MINNESOTA DEPARTMENT OF TRANSPORTATION
ANOKA COUNTY

CONSTRUCTION PLAN FOR GRADING, BITUMINOUS SURFACING, DRAINAGE AND SIGNAL SYSTEM

LOCATED ON CSAH 17 BETWEEN 510 FT SOUTH OF 169TH LN AND CSAH 18

LOCATED ON CSAH 18 BETWEEN 550 FT WEST OF CSAH 17 AND 750 FT NORTH OF CSAH 17

STATE PROJ. NO. 002-617-020

STATE PROJ. NO. 197-020-003

CSAH 17

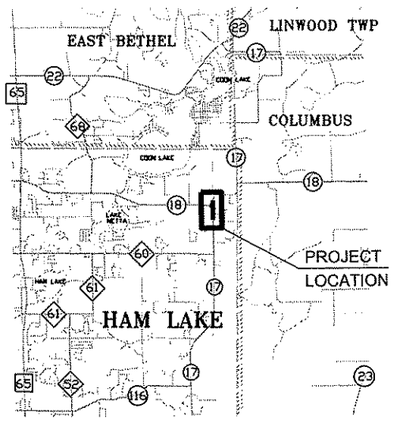
GROSS LENGTH	1410.17 FEET	0.267 MILES
BRIDGES-LENGTH	0.00 FEET	0.000 MILES
EXCEPTIONS-LENGTH	0.00 FEET	0.000 MILES
NET LENGTH	1410.17 FEET	0.267 MILES

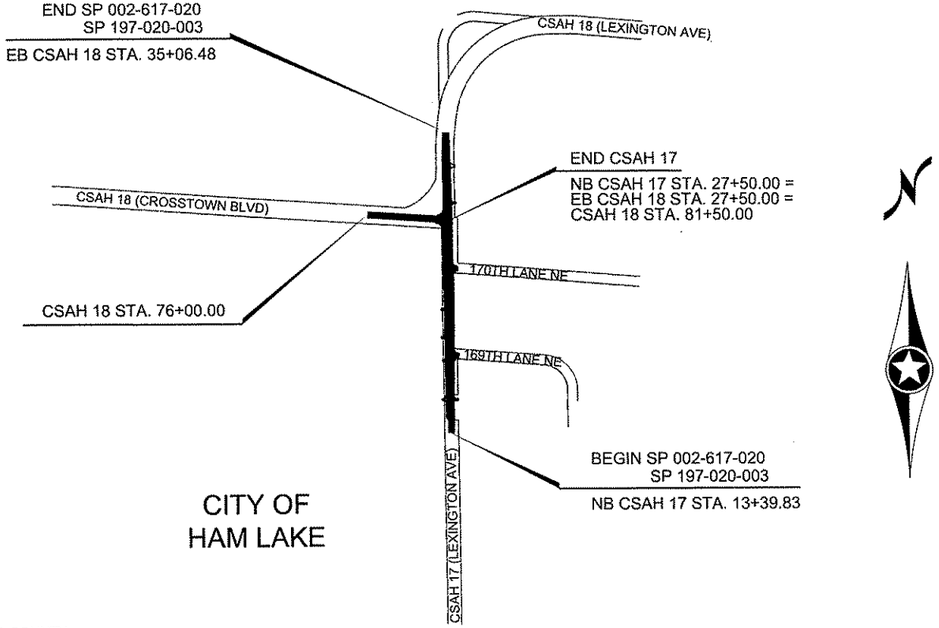
NOTE: LENGTH AND DESCRIPTION BASES ON CSAH 17 NB ALIGNMENT.

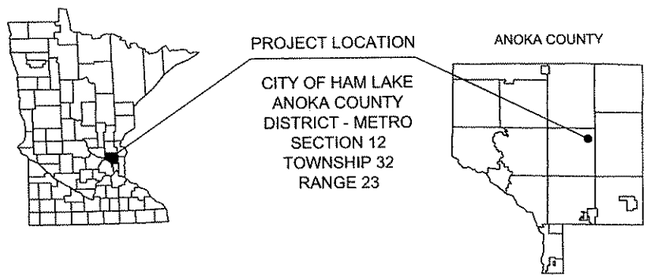
CSAH 18

GROSS LENGTH	1306.48 FEET	0.247 MILES
BRIDGES-LENGTH	0.00 FEET	0.000 MILES
EXCEPTIONS-LENGTH	0.00 FEET	0.000 MILES
NET LENGTH	1306.48 FEET	0.247 MILES

NOTE: LENGTH AND DESCRIPTION BASES ON CSAH 18 EB ALIGNMENT.







DESIGN DESIGNATION

ESAL 20	1,007,165
R VALUE	30
ADT (2013)	6763
PROJ. ADT (2033)	10820
PROJ. HCADT (2033)	638
SOIL FACTOR	NA
10 TON DESIGN	

FUNCTIONAL CLASSIFICATION A MINOR EXPANDER

NO. OF TRAFFIC LANES 2 NO. OF PARKING LANES 0

DESIGN SPEED 55 MPH CSAH 17

STOPPING SIGHT DISTANCE BASED ON:

HEIGHT OF EYE 3.5' HEIGHT OF OBJECT 2.0'

DESIGN SPEED NOT ACHIEVED AT :

STA. _____ TO STA. _____ MPH _____

MINN. PROJ. NO. HSIP 0213 (109)

GOVERNING SPECIFICATIONS

THE 2005 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" SHALL GOVERN.
ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE LATEST EDITION OF THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, INCLUDING THE LATEST FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS.

UTILITY NOTE:
THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS UTILITY QUALITY LEVEL D. THIS QUALITY LEVEL WAS DETERMINED ACCORDING TO THE GUIDELINES OF CI/ASCE 38-02, ENTITLED "STANDARD GUIDELINES FOR THE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA".

INDEX

THIS PLAN CONTAINS 70 SHEETS

APPROVED _____ ANOKA COUNTY ENGINEER — DATE 3/1/13

APPROVED _____ CITY OF HAM LAKE ENGINEER — DATE 3/6/13

_____ DISTRICT STATE AID ENGINEER: REVIEWED FOR COMPLIANCE WITH STATE AND FEDERAL AID RULES/POLICY — DATE 3/22/13

_____ STATE AID ENGINEER: APPROVED FOR STATE AND/OR FEDERAL AID FUNDING — DATE 3/22/13

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 T
ELECTRIC MANHOLE P
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'
VICINITY MAP 0' 1000'

NO	DATE	BY	CKD	APPR	REVISION
					02/27/2013 3:24:39 PM

NAME: p:\02-617-20\Plan\0261720_TSH.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: CURT A. KOBILARCSIK
SIGNATURE: _____
DATE: 2-28-13 LICENSE NO. 24756

DRAWN BY EJM DATE 02/01/13
DESIGN BY EJM DATE 01/16/13
CHECKED BY GMP DATE 02/01/13

ANOKA COUNTY HIGHWAY DEPT.

SP 002-617-020
SP 197-020-003

TITLE SHEET

Sheet 1 of 70 Sheets

STATEMENT OF ESTIMATED QUANTITIES

TAB	NOTE	ITEM NO.	ITEM	UNIT	TOTAL QUANTITY	FEDERAL PARTICIPATING	
						COUNTY OF ANOKA SP 002-617-020	CITY OF HAM LAKE SP 197-020-003
		2021.501	MOBILIZATION	LUMP SUM	1	0.83	0.17
		2031.501	FIELD OFFICE TYPE D	EACH	1	0.83	0.17
A	(1)	2101.501	CLEARING	ACRE	0.55	0.55	
A	(1)	2101.502	CLEARING	TREE	42	42	
A	(1)	2101.506	GRUBBING	ACRE	0.55	0.55	
A	(1)	2101.507	GRUBBING	TREE	40	40	
S		2102.502	PAVEMENT MARKING REMOVAL	LIN FT	1000	1000	
B	(2), (3)	2104.501	REMOVE PIPE CULVERTS	LIN FT	267	267	
C, D	(2)	2104.505	REMOVE BITUMINOUS PAVEMENT	SQ YD	1052	1052	
B	(2)	2104.509	REMOVE CONCRETE APRON	EACH	2	2	
B	(2)	2104.509	REMOVE BITUMINOUS FLUME	EACH	2	2	
F	(2)	2104.509	REMOVE SIGN TYPE C	EACH	20	20	
C, D	(4)	2104.513	SAWING BITUMINOUS PAVEMENT (FULL DEPTH)	LIN FT	3407	3407	
F		2104.523	SALVAGE SIGN TYPE SPECIAL	EACH	3	3	
G	(5)	2105.501	COMMON EXCAVATION (P)	CU YD	4653	4653	
G	(6)	2105.505	MUCK EXCAVATION	CU YD	2362	2362	
G		2105.507	SUBGRADE EXCAVATION (P)	CU YD	1204	1204	
H		2105.522	SELECT GRANULAR BORROW (LV)	CU YD	2183	2183	
	(7)	2123.509	DOZER	HOUR	15	15	
	(8)	2130.501	WATER	M GALLON	25	25	
D, J	(9)	2211.503	AGGREGATE BASE (CV) CLASS 5 (P)	CU YD	740	740	
J		2221.503	AGGREGATE SHOULDERING (CV) CLASS 5	CU YD	120	120	
C		2232.501	MILL BITUMINOUS SURFACE (1.5")	SQ YD	9190	9190	
J		2357.502	BITUMINOUS MATERIAL FOR TACK COAT	GALLON	986	986	
D, J		2360.501	TYPE SP 12.5 WEARING COURSE MIX (3,F)	TON	1687	1687	
J		2360.502	TYPE SP 12.5 NON WEAR COURSE MIX (3,B)	TON	595	595	
K		2501.511	15" CS PIPE CULVERT	LIN FT	92	92	
K	(10)	2501.511	24" CS PIPE CULVERT	LIN FT	13	13	
K		2501.511	18" RC PIPE CULVERT CLASS V	LIN FT	187	187	
K	(10)	2501.511	24" RC PIPE CULVERT CLASS V	LIN FT	53	53	
K		2501.567	15" GS SAFETY APRON & GRATE DESIGN 3148	EACH	6	6	
K		2501.567	24" GS SAFETY APRON & GRATE DESIGN 3148	EACH	1	1	
K		2501.567	18" RC SAFETY APRON & GRATE DESIGN 3128	EACH	6	6	
K		2501.567	24" RC SAFETY APRON & GRATE DESIGN 3128	EACH	2	2	

NOTES:

(1) CLEARING AND GRUBBING SHALL BE STAKED IN FIELD BY THE ENGINEER.

(2) ALL REMOVAL ITEMS SHALL BE DISPOSED OFF-SITE. NO DISPOSAL SHALL BE ALLOWED WITHIN THE ROADWAY RIGHT-OF-WAY OR EASEMENTS.

(3) LENGTHS INCLUDE CMP APRONS. APRON REMOVAL SHALL BE INCIDENTAL.

(4) PAYMENT FOR SAWING BITUMINOUS WILL ONLY BE PAID WHEN THE CUT IS MADE WITH A SAW. NO PAYMENT SHALL BE MADE FOR CUTS MADE BY A MILLING MACHINE OR RECLAIMER.

(5) INCLUDES INPLACE TOPSOIL. EXCESS TOPSOIL SHALL BE DISPOSED OF OUTSIDE THE ROADWAY RIGHT-OF-WAY.

(6) EXCESS UNSUITABLE MATERIAL SHALL BE DISPOSED OF OUTSIDE THE ROADWAY RIGHT-OF-WAY.

(7) SHALL BE USED FOR MISCELLANEOUS GRADING ACTIVITIES AS DIRECTED BY THE ENGINEER.

(8) WATER TO BE USED ONLY FOR DUST CONTROL AS DIRECTED BY THE ENGINEER IN FIELD. WATER USED FOR COMPACTION AND TURF ESTABLISHMENT SHALL BE INCIDENTAL.

(9) INCLUDES QUANTITY FOR GRAVEL DRIVEWAY.

(10) CONNECT TO INPLACE CULVERT SHALL BE INCIDENTAL.

(11) PAVEMENT MARKING REMOVAL AND TEMPORARY RAISED PAVEMENT MARKERS ARE INCIDENTAL.

(P) PLAN QUANTITY.

NO	DATE	BY	CKD	APPR	REVISION
1	05/07/2013	EM	CAK	CAK	CORRECTED SP NUMBERS IN THE ESTIMATED QUANTITIES' TAB.

NAME: P:\02-617-20\Plan\0261720_TAB.dgn 05/07/2013 2:54:02 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: CURT A. KOBILARCSIK

SIGNATURE:

DATE: 5-7-13 LICENSE NO. 24756

DRAWN BY EJM DATE 01-16-13

DESIGN BY EJM DATE 01-16-13

CHECKED BY GMP DATE 01-25-13

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

SP 002-617-020

SP 197-020-003

STATEMENT OF ESTIMATED QUANTITIES

Sheet 2 of 70 Sheets

STATEMENT OF ESTIMATED QUANTITIES

TAB	NOTE	ITEM NO.	ITEM	UNIT	TOTAL QUANTITY	FEDERAL PARTICIPATING	
						COUNTY OF ANOKA SP 002-617-020	CITY OF HAM LAKE SP 197-020-003
K, N		2511.501	RANDOM RIPRAP CL II	CU YD	35	35	
K, N		2511.515	GEOTEXTILE FILTER TYPE III	SQ YD	108	108	
L		2521.501	6" CONCRETE WALK	SQ FT	547	547	
L		2531.618	TRUNCATED DOMES	SQ FT	40	40	
J		2535.501	BITUMINOUS CURB	LIN FT	10	10	
M		2540.602	MAIL BOX SUPPORT	EACH	2	2	
M		2540.602	RELOCATE MAIL BOX SUPPORT	EACH	7	7	
	(11)	2563.601	TRAFFIC CONTROL	LUMP SUM	1	0.83	0.17
O		2564.531	SIGN PANELS TYPE C	SQ FT	205	205	
F		2564.537	INSTALL SIGN TYPE SPECIAL	EACH	3	3	
K		2564.602	CULVERT MARKER X4-3	EACH	15	15	
		2565.511	TRAFFIC CONTROL SIGNAL SYSTEM	SIG SYS	1	0.5	0.5
		2565.601	EMERGENCY VEHICLE PREEMPTION SYSTEM	LUMP SUM	1		1
		2565.602	SIGNAL SERVICE CABINET	EACH	1	0.5	0.5
P		2573.502	SILT FENCE, TYPE MACHINE SLICED	LIN FT	1873	1873	
N		2573.508	BITUMINOUS LINED FLUME	SQ YD	12	12	
K		2573.530	STORM DRAIN INLET PROTECTION	EACH	8	8	
P		2575.501	SEEDING	ACRE	2.5	2.5	
P		2575.502	SEED MIXTURE 270	POUND	91	91	
P		2575.502	SEED MIXTURE 350	POUND	149	149	
P		2575.505	SODDING TYPE SALT RESISTANT	SQ YD	27	27	
P		2575.523	EROSION CONTROL BLANKETS CATEGORY 3	SQ YD	12195	12195	
P		2575.532	FERTILIZER TYPE 4	POUND	383	383	
P		2575.571	RAPID STABILIZATION METHOD 3	M GALLON	7.9	7.9	
S		2582.501	PAVEMENT MESSAGE (LT ARROW) PREFORMED THERMOPLASTIC	EACH	4	4	
S		2582.501	PAVEMENT MESSAGE (RT ARROW) PREFORMED THERMOPLASTIC	EACH	4	4	
S		2582.502	24" SOLID LINE WHITE-PREFORMED THERMOPLASTIC	LIN FT	96	96	
S		2582.502	24" SOLID LINE YELLOW-PREFORMED THERMOPLASTIC	LIN FT	769	769	
S		2582.502	4" SOLID LINE WHITE-EPOXY	LIN FT	7315	7315	
S		2582.502	4" BROKEN LINE WHITE-EPOXY	LIN FT	40	40	
S		2582.502	4" SOLID LINE YELLOW-EPOXY	LIN FT	1000	1000	
S		2582.502	4" BROKEN LINE YELLOW-EPOXY	LIN FT	220	220	
S		2582.502	4" DOUBLE SOLID LINE YELLOW-EPOXY	LIN FT	3100	3100	
S		2582.503	CROSSWALK MARKING-PREFORMED THERMOPLASTIC	SQ FT	414	414	

NOTES:

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(P) PLAN QUANTITY.

NO	DATE	BY	CKD	APPR	REVISION
1	05/07/2013	EM	CAK	CAK	CORRECTED SP NUMBERS IN THE ESTIMATED QUANTITIES' TAB.

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DESIGN BY EJM DATE 01-16-13

CHECKED BY GMP DATE 01-25-13

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

SP 002-617-020

SP 197-020-003

STATEMENT OF ESTIMATED QUANTITIES

Sheet 3 of 70 Sheets

THE FOLLOWING STANDARD PLATES AS APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION SHALL APPLY.

NO.	STANDARD PLATE TITLE
3000L	REINFORCED CONCRETE PIPE
3006G	GASKET JOINT FOR R.C. PIPE
3007D	SHEAR REINFORCEMENT FOR PRECAST DRAINAGE STRUCTURES
3040F	CORRUGATED METAL PIPE CULVERT
3100G	CONCRETE APRON FOR REINFORCED CONCRETE PIPE
3123J	METAL APRON FOR C.S. PIPE
3124B	METAL APRON CONNECTION
3128H	METAL SAFETY APRON & GRATE
3133C	RIPRAP AT RCP OUTLETS
3134C	RIPRAP AT CMP OUTLETS
3145G	CONCRETE PIPE TIES
3148A	SAFETY SLOPE METAL END SECTION FOR CIRCULAR & ARCHED PIPES
7038A	DETECTABLE WARNING SURFACE TRUNCATED DOMES
8150C	INSTALLATION OF CULVERT MARKERS
9102D	TURF ESTABLISHMENT AREA (AT PIPE CULVERT ENDS)
9350A	MAILBOX SUPPORT (SWING-AWAY TYPE)

NOTE: SEE SHEET 50 FOR TRAFFIC SIGNAL STANDARD PLATES

INDEX OF TABULATIONS

BASIS OF QUANTITIES

SPEC NO	DESCRIPTION	RATE
2357	BITUMINOUS MATERIAL FOR TACK COAT	0.05 GALLONS / SQ YD / LIFT
2360	TYPE SP12.5 WEARING COURSE MIXTURE	113 POUNDS / SQ YD / IN
2360	TYPE SP12.5 NON-WEARING COURSE MIXTURE	113 POUNDS / SQ YD / IN
2575	SEED MIXTURE 270	120.0 POUNDS / ACRE
2575	SEED MIXTURE 350	84.5 POUNDS / ACRE
2575	FERTILIZER TYPE 4, 17-10-17	150 POUNDS / ACRE
2575	RAPID STABILIZATION METHOD 3	6000 GALLONS / ACRE

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-20\Plan\0261720_TAB.dgn 02/27/2013 3:14:46 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: CURT A. KOBILARCSIK

SIGNATURE:

DATE: 2-28-13 LICENSE NO. 24756

DRAWN BY EJM DATE 01-16-13

DESIGN BY EJM DATE 01-16-13

CHECKED BY GMP DATE 01-25-13

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

SP 002-617-020

SP 197-020-003

STANDARD PLATES, INDEX OF TABULATIONS AND BASIS OF QUANTITIES

Sheet 4 of 70 Sheets

CLEARING AND GRUBBING — A

STATION TO STATION		LOCATION			CLEAR	GRUB	CLEAR	GRUB
		ALIGN	OFFSET		ACRE	ACRE	TREE	TREE
CSAH 17								
13+43	23+50	17 NB	31 RT	48 RT	0.05	0.05	22	23
23+50	33+27	17 NB	19 RT	50 RT	0.50	0.50	10	10
13+46	23+50	17 SB	26 LT	35 LT			10	7
				TOTAL	**0.55**	**0.55**	**42**	**40**

REMOVE CULVERT AND DRAINAGE FLUME — B

STATION TO STATION		LOCATION			PIPE CULVERTS	RC PIPE APRON	BITUMINOUS FLUME
		ALIGN	OFFSET		LIN FT	EACH	EACH
CSAH 17							
18+29	18+79	17 NB	14 RT	17 RT	50		2
19+65	20+15	17 NB	11 RT	9 RT	49		
21+18	21+59	17 NB	9 RT	9 RT	41		
23+42		17 NB				2	
23+99	24+60	17 NB	26 RT	26 RT	61		
30+11		17 NB	19 RT		4		
16+10	16+41	17 SB	20 LT	20 LT	31		
21+43	21+74	17 SB	22 LT	22 LT	31		
				TOTAL	**267**	**2**	**2**

REMOVE, SAWING AND MILL BIT. PAVEMENT — C

STATION TO STATION		ALIGNMENT	LOCATION	REMOVE	SAWING	1.5" MILL
				SQ YD	LIN FT	SQ YD
CSAH 17						
13+60	18+21	17 NB	NB	56	505	598
18+21	18+90	17 NB	NB	219	28	
18+90	23+77	17 NB	NB	75	575	715
23+77	24+57	17 NB	NB	200	25	
24+57	27+29	17 NB	NB	54	309	679
27+29	33+25	17 NB	NB	134	597	1299
14+44	27+27	17 SB	SB	204	1284	1718
27+27	33+25	17 SB	SB			1872
76+00	80+54	18 CL	EB & WB		61	2309
			TOTAL	**942**	**3384**	**9190**

DRIVEWAY REMOVAL AND CONSTRUCTION — D

STATION	LOCATION		ADDRESS	SAWCUT	REMOVE	CONSTRUCT	
	ALIGNMENT	OFFSET		BIT	BIT	2.5" BIT (1)	4" CL 5
				LIN FT	SQ YD	TON (2)	CU YD
CSAH 17							
15+65	17 NB	39 RT	16913			1	3
28+70	17 NB	37 RT	17109			1	5
31+06	17 NB	32 RT	17125			2	9
15+63	17 SB	33 LT	16906	11	58	6	
18+21	17 SB	30 LT	16944	12	52	5	
19+72	17 SB	30 LT	16956			1	4
21+57	17 SB	34 LT	17012			1	3
			TOTAL	**23**	**110**	**17**	**24**

(1) TYPE SP 12.5 WEARING COURSE MIXTURE.
(2) SEE SHEET 4 FOR 'BASIS OF QUANTITIES'.

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-20\Plan\0261720_TAB.dgn 02/27/2013 3:14:49 PM

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ANOKA COUNTY
HIGHWAY DEPT.

SP 002-617-020
SP 197-020-003

TABULATIONS

Sheet 5 of 70 Sheets

BASE AND BITUMINOUS QUANTITIES — J

STATION TO STATION		LOCATION	DESCRIPTION	TYPE SP 12.5 WEAR (SPWEB340F)	TYPE SP 12.5 NON WEAR (SPNWB330B)	TACK COAT	AGGREGATE BASE CLASS 5	AGGREGATE SHOULDERING CLASS 5	BITUMINOUS CURB
				TON	TON	GALLON	CU YD	CU YD	LIN FT
CSAH 17									
13+50	18+99	17 NB	MAIN / RTL	261	139	154	235	19	10
18+99	24+71	17 NB	MAIN / RTL	347	190	205	312	22	
24+71	33+25	17 NB	MAIN / SHLDR	306	94	181	63	31	
13+48	27+27	17 SB	MAIN / SHLDR	403	172	238	106	48	
27+27	33+25	17 SB	MAIN / RTL	158		93			
76+00	80+54	18 CL	FULL WIDTH	195		115			
			TOTAL	1670	595	986	716	120	10

- SEE SHEET 4 FOR 'BASIS OF QUANTITIES'.

CONC. WALK & TRUNCATED DOMES — L

STATION TO STATION		LOCATION		6" CONC. WALK	TRUNCATED DOMES
		ALIGN	OFFSET	SQ FT	SQ FT
CSAH 17					
27+00	27+12	17 NB	8 RT	138	8
26+88	27+15	17 SB	12 LT	285	24
80+77	80+92	17 SB	40 LT	124	8
			TOTAL	547	40

DRAINAGE TABULATION — K

LOCATION					INVERT ELEVATION		SLOPE %	FURNISH AND INSTALL								RIPRAP CL II	GEOTEXTILE FILTER TYPE III	SODDING TYPE SALT RESISTANT	CULVERT MARKER X4-3	STORM DRAIN INLET PROTECTION	NOTES
STATION		ALIGN	OFFSET					15" CS PIPE CULVERT	15" GS SAFETY APRON & GRATE	24" CS PIPE CULVERT	24" GS SAFETY APRON & GRATE	18" RC PIPE CULVERT CL V	18" RC SAFETY APRON & GRATE	24" RC PIPE CULVERT CL V	24" RC SAFETY APRON & GRATE						
INLET	OUTLET		FROM	TO	INLET	OUTLET		LIN FT	EACH	LIN FT	EACH	LIN FT	EACH	LIN FT	EACH	CU YD	SQ YD	SQ YD	EACH	EACH	
15+50	15+81	17 NB	27 RT	27 RT	902.69	902.60	0.30	27	2									9	2	1	
18+21	18+87	17 NB	28 RT	28 RT	901.87	901.67	0.30					56	2			3.9	12.0		2	1	
23+42		17 NB	30 RT	0	900.31	899.79	0.50							31	1				1	1	(1)
24+61	23+94	17 NB	31 RT	31 RT	901.03	900.62	0.59					57	2			3.9	12.0		2	1	
30+11		17 NB	19 RT	LT	902.03					13	1								1	1	(1), (2)
15+45	15+81	17 SB	25 LT	25 LT	903.32	903.30	0.06	32	2									9	2	1	
19+53	19+89	17 SB	30 LT	30 LT	902.75	902.57	0.50	33	2									9	2	1	
20+43		17 SB	25 LT	67 RT	901.98	901.55	0.50					74	2			3.9	12.0		2	1	(3)
23+40		17 SB	13 LT	33 LT	899.90	899.79	0.50							22	1	5.5	16.8		1		(1)
							TOTAL	92	6	13	1	187	6	53	2	17	53	27	15	8	

NOTES:

(1) CONNECT TO INPLACE CULVERT INCIDENTAL.

(2) INLET ELEVATION SHALL BE DETERMINED IN FIELD.

(3) TRENCHING AND CLASS B BEDDING INCIDENTAL TO CULVERT.

- INVERT ELEVATIONS ARE AT THE END OF APRON.

- PIPE LENGTHS DO NOT INCLUDE APRONS.

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-20\Plan\0261720_TAB.dgn 03/01/2013 7:53:23 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: CURTIS A. KOBILARCSIK

SIGNATURE:

DATE: 3-1-13 LICENSE NO. 24756

DRAWN BY EJM DATE 01-16-13

DESIGN BY EJM DATE 01-16-13

CHECKED BY GMP DATE 01-25-13

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

SP 002-617-020

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TABULATIONS

Sheet 6 of 70 Sheets

MAILBOX — M

STATION	LOCATION			MAIL BOX SUPPORT	RELOCATE MAIL BOX SUPPORT
	ALIGN	OFFSET	ADDRESS	EACH	EACH
CSAH 17					
15+79	17 NB	11 RT	16913		1
20+03	17 NB	2 RT	16961		1
21+48	17 NB	4 RT	17039		1
28+76	17 NB	2 RT	17109	1	
31+36	17 NB	7 RT	17125	1	
15+75	17 SB	11 LT	16906		1
18+08	17 SB	9 LT	16944		1
19+56	17 SB	7 LT	16956		1
21+68	17 SB	11 LT	17012		1
			TOTAL	2	7

DRAINAGE FLUME — N

STATION TO STATION		LOCATION			BITUMINOUS FLUME	RIPRAP CL II	GEOTEXTILE FILTER TYPE III
		ALIGN	OFFSET		SQ YD	CU YD	SQ YD
CSAH 17							
18+30	18+40	17 NB	40 RT	44 RT	6	9.2	27.6
18+68	18+79	17 NB	46 RT	43 RT	6	9.2	27.6
				TOTAL	12	18	55

TURF ESTABLISHMENT AND EROSION CONTROL — P

STATION TO STATION		LOCATION	SILT FENCE	SEEDING	SEED		EROSION CONTROL BLANKET CATEGORY 3	FERTILIZER TYPE 4 17-10-17	RAPID STABILIZATION METHOD 3
					270	350			
			LIN FT	ACRE	POUND	POUND	SQ YD	POUND	M GALLON
CSAH 17									
13+46	15+60	17 NB RT		0.18	22		871	27	
15+70	18+40	17 NB RT		0.21		18	1016	32	
18+68	24+15	17 NB RT		0.45		38	2178	68	1.8
24+40	27+69	17 NB RT	215	0.26		22	1258	39	1.6
27+69	28+57	17 NB RT		0.08	10		387	12	0.5
28+68	30+98	17 NB RT	88	0.20		17	968	30	1.2
31+12	34+06	17 NB RT		0.21		18	1016	32	
14+28	15+57	17 SB LT		0.07	8		339	11	
15+69	18+15	17 SB LT	124	0.17	20		823	26	1.0
18+27	19+65	17 SB LT		0.09	11		436	14	
19+78	21+51	17 SB LT		0.11	13		532	17	
21+62	22+54	17 SB LT		0.06	7		290	9	0.4
22+54	27+15	17 SB LT	373	0.23		19	1113	35	1.4
27+79	32+18	17 SB LT	393	0.10		8	484	15	
32+42	35+06	17 SB LT		0.03		3	145	5	
76+00	77+61	18 CL RT	160	0.02		2	97	3	
77+89	80+90	18 CL RT & LT	520	0.05		4	242	8	
		TOTAL	1873	2.5	91	149	12195	383	7.9

NOTES:
- QUANTITIES ARE BASED ON 110% OF THE COMPUTED AREA.
- SEE SHEET 4 FOR 'BASIS OF QUANTITIES'.

NO	DATE	BY	CKD	APPR	REVISION

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PRINT NAME: CURT A. KOBILARCSIK
SIGNATURE:
DATE: 2-28-13 LICENSE NO. 24756

DRAWN BY EJM DATE 01-16-13
DESIGN BY EJM DATE 01-16-13
CHECKED BY GMP DATE 01-25-13

ANOKA COUNTY HIGHWAY DEPT.

SP 002-617-020
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TABULATIONS

Sheet 7 of 70 Sheets

UTILITY CONTACTS | AA

GOPHER STATE ONE CALL
FIELD UTILITY LOCATE REQUEST
http://www.gopherstateonecall.org
TEL 651--454-0002 OR
TEL 1-800-252-1166

CENTURYLINK
425 MONROE ST
ANOKA, MN 55303
CONTACT: SCOTT KUNZMAN
TEL. 763-712-5019

CONNEXUS ENERGY
14601 RAMSEY BLVD
RAMSEY, MN 55303
CONTACT: SHANNON MCDONALD
TEL. 763-323-2695

COMCAST CABLE
2611 FAIRVIEW AVE
ROSEVILLE, MN 55113
CONTACT: DOUG ZAHN
TEL 651-493-5316

XCEL ENERGY
5363 260TH LN N
WYOMING, MN 55096
CONTACT: KATHLEEN RONNING
TEL 651-462-6201

GENERAL NOTES:

ALL UTILITY WORK SHOWN ON THIS SHEET SHALL BE DONE BY OTHERS UNLESS NOTED.

ALL RELOCATES AND ADJUSTMENTS SUBJECT TO ANOKA COUNTY AND/OR CITY OF HAM LAKE RIGHT OF WAY POSSESSION.

IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO UTILIZE THE GOPHER STATE ONE CALL EXCAVATION NOTICE SYSTEM REQUIRED BY MINNESOTA STATUTE, CHAPTER 216D FOR ALL UNDERGROUND UTILITY LOCATIONS.

THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS UTILITY QUALITY LEVEL D. THIS UTILITY QUALITY LEVEL WAS DETERMINED ACCORDING TO THE GUIDELINES OF CI/ASCE 38-02, ENTITLED "STANDARD GUIDELINES FOR THE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA".

THE REMARKS COLUMN IS BASED UPON THE BEST INFORMATION AVAILABLE AND MAY NOT REFLECT THE ACTUAL EFFECTS ON THE UTILITES BY CONSTRUCTION. ACTUAL DETERMINATIONS WILL BE MADE IN THE FIELD DURING CONSTRUCTION.

CENTURYLINK | AB

STATION BEGIN	STATION END	OFFSET					INPLACE ITEM	REMARKS
CSAH 17								
10+25	13+26	50	LT	NB	47	LT	BURIED	LEAVE
13+26		47	LT	NB			SPLICE BOX	LEAVE
13+26	14+45	47	LT	NB	50	LT	BURIED	LEAVE
14+33		31	RT	NB			SPLICE BOX	RELOCATE
14+45		50	LT	NB			SPLICE BOX	RELOCATE
14+45	18+81	50	LT	NB	61	LT	BURIED	RELOCATE
15+92		31	RT	NB			SPLICE BOX	RELOCATE
17+34	17+61	57	LT	NB	25	RT	BURIED	RELOCATE
17+61		25	RT	NB			SPLICE BOX	RELOCATE
17+61	18+81	25	RT	NB	61	LT	BURIED	RELOCATE
18+81		61	LT	NB			SPLICE BOX	RELOCATE
18+81	20+70	61	LT	NB	69	LT	BURIED	RELOCATE
20+70		69	LT	NB			SPLICE BOX	RELOCATE
20+70	20+74	69	LT	NB	16	RT	BURIED	RELOCATE
20+74		16	RT	NB			SPLICE BOX	RELOCATE
20+74	20+77	16	RT	NB	78	RT	BURIED	ADJUST
20+70	24+22	69	LT	NB	71	LT	BURIED	RELOCATE
24+22		71	LT	NB			SPLICE BOX	RELOCATE
24+22	24+03	71	LT	NB	146	RT	BURIED	ADJUST
24+22	28+62	71	LT	NB	77	LT	BURIED	LEAVE
28+62		90	LT	NB			SPLICE BOX	LEAVE
28+62	28+64	90	LT	NB	764	LT	BURIED	LEAVE
28+62	29+40	90	LT	NB	16	RT	BURIED	ADJUST
29+40		16	RT	NB			SPLICE BOX	RELOCATE
28+62	36+28	90	LT	NB	128	LT	BURIED	LEAVE
29+40	34+05	16	RT	NB	31	RT	BURIED	RELOCATE
34+05		31	RT	NB			SPLICE BOX	LEAVE
34+05	38+22	31	RT	NB	32	RT	BURIED	LEAVE

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-20\Plan\0261720_TAB.dgn 02/27/2013 3:14:50 PM

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SIGNATURE:
DATE: 2-28-13 LICENSE NO. 24756

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CHECKED BY GMP DATE 01-25-13

ANOKA COUNTY
ANOKA COUNTY HIGHWAY DEPT.

SP 002-617-020
SP 197-020-003

TABULATIONS

Sheet 8 of 70 Sheets

COMCAST CABLE — AC

STATION BEGIN	STATION END	LOCATION	INPLACE ITEM	REMARKS
CSAH 17				
10+25	14+31	31 RT NB 32 RT	FIBER OPTIC	RELOCATE
14+31		32 RT NB	HAND HOLE	RELOCATE
14+31	14+45	32 RT NB 50 LT	FIBER	RELOCATE
14+45		50 LT NB	SPLICE BOX	RELOCATE
14+45	17+34	50 LT NB 58 LT	BURIED	RELOCATE
15+92		31 RT NB	SPLICE BOX	RELOCATE
17+34		58 LT NB	SPLICE BOX	RELOCATE
17+34	20+72	58 LT NB 68 LT	BURIED	RELOCATE
20+72		68 LT NB	SPLICE BOX	RELOCATE
20+72	26+97	68 LT NB 69 LT	BURIED	ADJUST
24+53	24+51	70 LT NB 162 RT	BURIED	ADJUST
24+53	27+03	70 LT NB 72 LT	BURIED	LEAVE
26+97		72 LT NB	VAULT	RELOCATE
27+03	27+00	72 LT NB 22 RT	BURIED	ADJUST
27+03	27+24	72 LT NB 343 LT	FIBER OPTIC	LEAVE
27+00	29+39	22 RT NB 17 RT	BURIED	RELOCATE
29+39		17 RT NB	SPLICE BOX	RELOCATE
29+39	34+03	17 RT NB 33 RT	BURIED	RELOCATE
34+03		33 RT NB	SPLICE BOX	LEAVE
34+03	36+29	33 RT NB 128 LT	BURIED	LEAVE
36+29		128 LT NB	SPLICE BOX	LEAVE
36+29	36+41	128 LT NB 135 LT	BURIED	LEAVE

CONNEXUS ENERGY — AD

STATION BEGIN	STATION END	OFFSET	INPLACE ITEM	REMARKS
CSAH 17				
10+91	14+34	31 RT NB 31 RT	OVERHEAD	RELOCATE
14+34		31 RT NB	POWER POLE	RELOCATE
14+34	17+59	31 RT NB 26 RT	OVERHEAD	RELOCATE
17+59		26 RT NB	POWER POLE	RELOCATE
17+59	19+66	26 RT NB 22 RT	OVERHEAD	RELOCATE
19+66		22 RT NB	POWER POLE	RELOCATE
19+66	21+91	22 RT NB 19 RT	OVERHEAD	RELOCATE
21+91		19 RT NB	POWER POLE	RELOCATE
21+91	23+94	19 RT NB 18 RT	OVERHEAD	RELOCATE
23+94		18 RT NB	POWER POLE	RELOCATE
23+94	24+60	18 RT NB 19 RT	OVERHEAD	RELOCATE
24+60		19 RT NB	POWER POLE	RELOCATE
24+60	25+83	19 RT NB 19 RT	OVERHEAD	RELOCATE
25+83		19 RT NB	POWER POLE	RELOCATE
25+83	27+13	19 RT NB 17 RT	OVERHEAD	RELOCATE
27+13		17 RT NB	POWER POLE	RELOCATE
27+13	29+40	17 RT NB 17 RT	OVERHEAD	RELOCATE
29+40		17 RT NB	POWER POLE	RELOCATE
29+40	31+57	17 RT NB 29 RT	OVERHEAD	RELOCATE
31+57		29 RT NB	POWER POLE	RELOCATE
31+57	34+05	29 RT NB 32 RT	OVERHEAD	RELOCATE
34+05		32 RT NB	POWER POLE	LEAVE
34+03		33 RT NB	SPLICE BOX	LEAVE
34+05	36+32	32 RT NB 57 LT	OVERHEAD	LEAVE
31+66	32+17	4 RT NB 75 LT	BURIED	LEAVE
26+57	27+90	11 LT SB 89 LT	BURIED	LEAVE
26+95		35 LT SB	BURIED	LEAVE
26+96		34 LT SB	SPLICE BOX	RELOCATE
26+96		2 RT SB 38 LT	BURIED	LEAVE
26+93	27+14	38 LT SB 78 LT	BURIED	LEAVE
26+93	27+32	38 LT SB 110 LT	BURIED	LEAVE
28+72	29+37	53 LT SB 51 RT	BURIED	LEAVE

XCEL ENERGY - GAS — AE

STATION BEGIN	STATION END	LOCATION	INPLACE ITEM	REMARKS
CSAH 17				
13+40	15+03	11 RT NB 9 RT	2" PVC	RELOCATE
15+03	15+04	9 RT NB 100 RT	SERVICE	ADJUST
15+03	15+44	9 RT NB 9 RT	2" PVC	RELOCATE
15+44	15+43	9 RT NB 39 LT	SERVICE	ADJUST
15+44	16+84	9 RT NB 6 RT	2" PVC	RELOCATE
16+84	16+85	6 RT NB 109 RT	SERVICE	ADJUST
16+84	18+85	6 RT NB 2 RT	2" PVC	RELOCATE
18+85	18+77	2 RT NB 146 RT	2" PVC	ADJUST
18+85	18+92	2 RT NB 2 RT	2" PVC	RELOCATE
18+92	18+91	2 RT NB 45 LT	SERVICE	ADJUST
18+92	20+03	2 RT NB 0 RT	2" PVC	RELOCATE
20+03	20+03	0 RT NB 25 RT	SERVICE	ADJUST
20+03	19+78	25 RT NB 25 RT	SERVICE	ADJUST
19+78	19+81	25 RT NB 224 RT	SERVICE	ADJUST
20+03	20+27	0 RT NB 0 RT	2" PVC	RELOCATE
20+27	20+27	0 RT NB 47 LT	SERVICE	ADJUST
20+27	21+10	0 RT NB 2 RT	2" PVC	RELOCATE
21+10	21+09	2 RT NB 48 LT	SERVICE	ADJUST
21+10	24+13	2 RT NB 2 RT	2" PVC	RELOCATE
24+13	27+01	2 RT NB 2 RT	2" PVC	RELOCATE
24+13		2 RT NB 60 RT	2" PVC	ADJUST
27+01	27+06	2 RT NB 71 LT	2" PVC	ADJUST
11+41	28+00	15 LT SB 30 LT	6" STEEL	LEAVE
27+04	27+08	46 LT SB 105 LT	2" PVC	LEAVE
27+03	27+81	34 LT SB 37 LT	2" PVC	LEAVE
27+81	28+15	37 LT SB 20 LT	2" PVC	LEAVE
28+00	36+00	30 LT SB 18 LT	6" STEEL	LEAVE
28+15	28+51	20 LT SB 20 LT	2" PVC	LEAVE
28+51	28+49	20 LT SB 157 RT	SERVICE	ADJUST
28+51	29+48	20 LT SB 18 LT	2" PVC	LEAVE
29+48	29+46	18 LT SB 204 RT	SERVICE	ADJUST
29+48	30+78	18 LT SB 16 LT	2" PVC	LEAVE
30+78	30+74	16 LT SB 371 RT	SERVICE	ADJUST
30+78	32+54	16 LT SB 11 LT	2" PVC	LEAVE
32+54	32+57	11 LT SB 282 RT	SERVICE	ADJUST
32+54	36+68	11 LT SB 13 LT	2" PVC	LEAVE

GENERAL NOTES:

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TABULATIONS

Sheet 9 of 70 Sheets

EARTHWORK TABULATION (CSAH 17) — G

STATION	EXCAVATION TOTALS			EMBANKMENT TOTALS (CV)			
	COMMON (CU YD)	MUCK (CU YD)	SUBGRADE (CU YD)	TOPSOIL (CU YD)	SELECT GRANULAR (CU YD)	SUBGRADE (CU YD)	MUCK DISPOSAL (CU YD)
13+50.38							
13+63.00	22		7	3	1	7	
14+00.00	87		21	10	4	22	
14+50.00	162		33	19	19	40	
15+00.00	197		40	25	33	52	
15+50.00	185		44	26	24	54	
15+65.00	30		16	4	1	16	
16+00.00	56		34	9	13	38	
16+50.00	162		43	27	31	56	
17+00.00	159		41	26	31	58	
17+50.00	133		39	24	41	60	
18+00.00	152		41	24	48	62	
18+23.00	74		22	9	20	29	
18+56.79	66		56	8	15	59	
19+00.00	74		69	14	11	77	
19+50.00	157		46	24	30	66	
19+75.00	99		29	10	19	34	
19+87.00	53		15	5	4	16	
20+00.00	68		16	7	3	18	
20+50.00	231		55	25	15	69	
21+00.00	208		40	26	29	71	
21+38.00	164		42	20	37	55	
21+60.00	78		27	9	13	32	
22+00.00	128		38	16	11	58	
22+50.00	147		41	27	41	72	
23+00.00	155	169	23	30	89	76	
23+42.00	133	261	6	26	196	66	44
24+00.00	143	432	9	30	423	89	127
24+30.72	46	242	5	9	228	49	72
24+50.00	44	154	3	6	115	30	37
25+00.00	138	380	7	21	273	61	75
25+50.00	81	255	7	18	255	52	56
26+00.00	62	199	7	16	175	52	37
26+50.00	60	180	7	16	142	52	48
27+00.00	65	90	31	12	145	54	58
27+50.00	91		38	10	147	39	31
28+00.00	115		22	13	67	22	
28+61.00	81		26	9	1	26	
29+00.00	47		15	4		15	
29+50.00	115		19	13		19	
30+00.00	83		17	16	2	10	
30+50.00	47		16	15	28	10	
31+05.00	32		19	7	42	20	
31+50.00	45		16	7	11	16	
32+00.00	84		18	14	5	18	
32+50.00	59		19	11	8	19	
33+00.00	35		19	9	6	19	
TOTAL	**4653**	**2362**	**1204**	**709**	**2852**	**1935**	**585**

EARTHWORK SUMMARY — H

EXCAVATION (CU YD)	EMBANKMENT (CU YD)	EXCESS / BORROW (CU YD)
COMMON EXCAVATION 4653 (EV) → TOPSOIL 2127 (EV) → (2127 / 1.20) = 1773 (CV)	TOPSOIL 709 (CV)	TOPSOIL (709 - 1773) * 1.30 = (1383) (EXCESS) (LV)
COMMON EXCAVATION 4653 (EV) → SUITABLE 2526 (EV) + SUBGRADE EXCAVATION 1204 (EV) → (2595 + 1204) / 1.20 = 3108 (CV)	SELECT GRANULAR 2852 (CV)	SELECT GRANULAR ((2852 + 1935) - 3108) * 1.30 = 2183 (BORROW) (LV)
	SUBGRADE BACKFILL 1935 (CV)	
MUCK EXCAVATION 2362 (EV) → (2362 / 1.40) = 1687	MUCK DISPOSAL 585 (CV)	UNSUITABLE SOIL (585 - 1687) * 1.40 = (1543) (EXCESS) (LV)

EARTHWORK BALANCE NOTES:

SELECT GRANULAR MATERIAL MEETING THE REQUIREMENTS OF MN/DOT SPEC. 3149.2B2 SHALL BE USED TO BACKFILL COMMON EXCAVATION AND MUCK EXCAVATION (EXCLUDING MUCK DISPOSAL) AREAS.

1' SUBGRADE TREATMENT EXCAVATION PAID FOR AS SUBGRADE EXCAVATION. IT IS ASSUMED THAT SUBGRADE EXCAVATION AND SUITABLE MATERIALS FROM COMMON EXCAVATION MEET THE REQUIREMENTS OF SELECT GRANULAR BORROW. ADDITIONAL MATERIAL NEEDED SHALL BE SELECT GRANULAR.

120% SHRINKAGE FACTOR USED FROM EXCAVATED VOLUME (EV) TO COMPACTED VOLUME (CV). 130% SWELL FACTOR USED FROM COMPACTED VOLUME (CV) TO LOOSE VOLUME (LV).
140% SWELL FACTOR ASSUMED FOR MUCK DISPOSAL VOLUME.
SHRINKAGE FACTORS ARE ASSUMED VALUES, USED ONLY FOR THE PURPOSE OF ESTIMATED QUANTITIES. IT SHALL BE UNDERSTOOD THAT NO WARRANTY IS MADE OR IMPLIED AS TO THE ACCURACY, SUFFICIENCY, OR RELIABILITY OF SHRINKAGE FACTORS.

GENERAL NOTES:

SEE SOILS AND CONSTRUCTION NOTES FOR MATERIAL DEFINITIONS AND ADDITIONAL INFORMATION.

ALL MATERIAL NOT USED ON THE PROJECT SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE PROJECT LIMITS WITH NO DIRECT PAYMENT THEREFORE. THE MATERIAL QUANTITY IS BASED ON ESTIMATED QUANTITIES. DISPOSAL SHALL BE IN ACCORDANCE WITH SPEC. 2105

THE CONTRACTOR SHALL OBTAIN APPROVAL FROM THE ENGINEER BEFORE HAULING MATERIAL OFF SITE.

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-20\Plan\0261720_TAB.dgn 02/27/2013 3:14:51 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: CURT A. KOBILARCSIK
SIGNATURE: Curt Kobilarcsik
DATE: 2-28-13 LICENSE NO. 24756

DRAWN BY EJM DATE 01-16-13
DESIGN BY EJM DATE 01-16-13
CHECKED BY GMP DATE 01-25-13

ANOKA COUNTY HIGHWAY DEPT.

