

MINNESOTA DEPARTMENT OF TRANSPORTATION

ANOKA COUNTY

CONSTRUCTION PLAN FOR BITUMINOUS RECLAMATION, BITUMINOUS SURFACING, CURB REMOVAL & REPLACEMENT, AND SEWER REPAIRS

LOCATED ON CR 132 BETWEEN CSAH 1 (EAST RIVER RD) AND 250' WEST OF COTTONWOOD ST

GOVERNING SPECIFICATIONS
 THE 2016 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" SHALL GOVERN.
 ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE LATEST EDITION OF THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, INCLUDING THE LATEST FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS.

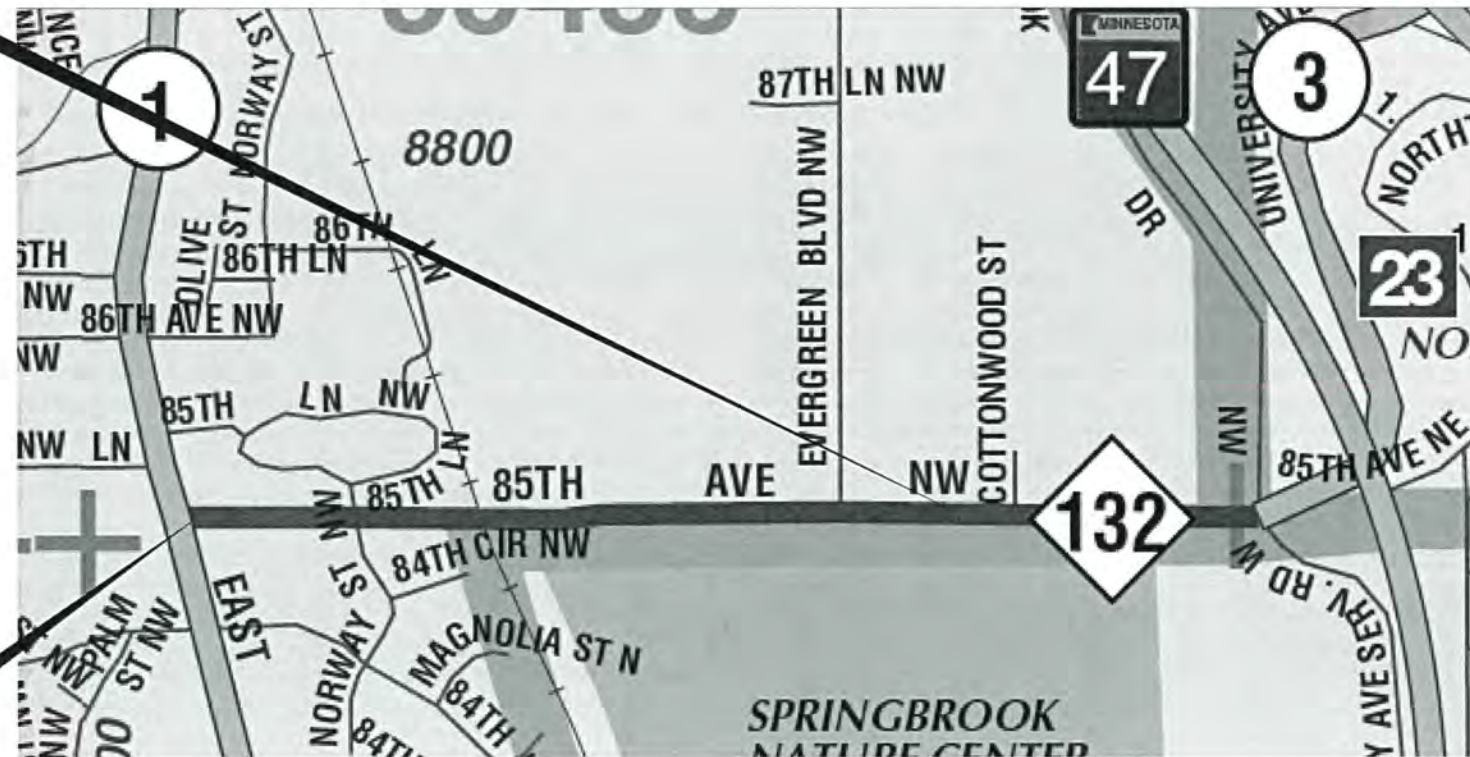
THIS PLAN CONTAINS 18 SHEETS

INDEX

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END CP 17-26-132
 CR 132, STA: 45+65

BEGIN CP 17-26-132
 CR 132, STA: 10+90



PROJECT LOCATION



	<u>CR 132</u>				
GROSS LENGTH	3475 FEET	0.658 MILES			
EXCEPTIONS-LENGTH	27 FEET	0.005 MILES			
NET LENGTH	3448 FEET	0.653 MILES			
DESIGN SPEED	50 MPH				
CURRENT ADT	7200				

CITIES OF FRIDLEY & COON RAPIDS
 ANOKA COUNTY
 MN/DOT TRANSPORTATION DISTRICT - METRO
 SECTIONS 3 & 36
 TOWNSHIP 31 NORTH
 RANGE 24 WEST

Approved: 4/7/17
 ANOKA COUNTY ENGINEER

STATEMENT OF ESTIMATED QUANTITIES

ITEM NUMBER	ITEM DESCRIPTION	NOTES	UNIT	TOTAL PROJECT QUANTITIES ESTIMATED
2021.501	MOBILIZATION		LUMP SUM	1
2104.501	REMOVE CURB & GUTTER	15	LIN FT	272
2104.503	REMOVE CONCRETE MEDIAN	15	SQ FT	108
2104.505	REMOVE BITUMINOUS DRIVEWAY PAVEMENT	1	SQ YD	291
2104.505	REMOVE BITUMINOUS PAVEMENT		SQ YD	637
2104.505	REMOVE CONCRETE DRIVEWAY PAVEMENT	1	SQ YD	55
2104.509	REMOVE CASTING	15	EACH	1
2104.509	REMOVE CONCRETE FLUME		EACH	2
2104.511	SAWING CONCRETE PAVEMENT (FULL DEPTH)	15	LIN FT	88
2104.513	SAWING BITUMINOUS PAVEMENT (FULL DEPTH)	15	LIN FT	539
2104.523	SALVAGE SIGN TYPE C	14	EACH	4
2105.602	CONSTRUCT TURN LANE (NORWAY ST) (P)	23	EACH	1
2123.503	MOTOR GRADER	2	HOUR	16
2123.509	DOZER	25	HOUR	5
2130.501	WATER		MGALLON	132
2211.501	AGGREGATE BASE CLASS 5	3	TON	173
2215.501	FULL DEPTH RECLAMATION		SQ YD	16480
2215.502	HAUL FULL DEPTH RECLAMATION (LV)	4	CU YD	80
2221.501	SHOULDER BASE AGGREGATE CLASS 5		TON	192
2232.501	MILL BITUMINOUS SURFACE (2.0")	5	SQ YD	2879
2357.502	BITUMINOUS MATERIAL FOR TACK COAT		GALLON	2077
2360.501	TYPE SP 12.5 WEARING COURSE MIXTURE (3,B)	1,6	TON	188
2360.501	TYPE SP 12.5 WEARING COURSE MIXTURE (4,C)		TON	4242
2360.505	TYPE SP 12.5 BIT MIXTURE FOR PATCHING	16	TON	18
2411.507	CONCRETE FLUME		EACH	2
2504.602	ADJUST GATE VALVE	17	EACH	4
2506.516	CASTING ASSEMBLY	18	EACH	1
2506.602	GROUT CATCH BASIN OR MANHOLE	19	EACH	1
2521.501	4" CONCRETE WALK	20	SQ FT	123
2531.501	CONCRETE CURB AND GUTTER DESIGN B612		LIN FT	172
2531.501	CONCRETE CURB AND GUTTER DESIGN B618		LIN FT	85
2531.507	6" CONCRETE DRIVEWAY PAVEMENT	1	SQ YD	55
2550.602	LOOP DETECTOR DESIGN NMC	7	EACH	5
2563.601	TRAFFIC CONTROL	8	LUMP SUM	1
2563.613	PORTABLE CHANGEABLE MESSAGE SIGN	9	UNIT DAY	14
2564.531	SIGN PANELS TYPE C		SQ FT	6,25
2564.602	INSTALL SIGN	14	EACH	4
2573.502	SILT FENCE, TYPE MS	24	LIN FT	530
2573.530	STORM DRAIN INLET PROTECTION	21	EACH	4
2574.525	COMMON TOPSOIL BORROW (LV)	10, 24	CU YD	133
2575.523	EROSION CONTROL BLANKETS CATEGORY 0	11	SQ YD	427
2581.501	REMOVABLE PREFORMED PAVEMENT MARKING TAPE	12	LIN FT	278
2582.501	PAVEMENT MESSAGE PREFORM THERMOPLASTIC	13, 22	SQ FT	669
2582.502	4" SOLID LINE EPOXY	13	LIN FT	7819
2582.502	4" BROKEN LINE EPOXY	13	LIN FT	1340
2582.502	4" DOUBLE SOLID LINE EPOXY	13	LIN FT	3950

CONSTRUCTION NOTES

1	CONTRACTOR IS RESPONSIBLE FOR CONTACTING PROPERTY OWNER 48 HOURS BEFORE STARTING OPERATION.
2	ITEM USED TO MOVE EXCESS RECLAIM MATERIAL AT THE RECLAIM AREA LIMITS TO CREATE A SMOOTH TRANSITION BETWEEN THE PROPOSED AND EXISTING PAVEMENT.
3	GRAVEL BASE FOR CONCRETE / BITUMINOUS DRIVEWAYS, AND BITUMINOUS STREET APPROACHES.
4	MATERIAL SHALL BE HAULED AND USED FOR PROFILE CORRECTION AREAS. ITEM INCLUDES PLACEMENT, SHAPING, COMPACTION, AND MAINTENANCE OF MATERIAL. EXCESS MATERIAL SHALL BECOME THE PROPERTY OF THE CONTRACTOR.
5	ITEM USED FOR MILLING DRIVEWAY APPROACHES AND AT BEGIN / END OF PROJECT. DETAIL MILLING AROUND MANHOLES, CATCH BASINS, GATE VALVES, AND ALONG CURB LINE IS INCIDENTAL TO THIS ITEM.
6	ITEM FOR BITUMINOUS DRIVEWAY AND STREET APPROACHES. DRIVEWAY AND STREET APPROACHES SHALL BE PAVED AFTER MAINLINE PAVING AND BEFORE FINAL STRIPING.
7	FULL LOOP REPLACEMENT REQUIRED. CONTRACTOR SHALL CONTACT ANOKA COUNTY TO DETERMINE PLACEMENT. ORIGINAL SIGNAL PLANS ARE INCLUDED AT THE END OF THIS PLAN FOR REFERENCE.
8	ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO, AND BE INSTALLED IN ACCORDANCE WITH, THE MOST CURRENT REVISION OF THE "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES". DO NOT PASS, PASS WITH CARE, NO CENTER STRIPE, AND STOP HERE ON RED SIGNS SHALL BE INPLACE WHENEVER PAVEMENT MARKINGS ARE NOT PRESENT.
9	2 MESSAGE BOARDS, ONE ON THE EACH END OF PROJECT, SHALL BE INSTALLED 7 DAYS PRIOR TO ANY CONSTRUCTION; REFERENCE STRIPING PLAN FOR DETAILS.
10	ITEM USED AT THE ENGINEERS DISCRETION FOR THE RESTORATION OF DISTURBED AREAS ALONG DRIVEWAYS, AND STREET APPROACHES.
11	TYPE 1 FERTILIZER AND TYPE 25-121 SEED ARE INCIDENTAL TO THIS ITEM.
12	CENTERLINE AND LANE DESIGNATION SKIPS TO BE APPLIED AS SOON AS POSSIBLE ON EACH NEW LIFT OF PAVEMENT; SKIPS MUST BE INPLACE BEFORE THE CONTRACTOR LEAVES FOR THE DAY. CONTRACTOR SHALL REMOVE PRIOR TO FINAL PAINT STRIPING.
13	FINAL STRIPING SHALL BE INSTALLED WITHIN 72 HOURS OF COMPLETION OF MAINLINE WEAR COURSE PAVING.
14	ITEM USED FOR SIGNS IN MEDIAN AND / OR PEDESTRIAN RAMP REPLACEMENT AREAS.
15	REFERENCE DETAILS (PAGE 8) FOR REMOVAL DETAILS.
16	ITEM INCLUDES BITUMINOUS PATCHING AROUND NEW CURB, STORM STRUCTURE REPAIRS, AND ANY POTHOLES.
17	GATE VALVES SHALL BE ADJUSTED ONLY AS NECESSARY AS DETERMINED BY THE ENGINEER.
18	ITEM INCLUDES FULL REPLACEMENT OF CASTING ADJUSTMENT RINGS. SEE STORM TABULATIONS FOR RING HEIGHTS.
19	ITEM INCLUDES GROUTING OF INVERTS, DOGHOUSES, RINGS, AND CASTINGS AS REQUIRED (SEE DRAINAGE TAB, PAGE 3).
20	ITEM USED FOR CONCRETE MEDIAN.
21	ALL DRAINAGE STRUCTURES AFFECTED BY THIS PROJECT MUST HAVE INLET PROTECTION.
22	INCLUDES ALL THERMOPLASTIC STOP BARS, GORE AREA HATCHING, CROSSWALKS, LANE DESIGNATION ARROWS, AND PAVEMENT MESSAGES.
23	ITEMS INCLUDED IN THE RT TURN LANE BY THE EACH ARE - COMMON EXCAVATION, SELECT GRANULAR BORROW, TOPSOIL BORROW AND AGGREGATE BASE CL-5.
24	ITEM USED ALONG RIGHT TURN LANE CONSTRUCTION AREA.
25	ITEM USED TO GRADE DITCH LINE ADJACENT TO CONSTRUCTED TURN LANE, AS NECESSARY, AS DETERMINED BY THE ENGINEER.

