

MINNESOTA DEPARTMENT OF TRANSPORTATION ANOKA COUNTY

CONSTRUCTION PLAN FOR _____ BITUMINOUS RECLAMATION, AND BITUMINOUS SURFACING _____

LOCATED ON CR 72 BETWEEN RUM RIVER NORTH CO. PARK ENT AND 480' SOUTH OF 235TH AVE NW

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 9 SHEETS

INDEX

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3	TYPICAL SECTIONS
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6	CONSTRUCTION PLAN
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8 - 9	TEMPORARY SIGNING, PERMANENT SIGNING, AND STRIPING

END CP 17-29-72
CR 72 STA: 35+35

BEGIN CP 17-29-72
CR 72 LNB STA: 10+60



PROJECT LOCATION



CR 72			
GROSS LENGTH	2475 FEET	0.469 MILES	
EXCEPTIONS-LENGTH	0.00 FEET	0.000 MILES	
NET LENGTH	2475 FEET	0.469 MILES	
DESIGN SPEED	55 MPH		
CURRENT ADT	2010		

CITY OF ST FRANCIS
ANOKA COUNTY
MN/DOT TRANSPORTATION DISTRICT - METRO
SECTION 32
TOWNSHIP 34 NORTH
RANGE 24 WEST

Approved: 4/7/2017
ANOKA COUNTY ENGINEER

NO	DATE	BY	CKD	APPR	REVISION	TIME

NAME: P:\17-01-00\CR_72_(ParkEnt-235th)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:
DATE: 3/15/2017 LICENSE NO. 51639

DRAWN BY: SRK DATE: 03/10/2017
DESIGN BY: SRK DATE: 03/10/2017
CHECKED BY: MJJ DATE: 03/15/2017

ANOKA COUNTY
HIGHWAY DEPT.

COUNTY PROJECT 17-29-72

TITLE SHEET
Sheet 1 of 9 Sheets

STATEMENT OF ESTIMATED QUANTITIES

ITEM NUMBER	ITEM DESCRIPTION	NOTES	UNIT	TOTAL PROJECT QUANTITIES ESTIMATED
2021.501	MOBILIZATION		LUMP SUM	1
2104.505	REMOVE BITUMINOUS DRIVEWAY PAVEMENT	1	SQ YD	336
2104.513	SAWING BITUMINOUS PAVEMENT (FULL DEPTH)		LIN FT	188
2105.602	CONSTRUCT TURN LANE	14	EACH	1
2105.602	CONSTRUCT BYPASS LANE	14	EACH	1
2123.503	MOTOR GRADER	2	HOUR	12
2130.501	WATER		MGAL	58
2211.501	AGGREGATE BASE CLASS 5	3	TON	66
2215.501	FULL DEPTH RECLAMATION		SQ YD	8255
2215.502	HAUL FULL DEPTH RECLAMATION (LV)	4	CU YD	60
2221.501	SHOULDER BASE AGGREGATE CLASS 5		TON	177
2232.501	MILL BITUMINOUS SURFACE (2.0")	5	SQ YD	122
2357.502	BITUMINOUS MATERIAL FOR TACK COAT		GAL	430
2360.501	TYPE SP 12.5 WEARING COURSE MIXTURE (3,B)	1,6	TON	77
2360.501	TYPE SP 12.5 WEARING COURSE MIXTURE (4,C)		TON	2236
2515.616	REVISE FLASHER SYSTEM		SYS	1
2540.602	MAIL BOX SUPPORT	11	EACH	2
2563.601	TRAFFIC CONTROL	7	LUMP SUM	1
2563.613	PORTABLE CHANGEABLE MESSAGE SIGN	8	UNIT DAY	14
2574.525	COMMON TOPSOIL BORROW (LV)	12	CU YD	30
2575.523	EROSION CONTROL BLANKETS CATEGORY 0	13	SQ YD	150
2581.501	REMOVABLE PREFORMED PAVEMENT MARKING TAPE	9	LIN FT	99
2582.502	4" SOLID LINE EPOXY	10	LIN FT	5945
2582.502	4" BROKEN LINE EPOXY	10	LIN FT	40
2582.502	4" DOUBLE SOLID LINE EPOXY	10	LIN FT	2750

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	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	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.
8	2 MESSAGE BOARDS, ONE ON THE EACH END OF PROJECT, WILL BE INSTALLED 7 DAYS PRIOR TO ANY CONSTRUCTION; REFERENCE STRIPING PLAN FOR DETAILS.
9	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 IS TO REMOVE PRIOR TO FINAL PAINT STRIPING.
10	FINAL STRIPING SHALL BE INSTALLED WITHIN 72 HOURS OF COMPLETION OF MAINLINE WEAR COURSE PAVING.
11	MAILBOXES SHALL BE INSTALLED AT THE EXISTING MAILBOX LOCATION OR AS DIRECTED BY THE LOCAL POSTAL AUTHORITY. THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING THE LOCAL POSTAL AUTHORITY. MAILBOX REMOVAL AND ALL MATERIALS NECESSARY FOR INSTALLATION ARE INCIDENTAL TO THIS ITEM.
12	ITEM USED AT ENGINEER'S DISCRETION FOR RESTORATION OF DISTURBED AREAS ALONG DRIVEWAYS AND STREET APPROACHES.
13	TYPE 1 FERTILIZER AND TYPE 25-121 SEED ARE INCIDENTAL TO THIS ITEM.
14	INCLUDES TIME AND MATERIALS TO CONSTRUCT. - COMMON EX., SELECT GRANULAR, AGG. BASE CL-5, TOPSOIL, MOTOR GRADER HRS, DOZER HRS, PNEUMATIC TIRED ROLLER HRS, SILT FENCE MACHINE SLICED, EROSION CONTROL BLANKET TYPE 3, SEEDING, SEED TYPE 25-141 AND FERTILIZER TYPE 3. EST. CALCS CAN BE FOUND IN PLAN DETAILS. BITUMINOUS PAVEMENT FOR TURN LANE/BYPASS LANE INCLUDED IN MAIN SEQ.

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
8000J	CHANNELIZERS (3 SHEETS)
9350A	MAILBOX SUPPORT (SWING-AWAY TYPE)

NO	DATE	BY	CKD	APPR	REVISION	
	04/25/2017					1:03:46 PM

NAME: P:\17-01-00\CR_72 (ParkEnt-235th)\Base\PROPOSED\PROPOSED.dgn

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PRINT NAME: MATTHEW J. JOHN
 SIGNATURE: *[Signature]*
 DATE: 4/25/2017 LICENSE NO. 51639

