MINNESOTA DEPARTMENT OF TRANSPORTATION
ANOKA COUNTY

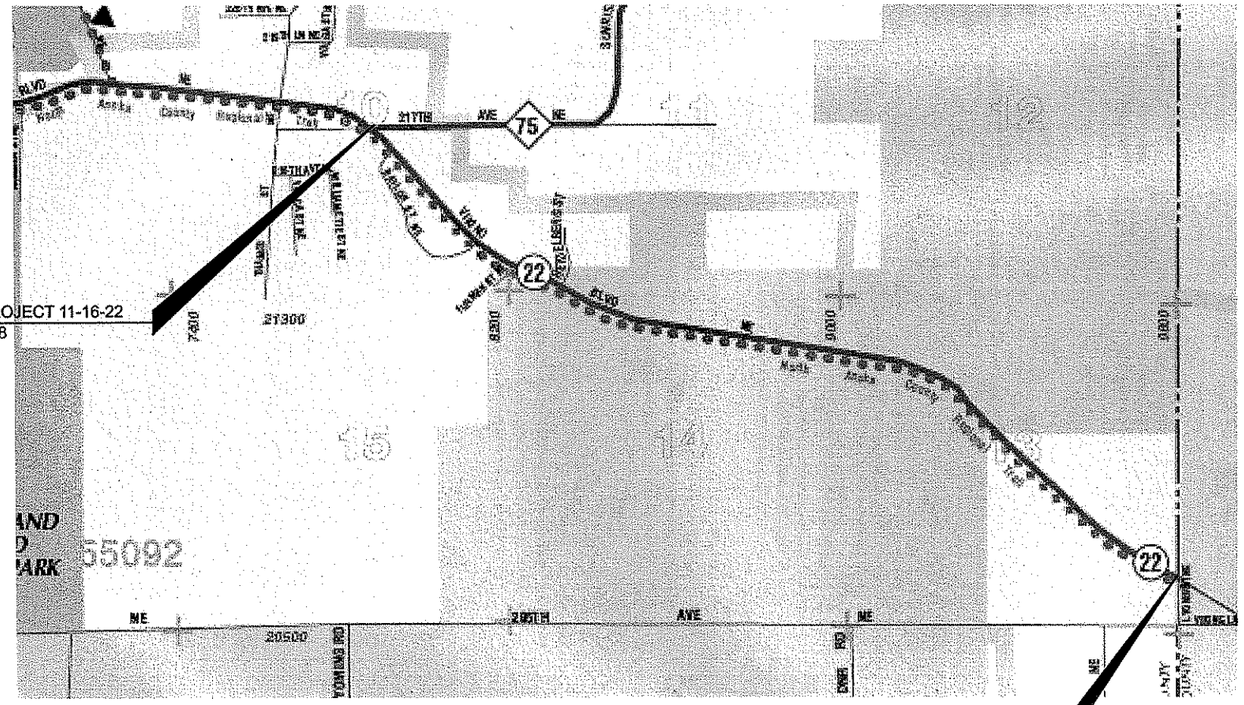
CONSTRUCTION PLAN FOR BITUMINOUS RECLAMATION, BITUMINOUS SURFACING.

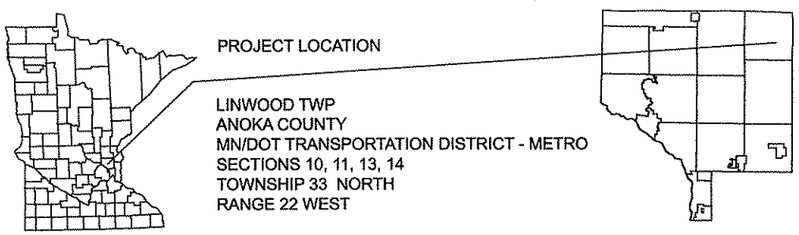
LOCATED ON CSAH 22 BETWEEN CR 75 AND EAST COUNTY LINE

11-16-22

GROSS LENGTH	15457 FEET	2.927 MILES
BRIDGES-LENGTH	0.00 FEET	0.000 MILES
EXCEPTIONS-LENGTH	0.00 FEET	0.000 MILES
NET LENGTH	15457 FEET	2.927 MILES

LINWOOD TWP





PROJECT LOCATION

LINWOOD TWP
ANOKA COUNTY
MN/DOT TRANSPORTATION DISTRICT - METRO
SECTIONS 10, 11, 13, 14
TOWNSHIP 33 NORTH
RANGE 22 WEST

PLAN SYMBOLS

COUNTY LINE
TOWNSHIP OR RANGE LINE
SECTION LINE
QUARTER LINE
SIXTEENTH LINE
RIGHT OF WAY LINE
SLOPE EASEMENT
EXISTING RIGHT OF WAY
PROPERTY LINE
CORPORATE OR CITY LIMITS
RETAINING WALL
RAILROAD
RAILROAD RIGHT OF WAY
RIVER OR CREEK
DRAINAGE DITCH
CULVERT
DROP INLET
GUARD RAIL
BARBED WIRE FENCE
WOVEN WIRE FENCE
CHAIN LINK FENCE
WOOD FENCE
STONE WALL OR FENCE
HEDGE
LOWLAND
TIMBER
ORCHARD
BRUSH
NURSERY
CATTLE GUARD
OVERPASS (Highway Over)
UNDERPASS (Highway Under)
BRIDGE
BUILDING (One Story Frame) 1-S-F
F-FRAME C-CONCRETE
S-STONE T-TILE
B-BRICK ST-STUCCO
RAILROAD CROSSING BELL
RAILROAD CROSSING GATE
MANHOLE M.H.
CATCH BASIN C.B.
FIRE HYDRANT
CAST IRON MONUMENT
IRON PIN
GRAVEL PIT G
SAND PIT S
BORROW PIT B
ROCK QUARRY Q

UTILITY SYMBOLS

POWER POLE LINE
TELEPHONE OR TELEGRAPH POLE LINE
JOINT TELEPHONE & POWER ON POWER POLES
ON TELEPHONE POLES
ANCHOR
STEEL TOWER
STREET LIGHT
PEDESTAL (Cable Terminal)
GAS MAIN
WATERMAIN
TELEPHONE CABLE IN CONDUIT
ELECTRIC CABLE IN CONDUIT
TELEPHONE MANHOLE
ELECTRIC MANHOLE
BURIED TELEPHONE CABLE T-BUR
BURIED ELECTRIC CABLE P-BUR
T-AE
SEWER (Sanitary or Storm)
SEWER MANHOLE

SCALES

PLAN	0'	100'
PROFILE HORIZONTAL	0'	100'
VERTICAL	0'	10'
X-SECTIONS HORIZONTAL	0'	10'
VERTICAL	0'	10'
INDEX MAP	0'	2000'

GOVERNING SPECIFICATIONS

THE 2005 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" SHALL GOVERN. ALL TRAFFIC CONTROL DEVICES SHALL CONFORM AND BE INSTALLED IN ACCORDANCE TO THE "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MNMUTCD), AND PART VI, "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS."

INDEX

THIS PLAN CONTAINS 20 SHEETS

DESIGN DESIGNATION

ESAL 20	1,055,783
R VALUE	50
ADT (2010) =	7,764
Proj. ADT (2030) =	12,422
Proj. HCADT (2030) =	NA
Soil Factor	NA

9 TON DESIGN

Functional Classification A MINOR ARTERIAL - CONNECTOR
No. of Traffic Lanes 2 No. of Parking Lanes 0
Design Speed 55 MPH N/A
Based on Stopping Sight Distance
Height of eye 3.5' Height of object 2.0'
Design Speed not achieved at:
STA. 20+38 TO STA. 174+95 MPH

Approved [signature] ANOKA COUNTY ENGINEER 3/4/20 12

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\12-01-00\CSAH_22_(East_of_75)\Plan\1 Title.dgn 02/29/2012 11:13:43 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: CHARLES CADENHEAD
SIGNATURE: [signature]
DATE: 2/2/12 LICENSE NO. 40416

DRAWN BY JJ DATE 2-29-2012
DESIGN BY JJ DATE 2-29-2012
CHECKED BY JO DATE 2-29-2012

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO.
STATE AID PROJECT NO.
CITY PROJECT NO.
COUNTY PROJECT NO. 11-16-22

TITLE SHEET

Sheet 1 of 22 Sheets

CSAH 22	STATEMENT OF ESTIMATED QUANTITIES			
ITEM NO.	ITEM	NOTE NO.	UNIT	TOTAL EST. QUANT.
2011.601	CONSTRUCTION SURVEYING		LUMP SUM	1
2021.501	MOBILIZATION		LUMP SUM	1
2104.501	REMOVE SEWER PIPE (STORM)		LIN FT	200
2104.505	REMOVE BITUMINOUS DRIVEWAY PAVEMENT		SQ YD	341
2104.505	REMOVE BITUMINOUS PAVEMENT		SQ YD	484
2104.513	SAWING BITUMINOUS PAVEMENT (FULL DEPTH)		LIN FT	278
2104.523	SALVAGE CONCRETE APRON	7	EACH	1
2105.602	CONSTRUCT TURN LANES	11	EACH	3
2105.602	CONSTRUCT BYPASS LANES	11	EACH	3
2123.503	MOTOR GRADER		HOUR	10
2130.501	WATER		MGAL	168
2211.501	AGGREGATE BASE CLASS 5		TON	2957
2221.501	AGGREGATE SHOULDERING CLASS 5	2	TON	559
2232.501	MILL BITUMINOUS SURFACE (2.0") (JOINTS)	1	SQ YD	95
2331.604	BITUMINOUS PAVEMENT RECLAMATION		SQ YD	69835
2357.502	BITUMINOUS MATERIAL FOR TACK COAT		GALLON	2501
2360.501	TYPE SP 12.5 WEARING COURSE MIX (4,E)	14	TON	8273
2360.501	TYPE SP 12.5 WEARING COURSE MIX (4,B)	10	TON	1064
2360.502	TYPE SP 12.5 NON WEAR COURSE MIX (4,B)		TON	5664
2501.511	24" RC PIPE CULVERT CLASS III		LIN FT	56
2501.511	18" CS PIPE CULVERT		LIN FT	140
2501.515	24" RC PIPE APRON	12	EACH	2
2501.515	18" RC PIPE APRON	12	EACH	4
2503.521	28" SPAN RC PIPE-ARCH SEWER CL IIA	6	LIN FT	8
2540.602	INSTALL MAIL BOX SUPPORT		EACH	24
2563.601	TRAFFIC CONTROL	4	LUMP SUM	1
2564.602	F & I SIGN PANEL TYPE C	9	SQ FT	37
2573.602	CULVERT PROTECTION	1,8	EACH	4
2575.523	EROSION CONTROL BLANKETS CATEGORY 3		SQ YD	30
2581.501	REMOVABLE PREFORMED PLASTIC MARKING	3	LIN FT	618
2582.502	4" SOLID LINE WHITE-EPOXY	5	LIN FT	32010
2582.502	4" BROKEN LINE WHITE-EPOXY	5	LIN FT	120
2582.502	4" SOLID LINE YELLOW-EPOXY	5	LIN FT	6294
2582.502	4" BROKEN LINE YELLOW-EPOXY	5	LIN FT	2710
2582.502	4" DOUBLE SOLID LINE YELLOW-EPOXY	5	LIN FT	1747

