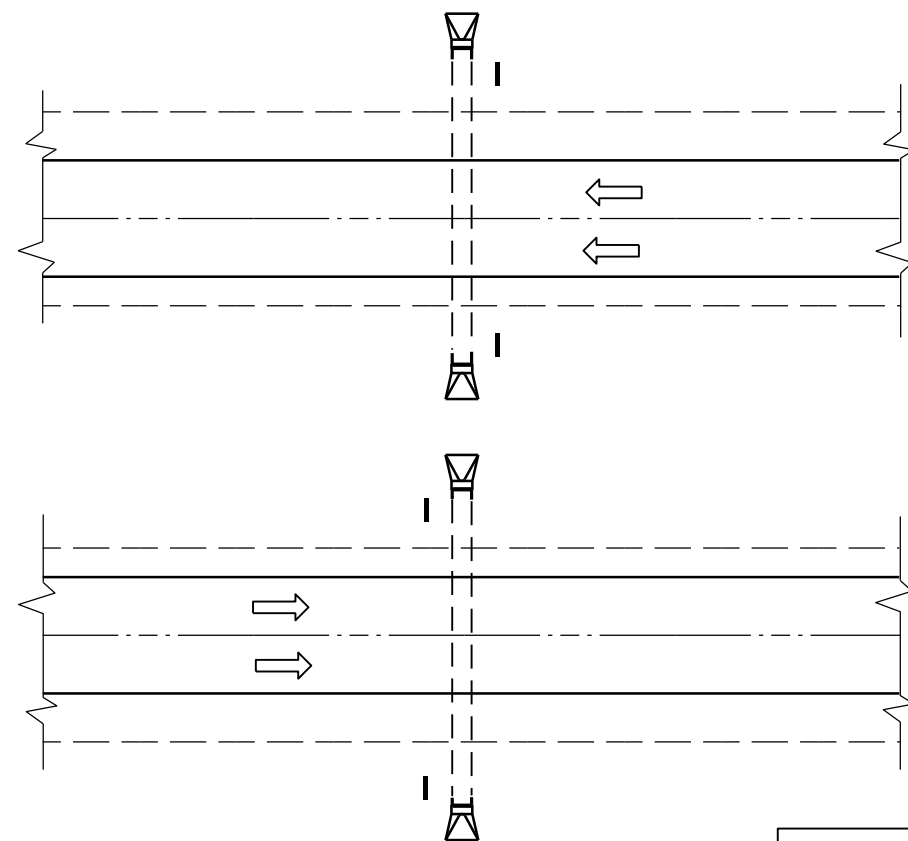
SECTION P - P

CONCRETE BARRIER
SINGLE SLOPE (CBSS)

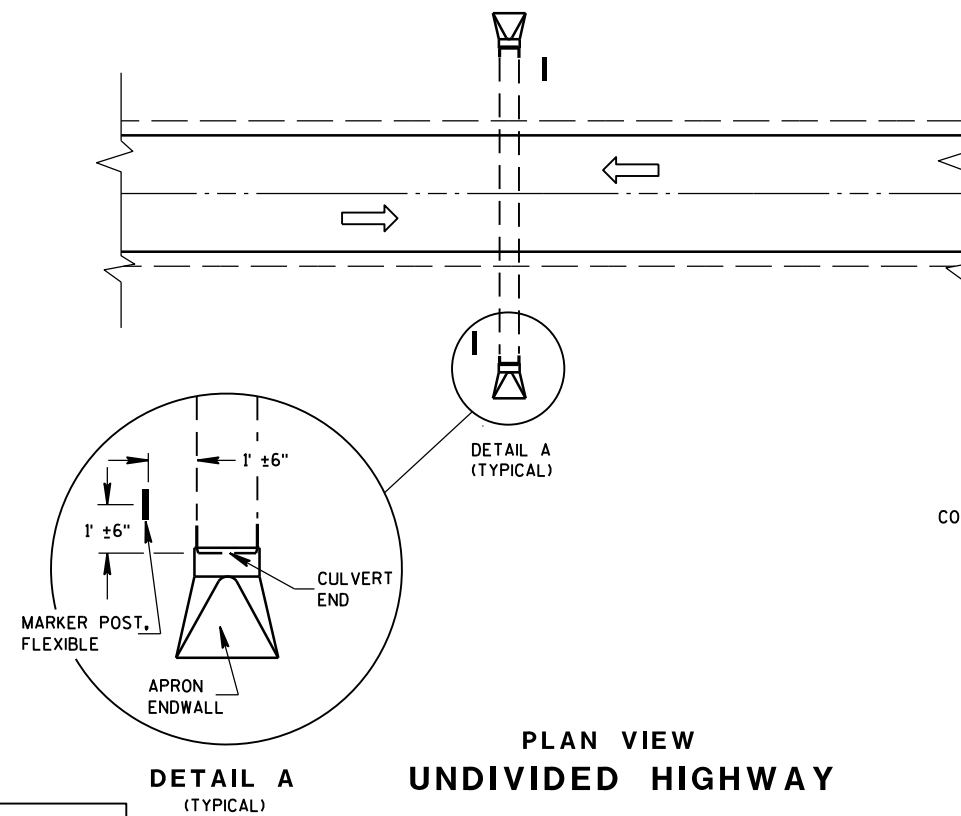
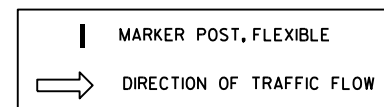
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2024 /S/ Rodney Taylor
DATE ROADWAY STANDARDS DEVELOPMENT ENGINEER

FHWA



PLAN VIEW
DIVIDED HIGHWAY

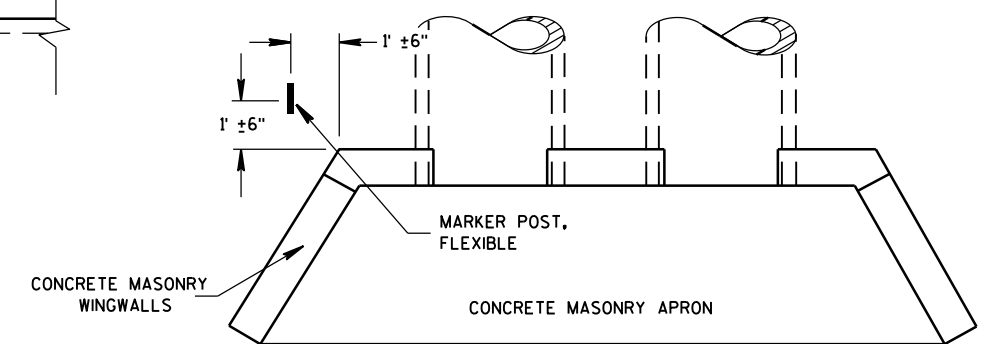


PLAN VIEW
UNDIVIDED HIGHWAY

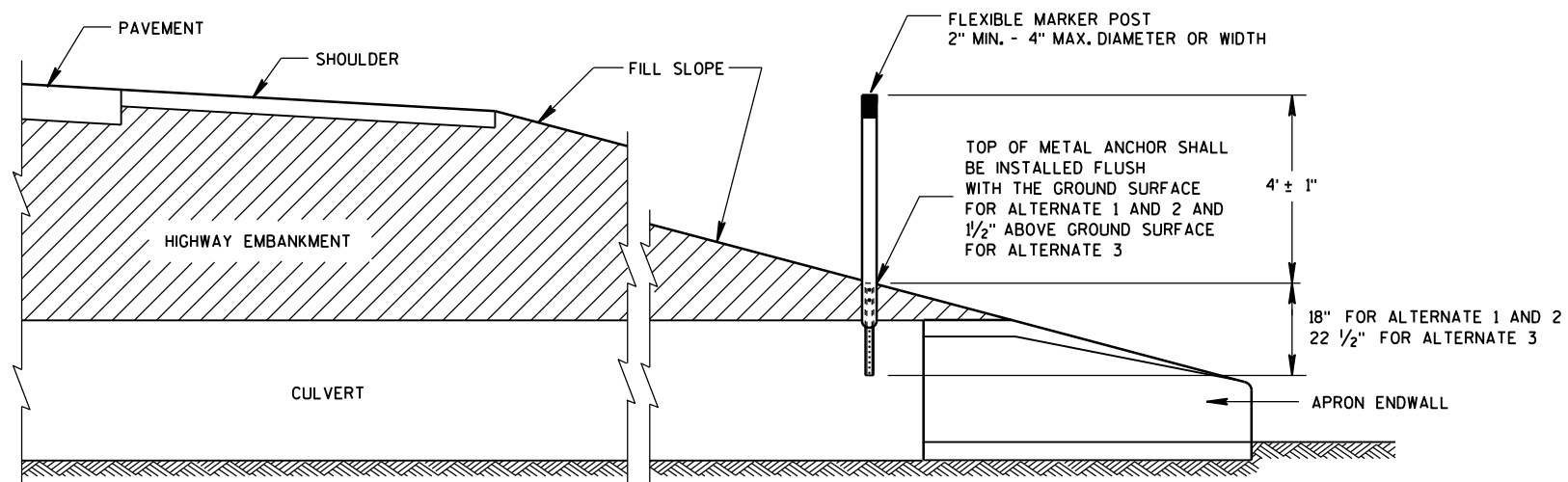
FLEXIBLE MARKER POST LOCATION

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.



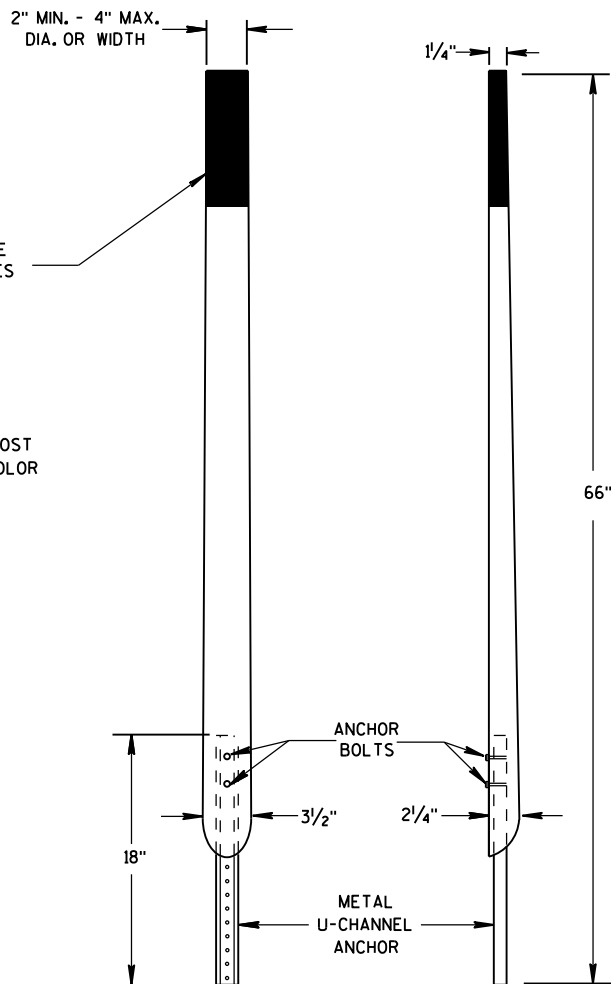
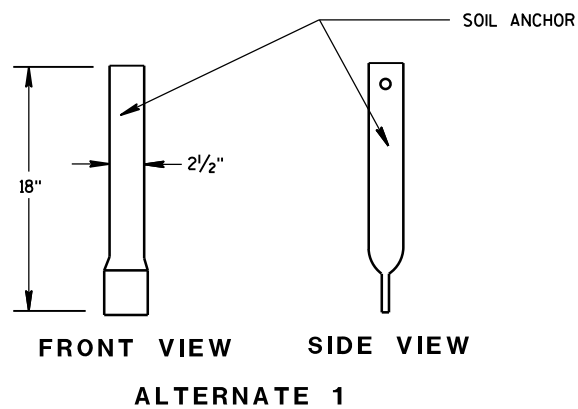
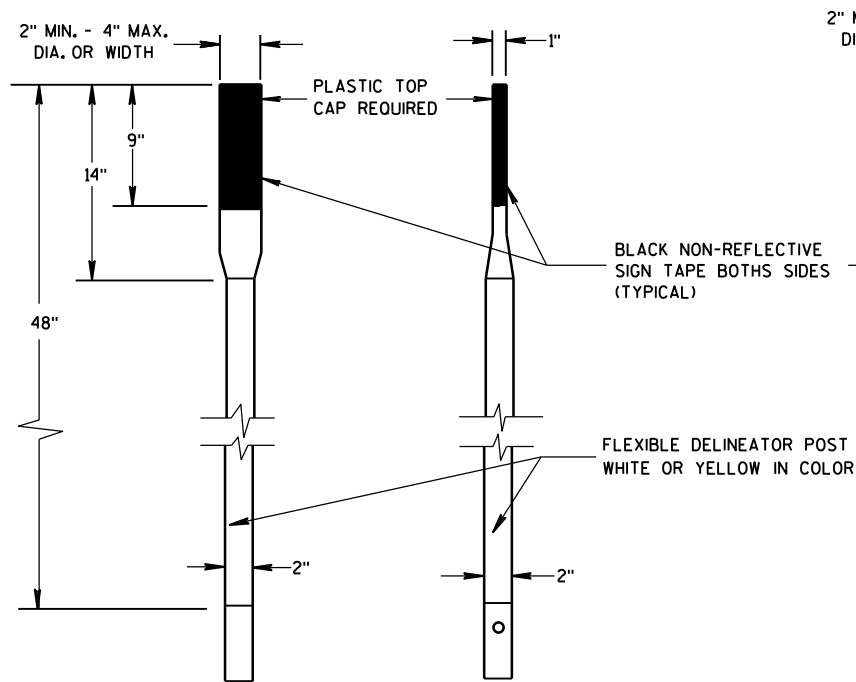
PLAN VIEW
CONCRETE MASONRY ENDWALLS FOR
CULVERT PIPE AND PIPE ARCH



CROSS SECTION
FLEXIBLE MARKER POST

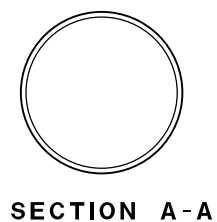
FLEXIBLE MARKER POST
FOR CULVERT END

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 168

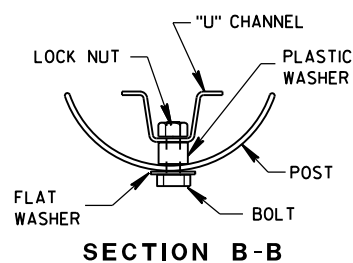
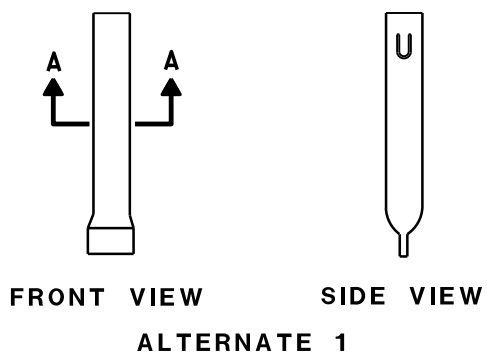


FRONT VIEW SIDE VIEW
ALTERNATE 2

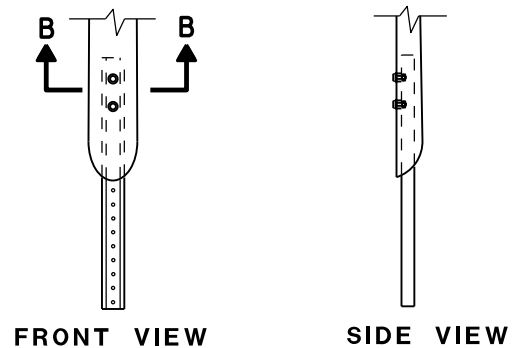
FLEXIBLE MARKER POSTS



SECTION A-A

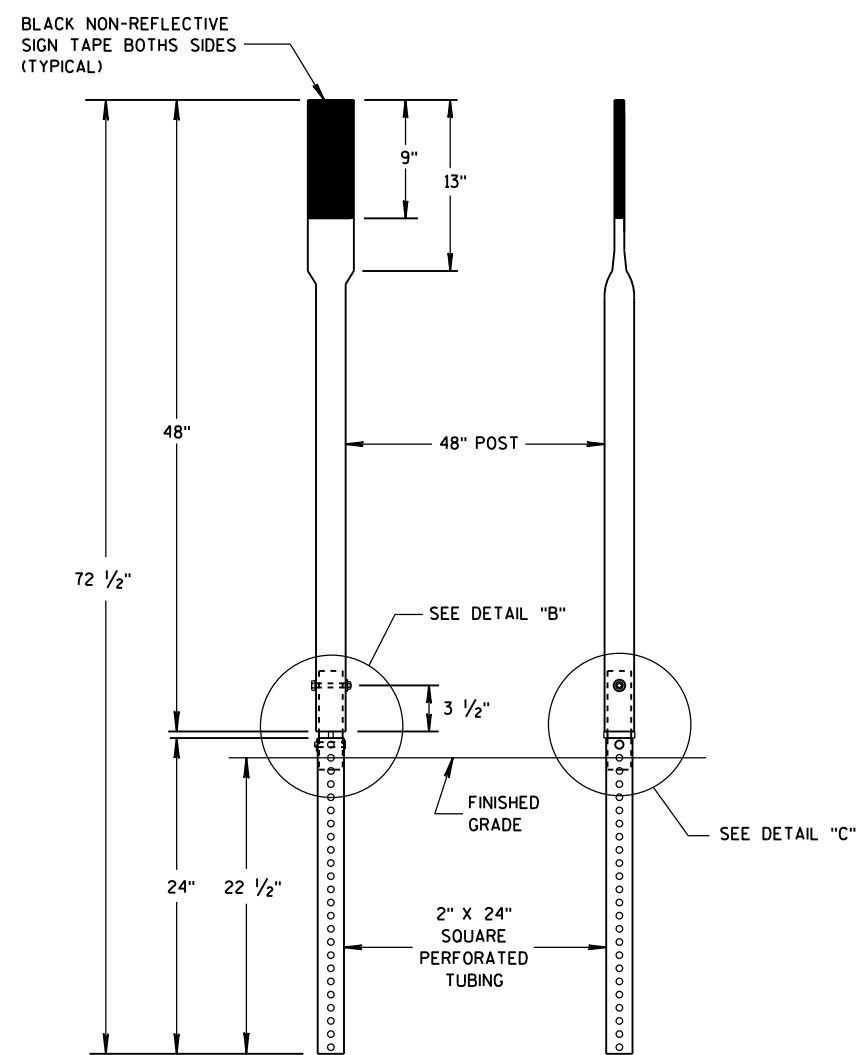


SECTION B-B

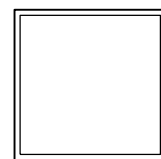


FRONT VIEW SIDE VIEW
ALTERNATE 2

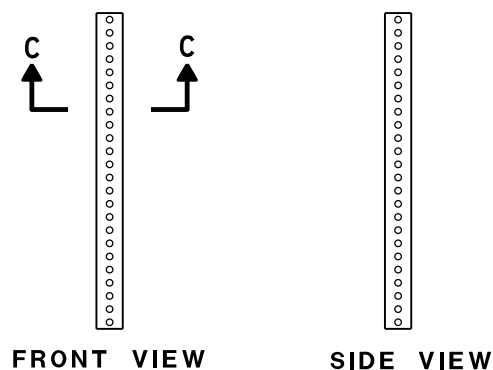
FLEXIBLE MARKER POST ANCHORS



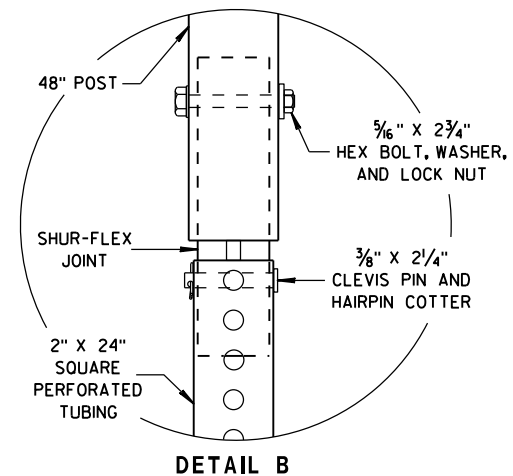
FRONT VIEW SIDE VIEW
ALTERNATE 3



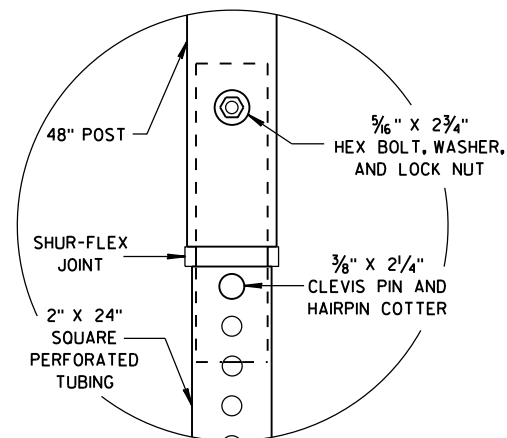
SECTION C-C



FRONT VIEW SIDE VIEW
ALTERNATE 3



DETAIL B



DETAIL C

FLEXIBLE MARKER POST FOR CULVERT END

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

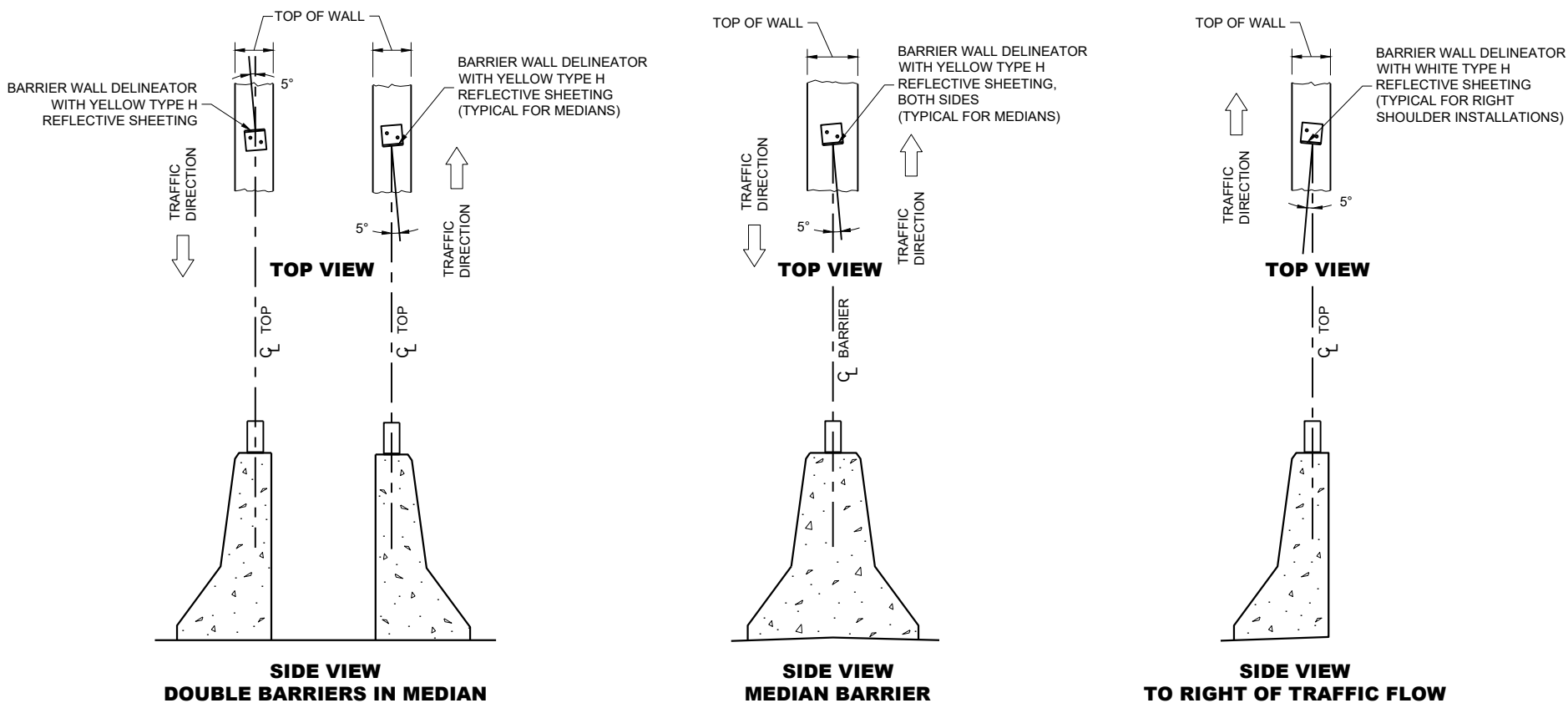
10/1/2012

DATE

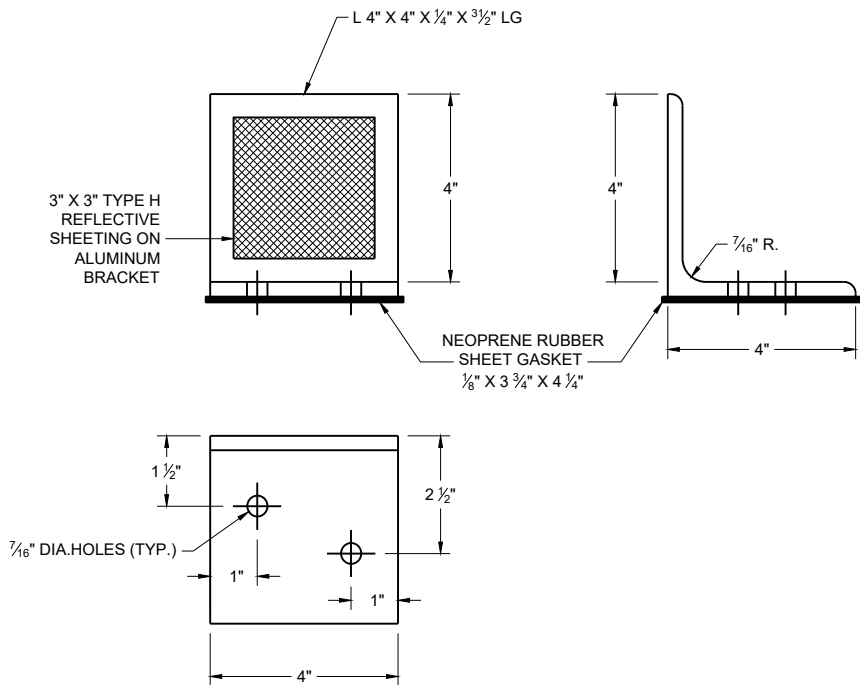
FHWA

/S/ Travis Feltes
STATE TRAFFIC ENGINEER 169

IGN



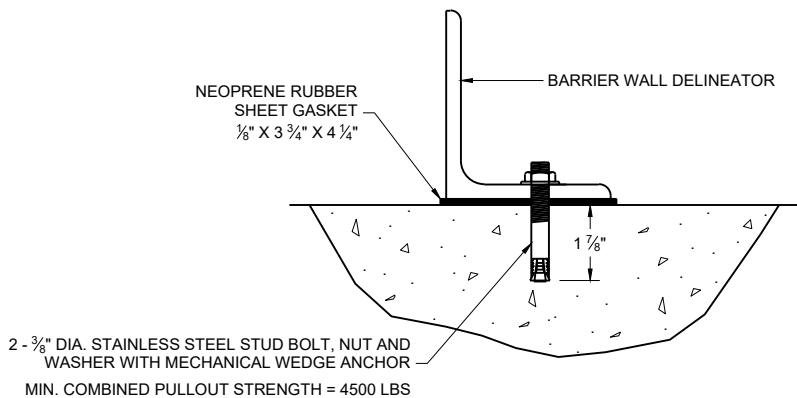
LOCATION AND AIMING DETAILS FOR BARRIER WALL DELINEATOR MOUNTED ON CONCRETE BARRIERS



BARRIER WALL DELINEATOR

REFLECTOR SPACING TABLE

REFLECTOR SPACING	MINIMUM NUMBER OF REFLECTORS
100' C-C	3



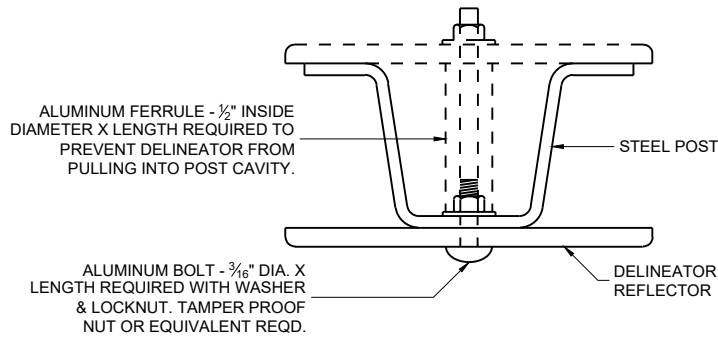
BARRIER WALL DELINEATOR MOUNTING DETAIL

BARRIER WALL DELINEATOR WITH REFLECTIVE SHEETING

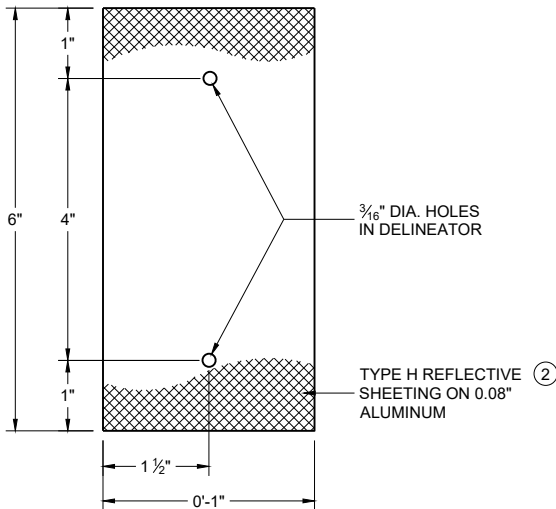
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
March 2024 /S/ Jeannie Silver
DATE Statewide Pavement Marking Engineer

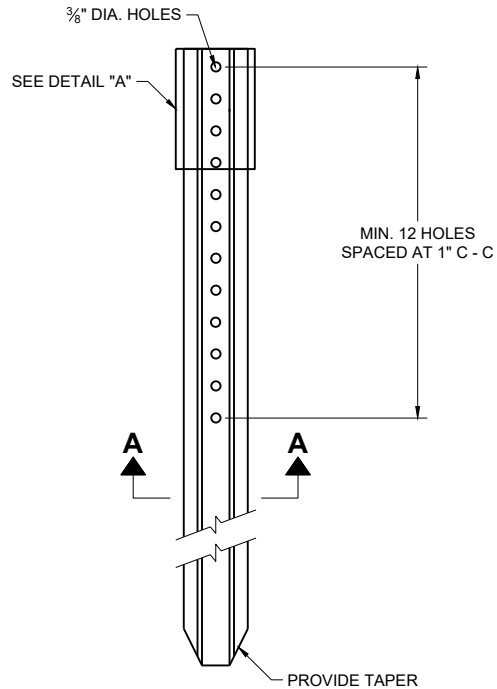
FHWA 170



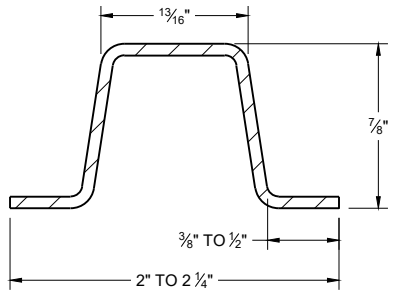
MOUNTING DETAIL FOR DELINEATOR REFLECTOR



DETAIL "A" 3" X 6" DELINEATOR REFLECTOR



DELINEATOR POST



SECTION A - A
WEIGHT 1.12 LBS PER FT. \ 0.1 LB.

REFLECTOR SPACING TABLE

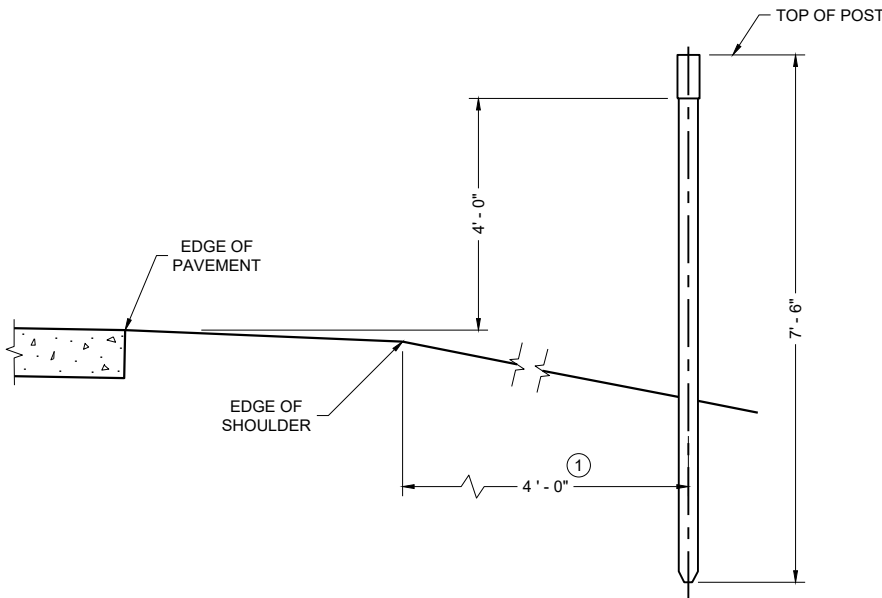
REFLECTOR SPACING	LOCATION
* 100' C-C	RAMPS
400' C-C	MAINLINE

* START AT BEGINNING OF RAMP TAPER AND END AT END OF RAMP TAPER

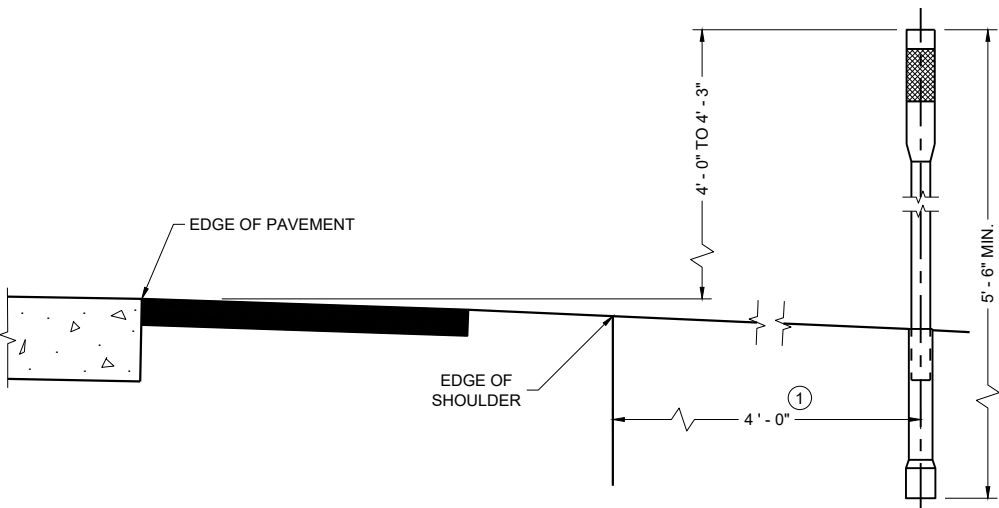
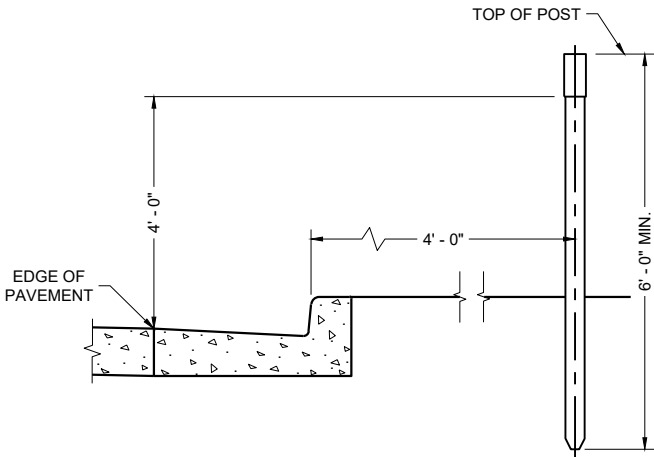
GENERAL NOTES

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

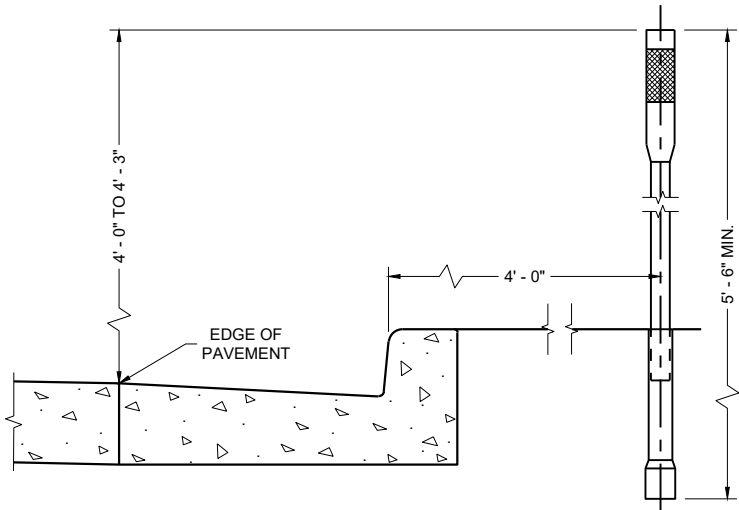
- ① DELINEATORS SHALL BE PLACED AT A CONSTANT DISTANCE FROM THE EDGE OF THE SHOULDER FOR THE LENGTH OF THE INSTALLATION.
- ② FURNISH TYPE H SHEETING FROM THE APPROVED PRODUCTS LIST.



TYPICAL INSTALLATIONS OF DELINEATOR POSTS



TYPICAL INSTALLATIONS OF FLEXIBLE DELINEATOR POSTS



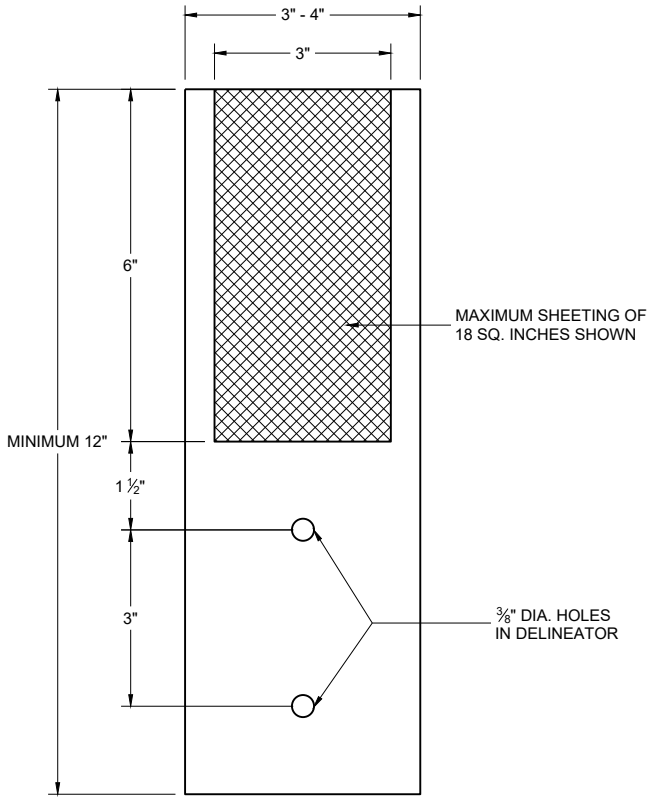
DELINEATOR POST
WITH REFLECTIVE SHEETING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
March 2024
DATE

/S/ Jeannie Silver
Statewide Pavement Marking Engineer

FHWA



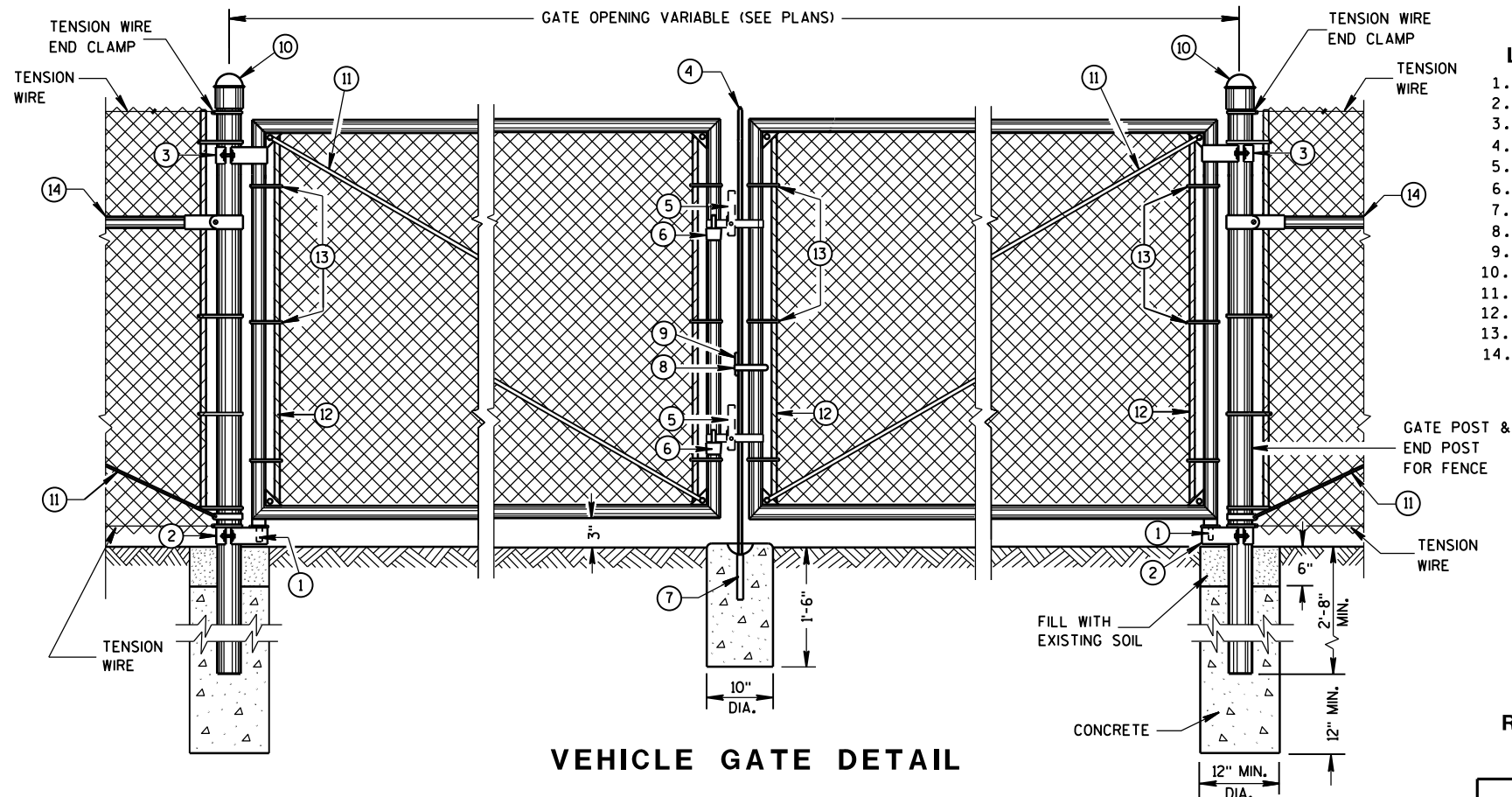
4" x 12" DELINEATOR
WITH REFLECTIVE SHEETING

REFLECTOR SPACING TABLE

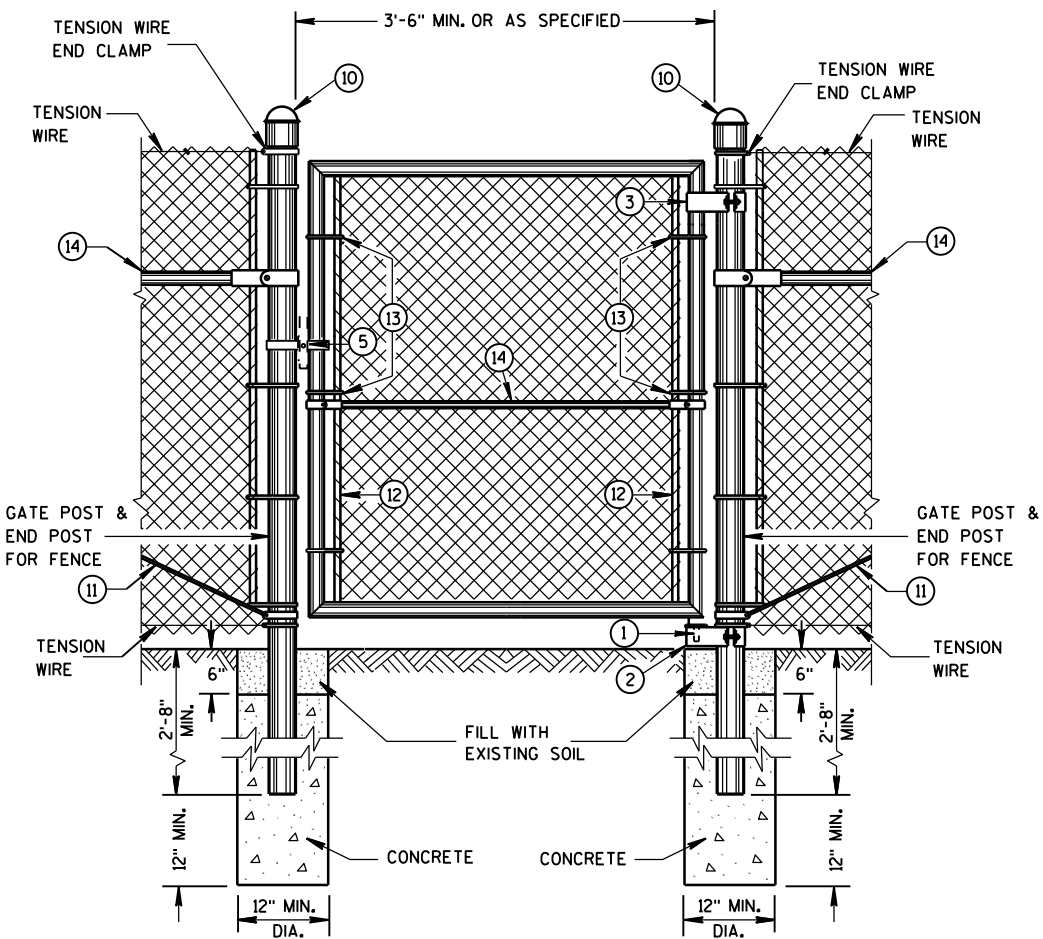
REFLECTOR SPACING	MINIMUM NUMBER OF REFLECTORS
100' C-C	3

DELINEATOR POST WITH REFLECTIVE SHEETING	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED March 2024 DATE	/S/ Jeannie Silver Statewide Pavement Marking Engineer

FHWA



VEHICLE GATE DETAIL



PEDESTRIAN GATE DETAIL

REQUIRED FENCE POST SIZES

USE	FABRIC HEIGHTS FEET	POST TYPE
TERMINAL POSTS **	LESS THAN OR EQUAL TO 6 FT.	SP3
	GREATER THAN OR EQUAL TO 6 FT.	SP4
LINE POSTS	LESS THAN OR EQUAL TO 6 FT.	SP2
	LESS THAN OR EQUAL TO 8 FT.	SP3
	GREATER THAN OR EQUAL TO 8 FT.	SP4
	LESS THAN OR EQUAL TO 8 FT.	FS2 OR FS2+
	GREATER THAN OR EQUAL TO 8 FT.	FS3

BRACE RAIL TYPES

USE	TYPE
BRACE RAIL	SP1 OR FS1

** INCLUDES END, CORNER, ANGLE, INTERSECTION AND INTERMEDIATE BRACED POSTS

LEGEND

1. STRAIGHT PLUG
 2. BOTTOM HINGE
 3. TOP HINGE
 4. PLUNGER ROD
 5. FULCRUM LATCH
 6. FORK CATCH *
 7. PLUNGER ROD CATCH
 8. LOCK KEEPER GUIDE
 9. LOCK KEEPER
 10. DOME TOPS
 11. TRUSS RODS
 12. TENSION BAR
 13. TENSION BANDS
 14. BRACE RAIL
- *NOT REQUIRED ON SINGLE SWING PEDESTRIAN GATE

GENERAL NOTES

FENCE POSTS INSTALLED ON CONCRETE WALLS SHALL BE ANCHORED INTO EMBEDDED METAL SLEEVES OR CORED HOLE BY FILLING THE ANNULAR SPACE WITH PEA GRAVEL FOLLOWED BY AN EPOXY RESIN ADHESIVE. THE EPOXY RESIN ADHESIVE SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M 235, CLASS A, B OR C.

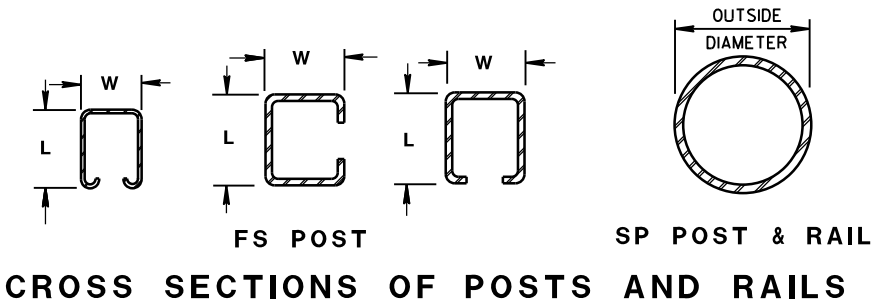
USE FENCE FABRIC KNUCKLED AT BOTH SELVAGES.

FOR LEAF GATES GREATER THAN 8 FEET WIDE, INSTALL INTERIOR VERTICAL BRACE RAIL AT 8 FOOT INTERVALS.

FOR FABRIC HEIGHTS GREATER THAN 8 FEET, INSTALL INTERIOR HORIZONTAL BRACE RAILS TO LEAF GATE.

MAXIMUM SAG FOR OUTER GATE MEMBER SHALL NOT EXCEED THE GREATER OF 1% OF THE LEAF GATE WIDTH OR 2 INCHES.

USE TYPE 2, CLASS 3, MARCELLED/CRIMPED, TENSION WIRE PER ASTM A 817.



ROLLED-FORMED STEEL FENCE POST
(2.0 OZ./SQ. FT. COATING)

POST TYPE	LENGTH (L) INCH	WIDTH (W) INCH	WEIGHT LBS/FT
FS1	1.625	1.25	1.35
FS2+	1.875	1.625	1.850
FS2	1.875	1.625	2.400
FS3	2.250	1.700	2.780

ROUND STEEL FENCE POST
(1.8 OZ./SQ. FT. COATING)

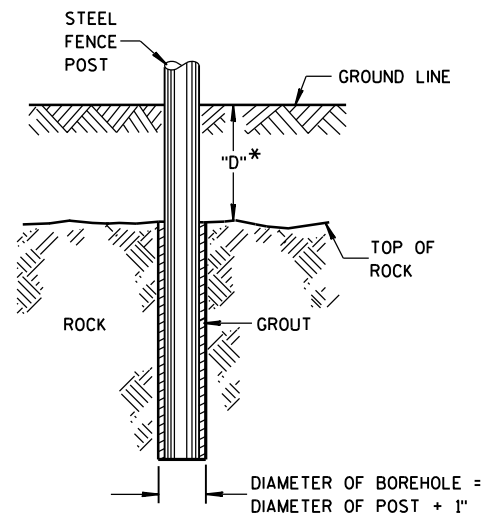
POST TYPE	OUTSIDE DIMENSION INCH	WALL THICKNESS INCH	WEIGHT LBS/FT
SP1	1.660	0.140	2.270
SP2	1.900	0.145	2.720
SP3	2.375	0.154	3.650
SP4	2.875	0.203	5.800
SP5	4.000	0.226	9.120
SP6	6.625	0.280	18.990
SP7	8.625	0.322	28.580

REQUIRED POST SIZE FOR GATES

USE	LEAF WIDTHS FEET	POST TYPE
GATES	LESS THAN OR EQUAL TO 6 FT.	SP4
	LESS THAN OR EQUAL TO 13 FT.	SP5
	LESS THAN OR EQUAL TO 18 FT.	SP6
	LESS THAN OR EQUAL TO 23 FT.	SP7

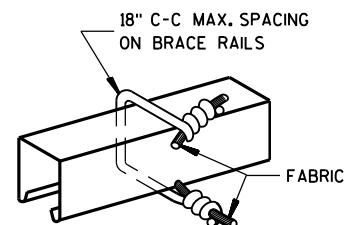
FENCE CHAIN LINK

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



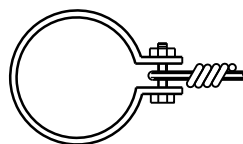
* IF "D" IS LESS THAN 2'-6",
DRILL ROCK AND INSTALL GROUT

ROCK INSTALLATION OF LINE POST

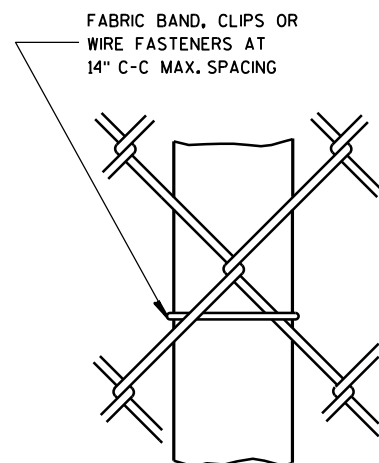


BRACE RAIL FABRIC FASTENER

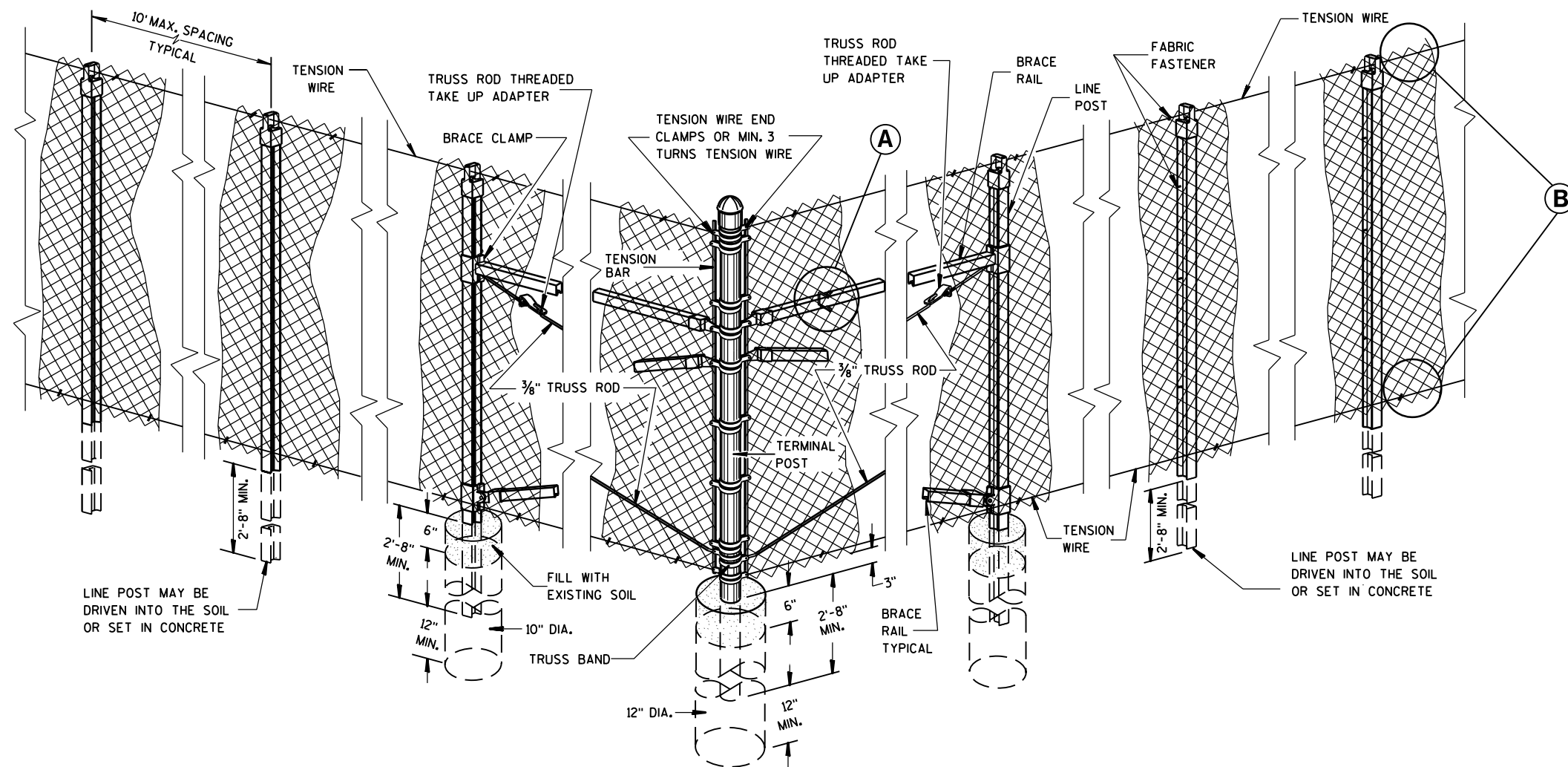
(A)



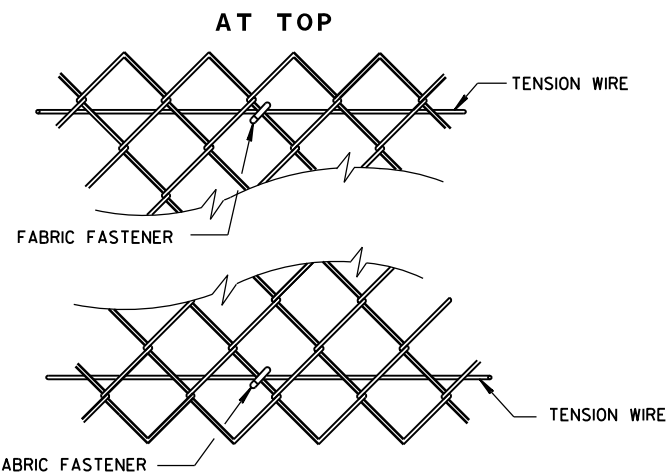
TENSION WIRE END CLAMP



LINE POST FABRIC FASTENER



END, CORNER, ANGLE INTERSECTION & INTERMEDIATE BRACED POSTS



(B)

FENCE CHAIN LINK

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

FEB. 2015

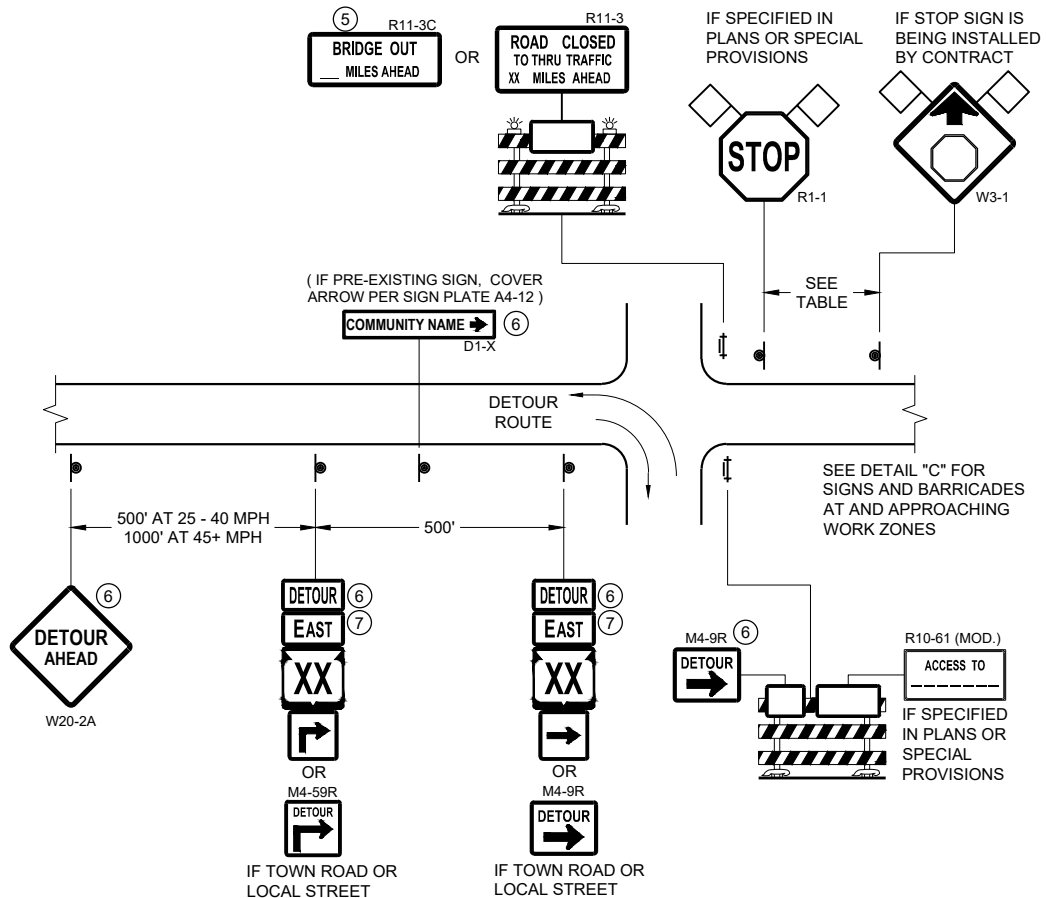
DATE

FHWA

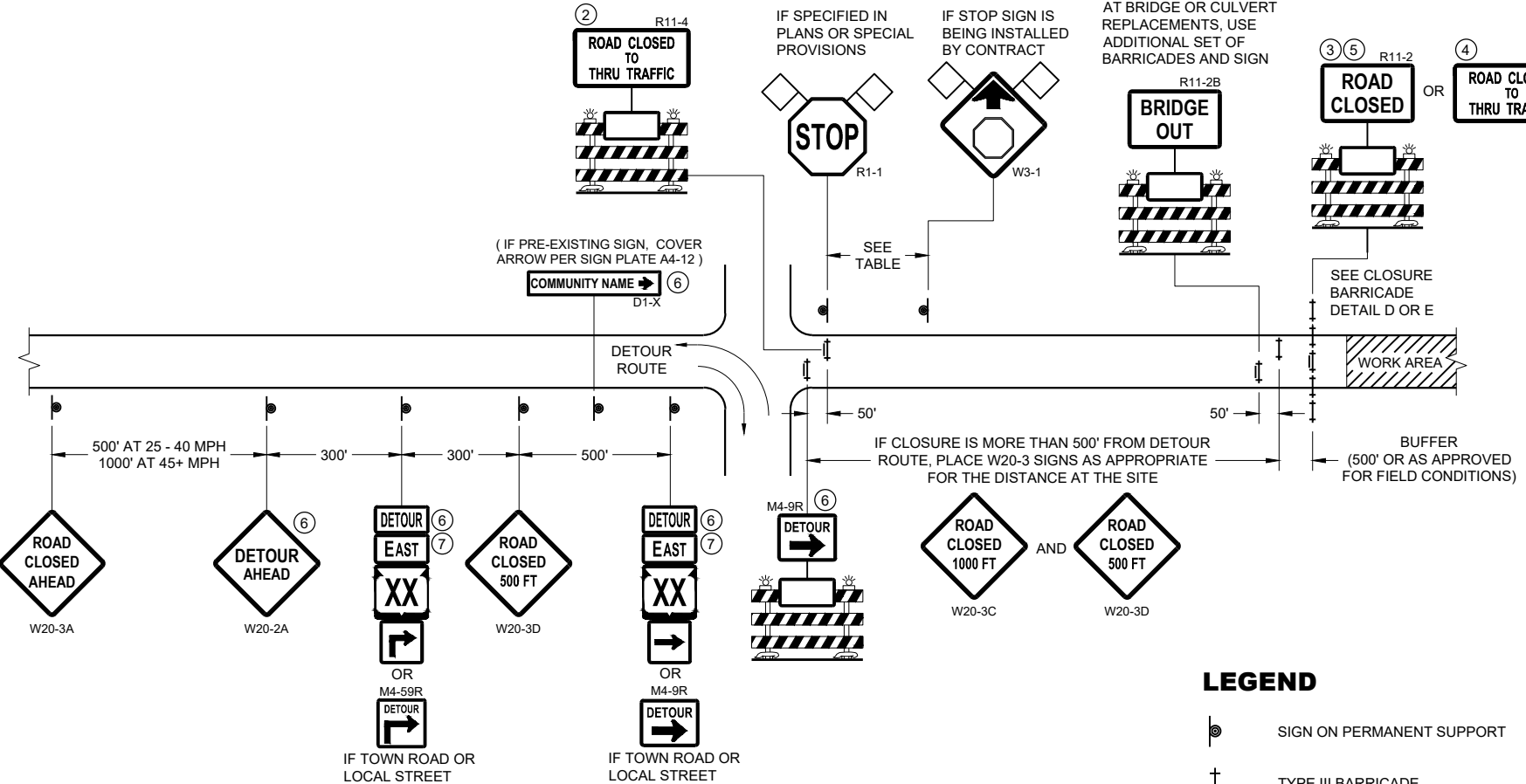
/S/ Jerry H. Zogg

ROADWAY STANDARDS 174

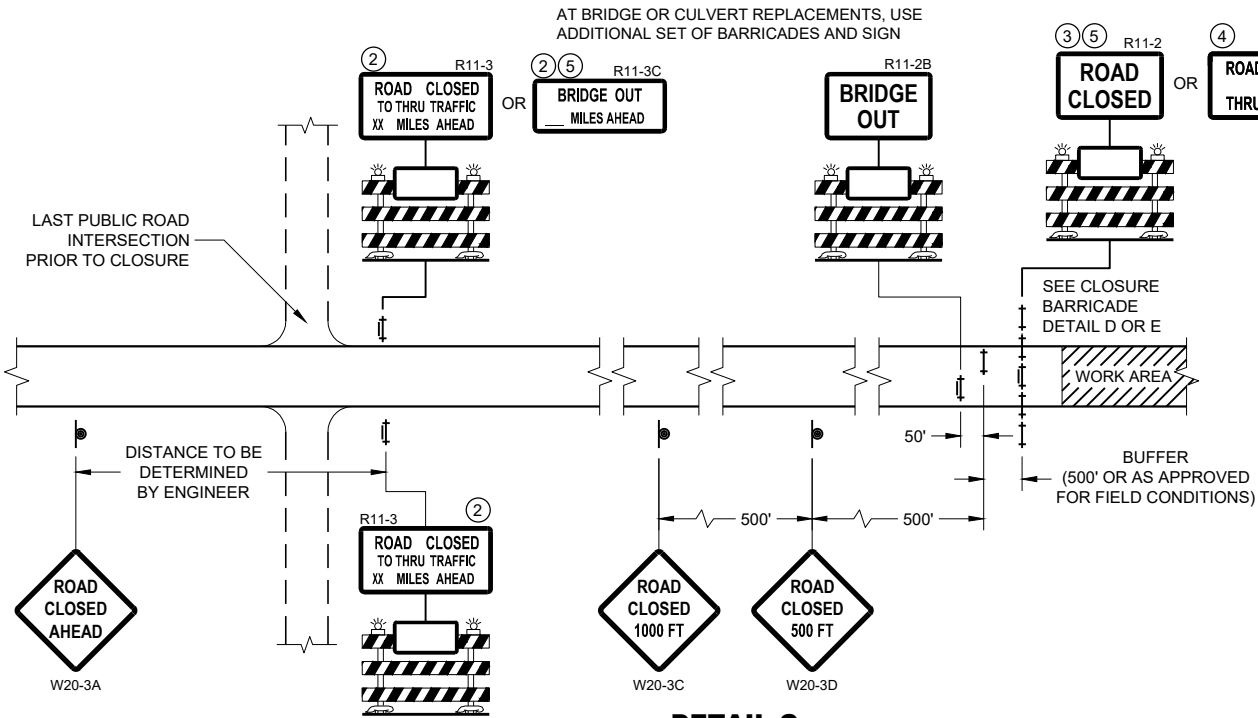
ENGINEER



DETAIL A
MAINLINE CLOSURE WITH POSTED DETOUR
WORK ZONE GREATER THAN OR EQUAL TO ½ MILE FROM
DETOUR ROUTE (1000 FEET IF URBAN)



DETAIL B
MAINLINE CLOSURE WITH POSTED DETOUR
WORK ZONE LESS THAN ½ MILE FROM
DETOUR ROUTE (1000 FEET IF URBAN)



DETAIL C
MAINLINE CLOSURE, NO POSTED DETOUR

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

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

LEGEND

- SIGN ON PERMANENT SUPPORT
- TYPE III BARRICADE
- TYPE III BARRICADE WITH ATTACHED SIGN
- TYPE "A" WARNING LIGHT (FLASHING)
- WORK AREA
- FLAGS, 16" X 16" MIN. (ORANGE)
- DETOUR M4 - 8
- EAST M3 - X
- XX M1 - 4 OR XX M1 - 6 OR COUNTY M1 - 5A
- M05 - 1 OR M06 - 1

**BARRICADES AND SIGNS
FOR MAINLINE CLOSURES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2023 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER 175
FHWA

THIS DRAWING PROVIDES GENERAL GUIDANCE ON TYPICAL "TO" MO-4 SIGN LAYOUT AND SPACING. SEE PROJECT TO SIGNING SHEETS FOR SPECIFIC DETAILS FOR EACH PROJECT.

