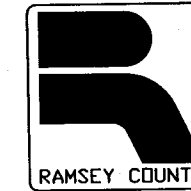


# RAMSEY COUNTY

DEPARTMENT OF PUBLIC WORKS  
PLAN FOR THE MILL, ASPHALT EMULSION, AND BITUMINOUS OVERLAY OF



## COUNTY ROAD C S.A.P. No. 62-623-52

BETWEEN: TH 61 to HAZELWOOD STREET  
 BEGINNING: AT A POINT 1261.03 FEET EAST AND 10.54 FEET NORTH OF THE SOUTHWEST CORNER OF THE NORTHEAST QUARTER OF SEC 4, T29N, R22W  
 ENDING: AT A POINT 54.38 FEET EAST OF THE NORTHWEST CORNER OF THE NORTHEAST QUARTER OF SEC 10, T29N, R22W

INDEX

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	ESTIMATED QUANTITIES
3	CONSTRUCTION NOTES
4-6	CHARTS
7-9	DETAILS
10	SIGNAL INTERSECTION LAYOUT
11-12	TYPICAL SECTIONS
13-15	CONSTRUCTION PLAN SHEETS
16-18	EROSION & TURF PLAN SHEETS
19-21	STRIPING PLAN SHEETS

THIS PLAN CONTAINS 21 SHEETS

END S.A.P. 62-623-52  
 COUNTY RD C  
 STA. 47+89.43  
 END EXCEPTION  
 STA. 35+78

I HEREBY CERTIFY THAT THIS PLAN 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.

*Kathy Jaschke* REG. NO. 21864 DATE 5/12/10  
 KATHY JASCHKE

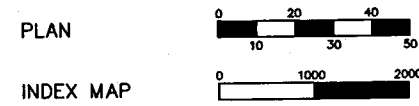
RECOMMENDED FOR APPROVAL *[Signature]* DATE 5/13/10  
 COUNTY ENGINEER

APPROVED *[Signature]* DATE 5/12/10  
 MAPLEWOOD

MINNESOTA DEPARTMENT OF TRANSPORTATION

RECOMMENDED FOR APPROVAL *[Signature]* DATE 5/14/10  
 DISTRICT STATE AID ENGINEER  
 REVIEWED FOR COMPLIANCE WITH STATE-AID RULES/POLICY  
 APPROVED *[Signature]* DATE 5/14/10  
 APPROVED FOR STATE AID FUNDING STATE AID ENGINEER

### SCALES IN FEET



GROSS LENGTH 4083.43 FEET 0.773 MILES  
 BRIDGE LENGTH -----  
 EXCEPTIONS 92 FEET 0.017 MILES  
 NET LENGTH 3991.43 FEET 0.756 MILES

### PLAN SYMBOLS

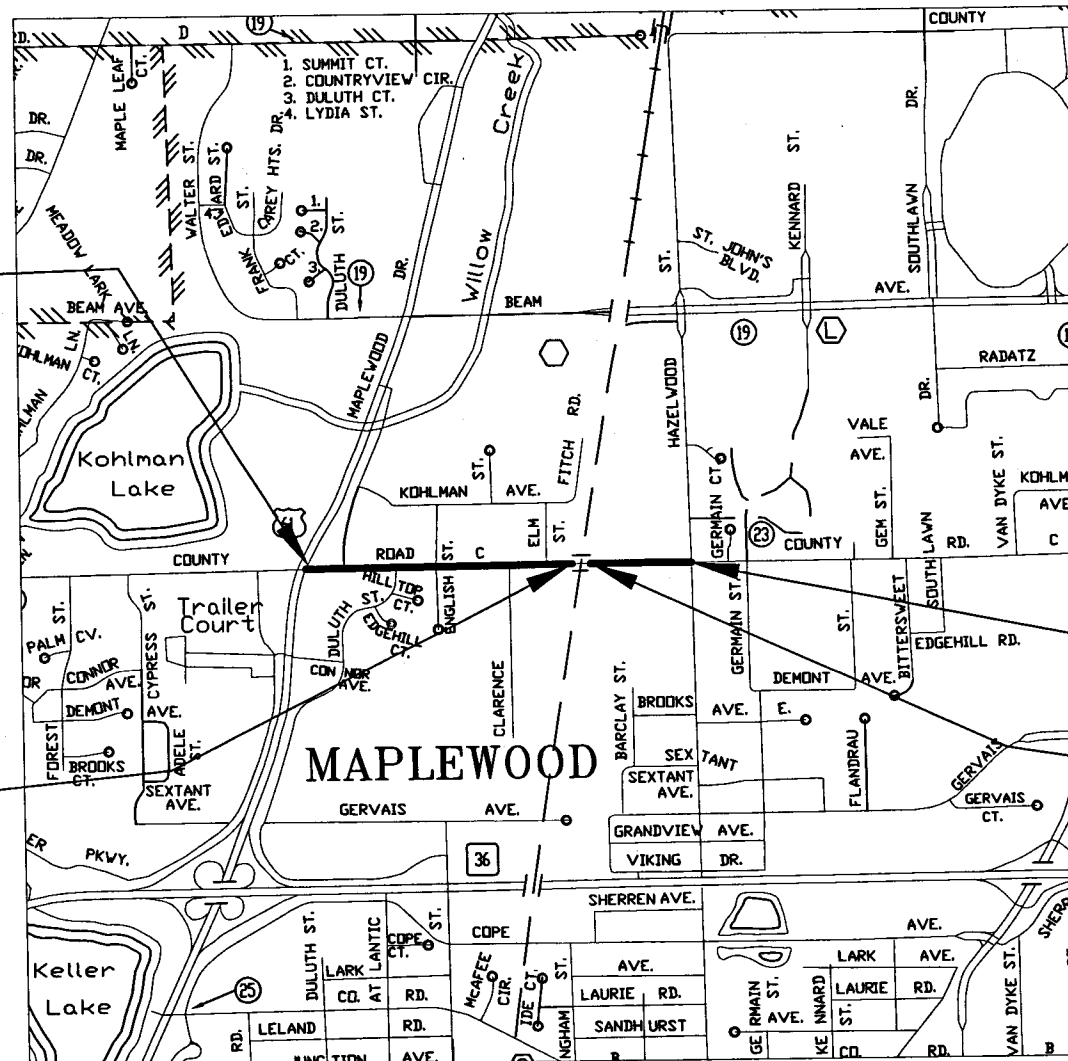
- STATE LINE
- COUNTY LINE
- TOWNSHIP OR RANGE LINE
- SECTION LINE
- QUARTER LINE
- SIXTEENTH LINE
- EXISTING RIGHT OF WAY LINE
- PROPOSED RIGHT OF WAY LINE
- PROPERTY LINE
- CORPORATE OR CITY LIMITS
- RAILROAD
- RAILROAD RIGHT-OF-WAY
- RIVER OF CREEK
- CULVERT
- GUARDRAIL
- WOOD FENCE
- BARBED WIRE FENCE
- WOVEN WIRE FENCE
- CHAIN LINK FENCE
- TIMBER WALL
- STONE WALL
- HEDGE
- RAILROAD CROSSING SIGN
- CROSSING GATE
- MEANDER CORNER
- SLOPE EASEMENT (CONST. LIMITS)
- MARSH
- DECIDUOUS TREE
- CONIFEROUS TREE
- BUSH OR SHRUB
- WOODS
- CATCH BASIN
- BRIDGE
- IRON PIPE OR ROD
- MONUMENT (STONE, CONCRETE OR METAL)
- WOODEN HUB

### UTILITY SYMBOLS

- UTILITY POLE
- GUY OR ANCHOR
- STREET LIGHT
- TELEPHONE PEDESTAL
- GAS MAIN
- WATER MAIN
- TELEPHONE VAULT
- ELECTRIC VAULT
- TELEPHONE CABLE
- ELECTRIC CABLE
- STORM SEWER
- SANITARY SEWER
- SEWER MANHOLE
- GATE VALVE
- CONTROLLER CABINET
- EXISTING HYDRANT
- CABLE TELEVISION-BURIED
- FIBER OPTIC CABLE
- TRAFFIC SIGNAL LINE
- TRAFFIC SIGNAL HAND HOLE

BEGIN S.A.P. 62-623-52  
 COUNTY RD C  
 STA. 7+06.00

BEGIN EXCEPTION  
 STA. 34+86



### DESIGN DESIGNATION

TH 61 TO HAZELWOOD STREET

PRESENT ADT (2010)	6800
PROJECTED ADT (2030)	10200
FUNCTIONAL CLASS	MINOR ARTERIAL
TRAFFIC LANES	2
PARKING LANES	0

BASED ON STOPPING DISTANCE  
 HEIGHT OF EYE: 3.50 FEET  
 HEIGHT OF OBJECT: 0.50 FEET

DRAWN BY B BECK DATE 4-26-2010  
 CHECKED BY B ESSLER DATE 4-26-2010

PLAN REVISIONS		
DATE	SHEET NO. & DESCRIPTION	BY
5/20/10	2-Quantities	KJ

FOR PLANS AND UTILITIES SYMBOLS SEE MN/DOT TECHNICAL MANUAL.

### -GOVERNING SPECIFICATIONS-

THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" SHALL APPLY.

ALL TRAFFIC CONTROL DEVICES AND SIGNING SHALL CONFORM TO THE MMUTCD, INCLUDING FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS, SEE [HTTP://WWW.DOT.STATE.MN.US/TRAFFICENG/](http://www.dot.state.mn.us/trafficeng/)

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



**ESTIMATED QUANTITIES**

NOTE	CHART	Item Number	Item	Unit	Estimated Quantity	100% SAP 62-623-52
		2021.501	MOBILIZATION	L.S.	1	1
6		2031.501	FIELD OFFICE TYPE D- MODIFIED	EACH	1	1
	H	2104.501	REMOVE CURB AND GUTTER	L.F.	300	300
	H	2104.503	REMOVE SIDEWALK	S.F.	778	778
1	G	2104.513	SAWING BITUMINOUS PAVEMENT (FULL DEPTH)	L.F.	971	971
		2105.501	COMMON EXCAVATION	C.Y.	1,147	1147
	K	2105.525	TOPSOIL BORROW (LV)	C.Y.	15	15
		2123.610	TRACTOR MOUNTED BACKHOE	HOUR	15	15
		2123.610	STREET SWEEPER (WITH PICKUP BROOM)	HOUR	25	25
2		2130.501	WATER	MGAL	25	25
	I	2211.501	CLASS 7 RECYCLE	TON	52	52
6	E	2232.501	MILL BITUMINOUS SURFACE (5")	S.Y.	18691	18691
		2331.603	SAW AND SEAL JOINT	LF	4400	4400
6	E	2331.604	BITUMINOUS PAVEMENT RECLAMATION	S.Y.	18691	18691
7		2331.607	HAUL BITUMINOUS PAVEMENT RCLAMATION (LV)	C.Y.	450	450
5		2350.505	BITUINOUS PATCH MIX TYPE LV NON WEAR	TON	178	178
	I	2357.502	BITUMINOUS MATERIAL FOR TACK COAT	GAL	1869	1869
	I	2360.501	TYPE SPWEB340F WEARING COURSE MIXTURE	TON	4300	4300
	I	2360.502	TYPE SPNWB330B NON-WEARING COURSE MIXTURE	TON	2151	2151
	B	2504.602	ADJUST VALVE BOX	EACH	8	8
	A, D	2506.522	ADJUST FRAME RING AND CASTING	EACH	29	29
	F	2506.602	CONSTRUCT SURVEY CONTROL STRUCTURE	EACH	3	3
	C	2521.501	6" CONCRETE WALK	S.F.	1936	1936
	G	2521.603	SAWING CONCRETE WALK	L.F.	45	45
	C	2531.501	CONCRETE CURB AND GUTTER DESIGN B624	L.F.	300	300
3	C	2531.618	TRUNCATED DOMES	S.F.	128	128
		2563.601	TRAFFIC CONTROL	L.S.	1	1
		2565.602	NMC LOOP DETECTOR 6' X 6'	EACH	10	10
	A	2573.530	STORM DRAIN INLET PROTECTION	EACH	20	20
		2573.550	EROSION CONTROL SUPERVISOR	L.S.	1	1
4	K	2575.501	SEEDING	ACRE	0.03	0.03
4	K	2575.502	SEED MIXTURE 270	POUND	3	3
4	K	2575.523	EROSION CONTROL BLANKETS CATEGORY 3	SY	138	138
4	K	2575.532	FERTILIZER TYPE 3 ANALYSIS 22-5-10	POUND	10	10
	J	2582.501	PAVEMENT MESSAGE (LT OR RT ARROW) EPOXY	EACH	3	3
	J	2582.502	4" SOLID WHITE LINE- EPOXY	L.F.	7200	7200
	J	2582.502	4" DOUBLE SOLID LINE YELLOW - EPOXY	L.F.	3665	3665
	J	2582.502	12" SOLID LINE WHITE- EPOXY	L.F.	32	32
	J	2582.502	24" SOLID LINE YELLOW- EPOXY	L.F.	55	55
	J	2582.502	24" SOLID LINE WHITE- EXPOXY	L.F.	23	23
	J	2582.618	ZEBRA X-WALK- EPOXY (2.5' X 8')	S.F.	165	165

QUANTITY NOTES	
1	SAWCUT SHALL BE FULL DEPTH
2	FOR DUST CONTROL
3	ALL PEDESTRIAN RAMPS SHALL HAVE PRECAST TRUNCATED DOME AREA
4	ALL DISTURBED AREAS MUST BE TOPSOILED, SEEDED, FERTILIZED, & BLANKETED WITH CATEGORY 3 EROSION CONTROL BLANKET
5	BITUMINOUS PATCHING MIXTURE TO BE USED AS DIRECTED BY THE ENGINEER
6	SEE SPECIAL PROVISIONS
7	EXCESS MATERIAL SHALL BE REMOVED FROM THIS PROJECT AS DIRECTED BY THE ENGINEER EXCESS RECLAIM MATERIAL SHALL BECOME PROPERTY OF THE CONTRACTOR AND SHALL BE DISPOSED OF IN ACCORDANCE WITH THE REQUIREMENTS OF MN/DOT 2104.3C3 AND 2105.3D.

NO. REV-DATE	BY:	DESCRIPTION	I HEREBY CERTIFY THAT THIS PLAN 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. SIGNED: <u>Kathy Jaschke</u> REG NO: <u>21864</u> DATE: <u>5/20/10</u>
5/20/10	KJ	Remove Subgrade Prep, add Haul Bit Reclaim	

COUNTY ROAD C  
TH 61 TO HAZELWOOD ST.

S.A.P. 62-623-52  
County Proj. P-3283



STATEMENT OF EST. QUANTITIES  
Sheet No. 2 of 21 Sheets

## CONSTRUCTION NOTES

WATER, GAS, ELECTRIC, TELEPHONE, SEWER, AND T.V. CABLE LINES SHOWN ON THE DRAWINGS AND CROSS-SECTIONS ARE PLOTTED FROM THE BEST INFORMATION AVAILABLE AT THE TIME OF PLAN PREPARATION, BUT MAY NOT REFLECT ACTUAL LOCATIONS OR ELEVATIONS. THE CONTRACTOR SHALL VERIFY LOCATION OF ALL UTILITIES BEFORE BEGINNING CONSTRUCTION WHICH MAY BE AFFECTED BY A UTILITY CONFLICT. THE CONTRACTOR SHALL GIVE 48 HOURS NOTICE TO THE OWNERS OF ALL KNOWN UTILITIES BEFORE STARTING ANY OPERATIONS AFFECTING THOSE PROPERTIES, OR BEGINNING EXCAVATION IN THE VICINITY OF THOSE PROPERTIES. THE CONTRACTORS ATTENTION IS DIRECTED TO SECTION 1507 IN THE STANDARD SPECIFICATIONS.

PROVIDE FOR REMOVAL AND DISPOSAL (OUTSIDE THE CONSTRUCTION ZONE) OF ALL INPLACE STRUCTURES THAT WILL INTERFERE WITH CONSTRUCTION. DISPOSAL OF ITEMS REMOVED UNDER THIS CONTRACT SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF 2104.3C3.

EXCESS EXCAVATED AND UNSUITABLE MATERIALS SHALL BE DISPOSED OF IN ACCORDANCE WITH THE REQUIREMENTS OF 2104.3C3 AND 2105.3D. COMPACTION IN GRADING ITEMS SHALL BE ACCOMPLISHED IN ACCORDANCE WITH SPEC. 2105.3F2 "QUALITY COMPACTION METHOD".

COMPACTION OF BITUMINOUS SURFACE ITEMS SHALL BE ACCOMPLISHED IN ACCORDANCE WITH SPEC. 2360.6B "MAXIMUM DENSITY METHOD."

WHEN EXCAVATING ADJACENT TO INPLACE PAVEMENT, NO MATERIAL SHALL BE REMOVED FROM INSIDE AN APPROXIMATE 2:1 SLOPED LINE DRAWN DOWNWARD AND OUTWARD FROM THE BOTTOM OF THE INPLACE PAVEMENT.

WHEN CONNECTION TO EXISTING BITUMINOUS PAVEMENT IS REQUIRED, THE EDGE OF EXISTING PAVEMENT SHALL BE CUT TO A NEAT LINE PRIOR TO CONSTRUCTING ASPHALT SURFACING.

STABILIZING AGGREGATE SHALL BE APPLIED IF NECESSARY TO ACHIEVE SATISFACTORY SURFACE STABILITY AS DETERMINED BY THE ENGINEER. THE MATERIAL SHALL SATISFY THE REQUIREMENTS OF SECTION 3149.2C AND SHALL BE APPLIED IN ACCORDANCE WITH SECTION 2105.3G OF THE STANDARD SPECIFICATIONS.

COMPACTION OF AGGREGATE BASE SHALL BE ACCOMPLISHED BY THE "QUALITY COMPACTION METHOD". AT ALL STREET CONNECTIONS THE CONTRACTOR SHALL PLACE A 20:1 BITUMINOUS TAPER.

USE TACK COAT BETWEEN ALL BITUMINOUS LIFTS.

ALL USES OF THE WORD "INCIDENTAL" IN THESE CONSTRUCTION DOCUMENTS SHALL BE CONSTRUED TO MEAN INCIDENTAL WORK FOR WHICH NO DIRECT COMPENSATION SHALL BE MADE.

