

# MINNESOTA DEPARTMENT OF TRANSPORTATION ANOKA COUNTY

CONSTRUCTION PLAN FOR CITY UTILITY UPGRADES, GRADING, AGGREGATE BASE, CURB AND GUTTER, BITUMINOUS SURFACING

LOCATED ON 7TH AVENUE BETWEEN EAST RIVER ROAD AND CROSS STREET

13-12-07

GROSS LENGTH	2975 FEET	0.563 MILES
BRIDGES-LENGTH	0.00 FEET	0.000 MILES
EXCEPTIONS-LENGTH	0.00 FEET	0.000 MILES
NET LENGTH	2975 FEET	0.563 MILES

CITY OF ANOKA



BEGIN COUNTY PROJECT 13-12-07  
CSAH 7 STA. 10+25

END COUNTY PROJECT 13-12-07  
CSAH 7 STA. 40+00

THIS PLAN CONTAINS 46 SHEETS

DESIGN DESIGNATION

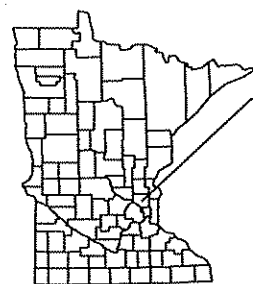
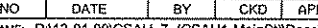
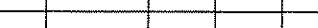
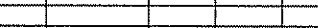
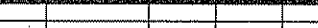
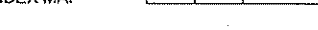
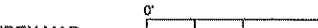
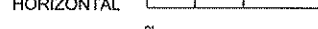
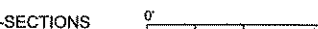
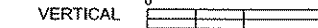
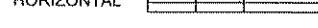
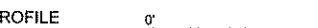
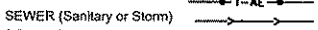
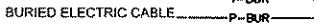
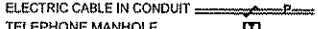
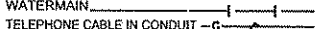
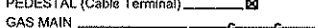
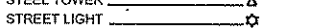
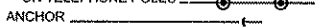
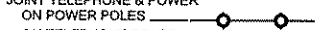
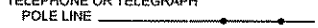
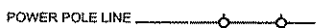
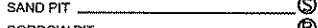
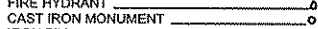
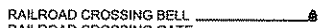
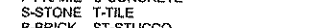
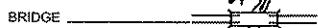
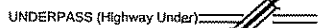
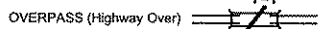
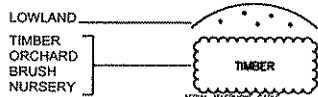
ESAL 20	152,000
R VALUE	50
ADT (2011) =	6,388
Proj. ADT (2030) =	13,800
Proj. HCADT (2030) =	NA
Soil Factor	NA
<u>9</u> TON DESIGN	

Functional Classification	MAJOR COLLECTOR	
No. of Traffic Lanes	<u>2</u>	No. of Parking Lanes <u>0</u>
Design Speed	<u>35</u> MPH	N/A
Based on Stopping Sight Distance		
Height of eye	<u>3.5'</u>	Height of object <u>2.0'</u>
Design Speed not achieved at:		
STA. <u>10+25</u>	TO STA. <u>40+00</u>	<u>35</u> MPH

Approved: 4/4/13  
ANOKA COUNTY ENGINEER

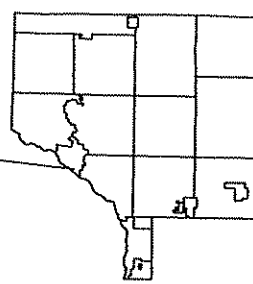
### PLAN SYMBOLS

- 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 \_\_\_\_\_



PROJECT LOCATION

CITY OF ANOKA  
ANOKA COUNTY  
MN/DOT TRANSPORTATION DISTRICT - METRO  
SECTION 7  
TOWNSHIP 31 NORTH  
RANGE 24 WEST



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

PRINT NAME: ANDREW WITTER

SIGNATURE:

DATE: 4/4/13 LICENSE NO. 42757

DRAWN BY: JJ DATE: 04/03/2013

DESIGN BY: JJ DATE: 04/03/2013

CHECKED BY: OFF DATE: 04/03/2013



ANOKA COUNTY  
HIGHWAY DEPT.

COUNTY PROJECT NO. 13-12-07

TITLE SHEET

Sheet 1 of 39 Sheets

NO	DATE	BY	CKD	APPR	REVISION	TIME

NAME: P:\13-01-00\CSAH 7 (CSAH1-MainSt)\Base\PROPOSED\PLAN1 7S TITLE.dgn

CSAH 7 STATEMENT OF ESTIMATED QUANTITIES				
ITEM NO.	ITEM	NOTES	UNIT	TOTAL EST. QUANT.
2021.501	MOBILIZATION		LUMP SUM	1
2101.502	CLEARING	21	TREE	3
2101.507	GRUBBING	21	TREE	3
2104.501	REMOVE CURB AND GUTTER		LIN FT	6695
2104.501	REMOVE SEWER PIPE (STORM)	21	LIN FT	445
2104.501	REMOVE SEWER PIPE (SANITARY)	21	LIN FT	147
2104.501	REMOVE WATER MAIN	21	LIN FT	1146
2104.501	REMOVE WOOD RETAINING WALL	21	SQ FT	160
2104.503	REMOVE CONCRETE WALK		SQ FT	10620
2104.503	REMOVE CONCRETE DRIVEWAY PAVEMENT	1	SQ FT	4675
2104.505	REMOVE BITUMINOUS PAVEMENT		SQ YD	16006
2104.509	REMOVE MANHOLES OR CATCH BASINS	2	EACH	17
2104.509	REMOVE DRAINAGE STRUCTURE	20	EACH	9
2104.509	REMOVE HANDHOLE		EACH	2
2104.509	REMOVE HYDRANT	21	EACH	3
2104.511	SAWING CONCRETE PAVEMENT (FULL DEPTH)		LIN FT	100
2104.513	SAWING BITUMINOUS PAVEMENT (FULL DEPTH)		LIN FT	905
2104.521	SALVAGE CHAIN LINK FENCE	21	LF	40
2104.521	SALVAGE IRON FENCE	21	LF	20
2104.521	SALVAGE RETAINING WALL	21	SQ FT	160
2104.523	SALVAGE SIGN TYPE SPECIAL	21	EACH	1
2105.501	COMMON EXCAVATION	3	CU YD	1636
2105.525	TOPSOIL BORROW (LV)		CU YD	83
2105.541	STABILIZING AGGREGATE	21	CU YD	6
2123.503	MOTOR GRADER		hour	20
2130.501	WATER		MGAL	50
2211.503	AGGREGATE BASE (CV) CLASS 5 (P)		CU YD	4002
2357.502	BITUMINOUS MATERIAL FOR TACK COAT		GAL	750
2360.501	TYPE SP 12.5 WEARING COURSE MIXTURE (4.E)	4	TON	3642
2401.541	REINFORCEMENT BARS (EPOXY COATED)		POUND	250
2411.602	CONSTRUCT CONCRETE PLUG	21,22	EACH	10
2411.603	INSTALL RETAINING WALL	21	SQ FT	160
2411.607	INVERT CONCRETE (3B42)	21,26	CU YD	3
2501.602	SAFETY GRATE	21	EACH	1
2503.511	8" PVC PIPE SEWER SDR 35	21	LIN FT	320
2503.511	10" PVC PIPE SEWER SDR 26	21	LIN FT	489
2503.541	12" RC PIPE SEWER DESIGN 3006 CL V	21	LIN FT	242
2503.541	15" RC PIPE SEWER DESIGN 3006 CL V	21	LIN FT	685
2503.541	18" RC PIPE SEWER DESIGN 3006 CL IV	21	LIN FT	165
2503.541	72" RC PIPE SEWER DESIGN 3006 CL II	21	LIN FT	150
2503.602	CONNECT TO EXISTING MANHOLE	21	EACH	1
2503.602	CONNECT TO EXISTING STORM SEWER	21	EACH	4
2503.602	CONSTRUCT CONCRETE PLUG	21,23	EACH	1
2503.602	CONNECT TO EXISTING SANITARY SEWER	21	EACH	4
2503.602	PIPE PLUG	21,24	EACH	7
2503.602	8"x4" PVC WYE SDR 26	21	EACH	1
2503.602	10"x4" PVC WYE SDR 26	21	EACH	1
2503.602	10"x6" PVC WYE SDR 26	21	EACH	1
2503.603	CLEAN AND VIDEO TAPE PIPE SEWER	21	LIN FT	734
2503.603	4" PVC SANITARY SERVICE PIPE SDR 26	21	LIN FT	100
2503.603	6" PVC SANITARY SERVICE PIPE SDR 26	21	LIN FT	52
2504.601	TEMPORARY WATER SERVICE	21	LUMP SUM	1
2504.602	ADJUST GATE VALVE	5	EACH	8
2504.602	INSTALL PLUG	21,25	EACH	1
2504.602	RECONNECT WATER SERVICE	21	EACH	6
2504.602	CONNECT TO EXISTING WATER MAIN	21	EACH	18
2504.602	HYDRANT	21	EACH	5
2504.602	1" CORPORATION STOP	21	EACH	6
2504.602	6" GATE VALVE AND BOX	21	EACH	13
2504.602	8" GATE VALVE AND BOX	21	EACH	2
2504.602	10" GATE VALVE AND BOX	21	EACH	6
2504.602	1" CURB STOP & BOX	21	EACH	6
2504.603	HYDRANT RISER	21	LIN FT	4
2504.603	TAP SERVICE PIPE 1"	21	EACH	1
2504.603	1" TYPE K COPPER PIPE	21	LIN FT	210
2504.603	6" WATERMAIN DUCTILE IRON CL 52	21	LIN FT	532
2504.603	8" WATERMAIN DUCTILE IRON CL 52	21	LIN FT	144

CSAH 7 STATEMENT OF ESTIMATED QUANTITIES, CONTINUED				
ITEM NO.	ITEM	NOTES	UNIT	TOTAL EST. QUANT.
2504.603	10" WATERMAIN DUCTILE IRON CL 52	21	LIN FT	777
2504.604	4" POLYSTYRENE INSULATION	21	SQ YD	15
2504.608	DUCTILE IRON FITTINGS	21	POUND	5944
2506.501	CONSTRUCT DRAINAGE STRUCTURE DESIGN 48-4020	21	LIN FT	39
2506.501	CONSTRUCT DRAINAGE STRUCTURE DESIGN 120-4020	21	LIN FT	24
2506.502	CONSTRUCT DRAINAGE STRUCTURE DESIGN H	21	EACH	5
2506.503	CONSTRUCT SANITARY STRUCTURE DESIGN 4007	21	EACH	5
2506.516	CASTING ASSEMBLY	6	EACH	36
2506.602	GROUT CATCH BASIN OR MANHOLE		EACH	4
2521.501	4" CONCRETE WALK		SQ FT	5925
2521.501	6" CONCRETE WALK	7	SQ FT	4335
2531.501	CONCRETE CURB & GUTTER DESIGN B418	8	LIN FT	6033
2531.501	CONCRETE CURB & GUTTER DESIGN B618	19	LIN FT	550
2531.507	6" CONCRETE DRIVEWAY PAVEMENT	10	SQ YD	538
2531.507	8" CONCRETE DRIVEWAY PAVEMENT	10	SQ YD	215
2540.618	BLOCK RETAINING WALL	21,27	SQ FT	100
2531.618	TRUNCATED DOMES	11	SQ FT	192
2545.521	2" RIGID STEEL CONDUIT	12	LIN FT	180
2545.553	HANDHOLE	12	EACH	2
2545.602	ADJUST HANDHOLE		EACH	4
2557.603	INSTALL CHAIN LINK FENCE	21	LF	40
2557.603	INSTALL IRON FENCE	21	LF	20
2563.601	TRAFFIC CONTROL	13,14,15	LUMP SUM	1
2563.613	PORTABLE CHANGEABLE MESSAGE SIGN	16	UNIT DAY	14
2564.537	INSTALL SIGN TYPE SPECIAL	21	EACH	1
2565.602	NMC LOOP DETECTORS 6' X 6'		EACH	5
2573.502	SILT FENCE, TYPE MACHINE SLICED		LIN FT	500
2573.530	STORM DRAINAGE INLET PROTECTION	17	EACH	29
2573.540	FILTER LOG TYPE COMPOST LOG	5	LIN FT	30
2575.505	SODDING TYPE SALT RESISTANT		SQ YD	3476
2581.501	REMOVABLE PREFORMED PLASTIC MARKING	18	LIN FT	236
2582.502	4" SOLID LINE WHITE-EPOXY		LIN FT	5715
2582.502	4" SOLID LINE YELLOW-EPOXY		LIN FT	980
2582.502	4" BROKEN LINE YELLOW-EPOXY		LIN FT	270
2582.502	4" DOUBLE SOLID LINE YELLOW-EPOXY		LIN FT	1360
2582.602	PAVT MSSG (RT ARROW) PREF THERMOPLASTIC		EACH	1
2582.602	PAVT MSSG (LT-THRU ARROW) PREF THERMOPLASTIC		EACH	1
2582.603	24" WHITE PREF THERMOPLASTIC		LIN FT	134
2582.618	3 X 6 ZEBRA CROSSWALK - PREFORMED THERMOPLASTIC		SQ FT	594

CSAH 7 CONSTRUCTION NOTES	
1	ITEM INCLUDES REMOVAL OF EXISTING CROSS GUTTER AREAS
2	ITEM INCLUDES CURB OUTLETS (SEE PLAN FOR LOCATION)
3	ITEM FOR BASE MATERIAL, BOULEVARDS AND STREET APPROACHES
4	SEE BITUMINOUS SUMMARY TAB FOR BREAKOUT QUANTITIES
5	SEE CONSTRUCTION PLAN AND TABS FOR LOCATION
6	ITEM INCLUDES FURNISH AND INSTALL CASTING AND INSTALLATION OF NEW ADJUSTMENT RINGS
7	6" WALK TO BE INSTALLED AT ALL PEDESTRIAN RAMP LOCATIONS
8	CURB RADIUS IN CROSS GUTTERS INCLUDED IN 2531.507 (6")
10	HIGH EARLY CONCRETE TO BE USED FOR THIS ITEM, EXCLUDING CROSS GUTTERS DUE TO ROAD CLOSURE
11	INSTALL RADIAL STYLE TRUNCATED DOMES AT EVERY CROSSING
12	ITEM FOR THE REPLACEMENT OF DAMAGED SIGNAL CONDUIT
13	DO NOT PASS, PASS WITH CARE, NO CENTER STRIPE AND BUMP/BUMP AHEAD SIGNS TO BE IN PLACE DURING MILLING / PAVING OPERATIONS.
14	MARKINGS SHALL BE IN PLACE WITH IN 72 HOURS OF FINAL MAINLINE PAVING
15	ALL TRAFFIC CONTROL DEVICES AND METHODS SHALL CONFORM TO THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL
16	2 MESSAGE BOARDS (ONE ON EACH END OF PROJECT) TO BE IN PLACE 7 DAYS PRIOR TO ANY WORK.
17	ALL DRAINAGE STRUCTURES ON THIS PROJECT MUST HAVE INLET PROTECTION, INCLUDES 7 LOCATIONS OFF SITE (SEE REMOVAL PLAN)
18	SKIPS WILL BE PLACED AS SOON AS POSSIBLE AFTER PAVING OPERATIONS, CONTRACTOR TO REMOVE PRIOR TO FINAL PAINT STRIPING
19	ALL SIDE STREET CURB AND GUTTER TO TRANSITION FROM B418 TO B618 THROUGH RADIUS
20	REMOVAL OF CASTINGS IS INCIDENTAL
21	CITY ITEM
22	PLUG FOR WATERMAIN PIPE
23	PLUG FOR STORM SEWER PIPE
24	PLUG FOR SANITARY PIPE
25	PLUG FOR 72" PIPE STUB, REQUIRES SPECIAL PRECAST GASKETED PLUG MANUFACTURED BY SUPPLIER AND FURNISHED BY CONTRACTOR
26	INVERT POUR INCLUDES PLUG ON REMAINING PIPE
27	REBUILDING SALVAGED WALL

NO	DATE	BY	CHKD	APPR	REVISION	04/03/2013	2:23:08 PM
NAME: P:\13-01-00\CSAH_7_(CSAH1-MainSt)\Base\PROPOSED\PLAN2-4_7S_SEQ.dgn							

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

PRINT NAME: ANDREW WITTER

SIGNATURE: *Andrew Witter*

DATE: 4/4/13 LICENSE NO. 42757

DRAWN BY JJ DATE 04/03/2013

DESIGN BY JJ DATE 04/03/2013

CHECKED BY DFF DATE 04/03/2013



ANOKA COUNTY  
HIGHWAY DEPT.

COUNTY PROJECT NO. 13-12-07

STATEMENT OF ESTIMATED QUANTITIES

Sheet 2 of 39 Sheets

STRUCTURE SUMMARY																								
STRUCTURE	STATION	OFFSET	SYSTEM TYPE	FINISHED TOP CASTING	STRUCTURE INVERT	SLOPE (%)	DOWNSTREAM STRUCTURE	DOWNSTREAM STRUCTURE INVERT	REMOVE DRAINAGE STRUCTURE	H	48-4020	120-4020	12" RCP CL V	15" RCP CL V	18" RCP CL IV	72" RCP CL II	FURNISH AND INSTALL CASTING	R-3070 V	R-3250-DVSP	A-7D	GROUT	RING HEIGHT	ACTION	
										LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	EACH	LIN FT	LIN FT	EACH	EACH	LIN FT		
109	10+43.3	1.00	SANITARY	878.48													1			1		-	REMOVE RING, NO HOLES IN COVER	
110	13+43.0	-0.70	SANITARY	879.63													1			1		2.0	RE-RING	
111	16+43.0	-0.50	SANITARY	878.53													1			1		0.2	RE-RING	
112	19+59.2	-0.10	SANITARY	-					1								-			-		-	REMOVE & PLUG	
STUB 4000			SANITARY																					
4001			SANITARY																					
4003			SANITARY																					
4002			SANITARY																					
4004			SANITARY																					
SEE CITY UTILITY PLANS, SHEET: C3 FOR SUMMARY																								
229	24+44.0	21.25	STORM	873.34	858.76	0.10	300	858.60	1		14.5				165.0		1	1					RECONSTRUCT*, CONNECT TO EX.	
230	24+43.8	-72.90	STORM	INPLACE	866.00	0.49	229	865.54						93.0			1			1			CONCRETE INVERT*, CONNECT TO EX. MH	
231	25+15.8	-94.80	STORM	INPLACE																	1		GROUT	
232	25+14.6	-220.00	STORM	INPLACE																	1		GROUT	
233	26+08.8	-162.00	STORM	INPLACE																	1		GROUT	
234	26+37.0	-163.00	STORM	INPLACE																	1		GROUT	
235	26+06.5	41.10	STORM	872.40	868.67	0.50	300	868.53	1		3.7			28.0			1		1			VARIES	RECONSTRUCT*	
236	26+35.3	41.00	STORM	872.40	869.00	0.50	235	868.87	1	3.4			26.0				1		1			VARIES	RECONSTRUCT*	
237	26+55.0	21.25	STORM	872.92	868.94	0.50	300	868.65	1		3.9			58.0			1	1				VARIES	RECONSTRUCT*	
238	26+55.0	-21.25	STORM	872.92	869.34	0.50	237	869.14	1	3.5			40.0				1	1				VARIES	RECONSTRUCT*	
239	26+66.3	-70.50	STORM	868.67	858.49		EX		1			10.2					1			1		VARIES	RECONSTRUCT*, CONNECT TO EX.	
240	32+68.1	-39.70	STORM	876.55													1	1				0.2	RE-RING	
241	32+74.3	-50.50	STORM	877.03													1			1		0.6	RE-RING	
242	32+68.2	39.70	STORM	876.55													1	1				0.2	RE-RING	
243	32+71.8	45.40	STORM	876.89													1			1		0.6	RE-RING	
244	32+98.3	43.30	STORM	876.55													1	1				0.4	RE-RING	
245	32+98.6	39.10	STORM	876.55													1	1				-	REMOVE RINGS	
246	32+97.5	-40.00	STORM	876.55													1	1				-	REMOVE RINGS	
247	32+97.9	-44.30	STORM	876.55													1	1				0.2	RE-RING	
248	32+82.6	-56.80	SANITARY	877.45													1			1		0.2	RE-RING	
249	36+12.4	-39.90	SANITARY	878.17													1			1		-	REMOVE RINGS	
STUB	26+12.0	62.00	STORM	-	858.66	0.13	300	858.60							45.0							VARIES	INSTALL PLUG*	
300	26+12.0	17.00	STORM	872.84	858.60	0.10	239	858.49				14.2			105.0		1			1		VARIES	CONSTRUCT*	
301	21+53.0	21.25	STORM	875.38	871.05	0.50	229	869.59			4.3			291.0			1	1				VARIES	CONSTRUCT*	
302	21+53.0	-21.25	STORM	875.15	871.35	0.50	301	871.15			3.8			40.0			1	1				VARIES	CONSTRUCT*	
303	20+30.0	-38.00	STORM	876.20	872.70	0.93	302	871.55		3.5		124.0					1			1		VARIES	CONSTRUCT	
304	36+28.8	-47.40	STORM	878.00	873.81	0.50	305	873.68		4.2		26.0					1		1			VARIES	CONSTRUCT*	
305	36+00.3	-48.00	STORM	877.90	873.40	0.30	STUB	873.13		4.5			89.0				1		1			VARIES	CONSTRUCT*, PLUG, STAB. AGG	
306	39+57.5	-41.60	STORM	878.60	874.68	0.50	307	874.55		3.9		26.0					1		1			VARIES	CONSTRUCT*	
307	39+30.3	-41.40	STORM	878.60	874.45	0.30	STUB	874.19			4.2		86.0				1		1			VARIES	CONSTRUCT*, PLUG, STAB. AGG	
CURB OUTLETS:																								
									3													REPLACE		
TOTAL:									7.0	18.6	38.8	24.4	242.0	685.0	165.0	150.0	31	11	6	11	4	4.6		

\*CITY DESIGN STORMSEWER

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.  
 PRINT NAME: ANDREW WITTER  
 SIGNATURE: *[Signature]*  
 DATE: 4/15/13 LICENSE NO. 42757

DRAWN BY JJ DATE 04/03/2013  
 DESIGN BY JJ DATE 04/03/2013  
 CHECKED BY DJF DATE 04/03/2013



ANOKA COUNTY  
 HIGHWAY DEPT.

COUNTY PROJECT NO. 13-12-07

TABULATIONS

Sheet 3 of 39 Sheets

NO	DATE	BY	CKD	APPR	REVISION	
	04/03/2013					2:23:15 PM

NAME: P:\113-01-00\CSAH\_7\_(CSAH1-MainSt)\Base\PROPOSED\PLAN2-4\_75\_SEQ.dgn

EARTHWORK BALANCE					
EXCAVATION (CY)					
COMMON (EV) (1)	1,636	SUITABLE	1,254 (EV) / 1.2 = 1,045 (CV)		
		EXISTING TOPSOIL	382 (EV) / 1.2 = 318 (CV)		
EMBANKMENT (CY)					
SUITABLE			258 (CV)		
TOPSOIL		318 (CV) X 1.3 =	413 (LV)		
NEEDED (CY)					
TOPSOIL		382 (CV) X 1.3 =	497 (LV)		
	(LV)	497 - 413 =	83 (LV) (3)		
EXCESS (CY)					
SUITABLE		1,045 (CV) - 258 (CV) =	787 (CV) (2)		

**EARTHWORK BALANCE NOTES:**

- (1) TOTAL COMMON EXCAVATION FOR PROJECT (INCLUDING TOPSOIL)
- (2) TOTAL SUITABLE GRADING EXCESS FOR PROJECT
- (3) TOTAL TOPSOIL BORROW

**SOILS AND CONSTRUCTION NOTES**

- THE GRADING GRADE IS DEFINED AS THE BOTTOM OF THE CLASS 5 AGGREGATE BASE LAYER.
- THE SUB-GRADE IS DEFINED AS THE BOTTOM OF THE SUBGRADE EXCAVATION LAYER.
- SUITABLE GRADING MATERIAL ON THIS PROJECT SHALL CONSIST OF ALL GRANULAR AND FINER GRAINED SOILS THAT MEET THE REQUIREMENTS OF MN/DOT SPEC 3149 AND SHALL BE USED AS EMBANKMENT MATERIAL ON THE PROJECT ANYWHERE BELOW THE SUBGRADE AND AS APPROVED BY THE ENGINEER.
- WITH THE EXCEPTION OF TOPSOIL, IT IS ASSUMED THAT ALL COMMON EXCAVATION MEETS THE REQUIREMENTS OF SUITABLE GRADING MATERIAL.
- SOILS EXCAVATED BETWEEN THE SUB-GRADE AND GRADING GRADE (SUBGRADE EXCAVATION) CAN BE RE-USED AS EMBANKMENT WITHIN THE PROJECT AS SUITABLE GRADING MATERIAL.
- SOILS PLACED BETWEEN THE SUB-GRADE AND GRADING GRADE MUST MEET REQUIREMENTS FOR SELECT GRANULAR MATERIAL.
- ANY SOILS EXCAVATED ON SITE THAT MEET THE REQUIREMENTS FOR SELECT GRANULAR MATERIAL CAN BE USED AS EMBANKMENT BETWEEN THE SUB-GRADE AND GRADING GRADE.
- THE ROADWAY CORE IS DEFINED AS THE AREA BENEATH THE ROADWAY AND BETWEEN LINES EXTENDING DOWN FROM THE GRADING GRADE P.I. AT A RATE OF 1.5:1.
- 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. UNSUITABLE MATERIALS INCLUDE TOPSOILS, PAVEMENT OR CONCRETE DEBRIS, PEAT, MUCK AND ORGANIC MATERIAL. UNSUITABLE SOILS CAN HOWEVER BE USED AS EMBANKMENT OUTSIDE THE ROADWAY CORE.
- UNSUITABLE SOILS AND DEBRIS WHICH MAY BE ENCOUNTERED DURING CONSTRUCTION THAT ARE NOT USED SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND REMOVED FROM THE PROJECT AND DISPOSED OF OR REUSED IN ACCORDANCE WITH MN/DOT SPECIFICATIONS.
- ALL TOPSOIL STRIPPING IS CONSIDERED TO BE COMMON EXCAVATION.
- STRIP ALL TOPSOIL WHERE PRESENT IN AREAS TO BE DISTURBED BY CONSTRUCTION AND REUSE AS TOPSOIL THROUGHOUT THE PROJECT AS DIRECTED BY THE ENGINEER. FOR ESTIMATING PURPOSES, THE DEPTH OF TOPSOIL AVAILABLE IS CONSIDERED TO BE 4 INCHES. CONTRACTOR TO VERIFY TOPSOIL DEPTH PRIOR TO PLACING BID.
- AGGREGATE BASE & SHOULDER MATERIAL SHALL MEET THE REQUIREMENTS OF MN/DOT SPEC. 3138, CLASS 5.
- WHENEVER THE WORD "INCIDENTAL" IS USED IN THIS PLAN, IT SHALL MEAN THE WORK WILL BE INCIDENTAL FOR WHICH NO DIRECT COMPENSATION WILL BE MADE.
- 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.
- UNLESS OTHERWISE REQUIRED, IN ALL TREATMENTS, THE CONTRACTOR SHOULD STRIVE TO SUBSTANTIALLY MATCH THE SOILS INPLACE IN THE UPPER 5.0 FEET OF THE ROADWAY.
- WHERE CONNECTING NEW SURFACE ADJACENT TO ANY INPLACE PAVEMENTS TO BE WIDENED, CUT VERTICALLY TO THE BOTTOM OF THE INPLACE SURFACING OR TO THE BOTTOM OF THE NEW SURFACING DESIGN, WHICHEVER IS DEEPER, THEN AT 1:2 SLOPE TO THE BOTTOM OF THE RECOMMENDED SUBGRADE EXCAVATION.
- USE TACK COAT BETWEEN ALL BITUMINOUS MIXTURES AND PRIOR TO PLACING ANY BITUMINOUS MIXTURES ON THE EXISTING PAVEMENT. THE BITUMINOUS TACK COAT MATERIAL SHALL BE APPLIED AT A UNIFORM RATE OF 0.03 TO 0.05 GALLONS/SQ. YD. BETWEEN BITUMINOUS LAYERS AND 0/07 TO 0/10 GALLONS/SQ. YD. ON CONCRETE OR MILLED BITUMINOUS SURFACES PRIOR TO BEING OVERLAID. THE APPLICATION RATES ARE FOR UNDILUTED EMULSIONS (AS SUPPLIED FROM THE REFINERY) OR MC AND RD LIQUID ASPHALTS. THE ASPHALT EMULSION MAY BE FURTHER DILUTED IN THE FIELD IN ACCORDANCE WITH SPECIFICATION 2357.
- PROVIDE A SAWCUT WHERE PLACING NEW PAVEMENT ADJACENT TO INPLACE PAVEMENT TO ENSURE A UNIFORM JOINT.
- EMBANKMENT QUANTITIES SHOWN ON THE EARTHWORK TABULATION REPRESENT ALL EARTHWORK QUANTITIES BELOW THE PROPOSED GRADING GRADE OF ALL PERMANENT ROADWAYS.
- DISPOSITION OF EXCAVATED MATERIAL SHALL BE IN ACCORDANCE WITH SPECIFICATION 2105.

BITUMINOUS SUMMARY			
MAIN LINE			
STREET	STATION	CROSS GUTTER	TONNAGE
7TH AVE	10+50 - 40+00		1550.0
SIDE STREETS			
SOUTHVIEW DR	14+40 - RT	YES	12.0
703 - 1304	15+50		2.3
1308 - 1316	17+50		2.5
FIRST STUDENT (BLVD)	15+50-19+50 LT		48.0
SOUTH ST W	19+60 - LT	YES	35.3
SOUTH ST E	19+60 - RT		21.2
TENNIS COURT LOT (BLVD)	20+00 - 21+50 LT		33.2
WASHINGTON ST	22+90 - RT		15.2
BRISBIN ST W	26+25 - LT		19.8
BRISBIN ST E	26+25 - RT		20.0
ADAMS ST	29+50 - RT		7.3
JEFFERSON ST W	32+80 - LT		23.8
JEFFERSON ST E	32+80 - RT		17.1
MADISON ST W	36+10 - LT		19.3
MADISON ST E	32+80 - RT		8.0
CROSS ST W	32+80 - RT		11.8
CROSS ST E	36+10 - RT		8.0
TONNAGE FOR ONE 2" LIFT			

CSAH 7	BASIS OF PLANNED QUANTITIES	
2357.502	BITUMINOUS MATERIAL FOR TACK COAT	.05 GAL / SQ YD
2361.501	TYPE SP 12.5 WEARING COURSE MX (4, E)	115/SQ. YD./IN THICKNESS
2401.541	REINFORCEMENT BARS (EPOXY COATED)	0.668LBS / LIN FT (#4 BAR)
2531.618	TRUNCATED DOMES	8 SQ FT EACH
2581.501	REMOVABLE PREFORMED PLASTIC MARKING 2' AT 50' INTERVALS FOR SKIPS	

CASTING ASSEMBLIES SUMMARY						
ASSEMBLY	RING OR FRAME CASTING	COVER OR GRATE CASTING	CURB BOX	STANDARD PLATE NO.	QUANTITY	DESCRIPTION
A-7D	700-7	716		4101, 4110	14	7" CASTING
A-7D	700-7	810		4101, 4149	1	7" CASTING
NEENAH*	R-6461-HH				1	STRUCTURE 239
NEENAH*	R-3070	V			11	17" x 20" GRATE
NEENAH*	R-3250-DVSP	V			6	22.75" x 22.75" GRATE
NEENAH*	R-3262-2				3	CURB OUTLETS**
*OR APPROVED EQUAL						
**CONNECTION TO EXISTING PIPE IS INCIDENTAL						
ALL CASTING HEIGHTS ARE TO BE VERIFIED IN THE FIELD.						
ALL MANHOLE CASTINGS NEED TO HAVE "SANITARY SEWER" OR "STORM SEWER" STAMPED ON THEM FOR IDENTIFICATION.						

ALIGNMENT TABULATION					
POINT	STA	X	Y	LENGTH	AZIMUTH
1 POT	10+00.00	471070.8964	155648.2933	2313.967	01-54-30.00
2 POT	33+13.97	471147.9527	157960.9771	702.004	00-32-00.00
3 POT	40+15.97	471154.4872	158662.951		

ADJUST GATE VALVES		
STATION	OFFSET	TYPE
10+60.79	15.86	WATER
13+68.25	12.81	WATER
21+21.03	-17.69	GAS
21+26.31	-18.39	GAS
32+89.91	34.41	WATER
32+94.07	-30.81	WATER
39+32.81	-28.13	WATER
39+36.68	-25.89	WATER

CROSS SECTIONS		
STATION	DETAIL	SHEET
11+80.0	PDQ	24
12+68.0	#1222	24
13+40.0	#1228	25
14+25.0	SOUTHVIEWDR	25
14+85.0	#1231 - #1235	26
15+60.0	#703 - #1304	26
17+25.0	FIRST STUDENT	27
17+50.0	#1308 - #1312	27
19+05.0	#1316	28
19+50.0	SOUTH ST	28
19+75.0	SOUTH ST	29
20+00.0	TENNIS COURT	29
20+25.0	TENNIS COURT	30
20+35.0	TENNIS COURT / #1402	30
21+50.0	TENNIS COURT	30
21+65.0	#1420	31
23+00.0	WASHINGTON ST	31
23+35.0	POOL UTILITY DR	32
24+10.0	#1508	32
24+90.0	AQUATIC CENTER	32
25+50.0	AQUATIC CENTER	33
26+25.0	BRISBIN	33
27+35.0	#1552	34
28+35.0	#1570	34
29+50.0	ADAMS	35
30+38.0	#1601	35
31+05.0	#1611	36
32+75.0	JEFFERSON ST	36
34+10.0	#1704	37
34+70.0	#656	37
36+00.0	MADISON ST	38
36+25.0	MADISON ST	38
37+20.0	#1803	39
39+50.0	CROSS ST	39

NO	DATE	BY	CHKD	APPR	REVISION	
NAME: P:\13-01-00\CSAH_7 (CSAH1-MainSt)Base\PROPOSED\PLAN2-4_7S_SEQ.dgn						04/03/2013 2:23:21 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: ANDREW WITTER  
 SIGNATURE: *Andrew Witter*  
 DATE: 4/11/13 LICENSE NO. 42757

DRAWN BY JJ DATE 04/03/2013  
 DESIGN BY JJ DATE 04/03/2013  
 CHECKED BY DJF DATE 04/03/2013



ANOKA COUNTY  
 HIGHWAY DEPT.

