

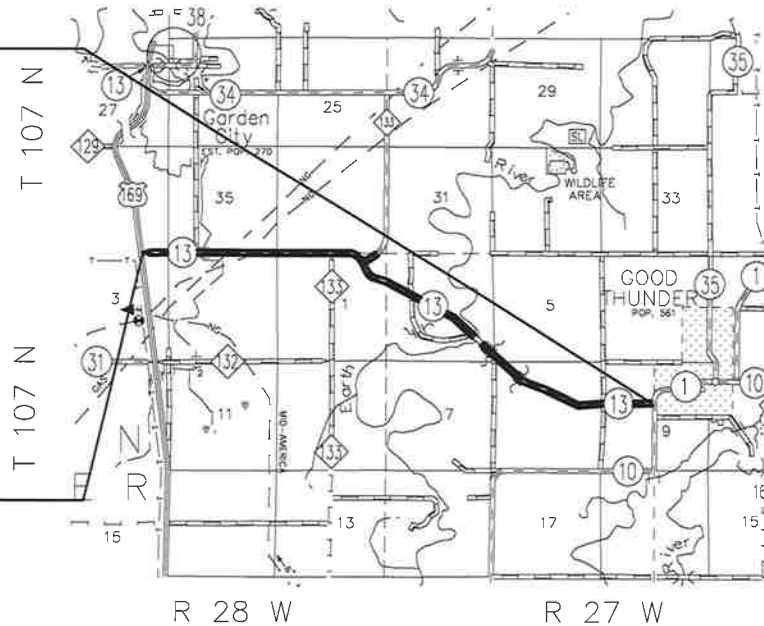


BLUE EARTH COUNTY HIGHWAY DEPARTMENT

CONSTRUCTION PLAN FOR BITUMINOUS
OVERLAY & AGGR. SHOULDER

COUNTY STATE AID HIGHWAY NO. 13

END S.A.P. 007-613-014
STA 323 + 00



BETWEEN T.H. 169 AND CSAH 1
FROM: THE SE 1/4 OF THE SE 1/4 OF SEC 34-107-28.
TO: THE SE 1/4 OF THE NW 1/4 OF SEC 09-106-27.

GROSS LENGTH	27,255.00	FEET	5.162	MILES
BRIDGE EXCEPTION	270.00	FEET	0.051	MILES
NET LENGTH	26,985.00	FEET	5.111	MILES

GRADED IN: 2024 UNDER SAP 007-613-013
SURFACED IN: 2024 UNDER SAP 007-613-013

BEGIN S.A.P. 007-613-014
STA 50 + 43

DESIGN DESIGNATION

ADT (Current Year) 320 (2025)
ADT (Future Year) 352 (2045)
ADT (Heavy Commercial)
ESAL 106,000
10 TON DESIGN
DESIGN SPEED 55 MPH
DESIGN SPEED NOT ACHIEVED AT:
SOIL FACTOR 130
SHOULDER WIDTH 8'
STOPPING SIGHT DISTANCE BASED ON
3.5' HEIGHT OF EYE
0.5' HEIGHT OF OBJECT

INDEX OF SHEETS
SHEET No. 1 TITLE
SHEET No. 2 ESTIMATED QUANTITIES
SHEET No. 3 STANDARD PLATES
SHEET No. 4-6 CHARTS
SHEET No. 7-9 TYPICAL SECTIONS
SHEET No. 10 DETAILS

PLAN NOT TO SCALE

GOVERNING SPECIFICATIONS

THE 2020 EDITION OF THE MINNESOTA DEPARTMENT
OF TRANSPORTATION'S "STANDARD SPECIFICATIONS
FOR HIGHWAY CONSTRUCTION", SHALL GOVERN.

The subsurface utility information in this plan is utility quality level "D".
This utility quality level was determined according to the guidelines
of CI/ASCE 38-22, entitled "Standard Guidelines for Investigating and
Determining Existing Utilities."

ALL APPLICABLE FEDERAL, STATE AND LOCAL LAWS AND ORDINANCES WILL BE
COMPLIED WITH, IN THE CONSTRUCTION OF THIS PROJECT.

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED
BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED
PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.