DRAWN BY: SRK DATE: 03/10/2017
 DESIGN BY: SRK DATE: 03/10/2017
 CHECKED BY: MJJ DATE: 04/25/2017



**ANOKA COUNTY
HIGHWAY DEPT.**

COUNTY PROJECT 17-29-72

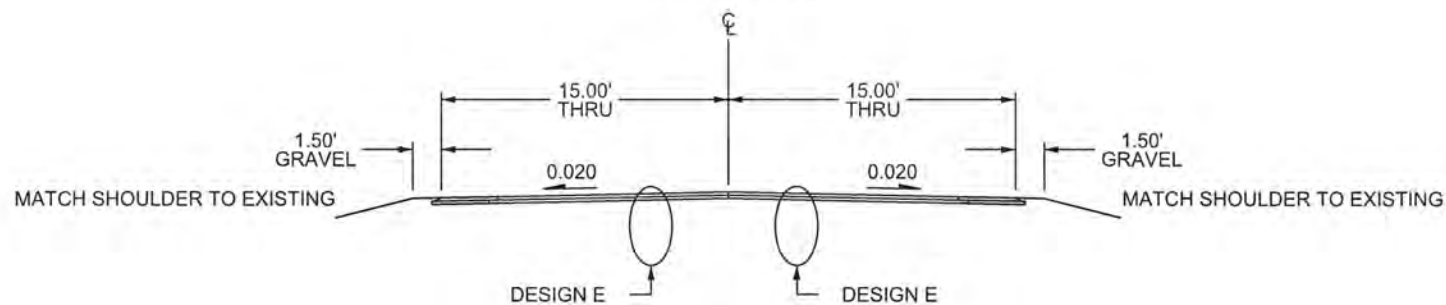
STATEMENT OF ESTIMATED QUANTITIES

Sheet 2 of 9 Sheets

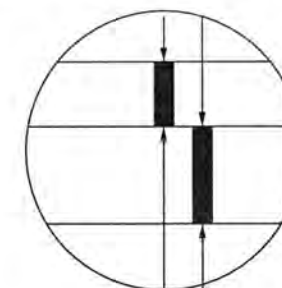
mjjohn

CR 72 - RUM RIVER BLVD EXISTING RECLAIM SECTION

10+60 - 35+35



DESIGN E EXISTING SECTION

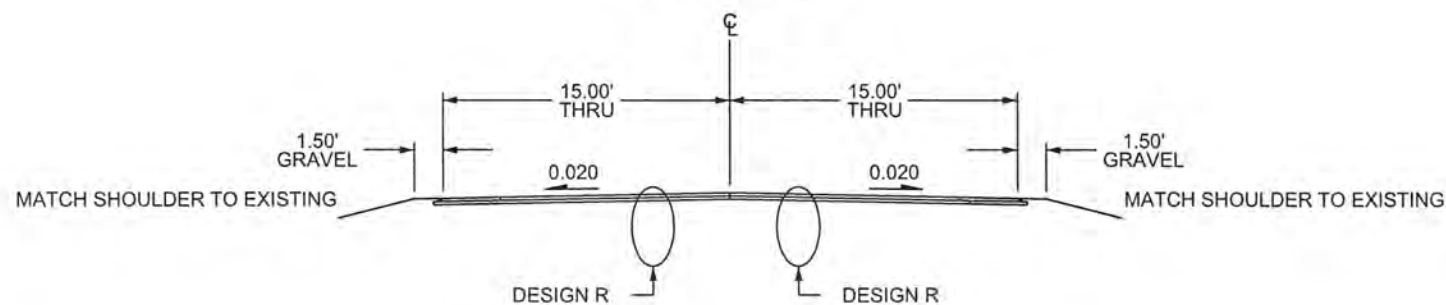


5" EXISTING BITUMINOUS
6" EXISTING AGGREGATE BASE

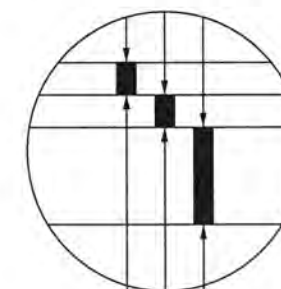
FOR INFORMATIONAL PURPOSES ONLY
CONTRACTOR SHALL FIELD VERIFY EXISTING SECTION

CR 72 - RUM RIVER BLVD PROPOSED RECLAIM SECTION

10+60 - 35+35



DESIGN R RECLAIM SECTION



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

NO	DATE	BY	CKD	APPR	REVISION		
						03/15/2017	7:47:42 AM

NAME: P:\17-01-00\CR_72_(ParkEnt-235th)\Base\PROPOSED\PROPOSED.dgn

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ANOKA COUNTY
HIGHWAY DEPT.

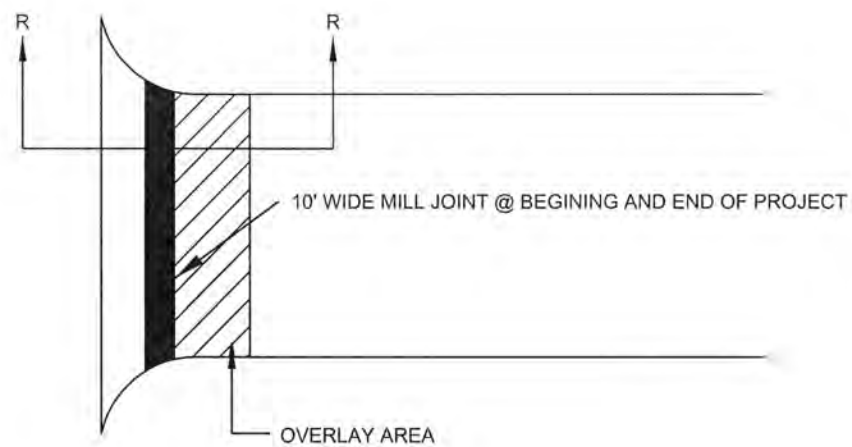
COUNTY PROJECT 17-29-72

TYPICAL SECTIONS
Sheet 3 of 9 Sheets

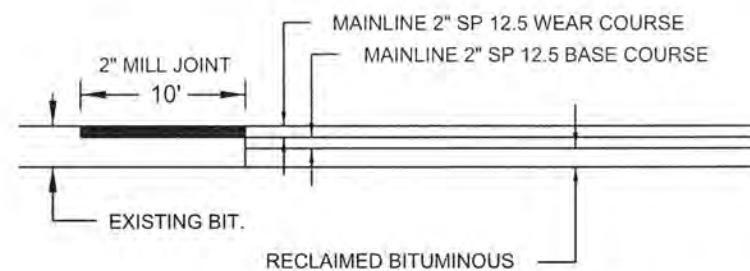
m.john

MAINLINE JOINT DETAIL (RECLAIM)

PLAN VIEW



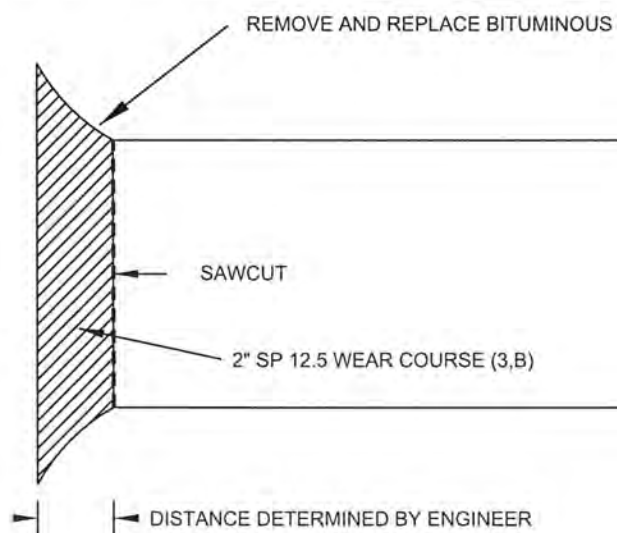
SECTION R - R



RECLAIM AREA - DRIVEWAY DETAIL

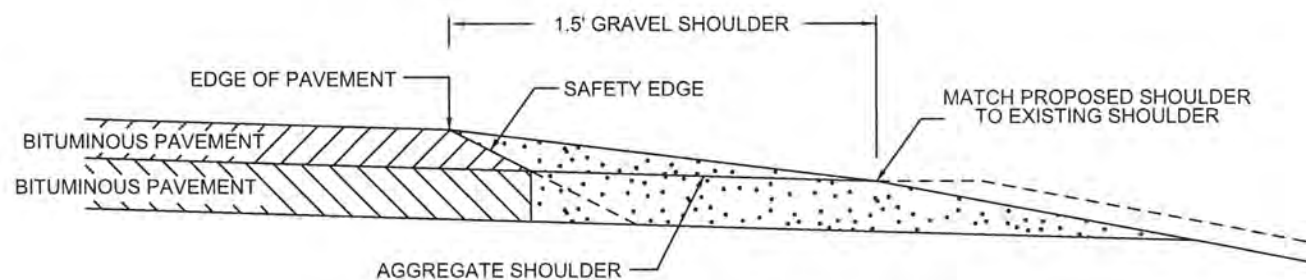
BITUMINOUS

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		
	03/15/2017					7:23:19 AM	

