MINNESOTA DEPARTMENT OF TRANSPORTATION
ANOKA COUNTY

CONSTRUCTION PLAN FOR GRADING, AGG.BASE, BITUMINOUS SURFACING, DRAINAGE AND SIGNAL SYSTEM

LOCATED ON CSAH 9 BETWEEN 385 FT NORTH OF 191ST AVE NW AND 240 FT NORTH OF 194TH AVE NW

LOCATED ON CSAH 22 BETWEEN 250 FT WEST OF ORCHID ST NW AND 410 FT WEST OF HEATHER ST NW

STATE PROJ. NO. SAP 002-609-016

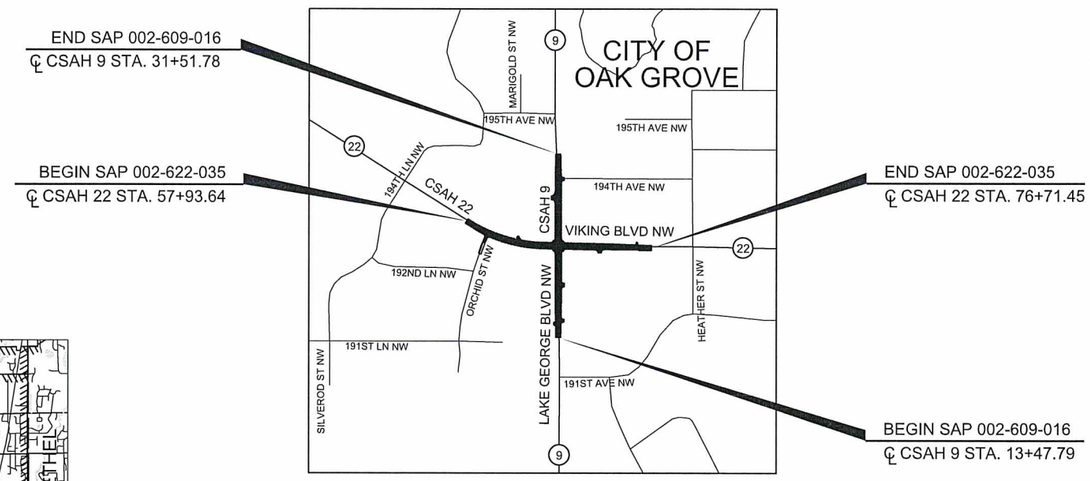
CSAH 9

GROSS LENGTH	1803.99	FEET	0.342	MILES
BRIDGES-LENGTH	0.00	FEET	0.000	MILES
EXCEPTIONS-LENGTH	0.00	FEET	0.000	MILES
NET LENGTH	1803.99	FEET	0.342	MILES

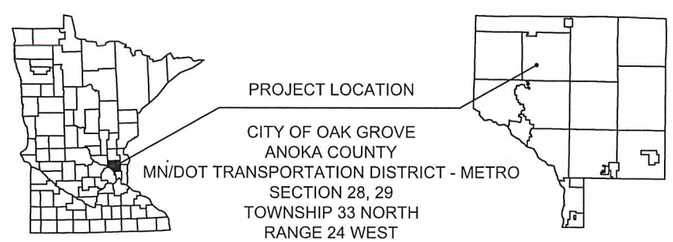
STATE PROJ. NO. SAP 002-622-035

CSAH 22

GROSS LENGTH	1877.81	FEET	0.356	MILES
BRIDGES-LENGTH	0.00	FEET	0.000	MILES
EXCEPTIONS-LENGTH	0.00	FEET	0.000	MILES
NET LENGTH	1877.81	FEET	0.356	MILES



PROJECT LOCATION



PROJECT LOCATION

CITY OF OAK GROVE
ANOKA COUNTY
MN/DOT TRANSPORTATION DISTRICT - METRO
SECTION 28, 29
TOWNSHIP 33 NORTH
RANGE 24 WEST

UTILITY QUALITY LEVEL NOTE:

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".

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 G
WATERMAIN
TELEPHONE CABLE IN CONDUIT T
ELECTRIC CABLE IN CONDUIT P
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'
INDEX MAP 0' 1500'

GOVERNING SPECIFICATIONS

THE 2016 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" SHALL GOVERN.

ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE LATEST EDITION OF THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, INCLUDING THE LATEST FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS.

INDEX

THIS PLAN CONTAINS 119 SHEETS

APPROVED ANOKA COUNTY ENGINEER DATE 7/19/16

APPROVED CITY OF OAK GROVE ENGINEER DATE 7/20/16

DISTRICT STATE AID ENGINEER: REVIEWED FOR COMPLIANCE WITH STATE AID RULES/POLICY DATE 7/21/16

APPROVED FOR STATE AID FUNDING: STATE AID ENGINEER DATE 7/21/16

DESIGN DESIGNATION (CSAH 22)

ESAL 20	1,172,634	FUNCTIONAL CLASSIFICATION	A MINOR CONNECTOR
R VALUE	50	NO. OF TRAFFIC LANES 2	NO. OF PARKING LANES 0
ADT (2016)	8426	DESIGN SPEED 55 MPH	
PROJ. ADT (2036)	11796	STOPPING SIGHT DISTANCE BASED ON:	
PROJ. HCADT (2036)	696	HEIGHT OF EYE 3.5'	HEIGHT OF OBJECT 2.0'
SOIL FACTOR	NA	DESIGN SPEED NOT ACHIEVED AT :	
10 TON DESIGN		STA. TO STA. MPH	

DESIGN DESIGNATION (CSAH 9)

ESAL 20	1,737,101	FUNCTIONAL CLASSIFICATION	A MINOR CONNECTOR
R VALUE	50	NO. OF TRAFFIC LANES 2	NO. OF PARKING LANES 0
ADT (2016)	12483	DESIGN SPEED 55 MPH	
PROJ. ADT (2036)	17476	BASED ON STOPPING SIGHT DISTANCE:	
PROJ. HCADT (2036)	1031	HEIGHT OF EYE 3.5'	HEIGHT OF OBJECT 2.0'
SOIL FACTOR	NA	DESIGN SPEED NOT ACHIEVED AT:	
10 TON DESIGN		STA. TO STA. MPH	

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-622-35\Plan\0262235_TSH.dgn 07/18/2016 2:31:34 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: ELIZABETH MARKOSE
SIGNATURE: Elizabeth M
DATE: 07-18-16 LICENSE NO. 49118

DRAWN BY EJM DATE 07-06-16
DESIGN BY EJM DATE 07-06-16
CHECKED BY GMP DATE 07-14-16

ANOKA COUNTY HIGHWAY DEPT.

SAP 002-609-016
SAP 002-622-035

TITLE SHEET

Sheet 1 of 119 Sheets

STATEMENT OF ESTIMATED QUANTITIES
SAP 002-609-016, SAP 002-622-035

TAB	NOTES	ITEM NO.	ITEM DESCRIPTION	UNIT	TOTAL PROJECT QUANTITES ESTIMATED	ANOKA COUNTY SAP 002-609-016 ROADWAY QUANTITIES ESTIMATED	ANOKA COUNTY SAP 002-622-035 ROADWAY QUANTITIES ESTIMATED	CITY OF OAK GROVE ROADWAY QUANTITIES ESTIMATED
		2013.601	SURVEY EQUIPMENT	LUMP SUM	1	0.50	0.50	
		2021.501	MOBILIZATION	LUMP SUM	1	0.450	0.476	.074
		2031.501	FIELD OFFICE TYPE D	EACH	1	0.450	0.476	.074
A	(1),(2)	2101.501	CLEARING	ACRE	0.40	0.15	0.25	
A	(1),(2)	2101.502	CLEARING	TREE	20	15	5	
A	(1),(2)	2101.506	GRUBBING	ACRE	0.40	0.15	0.25	
A	(1),(2)	2101.507	GRUBBING	TREE	12	9	3	
B	(3),(4)	2102.502	PAVEMENT MARKING REMOVAL	LIN FT	22200	7760	14440	
C	(2),(5)	2104.501	REMOVE PIPE CULVERTS	LIN FT	295	62	233	
C	(2)	2104.501	REMOVE CURB AND GUTTER	LIN FT	278	278		
C	(2)	2104.503	REMOVE CONCRETE MEDIAN	SQ FT	210	210		
C	(2)	2104.505	REMOVE BITUMINOUS PAVEMENT	SQ YD	19800	9170	10630	
C	(2)	2104.509	REMOVE CONCRETE APRON	EACH	2		2	
C	(2)	2104.509	REMOVE BITUMINOUS FLUME	EACH	1		1	
D	(2)	2104.509	REMOVE SIGN TYPE C	EACH	61	33	28	
C	(6)	2104.513	SAWING BIT PAVEMENT (FULL DEPTH)	LIN FT	4036	1995	2041	
C		2104.523	SALVAGE METAL APRON	EACH	1		1	
D		2104.523	SALVAGE SIGN TYPE C	EACH	2		2	
D		2104.523	SALVAGE SIGN TYPE D	EACH	2		2	
D		2104.523	SALVAGE SIGN TYPE SPECIAL	EACH	6	1	5	
	(7)	2104.601	HAUL SALVAGED MATERIAL	LUMP SUM	1	1		
		2104.607	REMOVE TEMPORARY PAVEMENT	CU YD	2124	1638	486	
G	(8),(9)	2105.501	COMMON EXCAVATION (P)	CU YD	8637	4609	4028	
G	(9)	2105.507	SUBGRADE EXCAVATION (P)	CU YD	7760	3797	3963	
G	(9)	2105.522	SELECT GRANULAR BORROW (LV)	CU YD	1373	42	1331	
H		2112.603	SHOULDER PREPARATION	LIN FT	4149	2167	1982	
	(10)	2130.501	WATER	M GALLON	150	75	75	
H		2211.503	AGGREGATE BASE (CV) CLASS 5 (P)	CU YD	4100	2021	2079	
H		2221.501	SHOULDER BASE AGGREGATE CLASS 5	TON	154	110	44	
H		2221.503	SHOULDER BASE AGGREGATE (CV) CLASS 5	CU YD	399	183	216	
C		2232.501	MILL BITUMINOUS SURFACE (2.0")	SQ YD	147	86	61	
H		2357.502	BITUMINOUS MATERIAL FOR TACK COAT	GALLON	2465	1213	1252	
H		2360.501	TYPE SP 12.5 WEARING COURSE MIX (3,F)	TON	5663	2790	2873	
H	(11)	2360.502	TYPE SP 12.5 NON WEAR COURSE MIX (3,B)	TON	2947	1497	1450	
I		2501.511	15" RC PIPE CULVERT CLASS V	LIN FT	78		78	
I		2501.511	18" RC PIPE CULVERT CLASS V	LIN FT	127	58	69	
I		2501.511	24" RC PIPE CULVERT CLASS V	LIN FT	76		76	
I, O		2501.569	15" RC SAFETY APRON	EACH	5	1	4	
I		2501.569	18" RC SAFETY APRON	EACH	4	2	2	
I		2501.569	24" RC SAFETY APRON	EACH	2		2	
I		2501.573	INSTALL METAL APRON	EACH	1		1	
I		2503.511	24" PVC PIPE SEWER	LIN FT	5		5	
O		2503.541	15" RC PIPE SEWER DES 3006 CL V	LIN FT	108	108		
I		2503.602	CONNECT TO EXISTING STORM SEWER	EACH	1		1	
O		2506.501	CONSTRUCT DRAINAGE STRUCTURE DESIGN G	LIN FT	3.4	3.4		

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) FOR TEMPORARY TRAFFIC CONTROL DURING CONSTRUCTION STAGING.

(4) SEE SHEET 42 FOR SPECIFIC WHITE AND YELLOW 4" ITEM QUANTITIES.

(5) INCLUDES ALL TYPES OF PIPES. CMP APRON REMOVALS ARE INCIDENTAL.

(6) INCLUDES 1804 LIN FT FOR CSAH 9 & 1878 LIN FT FOR CSAH 22 SAWING BITUMINOUS PAVEMENT DURING CONSTRUCTION STAGING. 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.

(7) SALVAGE TO: ANOKA COUNTY HIGHWAY DEPT, 1440 BUNKER LAKES BLVD NW, ANDOVER, MN.

(8) INCLUDES INPLACE TOPSOIL.

(9) SEE SOILS AND CONSTRUCTION NOTES.

(10) 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.

(11) FOR TEMPORARY AND PERMANENT CONSTRUCTION.

(12) SEE REMOVAL SHEET 46 FOR LOCATION.

(13) INCLUDES QUANTITY FOR CONCRETE MEDIAN NOSE.

(14) TIP-OUT GUTTER. SEE SHEET 14 FOR MEDIAN C&G DETAILS.

(15) SEE TRAFFIC CONTROL SIGNS' TAB ON SHEET 42 FOR MORE INFORMATION.

(16) THE COUNTY WILL PROVIDE TRAFFIC SIGNAL POLES AND MASTER ARMS. SEE DIVISION SS OF SPECIAL PROVISIONS FOR MORE INFORMATION.

(17) SEE SHEET 70 FOR LEFT AND RIGHT ARROW QUANTITIES.

(18) SEE SHEET 70 FOR 4" WHITE AND YELLOW EPOXY QUANTITIES.

(P) PLAN QUANTITY

NO	DATE	BY	CKD	APPR	REVISION
1	08/07/2016	EJM	GMP	GMP	CHANGED ITEMS 2501.567 TO 2501.569 (NO SAFETY GRATE).

NAME: P:\02-622-35\Plan\0262235_TAB.dgn 08/07/2016 9:43:32 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: ELIZABETH MARKOSE

SIGNATURE: Elizabeth Markose

DATE: 08-08-2016 LICENSE NO. 49118

DRAWN BY EJM DATE 06-17-16

DESIGN BY EJM DATE 06-17-16

CHECKED BY GMP DATE 07-14-16

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

SAP 002-609-016
SAP 002-622-035

STATEMENT OF ESTIMATED QUANTITIES

Sheet 2 of 119 Sheets

STATEMENT OF ESTIMATED QUANTITIES
SAP 002-609-016, SAP 002-622-035

TAB	NOTES	ITEM NO.	ITEM DESCRIPTION	UNIT	TOTAL PROJECT QUANTITES ESTIMATED	ANOKA COUNTY SAP 002-609-016 ROADWAY QUANTITIES ESTIMATED	ANOKA COUNTY SAP 002-622-035 ROADWAY QUANTITIES ESTIMATED	CITY OF OAK GROVE ROADWAY QUANTITIES ESTIMATED
O		2506.516	CASTING ASSEMBLY	EACH	1	1		
	(12)	2506.602	ADJUST DRAINAGE STRUCTURE	EACH	1		1	
I, O		2511.501	RANDOM RIPRAP CLASS III	CU YD	46	11	35	
I, O		2511.515	GEOTEXTILE FILTER TYPE III	SQ YD	182	47	135	
J		2521.501	4" CONCRETE WALK	SQ FT	197	197		
J	(13)	2521.501	6" CONCRETE WALK	SQ FT	988	540	448	
J		2531.501	CONCRETE CURB & GUTTER DESIGN B418	LIN FT	173	173		
J	(14)	2531.501	CONCRETE CURB & GUTTER DESIGN B418 (MOD)	LIN FT	40	40		
J		2531.501	CONCRETE CURB & GUTTER DESIGN B424	LIN FT	188	92	96	
J		2531.604	CONCRETE DRAINAGE FLUME	SQ YD	16	8	8	
J		2531.618	TRUNCATED DOMES	SQ FT	96	48	48	
K		2540.602	RELOCATE MAIL BOX SUPPORT	EACH	2	1	1	
X		2545.541	SERVICE CABINET	EACH	1	0.50	0.50	
		2563.601	TRAFFIC CONTROL (STAGE 1)	LUMP SUM	1	0.450	0.476	0.074
		2563.601	TRAFFIC CONTROL (STAGE 2)	LUMP SUM	1	0.450	0.476	0.074
		2563.601	TRAFFIC CONTROL SUPERVISOR	LUMP SUM	1	0.50	0.50	
B		2563.602	RAISED PAVEMENT MARKER TEMPORARY	EACH	758	246	512	
		2563.610	POLICE OFFICER	HOUR	40		40	
	(15)	2563.613	PORTABLE CHANGEABLE MESSAGE SIGN	UNIT DAY	96		96	
L		2564.531	SIGN PANELS TYPE C	SQ FT	355	190	165	
D		2564.537	INSTALL SIGN TYPE C	EACH	2		2	
D		2564.537	INSTALL SIGN TYPE D	EACH	2		2	
D		2564.537	INSTALL SIGN TYPE SPECIAL	EACH	6	1	5	
X	(16)	2565.511	TRAFFIC CONTROL SIGNAL SYSTEM	SIG SYS	1	0.25	0.25	0.50
X		2565.513	EMERGENCY VEHICLE PREEMPTION SYSTEM	LUMP SUM	1			1
M		2573.502	SILT FENCE, TYPE MS	LIN FT	2666	755	1911	
M		2573.530	STORM DRAIN INLET PROTECTION	EACH	2	1	1	
M		2573.560	CULVERT END CONTROLS	EACH	6	2	4	
M		2574.508	FERTILIZER TYPE 3	POUND	212	95	117	
M		2575.501	SEEDING	ACRE	3.6	1.6	2.0	
M		2575.502	SEED MIXTURE 25-121	POUND	216	97	119	
M		2575.505	SODDING TYPE SALT TOLERANT	SQ YD	126	18	108	
M		2575.523	EROSION CONTROL BLANKETS CATEGORY 0	SQ YD	17100	7610	9490	
M		2575.571	RAPID STABILIZATION METHOD 3	MGAL	22	10	12	
B	(3),(4)	2581.501	REMOVABLE PREFORMED PAVEMENT MARKING TAPE	LIN FT	14100	2460	11640	
N	(17)	2582.501	PAVEMENT MESSAGE PREFORM THERMOPLASTIC	SQFT	240	120	120	
B	(3)	2582.502	4" SOLID LINE PAINT	LIN FT	11080	3600	7480	
B	(3)	2582.502	4" DOUBLE SOLID LINE PAINT	LIN FT	5540	1800	3740	
N	(18)	2582.502	4" SOLID LINE EPOXY	LIN FT	19190	10830	8360	
N	(18)	2582.502	4" BROKEN LINE EPOXY	LIN FT	280	240	40	
N		2582.502	4" DOUBLE SOLID LINE EPOXY	LIN FT	7660	3610	4050	
N		2582.503	CROSSWALK PREFORM THERMOPLASTIC	SQ FT	936	468	468	
N	(18)	2582.618	24" SOLID LINE PREFORM THERMOPLASTIC	SQ FT	1537	682	855	

NOTES:

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

(3) FOR TEMPORARY TRAFFIC CONTROL DURING CONSTRUCTION STAGING.

(4) SEE SHEET 42 FOR SPECIFIC WHITE AND YELLOW 4" ITEM QUANTITIES.

(5) INCLUDES ALL TYPES OF PIPES. CMP APRON REMOVALS ARE INCIDENTAL.

(6) INCLUDES 1804 LIN FT FOR CSAH 9 & 1878 LIN FT FOR CSAH 22 SAWING BITUMINOUS PAVEMENT DURING CONSTRUCTION STAGING. 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.

(7) SALVAGE TO: ANOKA COUNTY HIGHWAY DEPT, 1440 BUNKER LAKES BLVD NW, ANDOVER, MN.

(8) INCLUDES INPLACE TOPSOIL.

(9) SEE SOILS AND CONSTRUCTION NOTES.

(10) 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.

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(18) SEE SHEET 70 FOR 4" WHITE AND YELLOW EPOXY QUANTITIES.

(P) PLAN QUANTITY

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-622-35\Plan\0262235_TAB.dgn 07/18/2016 2:31:39 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: ELIZABETH MARKOSE

SIGNATURE: Elizabeth Markose

DATE: 07-18-16 LICENSE NO. 49118

DRAWN BY EJM DATE 07-06-16

DESIGN BY EJM DATE 07-06-16

CHECKED BY GMP DATE 07-14-16

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

SAP 002-609-016
SAP 002-622-035

STATEMENT OF ESTIMATED QUANTITIES

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. 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.

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

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

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

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

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

9. 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.

10. 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.

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

12. 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.

13. 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.

14. 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.

15. 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.

16. 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.

17. 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.

18. 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.

19. 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.

20. 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.

21. 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.

22. 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.

23. 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.

24. 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.

25. INPLACE BITUMINOUS PAVEMENT RANGES FROM 4" TO 8" THICK (AVERAGE 6"). FOR INFORMATION ONLY. CONTRACTOR MAY VERIFY PAVEMENT DEPTH PRIOR TO PLACING BID. NO WARRANTY IS MADE OR IMPLIED WITH THIS INFORMATION.

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

27. 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".

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

29. DEWATERING WITH SUMP PUMPS CAN ALSO BE EXPECTED AT SIGNAL FOUNDATION LOCATIONS. CLEAN CRUSHED ROCK WILL LIKELY BE NECESSARY TO STABILIZE THE BOTTOM OF THE EXCAVATION. THIS WORK SHALL BE CONSIDERED INCIDENTAL TO EXCAVATION AND BACKFILL.

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PRINT NAME: ELIZABETH MARKOSE

SIGNATURE: Elizabeth M

DATE: 07-18-16 LICENSE NO. 49118

DRAWN BY EJM DATE 07-06-16

DESIGN BY EJM DATE 07-06-16

CHECKED BY GMP DATE 07-14-16

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

SAP 002-609-016
SAP 002-622-035

SOILS AND CONSTRUCTION NOTES

THE FOLLOWING STANDARD PLATES APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION SHALL APPLY ON THIS PROJECT.

STANDARD PLATES

PLATE NO.	DESCRIPTION
3000L	REINFORCED CONCRETE PIPE (5 SHEETS)
3006G	GASKET JOINT FOR R.C. PIPE (2 SHEETS)
3022C	PRECAST CONCRETE SAFETY APRON (3 SHEETS)
3100G	CONCRETE APRON FOR REINFORCED CONCRETE PIPE
3133D	RIPRAP AT RCP OUTLETS
3134D	RIPRAP AT CSP OUTLETS
3145G	CONCRETE PIPE OR PRECAST BOX CULVERT TIES
4006L	MANHOLE OR CATCH BASIN PRECAST - DESIGNS G AND H
4010H	CONCRETE SHORT CONE & ADJUSTING RING (SECTIONAL CONCRETE)
4011E	PRECAST CONCRETE BASE
4026A	CONCRETE ENCASED CONCRETE ADJUSTING RINGS
4101D	RING CASTING FOR MANHOLE OR CATCH BASIN
4108F	ADJUSTING RINGS FOR CATCH BASINS AND MANHOLES
7035N	CONCRETE WALK & CURB RETURNS AT ENTRANCES
7038A	DETECTABLE WARNING SURFACE TRUNCATED DOMES
7100H	CONCRETE CURB AND GUTTER (DESIGN B and DESIGN V)
7113A	CONCRETE APPROACH NOSE DETAIL
8000J	CHANNELIZERS
8110E	TRAFFIC SIGNAL BRACKETING (POLE MOUNTED)
8118D	SERVICE EQUIPMENT & POLE TRAFFIC CONTROL SIGNALS
8119C	GROUND MOUNTED CABINET FOUNDATION
8121H	TRANSFORMER BASE AND POLE BASE PLATE (PA85, PA90 AND PA100) (2 SHEETS)
8123G	POLE AND MAST ARM - LUMINAIRES AND TRAFFIC LIGHTS ASSEMBLY (FOR ALL POLE TYPES) (2 SHEETS)
8126L	POLE FOUNDATION (PA90 AND PA100)
8150C	INSTALLATION OF CULVERT MARKERS
8337C	TEMPORARY PORTABLE PRECAST CONCRETE BARRIER (TYPE "F") (3 SHEETS)
9102E	TURF ESTABLISHMENT AREAS (AT PIPE CULVERT ENDS)

NOTE:
SEE SHEET 80 FOR ADDITIONAL STANDARD PLATES INCLUDED IN THIS PROJECT

INDEX OF TABULATION CHARTS

BASIS OF QUANTITIES

SPEC NO	DESCRIPTION	RATE
2357.502	BITUMINOUS MATERIAL FOR TACK COAT	0.05 GAL / SQ YD / LIFT
2360.501	TYPE SP12.5 WEARING COURSE MIXTURE	115 LBS / SQ YD / IN
2360.502	TYPE SP12.5 NON-WEARING COURSE MIXTURE	115 LBS / SQ YD / IN
2575.502	SEED MIXTURE 25-121	61 LBS / ACRE
2575.532	FERTILIZER TYPE 3	60 LBS / ACRE
2575.571	RAPID STABILIZATION METHOD 3	6 MGAL / ACRE

CLEARING & GRUBBING SPEC (2101) — A

ALIGNMENT	STATION	OFFSET LEFT	OFFSET RIGHT	CLEARING (TREE)	GRUBBING (TREE)	CLEARING (ACRE)	GRUBBING (ACRE)
SAP 002-609-016							
CSAH 8	17+60	-65		1	1		
CSAH 9	18+07	-56		2	1		
CSAH 9	26+66 | 27+57		61			0.05	0.05
CSAH 9	27+65		62	1	1		
CSAH 9	27+83		61	1	1		
CSAH 9	27+94		58	2	1		
CSAH 9	28+12		62	1	1		
CSAH 9	28+12 | 29+62	-58				0.10	0.10
CSAH 9	28+23		68	1	1		
CSAH 9	28+28		68	3	1		
CSAH 9	28+73		56	3	1		
			SUBTOTAL	15	9	0.15	0.15
SAP 002-622-035							
CSAH 22	59+90		72	1	1		
CSAH 22	59+95		72	1	1		
CSAH 22	63+04 | 63+31		75			0.05	0.05
CSAH 22	63+68		81	3	1		
CSAH 22	64+22 | 65+28		72			0.05	0.05
CSAH 22	71+42 | 71+65	-58				0.05	0.05
CSAH 22	72+70 | 74+07	-57				0.10	0.10
			SUBTOTAL	5	3	0.25	0.25
			PROJECT TOTAL	20	12	0.40	0.40

GENERAL NOTES:

TREES WITHIN THE CONSTRUCTION LIMITS WILL BE DESIGNATED FOR REMOVAL BY THE ENGINEER.
REMOVAL OF MISCELLANEOUS SHRUBS AND LANDSCAPING SHALL BE CONSIDERED INCIDENTAL

REMOVALS, SAWING, SALVAGE AND MILLING — C

ALIGNMENT	STATION	LT/RT	REMOVE (SPEC. 2104) PIPE CULVERTS (LIN FT)	CONC. CURB & GUTTER (LIN FT)	CONC. MEDIAN (SQ FT)	BIT. PAVEMENT (SQ YD)	CONC. APRON (EACH)	BIT. FLUME (EACH)	SAWING (SPEC. 2104) BIT. PAVEMENT (LIN FT)	SALVAGE (SPEC. 2104) METAL APRON (EACH)	MILLING (SPEC. 2232) BIT. SURFACE (2") (SQ YD)	NOTES
SAP 002-609-016												
CSAH 9	13+48 - 22+28	RT				2546			26		12	[1]
CSAH 9	15+01 - 15+27	RT				150			26		12	[6]
CSAH 9	18+35 - 18+97	RT	62									[2]
CSAH 9	18+48 - 18+81	RT				193			33		15	[6]
CSAH 9	22+74 - 31+52	RT				2029			16		7	[1]
CSAH 9	28+96 - 29+21	RT				182			24		11	[3]
CSAH 9	13+48 - 22+28	LT				1551			15		7	[1]
CSAH 9	22+74 - 31+52	LT				2275			14		6	[1]
CSAH 9	27+04 - 27+41	LT				244			37		16	[4]
CSAH 9	27+15 - 27+38	LT		74	210							[7]
CSAH 9	27+41 - 29+31	LT		204								[8]
		SUBTOTAL	62	278	210	9170			191		86	
SAP 002-622-035												
CSAH 22	57+94 - 67+50	RT				2467			24		11	[1]
CSAH 22	60+04 - 60+54	RT	50									[2]
CSAH 22	60+18 - 60+41	RT				283			24		11	[3]
CSAH 22	63+40	RT								1		
CSAH 22	67+50 - 76+71	RT				2055						[1]
CSAH 22	71+25 - 72+03	RT	79									[2]
CSAH 22	71+43 - 71+76	RT				190			32		14	[4]
CSAH 22	71+93	RT						1				
CSAH 22	72+79 - 72+84	LT/RT	64				2					[5]
CSAH 22	57+94 - 67+50	LT				2558			24		11	[1]
CSAH 22	63+37 - 63+53	LT				130			21		9	[4]
CSAH 22	67+50 - 76+71	LT				2316						[1]
CSAH 22	75+05 - 75+46	LT	40									[2]
CSAH 22	75+19 - 75+30	LT				56			11		5	[6]
ORCHID ST	2+30 - 4+27	LT/RT				575			27			
		SUBTOTAL	233			10630	2	1	163	1	61	
		PROJECT TOTAL	295	278	210	19800	2	1	354	1	147	

REMOVALS NOTES:

[1] ROADWAY MAINLINE
[2] EXISTING CMP PIPE
[3] STREET APPROACH
[4] BUSINESS ENTRANCE
[5] EXISTING CENTERLINE RCP
[6] DRIVEWAY
[7] PORKCHOP ISLAND
[8] LSB B418 SHOULDER CURB

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PRINT NAME: ELIZABETH MARKOSE
SIGNATURE: Elizabeth M
DATE: 07-19-16 LICENSE NO. 49118

DRAWN BY EJM DATE 06-17-16
DESIGN BY EJM DATE 06-17-16
CHECKED BY GMP DATE 07-14-16

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TABULATIONS

BITUMINOUS / AGGREGATE SUMMARY

H

ALIGNMENT	DIRECTION	STATION	TO	STATION	LT/RT	BITUMINOUS: 2360 TYPE SP 12.5 WEAR (3,F)	BITUMINOUS: 2360 TYPE SP 12.5 NON-WEAR (3,B)	BITUMINOUS: 2357 BIT. TACK COAT	AGGREGATE BASE: 2211 CLASS 5	AGGREGATE BASE: 2221 SHOULDER CLASS 5	TEMP WIDENING: 2360 TYPE SP 12.5 NON-WEAR TEMP (3,B)	TEMP WIDENING: 2221 SHOULDER BASE CLASS 5	2112 SHOULDER PREP
						TON	TON	GALLON	CU YD	CU YD	TON	TON	LIN FT
SAP 002-609-016													
CSAH 9	LNB	9+50	-	14+78	RT								270
CSAH 9	LNB	13+48	-	22+28	RT	726	363	316	526	46			
CSAH 9	LNB	15+39	-	18+24	RT								285
CSAH 9	LNB	19+06	-	21+87	RT								281
CSAH 9	LNB	22+74	-	31+52	RT	693	346	301	502	46			
CSAH 9	LNB	23+02	-	28+81	RT								579
CSAH 9	LNB	29+32	-	33+59	RT						42	45	427
CSAH 9	LSB	10+00	-	22+28	LT	663	331	288	480	46	28	30	
CSAH 9	LSB	22+74	-	31+52	LT	708	354	308	513	45			
CSAH 9	LSB	31+52	-	34+77	LT						33	35	325
					SUBTOTAL	**2790**	**1394**	**1213**	**2021**	**183**	**103**	**110**	**2167**
SAP 002-622-035													
CSAH 22	LEB	57+94	-	67+50	RT	727	364	316	527	52			
CSAH 22	LEB	67+50	-	76+71	RT	664	332	289	481	51	34	36	
CSAH 22	LWB	57+94	-	67+50	LT	728	364	316	527	52			
CSAH 22	LWB	59+44	-	66+90	LT								746
CSAH 22	LWB	67+50	-	76+71	LT	697	349	303	505	51			
CSAH 22	LWB	68+05	-	80+41	LT						7	8	1236
ORCHID ST		1+35	-	2+21	LT/ RT	57		28	39	10			
					SUBTOTAL	**2873**	**1409**	**1252**	**2079**	**216**	**41**	**44**	**1982**
					PROJECT TOTAL	**5663**	**2803**	**2465**	**4100**	**399**	**144**	**154**	**4149**

CULVERT TABULATION

I

ALIGNMENT	STATION	TO	STATION	OFFSET LEFT	OFFSET RIGHT	INVERT ELEVATION INLET	INVERT ELEVATION OUTLET	SLOPE %	FURNISH & INSTALL: 15" RC PIPE CULVERT	15" RC SAFETY APRON	18" RC PIPE CULVERT	18" RC SAFETY APRON	24" RC PIPE CULVERT	24" RC SAFETY APRON	24" PVC PIPE SEWER	CONNECT TO EX. STORM SEWER	RANDOM RIPRAP CL III	GEOTEXTILE FILTER TYPE III	INSTALL: 24" GS APRON	NOTES
				LEFT	RIGHT	INLET	OUTLET		EACH	LIN FT	EACH	LIN FT	EACH	LIN FT	LIN FT	EACH	CU YD	SQ YD	EACH	
SAP 002-609-016																				
CSAH 9	18+35	-	18-96		48	903.68	903.33	0.50			58	2					6.4	25.6		
								SUBTOTAL			**58**	**2**					**6**	**26**		
SAP 002-622-035																				
CSAH 22	60+10	-	60+70		56	901.00	900.40	1.00	48	2							4.8	20.8		
CSAH 22	63+08	-	63+42	48	73	888.13	886.73	1.06							5	1	9.5	34.2	1	
CSAH 22	71+26	-	72+04		51	892.86	892.00	1.06			69	2					6.4	25.6		
CSAH 22	72+80			44	44	889.71	889.23	0.55					76	2			9.2	33.4		[1]
CSAH 22	75+05	-	75+46	45		891.16	890.56	1.50	30	2							4.8	20.8		
								SUBTOTAL	**78**	**4**	**69**	**2**	**76**	**2**	**5**	**1**	**35**	**135**	**1**	
								PROJECT TOTAL	**78**	**4**	**127**	**4**	**76**	**2**	**5**	**1**	**41**	**161**	**1**	

GENERAL NOTES:
INVERT ELEVATIONS ARE AT THE END OF APRON.
PIPE LENGTHS DO NOT INCLUDE APRONS.

CULVERT NOTES:
[1] TRENCHING AND CLASS B BEDDING MATERIAL INCIDENTAL.

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SIGNATURE: Elizabeth Markose
DATE: 07-18-16 LICENSE NO. 49118

DRAWN BY EJM DATE 06-17-16
DESIGN BY EJM DATE 06-17-16
CHECKED BY GMP DATE 07-14-16

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TABULATIONS

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CONCRETE — J

STATION BEGIN	STATION END	ALIGN.	OFFSET	LT / RT	CONCRETE CURB & GUTTER DESIGN B418	CONCRETE CURB & GUTTER DESIGN B418 (MOD)	CONCRETE CURB & GUTTER DESIGN B424	4" CONCRETE WALK	6" CONCRETE WALK	TRUNCATED DOMES	CONC. NOSE DESIGN 7113 [1]	CONCRETE DRAINAGE FLUME [2]
					LIN FT	LIN FT	LIN FT	SQ FT	SQ FT	SQ FT	SQ FT	SQ YD
SAP 002-609-016												
21+84	22+17	CSAH 7	31.6 - 71.1	RT			46		224	24		4
22+80	23+12	CSAH 8	31.0 - 69.3	RT			46		224	24		4
27+11	27+35	CSAH 9	-33.0 - -33.0	LT		40		197			92	
27+41	29+12	CSAH 9	-64.2 - -27.9	LT	173							
				SUBTOTAL	173	40	92	197	448	48	92	8
SAP 002-622-035												
66+83	67+17	CSAH 22	-32.6 - -64.4	LT			48		224	24		4
66+84	67+17	CSAH 22	-32.4 - -64.1	RT			48		224	24		4
				SUBTOTAL			96		448	48		8
				PROJECT TOTAL	173	40	188	197	896	96	92	16

CONCRETE NOTES:
[1] PAID FOR AS 6" CONCRETE WALK
[2] SEE SHEET 14 FOR DETAILS. REBARS INCIDENTAL.

DRAINAGE TABULATION — O

STRUCTURE NO. FLOWS FROM	STRUCTURE NO. FLOWS TO	CENTER OF CASTING LOCATION ALIGN.	STATION	OFFSET	DRAINAGE STRUCTURE TYPE	DESIGN	G	CASTING ASSEMBLY TYPE	TOP OF CASTING ELEV.	OUTLET ELEV.	DOWN-STREAM INLET ELEV.	SLOPE %	15" RC PIPE SEWER CL V	15" RC SAFETY APRON	RANDOM RIPRAP CLASS III	GEOTEXTILE FILTER TYPE III
							LIN FT	TYPE	ELEV.	ELEV.	ELEV.	%	LIN FT	EACH	CU YD	SQ YD
SAP 002-609-016																
A101		CSAH 9	26+67	-48.91	APR				894.48	893.23				1	4.8	20.8
CB102	A101	CSAH 9	27+74	-32.61	CB	G	3.4	R-3448-C	896.82	893.57	893.23	0.30	108			
						PROJECT TOTAL	3.4	1					108	1	5	21

GENERAL NOTES:
PIPE LENGTH DOES NOT INCLUDE APRON.
R-3448-C DENOTES CASTING ASSEMBLY WITH 17 3/4 x 22 3/4 x 1 3/4 GRATE FOR B418 CURB AND GUTTER.

MAILBOX — K

STATION	LOCATION ALIGN	OFFSET	ADDRESS	RELOCATE MAILBOX SUPPORT
				EACH
SAP 002-609-016				
14+58	CSAH 9	20 LT	19154	1
			SUBTOTAL	1
SAP 002-622-035				
75+37	CSAH 22	27 LT	3055	1
			SUBTOTAL	1
			PROJECT TOTAL	2

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TABULATIONS

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TURF ESTABLISHMENT AND EROSION CONTROL

M

ALIGN.	LOCATION	LOC.	SEEDING	SEED MIXTURE 25-121	FERTILIZER TYPE 3	SILT FENCE TYPE MS	EROSION CONTROL BLANKETS CAT. 0	STORM DRAIN INLET PROTECTION	CULVERT END CONTROLS	SODDING TYPE SALT TOLERANT	RAPID STABILIZATION METHOD 3
	STATION TO STATION	LT / RT	ACRE	POUND	POUND	LIN FT	SQ YD	EACH	EACH	SQ YD	MGAL
SAP 002-609-016											
CSAH 9	13+46 14+69	LT	0.03	2	2		124				0.2
CSAH 9	13+47 15+00	RT	0.02	1	1		81				0.1
CSAH 9	14+83	RT							1	8	
CSAH 9	15+01 21+71	LT	0.36	22	21		1719				2.1
CSAH 9	15+28 18+46	RT	0.09	5	5		412				0.5
CSAH 9	18+27	RT							1	10	
CSAH 9	18+82 21+67	RT	0.08	5	5		408				0.5
CSAH 9	23+28 27+44	RT				379					
CSAH 9	23+31 27+00	LT				376					
CSAH 9	23+29 28+94	RT	0.44	27	26		2125				2.6
CSAH 9	23+32 27+02	LT	0.24	15	15		1173				1.5
CSAH 9	26+64	LT									
CSAH 9	27+43 31+54	LT	0.19	12	12		937				1.2
CSAH 9	28+26	LT						1			
CSAH 9	29+23 31+54	RT	0.13	8	8		631				0.8
		SUBTOTAL	**1.6**	**97**	**95**	**755**	**7610**	**1**	**2**	**18**	**10**
SAP 002-622-035											
CSAH 22	57+92 60+18	RT	0.17	11	10		842				1.0
CSAH 22	57+93 63+36	LT	0.32	19	19		1546				1.9
CSAH 22	59+96	RT							1	8	
CSAH 22	60+44 67+19	RT	0.63	38	38		3033				3.8
CSAH 22	61+50 66+89	RT				580					
CSAH 22	63+08	LT						1			
CSAH 22	63+48 67+16	LT	0.10	6	6		469				0.6
CSAH 22	64+00 67+00	LT				315					
CSAH 22	66+86	RT								15	
CSAH 22	67+10	LT								15	
CSAH 22	67+80 75+18	LT	0.37	23	22		1812				2.2
CSAH 22	67+85 71+41	RT	0.15	9	9		739				0.9
CSAH 22	68+00 73+06	LT				515					
CSAH 22	68+17	LT								15	
CSAH 22	68+20	RT								15	
CSAH 22	71+19	RT							1	10	
CSAH 22	71+78 76+74	RT	0.15	9	9		744				0.9
CSAH 22	71+89 76+74	RT				501					
CSAH 22	72+79	RT							1	13	
CSAH 22	72+84	LT									
CSAH 22	74+98	LT								8	
CSAH 22	75+32 76+74	LT	0.06	4	4		305				0.4
CSAH 22	75+50	LT							1	9	
		SUBTOTAL	**2.0**	**119**	**117**	**1911**	**9490**	**1**	**4**	**108**	**12**
		PROJECT TOTAL	**3.6**	**216**	**212**	**2666**	**17100**	**2**	**6**	**126**	**22**

NO	DATE	BY	CKD	APPR	REVISION

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

PRINT NAME: ELIZABETH MARKOSE

SIGNATURE: Elizabeth M

DATE: 07-18-16 LICENSE NO. 49118

DRAWN BY EJM DATE 07-06-16

DESIGN BY EJM DATE 07-06-16

CHECKED BY GMP DATE 07-14-16

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

SAP 002-609-016
SAP 002-622-035

TABULATIONS

Sheet 9 of 119 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

CENTERPOINT ENERGY
700 WEST LINDEN AVE
PO BOX 1165
MINNEAPOLIS, MN 55440-1165
CONTACT: STEVE GUHANICK
TEL: 612-321-5421

CENTURYLINK
425 MONROE ST
ANOKA, MN 55303
CONTACT: CARRIE BAUER
TEL: 651-312-5278

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

CONNEXUS ENERGY
5363 260TH LN N
WYOMING, MN 55096
CONTACT: MAT RAUSCHENDORFER
TEL: 763-323-4259

ZAYO FIBER SOLUTIONS
5005 CHESHIRE PKWY, SUITE 1
PLYMOUTH, MN 55446
CONTACT: STEVE SENGER
TEL: 952-230-9660

GAS - CENTERPOINT ENERGY | BB

STATION BEGIN	STATION END	OFFSET FROM CL	SIZE & ITEM	REMARKS
CSAH 22				
56+00	60+64	40 RT	2" ST	LEAVE
56+38		40 RT - 81 LT	CROSSING	LEAVE
57+88		40 RT - 100 LT	CROSSING	LEAVE
60+64		40 RT - 100 RT	2" ST	LEAVE
62+98	68+18	64 LT	4" ST	LEAVE
68+04	68+74	56 - 58 RT	6" ST	LEAVE
68+74	70+04	58 - 61 RT	6" ST	LEAVE
70+04	71+84	61 - 72 RT	6" ST	LEAVE
71+84	80+00	72 RT	6" ST	LEAVE
CSAH 9				
12+85	21+76	45 RT	4" ST	RELOCATE
21+76	21+97	45 - 70 RT	4" ST	RELOCATE
21+97	23+51	70 RT	4" ST	LEAVE
23+11		72 RT	GAS VALVE	ADJUST
23+17		66 RT	GAS VALVE	ADJUST
23+51	23+81	70 - 39 RT	4" ST	LEAVE
23+81	27+50	39 RT	4" ST	LEAVE
27+50	29+00	39 RT	4" ST	RELOCATE
29+00	31+87	39 RT	4" ST	LEAVE

POWER - CONNEXUS ENERGY | CC

STATION	OFFSET		INPLACE ITEM	REMARKS
CSAH 22				
57+17	48	RT	POWER POLE	LEAVE
60+03	60	RT	POWER POLE	RELOCATE
60+69	72	RT	POWER POLE	LEAVE
63+77	66	RT	POWER POLE	ADJUST
67+07	43	RT	POWER POLE	RELOCATE
68+27	43	RT	POWER POLE	LEAVE
71+31	43	RT	POWER POLE	RELOCATE
74+39	42	RT	POWER POLE	LEAVE
77+43	42	RT	POWER POLE	LEAVE
CSAH 9				
12+41	41	RT	POWER POLE	LEAVE
15+33	32	LT	POWER POLE	RELOCATE
15+69	41	RT	POWER POLE	LEAVE
19+10	42	RT	POWER POLE/BURIED	LEAVE
25+08	42	LT	POWER POLE	ADJUST
26+96 - 27+91	89-42	LT	BURIED CABLE	ADJUST
27+91	41	LT	POWER POLE	ADJUST
28+27	42	LT	POWER POLE	ADJUST
28+78	77	RT	POWER POLE	LEAVE
31+40	42	LT	POWER POLE	ADJUST
34+66	41	LT	POWER POLE	LEAVE

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-622-35\Plan\0262235_TAB.dgn 07/18/2016 2:31:45 PM

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PRINT NAME: ELIZABETH MARKOSE
SIGNATURE: Elizabeth Markose
DATE: 07-18-16 LICENSE NO. 49118

DRAWN BY EJM DATE 07-06-16
DESIGN BY EJM DATE 07-06-16
CHECKED BY GMP DATE 07-14-16

ANOKA COUNTY
ANOKA COUNTY HIGHWAY DEPT.

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TEL: 763-323-4259

ZAYO FIBER SOLUTIONS
5005 CHESHIRE PKWY, SUITE 1
PLYMOUTH, MN 55446
CONTACT: STEVE SENGER
TEL: 952-230-9660

CABLE - COMCAST COMMUNICATIONS | DD

STATION BEGIN	STATION END	OFFSET FROM CL	REMARKS	SIZE & ITEM
CSAH 22				
60+45		47 LT	ADJUST	SPLICE BOX
60+45		100 LT - 100 RT	ADJUST	BURIED CABLE
60+45	71+27	50 RT - 58 RT	LEAVE	BURIED CABLE
71+27		58 RT - 60 LT	LEAVE	BURIED CABLE
71+27	72+50	60 LT	LEAVE	BURIED CABLE
72+50	74+50	60 LT RT	ADJUST	BURIED CABLE
74+50	77+50	60 LT	LEAVE	BURIED CABLE
CSAH 9				
10+00	15+32	31 LT	LEAVE	BURIED CABLE
15+32		32 LT	LEAVE	SPLICE BOX
15+32		32 LT - 150 RT	LEAVE	CROSSING
15+32	17+50	32 LT	RELOCATE	BURIED CABLE
15+40	18+40	55 RT	LEAVE	BURIED CABLE
15+71		42 RT	LEAVE	F/O SPLICE BOX
15+85		50 LT	ADJUST	F/O SPLICE BOX
15+85	19+50	50 LT	ADJUST	F/O
17+50	21+90	32 LT - 43 LT	LEAVE	BURIED CABLE
18+40		82 RT	LEAVE	SPLICE BOX
19+50	27+00	53 LT	LEAVE	F/O
21+90		53 LT	RELOCATE	F/O SPLICE BOX
21+90	23+10	52 RT	RELOCATE	BURIED CABLE
23+10	27+00	50 RT	LEAVE	BURIED CABLE
27+00	29+00	50 RT	RELOCATE	BURIED CABLE
27+00	28+25	51 LT	RELOCATE	F/O
28+25	32+00	42 LT	RELOCATE	OVERHEAD
29+38		85 RT	LEAVE	SPLICE BOX
29+38	32+00	45 RT	LEAVE	BURIED CABLE

TELEPHONE - CENTURYLINK | FF

STATION BEGIN	STATION END	OFFSET	INPLACE ITEM	REMARKS
CSAH 22				
57+67		58 LT	SPLICE BOX	LEAVE
57+67	60+00	58 - 47 LT	BURIED CABLE	LEAVE
59+93		53 LT - 50 RT	CABLE CROSSING	ADJUST
59+93	60+66	50 RT	BURIED CABLE	LEAVE
60+00	64+00	58 - 53 LT	BURIED CABLE	RELOCATE
60+40		47 LT	SPLICE BOX	RELOCATE
60+66		50 - 100 RT	BURIED CABLE	LEAVE
64+00	67+93	53 - 36 LT	BURIED CABLE	LEAVE
67+93		36 LT	MANHOLE	ADJUST
67+93	77+00	36 / 65 LT	F/O / BURIED CABLE	LEAVE
CSAH 9				
9+34		35 LT	F/O HAND HOLE	LEAVE
9+81		37 RT	SPLICE BOX	LEAVE
11+54		36 LT	F/O SPLICE BOX	LEAVE
11+54	15+0	36 - 52 LT	F/O	LEAVE
12+49		37 RT	SPLICE BOX	LEAVE
12+49	22+85	37 - 43 RT	BURIED CABLE	LEAVE
14+83		69 RT	SPLICE BOX	LEAVE
14+83	17+81	73 RT	BURIED CABLE	LEAVE
15+00	19+00	42/54 LT	F/O / BURIED CABLE	ADJUST
15+90		52 LT	SPLICE BOX	ADJUST
19+00	27+50	44 - 54 LT	F/O / BURIED CABLE	LEAVE
23+07		44 LT	HANDHOLE	RELOCATE
27+50	30+50	38 LT	F/O / BURIED CABLE	ADJUST
28+97		38 LT	SPLICE BOX	ADJUST
29+39		38 LT	SPLICE BOX	ADJUST
30+50	32+00	38 LT	BURIED CABLE	LEAVE

FIBER OPTIC - ZAYO FIBER SOLUTIONS | FF

STATION BEGIN	STATION END	OFFSET FROM CL	REMARKS	SIZE & ITEM
CSAH 22				
57+00	68+50	35 RT - 32 RT	RELOCATE	FIBER
68+50	77+00	32 RT - 39 RT	LEAVE	FIBER

NO	DATE	BY	CKD	APPR	REVISION
1	08/07/2016	EJM	GMP	GMP	UPDATED TABULATION DD 'REMARKS' & 'SIZE & ITEM' COLUMNS.

NAME: P:\02-622-35\Plan\0262235_TAB.dgn 08/07/2016 9:19:01 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: ELIZABETH MARKOSE
SIGNATURE: Elizabeth M
DATE: 08-08-2016 LICENSE NO. 49118

DRAWN BY EJM DATE 06-17-16
DESIGN BY EJM DATE 06-17-16
CHECKED BY GMP DATE 07-14-16

ANOKA COUNTY HIGHWAY DEPT.

SAP 002-609-016
SAP 002-622-035

TABULATIONS

Sheet 11 of 119 Sheets

EARTHWORK TABULATION (CSAH 22) — E

STATION	EXCAVATION TOTALS		EMBANKMENT TOTALS (CV)		
	COMMON (CU YD)	SUBGRADE (CU YD)	TOPSOIL (CU YD)	SUBGRADE (CU YD)	SUITABLE (CU YD)
58+00.00					
58+50.00	131	95	20	95	2
59+00.00	137	97	30	98	22
59+50.00	144	95	36	103	56
60+00.00	156	94	37	107	76
60+30.00	109	59	17	66	57
60+60.00	120	61	17	67	54
61+00.00	164	81	31	91	56
61+50.00	212	103	41	116	63
62+00.00	200	106	39	118	63
62+50.00	200	110	42	119	76
63+00.00	170	111	44	119	91
63+22.00	57	49	19	53	53
63+50.00	78	62	22	67	85
64+00.00	141	106	41	119	190
64+50.00	121	103	42	119	217
65+00.00	101	100	33	119	198
65+50.00	96	96	30	119	146
66+00.00	81	98	22	119	80
66+50.00	65	106	16	119	29
66+75.00	28	57	6	59	4
67+00.00	37	68	7	69	38
67+50.00	107	153	19	156	158
68+00.00	102	148	19	138	101
68+25.00	34	64	9	59	19
68+50.00	25	54	12	59	30
69+00.00	62	105	28	119	73
69+50.00	71	106	23	119	66
70+00.00	75	110	19	119	56
70+50.00	75	111	19	119	48
71+00.00	70	112	18	118	43
71+25.00	34	57	8	57	21
71+60.00	63	79	16	77	33
72+00.00	84	87	20	86	41
72+50.00	90	106	26	107	66
72+81.50	55	66	19	68	44
73+00.00	35	38	12	39	19
73+50.00	109	101	31	102	40
74+00.00	97	97	22	98	33
74+50.00	60	95	17	94	24
75+00.00	41	94	11	92	10
75+24.00	21	44	5	46	5
75+50.00	21	49	9	52	13
76+00.00	32	96	19	96	29
76+50.00	50	94	20	94	26
76+71.40	31	40	4	20	6
SUBTOTAL	**3992**	**3963**	**997**	**4195**	**2660**

EARTHWORK TABULATION (CSAH 9) — E

STATION	EXCAVATION TOTALS		EMBANKMENT TOTALS (CV)		
	COMMON (CU YD)	SUBGRADE (CU YD)	TOPSOIL (CU YD)	SUBGRADE (CU YD)	SUITABLE (CU YD)
13+50.00					
14+00.00	67	89	13	93	27
14+50.00	66	92	9	95	16
14+83.00	45	64	4	65	5
15+14.00	51	63	3	63	3
15+50.00	105	73	10	74	2
16+00.00	230	105	26	106	2
16+50.00	283	110	29	111	7
17+00.00	270	114	29	117	14
17+50.00	197	115	28	119	17
18+00.00	156	115	32	119	19
18+30.00	97	71	24	72	12
18+64.00	105	81	20	82	13
19+00.00	99	85	17	87	11
19+50.00	111	119	26	120	15
20+00.00	83	117	18	119	17
20+50.00	83	117	17	119	19
21+00.00	88	117	17	119	20
21+50.00	96	118	15	119	16
21+75.00	47	59	6	59	5
22+00.00	53	69	7	30	32
22+50.00	62	78	8		61
23+00.00	52	71	10	78	91
23+25.00	43	64	9	69	53
23+50.00	39	58	11	59	23
24+00.00	83	115	33	119	114
24+50.00	80	113	44	119	163
25+00.00	74	110	47	119	167
25+50.00	78	110	48	119	176
26+00.00	90	112	47	119	172
26+50.00	92	108	41	119	171
26+75.00	44	52	18	59	78
27+00.00	41	53	14	59	55
27+23.00	43	49	9	55	29
27+50.00	104	58	13	64	14
28+00.00	374	109	38	119	6
28+25.00	192	55	19	60	3
28+50.00	131	54	15	59	2
28+75.00	89	56	11	58	1
29+09.50	88	79	6	79	
29+50.00	117	86	13	89	20
30+00.00	133	91	31	106	100
30+50.00	87	78	31	102	204
31+00.00	70	73	32	99	259
31+50.00	71	72	33	96	234
SUBTOTAL	**4609**	**3797**	**931**	**3912**	**2468**

EARTHWORK TABULATION (ORCHID ST) — E

STATION	EXCAVATION TOTALS		EMBANKMENT TOTALS (CV)		
	COMMON (CU YD)	SUBGRADE (CU YD)	TOPSOIL (CU YD)	SUBGRADE (CU YD)	SUITABLE (CU YD)
2+30.00					
2+50.00	11		1		
2+75.00	12		2		
3+00.00	6		2		2
3+25.00	4		4		11
3+50.00	3		7		32
3+75.00			7		49
4+00.00			6		50
SUBTOTAL	**36**		**29**		**144**

EARTHWORK SUMMARY — F

	EXCAVATION TOTALS		EMBANKMENT TOTALS (CV)		
	COMMON (CU YD)	SUBGRADE (CU YD)	TOPSOIL (CU YD)	SUBGRADE (CU YD)	SUITABLE (CU YD)
CSAH 9	4609	3797	931	3912	2468
CSAH 22	3992	3963	997	4195	2660
ORCHID ST	36		29		144
TOTAL	**8637**	**7760**	**1957**	**8107**	**5272**

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-622-35\Plan\0262235_TAB.dgn 07/18/2016 2:31:46 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: ELIZABETH MARKOSE

SIGNATURE: Elizabeth Markose

DATE: 07-18-16 LICENSE NO. 49118

DRAWN BY EJM DATE 07-06-16

DESIGN BY EJM DATE 07-06-16

CHECKED BY GMP DATE 07-14-16

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

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SAP 002-622-035

TABULATIONS

Sheet 12 of 119 Sheets

EARTHWORK BALANCE

G

EXCAVATION (CU YD)			EMBANKMENT (CU YD)	EXCESS / BORROW (CU YD)
COMMON EXCAVATION 8637 (EV)	TOPSOIL 2718 (EV)	(2718/ 1.11) = 2449 (CV)	TOPSOIL 1957 (CV)	TOPSOIL (2449 - 1957) * 1.30 = (640) (EXCESS) (LV)
① SUBGRADE EXCAVATION 7760 (EV)	SUITABLE 5919 (EV)	(5919+7760) / 1.11 = 12323 (CV)	SUITABLE 5272 (CV)	② SELECT GRANULAR ((5272+ 8107) -12323) * 1.30 = 1373 (BORROW) (LV)
			SUBGRADE BACKFILL 8107 (CV)	

EARTHWORK BALANCE NOTES:

① 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.

② 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.

GENERAL NOTES:

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

111% SHRINKAGE FACTOR USED FROM EXCAVATED VOLUME (EV) TO COMPACTED VOLUME (CV).
130% SWELL FACTOR USED FROM COMPACTED VOLUME (CV) TO LOOSE VOLUME (LV).
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.

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 OVER MINING OF MATERIALS WILL BE ALLOWED ON THE PROJECT.

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-622-35\Plan\0262235_TAB.dgn 07/18/2016 2:31:47 PM

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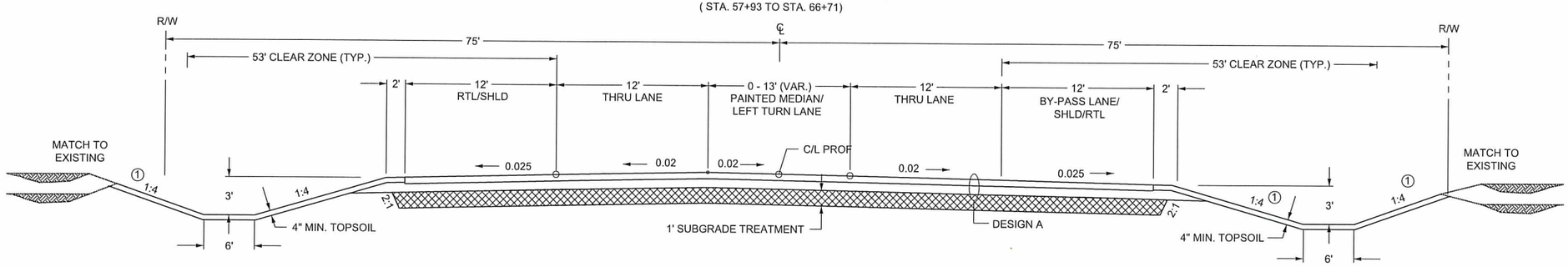
TABULATIONS

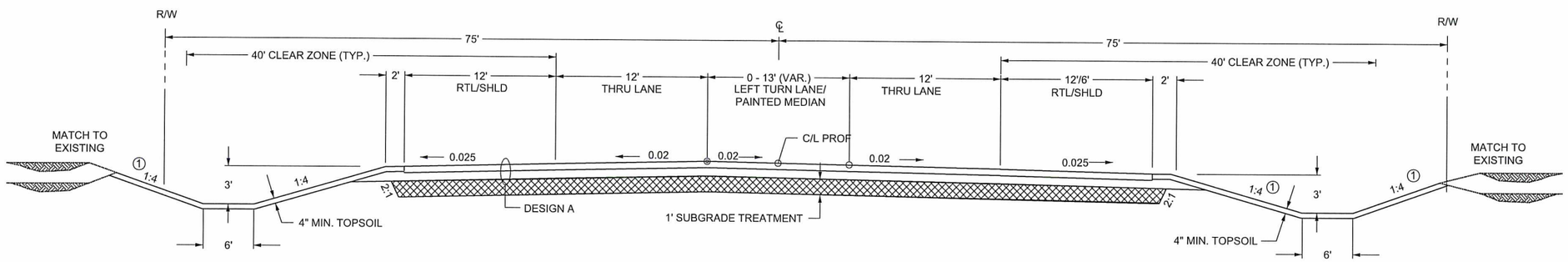
CSAH 22 (VIKING BLVD NW)

(STA. 57+93 TO STA. 66+71)



CSAH 22 (VIKING BLVD NW)

(STA. 66+71 TO STA. 76+71)



TURN LANE LOCATIONS

ALIGNMENT	STA. TO STA. *		LOCATION	DESCRIPTION	TAPER
CSAH 9	BEGIN	14+73	RT.	RIGHT TURN LANE	-
CSAH 9	15+57	18+18	RT.	RIGHT TURN LANE	-
CSAH 9	16+08	22+00	LT.	BY-PASS LANE	1:15
CSAH 9	17+05	21+66		LEFT TURN LANE	1:15
CSAH 9	19+10	21+66	RT.	RIGHT TURN LANE	-
CSAH 9	23+29	27+94		LEFT TURN LANE	1:15
CSAH 9	23+32	26+74	LT.	RIGHT TURN LANE	-
CSAH 9	24+16	28+66	RT.	RIGHT TURN LANE	1:15
CSAH 9	28+90	30+84	LT.	RIGHT TURN LANE	1:15
CSAH 22	57+98	59+78	RT.	BY-PASS LANE	1:15
CSAH 22	BEGIN	63+33	LT.	RIGHT TURN LANE	-
CSAH 22	62+18	66+71	RT.	RIGHT TURN LANE	1:15
CSAH 22	62+18	66+93		LEFT TURN LANE	1:15
CSAH 22	63+92	66+68	LT.	RIGHT TURN LANE	-
CSAH 22	68+07	72+97		LEFT TURN LANE	1:15
CSAH 22	68+28	72+82	LT.	RIGHT TURN LANE	1:15
CSAH 22	68+33	71+13	RT.	RIGHT TURN LANE	-
CSAH 22	75+47	END	RT.	RIGHT TURN LANE	1:15

* STATION RANGE INCLUDES TAPER SECTION.

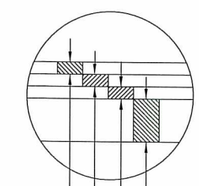
GENERAL NOTES:

1) ALL CROSS SLOPES ARE EXPRESSED IN FT/FT.
2) SEE SUPERELEVATION PLANS FOR SUPERELEVATION TRANSITIONS.
3) LONGITUDINAL PAVEMENT JOINTS SHALL BE ALONG THE EDGE OF LANES.

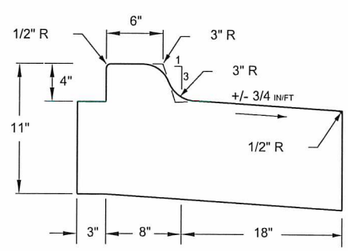
NOTES:

① 1:3 OUTSIDE CLEARZONE TO REDUCE R/W AND WETLAND IMPACTS.

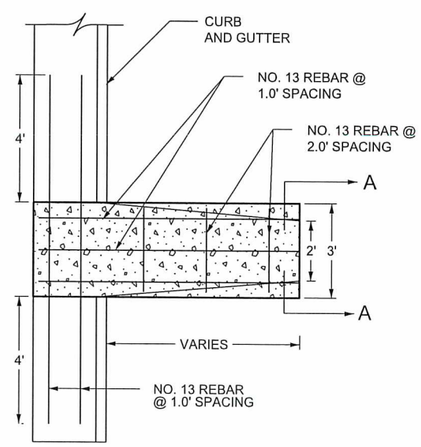
CSAH 9/22
DESIGN A

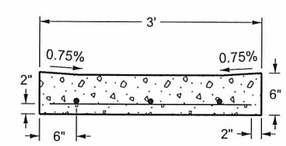


2.0" TYPE SP 12.5 WEARING COURSE MIXTURE (3,F) SPWEB340F
2.0" TYPE SP 12.5 WEARING COURSE MIXTURE (3,F) SPWEB340F
2.0" TYPE SP 12.5 NON-WEARING COURSE MIXTURE (3,B) SPNWB330B
6.0" AGGREGATE BASE, CLASS 5 (MNDOT SPEC. 2211)



MODIFIED B418 CURB & TIP OUT GUTTER
FOR MEDIAN
(NO VARIANCES ALLOWED)





SECTION A-A

CONCRETE DRAINAGE FLUME DETAIL

NOT TO SCALE

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-622-35\Plan\0262235_TYP.dgn 07/18/2016 2:31:51 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: ELIZABETH MARKOSE
SIGNATURE: Elizabeth Markose
DATE: 07-18-16 LICENSE NO. 49118

DRAWN BY EJM DATE 07-06-16
DESIGN BY EJM DATE 07-06-16
CHECKED BY GMP DATE 07-14-16

ANOKA COUNTY

ANOKA COUNTY
HIGHWAY DEPT.

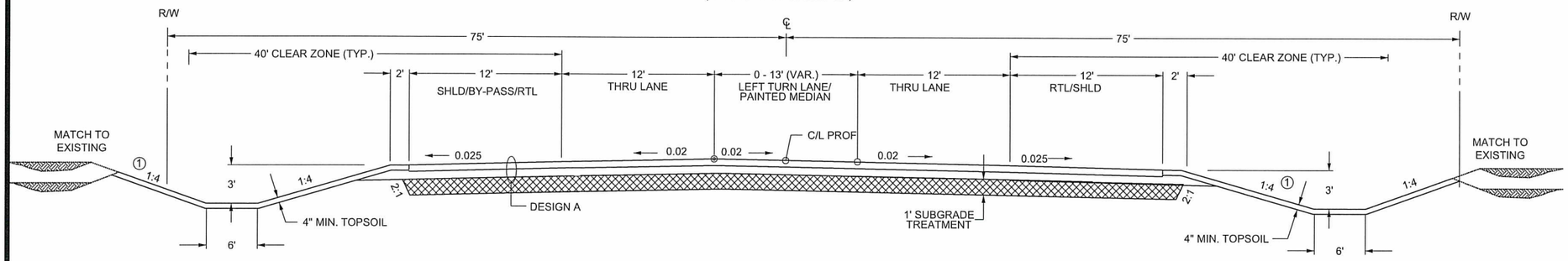
SAP 002-609-016
SAP 002-622-035

PROPOSED TYPICAL SECTIONS

Sheet 14 of 119 Sheets

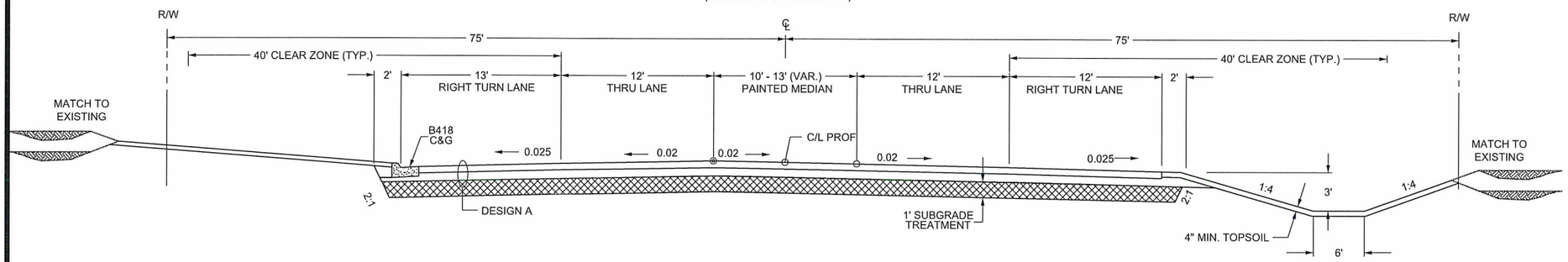
CSAH 9 (LAKE GEORGE BLVD NW)

(STA. 13+47 TO STA. 27+00)



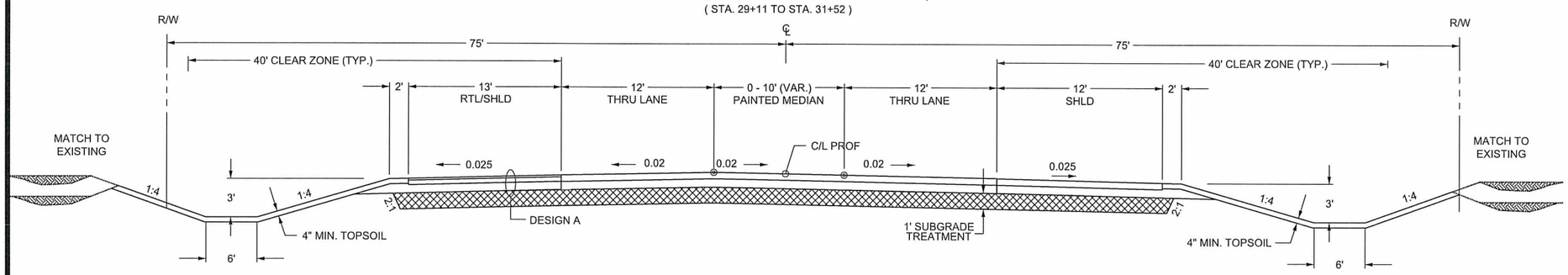
CSAH 9 (LAKE GEORGE BLVD NW)

(STA. 27+00 TO STA. 29+11)



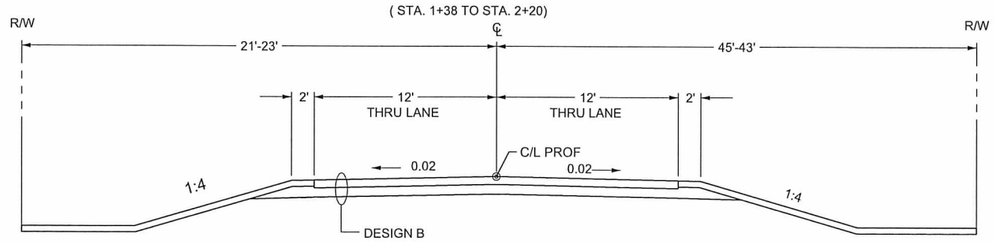
CSAH 9 (LAKE GEORGE BLVD NW)

(STA. 29+11 TO STA. 31+52)



ORCHID ST NW

(STA. 1+38 TO STA. 2+20)



NOT TO SCALE

TURN LANE LOCATIONS

ALIGNMENT	STA. TO STA. *		LOCATION	DESCRIPTION	TAPER
CSAH 9	BEGIN	14+73	RT.	RIGHT TURN LANE	-
CSAH 9	15+57	18+18	RT.	RIGHT TURN LANE	-
CSAH 9	16+08	22+00	LT.	BY-PASS LANE	1:15
CSAH 9	17+05	21+66		LEFT TURN LANE	1:15
CSAH 9	19+10	21+66	RT.	RIGHT TURN LANE	-
CSAH 9	23+29	27+94		LEFT TURN LANE	1:15
CSAH 9	23+32	26+74	LT.	RIGHT TURN LANE	-
CSAH 9	24+16	28+66	RT.	RIGHT TURN LANE	1:15
CSAH 9	28+90	30+84	LT.	RIGHT TURN LANE	1:15
CSAH 22	57+98	59+78	RT.	BY-PASS LANE	1:15
CSAH 22	BEGIN	63+33	LT.	RIGHT TURN LANE	-
CSAH 22	62+18	66+71	RT.	RIGHT TURN LANE	1:15
CSAH 22	62+18	66+93		LEFT TURN LANE	1:15
CSAH 22	63+92	66+68	LT.	RIGHT TURN LANE	-
CSAH 22	68+07	72+97		LEFT TURN LANE	1:15
CSAH 22	68+28	72+82	LT.	RIGHT TURN LANE	1:15
CSAH 22	68+33	71+13	RT.	RIGHT TURN LANE	-
CSAH 22	75+47	END	RT.	RIGHT TURN LANE	1:15

* STATION RANGE INCLUDES TAPER SECTION.

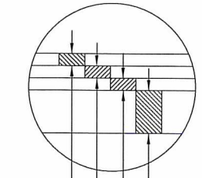
GENERAL NOTES:

1) ALL CROSS SLOPES ARE EXPRESSED IN FT/FT.
2) SEE SUPERELEVATION PLANS FOR SUPERELEVATION TRANSITIONS.
3) LONGITUDINAL PAVEMENT JOINTS SHALL BE ALONG THE EDGE OF LANES.

NOTES:

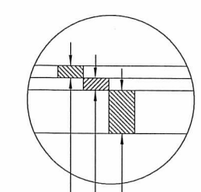
① 1:3 OUTSIDE THE CLEARZONE TO REDUCE R/W AND WETLAND IMPACTS.

CSAH 9/22
DESIGN A



2.0" TYPE SP 12.5 WEARING COURSE MIXTURE (3,F) SPWEB340F
2.0" TYPE SP 12.5 WEARING COURSE MIXTURE (3,F) SPWEB340F
2.0" TYPE SP 12.5 NON-WEARING COURSE MIXTURE (3,B) SPNWB330B
6.0" AGGREGATE BASE, CLASS 5 (MNDOT SPEC. 2211)

ORCHID ST NW
DESIGN B



1.5" TYPE SP 12.5 WEARING COURSE MIXTURE (3,F) SPWEB340F
2.0" TYPE SP 12.5 WEARING COURSE MIXTURE (3,F) SPWEB340F
5.0" AGGREGATE BASE, CLASS 5 (MNDOT SPEC. 2211)

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-622-35\Plan\0262235_TYP.dgn 07/18/2016 2:31:52 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: ELIZABETH MARKOSE
SIGNATURE: Elizabeth M
DATE: 07-18-16 LICENSE NO. 49118

DRAWN BY EJM DATE 07-06-16
DESIGN BY EJM DATE 07-06-16
CHECKED BY GMP DATE 07-14-16

ANOKA COUNTY

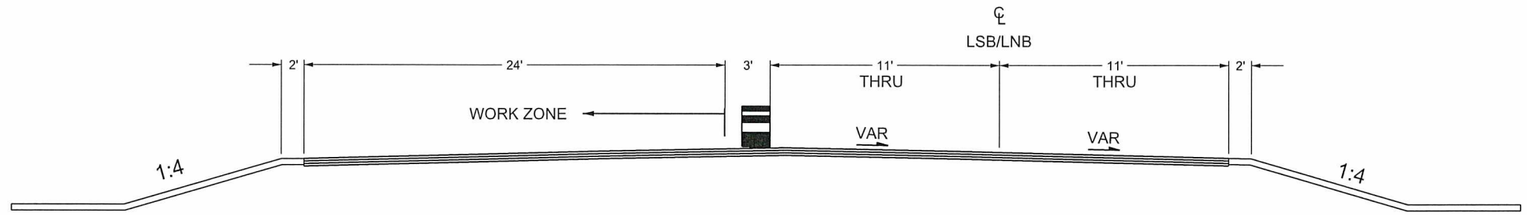
ANOKA COUNTY HIGHWAY DEPT.

SAP 002-609-016
SAP 002-622-035

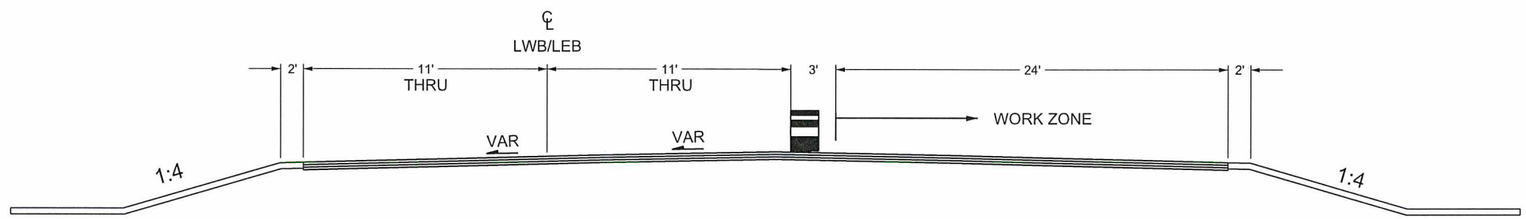
PROPOSED TYPICAL SECTIONS

STAGE 1 TYPICAL SECTION

CSAH 9 (LAKE GEORGE BLVD NW)



CSAH 22 (VIKING BLVD NW)



STAGE 2 TYPICAL SECTION

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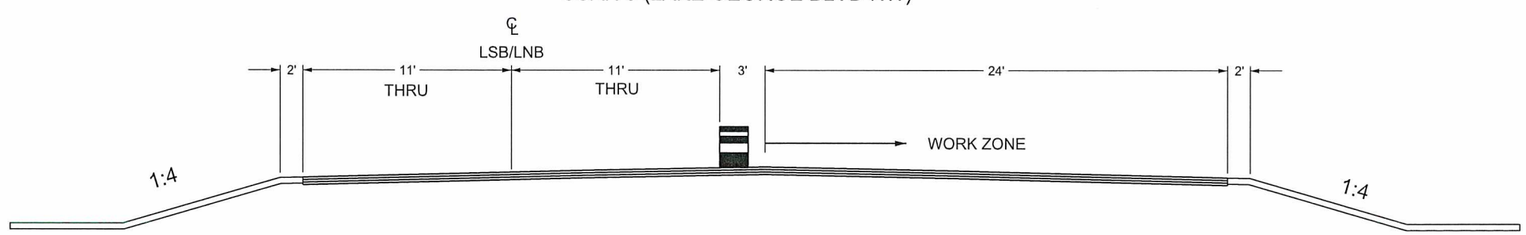
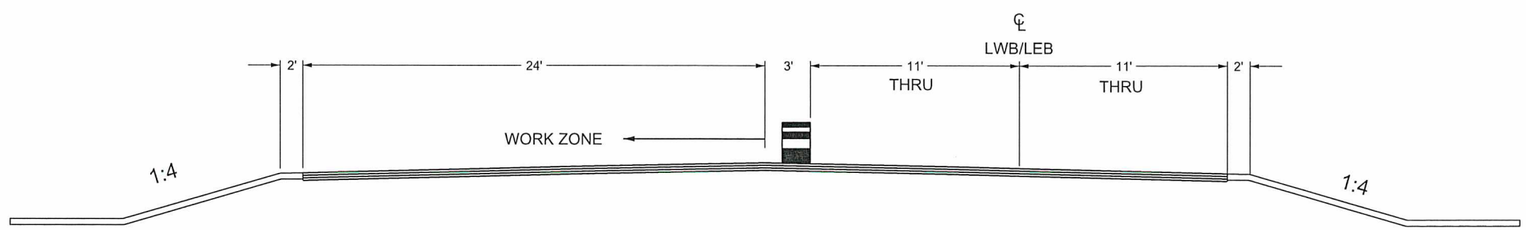


CSAH 22 (VIKING BLVD NW)



NOT TO SCALE

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-622-35\Plan\0262235_TYP.dgn 07/18/2016 2:31:53 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: ELIZABETH MARKOSE

SIGNATURE: Elizabeth M

DATE: 07-18-16 LICENSE NO. 49118

DRAWN BY EJM DATE 07-06-16

DESIGN BY EJM DATE 07-06-16

CHECKED BY GMP DATE 07-14-16

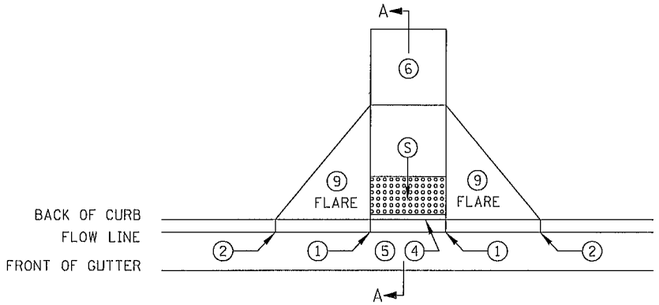
ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

SAP 002-609-016
SAP 002-622-035

STAGING TYPICAL SECTIONS

Sheet 16 of 119 Sheets



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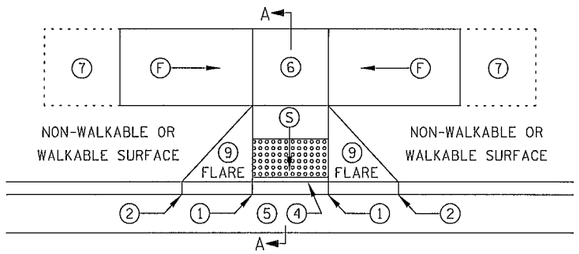
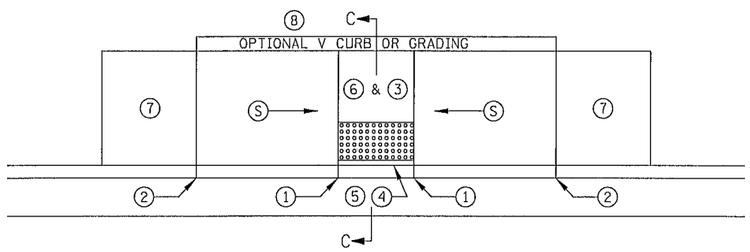


TIERED PERPENDICULAR



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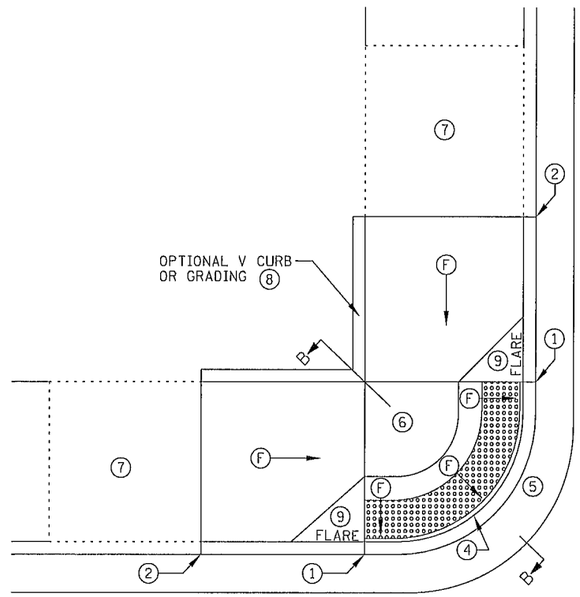

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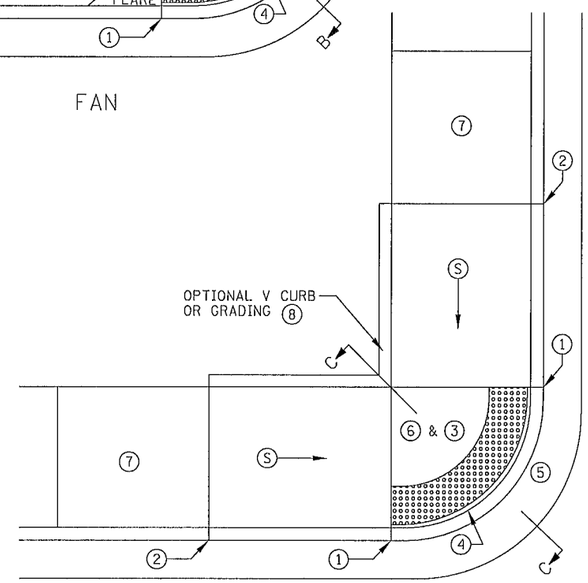
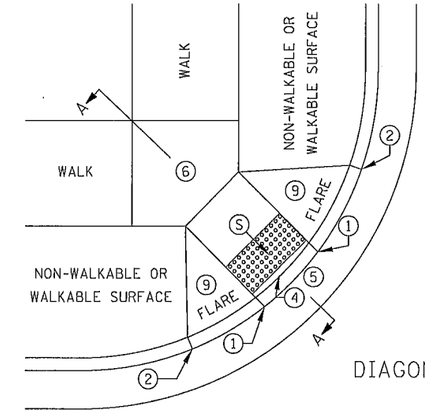
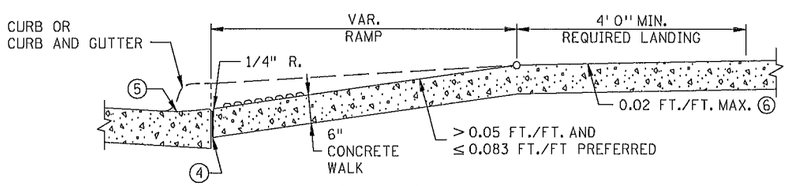


DEPRESSED CORNER

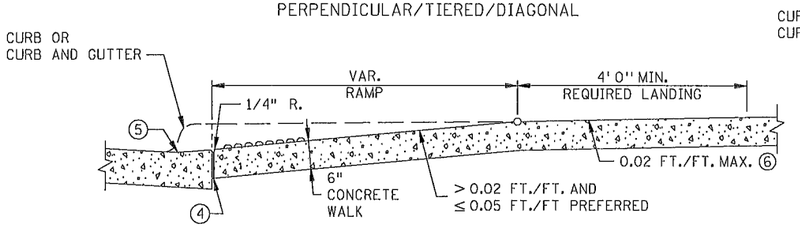


DIAGONAL 10



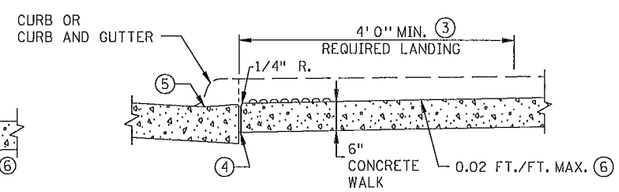
SECTION A-A

PERPENDICULAR/TIERED/DIAGONAL



SECTION B-B

FAN



SECTION C-C

PARALLEL/DEPRESSED CORNER

NOTES:

LANDINGS SHALL BE LOCATED ANYWHERE THE PEDESTRIAN ACCESS ROUTE CHANGES DIRECTION, AT THE TOP OF RAMPS THAT HAVE RUNNING SLOPES GREATER THAN 5.0%, AND IF THE APPROACHING WALK IS INVERSE GRADE.