EXCESS COMMON EXCAVATION SHALL BECOME THE PROPERTY OF THE CONTRACTOR. THE COST FOR DISPOSAL SHALL BE THE CONTRACTOR'S RESPONSIBILITY AND NO ADDITIONAL COMPENSATION WILL BE PAID OUTSIDE THE PRICE BID FOR COMMON EXCAVATION.

STANDARD PLATES	
THE FOLLOWING STANDARD PLATES, APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION, SHALL APPLY ON THIS PROJECT	
PLATE NO.	DESCRIPTION
7036F	PEDESTRIAN CURB RAMP
7100H	CONCRETE CURB AND GUTTERS (DESIGN B & DESIGN V)
8000I	STANDARD BARRICADE

CHART INDEX		
		SHEET
A	EXISTING STORM STRUCTURES	4
B	WATERMAIN	5
C	CONCRETE TABULATION	5
D	EXISTING UTILITY STRUCTURES	5
E	MILLING	5
F	SURVEY CONTROL STRUCTURE	5
G	SAWING PAVEMENT	5
H	CONCRETE REMOVALS	5
I	AGGREGATE & BITUMINOUS SUMMARY	6
J	PAVEMENT MARKINGS	6
K	TURF ESTABLISHMENT & EROSION CONTROL	6

BASIS FOR ESTIMATED QUANTITIES	
2350&2360 MIXES	- BITUMINOUS MIXTURES - 115 LBS PER 1" THICKNESS PER SQ. YD.
2357.502	- BITUMINOUS MATERIAL FOR TACK COAT ESTIMATED AT 0.05 GAL. PER SQ. YD. PER APPLICATION
2575.502	- SEED MIXTURE 270 APPLICATION RATE 120 LBS/ACRE
2575.532	- FERTILIZER APPLICATION RATE 350 LBS/ACRE

NO.	REV-DATE	BY:	DESCRIPTION	I HEREBY CERTIFY THAT THIS PLAN 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.
				SIGNED: <u>Kathy Jaschke</u>
				REG NO: <u>21864</u> DATE: <u>5/12/10</u>

COUNTY ROAD C  
TH 61 TO HAZELWOOD ST.

S.A.P. 62-623-52  
County Proj. P-3283



CONSTRUCTION NOTES  
SHEET 3 OF 21 SHEETS

EXISTING STORM STRUCTURES

EXISTING STRUCTURE	ROAD ALIGNMENT	STATION	OFFSET	TYPE	CSTG ASSEM TYPE	TOP OF CASTING	OUTLET ELEVATION	RAINS T	% GRADE	INLET ELEVATION	15" LIN. FT	18" LIN. FT	21" LIN. FT	24" LIN. FT	27" LIN. FT	30" LIN. FT	ADJUST	INLET PROTECTION	REMARKS
101	CO. RD. C	7+11	RT 77	APRON	W/TRASH GUARD	883.6	883.6	102	4.00	842.40	24								OK LEAVE
102	CO. RD. C	7+40	RT 63	MH DESIGN B	R-1412-A	887.7	873.24	103	1.08	871.95			120						OK LEAVE
103	CO. RD. C	7+66	LT 47	MH DESIGN C	R-1412-A	886.1	871.48	142	1.24	869.06						195			OK LEAVE
104	CO. RD. C	7+97	CL	MH DESIGN C	R-1412-A	886.5	877.78	103	7.00	874.00					54		1		ADJUST FRAME AND RING
105	CO. RD. C	8+04	LT 29	CB LP-4		886.46	881.46	104	1.00	881.17	29							1	OK LEAVE
106	CO. RD. C	8+04	RT 30	CB LP-4		886.46	880.3	104	0.60	880.13	29							1	OK LEAVE
107	CO. RD. C	8+18	RT 47			884.8	880.4	106	0.40	880.30	21								OK LEAVE
108	CO. RD. C	10+46	RT 12	MH DESIGN C	R-1412-A	890.87	881.26	104	0.52	879.93					255		1		ADJUST FRAME AND RING
109	CO. RD. C	14+03	RT 12	MH DESIGN C		889.71	883.10	108	0.52	881.26					354		1		ADJUST FRAME AND RING
110	CO. RD. C	14+08	LT 23	CB LP-4		889.97	885.97	109	1.00	885.62	35							1	OK LEAVE
111	CO. RD. C	14+07	RT 24	CB LP-4		889.97	885.47	109	1.00	885.36	11							1	OK LEAVE
112	CO. RD. C	16+48	RT 12	MH DESIGN C	R-1412-A	891.83	885.54	11	0.92	883.30				243			1		ADJUST FRAME AND RING
112A	CO. RD. C	16+61	LT 34	MH DESIGN B	R-2561	890.3	887.01	112	3.13	885.54	47								OK LEAVE
113	CO. RD. C	16+52	RT 20	CB DS-2	R-3067-V	891.44	886.94	112	1.00	886.87	7							1	OK LEAVE
114	CO. RD. C	20+54	RT 12	MH DESIGN C	R-1412-A	894.44	887.66	112	0.52	885.54				408			1		ADJUST FRAME AND RING
115	CO. RD. C	20+59	LT 20	CB DS-2	R-3067-V	894.05	891.05	114	1.00	890.74	31							1	OK LEAVE
116	CO. RD. C	20+56	RT 20	CB DS-2	R-3067-V	894.05	889.55	114	1.00	889.48	7							1	OK LEAVE
117	CO. RD. C	21+86	RT 12	MH DESIGN C	R-1412-A	894.01	888.08	114	0.32	887.66				130			1		ADJUST FRAME AND RING
118	CO. RD. C	21+87	LT 23	CB LP-4		894.27	890.27	117	1.00	889.92	35							1	OK LEAVE
119	CO. RD. C	21+88	RT 24	CB LP-4		894.27	889.27	117	1.00	889.16	11							1	OK LEAVE
120	CO. RD. C	25+40	RT 13	MH DESIGN B	R-1412-A	898.11	889.68	117	0.40	888.28				349			1		ADJUST FRAME AND RING
121	CO. RD. C	25+38	LT 19	CB DS-2	R-3067-V	897.72	894.72	120	1.00	894.41	31							1	OK LEAVE
122	CO. RD. C	25+44	RT 20	CB DS-2	R-3067-V	897.72	893.22	120	1.00	893.15	7							1	OK LEAVE
123	CLARENCE	0+48	LT 15.5	CB DS-2	R-3067-V	907.00	902.55	126	1.00	902.15	40								
124	CO. RD. C	28+70	RT 13	MH DESIGN B	R-1412-A	906.96	901.11	122	2.68	892.21	332							1	ADJUST FRAME AND RING
125	CO. RD. C	28+70	LT 20	CB DS-2	R-3067-V	906.57	903.07	124	1.00	902.76	31								OK LEAVE
126	CO. RD. C	28+73	RT 20	CB B-1	R-3067-V	906.65	901.95	124	1.00	901.87	8								OK LEAVE
127	CO. RD. C	32+55	RT 12	MH DESIGN B	R-1412-A	918.22	913.20	124	3.13	901.11	386							1	ADJUST FRAME AND RING
131	CO. RD. C	39+24	RT 13	MH DESIGN B	R-1412-A	915.85	911.50	134	0.50	909.6	380							1	ADJUST FRAME AND RING
132	CO. RD. C	39+24	LT 23	CB LP-4		916.11	912.11	131	1.00	911.76	35							1	OK LEAVE
133	CO. RD. C	39+23	RT 24	CB LP-4		916.11	911.61	131	1.00	911.5	11							1	OK LEAVE
134	CO. RD. C	43+05	RT 11	MH DESIGN B	R-1412-A	921.34	909.60	135	0.50	907.67	385							1	ADJUST FRAME AND RING
135	CO. RD. C	46+89	RT 13	MH DESIGN B	R-1412-A	921.78	907.47	136	0.20	906.75			361					1	ADJUST FRAME AND RING
136	CO. RD. C	50+50	RT 21.5	CB DS-5		917.40	906.75	138	0.60	904.92			305						OK LEAVE
137	CO. RD. C	50+50	LT 22	MH DESIGN B	R-2501	916.80	912.30	136	1.00	911.85	45								OK LEAVE
138	CO. RD. C	53+55	RT 23.8	MH DESIGN B	R-1412-A	921.90	904.72	139	4.56	892.27			273						OK LEAVE
157	CO. RD. C	32+56	RT 20	CB DS-2	R-3067-V	917.83	914.33	127	1.00	914.26	7							1	OK LEAVE
158	CO. RD. C	43+02	RT 20	CB DS-2	R-3067-V	920.95	916.45	134	1.00	916.38	7							1	OK LEAVE
159	CO. RD. C	43+28	LT 20	CB DS-2	R-3067-V	921.13	917.63	134	1.00	917.24	39							1	OK LEAVE
160	CO. RD. C	46+88	LT 21	CB DS-2	R-3067-V	921.39	917.89	135	1.00	917.58	31							1	OK LEAVE
161	CO. RD. C	46+88	RT 21	CB DS-2	R-3067-V	921.39	916.89	135	1.00	916.82	7							1	OK LEAVE
162	CO. RD. C	32+38	LT 51	CB DS-2	R-3067-V	918.34		163										1	OK LEAVE
163	CO. RD. C	32+59	LT 46	MH DESIGN B	R-2501	918.74		127										1	OK LEAVE
164	CO. RD. C	32+69	LT 49	CB DS-2	R-3067-V	918.16		163											OK LEAVE
																TOTAL	12	20	

NO. REV-DATE BY: DESCRIPTION

I HEREBY CERTIFY THAT THIS PLAN 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.

SIGNED: *Kathy Sarahae*

REG NO: *21864* DATE: *5/12/10*

COUNTY ROAD C  
TH 61 TO HAZELWOOD ST.

S.A.P. 62-623-52  
County Proj. P-3283



CHARTS  
Sheet No. 4 of 21 Sheets

D

EXISTING UTILITY STRUCTURES									
EXISTING STRUCTURE	ROAD ALIGNMENT	STATION	OFFSET	TYPE	CSTG ASSEM TYPE	TOP OF CASTING	OULET INVERT	ADJUST	REMARKS
2	CO. RD. C	8+27	LT 13	SANITARY	1422-A	886.34		1	ADJUST FRAME AND RING
4	CO. RD. C	10+24	CL	SANITARY	1422-A	890.56		1	ADJUST FRAME AND RING
5	CO. RD. C	14+12	CL	SANITARY	1422-A	889.89		1	ADJUST FRAME AND RING
6	CO. RD. C	16+07	RT 37	SANITARY	1422-A	892		1	ADJUST FRAME AND RING
7	CO. RD. C	17+43	CL	SANITARY	1422-A	893.14		1	ADJUST FRAME AND RING
8	CO. RD. C	21+03	LT 3	SANITARY	1422-A	894.44		1	ADJUST FRAME AND RING
9	CO. RD. C	23+61	CL	SANITARY	1422-A	895.02		1	ADJUST FRAME AND RING
10	CO. RD. C	25+32	CL	SANITARY	1422-A	898.16		1	ADJUST FRAME AND RING
11	CO. RD. C	28+94	CL	SANITARY	1422-A	907.79		1	ADJUST FRAME AND RING
12	CO. RD. C	32+52	CL	SANITARY	1422-A	918.3		1	ADJUST FRAME AND RING
13	CO. RD. C	34+26	CL	SANITARY	1422-A	920.42		1	ADJUST FRAME AND RING
14	CO. RD. C	38+35	RT 4	SANITARY	1422-A	916.45		1	ADJUST FRAME AND RING
15	CO. RD. C	41+31	RT 3	SANITARY	1422-A	918.46		1	ADJUST FRAME AND RING
16	CO. RD. C	44+33	RT 1	SANITARY	1422-A	922.21		1	ADJUST FRAME AND RING
17	CO. RD. C	47+33	CL	SANITARY	1422-A	921.39		1	ADJUST FRAME AND RING
22	CO. RD. C	10+28	RT 63	MH STD	R-1412-A	889.55	872.00		OK LEAVE
23	CO. RD. C	10+14	CL	MH STD	R-1412-A	890.32	875.52	1	ADJUST FRAME AND RING
24	CO. RD. C	37+14	CL	MH STD	R-1412-A	918.65	905.68	1	ADJUST FRAME AND RING
							<b>TOTAL</b>	<b>17</b>	

C

CONCRETE TABULATION				
STATION TO STATION	LOCATION	CURB & GUTTER	6" CONCRETE WALK	PRECAST TRUNCATED DOMES
		B624 LIN. FT.	SQ. FT.	SQ. FT.
7+21	RT	36	241	16
15+79	RT	39	261	16
16+32	RT	36	228	16
20+80	RT	36	209	16
21+27	RT	45	294	16
28+06	RT	36	205	16
28+54	RT	34	225	16
47+11	RT	38	273	16
<b>TOTAL</b>		<b>300</b>	<b>1936</b>	<b>128</b>

G

SAWING PAVEMENT				
STATION TO STATION	LOCATION	SAW BITUMINOUS PAVEMENT	SAW CONCRETE PAVEMENT	REMARKS
		LIN. FT.	LIN. FT.	
7+06	RT - LT	156		
7+30	RT		5	SIDEWALK
9+99 - 10+93	LT	94		
15+63 - 16+47	RT	85		
15+65	RT		5	SIDEWALK
16+44	RT		5	SIDEWALK
20+62 - 21+39	LT	77		
20+67 - 21+40	RT	73		
20+70	RT		5	SIDEWALK
21+38	RT		5	SIDEWALK
27+88 - 28+70	RT	82		
27+98	RT		5	SIDEWALK
28+67	RT		5	SIDEWALK
32+07 - 32+98	LT	91		
37+34 - 38+15	LT	81		
46+82 - 47+89	RT	107		
47+00 - 47-88	LT	125		
47+02	RT		10	SIDEWALK
<b>TOTAL</b>		<b>971</b>	<b>45</b>	

E

MILLING PAVEMENT			
STATION TO STATION	LOCATION	MILL BITUMINOUS PAVEMENT	BITUMINOUS RECLAMATION
		SQ. YD.	SQ. YD.
7+06 to 34+86	LT - RT	13298	13298
35+78 to 47+89	LT - RT	5393	5393
<b>TOTAL</b>		<b>18691</b>	<b>18691</b>

F

SURVEY CONTROL STRUCTURE				
STATION	LOCATION	ITEM	INSTALL	REMARKS
21+03	RT 0	MONUMENT	1	INSTALL SURVEY CONTROL STRUCTURE
47+33	RT 0	MONUMENT	1	INSTALL SURVEY CONTROL STRUCTURE
47+33	RT 33	MONUMENT		OK LEAVE
47+66	RT 0	MONUMENT	1	INSTALL SURVEY CONTROL STRUCTURE
		<b>TOTAL</b>	<b>3</b>	

B

WATERMAIN				
STATION	LOCATION	ITEM	ADJUST	REMARKS
9+05	LT 16	GATEVALVE	1	ADJUST
9+90	LT 17	GATEVALVE	1	ADJUST
10+69	LT 17	GATEVALVE	1	ADJUST
16+20	RT 32	GATEVALVE		OK LEAVE
16+33	RT 20	GATEVALVE	1	ADJUST
20+69	LT 16	GATEVALVE	1	ADJUST
20+89	LT 12	GATEVALVE	1	ADJUST
32+83	LT 17	GATEVALVE	1	ADJUST
34+26	LT 14	GATEVALVE	1	ADJUST
		<b>TOTAL</b>	<b>8</b>	

NO.	REV-DATE	BY:	DESCRIPTION	I HEREBY CERTIFY THAT THIS PLAN 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. SIGNED: <i>Kathy Jaschke</i> REG NO: 21864 DATE: 5/12/10
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COUNTY ROAD C  
TH 61 TO HAZELWOOD ST.

S.A.P. 62-623-52  
County Proj. P-3283



CHARTS

# CHART J

E  
P  
O  
X  
Y

LOCATION	EPOXY						PAVEMENT MESSAGES		
	4" SOLID LINE WHITE (EPOXY)	4" DOUBLE LINE YELLOW (EPOXY)	12" SOLID LINE WHITE (EPOXY)	24" SOLID LINE YELLOW (EPOXY)	24" SOLID LINE WHITE (EPOXY)	ZEBRA CROSS WALK (EPOXY)	LEFT TURN ARROW (EPOXY)	RIGHT TURN ARROW (EPOXY)	
	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	SQ. FT.	EACH	EACH	
7+27 to 47+89	7200	3665	32	55	23	165	2	1	
<b>TOTAL</b>	<b>7200</b>	<b>3665</b>	<b>32</b>	<b>55</b>	<b>23</b>	<b>165</b>	<b>2</b>	<b>1</b>	

AGGREGATE & BITUMINOUS SUMMARY FOR ROADWAY & SIDEWALK						
STATION TO STATION	LOCATION	AGGREGATE BASE CL. 7 SPEC. C.Y.	BITUMINOUS MIXTURE		TACK COAT GALLON	SAW / SEAL LIN. FT.
			TYPE SPWEB340F WEAR TON	TYPE SPNWB330B NON-WEAR TON		
			7+06 to 34+86	LT - RT		
35+78 to 47+89	LT - RT		1241	621	539	
7+21	RT	6				
15+79	RT	7				
16+32	RT	6				
20+80	RT	6				
21+27	RT	8				
28+06	RT	6				
28+54	RT	6				
47+11	RT	7				
<b>TOTAL</b>		<b>52</b>	<b>4300</b>	<b>2151</b>	<b>1869</b>	

TURF ESTABLISHMENT AND EROSION CONTROL								
STATION TO STATION	LOCATION	TURF				COMMERCIAL FERTILIZER ANALYSIS 22-5-10 LB.	EROSION CONTROL	
		SEEDING		SEED MIX 270 LB.	TOPSOIL BORROW CU. YD.		EROSION CONTROL BLANKET CAT. 3 SQ. YD.	SILT FENCE MACHINE SLICED LIN. FT.
		PERM. ACRE	TEMP. ACRE					
7+21	RT	0.0046		0.55	2	1.61	22	
15+79	RT	0.0037		0.44	2	1.28	18	
16+32	RT	0.0037		0.45	2	1.31	18	
20+80	RT	0.0030		0.36	2	1.06	15	
21+27	RT	0.0043		0.51	2	1.49	21	
28+06	RT	0.0032		0.39	2	1.13	16	
28+54	RT	0.0034		0.40	2	1.17	16	
47+11	RT	0.0026		0.31	1	0.90	12	
<b>TOTAL</b>		<b>0.0284</b>		<b>3</b>	<b>15</b>	<b>10</b>	<b>138</b>	

NO. REV-DATE BY: DESCRIPTION

I HEREBY CERTIFY THAT THIS PLAN 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.