SP 002-617-020
SP 197-020-003

EARTHWORK TABULATION

Sheet 10 of 70 Sheets

1. TOP OF THE GRADING SUBGRADE (GRADING GRADE) IS DEFINED AS THE BOTTOM OF THE CLASS 5 AGGREGATE BASE LAYER.

2. BOTTOM OF THE SUBBASE GRADE SHALL BE DEFINED AS THE BOTTOM OF THE 1' SUBGRADE EXCAVATION.

3. IN AREAS OF MUCK EXCAVATION ANY EXCAVATION ABOVE THE UNSUITABLE ORGANIC MATERIAL IS PAID FOR AND INCLUDED AS COMMON EXCAVATION.

4. SUITABLE GRADING MATERIAL ON THIS PROJECT SHALL CONSIST OF ALL GRANULAR AND FINER GRAINED SOILS ENCOUNTERED WITH THE EXCEPTION OF TOPSOIL, DEBRIS, PEAT, MUCK, ORGANIC MATERIAL AND OTHER UNSTABLE MATERIAL.

5. SELECT GRANULAR MATERIAL SHALL MEET THE REQUIREMENTS OF MN/DOT SPEC. 3149.2B2

6. ALL TOPSOIL STRIPPING WILL BE CONSIDERED TO BE COMMON EXCAVATION.

7. TOPSOIL SHALL BE DEFINED AS EXISTING SOILS WHICH MEET MN/DOT SPEC. 3877 THAT WOULD BE SUITABLE FOR REUSE.

8. SELECT GRANULAR MATERIAL SHALL BE USED TO BACK FILL THE EMBANKMENT UNDER THE NEW ROADWAY CORE, UP TO THE TOP OF THE GRADING SUBGRADE.

9. SLOPE DRESSING ON THE PROJECT IS DEFINED AS THE TOPSOIL OR OTHER SOIL PLACED DURING PRIOR CONSTRUCTION TO PROVIDE A MEDIUM FOR ESTABLISHING TURF.

10. UNSUITABLE SOILS ARE DEFINED AS SOILS WHICH DO NOT MEET OR ARE NOT MANUFACTURED TO MEET ANY OF THE ABOVE DEFINED CATEGORIES, AND ARE THEREFORE NOT REUSABLE AS STRUCTURAL BACKFILL OR EMBANKMENT WITHIN THE ROADWAY CORE.

11. SUITABLE GRADING MATERIAL OBTAINED FROM COMMON EXCAVATION NOT MEETING THE REQUIREMENTS OF MN/DOT SPEC. 3149.2B1, SHALL BE USED OUTSIDE THE ROADWAY CORE ON THE PROJECT AS APPROVED BY THE ENGINEER.

12. UNSUITABLE MATERIALS ARE TOPSOILS, PAVEMENT OR CONCRETE DEBRIS, PEAT, MUCK AND ORGANIC OR OTHER UNSTABLE SOILS.

13. UNLESS OTHERWISE SPECIFICALLY ALLOWED OR REQUIRED BY THE CONTRACT, BITUMINOUS AND CONCRETE ITEMS DISTURBED BY CONSTRUCTION SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE RECYCLED TO THE EXTENT ALLOWED IN BASE AND SURFACING ITEMS OR DISPOSED OF OUTSIDE THE RIGHT-OF-WAY IN ACCORDANCE WITH SPEC. 2104.3C3.

14. REGULAR EMBANKMENT SHALL BE DEFINED AS ALL GRADING MATERIALS THAT ARE APPROPRIATE FOR REUSE ON THE PROJECT BUT THAT MAY NOT MEET THE REQUIREMENTS OF SUITABLE GRADING MATERIALS. REGULAR EMBANKMENT MAY CONSIST OF GRADING SOILS NOT MEETING GRANULAR SPECIFICATIONS AND THEREFORE NOT SUITABLE FOR REUSE UNDER ROAD CORE.

15. WHERE CONNECTING TO THE INPLACE ROADWAYS AT THE TERMINI OF PROPOSED NEW CONSTRUCTION, CUT VERTICALLY TO THE BOTTOM OF THE INPLACE SURFACING OR TO THE BOTTOM OF THE NEW SURFACING DESIGN, WHICHEVER IS DEEPER, THEN AT A 1:20 TAPER TO THE BOTTOM OF THE RECOMMENED SUBGRADE EXCAVATION.

16. WHERE MATCHING INTO INPLACE CROSSROADS, CUT VERTICALLY TO THE BOTTOM OF THE INPLACE SURFACING OR TO THE BOTTOM OF NEW SURFACING DESIGN, WHICHEVER IS DEEPER, THEN AT A 1:20 TAPER TO THE BOTTOM OF THE RECOMMENDED SUBGRADE EXCAVATION.

17. WHERE WIDENING ADJACENT TO EXISTING PAVEMENT, CUT VERTICALLY TO THE BOTTOM OF THE CLASS 5 AGGREGATE BASE AND THEN AT A 1V:1/2H SLOPE TO THE BOTTOM OF THE BOTTOM OF THE RECOMMENDED SUBGRADE EXCAVATION (AS SHOWN ON THE TYPICAL SECTIONS AND THE CROSS SECTIONS). BACKFILL PROMPTLY TO AVOID UNDERMINING THE EXISTING PAVEMENT.

18. CONTRACTOR SHALL PROVIDE A FULL DEPTH SAWCUT WHERE PLACING NEW PAVEMENT ADJACENT TO INPLACE PAVEMENT TO ENSURE A UNIFORM JOINT. IF NO ITEM FOR THIS WORK IS SPECIFICALLY CALLED OUT FOR, THEN THE WORK SHALL BE INCIDENTAL WITH NO DIRECT COMPENSATION.

19. CONTRACTOR SHALL PROVIDE A UNIFORM BITUMINOUS TACK COAT BETWEEN ALL BITUMINOUS LAYERS AND PRIOR TO PLACING ANY BITUMINOUS MIXTURES ON EXISTING PAVEMENT IN ACCORDANCE WITH SPEC. 2357.

20. STRIP ALL TOPSOIL AND INPLACE SLOPE DRESSING WHERE PRESENT IN AREAS TO BE DISTURBED BY CONSTRUCTION AND REUSE AS SLOPE DRESSING. FOR ESTIMATING PURPOSES, THE DEPTH OF TOPSOIL AVAILABLE IS CONSIDERED TO BE 4 INCHES. CONTRACTOR TO VERIFY PRIOR TO PLACING BID.

21. EMBANKMENT QUANTITIES SHOWN ON THE EARTHWORK TABULATION REPRESENT ALL EARTHWORK QUANTITIES BELOW THE PROPOSED GRADING GRADE OF ALL PERMANENT ROADWAYS. QUANTITIES REQUIRED ABOVE THE GRADING GRADE ARE PROVIDED IN DETAIL ON THE BITUMINOUS SUMMARY TAB.

22. THE CONSTRUCTION LIMITS AS SHOWN IN THE PLANS REPRESENT THE POINT OF INTERSECTION BETWEEN THE REQUIRED FILL OR CUT SLOPE AND THE EXISTING GROUND LINE AS DEPICTED ON THE CROSS SECTIONS. THE CONSTRUCTION LIMITS DO NOT INCLUDE AREAS REQUIRED FOR SLOPE ROUNDING.

23. DITCH BOTTOMS, TOE OF FILL, CUT RUNOUTS AND THE TOP EDGE OF THE BACKSLOPES SHALL BE ROUNDED REGARDLESS OF THE SECTION USED ON THE CROSS SECTION SHEETS.

24. ANY DEBRIS WHICH MAY BE ENCOUNTERED DURING GRADING SHALL BE DISPOSED OF BY THE CONTRACTOR OFF THE PROJECT RIGHT OF WAY IN A SUITABLE DISPOSAL AREA AS APPROVED BY THE ENGINEER.

25. UNSUITABLE SOILS NOT USED ON THE PROJECT SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE PROJECT AND DISPOSED OFF IN ACCORDANCE WITH MN/DOT SPECIFICATIONS.

26. INPLACE BITUMINOUS PAVEMENT RANGES FROM 5" TO 7" THICK. (AVERAGE 6") FOR INFORMATION ONLY, CONTRACTOR MAY VERIFY PAVEMENT DEPTH PRIOR TO PLACING BID. NO WARRANTY IS MADE OR IMPLIED WITH THIS INFORMATION.

27. AGGREGATE BASE MATERIAL SHALL MEET THE REQUIREMENTS OF MN/DOT SPEC. 3138, CLASS 5.

28. COMPACTION OF AGGREGATE BASE SHOULD BE IN ACCORDANCE WITH MN/DOT "MODIFIED PENETRATION INDEX METHOD". COMPACTION OF SELECT GRANULAR MATERIAL SHOULD BE IN ACCORDANCE WITH MN/DOT "SPECIFIED DENSITY METHOD".

29. COMPACTION OF ALL ROADWAY BITUMINOUS MIXTURES SHALL BE BY THE "MAXIMUM DENSITY METHOD". COMPACTION OF DRIVEWAYS SHALL BE BY THE "ORDINARY COMPACTION METHOD".

30. WET CONDITIONS MAY BE ENCOUNTERED IN THE MUCK EXCAVATION AREAS. DEWATERING WITH SUMP PUMPS CAN ALSO BE EXPECTED. CLEAN CRUSHED ROCK WILL LIKELY BE NECESSARY TO STABILIZE THE BOTTOM OF THE MUCK EXCAVATION FOR PLACEMENT OF FILL. THIS WORK SHALL BE CONSIDERED INCIDENTAL TO THE EXCAVATION AND BACKFILL.

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-20\Plan\0261720_TAB.dgn 02/27/2013 3:14:51 PM

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PRINT NAME: CURT A. KOBILARCSIK
SIGNATURE: [signature]
DATE: 2-28-13 LICENSE NO. 24756

DRAWN BY EJM DATE 01-16-13
DESIGN BY EJM DATE 01-16-13
CHECKED BY GMP DATE 01-25-13

ANOKA COUNTY
HIGHWAY DEPT.

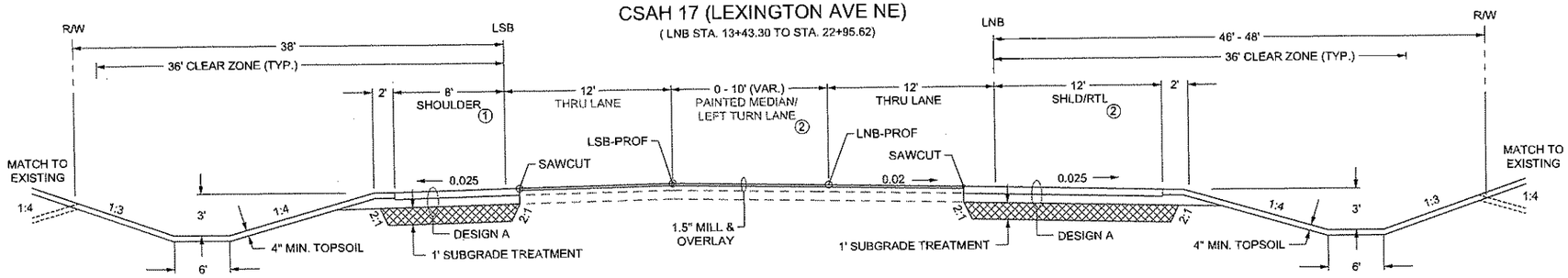
SP 002-617-020
SP 197-020-003

SOILS AND CONSTRUCTION NOTES

Sheet 11 of 70 Sheets

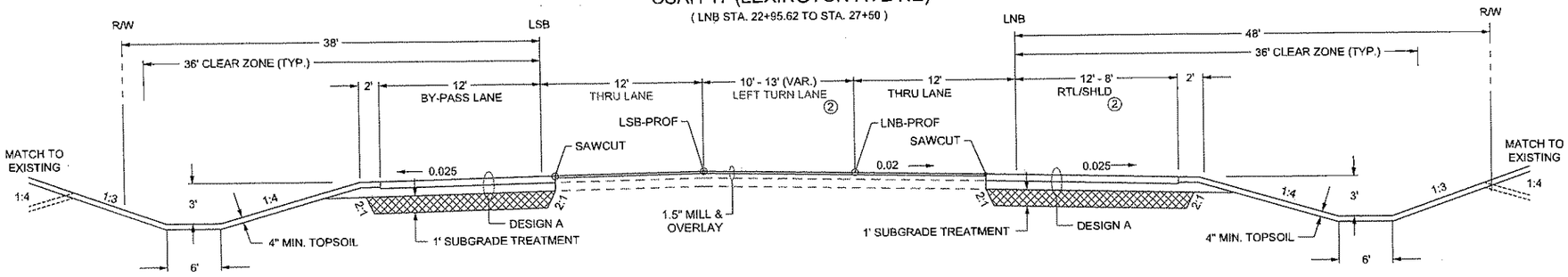
CSAH 17 (LEXINGTON AVE NE)

(LNB STA. 13+43.30 TO STA. 22+95.62)



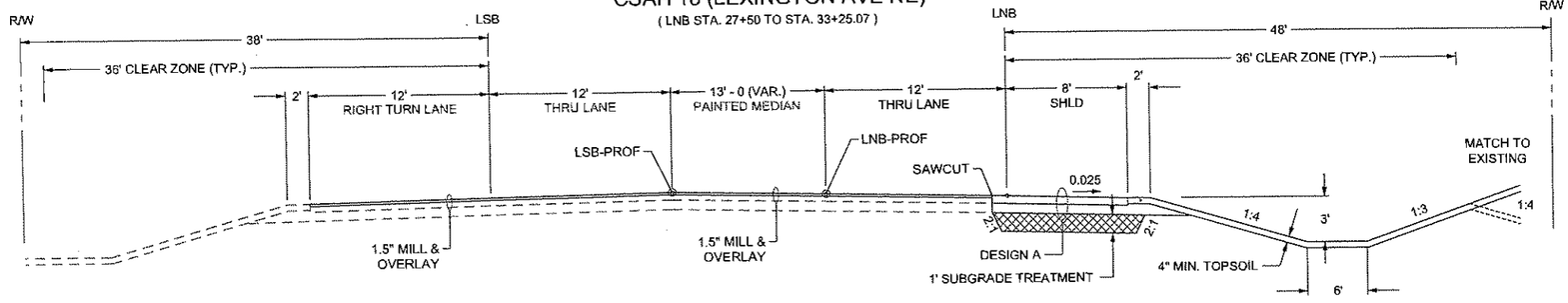
CSAH 17 (LEXINGTON AVE NE)

(LNB STA. 22+95.62 TO STA. 27+50)



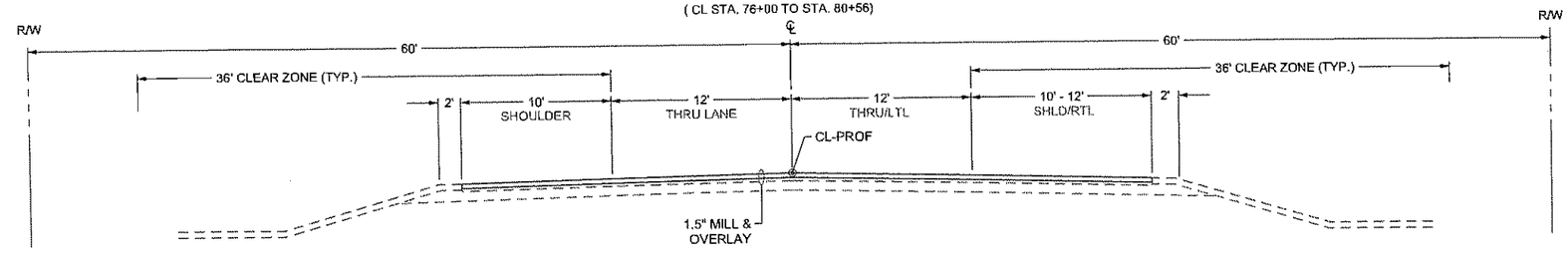
CSAH 18 (LEXINGTON AVE NE)

(LNB STA. 27+50 TO STA. 33+25.07)



CSAH 18 (CROSSTOWN BLVD NE)

(CL STA. 76+00 TO STA. 80+56)



TURN LANE LOCATIONS

ALIGN	STA. TO STA. *		LOCATION	DESCRIPTION	STRIPED TAPER
17 NB	13+60	18+10	RT.	RIGHT TURN LANE	1:15
17 NB	20+56	24+86	RT.	RIGHT TURN LANE	1:15
17 NB	21+23	27+18	LT.	LEFT TURN LANE	1:15
18 CL	76+52	81+02	RT.	LEFT TURN LANE	
18 CL	76+52	81+02	RT.	RIGHT TURN LANE	1:15

* STATION RANGE INCLUDES TAPER SECTION.

CONSTRUCTION NOTES:

① BEGIN SAWCUT AND SHOULDER WIDENING ALONG SB CSAH 17 AT LSB STATION 14+44.06 .

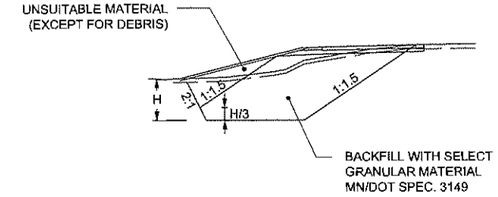
② SEE CONSTRUCTION PLAN SHEETS 30 - 31 AND CHART ABOVE FOR TURN LANE LOCATIONS.

GENERAL NOTES:

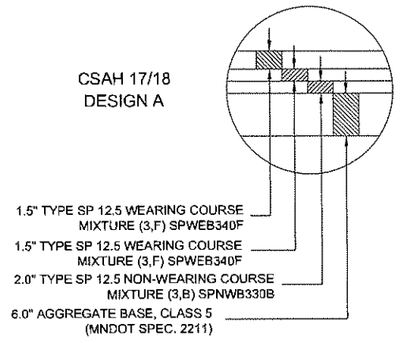
1) ALL CROSS SLOPES ARE EXPRESSED IN FT/FT.
2) SAWCUT BITUMINOUS PAVEMENT 1 FT FROM THE EDGE OF EXISTING PAVEMENT.

MUCK EXCAVATION DETAIL

(STA. 23+00 TO STA. 26+50)



CSAH 17/18 DESIGN A



NOT TO SCALE

1 OF 1

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-20\Plan\0261720_TYP1.dgn 03/01/2013 7:29:45 AM

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PRINT NAME: CURT A. KOBILARCSIK

SIGNATURE:

DATE: 3-1-13 LICENSE NO. 24756

DRAWN BY EJM DATE 01-16-13

DESIGN BY EJM DATE 01-16-13

CHECKED BY GMP DATE 01-25-13

ANOKA COUNTY

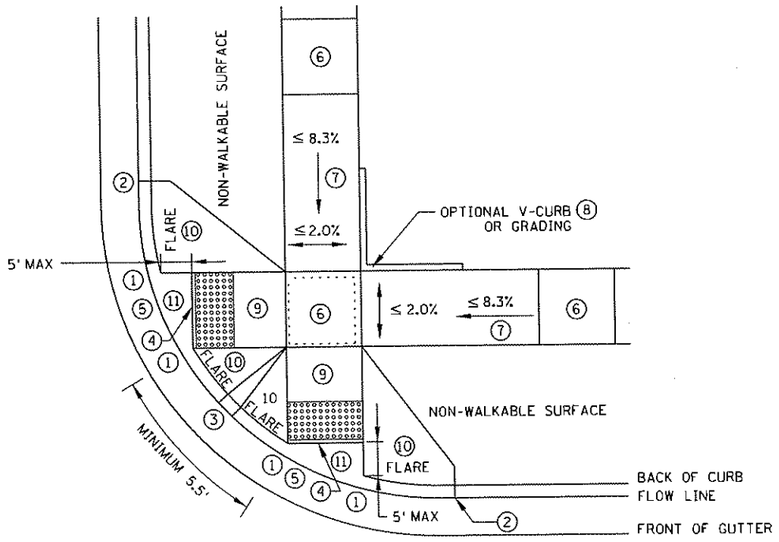
ANOKA COUNTY HIGHWAY DEPT.

SP 002-617-020

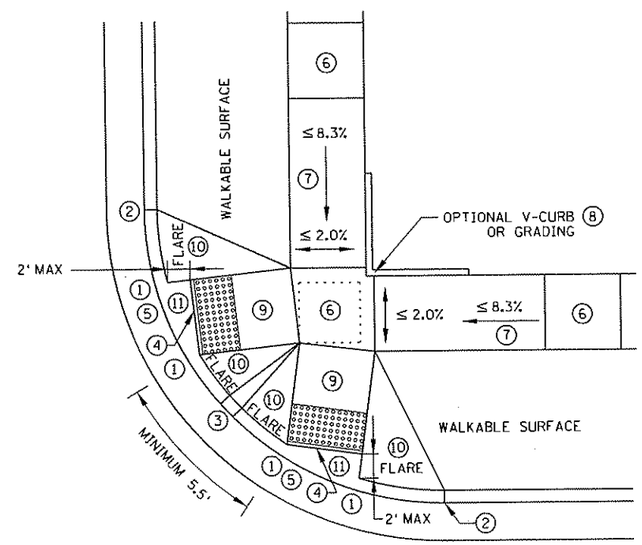
SP 197-020-003

PROPOSED TYPICAL SECTIONS

Sheet 12 of 70 Sheets

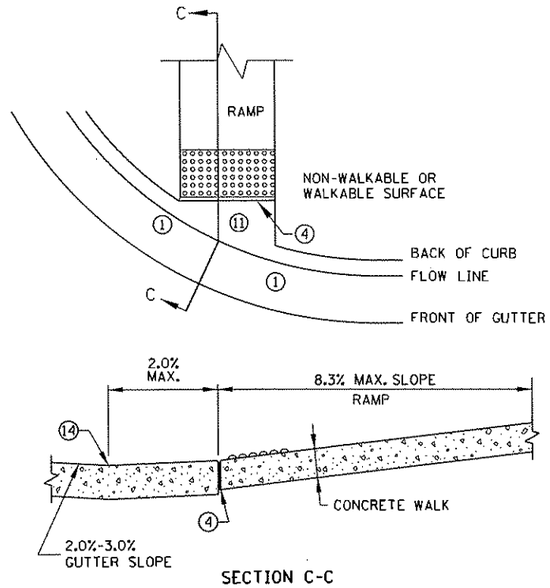


ADJACENT TO NON-WALKABLE SURFACE



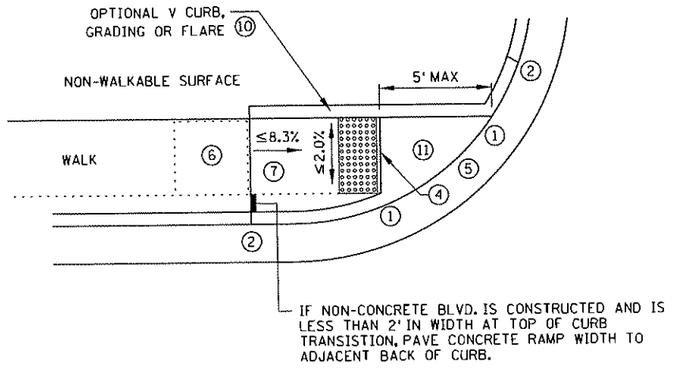
ADJACENT TO WALKABLE SURFACE

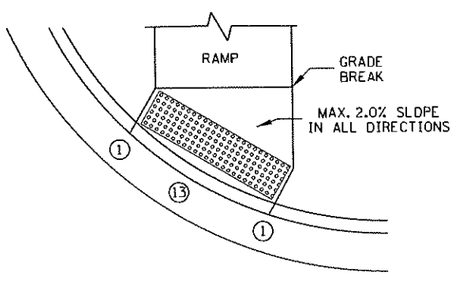
COMBINED DIRECTIONAL



SECTION C-C

CURB FOR DIRECTIONAL RAMPS (12)





ONE-WAY DIRECTIONAL

NOTES:

SEE STANDARD PLATE 7038 AND SHEET 4 OF 5 FOR DETAILS ON DETECTABLE WARNING.

SLOPES ARE DEFINED AS ABSOLUTE ELEVATION DIFFERENCE PER LENGTH OF RUN. (AS OPPOSED TO A RELATIVE SLOPE WITH RESPECT TO A CURB LINE OR CURB HEIGHT.)

LANDINGS SHALL BE LOCATED ANYWHERE THE PEDESTRIAN ACCESS ROUTE CHANGES DIRECTION, AND AT THE TOP OF RAMPS THAT HAVE RUNNING SLOPES GREATER THAN 5%.

INITIAL CURB RAMP LANDINGS SHALL BE CONSTRUCTED WITHIN 15' FROM THE BACK OF CURB, WITH 6' FROM THE BACK OF CURB BEING THE PREFERRED DISTANCE.

SECONDARY CURB RAMP LANDINGS ARE REQUIRED FOR EVERY 30" OF VERTICAL RISE WHEN THE LONGITUDINAL SLOPE IS 5% OR GREATER.

CONTRACTION JOINTS SHALL BE CONSTRUCTED AT ALL GRADE BREAKS.

TOP OF CURB SHALL MATCH PROPOSED ADJACENT WALK GRADE.

USE 6" CONCRETE WALK FOR ALL INITIAL RAMP AND LANDING AREAS.

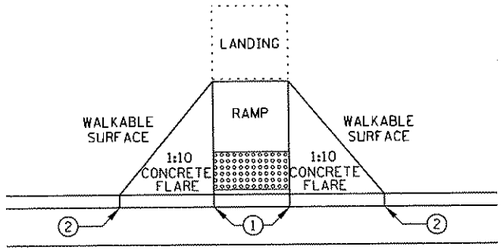
CONTRACTOR SHALL EMPLOY APPROPRIATE METHODS FOR INTERMEDIATE GRADE CONTRDL TO ENSURE ALL GRADE BREAKS ARE CONSTRUCTED PROPERLY.

ALL GRADE BREAKS SHALL BE PERPENDICULAR TO THE DIRECTION OF TRAVEL/PEDESTRIAN ACCESS RDUTE.

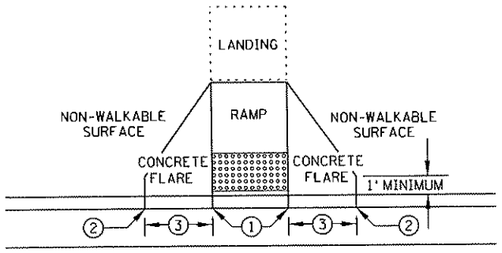
4' MINIMUM WIDTH OF DETECTABLE WARNING IS REQUIRED FOR ALL RAMPS. SHARED USE PATHS SHALL HAVE DETECTABLE WARNING ACROSS THE ENTIRE WIDTH OF PATH WHEN THE PATH CROSSES A RDAD.

(1) D" CURB HEIGHT.
(2) FULL CURB HEIGHT.
(3) 3" MINIMUM CURB HEIGHT.
(4) 1/2" PREFORMED JOINT FILLER MATERIAL AASHTD M 213. JOINT FILLER SHALL BE PLACED FLUSH WITH THE BACK OF CURB AND ADJACENT SIDEWALK. JOINT SHALL BE FREE DF DEBRIS. RECTANGULAR DETECTABLE WARNINGS SHALL BE SET BACK 3" FROM THE BACK OF CURB. RADIAL DETECTABLE WARNINGS SHALL BE SET BACK 3"-6" FROM THE BACK OF CURB.
(5) SEE PEDESTRIAN ACCESS ROUTE CURB AND GUTTER DETAIL FOR INFORMATION ON CONSTRUCTING CURB AND GUTTER AT CURB OPENINGS. SEE SHEET NO. 3 DF 5.
(6) 4' BY 4' MIN. LANDING WITH MAX. 2% SLDPE IN ALL DIRECTIONS.
(7) IF RAMP SLOPE IS LESS THAN 5% NO SECONDARY LANDING IS REQUIRED.
(8) V CURB, IF USED, SHALL BE PLACED OUTSIDE THE SIDEWALK LIMITS WHEN RIGHT OF WAY ALLDWS.
(9) RUNNING SLOPE LESS THAN OR EQUAL TO 8.3% & CROSS SLOPE LESS THAN OR EQUAL TO 2%.
(10) SEE SHEET 4 OF 5, TYPICAL SIDE TREATMENT OPTIONS, FOR DETAILS ON FLARES AND RETURNED CURBS.
(11) MAX. 2% SLOPE IN ALL DIRECTIONS IN FRONT OF GRADE BREAK AND DRAIN TO FLOW LINE. SHALL BE CONSTRUCTED INTEGRAL WITH CURB AND GUTTER.
(12) TO BE USED FOR ALL DIRECTIDNAL RAMPS.
(13) DOMES PLACED AT THE BACK OF CURB WHEN ALLOWABLE SETBACK CRITERIA IS EXCEEDED.
(14) ANY VERTICAL LIP THAT DCCURS AT THE FLOW LINE MAY NOT BE GREATER THAN 1/4 INCH.

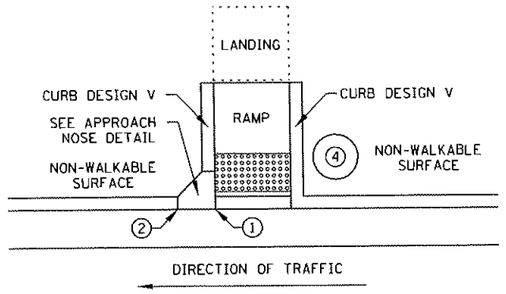
STANDARD PLAN SHEET NO. 5-297.250 (2 OF 5)	PEDESTRIAN CURB RAMP DETAILS
STANDARD APPROVED: MAY 10, 2012	
S.P. 002-617-020 S.P. 197-020-003	SHEET NO. 13 OF 70 SHEETS



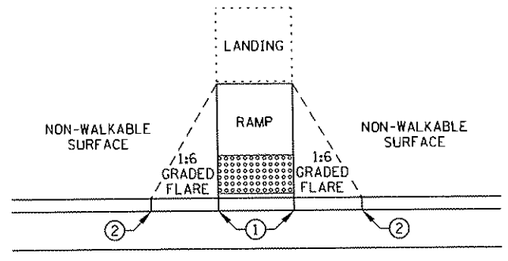
PAVED FLARES
AOJACENT TO WALKABLE SURFACE



PAVED FLARES
ADJACENT TO NON-WALKABLE SURFACE

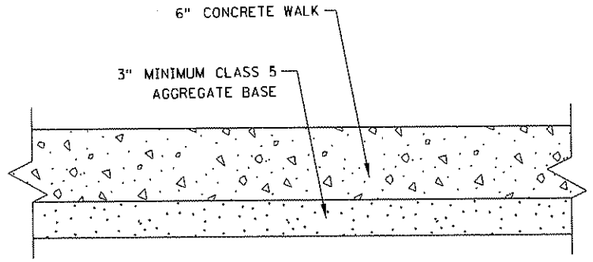


RETURNED CURB

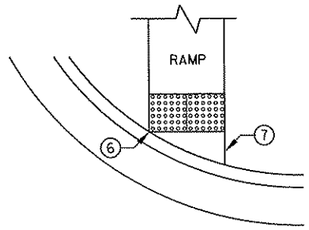


GRADED FLARES

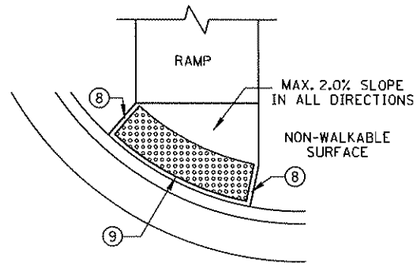
TYPICAL SIDE TREATMENT OPTIONS ⑤



TYPICAL SIDEWALK SECTION
WITHIN INTERSECTION CORNER

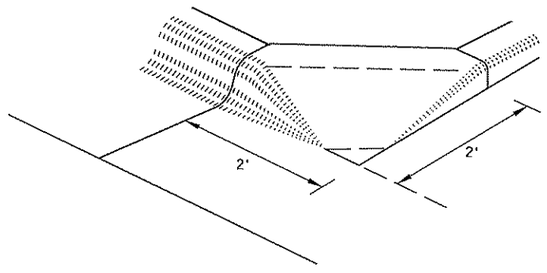


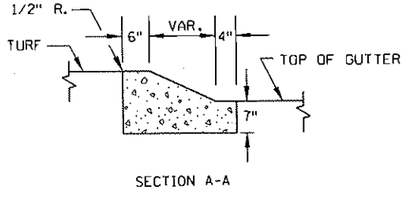
DETECTABLE WARNING
SETBACK CRITERIA



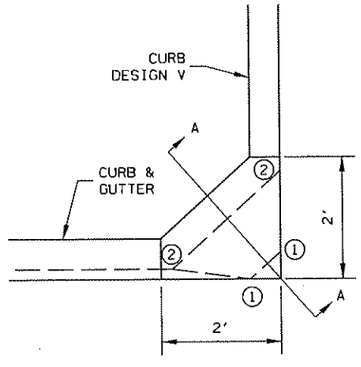
RADIAL DETECTABLE
WARNING AT RADIUS

DETECTABLE WARNING PLACEMENT





SECTION A-A



APPROACH NOSE DETAIL
FOR DOWNSTREAM SIDE OF TRAFFIC

NOTES:

SEE STANDARD PLATE 7038 AND THIS SHEET FOR DETAILS ON DETECTABLE WARNING.

USE 6" CONCRETE WALK UP TO EXISTING SIDEWALK GRADES FOR ALL RAMP AND LANDING AREAS.

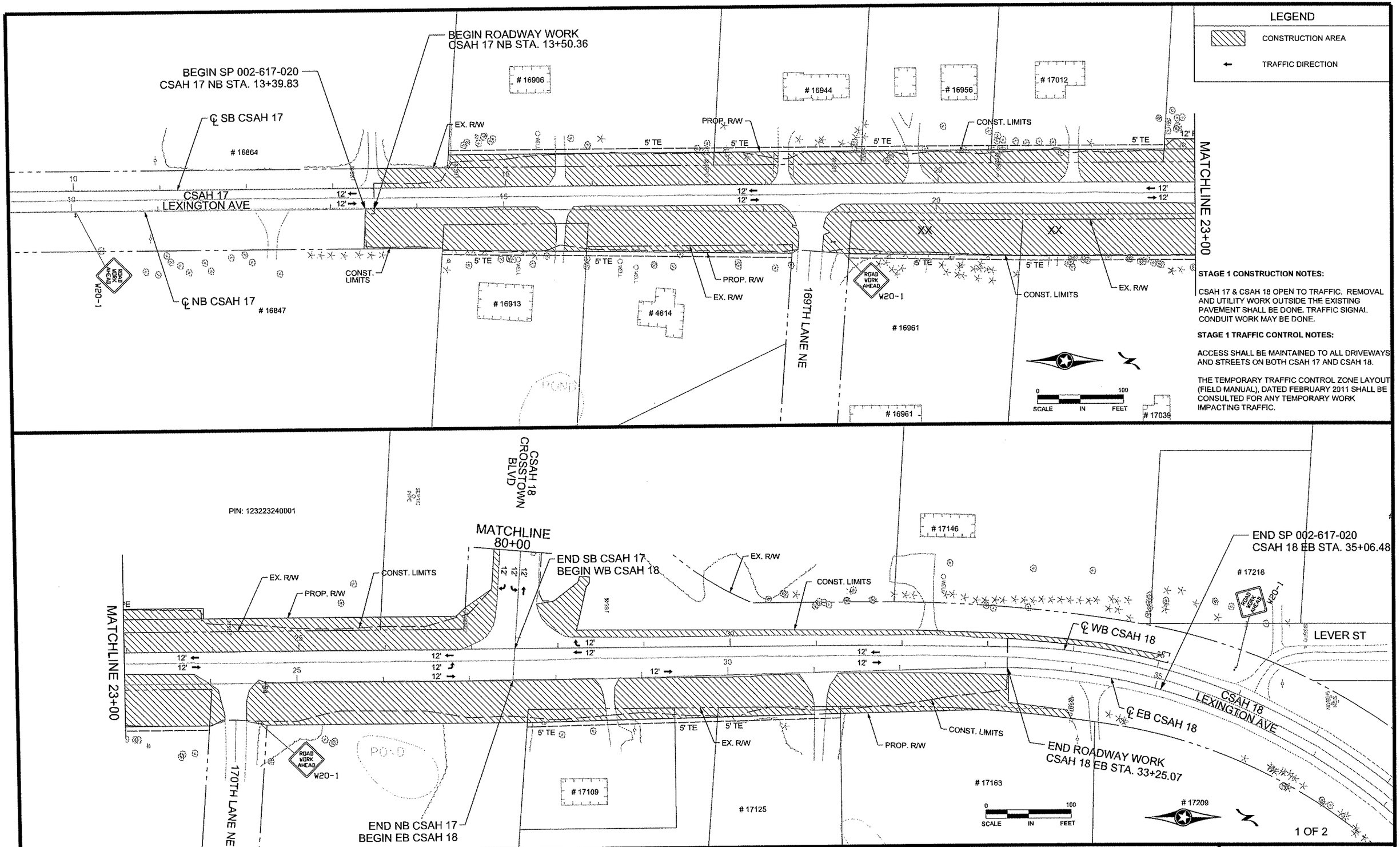
WHETHER A SURFACE IS WALKABLE OR NOT SHALL BE DETERMINED BY THE ENGINEER.

FLARE LENGTHS SHOULD BE LESS THAN 8' LONG MEASURED ALONG THE RAMPS FROM THE BACK OF CURB.

4' MINIMUM WIDTH OF DETECTABLE WARNING IS REQUIRED FOR ALL RAMPS. SHARED USE PATHS SHALL HAVE DETECTABLE WARNING ACROSS THE ENTIRE WIDTH OF PATH WHEN THE PATH CROSSES A ROAD.

(1) 0" CURB HEIGHT.
(2) FULL CURB HEIGHT.
(3) 2' - 3' CONCRETE FLARE.
(4) IMMOVABLE OBJECT DR OBSTRUCTION.
(5) SIDE TREATMENTS ARE APPLICABLE TO ALL RAMP TYPES AND SHOULD BE IMPLEMENTED AS NEEDED ON ALL RAMPS AS FIELD CONDITIONS DICTATE. THE ENGINEER SHALL DETERMINE THE RAMP SIDE TREATMENTS BASED ON MAINTENANCE OF BOTH ROADWAY AND SIDEWALK, ADJACENT PROPERTY CONSIDERATIONS, AND MITIGATING CONSTRUCTION IMPACTS.
(6) DETECTABLE WARNING SHALL HAVE ONE CORNER 3" FROM THE BACK OF CURB.
(7) SHALL BE 2' MAXIMUM OFFSET WHEN ADJACENT TO WALKABLE SURFACE AND 5' MAXIMUM OFFSET WHEN ADJACENT TO NON-WALKABLE SURFACE.
(8) WHEN NO FLARES ARE PROPOSED, THE CONCRETE WALK SHALL BE FORMED AND CONSTRUCTED PERPENDICULAR TO THE BACK OF CURB. MAINTAIN 3" BETWEEN EDGE OF DOMES AND EDGE OF CONCRETE.
(9) DETECTABLE WARNING TO BE PLACED AT A UNIFORM OFFSET DISTANCE FROM 3" TO 6" FROM THE BACK OF CURB. IF NO CURB AND GUTTER IS PLACED IN RURAL SECTIONS, DETECTABLE WARNING SHALL BE PLACED 1' FROM THE EDGE OF ROADWAY TO PROVIDE CONCRETE BORDER.

STANDARD PLAN SHEET NO. 5-297.250 (4 OF 5)	PEDESTRIAN CURB RAMP DETAILS
STANDARD APPROVED: MAY 10, 2012	
S.P. 002-617-020 S.P. 197-020-003	SHEET NO. 14 OF 70 SHEETS



NO	DATE	BY	CKD	APPR	REVISION
					02/22/2013 12:07:00 PM

NAME: P:\02-617-20\Plan\0261720_STG1_P1.dgn

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PRINT NAME: CURT A. KOBILARCSIK

SIGNATURE:

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ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

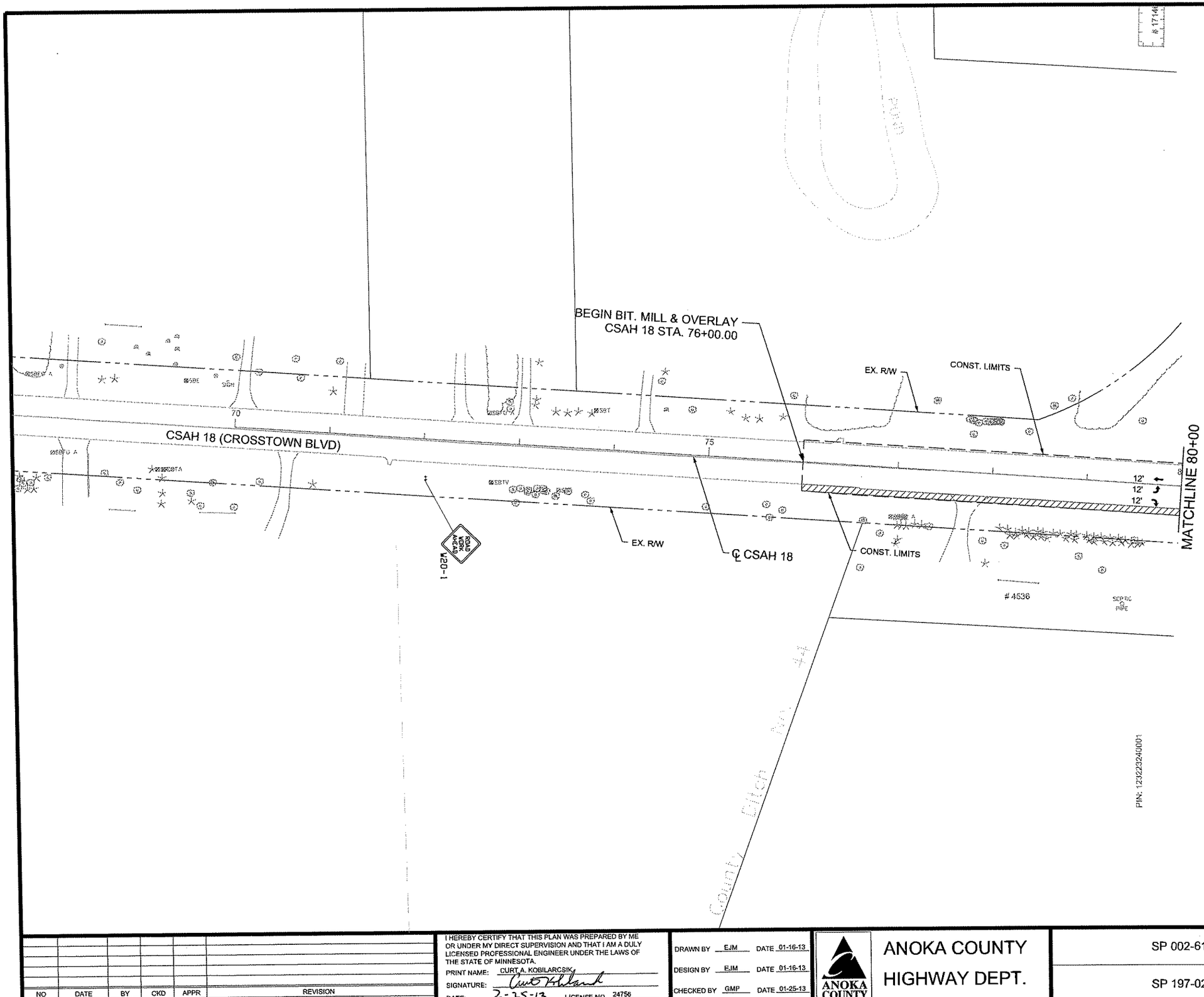
SP 002-617-020

SP 197-020-003

CONSTRUCTION STAGE 1 & TRAFFIC CONTROL PLAN

STA 13+43.30 TO 35+06.48

SHEET 15 OF 70 SHEETS



LEGEND

CONSTRUCTION AREA

TRAFFIC DIRECTION

STAGE 1 CONSTRUCTION NOTES:

CSAH 17 & CSAH 18 OPEN TO TRAFFIC. REMOVAL AND UTILITY WORK OUTSIDE THE EXISTING PAVEMENT SHALL BE DONE. TRAFFIC SIGNAL CONDUIT WORK MAY BE DONE.

STAGE 1 TRAFFIC CONTROL NOTES:

ACCESS SHALL BE MAINTAINED TO ALL DRIVEWAYS AND STREETS ON BOTH CSAH 17 AND CSAH 18.

THE TEMPORARY TRAFFIC CONTROL ZONE LAYOUT (FIELD MANUAL), DATED FEBRUARY 2011 SHALL BE CONSULTED FOR ANY TEMPORARY WORK IMPACTING TRAFFIC.

N

0 100
SCALE IN FEET

2 OF 2

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-20\Plan\0261720_STG1_P2.dgn 02/22/2013 12:07:02 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: CURT A. KOBILARCSIK

SIGNATURE: Curt A Kobilarcsik

DATE: 2-25-13 LICENSE NO. 24756

DRAWN BY EJM DATE 01-16-13

DESIGN BY EJM DATE 01-16-13

CHECKED BY GMP DATE 01-25-13

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

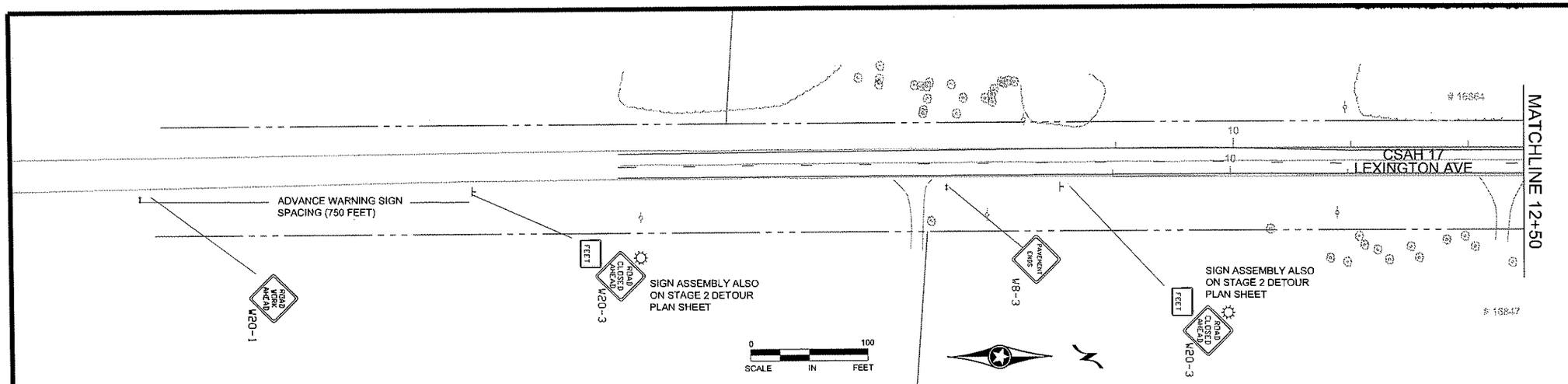
SP 002-617-020

SP 197-020-003

CONSTRUCTION STAGE 1 & TRAFFIC CONTROL PLAN

STA 76+00.00 TO 80+56.29

SHEET 16 OF 70 SHEETS



LEGEND

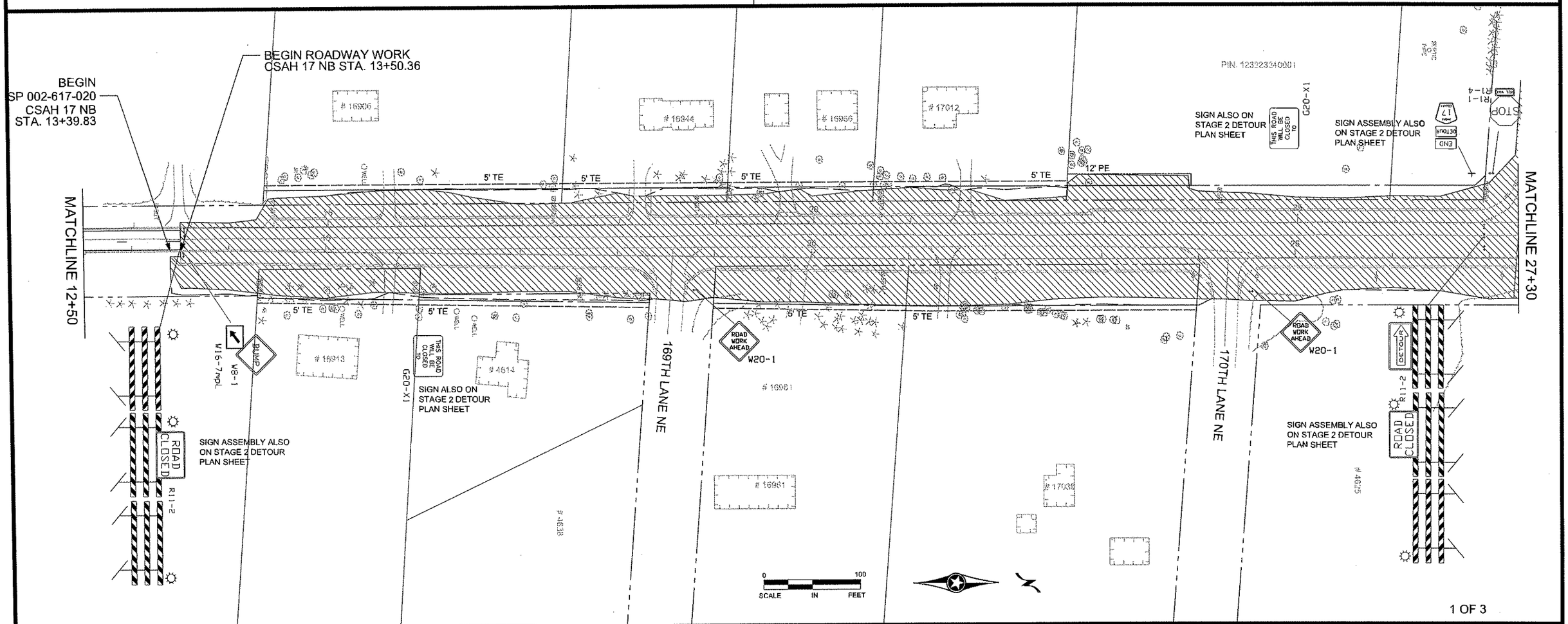
- CONSTRUCTION AREA
- TRAFFIC DIRECTION

STAGE 2 CONSTRUCTION NOTES:

CSAH 17 SOUTH OF CSAH 18 SHALL BE CLOSED TO TRAFFIC FOR CONSTRUCTION.
BIT. MILL & OVERLAY ON CSAH 18 SHALL BE DONE UNDER TRAFFIC.