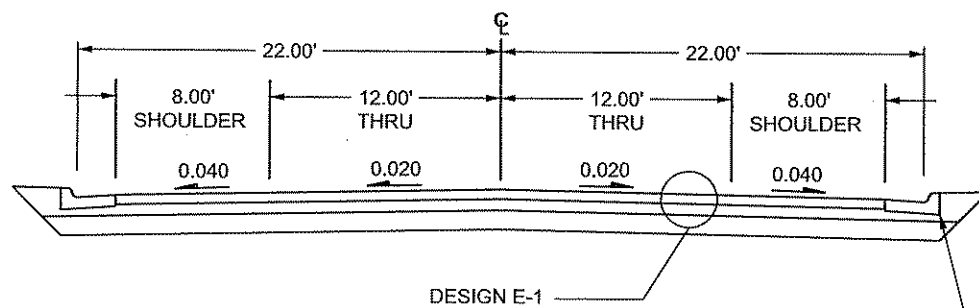
COUNTY PROJECT NO. 13-12-07

TABULATIONS  
 Sheet 4 of 39 Sheets

**C.S.A.H. 7**

EXISTING ROAD

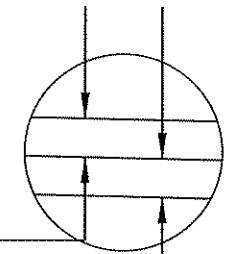
10+32 - 40+00



**DESIGN E-1**  
EXISTING SECTION

6" EXISTING BITUMINOUS

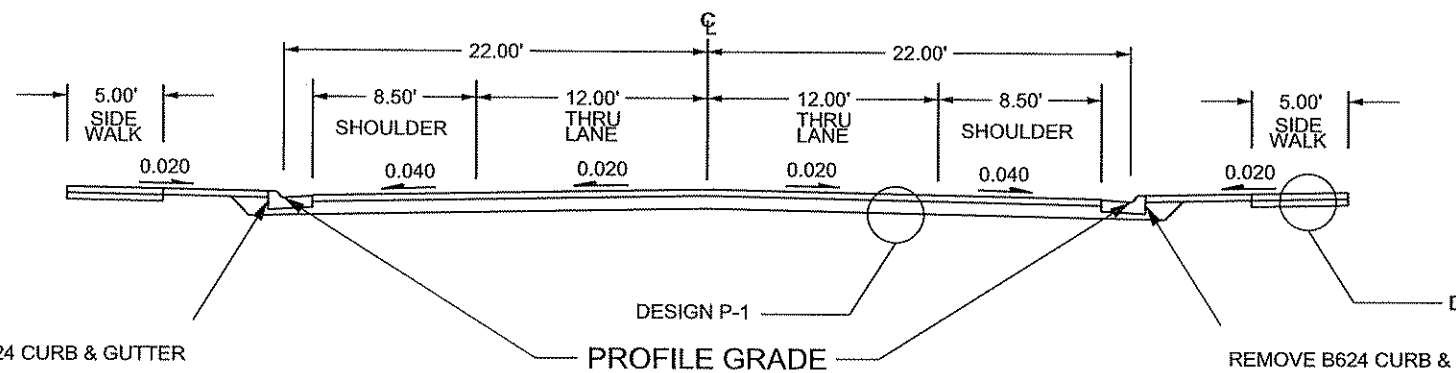
6" CLASS 5



**C.S.A.H. 7**

PROPOSED ROAD

10+45 - 14+08



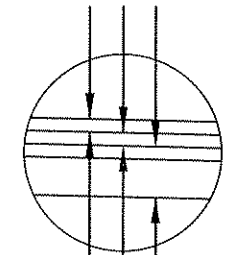
B624 CURB & GUTTER

**DESIGN P-1**

2" TYPE SP 12.5 WEARING COURSE MIXTURE(4,E) SPWEB440E

2" TYPE SP 12.5 WEARING COURSE MIXTURE(4,E) SPWEB440E

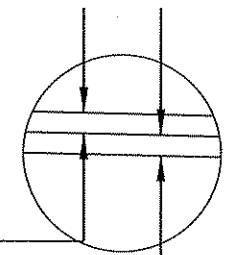
8" AGGREGATE BASE CLASS 5  
INCLUDES THE PLACING OF 2" OF  
CLASS 5 AFTER CURB OPERATION



**DESIGN S-1**

4" CONCRETE WALK  
(SPEC. 2521)

VARIES: (4"MINIMUM) AGGREGATE BASE CLASS 5  
(INCIDENTAL TO 4" CONCRETE WALK, SPEC 2211)



REMOVE B624 CURB & GUTTER  
REPLACE WITH B418 CURB & GUTTER

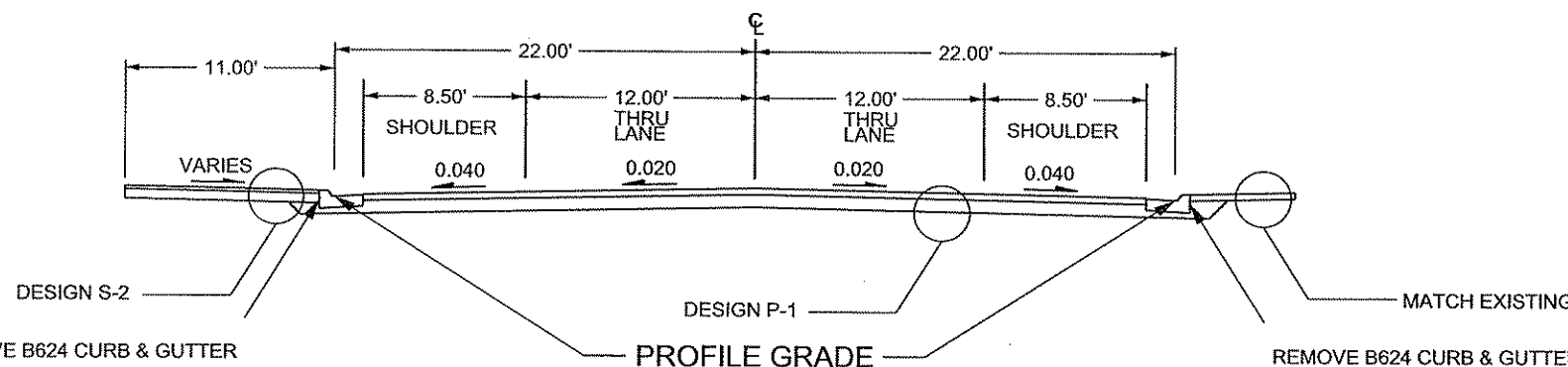
PROFILE GRADE

REMOVE B624 CURB & GUTTER  
REPLACE WITH B418 CURB & GUTTER

**C.S.A.H. 7**

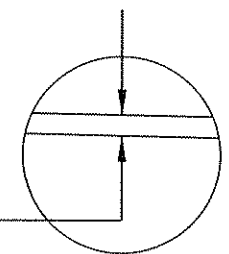
PROPOSED ROAD

15+55 - 19+25



**BOULEVARD SECTION**

4" TOPSOIL IN BOULEVARD / SOD AREAS



REMOVE B624 CURB & GUTTER  
REPLACE WITH B418 CURB & GUTTER

PROFILE GRADE

REMOVE B624 CURB & GUTTER  
REPLACE WITH B418 CURB & GUTTER

- ALL CROSS SLOPES EXPRESSED AS FT / FT

NO	DATE	BY	CKD	APPR	REVISION	04/03/2013	2:23:31 PM
NAME: P:\13-01-00\CSAH_7_(CSAH1-MainSt)\Base\PROPOSED\PLAN5-6_7S_TYP.dgn							

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.  
PRINT NAME: ANDREW WITTER  
SIGNATURE: *Andrew Witter*  
DATE: 4/11/13 LICENSE NO. 42757

DRAWN BY JJ DATE 04/03/2013  
DESIGN BY JJ DATE 04/03/2013  
CHECKED BY DFF DATE 04/03/2013



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

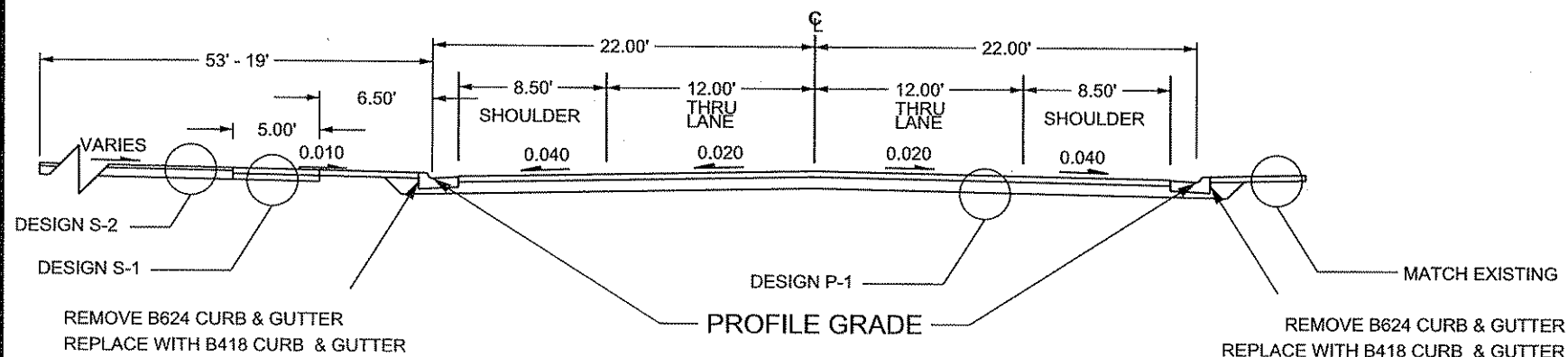
COUNTY PROJECT NO. 13-12-07

TYPICAL SECTIONS

Sheet 5 of 39 Sheets

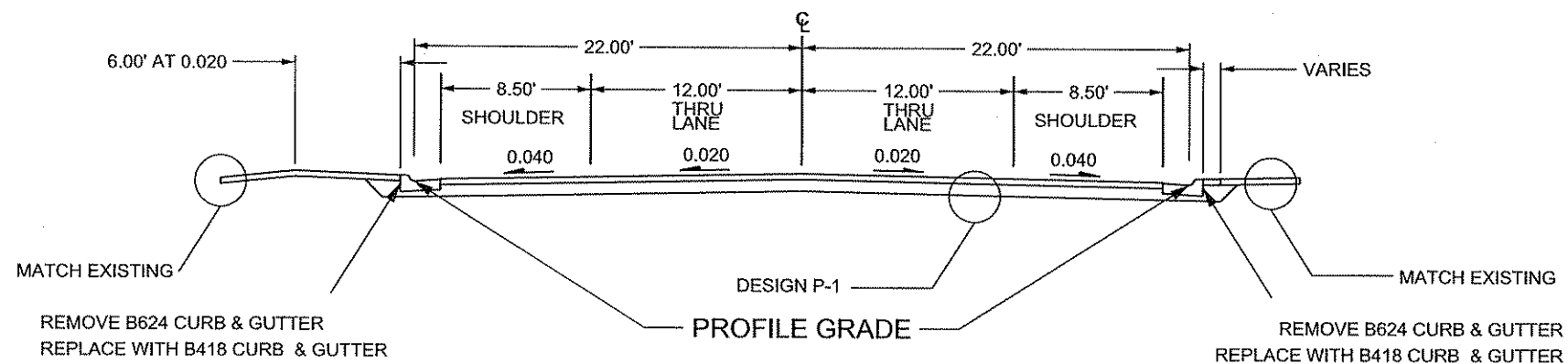
**C.S.A.H. 7**

**PROPOSED ROAD**  
20+00 - 21+52



**C.S.A.H. 7**

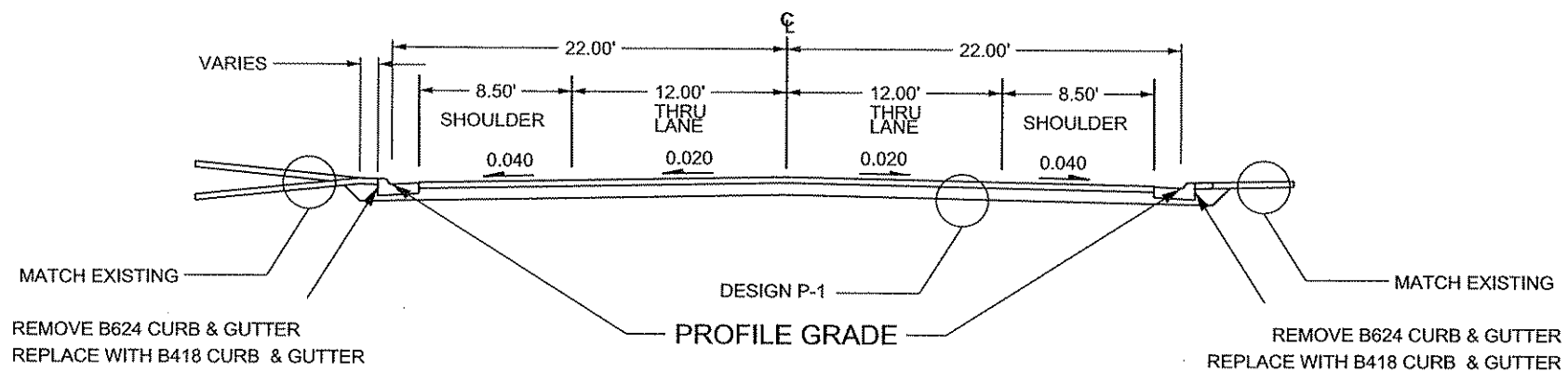
**PROPOSED ROAD**  
26+50 - 29+50



**C.S.A.H. 7**

**PROPOSED ROAD**

14+08 - 15+55    19+25 - 20+00  
21+52 - 26+50    29+50 - 40+00



**DESIGN S -2**

2" TYPE SP 12.5 WEARING COURSE MIXTURE(4,E) SPWEB440E

6" AGGREGATE BASE CLASS 5

**DRIVEWAY SECTION**

6" TO 8" CONCRETE DRIVEWAY  
REFERENCE CONSTRUCTION PLAN  
FOR LOCATION

6" AGGREGATE BASE CLASS 5

**CROSS GUTTER SECTION**

6" CONCRETE DRIVEWAY  
REFERENCE CONSTRUCTION PLAN  
FOR LOCATION

6" AGGREGATE BASE CLASS 5

**STREET APPROACH SECTION**

2" TYPE SP 12.5 WEARING COURSE MIXTURE(4,E) SPWEB440E

2" TYPE SP 12.5 WEARING COURSE MIXTURE(4,E) SPWEB440E

8" AGGREGATE BASE CLASS 5

- ALL CROSS SLOPES EXPRESSED AS FT / FT

NO	DATE	BY	CKD	APPR	REVISION	
					04/03/2013	2:23:32 PM

NAME: P:\13-01-00\CSAH\_7 (CSAH1-MainSt)\Base\PROPOSED\PLANIS-6\_7S\_TYP.dgn

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

PRINT NAME: ANDREW WITTE  
SIGNATURE: *[Signature]*  
DATE: 4/13/13 LICENSE NO. 42757

DRAWN BY JJ DATE 04/03/2013  
DESIGN BY JJ DATE 04/03/2013  
CHECKED BY DFF DATE 04/03/2013



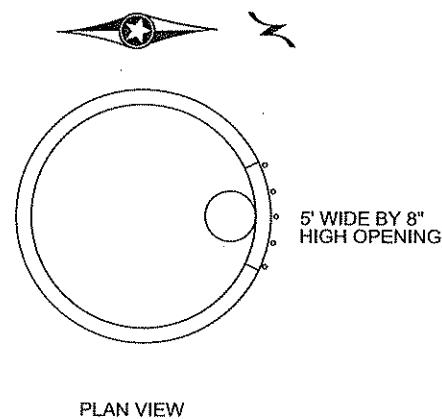
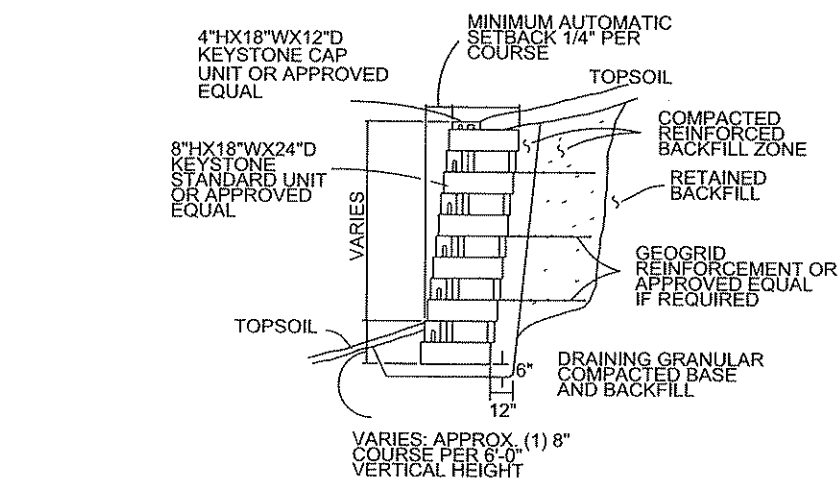
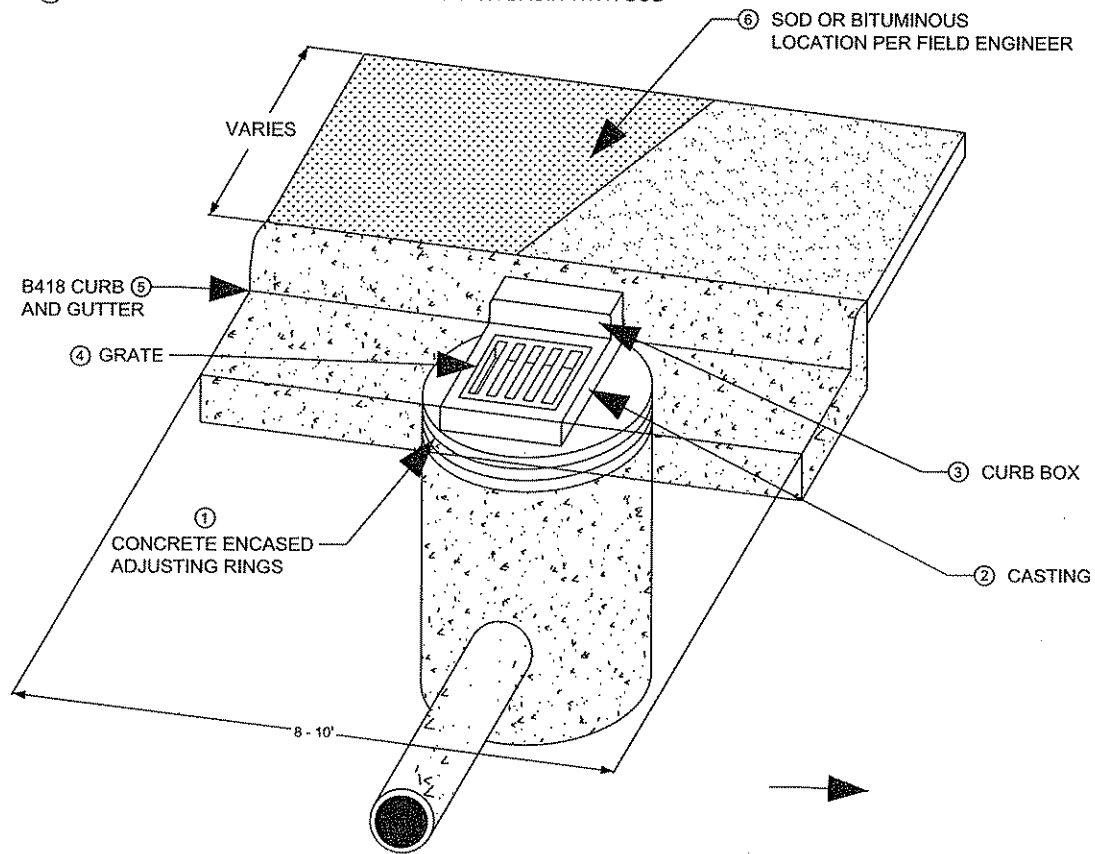
**ANOKA COUNTY**  
**HIGHWAY DEPT.**

COUNTY PROJECT NO. 13-12-07

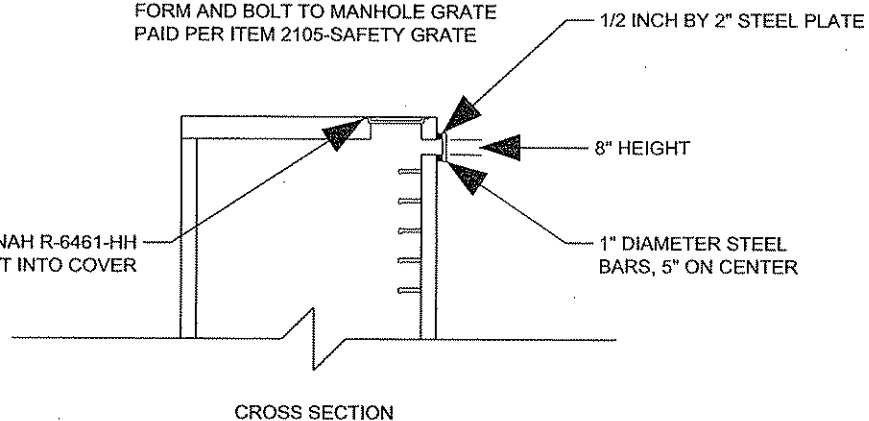
TYPICAL SECTIONS  
Sheet 6 of 39 Sheets

**NOTES:**

- ① CONCRETE ENCASED CONCRETE ADJUSTING RINGS STANDARD PLATE 4026A (DO NOT USE PLASTIC RINGS ON STORM STRUCTURES)
- ② RING AND FRAME CASTING. REFERENCE CASTING ASSEMBLIES SUMMARY CHART FOR CASTING TYPE, SHEET 4
- ③ CURB BOX MATCHES CASTING REFERENCE CHART FOR CASTING TYPE, SHEET 4
- ④ GRATE CASTING. REFERENCE CASTING ASSEMBLIES SUMMARY CHART FOR CASTING TYPE, SHEET 4
- ⑤ CONCRETE CURB AND GUTTER DESIGN B STANDARD PLATE 7100G
- ⑥ REPLACE DISTURBED AREA BEHIND CATCH BASIN WITH SOD

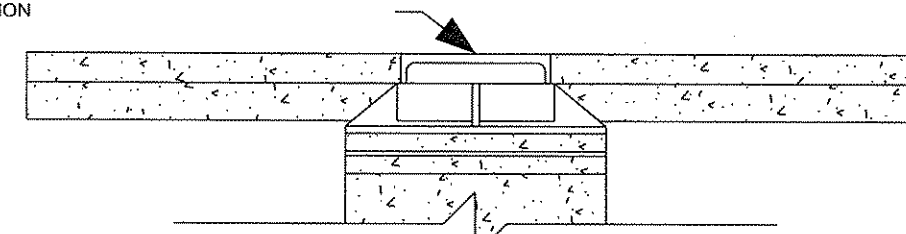


GRATE SHALL BE HOT DIP GALVANIZED FORM AND BOLT TO MANHOLE GRATE PAID PER ITEM 2105-SAFETY GRATE



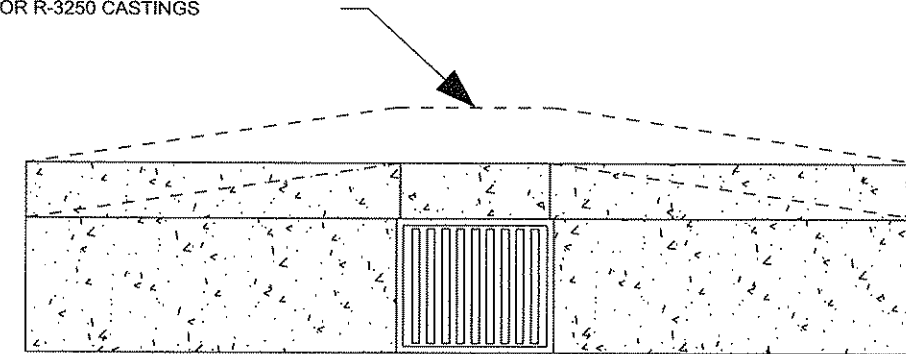
**CATCH BASIN DETAILS:**

TOP OF CURB TO MEET TOP OF CASTING FOR R-3070 CASTINGS  
NO VERTICAL TRANSITION



FRONT VIEW

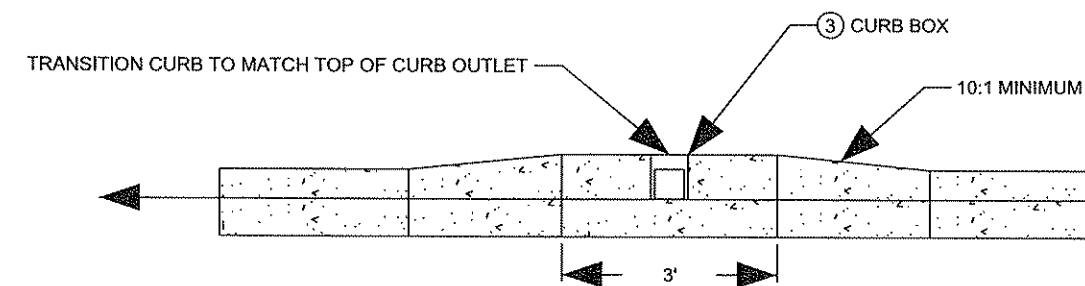
BACK OF CURB TO RECESS BACK INTO BOULEVARD IF NECESSARY FOR R-3250 CASTINGS



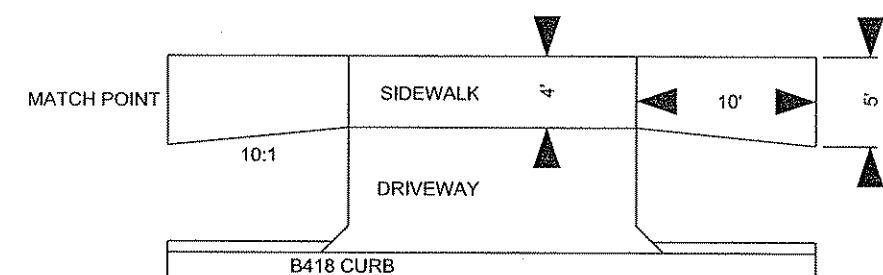
TOP VIEW

GRATE TO MATCH IN LINE WITH CURB LIP

**CURB OUTLET DETAIL:**



**DRIVEWAY AND SIDEWALK DETAIL:**



SIDEWALK GRADES TO HOLD AT A 2% CROSS SLOPE THRU DRIVE  
REFERENCE CONSTRUCTION PLAN FOR LOCATION  
REFERENCE CROSS SECTIONS FOR DRIVEWAY GRADES

**CITY DETAIL: RETAINING WALL TYPICAL**

**CITY DETAIL: STRUCTURE 239**

NO	DATE	BY	CKD	APPR	REVISION	04/03/2013	2:23:34 PM
NAME: P:\13-01-00\CSAH 7_CSAH1-MainSU\Bases\PROPOSED\PLAN7-9_7S_DETAILS.dgn							

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.  
 PRINT NAME: ANDREW WITTER  
 SIGNATURE: *[Signature]*  
 DATE: 4/4/13 LICENSE NO. 42757

DRAWN BY JJ DATE 04/03/2013  
 DESIGN BY JJ DATE 04/03/2013  
 CHECKED BY DFF DATE 04/03/2013



**ANOKA COUNTY  
HIGHWAY DEPT.**

COUNTY PROJECT NO. 13-12-07

DETAILS  
 Sheet 7 of 39 Sheets

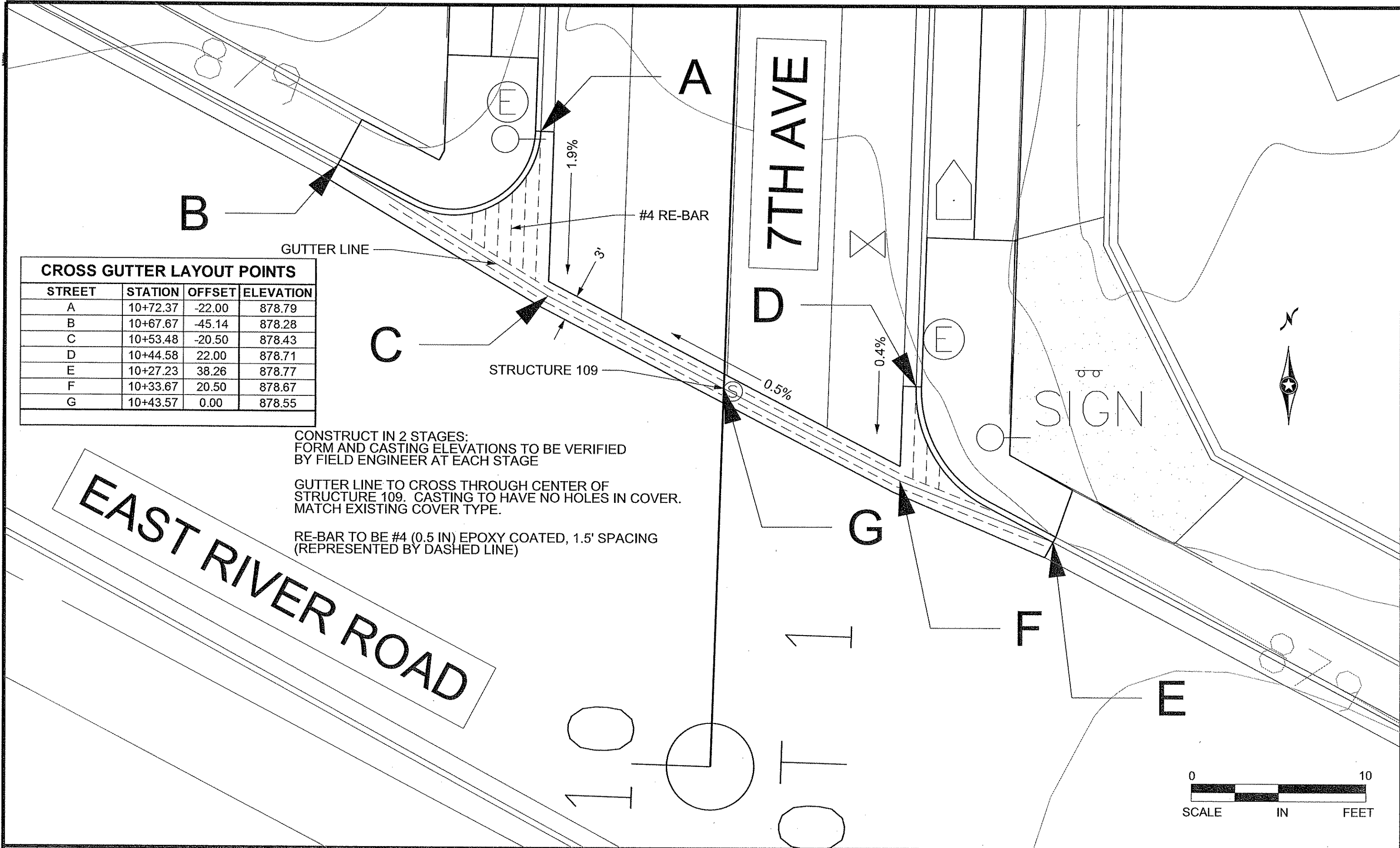
**CROSS GUTTER LAYOUT POINTS**

STREET	STATION	OFFSET	ELEVATION
A	10+72.37	-22.00	878.79
B	10+67.67	-45.14	878.28
C	10+53.48	-20.50	878.43
D	10+44.58	22.00	878.71
E	10+27.23	38.26	878.77
F	10+33.67	20.50	878.67
G	10+43.57	0.00	878.55

CONSTRUCT IN 2 STAGES:  
FORM AND CASTING ELEVATIONS TO BE VERIFIED  
BY FIELD ENGINEER AT EACH STAGE

GUTTER LINE TO CROSS THROUGH CENTER OF  
STRUCTURE 109. CASTING TO HAVE NO HOLES IN COVER.  
MATCH EXISTING COVER TYPE.

RE-BAR TO BE #4 (0.5 IN) EPOXY COATED, 1.5' SPACING  
(REPRESENTED BY DASHED LINE)



NO	DATE	BY	CKD	APPR	REVISION	

NAME: P:\13-01-00\CSAH\_7\_(CSAH1-MainSt)\Base\PROPOSED\PLAN15-6\_78\_TYP.dgn

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

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SIGNATURE: *Andrew Witter*  
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ANOKA COUNTY  
HIGHWAY DEPT.