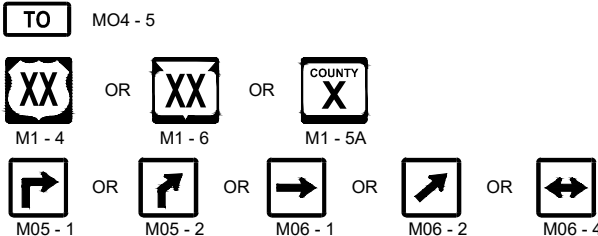
LEGEND



SIGN ON PERMANENT SUPPORT



PORTABLE CHANGEABLE MESSAGE SIGN



GENERAL NOTES

SEE SDD 15D16 "TRAFFIC CONTROL, EXIT RAMP CLOSURE" DETAIL FOR TRAFFIC CONTROL AT EXIT RAMP CLOSURE.

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

IF THERE ARE ANY ROUTE MARKER ASSEMBLIES THAT WILL REMAIN IN PLACE, ADJUST THE LOCATION OF THE "TO" MO-4 ROUTE SIGNS TO CORRESPOND WITH THE EXISTING ASSEMBLIES. SEE SPECIFIC PROJECT TO SIGNING DETAIL SHEETS MODIFY EXISTING SIGNS WHERE POSSIBLE.

THE SPACING BETWEEN TRAFFIC CONTROL AND "TO" MO-4 SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND TO PROVIDE A DESIRABLE MINIMUM OF 200 FEET. CLEARANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.

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

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

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

SIGN SIZES SHALL BE AS FOLLOW:
MO4 - 5 SHALL BE 24" X 12". (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS).
M1 - 4, M1 - 5A, AND M1 - 6 SHALL BE 24" X 24" (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS).
MO5 - 1, MO5 - 2, AND MO6 - 1, SHALL BE 21" X 21". (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS).

① ONLY ADD IF THERE ARE NO EXISTING ROUTE MARKERS FOR THE INTERSECTING ROADWAY.

OFF RAMP LANE CLOSURE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2023 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER 176

FHWA

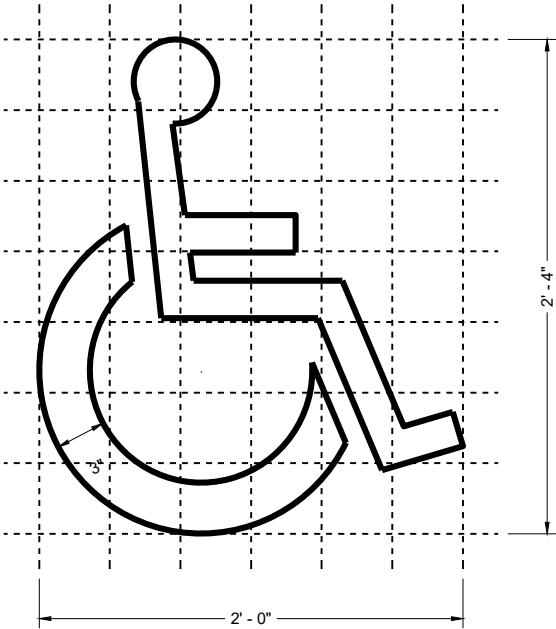
WORK ZONE ENGINEER 176

SDD15C02 - 09e

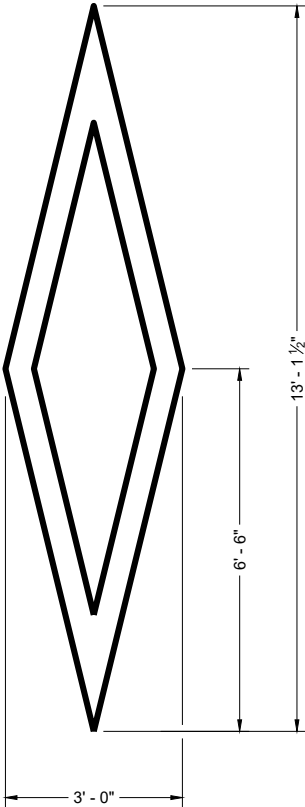
SDD 15C02 - 09e

6

6 |



HANDICAP SYMBOL

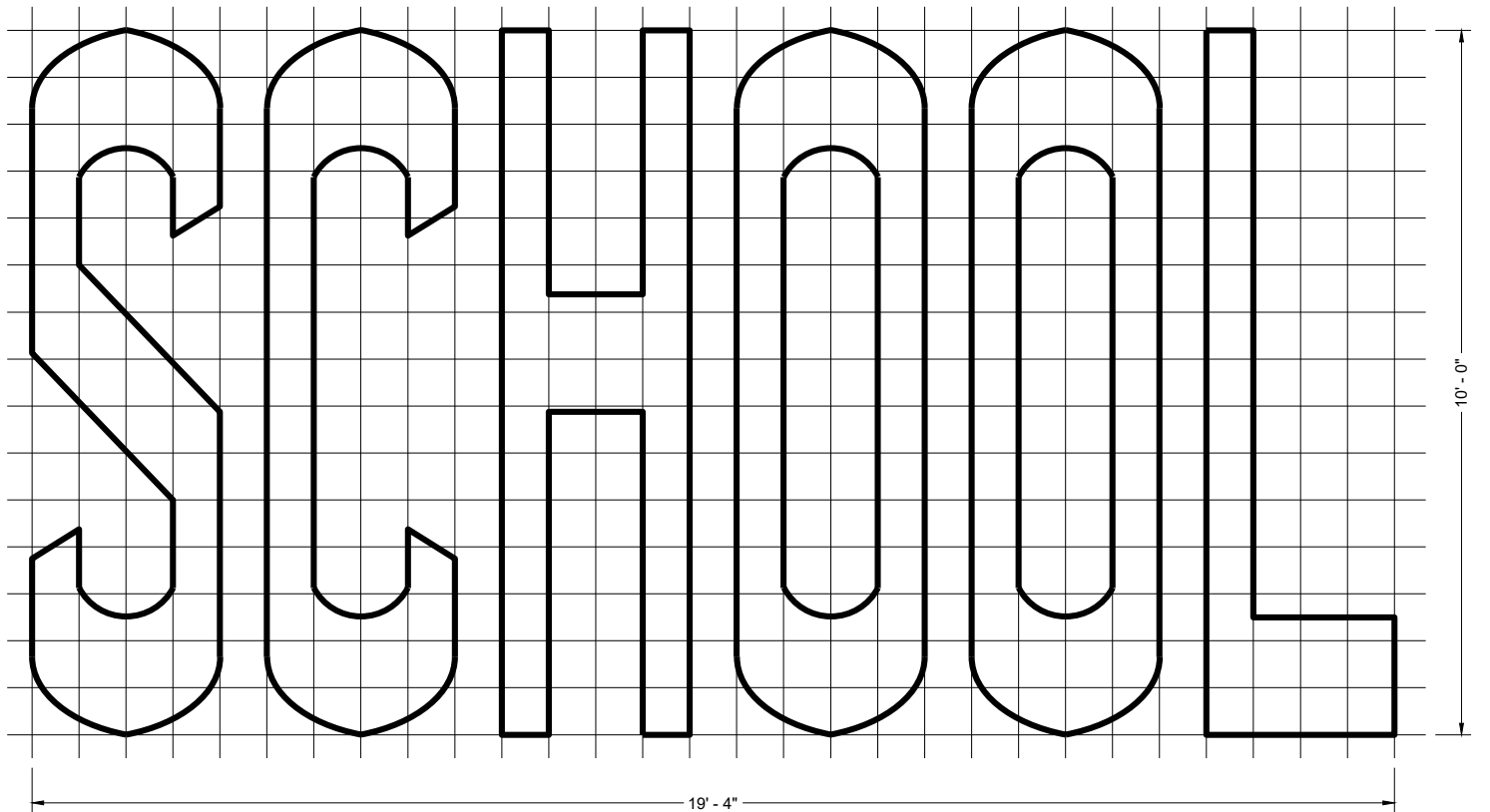
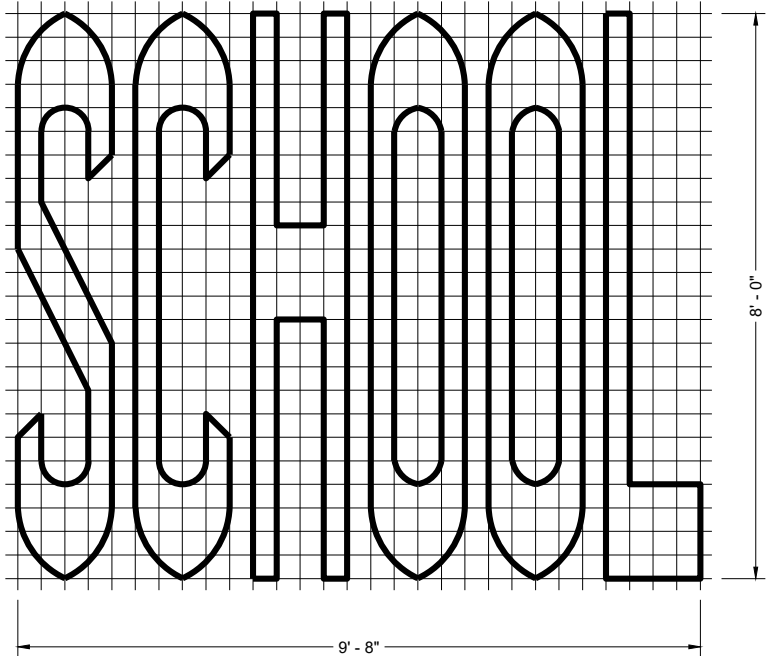
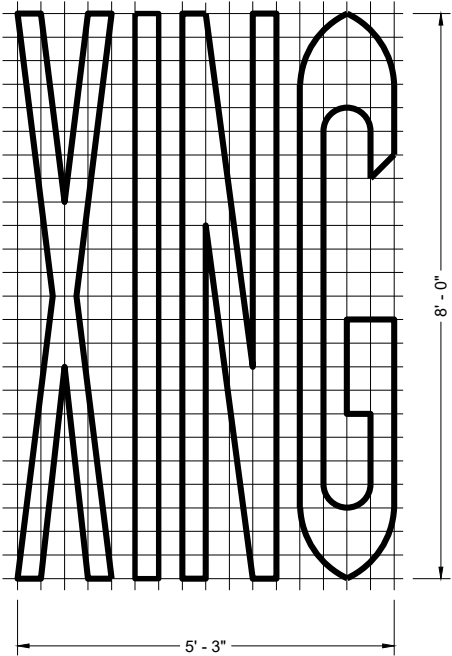
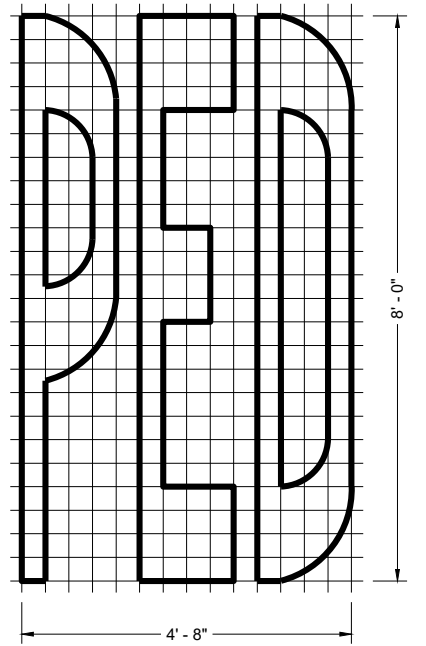
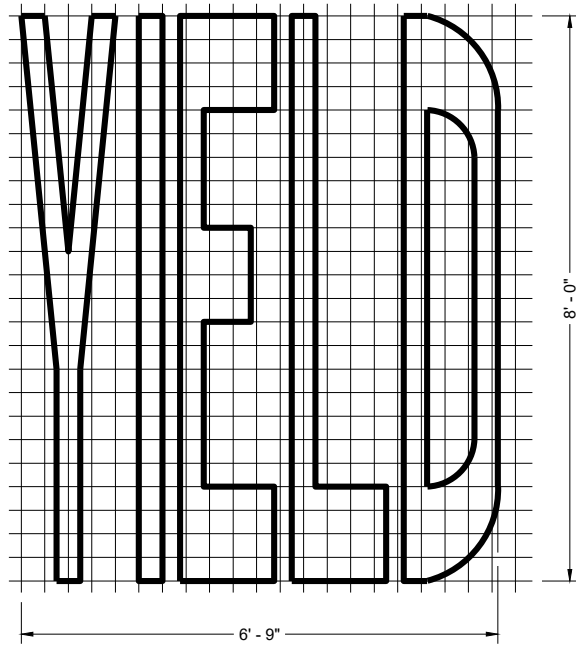
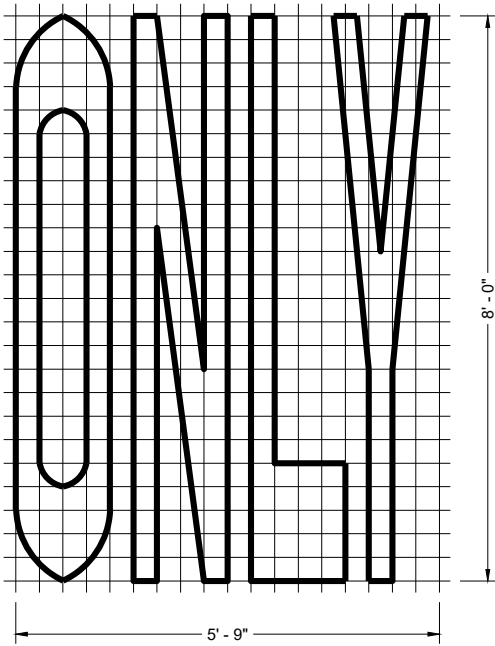
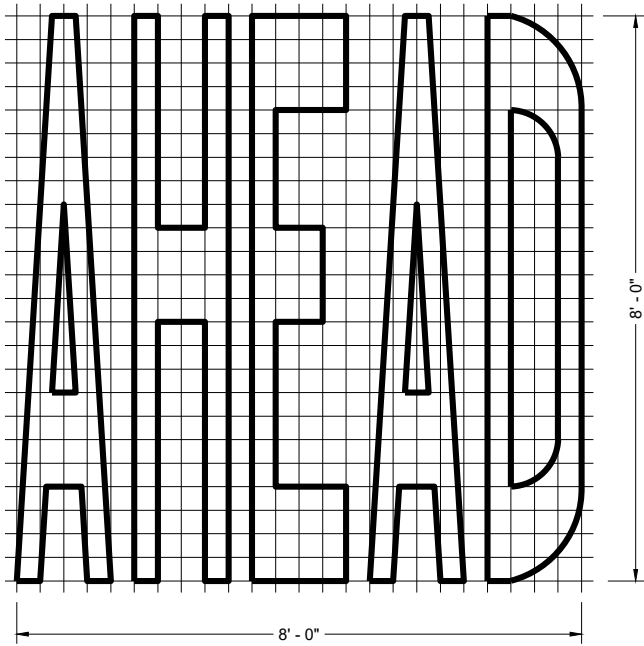
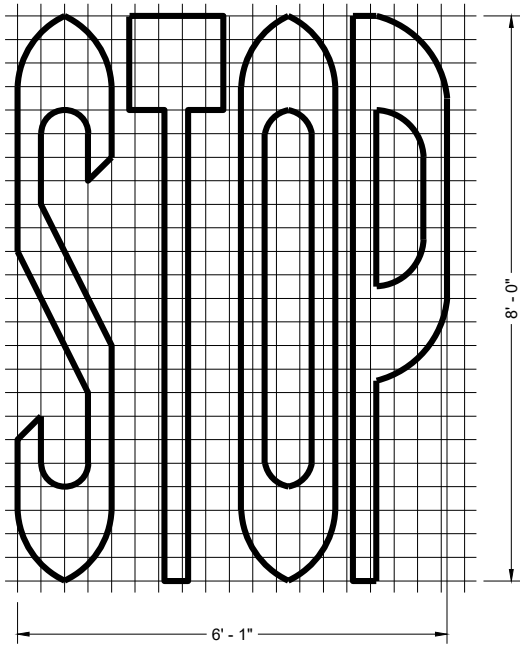


PREFERENTIAL
LANE SYMBOL

GENERAL NOTES

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

PAVEMENT MARKING SYMBOLS	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED November 2024 DATE	/S/ Matthew Rauch STATE SIGNING AND MARKING ENGINEER
FHWA	



SINGLE LANE

TWO - LANE

GENERAL NOTES

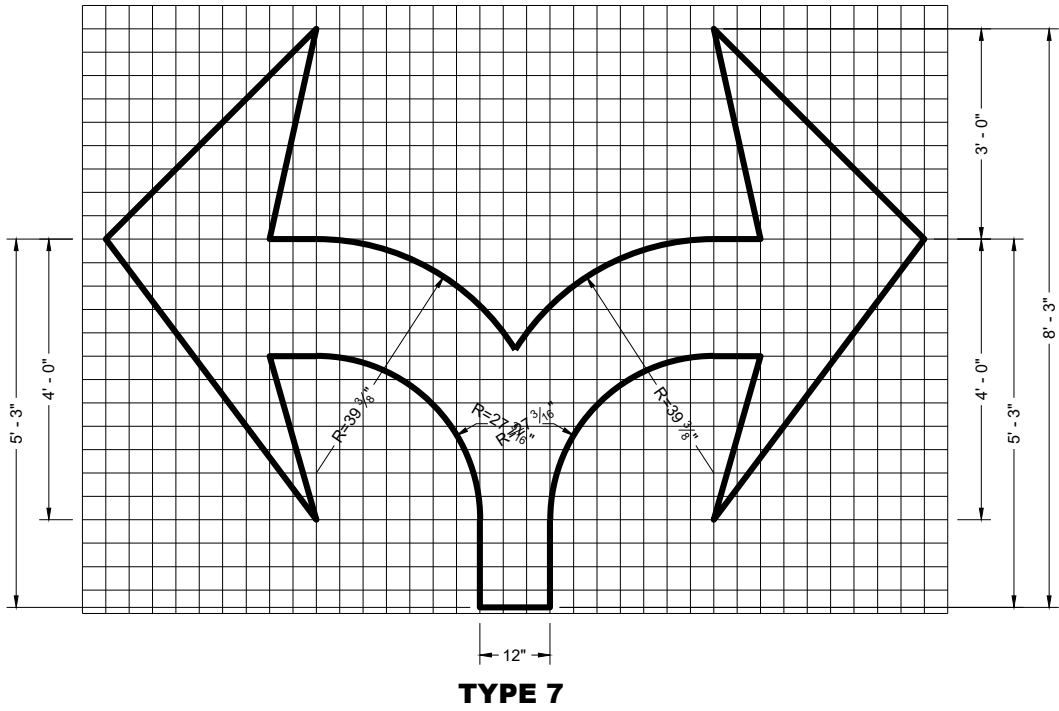
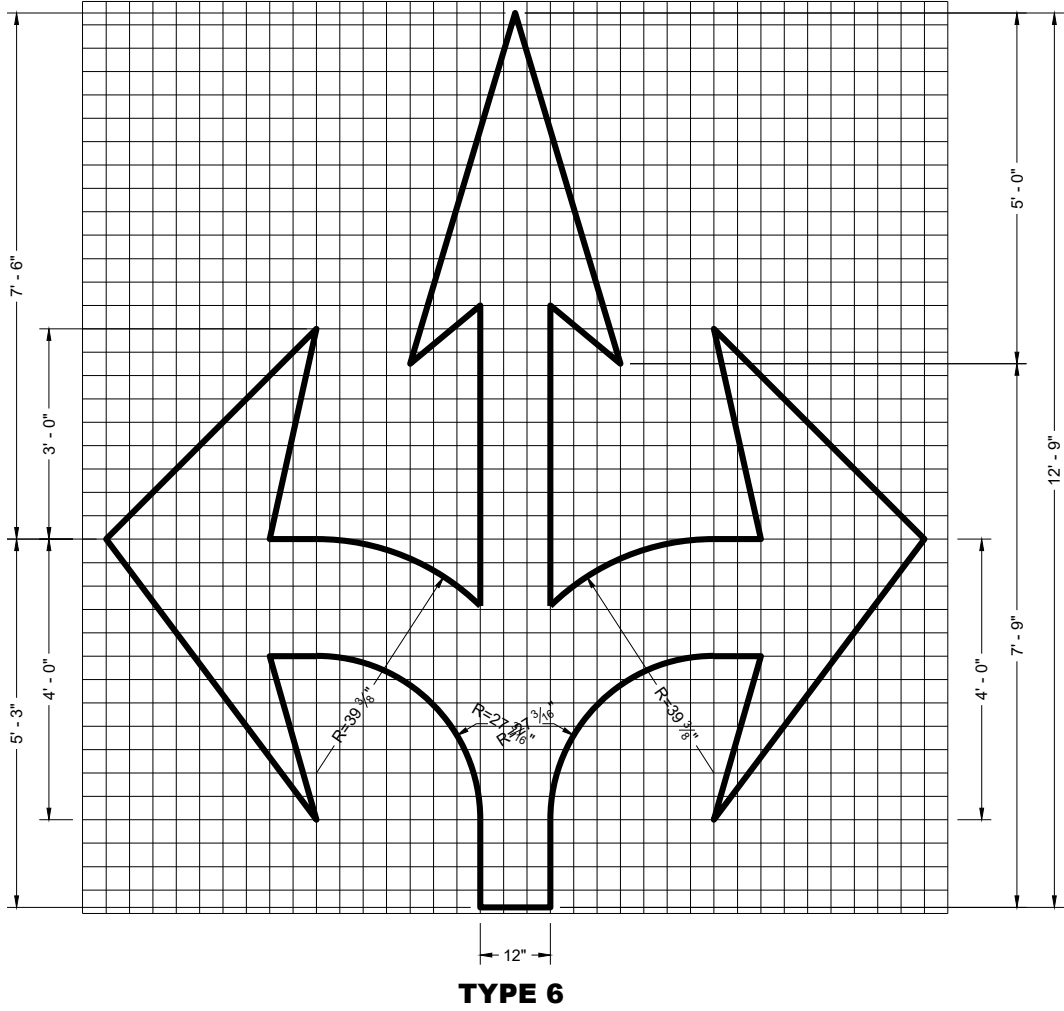
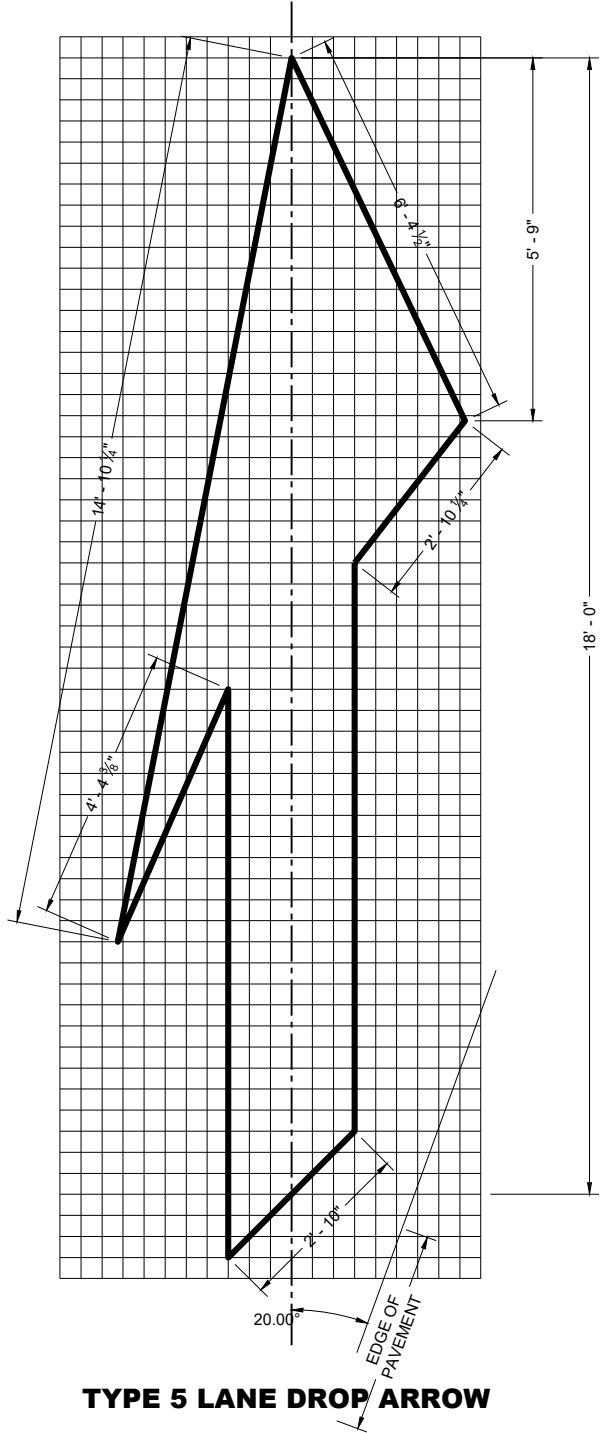
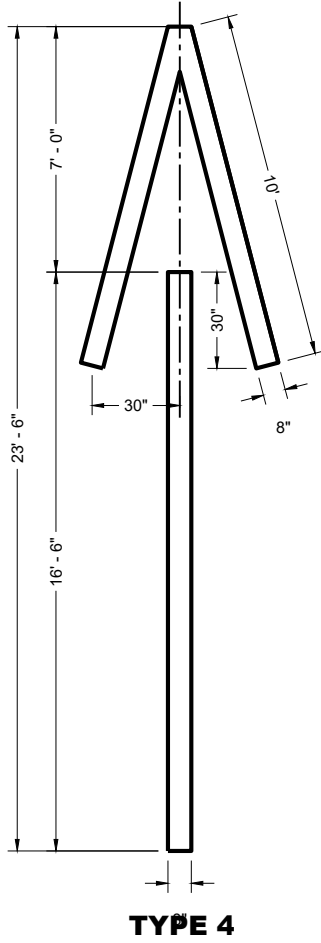
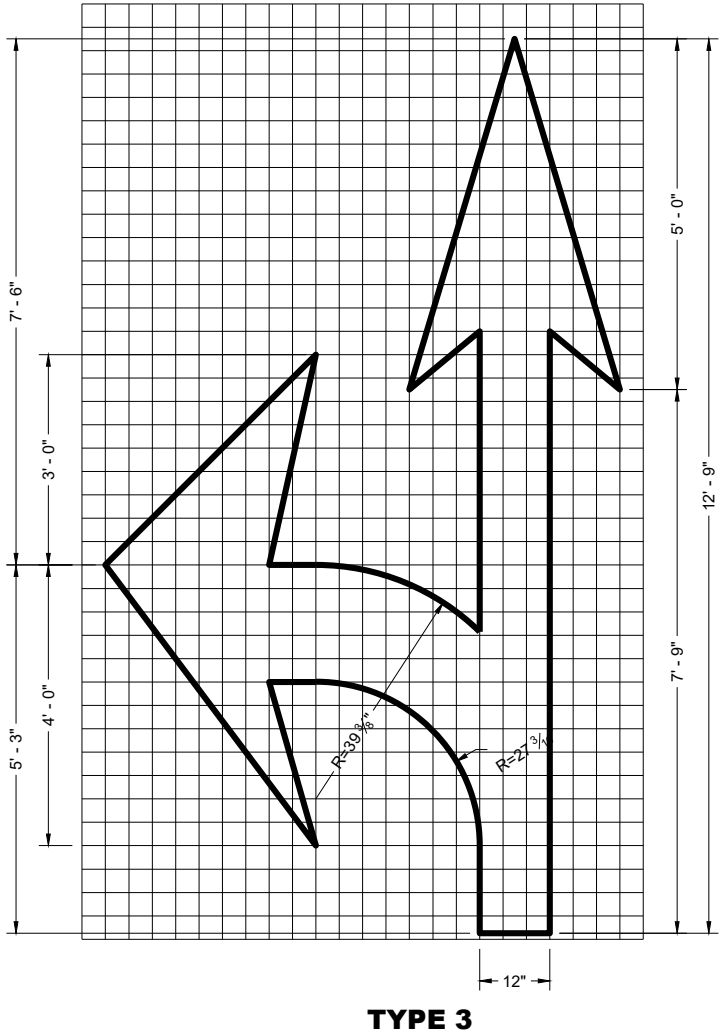
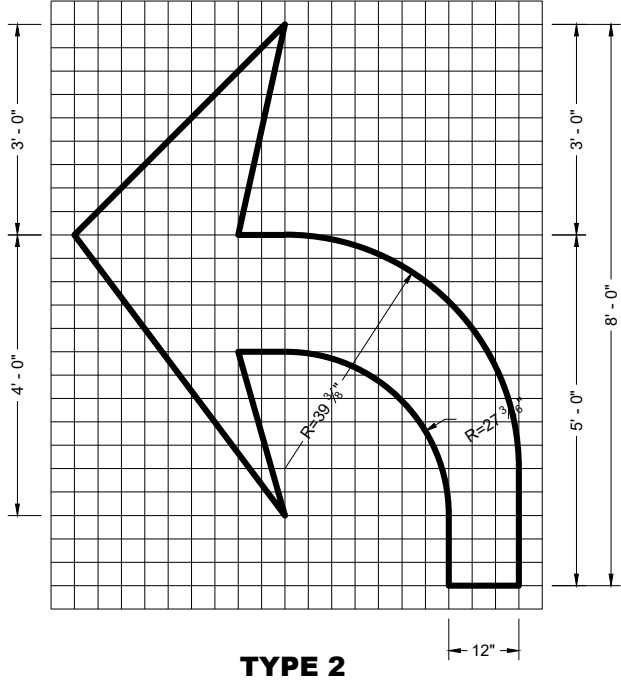
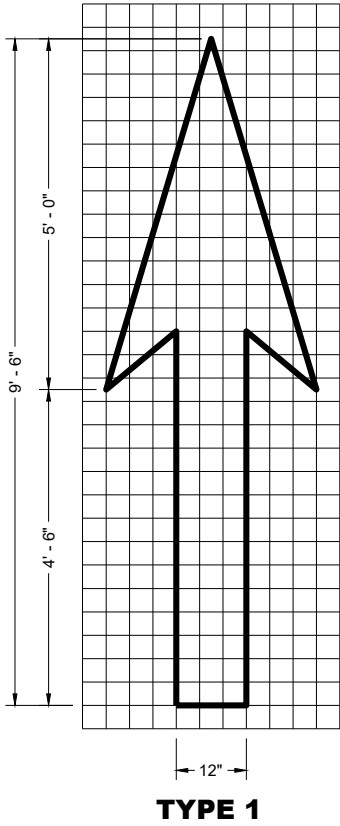
DETAILS OF INSTALLATION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

PAVEMENT MARKING WORDS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2024 /S/ Matthew Rauch
DATE STATE SIGNING AND MARKING ENGINEER

FHWA



GENERAL NOTES

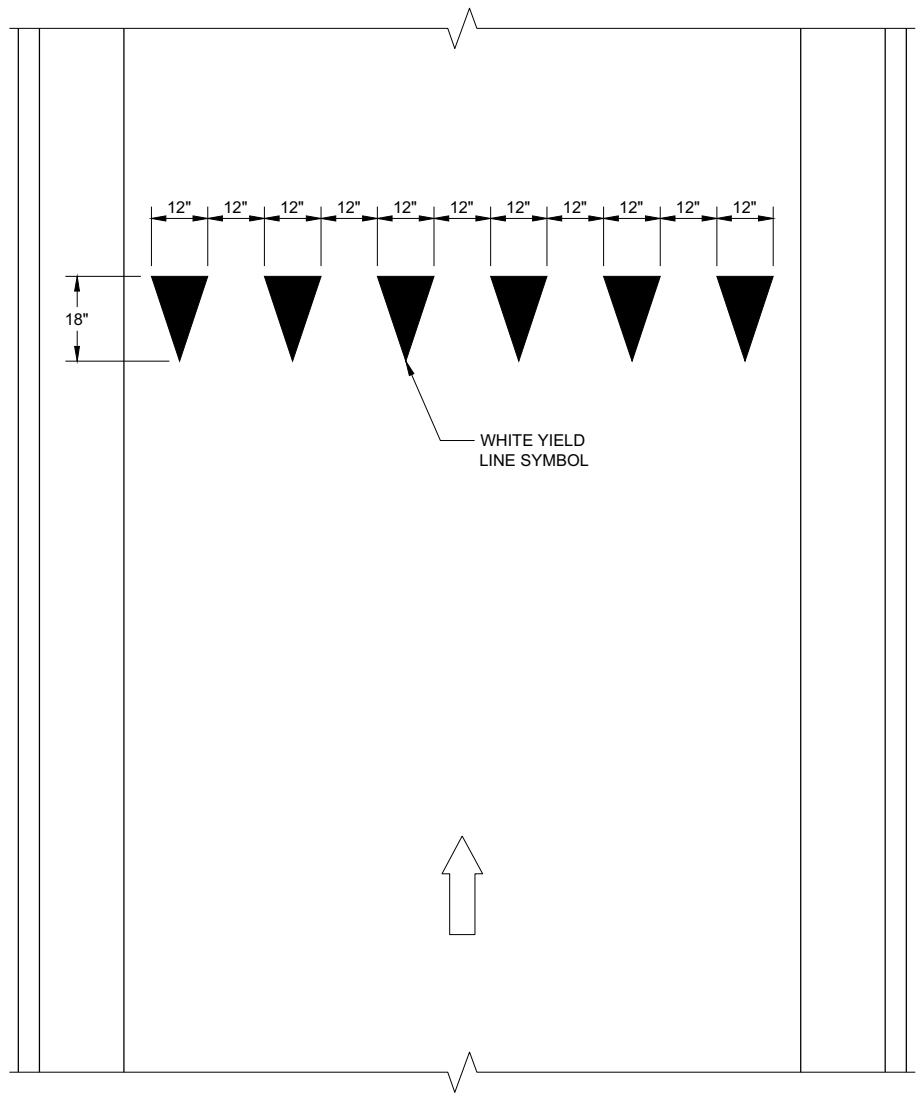
DETAILS OF INSTALLATION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

PAVEMENT MARKING ARROWS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2024 /S/ Matthew Rauch
DATE STATE SIGNING AND MARKING ENGINEER

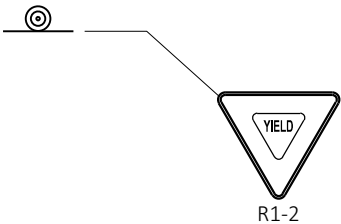
FHWA



YIELD LINE

LEGEND

-  SIGN ON PERMANENT SUPPORT
-  DIRECTION OF TRAVEL



YIELD MARKINGS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

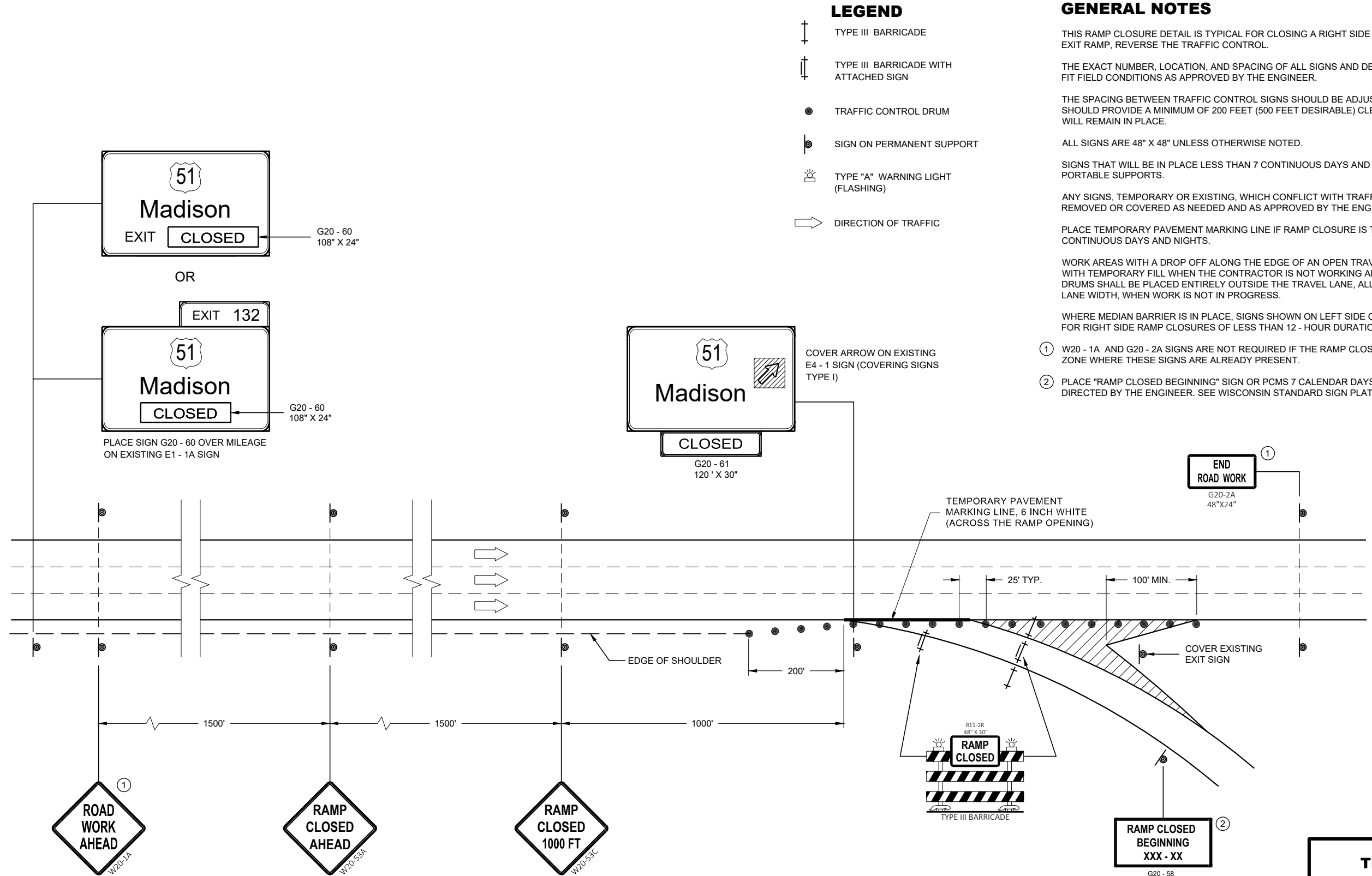
APPROVED

4-81-2016
DATE

FHWA

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

180



LEGEND

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

GENERAL NOTES

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

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

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

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

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

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

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

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

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

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

② PLACE "RAMP CLOSED BEGINNING" SIGN OR PCMS 7 CALENDAR DAYS PRIOR TO CLOSURE OR AS DIRECTED BY THE ENGINEER. SEE WISCONSIN STANDARD SIGN PLATES FOR SIGN LAYOUT.

RAMP CLOSED BEGINNING XXX - XX	
G20 - 58 OR PCMS MESSAGING	
FRAME 1	FRAME 2
RAMP TO CLOSE	XXXDAY XX XX XX

**TRAFFIC CONTROL,
EXIT RAMP CLOSURE**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2023
DATE

/S/ Andrew Heidtke
ROADWAY STANDARDS DEVELOPMENT ENGINEER

181

FHWA

LEGEND

- TRAFFIC CONTROL DRUM
- ⦿ SIGN ON PERMANENT SUPPORT
- ➡ DIRECTION OF TRAFFIC
- ⚡➡ FLASHING ARROW BOARD
- ▨ WORK AREA

GENERAL NOTES

THIS DETAIL IS TYPICAL FOR CLOSING THE RIGHT SHOULDER. FOR CLOSING THE LEFT SHOULDER, REVERSE THE TRAFFIC CONTROL.

THIS DETAIL MAY BE USED FOR DIVIDED ROADWAYS WITH ANY NUMBER OF TRAVEL LANES.

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

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

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

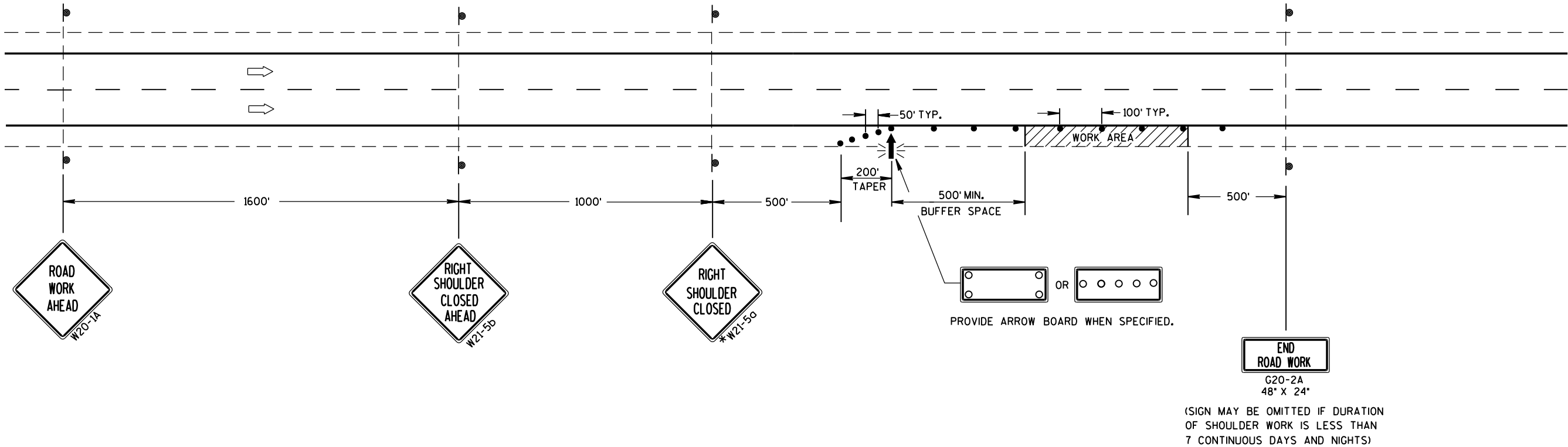
SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

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

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

WHEN A 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.

*FOR SHORT DURATION SHOULDER WORK OF LESS THAN ONE HOUR, THE W21-5a SIGN MAY BE OMITTED.



TRAFFIC CONTROL SHOULDER CLOSURE ON DIVIDED ROADWAY, SPEEDS GREATER THAN 40 MPH			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
APPROVED			
June 2016	/S/ Peter Amakobe Atepe		
DATE	STATEWIDE WORK ZONE	182	IC
FHWA	SAFETY ENGINEER		

LEGEND

- SIGN ON TEMPORARY SUPPORT
- SIGN ON PERMANENT SUPPORT
- TYPE III BARRICADE
- TYPE III BARRICADE WITH ATTACHED SIGN
- TYPE "A" WARNING LIGHT (FLASHING)
- DIRECTION OF TRAFFIC
- FLAGGER, EQUIPPED WITH STOP/SLOW PADDLE FASTENED ON SUPPORT STAFF

POSTED SPEED LIMIT PRIOR TO WORK STARTING (MPH)	ADVANCE WARNING SIGN SPACING (A) FEET
0-30	200'
35-40	350'
45-55	500'

GENERAL NOTES

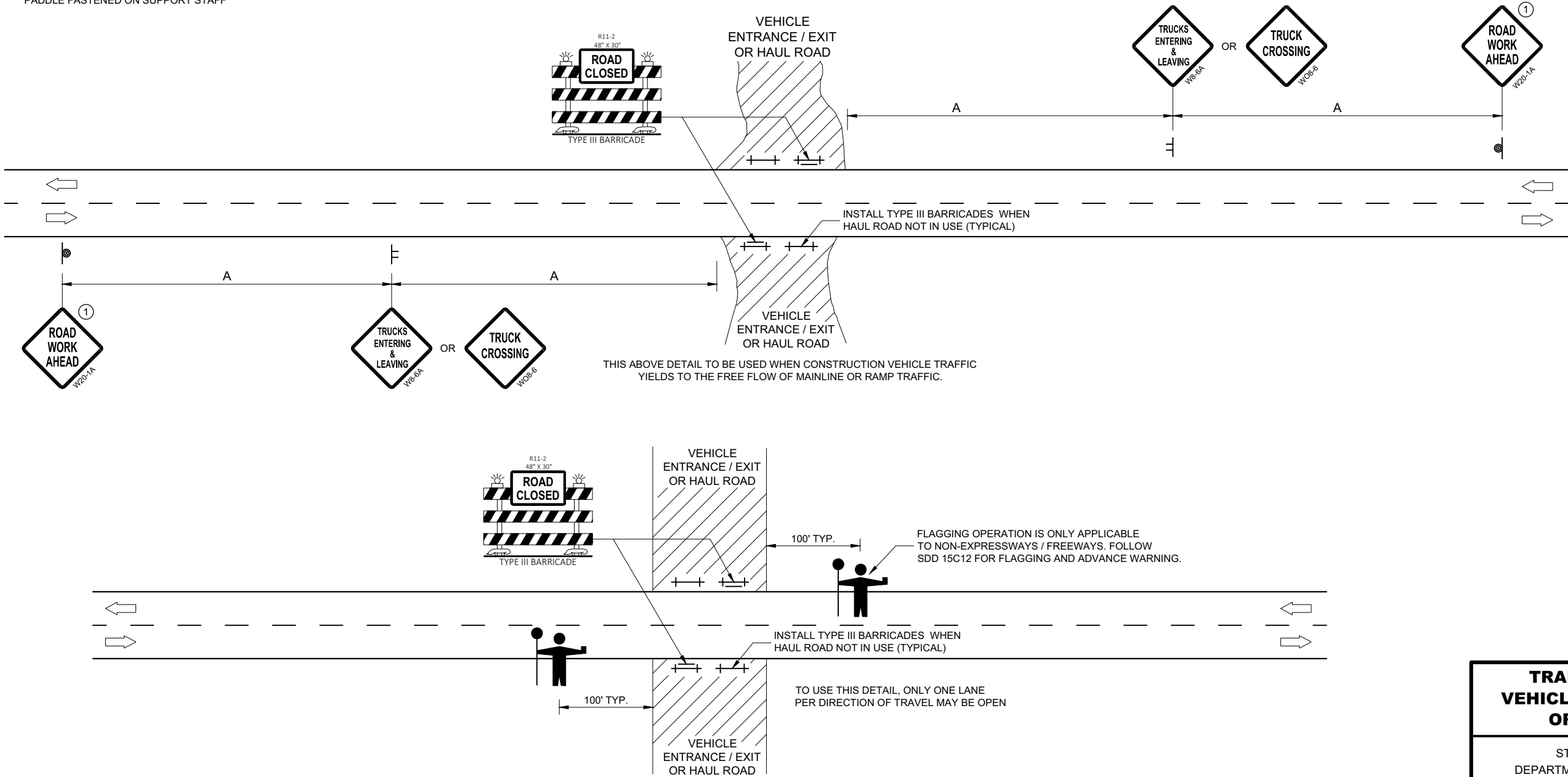
- ALL SIGNS ARE 48"X48" UNLESS OTHERWISE NOTED.
- "WO" SIGN IS THE SAME AS "W" SIGN EXCEPT THE BACKGROUND IS ORANGE.
- THE EXACT NUMBER, LOCATION, AND SPACING OF ALL SIGNS AND DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS APPROVED BY THE ENGINEER.
- WARNING SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.
- WHEN ACTIVITY REFLECTED BY THE SIGN IS NOT CURRENTLY TAKING PLACE, THE HIGHWAY SHALL BE RESTORED TO NORMAL CONDITION AND THE SIGNS SHALL BE REMOVED, COVERED OR TURNED AWAY FROM TRAFFIC.
- WHEN A SIDE ROAD OR RAMP INTERSECTS WITHIN THE ADVANCE SIGNING AREA, ADDITIONAL TRAFFIC CONTROLS SHALL BE PROVIDED AS SPECIFIED IN THE PLANS AND / OR THE SPECIAL PROVISIONS OR AS APPROVED BY THE ENGINEER.
- PLACE SIGNS ON BOTH SIDES IF USED ON DIVIDED HIGHWAY.
- ① THESE SIGNS ARE TO BE USED ONLY WHEN VEHICLE ENTRANCE / EXIT CONDITIONS ARE SEPARATED BY MORE THAN TWO MILES FROM PREVIOUS WORK AREA OR SIGNING OR AS DIRECTED BY THE ENGINEER.

6

6

SDD 15D29 - 06

SDD 15D29 - 06



THIS DETAIL TO BE USED WHEN CONSTRUCTION WORK INCLUDING TRUCKING ACTIVITY REQUIRES MAINLINE TRAFFIC TO BE TEMPORARILY STOPPED IN ONE OR BOTH DIRECTIONS. DELAY TO HIGHWAY TRAFFIC SHALL BE MINIMIZED.

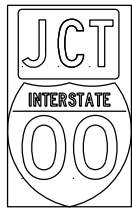
**TRAFFIC CONTROL,
VEHICLE ENTRANCE/EXIT
OR HAUL ROAD**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

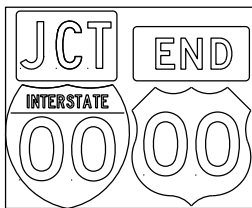
APPROVED
May 2020 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER 183

FHWA

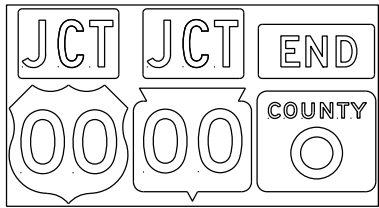
TYPICAL ASSEMBLIES



J1-1



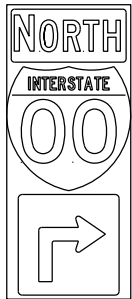
J1-2



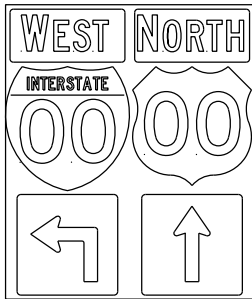
J1-3



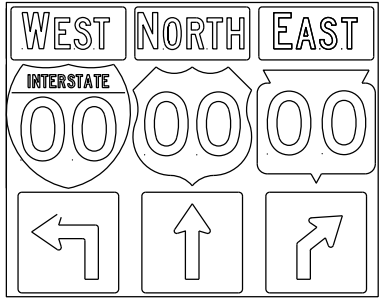
JR1-1



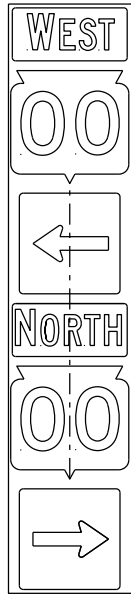
J2-1



J2-2

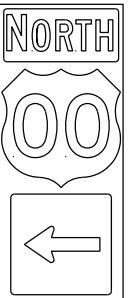


J2-3

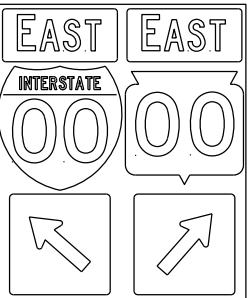


JV

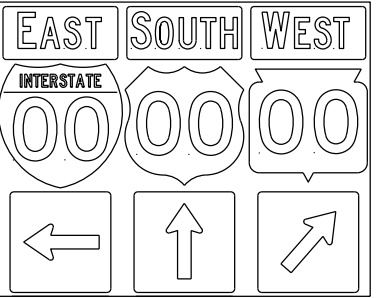
(Typical Vertical J-Assembly
See Note 10 and 11)



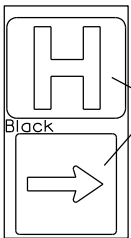
J3-1



J3-2



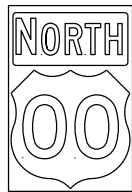
J3-3



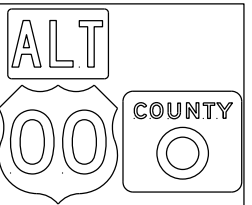
JH-1

Blue Background

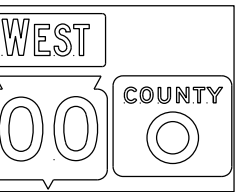
Black



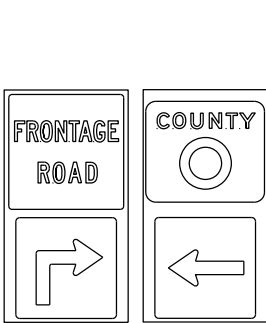
J4-1



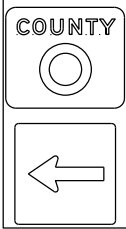
J4-2



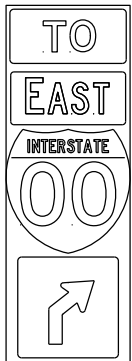
J4-2



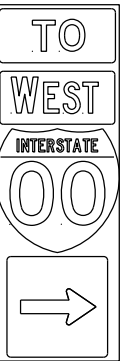
J12-1



J13-1



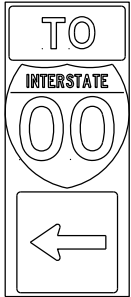
J32-1



J33-1



J22-1



J23-1



JR13-1

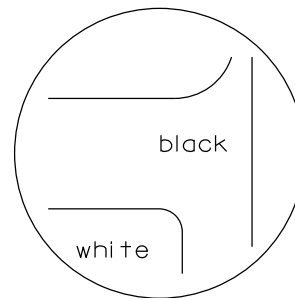
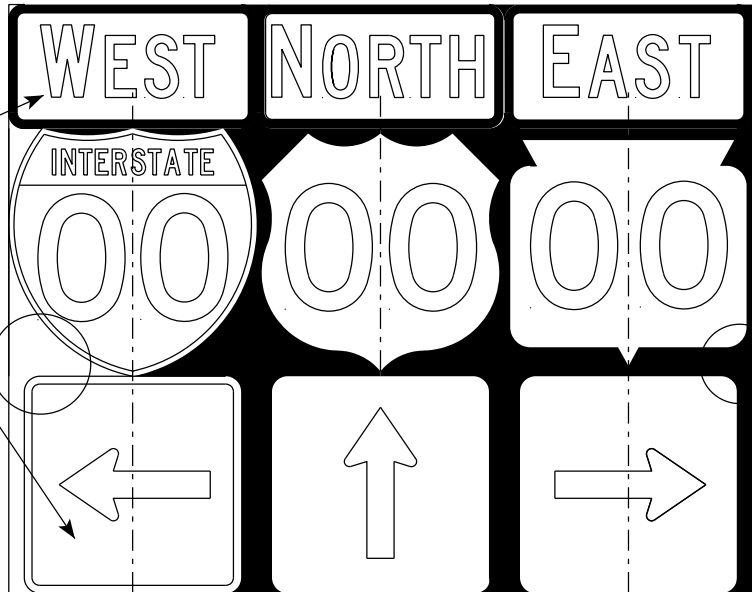
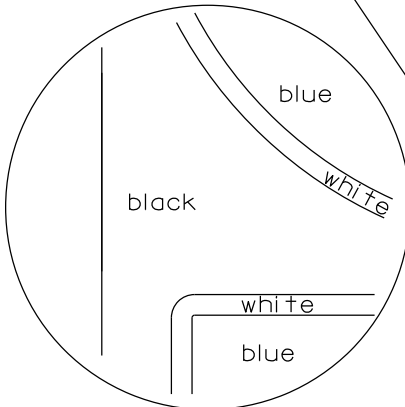


JR23-1



JR99-1

blue background
with interstate



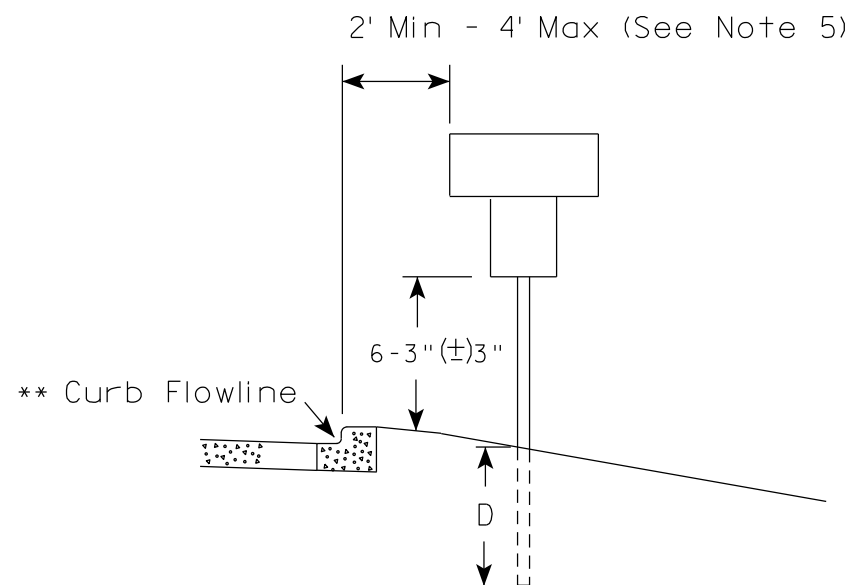
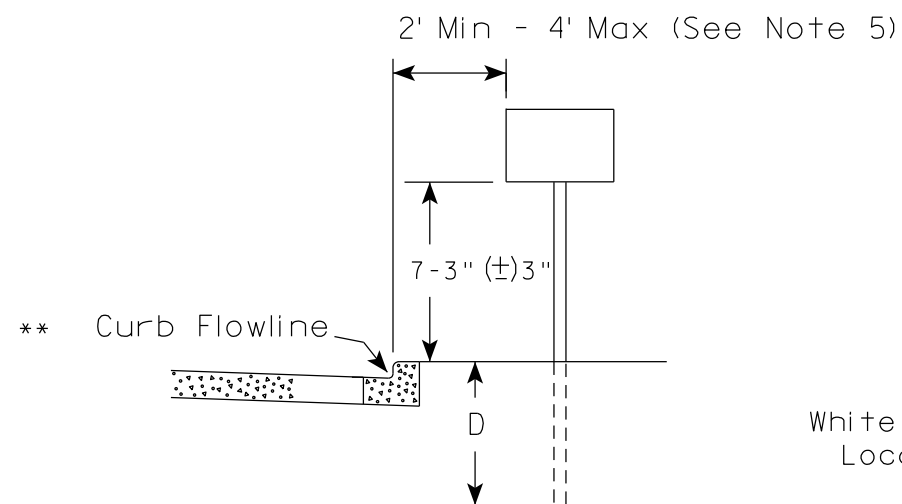
black background

ROUTE MARKERS & COMPONENTS IN TYPICAL ASSEMBLIES	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> for State Traffic Engineer
DATE 6/7/23	PLATE NO. A2-1S.10

NOTES

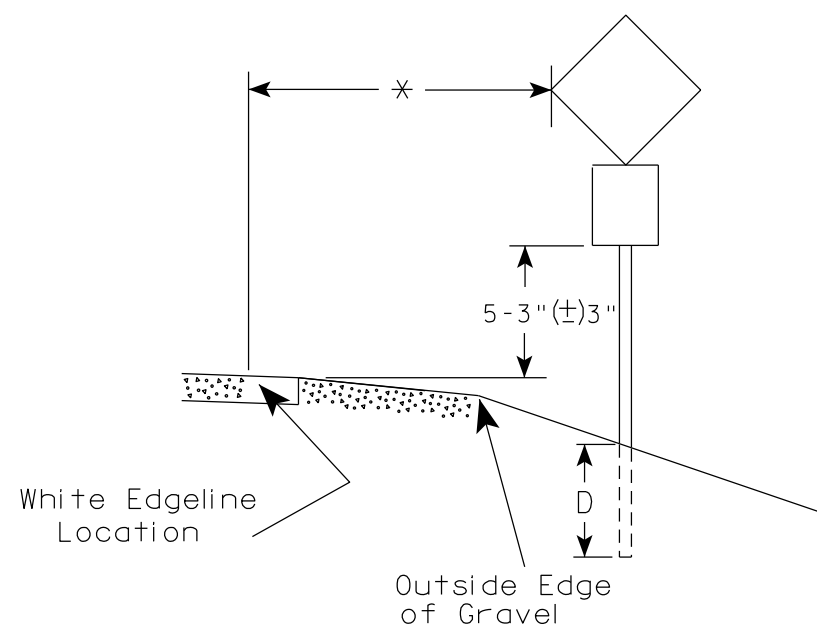
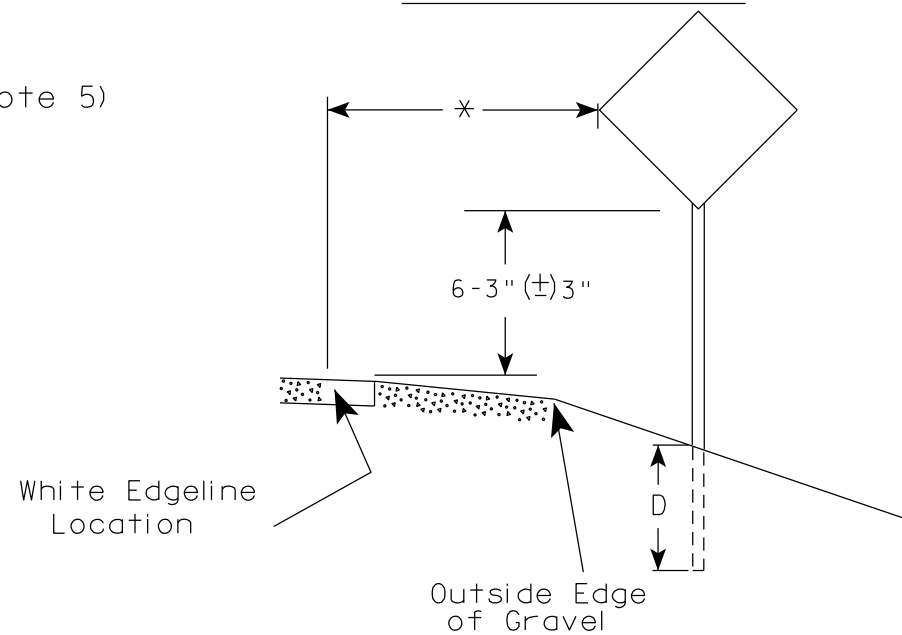
1. Signs are Type II - Type H Reflective
2. Color:
Background - Black Non-reflective
Message - see Note 4
3. Message Series - See Note 4
4. The colors and message spacing on each marker shall be according to the applicable route marker panel specifications.
5. Certain marker heads require the component pieces to be the same color. As an example, all the components used with an M1-1 Interstate marker shall be blue.
6. Single panel j-assemblies shall only be used with route marker shields that are same size. If the route marker shields are different size use multiple piece component.
7. Route assemblies that have 24 inch route shields and have dimensions greater than 48 inches (both vertical and horizontal) shall have one horizontal splice between the arrows and route shields. Vertical splices shall not be used on route assemblies with a horizontal dimension of 144 inches or less. The contractor shall not use more than one vertical joint per sign and the joint shall be between route shields.
8. Route assemblies that have 36 inch shields and have dimensions greater than 48 inches (both vertical and horizontal) shall have two horizontal splices. One horizontal splice shall be between the cardinal direction and route shields and the other horizontal splice shall be between the arrows and route shields. Vertical splices shall not be used on route assemblies with a horizontal dimension of 144 or less. The contractor shall not use more than one vertical joint per sign and the joint shall be between route shields.
9. All Vertical J Assemblies are given a Sign Code of JV
10. For JV Assemblies that have a mixture of Interstate and Non-Interstate shields, arrows and cardinals shall be white on blue.
11. For JV Assemblies that have a mixture of Non-Interstate and Auto-Tour shields, arrows and cardinals shall be black on white.

URBAN AREA



* * 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.

RURAL AREA (See Note 2)



* 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'

GENERAL NOTES

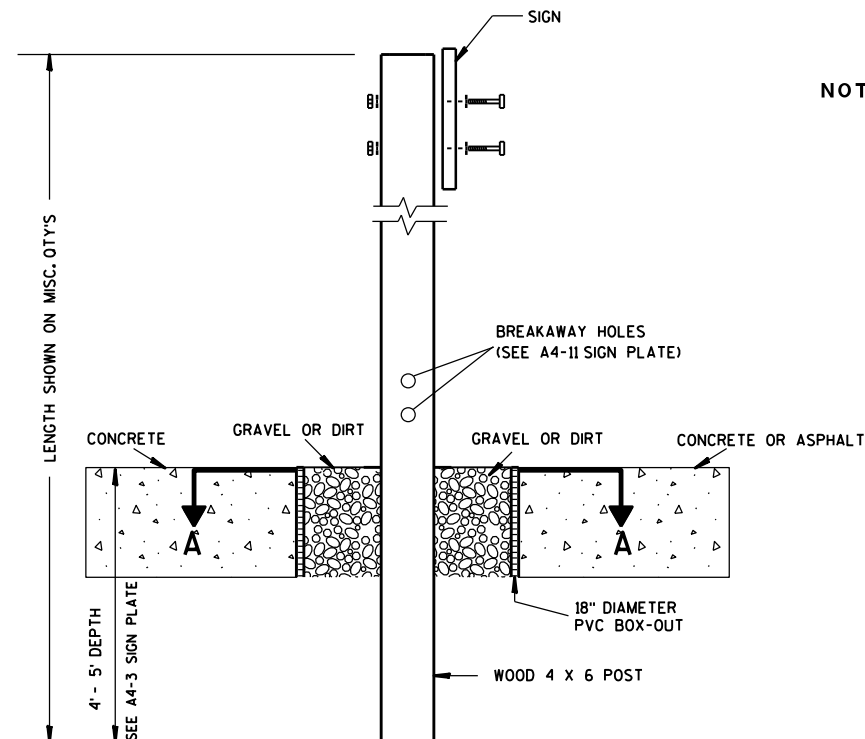
- Signs wider than 4 feet or 20 sq.ft or larger, shall be mounted on multiple posts. Refer to plate A4-4.
- If signs are mounted on or behind barrier wall, see A4-10 sign plate.
The Double Arrow sign (W12-1D) shall be mounted at a height of 2'-3" (±) 3". The Chevron sign (W1-8), Roundabout Chevron panel (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" (±) 3" or 6'-3" (±) 3" depending upon existence of a sub-sign.
- Minimum mounting height for signs mounted on traffic signal poles is 5'- 3" (±) 3".
- Offset distance shall be consistent with existing signs or consistent throughout length of project.
- Folding signs shall be mounted at a height of 5'-3" (±) 3" or as directed by the Engineer.

