

# MINNESOTA DEPARTMENT OF TRANSPORTATION

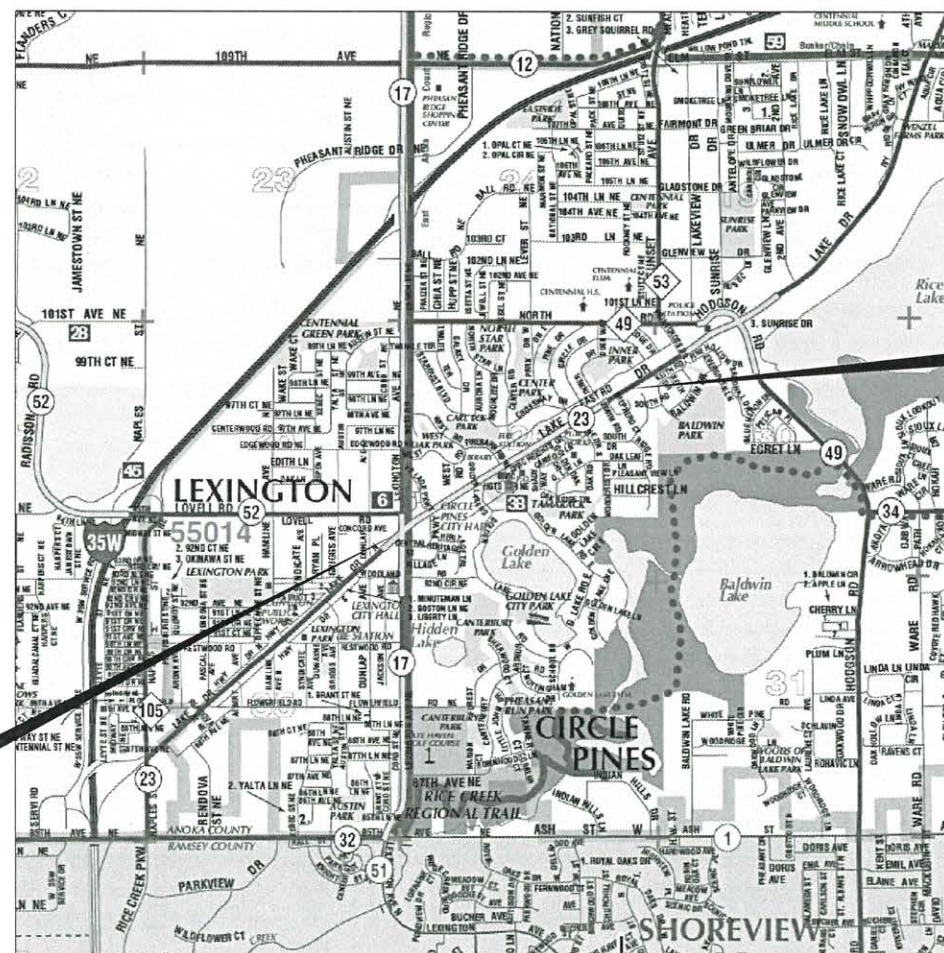
## ANOKA COUNTY

CONSTRUCTION PLAN FOR BITUMINOUS MILLING, GEOTEXTILE INSTALLATION, BITUMINOUS SURFACING, PEDESTRIAN IMPROVEMENTS

LOCATED ON C.S.A.H. 23 BETWEEN LEXINGTON AVE (CSAH 17) AND 1000' NE OF SHEPHERD CT

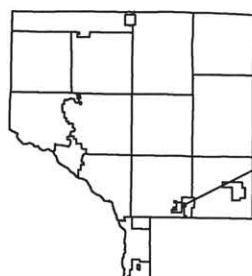
C.S.A.H. 23

GROSS LENGTH	6.066 FEET	1.149 MILES
EXCEPTIONS-LENGTH	0.00 FEET	0.000 MILES
NET LENGTH	6.066 FEET	1.149 MILES



END C.P. 14-13-23  
C.S.A.H. 23 STA. 71+51

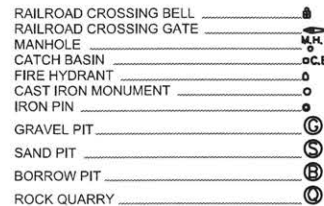
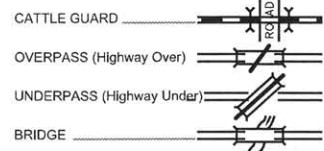
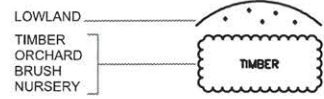
BEGIN C.P. 14-13-23  
C.S.A.H. 23 STA. 10+85



**PROJECT LOCATION**  
CITY OF CIRCLE PINES  
ANOKA COUNTY  
MN/DOT TRANSPORTATION DISTRICT - METRO  
SECTION 25  
TOWNSHIP 31 NORTH  
RANGE 23 WEST

### PLAN SYMBOLS

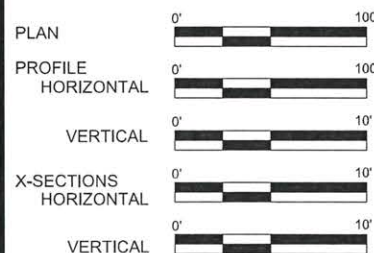
- COUNTY LINE \_\_\_\_\_
- TOWNSHIP OR RANGE LINE \_\_\_\_\_
- SECTION LINE \_\_\_\_\_
- QUARTER LINE \_\_\_\_\_
- SIXTEENTH LINE \_\_\_\_\_
- RIGHT OF WAY LINE \_\_\_\_\_
- SLOPE EASEMENT \_\_\_\_\_
- EXISTING RIGHT OF WAY \_\_\_\_\_
- PROPERTY LINE \_\_\_\_\_
- CORPORATE OR CITY LIMITS \_\_\_\_\_
- 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 \_\_\_\_\_



### 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 \_\_\_\_\_
- BURIED ELECTRIC CABLE \_\_\_\_\_
- SEWER (Sanitary or Storm) \_\_\_\_\_
- SEWER MANHOLE \_\_\_\_\_

### SCALES



### GOVERNING SPECIFICATIONS

THE 2014 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

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	STATEMENT OF ESTIMATED QUANTITIES
3	TYPICAL SECTIONS
4	DETAILS
5 - 6	STAGING PLAN
7 - 9	CONSTRUCTION PLAN
10 - 11	DETOUR PLAN
12 - 17	STAGING TRAFFIC CONTROL
18 - 24	SIGNING AND STRIPING PLANS
S1 - S7	ORIGINAL SIGNAL PLANS

THIS PLAN CONTAINS 31 SHEETS

Approved: 4/29/2014  
ANOKA COUNTY ENGINEER

NO	DATE	BY	CKD	APPR	REVISION	

NAME: P:\14-01-00\CSAH\_23\_(Lexington-NotShepard)\Base\PROPOSED\PLAN.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: ANDREW WITTER

SIGNATURE:

DATE: 4/29/14 LICENSE NO. 42757

DRAWN BY JJ DATE 04/17/2014

DESIGN BY JJ DATE 04/17/2014

CHECKED BY DF DATE 04/17/2014

**ANOKA COUNTY**  
**HIGHWAY DEPT.**

COUNTY PROJECT 14-13-23

TITLE SHEET

Sheet 1 of 24 Sheets



STATEMENT OF ESTIMATED QUANTITIES				
ITEM NO.	ITEM	NOTES	UNIT	TOTAL PROJECT QUANTITIES ESTIMATED
2021.501	MOBILIZATION		LUMP SUM	1
2104.501	REMOVE CURB AND GUTTER	1	LN FT	617
2104.503	REMOVE CONCRETE WALK		SQ FT	460
2104.505	REMOVE BITUMINOUS PAVEMENT	1	SQ YD	160
2104.509	REMOVE DRAINAGE STRUCTURE	1	EACH	1
2104.509	REMOVE BITUMINOUS FLUME		EACH	1
2104.511	SAWING CONCRETE PAVEMENT (FULL DEPTH)	1	LN FT	100
2104.513	SAWING BITUMINOUS PAVEMENT (FULL DEPTH)	1	LN FT	1044
2104.523	SALVAGE CASTING		EACH	1
2105.501	COMMON EXCAVATION	2	CU YD	28
2105.604	GEOTEXTILE FABRIC SPECIAL	3	SQ YD	11300
2123.503	MOTOR GRADER	4	HR	8
2211.501	AGGREGATE BASE CLASS 5	5	TON	100
2232.501	MILL BITUMINOUS SURFACE (3.0")	6	SQ YD	38060
2232.604	MILL BITUMINOUS PAVEMENT (SPECIAL)	7	SQ YD	1376
2357.502	BITUMINOUS MATERIAL FOR TACK COAT		GAL	2650
2360.501	TYPE SP 9.5 WEARING COURSE MIXTURE (4,E)	8	TON	6800
2360.505	TYPE SP 12.5 BITUMINOUS MIXTURE FOR PATCHING	9	TON	10
2411.507	CONCRETE FLUME		EACH	3
2501.511	18" CS PIPE CULVERT		LN FT	40
2501.567	18" GS SAFETY APRON AND GRATE DESIGN 3148		EACH	6
2504.602	ADJUST GATE VALVE		EACH	3
2506.501	CONSTRUCT DRAINAGE STRUCTURE DESIGN 48-4020	10	LN FT	6
2506.521	INSTALL CASTING	11	EACH	1
2511.501	RANDOM RIPRAP CLASS II		CU YD	24
2521.501	6" CONCRETE WALK	12	SQ FT	2985
2531.501	CONCRETE CURB AND GUTTER DESIGN B618		LN FT	705
2531.618	TRUNCATED DOMES		SQ FT	408
2545.602	ADJUST HANDHOLE		EACH	11
2550.602	LOOP DETECTOR DESIGN NMC	13	EACH	42
2563.601	TRAFFIC CONTROL	14	LUMP SUM	1
2563.613	PORTABLE CHANGEABLE MESSAGE SIGN	15	UNIT DAY	14
2573.502	SILT FENCE, TYPE MS		LN FT	230
2573.530	STORM DRAIN INLET PROTECTION	16	EACH	1
2575.505	SODDING TYPE SALT TOLERANT	17	SQ YD	580
2581.501	REMOVABLE PREFORMED PAVEMENT MARKING TAPE	18	LN FT	250
2582.502	4" SOLID LINE WHITE - EPOXY	19	LN FT	3950
2582.502	4" SOLID LINE YELLOW - EPOXY	19	LN FT	1790
2582.502	4" DOUBLE SOLID LINE YELLOW - EPOXY	19	LN FT	1630
2582.601	PAVEMENT MESSAGE (LT ARROW) PREFORMED THERMOPLASTIC	19	EACH	10
2582.601	PAVEMENT MESSAGE (RT ARROW) PREFORMED THERMOPLASTIC	19	EACH	8
2582.602	24" SOLID LINE YELLOW PREFORMED THERMOPLASTIC	19	LN FT	163
2582.602	24" SOLID LINE WHITE PREFORMED THERMOPLASTIC	19	LN FT	313
2582.618	3' X 6' ZEBRA CROSSWALK - PREFORMED THERMOPLASTIC	19	SQ FT	1998

CONSTRUCTION NOTES	
1	REFERENCE DETAILS (PAGE 4) FOR REMOVAL DETAILS
2	ITEM INCLUDES DITCH GRADING AROUND PIPE WORK
3	SEE (PAGE 4) FOR PLACEMENT DETAILS. QUANTITY BASED ON FABRIC (5' WIDTH) COVERING ALL CONCRETE JOINTS ON CENTER, EXCLUDING THE MEDIAN BUT INCLUDING ALL SHOULDERS, FABRIC NOT TO EXTEND ONTO EXPOSED AGGREGATE SURFACE.
4	ITEM TO BE USED TO GRADE SHOULDERS AND OR TURN LANES IN AREAS WHERE THE MILLING OPERATION EXPOSES AGGREGATE BASE.
5	ITEM TO BE USED AS BASE FOR NEW CONCRETE WALK
6	DETAIL MILLING AROUND MANHOLES, CATCH BASINS, AND GATE VALVES IS INCIDENTAL TO THIS ITEM.
7	TO BE USED FOR JOINT MATCHING AT EXISTING STREET APPROACHES AND/OR DETAIL MILLING ALONG FACE OF CONCRETE CURB AND GUTTER. DETAIL MILLING AROUND MANHOLES, CATCH BASINS, AND GATE VALVES IS INCIDENTAL TO THIS ITEM.
8	STREET APPROACH QUANTITY IS INCLUDED IN MAINLINE QUANTITY, AND STREET APPROACHES ARE TO BE PAVED AFTER MAINLINE PAVING BUT BEFORE FINAL STRIPING.
9	ITEM INCLUDES BITUMINOUS PATCHING AROUND NEW CURB AND STORM STRUCTURE REPAIRS.
10	CONNECTIONS TO EXISTING STORM SEWER ARE INCIDENTAL.
11	ITEM INCLUDES GROUTING AND FURNISH AND INSTALL.
12	ISLAND NOSES PAID FOR AS 6" CONCETE WALK (PLATE 7113A).
13	ITEM INCLUDES 2 NEW LOOPS TO BE INSTALL ON LEXINGTON AVE (SEE PLAN, PAGE 7), ALL LOOPS AT THE INTERSECTIONS OF LAKE DR AND FIREBARNRD/CVIC HEIGHTS DR AND PINE DR TO BE COMPLETELY REPLACED; CONTRACTOR TO CONTACT ANOKA COUNTY FOR PLACEMENT LOCATION. ALL LOOPS TO BE REPLACED BEFORE LEVELING COURSE IS PAVED. REMAINING LOOPS ONLY REQUIRED TO BE REPLACED IF HIT DURING MILLING OPERATION. ORIGINAL SIGNAL PLANS ARE LOCATED AT THE END OF THIS PLAN.
14	DETOUR IS INCIDENTAL TO TRAFFIC CONTROL. DO NOT PASS, PASS WITH CARE AND NO CENTER STRIPE SIGNS TO BE INPLACE DURING MILLING, RECLAIMING OR PAVING OPERATIONS.
15	2 MESSAGE BOARDS, ONE ON EACH END OF THE PROJECT WILL BE INSTALLED 7 DAYS PRIOR TO ANY CONSTRUCTION; REFERENCE STRIPING PLAN FOR DETAILS.
16	ALL DRAINAGE STRUCTURES AFFECTED BY THIS PROJECT MUST HAVE INLET PROTECTION.
17	TOPSOIL IS INCIDENTAL TO ALL TURF ESTABLISHMENT, ITEM CALCULATED AS 5' WIDTH FROM CONSTRUCTION LIMITS.
18	CENTERLINE AND LANE DESIGNATION SKIPS TO BE APPLIED AS SOON AS POSSIBLE ON EACH NEW LIFT OF PAVEMENT; SKIPS MUST BE INPLACE BEFORE CONTRACTOR LEAVES FOR THE DAY. CONTRACTOR IS TO REMOVE PRIOR TO FINAL PAINT STRIPING.
19	FINAL STRIPING SHALL BE INSTALLED WITHIN 72 HOURS OF COMPLETION OF MAINLINE WEAR COURSE PAVING.

BASIS OF PLANNED QUANTITIES		
2357.502	BITUMINOUS MATERIAL FOR TACK COAT	0.05 GAL / SQ YD
2211.501	AGGREGATE BASE CLASS 5	1.8 TON / CUYD
2360.501	TYPE SP 9.5 WEARING COURSE MIX (4,E) SPWEA440E	115 LBS / SQYD / INCH THICKNESS

NO	DATE	BY	CKD	APPR	REVISION
	04/17/2014				11:16:41 AM

NAME: P:\14-01-00\CSAH\_23\_(Lexington-NotShepard)\Base\PROPOSED\PLAN.dgn

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ANOKA COUNTY  
HIGHWAY DEPT.

COUNTY PROJECT 14-13-23

STATEMENT OF ESTIMATED QUANTITIES

Sheet 2 of 24 Sheets

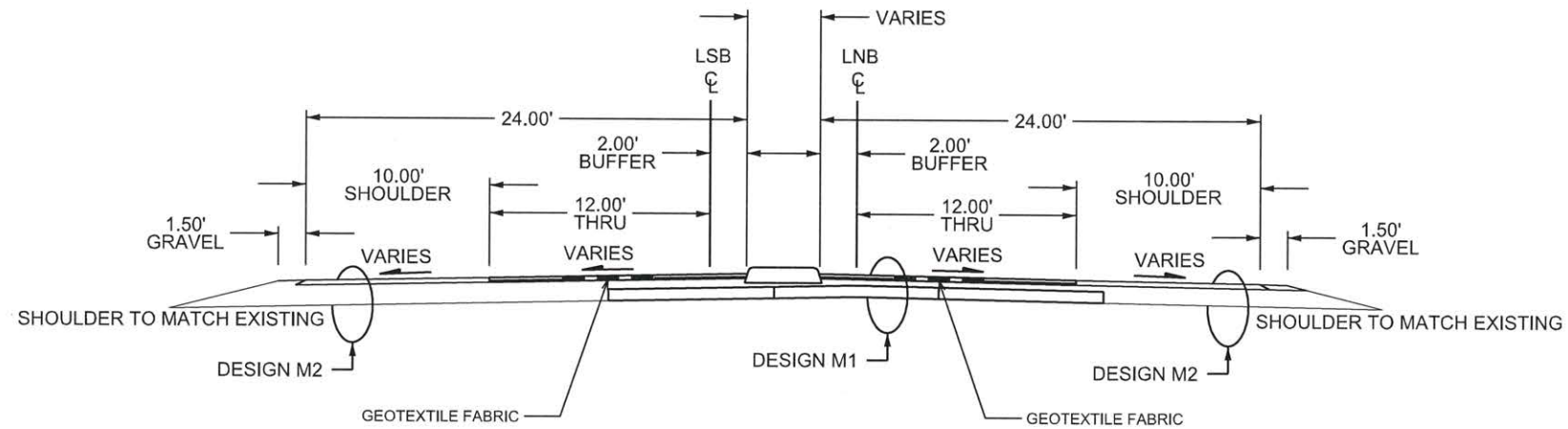


### LAKE DRIVE (CSAH 23)

#### TYPICAL MEDIAN SECTION

10+85 - 61+00

SEE TURN LANE TYPICALS FOR STATIONS WITHIN ABOVE RANGE



### LAKE DRIVE (CSAH 23)

#### TYPICAL LSB TURN LANES

### LAKE DRIVE (CSAH 23)

#### TYPICAL LNB TURN LANES

#### RIGHT TURN LANE

- 10+85 - 14+30
- 18+00 - 22+00
- 30+00 - 32+00
- 35+50 - 40+00
- 53+00 - 56+00

#### LEFT TURN LANE

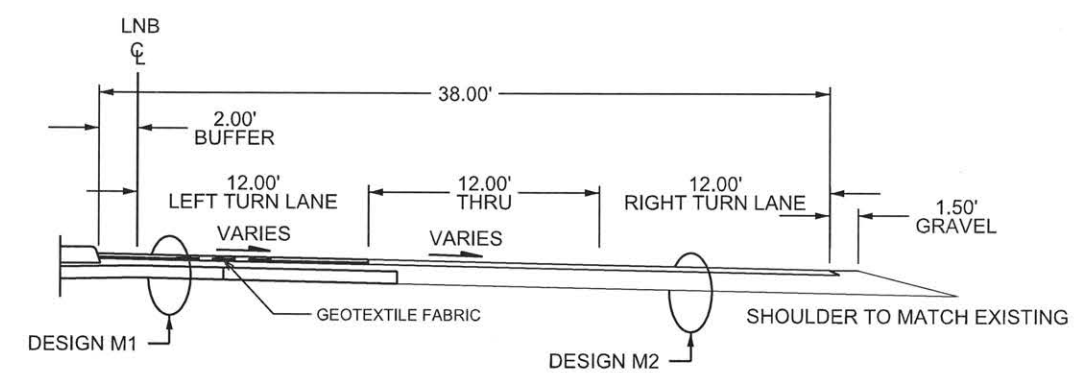
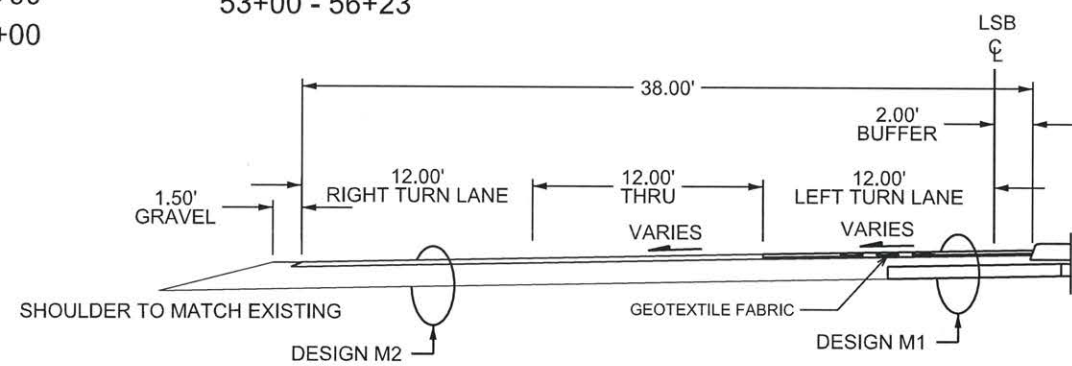
- 10+85 - 14+30
- 18+00 - 20+23
- 35+50 - 40+00
- 53+00 - 56+23

#### LEFT TURN LANE

- 32+30 - 35+50
- 49+00 - 53+00

#### RIGHT TURN LANE

- 15+09 - 17+50
- 27+00 - 30+00
- 32+30 - 35+50
- 50+44 - 53+00
- 57+84 - 61+00



#### DESIGN M1 MILL SECTION

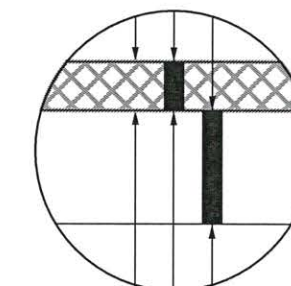
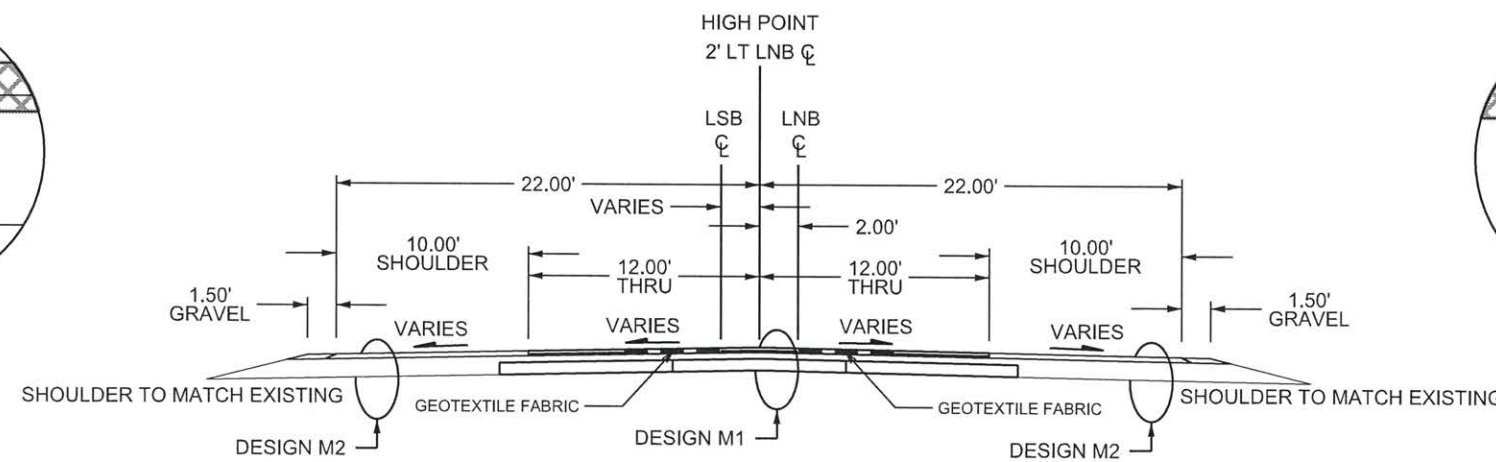
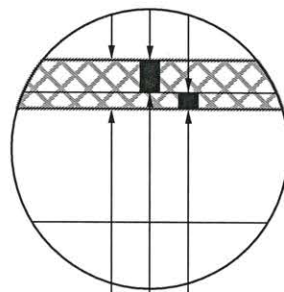
### LAKE DRIVE (CSAH 23)

#### TYPICAL NON MEDIAN SECTION

61+00 - 71+51

#### DESIGN M2 MILL SECTION

3.0" MILL BITUMINOUS  
2.0" BITUMINOUS WEAR (SPWEA440E)  
1.0" BITUMINOUS WEAR (SPWEA440E) - LEVELING COURSE



3.0" MILL BITUMINOUS  
3.0" BITUMINOUS WEAR (SPWEA440E)  
VARIABLE DEPTH CLASS 5 / BITUMINOUS

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ANOKA COUNTY  
HIGHWAY DEPT.