NAME: P:\17-01-00\CR_72_(ParkEnt-235m)\Base\PROPOSED\PROPOSED.dgn

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ANOKA COUNTY
HIGHWAY DEPT.

COUNTY PROJECT 17-29-72

DETAILS

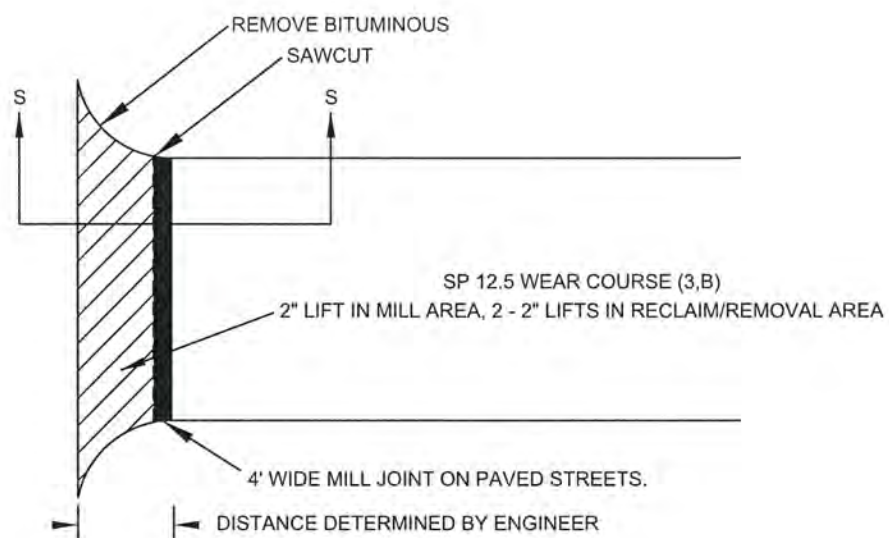
Sheet 4 of 9 Sheets

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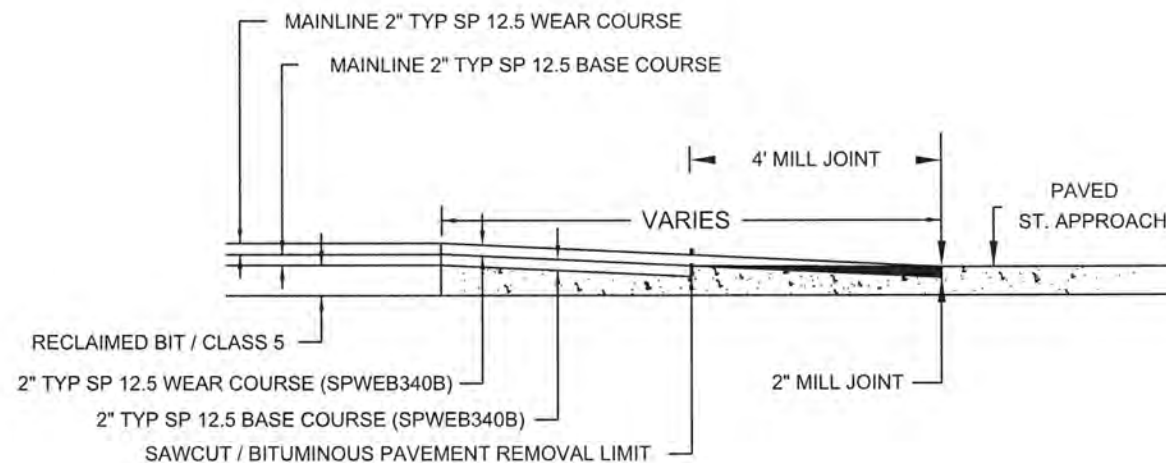
STREET APPROACH DETAIL

BITUMINOUS STREET

PLAN VIEW

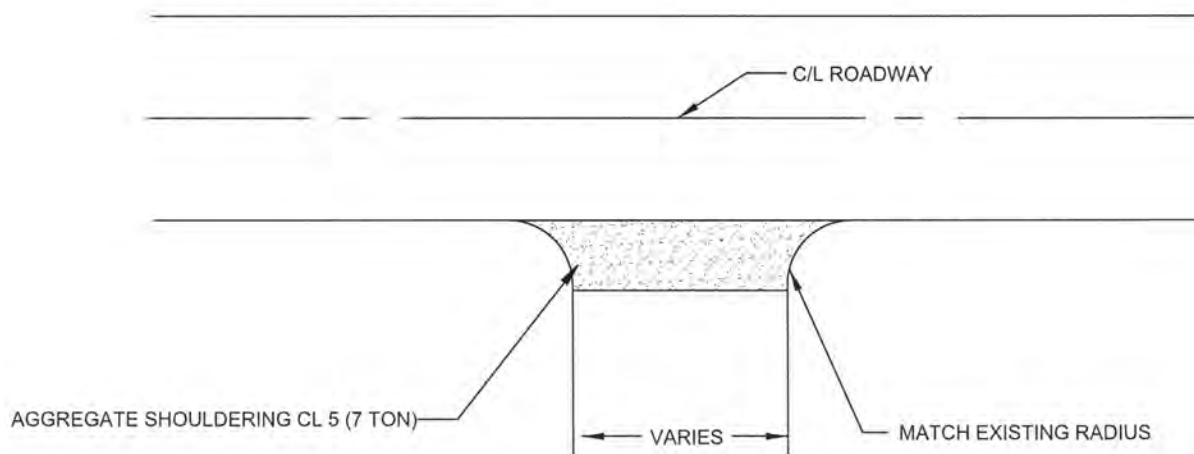


SECTION S - S



DRIVEWAY DETAIL

GRAVEL ENTRANCE (HSE #23400)



NO	DATE	BY	CKD	APPR	REVISION	03/15/2017	7:23:21 AM
NAME: P:\17-01-00\CR_72_(ParkEnt-235th)Base\PROPOSED\PROPOSED.dgn							

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DESIGN BY SRK DATE 03/10/2017

CHECKED BY M.J.J. DATE 03/15/2017



ANOKA COUNTY
HIGHWAY DEPT.