BASIS OF PLANNED QUANTITIES

2357	BITUMINOUS MATERIAL FOR TACK COAT	0.05 GAL / SQ YD
2211	AGGREGATE BASE CLASS 5	1.8 TONS / CU YD
2360	ALL BITUMINOUS PAVEMENT	115 LBS / SQ YD / IN THICKNESS
2581	REMOVABLE PREFORM PAVEMENT MARKING TAPE	2' AT 50' INTERVALS

MNDOT STANDARD PLATES

PLATE NUMBER	DESCRIPTION
4026A	CONCRETE ENCASED CONCRETE ADJUSTING RINGS
4101D	RING CASTING FOR MANHOLE OR CATCH BASIN
4110F	COVER CASTING FOR MANHOLE
7100H	CONCRETE CURB AND GUTTER
8000J	CHANNELIZERS (3 SHEETS)

NO	DATE	BY	CKD	APPR	REVISION	
					03/15/2017	11:34:08 AM

NAME: P:\17-01-00\CR_132_(CSAH1-250W Cottonwood)\Base\PROPOSED\PROPOSED.dgn

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.

PRINT NAME: MATTHEW J. JOHN
 SIGNATURE: *[Signature]*
 DATE: 3/16/2017 LICENSE NO. 51639

DRAWN BY: SRK DATE: 03/07/2017
 DESIGN BY: SRK DATE: 03/07/2017
 CHECKED BY: MJJ DATE: 03/16/2017



**ANOKA COUNTY
HIGHWAY DEPT.**

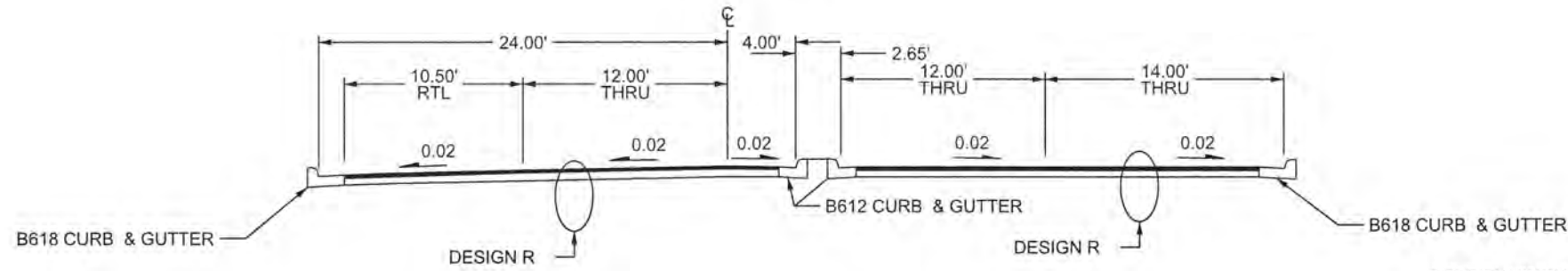
COUNTY PROJECT 17-26-132

STATEMENT OF ESTIMATED QUANTITIES

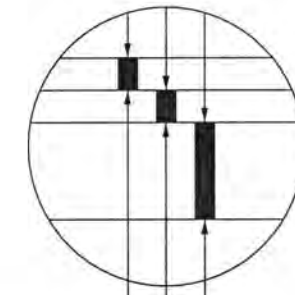
Sheet 2 of 18 Sheets

CR 132 - 85TH AVENUE
PROPOSED RECLAIM SECTION

10+90 - 11+70



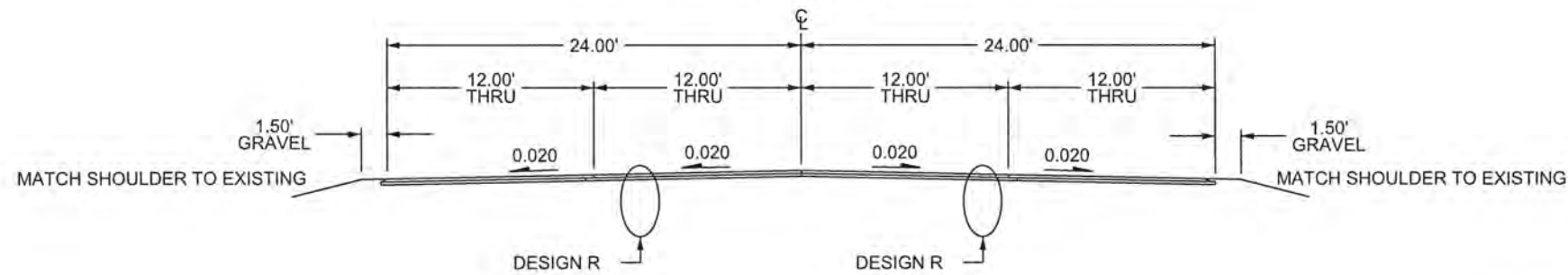
DESIGN R
RECLAIM SECTION



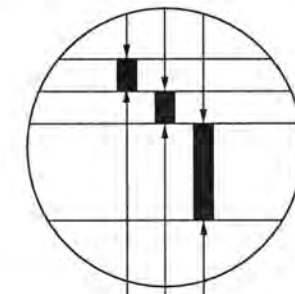
2.0" BITUMINOUS WEAR(SPWEB440C)
2.0" BITUMINOUS WEAR(SPWEB440C)
RECLAIMED BITUMINOUS

CR 132-85TH AVE
PROPOSED RECLAIM SECTION

11+70 - 23+15
28+10 - 45+65



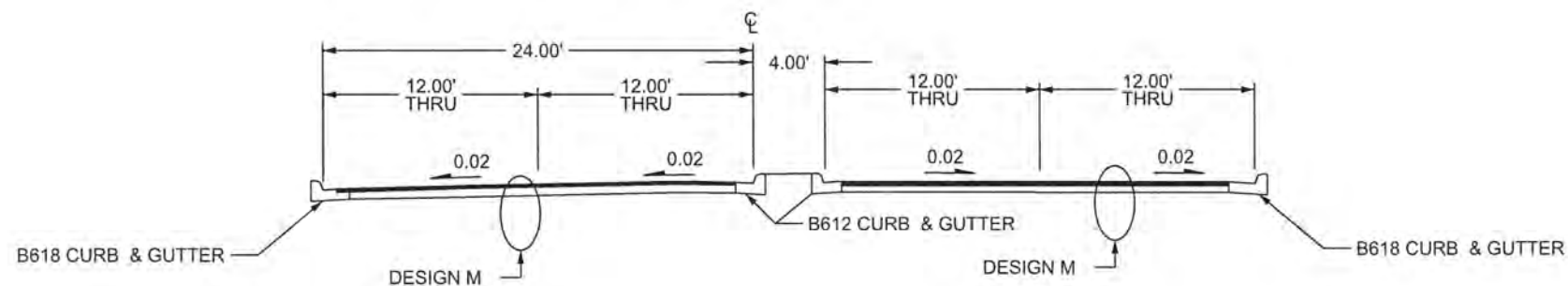
DESIGN O
RT TURN LANE SECTION



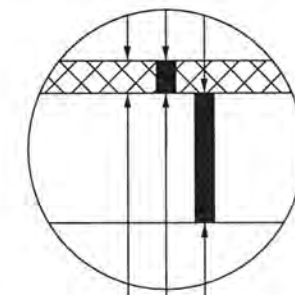
2.0" BITUMINOUS WEAR(SPWEB440C)
2.0" BITUMINOUS WEAR(SPWEB440C)
6.0" AGGREGATE BASE, CLASS 5

CR 132 - 85TH AVENUE
PROPOSED MILL SECTION

23+15 - 28+10



DESIGN M
MILL SECTION

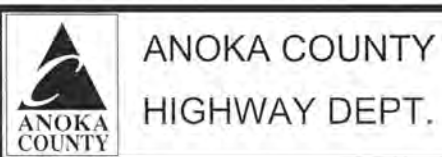


2.0" MILL BITUMINOUS
2.0" BITUMINOUS WEAR(SPWEB440C)
REMAINING BITUMINOUS

NO	DATE	BY	CKD	APPR	REVISION	TIME

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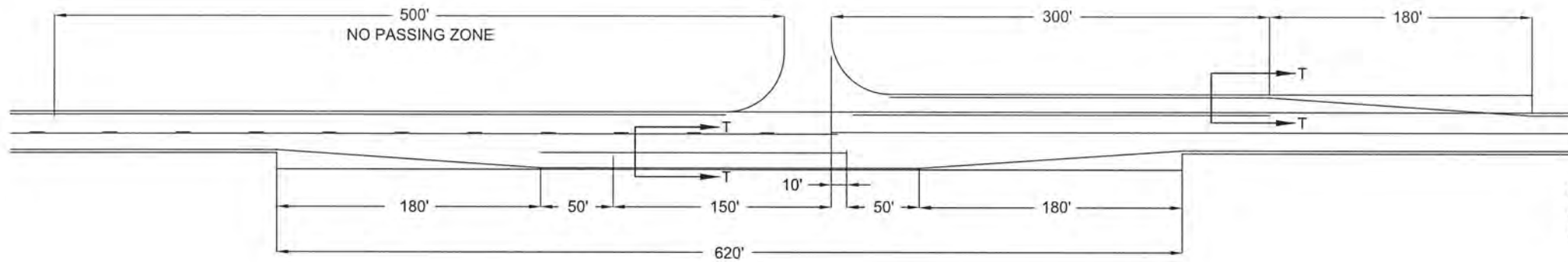
COUNTY PROJECT 17-26-132

TYPICAL SECTIONS
Sheet 4 of 18 Sheets

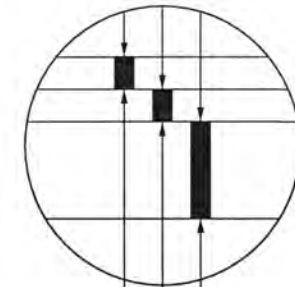
mjohn

RIGHT TURN AND BY-PASS LANE

GENERAL LAYOUT
PLAN VIEW



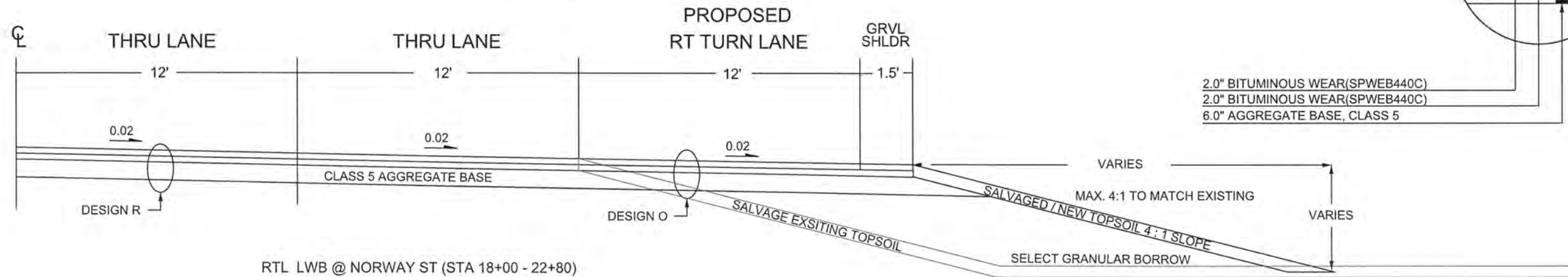
DESIGN R RECLAIM SECTION



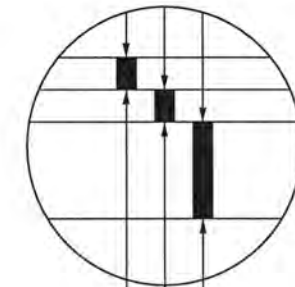
2.0" BITUMINOUS WEAR(SPWEB440C)
 2.0" BITUMINOUS WEAR(SPWEB440C)
 RECLAIMED BITUMINOUS

RIGHT TURN LANE

SECTION T - T



DESIGN O RT TURN LANE SECTION



2.0" BITUMINOUS WEAR(SPWEB440C)
 2.0" BITUMINOUS WEAR(SPWEB440C)
 6.0" AGGREGATE BASE, CLASS 5

NO	DATE	BY	CKD	APPR	REVISION	TIME

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ANOKA COUNTY
HIGHWAY DEPT.

