

# MINNESOTA DEPARTMENT OF TRANSPORTATION

## ANOKA COUNTY

### CONSTRUCTION PLAN FOR GRADING, AGG.BASE, BITUMINOUS SURFACING, DRAINAGE, WATER MAIN, SANITARY SEWER, CURB & GUTTER, RETAINING WALLS, NOISE BARRIER, AND SIGNAL SYSTEM

LOCATED ON C.S.A.H. 116 BETWEEN 1600' WEST OF C.S.A.H. 7 AND 550' WEST OF C.S.A.H. 9  
C.S.A.H. 7 740' SOUTH OF 40TH LANE 65' SOUTH OF 145TH AVE.

STATE PROJ. NO. 002-716-012

STATE PROJ. NO. 002-607-021

GROSS LENGTH	8,758.66 FEET	1.659 MILES
BRIDGES-LENGTH	0.00 FEET	0.000 MILES
EXCEPTIONS-LENGTH	0.00 FEET	0.000 MILES
NET LENGTH	8,758.66 FEET	1.659 MILES

GROSS LENGTH	3,564.14 FEET	0.675 MILES
BRIDGES-LENGTH	0.00 FEET	0.000 MILES
EXCEPTIONS-LENGTH	110.00 FEET	0.021 MILES
NET LENGTH	3,454.14 FEET	0.654 MILES

#### GOVERNING SPECIFICATIONS

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

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

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#### PLAN SYMBOLS

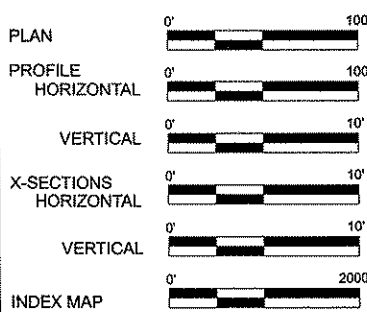
- COUNTY LINE
- TOWNSHIP OR RANGE LINE
- SECTION LINE
- QUARTER LINE
- SIXTEENTH LINE
- RIGHT OF WAY LINE
- SLOPE EASEMENT
- EXISTING RIGHT OF WAY
- PROPERTY LINE
- CORPORATE OR CITY LIMITS
- RETAINING WALL
- RAILROAD
- RAILROAD RIGHT OF WAY
- RIVER OR CREEK
- DRAINAGE DITCH
- CULVERT
- DROP INLET
- GUARD RAIL
- BARBED WIRE FENCE
- WOVEN WIRE FENCE
- CHAIN LINK FENCE
- WOOD FENCE
- STONE WALL OR FENCE
- HEDGE

- LOWLAND
- TIMBER
- ORCHARD
- BRUSH
- NURSERY
- CATTLE GUARD
- OVERPASS (Highway Over)
- UNDERPASS (Highway Under)
- BRIDGE
- BUILDING (One Story Frame)
- F-FRAME C-CONCRETE
- S-STONE T-TILE
- B-BRICK ST-STUCCO
- RAILROAD CROSSING BELL
- RAILROAD CROSSING GATE
- MANHOLE
- CATCH BASIN
- FIRE HYDRANT
- CAST IRON MONUMENT
- IRON PIN
- GRAVEL PIT
- SAND PIT
- BORROW PIT
- ROCK QUARRY

#### UTILITY SYMBOLS

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

#### SCALES



END SP 002-607-021,  
 SP 103-020-015, SP 198-020-032  
 N.B. C.S.A.H. 7 STA. 126+90.00

BEGIN SP 198-020-031  
 W.B. C.S.A.H. 116 STA. 24+62.49

BEGIN SP 002-716-012, SP103-020-014  
 W.B. C.S.A.H. 116 STA. 9+11.54

BEGIN SP 198-020-032  
 N.B. C.S.A.H. 7 STA. 102+60.56

BEGIN SP 002-607-021, SP 103-020-015  
 N.B. C.S.A.H. 7 STA. 91+25.86

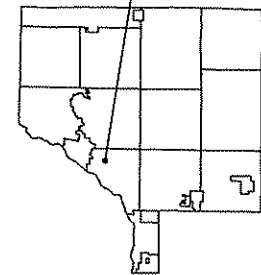
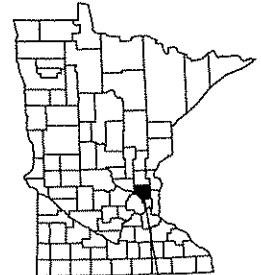
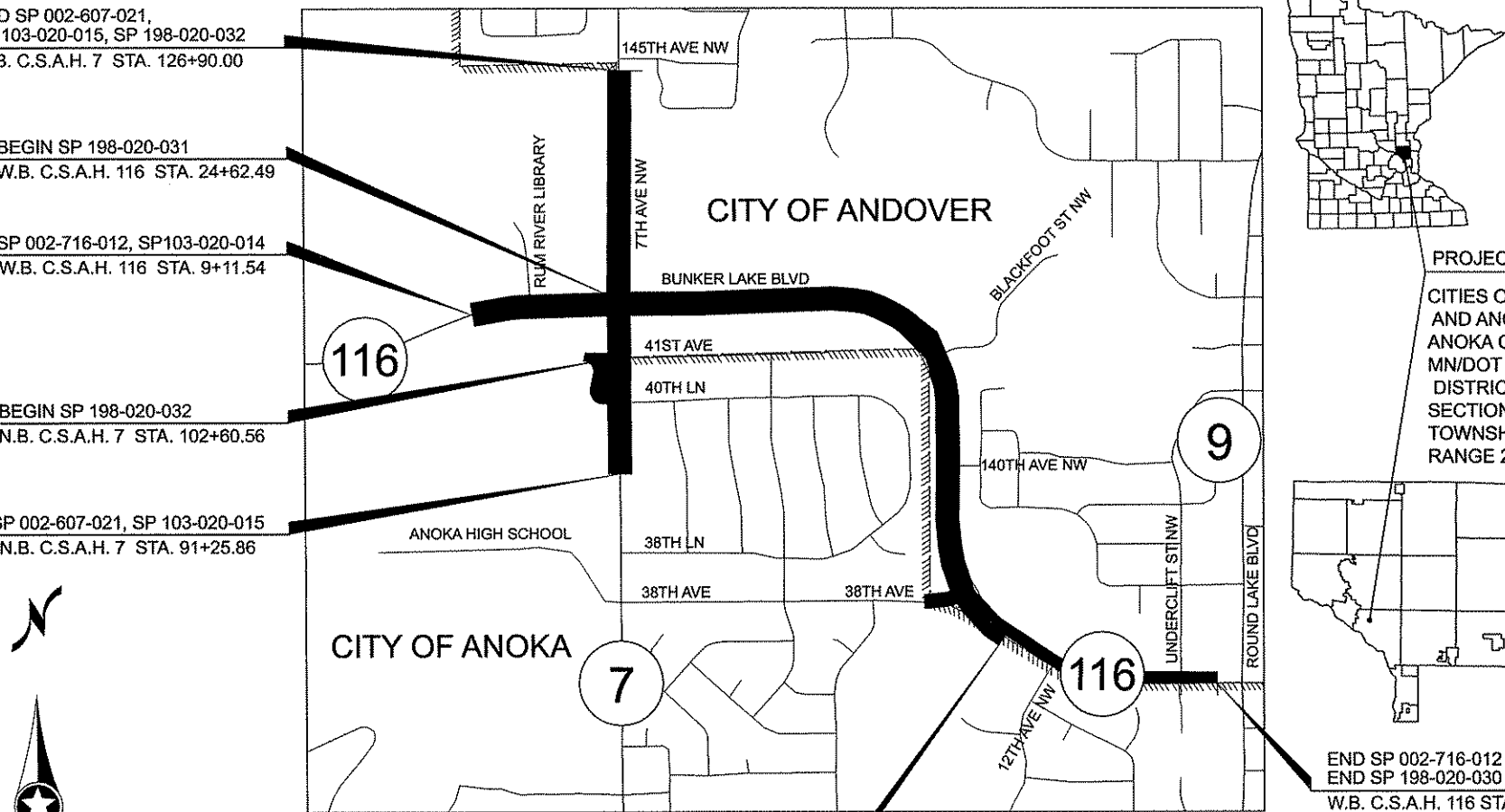
END SP 103-020-014, SP 198-020-031  
 BEGIN SP 198-020-030  
 W.B. C.S.A.H. 116 STA. 78+95.35

CSAH 116 (BUNKER LAKE BLVD)	
DESIGN DESIGNATION	ESAL <sub>20</sub> 2,249,569
	R VALUE 70
	ADT (2012) 16,278
	PROJ. ADT (2032) 28,070
	PROJ. HCA DT (2032) 1,537
	SOIL FACTOR NA
	10 TON DESIGN

FUNCTIONAL CLASSIFICATION	A MINOR ARTERIAL, RELIEVER	
NO. OF TRAFFIC LANES	4	NO. OF PARKING LANES 0
DESIGN SPEED	50 MPH	
STOPPING SIGHT DISTANCE BASED ON:		
HEIGHT OF EYE	3.5'	HEIGHT OF OBJECT 2.0'
DESIGN SPEED NOT ACHIEVED AT:		
STA.	TO STA. MPH	

CSAH 7 (7TH AVE NW)	
DESIGN DESIGNATION	ESAL <sub>20</sub> 1,754,510
	R VALUE 70
	ADT (2012) 12,695
	PROJ. ADT (2032) 20,312
	PROJ. HCA DT (2032) 1,198
	SOIL FACTOR NA
	10 TON DESIGN

DESIGN DESIGNATION - BIKE PATH	
DESIGN SPEED (MPH)	20
BASED ON:	
4.5 FT HEIGHT OF EYE	
0.0 FT HEIGHT OF OBJECT	
FUNCTIONAL CLASSIFICATION	A MINOR ARTERIAL, EXPANDER
NO. OF TRAFFIC LANES	4
NO. OF PARKING LANES	0
DESIGN SPEED	55 MPH
STOPPING SIGHT DISTANCE BASED ON:	
HEIGHT OF EYE	3.5'
HEIGHT OF OBJECT	2.0'
DESIGN SPEED NOT ACHIEVED AT:	
STA.	TO STA. MPH



#### PROJECT LOCATION

CITIES OF ANDOVER AND ANOKA  
 ANOKA COUNTY  
 MN/DOT TRANSPORTATION DISTRICT - METRO SECTION 29, 30, 31, 32 TOWNSHIP 32 NORTH RANGE 24 WEST

THIS PLAN CONTAINS 282 SHEETS

Approved 7/13/12 David D. Bulant  
 CITY OF ANDOVER ENGINEER

Approved 7/13/12 Greg Lee  
 CITY OF ANOKA ENGINEER

Approved 7/13/12 David D. Bulant  
 ANOKA COUNTY ENGINEER

REVIEWED FOR COMPLIANCE WITH STATE AND FEDERAL AID RULES/POLICY  
D. Schuman 7/13/12  
 DISTRICT STATE AID ENGINEER

APPROVED FOR STATE AND/OR FEDERAL AID FUNDING  
D. Schuman 7/13/12  
 STATE AID ENGINEER

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

PRINT NAME: CURT A. KOBILARCSIK

SIGNATURE: Curt Kobilarsik

DATE: 6-29-12 LICENSE NO. 24756

DRAWN BY EM DATE 03-02-2012

DESIGN BY MN DATE 03-18-2012

CHECKED BY CAK DATE 04-12-2012

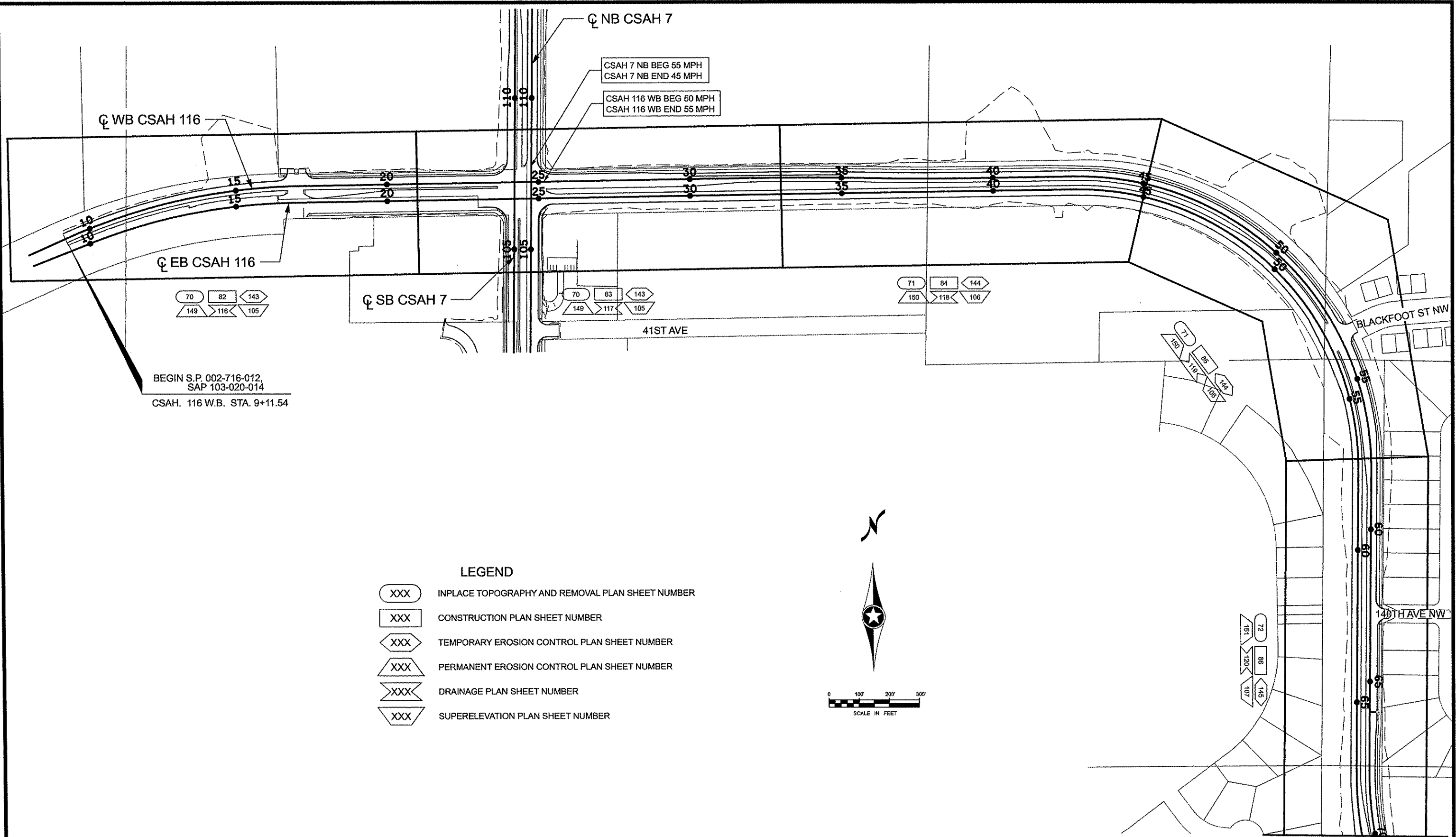


ANOKA COUNTY  
 HIGHWAY DEPT.

S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

TITLE SHEET

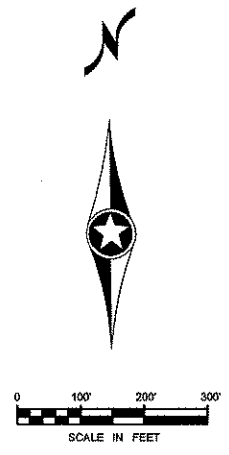
Sheet 1 of 282 Sheets



BEGIN S.P. 002-716-012,  
SAP 103-020-014  
CSAH. 116 W.B. STA. 9+11.54

**LEGEND**

- INPLACE TOPOGRAPHY AND REMOVAL PLAN SHEET NUMBER
- CONSTRUCTION PLAN SHEET NUMBER
- TEMPORARY EROSION CONTROL PLAN SHEET NUMBER
- PERMANENT EROSION CONTROL PLAN SHEET NUMBER
- DRAINAGE PLAN SHEET NUMBER
- SUPERELEVATION PLAN SHEET NUMBER



MATCHLINE 69+00

NO	DATE	BY	CKD	APPR	REVISION

NAME: p:\02-716-12\plan\0271612\_LO1\_P1.dgn      06/28/2012      7:29:31 AM

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

PRINT NAME: CURT A. KOBILARCSIK  
SIGNATURE: *Curt Kobilarsik*  
DATE: 6-29-12      LICENSE NO. 24756

DRAWN BY: MN      DATE 05/15/2012  
DESIGN BY: MN      DATE 12/01/2010  
CHECKED BY: CAK      DATE 05/29/2012

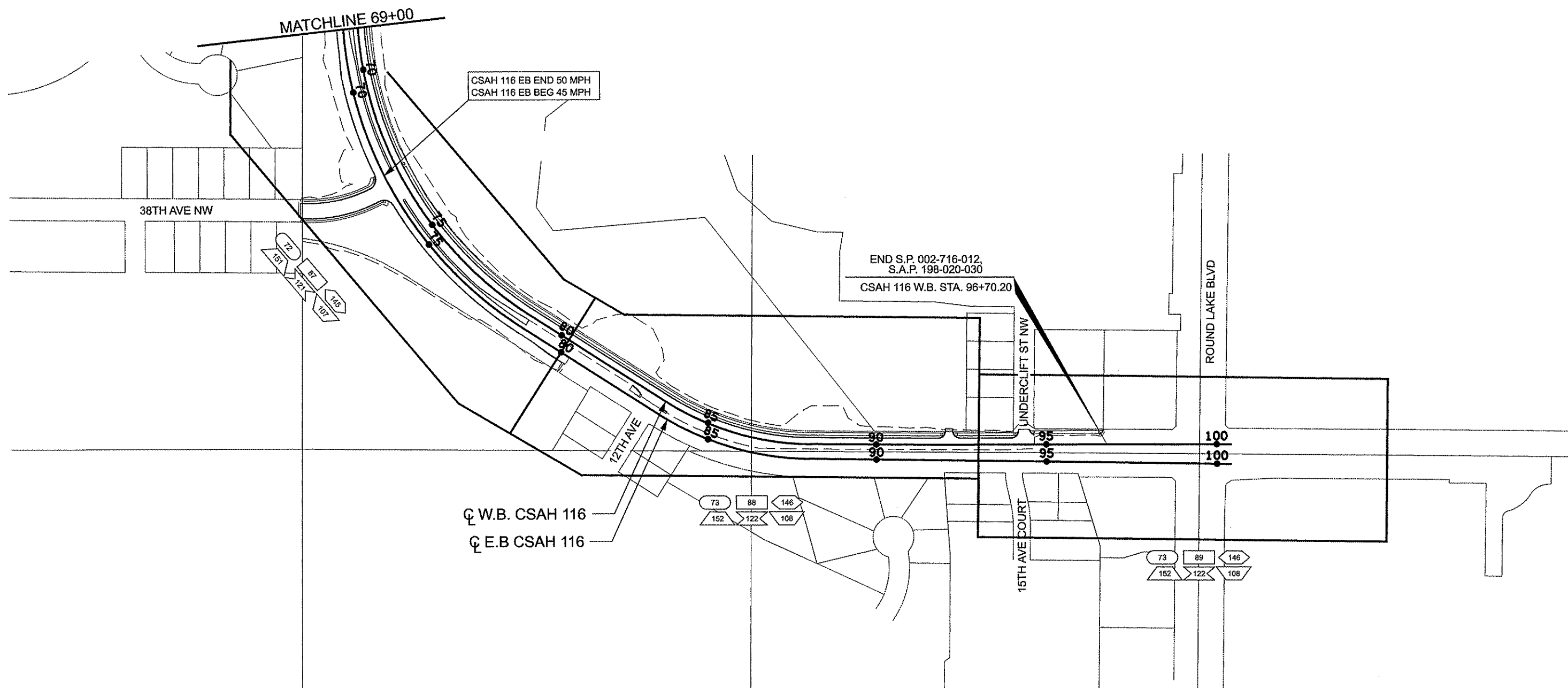


**ANOKA COUNTY  
HIGHWAY DEPT.**







S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

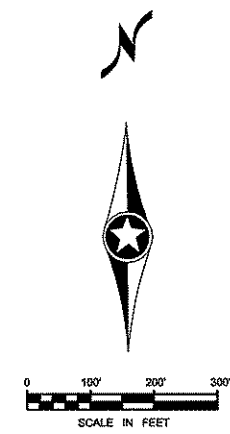
**GENERAL LAYOUT  
C.S.A.H. 116**

Sheet 2 of 282 Sheets



**LEGEND**

-  INPLACE TOPOGRAPHY AND REMOVAL PLAN SHEET NUMBER
-  CONSTRUCTION PLAN SHEET NUMBER
-  EROSION CONTROL PLAN SHEET NUMBER
-  PERMANENT EROSION CONTROL PLAN SHEET NUMBER
-  DRAINAGE PLAN SHEET NUMBER
-  SUPERELEVATION PLAN SHEET NUMBER



NO	DATE	BY	CKD	APPR	REVISION
NAME: p:\02-716-12\plan\0271612_LO1_F2.dgn					
06/28/2012 7:29:33 AM					

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

PRINT NAME: CURT A. KOBILARCSIK

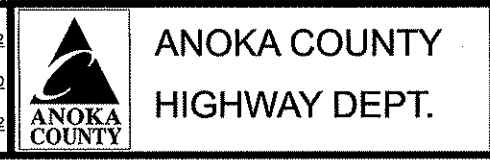
SIGNATURE: *Curt A. Kobilarscik*

DATE: 6-29-12 LICENSE NO. 24756

DRAWN BY: MN DATE 05/15/2012

DESIGN BY: MN DATE 12/01/2010

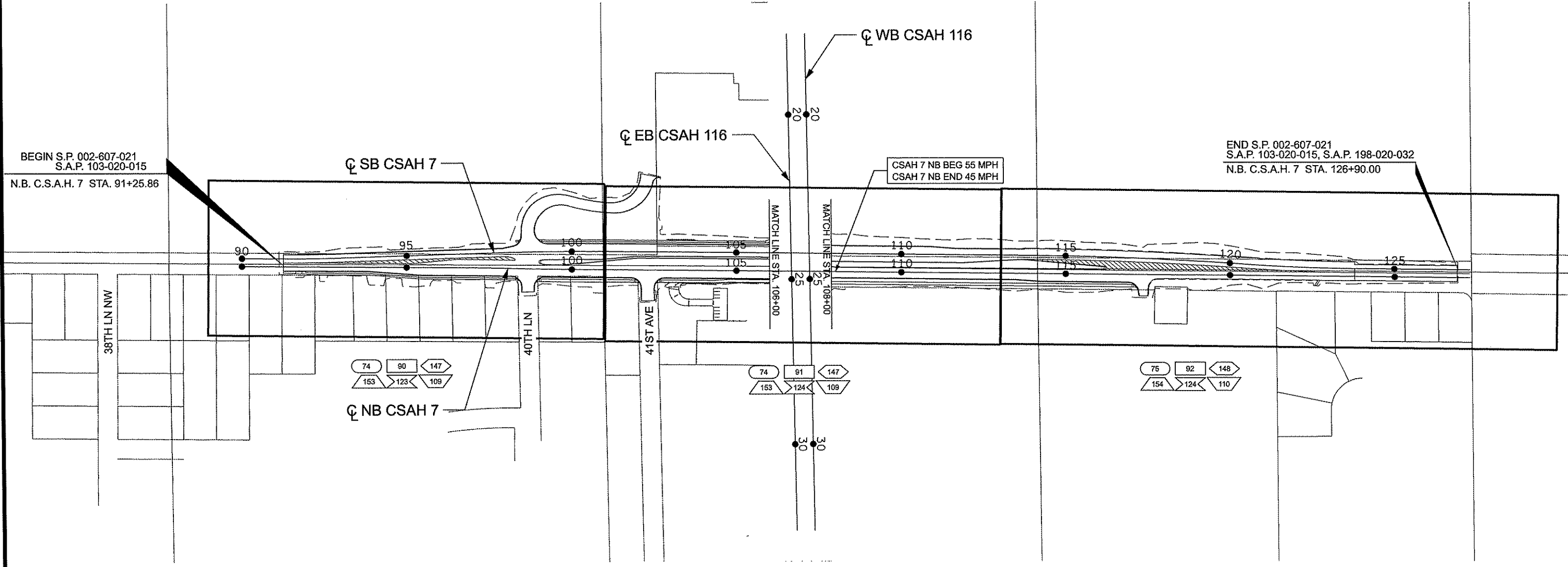
CHECKED BY: CAK DATE 05/29/2012



S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

GENERAL LAYOUT  
C.S.A.H 116

Sheet 3 of 282 Sheets

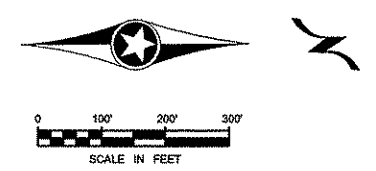


BEGIN S.P. 002-607-021  
S.A.P. 103-020-015  
N.B. C.S.A.H. 7 STA. 91+25.86

END S.P. 002-607-021  
S.A.P. 103-020-015, S.A.P. 198-020-032  
N.B. C.S.A.H. 7 STA. 126+90.00

**LEGEND**

- INPLACE TOPOGRAPHY AND REMOVAL PLAN SHEET NUMBER
- CONSTRUCTION PLAN SHEET NUMBER
- EROSION CONTROL PLAN SHEET NUMBER
- PERMANENT EROSION CONTROL PLAN SHEET NUMBER
- DRAINAGE PLAN SHEET NUMBER
- SUPERELEVATION PLAN SHEET NUMBER



NO	DATE	BY	CHKD	APPR	REVISION

NAME: p:\02-716-12\plan\0271612\_L01\_P3.dgn 06/28/2012 7:29:35 AM

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

PRINT NAME: CURT A. KOBILARCSIK  
SIGNATURE: *Curt Kobilarsik*  
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DRAWN BY MN DATE 05/15/2012  
DESIGN BY MN DATE 12/01/2010  
CHECKED BY CAK DATE 05/28/2012




**ANOKA COUNTY  
HIGHWAY DEPT.**

S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

GENERAL LAYOUT  
C.S.A.H. 7  
Sheet 4 of 282 Sheets

**STATEMENT OF ESTIMATED QUANTITIES**

TAB	NOTE	ITEM NO.	ITEM DESCRIPTION	UNIT	TOTAL PROJECT QUANTITY	FEDERAL PARTICIPATING				FEDERAL NON-PARTICIPATING						
									STORM SEWER SP 002-716-012 SP 198-020-031 SP 198-020-032 SP 103-020-015	STATE AID PARTICIPATING			LOCAL			
						COUNTY OF ANOKA SP 002-716-012 SP 002-607-021	CITY OF ANDOVER SP 198-020-031 SP 198-020-032	CITY OF ANOKA SP 103-020-015		COUNTY OF ANOKA SP 002-716-012	CITY OF ANDOVER SP 198-020-030	CITY OF ANOKA SP 103-020-014	COUNTY OF ANOKA	CITY OF ANDOVER CP 11-16	CITY OF ANDOVER CP 12-11	CITY OF ANOKA CP 10-27
		2021.501	MOBILIZATION	LUMP SUM	1	0.738	0.044	0.033	0.104		0.042			0.025	0.009	0.004
		2031.501	FIELD OFFICE TYPE D	EACH	1	0.738	0.044	0.033	0.104		0.042			0.025	0.009	0.004
		2041.610	TRAINEES	HOUR	1,800	1,800										
A	(1),(2)	2101.501	CLEARING	ACRE	4.15	3.95					0.20					
A	(1),(2)	2101.502	CLEARING	TREE	173	168					5					
A	(1),(2)	2101.506	GRUBBING	ACRE	4.15	3.95					0.20					
A	(1),(2)	2101.507	GRUBBING	TREE	134	129					5					
C	(2),(3)	2104.501	REMOVE PIPE CULVERTS	LIN FT	443	443										
W	(2)	2104.501	REMOVE WATER MAIN	LIN FT	593											593
C	(2)	2104.501	REMOVE PIPE SEWERS	LIN FT	3,163	3,099					64					
B	(2)	2104.501	REMOVE CURB AND GUTTER	LIN FT	10,639	10,595					44					
Q	(2)	2104.501	REMOVE BITUMINOUS CURB	LIN FT	107	107										
L	(2)	2104.501	REMOVE RETAINING WALL	LIN FT	20	20										
E	(2)	2104.501	REMOVE FENCE	LIN FT	1,639	1,639										
B	(2)	2104.503	REMOVE BITUMINOUS WALK	SQ FT	9,032	9,032										
B	(2)	2104.503	REMOVE CONCRETE WALK	SQ FT	28,054	28,054										
D	(2)	2104.505	REMOVE CONCRETE DRIVEWAY PAVEMENT	SQ YD	288	288										
B,D,V	(2)	2104.505	REMOVE BITUMINOUS PAVEMENT	SQ YD	111,690	110,534					406				750	
C	(2)	2104.509	REMOVE PIPE APRON	EACH	19	15					4					
C	(2)	2104.509	REMOVE CONCRETE HEAD WALL	EACH	1	1										
C	(2)	2104.509	REMOVE MANHOLE OR CATCH BASIN	EACH	37	34					3					
W	(2)	2104.509	REMOVE GATE VALVE & BOX	EACH	1											1
W	(2)	2104.509	REMOVE VALVE BOX	EACH	1											1
R	(2)	2104.509	REMOVE BITUMINOUS FLUME	EACH	2	1					1					
	(2),(4),(5)	2104.509	REMOVE SIGNAL SYSTEM	EACH	1	1										
B,D	(6)	2104.511	SAWING CONCRETE PAVEMENT (FULL DEPTH)	LIN FT	609	601					8					
B,D,V	(6)	2104.513	SAWING BITUMINOUS PAVEMENT (FULL DEPTH)	LIN FT	3,696	1,975					1,621					
F	(4)	2104.523	SALVAGE SIGN TYPE C	EACH	138								126		12	100
F	(4)	2104.523	SALVAGE SIGN TYPE SPECIAL	EACH	8	7					1					
I	(4)	2104.523	SALVAGE MAIL BOX SUPPORT	EACH	7								7			
	(4)	2104.601	HAUL SALVAGED MATERIAL	LUMP SUM	1								1			
W		2104.603	ABANDON WATER MAIN	LIN FT	192											192
	(7),(8)	2105.501	COMMON EXCAVATION (EV)	CU YD	40,625	38,499					2,126					
	(8)	2105.501	COMMON EXCAVATION (EV) (PONDS)	CU YD	22,416	21,723					693					
	(8)	2105.505	MUCK EXCAVATION	CU YD	82,430	79,373					3,057					
	(8)	2105.507	SUBGRADE EXCAVATION (EV)	CU YD	23,215	22,468					747					
	(8)	2105.522	SELECT GRANULAR BORROW (LV)	CU YD	79,725	72,952					6,773					
D		2118.501	AGGREGATE SURFACING CLASS 5	TON	39	39										
	(9)	2123.610	DOZER	HOUR	10	10										
	(10)	2130.501	WATER	M GALLON	210	180					30					
V		2211.501	AGGREGATE BASE CLASS 5	TON	120											120
J		2211.503	AGGREGATE BASE (CV) CLASS 5	CU YD	10,362	10,194					168					
B		2232.501	MILL BITUMINOUS SURFACE	SQ YD	5,353	211					5,142					
J		2357.502	BITUMINOUS MATERIAL FOR TACK COAT	GALLON	8,339	8,109					230					
D,K		2360.501	TYPE SP 12.5 WEARING COURSE MX (2,B)	TON	1,235	210	725	86			214					
J,V		2360.501	TYPE SP 12.5 WEARING COURSE MX (3,F)	TON	19,186	18,506					530					150
J		2360.502	TYPE SP 12.5 NON WEAR COURSE MX (3,B)	TON	11,729	11,562					167					
J	(11)	2360.505	TYPE SP 12.5 BITUMINOUS MIXTURE FOR PATCHING	TON	394	394										
L		2411.618	MODULAR BLOCK RETAINING WALL	SQ FT	1,618	1,618										
G		2422.618	WOOD NOISE BARRIER	SQ FT	4,320	4,320										
T		2451.509	AGGREGATE BEDDING (CV)	CU YD	177						177					
U		2451.513	FINE FILTER AGGREGATE (LV)	CU YD	57				43		14					
V		2451.607	TRENCH STABILIZATION MATERIAL (CV)	CU YD	120									120		
M		2501.511	24" RC PIPE CULVERT CLASS III	LIN FT	85	23					62					
M		2501.511	48" RC PIPE CULVERT CLASS III	LIN FT	166	166										
S		2501.515	15" RC PIPE APRON	EACH	17					13						
S		2501.515	18" RC PIPE APRON	EACH	4					3						
S		2501.515	21" RC PIPE APRON	EACH	1					1						
M,S		2501.515	24" RC PIPE APRON	EACH	5	1				2						
M		2501.515	48" RC PIPE APRON	EACH	2	2										
S		2501.515	54" RC PIPE APRON	EACH	1											1
M		2501.521	28" SPAN RC PIPE ARCH CULVERT CLASS IIA	LIN FT	123	123										

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA. PRINT NAME: CURT A. KOBILARCSIK SIGNATURE: <i>Curt A. Kobilarscik</i> DATE: 6-29-12 LICENSE NO. 24756					DRAWN BY: MN DATE 05/15/2012 DESIGN BY: MN DATE 12/01/2010 CHECKED BY: CAK DATE 05/29/2012		 <b>ANOKA COUNTY</b> <b>HIGHWAY DEPT.</b>	S.P. 002-716-012 S.P. 198-020-031 S.P. 103-020-014	S.P. 198-020-030 S.P. 198-020-032 S.P. 103-020-015	S.P. 002-607-021 S.P. 198-020-032 S.P. 103-020-015	<b>STATEMENT OF ESTIMATED QUANTITIES</b>  Sheet <u>5</u> of <u>282</u> Sheets
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## STATEMENT OF ESTIMATED QUANTITIES

TAB	NOTE	ITEM NO.	ITEM DESCRIPTION	UNIT	TOTAL PROJECT QUANTITY	FEDERAL PARTICIPATING				FEDERAL NON-PARTICIPATING								
									STORM SEWER SP 002-716-012 SP 198-020-031 SP 198-020-032 SP 103-020-015	STATE AID PARTICIPATING			LOCAL					
						COUNTY OF ANOKA SP 002-716-012 SP 002-607-021	CITY OF ANDOVER SP 198-020-031 SP 198-020-032	CITY OF ANOKA SP 103-020-015		COUNTY OF ANOKA SP 002-716-012	CITY OF ANDOVER SP 198-020-030	CITY OF ANOKA SP 103-020-014	COUNTY OF ANOKA	CITY OF ANDOVER CP 11-16	CITY OF ANDOVER CP 12-11	CITY OF ANOKA CP 10-27		
M		2501.525	28" SPAN RC PIPE-ARCH APRON	EACH	2													
S		2501.525	36" SPAN RC PIPE-ARCH APRON	EACH	2													
S		2501.525	44" SPAN RC PIPE-ARCH APRON	EACH	1													
M		2501.602	TRASH GUARD FOR 24" PIPE APRON	EACH	2													
M		2501.602	TRASH GUARD FOR 48" PIPE APRON	EACH	1													
M		2501.602	TRASH GUARD FOR 28" SPAN PIPE APRON	EACH	1													
U		2502.541	3" PERF TP PIPE DRAIN	LIN FT	1,682													
S		2503.521	28" SPAN RC PIPE-ARCH SEWER CL IIA	LIN FT	244													
S		2503.521	36" SPAN RC PIPE-ARCH SEWER CL IIA	LIN FT	407													
S		2503.521	44" SPAN RC PIPE-ARCH SEWER CL IIA	LIN FT	145													
S		2503.541	15" RC PIPE SEWER DESIGN 3006 CL V	LIN FT	5,600													
S		2503.541	18" RC PIPE SEWER DESIGN 3006 CL III	LIN FT	1,707													
S		2503.541	21" RC PIPE SEWER DESIGN 3006 CL III	LIN FT	1,788													
S		2503.541	24" RC PIPE SEWER DESIGN 3006 CL III	LIN FT	1,521													
S		2503.541	24" RC PIPE SEWER DESIGN 3006 CL V	LIN FT	234													
S		2503.541	27" RC PIPE SEWER DESIGN 3006 CL V	LIN FT	226													
S		2503.541	30" RC PIPE SEWER DESIGN 3006 CL V	LIN FT	253													
S		2503.541	54" RC PIPE SEWER DESIGN 3006 CL III	LIN FT	282													
V		2503.602	CONNECT TO EXISTING SANITARY SEWER	EACH	1													
S		2503.602	CONNECT TO EXISTING STORM SEWER	EACH	13													
V		2503.603	8" PVC SANITARY SEWER PIPE SDR 26	LIN FT	640													
V		2503.603	8" PVC SANITARY SEWER PIPE SDR 35	LIN FT	1,020													
V		2503.603	JET CLEAN SANITARY SEWER MAIN	LIN FT	1,810													
V		2503.603	TELEVIEW SANITARY SEWER MAIN	LIN FT	1,810													
V,W		2504.602	CONNECT TO EXISTING WATER MAIN	EACH	4													
V		2504.602	HYDRANT	EACH	4													
CC,DD		2504.602	RELOCATE HYDRANT & VALVE	EACH	5													
W		2504.602	VALVE BOX	EACH	1													
DD		2504.602	ADJUST GATE VALVE & BOX	EACH	12													
W		2504.602	2" CORPORATION STOP	EACH	1													
V		2504.602	6" GATE VALVE AND BOX	EACH	6													
V		2504.602	8" GATE VALVE AND BOX	EACH	4													
W		2504.602	12" GATE VALVE AND BOX	EACH	1													
V		2504.602	6" X 6" WET TAP	EACH	1													
W		2504.603	2" TYPE K COPPER PIPE	LIN FT	15													
V		2504.603	6" DIP WATERMAIN CLASS 52	LIN FT	1,200													
V		2504.603	8" DIP WATERMAIN CLASS 52	LIN FT	1,670													
W		2504.603	12" PVC WATERMAIN (C900)	LIN FT	533													
V,W		2504.604	4" POLYSTYRENE INSULATION	SQ YD	95													
V,W		2504.608	DUCTILE IRON FITTINGS	POUND	3,190													
S		2506.501	CONST. DRAINAGE STRUCTURE DESIGN G	LIN FT	147.9													
S		2506.501	CONST. DRAINAGE STRUCTURE DESIGN 48-4020	LIN FT	470.9													
S		2506.501	CONST. DRAINAGE STRUCTURE DESIGN 54-4020	LIN FT	86.1													
S		2506.501	CONST. DRAINAGE STRUCTURE DESIGN 60-4020	LIN FT	68.0													
S		2506.501	CONST. DRAINAGE STRUCTURE DESIGN 66-4020	LIN FT	14.3													
S		2506.501	CONST. DRAINAGE STRUCTURE DESIGN 72-4020	LIN FT	17.9													
S		2506.501	CONST. DRAINAGE STRUCTURE DESIGN 102-4020	LIN FT	7.2													
S		2506.501	CONST. DRAINAGE STRUCTURE DESIGN 120-4020	LIN FT	6.5													
S,W		2506.516	CASTING ASSEMBLY	EACH	189													
H,W		2506.522	ADJUST FRAME & RING CASTING	EACH	12													
S		2506.602	RECONSTRUCT DRAINAGE STRUCTURE	EACH	1													
H		2506.602	ADJUST DRAINAGE STRUCTURE	EACH	6													
V		2506.602	CONSTRUCT SANITARY MANHOLE - TYPE 301	EACH	8													
S		2506.603	CONSTRUCT DRAINAGE STRUCTURE DESIGN SPECIAL	LIN FT	19.2													
M,S		2511.501	RANDOM RIPRAP CLASS II	CU YD	192													
M,S		2511.515	GEOTEXTILE FILTER TYPE III	SQ YD	581													
O		2521.501	4" CONCRETE WALK	SQ FT	82,706													
O		2531.501	CONCRETE CURB & GUTTER DESIGN B418	LIN FT	17,800													
O		2531.501	CONCRETE CURB & GUTTER DESIGN B424	LIN FT	19,446													
O		2531.501	CONCRETE CURB & GUTTER DESIGN B612	LIN FT	84													
O		2531.503	CONCRETE MEDIAN (NOSE)	SQ YD	66													
D,O		2531.507	6" CONCRETE DRIVEWAY PAVEMENT	SQ YD	507													
R		2531.604	CONCRETE DRAINAGE FLUME	SQ YD	23													
O		2531.618	TRUNCATED DOMES	SQ FT	396													
O		2531.618	PEDESTRIAN CURB RAMP	SQ FT	1,753													
Q		2535.501	BITUMINOUS CURB	LIN FT	107													