CSAH 22	CONSTRUCTION NOTES
1	LOCATION TO BE DETERMINED BY ENGINEER
2	SHLDR. LEVELING / NEW 1.5' SHLDRS / AGG. ST APPROACHES & AGG.DRIVEWAYS
3	MARKINGS SHALL BE PLACED AT THE END OF DAYS PAVING
4	DO NOT PASS, PASS WITH CARE, AND NO CENTER STRIPE SIGNS TO BE INPLACE DURING RECLAIM / PAVING OPERATIONS
5	PERMANENT MARKINGS TO BE IN PLACE WITHIN 72 HOURS OF FINAL MAINLINE PAVING.
6	CONTRACTORS RESPONSIBILITY TO VERIFY PIPE
7	THIS INCULDES REINSTALLATION OF APRON
8	INSTALL 1 PER CULVERT INSIDE RTL / BYPASS WIDENING AREAS - AT THE HIGH INVERT.
9	FURNISH AND INSTALL SIGN POSTS SHALL BE INCIDENTAL TO SIGN PANELS.
10	PAVING STREET APPROACHES OF DRIVEWAYS
11	THIS INCULDES SELECT GRANULAR, COMMON EXCAVATION, CLASS 5, SILT FENCE, SEEDING, FERTILIZER AND EROSION CONTROL BLANKET (SEE RIGHT TURN LAND AND BYPASS SEQ)
12	ITEM INCLUDES GRATE
13	INCLUDES STREET APPROACHES
14	INCLUDES SAFETY EDGE

CSAH 22	BASIS OF PLANNED QUANTITIES	
2211.501	AGGREGATE BASE CLASS 5	CU YDS * 1.8 = TONS
2221.501	AGGREGATE SHOULDERING CLASS 5	CU YDS * 1.8 = TONS
2357.502	BITUMINOUS MATERIAL FOR TACK COAT	.05 GAL / SQ YD
2360.501	TYPE SP 12.5 WEARING COURSE MIX (4,E)	115 LBS/SQYD/IN
2360.502	TYPE SP 12.5 NON WEAR COURSE MIX (4,B)	115 LBS/SQYD/IN
2580.603	REMOVABLE PREFORMED PLASTIC MARKING	2' AT 50' INTERVALS FOR SKIPS

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\12-01-00\CSAH_22_(East_of_75)\Plan\2 Seq.dgn 03/01/2012 7:07:56 AM

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SIGNATURE:

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CHECKED BY JO DATE 2-29-2012

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO.

STATE AID PROJECT NO.

CITY PROJECT NO.

COUNTY PROJECT NO. 11-16-22

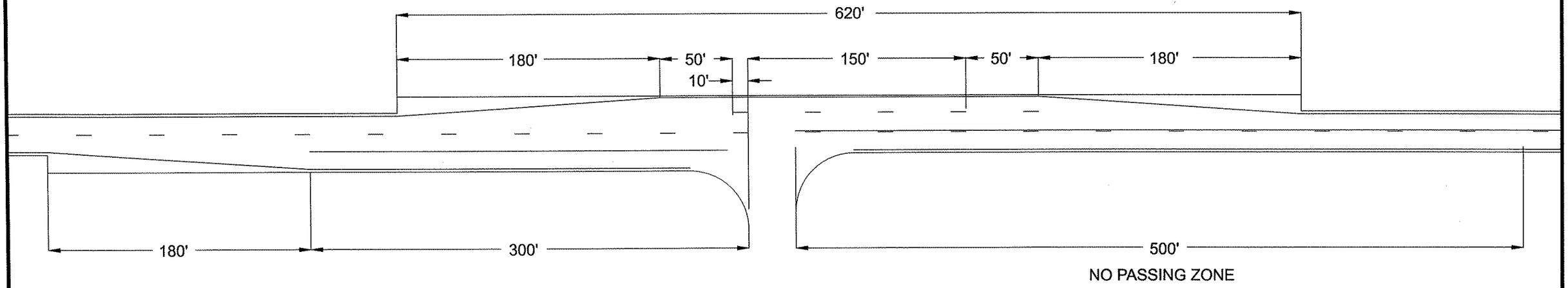
STATEMENT OF ESTIMATED QUANTITIES

ESTIMATED QUANTITIES FOR RIGHT TURN LANES AND BYPASS LANES

LOCATION	STATION TO STATION	LENGTH	WIDTH	COMMON EX		SELECT GRANULAR			SILT FENCE, TYPE MACHINE SLICED	EROSION CONTROL BLANKET CAT 3	SEEDING	FERTILIZER TYPE 3 (RATE - 350 LBS PER ACRE)
				DEPTH (FT)	VOLUME (CY)	DEPTH (FT)	VOLUME (CY)	CLASS 5 (CY)	(LIN FT)	(SQ YD)	(ACRE)	(POUND)
RTL - EAST BAYLOR ST	20+55 - 25+35	480	9.87	0.5	87.73	0.5	87.73	35.56	580.0	515.6	0.11	37.28
RTL - WEST BAYLOR ST	39+47 - 44+27	480	9.58	0.5	85.16	1.74	296.34	35.56	580.0	515.6	0.11	37.28
RTL - FURMAN ST	41+85 - 48+12	480	16.58	0.5	147.38	0.57	168.01	35.56	580.0	515.6	0.11	37.28
BYPASS - FURMAN ST	47+60 - 52+38	565	14.62	0.5	152.97	1.85	565.98	41.85	665.0	591.1	0.12	42.75
BYPASS - HEIDELBERG ST	49+96 - 56+16	318	14.36	0.5	84.56	0.83	140.38	23.56	418.0	371.6	0.08	26.87
BYPASS - EAST BAYLOR ST	56+92 - 63+12	100	16.72	0.5	30.96	0.77	47.68	7.41	200.0	177.8	0.04	12.86

Note:
CLASS 5 WIDTH IS ASSUMED TO BE 4 FEET
CLASS 5 DEPTH IS ASSUMED TO BE 0.5 FEET
COMMON EX. DEPTH IS ASSUMED TO BE 0.5 FEET
DOZER, MOTOR GRADER, AND PNEUMATIC-TIRED ROLLER ASSUMED TO BE 2 HOURS EACH PER LOCATION

TURN LANE AND BYPASS TYPICAL



NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\12-01-00\CSAH_22_(East_of_75)\Plan\2A TURN-BYPASS.dgn 02/29/2012 11:33:29 AM

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PRINT NAME: CHARLES CADENHEAD
SIGNATURE:
DATE: 3/9/12 LICENSE NO. 40416

DRAWN BY JJ DATE 2-29-2012
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CHECKED BY JO DATE 2-29-2012

ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO.
STATE AID PROJECT NO.
CITY PROJECT NO.
COUNTY PROJECT NO. 11-16-22

TURN LANE/BYPASS TABULATION

Sheet 3 of 22 Sheets

TURN LANE AND BYPASS BREAKDOWN

ESTIMATED AVERAGE DEPTH FOR RT. TURN LANES AND BYPASSES USING ELEVATION AT EDGE OF MAT, SHOULDER PI, AND DITCH

RTL - WEST BAYLOR ST

LEB: 20+55 - 25+35 RT
Length of Fill Area: 480

PI	PI ELEV	DITCH ELEV	LENGTH	EM	STATION
-1.80	903.71	901.19	8.5	904.05	20+55
0.00	903.53	900.69	9.8	903.97	21+05
1.50	903.60	901.11	10.4	904.01	21+90
1.80	904.20	901.52	10	904.50	23+50
1.00	904.87	902.42	8.9	905.25	24+50
0.50	**903.98**	**901.39**	**9.52**		

2.60	**Ave Elev Dif.**	
9.87	**Slope Dist.**	
4.93	**X-Sec Area**	

RTL - EAST BAYLOR ST

LEB: 39+47 - 44+27 RT
Length of Fill Area: 480

PI	PI ELEV	DITCH ELEV	LENGTH	EM	STATION
1.70	914.67	912.06	9.5	915.33	39+75
2.00	913.89	911.66	10.3	914.23	40+70
1.50	913.45	911.03	9.6	913.68	41+80
1.50	913.11	910.30	8.3	913.40	42+65
2.00	912.53	910.01	8.5	913.05	43+70
1.74	**913.53**	**911.01**	**9.24**		

2.52	**Ave Elev Dif.**	
9.58	**Slope Dist.**	
16.66	**X-Sec Area**	

RTL - FURMAN ST

LEB: 47+60 - 52+38
Length of Fill Area: 480

PI	PI ELEV	DITCH ELEV	LENGTH	EM	STATION
3.50	910.72	906.85	19.8	911.10	47+75
3.00	909.64	906.11	17.9	910.00	48+70
1.20	908.72	905.30	18.7	909.15	49+75
1.00	907.91	904.32	18.2	908.27	50+70
0.70	906.78	903.90	16.1	907.28	51+75
0.00	906.31	903.61	15.4	906.68	52+20
0.57	**907.00**	**903.94**	**16.56667**		

3.06	**Ave Elev Dif.**	
16.58	**Slope Dist.**	
9.39	**X-Sec Area**	

BYPASS - EAST BAYLOR ST

LWB: 41+85 - 48+12 LT
Length of Fill Area: 100

PI	PI ELEV	DITCH ELEV	LENGTH	EM	STATION
1.30	912.38	909.76	16	913.04	42+70
1.00	912.29	908.87	17.1	912.71	43+20
0.00	912.07	908.89	17	912.07	43+60
0.77	912.25	909.17	16.7		

3.07	**Ave Elev Dif.**	
16.72	**Slope Dist.**	
12.82	**X-Sec Area**	

BYPASS - FURMAN ST

LWB: 49+96 - 56+16
Length of Fill Area: 565

PI	PI ELEV	DITCH ELEV	LENGTH	EM	STATION
1.80	907.69	904.33	16.9	908.02	50+25
1.70	907.13	903.92	16.6	907.54	51+30
2.20	906.02	904.10	14.7	906.60	52+30
2.30	905.43	902.60	14	905.93	53+45
1.70	904.85	903.38	12.9	904.96	54+45
1.40	903.61	901.83	11.9	904.25	56+00
1.85	905.79	903.36	14.5		

2.43	**Ave Elev Dif.**	
14.62	**Slope Dist.**	
27.04	**X-Sec Area**	

BYPASS - HEIDELBERG ST

LWB: 56+92 - 63+12
Length of Fill Area: 318

PI	PI ELEV	DITCH ELEV	LENGTH	EM	STATION
1.00	902.49	899.59	13.1	902.72	59+90
1.00	902.30	898.99	16.2	902.61	60+90
0.50	901.37	897.77	13.7	901.78	62+50
0.83	902.05	898.78	14.33333		

3.27	**Ave Elev Dif.**	
14.36	**Slope Dist.**	
11.96	**X-Sec Area**	

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\12-01-00\CSAH_22_(East_of_75)\Plan\2A TURN-BYPASS.dgn 02/29/2012 11:33:39 AM

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ANOKA COUNTY
HIGHWAY DEPT.