TYPICAL INSTALLATION
OF PERMANENT TYPE II
SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

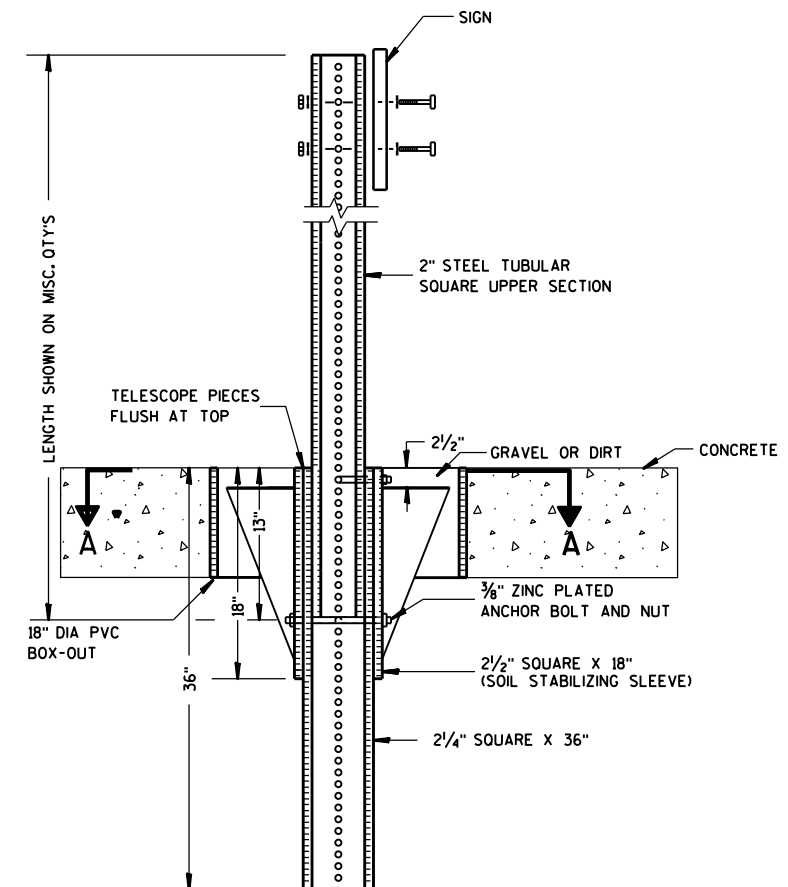
DATE 12/6/23 PLATE NO. A4-3.23



ELEVATION VIEW

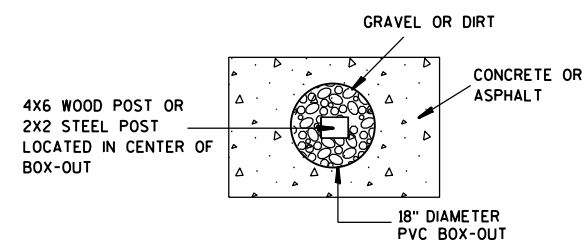
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

- 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 186 A4-3B.1

PROJECT NO:

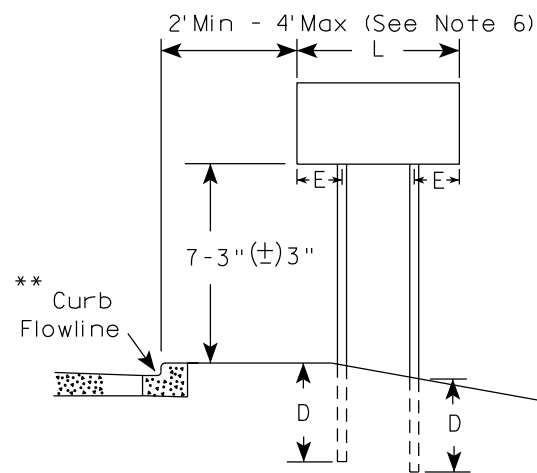
HWY:

COUNTY:

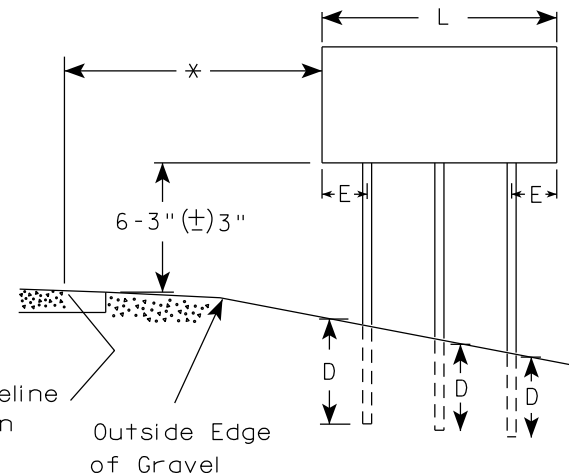
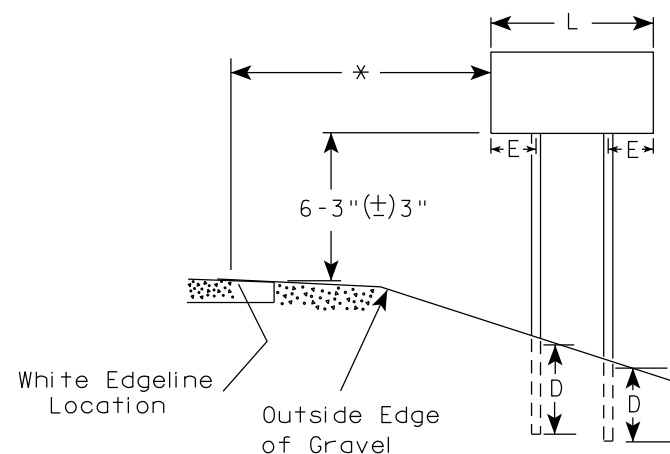
SHEET NO:

E

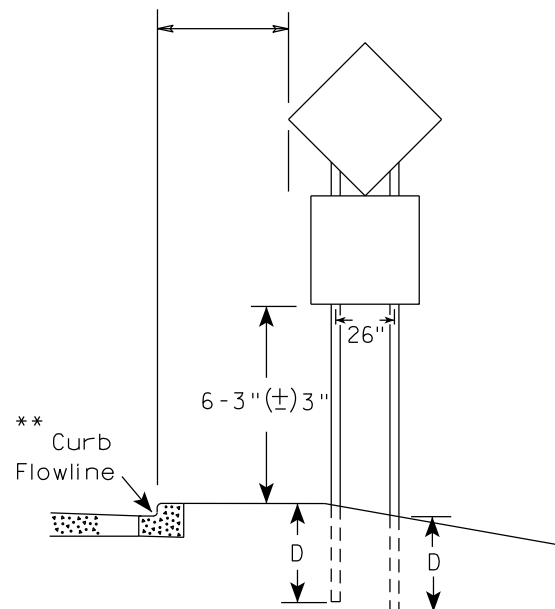
URBAN AREA



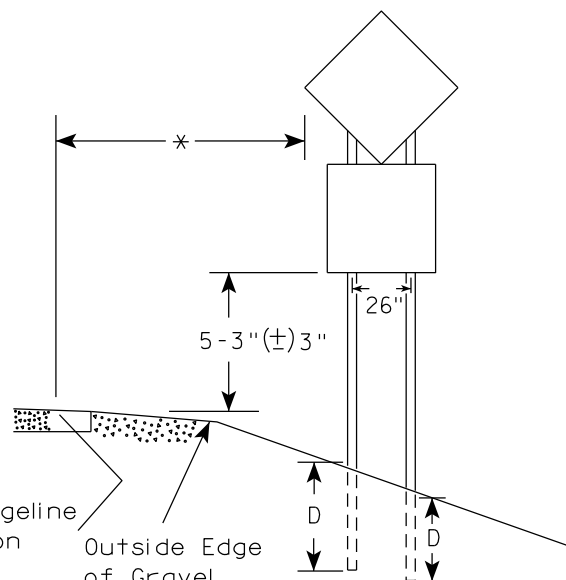
RURAL AREA (See Note 3)



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



48" DIAMOND WARNING SIGN



48" DIAMOND WARNING SIGN

SIGN SHAPE OTHER THAN DIAMOND (TWO POSTS REQUIRED)	
L	E
Greater than 48" Less than 60"	12"
60" to 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 12/6/23 PLATE NO. A4-4.16

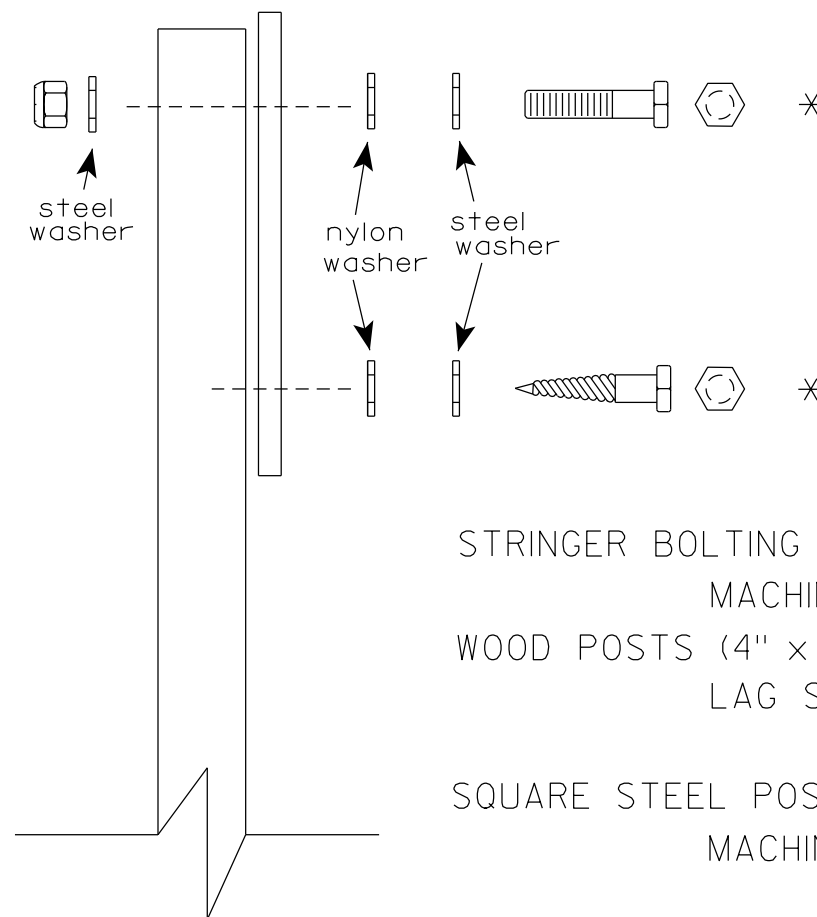
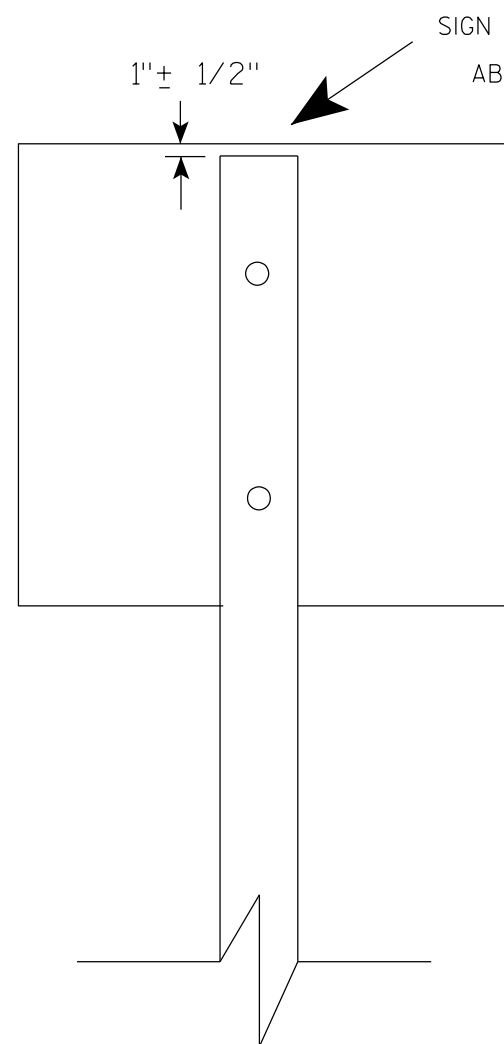
GENERAL NOTES

- For 3 or 4 post installations, individual post spacing shall be greater than 3'-6".
- See tables below for required number of posts.
- For expressways and freeways, mounting height is 7'-3" (±) 3" or 6'-3" (±) 3" depending upon existence of sub-sign.
- The (±) tolerance for mounting height is 3 inches.
- J-Assemblies are considered to be one sign for mounting height.
- Offset distance shall be consistent with existing signs or consistent throughout length of project.
- Folding signs shall be mounted at a height of 5'-3" (±) 3" or as directed by the engineer.
- The Double Arrow sign (W12-1) shall be mounted at a height of 2'-3" (±) 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" (±) 3".

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

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

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



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

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

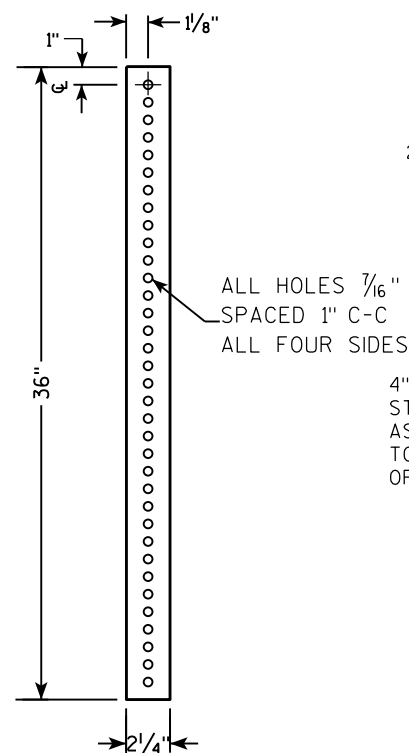
Threads on bolts and nuts shall be manufactured with sufficient allowance for the cadmium plate or galvanized coating to permit the nuts to run freely on the bolts.

- STRINGER BOLTING TO ALUMINUM SIGNS (SEE SIGN PLATE A4-18)
- MACHINE BOLTS - $\frac{5}{16}$ " 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

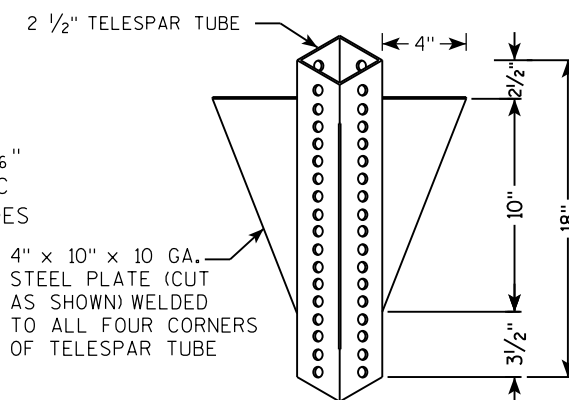
* Two different fastening systems are shown for illustration purposes. On any individual sign, either one or the other system shall be used. Actual number of fasteners per sign varies with the sign area, but normally there are two. For a single post installation, all signs greater than 9 sq. ft. require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

**2 1/4 " SQUARE
12 GAUGE
PERFORATED
GALVANIZED FINISH**



**2 1/2" SQUARE
12 GAUGE
OMNI-DIRECTIONAL
PERFORATED
SOIL STABILIZING SLEEVE
GALVANIZED FINISH**

[illegible]

TECHNICAL DRAWING OF A SIGNPOST ASSEMBLY.

Side View Dimensions:

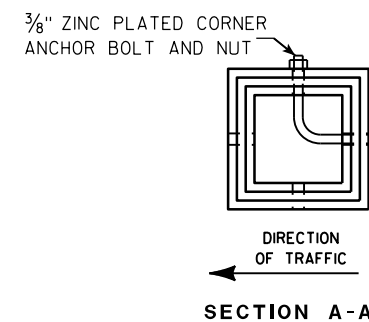
- Total height dimension: LENGTH SHOWN ON MISC. QTYS
- Section length: 36"
- Upper section offset from ground: 18"
- Lower section offset from ground: 12"

End View Details:

- SIGN
- SEE SIGN PLATE A4-8 FOR BOLT WASHER, & NUT MATERIAL
- 2" STEEL TUBULAR SQUARE UPPER SECTION
- ALL HOLES $\frac{7}{16}$ " SPACED 1" C-C ALL FOUR SIDES
- $\frac{3}{8}$ " ZINC PLATED CORNER ANCHOR BOLT AND NUT
- 1"
- $\frac{3}{8}$ " ZINC PLATED ANCHOR BOLT AND NUT
- 2 $\frac{1}{2}$ " SQUARE X 18" (SOIL STABILIZING SLEEVE)
- 2 $\frac{1}{4}$ " SQUARE X 36"

Assembly Notes:

- TELESCOPE PIECES FLUSH AT TOP



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 PLATI 189 14-9.9

PROJECT NO:

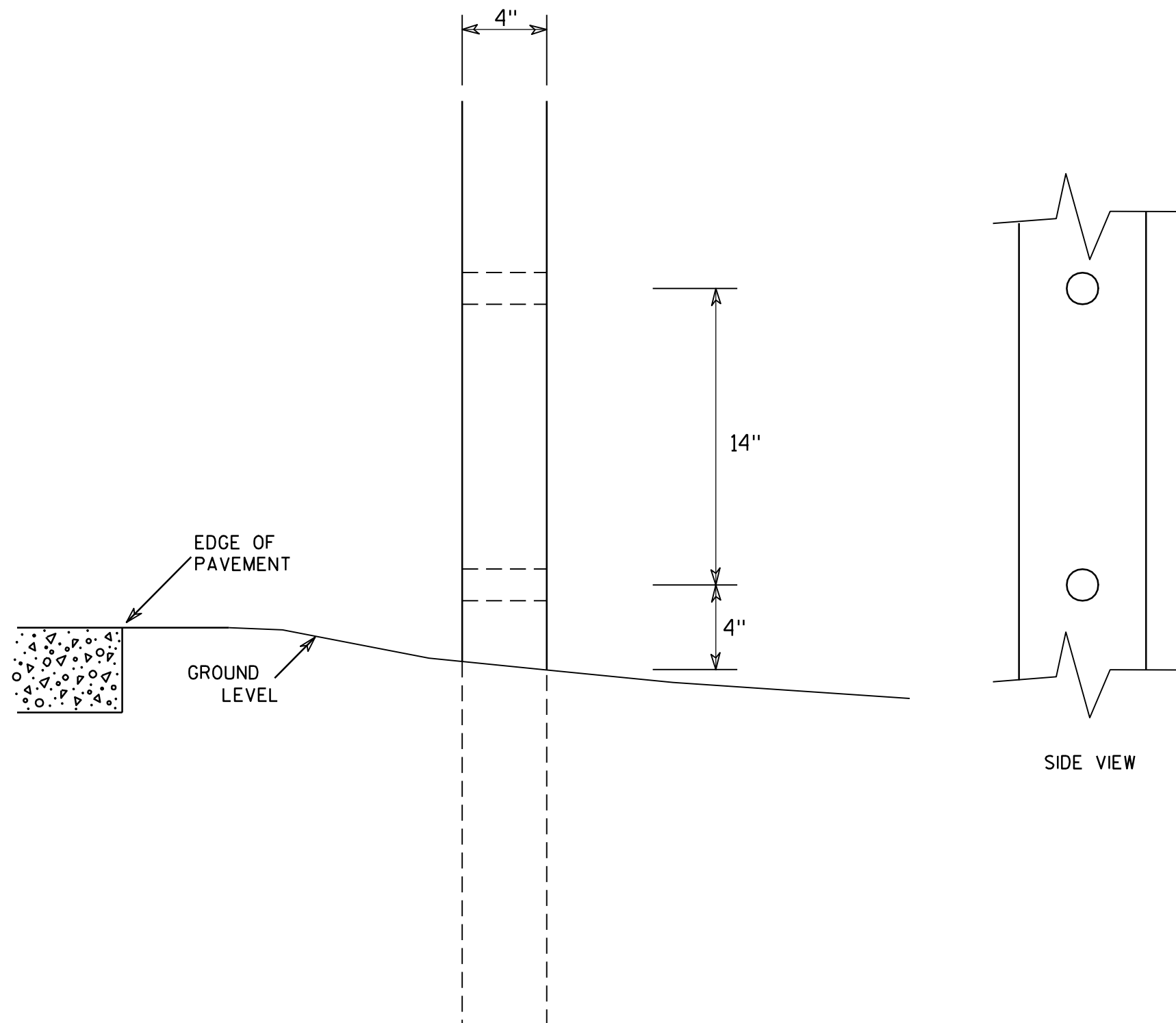
HWY:

COUNTY:

SHEET NO:

E

7



GENERAL NOTES

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

7

4 X 6 WOOD POST MODIFICATIONS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Chester J. Spang
for State Traffic Engineer

DATE 3/27/97

PLATE NO. A4-11.2

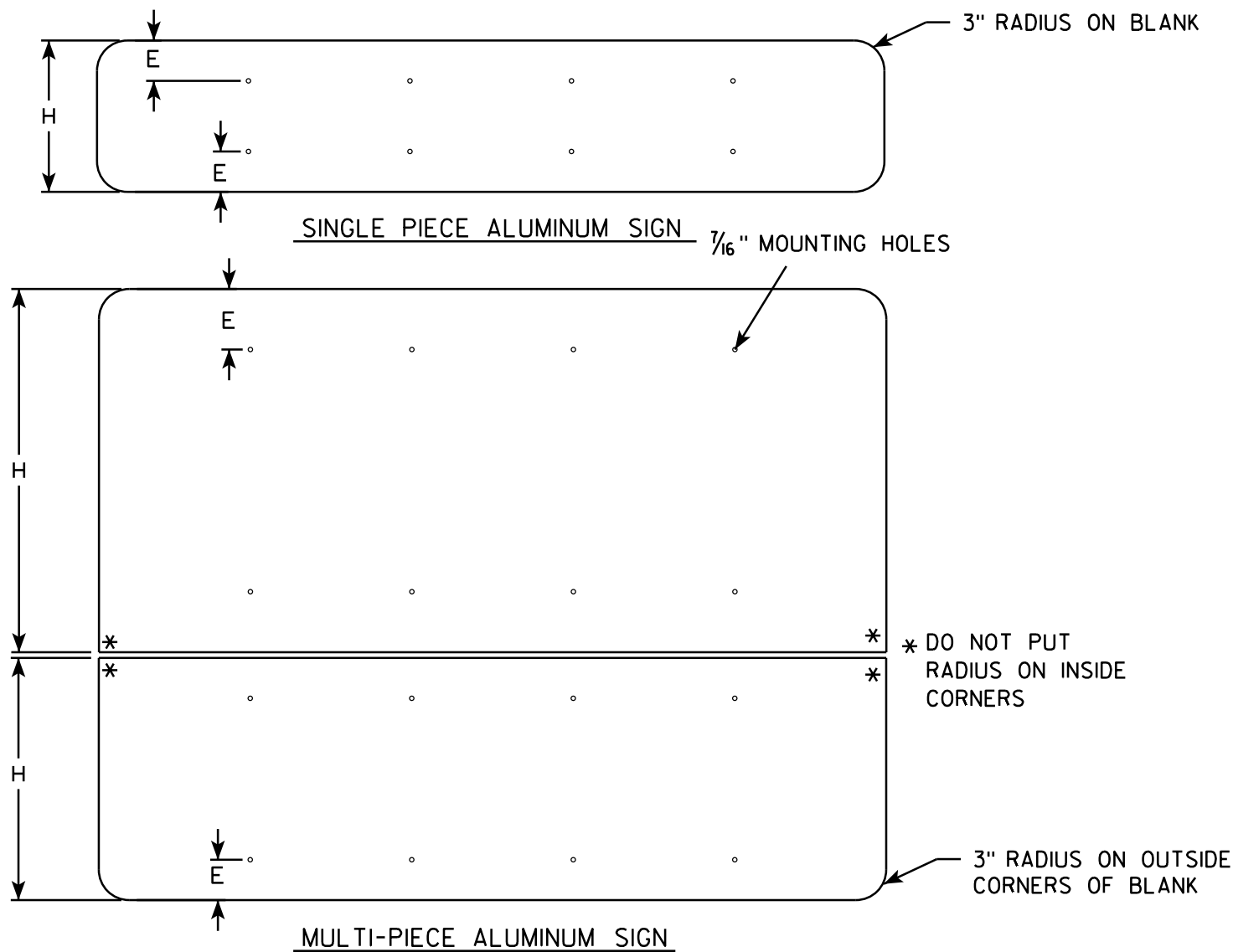
PROJECT NO:

HWY:

COUNTY:

SHEET NO: 190

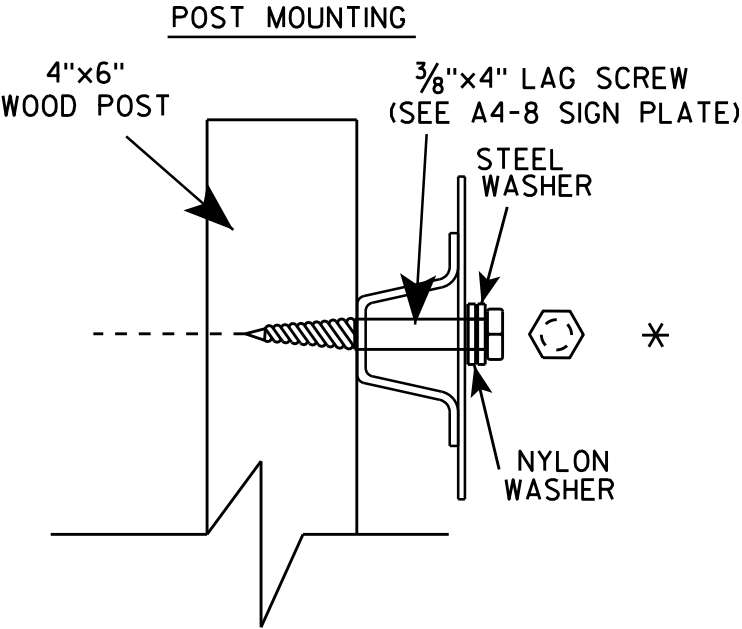
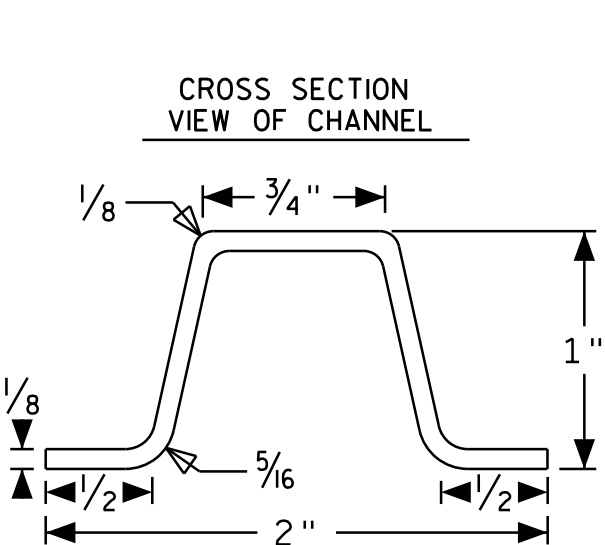
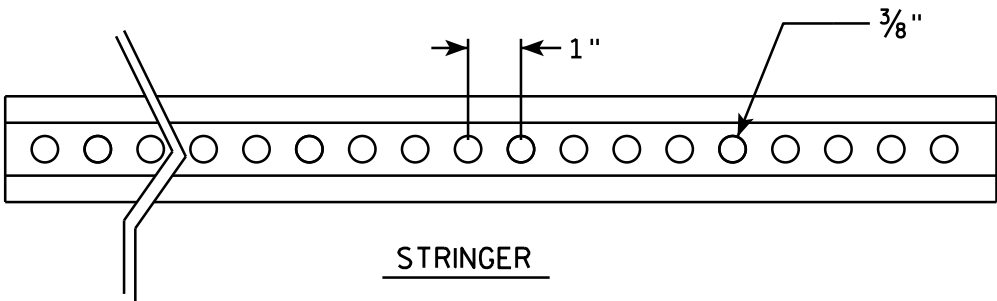
E



GENERAL NOTES

- ALL SIGNS OVER 60" IN WIDTH SHALL HAVE A 3" RADIUS ON THE OUTSIDE CORNERS OF THE ALUMINUM BLANK.
- MOUNTING HOLES SHALL BE 7/16" DIAMETER.
- SEE CHART FOR HOLE SPACING REQUIREMENTS
- FOR SIGN PANELS WITH DIMENSION (H) 36" AND OVER, DIMENSION E SHALL BE 6"
- FOR SIGN PANELS WITH DIMENSION (H) UNDER 36", DIMENSION E SHALL BE 4"
- SIGN STRINGER MATERIAL SHALL CONSIST OF STEEL CHANNEL POST SECTIONS, WEIGHING 1.12 LBS/FT IN ACCORDANCE WITH SECTION 633.2.1 OF THE STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION.
- SEE SIGN PLATE A4-8 FOR SIGN STRINGER BOLTING REQUIREMENTS.

SIGN WIDTH	STRINGER WIDTH	POSTS	HOLE SPACING	MOUNTING HOLES			
78"	72"	2	16"	15"	31"	47"	63"
84"	72"	2	17"	16 1/2"	33 1/2"	50 1/2"	67 1/2"
90"	72"	2	18"	18"	36"	54"	72"
96"	90"	2	19"	19 1/2"	38 1/2"	57 1/2"	76 1/2"
102"	90"	2	20"	21"	41"	61"	81"
108"	90"	2	21"	22 1/2"	43 1/2"	64 1/2"	85 1/2"
114"	108"	3	15"	12"	27"	42"	57" 72" 87" 102"
120"	108"	3	16"	12"	28"	44"	60" 76" 92" 108"
126"	108"	3	17"	12"	29"	46"	63" 80" 97" 114"
132"	126"	3	18"	12"	30"	48"	66" 84" 102" 120"
138"	126"	3	19"	12"	31"	50"	69" 88" 107" 126"
144"	126"	3	20"	12"	32"	52"	72" 92" 112" 132"



SIGN STRINGER
MOUNTING REQUIREMENTS

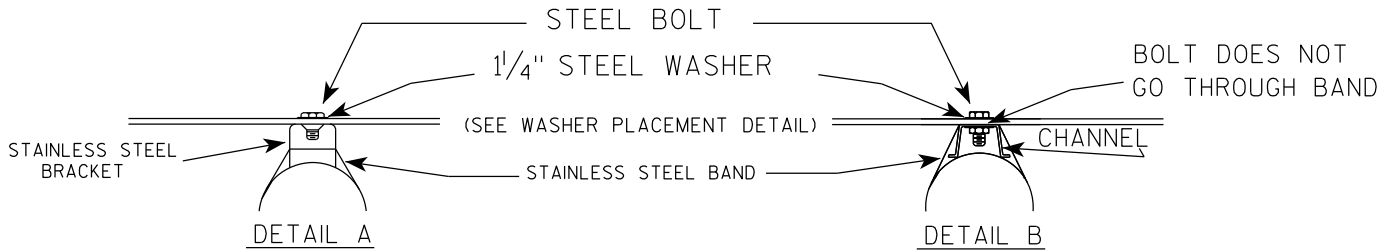
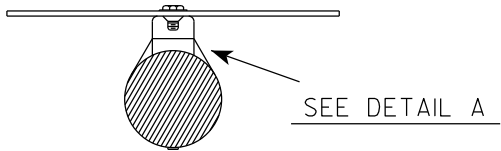
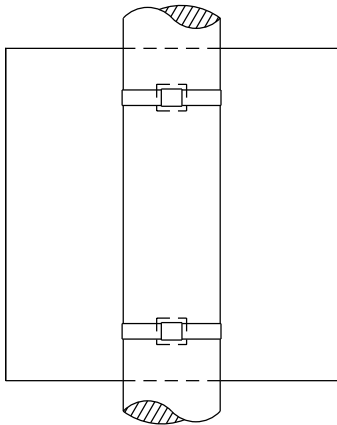
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 4/26/16 PLATE No A4-18.1
191

BANDING

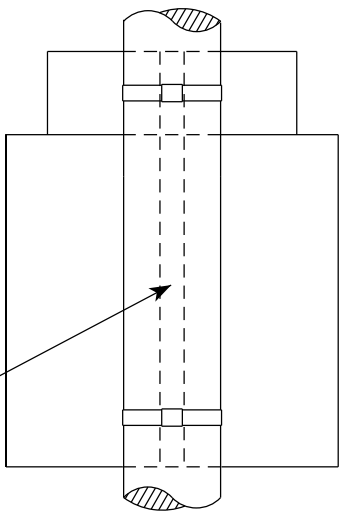
SINGLE SIGN



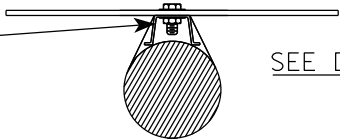
GENERAL NOTES

1. Any sign over 3 feet in width shall use the V-Block banding method. See A5-10 standard plate.
2. Signs 3 feet or greater in height shall have three bracket bands installed. Signs less than 3 feet in height shall have two bracket bands installed.
3. Banding and assembly bracket shall be stainless steel. All bands shall be $\frac{3}{4}$ " in width and 0.025" thickness.
4. ALL SIGN MOUNTING BOLTS AND WASHERS SHALL BE EITHER:
 - a. Hot dip or mechanically galvanized in accordance with ASTM Designation: A 153, Class D
 - b. Electro-galvanized in accordance with ASTM designation: B 633, Type III, SC 3

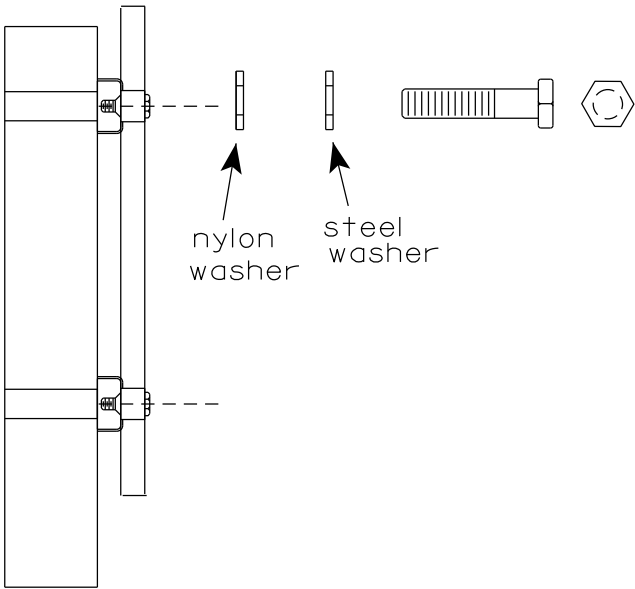
"J" ASSEMBLY



CHANNEL
SEE TYPICAL PANEL
INSTALLATION SHEET



WASHER PLACEMENT

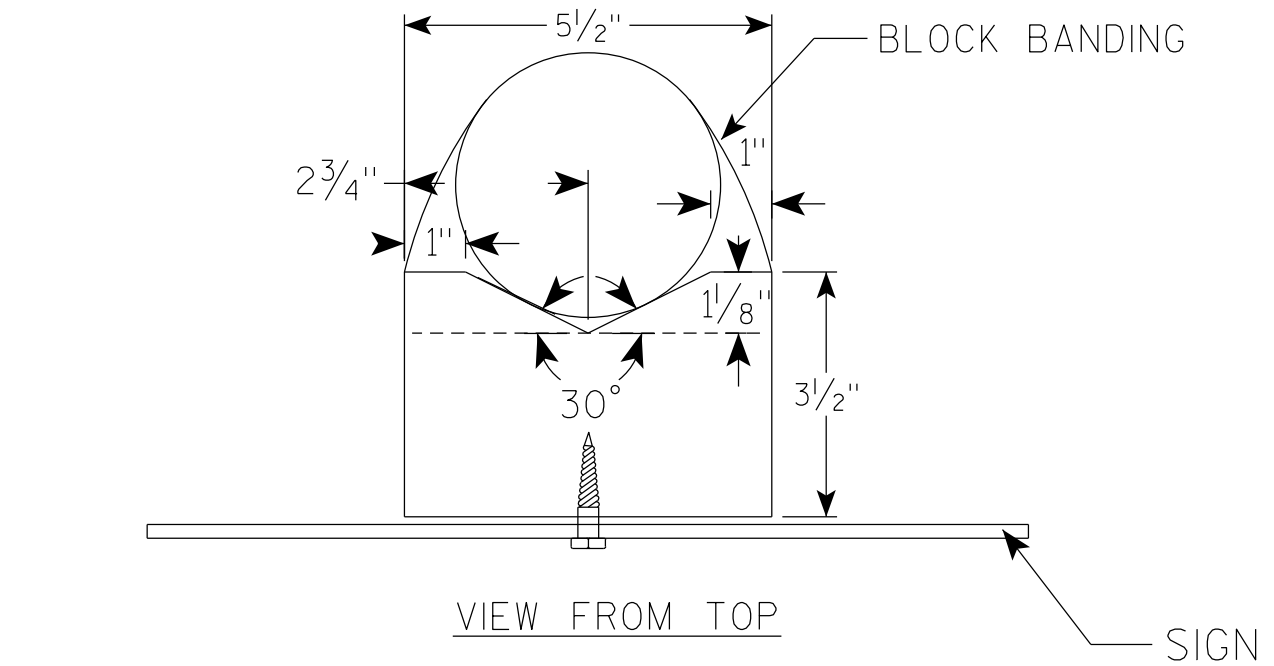
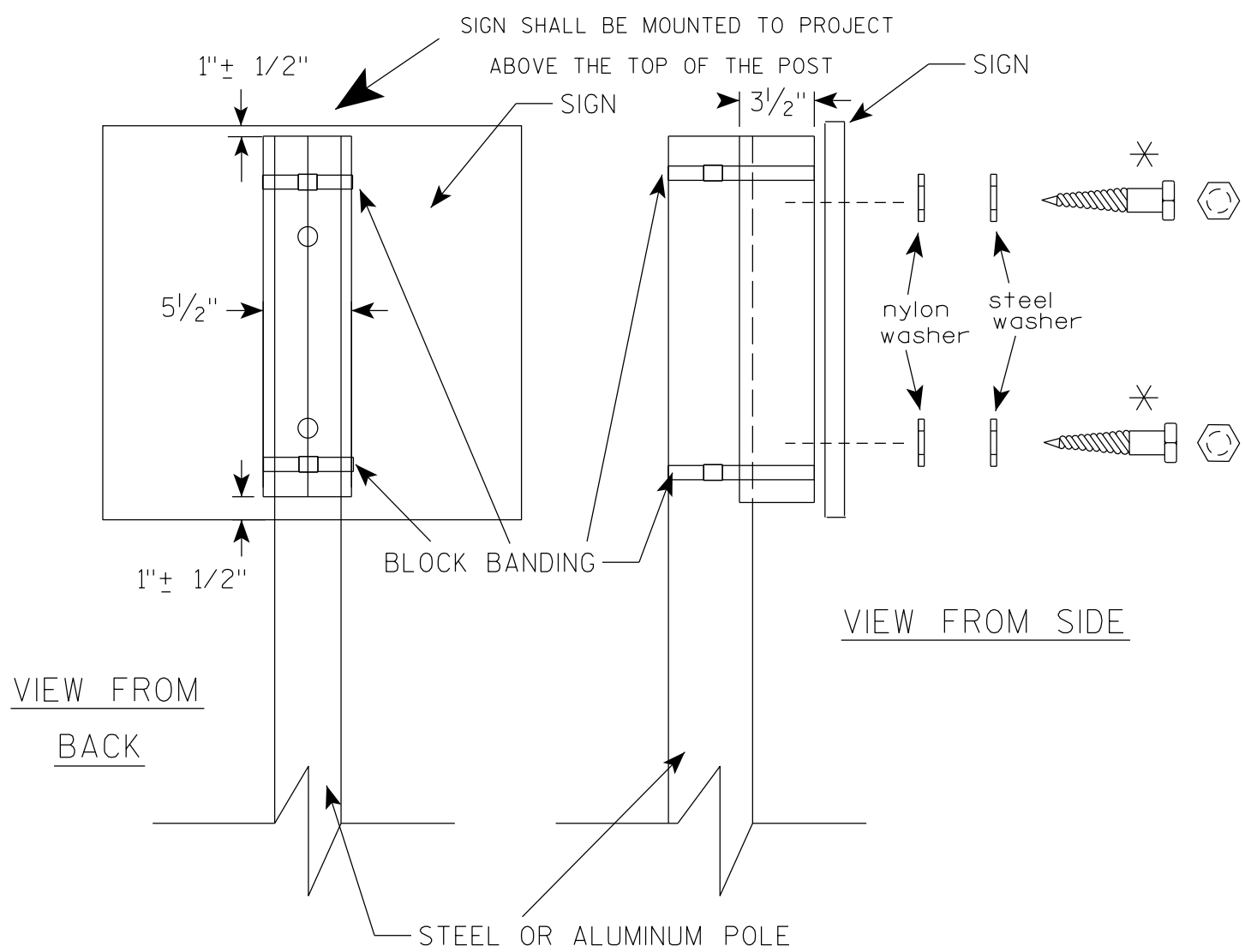


WASHERS (ALL POSTS) -
1-1/4" O.D. X $\frac{3}{8}$ " I.D. X $\frac{1}{16}$ " STEEL
1-1/4" O.D. X $\frac{3}{8}$ " I.D. X .080 NYLON
FOR ALL TYPE H SIGNS

STANDARD SIGN
SIGN BANDING DETAILS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer
DATE 6/10/19 PLATE NO. A5-9.4

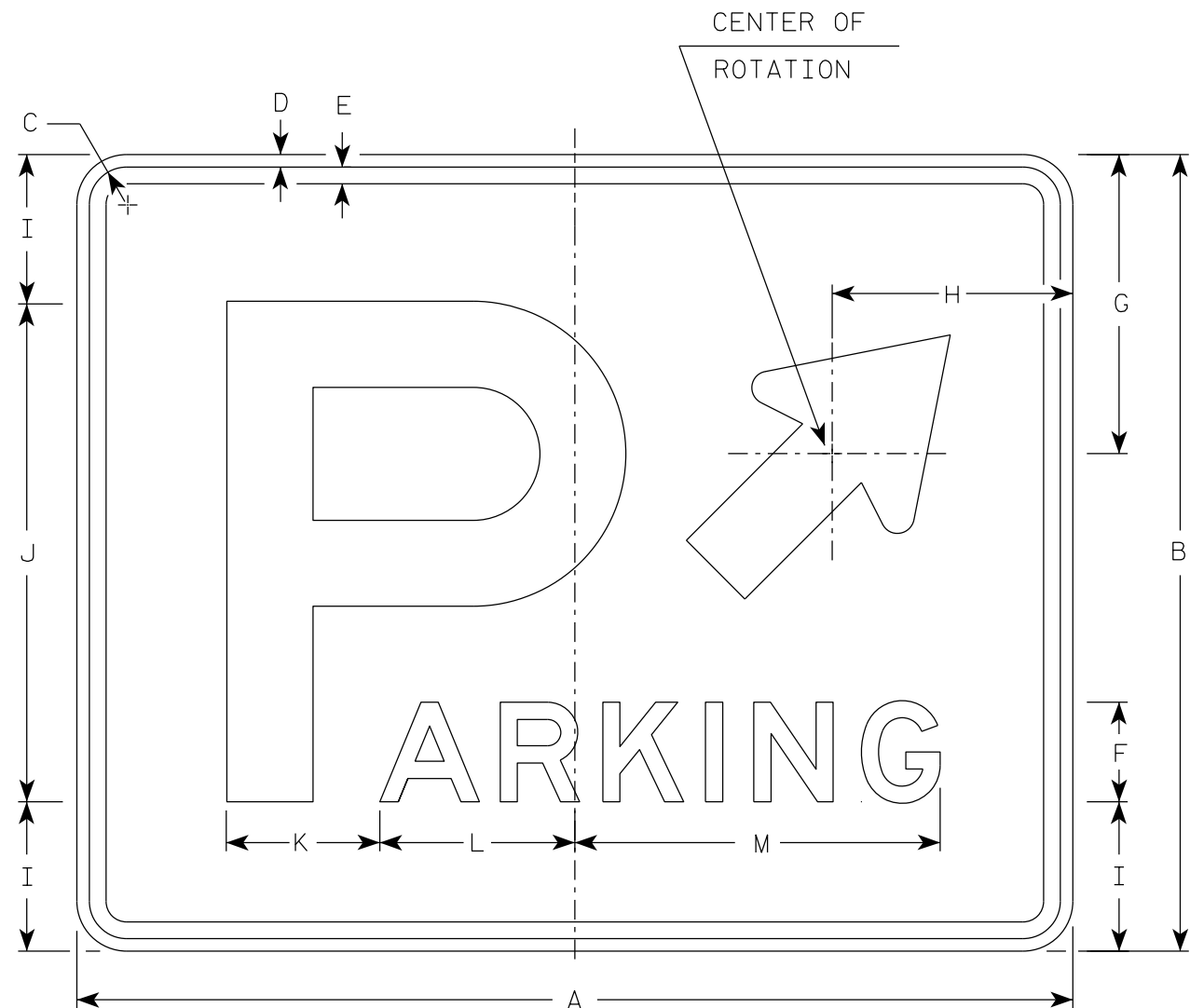


GENERAL NOTES

1. WOOD 4"X6" POST MATERIAL SHALL CONFORM TO 507.2.2 OF THE WISDOT STANDARD SPECIFICATIONS
2. BLOCK BANDING AND CLIPS SHALL BE STAINLESS STEEL, $\frac{3}{4}$ " WIDTH AND 0.025" THICKNESS
3. SIGNS 3' OR GREATER IN HEIGHT SHALL UTILIZE 3 BLOCK BANDS. SIGNS UNDER 3' IN HEIGHT SHALL UTILIZE 2 BLOCK BANDS
4. ACTUAL NUMBER OF FASTENERS PER SIGN VARIES WITH THE SIGN AREA, BUT NORMALLY THERE ARE TWO. FOR SIGNS GREATER THAN 9 S.F. 3 FASTENERS SHALL BE USED.
5. ALL SIGN MOUNTING BOLTS AND WASHERS SHALL BE EITHER:
 - a. Hot dip or mechanically galvanized in accordance with ASTM Designation: A 153, Class D
 - b. Electro-galvanized in accordance with ASTM Designation : B 633, TYPE III, SC 3
6. ALL BOLTS SHALL HAVE HEXAGONAL HEADS.
7. STEEL WASHERS SHALL BE $\frac{1}{4}$ " O.D. X $\frac{3}{8}$ " I.D. X $\frac{1}{16}$ "
8. NYLON WASHERS SHALL BE $\frac{1}{4}$ " O.D. X $\frac{3}{8}$ " I.D. X .080 FOR TYPE H OR TYPE F FACE SIGN

✱ LAG BOLTS SHALL BE $\frac{3}{8}$ " X $2\frac{1}{2}$ "

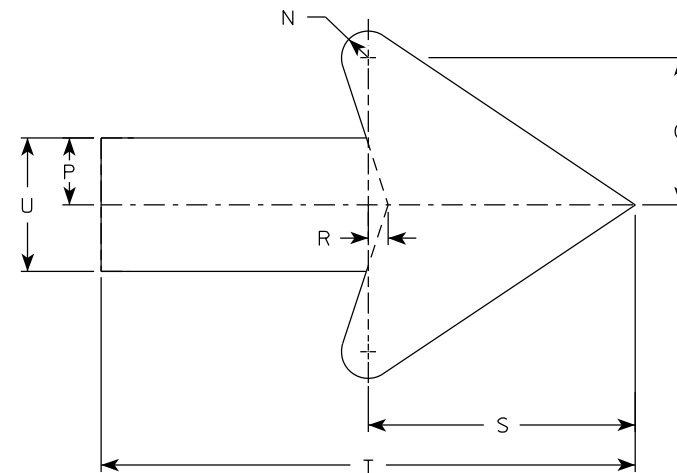
BLOCK BANDING DETAIL (V-BLOCK OPTION)	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> for State Traffic Engineer
DATE 4/19/2022	PLATE NO. A5-10.3



D4-1

NOTES

- 1. Sign is Type II - Type H Reflective
- 2. Color:
Background - White
Message - Green
- 3. Message Series - E
- 4. Arrow shall be rotated as required.



Arrow Detail

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	18	15	1 1/8	3/8	3/8	2	7	4 3/8	2 1/2	10	3 1/8	4	7 1/4	3/8	1 5/8	3/4		1/4	3	6	1 1/2						1.88
2S	30	24	1 1/8	3/8	1/2	3	9	7 1/4	4 1/2	15	4 5/8	5 7/8	11	1/2	2 3/4	1 1/4		3/8	5	10	2 1/2						5.0
2M	30	24	1 1/8	3/8	1/2	3	9	7 1/4	4 1/2	15	4 5/8	5 7/8	11	1/2	2 3/4	1 1/4		3/8	5	10	2 1/2						5.0
3	48	36	1 3/8	1/2	5/8	5	11	12	5 1/2	25	7 3/4	9 3/4	18 1/4	3/4	3 7/8	1 7/8		5/8	7 1/2	15	3 3/4						12.0
4																											
5																											

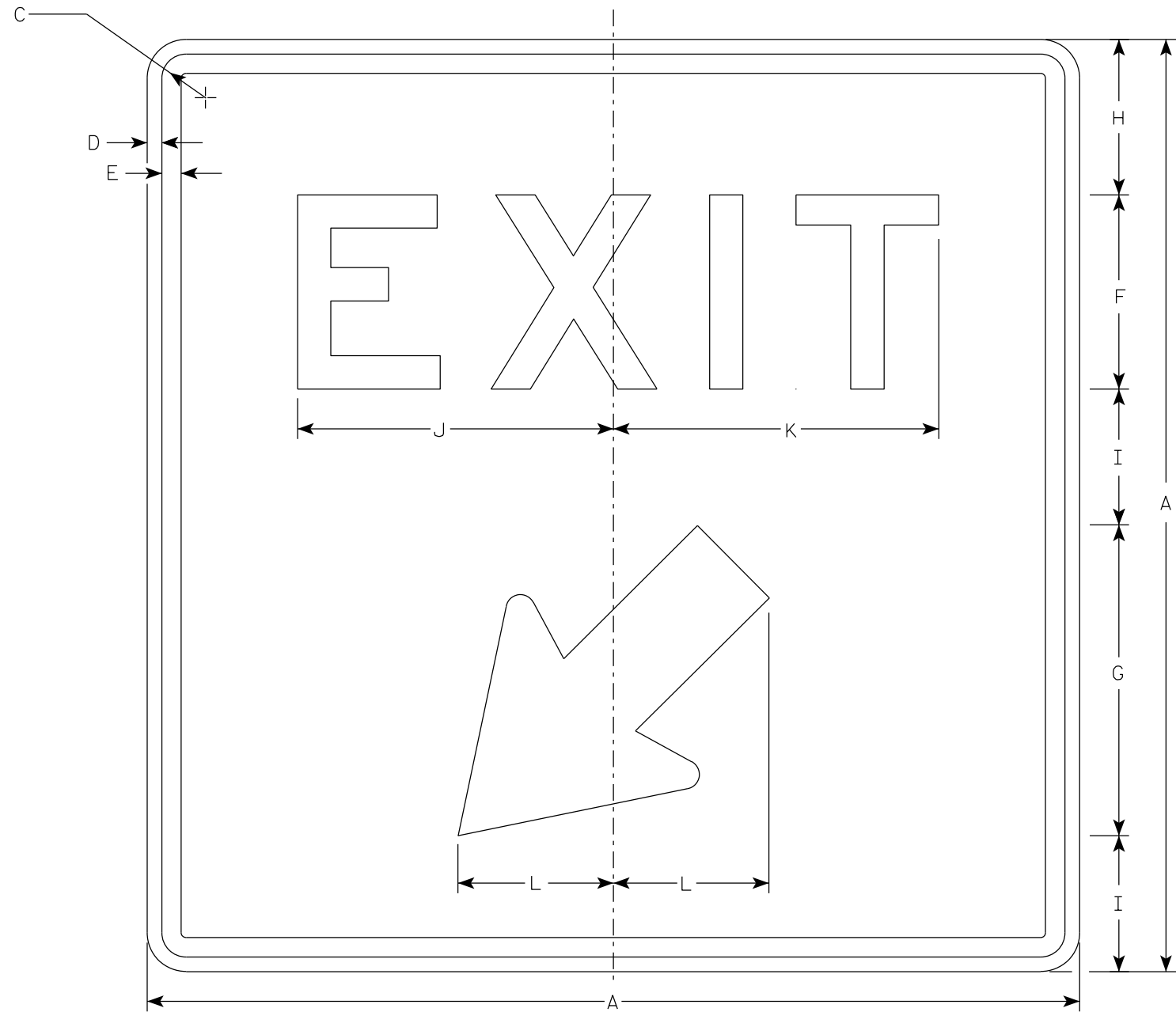
STANDARD SIGN

D4-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

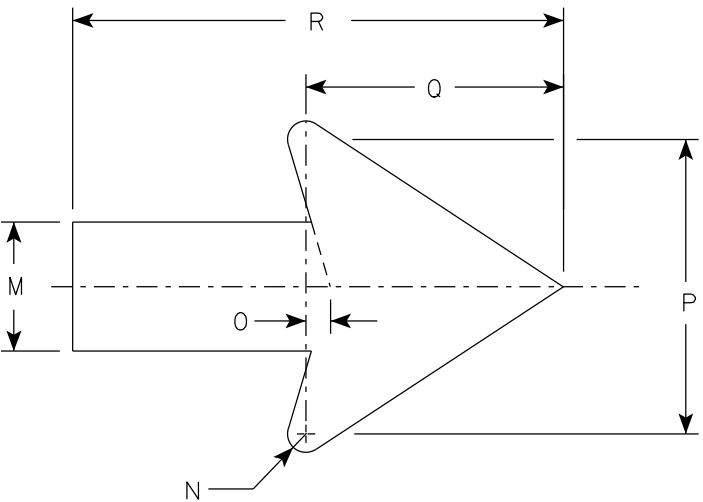
DATE 1/19/2021 PLATE NO. D4-1.9



D52 - 54L

NOTES

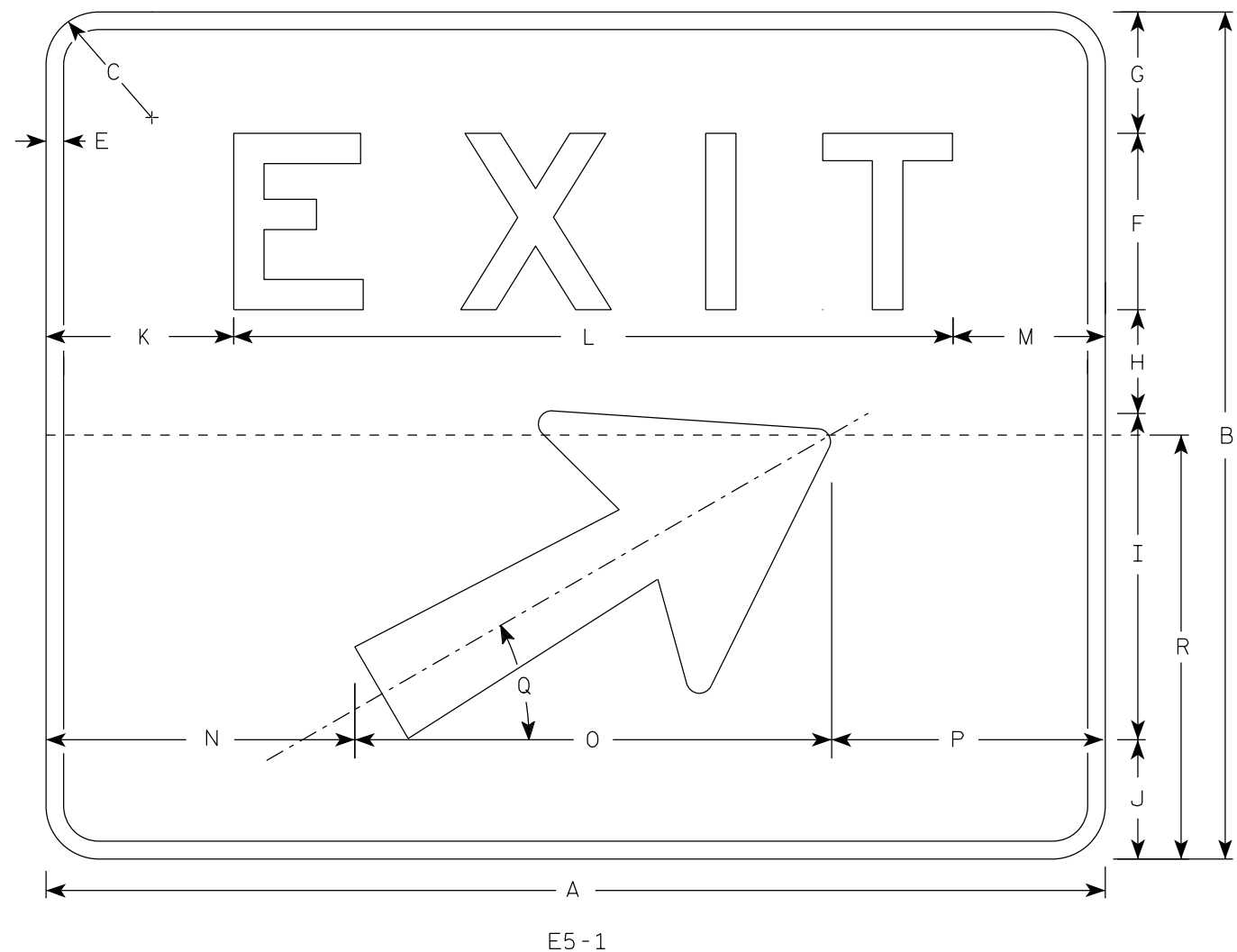
- 1. Sign is Type II - Type H Reflective
- 2. Color:
Background - White
Message - Black
- 3. Message Series - E
- 4. D52-54R is the same as D52-54L except that the arrow is reversed.