COUNTY ENGINEER

RYAN THILGES

DATE 2/6/2025

LIC. No. 45887

DISTRICT STATE AID ENG'R: REVIEWED FOR
COMPLIANCE WITH STATE-AID RULES/POLICY

DATE

STATE AID ENGINEER: APPROVED FOR STATE AID FUNDING

DATE

S.A.P. 007-613-014 SHEET No. 1 OF 10 SHEETS

ESTIMATED QUANTITY

SAP 007-613-014

ITEM NO.	ITEM	UNIT	CSAH # 13	NON. PART.	TOTAL
2118.509	AGGREGATE SURFACING, CL-2	TON	140		140
2221.509	SHOULDER BASE AGGREGATE, CL-1	TON	2412		2412
2232.504	MILL BITUMINOUS SURFACE	SQ YD	1940		1940
2360.509	TYPE SP 12.5 WEARING COURSE MIX (2,C)	TON	8146		8146
2580.503	INTERIM PAVEMENT MARKING	LIN. FT.	2159		2159
2582.503	4" SOLID LINE - PAINT	LIN. FT.	61000		61000
2582.503	24" SOLID LINE - PAINT	LIN. FT.	42		42
2582.503	4" BROKEN LINE - PAINT	LIN. FT.	3284		3284
2582.503	4" DOUBLE SOLID LINE - PAINT	LIN. FT.	9242		9242
2582.518	PAVEMENT MESSAGE - PAINT	SQ. FT.	99.72		99.72

SEE SPECIAL PROVISIONS 1402 FOR ADJUSTMENTS FOR INCREASED AND DECREASED QUANTITIES

BASIS FOR PLANNED QUANTITIES

AGGREGATE SHOULDERING, & SURFACING

COMPACTED DRY DENSITY – 140 LBS. PER CU. FT.

BITUMINOUS SURFACE

BITUM. MAT'L FOR TACK COAT 0.05 GALS. PER SQ. YD.

TACK COAT WILL BE CONSIDERED INCIDENTAL.

BITUM. COURSES, 113 LBS. PER 1" / SQ. YD.

THE FOLLOWING STANDARD PLATES AS APPROVED BY THE FHWA SHALL APPLY

STANDARD PLATES	
PLATE No.	DESCRIPTION
8000K	TEMPORARY CHANNELIZERS

MILL BITUM. SURFACE

LOCATION	STATION TO STATION	LENGTH	WIDTH	SQ.YD.
CL	50 + 43 TO 50 + 59	16	107	190
CL	223 + 46 TO 224 + 46	100	36	400
CL	227 + 56 TO 228 + 56	100	36	400
LTC&G	257 + 70 TO 264 + 53	683	8	607
CL	322 + 84 TO 323 + 0	16	123	219
CR 133 CL	102 + 71 TO 103 + 11	40	28	124
TOTAL				1,940

MILLINGS SHALL BECOME THE PROPERTY OF THE CONTRACTOR

ALL CENTERLINE MILLING WILL BE STARTING AT 1.5" DEPTH AND TAPERING TO 0". WILL BE MARKED BY THE ENGINEER.

ANY ADDITIONAL SKID LOADER MILLING FOR HEADERS ON INTERSECTING ROADS AND DRIVEWAYS WILL BE CONSIDERED INCIDENTAL TO THE PLACEMENT OF THE BITUMINOUS PAVEMENT.