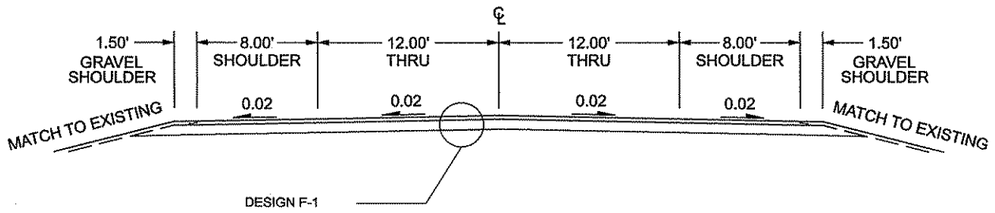
STATE PROJECT NO.
STATE AID PROJECT NO.
CITY PROJECT NO.
COUNTY PROJECT NO. 11-16-22

TURN LANE/BYPASS TABULATION

Sheet 4 of 22 Sheets

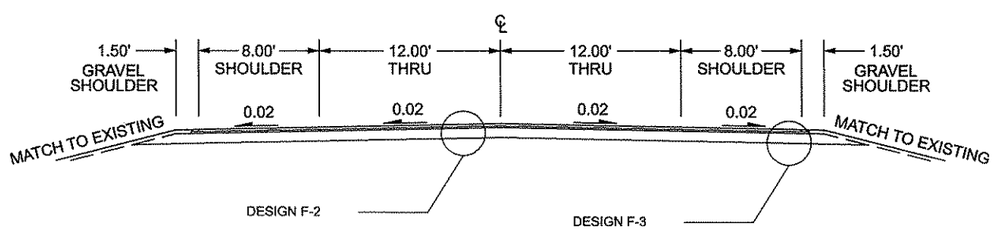
C.S.A.H. 22
EXISTING ROAD - RURAL SECTION

20+38 - 174+95 LT RT



C.S.A.H. 22
PROPOSED ROAD - RURAL SECTION

20+38 - 174+95 LT RT



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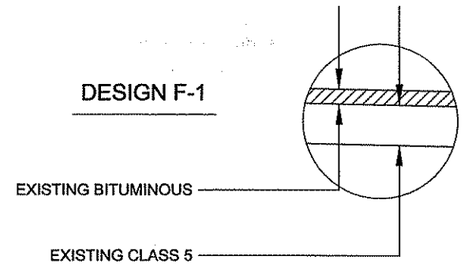

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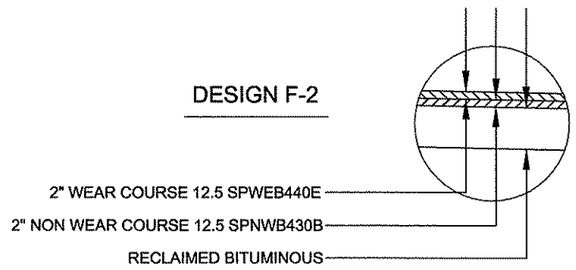

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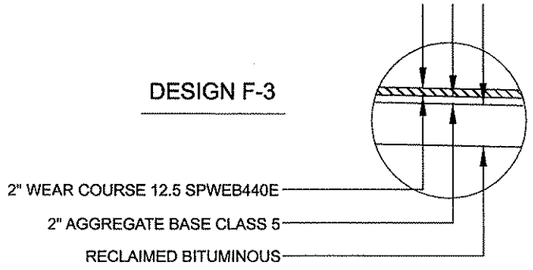

GENERAL NOTES:

- ALL CROSS SLOPES ARE APPROXIMATE
- UNLESS OTHERWISE SPECIFIED, THE CLASS 5 CROSS SLOPES SHALL BE THE SAME AS THE FINISHED SURFACE OF THE MAINLINE.

NO	DATE	BY	CKD	APPR	REVISION
NAME: P:\12-01-00\CSAH_22_(East_of_75)\Plan\3 typicals.dgn					02/29/2012 11:15:24 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.
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ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO.
STATE AID PROJECT NO.
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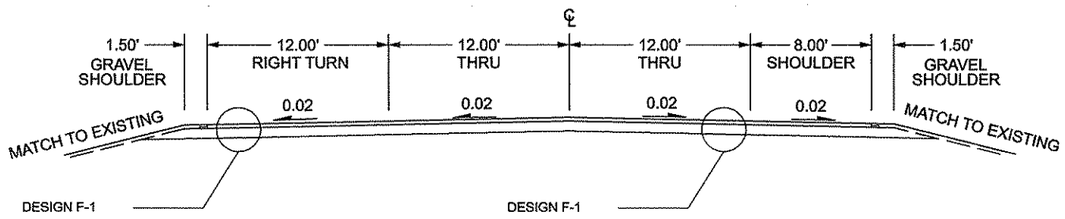
TYPICAL SECTIONS

Sheet 5 of 22 Sheets

C.S.A.H. 22
EXISTING ROAD - RURAL SECTION

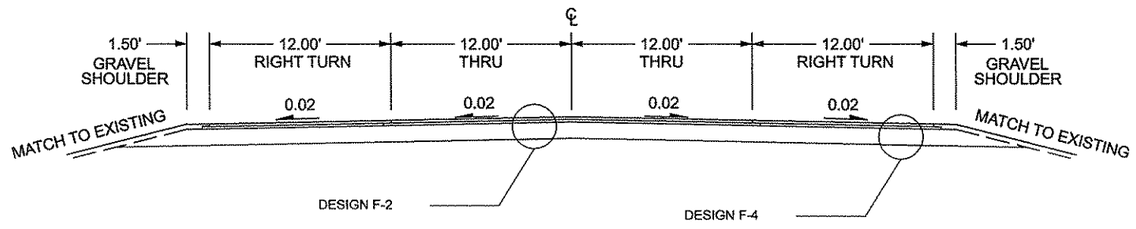
20+38 - 24+30 LT

61+00 - 65+69 LT



C.S.A.H. 22
PROPOSED ROAD - RURAL SECTION

20+38 - 24+30 LT	20+55 - 25+35 RT
41+85 - 48+12 LT	39+47 - 44+27 RT
49+96 - 56+16 LT	47+60 - 52+38 RT
61+00 - 65+69 LT	56+92 - 63+12 RT



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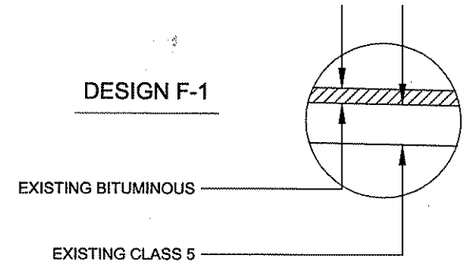

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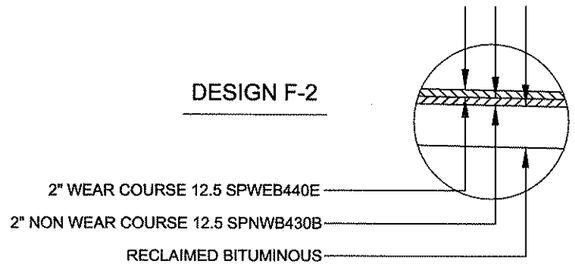

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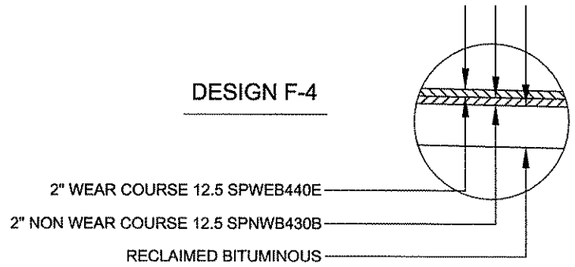

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NAME: P:\12-01-00\CSAH_22_(East_of_75)\Plan\3 typicals.dgn 02/29/2012 11:15:44 AM

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DRAWN BY JJ DATE 2-29-2012

DESIGN BY JJ DATE 2-29-2012

CHECKED BY JO DATE 2-29-2012

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO.

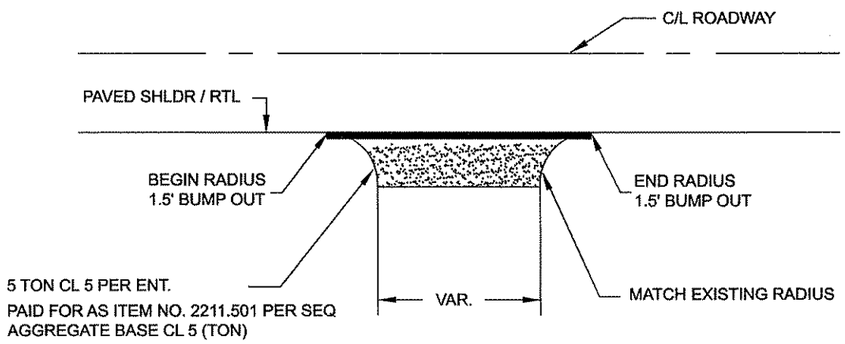
STATE AID PROJECT NO.

CITY PROJECT NO.

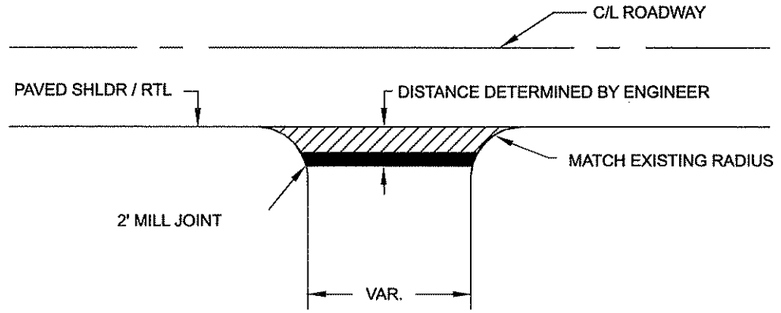
COUNTY PROJECT NO. 11-12-14

TYPICAL SECTIONS

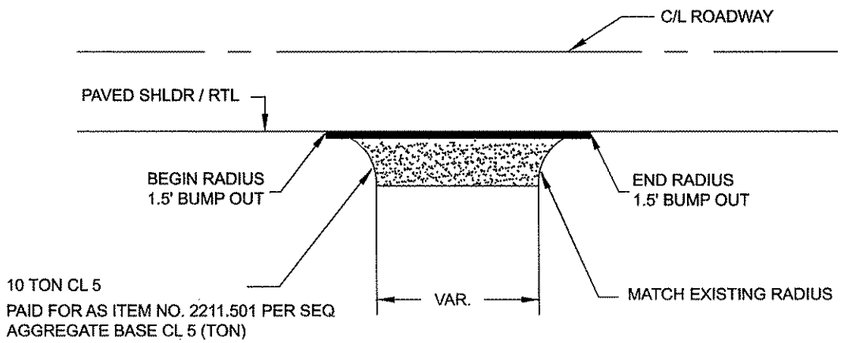
GRAVEL DR. WAYS AND FIELD ENT



PAVED DR. WAYS

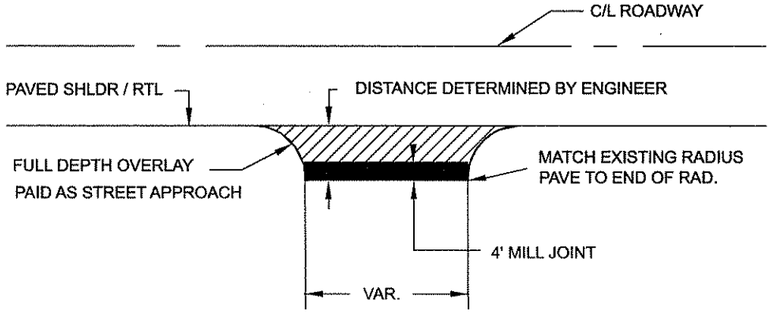


UN-PAVED STREET APPROACHES



UNPAVED STREET APPROCHES AND DRIVEWAYS BUMPED OUT,
PAVED WITH MAINLINE, PAID AS MAINLINE

PAVED STREET APPROACHES



DRIVEWAYS TO BE PAVED IN SEPARATE OPERATION FROM MAINLINE WEAR.
PAID AS STREET APPROACH WEAR

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\12-01-00\CSAH_22_(East_of_75)\Plan\4 Details.dgn 02/29/2012 11:16:13 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: CHARLES CADENHEAD
SIGNATURE:
DATE: 2/29/12 LICENSE NO. 40416

DRAWN BY JJ DATE 2-29-2012
DESIGN BY JJ DATE 2-29-2012
CHECKED BY JO DATE 2-29-2012

ANOKA COUNTY
HIGHWAY DEPT.