STAGE 2 TRAFFIC CONTROL NOTES:

CSAH 18 IS OPEN TO TRAFFIC.
CSAH 17 FROM CR 60 (CONSTANCE BLVD)TO CSAH 18 (CROSSTOWN BLVD) IS CLOSED TO THROUGH TRAFFIC.
STAGE 2 DETOUR IS IN PLACE.
CSAH 17 AT CSAH 18 SHALL BE CONVERTED TO AN ALL-WAY STOP CONDITION.
ACCESS SHALL BE MAINTAINED TO ALL DRIVEWAYS AND STREETS ON BOTH CSAH 17 AND CSAH 18.
TEMPORARY TRAFFIC CONTROL ZONE LAYOUT (FIELD MANUAL), DATED FEBRUARY 2011 SHALL BE CONSULTED FOR ANY TEMPORARY WORK IMPACTING TRAFFIC.



1 OF 3

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-20\Plan\0261720_STG2_P1.dgn 02/28/2013 8:04:06 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: CURT A. KOBILARCSIK
SIGNATURE: Curt A. Kobilarcsik
DATE: 2-28-13 LICENSE NO. 24756

DRAWN BY EJM DATE 01-16-13
DESIGN BY EJM DATE 01-16-13
CHECKED BY GMP DATE 01-25-13

ANOKA COUNTY HIGHWAY DEPT.

SP 002-617-020

SP 197-020-003

CONSTRUCTION STAGE 2 & TRAFFIC CONTROL PLAN
STA 0+01.00 TO 27+30.00

SHEET 17 OF 70 SHEETS

LEGEND	
	CONSTRUCTION AREA
	BIT. MILL & OVERLAY UNDER TRAFFIC
←	TRAFFIC DIRECTION

STAGE 2 CONSTRUCTION NOTES:

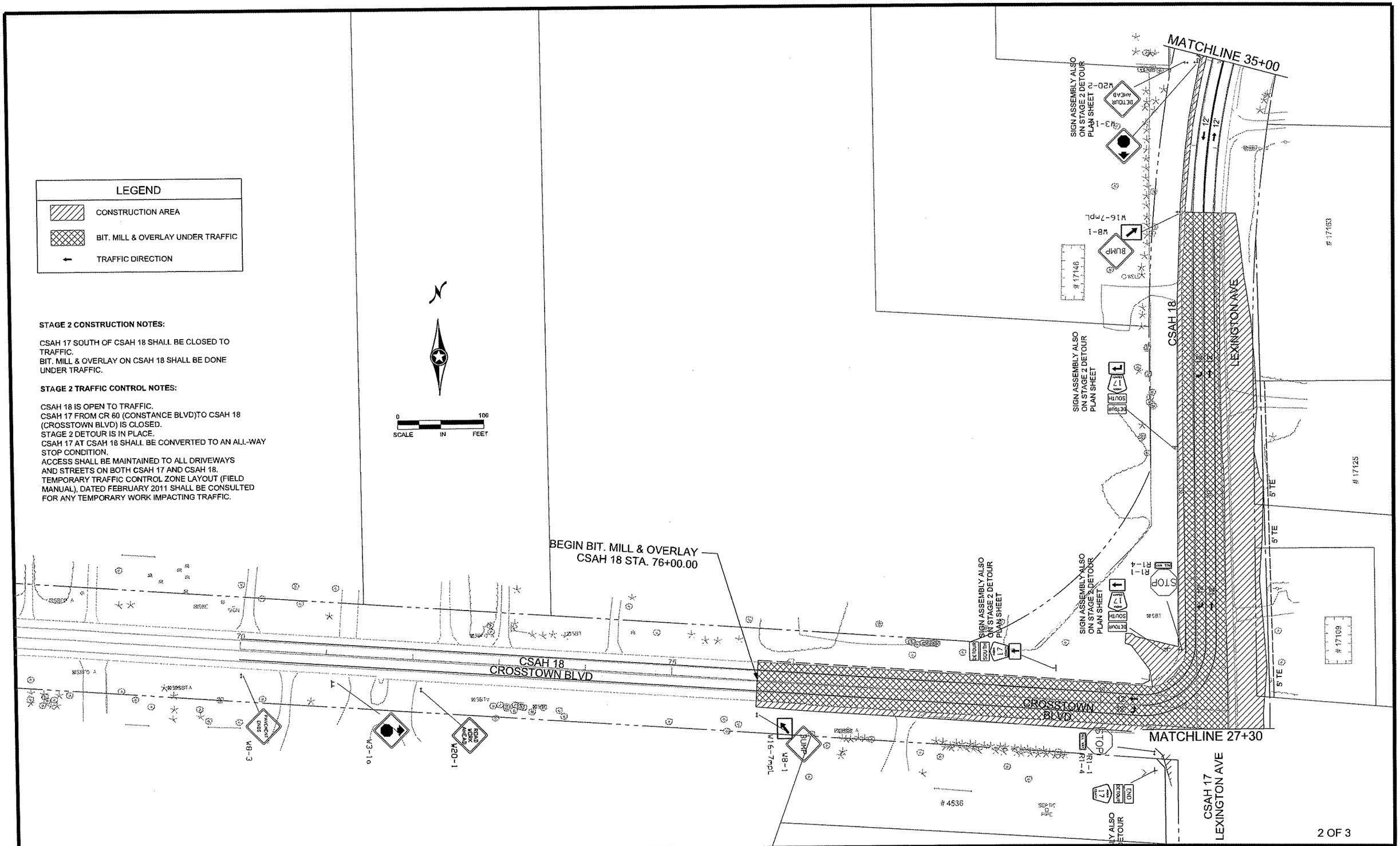
CSAH 17 SOUTH OF CSAH 18 SHALL BE CLOSED TO TRAFFIC.
BIT. MILL & OVERLAY ON CSAH 18 SHALL BE DONE UNDER TRAFFIC.

STAGE 2 TRAFFIC CONTROL NOTES:

CSAH 18 IS OPEN TO TRAFFIC.
CSAH 17 FROM CR 60 (CONSTANCE BLVD)TO CSAH 18 (CROSSTOWN BLVD) IS CLOSED.
STAGE 2 DETOUR IS IN PLACE.
CSAH 17 AT CSAH 18 SHALL BE CONVERTED TO AN ALL-WAY STOP CONDITION.
ACCESS SHALL BE MAINTAINED TO ALL DRIVEWAYS AND STREETS ON BOTH CSAH 17 AND CSAH 18.
TEMPORARY TRAFFIC CONTROL ZONE LAYOUT (FIELD MANUAL), DATED FEBRUARY 2011 SHALL BE CONSULTED FOR ANY TEMPORARY WORK IMPACTING TRAFFIC.

N

0 100
SCALE IN FEET



2 OF 3

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-20\Plan\0261720_STG2_P2.dgn 02/22/2013 12:07:07 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: CURT A. KOBILARCSIK
SIGNATURE:
DATE: 2-25-13 LICENSE NO. 24756

DRAWN BY EJM DATE 01-16-13
DESIGN BY EJM DATE 01-16-13
CHECKED BY GMP DATE 01-25-13

ANOKA COUNTY HIGHWAY DEPT.

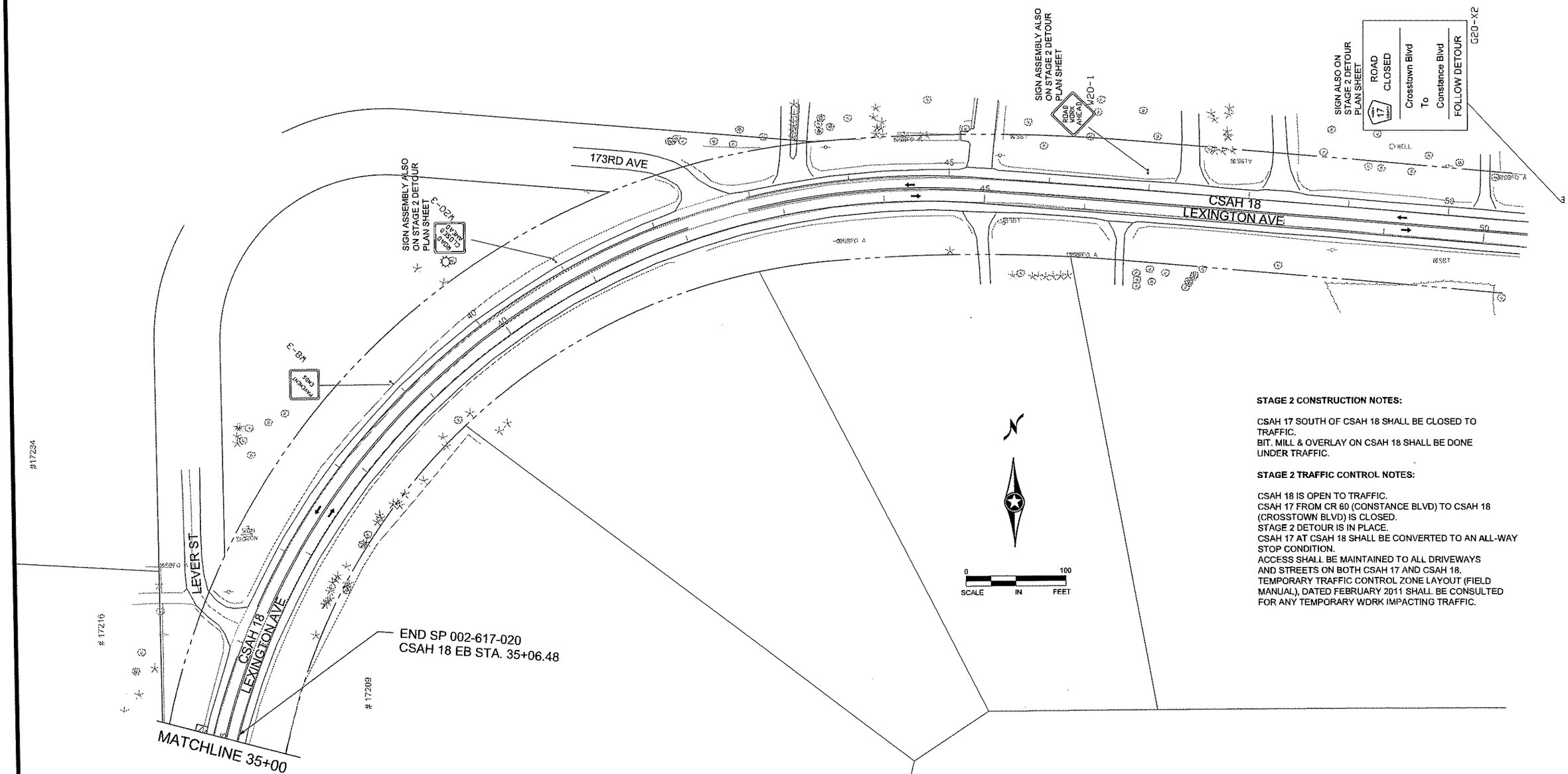
SP 002-617-020
SP 197-020-003

CONSTRUCTION STAGE 2 & TRAFFIC CONTROL PLAN
STA 27+30.00 TO 35+00.00

SHEET 18 OF 70 SHEETS

LEGEND

← TRAFFIC DIRECTION



STAGE 2 CONSTRUCTION NOTES:

CSAH 17 SOUTH OF CSAH 18 SHALL BE CLOSED TO TRAFFIC.
BIT. MILL & OVERLAY ON CSAH 18 SHALL BE DONE UNDER TRAFFIC.

STAGE 2 TRAFFIC CONTROL NOTES:

CSAH 18 IS OPEN TO TRAFFIC.
CSAH 17 FROM CR 60 (CONSTANCE BLVD) TO CSAH 18 (CROSSTOWN BLVD) IS CLOSED.
STAGE 2 DETOUR IS IN PLACE.
CSAH 17 AT CSAH 18 SHALL BE CONVERTED TO AN ALL-WAY STOP CONDITION.
ACCESS SHALL BE MAINTAINED TO ALL DRIVEWAYS AND STREETS ON BOTH CSAH 17 AND CSAH 18.
TEMPORARY TRAFFIC CONTROL ZONE LAYOUT (FIELD MANUAL), DATED FEBRUARY 2011 SHALL BE CONSULTED FOR ANY TEMPORARY WORK IMPACTING TRAFFIC.

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-20\Plan\0261720_STG2_P3.dgn 02/22/2013 12:07:09 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: CURT A. KOBILARCSIK
SIGNATURE:
DATE: 2-25-13 LICENSE NO. 24756

DRAWN BY EJM DATE 01-16-13
DESIGN BY EJM DATE 01-16-13
CHECKED BY GMP DATE 01-25-13

ANOKA COUNTY HIGHWAY DEPT.

SP 002-617-020

SP 197-020-003

CONSTRUCTION STAGE 2 & TRAFFIC CONTROL PLAN
STA 35+00.00 TO 50+50.00

SHEET 19 OF 70 SHEETS

M.U.T.C.D. CODE	SIZE	INSERT	QTY. STG. 1	QTY. STG. 2
R1-1 R1-4	48" x 48" 18" x 6"	STOP ALL WAY R1-4	0 4	3 1
W8-3	48" x 48"	PAVEMENT ENDS W8-3	0	3
W8-1a	48" x 48"	BUMP W8-1A	0	3
W20-1	48" x 48"	ROAD WORK AHEAD	5	5
W3-1a	48" x 48"	W3-1a	0	2
W3-X5	48" x 48"	TRAFFIC CONTROL CHANGE AHEAD	0	1
REFLECTORIZED REBOUNDABLE DRUM			365	535

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:\02-617-20\Base\TRAFFIC\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: CURT A. KOBILARCSIK
SIGNATURE:
DATE: 2-25-13 REG. NO. 24756

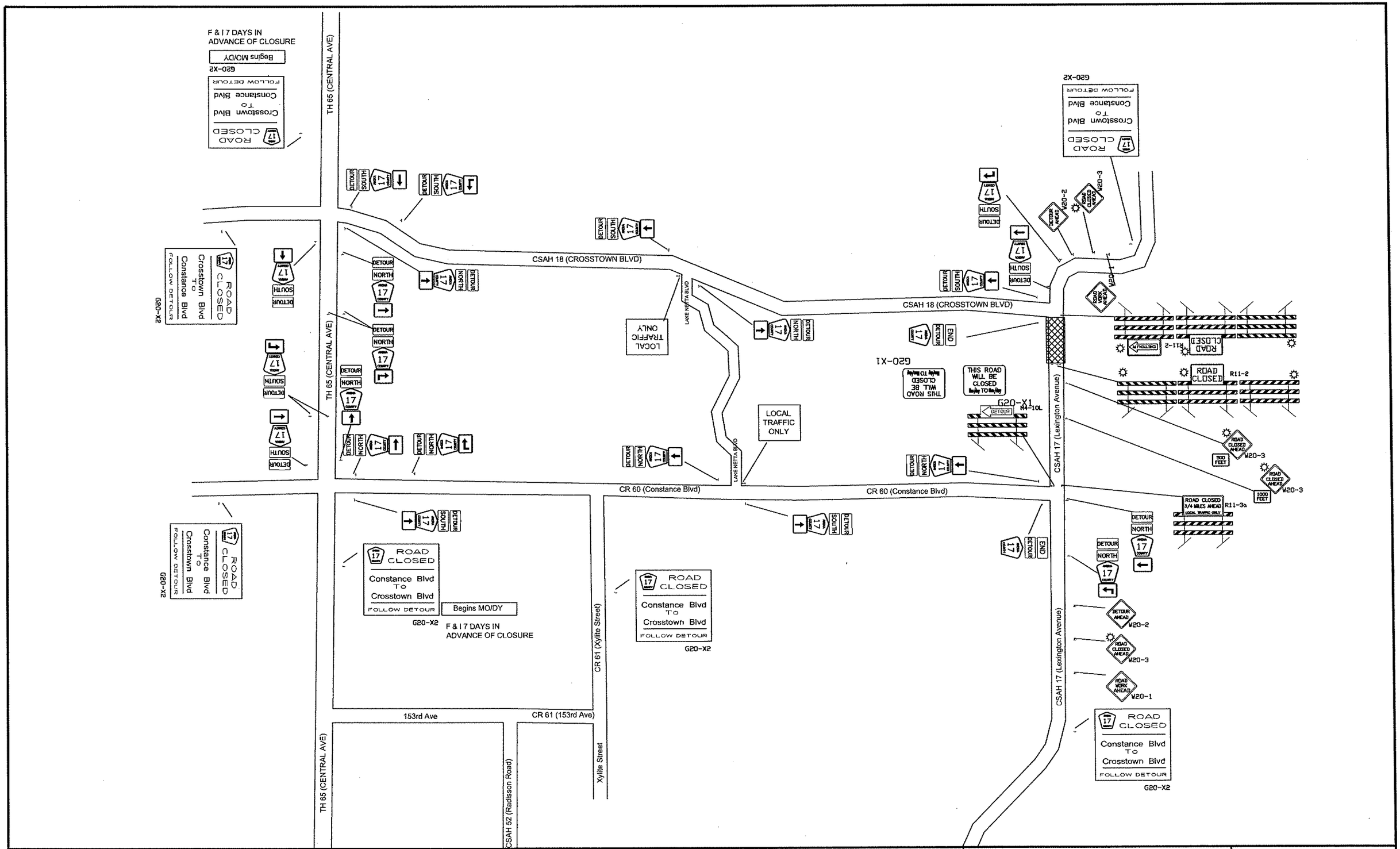
DRAWN BY MTH DATE 12/19/12
DESIGN BY MTH DATE 12/19/12
CHECKED BY JKR DATE 12/19/12

ANOKA COUNTY
HIGHWAY DEPT.

SP 002-617-020
SP 197-020-003

STAGING
SIGN QUANTITIES

Sheet 20 of 70 Sheets



NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-20\Base\TRAFFIC\0261720_STG4_2 Detour CSAH 18 to CR 60.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: CURT A. KOBILARCSIK

SIGNATURE: Curt Kobilarcsik

DATE: 2-25-13 REG. NO. 24756

DRAWN BY MTH DATE 12/19/12

DESIGN BY MTH DATE 12/19/12

CHECKED BY JKR DATE 12/19/12

ANOKA COUNTY HIGHWAY DEPT.

SP 002-617-020

SP 197-020-003

CSAH 17 (Lexington Ave)
Stage 2 Detour

Sheet 21 of 70 Sheets

M. U. T. C. D. CODE	SIZE	INSERT	QUANTITY
W20-1	48" x 48"	ROAD WORK AHEAD	• 2
W20-2	48" x 48"	DETOUR AHEAD	• 2
W20-3	48" x 48"	ROAD CLOSED AHEAD	• 4
W20-100P	24" x 18"	500 FEET	• 1
W20-100P	24" x 18"	1000 FEET	• 1
M4-10R	48" x 18"	DETOUR	SEE NOTE ②
TYPE III	8 FOOT		• 1
M4-10L	48" x 18"	DETOUR	SEE NOTE ②
TYPE III	8 FOOT		• 1
R11-2	48" x 30"	ROAD CLOSED	SEE NOTE ②
TYPE III	8 FOOT		• 2
R11-3	48" x 30"	ROAD CLOSED 3/4 MILE AHEAD LOCAL TRAFFIC ONLY	SEE NOTE ②
TYPE III	8 FOOT		• 1
		LOCAL TRAFFIC ONLY	SEE NOTE ②
			• 2

M. U. T. C. D. CODE	SIZE	INSERT	QUANTITY
TYPE III	8 FOOT		• 2
TYPE III	8 FOOT		• 1
G20-X2	132" x 108"	ROAD CLOSED Crosstown Blvd To Constance Blvd FOLLOW DETOUR G20-X2	• 3
G20-X2	132" x 108"	ROAD CLOSED Constance Blvd To Crosstown Blvd FOLLOW DETOUR G20-X2	• 4
G20-X3	72" x 18"	Begins MO/DY	• 2
M4-8A	24" x 12"	DETOUR NORTH	M5-1AR • 2
M3-4A	24" x 12"		M6-1AR • 1
M1-6A	24" x 24"		M5-1AL • 1
	21" x 15"		M6-1AL • 1
			M6-3A • 5
M4-8A	24" x 12"	DETOUR SOUTH	M5-1AR • 1
M3-2A	24" x 12"		M6-1AR • 1
M1-6A	24" x 24"		M5-1AL • 3
	21" x 15"		M6-1AL • 2
			M6-3A • 5
M4-6A	24" x 12"	END DETOUR	• 2
M4-8A	24" x 12"		
M1-6A	24" x 24"		
G20-X1	60" x 48"	THIS ROAD WILL BE CLOSED M1/01 TO M2/02 ✳	• 2

NOTES:
1. 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.
2. ALL TYPE III BARRICADES SHALL BE REFLECTORIZED ON BOTH SIDES. BARRICADE MARKINGS SHALL BE SLANTED IN ACCORDANCE WITH THE MUTCD.

✳ 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.

F & I 7 DAYS IN ADVANCE OF CLOSURE

G20-X2_132x108; 12.0" Radius, 2.0" Border, 1.0" Indent, Black on Orange;
[ROAD] D; [CLOSED] D; [Constance Blvd] D; [TO] D; [Crosstown Blvd] D; [FOLLOW DETOUR] D;

G20-X2_132x108; 12.0" Radius, 2.0" Border, 1.0" Indent, Black on Orange;
[ROAD] D; [CLOSED] D; [Crosstown Blvd] D; [TO] D; [Constance Blvd] D; [FOLLOW DETOUR] D;

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-20\Base\TRAFFIC\0261720_STG4_2 Detour CSAH 18 to CR 60.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: CURT A. KOBILARCSIK
SIGNATURE:
DATE: 2-25-13 REG. NO. 24756

DRAWN BY MTH DATE 12/19/12
DESIGN BY MTH DATE 12/19/12
CHECKED BY JKR DATE 12/19/12

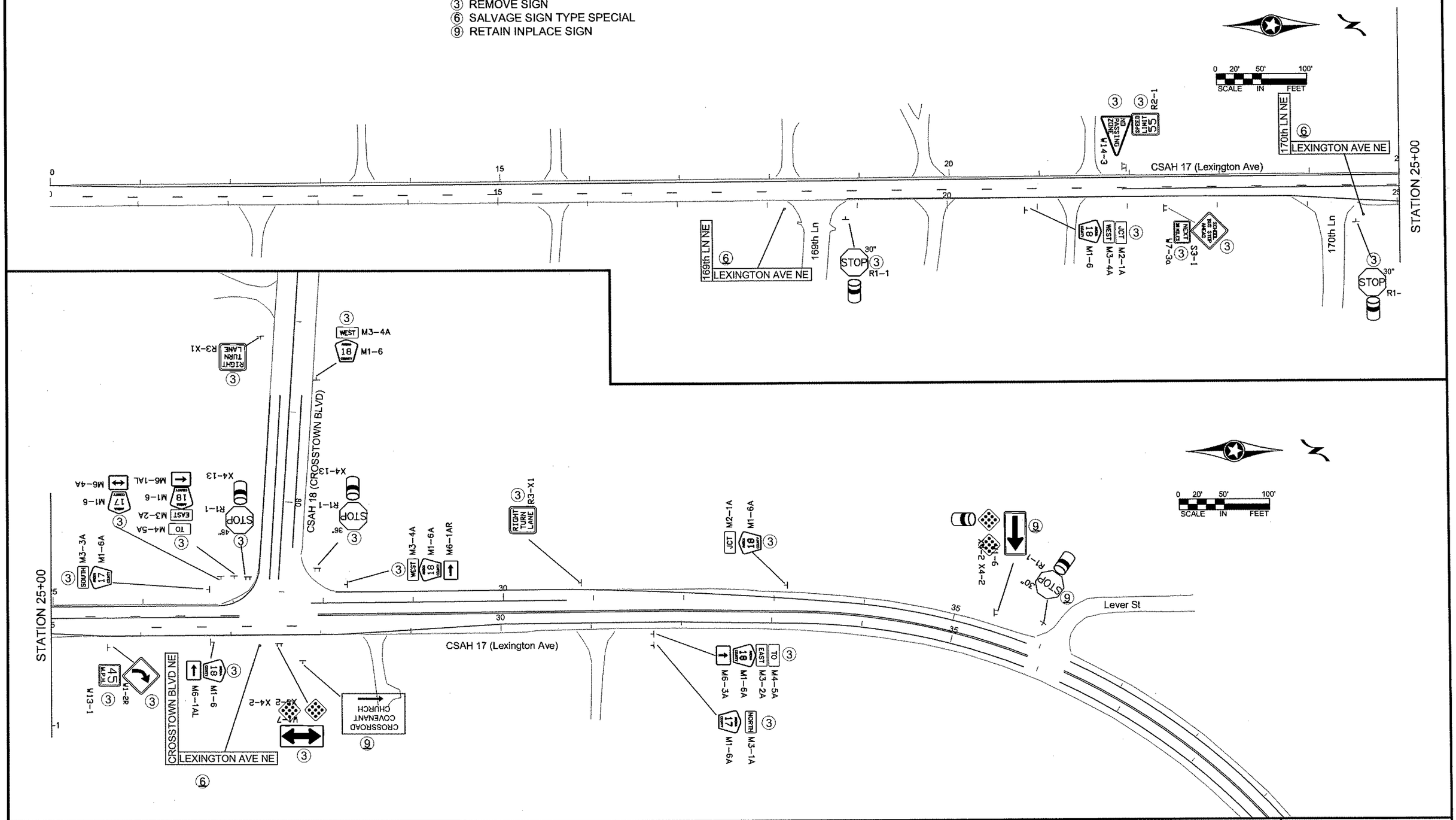
ANOKA COUNTY HIGHWAY DEPT.

SP 002-617-020
SP 197-020-003

CSAH 17 (Lexington Ave)
Stage 2 Detour
Quantities

Sheet 22 of 70 Sheets

NOTES:
③ REMOVE SIGN
⑥ SALVAGE SIGN TYPE SPECIAL
⑨ RETAIN INPLACE SIGN



NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-607-20\Base\TRAFFIC\0261720_EXISTING SIGNING & STRIPING.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: CURT A. KOBILARCSIK

SIGNATURE: Curt Kobilarcsik

DATE: 2-25-13 REG. NO. 24756

DRAWN BY MTH DATE 12/19/2012

DESIGN BY MTH DATE 12/19/2012

CHECKED BY JR DATE 12/19/2012

ANOKA COUNTY HIGHWAY DEPT.

SP 002-617-020

SP 197-020-003

EXISTING SIGNING & STRIPING LAYOUT

Sheet 23 of 70 Sheets

F		SIGN REMOVAL TAB				
STATION	ADDRESS/ DESCRIPTION (NOTES)	REMOVE SIGN TYPE C	SALVAGE SIGN TYPE SPECIAL	INSTALL SIGN TYPE SPECIAL	SIGN NUMBER	SIGN LEGEND
		EACH	EACH	EACH		
18+20			1	1		169TH ST
18+85		1			R1-1	Stop
					delineator	
20+85		1			M2-1A	JCT
					M3-4A	WEST
					M1-6	18
22+00		1			W14-3	NO PASSING
					R2-1	SL 55
22+40		1			S3-1	SCHOOL BUS STOP AHEAD
					W7-3a	NEXT X MILES
24+80			1	1		170TH ST
24+60		1			R1-1	STOP
					delineator	
25+60		1			W1-2R	RT CURVE
					W13-1	ADV SPEED
26+80		1			M1-6	18
					M6-1AL	LEFT
26+80		1			M3-3A	SOUTH
					M1-6	17
27+50		1			W1-7	TWO WAY
					X4-2	9-BUTTON
					X4-2	9-BUTTON
27+80						Crossroads church
27+20			1	1		Lexington/ Crosstown
28+30		1			M3-4A	WEST
					M1-6A	18
					M6-1AR	RIGHT
30+85		1			R3-X1	RIGHT TURN LANE
31+80		1			M4-5A	TO
					M3-2A	EAST
					M1-6A	18
					M6-3A	STRAIGHT
31+80		1			M3-1A	NORTH
					M1-6A	17
33+20		1			M2-1A	JCT
					M1-6A	18
78+15		1			R3-X1	RIGHT TURN LANE
78+64		1			M3-4A	WEST
					M1-6A	18
80+73		1			R1-1	STOP
						delineator
80+73		1			R1-1	STOP
						delineator
80+73		1			M4-5A	TO
					M3-2A	EAST
					M1-6A	18
					M6-1AL	LEFT
80+73		1			M1-6A	17
					M6-4A	BOTH WAYS
	TOTAL	20	3	3		

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-607-20\Base\TRAFFIC\0261720_EXISTING SIGNING & STRIPING.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: CURT A. KOBILARCSIK

SIGNATURE:

DATE: 2-25-13 REG. NO. 24756

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CHECKED BY JR DATE 12/19/2012

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

SP 002-617-020

SP 197-020-003

EXISTING SIGNING QUANTITIES

Sheet 24 of 70 Sheets

CSAH 18

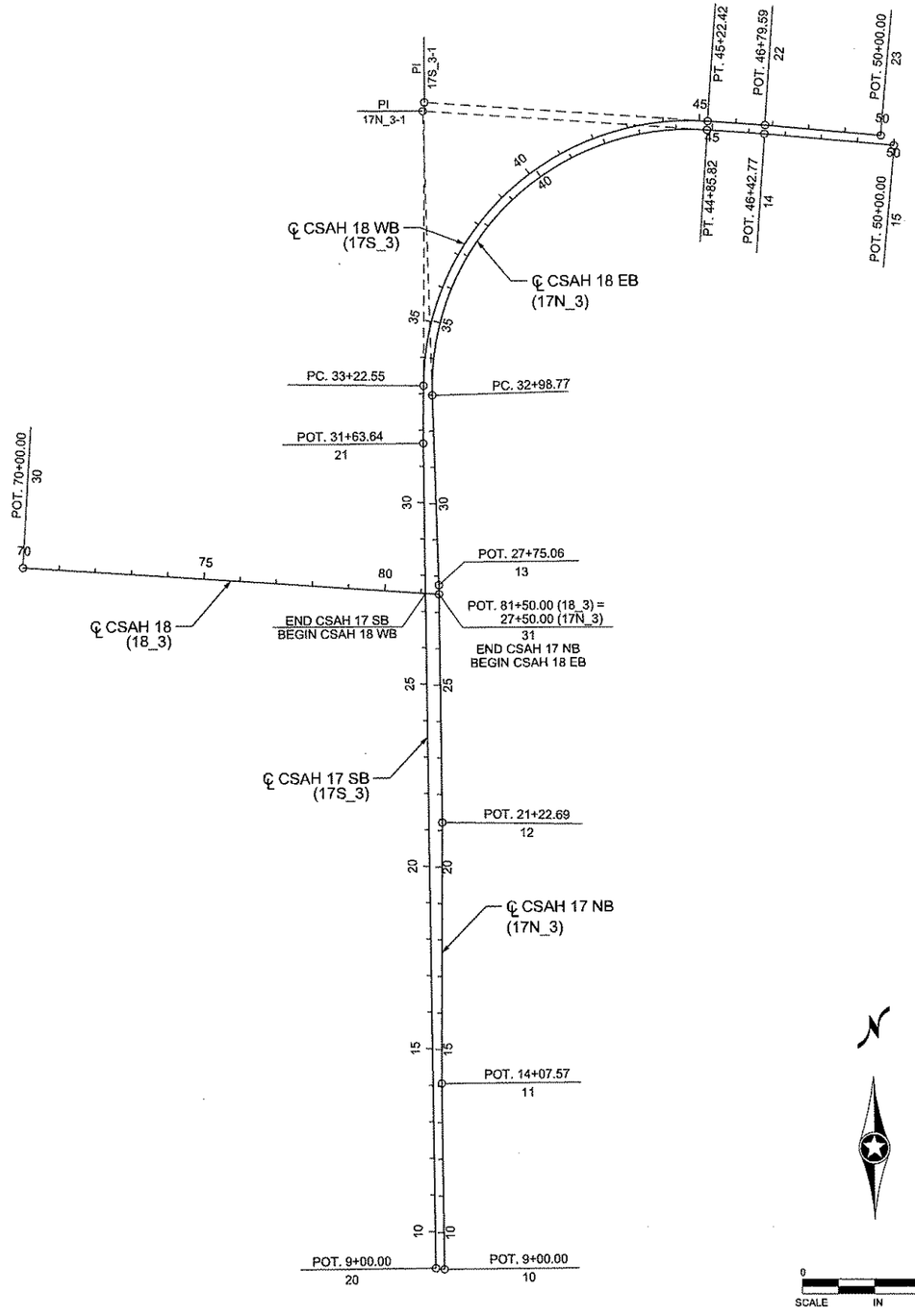
POINT NUMBER	POINT	STATION	CIRCULAR CURVE DATA					COORDINATES		AZIMUTH
			DELTA	DEGREE	RADIUS	TANGENT	LENGTH	E	N	
30	POT	70+00.000						528,298.3489	189,346.4785	
31	POT	81+50.000						529,445.5708	189,266.5918	

CSAH 17 NB / CSAH 18 EB

POINT NUMBER	POINT	STATION	CIRCULAR CURVE DATA					COORDINATES		AZIMUTH
			DELTA	DEGREE	RADIUS	TANGENT	LENGTH	E	N	
10	POT	9+00.000						529,445.2218	187,416.6295	
11	POT	14+07.571						529,441.7508	187,924.1890	
12	POT	21+22.689						529,449.8610	188,639.2612	
13	POT	27+75.055						529,445.3997	189,291.6116	
	PC	32+98.769						529,431.6156	189,815.1442	N 1° 30' 29.51" W
17N_3-1	PI	40+82.948	95° 31' 25.96" RT	8° 02' 49.78"	712.000'	784.179'	1,187.051'	529,410.9760	190,599.0516	PI
	CC							530,143.3689	189,833.8840	
	PT	44+85.820						530,193.2299	190,544.1360	S 85° 59' 03.55" E
14	POT	46+42.775						530,349.7993	190,533.1445	
15	POT	50+00.000						530,705.6567	190,501.9129	

CSAH 17 SB / CSAH 18 WB

POINT NUMBER	POINT	STATION	CIRCULAR CURVE DATA					COORDINATES		AZIMUTH
			DELTA	DEGREE	RADIUS	TANGENT	LENGTH	E	N	
20	POT	9+00.000						529,421.2036	187,419.2129	
21	POT	31+63.638						529,405.7237	189,682.7983	
	PC	33+22.545						529,407.4104	189,841.6963	N 0° 36' 29.45" E
17S_3-1	PI	41+03.672	93° 24' 27.00" RT	7° 47' 05.11"	736.000'	781.127'	1,199.878'	529,415.7017	190,622.7790	PI
	CC							530,143.3689	189,833.8840	
	PT	45+22.423						530,194.9106	190,568.0771	S 85° 59' 03.55" E
22	POT	46+79.587						530,351.6889	190,557.0710	
23	POT	50+00.000						530,670.8749	190,529.0578	



NO	DATE	BY	CKD	APPR	REVISION

NAME: p:\02-617-20\Plan\0261720_AL_P1.dgn 02/22/2013 12:07:11 PM

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PRINT NAME: CURT A. KOBILARCSIK

SIGNATURE:

DATE: 2-25-13 LICENSE NO. 24756

DRAWN BY EJM DATE 01-16-13

DESIGN BY EJM DATE 01-16-13

CHECKED BY GMP DATE 01-25-13

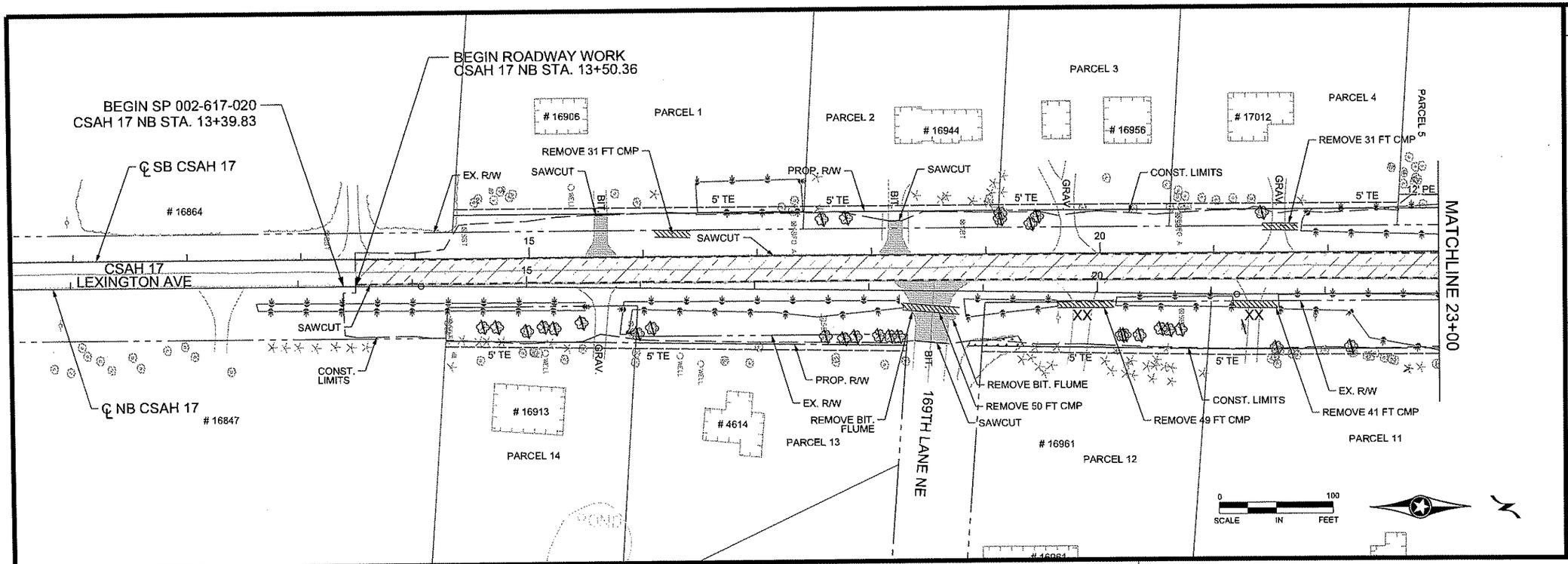
ANOKA COUNTY HIGHWAY DEPT.

SP 002-617-020

SP 197-020-003

ALIGNMENT PLAN AND TABULATION

Sheet 25 of 70 Sheets



LEGEND

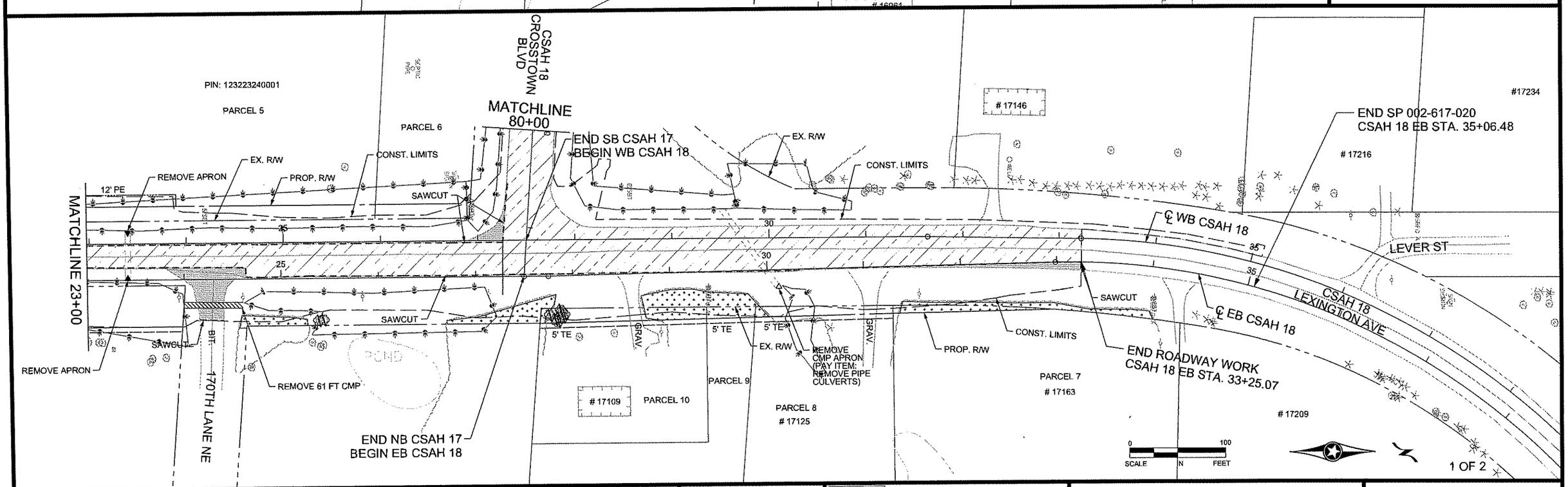
- REMOVE BITUMINOUS PAVEMENT
- MILL BITUMIINOUS PAVEMENT
- CLEAR & GRUB (ACRE)
- TREE REMOVAL BY EACH
- REMOVE RC/CM PIPE APRON
- REMOVE PIPE CULVERTS
- SAWING BITUMINOUS PAVEMENT
- CONSTRUCTION LIMITS
- TEMPORARY EASEMENT
- PERMANENT EASEMENT
- WETLAND BOUNDARY
- SOIL BORING
- XX CLOSE DRIVE ACCESS

REMOVAL NOTES

THE CONTRACTOR SHALL PERFORM ALL CLEARING AND GRUBBING AS DIRECTED AND MARKED IN THE FIELD BY THE ENGINEER. THE CONTRACTOR SHALL OTHERWISE PROTECT ALL EXISTING TREES NOT SPECIFICALLY MARKED FOR REMOVAL.

ALL PRIVATE UTILITIES TO BE RELOCATED BY OTHERS AS REQUIRED. SEE IN PLACE UTILITY TABULATION FOR MORE INFORMATION.

ALL ROADWAY SIGNS WITHIN THE CONSTRUCTION LIMITS AND CONFLICTING SIGNS SHALL BE SALVAGED BY THE CONTRACTOR.