SHLD. & SURF. QUANTITIES

ROAD #

CSAH 13

PROJECT #

SAP 007-613-014

LOCATION	LENGTH FEET	AVER WDTH FEET	DEPTH INCHES	AGGR. SHLD. TON	AGGR. SURF. TON
SHOULDER CL-1					
STA 50 + 43 TO STA 145 + 30 RT	9487	6	1.5	498	
STA 145 + 30 TO STA 159 + 54 RT	1424	2	1.5	25	
STA 159 + 54 TO STA 170 + 69 RT	1115	6	1.5	59	
STA 170 + 69 TO STA 181 + 63 RT	1094	2	1.5	19	
STA 181 + 63 TO STA 198 + 0 RT	1637	6	1.5	86	
STA 198 + 0 TO STA 217 + 87 RT	1987	2	1.5	35	
STA 217 + 87 TO STA 223 + 46 RT	559	6	1.5	29	
BRIDGE					
STA 228 + 56 TO STA 229 + 78	122	2	1.5	2	
STA 229 + 78 TO STA 258 + 39	2861	6	1.5	150	
C&G AREA					
STA 264 + 25 TO STA 323 + 0	5875	6	1.5	308	
STA 50 + 43 TO STA 54 + 0 LT	357	2	1.5	6	
STA 54 + 0 TO STA 159 + 54 LT	10554	6	1.5	554	
STA 159 + 54 TO STA 170 + 60 LT	1106	2	1.5	19	
STA 170 + 60 TO STA 198 + 0 LT	2740	6	1.5	144	
STA 198 + 0 TO STA 208 + 6 LT	1006	2	1.5	18	
STA 208 + 6 TO STA 223 + 46 LT	1540	6	1.5	81	
BRIDGE					
STA 228 + 56 TO STA 234 + 15 LT	559	2	1.5	10	
STA 234 + 15 TO STA 251 + 73 LT	1758	6	1.5	92	
STA 251 + 73 TO STA 257 + 70 LT	597	2	1.5	10	
C&G AREA					
STA 265 + 43 TO STA 280 + 86 LT	1543	6	1.5	81	
STA 280 + 86 TO STA 291 + 16 LT	1030	2	1.5	18	
STA 291 + 16 TO STA 323 + 0 LT	3184	6	1.5	167	
MATERIAL FOR FIELD ENTRANCES					
AGGR. SURFACING CL-2					
21 DRIVEWAYS @	5	TONS			105
7 INTERSECTIONS @	5	TONS			35
TOTAL				2412	140

CERT. BY

Ayan Chilges
PROFESSIONAL ENGINEER

LIC. No. 45887 MAR. 10, 2025

S.A.P. 007-613-014 SHEET No. 4 OF 10 SHEETS

CSAH 13 SUPERPAVE BITUM. CALCULATIONS

							LENGTH FEET	AVER WIDTH FEET	DEPTH INCHES	WEAR TON
LOCATION										
13 BITUM. WEAR										
STA	50 + 43	TO	STA	145 + 30	EBL		9487	14	1.5	1251
STA	145 + 30	TO	STA	159 + 54	EBL		1424	18	1.5	241
STA	159 + 54	TO	STA	170 + 69	EBL		1115	14	1.5	147
STA	170 + 69	TO	STA	181 + 63	EBL		1094	18	1.5	185
STA	181 + 63	TO	STA	198 + 0	EBL		1637	14	1.5	216
STA	198 + 0	TO	STA	217 + 87	EBL		1987	18	1.5	337
STA	217 + 87	TO	STA	222 + 31	EBL		444	14	1.5	59
STA	222 + 31	TO	STA	224 + 46	EBL		215	18	1.5	36
BRIDGE										
STA	227 + 56	TO	STA	229 + 78	EBL		222	18	1.5	38
STA	229 + 78	TO	STA	258 + 42	EBL		2864	14	1.5	378
STA	258 + 39	TO	STA	264 + 25	EBL		586	18	1.5	99
STA	264 + 25	TO	STA	323 + 0	EBL		5875	14	1.5	775
STA	50 + 43	TO	STA	54 + 0	WBL		357	18	1.5	61
STA	54 + 0	TO	STA	159 + 54	WBL		10554	14	1.5	1391
STA	159 + 54	TO	STA	170 + 60	WBL		1106	18	1.5	187
STA	170 + 60	TO	STA	198 + 0	WBL		2740	14	1.5	361
STA	198 + 0	TO	STA	208 + 6	WBL		1006	18	1.5	171
STA	208 + 6	TO	STA	223 + 46	WBL		1540	14	1.5	203
STA	223 + 46	TO	STA	224 + 46	WBL		100	18	1.5	17
BRIDGE										
STA	227 + 56	TO	STA	234 + 15	WBL		659	18	1.5	112
STA	234 + 15	TO	STA	251 + 73	WBL		1758	14	1.5	232
STA	251 + 73	TO	STA	265 + 43	WBL		1370	18	1.5	232
STA	265 + 43	TO	STA	280 + 86	WBL		1543	14	1.5	203
STA	280 + 86	TO	STA	291 + 16	WBL		1030	18	1.5	175
STA	291 + 16	TO	STA	323 + 0	WBL		3184	14	1.5	420
133 BITUM. WEAR										
STA	100 + 79	TO	STA	103 + 11			232	28	1.5	61
7	INTERSECTIONS @		30	TONS						210
21	DRIVEWAYS @		15	TONS						315
5	MAILBOX PADS @		175	LENGTH			875	4	1.5	33
TOTAL										8146