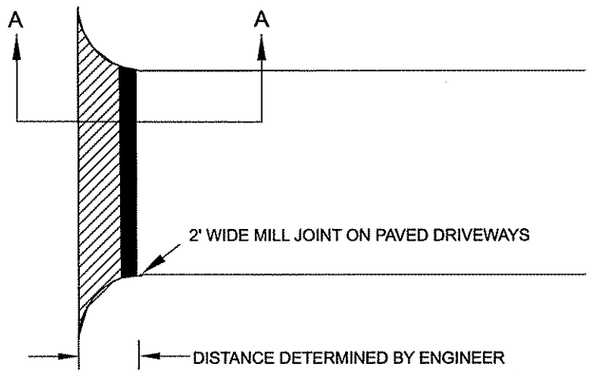
STATE PROJECT NO.
STATE AID PROJECT NO.
CITY PROJECT NO.
COUNTY PROJECT NO. 11-16-22

MISCELLANEOUS DETAILS

Sheet 7 of 22 Sheets

PAVED DRIVEWAYS

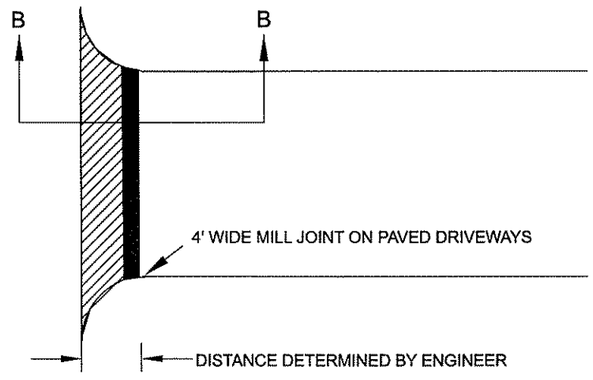
JOINT DETAILS



DRIVEWAYS TO BE PAVED IN SEPARATE OPERATION OTHER THAN MAINLINE WEAR.
PAID AS DRIVEWAY/STREET APPROACH WEAR

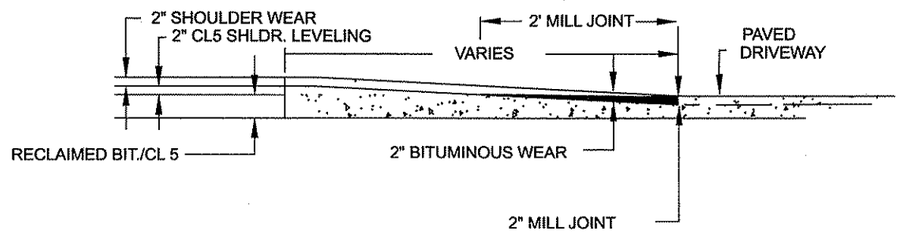
PAVED STREETS

JOINT DETAILS



OVERLAY EXISTING STEET APPROACH, DO NOT RECLAIM
STREETS TO BE PAVED IN SEPARATE OPERATION OTHER THAN MAINLINE WEAR.
PAID AS DRIVEWAY/STREET APPROACH BASE AND WEAR

DRIVEWAY JOINT DETAILS



SAFETY EDGE CONSTRUCTION DETAIL

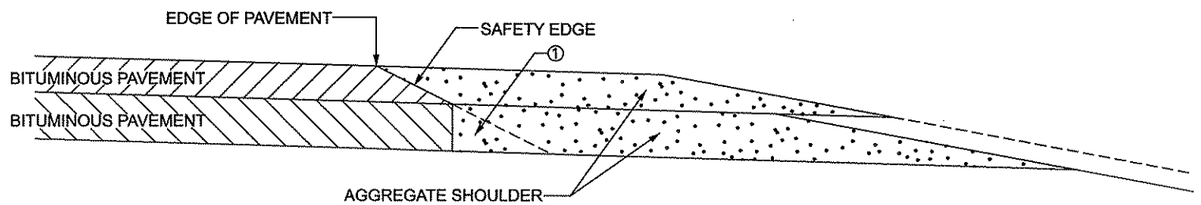
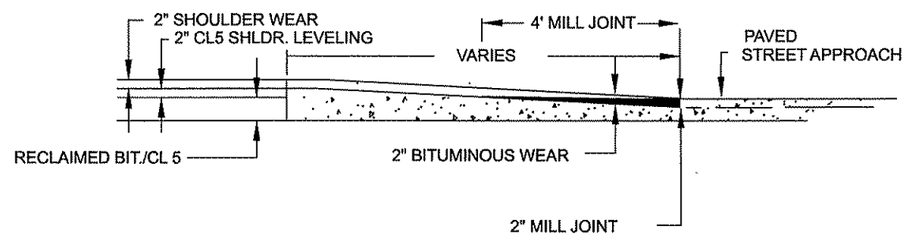


FIGURE B
BITUMINOUS PAVEMENT

① OPTIONAL DESIGN EXTENDS SAFETY EDGE DEEPER
THAN 6" AND WIDER THAN 10.5". SEE PLAN DESIGN DETAILS.

STREET APPROACH JOINT DETAILS



NO	DATE	BY	CKD	APPR	REVISION
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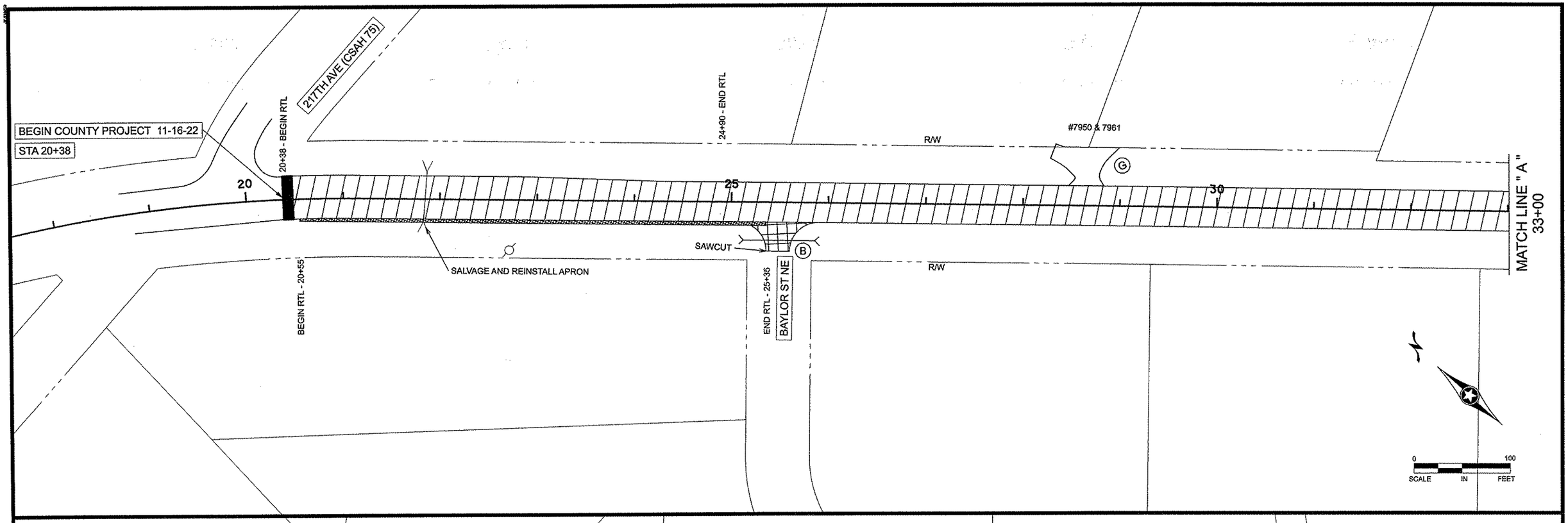
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
PRINT NAME: CHARLES CADENHEAD
SIGNATURE:
DATE: 2/29/12 LICENSE NO. 40416

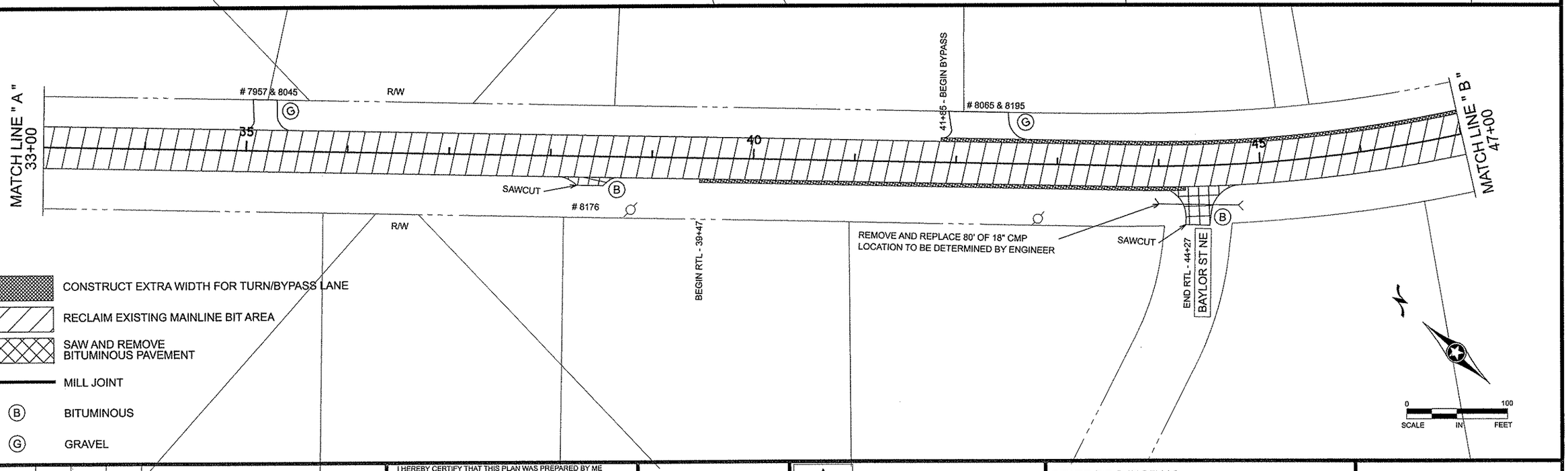
DRAWN BY JJ DATE 2-29-2012
DESIGN BY JJ DATE 2-29-2012
CHECKED BY JO DATE 2-29-2012

ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO.
STATE AID PROJECT NO.
CITY PROJECT NO.
COUNTY PROJECT NO. 11-16-22

MISCELLANEOUS DETAILS





NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\12-01-00\CSAH_22_(East_of_75)\Plan\5 plan .dgn 02/29/2012 12:37:45 PM

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: CHARLES CADENHEAD

SIGNATURE:

DATE: 2/29/12 LICENSE NO. 40416

DRAWN BY JJ DATE 2-29-2012

DESIGN BY JJ DATE 2-29-2012

CHECKED BY JO DATE 2-29-2012

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO.

STATE AID PROJECT NO.