NO	DATE	BY	CHKD	APPR	REVISION
NAME: p:\02-716-12\Plan\0271612_TAB.dgn					06/29/2012 8:56:25 AM

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

PRINT NAME: CURT A. KOBILARCSIK  
 SIGNATURE: *Curt A. Kobilarsik*  
 DATE: 6-29-12 LICENSE NO. 24756

DRAWN BY: MN DATE 05/15/2012  
 DESIGN BY: MN DATE 12/01/2010  
 CHECKED BY: CAK DATE 05/29/2012



**ANOKA COUNTY  
HIGHWAY DEPT.**

S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

**STATEMENT OF ESTIMATED QUANTITIES**


Sheet 6 of 282 Sheets

## STATEMENT OF ESTIMATED QUANTITIES

TAB	NOTE	ITEM NO.	ITEM DESCRIPTION	UNIT	TOTAL PROJECT QUANTITY	FEDERAL PARTICIPATING				FEDERAL NON-PARTICIPATING								
						COUNTY OF ANOKA SP 002-716-012 SP 002-607-021	CITY OF ANDOVER SP 198-020-031 SP 198-020-032	CITY OF ANOKA SP 103-020-015	STORM SEWER SP 002-716-012 SP 198-020-031 SP 198-020-032 SP 103-020-015	STATE AID PARTICIPATING			LOCAL					
										COUNTY OF ANOKA SP 002-716-012	CITY OF ANDOVER SP 198-020-030	CITY OF ANOKA SP 103-020-014	COUNTY OF ANOKA	CITY OF ANDOVER CP 11-16	CITY OF ANDOVER CP 12-11	CITY OF ANOKA CP 10-27		
I		2540.602	MAIL BOX SUPPORT	EACH	7	7												
I		2540.602	RELOCATE MAIL BOX SUPPORT	EACH	1	1												
	(12)	2563.601	TRAFFIC CONTROL	LUMP SUM	1	0.738	0.044	0.033	0.104		0.042			0.025	0.009	0.004		
		2563.610	POLICE OFFICER	HOURLY	30	30												
N		2564.531	SIGN PANELS TYPE C	SQ FT	869	869												
F		2564.537	INSTALL SIGN TYPE SPECIAL	EACH	8	7												
S		2564.602	CULVERT MARKER X4-3	EACH	14	12												
		2565.511	TRAFFIC CONTROL SIGNAL SYSTEM A	SIG SYS	1	0.50	0.25	0.25										
		2565.511	TRAFFIC CONTROL SIGNAL SYSTEM B	SIG SYS	1	0.34	0.33	0.33										
		2565.601	EMERGENCY VEHICLE PREEMPTION SYSTEM A	LUMP SUM	1		0.50	0.50										
		2565.601	EMERGENCY VEHICLE PREEMPTION SYSTEM B	LUMP SUM	1		0.50	0.50										
		2565.601	TRAFFIC CONTROL INTERCONNECTION	LUMP SUM	1		0.50	0.50										
		2565.602	SIGNAL SERVICE CABINET	EACH	2	0.84	0.58	0.58										
		2565.616	TEMPORARY SIGNAL SYSTEM	SYSTEM	1	1												
P		2573.502	SILT FENCE, TYPE MACHINE SLICED	LIN FT	9,692	8,266												
P		2573.505	FLOTATION SILT CURTAIN	LIN FT	142	142												
P,S		2573.530	STORM DRAIN INLET PROTECTION	EACH	222	20			179		23							
		2573.550	EROSION CONTROL SUPERVISOR	LUMP SUM	1	1												
P		2575.501	SEEDING (P)	ACRE	12.2	11.3												
P		2575.502	SEED MIXTURE 310	POUND	140	127												
P		2575.502	SEED MIXTURE 325	POUND	59	59												
P		2575.502	SEED MIXTURE 350	POUND	829	767												
M,P,S		2575.505	SODDING TYPE SALT RESISTANT	SQ YD	14,500	13,127												
P		2575.511	MULCH MATERIAL TYPE 1	TON	8.8	8.7												
P		2575.519	DISK ANCHORING (P)	ACRE	4.4	4.3												
P		2575.523	EROSION CONTROL BLANKETS CATEGORY 3	SQ YD	37,958	33,856												
P		2575.532	FERTILIZER TYPE 3	POUND	1,038	941												
P		2575.532	FERTILIZER TYPE 4	POUND	1,830	1,695												
P		2575.571	RAPID STABILIZATION METHOD 3	M GALLON	50.6	45.2												
Y		2582.501	PAVEMENT MESSAGE (LT ARROW) PREFORMED THERMOPLASTIC	EACH	16	16												
Y		2582.501	PAVEMENT MESSAGE (RT ARROW) PREFORMED THERMOPLASTIC	EACH	10	10												
Y		2582.502	24" SOLID LINE WHITE - PREFORMED THERMOPLASTIC	LIN FT	322	322												
Y		2582.502	24" SOLID LINE YELLOW - PREFORMED THERMOPLASTIC	LIN FT	1,197	1,197												
Y		2582.502	4" SOLID LINE WHITE - EPOXY	LIN FT	25,810	25,810												
Y		2582.502	4" BROKEN LINE WHITE - EPOXY	LIN FT	3,340	3,340												
Y		2582.502	8" BROKEN LINE WHITE - EPOXY	LIN FT	150	150												
Y		2582.502	4" SOLID LINE YELLOW - EPOXY	LIN FT	15,033	15,033												
Y		2582.502	4" DOUBLE SOLID LINE YELLOW - EPOXY	LIN FT	3,492	3,492												
Y		2582.503	CROSSWALK MARKING - WHITE PREFORMED THERMOPLASTIC	SQ FT	1,620	1,620												

**NOTES:**

- (1) CLEARING AND GRUBBING SHALL BE STAKED IN FIELD BY THE ENGINEER.
- (2) ALL REMOVAL ITEMS SHALL BE DISPOSED OFF-SITE. NO DISPOSAL SHALL BE ALLOWED WITHIN THE ROADWAY RIGHT-OF-WAY OR EASEMENTS.
- (3) REMOVAL INCLUDES ALL TYPES OF PIPES AND CMP APRONS.
- (4) SALVAGE TO: ANOKA COUNTY HIGHWAY DEPT, 1440 BUNKER LAKES BLVD NW, ANDOVER, MN. SALVAGE MAIL BOX SUPPORT TO OWNER.
- (5) THE EXISTING SYGNAL SYSTEM AT CSAH 116/CSAH 7 REMAIN IN OPERATION DURING CONSTRUCTION. TIMING CHANGES NECESSARY DURING CONSTRUCTION SHALL BE PART OF THIS BID ITEM . POLES, MASTER ARMS, EMERGENCY VEHICLE PREEMPTION AND SIGNAL INDICATION SHALL BE SALVAGED TO THE COUNTY. SEE SPECIAL PROVISIONS FOR ADDITIONAL INFORMATION.
- (6) PAYMENT FOR SAWING BITUMINOUS WILL ONLY BE PAID WHEN THE CUT IS MADE WITH A SAW. NO PAYMENT SHALL BE MADE FOR CUTS MADE BY A MILLING MACHINE OR RECLAIMER.
- (7) INCLUDES INPLACE TOPSOIL AND BITUMINOUS PAVEMENT LESS THAN 6" THICK. BITUMINOUS MATERIAL SHALL BE DISPOSED OUTSIDE THE ROADWAY RIGHT-OF-WAY.
- (8) SEE SOILS AND CONSTRUCTION NOTES.
- (9) SHALL BE USED FOR MISCELLANEOUS GRADING ACTIVITIES AS DIRECTED BY THE ENGINEER.
- (10) WATER TO BE USED ONLY FOR DUST CONTROL AS DIRECTED BY THE ENGINEER IN FIELD. WATER USED FOR COMPACTION AND TURF ESTABLISHMENT SHALL BE INCIDENTAL.
- (11) INCLUDES BITUMINOUS TEMPORARY WIDENING
- (12) PAVEMENT MARKING REMOVAL AND TEMPORARY RAISED PAVEMENT MARKERS ARE INCIDENTAL.
- (P) PLAN QUANTITY.

<p>NO DATE BY CKD APPR REVISION</p> <p>NAME: p:\02-716-12\Plan\0271612_TAB.dgn</p>	<p>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.</p> <p>PRINT NAME: CURT A. KOBILARCSIK</p> <p>SIGNATURE: <i>Curt A. Kobilarscik</i></p> <p>DATE: 6-29-12 LICENSE NO. 24756</p>	<p>DRAWN BY: MN DATE 05/15/2012</p> <p>DESIGN BY: MN DATE 12/01/2010</p> <p>CHECKED BY: CAK DATE 05/29/2012</p>	 <p><b>ANOKA COUNTY HIGHWAY DEPT.</b></p>	<p>S.P. 002-716-012</p> <p>S.P. 198-020-031</p> <p>S.P. 103-020-014</p>	<p>S.P. 198-020-030</p> <p>S.P. 198-020-032</p> <p>S.P. 103-020-015</p>	<p>S.P. 002-607-021</p> <p>S.P. 198-020-032</p> <p>S.P. 103-020-015</p>	<p><b>STATEMENT OF ESTIMATED QUANTITIES</b></p> <p>Sheet <u>7</u> of <u>282</u> Sheets</p>
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THE FOLLOWING STANDARD PLATES AS APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION SHALL APPLY.

PLATE NO.	STANDARD PLATES
3000L	REINFORCED CONCRETE PIPE
3006G	GASKET JOINT FOR R.C. PIPE
3007D	SHEAR REINFORCEMENT FOR PRECAST DRAINAGE STRUCTURES
3014J	REINFORCED CONCRETE PIPE ARCH
3100G	CONCRETE APRON FOR REINFORCED CONCRETE PIPE
3133C	RIPRAP AT RCP OUTLETS
3145F	CONCRETE PIPE TIES
4006L	MANHOLE OR CATCH BASIN PRECAST - DESIGNS G AND H
4010H	CONCRETE SHORT CONE & ADJUSTING RING (SECTIONAL CONCRETE)
4011E	PRECAST CONCRETE BASE
4018A	MANHOLE OR CATCH BASIN COVER DESIGN D
4020J	MANHOLE OR CATCH BASIN FOR USE WITH OR WITHOUT TRAFFIC LOADS
4026A	CONCRETE ENCASED CONCRETE ADJUSTING RINGS
4101D	RING CASTING FOR MANHOLE OR CATCH BASIN
4110F	COVER CASTING FOR MAHNOLE - CASTING NO. 715 AND 716
4125D	CATCH BASIN FRAME CASTING (FOR SQUARE GRATE) - CASTING NO. 715 AND 716
4132F	CATCH BASIN FRAME CASTING - CASTING NO. 806
4134A	CURB BOX CASTING FOR CATCH BASIN - CASTING NO. 825
4140D	SPECIAL GRATE CASTING FOR CATCH BASIN - CASTING NO. 720 AND 721
4154B	CATCH BASIN GRATE CASTING - CASTING NO. 816
4180J	MANHOLE OR CATCH BASIN STEP
7035N	CONCRETE WALK AND CURB RETURNS AT ENTRANCES
7038A	DETECTABLE WARNING SURFACE TRUNCATED DOMES
7100H	CONCRETE CURB AND GUTTER (DESIGN B AND DESIGN V)
7109C	MEDIAN NOSE AND ISLAND
7111J	INSTALLATION OF CATCH BASIN CASTINGS (CONCRETE CURB AND GUTTER)
7113A	CONCRETE APPROACH NOSE DETAIL
8150C	INSTALLATION OF CULVERT MARKERS
9102D	TURF ESTABLISHMENT AREA ( AT PIPE CULVERT ENDS )
9350A	MAILBOX SUPPORT (SWING-AWAY TYPE)

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L	14	RETAINING WALL REMOVAL AND CONSTRUCTION
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### BASIS OF QUANTITIES

SPEC NO	DESCRIPTION	RATE
2211	AGGREGATE BASE CLASS 5	2 TONS / CU YD
2357	BITUMINOUS MATERIAL FOR TACK COAT	0.05 GALLONS / SQ YD / LIFT
2360	TYPE SP12.5 WEARING COURSE MIXTURE	115 POUNDS / SQ YD / IN
2360	TYPE SP12.5 NON-WEARING COURSE MIXTURE	115 POUNDS / SQ YD / IN
2575	SEED MIXTURE 310	82.0 POUNDS / ACRE
2575	SEED MIXTURE 325	84.0 POUNDS / ACRE
2575	SEED MIXTURE 350	84.5 POUNDS / ACRE
2575	MULCH MATERIAL TYPE 1	2 TONS / ACRE
2575	FERTILIZER TYPE 3, 22-5-10 FOR SOD	350 POUNDS / ACRE
2575	FERTILIZER TYPE 4, 18-1-8 FOR SEED MIX 350	150 POUNDS / ACRE
2575	RAPID STABILIZATION METHOD 3	6000 GALLONS / ACRE

NO	DATE	BY	CKD	APPR	REVISION

NAME: p:\02-716-12\plan\0271612\_TAB.dgn 08/29/2012 8:58:26 AM

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.  
 PRINT NAME: CURT A. KOBILARCSIK  
 SIGNATURE: *Curt Kobilarsik*  
 DATE: 6-29-12 LICENSE NO. 24756

DRAWN BY MN DATE 09/15/2012  
 DESIGN BY MN DATE 12/01/2010  
 CHECKED BY CAK DATE 05/29/2012



**ANOKA COUNTY  
HIGHWAY DEPT.**

S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

STANDARD PLATES & BASIS OF QUANTITIES  
 Sheet 8 of 282 Sheets



Table with columns: ALIGNMENT, STATION TO STATION, OFFSET (LEFT, RIGHT), CLEARING (TREE, ACRE), GRUBBING (TREE, ACRE), NOTES. Includes data for WB 116 and EB 116 segments, ending with a SUBTOTAL row.

Table with columns: ALIGNMENT, STATION TO STATION, OFFSET (LEFT, RIGHT), CLEARING (TREE, ACRE), GRUBBING (TREE, ACRE), NOTES. Includes data for EB 116 and EB 38 segments, ending with a SUBTOTAL row.

Table with columns: NO, DATE, BY, CKD, APPR, REVISION. Includes a footer line with file name p:102-716-12Plan0271612\_TAB.dgn and date 05/29/2012.

STATEMENT: I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION... SIGNATURE: Curt A. Kobilarski, DATE: 6-29-12, LICENSE NO. 24756

FORM FIELDS: DRAWN BY MN DATE 05/15/2012, DESIGN BY MN DATE 12/01/2010, CHECKED BY CAK DATE 05/29/2012




Table with columns: S.P. 002-716-012, S.P. 198-020-030, S.P. 002-607-021, S.P. 198-020-031, S.P. 198-020-032, S.P. 103-020-014, S.P. 103-020-015

TABULATIONS Sheet 9 of 282 Sheets

CLEARING & GRUBBING SPEC (2101)								A
ALIGNMENT	STATION TO STATION	OFFSET		CLEARING		GRUBBING		NOTES
		LEFT	RIGHT	(TREE)	(ACRE)	(TREE)	(ACRE)	
NB 7	94+57.24		32	1		1		
NB 7	95+83.29		39	1		1		
NB 7	97+73.74		43	1		1		
NB 7	99+05.36		47	1		1		
NB 7	99+18.64		29	1		1		
NB 7	99+38.28		27	1		1		
NB 7	99+60.15		28	1		1		
NB 7	100+01.83		49	1		1		
NB 7	100+12.04		50	1		1		
NB 7	100+20.97		50	1		1		
NB 7	100+23.48		39	1		1		
NB 7	100+29.34		51	1		1		
NB 7	100+39.35		40	1		1		
NB 7	101+18.56		49	1		1		
NB 7	101+51.14		45	1		1		
NB 7	101+58.86		38	1		1		
NB 7	101+66.19		46	1		1		
NB 7	101+66.21		34	1		1		
NB 7	101+73.44		39	1		1		
NB 7	101+80.21		45	1		1		
NB 7	101+80.53		35	1		1		
NB 7	101+89.48		39	1		1		
NB 7	108+22.97		44	2		1		
NB 7	108+52.74		45	2		1		
NB 7	108+96.59		43	2		1		
NB 7	109+55.07		45	1		1		
NB 7	110+26.09		41	1		1		
NB 7	114+25.68		34	1		1		
NB 7	120+00.95		31	1		1		
SB 7	99+43.25		7	1		1		
SB 7	101+01.23	21		1		1		
SB 7	101+02.47	22		1		1		
SB 7	101+29.94	29		6		4		
SB 7	108+10.34	19		1		1		
SB 7	108+19.41	17		1		1		
SB 7	114+19.31	25		3		1		
SB 7	120+75.83	20		1		1		
SUBTOTAL CSAH 7					47		40	
PROJECT TOTAL					173	4.15	134	4.15

BITUMINOUS AND CONCRETE REMOVALS, SAWING AND MILL										B
ALIGNMENT	STATION TO STATION	REMOVE (SPEC. 2104)					SAWING (SPEC. 2104)		MILL (SPEC. 2232)	NOTES
		BITUMINOUS PAVEMENT SQ YD	BITUMINOUS WALK SQ FT	CONCRETE WALK SQ FT	CONCRETE MEDIAN SQ FT	CONC. CURB & GUTTER LIN FT	BITUMINOUS PAVEMENT LIN FT	CONCRETE PAVEMENT LIN FT	BITUMINOUS SURFACE (2") SQ YD	
CSAH 116										
WB 116	9+12 - 17+01	3322			3202	1588	57	449		
WB 116	17+01 - 24+63	3584	5619			1455				
WB 116	24+63 - 32+62	3811				741				
WB 116	32+62 - 53+43	5967				22	18	2		
WB 116	53+43 - 62+76	2855				45	32	4		
WB 116	62+76 - 73+47	3299				242	14	2		
WB 116	73+47 - 78+95	2169				513	24			
WB 116	78+95 - 94+24	386					1569		5142	
WB 116	82+54 - 83+80				444	102	136	24		MEDIAN
WB 116	94+24 - 96+71	20				44	52	8		
EB 116	16+42 - 24+62	1679				6892	821	749	2	
EB 116	24+62 - 32+62	2542				6460	741			
EB 116	32+62 - 52+95	5418								
EB 116	52+95 - 62+06	2347								
EB 116	62+06 - 73+00	3098				2738	221			
EB 116	73+00 - 78+70	2353				3471	540	48	19	
EB 116	78+70 - 80+28							169		211
38TH STREET	12+43 - 15+00	1967					15	44	4	
SUBTOTAL 116		44817	5619			23207	7090	2912	514	5353
CSAH 7										
NB 7	91+26 - 98+65	2232			3481	769	44			
NB 7	98+65 - 102+32	1338			1312	445	40			
NB 7	102+32 - 106+01	1224	3413			431	20			
NB 7	107+73 - 117+36	2750					12			
NB 7	117+36 - 123+79	1728					36			
SB 7	91+26 - 102+30	3415				1098	24			
SB 7	102+30 - 106+02	1611				365				
SB 7	7+98 - 8+04	989		54		441	57	9		ICE ARENA
SB 7	107+73 - 123+80	5426					336			
SUBTOTAL 7			3413	4847		3549	569	9		
PROJECT TOTAL		110347	9032	4847		23207	10639	3481	523	5353

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA. PRINT NAME: CURT A. KOBILARCSIK SIGNATURE: <i>Curt A. Kobilarsik</i> DATE: 6-29-12 LICENSE NO. 24758					DRAWN BY: MN DATE 05/15/2012 DESIGN BY: MN DATE 12/01/2010 CHECKED BY: CAK DATE 05/29/2012		 <b>ANOKA COUNTY HIGHWAY DEPT.</b>		S.P. 002-716-012 S.P. 198-020-031 S.P. 103-020-014			S.P. 198-020-030 S.P. 198-020-032 S.P. 103-020-015			TABULATIONS Sheet 10 of 282 Sheets	
NO	DATE	BY	CKD	APPR	REVISION											
					06/29/2012											





WOOD NOISE BARRIER					G
ALIGNMENT	STATION		OFFSET	HEIGHT LIN FT	SQ FT
	START	END			
CSAH 116					
WB 116	57+60.00	62+39.00	40 LT WB	9	4320
TOTAL					4320

SANITARY/STORM SEWER ADJUSTMENTS									H
STATION	LOCATION		SANITARY			STORM			NOTES
	ALIGN	OFFSET	EXISTING TOC ELEV.	PROPOSED TOC ELEV.	ADJUST EACH	EXISTING TOC ELEV.	PROPOSED TOC ELEV.	ADJUST EACH	
C.S.A.H 116									
74+65.59	116 EB	109.94	870.66	867.30	1				
77+22.54	116 EB	41.49	870.63	870.72	1				
80+18.09	116 EB	31.01	866.56	868.54	1				
10+37.11	116 WB	-19.00				868.28	868.76	1	
91+77.04	116 WB	-23.81				869.94	870.78	1	(1)
91+85.11	116 WB	-39.94				869.79	870.05	1	(1)
92+58.37	116 WB	-34.17						1	(1),(2)
94+19.47	116 WB	-22.83				872.91	872.98	1	(1)
12+29.35	38th	0	872.22	872.28	1				
C.S.A.H. 7									
92+18.05	7 NB	13				861.71	862.02	1	
94+50.91	7 NB	-8.87	863.24	862.97	1				
98+65.04	7 NB	-12	866.68	866.80	1				
102+30.2	7 NB	-13	876.30	875.33	1				
101+80.44	7 SB	-47	874.90	871.68	1				
102+29	7 SB	-14	875.73	874.72	1				
TOTAL					9				6

**NOTES:**

- (1) DONE BY OTHERS.
- (2) EXISTING CASTING TO BE REPLACED AS PER DETAILS ON SHEET 27.

MAILBOX						I
ALIGNMENT	STATION	OFFSET		SALVAGE MAIL BOX SUPPORT (SPEC 2104) (EACH)	INSTALL MAIL BOX SUPPORT (SPEC 2540) (EACH)	RELOCATE MAIL BOX SUPPORT (SPEC 2540) (EACH)
		LEFT	RIGHT			
NB 7	92+38		24	1	1	
NB 7	93+83		24	1	1	
NB 7	94+86		24	1	1	
NB 7	95+74		24	1	1	
NB 7	96+47		24	1	1	
NB 7	97+40		24	1	1	
NB 7	100+95		20	1	1	
SB 7	102+52	68				1
TOTAL				7	7	1

BASE AND BITUMINOUS QUANTITIES								J
LOCATION	DESCRIPTION	BITUMINOUS SURFACE	TYPE SP 12.5 WEAR (SPWEB340F)	TYPE SP 12.5 NON WEAR (SPNWB330B)	PATCHING TYPE SP 12.5 WEAR (SPWEB230B)	TACK COAT	AGGREGATE BASE CLASS 5	
								SQ YD
CSAH 116								
9+11.50	17+01.00	LWB					209	
17+01.00	24+47.50	LWB					263	
16+42.50	24+42.80	LEB					198	
24+42.80	53+46.90	LWB					896	
24+47.50	54+00.00	LEB					862	
53+46.90	62+77.00	LWB					321	
54+00.00	73+00.50	LEB					604	
62+77.00	73+47.40	LWB					316	
73+00.50	78+70.20	LEB					165	
73+47.40	78+95.00	LWB					185	
78+95.00	94+23.77	LWB	SHOULDERING				168	
78+95.00	94+78.00	LWB	OVERLAY				114	
82+54.00	83+80.00		2.5" TEMP. WIDENING				25	
12+43.16	14+72.80	C/L	38TH AVE				182	
SUBTOTAL 116							4394	
CSAH 7								
91+25.85	98+66.40	LNB					659	
91+25.85	98+63.26	LSB					540	
98+63.26	102+30.10	LSB					432	
98+66.40	102+30.25	LNB					470	
102+30.25	106+00.00	LNB					549	
102+30.10	105+87.80	LSB					322	
104+83.00	106+38.00	LNB	2.5" TEMP. WIDENING					
107+54.00	113+54.00	LNB	2.5" TEMP. WIDENING					
107+94.60	113+75.30	LSB					609	
107+99.20	117+36.70	LNB					806	
113+75.30	123+80.30	LSB					1018	
117+36.70	123+78.90	LNB					456	
121+00.00	125+50.00	LNB	2.5" TEMP. WIDENING					
123+78.90	126+90.00	LSB	EXTENDED LANE				107	
123+78.90	126+90.00	LNB	OVERLAY					
8+65.50	13+35.50	C/L	ICE ARENA ACCESS					
SUBTOTAL 7							5968	
PROJECT TOTAL							10362	

- (1) INCLUDES QUANTITY FOR ADDITIONAL 1/4 INCH TO DESIGN PAVEMENT THICKNESS.
- (2) 5" AGGREGATE BASE CLASS 5 INCIDENTAL TO EXTENDED LANE AND PATCHING.
- (3) INCLUDES QUANTITY FOR AGGREGATE SHOULDERING SEE SHEET 8 FOR 'BASIS OF QUANTITIES'.

NO	DATE	BY	CKD	APPR	REVISION

NAME: p:\02-716-12\plan\0271612\_TAB.dgn 06/29/2012 8:58:31 AM

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

PRINT NAME: CURT A. KOBILARCSIK  
 SIGNATURE: *Curt A. Kobilarsik*  
 DATE: 6-29-12 LICENSE NO. 24756

DRAWN BY: MN DATE 05/15/2012  
 DESIGN BY: MN DATE 12/01/2010  
 CHECKED BY: CAK DATE 05/29/2012



**ANOKA COUNTY  
HIGHWAY DEPT.**

S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

TABULATIONS

Sheet 13 of 282 Sheets

CONSTRUCT BITUMINOUS TRAIL						K
STATION TO STATION	ALIGNMENT	OFFSET	SURFACE AREA	TYPE SP 12.5 WEAR (SPWEB230B)		NOTES
				SQ YD	TON	
17+39.30	23+83.50	LWB	30 LT	589	85	COUNTY
17+34.90	23+79.00	LEB	36 RT	595	86	CITY OF ANOKA
25+08.60	53+22.80	LWB	30 LT	2516	362	CITY OF ANDOVER
53+69.70	62+58.30	LWB	30 LT	312	45	CITY OF ANDOVER
62+98.00	73+47.50	LWB	30 LT	923	133	CITY OF ANDOVER
73+47.50	78+92.60	LWB	30 LT	473	68	CITY OF ANDOVER
CSAH 116 (SP 002-716-012) SUBTOTAL					779	
78+92.60	91+98.40	LWB	30 LT	1141	164	CITY OF ANDOVER
92+31.00	94+16.40	LWB	30 LT	160	23	CITY OF ANDOVER
94+51.90	96+65.90	LWB	30 LT	185	27	CITY OF ANDOVER
CSAH 7 (SP 198-002-030) SUBTOTAL					214	
98+93.00	102+05.20	LNB	30 RT	272	39	COUNTY
102+57.50	106+37.30	LNB	31 RT	272	39	COUNTY
106+97.20	117+15.50	LNB	32 RT	814	117	CITY OF ANDOVER
CSAH 7 (SP 002-716-012) SUBTOTAL					195	
PROJECT TOTAL					1188	

RETAINING WALL REMOVAL AND CONSTRUCTION								L	
ALIGNMENT	STATION		LOCATION	REMOVAL		CONSTRUCTION			DESCRIPTION
	START	END		HEIGHT	LENGTH	LENGTH	HEIGHT	BLOCK	
	LIN FT	LIN FT		LIN FT	LIN FT	LIN FT	SQ FT		
SB 7	102+90	103+75	38 LT SB			85	3.0	255	MODULAR BLOCK
NB 7	103+31	106+25	42 RT NB			303	4.5	1363	MODULAR BLOCK
NB 7	105+95	106+15	36 RT NB	2	20				MODULAR BLOCK
TOTAL						20		1618	

BITUMINOUS CURB REMOVAL AND CONSTRUCTION						Q
STATION TO STATION	ALIGNMENT	OFFSET	REMOVE		CONSTRUCT	
			LIN FT	LIN FT	LIN FT	
122+72.00	123+78.90	CSAH 7 NB	13 RT	107	107	
TOTAL				107	107	


DRAINAGE FLUME REMOVAL AND CONSTRUCTION							R
STATION	ALIGNMENT	OFFSET	REMOVE		CONSTRUCT		
			LIN FT	DESCRIPTION	EACH	DESCRIPTION	SQ YD
80+21.00	CSAH 116 -EB	24 RT				CONC	13
94+02.00	CSAH 116 -WB	19 LT		BIT.	1		
122+70.10	CSAH 7 - NB	13 RT		BIT.	1	CONC	10
TOTAL					2		23

CULVERT TABULATION																				M			
APRON NO.	STATION				OFFSET				ALIGNMENT (FROM/TO)	INVERT UPSTREAM	INVERT DOWNSTREAM	FURNISH AND INSTALL											
	FROM	TO	FROM	TO	FROM	TO	FROM	TO				24" RCP CULVERT CL III	24" RC PIPE APRON	TRASH GUARD FOR 24" PIPE APRON	28" SPAN RCP-ARCH CULV CL IIA	28" SPAN RCP-ARCH APRON	TRASH GUARD FOR 28" SPAN PIPE APRON	48" RCP CULVERT CL III	48" RC PIPE APRON	TRASH GUARD FOR 48" PIPE APRON	RIPRAP CL II	GEOTEXTILE FILTER TYPE III	SODDING
	LIN FT	EACH	EACH	LIN FT	EACH	EACH	LIN FT	EACH				EACH	LIN FT	EACH	EACH	CU YD	SQ YD	SQ YD					
02-716-12																							
330	331	43+14.20	43+13.22	52	RT	72	LT	EB/WB	863.97	863.56					166	2	1	12.9	39.0	42			
550	551	68+92.84	69+54.28	56	RT	59	LT	EB/WB	863.28	863.20			123	2	1			5.5	16.8	13			
650	X65	80+55.01	80+55.23	23	LT	56	LT	WB	863.42	863.34	33	1	1							13			
670	X67	87+46.53	87+47.27	22	LT	53	LT	WB	864.48	864.35	29	1	1							13			
X56	560	13+33.07	13+10.26	78	RT	107	RT	38TH	863.24	863.20	23	1						5.5	16.8				
TOTAL											85	3	2	123	2	1	166	2	1	24	73	81	

- OFFSETS ARE TO END OF APRON.  
- PIPE LENGTH DOES NOT INCLUDE APRON.

CONCRETE CURB AND GUTTER, MEDIAN, WALK										O
STATION TO STATION	LOC.	CONCRETE CURB & GUTTER DES. B424	CONCRETE CURB & GUTTER DES. B418	CONCRETE CURB & GUTTER DES. B612	4" CONCRETE WALK	6" CONCRETE WALK (1)	CONCRETE MEDIAN NOSE	PEDESTRIAN CURB RAMP	TRUNCATED DOMES	
		LIN FT	LIN FT	LIN FT	SQ FT	SQ YD	SQ YD	SQ FT	SQ FT	
<b>CSAH 116</b>										
9+11.00	17+01.00	LWB	806	750		4193		12		
16+42.00	24+41.00	LEB	80	662		5419		10	45	8
17+01.00	24+46.00	LWB	710	632						
17+40.00		LEB							56	16
17+42.60		LWB							56	16
23+76.00		LEB							36	12
23+71.00		LWB							35	12
24+41.00	53+00.00	LEB	2708	2697		39690		8		
24+46.00	53+46.00	LWB	2860	2740						
25+14.00		LEB							64	12
25+18.00		LWB							37	12
53+00.00	62+09.00	LEB	920	869		7731		3		
53+21.50		LWB							70	16
53+46.00	62+77.00	LWB	1021	872						
53+72.80		LWB							70	16
62+09.00	73+01.00	LEB	1100	1023		9738		3		
62+56.60		LWB							68	16
62+77.00	73+47.00	LWB	1089	1020						
63+01.70		LWB							68	16
72+54.70		LEB							47	8
73+00.00		LWB							70	8
73+01.00	80+28.00	LEB	694	509		2495		3		
72+68.00		LEB							46	8
73+25.00		LEB							25	8
73+47.00	78+95.35	LWB	541	506						
77+10.00	77+40.00	LEB			84					
78+95.35	91+99.50	LWB	1314							
82+54.00	83+80.00	LWB		68		414		9		
91+99.50		LWB							68	16
92+34.70		LWB							68	16
92+34.70	94+14.30	LWB	238							
94+14.30		LWB							68	16
94+55.80		LWB	23						68	16
96+62.90		LWB	19						68	16
12+43.00	14+69.00	38TH AVE	454			2639				
SUBTOTAL 116			14577	12348	84	72319		48	1133	264
<b>CSAH 7</b>										
91+25.86	98+65.00	LNB	788			3598	80			
91+25.80	98+63.00	LSB	732	57						
98+65.00	102+30.00	LNB	441						37	8
98+40.00		LSB							50	8
98+89.86	106+38.00	LSB	807							
98+97.70	105+94.50	MEDIAN		2796		3298		8		
98+97.00									80	16
99+07.00	105+88.00	LSB				3386			47	8
102+01.50		LNB							76	16
102+60.70	105+99.00	LNB	402							
102+60.70		LNB							76	16
107+49.00	117+20.00	LNB	1019							
106+44.60	113+75.30	LSB	680							
106+06.50		LSB							32	12
106+07.50		LNB							67	12
107+63.30	116+16.30	MEDIAN		1681				10		
107+66.50		LNB							40	12
107+95.00	116+18.00	LSB								
107+99.00	117+37.00	LNB								
117+09.00		LNB							75	16
ICE ARENA ACCESS				916		105			40	8
SUBTOTAL 7			4869	5452	84	10387	80	18	620	132
PROJECT TOTAL			19446	17800	84	82706	80	66	1753	396

NOTE:  
(1) FOR THE WIDTH OF CONCRETE DRIVEWAY APRON AND PAID FOR AS 6" CONCRETE DRIVEWAY PAVEMENT.

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA. PRINT NAME: CURT A. KOBILARCSIK SIGNATURE: <i>Curt Kobilarcsik</i> DATE: 6.29.12 LICENSE NO. 24756					DRAWN BY: MN DATE 05/15/2012 DESIGN BY: MN DATE 12/01/2010 CHECKED BY: CAK DATE 05/29/2012		 <b>ANOKA COUNTY HIGHWAY DEPT.</b>		S.P. 002-716-012 S.P. 198-020-030 S.P. 002-607-021 S.P. 198-020-032 S.P. 103-020-014 S.P. 103-020-015			TABULATIONS Sheet 15 of 282 Sheets	
NO	DATE	BY	CHKD	APPR	REVISION	NAME: p:\02-716-12\Plan\0271612_TAB.dgn 06/29/2012 8:56:33 AM							

TURF ESTABLISHMENT AND EROSION CONTROL															P	
LOCATION			SILT FENCE	FLOTATION SILT CURTAIN	STORM DRAIN INLET PROTECTION	SEEDING	SEED MIXTURE			SODDING	MULCH MATERIAL TYPE 1	DISK ANCHORING	EROSION CONTROL BLANKET (CAT. 3)	FERTILIZER TYPE 3 22-5-10	FERTILIZER TYPE 4 18-1-8	RAPID STABILIZATION METHOD 3
							310	325	350	TYPE SALT RESISTANT						
BEG. STA.	END STA.	ALI	LIN FT	LIN FT	EACH	ACRE	POUND	POUND	POUND	SQ YD	TON	ACRE	SQ YD	POUND	POUND	M GAL
C.S.A.H. 116																
4+20	16+84	EB			8											
17+31	23+93	EB	400		3					1109				80		
25+48	42+04	EB	561		1	0.9			72		1.7	0.9			135	1.9
42+28	62+00	EB	1805			1.5	8		121		0.3	0.2	6546		225	8.1
62+00	72+81	EB	764		1	0.5			44	159			2512	11	75	3.1
73+25	77+14	EB	583			1.0	31		50	149			4646	11	150	5.8
77+35	80+29	EB	302			0.2			19				1064		30	1.3
4+20	16+73	WB		142	5	0.7	25		30		0.7	0.4	1470		105	2.5
17+35	23+99	WB				0.1			10	346	0.2	0.1		25	15	
25+17	37+00	WB	102			0.3			29	1113	0.7	0.3		80	45	
37+00	53+22	WB	2320		1	3.0	36	59	156	1348	0.4	0.2	13441	97	450	18.7
53+63	62+61	WB								3612				261		
62+93	68+11	WB	42							1004				73		
68+11	78+92	WB	1032			0.5			45	699			2581	51	75	
78+92	92+03	WB	1426		5	0.9	13		62	856	0.1	0.1	4102	62	135	5.4
92+27	94+18	WB			2					278				20		
94+50	96+67	WB			1					213				15		
SUBTOTAL			9337	142	27	9.6	113	59	638	10886	4.1	2.2	36362	786	1440	46.8
C.S.A.H. 7																
91+13	98+46	NB			1					712				51		
98+88	102+11	NB								592				43		
102+52	106+49	NB								359				26		
108+00	117+22	NB				0.2			20	857	0.5	0.2		62	30	
117+53	124+06	NB				0.3			28		0.7	0.3			45	
91+13	98+54	SB				0.2			15		0.4	0.2			30	
98+89	106+00	SB							2	968	0.1			70		0.2
107+95	124+08	SB				1.0			81		1.9	1.0			150	
ICE ARENA			355			0.9	27		45		1.1	0.5	1596		135	3.6
SUBTOTAL			355		1	2.6	27		191	3488	4.7	2.2	1596	252	390	3.8
TOTAL			9692	142	28	12.2	140	59	829	14374	8.8	4.4	37958	1038	1830	50.6

NOTES:  
SEE SHEET 8 FOR 'BASIS OF QUANTITIES'.

NO DATE BY CKD APPR REVISION NAME: p:\02-716-12\Plan\0271612_TAB.dgn 06/29/2012 8:56:34 AM					I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA. PRINT NAME: CURT A. KOBILARCSIK SIGNATURE: <i>Curt Kobilarsik</i> DATE: 6-29-12 LICENSE NO. 24756					DRAWN BY: MN DATE 05/15/2012 DESIGN BY: MN DATE 12/01/2010 CHECKED BY: CAK DATE 05/28/2012					 <b>ANOKA COUNTY HIGHWAY DEPT.</b>					S.P. 002-716-012 S.P. 198-020-031 S.P. 103-020-014			S.P. 198-020-030 S.P. 198-020-032 S.P. 103-020-015			S.P. 002-607-021 S.P. 198-020-032 S.P. 103-020-015			TABULATIONS Sheet 16 of 282 Sheets		
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GENERAL NOTES:

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

ALL RELOCATES AND ADJUSTMENTS SUBJECT TO ANOKA COUNTY, CITY OF ANDOVER AND/OR CITY OF ANOKA RIGHT OF WAY.

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

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

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

UTILITY CONTACTS		AA
CITY OF ANDOVER 1685 CROSSTOWN BLVD. ANDOVER, MN 55304 CONTACT: DAVID BERKOWITZ TEL: 763-427-5543	GOPHER STATE ONE CALL FIELD UTILITY LOCATE REQUEST http://www.gopherstateonecall.org TEL 651-454-0002 OR TEL 1-800-252-1166	
CITY OF ANOKA 2015 FIRST AVENUE NORTH ANOKA, MN 55303 CONTACT: GREG LEE TEL 763-576-2700	CENTERPOINT ENERGY 700 WEST LINDEN AVE P.O. BOX 1165 MINNAPOLIS, MN 55440-1165 CONTACT: STEVE GUHANICK TEL 763-427-3456	
CONNEXUS ENERGY 14601 RAMSEY BLVD RAMSEY, MN 55303 CONTACT: DOUG CABAK TEL. 763-323-4268	CENTURYLINK 425 MONROE ST ANOKA, MN 55303 CONTACT: BRUCE HOLLOWAY TEL. 763-712-5020	
COMCAST CABLE 2611 FAIRVIEW AVE ROSEVILLE, MN 55113 CONTACT: DOUG ZAHN TEL 651-493-5316	WINDSTREAM COMMUNICATIONS 9938 STATE HIGHWAY 55 NW PO BOX 340 ANNANDALE, MN 55302 CONTACT: CURTIS OLSON TEL. 320-274-1176	
ACCESS COMMUNICATION TECH 5005 CHESHIRE LN N PLYMOUTH, MN 55446 CONTACT: MIKE DAHLE TEL 763-545-9998	NORTHERN NATURAL GAS 1120 CENTER POINTE DR. SUITE 400 MENDOTA HEIGHTS, MN 55120 CONTACT: TOM DICKSON TEL. 651-456-1777	

ACCESS COMMUNICATIONS						BB
STATION		LOCATION			INPLACE ITEM	REMARKS
BEGIN	END	OFFSET FROM LEB				
CSAH 116						
17+35	19+00	30	RT	TO 25	RT	BUR F/O RELOCATE
19+00	25+39	46	RT	TO 33	RT	BUR F/O LEAVE
25+39	35+00	33	RT	TO 25	RT	BUR F/O LEAVE
35+00	47+81	25	RT	TO 7	RT	BUR F/O RELOCATE
47+81	57+09	7	RT	TO 17	RT	BUR F/O RELOCATE
57+09	67+77	17	RT	TO 23	RT	BUR F/O RELOCATE
67+77	74+30	23	RT	TO 34	RT	BUR F/O RELOCATE
74+30	77+08	34	RT	TO 40	RT	BUR F/O RELOCATE
77+08	82+64	40	RT	TO 43	RT	BUR F/O LEAVE

CITY OF ANDOVER					CC
STATION	LOCATION	INPLACE ITEM	RELOCATE HYDRANT		REMARKS
			EACH		
CSAH 116					
53+48	65	LT	WB	SAN MH	LEAVE
53+70	125	LT	WB	HYDRANT	LEAVE
94+03	28	LT	WB	HYDRANT	1 RELOCATE
94+34	95	LT	WB	SAN MH	LEAVE
			1		

NOTES:

- SEE CITY OF ANDOVER TABULATIONS ON SHEET 150 FOR MORE INFORMATION.
- UTILITY COMPANIES SHALL COORDINATE WITH CITY OF ANDOVER FOR STREET LIGHT LOCATIONS ALONG CSAH 116, BETWEEN CSAH 7 AND CSAH9.

