

HMA PAVEMENT - GRADE AND NEW
HSIPX-020-9(275)--3L-31

DUBUQUE COUNTY

LETTING DATE
05-21-24



PLANS OF PROPOSED IMPROVEMENT ON THE
PRIMARY ROAD SYSTEM
DUBUQUE COUNTY
HMA PAVEMENT - GRADE AND NEW
Westbound, at Wuchter Road east of Dyersville

SCALES: As Noted

Refer to the Proposal Form for list of applicable specifications.

Value Engineering Saves. Refer to Article 1105.14 of the Specifications.



REVISIONS

TOTAL

?

PROJECT IDENTIFICATION NUMBER

23-31-020-010

PROJECT NUMBER

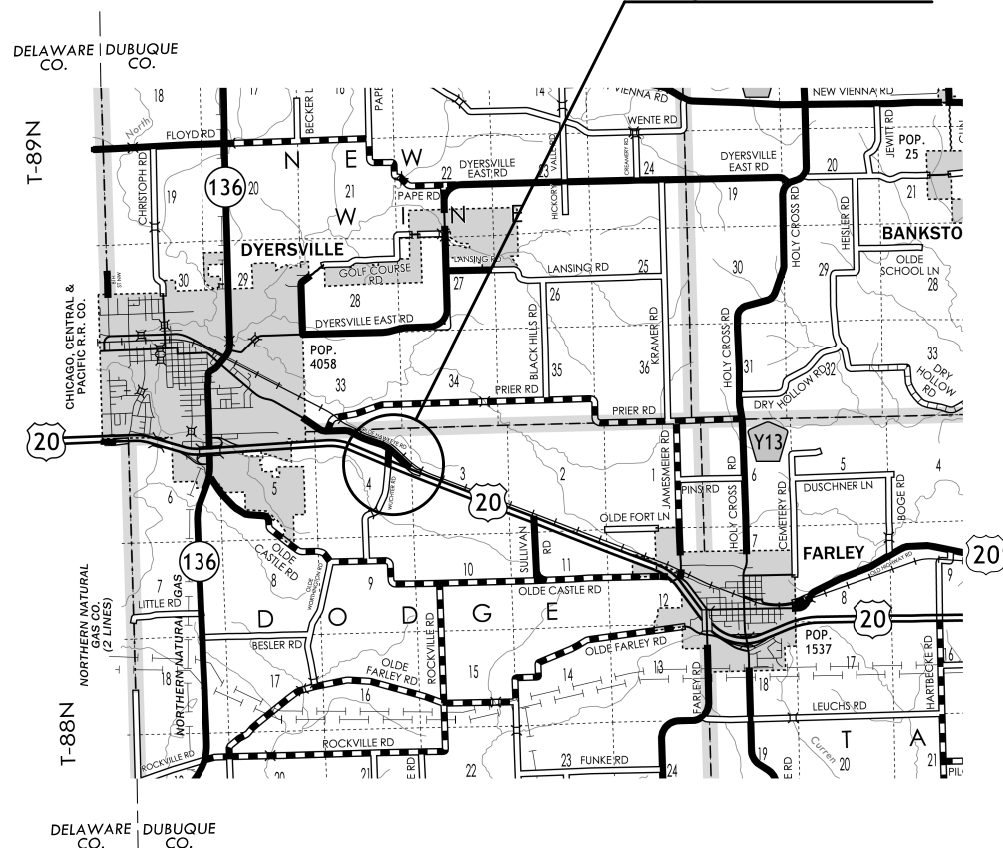
HSIPX-020-9(275)--3L-31

R.O.W. PROJECT NUMBER

INDEX OF SHEETS

No.	DESCRIPTION
A Sheet	Title Sheet
A.1	Title Sheet
B Sheet	Typical Cross Sections and Details
B.1	Typical Cross Sections and Details
C Sheets	Quantities and General Information
C.1 - ?	Project Description
D Sheet	Mainline Plan Sheet
D.1	Mainline Plan Sheet
H Sheets	Right-of-Way Sheet
H.1	Right-Of-Way Sheet
J Sheet	Traffic Control
J.1	Traffic Control Plan
L Sheets	Geometric Detail Sheets
L.1 - 2	Geometric Detail Sheets
N Sheet	Pavement Marking Detail
N.1	Pavement Marking Detail
P Sheet	Lighting Layout Sheet
P.1	Lighting Layout Sheet
U Sheets	Detail Sheets
U.1	Detail Sheets
W Sheets	Mainline Cross Sections
W.1 - ?	Cross Sections
X Sheets	Side Road Cross Sections
X.1	Cross Sections

Project Location



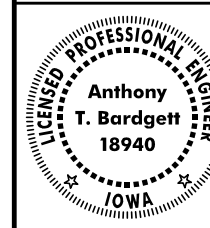
LOCATION MAP SCALE



DESIGN DATA RURAL

2017 AADT	12,600	V.P.D.
20 -- AADT	--	V.P.D.
20 -- DHV	--	V.P.H.
TRUCKS	?	%
Total		
Design ESALs	--	

ROADWAY DESIGN



I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.

Signature Anthony T. Bardgett Date _____

Printed or Typed Name

My license renewal date is December 31, 2025

Pages or sheets covered by this seal: ALL
X

FILE NO.

ENGLISH

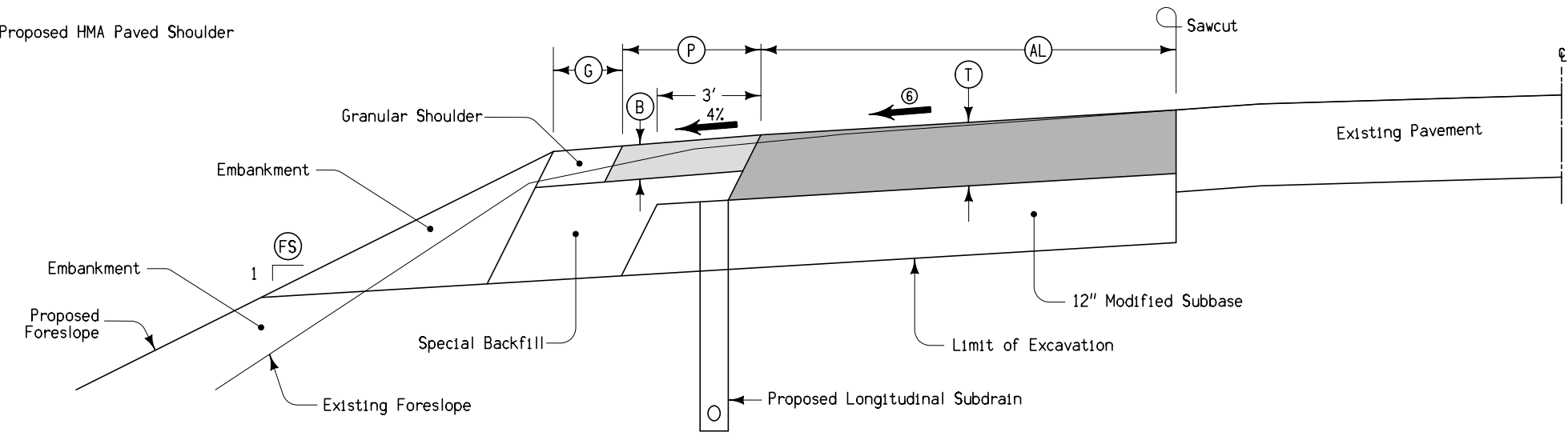
DESIGN TEAM Bardgett/Storey/Holub

DUBUQUE COUNTY

PROJECT NUMBER HSIPX-020-9(275)--3L-31

SHEET NUMBER A.1

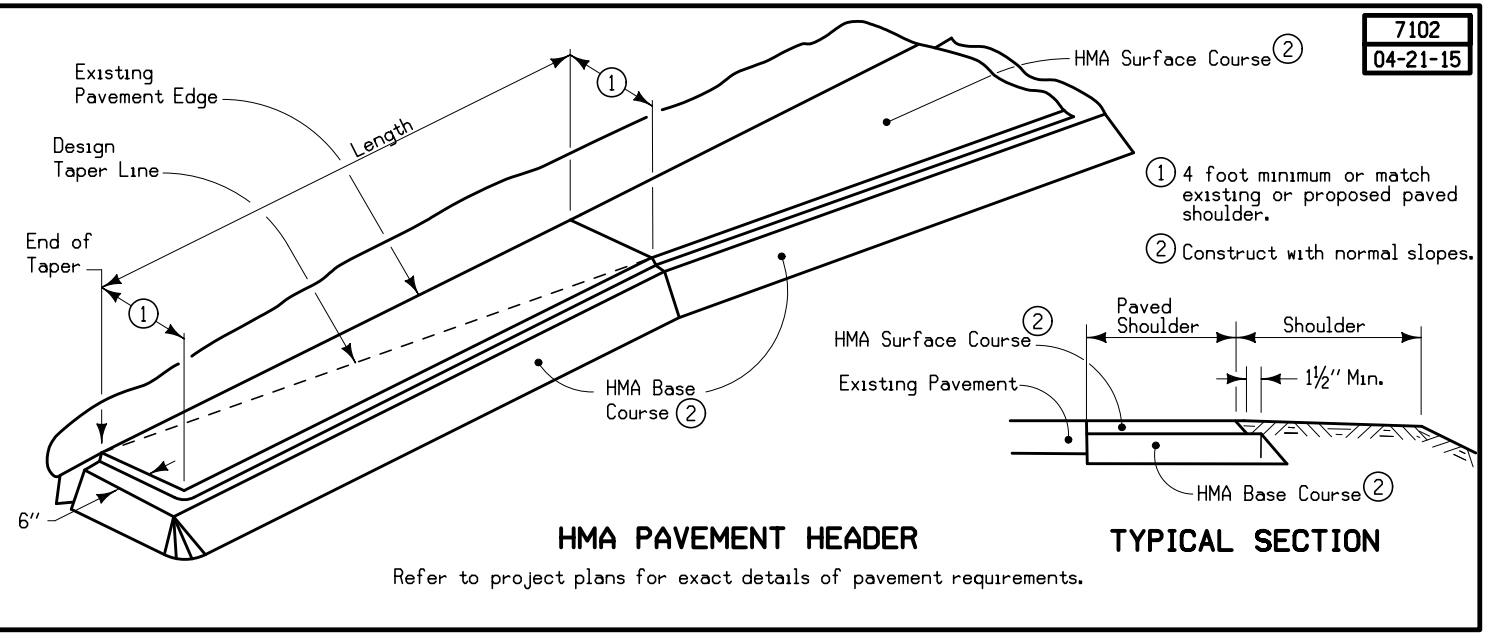
█ = Proposed HMA Pavement
█ = Proposed HMA Paved Shoulder



- Notes:
- ① Embankment (Fill) quantity does not include shrink. Not a bid item.
 - ② Excavation (Waste) quantity is (Cut) - (Fill). Not a bid item.
 - ③ Existing topsoil may be stripped and salvaged for use as topsoil.
 - ④ Includes tapers. Refer to L sheets.
 - ⑤ Width varies. Refer to L sheets.
 - ⑥ Slope at 3% for normal section. Slope at 4% through radius. Refer to L sheets.