SIGNED: *Kathy Joseph*

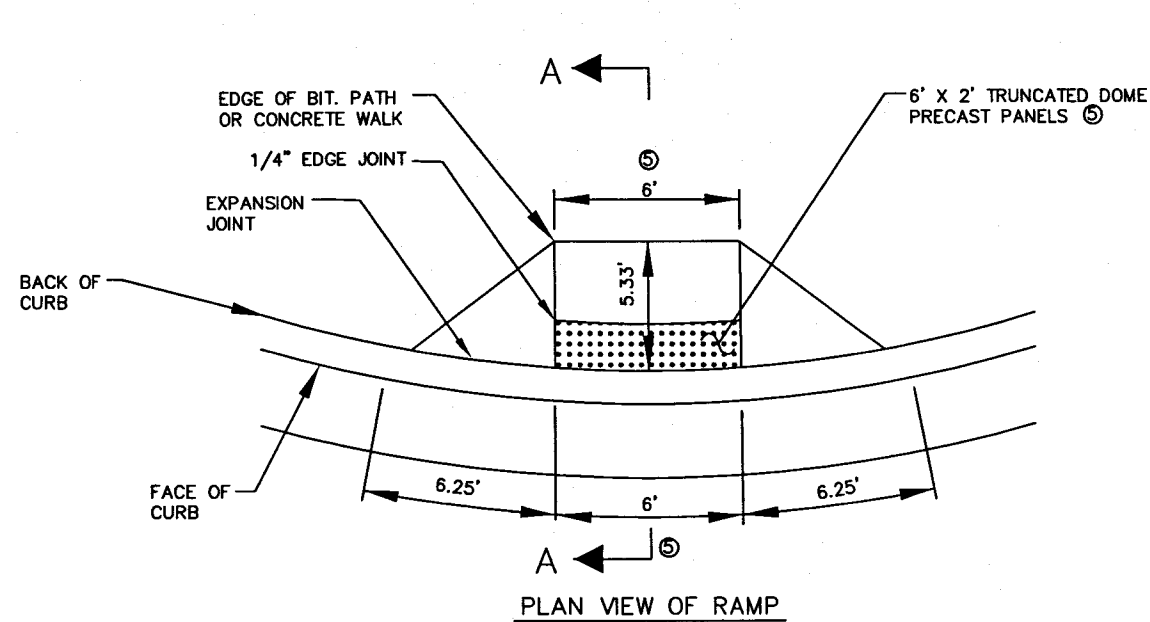
REG NO: *21864* DATE: *5/12/10*

COUNTY ROAD C  
TH 61 TO HAZELWOOD ST.

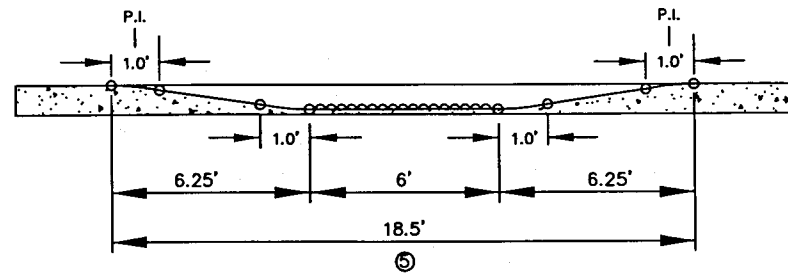
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County Proj. P-3283



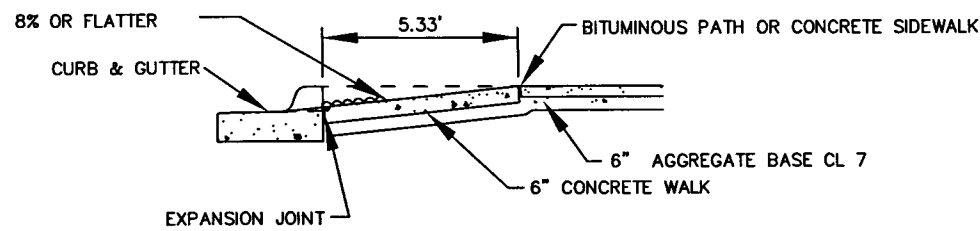
CHARTS  
Sheet No. 6 of 21 Sheets



PLAN VIEW OF RAMP



ELEVATION OF RAMP

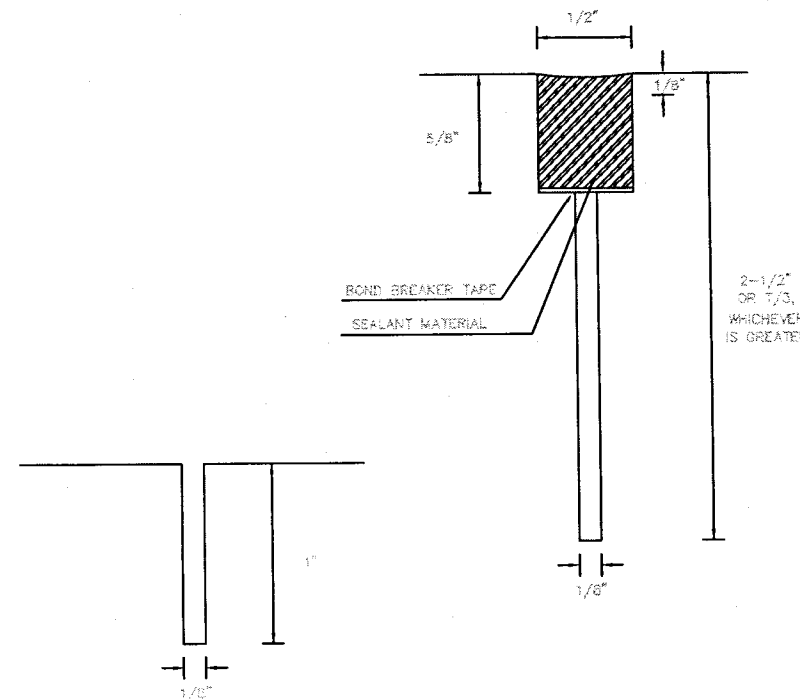


SECTION A-A

PEDESTRIAN CURB RAMP

CONSTRUCTION NOTES

1. PEDESTRIAN CURB RAMPS TYPE SPECIAL SHALL BE CONSTRUCTED AT ALL INTERSECTIONS
2. ALL SPECIFICATIONS OF STANDARD PLATE 7036F APPLY EXCEPT THAT THE TRUCATED DOMES ARE TO BE REPLACED WITH CAST IRON DETECTABLE WARNING PLATES PER NEENAH FOUNDRY SPECIFICATIONS OR EQUIVALENT.
3. PAYMENT FOR THE ENTIRE RAMP AREA SHALL BE WILL BE PAID FOR AS 6" CONCRETE WALK. DETACABLE WARNING PLATES WILL BE PAID FOR AS DETECTABLE WARNING PLATES BY THE SQUARE FOOT.
4. AGGREGATE BASE CL 7 SHALL BE PAID AS ITEM 2211.501.
5. ALL PEDESTRIAN RAMP SHALL BE CONSTRUCTED OF 6" CONCRETE
6. STRAIGHTEN BACK OF CURB TO ACCOMMODATE WARNING PLATES.



SEASONAL SAW CUT

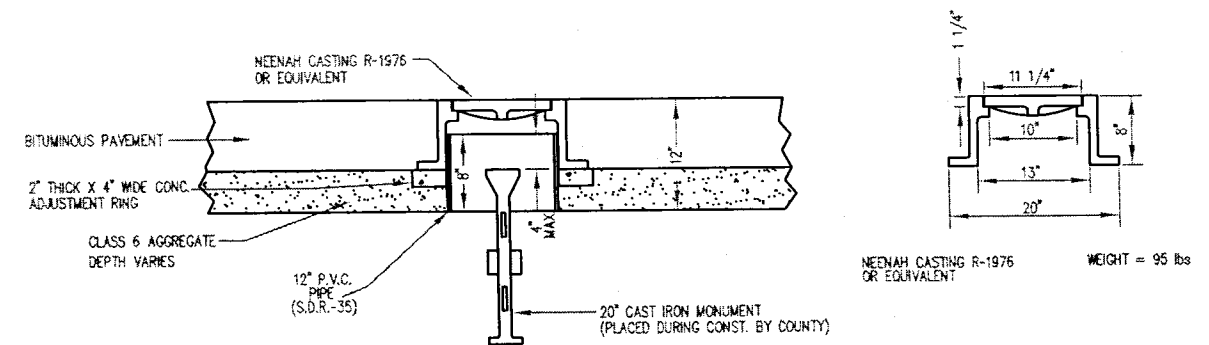
SAWED/SEALED BITUMINOUS JOINT

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER LAWS OF THE STATE OF MINNESOTA.  
 REG. NO. \_\_\_\_\_ DATE \_\_\_\_\_

NOTES

1. THE SAW CUT SHOULD BE 2-1/2" DEEP OR T/3 (WHERE T IS EQUAL TO THE THICKNESS OF THE BITUMINOUS OVERLAY OR NEW PAVEMENT), WHICHEVER IS GREATER.
2. THE RESERVOIR SHOULD BE 1/2" WIDE BY 5/8" DEEP SEALED WITH MATERIAL MEETING THE NEW Mn/DOT 3720 SPECIFICATION.
3. THE DEEP SAW CUT AND RESERVOIR SHOULD BE MADE WITH ONE PASS OF THE SAW. WHILE TWO PASS CUTTING CAN PRODUCE GOOD RESULTS, ALIGNMENT PROBLEMS OFTEN OCCUR.
4. BACKER TAPE SHOULD BE PLACED AT THE BOTTOM OF THE RESERVOIR TO PREVENT THE SEALANT MATERIAL FROM FLOWING DOWN INTO THE DEEP SAW CUT. BACKER ROD STUFFED BELOW THE RESERVOIR INTO THE DEEP SAW CUT HAS ALSO BEEN SHOWN TO WORK WELL.
5. THE RESERVOIR SHOULD BE FLUSH FILLED AND SLIGHTLY BEADED OVER THE EDGE OF THE RESERVOIR AS SHOWN.
6. SAW CUTS ARE TO BE SPACED 40' APART.

CONTROL STRUCTURE SURVEY MONUMENT MANHOLE (FOR BITUMINOUS PAVEMENT)



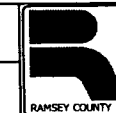
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NO.	REV-DATE	BY:	DESCRIPTION

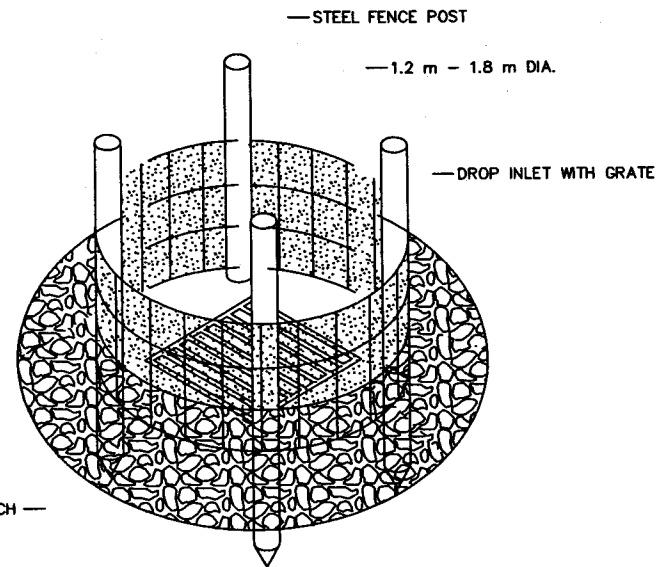
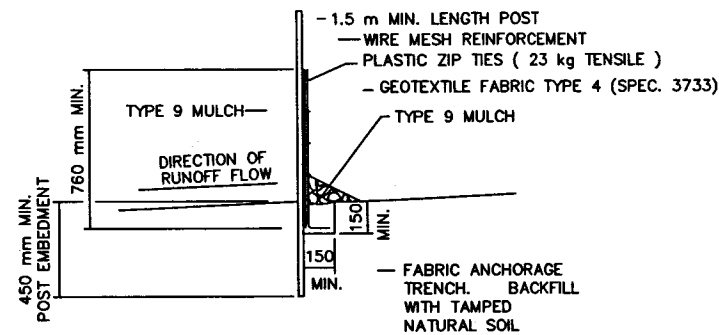
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.  
 SIGNED: *Kathy Jaschke*  
 REG NO: 21864 DATE: 5/12/10

COUNTY ROAD C  
 TH 61 TO HAZELWOOD ST.

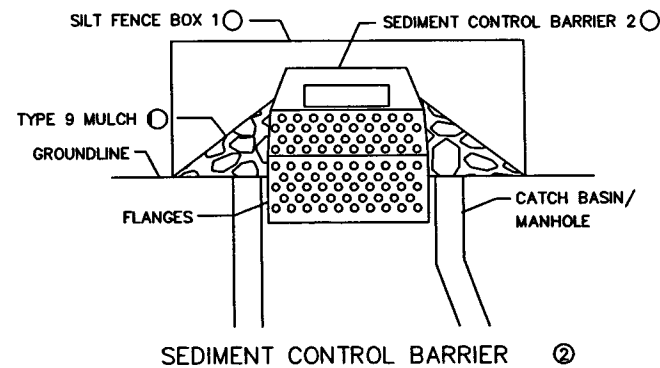
S.A.P. 62-623-52  
 County Proj. P-3283



DETAILS  
 Sheet No. 7 of 21 Sheets



**INLET PROTECTION TYPE A (SILT FENCE TO PROTECT DROP INLETS)**  
 USE WHERE INLET DRAINS AN AREA WITH SLOPES AT 1:3 OR LESS  
 (TYPE A SPEC. 3891)

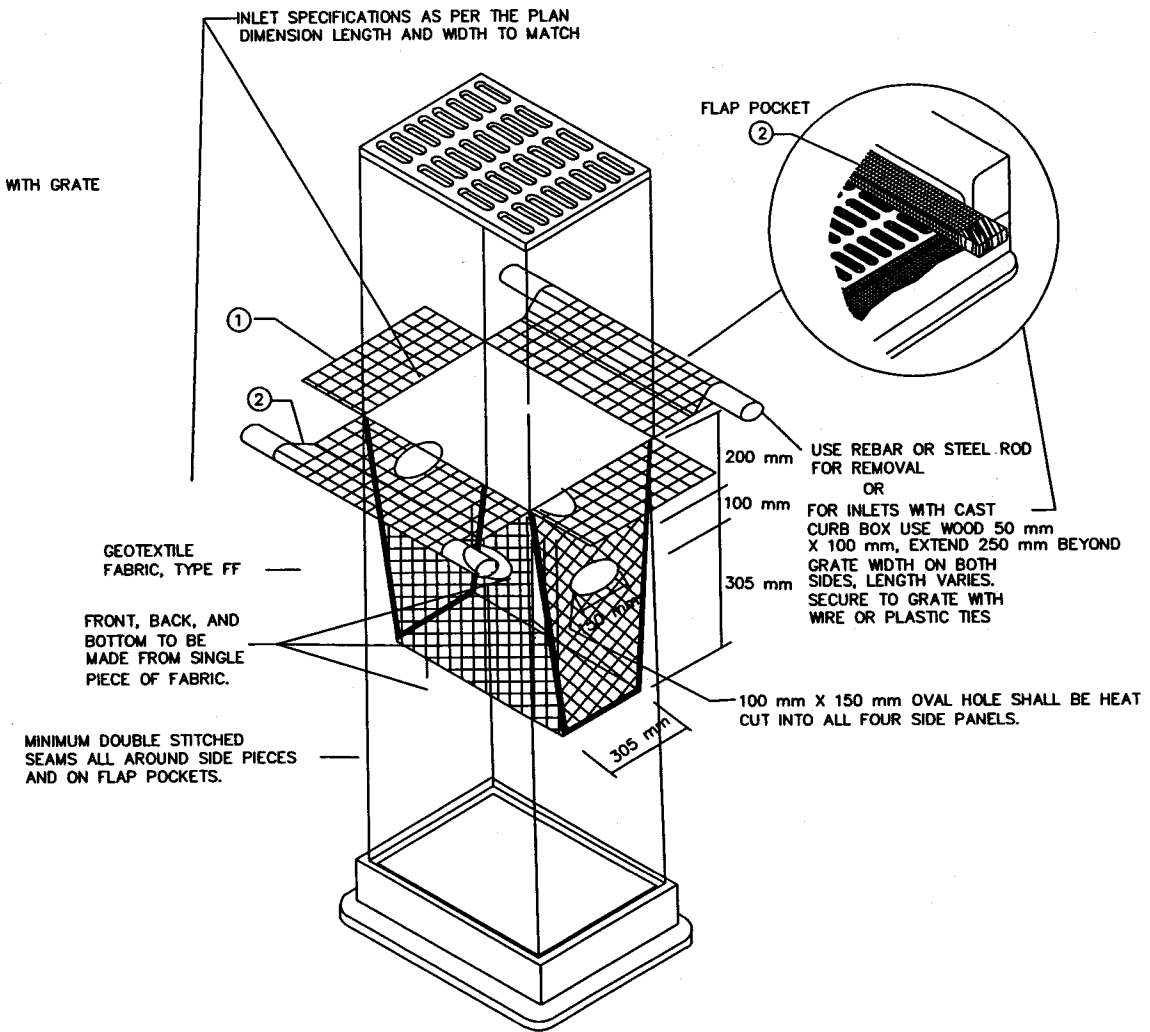


**NOTES:**

- THE SEDIMENT CONTROL BARRIER SHALL BE A METAL OR PLASTIC/POLYETHYLENE RISER SIZED TO FIT INSIDE THE CATCH BASIN/MANHOLE; HAVE PERFORATIONS TO ALLOW FOR WATER INFILTRATION; HAVE AN OVERFLOW OPENING, FLANGES AND A LID/COVER.
- ① USE INLET PROTECTION TYPE A OR TYPE 9 MULCH, AS DIRECTED BY THE ENGINEER.
  - ② PAID FOR AS SEDIMENT CONTROL BARRIER.