1 OF 2

NO	DATE	BY	CKD	APPR	REVISION

NAME: p:\02-617-20\Plan\0261720_RM_P1.dgn 02/22/2013 1:00:55 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: CURT A. KOBILARCSIK

SIGNATURE:

DATE: 2-25-13 LICENSE NO. 24756

DRAWN BY EJM DATE 01-16-13

DESIGN BY EJM DATE 01-16-13

CHECKED BY GMP DATE 01-25-13

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

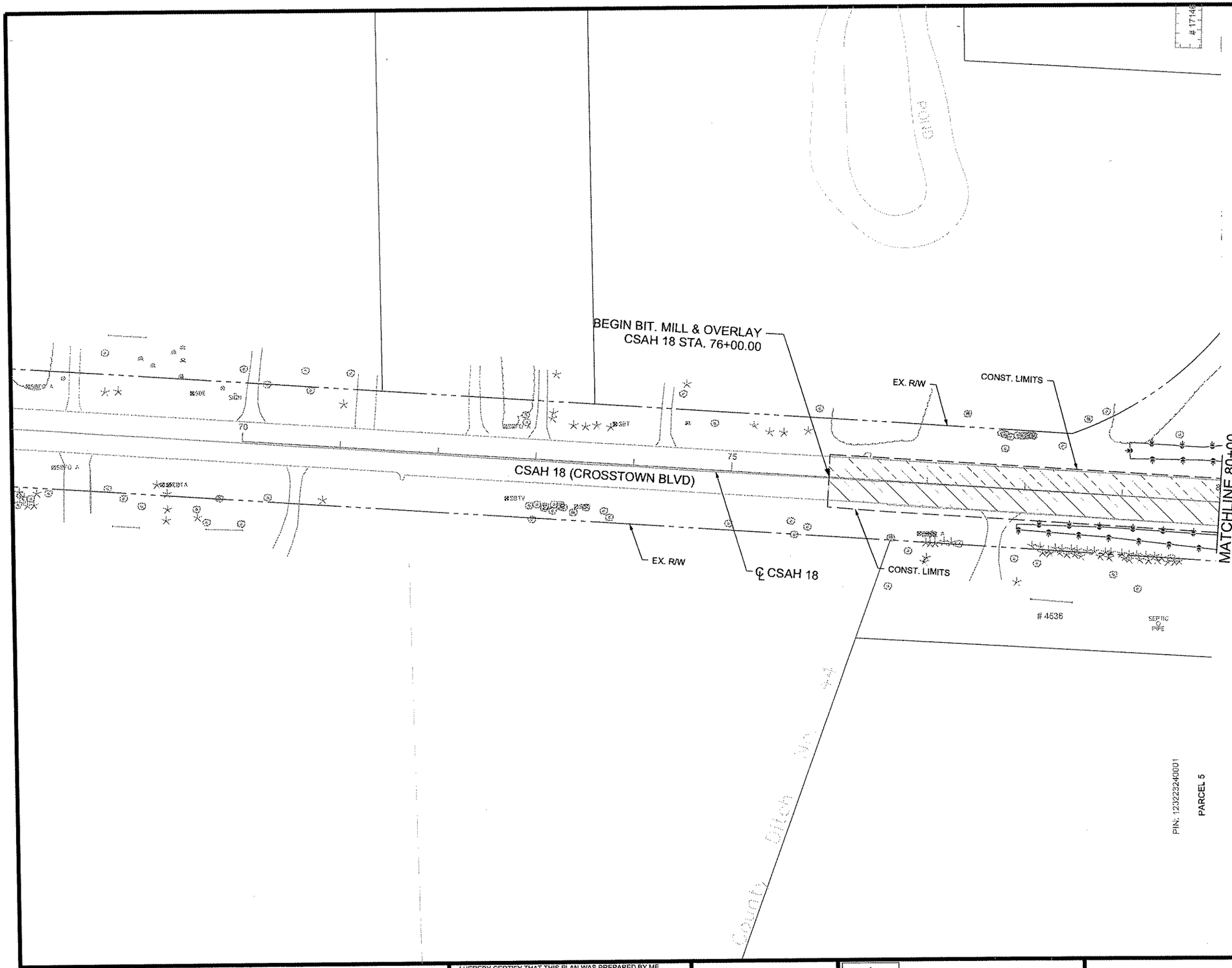
SP 002-617-020

SP 197-020-003

REMOVAL PLAN

STA 13+39.83 TO 35+06.48

SHEET 26 OF 70 SHEETS



LEGEND

- MILL BITUMINOUS PAVEMENT
- WETLAND BOUNDARY

N

0 100
SCALE IN FEET

2 OF 2

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-20\Plan\0261720_RM_P2.dgn 02/22/2013 1:00:57 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: CURT A. KOBILARCSIK

SIGNATURE: [signature]

DATE: 2-25-13 LICENSE NO. 24756

DRAWN BY EJM DATE 01-16-13

DESIGN BY EJM DATE 01-16-13

CHECKED BY GMP DATE 01-25-13

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

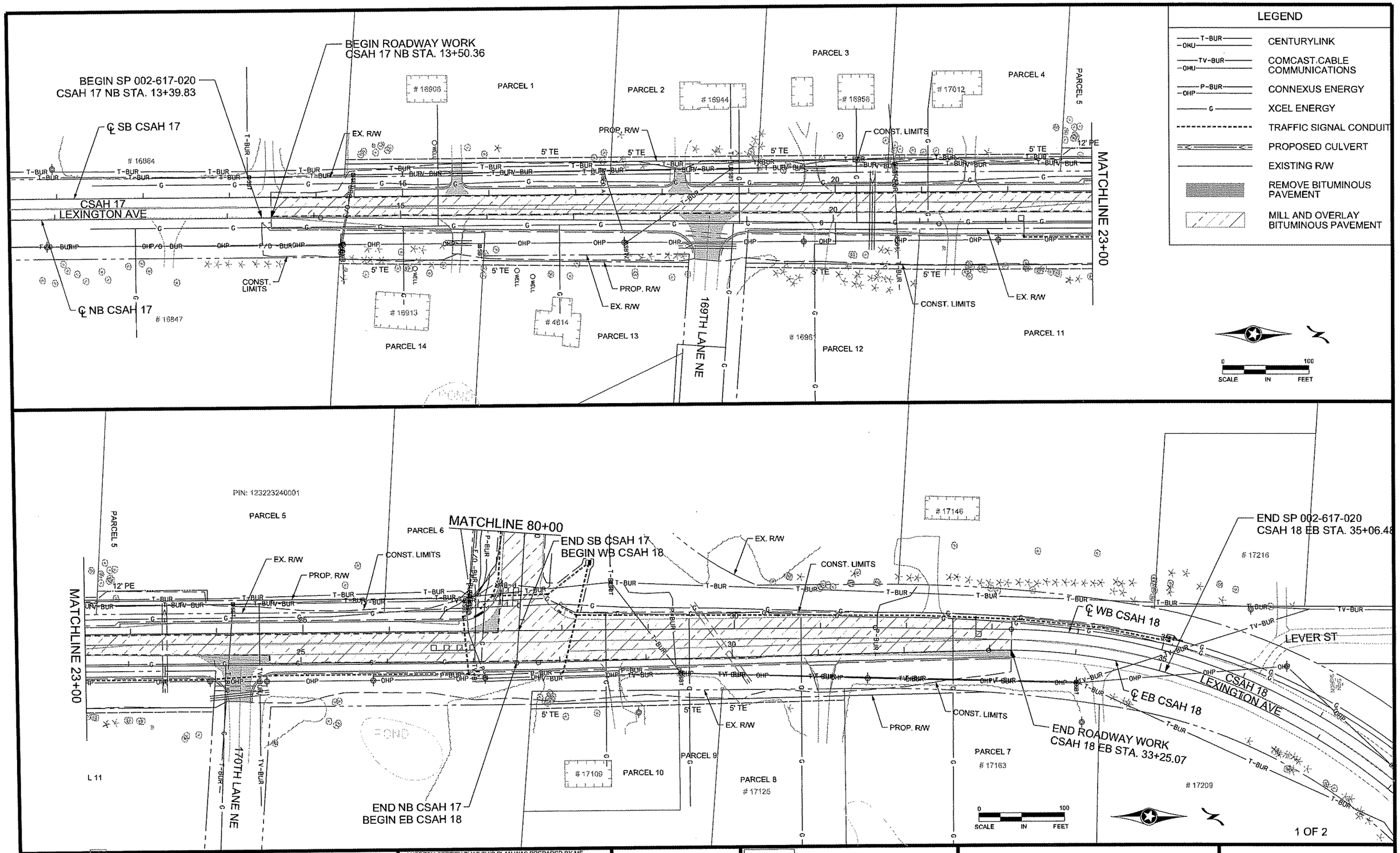
SP 002-617-020

SP 197-020-003

REMOVAL PLAN

STA 70+00.00 TO 80+56.29

SHEET 27 OF 70 SHEETS



NO	DATE	BY	CKD	APPR	REVISION

NAME: p:\02-617-20\Plan\0261720_UT_P1.dgn 02/22/2013 12:07:18 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: CURT A. KOBILARCSIK

SIGNATURE:

DATE: 2-25-13 LICENSE NO. 24756

DRAWN BY EJM DATE 01-16-13

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ANOKA COUNTY HIGHWAY DEPT.

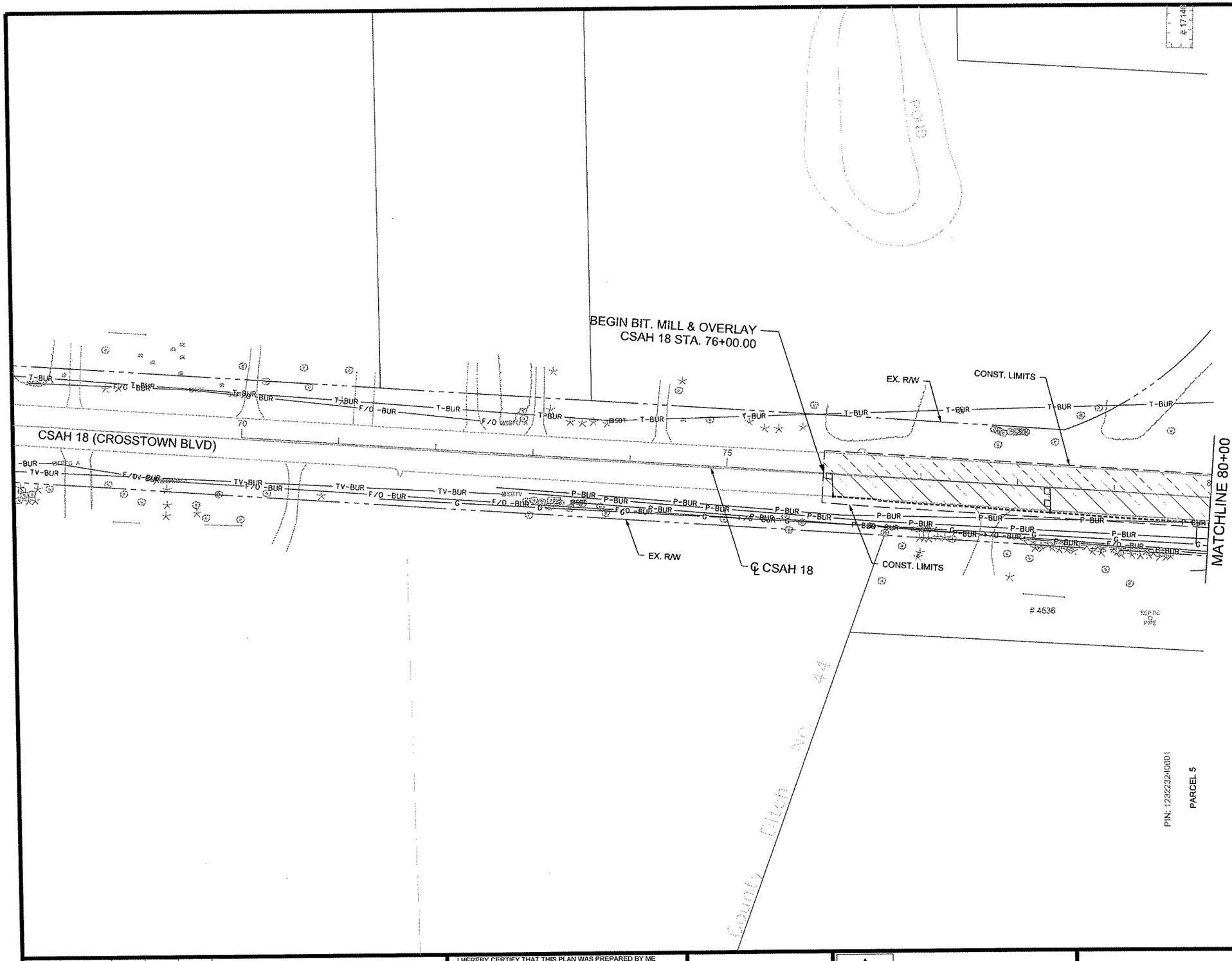
SP 002-617-020

SP 197-020-003

EXISTING UTILITY PLAN

STA 13+39.83 TO 35+06.48

SHEET 28 OF 70 SHEETS



LEGEND

- T-BUR / OHU — CENTURYLINK
- TV-BUR / OHU — COMCAST CABLE COMMUNICATIONS
- P-BUR / OHP — CONNEXUS ENERGY
- G — XCEL ENERGY
- TRAFFIC SIGNAL CONDUIT
- REMOVE BITUMINOUS PAVEMENT
- MILL AND OVERLAY BITUMINOUS PAVEMENT

N

0 100
SCALE IN FEET

2 OF 2

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-20\Plan\0261720_UT_P2.dgn 02/22/2013 12:07:21 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: CURT A. KOBILARCSIK

SIGNATURE: [signature]

DATE: 2-25-13 LICENSE NO. 24756

DRAWN BY EJM DATE 01-16-13

DESIGN BY EJM DATE 01-16-13

CHECKED BY GMP DATE 01-25-13

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

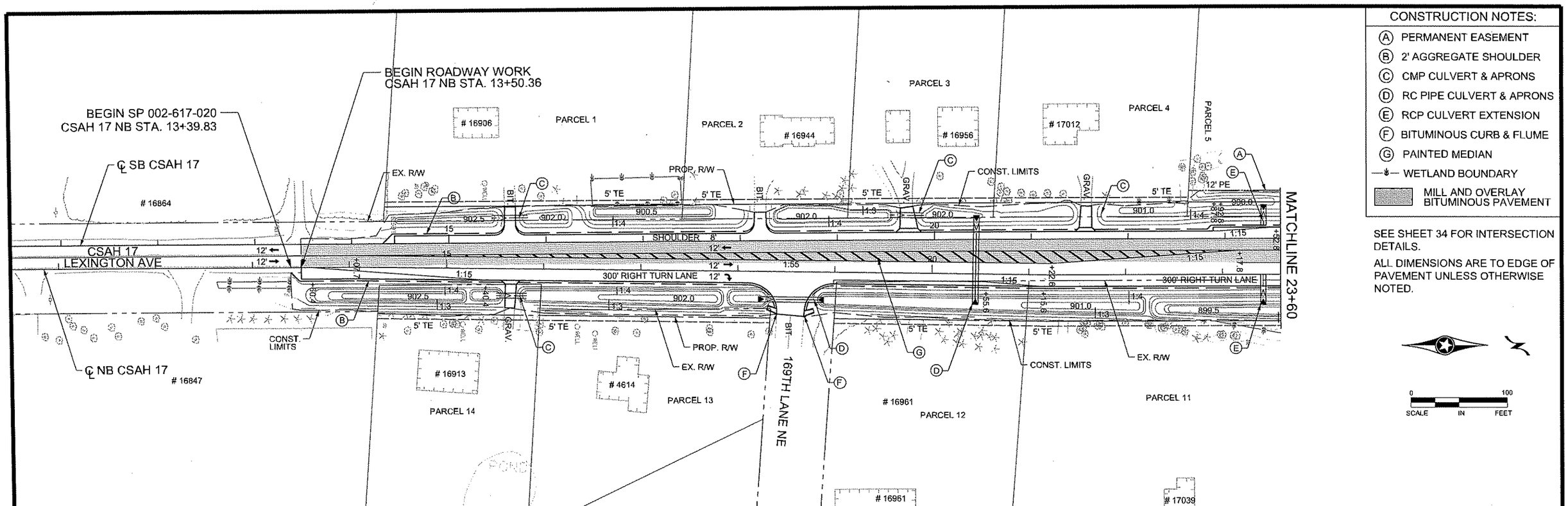
SP 002-617-020

SP 197-020-003

UTILITY PLAN

STA 70+00.00 TO 79+00.00

SHEET 29 OF 70 SHEETS



CONSTRUCTION NOTES:

- (A) PERMANENT EASEMENT
- (B) 2' AGGREGATE SHOULDER
- (C) CMP CULVERT & APRONS
- (D) RC PIPE CULVERT & APRONS
- (E) RCP CULVERT EXTENSION
- (F) BITUMINOUS CURB & FLUME
- (G) PAINTED MEDIAN
- WETLAND BOUNDARY
- MILL AND OVERLAY BITUMINOUS PAVEMENT

SEE SHEET 34 FOR INTERSECTION DETAILS.

ALL DIMENSIONS ARE TO EDGE OF PAVEMENT UNLESS OTHERWISE NOTED.

0 100
SCALE IN FEET

1 OF 3

NO	DATE	BY	CKD	APPR	REVISION

NAME: p:\02-617-20\Plan\0261720_PP1.dgn 02/28/2013 8:04:08 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: CURT A. KOBILARCSIK

SIGNATURE:

DATE: 2-28-13 LICENSE NO. 24756

DRAWN BY EJM DATE 01-16-13

DESIGN BY EJM DATE 01-16-13

CHECKED BY GMP DATE 01-25-13

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

SP 002-617-020

SP 197-020-003

CONSTRUCTION PLAN & PROFILES

STA 13+39.83 TO 23+60.00

Sheet 30 of 70 Sheets

CONSTRUCTION NOTES:

- (A) PERMANENT EASEMENT
- (B) 2' AGGREGATE SHOULDER
- (C) CMP CULVERT & APRON
- (D) RC PIPE CULVERT & APRONS
- (G) PAINTED MEDIAN
- (H) 6" WALK & TRUNCATED DOMES
- WETLAND BOUNDARY
- MILL AND OVERLAY BITUMINOUS PAVEMENT

SEE SHEETS 34-35 FOR INTERSECTION DETAILS.

ALL DIMENSIONS ARE TO EDGE OF PAVEMENT UNLESS OTHERWISE NOTED.

PIN: 123223240001

PARCEL 5

PARCEL 6

CSAH 18 CROSSTOWN BLVD

MATCHLINE STA. 80+00

MATCHLINE 23+60

END SB CSAH 17
BEGIN WB CSAH 18

END NB CSAH 17
BEGIN EB CSAH 18

END SP 002-617-020
CSAH 18 EB STA. 35+06.48

END ROADWAY WORK
CSAH 18 EB STA. 33+25.07

END 002-617-020
EB STA. 35+06.48

EX. R/W

PROP. R/W

CONST. LIMITS

12' PE

BY-PASS LANE 1:15 12'

375' LEFT TURN LANE 13'

SHOULDER 8'

8' SHOULDER

902.0

903.5

904.0

5' TE

GRAV.

BIT.

170TH LANE NE

17146

17216

17109

PARCEL 10

PARCEL 9

PARCEL 8
17125

PARCEL 7
17163

17209

46

℄ WB CSAH 18

℄ EB CSAH 18

LEVER ST

CSAH 18
LEXINGTON AVE

SCALE 0 100 IN FEET

TRAFFIC

NB CSAH 17

EB CSAH 18

EXISTING GROUND @ 12' LT

SD RT ELEV. 902.00

MUCK EXCAVATION

901.03

69' - 18" RCP CULVERT @ 0.59%

900.62

EXISTING ELEVATION

SD RT ELEV. 903.50

SD RT ELEV. 904.00

24" CMP CULVERT
902.03

100 YR FLOODPLAIN ELEV.
NORTH OF 170TH LN
896.2 FT

910

900

890

905.0 905.4 905.7 905.9 905.9 905.9 905.9 906.0 906.3 906.5 906.8 906.9 907.1 907.4 907.5 907.7 907.9 908.1 908.3 908.7 908.9 909.0 909.1 909.3 909.6 909.6 909.8

24+00 25+00 26+00 27+00 28+00 29+00 30+00 31+00 32+00 33+00 34+00 35+00 36+00

2 OF 3

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-20\Plan\0261720_PP2.dgn 02/28/2013 8:11:22 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: CURT A. KOBILARCSIK

SIGNATURE:

DATE: 2-28-13 LICENSE NO. 24756

DRAWN BY EJM DATE 01-16-13

DESIGN BY EJM DATE 01-16-13

CHECKED BY GMP DATE 01-25-13

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

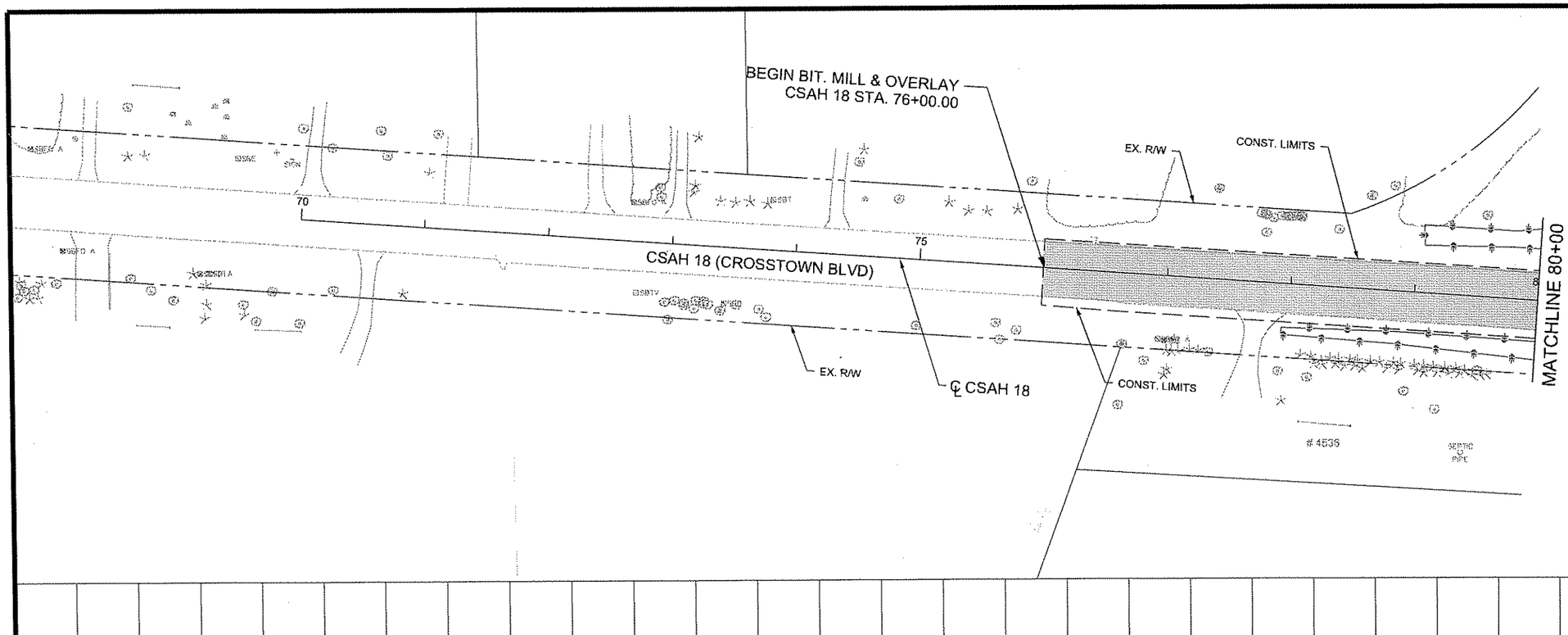
SP 002-617-020

SP 197-020-003

CONSTRUCTION PLAN & PROFILES

STA 23+60.00 TO 35+06.48

Sheet 31 of 70 Sheets



CONSTRUCTION NOTES:

MILL AND OVERLAY BITUMINOUS PAVEMENT

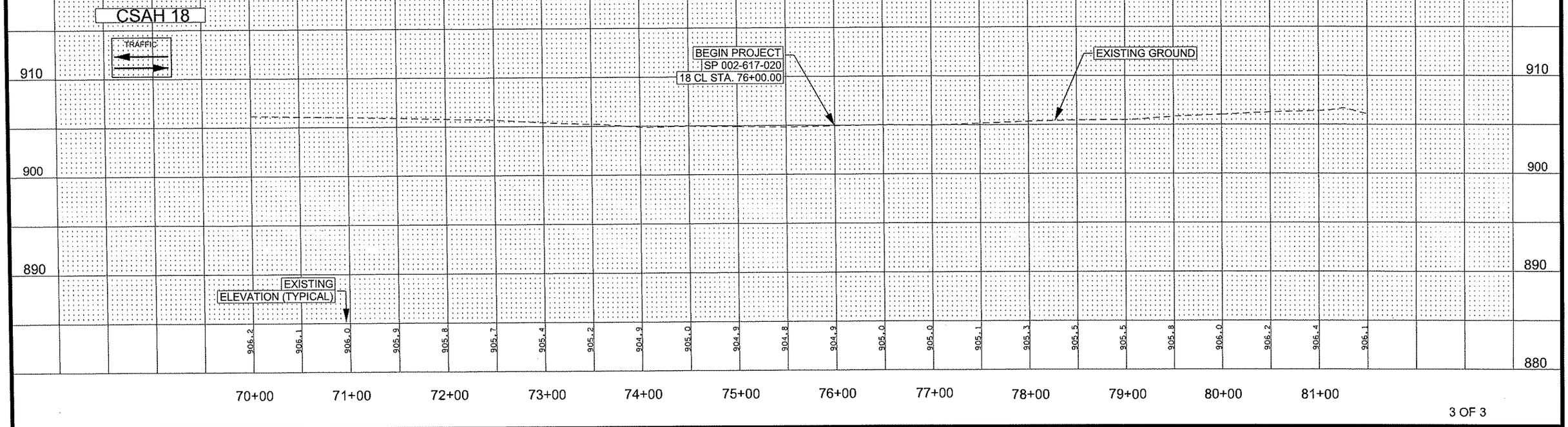
WETLAND BOUNDARY

ALL DIMENSIONS ARE TO EDGE OF PAVEMENT UNLESS OTHERWISE NOTED.

N

0 100

SCALE IN FEET



3 OF 3

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-20\Plan\0261720_PP3.dgn 02/27/2013 3:15:00 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: CURT A. KOBILARCSIK

SIGNATURE:

DATE: 2-28-13 LICENSE NO. 24756

DRAWN BY EJM DATE 01-16-13

DESIGN BY EJM DATE 01-16-13

CHECKED BY GMP DATE 01-25-13

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

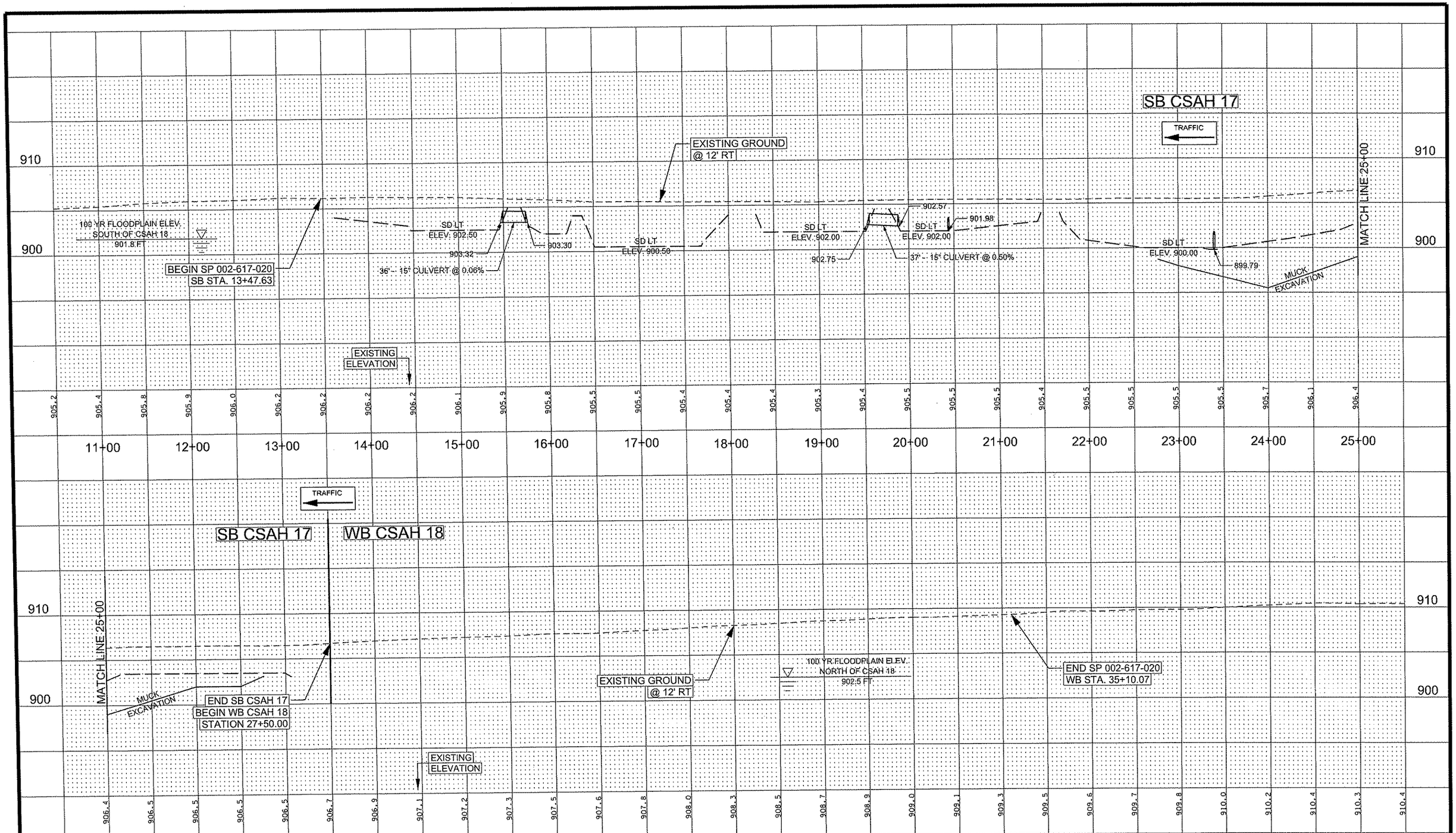
SP 002-617-020

SP 197-020-003

CONSTRUCTION PLAN & PROFILE

STA 70+00.00 TO 80+50

SHEET 32 OF 70 SHEETS



1 OF 1

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-20\Plan\0261720_PR1.dgn 02/28/2013 8:04:13 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: CURT A. KOBILARCSIK

SIGNATURE:

DATE: 2-28-13 LICENSE NO. 24756

DRAWN BY EJM DATE 01-16-13

DESIGN BY EJM DATE 01-16-13

CHECKED BY GMP DATE 01-25-13

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

SP 002-617-020

SP 197-020-003

PROFILE
CSAH 17 SB / 18 WB
STA 10+50.00 TO 39+50.00

Sheet 33 of 70 Sheets

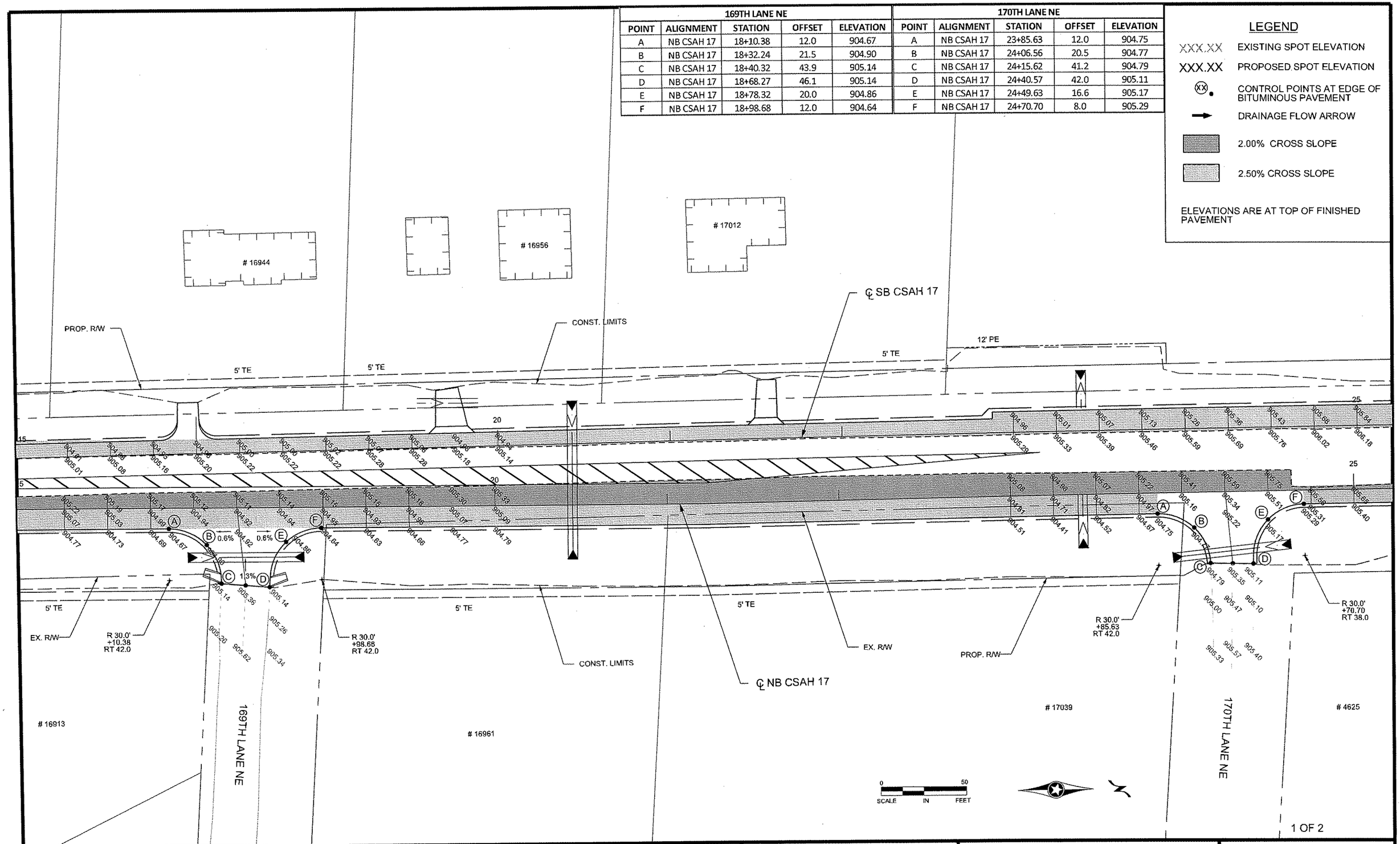
169TH LANE NE				
POINT	ALIGNMENT	STATION	OFFSET	ELEVATION
A	NB CSAH 17	18+10.38	12.0	904.67
B	NB CSAH 17	18+32.24	21.5	904.90
C	NB CSAH 17	18+40.32	43.9	905.14
D	NB CSAH 17	18+68.27	46.1	905.14
E	NB CSAH 17	18+78.32	20.0	904.86
F	NB CSAH 17	18+98.68	12.0	904.64

170TH LANE NE				
POINT	ALIGNMENT	STATION	OFFSET	ELEVATION
A	NB CSAH 17	23+85.63	12.0	904.75
B	NB CSAH 17	24+06.56	20.5	904.77
C	NB CSAH 17	24+15.62	41.2	904.79
D	NB CSAH 17	24+40.57	42.0	905.11
E	NB CSAH 17	24+49.63	16.6	905.17
F	NB CSAH 17	24+70.70	8.0	905.29

LEGEND

- XXX.XX — EXISTING SPOT ELEVATION
- XXX.XX — PROPOSED SPOT ELEVATION
- (XX) • — CONTROL POINTS AT EDGE OF BITUMINOUS PAVEMENT
- DRAINAGE FLOW ARROW
- 2.00% CROSS SLOPE
- 2.50% CROSS SLOPE

ELEVATIONS ARE AT TOP OF FINISHED PAVEMENT



1 OF 2

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-20\Plan\0261720_IN_P1.dgn 03/01/2013 7:59:30 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: CURT A. KOSILARCSIK

SIGNATURE: Curt A. Kosilarcsik

DATE: 3-1-13 LICENSE NO. 24756

DRAWN BY EJM DATE 01-16-13

DESIGN BY EJM DATE 01-16-13

CHECKED BY GMP DATE 01-25-13

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

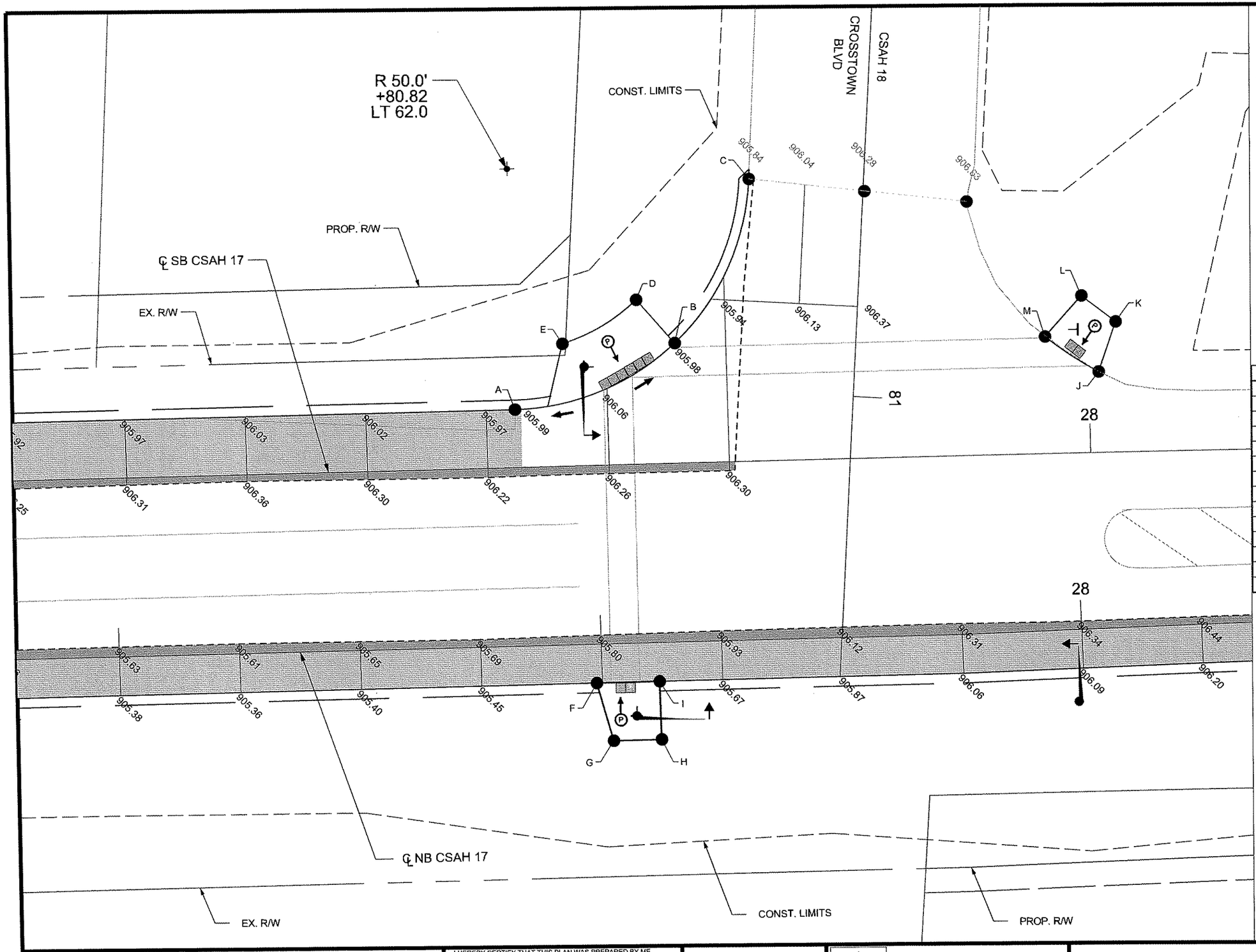
SP 002-617-020

SP 197-020-003

INTERSECTION DETAILS

STA 15+00.00 TO 23+00.00

Sheet 34 of 70 Sheets



LEGEND

- PROPOSED SIGNAL POLE
- PEDESTRIAN PUSH BUTTON
- XXX — CONTROL POINTS AT GUTTER FLOW LINE
- TRUNCATED DOMES (SEE STANDARD PLATE 7038)
- INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE GREATER THAN 2.0% AND LESS THAN 5.0%IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 2.0%
- DRAINAGE FLOW ARROW
- XXX.XX — EXISTING SPOT ELEVATION
- XXX.XX — PROPOSED SPOT ELEVATION
- 2.00% CROSS SLOPE
- 2.50% CROSS SLOPE

CSAH 17 / CSAH 18

POINT	ALIGNMENT	STATION	OFFSET	ELEVATION
A	SB CSAH 17	26+80.82	12.0	906.02
B	SB CSAH 17	27+14.94	24.9	905.98
C	SB CSAH 17	27+30.70	58.6	905.84
D	SB CSAH 17	27+06.64	34.1	906.22
E	SB CSAH 17	26+91.06	25.4	906.28
F	SB CSAH 17	26+98.79	8.0	905.56
G	SB CSAH 17	27+01.93	20.0	905.80
H	SB CSAH 17	27+11.93	20.0	905.84
I	SB CSAH 17	27+11.88	8.0	905.61
J	SB CSAH 17	28+02.05	16.8	906.12
K	SB CSAH 17	28+05.82	27.1	906.23
L	SB CSAH 17	27+98.88	32.6	906.07
M	SB CSAH 17	27+91.11	24.3	905.95

ELEVATIONS ARE AT TOP OF FINISHED PAVEMENT.

SCALE 0 20 IN FEET

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-20\Plan\0261720_IN_P2.dgn 02/22/2013 12:07:35 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: CURTIS KOBILARCSIK

SIGNATURE:

DATE: 2-25-13 LICENSE NO. 24756

DRAWN BY EJM DATE 01-16-13

DESIGN BY EJM DATE 01-16-13

CHECKED BY GMP DATE 01-25-13

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

SP 002-617-020

SP 197-020-003

INTERSECTION DETAILS

STA 23+00.00 TO 30+00.00

Sheet 35 of 70 Sheets

STORM WATER POLLUTION PREVENTION PLAN (SWPPP)

PROJECT LOCATION AND GENERAL INFORMATION

SP 02-617-20 IS LOCATED AT THE INTERSECTION OF CSAH 17 (LEXINGTON AVE NE) AND CSAH 18 (CROSSTOWN BLVD NE) IN CITY OF HAM LAKE.

THE PROPOSED PROJECT WILL INCLUDE INSTALLATION OF TRAFFIC SIGNAL AT CSAH 17/CSAH 18 INTERSECTION, LEFT AND RIGHT TURN LANES, 8 FT SHOULDER AND DRAINAGE DITCHES. THE RECEIVING WATERS WILL DRAIN THROUGH DITCHES AND CULVERTS INTO COUNTY DITCH NO. 44 AND ULTIMATELY INTO COON CREEK.

THIS PROJECT WILL IMPACT 5.47 ACRES OF SOILS AND CREATE POTENTIAL FOR SEDIMENT DISCHARGE FROM THE SITE.

TRAINING REQUIREMENTS

THE CONTRACTOR SHALL ENSURE COMPLIANCE WITH THE TRAINING REQUIRED IN PART 111.A.2 OF THE GENERAL STORM WATER PERMIT FOR CONSTRUCTION ACTIVITY.

THE INDIVIDUALS TRAINED AND THE TRAINING RECEIVED SHALL BE RECORDED IN THE SWPPP BEFORE THE START OF CONSTRUCTION OR AS SOON AS PERSONNEL FOR THE PROJECT HAVE BEEN DETERMINED.

LONG TERM OPERATION AND MAINTENANCE

THE STREETS DIVISION OF CITY OF HAM LAKE SHALL BE RESPONSIBLE FOR THE LONG TERM OPERATION AND MAINTENANCE OF PERMANENT STORM WATER MANAGEMENT.

RECEIVING SURFACE WATERS, DISCHARGE TO IMPAIRED WATERS & SPECIAL WATERS

THE FOLLOWING TABLE IDENTIFIES ALL SURFACE WATERS WITHIN 1 MILE OF THE PROJECT BOUNDARY, WHICH WILL RECEIVE STORM WATER RUNOFF FROM THE CONSTRUCTION SITE, DURING AND AFTER CONSTRUCTION.

RECEIVING SURFACE WATERS		
NAME OF WATER BODY	SPECIAL WATER	IMPAIRED WATER
COON CREEK	YES	YES

STORM WATER FROM A DISCHARGE PDINT ON THE PROJECT WHICH FLOWS TO A SURFACE WATER IDENTIFIED AS IMPAIRED ANO/OR SPECIAL MUST INCLUDE THE FOLLOWING ADDITIONAL BMP REQUIREMENTS:

1) ALL EXPOSED SOILS MUST BE STABILIZED AS SOON AS POSSIBLE TO LIMIT SOIL EROSION BUT IN NO CASE LATER THAN SEVEN (7) DAYS AFTER THE CONSTRUCTION ACTIVITY IN THAT PORTION OF THE SITE HAS TEMPORARILY OR PERMANENTLY CEASED.

2) DITCH BOTTOMS ULTIMATELY DRAIN INTO PUBLIC STORM DRAINAGE SYSTEM. STABILIZATION TO PREVENT EROSION IS REQUIRED WITHIN 24 HOURS OF GRADING OF ALL DITCH BOTTOMS.

DISTURBED AREA

TOTAL PROJECT AREA DISTURBED : 5.48 ACRES
EXISTING IMPERVIOUS AREA : 2.01 ACRES
PROPOSED IMPERVIOUS AREA : 2.91 ACRES

EXISTING PERVIOUS AREA : 3.47 ACRES
PROPOSED PERVIOUS AREA : 2.57 ACRES

CONSTRUCTION PHASING

SILT FENCE AND/OR OTHER SUITABLE PERIMETER BMPS AS PROVIDED IN THE PLANS WILL BE INSTALLED PRIOR TO THE START OF ANY LAND DISTURBING ACTIVITY. CONSTRUCTION WILL BE REQUIRED TO BE PHASED SO THAT ALL DOWN GRADIENT SEDIMENT CONTROL MEASURES ARE INSTALLED PRIOR TO OR IN CONJUNCTION WITH ANY SOIL DISTURBING ACTIVITIES.

WHEN TOPSOIL IS DISTURBED, THE TOPSOIL SHALL BE STRIPPED AND STOCKPILED IN SOIL BERMS AT THE TOE OF THE STRIPPED SLOPES ALONG THE PROJECT LIMITS. TEMPORARY VEGETATION WILL BE ESTABLISHED ON THE STOCKPILED TOPSOIL BERMS WITH SEED MIXTURE 150, TYPE 1 FERTILIZER, AND DISK ANCHORING TYPE 1 MULCH. STOCKPILED TOPSOIL BERMS SHALL NOT BE PLACED IN ANY STORM WATER CONVEYANCES.

AFTER STRIPPING THE TOPSOIL THE EXPOSED SOIL SHALL BE STABILIZED WITH DISK ANCHORED TYPE 1 MULCH WITHIN 14 DAYS OF ROUGH GRADING.

TEMPORARY SEDIMENT BASIN

THIS ROAD CONSTRUCTION PROJECT AS DESIGNED DOES NOT MEET ANY OF THE TEMPORARY SEDIMENT BASIN DISTURBED AREA THRESHOLD REQUIREMENTS AND TEMPORARY SEDIMENT BASIN WILL NOT BE REQUIRED.

PERMANENT STORM WATER MANAGEMENT SYSTEM

ALL STORM WATER MUST BE DISCHARGED IN A MANNER THAT DOES NOT CAUSE NUISANCE CONDITIONS, EROSION IN RECEIVING WATERS OR ON DOWNSLOPE PROPERTIES, OR INUNDATION IN WETLANDS CAUSING A SIGNIFICANT ADVERSE IMPACT TO THE WETLAND.

THIS ROAD CONSTRUCTION PROJECT HAS 0.90 ACRE INCREASE IN IMPERVIOUS AREA.

EROSION PREVENTION PRACTICES

ALL EXPOSED SOIL AREAS MUST BE STABILIZED AS SOON AS POSSIBLE TO LIMIT SOIL EROSION, BUT IN NO CASE LATER THAN 14 DAYS AFTER ROUGH GRADING. FOR ALL AREAS WHERE DISTURBED SOILS DRAIN TO AN IMPAIRED OR SPECIAL WATERS, THE EXPOSED SOIL MUST BE STABLIZED NO LATER THAN 24 HOURS OF GRADING. SEE THE IMPAIRED & SPECIAL WATERS SECTION OF THIS SWPPP FOR ADDITIONAL BMP REQUIREMENTS FOR DISTURBED AREAS THAT DRAIN TO A SPECIAL OR IMPAIRED WATER.

THE NORMAL WETTED PERIMETER OF ANY TEMPORARY OR PERMANENT DRAINAGE DITCH OR SWALE THAT DRAIN WATER FROM ANY PORTION OF THE CONSTRUCTION SITE, OR DIVERTS WATER AROUND THE SITE, MUST BE STABILIZED WITHIN 200 LINEAL FEET FROM THE POINT OF DISCHARGE INTO ANY SURFACE WATER. STABLITIZATION OF THE LAST 200 FEET MUST BE COMPLETED WITHIN 24 HOURS AFTER CONNECTING TO A SURFACE WATER.

PIPE CULVERT OUTLETS MUST BE PROVIDED WITH TEMPORARY OR PERMANENT ENERGY DISSIPATION WITHIN 24 HOURS AFTER CONNECTION TO A SURFACE WATER. THIS WILL INCLUDE DRAINAGE DITCHES THAT DRAIN WATER FROM ANY PORTION OF THE CONSTRUCTION SITE.

POLLUTION PREVENTION MEASURES

THE CONTRACTOR SHALL IMPLEMENT THE POLLUTION PREVENTION MANAGEMENT MEASURES AS DIRECTED IN THE NPDES PERMIT PART IV.F AS PERTAINING TO SOLID WASTE, HAZARDOUS MATERIALS, EXTERNAL TRUCK WASHING, ANO CONCRETE WASHOUT ONSITE.

THESE MANAGEMENT MEASURE FOR POLLUTION PREVENTION SHALL BE STRICTLY ENFORCED.

PROJECT CONTACTS			
DNR	NOT REQUIRED		
COE	NOT REQUIRED		
ANOKA COUNTY DESIGN SWPPP PREPARATION	U OF MN DESIGN OF SWPPP EXPIRES 5/14	ELIZABETH MARKOSE	763-862-4222
ANOKA COUNTY PROJECT REPRESENTATIVE	U OF MN SITE MANAGEMENT EXPIRES 5/15	HARRY GRAMS	763-862-4250
EROSION CONTROL SUPERVISOR (CONTRACTOR)			

SEDIMENT CONTROL PRACTICES

TEMPORARY STOCKPILED TOPSOIL BERMS MUST INCLUDE PERIMETER BMPS AS PROVIDED IN THE PLAN AT LOCAITONS WHERE CONSTRUCTION STORM WATER DRAINS FROM THE PROJECT.

