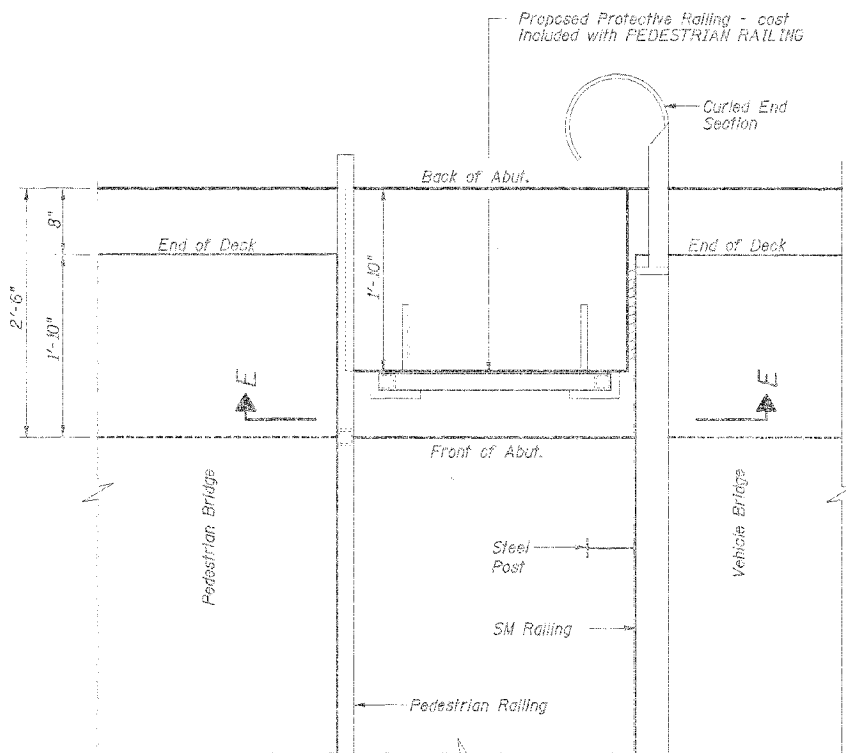


ROUTE NO.	SECTION	COUNTY	SHEET	TOTAL
FAS 507	*	Vermilion	54	53
FED. ROAD DIST. NO. 7		PLANES	TOTAL PROJECT	

\*05-00154-00-BR

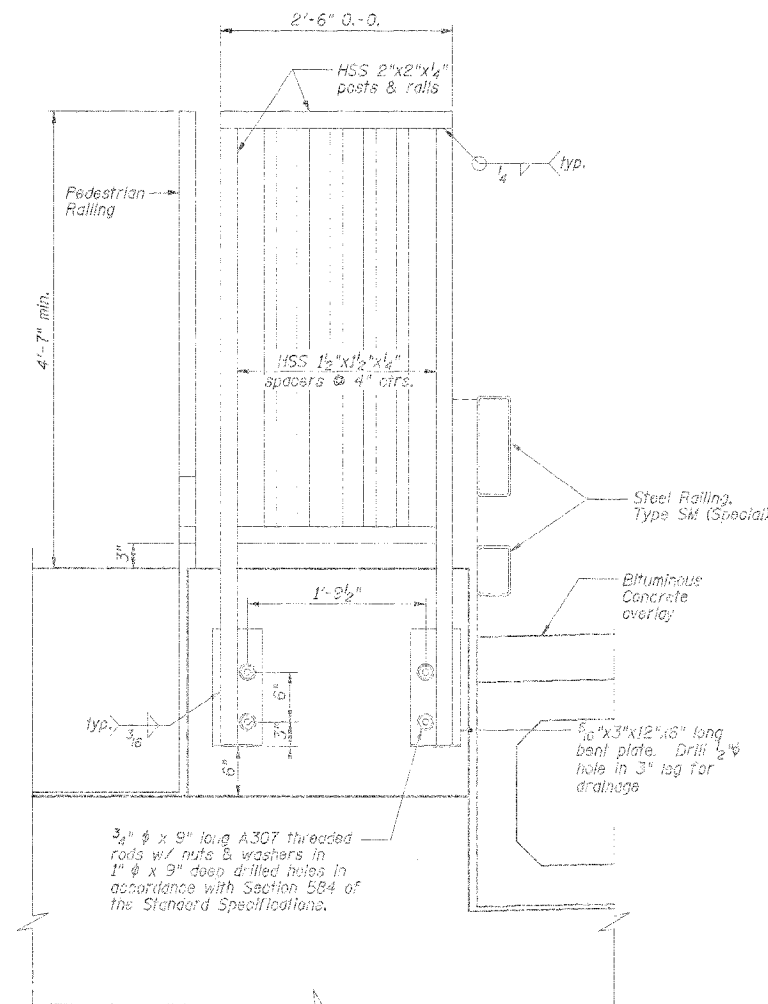


**PLAN VIEW PROTECTIVE RAILING**

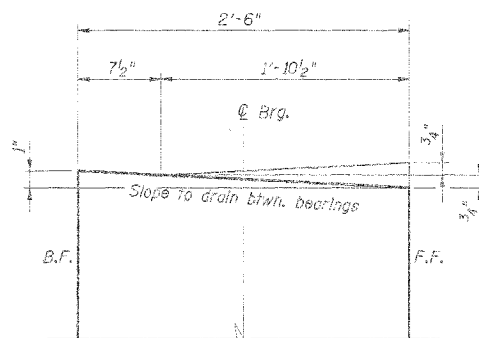
Cost Included with PEDESTRIAN RAILING Occurs at North & South Abutments.