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 GREATER THAN 5.0%.

CONTRACTION JOINTS SHALL BE CONSTRUCTED ALONG ALL GRADE BREAKS.

ALL GRADE BREAKS WITHIN THE PAR SHALL BE PERPENDICULAR TO THE PATH OF TRAVEL.

TO ENSURE RAMPS AND LANDINGS ARE PROPERLY CONCTRUCTED, LANDINGS MAY BE CAST SEPARATELY. FOLLOW SIDEWALK REINFORCEMENT DETAILS ON SHEET 5 WHEN LANDINGS ARE CAST SEPARATELY.

ALL SLOPES ARE ABSOLUTE, RATHER THAN RELATIVE TO SIDEWALK/ROADWAY GRADES.

TOP OF CURB SHALL MATCH PROPOSED ADJACENT WALK GRADE.

4' MINIMUM WIDTH OF DETECTABLE WARNING IS REQUIRED FOR ALL RAMPS. DETECTABLE WARNINGS SHALL CONTINUOUSLY EXTEND FOR A MINIMUM OF 24" IN THE PATH OF TRAVEL. SHARED USE PATHS SHALL HAVE DETECTABLE WARNING ACROSS THE ENTIRE WIDTH OF PATH WHEN THE PATH CROSSES A ROAD.

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

1. 0" CURB HEIGHT.
2. FULL CURB HEIGHT.
3. DETECTABLE WARNINGS MAY BE PART OF 4' X 4' LANDING AREA IF IT IS NOT FEASIBLE TO CONSTRUCT THE LANDING OUTSIDE OF THE DETECTABLE WARNING AREA.
4. 1/2" PREFORMED JOINT FILLER MATERIAL AASHTO M 213. JOINT FILLER SHALL BE PLACED FLUSH WITH THE BACK OF CURB AND ADJACENT SIDEWALK. JOINT SHALL BE FREE OF DEBRIS. RECTANGULAR DETECTABLE WARNINGS SHALL BE SETBACK 3" FROM THE BACK OF CURB. RADIAL DETECTABLE WARNINGS SHALL BE SETBACK 3" MINIMUM TO 6" MAXIMUM 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 OF 5.
6. 4' BY 4' MIN. LANDING WITH MAX. 2.0% SLOPE IN ALL DIRECTIONS.
7. IF LONGITUDINAL SLOPE IS GREATER THAN 5.0%, 4' X 4' MIN. LANDING WITH MAX 2.0% SLOPE IN ALL DIRECTIONS REQUIRED.
8. V CURB, IF USED, SHALL BE PLACED OUTSIDE THE SIDEWALK LIMITS WHEN RIGHT OF WAY ALLOWS. SEE SHEET 5 OF 5.
9. SEE SHEET 4 OF 5, TYPICAL SIDE TREATMENT OPTIONS, FOR DETAILS ON FLARES AND RETURNED CURBS.
10. DIAGONAL RAMPS SHOULD ONLY BE USED AFTER ALL OTHER CURB RAMP TYPES HAVE BEEN EVALUATED AND DEEMED IMPRACTICAL.

LEGEND

THESE LONGITUDINAL SLOPE RANGES SHALL BE THE STARTING POINT. IF SITE CONDITIONS WARRANT, LONGITUDINAL SLOPES UP TO 8.3% OR FLATTER ARE ALLOWED.

S — INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN 5.0% MINIMUM AND 8.3% MAXIMUM IN THE DIRECTION SHOWN AND THE CROSS SLOPE SHALL NOT EXCEED 2.0%

F — 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%

1 OF 5

REVISION:

APPROVED: 8-6-2014

OPERATIONS ENGINEER

SAP 002-609-016
SAP 002-622-035

MINNESOTA DEPARTMENT OF TRANSPORTATION

REVISED:

STATE DESIGN ENGINEER

APPROVED: 8-6-2014

PEDESTRIAN CURB RAMP DETAILS

STANDARD PLAN 5-297.250

PLOTTED/REVISED: 07/18/2016
DISTRICT #:
USER NAME: ejmarkos
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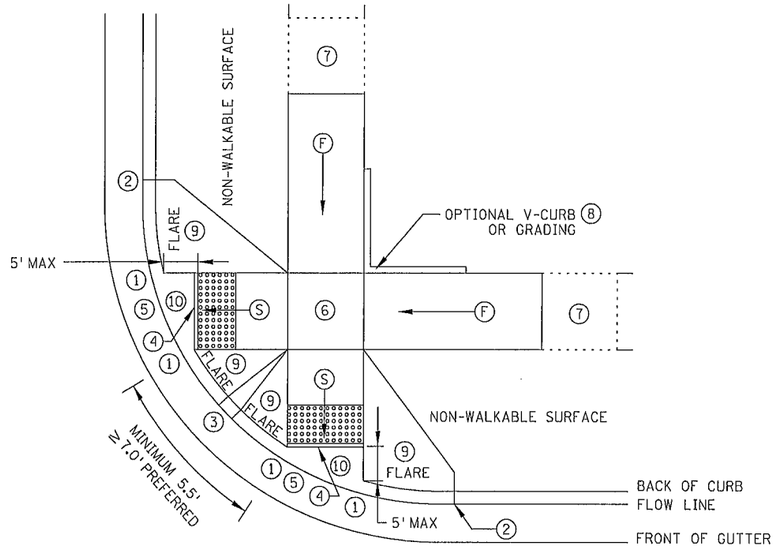
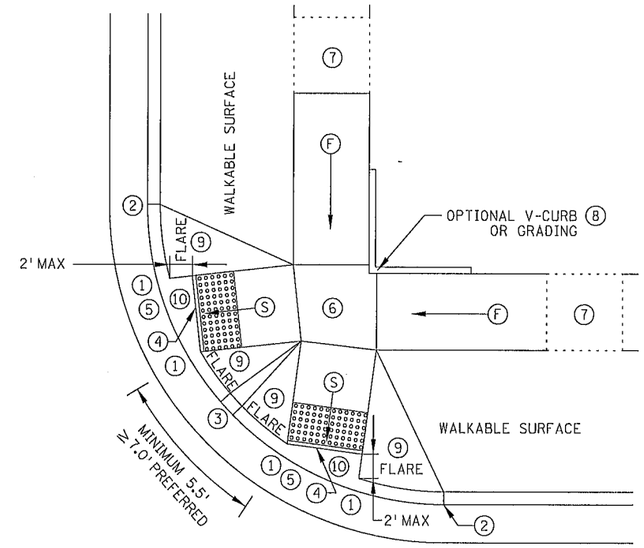
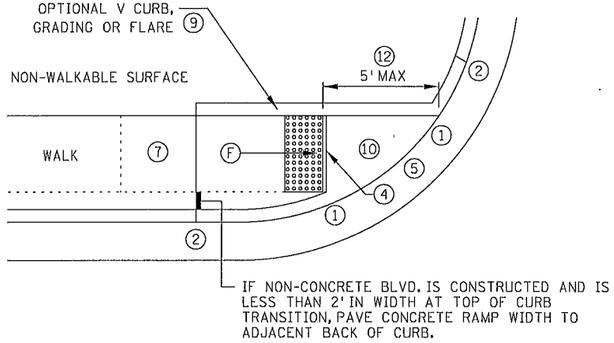


ADJACENT TO NON-WALKABLE SURFACE

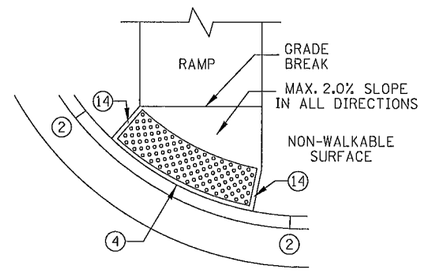


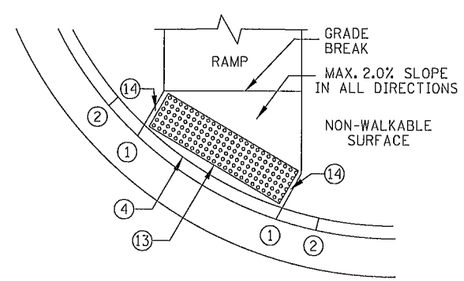
ADJACENT TO WALKABLE SURFACE

COMBINED DIRECTIONAL ⑮



ONE-WAY DIRECTIONAL





DETECTABLE WARNING PLACEMENT WHEN SETBACK CRITERIA IS EXCEEDED

NOTES:

LANDINGS SHALL BE LOCATED ANYWHERE THE PEDESTRIAN ACCESS ROUTE CHANGES DIRECTION, AT THE TOP OF RAMPS THAT HAVE RUNNING SLOPES GREATER THAN 5.0%, AND IF THE APPROACHING WALK IS INVERSE GRADE.

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 GREATER THAN 5.0%.

CONTRACTION JOINTS SHALL BE CONSTRUCTED ALONG ALL GRADE BREAKS.

ALL GRADE BREAKS WITHIN THE PAR SHALL BE PERPENDICULAR TO THE PATH OF TRAVEL.

TO ENSURE RAMPS AND LANDINGS ARE PROPERLY CONCTRUCTED, LANDINGS MAY BE CAST SEPARATELY. FOLLOW SIDEWALK REINFORCEMENT DETAILS ON SHEET 5 WHEN LANDINGS ARE CAST SEPARATELY.

ALL SLOPES ARE ABSOLUTE, RATHER THAN RELATIVE TO SIDEWALK/ROADWAY GRADES.

TOP OF CURB SHALL MATCH PROPOSED ADJACENT WALK GRADE.

4' MINIMUM WIDTH OF DETECTABLE WARNING IS REQUIRED FOR ALL RAMPS. DETECTABLE WARNINGS SHALL CONTINUOUSLY EXTEND FOR A MINIMUM OF 24" IN THE PATH OF TRAVEL. SHARED USE PATHS SHALL HAVE DETECTABLE WARNING ACROSS THE ENTIRE WIDTH OF PATH WHEN THE PATH CROSSES A ROAD.

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

① 0" CURB HEIGHT.

② FULL CURB HEIGHT.

③ 3" MINIMUM CURB HEIGHT, 4" PREFERRED.

④ 1/2" PREFORMED JOINT FILLER MATERIAL AASHTO M 213. JOINT FILLER SHALL BE PLACED FLUSH WITH THE BACK OF CURB AND ADJACENT SIDEWALK. JOINT SHALL BE FREE OF DEBRIS. RECTANGULAR DETECTABLE WARNINGS SHALL BE SETBACK 3" FROM THE BACK OF CURB. RADIAL DETECTABLE WARNINGS SHALL BE SETBACK 3" MIN. TO 6" MAX. 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 OF 5.

⑥ 4' BY 4' MIN. LANDING WITH MAX. 2.0% SLOPE IN ALL DIRECTIONS.

⑦ IF LONGITUDINAL SLOPE IS GREATER THAN 5.0%, 4' X 4' MIN. LANDING WITH MAX 2.0% SLOPE IN ALL DIRECTIONS REQUIRED.

⑧ V CURB, IF USED, SHALL BE PLACED OUTSIDE THE SIDEWALK LIMITS WHEN RIGHT OF WAY ALLOWS.

⑨ SEE SHEET 4 OF 5, TYPICAL SIDE TREATMENT OPTIONS, FOR DETAILS ON FLARES AND RETURNED CURBS.

⑩ MAX. 2.0% SLOPE IN ALL DIRECTIONS IN FRONT OF GRADE BREAK AND DRAIN TO FLOW LINE. SHALL BE CONSTRUCTED INTEGRAL WITH CURB AND GUTTER.

⑪ TO BE USED FOR ALL DIRECTIONAL RAMPS.

⑫ PLACE DOMES AT THE BACK OF CURB WHEN ALLOWABLE SETBACK CRITERIA IS EXCEEDED.

⑬ RECTANGULAR DETECTABLE WARNINGS MAY BE SETBACK 9" FROM THE BACK OF CURB WITH CORNERS SET 3" FROM BACK OF CURB. IF 9" SETBACK IS EXCEEDED USE RADIAL DETECTABLE WARNINGS.

⑭ WHEN NO CONCRETE 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.

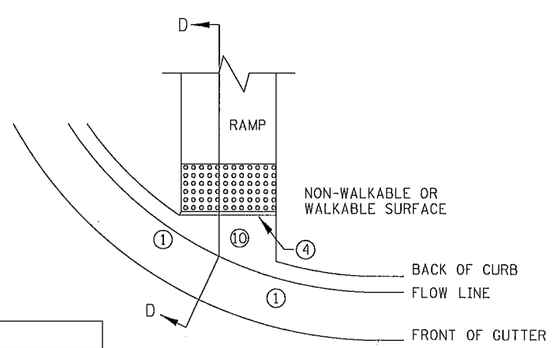
⑮ FRONT EDGE OF DETECTABLE WARNING SHALL BE SET BACK 2' MAXIMUM WHEN ADJACENT TO WALKABLE SURFACE, AND 5' MAXIMUM WHEN ADJACENT TO NON-WALKABLE SURFACE WITH ONE CORNER SET 3" FROM BACK OF CURB. WHETHER A SURFACE IS WALKABLE OR NOT SHALL BE DETERMINED BY THE ENGINEER

LEGEND

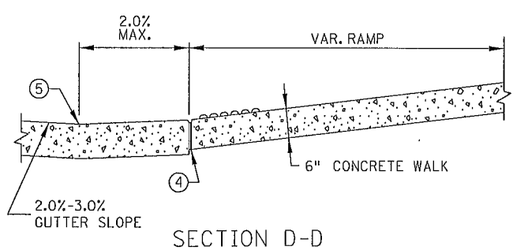
THESE LONGITUDINAL SLOPE RANGES SHALL BE THE STARTING POINT. IF SITE CONDITIONS WARRANT, LONGITUDINAL SLOPES UP TO 8.3% OR FLATTER ARE ALLOWED.

Ⓢ INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN 5.0% MINIMUM AND 8.3% MAXIMUM IN THE DIRECTION SHOWN AND THE CROSS SLOPE SHALL NOT EXCEED 2.0%

Ⓕ 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%



CURB FOR DIRECTIONAL RAMPS ⑪



SECTION D-D

REVISION:

APPROVED: 8-6-2014

OPERATIONS ENGINEER

SAP 002-609-016
SAP 002-622-035

REVISED:

APPROVED: 8-6-2014

STATE DESIGN ENGINEER

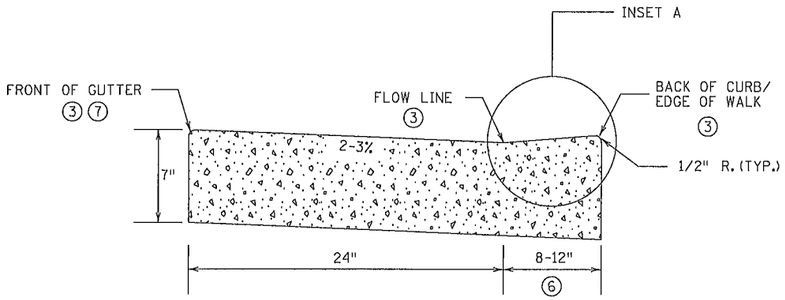
PEDESTRIAN CURB RAMP DETAILS

STANDARD PLAN 5-297.250

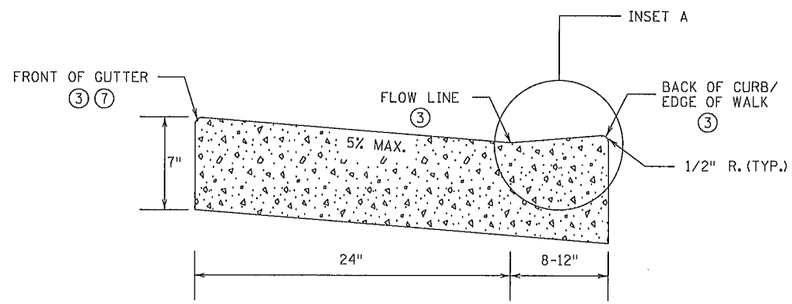
PLOTTED/REVISED: 07/18/2016

DISTRICT *:
USER NAME: ejmarkos
PATH & FILENAME: P:\02-622-35\Plan\STD Plans\s250_1_sp.dgn

FILE NAME: s250_1_sp.dgn



NON PERPENDICULAR ①



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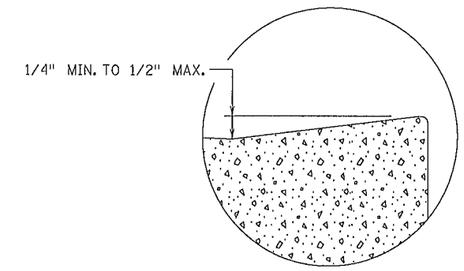
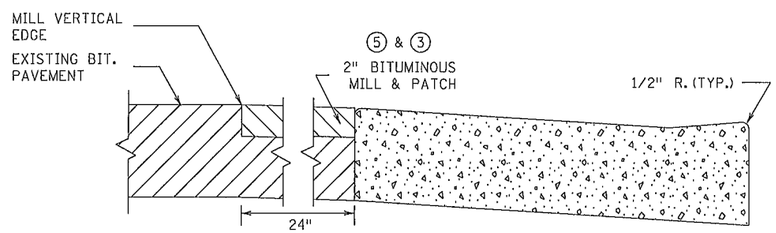
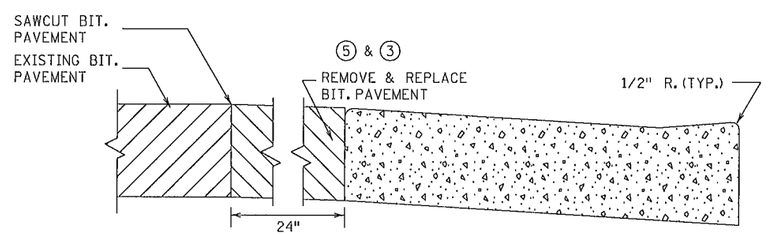
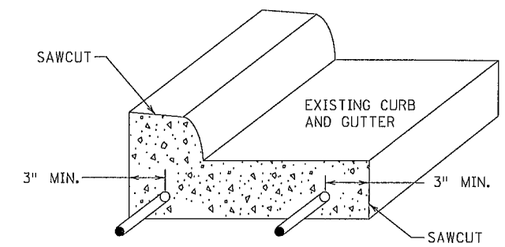


INSET A

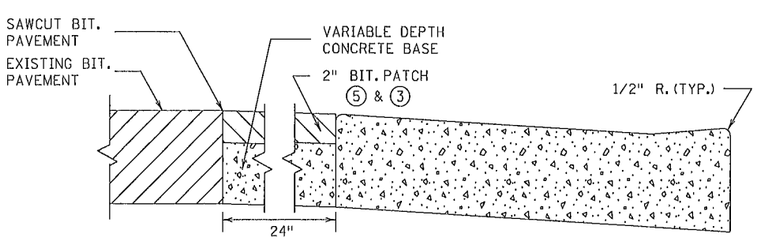
PEDESTRIAN ACCESS ROUTE
CURB & GUTTER DETAIL

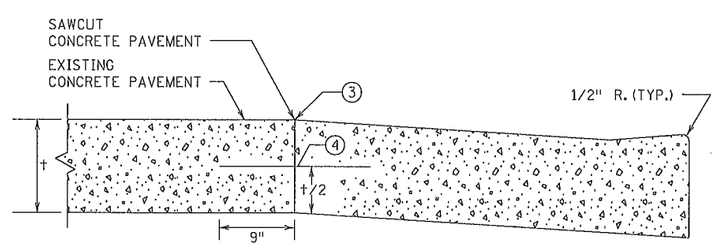






CURB AND GUTTER ⑧
REINFORCEMENT
FOR USE ON CURB RAMP RETROFITS





PAVEMENT TREATMENT OPTIONS
IN FRONT OF CURB & GUTTER
FOR USE ON CURB RAMP RETROFITS

NOTES:

POSITIVE FLOW LINE DRAINAGE SHALL BE MAINTAINED THROUGH THE PEDESTRIAN ACCESS ROUTE (PAR) AT A 2% MAXIMUM.

NO PONDING SHALL BE PRESENT IN THE PAR.

ANY VERTICAL LIP THAT OCCURS AT THE FLOW LINE SHALL NOT BE GREATER THAN 1/4 INCH.

① FOR USE AT CURB CUTS WHERE THE PEDESTRIAN'S PATH OF TRAVEL IS ASSUMED NON PERPENDICULAR TO THE GUTTER FLOW LINE. RAMP TYPES INCLUDE: FANS, DEPRESSED CORNERS, & ONE WAY AND COMBINED DIRECTIONALS.

② FOR USE AT CURB CUTS WHERE THE PEDESTRIAN'S PATH OF TRAVEL IS ASSUMED PERPENDICULAR TO THE GUTTER FLOW LINE. RAMP TYPES INCLUDE: PERPENDICULAR, TIERED PERPENDICULAR, PARALLEL, AND DIAGONAL RAMPS.

③ THERE SHALL BE NO VERTICAL DISCONTINUITIES GREATER THAN 1/4".

④ DRILL AND GROUT NO. 4 EPOXY-COATED 18" LONG TIE BARS AT 30" CENTER TO CENTER INTO EXISTING CONCRETE PAVEMENT.

⑤ ELEVATION CHANGE TAKES PLACE FROM THE EXISTING TO NEW FRONT OF GUTTER. PATCH IS USED TO MATCH THE NEW GUTTER FACE INTO THE EXISTING ROADWAY.

⑥ VARIABLE WIDTH FOR DIRECTIONAL CURB APPLICATIONS.

⑦ TOP FRONT OF GUTTER SHALL BE CONSTRUCTED FLUSH WITH PROPOSED ADJACENT PAVEMENT ELEVATION. PAR GUTTER SHALL NOT BE OVERLAID.

⑧ WHERE PLAN SPECIFIES, DRILL AND GROUT 2 - NO. 4 X 12" LONG REINFORCEMENT BARS (EPOXY COATED).

REVISION:

APPROVED: 8-6-2014
OPERATIONS ENGINEER

SAP 002-609-016
SAP 002-622-035

MINNESOTA DEPARTMENT OF TRANSPORTATION

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STATE DESIGN ENGINEER

APPROVED: 8-6-2014

PEDESTRIAN CURB RAMP DETAILS

STANDARD PLAN 5-297.250

PLOTTED/REVISED: 07/18/2016
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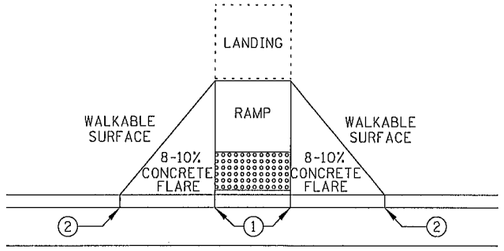
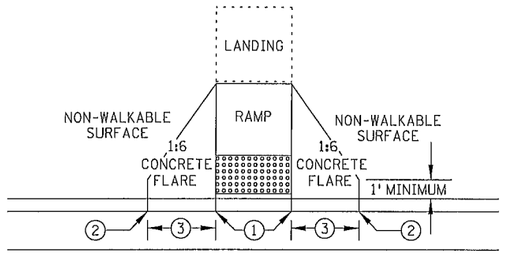
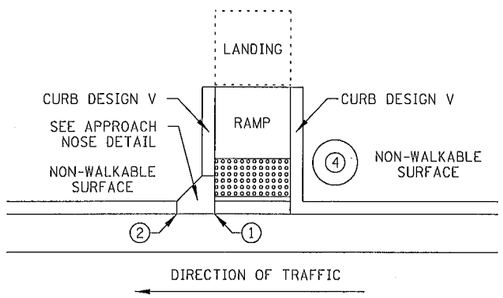


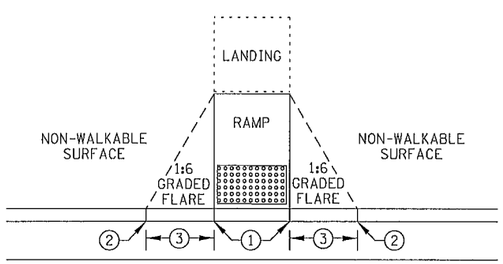
PAVED FLARES
ADJACENT TO WALKABLE SURFACE



PAVED FLARES
ADJACENT TO NON-WALKABLE SURFACE

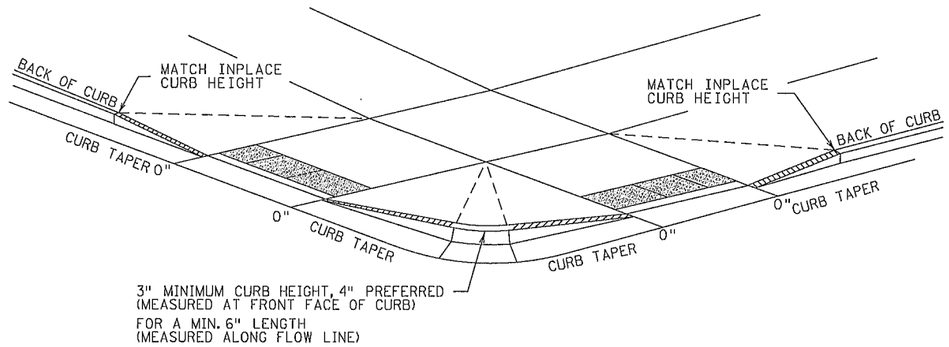


RETURNED CURB

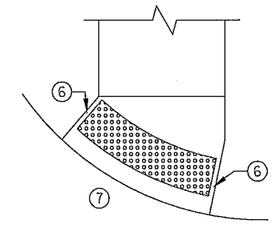


GRADED FLARES

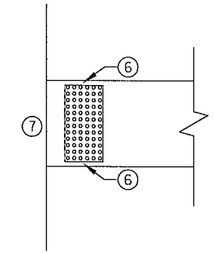
TYPICAL SIDE TREATMENT OPTIONS ⑤



DETECTABLE EDGE WITH
CURB AND GUTTER ⑧

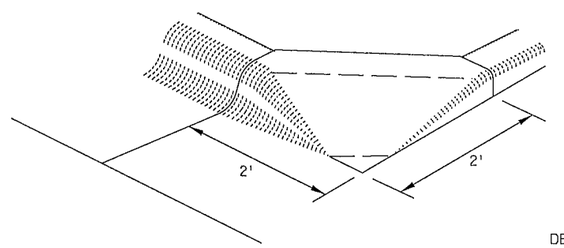


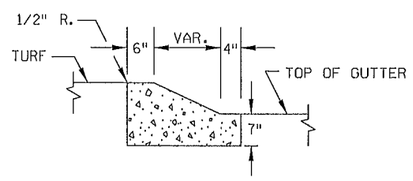
RADIAL DETECTABLE WARNING



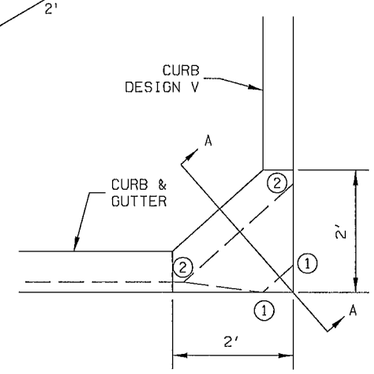
RECTANGULAR DETECTABLE WARNING

DETECTABLE EDGE WITHOUT CURB AND GUTTER





SECTION A-A



APPROACH NOSE DETAIL
FOR DOWNSTREAM SIDE OF TRAFFIC

NOTES:

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

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

CONCRETE FLARE LENGTHS ADJACENT TO NON-WALKABLE SURFACES SHOULD BE LESS THAN 8' LONG MEASURED ALONG THE RAMPS FROM THE BACK OF CURB.

① 0" CURB HEIGHT.

② FULL CURB HEIGHT.

③ 2' - 3' FLARE.

④ IMMOVABLE OBJECT OR 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 WHEN NO CONCRETE FLARES ARE PROPOSED, THE CONCRETE WALK SHALL BE FORMED AND CONSTRUCTED PERPENDICULAR TO THE EDGE OF ROADWAY. MAINTAIN 3" BETWEEN EDGE OF DOMES AND EDGE OF CONCRETE.

⑦ IF NO CURB AND GUTTER IS PLACED IN RURAL SECTIONS, DETECTABLE WARNINGS SHALL BE PLACED 1' FROM THE EDGE OF ROADWAY TO PROVIDE VISUAL CONTRAST.

⑧ ALL CONSTRUCTED CURBS MUST HAVE A CONTINUOUS DETECTABLE EDGE FOR THE VISUALLY IMPAIRED. THIS DETECTABLE EDGE REQUIRES DETECTABLE WARNINGS WHEREVER THERE IS ZERO-INCH HIGH CURB. CURB TAPERS ARE CONSIDERED A DETECTABLE EDGE WHEN THE TAPER STARTS WITHIN 3" OF THE EDGE OF THE DETECTABLE WARNINGS AND UNIFORMLY RISES TO A 3-INCH MINIMUM CURB HEIGHT. ANY CURB NOT PART OF A CURB TAPER AND LESS THAN 3 INCHES IN HEIGHT IS NOT CONSIDERED A DETECTABLE EDGE AND THEREFORE IS NOT COMPLIANT WITH ACCESSIBILITY STANDARDS.

REVISION:
APPROVED: 8-6-2014
OPERATIONS ENGINEER

SAP 002-609-016
SAP 002-622-035

MINNESOTA DEPARTMENT OF TRANSPORTATION

REVISED:
STATE DESIGN ENGINEER
APPROVED: 8-6-2014

PEDESTRIAN CURB RAMP DETAILS

STANDARD PLAN 5-297.250

PLOTTED/REVISED: 07/18/2016
DISTRICT *:
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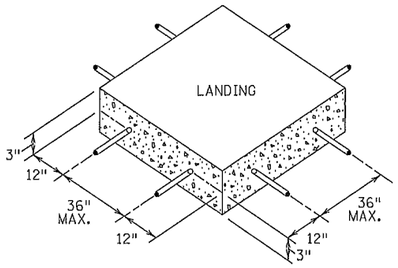
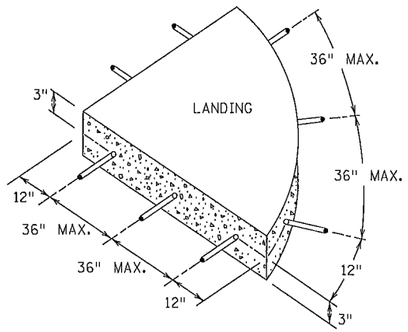
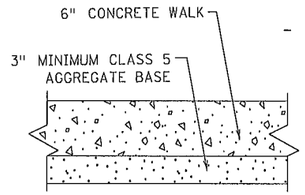
FILE NAME: s250_1_spn.dgn

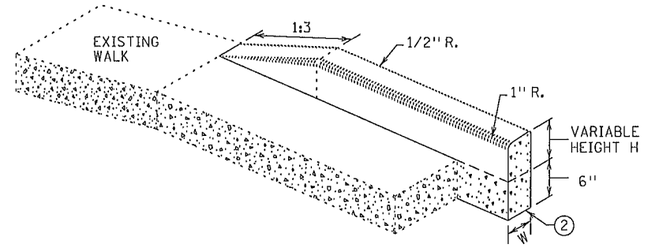




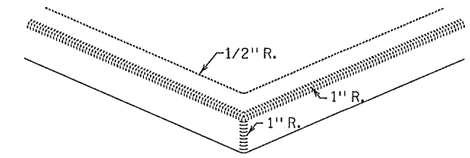
SIDEWALK REINFORCEMENT ⑥ ⑦



TYPICAL SIDEWALK SECTION
WITHIN INTERSECTION CORNER

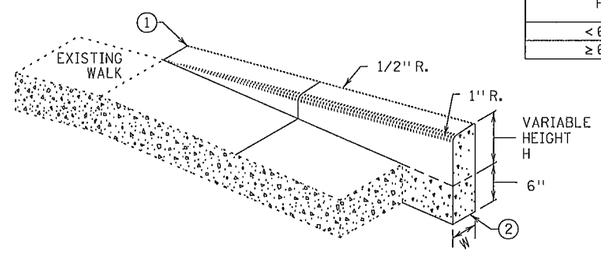


V CURB ADJACENT TO LANDSCAPE
CURB WITHIN SIDEWALK LIMITS

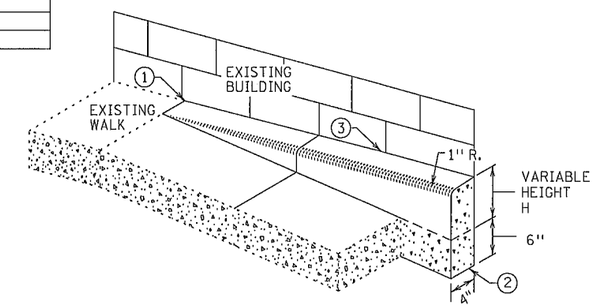


V CURB INTERSECTION

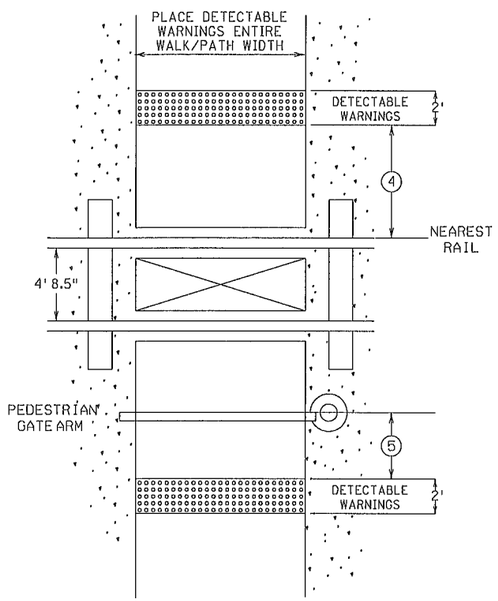
CONCRETE CURB DESIGN V	
CURB HEIGHT H	CURB WIDTH W
< 6"	4"
≥ 6"	6"



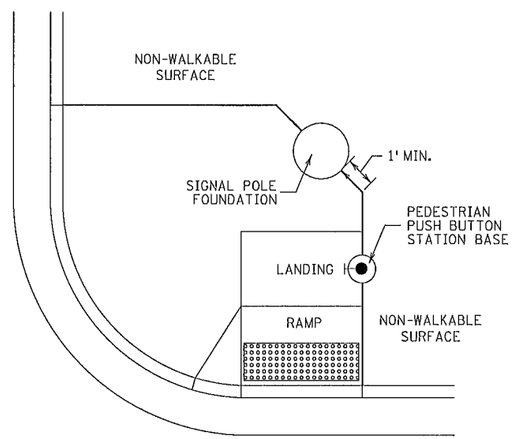
V CURB ADJACENT TO LANDSCAPE
CURB OUTSIDE SIDEWALK LIMITS



V CURB ADJACENT TO BUILDING
OR BARRIER



RAILROAD CROSSING
PLAN VIEW



CONCRETE WALK EDGES ADJACENT
TO CONCRETE STRUCTURES

NOTES:

ALL V CURB CONTRACTION JOINTS SHALL MATCH CONCRETE WALK JOINTS.

WHERE RIGHT-OF-WAY ALLOWS, USE OF V CURB SHOULD BE MINIMIZED. GRADING ADJACENT TURF OR SLOPING ADJACENT PAVEMENT IS PREFERRED.

V CURB SHALL BE PLACED OUTSIDE THE SIDEWALK LIMITS WHEN RIGHT OF WAY ALLOWS.

V CURB NEXT TO BUILDING SHALL BE A 4" WIDTH AND SHALL MATCH PREVIOUS TOP OF SIDEWALK ELEVATIONS.

① END TAPERS AT TRANSITION SECTION SHALL MATCH INPLACE SIDEWALK GRADES.

② ALL V CURB SHALL MATCH BOTTOM OF ADJACENT WALK.

③ EDGE BETWEEN NEW V CURB AND INPLACE STRUCTURE SHALL BE SEALED AND BOND BREAKER SHALL BE USED BETWEEN EXISTING STRUCTURE AND PLACED V-CURB.

④ NEAREST EDGE OF DETECTABLE WARNING SURFACES SHALL BE PLACED 12' MINIMUM TO 15' MAXIMUM FROM THE NEAREST RAIL. FOR SKEWED RAILWAYS IN NO INSTANCE SHALL THE DETECTABLE WARNING BE CLOSER THAN 12' MEASURED PERPENDICULAR TO THE NEAREST RAIL.

⑤ WHEN PEDESTRIAN GATES ARE PROVIDED, DETECTABLE WARNING SURFACES SHALL BE PLACED ON THE SIDE OF THE GATES OPPOSITE THE RAIL, 2' FROM THE APPROACHING SIDE OF THE GATE ARM.

⑥ WHEN PLAN SPECIFIES, DRILL AND GROUT NO. 4 12" LONG REINFORCEMENT BARS AT 36" MAX. CENTER TO CENTER (EPOXY COATED).

⑦ TO ENSURE RAMPS AND LANDINGS ARE PROPERLY CONSTRUCTED, LANDINGS MAY BE CAST SEPARATELY. FOLLOW SIDEWALK REINFORCEMENT DETAILS ON THIS SHEET WHEN LANDINGS ARE CAST SEPARATELY.

PLOTTED/REVISED: 07/18/2016
DISTRICT #:
USER NAME: ejmarkos
PATH & FILENAME: P:\02-622-35\Plan\STD Plans\s250_1_spn.dgn
FILE NAME: s250_1_spn.dgn

REVISION:
APPROVED: 2-9-2015
OPERATIONS ENGINEER

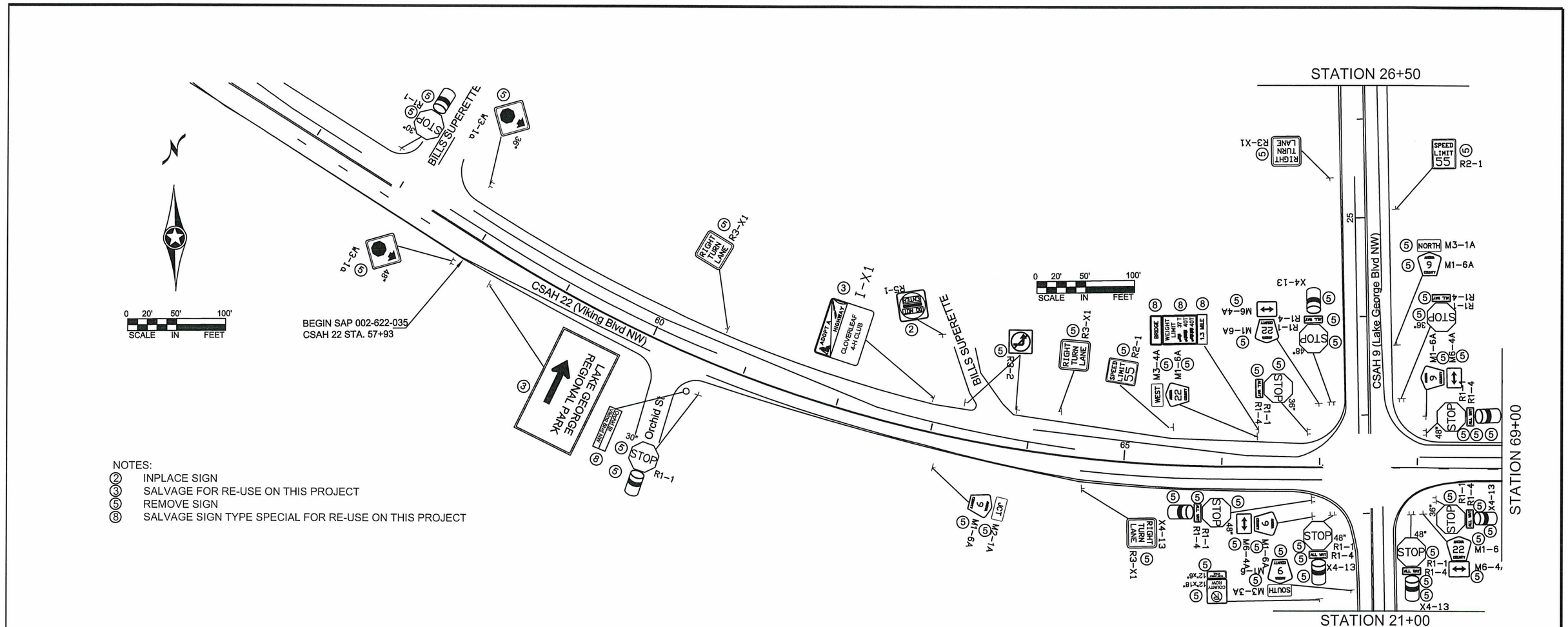
SAP 002-609-016
SAP 002-622-035

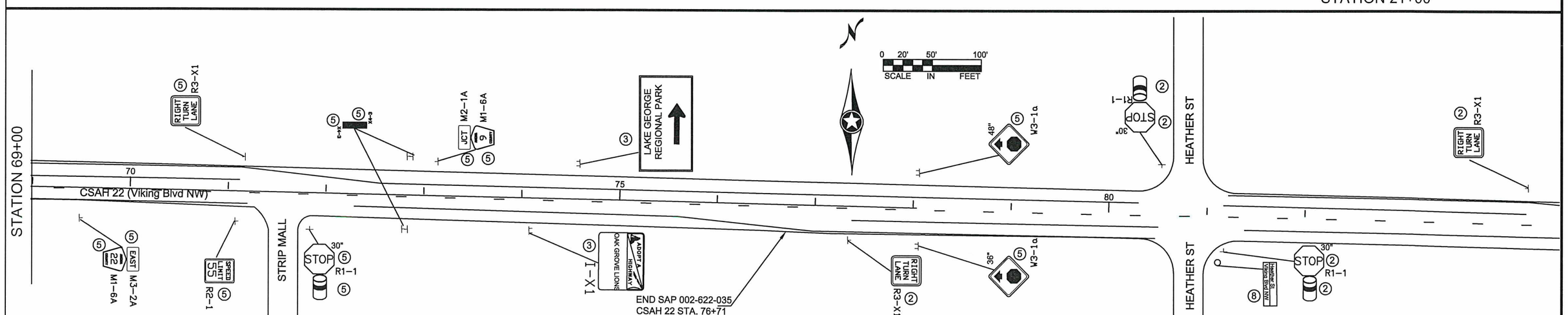
MINNESOTA DEPARTMENT OF TRANSPORTATION

REVISED:
STATE DESIGN ENGINEER
APPROVED: 2-9-2015

PEDESTRIAN CURB RAMP DETAILS

STANDARD PLAN 5-297.250





NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\SAP 002-622-035\BASE\TRAFFIC\EXISTING SIGNING AND STRIPING PLAN

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: DOUGLAS W. FISCHER, P.E.

SIGNATURE:

DATE: 7/19/16 LICENSE NO. 20235

DRAWN BY TMV DATE 02-10-16

DESIGN BY RLB DATE 02-10-16

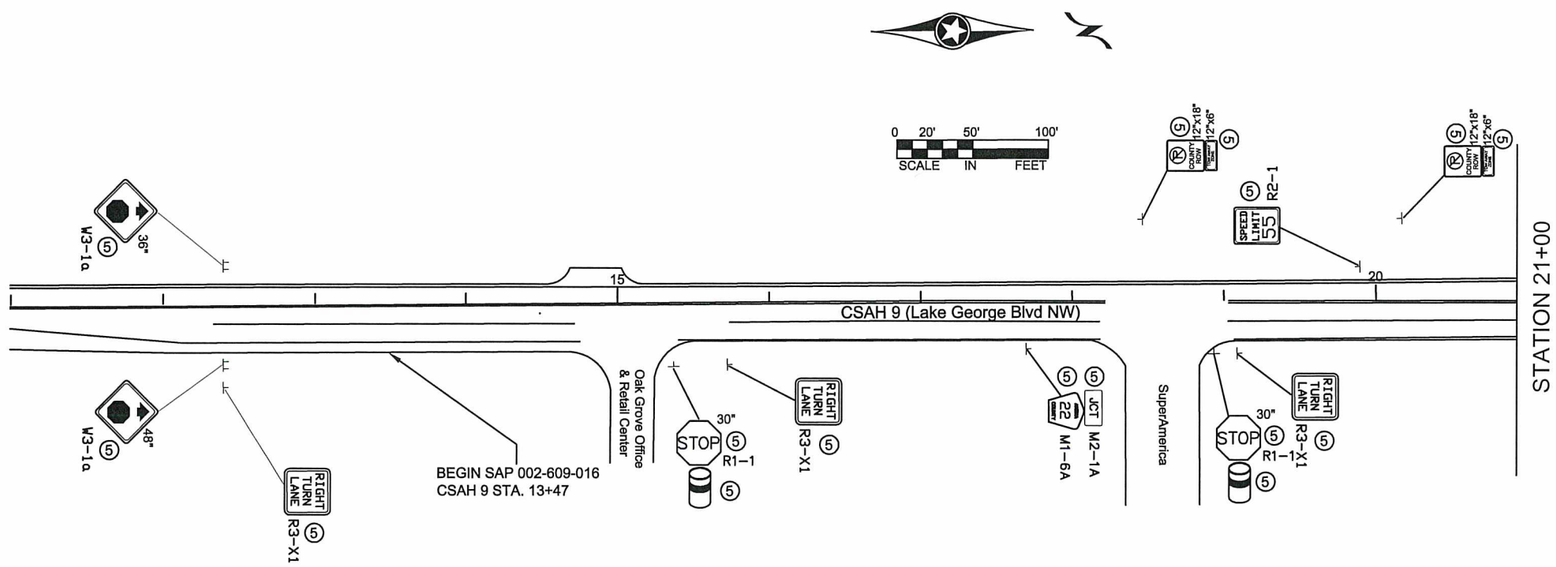
CHECKED BY JKR DATE 06-27-16

ANOKA COUNTY HIGHWAY DEPT.

SAP 002-609-016
SAP 002-622-035

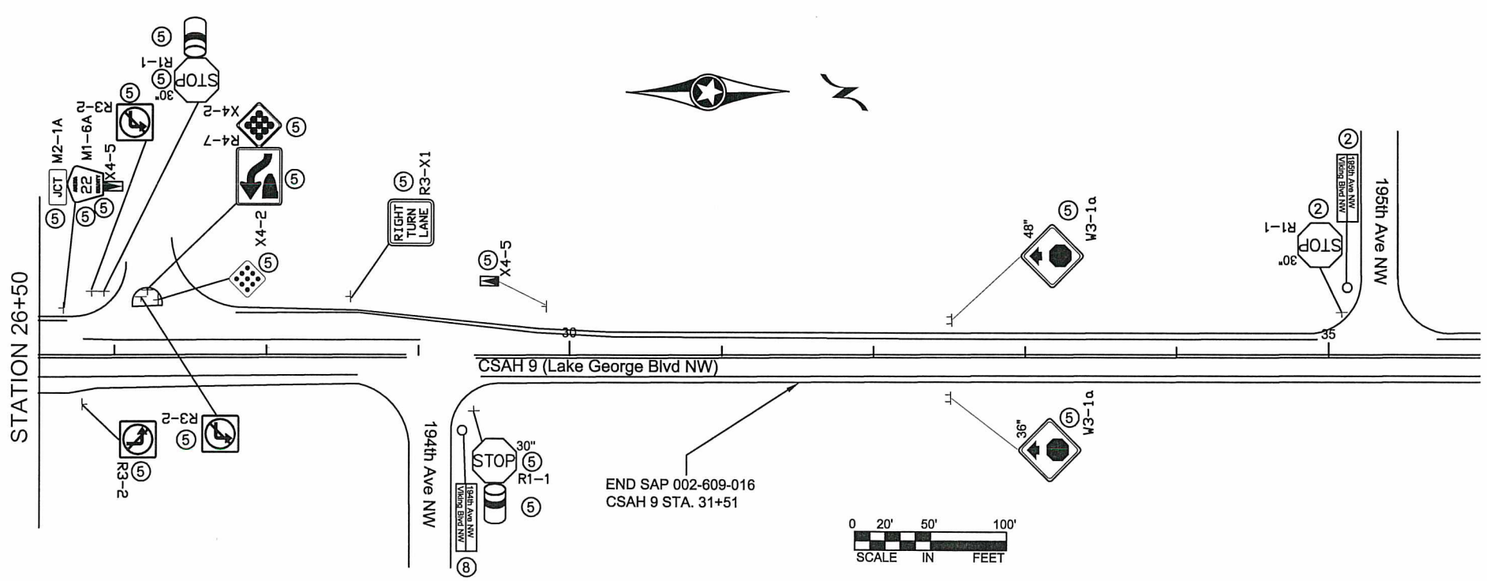
EXISTING SIGNING & STRIPING PLAN

Sheet 22 of 119 Sheets



NOTES:

- ② INPLACE SIGN
- ③ SALVAGE FOR RE-USE ON THIS PROJECT
- ⑤ REMOVE SIGN
- ⑧ SALVAGE SIGN TYPE SPECIAL FOR RE-USE ON THIS PROJECT



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ANOKA COUNTY HIGHWAY DEPT.

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EXISTING SIGNING & STRIPING PLAN

D EXISTING SIGN TAB

STATION	ADDRESS/ DESCRIPTION (NOTES)	REMOVE SIGN TYPE C	SALVAGE SIGN TYPE C	SALVAGE SIGN TYPE D	SALVAGE SIGN TYPE SPECIAL (1)	INSTALL SIGN TYPE C	INSTALL SIGN TYPE D	INSTALL SIGN TYPE SPECIAL (1)	SIGN NUMBER	SIGN LEGEND
		EACH	EACH	EACH	EACH	EACH	EACH	EACH		
SAP 002-609-016										
12+40	Rt	1							W3-1a	48" Stop Ahead
12+40	Lt	1							W3-1a	36" Stop Ahead
12+40	Rt	1							R3-X1	Right Turn Lane
15+40	Rt	1							R1-1	30" Stop
										Delineator
15+75	Rt	1							R3-X1	Right Turn Lane
17+70	Rt	1							M2-1A	JCT
									M1-6A	Rte Marker 22
18+40	Lt	1								NP Co ROW
										Tow Zone
18+90	Rt	1							R1-1	30" Stop
										Delineator
19+10	Rt	1							R3-X1	Right Turn Lane
19+90	Lt	1								NP Co ROW
										Tow Zone
21+10	Lt	1								NP Co ROW
										Tow Zone
21+20	Lt	1							M3-3A	South
									M1-6A	Rte Marker 9
22+00	Lt	1							R1-1	48" Stop
									R1-4	ALL WAY
										Delineator
22+00	Rt	1							R1-1	48" Stop
									R1-4	ALL WAY
										Delineator
22+00	Rt	1							M1-6A	Rte Marker 22
									M6-4A	Double Arrow
23+20	Lt	1							R1-1	48" Stop
									R1-4	ALL WAY
										Delineator
23+20	Lt	1							M1-6A	Rte Marker 22
									M6-4A	Double Arrow
23+20	Rt	1							R1-1	48" Stop
									R1-4	ALL WAY
23+70	Rt	1							M3-1A	North
									M1-6A	Rte Marker 9
25+05	Rt	1							R2-1	55 MPH
25+40	Lt	1							R3-X1	Right Turn Lane
26+65	Lt	1							M2-1A	JCT
									M1-6A	Rte Marker 22
									X4-5	Plow Marker
26+80	Rt	1							R3-2	No Left Turn
26+80	Lt	1							R3-2	No Left Turn
23+90	Lt	1							R1-1	30" Stop
										Delineator
27+15	Pork Chop Isle	1							R3-2	No Left Turn
27+15	Pork Chop Isle	1							R4-7	Keep Right
									X4-2	9-Button
27+30	Pork Chop Isle	1							X4-2	9-Button
28+50	Lt	1							R3-X1	Right Turn Lane
29+35	Rt				1			1		Street Sign
29+35	Rt	1							R1-1	30" Stop
										Delineator
29+90	Lt	1							X4-5	Plow Marker
32+50	Lt	1							W3-1a	48" Stop Ahead
32+50	Rt	1							W3-1a	36" Stop Ahead
SUBTOTAL		33	0	0	1	0	0	1		

EXISTING SIGN TAB

STATION	ADDRESS/ DESCRIPTION (NOTES)	REMOVE SIGN TYPE C	SALVAGE SIGN TYPE C	SALVAGE SIGN TYPE D	SALVAGE SIGN TYPE SPECIAL (1)	INSTALL SIGN TYPE C	INSTALL SIGN TYPE D	INSTALL SIGN TYPE SPECIAL (1)	SIGN NUMBER	SIGN LEGEND
		EACH	EACH	EACH	EACH	EACH	EACH	EACH		
SAP 002-622-035										
56+80	Lt	1							R1-1	30" Stop
		1								Delineator
57+90	Rt	1							W3-1a	48" Stop Ahead
57+90	Lt	1							W3-1a	36" Stop Ahead
58+30	Rt			1			1			Lk Geo Park
60+50	Rt				1			1		Street Sign
60+50	Rt	1							R1-1	30" Stop
										Delineator
60+70	Lt	1							R3-X1	Right Turn Lane
63+00	Rt	1							M2-1A	JCT
									M1-6A	Rte Marker 9
63+-00	Lt		1			1			I-X1	Adopt A Hwy
63+30	Lt	1							R3-2	No Left Turn
63+85	Lt	1							R3-2	No Left Turn
64+30	Lt	1							R3-X1	Right Turn Lane
64+60	Rt	1							R3-X1	Right Turn Lane
65+50	Lt	1							R2-1	55 MPH
66+40	Lt	1							M3-4A	WEST
									M1-6A	Rte Marker 22
66+40	Lt				1			1		BRIDGE
					1			1		Wt Limits
					1			1		1.3 MILE
66+90	Rt	1							R1-1	48" Stop
									R1-4	ALL WAY
										Delineator
66+90	Rt	1							M1-6A	Rte Marker 9
									M6-4A	Dble Arrow
66+90	Lt	1							R1-1	36" Stop
									R1-4	ALL WAY
68+10	Rt	1							R1-1	36" Stop
									R1-4	ALL WAY
										Delineator
68+10	Lt	1							R1-1	48" Stop
									R1-4	ALL WAY
										Delineator
68+10	Lt	1							M1-6A	Rte Marker 9
									M6-4A	Dble Arrow
69+50	Rt	1							M3-2A	EAST
									M1-6A	Rte Marker 22
71+10	Rt	1							R2-1	55 MPH
71+20	Lt	1							R3-X1	Right Turn Lane
71+85	Rt	1							R1-1	30" Stop
										Delineator
72+80	Rt	1							X4-3	Culvert Marker
72+90	Lt	1							X4-3	Culvert Marker
73+10	Lt	1							M2-1A	JCT
									M1-6A	Rte Marker 9
74+10	Rt		1			1			I-X1	Adopt A Hwy
74+60	Lt			1			1			Lk Geo Park
78+05	Rt	1							W3-1a	36" Stop Ahead
78+05	Lt	1							W3-1a	48" Stop Ahead
81+20	Rt				1			1		Street Sign
SUBTOTAL		28	2	2	5	2	2	5		
PROJECT TOTAL		61	2	2	6	2	2	6		

CONSTRUCTION NOTES:

1. SIGN TYPE SPECIAL ARE TO REMAIN VISIBLE AT ALL TIMES. SHALL BE PAID BY THE EACH, WHEN RELOCATION IS REQUIRED.

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\SAP 002-622-035\BASE\TRAFFIC\EXISTING SIGNING AND STRIPING PLAN

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: DOUGLAS W. FISCHER, P.E.

SIGNATURE:

DATE: 7/19/16 LICENSE NO. 20235

DRAWN BY TMV DATE 02-10-16

DESIGN BY RLB DATE 02-10-16

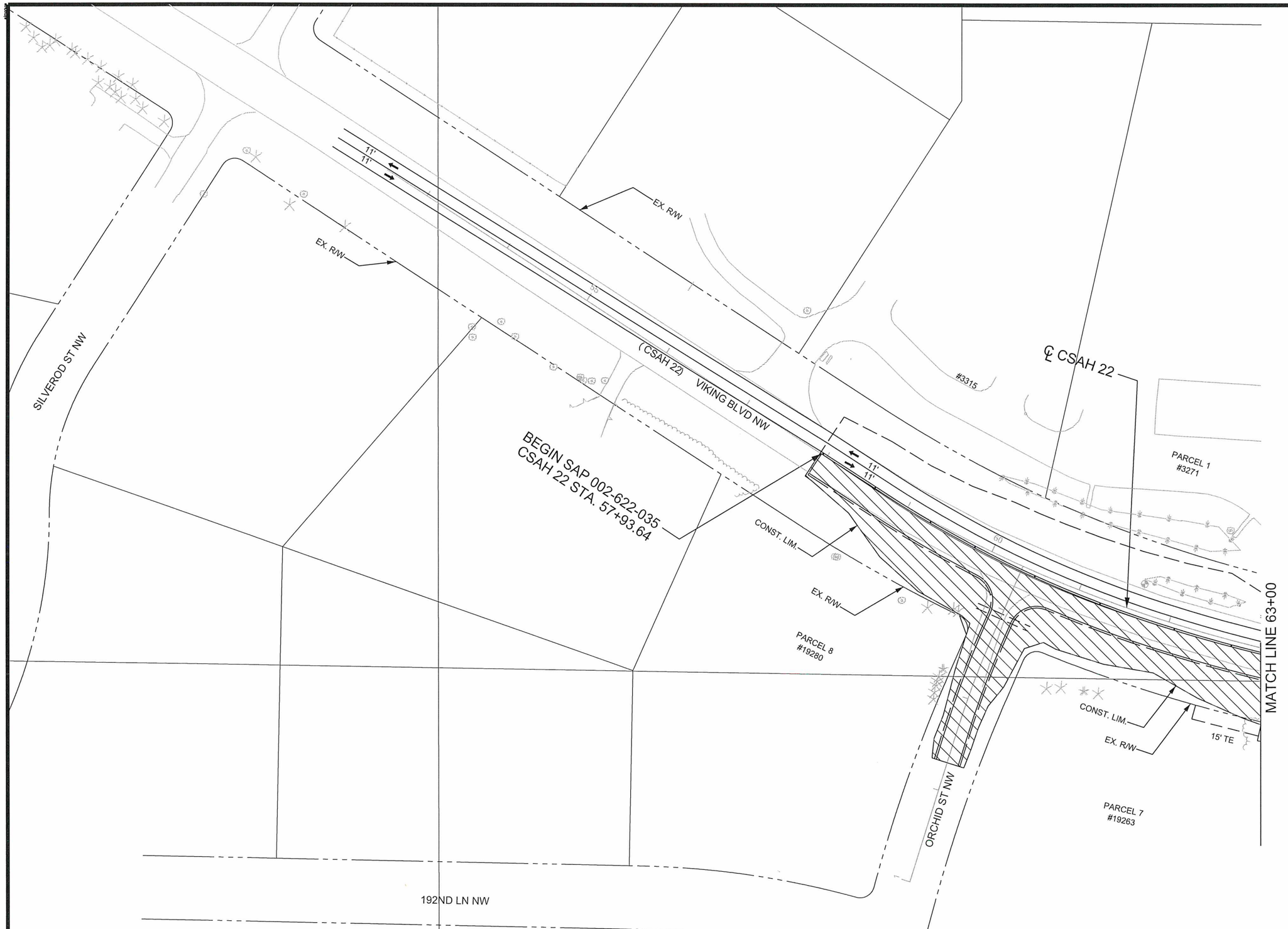
CHECKED BY JKR DATE 06-27-16

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

SAP 002-609-016
SAP 002-622-035

EXISTING SIGNING & STRIPING PLAN



LEGEND

- CULVERT WORK
- CONSTRUCTION AREA
- TRAFFIC DIRECTION

PRE-STAGE 1 CONST. NOTES:

CONSTRUCT TEMPORARY PAVEMENT ON WESTBOUND CSAH 22, FROM STATION 74+34 TO 77+90

REPLACE CENTERLINE CULVERT AT CSAH 22 STATION 72+80

STAGE 1 CONSTRUCTION NOTES:

FULL DEPTH RECONSTRUCTION AND CULVERT WORK ALONG EASTBOUND CSAH 22.

CONSTRUCT 6 FT TEMPORARY PAVEMENT ON EASTBOUND CSAH 22 FROM STATION 71+87 TO 75+47, FOR STAGE 2 TRAFFIC.

CONTRACTOR SHALL MAINTAIN ACCESS TO SIDE STREETS AND PRIVATE DRIVEWAYS AT ALL TIMES, WITH THE EXCEPTION OF ORCHID ST CLOSURE DURING STAGE 1.

STAGE 1 TRAFFIC CONTROL NOTES:

TRAFFIC SHALL BE SHIFTED TO WESTBOUND CSAH 22.

SEE TRAFFIC CONTROL SHEETS FOR MORE INFORMATION.

N

0 100
SCALE IN FEET

1 OF 4

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-622-35\Plan\0262235_STG1_P1.dgn 07/18/2016 2:32:04 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: ELIZABETH MARKOSE
SIGNATURE: Elizabeth Markose
DATE: 07-18-16 LICENSE NO. 49118

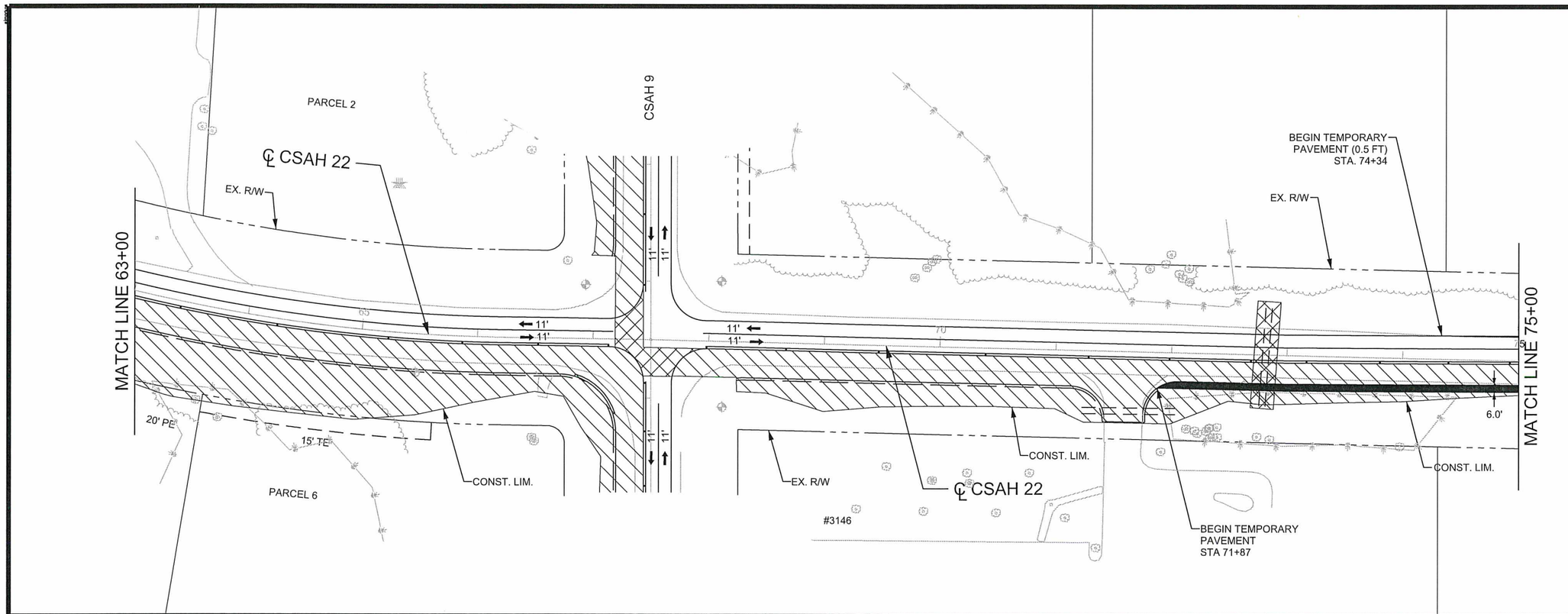
DRAWN BY EJM DATE 07-06-16
DESIGN BY EJM DATE 07-06-16
CHECKED BY GMP DATE 07-14-16

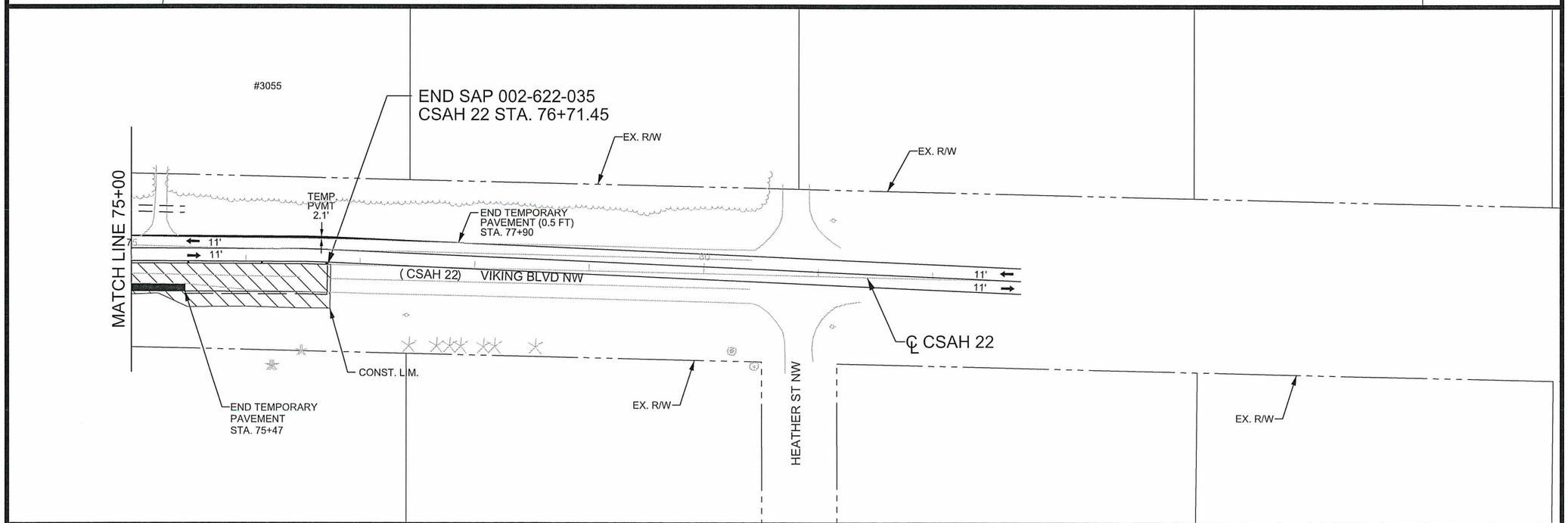
ANOKA COUNTY HIGHWAY DEPT.

SAP 002-609-016
SAP 002-622-035

CONSTRUCTION STAGE 1 PLAN
CSAH 22
STA 57+93.64 TO 63+00

Sheet 25 of 119 Sheets





LEGEND

- CULVERT WORK
- CONSTRUCTION AREA
- CONSTRUCTION UNDER TRAFFIC
- TEMPORARY PAVEMENT
- TRAFFIC DIRECTION

PRE-STAGE 1 CONST. NOTES:

CONSTRUCT TEMPORARY PAVEMENT ON WESTBOUND CSAH 22, FROM STATION 74+34 TO 77+90.

REPLACE CENTERLINE CULVERT AT CSAH 22 STATION 72+80

STAGE 1 CONSTRUCTION NOTES

FULL DEPTH RECONSTRUCTION AND CULVERT WORK ALONG EASTBOUND CSAH 22.

CONSTRUCT 6 FT TEMPORARY PAVEMENT ON EASTBOUND CSAH 22 FROM STATION 71+87 TO 75+47, FOR STAGE 2 TRAFFIC

CONTRACTOR SHALL MAINTAIN ACCESS TO SIDE STREETS AND PRIVATE DRIVEWAYS AT ALL TIMES, WITH THE EXCEPTION OF ORCHID ST CLOSURE DURING STAGE 1.

STAGE 1 TRAFFIC CONTROL NOTES:

TRAFFIC SHALL BE SHIFTED TO WESTBOUND CSAH 22.

SEE TRAFFIC CONTROL SHEETS FOR MORE INFORMATION.

N

0 100
SCALE IN FEET

2 OF 4

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-622-35\Plan\0262235_STG1_P2.dgn 07/18/2016 2:32:06 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: ELIZABETH MARKOSE
SIGNATURE: Elizabeth Markose
DATE: 07-18-16 LICENSE NO. 49118

DRAWN BY EJM DATE 07-06-16
DESIGN BY EJM DATE 07-06-16
CHECKED BY GMP DATE 07-14-16

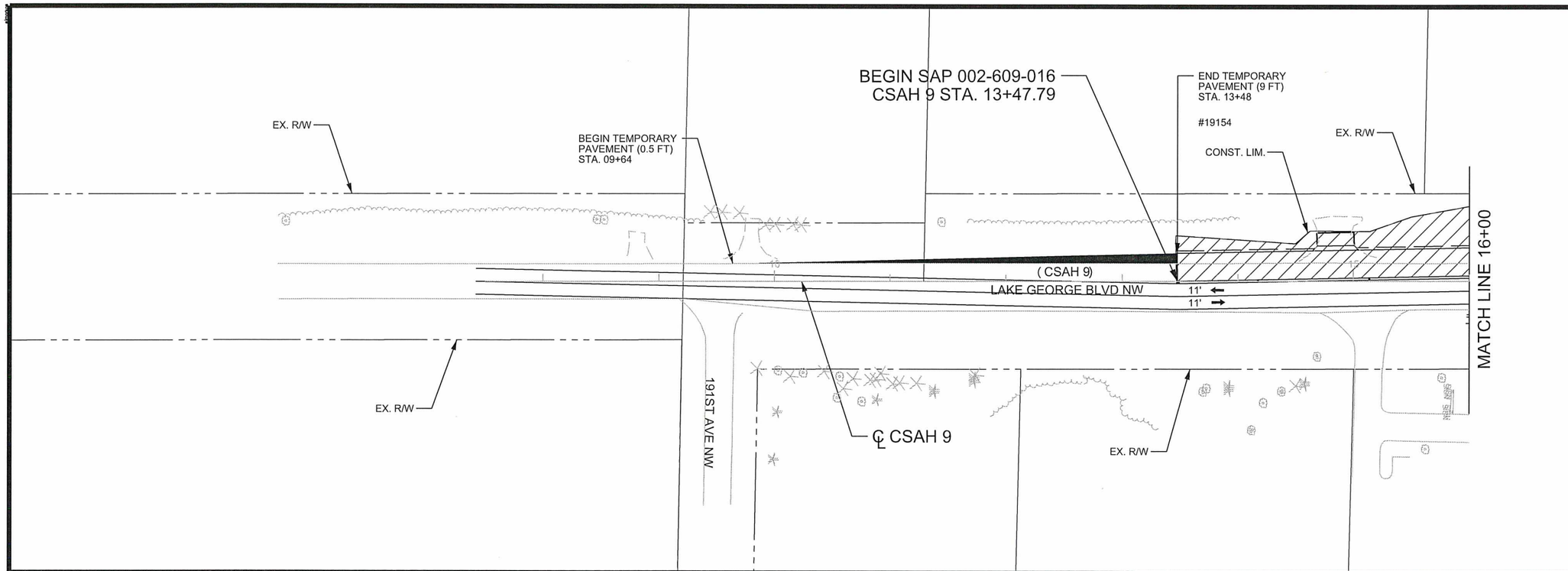
ANOKA COUNTY

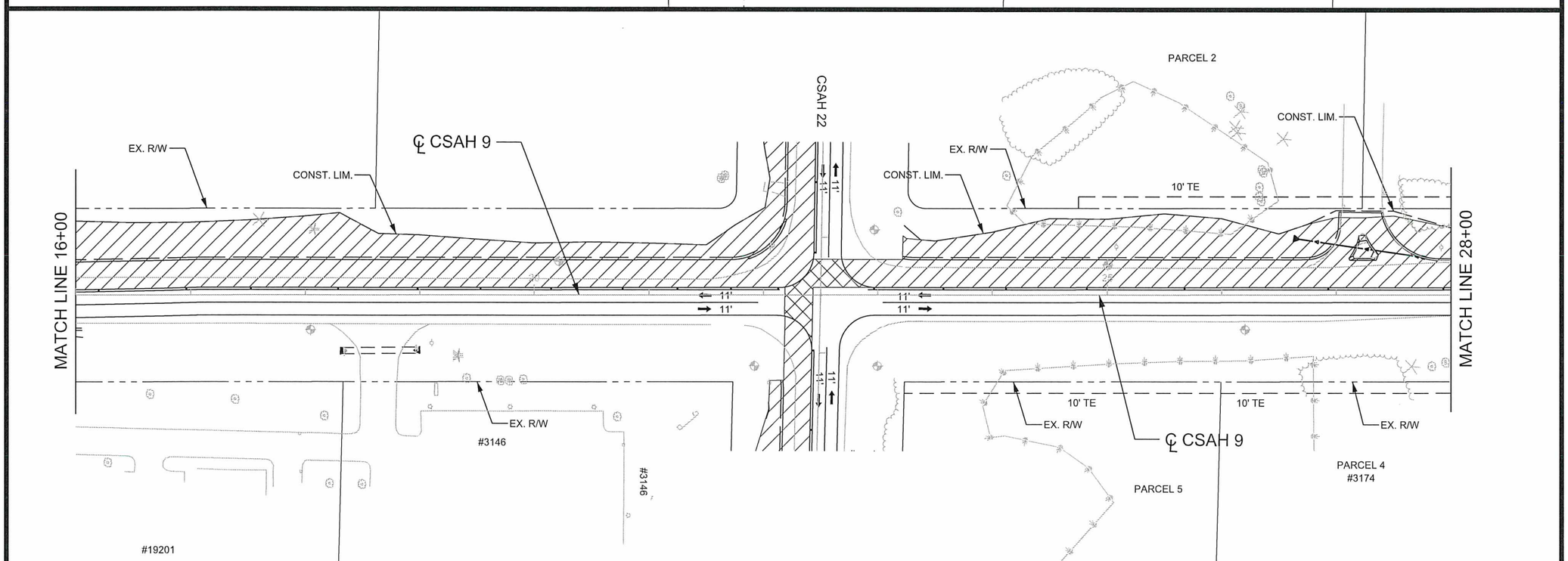
ANOKA COUNTY HIGHWAY DEPT.

SAP 002-609-016
SAP 002-622-035

CONSTRUCTION STAGE 1 PLAN
CSAH 22
STA 63+00 TO 76+71.45

Sheet 26 of 119 Sheets





LEGEND

- STORM DRAIN
- CONSTRUCTION AREA
- CONSTRUCTION UNDER TRAFFIC
- TEMPORARY PAVEMENT
- TRAFFIC DIRECTION

PRE-STAGE 1 CONST. NOTES:

CONSTRUCT TEMPORARY PAVEMENT ALONG NORTHBOUND CSAH 9 FROM STATION 28+45 TO 35+25.

STAGE 1 CONSTRUCTION NOTES:

FULL DEPTH RECONSTRUCTION AND STORM DRAIN WORK ALONG SOUTHBOUND CSAH 9.

CONTRACTOR SHALL MAINTAIN ACCESS TO SIDE STREETS AND PRIVATE DRIVEWAYS AT ALL TIMES.

CONSTRUCT TEMPORARY PAVEMENT ALONG SOUTHBOUND CSAH 9 FROM STATION 9+50 TO 13+50 AND 31+50 TO 35+35, FOR STAGE 2 TRAFFIC

TRAFFIC CONTROL NOTES:

TRAFFIC SHALL BE SHIFTED TO NORTHBOUND CSAH 9.

SEE TRAFFIC CONTROL SHEETS FOR MORE INFORMATION.

0 100
SCALE IN FEET

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-622-35\Plan\0262235_STG1_P3.dgn 07/18/2016 2:32:09 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: ELIZABETH MARKOSE
SIGNATURE: Elizabeth Markose
DATE: 07-18-16 LICENSE NO. 49118

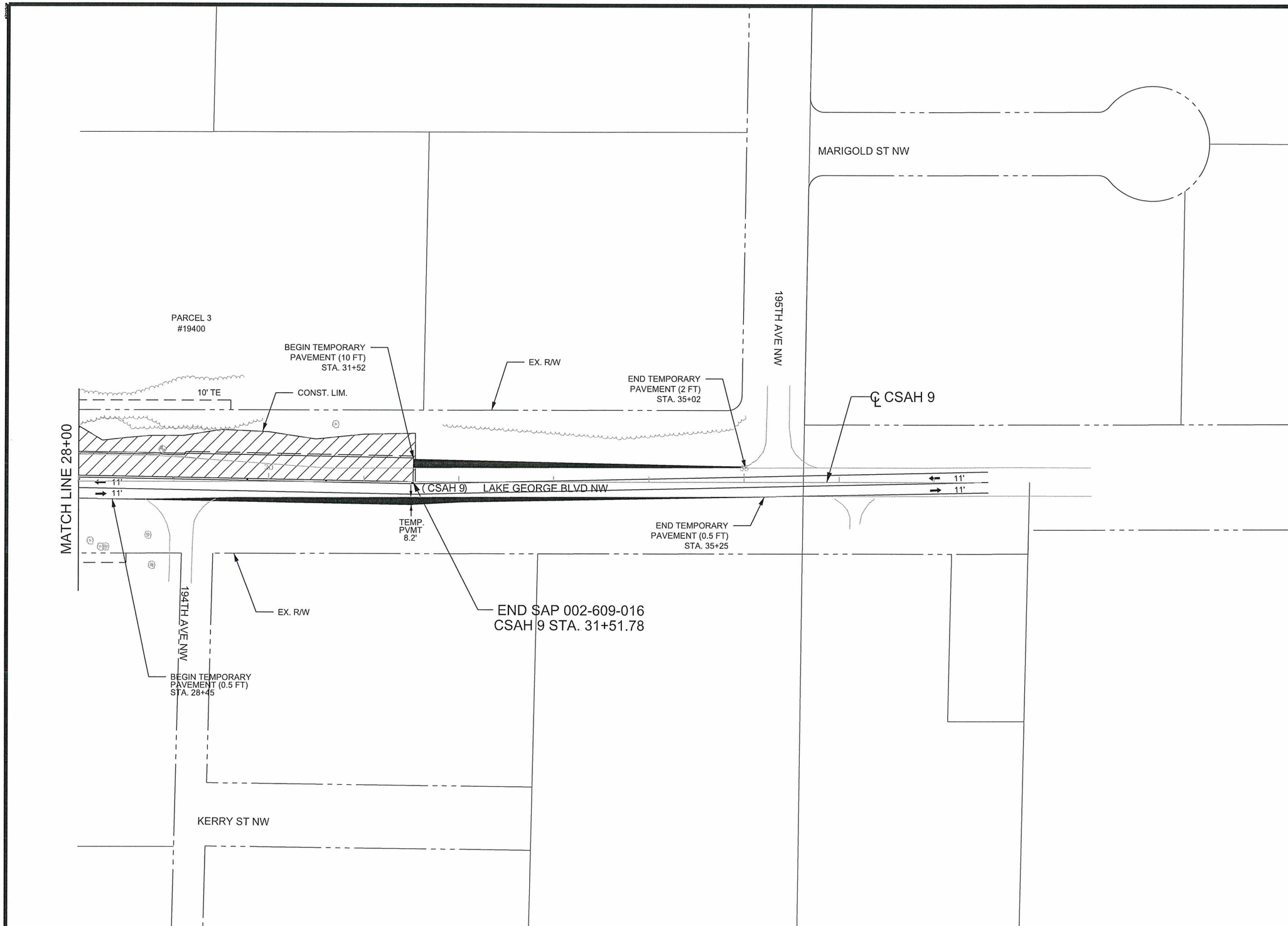
DRAWN BY EJM DATE 07-06-16
DESIGN BY EJM DATE 07-06-16
CHECKED BY GMP DATE 07-14-16

ANOKA COUNTY HIGHWAY DEPT.