IN ORDER TO MAINTAIN SHEET FLOW AND MINIMIZE RILLS AND/OR GULLIES, THERE SHALL BE NO UNBROKEN SLOPE LENGTH OF GREATER THAT 75 FEET FDR SLOPES WITH A GRADE OF 1:3 OR STEEPER.

ALL STORM DRAIN INLETS MUST BE PROTECTED BY APPROPRIATE BMPS DURING CONSTRUCTION UNTIL ALL SOURCES WITH POTENTIAL DISCHARGE TO THE INLET HAVE BEEN STABILIZED.

VEHICLE TRACKING OFF SEDIMENT FROM THE CONSTRUCTION SITE MUST BE MINIMIZED. STREET SWEEPING MUST BE USED IF SEDIMENT IS BEING TRACKED OFF THE CONSTRUCTION SITE.

LOCATION OF SWPPP REQUIREMENTS

REQUIREMENT	PLAN TITLE	PLAN LOCATION	MN/DOT SPECIFICATION	SPECIAL PROVISION
NPDES PERMIT COMPLIANCE			1701, 1702, &1717	1717 (AIR, LAND & WATER) 1717 (NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT)
CERTIFIED PERSONNEL IN EROSION AND SEDIMENT CONTROL SITE MANAGEMENT	STORM WATER POLLUTION PREVENTION PLAN	SHEETS 36 - 37	1506, 1717, & 2573	1716 (AIR, LAND & WATER) 1716 (NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT)
CHAIN OF RESPONSIBILITY			1506, 1717, & 2573	
PROJECT SCHEDULE / WEEKLY EROSION & SEDIMENT CONTROL SCHEDULE / COMPLETING INSPECTION / MAINTENANCE LOG			1717 & 2573	1717 (AIR, LAND & WATER) 1717 (NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT)
SWPPP PREPARATION				
SITE MAP / RECEIVING WATERS / DIRECTION OF FLOW	EROSION CONTROL PLAN	SHEETS 40 - 41	1717	
PROJECT SPECIFIC CONSTRUCTION STAGING	CONSTRUCTION STAGING & TRAFFIC CONTROL	SHEETS 15 - 20	1717	1717 (AIR, LAND & WATER) 1717 (NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT) 1806 (DETERMINATION AND EXTENSION OF CONTRACT TIME)
TEMPORARY EROSION AND SEDIMENT CONTROL BMP LOCATIONS, INSTALLATION, TIMING OF INSTALLATION AND TYPE OF BMP	EROSION CONTROL PLAN, TABULATION CHARTS	SHEETS 7, 40, 41	2573 & 2525	2575 (RAPID STABILIZATION SPECIFICATION)
ADDITIONAL TEMPORARY AND OR PERMANENT EROSION AND SEDIMENT CONTROL BMP'S NOT PROVIDED OR SHOWN IN THE PLAN	STORM WATER POLLUTION PREVENTION PLAN	SHEETS 36 - 37	1717, 2573, & 2575	1717 (AIR, LAND & WATER) 1717 (NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT) 2575 (RAPID STABILIZATION SPECIFICATION)
MAINTENANCE OF EROSION AND SEDIMENT CONTROL DEVICES, REMOVAL OF TRACKED SEDIMENT, REMOVAL OF DEVICES			1717 & 2573	1514 (MAINTENANCE DURING CONSTRUCTION) 1717 (LAND AIR & WATER) 1717 (NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT)
DEWATERING			2105.3B, & 2451.3C	DEWATERING MAY ALSO REQUIRE DNR PERMIT. NO DEWATERING IS ANTICIPATED FOR THIS PROJECT
FINAL STABILIZATION	TURF ESTABLISHMENT PLAN, TABULATION CHARTS	SHEETS 7, 40, 41	1717, 2573, & 2575	1717 (AIR, LAND & WATER) 1717 (NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT)
TEMPORARY EROSIDN AND SEDIMENT CONTROL DETAILS	EROSION CONTROL STANDARD PLAN	SHEETS 38 - 39	2575	2575 (RAPID STABILIZATION SPECIFICATION)
PERMANENT EROSION CONTROL DETAILS			2575	2575 (CONTROLLING EROSION AND ESTABLISHING VEGETATION)

NO	DATE	BY	CKD	APPR	REVISION
1	04/09/2009	EM	JO	CK	ADDED HAZARDOUS MATERIAL CONTAINMENT NOTE PER MNDOT REVIEW COMMENTS.

NAME: P:\02-617-20\Plan\0261720_SWPPP.dgn 02/22/2013 12:07:36 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 MINNESDTA.
PRINT NAME: CURT A. KOBILARCSIK
SIGNATURE:
DATE: 2-25-13 LICENSE NO. 24756

DRAWN BY EJM DATE 01-16-13
DESIGN BY EJM DATE 01-16-13
CHECKED BY GMP DATE 01-25-13

ANOKA COUNTY HIGHWAY DEPT.

SP 002-617-020
SP 197-020-003

STORM WATER POLLUTION PREVENTION PLAN

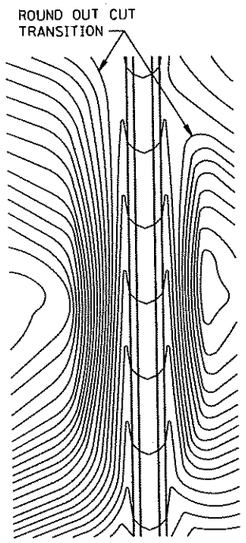
Sheet 36 of 70 Sheets

AMENDING THE SWPPP

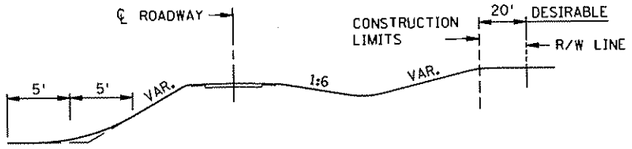
THE SWPPP MUST BE AMENDED TO RECORD CHANGES OR MODIFICATIONS TO PERMANENT BMPS OR OTHER STORM WATER TREATMENT SYSTEMS AND REMOVALS OF TEMPORARY BMPS. CHANGES TO TEMPORARY BMPS MAY BE RECORDED IN THIS SHEET. INCLUDE A BRIEF DESCRIPTION OF THE PROBLEM, LOCATION, NATURE OF ALTERATION AND COMMENTS. THIS RECORD IS TO BE RETAINED FOR THREE YEARS AFTER PROJECT COMPLETION.

Date Reported	Staff	Plan Location (sheet)	Project Location (station)	Problem, solution, and notes

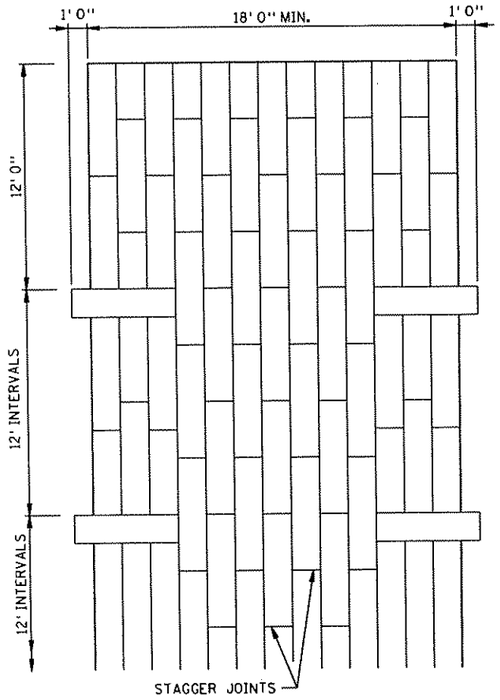
2 OF 2



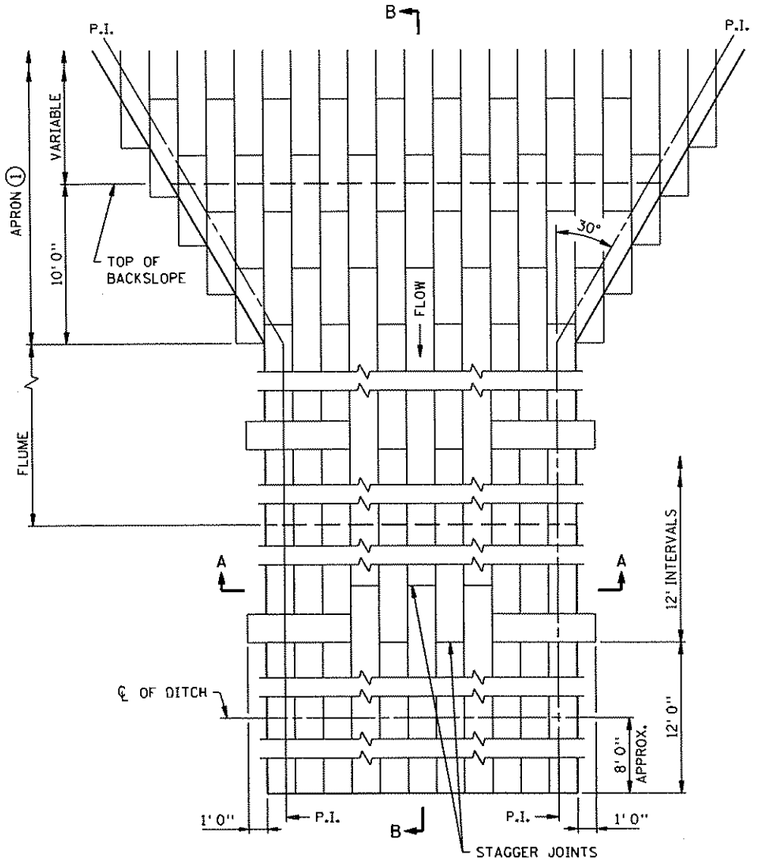
CONTOURING ROAD CUTS



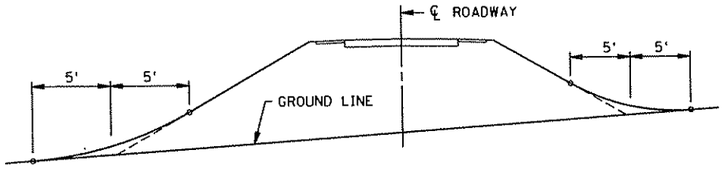
ROUNDING SHOULDERS AND BACKSLOPES



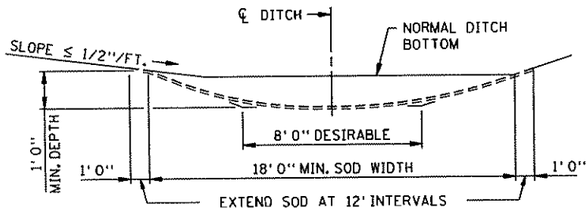
PLAN VIEW



PLAN VIEW

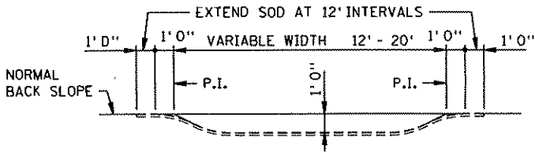


SHAPING FOR DRAINAGE ALONG THE TOE OF FILL SLOPES

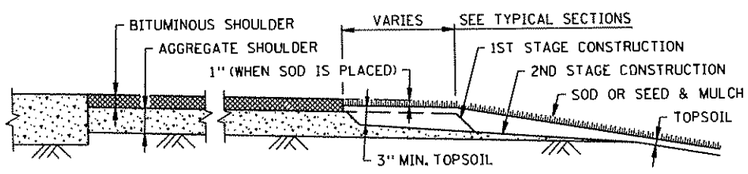


SODDED DITCH CROSS SECTION

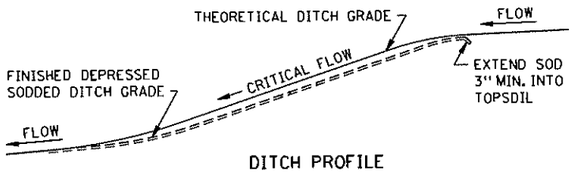
WHERE FRONT OR BACK SLOPE IS FLAT (LESS THAN 1/2"/FT.), FIRST NOTCH DITCH AND THEN PROVIDE ROUNDING.



SECTION A-A

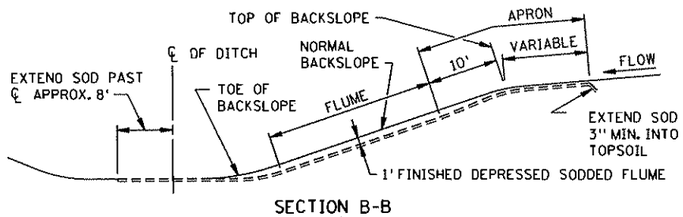


SHAPING AND TOPSOILING INSLOPES



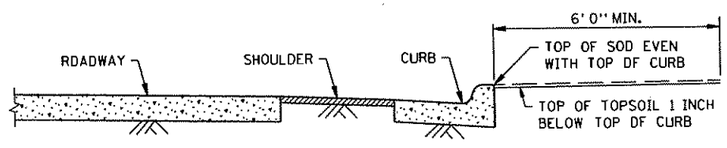
DITCH PROFILE

SODDED DITCH DETAILS



SECTION B-B

SODDED FLUME DETAILS



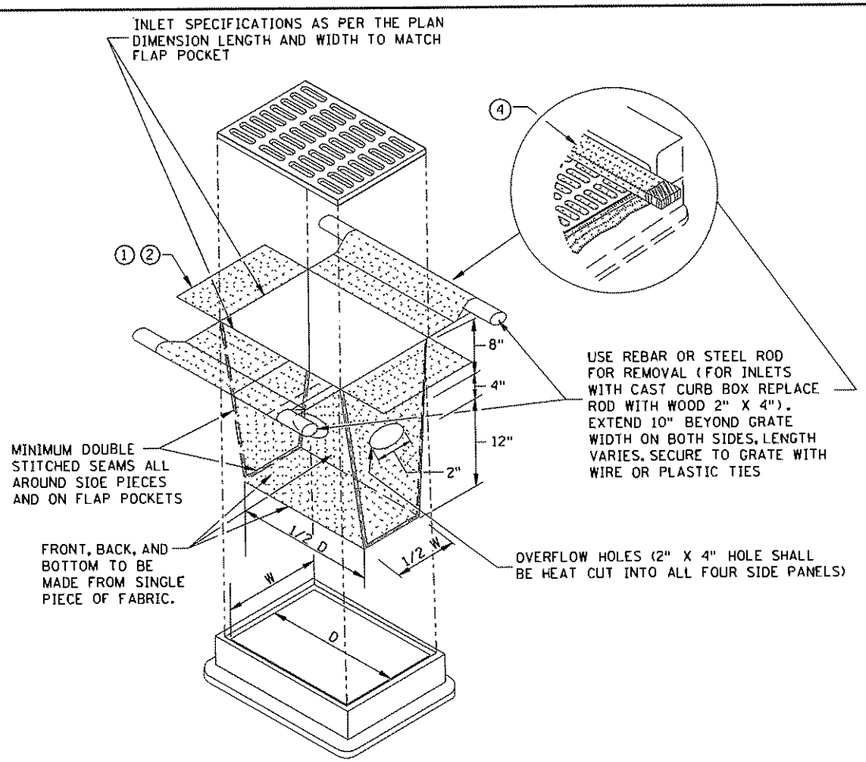
SHAPING ADJACENT TO CURBS WHEN SOD IS PLACED

NOTES:

SEE SPEC. 2575.3 FOR ADDITIONAL INFORMATIDN.

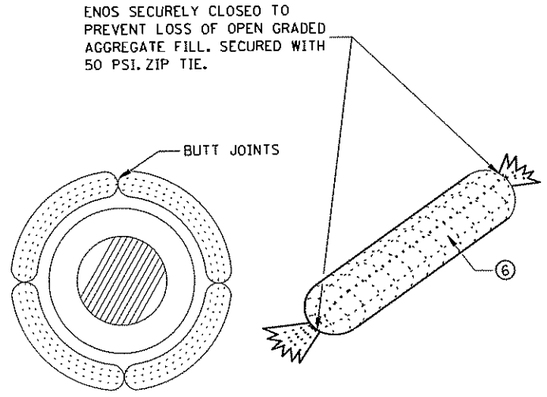
(1) CONSTRUCT TAPER AS DIRECTED BY THE ENGINEER.

STANDARD SHEET NO. 5-297.404	TITLE: PERMANENT EROSION CONTROL ALONG ROADWAYS, DITCHES AND FLUMES
STANDARD APPROVED: NOVEMBER 20, 2002	
S.P. 002-617-020 S.A.P. 197-020-003	SHEET NO. 38 OF 70 SHEETS

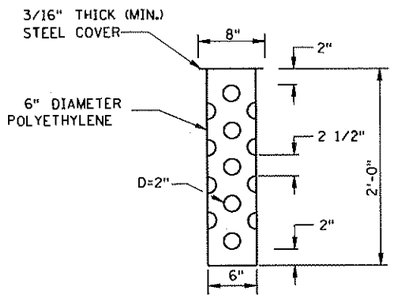


FILTER BAG INSERT ③

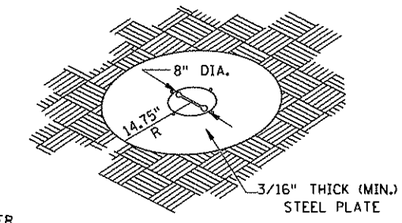
(CAN BE INSTALLED IN ANY INLET TYPE
WITH OR WITHOUT A CURB BOX)



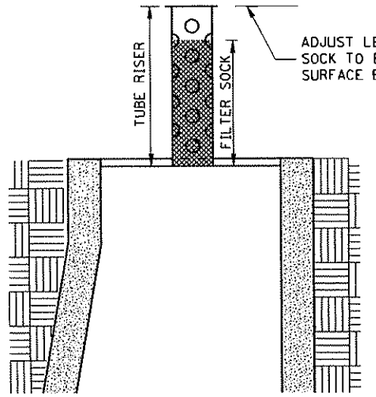
ROCK LOG/COMPOST LOG



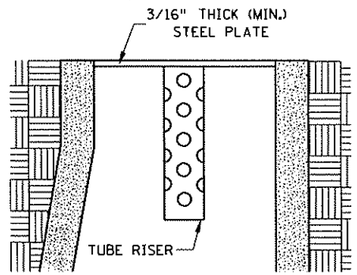
TUBE RISER



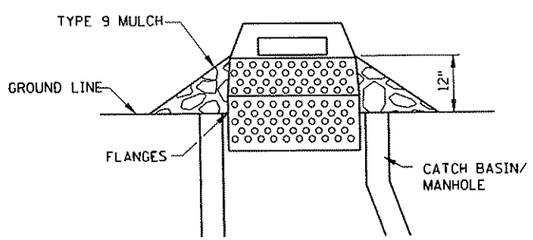
PERSPECTIVE VIEW



SECTION (UP POSITION)

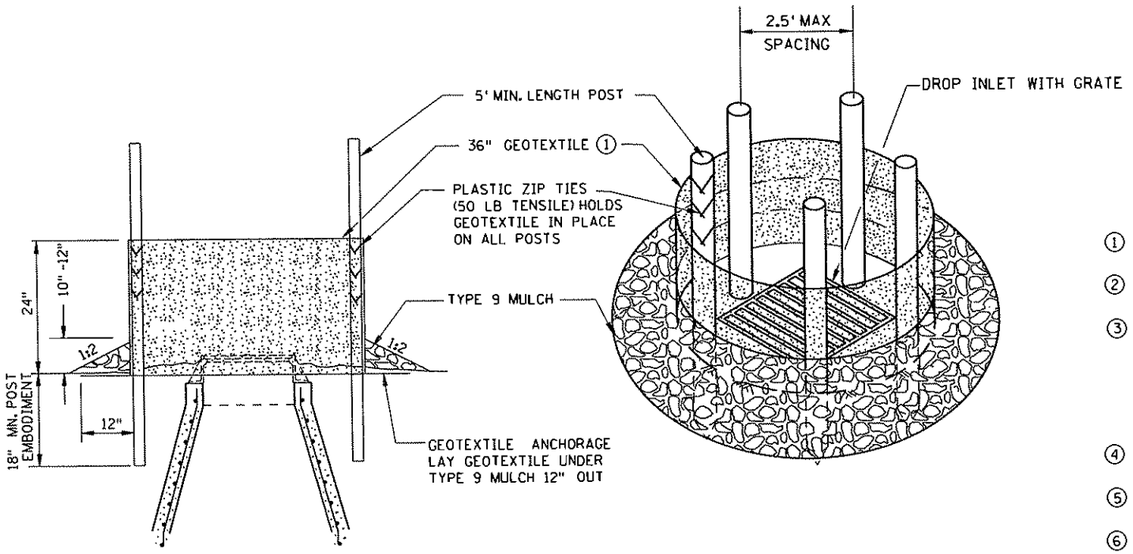


SECTION (DOWN POSITION)



SEDIMENT CONTROL INLET HAT

NOTE:
THE SEDIMENT CONTROL BARRIER SHALL BE A METAL OR PLASTIC/PDLYETHYLENE RISER SIZED TO FIT INSIDE THE CATCH BASIN/MANHDLE; HAVE PERFDRATIONS TO ALLOW FOR WATER INFILTRATION; HAVE AN OVERFLOW OPENING, FLANGES AND A LID/COVER.



SILT FENCE RING AND ROCK FILTER BERM

USE WHERE INLET DRAINS IN AN AREA WITH SLOPES AT 1:3 or LESS

POP-UP HEAD

NOTES:
SEE SPECS. 2573, 3137, 3886 & 3891.

MANUFACTURED ALTERNATIVES LISTED ON Mn/DOT'S APPROVED PRODUCTS LIST MAY BE SUBSTITUTED.

① ALL GEOTEXTILE USED FOR INLET PROTECTION SHALL BE MONOFILAMENT IN BOTH DIRECTIONS, MEETING SPEC. 3B86.

② FINISHED SIZE, INCLUDING POCKETS WHERE REQUIRED SHALL EXTEND A MINIMUM OF 10 INCHES AROUND THE PERIMETER TO FACILITATE MAINTENANCE OR REMOVAL.

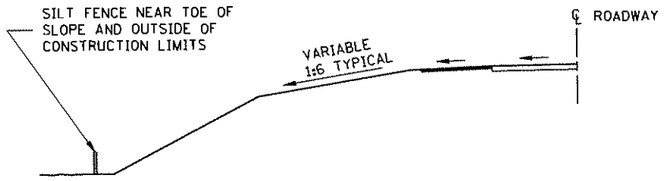
③ INSTALLATION NOTES:
DO NOT INSTALL FILTER BAG INSERT IN INLETS SHALLOWER THAN 30 INCHES, MEASURED FROM THE BOTTOM OF THE INLET TO THE TOP OF THE GRATE. THE INSTALLED BAG SHALL HAVE A MINIMUM SIDE CLEARANCE OF 3 INCHES BETWEEN THE INLET WALLS AND THE BAG, MEASURED AT THE BOTTOM OF THE OVERFLOW HOLES. WHERE NECESSARY THE CONTRACTOR SHALL CLINCH THE BAG, USING PLASTIC ZIP TIES, TO ACHIEVE THE 3 INCH SIDE CLEARANCE.

④ FLAP POCKETS SHALL BE LARGE ENOUGH TO ACCEPT WOOD 2 INCH X 4 INCH OR USE A ROCK SOCK OR SAND BAGS IN PLACE OF THE FLAP POCKETS.

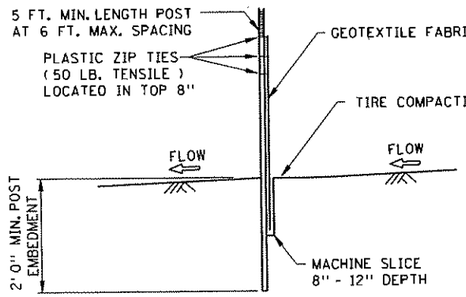
⑤ SOCK HEIGHT MUST NOT BE SO HIGH AS TO SLOW DOWN WATER FILTRATION TO CAUSE FLOODING OF THE ROADWAY.

⑥ GEDTEXTILE SOCK BETWEEN 4-10 FEET LONG AND 4-6 INCH DIAMETER. SEAM TO BE JOINED BY TWO ROWS OF STITCHING WITH A PLASTIC MESH BACKING OR PRDVIDE A HEAT BONDED SEAM (OR APPROVED EQUIVALENT). FILL ROCK LOG WITH OPEN GRADED AGGREGATE CONSISTING OF SOUND DURABLE PARTICLES OF COARSE AGGREGATE CONFORMING TO SPEC. 3137 TABLE 3137-1; CA-3 GRADATION.

STANDARD SHEET NO. 297.405 (4 OF 4)	TITLE: TEMPORARY SEDIMENT CONTROL STORM DRAIN INLET PROTECTION
STANDARD APPROVED: SEPTEMBER 27, 2006	
S.P. 002-617-020 S.A.P. 197-020-003	SHEET NO. 39 OF 70 SHEETS

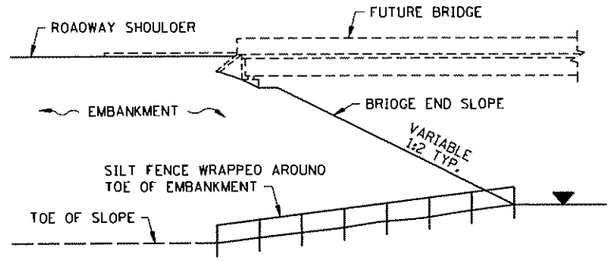


LOCATION OF SILT FENCE
AT TOE OF ROADWAY EMBANKMENT



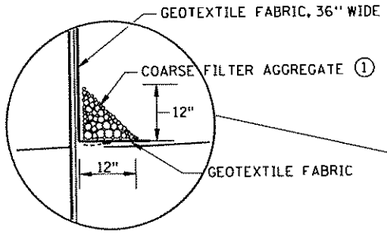
SILT FENCE, MACHINE SLICED

DESIGN GUIDELINES:
TO PROTECT AREAS FROM SHEET FLOW.
MAXIMUM CONTRIBUTING AREA: 1 ACRE.

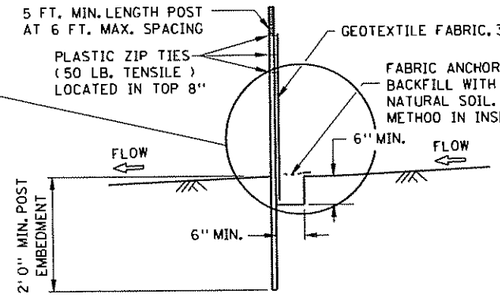


BRIDGE FILL

DESIGN GUIDELINES:
WATER COURSE FLOW VELOCITY: STAGNANT
CONTRIBUTING SLOPE AREA: 1/2 ACRE

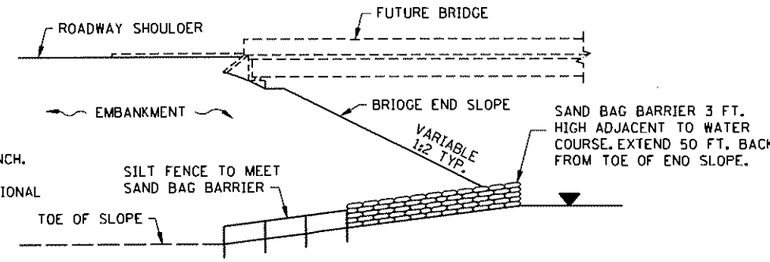


OPTIONAL METHOD
FOR SILT FENCE, HEAVY DUTY



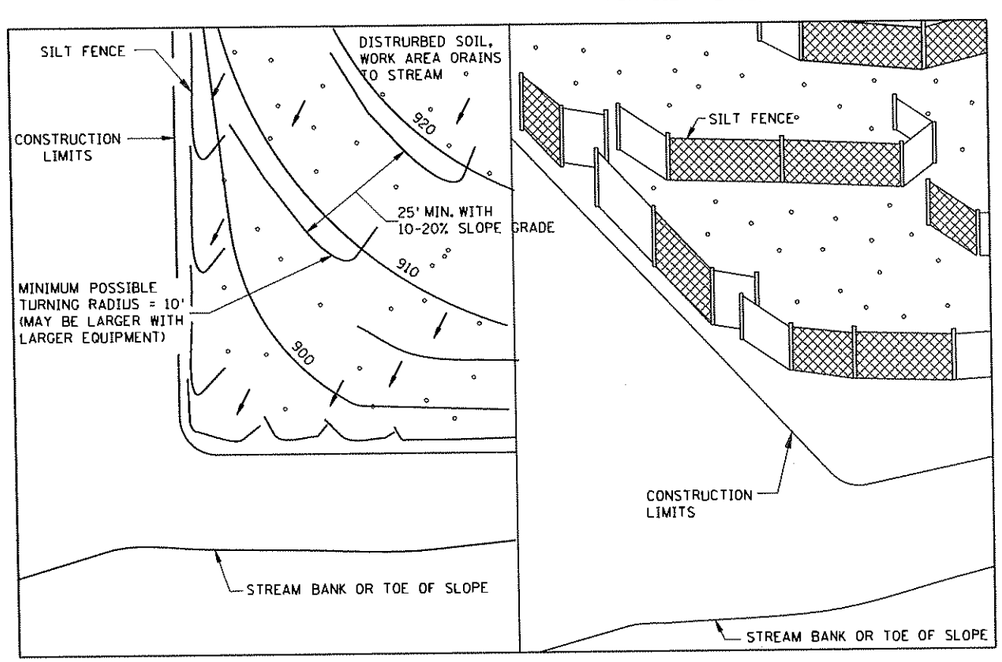
SILT FENCE, HEAVY DUTY
(HAND INSTALLED)

DESIGN GUIDELINES:
TO PROTECT AREAS FROM SHEET FLOW.
MAXIMUM CONTRIBUTING AREA: 1 ACRE.



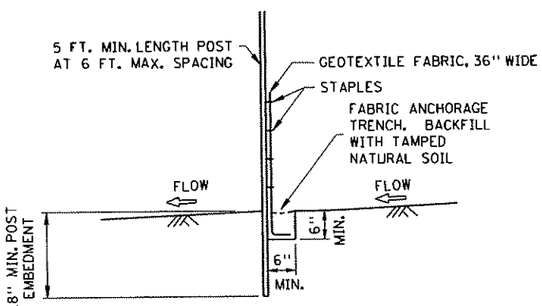
BRIDGE FILL

DESIGN GUIDELINES:
WATER COURSE FLOW VELOCITY: 1 TO 7 FT./SEC.
CONTRIBUTING SLOPE AREA: 1 ACRE



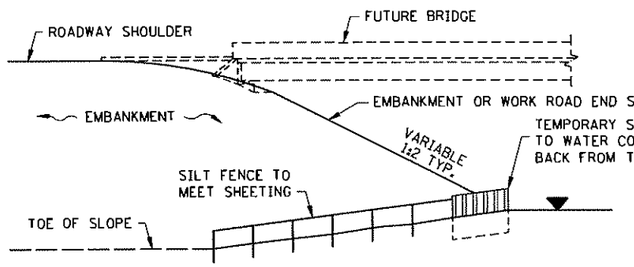
PLAN VIEW SIDE VIEW

SILT FENCE, J-HOOK INSTALLATION



SILT FENCE, PREASSEMBLED

DESIGN GUIDELINES:
TO PROTECT AREAS FROM SHEET FLOW.
MAXIMUM CONTRIBUTING AREA: 1 ACRE.



EMBANKMENT OR WORK ROAD FILL

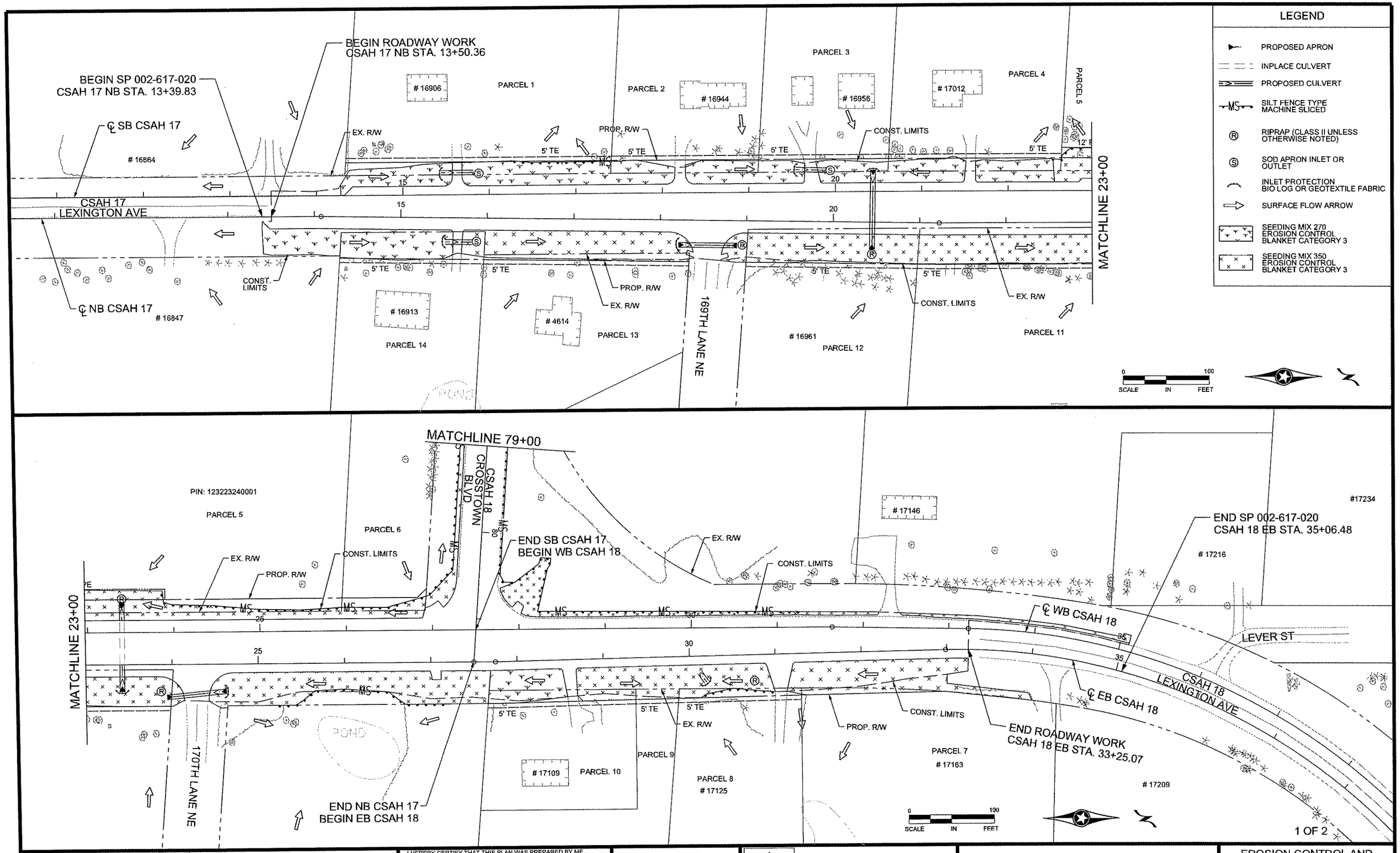
DESIGN GUIDELINES:
WATER COURSE FLOW VELOCITY: 8 TO 15 FT./SEC.
CONTRIBUTING SLOPE AREA: 3 ACRES

SILT FENCE AT BRIDGE EMBANKMENT ADJACENT TO WATER

NOTES:
SEE SPECS. 2573, 3149 & 3886.
(1) COARSE FILTER AGGREGATE (SPEC. 3149) SHALL BE INCIDENTAL.

STANDARD SHEET NO. 5-297.408 (1 OF 2)	TITLE: TEMPORARY SEDIMENT CONTROL SILT FENCE
STANDARD APPROVED: SEPTEMBER 27, 2006	
S.P. 002-617-020 S.A.P. 197-020-003	SHEET NO. 40 OF 70 SHEETS

PLOTTED/REVISED: $$$$@DATE@$$$$
DISTRICT #: $@DISTRICT@$
USER NAME: $$@USER$NAME@$$
PATH & FILENAME: $$$@PATHFILENAME@$$$
FILE NAME: @FILENAME@



NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-20\Plan\0261720_EC_P1.dgn 02/22/2013 12:07:44 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: CURT A. KOBILARCSIK

SIGNATURE:

DATE: 2-25-13 LICENSE NO. 24756

DRAWN BY EJM DATE 01-16-13

DESIGN BY EJM DATE 01-16-13

CHECKED BY GMP DATE 01-25-13

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

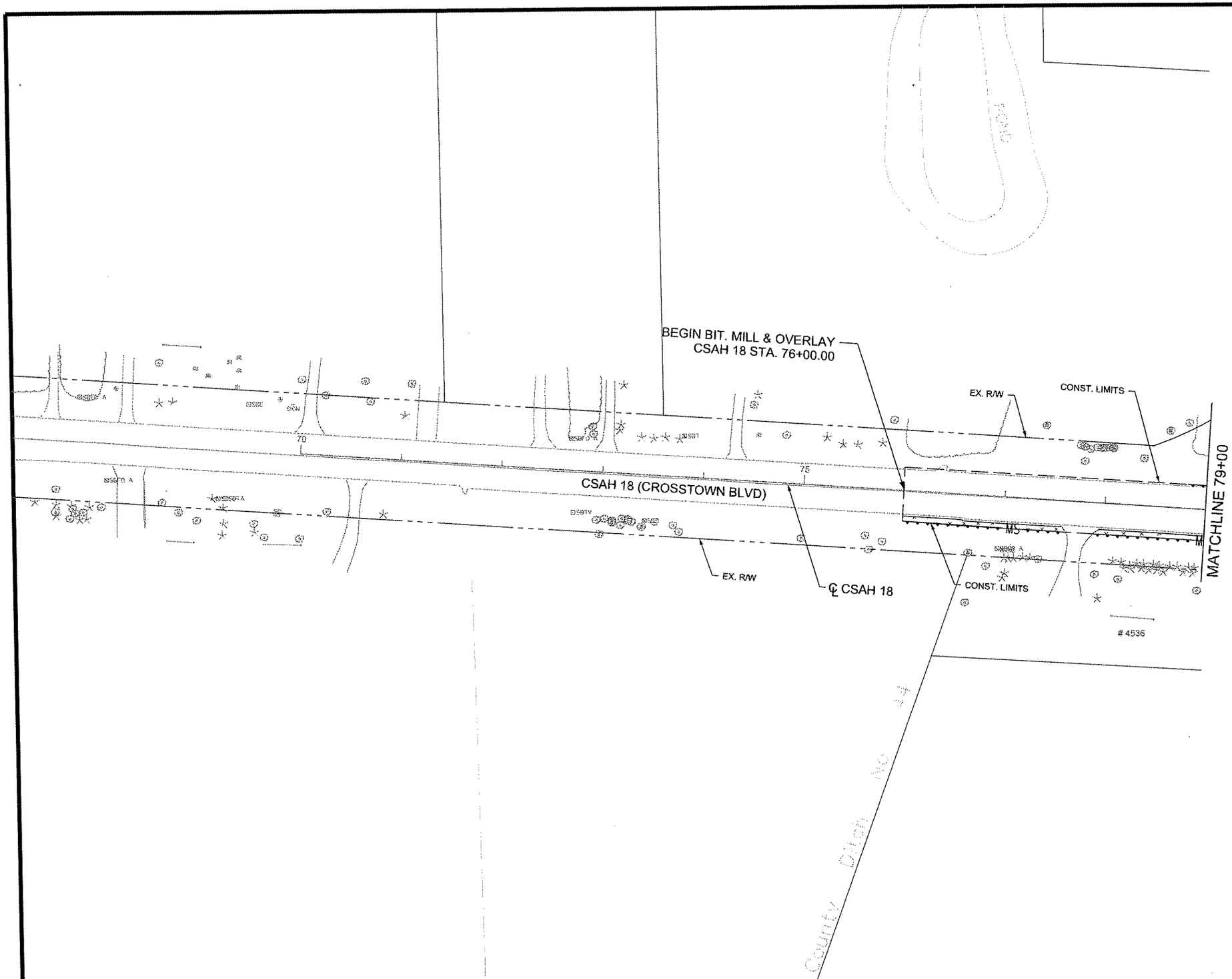
SP 002-617-020

SP 197-020-003

EROSION CONTROL AND TURF ESTABLISHMENT PLAN

STA 13+43.30 TO 35+06.48

SHEET 41 OF 70 SHEETS



LEGEND

- PROPOSED APRON
- INPLACE CULVERT
- PROPOSED CULVERT
- MS — SILT FENCE TYPE MACHINE SLICED
- Ⓡ — RIPRAP (CLASS II UNLESS OTHERWISE NOTED)
- Ⓢ — SOD APRON INLET OR OUTLET
- INLET PROTECTION BIO LOG OR GEOTEXTILE FABRIC
- SURFACE FLOW ARROW
- SEEDING MIX 270 EROSION CONTROL BLANKET CATEGORY 3
- SEEDING MIX 350 EROSION CONTROL BLANKET CATEGORY 3

N

0 100
SCALE IN FEET

2 OF 2

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-20\Plan\0261720_EC_P2.dgn 02/22/2013 12:07:46 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: CURT A. KOBILARCSIK
SIGNATURE: [signature]
DATE: 2-25-13 LICENSE NO. 24756

DRAWN BY EJM DATE 01-16-13
DESIGN BY EJM DATE 01-16-13
CHECKED BY GMP DATE 01-25-13

ANOKA COUNTY
ANOKA COUNTY HIGHWAY DEPT.

SP 002-617-020
SP 197-020-003

EROSION CONTROL AND TURF ESTABLISHMENT PLAN
STA 70+00.00 TO 79+00.00

SHEET 42 OF 70 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.

S PERMANENT & TEMPORARY PAVEMENT MARKING TABULATION

ITEM	UNIT	TOTAL QUANTITY
PAVEMENT MARKING REMOVAL	LIN FT	1000
PAVEMENT MESSAGE (LT ARROW) PREFORMED THERMOPLASTIC	EACH	4
PAVEMENT MESSAGE (RT ARROW) PREFORMED THERMOPLASTIC	EACH	4
24" SOLID LINE YELLOW - PREFORMED THERMOPLASTIC	LIN FT	769
24" SOLID LINE WHITE - PREFORMED THERMOPLASTIC	LIN FT	96
3' x 6' CROSSWALK MARKING - PREFORMED THERMOPLASTIC	SQ FT	414
4" SOLID LINE WHITE - EPOXY	LIN FT	7315
4" SOLID LINE YELLOW - EPOXY	LIN FT	1000
4" BROKEN LINE WHITE - EPOXY (10' STRIPE, 40' SKIP)	LIN FT	40
4" BROKEN LINE YELLOW - EPOXY (10' STRIPE, 40' SKIP)	LIN FT	220
4" DOUBLE SOLID LINE YELLOW - EPOXY	LIN FT	3100

SYMBOLS & MATERIALS LEGEND

CROSSWALK BLOCK WHITE - PREFORMED THERMOPLASTIC

PAVEMENT MESSAGE (LEFT ARROW) PREFORMED THERMOPLASTIC

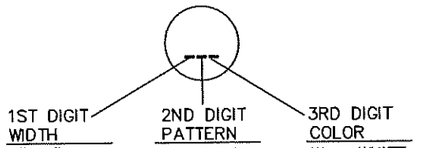
STRIPING KEY

CIRCLE - EPOXY

SQUARE - PREFORMED THERMOPLASTIC

TRIANGLE - PAINT

PENTAGON - REMOVABLE PREFORMED PLASTIC MARKING



EXAMPLE: (4SW) = 4" SOLID LINE WHITE – EPOXY

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-20\Base\Traffic\Perm Pvmt Marking Plan.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: CURT A. KOBILARCSIK
SIGNATURE:
DATE: 2-25-13 LICENSE NO. 24756

DRAWN BY MTH DATE 9/04/12
DESIGN BY MTH DATE 5/07/12
CHECKED BY JKR DATE 9/0x/12

ANOKA COUNTY HIGHWAY DEPT.

SP 002-617-020
SP 197-020-003

PERMANENT MARKING TABULATION

Sheet 43 of 70 Sheets

O	SIGN PANELS TYPE C					
SIGN DESIGNATION	SIGN SIZE	SIZE AREA (FT^2)	Total Installations	Total Area (ft^2)	Posts per Installation	Notes
R1-1	30" x 30"	6.25	2	12.5	1	
X4-15	4" x 15"	1.31	2	0	0	B
R2-1	24" x 36"	6	1	6	1	
R3-X1	30" x 30"	6.25	3	18.75	1	
R3-30AA	36" x 30"	7.5	1	7.5	2	
R3-30AC	36" x 30"	7.5	1	7.5	2	
W1-2R	36" x 36"	9	1	9	2	
W1-7	24" x 48"	8	1	8	2	
W3-3	48" x 48"	16	3	48	2	
W7-3a	30" x 24"	5	1	5		C
W13-1	24" x 24"	4	1	4		D
W14-3	48" x 36"	6	1	6	2	
S3-1	36" x 36"	9	1	9	2	
M1-6A	24" x 24"	4	9	36	1	
M2-1A	21" x15"	2.19	2	4.38		E
M3-1A	24" x 12"	2	1	2		E
M3-2A	24" x 12"	2	2	4		E
M3-3A	24" x 12"	2	1	2		E
M3-4A	24" x 12"	2	1	2		E
M6-1AR	21" x15"	2.19	1	2.19		F
M6-1AL	21" x15"	2.19	2	4.38		F
M6-4A	21" x15"	2.19	1	2.19		F
X4-11	18" x 18"	2.25	2	4.50		G
Project Totals			41	204.88		

NOTES: This table illustrates quantities for F&I new type "C" signs only.