Arrow Detail

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

7



NOTES

- 1. Sign is Type II - Type H reflective
- 2. Color:
Background - Green
Message - White
- 3. Message Series - E
- 4. Sign shall be split into two seperate pieces as shown on the detail by the dashed line (-----) for sizes 4 & 5.
- 5. Arrow is Type "A" from sign plate A1-1.
- 6. As per the Standard Spec's, this sign shall not have a vertical joint.
- 7. Size 3 E5-1 shall only be used in a Work Zone application with a Temporary Sign Support

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																											
2S																											
2M																											
3	48	48	3		1	10	6 ⁷ / ₈	5 ⁷ / ₈	18 ¹ / ₂	6 ³ / ₄	8 ¹ / ₂	31 ¹ / ₈	8 ³ / ₈	11 ¹ / ₂	27	9 ¹ / ₂	30°	30									16.0
4	60	48	3		1	10	6 ⁷ / ₈	5 ⁷ / ₈	18 ¹ / ₂	6 ³ / ₄	10 ⁵ / ₈	40 ³ / ₄	8 ⁵ / ₈	17 ¹ / ₂	27	15 ¹ / ₂	30°	30									20.0
5	72	60	3		1	12	9 ³ / ₄	10	18 ¹ / ₂	9 ³ / ₄	13 ¹ / ₄	48 ¹ / ₂	10 ¹ / ₄	23 ¹ / ₂	27	21 ¹ / ₂	30°	30									30.0

PROJECT NO:

HWY:

COUNTY:

SHEET NO: 196

E

FILE NAME : C:\CAEfiles\Projects\tr_stdplate\E51.dgn

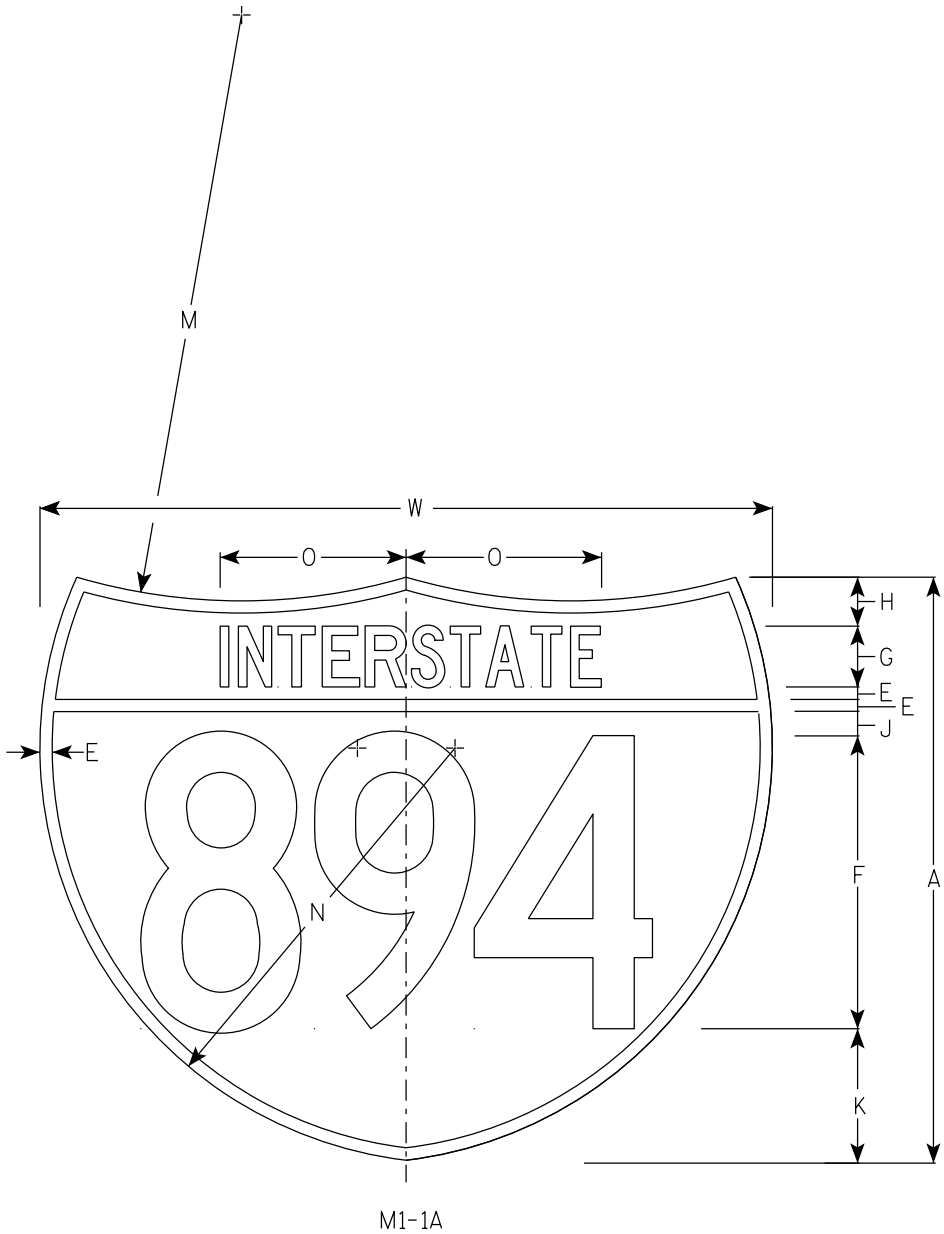
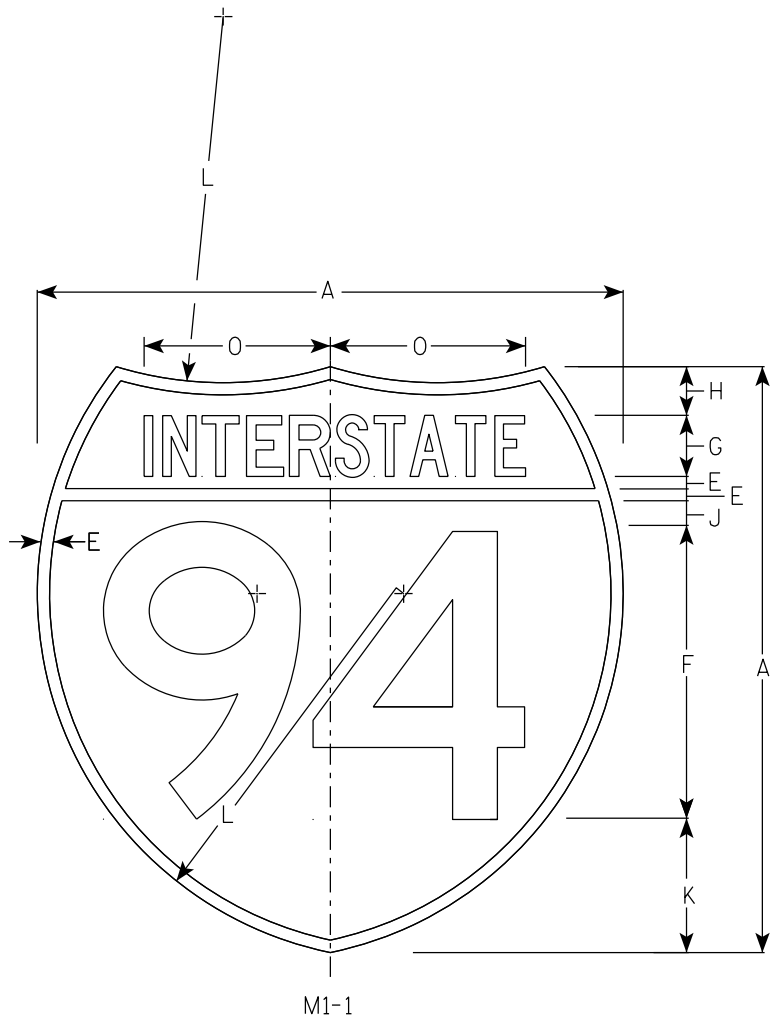
PLOT DATE : 26-JAN 2023 6:53

PLOT BY : dotc4c

PLOT NAME :

PLOT SCALE : \$\$\$.....plotscale.....\$\$\$WISDOT/CADDS SHEET 42

7



NOTES

- 1. Sign is Type II - Type H Reflective
- 2. Color:
Background - Top Red - Bottom Blue
Message - White
- 3. Message Series - See note 5
- 4. Substitute appropriate numerals & adjust spacing as per plate A10-1.
- 5. M1-1 - Numerals - D
Interstate - C
M1-1A - All copy - C

7

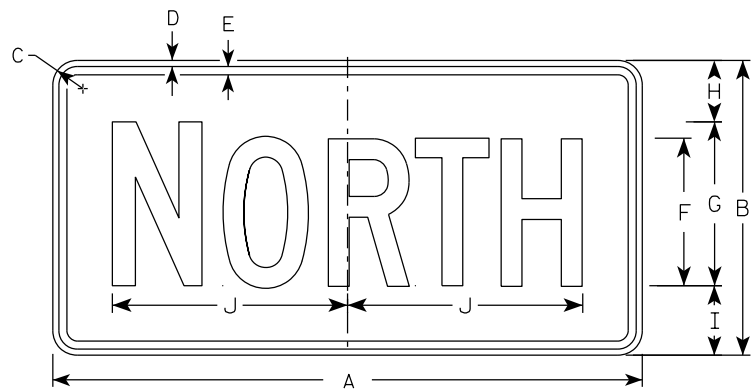
																										M1-1	M1-1A
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Area sq. ft.	Area sq. ft.
1																											
2	24				1/2	12	2 1/2	2		1	5 1/2	15	24	17	7 7/8								30			3.13	3.91
2M	24				1/2	12	2 1/2	2		1	5 1/2	15	24	17	7 7/8								30			3.13	3.91
3	36				3/4	18	3 3/4	3		1 1/2	8 1/4	22 1/2	36	25 1/2	11 3/4								45			7.03	8.79
4	36				3/4	18	3 3/4	3		1 1/2	8 1/4	22 1/2	36	25 1/2	11 3/4								45			7.03	8.79
5	36				3/4	18	3 3/4	3		1 1/2	8 1/4	22 1/2	36	25 1/2	11 3/4								45			7.03	8.79

INTERSTATE ROUTE MARKER
M1-1 FOR ASSEMBLIES

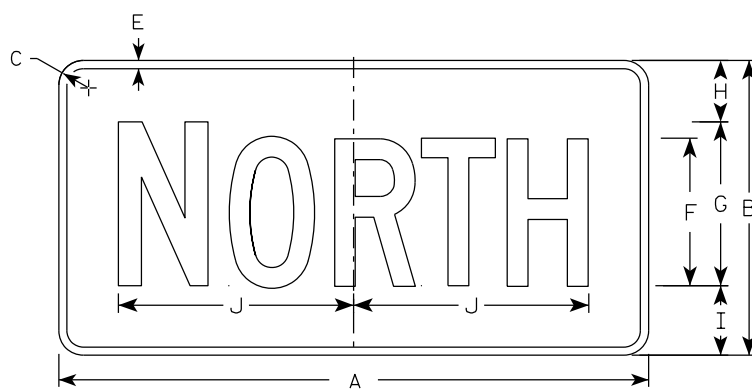
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

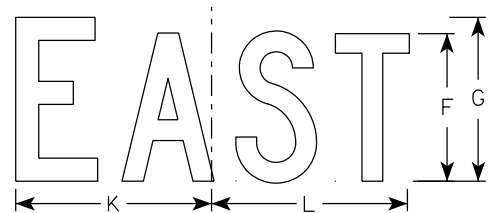
DATE 11/7/2022 PLATE NO. M1-1.9



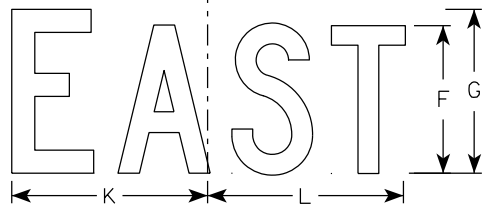
M3-1
MM3-1
MP3-1



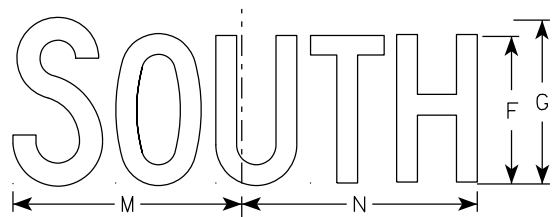
MB3-1
MK3-1
MN3-1



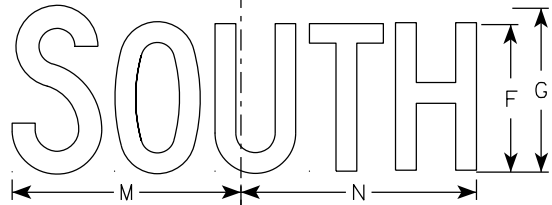
M3-2
MM3-2
MP3-2



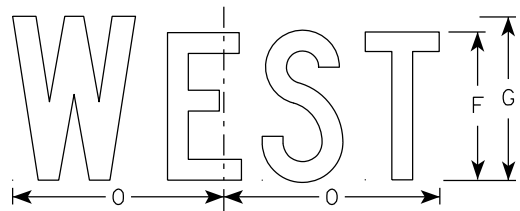
MB3-2
MK3-2
MN3-2



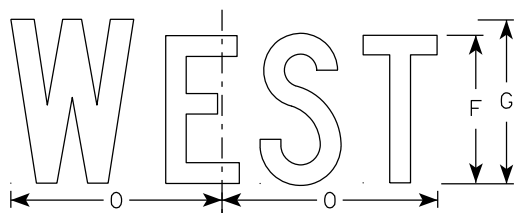
M3-3
MM3-3
MP3-3



MB3-3
MK3-3
MN3-3



M3-4
MM3-4
MP3-4



MB3-4
MK3-4
MN3-4

NOTES

- All Signs Type II - Type H Reflective
- Color:
 - Background - See note 5
 - Message - See note 5
- 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.
- 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
- 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																											
2S	24	12	1 1/2	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												2.00
2M	24	12	1 1/2	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												2.00
3	36	18	1 1/2	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13												4.5
4	36	18	1 1/2	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13												4.5
5	36	18	1 1/2	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13												4.5

STANDARD SIGNS M3-1 THRU M3-4 SERIES

WISCONSIN DEPT OF TRANSPORTATION

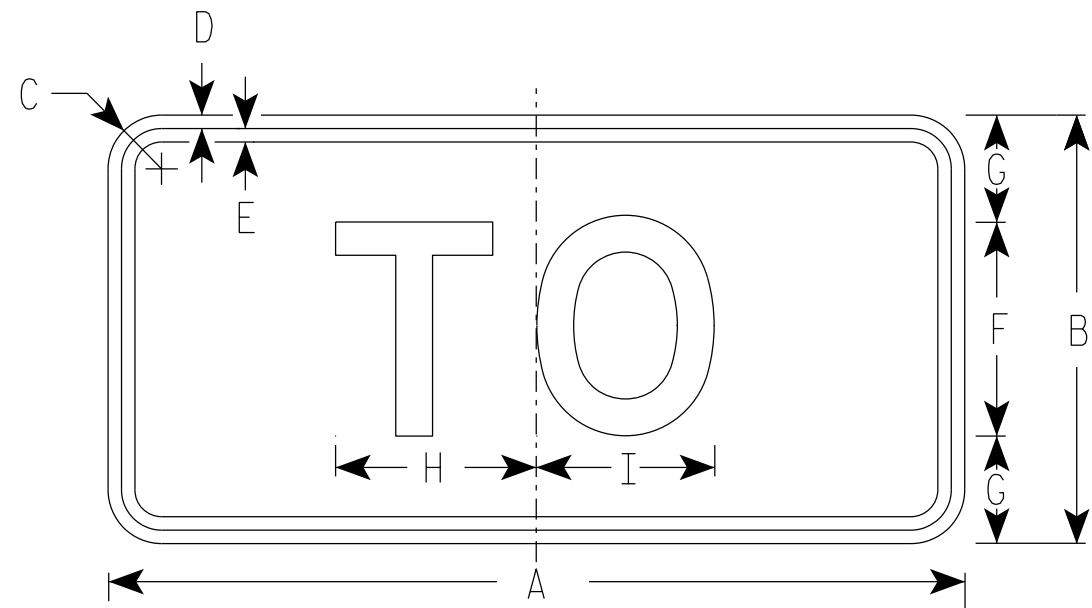
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 2/8/2023 PLATE NO. M3-1.15

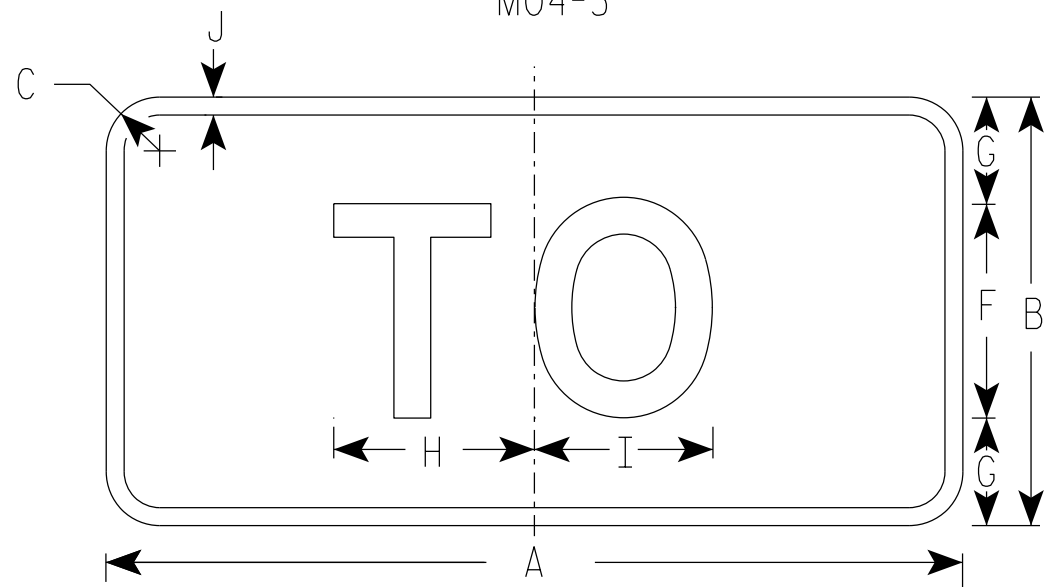
PROJECT NO: HWY: COUNTY: SHEET NO: 198 E

FILE NAME : C:\CAEfiles\Projects\tr_stdplate-M31.dgn PLOT DATE : 8-FEB 2023 11:00 PLOT BY : dotc4c PLOT NAME : PLOT SCALE : \$\$.....plotscale.....\$\$WISDOT/CADDS SHEET 42

7



M4-5
MM4-5
MP4-5
M04-5



MB4-5
MK4-5
MN4-5

NOTES

1. Sign is Type II - Type H Reflective
2. Color:
Background - See note 5
Message - See note 5
3. Message Series - E
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. M4-5 Background - White
Message - Black
MB4-5 Background - Blue
Message - White
MK4-5 Background - Green
Message - White
MM4-5 Background - White
Message - Green
MN4-5 Background - Brown
Message - White
MP4-5 Background - White
Message - Blue
M04-5 Background - Orange Type F Reflective
Message - 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	24	12	1 1/2	3/8	3/8	6	3	5 3/8	5 1/4	1/2																	2.00
2M	24	12	1 1/2	3/8	3/8	6	3	5 3/8	5 1/4	1/2																	2.00
3	36	18	1 1/2	3/8	1/2	9	4 1/2	8 1/4	8 3/8	1/2																	4.5
4	36	18	1 1/2	3/8	1/2	9	4 1/2	8 1/4	8 3/8	1/2																	4.5
5	36	18	1 1/2	3/8	1/2	9	4 1/2	8 1/4	8 3/8	1/2																	4.5

PROJECT NO:	HWY:	COUNTY:	SHEET NO: 199	E
-------------	------	---------	---------------	---

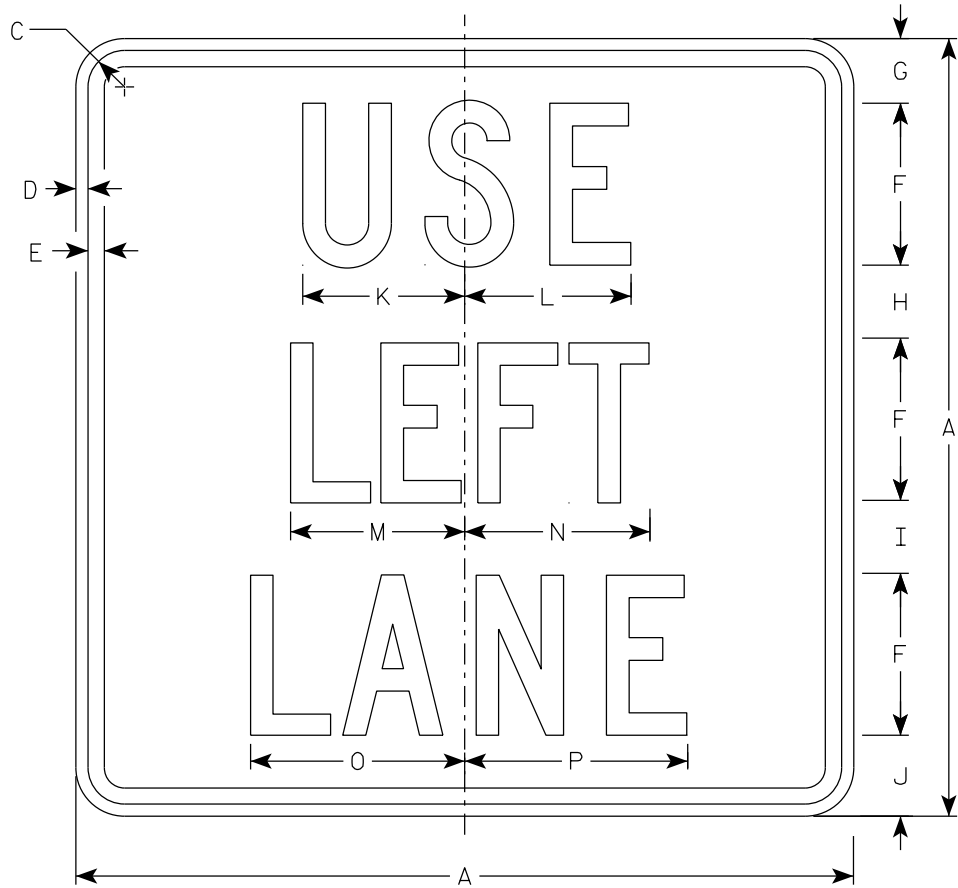
STANDARD SIGN
M4-5

WISCONSIN DEPT OF TRANSPORTATION

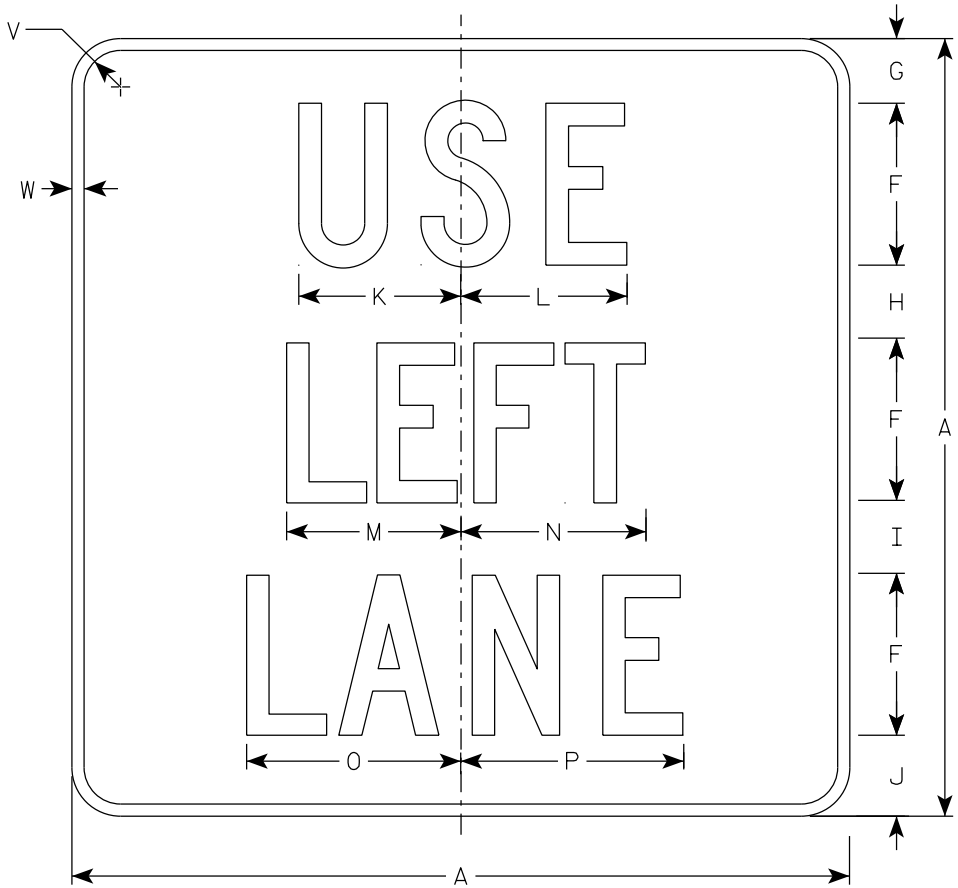
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 2/8/2023 PLATE NO. M4-5.11

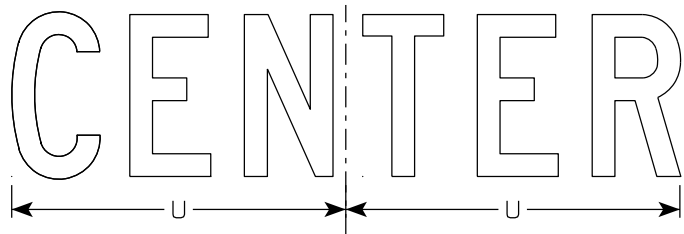
7



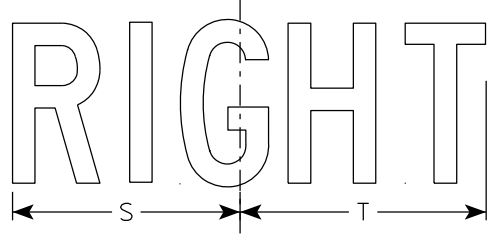
M4-20L
MM4-20L
M04-20L
MP4-20L



MB4-20L
MK4-20L
MN4-20L
MR4-20L



M4-20C
MB4-20C
MK4-20C
MM4-20C
MN4-20C
M04-20C
MP4-20C
MR4-20C



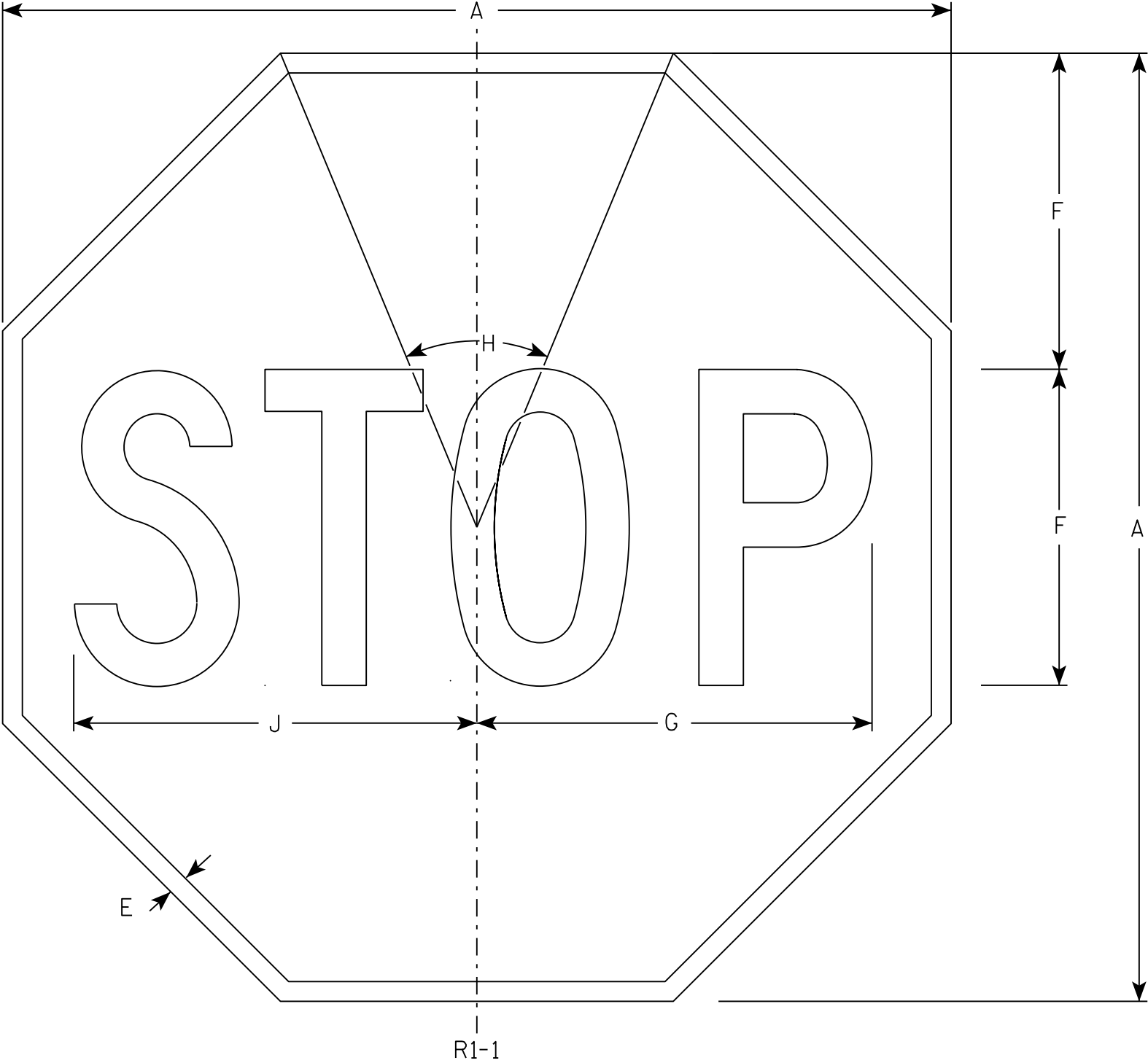
M4-20R
MB4-20R
MK4-20R
MM4-20R
MN4-20R
M04-20R
MP4-20R
MR4-20R

NOTES

- Sign is Type II - Type H except as Shown
- Color:
Background - See note 5
Message - See note 5
- 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.
- M4-20 Background - White
Message - Black
MB4-20 Background - Blue
Message - White
MK4-20 Background - Green
Message - White
MM4-20 Background - White
Message - Green
MN4-20 Background - Brown
Message - White
M04-20 Background - Orange - Type F Reflective
Message - Black
MP4-20 Background - White
Message - Blue
MR4-20 Background - Brown
Message - Yellow

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

7



NOTES

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

7

R1-1

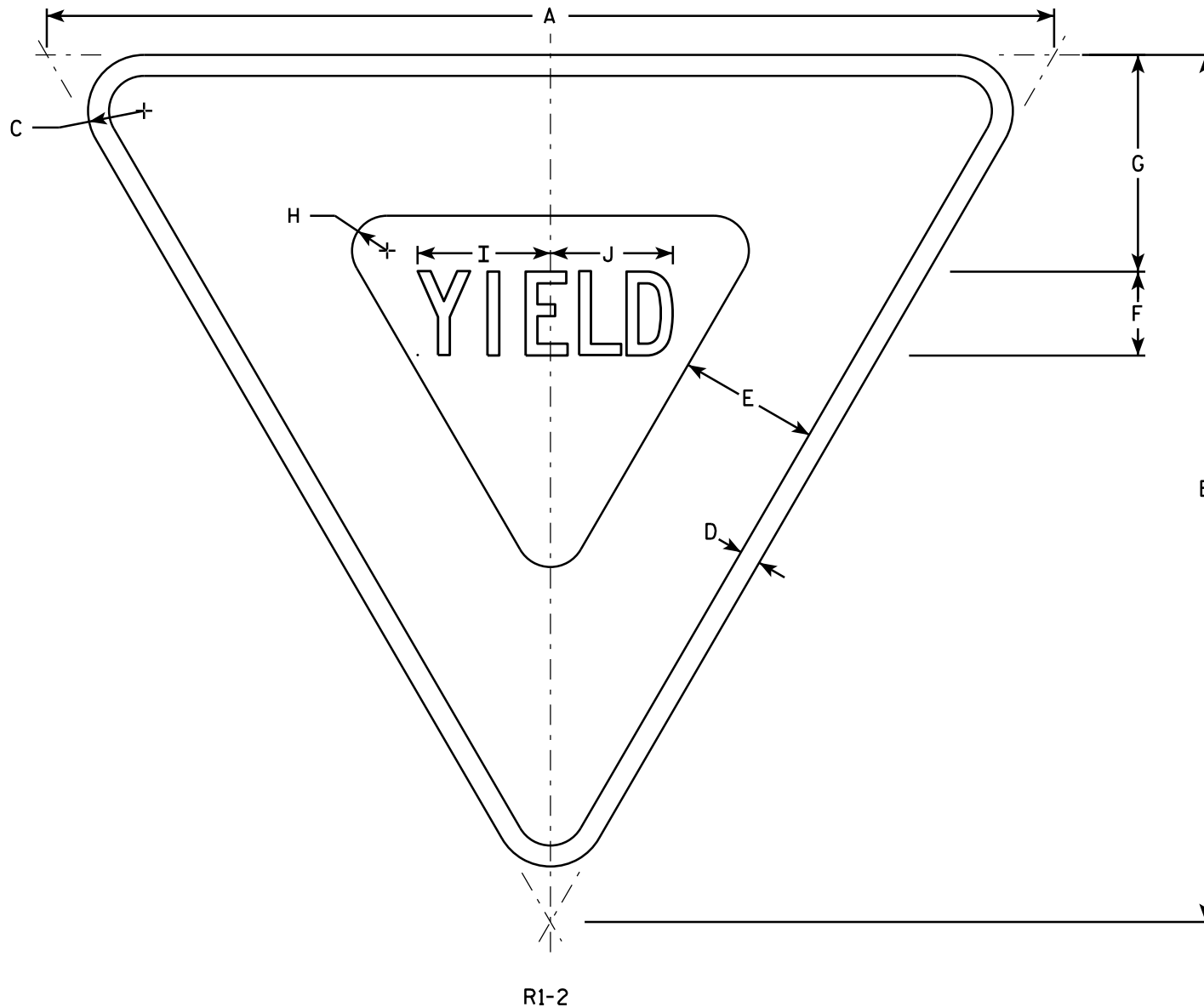
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	30				5/8	10	12 1/2	45°		12 3/4																	5.18
2S	30				5/8	10	12 1/2	45°		12 3/4																	5.18
2M	36				3/4	12	15	45°		15 3/8																	7.46
3	36				3/4	12	15	45°		15 3/8																	7.46
4	48				1	16	20	45°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

STANDARD SIGN
R1 - 1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 11/12/15 PLATE NO. R1-1.13



NOTES

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

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

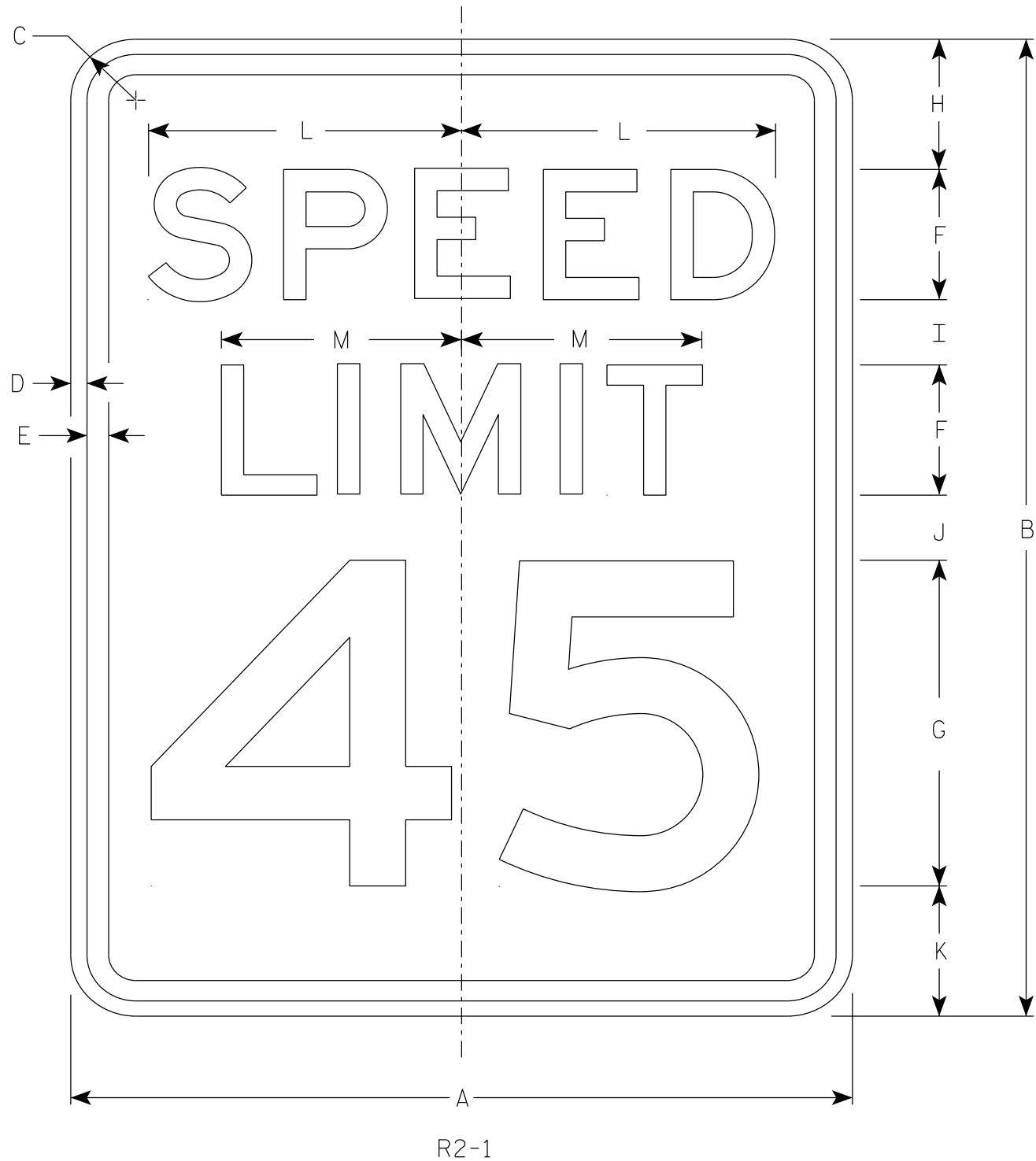
STANDARD SIGN
R1-2

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 10/13/14 PLATE 202 P1-2.12

7



NOTES

1. Sign is Type II - Type H Reflective
2. Color:
Background - White
Message - Black
3. Message Series - E
4. 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	18	24	1 1/2	3/8	1/2	3	8	3	2	2	3	7 1/4	5 1/2														3.0
2S	24	30	1 1/2	3/8	1/2	4	10	3	2 1/4	3 3/8	3 3/8	9 5/8	7 3/8														5.0
2M	30	36	1 7/8	1/2	5/8	5	12	5	2 1/2	2 1/2	4	12	9 1/4														7.5
3	36	48	1 7/8	1/2	5/8	6	14	6	5	5	6	14 3/8	11														12.0
4	36	48	1 7/8	1/2	5/8	6	14	6	5	5	6	14 3/8	11														12.0
5	48	60	3	3/4	1	8	20	6	4 1/2	6 3/4	6 3/4	19 1/4	14 5/8														20.0

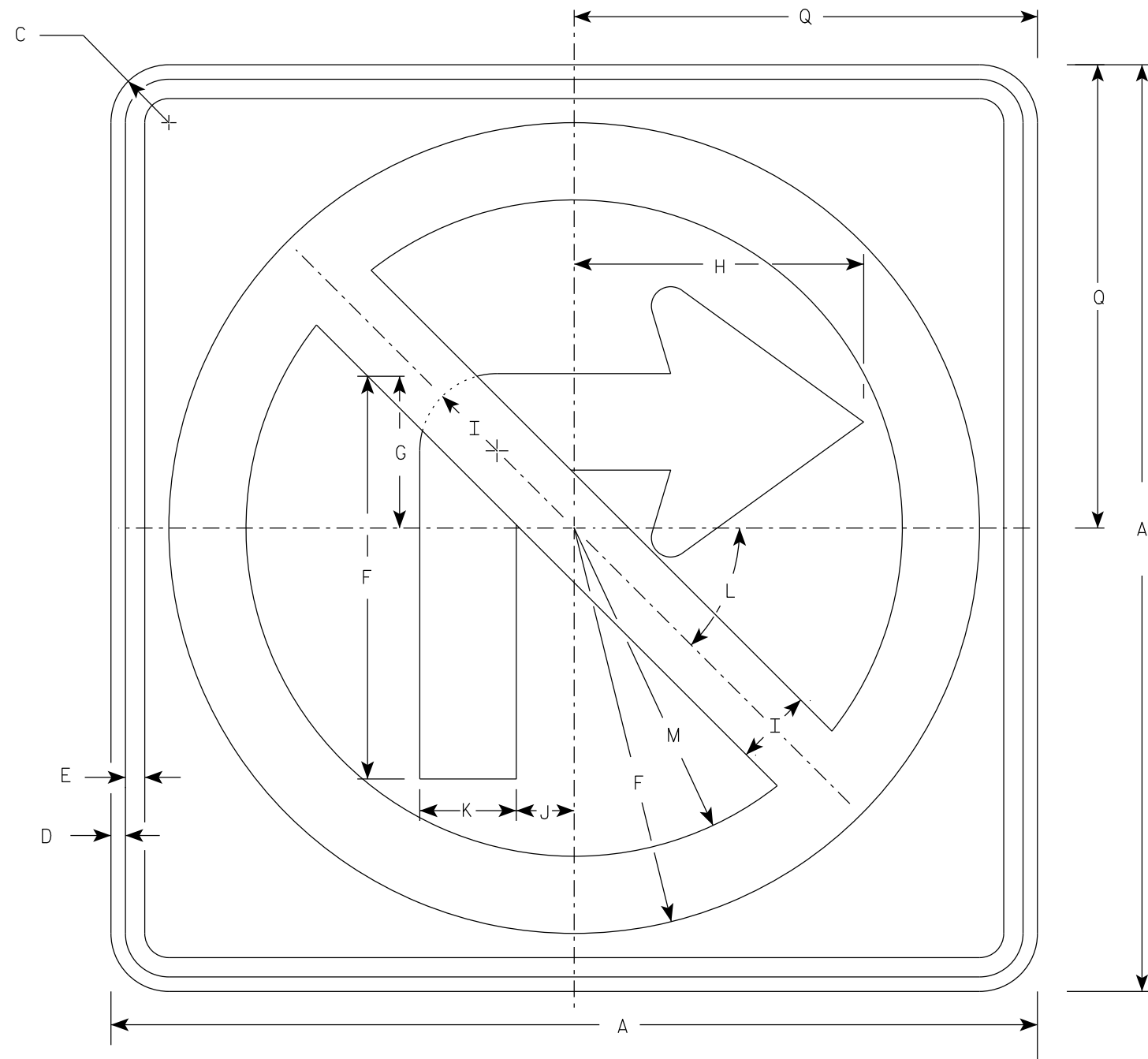
STANDARD SIGN
R2 - 1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 2/1/23 PLATE NO. R2-1.14

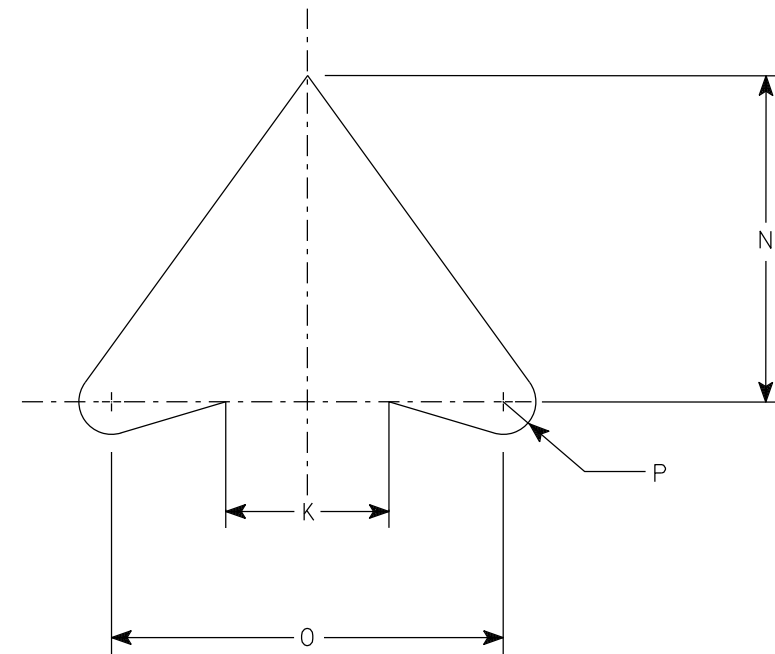
7



R3-1

NOTES

1. Sign is Type II - Type H Reflective
2. Color:
Background - White
Message - See note 3
3. Border & Arrow are non reflective black, the circle with diagonal bar is reflective red.

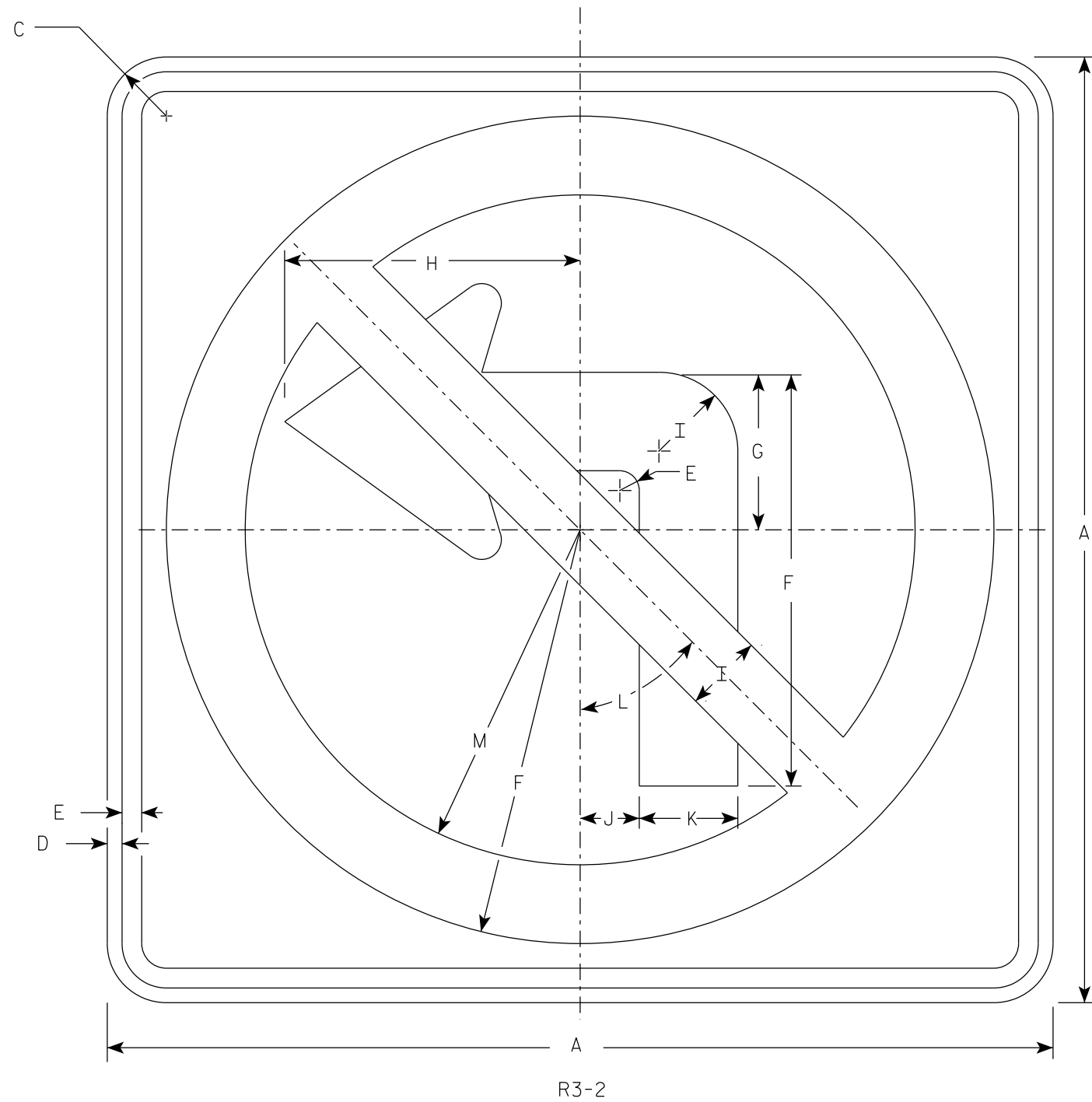


ARROW DETAIL

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	24		1 1/2	3/8	1/2	10 1/2	4	7 1/2	2	1 1/2	2 1/2	45	8 1/2	5	6	1/2	12										4.0
2S	24		1 1/2	3/8	1/2	10 1/2	4	7 1/2	2	1 1/2	2 1/2	45°	8 1/2	5	6	1/2	12										4.0
2M	36		2 1/4	5/8	3/4	15 3/4	6	11 1/4	3	2 1/4	3 3/4	45	12 3/4	7 1/2	9	3/4	18										9.0
3	36		2 1/4	5/8	3/4	15 3/4	6	11 1/4	3	2 1/4	3 3/4	45	12 3/4	7 1/2	9	3/4	18										9.0
4	36		2 1/4	5/8	3/4	15 3/4	6	11 1/4	3	2 1/4	3 3/4	45°	12 3/4	7 1/2	9	3/4	18										9.0
5	48		2 1/4	3/4	1	21	8	15	4	3	5	45°	17	10	12	1	24										16.0

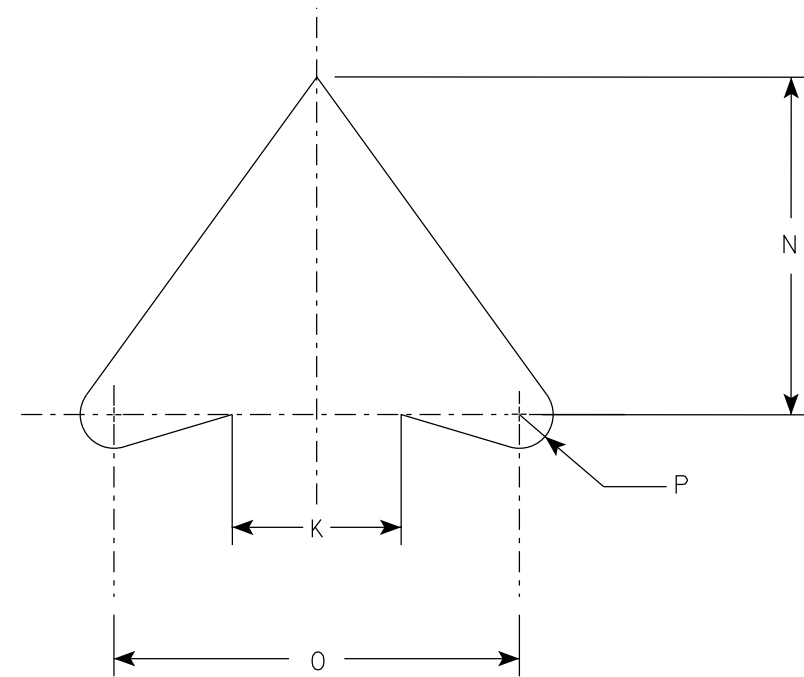
PROJECT NO:	HWY:	COUNTY:	SHEET NO: 204	E
-------------	------	---------	---------------	---

7



NOTES

- 1. Sign is Type II - Type H Reflective
- 2. Color:
Background - White
Message - See note 3
- 3. Border & Arrow are non reflective black, the circle with diagonal bar is reflective red.



ARROW DETAIL

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

PROJECT NO:

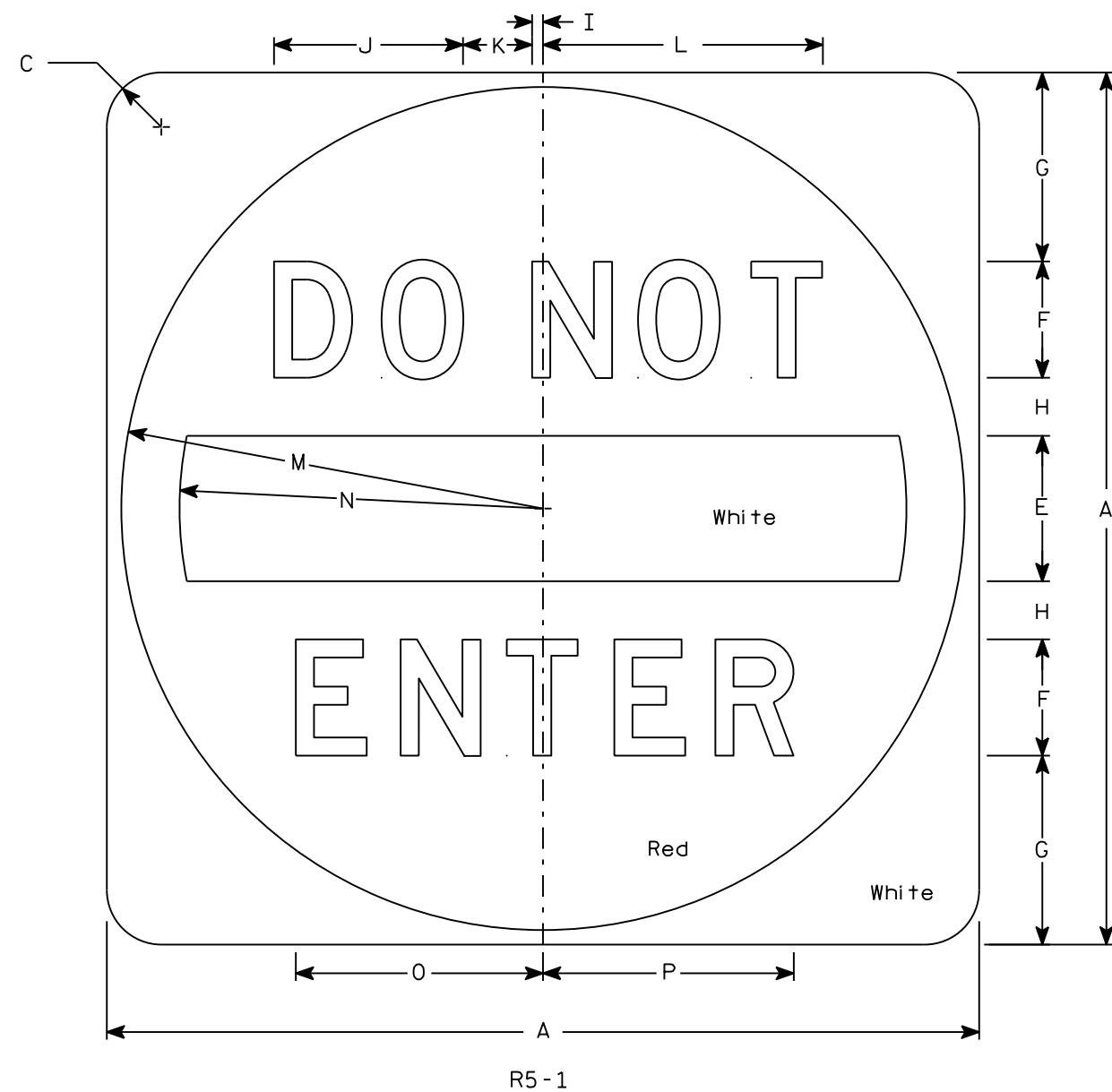
HWY:

COUNTY:

SHEET NO: 205

E

7



NOTES

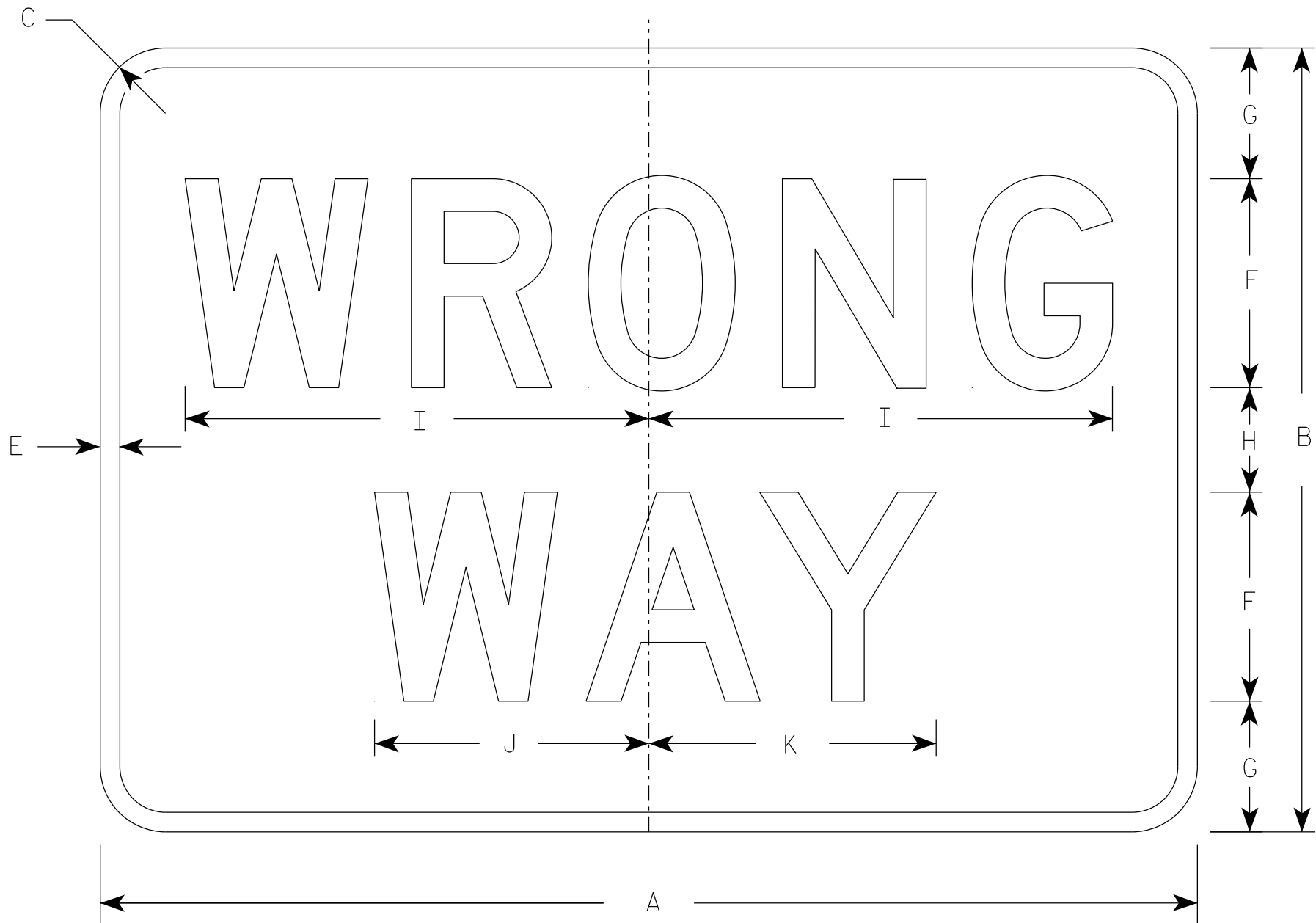
1. Sign is Type II - Type H Reflective
2. Color:
Background - See detail
Message - White
3. Message Series - D

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																											
2S	30		1 7⁄8		5	4	6 1⁄2	2	3⁄8	6 1⁄2	2 3⁄8	9 5⁄8	14 1⁄2	12 1⁄2	8 1⁄2	8 5⁄8											6.25
2M	36		2 1⁄4		6	5	7 1⁄2	2 1⁄2	1⁄2	8 1⁄8	3	12 1⁄8	17 1⁄2	15	10 5⁄8	10 3⁄4											9.0
3	36		2 1⁄4		6	5	7 1⁄2	2 1⁄2	1⁄2	8 1⁄8	3	12 1⁄8	17 1⁄2	15	10 5⁄8	10 3⁄4											9.0
4	36		2 1⁄4		6	5	7 1⁄2	2 1⁄2	1⁄2	8 1⁄8	3	12 1⁄8	17 1⁄2	15	10 5⁄8	10 3⁄4											9.0
5	48		3		8	6	11	3	5⁄8	9 3⁄4	3 5⁄8	14 1⁄2	23 1⁄2	20	12 3⁄4	12 7⁄8											16.0

STANDARD SIGN R5-1	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> for State Traffic Engineer
DATE 3/15/18	PLATE NO. R5-1.16

7



R5-1A

NOTES

- 1. Sign is Type II - Type H Reflective
- 2. Color:
 - Background - Red
 - Message - White
- 3. Message Series - D

7

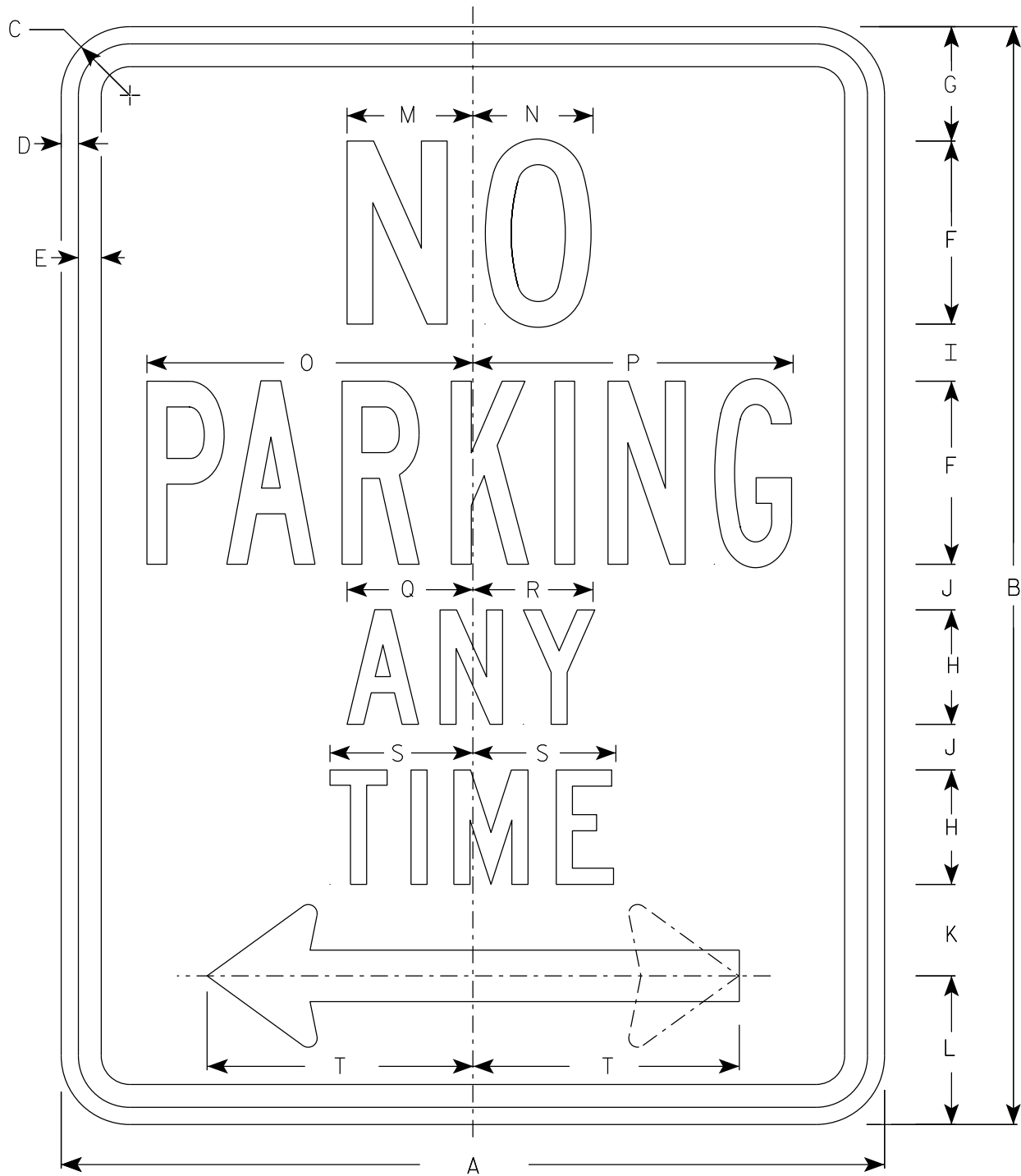
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	30	18	1 1/2		1/2	5	3	2	11	6 1/2	6 7/8																3.75
2S	36	24	1 1/2		5/8	6	4 1/2	3	13 1/4	7 7/8	8 1/4																6.00
2M	42	30	1 7/8		3/4	8	5	4	17 3/4	10 1/2	11																8.75
3	42	30	1 7/8		3/4	8	5	4	17 3/4	10 1/2	11																8.75
4	42	30	1 7/8		3/4	8	5	4	17 3/4	10 1/2	11																8.75
5	42	30	1 7/8		3/4	8	5	4	17 3/4	10 1/2	11																8.75

STANDARD SIGN
R5-1A

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 8/17/23 PLATE NO. R5-1A.3

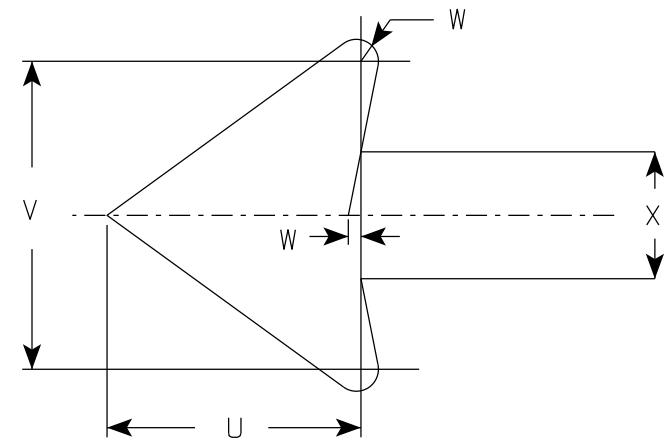


R7-1

NOTES

1. Sign is Type II - Type H Reflective
2. Color:
Background - White
Message - Red
3. Message Series - See Note 4
4. Lines 1, 3 and 4 are series C, line 2 is series B.
5. R7-1D (double arrow)
R7-1L (left arrow)
R7-1R (right arrow)

ARROW DETAIL



SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	12	18	1 1/2	3/8	3/8	3	1 7/8	2	7/8	5/8	1 1/2	2 1/2	2	2	4 7/8	4 7/8	2 1/4	2 1/8	2 1/2	3 7/8	1 1/2	1 3/4	1/8	3/4			1.5
2S	18	24	1 1/2	3/8	1/2	4	2 1/2	2 1/2	1 1/4	1	2	3 1/4	2 3/4	2 5/8	7 1/8	7	2 3/4	2 5/8	3 1/8	5 7/8	2 1/4	2 5/8	1/4	1 1/8			3.0
2M	24	30	1 1/2	3/8	1/2	5	3	3	2	1 1/4	2 1/2	4	3 1/4	3 3/8	9 1/4	9 1/4	3 1/4	3 1/4	3 3/4	7 3/4	3	3 1/2	1/4	1 1/2			5.0
3	24	30	1 1/2	3/8	1/2	5	3	3	2	1 1/4	2 1/2	4	3 1/4	3 3/8	9 1/4	9 1/4	3 1/4	3 1/4	3 3/4	7 3/4	3	3 1/2	1/4	1 1/2			5.0
4																											
5																											

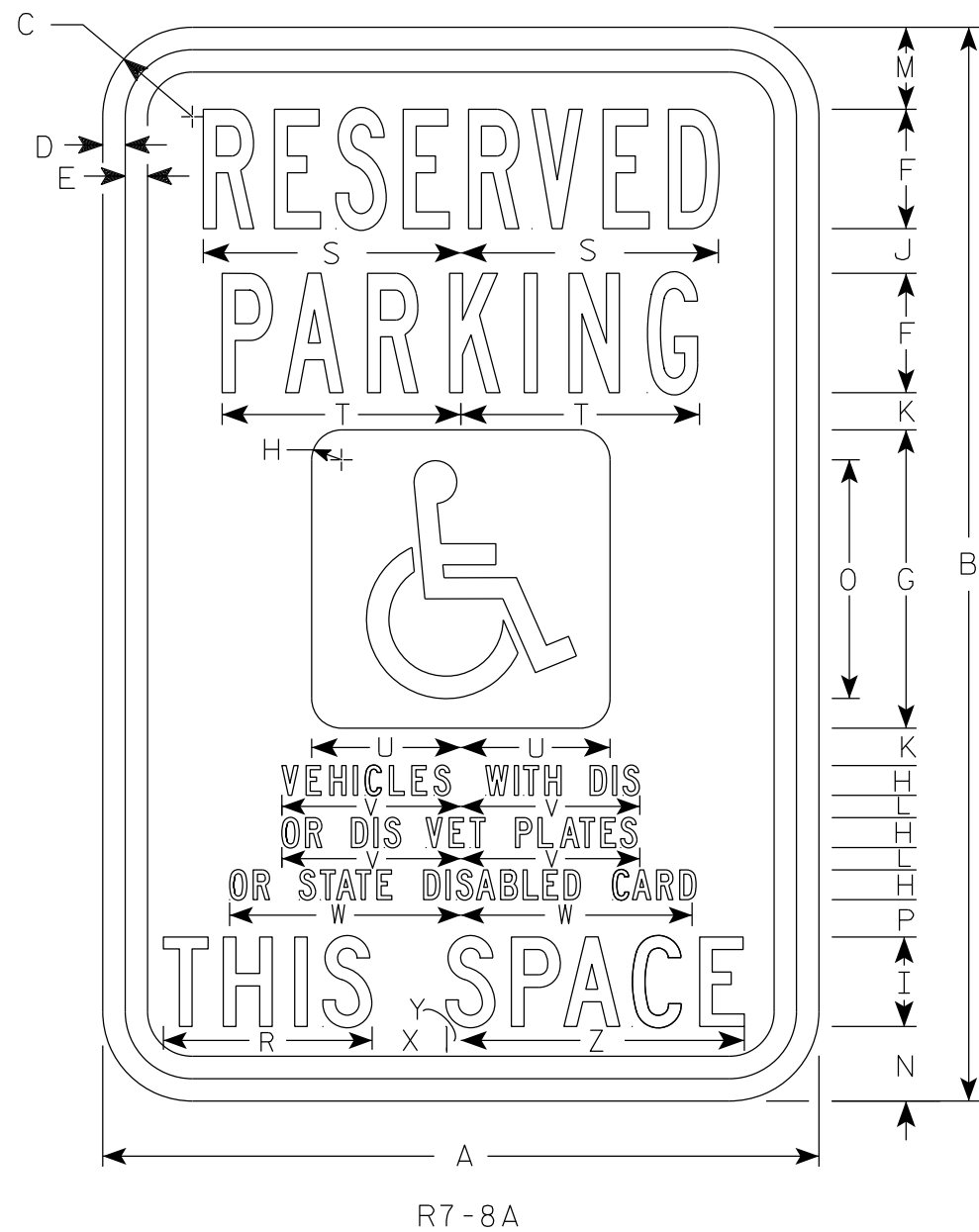
STANDARD SIGN
R7-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 10/26/23 PLATE NO. R7-1.11

PROJECT NO:	HWY:	COUNTY:	SHEET NO: 208	E
-------------	------	---------	---------------	---



NOTES

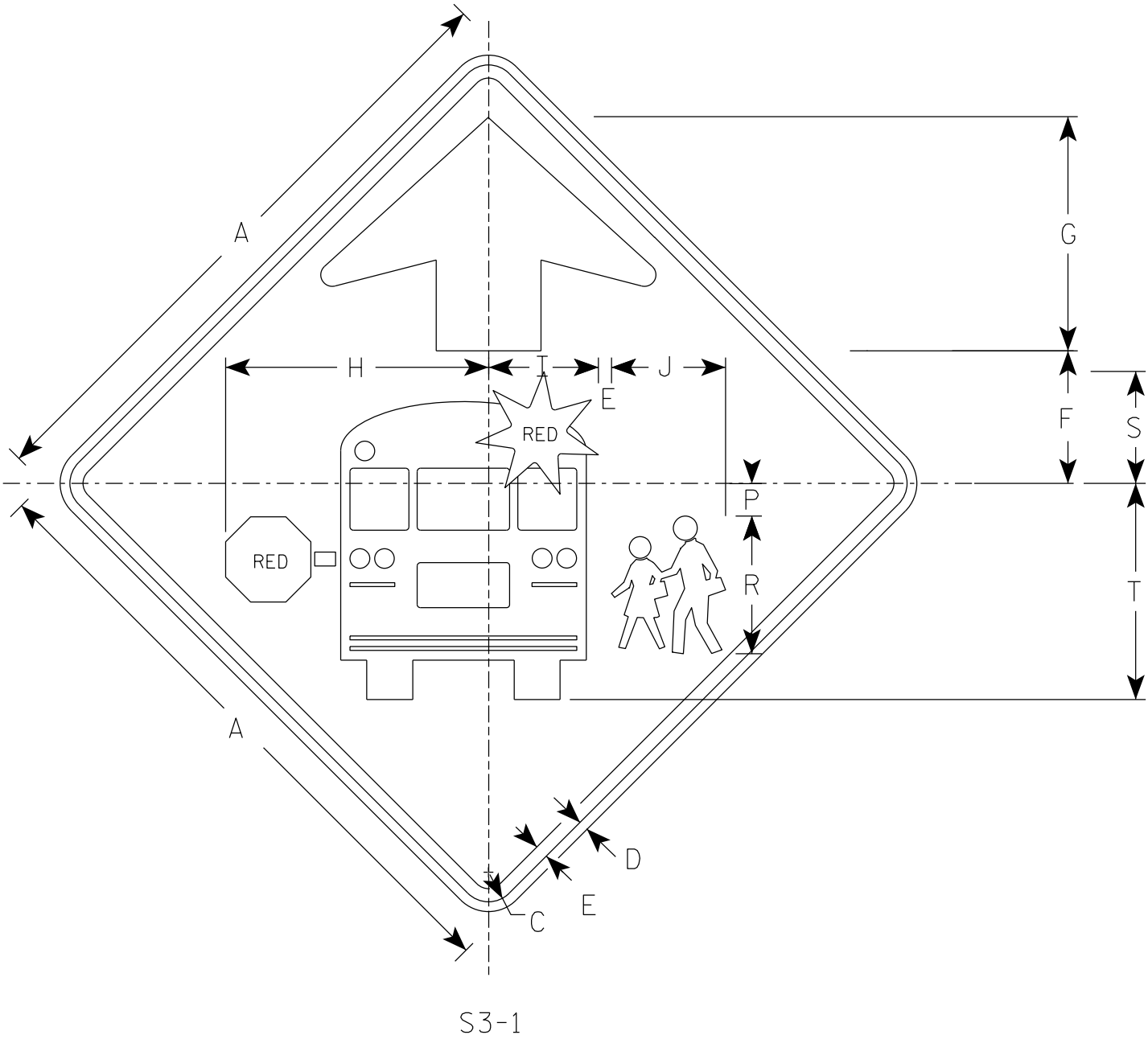
1. Sign is Type II - Type H Reflective
2. Color:
 - Background - Sign is white Type H Reflective; paraplegic background is blue.
 - Message - Legend and border are green; paraplegic symbol is white
3. Message Series - Lines 1 & 2 are Series B
Lines 3, 4, 5 & 6 are Series C

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Areq sq. ft.
1																											
2S	12	18	1 1/2	3/8	3/8	2	5	1/2	1 1/2	3/4	5/8	3/8	1 3/8	1 1/4	4	5/8		3 1/2	4 3/8	4	2 1/2	3	3 7/8	1 1/4	1/4	4 3/4	1.5
2M	18	24	1 1/2	3/8	1/2	3	6	3/4	2	7/8	5/8	1/2	1 7/8	2	5	3/4		4 5/8	6 1/2	5 3/8	3	4 1/2	5 7/8	1 1/2	1/4	6 3/8	3.0
3	18	24	1 1/2	3/8	1/2	3	6	3/4	2	7/8	5/8	1/2	1 7/8	2	5	3/4		4 5/8	6 1/2	5 3/8	3	4 1/2	5 7/8	1 1/2	1/4	6 3/8	3.0
4																											
5																											

STANDARD SIGN R7-8A	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> for State Traffic Engineer
DATE 11/9/23	PLATE NO. R7-8A.7

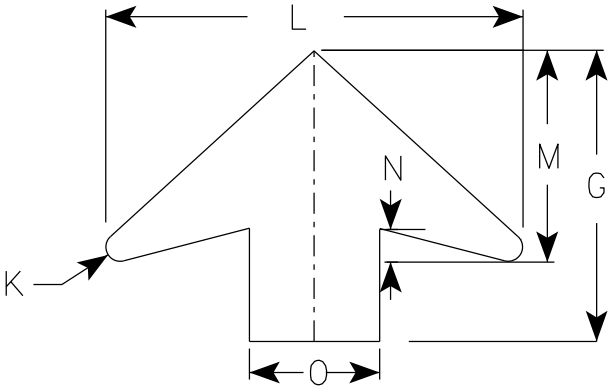
PROJECT NO:	HWY:	COUNTY:	SHEET NO: 209	E
-------------	------	---------	---------------	---

7



NOTES

- 1. Sign is Type II - Type F Reflective
- 2. Color:
 - Background - YELLOW-GREEN
 - Message - BLACK except as noted
 - Circles except PEDS- RED BACKGROUND



ARROW DETAIL

7

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	30		1 7/8	1/2	5/8	6 1/4	11 1/4	12 1/2	5 1/4	5 1/2	1/2	16	8	1 1/4	5	1 1/2		6 5/8	5 3/8	10 3/8							6.25
2S	36		2 1/4	5/8	3/4	7 1/2	13 1/2	15 1/8	6 1/4	6 1/2	5/8	19 1/4	9 3/4	1 5/8	6	1 7/8		7 7/8	6 3/8	12 3/8							9.0
2M	36		2 1/4	5/8	3/4	7 1/2	13 1/2	15 1/8	6 1/4	6 1/2	5/8	19 1/4	9 3/4	1 5/8	6	1 7/8		7 7/8	6 3/8	12 3/8							9.0
3	48		3	3/4	1	10	17 7/8	20 1/8	8 3/8	8 3/4	7/8	25 5/8	13	2	8	2 1/2		10 1/2	8 1/2	16 1/2							16.0
4	48		3	3/4	1	10	17 7/8	20 1/8	8 3/8	8 3/4	7/8	25 5/8	13	2	8	2 1/2		10 1/2	8 1/2	16 1/2							16.0
5																											

DESIGN DATA

CONTRACTOR DESIGNED HIGH MAST LIGHT STRUCTURES SHALL BE DESIGNED ACCORDING TO THE AASHTO "LRFD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS", 1ST EDITION AND INTERIM SPECIFICATIONS, AND THE WISDOT BRIDGE MANUAL.