SAP 002-609-016
SAP 002-622-035

CONSTRUCTION STAGE 1 PLAN
CSAH 9
STA 13+47.79 TO 28+00

Sheet 27 of 119 Sheets



LEGEND

- CONSTRUCTION AREA
- TRAFFIC DIRECTION
- TEMPORARY PAVEMENT

PRE-STAGE 1 CONST. NOTES:

CONSTRUCT TEMPORARY PAVEMENT ALONG NORTHBOUND CSAH 9 FROM STATION 28+45 TO 35+25.

STAGE 1 CONSTRUCTION NOTES:

FULL DEPTH RECONSTRUCTION AND STORM DRAIN WORK ALONG SOUTHBOUND CSAH 9.

CONTRACTOR SHALL MAINTAIN ACCESS TO SIDE STREETS AND PRIVATE DRIVEWAYS AT ALL TIMES.

CONSTRUCT TEMPORARY PAVEMENT ALONG SOUTHBOUND CSAH 9 FROM STATION 9+50 TO 13+50 AND 31+50 TO 35+35, FOR STAGE 2 TRAFFIC

TRAFFIC CONTROL NOTES:

TRAFFIC SHALL BE SHIFTED TO NORTHBOUND CSAH 9.

SEE TRAFFIC CONTROL SHEETS FOR MORE INFORMATION.

0 100
SCALE IN FEET

4 OF 4

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-622-35\Plan\0262235_STG1_P4.dgn 07/19/2016 7:57:16 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: ELIZABETH MARKOSE
SIGNATURE: Elizabeth M
DATE: 07-19-16 LICENSE NO. 49118

DRAWN BY EJM DATE 06-17-16
DESIGN BY EJM DATE 06-17-16
CHECKED BY GMP DATE 07-14-16

ANOKA COUNTY
ANOKA COUNTY HIGHWAY DEPT.

SAP 002-609-016
SAP 002-622-035

CONSTRUCTION STAGE 1 PLAN
CSAH 9
STA 28+00 TO 31+51.78

Sheet 28 of 119 Sheets

194TH LN NW
11'
11'
EX R/W
EX R/W
℄ CSAH 22
55
(CSAH 22) VIKING BLVD NW
#3315
CONST. LIM.
SILVEROD ST NW
BEGIN SAP 002-622-035
CSAH 22 STA. 57+93.64
PARCEL 1
#3271
11'
11'
60
PARCEL 8
#19280
MATCH LINE 63+00
15' TE
RCHID ST NW
PARCEL 7
#19263

LEGEND

CONSTRUCTION AREA

TRAFFIC DIRECTION

STAGE 2 CONSTRUCTION NOTES:

FULL DEPTH RECONSTRUCTION AND CULVERT WORK ALONG WESTBOUND CSAH 22.

CONTRACTOR SHALL MAINTAIN ACCESS TO SIDE STREETS AND PRIVATE DRIVEWAYS AT ALL TIMES.

REMOVE TEMPORARY PAVEMENT ON EASTBOUND CSAH 22 BETWEEN STATIONS 72+00 AND 75+47 AFTER COMPLETION OF WESTBOUND LANES AND TRAFFIC HAS BEEN SHIFTED TO RESPECTIVE LANES ON COMPLETED ROADWAY.

STAGE 2 TRAFFIC CONTROL NOTES:

TRAFFIC SHALL BE KEPT TO THE EAST BOUND SIDE OF CSAH 22.

SEE TRAFFIC CONTROL SHEETS FOR TRAFFIC CONTROL NOTES AND DETAILS.

N

0 100
SCALE IN FEET

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-622-35\Plan\0262235_STG2_P1.dgn 07/18/2016 2:32:13 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: ELIZABETH MARKOSE

SIGNATURE: Elizabeth Markose

DATE: 07-18-16 LICENSE NO. 49118

DRAWN BY EJM DATE 07-06-16

DESIGN BY EJM DATE 07-06-16

CHECKED BY GMP DATE 07-14-16

ANOKA COUNTY

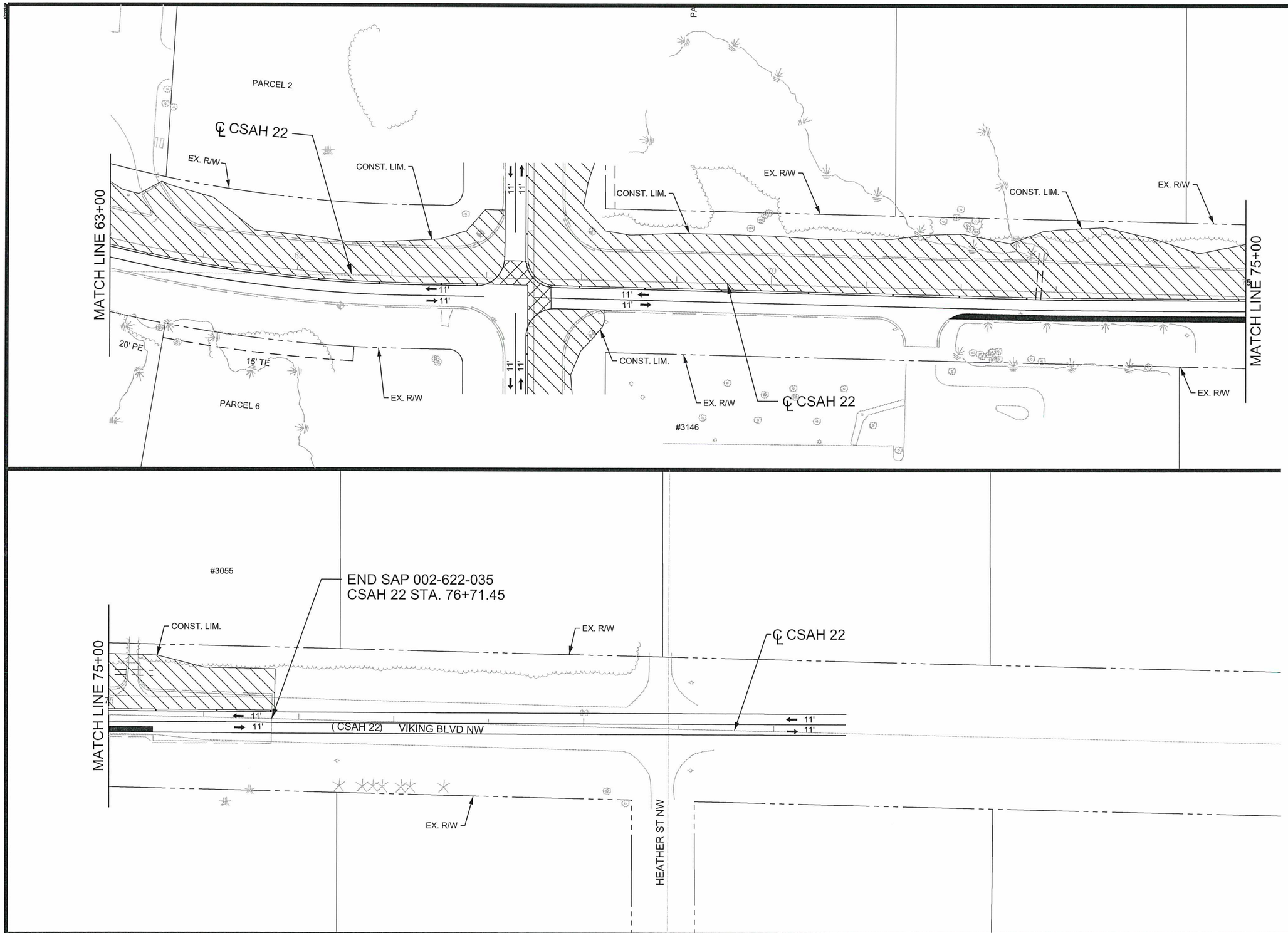
ANOKA COUNTY HIGHWAY DEPT.

SAP 002-609-016
SAP 002-622-035

CONSTRUCTION STAGE 2 PLAN
CSAH 22

STA 57+93.64 TO 63+00

Sheet 29 of 119 Sheets



LEGEND

- CULVERT WORK
- CONSTRUCTION AREA
- CONSTRUCT UNDER TRAFFIC
- TEMPORARY PAVEMENT
- TRAFFIC DIRECTION

STAGE 2 CONSTRUCTION NOTES

FULL DEPTH RECONSTRUCTION AND CULVERT WORK ALONG WESTBOUND CSAH 22.

CONTRACTOR SHALL MAINTAIN ACCESS TO SIDE STREETS AND PRIVATE DRIVEWAYS AT ALL TIMES.

REMOVE TEMPORARY PAVEMENT ON EASTBOUND CSAH 22 BETWEEN STATIONS 72+00 AND 75+47 AFTER COMPLETION OF WESTBOUND LANES AND TRAFFIC HAS BEEN SHIFTED TO RESPECTIVE LANES ON COMPLETED ROADWAY.

STAGE 2 TRAFFIC CONTROL NOTES:

TRAFFIC SHALL BE KEPT TO THE EASTBOUND SIDE OF CSAH 22.

SEE TRAFFIC CONTROL SHEETS FOR TRAFFIC CONTROL NOTES AND DETAILS.

N

0 100
SCALE IN FEET

2 OF 4

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-622-35\Plan\0262235_STG2_P2.dgn 07/18/2016 2:32:15 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: ELIZABETH MARKOSE
SIGNATURE: Elizabeth Markose
DATE: 07-18-16 LICENSE NO. 49118

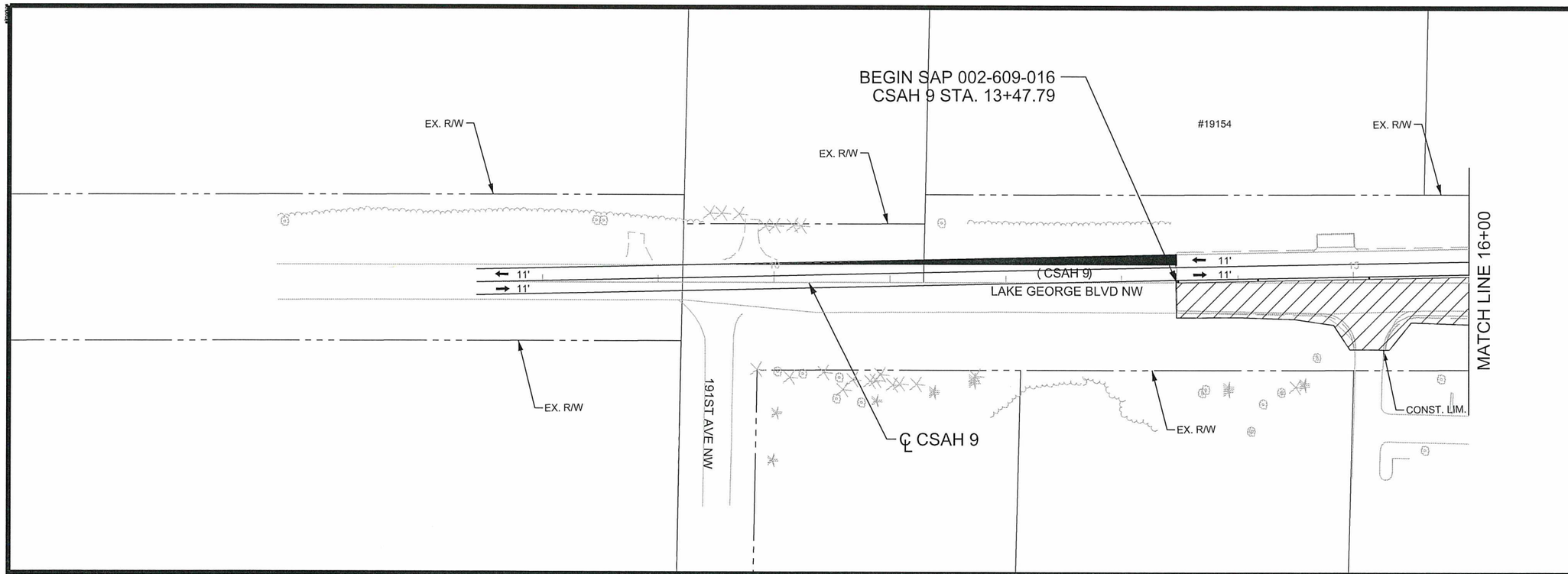
DRAWN BY EJM DATE 07-06-16
DESIGN BY EJM DATE 07-06-16
CHECKED BY GMP DATE 07-14-16

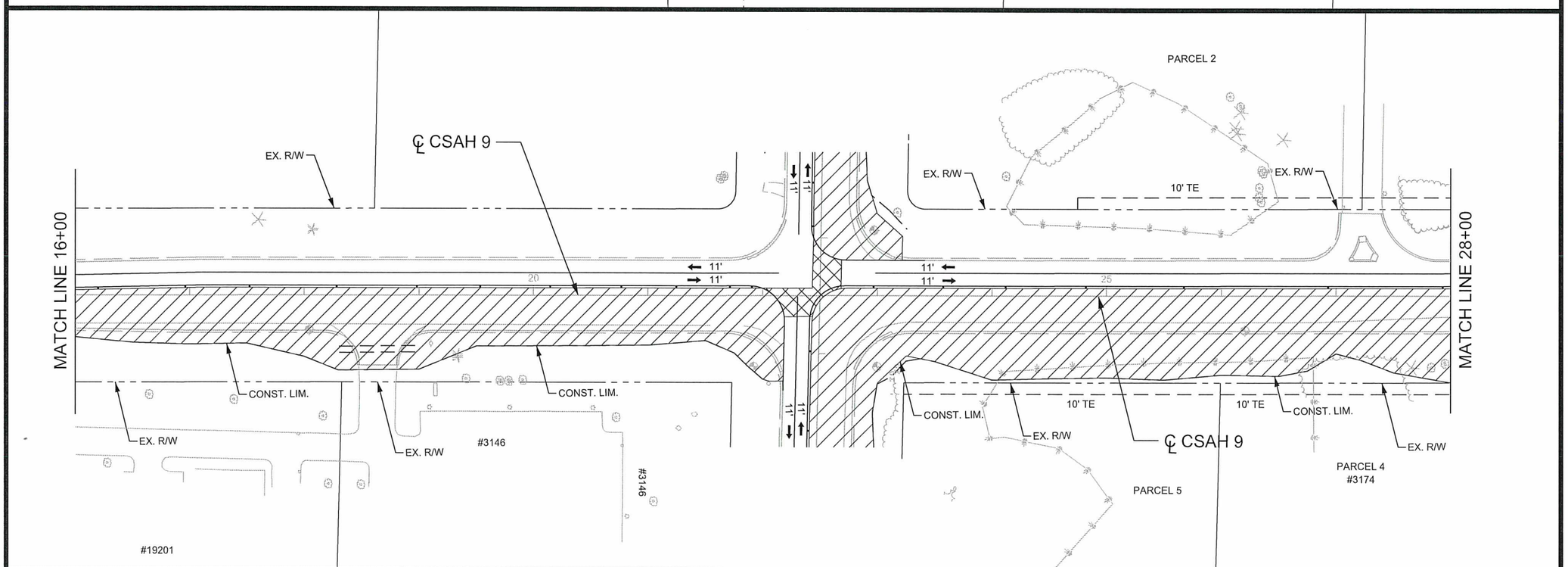
ANOKA COUNTY HIGHWAY DEPT.

SAP 002-609-016
SAP 002-622-035

CONSTRUCTION STAGE 2 PLAN
CSAH 22
STA 63+00 TO 76+71.45

Sheet 30 of 119 Sheets





LEGEND

- CULVERT WORK
- CONSTRUCTION AREA
- CONSTRUCTION UNDER TRAFFIC
- TEMPORARY PAVEMENT
- TRAFFIC DIRECTION

STAGE 2 CONSTRUCTION NOTES:

FULL DEPTH RECONSTRUCTION AND CULVERT WORK ALONG NORTHBOUND CSAH 9.

CONTRACTOR SHALL MAINTAIN ACCESS TO SIDE STREETS AND PRIVATE DRIVEWAYS AT ALL TIMES.

REMOVE TEMPORARY PAVEMENT AFTER TRAFFIC HAS BEEN SHIFTED TO RESPECTIVE LANES.

STAGE 2TRAFFIC CONTROL NOTES:

TRAFFIC SHALL BE SHIFTED TO SOUTHBOUND CSAH 9.

SEE TRAFFIC CONTROL SHEETS FOR MORE INFORMATION.

0 100
SCALE IN FEET

3 OF 4

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-622-35\Plan\0262235_STG2_P3.dgn 07/18/2016 2:32:17 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: ELIZABETH MARKOSE
SIGNATURE: Elizabeth Markose
DATE: 07-18-16 LICENSE NO. 49118

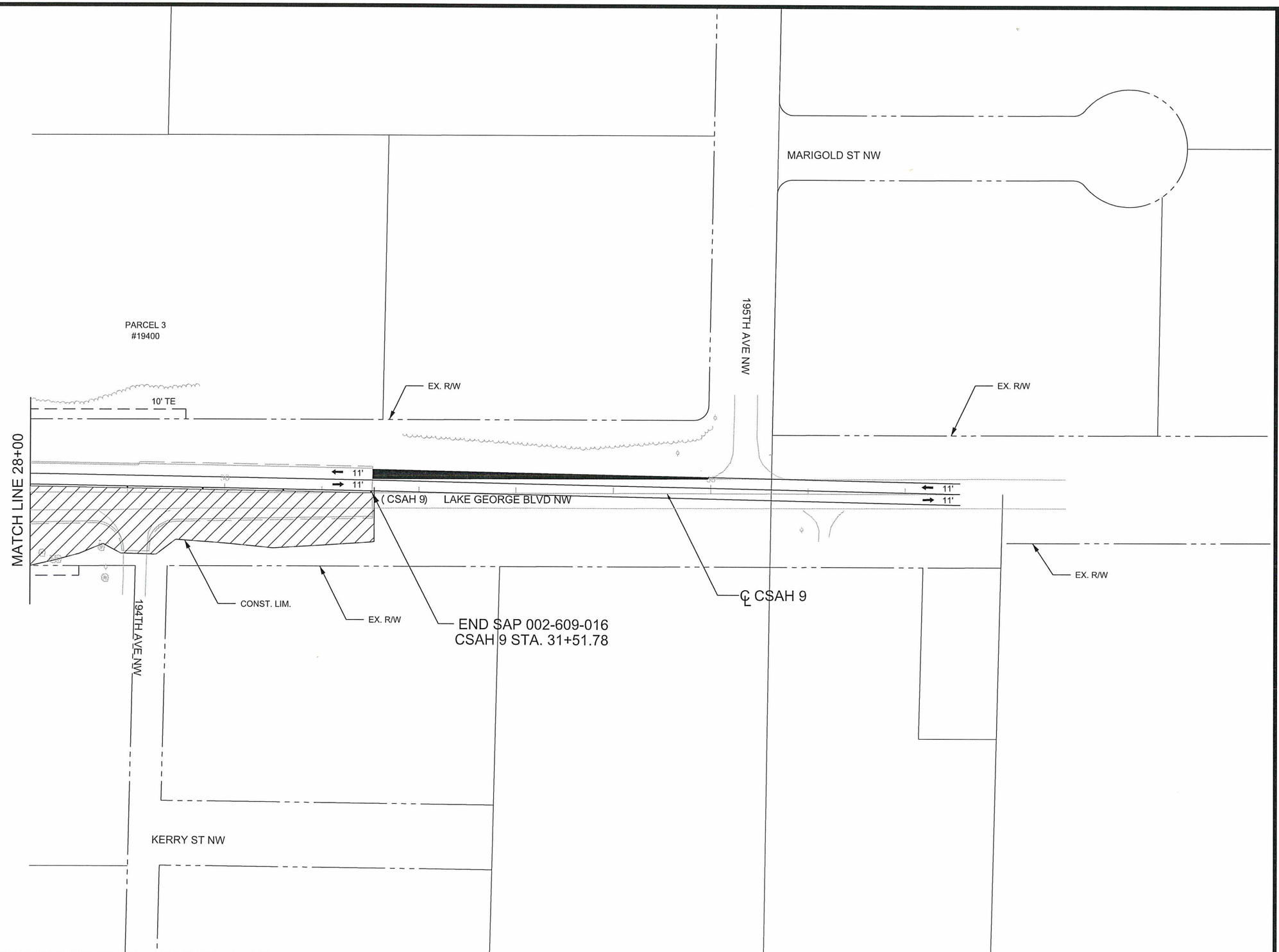
DRAWN BY EJM DATE 07-06-16
DESIGN BY EJM DATE 07-06-16
CHECKED BY GMP DATE 07-14-16

ANOKA COUNTY HIGHWAY DEPT.

SAP 002-609-016
SAP 002-622-035

CONSTRUCTION STAGE 2 PLAN
CSAH 9
STA 13+47.79 TO 28+00

Sheet 31 of 119 Sheets



LEGEND

- TEMPORARY PAVEMENT
- CONSTRUCTION AREA
- TRAFFIC DIRECTION

STAGE 2 CONSTRUCTION NOTES:

FULL DEPTH RECONSTRUCTION AND CULVERT WORK ALONG NORTHBOUND CSAH 9.

CONTRACTOR SHALL MAINTAIN ACCESS TO SIDE STREETS AND PRIVATE DRIVEWAYS AT ALL TIMES.

REMOVE TEMPORARY PAVEMENT AFTER TRAFFIC HAS BEEN SHIFTED TO RESPECTIVE LANES.

STAGE 2 TRAFFIC CONTROL NOTES:

TRAFFIC SHALL BE SHIFTED TO SOUTHBOUND CSAH 9.

SEE TRAFFIC CONTROL SHEETS FOR MORE INFORMATION.

0 100
SCALE IN FEET

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-622-35\Plan\0262235_STG2_P4.dgn 07/18/2016 2:32:19 PM

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

PRINT NAME: ELIZABETH MARKOSE
SIGNATURE: Elizabeth Markose
DATE: 07-18-16 LICENSE NO. 49118

DRAWN BY EJM DATE 07-06-16
DESIGN BY EJM DATE 07-06-16
CHECKED BY GMP DATE 07-14-16

ANOKA COUNTY

ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-609-016
SAP 002-622-035

CONSTRUCTION STAGE 2 PLAN
CSAH 9
STA 28+00 TO 35+35

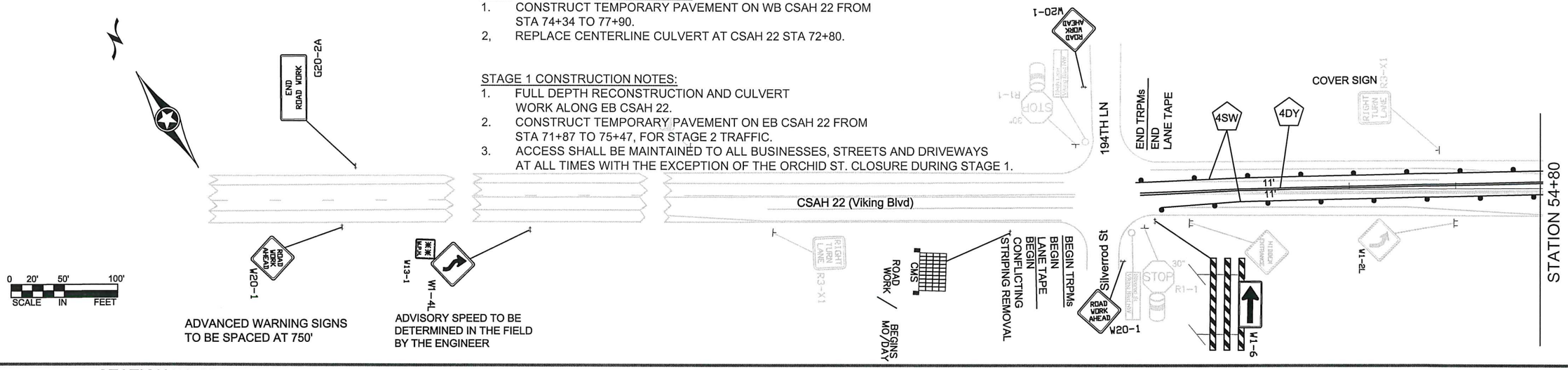
Sheet 32 of 119 Sheets

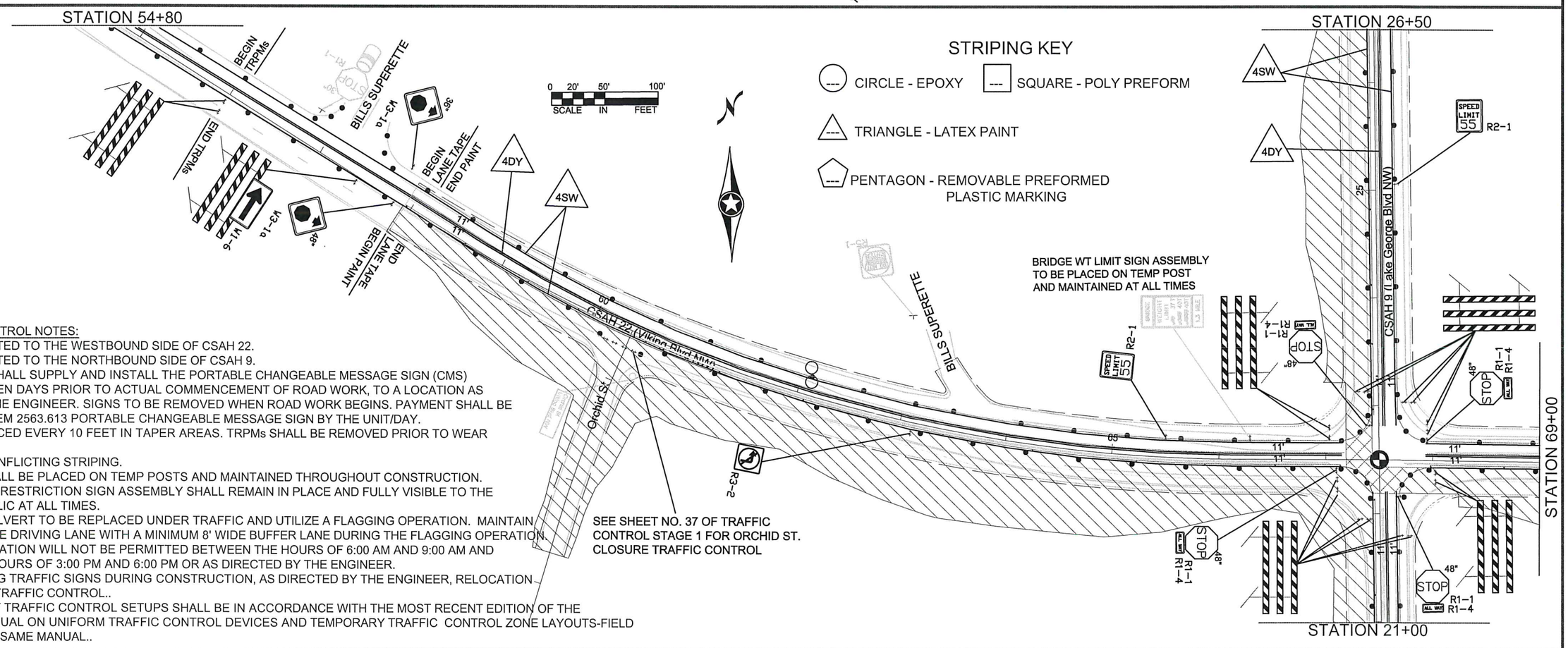
PRE-STAGE CONSTRUCTION NOTES

1. CONSTRUCT TEMPORARY PAVEMENT ON WB CSAH 22 FROM STA 74+34 TO 77+90.
2, REPLACE CENTERLINE CULVERT AT CSAH 22 STA 72+80.

STAGE 1 CONSTRUCTION NOTES:

1. FULL DEPTH RECONSTRUCTION AND CULVERT WORK ALONG EB CSAH 22.
2. CONSTRUCT TEMPORARY PAVEMENT ON EB CSAH 22 FROM STA 71+87 TO 75+47, FOR STAGE 2 TRAFFIC.
3. ACCESS SHALL BE MAINTAINED TO ALL BUSINESSES, STREETS AND DRIVEWAYS AT ALL TIMES WITH THE EXCEPTION OF THE ORCHID ST. CLOSURE DURING STAGE 1.





STAGE 1 TRAFFIC CONTROL NOTES:

1. TRAFFIC IS SHIFTED TO THE WESTBOUND SIDE OF CSAH 22.
2. TRAFFIC IS SHIFTED TO THE NORTHBOUND SIDE OF CSAH 9.
3. CONTRACTOR SHALL SUPPLY AND INSTALL THE PORTABLE CHANGEABLE MESSAGE SIGN (CMS) A MINIMUM OF TEN DAYS PRIOR TO ACTUAL COMMENCEMENT OF ROAD WORK, TO A LOCATION AS SPECIFIED BY THE ENGINEER. SIGNS TO BE REMOVED WHEN ROAD WORK BEGINS. PAYMENT SHALL BE MADE AS PER ITEM 2563.613 PORTABLE CHANGEABLE MESSAGE SIGN BY THE UNIT/DAY.
4. ADD TRPMs SPACED EVERY 10 FEET IN TAPER AREAS. TRPMs SHALL BE REMOVED PRIOR TO WEAR COURSE.
5. REMOVE ALL CONFLICTING STRIPING.
6. STOP SIGNS SHALL BE PLACED ON TEMP POSTS AND MAINTAINED THROUGHOUT CONSTRUCTION.
7. BRIDGE WEIGHT RESTRICTION SIGN ASSEMBLY SHALL REMAIN IN PLACE AND FULLY VISIBLE TO THE TRAVELING PUBLIC AT ALL TIMES.
8. CENTERLINE CULVERT TO BE REPLACED UNDER TRAFFIC AND UTILIZE A FLAGGING OPERATION. MAINTAIN MINIMUM 10' WIDE DRIVING LANE WITH A MINIMUM 8' WIDE BUFFER LANE DURING THE FLAGGING OPERATION.
9. FLAGGING OPERATION WILL NOT BE PERMITTED BETWEEN THE HOURS OF 6:00 AM AND 9:00 AM AND BETWEEN THE HOURS OF 3:00 PM AND 6:00 PM OR AS DIRECTED BY THE ENGINEER.
10. FOR RELOCATING TRAFFIC SIGNS DURING CONSTRUCTION, AS DIRECTED BY THE ENGINEER, RELOCATION INCIDENTAL TO TRAFFIC CONTROL..
11. ALL TEMPORARY TRAFFIC CONTROL SETUPS SHALL BE IN ACCORDANCE WITH THE MOST RECENT EDITION OF THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES AND TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS-FIELD MANUAL OF THE SAME MANUAL..

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\SAP 002-622-035\Base\Traffic\Stage 1.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: DOUGLAS W. FISCHER, P.E.
SIGNATURE:
DATE: 7/19/16 LICENSE NO. 20235

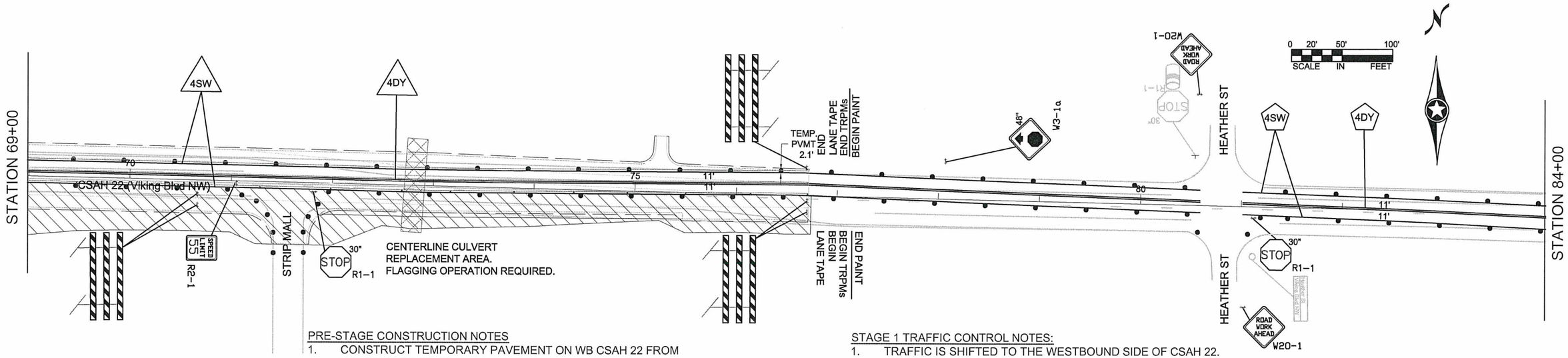
DRAWN BY TMV DATE 02-10-16
DESIGN BY RLB DATE 02-10-16
CHECKED BY JKR DATE 06-27-16

ANOKA COUNTY HIGHWAY DEPT.

SAP 002-609-016
SAP 002-622-035

TRAFFIC CONTROL
STAGE 1

Sheet 33 of 119 Sheets



PRE-STAGE CONSTRUCTION NOTES

1. CONSTRUCT TEMPORARY PAVEMENT ON WB CSAH 22 FROM STA 74+34 TO 77+90.
2, REPLACE CENTERLINE CULVERT AT CSAH 22 STA 72+80.

STAGE 1 CONSTRUCTION NOTES:

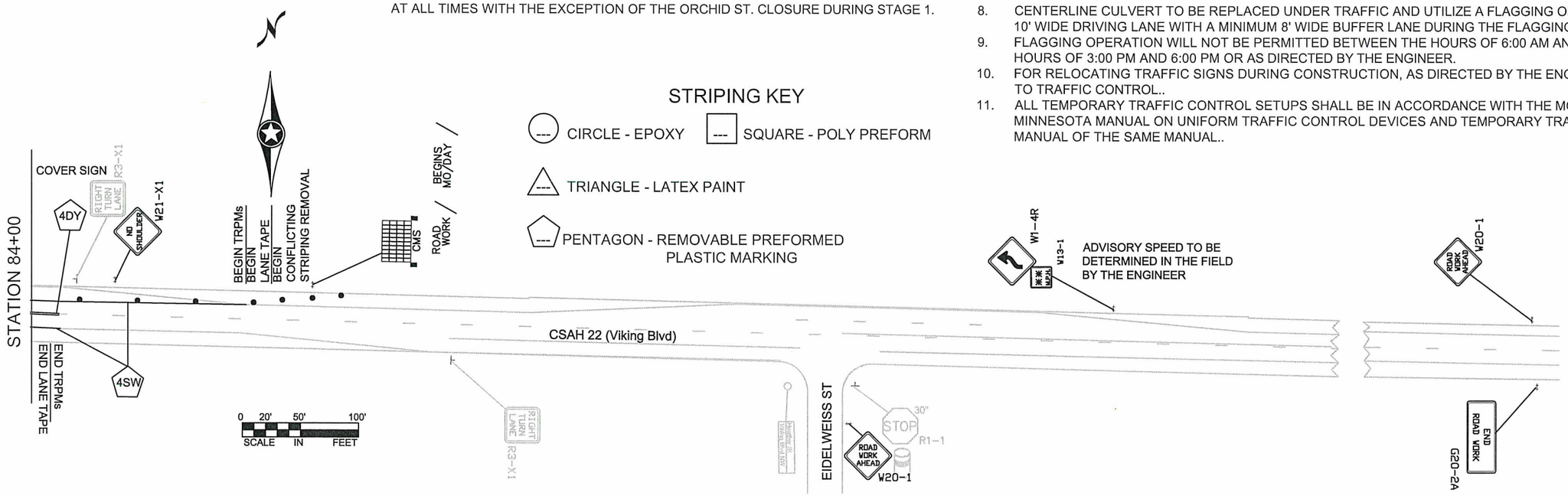
1. FULL DEPTH RECONSTRUCTION AND CULVERT WORK ALONG EB CSAH 22.
2. CONSTRUCT TEMPORARY PAVEMENT ON EB CSAH 22 FROM STA 71+87 TO 75+47, FOR STAGE 2 TRAFFIC.
3. ACCESS SHALL BE MAINTAINED TO ALL BUSINESSES, STREETS AND DRIVEWAYS AT ALL TIMES WITH THE EXCEPTION OF THE ORCHID ST. CLOSURE DURING STAGE 1.

STAGE 1 TRAFFIC CONTROL NOTES:

1. TRAFFIC IS SHIFTED TO THE WESTBOUND SIDE OF CSAH 22.
2. TRAFFIC IS SHIFTED TO THE NORTHBOUND SIDE OF CSAH 9.
3. CONTRACTOR SHALL SUPPLY AND INSTALL THE PORTABLE CHANGEABLE MESSAGE SIGN (CMS) A MINIMUM OF TEN DAYS PRIOR TO ACTUAL COMMENCEMENT OF ROAD WORK, TO A LOCATION AS SPECIFIED BY THE ENGINEER. SIGNS TO BE REMOVED WHEN ROAD WORK BEGINS. PAYMENT SHALL BE MADE AS PER ITEM 2563.613 PORTABLE CHANGEABLE MESSAGE SIGN BY THE UNIT/DAY.
4. ADD TRPMs SPACED EVERY 10 FEET IN TAPER AREAS. TRPMs SHALL BE REMOVED PRIOR TO WEAR COURSE.
5. REMOVE ALL CONFLICTING STRIPING.
6. STOP SIGNS SHALL BE PLACED ON TEMP POSTS AND MAINTAINED THROUGHOUT CONSTRUCTION.
7. BRIDGE WEIGHT RESTRICTION SIGN ASSEMBLY SHALL REMAIN IN PLACE AND FULLY VISIBLE TO THE TRAVELING PUBLIC AT ALL TIMES.
8. CENTERLINE CULVERT TO BE REPLACED UNDER TRAFFIC AND UTILIZE A FLAGGING OPERATION. MAINTAIN MINIMUM 10' WIDE DRIVING LANE WITH A MINIMUM 8' WIDE BUFFER LANE DURING THE FLAGGING OPERATION.
9. FLAGGING OPERATION WILL NOT BE PERMITTED BETWEEN THE HOURS OF 6:00 AM AND 9:00 AM AND BETWEEN THE HOURS OF 3:00 PM AND 6:00 PM OR AS DIRECTED BY THE ENGINEER.
10. FOR RELOCATING TRAFFIC SIGNS DURING CONSTRUCTION, AS DIRECTED BY THE ENGINEER, RELOCATION INCIDENTAL TO TRAFFIC CONTROL..
11. ALL TEMPORARY TRAFFIC CONTROL SETUPS SHALL BE IN ACCORDANCE WITH THE MOST RECENT EDITION OF THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES AND TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS-FIELD MANUAL OF THE SAME MANUAL..

STRIPING KEY

--- CIRCLE - EPOXY
--- SQUARE - POLY PREFORM
--- TRIANGLE - LATEX PAINT
--- PENTAGON - REMOVABLE PREFORMED PLASTIC MARKING



NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\SAP 002-622-035\Base\Traffic\Stage 1.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: DOUGLAS W. FISCHER, P.E.
SIGNATURE:
DATE: 7/19/16 LICENSE NO. 20235

DRAWN BY TMV DATE 02-10-16
DESIGN BY RLB DATE 02-10-16
CHECKED BY JKR DATE 06-27-16

ANOKA COUNTY HIGHWAY DEPT.

SAP 002-609-016
SAP 002-622-035

TRAFFIC CONTROL
STAGE 1

Sheet 34 of 119 Sheets

STAGE 1 TRAFFIC CONTROL NOTES:

1. TRAFFIC IS SHIFTED TO THE WESTBOUND SIDE OF CSAH 22.
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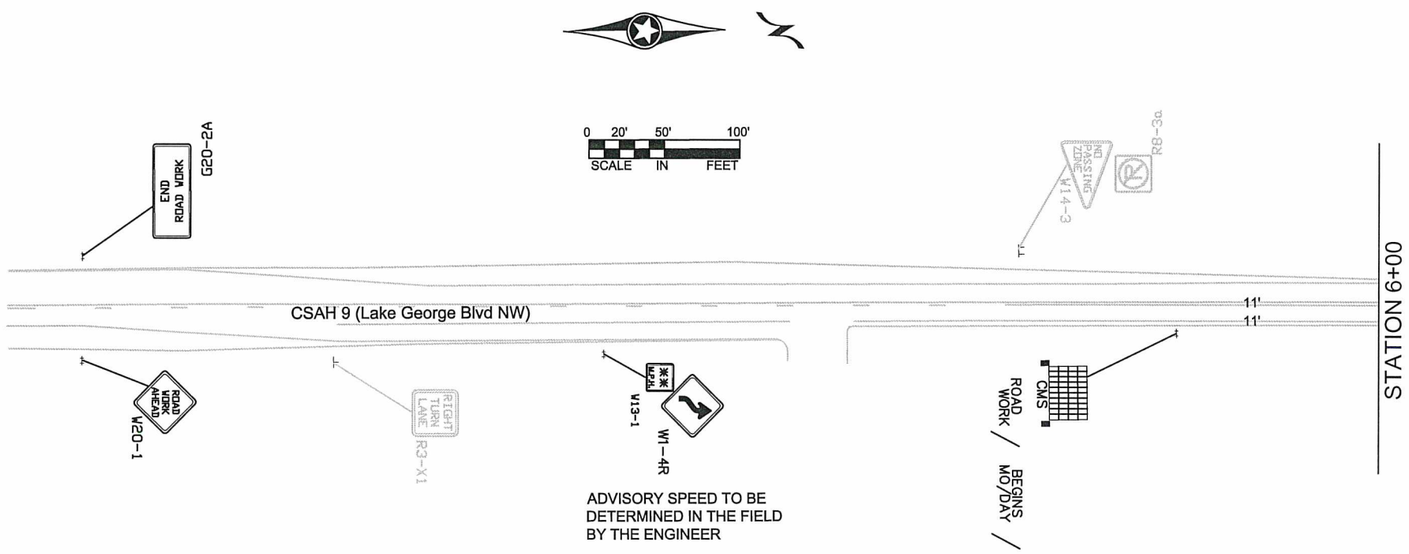

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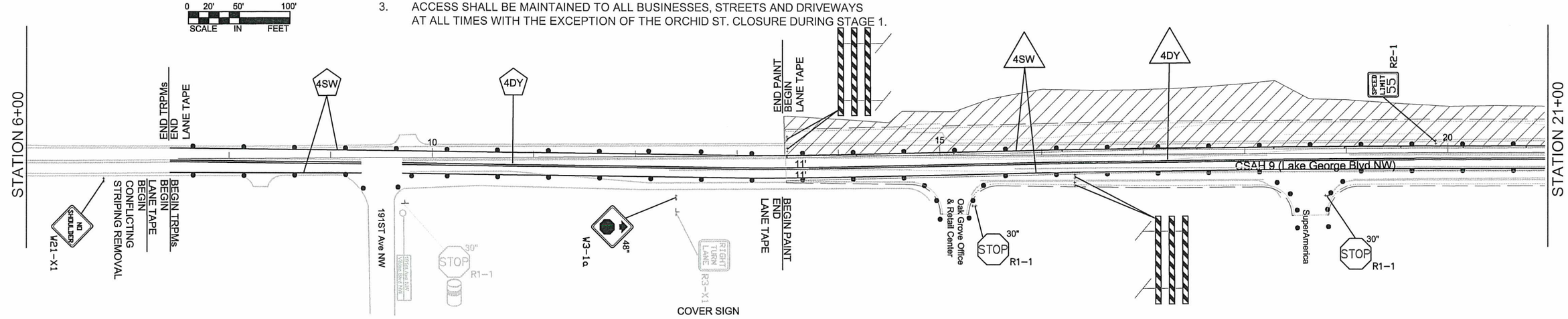
PRE-STAGE 1 CONSTRUCTION NOTES:

1. CONSTRUCT TEMPORARY PAVEMENT ON NB CSAH 9 FROM STA 28+45 TO STA 35+25.

STAGE 1 CONSTRUCTION NOTES:

1. FULL DEPTH RECONSTRUCTION AND DRAINAGE WORK ALONG SB CSAH 9.
2. CONSTRUCT TEMPORARY PAVEMENT ON SB CSAH 9 FROM STA 9+50 TO 13+50 AND 31+50 TO 35+35. FOR STAGE 2 TRAFFIC.
3. ACCESS SHALL BE MAINTAINED TO ALL BUSINESSES, STREETS AND DRIVEWAYS AT ALL TIMES WITH THE EXCEPTION OF THE ORCHID ST. CLOSURE DURING STAGE 1.



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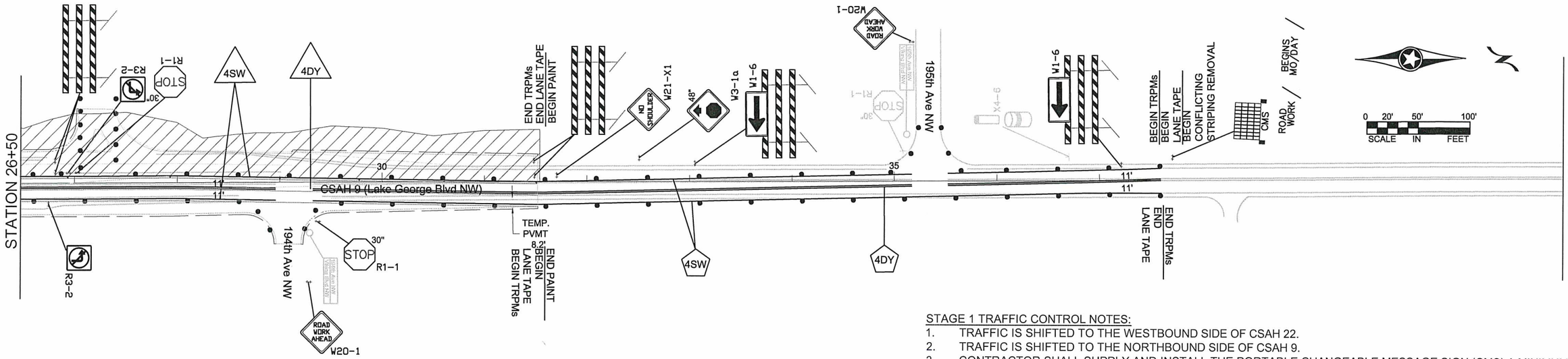

PRE-STAGE 1 CONSTRUCTION NOTES:

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STAGE 1 CONSTRUCTION NOTES:

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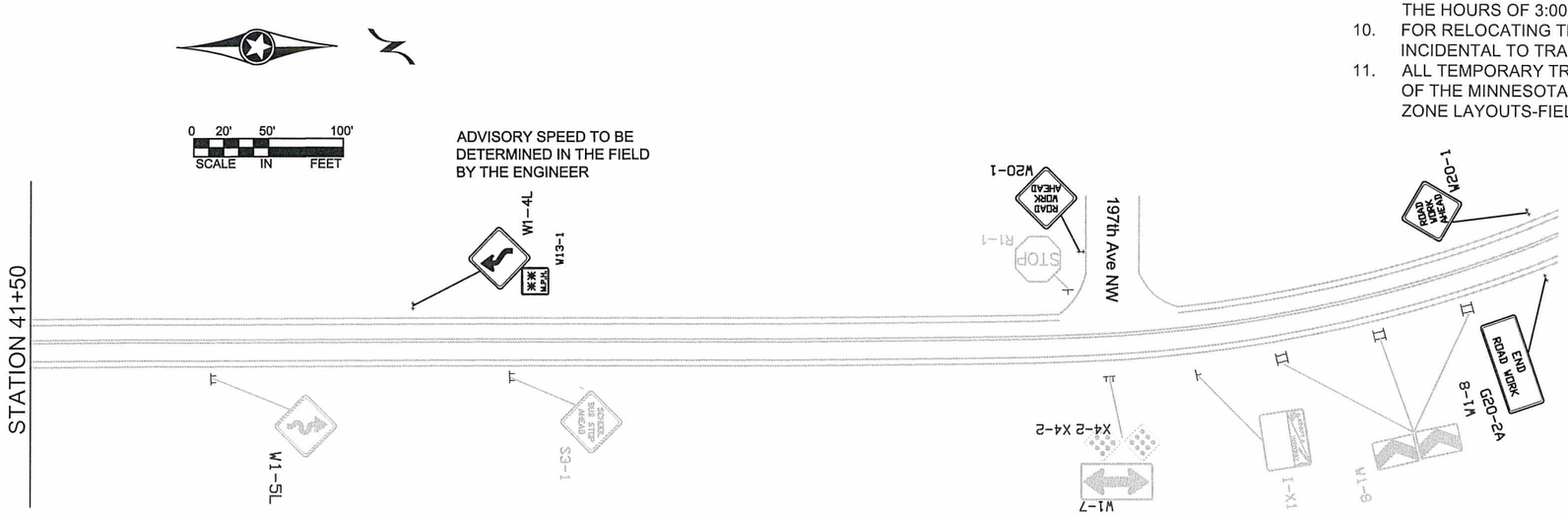

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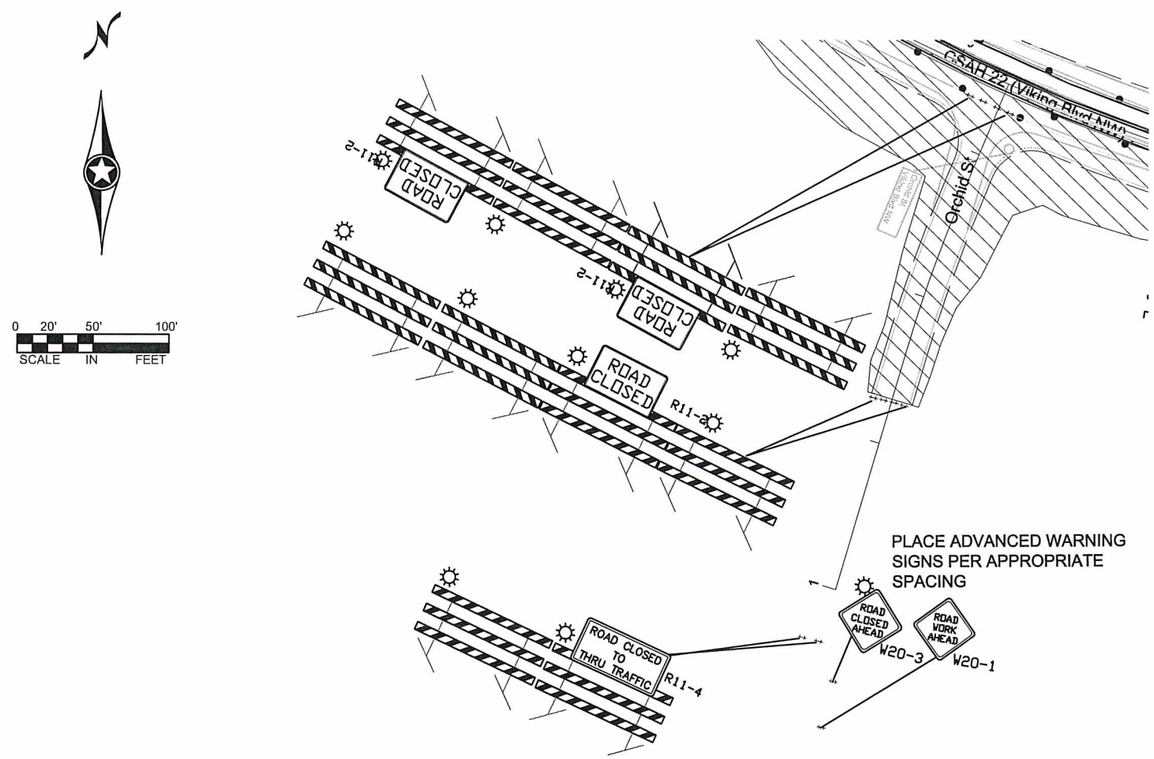

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PRE-STAGE CONSTRUCTION NOTES

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2, REPLACE CENTERLINE CULVERT AT CSAH 22 STA 72+80.

STAGE 1 CONSTRUCTION NOTES:

1. FULL DEPTH RECONSTRUCTION AND CULVERT WORK ALONG EB CSAH 22.
2. CONSTRUCT TEMPORARY PAVEMENT ON EB CSAH 22 FROM STA 71+87 TO 75+47, FOR STAGE 2 TRAFFIC.
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STRIPING KEY

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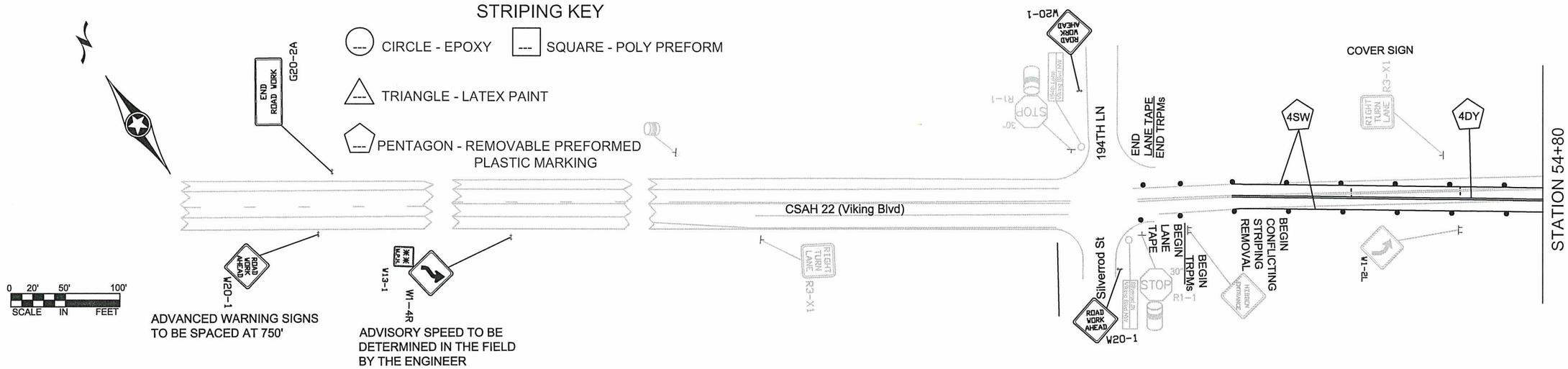
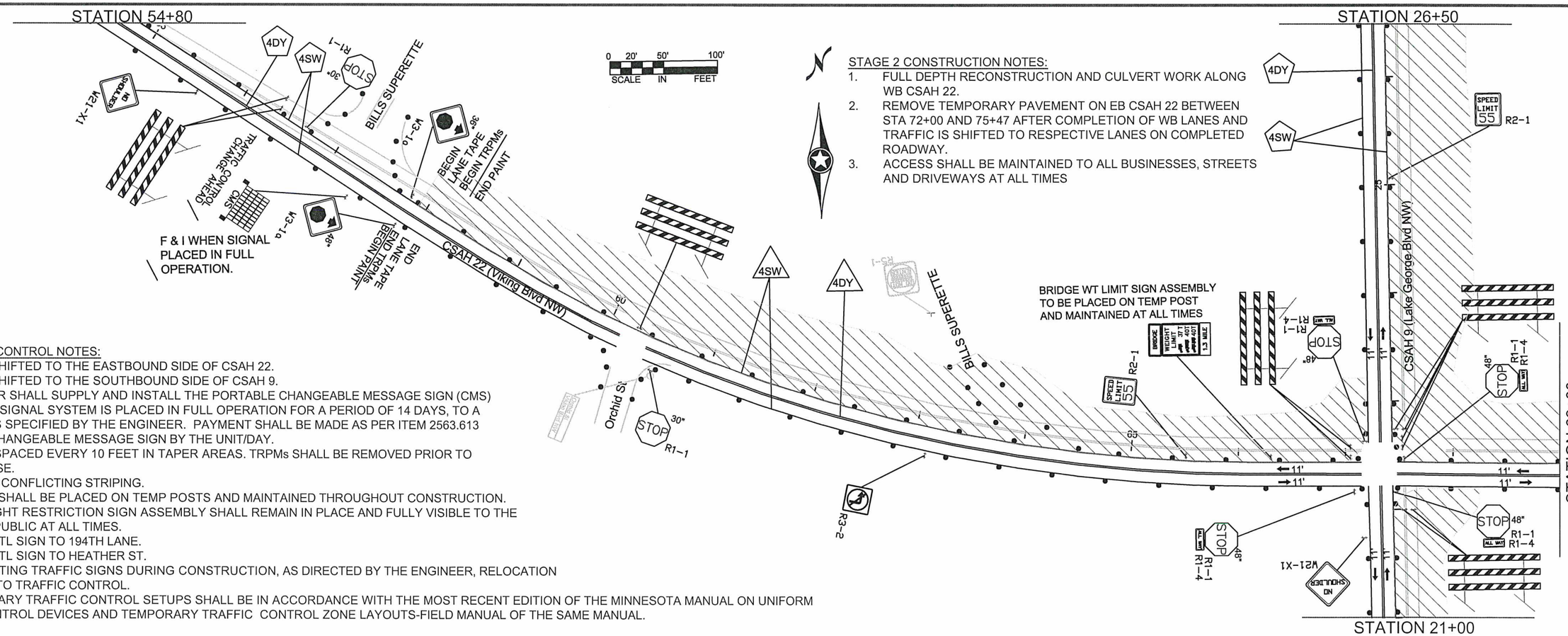


ADVANCED WARNING SIGNS TO BE SPACED AT 750'

ADVISORY SPEED TO BE DETERMINED IN THE FIELD BY THE ENGINEER



F & I WHEN SIGNAL PLACED IN FULL OPERATION.

STAGE 2 CONSTRUCTION NOTES:

1. FULL DEPTH RECONSTRUCTION AND CULVERT WORK ALONG WB CSAH 22.
2. REMOVE TEMPORARY PAVEMENT ON EB CSAH 22 BETWEEN STA 72+00 AND 75+47 AFTER COMPLETION OF WB LANES AND TRAFFIC IS SHIFTED TO RESPECTIVE LANES ON COMPLETED ROADWAY.
3. ACCESS SHALL BE MAINTAINED TO ALL BUSINESSES, STREETS AND DRIVEWAYS AT ALL TIMES

STAGE 2 TRAFFIC CONTROL NOTES:

1. TRAFFIC IS SHIFTED TO THE EASTBOUND SIDE OF CSAH 22.
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8. COVER WB RTL SIGN TO 194TH LANE.
9. COVER WB RTL SIGN TO HEATHER ST.
10. FOR RELOCATING TRAFFIC SIGNS DURING CONSTRUCTION, AS DIRECTED BY THE ENGINEER, RELOCATION INCIDENTAL TO TRAFFIC CONTROL.
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TRAFFIC CONTROL
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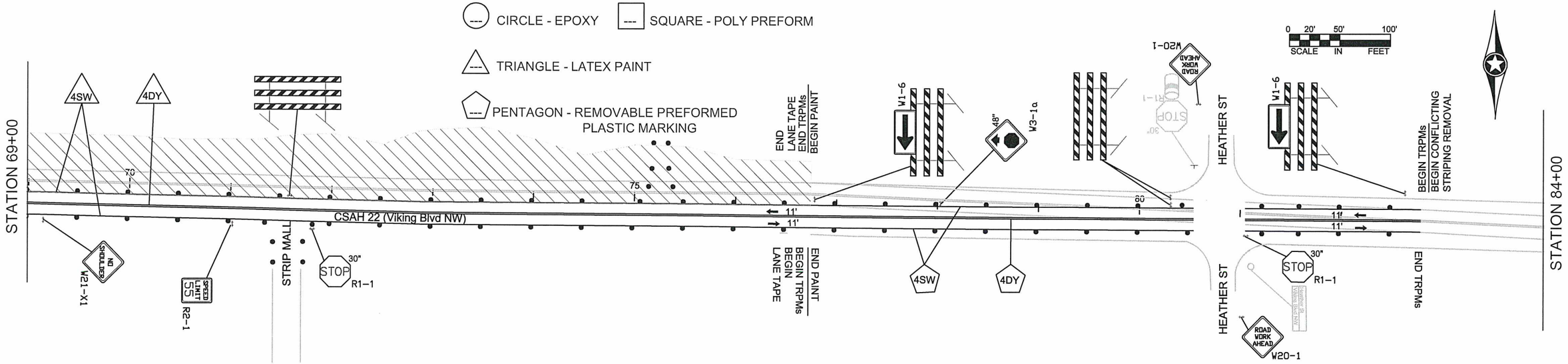

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2. REMOVE TEMPORARY PAVEMENT ON EB CSAH 22 BETWEEN STA 72+00 AND 75+47 AFTER COMPLETION OF WB LANES AND TRAFFIC IS SHIFTED TO RESPECTIVE LANES ON COMPLETED ROADWAY.
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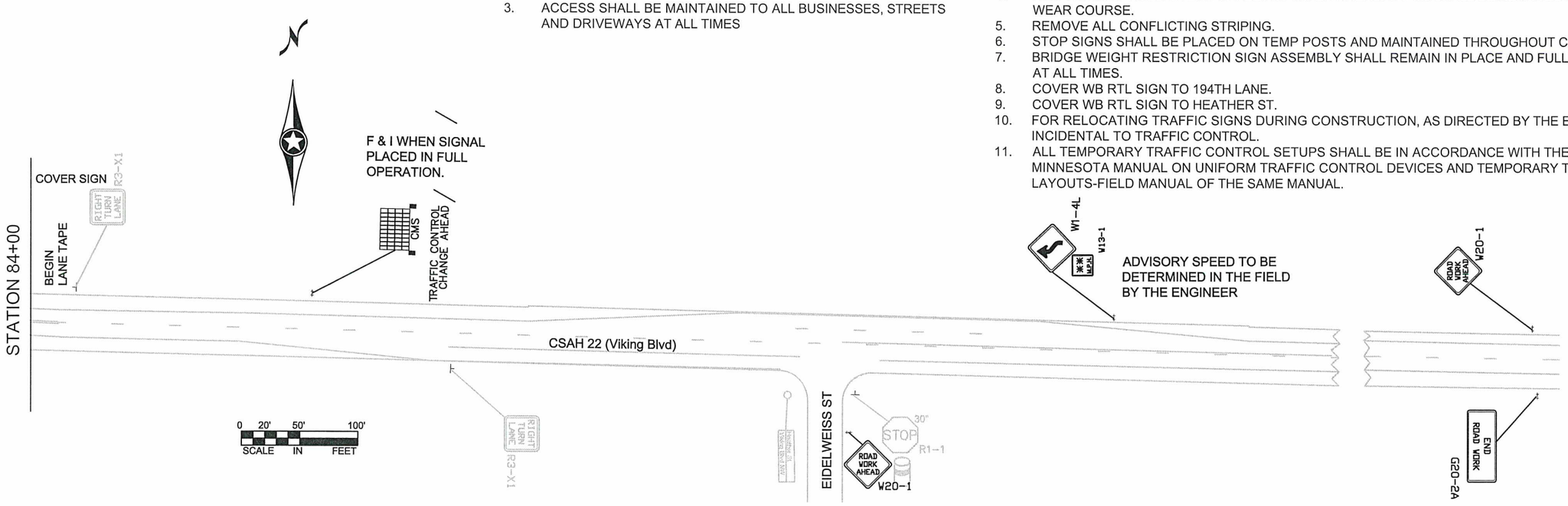

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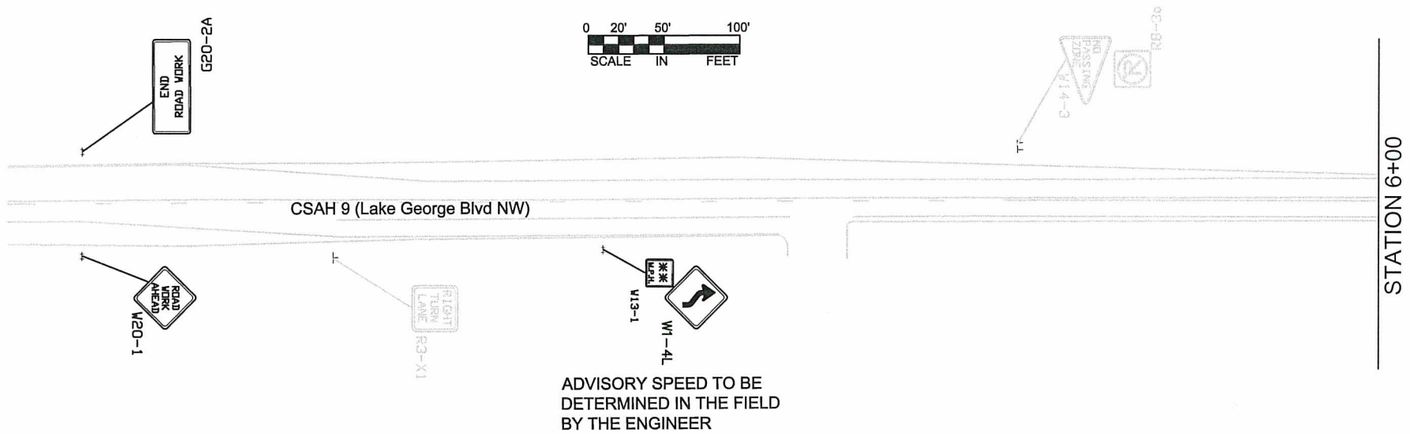

STAGE 2 CONSTRUCTION NOTES:

1. FULL DEPTH RECONSTRUCTION AND CULVERT WORK ALONG NB CSAH 9.
2. REMOVE TEMPORARY PAVEMENT AFTER TRAFFIC HAS BEEN SHIFTED TO RESPECTIVE LANES.
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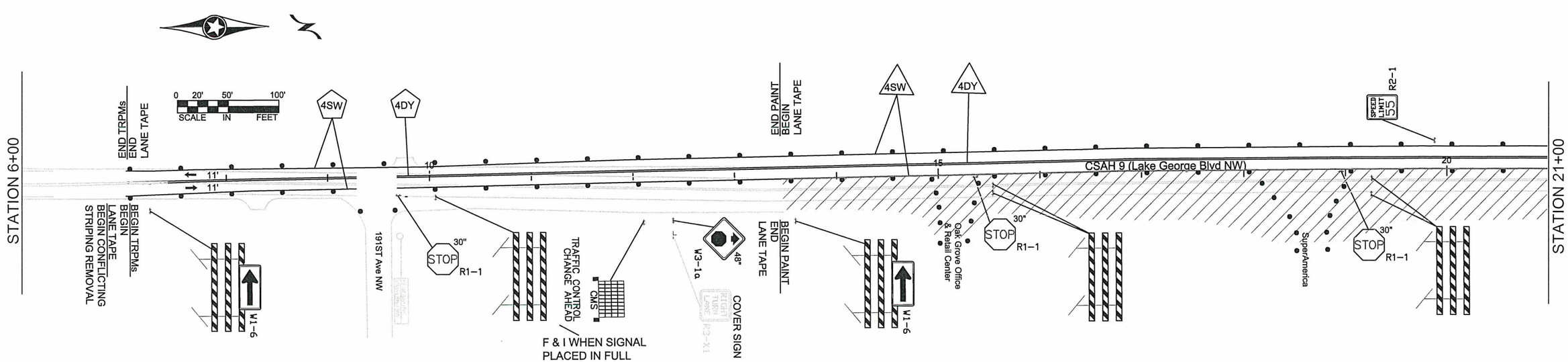


NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\SAP 002-622-035\Base\Traffic\Stage 2.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: DOUGLAS W. FISCHER P.E.

SIGNATURE:

DATE: 7/20/16 LICENSE NO. 20235

DRAWN BY TMV DATE 02-10-16

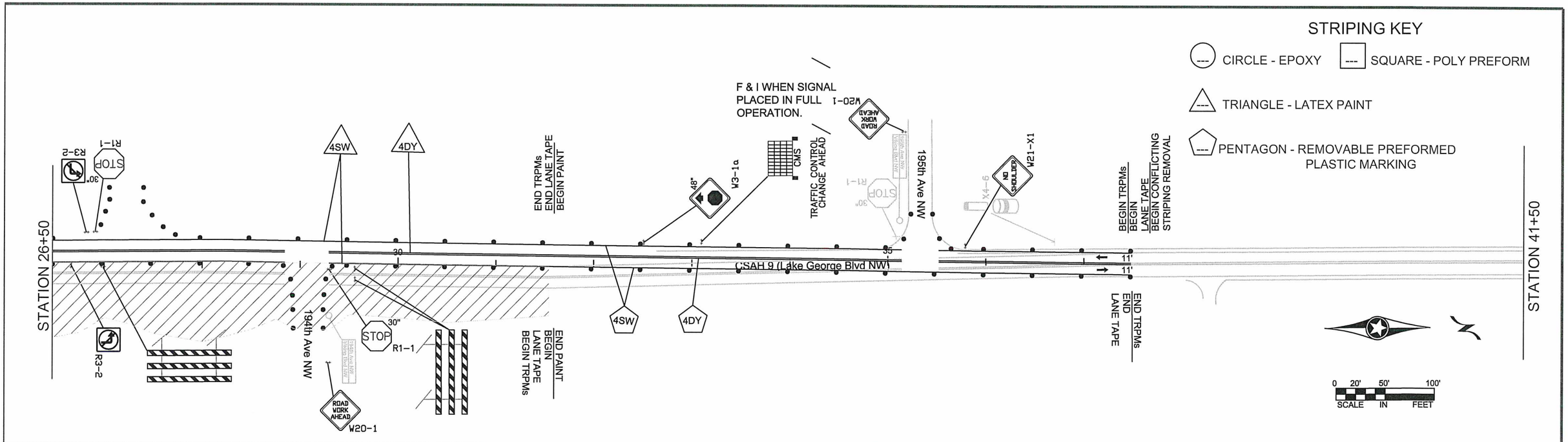
DESIGN BY RLB DATE 02-10-16

CHECKED BY JKR DATE 06-27-16

ANOKA COUNTY HIGHWAY DEPT.

SAP 002-609-016
SAP 002-622-035

TRAFFIC CONTROL
STAGE 2

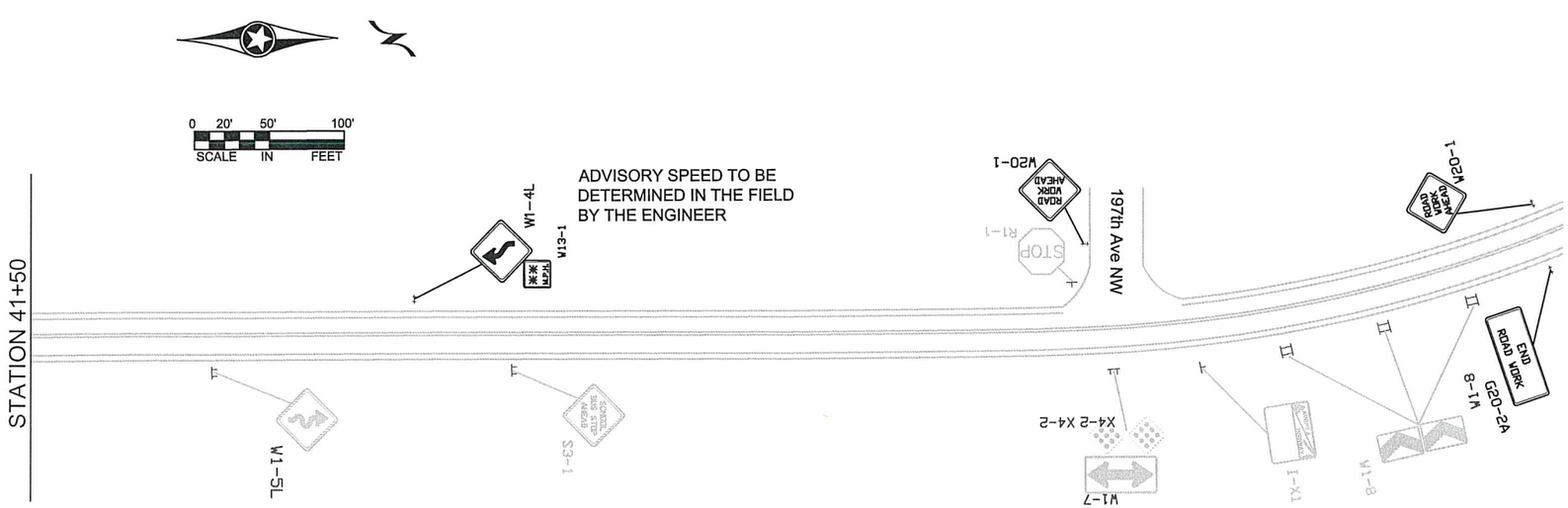


STAGE 2 CONSTRUCTION NOTES:

1. FULL DEPTH RECONSTRUCTION AND CULVERT WORK ALONG NB CSAH 9.
2. REMOVE TEMPORARY PAVEMENT AFTER TRAFFIC HAS BEEN SHIFTED TO RESPECTIVE LANES.
3. ACCESS SHALL BE MAINTAINED TO ALL BUSINESSES, STREETS AND DRIVEWAYS AT ALL TIMES.

STAGE 2 TRAFFIC CONTROL NOTES:

1. TRAFFIC IS SHIFTED TO THE EASTBOUND SIDE OF CSAH 22.
2. TRAFFIC IS SHIFTED TO THE SOUTHBOUND SIDE OF CSAH 9.
3. CONTRACTOR SHALL SUPPLY AND INSTALL THE PORTABLE CHANGEABLE MESSAGE SIGN (CMS) AT TIME THE SIGNAL SYSTEM IS PLACED IN FULL OPERATION FOR A PERIOD OF 14 DAYS, TO A LOCATION AS SPECIFIED BY THE ENGINEER. PAYMENT SHALL BE MADE AS PER ITEM 2563.613 PORTABLE CHANGEABLE MESSAGE SIGN BY THE UNIT/DAY.
4. ADD TRPMs SPACED EVERY 10 FEET IN TAPER AREAS. TRPMs SHALL BE REMOVED PRIOR TO WEAR COURSE.
5. REMOVE ALL CONFLICTING STRIPING.
6. STOP SIGNS SHALL BE PLACED ON TEMP POSTS AND MAINTAINED THROUGHOUT CONSTRUCTION.
7. BRIDGE WEIGHT RESTRICTION SIGN ASSEMBLY SHALL REMAIN IN PLACE AND FULLY VISIBLE TO THE TRAVELING PUBLIC AT ALL TIMES.
8. COVER WB RTL SIGN TO 194TH LANE.
9. COVER WB RTL SIGN TO HEATHER ST.
10. FOR RELOCATING TRAFFIC SIGNS DURING CONSTRUCTION, AS DIRECTED BY THE ENGINEER, RELOCATION INCIDENTAL TO TRAFFIC CONTROL.
11. ALL TEMPORARY TRAFFIC CONTROL SETUPS SHALL BE IN ACCORDANCE WITH THE MOST RECENT EDITION OF THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES AND TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS-FIELD MANUAL OF THE SAME MANUAL.



NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\SAP 002-622-035\Base\Traffic\Stage 2.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: DOUGLAS W. FISCHER, P.E.

SIGNATURE:

DATE: 7/19/16 LICENSE NO. 20235

DRAWN BY TMV DATE 02-10-16

DESIGN BY RLB DATE 02-10-16

CHECKED BY JKR DATE 06-27-16

ANOKA COUNTY HIGHWAY DEPT.

SAP 002-609-016
SAP 002-622-035

TRAFFIC CONTROL
STAGE 2

M.U.T.C.D. CODE	SIZE	INSERT	QTY. STG. 1	QTY. STG. 2
R1-1	30" x 30"	STOP	7	9
	48" x 48"	STOP	4	4
R1-3P	18" x 6"	ALL WAY	4	4
R2-1	24" x 30"	SPEED LIMIT 55	4	4
R3-2	24" x 24"		3	3
W1-4L	48" x 48"		2	3
W13-1	30" x 30"	** M.P.H.	2	3
W1-4L	48" x 48"		2	1
W13-1	30" x 30"	** M.P.H.	2	1
W3-1A	36" x 36"		1	1
	48" x 48"		4	4
W20-1	48" x 48"	ROAD WORK AHEAD	16	11
W20-3	48" x 48"	ROAD CLOSED AHEAD	1	0
W21-X1	48" x 48"	NO SHOULDER	3	4
W1-6	48" x 24"		4	4
TYPE III	8 FOOT		4	4

M.U.T.C.D. CODE	SIZE	INSERT	QTY. STG. 1	QTY. STG. 2
FLASHER			3	0
TYPE III	8 FOOT		34	21
FLASHER			3	0
TYPE III	8 FOOT		3	1
R11-2	48" x 30"	ROAD CLOSED	2	0
TYPE III	8 FOOT			
FLASHER				
R11-2	48" x 30"	ROAD CLOSED	1	0
TYPE III	8 FOOT			
FLASHER				
R11-4	60" x 30"	ROAD CLOSED TO THRU TRAFFIC	1	0
TYPE III	8 FOOT			
FLASHER				
G20-2A	48" x 24"	END ROAD WORK	4	4
REFLECTORIZED REBOUNDABLE DRUM			314	301
CMS sign to be installed a minimum of ten days prior to actual commencement of road work. Signs to be removed when road work begins.		CMS	4	0
CMS sign to be installed for 14 days at the time the signal system goes into full operation.			0	4

B	TEMPORARY PAVEMENT MARKING TABULATION		
		SAP 002-609-016	SAP 002-622-035
PAVEMENT MARKING REMOVAL 4" SOLID WHITE PAINT	LIN FT	4790	11320
PAVEMENT MARKING REMOVAL 4" SOLID DOUBLE YELLOW PAINT	LIN FT	2970	1750
PAVEMENT MARKING REMOVAL 4" SOLID YELLOW PAINT	LIN FT	0	1130
PAVEMENT MARKING REMOVAL 4" BROKEN WHITE PAINT	LIN FT	0	40
PAVEMENT MARKING REMOVAL 4" BROKEN YELLOW PAINT	LIN FT	0	200
TEMPORARY RAISED PAVEMENT MARKER	EACH	246	512
4" REMOVABLE PREFORM PLASTIC MARKING (WHITE)	LIN FT	0	5820
4" REMOVABLE PREFORM PLASTIC MARKING (YELLOW)	LIN FT	2460	5820
4" SOLID LINE WHITE - PAINT	LIN FT	3600	7480
4" DOUBLE LINE YELLOW - PAINT	LIN FT	1800	3740

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:\SAP 002-622-035\Base\Traffic\Stage Qtys.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: DOUGLAS W. FISCHER, P.E.

SIGNATURE:

DATE: 7/19/16 REG. NO. 20235

DRAWN BY TMV DATE 02-10-16

DESIGN BY RLB DATE 02-10-16

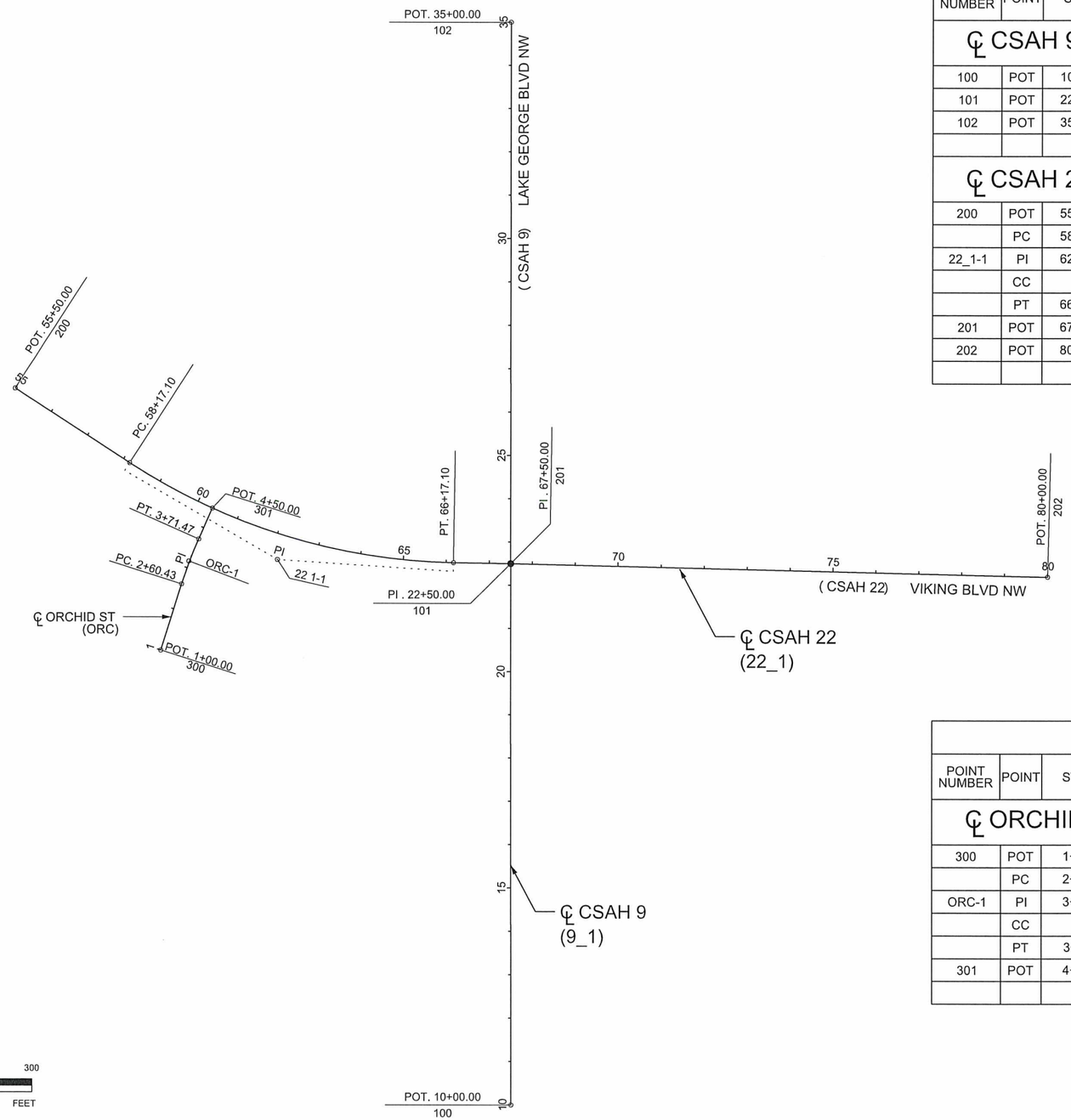
CHECKED BY JKR DATE 06-27-16

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

SAP 002-609-016
SAP 002-622-035

TRAFFIC CONTROL QUANTITIES



ALIGNMENT TABULATION

POINT NUMBER	POINT	STATION	CIRCULAR CURVE DATA					COORDINATES		AZIMUTH
			DELTA	DEGREE	RADIUS	TANGENT	LENGTH	E	N	
℄ CSAH 9 <9_1>										
100	POT	10+00.000						479,230.5330	202,575.6241	
101	POT	22+50.000						479,229.0176	203,825.6232	
102	POT	35+00.000						479,227.5309	205,075.6223	
℄ CSAH 22 <22_1>										
200	POT	55+00.000						478,074.2931	204,229.3407	
	PC	58+17.102						478,340.5628	204,057.1361	S 57° 06' 28.97" E
22_1-1	PI	62+27.834	32° 00' 00.00" LT	4° 00' 00.05"	1,432.390'	410.731'	799.997'	478,685.4522	203,834.0858	PI
	CC							479,118.4316	205,259.9085	
	PT	66+17.100						479,096.1337	203,827.6920	S 89° 06' 28.97" E
201	POT	67+50.000						479,229.0176	203,825.6232	
202	POT	80+00.000						480,478.6717	203,796.2166	

ALIGNMENT TABULATION

POINT NUMBER	POINT	STATION	CIRCULAR CURVE DATA					COORDINATES		AZIMUTH
			DELTA	DEGREE	RADIUS	TANGENT	LENGTH	E	N	
℄ ORCHID ST <ORC>										
300	POT	1+00.000						478,413.8886	203,623.9300	
	PC	2+60.432						478,462.0834	203,776.9515	N 17° 28' 55.44" E
ORC-1	PI	3+16.009	6° 21' 43.59" RT	5° 43' 46.48"	1,000.000'	55.577'	111.040'	478,478.7791	203,829.9614	PI
	CC							479,415.8944	203,476.5442	
	PT	3+71.471						478,501.2462	203,880.7948	N 23° 50' 39.03" E
301	POT	4+50.000						478,532.9914	203,952.6208	

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-622-35\Plan\0262235_AL_P1.dgn 07/18/2016 2:32:21 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.