A Sign mounted below R1-1 Sign Post Assembly

B Delineator mounted below R1-1 sign post assembly

C Sign mounted below S3-1 Sign Post Assembly

D Sign mounted below W1-2R Sign Post Assembly

E Sign mounted above M1-5A sign post assembly

F Sign mounted below M1-5A sign post assembly

G Sign mounted below W1-7 sign post assembly

M.U.T.C.D. CODE	SIZE	INSERT	QUANTITY
R1-1	48" x 48"	STOP	2
X4-15	4" x 15"		2
R2-1	24" x 36"	SPEED LIMIT 55	1
R3-X1	30" x 30"	RIGHT TURN LANE	3
R3-30AA	36" x 30"	ONLY ONLY	1
R3-30AC	36" x 30"	ONLY	1
W1-2R	36" x 36"		1
W13-1	24" x 24"	45 M.P.H.	1
W1-7	48" x 24"		1
X4-11	18" x 18"		2
W3-3	48" x 48"		3
W14-3	48" x 36"	NO PASSING ZONE	1
S3-1	36" x 36"	SCHOOL BUS STOP AHEAD	1
W7-3a	30" x 24"	NEXT 1/4 MILE	1

M.U.T.C.D. CODE	SIZE	INSERT	QUANTITY
M3-1A	24" x 12"	NORTH M3-1A	1
M3-3A	24" x 12"	SOUTH M3-3A	1
M1-6A	24" x 24"	HWY 17 COUNTY M1-6	3
M6-4A	21" x 15"	M6-4A	1
M3-2A	21" x 15"	JCT M2-1A	2
M3-2A	24" x 12"	EAST M3-2A	2
M3-4A	24" x 12"	WEST M3-4A	1
M1-6A	24" x 24"	HWY 18 COUNTY M1-6	5
M6-1AR	21" x 15"	M6-1AR	1
M6-1AL	21" x 15"	M6-1AL	1

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-651-07\Base\TRAFFIC\0261720_PERMANENT SIGNING & STRIPING north bypass.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: CURT A. KOBILARCSIK

SIGNATURE:

DATE: 2-28-13 REG. NO. 24756

DRAWN BY MTH DATE 12/19/12

DESIGN BY MTH DATE 12/19/12

CHECKED BY JR DATE 12/19/12

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PERMANENT SIGNING TABULATION

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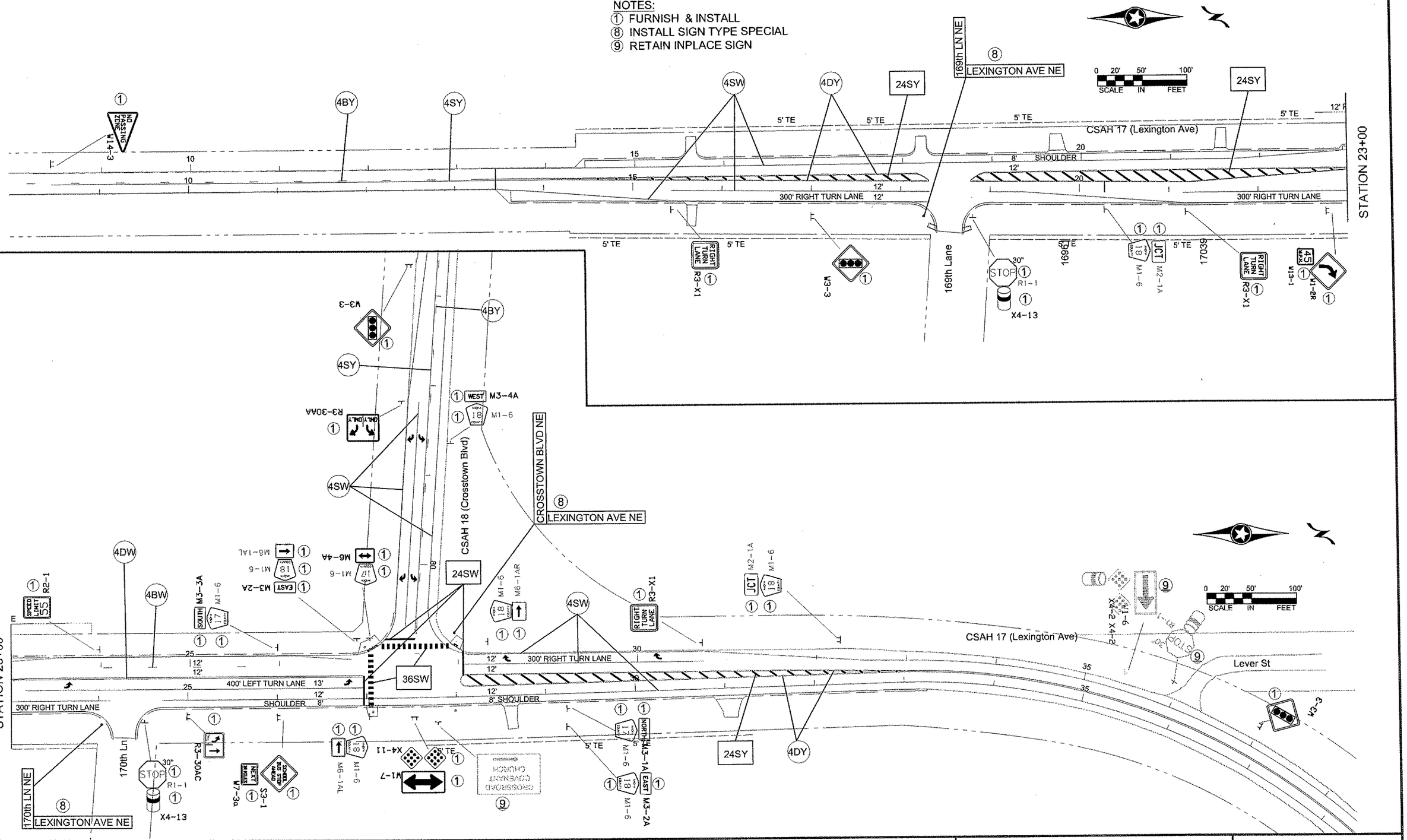
NOTES:
① FURNISH & INSTALL
⑧ INSTALL SIGN TYPE SPECIAL
⑨ RETAIN INPLACE SIGN



NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-651-07\Base\TRAFFIC\0261720_PERMANENT SIGNING & STRIPING north bypass.dwg

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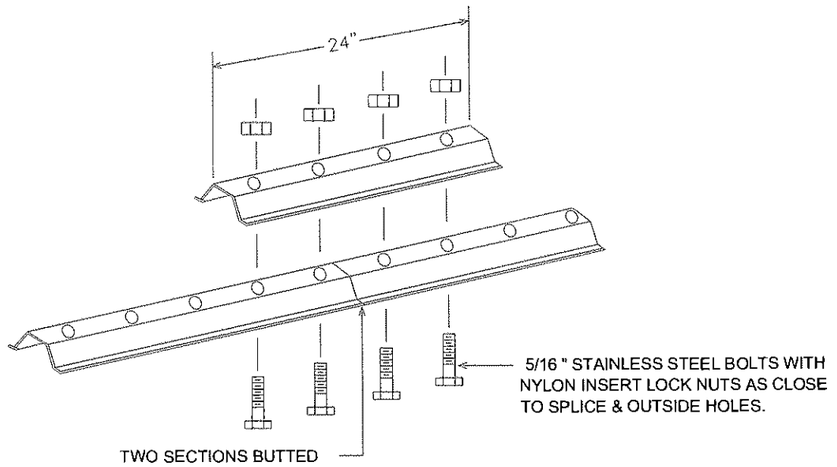
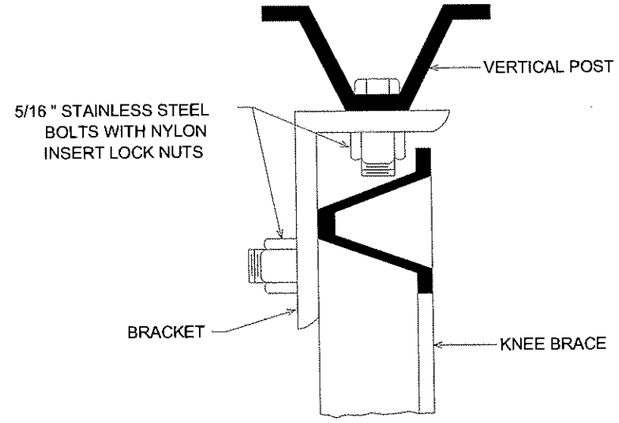
ANOKA COUNTY HIGHWAY DEPT.

SP 002-617-020
SP 197-020-003

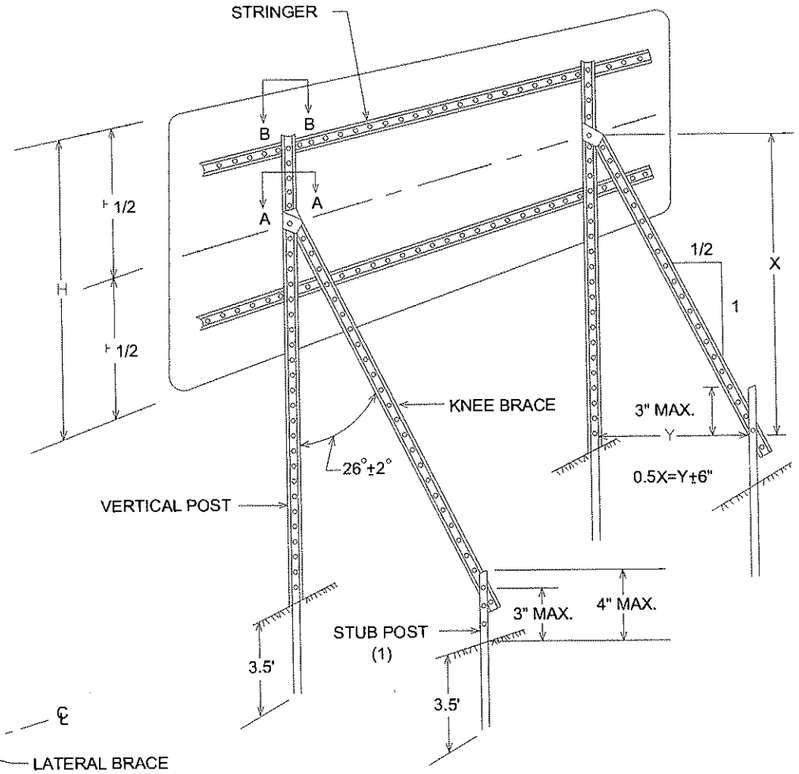
PERMANENT SIGNING & STRIPING PLAN
Sheet 45 of 70 Sheets



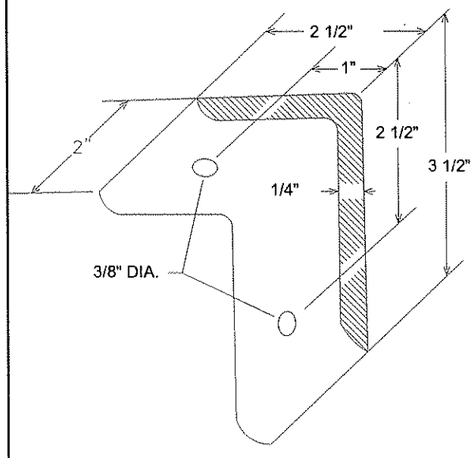
LATERAL BRACE OR STRINGER SPLICE DETAIL (EXPLODED VIEW)



SECTION A-A

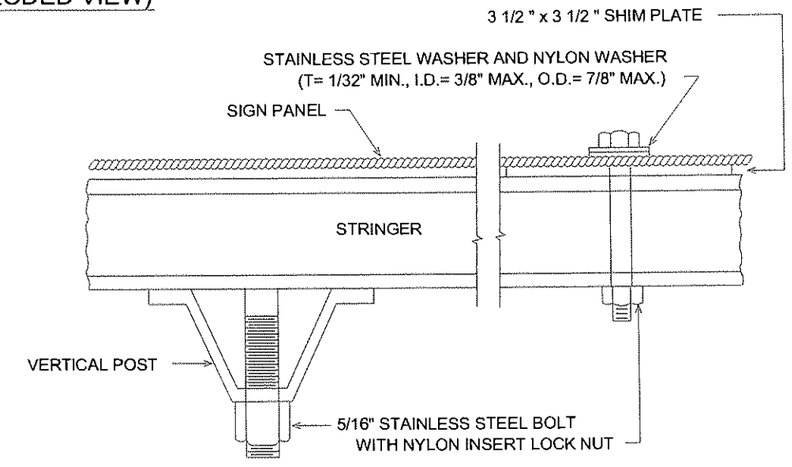


TYPICAL "A-FRAME" INSTALLATION TYPE "D" SIGNS

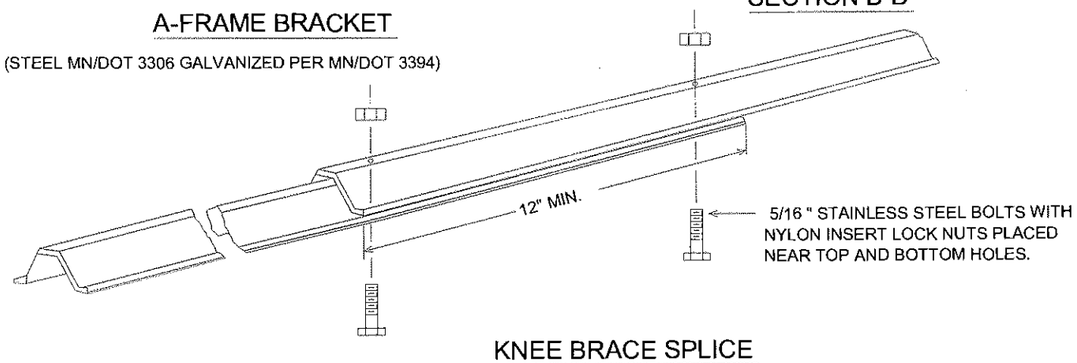


A-FRAME BRACKET

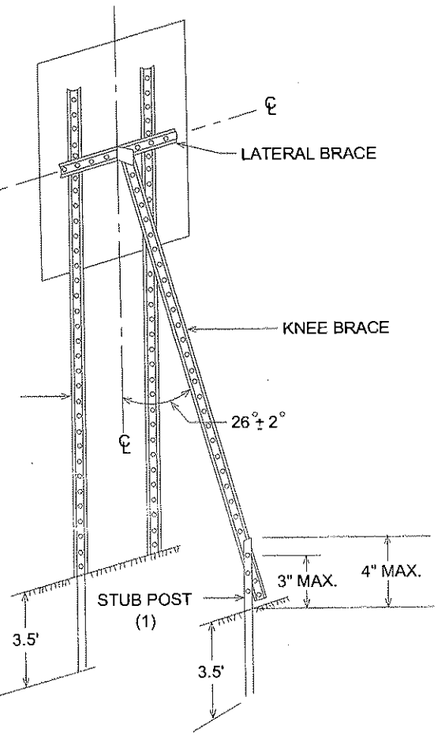
(STEEL MN/DOT 3306 GALVANIZED PER MN/DOT 3394)



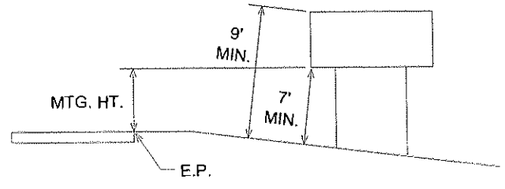
SECTION B-B



KNEE BRACE SPLICE



TYPICAL "A-FRAME" INSTALLATION TYPE "C" SIGNS



TYPICAL MOUNTING

(1) OFFSET STUB POST 1' TOWARD ROADWAY RELATIVE TO VERTICAL POST.

TYPE C & D SIGN STRUCTURAL DETAILS

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-20\Base\TRAFFIC\Sign&Stripe_Details.dwg

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PRINT NAME: CURT A KOBILARCSIK
SIGNATURE:
DATE: 2-25-13 LICENSE NO. 24756

DRAWN BY MTH DATE 06-06-12
DESIGN BY MTH DATE 06-06-12
CHECKED BY JR DATE 06-06-12

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SP 197-020-003

SIGNING & STRIPING DETAILS

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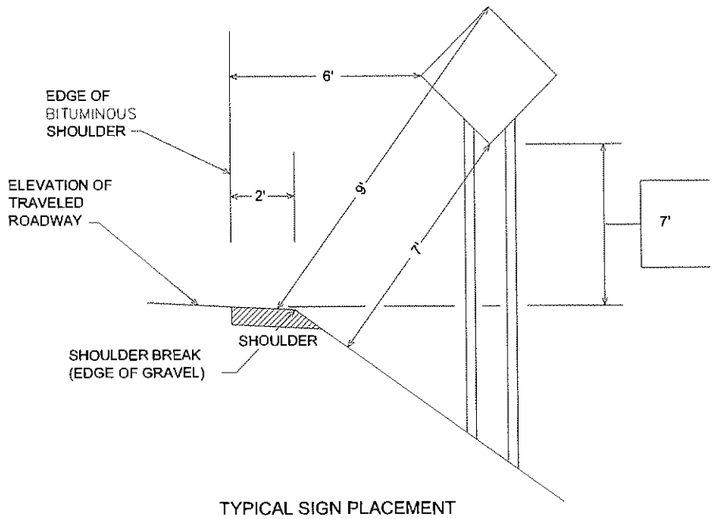
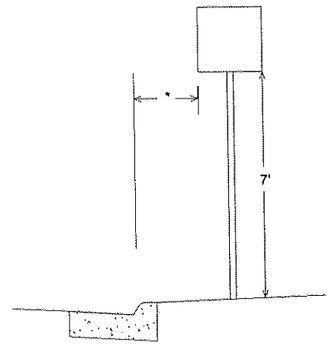
RURAL



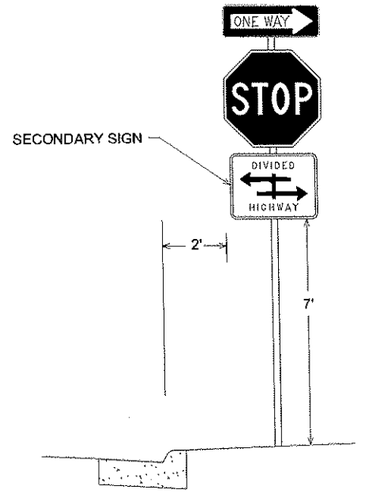
TYPICAL SIGN PLACEMENT

URBAN

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



TYPICAL SIGN PLACEMENT



NOTE:

- ALL DIMENSIONS ARE MINIMUMS

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-20\Base\TRAFFIC\Sign&Stripe_Details.dwg

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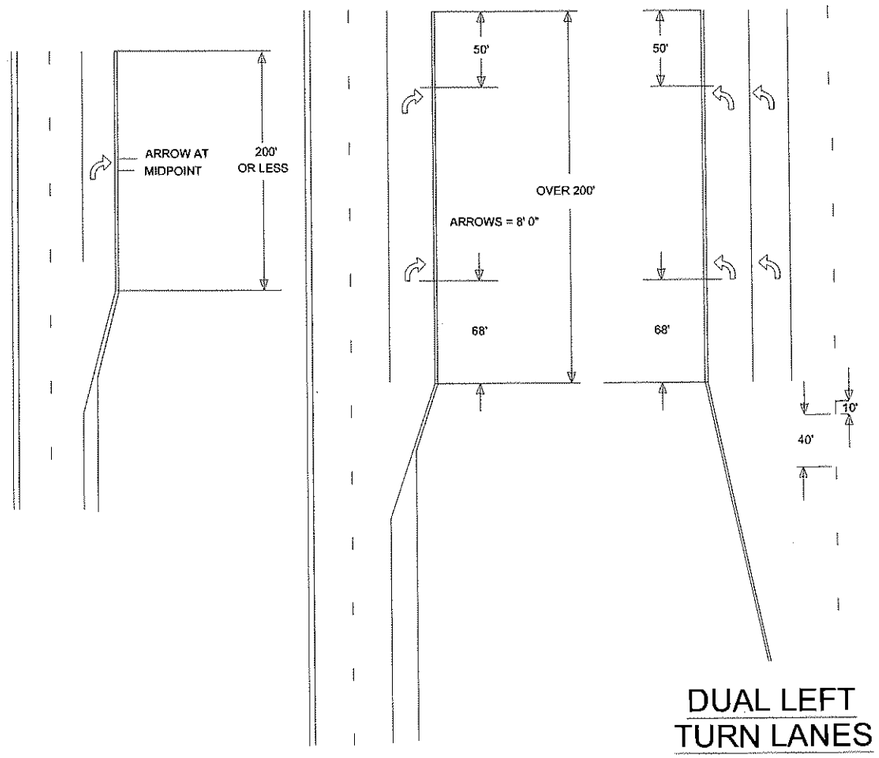
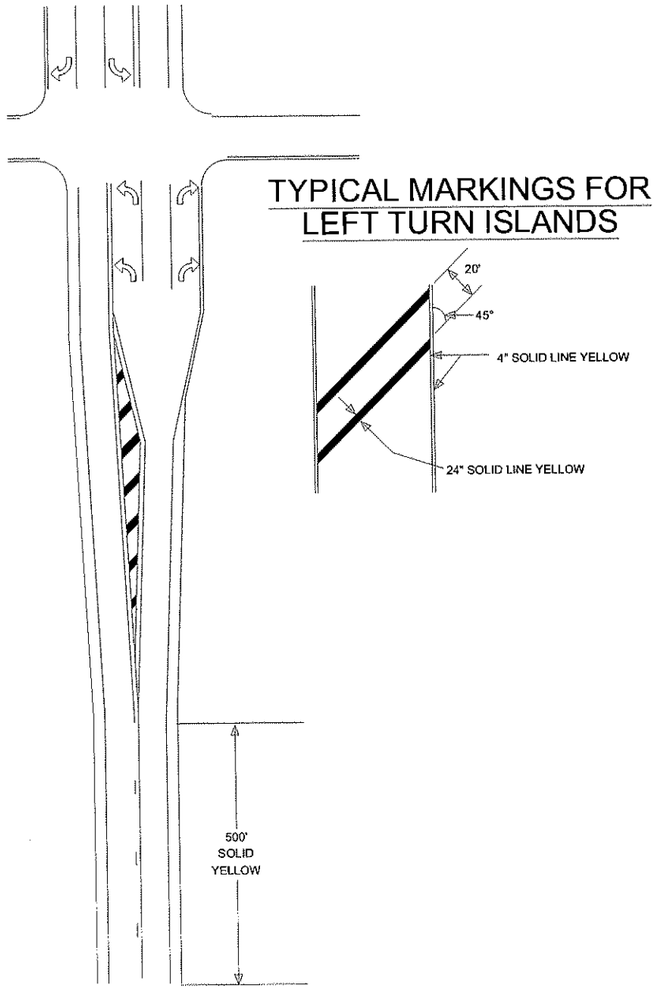
TYPICAL MESSAGE PLACEMENT FOR TURN LANES



DUAL LEFT TURN LANES

TYPICAL MARKINGS FOR LEFT TURN ISLANDS



NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-20\Base\TRAFFIC\Sign&Stripe_Details.dwg

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PRINT NAME: CURT A KOBILARCSIK

SIGNATURE: [signature]

DATE: 2-25-13 LICENSE NO. 24756

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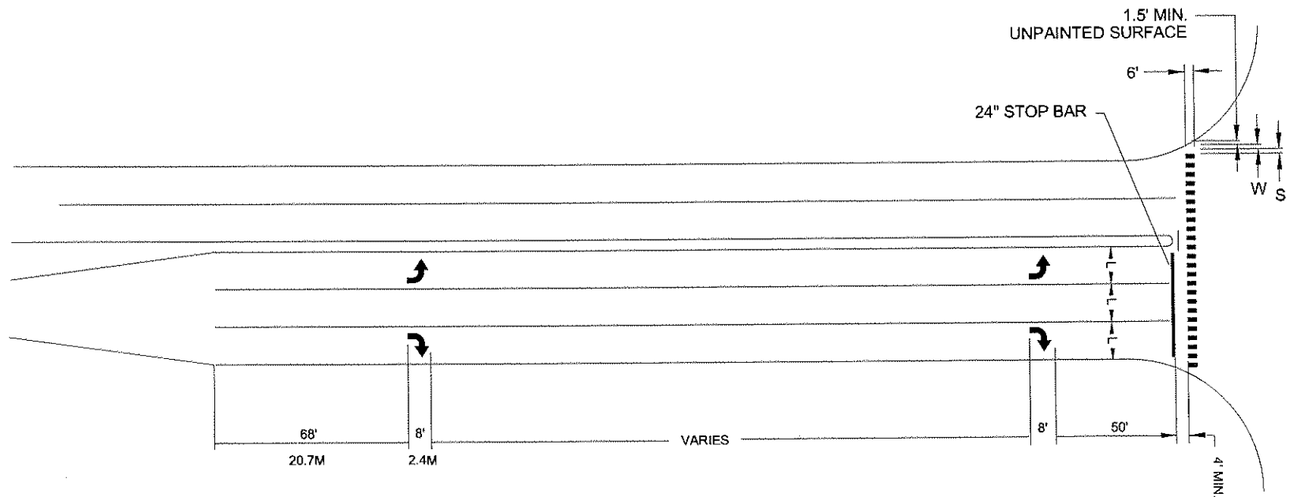
MARKINGS FOR PEDESTRIAN CROSSWALKS



(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 RAMPS ARE APPROXIMATE. FINAL LOCATIONS ARE TO BE DETERMINED AND FIELD VERFIED 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.

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-20\Base\TRAFFIC\Sign&Stripe_Details.dwg

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SIGNING & STRIPING DETAILS

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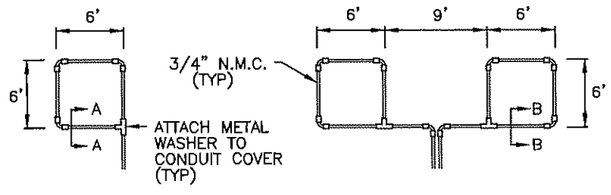
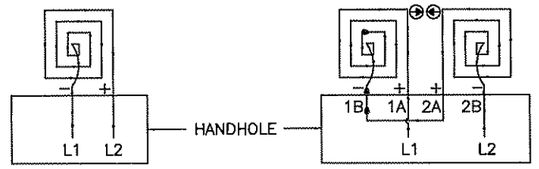




LOOP DETECTOR DETAIL 'A'

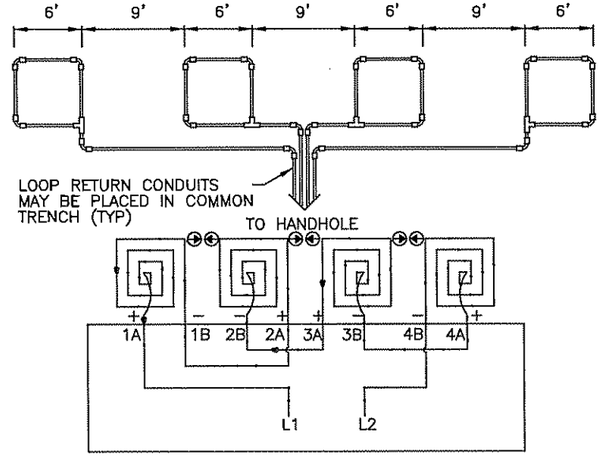
(LOOP PHASING FOR SINGLE CONNECTION)

LOOP CONNECTIONS SHALL BE LABELED AND SPLICED IN THE HANDHOLE AS FOLLOWS:

L1 TO 1A
1B TO 2A
2B TO L2

LOOP DETECTOR DETAIL 'B'

(LOOP PHASING FOR SERIES CONNECTION)



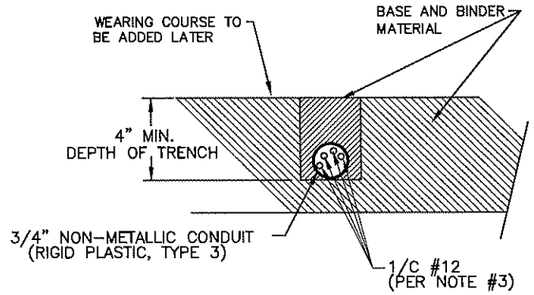
LOOP CONNECTIONS SHALL BE LABELED AND SPLICED IN THE HANOHOLE AS FOLLOWS:

L1 TO 1A
1B TO 2A
2B TO 3A
3B TO 4A
4B TO L2

SPLICE CONTROL CABLE TO L1 & L2 IN HANDHOLE. ALL CONDUCTORS SHALL BE TAGGED IN HANDHOLE (1A, 1B, ECT)

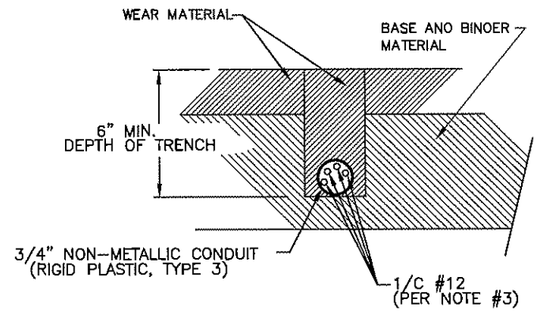
LOOP DETECTOR DETAIL 'C'

(LOOP PHASING FOR SERIES CONNECTION)



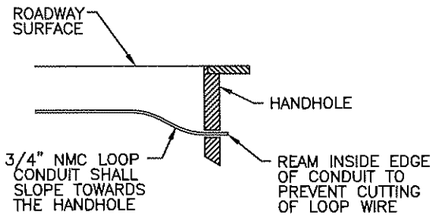
SECTION A–A

DETAIL FOR LOOP INSTALLATION IN NEW ROAOWAY



SECTION B–B

DETAIL FOR LOOP INSTALLATION IN EXISTING ROADWAY



DRAINAGE DETAIL

LOOP DETECTOR WIRING

1) ALL CORNERS SHALL BE 90° CONOUIT BENDS.
2) CONNECT WIRES IN HANDHOLES USING SPLICE KIT METHOD DESCRIBED IN THE SPECIAL PROVISIONS.
3) LOOP DETECTOR WIRES SHALL BE #12 AWG CROSSED LINKED POLYETHYLENE (XLP). SEE SPECIAL PROVISIONS.
4) LOOP LEAD IN WIRES SHALL BE TWISTED A MIN. OF (5) TURNS PER FOOT THROUGH THE CONDUIT TO THE HANDHOLE.
5) NMC DESIGNATES NON-METALLIC CONDUIT (SPEC. 3803)
6) LOOPS 6' x 6' THRU 6' x 14' SHALL HAVE (4) TURNS.
7) LOOPS 6' x 15' AND LARGER SHALL HAVE (2) TURNS.

LEGEND OF SYMBOLS

- CONTROLLER AND SERVICE EQUIP. NO's
- SIGNAL BASE NO.
- SIGNAL FACE NO.
- LUMINAIRE NO.
- CONTROLLER AND CABINET
- CONTROLLER AND CABINET – IN PLACE
- HANDHOLE
- HANDHOLE – IN PLACE
- RIGID STEEL CONDUIT (RSC)
- RIGID STEEL CONDUIT (RSC) – IN PLACE
- SIGNAL FACE WITH BACKGROUND SHIELD
- SIGNAL FACE W/O BACKGROUND SHIELD
- SIGNAL FACE – IN PLACE
- PEDESTRIAN INDICATORS
- PEDESTRIAN INDICATORS – IN PLACE
- PEDESTRIAN PUSH BUTTONS ON PEDESTAL OR POLE
- PEDESTRIAN PUSH BUTTON STATION
- TRAFFIC SIGNAL PEDESTAL
- TRAFFIC SIGNAL PEDESTAL – INPLACE
- TRAFFIC SIGNAL POLE AND MAST ARM
- TRAFFIC SIGNAL POLE AND MAST ARM – IN PLACE
- STREET LIGHT POLE AND LUMINAIRE
- STREET LIGHT POLE AND LUMINAIRE – IN PLACE
- MAST ARM AND LUMINAIRE
- MAST ARM AND LUMINAIRE – INPLACE
- WOOD POLE
- WOOD POLE – IN PLACE
- SOURCE OF POWER
- RAILROAD SIGNAL – IN PLACE
- RIGHT OF WAY LINE
- CENTERLINE
- EDGE OF ROADWAY
- SHOULDERLINE
- CURB LINE
- STOP BAR
- EMERGENCY VEHICLE PREEMPTION DETECTOR

ABBREVIATIONS

3–1(EG)	SIGNAL HEAD PHASE "3" – NO "1"	P2–1(EG)	PED INDICATION PHASE "2" – NO. "1"
BR. GR.	BARE GROUND	PB	PUSH BUTTON
CH. SW.	CHECK SWITCH	PB2–1(EG)	PUSH BUTTON PHASE "2" – NO. "1"
CLR	CLEAR	PEC	PHOTOELECTRIC CELL
D2–1(EG)	DETECTOR PHASE "2" – NO. "1"	PED	PEDESTRIAN
DWK	DON'T WALK	R	RED
EQG	EQUIPMENT GROUND	R&S	REMOVE AND SALVAGE
EVP	EMERGENCY VEHICLE PRE–EMPTION	RLTA	RED LEFT TURN ARROW
F&I	FURNISH AND INSTALL	RRTA	RED RIGHT TURN ARROW
FL	FLASH/FLASHING	RSC	RIGID STEEL CONDUIT
G	GREEN	SOP	SOURCE OF POWER
GLTA	GREEN LEFT TURN ARROW	SPR	SPARE
GRN	GREEN	ST. LHT	STREET LIGHT
GR. R	GROUND ROD	STA	STATION
GRTA	GREEN RIGHT TURN ARROW	SW	SWITCH
GTHA	GREEN THRU ARROW	SWD	SWITCHED
HH	HANDHOLE	S&R	SALVAGE AND REINSTALL
HPS	HIGH PRESSURE SODIUM	TDW	TELEPHONE DROP WIRE
JB	JUNCTION BOX	WLK	WALK
LUM	LUMINAIRE	YEL	YELLOW
NEU	NEUTRAL	YLTA	YELLOW LEFT TURN ARROW
NMC	NONMETALLIC CONDUIT	YRTA	YELLOW RIGHT TURN ARROW
		YTHA	YELLOW THRU ARROW

CONDUCTOR COLOR CODE

R	RED
O	ORANGE
BL	BLUE
WH	WHITE
R/BLK	RED WITH BLACK TRACER
O/BLK	ORANGE WITH BLACK TRACER
BL/BLK	BLUE WITH BLACK TRACER
WH/BLK	WHITE WITH BLACK TRACER
BLK	BLACK
BLK/WH	BLACK WITH WHITE TRACER
G/BLK	GREEN WITH BLACK TRACER
G	GREEN

TRAFFIC SIGNAL TABULATION

ITEM NO	ITEM	UNIT	TOTAL ESTIMATED QUANTITY
2565	TRAFFIC CONTROL SIGNAL SYSTEM	SIG. SYS.	1
2565	EMERGENCY VEHICLE PREEMPTION SYSTEM	LUMP SUM	1
2565	SIGNAL SERVICE CABINET	EACH	1

TRAFFIC SIGNAL STANDARD PLATES

THESE TRAFFIC SIGNAL STANDARD PLATES AS APPROVED BY FHWA SHALL APPLY:

PLATE NO.	DESCRIPTION
* 8000 I	STANDARD BARRICADES
* 8111 E	TRAFFIC SIGNAL BRACKETING (PEDESTAL MOUNTED) (3 SHEETS)
* 8112 G	PEDESTAL FOUNDATION (TRAFFIC CONTROL SIGNALS)
* 8114 A	PVC HANDHOLE/PULLBOX (NO VEHICLE LOAD) (2 SHEETS)
* 8118 D	SERVICE EQUIPMENT & POLE–TRAFFIC CONTROL SIGNALS
* 8119 C	GROUND MOUNTED CABINET FOUNDATION
* 8121 G	TRANSFORMER BASE & POLE BASE PLATE (2 SHEETS)
* 8122 F	PEDESTAL & PEDESTAL BASE (FOR TRAFFIC CONTROL SIGNALS SUPPORT)
* 8123 G	POLE & MAST ARM–LUMINAIRES & TRAFFIC LIGHTS ASSEMBLY (2 SHEETS)
* 8126 K	POLE FOUNDATION (PA90 & PA100)

* – APPLIES TO THIS PROJECT

S.P. 002–617–020
S.A.P. 197–020–003

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

NO.	BY	DATE	REVISIONS

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

Name: John M. Gray, PE
Date: January 29, 2013 Lic. No. 22457

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ANOKA COUNTY, MINNESOTA
CITY OF HAM LAKE

TRAFFIC SIGNAL SYSTEM
DETAILS AND STANDARD PLATES
CSAH 17–18 (LEXINGTON AVE NE)
AT CSAH 18 (CROSSTOWN BLVD NE)

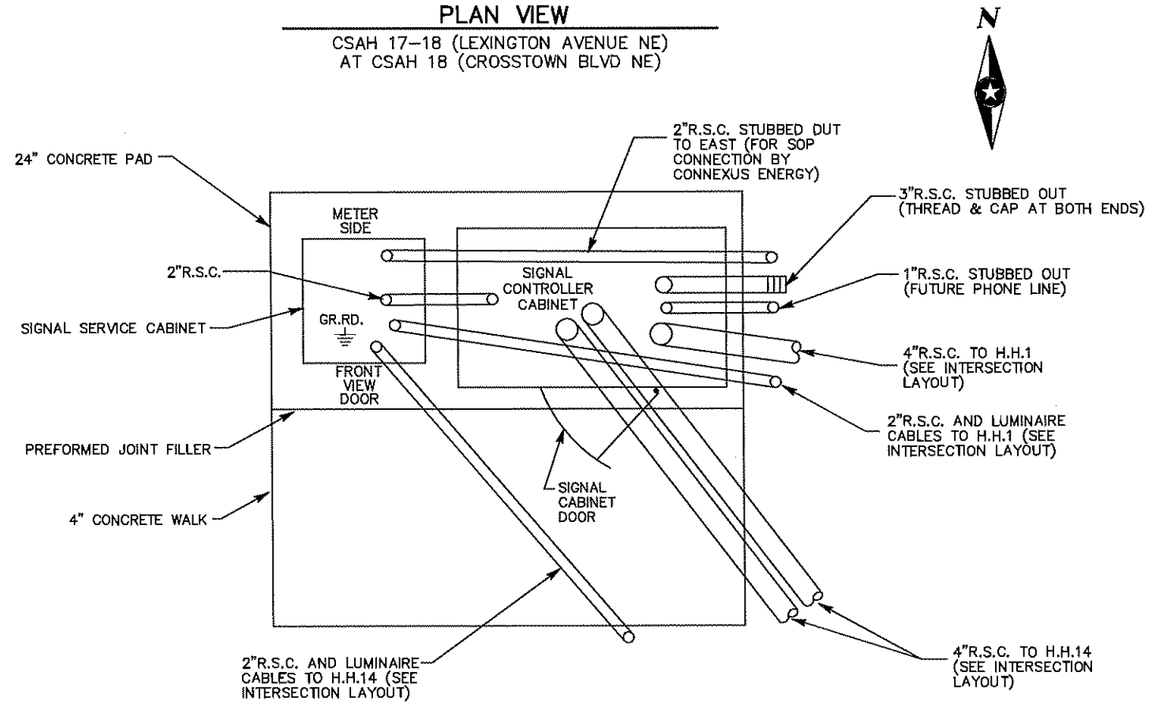
FILE NO. ANOKC 122264
SIGNAL SHEET 1 OF 8

TYPICAL PAD WITH CONTROLLER CABINET AND SERVICE CABINET

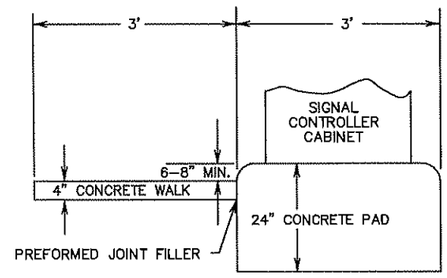
SEE INTERSECTION LAYOUT FOR CABLE INFORMATION (NOT TO SCALE)

PLAN VIEW

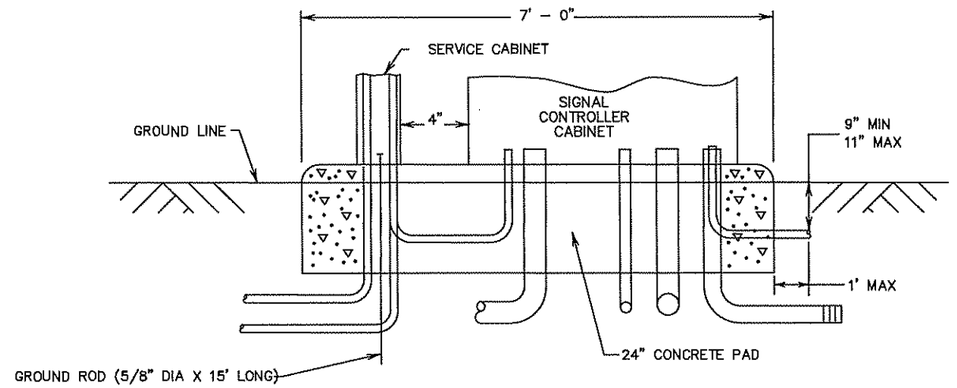
CSAH 17–18 (LEXINGTON AVENUE NE)
AT CSAH 18 (CROSSTOWN BLVD NE)



SIDE VIEW



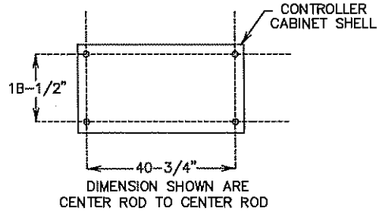
FRONT VIEW



NOTES:

1. THE ANCHOR RODS, NUTS AND WASHERS FOR THE COUNTY FURNISHED CONTROLLER AND CABINET SHALL BE FURNISHED BY THE COUNTY AND INSTALLED BY THE CONTRACTOR.
2. THE UPPER PART OF THE NEW EQUIPMENT PAD SHALL BE BEVELLED OR CHAMFERED IN A NEAT MANNER AS DIRECTED BY THE ENGINEER.
3. THE TOP OF THE CONDUITS SHALL BE THREADED AND CAPPED AFTER INSTALLATION (UNTIL CABLES ARE INSTALLED).
4. CONDUIT SHALL PROJECT A MINIMUM OF 2" ABOVE THE CONCRETE AND SHALL BE LOCATED INSIDE THE CABINET WHERE DIRECTED BY THE ENGINEER, BUT SHALL NOT INTERFERE WITH THE CABINET FUNCTIONS (SUPPORTING MEMBERS, ETC.).
5. CONCRETE MIX 3A32 OR EQUAL SHALL BE USED FOR THE EQUIPMENT PAD AND SIDEWALK.
6. CONDUITS WITH BOTH ENDS TERMINATING WITHIN THE PAD SHALL NOT BE INSTALLED BELOW THE CONCRETE.
7. THE EXACT LOCATION OF CONDUITS WITHIN THE PAD SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD.
8. ANCHOR RODS SHALL PROJECT A MINIMUM OF 3" ABOVE THE CONCRETE BUT SHALL NOT INTERFERE WITH THE CABINET FUNCTIONS (SUPPORTING MEMBERS, ETC.).
9. CONTRACTOR SHALL PROVIDE MINIMUM 4–INCH CLEARANCE BETWEEN CONTROLLER AND SERVICE CABINETS ON THE EQUIPMENT PAD FOUNDATIDN AS SHOWN.

CONTROLLER CABINET TYPE "P" & "R" BOLT PATTERN



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S.A.P. 197–020–003

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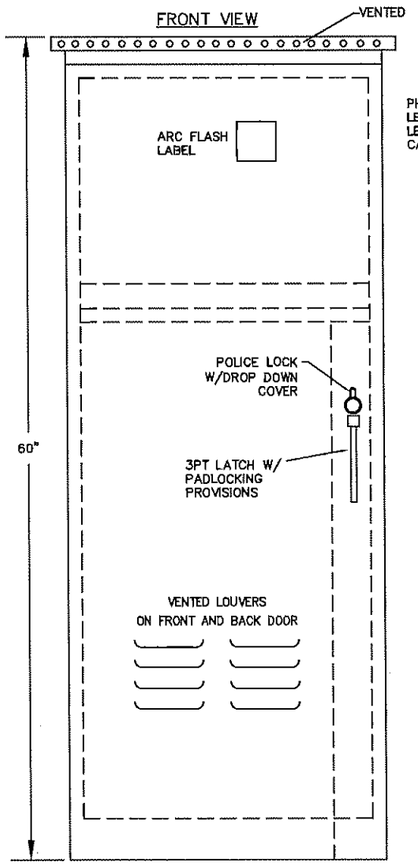
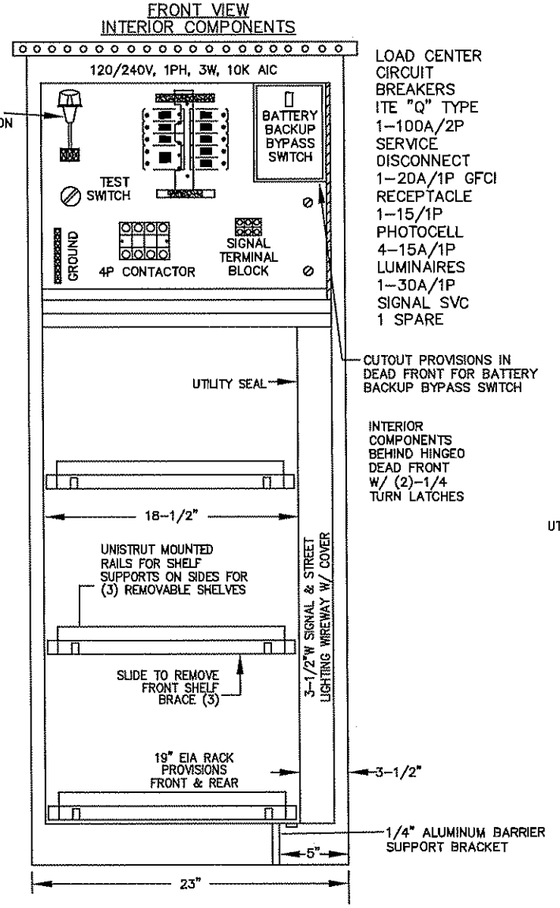
ANOKA COUNTY, MINNESOTA
CITY OF HAM LAKE

TRAFFIC SIGNAL SYSTEM
EQUIPMENT PAD DETAILS
CSAH 17–18 (LEXINGTON AVE NE)
AT CSAH 18 (CROSSTOWN BLVD NE)

FILE NO. ANOKC 122264
SIGNAL SHEET 2 OF 8

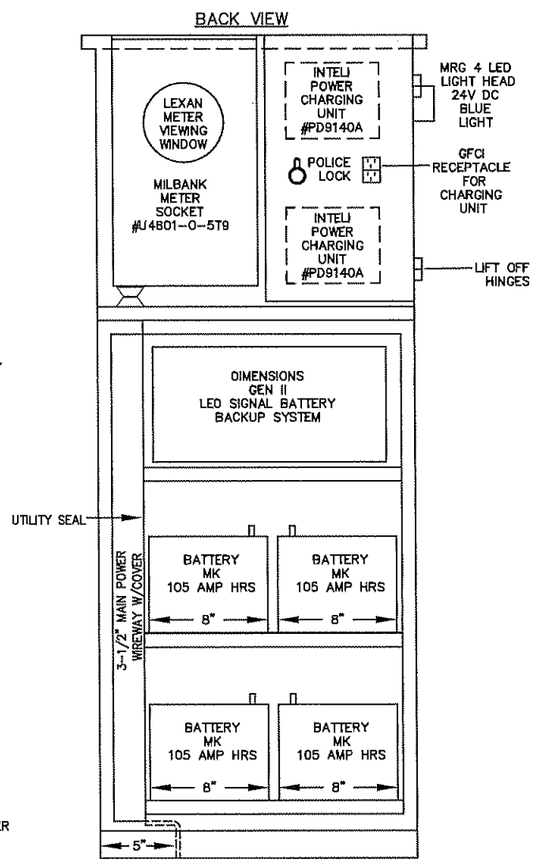


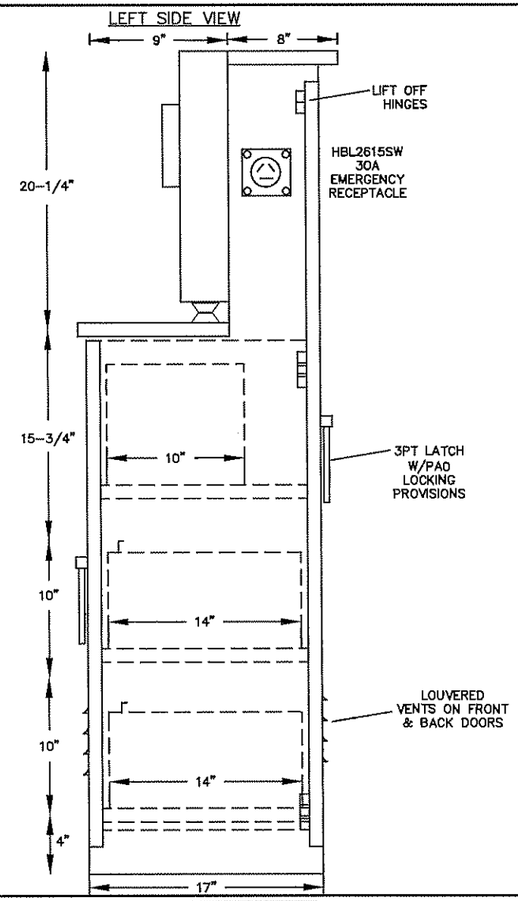


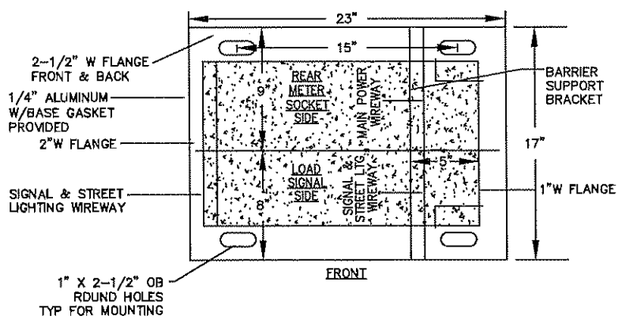
LOAD CENTER CIRCUIT BREAKERS
ITE "Q" TYPE
1-100A/2P SERVICE DISCONNECT
1-20A/1P GFCI RECEPTACLE
1-15/1P PHOTOCELL
4-15A/1P LUMINAIRES
1-30A/1P SIGNAL SVC
1 SPARE

CUTOUT PROVISIONS IN DEAD FRONT FOR BATTERY BACKUP BYPASS SWITCH

INTERIOR COMPONENTS BEHIND HINGED DEAD FRONT W/ (2)-1/4 TURN LATCHES



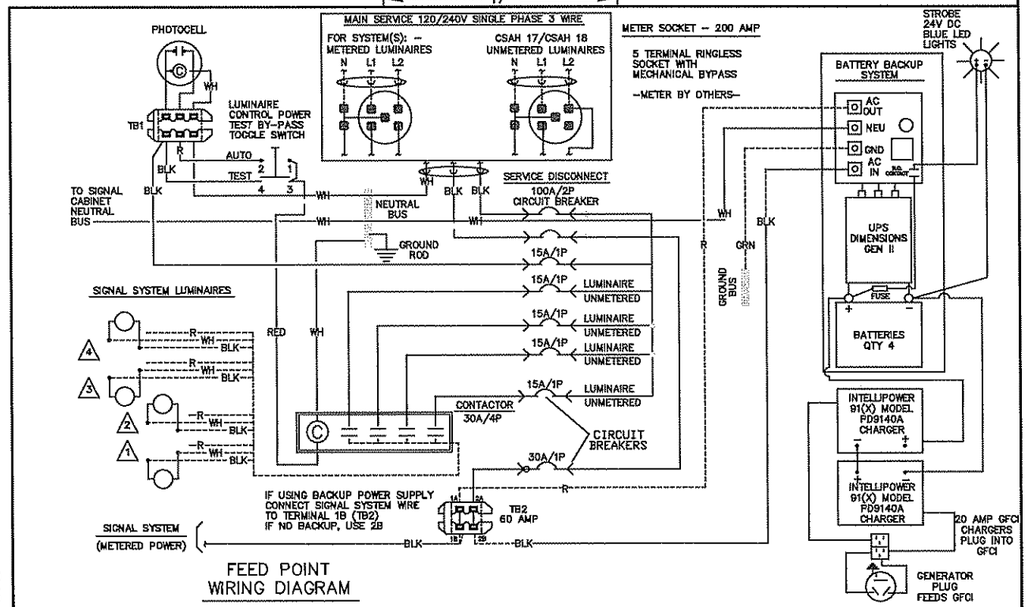




CABINET CONSTRUCTION

-NEMA 3R
-1/8" ALUMINUM 5052-H32
-ANODIZED 30 MINUTE CLEAR
-NEOPRENE GASKETED DOORS
-NON-CORRODING HARDWARE
-ETL LISTED IN ACCORDANCE W/UL508A

SEE SPECIAL PROVISIONS AND STATMENT OF ESTIMATED QUANTITIES REGARDING SEPARATE PAY ITEM FOR FURNISHING & INSTALLING NEW BATTERY BACK-UP SIGNAL SERVICE CABINET.