CITY OF ANOKA						DD	
STATION	LOCATION	INPLACE ITEM	ADJUST GATE VALVE		RELOCATE HYDRANT		REMARKS
			EACH		EACH		
CSAH 116							
17+38	44	LT	WB	HYDRANT		1	RELOCATE
17+45	76	LT	WB	SAN MH			LEAVE
17+76	53	LT	WB	SAN MH			LEAVE
76+58	39	RT	EB	GV	1		ADJUST
76+62	46	RT	EB	GV	1		ADJUST
76+64	38	RT	EB	GV	1		ADJUST
77+23	41	RT	EB	SAN MH			ADJUST (1)
80+18	31	RT	EB	SAN MH			ADJUST (1)
12+29	27	LT	38	HYDRANT			LEAVE
12+29			38	SAN MH			ADJUST (1)
12+56	50	RT	38	SAN MH			LEAVE
SUBTOTAL CSAH 116					3	1	
CSAH 7							
91+98	18	RT	NB	GV	1		ADJUST
94+37	21	RT	NB	HYDRANT		1	RELOCATE
94+51	9	LT	NB	SAN MH			ADJUST (1)
96+01	18	RT	NB	GV	1		ADJUST
98+36	1	LT	NB	GV	1		ADJUST
98+65	12	LT	NB	SAN MH			ADJUST (1)
98+99	21	RT	NB	HYDRANT		1	RELOCATE
98+99	12	RT	NB	GV	1		ADJUST
100+48	14	RT	NB	GV	1		ADJUST
102+30	13	LT	NB	SAN MH			ADJUST (1)
102+40	21	RT	NB	GV	1		ADJUST
102+52	39	RT	NB	GV	1		ADJUST
102+55	39	RT	NB	HYDRANT		1	RELOCATE
102+62	5	LT	NB	GV	1		ADJUST
102+29	14	LT	SB	SAN MH			ADJUST (1)
102+41	69	LT	SB	GV	1		ADJUST
SUBTOTAL CSAH 7					9	3	
PROJECT TOTAL					12	4	

NOTES:

- (1) SEE TAB H ON SHEET 13 FOR SANITARY MANHOLE ADJUSTMENTS.
- SEE CITY OF ANOKA WATERMAIN PLAN AND TABULATIONS ON SHEETS 155-157 FOR MORE INFORMATION.
- UTILITY COMPANIES SHALL COORDINATE WITH CITY OF ANOKA FOR STREET LIGHT LOCATIONS ALONG CSAH 7, SOUTH OF CSAH 116.

NO	DATE	BY	CHKD	APPR	REVISION
NAME: p:\02-716-12\Plan\0271612_TAB.dgn					
06/29/2012 8:56:34 AM					

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.  
 PRINT NAME: CURT A. KOBILARCSIK  
 SIGNATURE: *Curt Kobilarsik*  
 DATE: 6-29-12 LICENSE NO. 24756

DRAWN BY MN DATE 05/15/2012  
 DESIGN BY MN DATE 12/01/2010  
 CHECKED BY CAK DATE 05/28/2012



ANOKA COUNTY  
HIGHWAY DEPT.

S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

TABULATIONS



COMCAST CABLE							HH	
STATION		LOCATION			INPLACE ITEM	REMARKS		
BEGIN	END							
CSAH 116								
17+30	19+00	26	RT	EB	35	RT	FIBER	RELOCATE
19+00	24+10	26	RT	EB	35	RT	FIBER	LEAVE
17+30	19+00	46	RT	EB	47	RT	BURIED	RELOCATE
19+00	24+01	46	RT	EB	47	RT	BURIED	LEAVE
24+01	24+01	47	RT	EB	127	LT	BURIED	RELOCATE
24+01	25+11	72	LT	WB	40	LT	BURIED	RELOCATE
25+11	32+52	40	LT	WB	40	LT	BURIED	RELOCATE
25+33	25+67	67	LT	WB	31	LT	FIBER	RELOCATE
25+67	43+09	31	LT	WB	22	LT	FIBER	RELOCATE
26+69		31	LT	WB			SPLICE BOX	RELOCATE
32+52	53+43	40	LT	WB	58	LT	BURIED	RELOCATE
34+70		25	LT	WB			SPLICE BOX	RELOCATE
43+09		22	LT	WB			SPLICE BOX	RELOCATE
43+09	46+53	22	LT	WB	55	LT	FIBER	RELOCATE
46+53	53+22	55	LT	WB	41	LT	FIBER	RELOCATE
53+22	62+56	41	LT	WB	20	LT	FIBER	RELOCATE
53+43	56+98	58	LT	WB	16	LT	BURIED	RELOCATE
56+98	71+28	16	LT	WB	12	LT	BURIED	RELOCATE
62+56	75+26	20	LT	WB	27	LT	FIBER	RELOCATE
71+28	99+03	12	LT	WB	13	LT	BURIED	RELOCATE
75+26		27	LT	WB			SPLICE BOX	RELOCATE
75+26	83+46	27	LT	WB	35	LT	FIBER	RELOCATE
83+46		35	LT	WB			SPLICE BOX	RELOCATE
83+46	91+81	35	LT	WB	30	LT	FIBER	RELOCATE
91+81		30	LT	WB			SPLICE BOX	RELOCATE
91+81	98+67	30	LT	WB	32	LT	FIBER	RELOCATE
92+78		33	LT	WB			SPLICE BOX	RELOCATE
CSAH 7								
90+00	106+29	18	RT	NB	27	RT	FIBER	RELOCATE
106+29	108+86	27	RT	NB	67	LT	FIBER	RELOCATE
90+00	92+33	21	LT	SB	21	LT	OVERHEAD	LEAVE
92+33	101+39	21	LT	SB	2	RT	OVERHEAD	RELOCATE
101+39		2	RT	SB		LT	OVERHEAD	RELOCATE
101+39	101+96	2	RT	SB	9	LT	FIBER	RELOCATE
101+96	106+31	9	LT	SB	10	LT	FIBER	RELOCATE
107+93	118+29	20	LT	SB	24	LT	BURIED	RELOCATE
108+86	121+00	12	LT	SB	39	LT	FIBER	RELOCATE
121+00	124+30	39	LT	SB	39	LT	FIBER	LEAVE
118+29	121+00	24	LT	SB	48	LT	BURIED	RELOCATE
121+00	124+30	48	LT	SB	48	LT	BURIED	LEAVE

CONNEXUS ENERGY							II	
STATION		OFFSET			INPLACE ITEM	REMARKS		
BEGIN	END							
CSAH 116								
9+00	16+57	55	LT	WB	38	LT	BURIED	LEAVE
16+57	24+07	38	LT	WB	30	LT	BURIED	RELOCATE
53+75	60+46	35	LT	WB	14	LT	BURIED	RELOCATE
60+46	67+66	14	LT	WB	27	LT	BURIED	RELOCATE
62+56	69+48	37	LT	WB	20	LT	BURIED	RELOCATE
66+89		52	RT	EB			POWER POLE	LEAVE
66+89	67+58	52	RT	EB	70	LT	BURIED	RELOCATE
67+67		40	LT	WB			POWER POLE	RELOCATE
69+48	78+95	20	LT	WB	25	LT	BURIED	RELOCATE
78+95	89+69	25	LT	WB	9	LT	BURIED	RELOCATE
89+69	90+51	9	LT	WB	48	LT	BURIED	RELOCATE
90+51	92+62	48	LT	WB	39	LT	BURIED	LEAVE
92+62		39	LT	WB			SPLICE BOX	RELOCATE
CSAH 7								
92+18		20	RT	NB			POWER POLE	RELOCATE
94+29		20	RT	NB			POWER POLE	RELOCATE
96+34		20	RT	NB			POWER POLE	RELOCATE
98+37		21	RT	NB			POWER POLE	RELOCATE
100+97		22	RT	NB			POWER POLE	RELOCATE
102+61		23	RT	NB			POWER POLE	RELOCATE
102+97		16	RT	NB			MANHOLE	RELOCATE
104+43		21	RT	NB			POWER POLE	RELOCATE
104+45		21	RT	NB			POWER POLE	RELOCATE
104+68		16	RT	NB			MANHOLE	RELOCATE
106+02		23	RT	NB			POWER POLE	RELOCATE
106+05		21	RT	NB			POWER POLE	RELOCATE
106+07		15	RT	NB			MANHOLE	RELOCATE
106+40		40	RT	NB			POWER POLE	RELOCATE
107+69		25	RT	NB			POWER POLE	RELOCATE
107+83		31	RT	NB			POWER POLE	RELOCATE
108+75		31	RT	NB			POWER POLE	RELOCATE
109+93		32	RT	NB			POWER POLE	RELOCATE
112+10		31	RT	NB			POWER POLE	RELOCATE
114+61		31	RT	NB			POWER POLE	RELOCATE
117+02		31	RT	NB			POWER POLE	RELOCATE
117+71		31	RT	NB			POWER POLE	RELOCATE
119+29		32	RT	NB			POWER POLE	RELOCATE
121+39		31	RT	NB			POWER POLE	LEAVE
123+29		37	LT	SB			POWER POLE	LEAVE

NORTHERN NATURAL GAS							JJ	
STATION		LOCATION			INPLACE ITEM	REMARKS		
BEGIN	END							
CSAH 7								
118+74	118+89	69	RT	NB	50	RT		LEAVE
118+89	121+31	50	RT	NB	153	RT		LEAVE

WINDSTREAM COMMUNICATIONS							KK	
STATION		OFFSET			INPLACE ITEM	REMARKS		
BEGIN	END							
CSAH 116								
17+35	19+00	26	RT	EB	34	RT	F/O	RELOCATE
19+00	24+19	34	RT	EB	57	RT	F/O	LEAVE
CSAH 7								
90+00	96+45	9	LT	SB	0	LT	F/O	RELOCATE
96+45	101+64	0	LT	SB	14	RT	F/O	RELOCATE
101+64	105+49	14	RT	SB	12	RT	F/O	RELOCATE
105+49	106+10	12	RT	SB	0	RT	F/O	RELOCATE

GENERAL NOTES:

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

ALL RELOCATES AND ADJUSTMENTS SUBJECT TO ANOKA COUNTY, CITY OF ANDOVER AND/OR CITY OF ANOKA RIGHT OF WAY.

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NO	DATE	BY	CKD	APPR	REVISION

NAME: p:\02-716-12\Plan\0271612\_TAB.dgn 06/29/2012 8:56:36 AM

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

PRINT NAME: CURT A. KOBILARCSIK

SIGNATURE: *Curt Kobilarcsik*

DATE: 6-29-12 LICENSE NO. 24756

DRAWN BY: MN DATE 05/15/2012

DESIGN BY: MN DATE 12/01/2010

CHECKED BY: CAK DATE 05/29/2012



ANOKA COUNTY  
HIGHWAY DEPT.

S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

TABULATIONS





10/11/11

EARTHWORK SUMMARY							
	EXCAVATION (EV)				EMBANKMENT (CV)		
	SUITABLE (CY)	SUBGRADE (CY)	TOPSOIL (CY)	MUCK (CY)	SUITABLE (CY)	SELECT GRANULAR (CY)	TOPSOIL (CY)
SP. 02-716-12 CSAH 116	15,918	13,397	7,305	79,373	23,301	100,661	4,127
SP. 02-716-12 CSAH 7	13,164	9,071	2,112		3,169	10,438	1,841
S.P. 198-020-030 Trail	1,280	747	846	3,057	2,015	5,927	493
<b>TOTAL</b>	<b>30,362</b>	<b>23,215</b>	<b>10,263</b>	<b>82,430</b>	<b>28,485</b>	<b>117,026</b>	<b>6,461</b>

GENERAL NOTES:

- A - TO THE EXTENT POSSIBLE OR AT THE DIRECTION OF THE ENGINEER, WHERE THE ENGINEER DEEMS THE SUITABLE MATERIAL ACCEPTABLE, THE CONTRACTOR SHALL BE REQUIRED TO USE THE ON SITE EXCAVATED MATERIAL TO OFFSET THE SHORTAGE OF SELECT GRANULAR MATERIAL WITH NO ADDITIONAL COMPENSATION.
- B - SEE SOILS AND CONSTRUCTION NOTES FOR MATERIAL DEFINITIONS AND ADDITIONAL INFORMATION. ALL MATERIAL NOT USED ON THE PROJECT SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE PROJECT LIMITS WITH NO DIRECT PAYMENT THEREFORE. THE MATERIAL QUANTITY IS BASED ON ESTIMATED QUANTITIES. DISPOSAL SHALL BE IN ACCORDANCE WITH SPEC. 2105. THE CONTRACTOR SHALL OBTAIN APPROVAL FROM THE ENGINEER BEFORE HAULING ANY MATERIAL OFF SITE.

EARTHWORK BALANCE							
EXCAVATION (CU.YD.)				EMBANKMENT (CU.YD.)		(+ EXCESS or (-) SHORTAGE (CU.YD.)	
COMMON EXCAVATION (BID ITEM) 40,625	1 SUITABLE	42,776 (EV)	96,353 = (CV) 74,118 130% SHRINKAGE FACT.	SUITABLE GRADING	(CV)	145,511 (CV)	6 SELECT GRANULAR -79,725 (LV) (SHORTAGE) (BID ITEM)
	(BID ITEM) SUBGRADE	23,215 (EV)			28,485		
	COMMON	30,362 (EV)	117,026				
MUCK EXCAVATION (BID ITEM) 82,430	3 SUITABLE	27,535 (EV)	10,263 = (CV) 7,895 130% SHRINKAGE FACT.	TOPSOIL DRESSING	(CV)	TOPSOIL	1,864 (LV) (EXCESS)
	MUCK	54,895 (EV)		6,461			
PONDS EXCAVATION (BID ITEM) 22,416	4 SUITABLE	15,241 (EV)	7,175 = (CV) 5,519 130% SHRINKAGE FACT.	MUCK DISPOSAL	(CV)	MUCK	32,161 (EV) (EXCESS)
	UNSUITABLE	7,175 (EV)		2,734			
<b>AVAILABLE</b>				<b>NEEDS</b>		<b>BALANCE</b>	

- 1 SUITABLE MATERIAL INCLUDES: 27,535 C.Y. FROM MUCK EXCAVATION, AND 15,241 C.Y. FROM POND EXCAVATION.
- 2 INCLUDES COMMON EXCAVATION + SUBGRADE + SUITABLE MATERIAL FROM MUCK EXCAVATION AND POND EXCAVATION, THAT WILL MEET REQUIREMENT OF SELECT GRANULAR. (SPEC. 3149.2B2). (SEE GENERAL NOTE)
- 3 MUCK EXCAVATION INCLUDES SUITABLE MATERIAL (27,257 C.Y. CSAH 116 AND 278 C.Y. SHOULDERING). (SEE CROSS-SECTIONS)
- 4 PONDS EXCAVATION INCLUDES SUITABLE MATERIAL SEE SHEET NO21.
- 5 INCLUDES MUCK BACKFILL MATERIAL.
- 6 INCLUDES CREDIT FOR SLOPE FILL BY MUCK DISPOSAL 10,066 C.Y. (CV). (SEE GENERAL NOTE)

CONSTRUCTION NOTES

1. SUITABLE GRADING MATERIAL ON THIS PROJECT SHALL CONSIST OF ALL SOILS ENCOUNTERED WITH THE EXCEPTION OF SLOPE DRESSING, DEBRIS, ORGANIC MATERIAL, MUCK AND OTHER UNSUITABLE MATERIAL.
2. ITEMS REFERRED TO AS INCIDENTAL ON THIS PROJECT SHALL BE CONSIDERED INCIDENTAL WITH NO DIRECT COMPENSATION MADE THEREFORE.
3. SELECT GRANULAR MATERIAL SHALL MEET THE REQUIREMENTS OF SPEC. 3149.2B2, OR AS DIRECTED BY THE ENGINEER.
4. BITUMINOUS AND CONCRETE ITEMS REMOVED BY CONSTRUCTION SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL EITHER BE RECYCLED OR DISPOSED OF OFF THE PROJECT, IN ACCORDANCE WITH THE PROVISIONS OF SPEC. 2104.3C3 WITH NO DIRECT COMPENSATION MADE THEREFORE.
5. COMPACTION OF THE GRADING ITEMS OF THIS PROJECT, BOTH PERMANENT AND TEMPORARY, SHALL BE BY THE "SPECIFIED DENSITY METHOD", EXCEPT WHEN WITHIN 3 FEET OF THE WATER TABLE, THEN BY THE "QUALITY COMPACTION METHOD" OR AS DIRECTED BY THE ENGINEER.
6. COMPACTION OF THE AGGREGATE BASE ITEMS OF THIS PROJECT, BOTH PERMANENT AND TEMPORARY, SHALL BE BY THE "SPECIFIED DENSITY METHOD" EXCEPT WHEN THE CONTRACTOR ELECTS TO USE RECYCLED MATERIALS FOR THE AGGREGATE BASE ITEMS, THEN THE "QUALITY COMPACTION METHOD" SHALL BE UTILIZED.
7. WHERE WIDENING ADJACENT TO EXISTING PAVEMENT, CUT VERTICALLY TO THE BOTTOM OF THE CLASS 5 AGGREGATE BASE AND THEN AT A 1V:1/2H SLOPE TO THE BOTTOM OF THE BOTTOM OF THE RECOMMENDED SUBGRADE EXCAVATION (AS SHOWN ON THE TYPICAL SECTIONS AND THE CROSS SECTIONS). BACKFILL PROMPTLY TO AVOID UNDERMINING THE EXISTING PAVEMENT.
8. PROVIDE 1:20 LONGITUDINAL TAPERS BETWEEN CHANGES IN SUBGRADE AND SUBCUT DEPTHS.
9. USE TACK COAT BETWEEN ALL BITUMINOUS MIXTURES AND WHERE CONCRETE CURBING ABUTS BITUMINOUS MIXTURES. THE BITUMINOUS TACK COAT MATERIAL SHALL BE APPLIED AT A UNIFORM RATE OF 0.05 GAL./SQ. YD. BETWEEN BITUMINOUS LAYERS. APPLICATION RATES ARE APPLICABLE FOR UNDILUTED EMULSIONS (AS SUPPLIED FROM THE REFINERY). ASPHALT EMULSIONS MAY BE FURTHER DILUTED IN THE FIELD IN ACCORDANCE WITH SPEC. 2357.
10. STRIP AND REUSE AS SLOPE DRESSING ALL EXISTING TOPSOIL, WHERE PRESENT, IN AREAS TO BE DISTURBED BY CONSTRUCTION. APPROXIMATE DIMENSIONS ENCOUNTERED ARE ASSUMED TO BE 0 INCHES TO 24 INCHES, AND AVERAGE IS 3 INCHES. (CONTRACTOR TO VERIFY PRIOR TO PLACING BID) NO WARRANTY MADE ON THIS INFORMATION.
11. PLACE A MINIMUM OF 4 INCHES OF SLOPE DRESSING ON ALL AREAS SCHEDULED FOR PERMANENT TURF ESTABLISHMENT. ALL EXCESS TOPSOIL SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE DISPOSED OF OUTSIDE THE RIGHT-OF-WAY.
12. DITCH GRADE ELEVATIONS ON THE CROSS SECTIONS AND PROFILE DRAWINGS ARE AT THE BOTTOM OF TOPSOIL. ON ALL DRAWINGS WITH CONTOURS, THE ELEVATIONS ARE AT THE TOP OF TOPSOIL.
13. DITCH BOTTOMS, TOE OF FILL, CUT RUNOUTS, AND THE TOP EDGE OF THE BACKSLOPES SHALL BE ROUNDED REGARDLESS OF THE SECTION USED ON THE CROSS SECTION SHEETS.
14. SOIL BORINGS ALONG THE PROJECT INDICATE THE EXISTING CSAH 57 AND CSAH 116 BITUMINOUS PAVEMENT AVERAGES 6 INCHES THICK. FOR INFORMATION ONLY. NO WARRANTY ON THIS INFORMATION. CONTRACTOR SHALL VERIFY PRIOR TO PLACING BID.
15. ALL SILT FENCING AS SHOWN IN THE PLANS SHALL BE IN PLACE PRIOR TO THE COMMENCEMENT OF GRADING OPERATIONS.
16. EXPECT WET CONDITIONS IN MUCK EXCAVATION AND POND EXCAVATION AREAS. CLEAN CRUSHED ROCK WILL LIKELY BE NECESSARY TO STABILIZE THE BOTTOM OF THE MUCK EXCAVATION FOR PLACEMENT OF FILL. DEWATERING WITH SUMP PUMPS CAN ALSO BE EXPECTED. THIS IS INCIDENTAL TO MUCK EXCAVATION AND BACKFILL, AND POND EXCAVATION.

NO	DATE	BY	CKD	APPR	REVISION

NAME: p:102-716-12plan0271612\_EW\_SUM.dgn 06/28/2012 7:30:01 AM

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

PRINT NAME: CURT A. KOBIARCSIK

SIGNATURE: *Curt A. Kobiarsik*

DATE: 6-29-12 LICENSE NO. 24756

DRAWN BY MN DATE 05/15/2012

DESIGN BY MN DATE 12/01/2010

CHECKED BY CAK DATE 05/29/2012



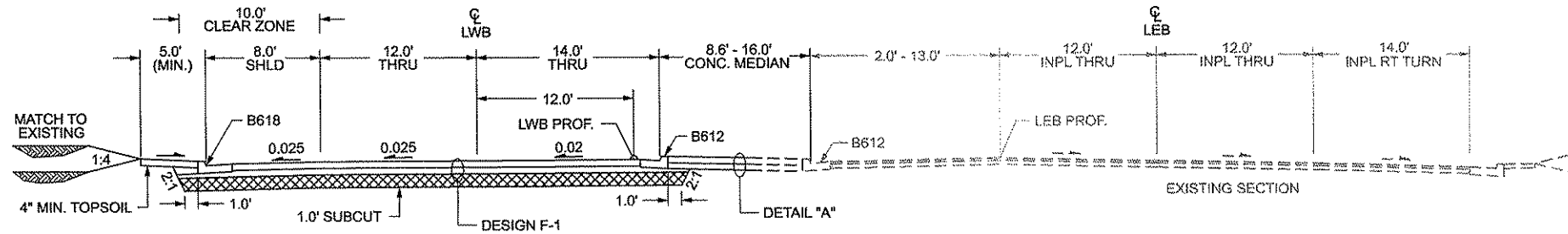
ANOKA COUNTY  
HIGHWAY DEPT.

S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

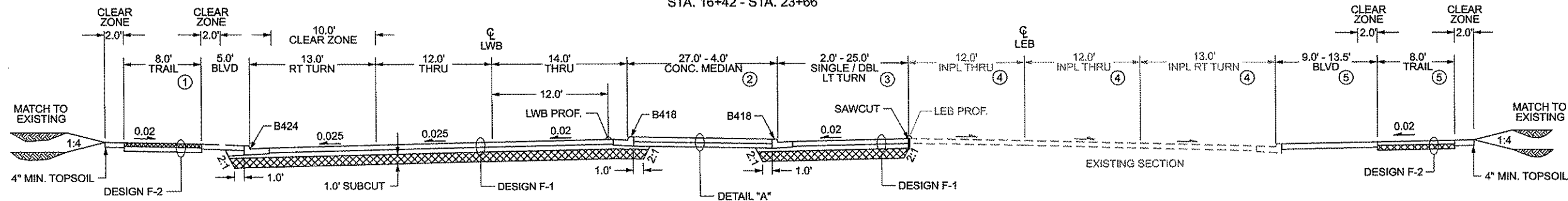
EARTH WORK SUMMARY

Sheet 22 of 282 Sheets

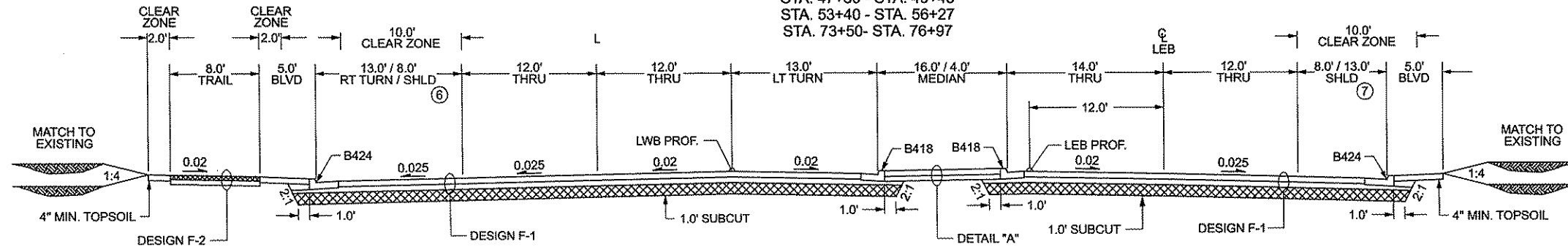
C.S.A.H. 116 (BUNKER LAKE BLVD)  
STA. 9+28 - STA. 16+42



C.S.A.H. 116 (BUNKER LAKE BLVD)  
STA. 16+42 - STA. 23+66



C.S.A.H. 116 (BUNKER LAKE BLVD)  
STA. 25+25 - STA. 30+06  
STA. 47+80 - STA. 49+45  
STA. 53+40 - STA. 56+27  
STA. 73+50 - STA. 76+97



NOTES:

- ① STA. 16+46 TO STA. 16+70, 5' CONC. WALK  
STA. 17+46 BEGIN 8' BITUMINOUS TRAIL
- ② STA. 16+72 TO STA. 17+24, NO MEDIAN.
- ③ STA. 17+82 TO STA. 20+11, TAPER 2.0' TO 25.0'.
- ④ STA. 23+00 BEGIN FULL WIDTH CONSTRUCTION.
- ⑤ STA. 17+34 BEGIN CONSTRUCTION.
- ⑥ STA. 75+50 - STA. 76+97 8.0' SHOULDER.
- ⑦ STA. 52+02 - STA. 54+79 13.0' SHOULDER.

GENERAL NOTES:

- 1) ALL CROSS SLOPES ARE EXPRESSED IN FT/FT.
- 2) ALL STATIONINGS ON CSAH 116 BASED ON EASTBOUND ALIGNMENT.
- 3) SEE CONSTRUCTION PLAN SHEETS 82 - 92 AND CHART ON SHEET 24 FOR TURN LANE LOCATIONS.
- 4) SEE SUPERELEVATION PLAN SHEETS 105 - 110 FOR CROSS SLOPE TRANSITION AND SUPERELEVATION.

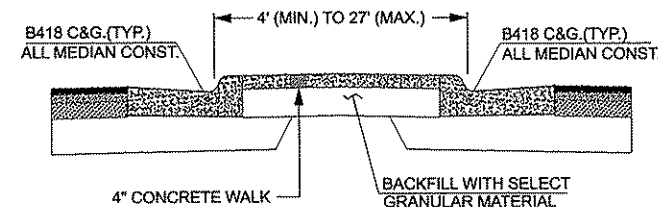
DESIGN F-2  
(BIT. TRAIL)

- 2.5" TYPE SP12.5 WEARING COURSE MIXTURE (2,B) SPWEB230B
- 4.0" AGGREGATE BASE, CLASS 5 INCIDENTAL (MNDOT SPEC. 2211) (CRUSHED) AGGREGATE SHALL EXTEND 6" ON EITHER SIDE OF BITUMINOUS TRAIL

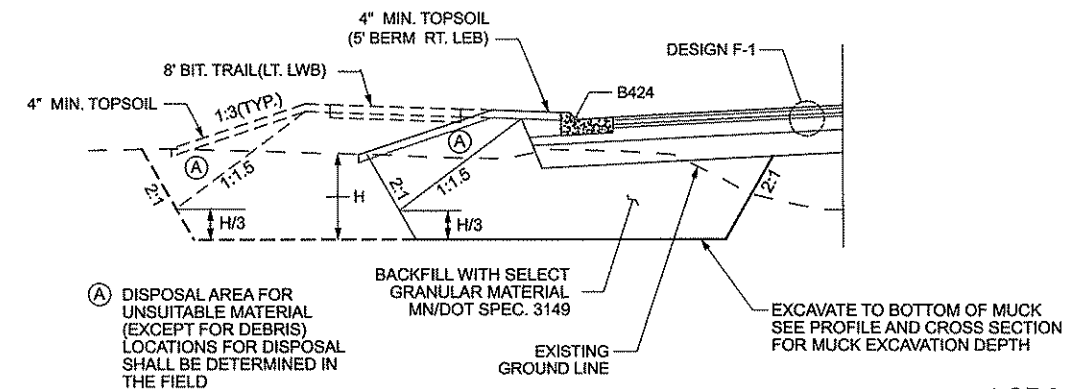
DESIGN F-1

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

DETAIL "A"



TYPICAL MUCK EXCAVATION DETAIL  
SEE CROSS SECTIONS FOR LOCATIONS



NO	DATE	BY	CHKD	APPR	REVISION

NAME: p102-716-12\plan10271612\_TYP.dgn 06/28/2012 7:30:05 AM

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.  
PRINT NAME: CURT A. KOBILARCSIK  
SIGNATURE: *Curt A. Kobilarscik*  
DATE: 6-29-12 LICENSE NO. 24758

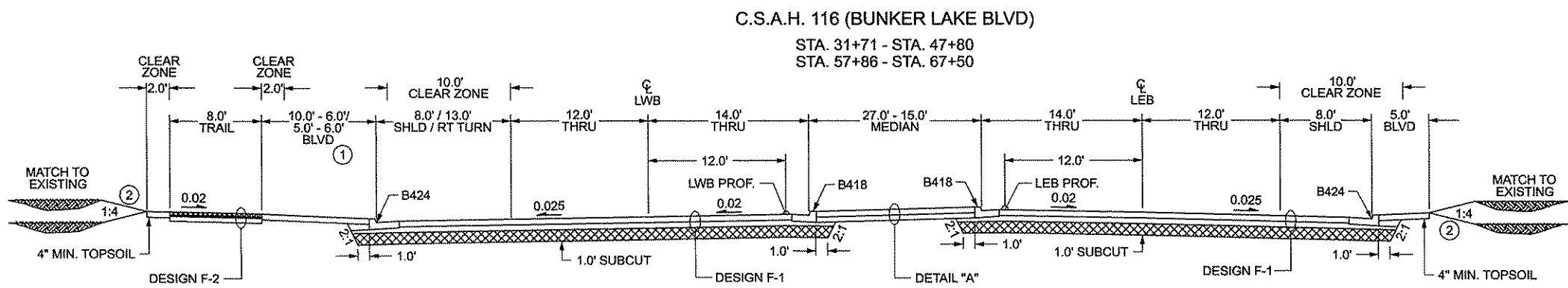
DRAWN BY MN DATE 05/15/2012  
DESIGN BY MN DATE 12/01/2010  
CHECKED BY CAK DATE 05/29/2012



ANOKA COUNTY  
HIGHWAY DEPT.

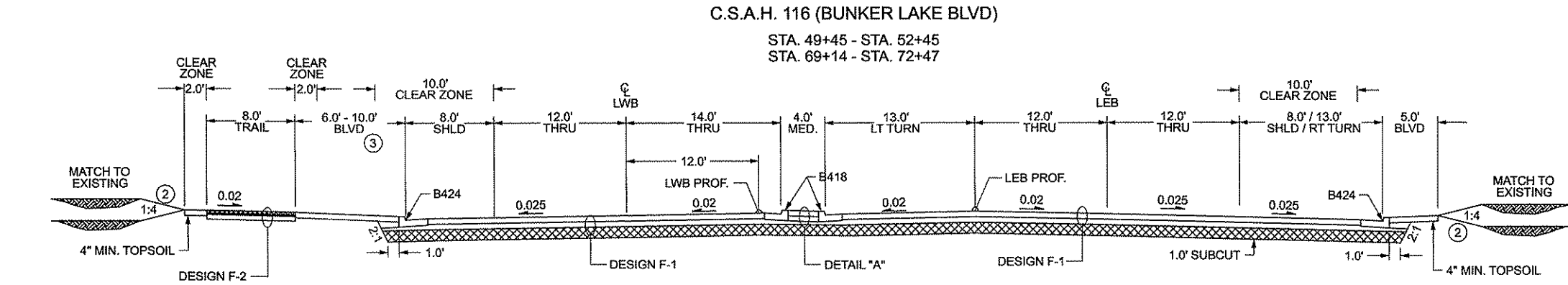
S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

CSAH 116  
TYPICAL SECTIONS  
Sheet 23 of 282 Sheets



TURN LANE LOCATIONS					
ALIGNMENT	STATION TO STATION*	LOCATION	DESCRIPTION	TAPER	
116 EB	12+60 - 16+72	LT.	LEFT TURN	EXISTING	
116 EB	17+81 - 23+66	LT.	DBL LEFT TURN	1:15	
116 EB	20+27 - 23+43	RT.	RIGHT TURN	EXISTING	
116 EB	47+80 - 52+45	LT.	LEFT TURN	1:15	
116 EB	67+49 - 72+47	LT.	LEFT TURN	1:15	
116 EB	68+73 - 72+46	RT.	RIGHT TURN	1:15	
116 WB	17+64 - 21+96	LT.	RIGHT TURN	-	
116 WB	25+26 - 31+71	RT.	LEFT TURN	1:15	
116 WB	25+49 - 29+23	LT.	RIGHT TURN	1:15	
116 WB	53-90 - 58+55	RT.	LEFT TURN	1:15	
116 WB	53+91 - 57+68	LT.	RIGHT TURN	1:15	
116 WB	63+23 - 66+98	LT.	RIGHT TURN	1:15	
116 WB	73+94 - 78+95	RT.	LEFT TURN	1:15	
38TH AVE	12+24 - 15+00	RT.	RIGHT TURN	1:15	

\* STATION RANGE INCLUDES TAPER SECTION.

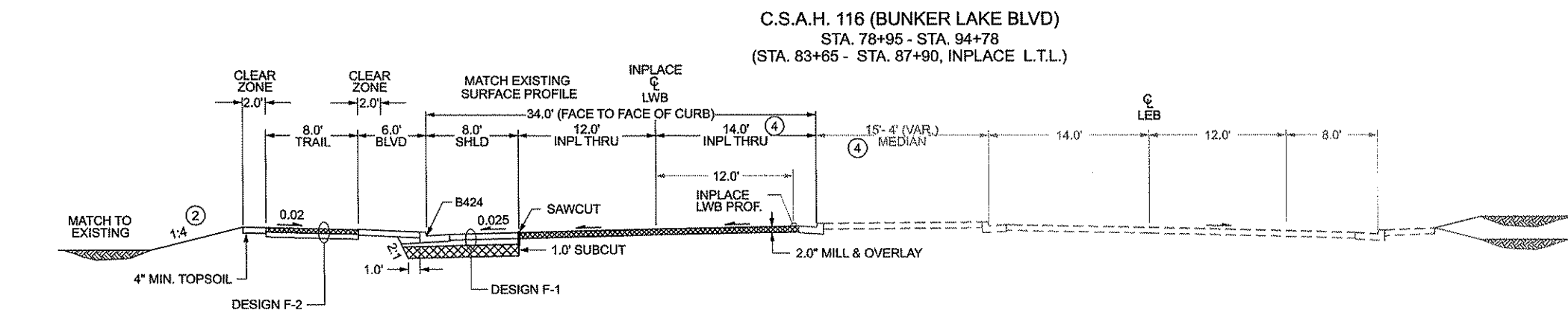


**NOTES:**

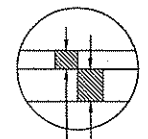
- ① STA 41+83 - STA 43+10, TAPER 10.0' TO 6.0'  
STA 65+69 - STA 66+29, TAPER 5.0' TO 6.0'
- ② 1:3 FILL SLOPE TO IMPACTED WETLAND AREA (SEE CROSS-SECTIONS FOR LOCATION)
- ③ STA 51+98.5 - STA 52+83.8, TAPER 6.0' TO 10.0' BLVD  
STA 72+55.3 - STA 72+75.8, TAPER 6.0' TO 7.0' BLVD  
STA 73+89.0 - STA 74+09.5, TAPER 7.0' TO 6.0' BLVD
- ④ STA 83+65 - STA 87+90, INPLACE LT TURN LANE

**GENERAL NOTES:**

- 1) ALL CROSS SLOPES ARE EXPRESSED IN FT/FT.
- 2) ALL STATIONINGS ON CSAH 116 BASED ON EASTBOUND ALIGNMENT.
- 3) SEE CONSTRUCTION PLAN SHEETS 82 - 92 AND CHART ABOVE FOR TURN LANE LOCATIONS.
- 4) SEE SUPERELEVATION PLAN SHEETS 105 110 FOR CROSS SLOPE TRANSITION AND SUPERELEVATION.

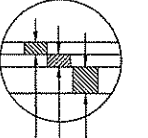


**DESIGN F-3  
CITY OF ANDOVER**

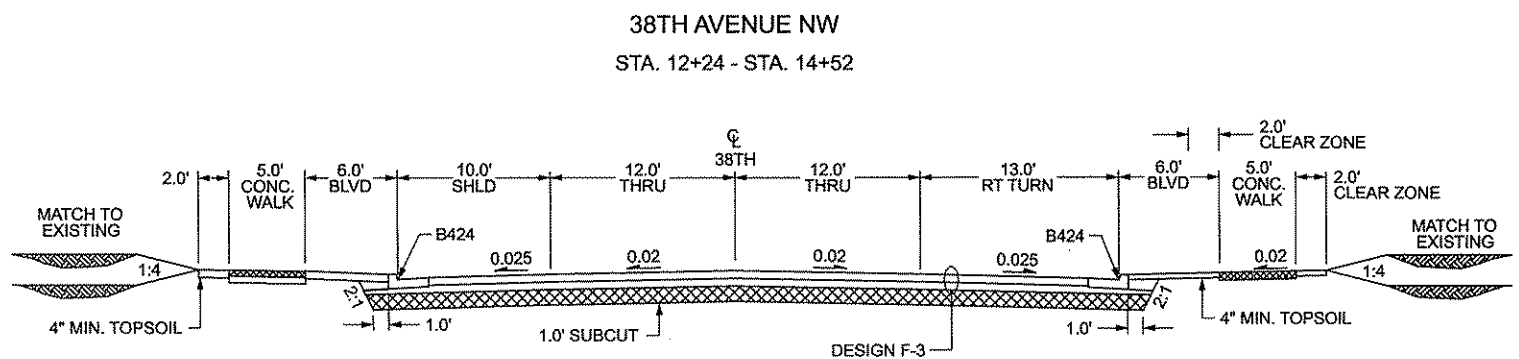


3.0" TYPE SP 12.5 WEARING COURSE MIXTURE (3,F) SPWEB340F  
5.0" AGGREGATE BASE, CLASS 5 (MNDOT SPEC. 2211) (CRUSHED)

**DESIGN F-3  
CITY OF ANOKA**



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



NO	DATE	BY	CKD	APPR	REVISION

NAME: p102-716-12\plan10271612\_TYP.dgn  
06/28/2012 7:30:07 AM

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.  
PRINT NAME: CURT A. KOBILARCSIK  
SIGNATURE: *Curt A. Kobilarsik*  
DATE: 6-29-12 LICENSE NO. 24756

DRAWN BY MN DATE 05/15/2012  
DESIGN BY MN DATE 12/01/2010  
CHECKED BY CAK DATE 05/29/2012

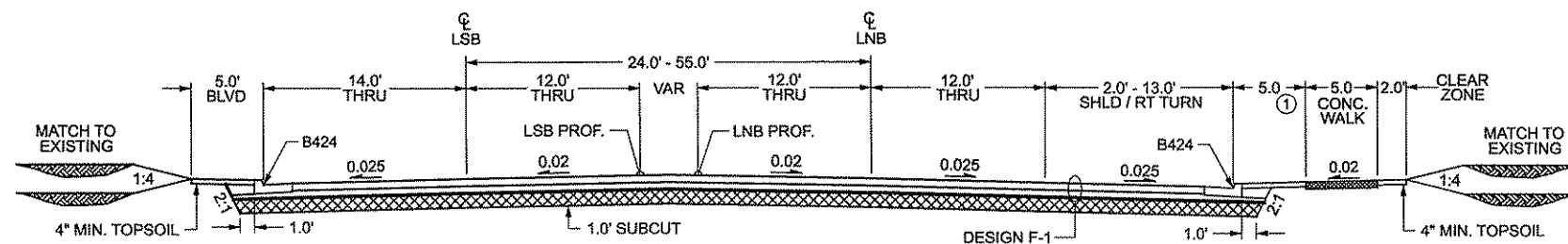


S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

CSAH 116  
TYPICAL SECTIONS  
Sheet 24 of 282 Sheets



C.S.A.H. 7 (7TH AVENUE)  
STA. 91+26 - STA. 98+24



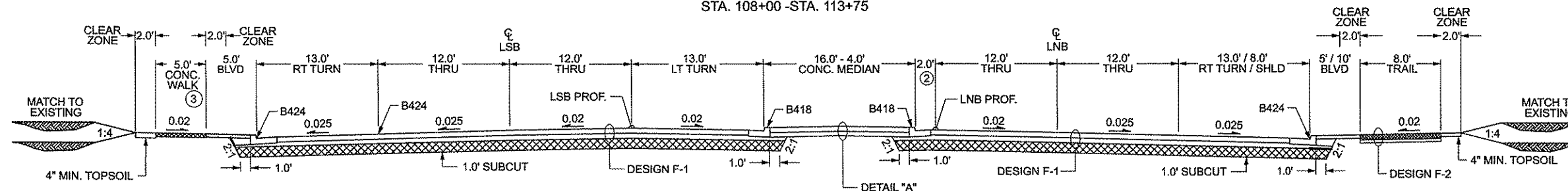
NOTES:

- ① STA. 91+26 TO STA 92+47, 0' TO 5.0' BLVD.
- ② STA. 99+72 TO STA. 102+02, TAPER 2.0' TO 25.0'.
- ③ STA. 99+00 TO STA. 102+02, CONC. WALK SECTION.
- ④ STA. 103+31 TO STA. 106+25 SEE DETAILS ON SHEET 26.
- ⑤ CONC. MEDIAN ENDS AT STA 16+21.