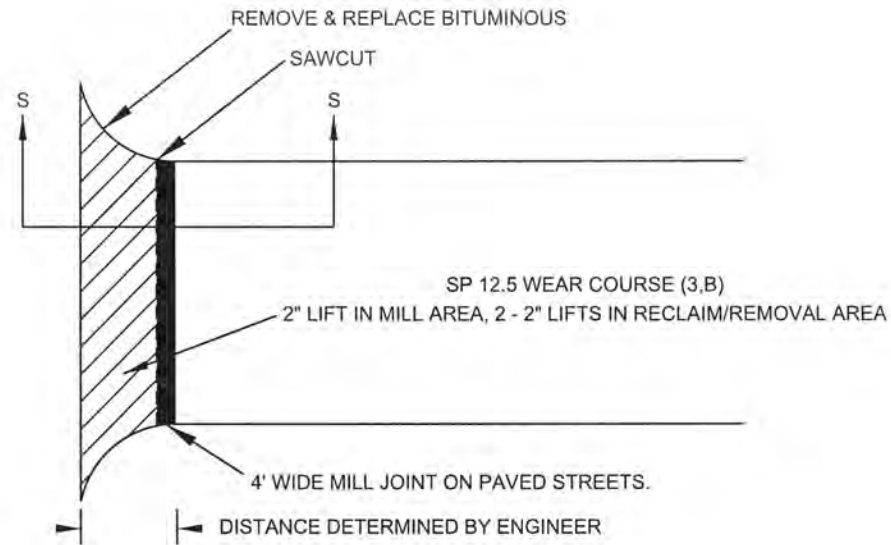
COUNTY PROJECT 17-26-132

TYPICAL SECTIONS
 Sheet 5 of 18 Sheets

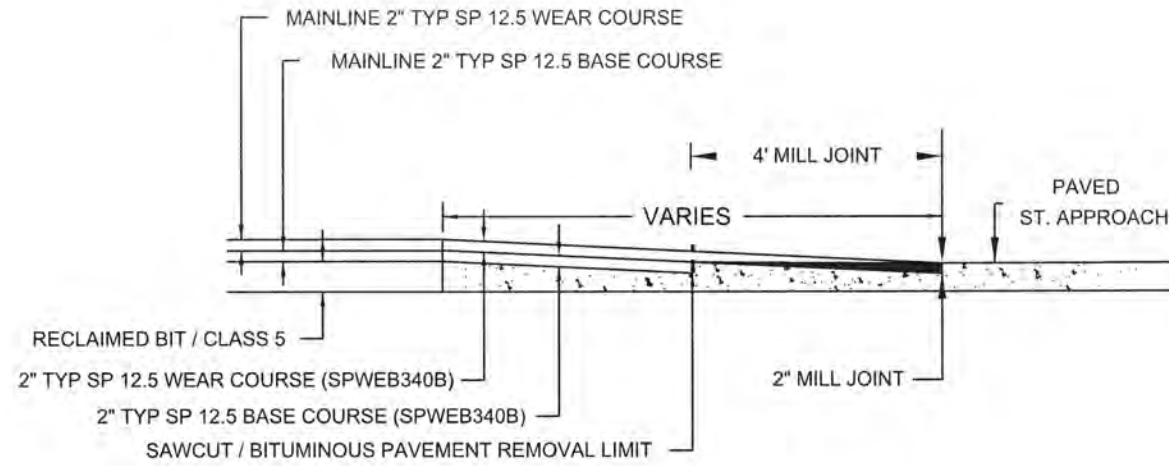
STREET APPROACH DETAIL

BITUMINOUS STREET

PLAN VIEW



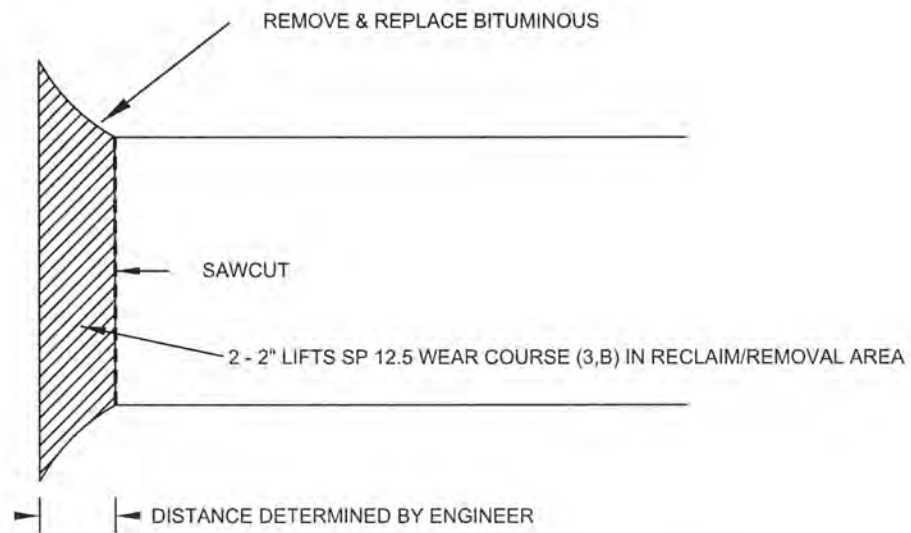
SECTION S - S



RECLAIM AREA - DRIVEWAY DETAIL

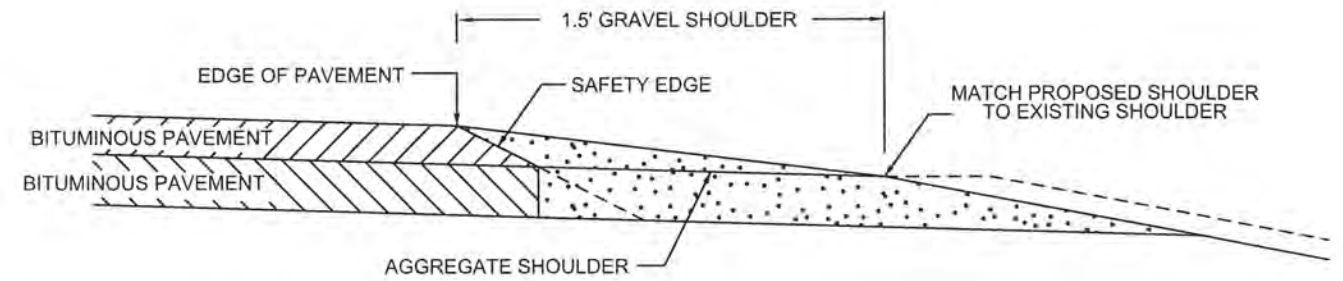
BITUMINOUS ENTRANCE

PLAN VIEW



SHOULDER DETAIL

BITUMINOUS SAFETY EDGE GRAVEL SHOULDER



SAFETY EDGE TO BE USED IN ALL NON-CURB AREAS ON SHOULDER.

OPTIONAL DESIGN EXTENDS SAFETY EDGE DEEPER THAN 6" AND WIDER THAN 10.5". SEE SPECIAL PROVISIONS.

NO	DATE	BY	CKD	APPR	REVISION	
					03/14/2017	10:52:06 AM

NAME: P:\17-01-00\CR_132_(CSAH1-250W Cottonwood)\Base\PROPOSED\PROPOSED.dgn

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ANOKA COUNTY
HIGHWAY DEPT.

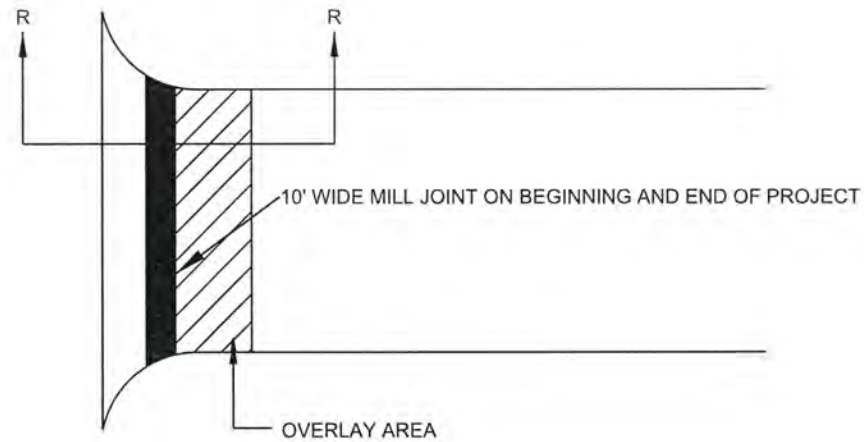
COUNTY PROJECT 17-26-132

DETAILS

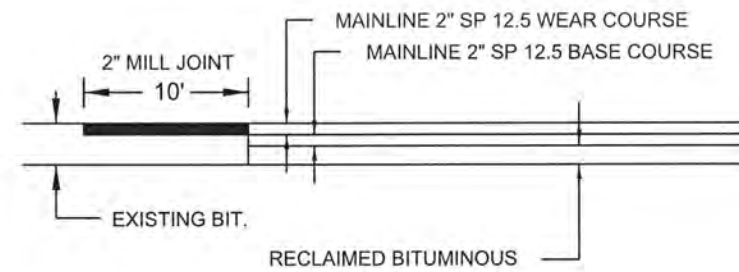
Sheet 6 of 18 Sheets

MAINLINE JOINT DETAIL (RECLAIM)--STA 10+90 & 45+65

PLAN VIEW

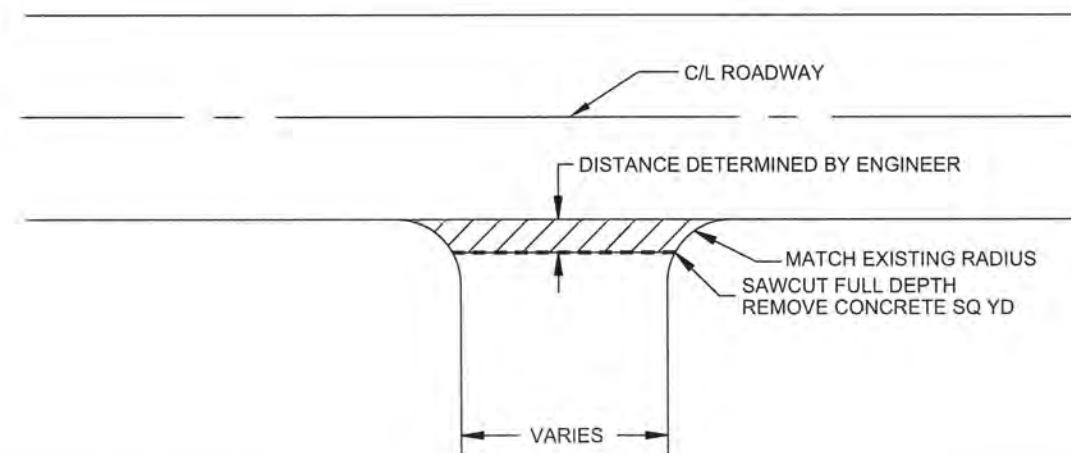


SECTION R - R



DRIVEWAY DETAIL

CONCRETE DRIVEWAY @ #299 85TH AVE



NO	DATE	BY	CKD	APPR	REVISION	TIME

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ANOKA COUNTY
 HIGHWAY DEPT.

COUNTY PROJECT 17-26-132

DETAILS
 Sheet 7 of 18 Sheets

mjohn

ESTIMATED AVERAGE DEPTH FOR RT. TURN LANE USING ELEVATION AT EDGE OF MAT, SHOULDER PI, AND DITCH BOTTOM.			
RTL @ NORWAY ST			
STA	EM	SH PI	BOTTOM
18+50	869.52	869.28	866.45
19+00	869.50	869.26	866.48
19+50	869.35	869.11	866.34
20+00	869.21	868.97	866.08
20+50	869.07	868.83	865.86
21+00	868.88	868.64	865.71
21+50	868.85	868.61	865.42
22+00	868.99	868.75	865.31
22+50	869.09	868.85	865.55
TOTAL	7822.46	7820.30	7793.20
AVERAGE	869.16	868.92	865.91
AVERAGE DEPTH			3.25
minus 0.5' (AGG BASE)			2.75

ESTIMATED QUANTITY FOR RT. TURN LANE														
RTL @ NORWAY ST														
STATION	STATION	LENGTH	COMMON EX			SELECT GRANULAR			CLASS 5			TOPSOIL		
			WIDTH	DEPTH	VOLUME (CY)	WIDTH	DEPTH	VOLUME (CY)	WIDTH	DEPTH	QUANTITY (TONS)	WIDTH	DEPTH	VOLUME (CY)
18+00	22+80	480.0	26.5	0.5	235.6	15.7	2.75	767.6	14.0	0.5	224.0	15.0	0.5	133.3

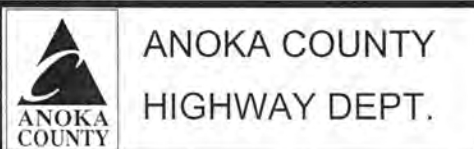
STORM DRAINAGE TAB										
NUMBER	TYPE	ACTION	NEW CASTING	FURNISH AND INSTALL CASTING ASSEMBLY	RING HIEGHT	GROUT CATCH BASIN OR MANHOLE	SAWING PAVEMENT (FULL DEPTH)	REMOVE BITUMINOUS PAVEMENT	TYPE SP 12.5 BIT MIXTURE FOR PATCHING	NOTES
					LIN FT	EACH	LIN FT	SQ YD	TON	
100	CB	STRUCTURE OK								
300	STRM MH	RE-RING	A-7D	1	0.4	1	32	7	2	
301	STRM MH	STRUCTURE OK								
400	SAN MH	STRUCTURE OK								
401	SAN MH	STRUCTURE OK								
402	SAN MH	STRUCTURE OK								
403	SAN MH	STRUCTURE OK								
404	SAN MH	STRUCTURE OK								
TOTALS				1		1	32	7	2	

CASTING ASSEMBLIES SUMMARY							
ASSEMBLY	RING OR	COVER	CURB	PLATE	QUANTIT	DESCRIPTION	NOTES
A-7D	700-7	716			1	STD. PLATE: 4101D, 4110F	CASTING COVER STAMPED "STORM SEWER"
ALL CASTING HEIGHTS ARE TO BE FIELD VERIFIED.							
ALL MANHOLE COVERS SHALL BE STAMPED AS STORM SEWER OR SANITARY SEWER.							