TABLE OF DESIGN QUANTITIES Per Location																			
LOCATION				AL	T	P	B	G	FS	HMA PAVEMENT SY	HMA PAVED SHOULDER SY	MODIFIED SUBBASE CY	SPECIAL BACKFILL CY	GRANULAR SHOULDER Tons	EARTH SHOULDER FINISHING STA	EXCAVATION (CUT) CY	EMBANKMENT (FILL) ① CY	EXCAVATION (WASTE) ② CY	TOPSOIL CY ③
STATION TO STATION ④		SIDE	DIRECTION	Feet	Inches	Feet	Inches	Feet											
155+09.57	164+20.00	Out	WB	⑤	11	4	6	2	4										

TYPICAL CROSS SECTION
HMA AUXILIARY LANE



HMA PAVEMENT HEADER
Refer to project plans for exact details of pavement requirements.

TYPICAL SECTION

ESTIMATED PROJECT QUANTITIES AND REFERENCE NOTES

Roadway Items : HSIPX-020-9(275)--3L-31

Item no.	Item Code	Item	Unit	Quantities		Estimate Reference Notes
				Estimated		
				Roadway Items		
1	2102-0425071	SPECIAL BACKFILL	CY	0		Refer to Typ. 2610. Reclaimed asphalt pavement (RAP) and reclaimed HMA shall not be used for the special backfill.
2	2102-2713070	EXCAVATION, CLASS 13, ROADWAY AND BORROW	CY	0		Refer to Typ. 2610. Excess material (waste) that is not used for embankment shall be removed from the project. No payment will be made for hauling or overhaul.
3	2105-8425005	TOPSOIL, FURNISH AND SPREAD	CY	0		The top 6" of all embankment shall be top soil.
4	2115-0100000	MODIFIED SUBBASE	CY	0		Refer to Typ. 2610.
5	2121-7425020	GRANULAR SHOULDERS, TYPE B	TON	0		Refer to Typ. 2610.
6	2122-5500060	PAVED SHOULDER, HOT MIX ASPHALT MIXTURE, 6 IN.	SY	0		
7	2123-7450020	SHOULDER FINISHING, EARTH	STA	0		
8	2303-1041750	HOT MIX ASPHALT HIGH TRAFFIC, BASE COURSE, 3/4 IN. MIX	TON			
9	2303-1042500	HOT MIX ASPHALT HIGH TRAFFIC, INTERMEDIATE COURSE, 1/2 IN. MIX	TON			
10	2303-1043503	HOT MIX ASPHALT HIGH TRAFFIC, SURFACE COURSE, 1/2 IN. MIX, FRICTION L-3	TON			
11	2303-1258284	ASPHALT BINDER, PG 58-28H, HIGH TRAFFIC	TON			
12	2416-0100042	APRONS, CONCRETE, 42 IN. DIA.	EACH	0		Refer to Tab. 104-13.
13	2416-1180042	CULVERT, CONCRETE ROADWAY PIPE, 42 IN. DIA.	LF	0		
14	2502-8212034	SUBDRAIN, LONGITUDINAL, (SHOULDER) 4 IN. DIA.	LF	0		Refer to Tab. 104-9.

Item no.	Item Code	Item	Unit	Quantities		Estimate Reference Notes
				Estimated	Roadway Items	
15	2502-8221306	SUBDRAIN OUTLET, DR-306	EACH	0		
16	2510-6745850	REMOVAL OF PAVEMENT	SY	0		Refer to Tab. 110-1. All material shall become the property of the contractor and shall be removed from the project.
17	2523-6765009	REMOVE AND REINSTALL LIGHT POLE AND LUMINAIRE	EACH			
18	2524-6765010	REMOVE AND REINSTALL SIGN AS PER PLAN	EACH	0		Refer to Tab. 190-61. The engineer will count the number of signs removed and reinstalled. For each sign removed and reinstalled, the contractor will be paid the contract unit price.
19	2524-6765015	REMOVE AND REINSTALL DELINEATOR POSTS	EACH	0		Refer to Tab. 190-61. The engineer will count the number of delineator post removed and reinstalled. For each delineator post removed and reinstalled, the contractor will be paid the contract unit price.
20	2524-9276021	PERFORATED SQUARE STEEL TUBE POST ANCHOR, BREAK-AWAY SOIL INSTALLATION	EACH	0		Refer to Tab. 190-61 and to U sheets.
21	2526-8285000	CONSTRUCTION SURVEY	LS	0		
22	2527-9263109	PAINTED PAVEMENT MARKING, WATERBORNE OR SOLVENT-BASED	STA	0		Refer to Tab. 108-22.
23	2527-9263180	PAVEMENT MARKINGS REMOVED	STA	0		Item is for removal of existing edge lines that conflict with proposed pavement markings.
24	2528-8445110	TRAFFIC CONTROL	LS	0		Refer to Tab. 108-23A.
25	2528-8445113	FLAGGERS	EACH	0		See Proposal. Item is for traffic control on Wuchter Road.
26	2533-4980005	MOBILIZATION	LS	0		
27	2601-2634100	MULCHING	ACRE	0		Item is for all disturbed areas.

Item no.	Item Code	Item	Unit	Quantities		Estimate Reference Notes
				Estimated	Roadway Items	
28	2601-2636043	SEEDING AND FERTILIZING (RURAL)	ACRE	0		Item is for all disturbed areas.
29	2601-2642100	STABILIZING CROP - SEEDING AND FERTILIZING	ACRE	0		Item is for all disturbed areas.
30	2602-0000312	PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE, 12 IN. DIA.	LF	0		Refer to Tab. 100-19.
31	2602-0000351	REMOVAL OF PERIMETER AND SLOPE OR DITCH CHECK SEDIMENT CONTROL DEVICE	LF	0		Refer to Tab. 100-19.
32	2602-0000362	DITCH CHECK SEDIMENT CONTROL DEVICE, 12 IN. DIA.	LF	0		
33	2602-0010010	MOBILIZATIONS, EROSION CONTROL	EACH			
34	2602-0010020	MOBILIZATIONS, EMERGENCY EROSION CONTROL	EACH			

PROJECT DESCRIPTION	100-1D 10-18-05
The project is located on US 20 in Dubuque County at Wuchter Road east of Dyersville. The work includes construction of an offset right turn lane from westbound US 20 to Wuchter Road.	

STANDARD ROAD PLANS	105-4 10-18-11	
The following Standard Road Plans apply to construction work on this project.		
Number	Date	Title
DR-101	04-18-17	Pipe Culvert (Bedding and Backfill)
DR-103	04-21-15	Pipe Culvert (Installation Details)
DR-104	04-19-16	Depth of Cover Tables for Concrete and Corrugated Pipe
DR-121	04-18-23	Connected Pipe Joints
DR-201	10-17-23	Concrete Aprons
DR-621	04-18-17	Pipe Extension
EC-204	10-19-21	Perimeter, Slope and Ditch Check Sediment Control Devices
EW-503	10-20-15	Side Road Grading
PM-110	04-21-20	Line Types
PM-561	10-15-19	Divided Multi-Lane Roadway with Right Turn Lanes
PM-562	10-15-19	Divided Multi-Lane Roadway with Left Turn Lanes
PV-101	04-19-22	Joints
PV-121	04-21-15	Jointing PCC Pavement Widening
SI-101	04-19-16	Locations - Type 'A' Signs
SI-102	04-19-16	Locations - Type 'B' Signs
SI-172	04-19-16	Delineators
SI-881	04-16-19	Special Signs for Workzones
TC-1	10-15-19	Work Not Affecting Traffic (Two-Lane or Multi-Lane)
TC-202	04-18-23	Work Within 15 ft of Traveled Way
TC-213	04-18-23	Lane Closure with Flaggers
TC-402	04-18-23	Work Within 15 ft of Traveled Way
TC-418	04-18-23	Lane Closure on Divided Highway

REMOVAL OF PAVEMENT	110-1 04-16-13					
Refer to Tabulation 102-5						
* Not a Bid Item						
Begin Station	End Station	Side	Pavement Type	Area	Saw Cut*	Remarks
				SY	LF	

TABULATION OF UTILITIES
Alliant Energy Billie Reid 319-786-3703 billiereid@alliantenergy.com
Lumen (Formerly CenturyLink) Steven Parker 515-265-0968 (Office) steven.parker4@centurylink.com
Maquoketa Valley REC Nic Schulte 319-462-3542 Nschulte@vec.com
Windstream Communications (ILEC) Dan Hogan 563-920-2428 Dan.Hogan@windstream.com
Iowa Communications Network (ICN) Tim Flickinger 515-725-4699 timothy.flickinger@icn.state.ia.us
Mediacom Chris Minard 815-597-5103 (Office) cminard@mediacomcc.com
Tekstar / Arvig Brett Christiansen 218-346-8138 Brett.Christiansen@arvig.com
Windstream Communications (CLEC) Stephen Kness 319-790-7678 stephen.kness@windstream.com

UTILITIES (NOT A POINT 25 PROJECT)	262-6 10-18-05
This is NOT a POINT 25 project and is not subject to the provisions of IAC 761-115.25.	

EXISTING SIGNS TO BE REINSTALLED	190-61 10-15-13								
SIGN DESCRIPTION	DIRECTION OF TRAVEL	LOCATION STATION	NUMBER OF POSTS	SQUARE TUBE STEEL POSTS	WOOD POSTS		INSTALLATION		SEE SIGNING NOTES
					4" x 4" LF	4" x 6" LF	TYPE	DIM 'X'	