COUNTY PROJECT 14-13-23

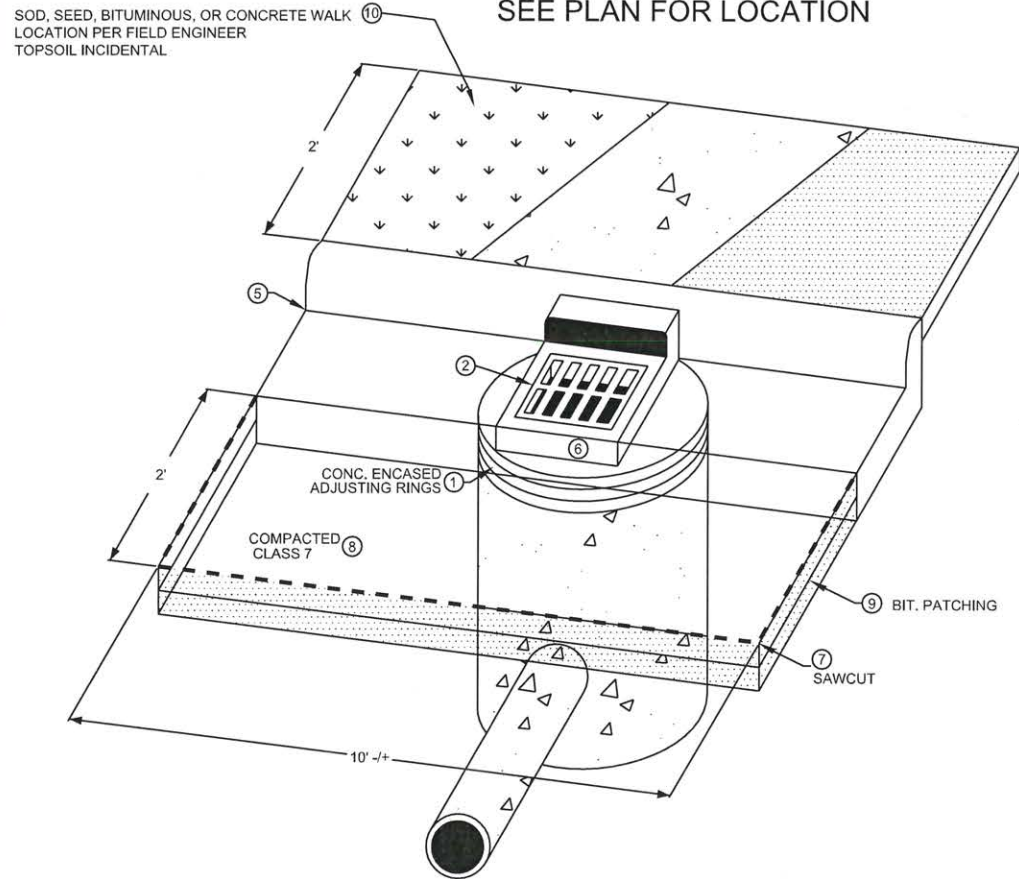
TYPICAL SECTIONS

Sheet 3 of 24 Sheets



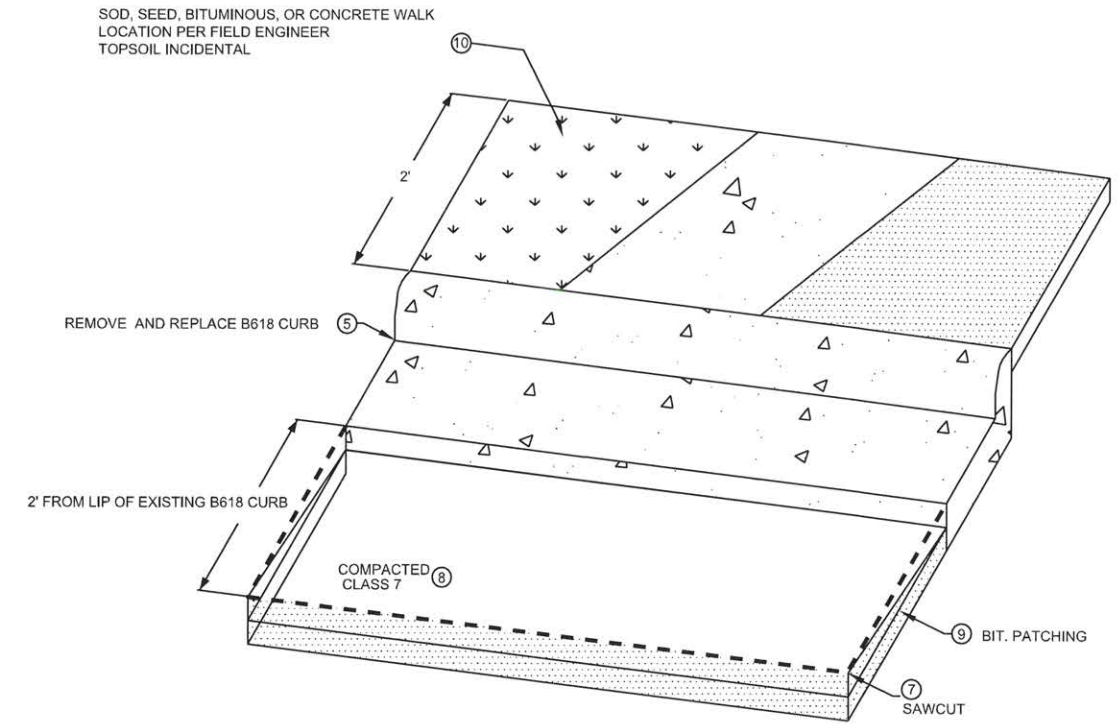
### CATCH BASIN DETAIL

SEE PLAN FOR LOCATION



### NEW CURB DETAIL

SEE PLAN FOR LOCATION



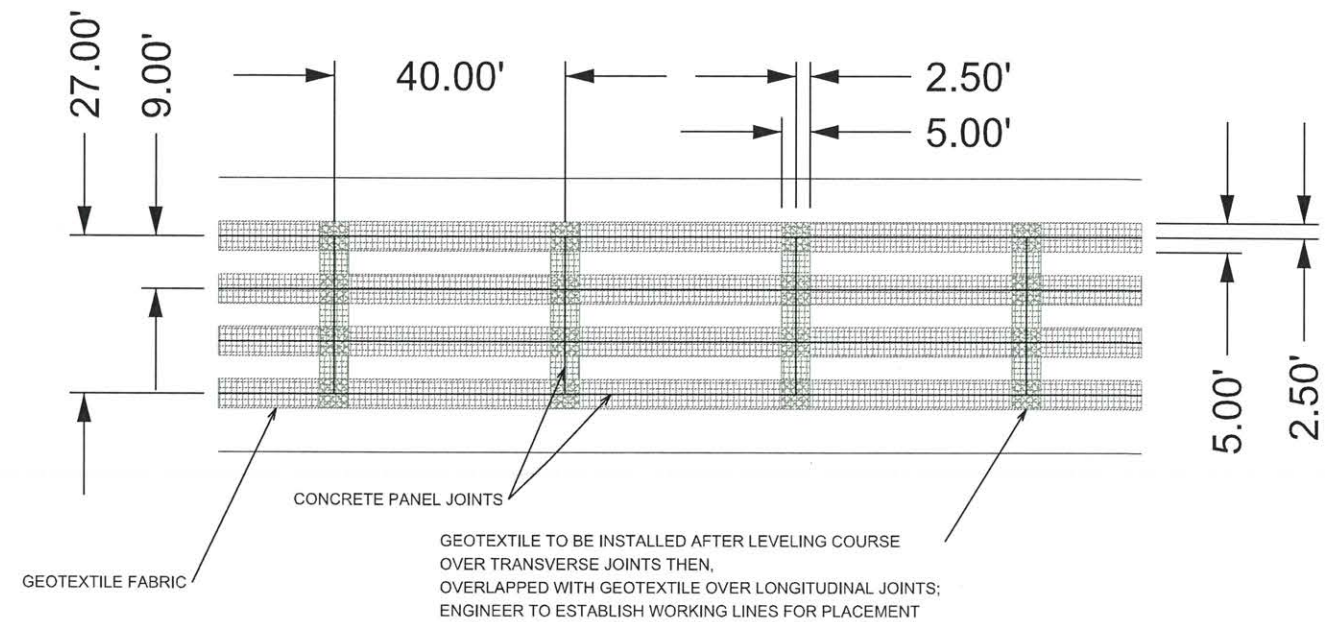
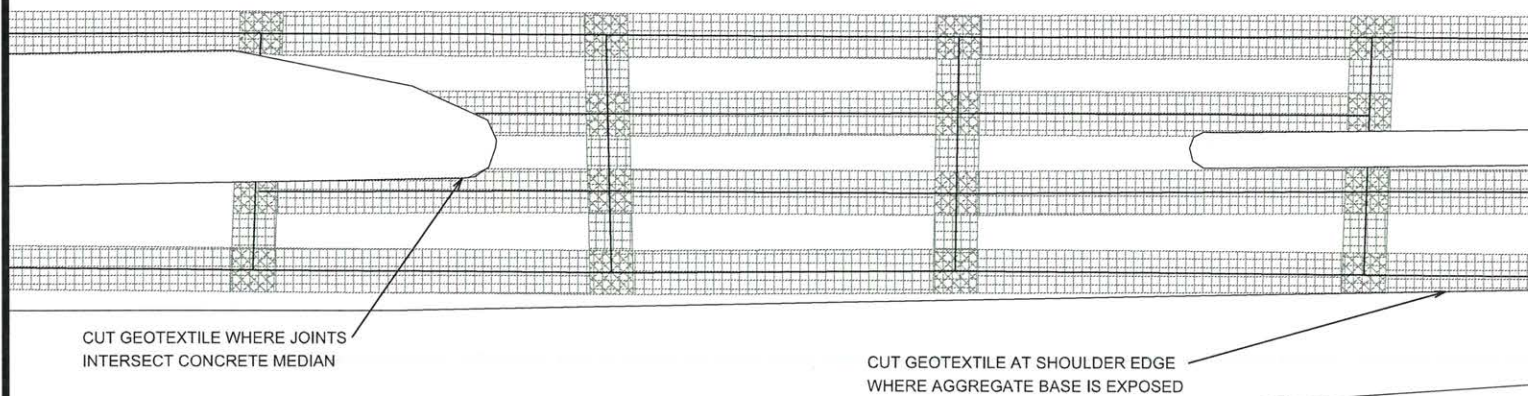
### NOTES

- 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 SALVAGE CASTING
  - ⑤ CONCRETE CURB AND GUTTER DESIGN B STANDARD PLATE 7100H
  - ⑥ INSTALLATION OF CATCH BASIN CASTINGS REFERENCE STANDARD PLATE PER TYPE OF CASTING
  - ⑦ SAWCUT BIT PAVEMENT / CONCRETE CURB FULL DEPTH.
  - ⑧ ADD AND COMPACT CL-7 AROUND REPAIRED STRUCTURE. ITEM INCIDENTAL TO C.B. REPAIR
  - ⑨ REMOVE VAR. 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

### ROADWAY PLACEMENT EXAMPLE

### GEOTEXTILE DETAILS SEE PLAN FOR LOCATION

### GENERAL PLACEMENT EXAMPLE



NO	DATE	BY	CKD	APPR	REVISION	04/17/2014	9:24:39 AM
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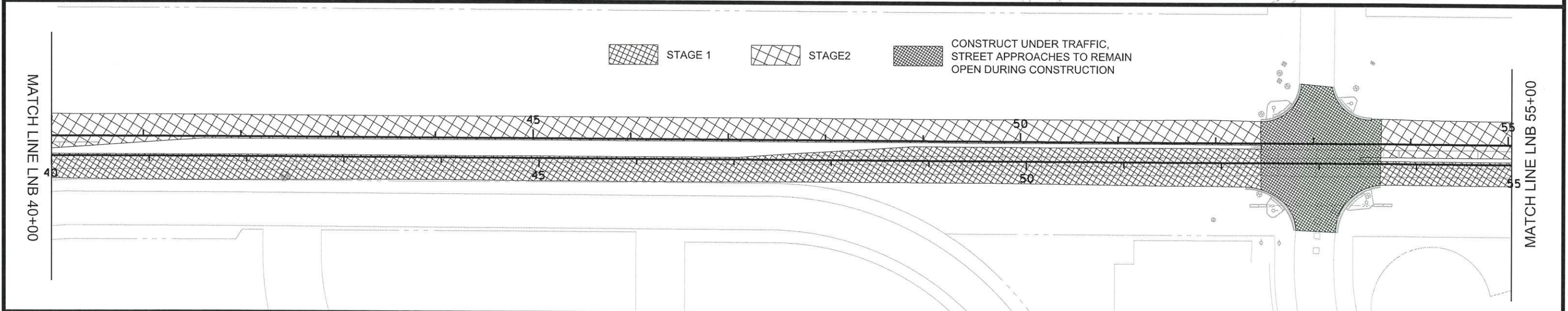
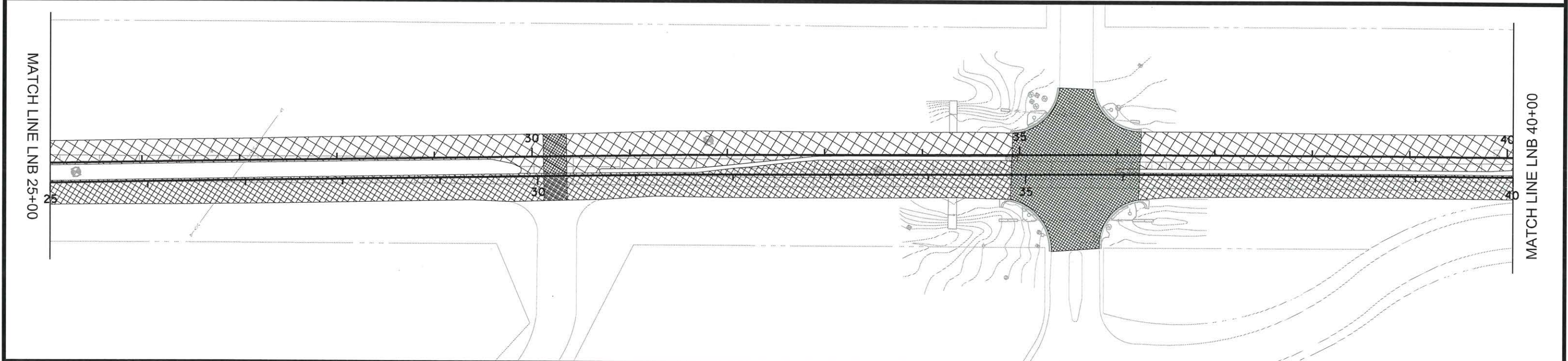
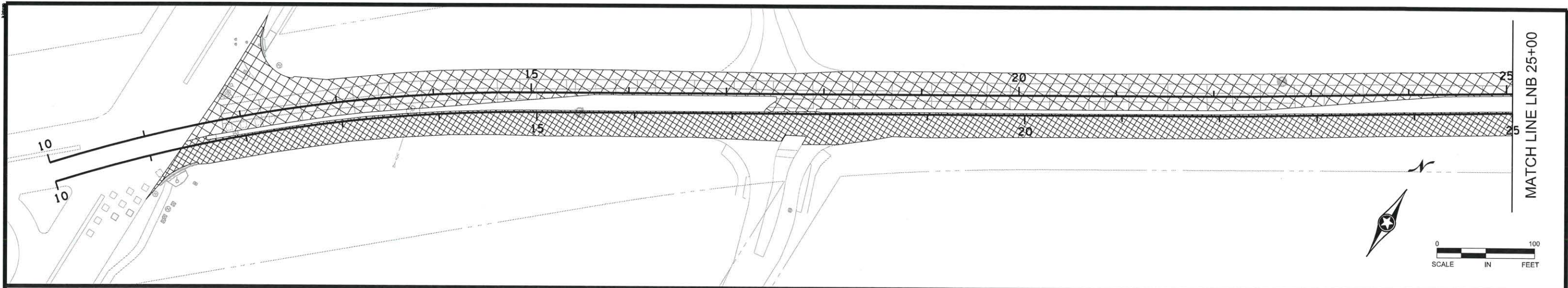
ANOKA COUNTY  
HIGHWAY DEPT.

COUNTY PROJECT 14-13-23

DETAILS

Sheet 4 of 24 Sheets





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SIGNATURE: *Andrew Wittek*

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**ANOKA COUNTY**  
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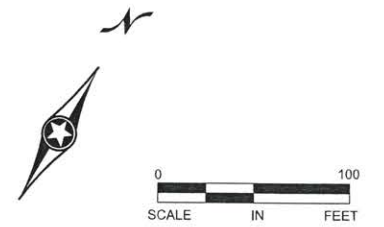
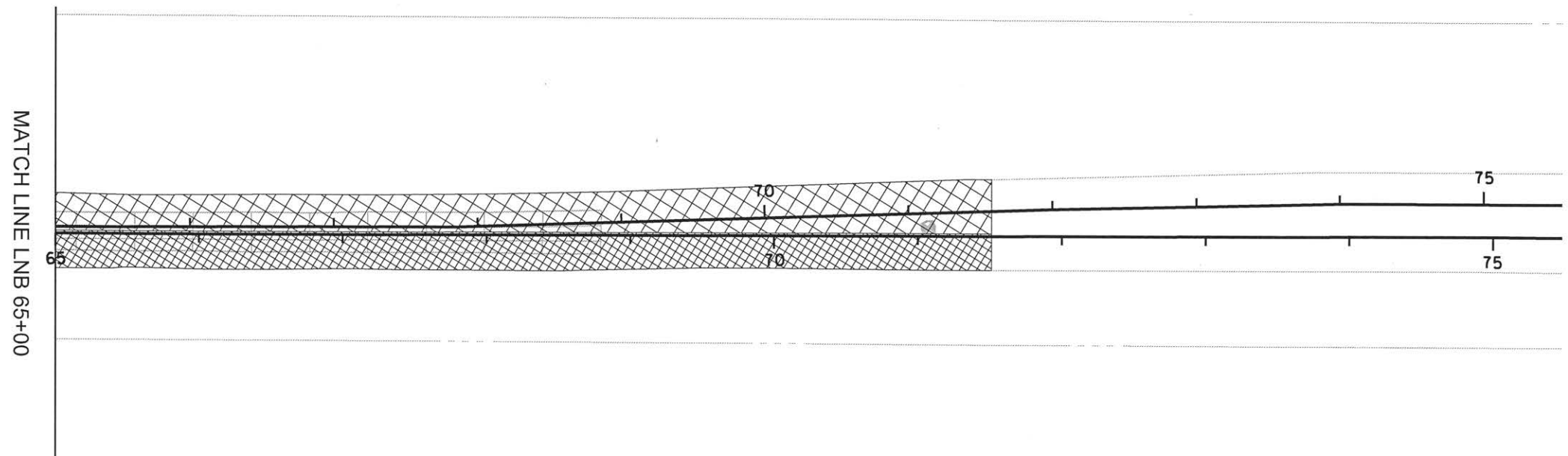
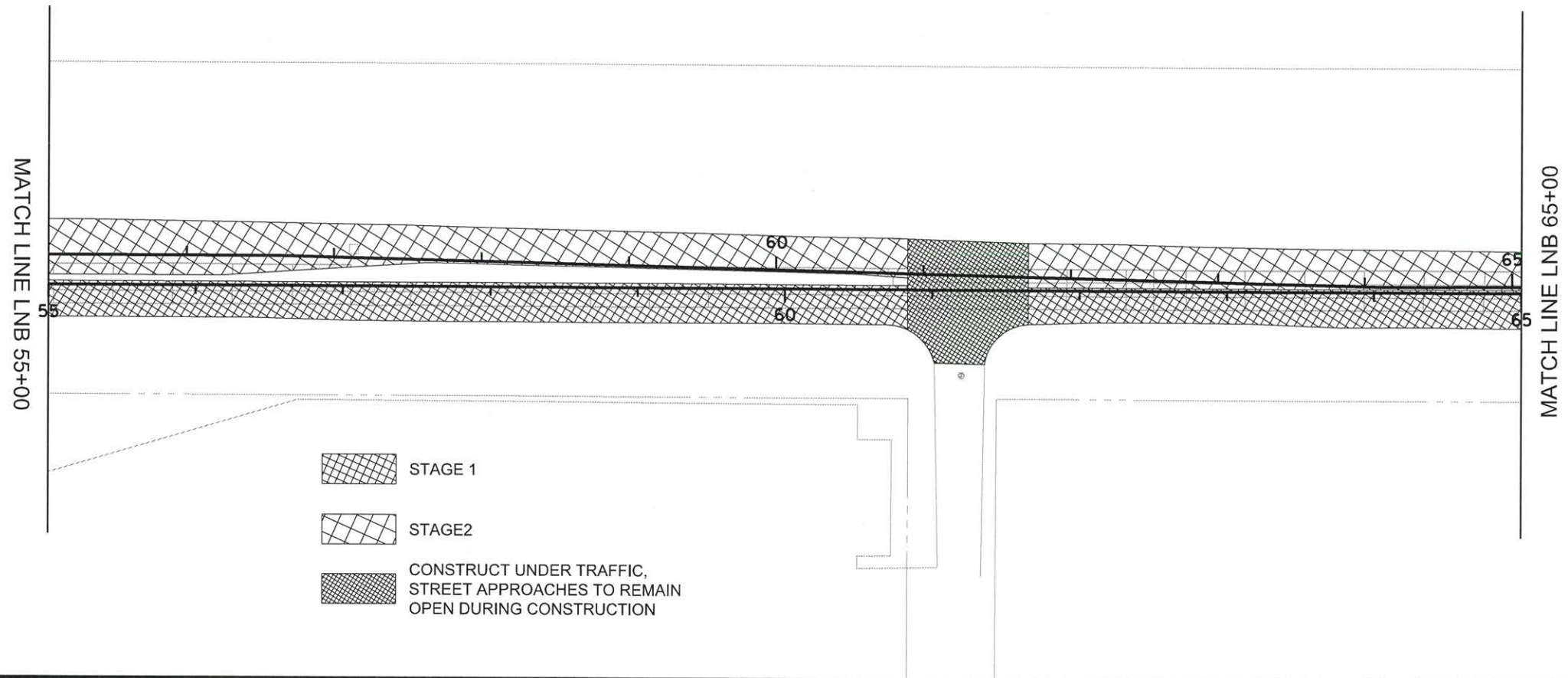
COUNTY PROJECT 14-13-23

STAGING PLAN

STA 62+00 TO 71+51

Sheet 5 of 24 Sheets





NO	DATE	BY	CKD	APPR	REVISION	04/17/2014	9:24:42 AM
NAME: P:\14-01-00\CSAH_23_(Lexington-NofShepard)\Base\PROPOSED\PLAN.dgn							