NO	DATE	BY	CKD	APPR	REVISION	
					03/15/2017	10:42:48 AM

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 PRINT NAME: MATTHEW L. JOHN
 SIGNATURE: *[Signature]*
 DATE: 3/15/2017 LICENSE NO. 51639

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 CHECKED BY: MJJ DATE: 03/15/2017



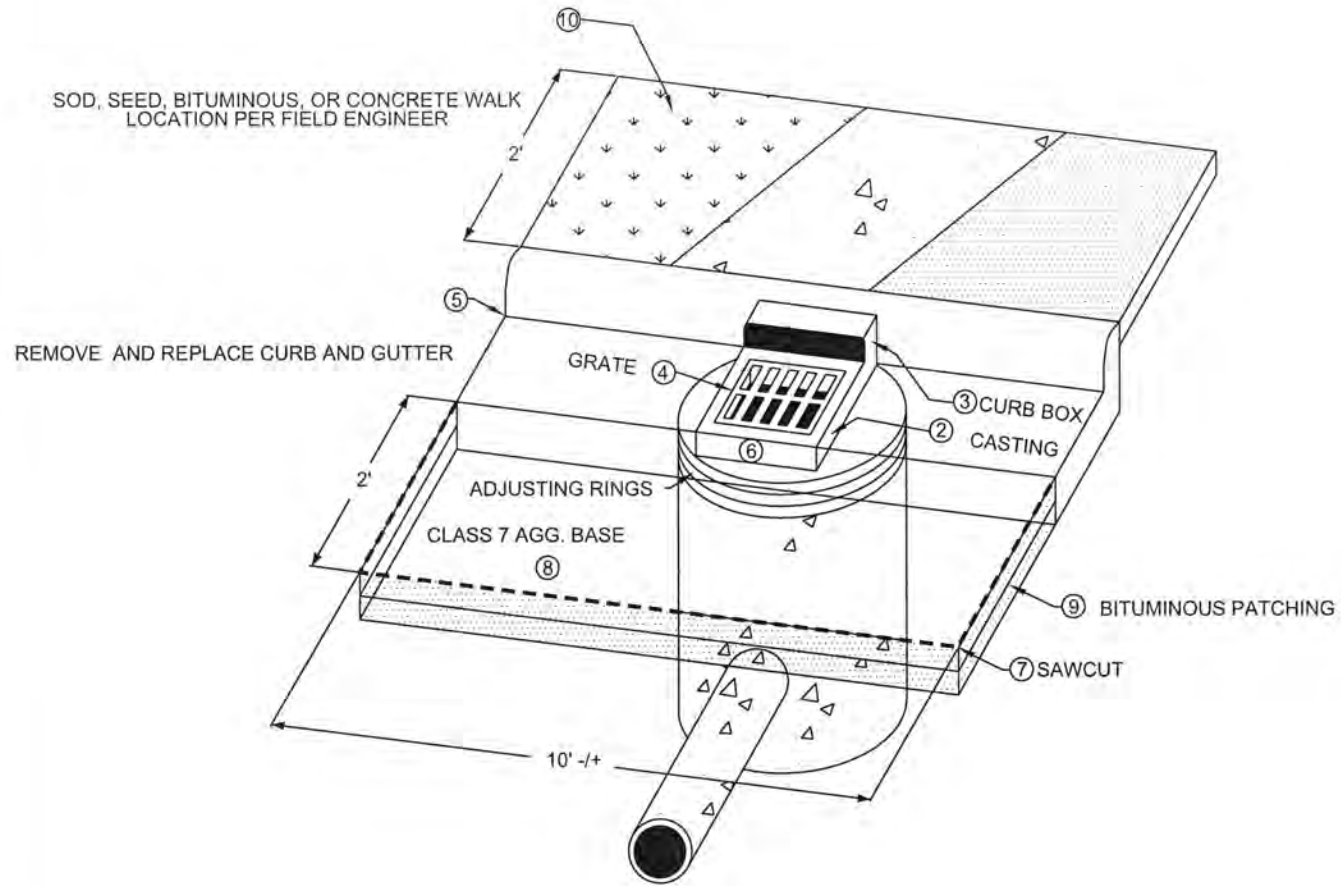
COUNTY PROJECT 17-26-132

TABULATIONS
 Sheet 3 of 18 Sheets

CATCH BASIN DETAIL

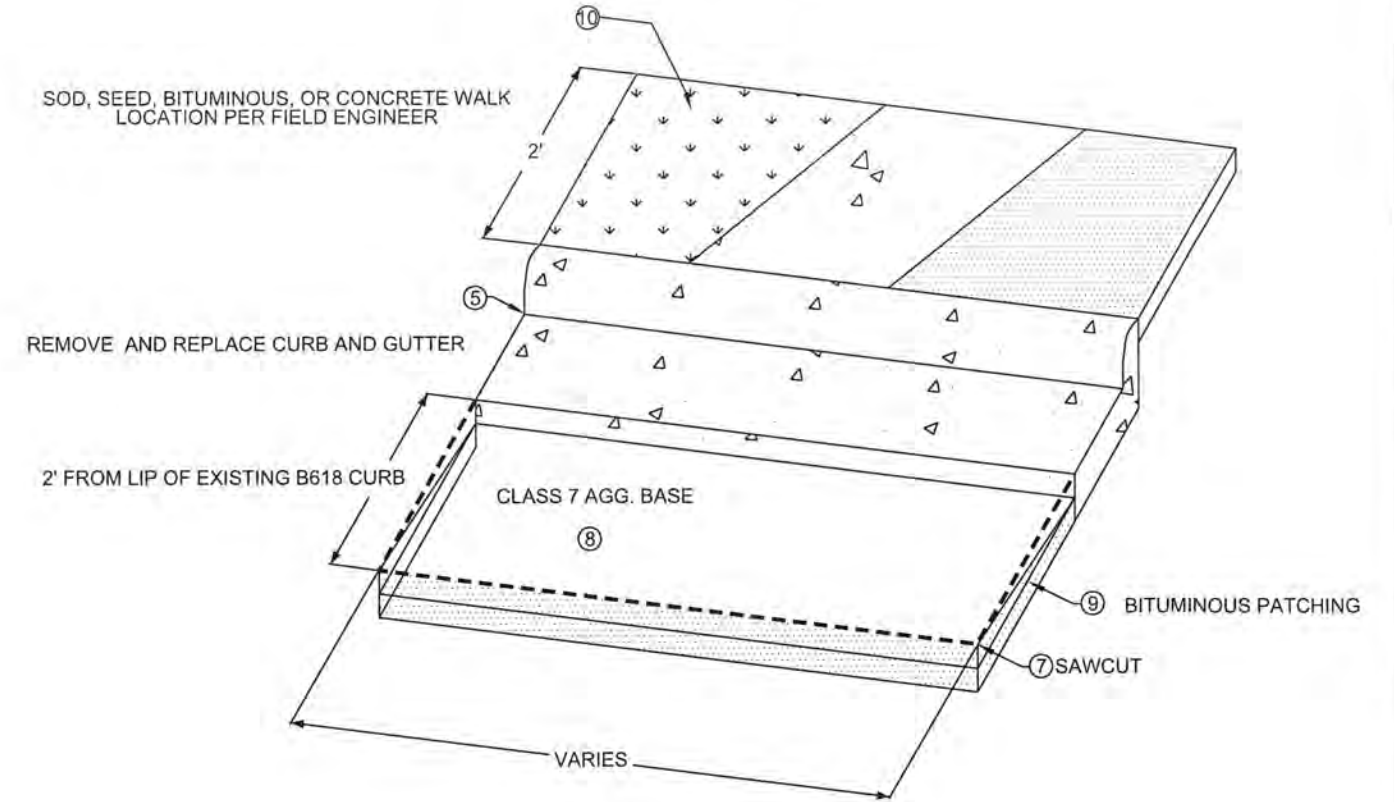
SEE STRUCTURE TAB FOR LOCATION

(PAGE 3)



NEW CURB DETAIL

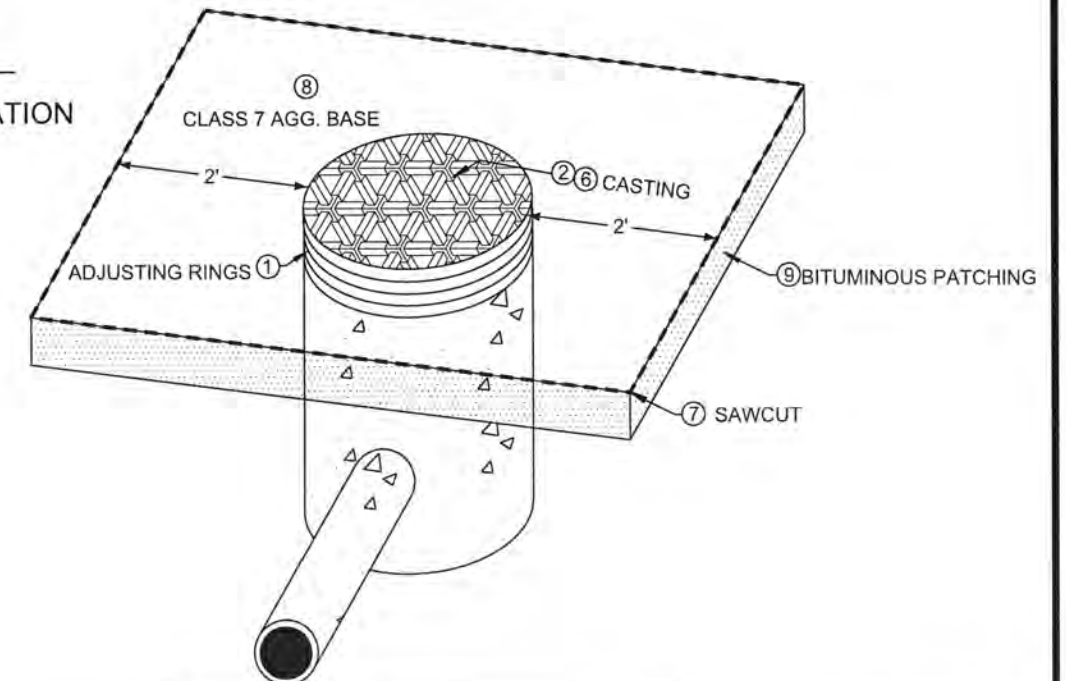
SEE PLAN FOR LOCATION



MANHOLE DETAIL

SEE STRUCTURE TAB FOR LOCATION

(PAGE 3)



NOTES

FOR TRAFFIC CONTROL AT CATCH BASIN AND MANHOLE REPAIRS REFER TO THE MINNESOTA MANUAL ON TEMPORARY TRAFFIC CONTROL LAYOUTS FIELD MANUAL.

- ① CONCRETE ENCASED CONCRETE ADJUSTING RINGS STANDARD PLATE 4026A
- ② RING AND FRAME CASTING; REFERENCE CASTING ASSEMBLIES SUMMARY CHART FOR CASTING TYPE
- ③ CURB BOX MATCHES CASTING REFERENCE CHART FOR CASTING TYPE
- ④ GRATE CASTING; REFERENCE CASTING ASSEMBLIES SUMMARY CHART FOR CASTING TYPE
- ⑤ CONCRETE CURB AND GUTTER DESIGN B STANDARD PLATE 7100H, FORM CURB TO FIT CASTING
- ⑥ INSTALLATION OF CATCH BASIN OR MANHOLE CASTINGS; REFERENCE STANDARD PLATE PER TYPE OF CASTING
- ⑦ SAWCUT BITUMINOUS PAVEMENT / CONCRETE CURB FULL DEPTH.
- ⑧ ADD AND COMPACT AGGREGATE BASE CLASS 7 AROUND REPAIRED STRUCTURE. ITEM INCIDENTAL TO ENTIRE STRUCTURE REPAIR
- ⑨ REMOVE VARIABLE DEPTH BITUMINOUS, PATCH WITH 2, 3" LIFTS OF BITUMINOUS, TOP LIFT SHOULD TAPER TO BOTTOM LIFT AT CURB.
- ⑩ REPLACE DISTURBED AREA BEHIND CATCH BASIN WITH EITHER SOD (RESIDENTIAL AREAS), EROSION CONTROL BLANKET, BITUMINOUS ,OR CONCRETE

NO	DATE	BY	CHKD	APPR	REVISION	TIME

NAME: P:\17-01-00\CR_132_CSAH1-250W\Cottonwood\Basel\PROPOSED\PROPOSED.dgn

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.