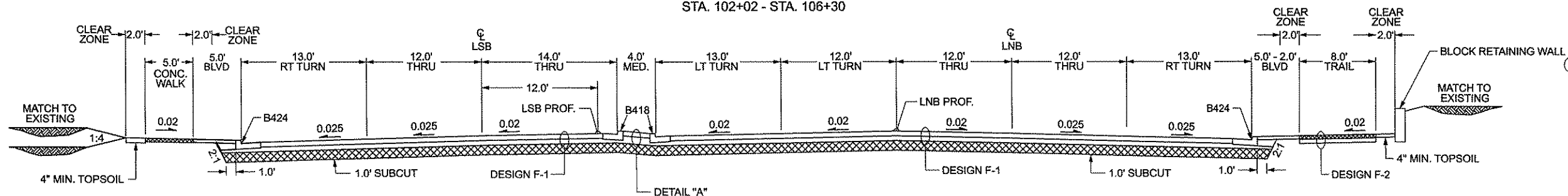
GENERAL NOTES:

- 1) ALL CROSS SLOPES ARE EXPRESSED IN FT/FT.
- 2) ALL STATIONINGS ON CSAH 7 BASED ON NORTHBOUND ALIGNMENT.
- 3) SEE CONSTRUCTION PLAN SHEETS 82 - 92 AND CHART ON SHEET 26 FOR TURN LANE LOCATIONS.

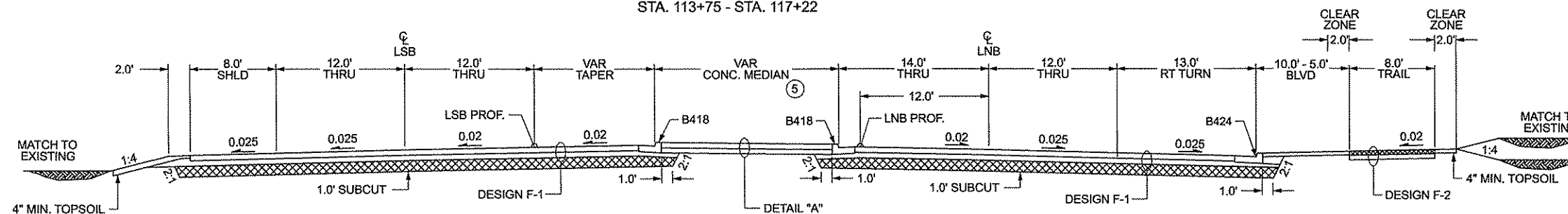
C.S.A.H. 7 (7TH AVENUE)  
STA. 99+00 - STA. 102+02  
STA. 108+00 - STA. 113+75



C.S.A.H. 7 (7TH AVENUE)  
STA. 102+02 - STA. 106+30



C.S.A.H. 7 (7TH AVENUE)  
STA. 113+75 - STA. 117+22



NO	DATE	BY	CKD	APPR	REVISION
NAME: p:\02-716-12\plant\0271612_TYP.dgn					
06/28/2012 7:30:08 AM					

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

PRINT NAME: CURT A. KOBILARCSIK

SIGNATURE: *Curt A. Kobilarsik*

DATE: 6-29-12 LICENSE NO. 24756

DRAWN BY: MN DATE 05/15/2012

DESIGN BY: MN DATE 12/01/2010

CHECKED BY: CAK DATE 05/29/2012

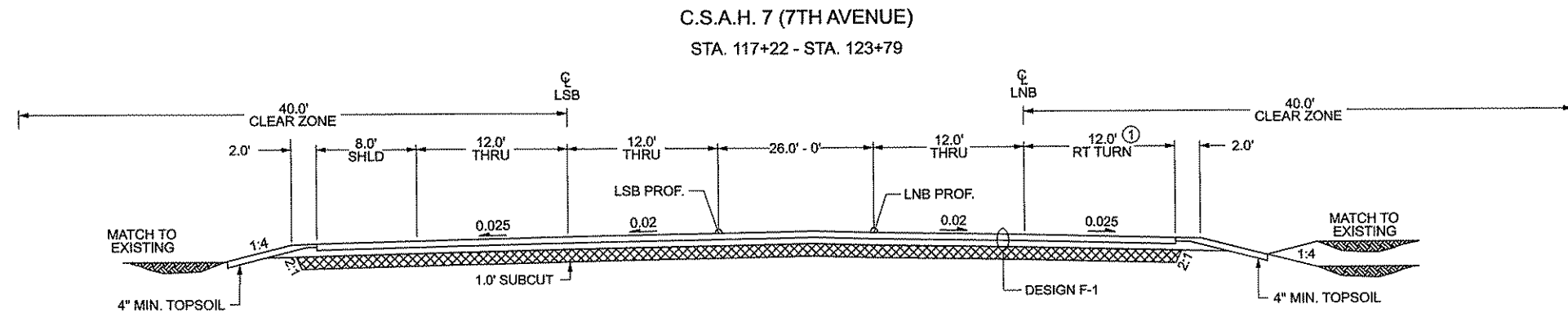


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S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

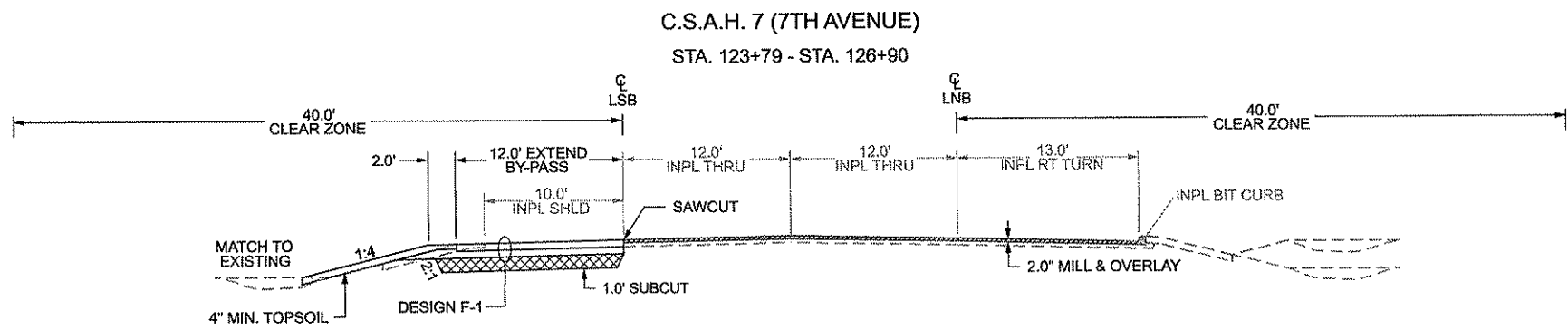
CSAH 7  
TYPICAL SECTIONS

Sheet 25 of 282 Sheets



TURN LANE LOCATIONS					
ALIGNMENT	STATION TO STATION*	LOCATION	DESCRIPTION	TAPER	
7 NB	93+81 - 98+18	RT.	RIGHT TURN	1:15	
7 NB	95+20 - 98+28	LT.	LEFT TURN-STRIPE	1:10	
7 NB	99+18 - 101+18	RT.	RIGHT TURN	-	
7 NB	99+72 - 106+01	LT.	DBL LEFT TURN	1:10	
7 NB	102+82 - 105+99	RT.	RIGHT TURN	-	
7 NB	113+49 - 116+91	RT.	RIGHT TURN	1:15	
7 NB	117+80 - 126+90	RT.	RIGHT TURN	-	
7 SB	99+01 - 102+02	RT.	LEFT TURN	1:10	
7 SB	99+28 - 103+00	LT.	RIGHT TURN	-	
7 SB	107+72 - 113+55	RT.	LEFT TURN	1:15	
7 SB	107+95 - 111+64	LT.	RIGHT TURN	1:15	
40TH LN	11+60 - 13+53	RT.	RIGHT TURN	-	

\* STATION RANGE INCLUDES TAPER SECTION.

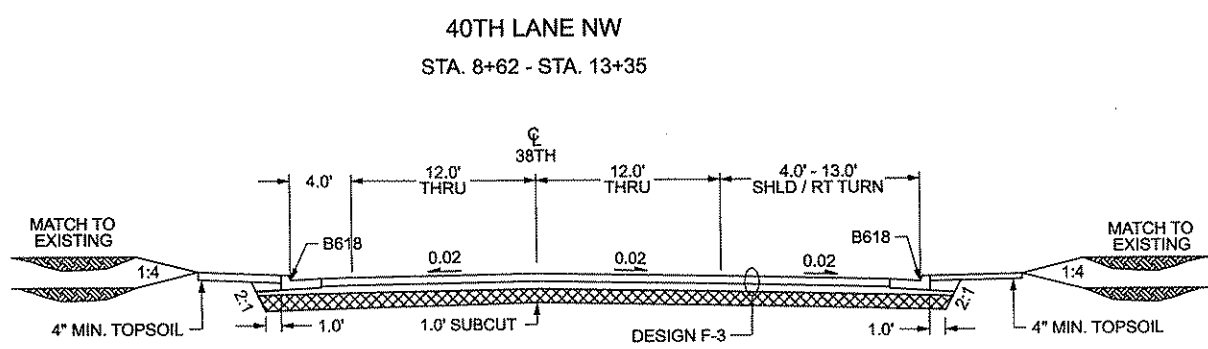


**GENERAL NOTES:**

- 1) ALL CROSS SLOPES ARE EXPRESSED IN FT/FT.
- 2) ALL STATIONINGS ON CSAH 7 BASED ON NB ALIGNMENT.
- 3) SEE CONSTRUCTION PLAN SHEETS 82 - 92 AND CHART ABOVE FOR TURN LANE LOCATIONS.

**NOTES:**

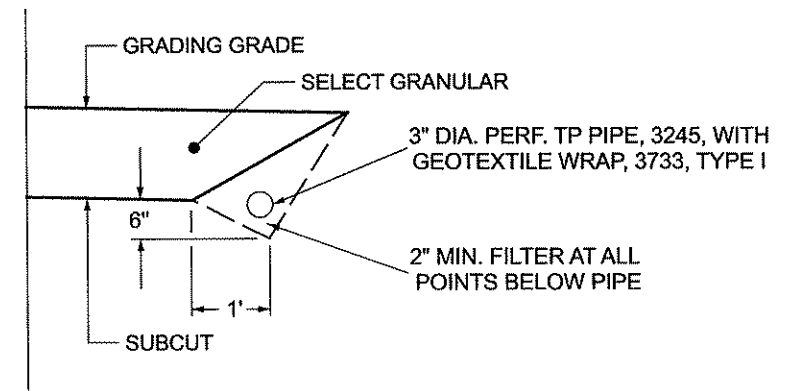
- ① STA. 122+71.90 TO STA 123+79.00, 13' RIGHT TU. LN. AND BIT. CURB (MATCH TO INPLACE BIT. CURB)



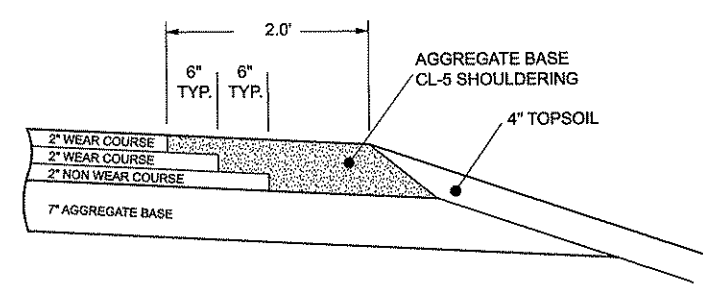
NOTE: SEE SHEET NO. 24 FOR 140TH AVE BITUMINOUS THICKNESS.

**SUBSURFACE DRAIN DETAIL**

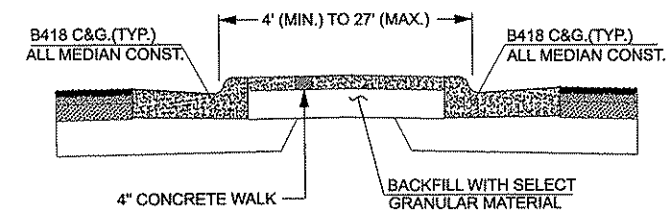
SEE DRAINAGE PLANS FOR LOCATIONS



**BITUMINOUS EDGE AND AGGREGATE SHOULDERING DETAIL**

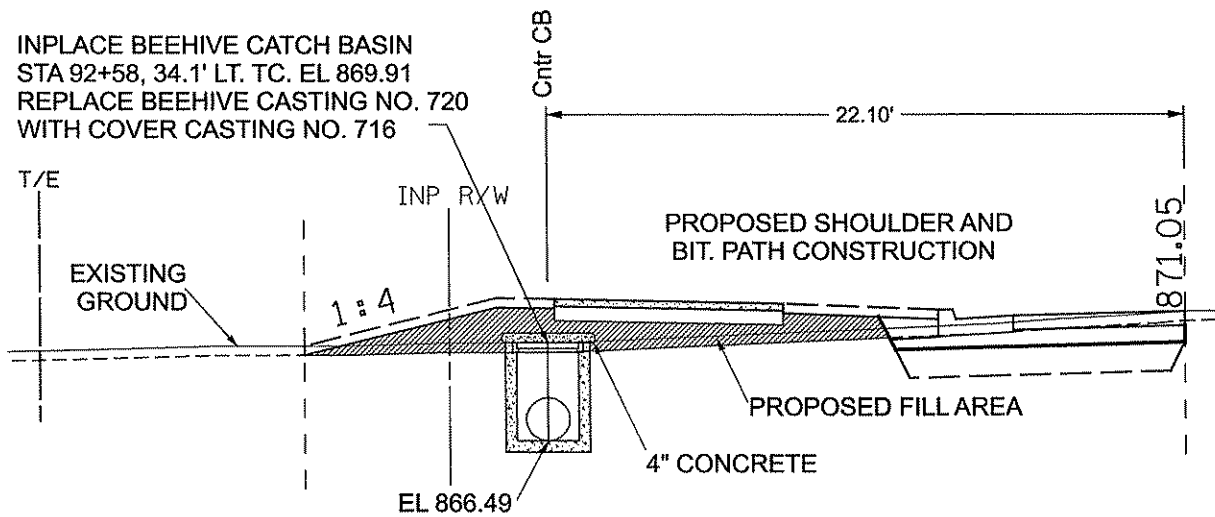


**DETAIL "A"**



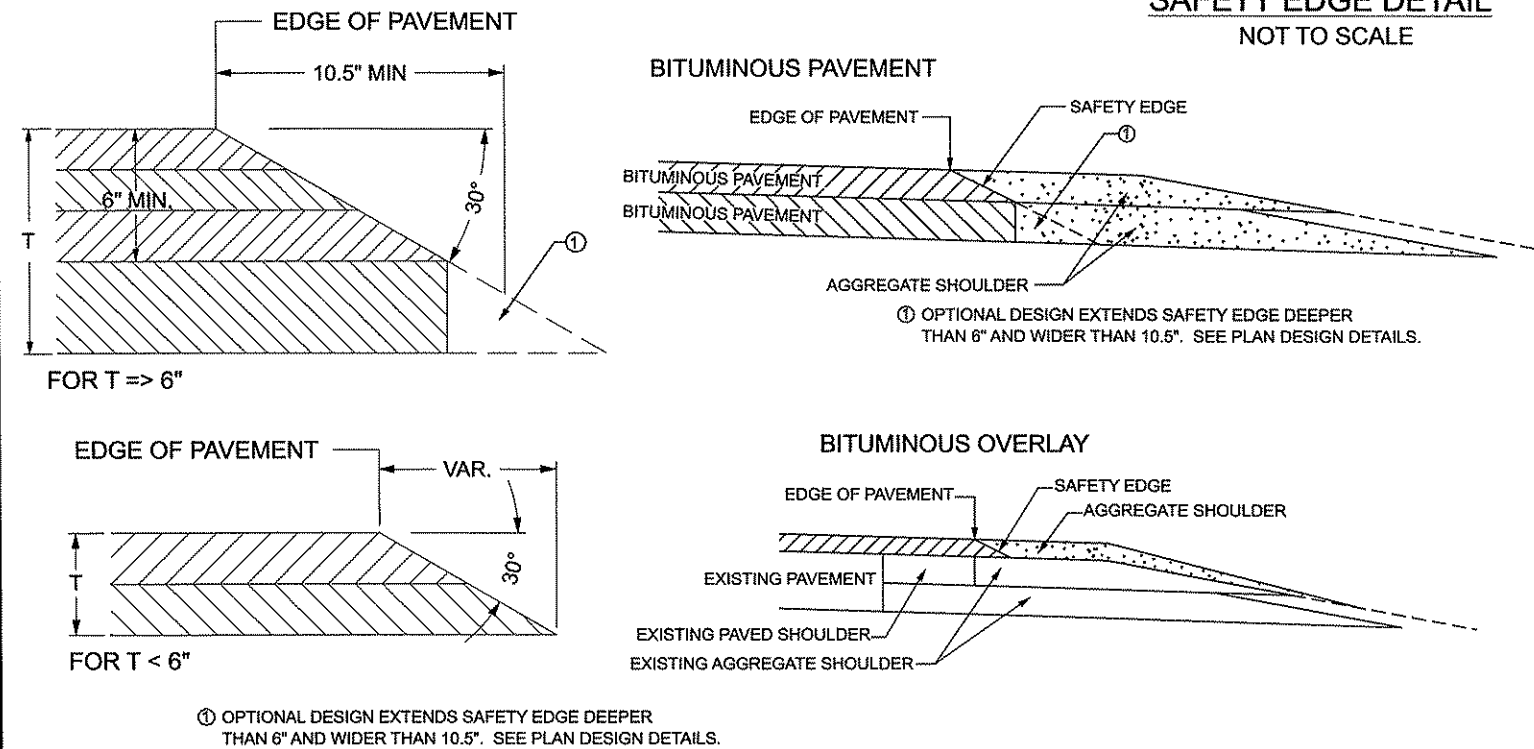
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA. PRINT NAME: CURT A. KOBILARCSIK SIGNATURE: <i>Curt A. Kobilarsik</i> DATE: 6-29-12 LICENSE NO. 24756					DRAWN BY: MN DATE 05/15/2012 DESIGN BY: MN DATE 12/01/2010 CHECKED BY: CAK DATE 05/29/2012				ANOKA COUNTY HIGHWAY DEPT.		S.P. 002-716-012 S.P. 198-020-030 S.P. 002-607-021		S.P. 198-020-031 S.P. 198-020-032		S.P. 103-020-014 S.P. 103-020-015		CSAH 7 TYPICAL SECTIONS Sheet 26 of 282 Sheets	
NO	DATE	BY	CKD	APPR	REVISION	NAME: p:\02-716-12\plan\0271612_TYP.dgn 06/28/2012 7:30:09 AM												

**CATCH BASIN NO. X73, DETAIL**



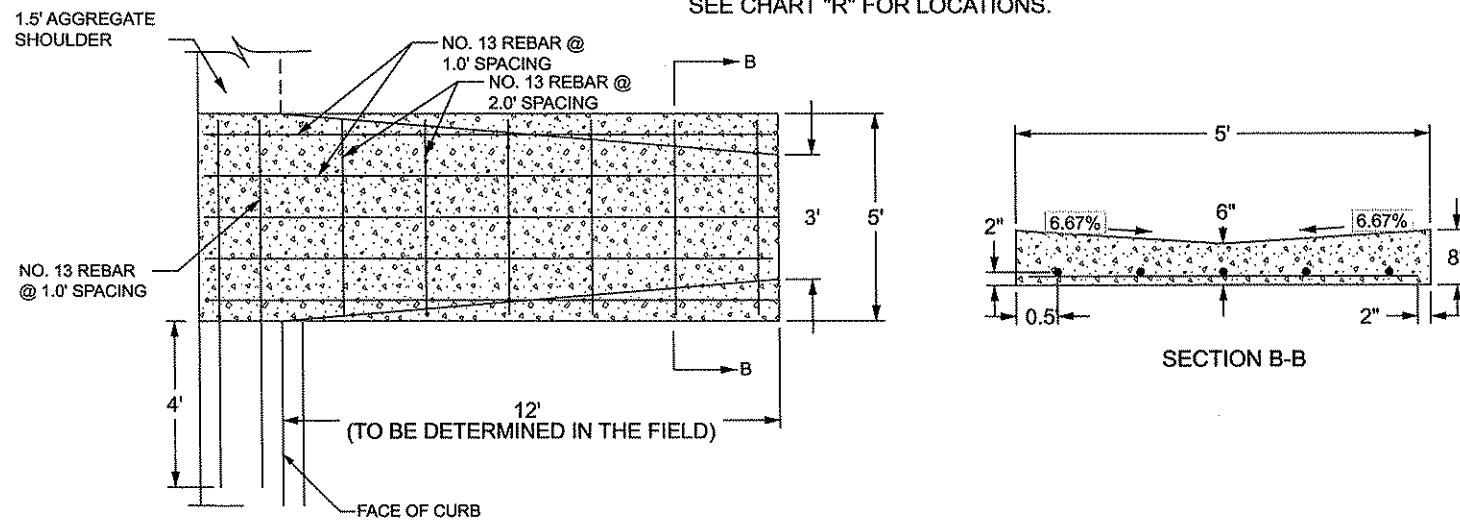
**SAFETY EDGE DETAIL**

NOT TO SCALE

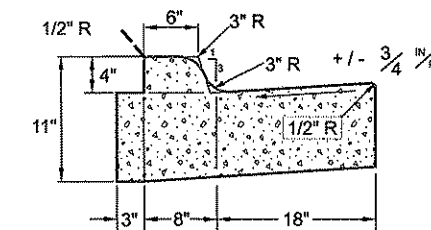


**CONCRETE DRAINAGE FLUME DETAIL**

SEE CHART "R" FOR LOCATIONS.

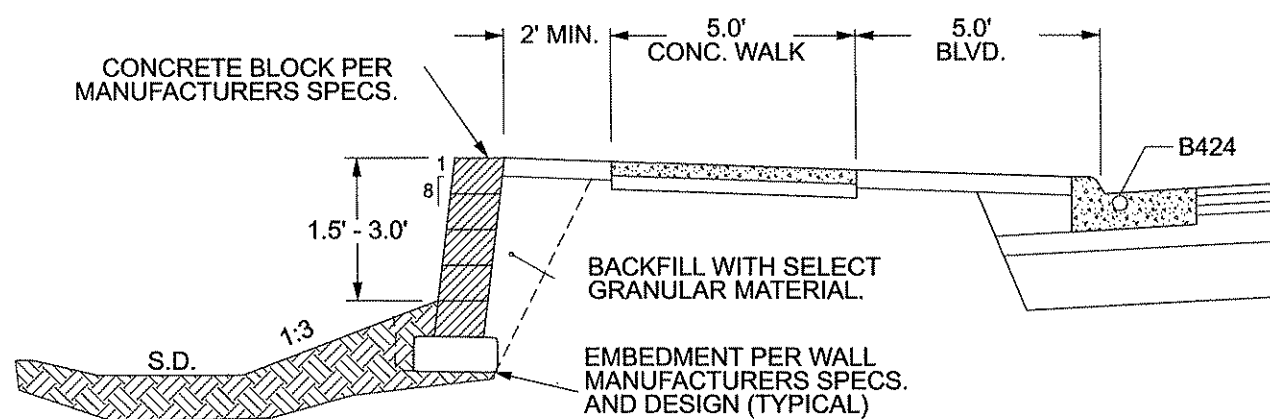


**B4 MODIFIED CURB & GUTTER**



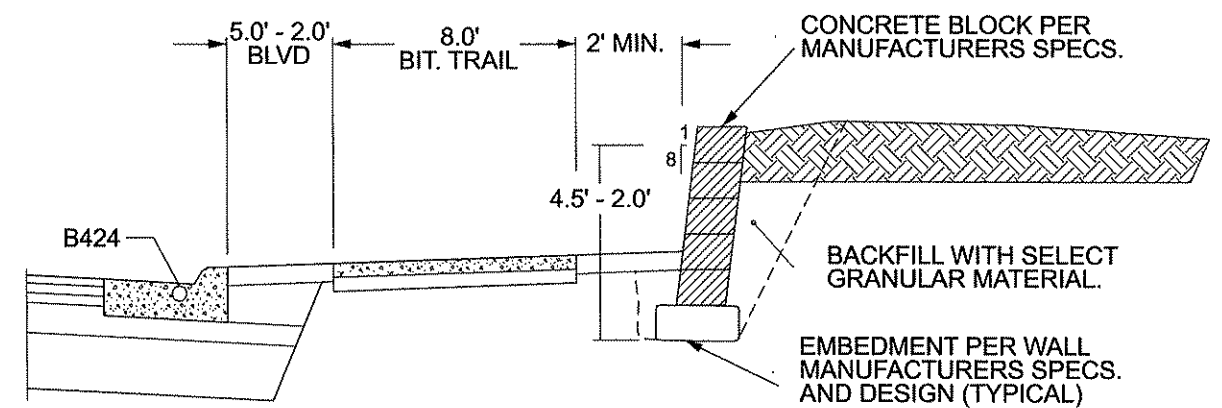
**BLOCK RETAINING WALL DETAILS**

LSB STA. 102+88.00 TO STA. 103+75



**BLOCK RETAINING WALL DETAILS**

LNB STA. 103+31 TO STA. 106+25



NO	DATE	BY	CHKD	APPR	REVISION

NAME: p102-716-12\plan0271612\_MISC\_DET.dgn  
06/28/2012 7:30:12 AM

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PRINT NAME: CURT A. KOBILARCSIK  
SIGNATURE: *Curt A. Kobilarscik*  
DATE: 6-29-12 LICENSE NO. 24759

DRAWN BY MN DATE 05/15/2012  
DESIGN BY MN DATE 12/01/2010  
CHECKED BY CAK DATE 05/29/2012



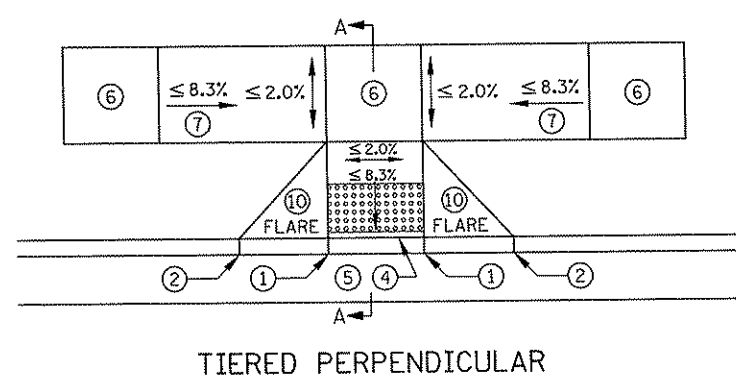
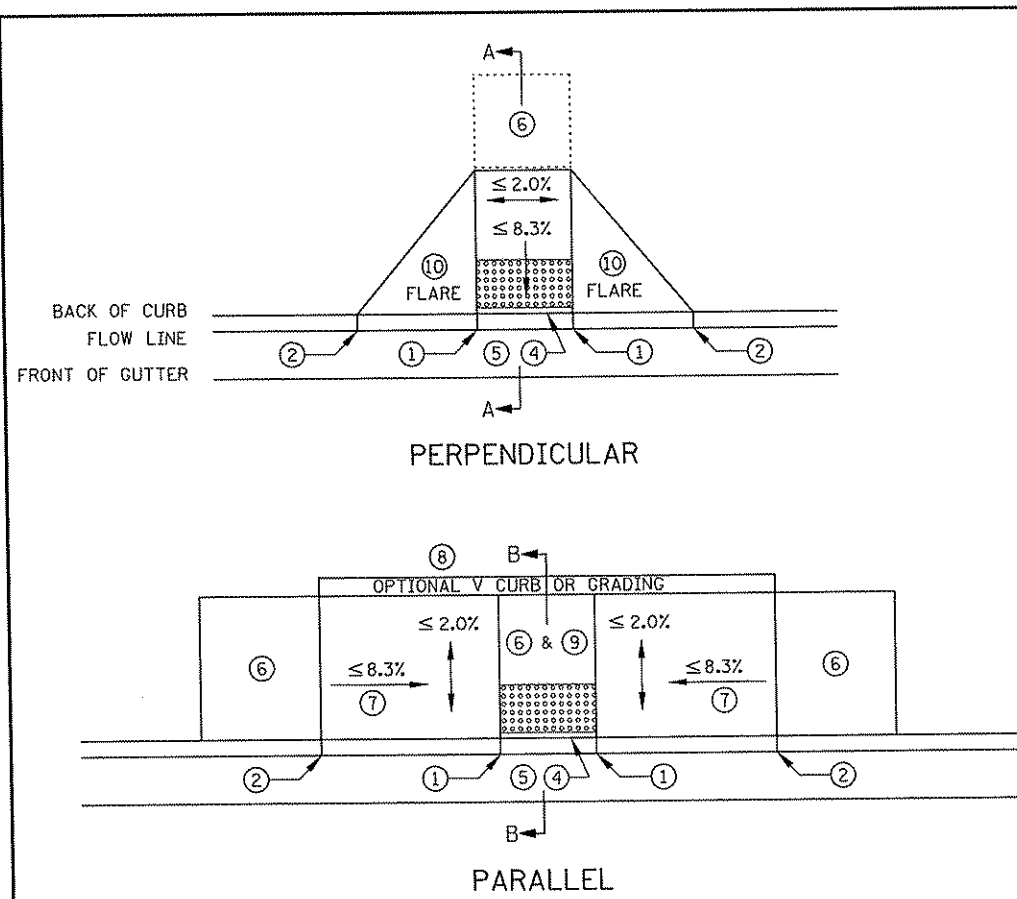
**ANOKA COUNTY  
HIGHWAY DEPT.**

S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

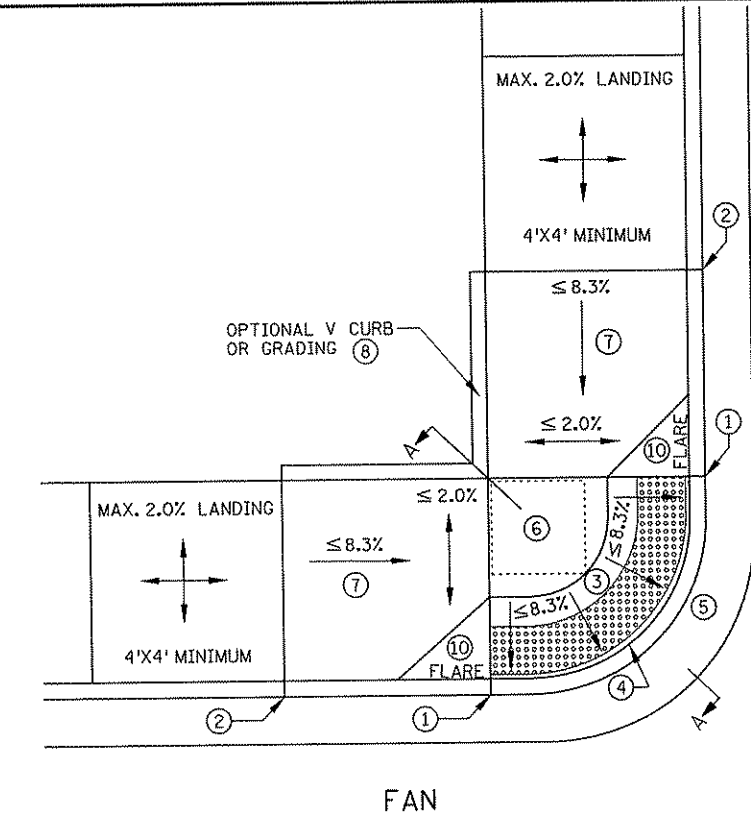
MISCELLANEOUS DETAILS

PLOTTED/REVISED:  
 \$\$\$DATE\$\$\$

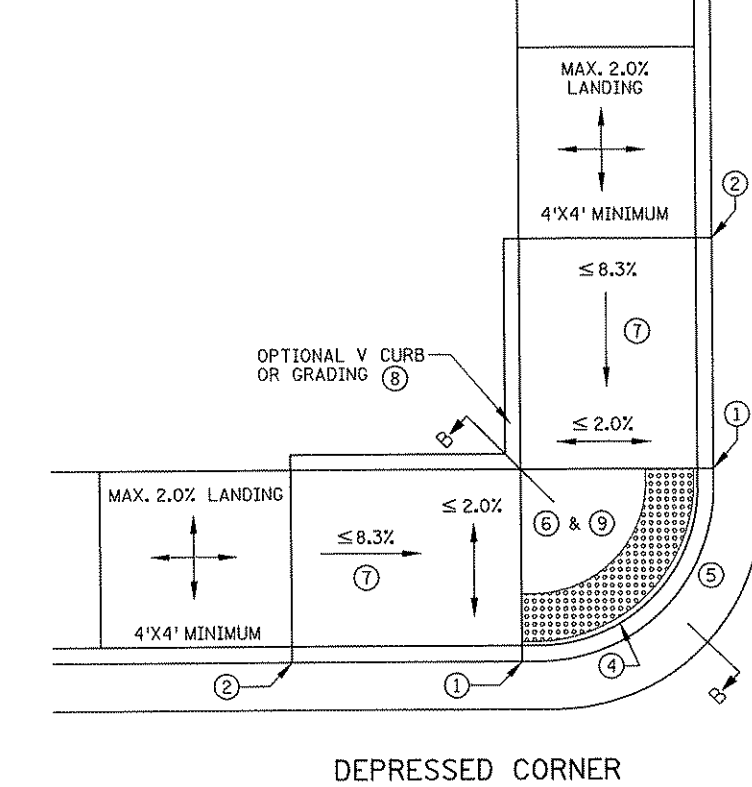
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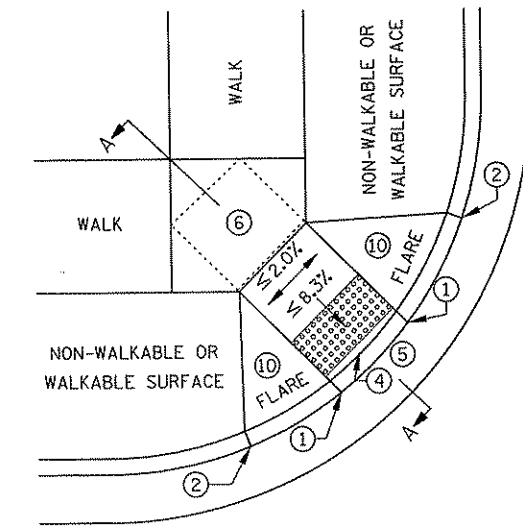
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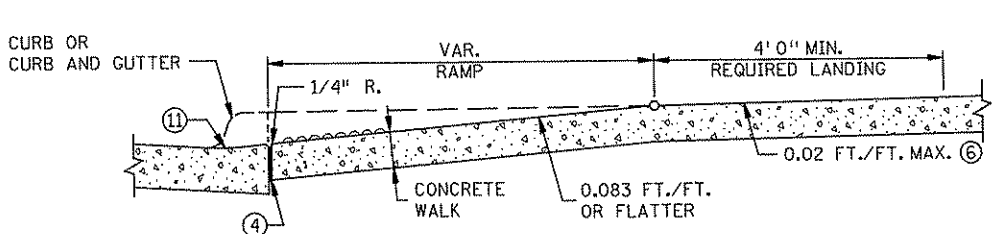
FAN



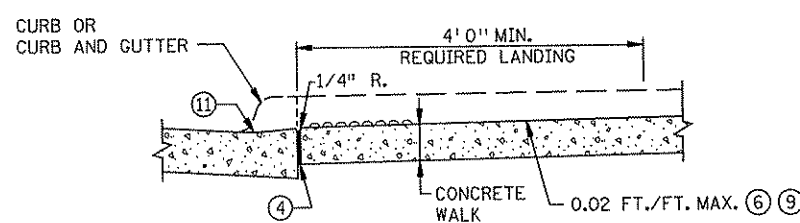
DEPRESSED CORNER



DIAGONAL 12



SECTION A-A  
 PERPENDICULAR/TIERED/DIAGONAL/FAN



SECTION B-B  
 PARALLEL/DEPRESSED CORNER

NOTES:

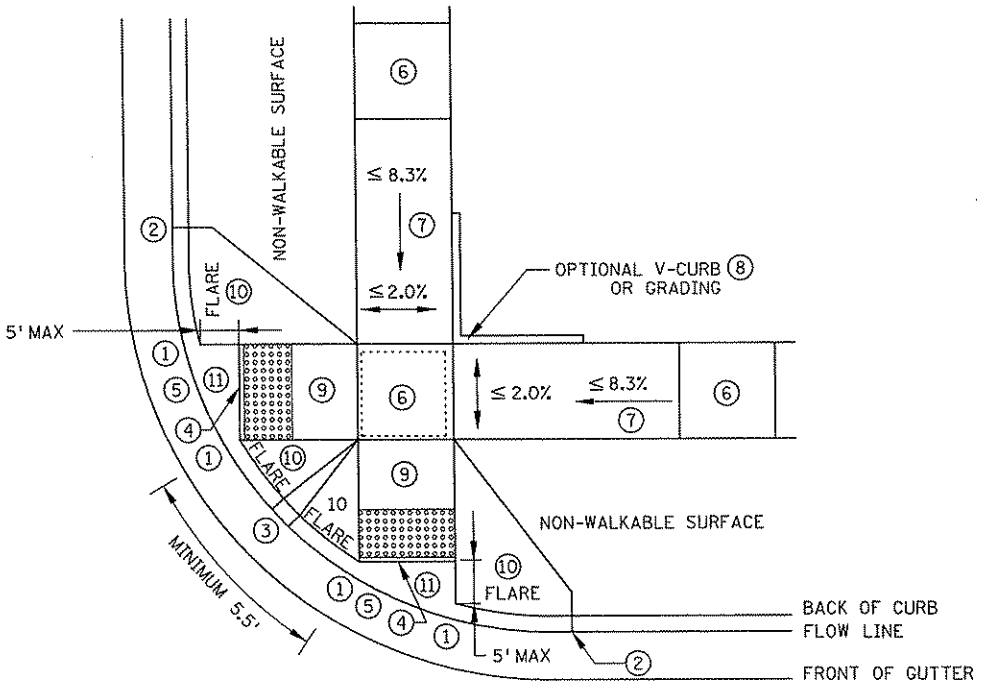
- SEE STANDARD PLATE 7038 AND SHEET 4 OF 5 FOR DETAILS ON DETECTABLE WARNING.
- SLOPES ARE DEFINED AS ABSOLUTE ELEVATION DIFFERENCE PER LENGTH OF RUN. (AS OPPOSED TO A RELATIVE SLOPE WITH RESPECT TO A CURB LINE OR CURB HEIGHT.)
- LANDINGS SHALL BE LOCATED ANYWHERE THE PEDESTRIAN ACCESS ROUTE CHANGES DIRECTION, AND AT THE TOP OF RAMPS THAT HAVE RUNNING SLOPES GREATER THAN 5%.
- INITIAL CURB RAMP LANDINGS SHALL BE CONSTRUCTED WITHIN 15' FROM THE BACK OF CURB, WITH 6' FROM THE BACK OF CURB BEING THE PREFERRED DISTANCE.
- SECONDARY CURB RAMP LANDINGS ARE REQUIRED FOR EVERY 30" OF VERTICAL RISE WHEN THE LONGITUDINAL SLOPE IS 5% OR GREATER.
- CONTRACTION JOINTS SHALL BE CONSTRUCTED AT ALL GRADE BREAKS.
- TOP OF CURB SHALL MATCH PROPOSED ADJACENT WALK GRADE.
- USE 6" CONCRETE FOR ALL INITIAL RAMP AND LANDING AREAS.
- CONTRACTOR SHALL EMPLOY APPROPRIATE METHODS FOR INTERMEDIATE GRADE CONTROL TO ENSURE ALL GRADE BREAKS ARE CONSTRUCTED PROPERLY.
- ALL GRADE BREAKS SHALL BE PERPENDICULAR TO THE DIRECTION OF TRAVEL/PEDESTRIAN ACCESS ROUTE.
- 4' MINIMUM WIDTH OF DETECTABLE WARNING IS REQUIRED FOR ALL RAMPS. SHARED USE PATHS SHALL HAVE DETECTABLE WARNING ACROSS THE ENTIRE WIDTH OF PATH WHEN THE PATH CROSSES A ROAD.
- 1 0" CURB HEIGHT.
- 2 FULL CURB HEIGHT.
- 3 LESS THAN 5% PREFERRED, 5-8.3% SHOULD ONLY BE USED AFTER ALL OTHER SLOPES HAVE BEEN CONSIDERED AND DEEMED IMPRACTICAL.
- 4 1/2" PREFORMED JOINT FILLER MATERIAL AASHTO M 213. JOINT FILLER SHALL BE PLACED FLUSH WITH THE BACK OF CURB AND ADJACENT SIDEWALK. JOINT SHALL BE FREE OF DEBRIS. RECTANGULAR DETECTABLE WARNINGS SHALL BE SET BACK 3" FROM THE BACK OF CURB. RADIAL DETECTABLE WARNINGS SHALL BE SET BACK 3"-6" FROM THE BACK OF CURB.
- 5 SEE PEDESTRIAN ACCESS ROUTE CURB AND GUTTER DETAIL FOR INFORMATION ON CONSTRUCTING CURB AND GUTTER AT CURB OPENINGS. SEE SHEET NO. 3 OF 5.
- 6 4' BY 4' MIN. LANDING WITH MAX. 2% SLOPE IN ALL DIRECTIONS.
- 7 IF RUNNING SLOPE IS LESS THAN 5.0% NO SECONDARY LANDING IS REQUIRED.
- 8 V CURB, IF USED, SHALL BE PLACED OUTSIDE THE SIDEWALK LIMITS WHEN RIGHT OF WAY ALLOWS. SEE SHEET 5 OF 5.
- 9 DETECTABLE WARNINGS MAY BE PART OF 4' X 4' LANDING AREA IF IT IS NOT FEASIBLE TO CONSTRUCT THE LANDING OUTSIDE OF THE DETECTABLE WARNING AREA.
- 10 SEE SHEET 4 OF 5, TYPICAL SIDE TREATMENT OPTIONS, FOR DETAILS ON FLARES AND RETURNED CURBS.
- 11 SEE SHEET 3 OF 5 FOR FURTHER DETAIL.
- 12 DIAGONAL RAMPS SHOULD ONLY BE USED AFTER ALL OTHER CURB RAMP TYPES HAVE BEEN CONSIDERED AND DEEMED IMPRACTICAL.