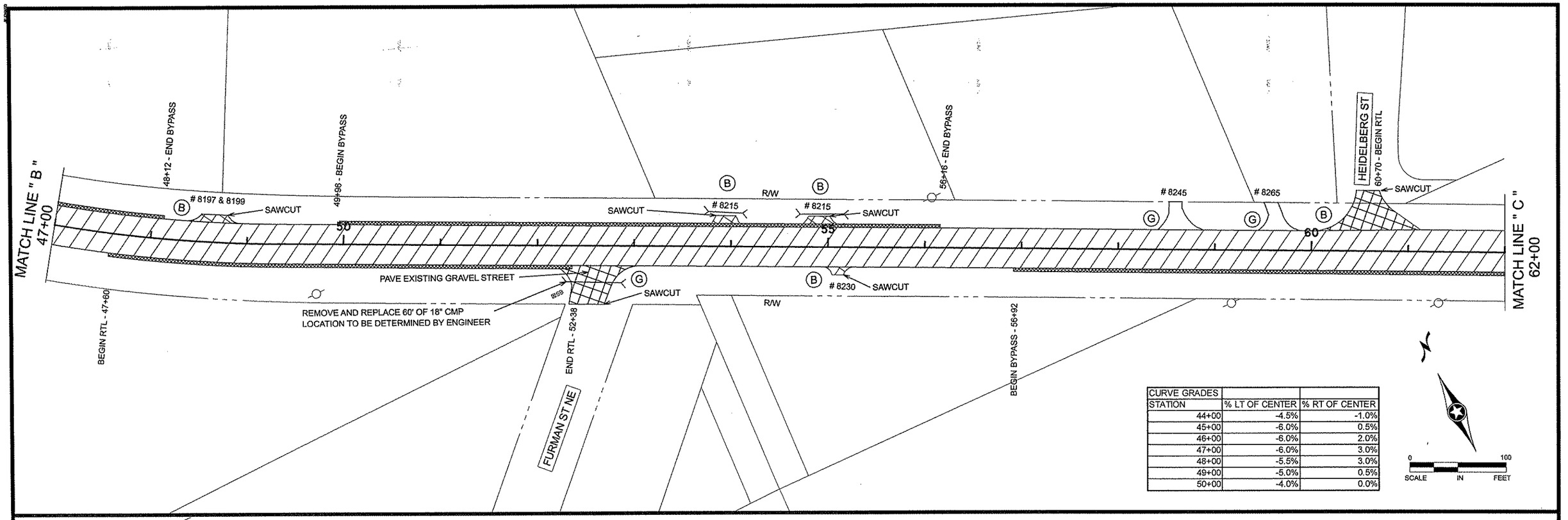
CITY PROJECT NO.

COUNTY PROJECT NO. 11-16-22

CONSTRUCTION PLAN

STA 19+00 TO 47+00

Sheet 9 of 22 Sheets



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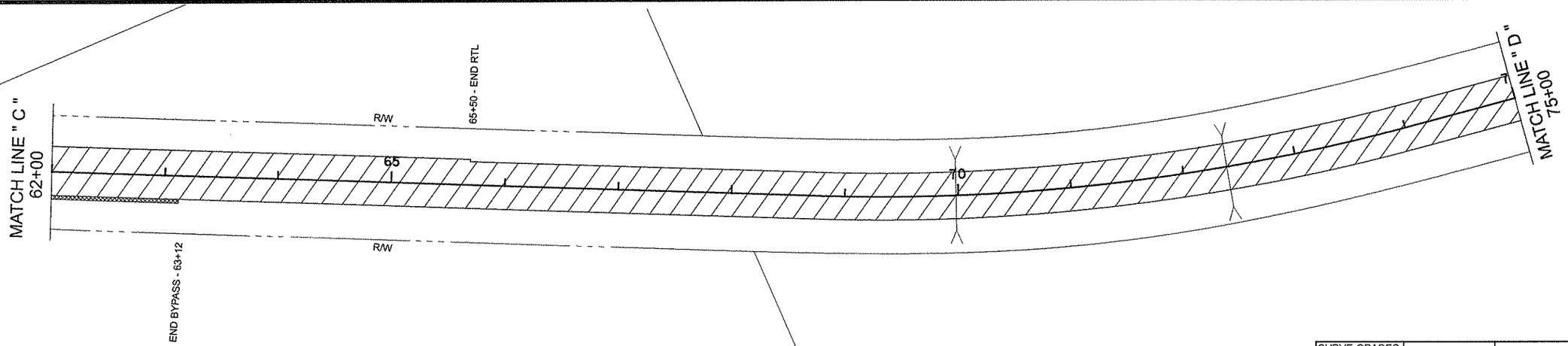

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74+00	-5.0%	0.0%
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NO	DATE	BY	CKD	APPR	REVISION

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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: CHARLES CADENHEAD

SIGNATURE:

DATE: 3/6/12 LICENSE NO. 40416

DRAWN BY JJ DATE 2-29-2012

DESIGN BY JJ DATE 2-29-2012

CHECKED BY JO DATE 2-29-2012

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO.

STATE AID PROJECT NO.

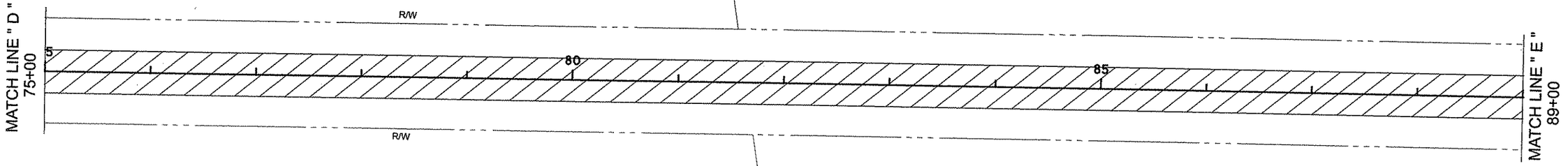
CITY PROJECT NO.

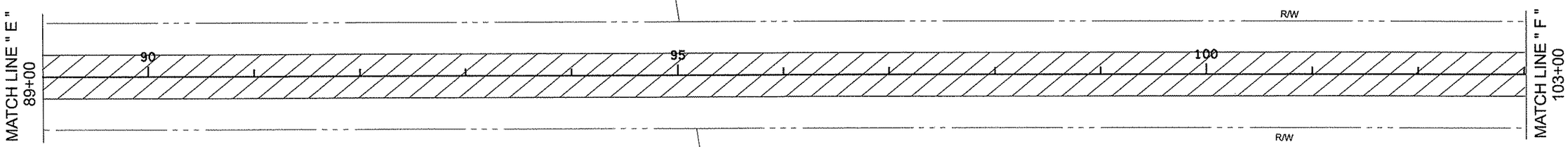
COUNTY PROJECT NO. 11-16-22

CONSTRUCTION PLAN

STA 47+00 TO 75+00

Sheet 10 of 22 Sheets





CONSTRUCT EXTRA WIDTH FOR TURN/BYPASS LANE

RECLAIM EXISTING MAINLINE BIT AREA

SAW AND REMOVE BITUMINOUS PAVEMENT

MILL JOINT

(B) BITUMINOUS

(G) GRAVEL

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\12-01-00\CSAH_22_(East_of_75)\Plan\5 plan .dgn 02/29/2012 12:38:08 PM

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: CHARLES CADENHEAD

SIGNATURE:

DATE: 2/29/12 LICENSE NO. 40416

DRAWN BY JJ DATE 2-29-2012

DESIGN BY JJ DATE 2-29-2012

CHECKED BY JO DATE 2-29-2012

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO.

STATE AID PROJECT NO.

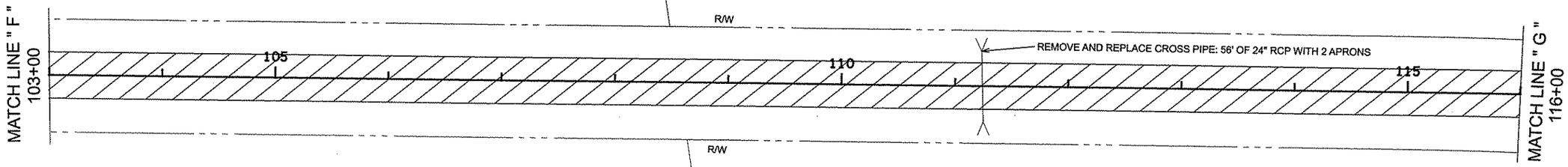
CITY PROJECT NO.

COUNTY PROJECT NO. 11-16-22

CONSTRUCTION PLAN

STA 75+00 TO 103+00

Sheet 11 of 22 Sheets



CONSTRUCT EXTRA WIDTH FOR TURN/BYPASS LANE

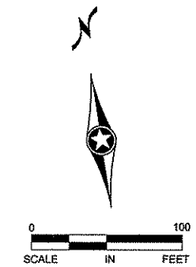
RECLAIM EXISTING MAINLINE BIT AREA

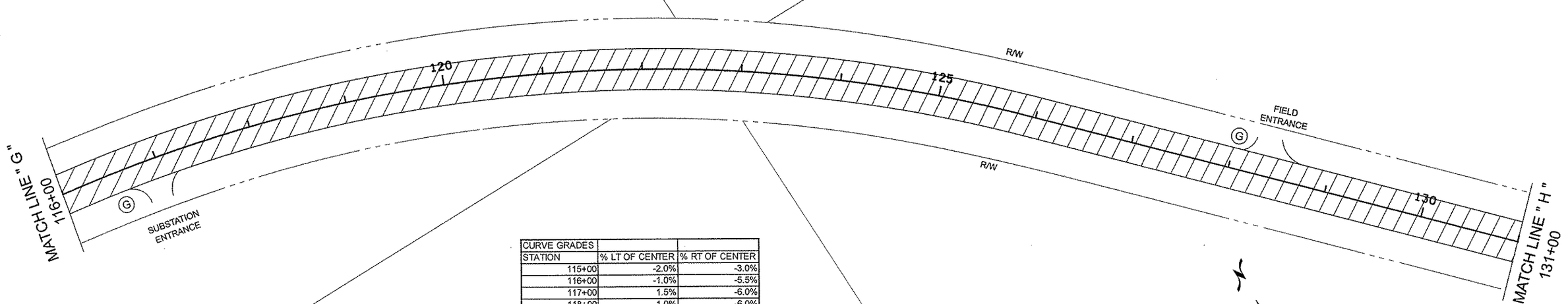
SAW AND REMOVE BITUMINOUS PAVEMENT

MILL JOINT

(B) BITUMINOUS

(G) GRAVEL





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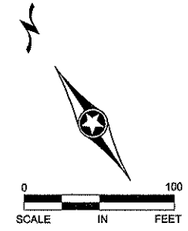


NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\12-01-00\CSAH_22_(East_of_75)\Plan\5 plan .dgn 02/29/2012 12:38:19 PM

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: CHARLES CADENHEAD

SIGNATURE:

DATE: 2/29/12 LICENSE NO. 40416

DRAWN BY JJ DATE 2-29-2012

DESIGN BY JJ DATE 2-29-2012

CHECKED BY JO DATE 2-29-2012

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO.

STATE AID PROJECT NO.

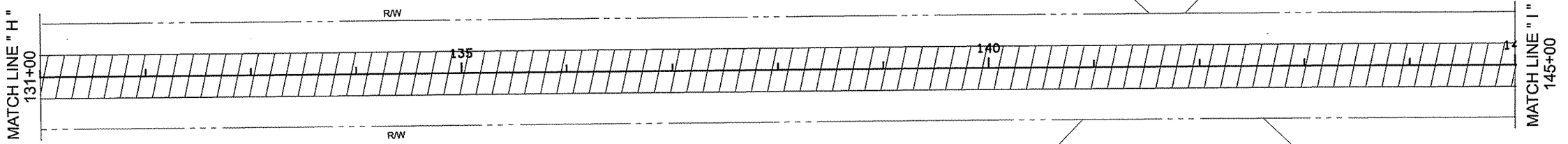
CITY PROJECT NO.