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 PRINT NAME: ANDREW WITTE  
 SIGNATURE: *Andrew Witte*  
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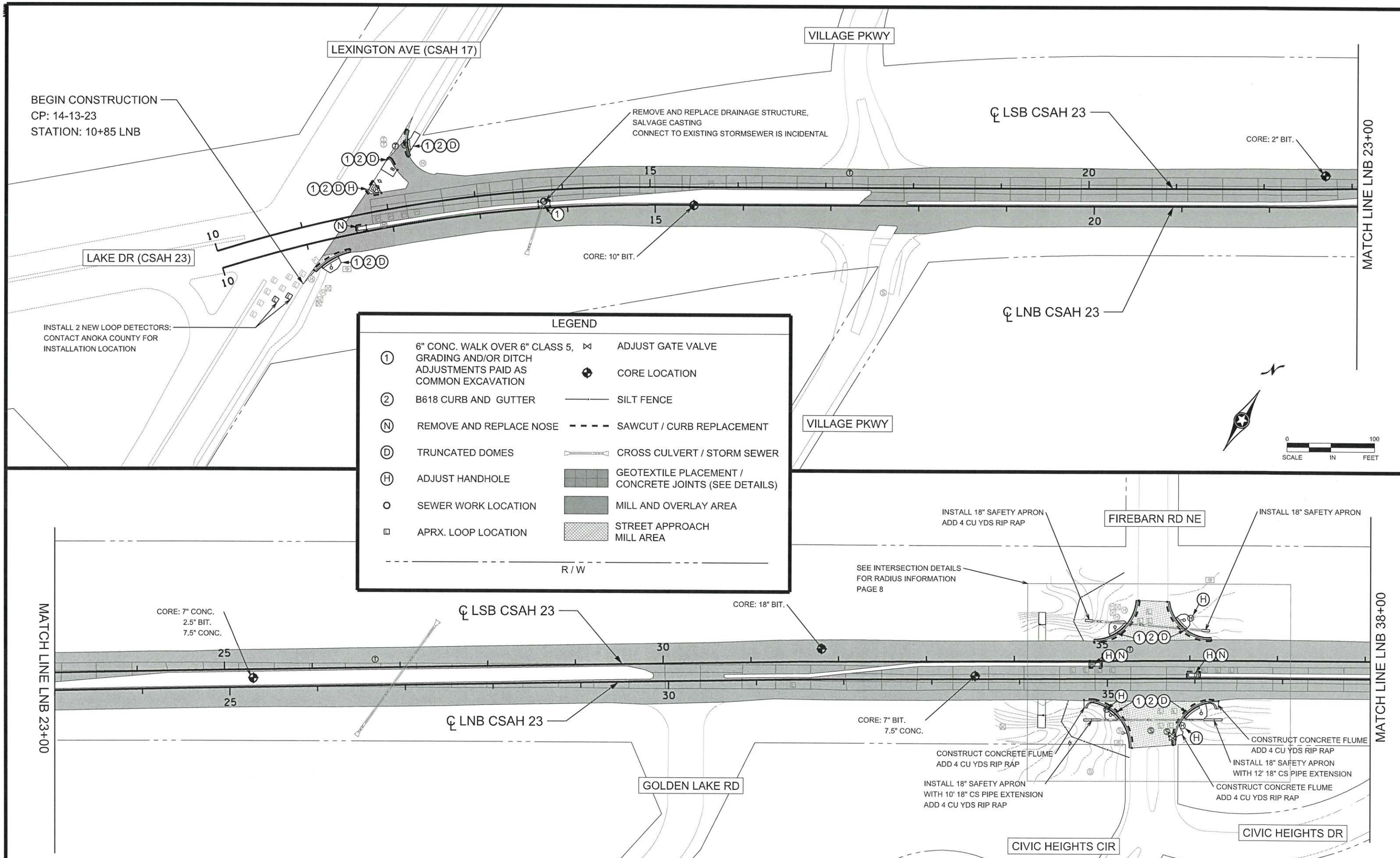
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**ANOKA COUNTY**  
**HIGHWAY DEPT.**

COUNTY PROJECT 14-13-23

STAGING PLAN  
 STA 62+00 TO 71+51  
 Sheet 6 of 24 Sheets

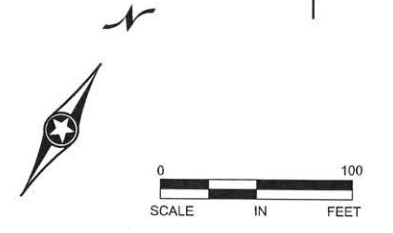




BEGIN CONSTRUCTION  
CP: 14-13-23  
STATION: 10+85 LNB

INSTALL 2 NEW LOOP DETECTORS:  
CONTACT ANOKA COUNTY FOR  
INSTALLATION LOCATION

LEGEND			
①	6" CONC. WALK OVER 6" CLASS 5, GRADING AND/OR DITCH ADJUSTMENTS PAID AS COMMON EXCAVATION	⊕	ADJUST GATE VALVE
②	B618 CURB AND GUTTER	⊙	CORE LOCATION
(N)	REMOVE AND REPLACE NOSE	---	SILT FENCE
(D)	TRUNCATED DOMES	- - -	SAWCUT / CURB REPLACEMENT
(H)	ADJUST HANDHOLE	▤	CROSS CULVERT / STORM SEWER
○	SEWER WORK LOCATION	▨	GEOTEXTILE PLACEMENT / CONCRETE JOINTS (SEE DETAILS)
□	APRX. LOOP LOCATION	▩	MILL AND OVERLAY AREA
		▨	STREET APPROACH MILL AREA
		---	R / W



MATCH LINE LNB 23+00

MATCH LINE LNB 38+00

NO	DATE	BY	CKD	APPR	REVISION	DATE	TIME
	04/17/2014						9:24:40 AM

NAME: P:\14-01-00\CSAH\_23\_(Lexington-NotShepard)\Base\PROPOSED\PLAN.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: ANDREW WALTER  
SIGNATURE: *[Signature]*  
DATE: 4/17/2014 LICENSE NO. 42757

DRAWN BY: JJ DATE: 04/17/2014  
DESIGN BY: JJ DATE: 04/17/2014  
CHECKED BY: DFF DATE: 04/17/2014



ANOKA COUNTY  
HIGHWAY DEPT.  
COUNTY PROJECT 14-13-23

CONSTRUCTION PLAN  
STA 10+85 TO 38+00  
Sheet 7 of 24 Sheets



MATCH LINE LNB 38+00

MATCH LINE LNB 52+00

☉ LSB CSAH 23

☉ LNB CSAH 23

CORE: 11" BIT.

SANDY WAY

CIVIC HEIGHTS DR

**LEGEND**

①	6" CONC. WALK OVER 6" CLASS 5, GRADING AND/OR DITCH ADJUSTMENTS PAID AS COMMON EXCAVATION	⊗	ADJUST GATE VALVE
②	B618 CURB AND GUTTER	⊕	CORE LOCATION
Ⓝ	REMOVE AND REPLACE NOSE	—	SILT FENCE
Ⓧ	TRUNCATED DOMES	- - -	SAWCUT / CURB REPLACEMENT
Ⓜ	ADJUST HANDHOLE	▭	CROSS CULVERT / STORM SEWER
Ⓛ	APRX. LOOP LOCATION REMOVE AND REPLACE	▨	GEOTEXTILE PLACEMENT / CONCRETE JOINTS (SEE DETAILS)
		■	MILL AND OVERLAY AREA
		▩	STREET APPROACH MILL AREA
		- - -	R/W

MATCH LINE LNB 52+00

MATCH LINE LNB 62+00

PINE DR

PINE DR

☉ LSB CSAH 23

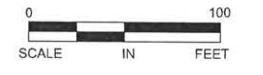
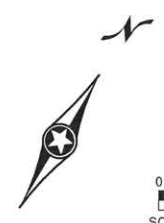
☉ LNB CSAH 23

INSTALL 18" SAFETY APRON WITH 10' 18" CS PIPE EXTENSION ADD 4 CU YDS RIP RAP

INSTALL 18" SAFETY APRON WITH 8' 18" CS PIPE EXTENSION

SEE INTERSECTION DETAILS FOR RADIUS INFORMATION PAGE 8

SHEPHERD CT



NO	DATE	BY	CKD	APPR	REVISION	TIME
	04/17/2014					9:24:40 AM

NAME: P:\14-01-00\CSAH\_23\_(Lexington-NotShepard)\Base\PROPOSED\PLAN.dgn

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PRINT NAME: ANDREW WITTER  
 SIGNATURE: *Andrew Witter*  
 DATE: 4/28/14 LICENSE NO. 42757

DRAWN BY JJ DATE 04/17/2014  
 DESIGN BY JJ DATE 04/17/2014  
 CHECKED BY DFF DATE 04/17/2014



**ANOKA COUNTY  
HIGHWAY DEPT.**

COUNTY PROJECT 14-13-23

**CONSTRUCTION PLAN**  
 STA 38+00 TO 62+00  
 Sheet 8 of 24 Sheets



LEGEND	
	CORE LOCATION
	CROSS CULVERT / STORM SEWER
	GEOTEXTILE PLACEMENT / CONCRETE JOINTS (SEE DETAILS)
	MILL AND OVERLAY AREA
	R / W

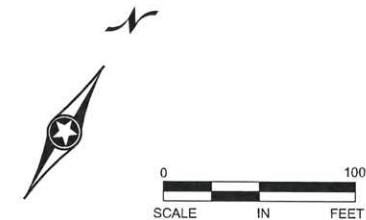
MATCH LINE LNB 62+00

☐ LSB CSAH 23

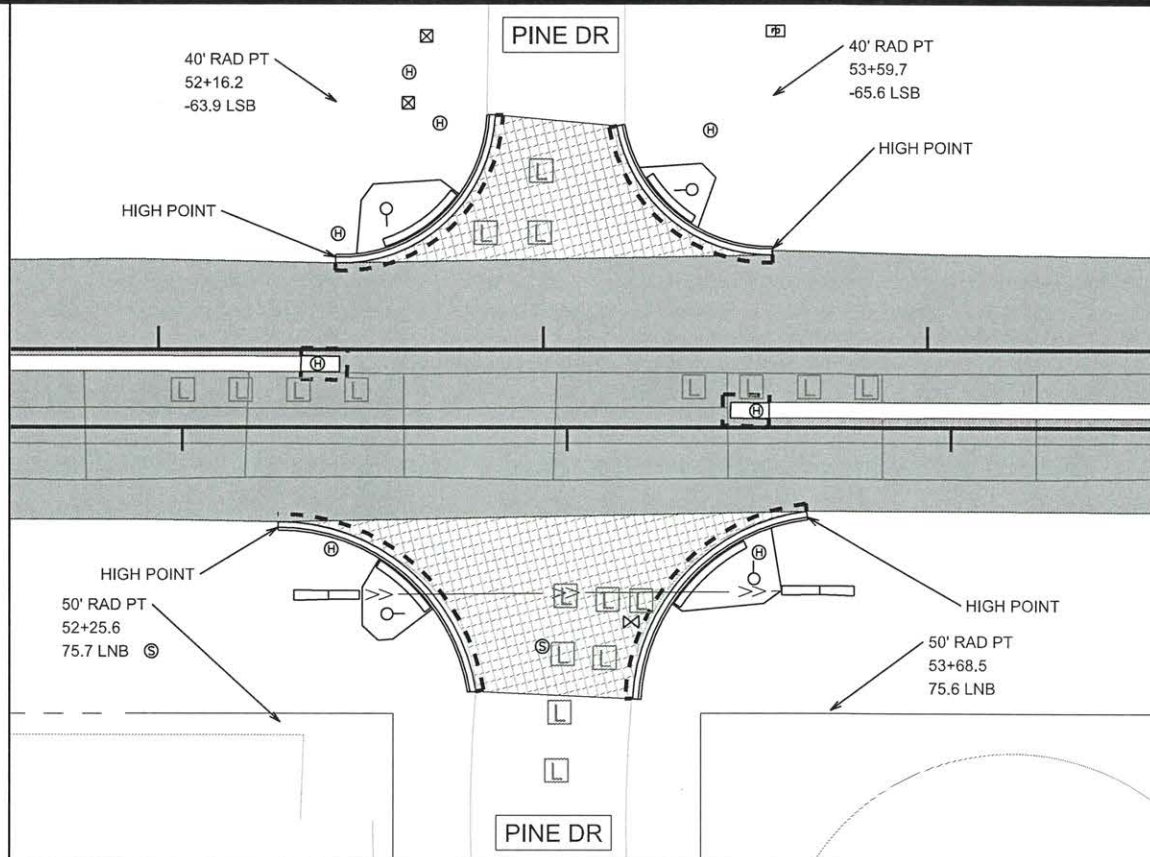
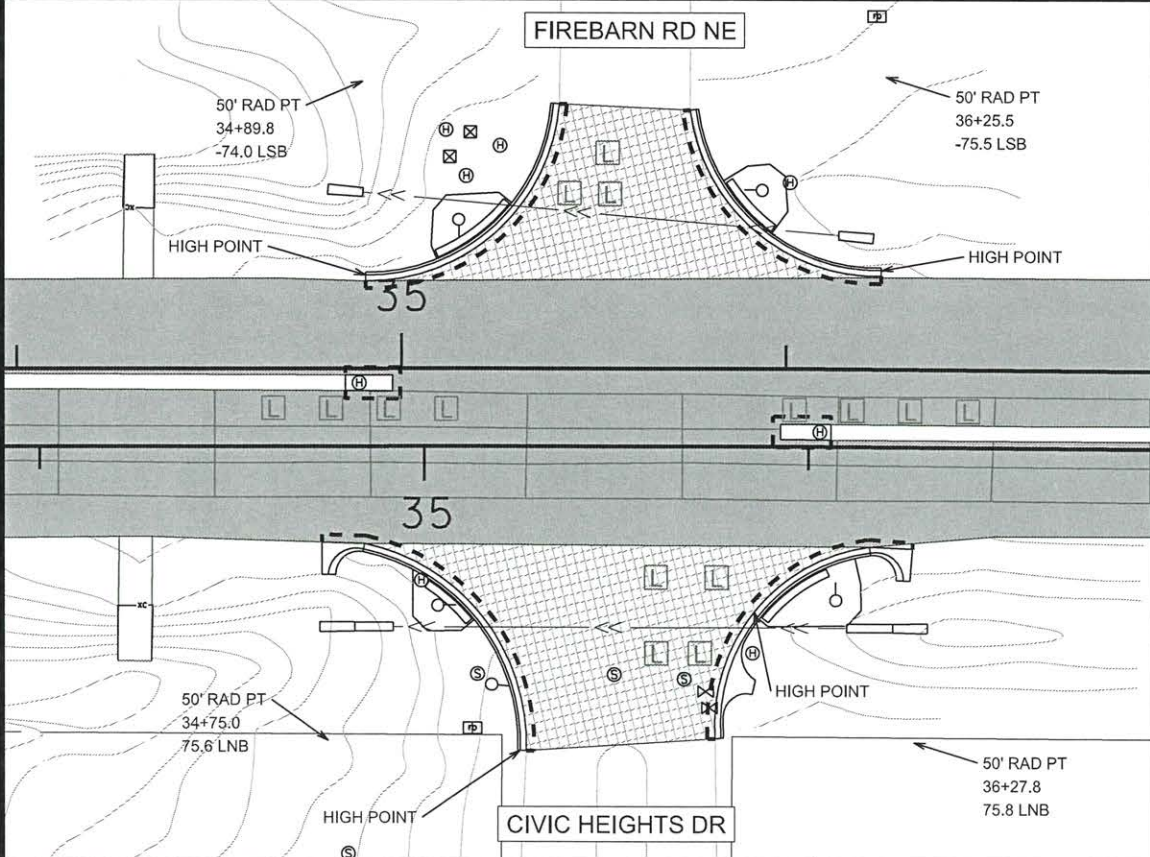
☐ LNB CSAH 23

END CONSTRUCTION  
CP: 14-13-23  
STATION: 71+51 LNB

CORE: 7" BIT. OVER RUBBLIZED CONCRETE



### INTERSECTION DETAILS



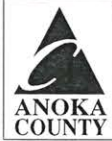
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NAME: P:\14-01-00\CSAH\_23\_(Lexington-NotShepard)\Base\PROPOSED\PLAN.dgn

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PRINT NAME: ANDREW WITTEB  
SIGNATURE: *[Signature]*  
DATE: 4/28/14 LICENSE NO. 42757

DRAWN BY JJ DATE 04/17/2014  
DESIGN BY JJ DATE 04/17/2014  
CHECKED BY DFF DATE 04/17/2014

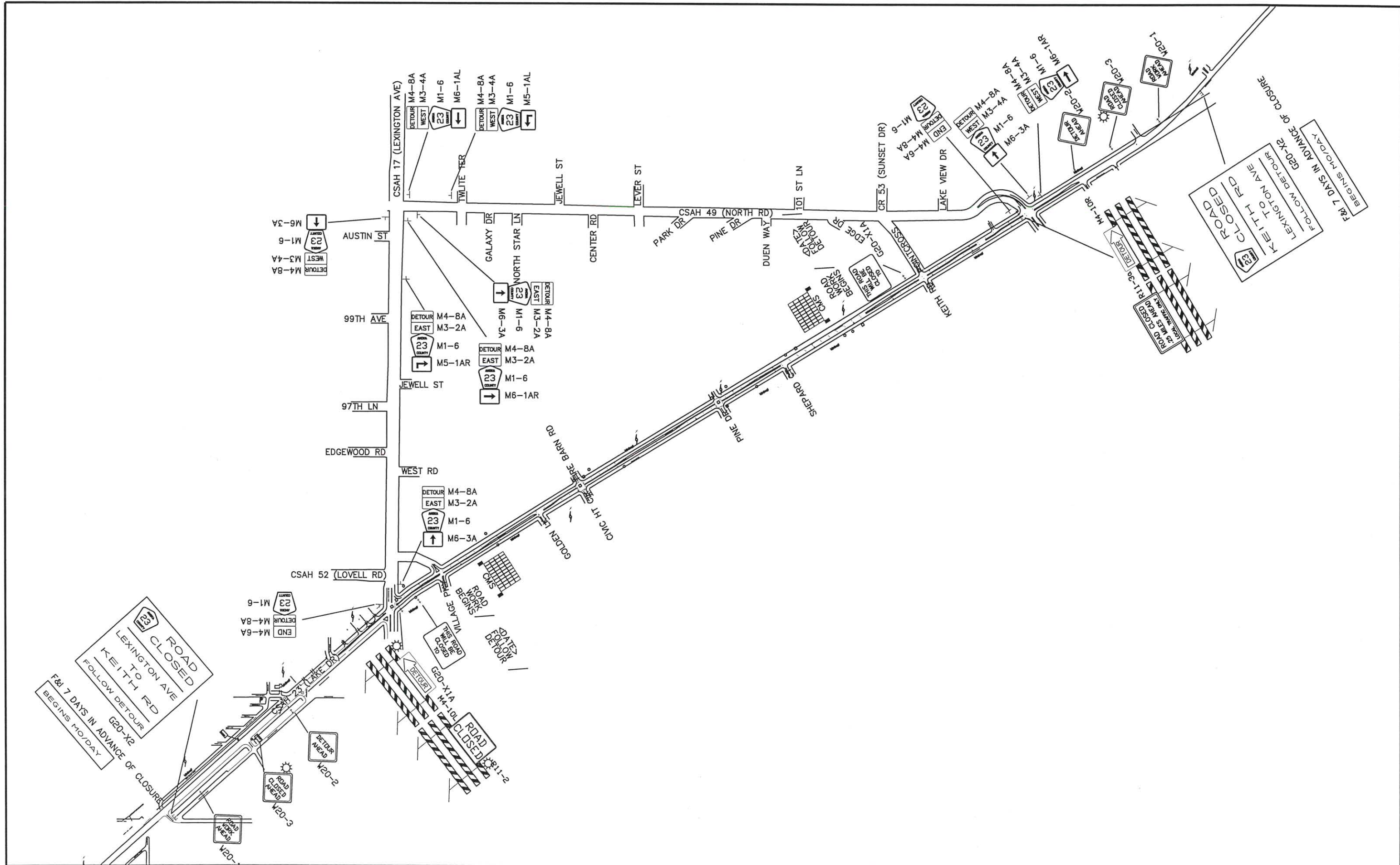


ANOKA COUNTY  
HIGHWAY DEPT.

COUNTY PROJECT 14-13-23

CONSTRUCTION PLAN  
STA 62+00 TO 71+51  
Sheet 9 of 24 Sheets





NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-19\base\Traffic\Curves from CSAH 18 to CSAH 22.dwg

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.  
 PRINT NAME: ANDREW WITTER  
 SIGNATURE: *[Signature]*  
 DATE: 4/14/14 REG. NO. 42757

DRAWN BY: RLB DATE: 4/14/14  
 DESIGN BY: RLB DATE: 4/14/14  
 CHECKED BY: JWR DATE: 4/14/14

**ANOKA COUNTY**  
**HIGHWAY DEPT.**

STATE PROJECT NO. \_\_\_\_\_  
 STATE AID PROJECT NO. \_\_\_\_\_  
 STATE AID PROJECT NO. \_\_\_\_\_  
 COUNTY PROJECT NO. 14-13-23

DETOUR PLAN  
 Sheet 10 of 24 Sheets



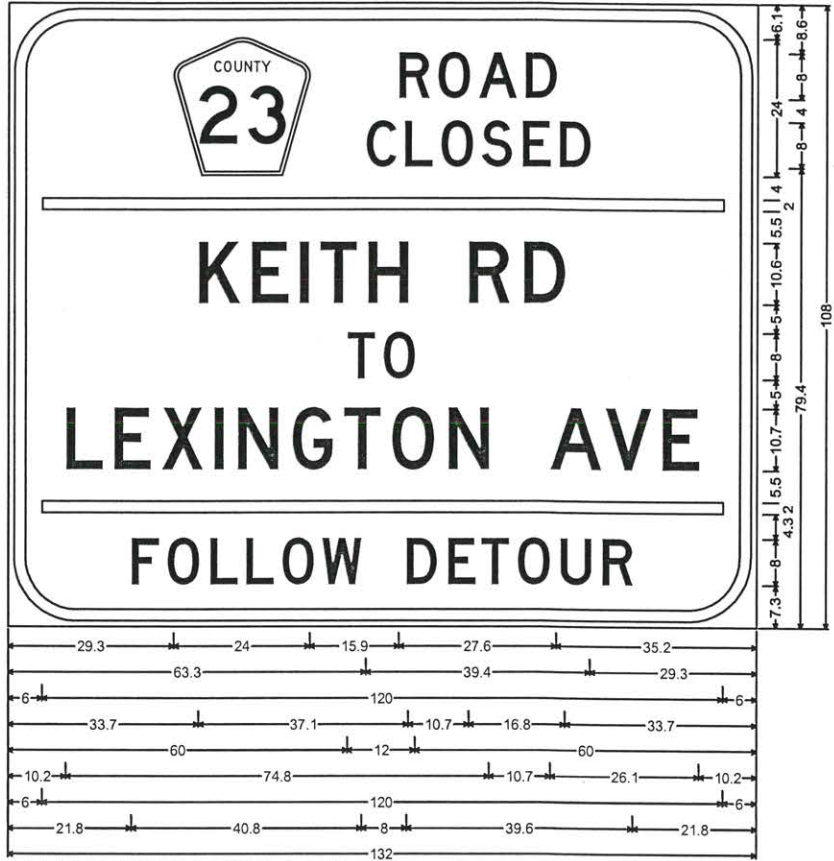
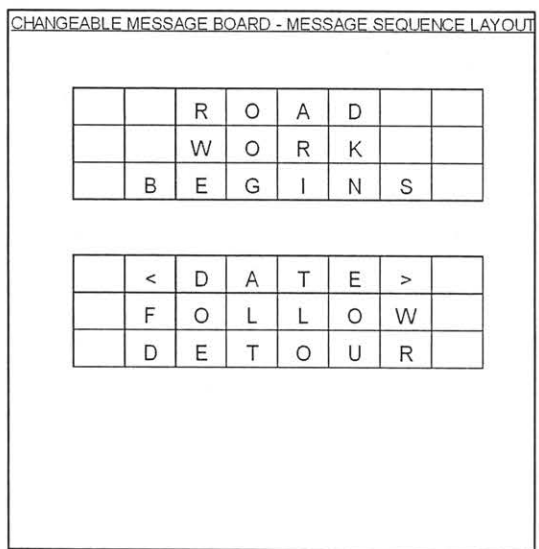
M. U. T. C. D. CODE	SIZE	INSERT	QUANTITY	M. U. T. C. D. CODE	SIZE	INSERT	QUANTITY
W20-2	48' x 48'		2	M4-8A	24' x 12'		0
				M3-4A	24' x 12'		1
				M1-6A	24' x 24'		1
					21' x 15'		1
							2
W20-3	48' x 48'		4	M4-8A	24' x 12'		1
W20-100P	24' x 18'		0	M3-2A	24' x 12'		1
W20-100P	24' x 18'		0	M1-6A	24' x 24'		0
					21' x 15'		0
							2
M4-10R	48' x 18'		1	M4-6A	24' x 12'		2
TYPE III	8 FOOT			M4-8A	24' x 12'		
				M1-6A	24' x 24'		
M4-10L	48' x 18'		1				
TYPE III	8 FOOT						
R11-2	48' x 30'		1				
TYPE III	8 FOOT						
R11-3a	48' x 30'		1				
	8 FOOT						
G20-X1	60' x 48'		2				

\* G20-X1 SIGN TO BE INSTALLED A MINIMUM OF SEVEN DAYS PRIOR TO ACTUAL CLOSING DATE OF ROAD CLOSURE AND IMPLEMENTATION OF DETOUR SIGNING. SIGNS TO BE REMOVED AT TIME OF DETOUR INSTALLATION.