**NOTES:**

- INLET PROTECTION DEVICES SHALL BE MAINTAINED OR REPLACED AT THE DIRECTION OF THE ENGINEER.  
 MANUFACTURED ALTERNATIVES APPROVED AND LISTED ON THE DEPARTMENT'S EROSION CONTROL PRODUCT ACCEPTABILITY LIST MAY BE SUBSTITUTED.  
 WHEN REMOVING OR MAINTAINING INLET PROTECTION, CARE SHALL BE TAKEN SO THAT THE SEDIMENT TRAPPED ON THE GEOTEXTILE FABRIC DOES NOT FALL INTO THE INLET. ANY MATERIAL FALLING INTO THE INLET SHALL BE REMOVED IMMEDIATELY.
- ① FINISHED SIZE, INCLUDING FLAP POCKETS WHERE REQUIRED, SHALL EXTEND A MINIMUM OF 250 mm AROUND THE PERIMETER TO FACILITATE MAINTENANCE OR REMOVAL.
  - ② FLAP POCKETS SHALL BE LARGE ENOUGH TO ACCEPT WOOD 50 mm X 100 mm.
  - ③ INSTALLATION NOTES:  
 DO NOT INSTALL INLET PROTECTION IN INLETS SHALLOWER THAN 760 mm, MEASURED FROM THE BOTTOM OF THE INLET TO THE TOP OF THE GRATE.  
 TRIM EXCESS FABRIC IN THE FLOW LINE TO WITHIN 75 mm OF THE GRATE.  
 THE INSTALLED BAG SHALL HAVE A MINIMUM SIDE CLEARANCE, BETWEEN THE INLET WALLS AND THE BAG, MEASURED AT THE BOTTOM OF THE OVERFLOW HOLES, OF 75 mm.  
 WHERE NECESSARY THE CONTRACTOR SHALL CINCH THE BAG, USING PLASTIC ZIP TIES, TO ACHIEVE THE 75 mm CLEARANCE. THE TIES SHALL BE PLACED AT A MAXIMUM OF 100 mm FROM THE BOTTOM OF THE BAG.



**INLET PROTECTION ③**  
 (CAN BE INSTALLED IN ANY INLET TYPE WITH OR WITHOUT A CURB BOX)

INLET PROTECTION ③  
 INLET PROTECTION TYPE A  
 SEDIMENT CONTROL BARRIER

NO.	REV-DATE	BY:	DESCRIPTION

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 SIGNED: *Kathy Sasahbe*  
 REG NO: 21864 DATE: 5/12/10

COUNTY ROAD C  
 TH 61 TO HAZELWOOD ST.

S.A.P. 62-623-52  
 County Proj. P-3283

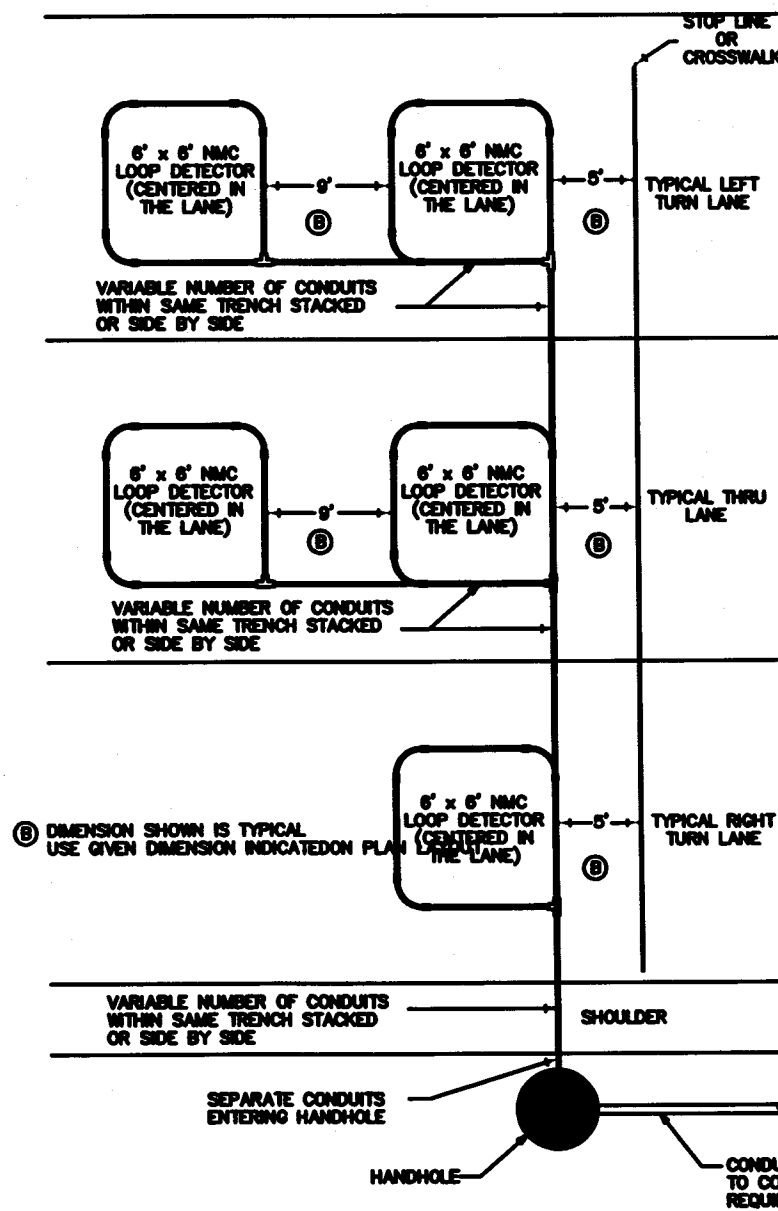


INLET PROTECTION DETAIL  
 Sheet No. 8 of 21 Sheets

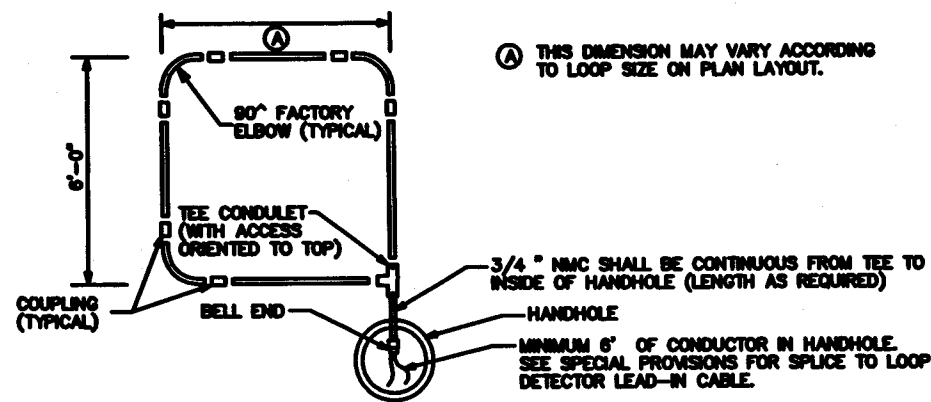


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 PLOTTED/REVISED: 2/1/2010

### TYPICAL CROSS STREET NMC LOOP DETECTOR LAYOUT



### TYPICAL NMC LOOP DETECTOR DETAIL

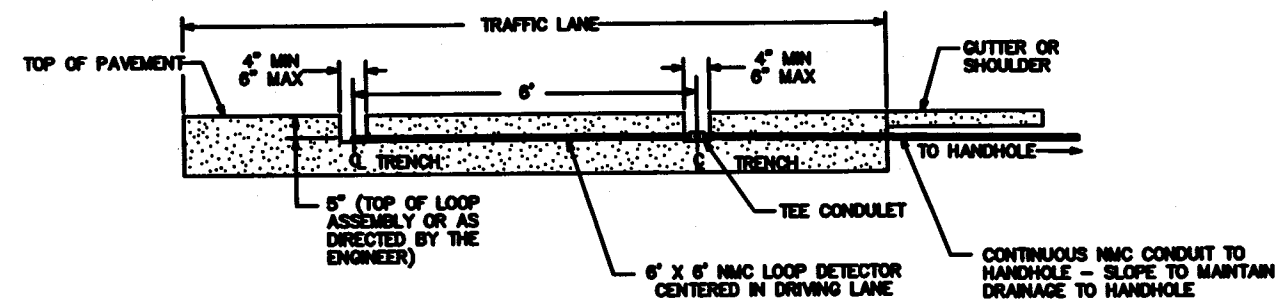


### NOTES:

- ROADWAY LOOP DETECTOR CONDUCTORS AND LOOP DETECTOR LEAD IN CABLES SHALL BE IN ACCORDANCE WITH MN/DOT SPEC 3615.
- THE 3/4" NON-METALLIC CONDUIT (NMC) AND FITTINGS SHALL BE SCHEDULE 40 HEAVY WALL RIGID POLYVINYL CHLORIDE (PVC), SEE SPEC. 3803.
- THREE CORNERS OF EACH LOOP DETECTOR SHALL BE A 90° FACTORY ELBOW (6" RADIUS), THE FOURTH SHALL BE AN NMC TEE CONDULET.
- APPROVED PVC PRIMER AND CEMENT SHALL BE USED FOR THE PVC JOINTS.
- ALL SLACK MUST BE REMOVED FROM LOOP DETECTOR CONDUCTORS WITHIN THE NMC.
- THE ROADWAY LOOP DETECTOR CONDUCTORS (1/C#14) SHALL BE TWISTED THREE TURNS PER FOOT FROM THE NMC TEE CONDULET TO THE HANDHOLE.
- ATTACH A FERROUS METAL ITEM IN OR ADJACENT TO THE TEE CONDULET COVER OR AS DIRECTED BY THE ENGINEER.
- EACH LOOP DETECTOR CONDUIT TO THE HANDHOLE SHALL BE SLOPED TOWARDS THE HANDHOLE.
- LOOP DETECTOR CONDUITS TO THE HANDHOLE MAY BE PLACED WITHIN THE SAME TRENCH.
- THE LOOP DETECTOR ROADWAY CONDUCTORS SHALL EXTEND 6' TO 10' INTO THE HAND HOLE FOR SPLICING.
- NO SPLICES ALLOWED IN CONDUIT.
- THE LOOP DETECTOR ROADWAY CONDUCTORS AND THE LOOP DETECTOR LEAD-IN CABLE CONDUCTORS SHALL BE PROPERLY PREPARED AND CLEANED BEFORE SPLICING.
- SPLICE KITS SHALL BE INSTALLED IN HANDHOLES IN SUCH A MANNER AS TO ENSURE THAT EACH SPLICE KIT IS SUSPENDED AND/OR SECURED NEAR THE TOP OF THE HANDHOLE TO THE SATISFACTION OF THE ENGINEER. (PLACING SPLICE KITS ON TOP OF THE ELECTRICAL CABLES AND CONDUCTORS IS NOT ACCEPTABLE).
- TYPICAL SIZE OF LOOP DETECTORS ARE 6' x 6' AND 6' x 10'. REFER TO INTERSECTION LAYOUT FOR SPECIFIC LOOP DETECTORS TO BE PLACED.
- ALL LOOP DETECTORS SHALL HAVE 4 TURNS OF CONDUCTORS.
- SEE SPECIAL PROVISIONS FOR APPROVED SPLICE KITS.
- PRIOR TO INSTALLING THE APPROVED SPLICE KIT, THE CONTRACTOR SHALL SOLDER THE ENDS OF THE LOOP DETECTOR LEAD IN CONDUCTOR AND SHALL FURNISH AND INSTALL AN APPROPRIATE SIZED WIRE NUT TO THE SOLDERED ENDS PRIOR TO THE INSTALLATION OF THE SPLICE KITS.
- IF BENDING OF THE NMC LOOP LEAD-IN CONDUIT IS REQUIRED, AN APPROPRIATE HEATING BLANKET OR DEVICE APPROVED BY THE ENGINEER SHALL BE USED. EXPOSED FLAME OR TORCHES ARE NOT ALLOWED.

### TYPICAL NMC LOOP DETECTOR INSTALLATION

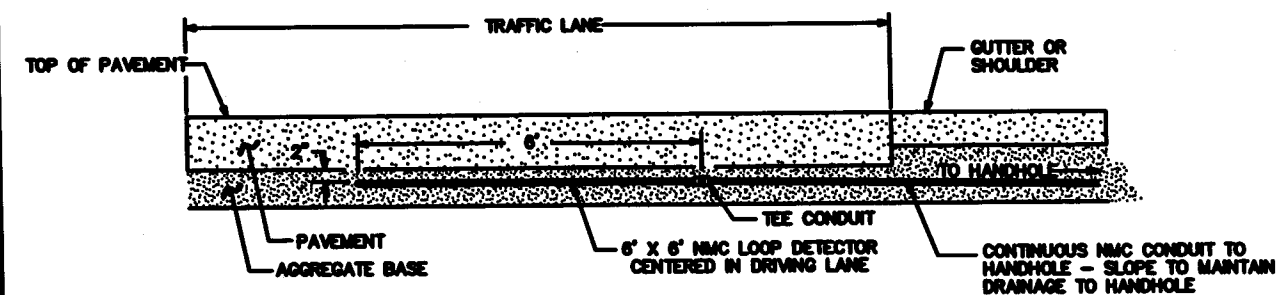
#### INPLACE PAVEMENT



### NOTES:

- USE THE LOOP DETECTOR TO BE INSTALLED FOR THE PURPOSE OF MARKING THE PAVEMENT LOCATION FOR THE MILLING OPERATION.
- TO ACHIEVE FULL TRENCH DEPTH FOR CONDUIT PLACEMENT, MILL BEYOND THE DESIRED PAVEMENT MARKING.
- PROVIDE A MINIMUM 5" CLEARANCE, MEASURED FROM THE TOP OF THE FINISHED PAVEMENT TO HIGHEST POINT OF LOOP ASSEMBLY (INCLUDING CONDUIT).
- AN AIR COMPRESSOR UNIT (50 HP) IS REQUIRED FOR REMOVING ALL LOOSE MATERIAL FROM TRENCH PRIOR TO TACK COAT APPLICATION.
- APPLY A TACK COAT AT A UNIFORM RATE TO THE BOTTOM AND EDGES OF THE MILLED AREA. USE AN EMULSIFIED ASPHALT PER SPEC. 2357.2A
- MIXTURE USED TO FILL THE RETROFIT LOOP DETECTOR TRENCHES SHALL MEET THE REQUIREMENTS OF MN/DOT SPECIFICATION 2360. AGGREGATE SIZE A OR B WILL BE ALLOWED WHEN 2360 IS UTILIZED. OTHER WEARING COURSE MIXTURE TYPES ARE ALLOWED WHEN APPROVED BY THE ENGINEER.
- COMPACTION SHALL BE OBTAINED BY THE ORDINARY COMPACTION METHOD. BACKFILL THE TRENCH WITH A MINIMUM OF TWO LIFTS AND COMPACT EACH LIFT. BEFORE COMPACTING THE FIRST LIFT ENSURE THAT THERE IS ADEQUATE MIXTURE ON EACH SIDE AND ABOVE THE CONDUIT SO THAT THE CONDUIT IS NOT DAMAGED DURING COMPACTION OPERATIONS.
- THE COMPACTED MIXTURE IN THE TRENCH SHOULD BE LEFT 1/4" TO 1/2" ABOVE THE ADJACENT PAVEMENT SURFACE TO PROVIDE FOR ADDITIONAL COMPACTION BY TRAFFIC.
- WHEN LOOP DETECTORS ARE MILLED INTO CONCRETE SURFACES, REMOVE RUBBLE, SANDBLAST AND AIR BLAST THE TRENCH TO REMOVE DEBRIS. FILL THE TRENCH WITH AN APPROVED MATERIAL LISTED ON THE MN/DOT CONCRETE UNIT'S WEBSITE FOR: "PACKAGED DRY RAPID HARDENING CEMENTITIOUS MATERIALS FOR CONCRETE REPAIRS". WWW.MN/DOT.STATE.MN.US/PAVEMENT/CONCRETE/PRODUCTS/CONCRETEREPAIRMATERIAL.PDF
- MILLING IS REQUIRED FOR ALL NMC LOOP INSTALLATIONS. WHEN LOOPS ARE MILLED INTO EXISTING MILLED SURFACE THAT WILL BE OVERLAYED WITH BITUMINOUS, THE MINIMUM TRENCH DEPTH SHALL BE NO LESS THAN THE HIGHEST LOOP ASSEMBLY IN THE TRENCH.
- WHEN MILLING INTO EXISTING BITUMINOUS SURFACE, BE ADVISED THAT CONCRETE MAY BE ENCOUNTERED UNDER THE BITUMINOUS SURFACE.

#### NEW PAVEMENT



### NOTES:

- OBTAIN THE REQUIRED COMPACTION OF THE AGGREGATE BASE AFTER PLACEMENT OF LOOP DETECTOR AND LEAD-IN CONDUIT.
- THE DEPTH OF THE LOOP MEASURED FROM THE TOP OF THE AGGREGATE BASE TO THE TOP OF THE CONDUIT SHALL NOT EXCEED 2".

BY	DATE	REVISIONS

SYSTEM ID:	T.E.
METER ADDRESS:	
MASTER ID:	T.E.