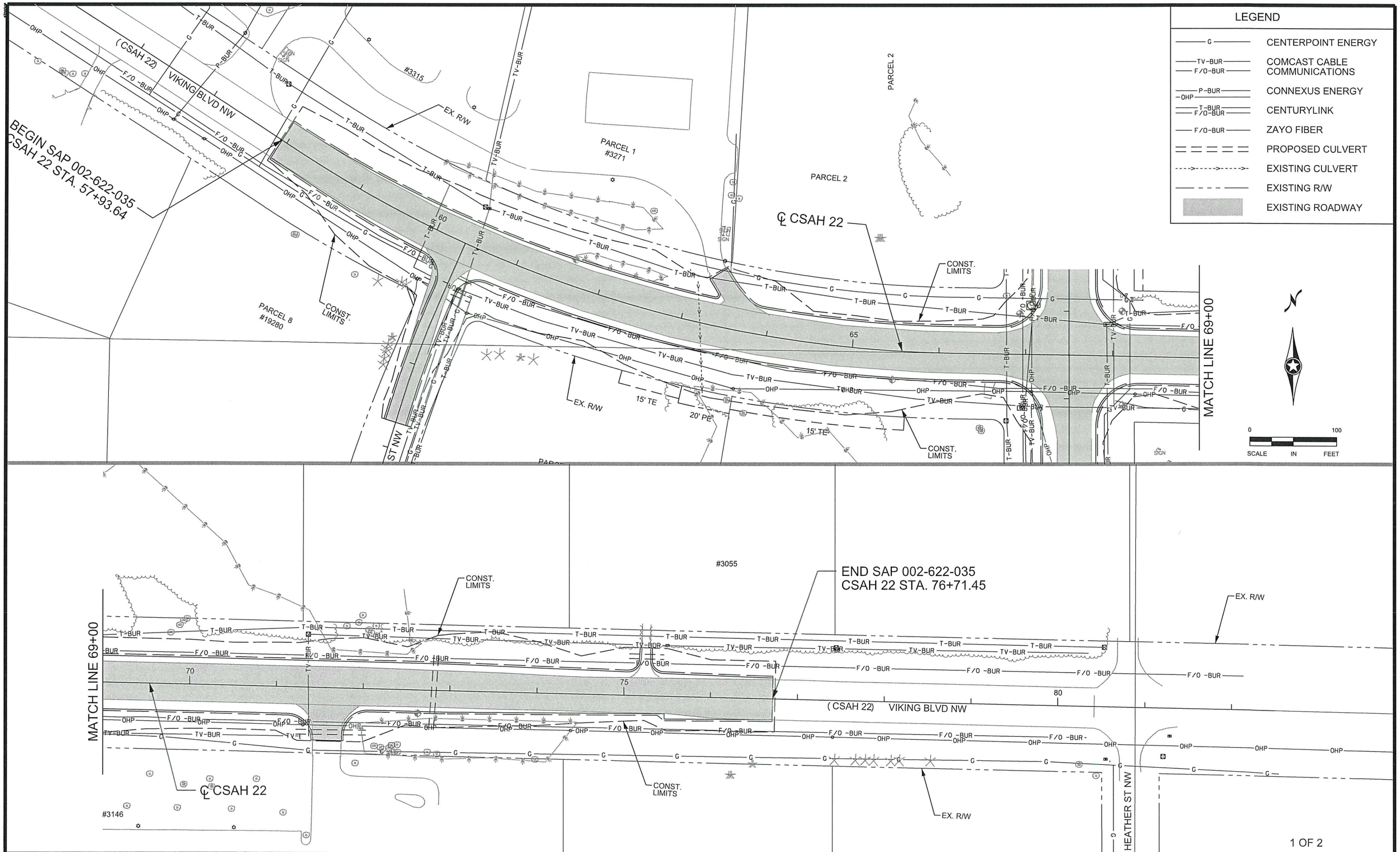
PRINT NAME: ELIZABETH MARKOSE
SIGNATURE: Elizabeth Markose
DATE: 07-18-16 LICENSE NO. 49118

DRAWN BY EJM DATE 07-06-16
DESIGN BY EJM DATE 07-06-16
CHECKED BY GMP DATE 07-14-16

ANOKA COUNTY HIGHWAY DEPT.

SAP 002-609-016
SAP 002-622-035

ALIGNMENT TABULATION
STA _____ TO _____



NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-622-35\Plan\0262235_UT_P1.dgn 07/19/2016 7:56:27 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: ELIZABETH MARKOSE

SIGNATURE: Elizabeth M

DATE: 07-19-16 LICENSE NO. 49118

DRAWN BY EJM DATE 06-17-16

DESIGN BY EJM DATE 06-17-16

CHECKED BY GMP DATE 07-14-16

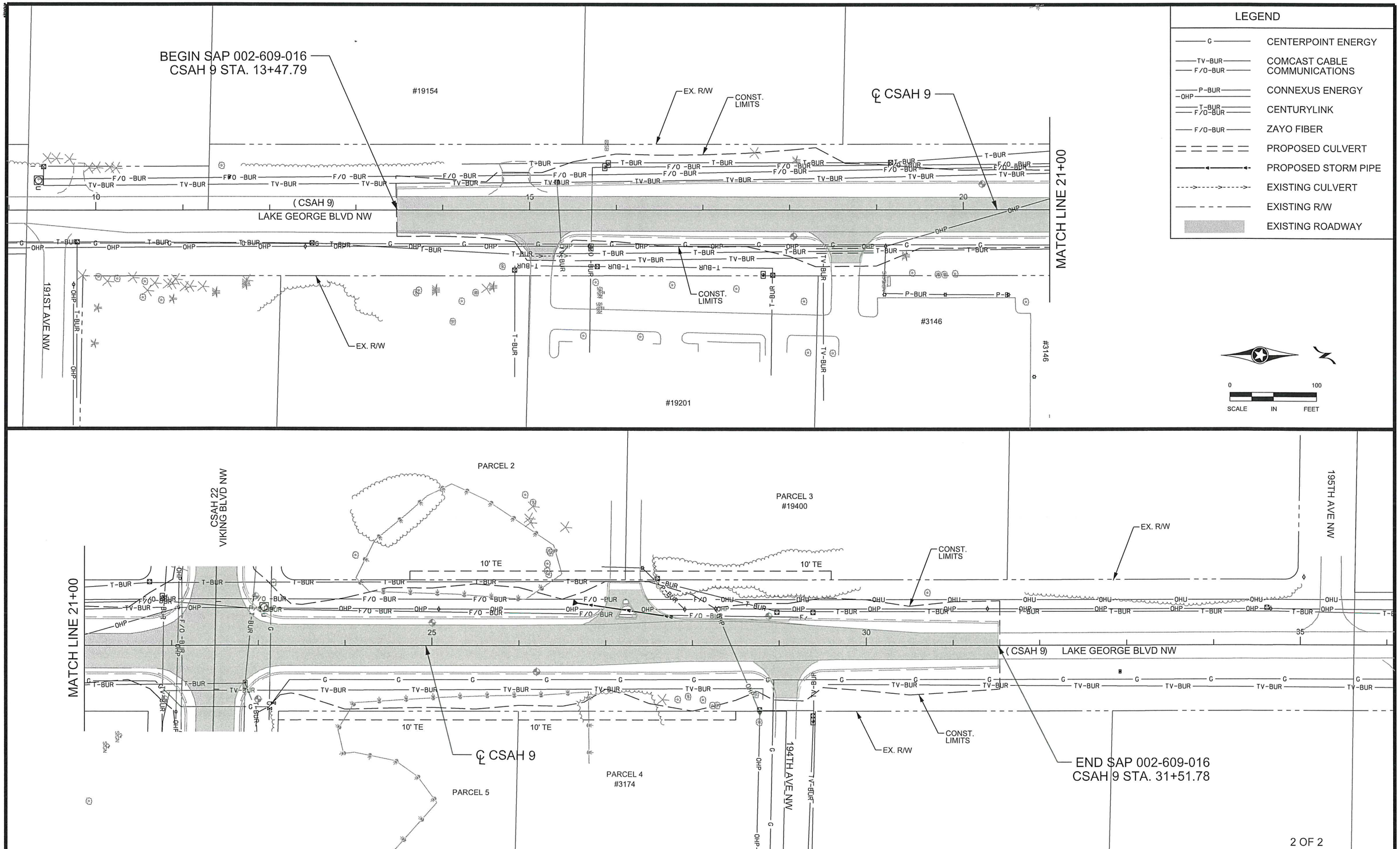
ANOKA COUNTY HIGHWAY DEPT.

SAP 002-609-016
SAP 002-622-035

UTILITY PLAN
CSAH 22

STA 57+93.64 TO 76+71.45

Sheet 44 of 119 Sheets



NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-622-35\Plan\0262235_UT_P2.dgn 07/19/2016 7:56:30 AM

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PRINT NAME: ELIZABETH MARKOSE

SIGNATURE: Elizabeth M

DATE: 07-19-16 LICENSE NO. 49118

DRAWN BY EJM DATE 06-17-16

DESIGN BY EJM DATE 06-17-16

CHECKED BY GMP DATE 07-14-16

ANOKA COUNTY

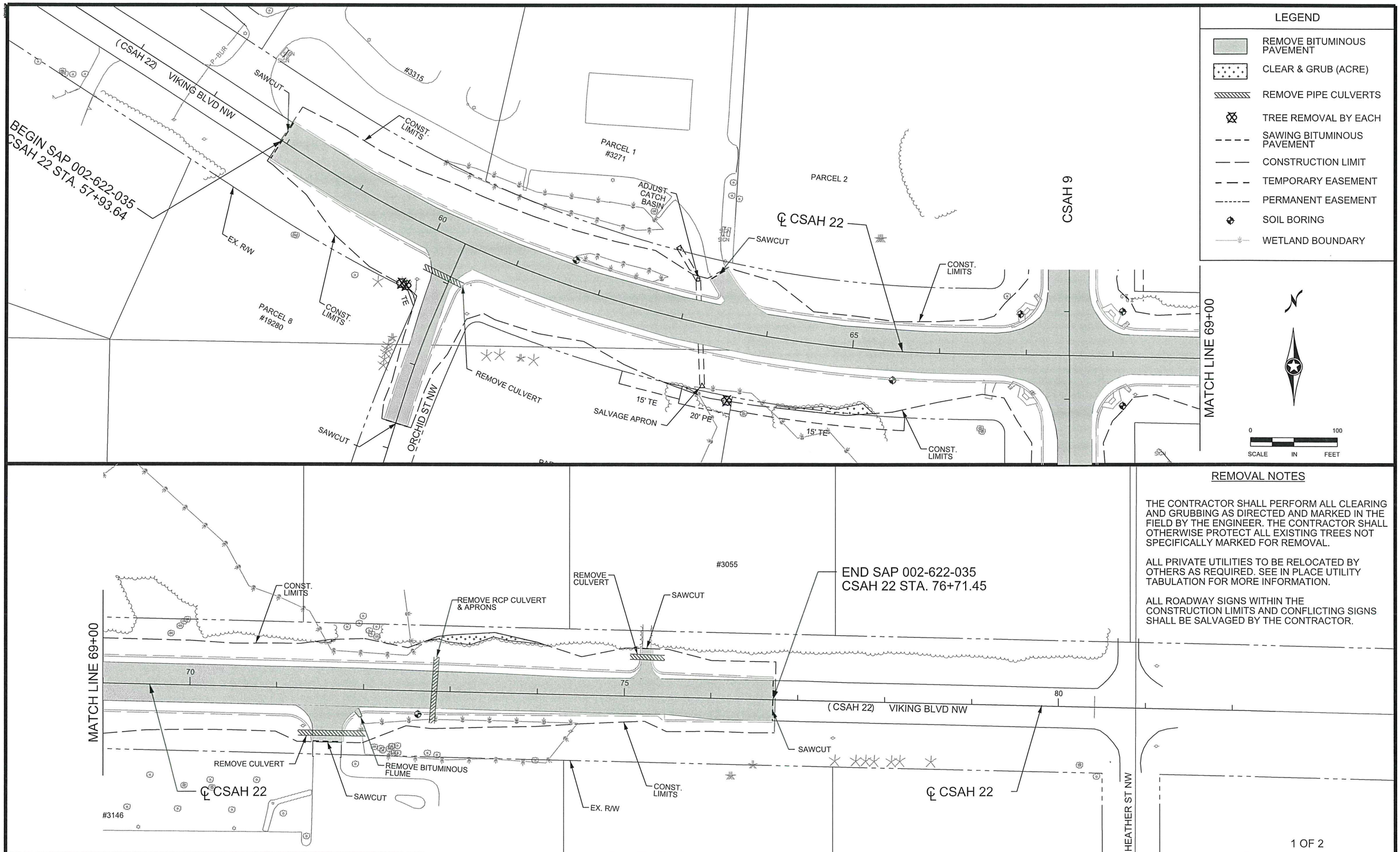
ANOKA COUNTY HIGHWAY DEPT.

SAP 002-609-016
SAP 002-622-035

UTILITY PLAN
CSAH 9

STA 13+47.79 TO 31+51.78

Sheet 45 of 119 Sheets



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:\02-622-35\Plan\0262235_RM_P1.dgn 07/19/2016 7:56:33 AM

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PRINT NAME: ELIZABETH MARKOSE
SIGNATURE: Elizabeth M
DATE: 07-19-16 LICENSE NO. 49118

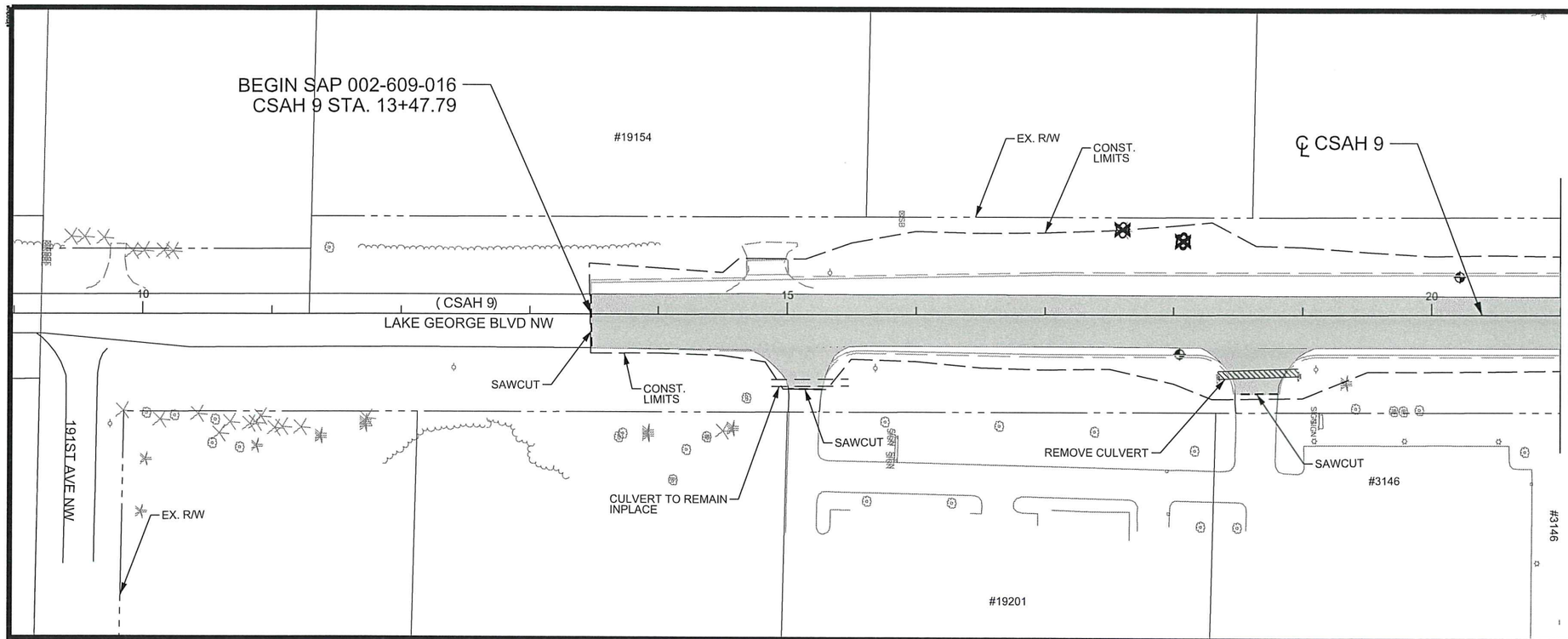
DRAWN BY EJM DATE 06-17-16
DESIGN BY EJM DATE 06-17-16
CHECKED BY GMP DATE 07-14-16

ANOKA COUNTY HIGHWAY DEPT.

SAP 002-609-016
SAP 002-622-035

REMOVAL PLAN
CSAH 22
STA 57+93.64 TO 76+71.45

Sheet 46 of 119 Sheets



LEGEND

- REMOVE BITUMINOUS PAVEMENT
- CLEAR & GRUB (ACRE)
- REMOVE CONCRETE MEDIAN
- REMOVE PIPE CULVERTS
- REMOVE CURB AND GUTTER
- TREE REMOVAL BY EACH
- SAWING BITUMINOUS PAVEMENT
- CONSTRUCTION LIMIT
- TEMPORARY EASEMENT
- WETLAND BOUNDARY
- SOIL BORING

0 100
SCALE IN FEET

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.

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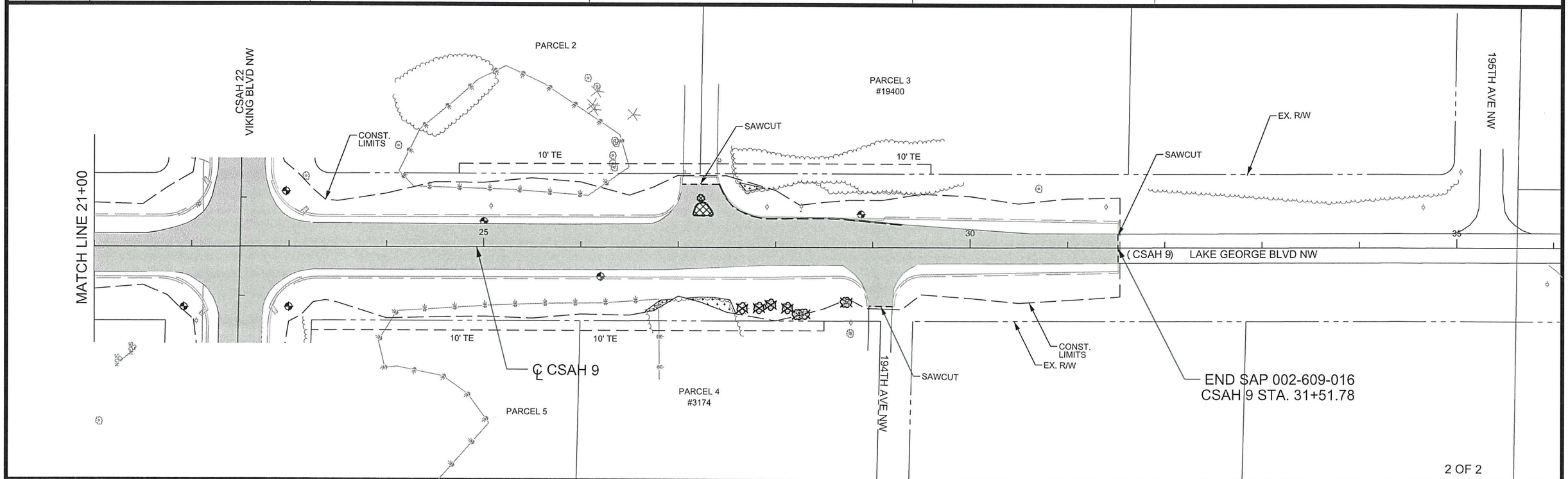
ALL ROADWAY SIGNS WITHIN THE CONFLICTING SIGNS SHALL BE SALVAGED BY THE CONTRACTOR. CONSTRUCTION LIMITS AND OTHERS AS



2 OF 2

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-622-35\Plan\0262235_RM_P2.dgn 07/19/2016 7:56:35 AM

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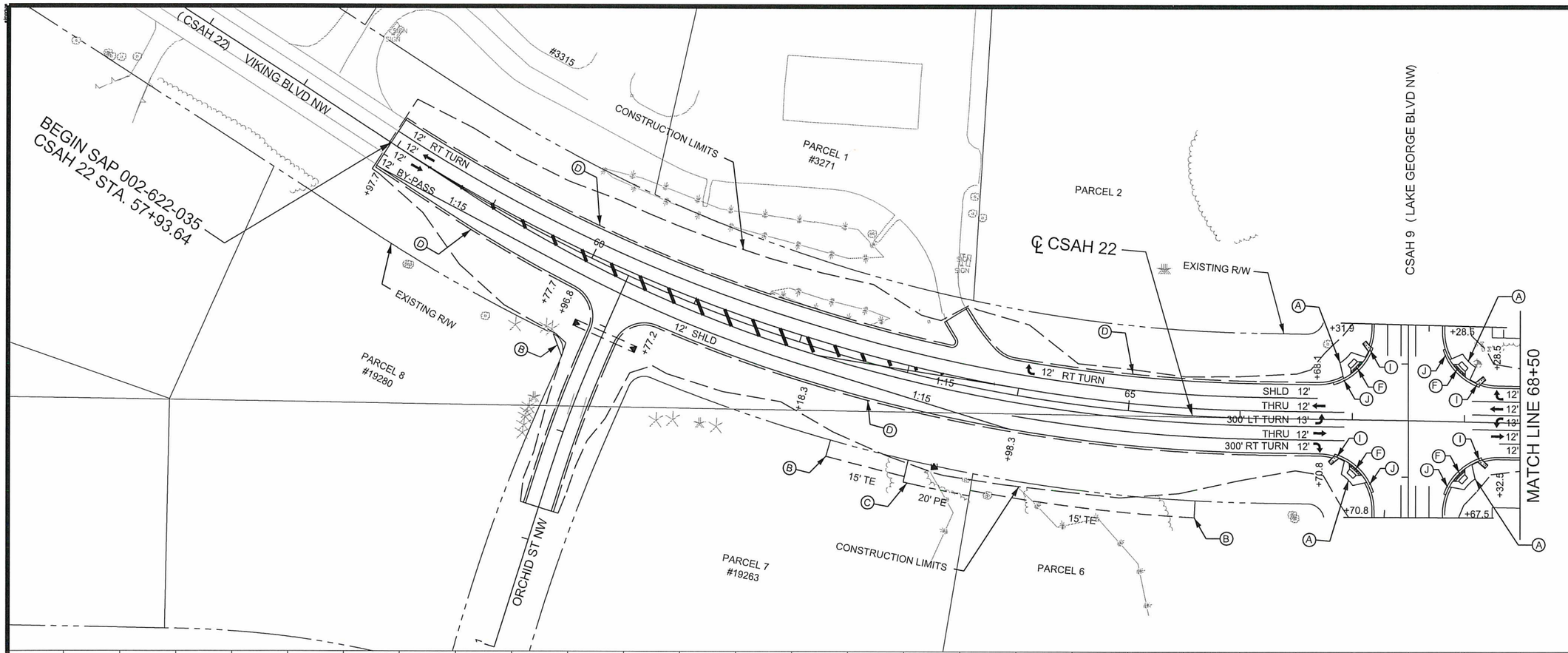
ANOKA COUNTY HIGHWAY DEPT.

SAP 002-609-016
SAP 002-622-035

REMOVAL PLAN
CSAH 9
STA 13+47.79 TO 31+51.78

Sheet 47 of 119 Sheets



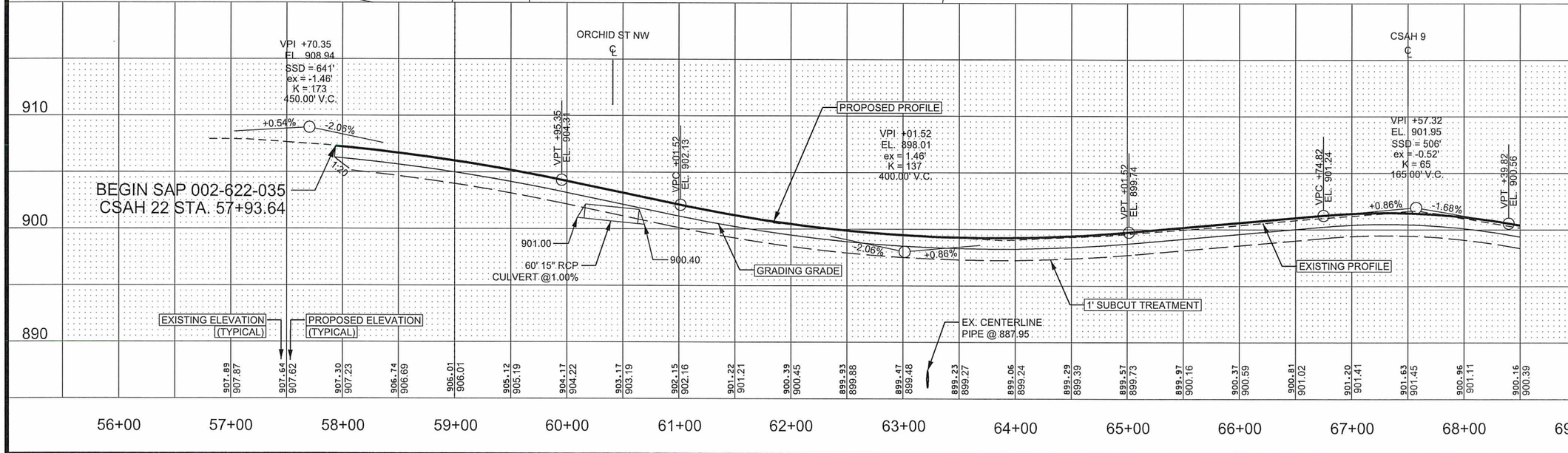
CONSTRUCTION NOTES:

- (A) CONCRETE WALK
- (B) TEMPORARY EASEMENT
- (C) PERMANENT EASEMENT
- (D) 2' AGGREGATE SHOULDER
- (F) TRUNCATED DOME
- (I) CONCRETE DRAINAGE FLUME
- (J) B424 CURB & GUTTER

ALL DIMENSIONS ARE TO FACE OF CURB OR EDGE OF PAVEMENT UNLESS OTHERWISE NOTED.

N

0 100
SCALE IN FEET



NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-622-35\Plan\0262235_PP1.dgn 07/18/2016 2:32:33 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: ELIZABETH MARKOSE
SIGNATURE: Eliz@nMkl
DATE: 07-18-16 LICENSE NO. 49118

DRAWN BY EJM DATE 07-06-16
DESIGN BY EJM DATE 07-06-16
CHECKED BY GMP DATE 07-14-16

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

SAP 002-609-016
SAP 002-622-035

CONSTRUCTION PLAN & PROFILE
CSAH 22

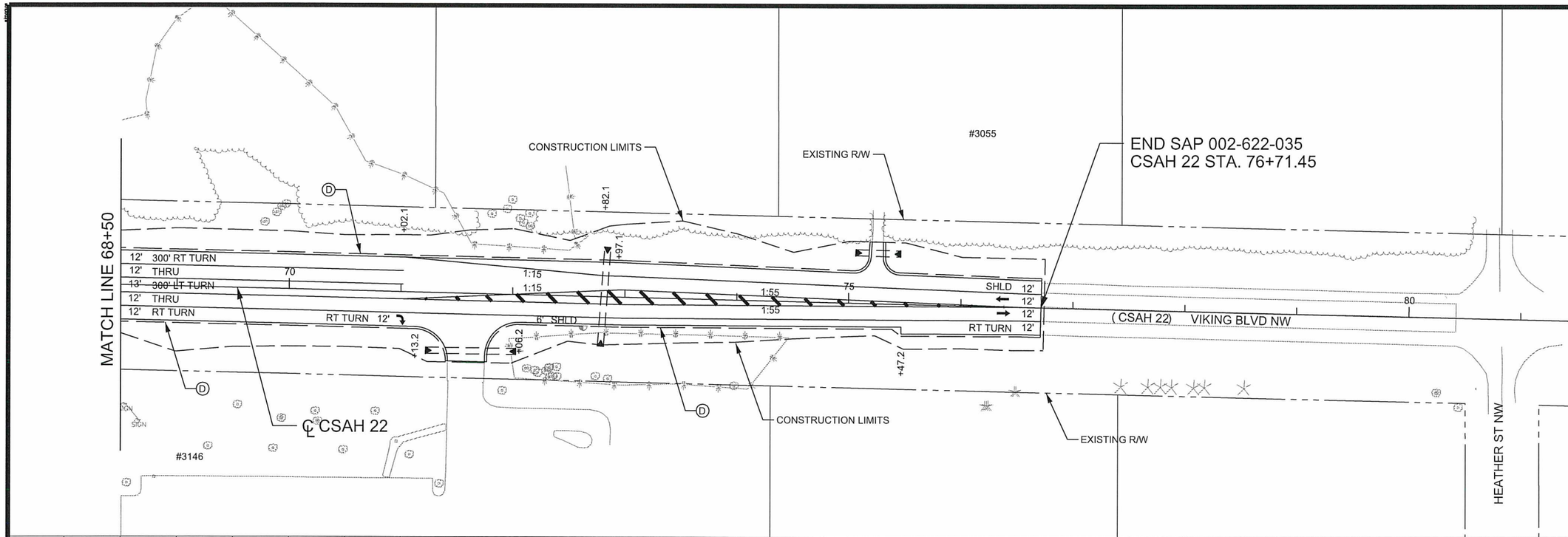
STA 57+93+64 TO 68+50.00

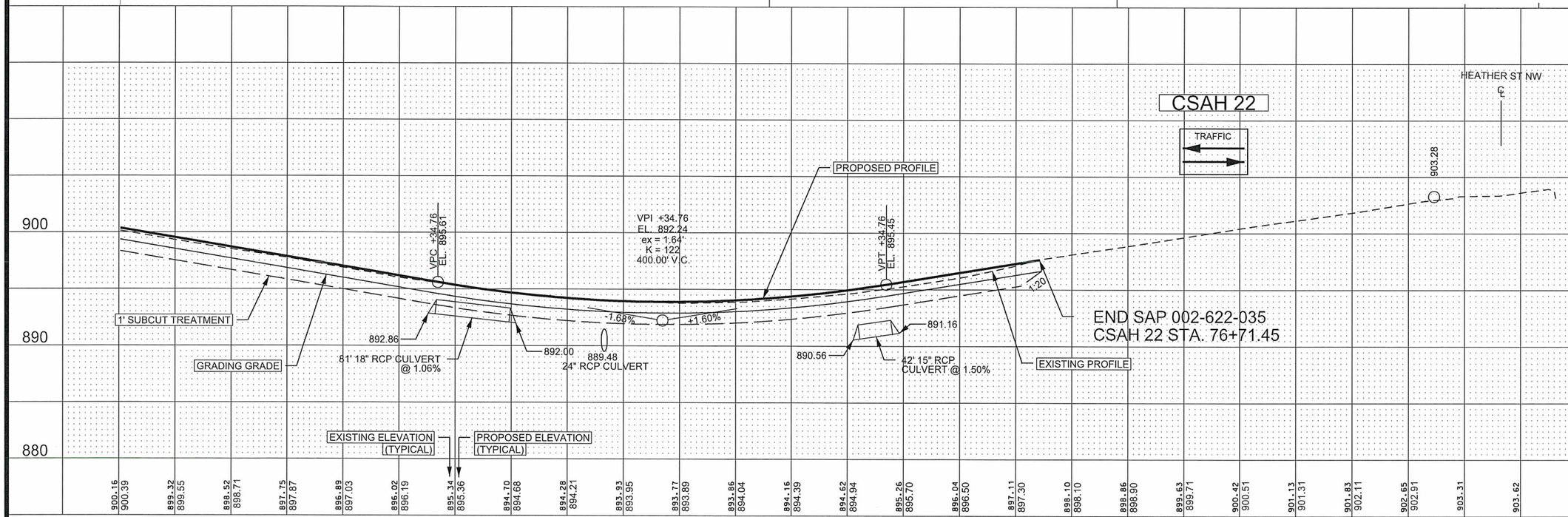
Sheet 48 of 119 Sheets

CONSTRUCTION NOTES:

(D) 2' AGGREGATE SHOULDER

ALL DIMENSIONS ARE TO FACE OF CURB OR EDGE OF PAVEMENT UNLESS OTHERWISE NOTED.





NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-622-35\Plan\0262235_PP2.dgn 07/18/2016 2:32:35 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.

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SIGNATURE: Elizabeth Markose

DATE: 07-18-16 LICENSE NO. 49118

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ANOKA COUNTY

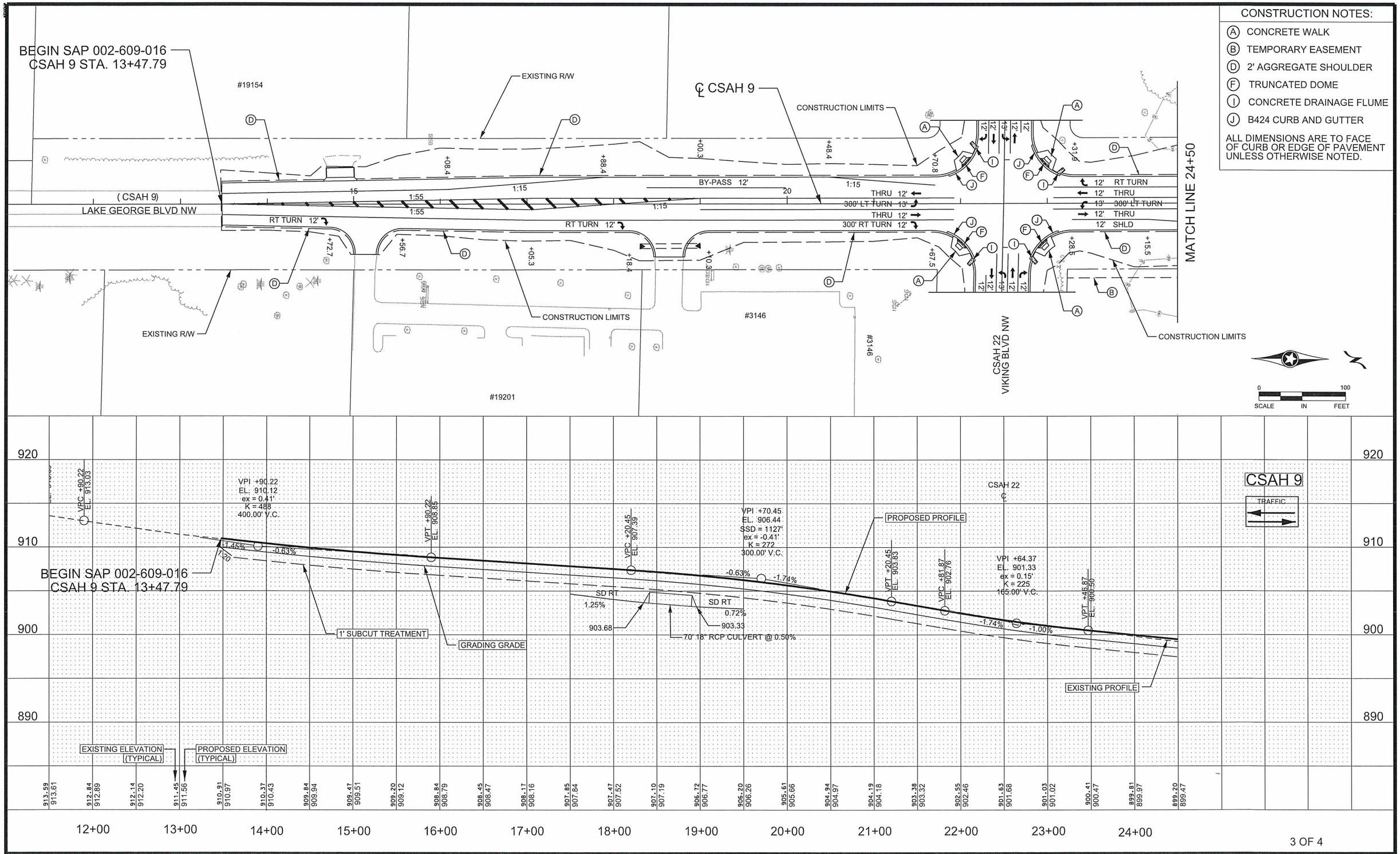
ANOKA COUNTY HIGHWAY DEPT.

SAP 002-609-016
SAP 002-622-035

CONSTRUCTION PLAN & PROFILE
CSAH 22

STA 68+50.00 TO 76+71.45

Sheet 49 of 119 Sheets



3 OF 4

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-622-35\Plan\0262235_PP3.dgn 07/18/2016 2:32:38 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: ELIZABETH MARKOSE

SIGNATURE: Eliz@Markose

DATE: 07-18-16 LICENSE NO. 49118

DRAWN BY EJM DATE 07-06-16

DESIGN BY EJM DATE 07-06-16

CHECKED BY GMP DATE 07-14-16

ANOKA COUNTY

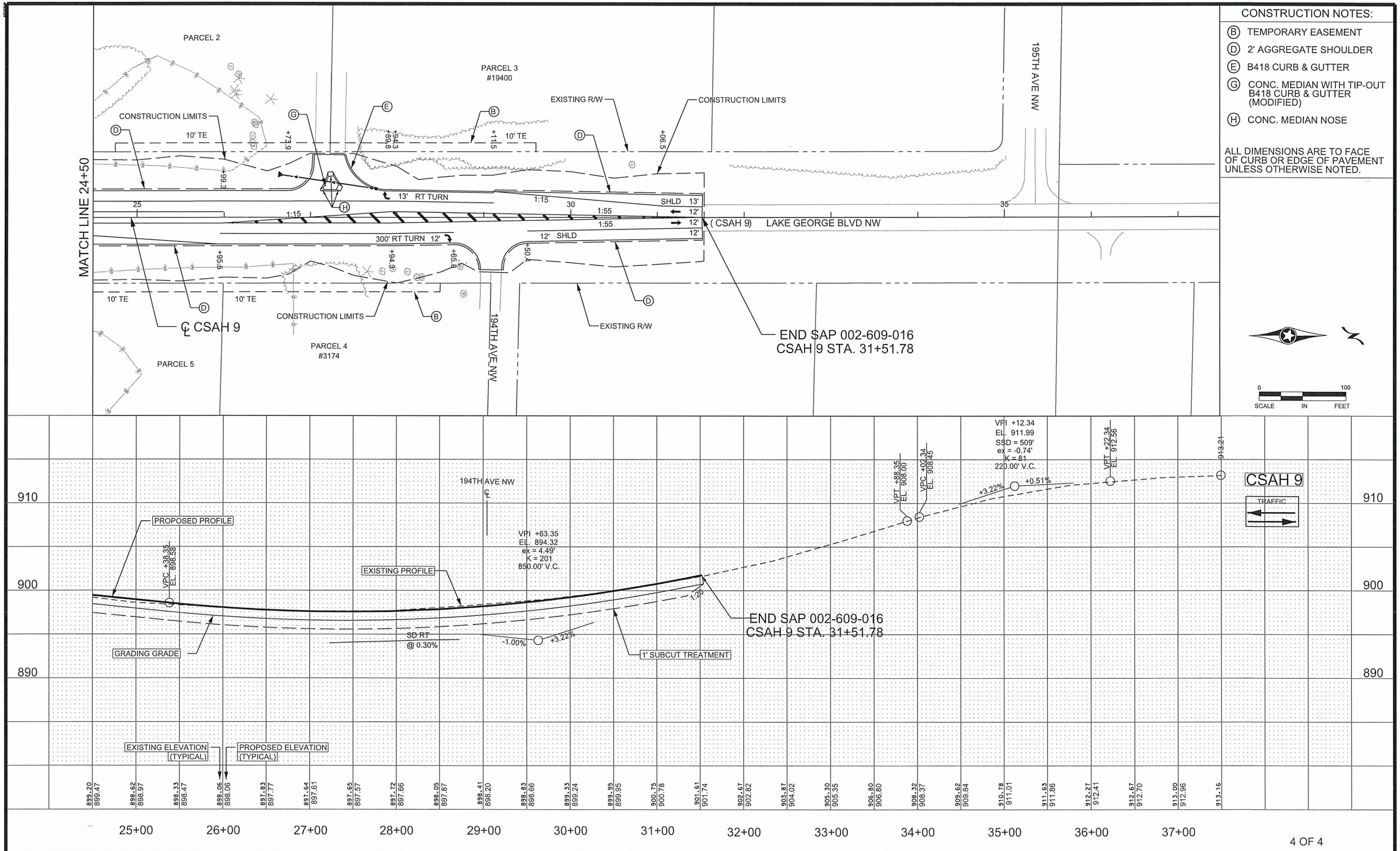
ANOKA COUNTY HIGHWAY DEPT.

SAP 002-609-016
SAP 002-622-035

CONSTRUCTION PLAN & PROFILE
CSAH 9

STA 13+47+79 TO 24+50.00

Sheet 50 of 119 Sheets



NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-622-35\Plan\0262235_PP4.dgn 07/18/2016 2:32:40 PM

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SIGNATURE: Elizabeth Markose
DATE: 01-18-16 LICENSE NO. 49118

DRAWN BY EJM DATE 07-06-16
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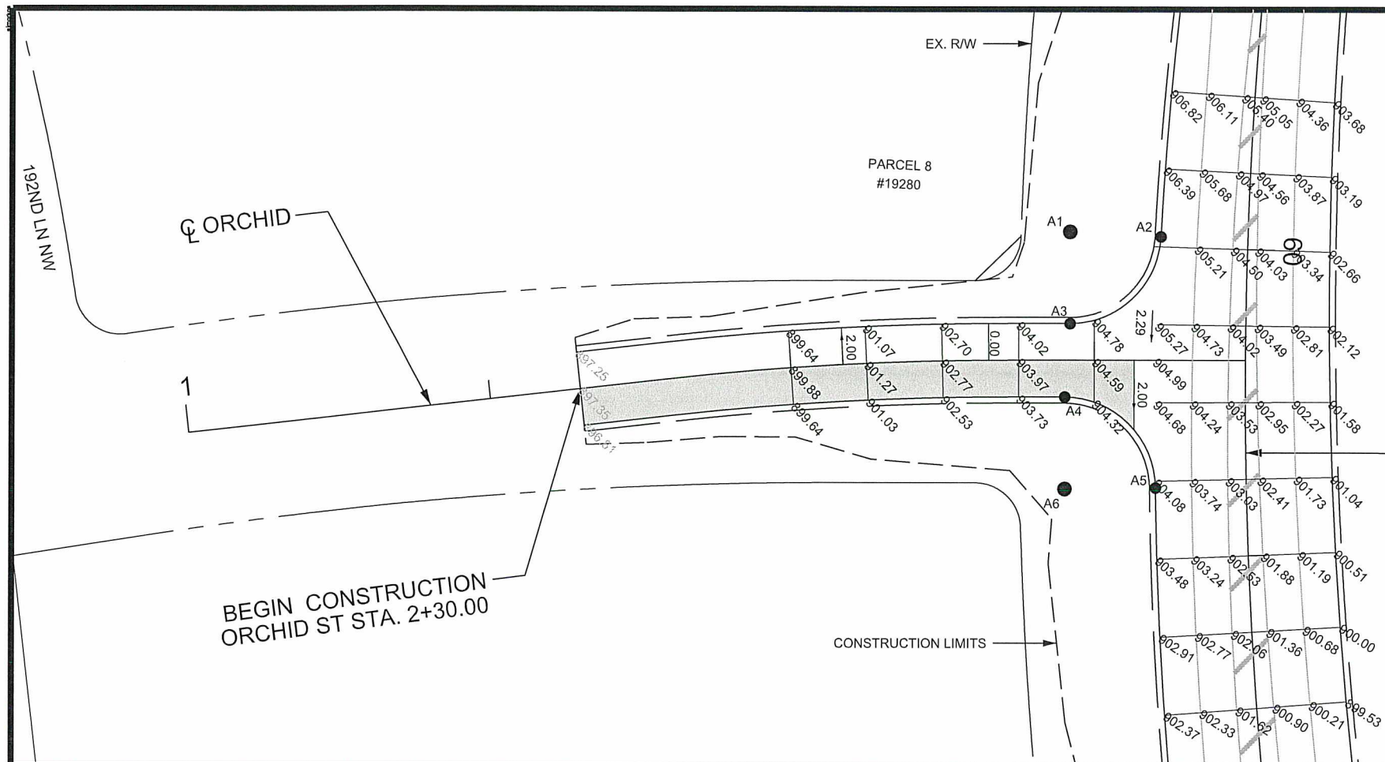
ANOKA COUNTY HIGHWAY DEPT.

SAP 002-609-016
SAP 002-622-035

CONSTRUCTION PLAN & PROFILE
CSAH 9
STA 24+50.00 TO 31+51+78

Sheet 51 of 119 Sheets

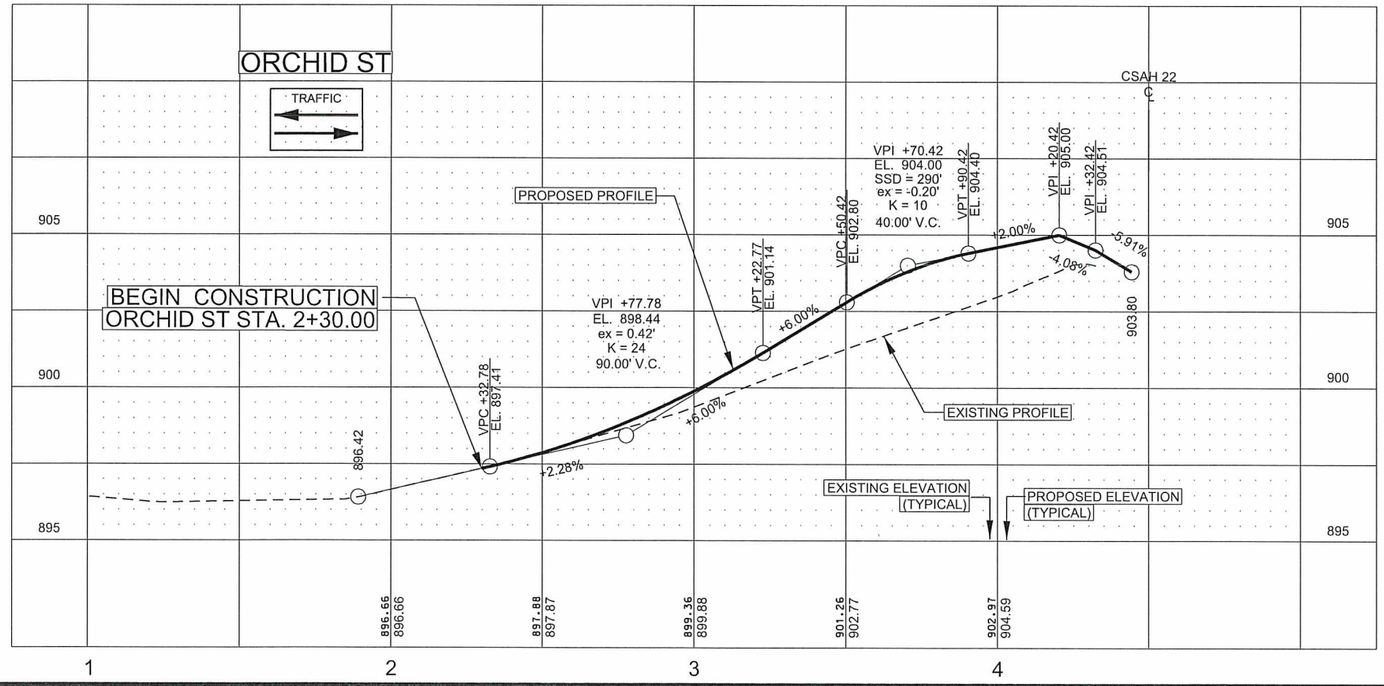


ORCHID ST POINTS

POINT	ALIGNMENT	STATION	OFFSET	ELEVATION	DESCRIPTION
A1	CSAH 22	59+96.22	58.81' RT	----	30' RADIUS POINT
A2	CSAH 22	59+96.84	28.81' RT	905.92	BEGIN RADIUS
A3	CSAH 22	60+25.04	58.12' RT	904.55	END RADIUS
A4	CSAH 22	60+48.10	59.75' RT	904.16	BEGIN RADIUS
A5	CSAH 22	60+77.21	30.16' RT	904.03	END RADIUS
A6	CSAH 22	60+76.89	60.15' RT	---	30' RADIUS POINT

LEGEND

999.99	EXISTING SPOT ELEVATION AT TOP OF FINISHED PAVEMENT
999.99	PROPOSED SPOT ELEVATION AT TOP OF FINISHED PAVEMENT
2.00 →	PROPOSED SLOPE
XX ●	CONTROL POINTS ON EDGE OF PAVEMENT
	2.00% CROSS SLOPE



0 50
SCALE IN FEET

1 OF 4

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-622-35\Plan\0262235_IN_P1.dgn 07/18/2016 2:32:43 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: ELIZABETH MARKOSE
SIGNATURE: Elizabeth Markose
DATE: 07-18-16 LICENSE NO. 49118

DRAWN BY EJM DATE 07-06-16
DESIGN BY EJM DATE 07-06-16
CHECKED BY GMP DATE 07-14-16

ANOKA COUNTY HIGHWAY DEPT.

SAP 002-609-016
SAP 002-622-035

INTERSECTION DETAILS
ORCHID ST
STA 1+35.00 TO 2+20.53

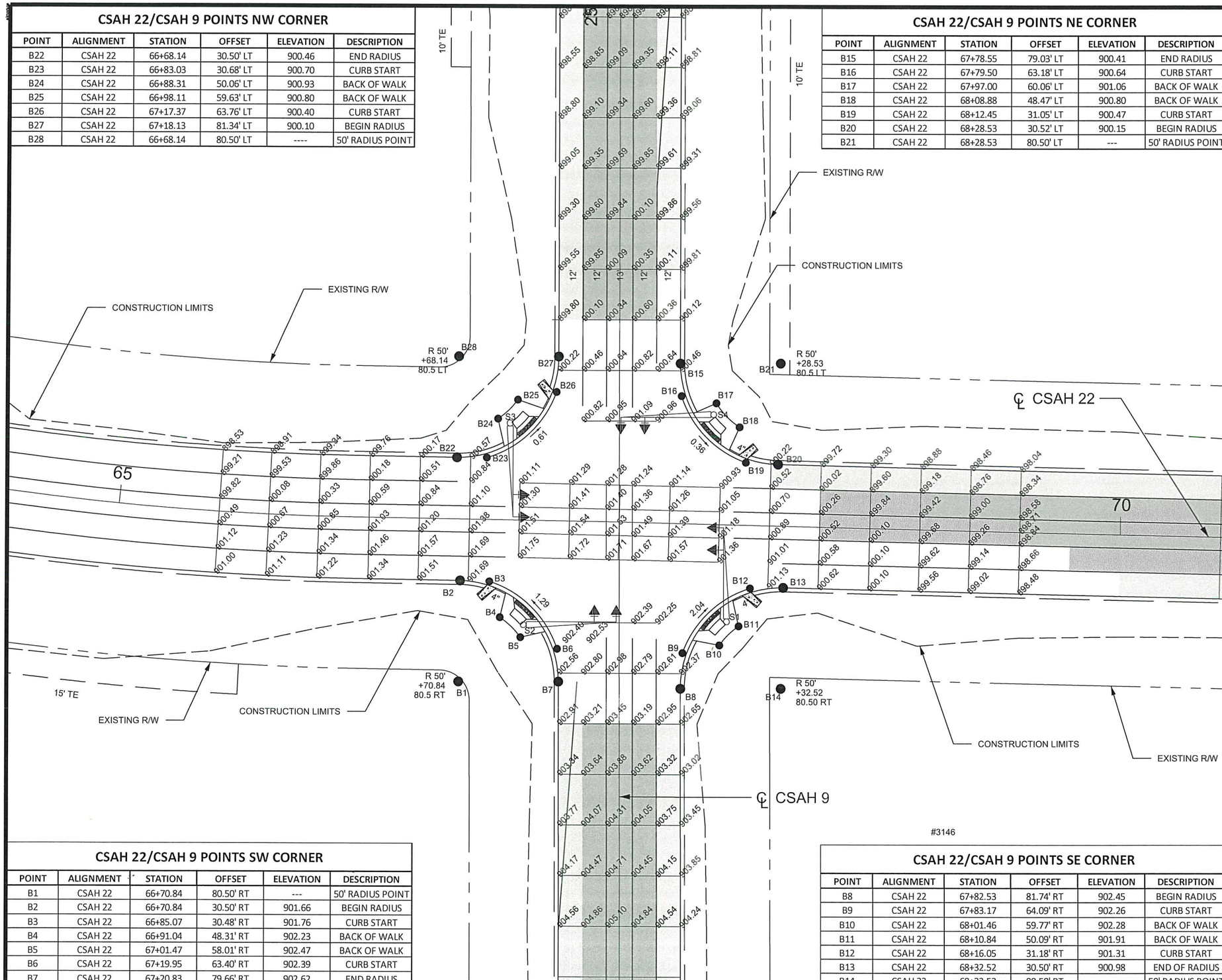
Sheet 52 of 119 Sheets

CSAH 22/CSAH 9 POINTS NW CORNER

POINT	ALIGNMENT	STATION	OFFSET	ELEVATION	DESCRIPTION
B22	CSAH 22	66+68.14	30.50' LT	900.46	END RADIUS
B23	CSAH 22	66+83.03	30.68' LT	900.70	CURB START
B24	CSAH 22	66+88.31	50.06' LT	900.93	BACK OF WALK
B25	CSAH 22	66+98.11	59.63' LT	900.80	BACK OF WALK
B26	CSAH 22	67+17.37	63.76' LT	900.40	CURB START
B27	CSAH 22	67+18.13	81.34' LT	900.10	BEGIN RADIUS
B28	CSAH 22	66+68.14	80.50' LT	----	50' RADIUS POINT

CSAH 22/CSAH 9 POINTS NE CORNER

POINT	ALIGNMENT	STATION	OFFSET	ELEVATION	DESCRIPTION
B15	CSAH 22	67+78.55	79.03' LT	900.41	END RADIUS
B16	CSAH 22	67+79.50	63.18' LT	900.64	CURB START
B17	CSAH 22	67+97.00	60.06' LT	901.06	BACK OF WALK
B18	CSAH 22	68+08.88	48.47' LT	900.80	BACK OF WALK
B19	CSAH 22	68+12.45	31.05' LT	900.47	CURB START
B20	CSAH 22	68+28.53	30.52' LT	900.15	BEGIN RADIUS
B21	CSAH 22	68+28.53	80.50' LT	---	50' RADIUS POINT



CSAH 22/CSAH 9 POINTS SW CORNER

POINT	ALIGNMENT	STATION	OFFSET	ELEVATION	DESCRIPTION
B1	CSAH 22	66+70.84	80.50' RT	---	50' RADIUS POINT
B2	CSAH 22	66+70.84	30.50' RT	901.66	BEGIN RADIUS
B3	CSAH 22	66+85.07	30.48' RT	901.76	CURB START
B4	CSAH 22	66+91.04	48.31' RT	902.23	BACK OF WALK
B5	CSAH 22	67+01.47	58.01' RT	902.47	BACK OF WALK
B6	CSAH 22	67+19.95	63.40' RT	902.39	CURB START
B7	CSAH 22	67+20.83	79.66' RT	902.62	END RADIUS

CSAH 22/CSAH 9 POINTS SE CORNER

POINT	ALIGNMENT	STATION	OFFSET	ELEVATION	DESCRIPTION
B8	CSAH 22	67+82.53	81.74' RT	902.45	BEGIN RADIUS
B9	CSAH 22	67+83.17	64.09' RT	902.26	CURB START
B10	CSAH 22	68+01.46	59.77' RT	902.28	BACK OF WALK
B11	CSAH 22	68+10.84	50.09' RT	901.91	BACK OF WALK
B12	CSAH 22	68+16.05	31.18' RT	901.31	CURB START
B13	CSAH 22	68+32.52	30.50' RT	900.98	END OF RADIUS
B14	CSAH 22	68+32.52	80.50' RT	---	50' RADIUS POINT

LEGEND

- PROPOSED SIGNAL POLE
- XX — CONTROL POINTS ON C&G ALONG THE GUTTER LIP/ CONTROL POINTS ON THE BACK/FRONT OF SIDEWALK
- TRUNCATED DOMES (SEE STANDARD PLATE 7038)
- CONSTRUCT CONCRETE CURB & GUTTER
- X" — CURB HEIGHT
- LANDING AREA - 4' X 4' MIN. DIMENSIONS AND MAX 2.0% SLOPE IN ALL DIRECTIONS
- 2.00 — PROPOSED SLOPE
- 999.99 — EXISTING SPOT ELEVATION AT TOP OF FINISHED PAVEMENT
- 999.99 — PROPOSED SPOT ELEVATION AT TOP OF FINISHED PAVEMENT
- 2.00% CROSS SLOPE
- 2.50% CROSS SLOPE

SIGNAL CONTROL POINTS

POINT NO.	DESCRIPTION	X	Y
S1	SIGNAL POLE	479282.6362	203776.3069
S2	SIGNAL POLE	479181.0803	203774.5605
S3	SIGNAL POLE	479174.1994	203874.4705
S4	SIGNAL POLE	479276.1146	203878.9533

N

0 50
SCALE IN FEET

2 OF 4

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-622-35\Plan\0262235_IN_P2.dgn 07/19/2016 8:02:41 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.

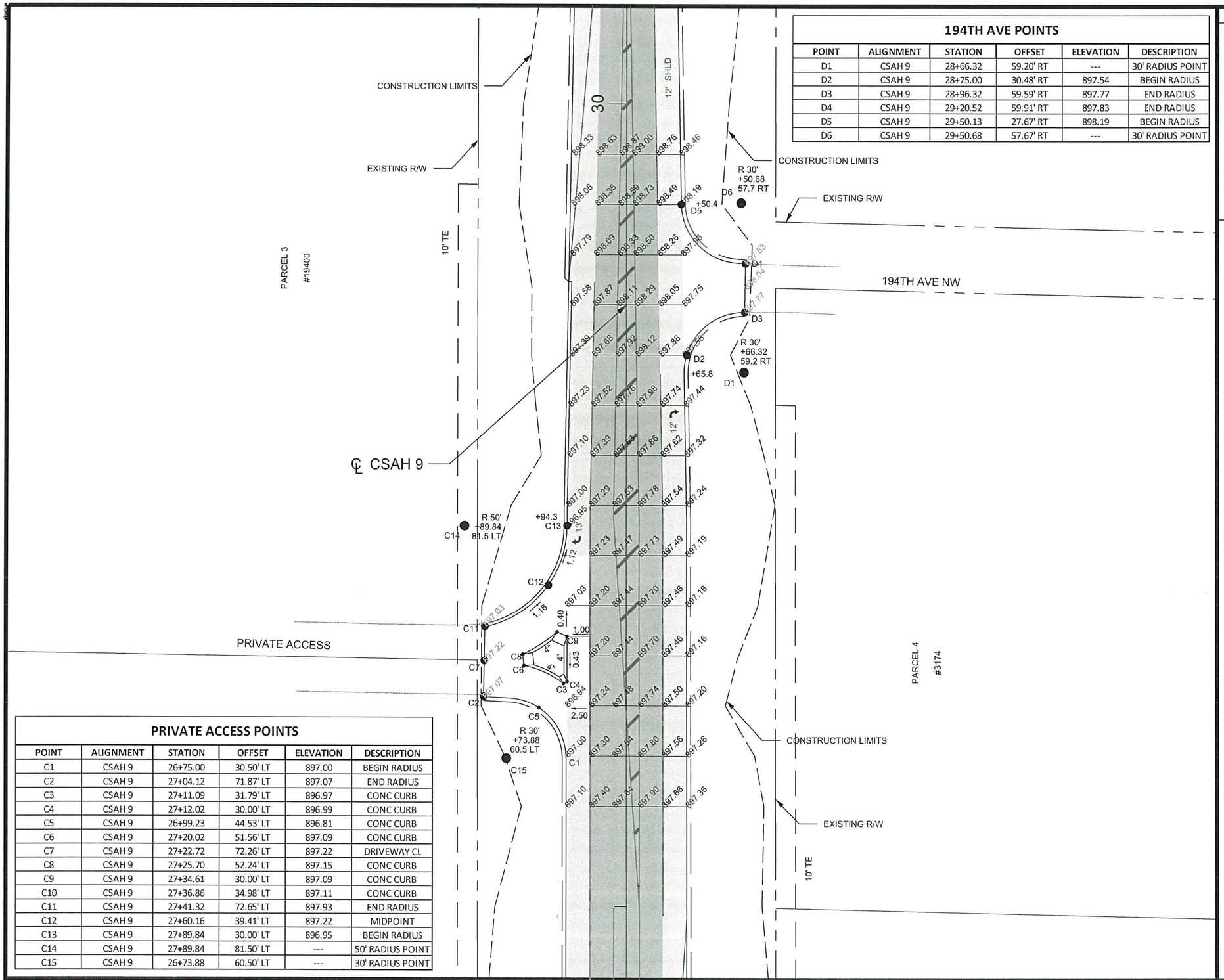
PRINT NAME: ELIZABETH MARKOSE
SIGNATURE: Elizabeth M
DATE: 07-19-16 LICENSE NO. 49118

DRAWN BY EJM DATE 06-17-16
DESIGN BY EJM DATE 06-17-16
CHECKED BY GMP DATE 07-14-16

ANOKA COUNTY HIGHWAY DEPT.

SAP 002-609-016
SAP 002-622-035

INTERSECTION DETAILS
CSAH 9 & 22
STA 65+00.00 TO 71+00.00



194TH AVE POINTS

POINT	ALIGNMENT	STATION	OFFSET	ELEVATION	DESCRIPTION
D1	CSAH 9	28+66.32	59.20' RT	---	30' RADIUS POINT
D2	CSAH 9	28+75.00	30.48' RT	897.54	BEGIN RADIUS
D3	CSAH 9	28+96.32	59.59' RT	897.77	END RADIUS
D4	CSAH 9	29+20.52	59.91' RT	897.83	END RADIUS
D5	CSAH 9	29+50.13	27.67' RT	898.19	BEGIN RADIUS
D6	CSAH 9	29+50.68	57.67' RT	---	30' RADIUS POINT

PRIVATE ACCESS POINTS

POINT	ALIGNMENT	STATION	OFFSET	ELEVATION	DESCRIPTION
C1	CSAH 9	26+75.00	30.50' LT	897.00	BEGIN RADIUS
C2	CSAH 9	27+04.12	71.87' LT	897.07	END RADIUS
C3	CSAH 9	27+11.09	31.79' LT	896.97	CONC CURB
C4	CSAH 9	27+12.02	30.00' LT	896.99	CONC CURB
C5	CSAH 9	26+99.23	44.53' LT	896.81	CONC CURB
C6	CSAH 9	27+20.02	51.56' LT	897.09	CONC CURB
C7	CSAH 9	27+22.72	72.26' LT	897.22	DRIVEWAY CL
C8	CSAH 9	27+25.70	52.24' LT	897.15	CONC CURB
C9	CSAH 9	27+34.61	30.00' LT	897.09	CONC CURB
C10	CSAH 9	27+36.86	34.98' LT	897.11	CONC CURB
C11	CSAH 9	27+41.32	72.65' LT	897.93	END RADIUS
C12	CSAH 9	27+60.16	39.41' LT	897.22	MIDPOINT
C13	CSAH 9	27+89.84	30.00' LT	896.95	BEGIN RADIUS
C14	CSAH 9	27+89.84	81.50' LT	---	50' RADIUS POINT
C15	CSAH 9	26+73.88	60.50' LT	---	30' RADIUS POINT

LEGEND

XX ●	CONTROL POINTS ON C&G ALONG THE GUTTER LIP/ CONTROL POINTS ALONG THE EDGE OF MAT
═══	CONSTRUCT CONCRETE CURB & GUTTER
X"	CURB HEIGHT
2.00 →	PROPOSED SLOPE
999.99	EXISTING SPOT ELEVATION AT TOP OF FINISHED PAVEMENT
999.99	PROPOSED SPOT ELEVATION AT TOP OF FINISHED PAVEMENT
▒	2.00% CROSS SLOPE
▭	2.50% CROSS SLOPE

N

0 50
SCALE IN FEET

3 OF 4

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-622-35\Plan\0262235_IN_P3.dgn 07/19/2016 8:02:44 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: ELIZABETH MARKOSE
SIGNATURE: Elizabeth M
DATE: 07-19-16 LICENSE NO. 49118

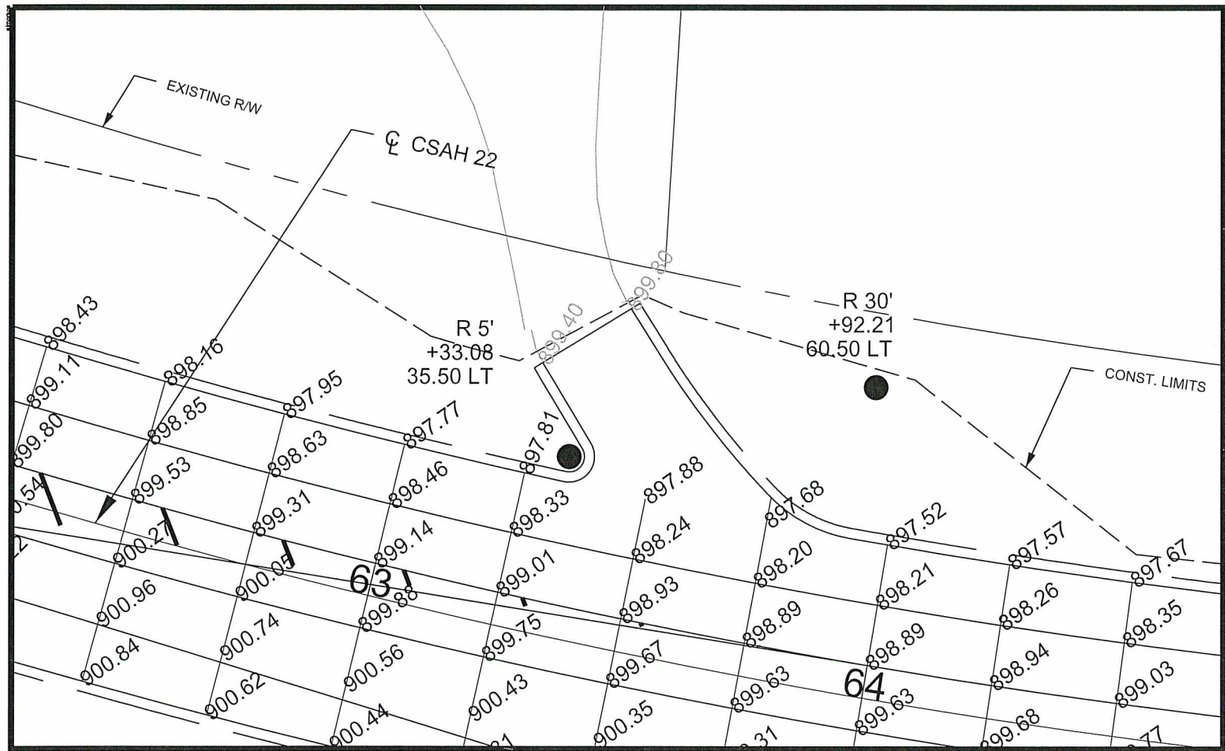
DRAWN BY EJM DATE 06-17-16
DESIGN BY EJM DATE 06-17-16
CHECKED BY GMP DATE 07-14-16

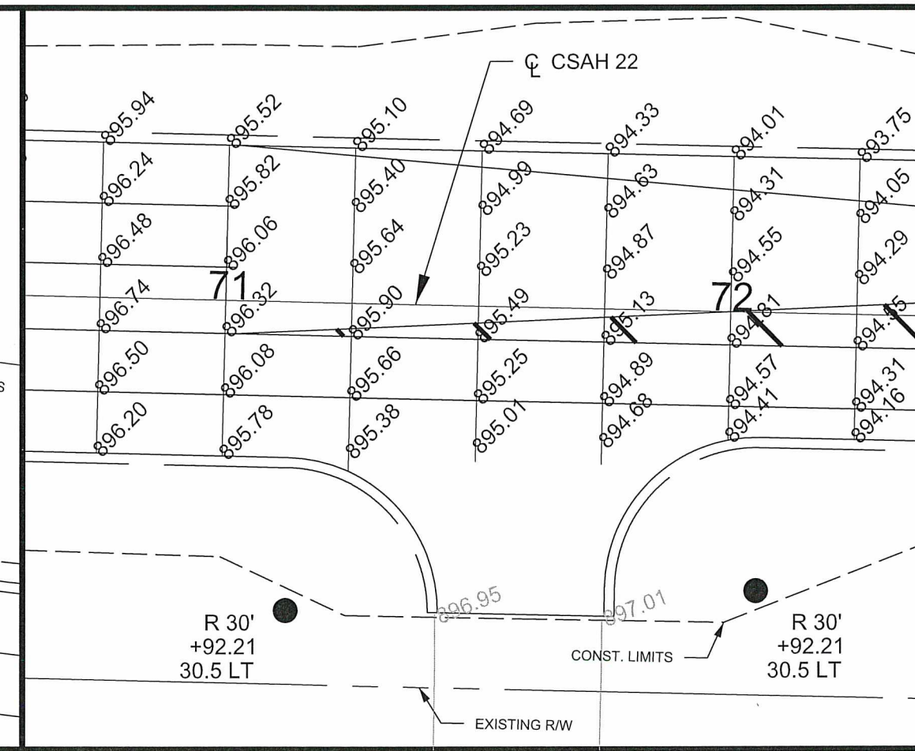
ANOKA COUNTY HIGHWAY DEPT.

SAP 002-609-016
SAP 002-622-035

INTERSECTION DETAILS
CSAH 9
STA 25+63.48 TO 30+49.20

Sheet 54 of 119 Sheets



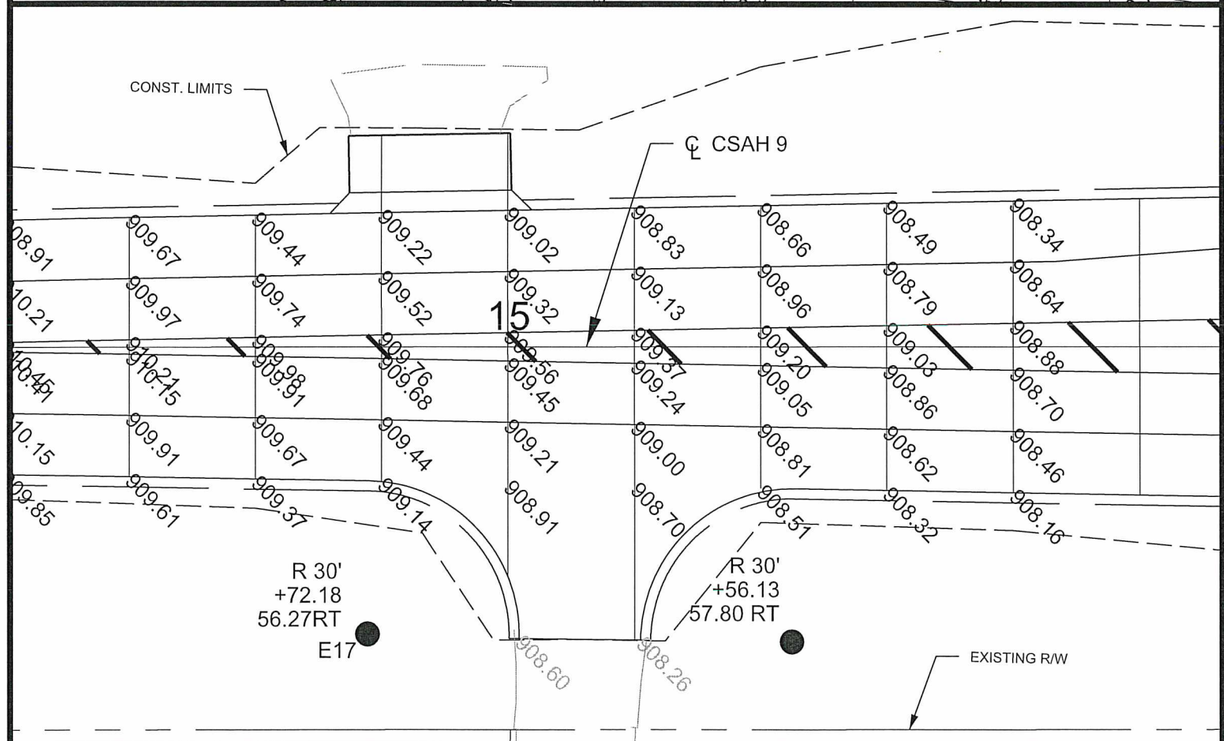


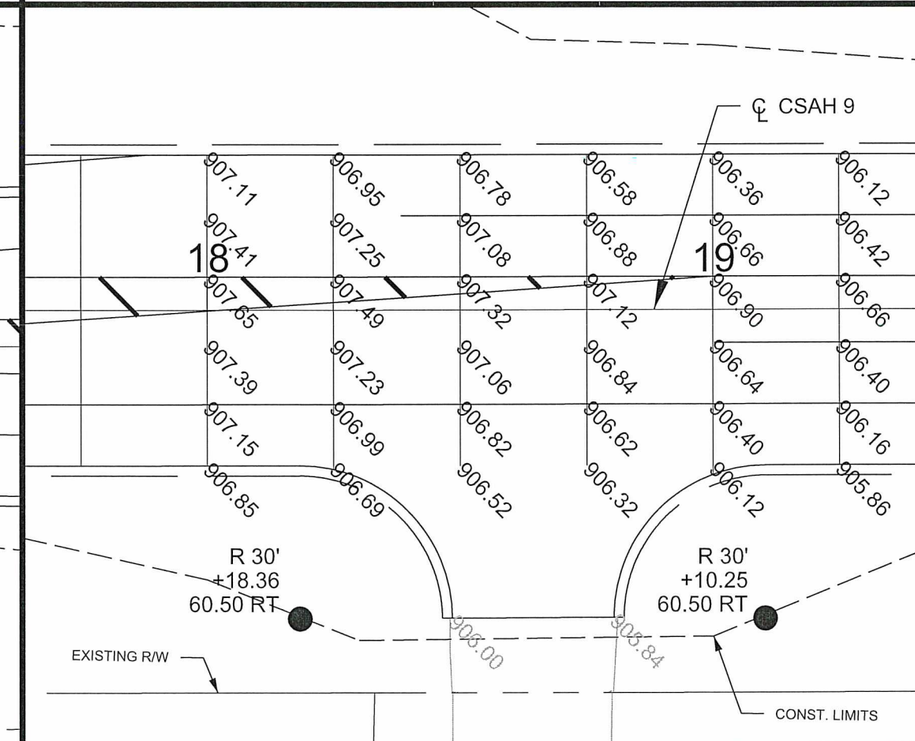
LEGEND

999.99	EXISTING SPOT ELEVATION AT TOP OF FINISHED PAVEMENT
999.99	PROPOSED SPOT ELEVATION AT TOP OF FINISHED PAVEMENT

N

0 30
SCALE IN FEET





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SCALE IN FEET

4 OF 4

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-622-35\Plan\0262235_IN_P4.dgn 07/18/2016 2:32:49 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: ELIZABETH MARKOSE

SIGNATURE: Elizabeth Markose

DATE: 07-18-16 LICENSE NO. 49118

DRAWN BY EJM DATE 07-06-16

DESIGN BY EJM DATE 07-06-16

CHECKED BY GMP DATE 07-14-16

ANOKA COUNTY

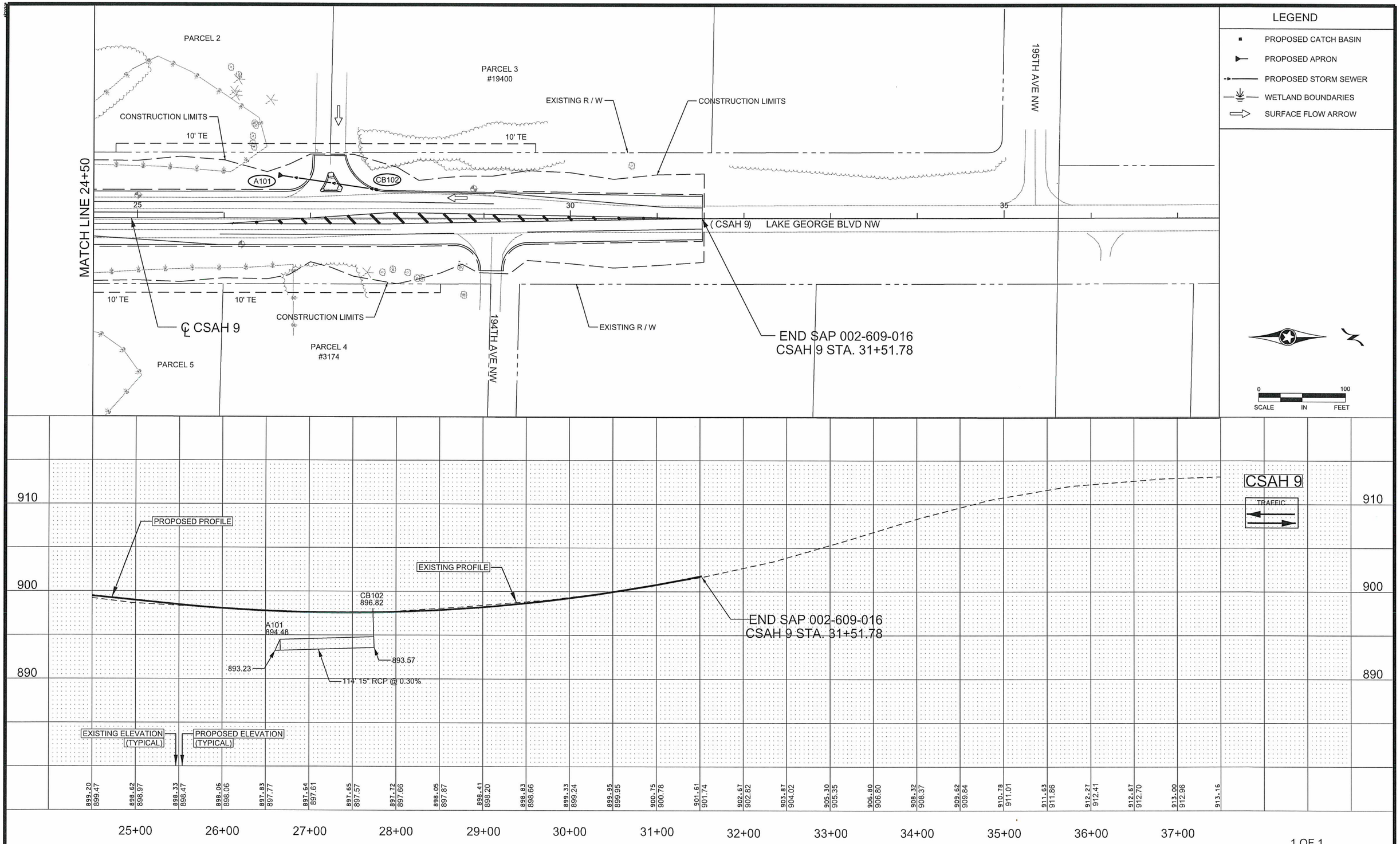
ANOKA COUNTY HIGHWAY DEPT.