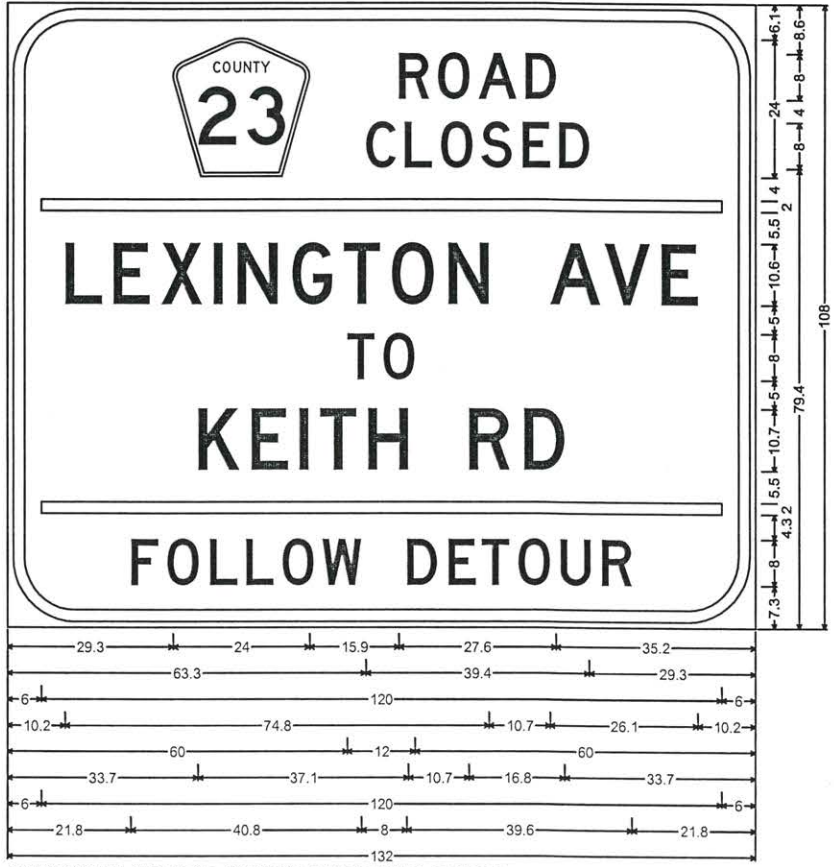
CMS sign to be installed a minimum of seven days prior to actual commencement of road work. Signs to be removed when road work begins.

- NOTES:
- 1) ALL BARRICADES SHALL BE PROPERLY WEIGHTED WITH SANDBAGS.
  - 2) ALL BARRICADES SHALL HAVE REFLECTIVE MATERIAL ON BOTH SIDES.
  - 3) ALL BARRICADE MARKINGS SHALL BE SLANTED IN ACCORDANCE WITH THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, INCLUDING THE FIELD MANUAL DATED JANUARY, 1998
  - 4) ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE MOST RECENT EDITION OF THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, INCLUDING THE FIELD MANUAL DATED JANUARY, 1998
  - 5) ADDITIONS OR CHANGES TO THIS PLAN MAY BE MADE AS DETERMINED BY THE ENGINEER.

INSTALL G20-X2 SIGNS 7 DAYS PRIOR WITH "BEGIN/DATE" PLATE; REMOVE AT START DATE OF CONSTRUCTION SO SIGN READS "FOLLOW DETOUR"



G20-X2\_132x108; 12.0" Radius, 2.0" Border, 1.0" Indent, Black on Orange; [ROAD] D; [CLOSED] D; [KEITH RD] D; [TO] D; [LEXINGTON AVE] D; [FOLLOW] D; [DETOUR] D;



G20-X2\_132x108; 12.0" Radius, 2.0" Border, 1.0" Indent, Black on Orange; [ROAD] D; [CLOSED] D; [LEXINGTON AVE] D; [TO] D; [KEITH RD] D; [FOLLOW] D; [DETOUR] D;

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-19\base\Traffic\Curves from CSAH 18 to CSAH 22.dwg

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.  
 PRINT NAME: ANDREW WITTER  
 SIGNATURE:   
 DATE: 4/28/14 REG. NO. 42757

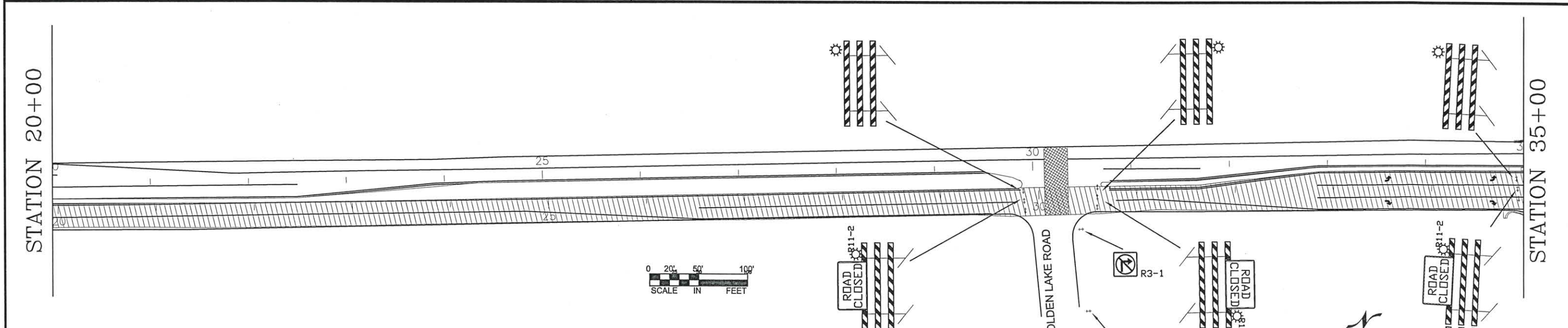
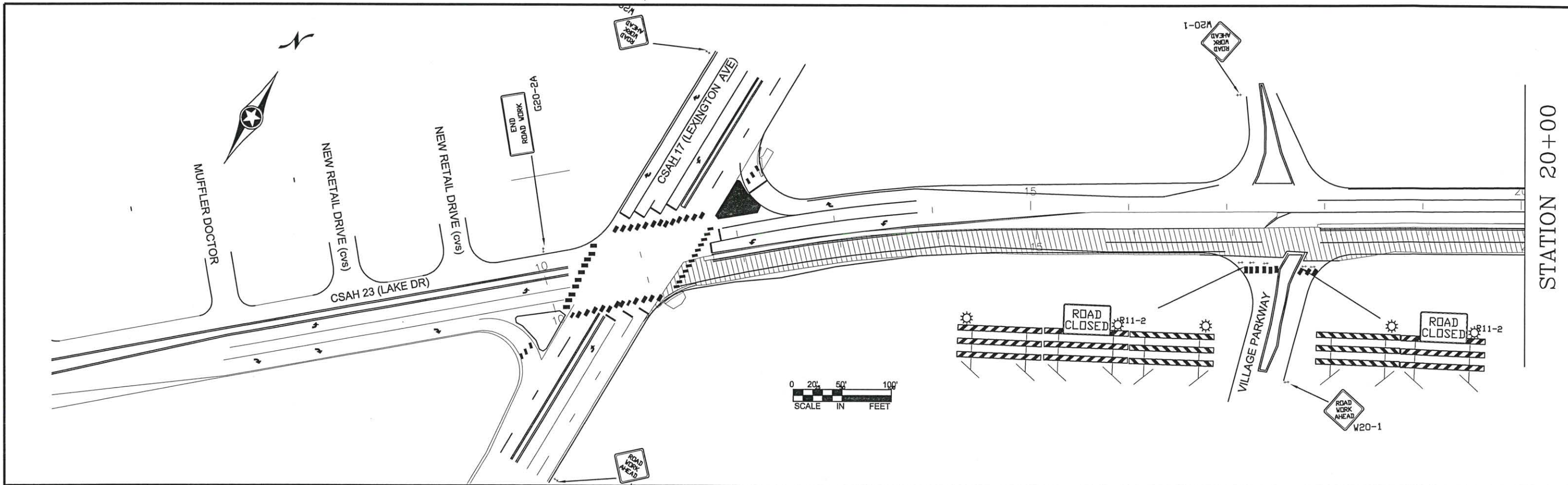
DRAWN BY: RLB DATE: 4/14/14  
 DESIGN BY: RLB DATE: 4/14/14  
 CHECKED BY: JR DATE: 4/14/14

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. \_\_\_\_\_  
 STATE AID PROJECT NO. \_\_\_\_\_  
 STATE AID PROJECT NO. \_\_\_\_\_  
 COUNTY PROJECT NO. 14-13-23

DETOUR QUANTITY \_\_\_\_\_  
 Sheet 11 of 24 Sheets





NOTES:

- ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE LATEST EDITION OF THE "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MN MUTCD), INCLUDING THE LATEST FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS.
- CONTRACTOR SHALL COMPLY WITH THE LONGITUDINAL DROP-OFF GUIDELINES AS PER THE FIELD MANUAL.
- 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 TYPE III BARRICADES SHALL BE REFLECTORIZED ON BOTH SIDES. BARRICADE MARKINGS SHALL BE SLANTED IN ACCORDANCE WITH THE MUTCD.

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-19\base\Traffic\Curves from CSAH 18 to CSAH 22.dwg

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PRINT NAME: ANDREW WITTER


SIGNATURE: *Andrew Witter*

DATE: 4/9/14 REG. NO. 42757

DRAWN BY: RLB DATE: 4/9/14

DESIGN BY: RLB DATE: 4/9/14

CHECKED BY: JR DATE: 4/9/14



**ANOKA COUNTY**  
HIGHWAY DEPT.

STATE PROJECT NO. \_\_\_\_\_

STATE AID PROJECT NO. \_\_\_\_\_

STATE AID PROJECT NO. \_\_\_\_\_

COUNTY PROJECT NO. 14-13-23

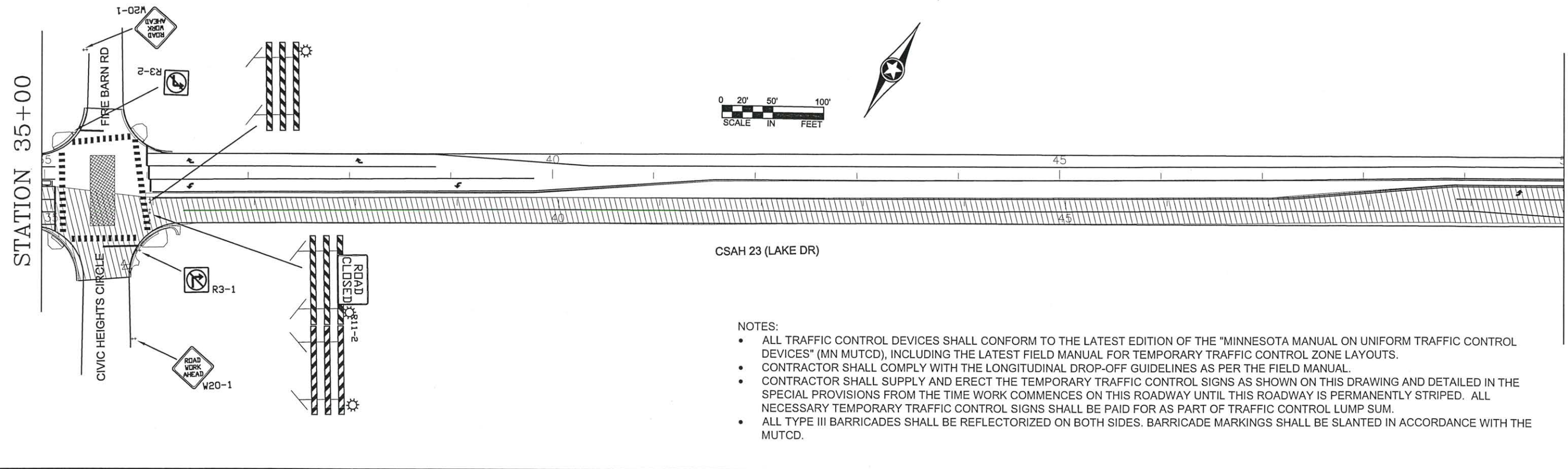
STAGE 1  
TRAFFIC CONTROL

Sheet 12 of 24 Sheets



STATION 35+00

STATION 50+00

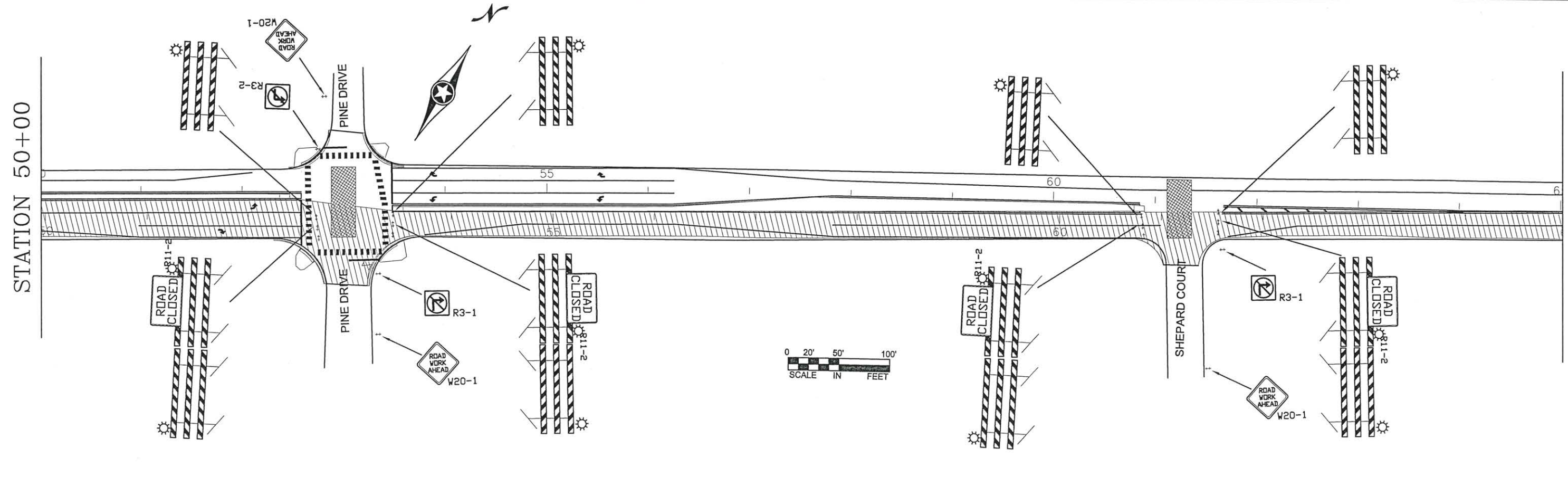


CSAH 23 (LAKE DR)

- NOTES:
- ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE LATEST EDITION OF THE "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MN MUTCD), INCLUDING THE LATEST FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS.
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STATION 50+00

STATION 65+00



SCALE IN FEET

NO	DATE	BY	CKD	APPR	REVISION

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PRINT NAME: ANDREW WITTER

SIGNATURE: [Signature]

DATE: 4/8/14 REG. NO. 42757

DRAWN BY: RLB DATE: 4/9/14

DESIGN BY: RLB DATE: 4/9/14

CHECKED BY: JR DATE: 4/9/14

**ANOKA COUNTY**  
HIGHWAY DEPT.

STATE PROJECT NO. \_\_\_\_\_

STATE AID PROJECT NO. \_\_\_\_\_

STATE AID PROJECT NO. \_\_\_\_\_

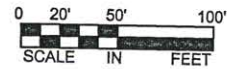
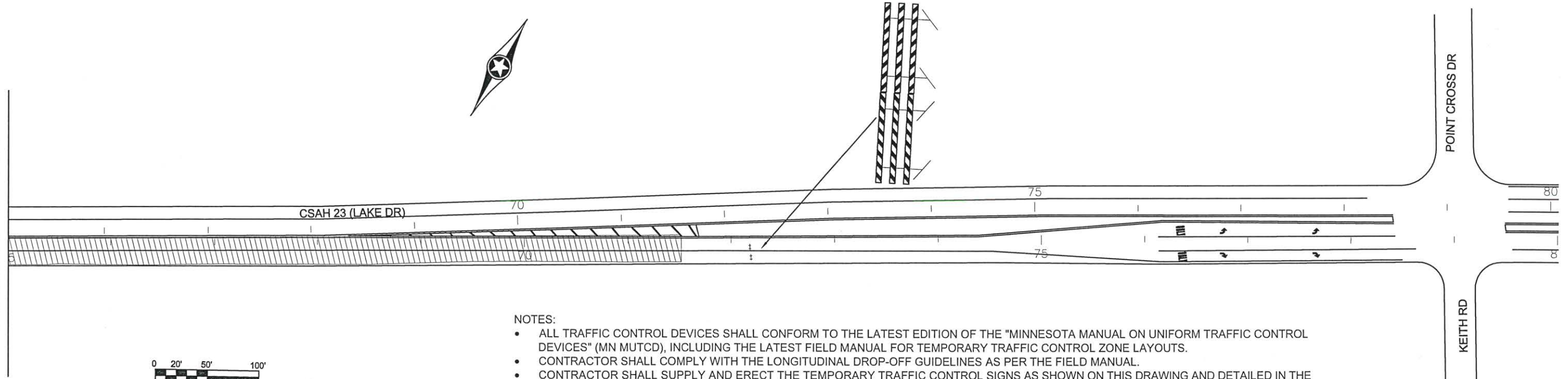
COUNTY PROJECT NO. 14-13-23

STAGE 1  
TRAFFIC CONTROL

Sheet 13 of 24 Sheets



STATION 65+00



NOTES:

- ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE LATEST EDITION OF THE "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MN MUTCD), INCLUDING THE LATEST FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS.
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 PRINT NAME: ANDREW WITTIER  
 SIGNATURE: *Andrew Wittier*  
 DATE: 4/9/14 REG. NO. 42757

DRAWN BY: RLB DATE: 4/9/14  
 DESIGN BY: RLB DATE: 4/9/14  
 CHECKED BY: JR DATE: 4/9/14

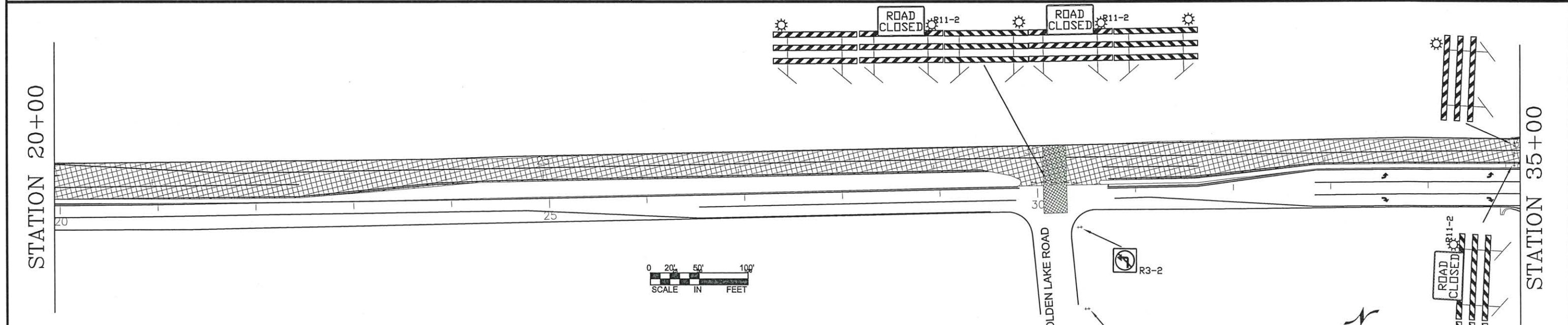
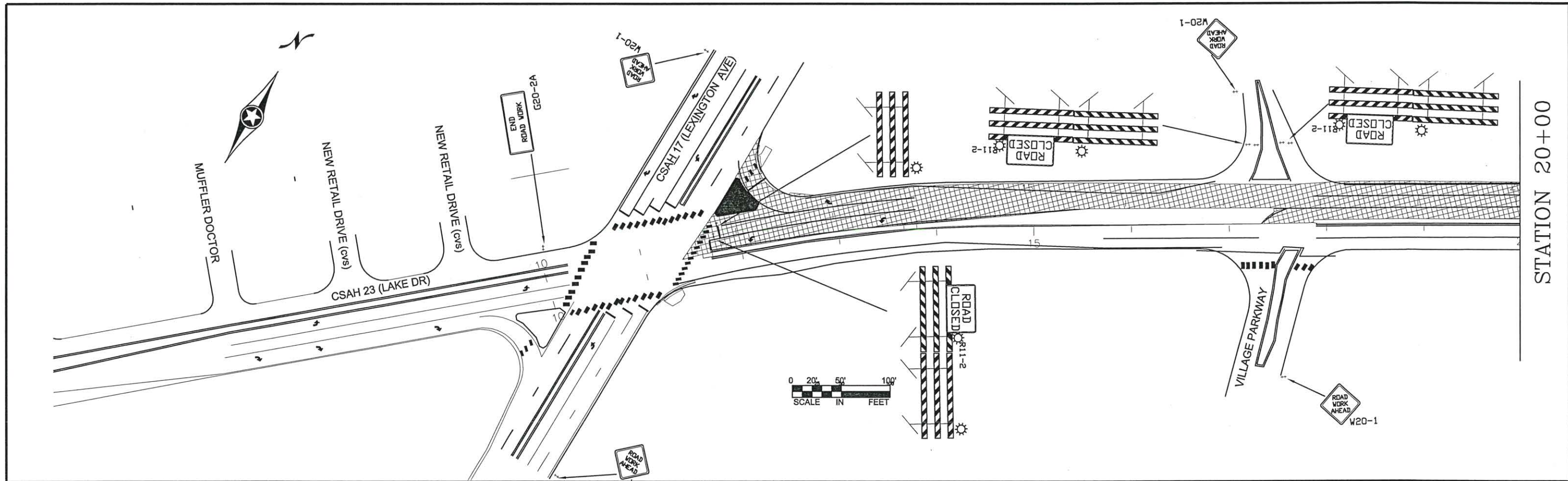


ANOKA COUNTY  
 HIGHWAY DEPT.