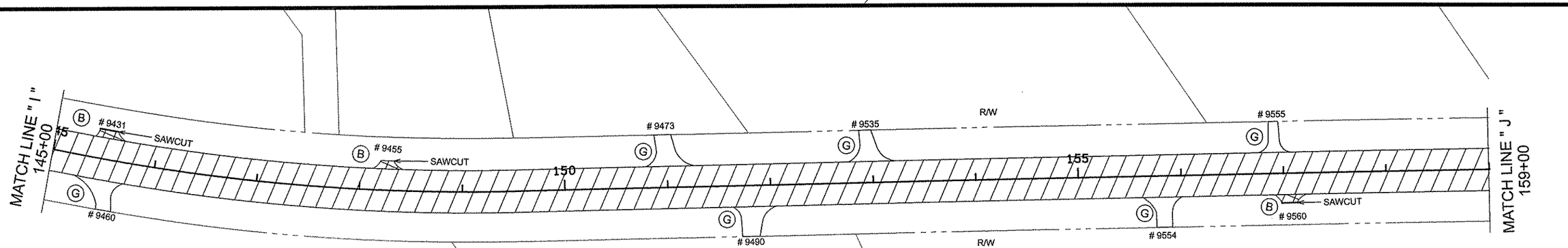
COUNTY PROJECT NO. 11-16-22

CONSTRUCTION PLAN

STA 103+00 TO 131+00

Sheet 12 of 22 Sheets





CONSTRUCT EXTRA WIDTH FOR TURN/BYPASS LANE

RECLAIM EXISTING MAINLINE BIT AREA

SAW AND REMOVE BITUMINOUS PAVEMENT

MILL JOINT

(B) BITUMINOUS

(G) GRAVEL

CURVE GRADES		
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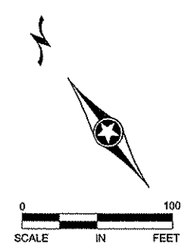

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\12-01-00\CSAH_22_(East_of_75)\Plan\5 plan .dgn 02/29/2012 12:38:37 PM

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: CHARLES CADENHEAD

SIGNATURE:

DATE: LICENSE NO. 40416

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ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO.

STATE AID PROJECT NO.

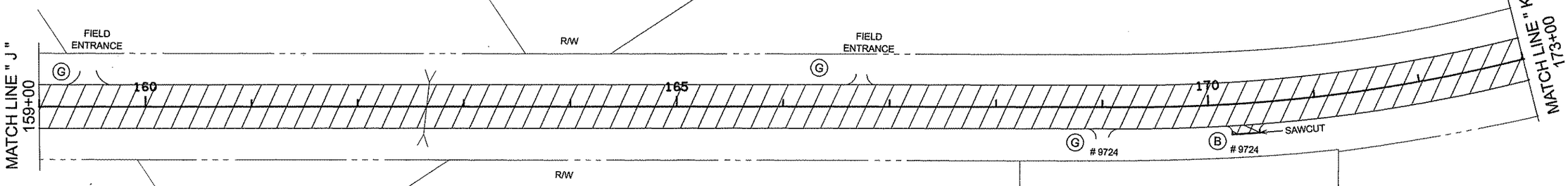
CITY PROJECT NO.

COUNTY PROJECT NO. 11-16-22

CONSTRUCTION PLAN

STA 131+00 TO 159+00

Sheet 13 of 22 Sheets



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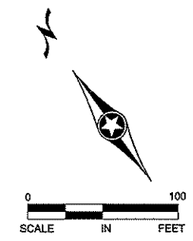
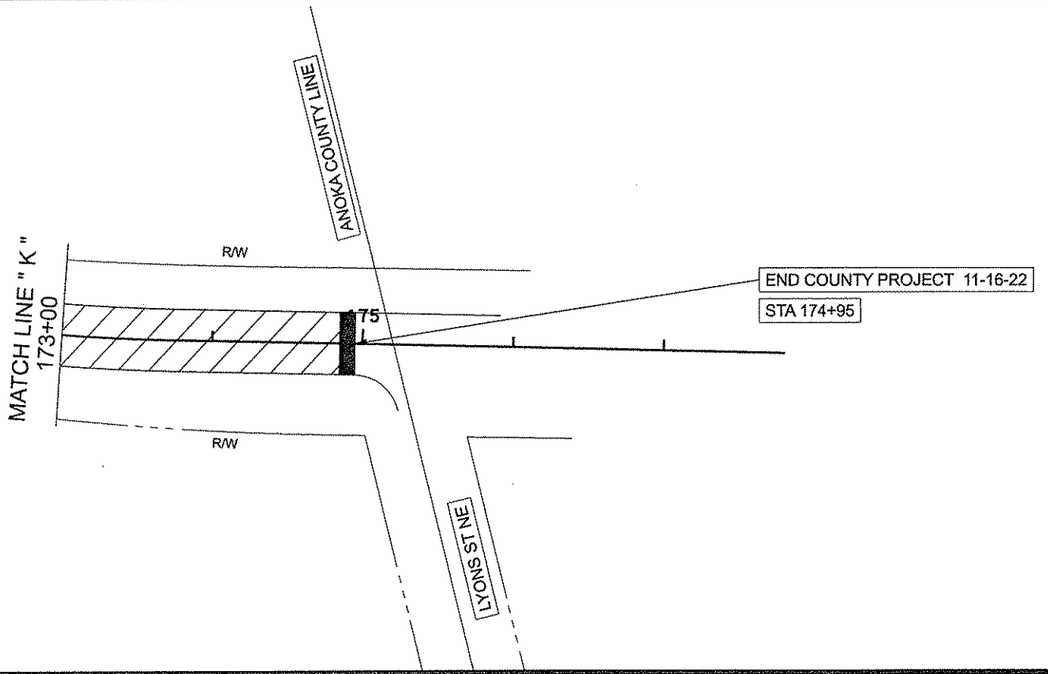




CONSTRUCT EXTRA WIDTH FOR TURN/BYPASS LANE

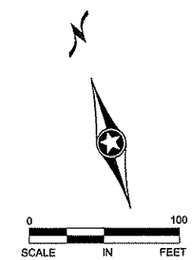
RECLAIM EXISTING MAINLINE BIT AREA

SAW AND REMOVE BITUMINOUS PAVEMENT

MILL JOINT

(B) BITUMINOUS

(G) GRAVEL



NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\12-01-00\CSAH_22_(East_of_75)\Plan\5 plan .dgn 02/29/2012 12:36:51 PM

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: CHARLES CADENHEAD

SIGNATURE: Charles Cadenhead

DATE: 3/2/12 LICENSE NO. 40416

DRAWN BY JJ DATE 2-29-2012

DESIGN BY JJ DATE 2-29-2012

CHECKED BY JO DATE 2-29-2012

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO.

STATE AID PROJECT NO.

CITY PROJECT NO.

COUNTY PROJECT NO. 11-16-22

CONSTRUCTION PLAN

STA 159+00 TO 178+00

Sheet 14 of 22 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 $\frac{1}{4}$ INCH UNDER OR $\frac{1}{4}$ 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 BEANS SHALL BE APPLIED IMMEDIATELY AFTER APPLICATION OF THE EPOXY RESIN LINE TO PROVIDE AN IMMEDIATE NO-TRACK SYSTEM.

AN EPOLY 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 APPLICAITON 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 FILD 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.

PAVEMENT MARKING QUANTITIES

Item	Quantity	Units
4" Double Solid Line Yellow - Epoxy	1747	Lin Ft
4" Solid Line Yellow - Epoxy	6294	Lin Ft
4" Broken Line Yellow - Epoxy (10 ft stripe / 40 ft gap)	2710	Lin Ft
4" Solid Line White - Epoxy	32010	Lin Ft
4" Broken Line White - Epoxy (10 ft stripe / 40 ft gap)	120	Lin Ft

SYMBOLS & MATERIALS LEGEND

CROSSWALK BLOCK WHITE PREFORMED THERMOPLASTIC

PAVEMENT MESSAGE (LEFT ARROW) PREFORMED THERMOPLASTIC

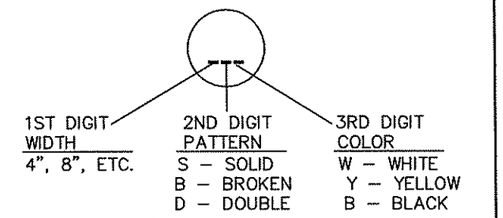
STRIPING KEY

CIRCLE - EPOXY

SQUARE PREFORMED THERMOPLASTIC

TRIANGLE - PAINT

PENTAGON - REMOVABLE PREFORMED PLASTIC MARKING



NO	DATE	BY	CKD	APPR	REVISION

NAME: T:\Traffic\dwg\CR 53\Perm pvmt mrkg guide notes_guidelines.dwg

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: CHARLES CADENHEAD
SIGNATURE:
DATE: 2/14/12 LICENSE NO. 40416

DRAWN BY MTH DATE 1/13/12
DESIGN BY ____ DATE ____
CHECKED BY JR DATE 2/14/12

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. ____
STATE AID PROJECT NO. ____
STATE AID PROJECT NO. ____
COUNTY PROJECT NO. 11-16-22

PERMANENT MARKING TABULATION

Sheet 15 of 22 Sheets

NOTES:

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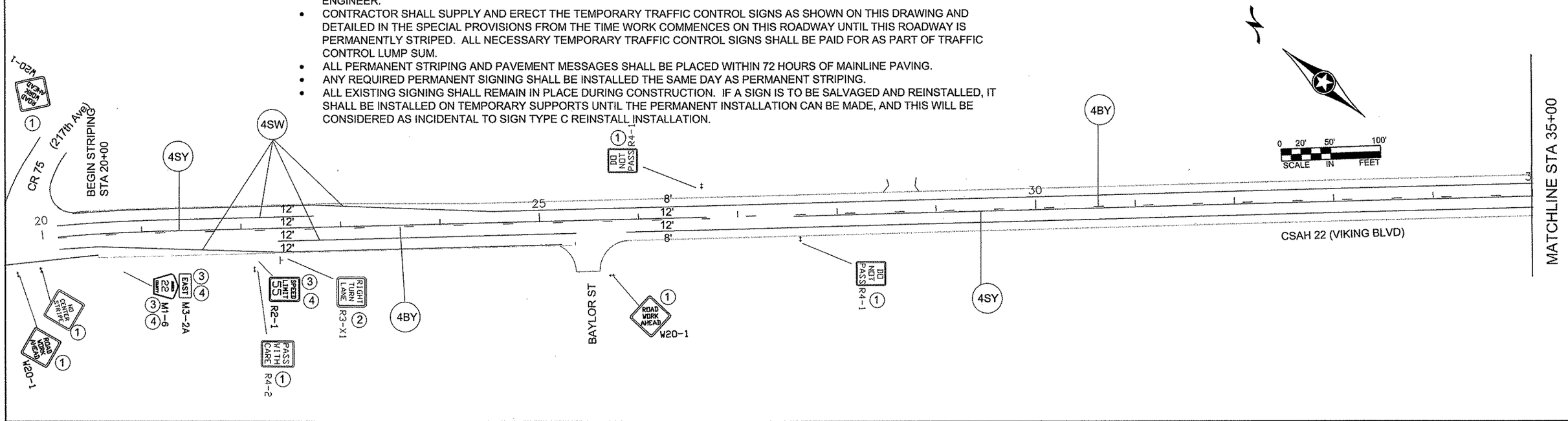

NO	DATE	BY	CKD	APPR	REVISION

NAME: T:\Traffic\dwg\CSAH 22 (Viking Blvd)\11-16-22.dwg

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SIGNATURE:

DATE: 3/2/12 LICENSE NO. 40416

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ANOKA COUNTY

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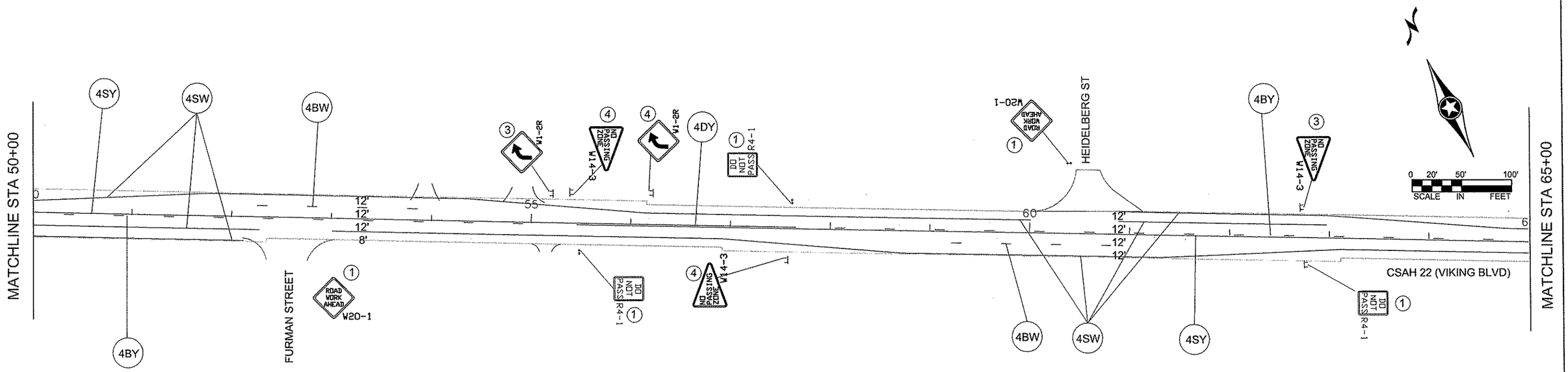
CSAH 22 (VIKING BLVD)
TEMPORARY SIGNING
PERMANENT SIGNING, STRIPING
AND PAVEMENT MESSAGES