SAP 002-609-016
SAP 002-622-035

INTERSECTION DETAILS
COMMERCIAL ACCESSES

STA --- TO ---

Sheet 55 of 119 Sheets



1 OF 1

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-622-35\Plan\0262235_DR_P1.dgn 07/19/2016 7:56:40 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: ELIZABETH MARKOSE

SIGNATURE: Elizabeth

DATE: 07-19-16 LICENSE NO. 49118

DRAWN BY EJM DATE 06-17-16

DESIGN BY EJM DATE 06-17-16

CHECKED BY GMP DATE 07-14-16

ANOKA COUNTY

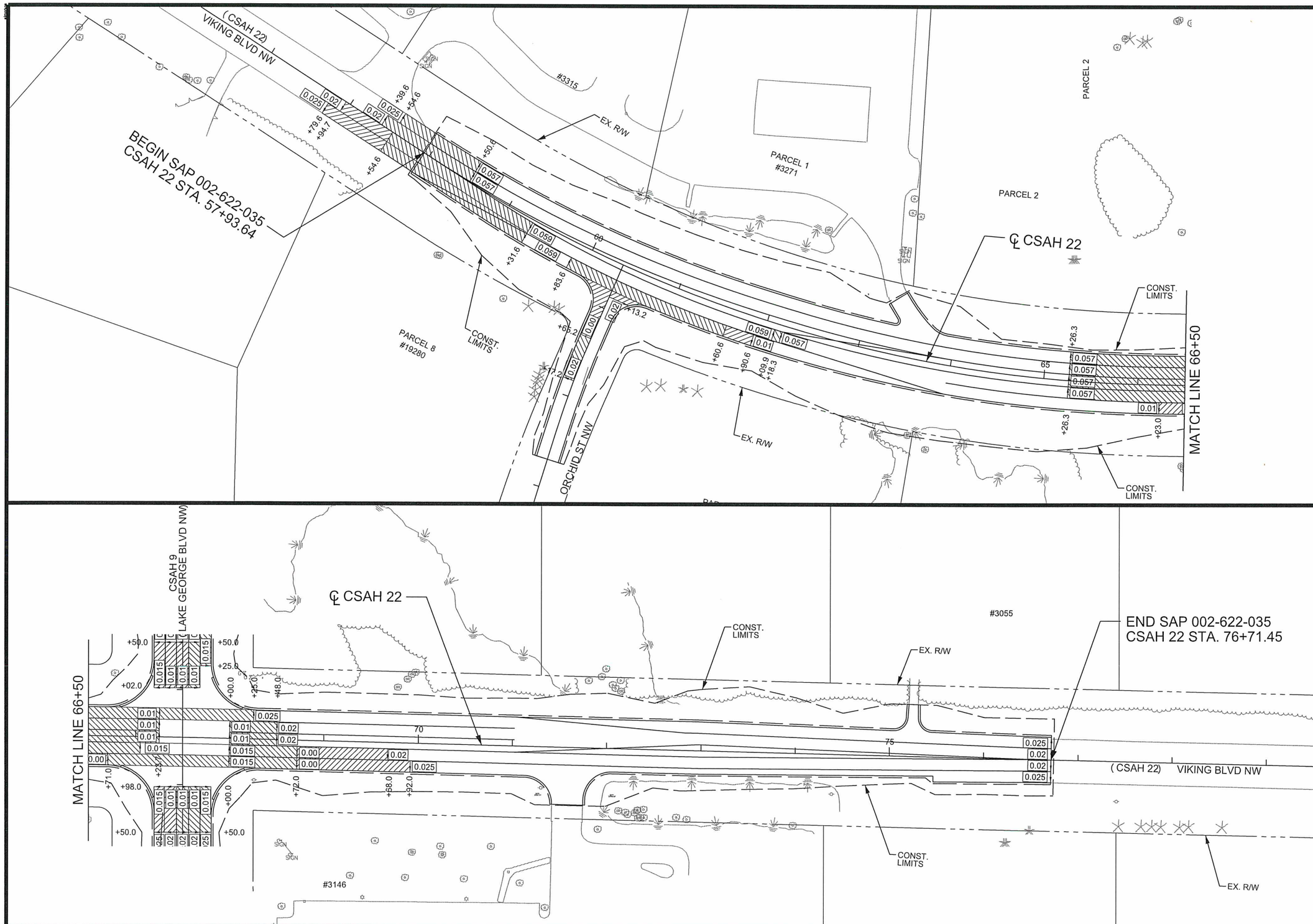
ANOKA COUNTY HIGHWAY DEPT.

SAP 002-609-016
SAP 002-622-035

DRAINAGE PLAN & PROFILE
CSAH 9

STA 24+50.00 TO 31+51+78

Sheet 56 of 119 Sheets



LEGEND

SUPERELEVATION TRANSITION

NOTES

1). ALL CROSS SLOPES ARE EXPRESSED AS FT/FT.

0 100
SCALE IN FEET

1 OF 2

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-622-35\Plan\0262235_SE_P1.dgn 07/19/2016 8:05:44 AM

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SIGNATURE: Elizabeth
DATE: 07-19-16 LICENSE NO. 49118

DRAWN BY EJM DATE 06-17-16
DESIGN BY EJM DATE 06-17-16
CHECKED BY GMP DATE 07-14-16

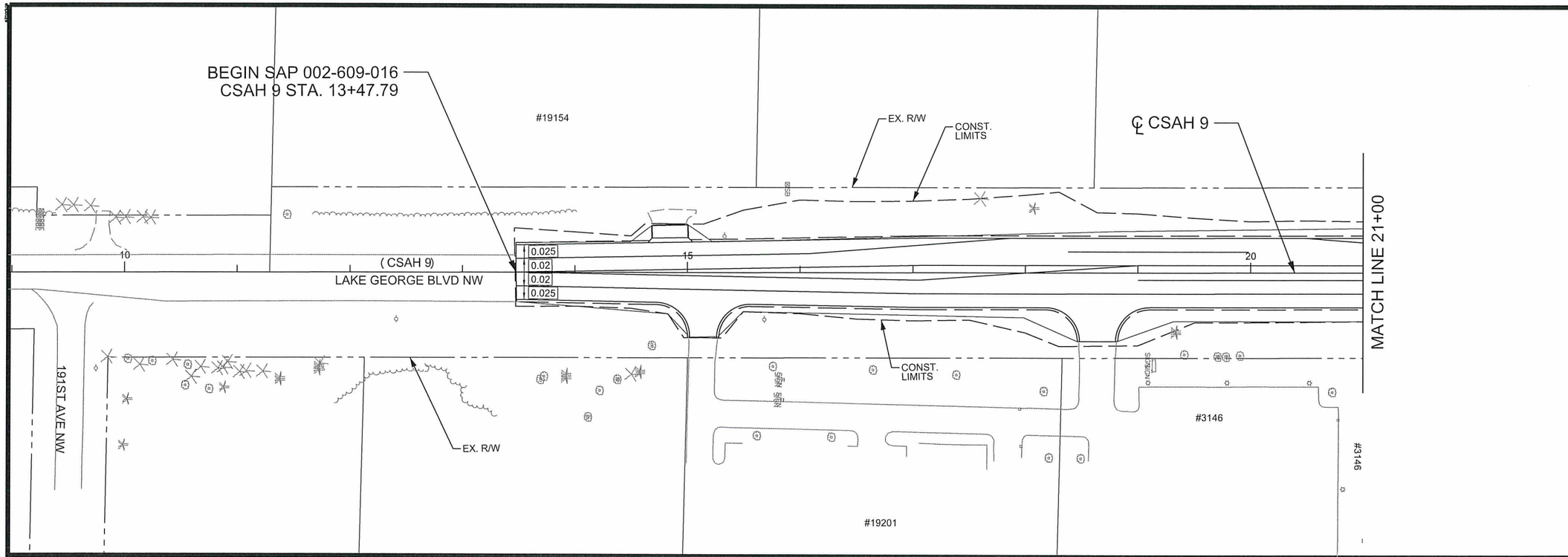
ANOKA COUNTY

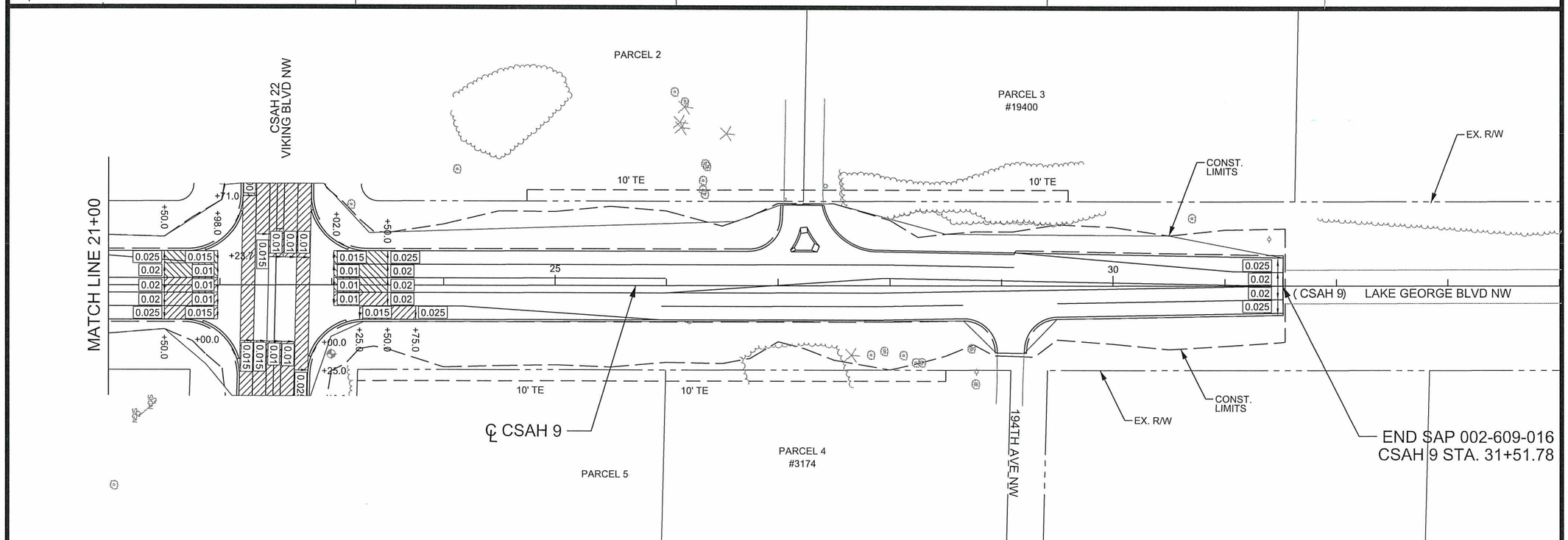
ANOKA COUNTY HIGHWAY DEPT.

SAP 002-609-016
SAP 002-622-035

SUPERELEVATION PLAN
CSAH 22
STA 57+93.64 TO 76+71.45

Sheet 57 of 119 Sheets





LEGEND

SUPERELEVATION TRANSITION

NOTES

1). ALL CROSS SLOPES ARE EXPRESSED AS FT/FT.

2 OF 2

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-622-35\Plan\0262235_SE_P2.dgn 07/19/2016 7:56:46 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: ELIZABETH MARKOSE

SIGNATURE: Elizabeth M

DATE: 07-19-16 LICENSE NO. 49118

DRAWN BY EJM DATE 06-17-16

DESIGN BY EJM DATE 06-17-16

CHECKED BY GMP DATE 07-14-16

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

SAP 002-609-016
SAP 002-622-035

SUPERELEVATION PLAN
CSAH 9

STA 13+47.79 TO 31+51.78

Sheet 58 of 119 Sheets

STORM WATER POLLUTION PREVENTION PLAN (SWPPP)

PROJECT LOCATION AND GENERAL INFORMATION

THE PROJECT IS LOCATED AT THE INTERSECTION OF SAP 002-622-035 CSAH 22 (VIKING BLVD NW) AND SAP 002-609-016 CSAH 9 (LAKE GEORGE BLVD NW) IN THE CITY OF OAK GROVE.

THE PROPOSED PROJECT INCLUDES INSTALLATION OF TRAFFIC SIGNAL, WIDENING THE ROADWAY TO INCORPORATE LEFT TURN LANES AND 6 - 12 FT SHOULDER, AND CULVERT WORK. THE RUNOFF WILL DRAIN THROUGH DITCHES AND CULVERTS INTO WETLANDS IN THE VICINITY.

THIS PROJECT WILL IMPACT 11.70 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
WETLAND	NO	NO

STORM WATER FROM A DISCHARGE POINT ON THE PROJECT WHICH FLOWS TO A SURFACE WATER IDENTIFIED AS IMPAIRED AND/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 : 9.05 ACRES
EXISTING IMPERVIOUS AREA : 4.04 ACRES
PROPOSED IMPERVIOUS AREA : 5.15 ACRES
EXISTING PERVIOUS AREA : 5.01 ACRES
PROPOSED PERVIOUS AREA : 3.90 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 1.1 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, AND CONCRETE WASHOUT ONSITE.

THESE MANAGEMENT MEASURE FOR POLLUTION PREVENTION SHALL BE STRICTLY ENFORCED.

PROJECT CONTACTS

DNR	NOT REQUIRED		
COE	NOT REQUIRED		
MPCA	NPDES	LAURAL MEZNER	218-316-3889
MPCA	EMERGENCY	STATE DUTY OFFICER	800-422-0798
ANOKA COUNTY DESIGN SWPPP PREPARATION	U OF MN DESIGN OF SWPPP EXPIRES 5/17	JEFF FOSTER	763-862-4268
ANOKA COUNTY PROJECT REPRESENTATIVE	U OF MN SITE MANAGEMENT EXPIRES 5/17	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 FOR 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	PROJECT CONTACTS		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 66 - 67	1717	
PROJECT SPECIFIC CONSTRUCTION STAGING	CONSTRUCTION STAGING PLAN	SHEETS 25 - 32	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 9, 66, 67	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 59 - 60	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 9, 68, 69	1717, 2573, & 2575	1717 (AIR, LAND & WATER) 1717 (NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT)
TEMPORARY EROSION AND SEDIMENT CONTROL DETAILS	EROSION CONTROL AND TURF ESTABLISHMENT PLANS	SHEETS 66 - 69	2575	2575 (RAPID STABILIZATION SPECIFICATION)
PERMANENT EROSION CONTROL DETAILS			2575	2575 (CONTROLLING EROSION AND ESTABLISHING VEGETATION)

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-622-35\Plan\0262235_SWPPP.dgn 07/18/2016 2:32:57 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: ELIZABETH MARKOSE
SIGNATURE: Elizabeth Markose
DATE: 07-18-16 LICENSE NO. 49118

DRAWN BY EJM DATE 07-06-16
DESIGN BY EJM DATE 07-06-16
CHECKED BY GMP DATE 07-14-16

ANOKA COUNTY HIGHWAY DEPT.

SAP 002-609-016
SAP 002-622-035

STORM WATER POLLUTION PREVENTION PLAN

STORM WATER POLLUTION PREVENTION PLAN (SWPPP)

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

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-622-35\Plan\0262235_SWPPP.dgn 07/18/2016 2:32:58 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: ELIZABETH MARKOSE

SIGNATURE: Elizabeth M

DATE: 07-18-16 LICENSE NO. 49118

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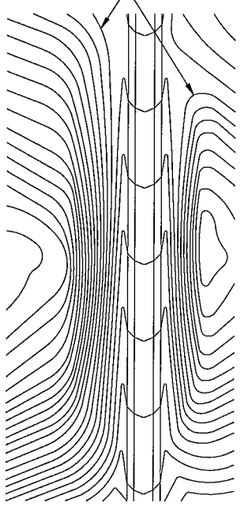
ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

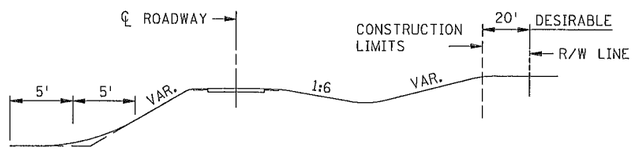
SAP 002-609-016
SAP 002-622-035

STORM WATER POLLUTION PREVENTION PLAN

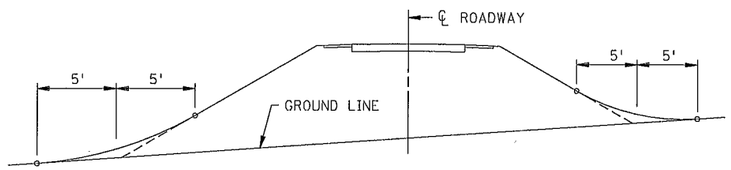
Sheet 60 of 119 Sheets



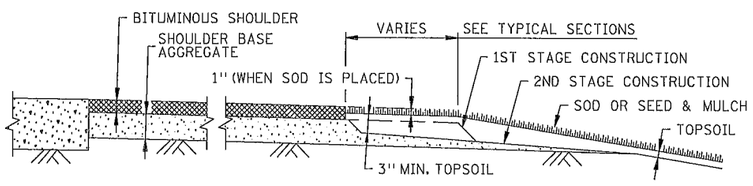
CONTOURING ROAD CUTS



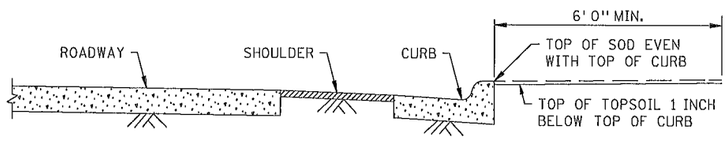
ROUNDING SHOULDERS AND BACKSLOPES



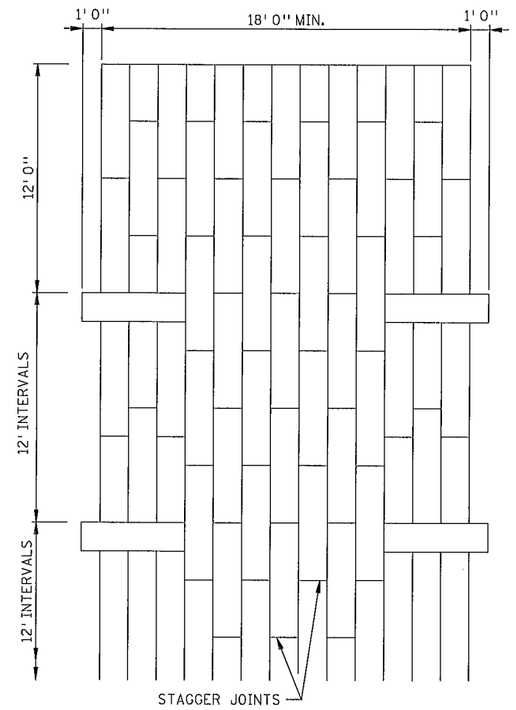
SHAPING FOR DRAINAGE ALONG THE TOE OF FILL SLOPES



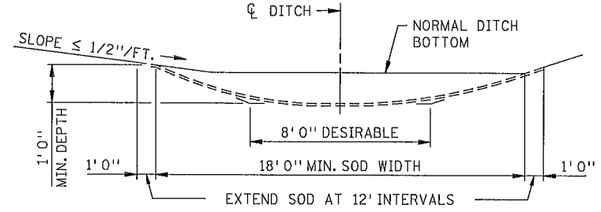
SHAPING AND TOPSOILING INSLOPES



SHAPING ADJACENT TO CURBS WHEN SOD IS PLACED

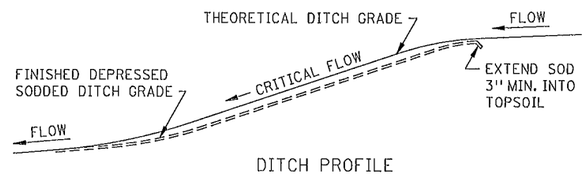


PLAN VIEW



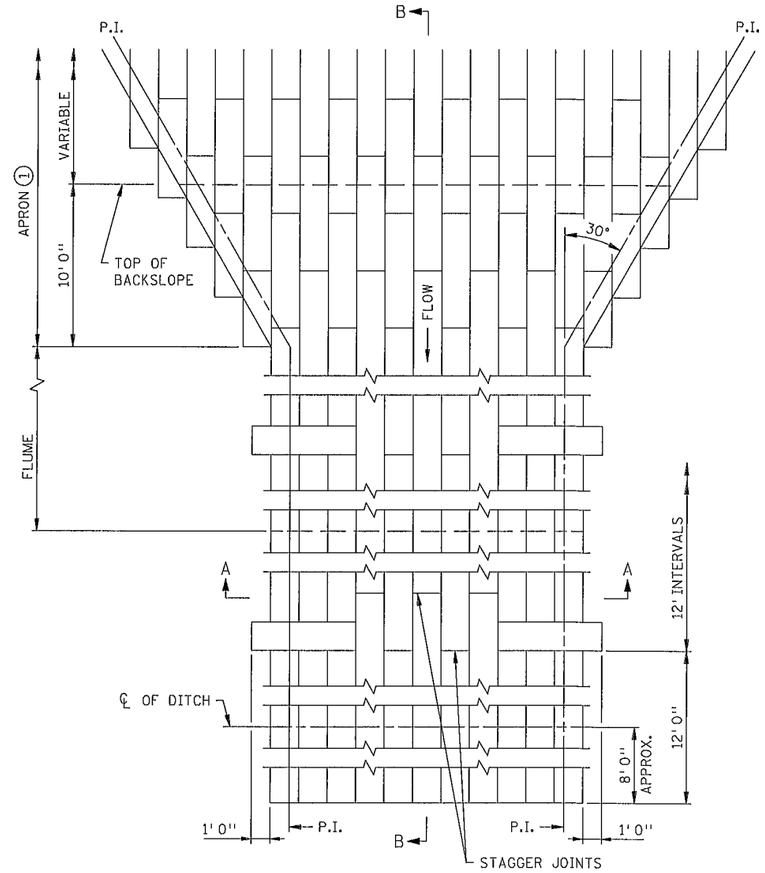
SODDED DITCH CROSS SECTION

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

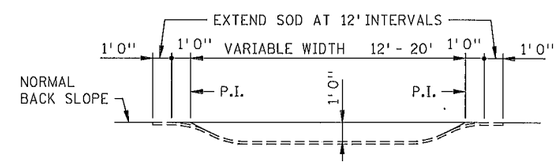


DITCH PROFILE

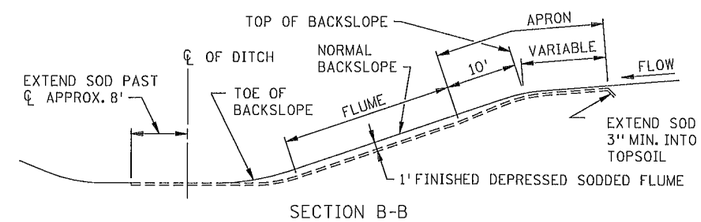
SODDED DITCH DETAILS



PLAN VIEW



SECTION A-A



SECTION B-B

SODDED FLUME DETAILS

NOTES:

SEE SPEC. 2575.3 FOR ADDITIONAL INFORMATION.

① CONSTRUCT TAPER AS DIRECTED BY THE ENGINEER.

REVISION:

APPROVED: 8-6-2014

CHIEF ENVIRONMENTAL OFFICER

SAP 002-609-016
SAP 002-622-035

MINNESOTA DEPARTMENT OF TRANSPORTATION

STATE DESIGN ENGINEER

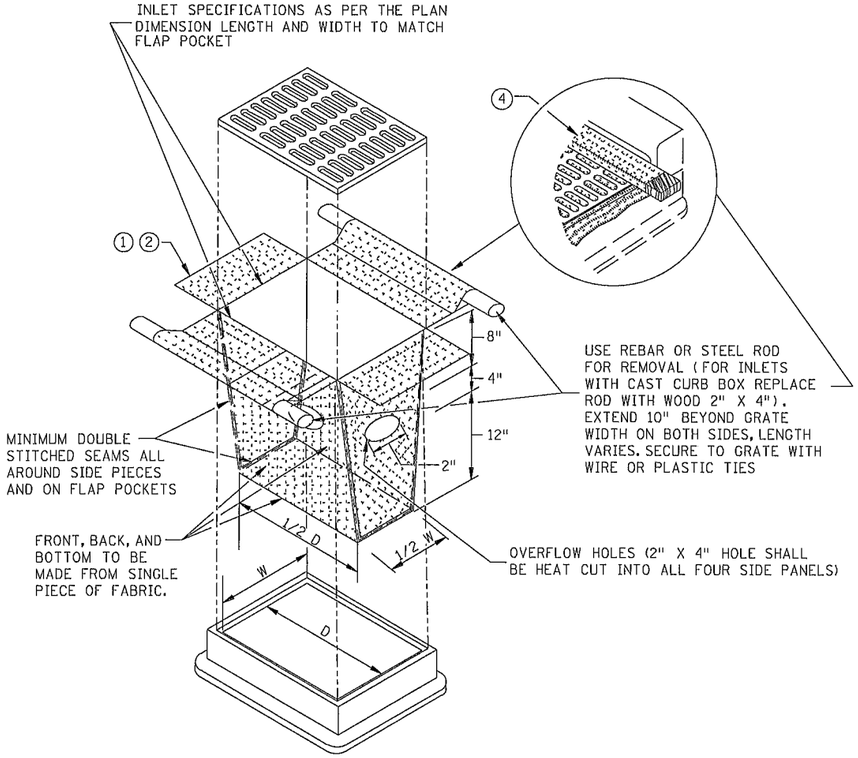
REVISED:

APPROVED: 8-6-2014

PERMANENT EROSION CONTROL
ALONG ROADWAYS, DITCHES AND FLUMES

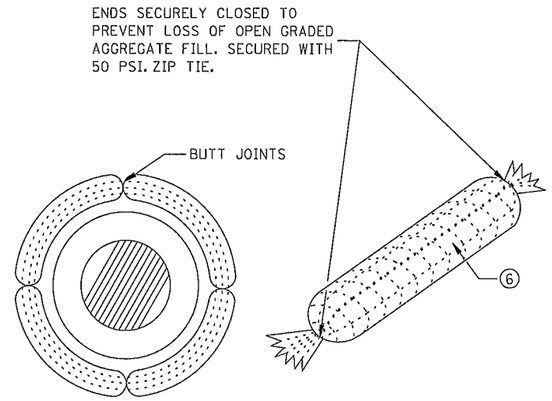
STANDARD PLAN 5-297.404

PLOTTED/REVISED: 07/18/2016
DISTRICT #:
USER NAME: ejmarkos
PATH & FILENAME: P:\02-622-35\Plan\STD Plans\s404_1_spn.dgn
FILE NAME: s404_1_spn.dgn

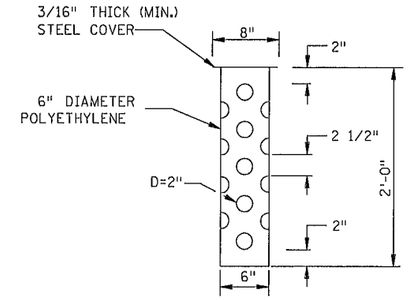


FILTER BAG INSERT 3

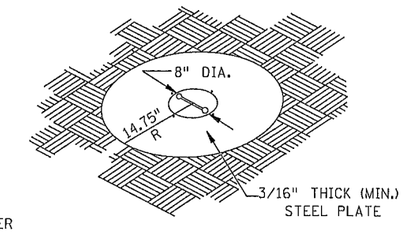
(CAN BE INSTALLED IN ANY INLET TYPE WITH OR WITHOUT A CURB BOX)



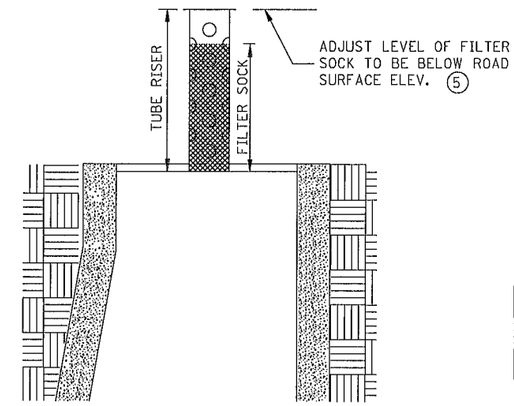
ROCK LOG/COMPOST LOG



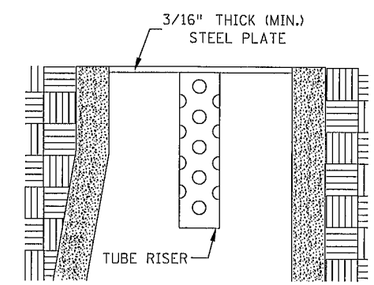
TUBE RISER



PERSPECTIVE VIEW

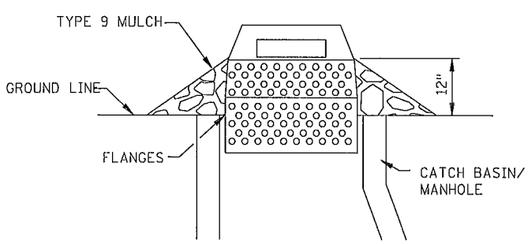


SECTION
(UP POSITION)



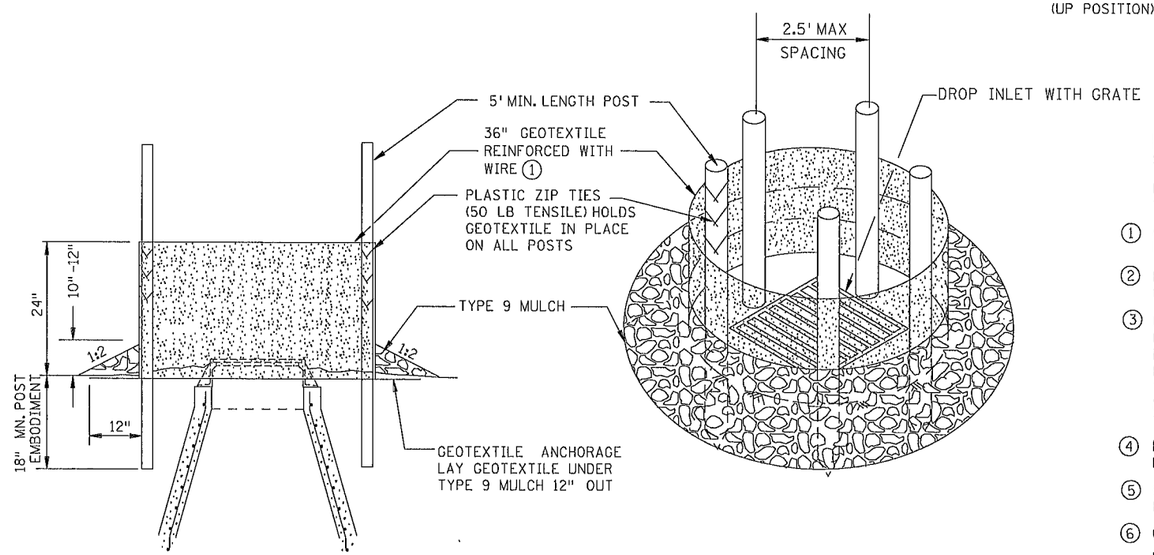
SECTION
(DOWN POSITION)

POP-UP HEAD



SEDIMENT CONTROL INLET HAT

NOTE:
THE SEDIMENT CONTROL BARRIER SHALL BE A METAL OR PLASTIC/POLYETHYLENE RISER SIZED TO FIT INSIDE THE CATCH BASIN/MANHOLE; HAVE PERFORATIONS 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

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

DEVICES MUST BE ADJUSTED ACCORDINGLY AS TO NOT CAUSE FLOODING ON ROADWAY THAT WOULD IMPEED TRAFFIC FLOW.

1. ALL GEOTEXTILE USED FOR INLET PROTECTION SHALL BE MONOFILAMENT IN BOTH DIRECTIONS, MEETING SPEC. 3886.
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 PLACE FILTER BAG INSERT IN INLETS SHALLOWER THAN 30 INCHES, MEASURED FROM THE BOTTOM OF THE INLET TO THE TOP OF THE GRATE. THE PLACED 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. GEOTEXTILE 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 PROVIDE 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.

REVISION:

APPROVED: 8-6-2014

CHIEF ENVIRONMENTAL OFFICER

SAP 002-609-016
SAP 002-622-035

MINNESOTA DEPARTMENT OF TRANSPORTATION

REVISED:

STATE DESIGN ENGINEER

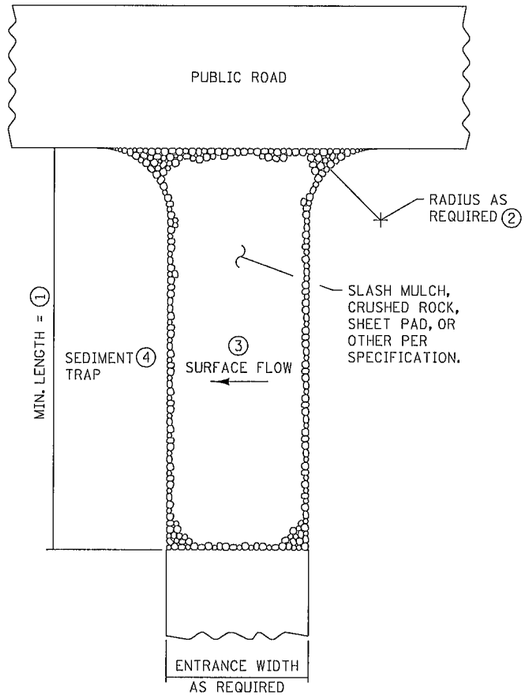
APPROVED: 8-6-2014

TEMPORARY SEDIMENT CONTROL

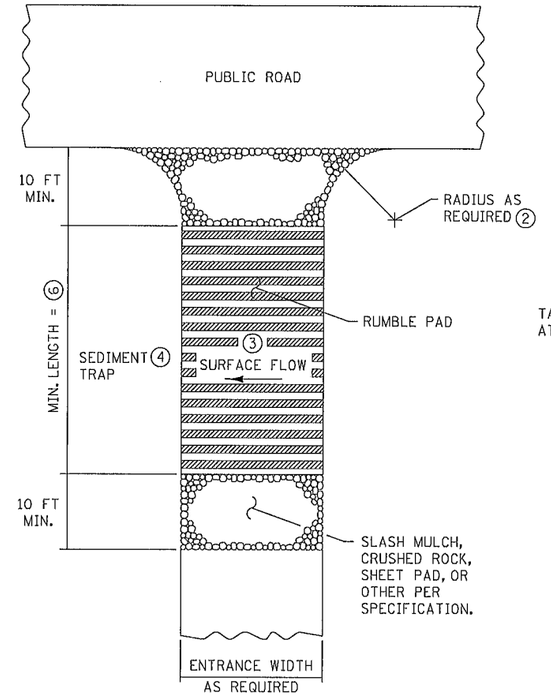
STORM DRAIN INLET PROTECTION

STANDARD PLAN 5-297.405

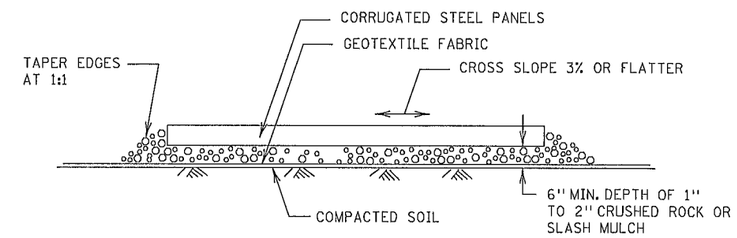
PLOTTED/REVISED: 07/20/2016
DISTRICT #:
USER NAME: ejmarkos
PATH & FILENAME: P:\02-622-35\Plan\STD Plans\s404_1_spn.dgn
FILE NAME: s404_1_spn.dgn



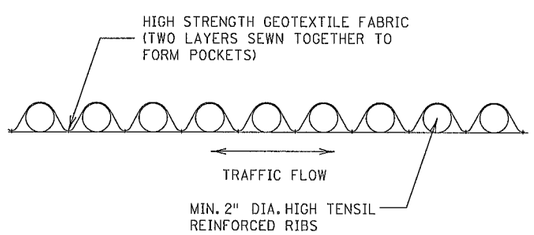
SLASH MULCH, CRUSHED ROCK, OR SHEET PAD CONSTRUCTION EXIT ⑤⑦



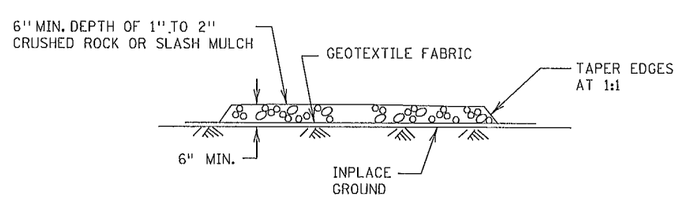
RUMBLE PAD CONSTRUCTION EXIT ⑤⑦



RUMBLE PAD



SHEET PAD



SLASH MULCH OR CRUSHED ROCK

NOTES:

SEE SPECS. 2573 & 3882.

① MINIMUM LENGTH SHALL BE THE GREATER OF 50 FEET OR A LENGTH SUFFICIENT TO ALLOW A MINIMUM OF 5 TIRE ROTATIONS ON THE PROVIDED PAD. MINIMUM LENGTH SHALL BE CALCULATED USING THE LARGEST TIRE WHICH WILL BE USED IN TYPICAL OPERATIONS.

② PROVIDE RADIUS OR WIDEN PAD SUFFICIENTLY TO PREVENT VEHICLE TIRES FROM TRACKING OFF OF PAD WHEN LEAVING SITE.

③ IF RUNOFF FROM DISTURBED AREAS FLOWS TOWARD CONSTRUCTION EXITS, PREVENT RUNOFF FROM DRAINING DIRECTLY TO PUBLIC ROAD OVER CONSTRUCTION EXIT BY CROWNING THE EXIT OR SLOPING TO ONE SIDE. IF SURFACE GRADING IS INSUFFICIENT, PROVIDE OTHER MEANS OF INTERCEPTING RUNOFF.

④ IF RUNOFF FROM CONSTRUCTION EXITS WILL DRAIN OFF OF PROJECT SITE, PROVIDE SEDIMENT TRAP WITH STABILIZED OVERFLOW.

⑤ IF A TIRE WASH OFF IS REQUIRED THE CONSTRUCTION EXITS SHALL BE GRADED TO DRAIN THE WASH WATER TO A SEDIMENT TRAP.

⑥ MINIMUM LENGTH OF RUMBLE PAD SHALL BE 20 FEET, OR AS REQUIRED TO REMOVE SEDIMENT FROM TIRES. IF SIGNIFICANT SEDIMENT IS TRACKED FROM THE SITE, THE RUMBLE PAD SHALL BE LENGTHENED OR THE DESIGN MODIFIED TO PROVIDE ADDITIONAL VIBRATION. WASH-OFF LENGTH SHALL BE AS REQUIRED TO EFFECTIVELY REMOVE CONSTRUCTION SEDIMENT FROM VEHICLE TIRES.

⑦ MAINTENANCE OF CONSTRUCTION EXITS SHALL OCCUR WHEN THE EFFECTIVENESS OF SEDIMENT REMOVAL HAS BEEN REDUCED. MAINTENANCE SHALL CONSIST OF REMOVING SEDIMENT AND CLEANING THE MATERIALS OR PLACING ADDITIONAL MATERIAL (SLASH MULCH OR CRUSHED ROCK) OVER SEDIMENT FILLED MATERIAL TO RESTORE EFFECTIVENESS.

REVISION:

APPROVED: 8-6-2014

CHIEF ENVIRONMENTAL OFFICER

SAP 002-609-016
SAP 002-622-035

MINNESOTA DEPARTMENT OF TRANSPORTATION

REVISED:

APPROVED: 8-6-2014

STATE DESIGN ENGINEER

TEMPORARY SEDIMENT CONTROL
CONSTRUCTION EXITS

STANDARD PLAN 5-297.405

PLOTTED/REVISED: 07/20/2016
DISTRICT #:
USER NAME: ejmarkos
PATH & FILENAME: P:\02-622-35\Plan\STD Plans\s404_1_spn.dgn
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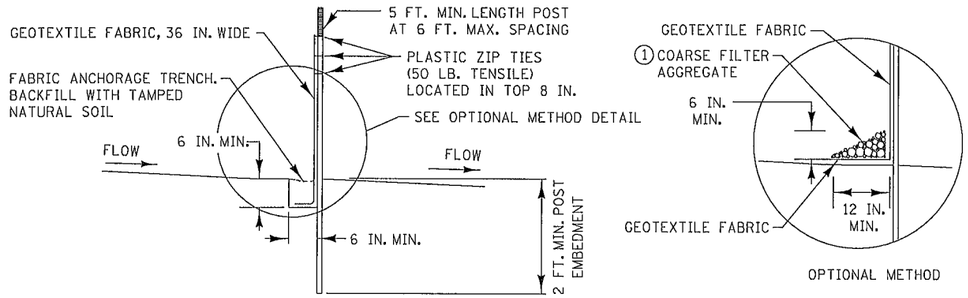
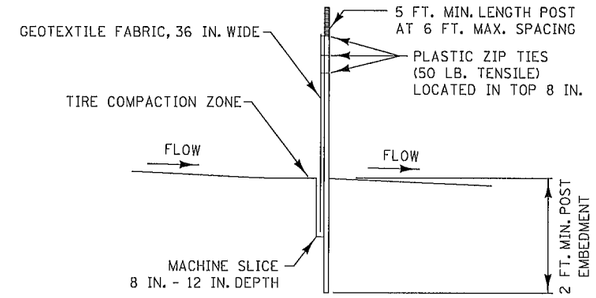
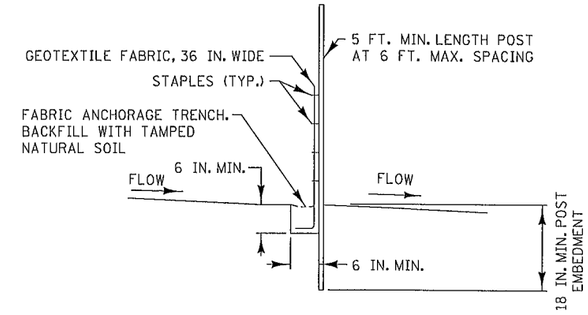


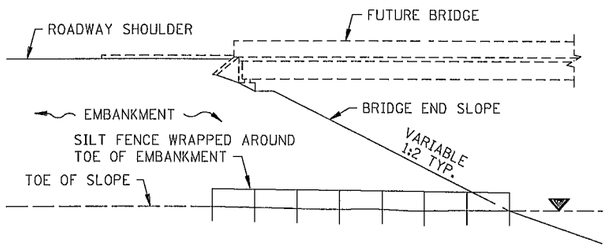
SILT FENCE TYPE HI ②
(HAND INSTALLED)



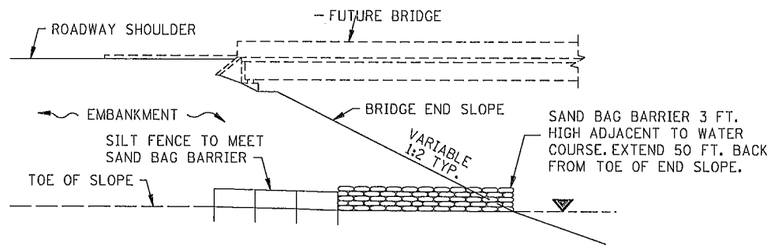
SILT FENCE TYPE MS ②
(MACHINE SLICED)



SILT FENCE TYPE PA ③
(PREASSEMBLED)

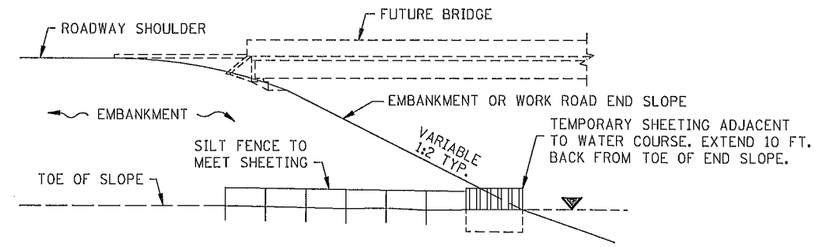


SILT FENCE ONLY ④

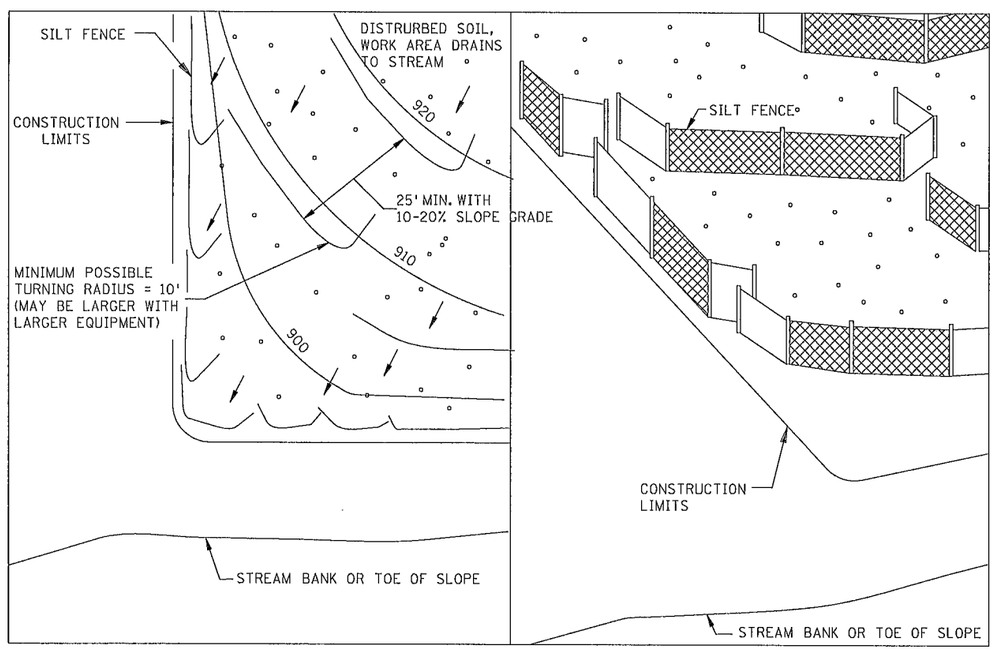


SILT FENCE WITH SAND BAGS ⑤

INSTALLATION AT BRIDGE EMBANKMENT ADJACENT TO WATER



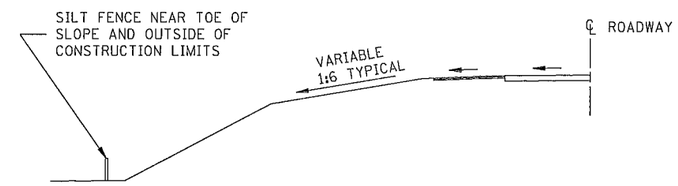
SILT FENCE WITH SHEETING ⑥



PLAN VIEW

PERSPECTIVE VIEW

J-HOOK INSTALLATION



LOCATION AT TOE OF ROADWAY EMBANKMENT

NOTES:

SEE SPECS. 2573, 3149 & 3886.

① COARSE FILTER AGGREGATE (SPEC. 3149) SHALL BE INCIDENTAL.

② TO PROTECT AREAS FROM SHEET FLOW. MAXIMUM CONTRIBUTING AREA: 1 ACRE.

③ TO PROTECT AREAS FROM SHEET FLOW. MAXIMUM CONTRIBUTING AREA: 0.25 ACRE.

④ WATER COURSE FLOW VELOCITY: STANDING. CONTRIBUTING SLOPE AREA: 1./2 ACRE.

⑤ WATER COURSE FLOW VELOCITY: 1 TO 7 FT./SEC. CONTRIBUTING SLOPE AREA: 1. ACRE.

⑥ WATER COURSE FLOW VELOCITY: 8 TO 15 FT./SEC. CONTRIBUTING SLOPE AREA: 3 ACRES.

REVISION:

APPROVED: 8-6-2014

CHIEF ENVIRONMENTAL OFFICER

SAP 002-609-016
SAP 002-622-035

MINNESOTA DEPARTMENT OF TRANSPORTATION

STATE DESIGN ENGINEER

REVISED:

APPROVED: 8-6-2014

TEMPORARY SEDIMENT CONTROL
SILT FENCE

STANDARD PLAN 5-297.405

PLOTTED/REVISED: 07/20/2016
DISTRICT #:
USER NAME: ejmarkos
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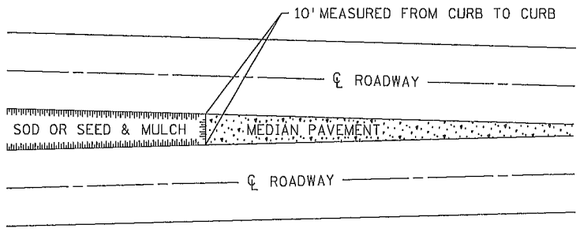
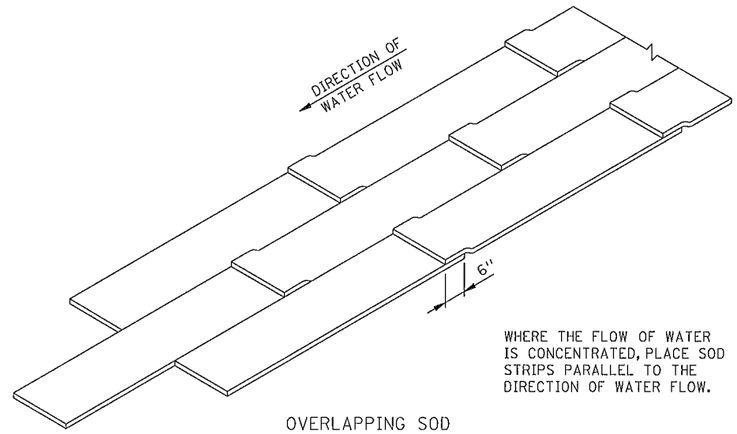
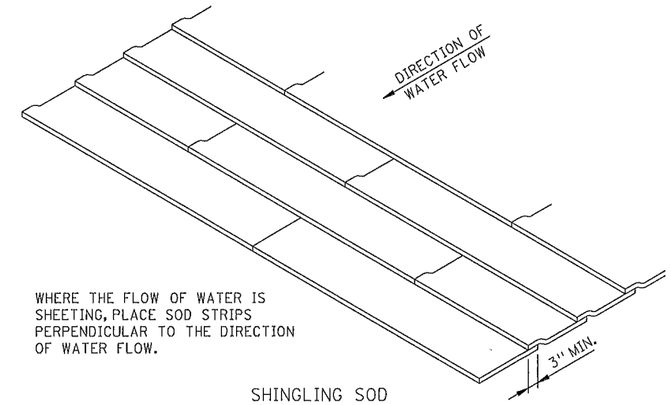


SODDING LIMITS AT GORE AREA



WHERE THE FLOW OF WATER IS CONCENTRATED, PLACE SOD STRIPS PARALLEL TO THE DIRECTION OF WATER FLOW.

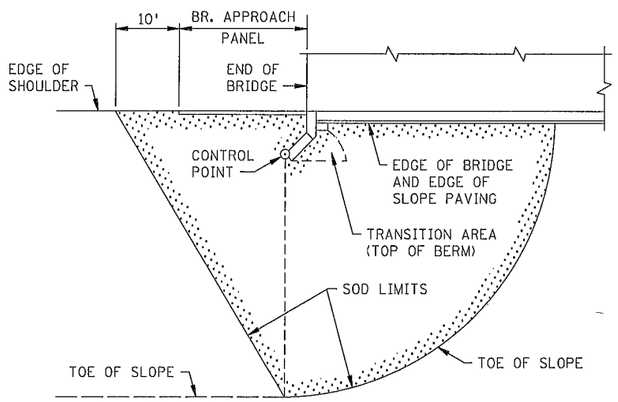
OVERLAPPING SOD



WHERE THE FLOW OF WATER IS SHEETING, PLACE SOD STRIPS PERPENDICULAR TO THE DIRECTION OF WATER FLOW.

SHINGLING SOD

SPECIAL SOD PLACEMENT TECHNIQUES



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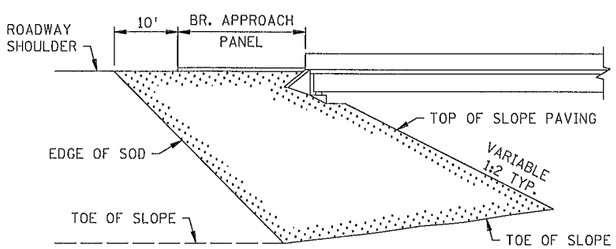
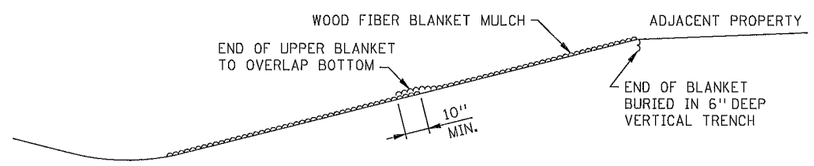
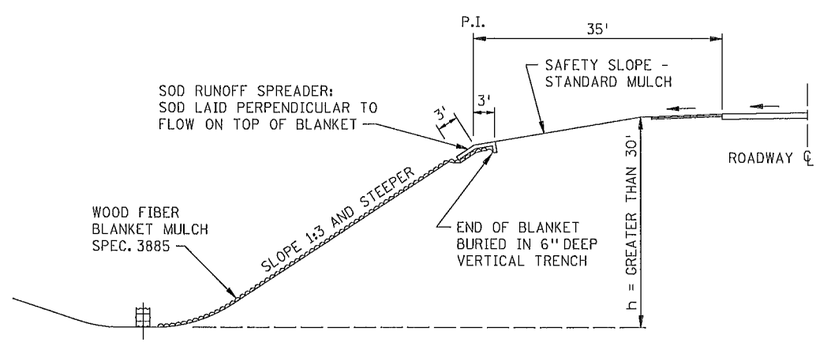


ELEVATION

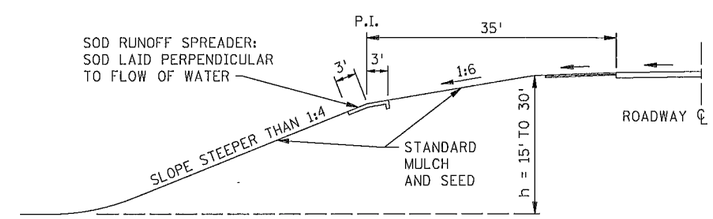
SODDING LIMITS AT BRIDGE APPROACH FILLS



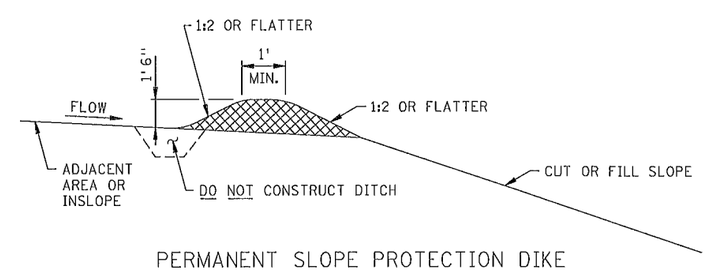
WOOD FIBER BLANKET INSTALLATION ON A CUT SLOPE



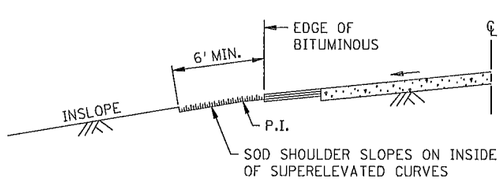
WOOD FIBER BLANKET INSTALLATION ON AN INSLOPE
(WHEN REQUIRED)



BROKEN-BACK SAFETY FILL SLOPE



PERMANENT SLOPE PROTECTION DIKE



SODDING INSLOPES OF SUPERELEVATED CURVES

1 OF 1

REVISION:

APPROVED: 8-6-2014

CHIEF ENVIRONMENTAL OFFICER

SAP 002-609-016
SAP 002-622-035

MINNESOTA DEPARTMENT OF TRANSPORTATION

REVISED:

APPROVED: 8-6-2014

STATE DESIGN ENGINEER

PERMANENT SEDIMENT CONTROL
ALONG ROADWAYS AND AT GORE AREAS & BRIDGE APPROACH FILLS

STANDARD PLAN 5-297.406

PLOTTED/REVISED: 07/18/2016
DISTRICT #:
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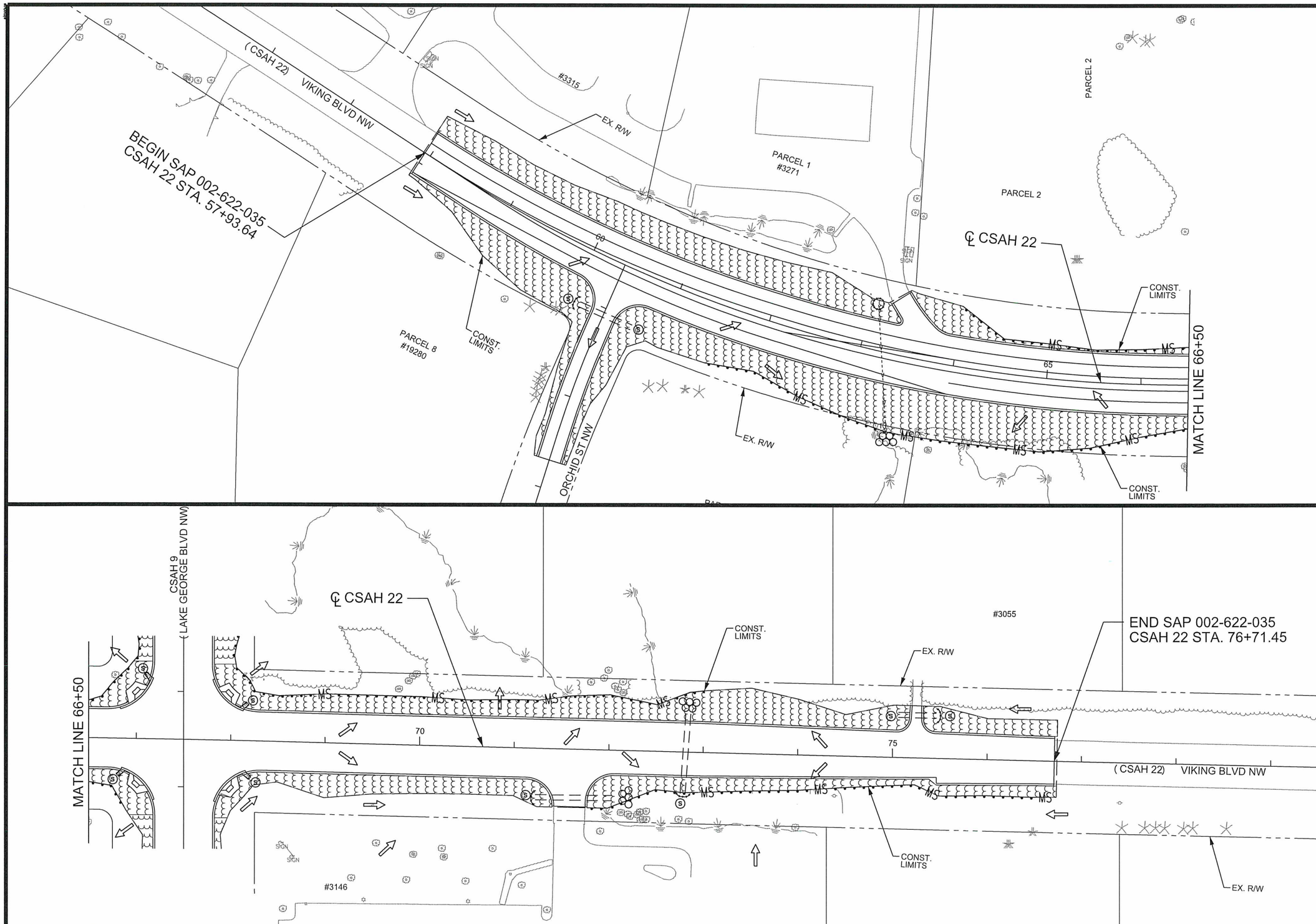

LEGEND

- PROPOSED CATCH BASIN
- INPLACE CATCH BASIN
- PROPOSED APRON
- INPLACE APRON
- INPLACE STORM SEWER
- INPLACE CULVERT
- PROPOSED CULVERT
- SILT FENCE TYPE MACHINE SLICED
- RIPRAP (CLASS II UNLESS OTHERWISE NOTED)
- SOD APRON INLET OR OUTLET
- CULVERT END CONTROLS/ INLET PROTECTION
- WETLAND BOUNDARIES
- SURFACE FLOW ARROW
- EROSION CONTROL BLANKET CATEGORY 0

N

0 100
SCALE IN FEET

1 OF 2

NO	DATE	BY	CKD	APPR	REVISION

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

PRINT NAME: ELIZABETH MARKOSE
SIGNATURE: Elizabeth M
DATE: 07-19-16 LICENSE NO. 49118

DRAWN BY EJM DATE 06-17-16
DESIGN BY EJM DATE 06-17-16
CHECKED BY GMP DATE 07-14-16

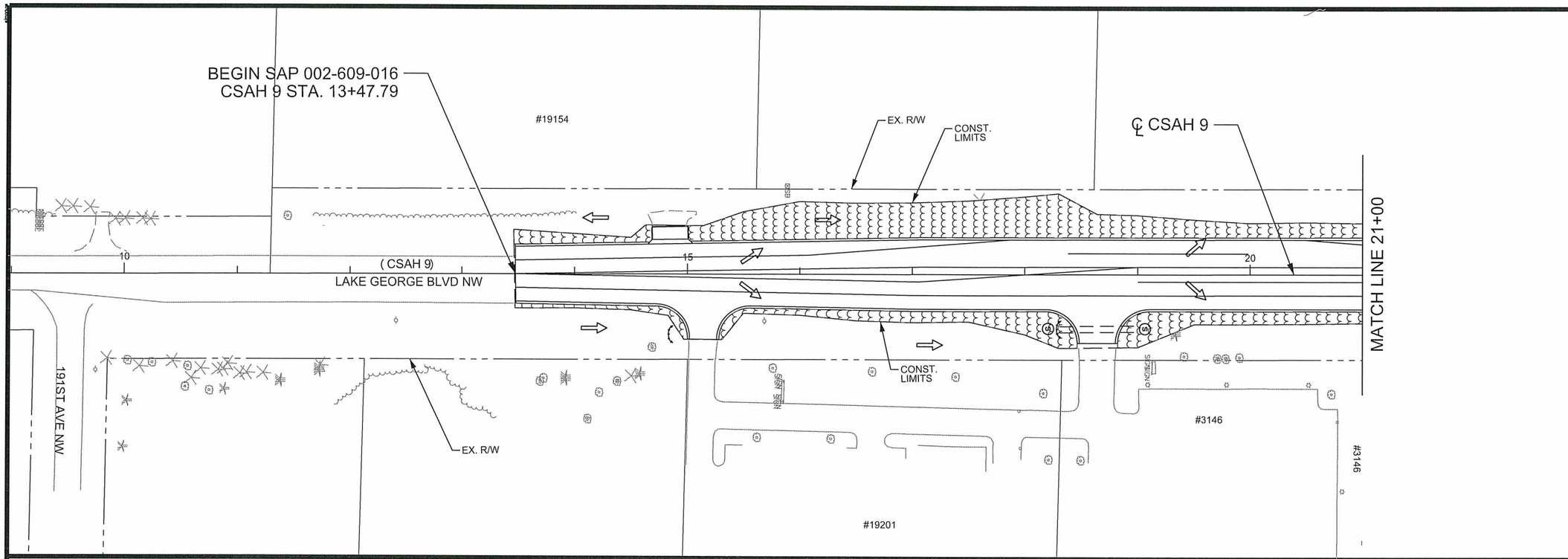
ANOKA COUNTY

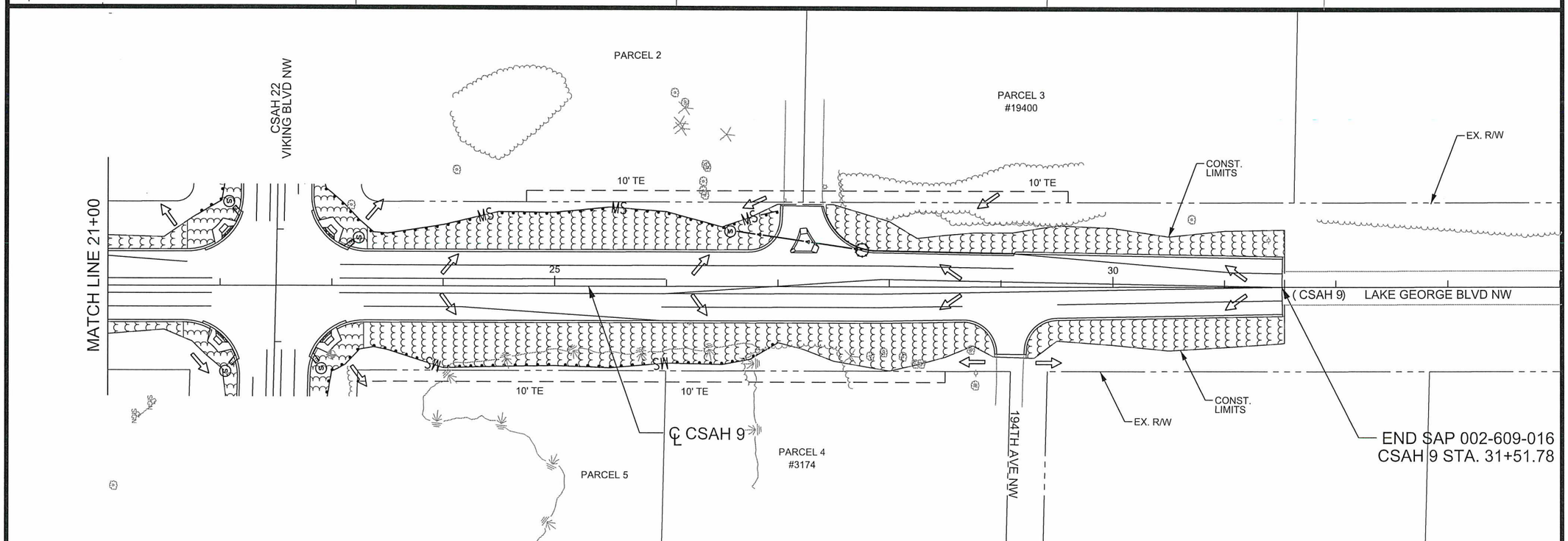
ANOKA COUNTY HIGHWAY DEPT.

SAP 002-609-016
SAP 002-622-035

EROSION CONTROL PLAN
CSAH 22
STA 57+93.64 TO 76+71.45

Sheet 66 of 119 Sheets





LEGEND

- PROPOSED CATCH BASIN
- INPLACE CATCH BASIN
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- INPLACE APRON
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- INPLACE STORM SEWER
- INPLACE CULVERT
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- SURFACE FLOW ARROW
- EROSION CONTROL BLANKET CATEGORY 0

0 100
SCALE IN FEET

2 OF 2

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-622-35\Plan\0262235_EC_P2.dgn 07/19/2016 7:56:51 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: ELIZABETH MARKOSE
SIGNATURE: Elizabeth M
DATE: 07-19-16 LICENSE NO. 49118

DRAWN BY EJM DATE 06-17-16
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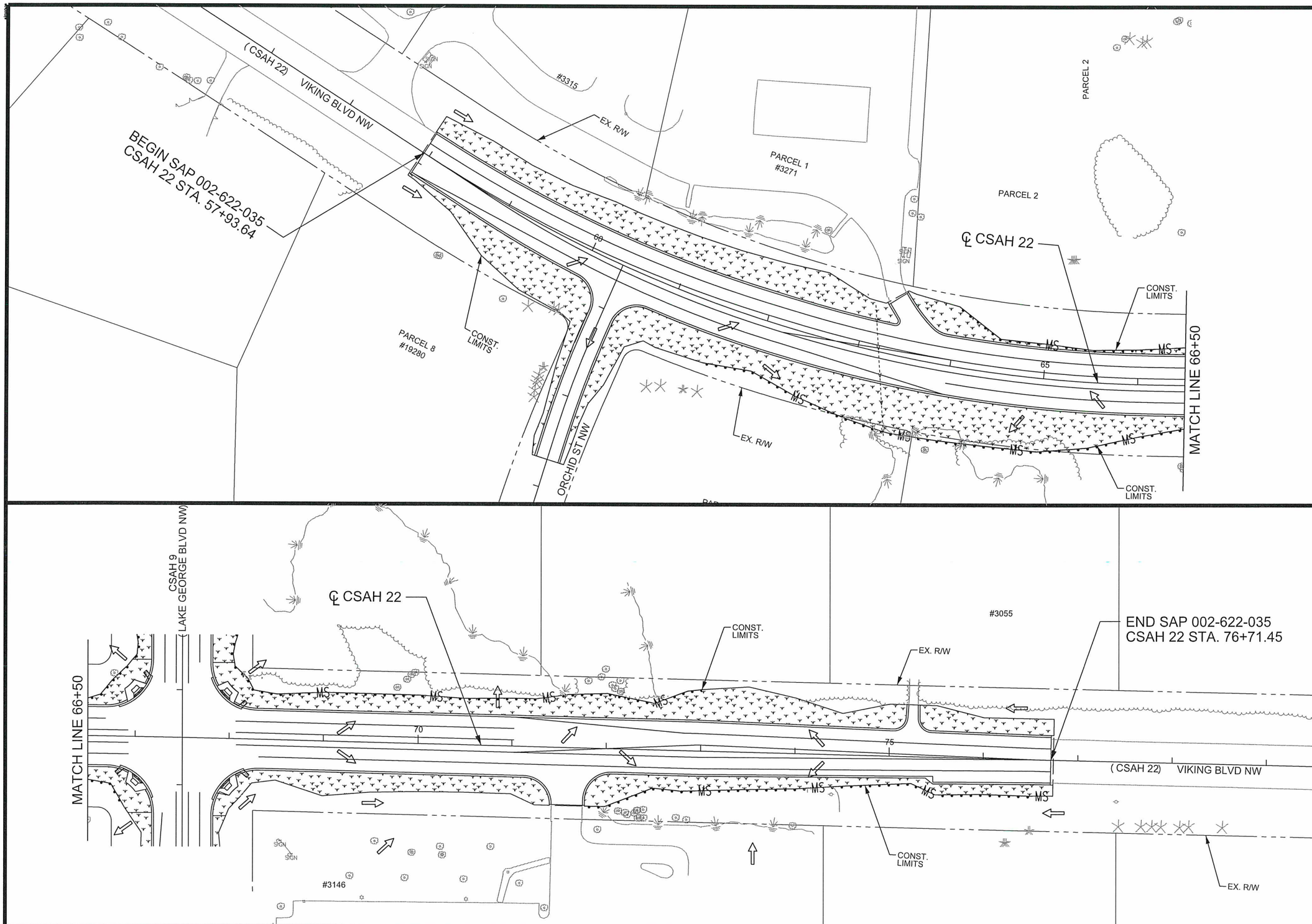
ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-609-016
SAP 002-622-035

EROSION CONTROL PLAN
CSAH 9
STA 13+47.79 TO 31+51.78

Sheet 67 of 119 Sheets



LEGEND

- WETLAND BOUNDARIES
- SURFACE FLOW ARROW
- SEED MIXTURE 25-121

1 OF 2

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-622-35\Plan\0262235_TE_P1.dgn 07/19/2016 7:56:54 AM

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SIGNATURE: Elizabeth M

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DRAWN BY EJM DATE 06-17-16

DESIGN BY EJM DATE 06-17-16

CHECKED BY GMP DATE 07-14-16

ANOKA COUNTY

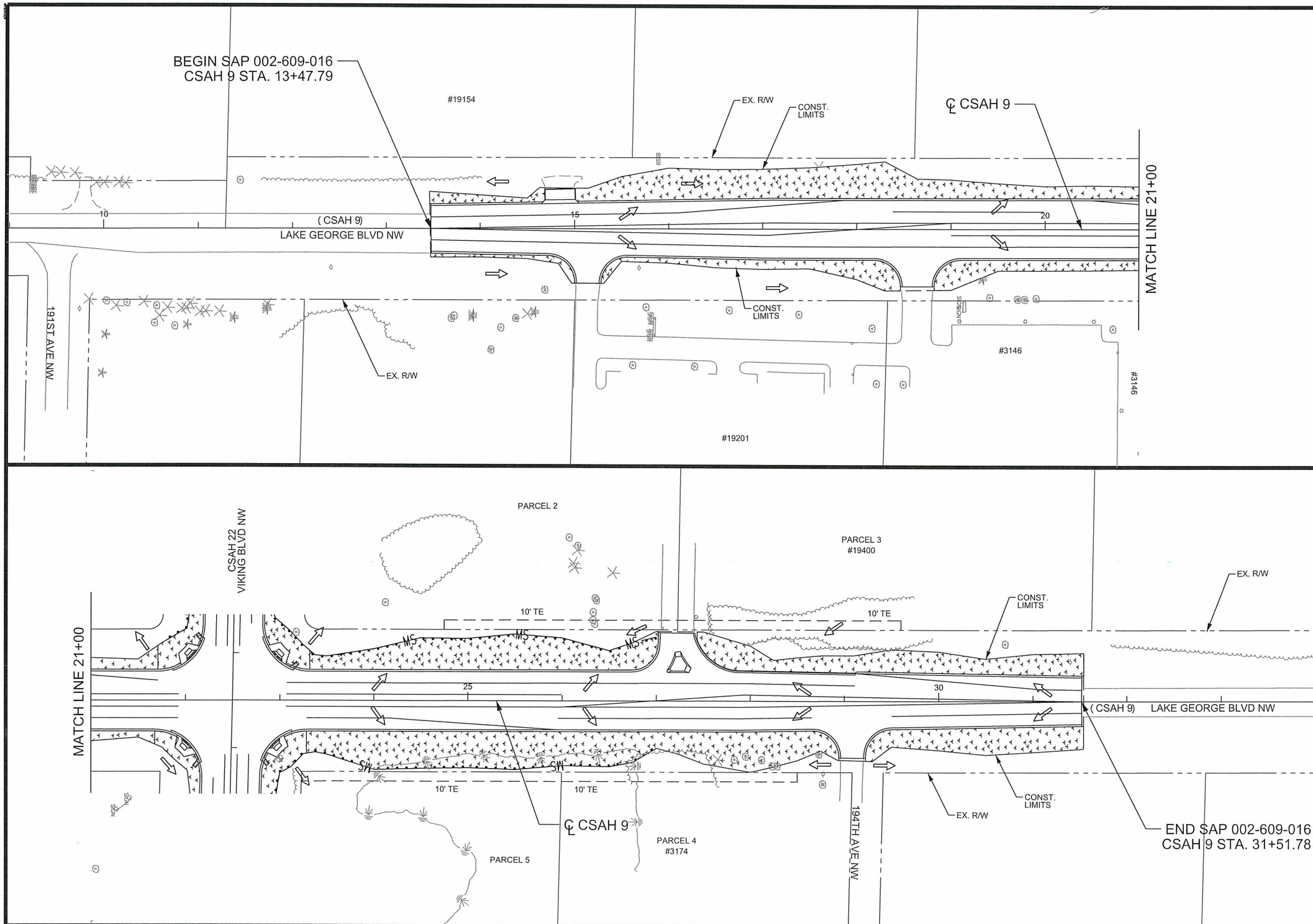
ANOKA COUNTY HIGHWAY DEPT.

SAP 002-609-016
SAP 002-622-035

TURF ESTABLISHMENT PLAN
CSAH 22

STA 57+93.64 TO 76+71.45

Sheet 68 of 119 Sheets



LEGEND

- WETLAND BOUNDARIES
- SURFACE FLOW ARROW
- SEED MIXTURE 25-121

0 100
SCALE IN FEET

2 OF 2

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-622-35\Plan\0262235_TE_P2.dgn 07/19/2016 7:56:57 AM

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SIGNATURE: Elizabeth Markose
DATE: 07-19-16 LICENSE NO. 49118

DRAWN BY EJM DATE 06-17-16
DESIGN BY EJM DATE 06-17-16
CHECKED BY GMP DATE 07-14-16

ANOKA COUNTY HIGHWAY DEPT.

SAP 002-609-016
SAP 002-622-035

TURF ESTABLISHMENT PLAN
CSAH 9
STA 13+47.79 TO 31+51.78

Sheet 69 of 119 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 EPOXY RESIN LINE 4" WIDE AND 15 MILL THICKNESS (WET), REQUIRES AN APPLICATION RATE OF ONE (1) GALLON OF COMPONENTS FOR 320 FEET OF LINE. GLASS BEADS SHALL BE APPLIED AT A POUND PER GALLON RATE SUFFICIENT TO ACHIEVE AN ACCEPTABLE NO-TRACK SYSTEM.

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

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

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

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

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

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

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

N PAVEMENT MARKING TABULATION

		SAP 002-609-016	SAP 002-622-035
ITEM	UNIT	TOTAL QUANTITY	TOTAL QUANTITY
4" SOLID LINE WHITE -EPOXY	LIN FT	10390	8360
4" BROKEN LINE WHITE - EPOXY	LIN FT	40	40
4" BROKEN LINE YELLOW - EPOXY	LIN FT	200	0
4" SOLID LINE YELLOW - EPOXY	LIN FT	440	0
4" SOLID DOUBLE LINE YELLOW - EPOXY	LIN FT	3610	4050
24" SOLID LINE YELLOW - PREFORMED THERMOPLASTIC	SQ FT	534	707
24" SOLID LINE WHITE - PREFORMED THERMOPLASTIC	SQ FT	148	148
3'x6' ZEBRA CROSSWALK - PREFORMED THERMOPLASTIC	SQ FT	468	468
PAVEMENT MESSAGE (LFT ARROW) - PREFORMED THERMOPLASTIC	SQ FT	60	60
PAVEMENT MESSAGE (RT ARROW) - PREFORMED THERMOPLASTIC	SQ FT	60	60

SYMBOLS & MATERIALS LEGEND

CROSSWALK BLOCK WHITE PREFORMED THERMOPLASTIC

PAVEMENT MESSAGE (LEFT ARROW) PREFORMED THERMOPLASTIC

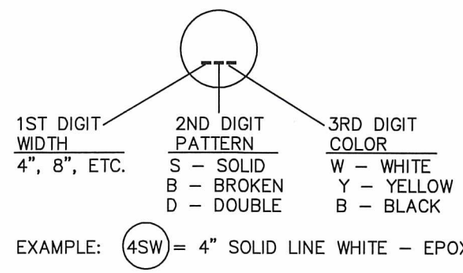
STRIPING KEY

CIRCLE - EPOXY

SQUARE PREFORMED THERMOPLASTIC

TRIANGLE - PAINT

PENTAGON - REMOVABLE PREFORMED PLASTIC MARKING



NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\SAP 002-622-035\Base\Traffic\Perm pvmt mrkg guide notes_guidelines.dwg

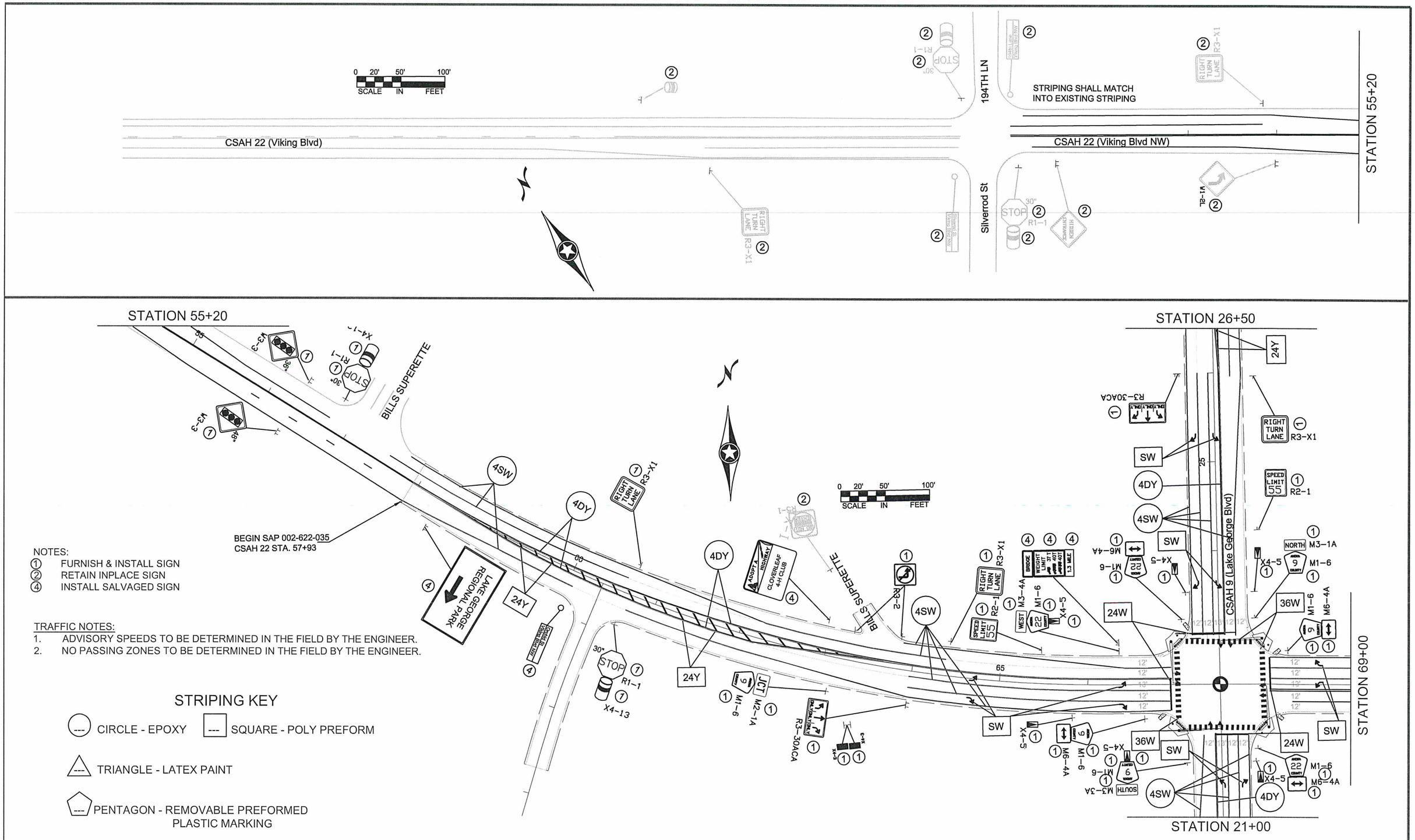
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
PRINT NAME: DOUGLAS W. FISCHER, P.E.
SIGNATURE:
DATE: 3/10/16 LICENSE NO. 20235

DRAWN BY TMV DATE 02-10-16
DESIGN BY RLB DATE 02-10-16
CHECKED BY JKR DATE 06-27-16

ANOKA COUNTY HIGHWAY DEPT.