STATE PROJECT NO. \_\_\_\_\_  
 STATE AID PROJECT NO. \_\_\_\_\_  
 STATE AID PROJECT NO. \_\_\_\_\_  
 COUNTY PROJECT NO. 14-13-23

STAGE 1  
 TRAFFIC CONTROL  
 Sheet 14 of 24 Sheets





- NOTES:
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PRINT NAME: ANDREW WITTER

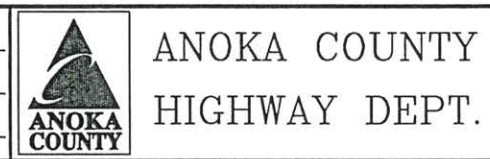
SIGNATURE: *Andrew Witter*

DATE: 4/9/14 REG. NO. 42757

DRAWN BY: RLB DATE: 4/9/14

DESIGN BY: RLB DATE: 4/9/14

CHECKED BY: JR DATE: 4/9/14



STATE PROJECT NO. \_\_\_\_\_

STATE AID PROJECT NO. \_\_\_\_\_

STATE AID PROJECT NO. \_\_\_\_\_

COUNTY PROJECT NO. 14-13-23

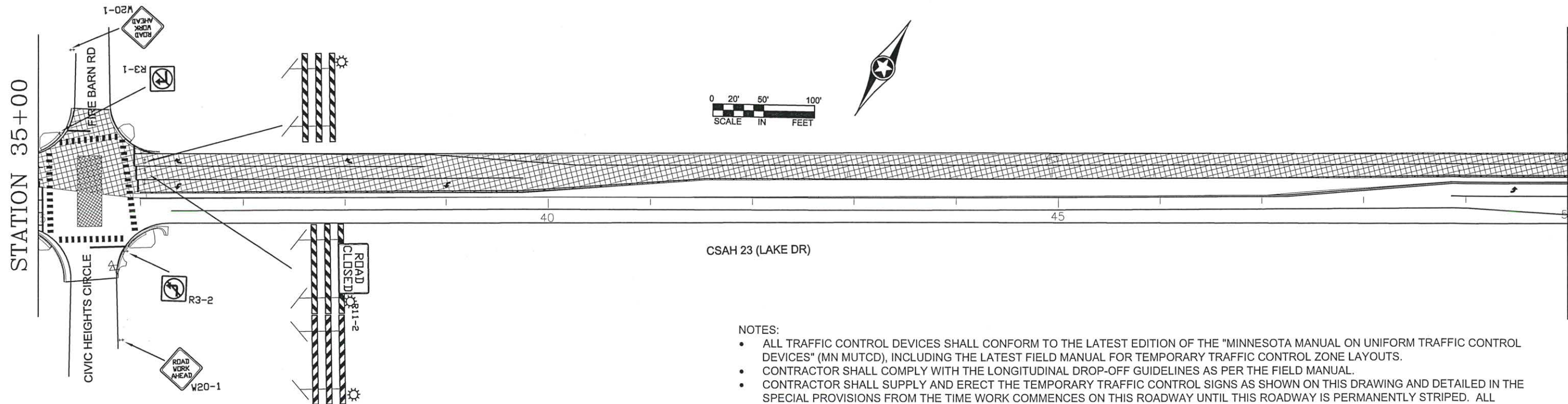
STAGE 2 TRAFFIC CONTROL

Sheet 15 of 24 Sheets



STATION 35+00

STATION 50+00

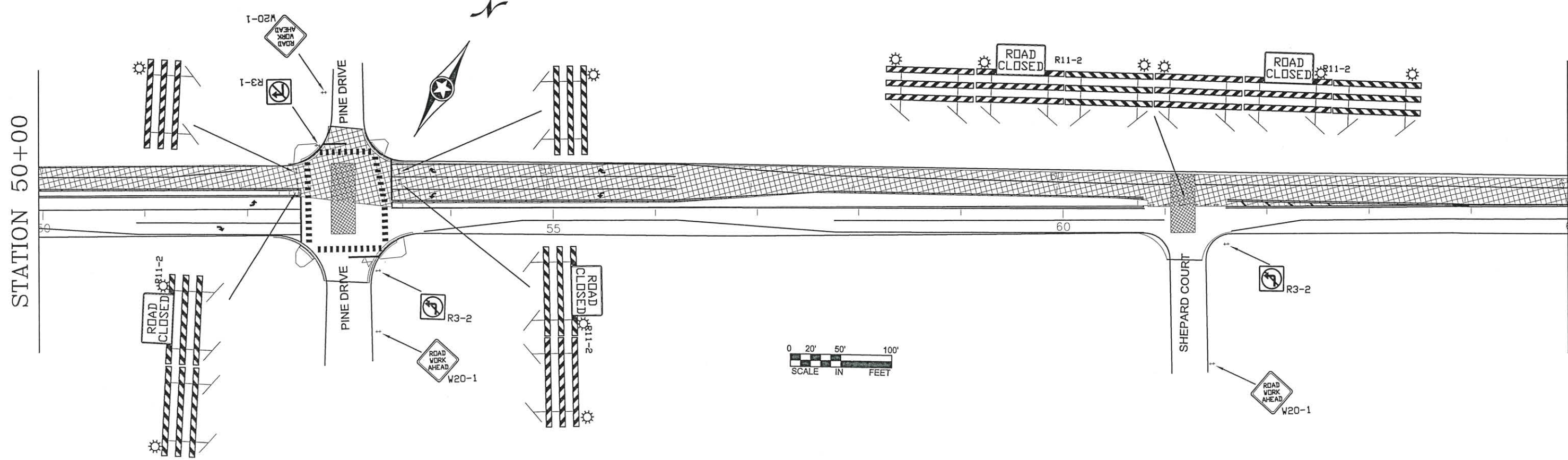


CSAH 23 (LAKE DR)

- NOTES:
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STATION 50+00

STATION 65+00



SCALE 0 20' 50' 100' IN FEET

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-19\base\Traffic\Curves from CSAH 18 to CSAH 22.dwg

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PRINT NAME: ANDREW WITTER

SIGNATURE: *Andrew Witter*

DATE: 4/28/14 REG. NO. 42757

DRAWN BY: RLB DATE: 4/9/14

DESIGN BY: RLB DATE: 4/9/14

CHECKED BY: JR DATE: 4/9/14



ANOKA COUNTY  
HIGHWAY DEPT.

STATE PROJECT NO. \_\_\_\_\_

STATE AID PROJECT NO. \_\_\_\_\_

STATE AID PROJECT NO. \_\_\_\_\_

COUNTY PROJECT NO. 14-13-23

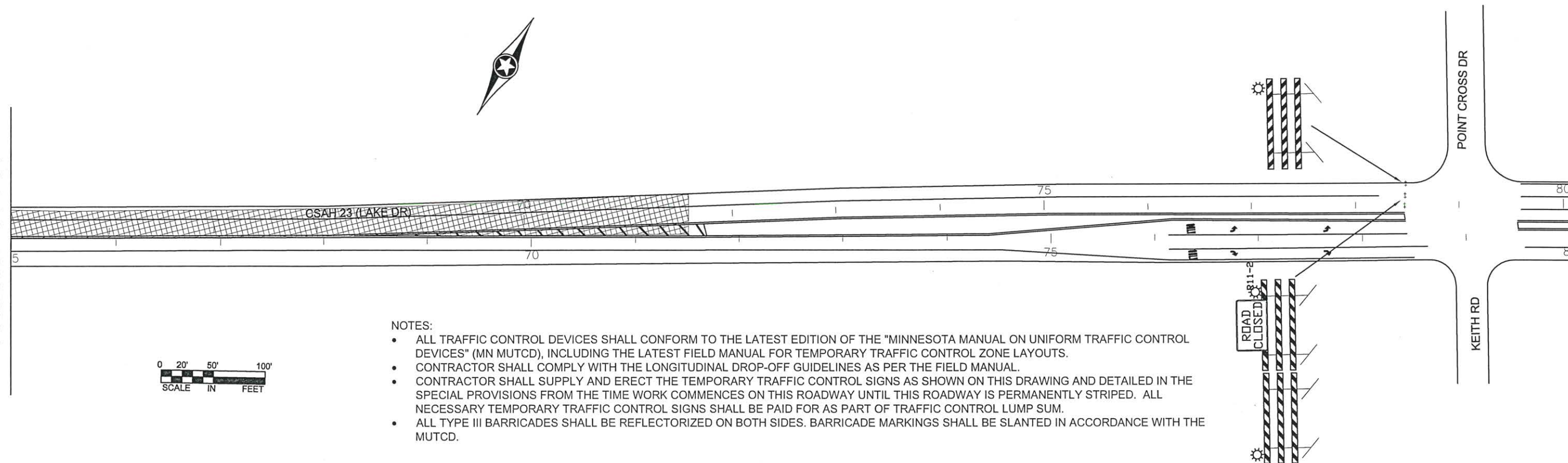
STAGE 2  
TRAFFIC CONTROL

Sheet 16 of 24 Sheets



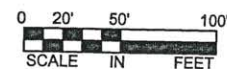
STATION 65+00

STATION 80+00

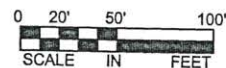
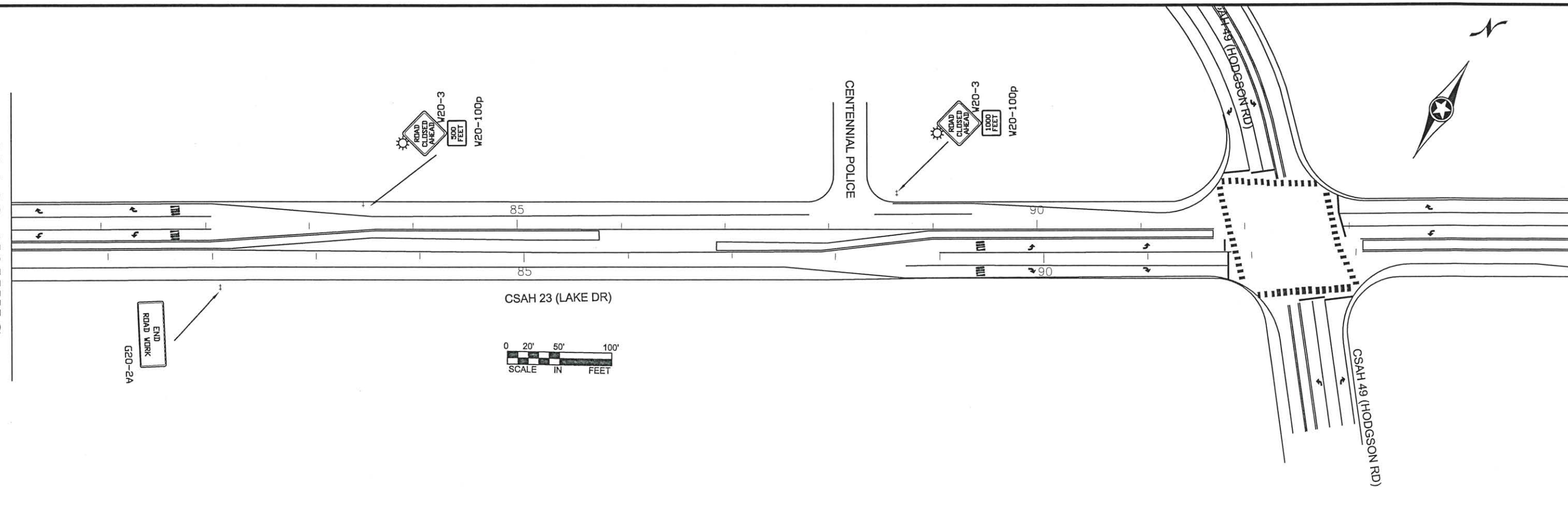


NOTES:

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STATION 80+00



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PRINT NAME: ANDREW WITTER

SIGNATURE: [Signature]

DATE: 4/9/14 REG. NO. 42757

DRAWN BY: RLB DATE: 4/9/14

DESIGN BY: RLB DATE: 4/9/14

CHECKED BY: JR DATE: 4/9/14



ANOKA COUNTY  
HIGHWAY DEPT.

STATE PROJECT NO. \_\_\_\_\_

STATE AID PROJECT NO. \_\_\_\_\_



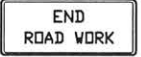








STATE AID PROJECT NO. \_\_\_\_\_

COUNTY PROJECT NO. 14-13-23

STAGE 2  
TRAFFIC CONTROL

Sheet 17 of 24 Sheets




M.U.T.C.D. CODE	SIZE	INSERT	QTY. STG. 1	QTY. STG. 2
R11-2	48" x 30"		10	10
TYPE III	8 FOOT		10	10
G20-2A	48" x 24"	 G20-2A	2	2
W20-1	48" x 48"	 W20-1	10	10
FLASHER			9	8
TYPE III	8 FOOT		10	8
FLASHER			10	13
TYPE III	8 FOOT		11	13
REFLECTORIZED REBOUNDABLE DRUM			0	0
R3-1	24" x 24"	 R3-1	4	2
R3-2	24" x 24"	 R3-2	2	4

NOTES:

- 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.
- ALL TYPE III BARRICADES SHALL BE REFLECTORIZED ON BOTH SIDES. BARRICADE MARKINGS SHALL BE SLANTED IN ACCORDANCE WITH THE M.U.T.C.D.

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-622-033\Base\TRAFFIC\0262233\_STGQTY.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: ANDREW WITNER  
 SIGNATURE:   
 DATE: 4/15/14 REG. NO. 42757

DRAWN BY: RLB DATE 04/15/14  
 DESIGN BY: RLB DATE 04/15/14  
 CHECKED BY: JR DATE 04/15/14



ANOKA COUNTY  
 HIGHWAY DEPT.

STATE PROJECT NO. \_\_\_\_\_  
 STATE AID PROJECT NO. \_\_\_\_\_  
 STATE AID PROJECT NO. \_\_\_\_\_  
 COUNTY PROJECT NO. 14-13-23

TRAFFIC CONTROL  
 SIGNING QUANTITIES



**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 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 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.

PAVEMENT MARKING TABULATION		
ITEM	UNIT	TOTAL QUANTITY
24" YELLOW THERMO- PLASTIC	LIN FT	163
24" WHITE THERMO- PLASTIC	LIN FT	313
3' X 6' THERMO- PLASTIC ZEBRA CROSSWALK	SQ FT	1998
PAVEMENT MESSAGE (RT ARROW) THERMO- PLASTIC	EACH	8
PAVEMENT MESSAGE (LT ARROW) THERMO- PLASTIC	EACH	10
4" SOLID LINE WHITE - EPOXY PAINT	LIN FT	3950
4" SOLID LINE YELLOW -EPOXY PAINT	LIN FT	1790
4" DOUBLE YELLOW - EPOXY PAINT	LIN FT	1630

**SYMBOLS & MATERIALS LEGEND**

■ CROSSWALK BLOCK WHITE PREFORMED THERMOPLASTIC

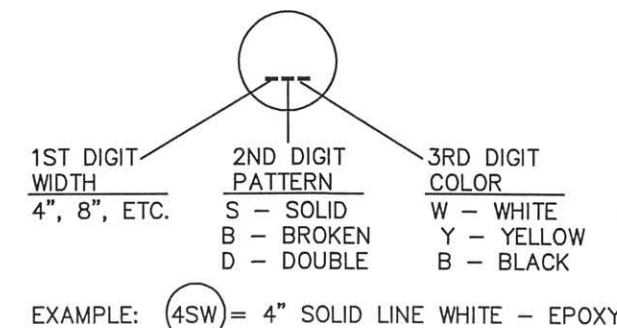
↩ PAVEMENT MESSAGE (LEFT ARROW) PREFORMED THERMOPLASTIC

**STRIPING KEY**

○ CIRCLE - EPOXY      □ SQUARE PREFORMED THERMOPLASTIC

△ TRIANGLE - PAINT

⬠ PENTAGON - REMOVABLE PREFORMED PLASTIC MARKING



NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\113-01-00\CSAH 18\Bases\TRAFFIC\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: ANDREW WITTER  
 SIGNATURE: *[Signature]*  
 DATE: 4/28/14 LICENSE NO. 42757

DRAWN BY: RLB DATE: 4-9-14  
 DESIGN BY: RLB DATE: 4-9-14  
 CHECKED BY: JR DATE: 4-9-14



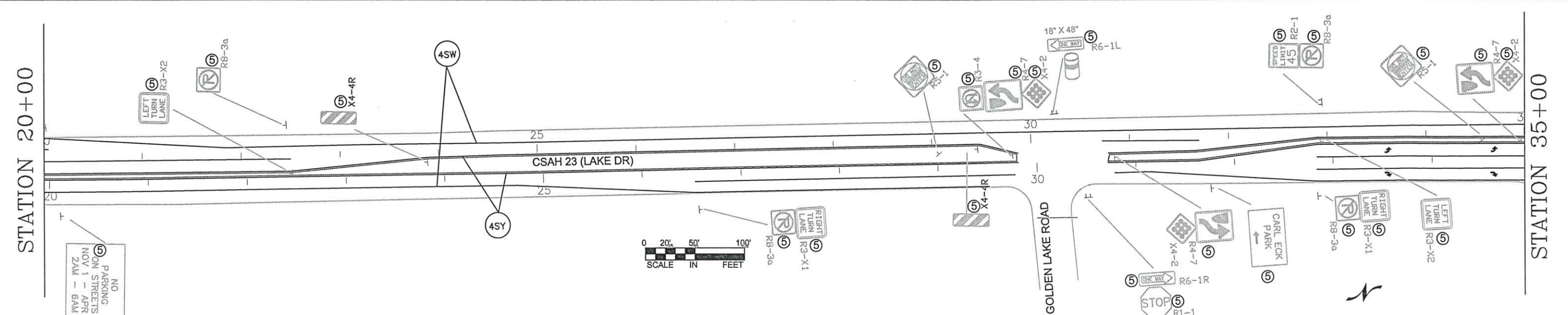
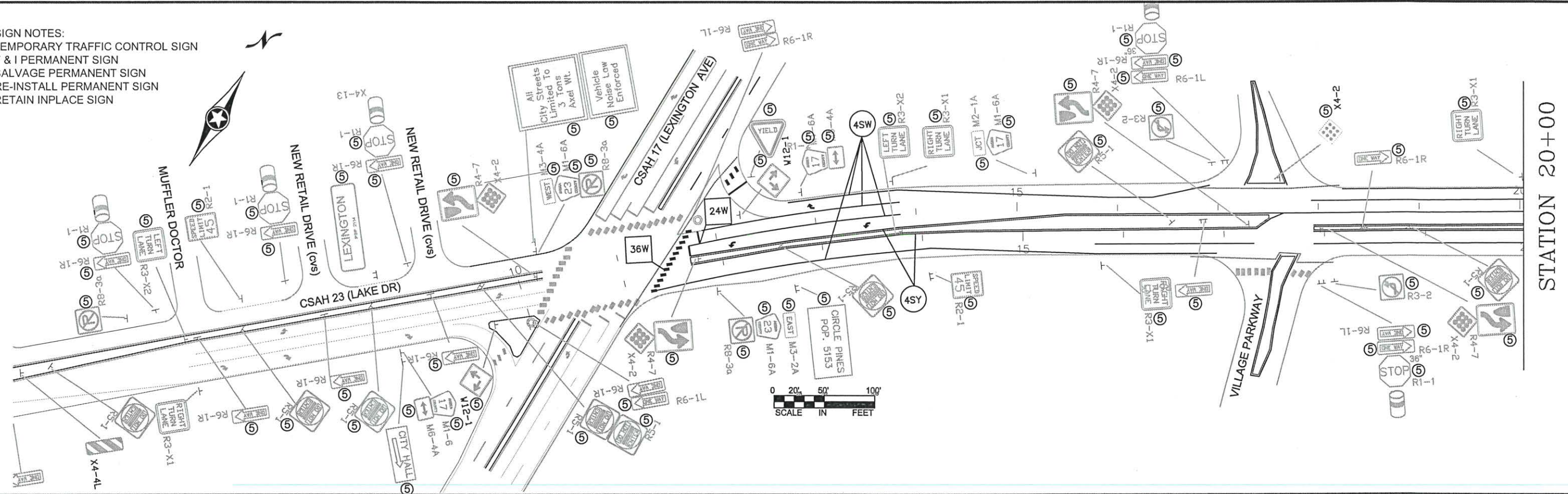
**ANOKA COUNTY**  
**HIGHWAY DEPT.**

STATE PROJECT NO. \_\_\_\_\_  
 STATE AID PROJECT NO. \_\_\_\_\_  
 STATE AID PROJECT NO. \_\_\_\_\_  
 COUNTY PROJECT NO. 14-13-23

PERMANENT MARKING  
TABULATION  
Sheet 19 of 24 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".
  - LOCATIONS OF PAVEMENT MARKINGS ARE APPROXIMATE. EXACT LOCATIONS WILL BE DETERMINED IN THE FIELD BY THE ENGINEER.
  - ALL MAINLINE PERMANENT STRIPING AND PAVEMENT MESSAGES SHALL BE PLACED WITHIN 72 HOURS OF MAINLINE PAVING.
  - SEE PERMANENT SIGN TABULATIONS FOR ADDITIONAL INFORMATION.
  - ALL SEGMENT STRIPE LINES SHALL BE EPOXY.
  - ALL SIGNS SHALL BE FURNISHED AND INSTALLED UNLESS OTHERWISE NOTED.
  - ACHD WILL CONDUCT NO PASSING ZONE STUDIES FOLLOWING PAVING. THEREFORE THE LOCATION OF NO PASSING ZONE SIGNS MAY CHANGE. THE CONTRACTOR IS RESPONSIBLE FOR PLACING THE NO PASSING ZONE SIGN AT THE CORRECT LOCATION.

NO	DATE	BY	CKD	APPR	REVISION
NAME: P:\02-617-19\base\Traffic\Curves from CSAH 18 to CSAH 22.dwg					

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

PRINT NAME: ANDREW WITTER

SIGNATURE: [Signature]