STANDARD FOUNDATIONS DESIGNED ACCORDING TO THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 8TH EDITION.

DEAD LOAD: WT. OF LUMINAIRES, HARDWARE, AND SUPPORTING STRUCTURE
ICE LOAD: 3 PSF TO TOP OF LUMINARIES, ASSEMBLY, AND SURFACE OF MEMBERS
WIND PRESSURE: 120 MPH (3-SEC. GUST SPEED) TO END PROJECTED AREA & EXPOSED MEMBERS (1700 YEAR MEAN RECURRENCE INTERVAL)

FATIGUE CATEGORY: I

WIND COMPONENTS	NORMAL	TRANSVERSE
LOAD CASE 1:	1.00	0.00
LOAD COMBINATIONS		
STRENGTH:	1.25 DC + 1.0 LL	
EXTREME I (MAX DC):	1.1 DC + 1.0 W + 1.0 ICE	
EXTREME I (MIN DC):	0.9 DC + 1.0 W	
SERVICE I:	1.0 DC + 1.0 W	
FATIGUE:	1.0 NW (NATURAL WIND GUST)	

MATERIAL PROPERTIES

CONCRETE MASONRY f'c = 3,500 PSI

HIGH STRENGTH STEEL REINFORCEMENT, GRADE 60 fy = 60,000 PSI

STRUCTURAL ANGLES, PLATES & BARS - ASTM A709 GRADE 36 fy = 36,000 PSI

COLUMN PIPE
TAPERED POLES <26 INCH DIAMETER
ASTM A572 GRADE 55 fy = 55,000 PSI
MULTISIDED OR TAPERED POLES <26 INCH DIAMETER
ASTM A572 GRADE 55 fy = 65,000 PSI

HIGH STRENGTH BOLTS - ASTM A3125 GRADE A325 fy = 92,000 PSI

ANCHOR RODS - ASTM F1554 GRADE 55 fy = 55,000 PSI

HEAVY HEX NUTS - ASTM A563 GRADE DH OR ASTM A194 GRADE 2H

WASHERS - ASTM F436

DIRECT TENSION INDICATING WASHER (DTI) - ASTM F959 TYPE 325

FOUNDATION DATA

SIGN STRUCTURE FOUNDATIONS ARE SUPPORTED ON DRILLED SHAFTS THAT HAVE BEEN DESIGN FOR SITES WHERE SOILS EXHIBIT A PHI-ANGLE GREATER THAN OR EQUAL TO 24° (GRANULAR SOILS), OR A COHESION VALUE GREATER THAN OR EQUAL TO 750 PSI (COHESIVE SOILS) AND A UNIT WEIGHT OF 125 PCF. THE GROUND WATER TABLE FOR DESIGN IS ASSUMED TO BE AT A DEPTH OF 10'-0" BELOW THE GROUND SURFACE, ACTUAL WATER LEVEL AT SITE MAY VARY. THE REGION GEOTECHNICAL ENGINEER SHALL VISUALLY INSPECT THE SUBSURFACE SOILS DURING THE DRILLING OF THE SHAFT HOLE TO CONFRIM THESE PROPERTIES PRIOR TO PLACEMENT OF THE DRILLED SHAFT CONCRETE.

TOTAL ESTIMATED QUANTITIES

BID ITEM NO.	BID ITEM	UNIT	L-44-01	L-44-02
531.2036	DRILLING SHAFT 48-INCH	LF	22	22
531.4500	FOUNDATION HIGH MAST 100-FT	EA	1	1
532.4500	HIGH MAST 100-FT	EA	1	1

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

ALTERNATE DESIGNS ARE NOT ALLOWED.

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

ALL REINFORCING BARS ARE IN ENGLISH UNITS. THE FIRST DIGIT OF A THREE-DIGIT BAR MARK OR THE FIRST TWO DIGITS OF A FOUR-DIGIT BAR MARK SIGNIFIES THE BAR SIZE.

HIGH MAST LIGHT ID PLAQUES SHALL BE CONSIDERED INCIDENTAL TO THE BID ITEM "HIGH MAST (HEIGHT)" FOR EACH APPLICABLE HIGH MAST LIGHT STRUCTURE IN THE PLAN SET. LOCATE THE ID PLAQUE ON THE FREEWAY SIDE OF THE SUPPORT COLUMN SO THAT IT CAN BE SEEN FROM THE ROADWAY. FABRICATE AND INSTALL THE ID PLAQUE IN ACCORDANCE WITH S.D.D. 10 A-4. ID NUMBERS SHALL BEGIN WITH AN "L" BEFORE THE COUNTY NUMBER SIMILAR TO THE "S" IN S.D.D 12 A-4

WELD TEST AS PER AWS D1.1.

THE INFORMATION SHOWN ON THESE DRAWINGS CONCERNING TYPE AND LOCATION OF UNDERGROUND UTILITIES IS NOT GUARANTEED TO BE ACCURATE OR ALL-INCLUSIVE. THE CONTRACTOR IS RESPONSIBLE FOR MAKING HIS OWN DETERMINATION OF THE TYPE AND LOCATION OF UTILITIES AS MAY BE NECESSARY TO AVOID DAMAGE.

CONTRACTOR SHALL SUBMIT SHOP DRAWINGS PER THE REQUIREMENTS IN THE STANDARD SPECIFICATIONS PRIOR TO FABRICATION OF THE STRUCTURE. CONTRACTOR SHALL SHOW SIGNS ON THE SHOP DRAWINGS.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR DRILLING OR EXCAVATING AND MAINTAINING A STABLE AND OPEN HOLE FOR SUBSEQUENT INSTALLATION OF CONCRETE MASONRY FOR THE DRILLED SHAFTS. PARTIAL OR FULL DEPTH TEMPORARY CASING MAY BE REQUIRED TO MAINTAIN THE STABILITY OF THE EXCAVATED HOLE FOR THE SIGN SUPPORT PRIOR TO FILLING THE HOLE WITH CONCRETE. PERMANENT CASING MADE FROM STEEL OR CORRUGATED METAL PIPE MAY BE USED IN LIEU OF TEMPORARY CASING. TEMPORARY/PERMANENT CASING, IF USED, SHALL BE INCIDENTAL TO THE BID ITEM "DRILLING SHAFT (DIA.)".

POLE FABRICATOR TO DESIGN AND SUPPLY POLE, ANCHOR RODS AND TEMPLATES IN ACCORDANCE WITH THE PLANS AND STANDARD SPECIFICATIONS.

OUTSIDE DIA. OF DRILLED SHAFT AT TOP IS DEPENDENT ON ANCHOR BOLT CIRCLE REQUIRED FOR POLE. MAINTAIN 4" MIN. COVER OF REINFORCEMENT.

SEE "LIGHTING PLAN" SHEETS FOR HIGH MAST STRUCTURE LOCATIONS.

SEE HIGH MAST LIGHT ELECTRICAL SHEETS FOR LUMINARIES AND HARDWARE INFORMATION.

STRUCTURE DATA

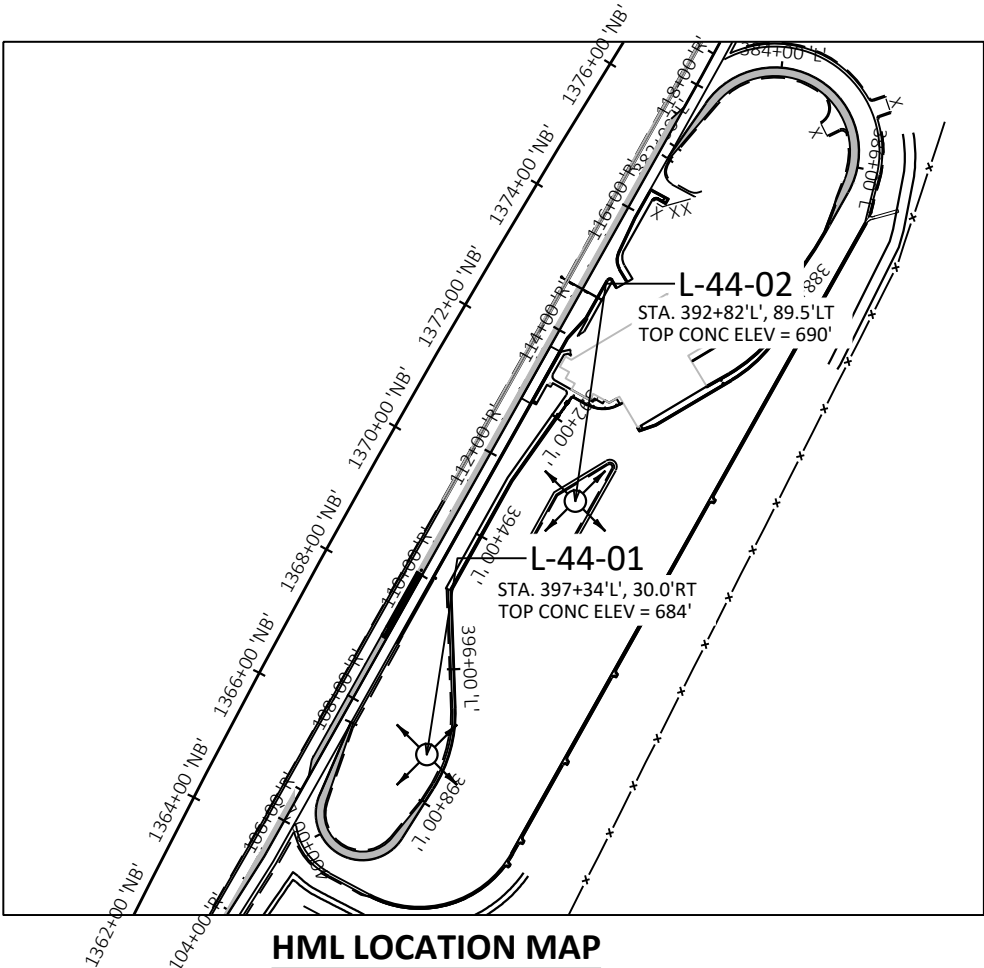
STRUCTURE ID	POLE HEIGHT
L-44-01	100 LF
L-44-02	100 LF

LIST OF DRAWINGS:

1. GENERAL NOTES & DESIGN DATA

LIST OF STANDARD DESIGN DRAWINGS

2. I. HIGH MAST LIGHT POLE FOUNDATIONS



HML LOCATION MAP

THESE ARE STANDARD DESIGN PLANS DEVELOPED AND MAINTAINED BY THE WISDOT. THE DESIGNER CERTIFIES THAT THE DESIGN AND PLAN DETAILS CHOSEN ARE CONSISTENT WITH THE GUIDANCE PROVIDED IN THE CURRENT WISDOT BRIDGE MANUAL CHAPTER 39.



03/13/2025

STATE PROJECT NUMBER

1130-44-75

TRAFFIC VOLUME

A.D.T. (2024) = 94,900
R.D.S. = 75 MPH

STRUCTURE DESIGN CONTACTS:

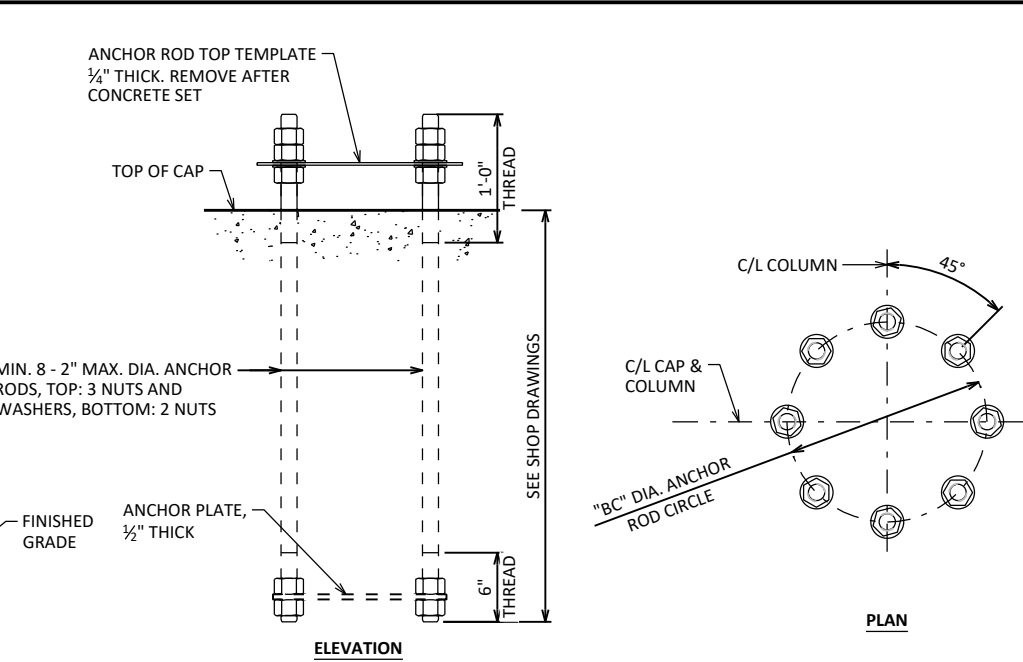
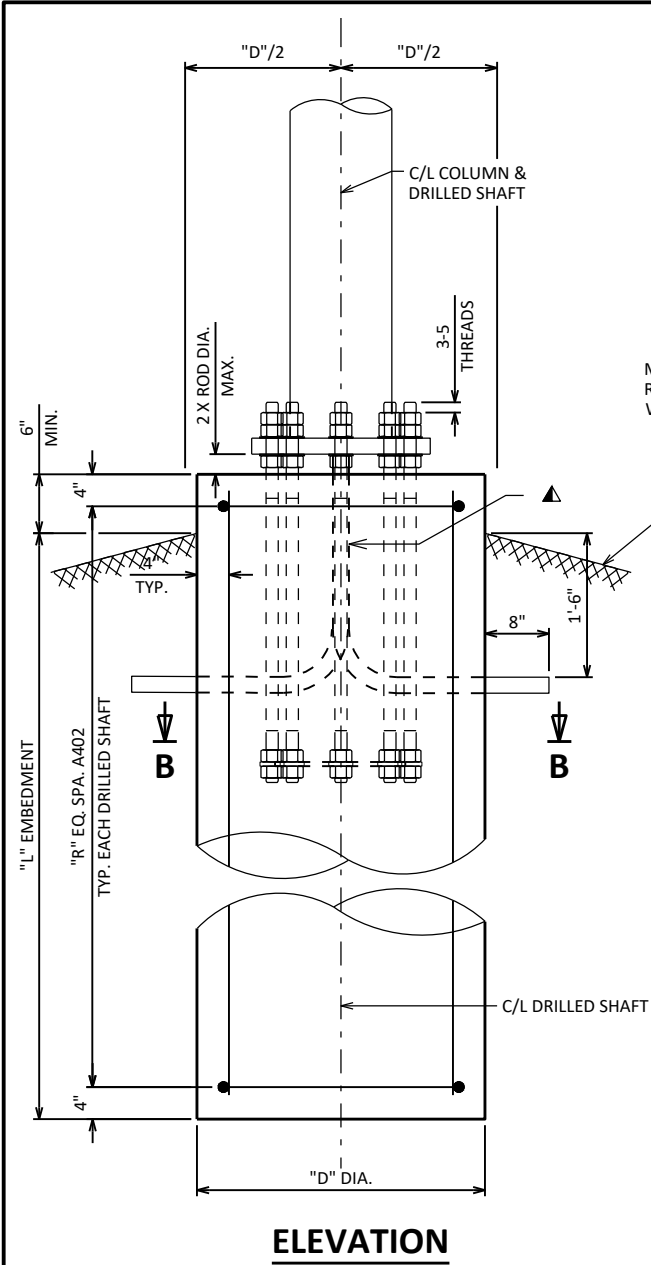
AARON BONK (608) 261-0261
JAKE JOYAL (608) 310-3831

NO.	DATE	REVISION	BY
BUREAU OF STRUCTURES			
ACCEPTED		DATE 3/17/25	
CHIEF STRUCTURES DESIGN ENGINEER			
HIGH MAST FOUNDATION			
WRIGHTSTOWN SWEF			
COUNTY	OUTAGAMIE	TOWN/CITY/VILLAGE	WRIGHTSTOWN
DESIGN SPEC. AASHTO LRFD BRIDGE DESIGN SPECIFICATION			
DESIGNED BY	JAJ	DESIGNED CK'D	CDH
DRAWN BY	JAJ	PLANS CK'D	CDH
GENERAL NOTES & DESIGN DATA		SHEET 1 OF 2 211	

I.D.

DATE:

SCALE =



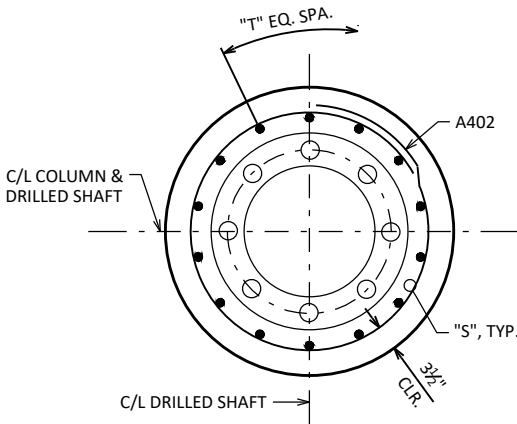
ANCHOR ROD ASSEMBLY DETAILS

SINGLE ANCHOR ASSEMBLY SHOWN

CENTER ANCHOR ROD ASSEMBLY AND MAKE SURE IT IS PLUMB. MAINTAIN ANCHOR ROD PROJECTION ABOVE TOP OF CONCRETE AS DETAILED. ANCHOR ROD ASSEMBLY SHALL BE RIGIDLY SECURED IN POSITION DURING AND AFTER CONCRETE PLACEMENT. DO NOT WELD THE ANCHORS.

ANCHOR ROD NUMBER, DIAMETER, LENGTH & ORIENTATION AS SHOWN ON FABRICATION DRAWINGS.

CONTRACTOR SHALL COORDINATE WITH FABRICATOR AND ADJUST TOP OF DRILLED SHAFT TO ACCOMMODATE ANCHOR RODS PRIOR TO DRILLING.



SECTION B-B

TYPICAL FOR EACH DRILLED SHAFT FOOTING

FOUNDATION REINFORCING DATA

POLE HEIGHT (FT)	FOUNDATION DIMENSIONS					
	"D"	"L"	"R"	"S"	"T"	"BC" MAX.
100	4'-0"	22'-0"	22	A1001	14	2'-10"

ESTIMATED QUANTITIES - FOUNDATION

POLE HEIGHT (FT)	CONCRETE MASONRY	STEEL REINFORCEMENT HS	FOUNDATION DRILLING (DIA.) (LF)	
	(CY)	(LBS)	48"	54"
100	11	1,465	22	---

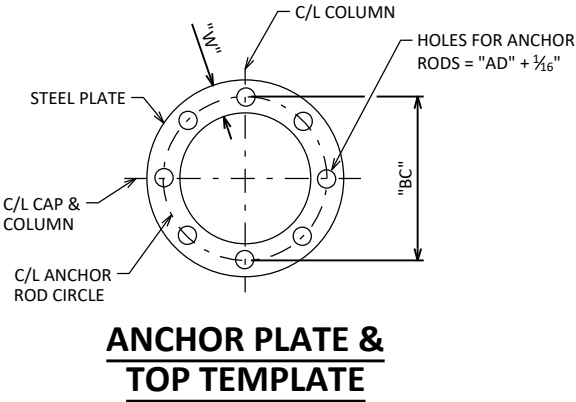
*** QUANTITIES ARE FOR INFORMATION ONLY AND ARE BASED ON STANDARD STRUCTURE DIMENSIONS.

STATE PROJECT NUMBER
1130-44-75

BILL OF BARS - 100-FT

NOTE: THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE.

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
A1001		14	21'-6"			DRILLED SHAFT - VERTICAL
A402		23	10'-10"	X		DRILLED SHAFT - HORIZONTAL



ANCHOR PLATE & TOP TEMPLATE

LEGEND

▲ 2 - 2" DIA. NON-METALLIC CONDUITS. INSTALL ONLY WITH DMS. EXTEND CONDUITS AS SHOWN AND CAP OR SEAL EACH END WITH A SUITABLE REMOVABLE PLUG. PLACE CONDUITS UNDER COLUMN ADJACENT TO DMS. CONDUITS INCIDENTAL TO THE FOUNDATION BID ITEMS.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE L-44-01/02			
DRAWN BY		BOS	PLANS CK'D BOS
HIGH MAST LIGHT POLE FOUNDATION		SHEET I. 212	

SCALE =

DESIGN DATA

CONTRACTOR DESIGNED OVERHEAD SIGN STRUCTURES SHALL BE DESIGNED ACCORDING TO THE AASHTO "LRFD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS", 1ST EDITION AND INTERIM SPECIFICATIONS, AND THE WISDOT BRIDGE MANUAL.

STANDARD FOUNDATIONS; DESIGNED ACCORDING TO THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 8TH EDITION.

DEAD LOAD: WT. OF SIGN AND SUPPORTING STRUCTURE
ICE LOAD: 3 PSF TO ONE FACE OF SIGN & SURFACE OF MEMBERS
WIND PRESSURE: 115 MPH (3-SEC. GUST SPEED) TO SIGN AREA & EXPOSED MEMBERS (700 YEAR MEAN RECURRENCE INTERVAL)

WIND COMPONENTS	NORMAL	TRANSVERSE
LOAD CASE 1:	1.00	0.00
LOAD CASE 2:	0.00	1.00
LOAD CASE 3:	0.75	0.75

LOAD COMBINATIONS	
STRENGTH I:	1.25 DC + 1.6 LL
EXTREME I (MAX DC):	1.1 DC + 1.0 W + 1.0 ICE
EXTREME I (MIN DC):	0.9 DC + 1.0 W
SERVICE I:	1.0 DC + 1.0 W
FATIGUE:	1.0 NW (NATURAL WIND GUST)
	1.0 TrG (TRUCK INDUCED GUST)
	1.0 GVW (GALLOPING - CANTILEVER ONLY)

MATERIAL PROPERTIES

CONCRETE MASONRY f'c = 3,500 PSI

HIGH STRENGTH STEEL REINFORCEMENT, GRADE 60 fy = 60,000 PSI

STRUCTURAL ANGLES, PLATES & BARS - ASTM A709 GRADE 36 fy = 36,000 PSI

HIGH STRENGTH BOLTS - ASTM A3125 GRADE A325 fy = 92,000 PSI

ANCHOR RODS - ASTM F1554 GRADE 55 fy = 55,000 PSI

HEAVY HEX NUTS - ASTM A563 GRADE DH OR ASTM A194 GRADE 2H

WASHERS - ASTM F436

DTI WASHERS - ASTM F959 TYPE 325

FOUNDATION DATA

SIGN STRUCTURE FOUNDATIONS ARE SUPPORTED ON DRILLED SHAFTS THAT HAVE BEEN DESIGN FOR SITES WHERE SOILS EXHIBIT A PHI-ANGLE GREATER THAN OR EQUAL TO 24° (GRANULAR SOILS), OR A COHESION VALUE GREATER THAN OR EQUAL TO 750 PSF (COHESIVE SOILS) AND A UNIT WEIGHT OF 125 PCF. THE GROUND WATER TABLE FOR DESIGN IS ASSUMED TO BE AT A DEPTH OF 10'-0" BELOW THE GROUND SURFACE, ACTUAL WATER LEVEL AT SITE MAY VARY. THE REGION GEOTECHNICAL ENGINEER SHALL VISUALLY INSPECT THE SUBSURFACE SOILS DURING THE DRILLING OF THE SHAFT HOLE TO CONFRIM THESE PROPERTIES PRIOR TO PLACEMENT OF THE DRILLED SHAFT CONCRETE.

TOTAL ESTIMATED QUANTITIES

BID ITEM NO.	BID ITEM	UNIT	S-44-320	S-44-321
531.2030	DRILLING SHAFT 30-INCH	LF	--	26
531.2042	DRILLING SHAFT 42-INCH	LF	18	--
531.5130	FOUNDATION SINGLE-SHAFT TYPE MC-III S-44-320	EA	1	--
531.5220	FOUNDATION SINGLE-SHAFT TYPE MF-II S-44-321	EA	--	2
532.5130	MONOTUBE CANTILEVER TYPE III S-44-320	EA	1	--
532.5220	MONOTUBE FULL SPAN TYPE II S-44-321	EA	--	1

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

ALTERNATE DESIGNS ARE NOT ALLOWED.

COORDINATES ON THIS PLAN ARE REFERENCED TO THE WISCONSIN COUNTY COORDINATE SYSTEM (WCCS), OUTAGAMIE COUNTY ZONE, NAD 83 (2011). ALL STATIONS AND ELEVATIONS ARE IN FEET. ELEVATIONS ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM NAVD 88 (2012).

ALL REINFORCING BARS ARE IN ENGLISH UNITS. THE FIRST DIGIT OF A THREE-DIGIT BAR MARK OR THE FIRST TWO DIGITS OF A FOUR-DIGIT BAR MARK SIGNIFIES THE BAR SIZE.

SIGN BRIDGE ID PLAQUES SHALL BE CONSIDERED INCIDENTAL TO THE TRUSS OR MONOTUBE BID ITEMS FOR EACH APPLICABLE SIGN STRUCTURE IN THE PLAN SET. LOCATE THE ID PLAQUE ON THE FREEWAY SIDE OF THE SUPPORT COLUMN SO THAT IT CAN BE SEEN FROM THE ROADWAY. FABRICATE AND INSTALL THE ID PLAQUE IN ACCORDANCE WITH S.D.D. 12 A4-3.

UNLESS DETAILED OTHERWISE IN THE PLANS, ALL H.S. BOLTED CONNECTIONS SHALL BE MADE WITH ¾" DIA. A325 GALVANIZED BOLTS. FIELD CONNECTIONS SHALL BE INSTALLED WITH DTI WASHERS.

WELDED CONNECTIONS CAN BE USED IN LIEU OF BOLTED CONNECTIONS, IF A TRUSS UNIT CAN BE GALVANIZED IN ONE PIECE.

WELD TEST AS PER AWS D1.1.

SEE SIGN PLATE NO. A4-6, A4-7A & A4-7B OF THE SIGN PLATE MANUAL FOR INSTRUCTIONS ON CENTERING SIGNS VERTICALLY ON THE TRUSS.

SIGNS OR BLANKS SHALL BE INSTALLED ON TRUSS AT TIME OF ERECTION. BLANKS SHALL BE ¾ THE LENGTH OF THE CANTILEVER SPAN, 2'-0" DEEPER THAN THE C/L TO C/L OF CHORDS, AND SHALL BE CENTERED ON THE BRIDGE. SIGNS SHALL BE AS DESIGNATED ON THE PLANS.

THE INFORMATION SHOWN ON THESE DRAWINGS CONCERNING TYPE AND LOCATION OF UTILITIES IS NOT GUARANTEED TO BE ACCURATE OR ALL-INCLUSIVE. THE CONTRACTOR IS RESPONSIBLE FOR MAKING HIS OWN DETERMINATION OF THE TYPE AND LOCATION OF UTILITIES AS MAY BE NECESSARY TO AVOID DAMAGE.

CONTRACTOR SHALL SUBMIT SHOP DRAWINGS PER THE REQUIREMENTS IN THE STANDARD SPECIFICATIONS PRIOR TO FABRICATION OF THE STRUCTURE. CONTRACTOR SHALL SHOW SIGNS ON THE SHOP DRAWINGS.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR DRILLING OR EXCAVATING AND MAINTAINING A STABLE AND OPEN HOLE FOR SUBSEQUENT INSTALLATION OF CONCRETE MASONRY FOR THE DRILLED SHAFTS. PARTIAL OR FULL DEPTH TEMPORARY CASING MAY BE REQUIRED TO MAINTAIN THE STABILITY OF THE EXCAVATED HOLE FOR THE SIGN SUPPORT PRIOR TO FILLING THE HOLE WITH CONCRETE. PERMANENT CASING MADE FROM STEEL OR CORRUGATED METAL PIPE MAY BE USED IN LIEU OF TEMPORARY CASING. TEMPORARY/PERMANENT CASING, IF USED, SHALL BE INCIDENTAL TO THE BID ITEM "DRILLING SHAFT (DIA.)".

STRUCTURE DATA

STRUCTURE ID	SIGN AREA	SIGN DEPTH	FOUNDATION TYPE
S-44-320	8.00 SF	2'-0"	MC-III
S-44-321	17.42 SF	1'-7"	MF-II

LIST OF DRAWINGS:

- GENERAL NOTES & DESIGN DATA
- GENERAL LAYOUT S-44-320
- GENERAL LAYOUT S-44-321

LIST OF STANDARD DESIGN DRAWINGS

- I. MONOTUBE & 2-CHORD TRUSS CONNECTIONS 1
- II. MONOTUBE & 2-CHORD TRUSS CONNECTIONS 2
- III. MONOTUBE & 2-CHORD TRUSS ELECTRICAL DETAILS
- IV. MONOTUBE & 2-CHORD TRUSS FOUNDATIONS

STATE PROJECT NUMBER

1130-44-75

STRUCTURE DESIGN CONTACTS:

AARON BONK 608-261-0261
CHAD HALVERSON 608-663-1218

NO.	DATE	REVISION	BY
-----	------	----------	----



STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

ACCEPTED  MJK 3/12/25
CHIEF STRUCTURES DESIGN ENGINEER DATE

MONOTUBE & 2-CHORD

WRIGHTSTOWN SWEF

COUNTY OUTAGAMIE VILLAGE WRIGHTSTOWN

DESIGN SPEC.
AASHTO LRFD BRIDGE DESIGN SPECIFICATION

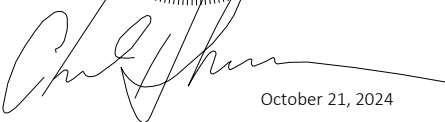
DESIGNED BY GWK CK'D CDH DRAWN BY GWK CK'D CDH PLANS CK'D CDH

GENERAL NOTES & DESIGN DATA

SHEET 1 OF 7
213

THESE ARE STANDARD DESIGN PLANS DEVELOPED AND MAINTAINED BY THE WISDOT. THE DESIGNER CERTIFIES THAT THE DESIGN AND PLAN DETAILS CHOSEN ARE CONSISTENT WITH THE GUIDANCE PROVIDED IN THE CURRENT WISDOT BRIDGE MANUAL CHAPTER 39.

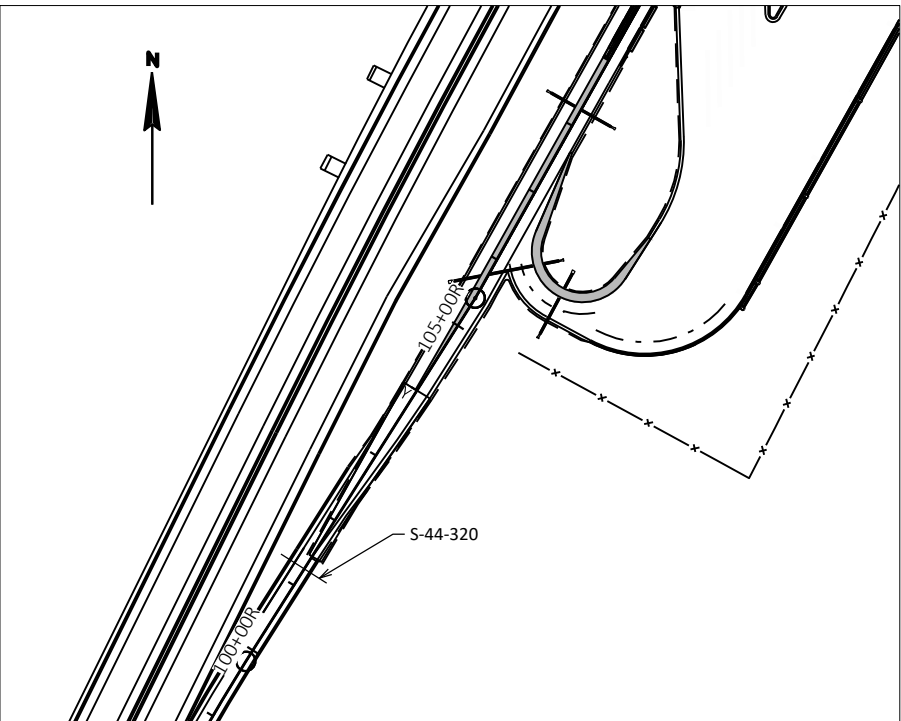
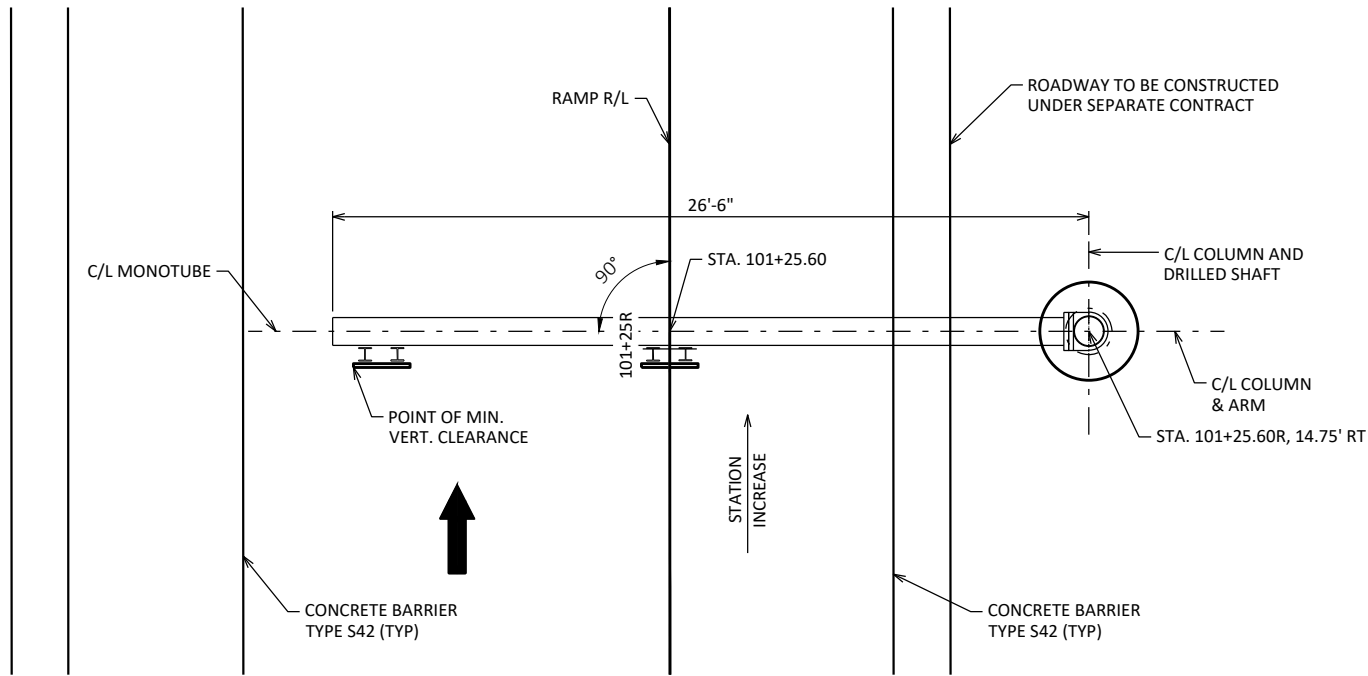



October 21, 2024

I.D.

DATE:

SCALE =



LOCATION MAP

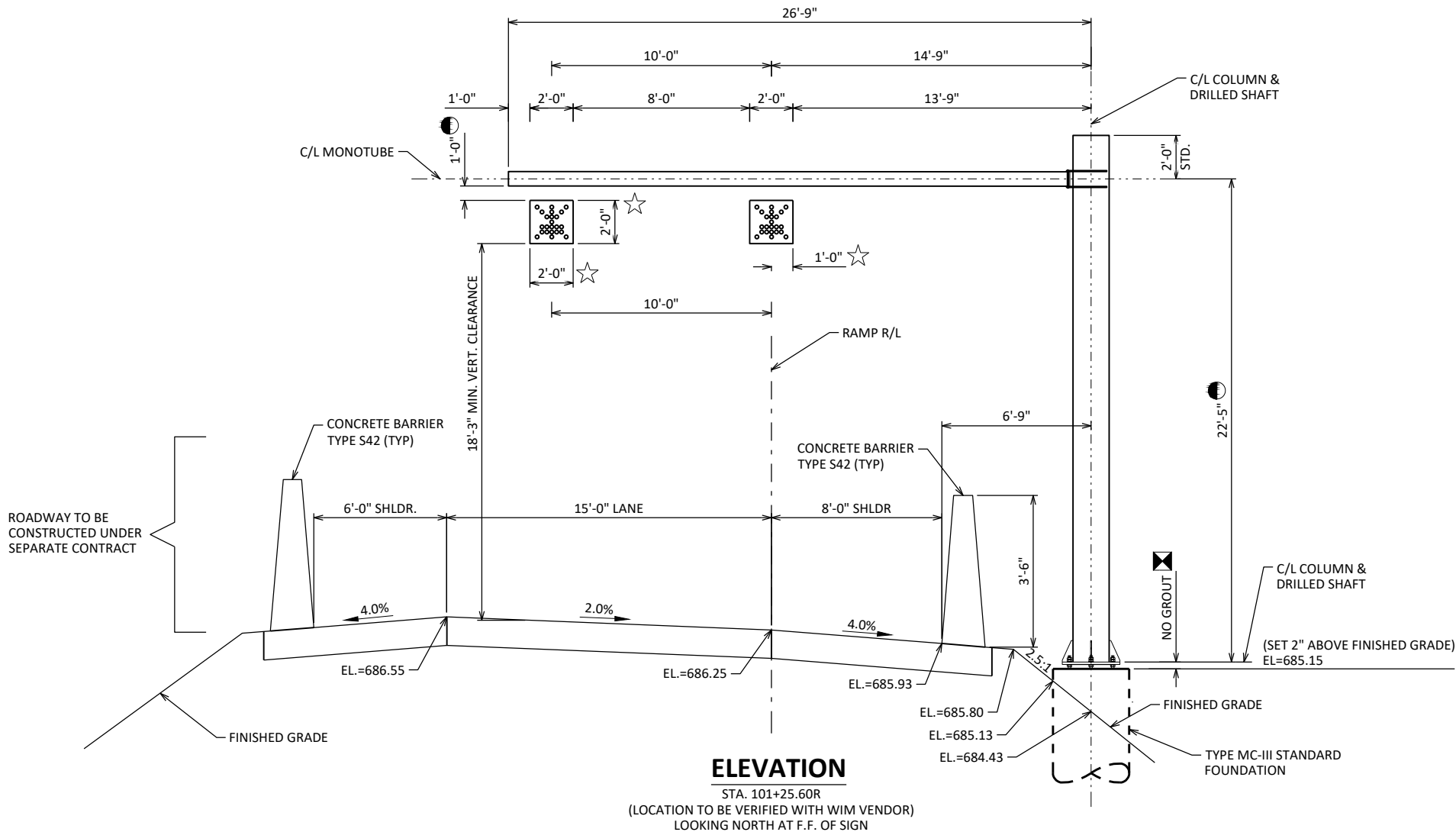
NOTES

POINT OF MIN. VERTICAL CLEARANCE
STA. 101+25.60R, 11.0' LT
EL. = 686.47
ELEVATIONS ARE GIVEN ALONG C/L MONOTUBE.

SIGNS AND MOUNTING HARDWARE ARE INCLUDED WITH BID ITEM "WEIGH-IN-MOTION SYSTEM". SEE ROADWAY DETAILS.

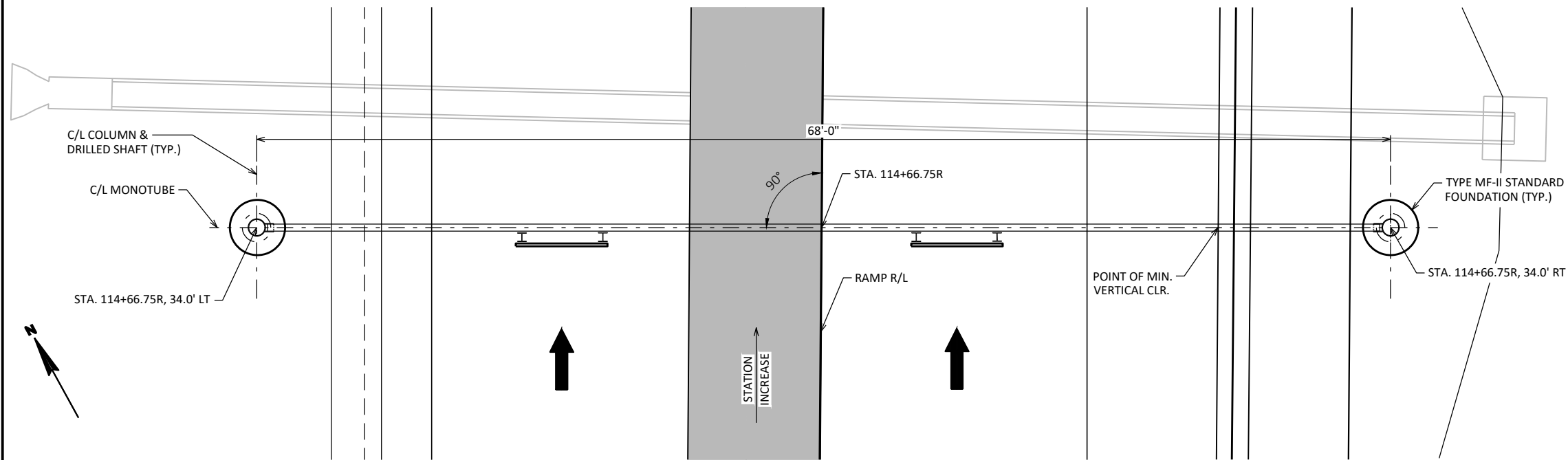
LEGEND

- Standoff dimension is assumed to be 2 1/2", but is a maximum of 2 X anchor dimension. See foundation details sheet and shop drawings for more information.
- 1'-0" offset assumed for C/L monotube chord to top of sign. Adjust height of column and monotube chord as required to maintain minimum vertical clearance shown.
- Sign dimensions assumed. Verify with weigh-in-motion system manufacturer.



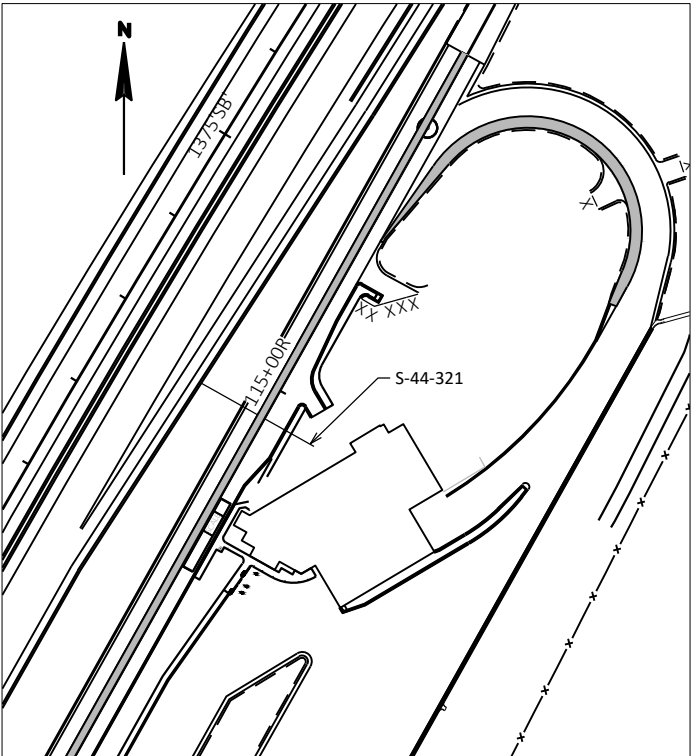
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE S-44-320			
DRAWN BY		GWK	PLANS CK'D CDH
GENERAL LAYOUT S-44-320		SHEET 2 OF 7 214	

SCALE =



PLAN

FULL SPAN MONOTUBE OVERHEAD SIGN STRUCTURE



LOCATION MAP

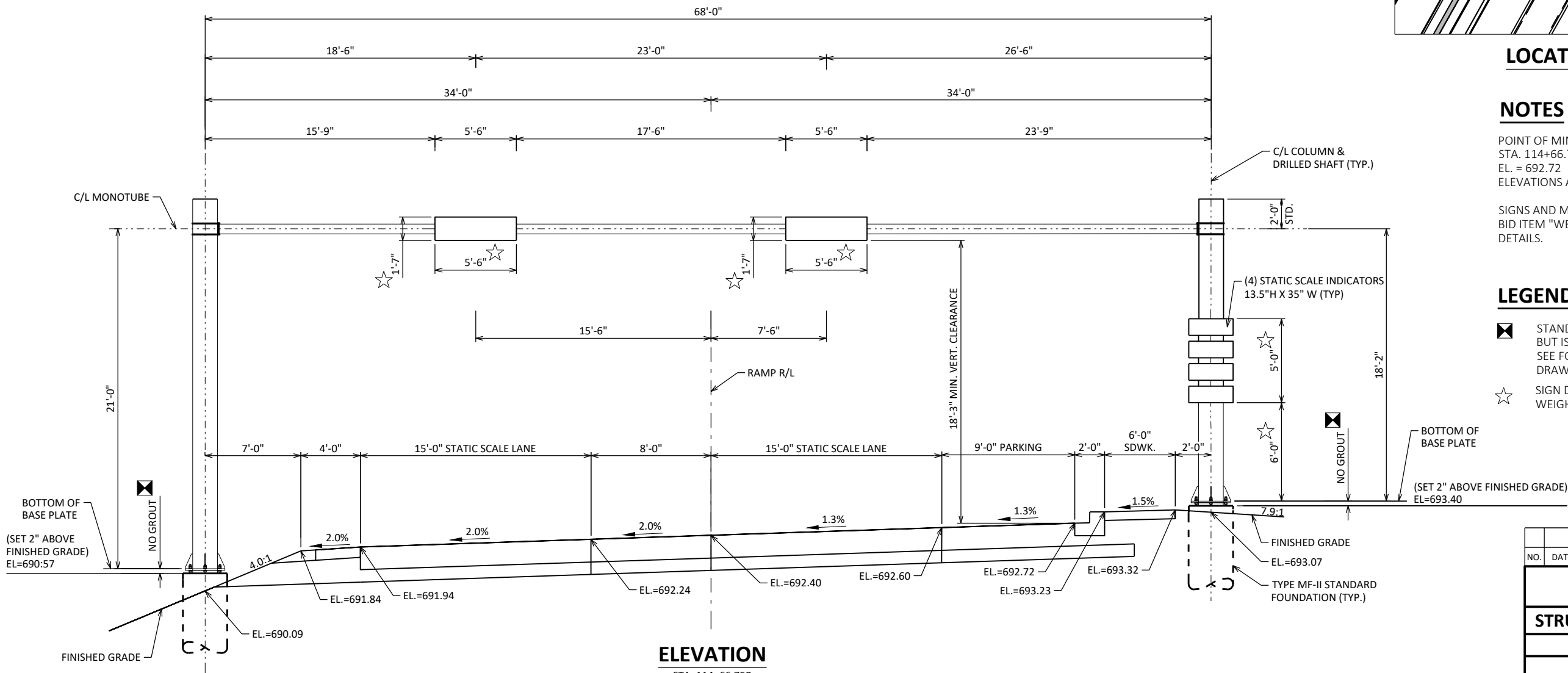
NOTES

POINT OF MIN. VERTICAL CLEARANCE
STA. 114+66.75R, 24.0' RT
EL. = 692.72
ELEVATIONS ARE GIVEN ALONG C/L MONOTUBE.

SIGNS AND MOUNTING HARDWARE ARE INCLUDED WITH
BID ITEM "WEIGH-IN-MOTION SYSTEM". SEE ROADWAY
DETAILS.

LEGEND

- STANDOFF DIMENSION IS ASSUMED TO BE 2 1/2", BUT IS A MAXIMUM OF 2 X ANCHOR DIMENSION. SEE FOUNDATION DETAILS SHEET AND SHOP DRAWINGS FOR MORE INFORMATION.
- SIGN DIMENSIONS ASSUMED. VERIFY WITH WEIGH-IN-MOTION SYSTEM MANUFACTURER.

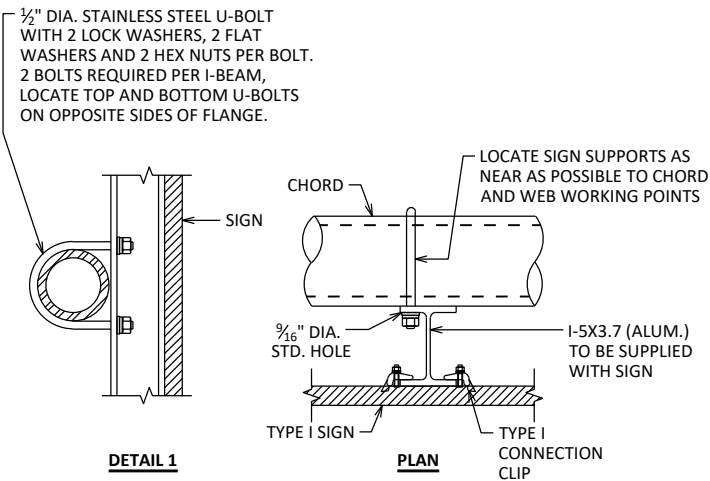


ELEVATION

STA. 114+66.75R
LOOKING NORTH AT F.F. OF SIGN

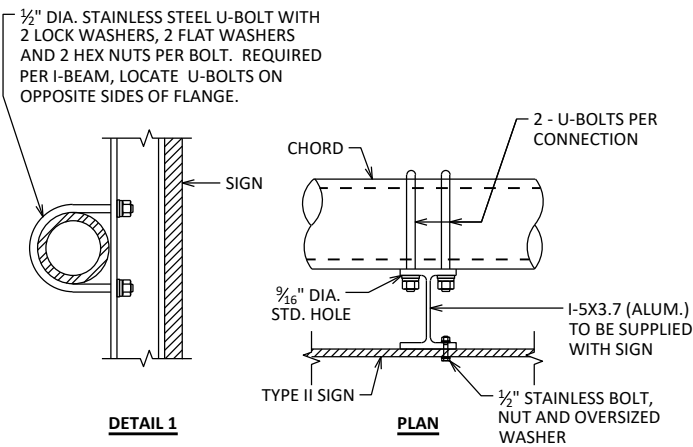
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE S-44-321			
DRAWN BY GWK		PLANS CK'D CDH	
GENERAL LAYOUT S-44-321		SHEET 3 of 7 215	

SCALE =



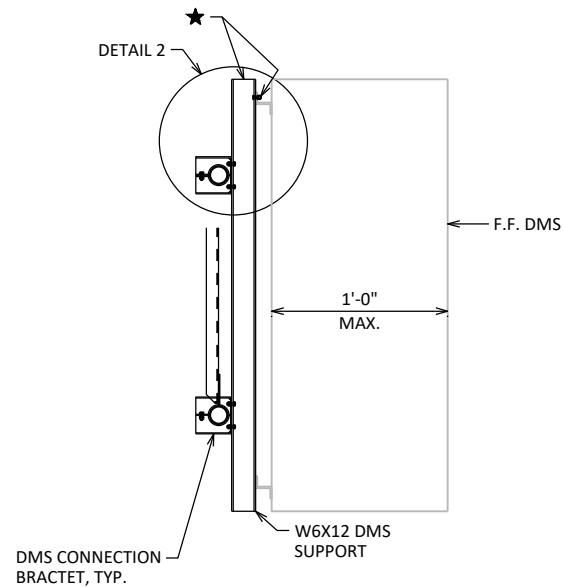
2-CHORD TRUSS SIGN CONNECTION

TYPE I SIGN PANEL SHOWN.
SEE SIGN PLATE MANUAL A4-7A AND A4-7B FOR DETAILS.
ALUMINUM I-5X3.7 I-BEAMS ARE TO BE SUPPLIED WITH SIGN PANEL, HARDWARE TO BE SUPPLIED BY THE CONTRACTOR.



MONOTUBE SIGN CONNECTION

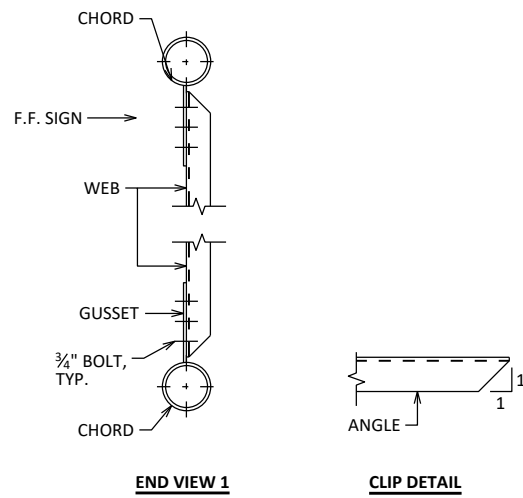
TYPE II SIGN PANEL SHOWN.
SEE SIGN PLATE MANUAL A4-7A AND A4-7B FOR DETAILS.
ALUMINUM I-5X3.7 I-BEAMS ARE TO BE SUPPLIED WITH SIGN PANEL, HARDWARE TO BE SUPPLIED BY THE CONTRACTOR.



SECTION THRU TRUSS - DMS

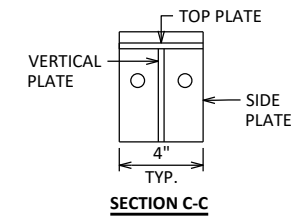
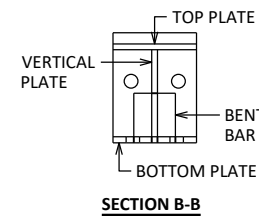
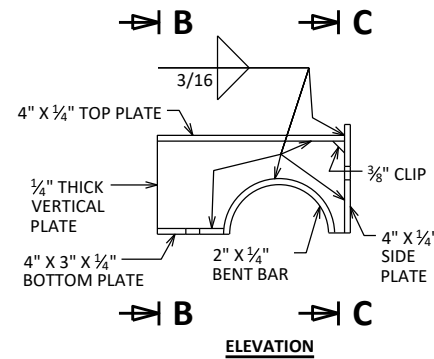
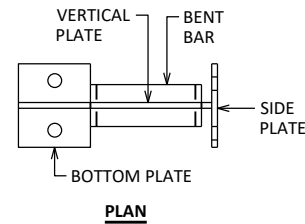
FOR DMS/CATWALK CONNECTIONS

★ W6X12 SUPPORTS AND HARDWARE ARE TO BE SUPPLIED BY THE CONTRACTOR. 1/2" STAINLESS BOLT, NUT, WASHER AND LOCK WASHER REQUIRED, 4 PER W6X12



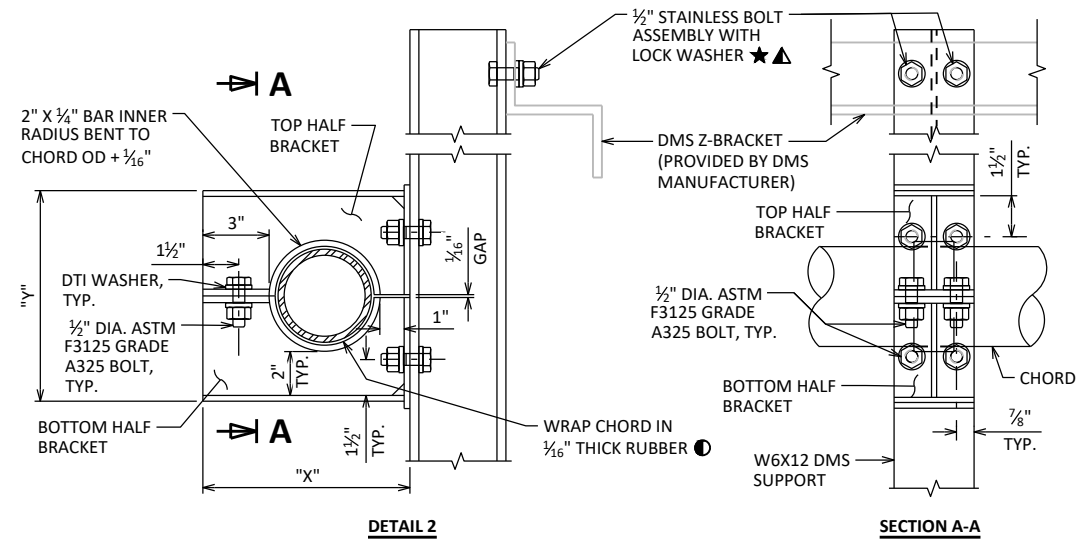
TRUSS CONNECTION DETAILS

MEMBER ORIENTATION FOR BOLTED CONNECTIONS SHOWN, WELDED CONNECTIONS SIMILAR.
ANGLES PREFERRED, OTHER WEB DESIGNS ALLOWED.



DMS WELDED PLATE CONNECTION DETAILS

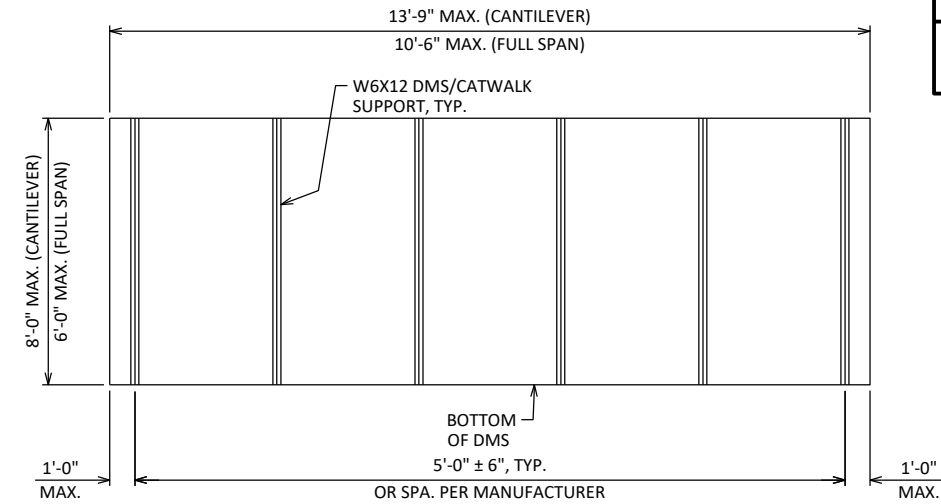
TOP HALF OF BRACKET SHOWN, BOTTOM HALF SIMILAR.



CHORD "OD"	"X"	"Y"
"OD"	"OD" + 4 3/16"	"OD" + 5 1/16"

TYPICAL DMS CONNECTION

- NEOPRENE, GRADE 45±5, OTHERWISE MEETING THE REQUIREMENTS OF STD. SPEC. 506.2.6.1
- ▲ IF DMS CONNECTION BRACKET IS USED WITH A TYPE II SIGN PANEL, THE BOLT HOLE MUST BE GALVANIZED AND A STAINLESS WASHER USED BETWEEN THE I-BEAM AND SIGN PANEL.

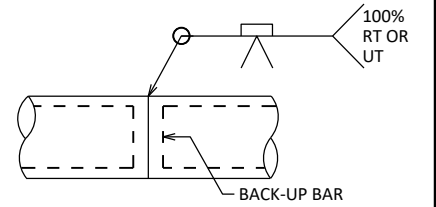


DMS MOUNTING POST DETAIL

POST SPACING MAY BE ADJUSTED AS REQUIRED IF SPACING CONFLICTS WITH GUSSET PLATES OF TRUSS WITHIN TOLERANCES NOTED.

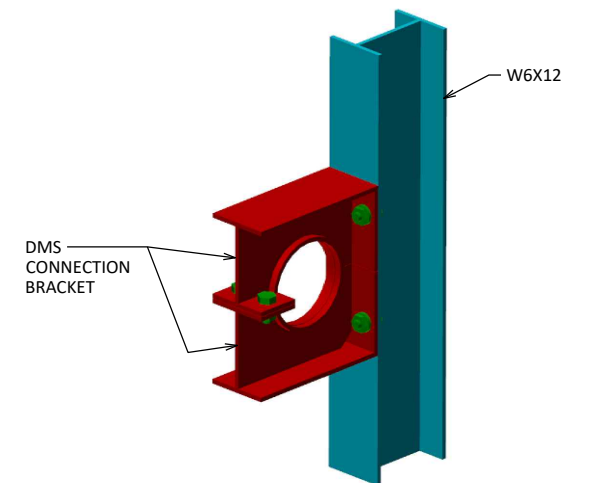
STATE PROJECT NUMBER

STANDARD



CHORD SPLICE

SEPARATE OPTIONAL SPLICE FROM GUSSET PLATES BY 6" MIN.

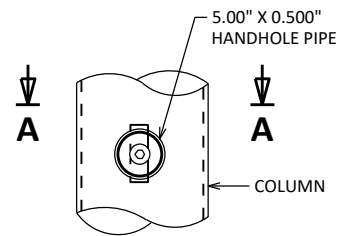


3-D VIEW OF DMS CONNECTION

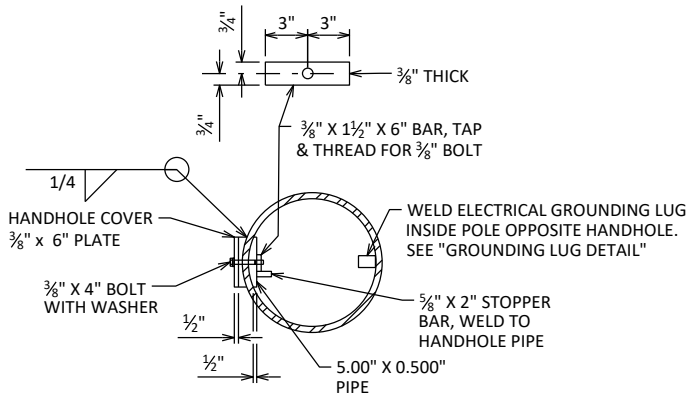
CHORD NOT SHOWN FOR CLARITY

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
UPDATED: OCT. 2023			
DRAWN BY BOS		PLANS CK'D BOS	
MONOTUBE & 2-CHORD TRUSS CONNECTIONS 2		SHEET II	217

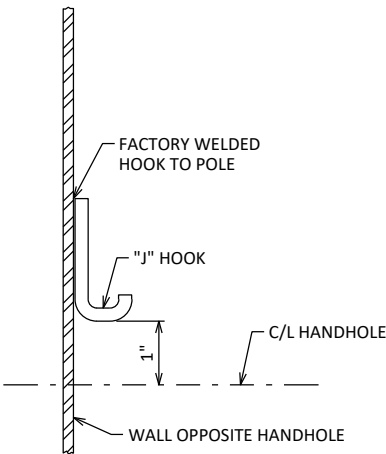
SCALE = 4:0



ELEVATION

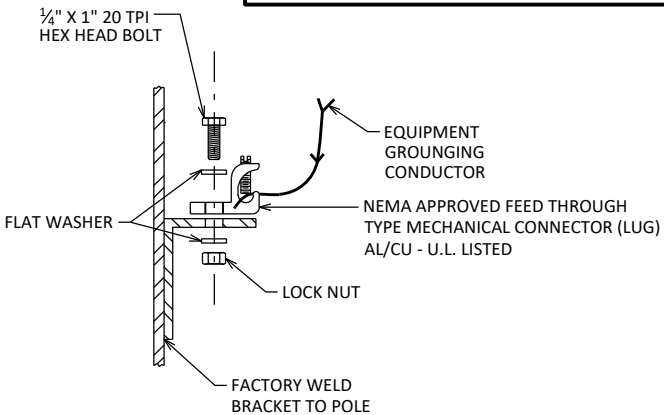


SECTION A-A



TYPICAL "J" HOOK LOCATION

THE "J" HOOK SHALL BE FACTORY WELDED TO THE INSIDE OF THE COLUMN CONTAINING ELECTRICAL WIRING. THE "J" HOOK SHALL BE ATTACHED ABOVE THE CENTERLINE OF THE UPPER HANDHOLE AND MOUNTED DIRECTLY OPPOSITE THE HANDHOLE AS SHOWN IN THE DRAWING.



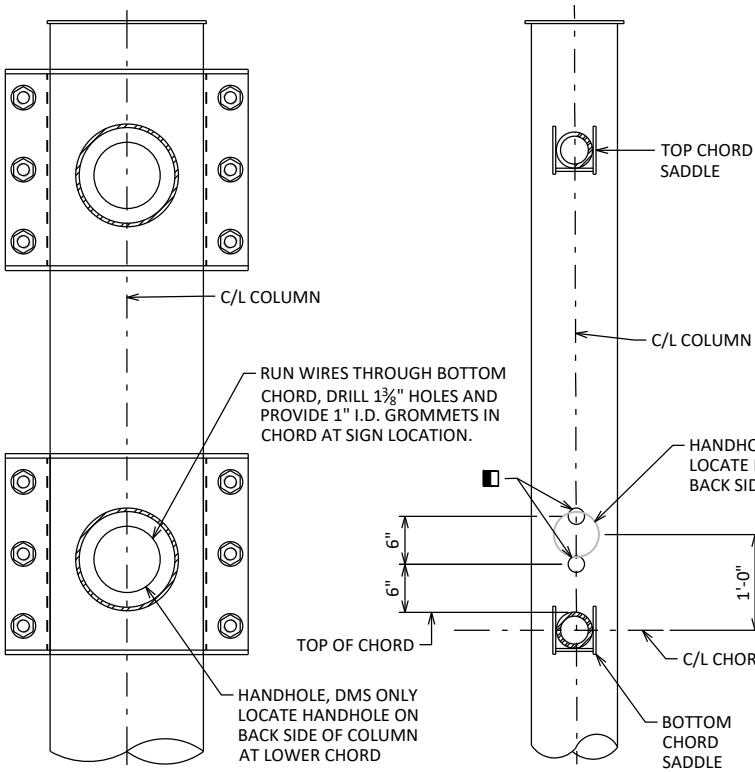
GROUNDING LUG DETAIL

NUT, BOLT AND WASHERS SHALL BE STAINLESS STEEL

HANDHOLE DETAILS

HANDHOLES SHALL BE LOCATED IN ONE COLUMN OF THE SIGN BRIDGE STRUCTURE IF ELECTRICALLY OPERATED DEVICES ARE INSTALLED ON/IN THE STRUCTURE. COLUMNS WITH HANDHOLES SHALL BE NEAR THE ELECTRICAL SERVICE. THE CONTRACTOR SHALL VERIFY THE LOCATION OF THE ELECTRICAL SERVICE ENTRANCE WITH THE REGION TRAFFIC SECTION PRIOR TO FABRICATION OF THE SIGN BRIDGE COLUMNS AND MEMBERS. CONDUIT (AS REQ'D.) SHALL BE LOCATED, PLACED AND SIZED AS SHOWN ON THE ELECTRICAL PLAN DETAIL SHEETS.