PRINT NAME: MATTHEW J. JOHN
 SIGNATURE: *Matthew J. John*
 DATE: 3/14/2017 LICENSE NO. 51639

DRAWN BY: SRK DATE: 03/07/2017
 DESIGN BY: SRK DATE: 03/07/2017
 CHECKED BY: MJJ DATE: 03/14/2017



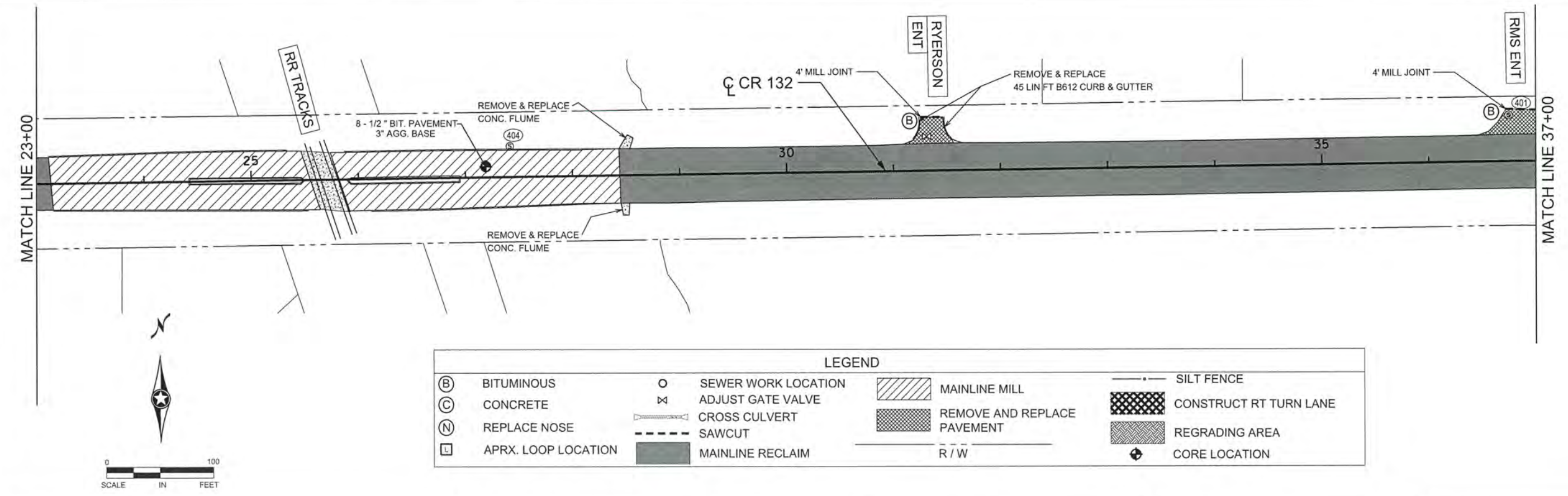
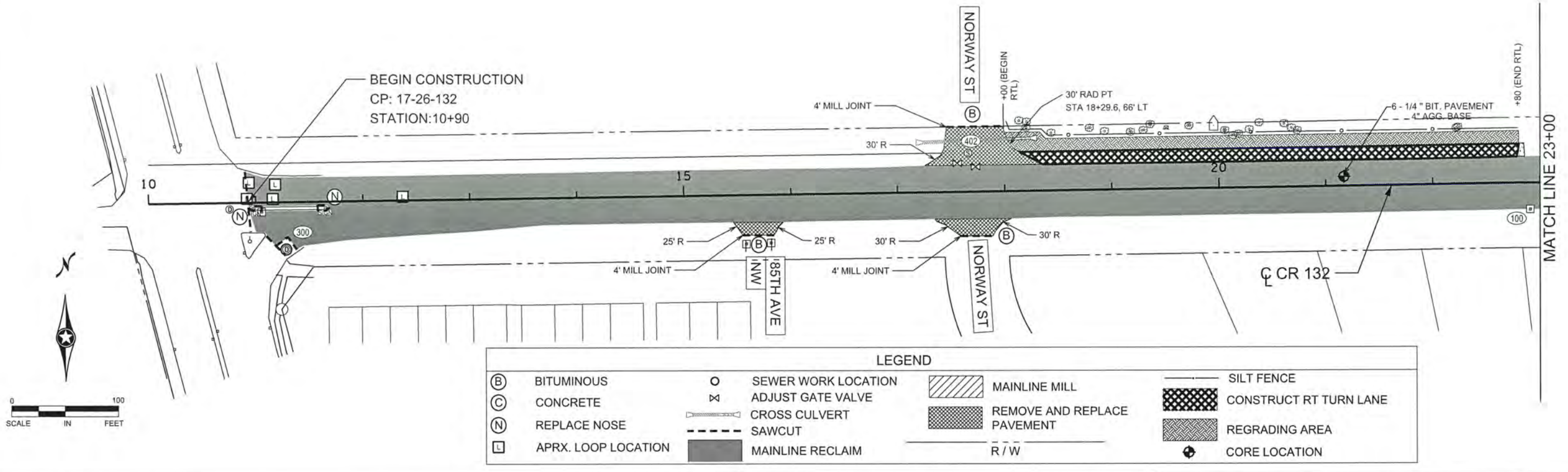
ANOKA COUNTY
HIGHWAY DEPT.

COUNTY PROJECT 17-26-132

DETAILS

Sheet 8 of 18 Sheets

SRKerr



NO	DATE	BY	CKD	APPR	REVISION	DATE	TIME

NAME: P:\17-01-00\CR_132_(CSAH1-250W Cottonwood)\Base\PROPOSED\PROPOSED.dgn

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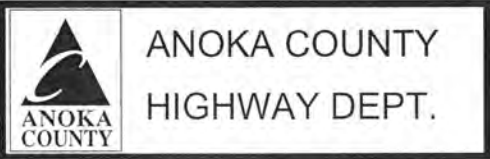
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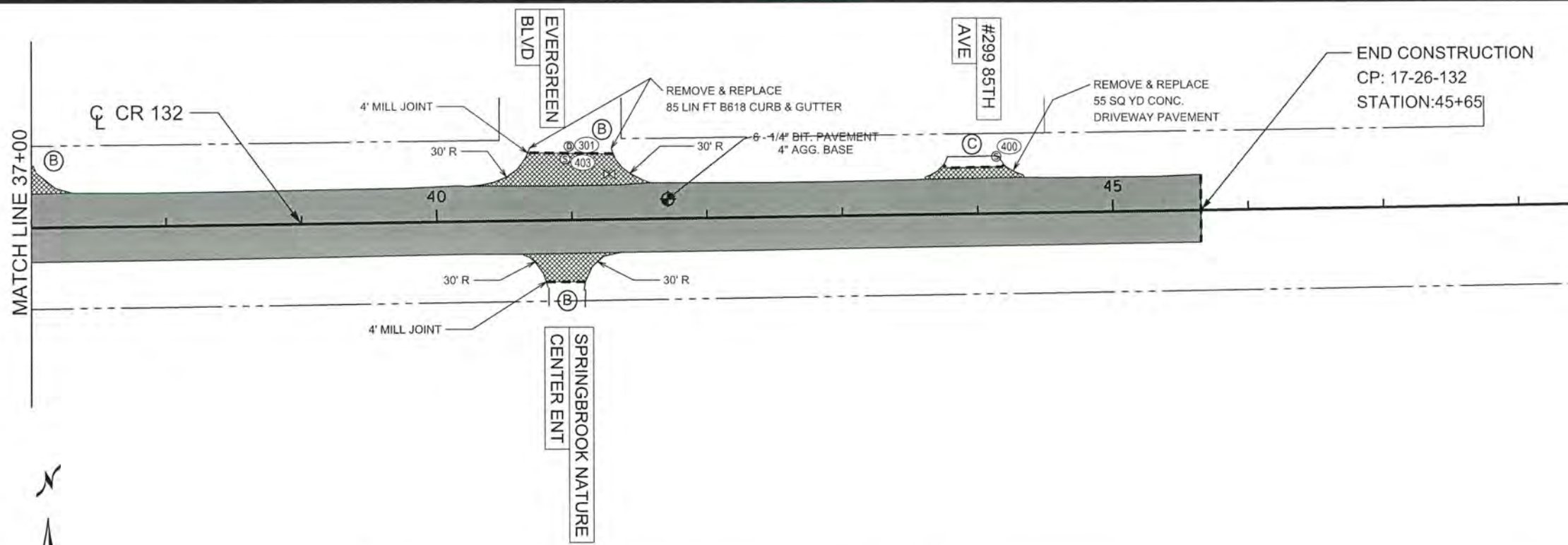
COUNTY PROJECT 17-26-132

CONSTRUCTION PLAN

STA 10+90 TO 37+00

Sheet 9 of 18 Sheets

SRKerr



LEGEND			
(B)	BITUMINOUS	○	SEWER WORK LOCATION
(C)	CONCRETE	⊗	ADJUST GATE VALVE
(N)	REPLACE NOSE	▬	CROSS CULVERT
(L)	APRX. LOOP LOCATION	- - -	SAWCUT
		■	MAINLINE RECLAIM
		▨	MAINLINE MILL
		▩	REMOVE AND REPLACE PAVEMENT
		---	R/W
		—	SILT FENCE
		▩	CONSTRUCT RT TURN LANE
		▩	REGRAIDING AREA
		⊕	CORE LOCATION

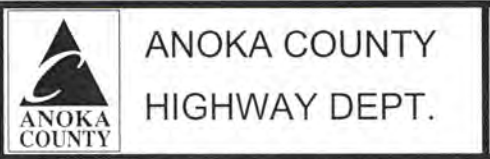
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	03/14/2017					10:52:38 AM

NAME: P:\17-01-00\CR_132_(CSAH1-250W Cottonwood)\Base\PROPOSED\PROPOSED.dgn

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COUNTY PROJECT 17-26-132

CONSTRUCTION PLAN
 STA 37+00 TO 45+65
 Sheet 10 of 18 Sheets

PERMANENT PAVEMENT MARKING PLAN
NOTES AND GUIDELINES

GENERAL INFORMATION:

THE ENGINEER'S INVOLVEMENT IN THE APPLICATION OF THE MATERIAL SHALL BE LIMITED TO FIELD CONSULTATION AND INSPECTION. ANOKA COUNTY HIGHWAY DEPARTMENT WILL PLACE NECESSARY "SPOTTING" AT APPROPRIATE POINTS TO PROVIDE HORIZONTAL CONTROL FOR STRIPING AND TO DETERMINE NECESSARY STARTING AND CUTOFF POINTS. LONGITUDINAL JOINTS, PAVEMENT EDGES AND EXISTING MARKINGS MAY SERVE AS HORIZONTAL CONTROL WHEN SO DIRECTED.

EDGE LINES AND LANE LINES ARE TO BE BROKEN ONLY AT INTERSECTIONS WITH PUBLIC ROADS AND AT PRIVATE ENTRANCES IF THEY ARE CONTROLLED BY A YIELD SIGN, STOP SIGN OR TRAFFIC SIGNAL. THE BREAK POINT IS TO BE AT THE START OF THE RADIUS FOR THE INTERSECTION OR AT MARKED STOP LINES OR CROSSWALKS.

A TOLERANCE OF 1/4 INCH UNDER OR 1/4 INCH OVER THE SPECIFIED WIDTH WILL BE ALLOWED FOR STRIPING PROVIDED THE VARIATION IS GRADUAL AND DOES NOT DETRACT FROM THE GENERAL APPEARANCE. BROKEN LINE SEGMENTS MAY VARY UP TO ONE-HALF FOOT FROM THE SPECIFIED LENGTHS PROVIDED THE OVER AND UNDER VARIATIONS ARE REASONABLY COMPENSATORY. ALIGNMENT DEVIATIONS FROM THE CONTROL GUIDE SHALL NOT EXCEED 1 INCH. MATERIAL SHALL NOT BE APPLIED OVER LONGITUDINAL JOINTS, ESTABLISHMENT OF APPLICATION TOLERANCES SHALL NOT RELIEVE THE CONTRACTOR OF THEIR RESPONSIBILITY TO COMPLY AS CLOSELY AS PRACTICABLE WITH THE PLANNED DIMENSIONS.

EPOXY:

THE ROAD SURFACE SHALL BE CLEANED AT THE DIRECTION OF THE ENGINEER JUST PRIOR TO APPLICATION. PAVEMENT CLEANING SHALL CONSIST OF AT LEAST BRUSHING WITH A ROTARY BROOM (NON-METALLIC) OR AS RECOMMENDED BY THE MATERIAL MANUFACTURER AND ACCEPTABLE TO THE ENGINEER. NEW PORTLAND CEMENT CONCRETE SURFACES SHALL BE SANDBLAST CLEANED TO REMOVE ANY SURFACE TREATMENT AND/OR LAITANCE ON LOW SPEED (SPEED LIMIT 35 MPH OR LESS) URBAN PORTLAND CEMENT CONCRETE ROADWAYS. SANDBLAST CLEANING SHALL BE USED FOR ALL EPOXY PAVEMENT MARKINGS.

THE EPOXY MARKING APPLICATION SHALL IMMEDIATELY FOLLOW THE PAVEMENT CLEANING. GLASS BEADS SHALL BE APPLIED IMMEDIATELY AFTER APPLICATION OF THE EPOXY RESIN LINE TO PROVIDE AN IMMEDIATE NO-TRACK SYSTEM.

AN EPOXY RESIN LINE 4" WIDE AND 15 MILL THICKNESS (WET), REQUIRES AN APPLICATION RATE OF ONE (1) GALLON OF COMPONENTS FOR 320 FEET OF LINE. GLASS BEADS SHALL BE APPLIED AT A POUND PER GALLON RATE SUFFICIENT TO ACHIEVE AN ACCEPTABLE NO-TRACK SYSTEM.

OPERATIONS SHALL BE CONDUCTED ONLY WHEN THE ROAD PAVEMENT SURFACE TEMPERATURES ARE 50 DEGREES FAHRENHEIT OR GREATER.

PERMANENT PAVEMENT MARKINGS SHALL NOT BE PLACED OVER TEMPORARY TAPE MARKINGS.

PREFORMED THERMOPLASTIC:

THE PREFORMED THERMOPLASTIC MARKINGS SHALL BE APPLIED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS ON CLEAN AND DRY SURFACES. SEE SPECIAL PROVISIONS FOR PREFORMED THERMOPLASTIC MARKING SPECIFICATIONS.

PAINT:

AT THE TIME OF APPLYING THE MARKING MATERIAL, THE APPLICATION AREA SHALL BE FREE OF CONTAMINATION. THE CONTRACTOR SHALL CLEAN THE ROADWAY SURFACE PRIOR TO THE LINE APPLICATION IN A MANNER AND TO THE EXTENT REQUIRED BY THE ENGINEER.

GLASS BEADS SHALL BE APPLIED IMMEDIATELY AFTER APPLICATION OF THE PAINT LINE.

EXCEPT WHEN USED AS A TEMPORARY MARKING, PAVEMENT MARKINGS SHALL ONLY BE APPLIED IN SEASONABLE WEATHER WHEN AIR TEMPERATURE IS 50 DEGREES FAHRENHEIT OR HIGHER AND SHALL NOT BE APPLIED WHEN THE WIND OR OTHER CONDITIONS CAUSE A FILM OR DUST TO BE DEPOSITED ON THE PAVEMENT SURFACE AFTER CLEANING AND BEFORE THE MARKING MATERIAL CAN BE APPLIED.

THE FILLING OF TANKS, POURING OF MATERIALS OR CLEANING OF EQUIPMENT SHALL NOT BE PERFORMED ON UNPROTECTED PAVEMENT SURFACES UNLESS ADEQUATE PROVISIONS ARE MADE TO PREVENT SPILLAGE OF MATERIAL.