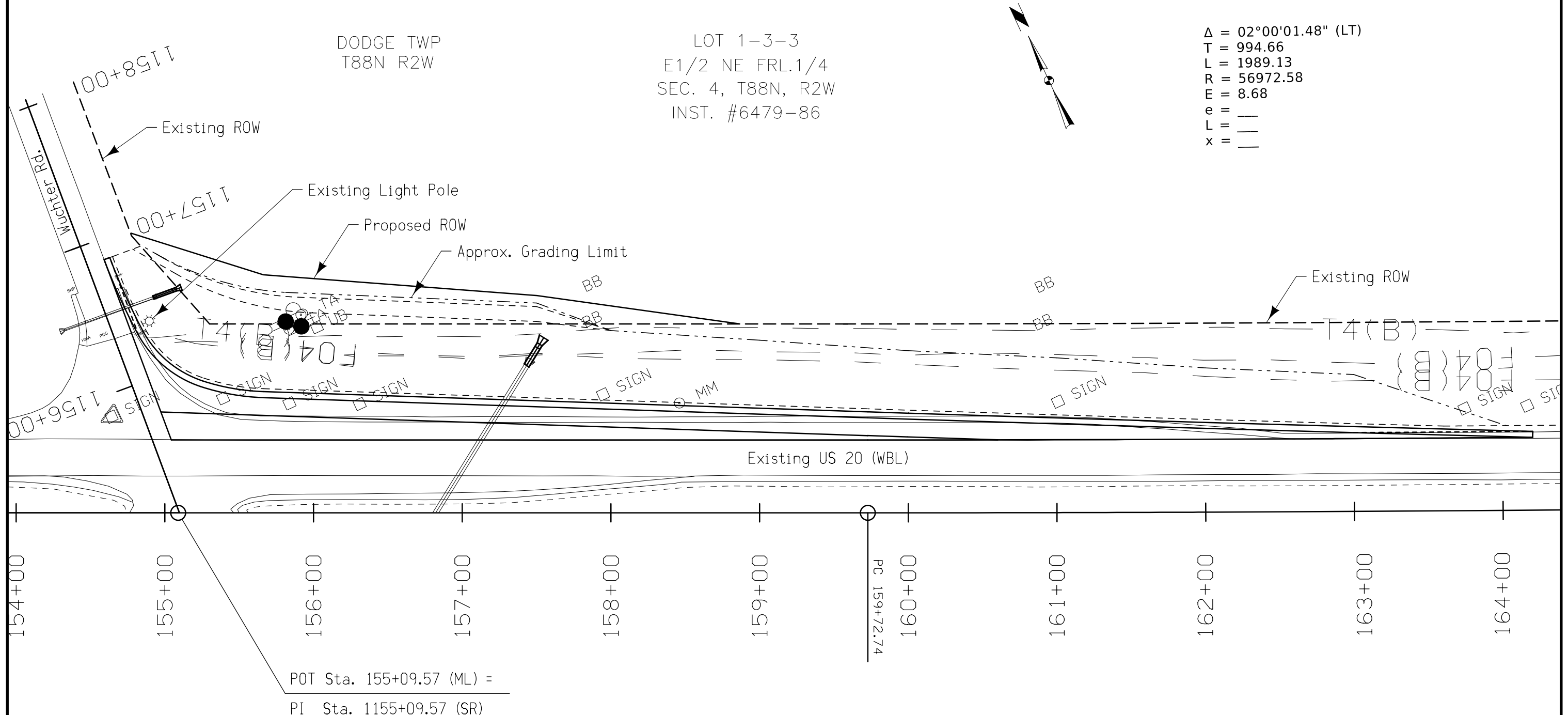
EXISTING PAVEMENT	102-5 04-18-17																				
No.	Location					Year	Type	Project Number	Surface		Base		Subbase		Removal		Coarse Aggregate			Reinforcement	Remarks
	County	Route	Dir. of Travel	Begin Ref. Loc. Sign	End Ref. Loc. Sign				Type	Depth	Type	Depth	Type	Depth	Type	Depth	Source	Type	Durability Class	Type	
	Dubuque	US 20	WB	294.55	299.57	2017	M	MP-020-6(706)283--76-28													PCC Patching
						2013		NHSN-020-8(49)--3H-28	HMA	1.5	HMA	1.5			SCR	1.0					
						2013	W	NHSN-020-8(49)--3H-28	HMA	1.5	HMA	1.5									
						1999		MP-20-6-(702)295-76-31	MSS												
						1990		FN-20-9(92)--21-31	HMA	2.0	HMA	3.0					Hartbecke		C. Lst.		
						1969		FN-20-9(8)--21-31	HMA	3.0							Browns Qry		C. Lst.		
						1960		F-305(10)	HMA	4.5	RSB	12.0	SAS	6.0			Sundheim		C. Lst.		

Benchmark: Sta. 154+90, Rt. 127' ROW CAP, SW Cor. US 20 and Wuchter Rd., Elev. 1059.02

DODGE TWP
T88N R2W

LOT 1-3-3
E1/2 NE FRL.1/4
SEC. 4, T88N, R2W
INST. #6479-86

$\Delta = 02^{\circ}00'01.48''$ (LT)
T = 994.66
L = 1989.13
R = 56972.58
E = 8.68
e = ___
L = ___
x = ___

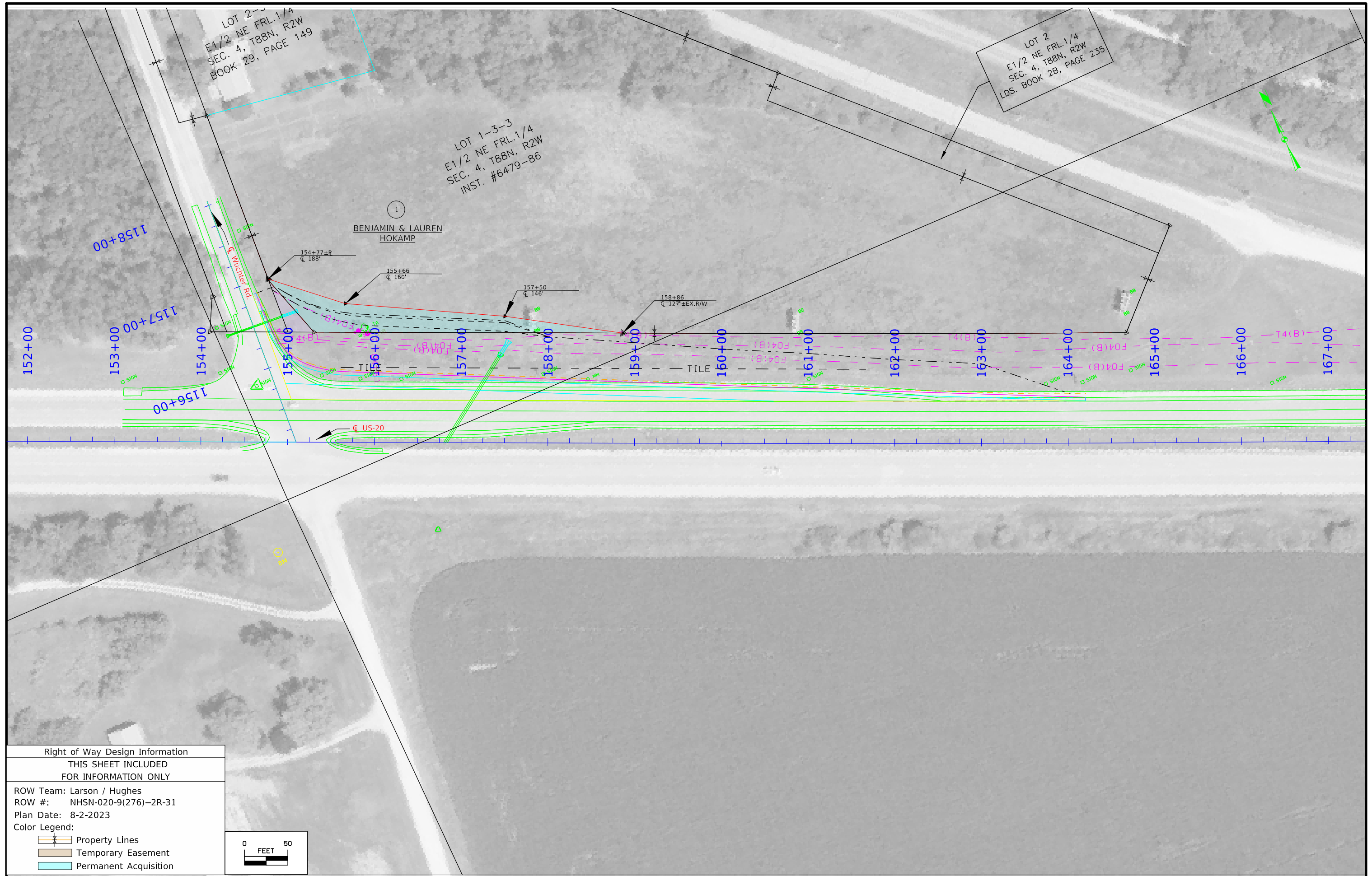


Sta. 1156+50, Rt.
Extend 24" Dia. RCP

Sta. 156+83, Lt.
Extend 42" Dia. RCP

Refer to L sheets
for geometric details.

**PLAN VIEW
RIGHT TURN LANE
AT WUCHTER ROAD**



LOT 2-3-3
E1/2 NE FRL.1/4
SEC. 4, T88N, R2W
BOOK 29, PAGE 149

LOT 1-3-3
E1/2 NE FRL.1/4
SEC. 4, T88N, R2W
INST. #6479-86

LOT 2
E1/2 NE FRL.1/4
SEC. 4, T88N, R2W
LDS. BOOK 2B, PAGE 235

1
BENJAMIN & LAUREN
HOKAMP

152+00

1158+00

1157+00
1156+00

154+00

155+00

156+00

157+00

158+00

159+00

160+00

161+00

162+00

163+00

164+00

165+00

166+00

167+00

154+77±P
C 188'

155+66
C 160'

157+50
C 146'

158+96
C 127'±EX.R/W

□ SIGN

□ SIGN

□ SIGN

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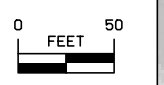
□ SIGN

Right of Way Design Information

THIS SHEET INCLUDED
FOR INFORMATION ONLY

ROW Team: Larson / Hughes
ROW #: NHSN-020-9(276)--2R-31
Plan Date: 8-2-2023

- Color Legend:
- Property Lines
 - Temporary Easement
 - Permanent Acquisition

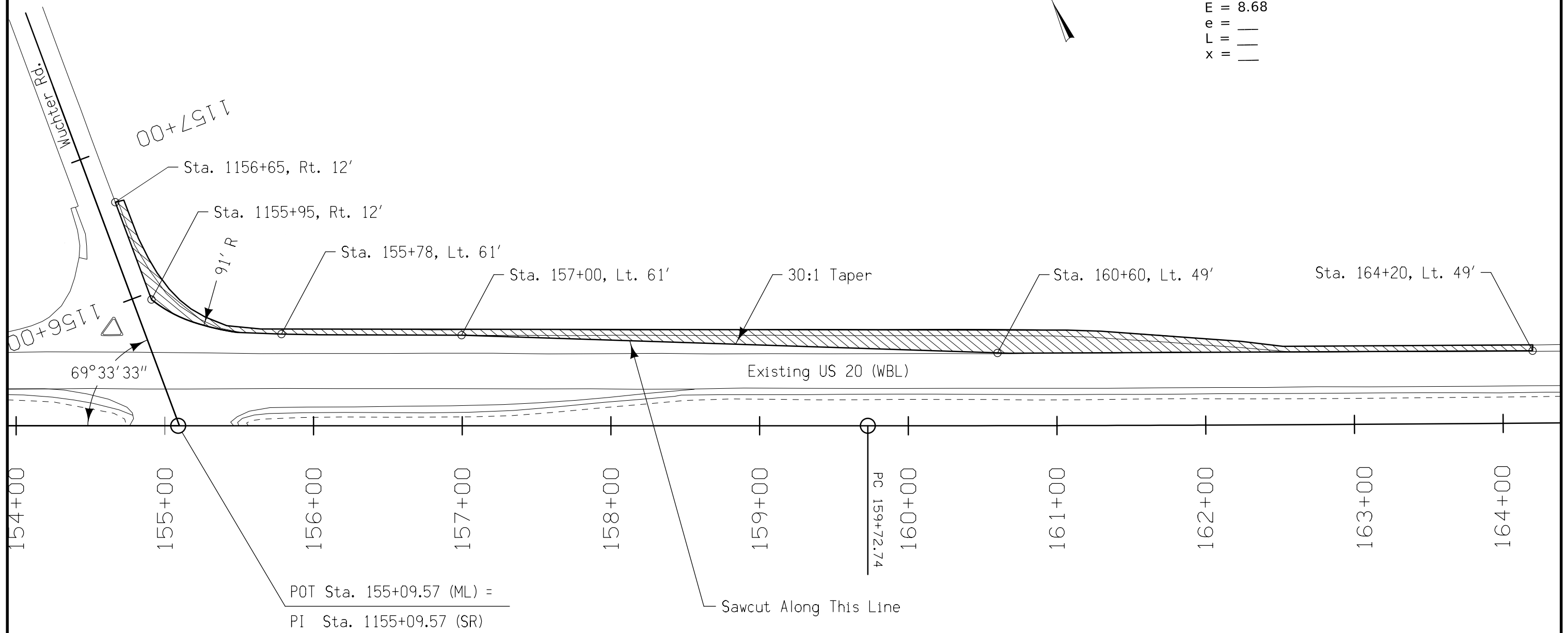
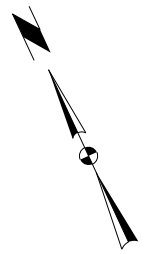


108-23A 08-01-08
TRAFFIC CONTROL PLAN
1. Through traffic will be maintained on the project at all times.

