DDP.03 Clear zone and guardrail length of need.xls
Length of Need Calculations (L)

L line

Enter Values for Equations found in Chapter 1610 of the Design Manual and field conditions encountered.

LH1=	23.64
LH2=	
L1=	
L2=	8.20
L4=	

L5=	
Y=	0
LR=	300
F=	14

$$X1= \frac{LH1 -(L2+Y)}{(LH1/LR)}$$

$$X1= \frac{23.64-(8.2+0)}{(23.64/300)}$$

$$X1= \frac{15.44}{0.0788}$$

X1= 195.94

$$X2= \frac{LH2 -(L5+Y)}{(LH2/LR)}$$

$$X2= \frac{-(+0)}{(/300)}$$

$$X2= \frac{0}{0}$$

X2= #DIV/0!

Adjacent-Side Hazard
Barrier Parallel to Roadway

Opposite-Side Hazard
Barrier Parallel to Roadway

$$X1= \frac{LH1 -(L2+Y)}{(1/F)+(LH1/LR)}$$

$$X1= \frac{23.64-(8.2+0)}{(1/14)+(23.64/300)}$$

$$X1= \frac{15.44}{0.150228571}$$

X1= 102.78

$$X2= \frac{LH2 -(L5+Y)}{(1/F)+(LH2/LR)}$$

$$X2= \frac{-(+0)}{(1/14)+(/300)}$$

$$X2= \frac{0}{0.071428571}$$

X2= 0.00

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Adjacent-Side Hazard
Barrier Flare Begins at Hazard

$$X1= \frac{(LH1+L1/F) -(L2+Y)}{(1/F)+(LH1/LR)}$$

$$X1= \frac{(23.64+/14)-(8.2+0)}{(1/14)+(23.64/300)}$$

$$X1= \frac{15.44}{0.150228571}$$

X1= 102.78

Opposite-Side Hazard
Barrier Flare Begins at Hazard

$$X2= \frac{(LH2+L4/F) -(L5+Y)}{(1/F)+(LH2/LR)}$$

$$X2= \frac{(+/14)-(+0)}{(1/14)+(/300)}$$

$$X2= \frac{0}{0.071428571}$$

X2= 0.00

Adjacent-Side Hazard
Barrier Flare Begins Before Hazard

Opposite-Side Hazard
Barrier Flare Begins Before Hazard

DDP.03 Clear zone and guardrail length of need.xls
Length of Need Calculations (L)

LOCATION: VMS

ALIGNMENT	**L**	LH1=	22.5	L5=	
STATION	**418+29.14**	LH2=		Y=	
		L1=		LR=	300
X1=	LH1 -(L2+Y)	L2=	14.4	F=	18
	(1/F)+(LH1/LR)	L4=			

X1= $\frac{22.5-(14.4+)}{(1/18)+(22.5/300)}$

X1= $\frac{8.1}{0.13056}$

X1= 62.04

LOCATION: VMS
Westbound

ALIGNMENT	**L**	LH1=	23.64	L5=	
STATION	**377+00**	LH2=		Y=	0
		L1=		LR=	300
X1=	LH1 -(L2+Y)	L2=	8.2	F=	14
	(LH1/LR)	L4=			

X1= $\frac{23.64-(8.2+0)}{(23.64/300)}$

X1= $\frac{15.44}{0.0788}$

DDP.03 Clear zone and guardrail length of need.xls
Length of Need Calculations (L)