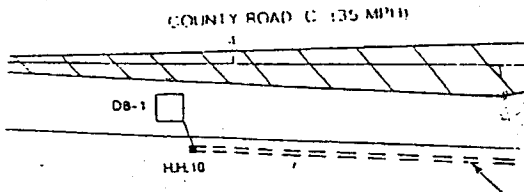
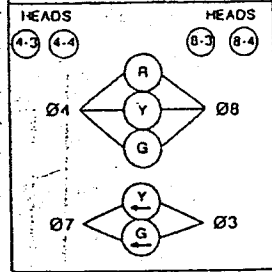
**PREFORMED NON-METALLIC CONDUIT (NMC) LOOP DETECTOR DETAILS**

S.A.P. NO. 02-023-02-	DRAWN BY: <i>Kathy Jaschke</i>	CHKD BY: <i>Kathy Jaschke</i>	DATE: 2-1-2010
CERTIFIED BY: <i>Kathy Jaschke</i>		LIC. NO. 2186A DATE: 5/12/10	
COUNTY PROJ. NO. P-3283		SHEET NO. 9 OF 21 SHEETS	

**NOTES:**

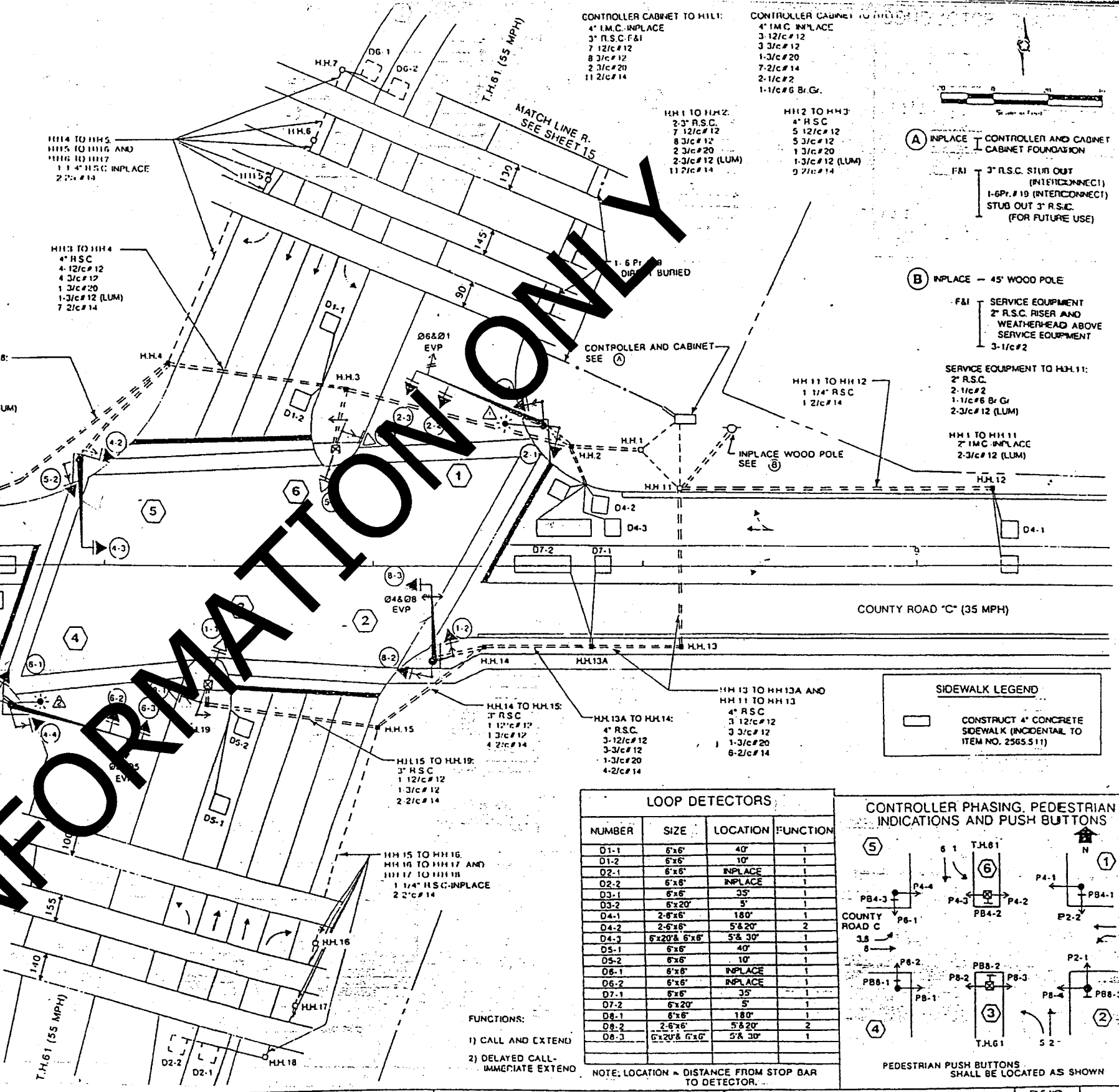
- 1) EACH SIGNAL FACE SHALL HAVE BACKGROUND SHIELD.
- 2) A 3/4" HALF COUPLING, 3/4" PIPE NIPPLE AND CONDUIT OUTLET BODY FOR EVP EQUIPMENT SHALL BE FURNISHED AND INSTALLED APPROXIMATELY 4 FEET FROM THE END OF EACH MAST ARM.
- 3) A MID-ARM MOUNT SHALL BE FURNISHED AND INSTALLED 12 FEET FROM THE END OF THE MAST ARM AT POLES (1) AND (4).
- 4) CONTRACTOR SHALL PAINT ALL NEW AND EXISTING ITEMS OF THE NEW PERMANENT SIGNAL SYSTEM.
- 5) LOCATIONS OF POLES, HANDHOLES, AND LOOP DETECTORS SHALL BE AS DETERMINED IN THE FIELD BY MN/DOT TRAFFIC PERSONNEL.
- 6) NEW HANDHOLES SHALL BE PVC HANDHOLES WITH METAL FRAMES AND COVERS. SEE SPECIAL PROVISIONS.
- 7) CONTRACTOR SHALL FURNISH AND INSTALL ALL NEW CABLES AND CONDUCTORS FOR THE NEW PERMANENT SIGNAL SYSTEM.
- 8) CONTRACTOR SHALL FURNISH AND INSTALL ALL NEW GROUND WIRES AND CONDUIT BUSHINGS ON OPEN ENDS OF CONDUITS INTO EACH HANDHOLE AND ABOVE CONCRETE FOUNDATIONS.
- 9) THE SIGNAL SYSTEM FLASH MODE SHALL BE ALL RED.
- 10) ALL SIGNAL FACES ARE 12"x3 SECTION R-Y-G, EXCEPT FOR FACES 1-1, 1-2, 5-1 AND 5-2, WHICH ARE 12"x3 SECTION RLTA-YLTA-GLTA AND FACES 4-3, 4-4, 8-3 AND 8-4, WHICH ARE 12"x5 SECTION R-Y-G-YLTA-GLTA.
- 11) CONTRACTOR SHALL (AT EACH INPLACE HANDHOLE) CLEAN OUT THE INSIDE OF THE HANDHOLE AT LEAST 1 FOOT BELOW THE LOWEST CONDUIT WITHIN THE HANDHOLE. ALL TO THE SATISFACTION OF THE ENGINEER.
- 12) INTERCONNECT CABLE BETWEEN CABINETS ON T.H.61 BETWEEN COUNTY ROAD C AND BEAM AVENUE SHALL BE 1-6 PAIR #19 DIRECT BURIED TYPE INSTALLED IN 3" R.S.C. UNDER ROADWAYS. INTERCONNECT CABLE BETWEEN CABINETS SHALL BE RUN SEPARATE FROM ALL OTHER CONDUIT AND CABLE RUNS.
- 13) EACH PEDESTRIAN INDICATION SHALL BE 12" x 12".
- 14) SEE SPECIAL PROVISIONS REGARDING REMOVAL AND SALVAGING OF INPLACE SIGNAL SYSTEM (INCIDENTAL TO ITEM NO. 2565 511)
- 15) LOOP DETECTORS D1-1, D1-2, D5-1 AND D5-2 SHALL BE SPECIAL PVC LOOP DETECTORS. SEE DETAILS.

**SIGNAL HEAD PHASING**



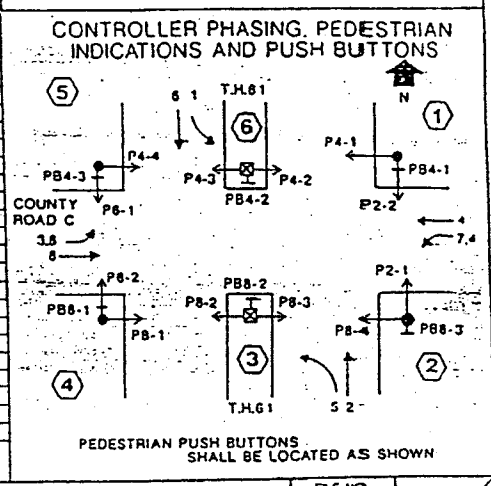
- 1) TYPE A100 A-50-D40-9 (DAVIT AT 350") A100 POLE FOUNDATION  
2-ONE WAY SIGNALS-OVERHEAD  
TYPE 10B-POLE MOUNTED 90°  
TYPE 10B-POLE MOUNTED 180°  
LUMINAIRE-200 WATT H.P.S. WITH PEC AND CHECK SWITCH  
PEDESTRIAN PUSH BUTTON AND SIGN (R10-4c)  
INSTALL ONE WAY EVP DETECTOR AND LIGHT (FROM INPLACE SIGNAL SYSTEM)  
INSTALL TYPE 'D' SIGN PANEL (FROM INPLACE SIGNAL SYSTEM)  
INSTALL 2-R8-1 SIGN PANELS (FROM INPLACE SIGNAL SYSTEM)
- 2) TYPE P90-A-25 P90 POLE FOUNDATION  
ONE WAY SIGNAL-OVERHEAD  
TYPE 10B-POLE MOUNTED 90°  
TYPE 10B-POLE MOUNTED 180°  
PEDESTRIAN PUSH BUTTON AND SIGN (R10-4c)  
R10-12 SIGN PANEL (36"x48")-ADJACENT TO 8-3  
INSTALL TWO WAY EVP DETECTOR AND LIGHT (FROM INPLACE SIGNAL SYSTEM)
- 3) TYPE P90-A-30 P90 POLE FOUNDATION  
ONE WAY SIGNAL-OVERHEAD  
TYPE 10B-POLE MOUNTED 90°  
TYPE 10B-POLE MOUNTED 180°  
PEDESTRIAN PUSH BUTTON AND SIGN (R10-4c)  
R10-12 SIGN PANEL (36"x48")-ADJACENT TO 4-3
- 6) INPLACE TYPE 2A PEDESTAL POLE AND BASE  
PEDESTAL FOUNDATION  
PEDESTRIAN PUSH BUTTON AND SIGN  
R10-XSL SIGN PANEL-POLE MOUNTED  
SALVAGE - PEDESTRIAN PUSH BUTTON AND SIGN  
F&I PEDESTRIAN PUSH BUTTON AND SIGN (R10-4c)  
2-PEDESTRIAN INDICATIONS (REVISE FROM TYPE 2A, TO TYPE 2D)

- BASE 1 TO HH.2:**  
3" R.S.C.  
2-12/c#12  
3-3/c#12  
1-3/c#20  
1-3/c#12 (LUM)
- BASE 2 TO HH.14:**  
3" R.S.C.  
2-12/c#12  
2-3/c#12  
1-3/c#20
- BASE 3 TO HH.9:**  
3" R.S.C.  
1-12/c#12  
1-3/c#12
- BASE 4 TO HH.4:**  
3" R.S.C.  
2-12/c#12  
3-3/c#12  
1-3/c#20  
1-3/c#12 (LUM)
- BASE 5 TO HH.4:**  
3" R.S.C.  
2-12/c#12  
3-3/c#12  
1-3/c#20  
1-3/c#12 (LUM)
- BASE 6 TO HH.3:**  
3" R.S.C.  
1-12/c#12  
1-3/c#12



**LOOP DETECTORS**

NUMBER	SIZE	LOCATION	FUNCTION
D1-1	6'x6'	40'	1
D1-2	6'x6'	10'	1
D2-1	6'x6'	INPLACE	1
D2-2	6'x6'	INPLACE	1
D3-1	6'x6'	35'	1
D3-2	6'x20'	5'	1
D4-1	2-6'x6'	180'	1
D4-2	2-6'x6'	5'x20'	2
D4-3	6'x20' & 6'x6'	5'x30'	1
D5-1	6'x6'	40'	1
D5-2	6'x6'	10'	1
D6-1	6'x6'	INPLACE	1
D6-2	6'x6'	INPLACE	1
D7-1	6'x6'	35'	1
D7-2	6'x20'	5'	1
D8-1	6'x6'	180'	1
D8-2	2-6'x6'	5'x20'	2
D8-3	6'x20' & 6'x6'	5'x30'	1



NO.	REV.	DATE	BY	DESCRIPTION
1	JMG	1/91		PER MN/DOT REVIEW
2	JMG	9/92		PER COUNTY AND MN/DOT REVIEW
3	JMG	1/93		PER MN/DOT REVIEW

I HEREBY CERTIFY THAT THIS PLAN 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.

SIGNED: \_\_\_\_\_  
REG. NO. \_\_\_\_\_ DATE: \_\_\_\_\_



RAMSEY COUNTY, MINNESOTA  
COUNTY ROAD C

TRAFFIC SIGNAL SYSTEM  
INTERSECTION LAYOUT  
T.H.61 AT COUNTY ROAD "C"

FILE NO. 90100.00  
DATE 1-29-93  
12  
74

NO.	REV.	DATE	BY	DESCRIPTION

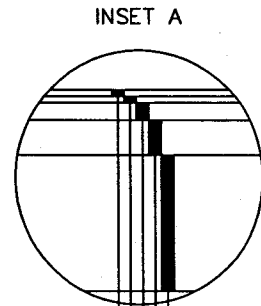
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

SIGNED: \_\_\_\_\_  
REG. NO. \_\_\_\_\_ DATE: \_\_\_\_\_

S.A.P. 62-623-52  
County Proj. P-3283

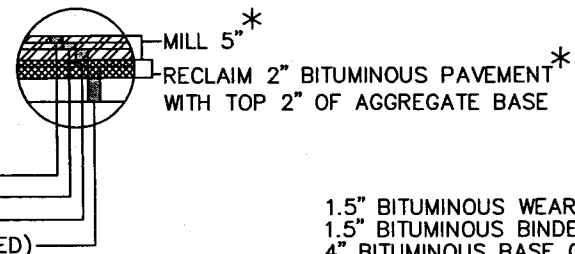
RAMSEY COUNTY  
SIGNAL INTERSECTION LAYOUT  
Sheet No. 10 of 21 Sheets

S.A.P. 62-623-34 & S.P. G222-118

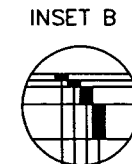


1.5" BITUMINOUS WEARING COURSE- MN/DOT TYPE 41  
 1.5" BITUMINOUS BINDER COURSE- MN/DOT TYPE 31  
 4" BITUMINOUS BASE COURSE- MN/DOT TYPE 31  
 8" AGGREGATE BASE CLASS 6 MN/DOT SPEC. 2211 (RECYCLED)  
 3' SELECT GRANULAR BORROW

INSET B  
MILLING DETAIL

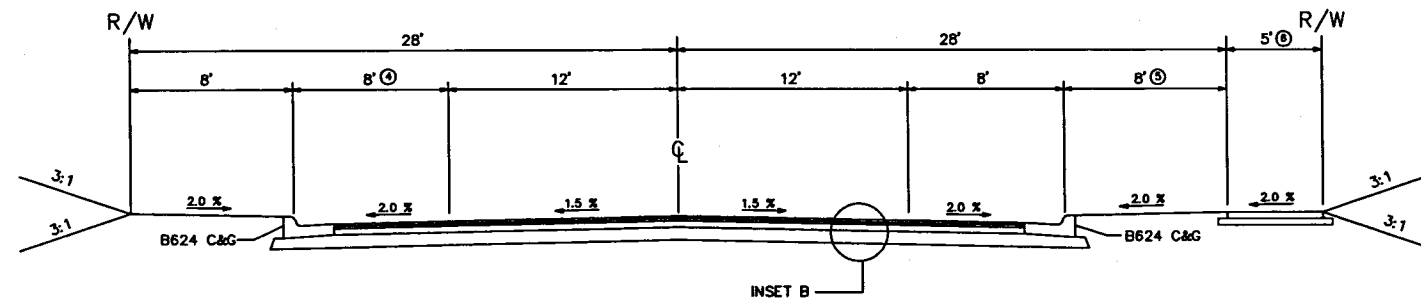


1.5" BITUMINOUS WEARING COURSE- MN/DOT TYPE 41  
 1.5" BITUMINOUS BINDER COURSE- MN/DOT TYPE 31  
 4" BITUMINOUS BASE COURSE- MN/DOT TYPE 31  
 8" AGGREGATE BASE CLASS 6 MN/DOT SPEC. 2211 (RECYCLED)



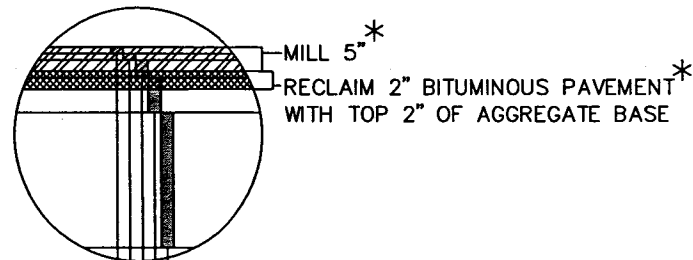
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 4" BITUMINOUS BASE COURSE- MN/DOT TYPE 31  
 8" AGGREGATE BASE CLASS 6 MN/DOT SPEC. 2211 (RECYCLED)