COUNTY PROJECT 17-29-72

DETAILS

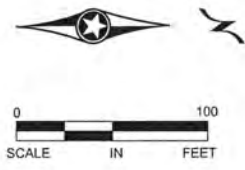
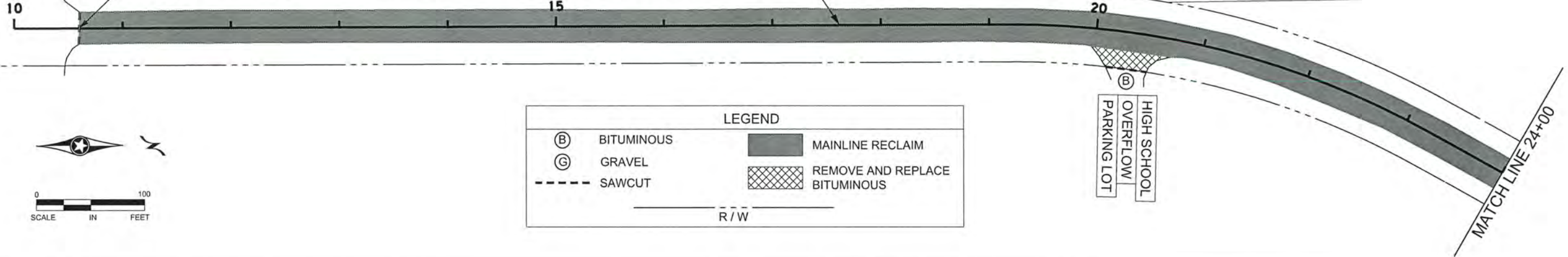
Sheet 5 of 9 Sheets

mj:john

RUM RIVER NORTH
CO. PARK ENT

BEGIN CONSTRUCTION
CP: 17-29-72
STATION: 10+60

CL LNB CR 72



LEGEND			
(B)	BITUMINOUS	[Solid Grey Box]	MAINLINE RECLAIM
(G)	GRAVEL	[Cross-hatch Box]	REMOVE AND REPLACE BITUMINOUS
- - -	SAWCUT	[Dashed Line]	
R / W			

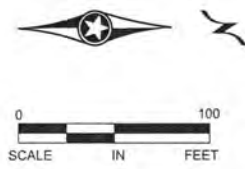
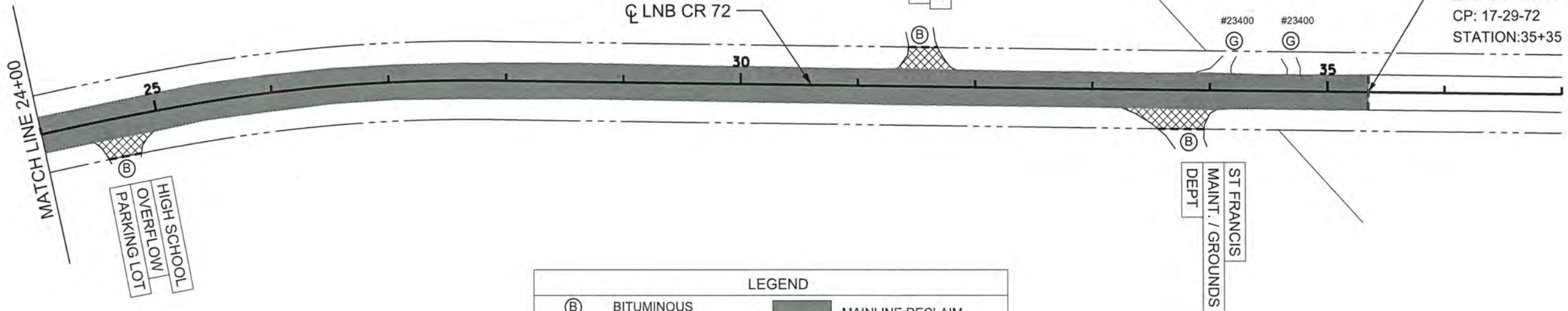
HIGH SCHOOL
OVERFLOW
PARKING LOT

MATCH LINE 24+00

RUM RIVER
NORTH CO.
PARK

CL LNB CR 72

END CONSTRUCTION
CP: 17-29-72
STATION: 35+35



LEGEND			
(B)	BITUMINOUS	[Solid Grey Box]	MAINLINE RECLAIM
(G)	GRAVEL	[Cross-hatch Box]	REMOVE AND REPLACE BITUMINOUS
- - -	SAWCUT	[Dashed Line]	
R / W			

ST FRANCIS
MAINT. / GROUND'S
DEPT.

NO	DATE	BY	CKD	APPR	REVISION	DATE	TIME
	03/15/2017						7:23:28 AM

NAME: P:\17-01-00\CR_72_(ParkEnt-235th)\Base\PROPOSED\PROPOSED.dgn

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ANOKA COUNTY
HIGHWAY DEPT.

COUNTY PROJECT 17-29-72

CONSTRUCTION PLAN
STA 10+60 TO 35+35
Sheet 6 of 9 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 FARHENHEIT 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.

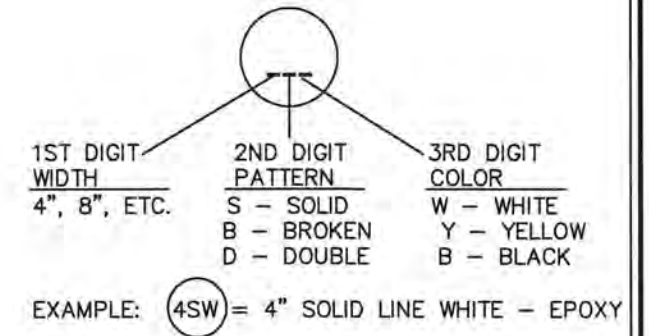
PERMANENT MARKING QUANTITIES		
ITEM	UNIT	TOTAL QUANTITY
4" SOLID LINE WHITE - EPOXY PAINT	LIN FT	5660
4" BROKEN LINE WHITE - EPOXY PAINT	LIN FT	0
4" SOLID LINE YELLOW - EPOXY PAINT	LIN FT	0
4" BROKEN LINE YELLOW - EPOXY PAINT	LIN FT	0
4" DOUBLE SOLID LINE YELLOW - EPOXY PAINT	LIN FT	2750

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\Base\TRAFFIC\Perm pvmt.mrkng guide notes_guidelines.dwg

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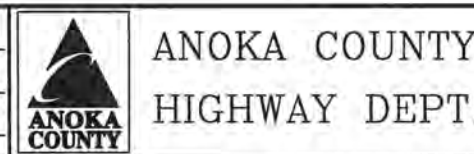
SIGNATURE: *[Signature]*