X1=	**195.94**

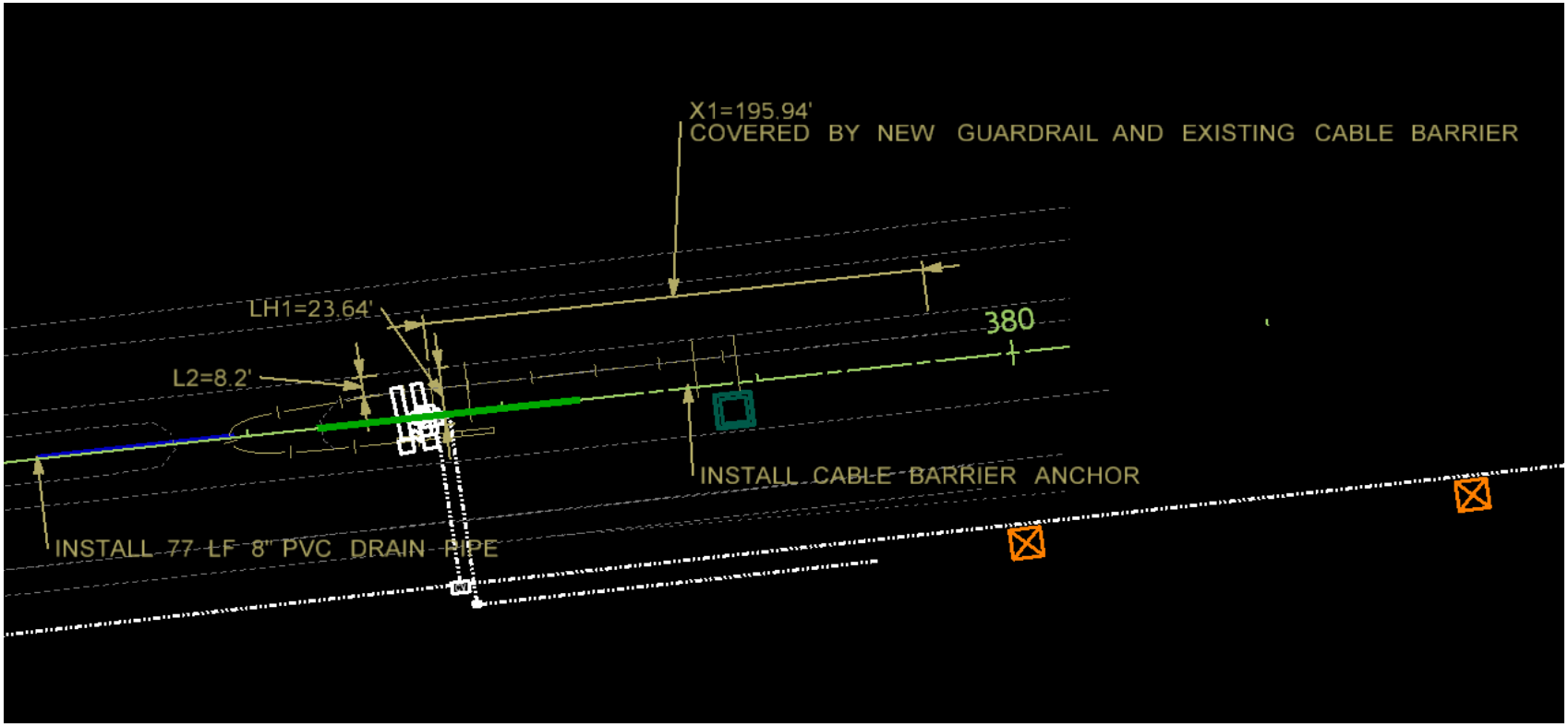
LOCATION: VMS
Eastbound

ALIGNMENT	**L**	LH1=	23.61	L5=	
STATION	**377+00**	LH2=		Y=	0
		L1=		LR=	300
X1=	LH1 -(L2+Y)	L2=	8.2	F=	14
	(1/F)+(LH1/LR)	L4=			

X1= $\frac{23.64-(8.2+0)}{(1/14)+(23.64/300)}$

X1= $\frac{15.44}{0.150228571}$

X1=	**102.78**


X1=195.94'
COVERED BY NEW GUARDRAIL AND EXISTING CABLE BARRIER
LH1=23.64'
L2=8.2'
380
INSTALL CABLE BARRIER ANCHOR
INSTALL 77 LF 8" PVC DRAIN PIPE