DATE: 4/9/14 REG. NO. 42757

DRAWN BY: RLB DATE 4/9/14

DESIGN BY: RLB DATE 4/9/14

CHECKED BY: JR DATE 4/9/14

**ANOKA COUNTY**  
HIGHWAY DEPT.

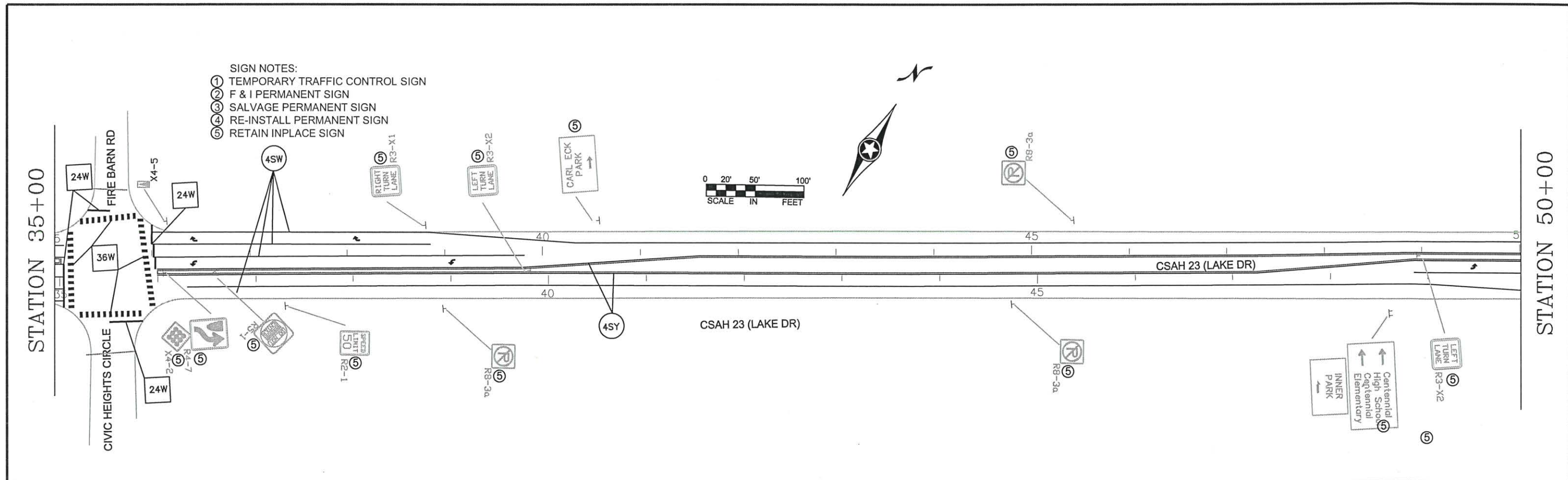
STATE PROJECT NO. \_\_\_\_\_

STATE AID PROJECT NO. \_\_\_\_\_

STATE AID PROJECT NO. \_\_\_\_\_

COUNTY PROJECT NO. 14-13-23

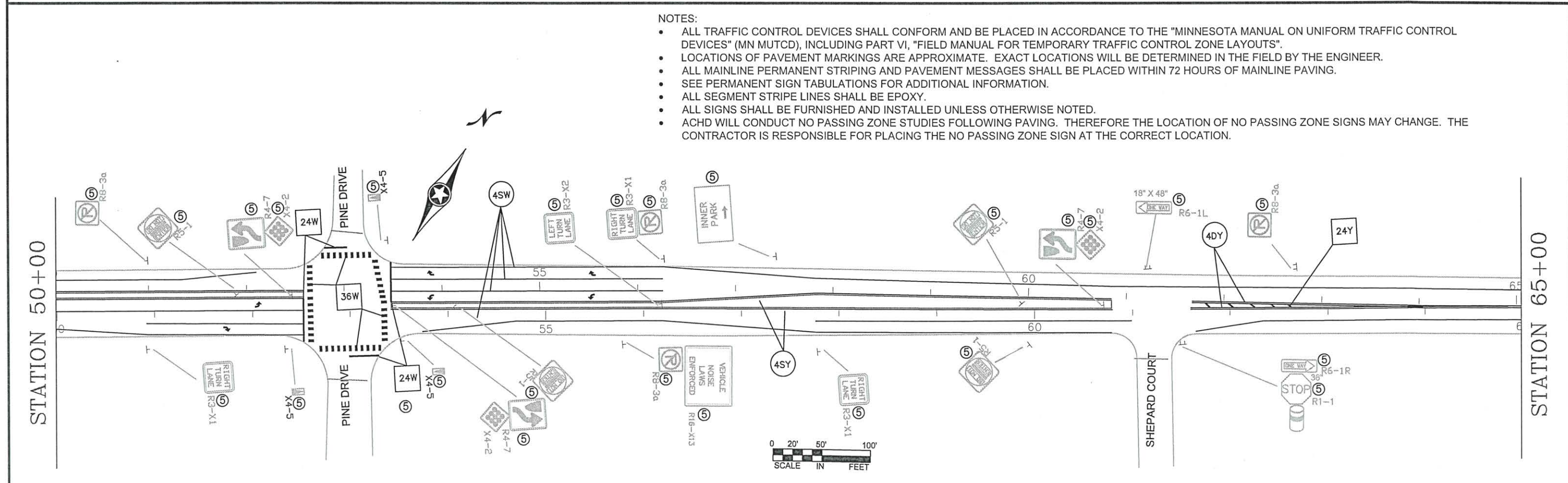





- SIGN NOTES:
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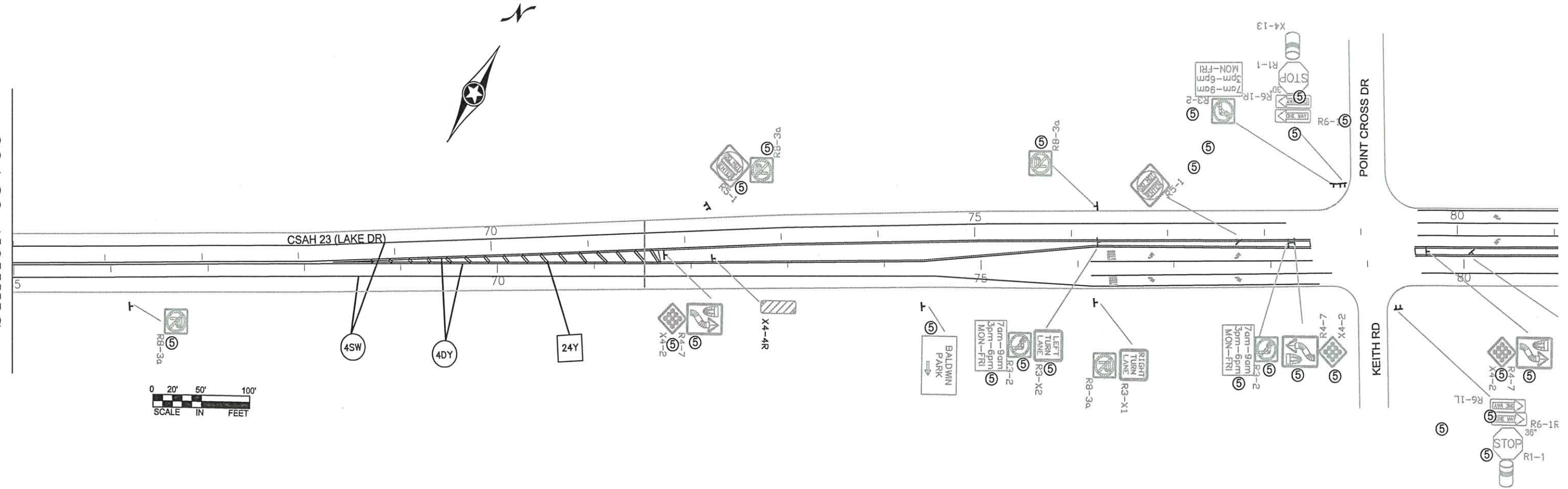
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NO. DATE BY CKD APPR REVISION NAME: P:\02-617-19\base\Traffic\Curves from CSAH 18 to CSAH 22.dwg								





NOTES:

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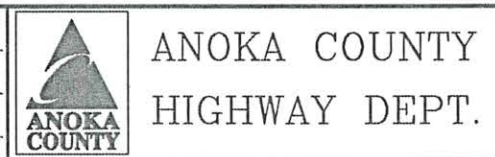
SIGN NOTES:

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- ② F & I PERMANENT SIGN
- ③ SALVAGE PERMANENT SIGN
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- ⑤ RETAIN INPLACE SIGN

NO	DATE	BY	CKD	APPR	REVISION

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.  
 PRINT NAME: ANDREW WITTER  
 SIGNATURE: *[Signature]*  
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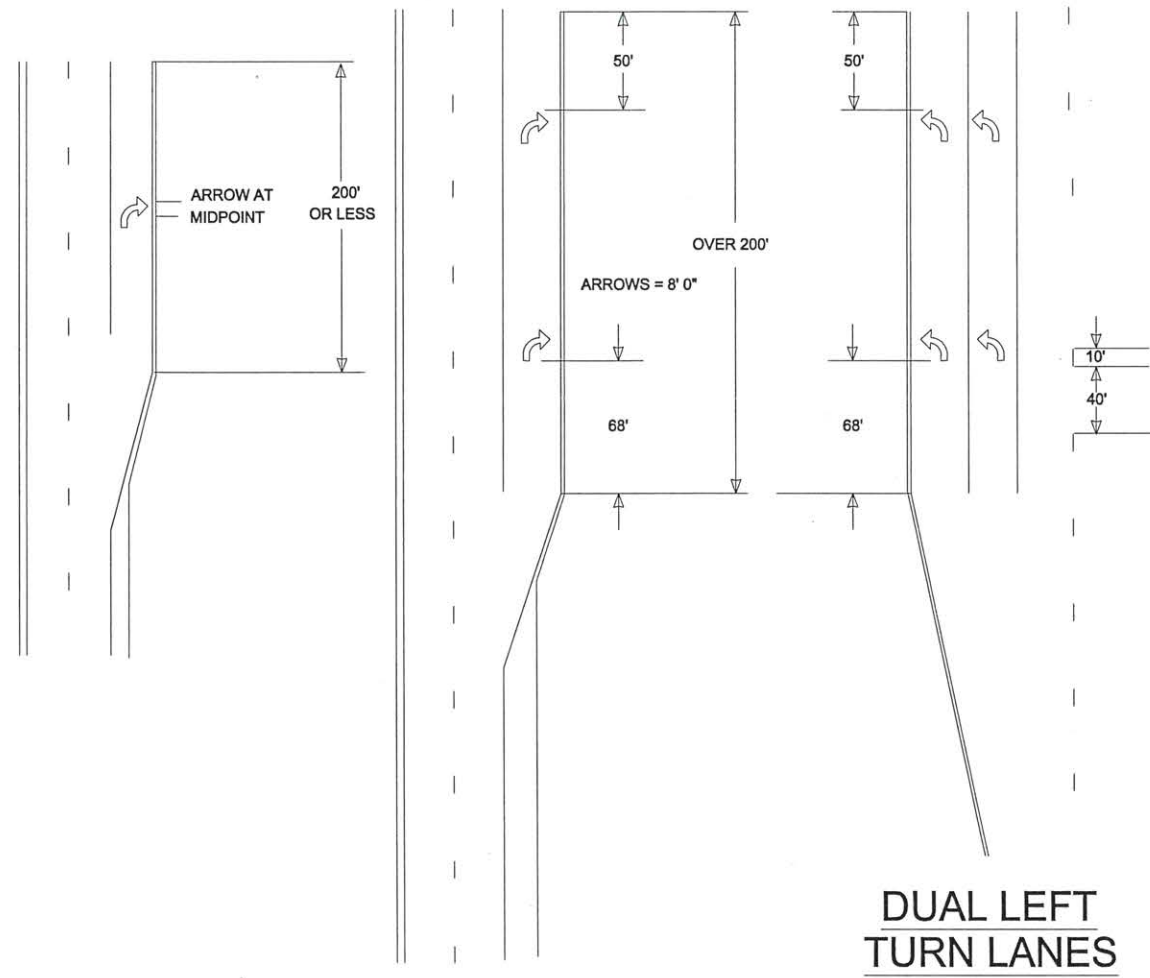


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 STATE AID PROJECT NO. \_\_\_\_\_  
 STATE AID PROJECT NO. \_\_\_\_\_  
 COUNTY PROJECT NO. 14-13-23

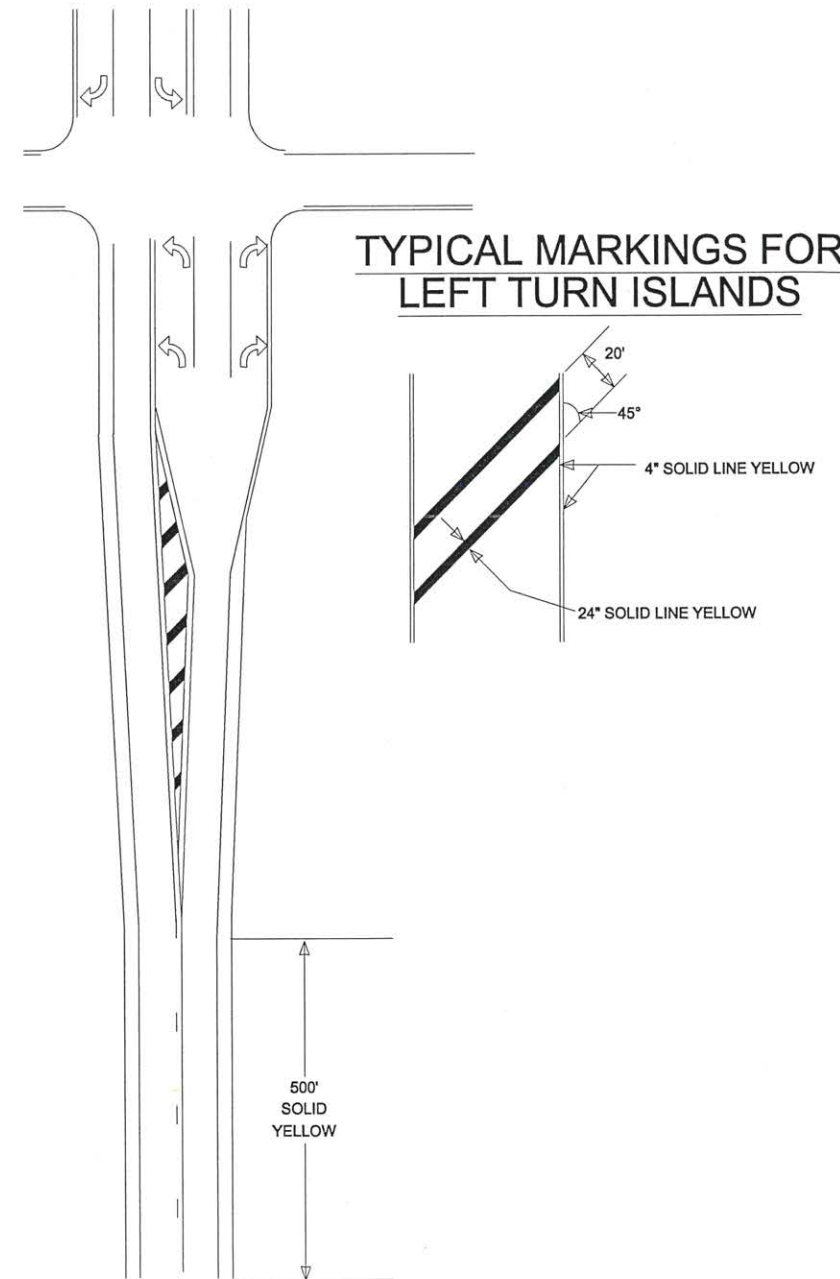
PERMANENT SIGNING AND STRIPING  
 Sheet 22 of 24 Sheets



**TYPICAL MESSAGE PLACEMENT  
FOR TURN LANES**



**TYPICAL MARKINGS FOR  
LEFT TURN ISLANDS**



NO	DATE	BY	CKD	APPR	REVISION

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.  
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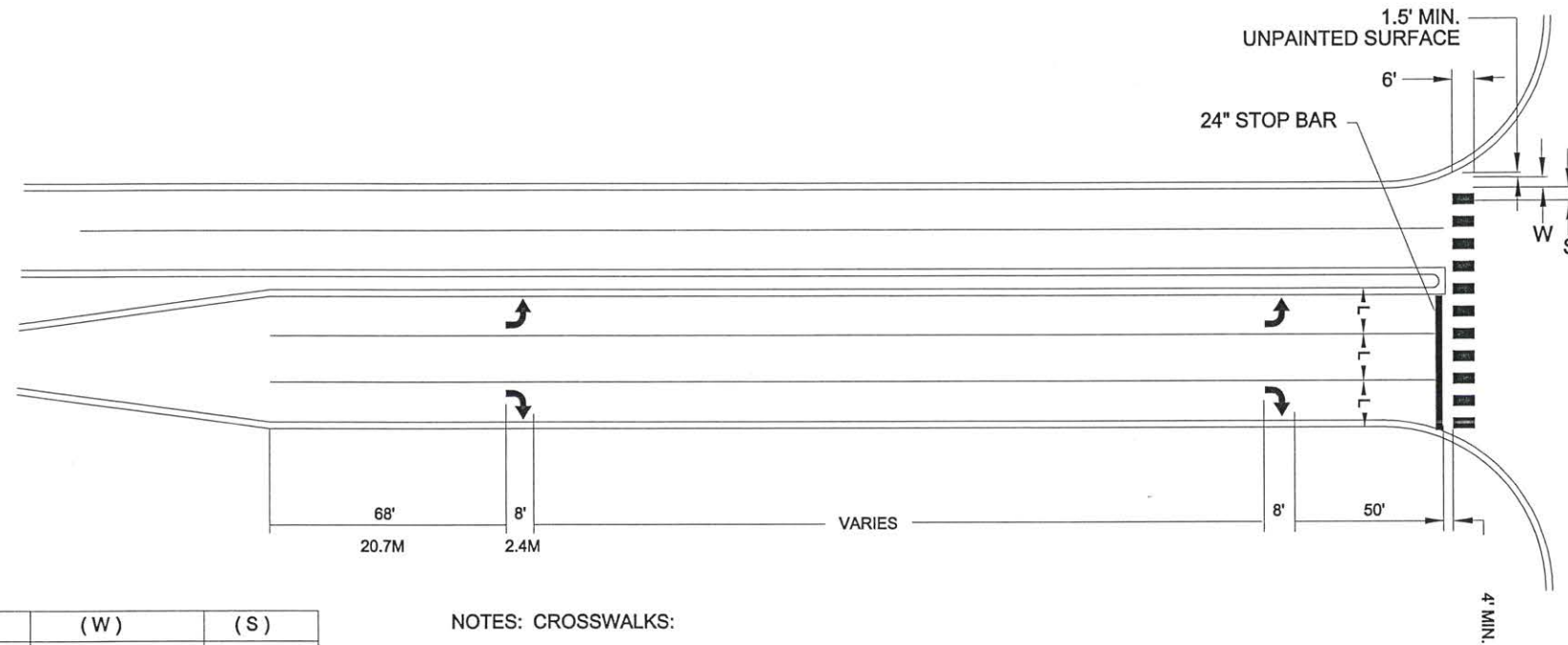
**ANOKA COUNTY  
HIGHWAY DEPT.**

STATE PROJECT NO. \_\_\_\_\_  
 STATE AID PROJECT NO. \_\_\_\_\_  
 STATE AID PROJECT NO. \_\_\_\_\_  
 COUNTY PROJECT NO. 14-13-23

**SIGNING & STRIPING  
DETAILS**  
 Sheet 23 of 24 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.

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

PRINT NAME: ANDREW WITTER  
 SIGNATURE: *[Signature]*  
 DATE: 4/23/14 REG. NO. 42757

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**ANOKA COUNTY  
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 COUNTY PROJECT NO. 14-13-23

**SIGNING & STRIPING  
 DETAILS**

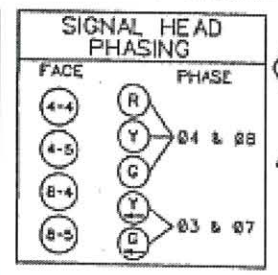
NO	DATE	BY	CKD	APPR	REVISION



7191

**SIGNAL INDICATION CHART**  
ALL SIGNAL INDICATIONS SHALL BE 300 mm  
ALL CIRCULAR & ARROW INDICATIONS SHALL BE LED

SIGNAL FACE	R	Y	G	RLTA	YLTA	GLTA
1-1-2				←	←	←
2-1,2-2,2-3	●	●	●			
4-1,4-2,4-3	●	●	●			
4-4,4-5	●	●	●	←	←	←
5-1,5-2				←	←	←
6-1,6-2,6-3	●	●	●			
8-1,8-2,8-3	●	●	●			
8-4,8-5	●	●	●	←	←	←



**PA100 FOUNDATION**  
TYPE PA100-A-10.7 m-D12 m-3 m (DAVIT AT 350°)  
2 - ONE WAY SIGNALS (OVERHEAD)  
(0 m AND 3.6 m FROM END OF MAST ARM)  
TYPE 10B POLE MOUNTED AT 90°  
LUMINAIRE - 200 WATT H.P.S. WITH P.E.C. AND TEST SWITCH  
ONE WAY EVP DETECTOR AND LIGHT  
(1.8 m FROM END OF MAST ARM), 19 mm HUB  
2 - PEDESTRIAN PUSHBUTTONS  
EXTEND 78 mm RSC INTO HH-13 WITH:  
3 - 12/C \*12, 2 - 3/C \*12  
1 - 3/C \*12 (LUM.) AND 1 - 3/C \*20

**PA100 FOUNDATION**  
TYPE PA100-A-10.7 m-D12 m-3 m (DAVIT AT 350°)  
2 - ONE WAY SIGNALS (OVERHEAD)  
(0 m AND 3.6 m FROM END OF MAST ARM)  
TYPE 10B POLE MOUNTED AT 90°  
LUMINAIRE - 200 WATT H.P.S. WITH P.E.C. AND TEST SWITCH  
ONE WAY EVP DETECTOR AND LIGHT  
(1.8 m FROM END OF MAST ARM), 19 mm HUB  
2 - PEDESTRIAN PUSHBUTTONS  
EXTEND 78 mm RSC INTO HH-5 WITH:  
3 - 12/C \*12, 2 - 3/C \*12  
1 - 3/C \*12 (LUM.) AND 1 - 3/C \*20

**PA100 FOUNDATION**  
TYPE PA100-A-12.2 m-D12 m-3 m (DAVIT AT 350°)  
2 - ONE WAY SIGNALS (OVERHEAD)  
(0.2 m AND 4.0 m FROM END OF MAST ARM)  
TYPE 10B POLE MOUNTED AT 90°  
LUMINAIRE - 200 WATT H.P.S. WITH P.E.C. AND TEST SWITCH  
ONE WAY EVP DETECTOR AND LIGHT  
(1.8 m FROM END OF MAST ARM), 19 mm HUB  
2 - PEDESTRIAN PUSHBUTTONS  
EXTEND 78 mm RSC INTO HH-10 WITH:  
3 - 12/C \*12, 2 - 3/C \*12  
1 - 3/C \*12 (LUM.) AND 1 - 3/C \*20

**PA100 FOUNDATION**  
TYPE PA100-A-12.2 m-D12 m-3 m (DAVIT AT 350°)  
2 - ONE WAY SIGNALS (OVERHEAD)  
(0.2 m AND 4.0 m FROM END OF MAST ARM)  
TYPE 10B POLE MOUNTED AT 90°  
LUMINAIRE - 200 WATT H.P.S. WITH P.E.C. AND TEST SWITCH  
ONE WAY EVP DETECTOR AND LIGHT  
(1.8 m FROM END OF MAST ARM), 19 mm HUB  
2 - PEDESTRIAN PUSHBUTTONS  
EXTEND 78 mm RSC INTO HH-10 WITH:  
3 - 12/C \*12, 2 - 3/C \*12  
1 - 3/C \*12 (LUM.) AND 1 - 3/C \*20

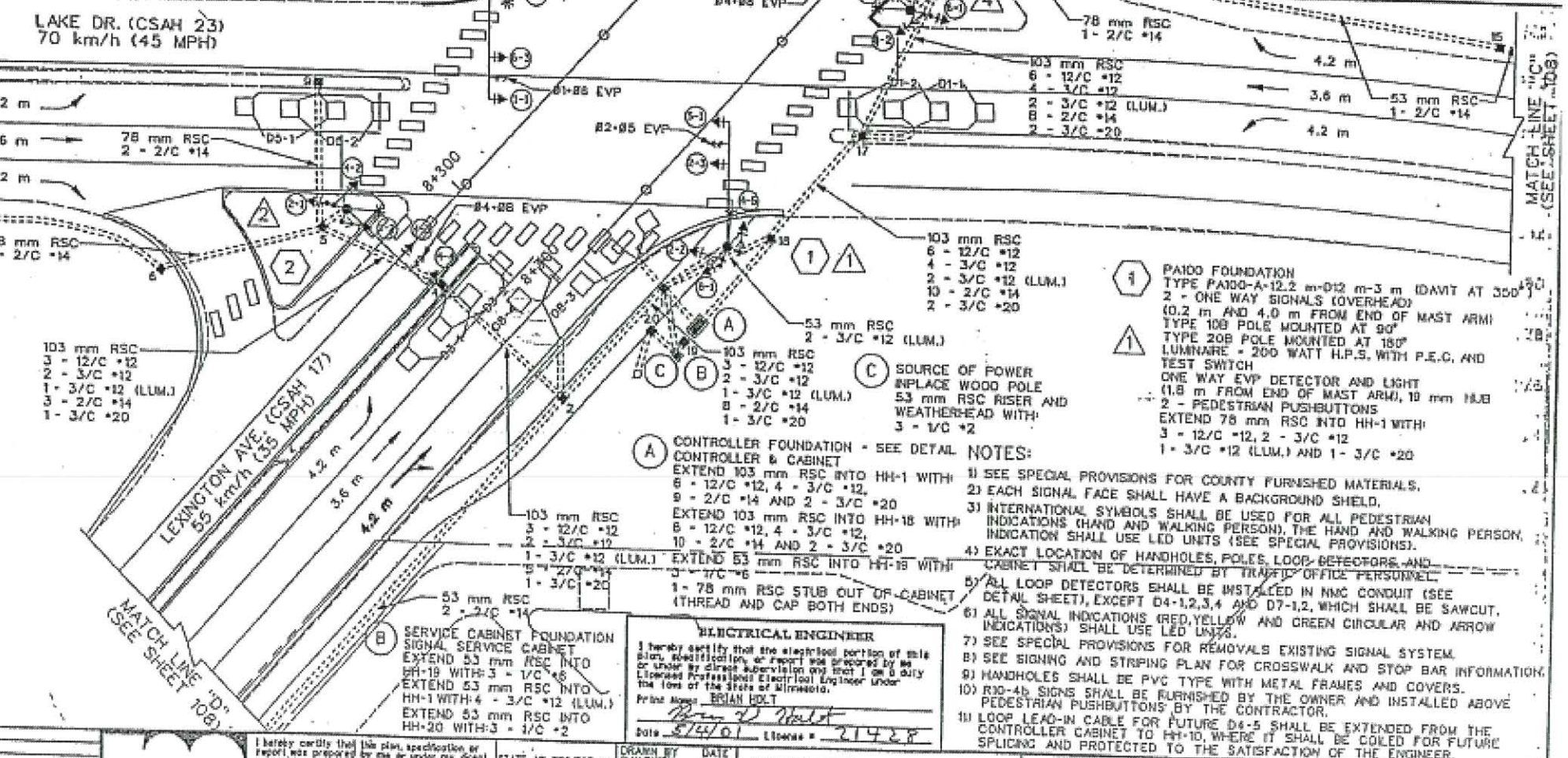
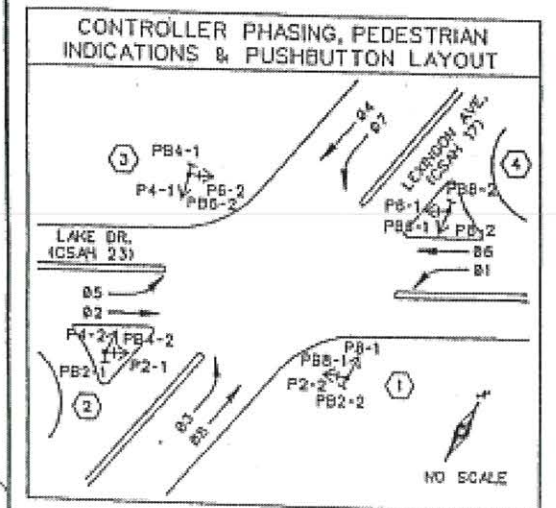
**FUNCTIONS:**  
(1) CALL AND EXTEND  
(3) EXTEND ONLY  
(7) DELAY CALL  
IMMEDIATE EXTEND

**LOOP DETECTOR CHART**

DESIGNATION	SIZE	FUNCTION	DISTANCE FROM STOP LINE
D1-1	2-1.7m x 1.7m	(1)	3.4, 12.2 m
D1-2	2-1.7m x 1.7m	(1)	-1.7, 8 m
D2-1	1-1.7m x 1.7m	(1)	107 m
D3-1	2-1.7m x 1.7m	(1)	3.4, 12.2 m
D3-2	2-1.7m x 1.7m	(1)	-1.7, 8 m
D4-1D4-2	1-1.7m x 1.7m	(3)	73 m
D4-3,D4-4	2-1.7m x 1.7m	(1)	-1.3, 4 m
D4-5	3-1.7m x 1.7m	(7)	-7.8,-3.4, 1 m
D5-1	2-1.7m x 1.7m	(1)	3.4, 12.2 m
D5-2	2-1.7m x 1.7m	(1)	-1.7, 8 m
D6-1	1-1.7m x 1.7m	(1)	107 m
D7-1	2-1.7m x 1.7m	(1)	3.4, 12.2 m
D7-2	2-1.7m x 1.7m	(1)	-1.7, 8 m
D8-1D8-2	1-1.7m x 1.7m	(3)	73 m
D8-3	3-1.7m x 1.7m	(1)	-7.8,-3.4, 1 m
D8-4	2-1.7m x 1.7m	(1)	-1.3, 4 m

**SIGNAL OPERATION NOTES**

- NORMAL OPERATION IS 8 PHASE
- FLASH MODE SHALL BE ALL RED
- 01 & 05 SHALL BE PROTECTED LEFT TURNS
- 03 & 07 SHALL BE PROTECTED/PERMISSIVE LEFT TURNS
- 02 & 06 SHALL BE ON VEHICLE RECALL



**NOTES:** ALL ITEMS ON THIS SHEET ARE EXISTING AND SHALL REMAIN IN PLACE, EXCEPT FOR WORK TO BE COMPLETED IN THIS CONTRACT, WHICH INCLUDES:  
1) REPLACE EXISTING SAWCUT LOOP DETECTORS D4-1,2,3,4 AND D7-1,2 WITH MMC LOOP DETECTORS. SPLICE LOOP WIRE TO EXISTING LEAD-IN WIRE IN HANDHOLE.  
2) FALLOUT DETECTOR D4-5. SPLICE LOOP WIRE TO EXISTING LEAD-IN WIRE IN HH-10.  
3) CHANGE D8-3 FUNCTION FROM (7) TO (1).