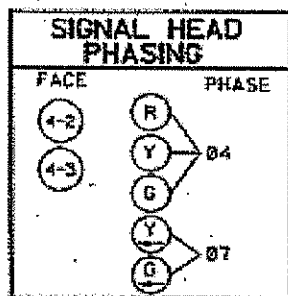
COUNTY PROJECT NO. 13-12-07

DETAILS  
Sheet 8 of 39 Sheets



7022

LOOP DETECTOR CHART			DISTANCE TO STOP BAR
DESIGNATION	SIZE/FT.	FUNCTION	
DE-1	1-1.7mX1.7m	(I)	55m
DE-2	1-1.7mX1.7m	(I)	55m
D7-1	1-1.7mX3.6m	(7)	15m
D8-1	1-1.7mX1.7m	(3), (8)	37m
D8-2	2-1.7mX1.7m	(7)	-1m, 3.6m
D2-1	1-1.7mX1.7m	(I)	55m
D2-2	1-1.7mX1.7m	(I)	55m
D4-1	1-1.7mX1.7m	(3), (8)	55m
D4-2	2-1.7mX1.7m	(7)	-1.7m, 3.9m
D4-3	2-1.7mX1.7m	(I)	-1.7m, 3.9m

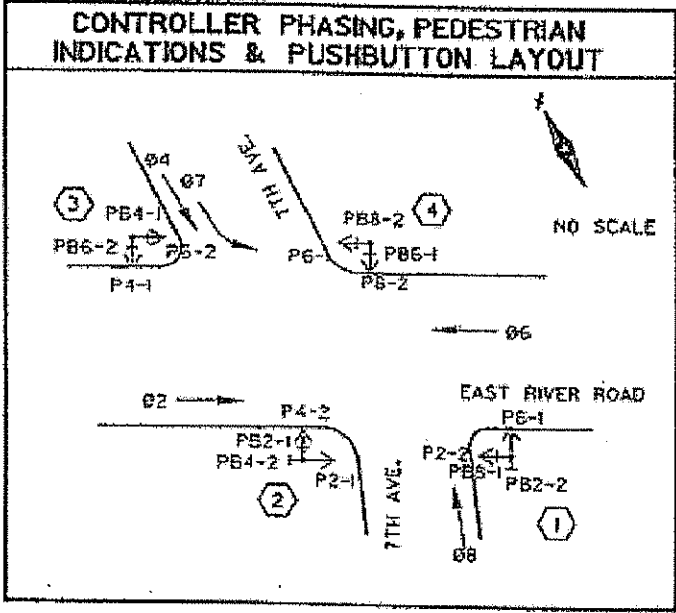
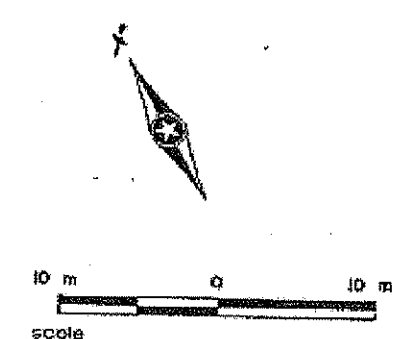
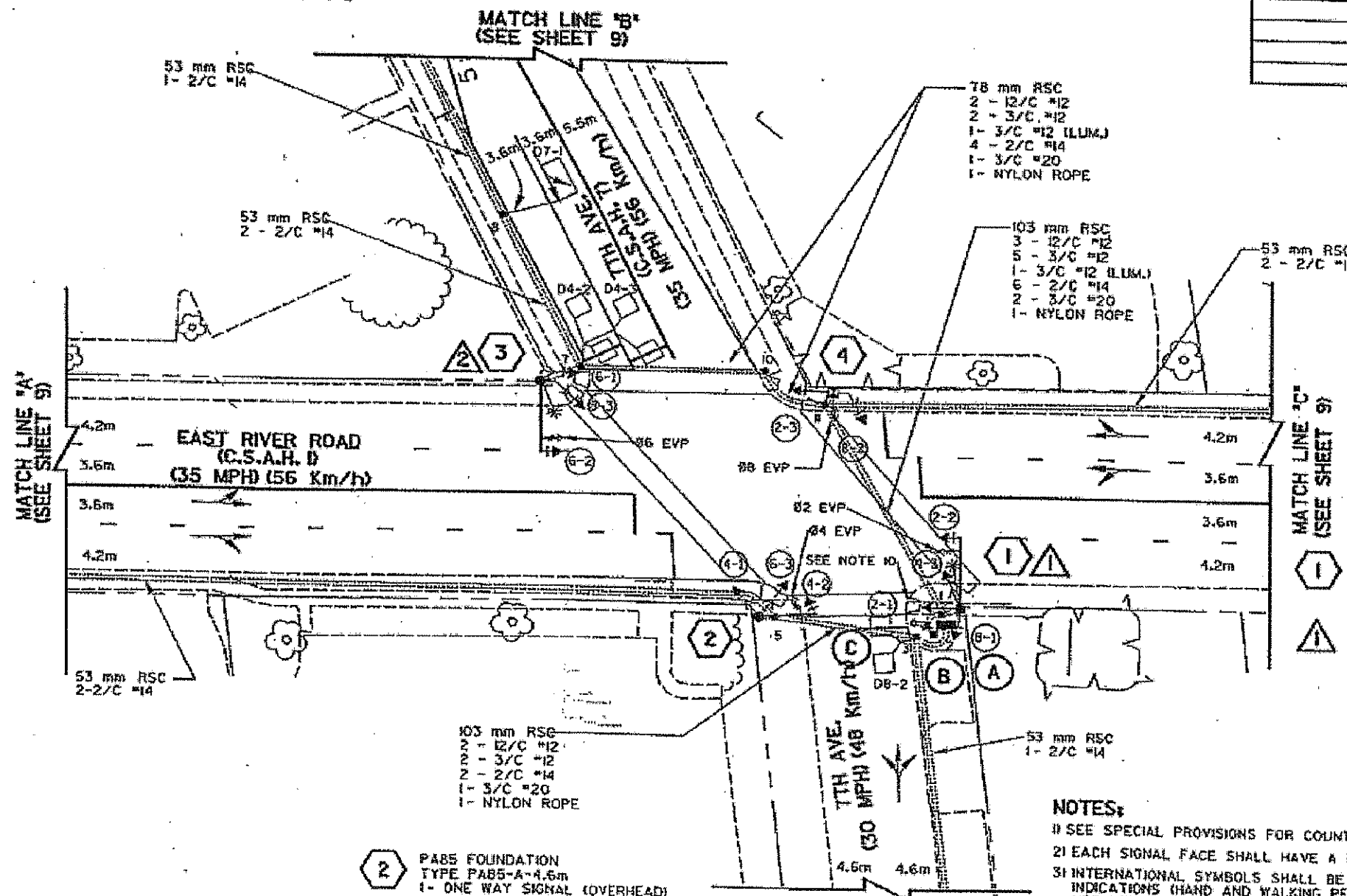


**3** PABS FOUNDATION  
TYPE PABS-A-6.0m-D9m-3m (DAVIT AT 350')  
1- ONE WAY SIGNAL (OVERHEAD)  
0m FROM END OF MAST ARM  
TYPE 10B POLE MOUNTED AT 180°  
TYPE 10B POLE MOUNTED AT 270°  
LUMINAIRE - 200 WATT H.P.S. WITH P.E.C. AND TEST SWITCH  
ONEWAY EVP DETECTOR AND LIGHT  
(1.2 m FROM END OF MAST ARM, 19 mm HUB)  
2 - PEDESTRIAN PUSHBUTTONS  
EXTEND 78 mm RSC INTO HH-7 WITH:  
2 - 12/C #12, 2 - 3/C #12,  
1 - 3/C #20, 1 - 3/C #20,  
AND 1 - NYLON ROPE

**4** PEDESTAL FOUNDATION  
3m PEDESTAL AND BASE  
TYPE 2C  
ONEWAY EVP DETECTOR AND LIGHT  
2 - PEDESTRIAN PUSHBUTTONS  
EXTEND 78 mm RSC INTO HH-8 WITH:  
1 - 12/C #12, 3 - 3/C #12,  
1 - 3/C #20,  
AND 1 - NYLON ROPE

SIGNAL INDICATION CHART						
ALL SIGNAL INDICATIONS SHALL BE 300 mm						
ALL RED CIRCULAR INDICATIONS SHALL BE L.E.D.						
SIGNAL FACE	R	Y	G	RLTA	YLTA	GLTA
2-1.2-2.2-3	●	●	●			
4-1	●	●	●			
4-2.4-3	●	●	●			
6-1.6-2.6-3	●	●	●		←	←
8-1.8-2.8-3	●	●	●			

- FUNCTIONS:**
- (I) CALL AND EXTEND
  - (3) EXTEND ONLY
  - (7) DELAY CALL, IMMEDIATE EXTEND
  - (8) STRETCH
- A** CONTROLLER CABINET PAD - SEE DETAIL  
CONTROLLER & CABINET  
EXTEND 103 mm RSC INTO HH-1 WITH:  
5 - 12/C #12, 8 - 3/C #12,  
6 - 2/C #14, 3 - 3/C #20,  
AND 1 - NYLON ROPE  
EXTEND 35 mm RSC INTO HH-2 WITH:  
3 - 1/C #6 AND 1 - 1/C #6 BR.GR.  
EXTEND 103 mm RSC INTO HH-3 WITH:  
2 - 12/C #12, 2 - 3/C #12,  
4 - 2/C #14, 1 - 3/C #20,  
AND 1 - NYLON ROPE  
1 - 78 mm RSC STUB OUT OF CABINET  
(THREAD AND CAP BOTH ENDS)
- B** SERVICE CABINET FOUNDATION - SEE DETAIL  
SIGNAL SERVICE CABINET  
EXTEND 35 mm RSC INTO HH-2 WITH:  
3 - 1/C #6 AND 1 - 1/C #6 BR.GR.  
EXTEND 35 mm RSC INTO HH-1 WITH:  
2 - 3/C #12 (LUM.)
- C** SOURCE OF POWER  
ANOKA MUN. ELECTRIC  
WOOD POWER POLE (HPJ)  
EXTEND 35 mm RSC INTO SERVICE CABINET WITH:  
3 - 1/C #6

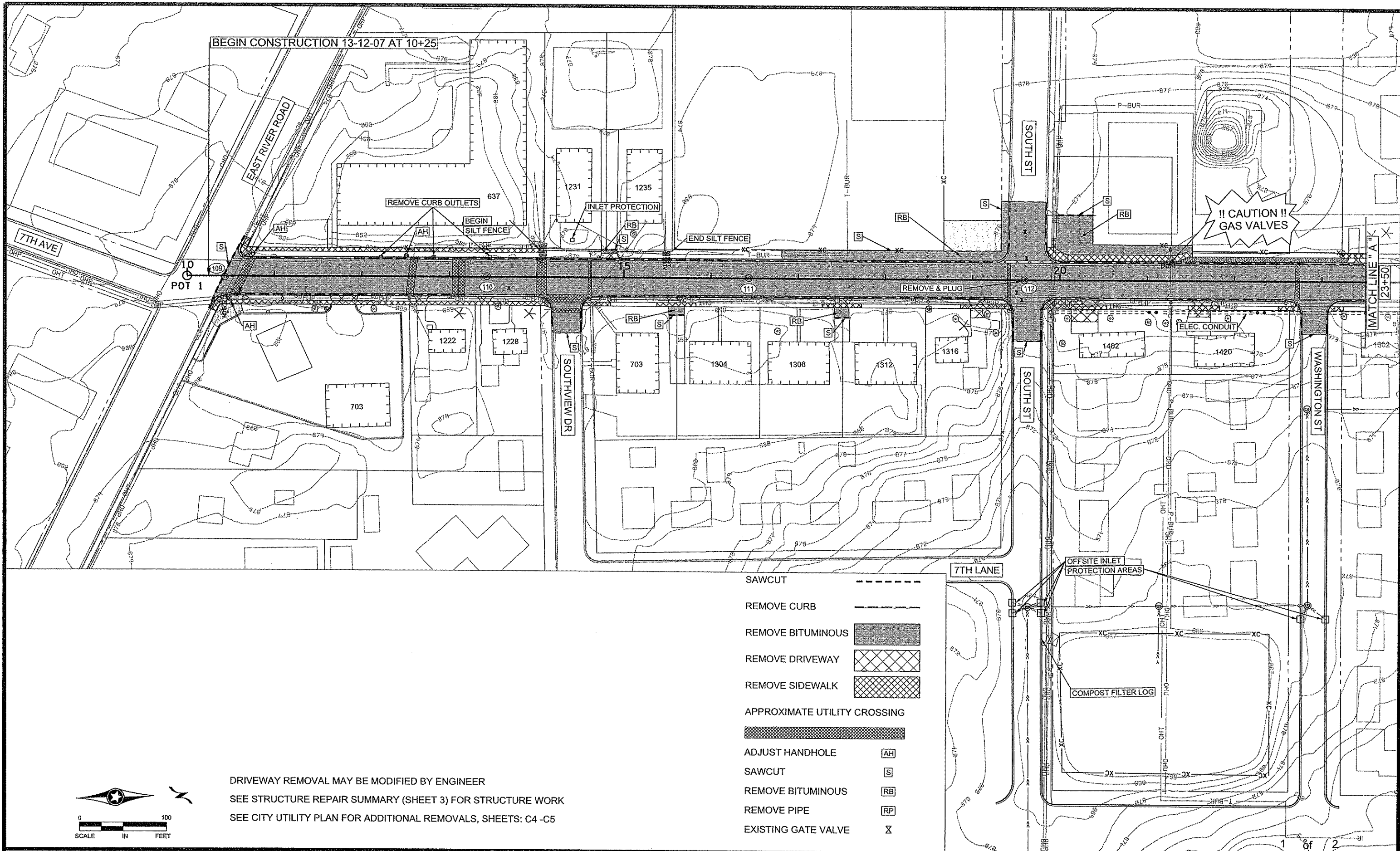


**SIGNAL OPERATION NOTES**

- NORMAL OPERATION IS 3 PHASE
- FLASH MODE SHALL BE ALL RED
- SOUTHBOUND APPROACH SHALL HAVE PROTECTED/PERMISSIVE LEFT TURNS
- 02 & 06 SHALL BE ON VEHICLE RECALL

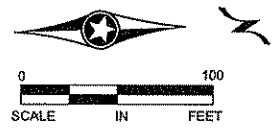
**2** PABS FOUNDATION  
TYPE PABS-A-4.6m  
1- ONE WAY SIGNAL (OVERHEAD)  
0m FROM END OF MAST ARM  
TYPE 10B POLE MOUNTED AT 0°  
TYPE 10A POLE MOUNTED AT 180°  
TYPE 10B POLE MOUNTED AT 270°  
LUMINAIRE - 200 WATT H.P.S. WITH P.E.C. AND TEST SWITCH  
ONEWAY EVP DETECTOR AND LIGHT  
(0.6 m FROM END OF MAST ARM, 19 mm HUB)  
2 - PEDESTRIAN PUSHBUTTONS  
SIGN (R30-12) MOUNTED WITH RIGHT EDGE OF SIGN .45 m FROM END OF MAST ARM  
EXTEND 78 mm RSC INTO HH-5 WITH:  
2 - 12/C #12, 2 - 3/C #12,  
1 - 3/C #20,  
AND 1 - NYLON ROPE

- NOTES:**
- 1) SEE SPECIAL PROVISIONS FOR COUNTY FURNISHED MATERIALS.
  - 2) EACH SIGNAL FACE SHALL HAVE A BACKGROUND SHIELD
  - 3) INTERNATIONAL SYMBOLS SHALL BE USED FOR ALL PEDESTRIAN INDICATIONS (HAND AND WALKING PERSON). THE HAND INDICATION SHALL USE LED UNITS (SEE SPECIAL PROVISIONS).
  - 4) HANDHOLES SHALL BE PVC TYPE WITH METAL FRAMES AND COVERS.
  - 5) ALL LOOP DETECTORS SHALL BE INSTALLED IN NMC CONDUIT. SEE DETAIL SHEET.
  - 6) EXACT LOCATION OF HANDHOLES, POLES, LOOP DETECTORS AND CABINET SHALL BE DETERMINED BY TRAFFIC OFFICE PERSONNEL.
  - 7) ALL SIGNAL INDICATIONS SHALL HAVE GLASS LENSES, EXCEPT RED CIRCULAR INDICATIONS WHICH SHALL USE LED UNITS.
  - 8) EXISTING SIGNAL EQUIPMENT SHALL BE REMOVED AND SALVAGED.
  - 9) CROSS WALKS SHALL BE ZEBRA STRIPED. SEE SIGNING AND STRIPING LAYOUT.
  - 10) CONTRACTOR SHALL REMOVE EXISTING CURB & GUTTER AND SHALL INSTALL NEW PEDESTRIAN RAMP ACCORDING TO MN/DOT STANDARD PLATE M7056D.



- SAWCUT
- REMOVE CURB
- REMOVE BITUMINOUS
- REMOVE DRIVEWAY
- REMOVE SIDEWALK
- APPROXIMATE UTILITY CROSSING
- ADJUST HANDHOLE
- SAWCUT
- REMOVE BITUMINOUS
- REMOVE PIPE
- EXISTING GATE VALVE

DRIVEWAY REMOVAL MAY BE MODIFIED BY ENGINEER  
 SEE STRUCTURE REPAIR SUMMARY (SHEET 3) FOR STRUCTURE WORK  
 SEE CITY UTILITY PLAN FOR ADDITIONAL REMOVALS, SHEETS: C4 -C5



NO	DATE	BY	CKD	APPR	REVISION	TIME
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NAME: P:\13-01-00\CSAH\_7 (CSAH1-MainS)\Base\PROPOSED\PLAN\10-11\_7S\_PLAN\_REMOVALS-STORM.dgn

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.  
 PRINT NAME: ANDREW WITTER  
 SIGNATURE:   
 DATE: 4/13/13 LICENSE NO. 42757

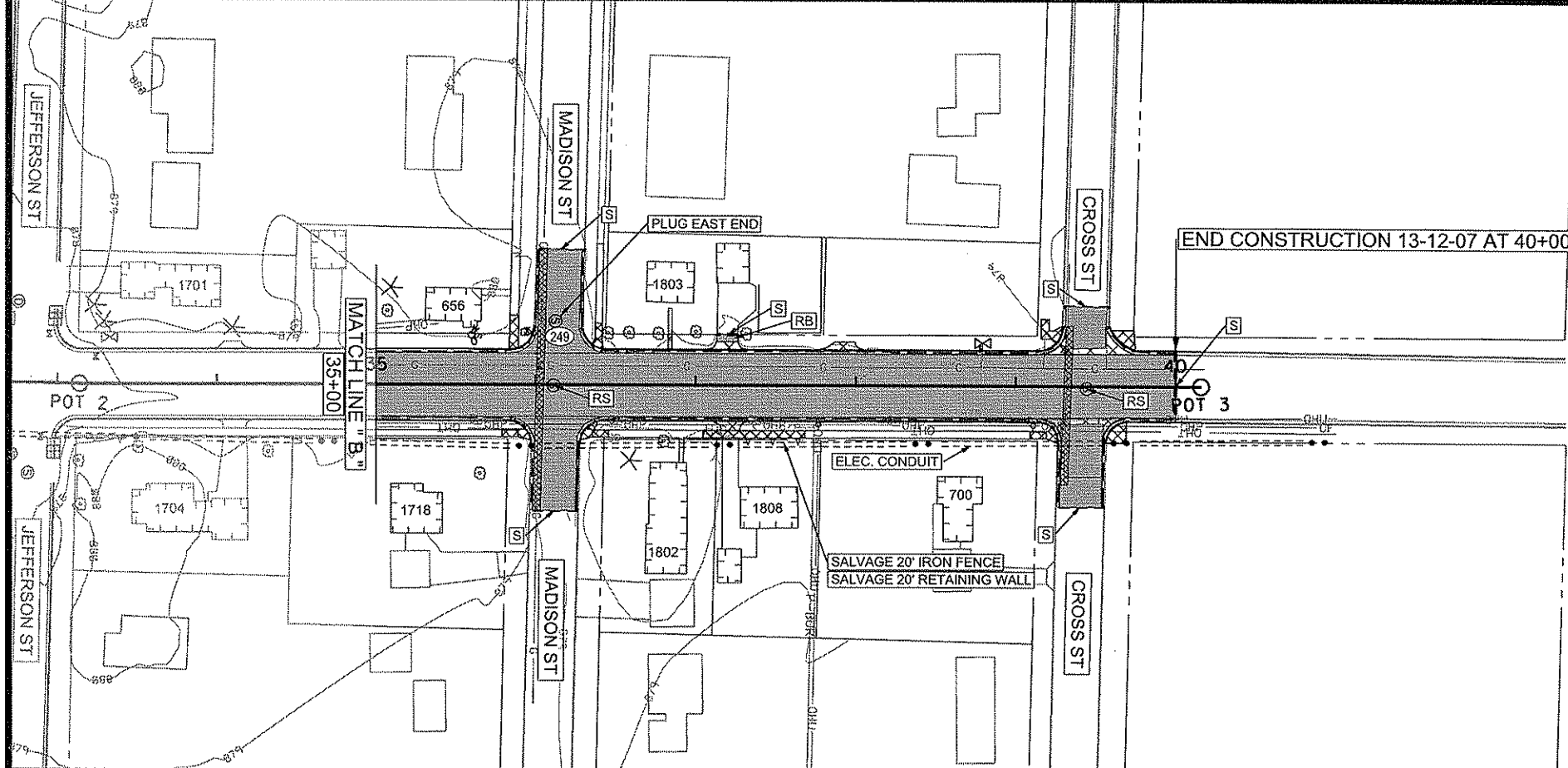
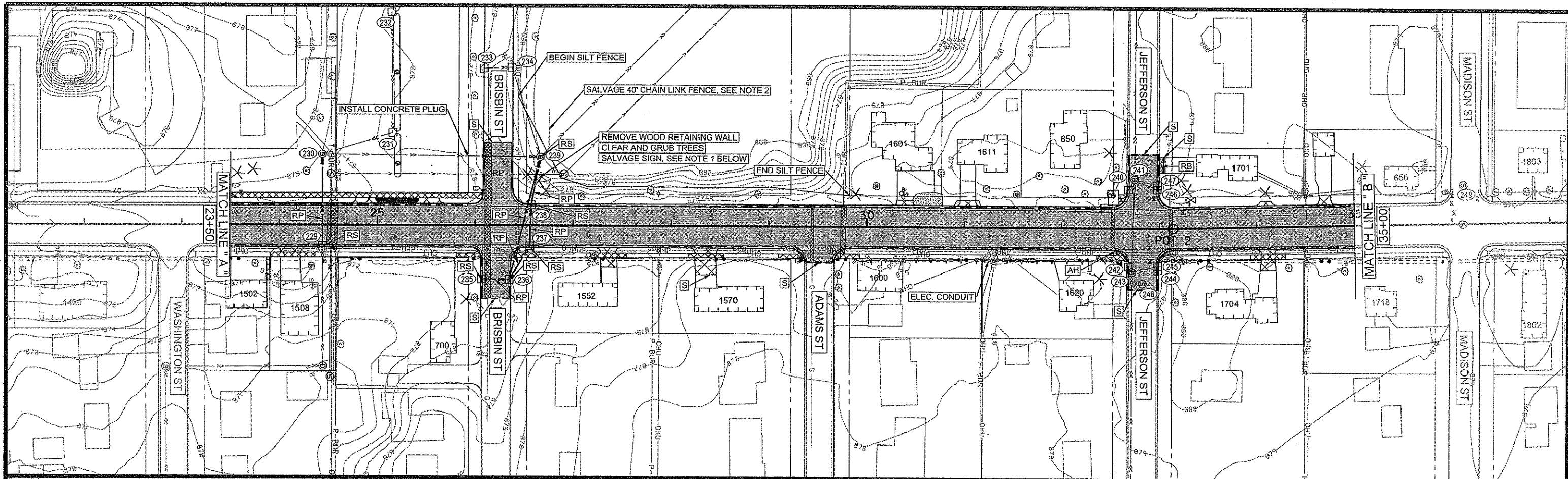
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**ANOKA COUNTY  
 HIGHWAY DEPT.**

COUNTY PROJECT NO. 13-12-07

**REMOVAL PLAN**  
 STA 10+00 TO 23+50  
 Sheet 10 of 39 Sheets

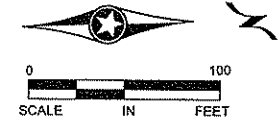


NOTE 1:  
 WORK SHALL BE PAID PER  
 ITEM 2104 - SALVAGE SIGN TYPE SPECIAL AND  
 ITEM 2564 - INSTALL SIGN TYPE SPECIAL

NOTE 2:  
 PRIOR TO SALVAGING CHAIN LINK BACK STOP  
 CONTRACTOR SHALL SALVAGE EXISTING  
 INFIELD LIMESTONE. CONTRACTOR SHALL  
 REINSTALL BACKSTOP AND LIMESTONE  
 WITHIN 7 CALENDAR DAYS OF SALVAGING  
 THESE ITEMS. WORK SHALL BE PAID PER  
 ITEM 2104 - SALVAGE CHAIN LINK FENCE AND  
 ITEM 2255 - INSTALL CHAIN LINK FENCE.

- SAWCUT -----
- REMOVE CURB -----
- REMOVE BITUMINOUS [Hatched Box]
- REMOVE DRIVEWAY [Cross-hatched Box]
- REMOVE SIDEWALK [Diagonal-hatched Box]
- APPROXIMATE UTILITY CROSSING [Dotted Box]
- ADJUST HANDHOLE [AH]
- SAWCUT [S]
- REMOVE BITUMINOUS [RB]
- REMOVE PIPE [RP]
- REMOVE STRUCTURE [RS]
- EXISTING GATE VALVE [X]

DRIVEWAY REMOVAL MAY BE MODIFIED BY ENGINEER  
 SEE STRUCTURE REPAIR SUMMARY (SHEET 3) FOR STRUCTURE WORK  
 SEE CITY UTILITY PLAN FOR ADDITIONAL REMOVALS, SHEETS: C4 -C5



NO	DATE	BY	CKD	APPR	REVISION	TIME
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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: ANDREW WITTER  
 SIGNATURE: *Andrew Witter*  
 DATE: 4/13/13 LICENSE NO. 42757

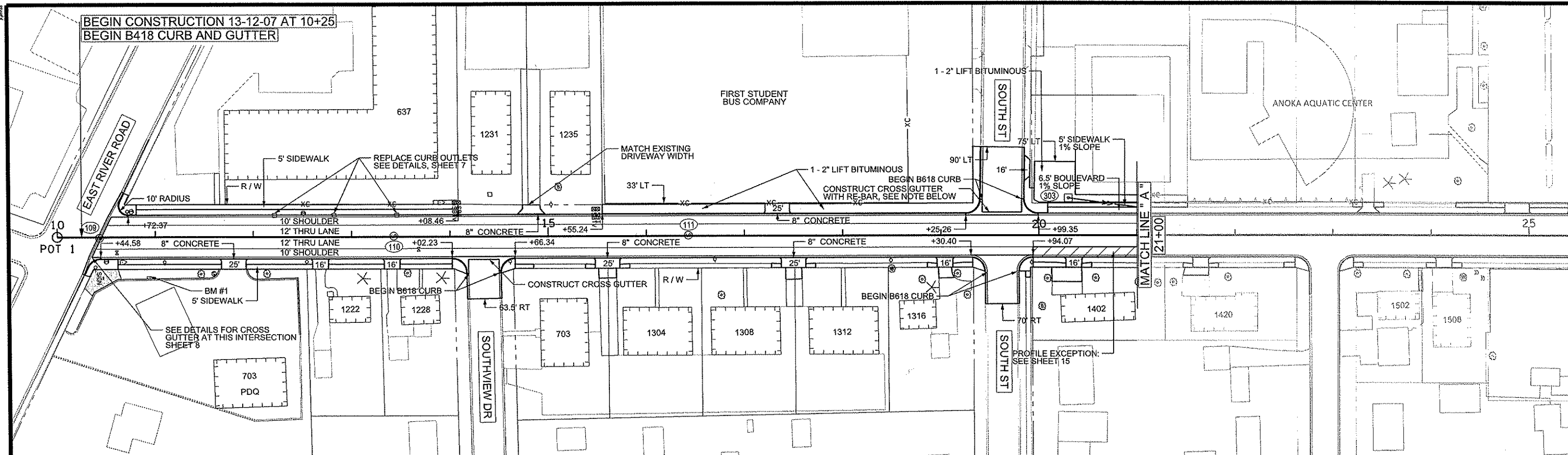
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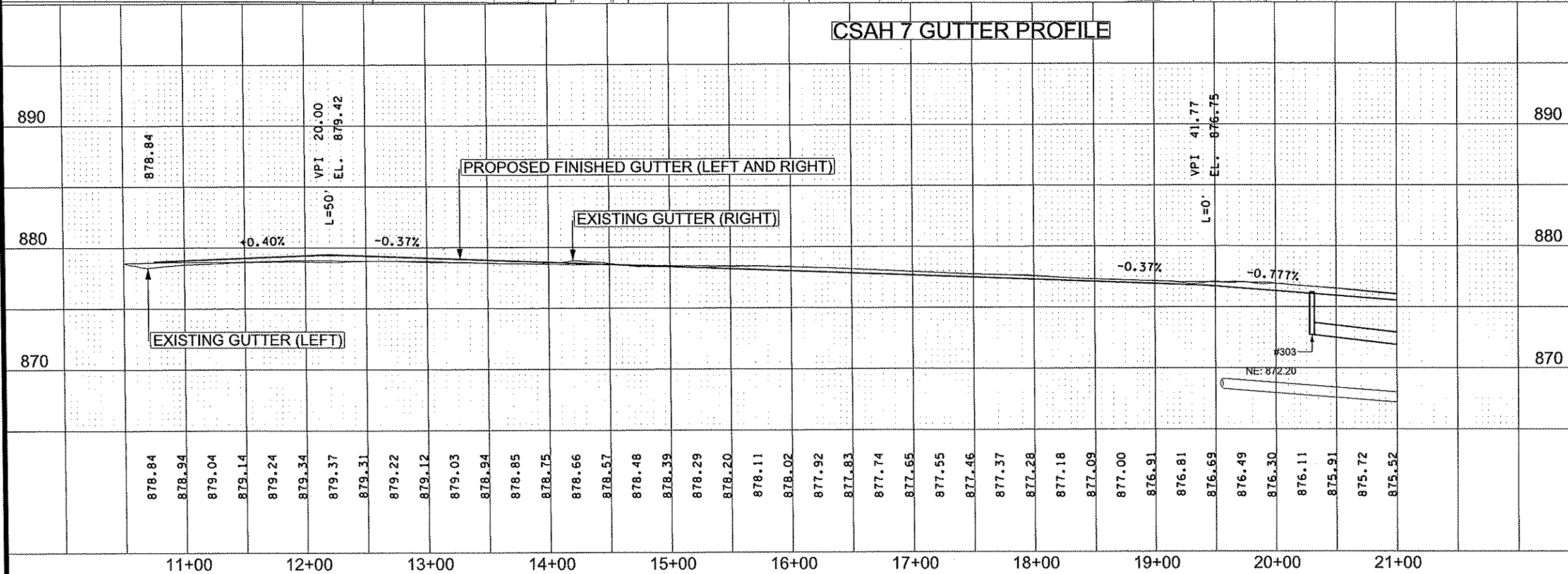
**ANOKA COUNTY  
 HIGHWAY DEPT.**

COUNTY PROJECT NO. 13-12-07

**REMOVAL PLAN**  
 STA 23+50 TO 40+00  
 Sheet 11 of 39 Sheets



**CSAH 7 GUTTER PROFILE**



BM #1: 881.49  
(NW CORNER CONCRETE PHONE PAD, PDQ)

ALL RADII ARE 15' UNLESS MARKED ON PLAN

WALK TO MATCH EXISTING RIGHT OF WAY GRADE UNLESS MARKED ON PLAN

ALL DRIVES ARE 6" CONCRETE UNLESS NOTED

ALL DIMENSIONS ARE TO FACE OF CURB

BOULEVARD TO HAVE SOD BETWEEN SIDEWALK AND NEW CURB

⊗ EXISTING GATE VALVE

CROSS GUTTERS CONTAINING RE-BAR:  
EAST RIVER ROAD - SEE DETAIL SHEET 8  
SOUTH STREET (WEST) - PLACEMENT TO BE DIRECTED BY ENGINEER

SEE CITY UTILITY PLANS FOR  
SANITARY AND WATERMAIN WORK  
SHEETS: C1 - C7

SCALE 1" = 100 FEET

NO	DATE	BY	CKD	APPR	REVISION	DATE	TIME
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NAME: P:\13-01-00\CSAH\_7 (CSAH1-MainSt)\Base\PROPOSED\PLAN12-15\_75\_PLAN\_CONSTRUCTION.dgn

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PRINT NAME: ANDREW WITTER

SIGNATURE: *Andrew Witter*

DATE: 4/13/13 LICENSE NO. 42757

DRAWN BY JJ DATE 04/03/2013

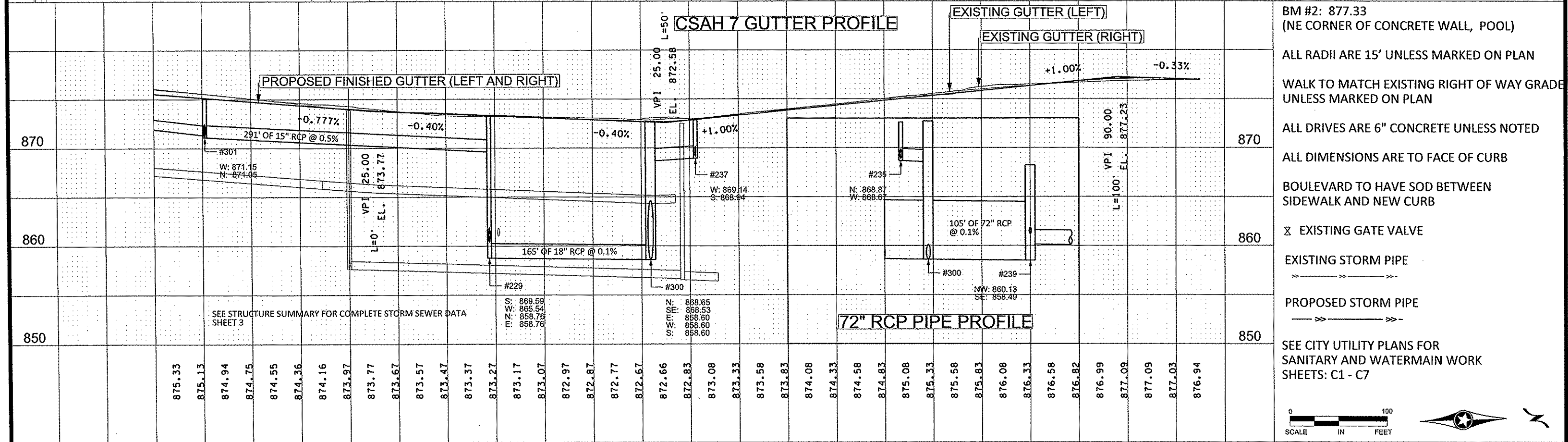
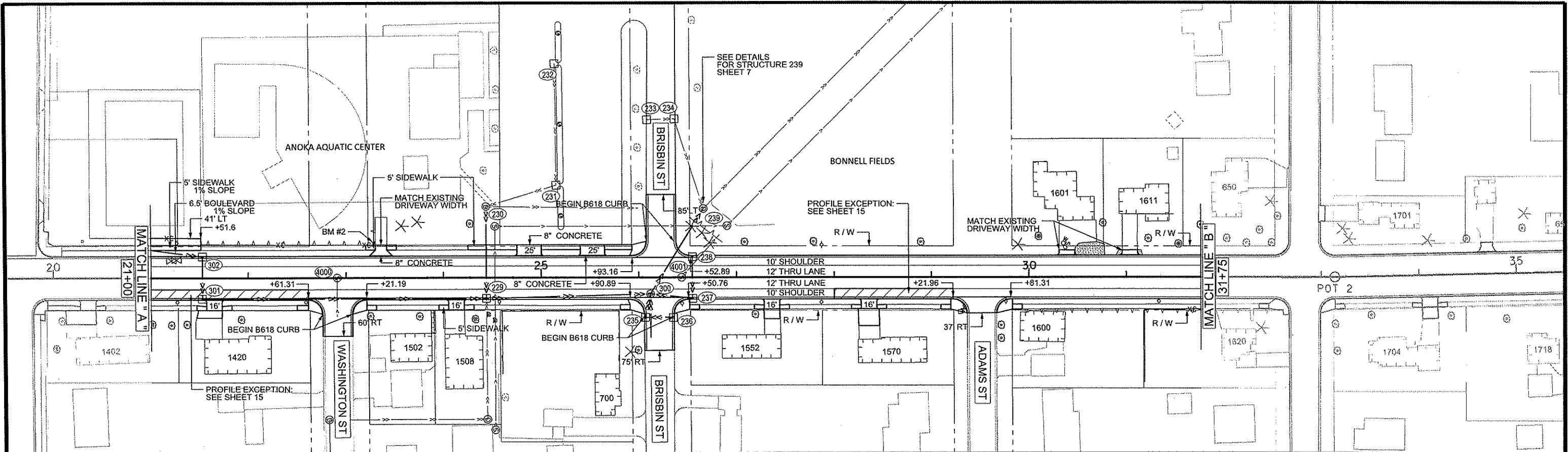
DESIGN BY JJ DATE 04/03/2013

CHECKED BY DFF DATE 04/03/2013



COUNTY PROJECT NO. 13-12-07

CONSTRUCTION PLAN  
STA 10+00 TO 21+00  
Sheet 12 of 39 Sheets



- BM #2: 877.33  
(NE CORNER OF CONCRETE WALL, POOL)
- ALL RADII ARE 15' UNLESS MARKED ON PLAN
- WALK TO MATCH EXISTING RIGHT OF WAY GRADE UNLESS MARKED ON PLAN
- ALL DRIVES ARE 6" CONCRETE UNLESS NOTED
- ALL DIMENSIONS ARE TO FACE OF CURB
- BOULEVARD TO HAVE SOD BETWEEN SIDEWALK AND NEW CURB
- ⊗ EXISTING GATE VALVE
- EXISTING STORM PIPE
- PROPOSED STORM PIPE
- SEE CITY UTILITY PLANS FOR SANITARY AND WATERMAIN WORK SHEETS: C1 - C7



NO	DATE	BY	CKD	APPR	REVISION	04/03/2013	3:04:33 PM
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PRINT NAME: ANDREW WITTE

SIGNATURE: *[Signature]*

DATE: 4/4/13 LICENSE NO. 42757

DRAWN BY: JJ DATE: 04/03/2013

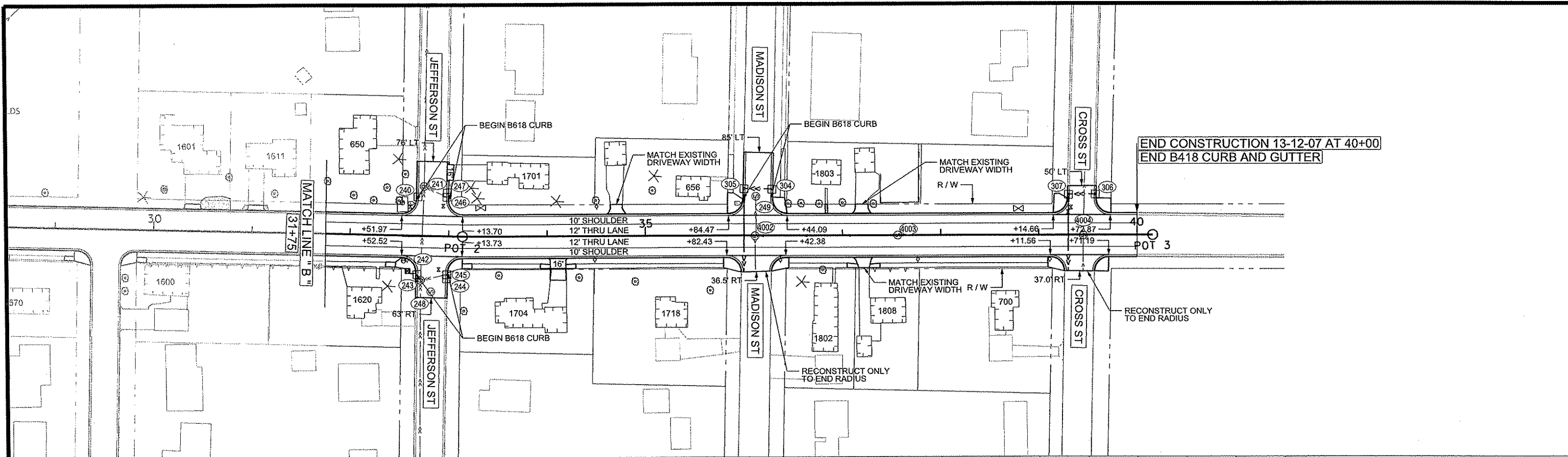
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CHECKED BY: DFF DATE: 04/03/2013

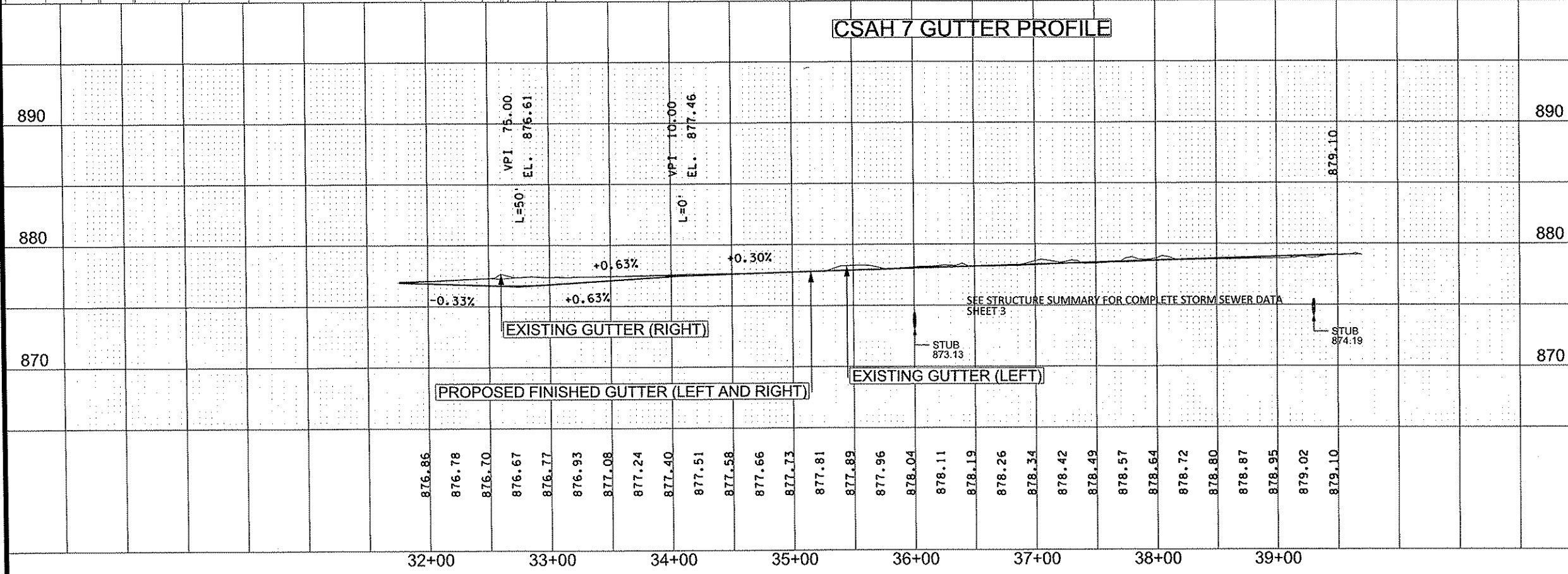
**ANOKA COUNTY**  
HIGHWAY DEPT.