CERT. BY

Alvan Schilges
PROFESSIONAL ENGINEER

LIC. No. 45887 MAR. 10, 2025

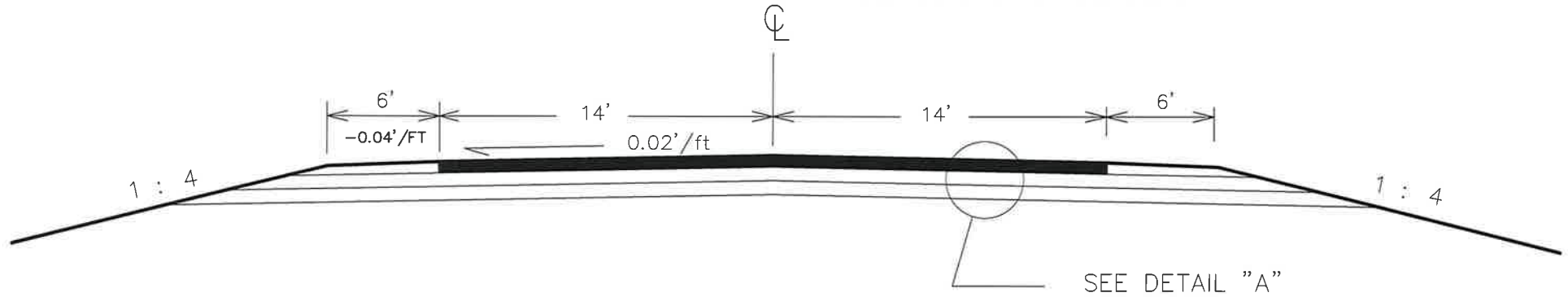
S.A.P. 007-613-014 SHEET No. 5 OF 10 SHEETS

Station to Station LOC.						WHITE - PAINT			YELLOW - PAINT		
						4"	24"	PVT MSG	4"	4"	4"
						SOLID LIN FT	SOLID LIN FT	STOP AHEAD SQ. FT.	BROKEN LIN FT	SOLID LIN FT	DOUBLE SOLID LIN FT
50 + 68					LT		14				
50 + 68	to	322 + 70			LT	26,812					
50 + 68	to	322 + 70			RT	26,582					
50 + 68	to	57 + 97			CL					729	
50 + 68	to	147 + 15			CL				1,929		
56 + 97					LT			49.86			
76 + 5	to	81 + 55			CL					550	
84 + 39	to	90 + 7			CL					568	
141 + 77	to	147 + 15			CL					538	
147 + 15	to	175 + 43			CL						2,828
175 + 43	to	184 + 88			CL					945	
175 + 43	to	184 + 88			CL				189		
184 + 88	to	189 + 75			CL						487
189 + 75	to	197 + 68			CL					793	
197 + 68	to	212 + 20			CL						1,452
212 + 20	to	217 + 58			CL					538	
212 + 20	to	235 + 20			CL				460		
235 + 20	to	245 + 10			CL					990	
245 + 10	to	287 + 40			CL						4,230
287 + 40	to	294 + 75			CL					735	
287 + 40	to	322 + 70			CL				706		
315 + 40	to	322 + 70			CL					730	
315 + 70								49.86			
322 + 70							14				
CR 133 LT											
0 + 65					LT		14				
0 + 65	to	3 + 10			LT	245					
0 + 65	to	3 + 10			RT	245					
0 + 65	to	3 + 10			CL						245
TOTALS						53,884	42	99.72	3,284	7,116	9,242