EXISTING TYPICAL SECTION\*  
 COUNTY ROAD C  
 STA 17+40 TO 47+89.43



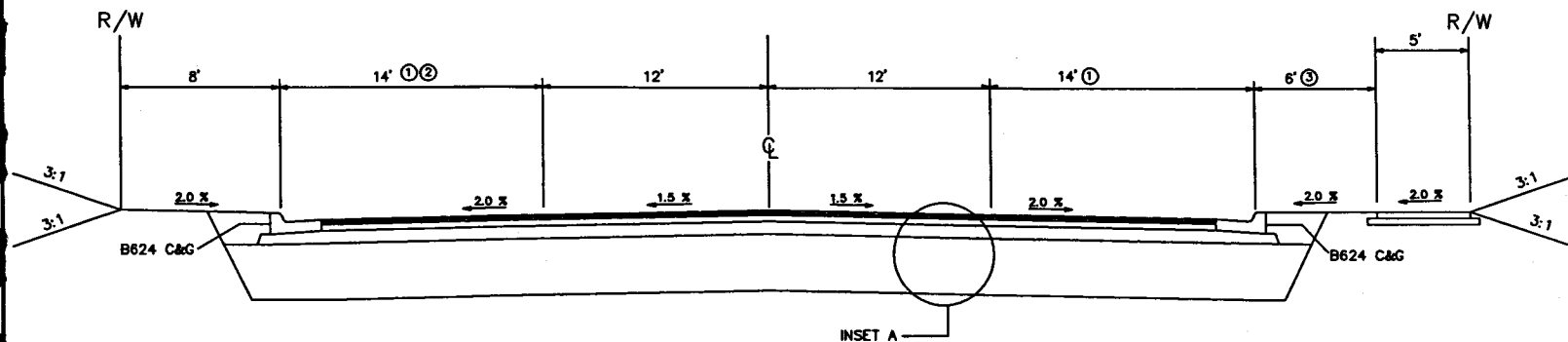
⊙ 4' EXISTING PLAN STA 28+45 TO 30+55  
 ⊙ DIMENSION VARIES AT BRIDGE- SEE EXISTING PLAN  
 ⊙ WIDTH AND LOCATION VARIES AT BRIDGE- SEE EXISTING PLAN

INSET A  
MILLING DETAIL



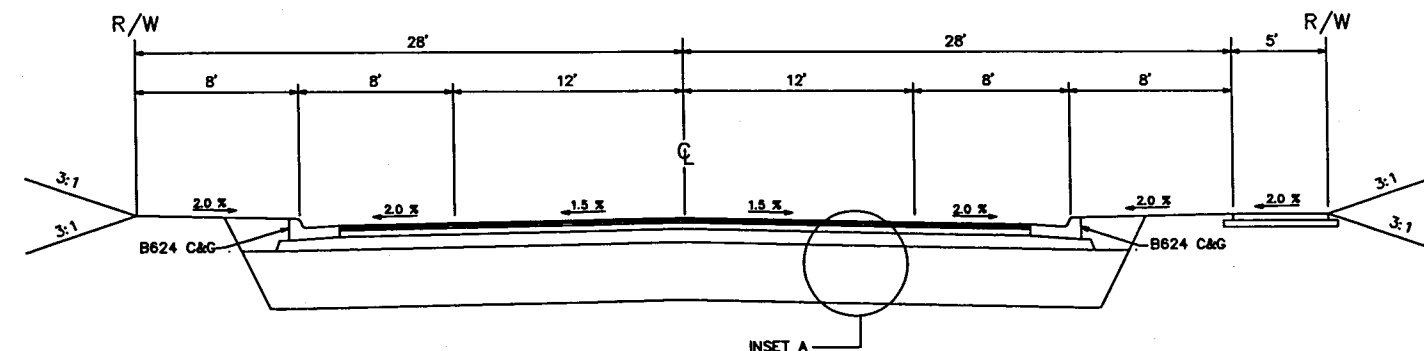
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 1.5" BITUMINOUS BINDER COURSE- MN/DOT TYPE 31  
 4" BITUMINOUS BASE COURSE- MN/DOT TYPE 31  
 8" AGGREGATE BASE CLASS 6 MN/DOT SPEC. 2211 (RECYCLED)  
 3' SELECT GRANULAR BORROW

EXISTING TYPICAL SECTION\*  
 COUNTY ROAD C  
 STA 7+06 TO 12+77



⊙ VARIES 14'-8' STA 10+97 TO STA 12+77  
 ⊙ VARIES 14' TO 18' STA 9+40 TO STA 10+00  
 ⊙ VARIES 6' TO 8' STA 12+17 TO 12+77

EXISTING TYPICAL SECTION\*  
 COUNTY ROAD C  
 12+77 TO 17+40



MILLING OF EXISTING BITUMINOUS PAVEMENT IS TO HAPPEN IN TWO PASSES. THE FIRST MILLING PASS OF THE EXISTING BITUMINOUS PAVEMENT SHALL BE MILLED TO A DEPTH OF 6" LEAVING 1" OF EXISTING BITUMINOUS PAVEMENT IN PLACE. THE 6" OF MILLING FROM THE FIRST PASS SHALL BE REMOVED FROM THE ROADWAY. THE SECOND MILLING PASS SHALL MILL THE REMAINING 1" OF EXISTING BITUMINOUS PAVEMENT AND COMBINE IT WITH 2" OF THE EXISTING BASE MATERIAL FOR A DEPTH OF 3". THE SECOND MILLING PASS SHALL BLEND THE REMAINING 1" OF EXISTING BITUMINOUS ROADWAY INTO 2" OF THE EXISTING BASE MATERIAL FOR UNITY AND COMPACTION. AFTER BLENDING THE LAST MILLING PASS, THE NEW COMBINED BASE MATERIAL SHALL BE REGRADED AND COMPACTION TO MET THE SPECIFICATIONS OF THE PROPOSED ROAD TYPICAL SECTIONS.

\*FOR MILLING DETAILS SEE SPECIAL PROVISIONS

NO.	REV-DATE	BY:	DESCRIPTION

I HEREBY CERTIFY THAT THIS PLAN 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.  
 SIGNED: *Kathy Jasek*  
 REG NO: 21864 DATE: 5/12/10

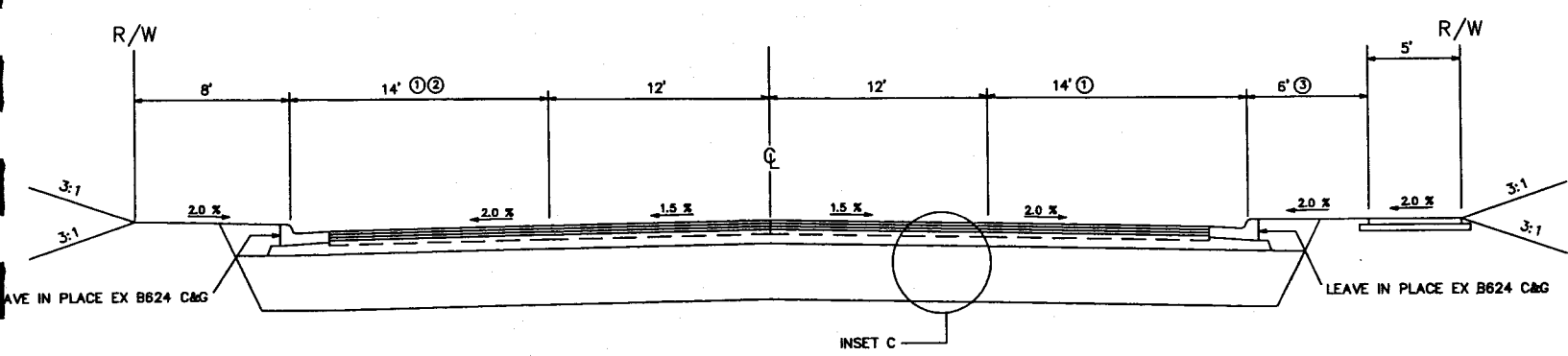
COUNTY ROAD C  
 TH 61 TO HAZELWOOD ST.

S.A.P. 62-623-52  
 County Proj. P-3283



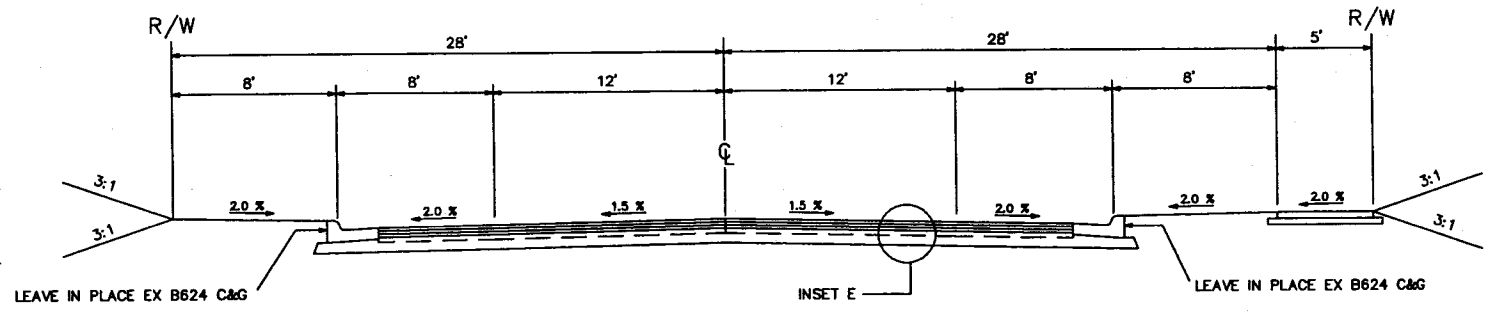
EXISTING TYPICAL SECTION  
 Sheet No. 11 of 21 Sheets

PROPOSED TYPICAL SECTION\*  
 COUNTY ROAD C  
 STA 7+06 TO 12+77

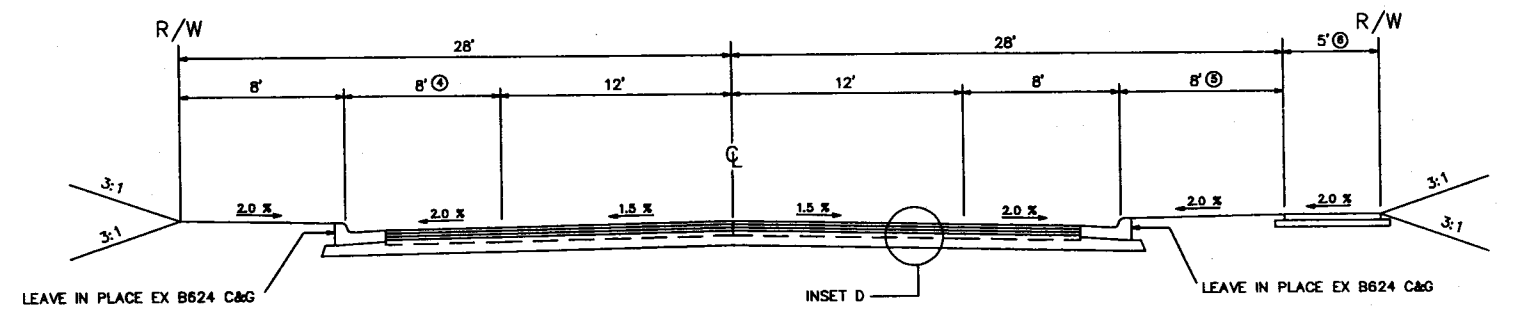


① VARIES 14'-8" STA 10+97 TO STA 12+77  
 ② VARIES 14' TO 18' STA 9+40 TO STA 10+00  
 ③ VARIES 6' TO 8' STA 12+17 TO 12+77

PROPOSED TYPICAL SECTION\*  
 COUNTY ROAD C  
 STA 35+78 TO 47+89.43

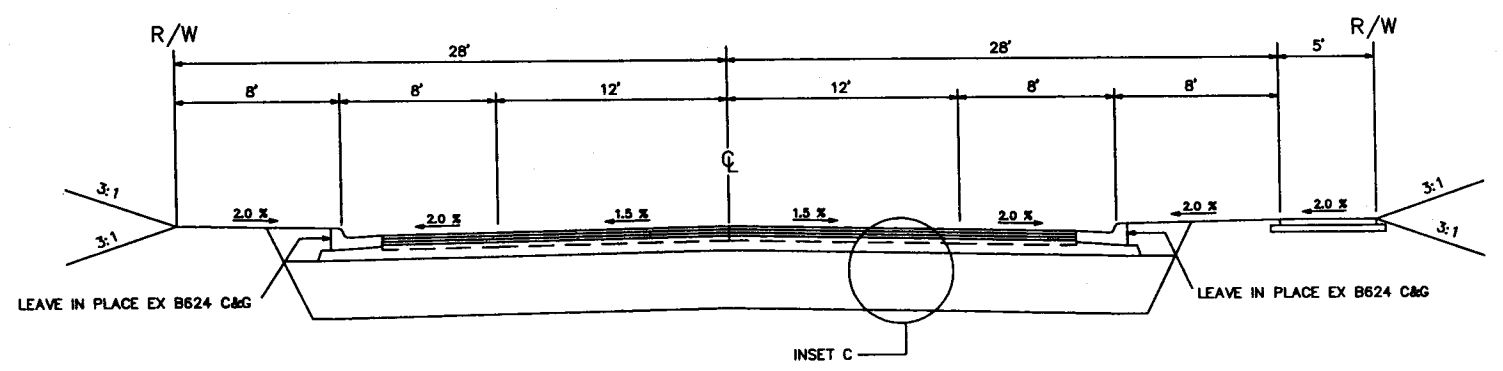


PROPOSED TYPICAL SECTION\*  
 COUNTY ROAD C  
 STA 17+40 TO 35+78



④ 4' EXISTING PLAN STA 28+45 TO 30+55  
 ⑤ DIMENSION VARIES AT BRIDGE- SEE EXISTING PLAN  
 ⑥ WIDTH AND LOCATION VARIES AT BRIDGE- SEE EXISTING PLAN

PROPOSED TYPICAL SECTION\*  
 COUNTY ROAD C  
 STA 12+77 TO 17+40



BITUMINOUS TACK COAT BETWEEN BIT. COURSES MN/DOT SPEC. 2357  
 2" BITUMINOUS WEARING COURSE- SPWEB340F  
 2" BITUMINOUS WEARING COURSE- SPWEB340F  
 2" BITUMINOUS NON-WEARING COURSE- SPNWB330B  
 3" BITUMINOUS PAVEMENT RECLAMATION  
 6" UNDISTURBED EXISTING AGGEGATE

BITUMINOUS TACK COAT BETWEEN BIT. COURSES MN/DOT SPEC. 2357  
 2" BITUMINOUS WEARING COURSE- SPWEB340F  
 2" BITUMINOUS WEARING COURSE- SPWEB340F  
 2" BITUMINOUS NON-WEARING COURSE- SPNWB330B  
 3" BITUMINOUS PAVEMENT RECLAMATION  
 6" UNDISTURBED EXISTING AGGEGATE

BITUMINOUS TACK COAT BETWEEN BIT. COURSES MN/DOT SPEC. 2357  
 2" 2360 BITUMINOUS WEARING COURSE- SPWEB340F  
 2" 2360 BITUMINOUS WEARING COURSE- SPWEB340F  
 2" 2360 BITUMINOUS NON-WEARING COURSE- SPNWB330B  
 3" BITUMINOUS PAVEMENT RECLAMATION  
 6" UNDISTURBED EXISTING AGGEGATE  
 3' UNDISTURBED EXISTING SELECT GRANULAR BORROW

MILLING OF EXISTING BITUMINOUS PAVEMENT IS TO HAPPEN IN TWO PASSES. THE FIRST MILLING PASS OF THE EXISTING BITUMINOUS PAVEMENT SHALL BE MILLED TO A DEPTH OF 6" LEAVING 1" OF EXISTING BITUMINOUS PAVEMENT IN PLACE. THE 6" OF MILLING FROM THE FIRST PASS SHALL BE REMOVED FROM THE ROADWAY. THE SECOND MILLING PASS SHALL MILL THE REMAINING 1" OF EXISTING BITUMINOUS PAVEMENT AND COMBINE IT WITH 2" OF THE EXISTING BASE MATERIAL FOR A DEPTH OF 3". THE SECOND MILLING PASS SHALL BLEND THE REMAINING 1" OF EXISTING BITUMINOUS ROADWAY INTO 2" OF THE EXISTING BASE MATERIAL FOR UNITY AND COMPACTION. AFTER BLENDING THE LAST MILLING PASS, THE NEW COMBINED BASE MATERIAL SHALL BE REGRADED AND COMPACTED TO MET THE SPECIFICATIONS OF THE PROPOSED ROAD TYPICAL SECTIONS.

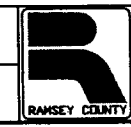
\*FOR MILLING DETAILS SEE SPECIAL PROVISIONS

NO.	REV-DATE	BY:	DESCRIPTION

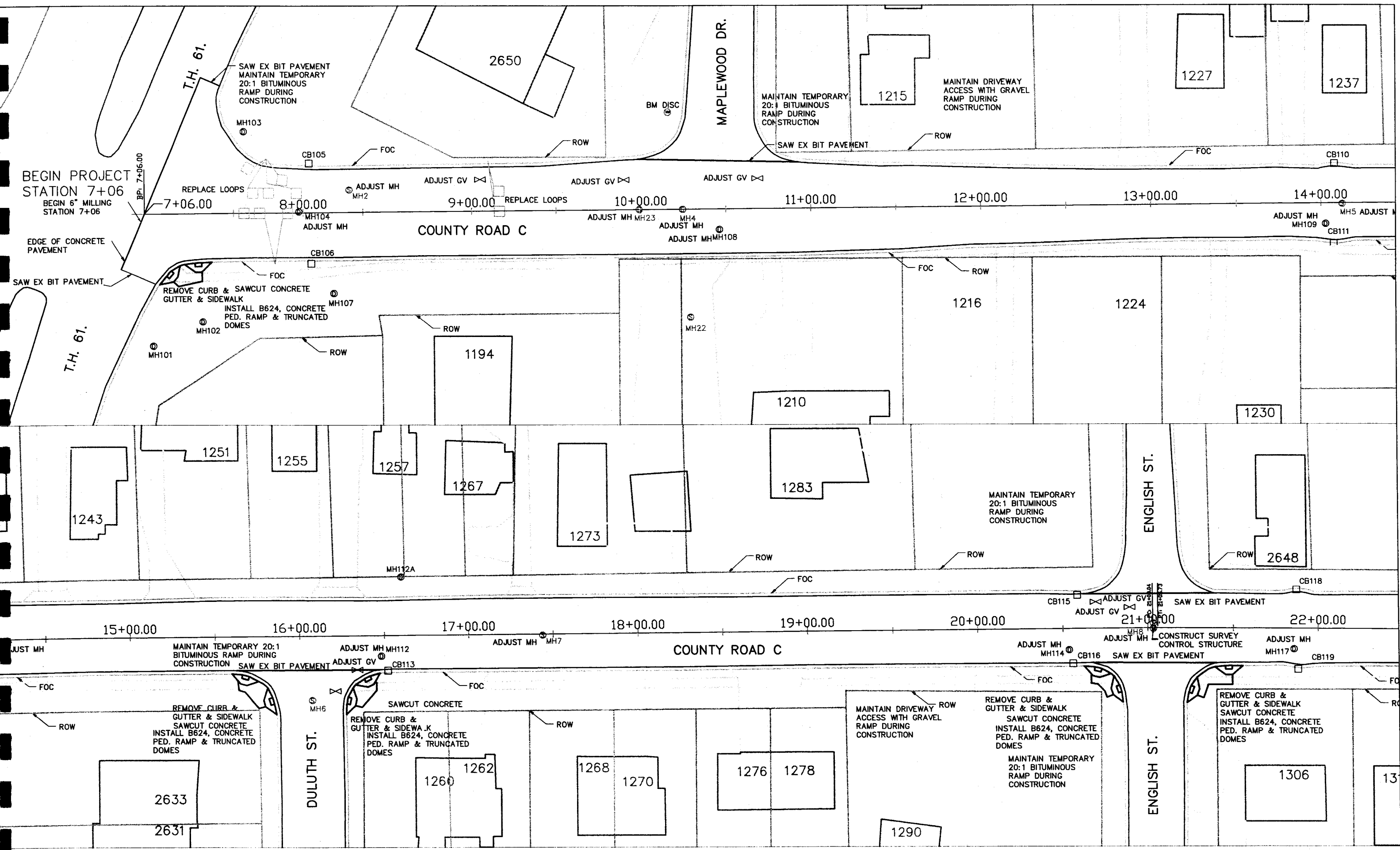
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.  
 SIGNED: *Kathy Jaschke*  
 REG NO: 21864 DATE: 5/12/10

COUNTY ROAD C  
 TH 61 TO HAZELWOOD ST.