STANDARD PLAN SHEET NO. 5-297.250 (1 OF 5)		PEDESTRIAN CURB RAMP DETAILS	
STANDARD APPROVED: MAY 10, 2012			
S.P. 002-716-012	S.P. 198-020-030	S.P. 103-020-014	S.P. 198-020-032
S.P. 002-607-021	S.P. 198-020-031	S.P. 103-020-015	
			SHEET NO. 28 OF 282 SHEETS

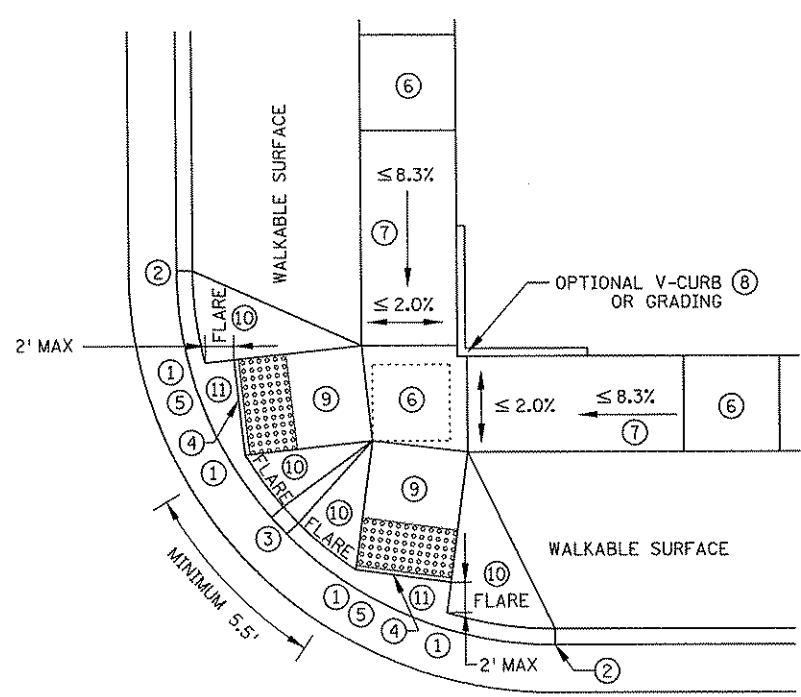
PLOTTED/REVISED:  
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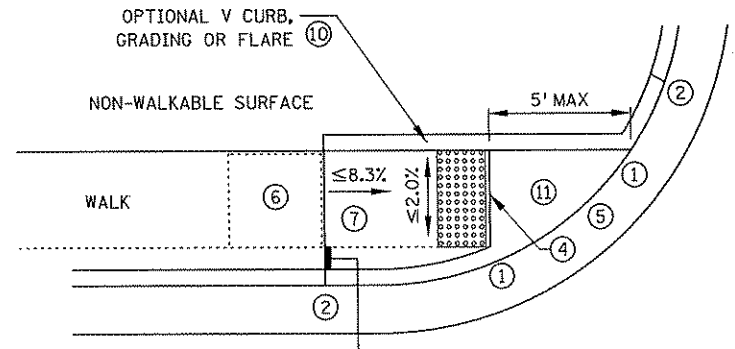


ADJACENT TO NON-WALKABLE SURFACE



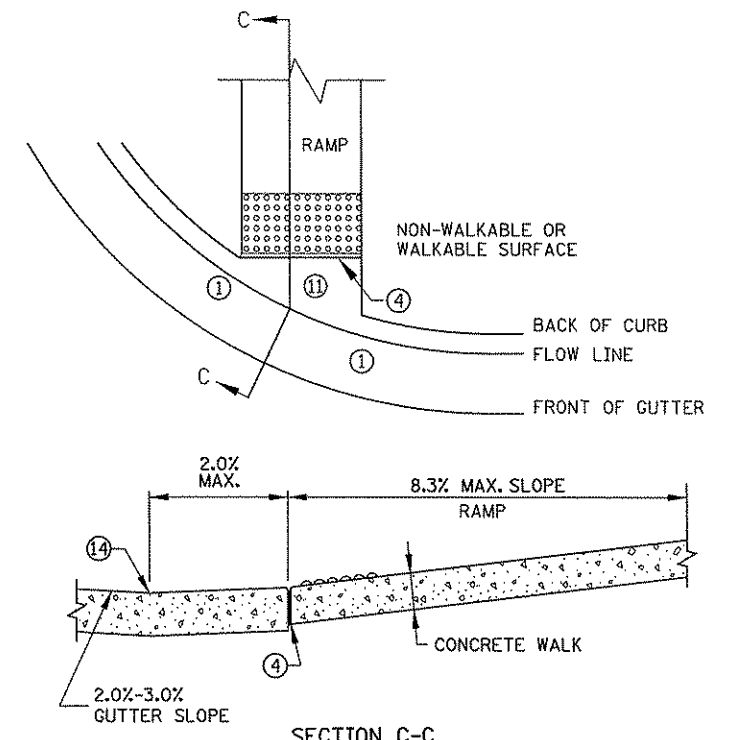
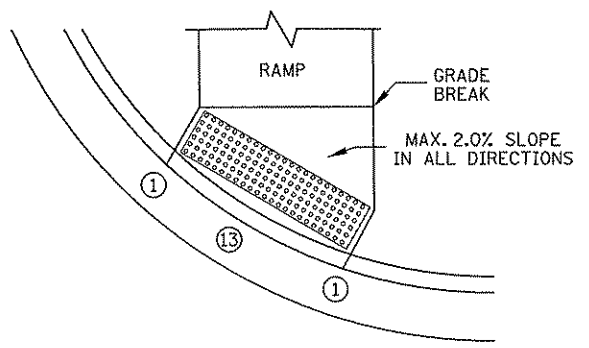
ADJACENT TO WALKABLE SURFACE

COMBINED DIRECTIONAL



IF NON-CONCRETE BLVD. IS CONSTRUCTED AND IS LESS THAN 2' IN WIDTH AT TOP OF CURB TRANSITION, PAVE CONCRETE RAMP WIDTH TO ADJACENT BACK OF CURB.

ONE-WAY DIRECTIONAL



CURB FOR DIRECTIONAL RAMPS 12

NOTES:

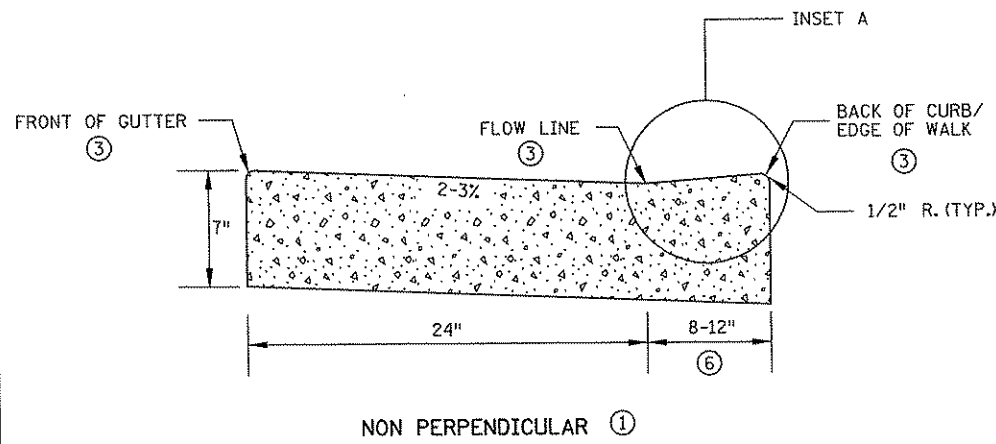
- SEE STANDARD PLATE 7038 AND SHEET 4 OF 5 FOR DETAILS ON DETECTABLE WARNING.
- SLOPES ARE DEFINED AS ABSOLUTE ELEVATION DIFFERENCE PER LENGTH OF RUN. (AS OPPOSED TO A RELATIVE SLOPE WITH RESPECT TO A CURB LINE OR CURB HEIGHT.)
- LANDINGS SHALL BE LOCATED ANYWHERE THE PEDESTRIAN ACCESS ROUTE CHANGES DIRECTION, AND AT THE TOP OF RAMPS THAT HAVE RUNNING SLOPES GREATER THAN 5%.
- INITIAL CURB RAMP LANDINGS SHALL BE CONSTRUCTED WITHIN 15' FROM THE BACK OF CURB, WITH 6' FROM THE BACK OF CURB BEING THE PREFERRED DISTANCE.
- SECONDARY CURB RAMP LANDINGS ARE REQUIRED FOR EVERY 30" OF VERTICAL RISE WHEN THE LONGITUDINAL SLOPE IS 5% OR GREATER.
- CONTRACTION JOINTS SHALL BE CONSTRUCTED AT ALL GRADE BREAKS.
- TOP OF CURB SHALL MATCH PROPOSED ADJACENT WALK GRADE.
- USE 6" CONCRETE WALK FOR ALL INITIAL RAMP AND LANDING AREAS.
- CONTRACTOR SHALL EMPLOY APPROPRIATE METHODS FOR INTERMEDIATE GRADE CONTROL TO ENSURE ALL GRADE BREAKS ARE CONSTRUCTED PROPERLY.
- ALL GRADE BREAKS SHALL BE PERPENDICULAR TO THE DIRECTION OF TRAVEL/PEDESTRIAN ACCESS ROUTE.
- 4' MINIMUM WIDTH OF DETECTABLE WARNING IS REQUIRED FOR ALL RAMPS. SHARED USE PATHS SHALL HAVE DETECTABLE WARNING ACROSS THE ENTIRE WIDTH OF PATH WHEN THE PATH CROSSES A ROAD.
- 1 0" CURB HEIGHT.
- 2 FULL CURB HEIGHT.
- 3 3" MINIMUM CURB HEIGHT.
- 4 1/2" PREFORMED JOINT FILLER MATERIAL AASHTO M 213. JOINT FILLER SHALL BE PLACED FLUSH WITH THE BACK OF CURB AND ADJACENT SIDEWALK. JOINT SHALL BE FREE OF DEBRIS. RECTANGULAR DETECTABLE WARNINGS SHALL BE SET BACK 3" FROM THE BACK OF CURB. RADIAL DETECTABLE WARNINGS SHALL BE SET BACK 3"-6" FROM THE BACK OF CURB.
- 5 SEE PEDESTRIAN ACCESS ROUTE CURB AND GUTTER DETAIL FOR INFORMATION ON CONSTRUCTING CURB AND GUTTER AT CURB OPENINGS. SEE SHEET NO. 3 OF 5.
- 6 4' BY 4' MIN. LANDING WITH MAX. 2% SLOPE IN ALL DIRECTIONS.
- 7 IF RAMP SLOPE IS LESS THAN 5% NO SECONDARY LANDING IS REQUIRED.
- 8 V CURB, IF USED, SHALL BE PLACED OUTSIDE THE SIDEWALK LIMITS WHEN RIGHT OF WAY ALLOWS.
- 9 RUNNING SLOPE LESS THAN OR EQUAL TO 8.3% & CROSS SLOPE LESS THAN OR EQUAL TO 2%.
- 10 SEE SHEET 4 OF 5, TYPICAL SIDE TREATMENT OPTIONS, FOR DETAILS ON FLARES AND RETURNED CURBS.
- 11 MAX. 2% SLOPE IN ALL DIRECTIONS IN FRONT OF GRADE BREAK AND DRAIN TO FLOW LINE. SHALL BE CONSTRUCTED INTEGRAL WITH CURB AND GUTTER.
- 12 TO BE USED FOR ALL DIRECTIONAL RAMPS.
- 13 DOMES PLACED AT THE BACK OF CURB WHEN ALLOWABLE SETBACK CRITERIA IS EXCEEDED.
- 14 ANY VERTICAL LIP THAT OCCURS AT THE FLOW LINE MAY NOT BE GREATER THAN 1/4 INCH.

STANDARD PLAN SHEET NO. 5-297.250 (2 OF 5)		PEDESTRIAN CURB RAMP DETAILS	
STANDARD APPROVED: MAY 10, 2012			
S.P. 002-716-012	S.P. 198-020-030	S.P. 103-020-014	S.P. 198-020-032
S.P. 002-607-021	S.P. 198-020-031	S.P. 103-020-015	

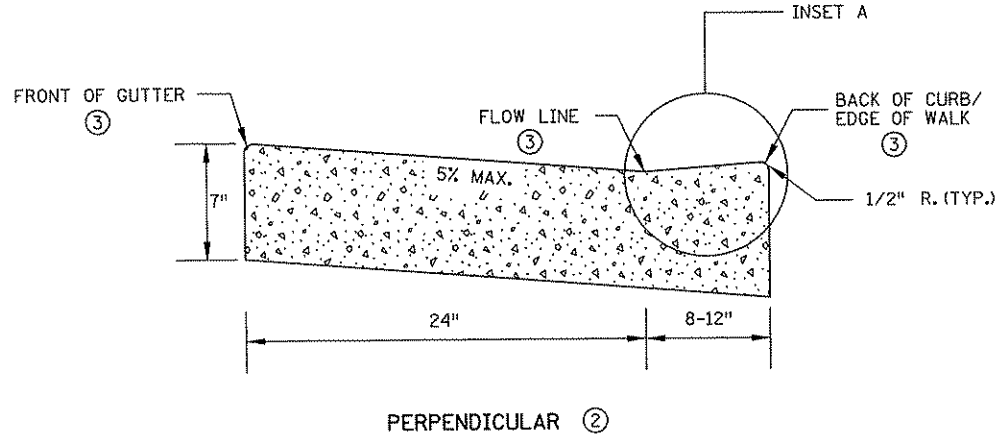
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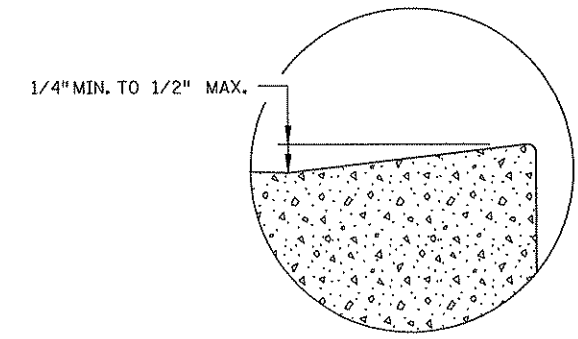
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NON PERPENDICULAR ①

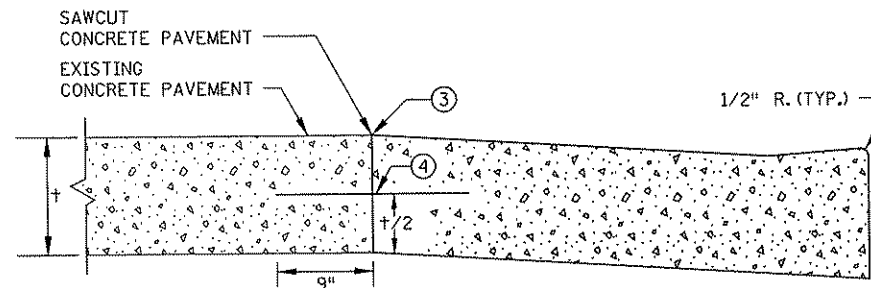
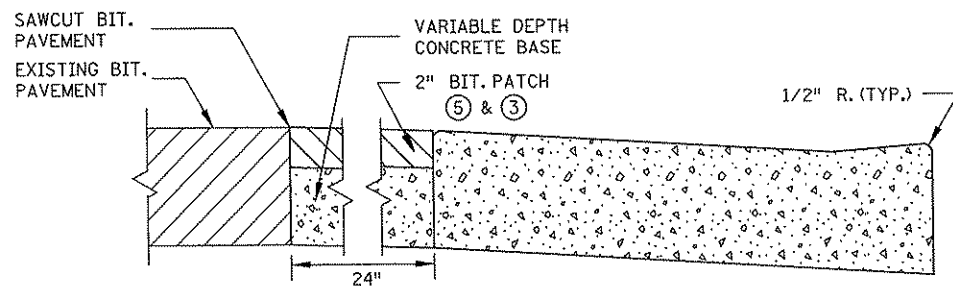
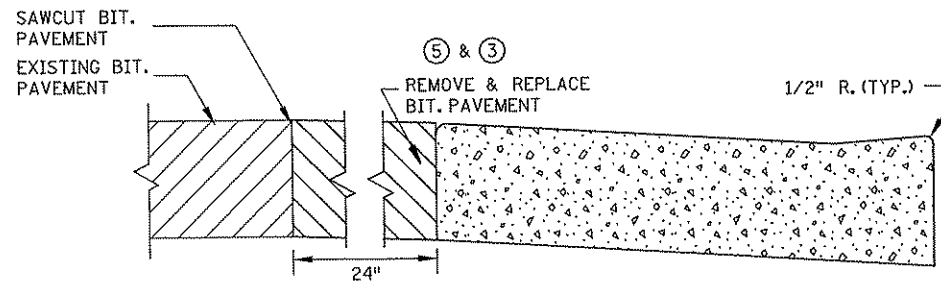
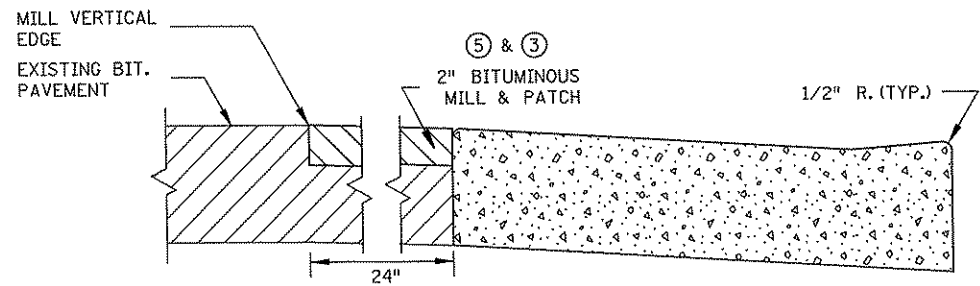


PERPENDICULAR ②



INSET A

PEDESTRIAN ACCESS ROUTE  
 CURB & GUTTER DETAIL



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

NOTES:

- ADEQUATE DRAINAGE SHALL BE MAINTAINED THROUGHOUT THE PEDESTRIAN ACCESS ROUTE (PAR) AT A 2% ABSOLUTE MAXIMUM.
- NO PONDING SHALL BE PRESENT IN THE PAR.
- ANY VERTICAL LIP THAT OCCURS AT THE FLOW LINE MAY NOT BE GREATER THAN 1/4 INCH.
- ① FOR USE AT CURB CUTS WHERE THE PEDESTRIAN'S PATH OF TRAVEL IS ASSUMED NON PERPENDICULAR TO THE GUTTER FLOW LINE. RAMP TYPES INCLUDE: FANS, DEPRESSED CORNERS, & ONE WAY AND COMBINED DIRECTIONALS.
- ② FOR USE AT CURB CUTS WHERE THE PEDESTRIAN'S PATH OF TRAVEL IS ASSUMED PERPENDICULAR TO THE GUTTER FLOW LINE. RAMP TYPES INCLUDE: PERPENDICULAR, TIERED PERPENDICULAR, PARALLEL, AND DIAGONAL RAMPS.
- ③ THERE SHALL BE NO VERTICAL DISCONTINUITIES GREATER THAN 1/4\".
- ④ DRILL AND GROUT NO. 13 EPOXY-COATED 18\" LONG BARS AT 2' CENTER TO CENTER INTO EXISTING CONCRETE PAVEMENT.
- ⑤ ELEVATION CHANGE TAKES PLACE FROM THE EXISTING TO NEW FRONT OF GUTTER. PATCH IS USED TO MATCH THE NEW GUTTER FACE INTO THE EXISTING ROADWAY.
- ⑥ VARIABLE WIDTH FOR DIRECTIONAL CURB APPLICATIONS.

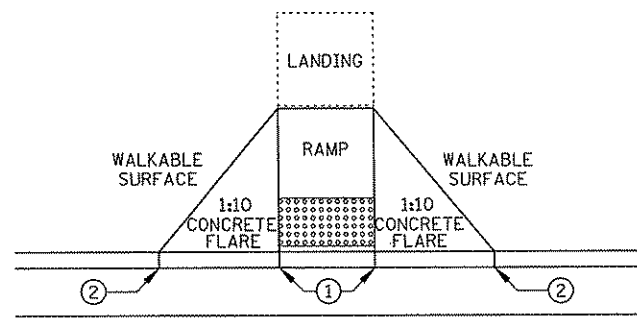
STANDARD PLAN SHEET NO.  
 5-297.250 (3 OF 5)

STANDARD APPROVED:  
 MAY 10, 2012

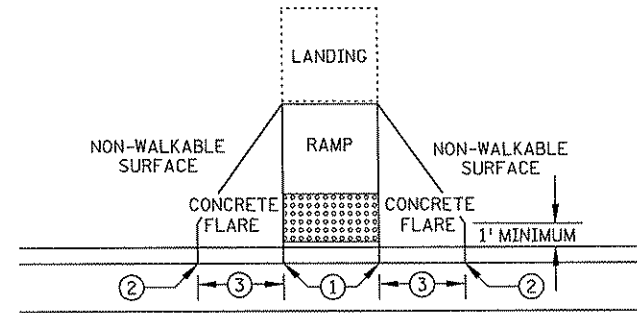
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PEDESTRIAN CURB RAMP DETAILS

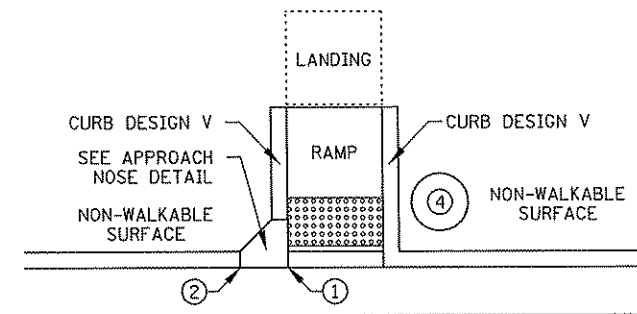
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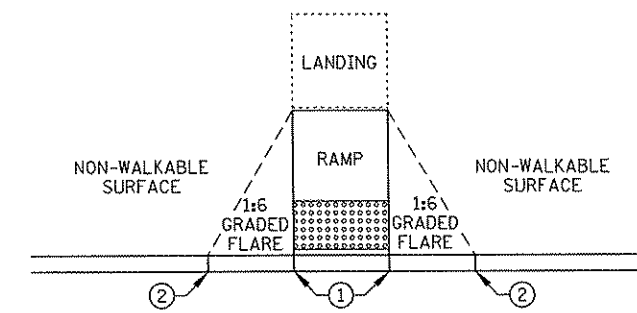
PAVED FLARES  
 ADJACENT TO WALKABLE SURFACE



PAVED FLARES  
 ADJACENT TO NON-WALKABLE SURFACE

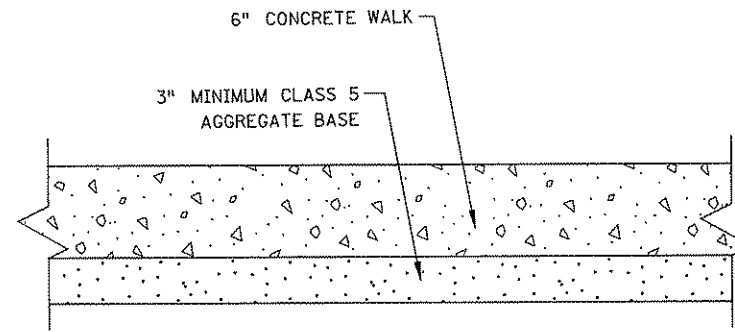


DIRECTION OF TRAFFIC  
 RETURNED CURB

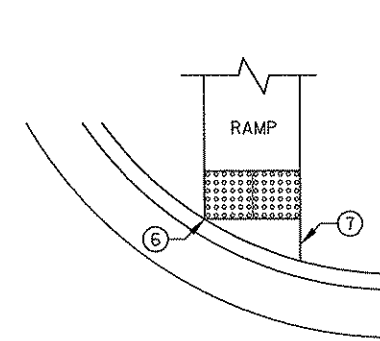


GRADED FLARES

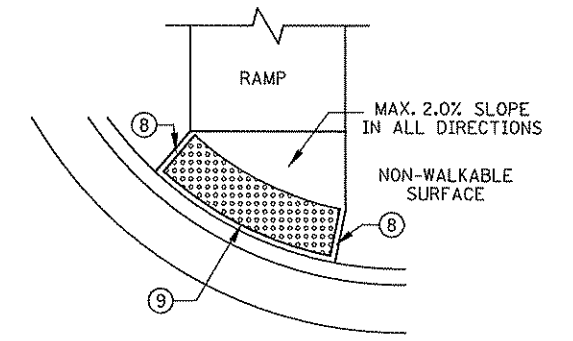
TYPICAL SIDE TREATMENT OPTIONS ⑤



TYPICAL SIDEWALK SECTION  
 WITHIN INTERSECTION CORNER

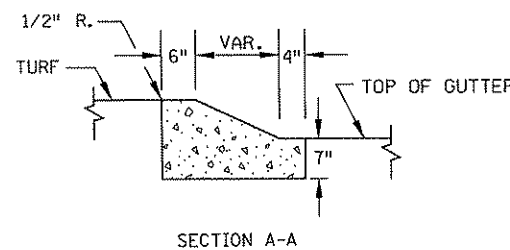
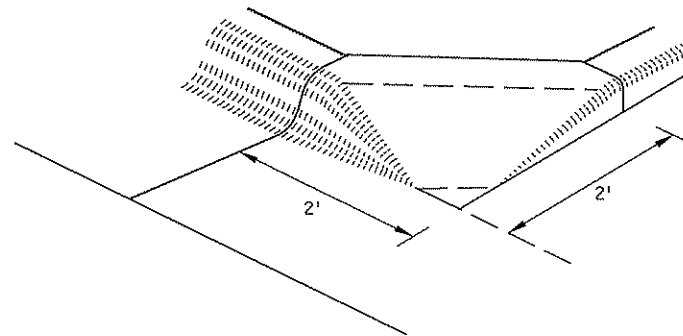


DETECTABLE WARNING  
 SETBACK CRITERIA

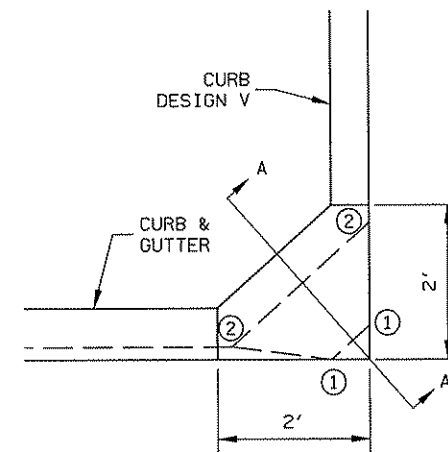


RADIAL DETECTABLE  
 WARNING AT RADIUS

DETECTABLE WARNING PLACEMENT



APPROACH NOSE DETAIL  
 FOR DOWNSTREAM SIDE OF TRAFFIC



NOTES:

- SEE STANDARD PLATE 7038 AND THIS SHEET FOR DETAILS ON DETECTABLE WARNING.
- USE 6" CONCRETE WALK UP TO EXISTING SIDEWALK GRADES FOR ALL RAMP AND LANDING AREAS.
- WHETHER A SURFACE IS WALKABLE OR NOT SHALL BE DETERMINED BY THE ENGINEER.
- FLARE LENGTHS SHOULD BE LESS THAN 8' LONG MEASURED ALONG THE RAMPS FROM THE BACK OF CURB.
- 4' MINIMUM WIDTH OF DETECTABLE WARNING IS REQUIRED FOR ALL RAMPS. SHARED USE PATHS SHALL HAVE DETECTABLE WARNING ACROSS THE ENTIRE WIDTH OF PATH WHEN THE PATH CROSSES A ROAD.
- ① 0" CURB HEIGHT.
- ② FULL CURB HEIGHT.
- ③ 2' - 3' CONCRETE FLARE.
- ④ IMMOVABLE OBJECT OR OBSTRUCTION.
- ⑤ SIDE TREATMENTS ARE APPLICABLE TO ALL RAMP TYPES AND SHOULD BE IMPLEMENTED AS NEEDED ON ALL RAMPS AS FIELD CONDITIONS DICTATE. THE ENGINEER SHALL DETERMINE THE RAMP SIDE TREATMENTS BASED ON MAINTENANCE OF BOTH ROADWAY AND SIDEWALK, ADJACENT PROPERTY CONSIDERATIONS, AND MITIGATING CONSTRUCTION IMPACTS.
- ⑥ DETECTABLE WARNING SHALL HAVE ONE CORNER 3" FROM THE BACK OF CURB.
- ⑦ SHALL BE 2' MAXIMUM OFFSET WHEN ADJACENT TO WALKABLE SURFACE AND 5' MAXIMUM OFFSET WHEN ADJACENT TO NON-WALKABLE SURFACE.
- ⑧ WHEN NO FLARES ARE PROPOSED, THE CONCRETE WALK SHALL BE FORMED AND CONSTRUCTED PERPENDICULAR TO THE BACK OF CURB. MAINTAIN 3" BETWEEN EDGE OF DOMES AND EDGE OF CONCRETE.
- ⑨ DETECTABLE WARNING TO BE PLACED AT A UNIFORM OFFSET DISTANCE FROM 3" TO 6" FROM THE BACK OF CURB. IF NO CURB AND GUTTER IS PLACED IN RURAL SECTIONS, DETECTABLE WARNING SHALL BE PLACED 1' FROM THE EDGE OF ROADWAY TO PROVIDE CONCRETE BORDER.

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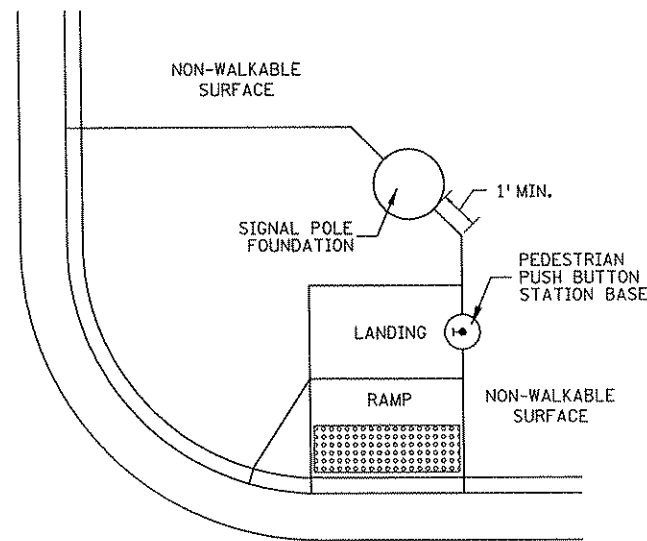
STANDARD PLAN SHEET NO. 5-297.250 (4 OF 5)			
STANDARD APPROVED: MAY 10, 2012			
S.P. 002-716-012	S.P. 198-020-030	S.P. 103-020-014	S.P. 198-020-032
S.P. 002-807-021	S.P. 198-020-031	S.P. 103-020-015	

PEDESTRIAN CURB RAMP DETAILS

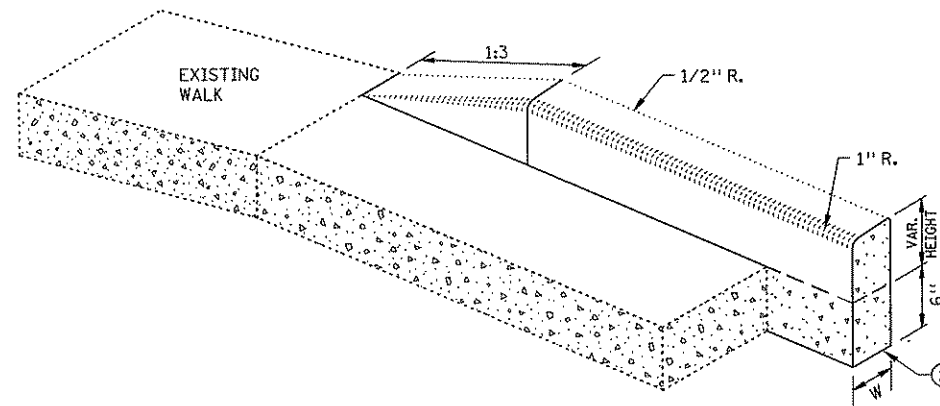
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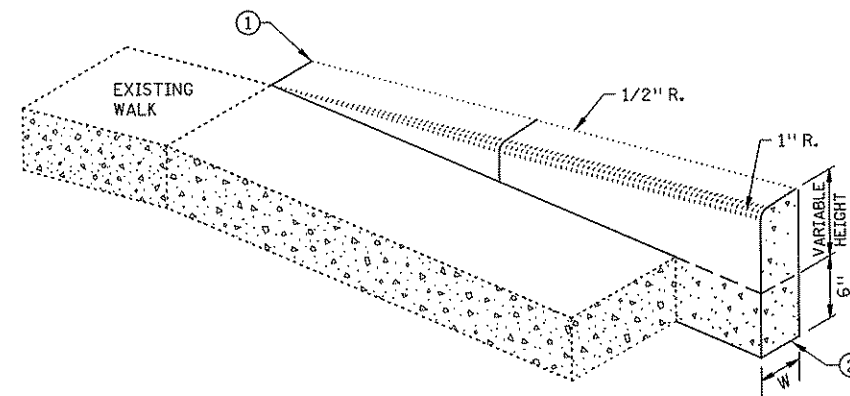
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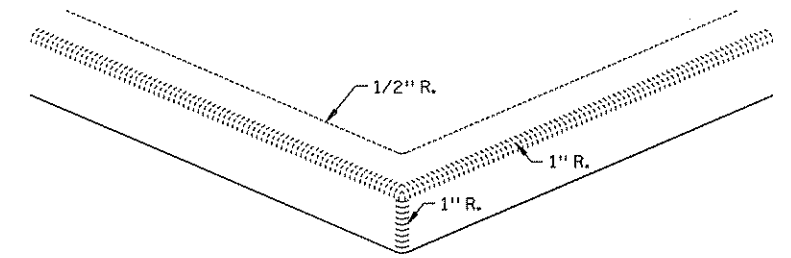
CONCRETE WALK EDGES ADJACENT TO CONCRETE STRUCTURES



V CURB ADJACENT TO LANDSCAPE  
 CURB WITHIN SIDEWALK LIMITS

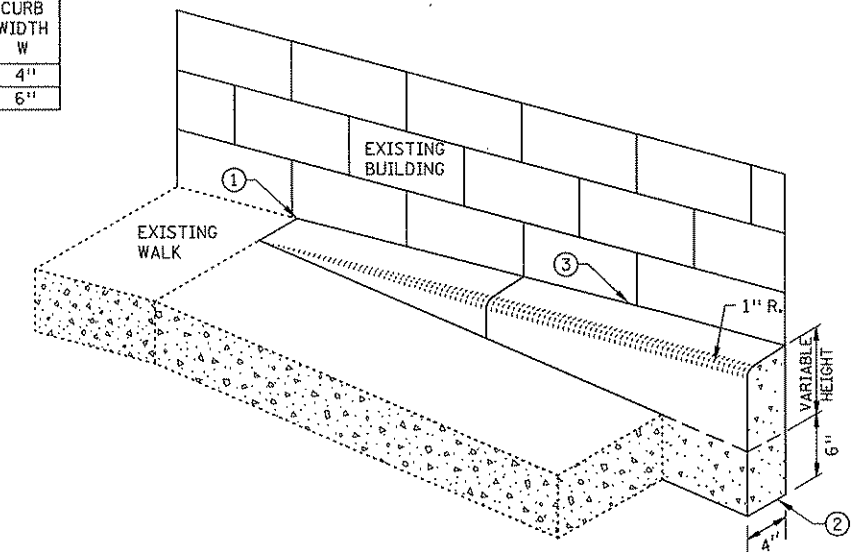


V CURB ADJACENT TO LANDSCAPE  
 CURB OUTSIDE SIDEWALK LIMITS

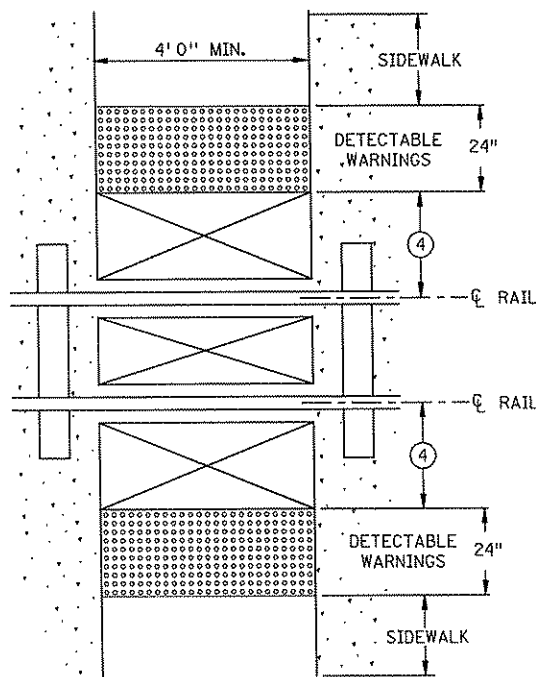


V CURB INTERSECTION

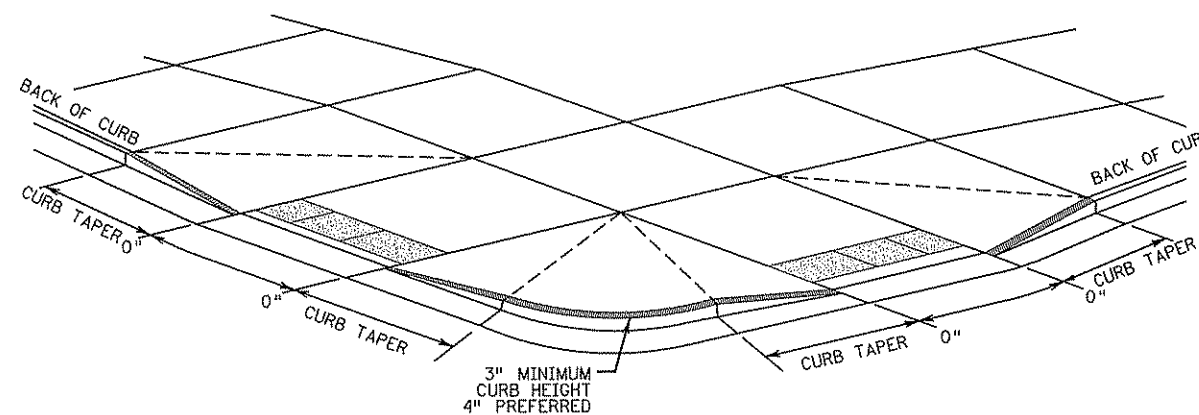
CONCRETE CURB DESIGN V	
CURB HEIGHT H	CURB WIDTH W
< 6"	4"
≥ 6"	6"



V CURB ADJACENT TO BUILDING



RAILROAD CROSSING  
 PLAN VIEW



DETECTABLE EDGE AT QUADRANT ⑤

NOTES:

- ALL V-CURB CONTRACTION JOINTS SHALL MATCH CONCRETE WALK JOINTS.
- V CURB SHALL BE PLACED OUTSIDE THE SIDEWALK LIMITS WHEN RIGHT OF WAY ALLOWS.
- V CURB NEXT TO BUILDING SHALL BE A 4" WIDTH AND SHALL MATCH PREVIOUS TOP OF SIDEWALK ELEVATIONS.
- ① END TAPERS AT TRANSITION SECTION SHALL MATCH INPLACE SIDEWALK GRADES.
- ② ALL V CURB SHALL MATCH BOTTOM OF ADJACENT WALK.
- ③ EDGE BETWEEN NEW V CURB AND INPLACE STRUCTURE SHALL BE SEALED AND BOND BREAKER SHALL BE USED BETWEEN EXISTING STRUCTURE AND PLACED V-CURB.
- ④ EDGE OF DETECTABLE WARNING SURFACES SHALL BE PLACED 6' MINIMUM TO 15' MAXIMUM FROM THE CENTERLINE OF THE NEAREST RAIL. WHEN PEDESTRIAN GATES ARE PROVIDED, DETECTABLE WARNING SURFACES SHALL BE PLACED ON THE SIDE OF THE GATES OPPOSITE THE RAIL.
- ⑤ ALL CONSTRUCTED CURBS MUST HAVE A CONTINUOUS DETECTABLE EDGE FOR THE VISUALLY IMPAIRED. THIS DETECTABLE EDGE REQUIRES TRUNCATED DOMES WHEREVER THERE IS ZERO-INCH HIGH CURB. CURB TRANSITIONS ARE CONSIDERED A DETECTABLE EDGE WHEN THE TAPER STARTS IMMEDIATELY AT THE EDGE OF THE TRUNCATED DOMES AND UNIFORMLY RISES TO A 3-INCH MINIMUM CURB HEIGHT. ANY CURB NOT PART OF A CURB TRANSITION AND LESS THAN 3 INCHES IN HEIGHT IS NOT CONSIDERED A DETECTABLE EDGE AND THEREFORE IS NOT COMPLIANT WITH ACCESSIBILITY GUIDELINES.