COUNTY PROJECT NO. 13-12-07

CONSTRUCTION PLAN	
STA. 21+00	TO 31+75
Sheet 13 of 39 Sheets	



**CSAH 7 GUTTER PROFILE**



ALL RADII ARE 15' UNLESS MARKED ON PLAN

WALK TO MATCH EXISTING RIGHT OF WAY GRADE UNLESS MARKED ON PLAN

ALL DRIVES ARE 6" CONCRETE UNLESS NOTED

ALL DIMENSIONS ARE TO FACE OF CURB

BOULEVARD TO HAVE SOD BETWEEN SIDEWALK AND NEW CURB

⊗ EXISTING GATE VALVE

—>>> EXISTING STORM PIPE

—>>> PROPOSED STORM PIPE

SEE CITY UTILITY PLANS FOR SANITARY AND WATERMAIN WORK SHEETS: C1 - C7

SCALE 0 100 IN FEET

NO	DATE	BY	CKD	APPR	REVISION	TIME
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PRINT NAME: ANDREW WITTER

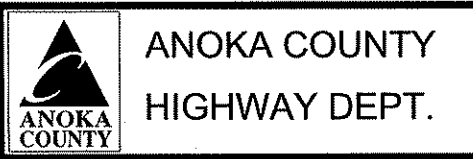
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DRAWN BY JJ DATE 04/03/2013

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CHECKED BY DFF DATE 04/03/2013



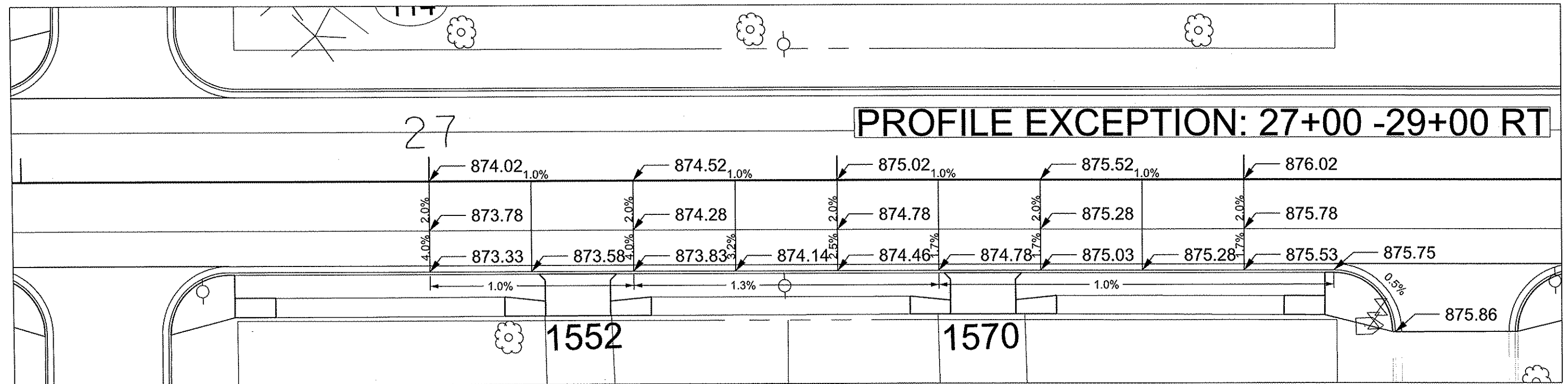
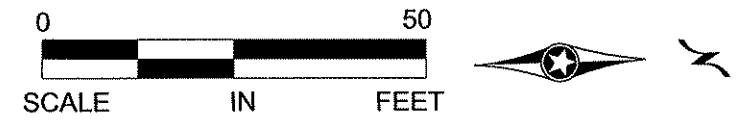
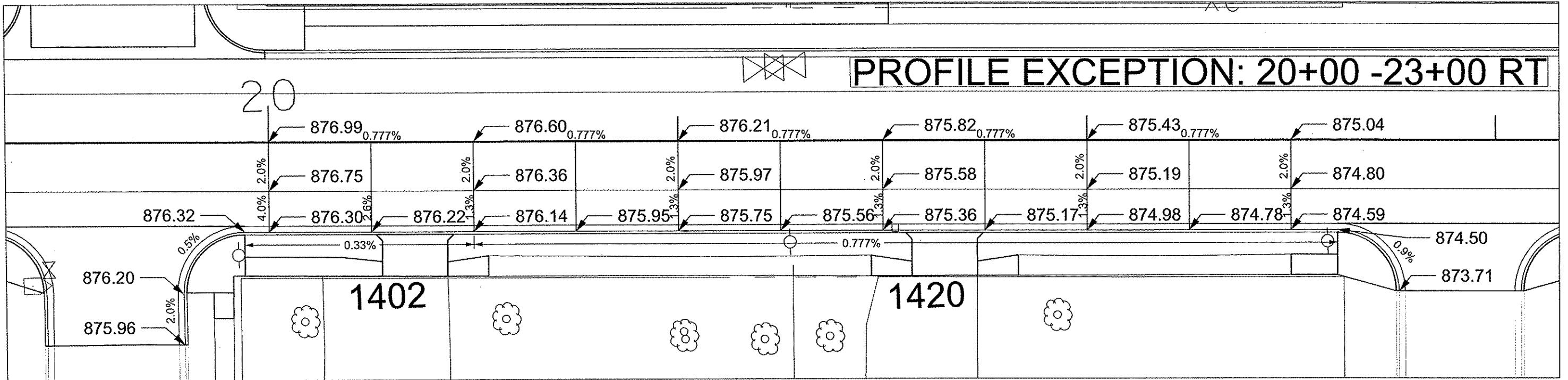
COUNTY PROJECT NO. 13-12-07

CONSTRUCTION PLAN

STA 31+75 TO 40+00

Sheet 14 of 39 Sheets

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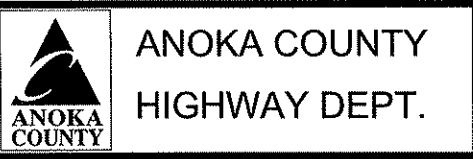
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 CHECKED BY DFF DATE 04/03/2013



COUNTY PROJECT NO. 13-12-07

CONSTRUCTION PLAN  
PROFILE EXCEPTION  
Sheet 15 of 39 Sheets

**PERMANENT PAVEMENT MARKING PLAN**  
NOTES AND GUIDELINES

**GENERAL INFORMATION:**

THE ENGINEER'S INVOLVEMENT IN THE APPLICATION OF THE MATERIAL SHALL BE LIMITED TO FIELD CONSULTATION AND INSPECTION. ANOKA COUNTY HIGHWAY DEPARTMENT WILL PLACE NECESSARY "SPOTTING" AT APPROPRIATE POINTS TO PROVIDE HORIZONTAL CONTROL FOR STRIPING AND TO DETERMINE NECESSARY STARTING AND CUTOFF POINTS, LONGITUDINAL JOINTS, PAVEMENT EDGES AND EXISTING MARKINGS MAY SERVE AS HORIZONTAL CONTROL WHEN SO DIRECTED.

EDGE LINES AND LANE LINES ARE TO BE BROKEN ONLY AT INTERSECTIONS WITH PUBLIC ROADS AND AT PRIVATE ENTRANCES IF THEY ARE CONTROLLED BY A YIELD SIGN, STOP SIGN OR TRAFFIC SIGNAL. THE BREAK POINT IS TO BE AT THE START OF THE RADIUS FOR THE INTERSECTION OR AT MARKED STOP LINES OR CROSSWALKS.

A TOLERANCE OF 1/4 INCH UNDER OR 1/4 INCH OVER THE SPECIFIED WIDTH WILL BE ALLOWED FOR STRIPING PROVIDED THE VARIATION IS GRADUAL AND DOES NOT DETRACT FROM THE GENERAL APPEARANCE. BROKEN LINE SEGMENTS MAY VARY UP TO ONE-HALF FOOT FROM THE SPECIFIED LENGTHS PROVIDED THE OVER AND UNDER VARIATIONS ARE REASONABLY COMPENSATORY. ALIGNMENT DEVIATIONS FROM THE CONTROL GUIDE SHALL NOT EXCEED 1 INCH. MATERIAL SHALL NOT BE APPLIED OVER LONGITUDINAL JOINTS, ESTABLISHMENT OF APPLICATION TOLERANCES SHALL NOT RELIEVE THE CONTRACTOR OF THEIR RESPONSIBILITY TO COMPLY AS CLOSELY AS PRACTICABLE WITH THE PLANNED DIMENSIONS.

**EPOXY:**

THE ROAD SURFACE SHALL BE CLEANED AT THE DIRECTION OF THE ENGINEER JUST PRIOR TO APPLICATION. PAVEMENT CLEANING SHALL CONSIST OF AT LEAST BRUSHING WITH A ROTARY BROOM (NON-METALLIC) OR AS RECOMMENDED BY THE MATERIAL MANUFACTURER AND ACCEPTABLE TO THE ENGINEER. NEW PORTLAND CEMENT CONCRETE SURFACES SHALL BE SANDBLAST CLEANED TO REMOVE ANY SURFACE TREATMENT AND/OR LAITANCE ON LOW SPEED (SPEED LIMIT 35 MPH OR LESS) URBAN PORTLAND CEMENT CONCRETE ROADWAYS. SANDBLAST CLEANING SHALL BE USED FOR ALL EPOXY PAVEMENT MARKINGS.

THE EPOXY MARKING APPLICATION SHALL IMMEDIATELY FOLLOW THE PAVEMENT CLEANING. GLASS 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.

**PERFORMED THERMOPLASTIC:**

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

**PAINT:**

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

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

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

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

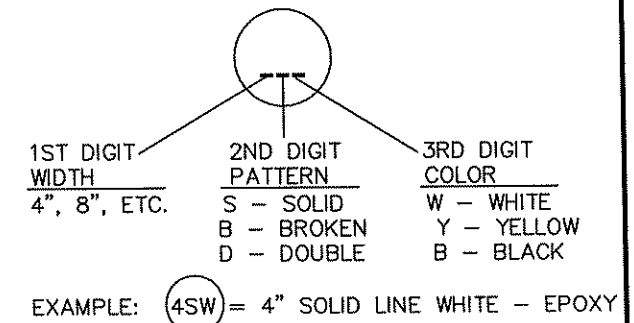
PERMANENT PAVEMENT MARKING TABULATION		
ITEM	Quantity	Units
4" Solid Line White - Epoxy	5715	Lin Ft
4" Solid Line Yellow - Epoxy	980	Lin Ft
4" Broken Line Yellow - Epoxy (10 ft stripe / 40 ft gap)	270	Lin Ft
4" Double Solid Line Yellow - Epoxy	1360	Lin Ft
Pavt Mssg (Rt Arrow) Pref Thermoplastic	1	Each
Pavt Mssg (Lt-Thru Arrow) Pref Thermoplastic	1	Each
24" White Pref Thermoplastic	134	Lin Ft
3'x6' Zebra Crossw alk - Preformed Thermoplastic	594	SQ FT

**SYMBOLS & MATERIALS LEGEND**

- CROSSWALK BLOCK WHITE PERFORMED THERMOPLASTIC
- ↩ PAVEMENT MESSAGE (LEFT ARROW) PERFORMED THERMOPLASTIC

**STRIPING KEY**

- CIRCLE - EPOXY
- SQUARE PERFORMED THERMOPLASTIC
- △ TRIANGLE - PAINT
- ⬠ PENTAGON - REMOVABLE PERFORMED PLASTIC MARKING



NO	DATE	BY	CKD	APPR	REVISION

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.  
 PRINT NAME: ANDREW WITTER  
 SIGNATURE: [Signature]  
 DATE: 3/5/13 LICENSE NO. 42757

DRAWN BY: MTH DATE: 02/06/2013  
 DESIGN BY: MTH DATE: 02/06/2013  
 CHECKED BY: JR DATE: 02/xx/2012

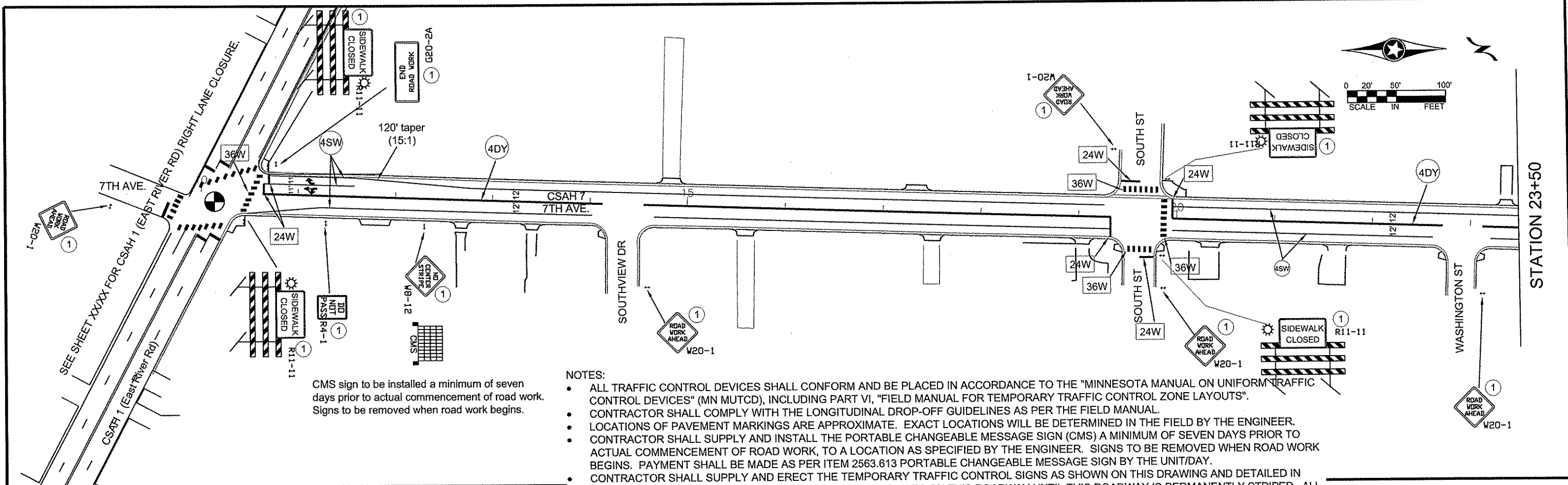


**ANOKA COUNTY**  
**HIGHWAY DEPT.**

STATE PROJECT NO. \_\_\_\_\_  
 STATE AID PROJECT NO. \_\_\_\_\_  
 STATE AID PROJECT NO. \_\_\_\_\_  
 COUNTY PROJECT NO. 13-12-07

**PERMANENT MARKING**  
**TABULATION**  
 Sheet 16 of 39 Sheets

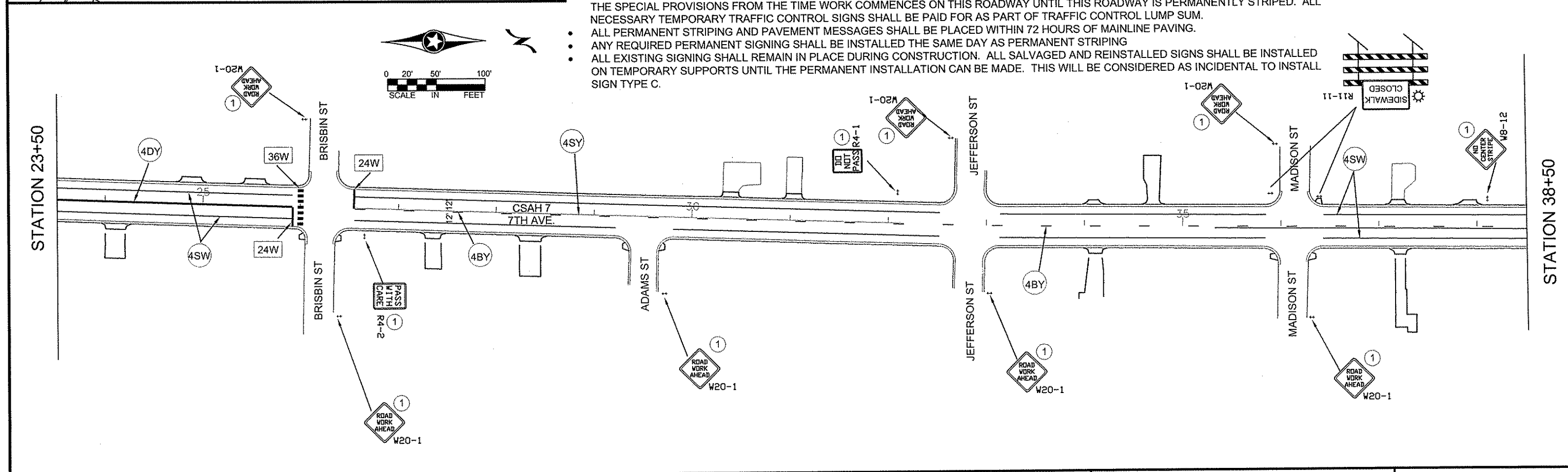




CMS sign to be installed a minimum of seven days prior to actual commencement of road work. Signs to be removed when road work begins.

**NOTES:**

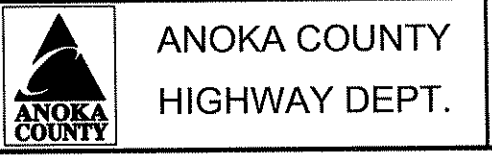
- ALL TRAFFIC CONTROL DEVICES SHALL CONFORM AND BE PLACED IN ACCORDANCE TO THE "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MN MUTCD), INCLUDING PART VI, "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS".
- CONTRACTOR SHALL COMPLY WITH THE LONGITUDINAL DROP-OFF GUIDELINES AS PER THE FIELD MANUAL.
- LOCATIONS OF PAVEMENT MARKINGS ARE APPROXIMATE. EXACT LOCATIONS WILL BE DETERMINED IN THE FIELD BY THE ENGINEER.
- CONTRACTOR SHALL SUPPLY AND INSTALL THE PORTABLE CHANGEABLE MESSAGE SIGN (CMS) A MINIMUM OF SEVEN DAYS PRIOR TO ACTUAL COMMENCEMENT OF ROAD WORK, TO A LOCATION AS SPECIFIED BY THE ENGINEER. SIGNS TO BE REMOVED WHEN ROAD WORK BEGINS. PAYMENT SHALL BE MADE AS PER ITEM 2563.613 PORTABLE CHANGEABLE MESSAGE SIGN BY THE UNIT/DAY.
- CONTRACTOR SHALL SUPPLY AND ERECT THE TEMPORARY TRAFFIC CONTROL SIGNS AS SHOWN ON THIS DRAWING AND DETAILED IN THE SPECIAL PROVISIONS FROM THE TIME WORK COMMENCES ON THIS ROADWAY UNTIL THIS ROADWAY IS PERMANENTLY STRIPED. ALL NECESSARY TEMPORARY TRAFFIC CONTROL SIGNS SHALL BE PAID FOR AS PART OF TRAFFIC CONTROL LUMP SUM.
- ALL PERMANENT STRIPING AND PAVEMENT MESSAGES SHALL BE PLACED WITHIN 72 HOURS OF MAINLINE PAVING.
- ANY REQUIRED PERMANENT SIGNING SHALL BE INSTALLED THE SAME DAY AS PERMANENT STRIPING
- ALL EXISTING SIGNING SHALL REMAIN IN PLACE DURING CONSTRUCTION. ALL SALVAGED AND REINSTALLED SIGNS SHALL BE INSTALLED ON TEMPORARY SUPPORTS UNTIL THE PERMANENT INSTALLATION CAN BE MADE. THIS WILL BE CONSIDERED AS INCIDENTAL TO INSTALL SIGN TYPE C.



NO	DATE	BY	CKD	APPR	REVISION

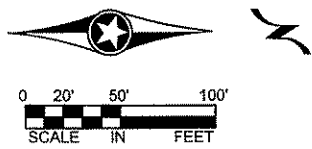
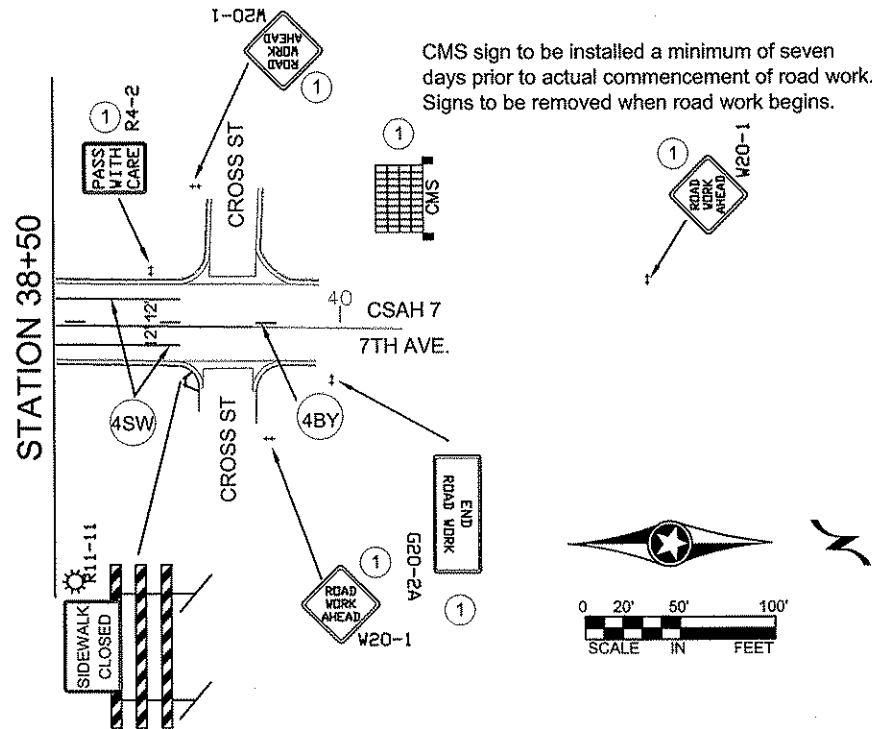
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.  
 PRINT NAME: ANDREW WITTER  
 SIGNATURE: [Signature]  
 DATE: 3/25/13 REG. NO. 42757

DRAWN BY: MTH DATE: 02/06/13  
 DESIGN BY: MTH DATE: 02/06/13  
 CHECKED BY: JKR DATE: 0X/XX/12

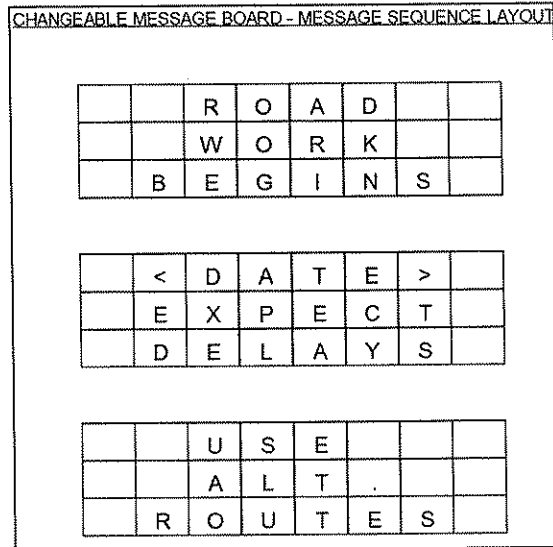


STATE PROJECT NO. \_\_\_\_\_  
 STATE AID PROJECT NO. \_\_\_\_\_  
 STATE AID PROJECT NO. \_\_\_\_\_  
 COUNTY PROJECT NO. 13-12-07

TEMPORARY SIGNING  
 PERMANENT STRIPING  
 AND PAVEMENT MESSAGES  
 Sheet 17 of 39 Sheets



CHANGEABLE MESSAGE BOARD - MESSAGE SEQUENCE LAYOUT



M.U.T.C.D. CODE	SIZE	TEMPORARY TRAFFIC CONTROL SIGNS		QUANTITY
		PANEL AREA FT. <sup>2</sup>	INSERT	
W8-12	48" x 48"	16.00	NO CENTER STRIPE	2
R4-1	24" x 30"	5.00	DO NOT PASS	2
R4-2	24" x 30"	5.00	PASS WITH CARE	2
W8-1A	48" x 48"	16.00	BUMP AHEAD	AS NEEDED
W8-1A	48" x 48"	16.00	BUMP	AS NEEDED
W8-8	48" x 48"	16.00	ROUGH ROAD	AS NEEDED
W8-9	48" x 48"	16.00	LOW SHOULDER	AS NEEDED
	48" x 48"	16.00	NO SHOULDER	AS NEEDED
W8-11	48" x 48"	16.00	UNEVEN LANES	AS NEEDED
W20-1	48" x 48"	16.00	ROAD WORK AHEAD	17 AND AS NEEDED

M.U.T.C.D. CODE	SIZE	TEMPORARY TRAFFIC CONTROL SIGNS		QUANTITY
		PANEL AREA FT. <sup>2</sup>	INSERT	
W20-X3L	48" x 48"	16.00	MERGE	1
W21-X5	48" x 48"	16.00	RIGHT LANE CLOSED	1
R9-9	30" x 18"	3.75	SIDEWALK CLOSED	7
W1-6	48" x 24"	8.00	TYPE III	2
G20-2A	48" x 24"	8.00	END ROAD WORK	2
			CMS sign to be installed a minimum of seven days prior to actual commencement of road work. Signs to be removed when road work begins.	2
				21

- NOTES:
- ALL TRAFFIC CONTROL DEVICES SHALL CONFORM AND BE PLACED IN ACCORDANCE TO THE "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MN MUTCD), INCLUDING PART VI, "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS".
  - CONTRACTOR SHALL COMPLY WITH THE LONGITUDINAL DROP-OFF GUIDELINES AS PER THE FIELD MANUAL.
  - LOCATIONS OF PAVEMENT MARKINGS ARE APPROXIMATE. EXACT LOCATIONS WILL BE DETERMINED IN THE FIELD BY THE ENGINEER.
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  - ALL PERMANENT STRIPING AND PAVEMENT MESSAGES SHALL BE PLACED WITHIN 72 HOURS OF MAINLINE PAVING.
  - ANY REQUIRED PERMANENT SIGNING SHALL BE INSTALLED THE SAME DAY AS PERMANENT STRIPING
  - ALL EXISTING SIGNING SHALL REMAIN IN PLACE DURING CONSTRUCTION. ALL SALVAGED AND REINSTALLED SIGNS SHALL BE INSTALLED ON TEMPORARY SUPPORTS UNTIL THE PERMANENT INSTALLATION CAN BE MADE. THIS WILL BE CONSIDERED AS INCIDENTAL TO INSTALL SIGN TYPE C.

NO	DATE	BY	CKD	APPR	REVISION

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

PRINT NAME: ANDREW WITTER

SIGNATURE: *Andrew Witter*

DATE: 3/25/13 REG. NO. 42757

DRAWN BY: MTH DATE 02/06/13

DESIGN BY: MTH DATE 02/06/13

CHECKED BY: JKR DATE 0X/XX/12



ANOKA COUNTY HIGHWAY DEPT.

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

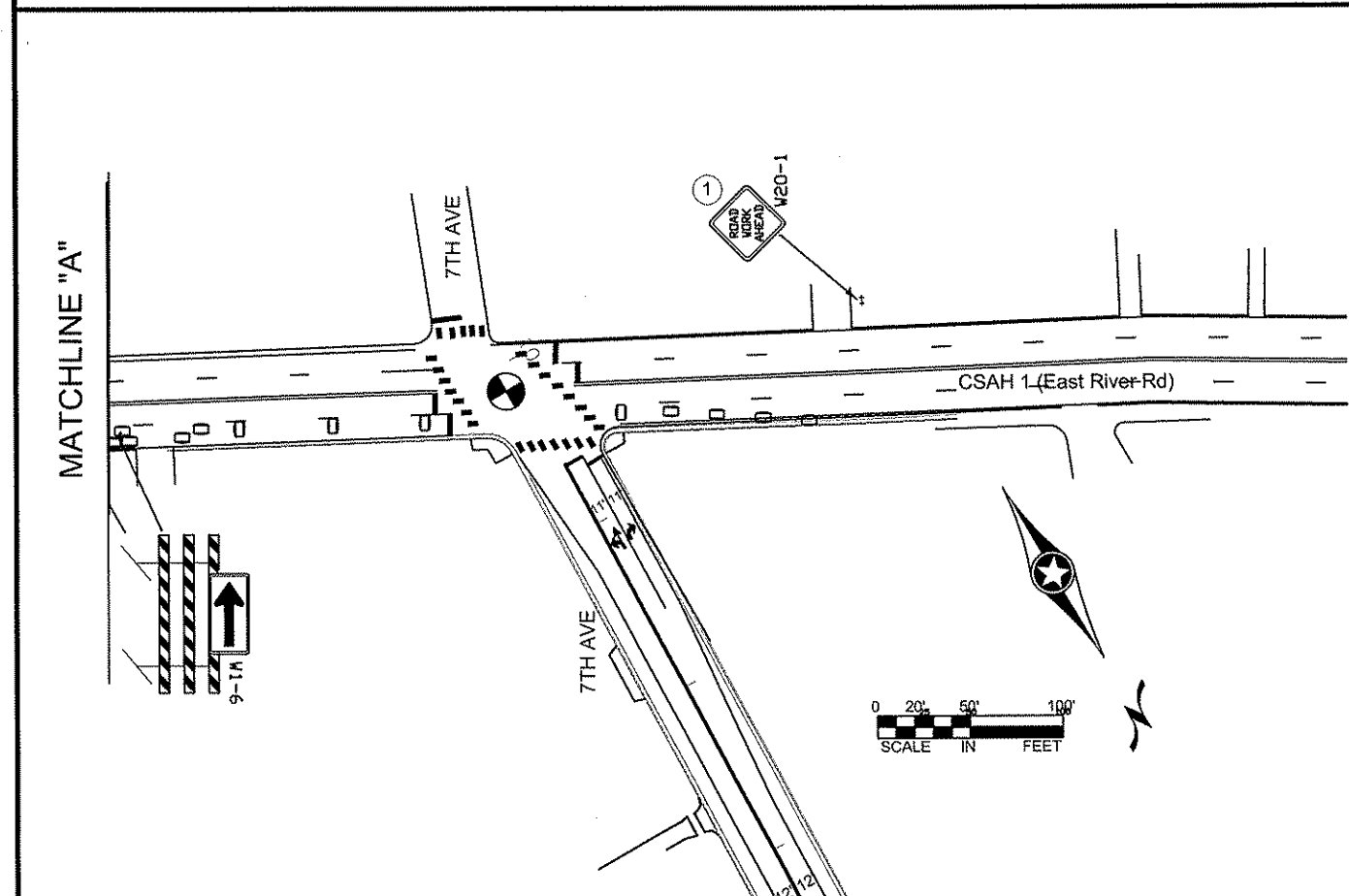
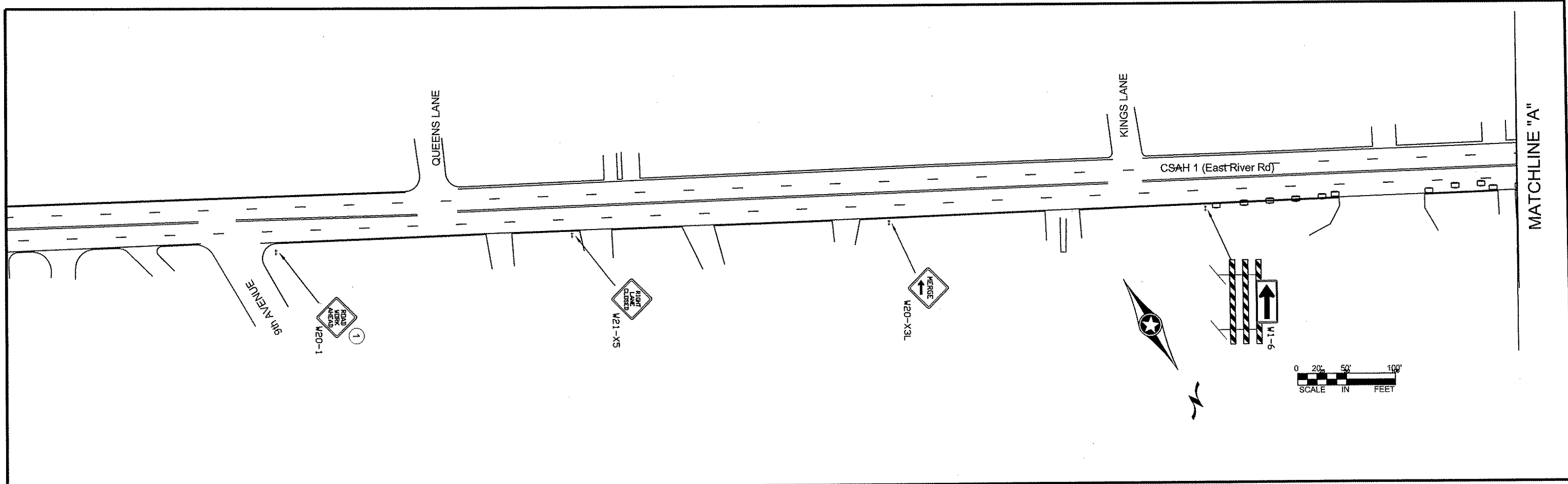
STATE AID PROJECT NO. \_\_\_\_\_

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

COUNTY PROJECT NO. 13-12-07

TEMPORARY SIGNING PERMANENT STRIPING AND PAVEMENT MESSAGES

Sheet 18 of 39 Sheets



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".
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NO	DATE	BY	CKD	APPR	REVISION