DATE: 3/15/2017 LICENSE NO. 51639

DRAWN BY: RLB DATE: 1/24/17

DESIGN BY: RLB DATE: 1/24/17

CHECKED BY: JR DATE: 1/24/17



STATE PROJECT NO. _____

STATE AID PROJECT NO. _____

STATE AID PROJECT NO. _____

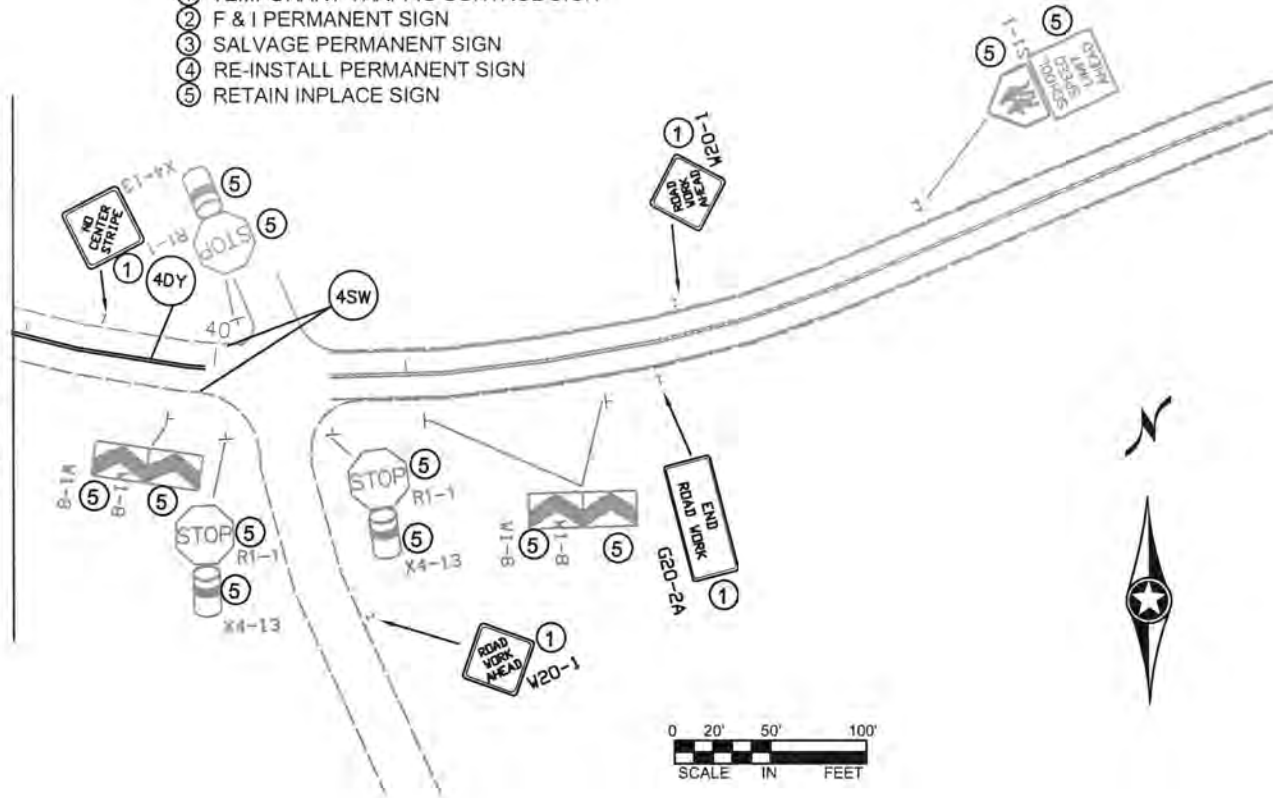
COUNTY PROJECT NO. 17-29-72

PERMANENT MARKING TABULATION

Sheet 7 of 9 Sheets

STATION 39+00

- 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:

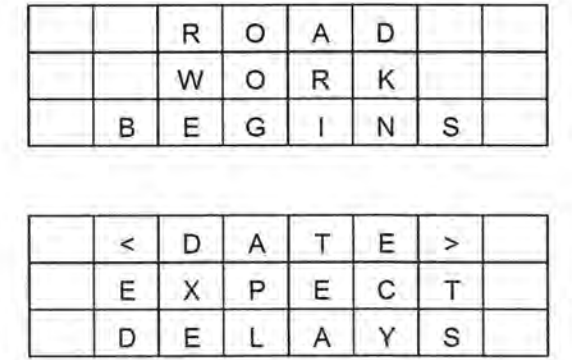
- ALL TRAFFIC CONTROL DEVICES SHALL CONFORM AND BE PLACED IN ACCORDANCE TO THE "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MN MUTCD), INCLUDING PART VI, "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS".
- CONTRACTOR SHALL COMPLY WITH THE LONGITUDINAL DROP-OFF GUIDELINES AS PER THE FIELD MANUAL.
- LOCATIONS OF PAVEMENT MARKINGS ARE APPROXIMATE. EXACT LOCATIONS WILL BE DETERMINED IN THE FIELD BY THE ENGINEER.
- 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.
- CONTRACTOR SHALL SUPPLY AND ERECT THE TEMPORARY TRAFFIC CONTROL SIGNS AS SHOWN ON THIS DRAWING AND DETAILED IN THE SPECIAL PROVISIONS FROM THE TIME WORK COMMENCES ON THIS ROADWAY UNTIL THIS ROADWAY IS PERMANENTLY STRIPED. ALL NECESSARY TEMPORARY TRAFFIC CONTROL SIGNS SHALL BE PAID FOR AS PART OF TRAFFIC CONTROL LUMP SUM.
- 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
- ALL EXISTING SIGNING SHALL REMAIN IN PLACE DURING CONSTRUCTION. ALL SALVAGED AND REINSTALLED SIGNS SHALL BE INSTALLED ON TEMPORARY SUPPORTS UNTIL THE PERMANENT INSTALLATION CAN BE MADE. THIS WILL BE CONSIDERED AS INCIDENTAL TO INSTALL SIGN TYPE C.

TEMPORARY TRAFFIC CONTROL SIGNS

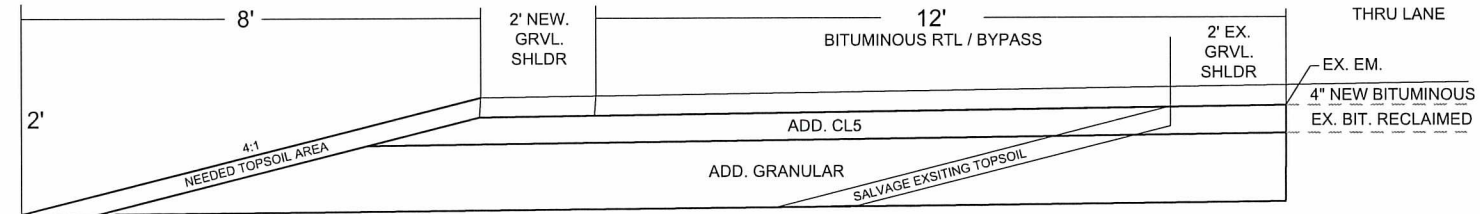
M.U.T.C.D. CODE	SIZE	PANEL AREA FT. ²	INSERT	QUANTITY		MOUNTING HEIGHT TO PAVEMENT EDGES FT.
				No.	POST	
W8-12	48" x 48"	16.00		2	2	7.0'
R4-1	24" x 30"	5.00		2	1	7.0'
R4-2	24" x 30"	5.00		0	1	7.0'
G20-2A	48" x 24"	8.00		2	2	7.0'
W8-1A	48" x 48"	16.00		AS NEEDED		
W8-1A	48" x 48"	16.00		AS NEEDED		
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 4)		
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		

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.