111-01 04-17-12																						
COORDINATED OPERATIONS																						
Other work in progress during the same period of time will include the construction of the projects listed. Coordinate operations with those of other contractors working within the same area.																						
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 30%;">Project</th> <th style="width: 70%;">Type of Work</th> </tr> </thead> <tbody> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> </tbody> </table>	Project	Type of Work																				
Project	Type of Work																					

108-25 10-21-14												
511 TRAVEL RESTRICTIONS												
Route	Direction	County	Location Description	Feature Crossed	Object Type	Maint. Bridge No., Structure ID, or FHWA No.	Type of Restriction	Existing Measurement	Construction Measurement	Construction Measurement as Signed	Projected As Built Measurement	Remarks
			None									

$\Delta = 02^{\circ}00'01.48''$ (LT)
 T = 994.66
 L = 1989.13
 R = 56972.58
 E = 8.68
 e = ___
 L = ___
 x = ___

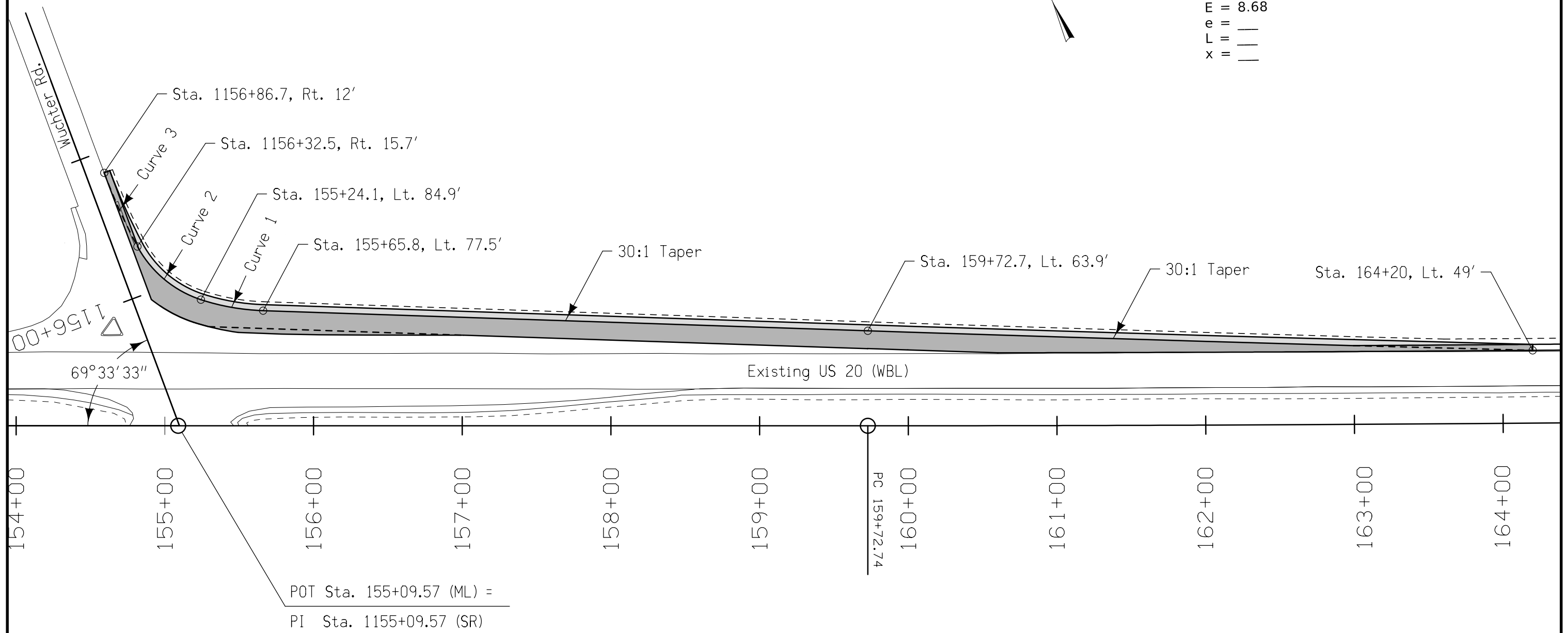
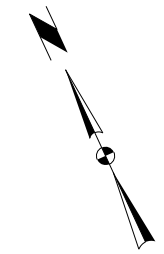


 = Pavement Removal

PAVEMENT REMOVAL

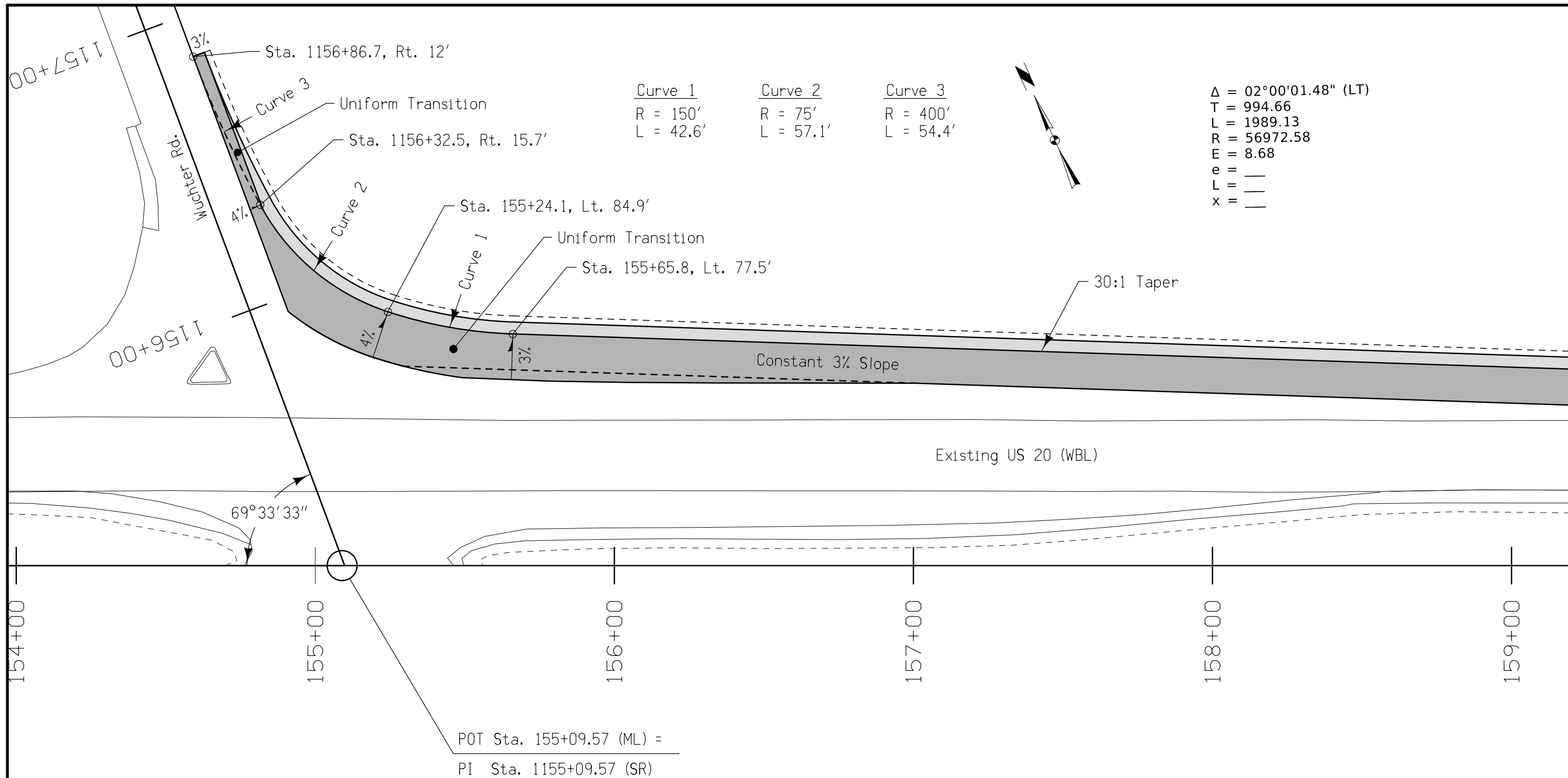
Curve 1	Curve 2	Curve 3
R = 150'	R = 75'	R = 400'
L = 42.6'	L = 57.1'	L = 54.4'

$\Delta = 02^{\circ}00'01.48''$ (LT)
 T = 994.66
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 e = ___
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- = Proposed HMA Pavement
- = Proposed HMA Paved Shoulder

GEOMETRIC DETAILS



Curve 1	Curve 2	Curve 3
R = 150'	R = 75'	R = 400'
L = 42.6'	L = 57.1'	L = 54.4'