TYPICAL SECTION

STA 50 + 43 TO STA 55 + 36
STA 146 + 77 TO STA 181 + 13

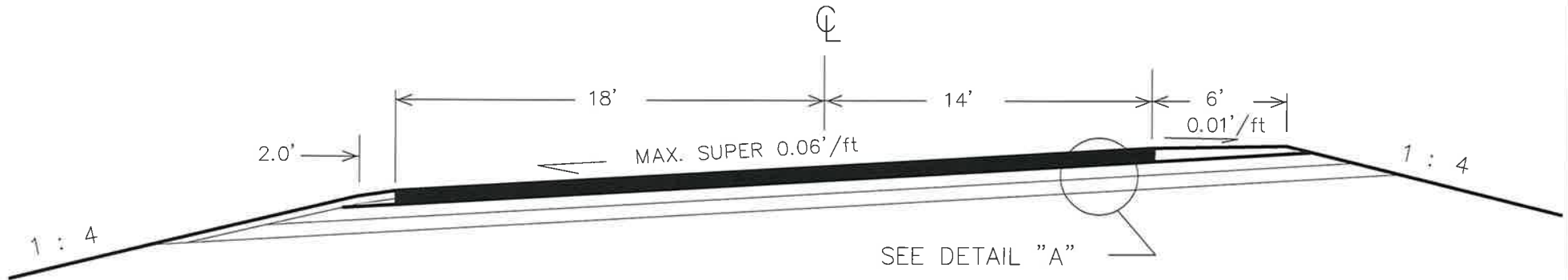
STA 208 + 25 TO STA 258 + 39
STA 263 + 62 TO STA 293 + 50



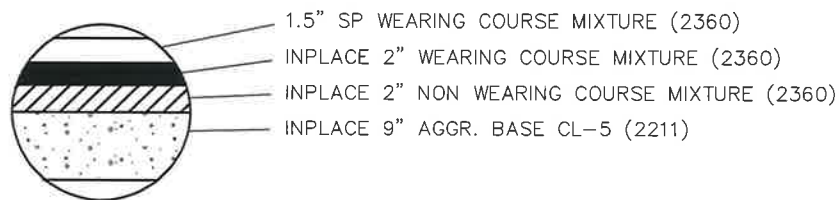
TYPICAL CURVE SECTION

STA 146 + 32 TO STA 159 + 54
STA 159 + 54 TO STA 169 + 58
STA 171 + 42 TO STA 180 + 91

STA 208 + 06 TO STA 217 + 06
STA 251 + 73 TO STA 261 + 22
STA 281 + 06 TO STA 290 + 97

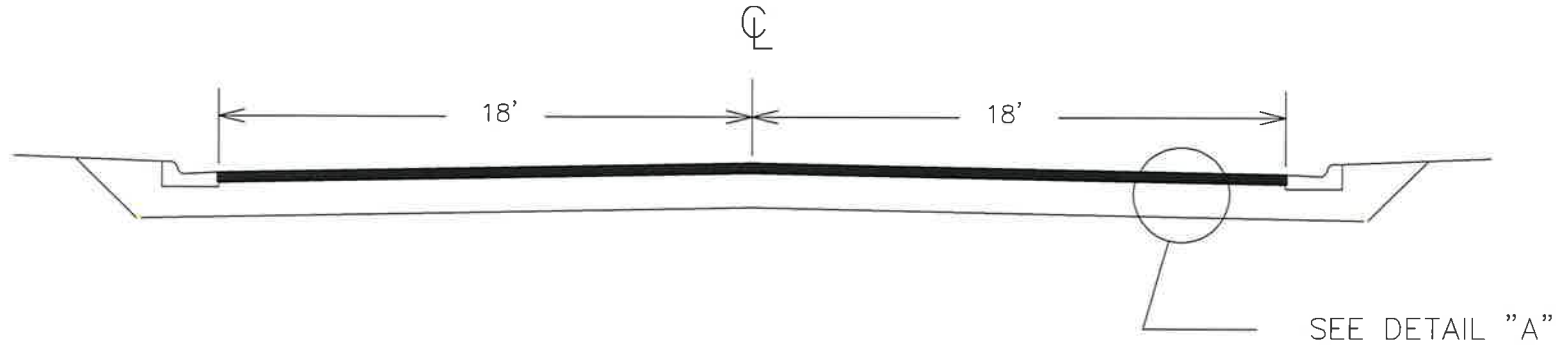


DETAIL "A"