SAP 002-609-016
SAP 002-622-035

PERMANENT MARKING TABULATION



NOTES:

1. FURNISH & INSTALL SIGN
2. RETAIN INPLACE SIGN
4. INSTALL SALVAGED SIGN

TRAFFIC NOTES:

1. ADVISORY SPEEDS TO BE DETERMINED IN THE FIELD BY THE ENGINEER.
2. NO PASSING ZONES TO BE DETERMINED IN THE FIELD BY THE ENGINEER.

STRIPING KEY

CIRCLE - EPOXY

SQUARE - POLY PREFORM

TRIANGLE - LATEX PAINT

PENTAGON - REMOVABLE PREFORMED PLASTIC MARKING

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\SAP 002-622-035\BASE\TRAFFIC\PERMANENT SIGNING AND STRIPING PLAN

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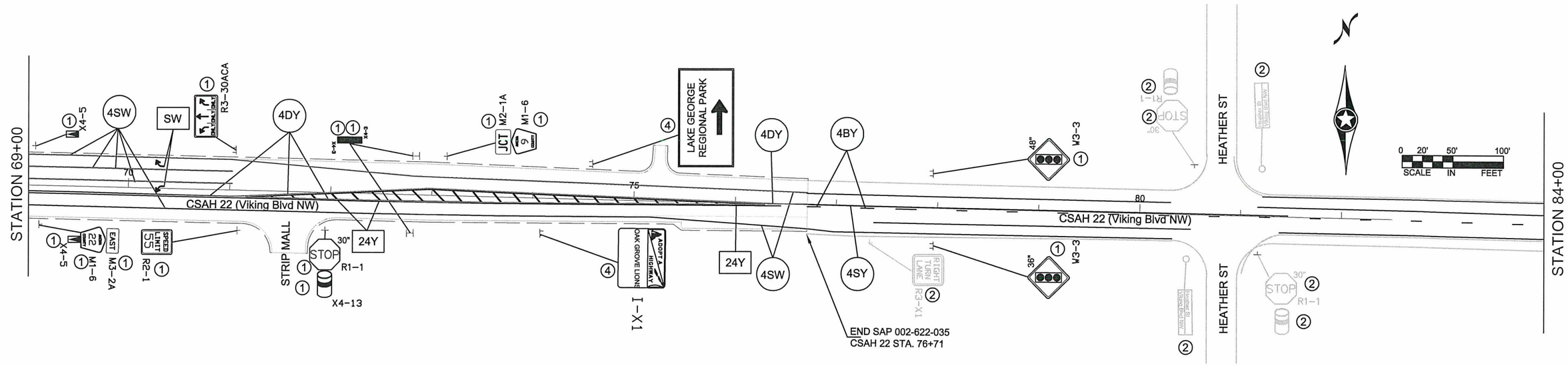
SAP 002-609-016
SAP 002-622-035

PERMANENT SIGNING & STRIPING PLAN



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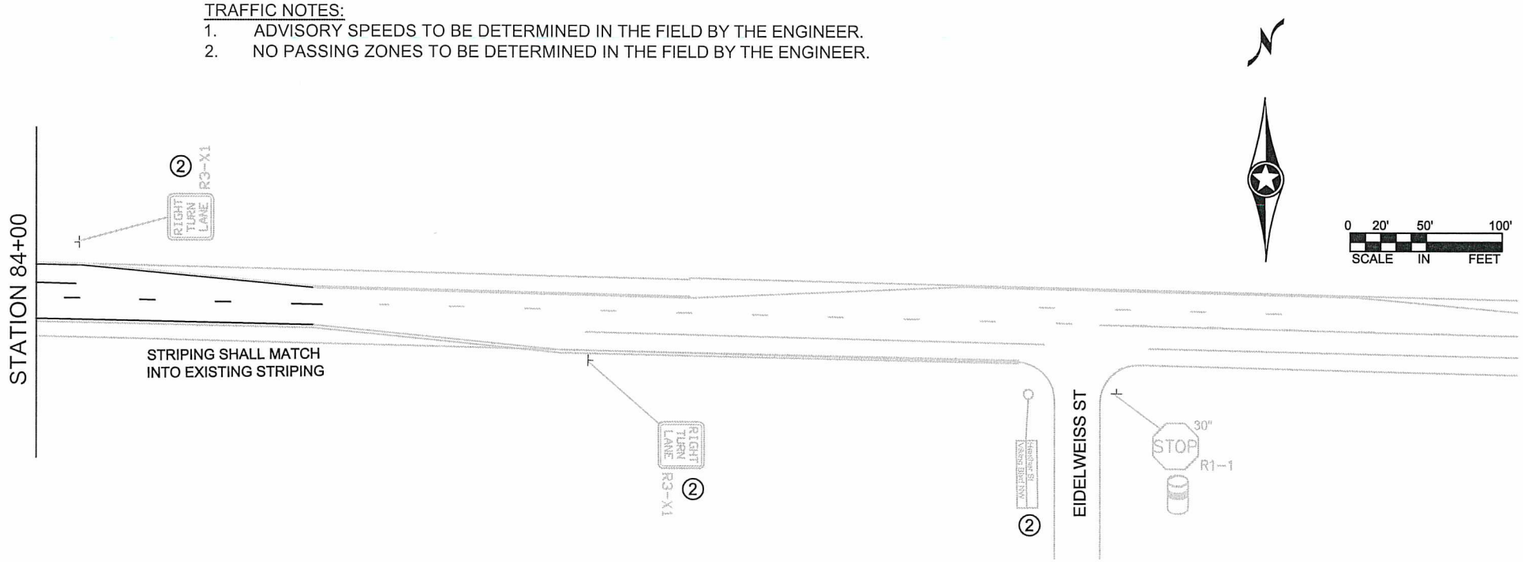

NOTES:

① FURNISH & INSTALL SIGN
② RETAIN INPLACE SIGN
④ INSTALL SALVAGED SIGN

STRIPING KEY

CIRCLE - EPOXY

SQUARE - POLY PREFORM

TRIANGLE - LATEX PAINT

PENTAGON - REMOVABLE PREFORMED PLASTIC MARKING

NO	DATE	BY	CKD	APPR	REVISION

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ANOKA COUNTY HIGHWAY DEPT.

SAP 002-609-016
SAP 002-622-035

PERMANENT SIGNING & STRIPING PLAN

STRIPING KEY

- CIRCLE - EPOXY
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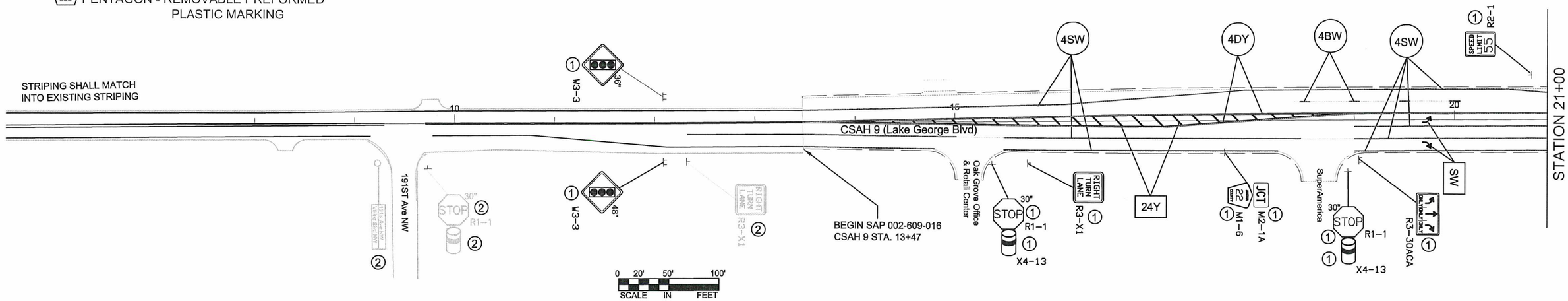

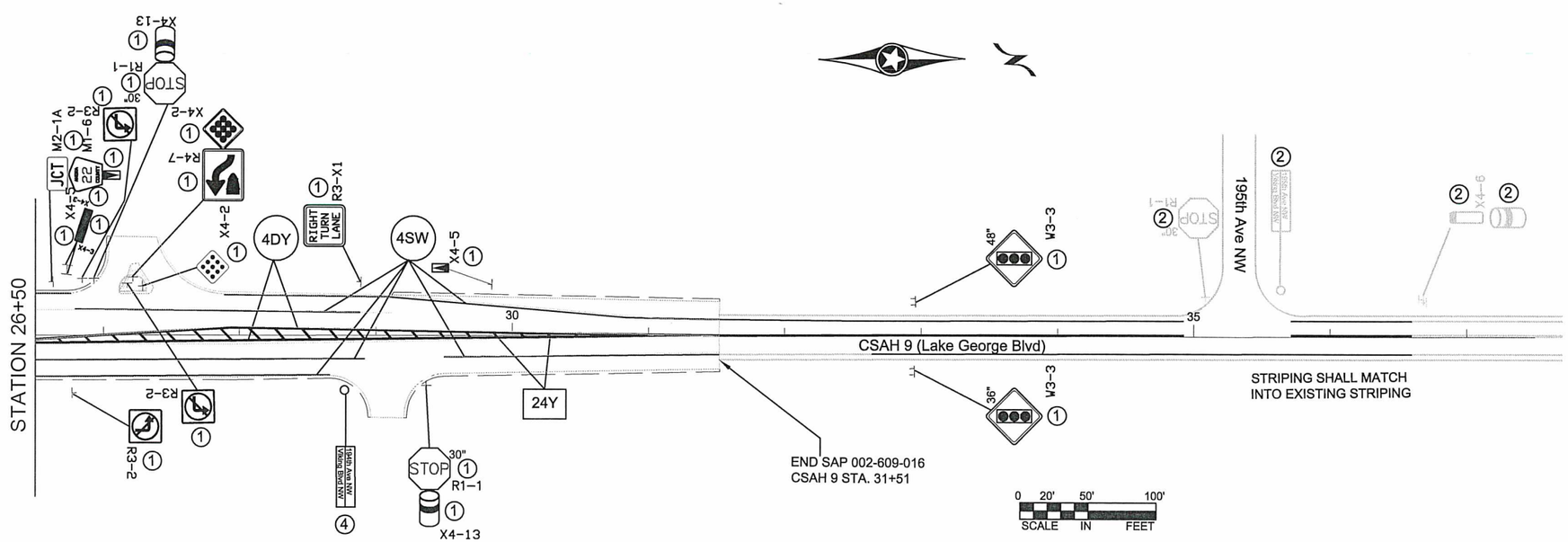

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\SAP 002-622-035\BASE\TRAFFIC\PERMANENT SIGNING AND STRIPING PLAN

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CHECKED BY JKR DATE 06-27-16

ANOKA COUNTY HIGHWAY DEPT.

SAP 002-609-016
SAP 002-622-035

PERMANENT SIGNING & STRIPING PLAN

L

SIGN PANELS TYPE C

SAP 002-609-016

M.U.T.C.D. CODE	SIZE	INSERT	QUANTITY	SQ FT PANEL AREA	SQ FT TOTAL AREA	MOUNTING POST PER INSTALLATION	MOUNTING HEIGHT
R1-1	30" x 30"	STOP	4	6.25	25.00	2	7.0'
X4-13	4" diameter x 15"		4	0.42	1.68		
R2-1	24" X 30"	SPEED LIMIT 55	2	5.00	10.00	2	7.0'
R3-X1	30" X 30"	RIGHT TURN LANE	3	6.25	18.75	2	7.0'
R3-2	24" X 24"		3	4.00	12.00	2	7.0'
R3-30ACA	54" X 30"	ONLY ONLY ONLY	2	11.25	22.50	2	7.0'
R4-7	24" X 30"		1	5.00	5.00	2	7.0'
X4-2	18" X 18"		1	2.25	2.25	2	7.0'
W3-3	36" X 36"		2	9.00	18.00	2	7.0'
	48" X 48"		2	16.00	32.00		
M3-1A	24" X 12"	NORTH	1	2.00	2.00	2	7.0'
M3-3A	24" X 12"	SOUTH	1	2.00	2.00		
M1-6	24" X 24"	ANOKA 9 COUNTY	2	4.00	8.00		
X4-5	6" X 12"		1	0.50	0.50		
M2-1A	21" X 15"	JCT	2	2.19	4.38	2	7.0'
M1-6	24" X 24"	ANOKA 22 COUNTY	4	4.00	16.00		
M6-4A	21" X 15"		2	2.19	4.38		
X4-5	6" X 12"		1	0.50	0.50		
X4-3	6" X 12"		2	0.50	1.00	1	4.0'
X4-5	6" X 12"		1	0.50	0.50	1	4.0'
X4-5	6" X 12"		3	0.50	1.50	1	4.0'
X4-2	18" X 18"		1	2.25	2.25	1	4.0'
SUBTOTALS			**45**		**190.19**		

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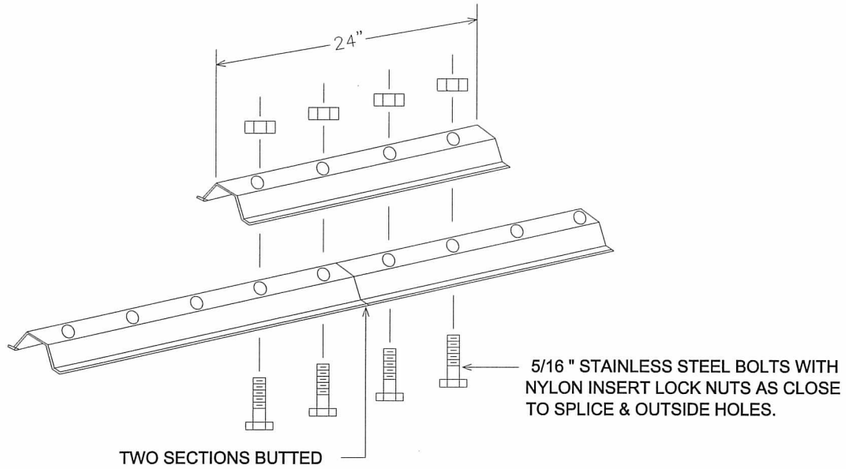
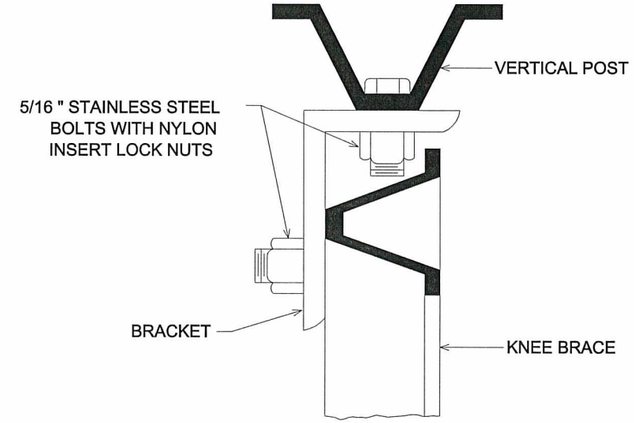
M.U.T.C.D. CODE	SIZE	INSERT	QUANTITY	SQ FT PANEL AREA	SQ FT TOTAL AREA	MOUNTING POST PER INSTALLATION	MOUNTING HEIGHT
R1-1	30" x 30"	STOP	3	6.25	18.75	2	7.0'
X4-13	4" diameter x 15"		3	0.42	1.26		
R2-1	24" X 30"	SPEED LIMIT 55	2	5.00	10.00	2	7.0'
R3-X1	30" X 30"	RIGHT TURN LANE	2	6.25	12.50	2	7.0'
R3-2	24" X 24"		2	4.00	8.00	2	7.0'
R3-30ACA	54" X 30"	ONLY ONLY ONLY	2	11.25	22.50	2	7.0'
W3-3	36" X 36"		2	9.00	18.00	2	7.0'
	48" X 48"		2	16.00	32.00		
M2-1A	21" X 15"	JCT	2	2.19	4.38	2	7.0'
M1-6	24" X 24"	ANOKA 9 COUNTY	4	4.00	16.00		
M6-4A	21" X 15"		2	2.19	4.38		
M3-2A	24" X 12"	EAST	1	2.00	2.00	2	7.0'
M3-4A	24" X 12"	WEST	1	2.00	2.00		
M1-6	24" X 24"	ANOKA 22 COUNTY	2	4.00	8.00		
X4-5	6" X 12"		2	0.50	1.00		
X4-3	6" X 12"		6	0.50	3.00	1	4.0'
X4-5	6" X 12"		2	0.50	1.00	1	4.0'
SUBTOTAL			**40**		**164.77**		
PROJECT TOTAL			**85**		**354.96**		

NOTES:

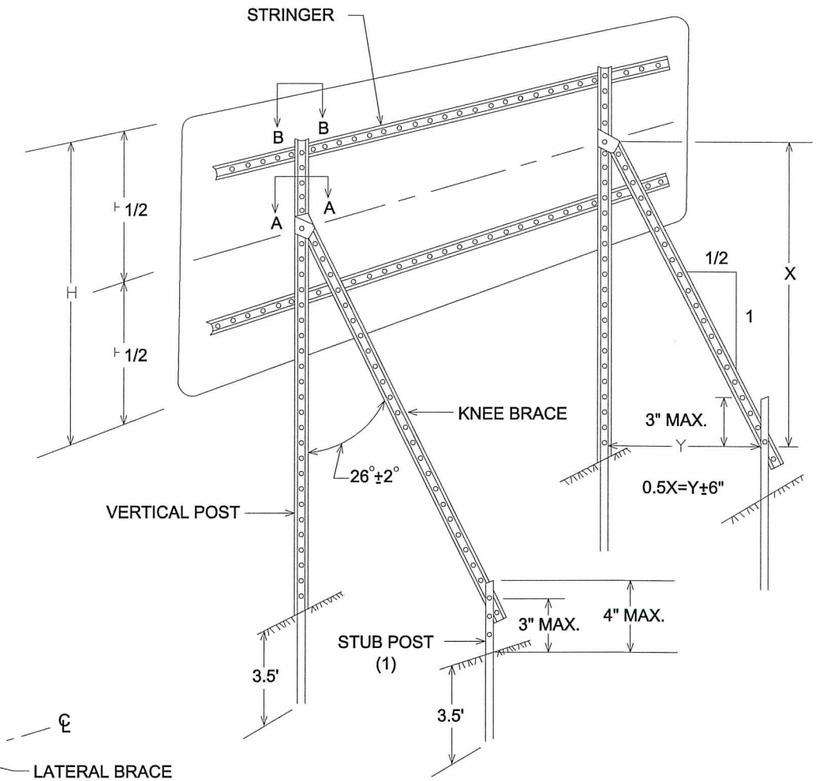
- ALL TRAFFIC CONTROL DEVICES SHALL CONFORM AND BE PLACED IN ACCORDANCE TO THE "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MN MUTCD), INCLUDING PART VI, "FIELD MANUAL" FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS".
- LOCATIONS OF ALL PERMANENT STRIPING AND PAVEMENT MARKINGS ARE APPROXIMATE. EXACT LOCATIONS WILL BE DETERMINED IN THE FIELD BY THE ENGINEER.
- ALL MAINLINE PERMANENT STRIPING AND PAVEMENT MESSAGES SHALL BE PLACED WITHIN 72 HOURS OF MAINLINE PAVING.
- SEE PERMANENT SIGN TABULATIONS FOR ADDITIONAL INFORMATION.
- ALL SEGMENT STRIPE LINES SHALL BE EPOXY. PERMANENT MESSAGES AND ARROWS SHALL BE PREFORMED THERMOPLASTIC.
- ALL SIGNS SHALL BE FURNISHED AND INSTALLED UNLESS OTHERWISE NOTED.



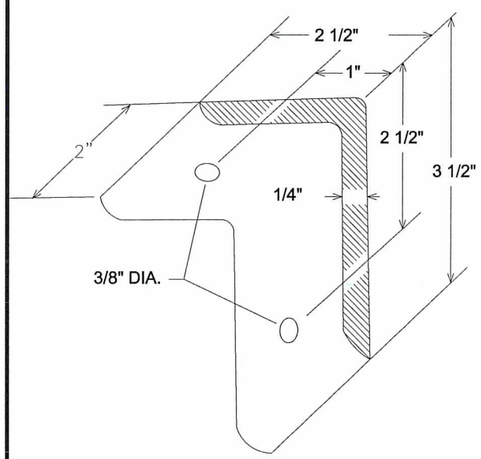
LATERAL BRACE OR STRINGER SPLICE DETAIL (EXPLODED VIEW)



SECTION A-A

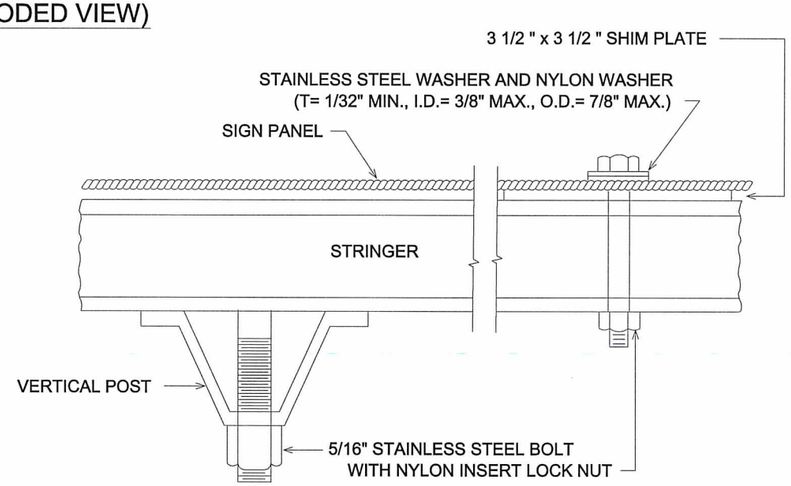


TYPICAL "A-FRAME" INSTALLATION
TYPE "D" SIGNS

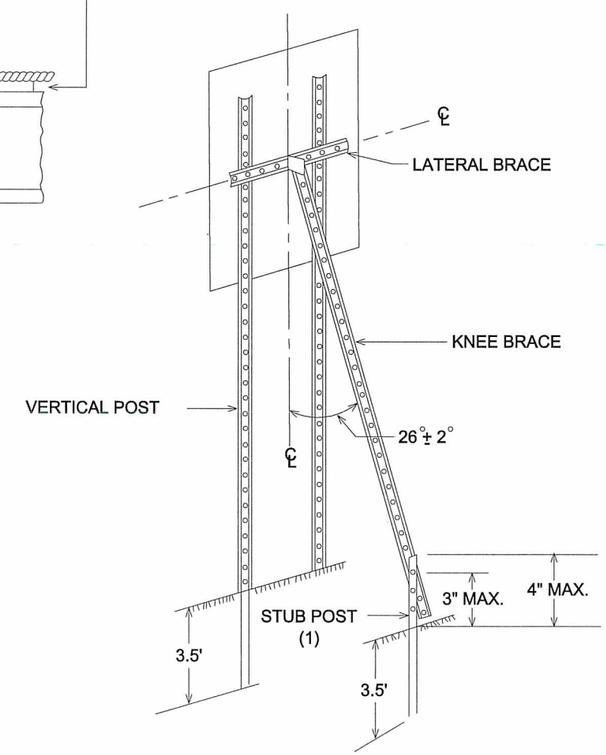


A-FRAME BRACKET

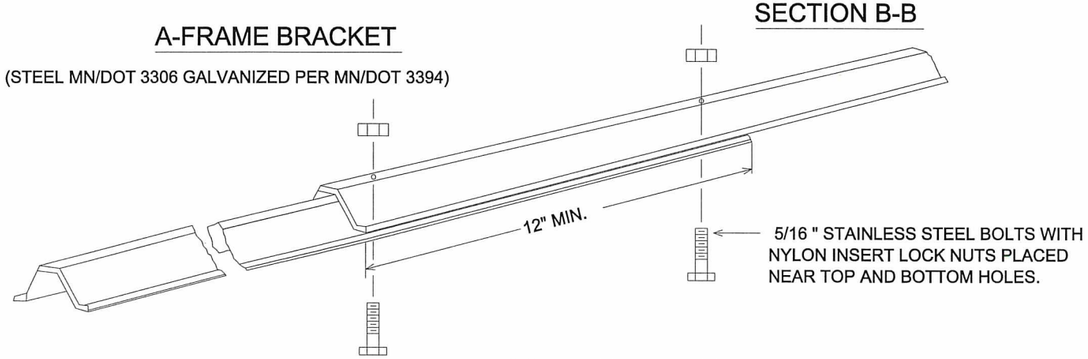
(STEEL MN/DOT 3306 GALVANIZED PER MN/DOT 3394)



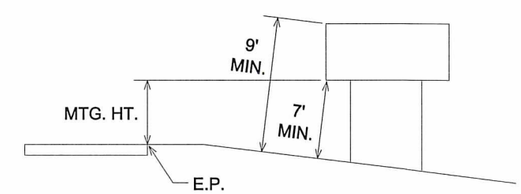
SECTION B-B



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



KNEE BRACE SPLICE



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:\SAP 002-622-035\Base\Traffic\Signing & Striping Details.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.

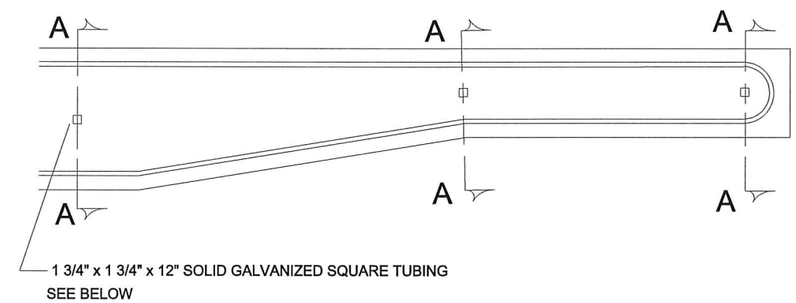
PRINT NAME: DOUGLAS W. FISCHER, P.E.
SIGNATURE:
DATE: 7/19/16 REG. NO. 20235

DRAWN BY TMV DATE 02-10-16
DESIGN BY RLB DATE 02-10-16
CHECKED BY JKR DATE 06-27-16

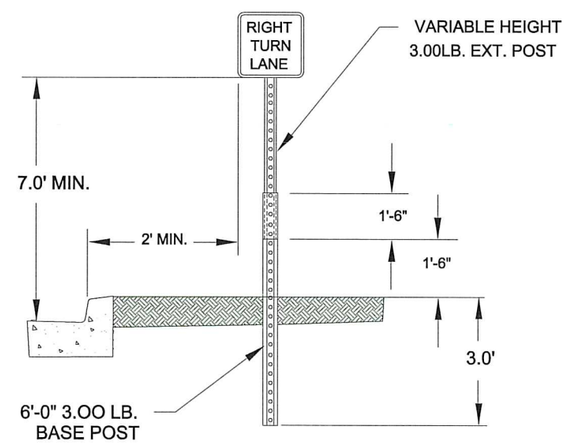
ANOKA COUNTY HIGHWAY DEPT.

SAP 002-609-016
SAP 002-622-035

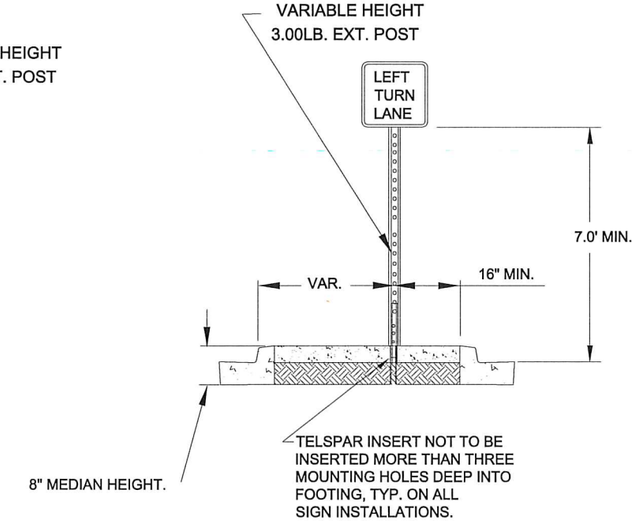
SIGNING & STRIPING DETAILS

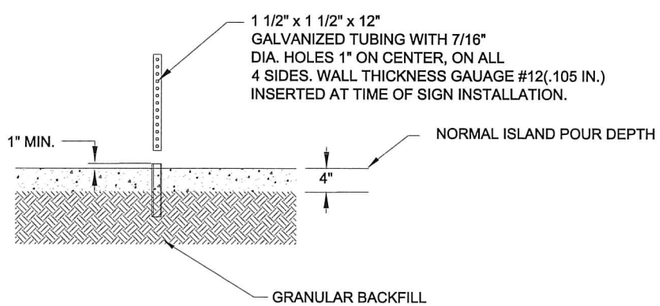


GROUND POST MOUNT SIGN
INSTALLATION TYPICAL



ISLAND MOUNT BREAK-AWAY SIGN
INSTALLATION TYPICAL





SECTION A - A

NO	DATE	BY	CKD	APPR	REVISION

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ANOKA COUNTY

ANOKA COUNTY
HIGHWAY DEPT.

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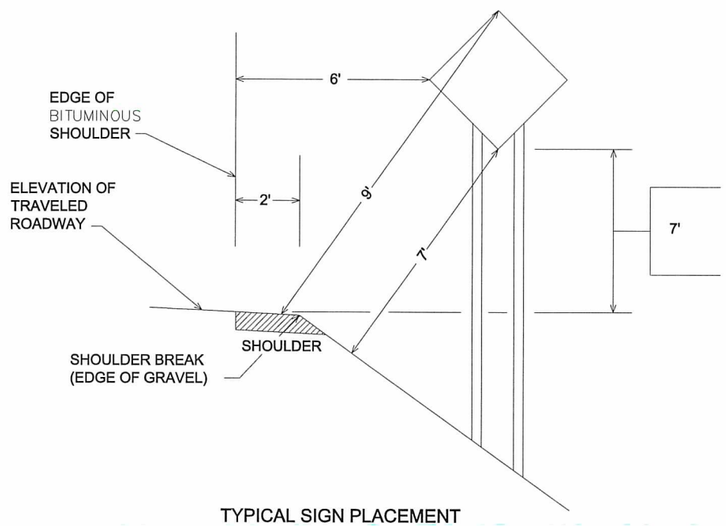
SAP 002-622-035

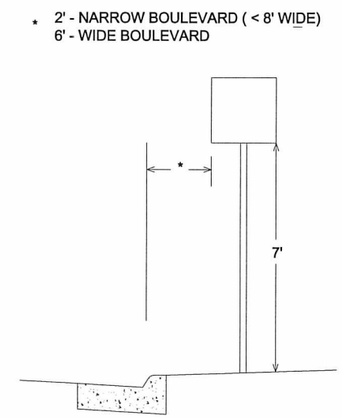
SIGNING & STRIPING
DETAILS

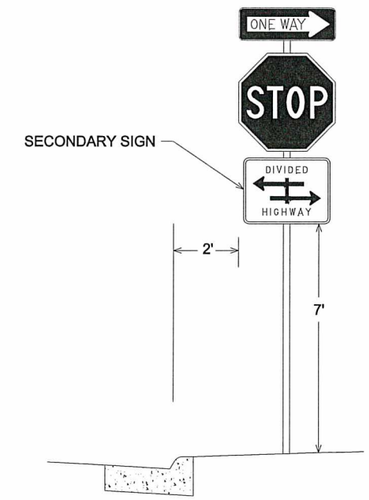
RURAL



TYPICAL SIGN PLACEMENT

URBAN





TYPICAL SIGN PLACEMENT

NOTE:

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

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\SAP 002-622-035\Base\Traffic\Signing & Striping Details.dwg

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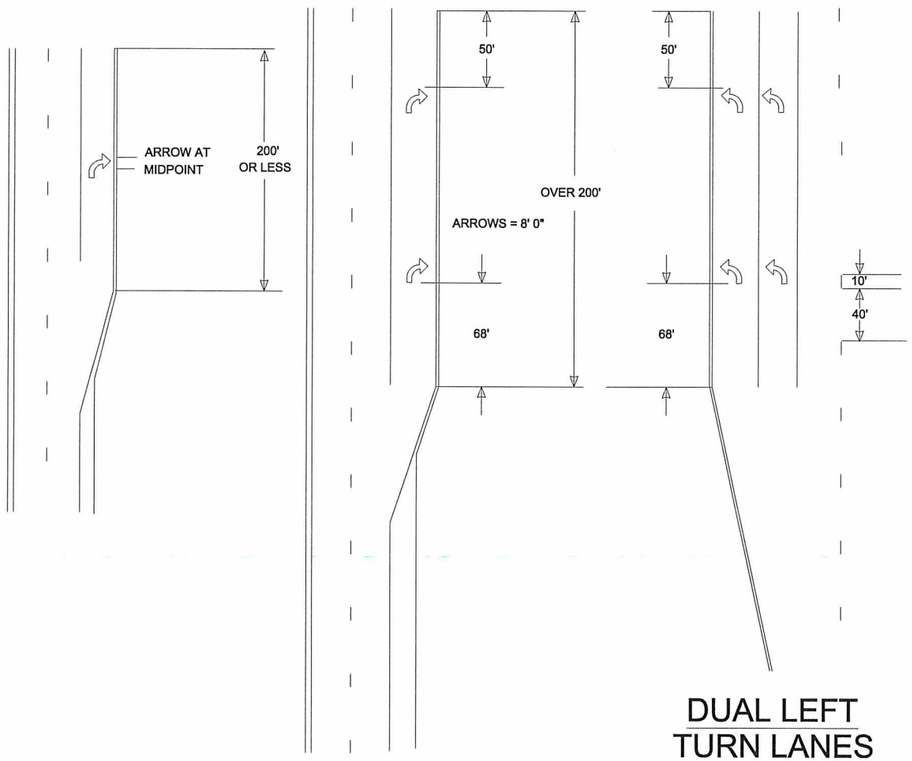
ANOKA COUNTY HIGHWAY DEPT.

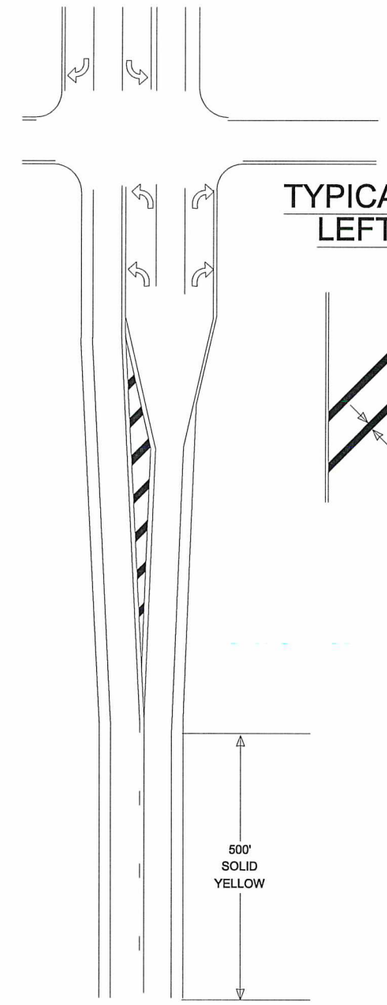
SAP 002-609-016
SAP 002-622-035

SIGNING & STRIPING DETAILS

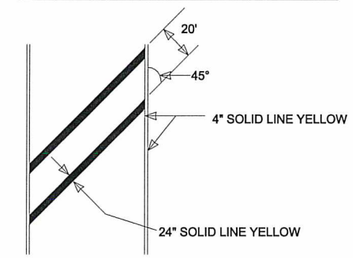
TYPICAL MESSAGE PLACEMENT FOR TURN LANES



DUAL LEFT TURN LANES



TYPICAL MARKINGS FOR LEFT TURN ISLANDS



NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\SAP 002-622-035\Base\Traffic\Signing & Striping Details.dwg

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PRINT NAME: DOUGLAS W. FISCHER, P.E.

SIGNATURE: [signature]

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ANOKA COUNTY

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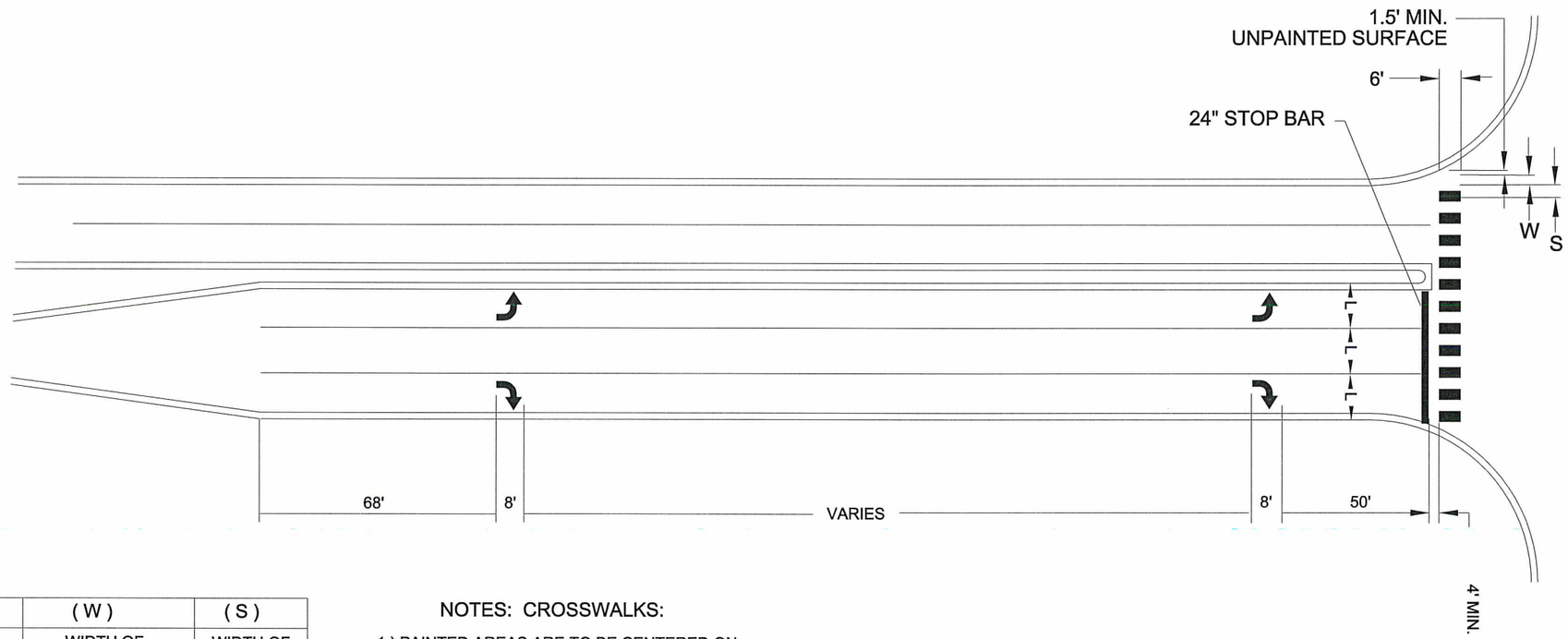
SAP 002-609-016
SAP 002-622-035

SIGNING & STRIPING DETAILS

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:\SAP 002-622-035\Base\Traffic\Signing & Striping Details.dwg

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PRINT NAME: DOUGLAS W. FISCHER, P.E.

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ANOKA COUNTY

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SAP 002-609-016
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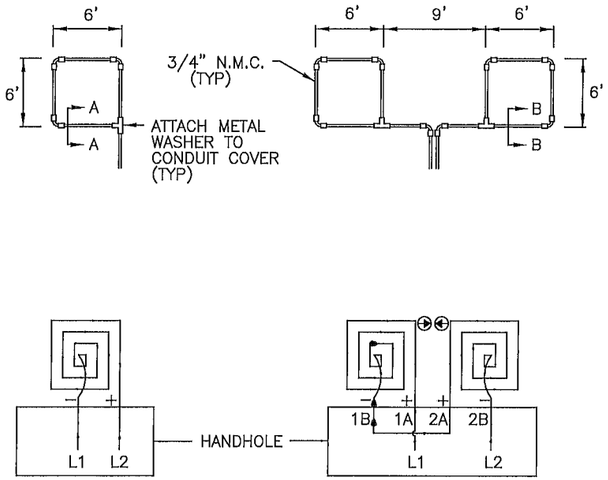
SIGNING & STRIPING DETAILS

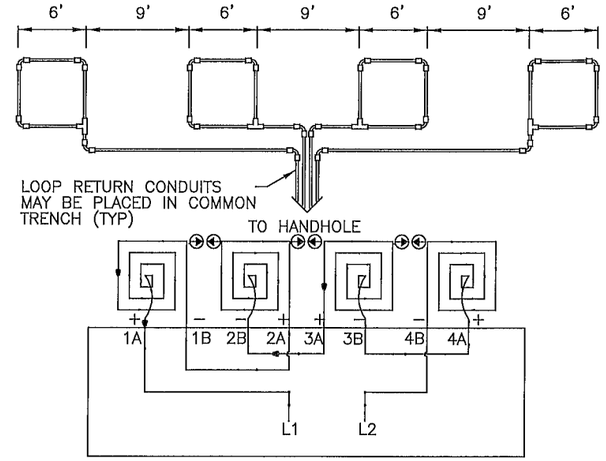


LOOP DETECTOR DETAIL 'A'
(LOOP PHASING FOR SINGLE CONNECTION)

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)

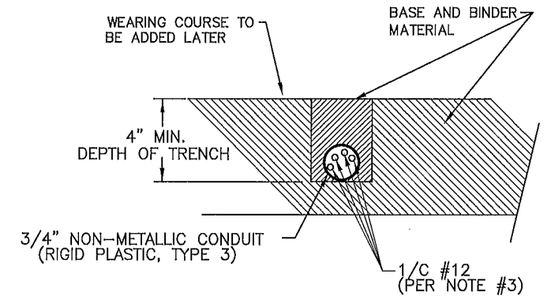


LOOP CONNECTIONS SHALL BE LABELED AND SPLICED IN THE HANDHOLE AS FOLLOWS:

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

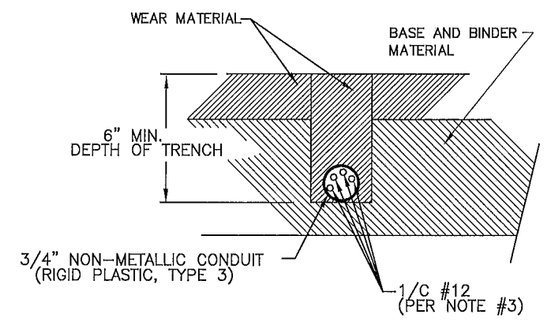
SPLICE CONTROL CABLE TO L1 & L2 IN HANDHOLE. ALL CONDUCTORS SHALL BE TAGGED IN HANDHOLE (1A, 1B, ECT)

LOOP DETECTOR DETAIL 'C'
(LOOP PHASING FOR SERIES CONNECTION)



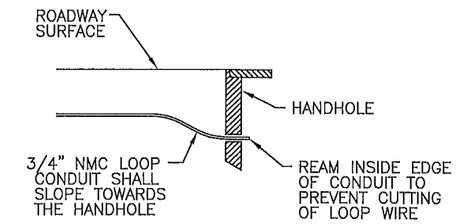
SECTION A–A

DETAIL FOR LOOP INSTALLATION IN NEW ROADWAY



SECTION B–B

DETAIL FOR LOOP INSTALLATION IN EXISTING ROADWAY



DRAINAGE DETAIL

LOOP DETECTOR WIRING

1) ALL CORNERS SHALL BE 90° CONDUIT 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	X TOTAL ESTIMATED QUANTITY
2545	SERVICE CABINET	EACH	1
2565	TRAFFIC CONTROL SIGNAL SYSTEM	SIG. SYS.	1
2565	EMERGENCY VEHICLE PREEMPTION SYSTEM	LUMP SUM	1

TRAFFIC SIGNAL STANDARD PLATES

THE FOLLOWING STANDARD PLATES, APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION, SHALL APPLY ON THIS PROJECT

PLATE NO.	DESCRIPTION
* 8000 J	CHANNELIZERS – TYPE A, B, C (3 SHEETS)
* 8111 E	TRAFFIC SIGNAL BRACKETING (PEDESTAL MOUNTED) (3 SHEETS)
* 8112 I	PEDESTAL FOUNDATION (TRAFFIC CONTROL SIGNALS)
* 8118 D	SERVICE EQUIPMENT & POLE–TRAFFIC CONTROL SIGNALS
* 8119 C	GROUND MOUNTED CABINET FOUNDATION
* 8121 H	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 L	POLE FOUNDATION (PA90 & PA100)
* 8129 A	SHIM AND WASHER (TRAFFIC CONTROL SIGNALS AND ROADWAY LIGHTING)

* – STANDARD PLATES APPLICABLE TO THIS PROJECT

S.A.P. 002–609–016
S.A.P. 002–622–035

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: July 14, 2016 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 OAK GROVE

TRAFFIC CONTROL SIGNAL SYSTEM DETAILS AND STANDARD PLATES
CSAH 22 (VIKING BLVD NW)
AT CSAH 9 (LAKE GEORGE BLVD NW)

FILE NO. ANOKC 136736
SIGNAL SHEET 1 OF 9

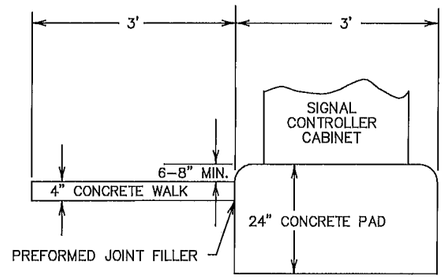
TYPICAL PAD WITH CONTROLLER CABINET AND SERVICE CABINET

SEE INTERSECTION LAYOUT FOR CABLE INFORMATION (NOT TO SCALE)

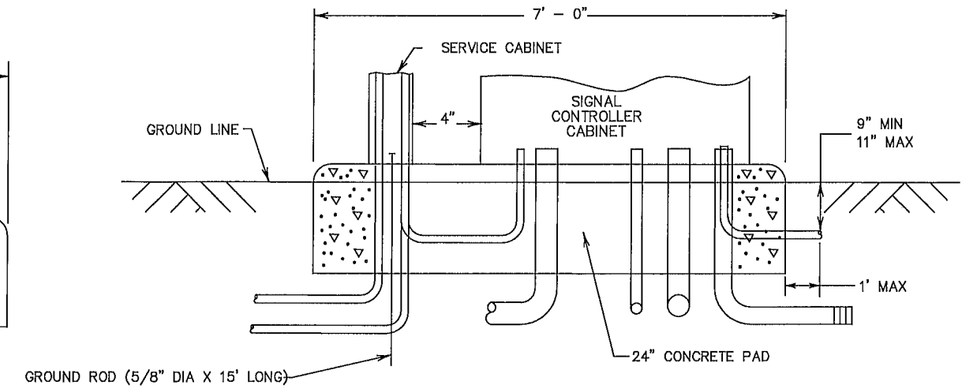
NOTES:

1. THE ANCHOR RODS, NUTS AND WASHERS FOR THE COUNTY FURNISHED CONTROLLERS AND CABINETS SHALL BE FURNISHED BY THE COUNTY AND INSTALLED BY THE CONTRACTOR.
2. THE UPPER PART OF EACH 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 CONCRETE AND SHALL BE LOCATED INSIDE OF THE CABINET WHERE DIRECTED BY THE ENGINEER, BUT SHALL NOT INTERFERE WITH THE CABINET FUNCTIONS (SUPPORTING MEMBERS, ETC.).
5. CONCRETE MIX 3F52 OR EQUAL SHALL BE USED FOR THE EQUIPMENT PADS AND SIDEWALKS.
6. CONDUITS WITH BOTH ENDS TERMINATING WITHIN THE PADS SHALL NOT BE INSTALLED BELOW THE CONCRETE.
7. THE EXACT LOCATION OF CONDUITS WITHIN EACH 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 EACH EQUIPMENT PAD FOUNDATION AS SHOWN.

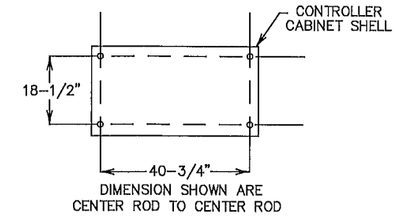
SIDE VIEW



FRONT VIEW

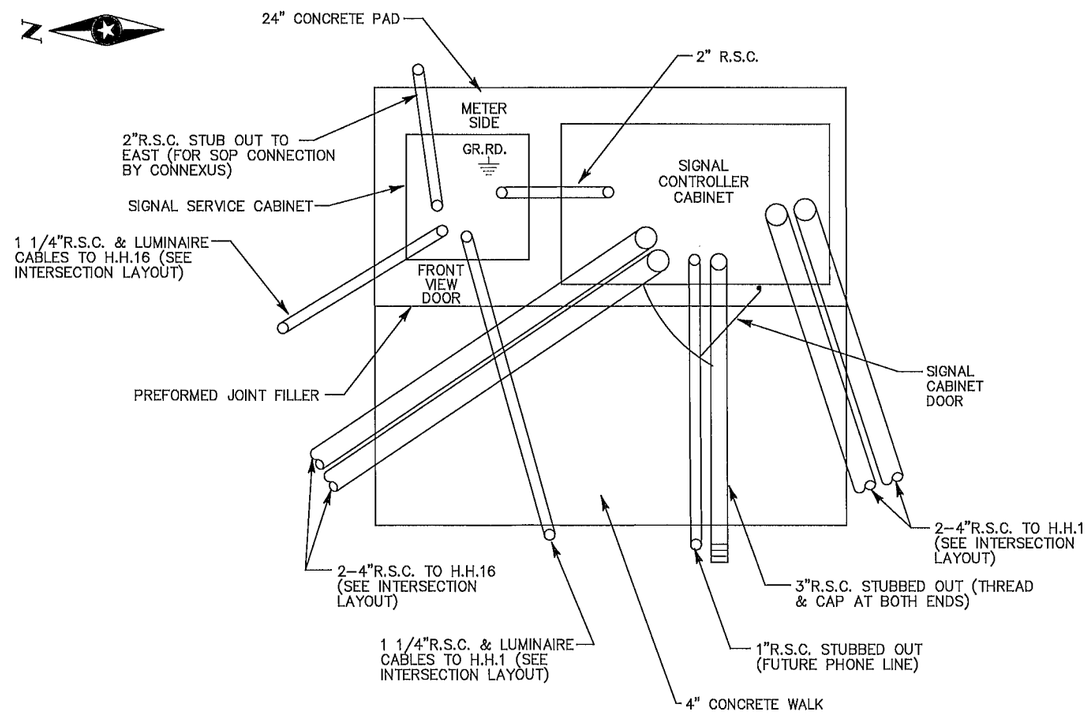


CONTROLLER CABINET TYPE "P" & "R" BOLT PATTERN



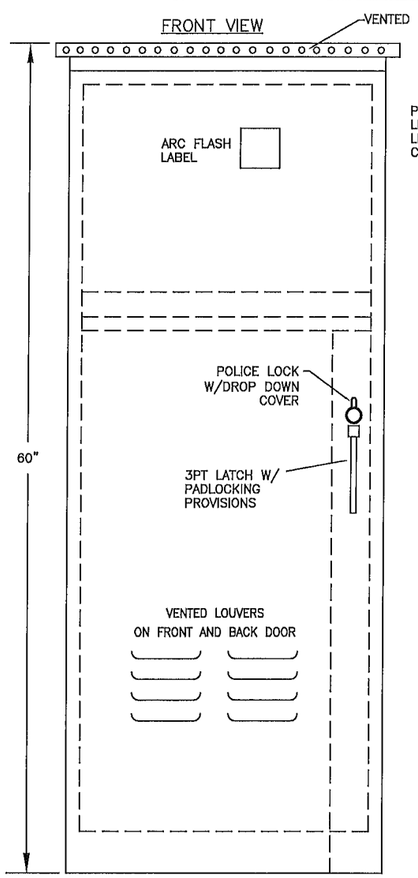
PLAN VIEW - SIGNAL SYSTEM

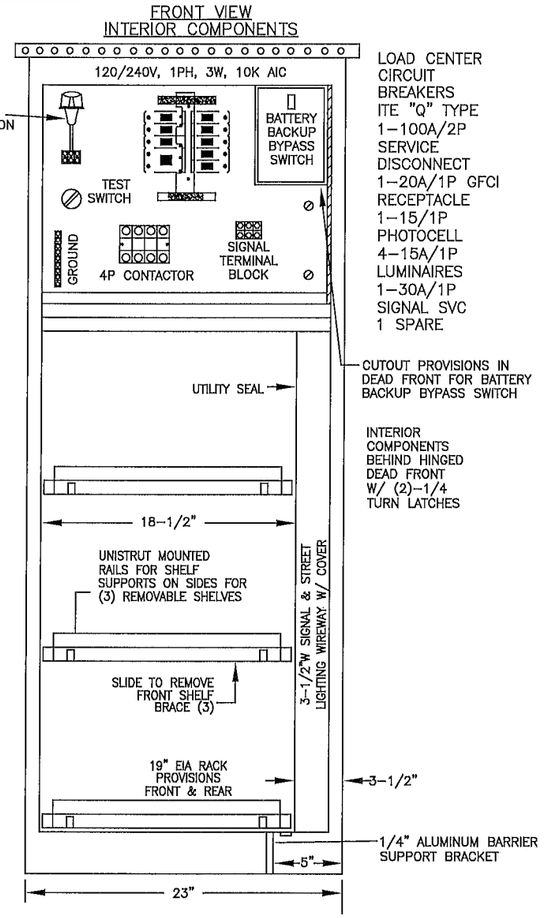
CSAH 9 AT CSAH 22

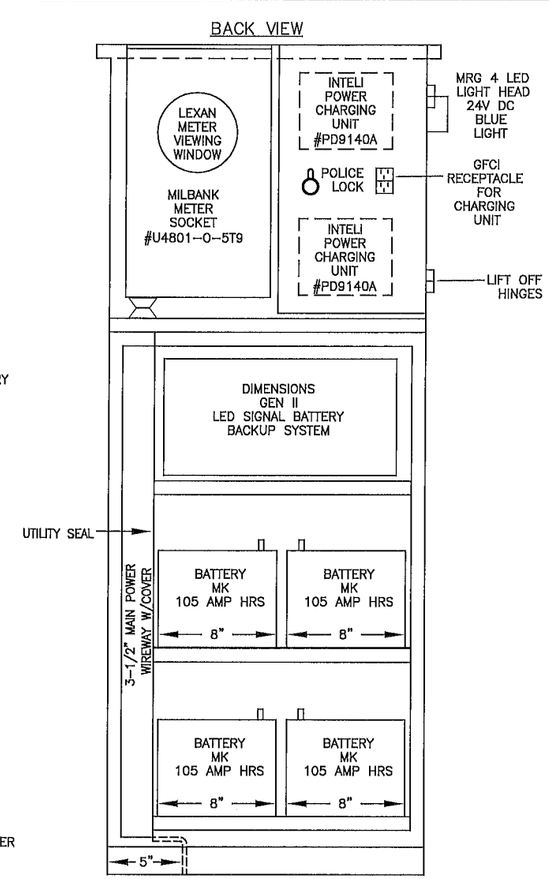


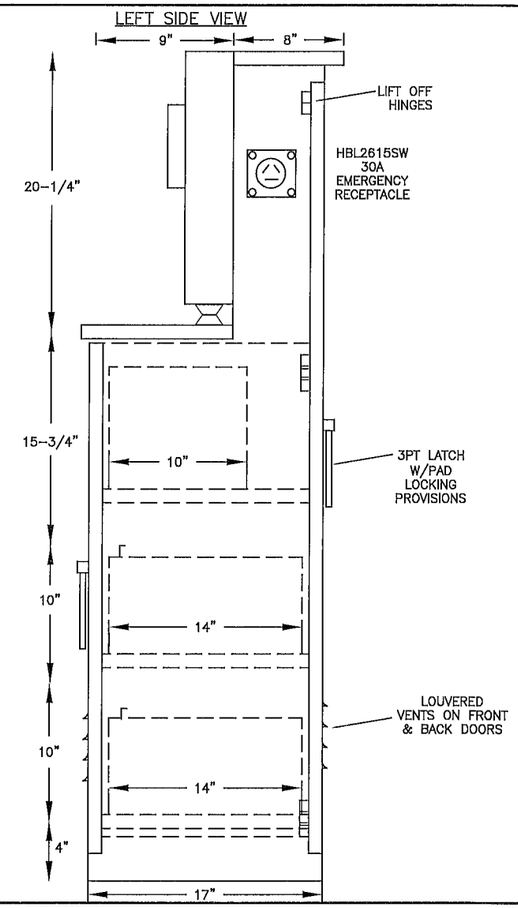
S.A.P. 002-609-016
S.A.P. 002-622-035

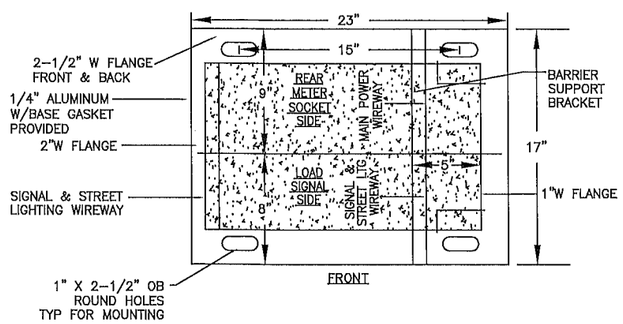
DRAWN BY: JMG DESIGNER: JMG CHECKED BY: JMG DESIGN TEAM	NO.	BY	DATE	REVISIONS	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA. Date: July 14, 2016 Name: John M. Gray, PE Lic. No. 22457	SEH PHONE: (651) 490-2000 3535 VADNAIS CENTER DR. ST. PAUL, MN 55110	ANOKA COUNTY, MINNESOTA CITY OF OAK GROVE	TRAFFIC CONTROL SIGNAL SYSTEM EQUIPMENT PAD DETAILS CSAH 22 (VIKING BLVD NW) AT CSAH 9 (LAKE GEORGE BLVD NW)	FILE NO. ANOKC 136736 SIGNAL SHEET 2 OF 9	81 / 119







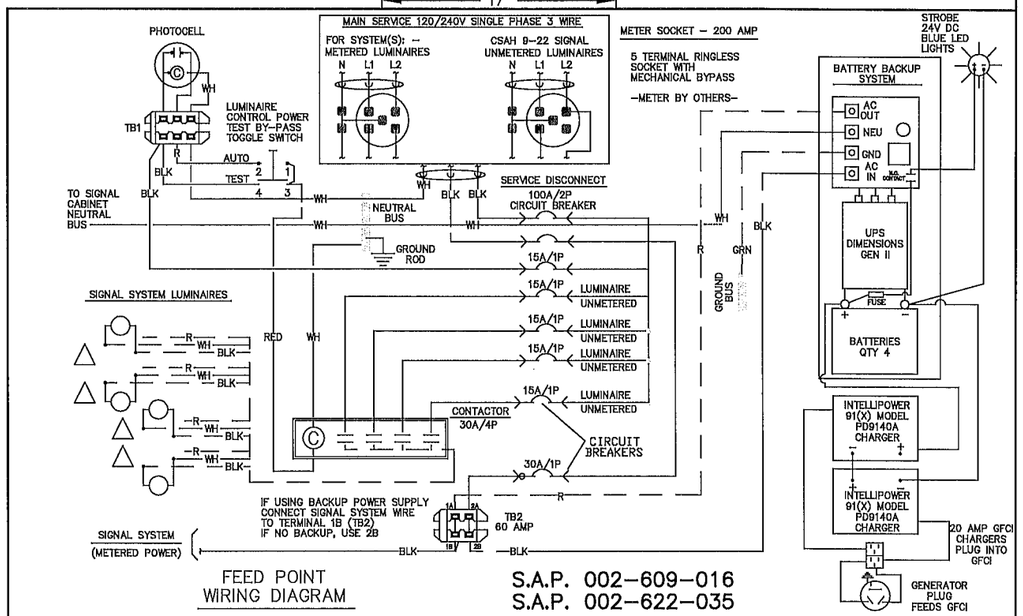




CABINET CONSTRUCTION

- 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 STATEMENT OF ESTIMATED QUANTITIES REGARDING SEPARATE PAY ITEM FOR FURNISHING & INSTALLING NEW BATTERY BACK-UP SIGNAL SERVICE CABINETS.



FEED POINT WIRING DIAGRAM

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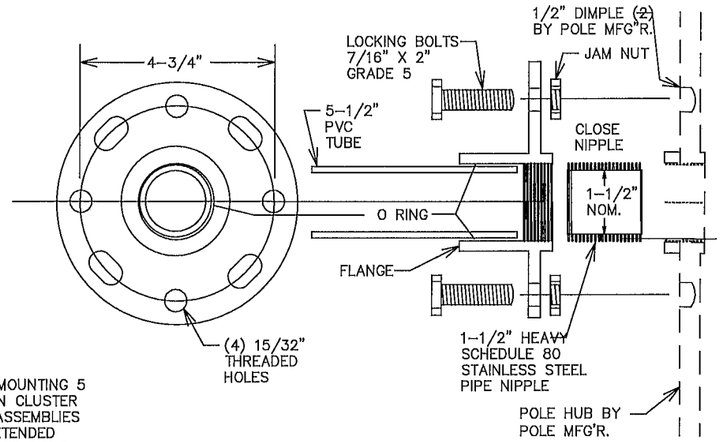
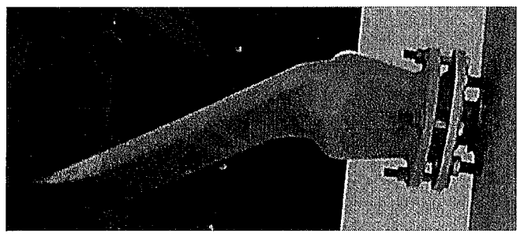
ANOKA COUNTY, MINNESOTA
CITY OF OAK GROVE

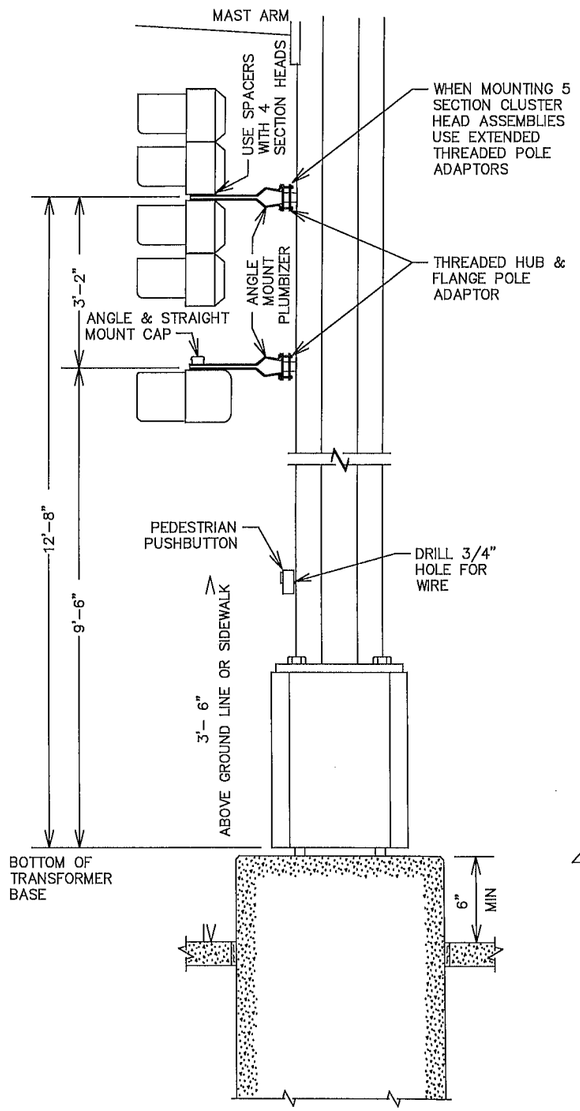
TRAFFIC CONTROL SIGNAL SYSTEM
SIGNAL SERVICE CABINET DETAILS
CSAH 22 (VIKING BLVD NW)
AT CSAH 9 (LAKE GEORGE BLVD NW)

FILE NO. ANOKC 136736
SIGNAL SHEET 3 OF 9



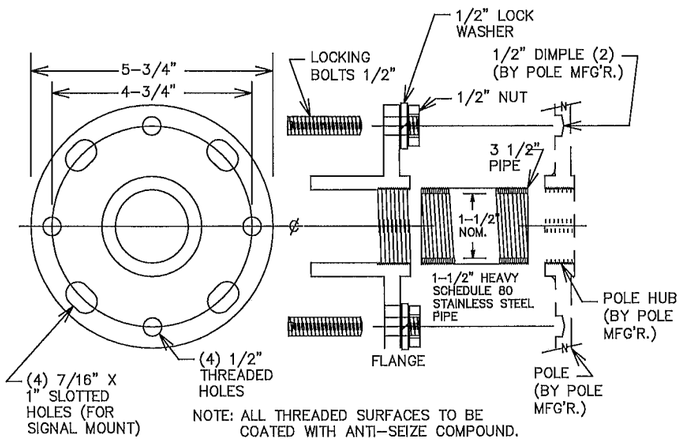
THREADED HUB AND FLANGE POLE ADAPTOR





TYPICAL SIGNAL POLE MOUNTING

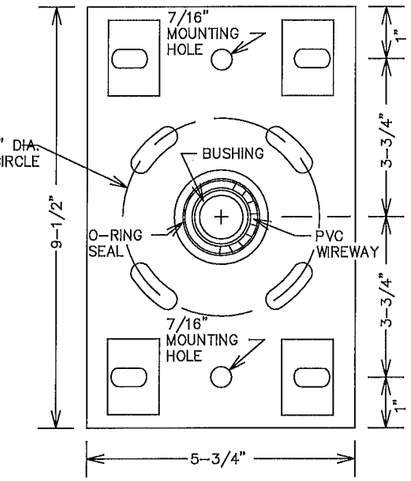
NOT TO SCALE



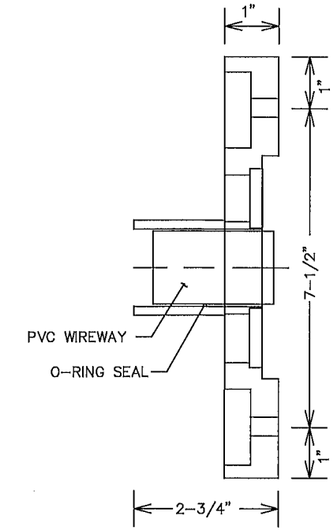
NOTE: ALL THREADED SURFACES TO BE COATED WITH ANTI–SEIZE COMPOUND.

EXTENDED THREADED POLE ADAPTER

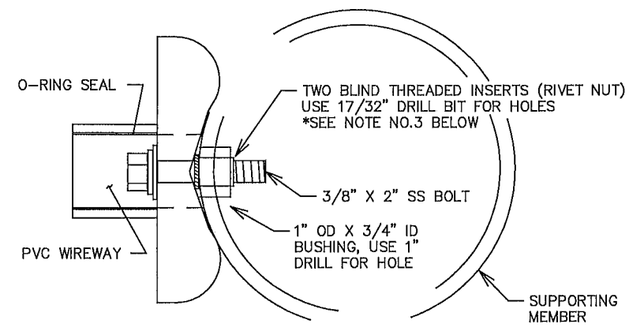
NOTES:
1. ALL THREADED SURFACES TO BE COATED WITH ANTI–SEIZE COMPOUND.
2. USE SIGNAL HEAD MOUNTED SPACERS FOR 4 SECTION POLY HEADS.
3. SEE STANDARD PLATE NUMBER 8123 FOR ADDITIONAL SIGNAL POLE DETAILS.
4. EXTENDED THREADED POLE ADAPTOR ONLY USED WITH 5 SECTION CLUSTER HEADS.



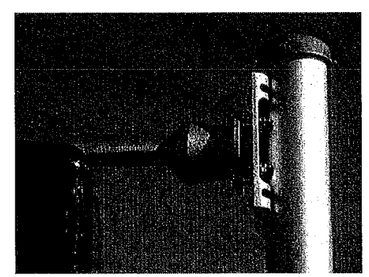
BOLT ON HUB & FLANGE



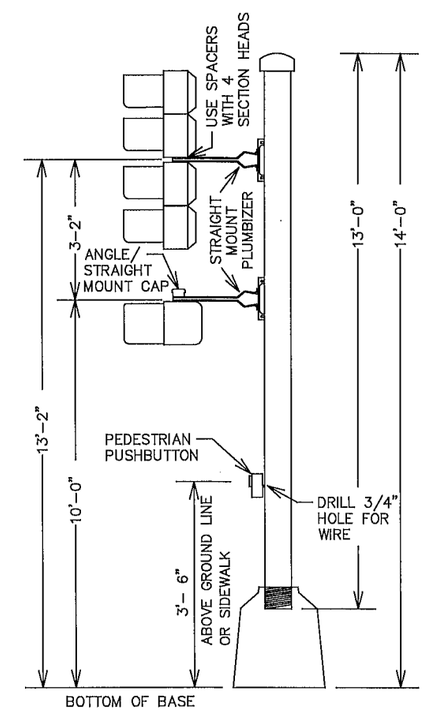
SIDE VIEW



TOP VIEW



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



TYPICAL PEDESTAL MOUNTING

NOT TO SCALE

S.A.P. 002–609–016
S.A.P. 002–622–035

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

ANOKA COUNTY, MINNESOTA
CITY OF OAK GROVE

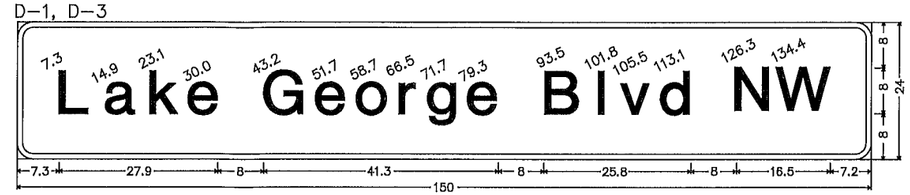
TRAFFIC CONTROL SIGNAL SYSTEM
POLE MOUNT DETAILS
CSAH 22 (VIKING BLVD NW)
AT CSAH 9 (LAKE GEORGE BLVD NW)

FILE NO. ANOKC 136736
SIGNAL SHEET 4 OF 9

SIGNS FOR TRAFFIC SIGNAL SYSTEM									
SIGN PANELS – TYPE D (FURNISH AND INSTALL)									
SIGN PANEL	POLE NO.	a (FT)	b (FT)	SIZE (IN)	MOUNTING BRACKET QUANTITY	MOUNTING BRACKET SPACING (1)	AREA/SIGN (SQ. FT.)	NO. REQ.	PANEL LEGEND
D–1	1	–	30'	150 x 24	5	----	25.00	1	Lake George Blvd NW
D–2	2	–	30'	114 x 24	4	----	19.00	1	Viking Blvd NW
D–3	3	–	30'	150 x 24	5	----	25.00	1	Lake George Blvd NW
D–4	4	–	30'	114 x 24	4	----	19.00	1	Viking Blvd NW
TOTAL QUANTITIES							88.00	4	

(1) = SPACING BETWEEN STIFFENERS SHALL NOT EXCEED 36 INCHES AND SHALL BE UNIFORMLY SPACED. SEE STANDARD SIGNS MANUAL, PAGE 105A (REVISION DATE 7/06/2007) FOR BRACKET SPACING REQUIREMENTS.

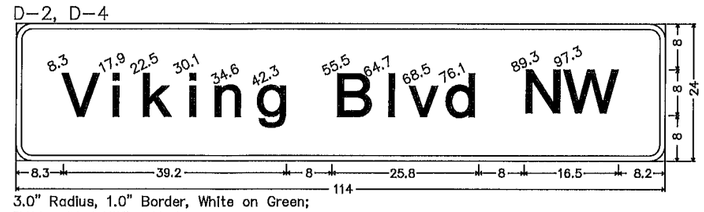
D–1, D–3



3.0" Radius, 1.0" Border, White on Green;
[Lake George Blvd NW] E Mod;

SIGNS FOR TRAFFIC SIGNAL SYSTEM									
SIGN PANELS – TYPE C (FURNISH AND INSTALL)									
SIGN PANEL	POLE NO.	a (FT)	b (FT)	SIZE (IN)	MOUNTING BRACKET QUANTITY	MOUNTING BRACKET SPACING (1)	AREA/SIGN (SQ. FT.)	NO. REQ.	PANEL LEGEND
R10–X12	1,2,3,4	1'	–	42 x 48	2	----	14.00	4	LEFT TURN YIELD ON FLASHING YELLOW ARROW
W3–3	5	–	–	36 x 36	①	----	9.00	1	SIGNAL AHEAD
TOTAL QUANTITIES							65.00	5	

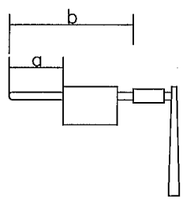
D–2, D–4

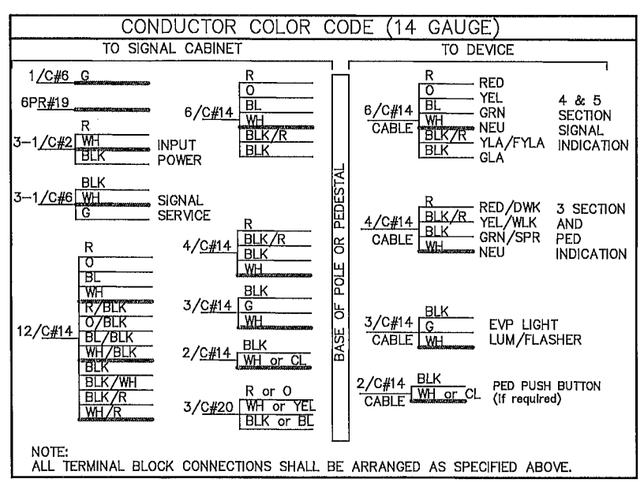


3.0" Radius, 1.0" Border, White on Green;
[Viking Blvd NW] E Mod;

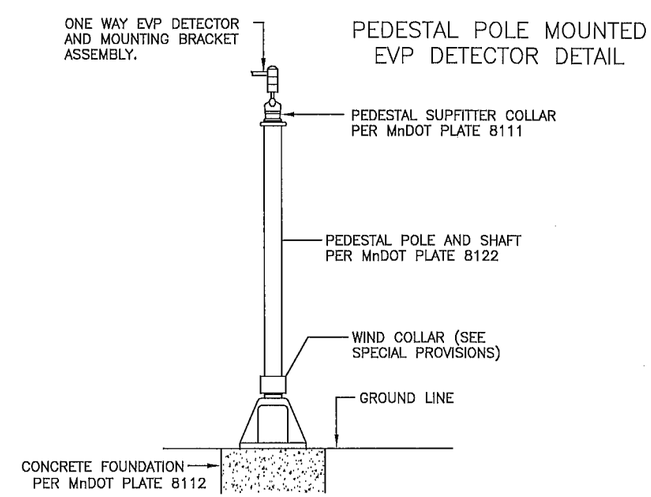
GENERAL SIGNING NOTES:

1) COLOR FOR ALL TYPE D SIGNS 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 105A (REVISION DATE: 7/06/07), AND SPECIAL PROVISIONS.
4) SEE STANDARD SIGNS MANUAL FOR DETAILED DRAWINGS OF TYPE C SIGN PANELS.
5) FURNISHING AND INSTALLING TYPE C & D SIGNS SHALL BE INCLUDED UNDER THE PAY ITEM FOR ITEM NO. 2565 (TRAFFIC SIGNAL SYSTEM). SEE SPECIAL PROVISIONS.
6) ALL NEW TYPE C AND D SIGN PANELS SHALL BE FABRICATED USING DG3 SHEETING. SEE SPECIAL PROVISIONS.
7) ① = INSTALL SIGN PANEL ON TRAFFIC SIGNAL PEDESTAL POLE.





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



S.A.P. 002–609–016
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ANOKA COUNTY, MINNESOTA
CITY OF OAK GROVE

TRAFFIC CONTROL SIGNAL SYSTEM
SIGNING AND MISCELLANEOUS DETAILS
CSAH 22 (VIKING BLVD NW)
AT CSAH 9 (LAKE GEORGE BLVD NW)

FILE NO. ANOKC 136736
SIGNAL SHEET 5 OF 9

NOTES:

1) LOCATION OF FOUNDATIONS, LOOP DETECTORS, AND HANDHOLES SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER.
2) SEE SPECIAL PROVISIONS FOR COUNTY FURNISHED MATERIALS.
3) NEW HANDHOLES SHALL BE PVC HANDHOLES WITH METAL FRAMES AND COVERS. SEE SPECIAL PROVISIONS.
4) A 3/4" HALF COUPLING, 3/4" PIPE NIPPLE & CONDUIT OUTLET BODY SHALL BE FURNISHED AND INSTALLED 6 FEET FROM END OF EACH MAST ARM (FOR EVP).
5) THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING THE POWER COMPANY TO ARRANGE FOR THE POWER CONNECTION (CONNEXUS). SEE SPECIAL PROVISIONS.
6) SEE SPECIAL PROVISIONS AND DETAILS REGARDING SIGNS TO BE FURNISHED AND INSTALLED BY CONTRACTOR (INCLUDED AS PART OF PAY ITEM FOR "TRAFFIC CONTROL SIGNAL SYSTEM").
7) EACH PEDESTRIAN INDICATION SHALL BE ONE SECTION LED FILLED COUNTDOWN TIMER "HAND/WALKING PERSON" INDICATION.
8) EACH SIGNAL FACE SHALL HAVE A BACKGROUND SHIELD.
9) SEE DETAILS, SPECIAL PROVISIONS & 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).
10) LOOP DETECTOR WIRES SHALL BE CROSS-LINKED POLYETHYLENE (XLP) IN 3/4" N.M.C. SEE SPECIAL PROVISIONS.
11) (*) DENOTES ITEMS TO BE INCLUDED AS PART OF THE PAY ITEM FOR ITEM NO. 2565 (EMERGENCY VEHICLE PREEMPTION SYSTEM). SEE STATEMENT OF ESTIMATED AND SPECIAL PROVISIONS.
12) ALL ITEMS OF THE COMPLETE SIGNAL AND EVP SYSTEM SHALL BE CONTRACTOR FURNISHED AND INSTALLED UNLESS SPECIFICALLY DENOTED OTHERWISE.

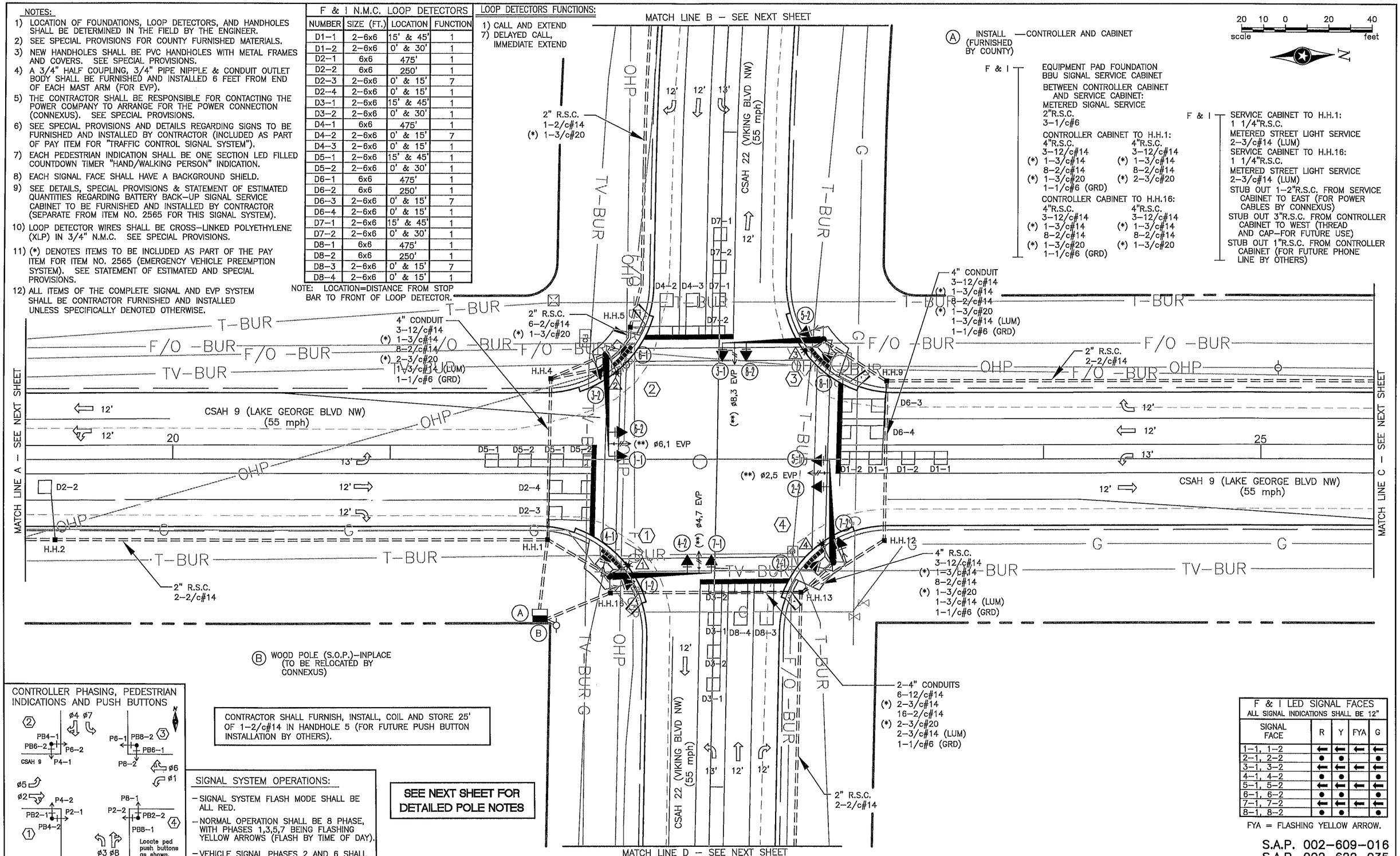
F & I N.M.C. LOOP DETECTORS

NUMBER	SIZE (FT.)	LOCATION	FUNCTION
D1-1	2-6x6	15' & 45'	1
D1-2	2-6x6	0' & 30'	1
D2-1	6x6	475'	1
D2-2	6x6	250'	1
D2-3	2-6x6	0' & 15'	7
D2-4	2-6x6	0' & 15'	1
D3-1	2-6x6	15' & 45'	1
D3-2	2-6x6	0' & 30'	1
D4-1	6x6	475'	1
D4-2	2-6x6	0' & 15'	7
D4-3	2-6x6	0' & 15'	1
D5-1	2-6x6	15' & 45'	1
D5-2	2-6x6	0' & 30'	1
D6-1	6x6	475'	1
D6-2	6x6	250'	1
D6-3	2-6x6	0' & 15'	7
D6-4	2-6x6	0' & 15'	1
D7-1	2-6x6	15' & 45'	1
D7-2	2-6x6	0' & 30'	1
D8-1	6x6	475'	1
D8-2	6x6	250'	1
D8-3	2-6x6	0' & 15'	7
D8-4	2-6x6	0' & 15'	1

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

LOOP DETECTORS FUNCTIONS:

1) CALL AND EXTEND
7) DELAYED CALL, IMMEDIATE EXTEND



F & I LED SIGNAL FACES
ALL SIGNAL INDICATIONS SHALL BE 12"

SIGNAL FACE	R	Y	FYA	G
1-1, 1-2	←	←	←	←
2-1, 2-2	●	●		●
3-1, 3-2	←	←	←	←
4-1, 4-2	●	●		●
5-1, 5-2	←	←	←	←
6-1, 6-2	●	●		●
7-1, 7-2	←	←	←	←
8-1, 8-2	●	●		●

FYA = FLASHING YELLOW ARROW.