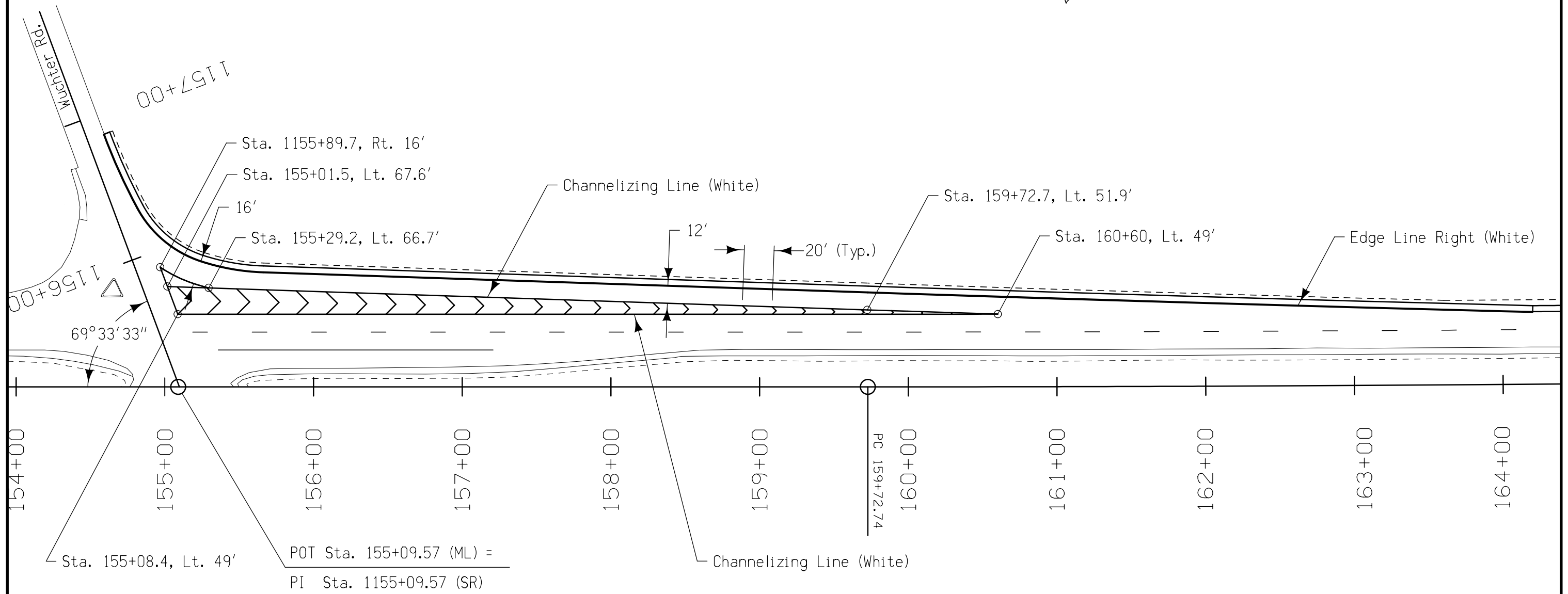
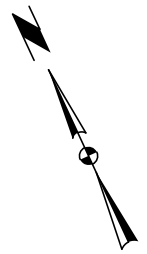
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 $T = 994.66$
 $L = 1989.13$
 $R = 56972.58$
 $E = 8.68$
 $e = \text{---}$
 $L = \text{---}$
 $x = \text{---}$

POT Sta. 155+09.57 (ML) =
 PI Sta. 1155+09.57 (SR)

- = Proposed HMA Pavement
- = Proposed HMA Paved Shoulder

- NOTES:
- The cross slope of the proposed pavement shall be 3% except as noted.
 - The cross slope of the proposed pavement shall in no case be less than the cross slope of the adjoining pavement.

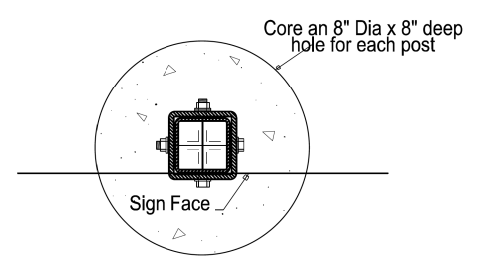
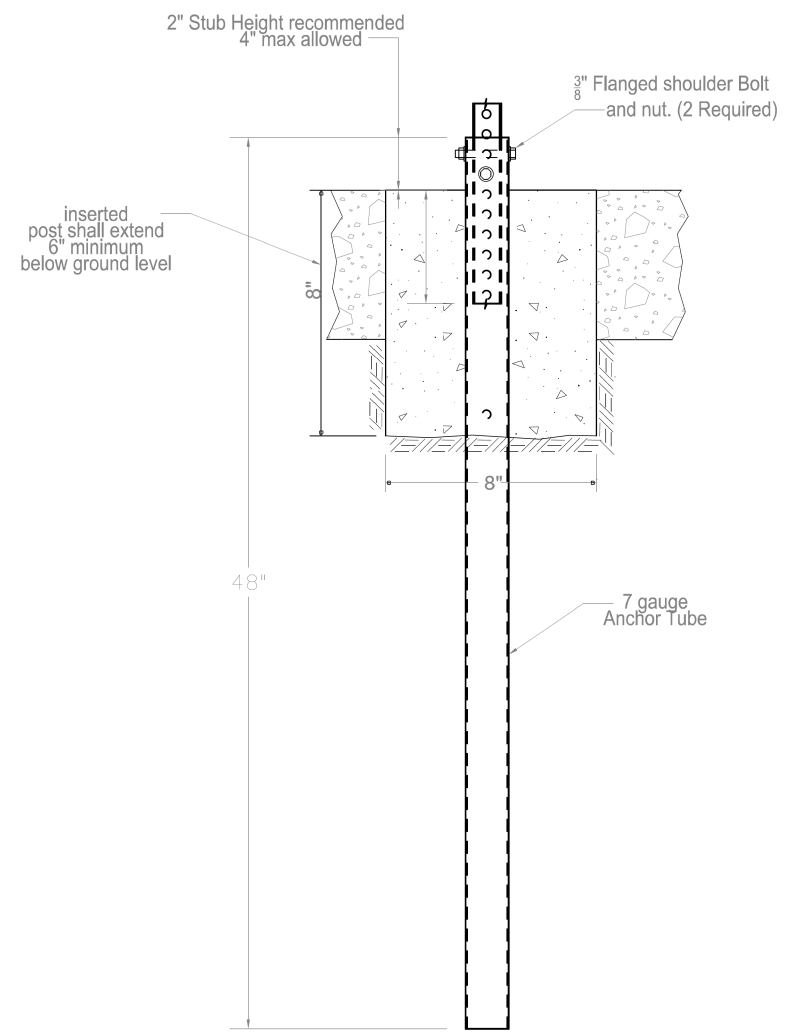
GEOMETRIC DETAILS