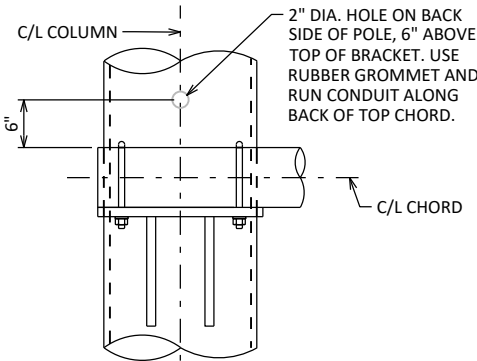
UNLESS OTHERWISE NOTED, ALL HANDHOLE ELEMENTS TO BE GALVANIZED PER THE WISDOT STANDARD SPECIFICATIONS.



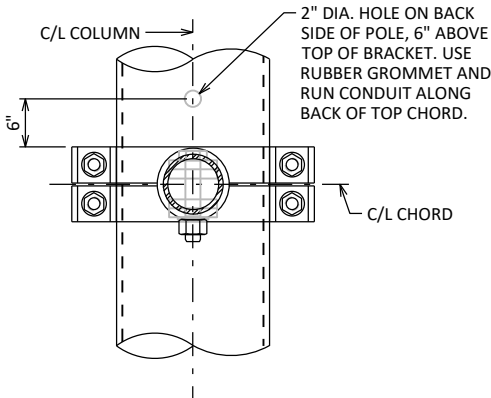
2-CHORD CANTILEVER

2-CHORD FULL SPAN

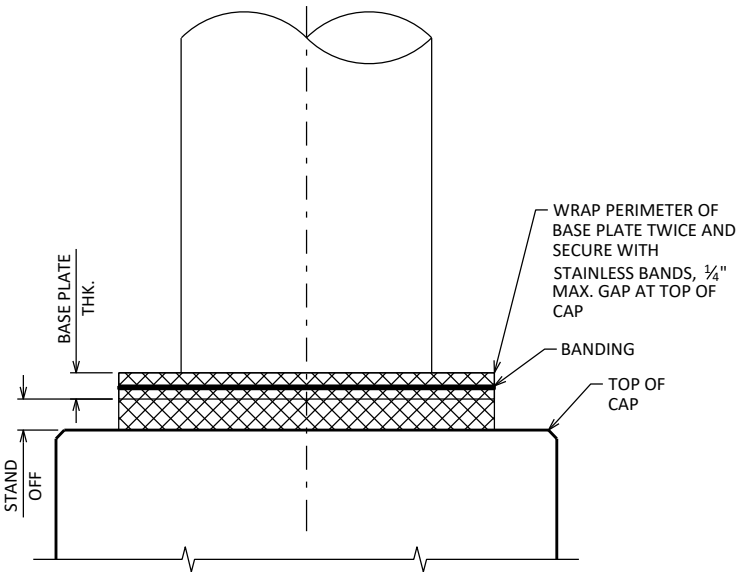
SADDLE CONNECTION SHOWN, OTHERS SIMILAR



FULL SPAN STIFFENED BEARING CONNECTION

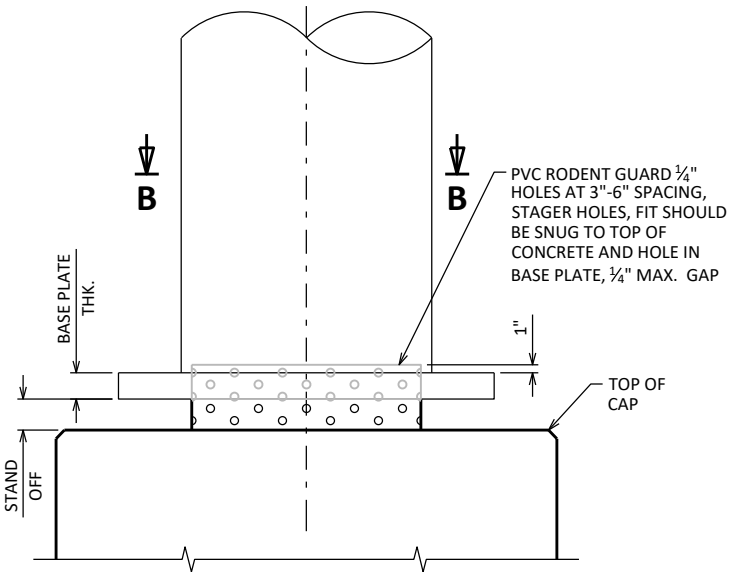


FULL SPAN CLAMP CONNECTION



RODENT SCREEN

ONLY REQ'D WHEN ELECTRICAL DEVICES ARE PRESENT
ANCHOR RODS NOT SHOWN

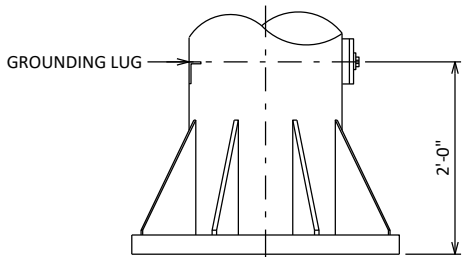


RODENT SCREEN - ALTERNATE

ONLY REQ'D WHEN ELECTRICAL DEVICES ARE PRESENT
ANCHOR RODS NOT SHOWN

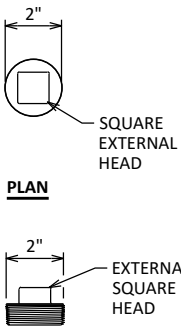
CONDUIT HOLE LOCATIONS

2" HOLE WITH STANDARD PIPE THREADS, USE
THREADED CONDUIT PLUG FOR UNUSED HOLES



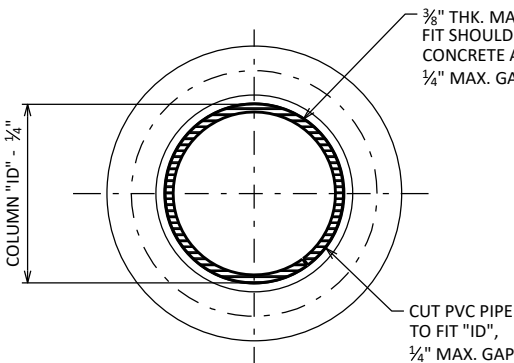
GROUNDING LUG LOCATION

LOOKING AT THE F.F. OF STRUCTURE



ELEVATION

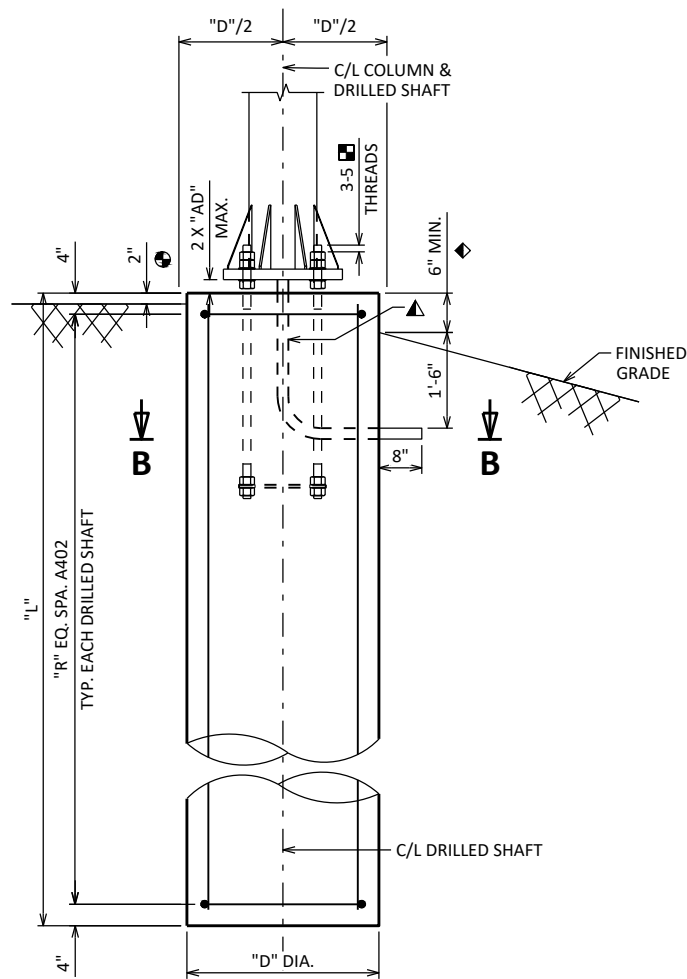
CONDUIT PLUG DETAILS



SECTION B-B

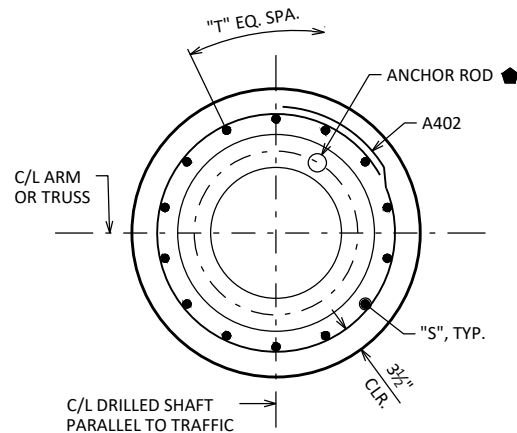
NO.	DATE	REVISION	BY
		STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION	
UPDATED:		OCT. 2024	
DRAWN BY		BOS	PLANS CK'D BOS
MONOTUBE & 2-CHORD TRUSS ELECTRICAL DETAILS		SHEET III 218	

SCALE = 2:0



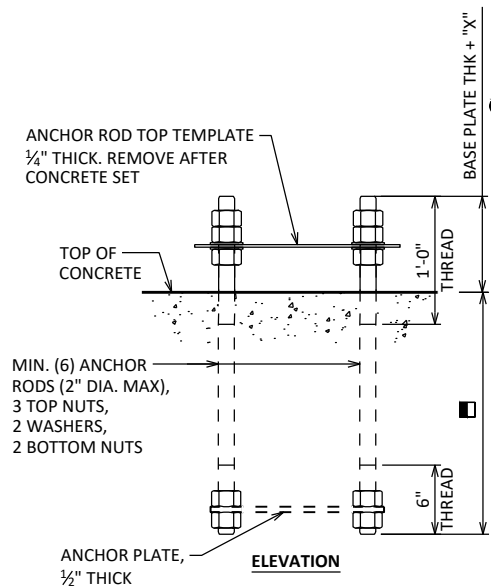
ELEVATION

- TYPICAL FOR DRILLED SHAFT FOOTINGS INSTALLED ADJACENT TO SIDEWALKS OR BEHIND CURB AND GUTTER ON LOW SPEED ROADS. TOP OF SHAFT SHALL BE FLUSH IF SURROUNDED BY CONCRETE AND 2" ABOVE FINISHED GRADE FOR ALL OTHER SURFACES.
- ◆ TYPICAL FOR EACH DRILLED SHAFT FOOTING INSTALLED ADJACENT TO ROADWAY FACILITIES OR ON SIDE SLOPES WITHIN CLEAR ZONE. BARRIER OR BEAMGUARD MAY BE REQUIRED.



SECTION B-B

TYPICAL FOR EACH DRILLED SHAFT FOOTING



ANCHOR ROD ASSEMBLY DETAILS

- ANCHOR RODS PER ASSEMBLY TO BE DESIGNED BY CONTRACTOR AND SHOWN ON SHOP DRAWINGS. SHOW DIAMETER, NUMBER, ORIENTATION AND EMBEDMENT OF ANCHOR RODS.

CENTER ANCHOR ROD ASSEMBLY AND ENSURE ASSEMBLY IS PLUMB. MAINTAIN ANCHOR ROD PROJECTION ABOVE TOP OF CONCRETE AS DETAILED. ANCHOR ROD ASSEMBLY SHALL BE RIGIDLY SECURED IN POSITION DURING AND AFTER CONCRETE PLACEMENT. DO NOT WELD THE ANCHORS.

FOUNDATION DIMENSION DATA

STANDARD DESIGN TYPE	FOUNDATION DIMENSIONS						
	"A"	"D"	"L"	"R"	"S"	"T"	"BC" MAX.
MFI	1'-11"	2'-6"	12'-0"	12	A801	10	1'-5"
MCI/MCII/TFI	1'-11"	2'-6"	17'-0"	17	A801	10	1'-5"
MFII	2'-5"	3'-0"	13'-0"	13	A801	14	1'-10"
TCI	2'-5"	3'-0"	18'-0"	18	A801	14	1'-10"
TFII	2'-5"	3'-0"	20'-0"	20	A801	14	1'-10"
MCII/TCII/TFIII	2'-11"	3'-6"	18'-0"	18	A901	14	2'-4"
MCIV/TFIV	2'-11"	3'-6"	23'-0"	23	A901	14	2'-4"
TCIII	3'-5"	4'-0"	23'-0"	23	A1001	14	2'-10"
TCIV	3'-5"	4'-0"	28'-0"	28	A1001	14	2'-10"

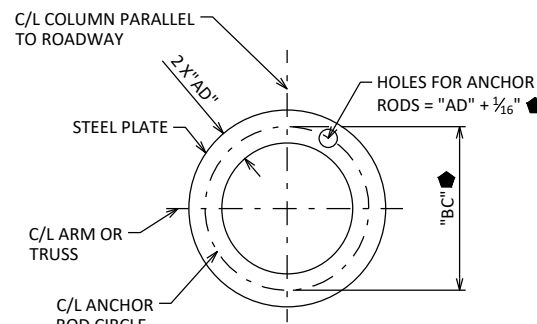
ESTIMATED QUANTITIES - FOUNDATION

STANDARD DESIGN TYPE	CONCRETE MASONRY	STEEL REINFORCEMENT HS	FOUNDATION DRILLING (DIA.) (LF)			
	(CY)	(LBS)	30"	36"	42"	48"
MFI	2.2	380	12	---	---	---
MCI/MCII/TFI	3.1	540	17	---	---	---
MFII	3.4	560	---	13	---	---
TCI	4.7	780	---	18	---	---
TFII	5.2	870	---	20	---	---
MCIII/TCII/TFIII	6.4	980	---	---	18	---
MCIV/TFIV	8.2	1,250	---	---	23	---
TCIII	10.7	1,570	---	---	---	23
TCIV	13.0	1,910	---	---	---	28

✱✱ QUANTITIES ARE FOR INFORMATION ONLY AND ARE BASED ON A SINGLE ✱✱
DRILLED SHAFT. MULTIPLY BY 2 FOR FULL SPAN STRUCTURES.

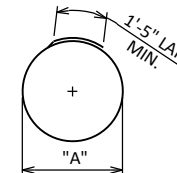
ANCHOR DIAMETER "AD"	MAX. STICK OUT 
	"X"
1"	5"
1¼"	6"
1½"	7"
1¾"	8"
2"	9"

- ADD BASE PLATE THICKNESS TO VALUE SHOWN FOR MAX. STICK OUT DIMENSION. CONTRACTOR TO COORDINATE WITH FABRICATOR FOR PROPER ANCHOR PLACEMENT.



ANCHOR PLATE & TOP TEMPLATE

- ANCHOR SIZE, BOLT CIRCLE, AND POSITION
TO BE VERIFIED WITH SHOP DRAWINGS.



A402

LEGEND

- ANCHOR ROD STICK OUT IN FINAL CONDITION. EXCESSIVE STICK OUT BEYOND DIMENSION SHOWN TO BE CUT OFF AFTER PLACING STRUCTURE. ANCHORS TO BE ULTRASONIC TESTED TO DETERMINE EMBEDDED LENGTH MEETS REQUIREMENTS PRIOR TO CUTTING. NOTE REMAINING LENGTH ON AS-BUILT.**
- 2 - 2" DIA. NON-METALLIC CONDUITS. INSTALL ONLY WITH DMS. EXTEND CONDUITS AS SHOWN AND CAP OR SEAL EACH END WITH A SUITABLE REMOVABLE PLUG. PLACE CONDUITS UNDER COLUMN ADJACENT TO DMS. CONDUITS INCIDENTAL TO THE FOUNDATION BID ITEMS.**

NOTE: THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE.

STATE PROJECT NUMBER

STANDARD

BILL OF BARS

STANDARD TYPE MFI

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
A801		10	11'-8"			DRILLED SHAFT - VERTICAL
A402		13	7'-6"	X		DRILLED SHAFT - HORIZONTAL

STANDARD TYPES MCI/MCII/TFI

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
A801		10	16'-8"			DRILLED SHAFT - VERTICAL
A402		18	7'-6"	X		DRILLED SHAFT - HORIZONTAL

STANDARD TYPE MF1

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
A801		14	12'-8"			DRILLED SHAFT - VERTICAL
A402		14	9'-1"	X		DRILLED SHAFT - HORIZONTAL

STANDARD TYPE TCI

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
A801		14	17'-8"			DRILLED SHAFT - VERTICAL
A402		19	9'-1"	X		DRILLED SHAFT - HORIZONTAL

STANDARD TYPE TFI

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
A801		14	19'-8"			DRILLED SHAFT - VERTICAL
A402		21	9'-1"	X		DRILLED SHAFT - HORIZONTAL

STANDARD TYPES MCIII/TCII/TFIII

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
A901		14	17'-8"			DRILLED SHAFT - VERTICAL
A402		19	10'-7"	X		DRILLED SHAFT - HORIZONTAL

STANDARD TYPES MCIV/TFIV

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
A901		14	22'-8"			DRILLED SHAFT - VERTICAL
A402		24	10'-7"	X		DRILLED SHAFT - HORIZONTAL

STANDARD TYPE TCII

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
A1001		14	22'-8"			DRILLED SHAFT - VERTICAL
A402		24	12'-2"	X		DRILLED SHAFT - HORIZONTAL

STANDARD TYPE TCIV

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
A1001		14	27'-8"			DRILLED SHAFT - VERTICAL
A402		29	12'-2"	X		DRILLED SHAFT - HORIZONTAL

✱ ✱ VALUES IN BAR TABLES ARE FOR A SINGLE FOUNDATION ONLY. MULTIPLY BY 2 FOR FULL ✱ ✱
SPAN STRUCTURES.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
UPDATED: OCT. 2024			
		DRAWN BY	PLANS CK'D
		BOS	BOS
MONOTUBE & 2-CHORD TRUSS FOUNDATIONS		SHEET IV — 219 —	

SCALE = 3.0

CMV PARKING ('C' R/L)

STATION	DISTANCE	AREA (SF)			INCREMENTAL VOL (CY) (UNADJUSTED)			CUMULATIVE VOL (CY)		
		CUT	SALVAGED/ UNUSABLE PAVEMENT MATERIAL	FILL	CUT NOTE 1	SALVAGED/ UNUSABLE PAVEMENT MATERIAL	FILL NOTE 2	CUT 1.00 NOTE 1	EXPANDED FILL 1.25	MASS ORDINATE NOTE 3
300+14.05	0.00	0.00	0.00	601.99	0	0	0	0	0	0
300+57.04	42.99	0.00	0.00	759.50	0	0	1,084	0	1,355	-1,355
301+08.88	51.84	0.00	0.00	1035.06	0	0	1,723	0	3,509	-3,509
302+00.00	91.12	0.00	0.00	1686.12	0	0	4,592	0	9,249	-9,249
302+57.90	57.90	0.00	0.00	2052.68	0	0	4,009	0	14,260	-14,260
303+00.00	42.10	0.00	0.00	2114.66	0	0	3,249	0	18,321	-18,321
303+41.65	41.65	0.00	0.00	2102.90	0	0	3,253	0	22,388	-22,388
304+00.00	58.35	0.00	0.00	1693.13	0	0	4,102	0	27,515	-27,515
304+37.76	37.76	0.00	0.00	1903.42	0	0	2,515	0	30,659	-30,659
304+62.76	25.00	0.00	0.00	1965.80	0	0	1,791	0	32,898	-32,898
305+36.20	73.44	0.00	0.00	1798.86	0	0	5,120	0	39,298	-39,298
305+61.83	25.63	16.36	0.00	1004.69	.	0	1331	8	01	053
3053.21	21.3	.21	0.00	3.3	33	0	30	1	1	133
3055.21	2.00	.1	0.00	3.55	5	0	2	46	151	105
3000.00	1.	11.1	0.00	23.0	25	0	51	1	2520	25
301.0	1.0	11.2	0.00	01.5	6	0	22	77	30	2
300.2	0.22	2.5	0.00	0.0	0	0	2015	13	55	53
					13	0	3515			

DUMPSTER PAD ('D' R/L)

STATION	DISTANCE	AREA (SF)			INCREMENTAL VOL (CY) (UNADJUSTED)			CUMULATIVE VOL (CY)		
		CUT	SALVAGED/ UNUSABLE PAVEMENT MATERIAL	FILL	CUT NOTE 1	SALVAGED/ UNUSABLE PAVEMENT MATERIAL	FILL NOTE 2	CUT 1.00 NOTE 1	EXPANDED FILL 1.25	MASS ORDINATE NOTE 3
1033.2	0.00	.3	0.00	0.	0	0	0	0	0	0
105.2	12.15	12.2	0.00	12.20	5	0	3	5	4	1
105.	12.52	33.	0.00	0.02	11	0	3	1	8	9
					1	0	6			

EMPLOYEE PARKING ACCESS ('E' R/L)

STATION	DISTANCE	AREA (SF)			INCREMENTAL VOL (CY) (UNADJUSTED)			CUMULATIVE VOL (CY)		
		CUT	SALVAGED/ UNUSABLE PAVEMENT MATERIAL	FILL	CUT NOTE 1	SALVAGED/ UNUSABLE PAVEMENT MATERIAL	FILL NOTE 2	CUT 1.00 NOTE 1	EXPANDED FILL 1.25	MASS ORDINATE NOTE 3
101.5	0.00	1.05	0.00	2.0	0	0	0	0	0	0
1035.00	15.	1.2	0.00	2.0	10	0	1	10	1	-8
10.51	.51	23.32	0.00	1.20	4	0	9	1	11	15
105.0	30.5	0.00	0.00	0.00	13	0	11	2	25	1
					2	0	3			

NOTES	
1 CUT	CUT INCLUDES SALVAGED/UNUSABLE PAVEMENT MATERIAL
2 FILL	DOES NOT INCLUDE UNUSABLE PAVEMENT EXC VOLUME
3 MASS ORDINATE	(CUT SALVAGED PAVT) ((FILL) FILL FACTOR)

LOOP RAMP PAVEMENT ('L' R/L)

STATION	DISTANCE	AREA (SF)			INCREMENTAL VOL (CY) (UNADJUSTED)			CUMULATIVE VOL (CY)		
		CUT	SALVAGED/ UNUSABLE PAVEMENT MATERIAL	FILL	CUT NOTE 1	SALVAGED/ UNUSABLE PAVEMENT MATERIAL	FILL NOTE 2	CUT 1.00 NOTE 1	EXPANDED FILL 1.25	MASS ORDINATE NOTE 3
381+80.26	0.00	0.70	0.00	0.00	0	0	0	0	0	0
382+75.49	95.23	7.41	0.00	0.00	14	0	0	14	0	14
383+27.29	51.80	69.83	0.00	0.00	74	0	0	88	0	88
384+00.00	72.71	117.04	0.00	0.00	252	0	0	340	0	340
384+42.50	42.50	16.69	0.00	0.00	105	0	0	445	0	445
385+00.00	57.50	0.00	0.00	76.35	18	0	81	463	101	362
385+58.10	58.10	0.00	0.00	118.90	0	0	210	463	364	99
386+15.10	57.00	0.00	0.00	145.42	0	0	279	463	713	-250
386+38.10	23.00	0.00	0.00	182.81	0	0	140	463	888	-425
386+61.99	23.89	0.00	0.00	228.93	0	0	182	463	1,115	-652
387+02.76	40.77	0.48	0.00	174.32	0	0	304	463	1,495	-1,032
387+18.60	15.84	0.00	0.00	189.13	0	0	107	463	1,629	-1,166
388+00.00	81.40	0.00	0.00	299.30	0	0	736	463	2,549	-2,086
388+55.73	55.73	1.60	0.00	367.18	2	0	688	465	3,409	-2,944
388+63.99	8.26	2.38	0.00	395.44	1	0	117	466	3,555	-3,089
389+00.00	36.01	10.66	0.00	486.85	9	0	588	475	4,290	-3,815
389+25.00	25.00	4.22	0.00	525.54	7	0	469	482	4,876	-4,394
389+69.75	44.75	73.00	0.00	404.06	64	0	770	546	5,839	-5,293
GAP FOR BUILDING										
397+62.50		0.00	0.00	604.36	0	0	0	546	5,839	-5,293
398+00.00	37.50	0.00	0.00	522.96	0	0	783	546	6,818	-6,272
398+13.95	13.95	0.00	0.00	494.43	0	0	263	546	7,146	-6,600
398+48.45	34.50	0.00	0.00	456.60	0	0	608	546	7,906	-7,360
398+82.95	34.50	0.00	0.00	346.54	0	0	513	546	8,548	-8,002
399+00.00	17.05	0.00	0.00	268.54	0	0	194	546	8,790	-8,244
399+57.36	57.36	0.00	0.00	103.53	0	0	395	546	9,284	-8,738
400+00.00	42.64	0.00	0.00	103.81	0	0	164	546	9,489	-8,943
400+18.41	18.41	0.00	0.00	83.81	0	0	64	546	9,569	-9,023
400+63.27	44.86	0.00	0.00	21.62	0	0	88	546	9,679	-9,133
401+69.73	106.46	0.00	0.00	0.00	0	0	43	546	9,733	-9,187
					546	0	7,786			

NOTES:	
1 - CUT	CUT INCLUDES SALVAGED/UNUSABLE PAVEMENT MATERIAL
2 - FILL	DOES NOT INCLUDE UNUSABLE PAVEMENT EXC VOLUME
3 - MASS ORDINATE	[(CUT - SALVAGED PAVT) - ((FILL) * FILL FACTOR)]

LOOP RAMP INSIDE ('L' R/L)

STATION	DISTANCE	AREA (SF)			INCREMENTAL VOL (CY) (UNADJUSTED)			CUMULATIVE VOL (CY)		
		CUT	SALVAGED/ UNUSABLE PAVEMENT MATERIAL	FILL	CUT NOTE 1	SALVAGED/ UNUSABLE PAVEMENT MATERIAL	FILL NOTE 2	CUT 1.00 NOTE 1	EXPANDED FILL 1.25	MASS ORDINATE NOTE 3
381+80.26	0.00	39.12	0.00	0.99	0	0	0	0	0	0
382+75.49	95.23	376.86	0.00	0.00	734	0	2	734	3	732
382+98.49	23.00	417.14	0.00	0.00	338	0	0	1,072	3	1,070
383+50.00	51.51	455.41	0.00	0.00	832	0	0	1,904	3	1,902
384+00.00	50.00	415.40	0.00	0.00	806	0	0	2,710	3	2,708
384+50.00	50.00	245.26	0.00	0.00	612	0	0	3,322	3	3,320
385+00.00	50.00	0.00	0.00	40.46	227	0	37	3,549	49	3,500
385+50.00	50.00	52.93	0.00	0.00	49	0	37	3,598	95	3,503
386+00.00	50.00	0.00	0.00	20.59	49	0	19	3,647	119	3,528
386+25.00	25.00	106.53	0.00	71.39	49	0	43	3,696	173	3,524
386+53.84	28.84	8.40	0.00	158.66	61	0	123	3,757	326	3,431
386+62.77	8.93	0.00	0.00	111.40	1	0	45	3,758	383	3,376
387+02.76	39.99	3.81	0.00	4.33	3	0	86	3,761	490	3,271
387+50.00	47.24	0.00	0.00	79.97	3	0	74	3,764	583	3,182
388+00.00	50.00	2.56	0.00	94.63	2	0	162	3,766	785	2,981
388+50.00	50.00	5.65	0.00	0.05	8	0	88	3,774	895	2,879
389+00.00	50.00	7.93	0.00	0.00	13	0	0	3,787	895	2,892
389+30.69	30.69	0.28	0.00	0.00	5	0	0	3,792	895	2,897
GAP FOR BUILDING										
390+90.00	0.00	7.63	0.00	0.00	0	0	0	3,792	895	2,897
390+97.20	7.20	4.40	0.00	0.00	2	0	0	3,794	895	2,899
391+15.51	18.31	6.25	0.00	0.00	4	0	0	3,798	895	2,903
391+25.00	9.49	4.05	0.00	0.00	2	0	0	3,800	895	2,905
391+33.24	8.24	3.97	0.00	0.00	1	0	0	3,801	895	2,906
391+50.00	16.76	3.78	0.00	0.00	2	0	0	3,803	895	2,908
391+60.75	10.75	2.20	0.00	0.00	1	0	0	3,804	895	2,909
391+63.49	2.74	0.00	0.00	1.58	0	0	0	3,804	895	2,909
391+65.80	2.31	0.00	0.00	1.19	0	0	0	3,804	895	2,909
391+94.46	28.66	0.00	0.00	41.03	0	0	22	3,804	923	2,882
392+00.00	5.54	0.00	0.00	51.94	0	0	10	3,804	935	2,869
393+00.00	100.00	0.00	0.00	47.08	0	0	183	3,804	1,164	2,640
394+00.00	100.00	0.00	0.00	55.86	0	0	191	3,804	1,403	2,402
394+88.78	88.78	0.00	0.00	51.14	0	0	176	3,804	1,623	2,182
395+00.00	11.22	0.00	0.00	88.32	0	0	29	3,804	1,659	2,145
395+50.00	50.00	0.00	0.00	167.92	0	0	237	3,804	1,955	1,849
396+00.00	50.00	0.01	0.00	200.23	0	0	341	3,804	2,381	1,423
396+50.00	50.00	2.68	0.00	140.58	2	0	316	3,806	2,776	1,030
397+00.00	50.00	30.07	0.00	145.27	30	0	265	3,836	3,108	729
397+50.00	50.00	43.61	0.00	99.59	68	0	227	3,904	3,391	513
397+76.56	26.56	54.71	0.00	81.76	48	0	89	3,952	3,503	450
398+00.00	23.44	67.33	0.00	73.43	53	0	67	4,005	3,586	419
398+48.45	48.45	65.72	0.00	83.73	119	0	141	4,124	3,763	362
398+59.95	11.50	67.46	0.00	87.02	28	0	36	4,152	3,808	345
399+00.00	40.05	62.88	0.00	78.77	97	0	123	4,249	3,961	288
399+50.00	50.00	61.94	0.00	78.84	116	0	146	4,365	4,144	221
400+00.00	50.00	60.46	0.00	84.83	113	0	152	4,478	4,334	144
400+57.36	57.36	62.99	0.00	83.18	131	0	178	4,609	4,556	53
400+68.86	11.50	60.01	0.00	83.22	26	0	35	4,635	4,600	35
401+00.00	31.14	40.88	0.00	85.83	58	0	97	4,693	4,721	-28
401+50.00	50.00	30.89	0.00	70.47	66	0	145	4,759	4,903	-144
401+69.73	19.73	0.00	0.00	0.00	11	0	26	4,770	4,935	-165
					4,770	0	3,948			

NOTES:	
1 - CUT	CUT INCLUDES SALVAGED/UNUSABLE PAVEMENT MATERIAL
2 - FILL	DOES NOT INCLUDE UNUSABLE PAVEMENT EXC VOLUME
3 - MASS ORDINATE	[(CUT - SALVAGED PAVT) - ((FILL) * FILL FACTOR)]

OUTSIDE LOOP - 'LO' R/L

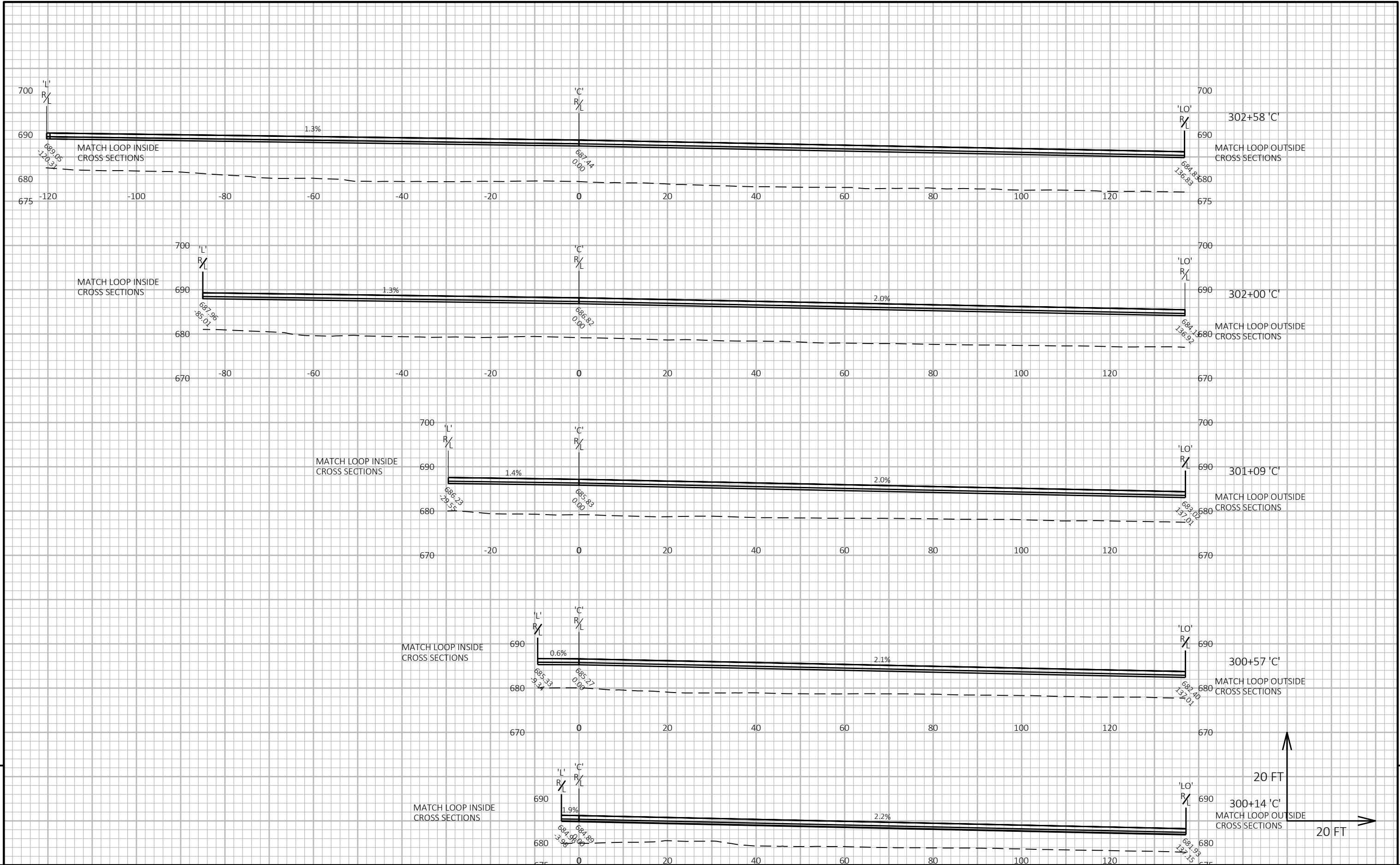
STATION	DISTANCE	AREA (SF)			INCREMENTAL VOL (CY) (UNADJUSTED)			CUMULATIVE VOL (CY)		
		CUT	SALVAGED/ UNUSABLE PAVEMENT MATERIAL	FILL	CUT NOTE 1	SALVAGED/ UNUSABLE PAVEMENT MATERIAL	FILL NOTE 2	CUT 1.00 NOTE 1	EXPANDED FILL 1.25	MASS ORDINATE NOTE 3
197+35.28	0.00	0.00	0.00	0.00	0	0	0	0	0	0
197+75.00	39.72	50.98	0.00	0.00	37	0	0	37	0	37
198+18.09	43.09	259.82	0.00	0.00	248	0	0	285	0	285
198+50.00	31.91	114.98	0.00	0.00	221	0	0	506	0	506
199+00.00	50.00	4.23	0.00	7.77	110	0	7	616	9	607
199+50.00	50.00	1.12	0.00	22.21	5	0	28	621	44	577
199+89.06	39.06	36.92	0.00	0.00	28	0	16	649	64	585
200+25.00	35.94	0.00	0.00	108.00	25	0	72	674	154	520
200+50.00	25.00	32.30	0.00	114.33	15	0	103	689	283	407
200+74.33	24.33	28.33	0.00	128.13	27	0	109	716	419	297
201+50.00	75.67	18.13	0.00	194.11	65	0	452	781	984	-203
201+52.00	2.00	19.60	0.00	213.66	1	0	15	782	1,003	-221
202+00.00	48.00	30.47	0.00	236.98	44	0	401	826	1,504	-678
203+00.00	100.00	40.98	0.00	248.35	132	0	899	958	2,628	-1,670
203+51.46	51.46	56.52	0.00	246.81	93	0	472	1,051	3,218	-2,167
204+00.00	48.54	0.38	0.00	259.23	51	0	455	1,102	3,786	-2,684
205+00.00	100.00	0.00	0.00	276.27	1	0	992	1,103	5,026	-3,923
206+00.00	100.00	0.00	0.00	228.48	0	0	935	1,103	6,195	-5,092
207+00.00	100.00	0.00	0.00	243.26	0	0	874	1,103	7,288	-6,185
208+00.00	100.00	0.00	0.00	247.56	0	0	909	1,103	8,424	-7,321
209+00.00	100.00	0.00	0.00	242.83	0	0	908	1,103	9,559	-8,456
210+00.00	100.00	0.00	0.00	174.91	0	0	774	1,103	10,526	-9,423
211+00.00	100.00	0.00	0.00	126.75	0	0	559	1,103	11,225	-10,122
212+00.00	100.00	9.93	0.00	91.17	18	0	404	1,121	11,730	-10,609
212+35.09	35.09	16.20	0.00	85.22	17	0	115	1,138	11,874	-10,736
213+00.00	64.91	37.98	0.00	61.81	65	0	177	1,203	12,095	-10,892
214+00.00	100.00	41.26	0.00	74.15	147	0	252	1,350	12,410	-11,060
214+11.50	11.50	40.64	0.00	53.78	17	0	27	1,367	12,444	-11,077
214+73.25	61.75	40.60	0.00	62.19	93	0	133	1,460	12,610	-11,150
215+00.00	26.75	36.58	0.00	61.33	38	0	61	1,498	12,686	-11,188
215+62.39	62.39	0.00	0.00	4.28	42	0	76	1,540	12,781	-11,241
					1,540	0	10,225			

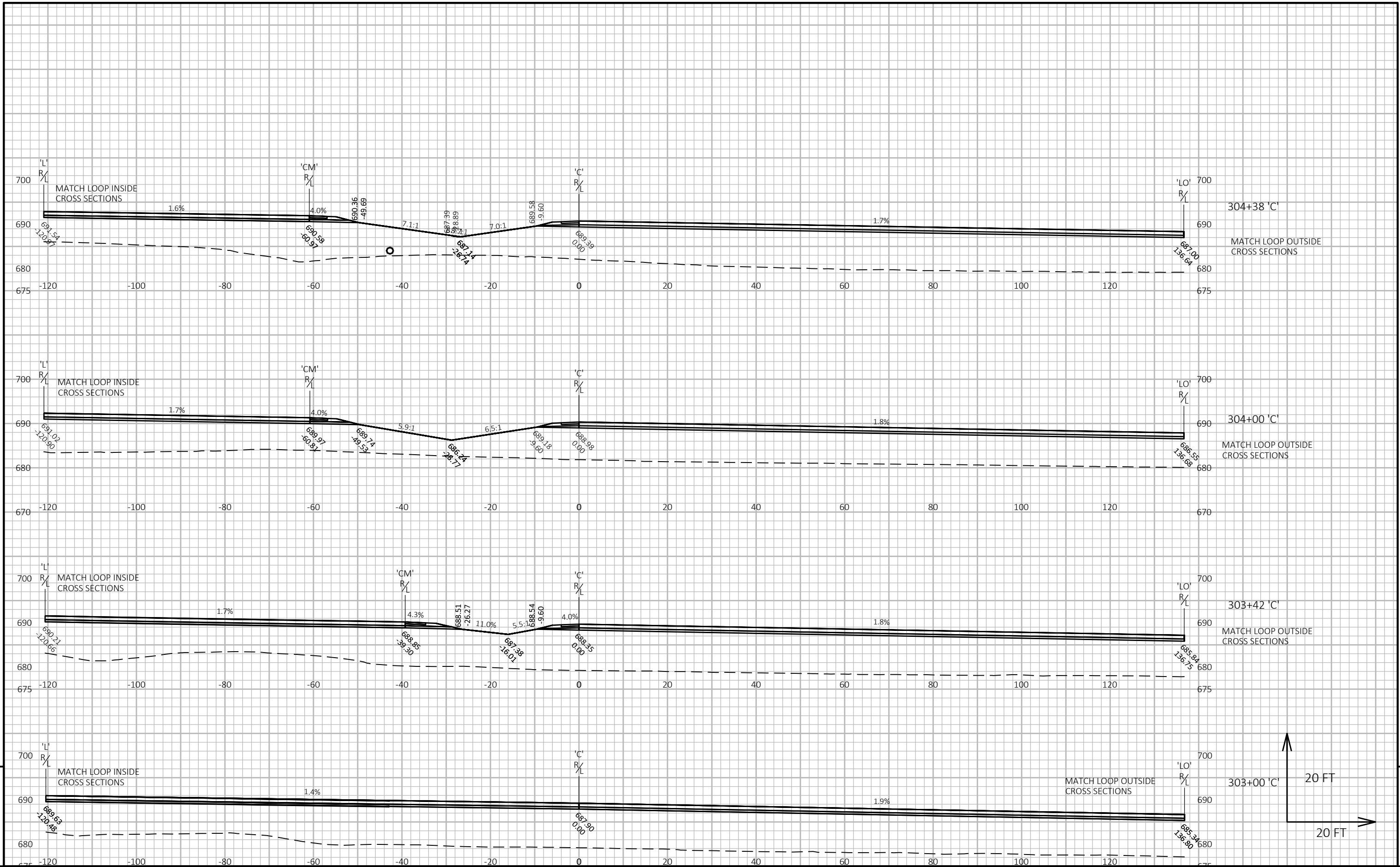
NOTES:	
1 - CUT	CUT INCLUDES SALVAGED/UNUSABLE PAVEMENT MATERIAL
2 - FILL	DOES NOT INCLUDE UNUSABLE PAVEMENT EXC VOLUME
3 - MASS ORDINATE	[(CUT - SALVAGED PAVT) - ((FILL) * FILL FACTOR)]

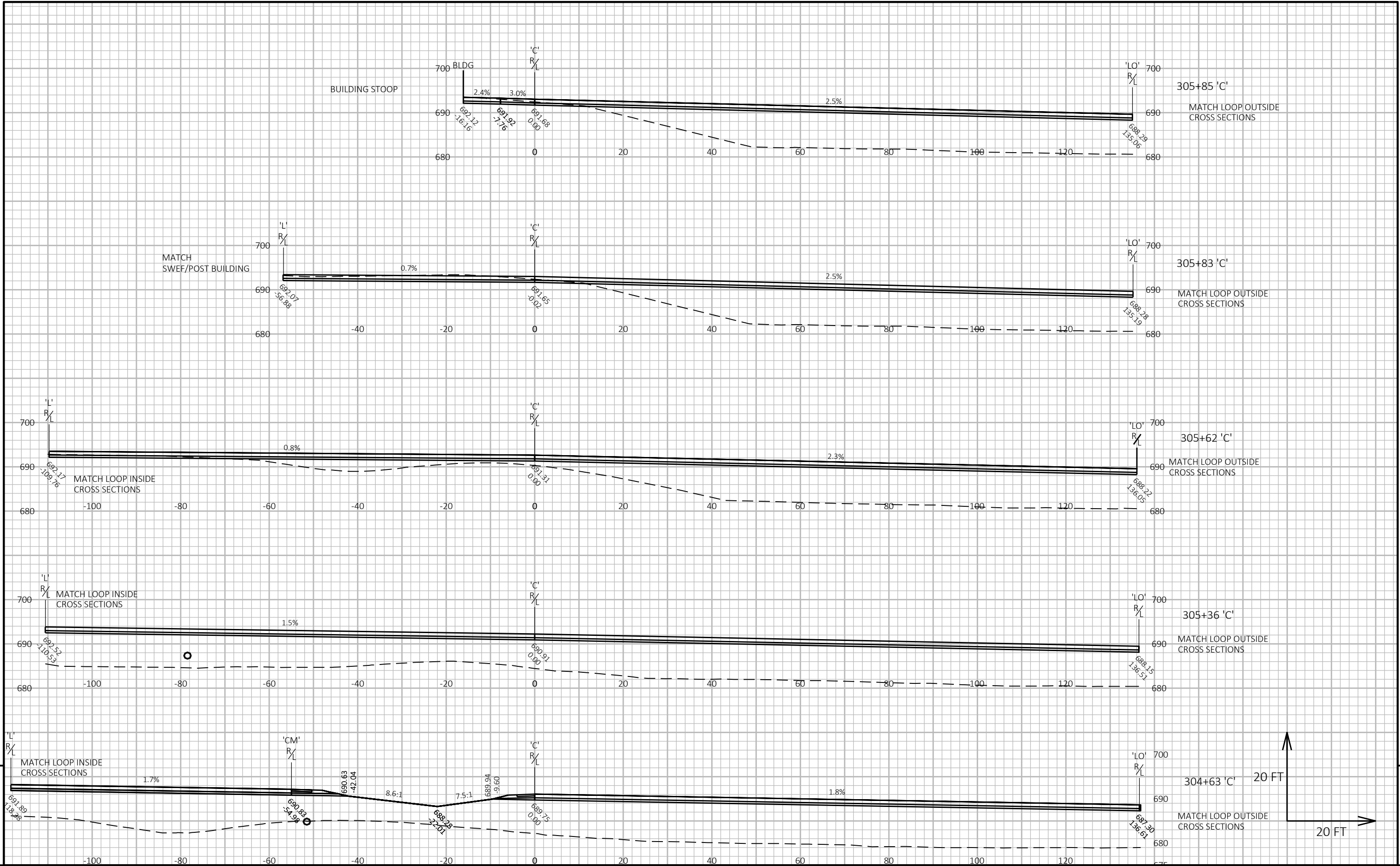
SWEF RAMP & TEMPORARY RAMP ('R' R/L)

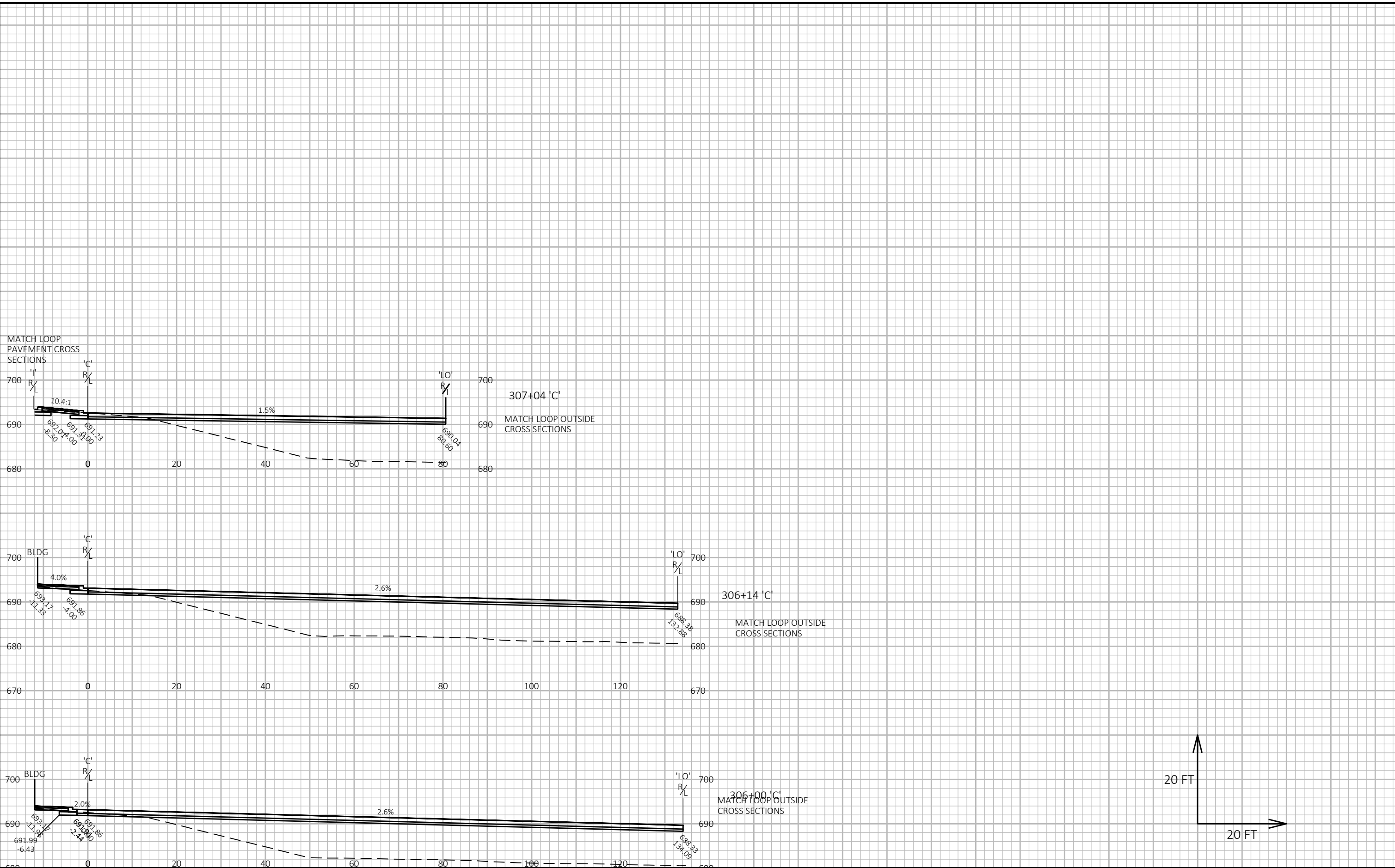
STATION	DISTANCE	AREA (SF)			INCREMENTAL VOL (CY) (UNADJUSTED)			CUMULATIVE VOL (CY)		
		CUT	SALVAGED/ UNUSABLE PAVEMENT MATERIAL	FILL	CUT NOTE 1	SALVAGED/ UNUSABLE PAVEMENT MATERIAL	FILL NOTE 2	CUT 1.00 NOTE 1	EXPANDED FILL 1.25	MASS ORDINATE NOTE 3
101+44.53	0.00	34.98	0.00	0.00	0	0	0	0	0	0
102+00.00	55.47	37.08	0.00	0.00	74	0	0	74	0	74
103+00.00	100.00	42.05	0.00	7.08	147	0	13	221	16	205
104+00.00	100.00	75.87	14.17	7.80	218	26	28	439	51	362
105+00.00	100.00	66.21	14.23	31.15	263	53	72	702	141	482
105+31.83	31.83	68.38	14.17	39.60	79	17	42	781	194	491
105+74.95	43.12	14.65	14.17	45.04	66	23	68	847	279	449
106+00.00	25.05	8.50	14.22	24.55	11	13	32	858	319	407
106+61.54	61.54	0.76	14.31	50.21	11	33	85	869	425	279
107+00.00	38.46	0.00	14.35	69.43	1	20	85	870	531	154
107+68.52	68.52	0.00	14.17	110.62	0	36	228	870	816	-167
108+00.00	31.48	10.21	14.17	205.98	6	17	185	876	1,048	-410
108+23.75	23.75	0.00	14.22	263.82	4	12	207	880	1,306	-676
109+00.00	76.25	0.00	3.30	336.63	0	25	848	880	2,366	-1,761
109+10.65	10.65	0.00	2.00	346.79	0	1	135	880	2,535	-1,931
110+00.00	89.35	0.00	0.00	373.22	0	3	1,191	880	4,024	-3,423
111+00.00	100.00	0.00	0.00	459.46	0	0	1,542	880	5,951	-5,350
111+80.77	80.77	0.00	0.00	494.67	0	0	1,427	880	7,735	-7,134
112+00.00	19.23	0.00	0.00	514.38	0	0	359	880	8,184	-7,583
112+50.00	50.00	0.00	0.00	569.58	0	0	1,004	880	9,439	-8,838
112+85.00	35.00	0.00	0.00	594.56	0	0	755	880	10,383	-9,782
113+23.91	38.91	0.00	0.00	376.02	0	0	699	880	11,256	-10,655
113+45.02	21.11	11.55	0.00	228.71	5	0	236	885	11,551	-10,945
113+54.45	9.43	17.68	0.00	212.52	5	0	77	890	11,648	-11,037
113+71.42	16.97	22.14	0.00	201.59	13	0	130	903	11,810	-11,186
113+75.00	3.58	26.45	0.00	195.49	3	0	26	906	11,843	-11,216
114+00.00	25.00	19.45	0.00	211.91	21	0	189	927	12,079	-11,431
114+33.42	33.42	1.12	0.00	382.96	13	0	368	940	12,539	-11,878
114+60.00	26.58	0.00	0.00	439.36	1	0	405	941	13,045	-12,383
114+75.00	15.00	0.78	0.00	397.27	0	0	232	941	13,335	-12,673
114+83.00	8.00	1.43	0.00	346.63	0	0	110	941	13,473	-12,811
114+94.56	11.56	3.56	0.00	313.14	1	0	141	942	13,649	-12,986
115+17.86	23.30	6.87	0.00	265.32	4	0	250	946	13,961	-13,294
115+36.73	18.87	20.42	0.00	226.06	10	0	172	956	14,176	-13,499
116+00.00	63.27	15.25	0.00	122.83	42	0	409	998	14,688	-13,969
116+25.00	25.00	8.44	0.00	117.40	11	0	111	1,009	14,826	-14,096
116+50.00	25.00	0.00	0.00	96.05	4	0	99	1,013	14,950	-14,216
117+00.00	50.00	0.20	0.00	85.83	0	0	168	1,013	15,160	-14,426
117+50.00	50.00	0.00	0.00	165.51	0	0	233	1,013	15,451	-14,717
118+00.00	50.00	0.07	0.00	145.92	0	0	288	1,013	15,811	-15,077
118+46.73	46.73	0.82	0.00	116.61	1	0	227	1,014	16,095	-15,360
118+99.95	53.22	57.37	0.00	95.62	57	0	209	1,071	16,356	-15,564
119+50.00	50.05	204.52	0.00	66.94	243	0	151	1,314	16,545	-15,510
120+00.00	50.00	126.34	0.00	41.74	306	0	101	1,620	16,671	-15,330
121+00.00	100.00	107.12	0.00	6.06	432	0	89	2,052	16,783	-15,010
122+00.00	100.00	72.80	9.15	0.00	333	17	11	2,385	16,796	-14,707
123+00.00	100.00	44.23	18.75	0.00	217	52	0	2,602	16,796	-14,542
123+16.00	16.00	13.08	0.00	0.00	17	6	0	2,619	16,796	-14,531
					2,619	354	13,437			

NOTES:	
1 - CUT	CUT INCLUDES SALVAGED/UNUSABLE PAVEMENT MATERIAL
2 - FILL	DOES NOT INCLUDE UNUSABLE PAVEMENT EXC VOLUME
3 - MASS ORDINATE	[(CUT - SALVAGED PAVT) - ((FILL) * FILL FACTOR)]