NAME: P:113-01-00\CSAH 7\Base\TRAFFIC\signing&striping.dwg

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

PRINT NAME: ANDREW WITTER

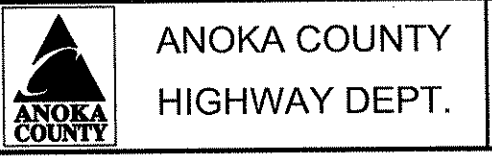
SIGNATURE: *Andrew Witter*

DATE: 3/25/13 REG. NO. 42757

DRAWN BY: MTH DATE 03/01/13

DESIGN BY: MTH DATE 03/01/13

CHECKED BY: JKR DATE 03/XX/13



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

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

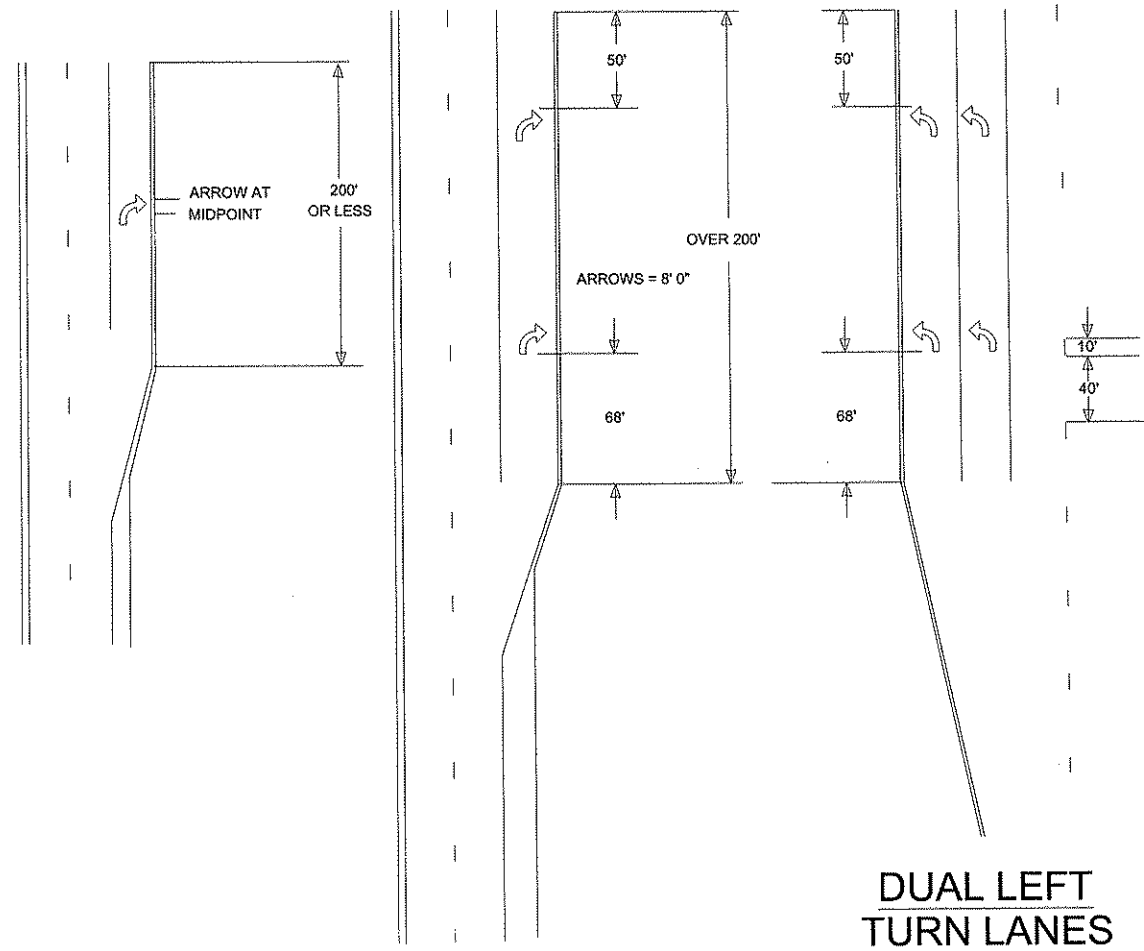
STATE AID PROJECT NO. \_\_\_\_\_

COUNTY PROJECT NO. 13-12-07

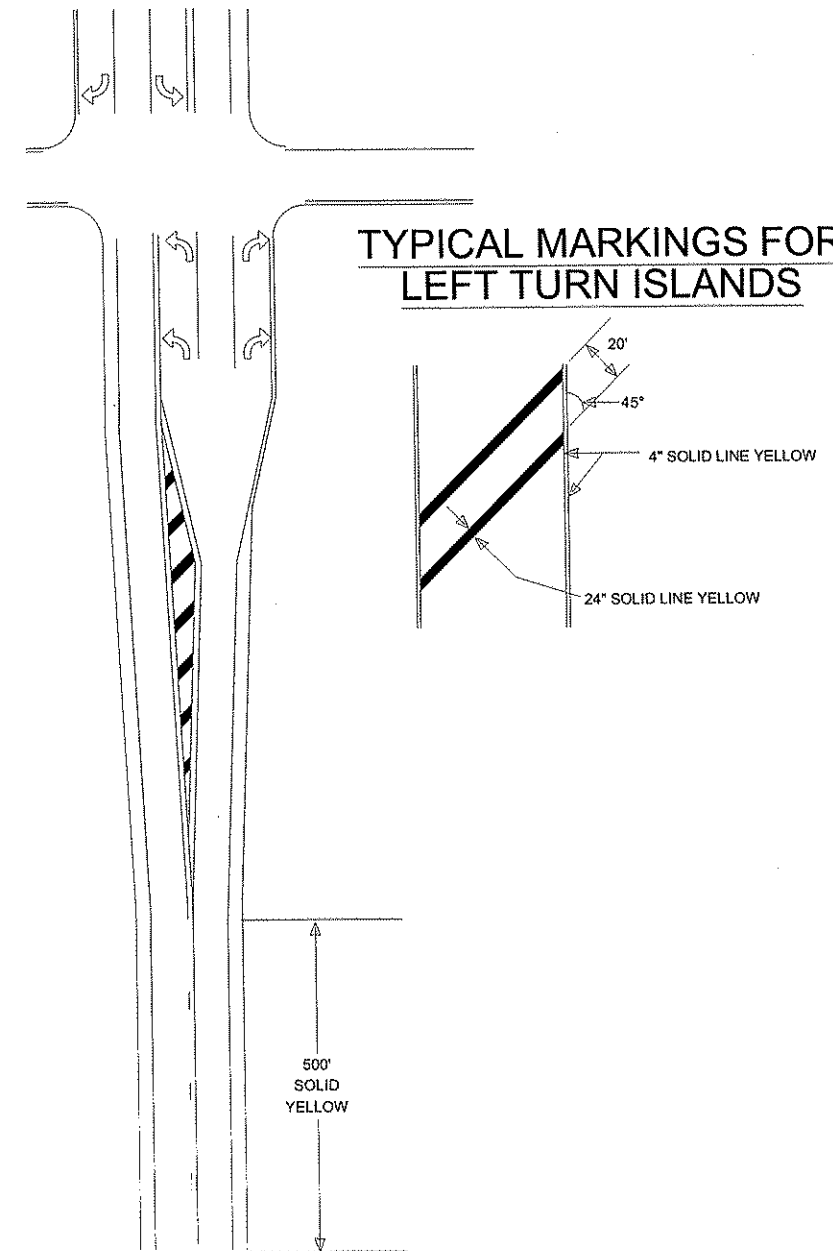
TEMPORARY SIGNING  
PERMANENT STRIPING  
AND PAVEMENT MESSAGES

Sheet 19 of 39 Sheets

**TYPICAL MESSAGE PLACEMENT  
FOR TURN LANES**



**TYPICAL MARKINGS FOR  
LEFT TURN ISLANDS**



NO	DATE	BY	CHKD	APPR	REVISION

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.  
 PRINT NAME: **ANDREW WITTER**  
 SIGNATURE: *Andrew Witter*  
 DATE: **3/25/13** LICENSE NO. **42757**

DRAWN BY **MTH** DATE **02-20-13**  
 DESIGN BY **MTH** DATE **02-20-13**  
 CHECKED BY **JR** DATE **02-XX-13**

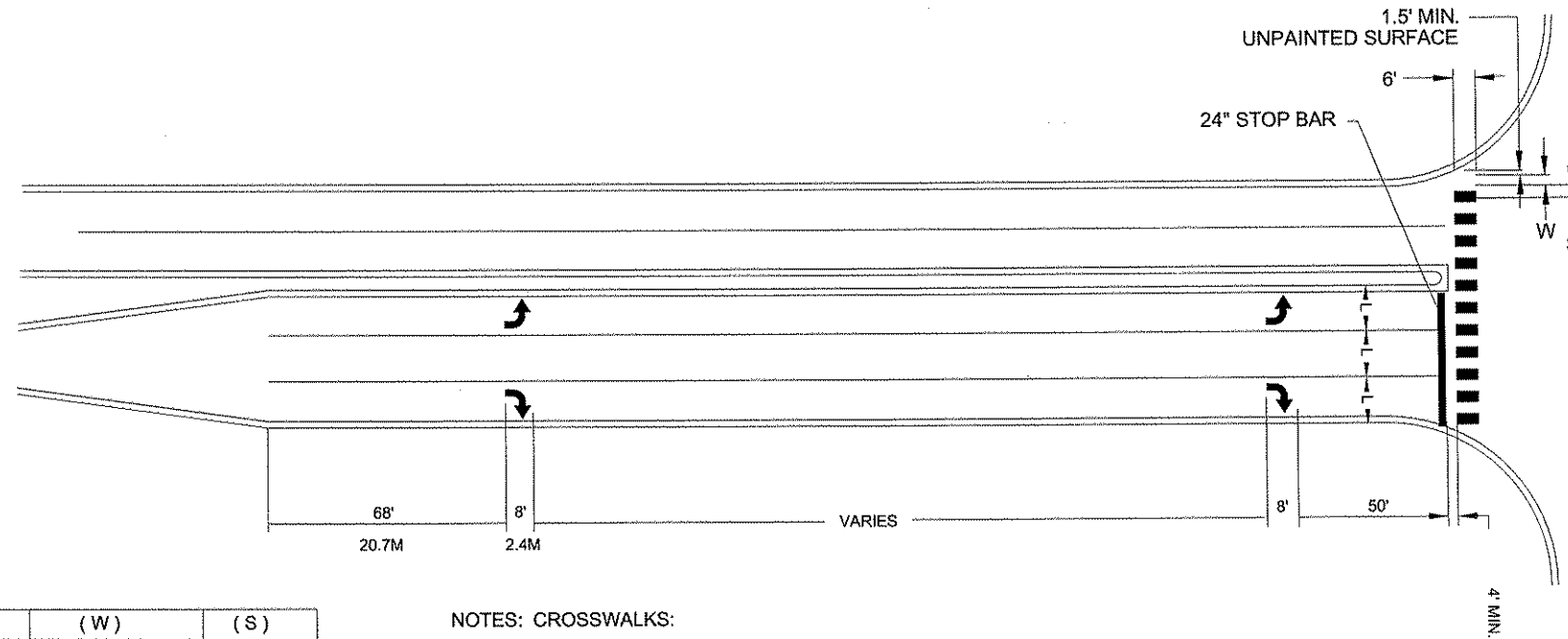
**ANOKA COUNTY  
HIGHWAY DEPT.**

STATE PROJECT NO. \_\_\_\_\_  
 STATE PROJECT NO. \_\_\_\_\_  
 STATE PROJECT NO. \_\_\_\_\_  
 COUNTY PROJECT NO. **13-12-07**

**SIGNING & STRIPING DETAILS**

Sheet **20** of **39** Sheets

# MARKINGS FOR PEDESTRIAN CROSSWALKS



(L)	(W)	(S)
WIDTH OF INSIDE LANE	WIDTH OF PAINTED AREAS	WIDTH OF SPACE
9'	2.0'	2.5'
10'	2.5'	2.5'
11'	2.5'	3.0'
12'	3.0'	3.0'
13'	3.0'	3.5'

**NOTES: CROSSWALKS:**

- 1.) PAINTED AREAS ARE TO BE CENTERED ON CENTER AND LANE LINES, EVEN IF INTERSECTION IS NOT ALIGNED.
- 2.) LOCATION OF ZEBRA CROSSWALKS AND STOP BARS, SIGNAL LOOPS AND PED RAMPS ARE APPROXIMATE. FINAL LOCATIONS ARE TO BE DETERMINED AND FIELD VERIFIED DURING CONSTRUCTION BY THE FIELD ENGR.
- 3.) ZEBRA CROSSWALKS ARE TO BE PARALLEL TO THE DRIVING LANE OR LANES. EVEN IF THE STREET IS ON AN ANGLE TO THE INTERSECTION.
- 4.) A MIN. OF 1.5' (450mm) CLEAR DISTANCE MUST BE LEFT ADJACENT TO THE CURB. IF LAST PAINTED AREA FALLS INTO THIS AREA, IT MUST BE OMITTED.
- 5.) ON TWO LANE STREETS, USE SPACING SHOWN FOR AN 11' (3.3mm) NSIDE LANE.

NO	DATE	BY	CKD	APPR	REVISION

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

PRINT NAME: ANDREW WITTER

SIGNATURE: *[Signature]*

DATE: 3/25/13 LICENSE NO. 42757

DRAWN BY MTH DATE 02-20-13

DESIGN BY MTH DATE 02-20-13

CHECKED BY JR DATE 02-xx-13



**ANOKA COUNTY  
HIGHWAY DEPT.**

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

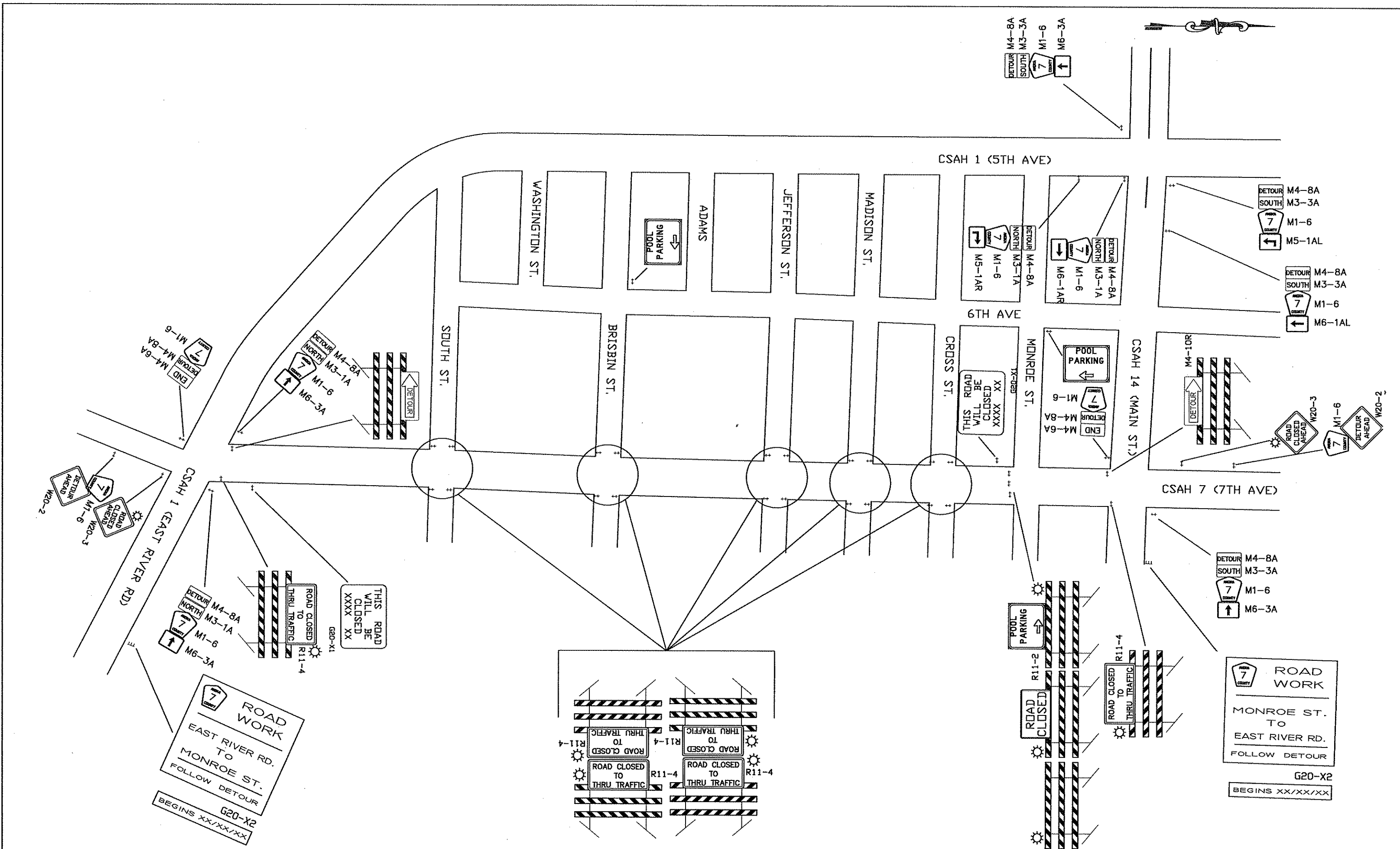
STATE PROJECT NO. \_\_\_\_\_

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

COUNTY PROJECT NO. 13-12-07

SIGNING & STRIPING DETAILS

Sheet 21 of 39 Sheets



NO	DATE	BY	CKD	APPR	REVISION

NAME: T:\Traffic\dwg\CSAH 14 (Main St)\RR DET 14.dwg

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

PRINT NAME: ANDREW WITTER

SIGNATURE: *[Signature]*

DATE: 3/25/13 LICENSE NO. 42757

DRAWN BY: RLB DATE 01/29/13

DESIGN BY: RLB DATE 01/29/13

CHECKED BY: JR DATE 02/01/13



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

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

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

CITY PROJECT NO. \_\_\_\_\_

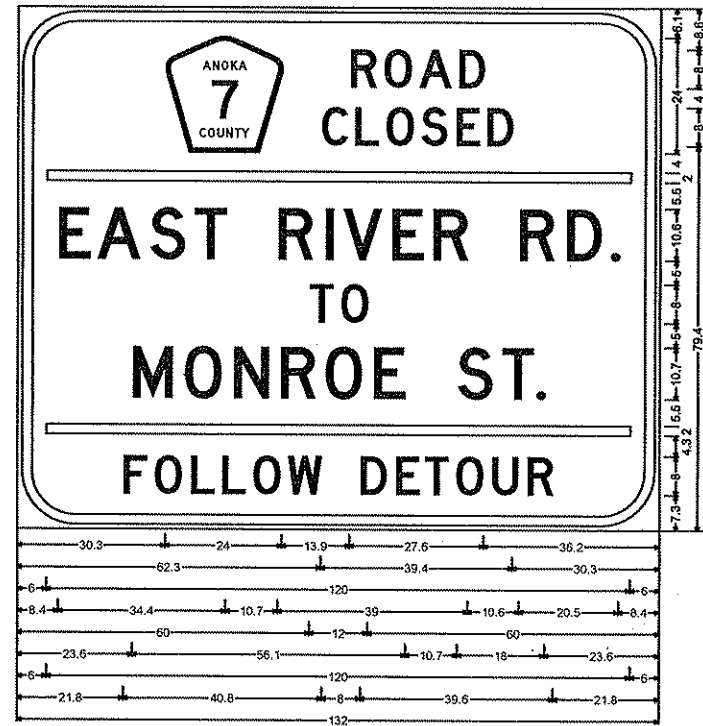
COUNTY PROJECT NO. 13-12-07

DETOUR PLAN

Sheet 22 of 39 Sheets

M.U.T.C.D. CODE	SIZE	INSERT	QTY.	M.U.T.C.D. CODE	SIZE	INSERT	QTY.
M4-8	24"x12"	M4-6 END	• 1	R11-4	60"x30"	ROAD CLOSED TO THRU TRAFFIC	• 11
M3-4A	24"x12"	M5-1AL	• 0	8 FT.	TYPE III		• 11
M1-6A	24"x24"	M5-1AR	• 1				
	21"x15"	M6-1AL	• 0	R11-4	60"x30"	ROAD CLOSED TO THRU TRAFFIC	• 11
		M6-1AR	• 1	8 FT.	TYPE III		• 11
		M6-3A	• 2				
M4-8	24"x12"	M4-6 END	• 1	M4-10R	48"x18"	DETOUR	• 1
M3-4A	24"x12"	M5-1AL	• 1	8 FT.	TYPE III		• 1
M1-6A	24"x24"	M5-1AR	• 0				
	21"x15"	M6-1AL	• 1				
		M6-1AR	• 0				
		M6-3A	• 2				
G20-X2	132"x108"	ROAD WORK EAST RIVER RD TO MONROE ST. FOLLOW DETOUR	• 1	R11-4	48"x30"	ROAD CLOSED	• 1
		G20-X2		8 FT.	TYPE III		• 1
G20-X2	132"x108"	ROAD WORK MONROE ST. TO EAST RIVER RD. FOLLOW DETOUR	• 1	M4-10L	48"x18"	DETOUR	• 1
		G20-X2		8 FT.	TYPE III		• 1
G20-X2	114"x20"	BEGINS XX/XX/XX	• 2				
M1-6A	24"x24"	DETOUR AHEAD	• 2				
W20-2	48"x48"	DETOUR AHEAD	• 2	8 FT.	TYPE III		• 1
W20-3	48"x48"	ROAD CLOSED AHEAD	• 2				
G20-X1	84"x60"	THIS ROAD WILL BE CLOSED XXXX XX	• 2	G20-X6	36"x24"	POOL PARKING	• 2
				G20-X6	36"x24"	POOL PARKING	• 1

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



G20-X2\_132x108; 12.0" Radius, 2.0" Border, 1.0" Indent, Black on Orange; [ROAD] D; [CLOSED] D; [EAST RIVER RD.] D; [TO] D; [MONROE ST.] D; [FOLLOW] D; [DETOUR] D;



G20-X2\_132x108; 12.0" Radius, 2.0" Border, 1.0" Indent, Black on Orange; [ROAD] D; [CLOSED] D; [MONROE ST.] D; [TO] D; [EAST RIVER RD.] D; [FOLLOW] D; [DETOUR] D;

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

STANDARD TRAFFIC CONTROL NOTES:

- 1) LOCATIONS OF ALL SIGNS ARE APPROXIMATE, EXACT LOCATIONS WILL BE DETERMINED IN THE FIELD BY THE ENGINEER.
- 2) ALL BARRICADES AND SIGNS SHALL BE PROPERLY WEIGHTED WITH SANDBAGS.
- 3) ALL BARRICADES SHALL HAVE REFLECTIVE MATERIAL ON BOTH SIDES.
- 4) ALL BARRICADES MARKINGS SHALL BE SLANTED IN ACCORDANCE WITH THE MINNESOTA MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.
- 5) ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE MOST RECENT EDITION OF THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
- 6) ADDITIONS OR CHANGES TO THIS PLAN MAY BE MADE AS DETERMINED BY THE ENGINEER.

NO	DATE	BY	CHKD	APPR	REVISION

NAME: T:\Traffic\dwg\CSAH 14 Main S9\RR DET 14.dwg

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.  
 PRINT NAME: ANDREW WITTER  
 SIGNATURE: *[Signature]*  
 DATE: 3/25/13 LICENSE NO. 42757

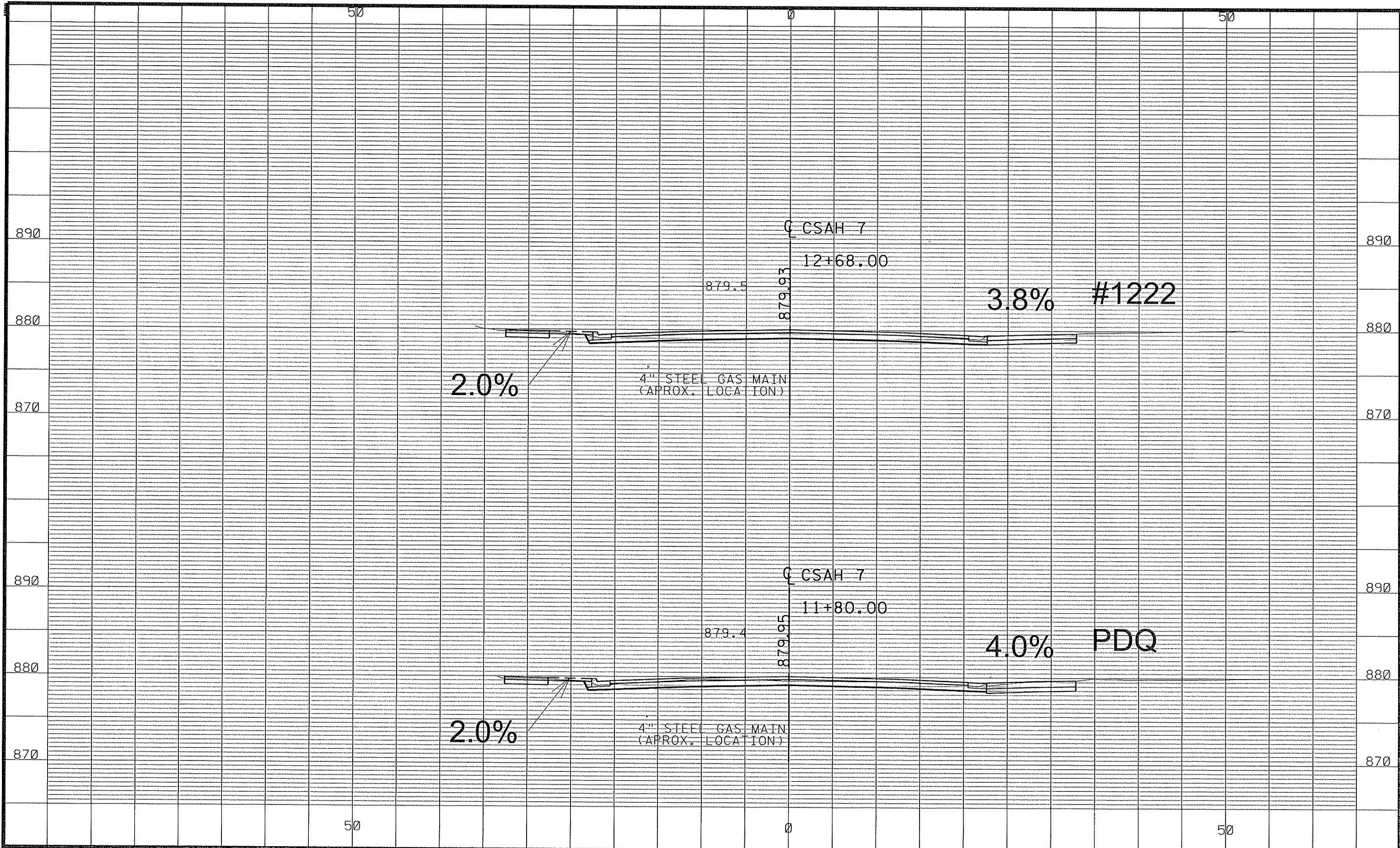
DRAWN BY: RLB DATE 02/04/13  
 DESIGN BY: RLB DATE 02/04/13  
 CHECKED BY: JR DATE 02/01/13



ANOKA COUNTY  
 HIGHWAY DEPT.

STATE PROJECT NO. \_\_\_\_\_  
 STATE AID PROJECT NO. \_\_\_\_\_  
 CITY PROJECT NO. \_\_\_\_\_  
 COUNTY PROJECT NO. 13-12-07

DETOUR  
 Sheet 23 of 39 Sheets



NO	DATE	BY	CHKD	APPR	REVISION
	04/03/2013				2:23:59 PM

NAME: P:\13-01-00\CSAH\_7\_(CSAH1-MainSt)\Base\PROPOSED\PLAN\24-39\_XS.dgn

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

PRINT NAME: ANDREW WITTER

SIGNATURE: *[Signature]*

DATE: 4/13 LICENSE NO. 42757

DRAWN BY: JJ DATE: 04/03/2013

DESIGN BY: JJ DATE: 04/03/2013

CHECKED BY: DFF DATE: 04/03/2013

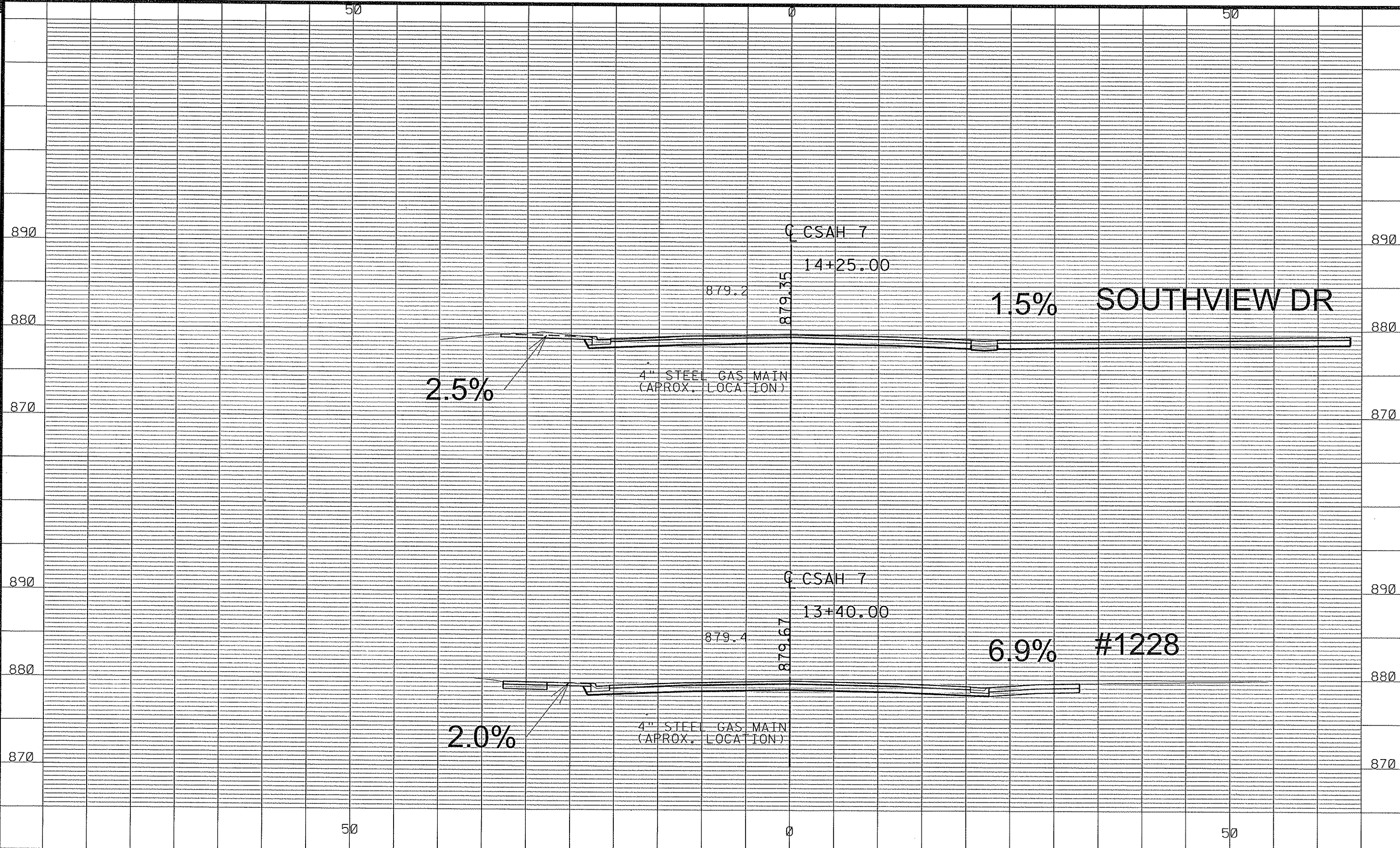


ANOKA COUNTY  
HIGHWAY DEPT.

COUNTY PROJECT NO. 13-12-07

CROSS SECTIONS  
STA 11+80 TO 12+68  
Sheet 24 of 39 Sheets





NO	DATE	BY	CKD	APPR	REVISION
	04/03/2013				2:23:54 PM

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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: ANDREW WITTER  
 SIGNATURE: *Andrew Witter*  
 DATE: 4/4/13 LICENSE NO. 42757

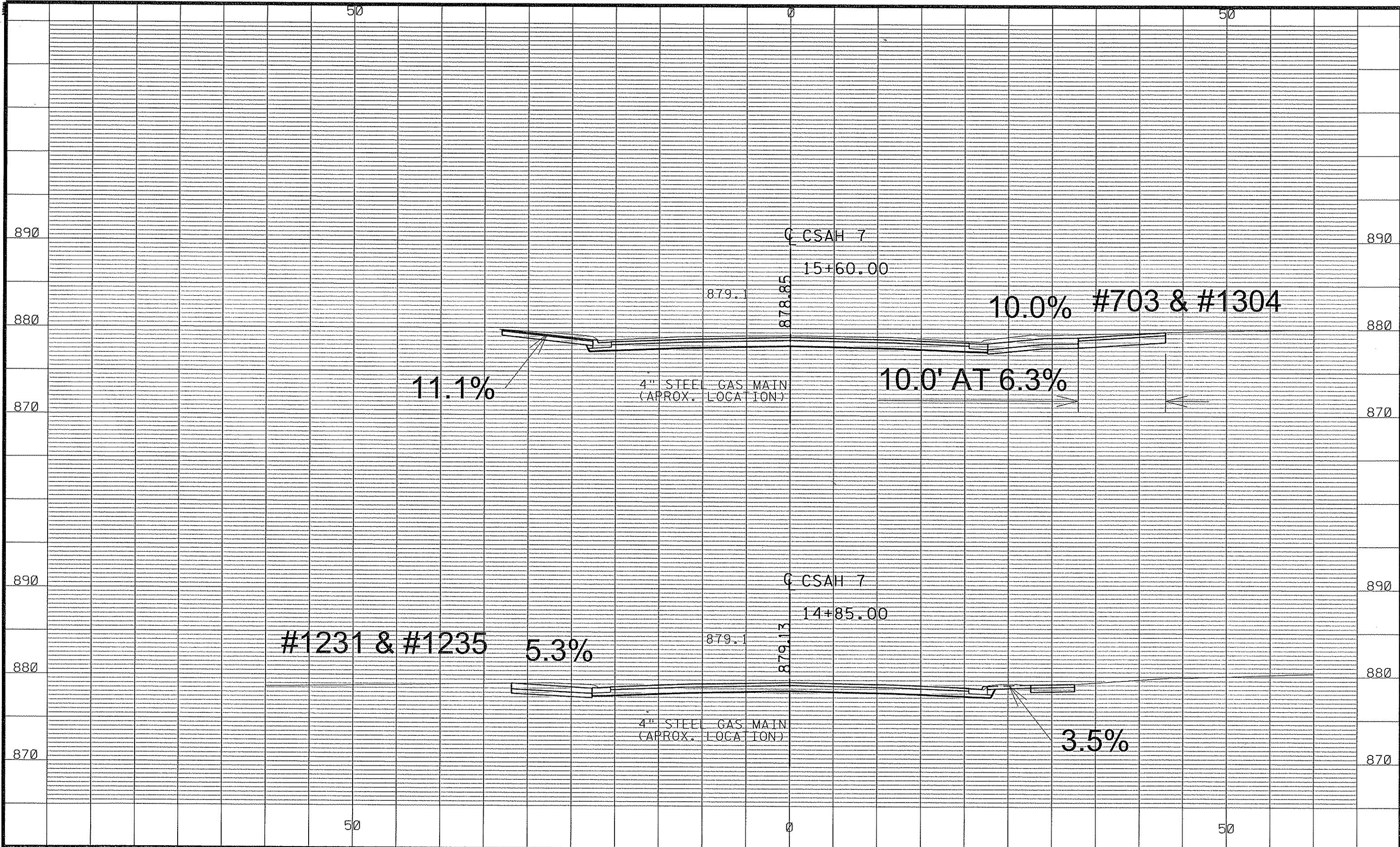
DRAWN BY JJ DATE 04/03/2013  
 DESIGN BY JJ DATE 04/03/2013  
 CHECKED BY DFF DATE 04/03/2013



ANOKA COUNTY  
HIGHWAY DEPT.