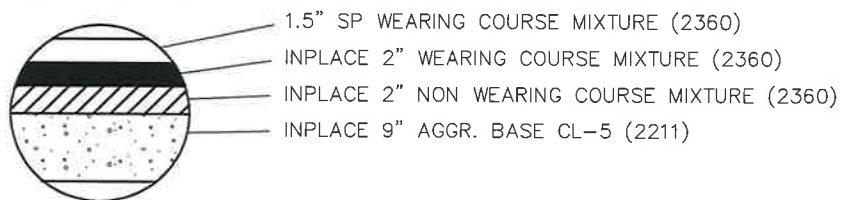


TYPICAL SECTION

STA 258 + 39 TO STA 263 + 62



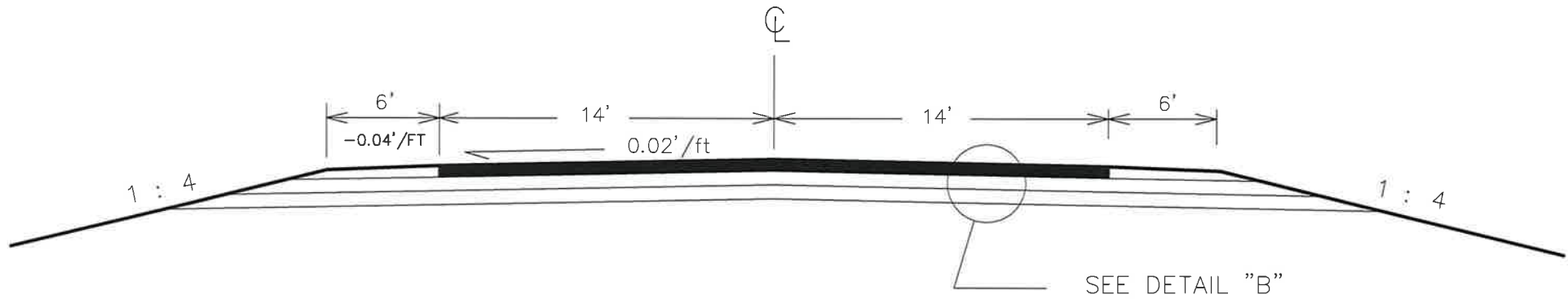
DETAIL "A"



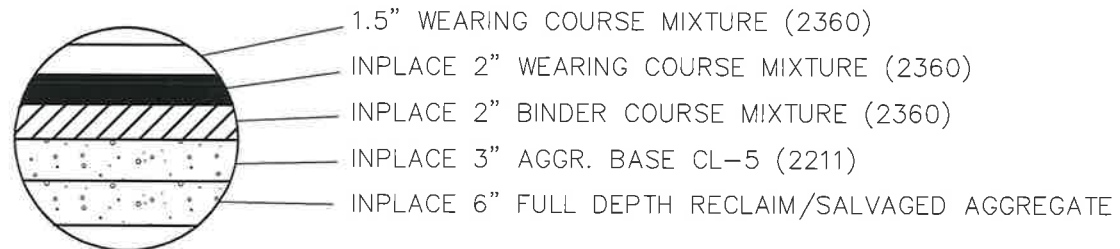
TYPICAL SECTION

STA 55 + 36 TO STA 146 + 77
STA 181 + 13 TO STA 208 + 25

STA 293 + 50 TO STA 323 + 00

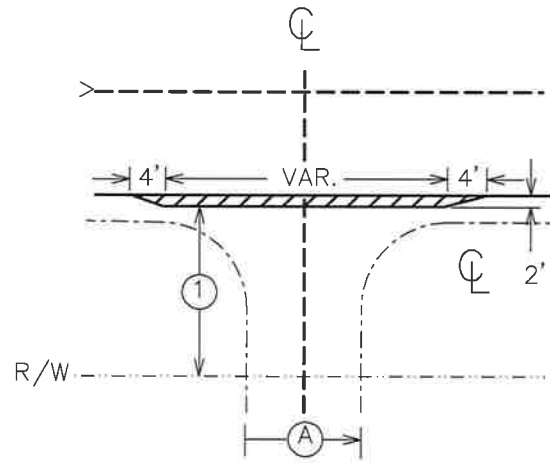


DETAIL "B"