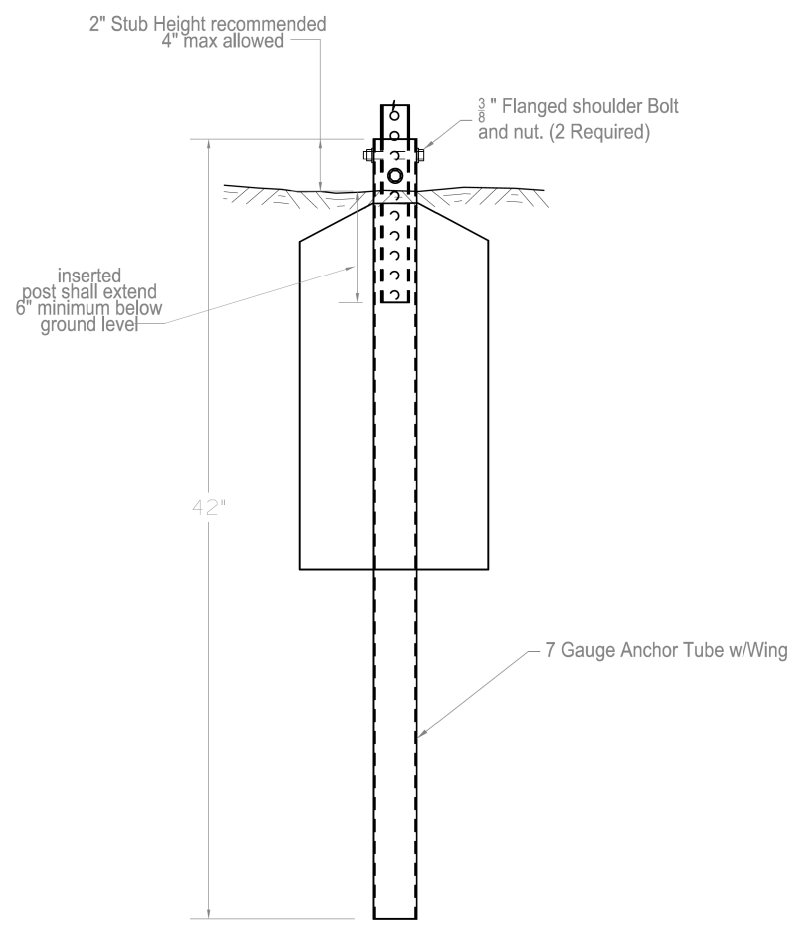
**PAVEMENT MARKING
DETAIL**



Sign post shall be installed according to the manufacturer's instructions

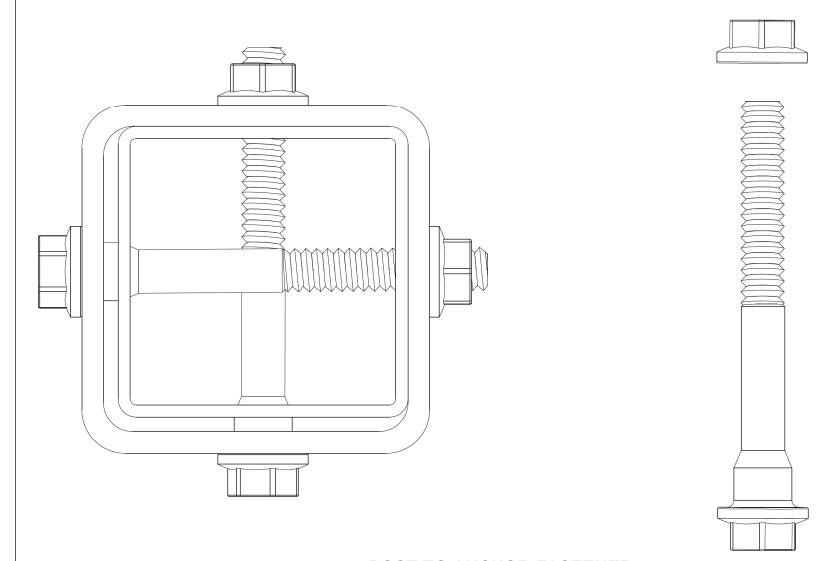


BREAK AWAY CONCRETE INSTALLATION



BREAK AWAY SOIL INSTALLATION

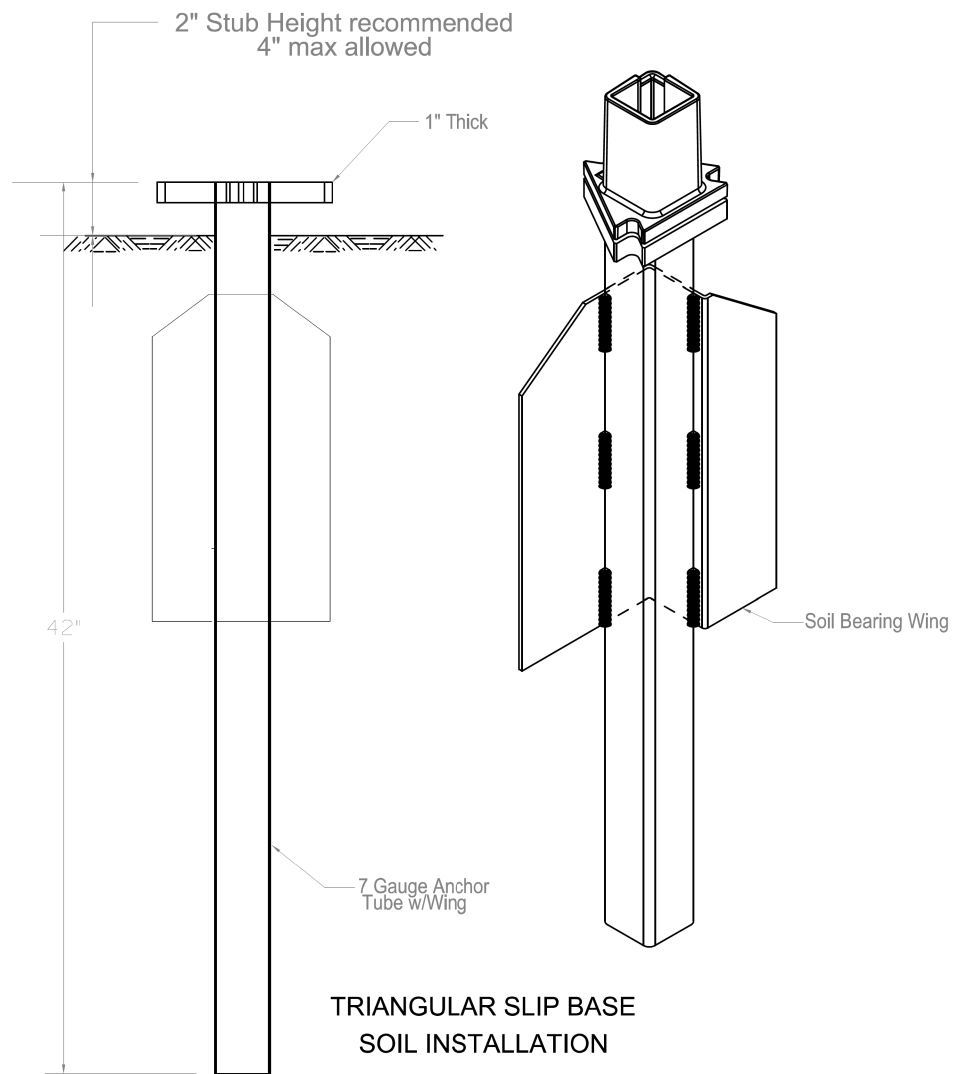
2 EACH 3/8" X 3 1/2" FLANGED SHOULDER BOLT & NUT



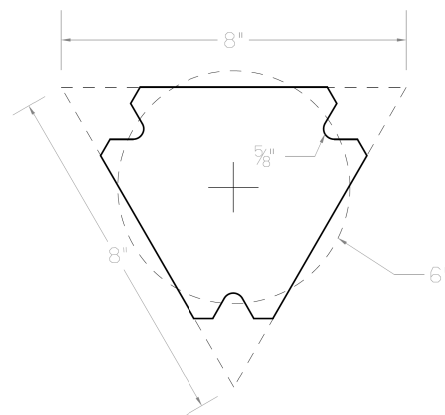
POST TO ANCHOR FASTENER FOR 7 GAUGE ANCHOR TUBE

NOTE: 2" X 2" X 12 gauge perforated post requires 2 1/2" X 2 1/2" X 7 gauge anchor tube.
2 1/2" X 2 1/2" X 12 gauge perforated post requires 3" X 3" X 7 gauge anchor tube.

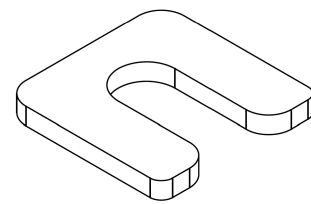
IOWADOT	REVISION	
	-	00-00-00
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TAS STANDARD		
REVISION:--		
Perforated Square Steet Tube Anchor and Post Sheet 1 of 3		



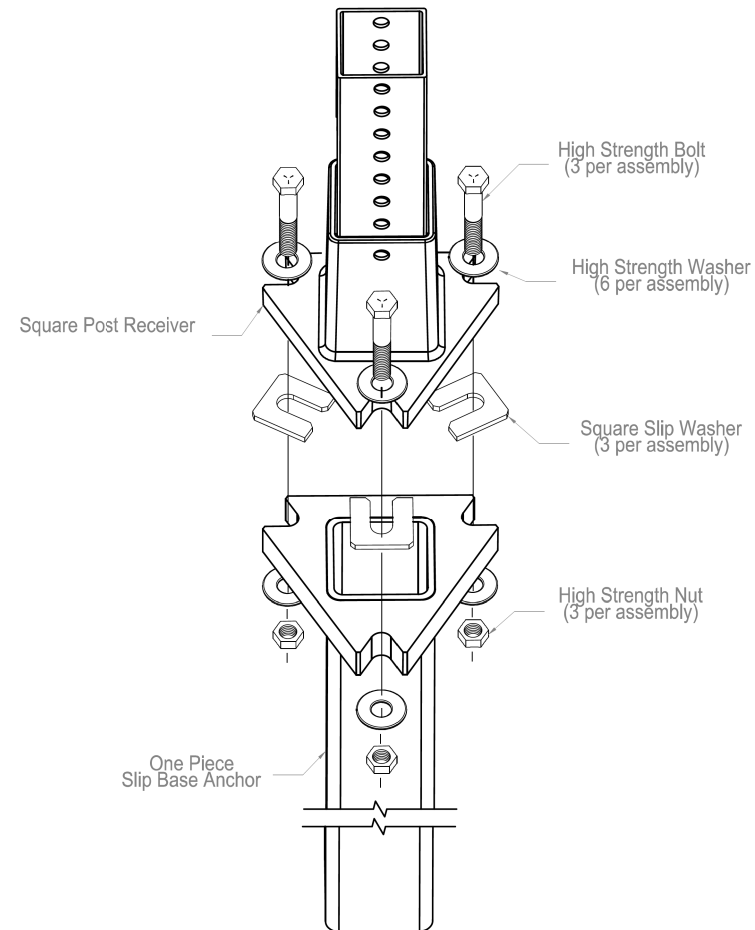
TRIANGULAR SLIP BASE
SOIL INSTALLATION



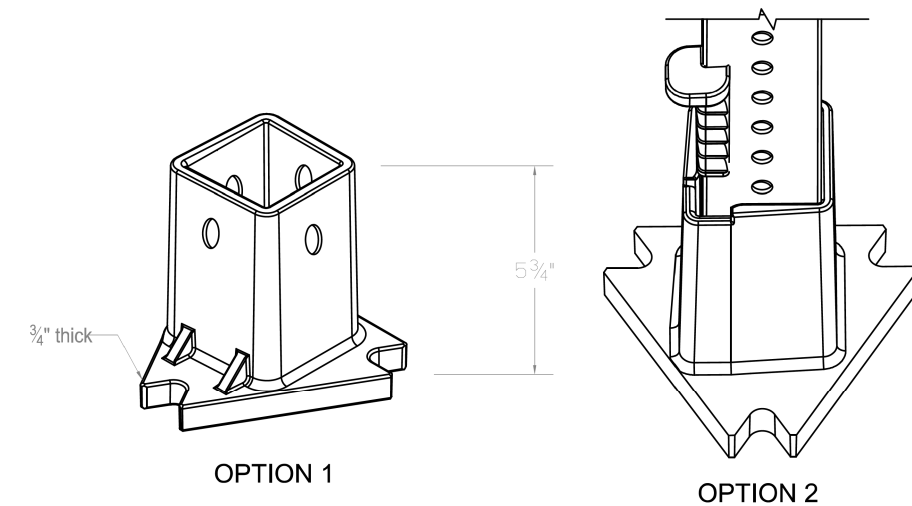
SLIP PLATE DIMENSIONS



1 1/4" SQUARE 3/16"
TEFLON COATED,
HARDENED SLIP WASHER



EXPLODED VIEW
SLIP BASE, RECEIVER AND
CONNECTION HARDWARE

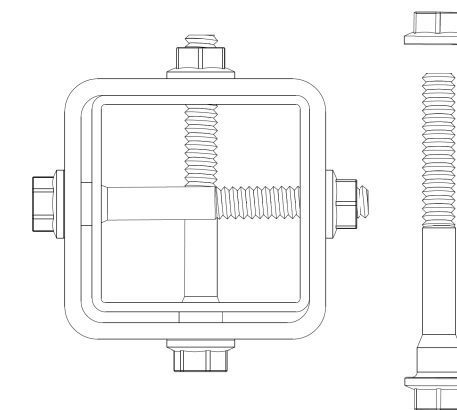


OPTION 1

OPTION 2

2 1/2" SQUARE POST RECEIVER OPTIONS

2 EACH 3/8" X 3 1/2" FLANGED SHOULDER BOLT & NUT
(FOR OPTION 1 RECEIVER CONNECTION)



POST TO ANCHOR FASTENER
FOR 7 GAUGE ANCHOR TUBE

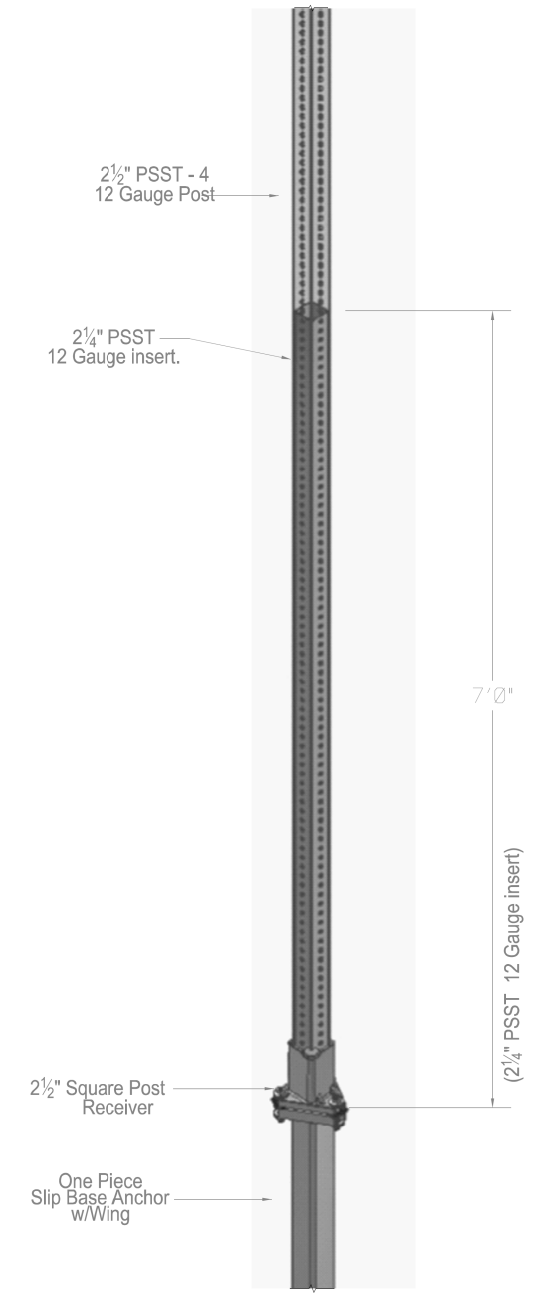
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	-	00-00-00
...	...	
REVISION...	TAS STANDARD	
Perforated Square Steel Tube Anchor and Post Sheet 2 of 3		

(AASHTO Standard Specifications for - Highway Signs, Luminaires, and Traffic Signals. 6th Edition 2013. <Rev B 4/7/14>)


WINDLOAD COORDINATES FOR PSST POST AT 90 MPH

Legend:  Post type not used.