S.A.P. 62-623-52  
 County Proj. P-3283



PROPOSED TYPICAL SECTION  
 Sheet No. 12 of 21 Sheets



NO.	REV-DATE	BY:	DESCRIPTION

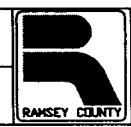
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SIGNED: *Kathy Sussler*

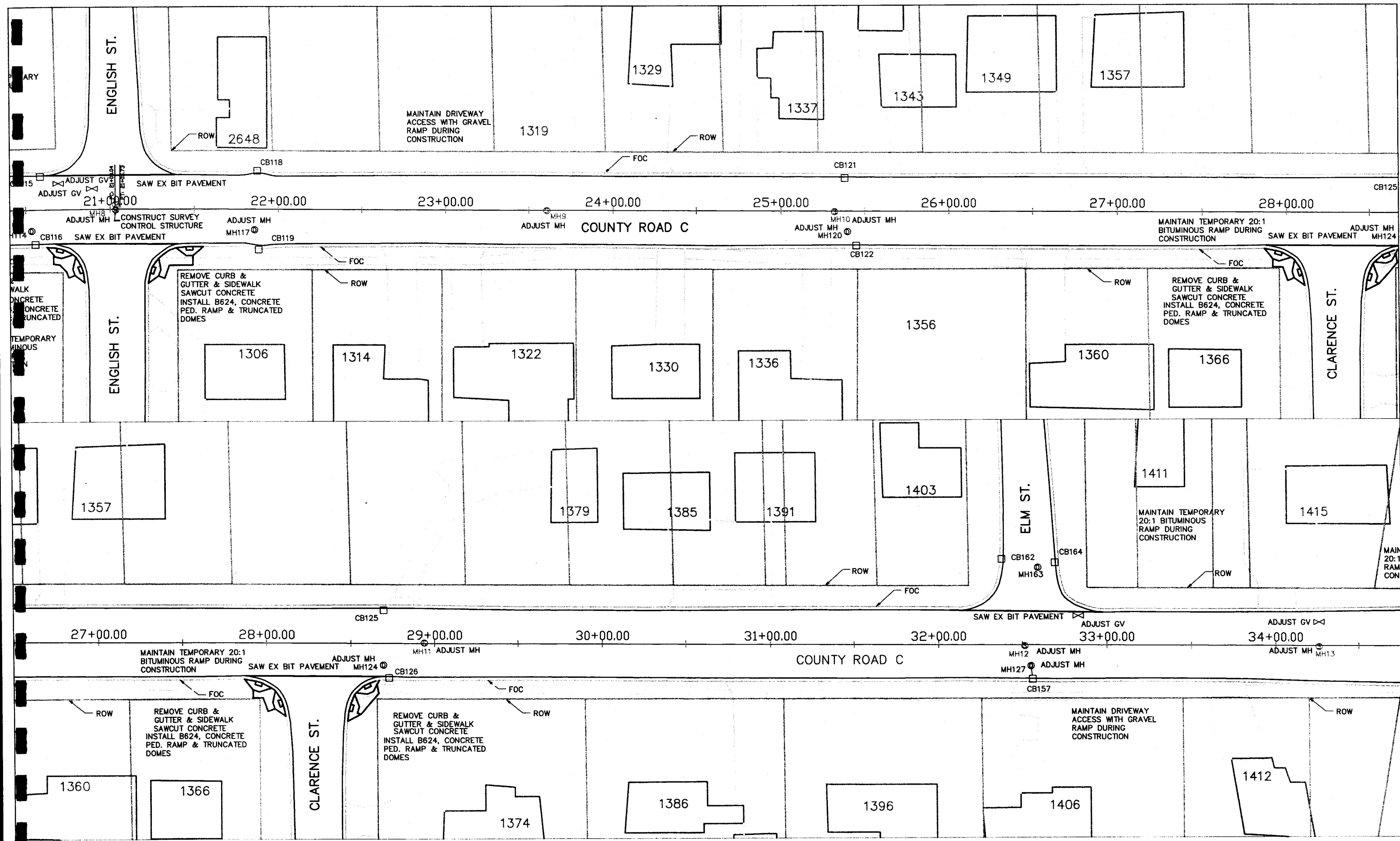
REG NO: 21864 DATE: 5/12/10

**COUNTY ROAD C**  
TH 61 TO HAZELWOOD ST.

S.A.P. 62-623-52  
County Proj. P-3283



**ROADWAY PLAN**  
Sheet No. 13 of 21 Sheets



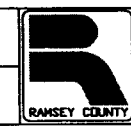
NO.	REV-DATE	BY:	DESCRIPTION

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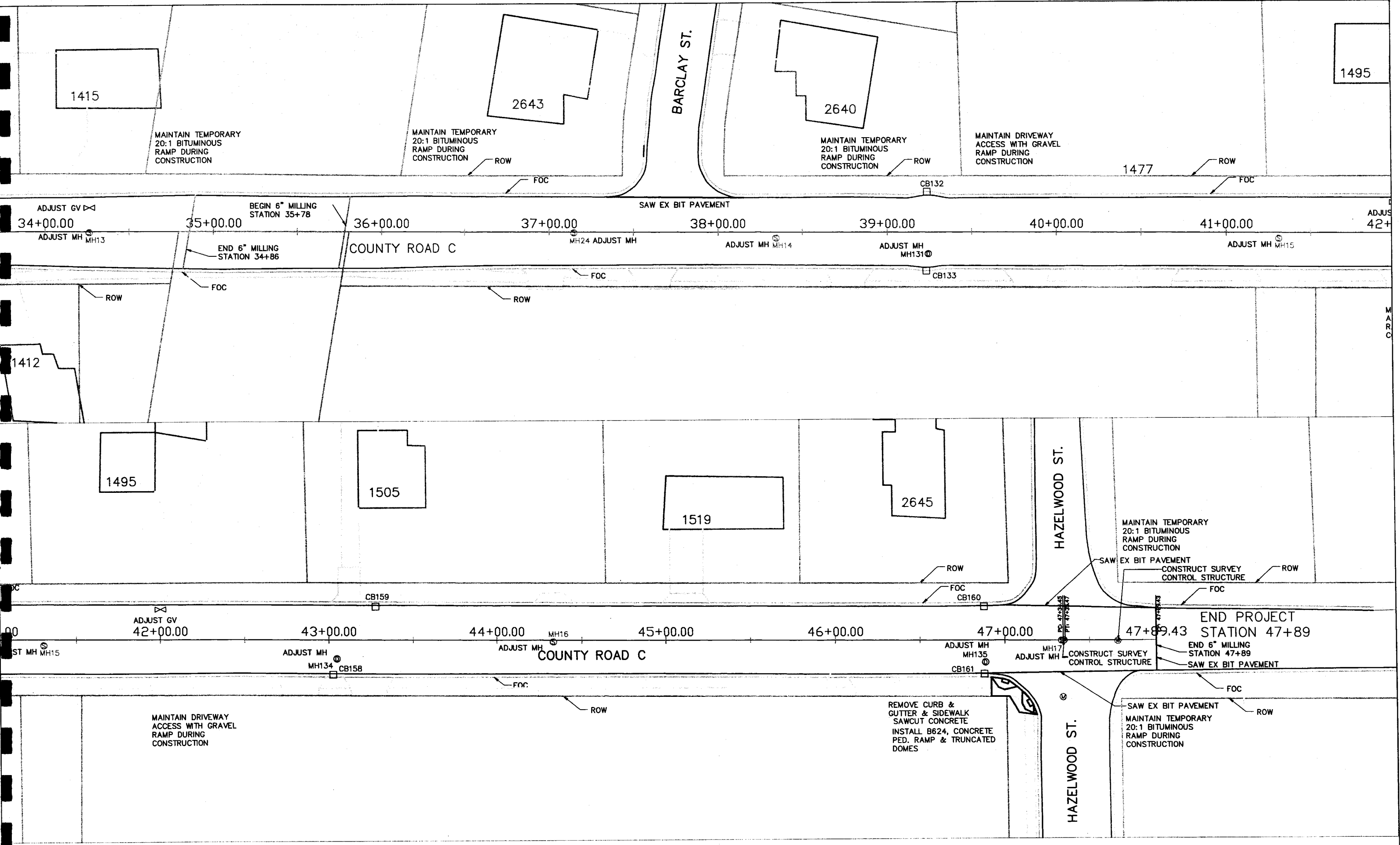
SIGNED: *Kathy Jaschke*  
 REG NO: 21861 DATE: 5/12/10

COUNTY ROAD C  
 TH 61 TO HAZELWOOD ST.

S.A.P. 62-623-52  
 County Proj. P-3283



ROADWAY PLAN  
 Sheet No. 14 of 21 Sheets



NO.	REV-DATE	BY:	DESCRIPTION

I HEREBY CERTIFY THAT THIS PLAN 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.

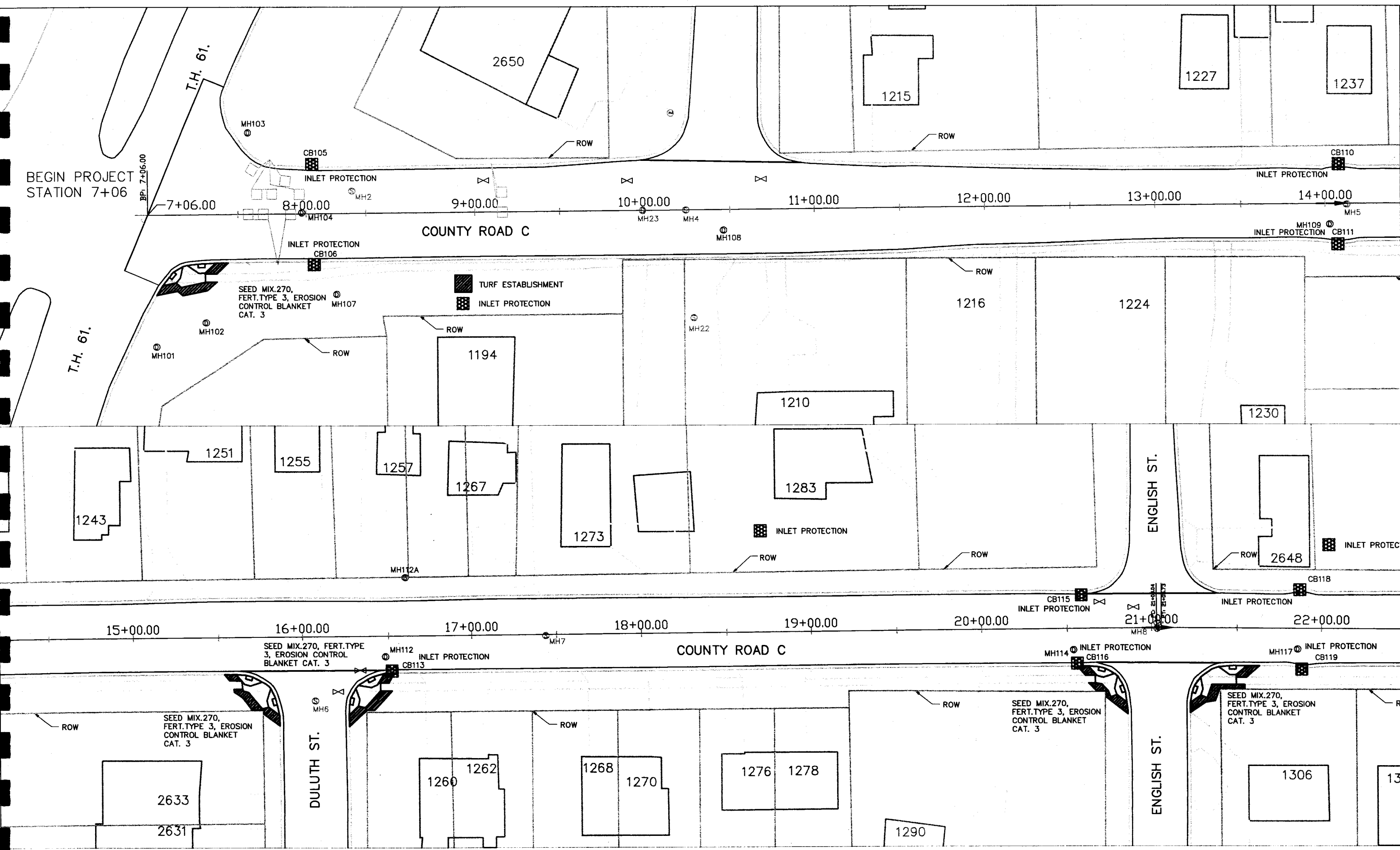
SIGNED: *Kathy Jaschke*  
 REG NO: 21864 DATE: 5/12/10

COUNTY ROAD C  
 TH 61 TO HAZELWOOD ST.

S.A.P. 62-623-52  
 County Proj. P-3283



ROADWAY PLAN  
 Sheet No. 15 of 21 Sheets



BEGIN PROJECT STATION 7+06

B.P. 7+06.00

T.H. 61.

COUNTY ROAD C

COUNTY ROAD C

ENGLISH ST.

DULUTH ST.

NO.	REV-DATE	BY:	DESCRIPTION

I HEREBY CERTIFY THAT THIS PLAN 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.  
 SIGNED: *Kathy J. Sasse*  
 REG NO: 21864 DATE: 5/12/10

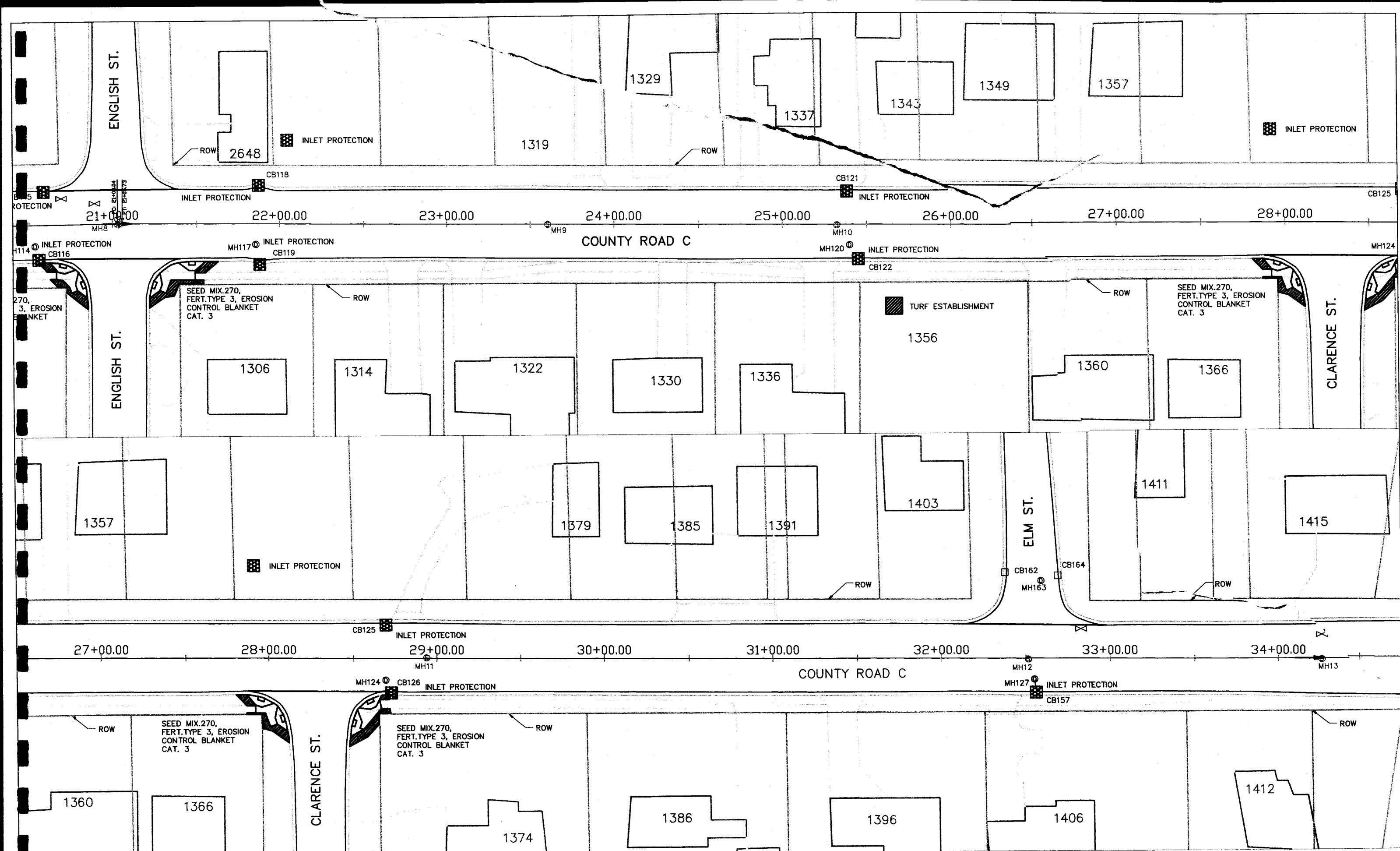
COUNTY ROAD C  
 TH 61 TO HAZELWOOD ST.