**CONTROLLER FOUNDATION - SEE DETAIL NOTES:**

- SEE SPECIAL PROVISIONS FOR COUNTY FURNISHED MATERIALS.
- EACH SIGNAL FACE SHALL HAVE A BACKGROUND SHIELD.
- INTERNATIONAL SYMBOLS SHALL BE USED FOR ALL PEDESTRIAN INDICATIONS (HAND AND WALKING PERSON), THE HAND AND WALKING PERSON INDICATION SHALL USE LED UNITS (SEE SPECIAL PROVISIONS).
- EXACT LOCATION OF HANDHOLES, POLES, LOOP DETECTORS, AND CABINET SHALL BE DETERMINED BY TRAFFIC OFFICE PERSONNEL.
- ALL LOOP DETECTORS SHALL BE INSTALLED IN MMC CONDUIT (SEE DETAIL SHEET), EXCEPT D4-1,2,3,4 AND D7-1,2, WHICH SHALL BE SAWCUT.
- ALL SIGNAL INDICATIONS (RED, YELLOW AND GREEN CIRCULAR AND ARROW INDICATIONS) SHALL USE LED UNITS.
- SEE SPECIAL PROVISIONS FOR REMOVALS EXISTING SIGNAL SYSTEM.
- SEE SIGNING AND STRIPING PLAN FOR CROSSWALK AND STOP BAR INFORMATION.
- HANDHOLES SHALL BE PVC TYPE WITH METAL FRAMES AND COVERS.
- R30-4b SIGNS SHALL BE FURNISHED BY THE OWNER AND INSTALLED ABOVE PEDESTRIAN PUSHBUTTONS BY THE CONTRACTOR.
- LOOP LEAD-IN CABLE FOR FUTURE D4-5 SHALL BE EXTENDED FROM THE CONTROLLER CABINET TO HH-10, WHERE IT SHALL BE COILED FOR FUTURE SPlicing AND PROTECTED TO THE SATISFACTION OF THE ENGINEER.

**CONTROLLER FOUNDATION - SEE DETAIL NOTES:**

**CONTROLLER & CABINET**  
EXTEND 103 mm RSC INTO HH-1 WITH:  
6 - 12/C \*12, 4 - 3/C \*12,  
9 - 2/C \*14 AND 2 - 3/C \*20  
EXTEND 103 mm RSC INTO HH-18 WITH:  
6 - 12/C \*12, 4 - 3/C \*12,  
10 - 2/C \*14 AND 2 - 3/C \*20  
EXTEND 53 mm RSC INTO HH-18 WITH:  
3 - 1/C \*6  
1 - 78 mm RSC STUB OUT OF CABINET (THREAD AND CAP BOTH ENDS)

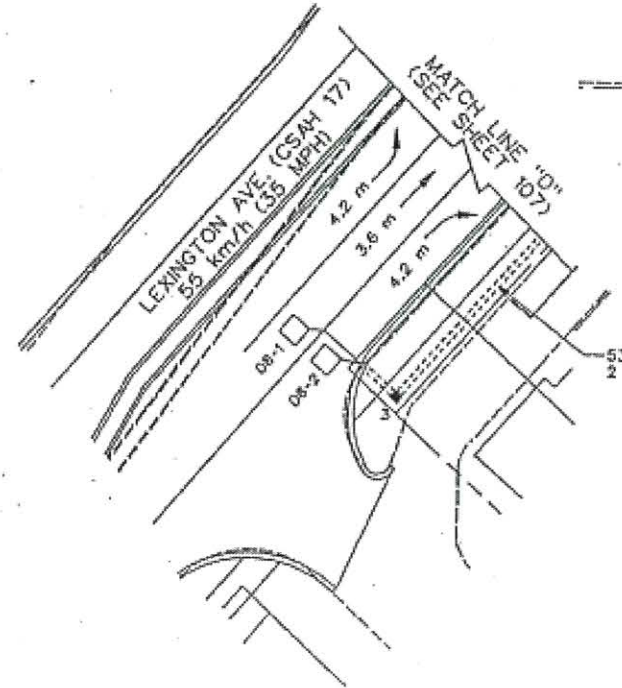
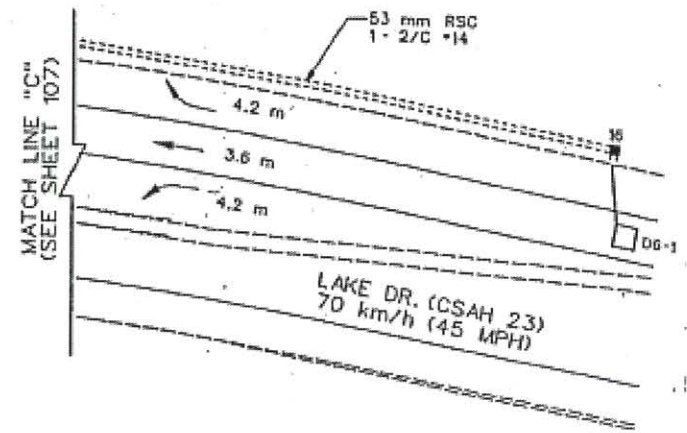
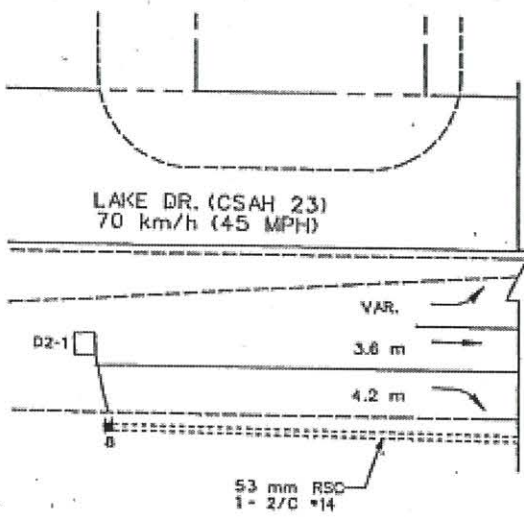
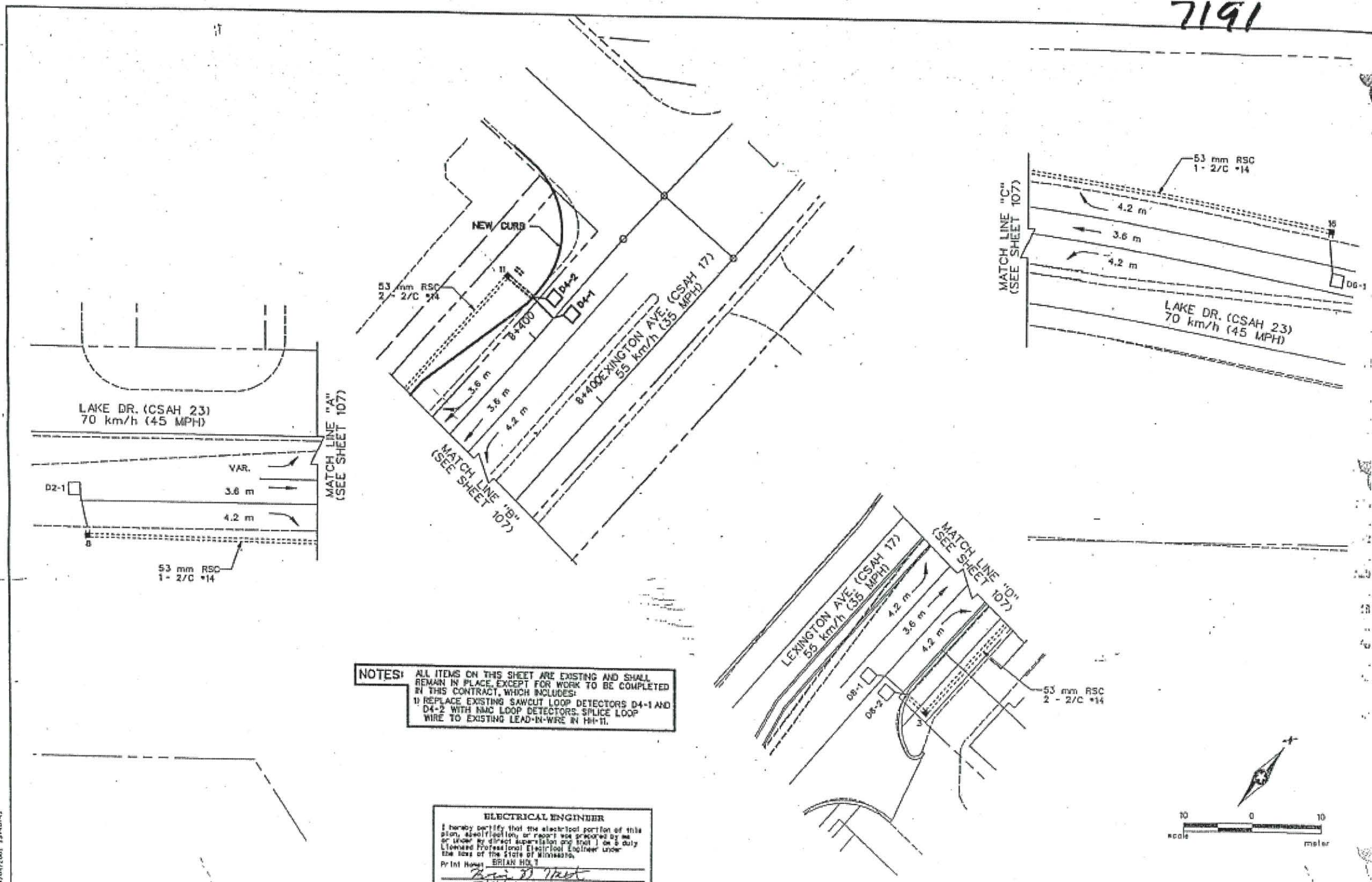
**SERVICE CABINET FOUNDATION**  
SIGNAL SERVICE CABINET  
EXTEND 53 mm RSC INTO HH-19 WITH: 3 - 1/C \*6  
EXTEND 53 mm RSC INTO HH-1 WITH: 4 - 3/C \*12 (LUM.)  
EXTEND 53 mm RSC INTO HH-20 WITH: 3 - 1/C \*2

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

DATE: 04/17/2014 License No. 21428



7191

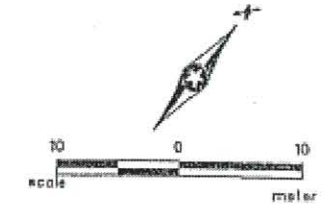
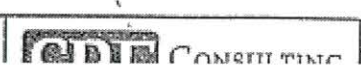


**NOTES:** ALL ITEMS ON THIS SHEET ARE EXISTING AND SHALL REMAIN IN PLACE, EXCEPT FOR WORK TO BE COMPLETED IN THIS CONTRACT, WHICH INCLUDES:  
 1) REPLACE EXISTING SAWCUT LOOP DETECTORS D4-1 AND D4-2 WITH NMC LOOP DETECTORS. SPLICE LOOP WIRE TO EXISTING LEAD-IN WIRE IN HH-11.

**ELECTRICAL ENGINEER**  
 I hereby certify that the electrical portion of this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Electrical Engineer under the laws of the State of Minnesota.  
 Print Name: BRIAN HOLT  
 Signature: *Brian Holt*  
 Date: 5/14/14 License #: 21428

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the laws of the State of Minnesota.  
 Print Name: ANDREW WINTER  
 Signature: *Andrew Winter*  
 Date: 4/28/14 License #: 42757

STATE AND PROJECT NO. S.A.P. 206-023-14  
 DRAWN BY: B.M. SMITH  
 DATE: 04-01  
 DESIGNED BY:



FILE: P:\14-01-00\CSAH\_23 (Lexington-NofShepard)\Base\PROPOSED\PLAN - LOOPS.dgn  
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 PLOTTER: HP DesignJet T1100e  
 PLOT DATE: 04/17/2014 13:40:43

NO	DATE	BY	CKD	APPR	REVISION	TIME
	04/17/2014					9:40:49 AM

NAME: P:\14-01-00\CSAH\_23 (Lexington-NofShepard)\Base\PROPOSED\PLAN - LOOPS.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: ANDREW WINTER  
 SIGNATURE: *Andrew Winter*  
 DATE: 4/28/14 LICENSE NO. 42757

DRAWN BY: JJ DATE: 04/17/2014  
 DESIGN BY: JJ DATE: 04/17/2014  
 CHECKED BY: DFF DATE: 04/17/2014



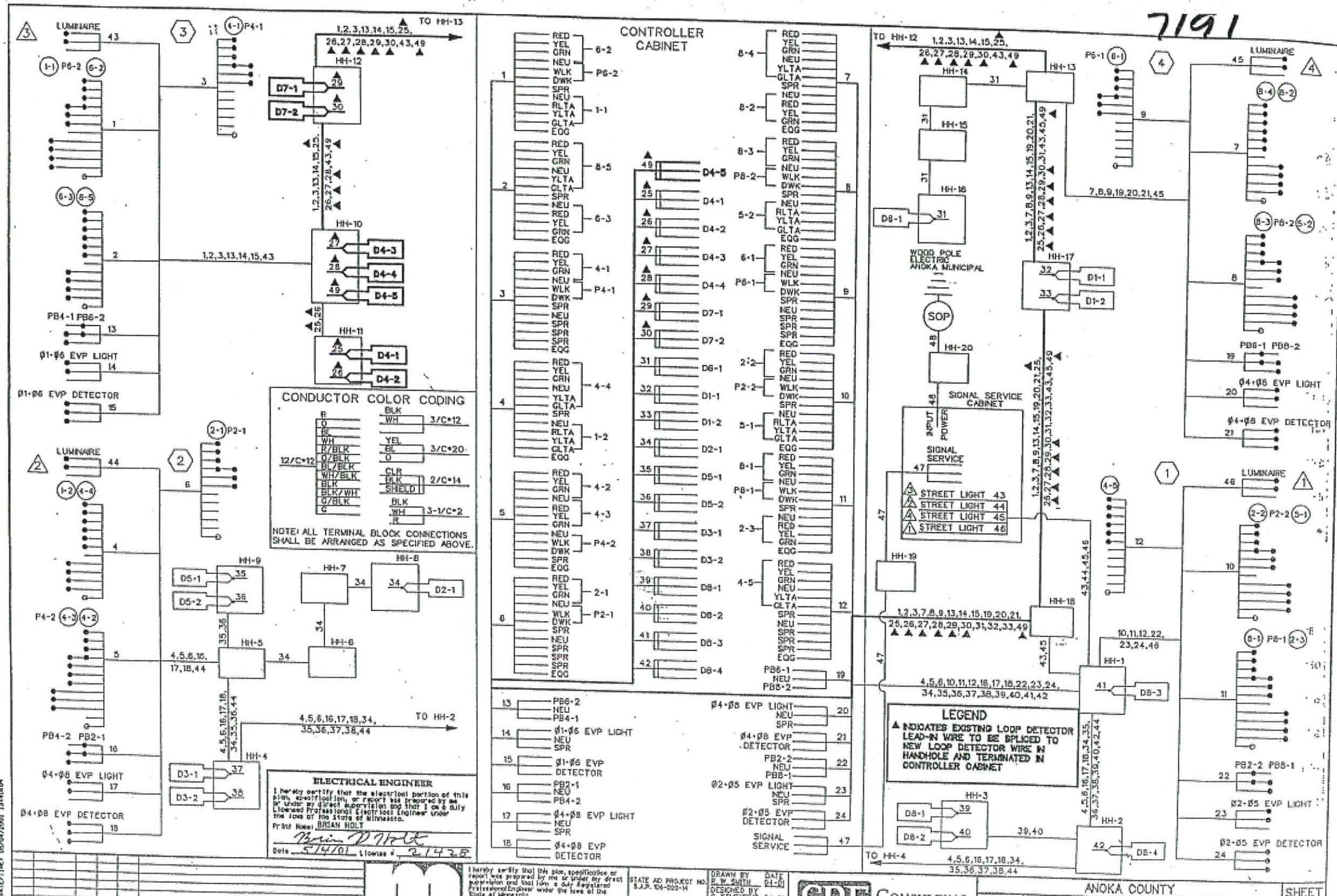
ANOKA COUNTY  
 HIGHWAY DEPT.

COUNTY PROJECT 14-13-23

ORIGINAL SIGNAL PLANS  
 (FOR REFERENCE ONLY)

Sheet S2 of S7 Sheets





NO	DATE	BY	CKD	APPR	REVISION	04/17/2014	9:44:16 AM
NAME: P:14-01-00/CSAH_23 (Lexington-NofShepard)/Base/PROPOSED/PLAN - LOOPS.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: **ANDREW WITTE**

SIGNATURE: *Andrew Witte*

DATE: **4/25/14** LICENSE NO. **42757**

DRAWN BY: **JJ** DATE: **04/17/2014**

DESIGN BY: **JJ** DATE: **04/17/2014**

CHECKED BY: **DF** DATE: **04/17/2014**

**ANOKA COUNTY HIGHWAY DEPT.**

COUNTY PROJECT **14-13-23**

**ANOKA COUNTY HIGHWAY DEPT.**

COUNTY PROJECT **14-13-23**

ORIGINAL SIGNAL PLANS (FOR REFERENCE ONLY)

Sheet **S3** of **S7** Sheets



**7192 LOOP DETECTORS**

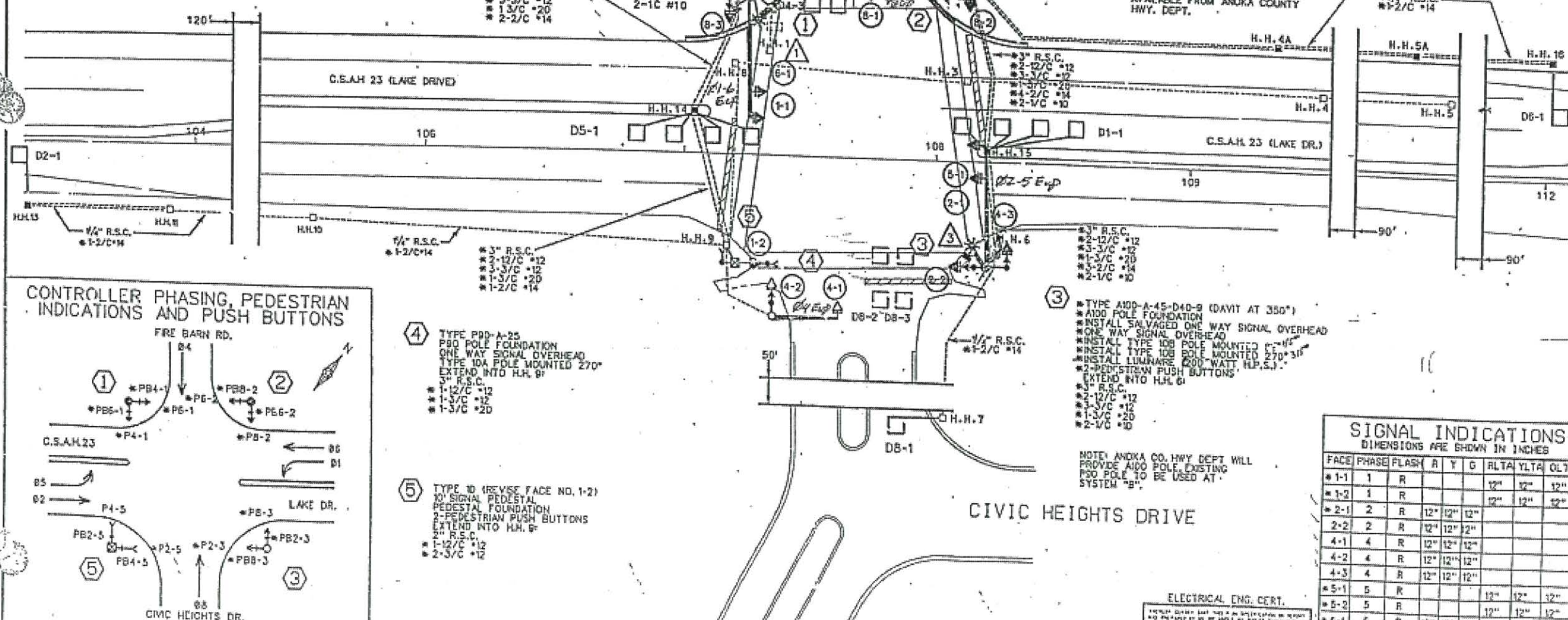
NUMBER	SIZE	FUNCTION	LOCATION
D1-1	MULTIPLE	1	5'
D2-1	6' X 6'	1	400'
D4-1	6' X 6'	3 & 8	INPLACE
D4-2	6' X 6'	1	5'
D4-3	6' X 6'	7	5'
D5-1	MULTIPLE	1	5'
D6-1	6' X 6'	1	400'
D8-1	6' X 6'	3 & 8	INPLACE
D8-2	6' X 6'	1	INPLACE
D8-3	6' X 6'	7	INPLACE

LOCATION-DISTANCE FROM STOP LINE TO DETECTOR

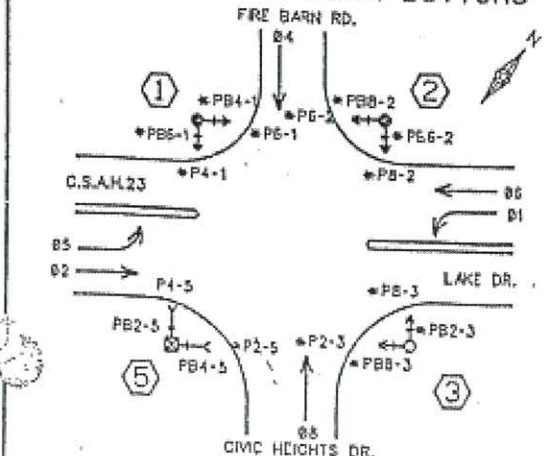
- LOOP DETECTOR FUNCTION
- 1- CALL AND EXTEND
  - 2- CALL ONLY
  - 3- EXTEND ONLY
  - 4- CALL ONLY DENS
  - 5- DLY CALL ONLY
  - 6- DLY CALL ONLY DENSITY
  - 7- DLY CALL IMMEDIATE EXTEND
  - 8- CARRY OVER
  - 9- ADVISORY
  - 10- SAMPLING

**NOTES:**

- 1) ALL ITEMS OF THIS SIGNAL SYSTEM ARE INPLACE AND SHALL BE USED INPLACE UNLESS OTHERWISE NOTED WITH AN "A" (WORK TO BE DONE)
- 2) SEE SPECIAL PROVISIONS FOR CONTRACTORS RESPONSIBILITY FOR LOCATION OF UTILITIES.
- 3) ALL SIGNAL FACES SHALL HAVE BACKGROUND SHIELDS.
- 4) EACH LUMINAIRE SHALL HAVE A PEC AND CHECK SWITCH.
- 5) SEE SPECIAL PROVISIONS FOR ANOKA COUNTY SERVICE CABINET DETAILS.
- 6) DIRECTIONAL SIGNS SHALL BE REINSTALLED ON MAST ARMS AT POLES 1, 2, AND 3. SEE SPECIAL PROVISIONS.
- 7) ALL NEW HANDHOLES SHALL BE CONCRETE WITH CONCRETE COVERS.
- 8) LOOP DETECTOR WIRES SHALL BE CROSS LINKED POLYETHYLENE (XLP) IN 1" N.M.C. SEE SPECIAL PROVISIONS.
- 9) ALL PEDESTRIAN INDICATIONS SHALL BE 12" X 12".
- 10) HUBS FOR POLE MOUNTED SIGNAL INDICATIONS SHALL BE PROVIDED ON 4 SIDES OF MAST ARM POLES.
- 11) SALVAGE ALL ITEMS OF THIS SIGNAL SYSTEM NOT USED AS PART OF THE FUTURE SIGNAL SYSTEM. FOR EXISTING SIGNAL SYSTEM SEE SHEETS 10 AND 10.
- 12) A 3/4" COUPLING AND 3/4" PIPE NIPPLE AND CAPPED CONDUIT OUTLET BODY SHALL BE FURNISHED AND INSTALLED APPROX. 4' FROM THE END OF THE MAST ARM AT POLES 1, 2, 3, 4 FOR FUTURE EMERGENCY VEHICLE PRE-EMPTION.
- 13) A MID MAST ARM MOUNT SHALL BE FURNISHED AND INSTALLED APPROX. 12' FROM THE END OF THE MAST ARM AT POLES 1 AND 3.