COUNTY PROJECT NO. 13-12-07

CROSS SECTIONS  
 STA 13+40 TO 14+25  
 Sheet 25 of 39 Sheets



NO	DATE	BY	CKD	APPR	REVISION	
	04/03/2013					2:23:55 PM

NAME: P:\13-01-00\CSAH\_7 (CSAH1-MainSt)\Base\PROPOSED\PLAN\24-39\_XS.dgn

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

PRINT NAME: ANDREW WITTER  
 SIGNATURE: *[Signature]*  
 DATE: 4/4/13 LICENSE NO. 42757

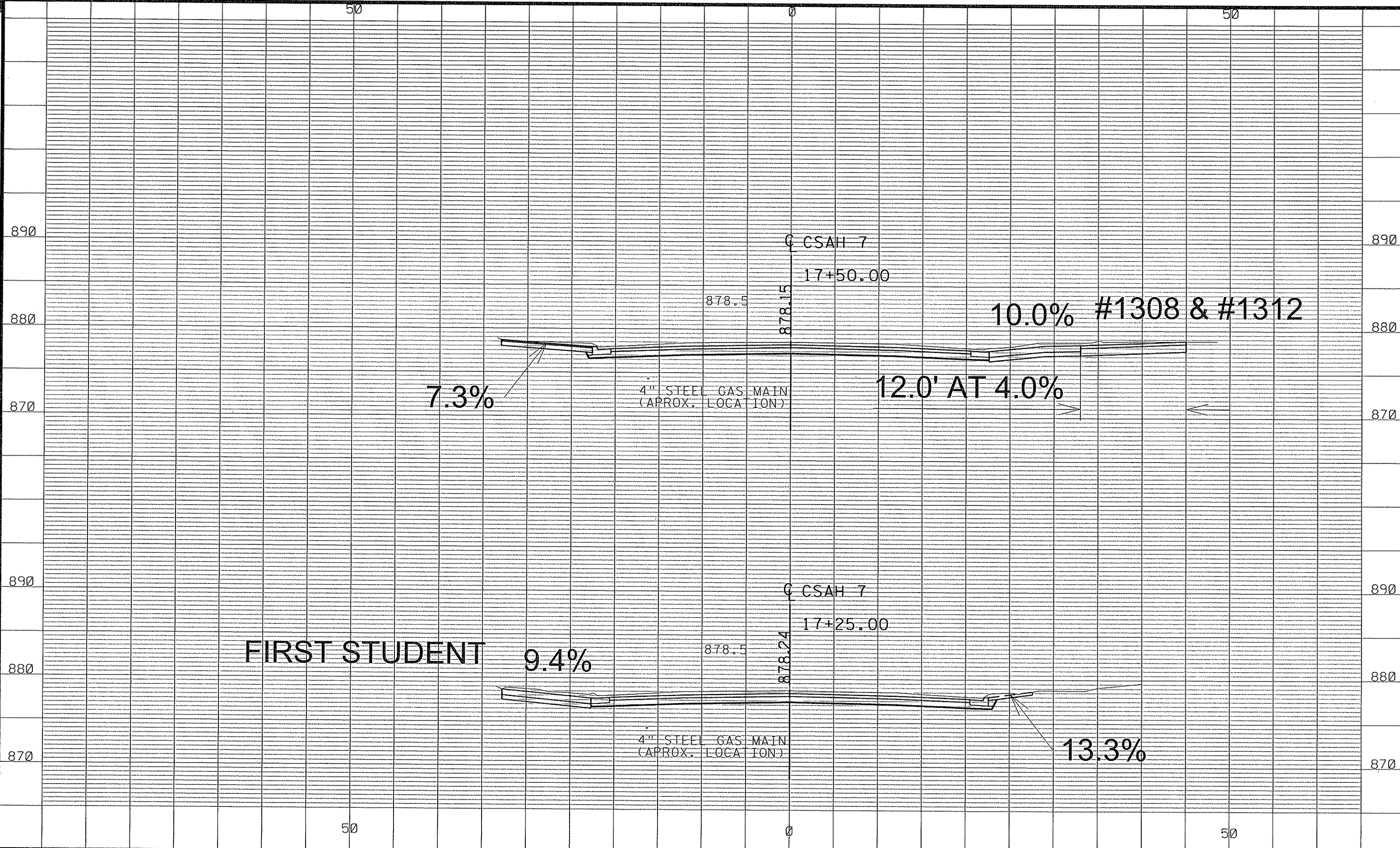
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 DESIGN BY JJ DATE 04/03/2013  
 CHECKED BY DFF DATE 04/03/2013



ANOKA COUNTY  
 HIGHWAY DEPT.

COUNTY PROJECT NO. 13-12-07

CROSS SECTIONS  
 STA 14+85 TO 15+60  
 Sheet 26 of 39 Sheets



FIRST STUDENT

NO	DATE	BY	CKD	APPR	REVISION
	04/03/2013				2:23:55 PM

NAME: P:\13-01\00\CSAH 7\_(CSAH1-MainSt)\Base\PROPOSED\PLAN\24-39\_XS.dgn

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

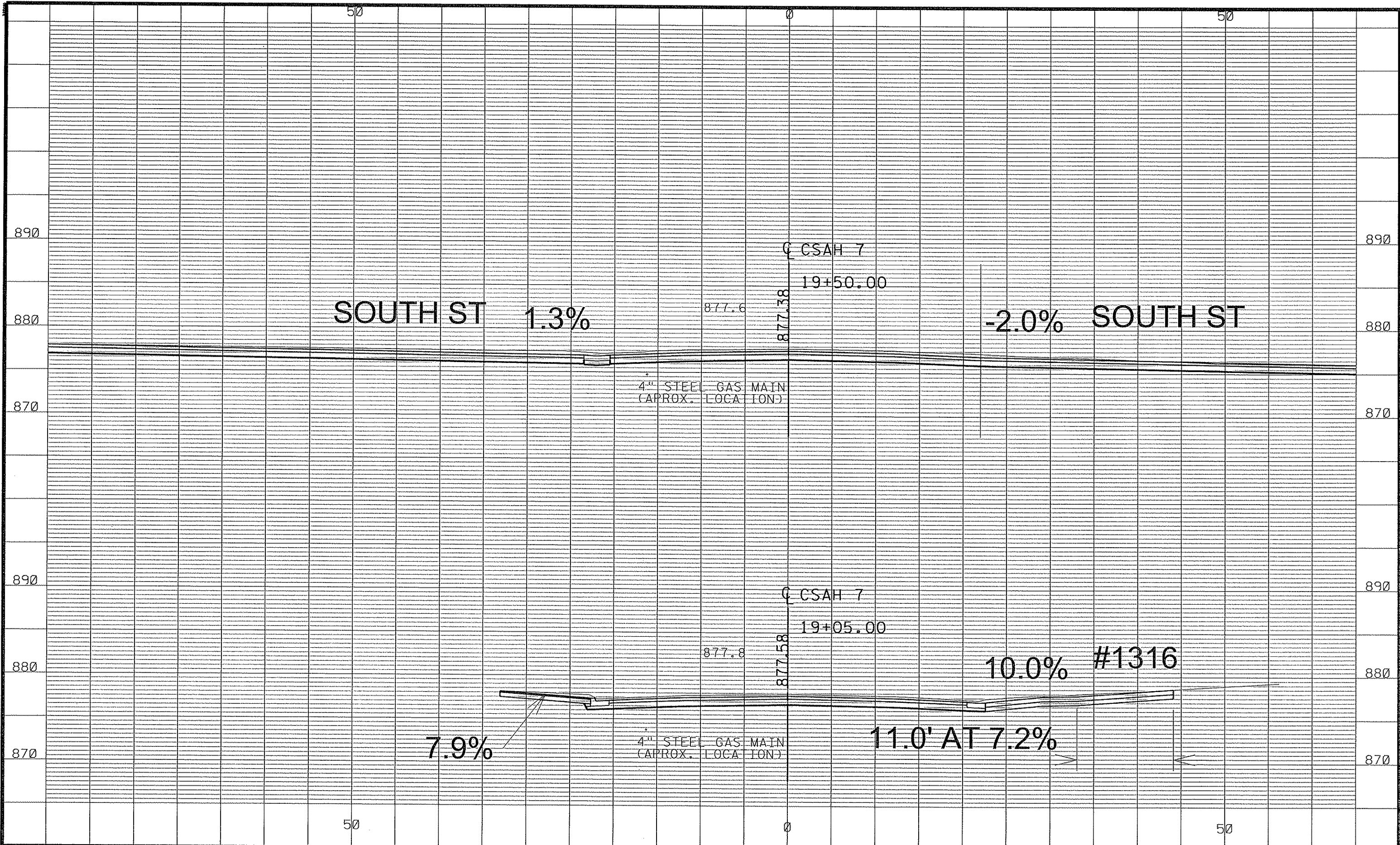
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 SIGNATURE: *Andrew Witter*  
 DATE: 4/4/13 LICENSE NO. 42757

DRAWN BY JJ DATE 04/03/2013  
 DESIGN BY JJ DATE 04/03/2013  
 CHECKED BY DFF DATE 04/03/2013



COUNTY PROJECT NO. 13-12-07

CROSS SECTIONS  
 STA 17+25 TO 17+50  
 Sheet 27 of 39 Sheets



NO	DATE	BY	CKD	APPR	REVISION
	04/03/2013				2:23:55 PM

NAME: P:\13-01-00\CSAH\_7\_(CSAH1-MainSt)\Base\PROPOSED\PLAN\24-39\_XS.dgn

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

PRINT NAME: ANDREW WITTER  
 SIGNATURE: *Andrew Witter*  
 DATE: 4/4/13 LICENSE NO. 42757

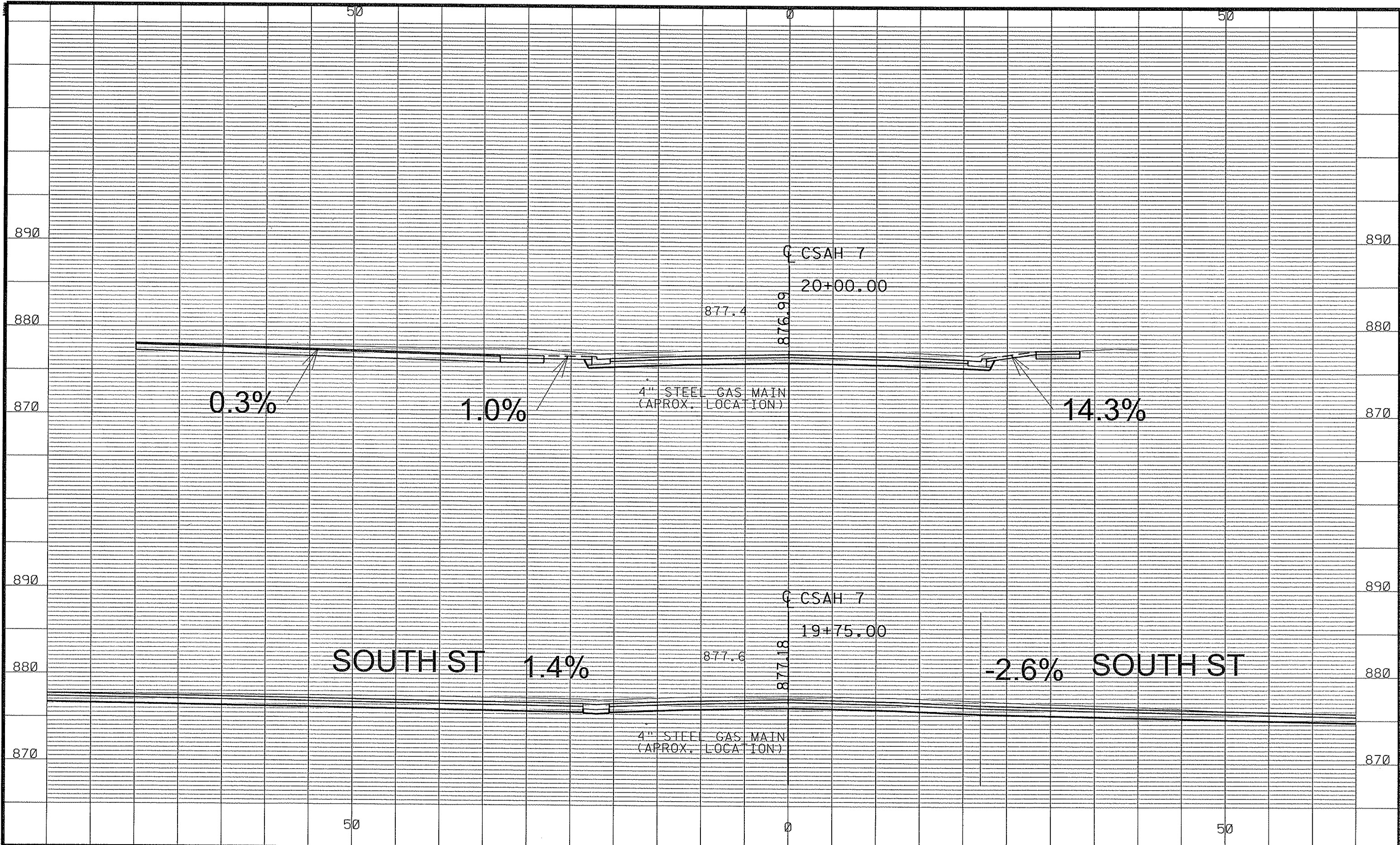
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 DESIGN BY JJ DATE 04/03/2013  
 CHECKED BY DFF DATE 04/03/2013



ANOKA COUNTY  
 HIGHWAY DEPT.

COUNTY PROJECT NO. 13-12-07

CROSS SECTIONS  
 STA 19+05 TO 19+50  
 Sheet 28 of 39 Sheets



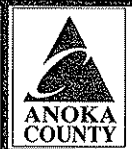
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I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME: ANDREW WITTER  
 SIGNATURE: *[Signature]*  
 DATE: 4/4/13 LICENSE NO. 42757

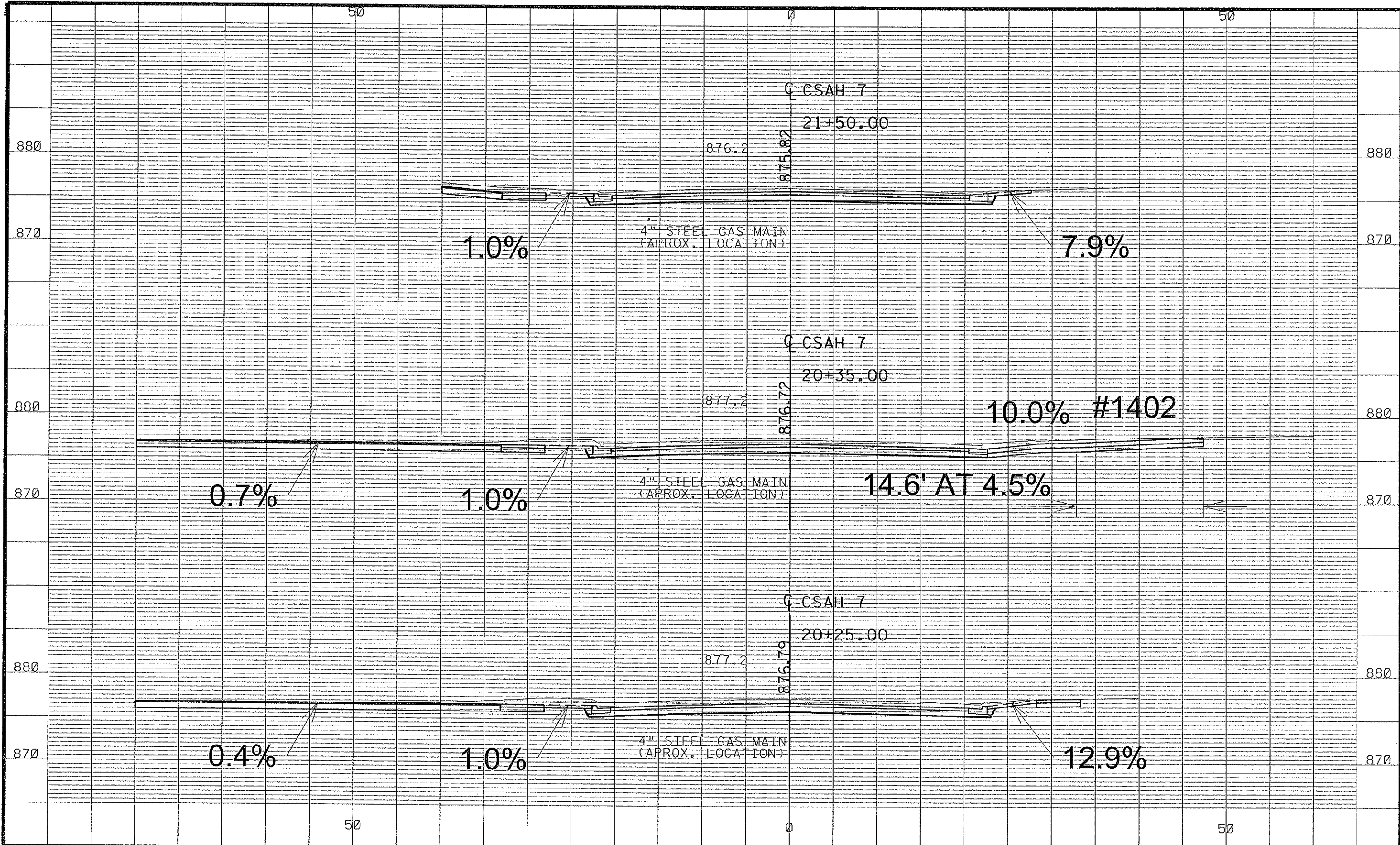
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 DESIGN BY JJ DATE 04/03/2013  
 CHECKED BY DFF DATE 04/03/2013



ANOKA COUNTY  
 HIGHWAY DEPT.

COUNTY PROJECT NO. 13-12-07

CROSS SECTIONS  
 STA 19+75 TO 20+00  
 Sheet 29 of 39 Sheets



NO	DATE	BY	CHKD	APPR	REVISION
	04/03/2013				2:23:56 PM

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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: ANDREW WITTER  
 SIGNATURE: *Andrew Witter*  
 DATE: 4/4/13 LICENSE NO. 42757

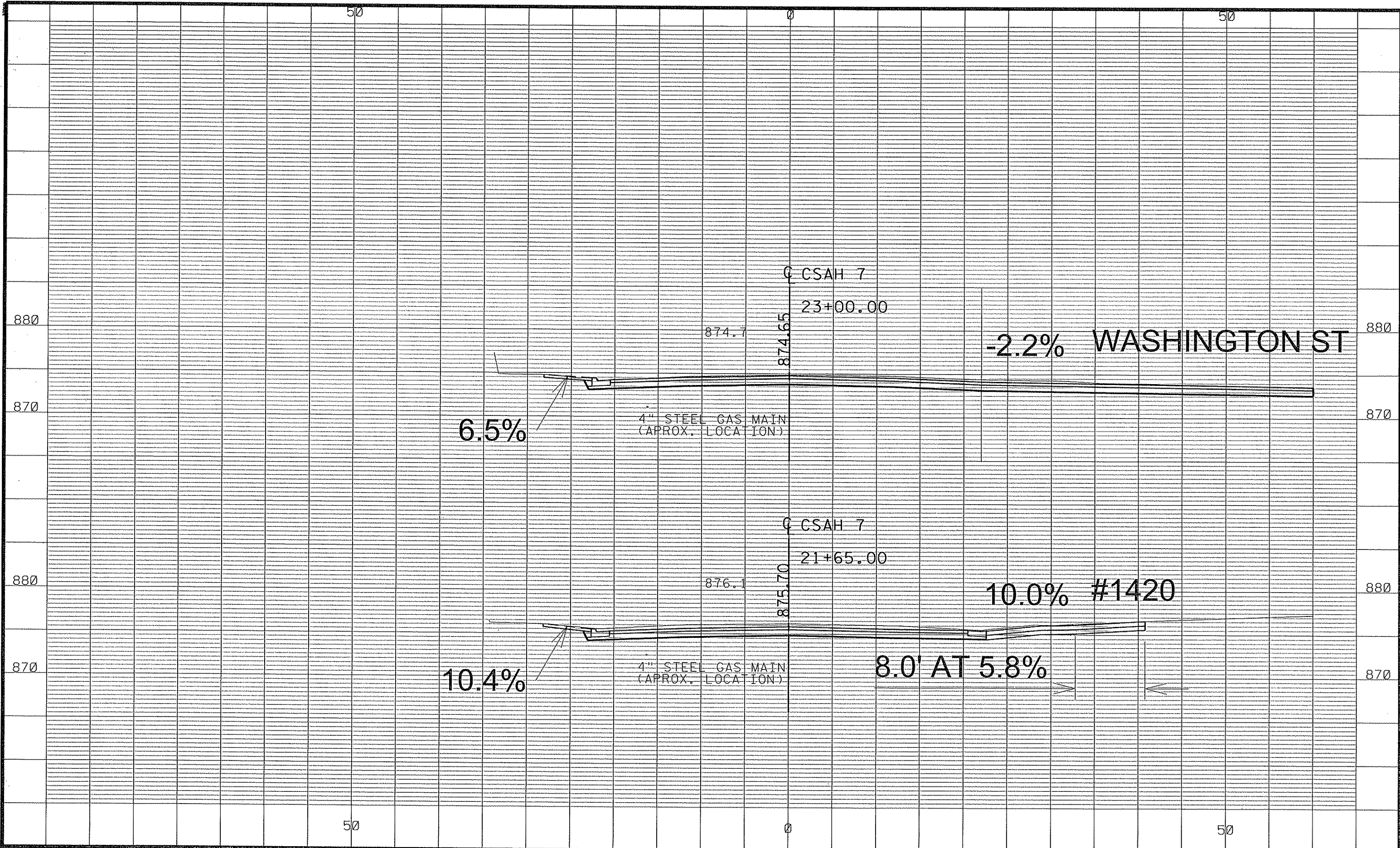
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 DESIGN BY JJ DATE 04/03/2013  
 CHECKED BY DFF DATE 04/03/2013



ANOKA COUNTY  
 HIGHWAY DEPT.

COUNTY PROJECT NO. 13-12-07

CROSS SECTIONS  
 STA 20+25 TO 21+50  
 Sheet 30 of 39 Sheets



NO	DATE	BY	CKD	APPR	REVISION
	04/03/2013				2:23:56 PM

NAME: P:\13-01-00\CSAH\_7\_(CSAH1-MainSt)\Base\PROPOSED\PLAN\24-39\_XS.dgn

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

PRINT NAME: ANDREW WITTER  
 SIGNATURE: *[Signature]*  
 DATE: 4/13/13 LICENSE NO. 42757

DRAWN BY JJ DATE 04/03/2013  
 DESIGN BY JJ DATE 04/03/2013  
 CHECKED BY DFF DATE 04/03/2013



ANOKA COUNTY  
 HIGHWAY DEPT.

COUNTY PROJECT NO. 13-12-07

CROSS SECTIONS  
 STA 21+65 TO 23+00  
 Sheet 31 of 39 Sheets

# AQUATIC CENTER ENTRANCE

10.0%

CSAH 7  
24+90.00

4" STEEL GAS MAIN  
(APPROX. LOCATION)

6.2%

CSAH 7  
24+10.00

4" STEEL GAS MAIN  
(APPROX. LOCATION)

9.7% #1508

6.5%

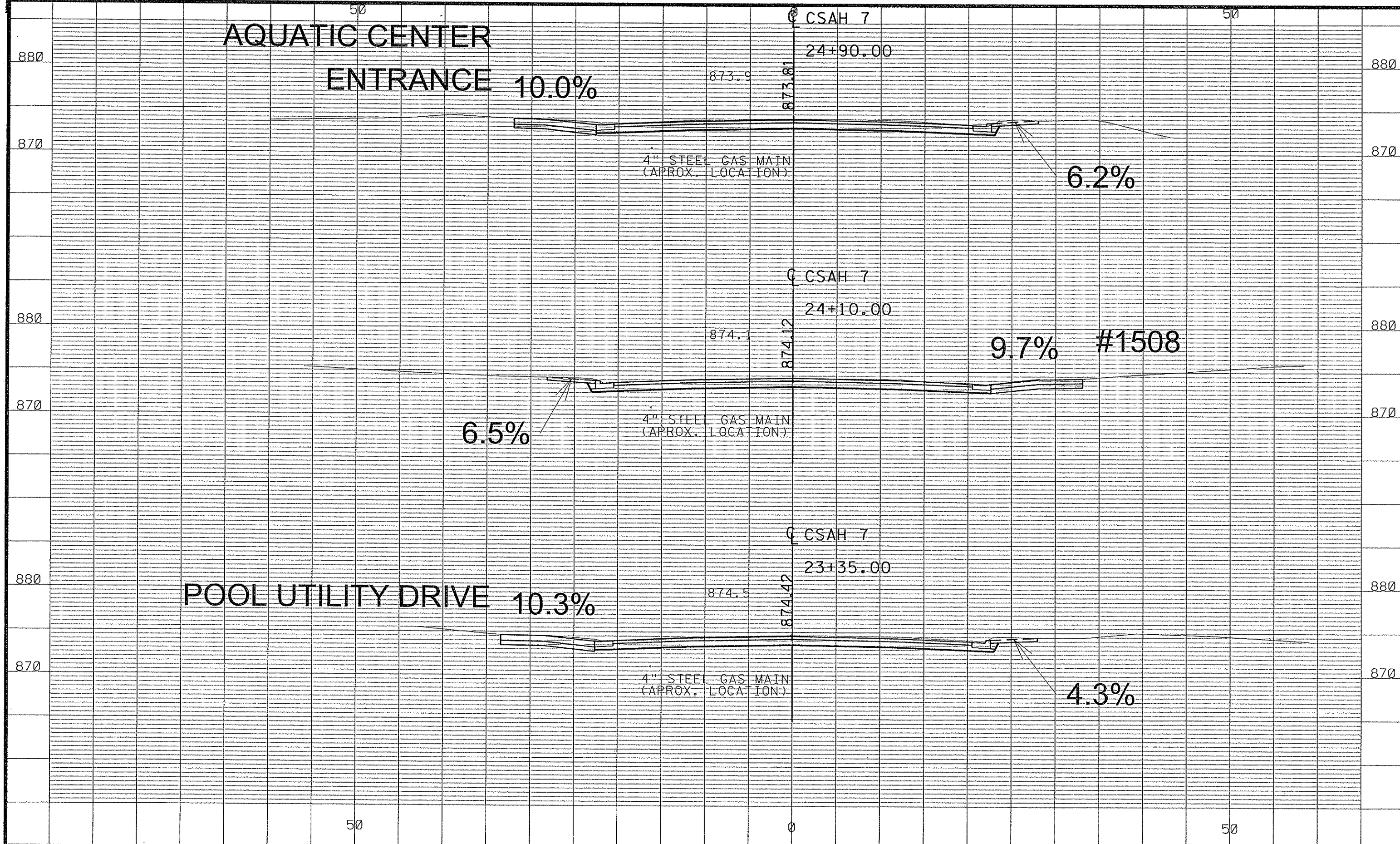
CSAH 7  
23+35.00

# POOL UTILITY DRIVE

10.3%

4" STEEL GAS MAIN  
(APPROX. LOCATION)

4.3%



NO	DATE	BY	CHKD	APPR	REVISION
	04/03/2013				2:23:56 PM

NAME: P:\113-01-00\CSAH\_7 (CSAH1-MainSt)\Base\PROPOSED\PLAN\24-39\_XS.dgn

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

PRINT NAME: ANDREW WITTER  
SIGNATURE: *[Signature]*  
DATE: 4/4/13 LICENSE NO. 42757

DRAWN BY JJ DATE 04/03/2013  
DESIGN BY JJ DATE 04/03/2013  
CHECKED BY DFF DATE 04/03/2013

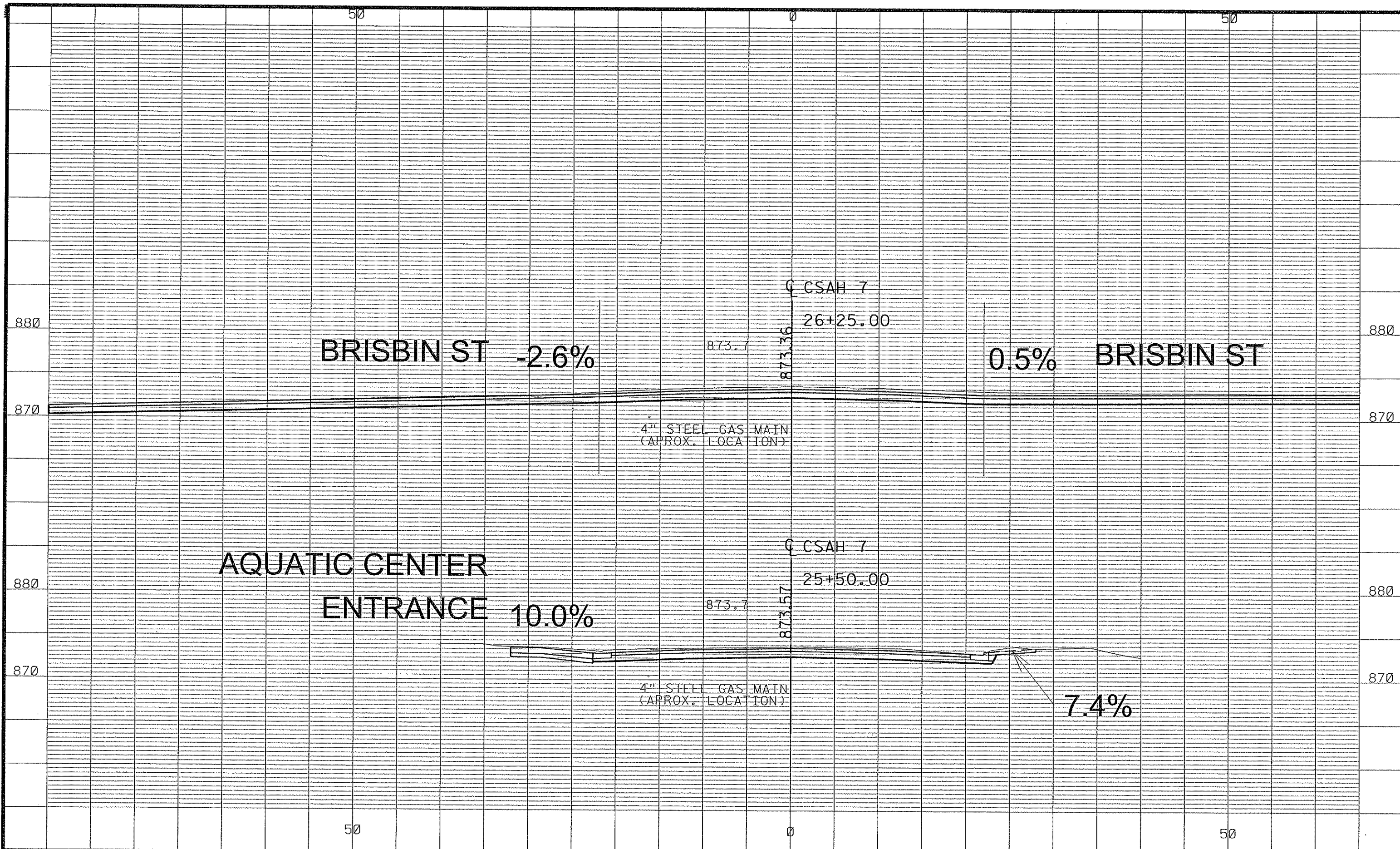


ANOKA COUNTY  
HIGHWAY DEPT.

COUNTY PROJECT NO. 13-12-07

CROSS SECTIONS  
STA 23+35 TO 24+90  
Sheet 32 of 39 Sheets





NO	DATE	BY	CHKD	APPR	REVISION
	04/03/2013				2:23:57 PM

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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: ANDREW WITTER  
 SIGNATURE: *Andrew Witter*  
 DATE: 4/11/13 LICENSE NO. 42757

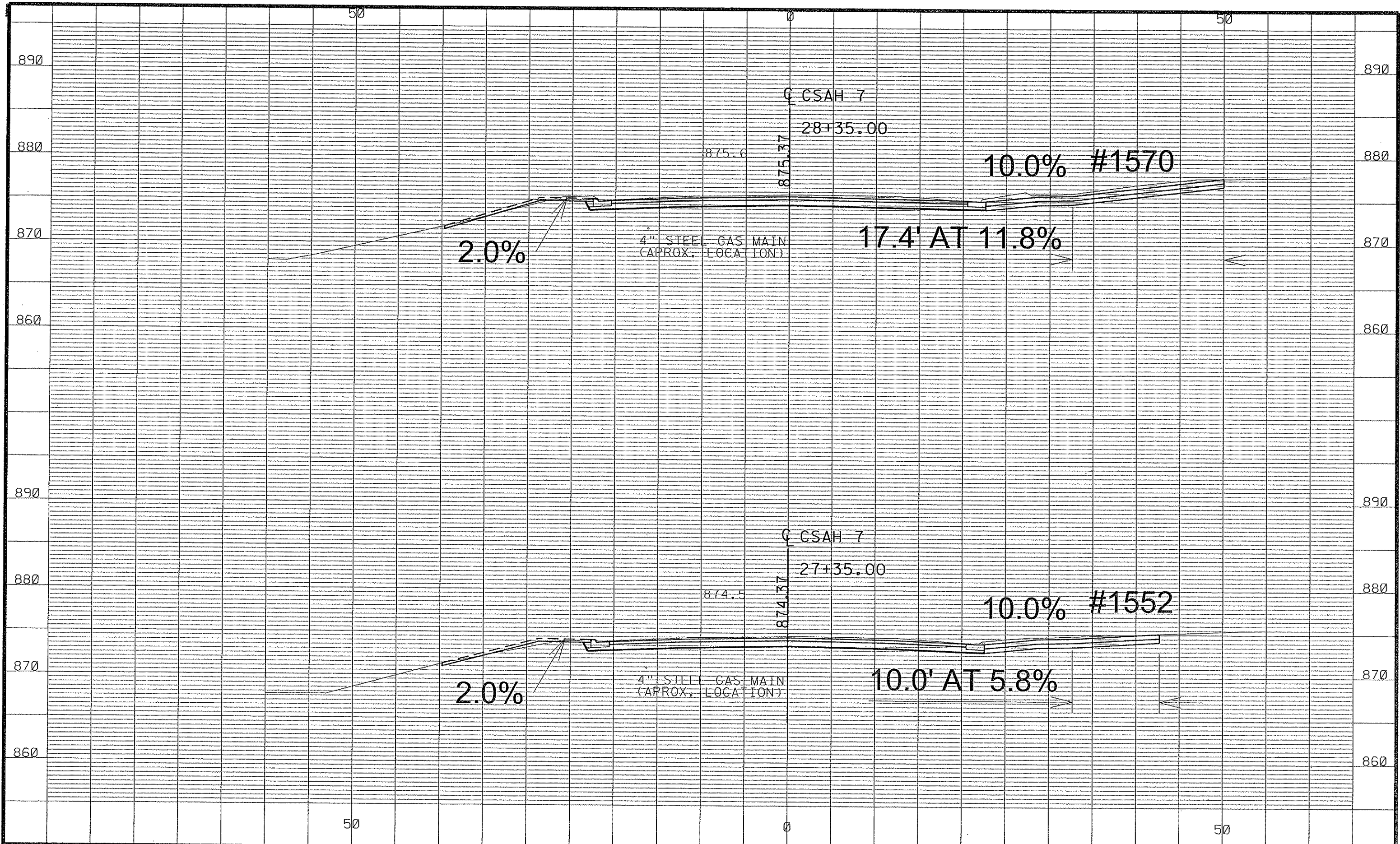
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 DESIGN BY JJ DATE 04/03/2013  
 CHECKED BY DFF DATE 04/03/2013



ANOKA COUNTY  
 HIGHWAY DEPT.