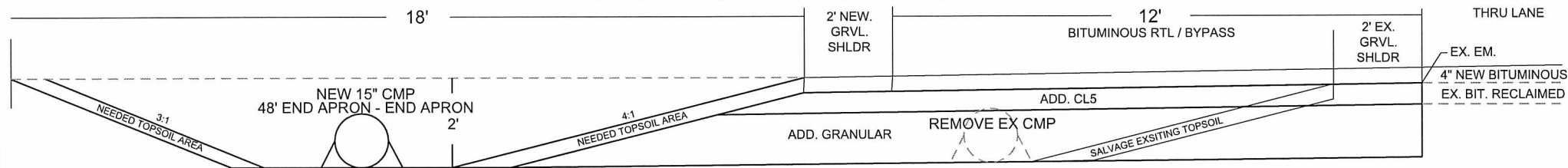
CHANGEABLE MESSAGE BOARD - MESSAGE SEQUENCE LAYOUT



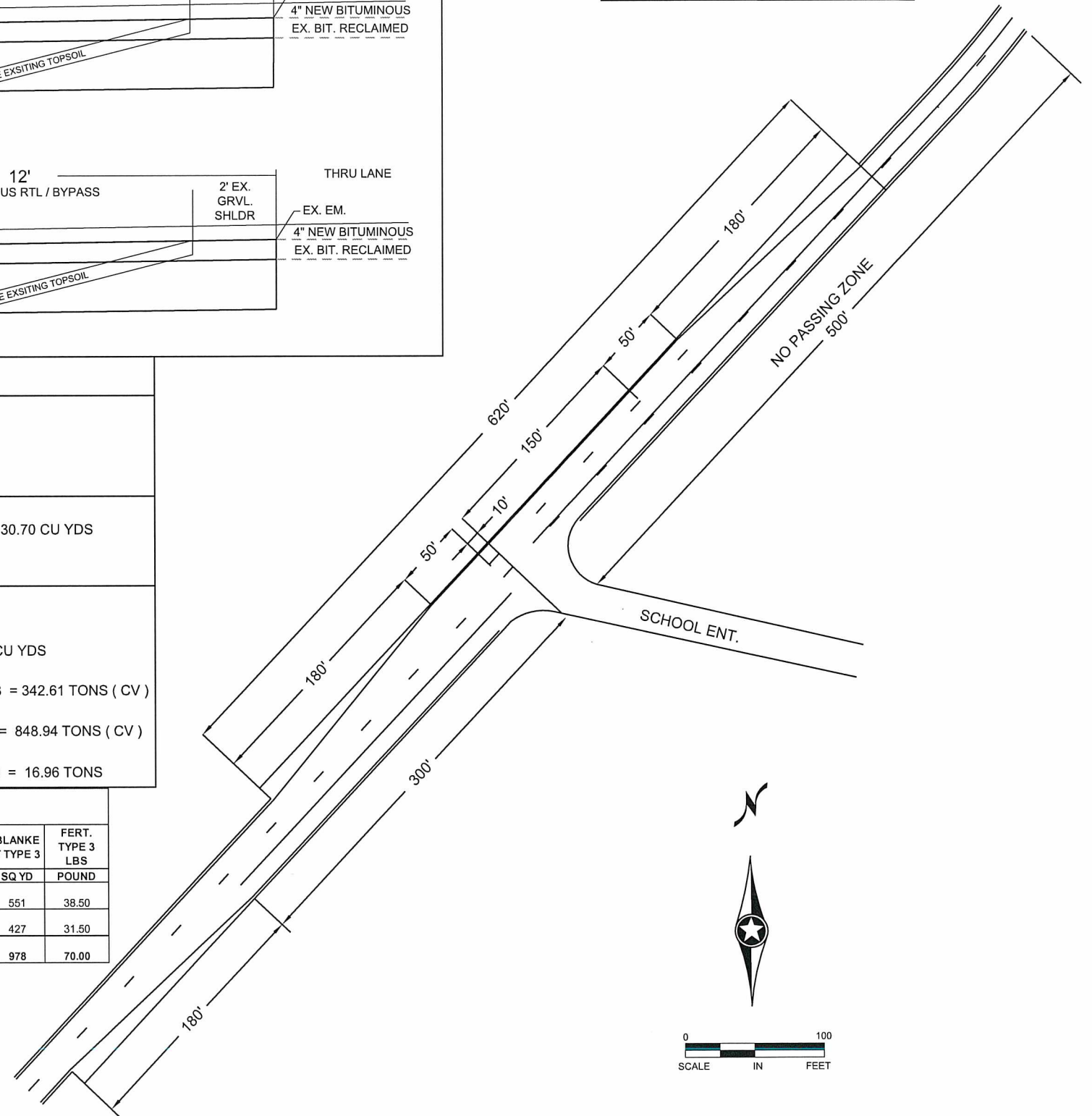
RTL NB STA. 111+16.00 - STA. 115+96.00
 BYPASS SB STA. 113+00.00 - STA. 119+31.00



BYPASS SB STA. 119+31.00 - STA. 120+26.00



RTL / BYPASS LAYOUT



NEW RTL / BYPASS WIDENING CALC.

* NOTE CALC. BASED ON A EST. AVERAGE FINISHED DITCH DEPTH OF 2'

END AREA SQ FT

COMMON EX 28.94 SQ FT
 SELECT GRANULAR 20.54 SQ FT

BASE CLASS 5 8.29 SQ FT
 SHORT TOPSOIL 0.41 SQ FT

CU YDS PER 100'

COMMON EX 28.94 SQ FT X 100' = 2894.5 CU FT / 27 = 107.20 CU YDS
 BASE CLASS 5 8.29 SQ FT X 100' = 829 CU FT / 27 = 30.70 CU YDS
 SELECT GRANULAR 20.54 SQ FT X 100' = 2054 CU FT / 27 = 76.07 CU YDS
 SHORT TOPSOIL 1.52 CU YDS

PER 480' RTL LOC

COMMON EX 107.20 CU YDS (PER 100') X 4.8 RTL = 514.56 CU YDS PER RTL
 BASE CLASS 5 30.70 CU YDS (PER 100') X 4.8 RTL = 147.36 CU YDS X 1.8 = 265.24 TONS (CV)
 SELECT GRANULAR 76.07 CU YDS (PER 100') X 4.8 RTL = 365.13 CU YDS X 1.8 = 657.24 TONS (CV)
 SHORT TOPSOIL 1.52 CU YDS (PER 100') X 4.8 RTL = 7.29 CU YDS X 1.8 = 13.13 TONS

PER 620' BYPASS LOC

COMMON EX 107.20 CU YDS (PER 100') X 6.2 BYPASS = 664.64 CU YDS
 BASE CLASS 5 30.70 CU YDS (PER 100') X 6.2 BYPASS = 190.34 CU YDS X 1.8 = 342.61 TONS (CV)
 SELECT GRANULAR 76.07 CU YDS (PER 100') X 6.2 BYPASS = 471.63 CU YDS X 1.8 = 848.94 TONS (CV)
 SHORT TOPSOIL 1.52 CU YDS (PER 100') X 6.2 BYPASS = 9.42 CU YDS X 1.8 = 16.96 TONS

RTL / BYPASS

BYPASS / RTL	ADD. WIDTH NEEDED	LENGTH	SP 12.5 WEAR COURSE 4"	COMMON EXCAVATION	SELECT GRANULAR	CLASS 5	TOPSOIL	GRADER	DOZER	ROLLER	REMOVE PIPE CULVERT	15" CS PIPE CULVERT	15" CS APRON	SILT FENCE	SEEDING	SEED TYPE 25-141	BLANKE T TYPE 3	FERT. TYPE 3 LBS
BYPASS	14.0	620.0	190	664.64	848.94	342.61	16.96	6	6	6	48	48	2	620	0.11	7.70	551	38.50
RTL	14.0	480	147	514.56	657.24	265.24	13.13	6	6	6	0	0	0	480	0.09	6.30	427	31.50
TOTALS			337	1179.20	1506.18	607.85	30.09	12	12	12	48	48	2	1100	0.20	14.00	978	70.00



NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\17-01-00\CR_72_(ParkEnt-235th)\Base\PROPOSED\I72 BYPASS.dgn 04/25/2017 11:01:26 AM

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: 4/25/2017 LICENSE NO. 51639

DRAWN BY: JF DATE: 4/25/2017
 DESIGN BY: JF DATE: 4/25/2017
 CHECKED BY: JO DATE: 4/25/2017

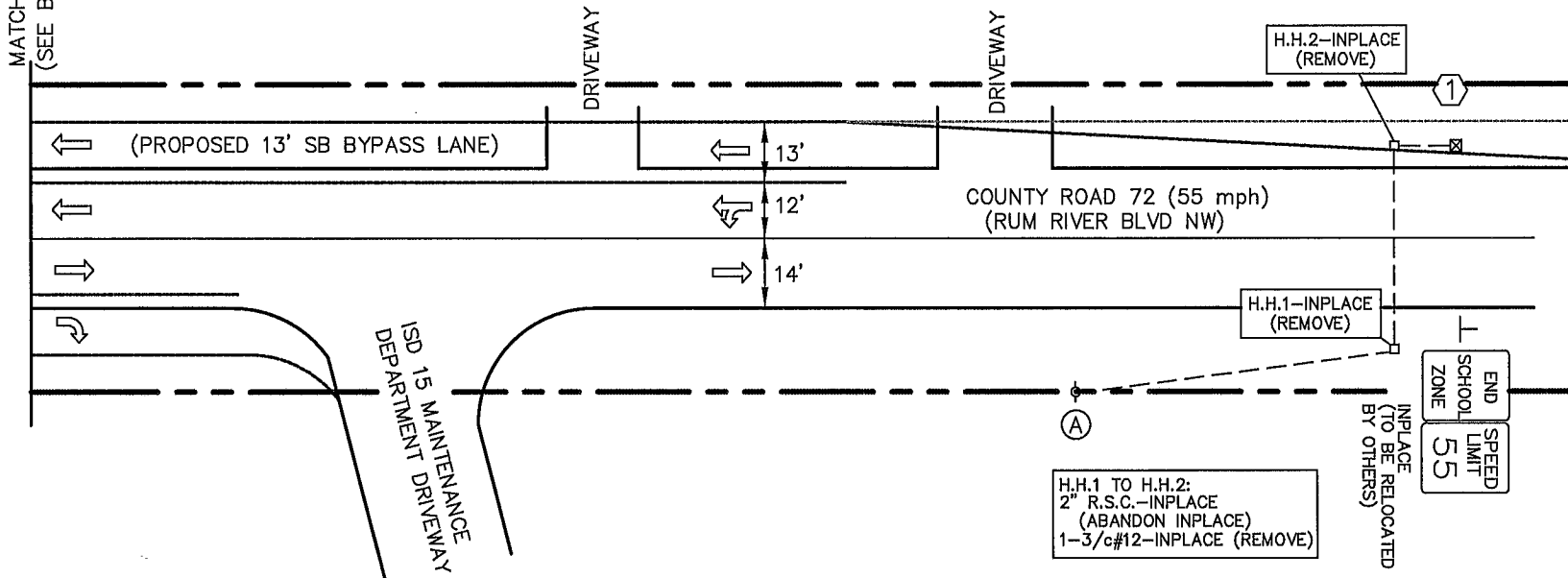
ANOKA COUNTY
HIGHWAY DEPT.

COUNTY PROJECT NO. CP 17-29-72
 CR 72 PARK ENT - 235TH

BYPASS DETAIL



MATCH LINE
(SEE BELOW)



(A) INPLACE WOOD POLE 113222 (CONNEXUS)

INPLACE (REMOVE) METER AND DISCONNECT—WOOD POLE MOUNTED EXTENDED ABOVE METER AND UP WOOD POLE:
1 1/4" R.S.C. RISER AND WEATHERHEAD
3-1/c#6
BETWEEN METER AND DISCONNECT:
1 1/4" R.S.C.
3-1/c#6
EXTENDED BELOW DISCONNECT INTO H.H.1:
2" R.S.C.
1-3/c#12

(1) INPLACE (REMOVE) PEDESTAL FOUNDATION EXTENDED INTO H.H.2:
2" R.S.C.
1-3/c#12

INPLACE (TO BE SALVAGED BY COUNTY) 14' PEDESTAL POLE AND BASE (FLASHER #42)
WIND COLLAR FOR PEDESTAL POLE
2-12" LED YELLOW FLASHERS WITH VISORS, BRACKETING, AND SLIPFITTER COLLAR (FACING SOUTHBOUND TRAFFIC)
RADAR SPEED SIGN (YOUR SPEED XX)—POLE MTD
S5-1 (SCHOOL—SPEED LIMIT 35—WHEN FLASHING) SIGN PANEL—POLE MOUNTED
DISPLAY DISCONNECT CABINET—MOUNTED ON BACK OF RADAR SPEED SIGN
1/2" FLEXIBLE CONDUIT FROM CABINET TO BOTTOM OF RADAR SPEED SIGN
1/2" EL FROM CABINET TO PEDESTAL POLE
ELECTRICAL CABLES FROM SIGN PANEL AND FLASHERS TO PEDESTAL POLE BASE (CONNECT TO 1-3/c#12 IN POLE BASE)

TABULATION OF FLASHER SYSTEM QUANTITIES			
ITEM NO	ITEM	UNIT	TOTAL ESTIMATED QUANTITY
2565.616	REVISE FLASHER SYSTEM	SYSTEM	1

FLASHER SYSTEM NOTES:

- 1) SEE SPECIAL PROVISIONS AND DETAILS FOR FURTHER INFORMATION REGARDING REVISED FLASHER SYSTEM WORK.
- 2) LOCATION OF NEW FOUNDATION AND NEW HANDHOLES SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER.
- 3) INPLACE SIGN AND POST RELOCATION ADJACENT TO OLD PEDESTAL POLE MOUNTED FLASHER AND SIGN INSTALLATION SHALL BE COMPLETED BY OTHERS AT NO EXPENSE TO FLASHER CONTRACTOR.
- 3) ALL NEW HANDHOLES SHALL BE PVC HANDHOLES WITH METAL FRAMES AND COVERS (SEE DETAILS IN SPECIAL PROVISIONS).
- 4) CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CONTACT WITH POWER COMPANY (CONNEXUS) FOR REVISED POWER CONNECTION.
- 5) CONTRACTOR IS RESPONSIBLE FOR ALL AT/BELOW GROUND REMOVAL AND INSTALLATION WORK (REMOVAL OF HANDHOLES, FOUNDATION, CONDUIT AND CABLES TO/FROM SOP POLE), AND FOR FURNISHING AND INSTALLING NEW AT/BELOW GROUND SYSTEM COMPONENTS (NEW HANDHOLES, FOUNDATION, CONDUIT, AND CABLES TO/FROM NEW SOP POLE), AS WELL AS FOR FURNISHING AND INSTALLING ALL NEW WOOD POLE MOUNTED SERVICE EQUIPMENT, ALL AS PART OF "REVISE FLASHER SYSTEM" PAY ITEM (ITEM NO. 2565.616).
- 6) COUNTY IS RESPONSIBLE FOR SALVAGING AND REINSTALLING ALL ABOVE GROUND FLASHER POLE SYSTEM COMPONENTS, ALL AT NO EXPENSE TO CONTRACTOR. CONTRACTOR SHALL COORDINATE REMOVAL AND INSTALLATION OF AT/BELOW GROUND FLASHER SYSTEM COMPONENTS WITH COUNTY, SO THAT COUNTY CAN REMOVE FLASHER POLE MOUNTED COMPONENTS BEFORE FOUNDATION REMOVAL IS COMPLETED AND THAT NEW FOUNDATION IS INSTALLED BY CONTRACTOR SO THAT COUNTY CAN REINSTALL FLASHER POLE COMPONENTS.