NOTES: Center protective railing in opening as necessary.

All posts, railing, anchor devices, and bent plates shall be galvanized after shop fabrication according to AASHTO M 111 and ASTM A 335. Galvanized roll shall not be permitted.

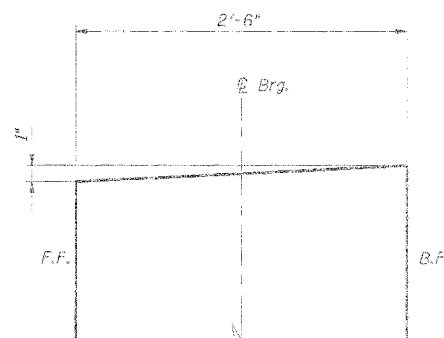


**SECTION E-E**



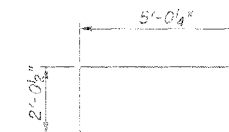
**SOUTH ABUTMENT TOP OF CAP SLOPE DETAILS**

Control elevations along C of Bearings. Slope top of abutment to drain between bearings as shown above.



**NORTH ABUTMENT TOP OF CAP SLOPE DETAILS**

Control elevations along C of Bearings. Slope top of abutment as shown above.



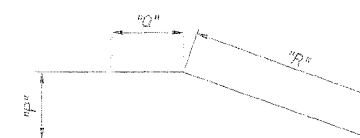
**BAR U10**



**BAR #12**

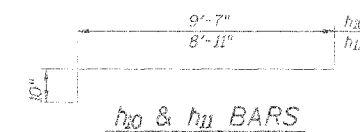


**BAR #10**



**h16 & h17 BARS**

BAR	"12"	"10"	"8"
h16	1'-6 1/2"	2'-3 1/2"	6'-9 1/2"
h17	1'-6 1/2"	1'-8"	6'-9 1/2"



**h10 & h11 BARS**

**PILE DATA**

Type: Steel HPI0x42  
 No. Required: 6 North Abutment  
 6 South Abutment  
 Nominal Required Bearing: 100 kips  
 Allowable Resistance Available: 60 kips  
 Drive Piles to Refusal  
 Est. Length: 14 Feet Both Abutments  
 Test Piles: 1 North Abutment  
 1 South Abutment  
 The Steel Piles shall meet the requirements of AASHTO M270 Grade 50.

**BILL OF MATERIAL - 2 ABUT.**

Bar	No.	Size	Length	Shops
h10	18	# 5	10'-5"	
h11	18	# 5	7'-9"	
h12	2	# 5	8'-10"	
h13	2	# 5	8'-2"	
h14	2	# 5	5'-3"	
h15	2	# 5	2'-7"	
h16	4	# 5	9'-1"	
h17	4	# 5	8'-5"	
h18	2	# 5	8'-8"	
h19	2	# 5	8'-0"	
h20	2	# 5	5'-8"	
h21	2	# 5	5'-0"	
D12	18	# 6	41'-0"	
P11	6	# 6	9'-6"	
P12	6	# 4	7'-11"	
S10	64	# 5	11'-6"	
U10	18	# 6	12'-1"	
V1	12	# 4	5'-9"	
V2	4	# 4	6'-7"	
V3	4	# 4	6'-4"	
V4	4	# 4	6'-1"	
V5	4	# 4	5'-11"	
V6	4	# 4	5'-8"	
V7	4	# 4	5'-5"	
V8	4	# 4	5'-3"	
V9	12	# 4	6'-0"	
V10	4	# 4	5'-10"	
V11	4	# 4	5'-7"	
V12	4	# 4	5'-4"	
V13	4	# 4	5'-2"	
V14	4	# 4	4'-11"	
V15	4	# 4	4'-8"	
V16	4	# 4	4'-6"	
V17	12	# 4	5'-0"	
Concrete Structures		Cu. Yds.	39.8	
Reinforcement Bars		Lbs.	3440	
Test Pile, Steel HPI0x42		Each	2	
Furnishing Steel Piles HPI0x42		Foot	168	
Driving Piles		Foot	168	
Metal Shoes		Each	14	
Concrete Cut-off Wall		Cu. Yds.	7.6	
Structure Excavation		Cu. Yds.	20	
Controlled Low-Strength Material (CLSM)		Cu. Yds.	102	

DSGN	K.J. Hoffmann				
DR	K.J. Hoffmann				
CHK	A. Fraunhofer				
APVD	A. Fraunhofer	No.	DATE	REVISION	BY

**FRAUENHOFER**  
 Fraunhofer and Associates, P.C. Consulting Engineers  
 3002 Crossing Court Champaign, IL 61822 217-361-6288

**ABUTMENTS - SHEET 2 OF 2**  
 VILLAGE OF CATLIN  
 SECTION 05-00154-00-BR  
 VERMILION COUNTY

SHEET	53
DWG. NO.	0522-ABT.dwg
DATE	JUNE 2006
PROJ. NO.	5022