FEED POINT WIRING DIAGRAM

S.P. 002-617-020
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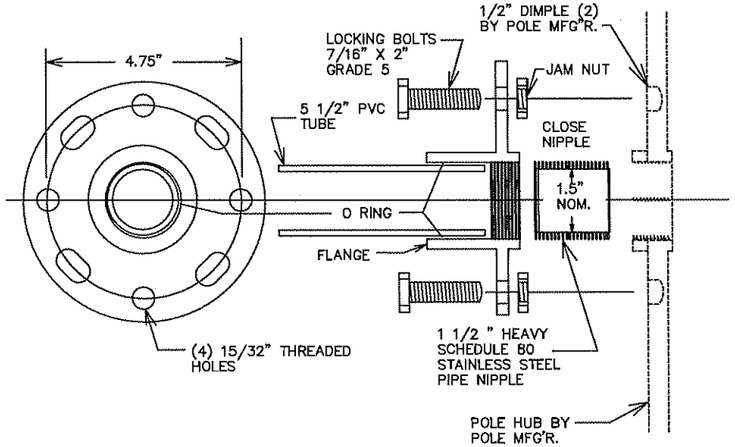
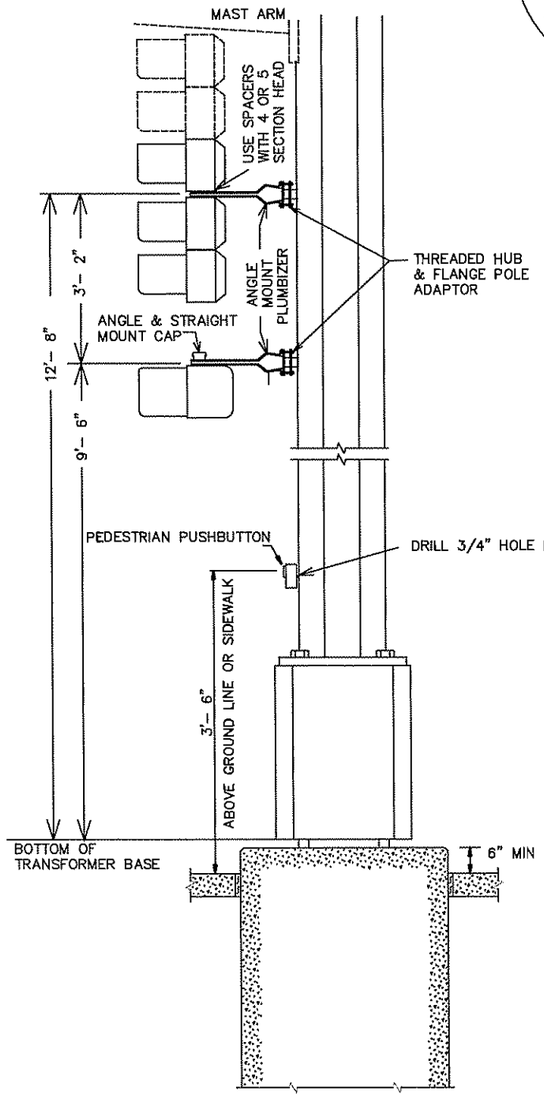
ANOKA COUNTY, MINNESOTA
CITY OF HAM LAKE

TRAFFIC SIGNAL SYSTEM
SERVICE CABINET DETAILS
CSAH 17-18 (LEXINGTON AVE NE)
AT CSAH 18 (CROSSTOWN BLVD NE)

FILE NO. ANOKC 122264
SIGNAL SHEET 3 OF 8
52/70

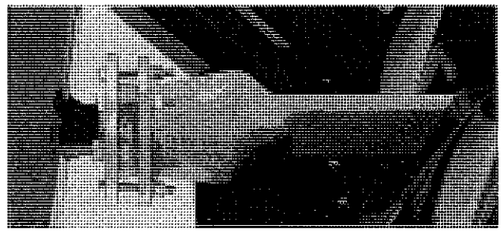


THREADED HUB AND FLANGE POLE ADAPTOR



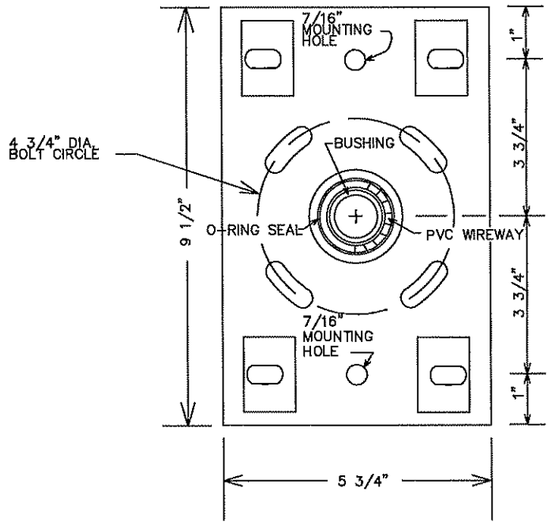
TYPICAL SIGNAL POLE MOUNTING

NOT TO SCALE

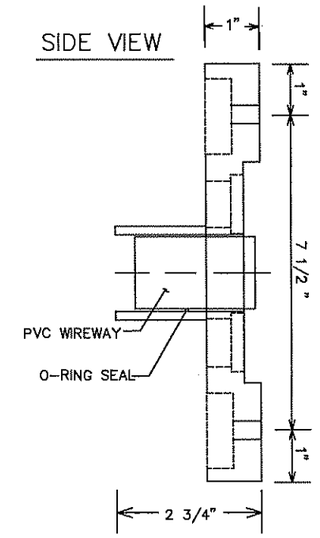


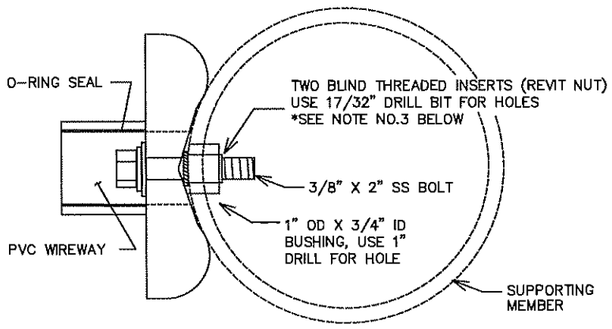
NOTE:

1. ALL THREADED SURFACES TO BE COATED WITH ANTI-SEIZE COMPOUND.
2. USE SIGNAL HEAD MOUNTED SPACERS FOR 4 & 5 SECTION POLY HEADS.
3. SEE STANDARD PLATE NUMBER 8123 FOR ADDITIONAL SIGNAL POLE DETAILS.

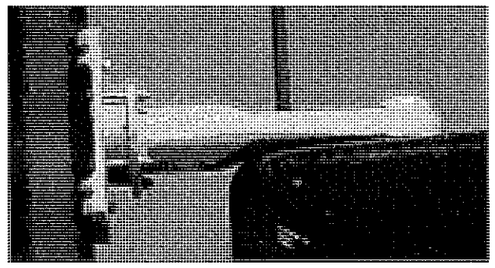


BOLT ON HUB & FLANGE



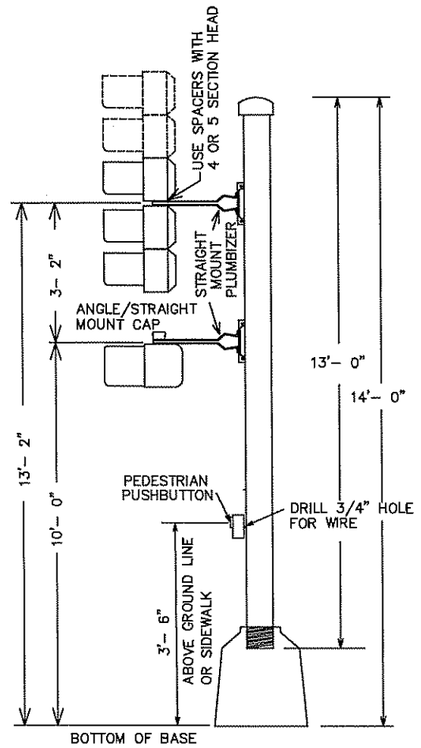


TOP VIEW



NOTE:

1. ALL THREADED SURFACES TO BE COATED WITH ANTI-SEIZE COMPOUND.
2. USE SIGNAL HEAD MOUNTED SPACERS FOR 4 & 5 SECTION POLY HEADS.
3. BLIND THREADED INSERTS (RIVET NUT) MUST BE INSTALLED USING MANUFACTURERS SPECIFIC INSTALLATION TOOL. NO OTHER METHOD OF INSTALLATION IS ACCEPTABLE.
4. SEE STANDARD PLATE NUMBER 8122 FOR ADDITIONAL PEDESTAL POLE DETAILS.



TYPICAL PEDESTAL MOUNTING

NOT TO SCALE

S.P. 002-617-020
S.A.P. 197-020-003

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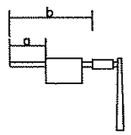
ANOKA COUNTY, MINNESOTA
CITY OF HAM LAKE

TRAFFIC SIGNAL SYSTEM
ONE WAY POLE MOUNT DETAILS
CSAH 17-18 (LEXINGTON AVE NE)
AT CSAH 18 (CROSSTOWN BLVD NE)

FILE NO. ANOKC 122264
SIGNAL SHEET 4 OF 8
53/70

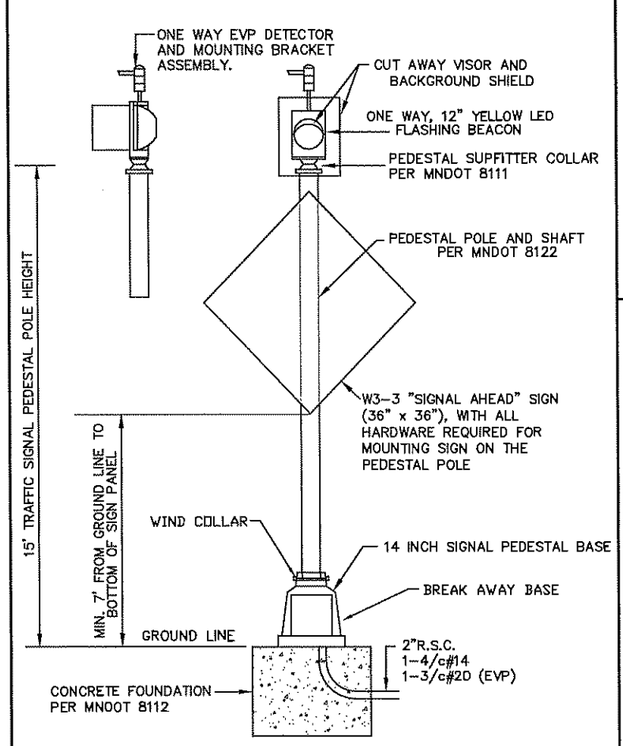
MAST ARM MOUNTED SIGNS							
SIGN PANELS – TYPE D (FURNISH AND INSTALL)							
SIGN PANEL	SIZE (inches)	NO. REQ.	BRACKETS PER SIGN	BRACKET SPACING (**)	AREA (sq.ft.) PER SIGN	POLE NO.	a
D–1	156x24	1	5	–	26.00	2	15'
D–2	126x24	1	5	–	21.00	3	8'
D–3	156x24	1	5	–	26.00	4	8'
	TOTALS	3			73.00		



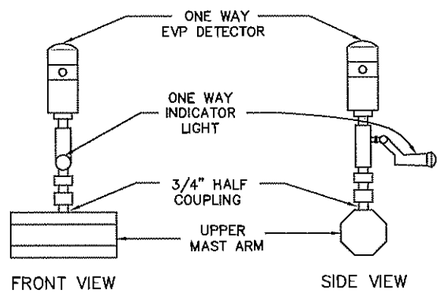
(**)= SPACING BETWEEN STIFFENERS SHALL NOT EXCEED 36 INCHES AND SHALL BE UNIFORMLY SPACED. SEE SPECIAL PROVISIONS AND STANDARD SIGNS MANUAL, PAGE 105A (REVISION DATE: 7/08/07) FOR BRACKET SPACING REQUIREMENTS.

SIGNAL SYSTEM MOUNTED SIGNS								
SIGN PANELS – TYPE C (FURNISH AND INSTALL)								
SIGN PANEL	SIZE (in.)	NO. REQ.	NO. POSTS PER SIGN	POST SPACING (in.)	SQ. FT. PER SIGN	POLE NO.	a	PANEL LEGEND
R9–3	18x18	2	①	–	2.25	1,2	–	NO PEDESTRIAN CROSSING (SYMBOL)
R10–X12	42x48	1	2	–	14.00	2	1'	LEFT TURN YIELD ON FLASHING YELLOW ARROW
W3–3	36x36	1	②	–	9.00	6	–	SIGNAL AHEAD
TOTALS		4			27.50			

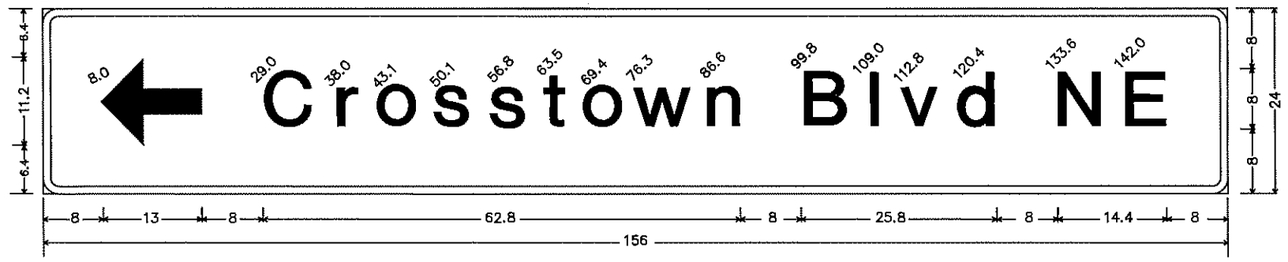
PEDESTAL POLE MOUNTED EVP/ADVANCE FLASHER



EVP DETECTOR AND LIGHT MOUNTING DETAIL ON MAST ARM

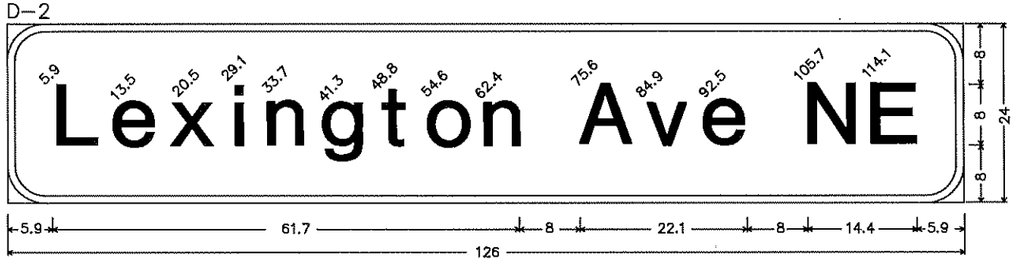


D–1



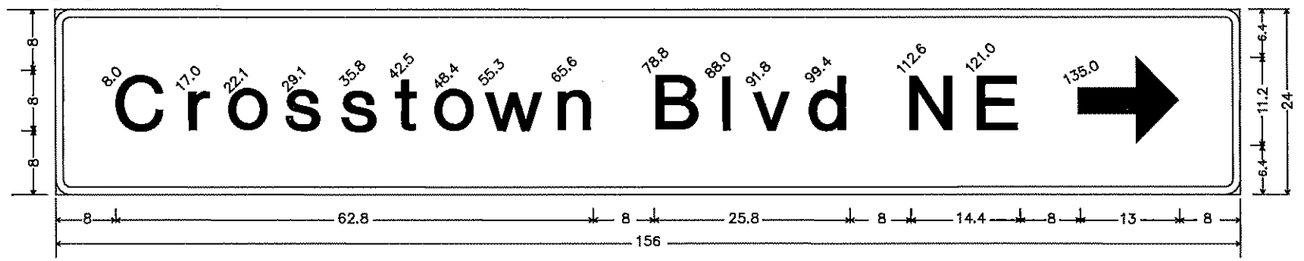
3.0" Radius, 1.0" Border, White on Green
Arrow 5 – 13.0" 180°, (Crosstown Blvd NE) E Mod.

D–2



3.0" Radius, 1.0" Border, White on Green
(Lexington Avenue NE) E Mod;

D–3



3.0" Radius, 1.0" Border, White on Green
(Crosstown Blvd NE) E Mod., Arrow 5–13.0" D"

GENERAL SIGNING NOTES:

1) COLOR FOR ALL TYPE D SIGNS SHOWN SHALL BE WHITE LEGEND AND BORDER ON GREEN BACKGROUND, FULLY REFLECTORIZED.
2) CORNERS EXTENDING BEYOND THE BORDER SHALL NOT BE TRIMMED.
3) FOR STRUCTURAL DETAILS OF MAST ARM MOUNTED SIGNS, SEE STANDARD SIGNS MANUAL, PAGE 1D5A (REVISION DATE: 7/08/07), AND SPECIAL PROVISIONS.
4) SEE STANDARD SIGNS MANUAL FOR DETAILED DRAWINGS OF TYPE C SIGN PANELS.
5) FURNISHING AND INSTALLING TYPE C AND D SIGNS AS SHOWN SHALL BE INCLUDED UNDER ITEM NO. 2565 (TRAFFIC CONTROL SIGNAL SYSTEM). SEE SPECIAL PROVISIONS.
6) ALL NEW TYPE C AND D SIGN PANELS SHOWN SHALL BE FABRICATED USING HP SHEETING. SEE SPECIAL PROVISIONS.
7) ① = INSTALL SIGN PANEL ON TRAFFIC SIGNAL MAST ARM POLE.
8) ② = INSTALL SIGN PANEL ON TRAFFIC SIGNAL PEDESTAL POLE.
9) SEE STANDARD SIGNS MANUAL FOR ARROW DETAILS.

S.P. 002–617–020
S.A.P. 197–020–003

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ANOKA COUNTY, MINNESOTA
CITY OF HAM LAKE

TRAFFIC SIGNAL SYSTEM SIGNING AND MISCELLANEOUS DETAILS
CSAH 17–18 (LEXINGTON AVE NE) AT CSAH 18 (CROSSTOWN BLVD NE)

FILE NO. ANOKC 122264
SIGNAL SHEET 5 OF 8

NOTES:

1) THE EXACT LOCATION OF HANDHOLES, POLES, LOOP DETECTORS AND EQUIPMENT PAD SHALL BE DETERMINED IN FIELD BY ENGINEER.
2) SEE SPECIAL PROVISIONS FOR COUNTY FURNISHED MATERIALS.
3) NEW HANDHOLES SHALL BE PVC HANDHOLES WITH METAL FRAMES AND COVERS.
4) A 3/4" HALF COUPLING, 3/4" PIPE NIPPLE AND CONDUIT OUTLET BODY SHALL BE FURNISHED AND INSTALLED 6 FEET FROM THE END OF EACH MAST ARM (FOR EVP).
5) THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING CONNEXUS ENERGY TO ARRANGE FOR THE POWER CONNECTION (SHANNON McDONALD, TELEPHONE 763-323-2695).
6) THE CONTRACTOR SHALL LOCATE AND VERIFY INPLACE UTILITIES PRIOR TO COMMENCING WORK.
7) SEE SPECIAL PROVISIONS AND DETAILS REGARDING SIGNS TO BE FURNISHED & INSTALLED BY CONTRACTOR (INCIDENTAL).
8) EACH PEDESTRIAN INDICATION SHALL BE ONE SECTION "FILLED" COUNTDOWN TIMER HAND/WALKING PERSON INDICATION.
9) ALL VEHICLE SIGNAL INDICATIONS, AND ALL PEDESTRIAN SIGNAL INDICATIONS SHALL BE LED.
10) EACH SIGNAL FACE SHALL HAVE BACKGROUND SHIELD.
11) SEE DETAILS, SPECIAL PROVISIONS, AND STATEMENT OF ESTIMATED QUANTITIES REGARDING BATTERY BACK-UP SIGNAL SERVICE CABINET TO BE FURNISHED AND INSTALLED BY CONTRACTOR (SEPARATE FROM ITEM NO. 2565 FOR THIS SIGNAL SYSTEM).
12) LOOP DETECTOR WIRES SHALL BE CROSS-LINKED POLYETHYLENE (XLP) IN 3/4" N.M.C. SEE SPECIAL PROVISIONS.
13) ALL VEHICLE AND PEDESTRIAN SIGNAL HOUSINGS, BACKGROUND SHIELDS, AND VISORS SHALL BE FABRICATED USING BLACK POLYCARBONATE MATERIALS. SEE SPECIAL PROVISIONS.
14) (EVP) DENOTES ITEMS TO BE FURNISHED & INSTALLED BY BY CONTRACTOR UNDER ITEM NO. 2565 (EMERGENCY VEHICLE PREEMPTION SYSTEM). SEE ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.

N.M.C. LOOP DETECTORS			
NUMBER	SIZE (FT.)	LOCATION	FUNCTION
D2-1	6x6	475'	1
D4-1	6x6	475'	3,8
D4-2	6x6	250'	1
D4-3	6x6	250'	1
D4-4	2-6x6	0' & 15'	7
D4-5	2-6x6	0' & 15'	7
D5-1	2-6x6	10' & 40'	1
D5-2	2-6x6	0' & 25'	1
D6-1	6x6	475'	1

NOTE: LOCATION = DISTANCE FROM STOP BAR TO FRONT OF LOOP DETECTOR.

LOOP DETECTORS FUNCTIONS:
1) CALL AND EXTEND
3) EXTEND ONLY
7) DELAYED CALL, IMMEDIATE EXTEND
8) CARRY OVER (STRETCH)

MATCH LINE "B" - SEE NEXT SHEET

20 0 20 40
scale feet

N

CSAH 18 (CROSSTOWN BLVD NE) (55 mph)

CSAH 17 (LEXINGTON AVE NE) (55 mph)

CSAH 18 (LEXINGTON AVE NE) (55 mph)

MATCH LINE "A" - SEE NEXT SHEET

MATCH LINE "C" - SEE NEXT SHEET

(A) INSTALL CONTROLLER AND CABINET (FURNISHED BY COUNTY)
EQUIPMENT PAD FOUNDATION
BATTERY BACK-UP SIGNAL SERVICE CABINET

BETWEEN CONTROLLER CABINET AND SERVICE CABINET:
METERED SIGNAL SERVICE
2"R.S.C.
3-1/c#6

CONTROLLER CABINET TO H.H.1:
4"R.S.C.
3-12/c#14
1-4/c#14
1-3/c#14 (EVP)
2-3/c#20 (EVP)
4-2/c#14
2-1/c#6 (GRD)

CONTROLLER CABINET TO H.H.14:
4"R.S.C.
2-12/c#14
1-3/c#14 (EVP)
1-3/c#20 (EVP)
7-2/c#14
1-1/c#6 (GRD)
4"R.S.C.
2-12/c#14
1-3/c#14 (EVP)
1-3/c#2D (EVP)
4-2/c#14
1-1/c#6 (GRD)

SERVICE CABINET TO H.H.1:
2"R.S.C.
UNMETERED STREET LIGHT SERVICE
1-3/c#14 (LUM)
SERVICE CABINET TO H.H.14:
2"R.S.C.
UNMETERED STREET LIGHT SERVICE
1-3/c#14 (LUM)
STUB OUT 2"R.S.C. FROM SERVICE CABINET TO EAST (FOR POWER CONNECTION BY CONNEXUS)
STUB OUT 1"R.S.C. FROM CONTROLLER CABINET (FOR FUTURE PHONE LINE BY OTHERS)
STUB OUT 3"R.S.C. FROM CONTROLLER CABINET TO EAST (THREAD AND CAP-FOR FUTURE USE)

(B) INPLACE WOOD PDLE (S.O.P.)-TO BE RELOCATED BY OTHERS (CONNEXUS)

(1) PEDESTAL FOUNDATION
14' (min) PEDESTAL PDLE AND BASE
WIND COLLAR FOR PEDESTAL POLE
1-STRAIGHT MOUNT SIGNAL (5-2)
1-STRAIGHT MOUNT C.D. PED INDICATION (P6-1)
1-PEDESTRIAN PUSH BUTTON
1-R9-3 SIGN PANEL-FACING POLE 2
EXTEND INTO H.H.1:
3"R.S.C.
1-12/c#14
2-2/c#14
1-1/c#6 (GRD.)

(2) PA90 POLE FOUNDATION
TYPE PA90-A-30-D40-9 (DAVIT AT 350°)
LUMINAIRE-COBRAHEAD LED (SEE SPECIAL PROVISIONS)
1-ANGLE MOUNT SIGNAL-OVERHEAD AT 0'
1-STRAIGHT MOUNT SIGNAL-OVERHEAD AT 10'
2-ANGLE MOUNT SIGNALS-POLE MOUNTED 90° & 270°
1-R9-3 SIGN PANEL-FACING POLE 1
R10-X12 SIGN PANEL-ADJACENT TO 5-1
TYPE D SIGN PANEL-OVERHEAD (D-1)
ONE WAY EVP DETECTOR AND LED LIGHT (ø2,5) (EVP)
EXTEND INTO H.H.5:
3"R.S.C.
2-12/c#14
1-3/c#14 (EVP)
1-3/c#2D (EVP)
1-2/c#14
1-3/c#14 (LUM)
1-1/c#6 (GRD.)

(3) PA90 POLE FOUNDATION
TYPE PA9D-A-30
1-ANGLE MOUNT SIGNAL-OVERHEAD AT 0'
1-ANGLE MOUNT SIGNAL-POLE MOUNTED 0°
1-ANGLE MOUNT C.D. PED INDICATION-POLE MOUNTED 0°
1-PEDESTRIAN PUSH BUTTON
TYPE D SIGN PANEL-OVERHEAD (D-2)
ONE WAY EVP DETECTOR AND LED LIGHT (ø4) (EVP)
EXTEND INTO H.H.6:
3"R.S.C.
2-12/c#14
1-3/c#14 (EVP)
1-3/c#20 (EVP)
1-2/c#14
1-1/c#6 (GRD.)

(4) PA90 POLE FOUNDATION
TYPE PA9D-A-25-D4D-9 (DAVIT AT 350°)
LUMINAIRE-COBRAHEAD LED (SEE SPECIAL PROVISIONS)
1-ANGLE MOUNT SIGNAL-OVERHEAD AT 0'
1-ANGLE MOUNT SIGNAL-POLE MOUNTED 180°
2-ANGLE MOUNT C.D. PED INDICATIONS-POLE MOUNTED 90° & 180°
1-PEDESTRIAN PUSH BUTTON
TYPE D SIGN PANEL-OVERHEAD (D-3)
ONE WAY EVP DETECTOR AND LED LIGHT (ø6) (EVP)
EXTEND INTO H.H.10:
3"R.S.C.
2-12/c#14
1-3/c#14 (EVP)
1-3/c#20 (EVP)
1-2/c#14
1-3/c#14 (LUM)
1-1/c#6 (GRD.)

(5) PEDESTRIAN PUSH BUTTON STATION (4"R.S.C.)
1-PEDESTRIAN PUSH BUTTON
EXTEND INTO H.H.11:
2"R.S.C.
1-2/c#14

2"R.S.C. 3-2/c#14

2-4" CONDUITS
4-12/c#14
2-3/c#14 (EVP)
2-3/c#20 (EVP)
11-2/c#14
1-3/c#14 (LUM)
2-1/c#6 (GRD)

4"R.S.C.
4-12/c#14
2-3/c#14 (EVP)
2-3/c#20 (EVP)
5-2/c#14
1-3/c#14 (LUM)
2-1/c#6 (GRD)

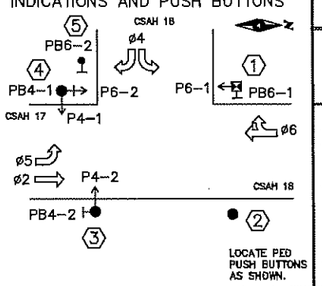
2"R.S.C.
1-4/c#14 (FLASHER)
1-3/c#20 (EVP)
1-2/c#14

4"CONDUIT
2-12/c#14
1-3/c#14 (EVP)
1-3/c#20 (EVP)
4-2/c#14
1-1/c#6 (GRD)

4"CONDUIT
2-12/c#14
1-3/c#14 (EVP)
1-3/c#20 (EVP)
1-2/c#14
1-3/c#14 (LUM)
1-1/c#6 (GRD)

2"R.S.C.
1-2/c#14

CONTROLLER PHASING, PEDESTRIAN INDICATIONS AND PUSH BUTTONS



SIGNAL SYSTEM OPERATIONS:
- SIGNAL SYSTEM FLASH MODE SHALL BE ALL RED.
- NORMAL OPERATION SHALL BE 4 PHASE, WITH PHASE 5 BEING A PROTECTED LEFT TURN PHASE (ALSO CAPABLE OF BEING FLASHING YELLOW ARROW-FLASH BY TIME OF DAY).
- VEHICLE SIGNAL PHASES 2 AND 6 SHALL OPERATE ON RECALL.

LED SIGNAL FACES				
SIGNAL FACE	ALL SIGNAL FACES SHALL BE 12".			
	R	Y	FYA	G
2-1, 2-2	●	●		●
4-1, 4-2, 4-3	●	●		●
5-1, 5-2	←	←	←	←
6-1, 6-2	●	●		●

FYA = FLASHING YELLOW ARROW.

S.P. 002-617-020
S.A.P. 197-020-003

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

NO.	BY	DATE	REVISIONS

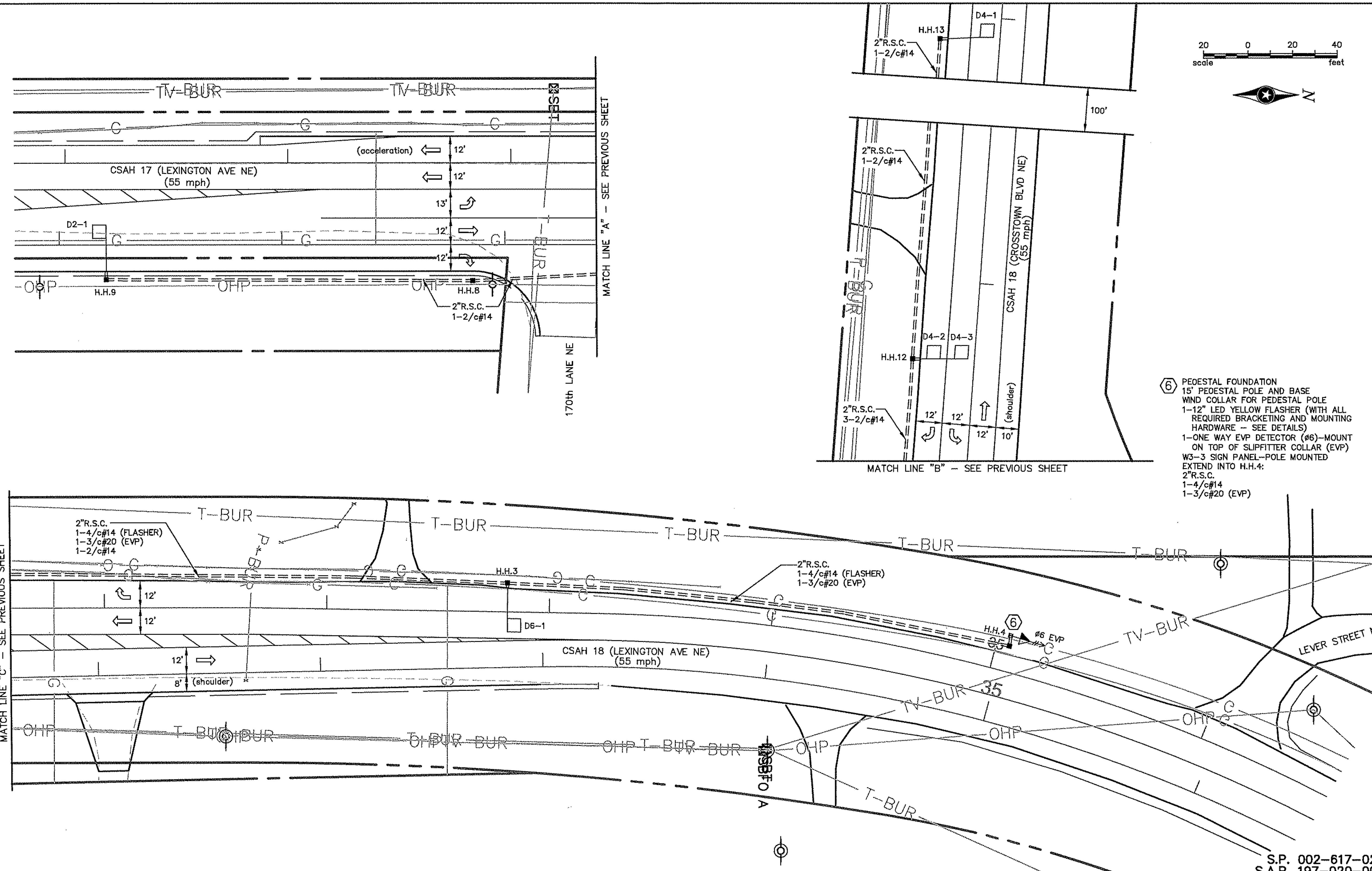
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
Date: January 29, 2013 Name: John M. Gray, PE Lic. No. 22457

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

ANOKA COUNTY, MINNESOTA
CITY OF HAM LAKE

TRAFFIC SIGNAL SYSTEM INTERSECTION LAYOUT
CSAH 17-18 (LEXINGTON AVE NE) AT CSAH 18 (CROSSTOWN BLVD NE)

FILE NO. ANOKC 122264
SIGNAL SHEET 6 OF 8
55/70



⑥ PEDESTAL FOUNDATION
15' PEDESTAL POLE AND BASE
WIND COLLAR FOR PEDESTAL POLE
1-12" LED YELLOW FLASHER (WITH ALL REQUIRED BRACKETING AND MOUNTING HARDWARE – SEE DETAILS)
1-ONE WAY EVP DETECTOR (ø6)-MOUNT ON TOP OF SLIPFITTER COLLAR (EVP)
W3-3 SIGN PANEL-POLE MOUNTED
EXTEND INTO H.H.4:
2"R.S.C.
1-4/c#14
1-3/c#20 (EVP)

S.P. 002-617-020
S.A.P. 197-020-003

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

NO.	BY	DATE	REVISIONS

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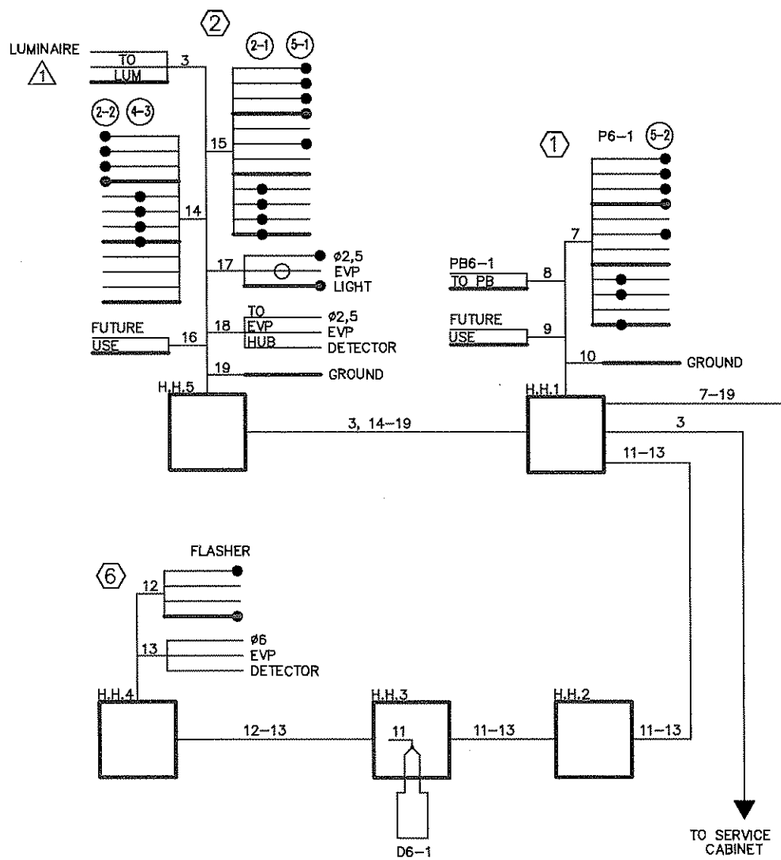
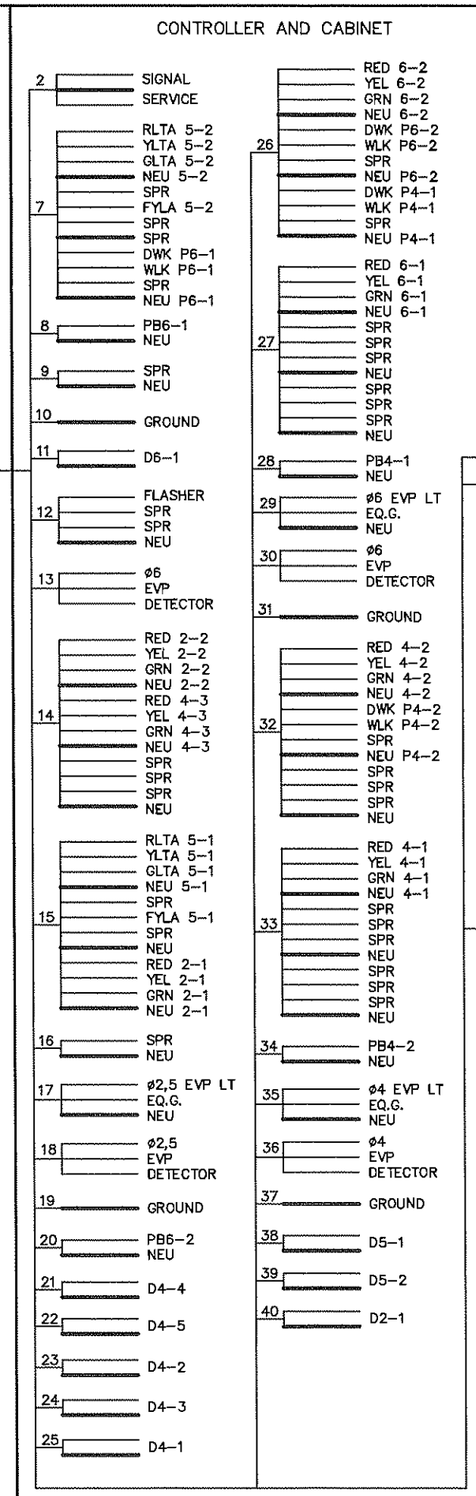
PHONE: (651) 490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

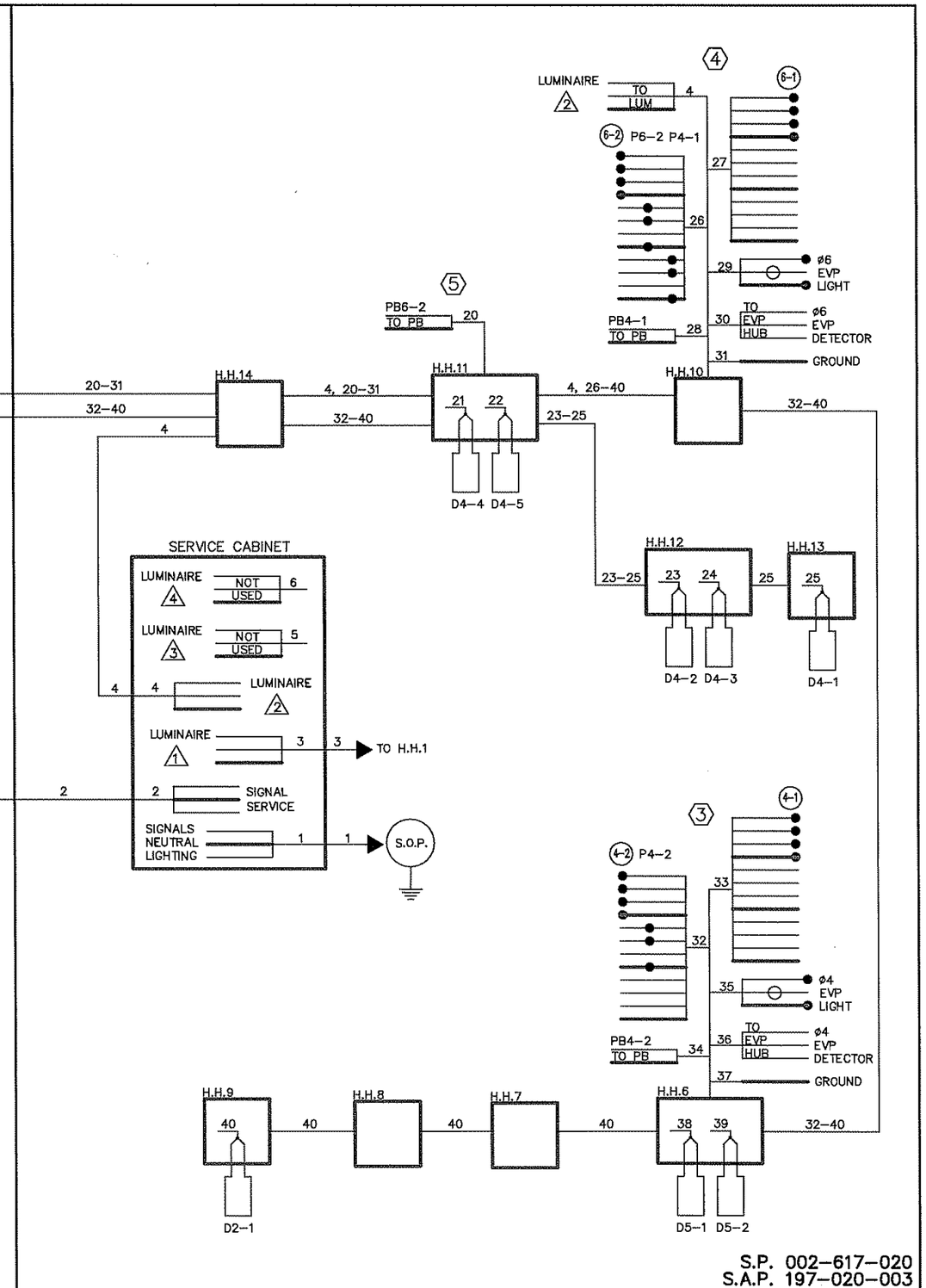
ANOKA COUNTY, MINNESOTA
CITY OF HAM LAKE

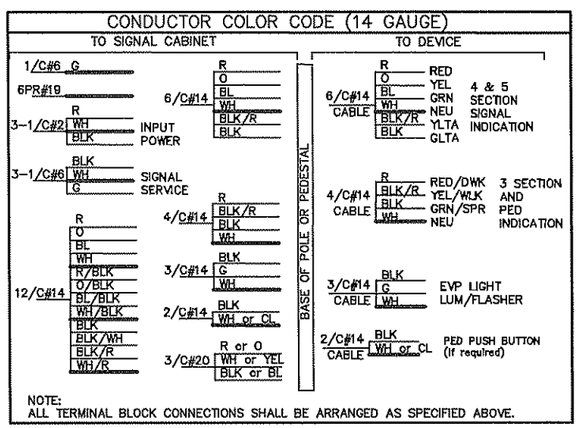
TRAFFIC SIGNAL SYSTEM
INTERSECTION LAYOUT
CSAH 17-18 (LEXINGTON AVE NE)
AT CSAH 18 (CROSSTOWN BLVD NE)

FILE NO. ANOKC 122264
SIGNAL SHEET 7 OF 8









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DESIGNER: JMG
CHECKED BY: JMG
DESIGN TEAM