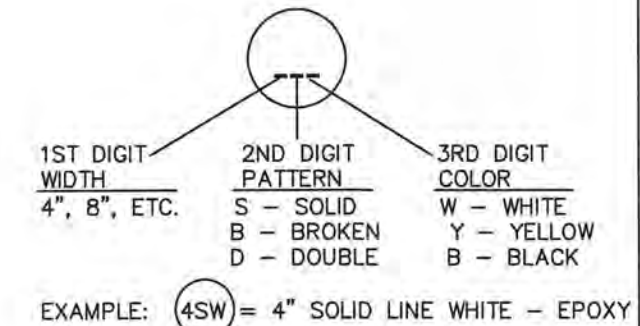
PERMANENT MARKING QUANTITIES		
ITEM	UNIT	TOTAL QUANTITY
8" SOLID LINE WHITE - EPOXY PAINT	LIN FT	69
4" SOLID LINE WHITE - EPOXY PAINT	LIN FT	7170
4" BROKEN LINE WHITE - EPOXY PAINT	LIN FT	1340
4" SOLID LINE YELLOW - EPOXY PAINT	LIN FT	580
24" SOLID LINE YELLOW - PREFORMED THERMOPLASTIC	SQ FT	176
4" DOUBLE SOLID LINE YELLOW - EPOXY PAINT	LIN FT	3950
24" SOLID LINE WHITE - PREFORMED THERMOPLASTIC	SQ FT	288
PAVEMENT MESSAGE (RIGHT ARROW) - PREFORMED THERMOPLASTIC	SQ FT	30
PAVEMENT MESSAGE (LEFT/THRU ARROW) - PREFORMED THERMOPLASTIC	SQ FT	52
PAVEMENT MESSAGE (R&R CROSSING) - PREFORMED THERMOPLASTIC	SQ FT	123

SYMBOLS & MATERIALS LEGEND

- CROSSWALK BLOCK WHITE PREFORMED THERMOPLASTIC
- ↩ PAVEMENT MESSAGE (LEFT ARROW) PREFORMED THERMOPLASTIC

STRIPING KEY

- CIRCLE - EPOXY
- SQUARE PREFORMED THERMOPLASTIC
- △ TRIANGLE - PAINT
- ⬠ PENTAGON - REMOVABLE PREFORMED PLASTIC MARKING



NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\16-01-00\CR 60\Bases\TRAFFIC\Perm pvmt mrkg guide notes_guidelines.dwg

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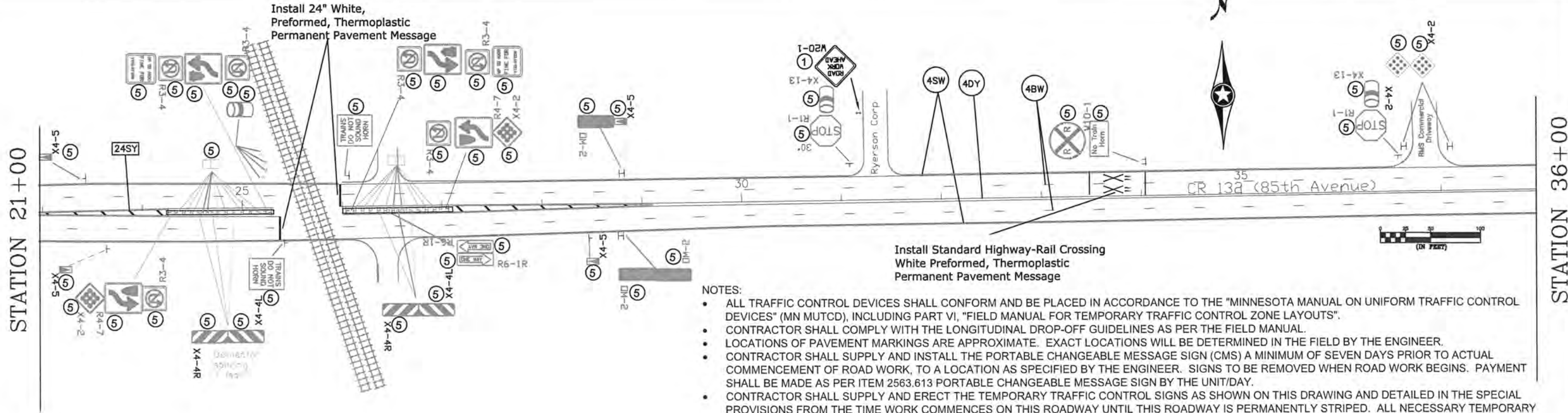
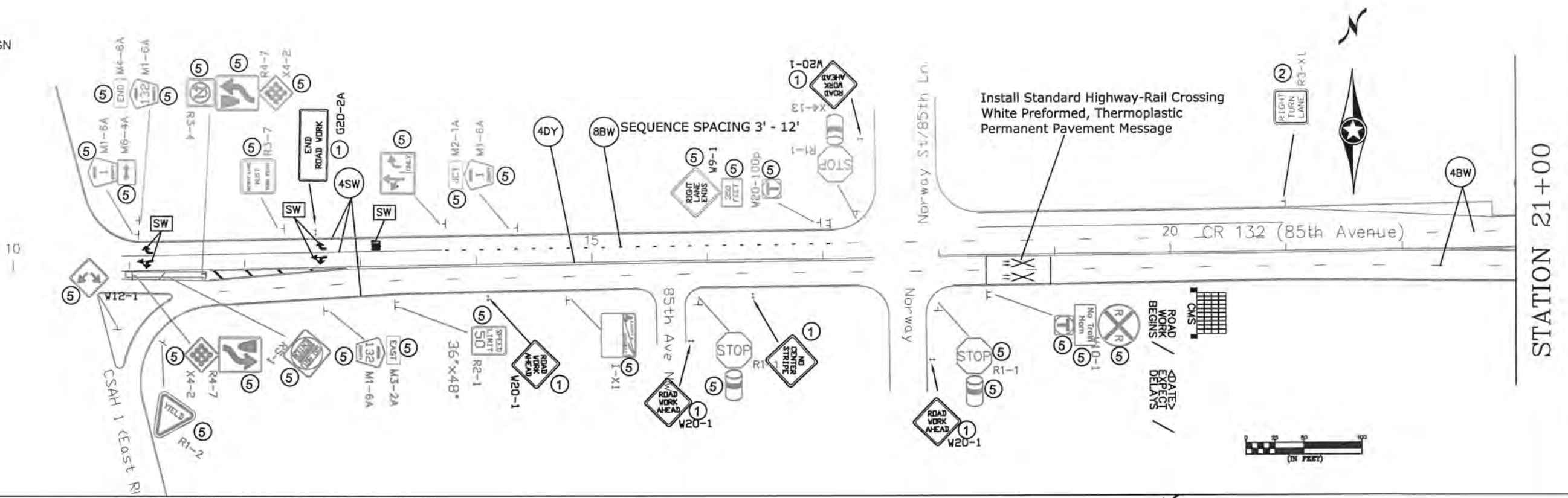
ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO. _____
 STATE AID PROJECT NO. _____
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 COUNTY PROJECT NO. 17-26-132

PERMANENT MARKING
TABULATION

Sheet 11 of 18 Sheets

- SIGN NOTES:
- ① TEMPORARY TRAFFIC CONTROL SIGN
 - ② F & I PERMANENT SIGN
 - ③ SALVAGE PERMANENT SIGN
 - ④ RE-INSTALL PERMANENT SIGN
 - ⑤ RETAIN INPLACE SIGN

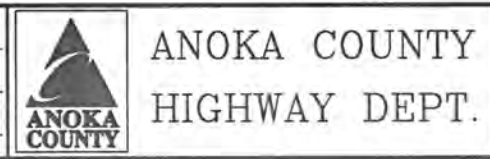


- NOTES:
- ALL TRAFFIC CONTROL DEVICES SHALL CONFORM AND BE PLACED IN ACCORDANCE TO THE "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MN MUTCD), INCLUDING PART VI, "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS".
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 - CONTRACTOR SHALL SUPPLY AND INSTALL THE PORTABLE CHANGEABLE MESSAGE SIGN (CMS) A MINIMUM OF SEVEN DAYS PRIOR TO ACTUAL COMMENCEMENT OF ROAD WORK, TO A LOCATION AS SPECIFIED BY THE ENGINEER. SIGNS TO BE REMOVED WHEN ROAD WORK BEGINS. PAYMENT SHALL BE MADE AS PER ITEM 2563.613 PORTABLE CHANGEABLE MESSAGE SIGN BY THE UNIT/DAY.
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 - ALL PERMANENT STRIPING AND PAVEMENT MESSAGES SHALL BE PLACED WITHIN 72 HOURS OF MAINLINE PAVING.
 - ANY REQUIRED PERMANENT SIGNING SHALL BE INSTALLED THE SAME DAY AS PERMANENT STRIPING
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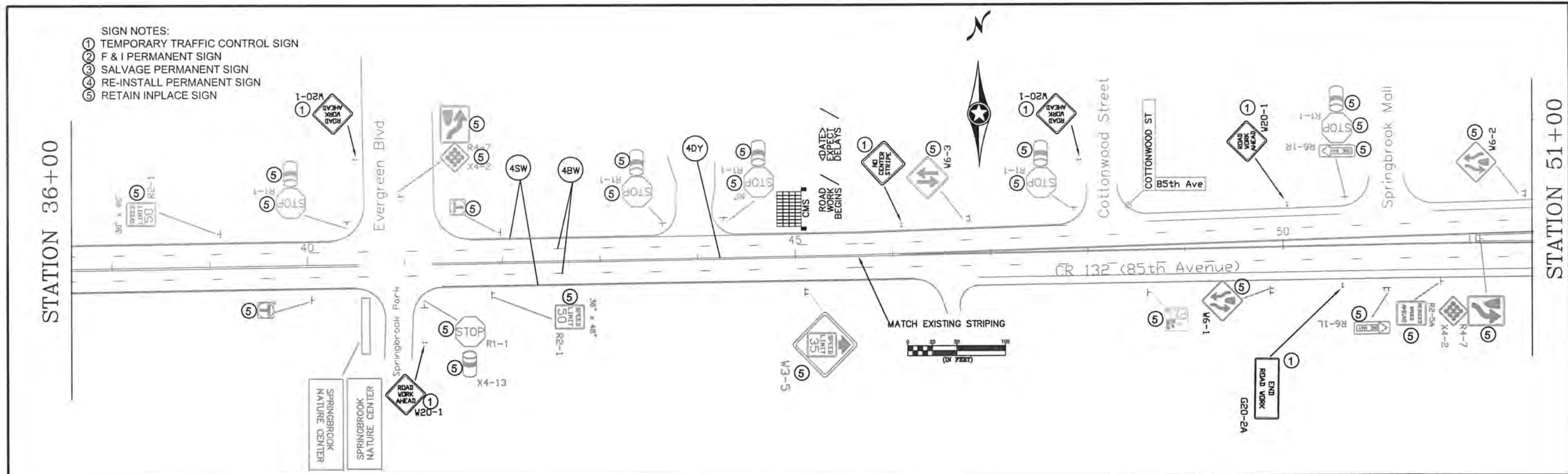
STATE PROJECT NO. _____
 STATE AID PROJECT NO. _____
 STATE AID PROJECT NO. _____
 COUNTY PROJECT NO. 17-26-132

TEMPORARY SIGNING,
 PERMANENT SIGNING
 AND STRIPING

Sheet 12 of 18 Sheets

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\16-01-00\CR 60\base\Traffic\Signing_Striping.dwg



- SIGN NOTES:
- ① TEMPORARY TRAFFIC CONTROL SIGN
 - ② F & I PERMANENT SIGN
 - ③ SALVAGE PERMANENT SIGN
 - ④ RE-INSTALL PERMANENT SIGN
 - ⑤ RETAIN INPLACE SIGN

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TEMPORARY SIGNING,
 PERMANENT SIGNING
 AND STRIPING

Sheet 13 of 18 Sheets

TEMPORARY TRAFFIC CONTROL SIGNS						
M.U.T.C.D. CODE	SIZE	PANEL AREA FT. ²	INSERT	QUANTITY		MOUNTING HEIGHT (TO PAVEMENT EDGE) FT.
					No. POST	
W8-12	48" x 48"	16.00		2	2	7.0'
R4-1	24" x 30"	5.00		0	1	7.0'
R4-2	24" x 30"	5.00		0	1	7.0'
G20-2A	48" x 24"	8.00		2	2	7.0'
W8-1A	48" x 48"	16.00		AS NEEDED		
W8-1A	48" x 48"	16.00		AS NEEDED		
W8-8	48" x 48"	16.00		AS NEEDED		
W8-9	48" x 48"	16.00		AS NEEDED		
	48" x 48"	16.00		AS NEEDED		
W8-11	48" x 48"	16.00		AS NEEDED		
W20-1	48" x 48"	16.00		AS NEEDED (ESTIMATED 9)		
CMS sign to be installed a minimum of seven days prior to actual commencement of road work. Signs to be removed when road work begins.				2		

SIGN PANELS TYPE C							E
M.U.T.C.D. CODE	SIZE	INSERT	QUANTITY	SQ FT PANEL AREA	SQ FT TOTAL AREA	MOUNTING POST PER INSTALLATION	MOUNTING HEIGHT
R3-X1	30" x 30"		1	6.25	6.25	1	7.0'