COUNTY PROJECT NO. 13-12-07

CROSS SECTIONS  
 STA 25+50 TO 26+25  
 Sheet 33 of 39 Sheets



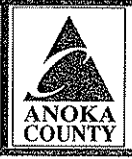
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I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME: ANDREW BITTNER  
 SIGNATURE: *Andrew Bittner*  
 DATE: 7/1/13 LICENSE NO. 42757

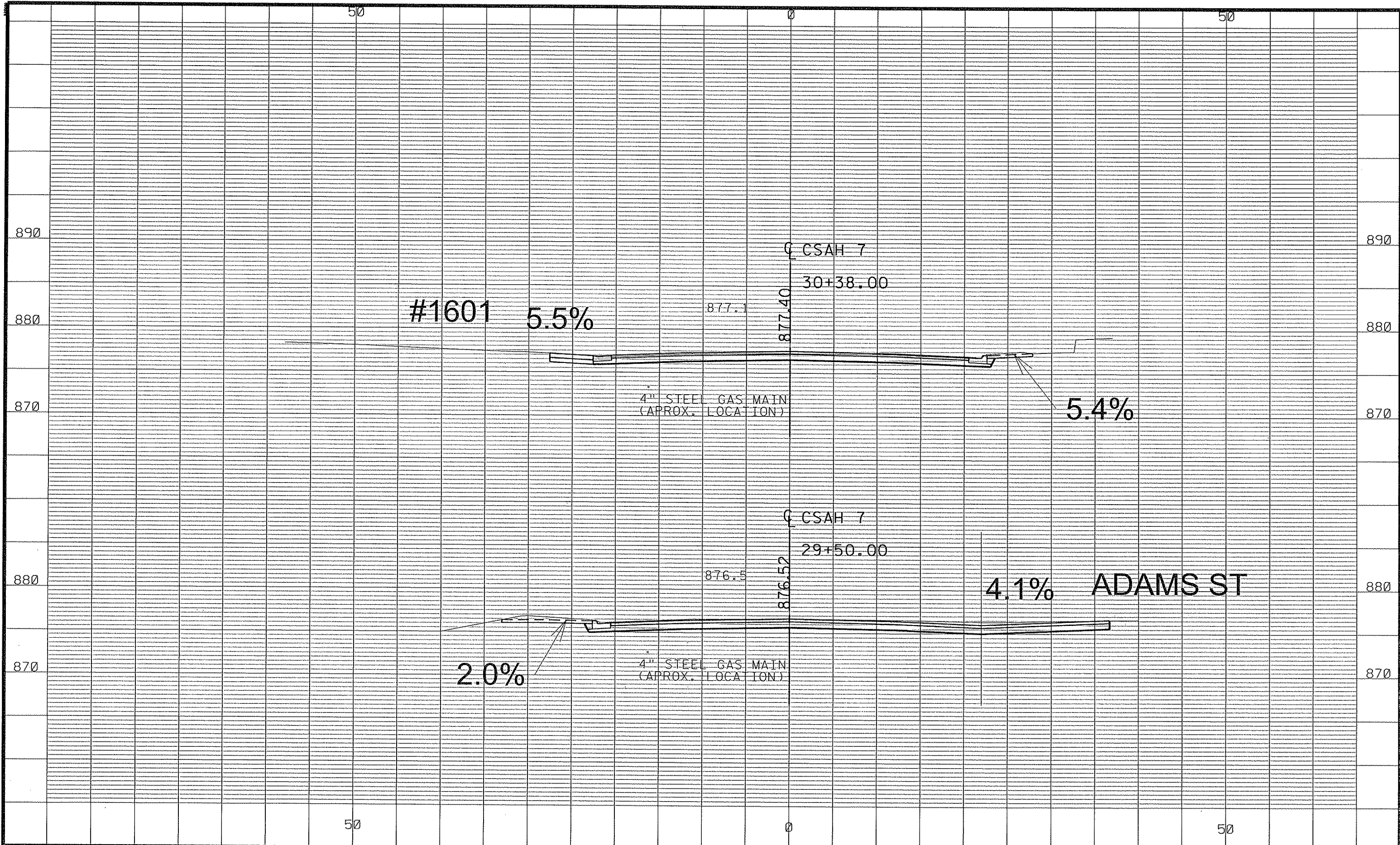
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 CHECKED BY OFF DATE 04/03/2013



ANOKA COUNTY  
 HIGHWAY DEPT.

COUNTY PROJECT NO. 13-12-07

CROSS SECTIONS  
 STA 27+35 TO 28+35  
 Sheet 34 of 39 Sheets



NO	DATE	BY	CKD	APPR	REVISION
	04/03/2013				2:23:57 PM

NAME: P:\113-01-00\CSAH\_7\_(CSAH1-MainSt)\Base\PROPOSED\PLAN\24-39\_XS.dgn

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

PRINT NAME: ANDREW WITTER

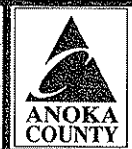
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DATE: 4/11/13 LICENSE NO. 42757

DRAWN BY: JJ DATE: 04/03/2013

DESIGN BY: JJ DATE: 04/03/2013

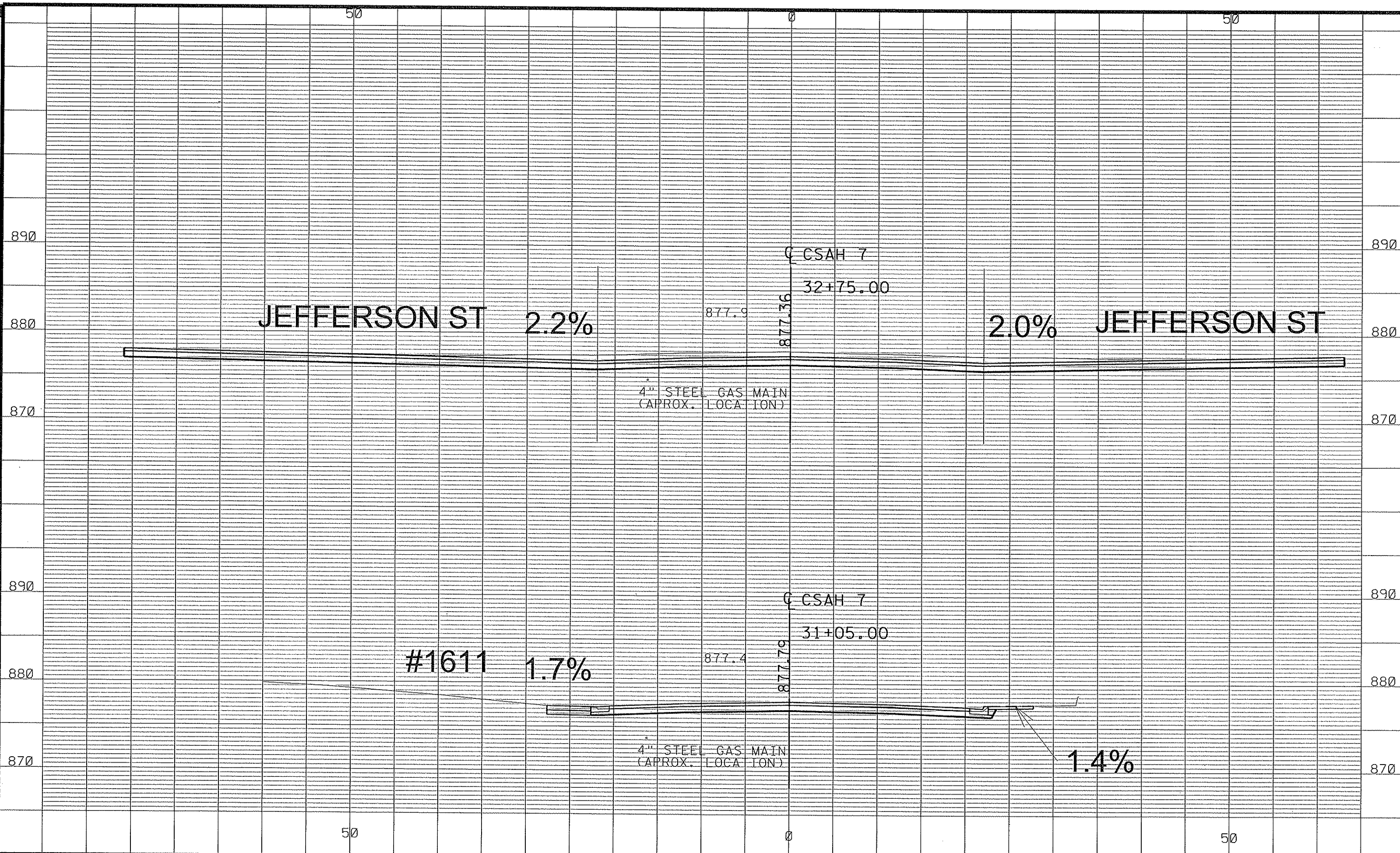
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ANOKA COUNTY  
HIGHWAY DEPT.

COUNTY PROJECT NO. 13-12-07

CROSS SECTIONS  
STA 29+50 TO 30+38  
Sheet 35 of 39 Sheets



NO	DATE	BY	CKD	APPR	REVISION
	04/03/2013				2:23:57 PM

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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: ANDREW WITTER  
 SIGNATURE: *[Signature]*  
 DATE: 4/4/13 LICENSE NO. 42757

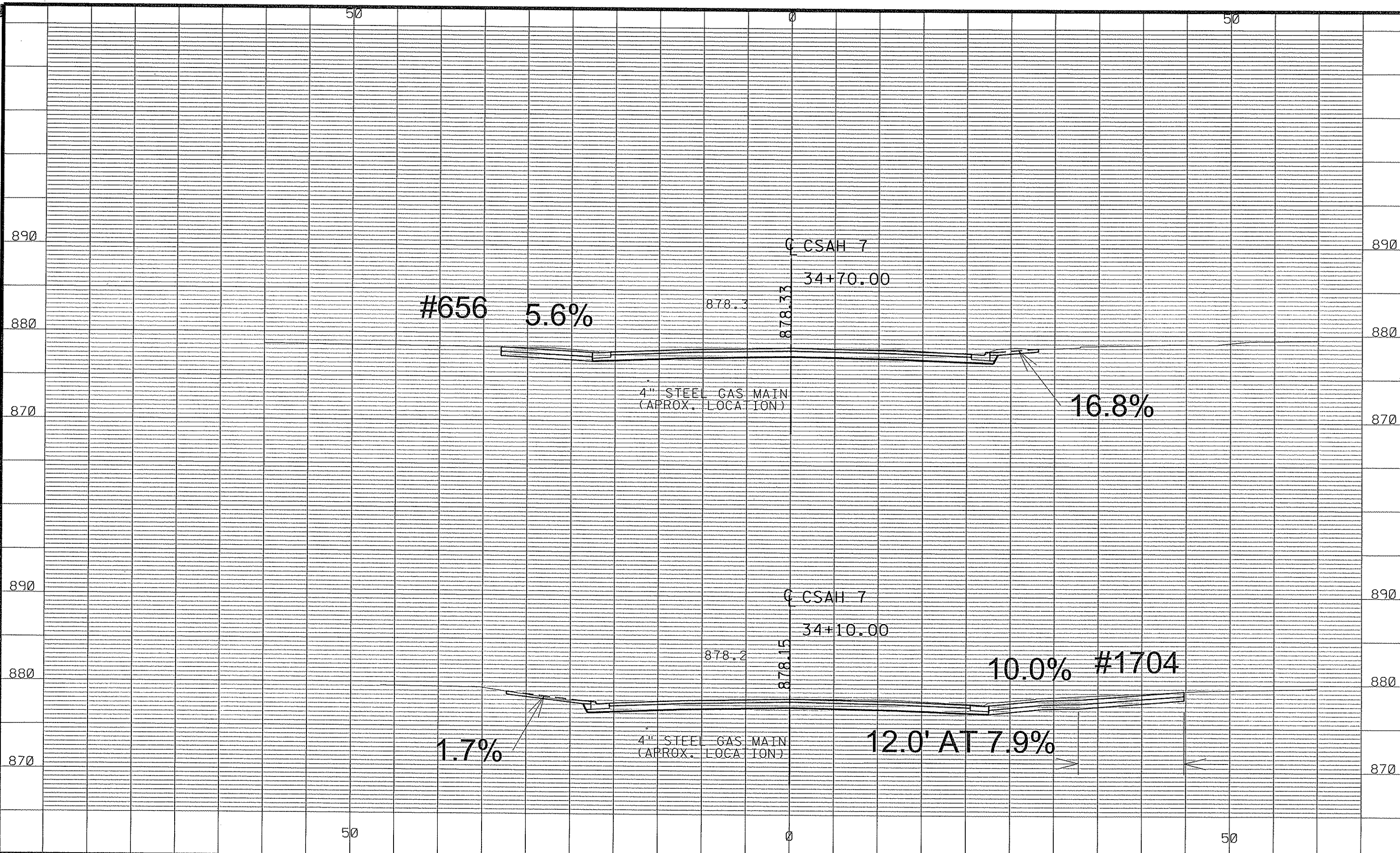
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 CHECKED BY DFF DATE 04/03/2013



ANOKA COUNTY  
 HIGHWAY DEPT.

COUNTY PROJECT NO. 13-12-07

CROSS SECTIONS  
 STA 31+05 TO 32+75  
 Sheet 36 of 39 Sheets



NO	DATE	BY	CHKD	APPR	REVISION
	04/03/2013				2:23:58 PM

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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: ANDREW WITTER  
 SIGNATURE: *[Signature]*  
 DATE: 4/13/13 LICENSE NO. 42757

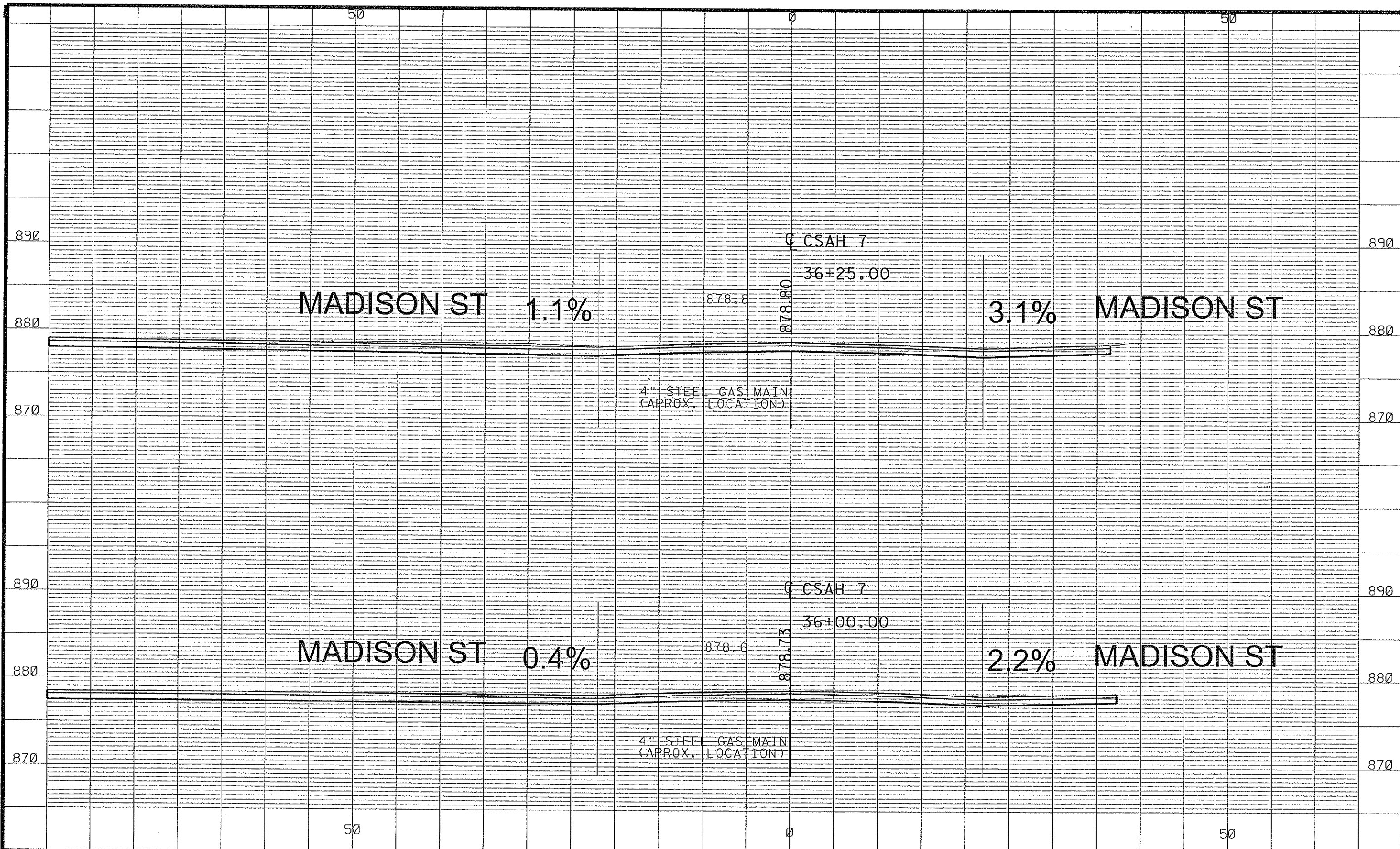
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 DESIGN BY: JJ DATE: 04/03/2013  
 CHECKED BY: DFF DATE: 04/03/2013



ANOKA COUNTY  
 HIGHWAY DEPT.

COUNTY PROJECT NO. 13-12-07

CROSS SECTIONS  
 STA 34+10 TO 34+70  
 Sheet 37 of 39 Sheets



NO	DATE	BY	CKD	APPR	REVISION
	04/03/2013				2:23:58 PM

NAME: P:\13-01-00\CSAH\_7\_(CSAH1-MainSt)\Base\PROPOSED\PLAN24-39\_XS.dgn

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

PRINT NAME: ANDREW WITTER  
 SIGNATURE: *Andrew Witter*  
 DATE: 4/4/13 LICENSE NO. 42757

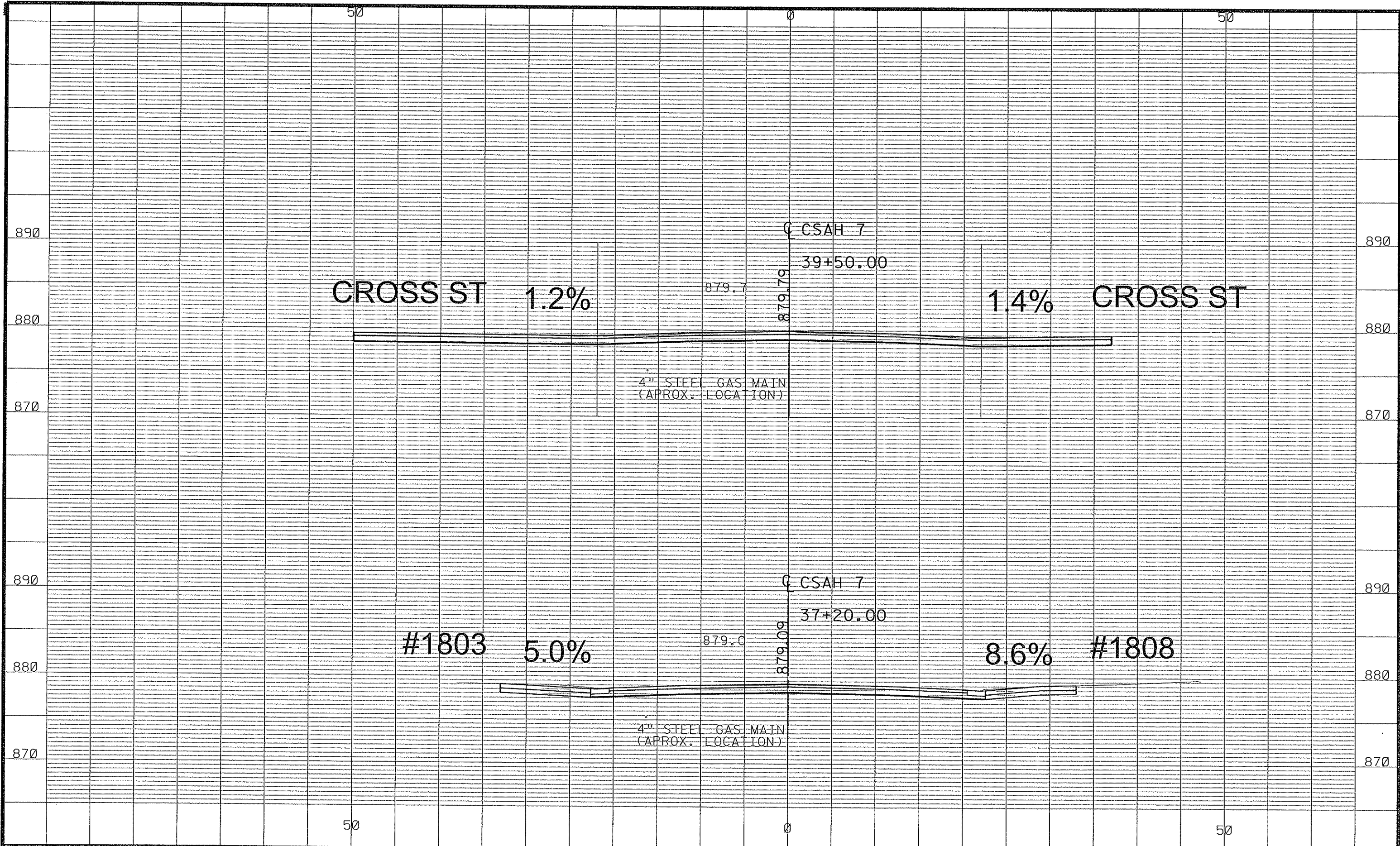
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 DESIGN BY JJ DATE 04/03/2013  
 CHECKED BY DFF DATE 04/03/2013



ANOKA COUNTY  
 HIGHWAY DEPT.

COUNTY PROJECT NO. 13-12-07

CROSS SECTIONS  
 STA 36+00 TO 36+25  
 Sheet 38 of 39 Sheets



NO	DATE	BY	CKD	APPR	REVISION
	04/03/2013				2:23:58 PM

NAME: P:\13-01-00\CSAH\_7\_(CSAH1-MainSt)\BaselPROPOSED\PLAN\24-39\_XS.dgn

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PRINT NAME: ANDREW WITTER  
 SIGNATURE: *[Signature]*  
 DATE: 4/4/13 LICENSE NO. 42757

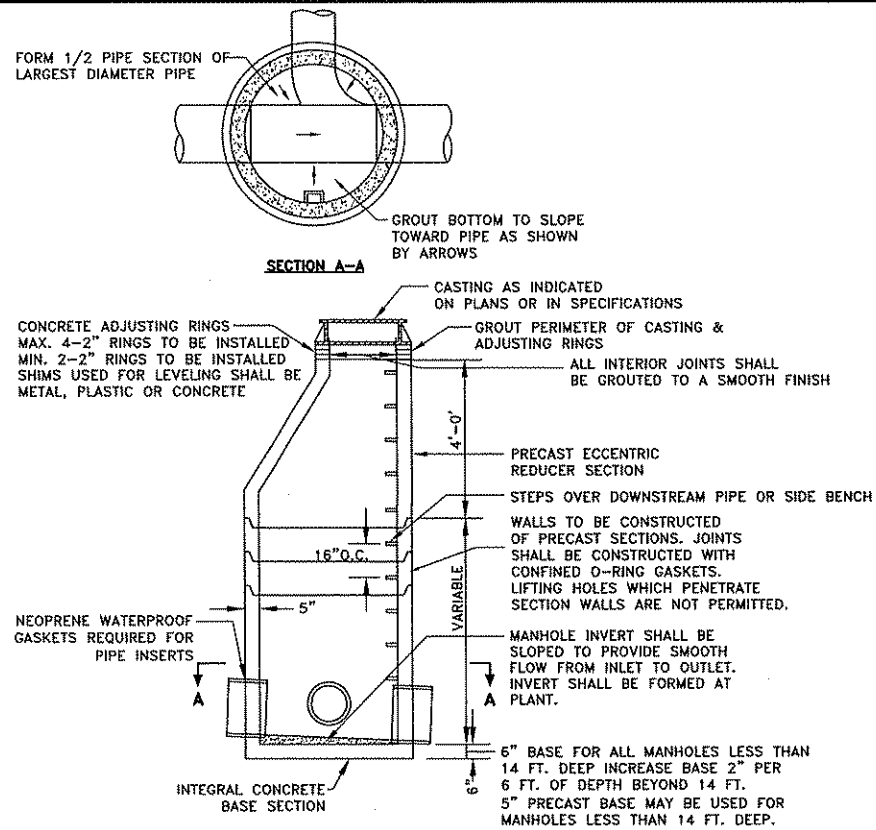
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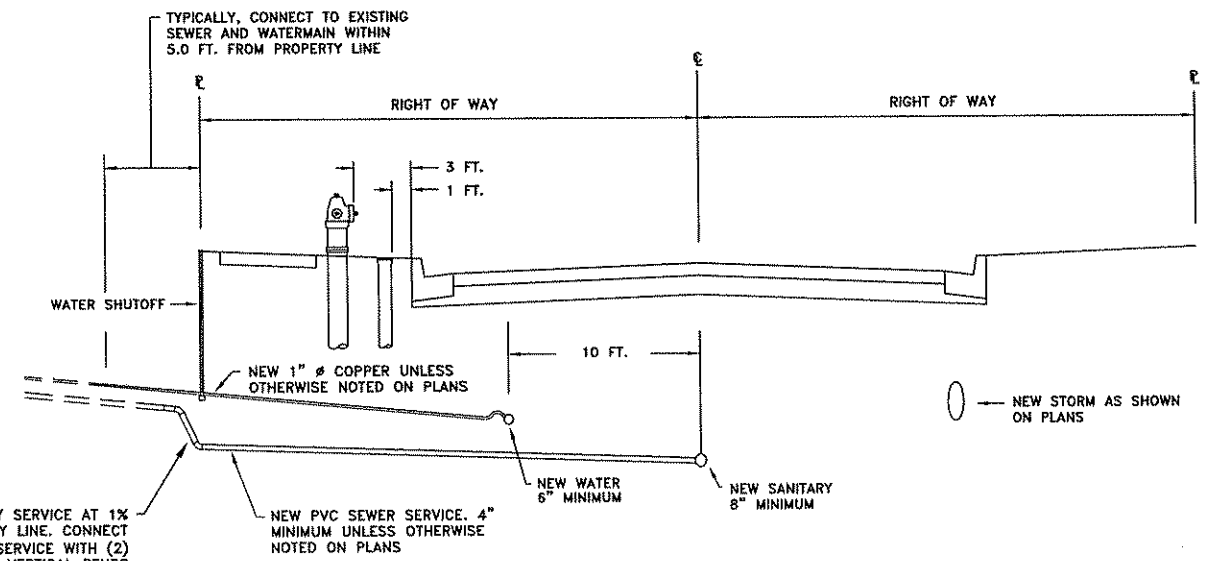
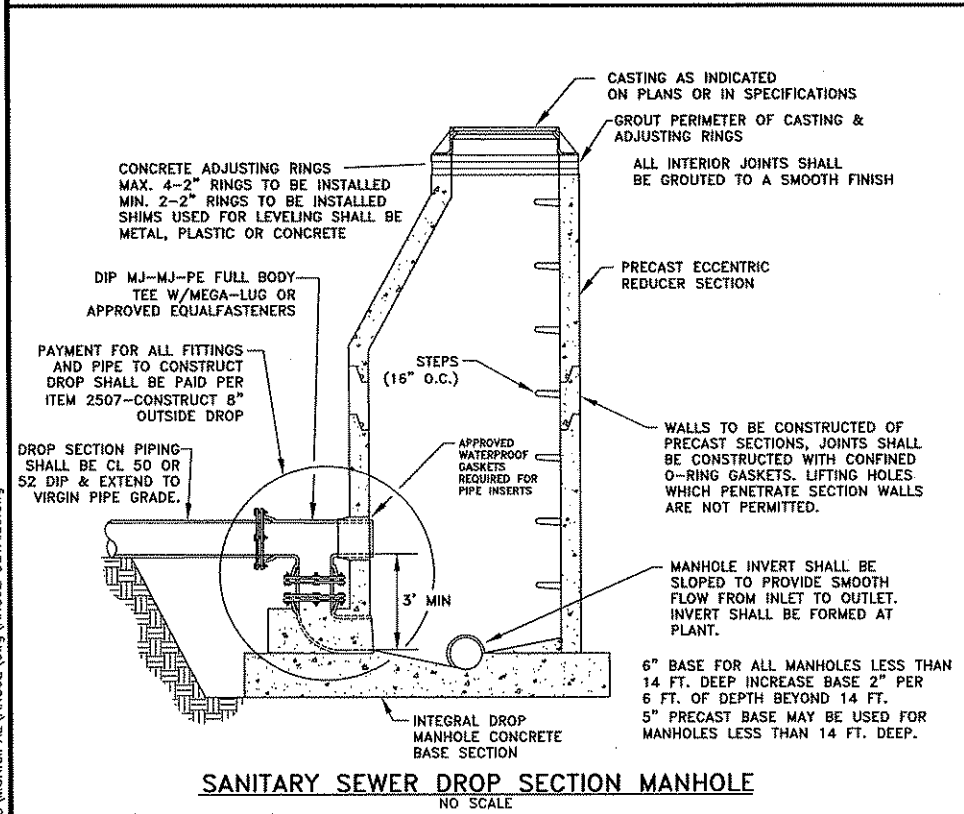
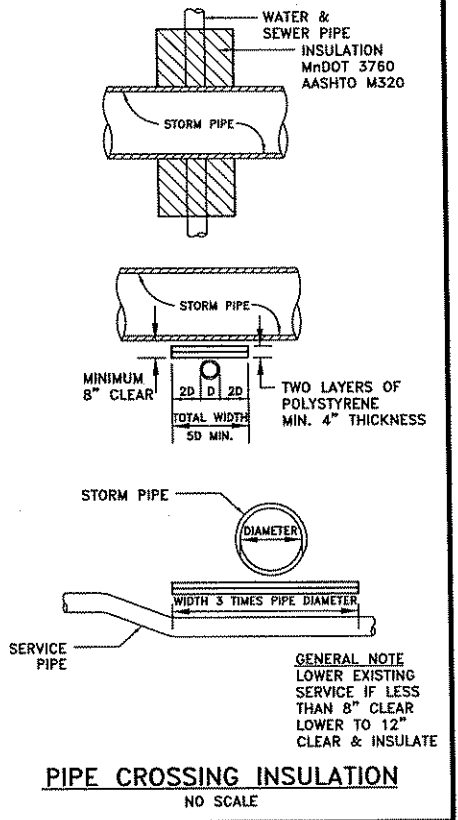
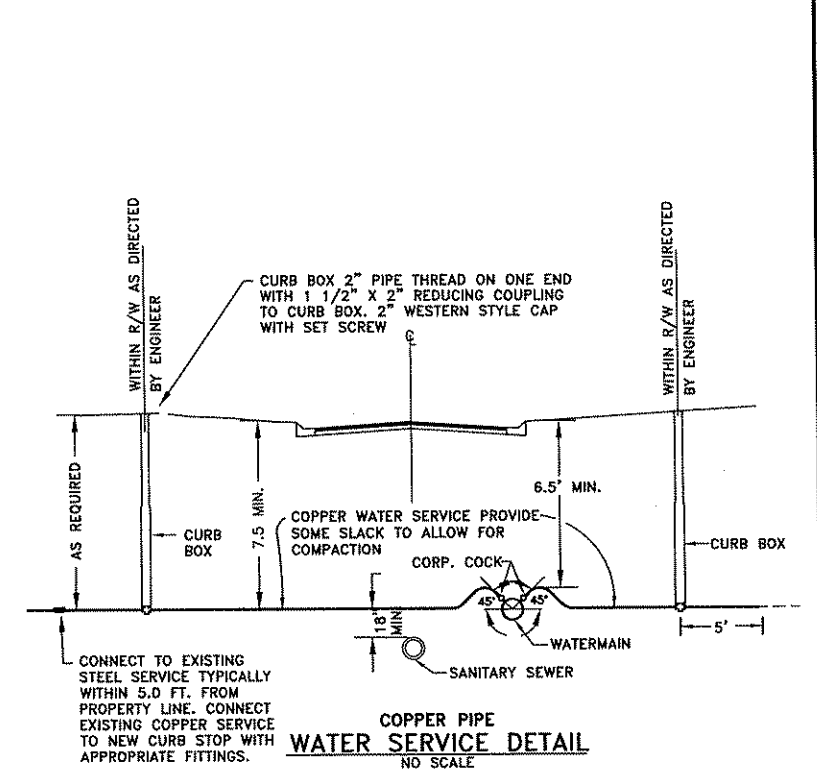
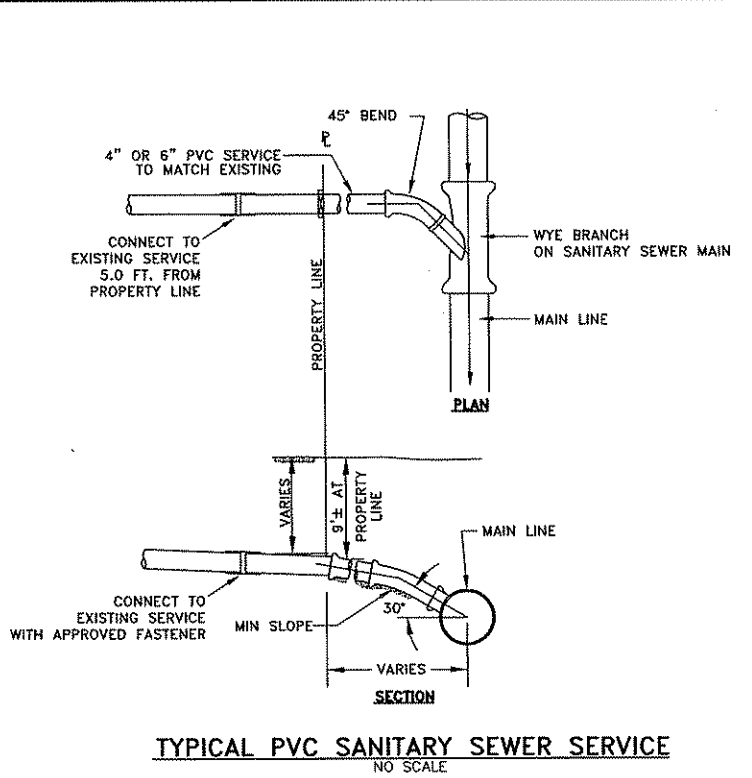
ANOKA COUNTY  
 HIGHWAY DEPT.