SIGN CENTROID	SIGN AREA (SQ-FT) YIELDING DESIGN													
	SOIL OR CONCRETE SOLID WALL ANCHOR			SLIP BASE REQUIRED										
	2" x 12ga perf.		2-1/2" x 12ga perf.	2-1/2" x 12ga perf.		2-1/2" x 10ga perf.			2-1/4" x 12ga inserted into a 2-1/2" x 12ga perf.			2-3/16" x 10ga inserted into a 2-1/2" x 10ga perf.		
	1 Post	2 Post	1 Post	2 Post	3 Post	1 Post	2 Post	3 Post	1 Post	2 Post	3 Post	1 Post	2 Post	3 Post
16.5	6.48	12.96	10.44	20.88	31.32	13.16	26.32	39.48	18.78	37.56	56.34	23.04	46.08	69.12
16	6.68	13.36	10.76	21.52	32.28	13.57	27.14	40.71	19.36	38.72	58.08	23.75	47.5	71.25
15.5	6.9	13.8	11.11	22.22	33.33	14.01	28.02	42.03	19.99	39.98	59.97	24.52	49.04	73.56
15	7.13	14.26	11.48	22.96	34.44	14.48	28.96	43.44	20.65	41.3	61.95	25.34	50.68	76.02
14.5	7.37	14.74	11.87	23.74	35.61	14.98	29.96	44.94	21.36	42.72	64.08	26.22	52.44	78.66
14	7.64	15.28	12.3	24.6	36.9	15.51	31.02	46.53	22.13	44.26	66.39	27.15	54.3	81.45
13.5	7.92	15.84	12.75	25.5	38.25	16.09	32.18	48.27	22.95	45.9	68.85	28.16	56.32	84.48
13	8.22	16.44	13.24	26.48	39.72	16.7	33.4	50.1	23.83	47.66	71.49	29.23	58.46	87.69
12.5	8.55	17.1	13.77	27.54	41.31	17.37	34.74	52.11	24.78	49.56	74.34	30.41	60.82	91.23
12	8.91	17.82	14.35	28.7	43.05	18.1	36.2	54.3	25.82	51.64	77.46	31.68	63.36	95.04
11.5	9.3	18.6	14.97	29.94	44.91	18.88	37.76	56.64	26.94	53.88	80.82	33.05	66.1	99.15
11	9.72	19.44	15.65	31.3	46.95	19.74	39.48	59.22	28.16	56.32	84.48	34.55	69.1	103.65
10.5	10.18	20.36	16.4	32.8	49.2	20.68	41.36	62.04	29.5	59	88.5	36.2	72.4	108.6
10	10.69	21.38	17.22	34.44	51.66	21.72	43.44	65.16	30.98	61.96	92.94	38.01	76.02	114.03
9.5	11.25	22.5	18.12	36.24	54.36	22.86	45.72	68.58	32.61	65.22	97.83	40.01	80.02	120.03
9	11.88	23.76	19.13	38.26	57.39	24.13	48.26	72.39	34.42	68.84	103.26	42.23	84.46	126.69
8.5	12.58	25.16	20.26	40.52	60.78	25.55	51.1	76.65	36.45	72.9	109.35	44.72	89.44	134.16
8	13.36	26.72	21.52	43.04	64.56	27.14	54.28	81.42	38.72	77.44	116.16	47.51	95.02	142.53



* NESTING DETAIL FOR PERFORATED SQUARE STEEL TUBE POST

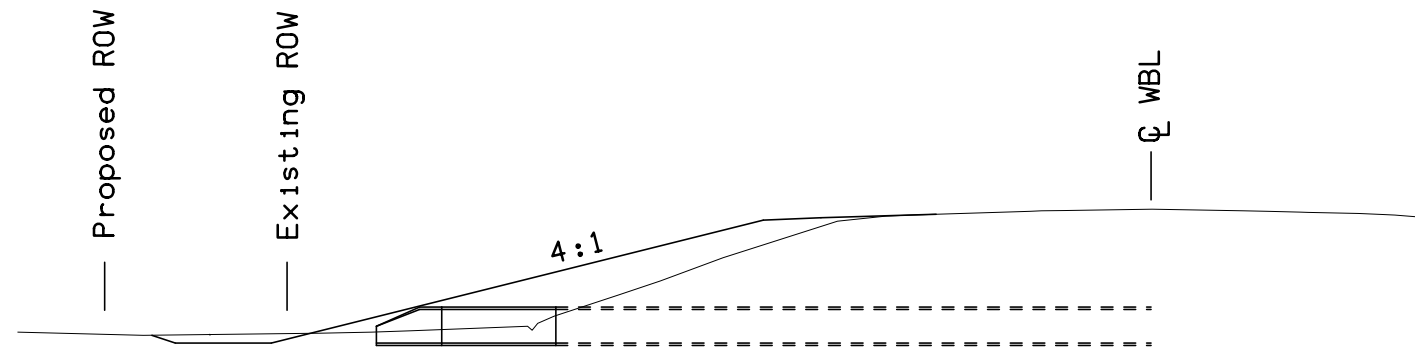
	REVISION	
	-	00-00-00

TAS STANDARD		
REVISION: _____		
Perforated Square Steel Tube Anchor and Post Sheet 3 of 3		

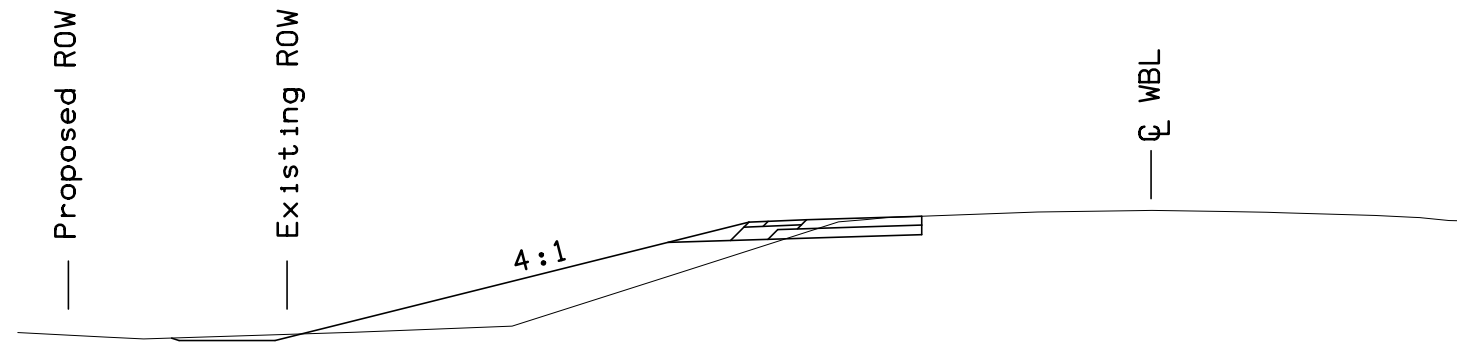
Post Code	a1	a2	b1	b2	b3	c1	c2	c3	d1	d2	d3	e1	e2	e3
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*SEE NESTING DETAIL

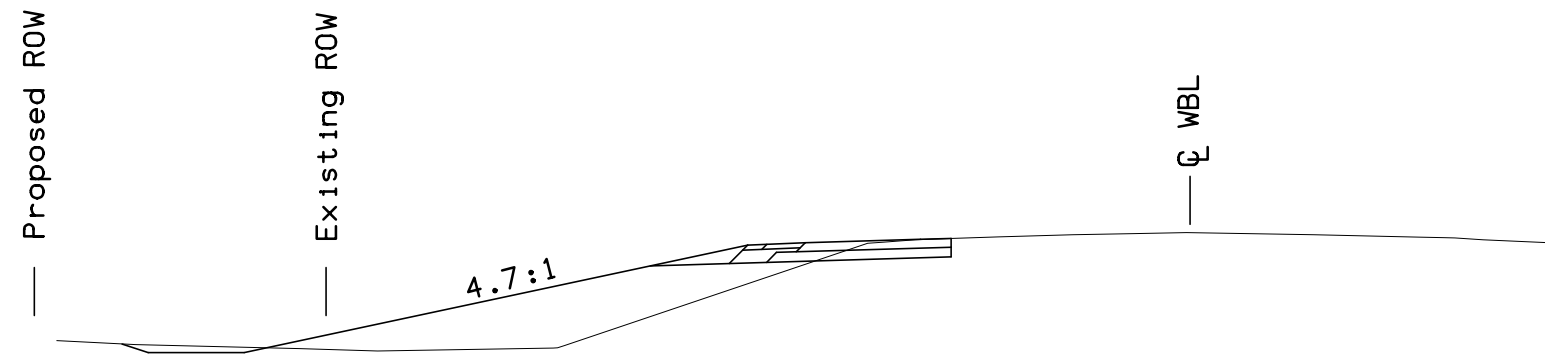
170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0