Sheet 16 of 22 Sheets



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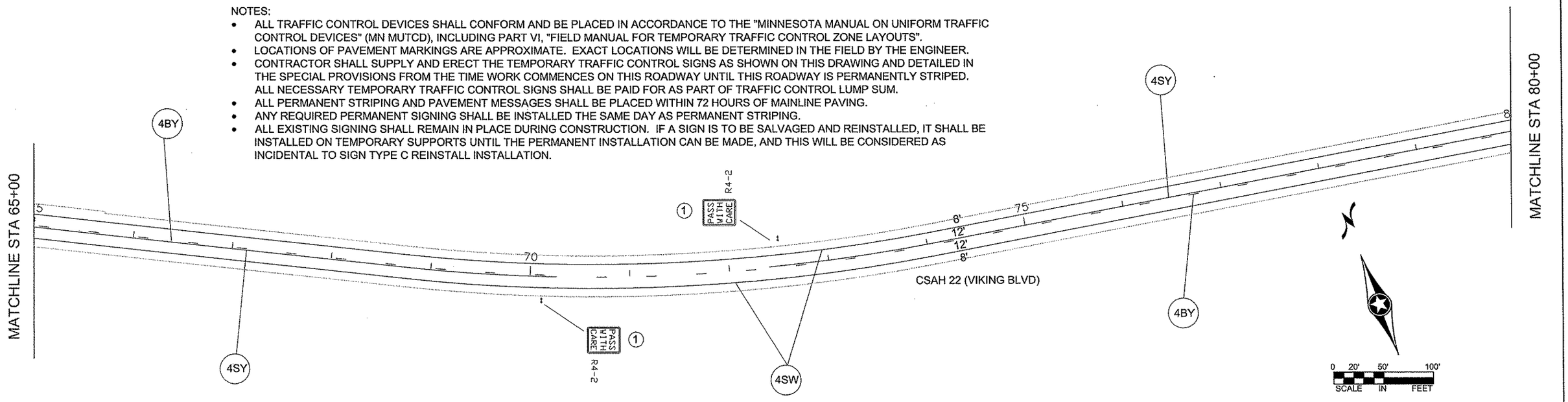

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SIGNATURE: [signature]

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CSAH 22 (VIKING BLVD)
TEMPORARY SIGNING
PERMANENT SIGNING, STRIPING
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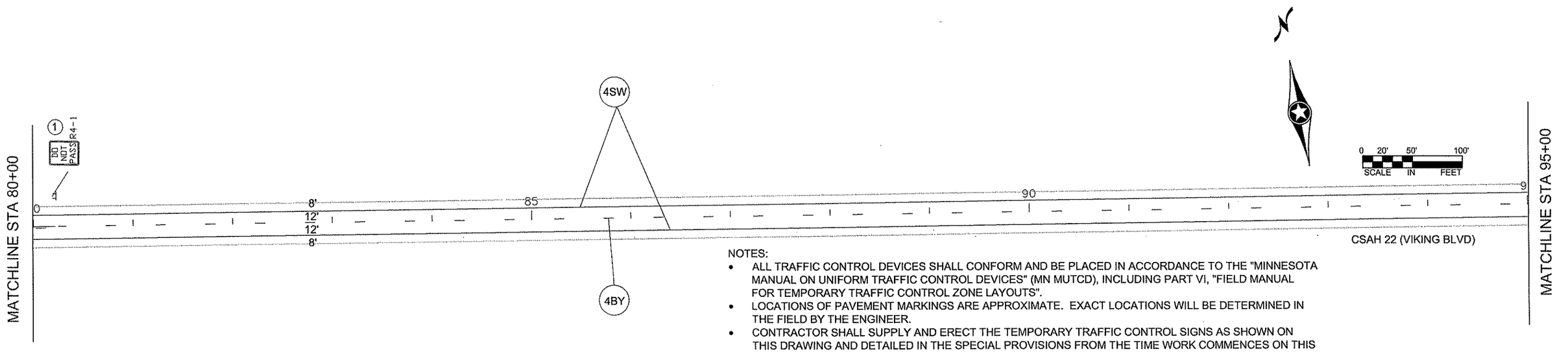
Sheet 17 of 22 Sheets



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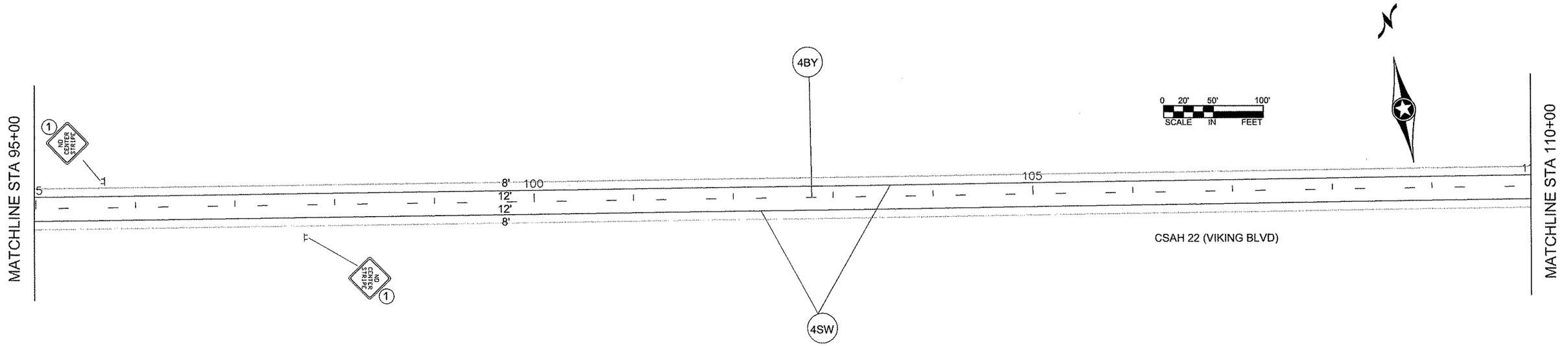

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CSAH 22 (VIKING BLVD)
TEMPORARY SIGNING
PERMANENT SIGNING, STRIPING
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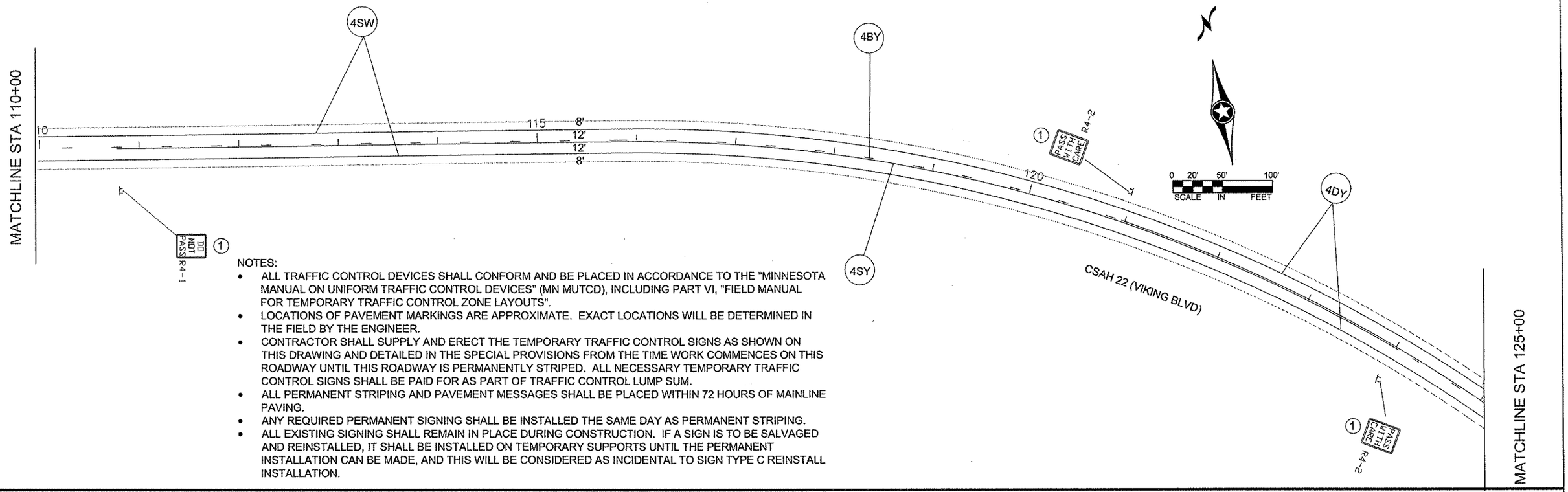
Sheet 18 of 22 Sheets



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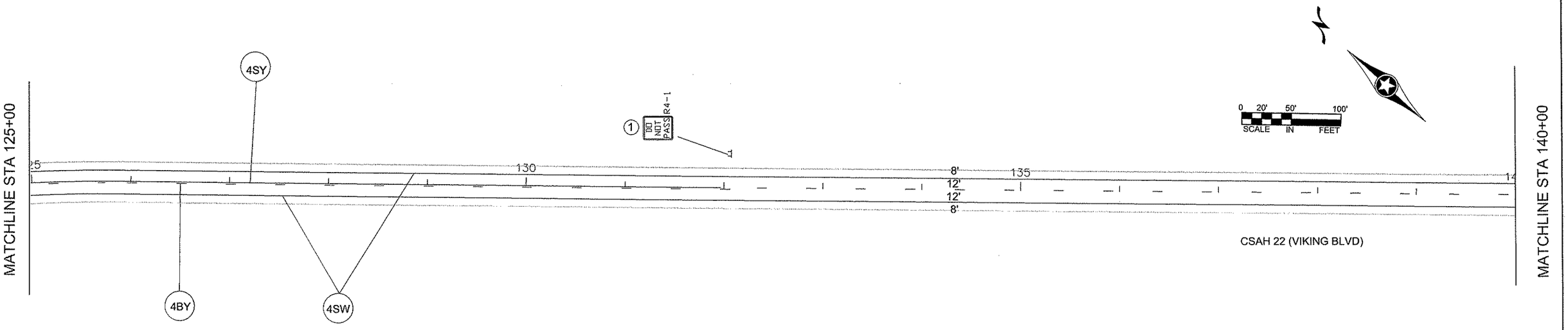