S.A.P. 62-623-52  
 County Proj. P-3283



EROSION & TURF ESTABLISH.  
 Sheet No. 16 of 21 Sheets





NO.	REV-DATE	BY:	DESCRIPTION

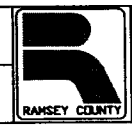
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SIGNED: *Kathy Jaschke*

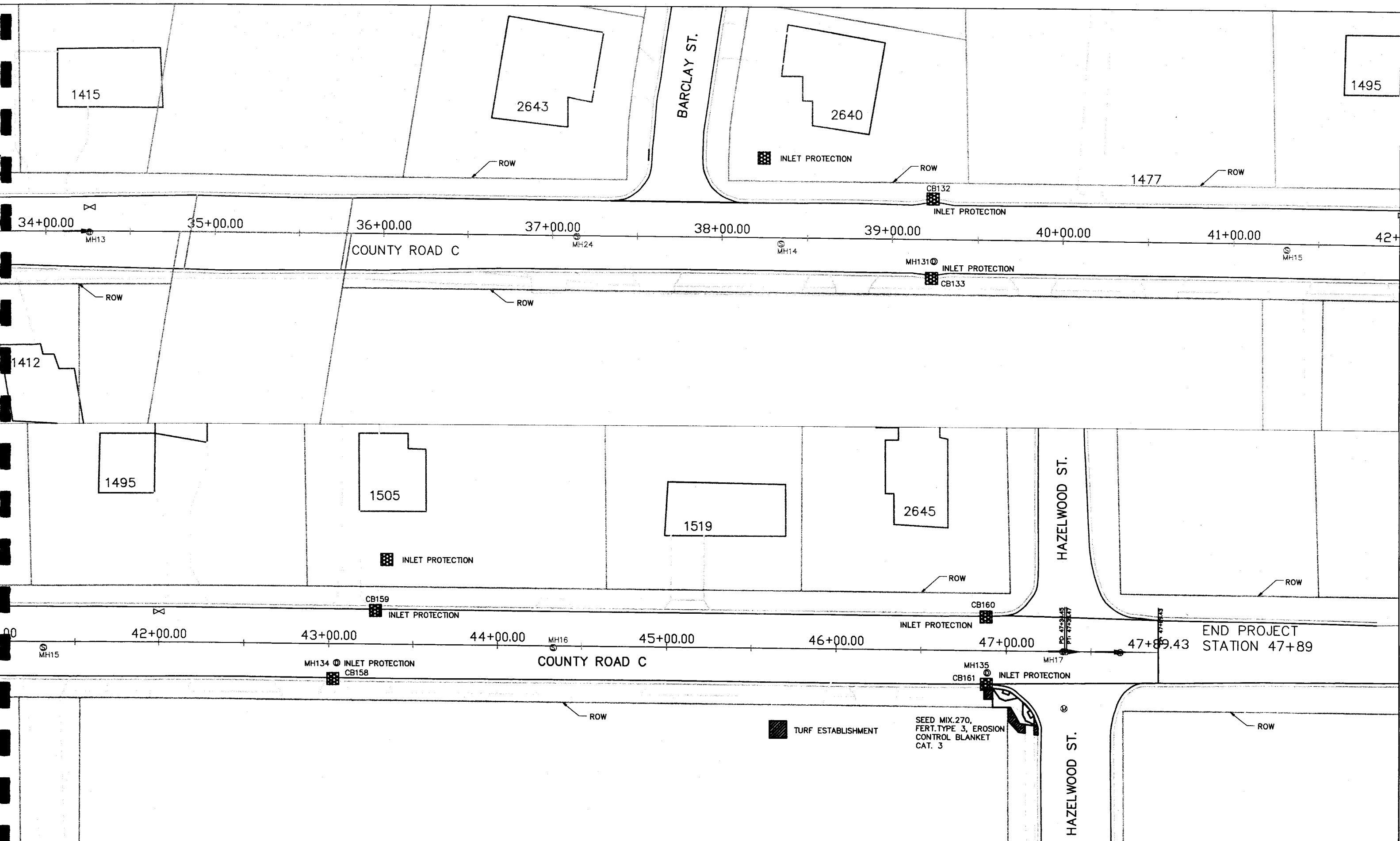
REG NO: 21864 DATE: 5/12/10

COUNTY ROAD C  
TH 61 TO HAZELWOOD ST.

S.A.P. 62-623-52  
County Proj. P-3283



EROSION & TURF ESTABLISH.  
Sheet No. 17 of 21 Sheets



NO.	REV-DATE	BY:	DESCRIPTION

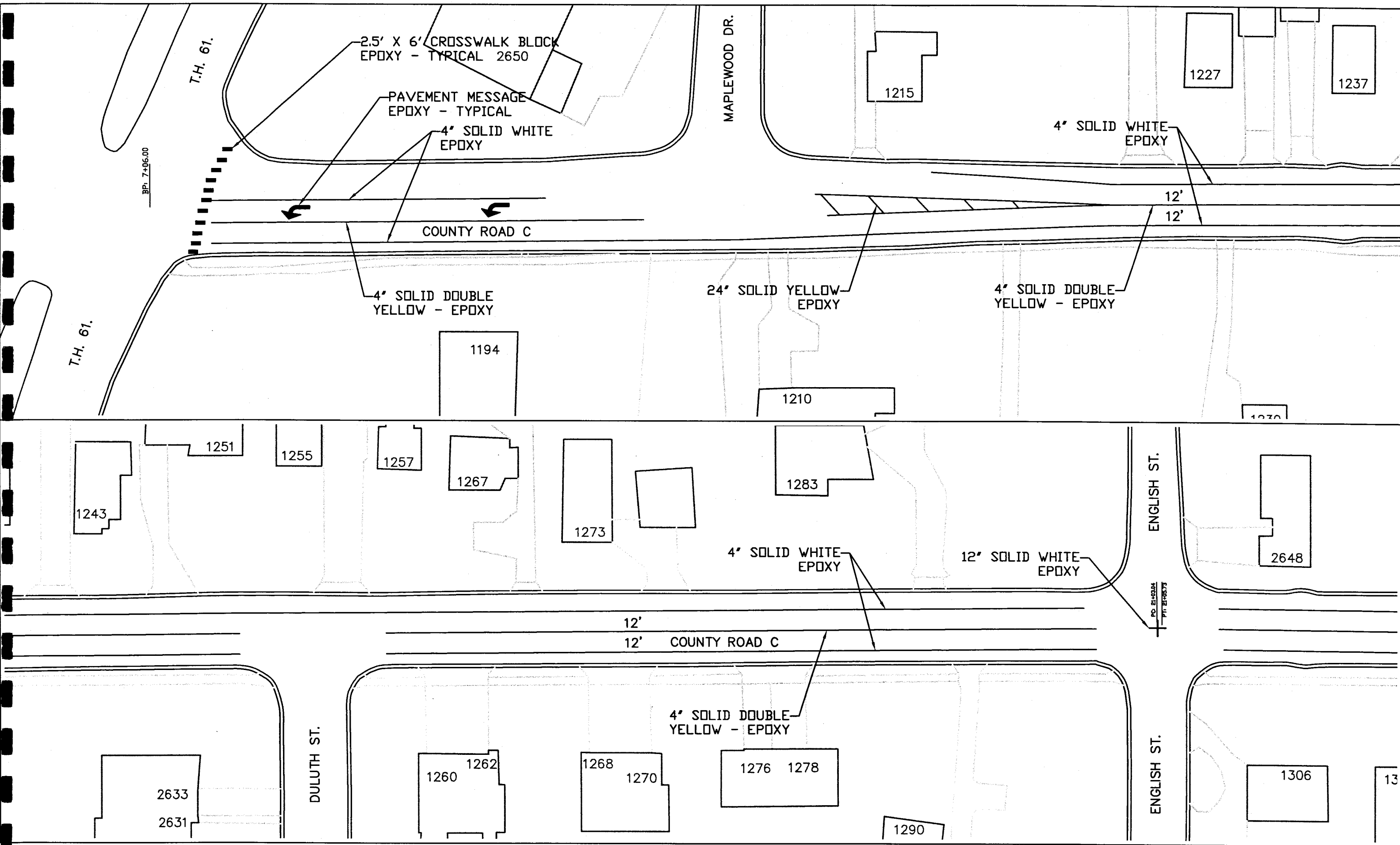
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.  
 SIGNED: *Randy J. Aschbe*  
 REG NO: 21864 DATE: 5/12/10

COUNTY ROAD C  
TH 61 TO HAZELWOOD ST.

S.A.P. 62-623-52  
County Proj. P-3283



EROSION & TURF ESTABLISH.  
Sheet No. 18 of 21 Sheets



NO.	REV-DATE	BY:	DESCRIPTION

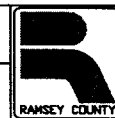
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SIGNED: *Kathy Jaschke*

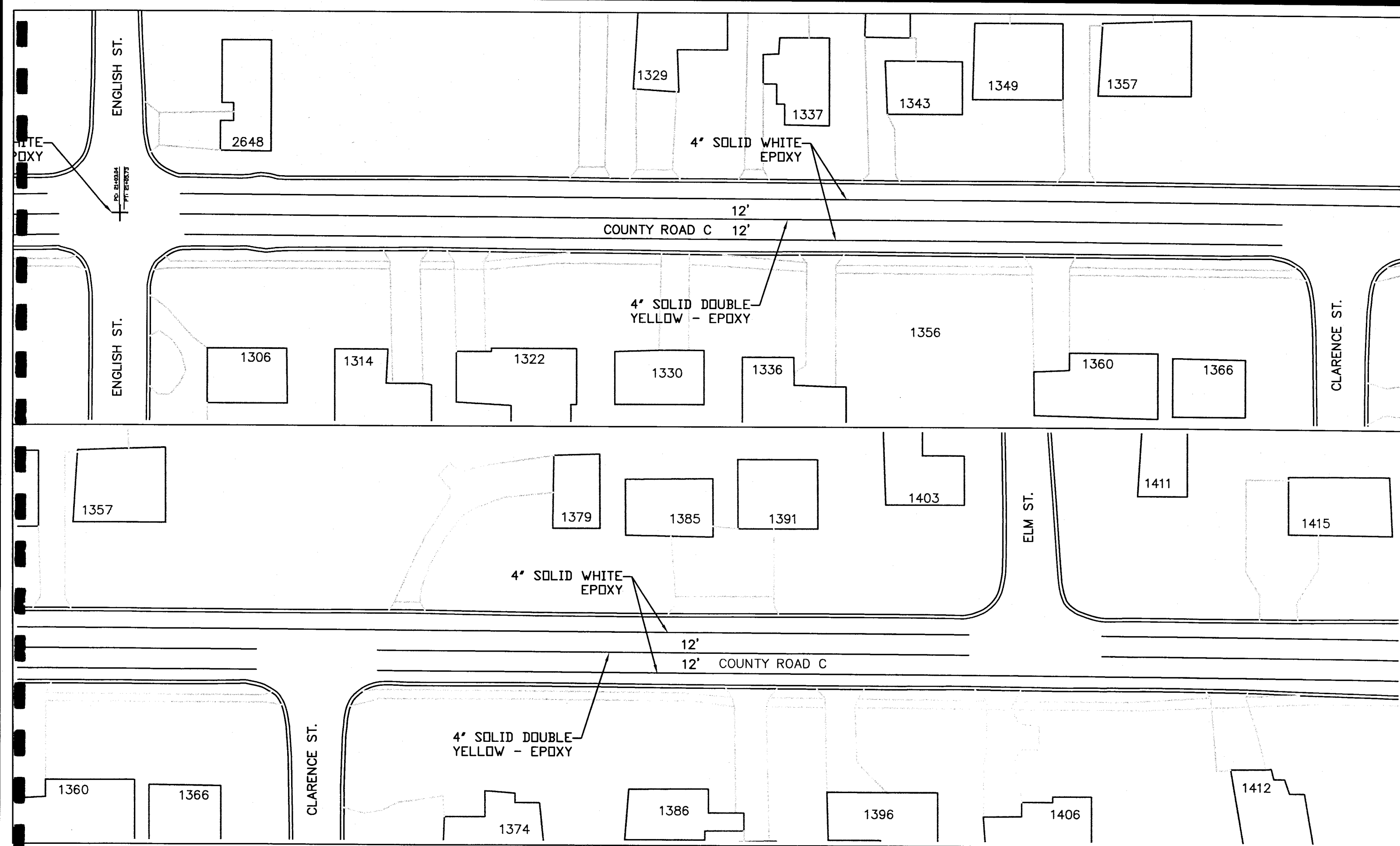
REG NO: 21864 DATE: 5/12/10

COUNTY ROAD C  
TH 61 TO HAZELWOOD ST.

S.A.P. 62-623-52  
County Proj. P-3283



STRIPING PLAN  
Sheet No. 19 of 21 Sheets



NO.	REV-DATE	BY:	DESCRIPTION

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SIGNED: *Kathy Josahke*

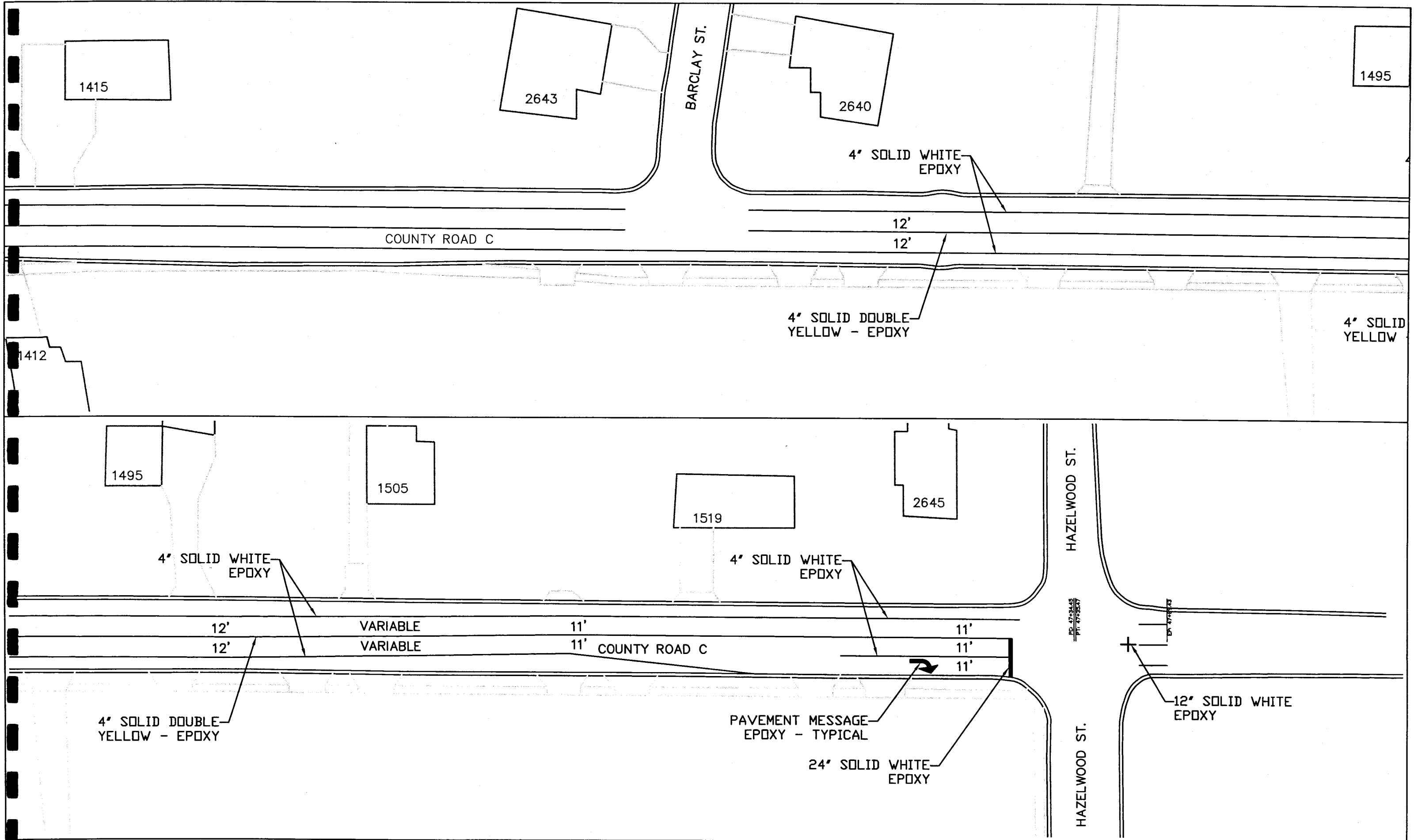
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COUNTY ROAD C  
TH 61 TO HAZELWOOD ST.

S.A.P. 62-623-52  
County Proj. P-3283



STRIPING PLAN  
Sheet No. 20 of 21 Sheets



NO.	REV-DATE	BY:	DESCRIPTION


I HEREBY CERTIFY THAT THIS PLAN 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.

SIGNED: *Kathy Saschke*

REG NO: 21864 DATE: 5/12/10

COUNTY ROAD C  
TH 61 TO HAZELWOOD ST.

S.A.P. 62-623-52  
County Proj. P-3283



STRIPING PLAN  
Sheet No. 21 of 21 Sheets