**CONTROLLER PHASING, PEDESTRIAN INDICATIONS AND PUSH BUTTONS**



**SIGNAL INDICATIONS**  
DIMENSIONS ARE SHOWN IN INCHES

FACE	PHASE	FLASH	A	Y	G	RLTA	YLTA	OLTA
1-1	1	R				12"	12"	12"
1-2	1	R				12"	12"	12"
2-1	2	R	12"	12"	12"			
2-2	2	R	12"	12"	12"			
4-1	4	R	12"	12"	12"			
4-2	4	R	12"	12"	12"			
4-3	4	R	12"	12"	12"			
5-1	5	R				12"	12"	12"
5-2	5	R				12"	12"	12"
5-3	5	R				12"	12"	12"
5-4	5	R				12"	12"	12"
5-5	5	R				12"	12"	12"
5-6	6	R	12"	12"	12"			

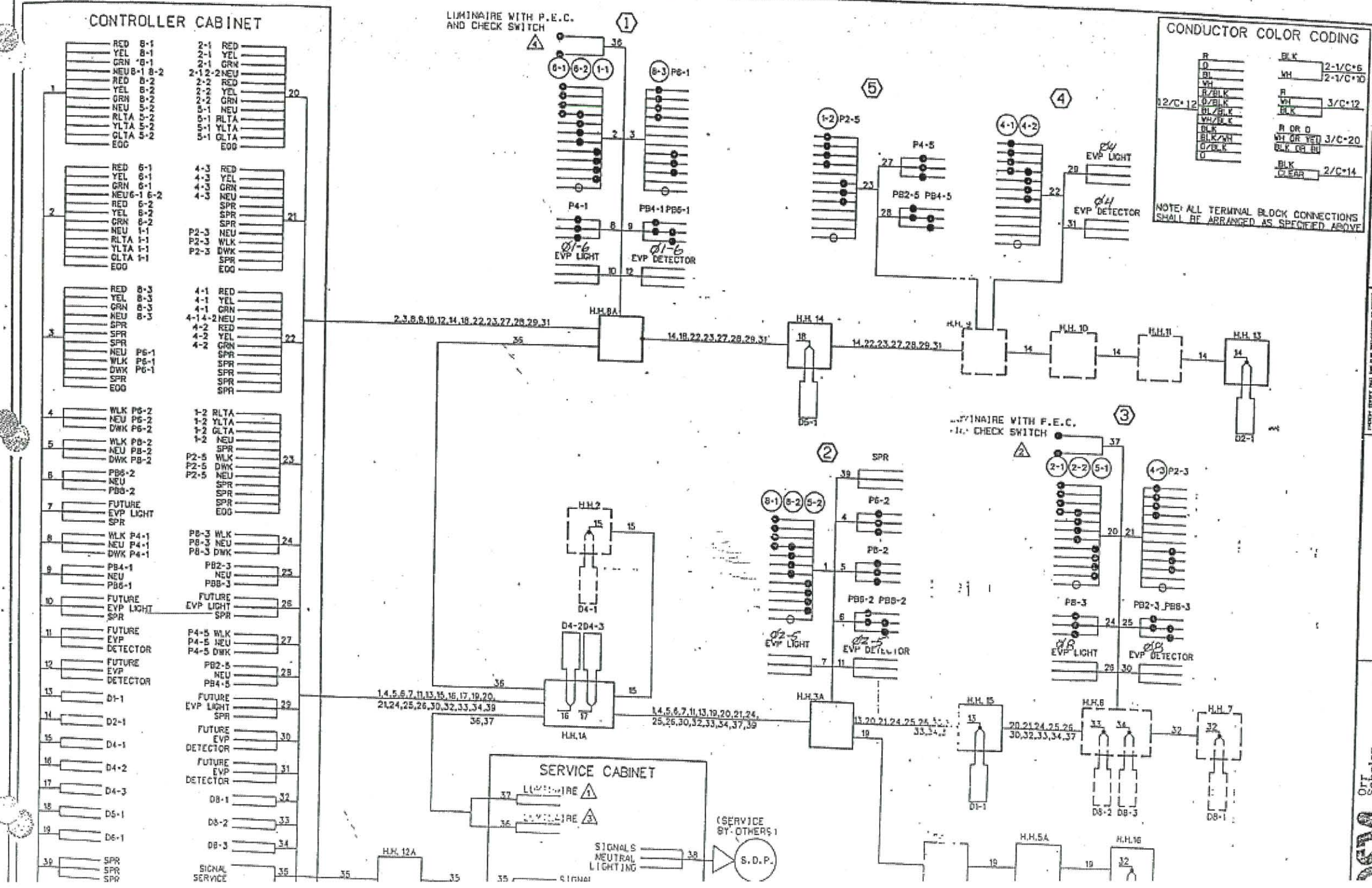
**INTERSECTION LAYOUT "SYSTEM A"**

C.S.A.H. 23 (LAKE DR.) AT FIREBARN RD

OSM  
Schelen, Mayron & Associates, Inc.  
Engineers - Surveyors - Planners  
1101 Hennepin Avenue • Minneapolis, MN 55403 • 612-338-6866



7192



NO	DATE	BY	CKD	APPR	REVISION	04/17/2014	9:44:18 AM
NAME: P:\14-01-00\CSAH_23 (Lexington-NotShepard)\Base\PROPOSED\PLAN - LOOPS.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: ANDREW WITTER  
SIGNATURE: *[Signature]*  
DATE: 4/28/14 LICENSE NO. 42757

DRAWN BY JJ DATE 04/17/2014  
DESIGN BY JJ DATE 04/17/2014  
CHECKED BY DFF DATE 04/17/2014



COUNTY PROJECT 14-13-23

ORIGINAL SIGNAL PLANS (FOR REFERENCE ONLY)  
Sheet S5 of S7 Sheets



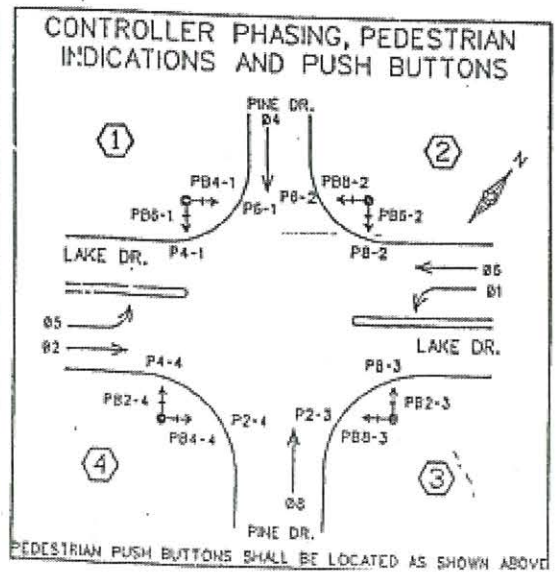
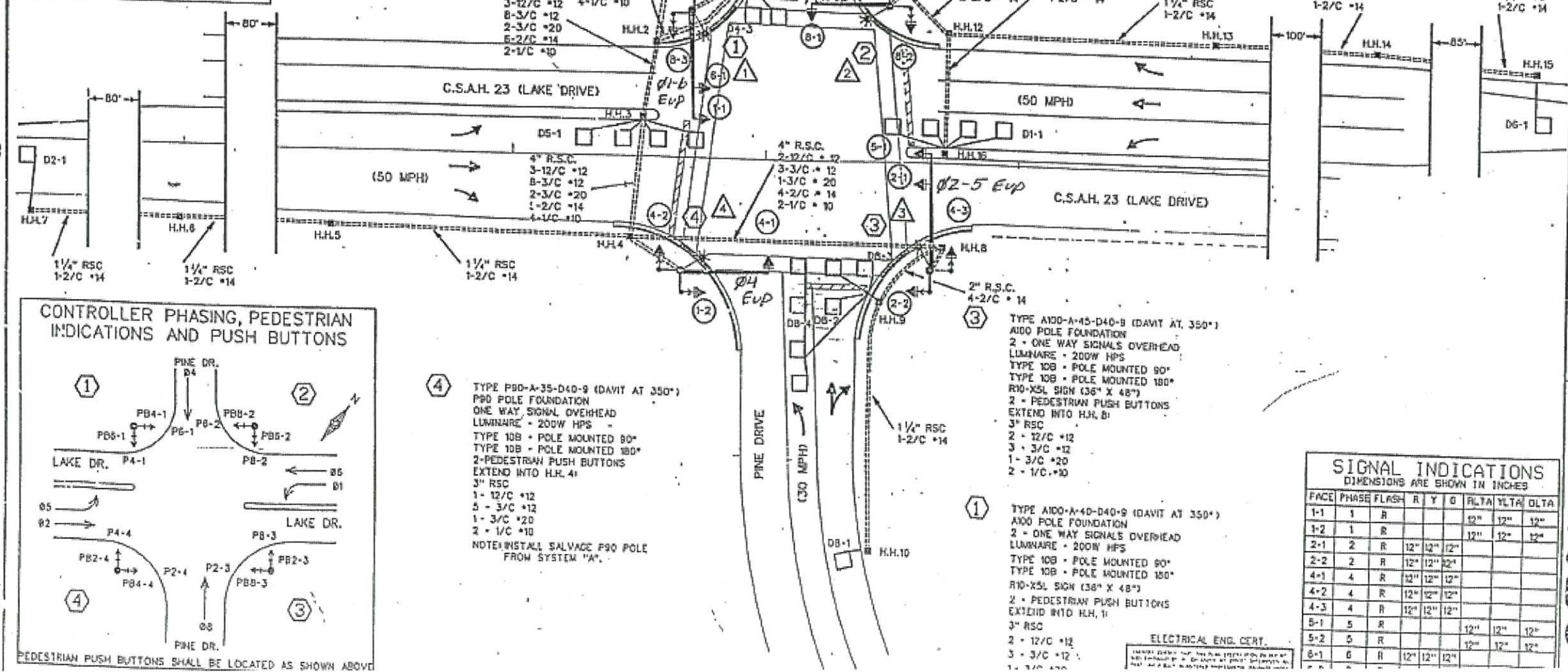
**7194**

LOOP DETECTORS			
NUMBER	SIZE	FUNCTION	LOCATION
D1-1	MULTIPLE	1	5'
D2-1	6' X 6'	1	400'
D4-1	6' X 6'	3 / B	125'
D4-2	(2)-6' X 6'	7	5'
D4-3	6' X 6'	7	5'
D5-1	MULTIPLE	1	5'
D6-1	6' X 6'	1	400'
D8-1	6' X 6'	3 / B	125'
D8-2	(2)-6' X 6'	1	5'
D8-3	6' X 6'	7	5'
D8-4	MULTIPLE	7	5'

LOCATION-DISTANCE FROM STOP LINE TO DETECTOR

FUNCTIONS:  
 1-CALL AND EXTEND  
 2-CALL ONLY  
 3-EXTEND ONLY  
 4-CALL ONLY BENS  
 5-DLY CALL ONLY  
 6-DLY CALL ONLY DENSITY  
 7-DLY CALL IMMEDIATE EXTEND  
 8-CARRY OVER  
 9-ADVISORY  
 10-SAMPLING  
 11-SPECIAL-SEE NOTE-

- NOTES:
- SEE SPECIAL PROVISIONS FOR CONTRACTORS RESPONSIBILITY FOR LOCATION OF UTILITIES.
  - ALL SIGNAL FACES SHALL HAVE BACKGROUND SHIELDS.
  - EACH LUMINAIRE SHALL HAVE A PEC AND CHECK SWITCH.
  - SEE SPECIAL PROVISIONS FOR ANOKA COUNTY SERVICE CABINET DETAILS.
  - DIRECTIONAL SIGNS TO BE FURNISHED AND INSTALLED ON MAST ARMS AT POLES 1, 2, 3, AND 4.
  - ALL HANDLES SHALL BE CONCRETE WITH CONCRETE COVERS.
  - LOOP DETECTOR WIRES SHALL BE CROSS LINKED POLYETHYLENE (XLP) IN 1" N.M.C. SEE SPECIAL PROVISIONS.
  - ALL PEDESTRIAN INDICATIONS SHALL BE 12" X 12".
  - HUBS FOR POLE MOUNTED SIGNAL INDICATIONS SHALL BE PROVIDED ON 4 SIDES OF MAST ARMS.
  - ALL SIGNAL FACES SHALL BE 12 INCH 3 SECTION R-Y-G EXCEPT FACE NO'S 1-1, 1-2, 5-1, AND 5-2 WHICH SHALL BE 12 INCH 3 SECTION RLTA-YLTA-GLTA.
  - A 3/4" COUPLING AND 3/4" PIPE WPPLE AND CAPPED CONDUIT OUTLET BODY SHALL BE FURNISHED AND INSTALLED APPROX. 4' FROM THE END OF THE MAST ARM AT POLES 1, 2, 3, 4 FOR FUTURE EMERGENCY VEHICLE PRE-EMPTION.
  - A MID MAST ARM MOUNT SHALL BE FURNISHED AND INSTALLED APPROX. 12 FEET FROM THE END OF THE MAST ARM AT POLES 1 AND 3.



**SIGNAL INDICATIONS**  
DIMENSIONS ARE SHOWN IN INCHES

FACE	PHASE	FLASH	R	Y	G	ALTA	YLTA	DLTA
1-1	1	R				12"	12"	12"
1-2	1	R				12"	12"	12"
2-1	2	R	12"	12"	12"			
2-2	2	R	12"	12"	12"			
4-1	4	R	12"	12"	12"			
4-2	4	R	12"	12"	12"			
4-3	4	R	12"	12"	12"			
5-1	5	R				12"	12"	12"
5-2	5	R				12"	12"	12"
6-1	6	R	12"	12"	12"			

**7194**

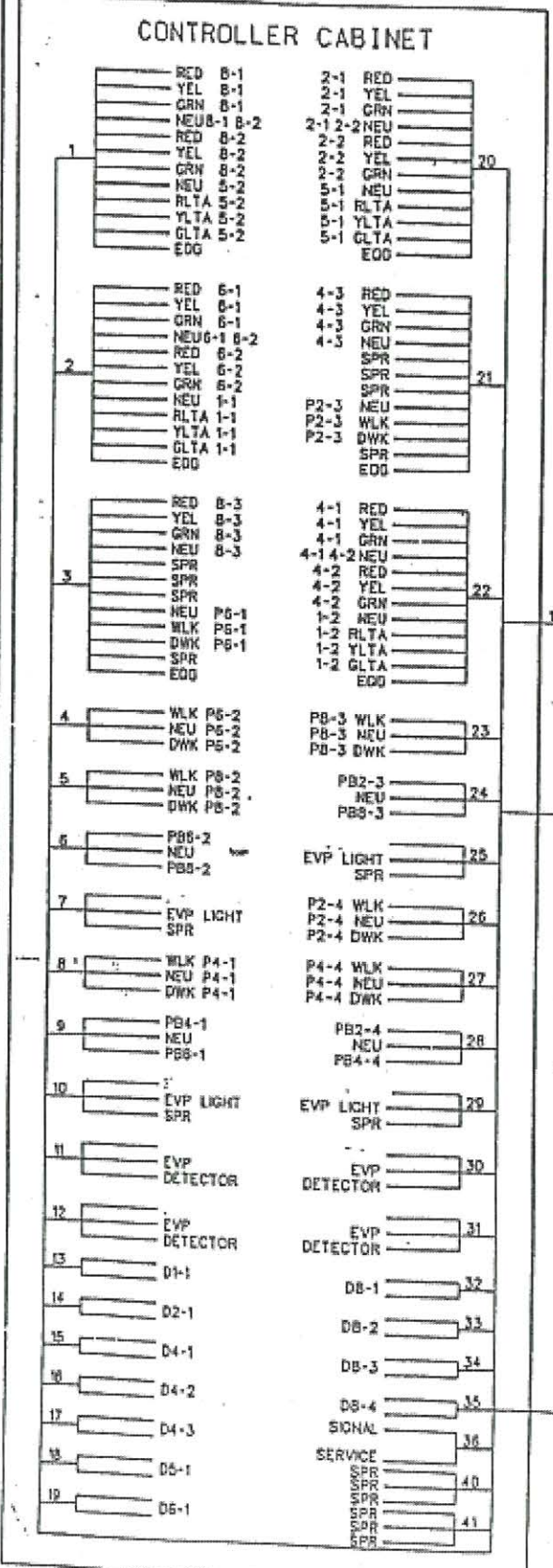
INTERSECTION LAYOUT "SYSTEM B"

OSM Schelen Mayeron & Associates, Inc. Engineers - Surveyors - Planners

11 East Hennepin Avenue, Suite 100, Minneapolis, MN 55415



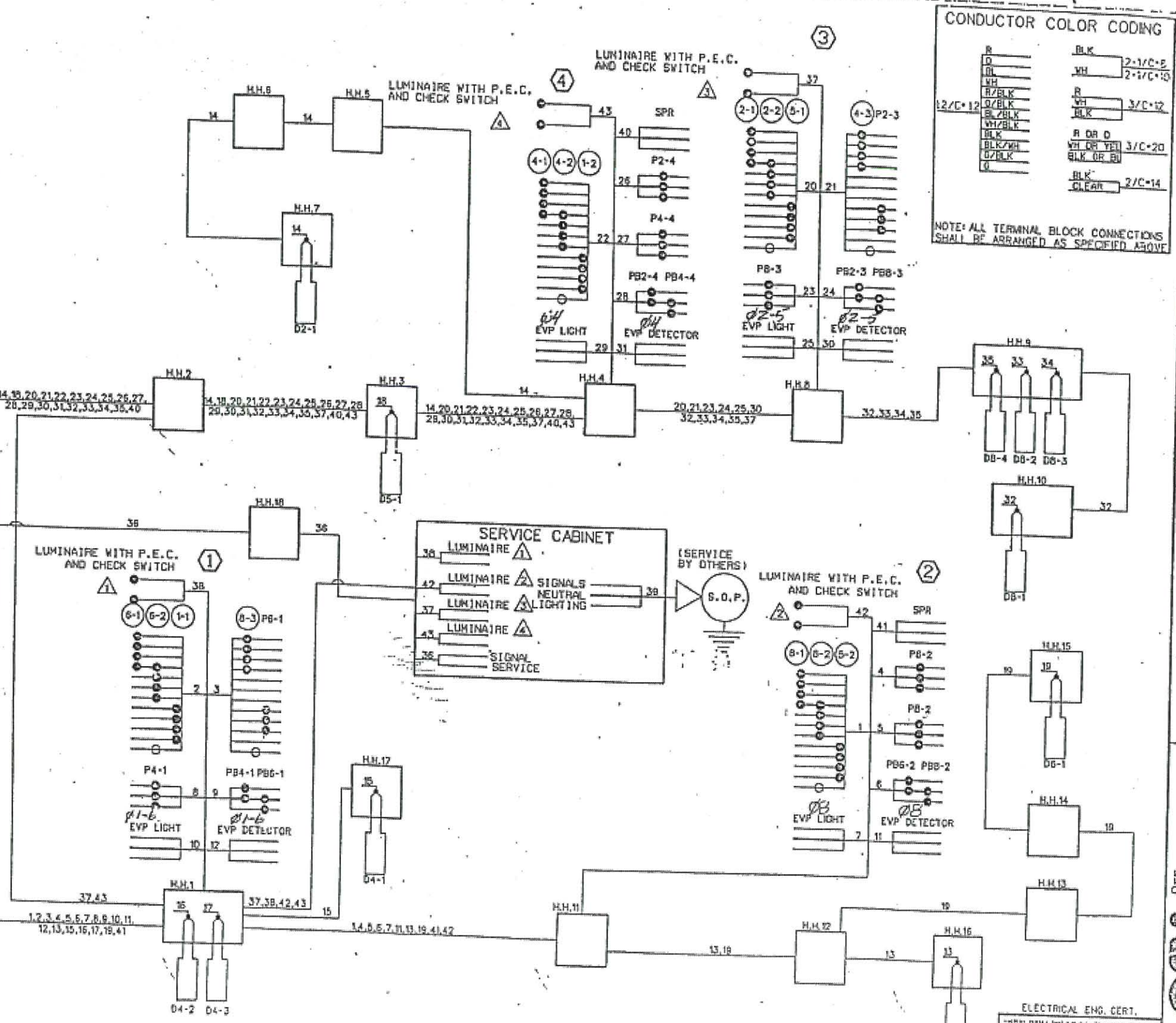
7194



### CONDUCTOR COLOR CODING

R	BLK	2-1/C-5
D	WH	2-1/C-10
YH	R	3/C-12
Y/BLK	WH	3/C-20
D/BLK	BLK	BLK OR B
Y/BLK	BLK	BLK OR B
BLK	GL FR	2/C-14
U		

NOTE: ALL TERMINAL BLOCK CONNECTIONS SHALL BE ARRANGED AS SPECIFIED ABOVE



FIELD WIRING DIAGRAM  
OSMA  
OFF Schellen  
Mayeron &  
Associates, Inc.  
ELECTRICAL ENG. CERT.

NO	DATE	BY	CKD	APPR	REVISION	04/17/2014	9:44:21 AM
NAME: P:\14-01-00\CSAH_23 (Lexington-NotShepard)\Base\PROPOSED\PLAN - LOOPS.dgn							

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PRINT NAME: ANDREW WITTER  
SIGNATURE: *[Signature]*  
DATE: 4/20/14 LICENSE NO. 42757

DRAWN BY JJ DATE 04/17/2014  
DESIGN BY JJ DATE 04/17/2014  
CHECKED BY DFF DATE 04/17/2014

**ANOKA COUNTY HIGHWAY DEPT.**

COUNTY PROJECT 14-13-23

ORIGINAL SIGNAL PLANS (FOR REFERENCE ONLY)  
Sheet S7 of S7 Sheets