S.A.P. 002-609-016
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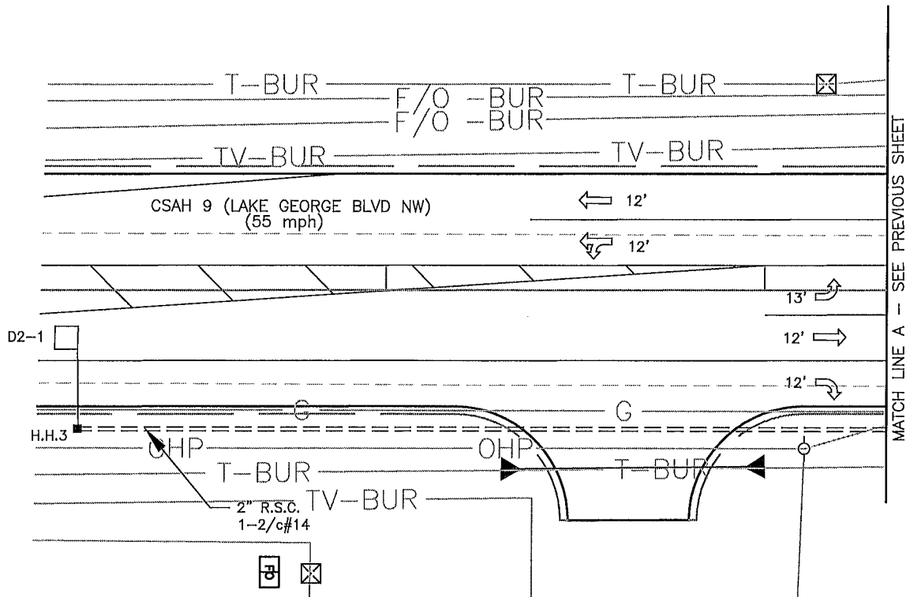
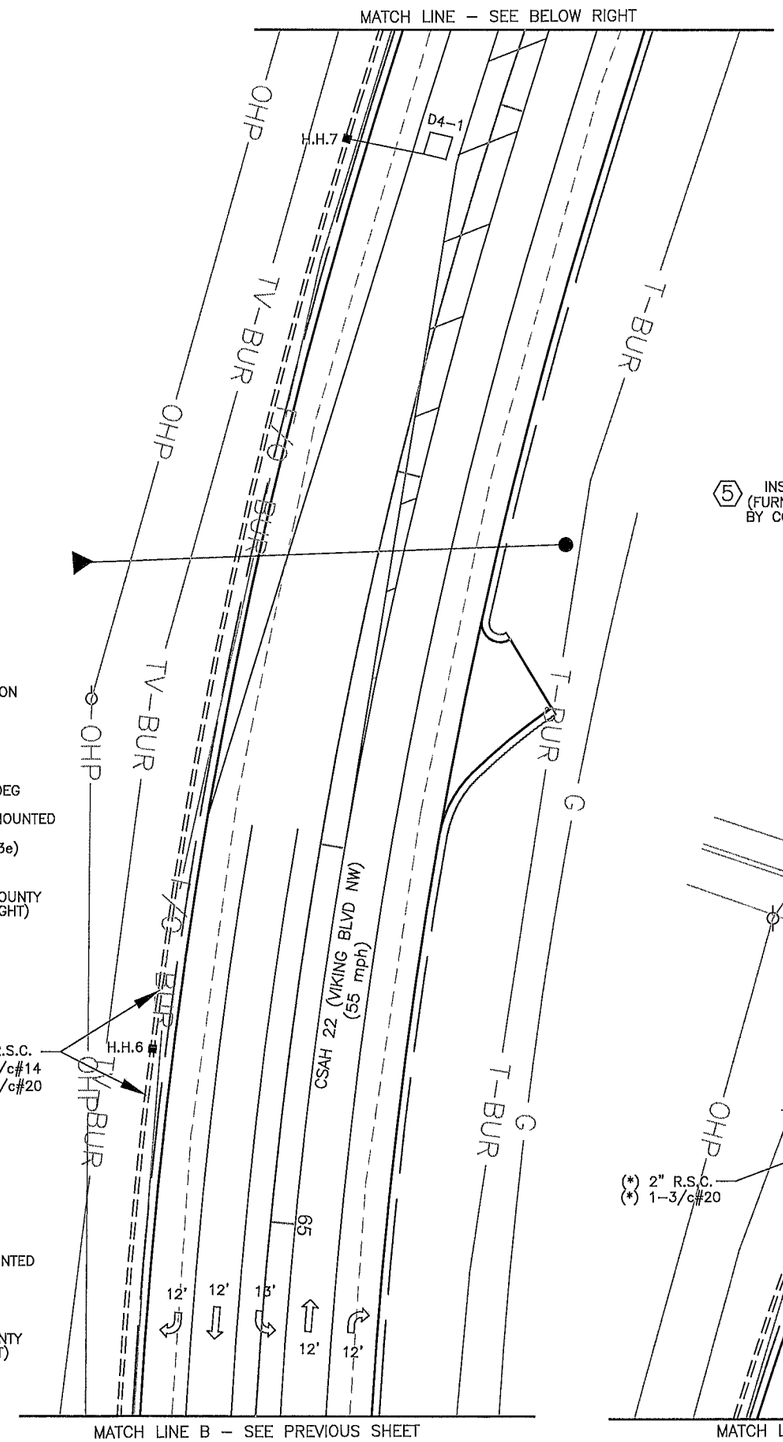
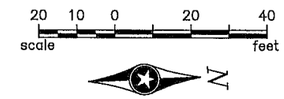
ANOKA COUNTY, MINNESOTA
CITY OF OAK GROVE

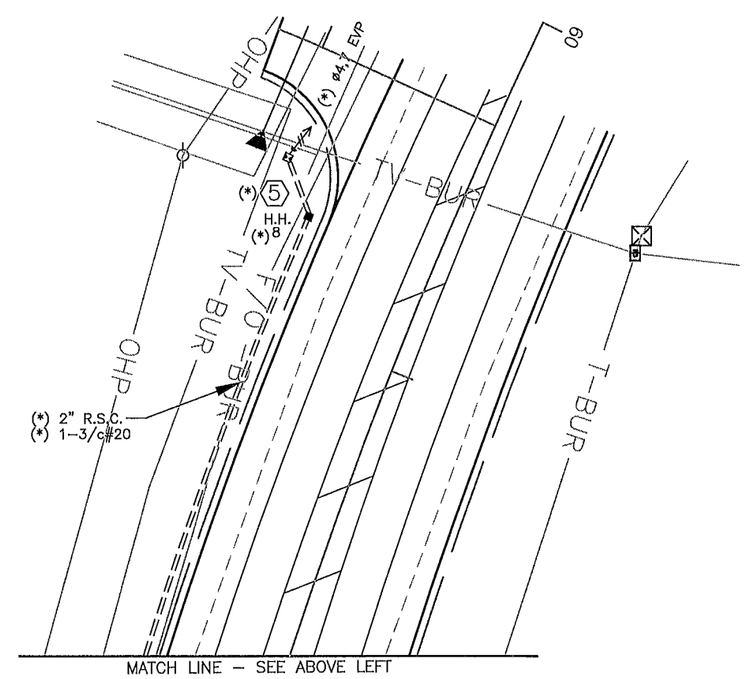
TRAFFIC CONTROL SIGNAL SYSTEM INTERSECTION LAYOUT
CSAH 22 (VIKING BLVD NW) AT CSAH 9 (LAKE GEORGE BLVD NW)

FILE NO. ANOKC 136736
SIGNAL SHEET 6 OF 9









(1) INSTALL (FURNISHED BY COUNTY)
- TYPE PA100-A-45-D30-9 (DAVIT AT 350 DEG)
- (*) ONE WAY EVP DETECTOR & LED CONFIRMATION LIGHT (ø4,7)

F & I
- PA100 POLE FOUNDATION
- LUMINAIRE-LED SHOEBOX
- 1-ANGLE MOUNT SIGNAL-OVERHEAD AT 0'
- 1-STRAIGHT MOUNT SIGNAL-OVERHEAD AT 11'
- 2-ANGLE MOUNT SIGNALS-POLE MOUNTED 90 DEG AND 180 DEG
- 2-ANGLE MOUNT C.D. PED INDICATIONS-POLE MOUNTED 90 DEG AND 180 DEG
- 2-PEDESTRIAN PUSH BUTTONS & SIGNS (R10-3e)
- R10-X12 SIGN PANEL-ADJACENT TO 7-1
- TYPE D SIGN PANEL-OVERHEAD (D-1)
- (*) ONE WAY EVP MOUNTING HARDWARE (FOR COUNTY FURNISHED DETECTOR AND CONFIRMATION LIGHT)
- EXTEND INTO H.H.1:
- 3"R.S.C.
  - 3-12/c#14
  - (*) 1-3/c#14
  - 2-2/c#14
  - (*) 1-3/c#20
  - 1-3/c#14 (LUM)
  - 1-1/c#6 (GRD)

(2) INSTALL (FURNISHED BY COUNTY)
- TYPE PA100-A-45-D30-9 (DAVIT AT 350 DEG)
- (*) ONE WAY EVP DETECTOR & LED CONFIRMATION LIGHT (ø6,1)

F & I
- PA100 POLE FOUNDATION
- LUMINAIRE-LED SHOEBOX
- 1-ANGLE MOUNT SIGNAL-OVERHEAD AT 0'
- 1-STRAIGHT MOUNT SIGNAL-OVERHEAD AT 11'
- 2-ANGLE MOUNT SIGNALS-POLE MOUNTED 90 DEG AND 180 DEG
- 2-ANGLE MOUNT C.D. PED INDICATIONS-POLE MOUNTED 90 DEG AND 180 DEG
- 2-PEDESTRIAN PUSH BUTTONS & SIGNS (R10-3e)
- R10-X12 SIGN PANEL-ADJACENT TO 1-1
- TYPE D SIGN PANEL-OVERHEAD (D-2)
- (*) ONE WAY EVP MOUNTING HARDWARE (FOR COUNTY FURNISHED DETECTOR AND CONFIRMATION LIGHT)
- EXTEND INTO H.H.4:
- 3"R.S.C.
  - 3-12/c#14
  - (*) 1-3/c#14
  - 2-2/c#14
  - (*) 1-3/c#20
  - 1-3/c#14 (LUM)
  - 1-1/c#6 (GRD)

(3) INSTALL (FURNISHED BY COUNTY)
- TYPE PA100-A-45-D30-9 (DAVIT AT 350 DEG)
- (*) ONE WAY EVP DETECTOR & LED CONFIRMATION LIGHT (ø8,3)

F & I
- PA100 POLE FOUNDATION
- LUMINAIRE-LED SHOEBOX
- 1-ANGLE MOUNT SIGNAL-OVERHEAD AT 0'
- 1-STRAIGHT MOUNT SIGNAL-OVERHEAD AT 11'
- 2-ANGLE MOUNT SIGNALS-POLE MOUNTED 90 DEG AND 180 DEG
- 2-ANGLE MOUNT C.D. PED INDICATIONS-POLE MOUNTED 90 DEG AND 180 DEG
- 2-PEDESTRIAN PUSH BUTTONS & SIGNS (R10-3e)
- R10-X12 SIGN PANEL-ADJACENT TO 3-1
- TYPE D SIGN PANEL-OVERHEAD (D-3)
- (*) ONE WAY EVP MOUNTING HARDWARE (FOR COUNTY FURNISHED DETECTOR AND CONFIRMATION LIGHT)
- EXTEND INTO H.H.9:
- 3"R.S.C.
  - 3-12/c#14
  - (*) 1-3/c#14
  - 2-2/c#14
  - (*) 1-3/c#20
  - 1-3/c#14 (LUM)
  - 1-1/c#6 (GRD)

(4) INSTALL (FURNISHED BY COUNTY)
- TYPE PA100-A-45-D30-9 (DAVIT AT 350 DEG)
- (*) ONE WAY EVP DETECTOR & LED CONFIRMATION LIGHT (ø2,5)

F & I
- PA100 POLE FOUNDATION
- LUMINAIRE-LED SHOEBOX
- 1-ANGLE MOUNT SIGNAL-OVERHEAD AT 0'
- 1-STRAIGHT MOUNT SIGNAL-OVERHEAD AT 11'
- 2-ANGLE MOUNT SIGNALS-POLE MOUNTED 90 DEG AND 180 DEG
- 2-ANGLE MOUNT C.D. PED INDICATIONS-POLE MOUNTED 90 DEG AND 180 DEG
- 2-PEDESTRIAN PUSH BUTTONS & SIGNS (R10-3e)
- R10-X12 SIGN PANEL-ADJACENT TO 5-1
- TYPE D SIGN PANEL-OVERHEAD (D-4)
- (*) ONE WAY EVP MOUNTING HARDWARE (FOR COUNTY FURNISHED DETECTOR AND CONFIRMATION LIGHT)
- EXTEND INTO H.H.13:
- 3"R.S.C.
  - 3-12/c#14
  - (*) 1-3/c#14
  - 2-2/c#14
  - (*) 1-3/c#20
  - 1-3/c#14 (LUM)
  - 1-1/c#6 (GRD)

(5) INSTALL (FURNISHED BY COUNTY)
- (*) ONE WAY EVP DETECTOR (ø4,7)

F & I
- (*) PEDESTAL FOUNDATION
- (*) 10' PEDESTAL POLE (INCLUDES BASE, WIND COLLAR)
- (*) 1-SLIPFITTER COLLAR AND EVP MOUNTING HARDWARE
- (*) INSTALL COUNTY FURNISHED EVP DETECTOR ATOP PEDESTAL POLE SLIPFITTER COLLAR (ø4,7)
- 1-W3-3 SIGN PANEL-FACING SOUTHBOUND TRAFFIC
- EXTEND INTO H.H.8:
- (*) 2" R.S.C.
- (*) 1-3/c#20

S.A.P. 002-609-016
S.A.P. 002-622-035

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.

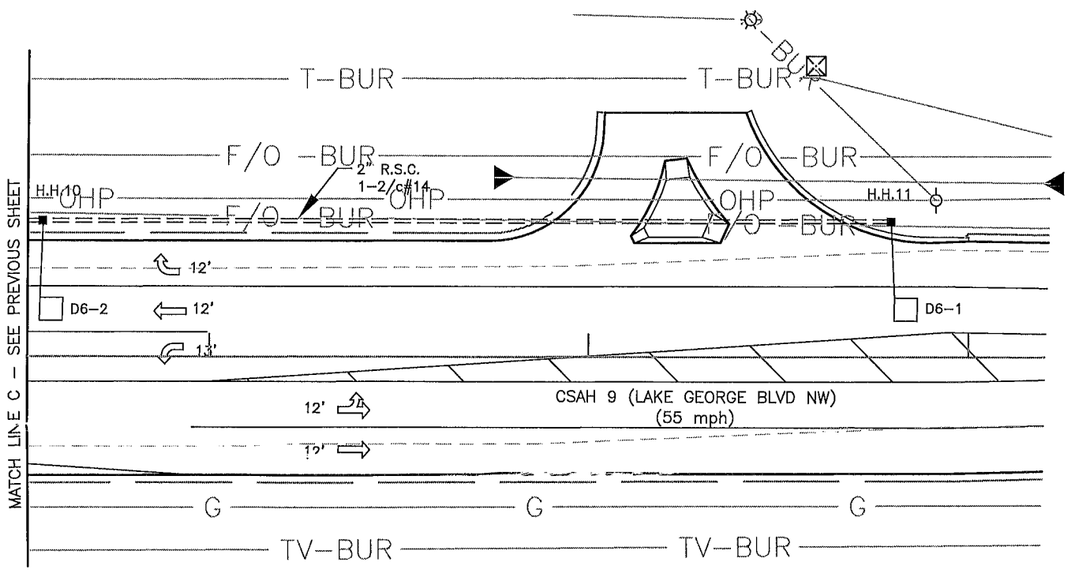
Date: July 14, 2016 Name: John M. Gray, PE Lic. No. 22457

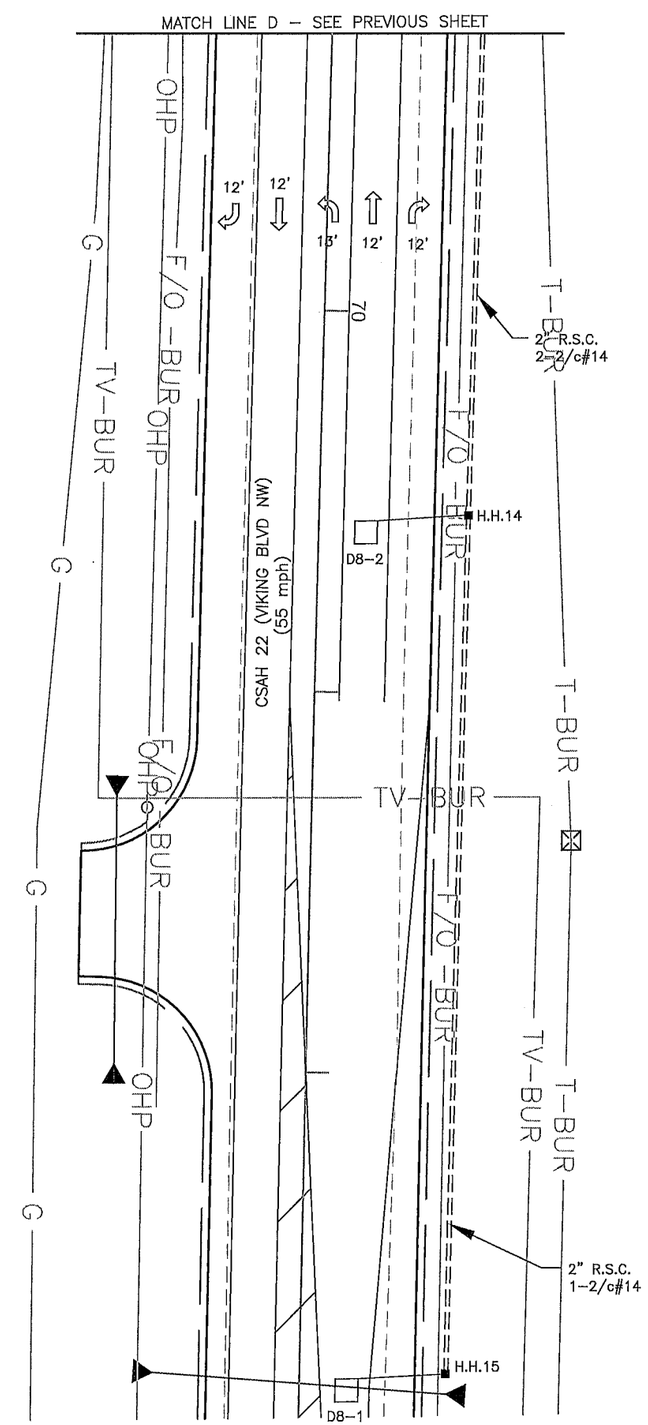
SEH — PHONE: (651) 490-2000, 3535 VADNAIS CENTER DR., ST. PAUL, MN 55110

ANOKA COUNTY, MINNESOTA
CITY OF OAK GROVE

TRAFFIC CONTROL SIGNAL SYSTEM
MATCH LINES AND NOTES
CSAH 22 (VIKING BLVD NW)
AT CSAH 9 (LAKE GEORGE BLVD NW)

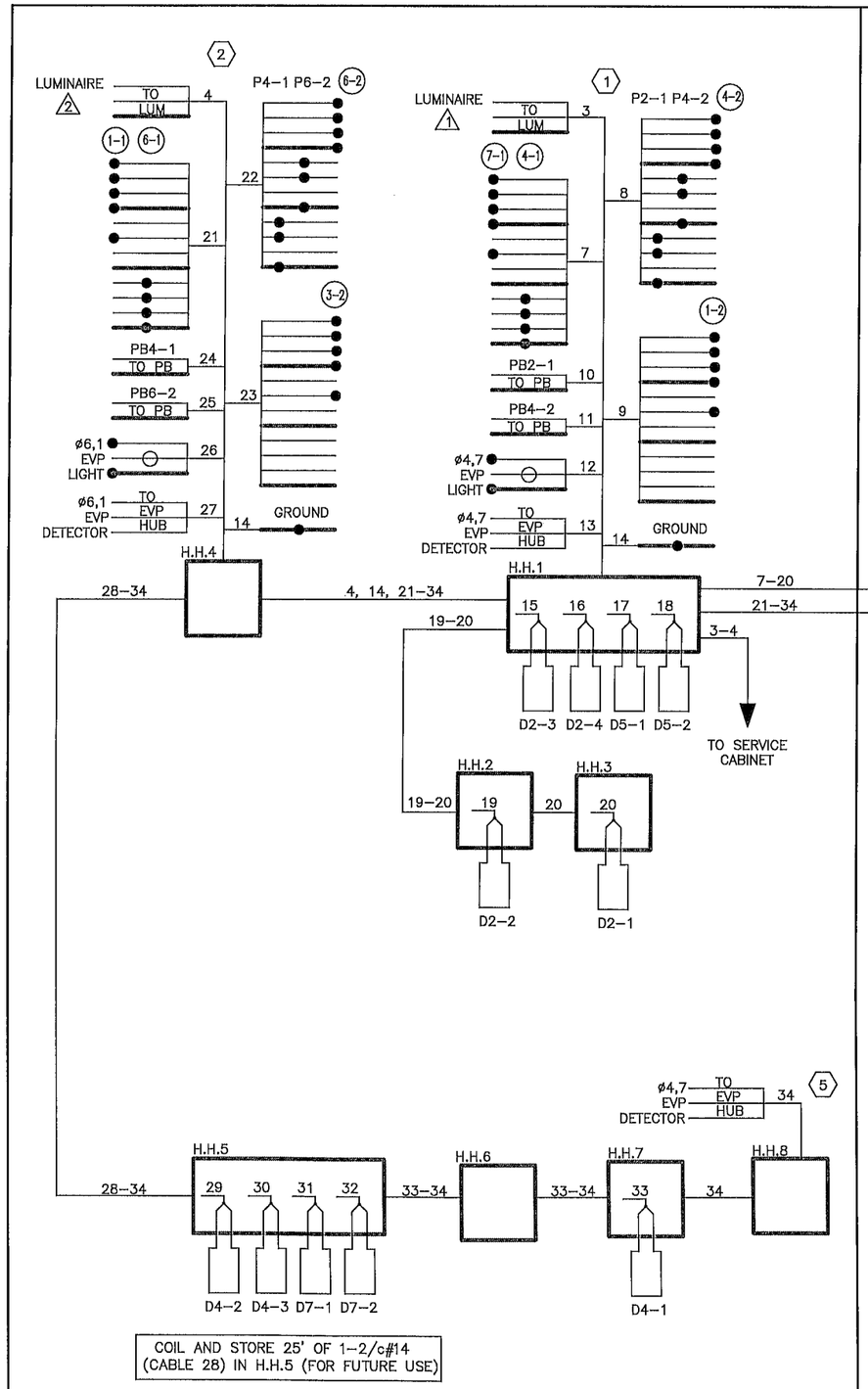
FILE NO. ANOKC 136736
SIGNAL SHEET 7 OF 9

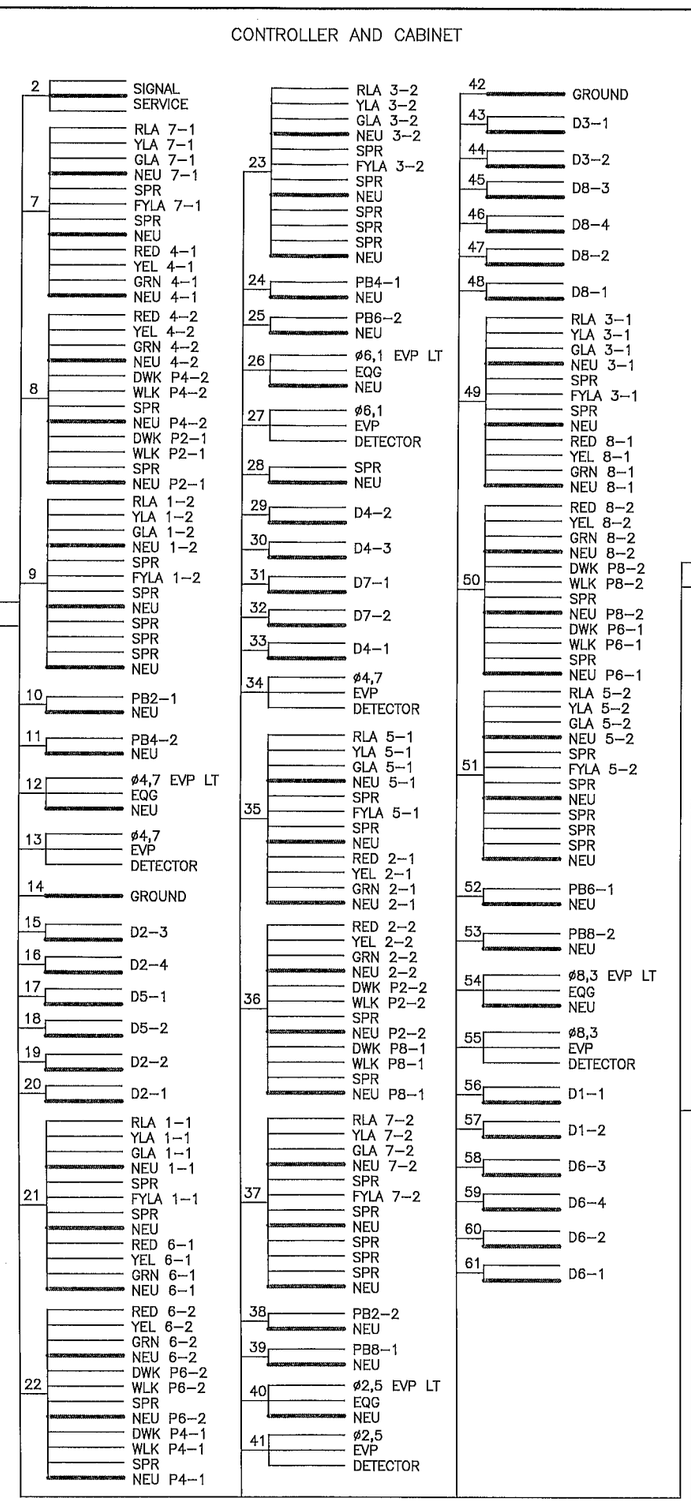




S.A.P. 002–609–016
S.A.P. 002–622–035

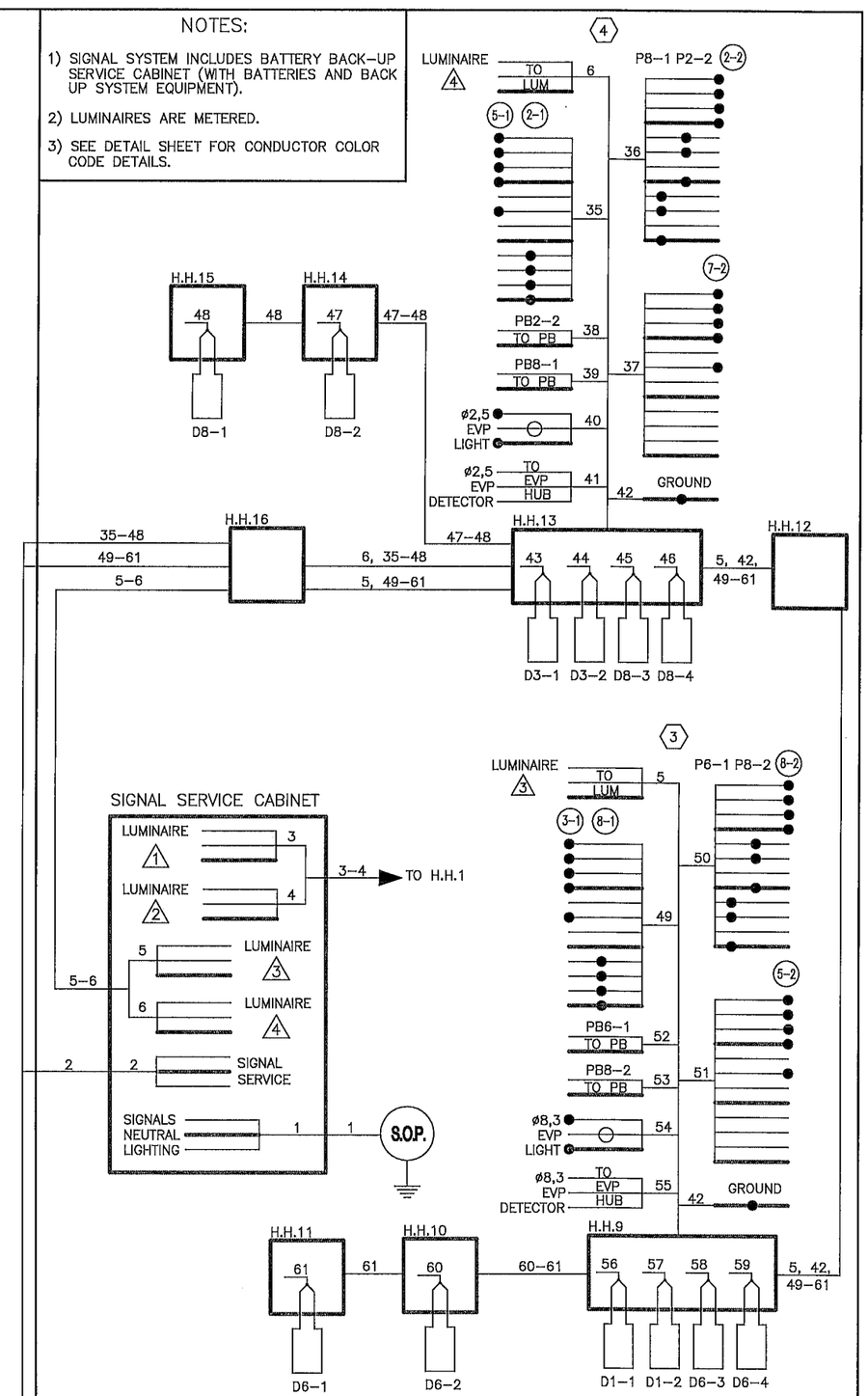
DRAWN BY: JMG DESIGNER: JMG CHECKED BY: JMG DESIGN TEAM	NO.	BY	DATE	REVISIONS	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA. Name: John M. Gray, PE Date: July 14, 2016 Lic. No. 22457	SEH PHONE: (651) 490–2000 3535 VADNAIS CENTER DR. ST. PAUL, MN 55110	ANOKA COUNTY, MINNESOTA CITY OF OAK GROVE	TRAFFIC CONTROL SIGNAL SYSTEM MATCH LINES CSAH 22 (VIKING BLVD NW) AT CSAH 9 (LAKE GEORGE BLVD NW)	FILE NO. ANOKC 136736 SIGNAL SHEET 8 OF 9	87 119





NOTES:

1) SIGNAL SYSTEM INCLUDES BATTERY BACK-UP SERVICE CABINET (WITH BATTERIES AND BACK UP SYSTEM EQUIPMENT).
2) LUMINAIRES ARE METERED.
3) SEE DETAIL SHEET FOR CONDUCTOR COLOR CODE DETAILS.



S.A.P. 002-609-016
S.A.P. 002-622-035

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

NO.	BY	DATE	REVISIONS

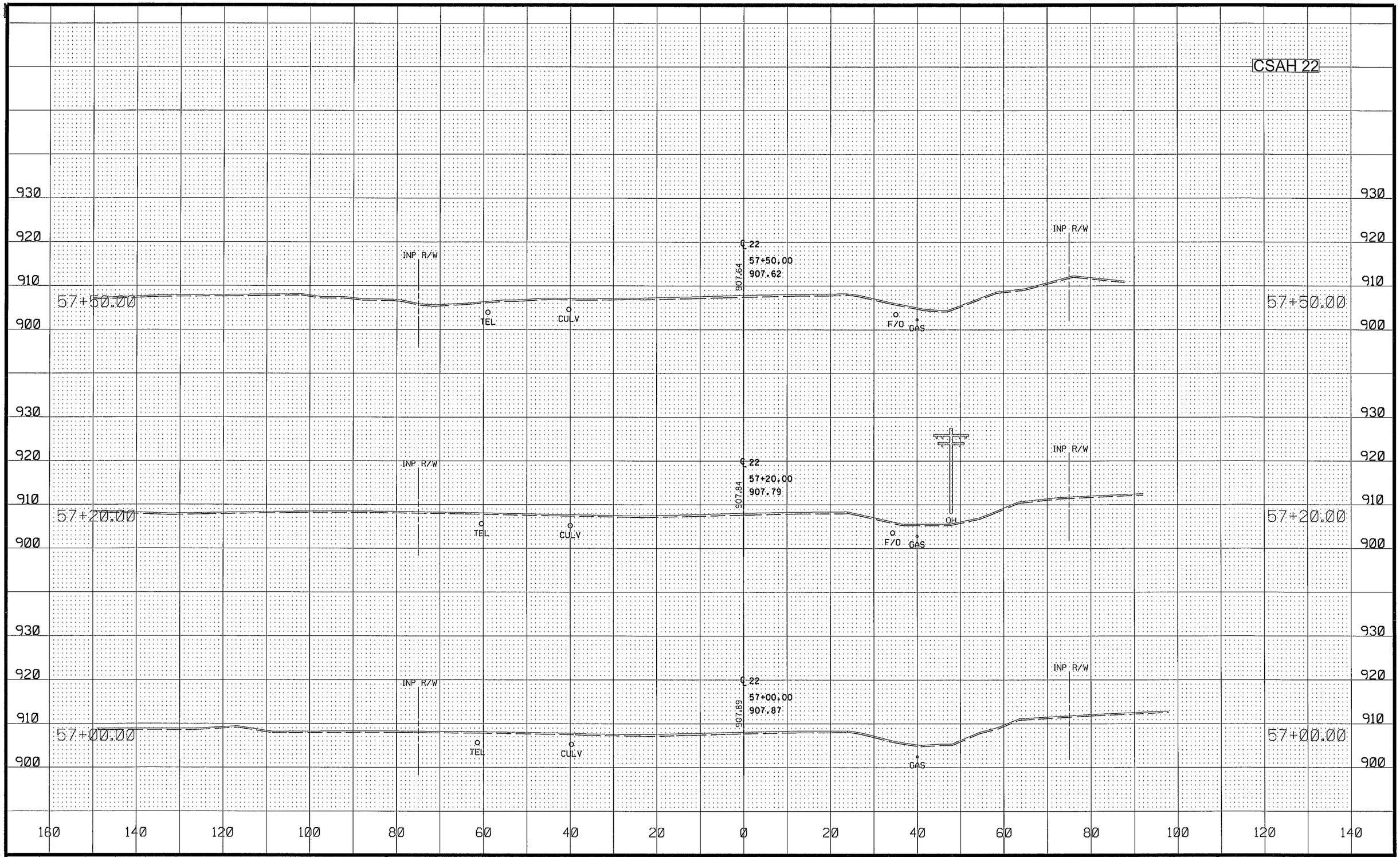
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
Date: July 14, 2016 Name: John M. Gray, PE Lic. No. 22457

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

ANOKA COUNTY, MINNESOTA
CITY OF OAK GROVE

TRAFFIC CONTROL SIGNAL SYSTEM
FIELD WIRING DIAGRAM
CSAH 22 (VIKING BLVD NW)
AT CSAH 9 (LAKE GEORGE BLVD NW)

FILE NO. ANOKC 136736
SIGNAL SHEET 9 OF 9



NO	DATE	BY	CKD	APPR	REVISION

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DRAWN BY EJM DATE 07-06-16
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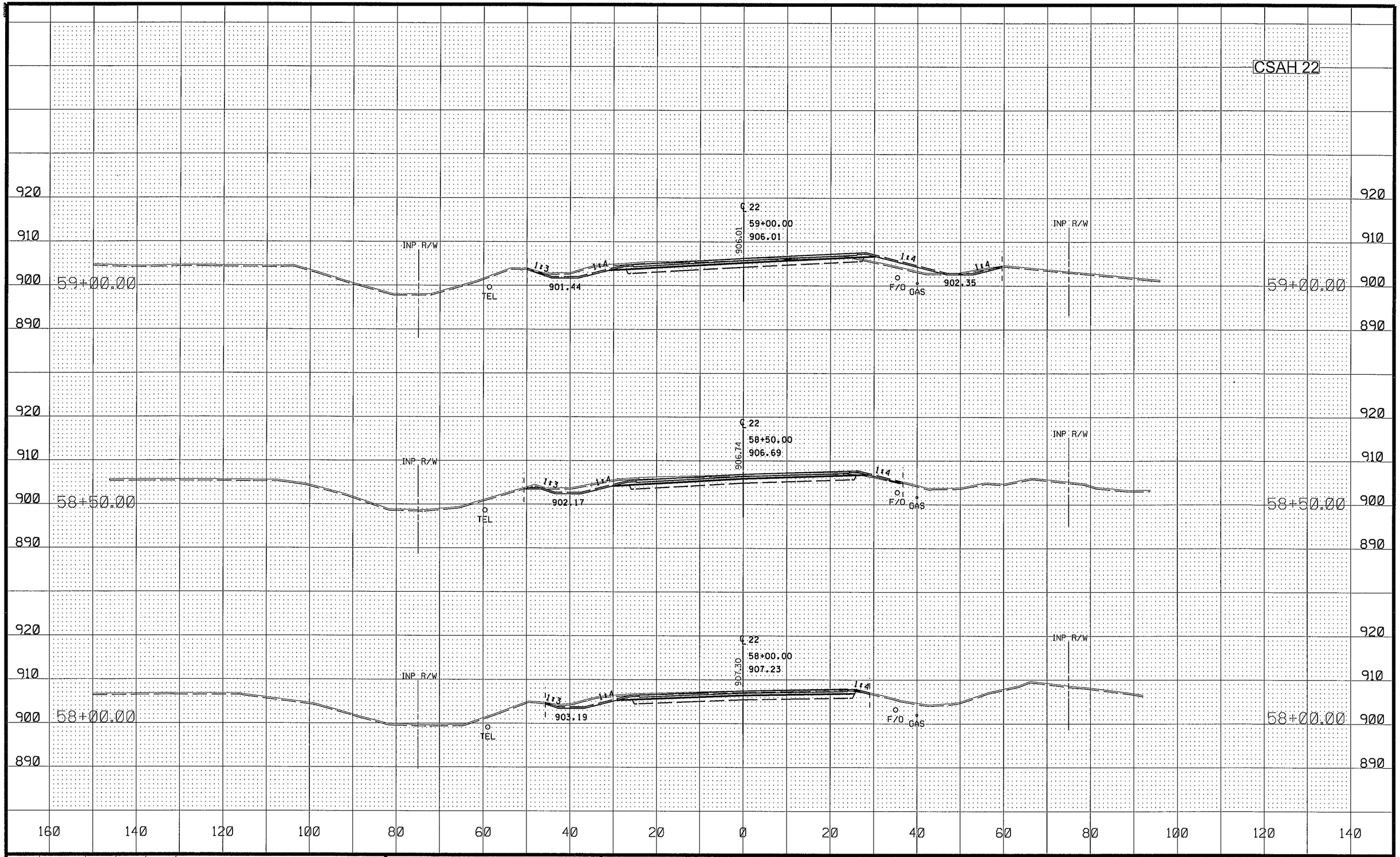
ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-609-016
SAP 002-622-035

CROSS SECTIONS
CSAH 22
STA 57+00.00 TO 57+50.00

Sheet 89 of 119 Sheets



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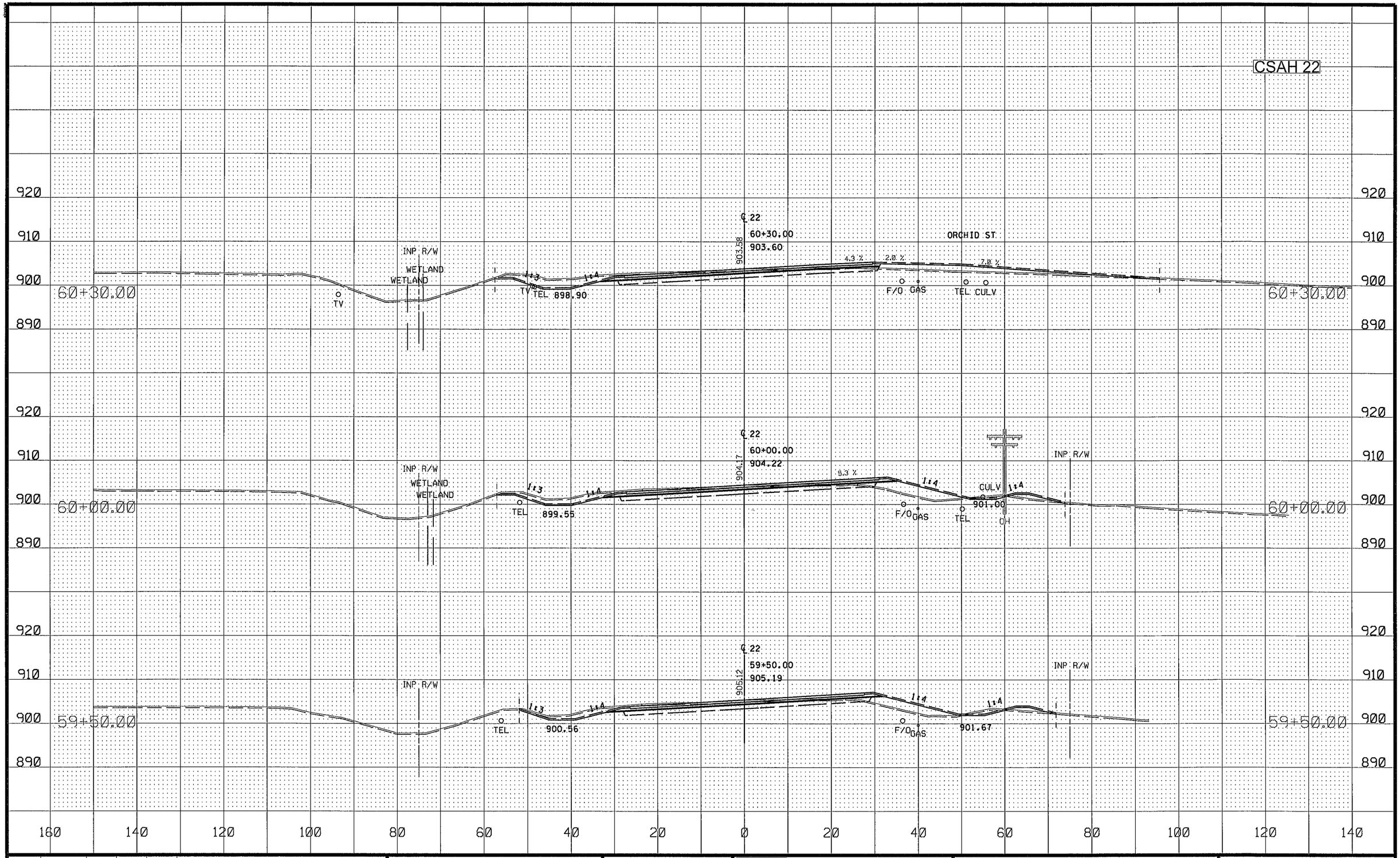
ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

SAP 002-609-016
SAP 002-622-035

CROSS SECTIONS
CSAH 22
STA 58+00.00 TO 59+00.00



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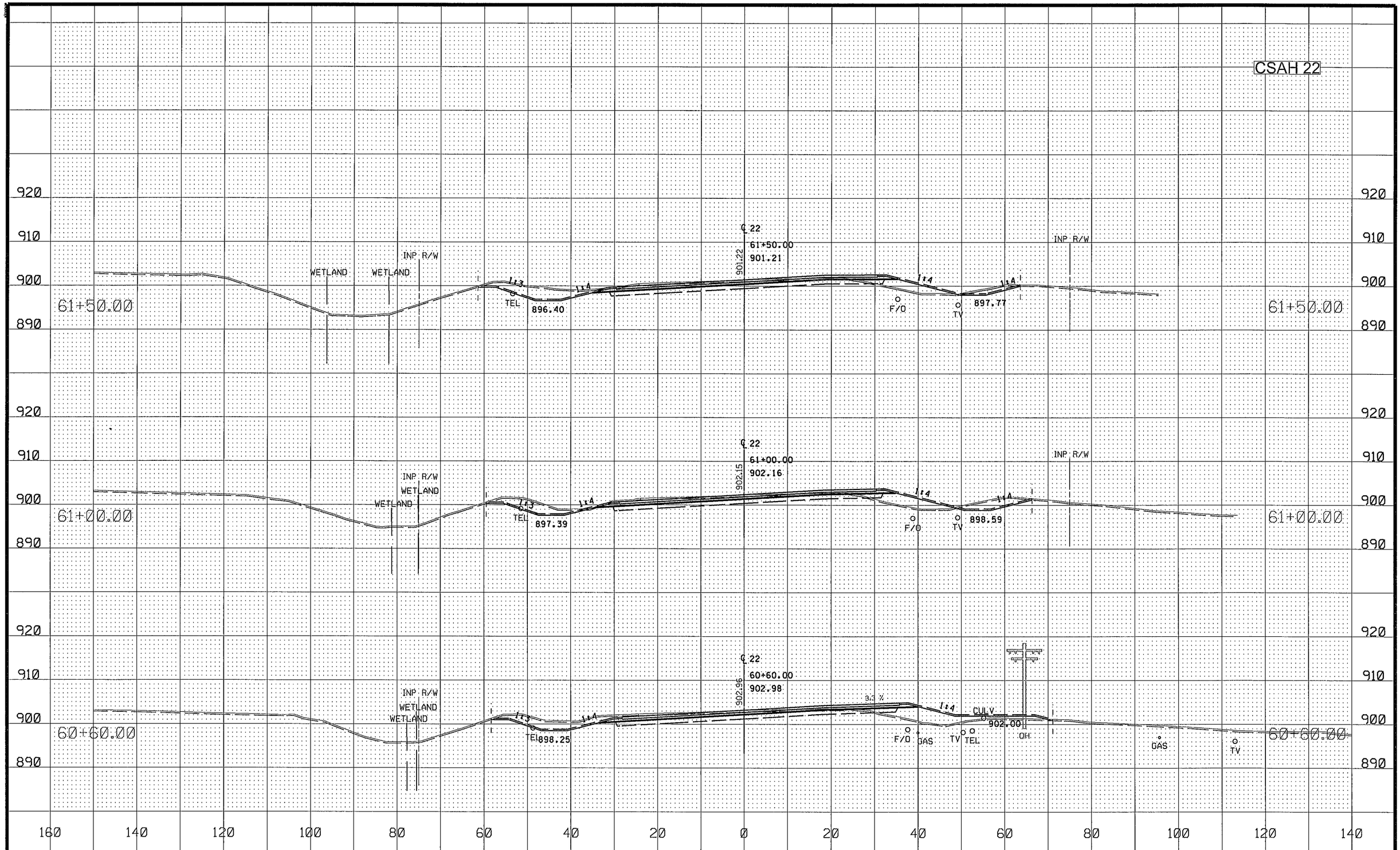
ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

SAP 002-609-016
SAP 002-622-035

CROSS SECTIONS
CSAH 22
STA 59+50.00 TO 60+30.00

Sheet 91 of 119 Sheets



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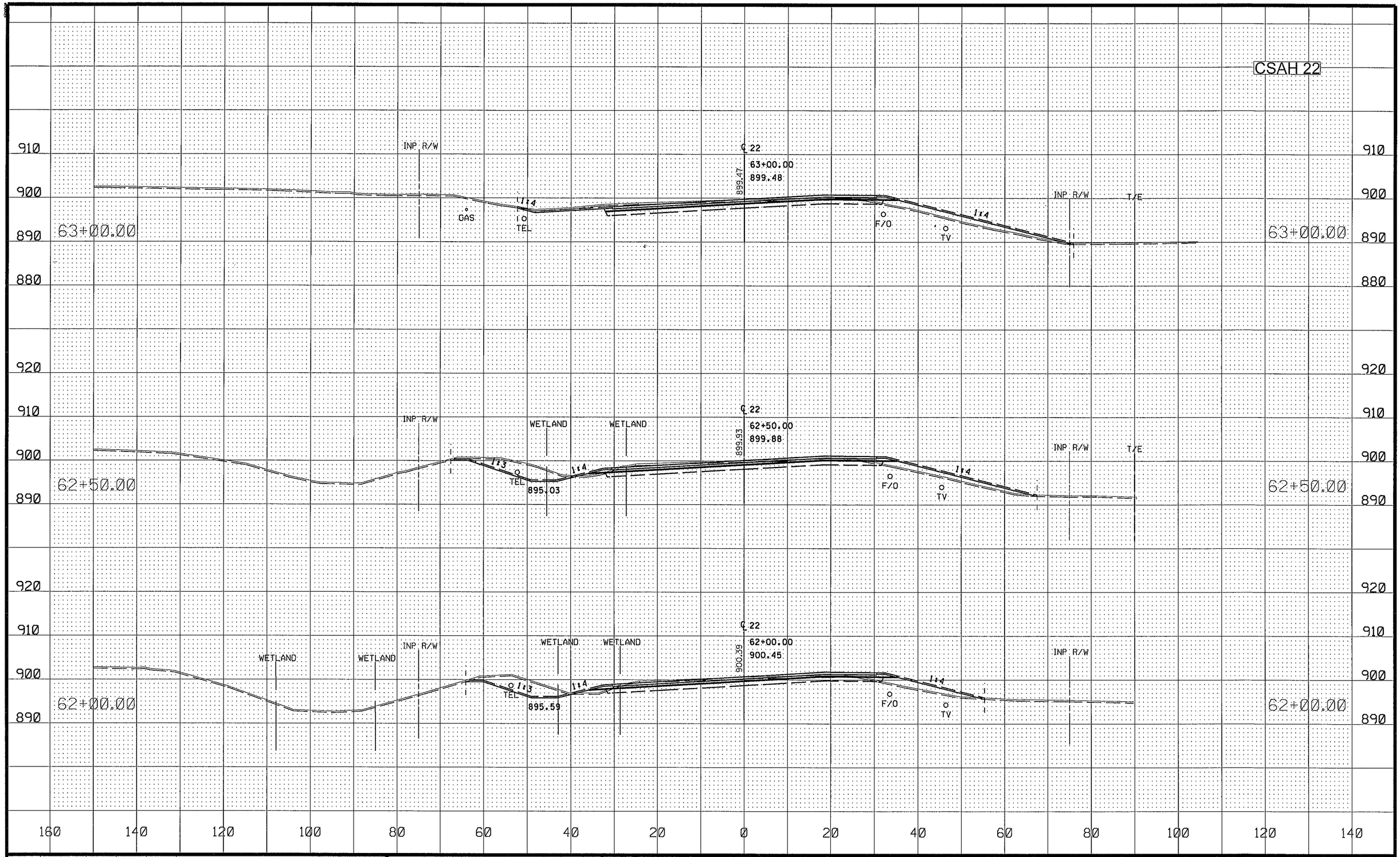
ANOKA COUNTY HIGHWAY DEPT.

SAP 002-609-016
SAP 002-622-035

CROSS SECTIONS
CSAH 22
STA 60+60.00 TO 61+50.00



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ANOKA COUNTY

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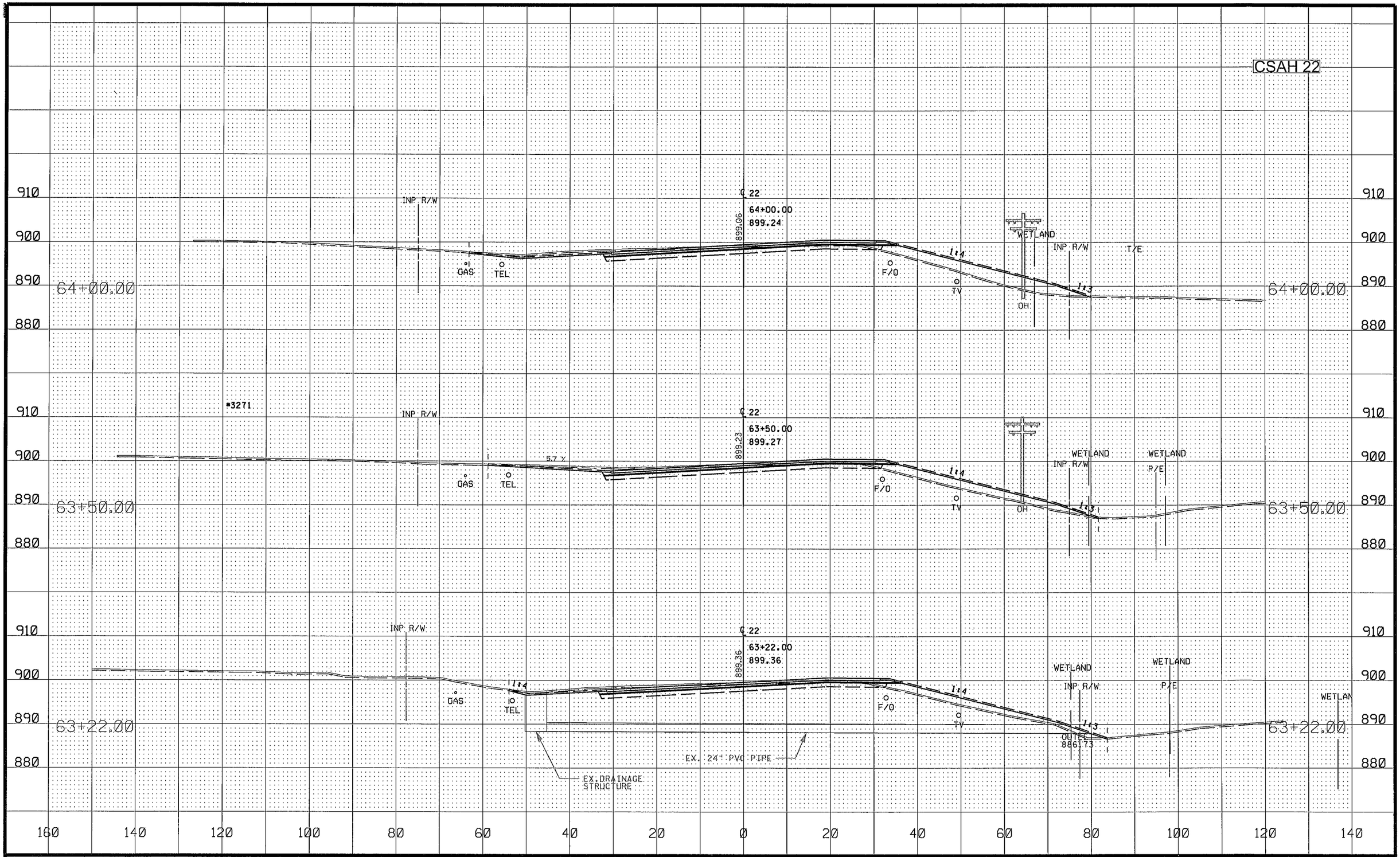
SAP 002-622-035

CROSS SECTIONS
CSAH 22
STA 62+00.00 TO 63+00.00



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ANOKA COUNTY HIGHWAY DEPT.

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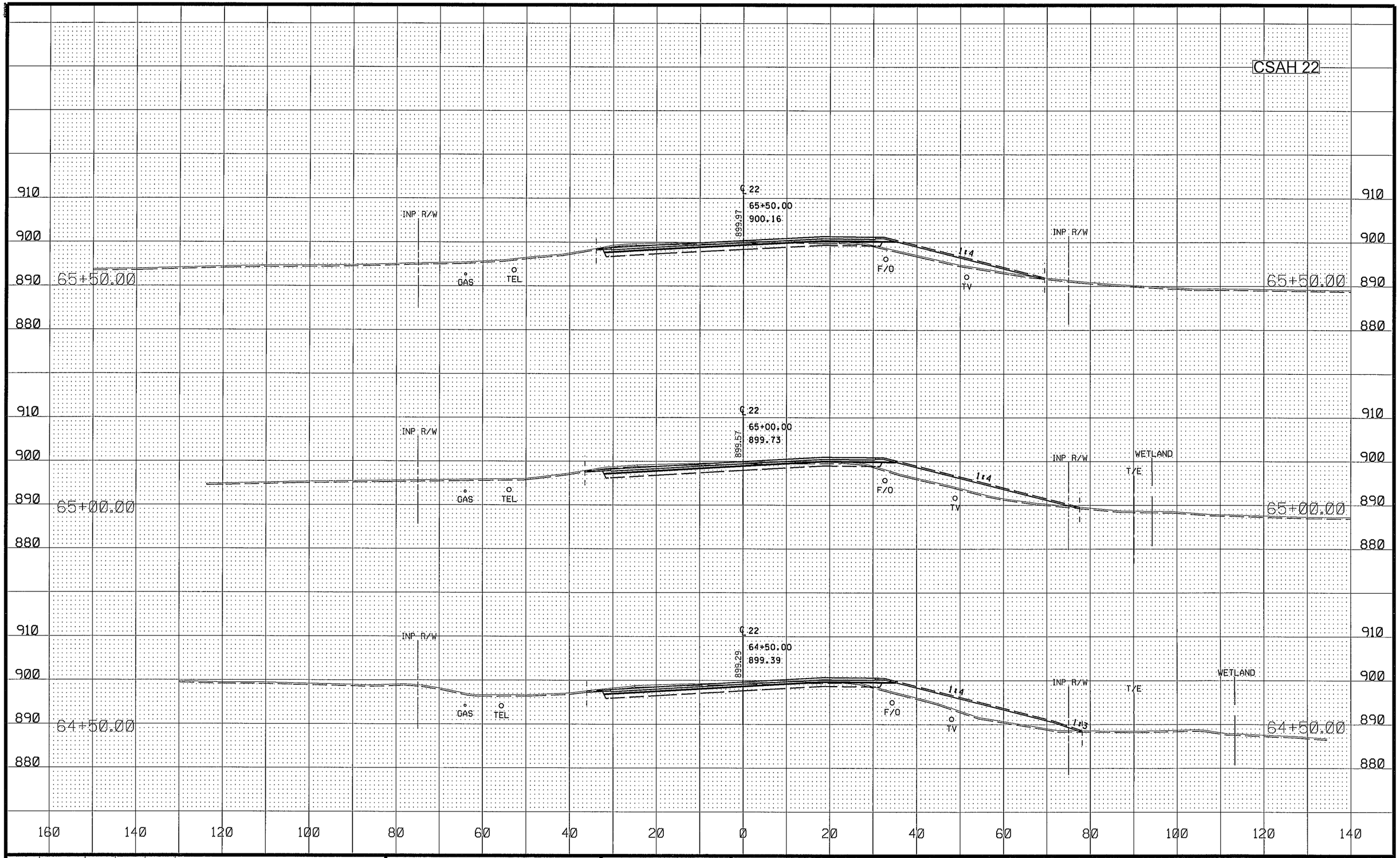
SAP 002-622-035

CROSS SECTIONS
CSAH 22
STA 63+22.00 TO 64+00.00

Sheet 94 of 119 Sheets



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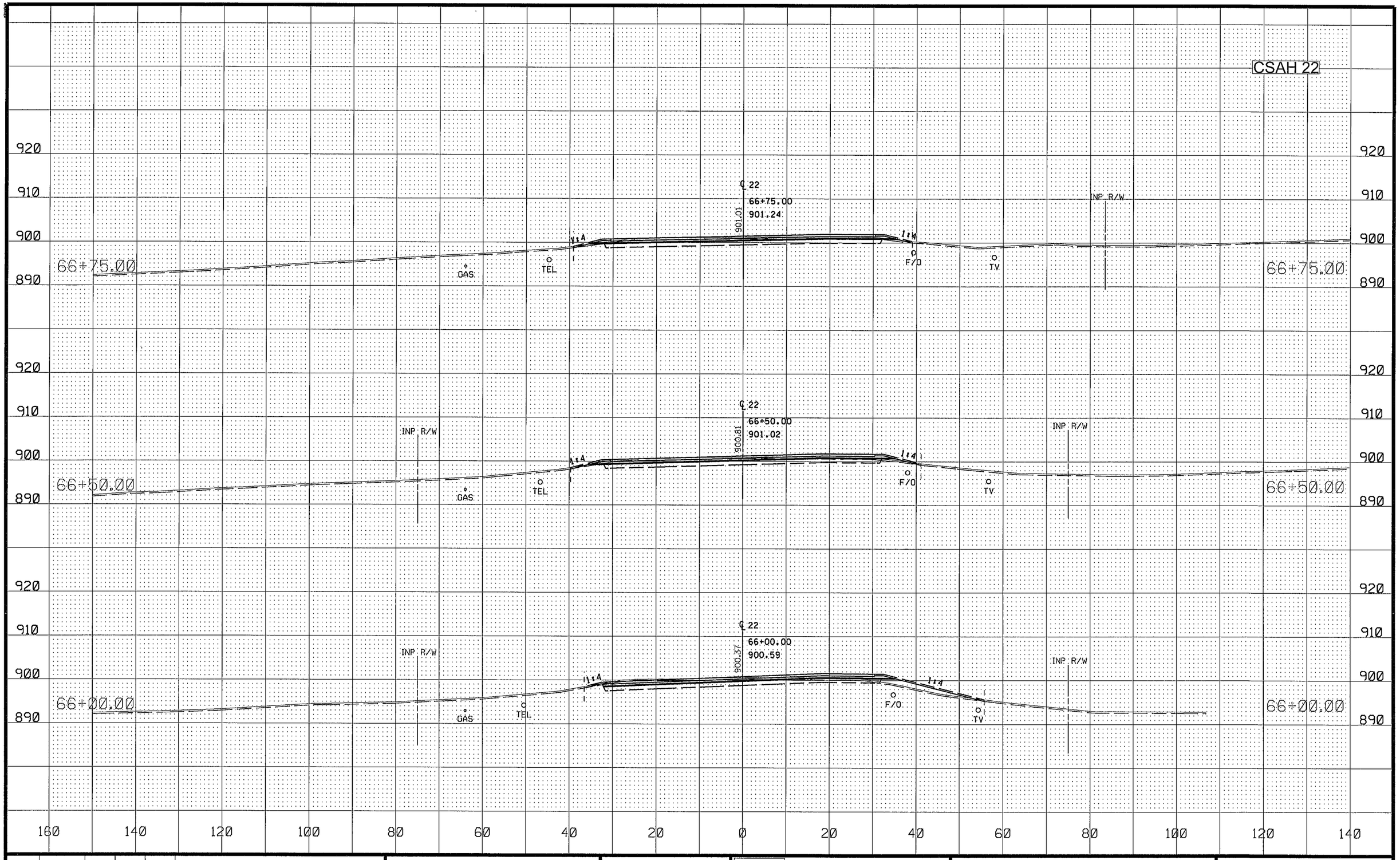
ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

SAP 002-609-016
SAP 002-622-035

CROSS SECTIONS
CSAH 22
STA 64+50.00 TO 65+50.00



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ANOKA COUNTY HIGHWAY DEPT.

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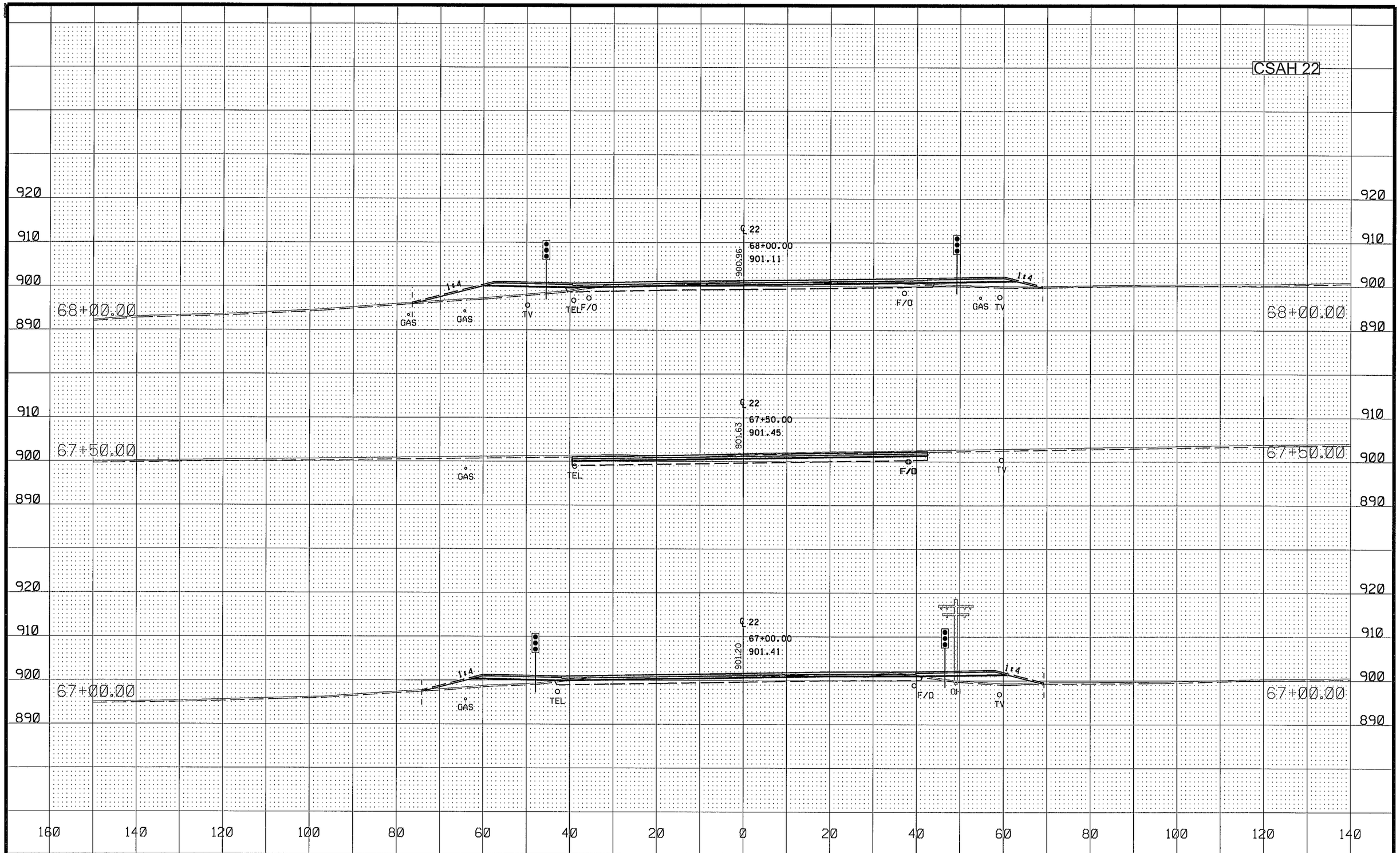
SAP 002-622-035

CROSS SECTIONS
CSAH 22
STA 66+00.00 TO 66+75.00



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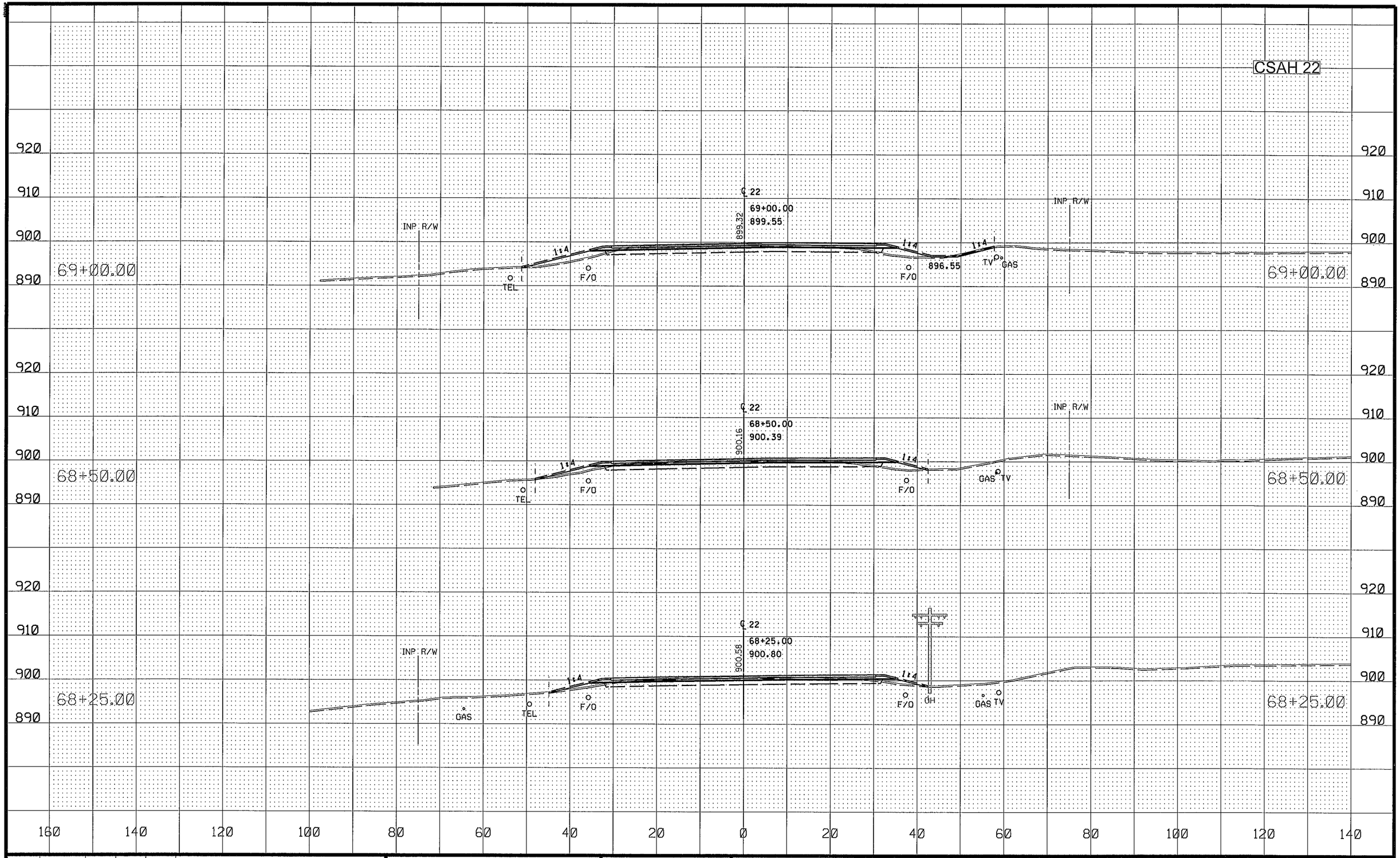
ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

SAP 002-609-016
SAP 002-622-035

CROSS SECTIONS
CSAH 22
STA 67+00.00 TO 68+00.00

Sheet 97 of 119 Sheets



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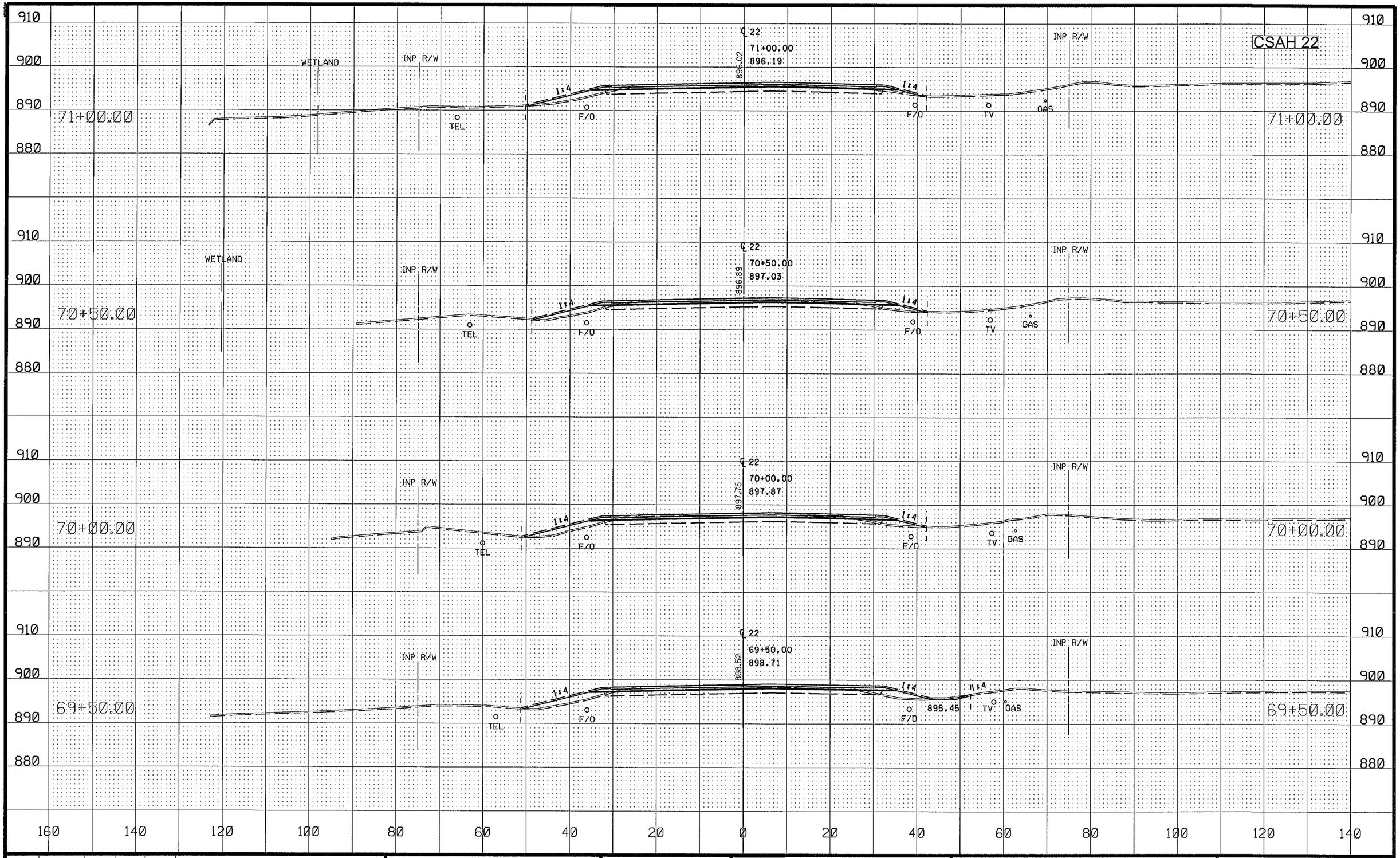
CHECKED BY GMP DATE 07-14-16

ANOKA COUNTY HIGHWAY DEPT.

SAP 002-609-016
SAP 002-622-035

CROSS SECTIONS
CSAH 22
STA 68+25.00 TO 69+00.00

Sheet 98 of 119 Sheets



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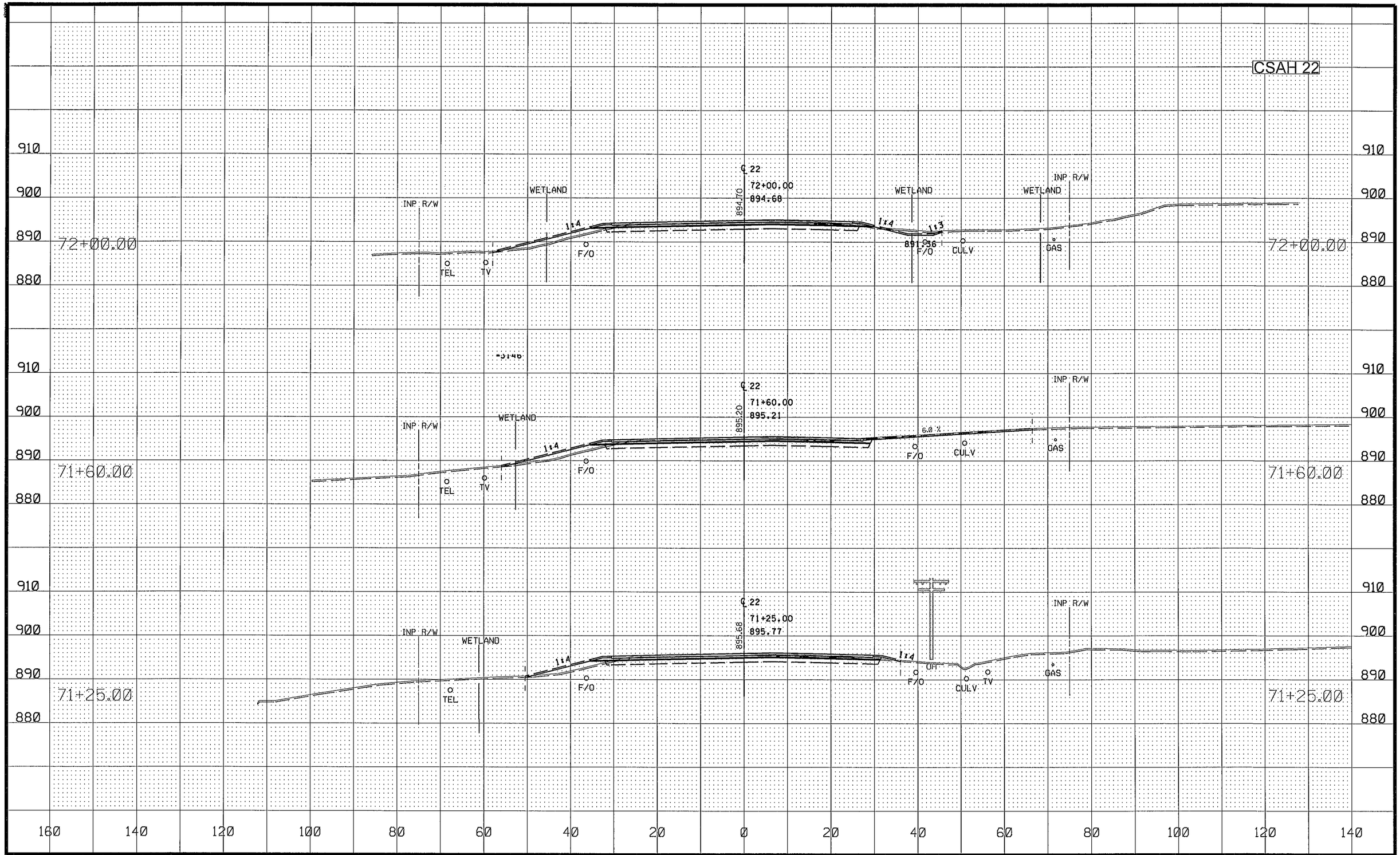
ANOKA COUNTY HIGHWAY DEPT.