NO.	BY	DATE	REVISIONS

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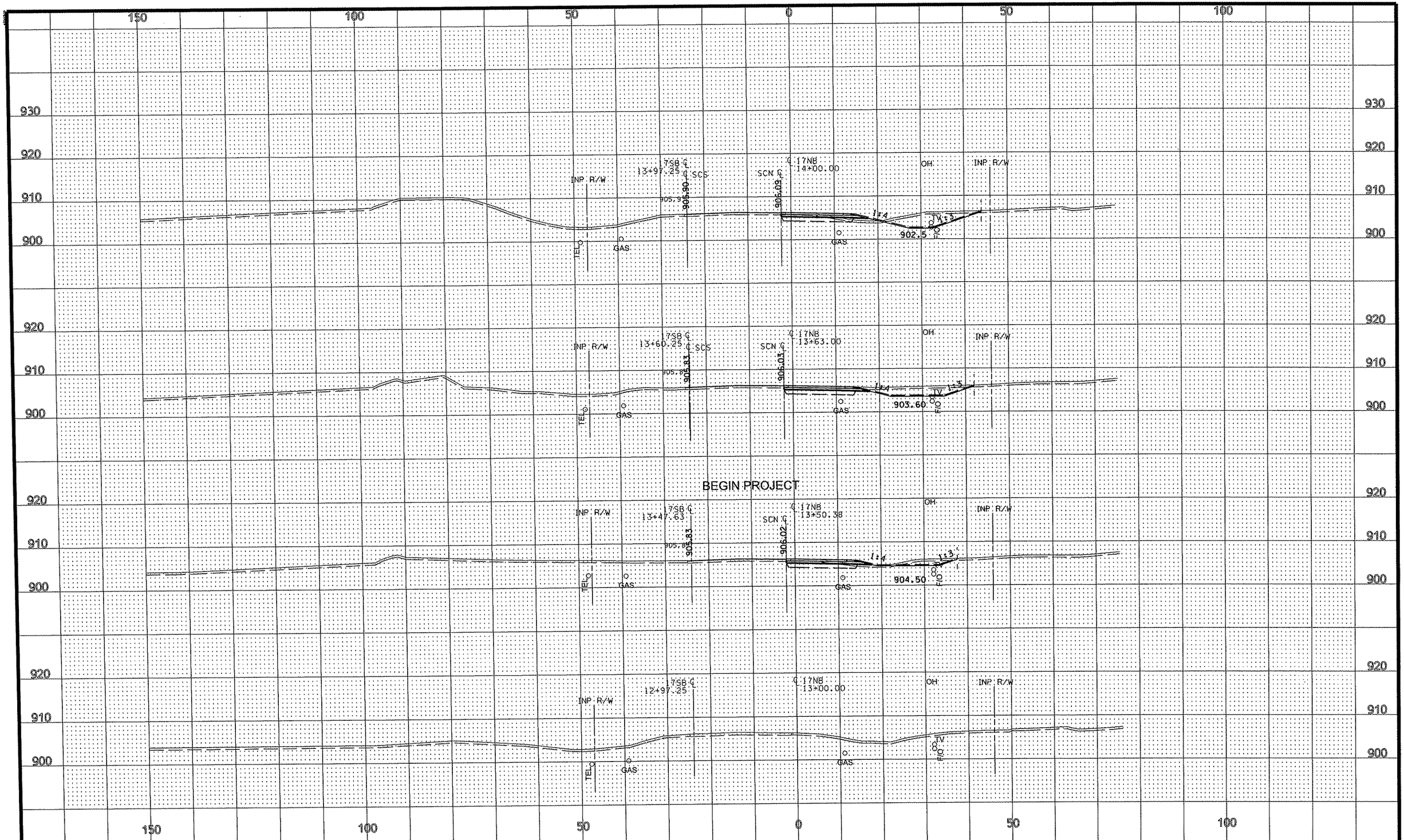
Date: January 29, 2013 Name: John M. Gray, PE Lic. No. 22457

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

ANOKA COUNTY, MINNESOTA
CITY OF HAM LAKE

TRAFFIC SIGNAL SYSTEM
FIELD WIRING DIAGRAM
CSAH 17-18 (LEXINGTON AVE NE)
AT CSAH 18 (CROSSTOWN BLVD NE)

FILE NO. ANOKC 122264
SIGNAL SHEET 8 OF 8
57/70



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ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

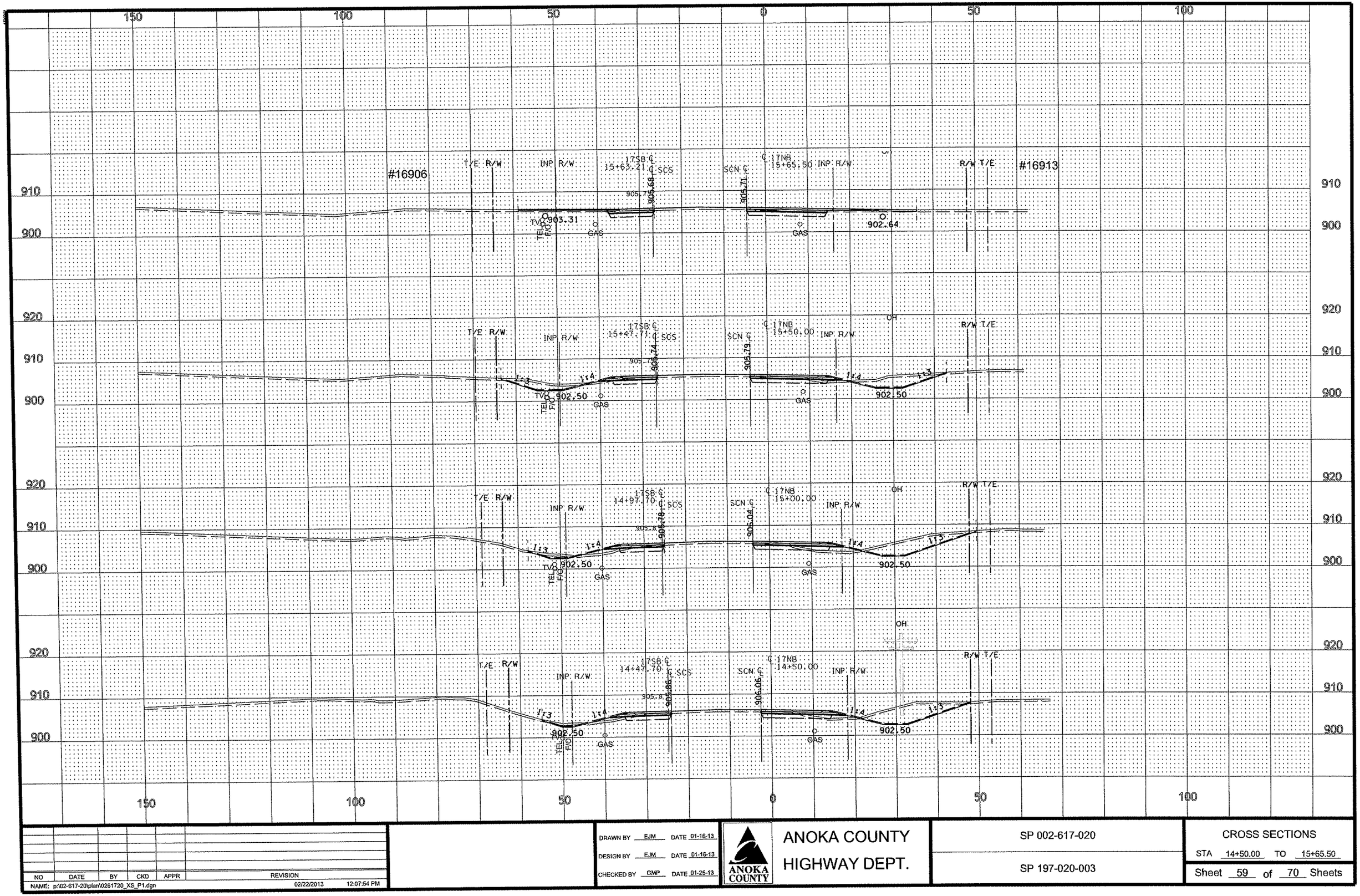
SP 002-617-020

SP 197-020-003

CROSS SECTIONS

STA _____ TO 14+00.00

Sheet 58 of 70 Sheets



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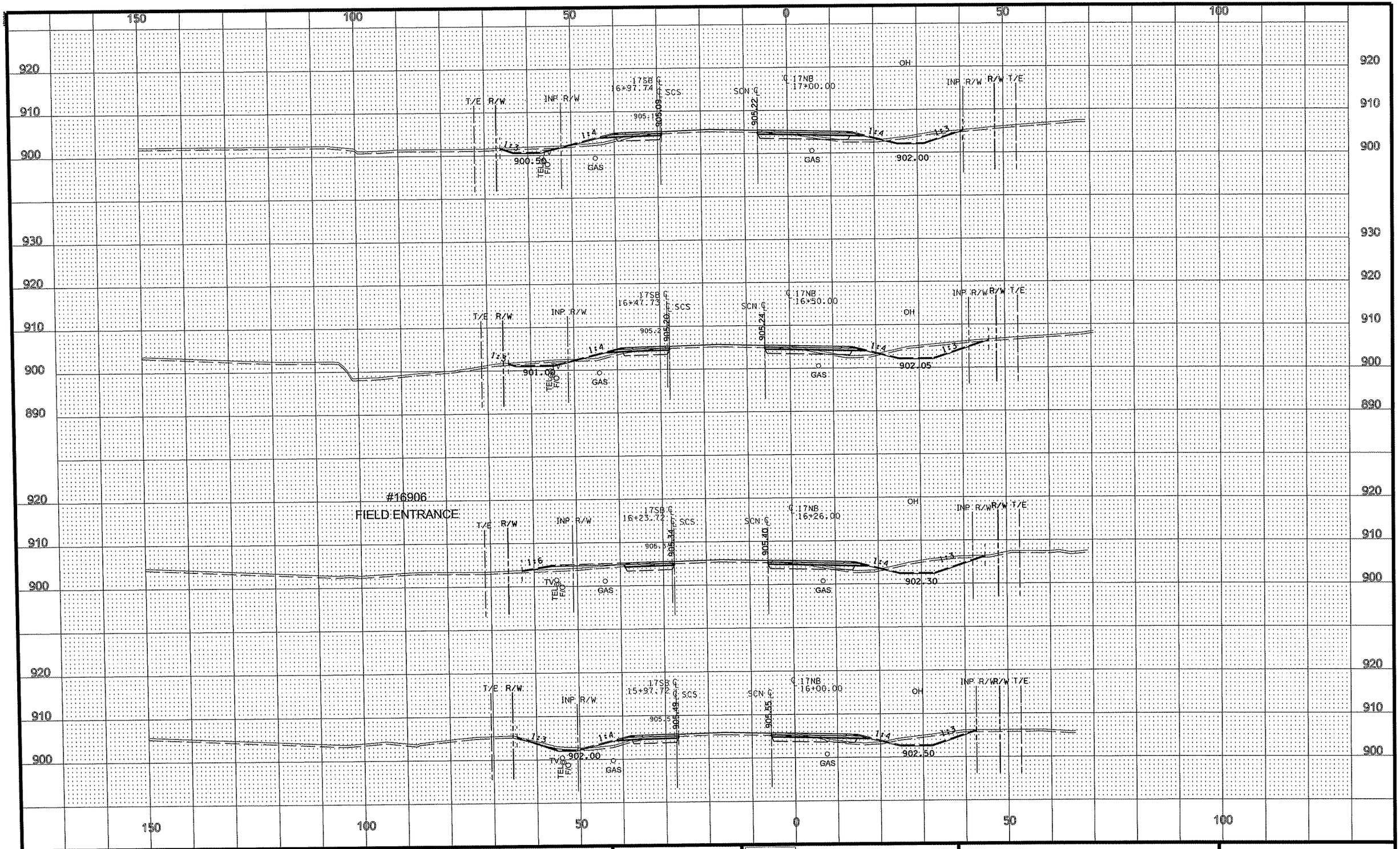
CROSS SECTIONS

STA 14+50.00 TO 15+65.50

Sheet 59 of 70 Sheets



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CROSS SECTIONS

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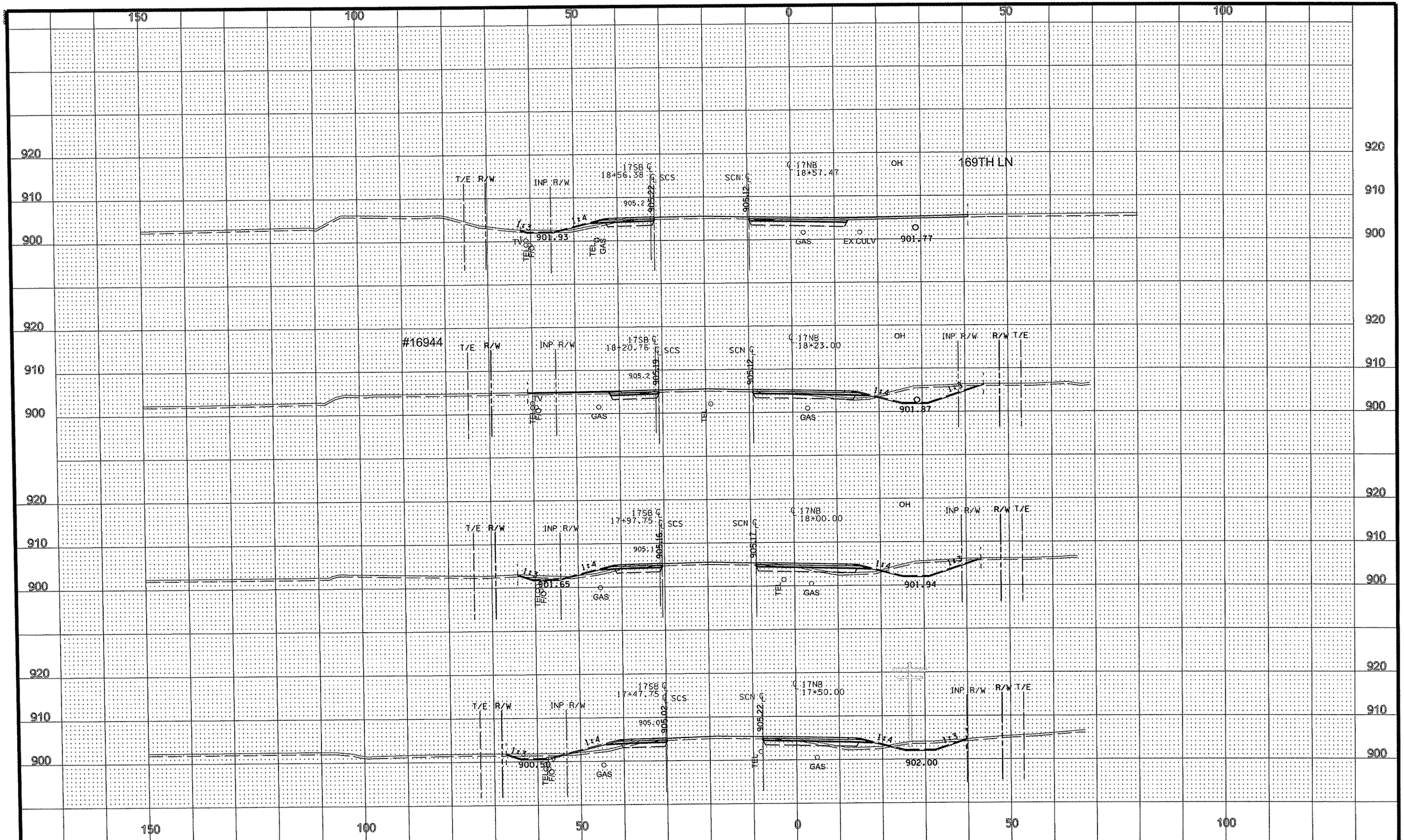
Sheet 60 of 70 Sheets



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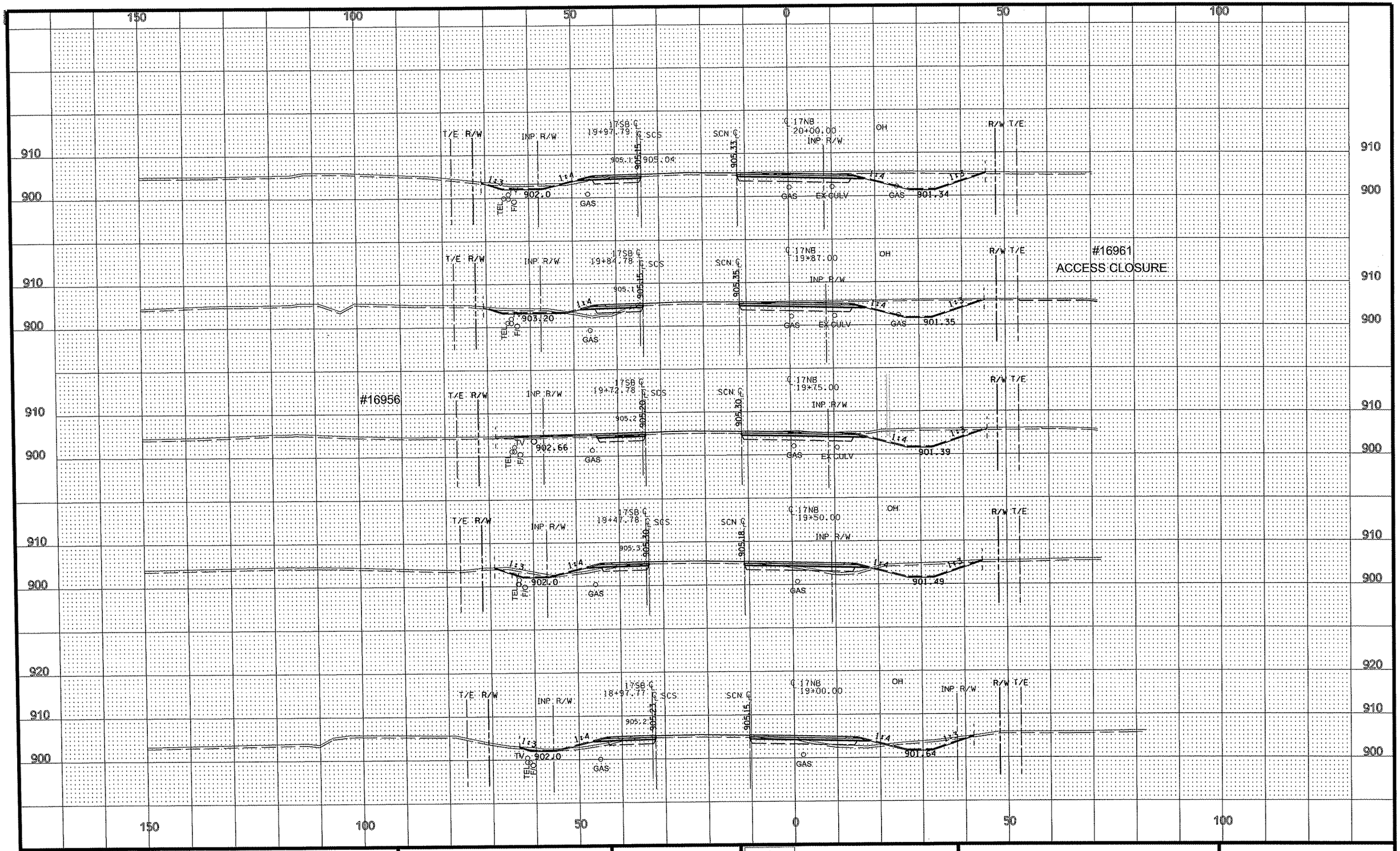
CROSS SECTIONS

STA 17+50.00 TO 18+57.47

Sheet 61 of 70 Sheets



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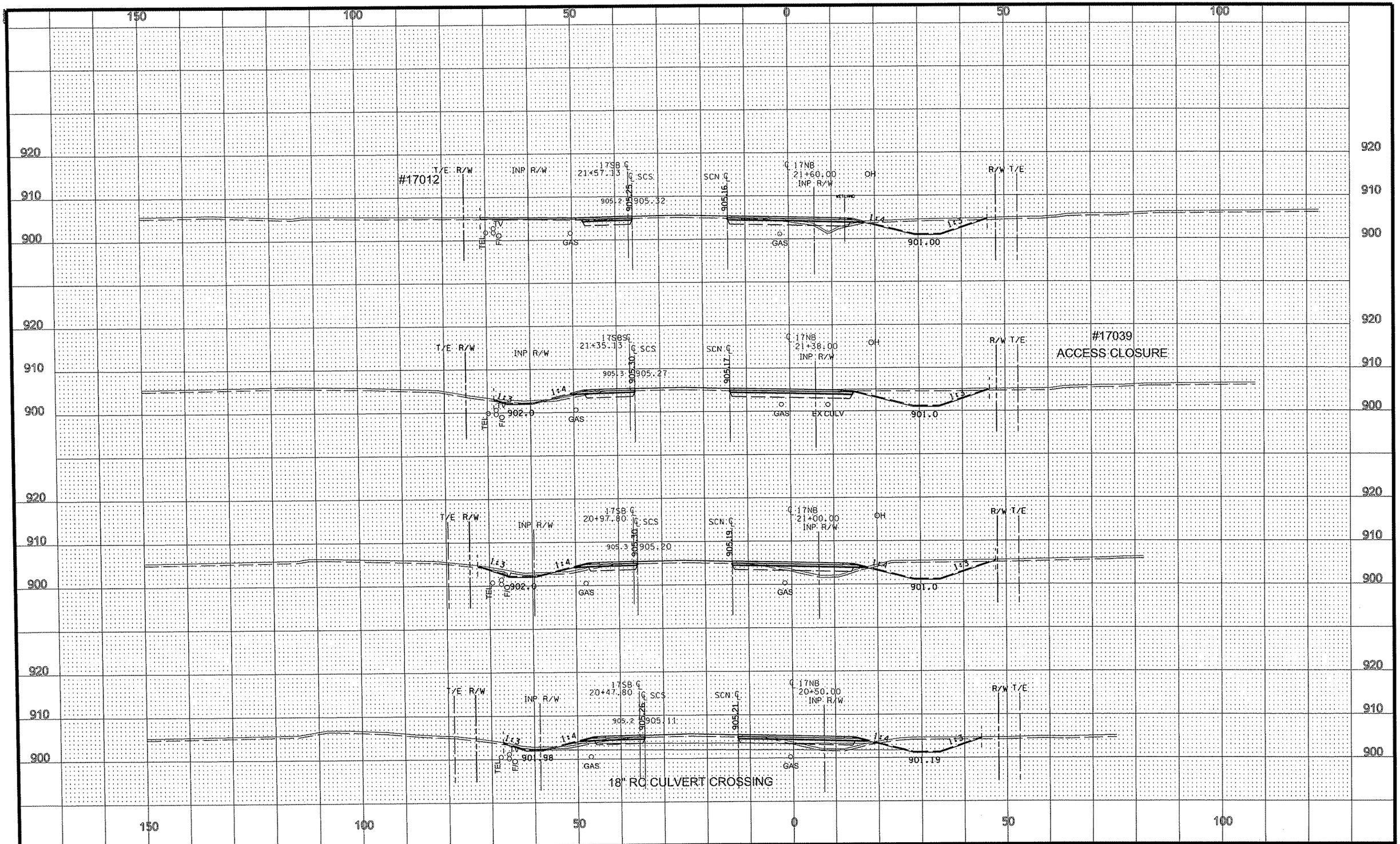
CROSS SECTIONS

STA 19+00.00 TO 20+00.00

Sheet 62 of 70 Sheets



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DESIGN BY EJM DATE 01-16-13

CHECKED BY GMP DATE 01-25-13

ANOKA COUNTY

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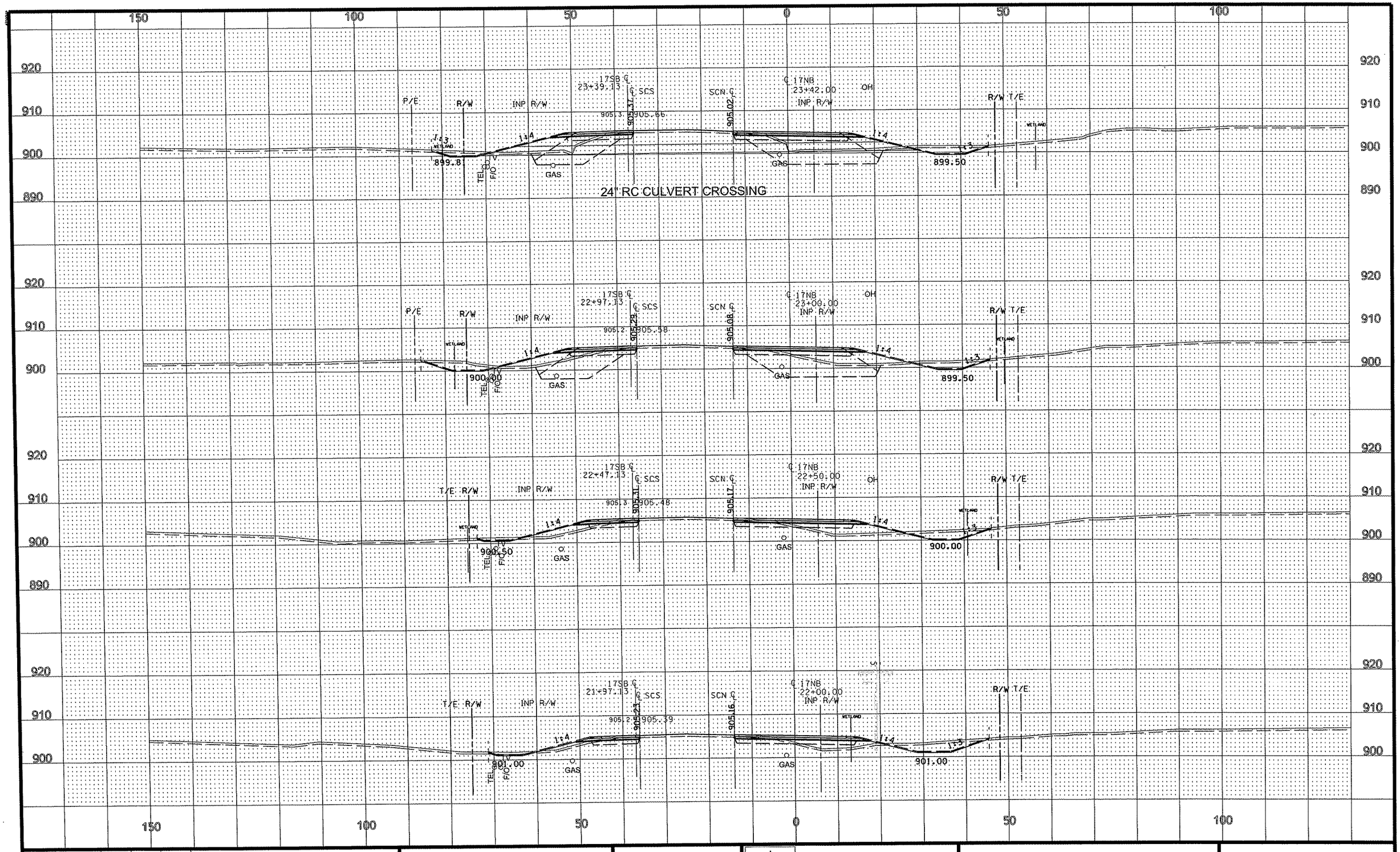
CROSS SECTIONS

STA 20+50.00 TO 21+60.00

Sheet 63 of 70 Sheets



PRELIMINARY - SUBJECT TO CHANGE

NO	DATE	BY	CKD	APPR	REVISION

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DESIGN BY EJM DATE 01-16-13
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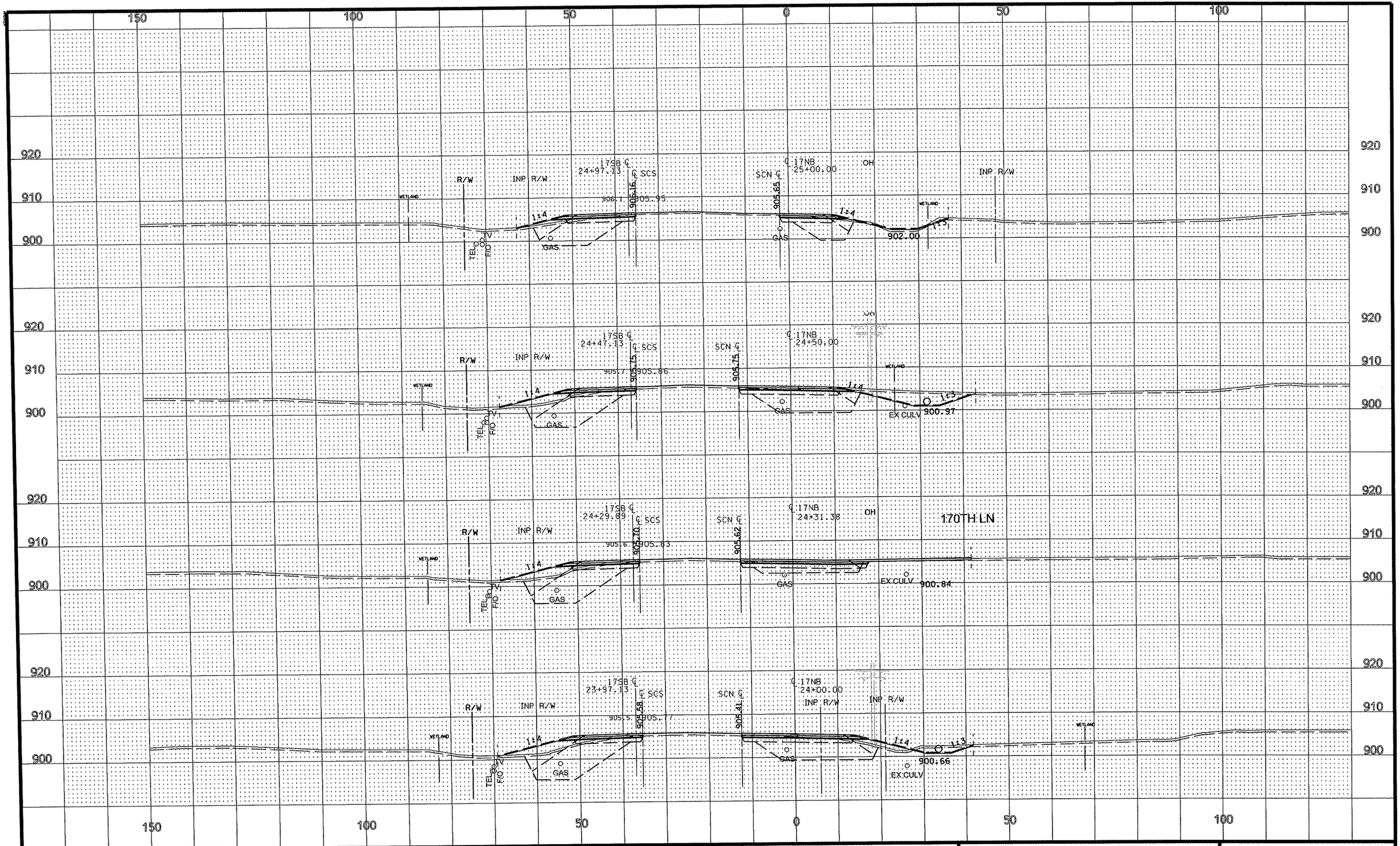
ANOKA COUNTY HIGHWAY DEPT.

SP 002-617-020

SP 197-020-003

CROSS SECTIONS
STA 22+00.00 TO 23+42.00

Sheet 64 of 70 Sheets



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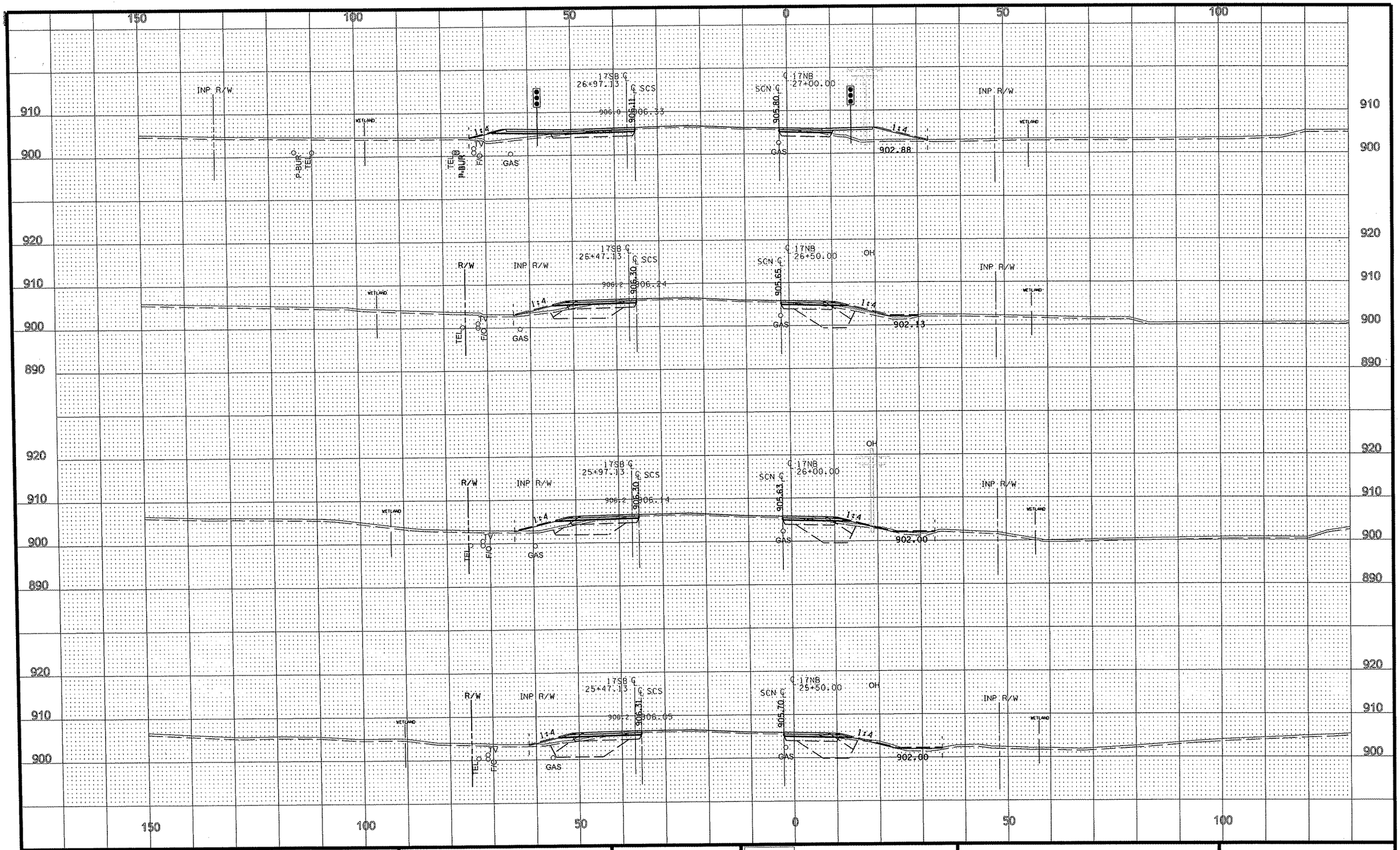
CHECKED BY GMP DATE 01-25-13

ANOKA COUNTY
HIGHWAY DEPT.

SP 002-617-020

SP 197-020-003

CROSS SECTIONS
STA 24+00.00 TO 25+00.00
Sheet 65 of 70 Sheets



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DESIGN BY EJM DATE 01-16-13

CHECKED BY GMP DATE 01-25-13

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

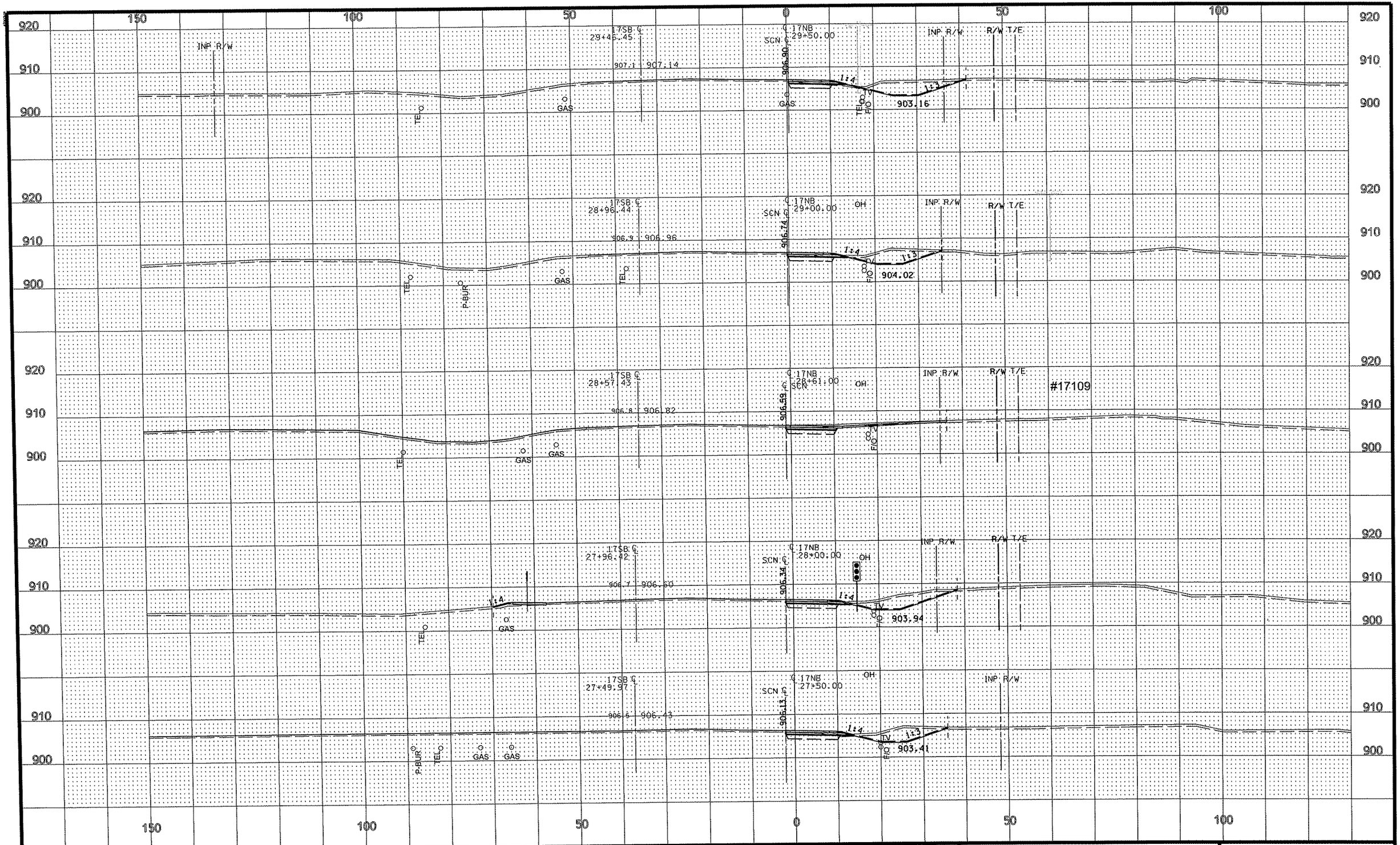
SP 002-617-020

SP 197-020-003

CROSS SECTIONS

STA 25+50.00 TO 27+00.00

Sheet 66 of 70 Sheets



NO	DATE	BY	CKD	APPR	REVISION

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DRAWN BY EJM DATE 01-16-13

DESIGN BY EJM DATE 01-16-13

CHECKED BY GMP DATE 01-25-13

ANOKA COUNTY HIGHWAY DEPT.

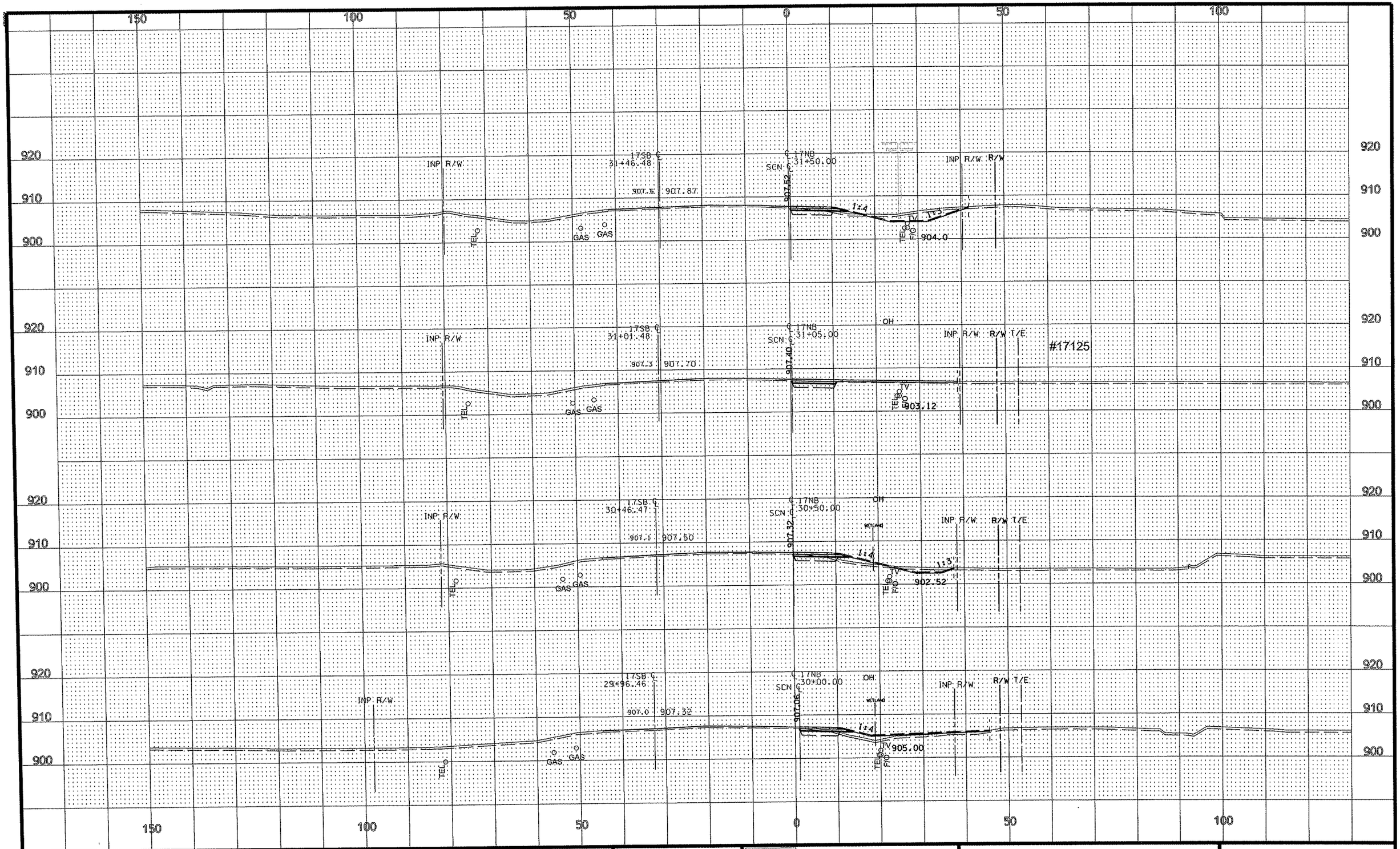
SP 002-617-020

SP 197-020-003

CROSS SECTIONS

STA 27+50.92 TO 29+50.00

Sheet 67 of 70 Sheets



NO	DATE	BY	CKD	APPR	REVISION

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DRAWN BY EJM DATE 01-16-13

DESIGN BY EJM DATE 01-16-13

CHECKED BY GMP DATE 01-25-13

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

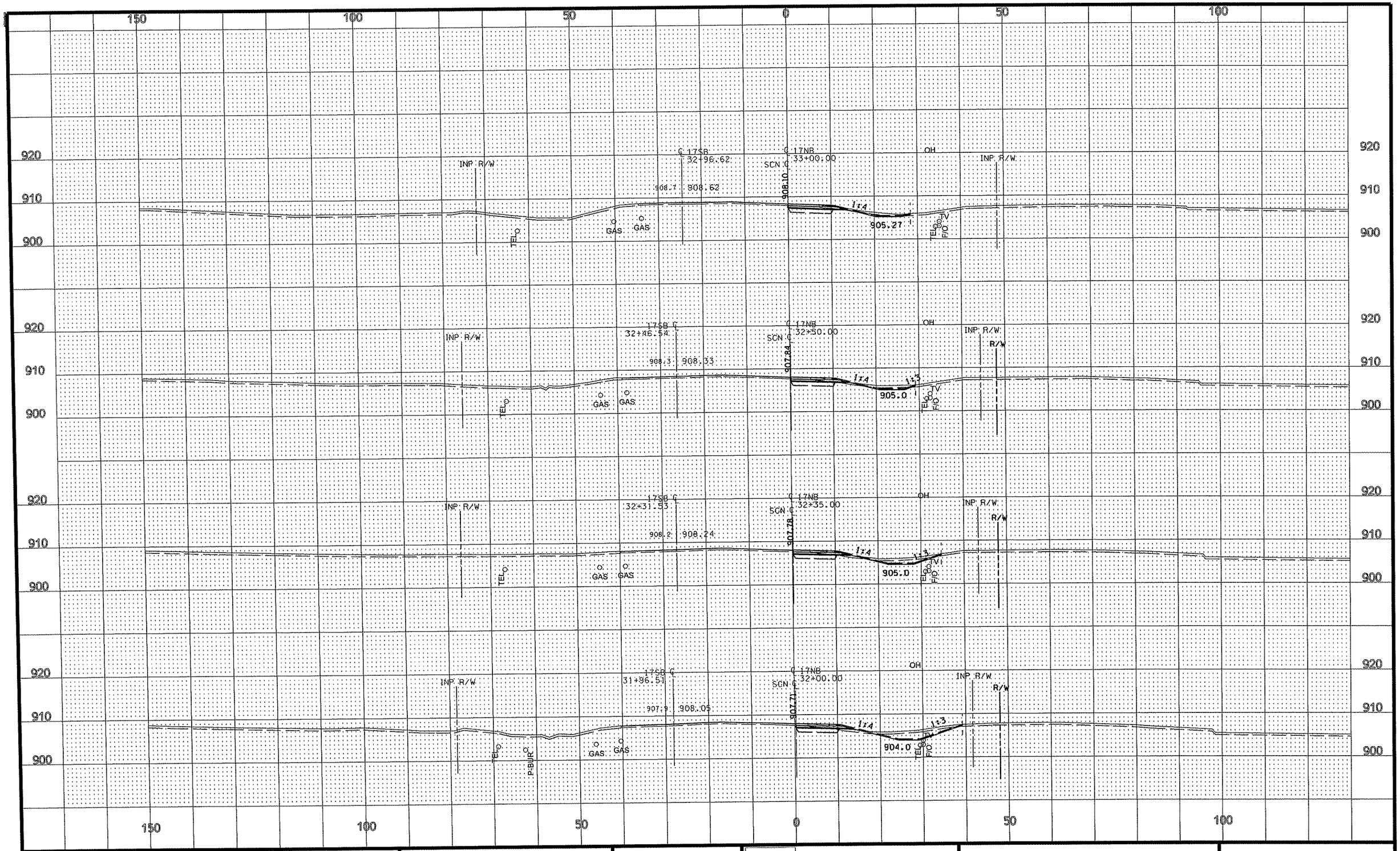
SP 002-617-020

SP 197-020-003

CROSS SECTIONS

STA 30+00.00 TO 31+50.00

Sheet 68 of 70 Sheets



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DESIGN BY EJM DATE 01-16-13

CHECKED BY GMP DATE 01-25-13

ANOKA COUNTY HIGHWAY DEPT.

SP 002-617-020

SP 197-020-003

CROSS SECTIONS

STA 32+00.00 TO 33+00.00

Sheet 69 of 70 Sheets

150 100 50 0 50 100

920 910 900

17SB ℄ 34+51.69 | ℄ 17NB 34+50.00 | OH | INP R/W | INP R/W | GAS GAS | TEL | TEL F/O TV

17SB ℄ 34+00.00 | ℄ 17NB 34+00.00 | INP R/W | INP R/W | 909.2 | 909.29 | GAS GAS | TEL | TEL F/O TV

17SB ℄ 33+48.32 | ℄ 17NB 33+50.00 | SCN ℄ | INP R/W | OH | INP R/W | 908.9 | 908.21 | GAS GAS | TEL | TEL F/O TV

END PROJECT

17SB ℄ 33+22.55 | ℄ 17NB 33+25.07 | SCN ℄ | INP R/W | OH | INP R/W | 908.8 | 908.84 | 908.18 | 1:4 | 905.53 | GAS GAS | TEL | TEL F/O TV

150 100 50 0 50 100

NO	DATE	BY	CKD	APPR	REVISION

NAME: p:\02-617-20\plan\0261720_XS_P1.dgn 02/22/2013 12:08:12 PM

DRAWN BY EJM DATE 01-16-13
DESIGN BY EJM DATE 01-16-13
CHECKED BY GMP DATE 01-25-13

ANOKA COUNTY HIGHWAY DEPT.

SP 002-617-020

SP 197-020-003

CROSS SECTIONS

STA 33+25.07 TO 34+50.00

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