STANDARD PLAN SHEET NO.  
 5-297.250 (5 OF 5)  
 STANDARD APPROVED:  
 MAY 10, 2012

PEDESTRIAN CURB RAMP DETAILS

S.P. 002-716-012 S.P. 198-020-030 S.P. 103-020-014 S.P. 198-020-032  
 S.P. 002-607-021 S.P. 198-020-031 S.P. 103-020-015

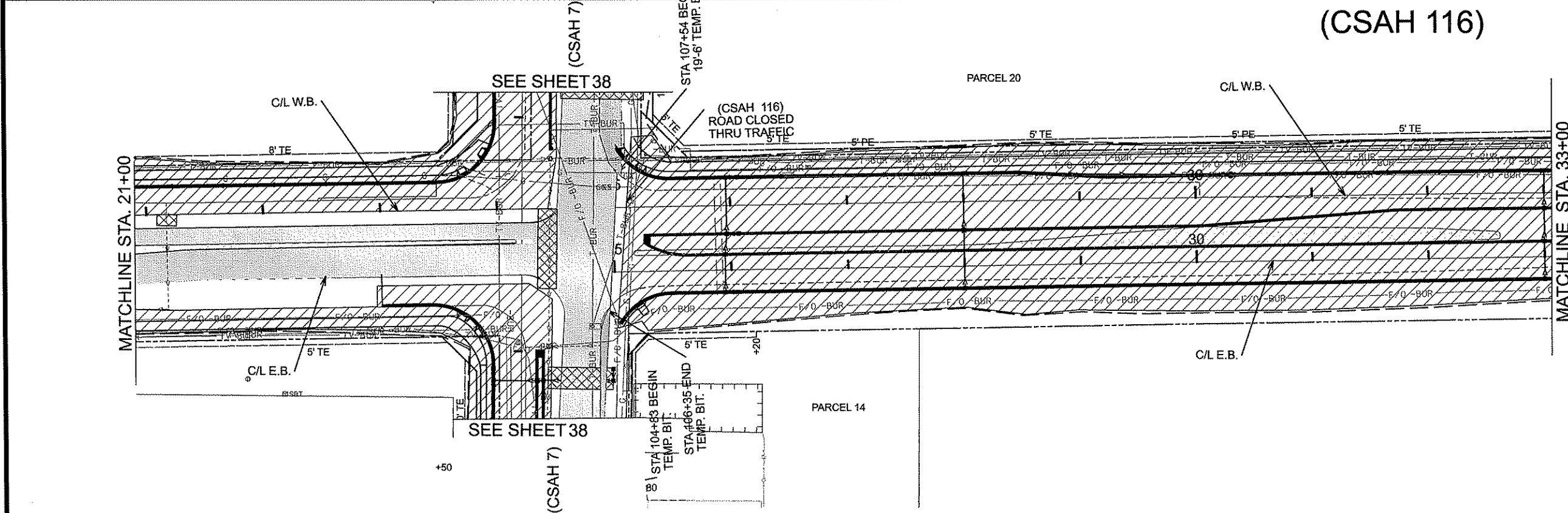
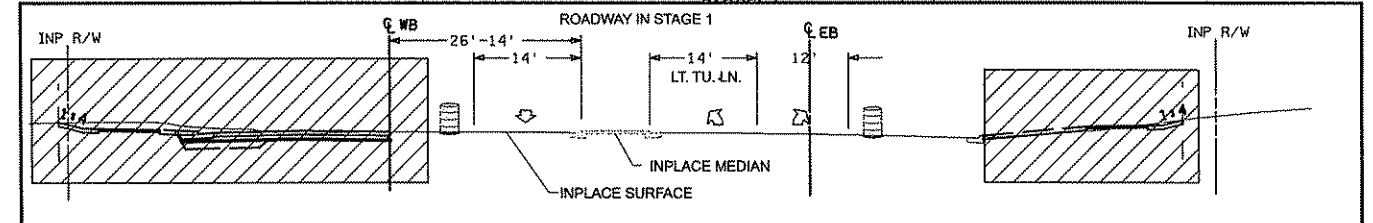
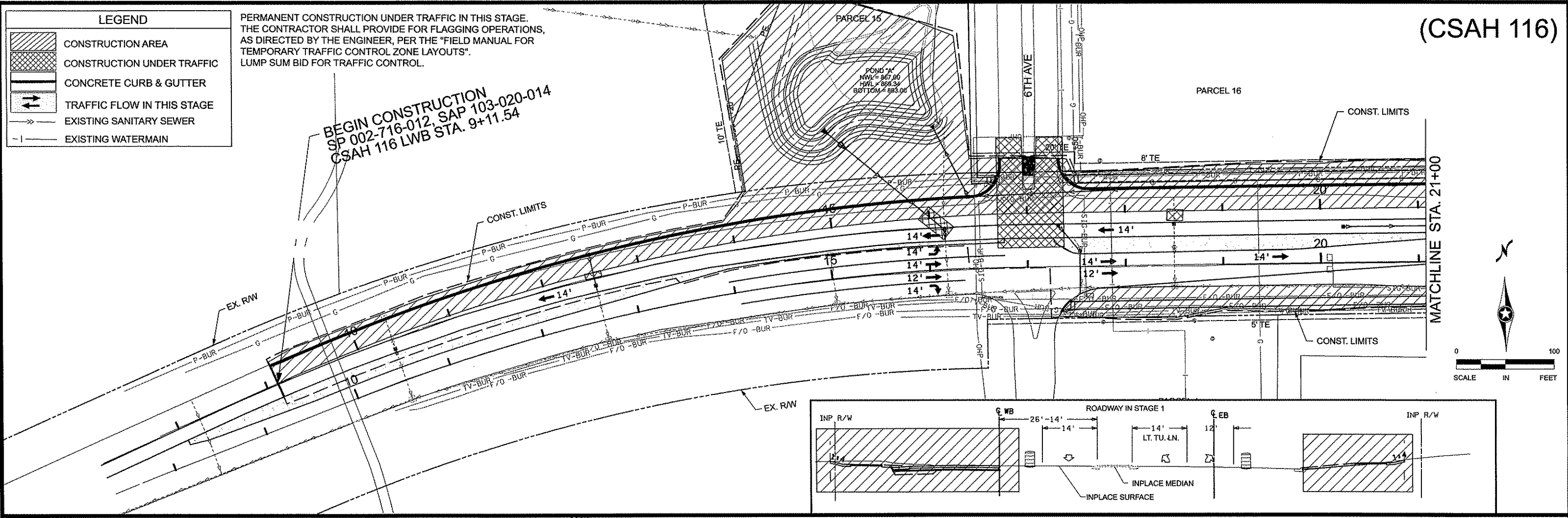


**LEGEND**

-  CONSTRUCTION AREA
-  CONSTRUCTION UNDER TRAFFIC
-  CONCRETE CURB & GUTTER
-  TRAFFIC FLOW IN THIS STAGE
-  EXISTING SANITARY SEWER
-  EXISTING WATERMAIN

PERMANENT CONSTRUCTION UNDER TRAFFIC IN THIS STAGE. THE CONTRACTOR SHALL PROVIDE FOR FLAGGING OPERATIONS, AS DIRECTED BY THE ENGINEER, PER THE "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS". LUMP SUM BID FOR TRAFFIC CONTROL.

BEGIN CONSTRUCTION  
SP 002-716-012, SAP 103-020-014  
CSAH 116 LWB STA. 9+11.54



- STAGE 1 TRAFFIC CONTROL NOTES:**
- 1) CSAH 116: REMAIN OPEN TO ALL TRAFFIC, WEST OF CSAH 7; BE CLOSED TO ALL TRAFFIC FROM CSAH 7 TO BLACKFOOT ST.; (TRAFFIC WILL BE DETOURED). OPEN TO LOCAL TRAFFIC ONLY FROM BLACKFOOT ST. TO 12TH AVE. (CONTRACTOR MUST MAINTAIN ACCESS TO BLACKFOOT ST.)
  - 2) CSAH 7: REMAIN OPEN TO ALL TRAFFIC DURING CONSTRUCTION.
- STAGE 1 CONSTRUCTION NOTES:**
- WESTBOUND:  
CONSTRUCT WESTBOUND RIGHT THROUGH LANE, SHOULDER, CURB & GUTTER AND PARTIAL MEDIAN; EXPAND THE EXISTING POND, STORM SEWER AND CROSS PIPE.
- EASTBOUND:  
CONSTRUCT NEW BITUMINOUS TRAIL AND BLVD. CSAH116: EAST OF CSAH 7 WILL BE CLOSED FOR MUCKING AND FULL ROAD CONSTRUCTION.

NO	DATE	BY	CKD	APPR	REVISION
NAME: p:102-716-12\plan\0271612_STG1_1.dgn					

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

PRINT NAME: CURT A. KOBIARCSIK  
SIGNATURE: *Curt Kobilarcsik*  
DATE: 6-27-12 LICENSE NO. 24756

DRAWN BY: MN DATE 05/15/2012  
DESIGN BY: MN DATE 12/01/2010  
CHECKED BY: CAK DATE 05/29/2012



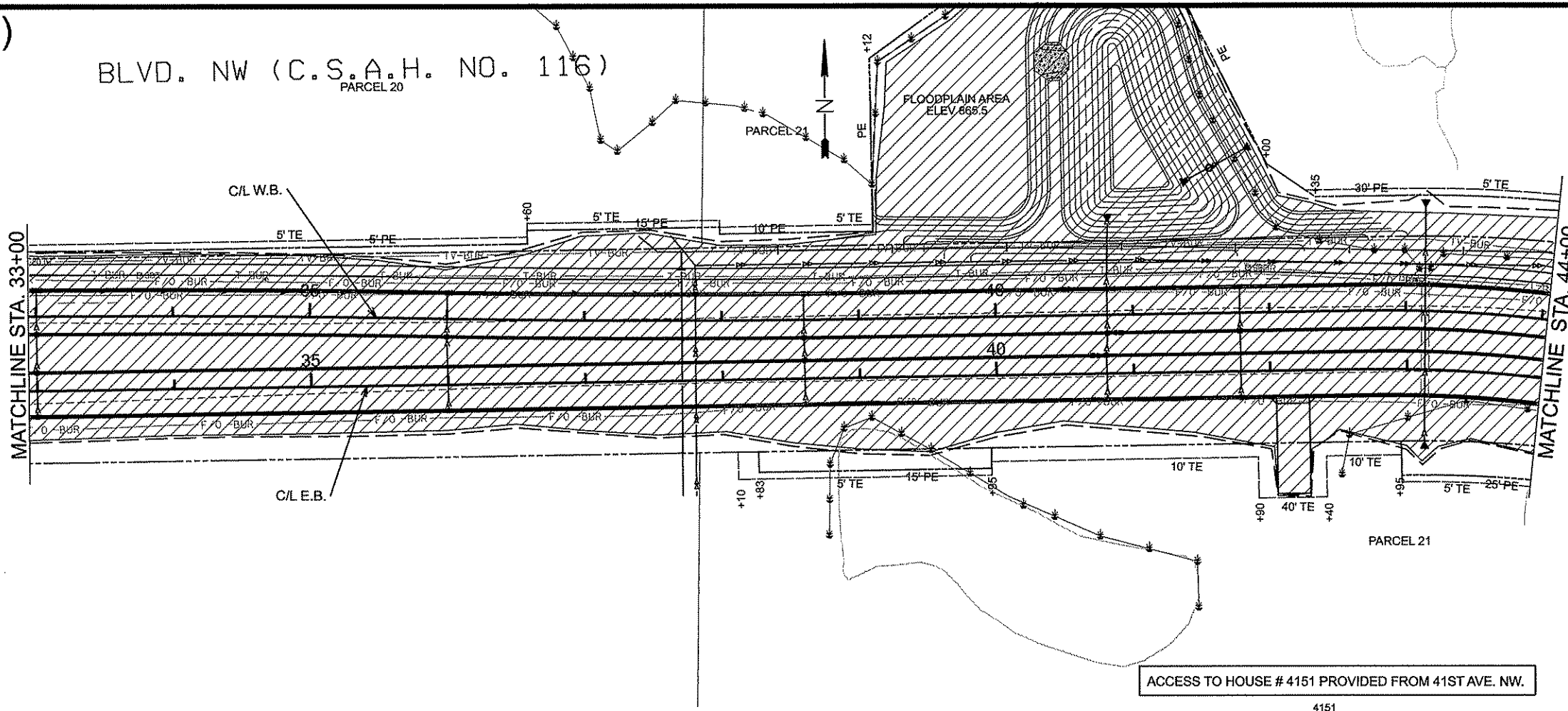
**ANOKA COUNTY  
HIGHWAY DEPT.**

S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

**CONSTRUCTION STAGE 1  
BUNKER LAKE BLVD. (CSAH 116)**  
STA 7+00.00 TO 33+00.00  
Sheet 33 of 282 Sheets

(CSAH 116)

BLVD. NW (C.S.A.H. NO. 116)  
PARCEL 20



LEGEND	
	CONSTRUCTION AREA
	CONSTRUCTION UNDER TRAFFIC
	CONCRETE CURB & GUTTER
	TRAFFIC FLOW IN THIS STAGE
	CONSTRUCT SANITARY SEWER
	CONSTRUCT WATERMAIN
	EXISTING SANITARY SEWER
	EXISTING WATERMAIN



**STAGE 1 TRAFFIC CONTROL NOTES:**

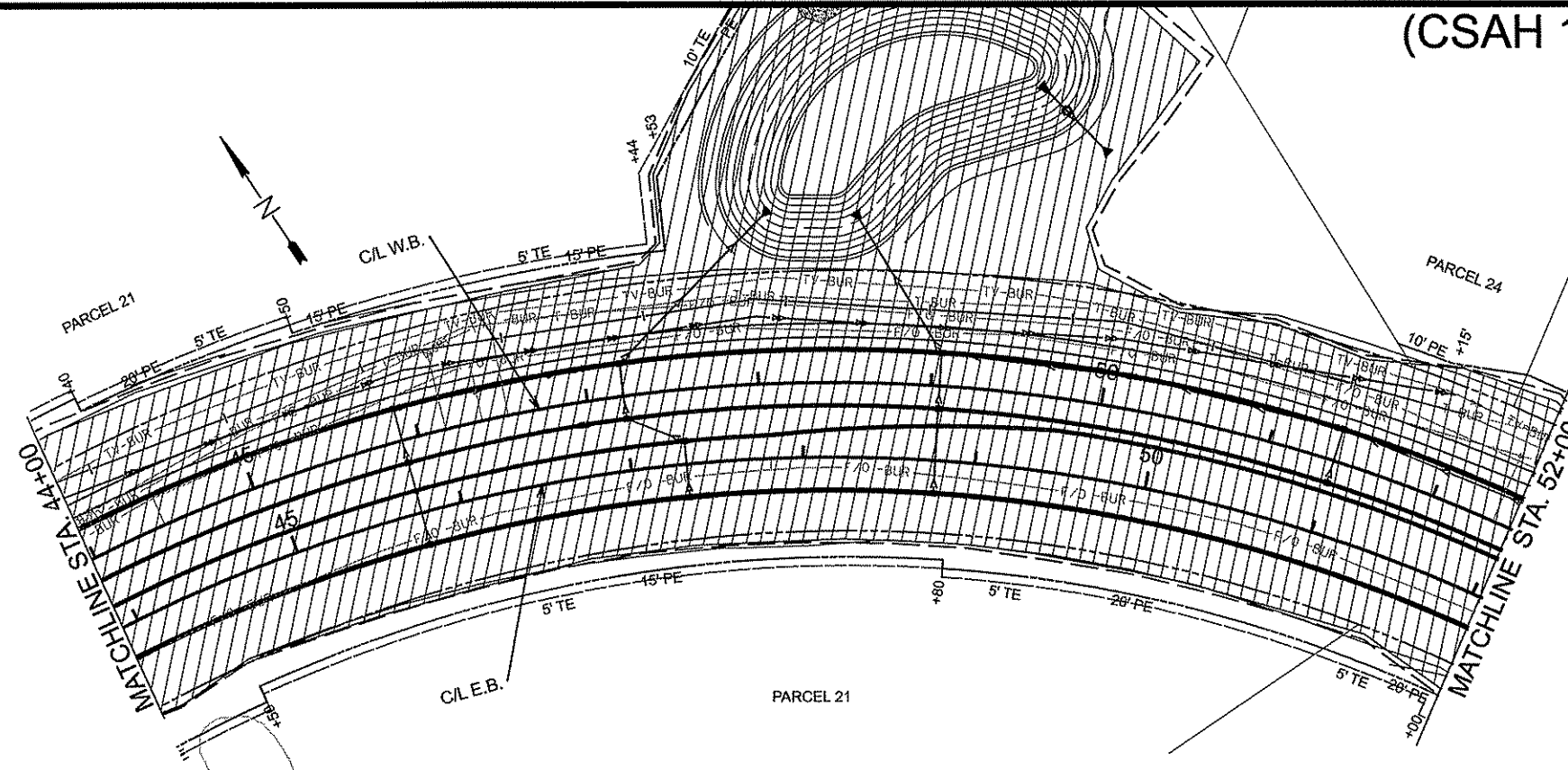
- 1) CSAH 116: REMAIN OPEN TO ALL TRAFFIC, WEST OF CSAH 7; BE CLOSED TO ALL TRAFFIC FROM CSAH 7 TO BLACKFOOT ST.; (TRAFFIC WILL BE DETOURED). OPEN TO LOCAL TRAFFIC ONLY FROM BLACKFOOT ST. TO 12TH AVE. (CONTRACTOR MUST MAINTAIN ACCESS TO BLACKFOOT ST.)
- 2) CSAH 7: REMAIN OPEN TO ALL TRAFFIC DURING CONSTRUCTION.

**STAGE 1 CONSTRUCTION NOTE:**

EXCAVATE MUCK AND CONSTRUCT PONDS, STORM SEWER, LEADS, SANITARY SEWER, WATER MAIN, CROSS PIPE CULVERT AND BOTH EASTBOUND AND WESTBOUND ROADWAY.

(SEE CITY OF ANDOVER SANITARY SEWER AND WATER MAIN CONSTRUCTION PLAN SHEETS.)

(CSAH 116)



NO	DATE	BY	CHKD	APPR	REVISION
NAME: p:102-716-12\plan\0271612_STG1_2.dgn					
06/28/2012 7:30:31 AM					

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.  
 PRINT NAME: CURT A. KOBILARCSIK  
 SIGNATURE: *Curt Kobilarscik*  
 DATE: 6.29.12 LICENSE NO. 24758

DRAWN BY: MN DATE: 05/15/2012  
 DESIGN BY: MN DATE: 12/01/2010  
 CHECKED BY: CAK DATE: 05/28/2012



**ANOKA COUNTY  
 HIGHWAY DEPT.**

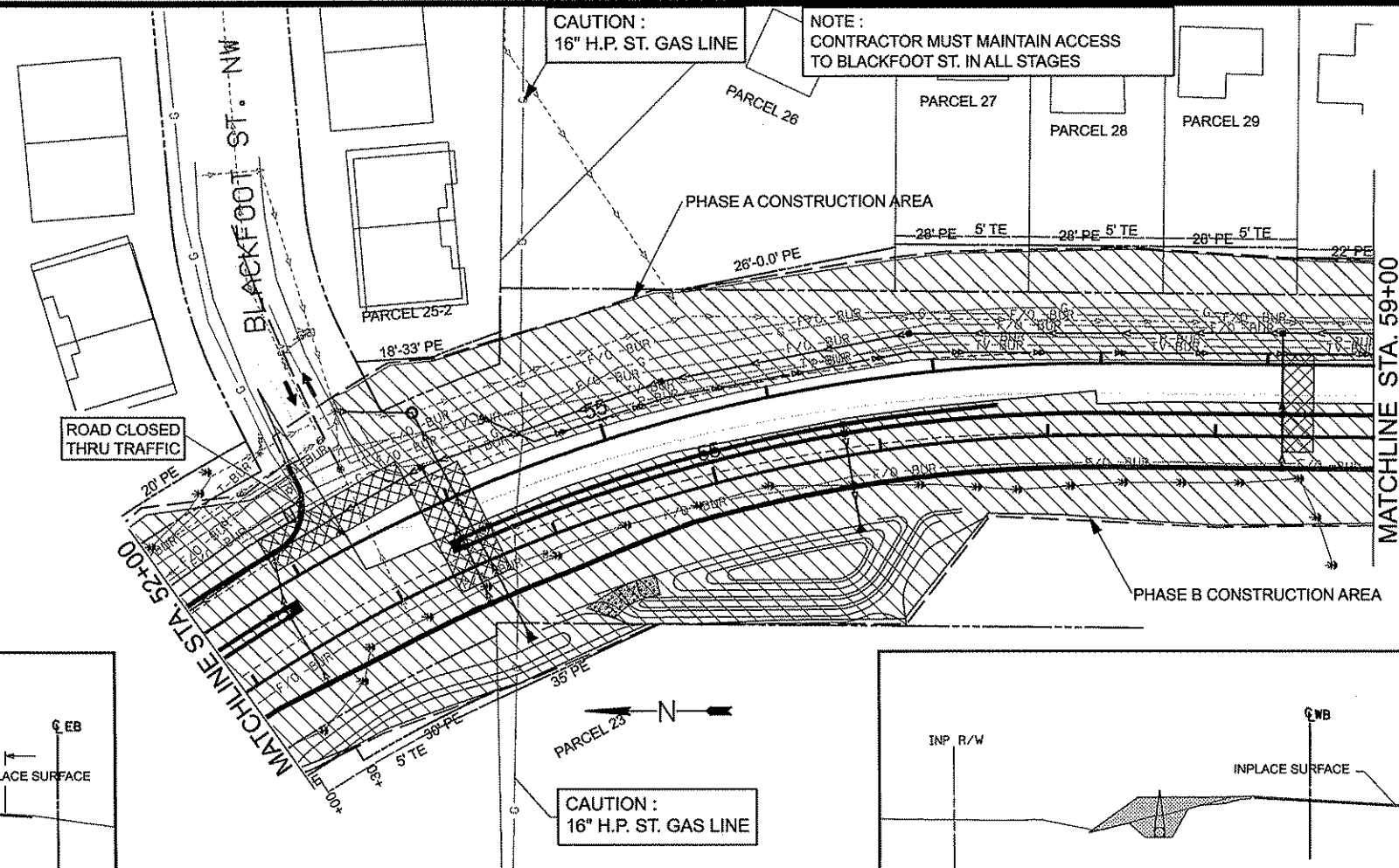
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S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

**CONSTRUCTION STAGE 1  
 BUNKER LAKE BLVD. (CSAH 116)**  
 STA 33+00.00 TO 52+00.00  
 Sheet 34 of 282 Sheets

# (CSAH 116)

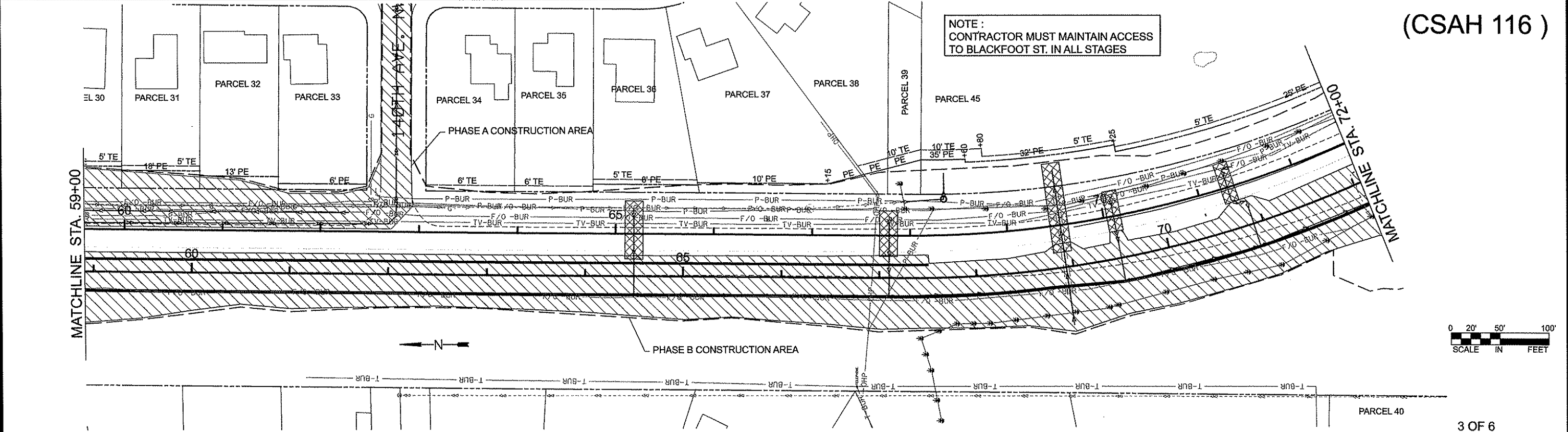
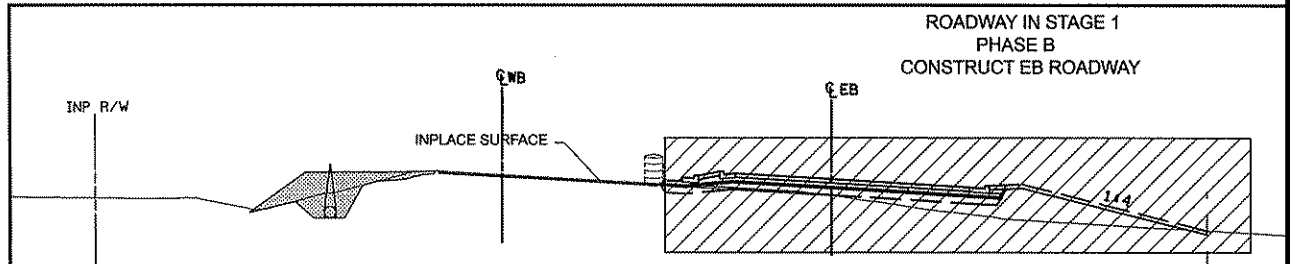
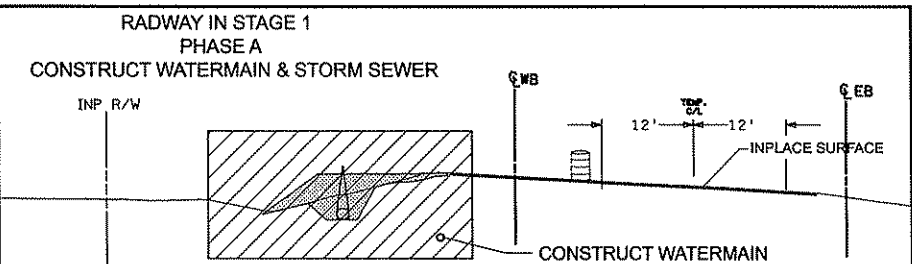
**STAGE 1 TRAFFIC CONTROL NOTES:**  
 1) CSAH 116: REMAIN OPEN TO ALL TRAFFIC, WEST OF CSAH 7; BE CLOSED TO ALL TRAFFIC FROM CSAH 7 TO BLACKFOOT ST.; (TRAFFIC WILL BE DETOURED). OPEN TO LOCAL TRAFFIC ONLY FROM BLACKFOOT ST. TO 12TH AVE. (CONTRACTOR MUST MAINTAIN ACCESS TO BLACKFOOT ST.)  
 2) CSAH 7: REMAIN OPEN TO ALL TRAFFIC DURING CONSTRUCTION.

**STAGE 1 CONSTRUCTION:**  
**PHASE A:**  
 CONSTRUCT WATERMAIN, STORM SEWER TRUNKLINE, LEADS AND PIPE CULVERT FROM STA. 53+50 TO STA. 62+50  
**PHASE B:**  
 CONSTRUCT EASTBOUND ROADWAY, CURB & GUTTER PARTIAL MEDIAN, AND SPECIAL DITCH.  
 (SEE CITY OF ANDOVER SANITARY SEWER AND WATER MAIN CONSTRUCTION PLAN SHEETS.)



LEGEND	
	CONSTRUCTION AREA
	CONSTRUCTION UNDER TRAFFIC
	CONCRETE CURB & GUTTER
	TRAFFIC FLOW IN THIS STAGE
	CONSTRUCT SANITARY SEWER
	CONSTRUCT WATERMAIN
	EXISTING SANITARY SEWER
	EXISTING WATERMAIN

PERMANENT CONSTRUCTION UNDER TRAFFIC IN THIS STAGE. THE CONTRACTOR SHALL PROVIDE FOR FLAGGING OPERATIONS, AS DIRECTED BY THE ENGINEER, PER THE "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS". LUMP SUM BID FOR TRAFFIC CONTROL.



NO	DATE	BY	CKD	APPR	REVISION

NAME: p102-716-12\plan10271612\_STG1\_3.dgn  
 06/28/2012 7:30:34 AM

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.  
 PRINT NAME: CURT A. KOBILARCSIK  
 SIGNATURE: *Curt Kobilarcsik*  
 DATE: 6-29-12 LICENSE NO. 24756

DRAWN BY: MN DATE: 05/15/2012  
 DESIGN BY: MN DATE: 12/01/2010  
 CHECKED BY: CAK DATE: 05/29/2012



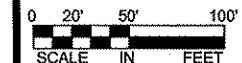
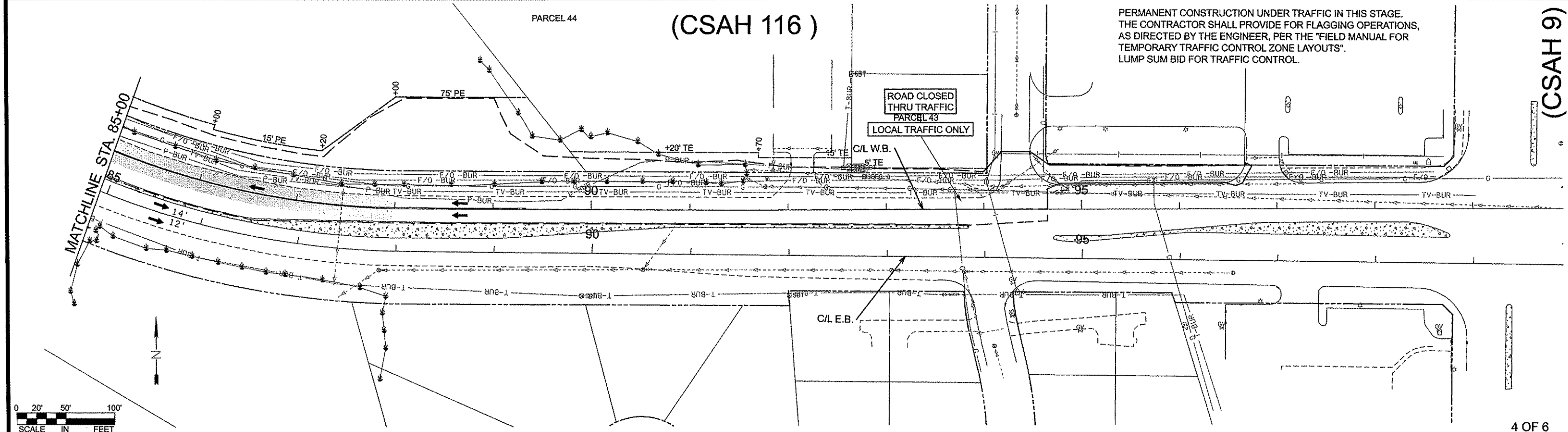
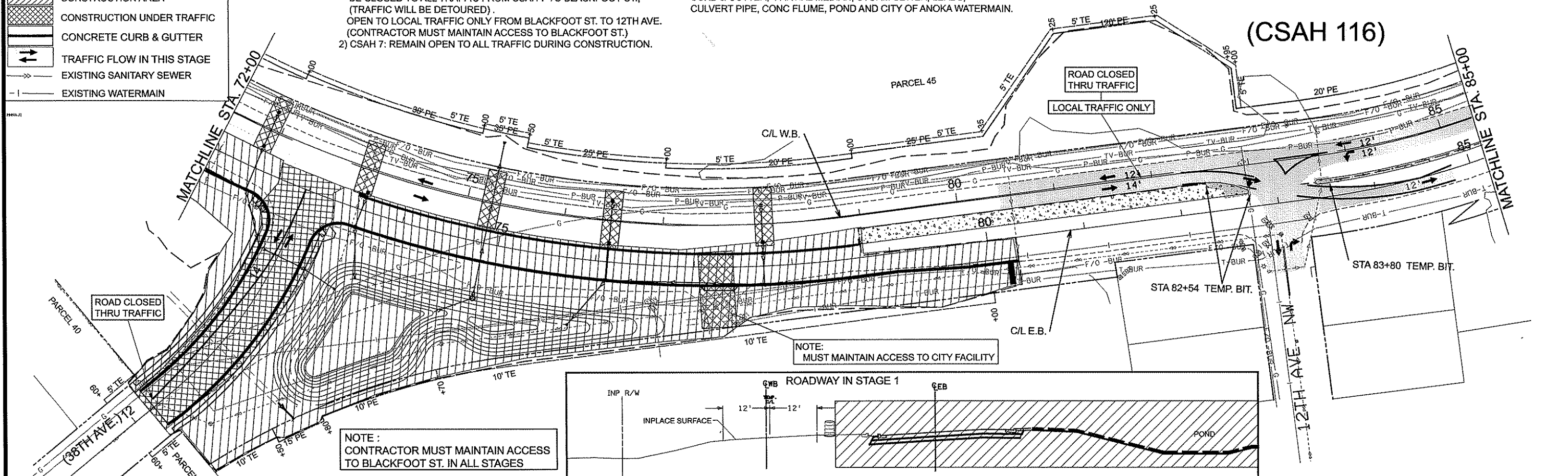
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S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

CONSTRUCTION STAGE 1  
 BUNKER LAKE BLVD. (CSAH 116)  
 STA 52+00.00 TO 72+00.00  
 Sheet 35 of 282 Sheets

LEGEND	
	CONSTRUCTION AREA
	CONSTRUCTION UNDER TRAFFIC
	CONCRETE CURB & GUTTER
	TRAFFIC FLOW IN THIS STAGE
	EXISTING SANITARY SEWER
	EXISTING WATERMAIN

**STAGE 1 TRAFFIC CONTROL NOTES:**  
 1) CSAH 116: REMAIN OPEN TO ALL TRAFFIC, WEST OF CSAH 7; BE CLOSED TO ALL TRAFFIC FROM CSAH 7 TO BLACKFOOT ST.; (TRAFFIC WILL BE DETOURED). OPEN TO LOCAL TRAFFIC ONLY FROM BLACKFOOT ST. TO 12TH AVE. (CONTRACTOR MUST MAINTAIN ACCESS TO BLACKFOOT ST.)  
 2) CSAH 7: REMAIN OPEN TO ALL TRAFFIC DURING CONSTRUCTION.

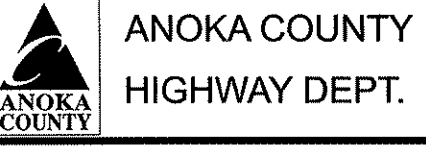
**STAGE 1 CONSTRUCTION NOTES:**  
 CONSTRUCT TEMPORARY BIT, MEDIAN, EASTBOUND ROADWAY, CURB & GUTTER, PARTIAL MEDIAN, STORM SEWER, LEADS, CULVERT PIPE, CONC FLUME, POND AND CITY OF ANOKA WATERMAIN.