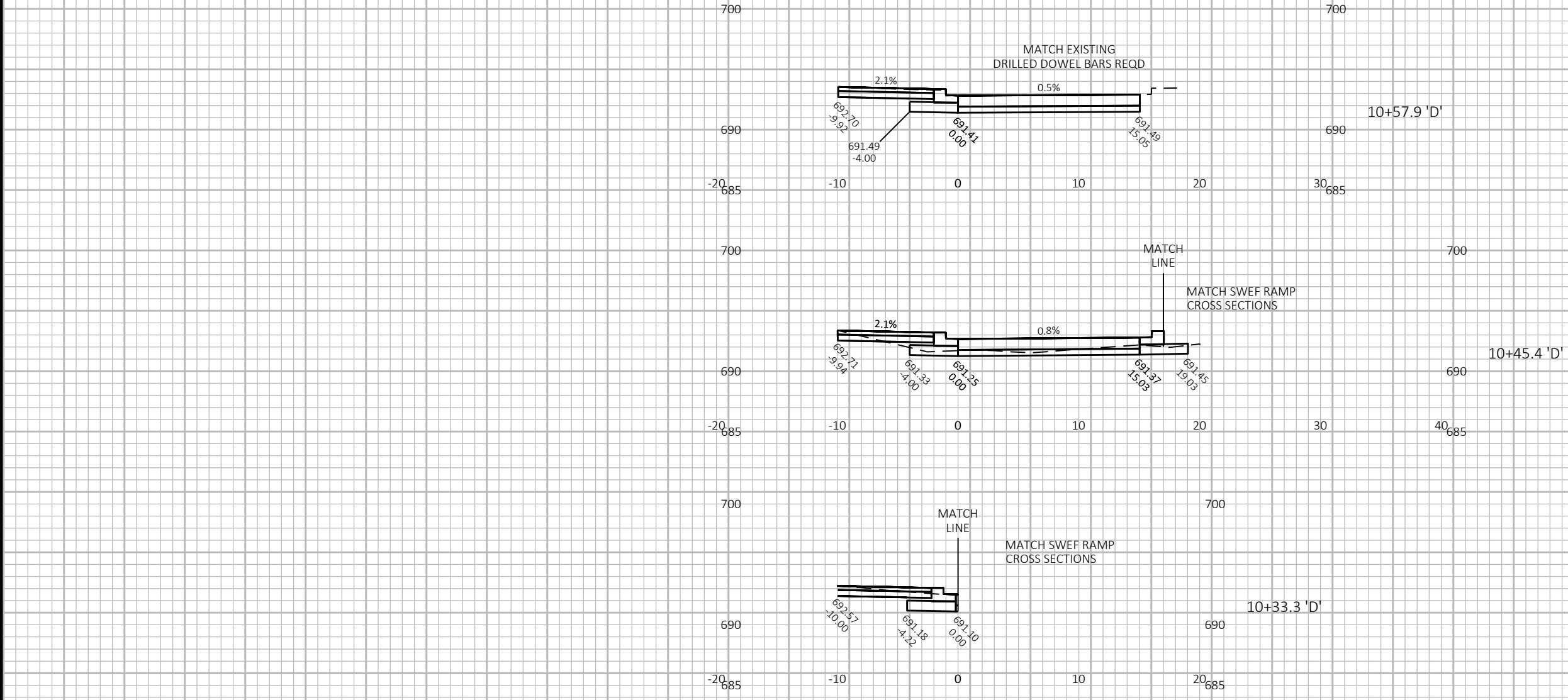




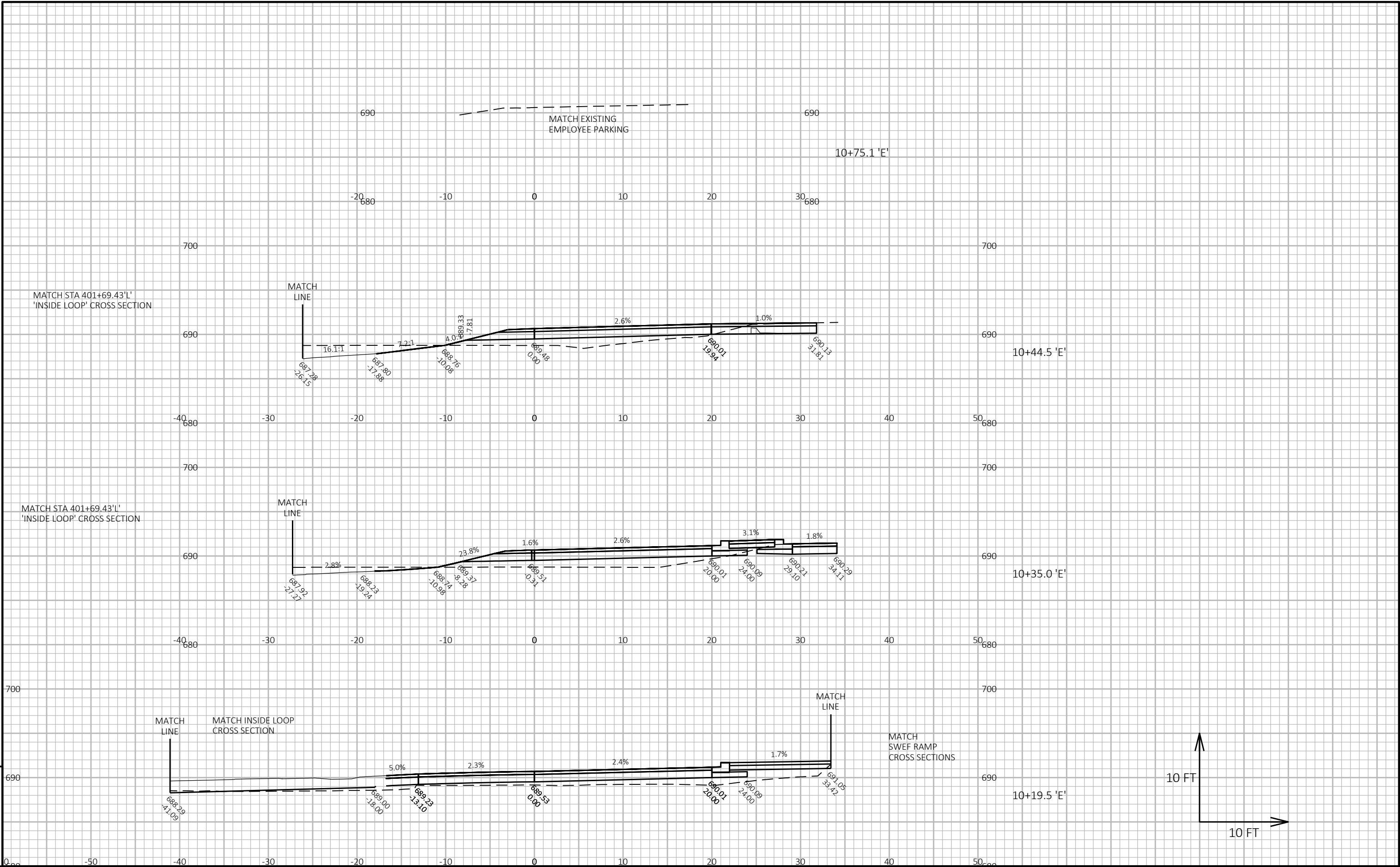


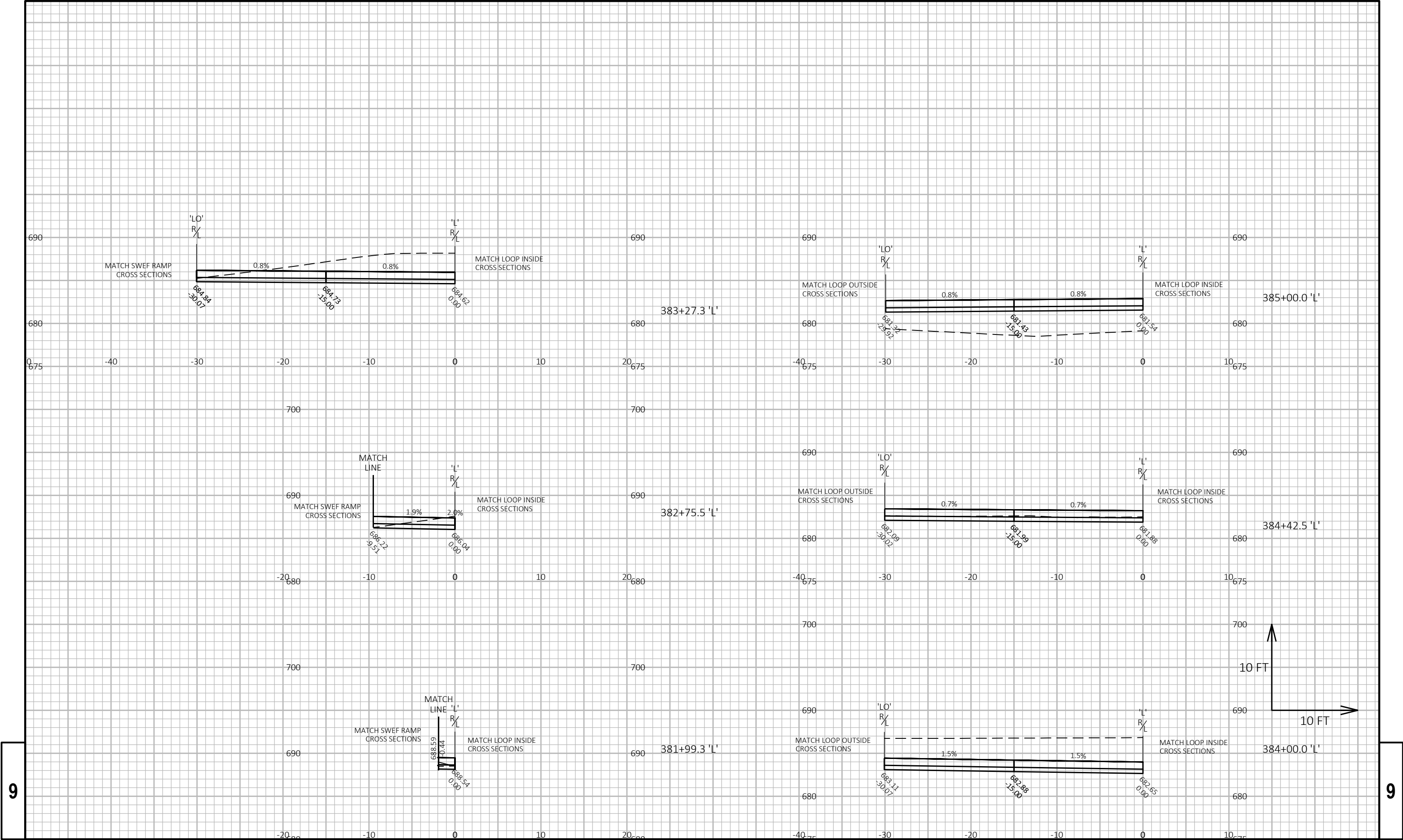


9



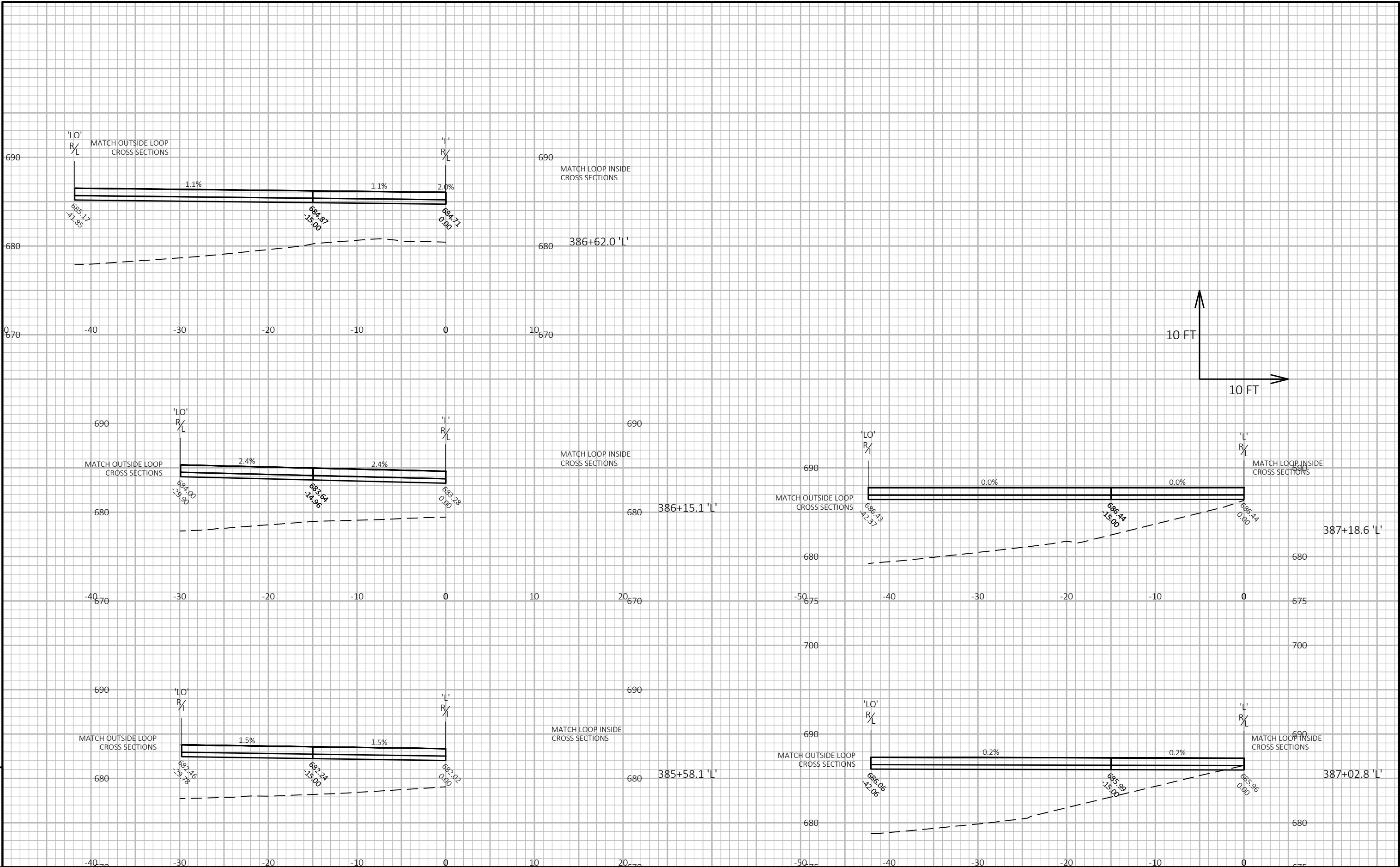
9

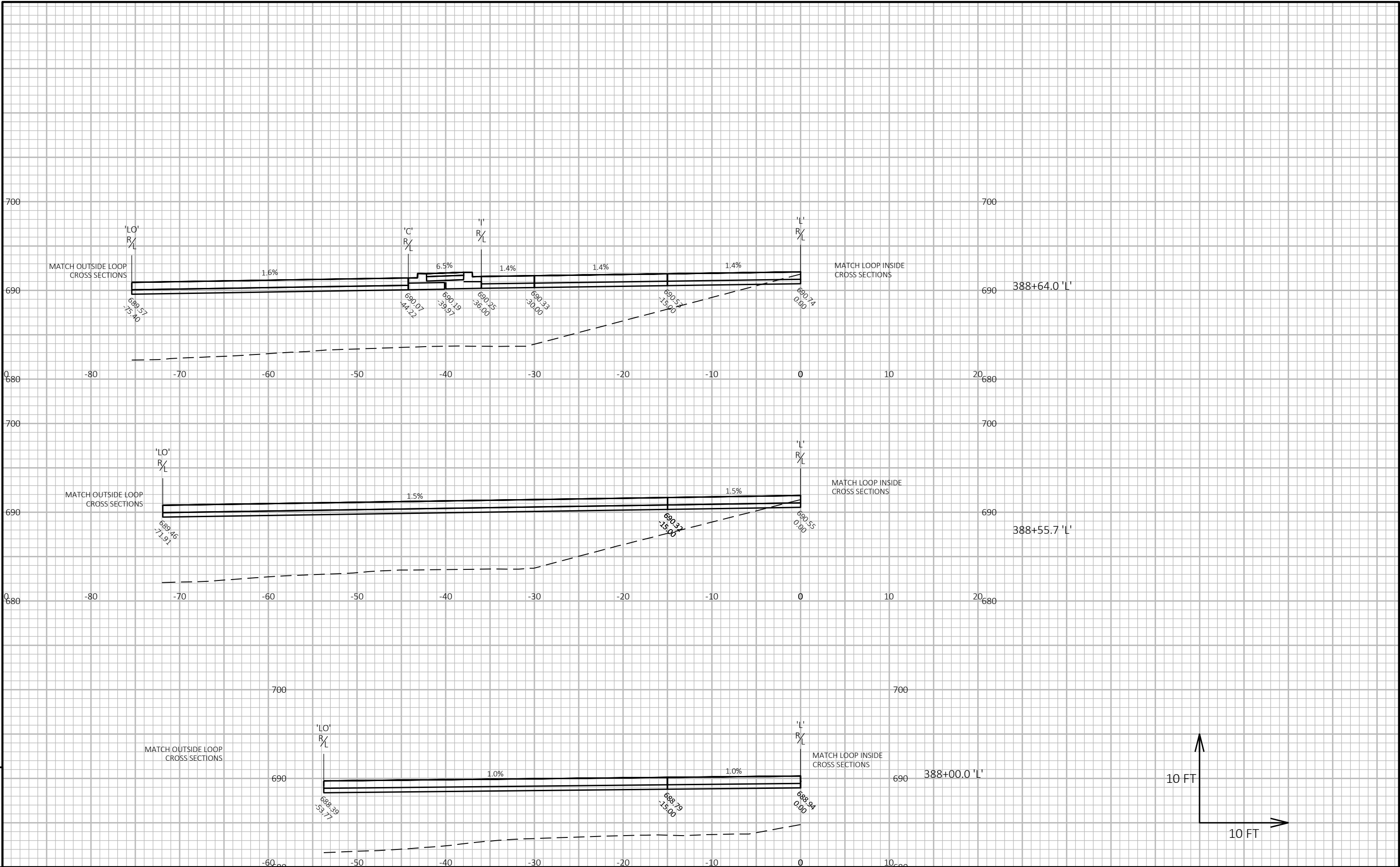


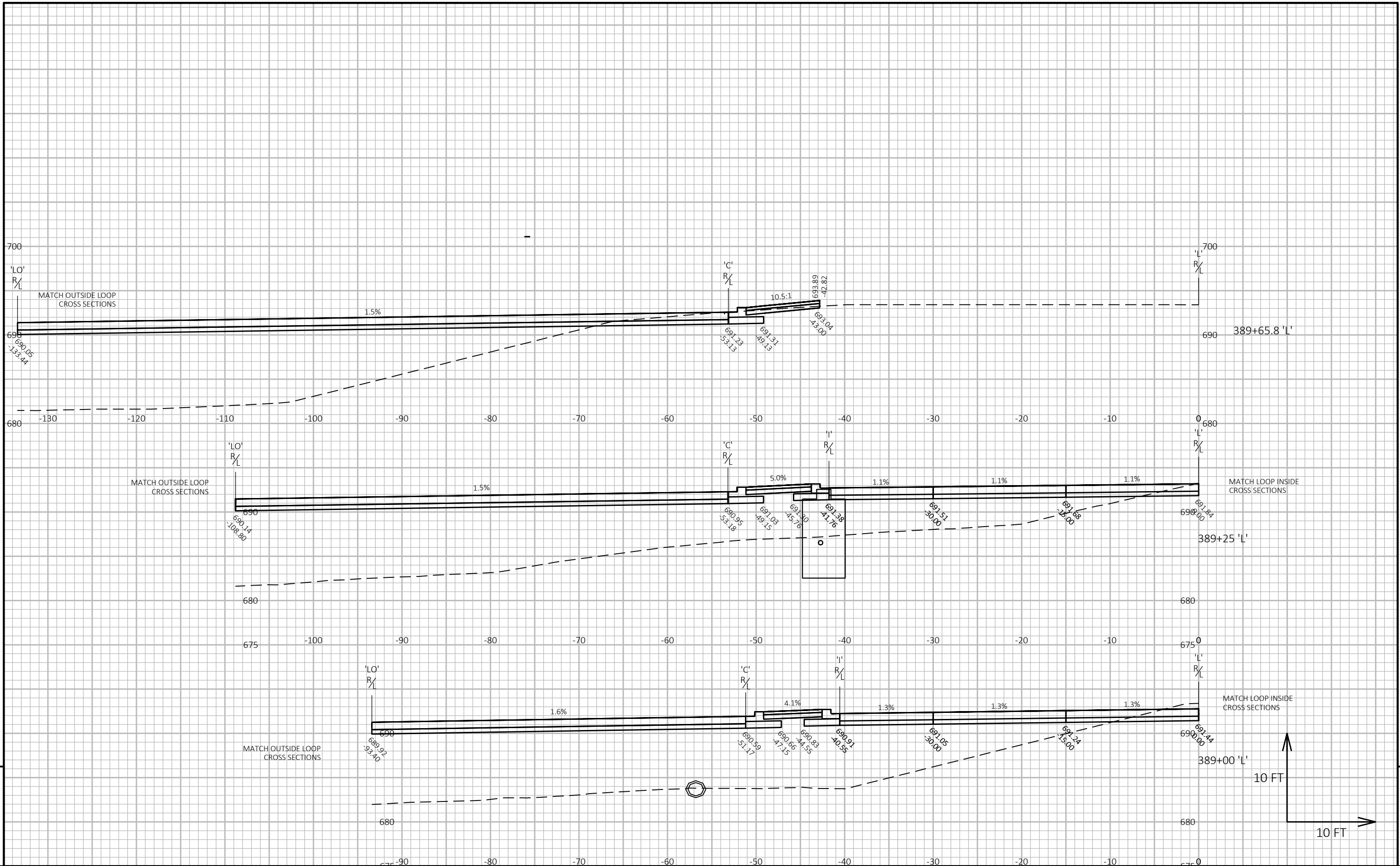


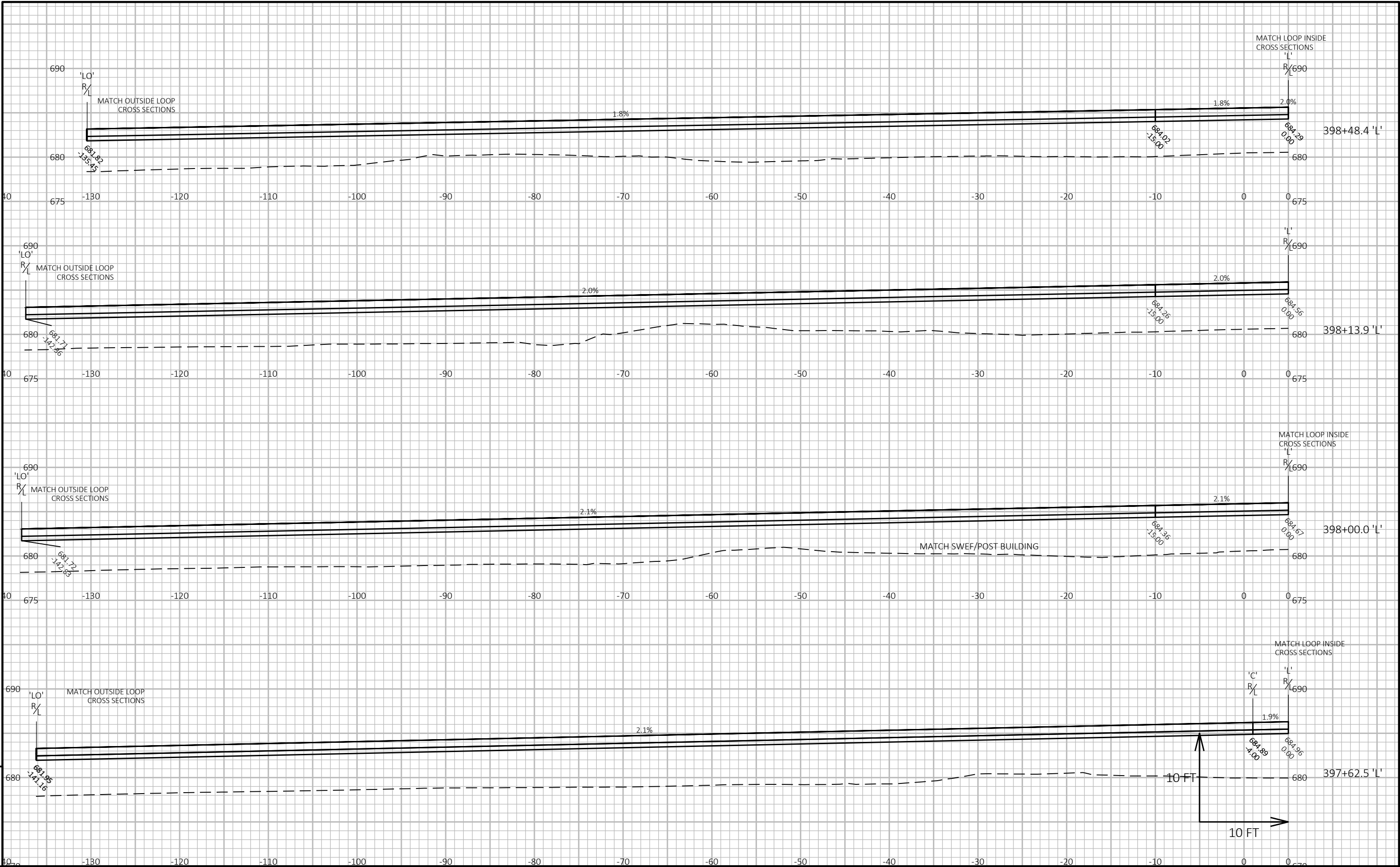
9

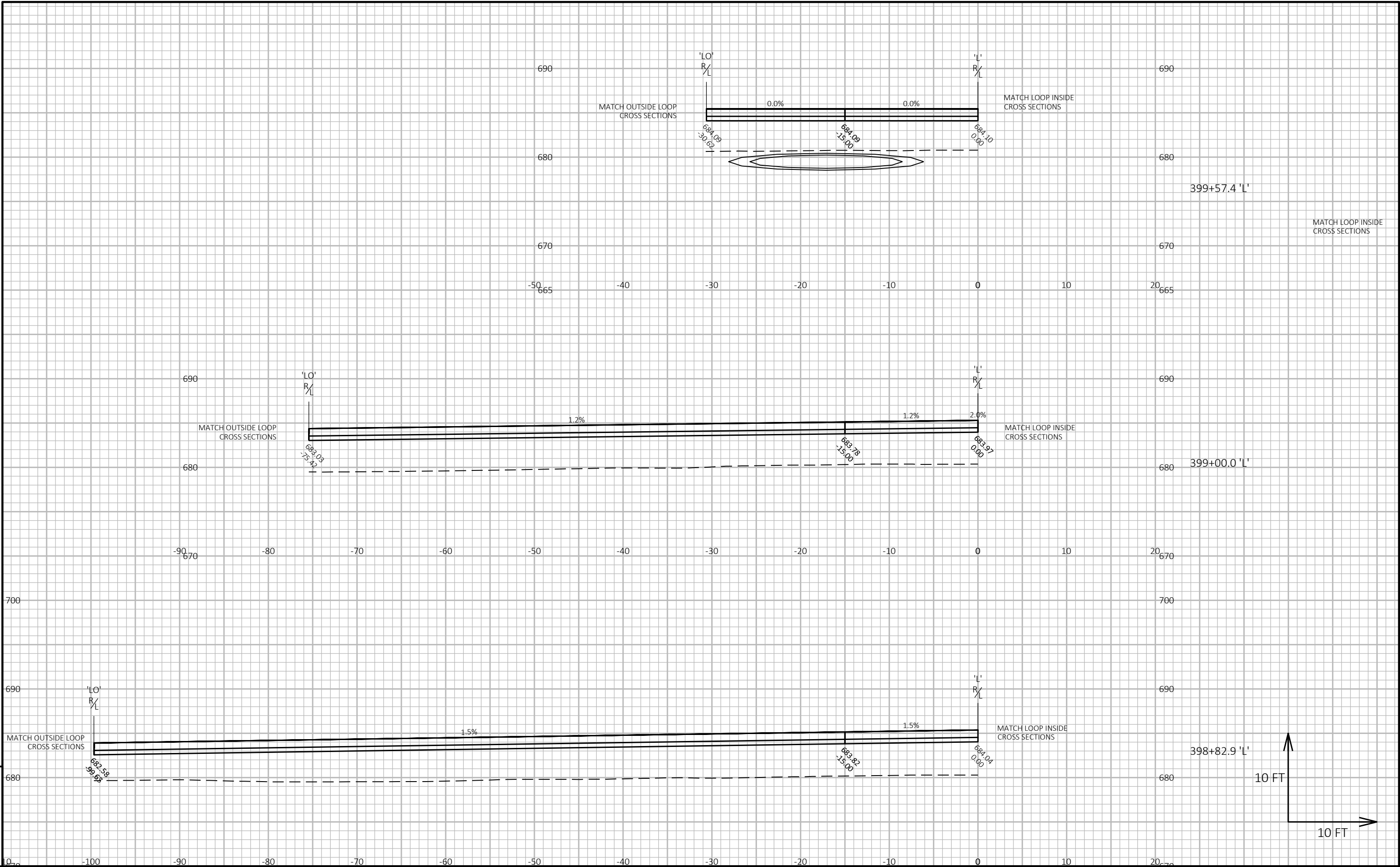
9

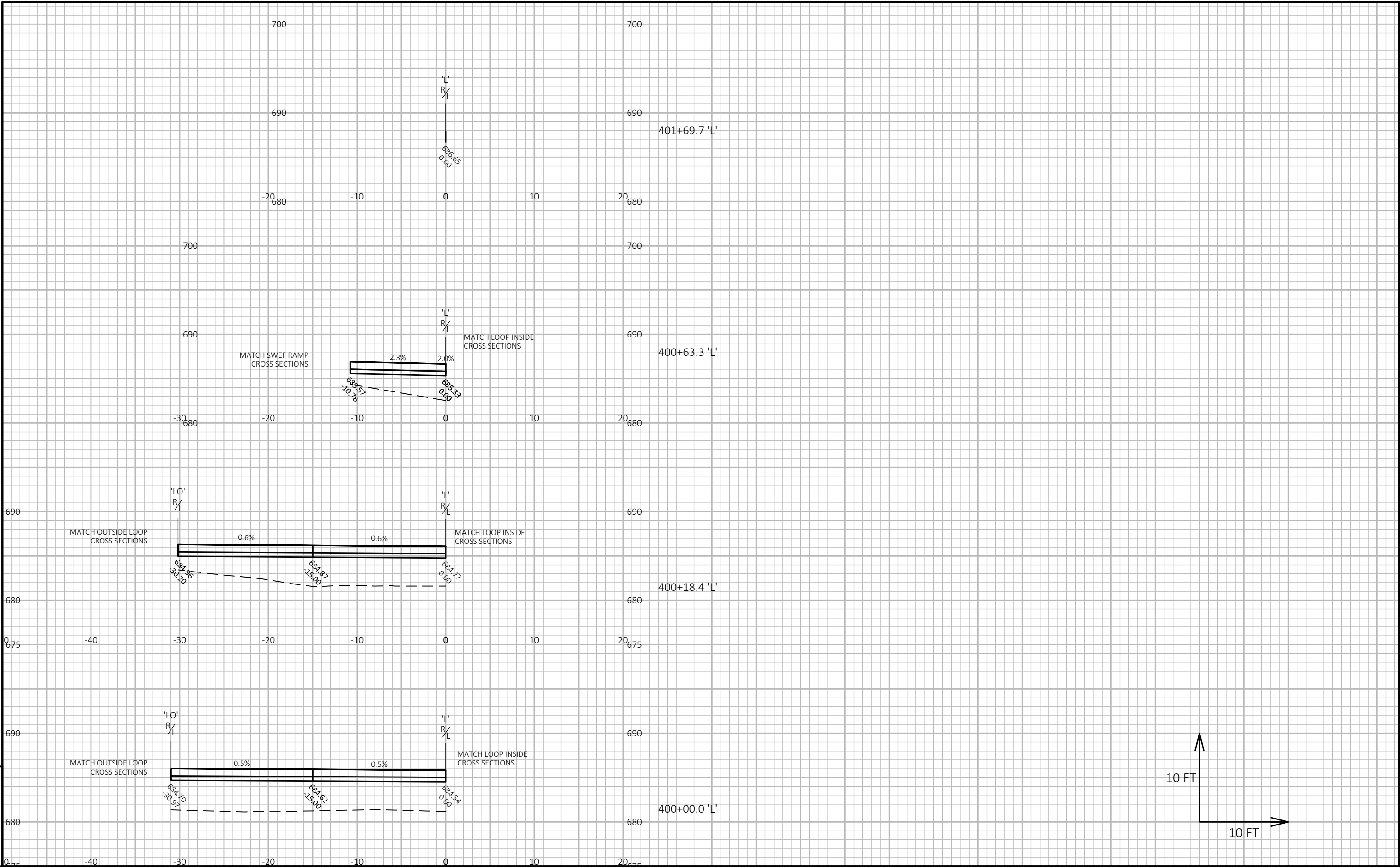


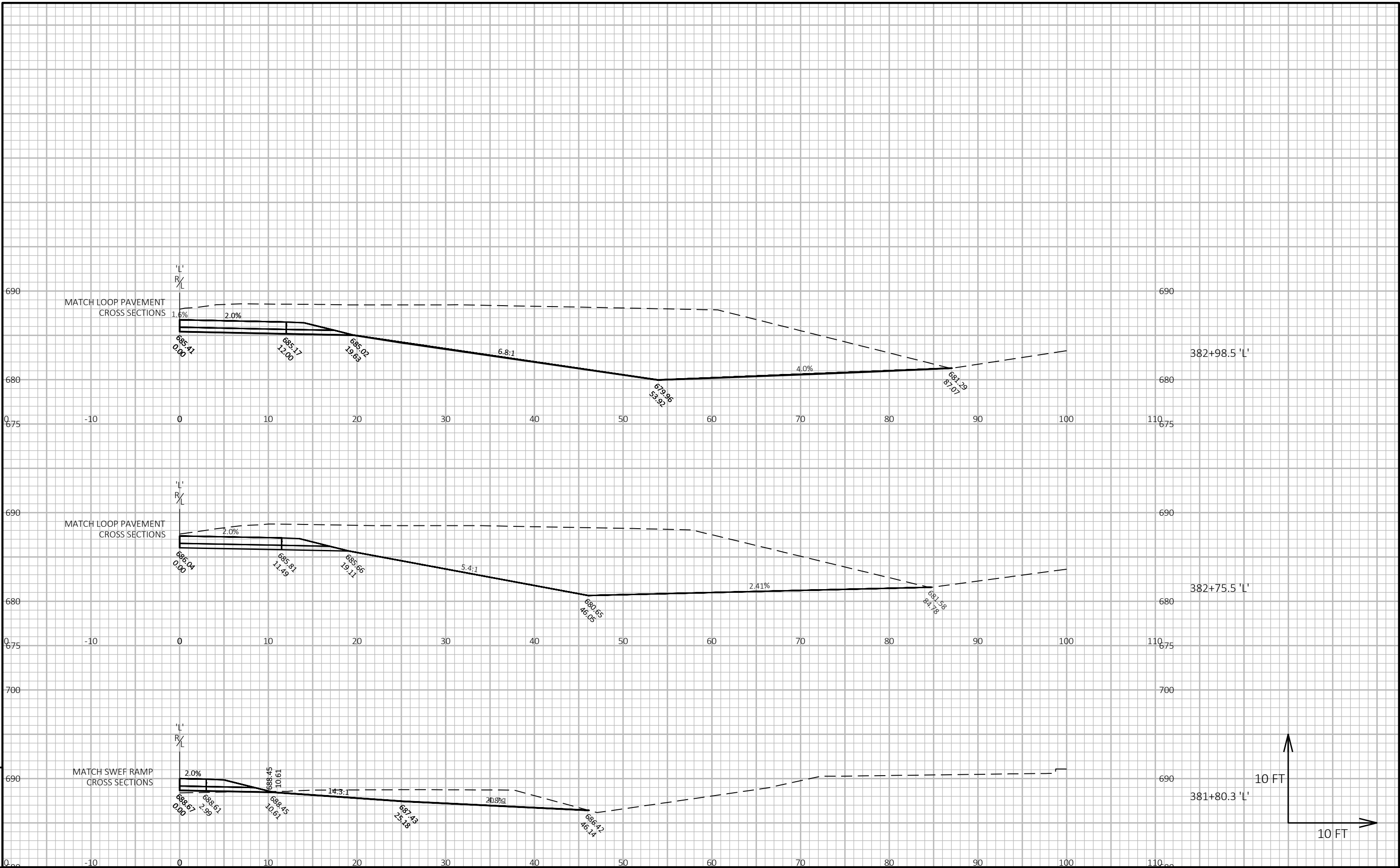


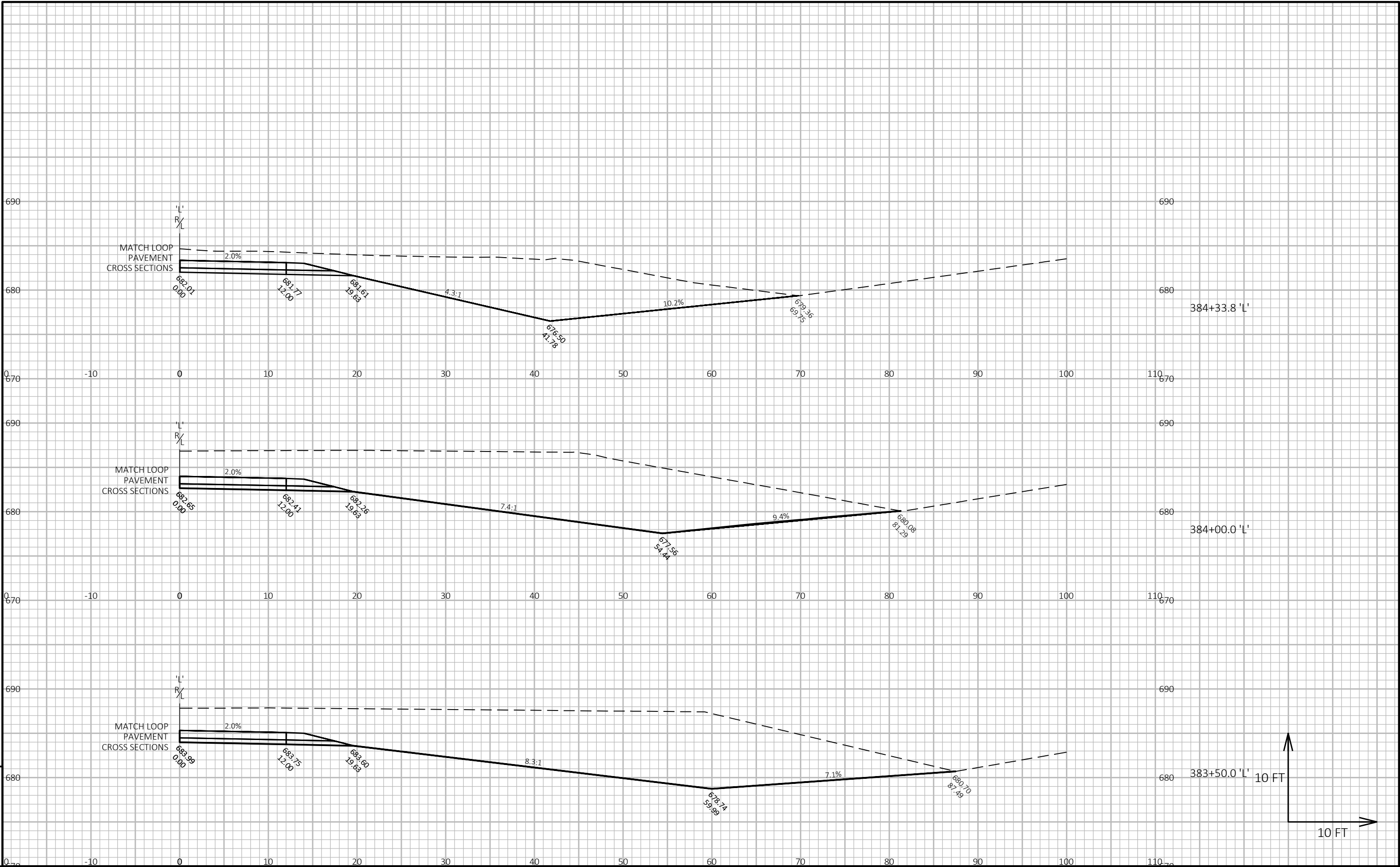


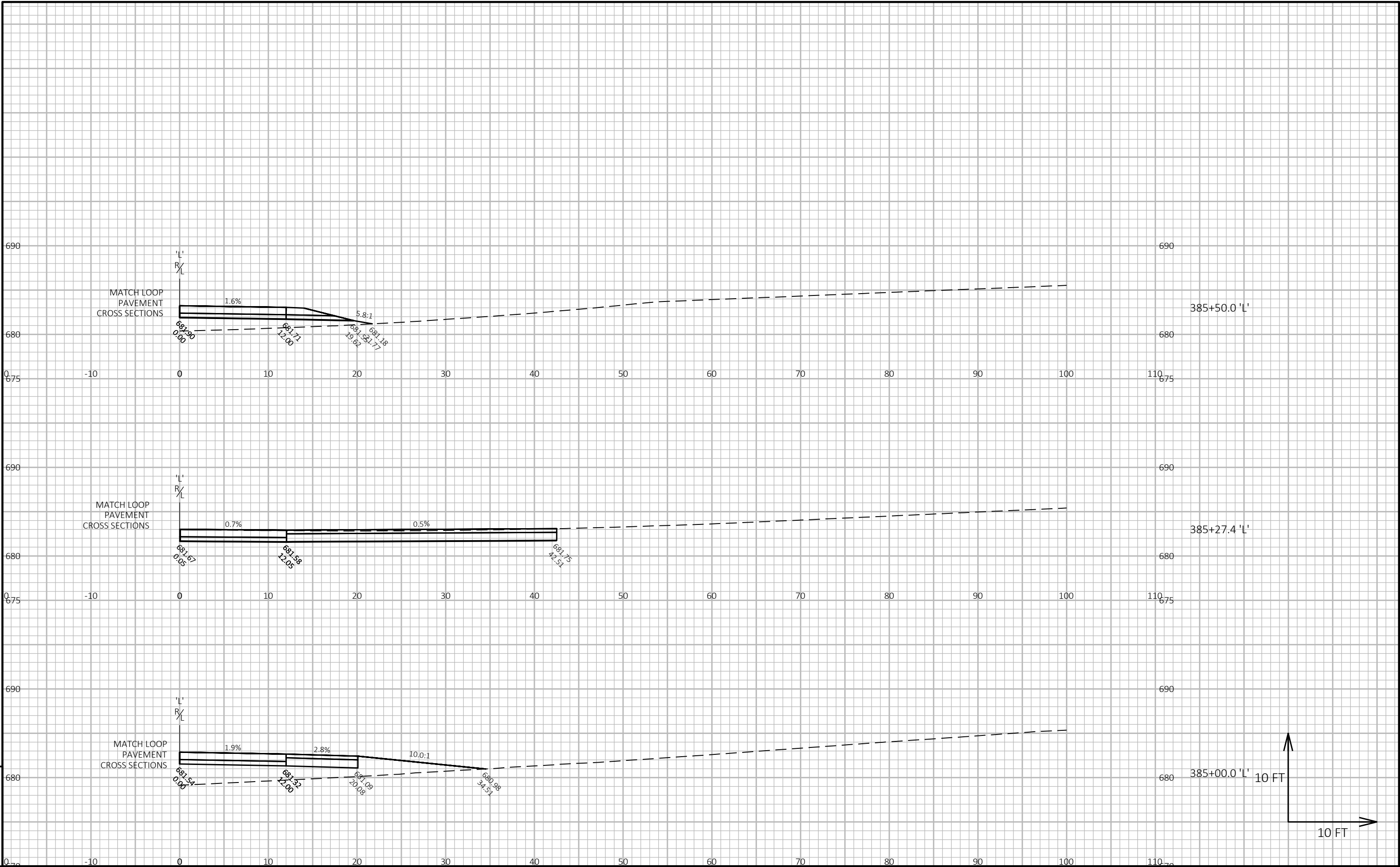


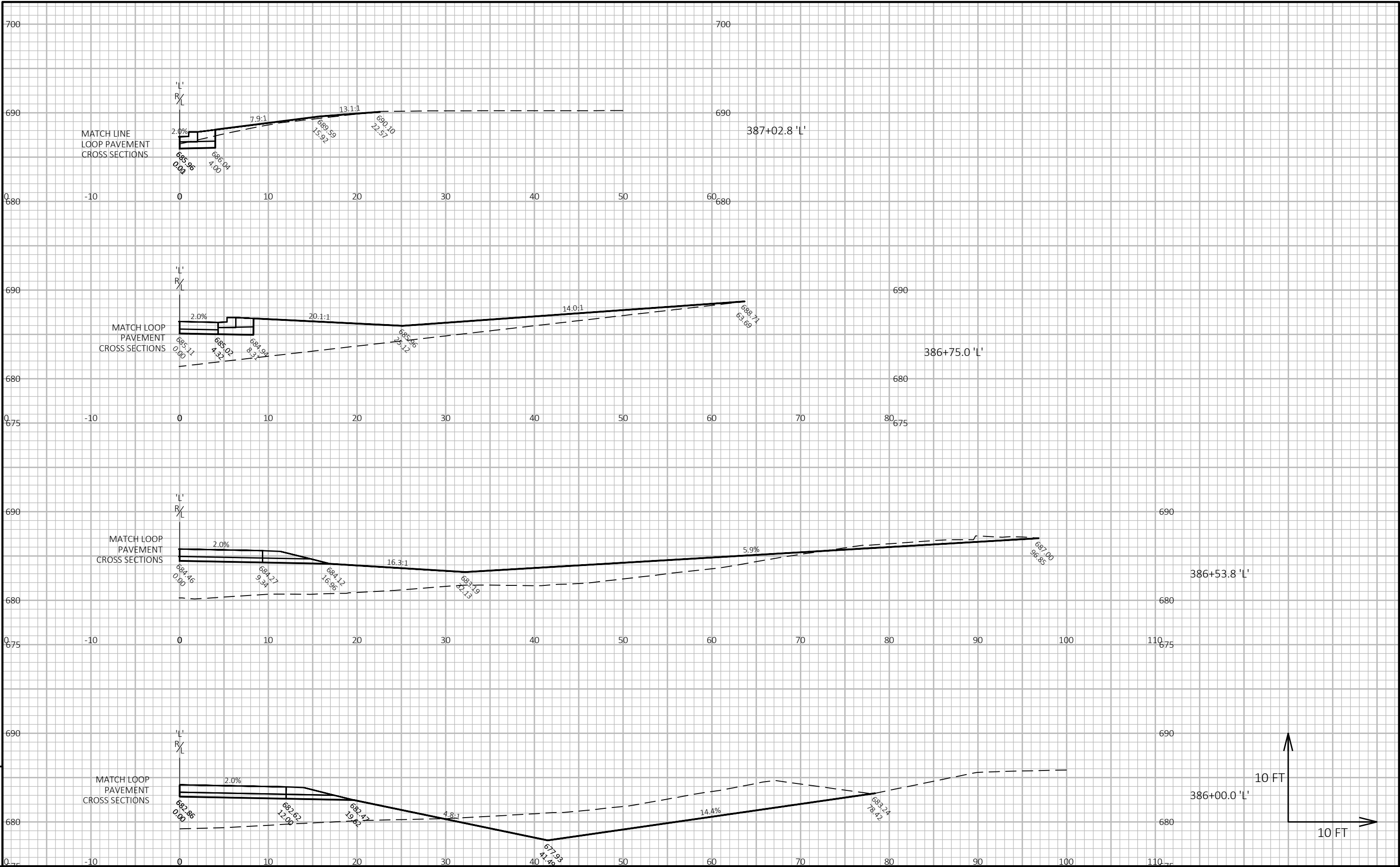


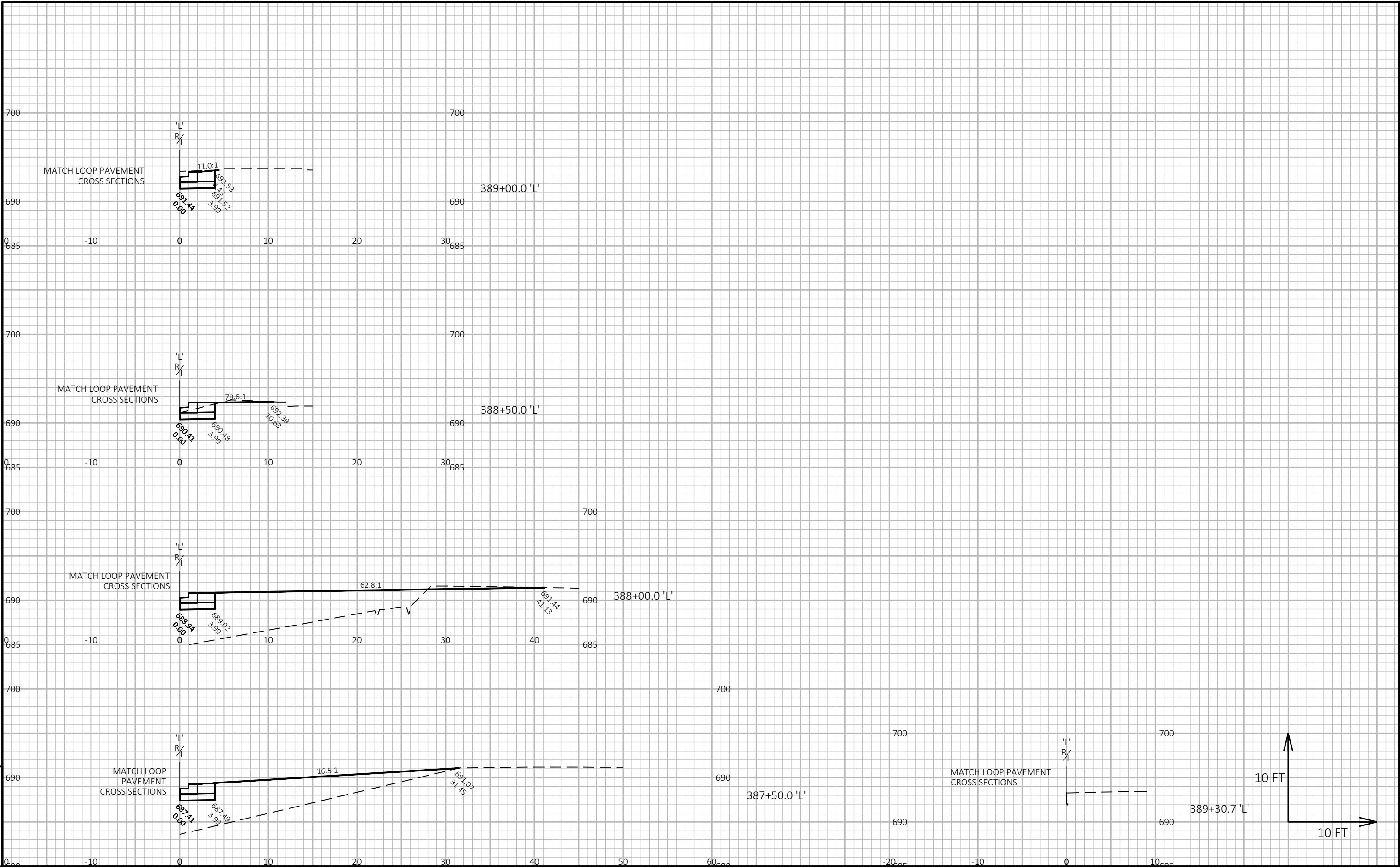




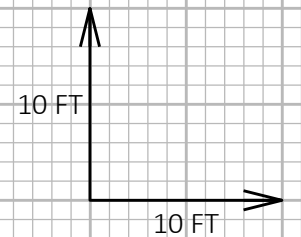
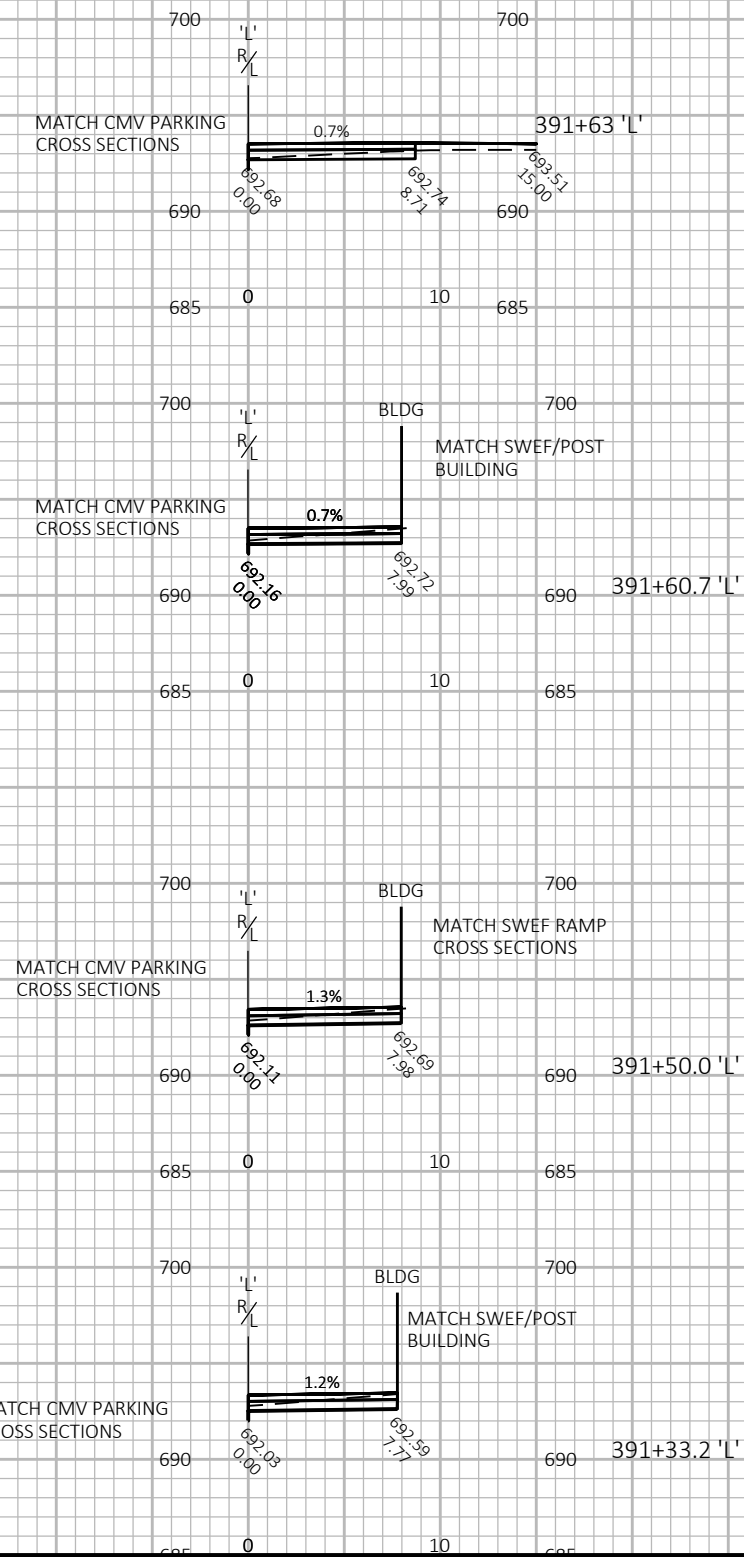
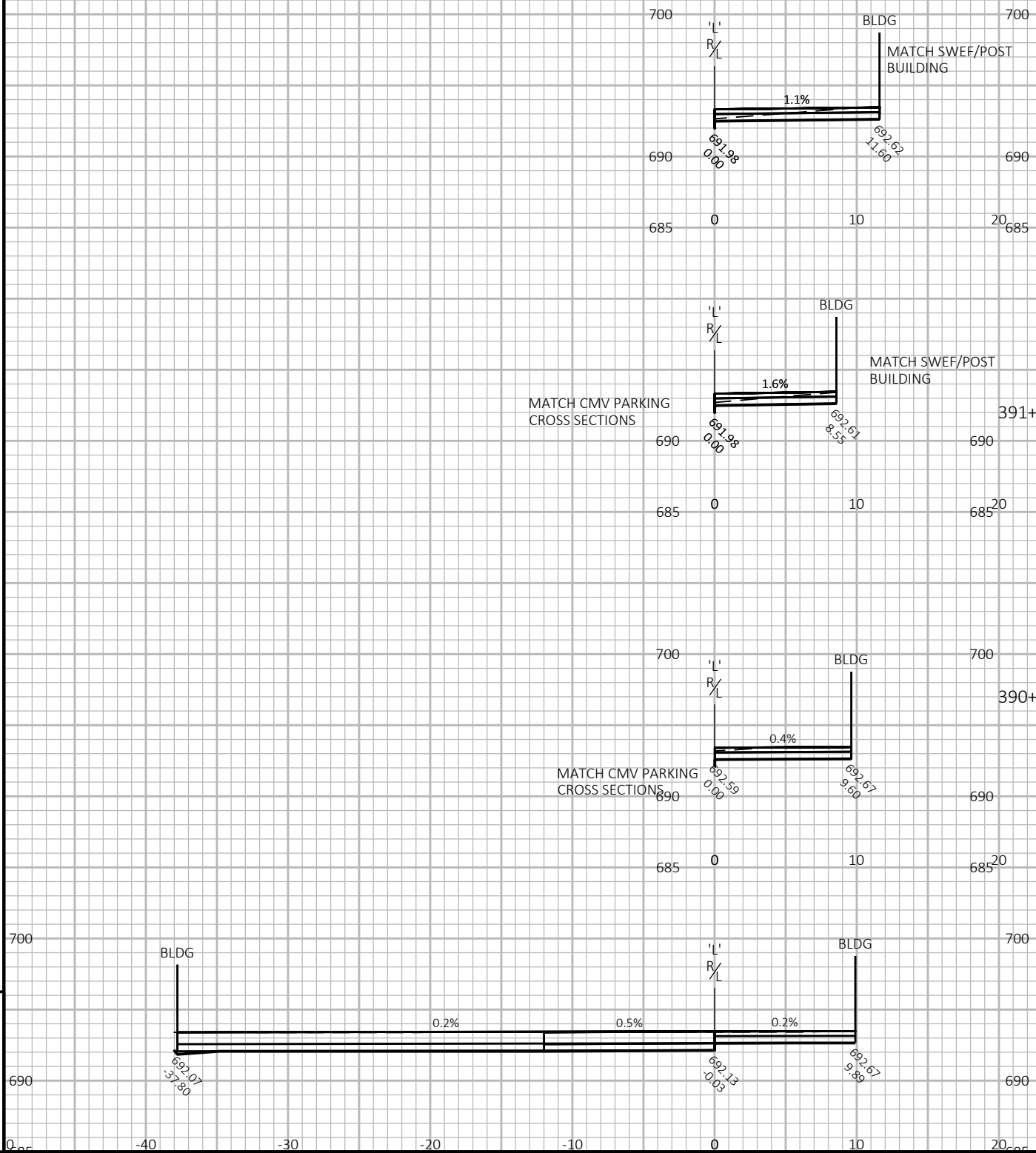