(2) F & I PEDESTAL FOUNDATION EXTEND INTO H.H.4:
2" R.S.C.
1-3/c#12

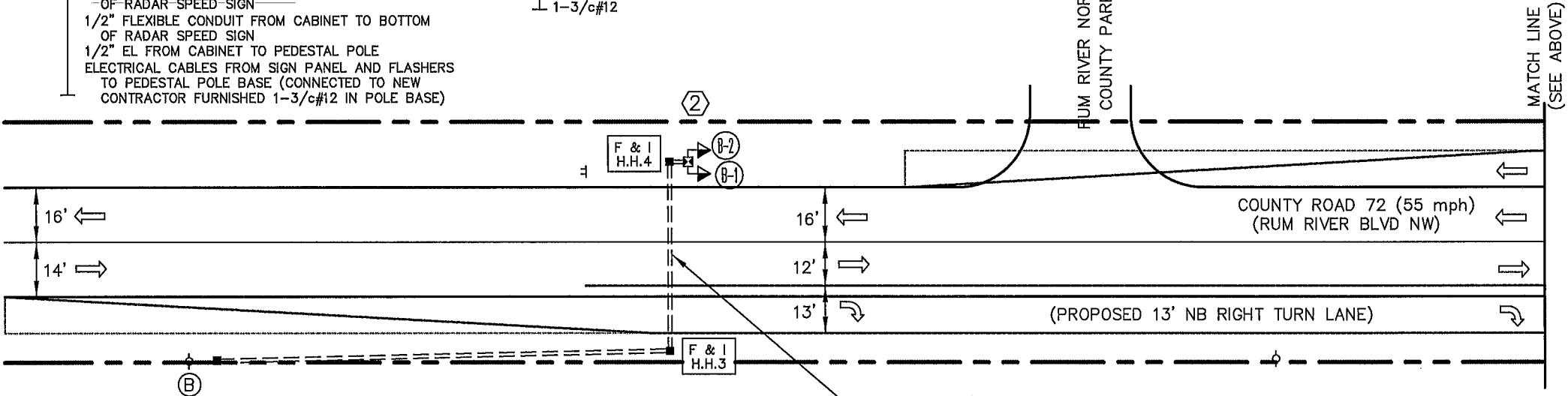
INPLACE (TO BE INSTALLED BY COUNTY) 14' PEDESTAL POLE AND BASE (FLASHER #42A)
WIND COLLAR FOR PEDESTAL POLE
2-12" LED YELLOW FLASHERS WITH VISORS, BRACKETING, AND SLIPFITTER COLLAR (FACING SOUTHBOUND TRAFFIC)
RADAR SPEED SIGN (YOUR SPEED XX)—(30"x41")—POLE MOUNTED
S5-1 (SCHOOL—SPEED LIMIT 35—WHEN FLASHING) SIGN PANEL (24"x48")—POLE MOUNTED
DISPLAY DISCONNECT CABINET—MOUNTED ON BACK OF RADAR SPEED SIGN
1/2" FLEXIBLE CONDUIT FROM CABINET TO BOTTOM OF RADAR SPEED SIGN
1/2" EL FROM CABINET TO PEDESTAL POLE
ELECTRICAL CABLES FROM SIGN PANEL AND FLASHERS TO PEDESTAL POLE BASE (CONNECTED TO NEW CONTRACTOR FURNISHED 1-3/c#12 IN POLE BASE)

(B) INPLACE WOOD POLE 113220 (S.O.P.) (CONNEXUS)

F & I CABINET FOUNDATION (PER MNDOT 8119)
SERVICE CABINET (WITH METER SOCKET & VIEWING WINDOW, 1-60A/1P MAIN BREAKER, 1-20A/1P SIGN/FLASHER BREAKER, NEMA 3R RAIN-TIGHT ENCLOSURE, AND STANDARD KEY/LOCK)
STUB OUT 2" R.S.C. FROM SERVICE CABINET TO SOUTH (FOR SERVICE CONNECTION BY CONNEXUS)
EXTEND INTO H.H.3:
2" R.S.C.
1-3/c#12

H.H.1 TO H.H.2:
2" R.S.C.—INPLACE (ABANDON INPLACE)
1-3/c#12—INPLACE (REMOVE)

INPLACE (TO BE RELOCATED BY OTHERS)



(B) INPLACE WOOD POLE 113220 (S.O.P.) (CONNEXUS)

F & I CABINET FOUNDATION (PER MNDOT 8119)
SERVICE CABINET (WITH METER SOCKET & VIEWING WINDOW, 1-60A/1P MAIN BREAKER, 1-20A/1P SIGN/FLASHER BREAKER, NEMA 3R RAIN-TIGHT ENCLOSURE, AND STANDARD KEY/LOCK)
STUB OUT 2" R.S.C. FROM SERVICE CABINET TO SOUTH (FOR SERVICE CONNECTION BY CONNEXUS)
EXTEND INTO H.H.3:
2" R.S.C.
1-3/c#12

H.H.3 TO H.H.4:
2" CONDUIT—F & I
1-3/c#12—F & I

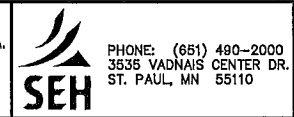
TRAFFIC SIGNAL STANDARD PLATES	
THESE TRAFFIC SIGNAL STANDARD PLATES AS APPROVED BY FHWA SHALL APPLY:	
PLATE NO.	DESCRIPTION
* 8000 J	CHANNELIZERS - TYPE A, B, C (3 SHEETS)
* 8112 I	PEDESTAL FOUNDATION
* 8118 D	SERVICE EQUIPMENT AND POLE—TRAFFIC CONTROL SIGNALS
* 8119 C	GROUND MOUNTED CABINET FOUNDATION
* 8129 A	SHIM AND WASHER (TRAFFIC CONTROL SIGNALS AND ROADWAY LIGHTING)

* - APPLIES TO THIS PROJECT

DRAWN BY: JMG
DESIGNER: JMG
CHECKED BY: JMG
DESIGN TEAM

NO.	BY	DATE	REVISIONS

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: April 21, 2017 Name: John M. Gray, PE Lic. No. 22457



ANOKA COUNTY, MN
SCHOOL FLASHER SYSTEM
CITY OF ST. FRANCIS

SCHOOL SPEED ZONE FLASHER/SIGN SYSTEM
REVISE FLASHER SYSTEM
COUNTY ROAD 72 (RUM RIVER BLVD)
AT ST. FRANCIS HIGH SCHOOL

FILE NO. ANOKC 122928	1
DATE 04/21/2017	1

COUNTY PROJECT NO. 17-29-72