NO	DATE	BY	CKD	APPR	REVISION
NAME: p:\02-716-12\plan\0271612_STG1_4.dgn					
27/08/2012 7:30:39 AM					

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.  
 PRINT NAME: CURT A. KOBILARCSIK  
 SIGNATURE: *Curt Kobilarcsik*  
 DATE: 6-29-12 LICENSE NO. 24756

DRAWN BY MN DATE 05/15/2012  
 DESIGN BY MN DATE 12/01/2010  
 CHECKED BY CAK DATE 05/28/2012



S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

CONSTRUCTION STAGE 1  
 BUNKER LAKE BLVD. (CSAH 116)  
 STA 72+00.00 TO 99+00.00  
 Sheet 36 of 282 Sheets

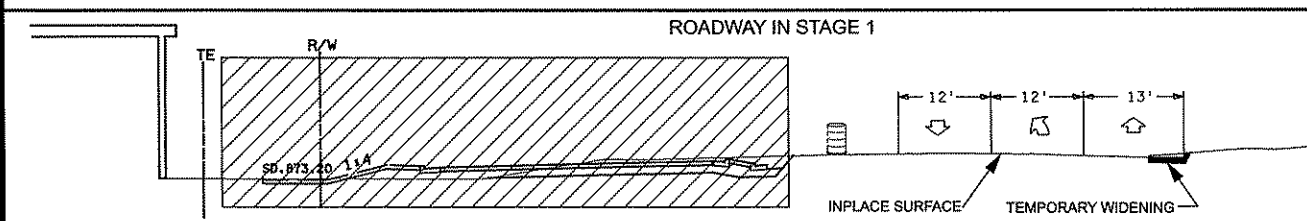
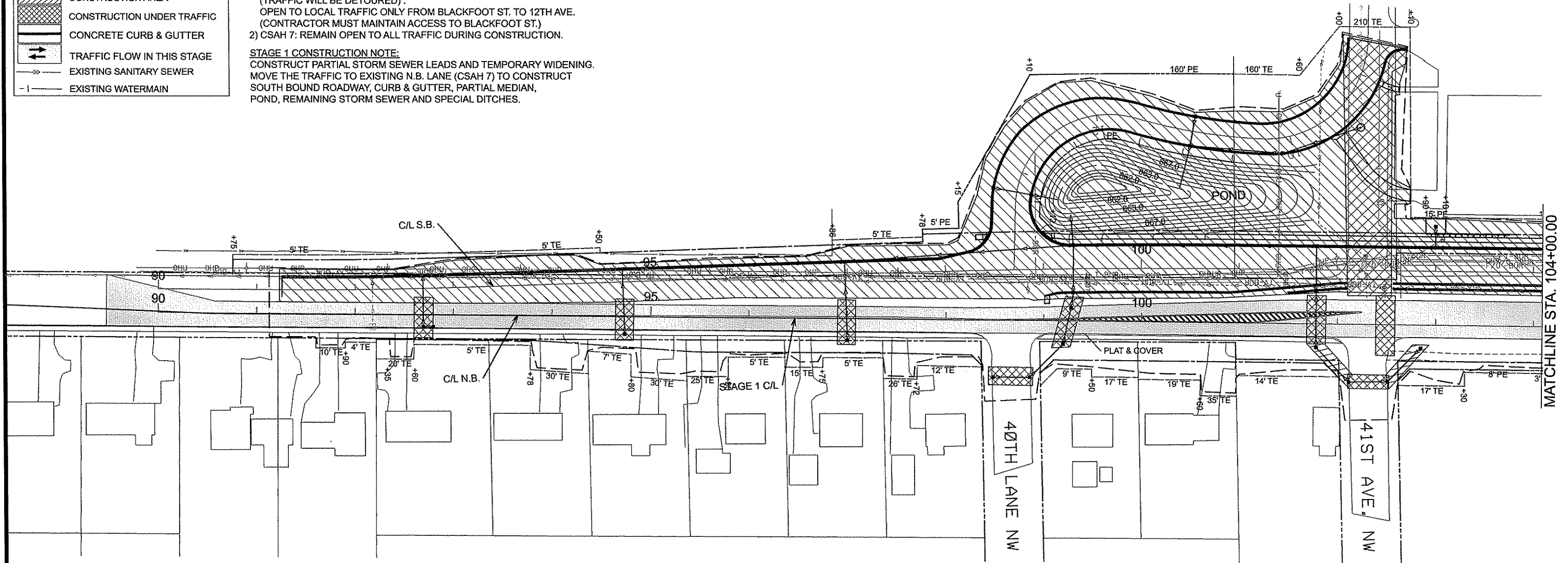
(CSAH 9)

(CSAH 7)

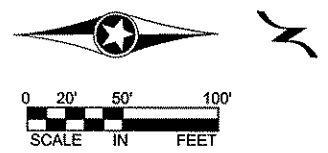
LEGEND	
	CONSTRUCTION AREA
	CONSTRUCTION UNDER TRAFFIC
	CONCRETE CURB & GUTTER
	TRAFFIC FLOW IN THIS STAGE
	EXISTING SANITARY SEWER
	EXISTING WATERMAIN

**STAGE 1 TRAFFIC CONTROL NOTES:**  
 1) CSAH 116: REMAIN OPEN TO ALL TRAFFIC, WEST OF CSAH 7; BE CLOSED TO ALL TRAFFIC FROM CSAH 7 TO BLACKFOOT ST.; (TRAFFIC WILL BE DETOURED). OPEN TO LOCAL TRAFFIC ONLY FROM BLACKFOOT ST. TO 12TH AVE. (CONTRACTOR MUST MAINTAIN ACCESS TO BLACKFOOT ST.)  
 2) CSAH 7: REMAIN OPEN TO ALL TRAFFIC DURING CONSTRUCTION.

**STAGE 1 CONSTRUCTION NOTE:**  
 CONSTRUCT PARTIAL STORM SEWER LEADS AND TEMPORARY WIDENING. MOVE THE TRAFFIC TO EXISTING N.B. LANE (CSAH 7) TO CONSTRUCT SOUTH BOUND ROADWAY, CURB & GUTTER, PARTIAL MEDIAN, POND, REMAINING STORM SEWER AND SPECIAL DITCHES.



PERMANENT CONSTRUCTION UNDER TRAFFIC IN THIS STAGE. THE CONTRACTOR SHALL PROVIDE FOR FLAGGING OPERATIONS, AS DIRECTED BY THE ENGINEER, PER THE "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS". LUMP SUM BID FOR TRAFFIC CONTROL.



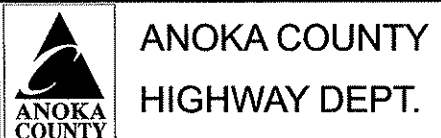
5 OF 6

NO	DATE	BY	CKD	APPR	REVISION

NAME: p:02-716-12\plan\0271612\_STG1\_5.dgn 06/28/2012 7:30:43 AM

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.  
 PRINT NAME: CURT A. KOBILARCSIK  
 SIGNATURE: *Curt Kobilarcsik*  
 DATE: 6.29.12 LICENSE NO. 24756

DRAWN BY MN DATE 05/15/2012  
 DESIGN BY MN DATE 12/01/2010  
 CHECKED BY CAK DATE 05/29/2012

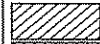


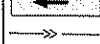
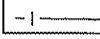



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S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

CONSTRUCTION STAGE 1  
 7th Ave. NW. (CSAH 7)  
 STA 90+00.00 TO 104+00.00  
 Sheet 37 of 282 Sheets

(CSAH 7)

**LEGEND**

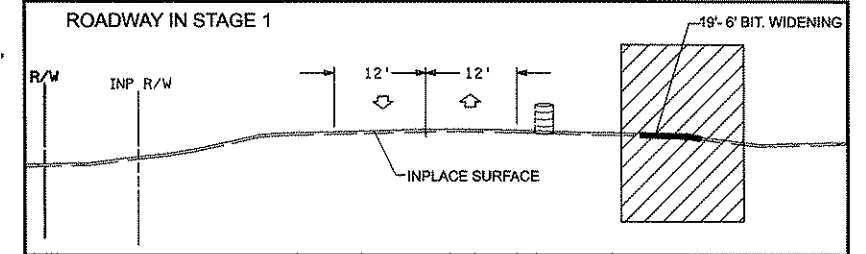
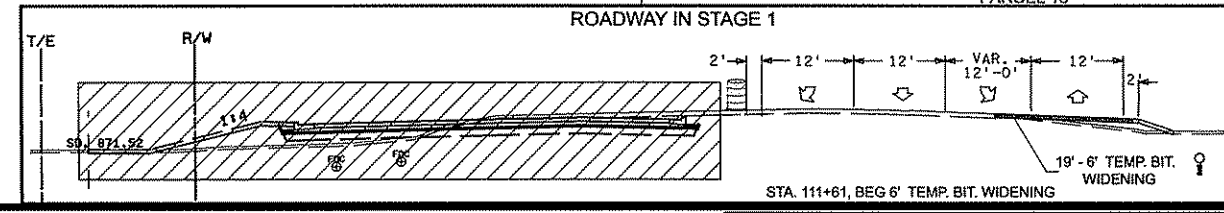
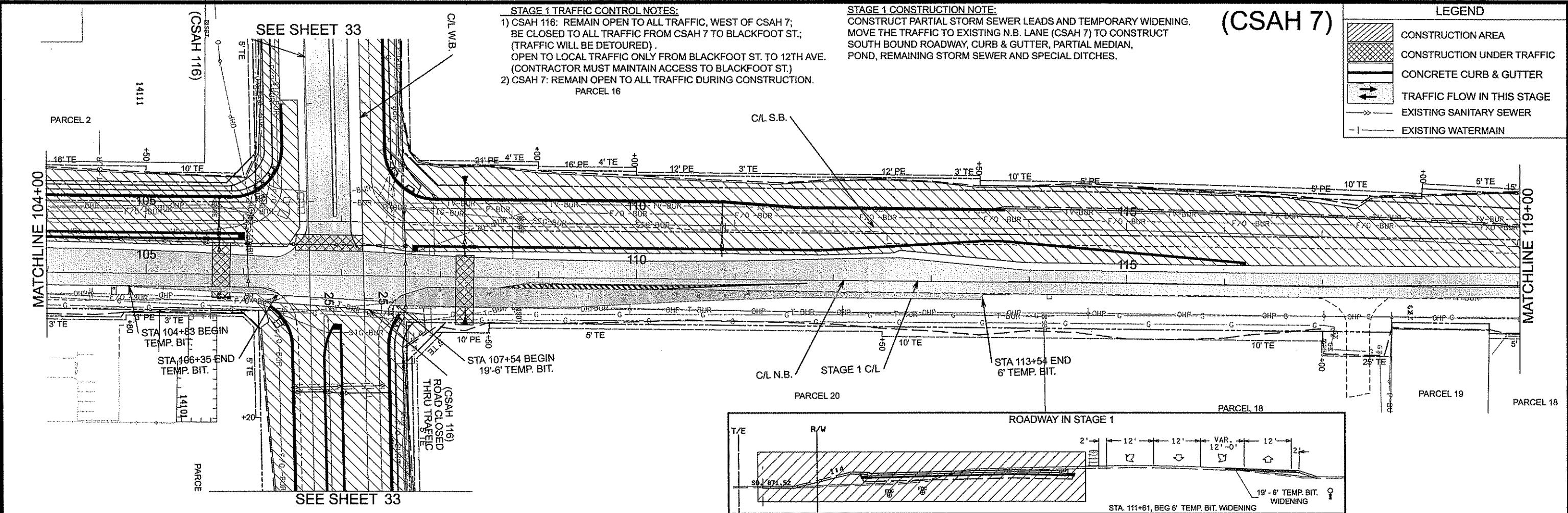
-  CONSTRUCTION AREA
-  CONSTRUCTION UNDER TRAFFIC
-  CONCRETE CURB & GUTTER
-  TRAFFIC FLOW IN THIS STAGE
-  EXISTING SANITARY SEWER
-  EXISTING WATERMAIN

**STAGE 1 TRAFFIC CONTROL NOTES:**

- 1) CSAH 116: REMAIN OPEN TO ALL TRAFFIC, WEST OF CSAH 7; BE CLOSED TO ALL TRAFFIC FROM CSAH 7 TO BLACKFOOT ST.; (TRAFFIC WILL BE DETOURED). OPEN TO LOCAL TRAFFIC ONLY FROM BLACKFOOT ST. TO 12TH AVE. (CONTRACTOR MUST MAINTAIN ACCESS TO BLACKFOOT ST.)
  - 2) CSAH 7: REMAIN OPEN TO ALL TRAFFIC DURING CONSTRUCTION.
- PARCEL 16

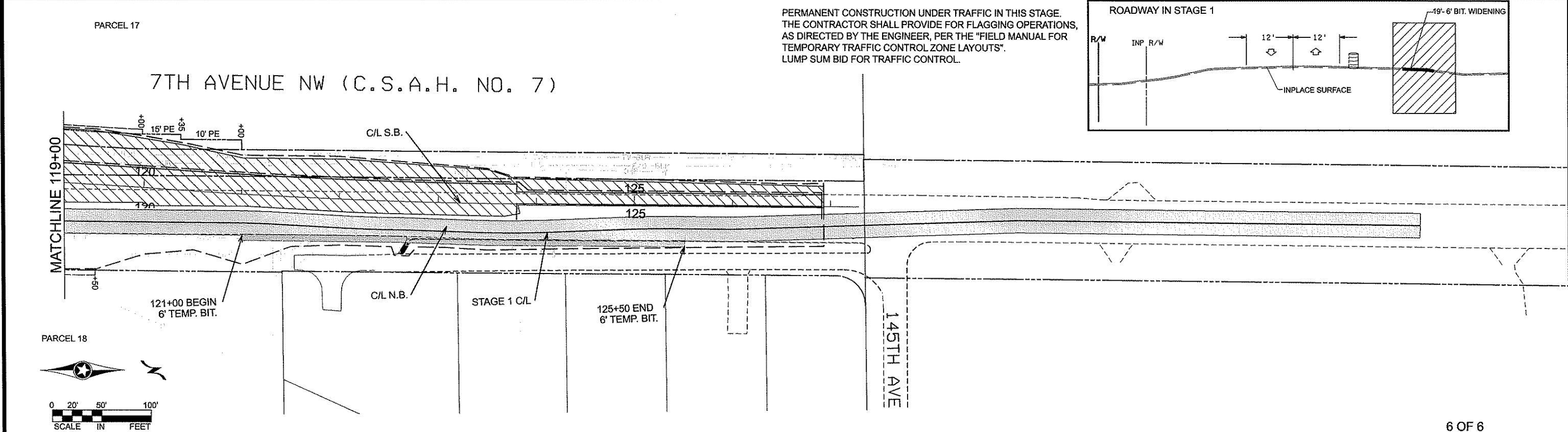
**STAGE 1 CONSTRUCTION NOTE:**

CONSTRUCT PARTIAL STORM SEWER LEADS AND TEMPORARY WIDENING. MOVE THE TRAFFIC TO EXISTING N.B. LANE (CSAH 7) TO CONSTRUCT SOUTH BOUND ROADWAY, CURB & GUTTER, PARTIAL MEDIAN, POND, REMAINING STORM SEWER AND SPECIAL DITCHES.

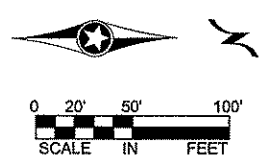


PERMANENT CONSTRUCTION UNDER TRAFFIC IN THIS STAGE. THE CONTRACTOR SHALL PROVIDE FOR FLAGGING OPERATIONS, AS DIRECTED BY THE ENGINEER, PER THE "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS". LUMP SUM BID FOR TRAFFIC CONTROL.

7TH AVENUE NW (C.S.A.H. NO. 7)



PARCEL 18



0 20' 50' 100'  
SCALE IN FEET

NO	DATE	BY	CKD	APPR	REVISION

NAME: p:\02-716-12\plan\0271612\_STG1\_6.dgn  
06/28/2012 7:30:54 AM

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

PRINT NAME: CURT A. KOBILARCSIK  
SIGNATURE: *Curt Kobilarscik*  
DATE: 6-29-12 LICENSE NO. 24756

DRAWN BY MN DATE 05/15/2012  
DESIGN BY MN DATE 12/01/2010  
CHECKED BY CAK DATE 05/29/2012









**ANOKA COUNTY  
HIGHWAY DEPT.**

S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

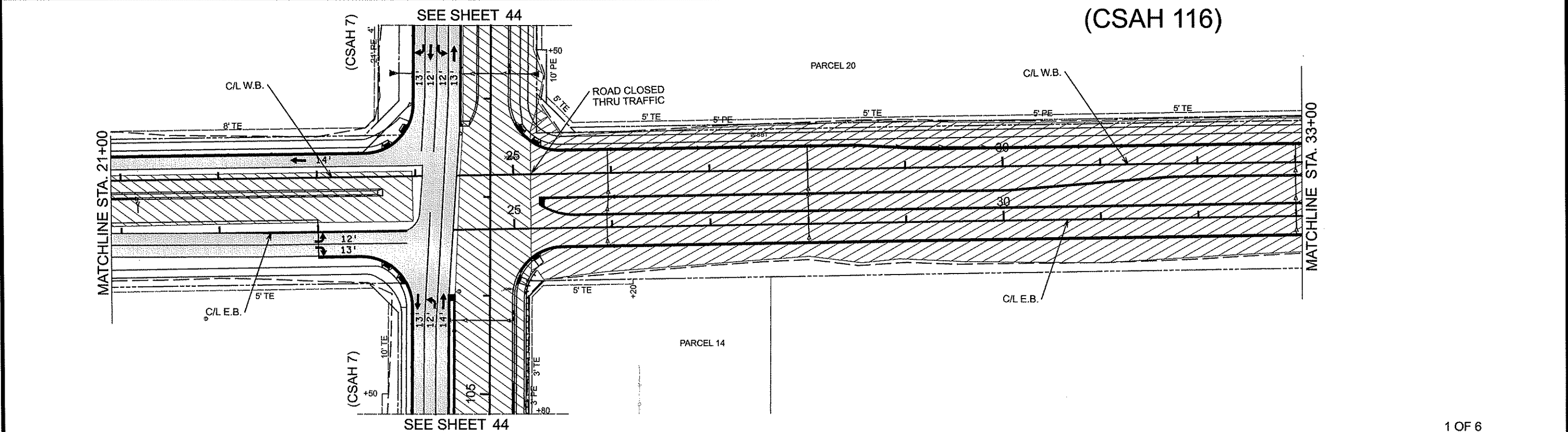
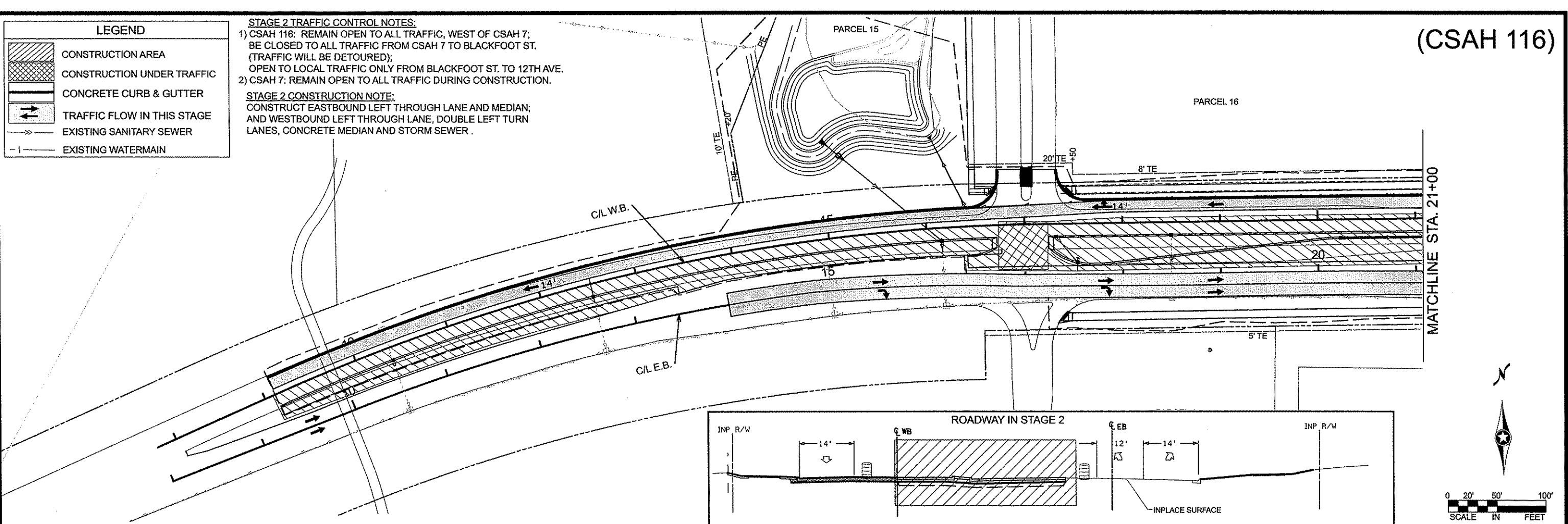
CONSTRUCTION STAGE 1  
7th AVE. (CSAH 7)  
STA 104+00.00 TO 133+00.00  
Sheet 38 of 282 Sheets

**LEGEND**

-  CONSTRUCTION AREA
-  CONSTRUCTION UNDER TRAFFIC
-  CONCRETE CURB & GUTTER
-  TRAFFIC FLOW IN THIS STAGE
-  EXISTING SANITARY SEWER
-  EXISTING WATERMAIN

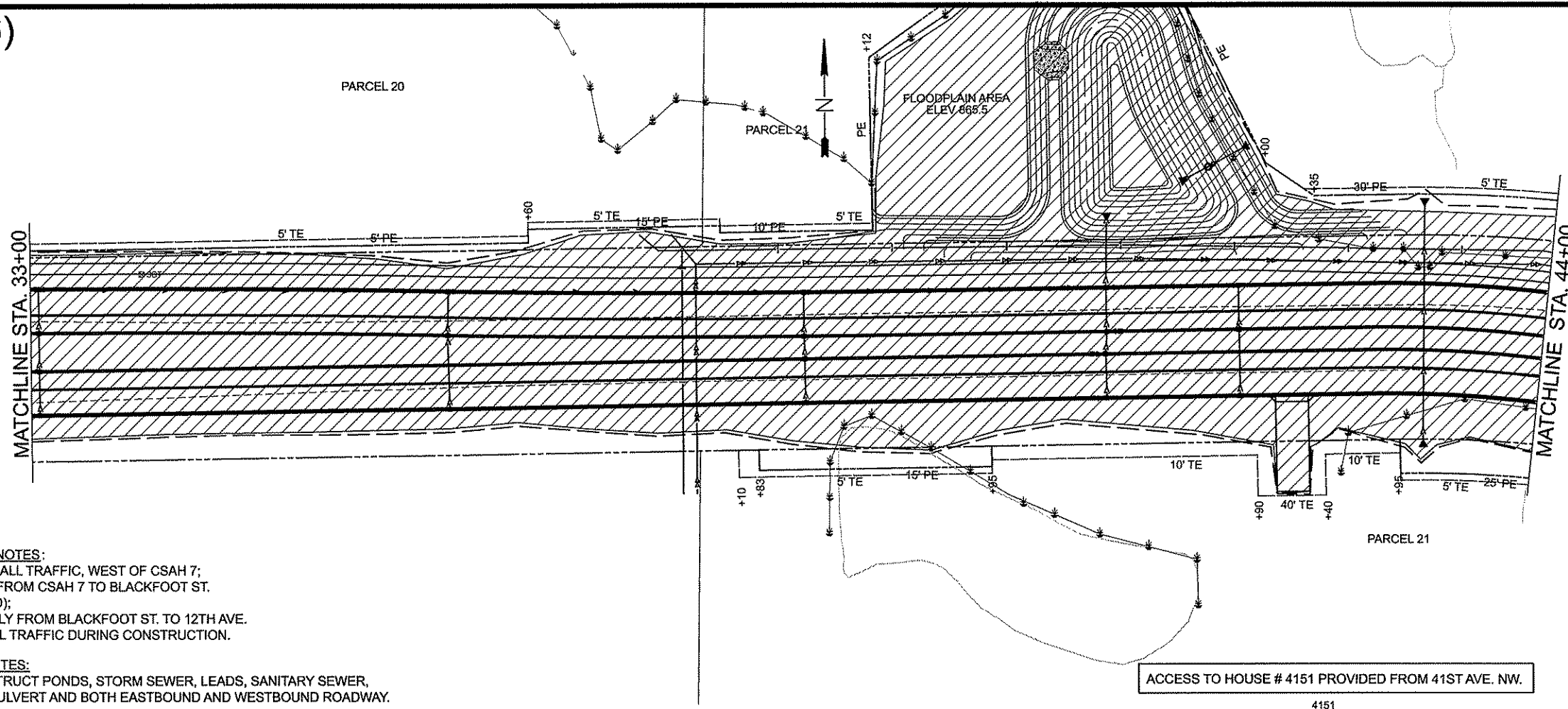
**STAGE 2 TRAFFIC CONTROL NOTES:**  
 1) CSAH 116: REMAIN OPEN TO ALL TRAFFIC, WEST OF CSAH 7; BE CLOSED TO ALL TRAFFIC FROM CSAH 7 TO BLACKFOOT ST. (TRAFFIC WILL BE DETOURED); OPEN TO LOCAL TRAFFIC ONLY FROM BLACKFOOT ST. TO 12TH AVE.  
 2) CSAH 7: REMAIN OPEN TO ALL TRAFFIC DURING CONSTRUCTION.

**STAGE 2 CONSTRUCTION NOTE:**  
 CONSTRUCT EASTBOUND LEFT THROUGH LANE AND MEDIAN; AND WESTBOUND LEFT THROUGH LANE, DOUBLE LEFT TURN LANES, CONCRETE MEDIAN AND STORM SEWER.



<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>NO</th> <th>DATE</th> <th>BY</th> <th>CKD</th> <th>APPR</th> <th>REVISION</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table> <p>NAME: p:\02-716-12\plan\0271612_STG2_1.dgn</p>	NO	DATE	BY	CKD	APPR	REVISION							<p>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.</p> <p>PRINT NAME: CURT A. KOBILARCSIK</p> <p>SIGNATURE: <i>Curt Kobilarcsik</i></p> <p>DATE: 6.29.12 LICENSE NO. 24756</p>	<p>DRAWN BY: MN DATE: 05/15/2012</p> <p>DESIGN BY: MN DATE: 12/01/2010</p> <p>CHECKED BY: CAK DATE: 05/29/2012</p>	<p style="text-align: center;"><b>ANOKA COUNTY</b> HIGHWAY DEPT.</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>S.P. 002-716-012</td> <td>S.P. 198-020-030</td> <td>S.P. 002-607-021</td> </tr> <tr> <td>S.P. 198-020-031</td> <td> </td> <td>S.P. 198-020-032</td> </tr> <tr> <td>S.P. 103-020-014</td> <td> </td> <td>S.P. 103-020-015</td> </tr> </table>	S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021	S.P. 198-020-031		S.P. 198-020-032	S.P. 103-020-014		S.P. 103-020-015	<p><b>CONSTRUCTION STAGE 2</b>  <b>BUNKER LAKE BLVD. (CSAH 116)</b>          STA 7+00.00 TO 33+00.00</p> <p>Sheet 39 of 282 Sheets</p>
NO	DATE	BY	CKD	APPR	REVISION																					
S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021																								
S.P. 198-020-031		S.P. 198-020-032																								
S.P. 103-020-014		S.P. 103-020-015																								

(CSAH 116)



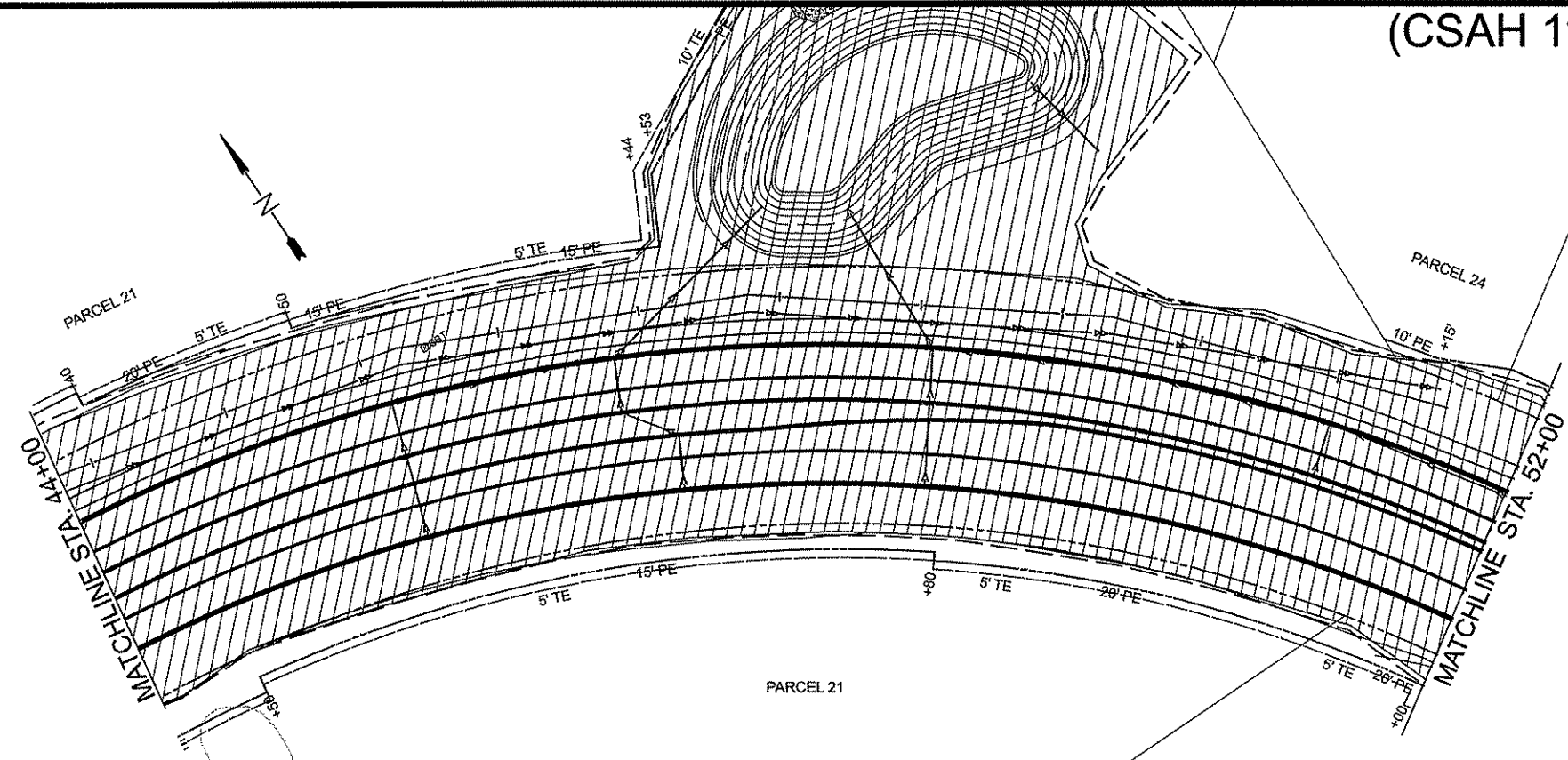
LEGEND	
	CONSTRUCTION AREA
	CONSTRUCTION UNDER TRAFFIC
	CONCRETE CURB & GUTTER
	TRAFFIC FLOW IN THIS STAGE
	CONSTRUCT SANITARY SEWER
	CONSTRUCT WATERMAIN
	EXISTING SANITARY SEWER
	EXISTING WATERMAIN

- STAGE 2 TRAFFIC CONTROL NOTES:**
- 1) CSAH 116: REMAIN OPEN TO ALL TRAFFIC, WEST OF CSAH 7; BE CLOSED TO ALL TRAFFIC FROM CSAH 7 TO BLACKFOOT ST. (TRAFFIC WILL BE DETOURED); OPEN TO LOCAL TRAFFIC ONLY FROM BLACKFOOT ST. TO 12TH AVE.
  - 2) CSAH 7: REMAIN OPEN TO ALL TRAFFIC DURING CONSTRUCTION.

**STAGE 2 CONSTRUCTION NOTES:**  
 EXCAVATE MUCK AND CONSTRUCT PONDS, STORM SEWER, LEADS, SANITARY SEWER, WATER MAIN, CROSS PIPE CULVERT AND BOTH EASTBOUND AND WESTBOUND ROADWAY.



(CSAH 116)



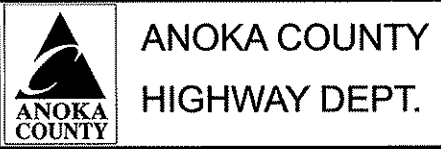
NO	DATE	BY	CHKD	APPR	REVISION

NAME: p:02-716-12\plan\0271612\_STG2\_2.dgn      06/28/2012      7:31:01 AM

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

PRINT NAME: CURT A. KOBILARCSIK  
 SIGNATURE: *Curt A. Kobilarsik*  
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DRAWN BY: MN      DATE: 05/15/2012  
 DESIGN BY: MN      DATE: 12/01/2010  
 CHECKED BY: CAK      DATE: 05/28/2012

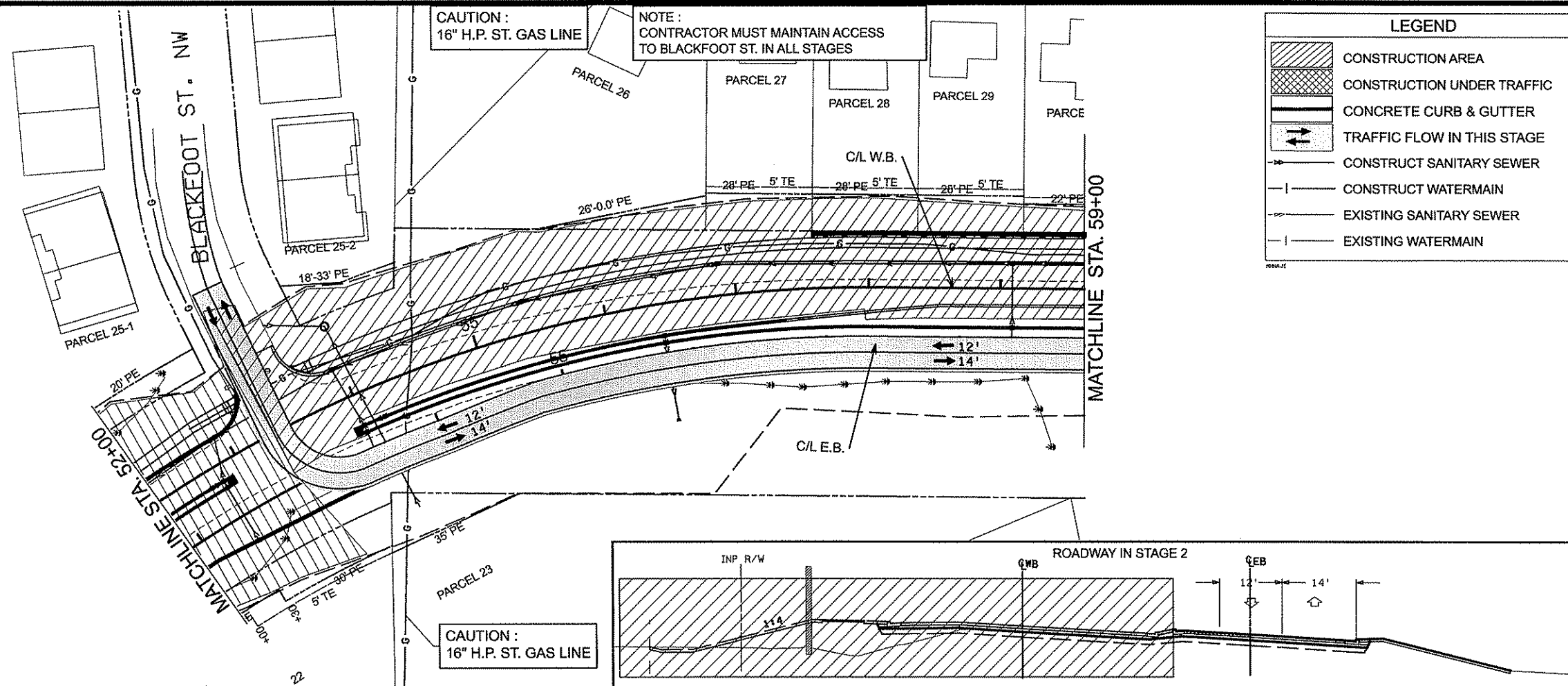


S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

CONSTRUCTION STAGE 2  
 BUNKER LAKE BLVD. (CSAH 116)  
 STA 33+00.00 TO 52+00.00  
 Sheet 40 of 282 Sheets



(CSAH 116)

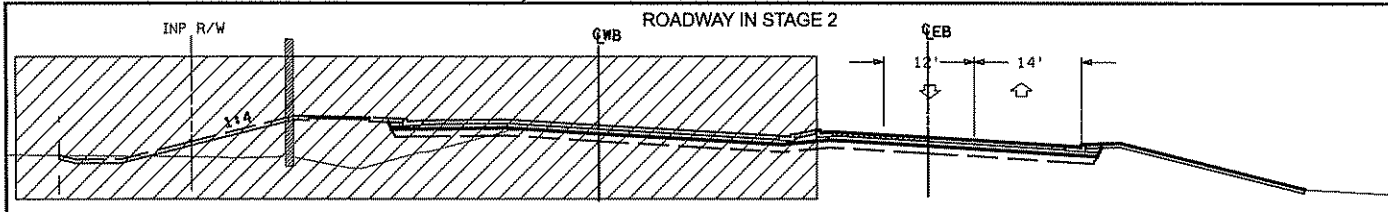
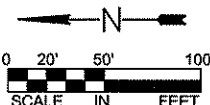


STAGE 2 TRAFFIC CONTROL NOTES:

- CSAH 116: REMAIN OPEN TO ALL TRAFFIC, WEST OF CSAH 7; BE CLOSED TO ALL TRAFFIC FROM CSAH 7 TO BLACKFOOT ST. (TRAFFIC WILL BE DETOURED); OPEN TO LOCAL TRAFFIC ONLY FROM BLACKFOOT ST. TO 12TH AVE.
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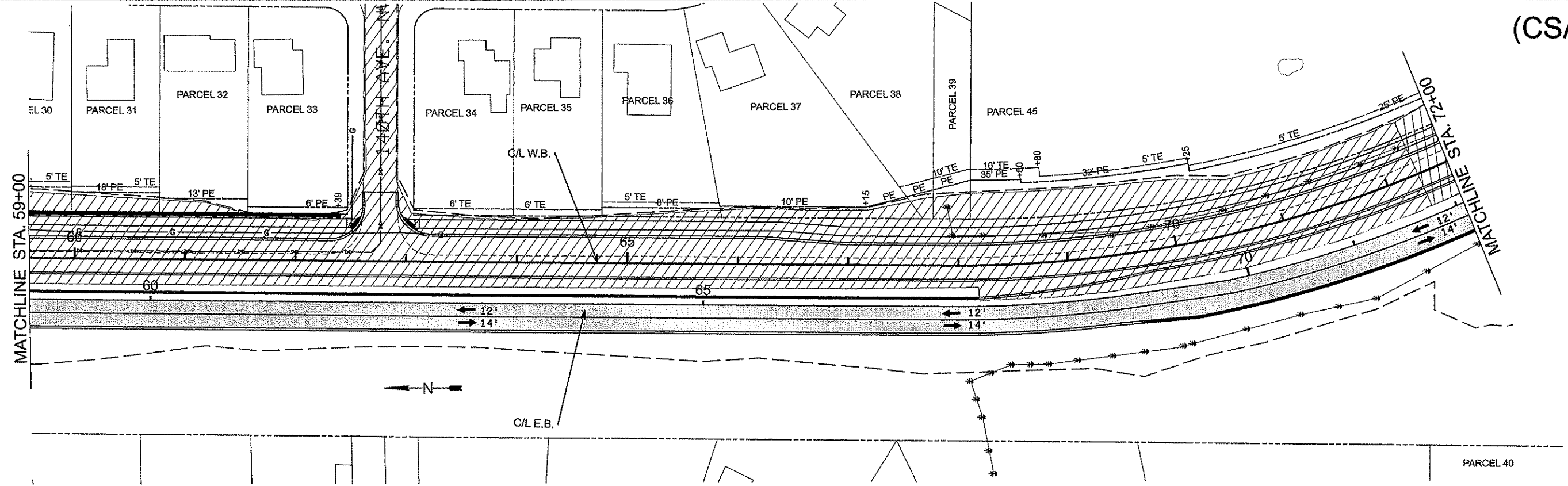
STAGE 2 CONSTRUCTION NOTES:

CONSTRUCT WESTBOUND ROADWAY, CURB & GUTTER, BITUMINOUS TRAIL, SPECIAL DITCH AND NOISE BARRIER.