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CHANGEABLE MESSAGE BOARD - MESSAGE SEQUENCE LAYOUT

		R	O	A	D		
		W	O	R	K		
		B	E	G	I	N	S

	<	D	A	T	E	>	
	E	X	P	E	C	T	
	D	E	L	A	Y	S	

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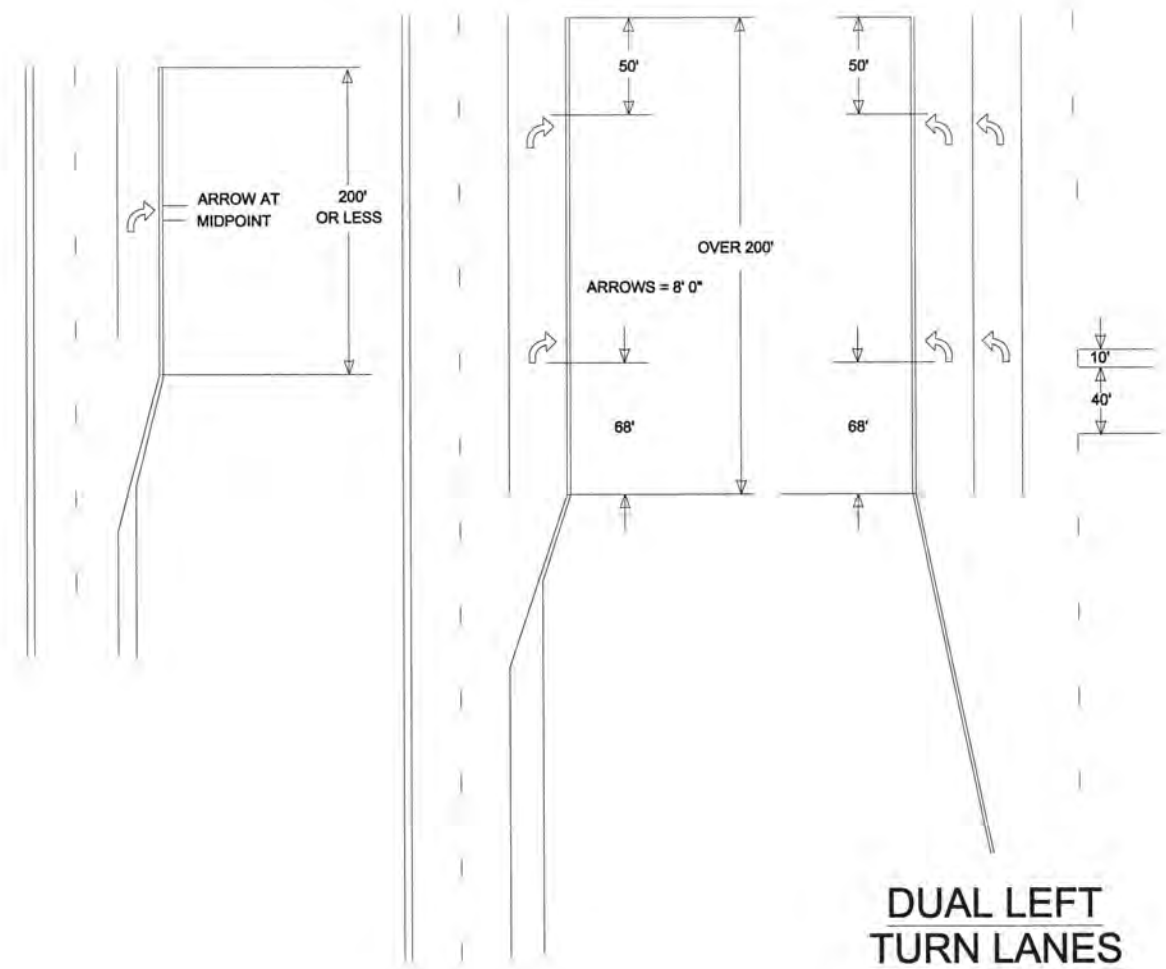


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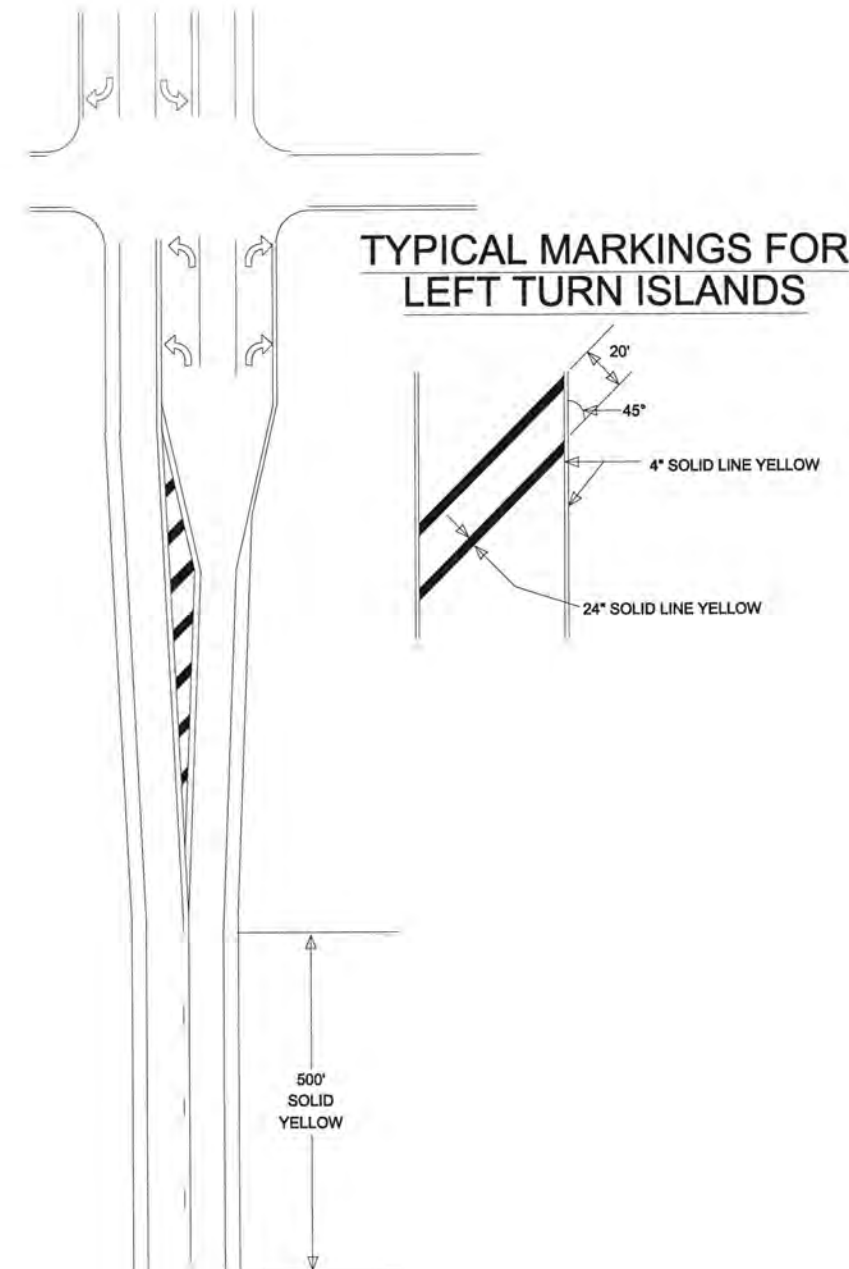
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 COUNTY PROJECT NO. 17-26-132

TRAFFIC CONTROL
QUANTITY

**TYPICAL MESSAGE PLACEMENT
FOR TURN LANES**



**TYPICAL MARKINGS FOR
LEFT TURN ISLANDS**



NO	DATE	BY	CKD	APPR	REVISION

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**ANOKA COUNTY
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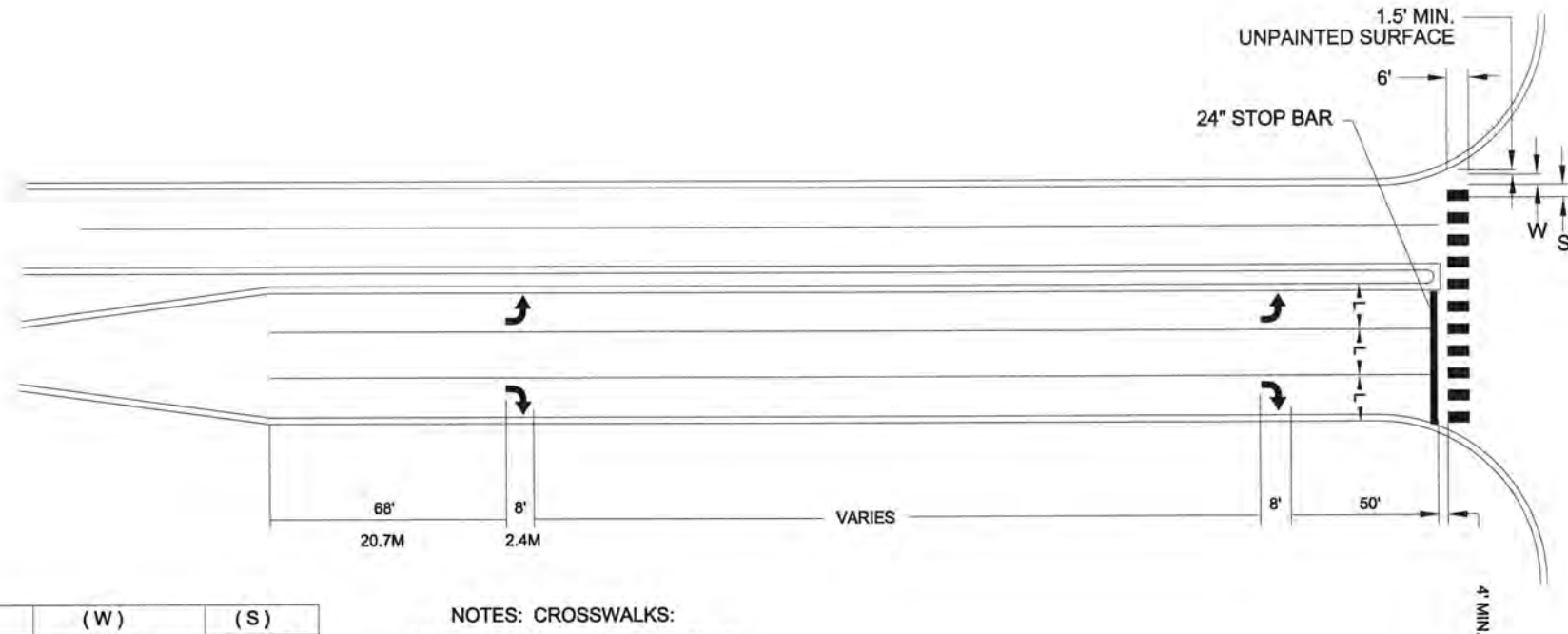
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COUNTY PROJECT NO. 17-26-132

**SIGNING & STRIPING
DETAILS**

Sheet 15 of 18 Sheets

MARKINGS FOR PEDESTRIAN CROSSWALKS



(L)	(W)	(S)
WIDTH OF INSIDE LANE	WIDTH OF PAINTED AREAS	WIDTH OF SPACE
9'	2.0'	2.5'
10'	2.5'	2.5'
11'	2.5'	3.0'
12'	3.0'	3.0'
13'	3.0'	3.5'

NOTES: CROSSWALKS:

- 1.) PAINTED AREAS ARE TO BE CENTERED ON CENTER AND LANE LINES, EVEN IF INTERSECTION IS NOT ALIGNED.
- 2.) LOCATION OF ZEBRA CROSSWALKS AND STOP BARS, SIGNAL LOOPS AND PED RAMP ARE APPROXIMATE. FINAL LOCATIONS ARE TO BE DETERMINED AND FIELD VERIFIED DURING CONSTRUCTION BY THE FIELD ENGR.
- 3.) ZEBRA CROSSWALKS ARE TO BE PARALLEL TO THE DRIVING LANE OR LANES. EVEN IF THE STREET IS ON AN ANGLE TO THE INTERSECTION.
- 4.) A MIN. OF 1.5' (450mm) CLEAR DISTANCE MUST BE LEFT ADJACENT TO THE CURB. IF LAST PAINTED AREA FALLS INTO THIS AREA, IT MUST BE OMITTED.
- 5.) ON TWO LANE STREETS, USE SPACING SHOWN FOR AN 11' (3.3mm) INSIDE LANE.

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SIGNING & STRIPING
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 Sheet 16 of 18 Sheets