SAP 002-609-016
SAP 002-622-035

CROSS SECTIONS
CSAH 22
STA 69+50.00 TO 71+00.00

Sheet 99 of 119 Sheets



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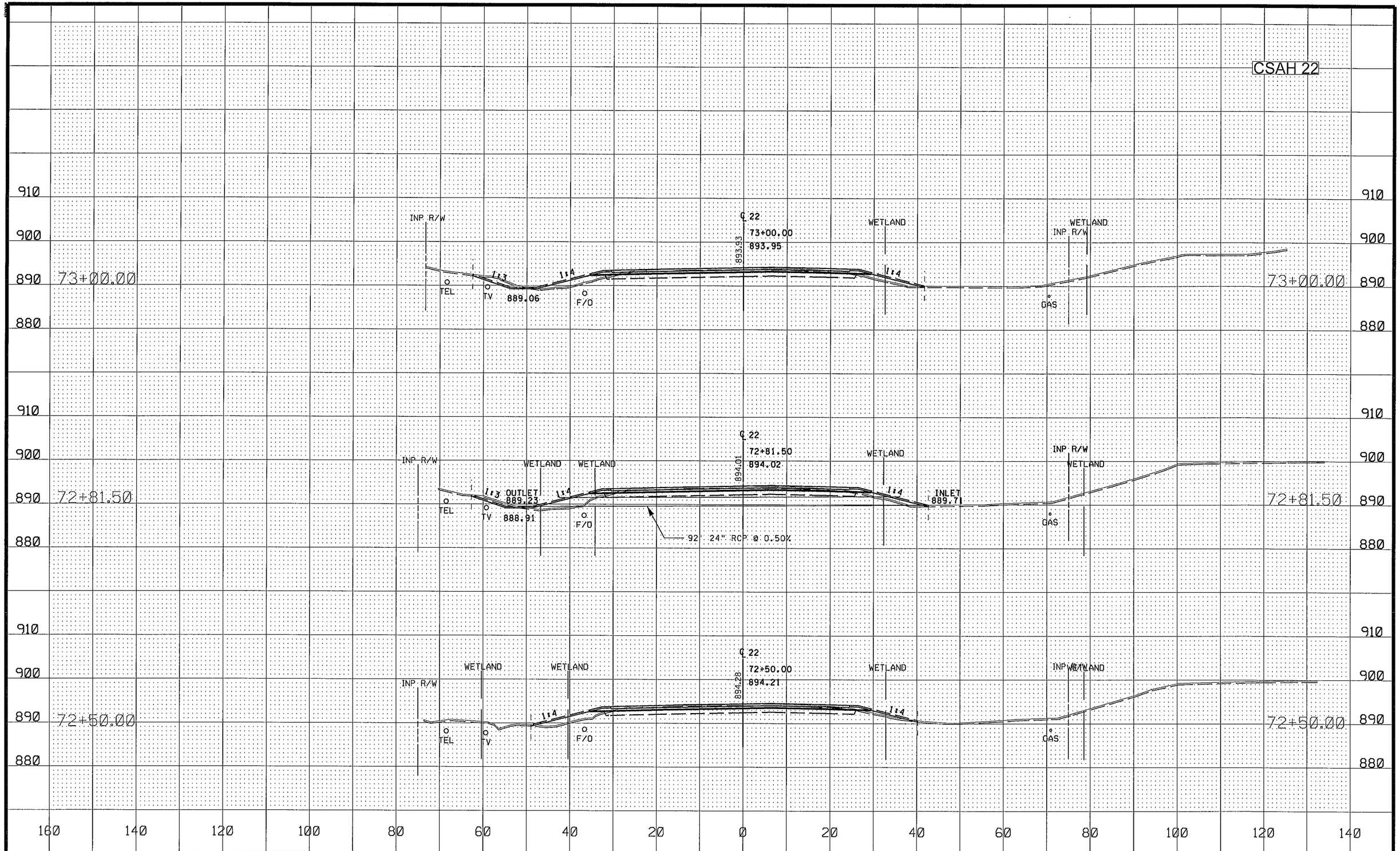
ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

SAP 002-609-016
SAP 002-622-035

CROSS SECTIONS
CSAH 22
STA 71+25.00 TO 72+00.00

Sheet 100 of 119 Sheets



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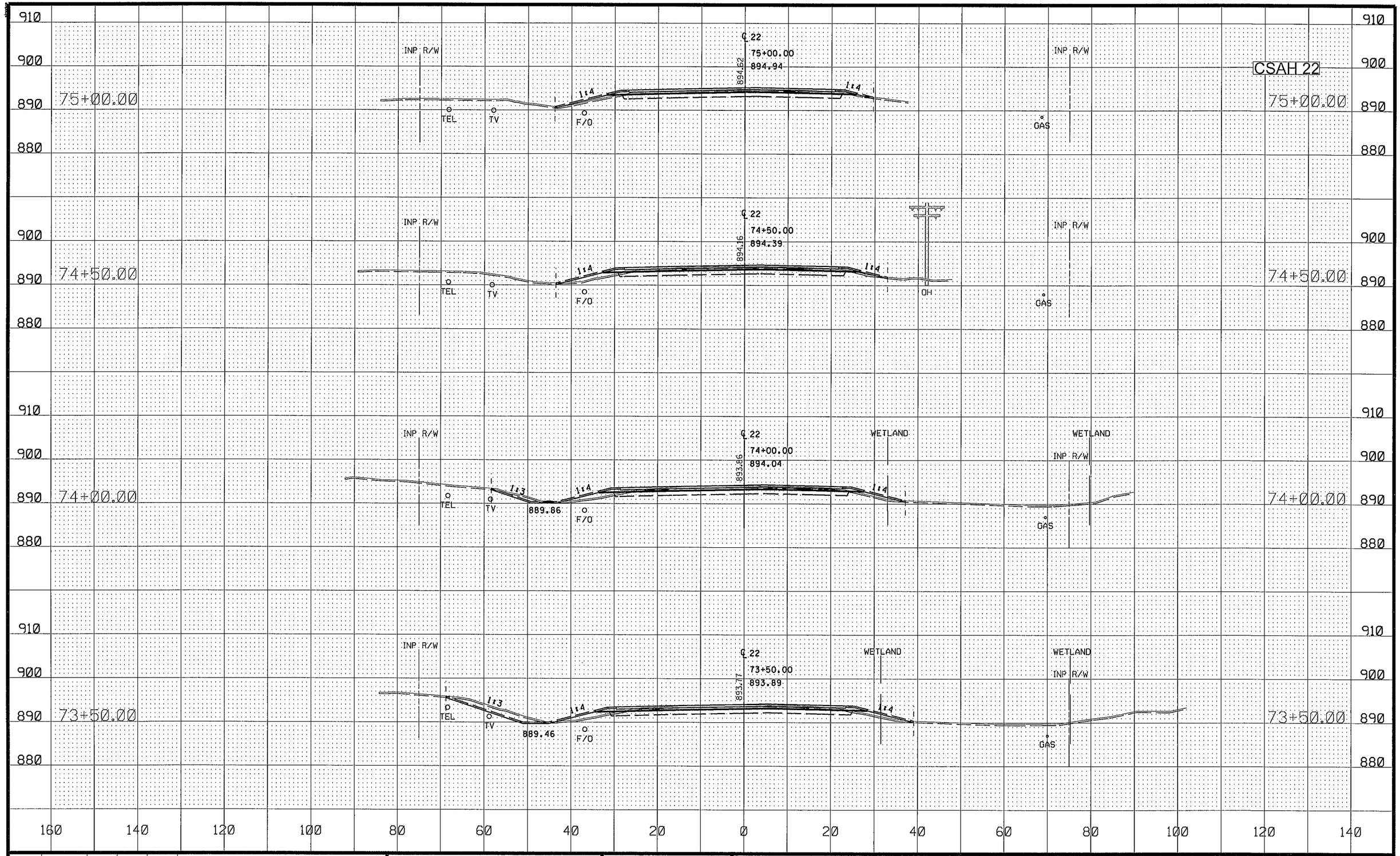
CHECKED BY GMP DATE 07-14-16

ANOKA COUNTY HIGHWAY DEPT.

SAP 002-609-016
SAP 002-622-035

CROSS SECTIONS
CSAH 22
STA 72+50.00 TO 73+00.00

Sheet 101 of 119 Sheets



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DESIGN BY EJM DATE 07-06-16
CHECKED BY GMP DATE 07-14-16

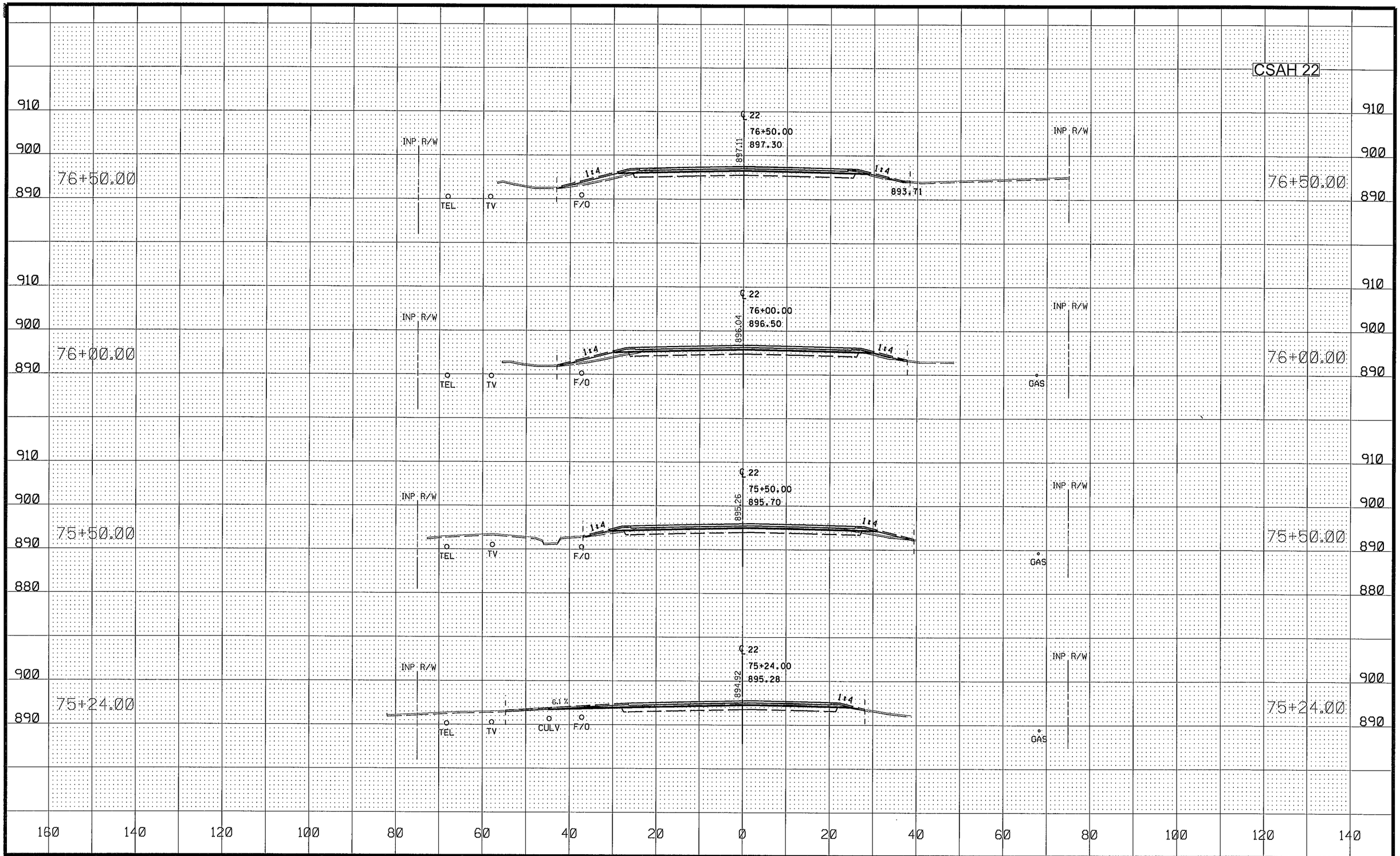
ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

SAP 002-609-016
SAP 002-622-035

CROSS SECTIONS
CSAH 22
STA 73+50.00 TO 75+00.00

Sheet 102 of 119 Sheets



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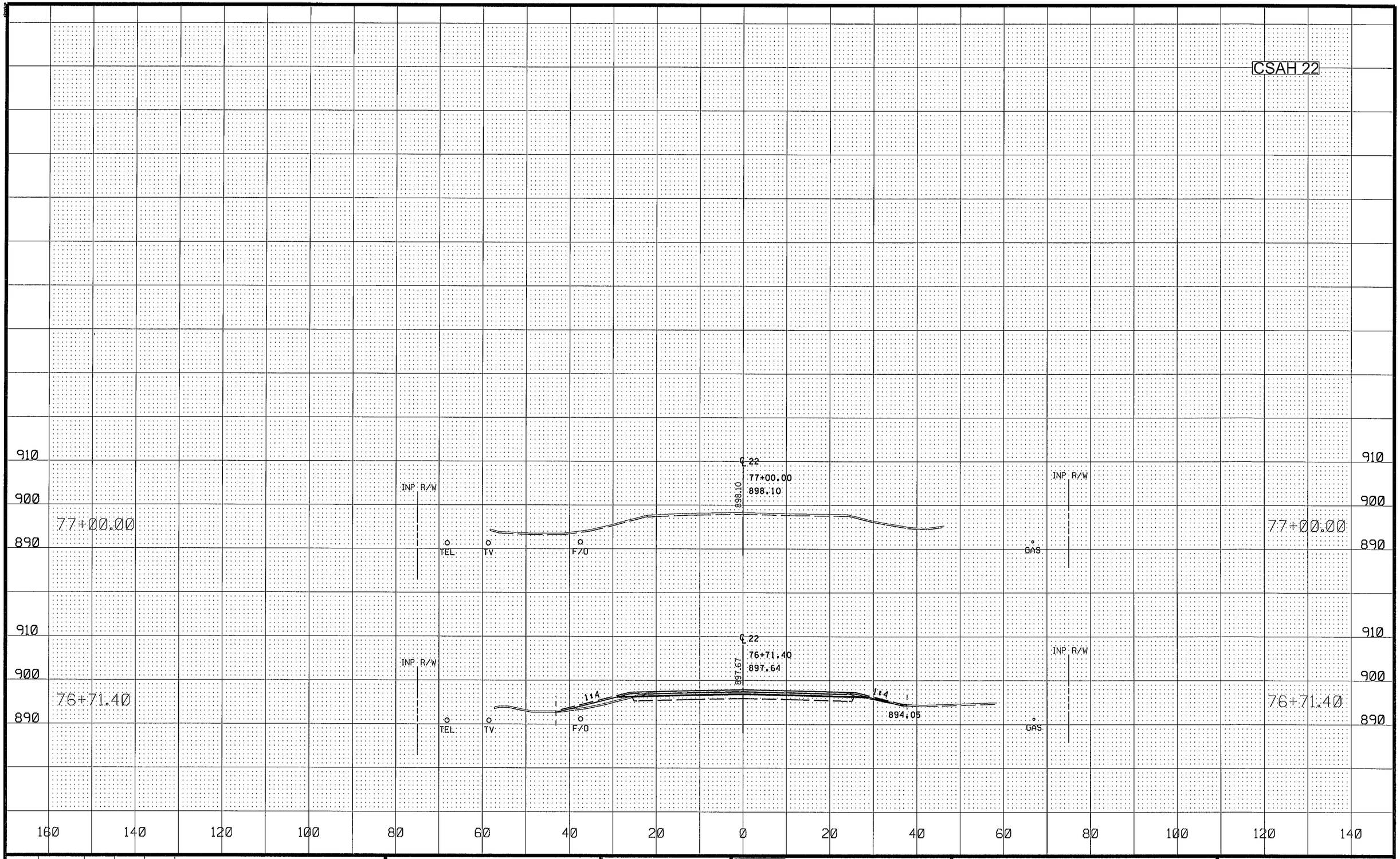
CHECKED BY GMP DATE 07-14-16

ANOKA COUNTY HIGHWAY DEPT.

SAP 002-609-016
SAP 002-622-035

CROSS SECTIONS
CSAH 22
STA 75+24.00 TO 76+50.00



NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-622-35\Plan\0262235_XS.dgn 07/18/2016 2:33:43 PM

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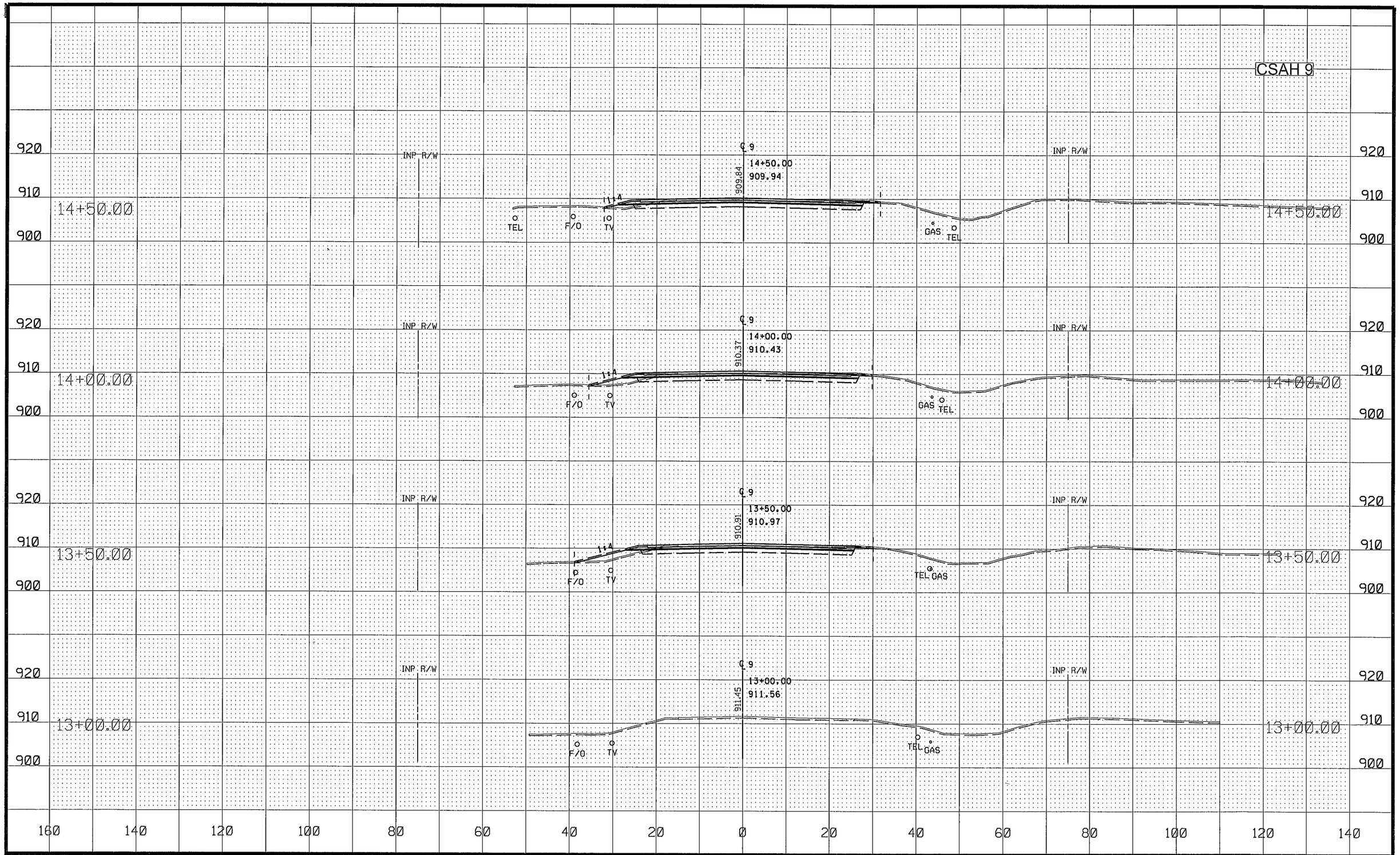
ANOKA COUNTY HIGHWAY DEPT.

SAP 002-609-016
SAP 002-622-035

CROSS SECTIONS
CSAH 22
STA 76+71.40 TO 77+00.00



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ANOKA COUNTY

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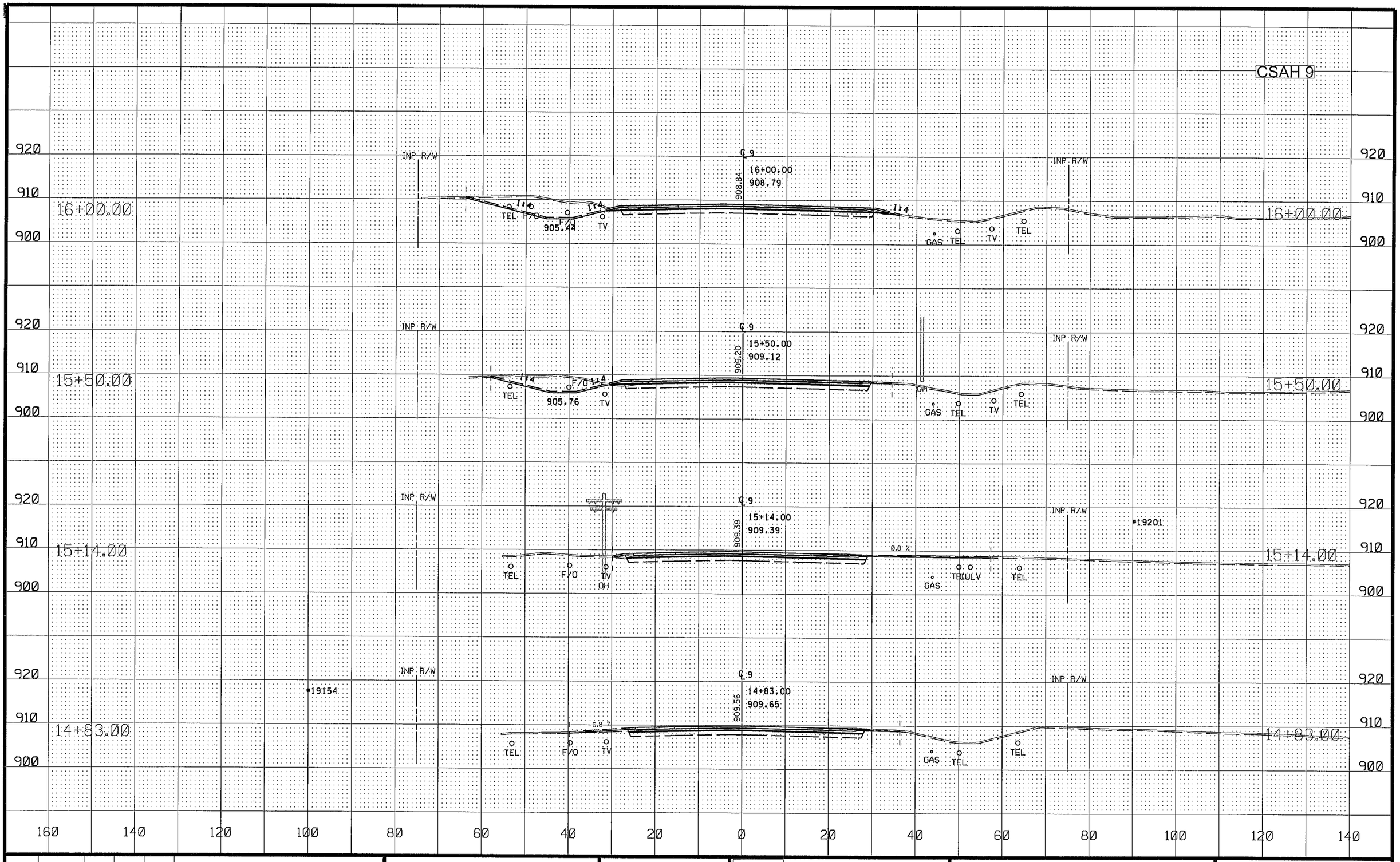
SAP 002-622-035

CROSS SECTIONS
CSAH 9
STA 13+00.00 TO 14+50.00

Sheet 105 of 119 Sheets



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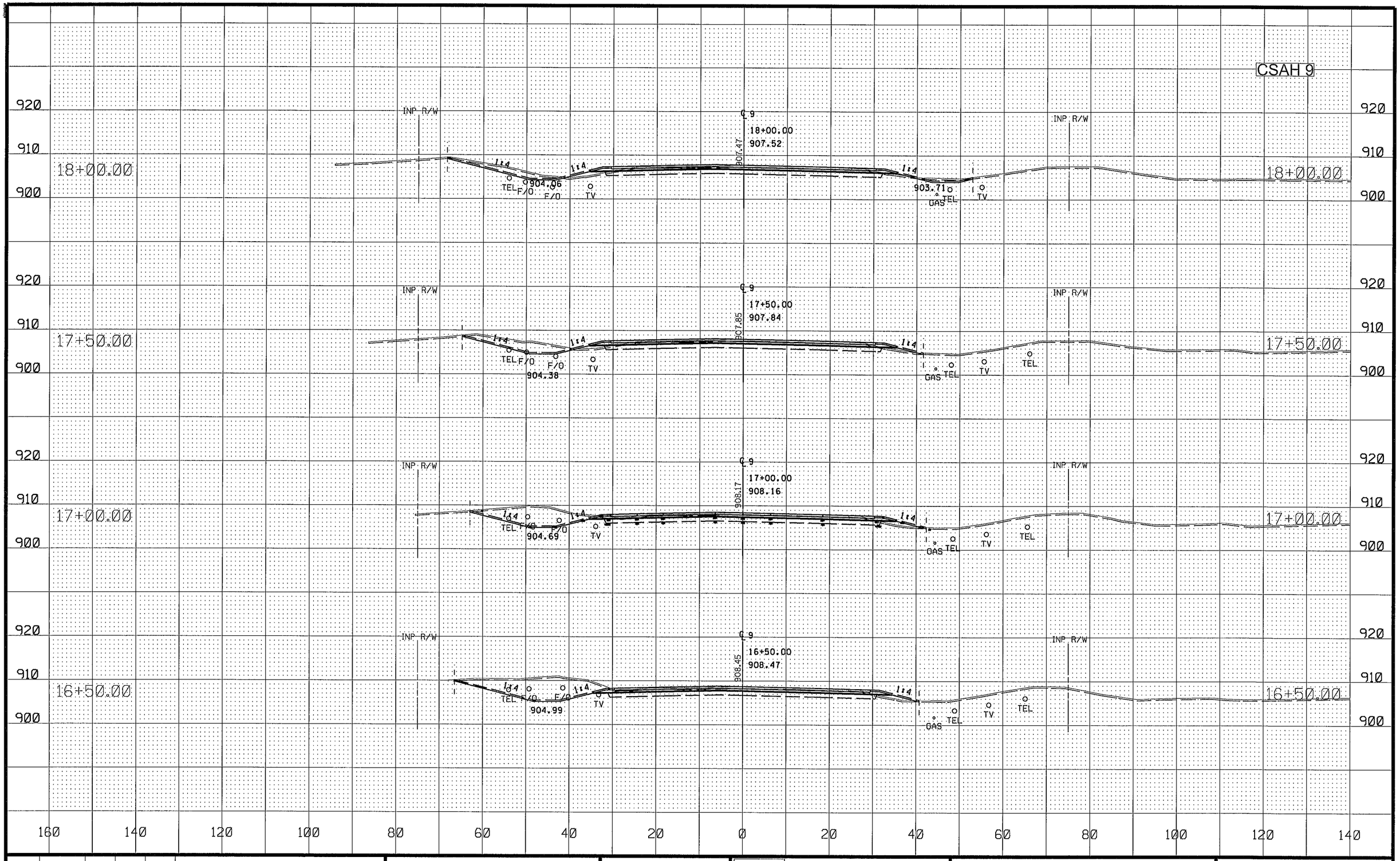
CROSS SECTIONS
CSAH 9
STA 14+83.00 TO 16+00.00

Sheet 106 of 119 Sheets



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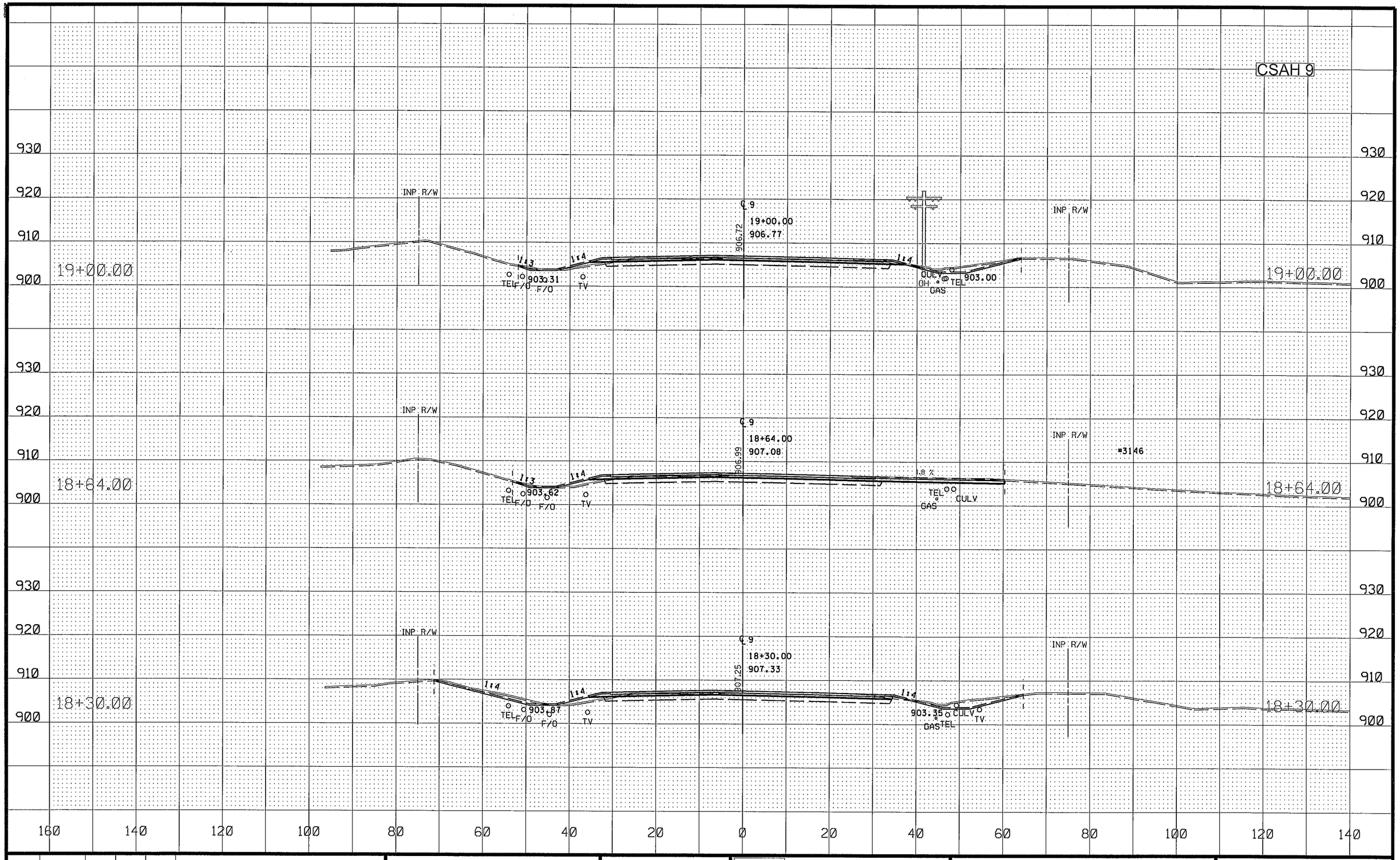
SAP 002-622-035

CROSS SECTIONS
CSAH 9

STA 16+50.00 TO 18+00.00



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ANOKA COUNTY

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SAP 002-609-016
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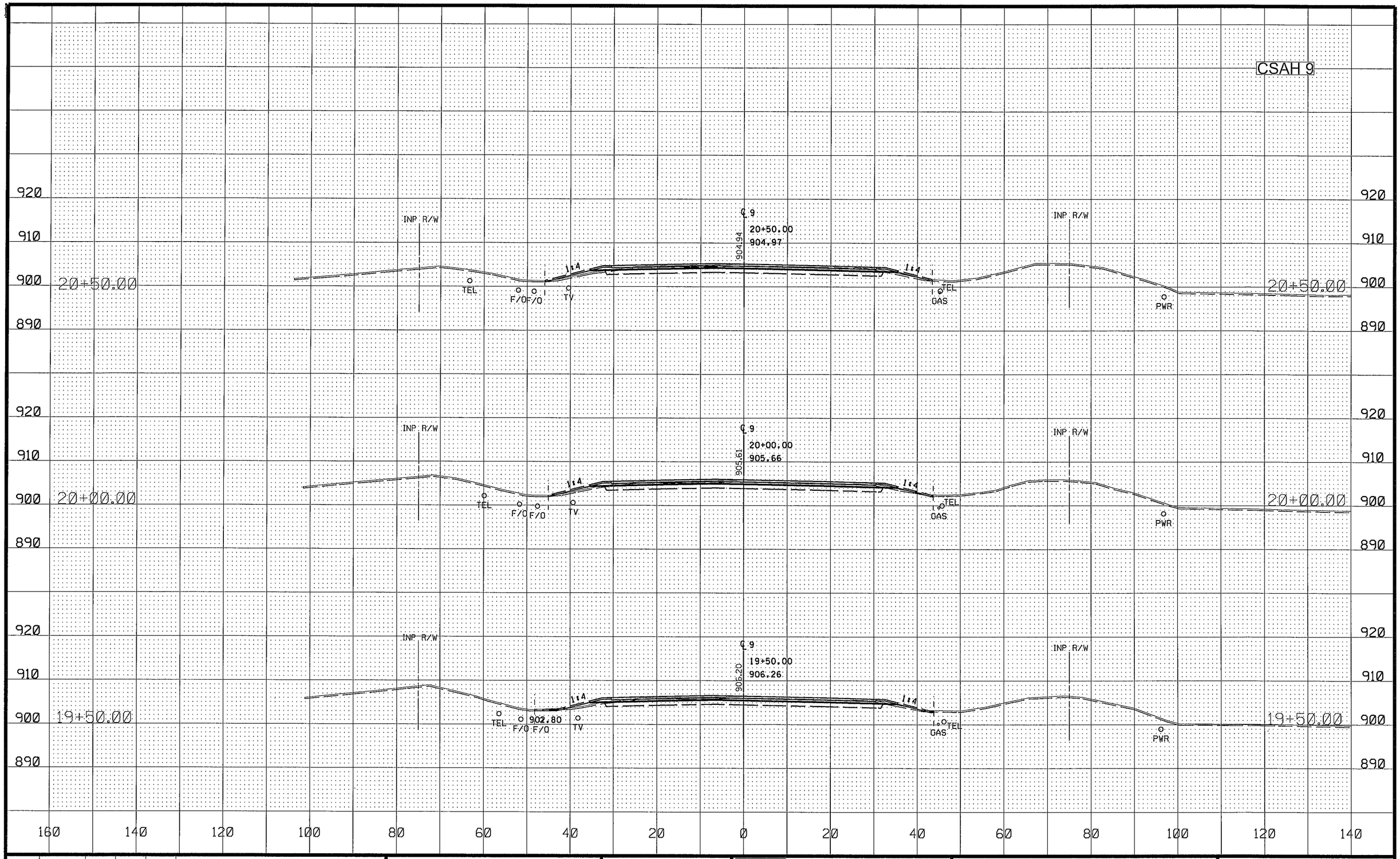
CROSS SECTIONS
CSAH 9
STA 18+30.00 TO 19+00.00



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ANOKA COUNTY HIGHWAY DEPT.

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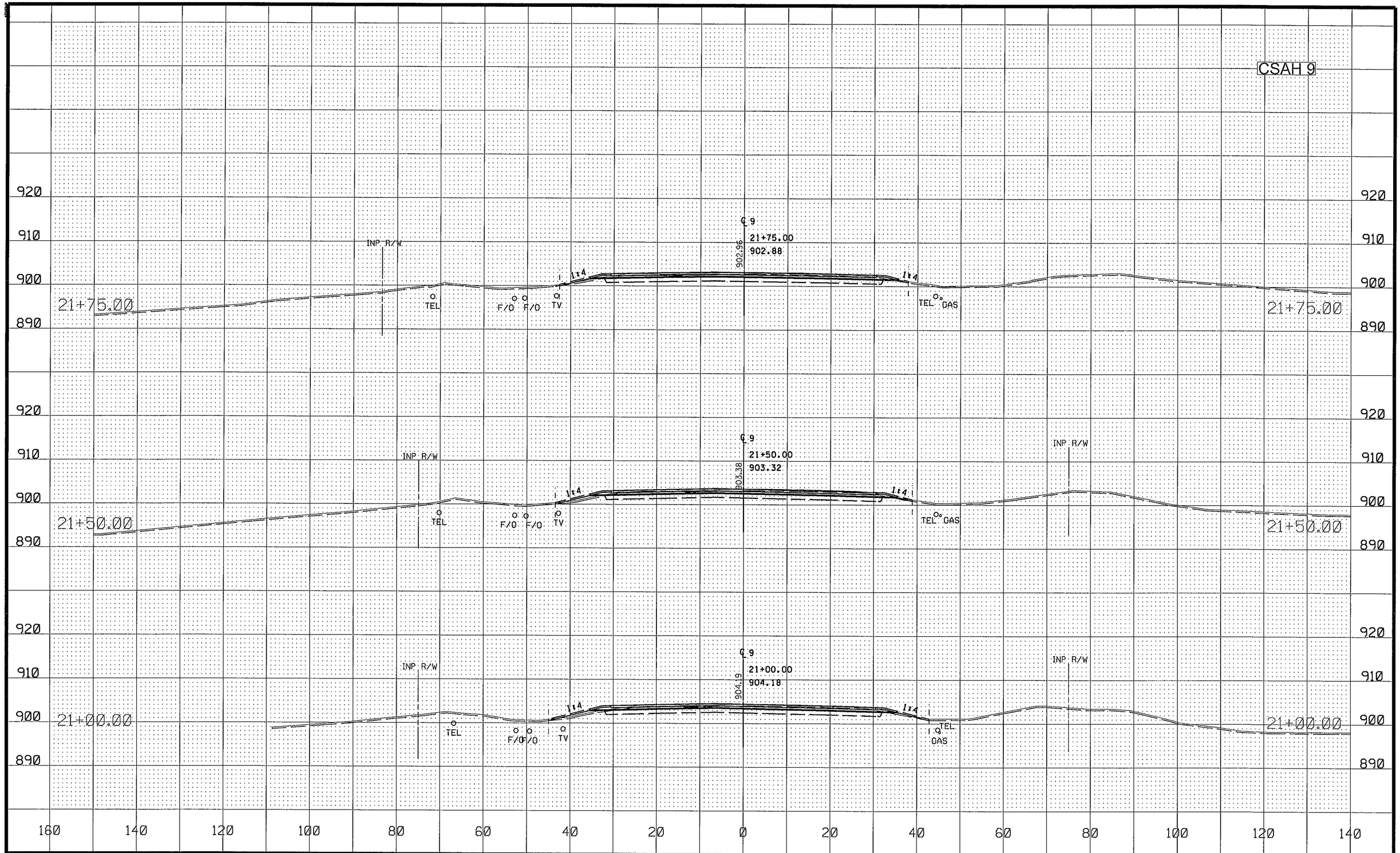
CROSS SECTIONS
CSAH 9
STA 19+50.00 TO 20+50.00

Sheet 109 of 119 Sheets



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ANOKA COUNTY HIGHWAY DEPT.

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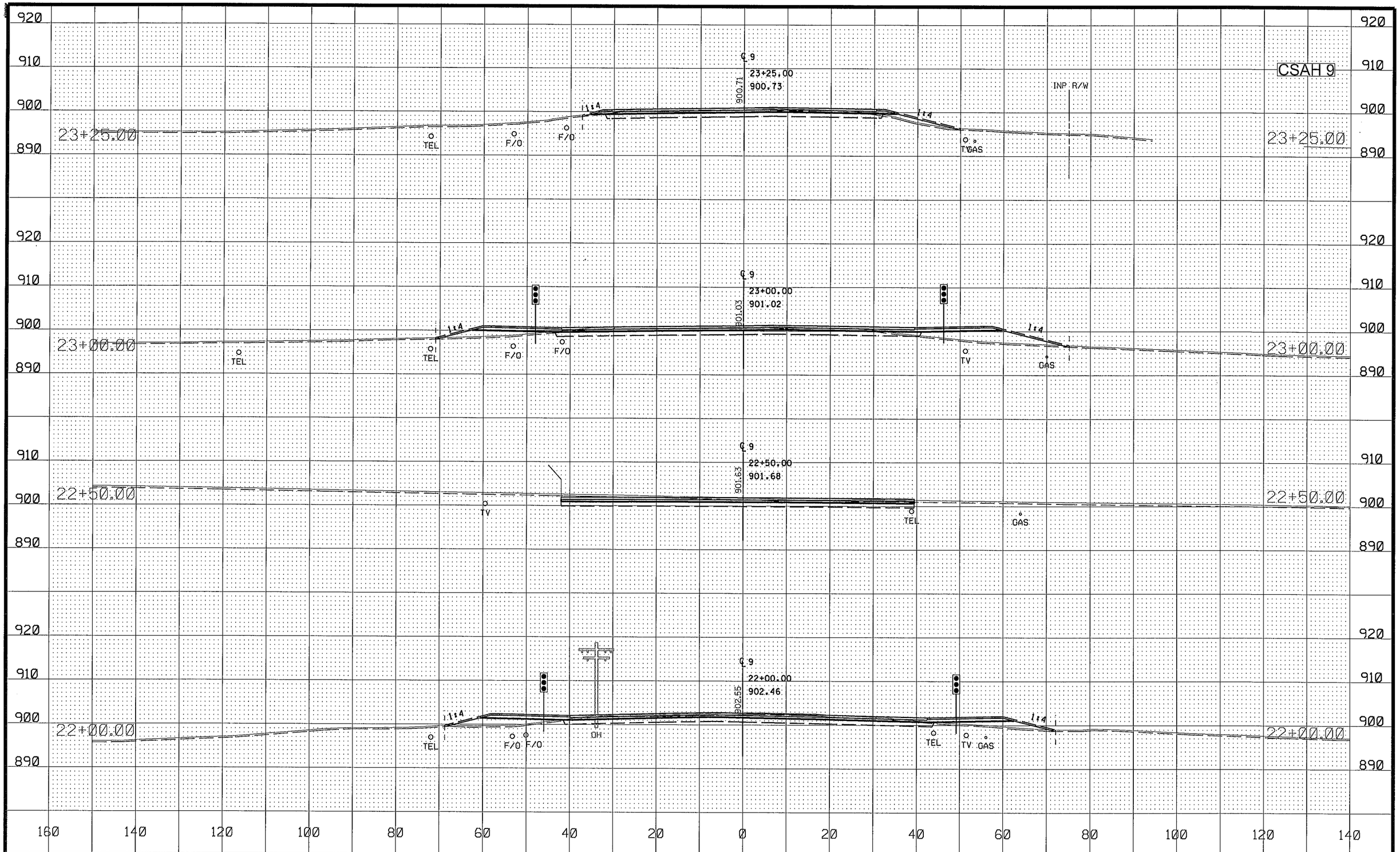
CROSS SECTIONS
CSAH 9
STA 21+00.00 TO 21+75.00



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ANOKA COUNTY HIGHWAY DEPT.

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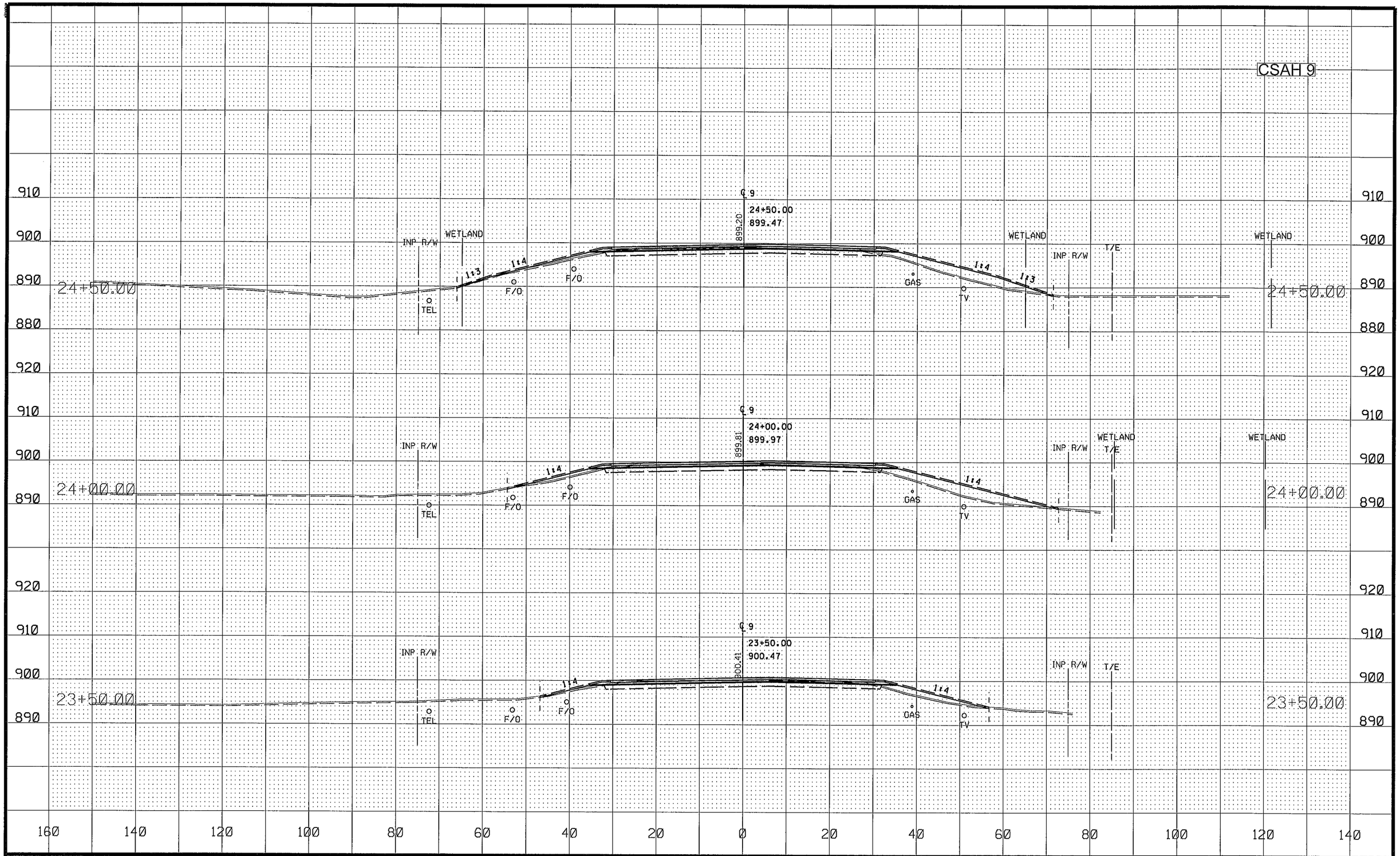
CROSS SECTIONS
CSAH 9
STA 22+00.00 TO 23+25.00

Sheet 111 of 119 Sheets



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ANOKA COUNTY

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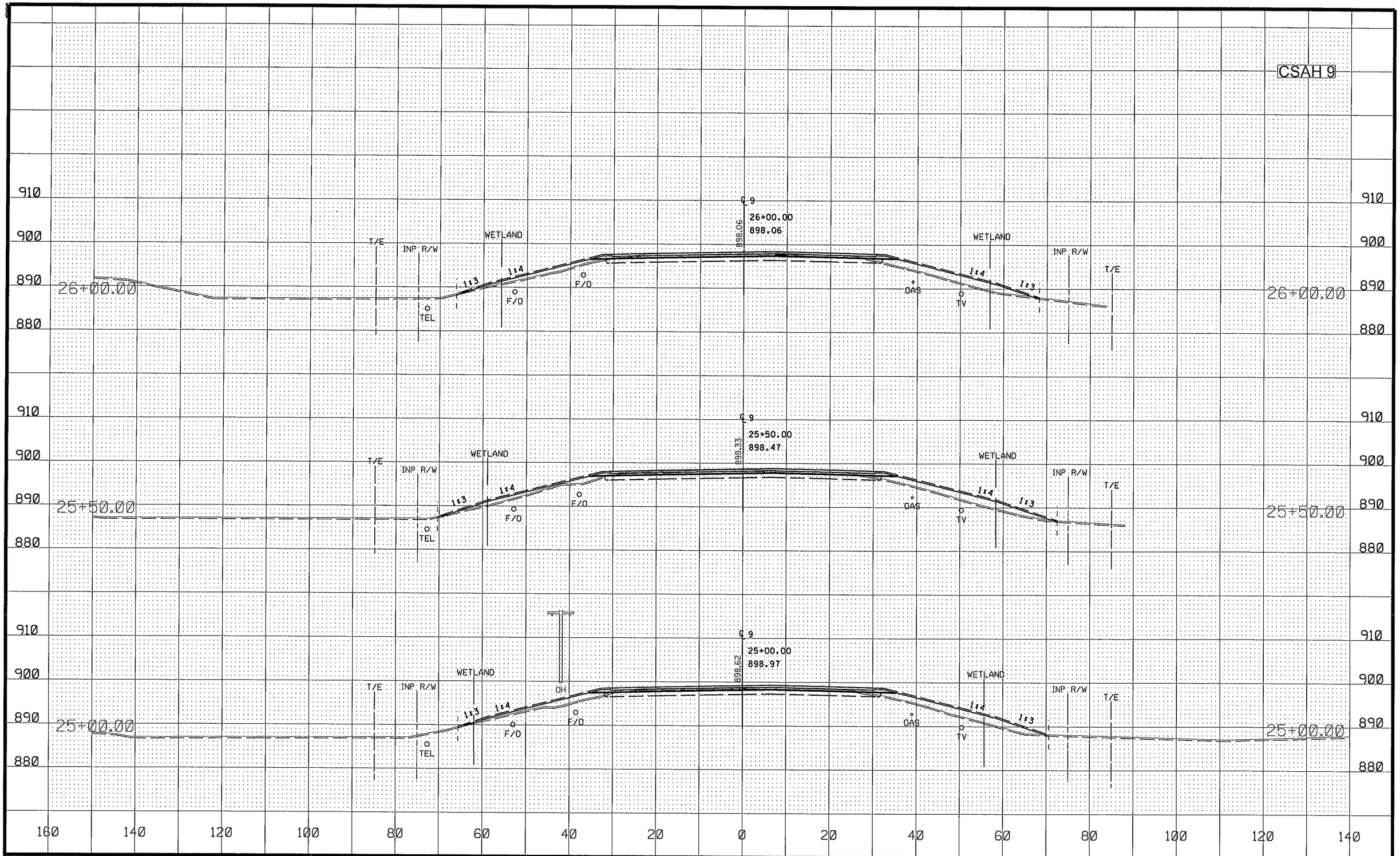
CROSS SECTIONS
CSAH 9
STA 23+50.00 TO 24+50.00



NO	DATE	BY	CKD	APPR	REVISION

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ANOKA COUNTY HIGHWAY DEPT.

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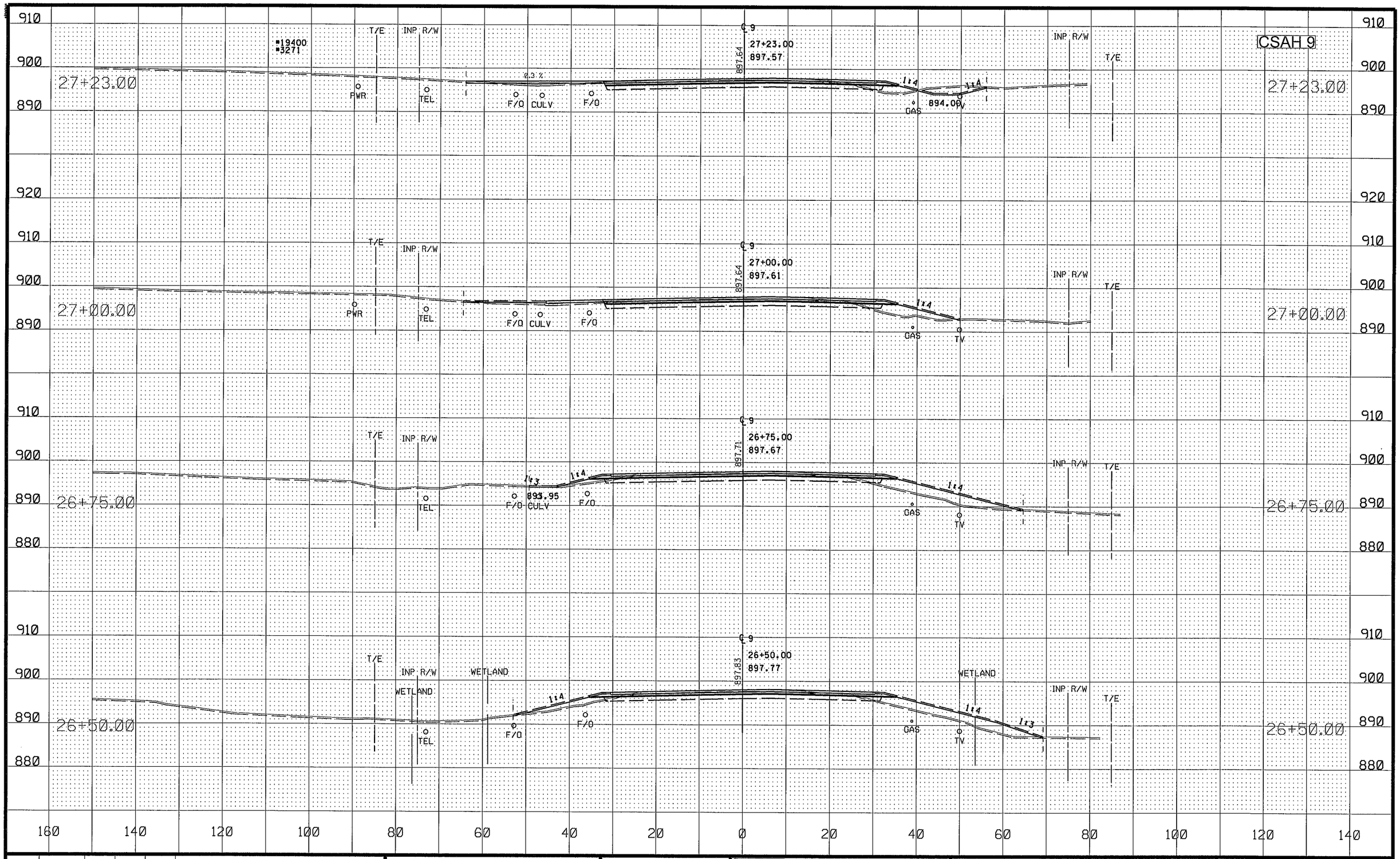
SAP 002-622-035

CROSS SECTIONS
CSAH 9
STA 25+00.00 TO 26+00.00

Sheet 113 of 119 Sheets



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ANOKA COUNTY HIGHWAY DEPT.

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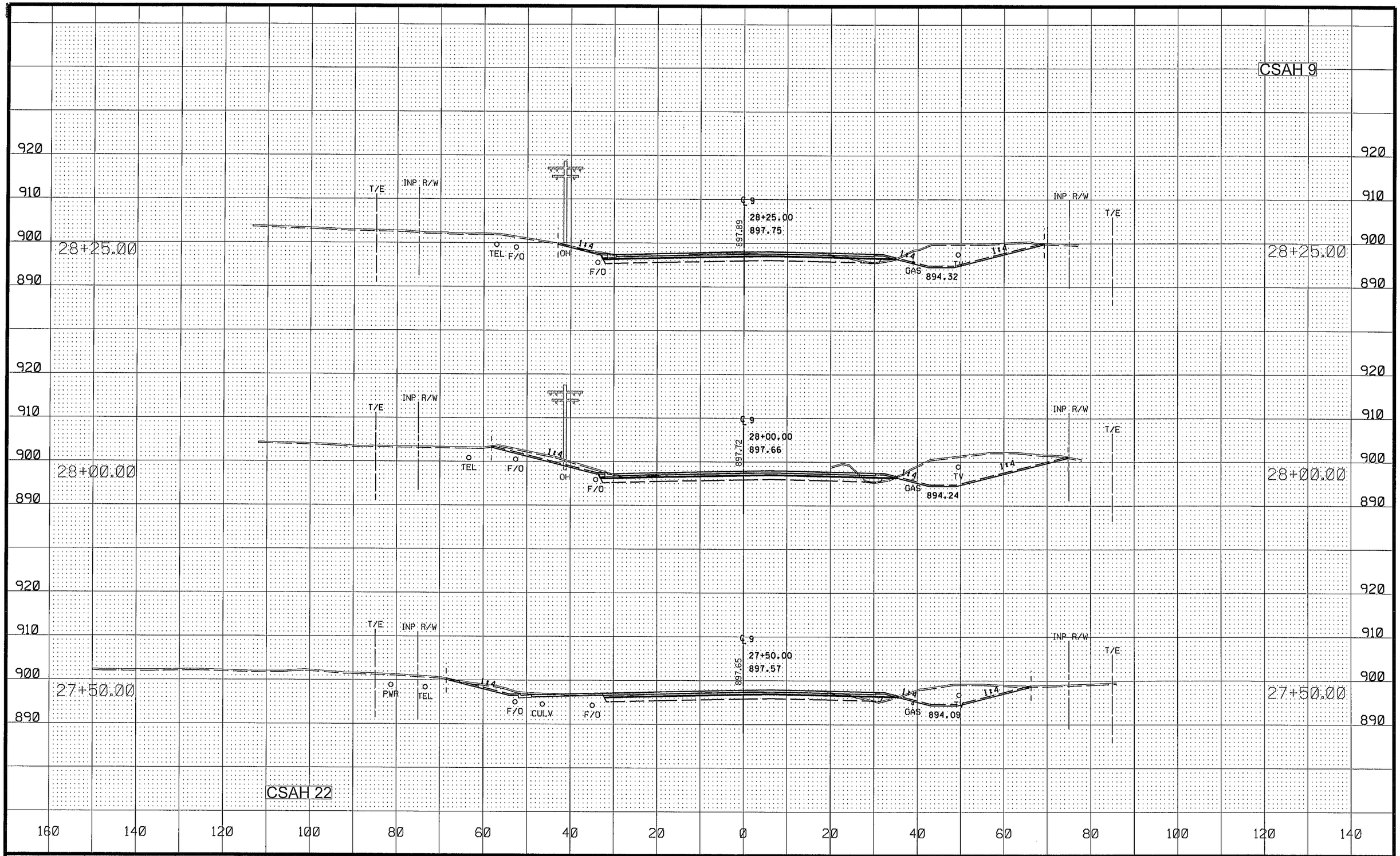
SAP 002-622-035

CROSS SECTIONS
CSAH 9
STA 26+50.00 TO 27+23.00

Sheet 114 of 119 Sheets



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ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

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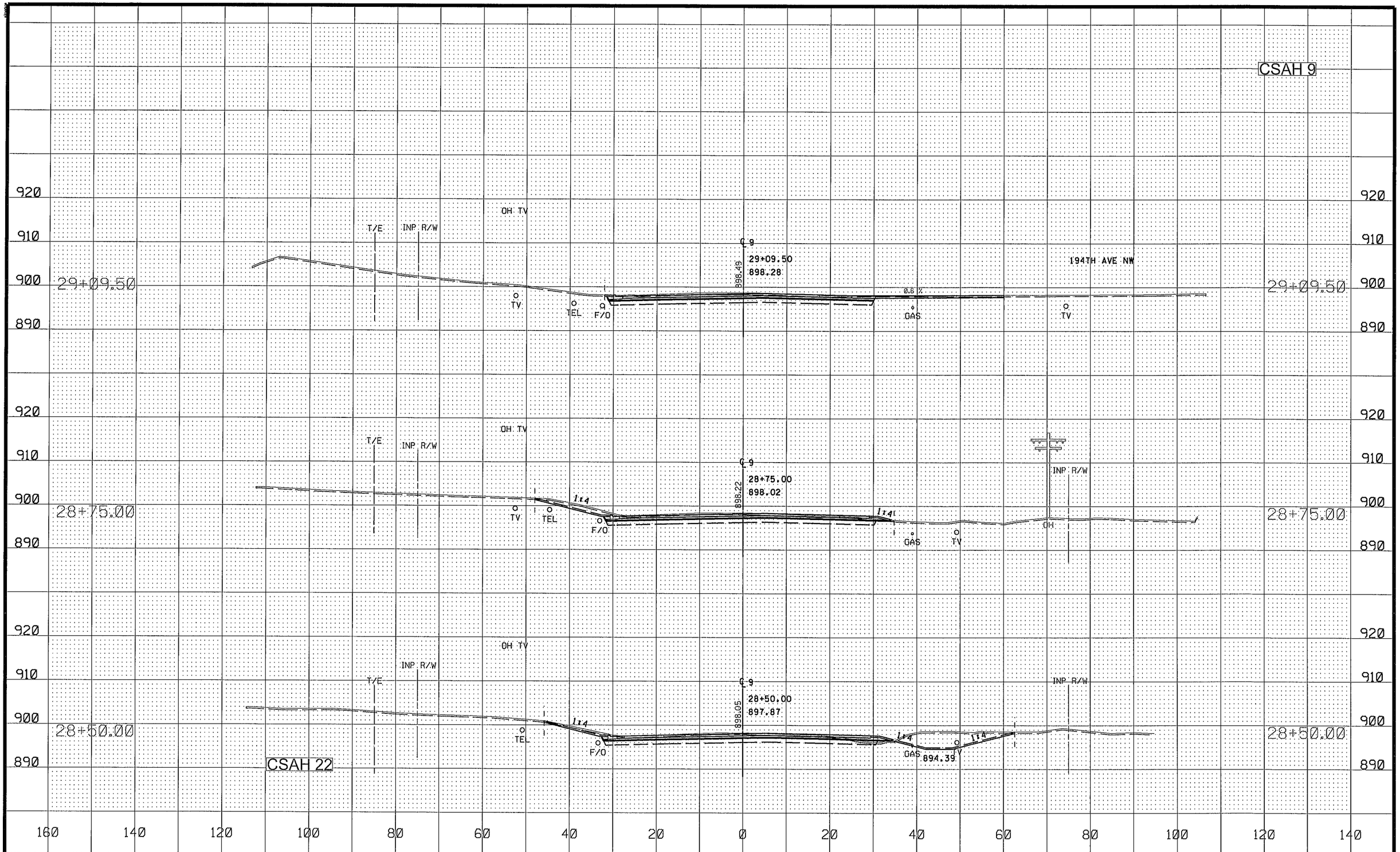
SAP 002-622-035

CROSS SECTIONS
CSAH 9

STA 27+50.00 TO 28+25.00

Sheet 115 of 119 Sheets



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ANOKA COUNTY HIGHWAY DEPT.

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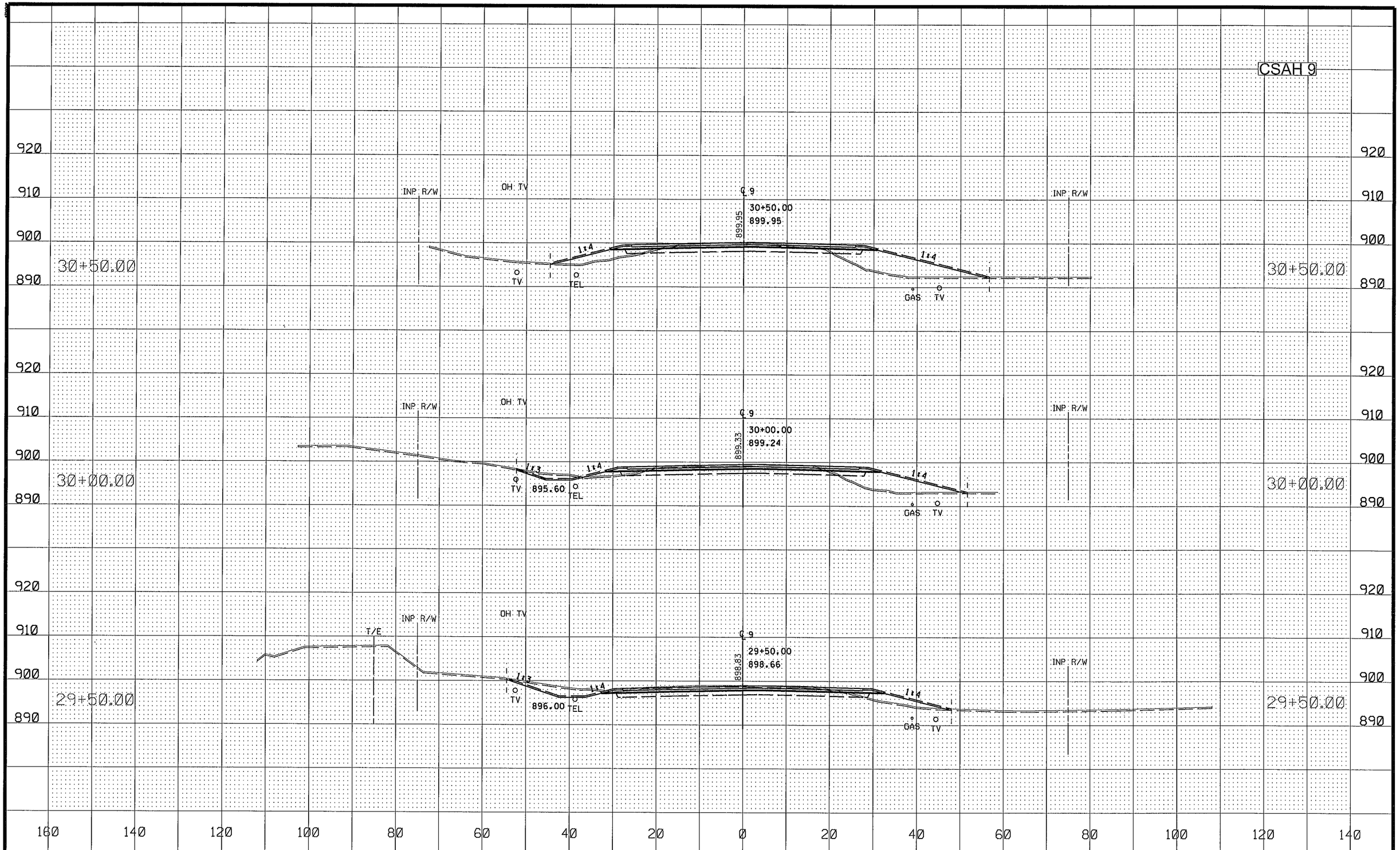
SAP 002-622-035

CROSS SECTIONS
CSAH 9
STA 28+50.00 TO 29+09.50

Sheet 116 of 119 Sheets



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DESIGN BY EJM DATE 07-06-16
CHECKED BY GMP DATE 07-14-16

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

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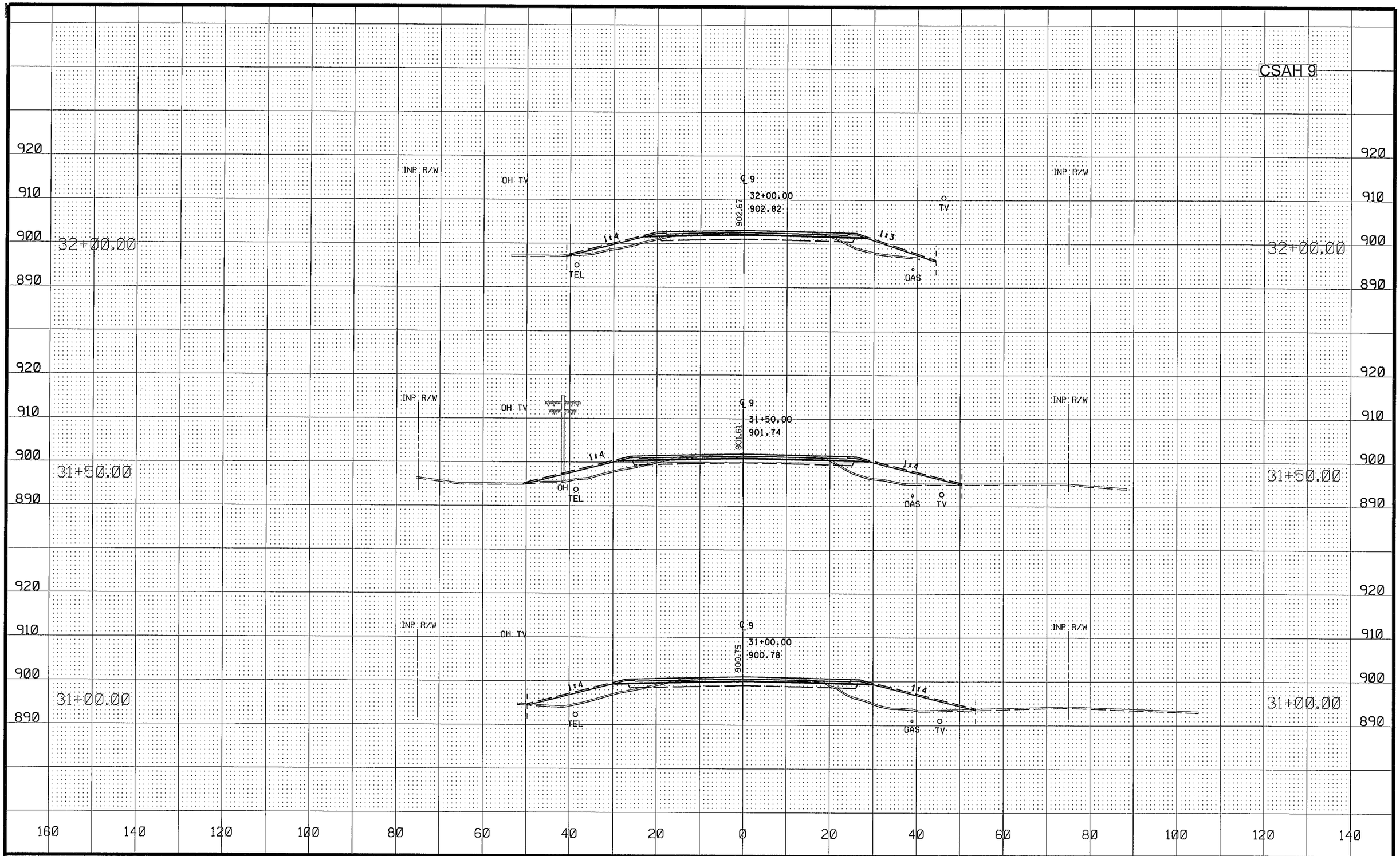
SAP 002-622-035

CROSS SECTIONS
CSAH 9
STA 29+50.00 TO 30+50.00



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DESIGN BY EJM DATE 07-06-16
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ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

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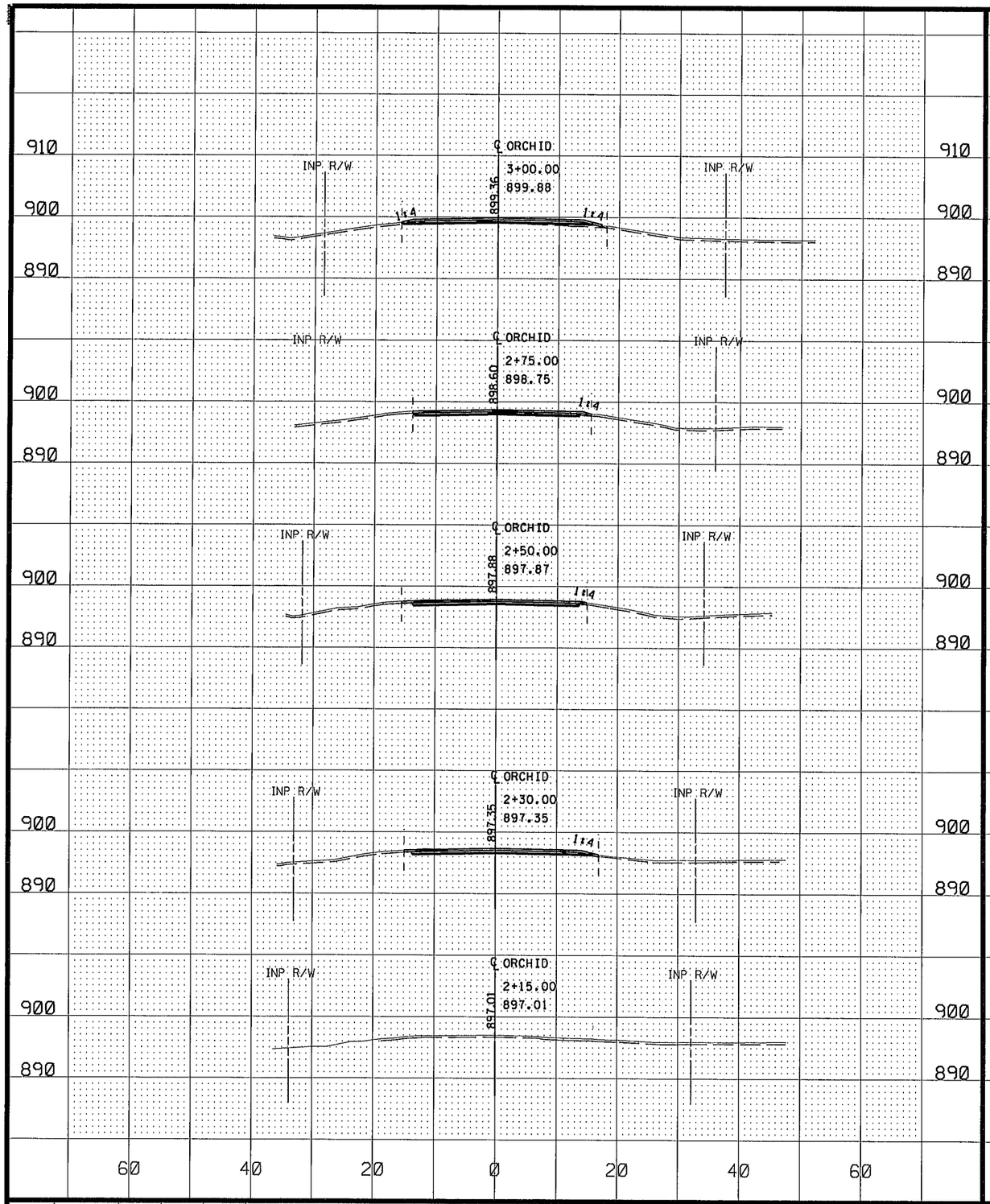
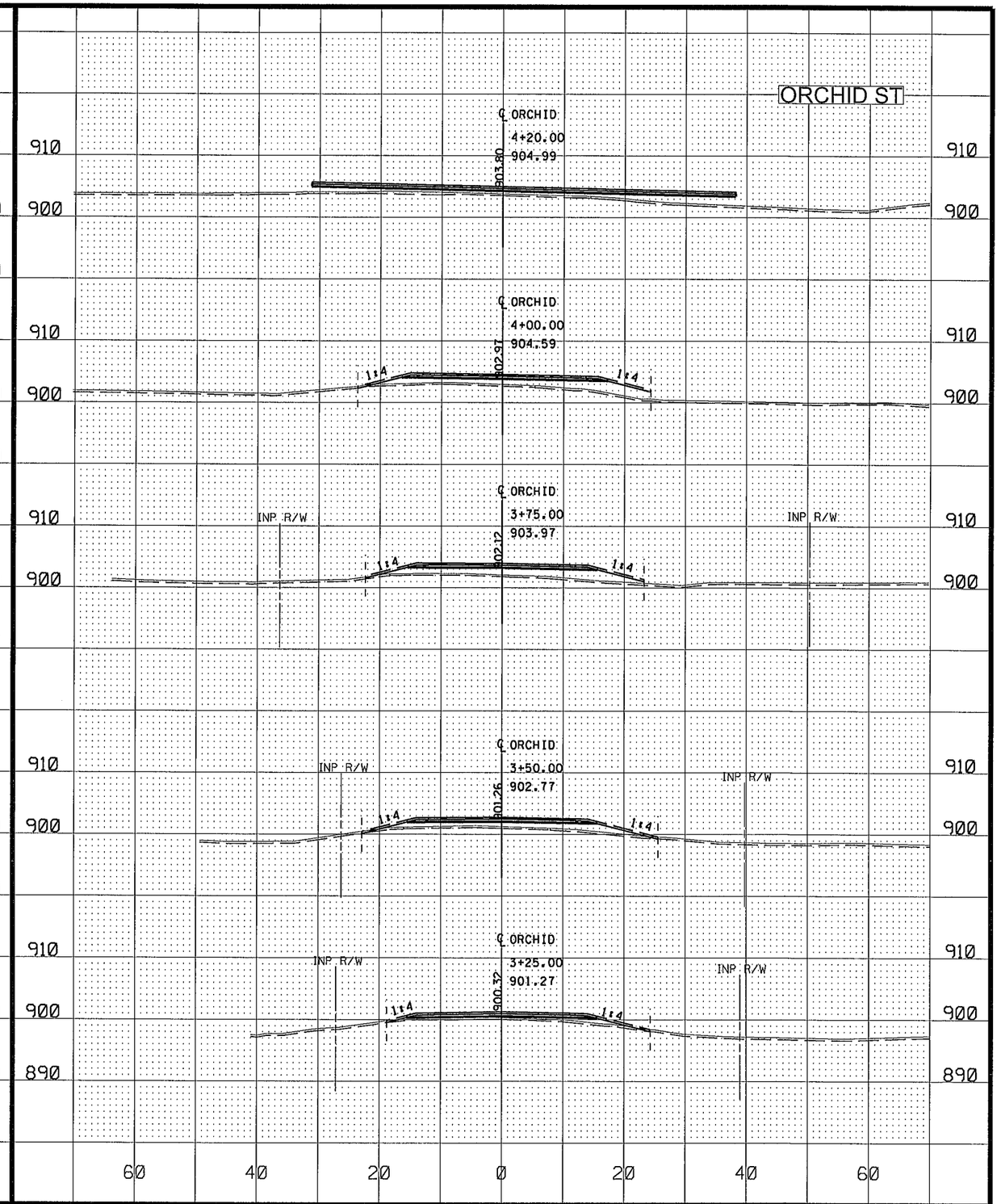
SAP 002-622-035

CROSS SECTIONS
CSAH 9
STA 31+00.00 TO 32+00.00





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ANOKA COUNTY HIGHWAY DEPT.

SAP 002-609-016
SAP 002-622-035

CROSS SECTIONS
ORCHID ST
STA 2+15.00 TO 4+20.00

Sheet 119 of 119 Sheets

BITUMINOUS / AGGREGATE SUMMARY

H

ALIGNMENT	DIRECTION	STATION	TO	STATION	LT/RT	BITUMINOUS: 2360 TYPE SP 12.5 WEAR (3,F)	BITUMINOUS: 2360 TYPE SP 12.5 NON-WEAR (3,B)	BITUMINOUS: 2357 BIT. TACK COAT	AGGREGATE BASE: 2211 CLASS 5	AGGREGATE BASE: 2221 SHOULDER CLASS 5	TEMP WIDENING: 2360 TYPE SP 12.5 NON-WEAR TEMP (3,B)	TEMP WIDENING: 2221 SHOULDER BASE CLASS 5	2112 SHOULDER PREP
						TON	TON	GALLON	CU YD	CU YD	TON	TON	LIN FT
SAP 002-609-016													
CSAH 9	LNB	9+50	-	14+78	RT								270
CSAH 9	LNB	13+48	-	22+28	RT	726	363	316	526	46			
CSAH 9	LNB	15+39	-	18+24	RT								285
CSAH 9	LNB	19+06	-	21+87	RT								281
CSAH 9	LNB	22+74	-	31+52	RT	693	346	301	502	46			
CSAH 9	LNB	23+02	-	28+81	RT								579
CSAH 9	LNB	29+32	-	33+59	RT						42	45	427
CSAH 9	LSB	10+00	-	22+28	LT	663	331	288	480	46	28	30	
CSAH 9	LSB	22+74	-	31+52	LT	708	354	308	513	45			
CSAH 9	LSB	31+52	-	34+77	LT						33	35	325
					SUBTOTAL	**2790**	**1394**	**1213**	**2021**	**183**	**103**	**110**	**2167**
SAP 002-622-035													
CSAH 22	LEB	57+94	-	67+50	RT	727	364	316	527	52			
CSAH 22	LEB	67+50	-	76+71	RT	664	332	289	481	51	34	36	
CSAH 22	LWB	57+94	-	67+50	LT	728	364	316	527	52			
CSAH 22	LWB	59+44	-	66+90	LT								746
CSAH 22	LWB	67+50	-	76+71	LT	697	349	303	505	51			
CSAH 22	LWB	68+05	-	80+41	LT						7	8	1236
ORCHID ST		1+35	-	2+21	LT/ RT	57		28	39	10			
					SUBTOTAL	**2873**	**1409**	**1252**	**2079**	**216**	**41**	**44**	**1982**
					PROJECT TOTAL	**5663**	**2803**	**2465**	**4100**	**399**	**144**	**154**	**4149**

CULVERT TABULATION

I

ALIGNMENT	STATION	TO	STATION	OFFSET LEFT	OFFSET RIGHT	INVERT ELEVATION INLET	INVERT ELEVATION OUTLET	SLOPE %	FURNISH & INSTALL: 15" RC PIPE CULVERT	15" RC SAFETY APRON	18" RC PIPE CULVERT	18" RC SAFETY APRON	24" RC PIPE CULVERT	24" RC SAFETY APRON	24" PVC PIPE SEWER	CONNECT TO EX. STORM SEWER	RANDOM RIPRAP CL III	GEOTEXTILE FILTER TYPE III	INSTALL: 24" GS APRON	NOTES
									EACH	LIN FT	EACH	LIN FT	EACH	LIN FT	LIN FT	EACH	CU YD	SQ YD	EACH	
SAP 002-609-016																				
CSAH 9	18+35	-	18-96		48	903.68	903.33	0.50			58	2					6.4	25.6		
								SUBTOTAL	**0**	**0**	**58**	**2**	**0**	**0**	**0**	**0**	**6**	**26**	**0**	
SAP 002-622-035																				
CSAH 22	60+10	-	60+70		56	901.00	900.40	1.00	48	2							4.8	20.8		
CSAH 22	63+08	-	63+42	48	73	888.13	886.73	1.06							5	1	9.5	34.2	1	
CSAH 22	71+26	-	72+04		51	892.86	892.00	1.06			69	2					6.4	25.6		
CSAH 22	72+80			44	44	889.71	889.23	0.55					76	2			9.2	33.4		[1]
CSAH 22	75+05	-	75+46	45		891.16	890.56	1.50	30	2							4.8	20.8		
								SUBTOTAL	**78**	**4**	**69**	**2**	**76**	**2**	**5**	**1**	**35**	**135**	**1**	
								PROJECT TOTAL	**78**	**4**	**127**	**4**	**76**	**2**	**5**	**1**	**41**	**161**	**1**	

GENERAL NOTES:
INVERT ELEVATIONS ARE AT THE END OF APRON.
PIPE LENGTHS DO NOT INCLUDE APRONS.

CULVERT NOTES:
[1] TRENCHING AND CLASS B BEDDING MATERIAL INCIDENTAL.

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-622-35\Plan\0262235_TAB.dgn 07/18/2016 2:31:42 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: ELIZABETH MARKOSE
SIGNATURE:
DATE: LICENSE NO. 49118

DRAWN BY EJM DATE 07-06-16
DESIGN BY EJM DATE 07-06-16
CHECKED BY GMP DATE 07-14-16

ANOKA COUNTY HIGHWAY DEPT.

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TABULATIONS

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