157+50



157+00

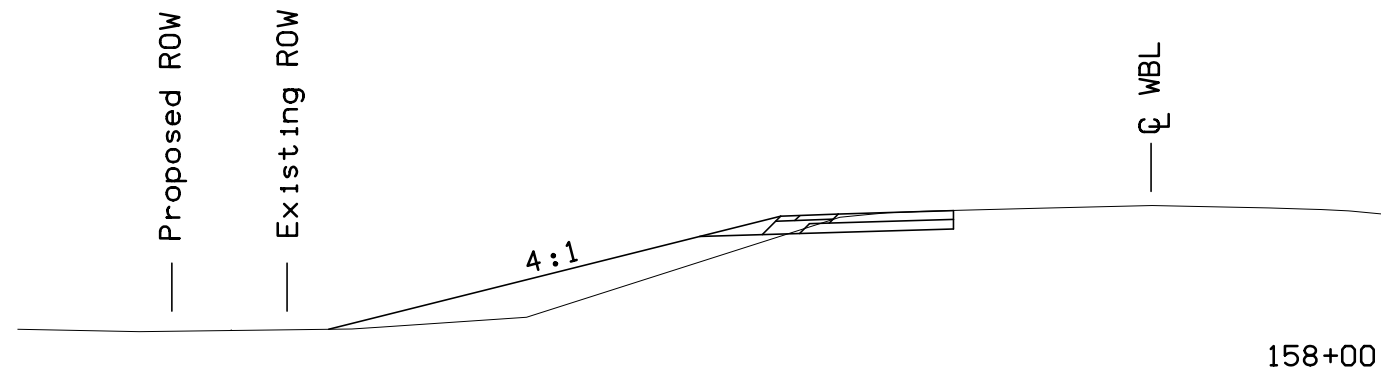
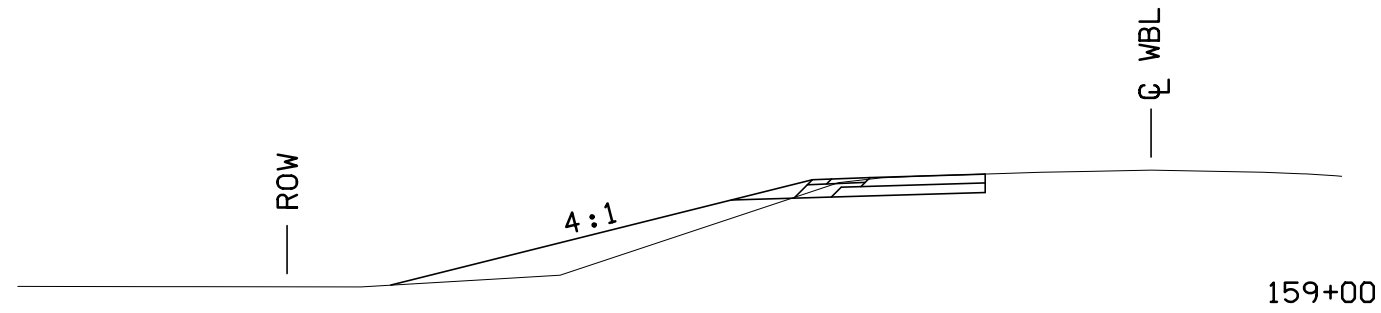
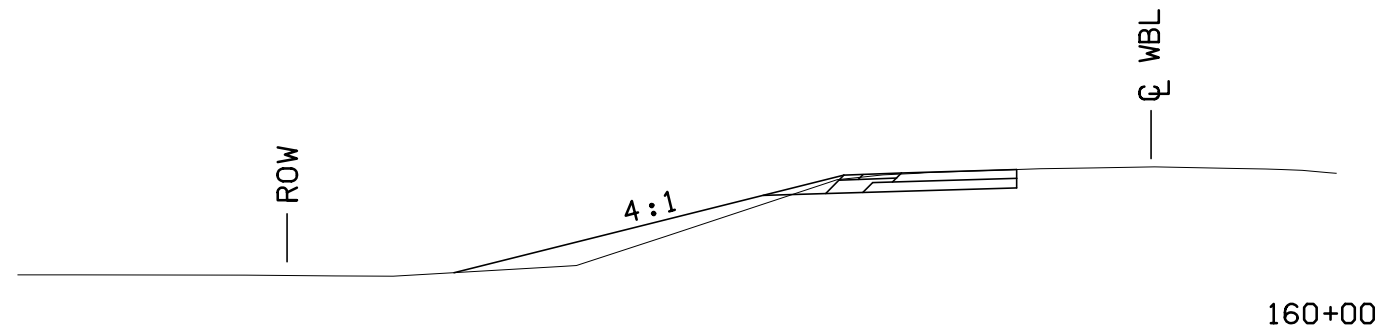


156+00

CROSS SECTIONS
US 20

170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0

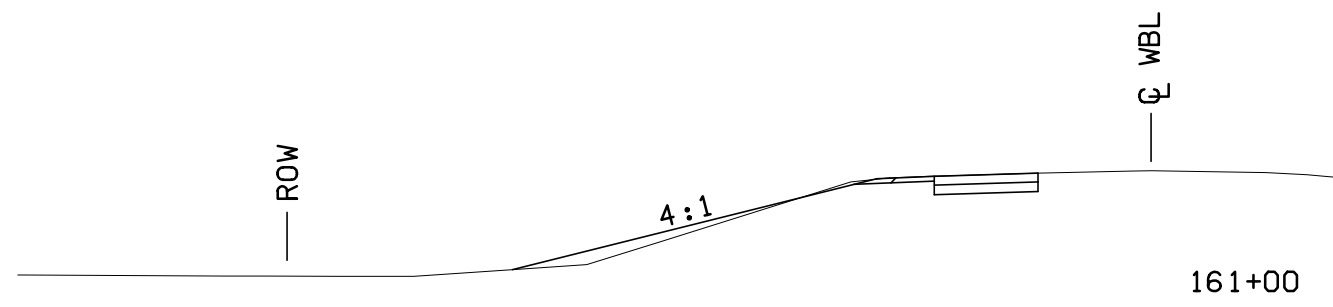
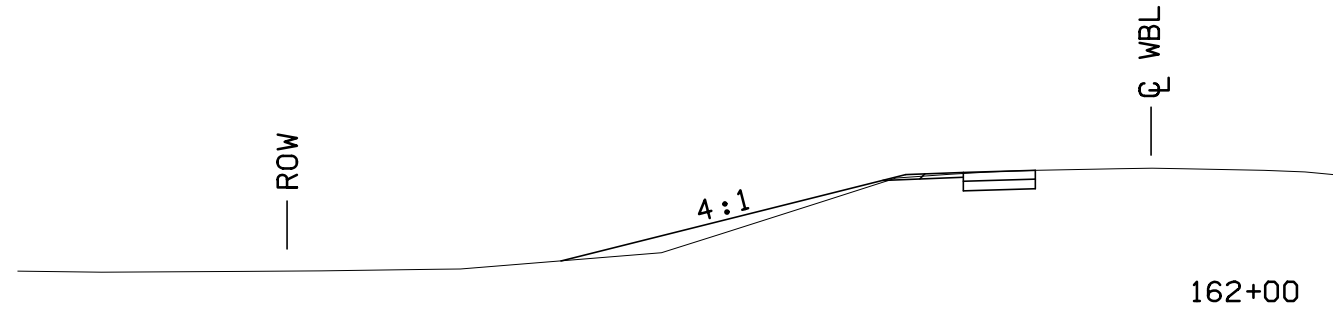
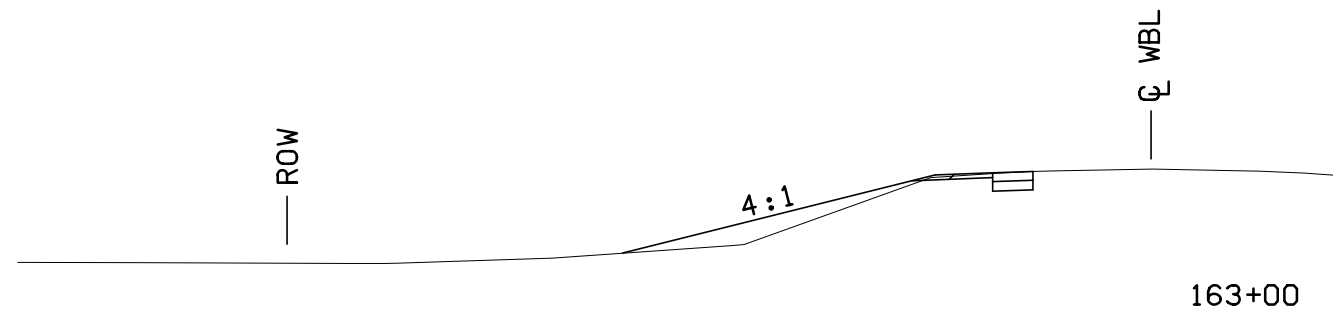
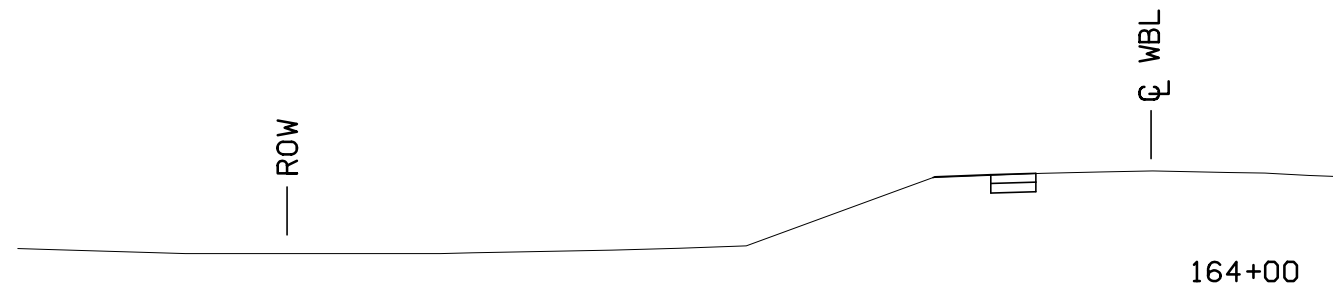
170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0



CROSS SECTIONS
US 20

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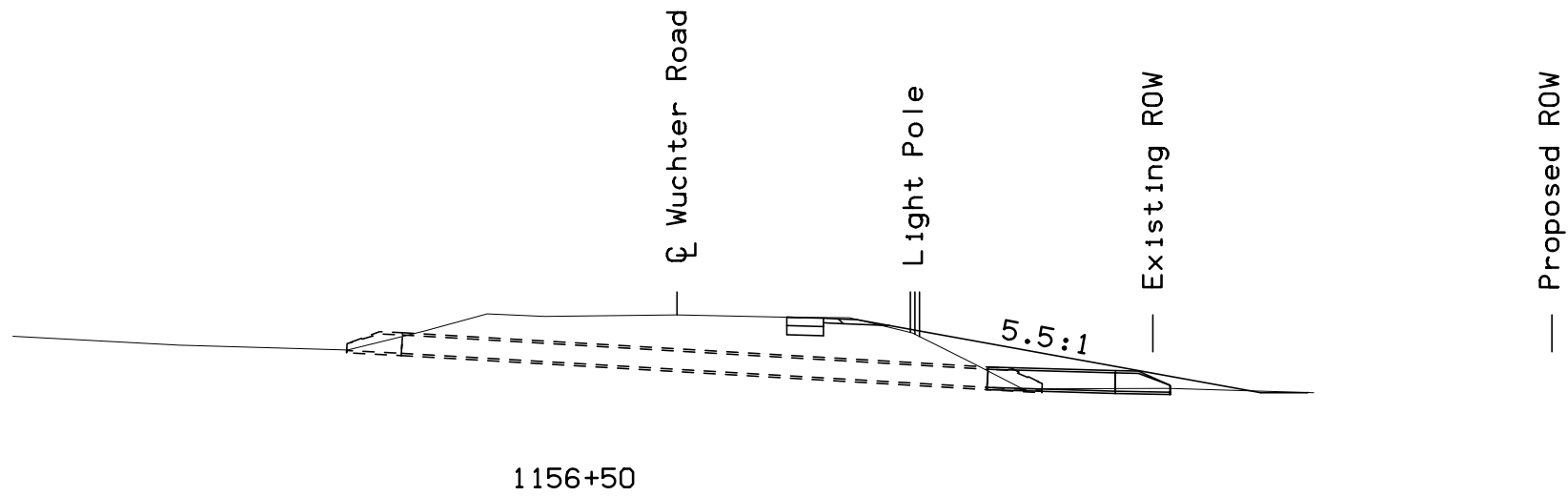
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CROSS SECTIONS
US 20

170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0

60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110



**CROSS SECTIONS
WUCHTER ROAD**

60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110