NO	DATE	BY	CKD	APPR	REVISION

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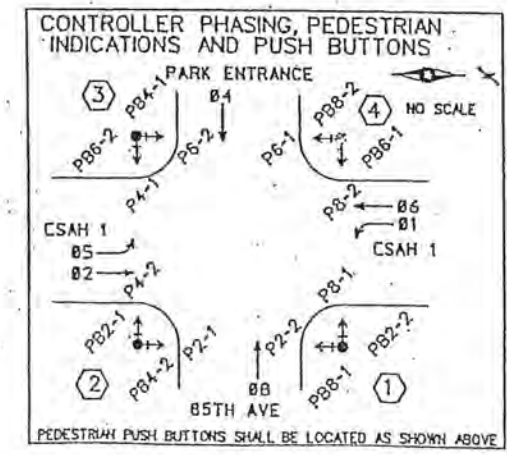
- LED RETROFIT-SYSTEM "A" NOTES:**
- 1) ALL ITEMS OF SIGNAL SYSTEM ARE INPLACE AND SHALL BE REUSED AND MAINTAINED INPLACE, UNLESS OTHERWISE NOTED ON PLANS.
 - 2) CONTRACTOR SHALL REMOVE THE INPLACE 12" x 12" 2-SECTION PEDESTRIAN SIGNAL INDICATIONS AND HOUSINGS, AND SHALL FURNISH AND INSTALL NEW ONE SECTION COUNTDOWN TIMER LED "HAND/WALKING PERSON" PEDESTRIAN SIGNALS (HOUSING, VISOR, LENS) IN THEIR PLACE.
 - 3) CONTRACTOR SHALL REMOVE THE INPLACE TYPE 10B BRACKETING ON POLES 1, 2, 3, AND 4 (90° & 180°); SHALL FURNISH & INSTALL NEW TYPE 10B BRACKETING (90° & 180°) IN THEIR PLACE; SHALL SALVAGE, INSTALL, AND MAKE OPERATIONAL SIGNAL HEADS 1-2, 2-1, 4-1, 4-3, 5-2, 6-1, 8-1, AND 8-3; & SHALL INCORPORATE NEW ONE SECTION PEDESTRIAN SIGNALS WITHIN NEW BRACKETINGS. ALL WORK LISTED ABOVE SHALL BE CONSIDERED INCIDENTAL TO THE PEDESTRIAN INDICATION PAY ITEM.
 - 4) CONTRACTOR SHALL BE RESPONSIBLE FOR ANY MODIFICATIONS TO INPLACE POLE MOUNTED BRACKETING ON EACH TRAFFIC SIGNAL POLE TO ACCOMMODATE INSTALLATION OF NEW ONE SECTION PEDESTRIAN SIGNAL INDICATIONS (INCLUDING THE REPLACEMENT OF THE POLE MOUNTED BRACKETING IF NEEDED TO ACCOMMODATE EACH PEDESTRIAN SIGNAL INDICATION INSTALLATION) (INCIDENTAL).
 - 5) ANY DAMAGE TO INPLACE TRAFFIC SIGNAL POLES OR VEHICLE SIGNAL HEADS DUE TO WORK ON THIS PROJECT SHALL BE REPAIRED BY CONTRACTOR TO THE SATISFACTION OF THE ENGINEER, AT NO EXPENSE TO THE CITY.
 - 6) NEW PEDESTRIAN HOUSINGS AND VISORS SHALL BE FABRICATED USING NEW POLYCARBONATE MATERIALS.
 - 7) ALL VEHICULAR SIGNAL INDICATIONS ARE LED AND ARE INPLACE (MAINTAIN AND REUSE INPLACE AS SHOWN).
 - 8) CONTRACTOR SHALL REMOVE ALL INPLACE PEDESTRIAN PUSH BUTTONS (8 TOTAL), R10-4b STICKER SIGNS, AND "MEANING OF WALK" STICKER SIGNS, & SHALL FURNISH & INSTALL NEW SOLID STATE PED PUSH BUTTONS AND R10-3a SIGNS IN THEIR PLACE.
 - 9) CONTRACTOR SHALL MAINTAIN OPERATION OF THE SIGNAL SYSTEM AT ALL TIMES, EXCEPT AS OTHERWISE APPROVED BY THE ENGINEER.
 - 10) SEE STATEMENT OF ESTIMATED QUANTITIES FOR BID ITEMS FOR WORK AT THIS SIGNAL SYSTEM.

LOOP DETECTORS			
NUMBER	SIZE	FUNCTION	LOCATION
D1-1	2-6' X 6'	1	20' & 50'
D1-2	2-6' X 6'	1	5' & 35'
D2-1	6' X 6'	1	300'
D2-2	6' X 6'	1	300'
D4-1	2-6' X 6'	1/7	5'
D5-1	2-6' X 6'	1	20' & 50'
D5-2	2-6' X 6'	1	5' & 35'
D6-1	6' X 6'	1	300'
D6-2	6' X 6'	1	300'
D8-1	6' X 6'	3/8	300'
D8-2	2-6' X 6'	7	5'
D8-3	2-6' X 6'	1	5'

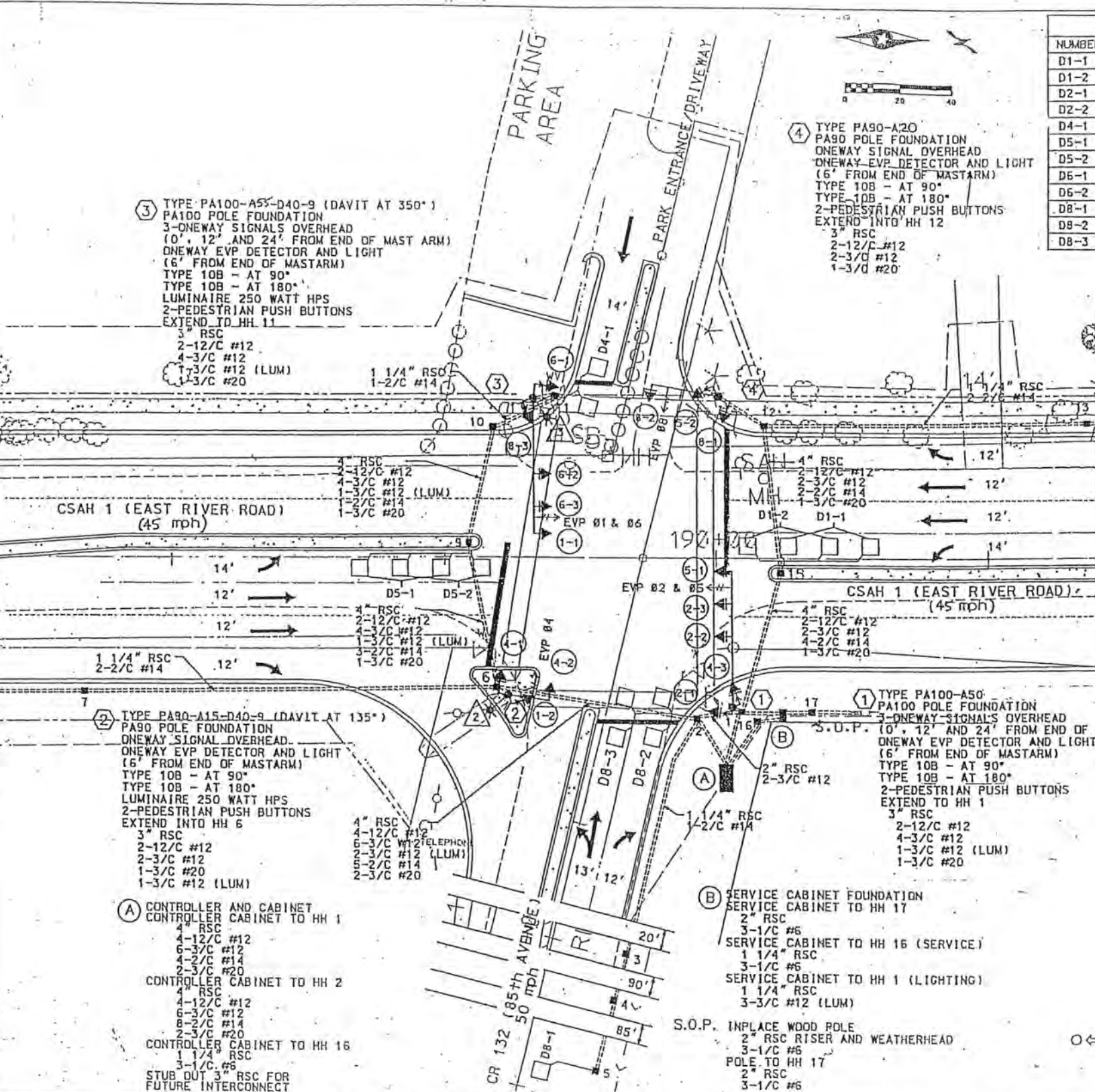
LOCATION-DISTANCE FROM STOP LINE TO DETECTOR

NUMBER	SIZE	FUNCTION	LOCATION
D6-1	6' X 6'	1	300'
D6-2	6' X 6'	1	300'

FUNCTIONS:
 1 - CALL AND EXTEND
 2 - CALL ONLY
 3 - EXTEND ONLY
 7 - DLY CALL IN-EXTEND
 8 - CARRY DYER



DRAWN BY:	JMG	1	Jm6	6/10	RECORD DRAWING FOR PROJECT
DESIGNER:	JMG				
CHECKED BY:	JMG				
DESIGN TEAM		NO.	BY	DATE	REVISIONS



RECORD PLAN FOR LED PROJECT
 (PLANS CONFIRMED FOR PROJECT WORK ONLY)
 DATE: JMG 06-10-10

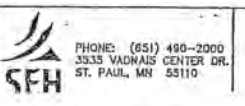
LED SIGNAL FACES

SIGNAL FACE	ALL 12"		
	R	Y	G
1-1, 1-2	←	←	←
2-1, 2-2, 2-3	○	○	○
4-1, 4-2, 4-3	○	○	○
5-1, 5-2	←	←	←
6-1, 6-2, 6-3	○	○	○
8-1, 8-2, 8-3	○	○	○

○ ← = INPLACE LED INDICATION, REUSE INPLACE.

S.P. 114-030-10
 CITY PROJECT NO. 09-18

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.
 Date: May 18, 2009
 Name: John M. Gray, PE
 License No.: 77497



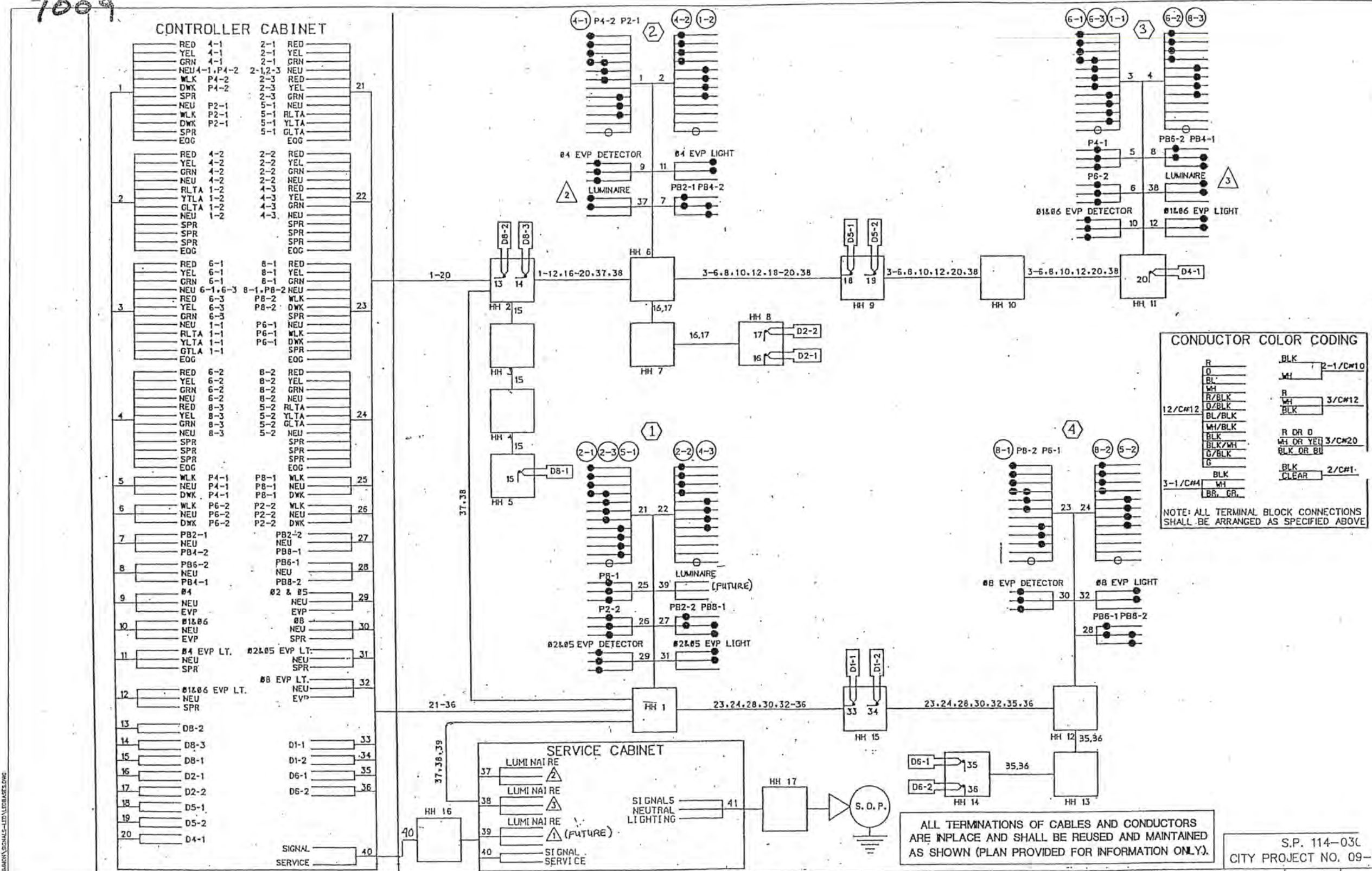
COON RAPIDS, MINNESOTA

LED RETROFIT-SYSTEM "A"
 INTERSECTION LAYOUT

FILE NO.	107418	3
DATE		

FOR REFERENCE PURPOSES ONLY

1009



FOR REFERENCE PURPOSES ONLY

DESIGN TEAM

NO.	BY	DATE
1	JMG	6/10

REVISIONS

NO.	BY	DATE
-----	----	------

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.

Signature: *JMG* Name: John M. Gray, PE Date: May 18, 2009 Lic. No. 22457

SEH PHONE: (651) 490-2000 3535 VADNAIS CENTER DR. ST. PAUL, MN 55110

COON RAPIDS, MINNESOTA

LED RETROFIT-SYSTEM 'A' FIELD WIRING DIAGRAM CSAH 1 AT 85TH AVENUE (CR 132)

S.P. 114-03C CITY PROJECT NO. 09-18 FILE NO. 107418 DATE 05/18/2009 4 131

NO.	DATE	BY	CKD	APPR	REVISION	03/14/2017	12:44:56 PM
NAME: P:\17-01-00\CR_132_CSAH1-250W\COFFONWOOD\Bases\PROPOSED\PROPOSED.dgn							

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.

PRINT NAME: MATTHEW J. JOHN SIGNATURE: *MJJ* DATE: 3/14/2017 LICENSE NO. 51639

DRAWN BY: SRK DATE: 03/07/2017 DESIGN BY: SRK DATE: 03/07/2017 CHECKED BY: MJJ DATE: 03/14/2017

ANOKA COUNTY HIGHWAY DEPT.

COUNTY PROJECT 17-26-132

ORIGINAL SIGNAL PLANS Sheet 18 of 18 Sheets