COUNTY PROJECT NO. 13-12-07

CROSS SECTIONS  
 STA 37+20 TO 39+50  
 Sheet 39 of 39 Sheets



**SANITARY SEWER STANDARD MANHOLE**  
**48" DIAMETER, ECCENTRIC CONE**  
 NO SCALE



**CITY OF ANOKA**  
**STANDARD UTILITY LOCATION**  
 SANITARY SEWER - ON ROAD CENTERLINE  
 WATERMAIN - 10 FT. NORTH OR EAST  
 STORM SEWER - SOUTH OR WEST OF CENTERLINE  
 SIDEWALK - REPLACE EXISTING WITHIN PROJECT LIMITS

Apr 01, 2013 - 2:11pm K:\cad\_eng\PROJECTS\MUNICIPAL\AN362.dwg\AN362 DETAILS.dwg

DATE	REVISION

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

*Craig J. Jochum*  
 CRAIG J. JOCHUM, P.E.  
 Lic. No. 23461

Date 4/1/13

DESIGNED BY: TAE  
 DRAWN BY: DMS  
 CHECKED BY: CJJ

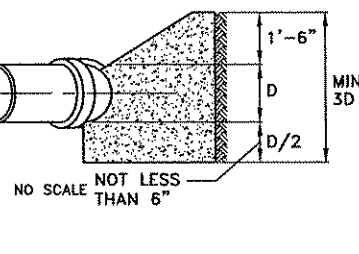
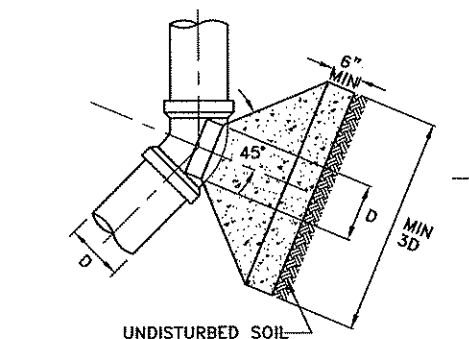
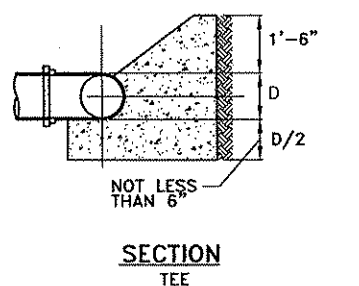
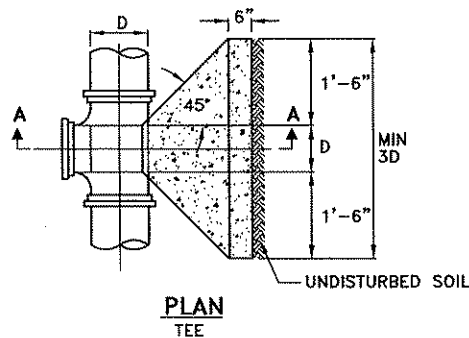
**Hakanson Anderson**  
 Civil Engineers and Land Surveyors  
 3601 Thurston Ave., Anoka, Minnesota 55303  
 763-427-5860 FAX 763-427-0520  
 www.hakanson-anderson.com



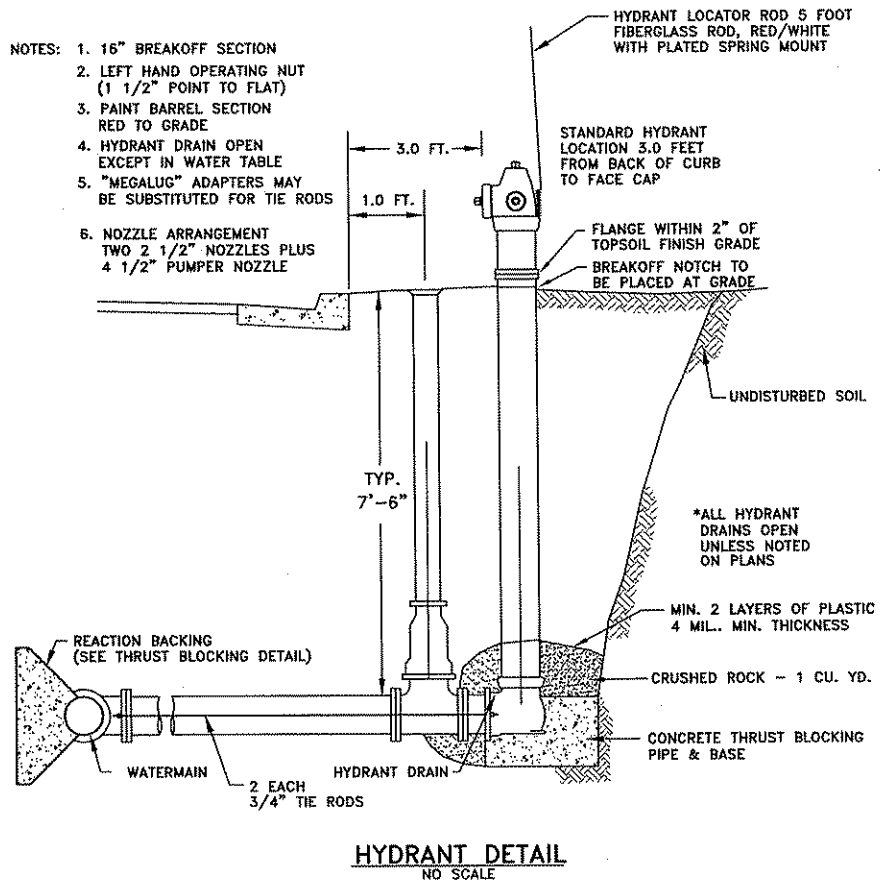
**7TH AVENUE RECONSTRUCTION**  
**SANITARY SEWER AND WATERMAIN DETAILS**  
 CITY OF ANOKA, MINNESOTA

SHEET C1 OF 7 SHEETS





**PLAN**  
45° OR 22.5° BEND  
**SECTION**  
45° OR 22.5° BEND  
**WATERMAIN THRUST BLOCKING DETAIL ③**



NOTES: 1. 16" BREAKOFF SECTION  
2. LEFT HAND OPERATING NUT (1 1/2" POINT TO FLAT)  
3. PAINT BARREL SECTION RED TO GRADE  
4. HYDRANT DRAIN OPEN EXCEPT IN WATER TABLE  
5. "MEGALUG" ADAPTERS MAY BE SUBSTITUTED FOR TIE RODS  
6. NOZZLE ARRANGEMENT TWO 2 1/2" NOZZLES PLUS 4 1/2" PUMPER NOZZLE

HYDRANT LOCATOR ROD 5 FOOT FIBERGLASS ROD, RED/WHITE WITH PLATED SPRING MOUNT

STANDARD HYDRANT LOCATION 3.0 FEET FROM BACK OF CURB TO FACE CAP

FLANGE WITHIN 2" OF TOPSOIL FINISH GRADE  
BREAKOFF NOTCH TO BE PLACED AT GRADE

UNDISTURBED SOIL

\*ALL HYDRANT DRAINS OPEN UNLESS NOTED ON PLANS

MIN. 2 LAYERS OF PLASTIC 4 MIL. MIN. THICKNESS

CRUSHED ROCK - 1 CU. YD.

CONCRETE THRUST BLOCKING PIPE & BASE

HYDRANT DRAIN

WATERMAIN 2 EACH 3/4" TIE RODS

REACTION BACKING (SEE THRUST BLOCKING DETAIL)

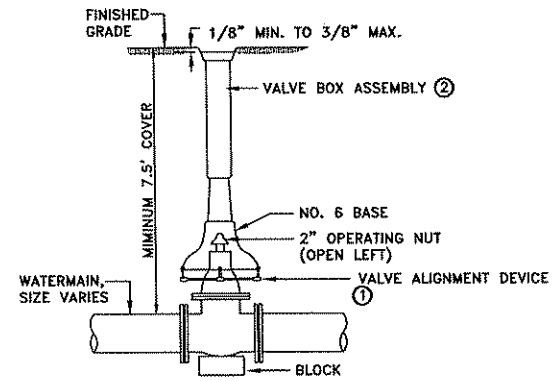
TYP. 7'-6"

3.0 FT.

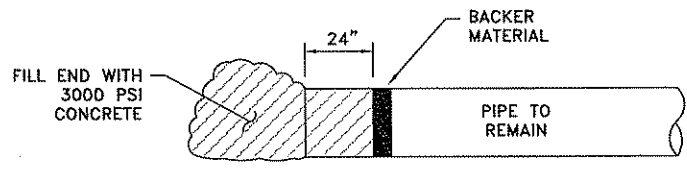
1.0 FT.

NO SCALE

**HYDRANT DETAIL**  
NO SCALE



**TYPICAL RESILIENT WEDGE VALVE & BOX INSTALLATION 12" & UNDER WATERMAIN**  
NO SCALE



**TYPICAL CONCRETE PLUG**

REFERENCE NOTES:  
① VALVE BOX ALIGNMENT DEVICE SHALL BE GATE VALVE ADAPTOR OR #6 BASE ADAPTOR AS MANUFACTURED BY ADAPTOR, INC. OR APPROVED EQUAL. GATE VALVE ADAPTOR SHALL BE FOR INSTALLATIONS ABOVE THE WATER TABLE AND #6 BASE ADAPTOR SHALL BE FOR INSTALLATION BELOW THE WATER TABLE. THE ALIGNMENT DEVICE SHALL BE INSTALLED IN LIEU OF BONNET BLOCKING AND SHALL BE INCIDENTAL TO THE VALVE AND BOX INSTALLATION.  
② THE CONTRACTOR SHALL USE A VALVE STEM ALIGNMENT TUBE TOOL TO MAINTAIN VERTICAL ALIGNMENT WHEN BACKFILLING THE VALVE BONNET AND VALVE BOX ASSEMBLY. THE ALIGNMENT TUBE SHALL CONSIST OF A METAL PIPE WITH A SQUARE NUT RECEIVER SECURELY FASTENED TO THE END FOR PLACEMENT ON THE VALVE OPERATING NUT.  
③ DO NOT COVER OR ENCASE PIPE IN CONCRETE.

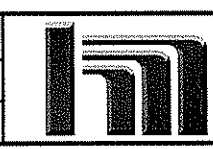
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*Craig J. Jochum*  
CRAIG J. JOCHUM, P.E.  
Date 4/1/13 Lic. No. 23461

DESIGNED BY: TAE  
DRAWN BY: DMS  
CHECKED BY: CJJ



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7TH AVENUE RECONSTRUCTION  
WATERMAIN AND MISCELLANEOUS DETAILS  
CITY OF ANOKA, MINNESOTA

SHEET C2 OF 7 SHEETS

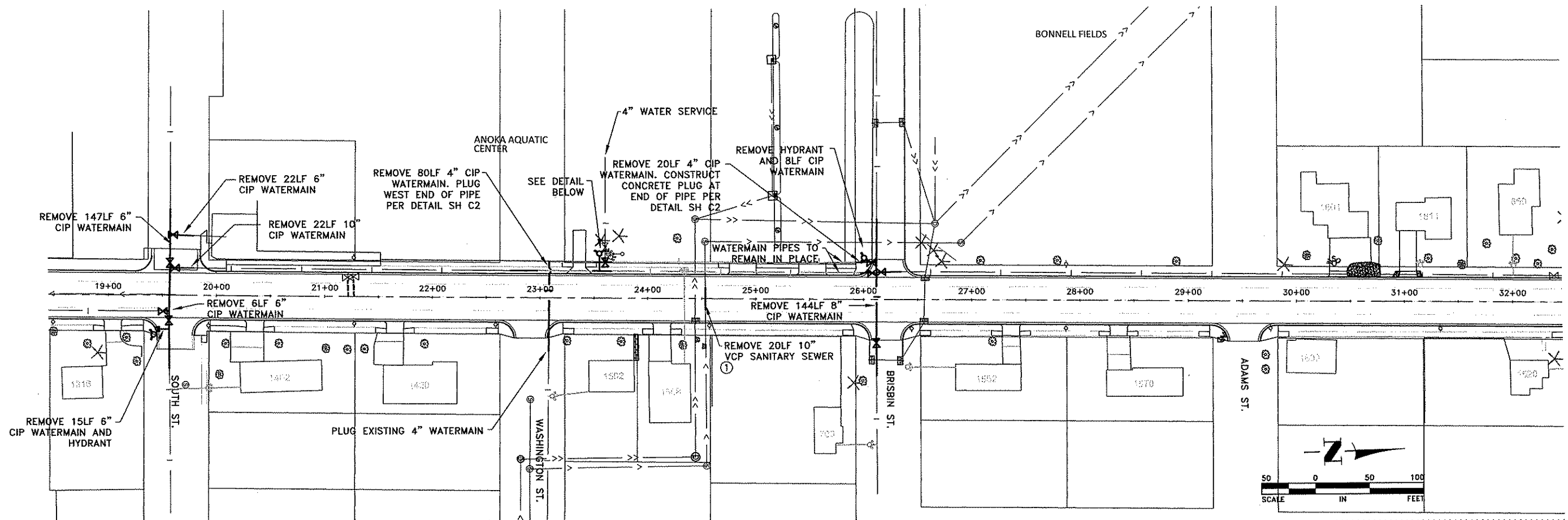
- GENERAL CONSTRUCTION NOTES:
- UNLESS SUPPLEMENTED OR REVISED BY THESE PLANS, ALL WATERMAIN AND SEWER CONSTRUCTION ON SHEETS C6-C7 SHALL CONFORM TO THE APPLICABLE PROVISIONS OF THE "STANDARD SPECIFICATIONS FOR TRENCH EXCAVATION AND BACKFILL/SURFACE RESTORATION, WATERMAIN AND SERVICE LINE INSTALLATION, SANITARY SEWER AND STORM SEWER INSTALLATION" 1999 EDITION AS PUBLISHED BY THE CITY ENGINEERS ASSOCIATION OF MINNESOTA (CEAM).
  - WATERMAIN SHALL BE CLASS 52 DUCTILE IRON PIPE.
  - VALVES 12" AND SMALLER IN DIAMETER SHALL BE RESILIENT WEDGE VALVES BY CLOW, DAIGLE AQUA, MUELLER OR APPROVED EQUAL. VALVES SHALL CONFORM TO AWWA C509 STANDARDS AND BE INSTALLED ONLINE WITH ACCOMPANYING VALVE BOXES. ALL VALVES SHALL HAVE MECHANICAL ENDS WITH UNDERGROUND OPERATOR. THE OPERATOR SHALL CLOSE THE VALVE IN A CLOCKWISE DIRECTION.
  - VALVE BOXES SHALL BE THREE PIECE ADJUSTABLE SCREW TYPE BOXES 60"-90" EXTENSION WITH A 5-1/4" SHAFT SIZE. THE WORK "WATER" SHALL BE IMPRINTED ON EACH LID. ANY VALVE WITH GREATER THAN 7.5 FOOT BURY SHALL HAVE AN EXTENDED BOX WITH AN EXTENSION ROD TO ALLOW OPERATION WITH A 6 FOOT LONG VALVE WRENCH.
  - ALL HYDRANT AND WATER VALVE OPERATIONS SHALL BE BY CITY OF ANOKA PERSONNEL AFTER PROPER NOTICES OF REQUIRED VALVE OPENING OR CLOSING IS PROVIDED TO THE CITY WATER DEPARTMENT. THE CONTRACTOR SHALL NOT OPERATE ANY EXISTING WATER VALVE EXCEPT FOR EMERGENCY CONDITIONS.
  - ALL WATERMAIN BENDS SHALL BE PROVIDED WITH CONCRETE REACTION BACKING PER THE WATERMAIN THRUST BLOCK DETAIL ON SHEET C2.
  - CONTRACTOR SHALL PERFORM TESTS AND FURNISH TEST RESULTS ON COMPLETED WATERMAIN, INCLUDING DISINFECTION AND PRESSURE AND CONDUCTIVITY TESTS, FOR APPROVAL.
  - CORPORATION FOR 2" TESTING SERVICE SHALL BE FORD FB600-7 OR APPROVED EQUAL. SERVICE CORPORATIONS SHALL BE WET TAPPED.
  - DEWATERING SHALL BE INCIDENTAL.
  - CONTRACTOR SHALL PROVIDE ALL TRAFFIC CONTROL REQUIRED FOR ROAD CLOSURE TO FACILITATE CONNECTION TO EXISTING UTILITIES. THIS WORK SHALL BE INCLUDE IN ITEM 2563-TRAFFIC CONTROL.
  - REMOVAL OF VALVES, FITTINGS AND OTHER APPURTENANCES SHALL BE INCIDENTAL.
  - CONSTRUCTION SHALL CONFORM TO DETAILS SHOWN ON SHEET C1 AND C2.
  - SANITARY MANHOLES WILL BE MEASURED BY THE EACH AND PAID PER ITEM 2506-CONSTRUCT SANITARY STRUCTURE DESIGN 4007.
  - ALL MATERIAL, EQUIPMENT, AND LABOR REQUIRED TO PROVIDE TEMPORARY PIPING AND BYPASS PUMPING TO KEEP EXISTING SANITARY SEWER MAINS AND SERVICES OPERATIONAL SHALL BE INCIDENTAL.

**SANITARY SEWER SCHEDULE**

STRUCTURE NO.		STRUCTURE LOCATION			NEENAH CASTING ASSEMBLY	TOP OF CASTING ELEVATION	INVERT ELEVATION	TOTAL BUILD DEPTH LIN FT	8" PVC SDR 35 LIN FT	10" PVC SDR 26 LIN FT	PIPE SLOPE %	REMARKS
FROM	TO	STREET	STATION	OFFSET								
PLUG	4000	7TH AVENUE	22+88.8	60	NA	NA	857.91			60	0.28	
4000	4001	7TH AVENUE	22+88.8	0'	R-1733	874.69	N 857.64 E 857.74	17.05		353	0.28	
4001	PLUG	7TH AVENUE	26+41.9	0'	R-1733	873.40	NW 856.56 S 856.66	16.84		56	0.28	
4003	4002	7TH AVENUE	37+56.4	0'	R-1733	879.15	S 868.56	10.59	145		0.40	
4002	PLUG	7TH AVENUE	36+11.4	0'	R-1733	878.71	N 867.98 E 867.88	10.83	70		0.40	
4004	PLUG	7TH AVENUE	39+45.4	0'	R-1733	879.70	E 868.31 E-2 869.71 W 869.70	11.39	105		0.40	FIELD VERIFY EXISTING SEWER INVERT (WEST)

Apr 01, 2013 - 2:45pm  
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<b>DATE</b>	<b>REVISION</b>	I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.  Date 4/1/13	DESIGNED BY: TAE DRAWN BY: DMS CHECKED BY: CJJ	 <b>Hakanson Anderson</b> Civil Engineers and Land Surveyors 3601 Thurston Ave., Anoka, Minnesota 55303 763-427-5860 FAX 763-427-0520 www.hakanson-anderson.com		<b>7TH AVENUE RECONSTRUCTION CONSTRUCTION NOTES AND SANITARY SEWER SCHEDULE CITY OF ANOKA, MINNESOTA</b>	SHEET <b>C3</b> OF <b>7</b> SHEETS
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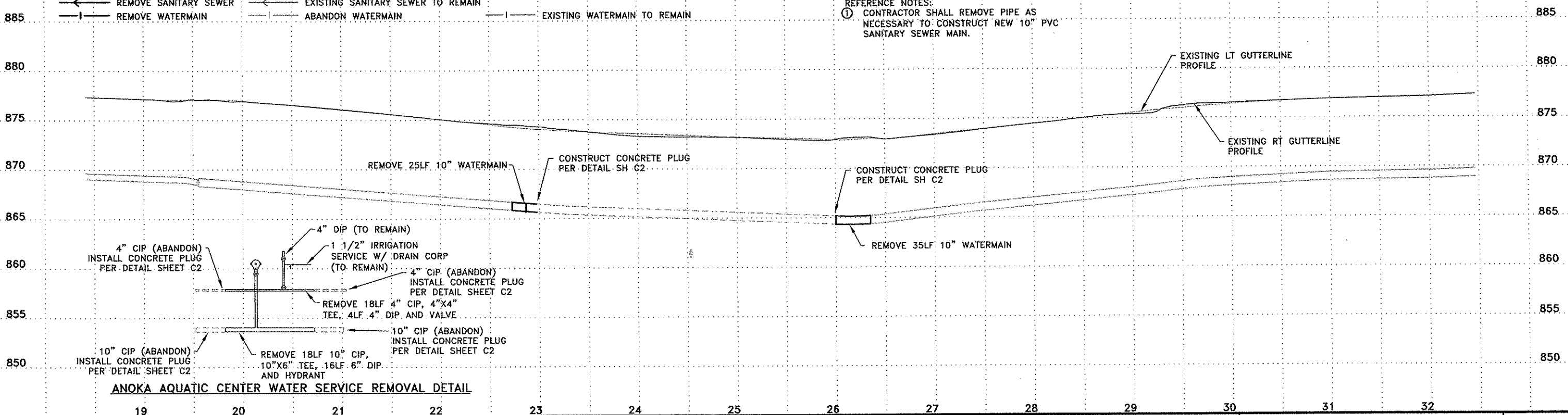


SEE SHEET 2

**LEGEND**

- ← REMOVE SANITARY SEWER
- ← EXISTING SANITARY SEWER TO REMAIN
- REMOVE WATERMAIN
- ABANDON WATERMAIN
- EXISTING WATERMAIN TO REMAIN

**REFERENCE NOTES:**  
 ① CONTRACTOR SHALL REMOVE PIPE AS NECESSARY TO CONSTRUCT NEW 10" PVC SANITARY SEWER MAIN.



**ANOKA AQUATIC CENTER WATER SERVICE REMOVAL DETAIL**

Apr 01, 2013 2:45pm K:\cad\_eng\PROJECTS\MUNICIPAL\AN362.dwg\AN362 REMOVAL.dwg

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*Craig P. Jochum*  
 CRAIG P. JOCHUM, P.E.  
 Lic. No. 23461  
 Date 4/1/13

DESIGNED BY: TAE  
 DRAWN BY: DMS  
 CHECKED BY: CJJ

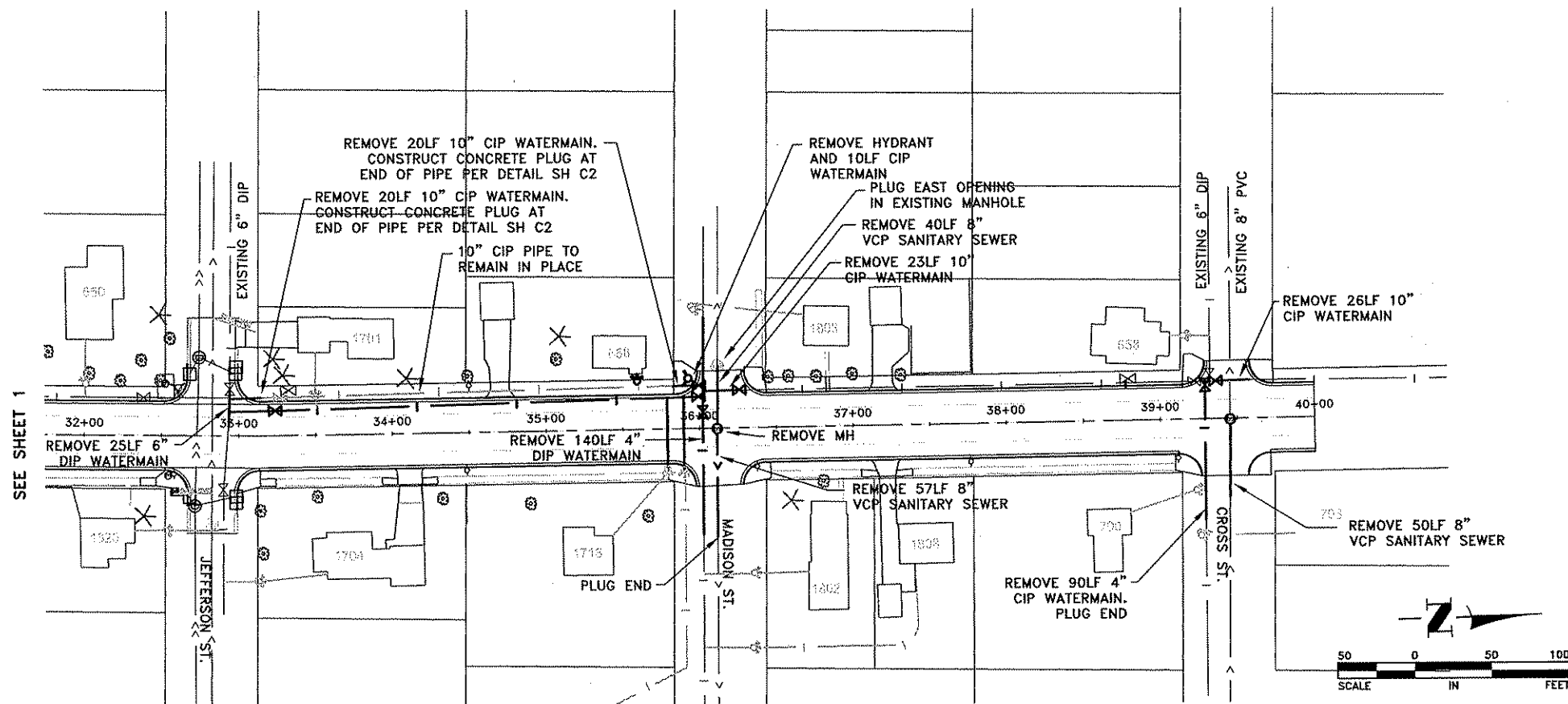


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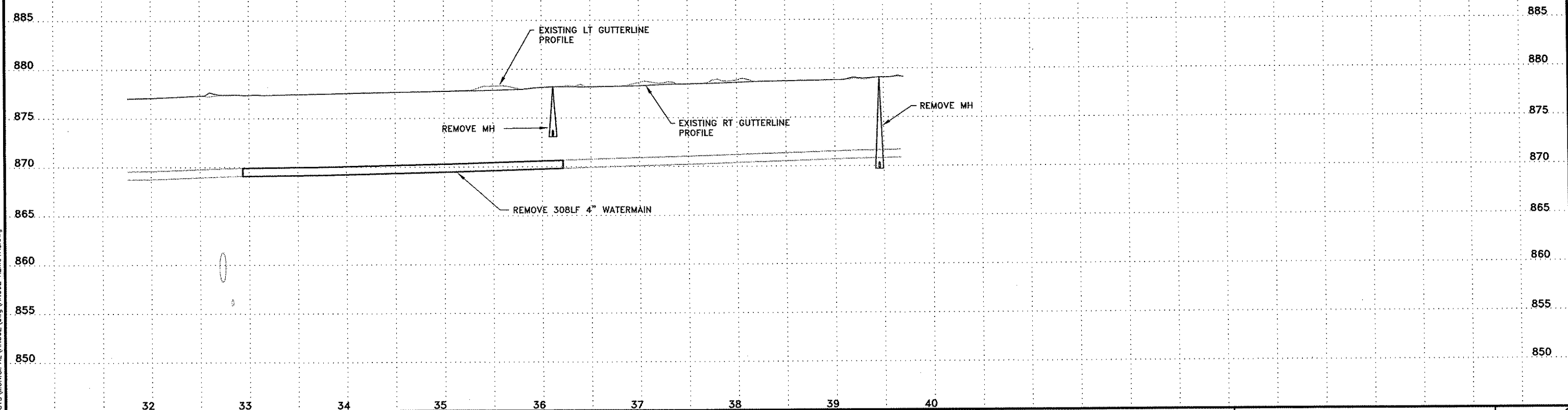
**7TH AVENUE RECONSTRUCTION  
 REMOVALS FOR SANITARY SEWER  
 AND WATERMAIN  
 CITY OF ANOKA, MINNESOTA**

SHEET C4 OF 7 SHEETS



**LEGEND**

- ← REMOVE SANITARY SEWER
- ← EXISTING SANITARY SEWER TO REMAIN
- REMOVE WATERMAIN
- ABANDON WATERMAIN
- EXISTING WATERMAIN TO REMAIN



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**CRAIG P. JOCHUM, P.E.**  
 Lic. No. 23461  
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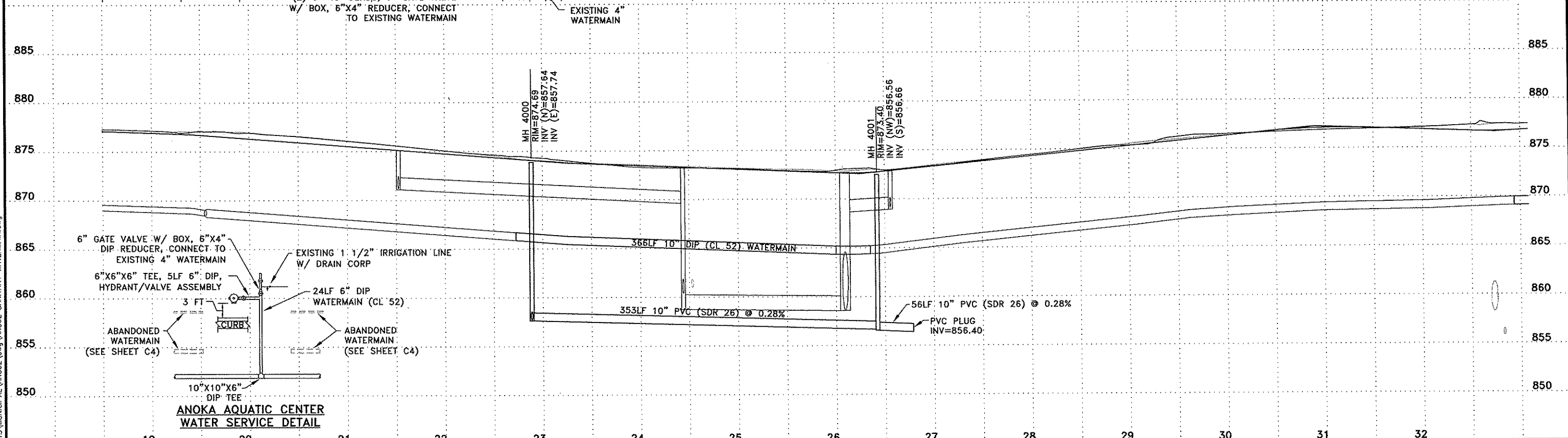
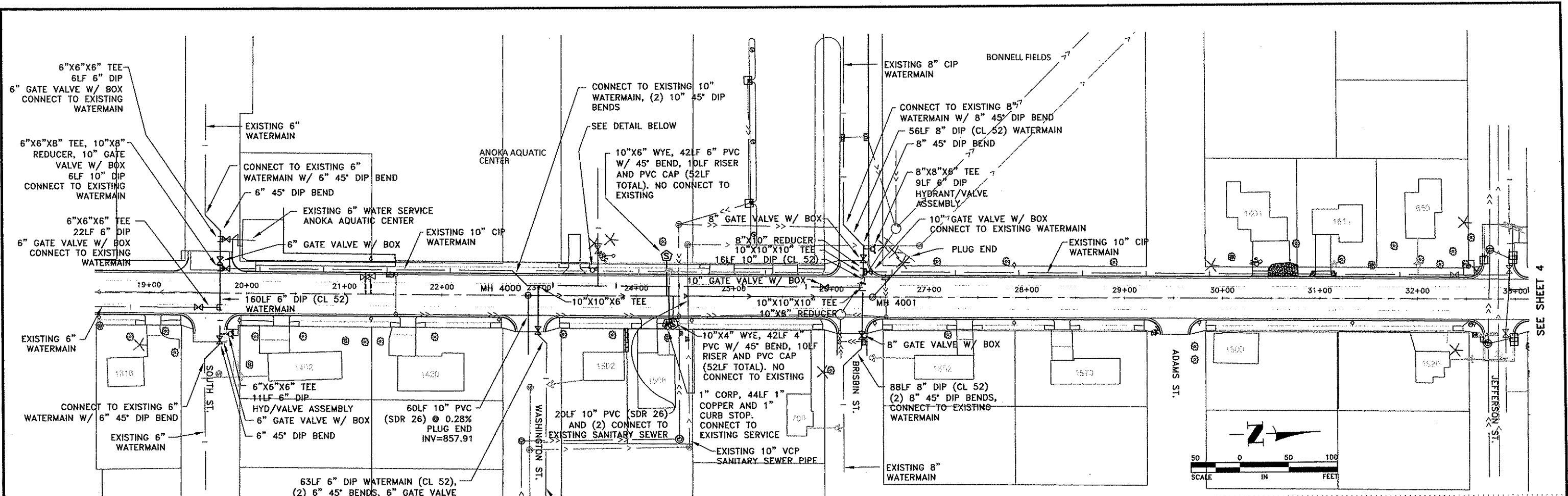


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**7TH AVENUE RECONSTRUCTION  
 REMOVALS FOR SANITARY SEWER  
 AND WATERMAIN  
 CITY OF ANOKA, MINNESOTA**

SHEET C5 OF 7 SHEETS



**ANOKA AQUATIC CENTER  
WATER SERVICE DETAIL**

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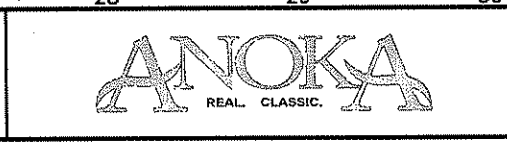
*Craig Jochum*  
**CRAIG J. JOCHUM, P.E.**  
 Lic. No. 23461

Date 4/1/13

DESIGNED BY: TAE  
 DRAWN BY: DMS  
 CHECKED BY: CJJ



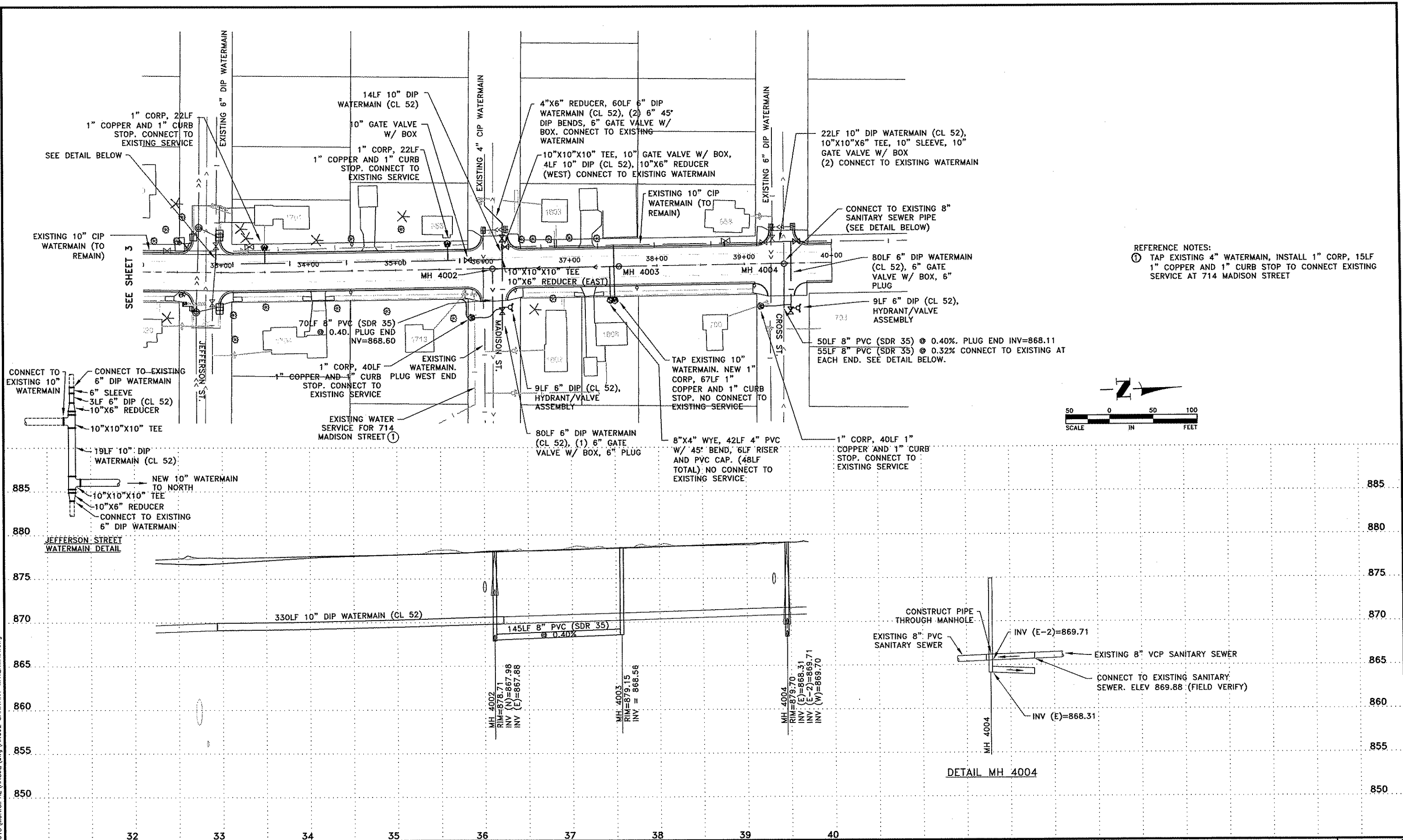
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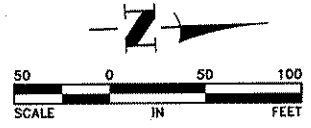
**7TH AVENUE RECONSTRUCTION  
 SANITARY SEWER AND WATERMAIN  
 7TH AVENUE  
 CITY OF ANOKA, MINNESOTA**

SHEET C6 OF 7 SHEETS

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REFERENCE NOTES:  
 ① TAP EXISTING 4" WATERMAIN, INSTALL 1" CORP, 15LF 1" COPPER AND 1" CURB STOP TO CONNECT EXISTING SERVICE AT 714 MADISON STREET



JEFFERSON STREET WATERMAIN DETAIL

DETAIL MH 4004

DATE	REVISION

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 Lic. No. 23461

Date 3/13

DESIGNED BY: TAE  
 DRAWN BY: DMS  
 CHECKED BY: CJJ



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7TH AVENUE RECONSTRUCTION  
 SANITARY SEWER AND WATERMAIN  
 7TH AVENUE  
 CITY OF ANOKA, MINNESOTA

SHEET C7 OF 7 SHEETS