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Sheet 19 of 22 Sheets

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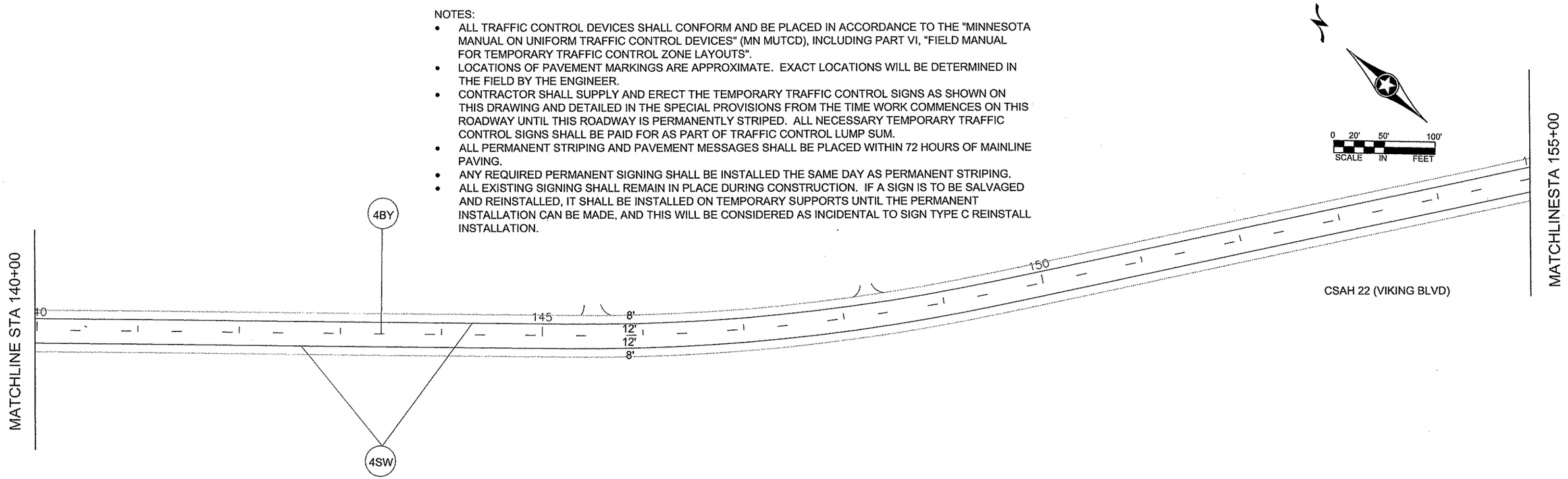

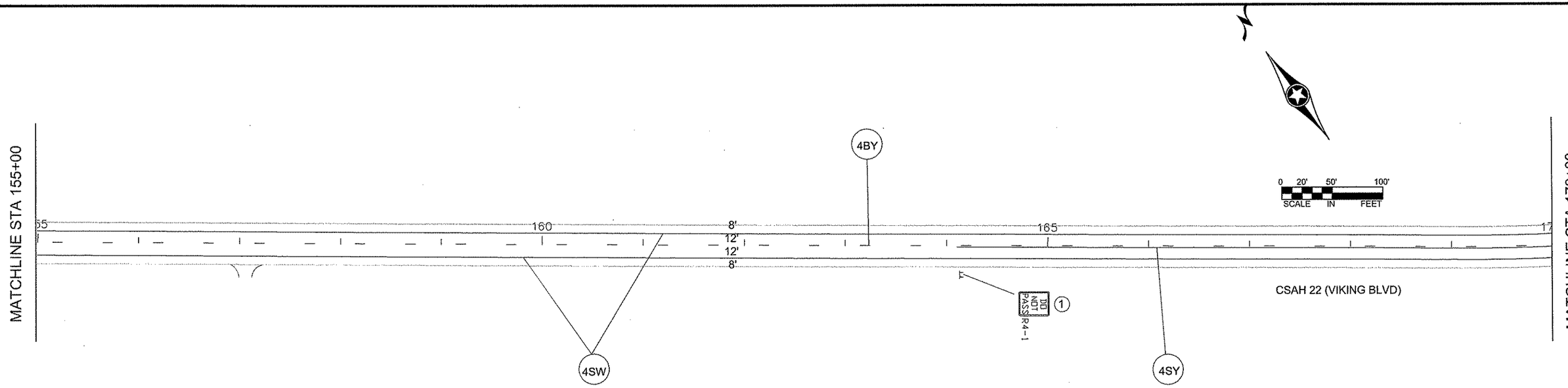

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CSAH 22 (VIKING BLVD)
TEMPORARY SIGNING
PERMANENT SIGNING, STRIPING
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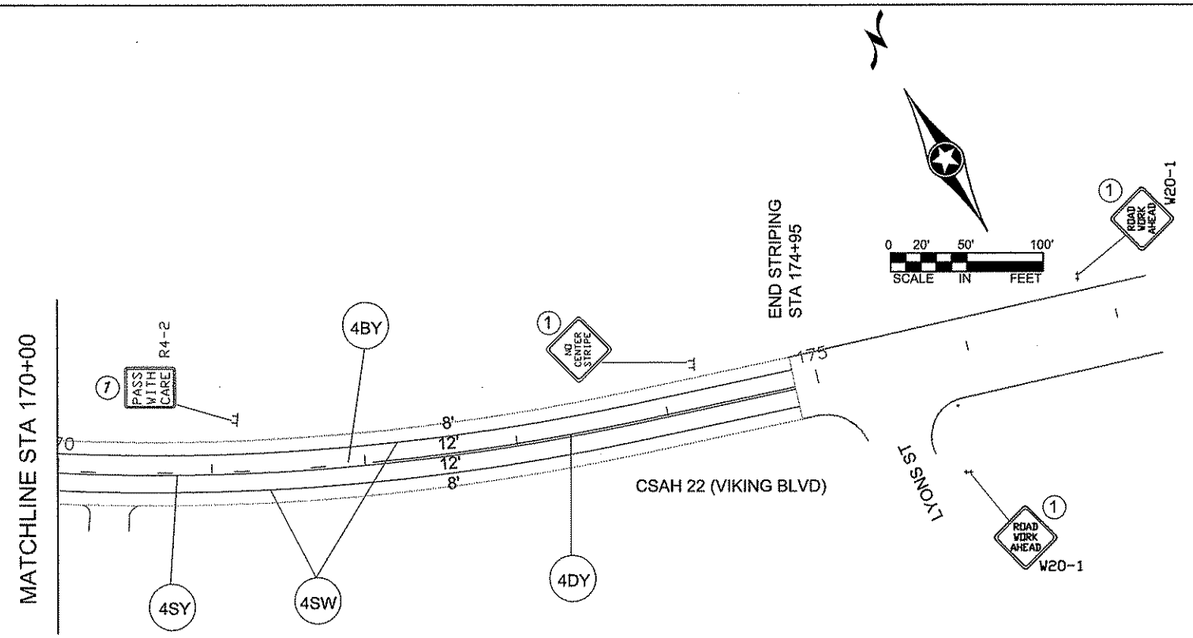
Sheet 20 of 22 Sheets



SALVAGE AND RE-INSTALL PERMANENT SIGNS

STATION		SALVAGE SIGN TYPE C	INSTALL SIGN TYPE C	SIGN NUMBER	NOTES
		EACH	EACH		
20+60	Rt	1	1	M3-2A	
20+60	Rt			M1-6	
22+00	Rt	1	1	R2-1	
42+00	Rt	1	1	W14-3	
55+15	Lt	1	1	W1-2R	
62+70	Lt	1	1	W14-3	
TOTAL		5	5		

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PERMANENT SIGNS

M.U.T.C.D. CODE	SIZE	PANEL AREA FT.²	INSERT	QUANTITY	No. POST	MOUNTING HEIGHT (TO PAVEMENT EDGE) FT.	TOTAL AREA FT.²
R3-X1	30" x 30"	6.25	RIGHT TURN LANE R3-X1	3	1	7.0'	18.75
						TOTAL PANEL AREA	18.75

SEE SPECIAL PROVISIONS

1. TEMPORARY TRAFFIC CONTROL SIGN
2. F & I PERMANENT SIGN
3. SALVAGE PERMANENT SIGN
4. RE-INSTALL PERMANENT SIGN

TEMPORARY TRAFFIC CONTROL SIGNS

M.U.T.C.D. CODE	SIZE	PANEL AREA FT.²	INSERT	QUANTITY	No. POST	MOUNTING HEIGHT (TO PAVEMENT EDGE) FT.
W8-1A	48" x 48"	16.00	BUMP AHEAD W8-1A	AS NEEDED		
W8-1A	48" x 48"	16.00	BUMP W8-1A	AS NEEDED		
W8-8	48" x 48"	16.00	ROUGH ROAD W8-8	AS NEEDED		
W8-11	48" x 48"	16.00	UNEVEN LANES W8-11	AS NEEDED		
W20-1	48" x 48"	16.00	ROAD WORK AHEAD W20-1	AS NEEDED (ESTIMATED 8)		
W8-12	48" x 48"	16.00	NO CENTER STRIPE	4	2	7.0'
R4-1	24" x 30"	5.00	DO NOT PASS R4-1	10	1	7.0'
R4-2	24" x 30"	5.00	PASS WITH CARE R4-2	8	1	7.0'

NO	DATE	BY	CKD	APPR	REVISION

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CSAH 22 (VIKING BLVD)
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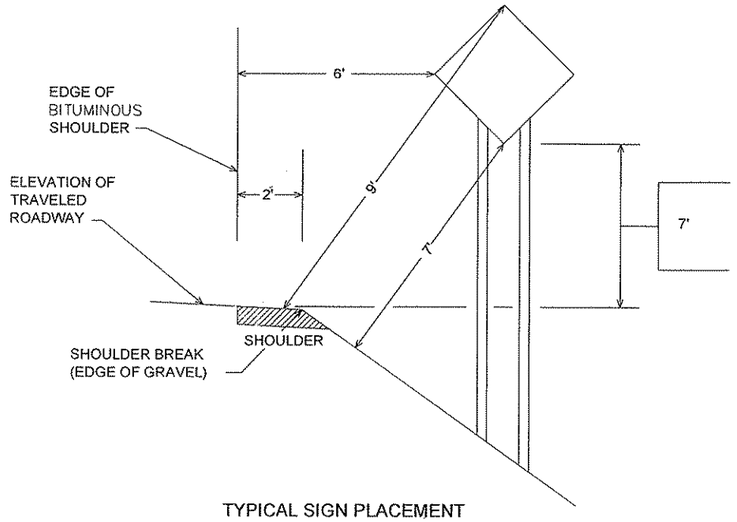
PERMANENT SIGNING, STRIPING AND PAVEMENT MESSAGES

Sheet 21 of 22 Sheets

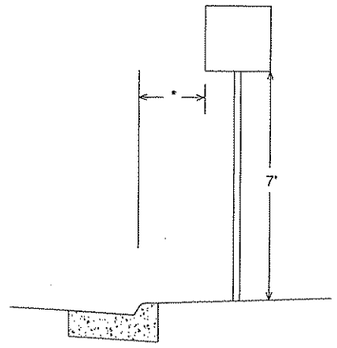
RURAL

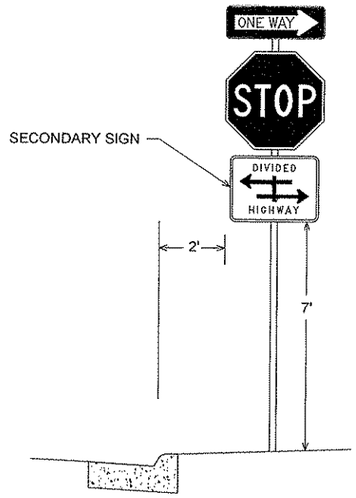


TYPICAL SIGN PLACEMENT

URBAN

* 2' - NARROW BOULEVARD (< 8' WIDE)
6' - WIDE BOULEVARD





TYPICAL SIGN PLACEMENT

NOTE:

- ALL DIMENSIONS ARE MINIMUMS
- MAINTAIN 2' CLEAR FROM SIGNS TO BITUMINOUS TRAIL

NO	DATE	BY	CKD	APPR	REVISION

NAME: T:\Traffic\Dwg\CSAH 22\Sign&Stripe_Details.dwg

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SIGNING & STRIPING DETAILS

Sheet 22 of 22 Sheets