

PILE DRIVING AND CAPACITY

THE FACTORED REACTION FOR EACH HP 12X53 PILE AT THE ABUTMENT IS 67.6 TONS ON BRIDGE "A".

THE FOLLOWING FORMULA (GATES EQUATION) SHALL BE USED TO DETERMINE THE AXIAL LOAD RESISTANCE OF THE DRIVEN FOUNDATION PILES.

$$\text{AXIAL LOAD RESISTANCE} = \phi [0.875 \sqrt{E} \log_{10}(10N)] - 50$$

WHERE:

ϕ = RESISTANCE FACTOR OF 0.4

E = ENERGY PRODUCED BY THE HAMMER PER BLOW IN FOOT-POUNDS. FOR GRAVITY AND SINGLE ACTING DIESEL HAMMERS, THE VALUE IS BASED ON THE ACTUAL RAM STROKE OBSERVED IN THE FIELD AND MEASURED IN FEET MULTIPLIED BY THE RAM WEIGHT IN POUNDS.

N = AVERAGE NUMBER OF HAMMER BLOWS PER INCH OF PILE PENETRATION FOR THE LAST 10 TO 20 BLOWS DELIVERED TO THE PILE HEAD.

THE ABOVE FORMULA IS ONLY APPLICABLE WHEN:

- THE PILE DRIVING HAMMER HAS A FREE FALL (GRAVITY AND SINGLE ACTING HAMMERS ONLY).
- THE HEAD OF THE PILE IS NOT BROOMED, CRUSHED OR OTHERWISE DAMAGED.
- THE PENETRATION IS QUICK AND UNIFORM.
- THERE IS NO APPRECIABLE REBOUND OF THE HAMMER AND A FOLLOWER IS NOT USED.

THE NUMBER OF BLOWS PER INCH OF PILE PENETRATION MAY BE MEASURED EITHER DURING INITIAL DRIVING OR BY RE-DRIVING WITH A WARM HAMMER OPERATED AT FULL ENERGY AFTER A PILE SET PERIOD, AS DETERMINED BY THE ENGINEER. IF WATER JETS ARE USED IN CONNECTION WITH THE DRIVING, DETERMINE THE AXIAL LOAD RESISTANCE BY THE FORMULA ONLY AFTER THE JETS HAVE BEEN WITHDRAWN.

SUMMARY OF GUARDRAILS

STATION TO STATION	LT.	RT.	TYPE D-BF (EACH)	TYPE A (EACH)	LENGTH INCLUDING ANCHOR UNITS (FEET)
125+42.15 - 126+42.15	X		1	1	100.00
125+56.68 - 126+56.68		X	1	1	100.00
128+58.71 - 129+07.60	X		1	1	87.00 *
128+73.24 - 129+73.24		X	1	1	100.00
TOTALS			4	4	387.00

* SEE GUARDRAIL BENDING DETAILS THIS SHEET.

SUMMARY OF SIGNS

DESCRIPTION	SIGN NO.	STATION	SIDE	READ FROM	AREA (SQ. FT.)	POST LENGTH (FEET)
LEFT REVERSE CURVE	W1-4(L)	116+60	RT.	SOUTH	6.25	13
CURVE RIGHT	W1-2(R)	121+15	LT.	NORTH	6.25	13
CHEVRON*	W1-8	122+00 TO 125+00	LT.	NORTH	21.00	91
SIDE ROAD	W2-2	125+00	RT.	SOUTH	6.25	13
DOUBLE ARROW	W1-7	129+20	RT.	WEST	8.00	26
SIDE ROAD	W2-2	132+50	LT.	NORTH	6.25	13
RIGHT REVERSE CURVE	W1-4(R)	136+75	LT.	NORTH	6.25	13
STOP AHEAD	W3-1	29+00	RT.	WEST	6.25	13
T - SYMBOL	W2-4	32+00	RT.	WEST	6.25	13
STOP	R1-1	35+50	RT.	WEST	5.18	13
TOTALS					77.93	221

* SERIES OF SEVEN SIGNS AT 50 FOOT SPACES.

SUMMARY OF STRIPING

ALIGNMENT	STATION TO STATION	DESCRIPTION	4" PAINT		24" PAINT
			WHITE (SOLID) (FEET)	YELLOW (SOLID) (FEET)	WHITE (SOLID) (FEET)
N-S 315 CRL	116+50 - 129+09	EDGE LINE LT.	1,326		
N-S 315 CRL	116+50 - 128+95	DOUBLE SOLID CENTER		2,590	
N-S 315 CRL	116+50 - 137+00	EDGE LINE RT.	2,150		
N-S 315 CRL	129+31 - 137+00	EDGE LINE LT.	831		
N-S 315 CRL	129+45 - 137+00	DOUBLE SOLID CENTER		1,610	
E-W 194 CRL	28+83 - 35+50	EDGE LINE LT.	671		
E-W 194 CRL	28+83 - 35+50	EDGE LINE RT.	664		
E-W 194 CRL	28+83 - 35+50	DOUBLE SOLID CENTER		1,334	
E-W 194 CRL	35+50 - 35+52	STOP BAR			11
TOTALS			5,642	5,534	11