BITUMINOUS APPROACHES AND ENTRANCES DETAIL

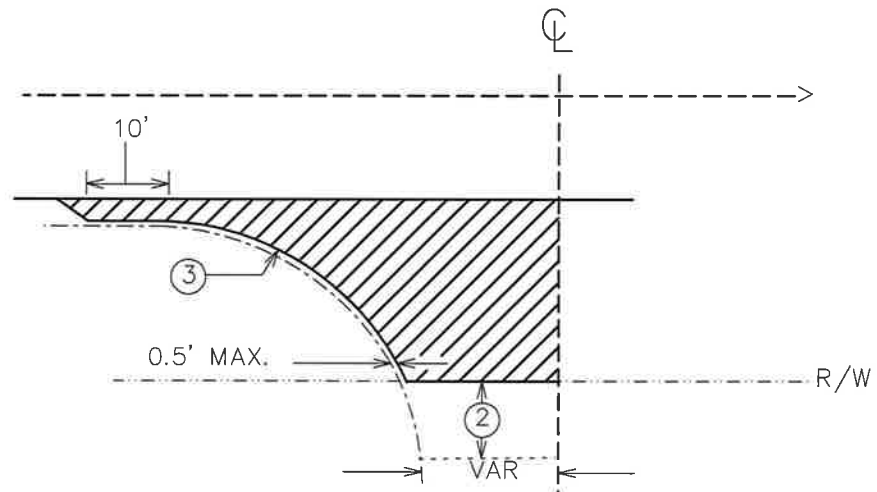
FIELD ENTRANCE



(A) 20' FOR SINGLE F.E.
28' FOR DOUBLE F.E.

MINIMUM DEPTH 1.5" OF BIT

ROAD APPROACH



MINIMUM DEPTH 1.5" OF BIT

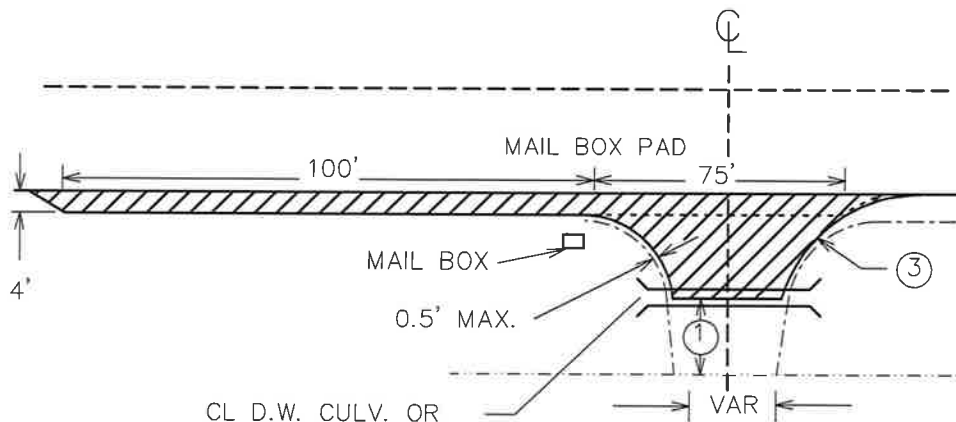
- ① FINISH WITH AGGR. MATERIAL FROM EDGE OF BITUM. TO A MIN. OF 10' BEHIND BITUM.
- ② FINISH WITH AGGR. MATERIAL, MIN. OF 10'.
- ③ BITUM. RADIUS TO BE STAKED IN FIELD BY THE ENGINEER - 25' MIN. (FOR FARM D.W. CONSIDER 30' TO 40' MAX.)

CONTRACTOR WILL BE REQUIRED TO SHAPE & NOTCH ALL DRIVEWAYS, INTERSECTIONS & MAIL BOX PADS THAT ARE NOT ALREADY PAVED AS DIRECTED BY THE ENGINEER. WORK SHALL BE DONE INCIDENTAL TO THE WEAR.

CONTRACTOR WILL BE REQUIRED TO HAND FINISH SHOULDERS ON ALL APPROACHES AND ENTRANCES AS DIRECTED BY THE ENGINEER.

ANY ADDITIONAL WORK ASSOCIATED WITH BRIDGE WINGWALL PAVING AND SKID LOADER MILLING FOR HEADERS ON INTERSECTING ROADS WILL BE CONSIDERED INCIDENTAL TO PLACEMENT OF THE BITUMINOUS PAVEMENT.

FARM & OTHER ENTRANCES



MINIMUM DEPTH 1.5" OF BIT