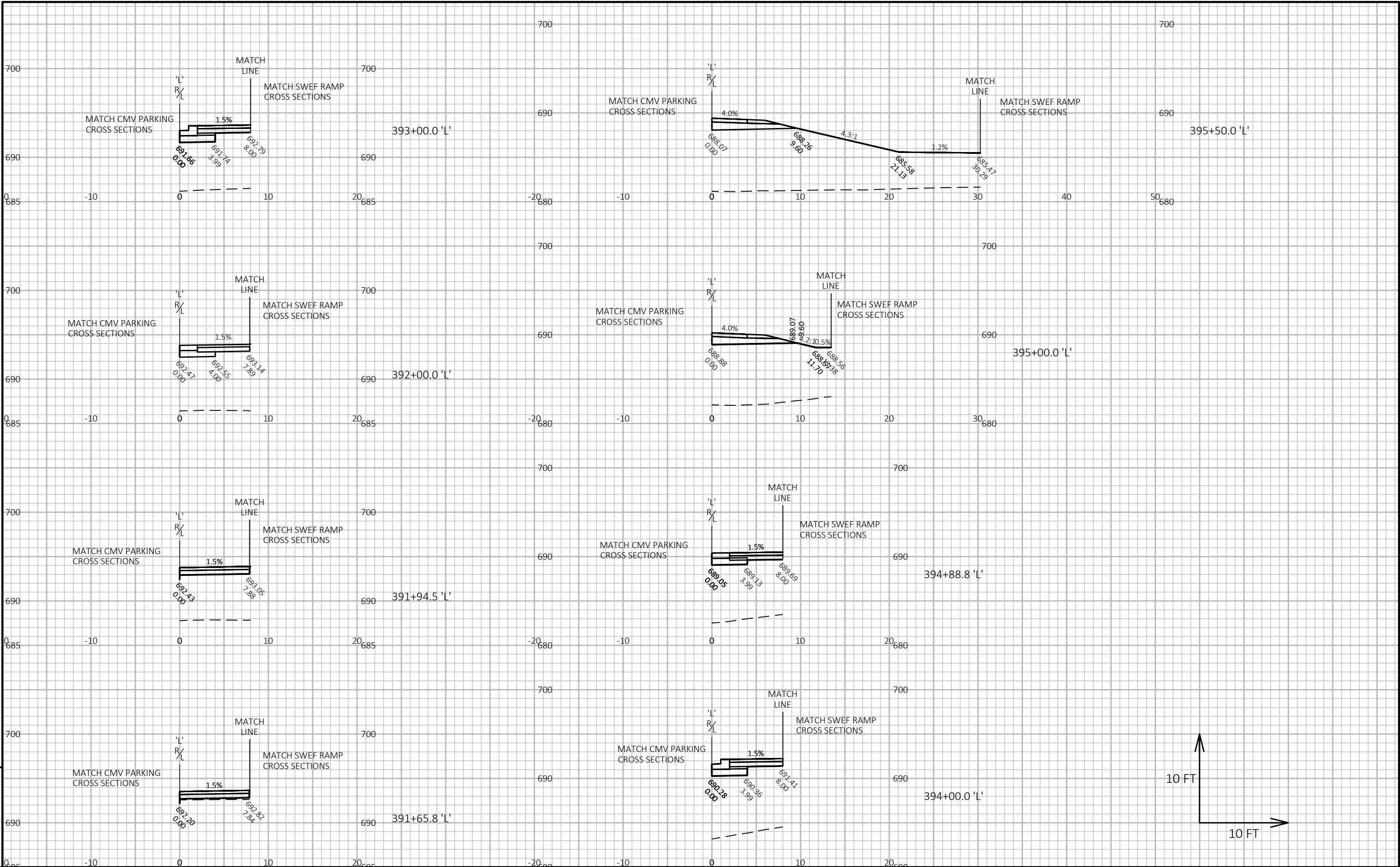


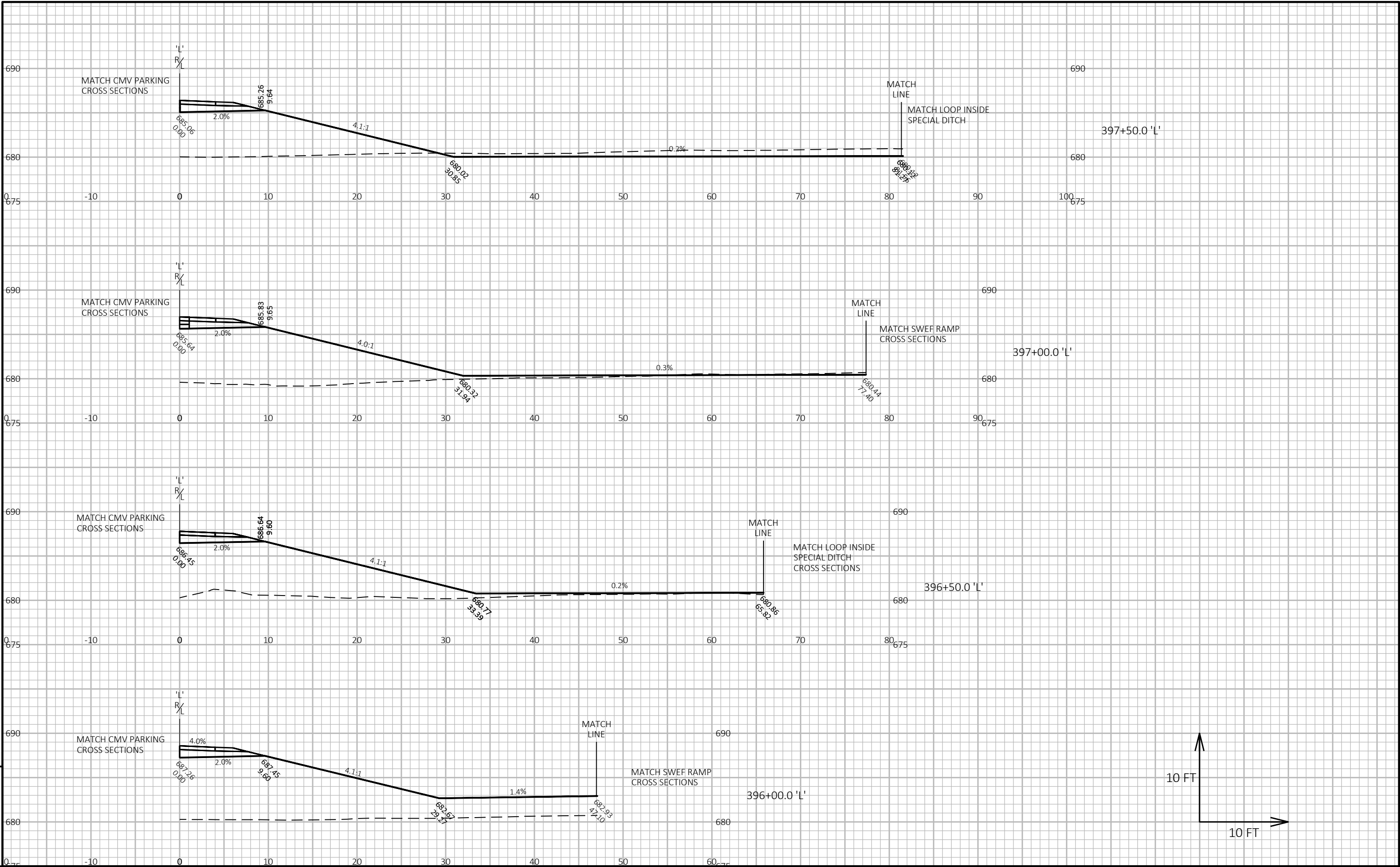


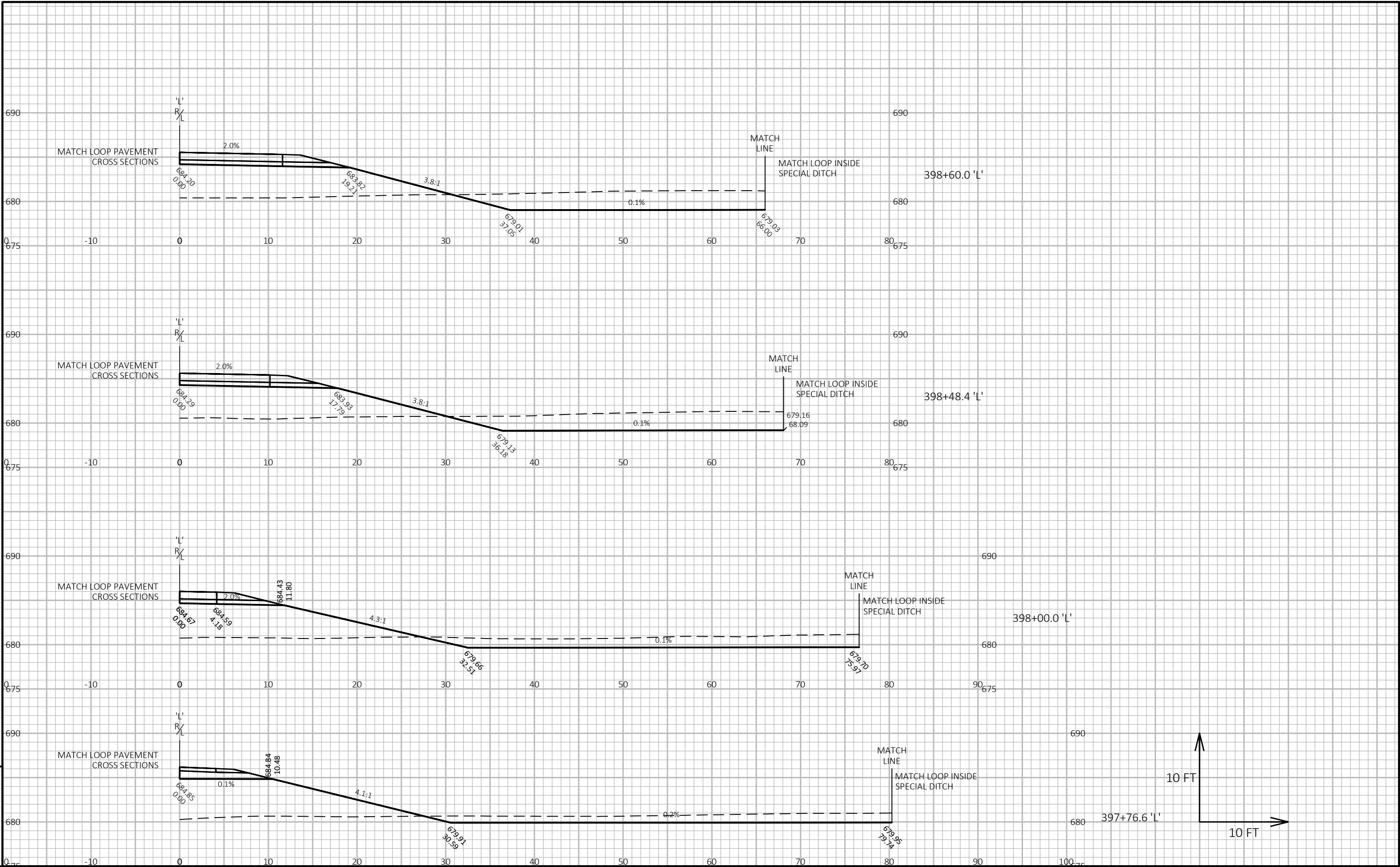
9

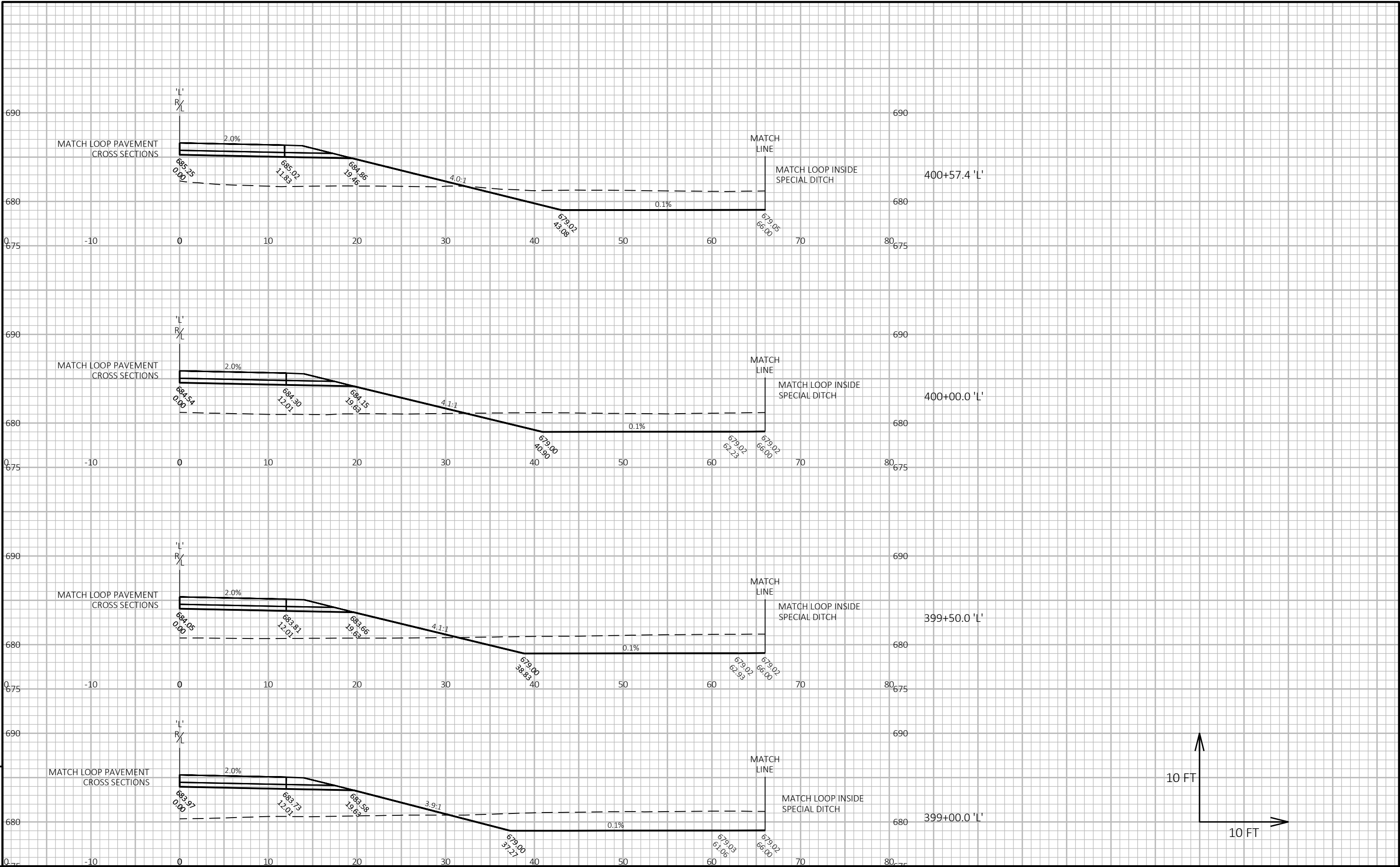


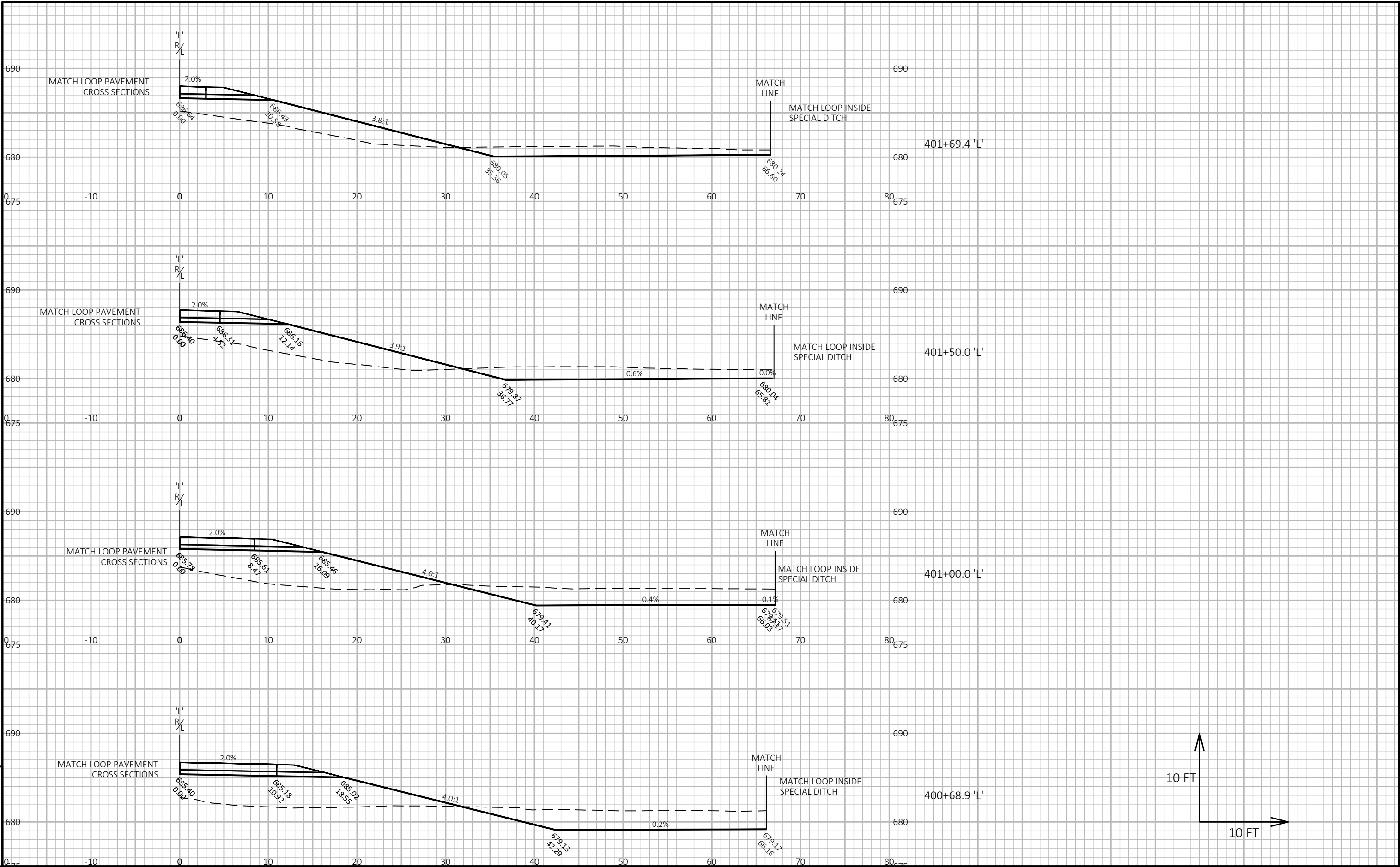
9

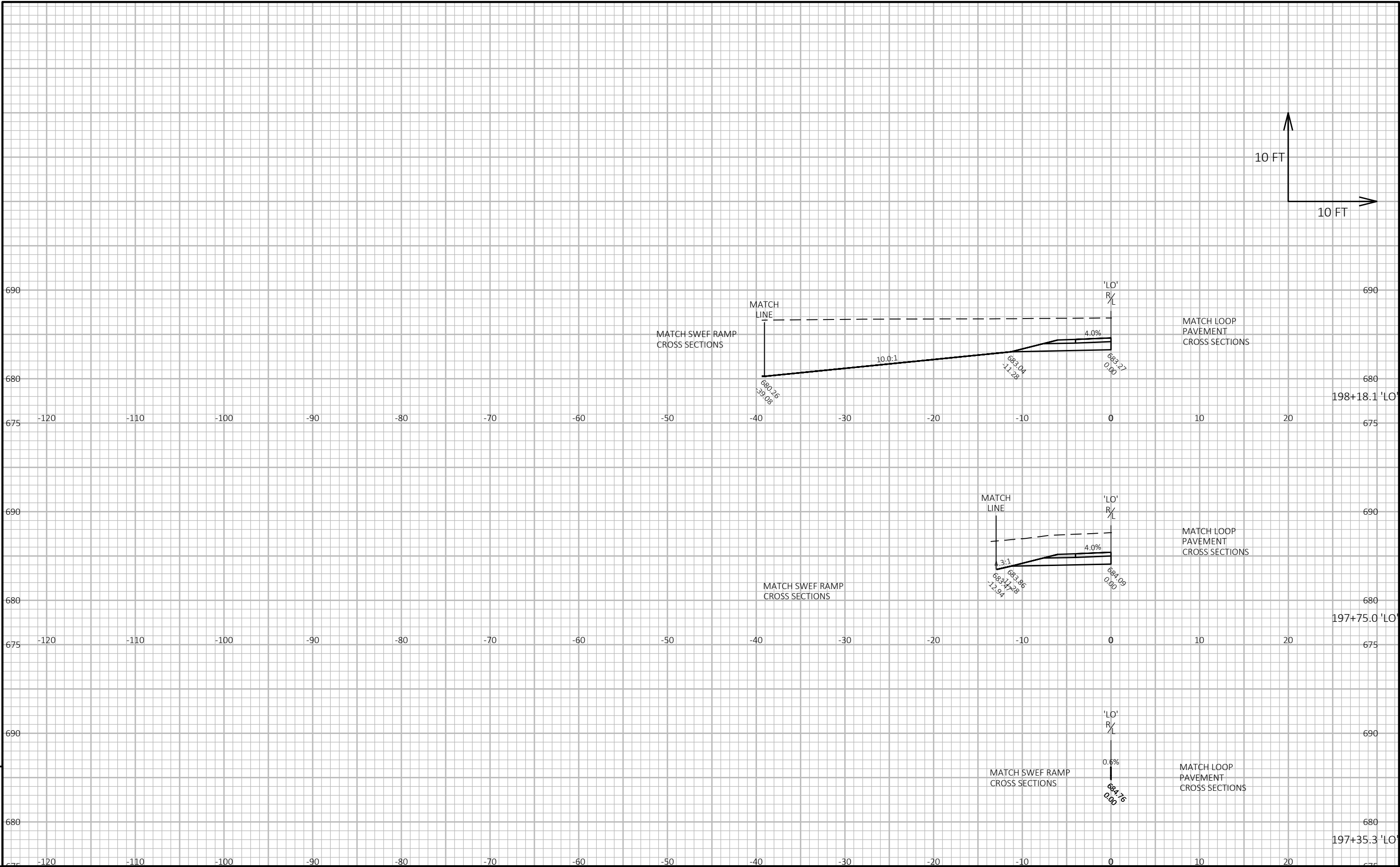


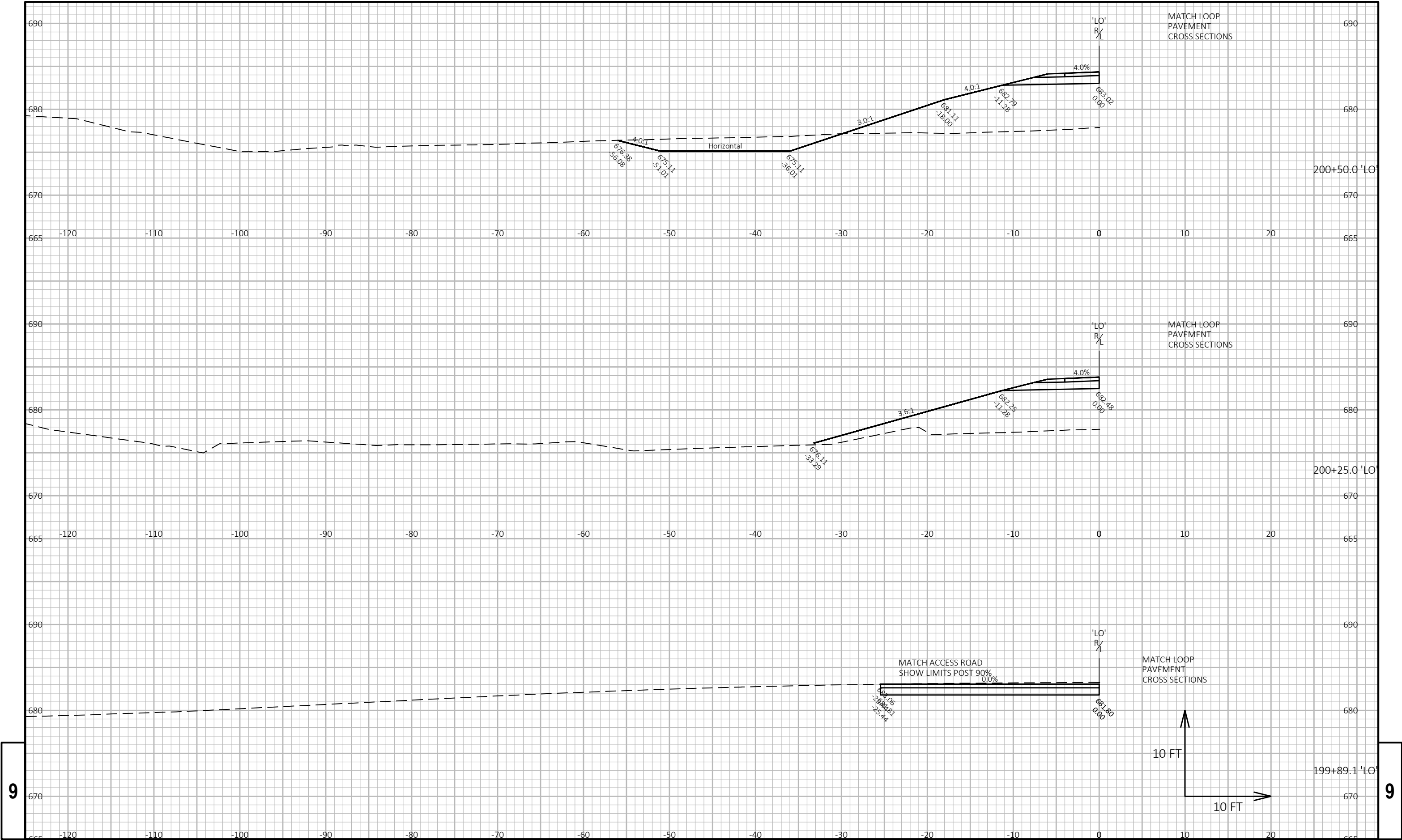






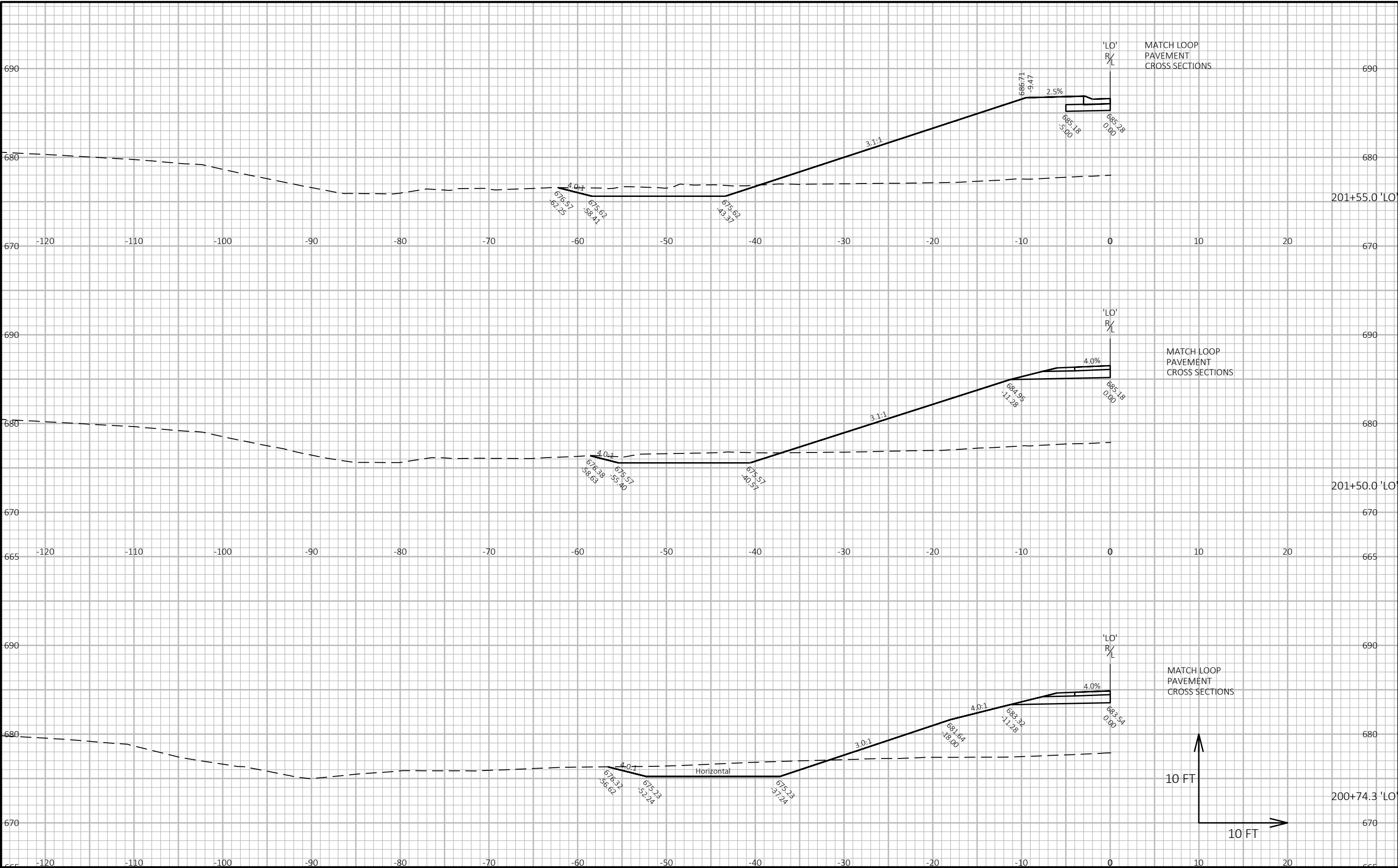






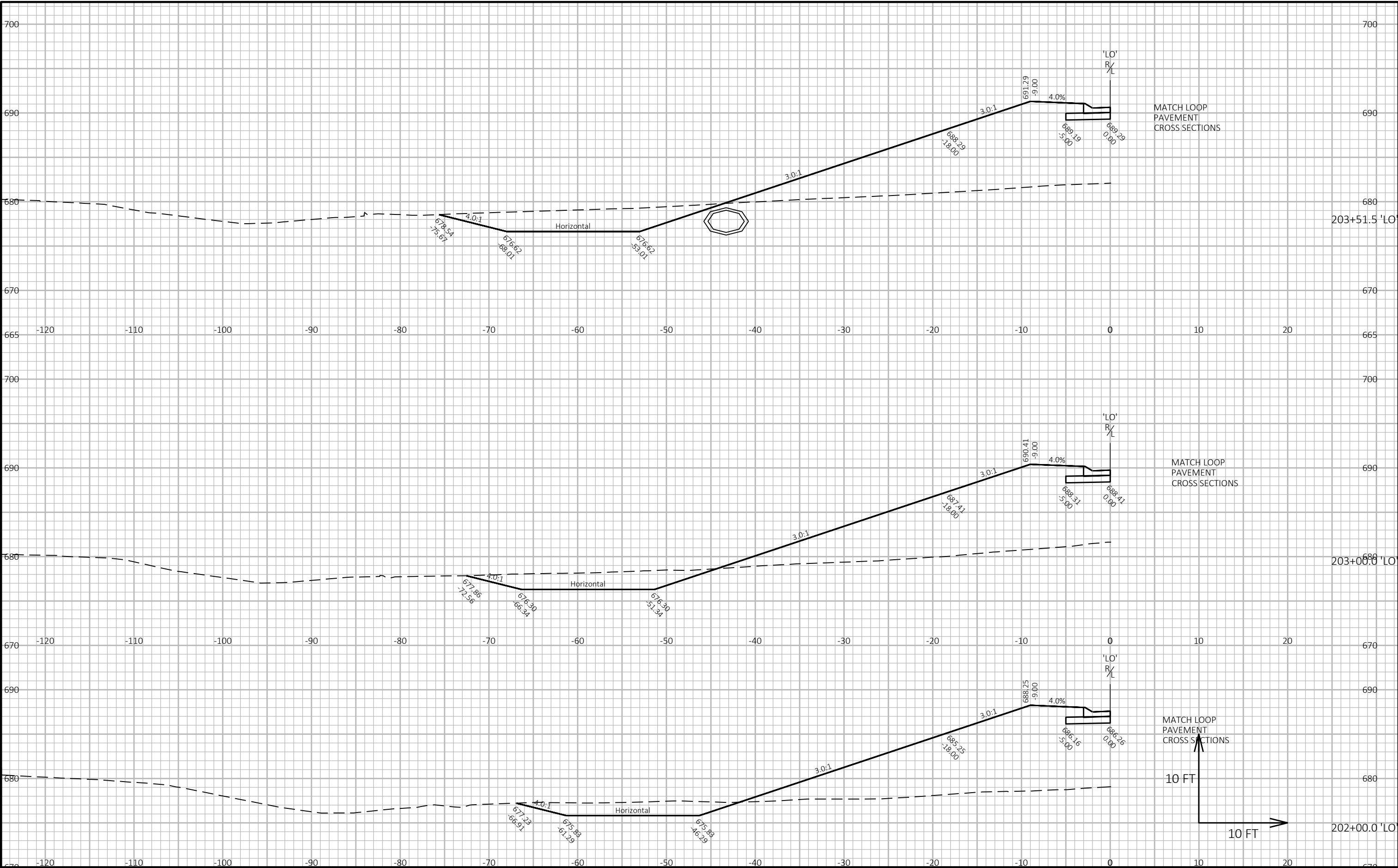
9

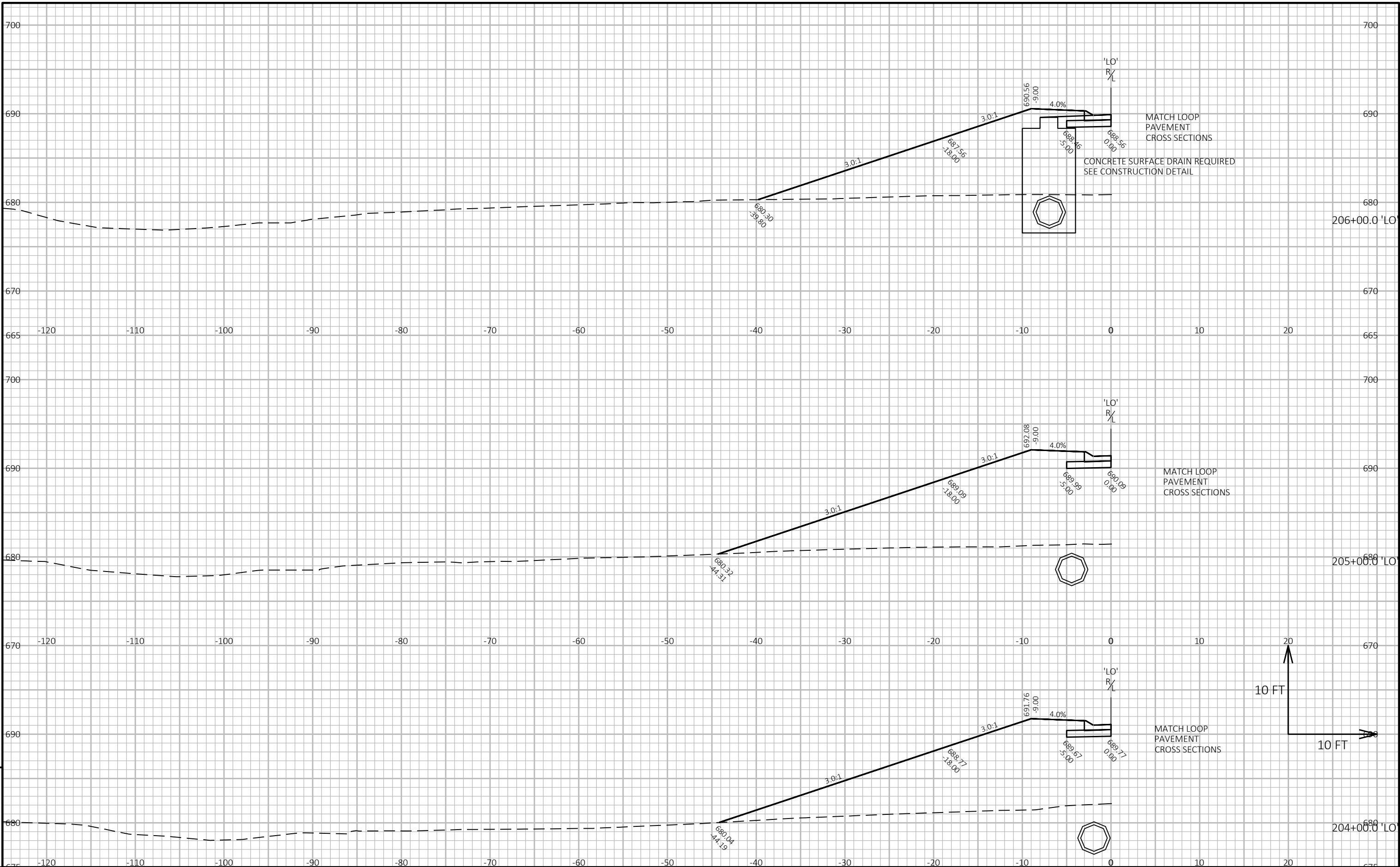
9



9

9





PROJECT NO: 1130-44-75

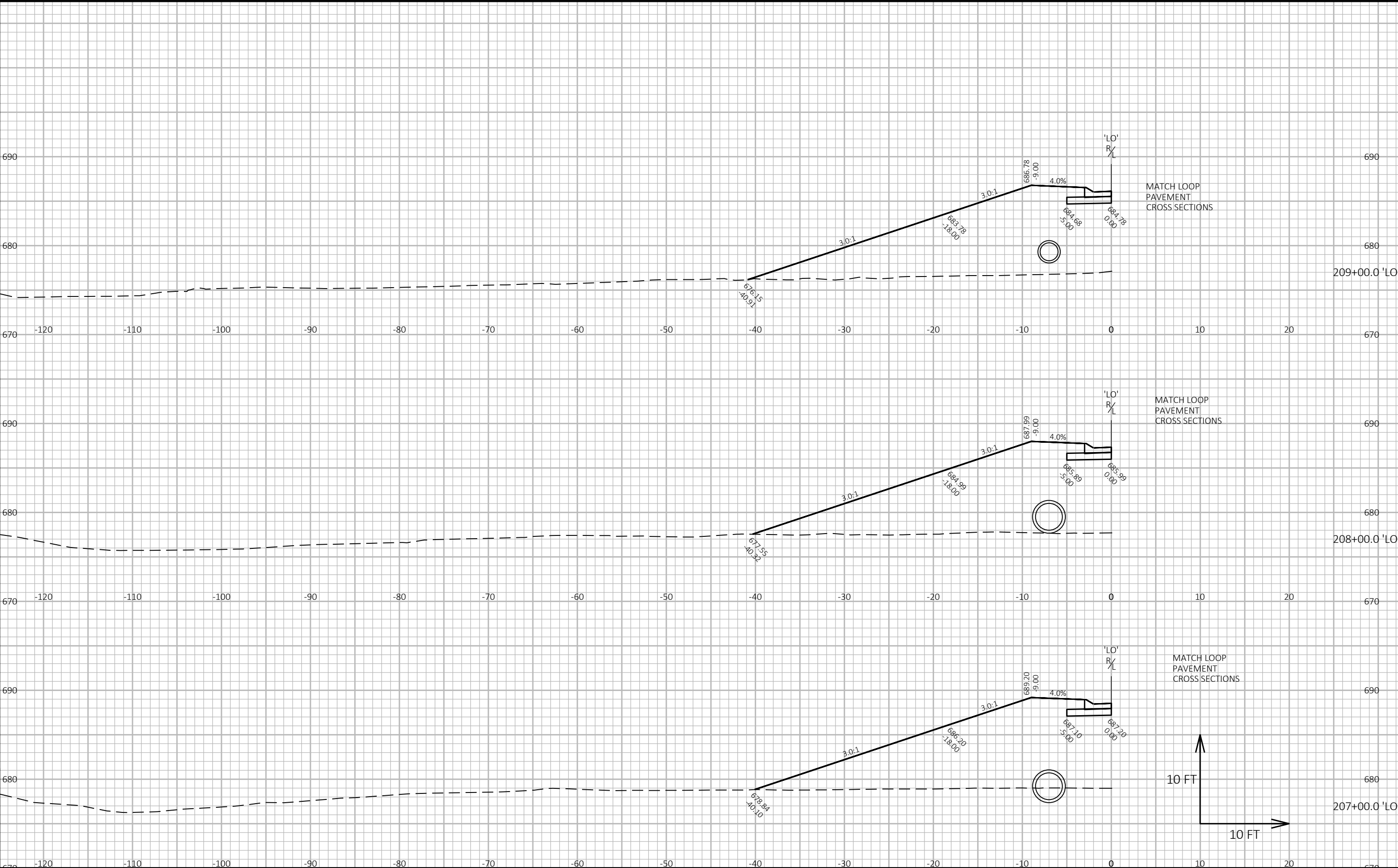
HWY: IH 41

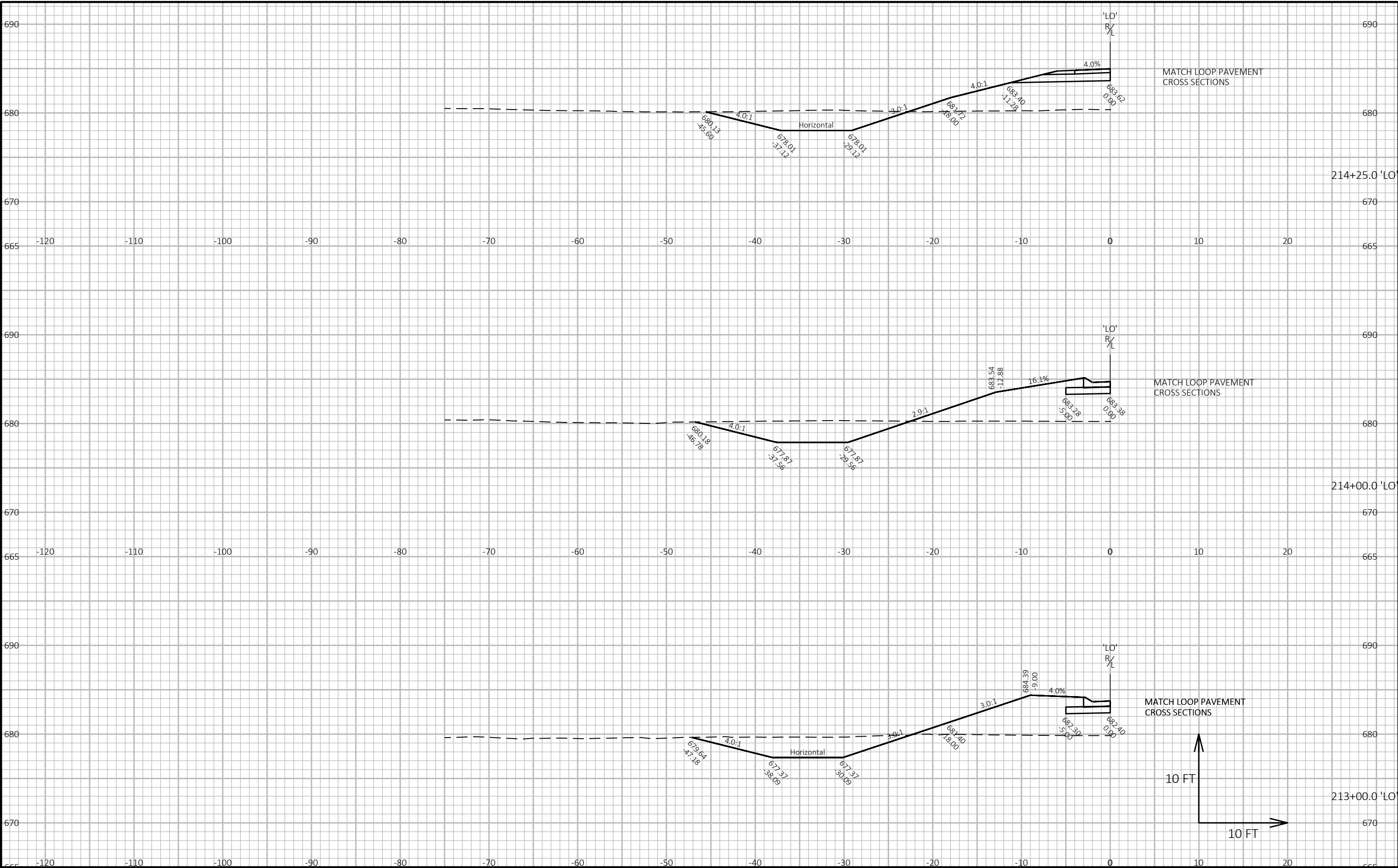
COUNTY: OUTAGAMIE

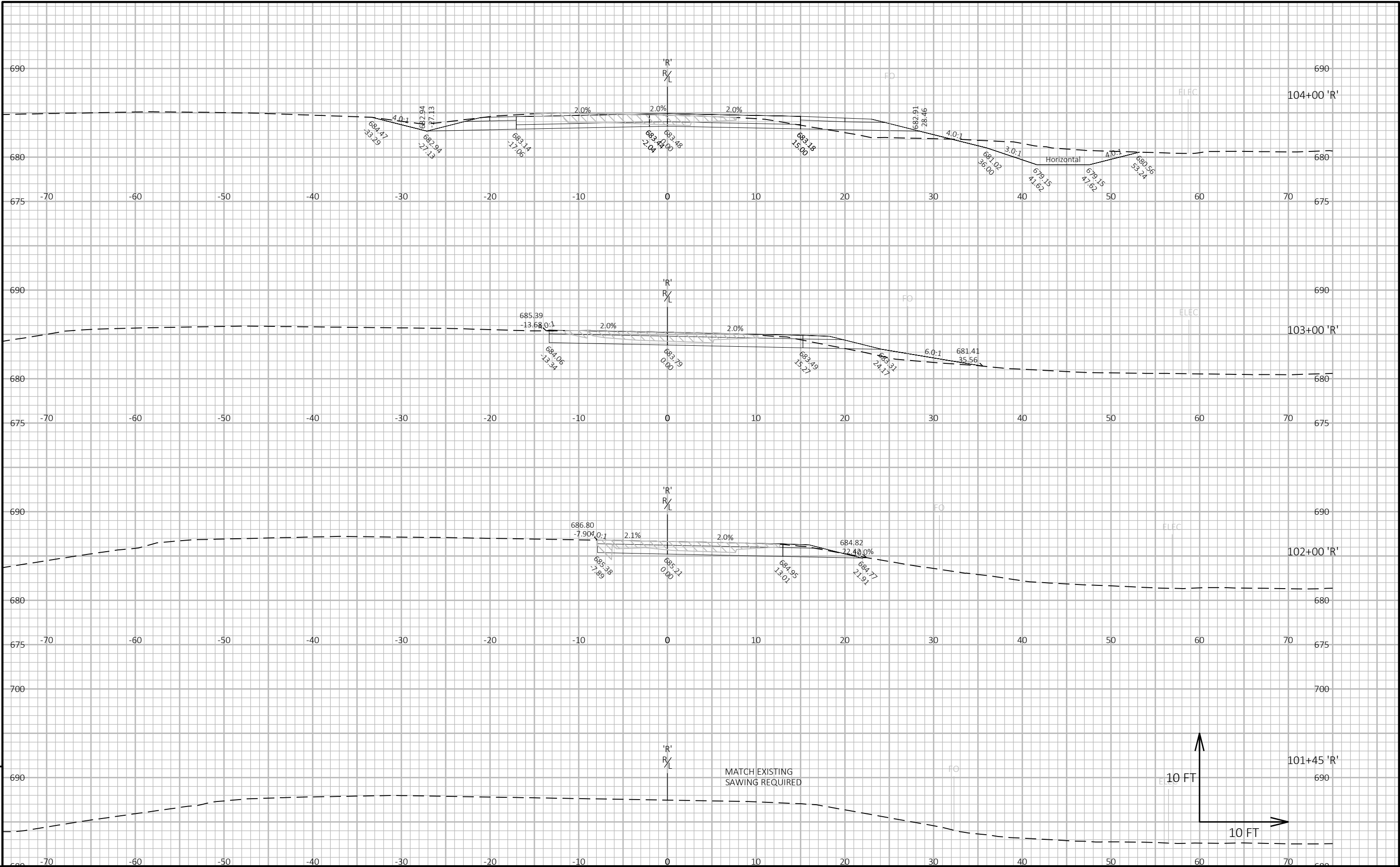
CROSS SECTIONS: LOOP OUTSIDE ('LO' R/L)

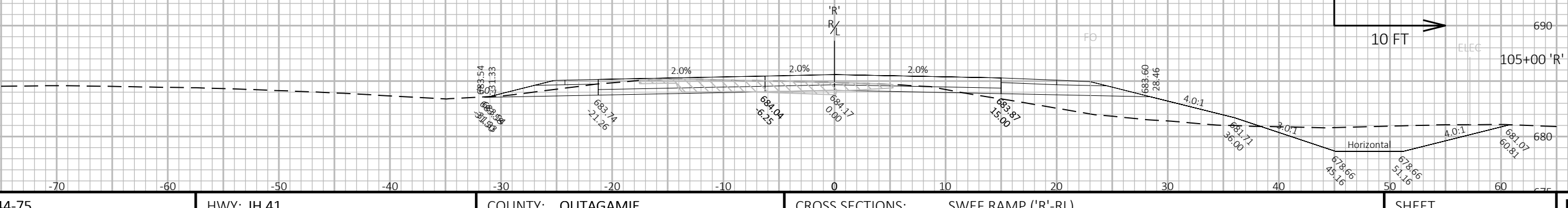
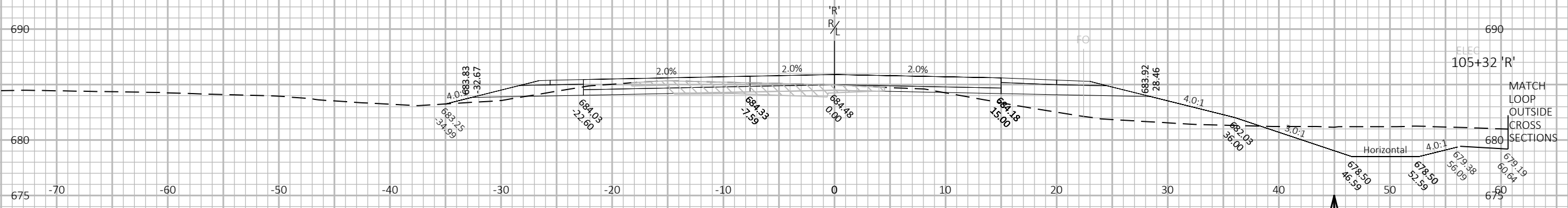
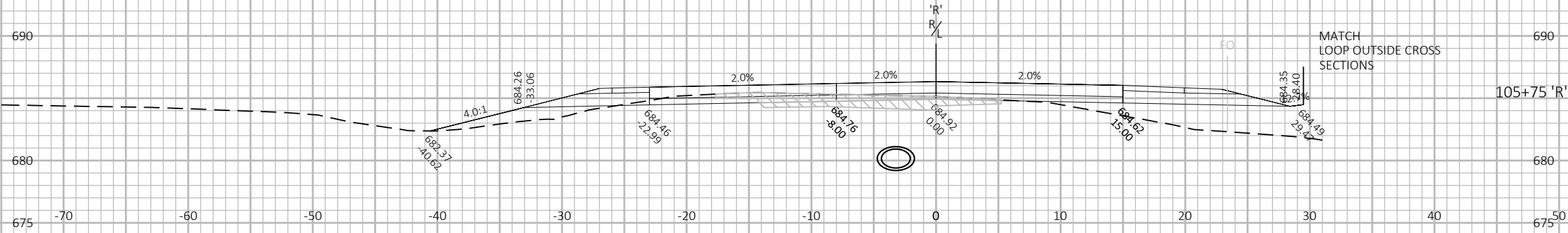
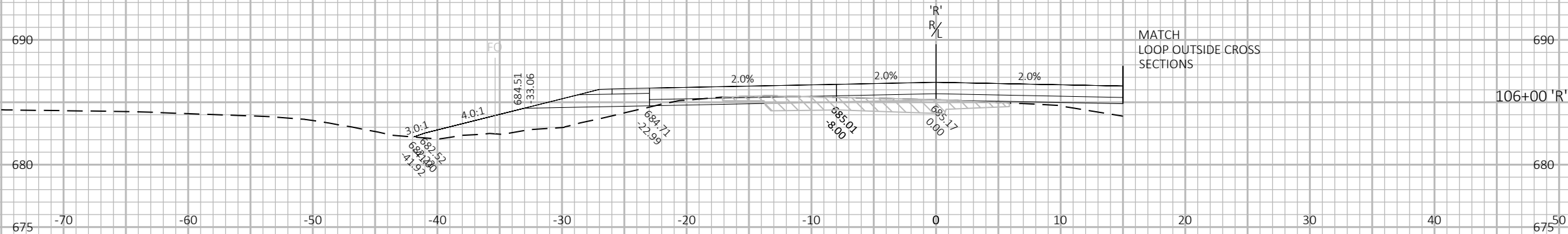
SHEET 254

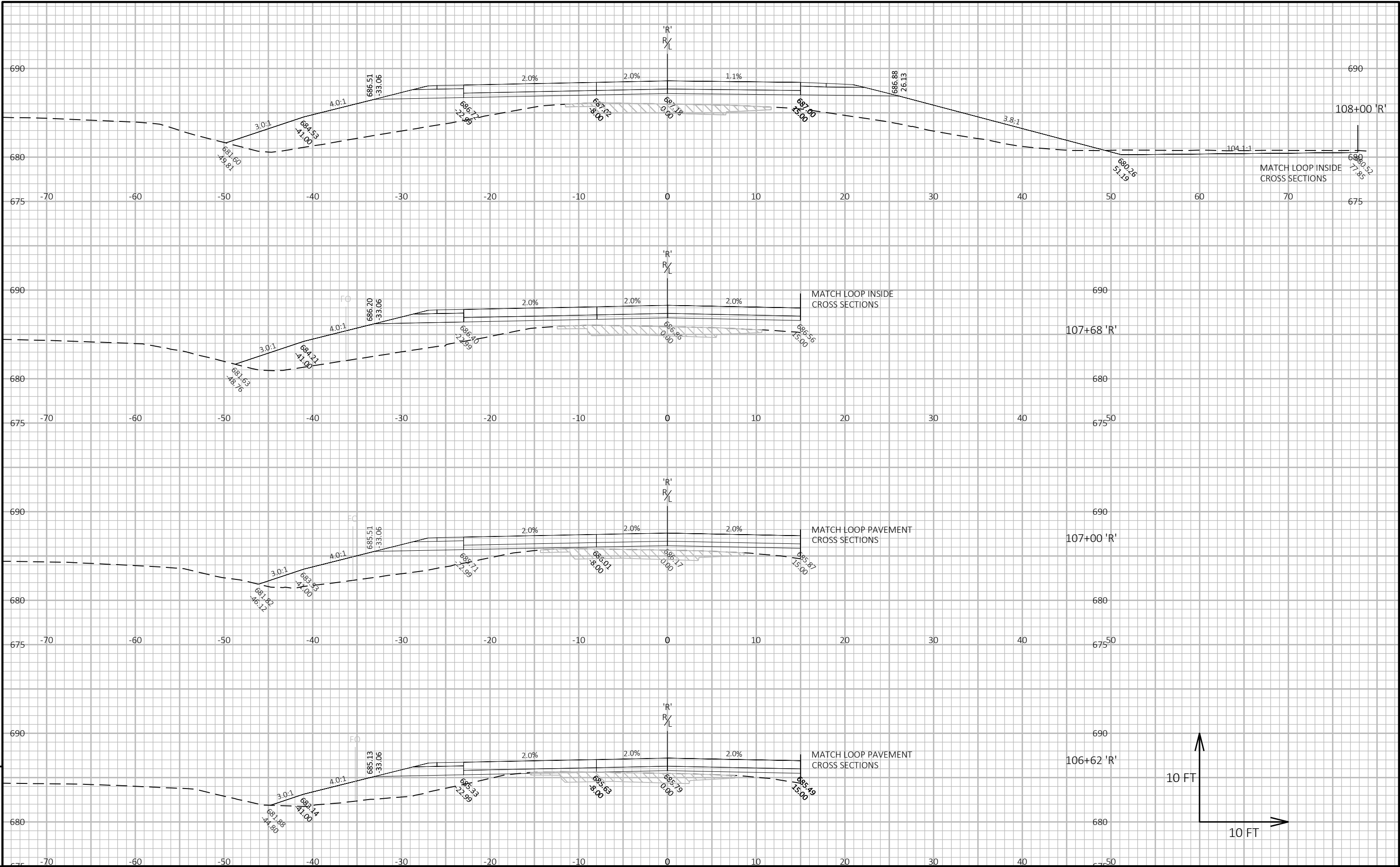
E

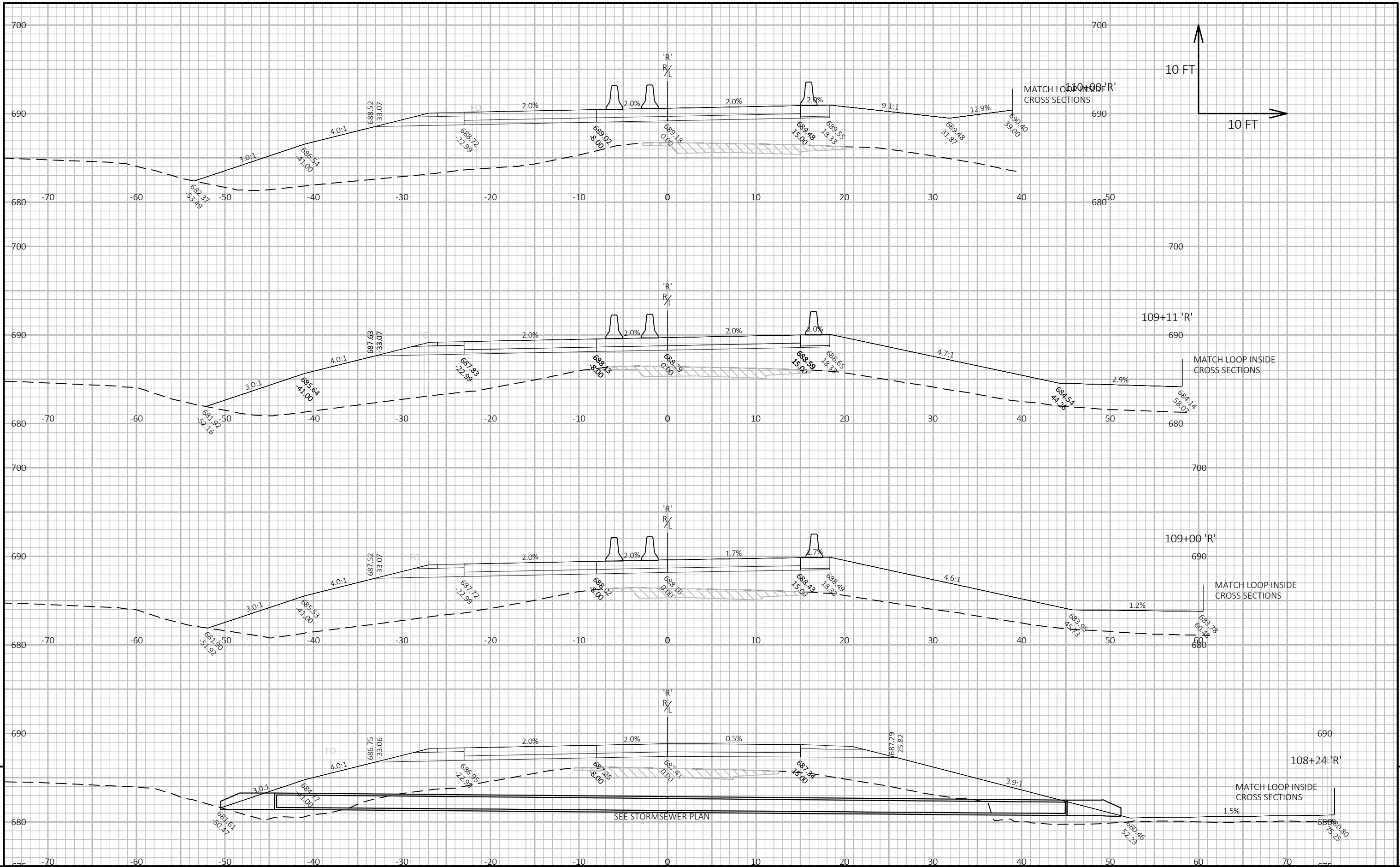


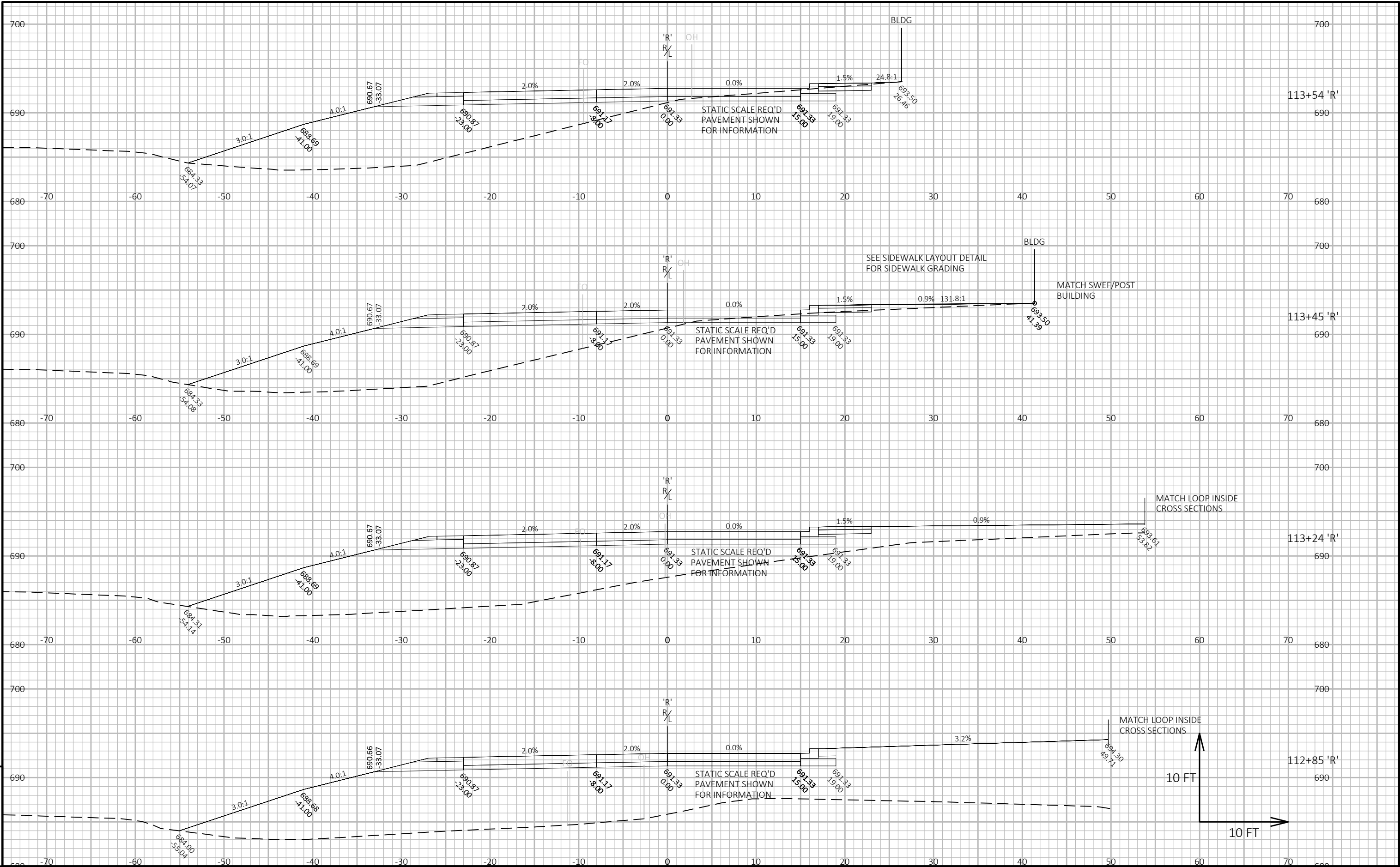


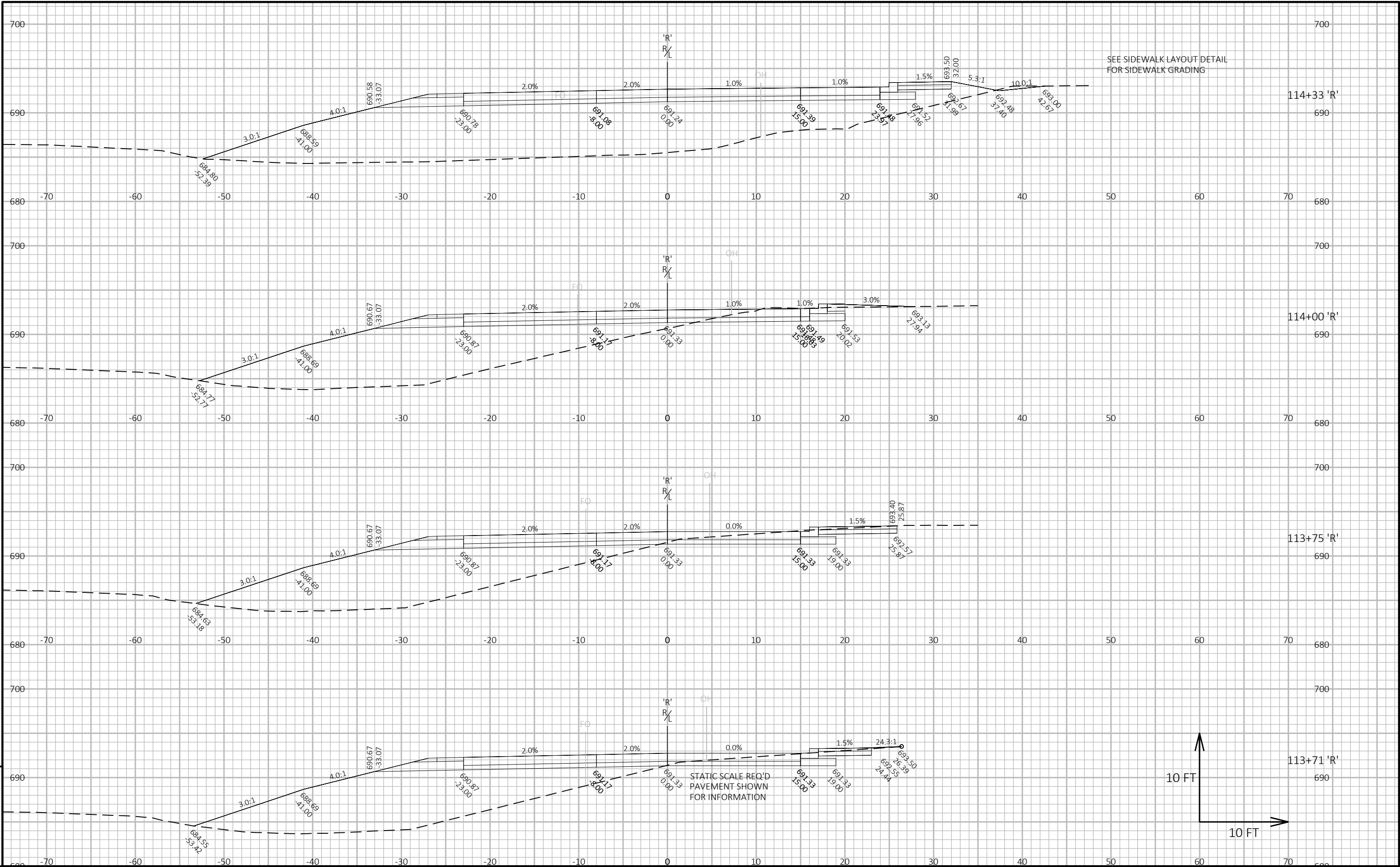


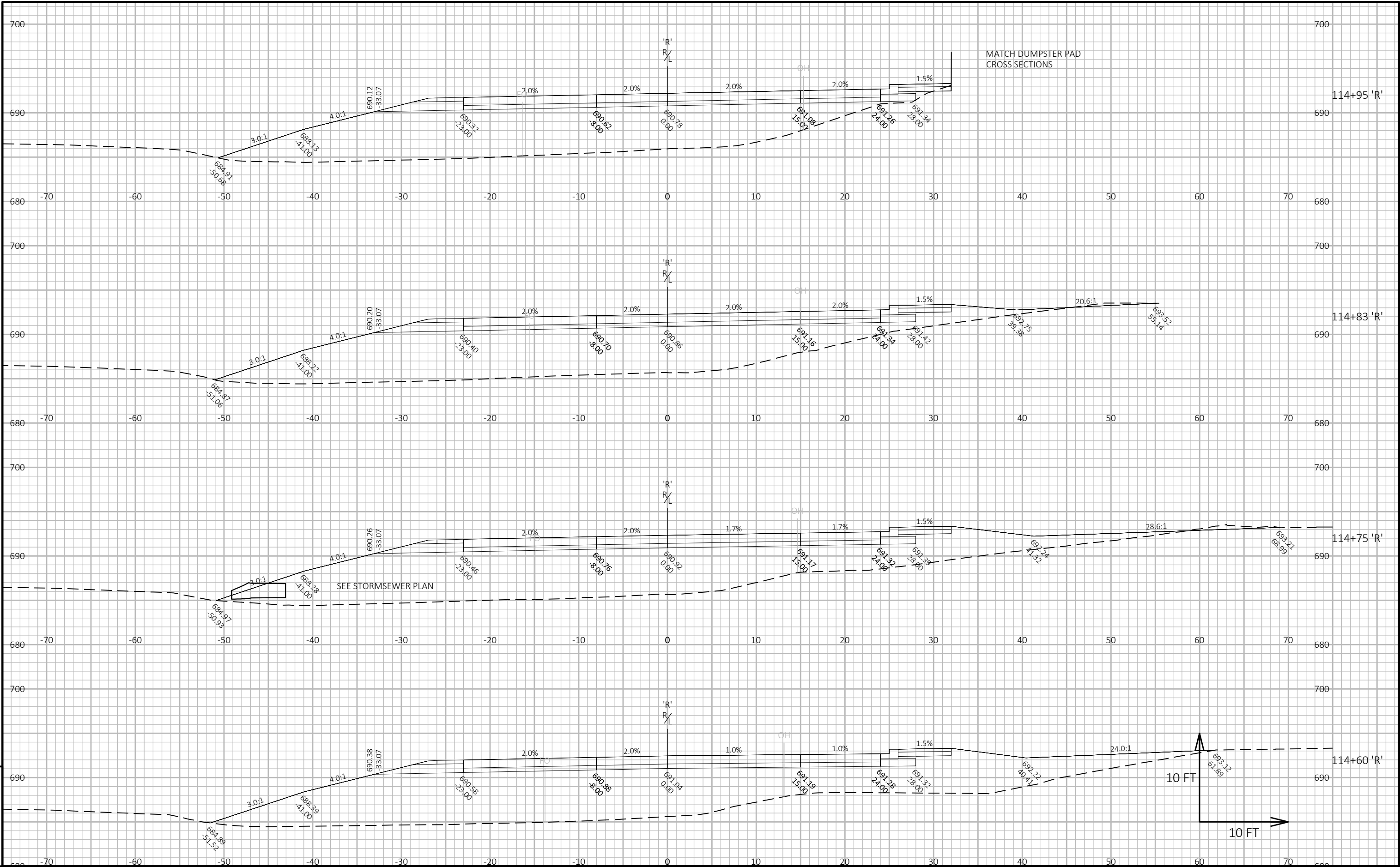


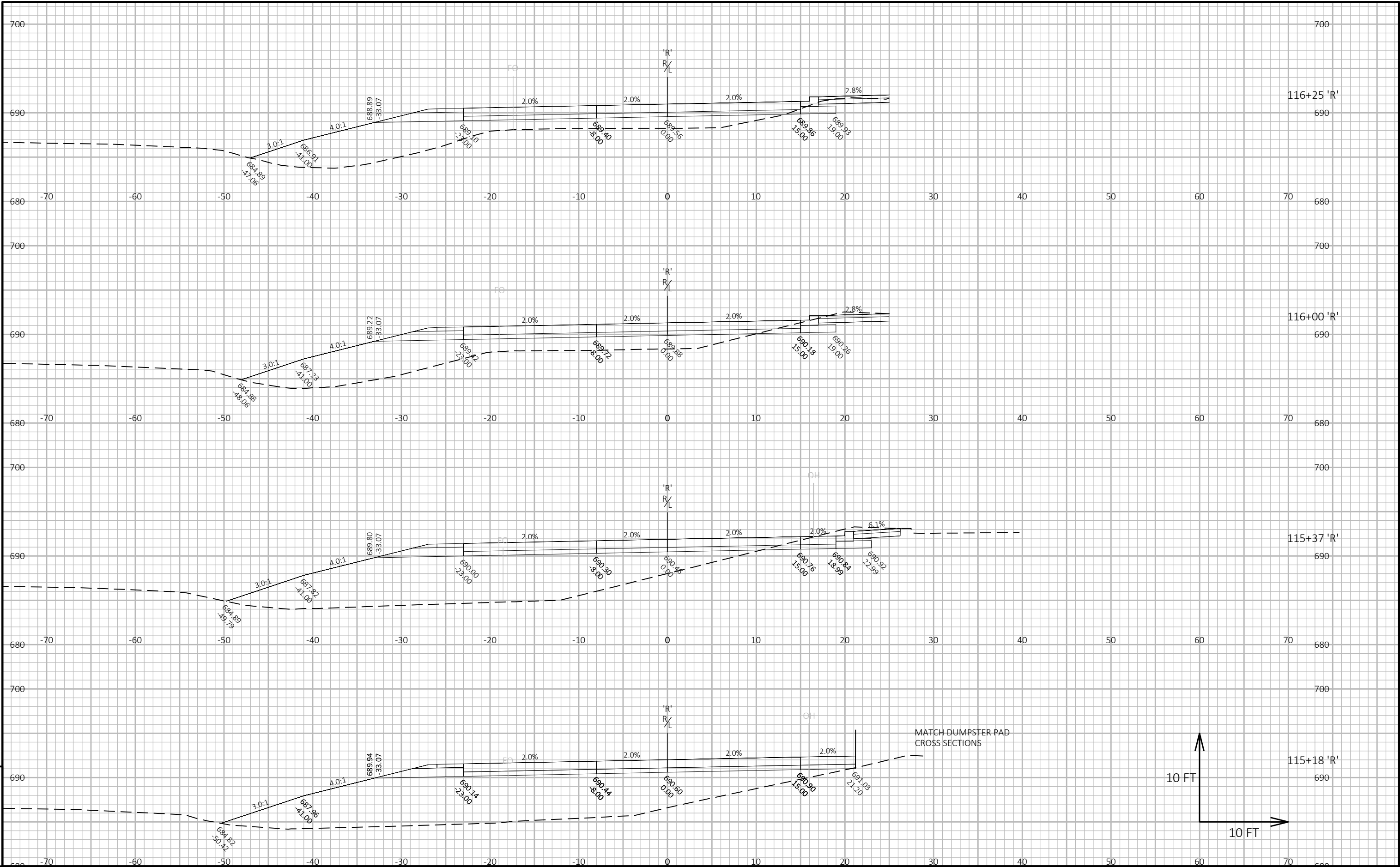


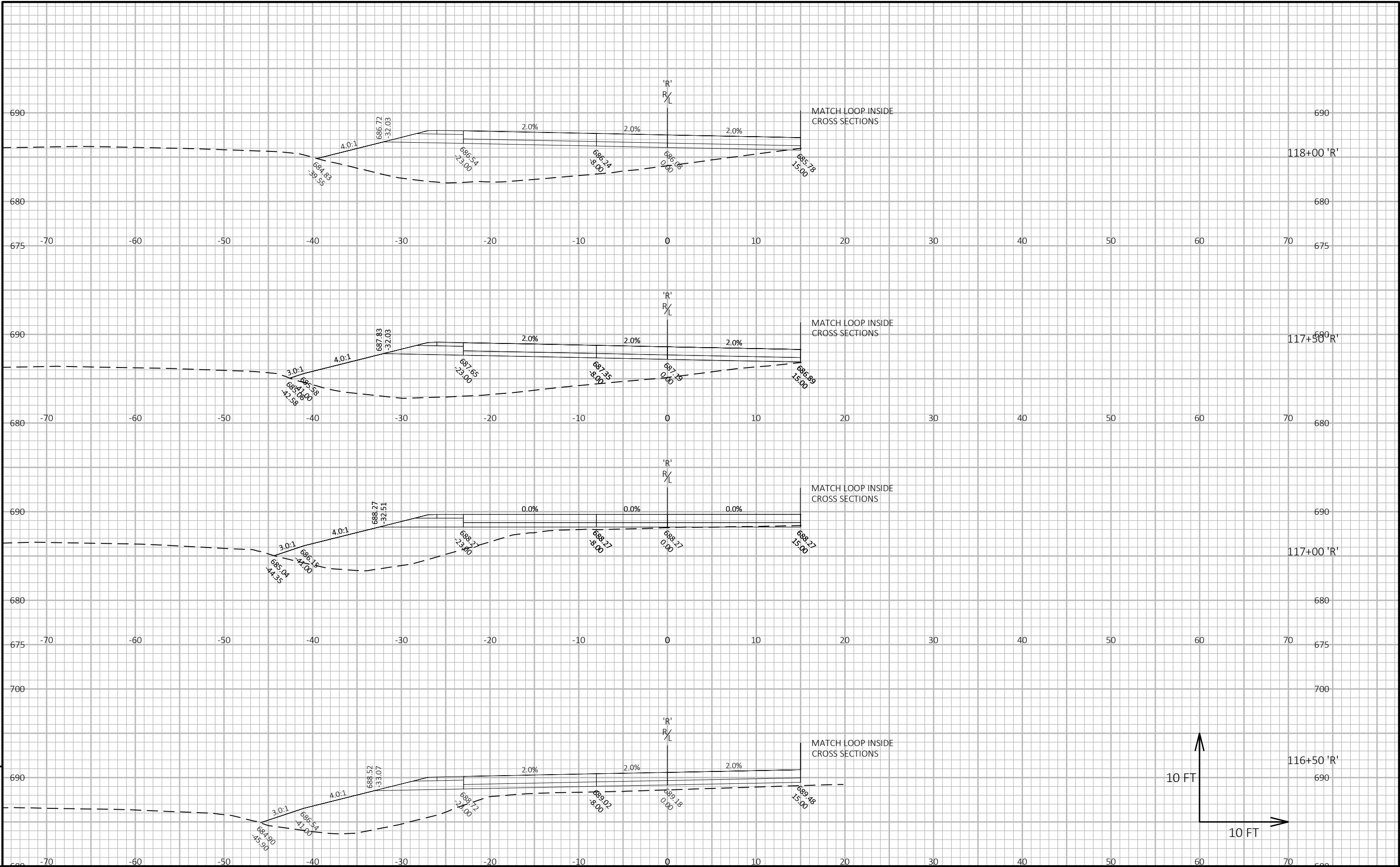


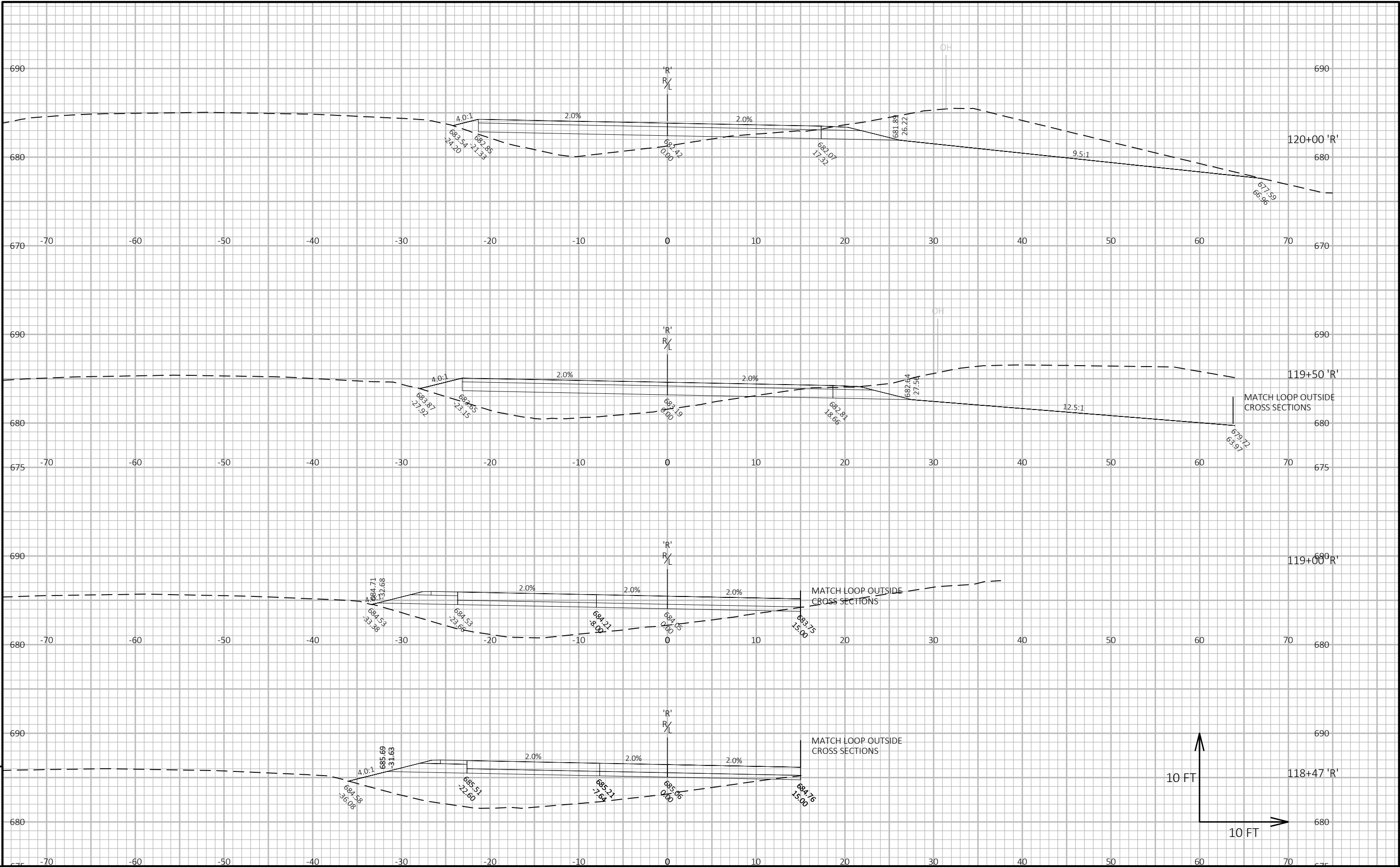


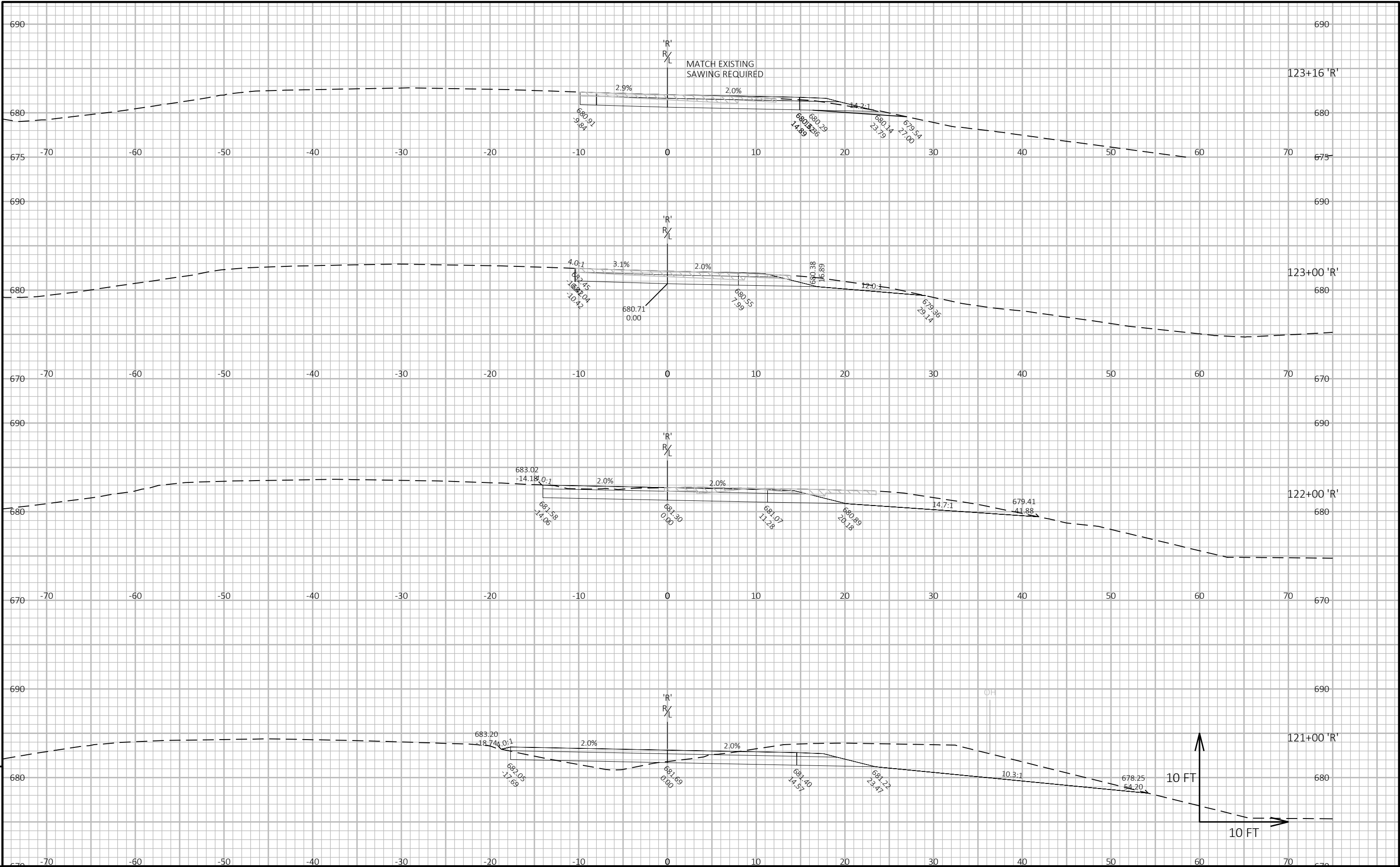




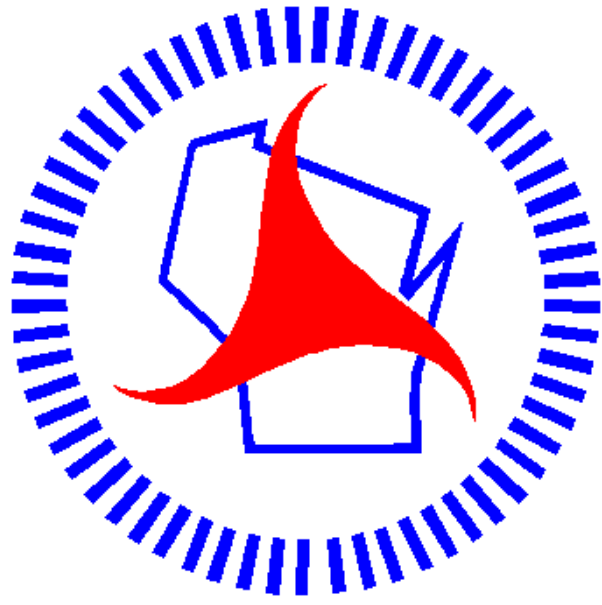








Notes



Wisconsin Department of Transportation

Dedicated people creating transportation solutions through innovation and exceptional service.

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