SUMMARY OF DRAINAGE STRUCTURES

STR. NO.	ALIGN.	STATION	DESCRIPTION	DESIGN	CGSPA		RCP	RCPA	PCES TYPE 1		PCES TYPE 2		SMD
					21"X15" (FEET)	28"X20" (FEET)	36" (FEET)	36"X22" (FEET)	21"X15" (EACH)	28"X20" (EACH)	36" (EACH)	36"X22" (EACH)	TYPE 2B (EACH)
1	N-S 315 CRL	119+00 RT.	SIDE DRAIN	CGSPA	90				2				
2	N-S 315 CRL	120+00	CROSS DRAIN	RCPA				48				2	
3	N-S 315 CRL	129+18 LT.	SIDE DRAIN	RCPA				46				1	1
4	N-S 315 CRL	129+80 RT.	SIDE DRAIN	CGSPA		42				2			
5	N-S 315 CRL	136+24 RT.	SIDE DRAIN	CGSPA	38				2				
6	E-W 194 CRL	30+82	CROSS DRAIN	RCP			48					2	
TOTALS					128	42	48	94	4	2	2	3	1

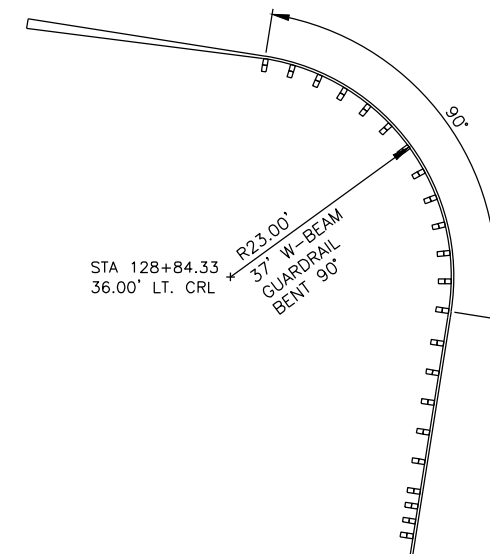
SUMMARY OF DRIVES

STATION	DESCRIPTION	SIZE	TBSC (TON)	3" S3 ASPHALT (TON)	2" S4 ASPHALT (TON)	PRIME COAT (GAL)	TACK COAT (GAL)
116+56 - 117+91 RT	SIDE ROAD	10' X 136'	24			53	
119+00 RT	RURAL DRIVE	26' X 39'	61			68	
123+80 RT	RURAL DRIVE	14' X 59'	35			37	
129+80 RT	RURAL DRIVE	14' X 90'		24	16	49	11
136+24 RT	RURAL DRIVE	14' X 28'		10	7	20	5
TOTALS			120	34	23	227	16

CONSTRUCT ALL DRIVES AND RAMPS PER STD. RDI-3.

SUMMARY OF FENCING

SHT. NO.	ALIGNMENT	TEMP. OR PERM.	LT.	RT.	STATION TO STATION	(4 BARBED WIRE)	(5 BARBED WIRE)
						(LF)	(LF)
9	NS SL 315	PERM.		X	116+30 - 118+86	266	
9	NS SL 315	TEMP.		X	116+30 - 118+86	266	
9	NS SL 315	PERM.	X		116+30 - 126+58	1,080	
9	NS SL 315	TEMP.	X		116+30 - 126+58	1,080	
9	NS SL 315	PERM.		X	119+32 - 126+42	832	
9	NS SL 315	TEMP.		X	119+32 - 126+42	832	
9	NS SL 315	PERM.	X		127+29 - 128+50		118
9	NS SL 315	TEMP.	X		127+29 - 128+50	118	
9,10	NS SL 315	PERM.	X		129+37 - 137+25	834	
9,10	NS SL 315	TEMP.	X		129+37 - 137+25	834	
9,10	NS SL 315	PERM.		X	129+63 - 135+81		638
9,10	NS SL 315	TEMP.		X	129+63 - 135+81	638	
9,10	NS SL 315	PERM.	X		135+97 - 138+00		210
9,10	NS SL 315	TEMP.	X		135+97 - 138+00	210	
11	EW SL 194	PERM.		X	27+60 - 34+74	756	
11	EW SL 194	TEMP.	X		27+60 - 34+74	756	
11	EW SL 194	PERM.	X		28+78 - 35+09	668	
11	EW SL 194	TEMP.	X		28+78 - 35+09	668	
TOTALS						9,838	966



GUARDRAIL BEND DETAIL