CAUTION: 16" H.P. ST. GAS LINE

(CSAH 116)



3 OF 6

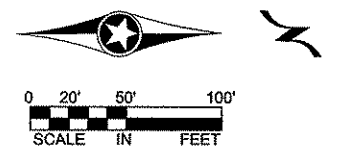
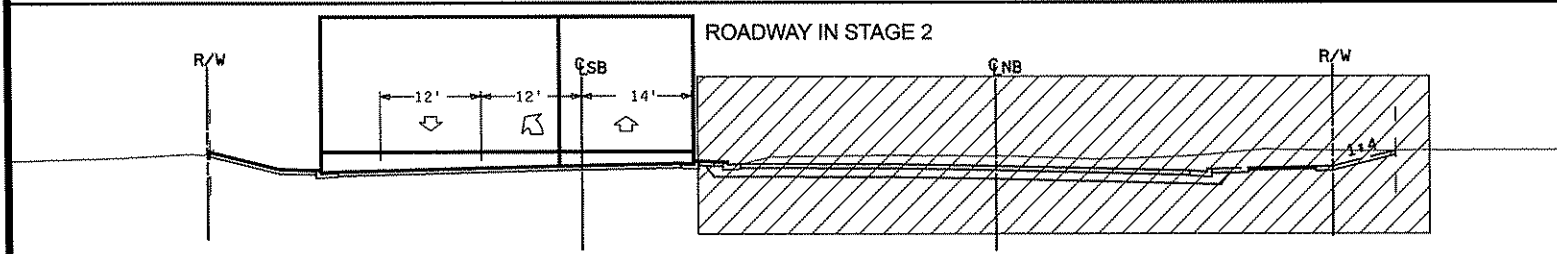
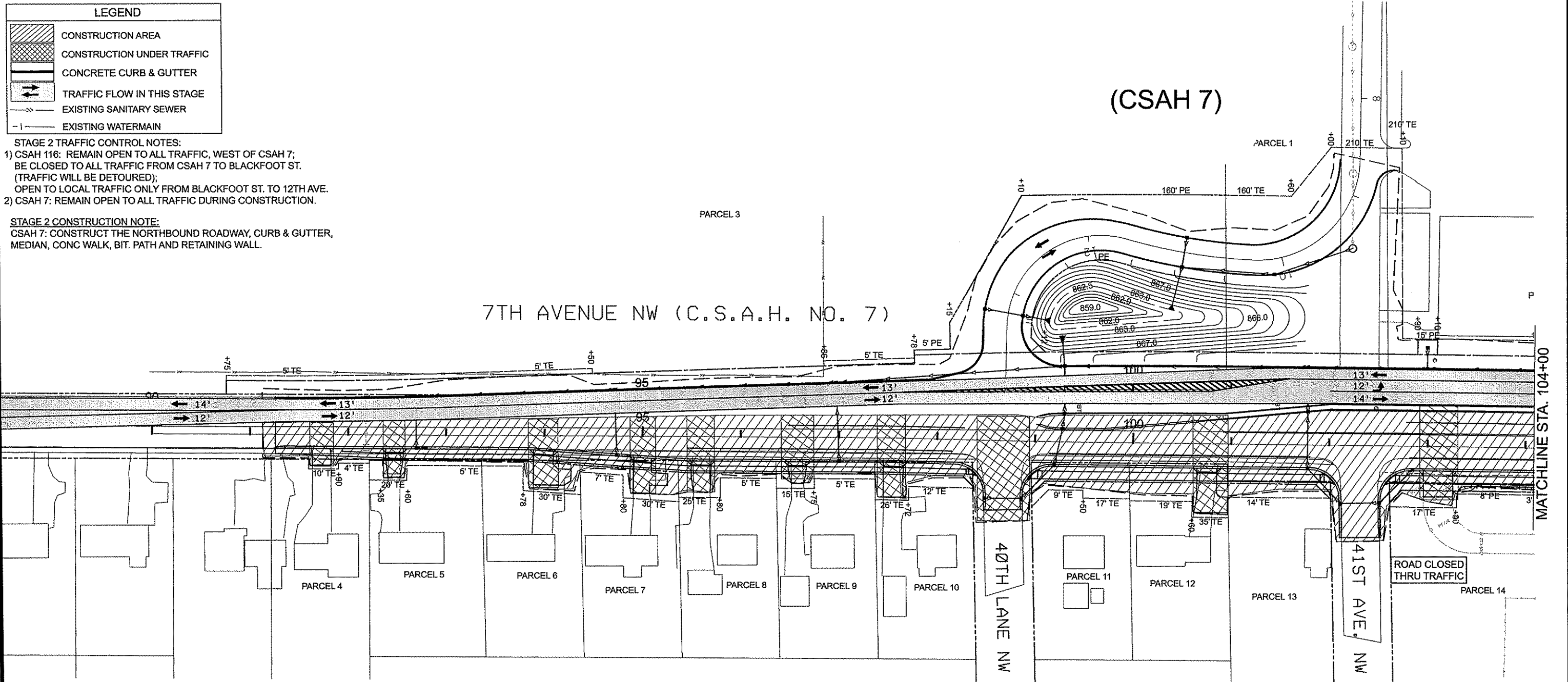
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NO	DATE	BY	CKD	APPR	REVISION							
NAME: p:\02-716-12\plan\0271612_STG2_3.dgn					06/28/2012	7:31:04 AM						



LEGEND	
	CONSTRUCTION AREA
	CONSTRUCTION UNDER TRAFFIC
	CONCRETE CURB & GUTTER
	TRAFFIC FLOW IN THIS STAGE
	EXISTING SANITARY SEWER
	EXISTING WATERMAIN

STAGE 2 TRAFFIC CONTROL NOTES:  
 1) CSAH 116: REMAIN OPEN TO ALL TRAFFIC, WEST OF CSAH 7;  
 BE CLOSED TO ALL TRAFFIC FROM CSAH 7 TO BLACKFOOT ST.  
 (TRAFFIC WILL BE DETOURED);  
 OPEN TO LOCAL TRAFFIC ONLY FROM BLACKFOOT ST. TO 12TH AVE.  
 2) CSAH 7: REMAIN OPEN TO ALL TRAFFIC DURING CONSTRUCTION.

STAGE 2 CONSTRUCTION NOTE:  
 CSAH 7: CONSTRUCT THE NORTHBOUND ROADWAY, CURB & GUTTER,  
 MEDIAN, CONC WALK, BIT. PATH AND RETAINING WALL.



5 OF 6

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-716-12\Plant\0271612\_STG2\_5.dgn 06/28/2012 8:11:44 AM

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.  
 PRINT NAME: CURT A. KOBILARCSIK  
 SIGNATURE: *Curt Kobilarcsik*  
 DATE: 6-29-12 LICENSE NO. 24758

DRAWN BY: MN DATE: 05/15/2012  
 DESIGN BY: MN DATE: 12/01/2010  
 CHECKED BY: CAK DATE: 05/29/2012

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

S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

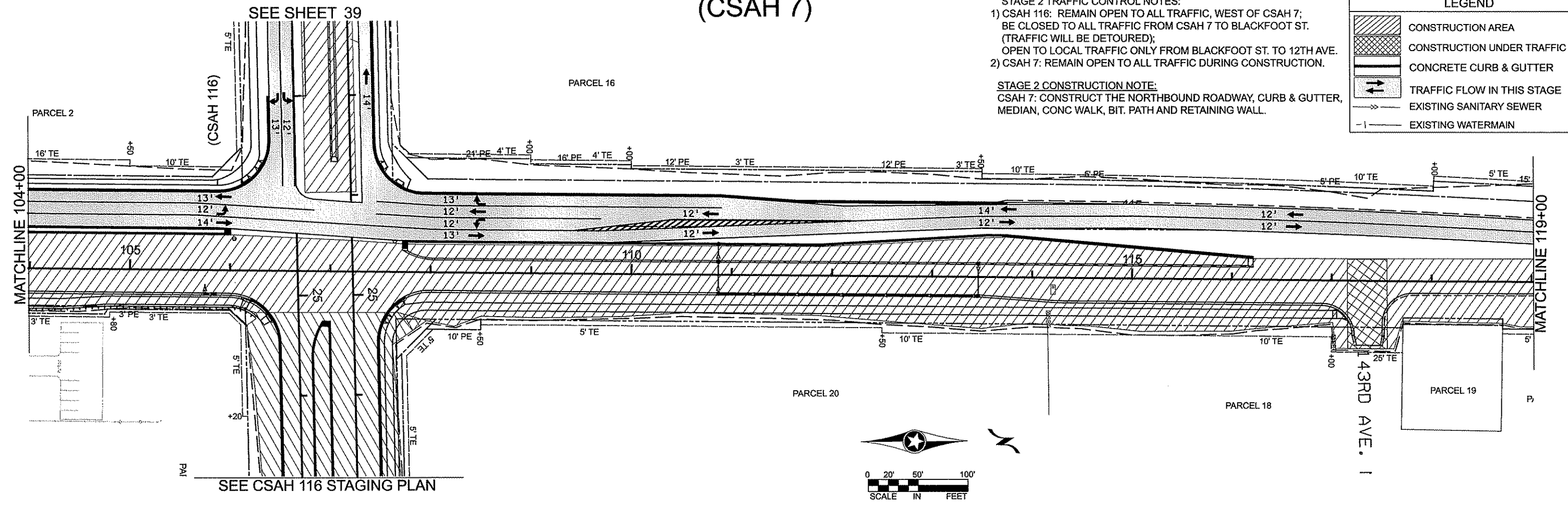
CONSTRUCTION STAGE 2  
 7th Ave. NW. (CSAH 7)  
 STA 90+00.00 TO 104+00.00  
 Sheet 43 of 282 Sheets

(CSAH 7)

STAGE 2 TRAFFIC CONTROL NOTES:  
 1) CSAH 116: REMAIN OPEN TO ALL TRAFFIC, WEST OF CSAH 7;  
 BE CLOSED TO ALL TRAFFIC FROM CSAH 7 TO BLACKFOOT ST.  
 (TRAFFIC WILL BE DETOURED);  
 OPEN TO LOCAL TRAFFIC ONLY FROM BLACKFOOT ST. TO 12TH AVE.  
 2) CSAH 7: REMAIN OPEN TO ALL TRAFFIC DURING CONSTRUCTION.

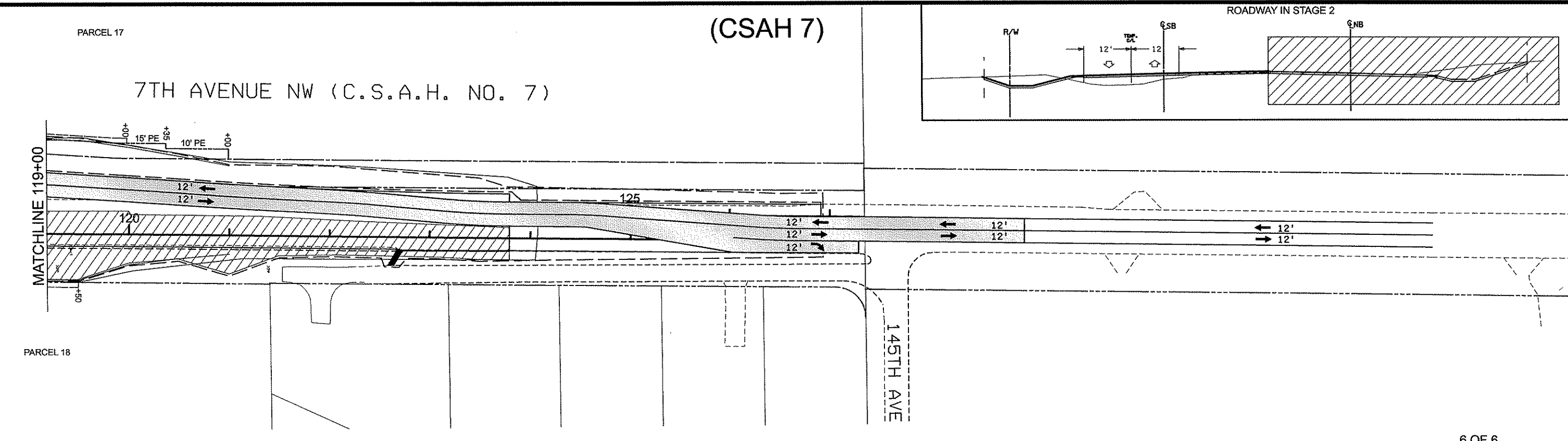
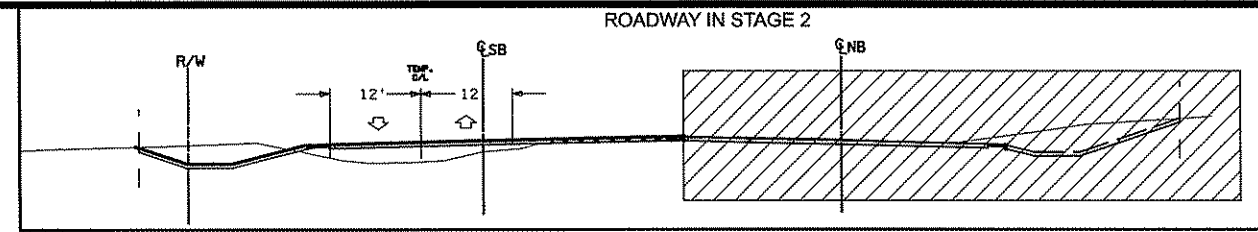
STAGE 2 CONSTRUCTION NOTE:  
 CSAH 7: CONSTRUCT THE NORTHBOUND ROADWAY, CURB & GUTTER,  
 MEDIAN, CONC WALK, BIT. PATH AND RETAINING WALL.

LEGEND	
	CONSTRUCTION AREA
	CONSTRUCTION UNDER TRAFFIC
	CONCRETE CURB & GUTTER
	TRAFFIC FLOW IN THIS STAGE
	EXISTING SANITARY SEWER
	EXISTING WATERMAIN



(CSAH 7)

7TH AVENUE NW (C.S.A.H. NO. 7)



NO	DATE	BY	CKD	APPR	REVISION

NAME: p:\02-716-12\plant\0271612\_STG2\_6.dgn 06/28/2012 7:31:16 AM

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

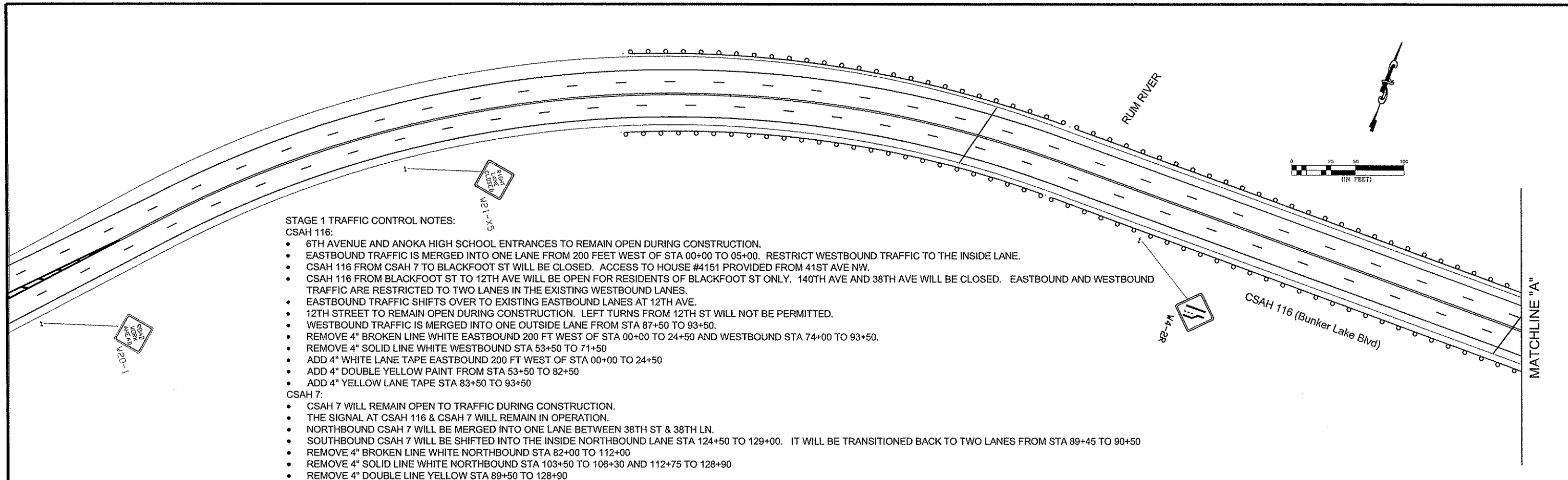
PRINT NAME: CURT A. KOBILARCSIK  
 SIGNATURE: *Curt Kobilarsik*  
 DATE: 6-29-12 LICENSE NO. 24756

DRAWN BY: MN DATE: 05/15/2012  
 DESIGN BY: MN DATE: 12/01/2010  
 CHECKED BY: CAK DATE: 05/28/2012



S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

CONSTRUCTION STAGE 2  
 7th AVE. (CSAH 7)  
 STA 104+00.00 TO 133+00.00  
 Sheet 44 of 282 Sheets



**STAGE 1 TRAFFIC CONTROL NOTES:**

**CSAH 116:**

- 6TH AVENUE AND ANOKA HIGH SCHOOL ENTRANCES TO REMAIN OPEN DURING CONSTRUCTION.
- EASTBOUND TRAFFIC IS MERGED INTO ONE LANE FROM 200 FEET WEST OF STA 00+00 TO 05+00. RESTRICT WESTBOUND TRAFFIC TO THE INSIDE LANE.
- CSAH 116 FROM CSAH 7 TO BLACKFOOT ST WILL BE CLOSED. ACCESS TO HOUSE #4151 PROVIDED FROM 41ST AVE NW.
- CSAH 116 FROM BLACKFOOT ST TO 12TH AVE WILL BE OPEN FOR RESIDENTS OF BLACKFOOT ST ONLY. 140TH AVE AND 38TH AVE WILL BE CLOSED. EASTBOUND AND WESTBOUND TRAFFIC ARE RESTRICTED TO TWO LANES IN THE EXISTING WESTBOUND LANES.
- EASTBOUND TRAFFIC SHIFTS OVER TO EXISTING EASTBOUND LANES AT 12TH AVE.
- 12TH STREET TO REMAIN OPEN DURING CONSTRUCTION. LEFT TURNS FROM 12TH ST WILL NOT BE PERMITTED.
- WESTBOUND TRAFFIC IS MERGED INTO ONE OUTSIDE LANE FROM STA 87+50 TO 93+50.
- REMOVE 4" BROKEN LINE WHITE EASTBOUND 200 FT WEST OF STA 00+00 TO 24+50 AND WESTBOUND STA 74+00 TO 93+50.
- REMOVE 4" SOLID LINE WHITE WESTBOUND STA 53+50 TO 71+50
- ADD 4" WHITE LANE TAPE EASTBOUND 200 FT WEST OF STA 00+00 TO 24+50
- ADD 4" DOUBLE YELLOW PAINT FROM STA 53+50 TO 82+50
- ADD 4" YELLOW LANE TAPE STA 83+50 TO 93+50

**CSAH 7:**

- CSAH 7 WILL REMAIN OPEN TO TRAFFIC DURING CONSTRUCTION.
- THE SIGNAL AT CSAH 116 & CSAH 7 WILL REMAIN IN OPERATION.
- NORTHBOUND CSAH 7 WILL BE MERGED INTO ONE LANE BETWEEN 38TH ST & 38TH LN.
- SOUTHBOUND CSAH 7 WILL BE SHIFTED INTO THE INSIDE NORTHBOUND LANE STA 124+50 TO 129+00. IT WILL BE TRANSITIONED BACK TO TWO LANES FROM STA 89+45 TO 90+50
- REMOVE 4" BROKEN LINE WHITE NORTHBOUND STA 82+00 TO 112+00
- REMOVE 4" SOLID LINE WHITE NORTHBOUND STA 103+50 TO 106+30 AND 112+75 TO 128+90
- REMOVE 4" DOUBLE LINE YELLOW STA 89+50 TO 128+90
- ADD 4" DOUBLE YELLOW LANE TAPE STA 82+00 TO 91+20 AND 126+90 TO 128+90
- ADD 4" WHITE LANE TAPE SOUTHBOUND STA 89+50 TO 91+20 AND 126+90 TO 131+50
- ADD 4" DOUBLE YELLOW PAINT STA 91+20 TO 126+90
- ADD 4" SOLID LINE WHITE PAINT NORTHBOUND AND SOUTHBOUND STA 91+20 TO 126+90

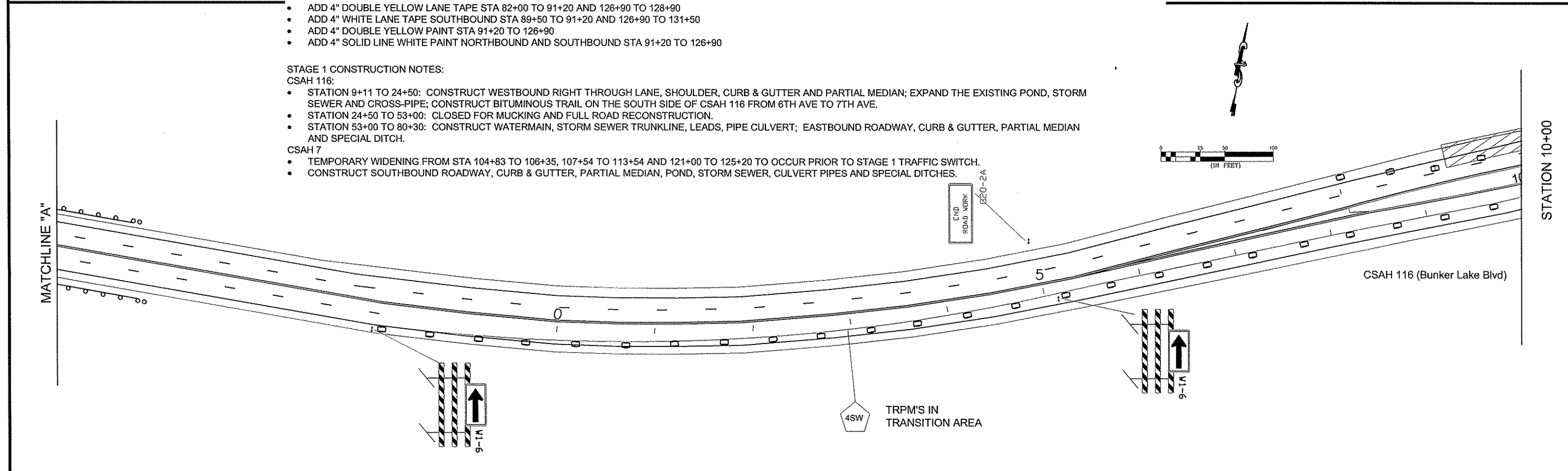
**STAGE 1 CONSTRUCTION NOTES:**

**CSAH 116:**

- STATION 9+11 TO 24+50: CONSTRUCT WESTBOUND RIGHT THROUGH LANE, SHOULDER, CURB & GUTTER AND PARTIAL MEDIAN; EXPAND THE EXISTING POND, STORM SEWER AND CROSS-PIPE; CONSTRUCT BITUMINOUS TRAIL ON THE SOUTH SIDE OF CSAH 116 FROM 6TH AVE TO 7TH AVE.
- STATION 24+50 TO 53+00: CLOSED FOR MUCKING AND FULL ROAD RECONSTRUCTION.
- STATION 53+00 TO 80+30: CONSTRUCT WATERMAIN, STORM SEWER TRUNKLINE, LEADS, PIPE CULVERT; EASTBOUND ROADWAY, CURB & GUTTER, PARTIAL MEDIAN AND SPECIAL DITCH.

**CSAH 7**

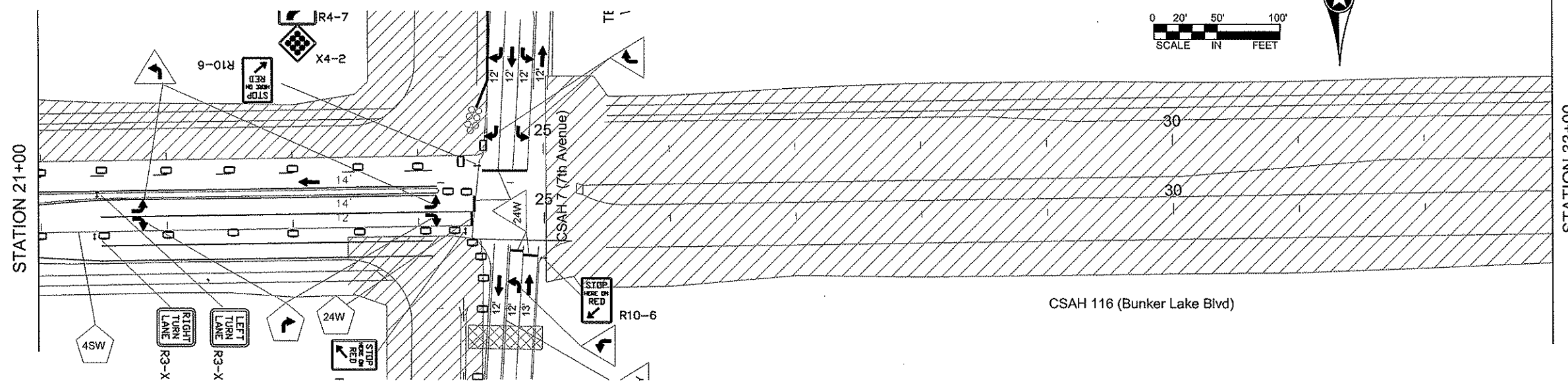
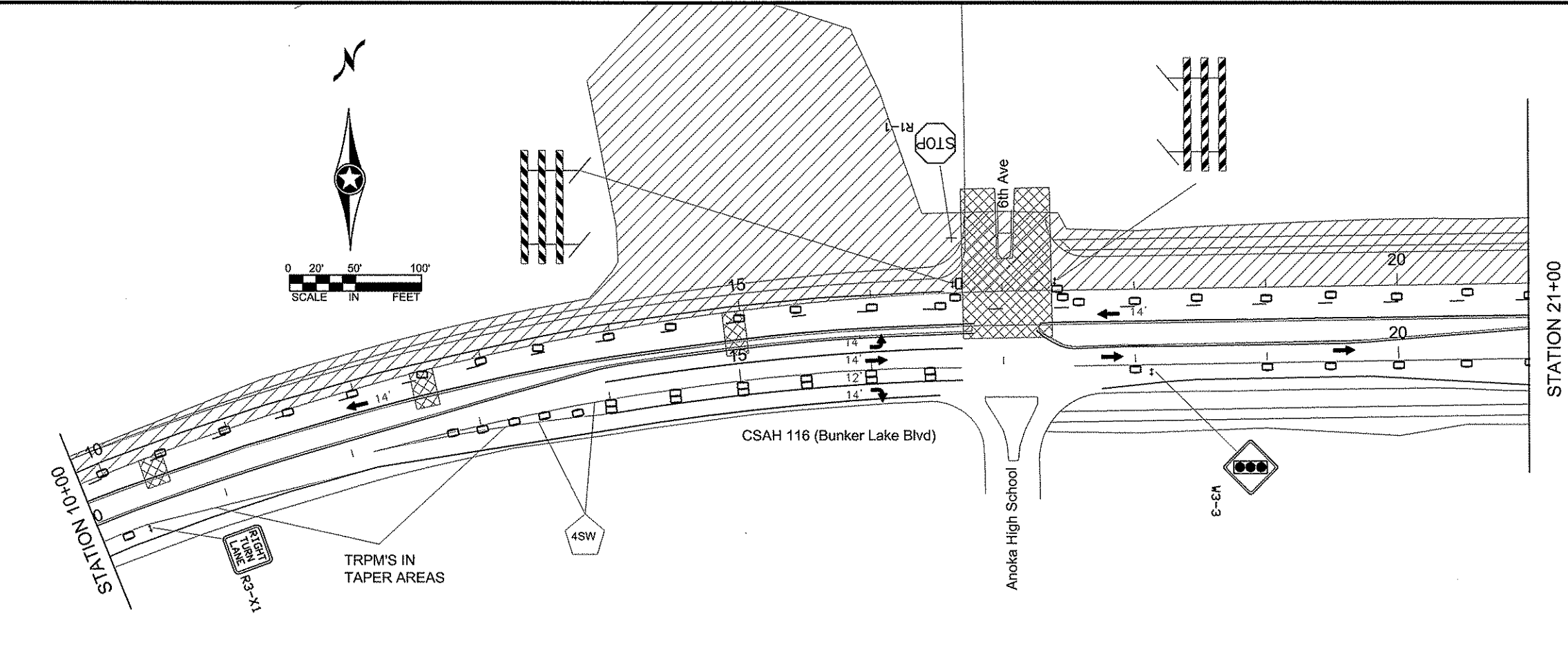
- TEMPORARY WIDENING FROM STA 104+83 TO 106+35, 107+54 TO 113+54 AND 121+00 TO 125+20 TO OCCUR PRIOR TO STAGE 1 TRAFFIC SWITCH.
- CONSTRUCT SOUTHBOUND ROADWAY, CURB & GUTTER, PARTIAL MEDIAN, POND, STORM SEWER, CULVERT PIPES AND SPECIAL DITCHES.



I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA. PRINT NAME: CURT A. KOBILARCSIK SIGNATURE: <i>Curt Kobilarsik</i> DATE: 6-29-12 REG. NO. 24756					DRAWN BY MTH DATE 12/12/11 DESIGN BY MTH DATE 12/12/11 CHECKED BY RB DATE 12/23/11		ANOKA COUNTY HIGHWAY DEPT.		S.P. 002-716-012 S.P. 198-020-031 S.P. 103-020-014	S.P. 198-020-030 S.P. 198-020-032	S.P.002-607-021 S.P. 198-020-015 S.P. 103-020-015	TRAFFIC CONTROL LAYOUT STAGE 1 Sheet 45 of 282 Sheets
NO	DATE	BY	CKD	APPR	REVISION							
NAME: P:\02-716-12\Bases\Traffic\0271602 STG 1.dwg												

STAGE 1 TRAFFIC CONTROL NOTES:

- CSAH 116:
- 6TH AVENUE AND ANOKA HIGH SCHOOL ENTRANCES TO REMAIN OPEN DURING CONSTRUCTION.
  - EASTBOUND TRAFFIC IS MERGED INTO ONE LANE FROM 200 FEET WEST OF STA 00+00 TO 05+00. RESTRICT WESTBOUND TRAFFIC TO THE INSIDE LANE.
  - CSAH 116 FROM CSAH 7 TO BLACKFOOT ST WILL BE CLOSED. ACCESS TO HOUSE #4151 PROVIDED FROM 41ST AVE NW.
  - CSAH 116 FROM BLACKFOOT ST TO 12TH AVE WILL BE OPEN FOR RESIDENTS OF BLACKFOOT ST ONLY. 140TH AVE AND 38TH AVE WILL BE CLOSED. EASTBOUND AND WESTBOUND TRAFFIC ARE RESTRICTED TO TWO LANES IN THE EXISTING WESTBOUND LANES.
  - EASTBOUND TRAFFIC SHIFTS OVER TO EXISTING EASTBOUND LANES AT 12TH AVE.
  - 12TH STREET TO REMAIN OPEN DURING CONSTRUCTION. LEFT TURNS FROM 12TH ST WILL NOT BE PERMITTED.
  - WESTBOUND TRAFFIC IS MERGED INTO ONE OUTSIDE LANE FROM STA 87+50 TO 93+50.
  - REMOVE 4" BROKEN LINE WHITE EASTBOUND 200 FT WEST OF STA 00+00 TO 24+50 AND WESTBOUND STA 74+00 TO 93+50.
  - REMOVE 4" SOLID LINE WHITE WESTBOUND STA 53+50 TO 71+50
  - ADD 4" WHITE LANE TAPE EASTBOUND 200 FT WEST OF STA 00+00 TO 24+50
  - ADD 4" DOUBLE YELLOW PAINT FROM STA 53+50 TO 82+50
  - ADD 4" YELLOW LANE TAPE STA 83+50 TO 93+50
- CSAH 7:
- CSAH 7 WILL REMAIN OPEN TO TRAFFIC DURING CONSTRUCTION.
  - THE SIGNAL AT CSAH 116 & CSAH 7 WILL REMAIN IN OPERATION.
  - NORTHBOUND CSAH 7 WILL BE MERGED INTO ONE LANE BETWEEN 38TH ST & 38TH LN.
  - SOUTHBOUND CSAH 7 WILL BE SHIFTED INTO THE INSIDE NORTHBOUND LANE STA 124+50 TO 129+00. IT WILL BE TRANSITIONED BACK TO TWO LANES FROM STA 89+45 TO 90+50
  - REMOVE 4" BROKEN LINE WHITE NORTHBOUND STA 82+00 TO 112+00
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  - ADD 4" DOUBLE YELLOW LANE TAPE STA 82+00 TO 91+20 AND 126+90 TO 128+90
  - ADD 4" WHITE LANE TAPE SOUTHBOUND STA 89+50 TO 91+20 AND 126+90 TO 131+50
  - ADD 4" DOUBLE YELLOW PAINT STA 91+20 TO 126+90
  - ADD 4" SOLID LINE WHITE PAINT NORTHBOUND AND SOUTHBOUND STA 91+20 TO 126+90



- STAGE 1 CONSTRUCTION NOTES:
- CSAH 116:
- STATION 9+11 TO 24+50: CONSTRUCT WESTBOUND RIGHT THROUGH LANE, SHOULDER, CURB & GUTTER AND PARTIAL MEDIAN; EXPAND THE EXISTING POND, STORM SEWER AND CROSS-PIPE; CONSTRUCT BITUMINOUS TRAIL ON THE SOUTH SIDE OF CSAH 116 FROM 6TH AVE TO 7TH AVE.
  - STATION 24+50 TO 53+00: CLOSED FOR MUCKING AND FULL ROAD RECONSTRUCTION.
  - STATION 53+00 TO 80+30: CONSTRUCT WATERMAIN, STORM SEWER TRUNKLINE, LEADS, PIPE CULVERT; EASTBOUND ROADWAY, CURB & GUTTER, PARTIAL MEDIAN AND SPECIAL DITCH.
- CSAH 7:
- TEMPORARY WIDENING FROM STA 104+83 TO 106+35, 107+54 TO 113+54 AND 121+00 TO 125+20 TO OCCUR PRIOR TO STAGE 1 TRAFFIC SWITCH.
  - CONSTRUCT SOUTHBOUND ROADWAY, CURB & GUTTER, PARTIAL MEDIAN, POND, STORM SEWER, CULVERT PIPES AND SPECIAL DITCHES.

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-716-12\Baser\Traffic\0271602 STG 1.dwg

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

PRINT NAME: CURT A KOBILARCSIK

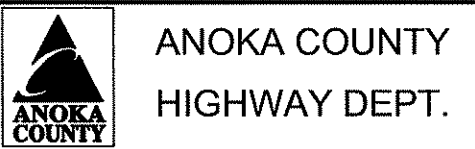
SIGNATURE: *Curt Kobilarcsik*

DATE: 6-29-12 REG. NO. 24756

DRAWN BY: MTH DATE: 12/12/11

DESIGN BY: MTH DATE: 12/12/11

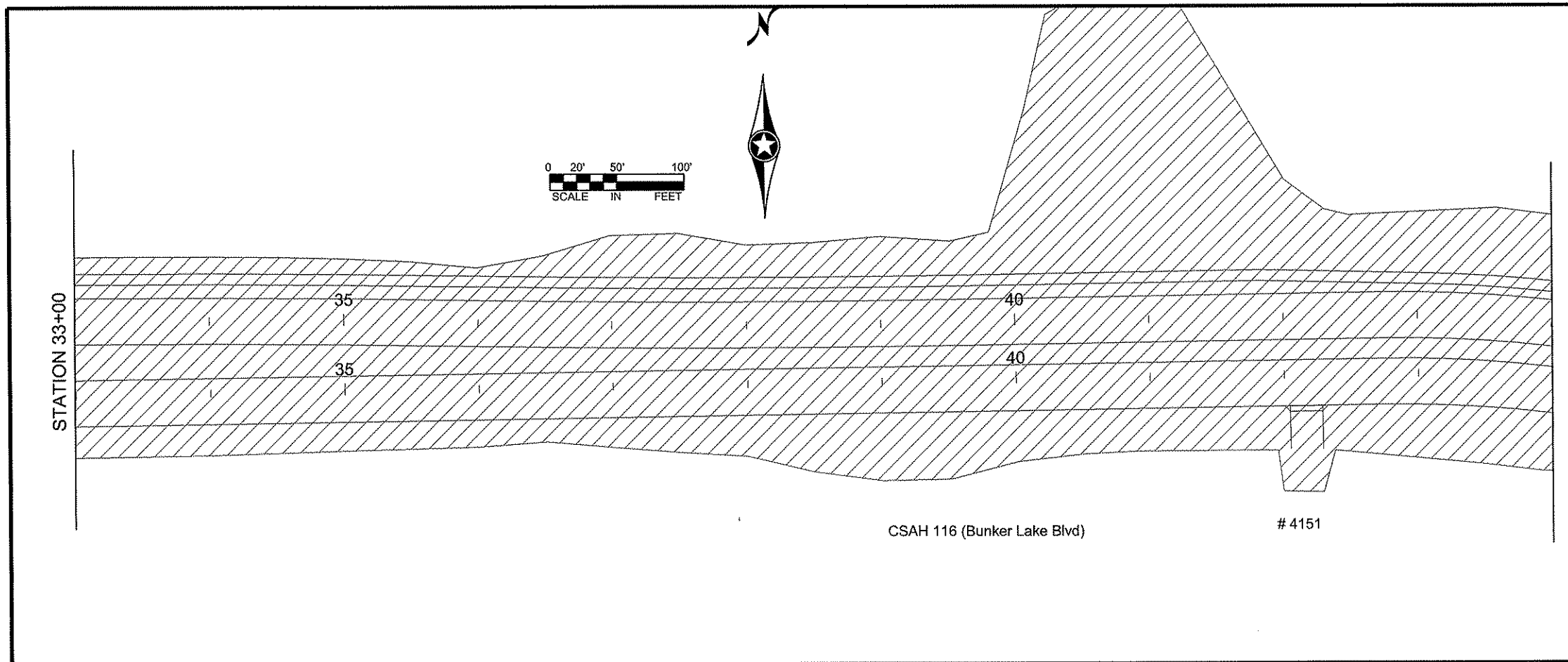
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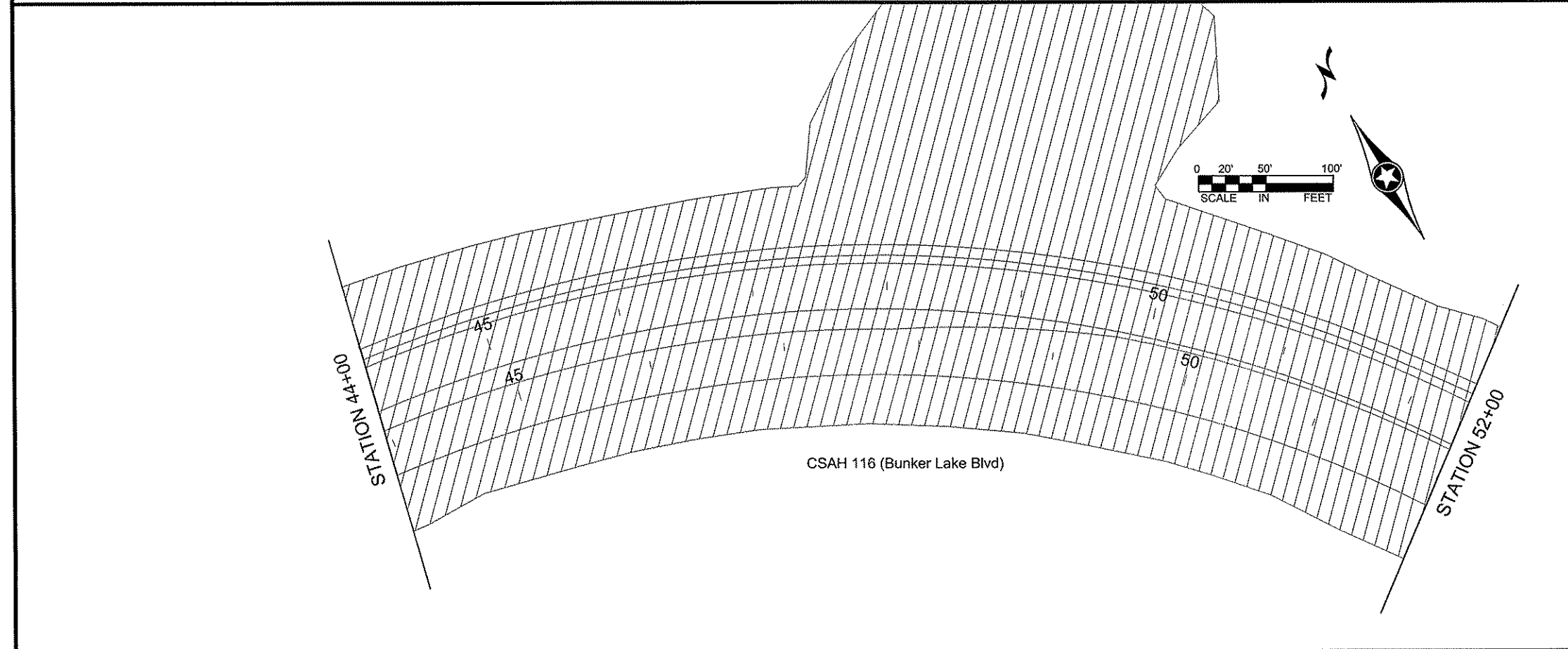
S.P. 002-716-012	S.P. 198-020-030	S.P.002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

TRAFFIC CONTROL LAYOUT STAGE 1

Sheet 46 of 282 Sheets

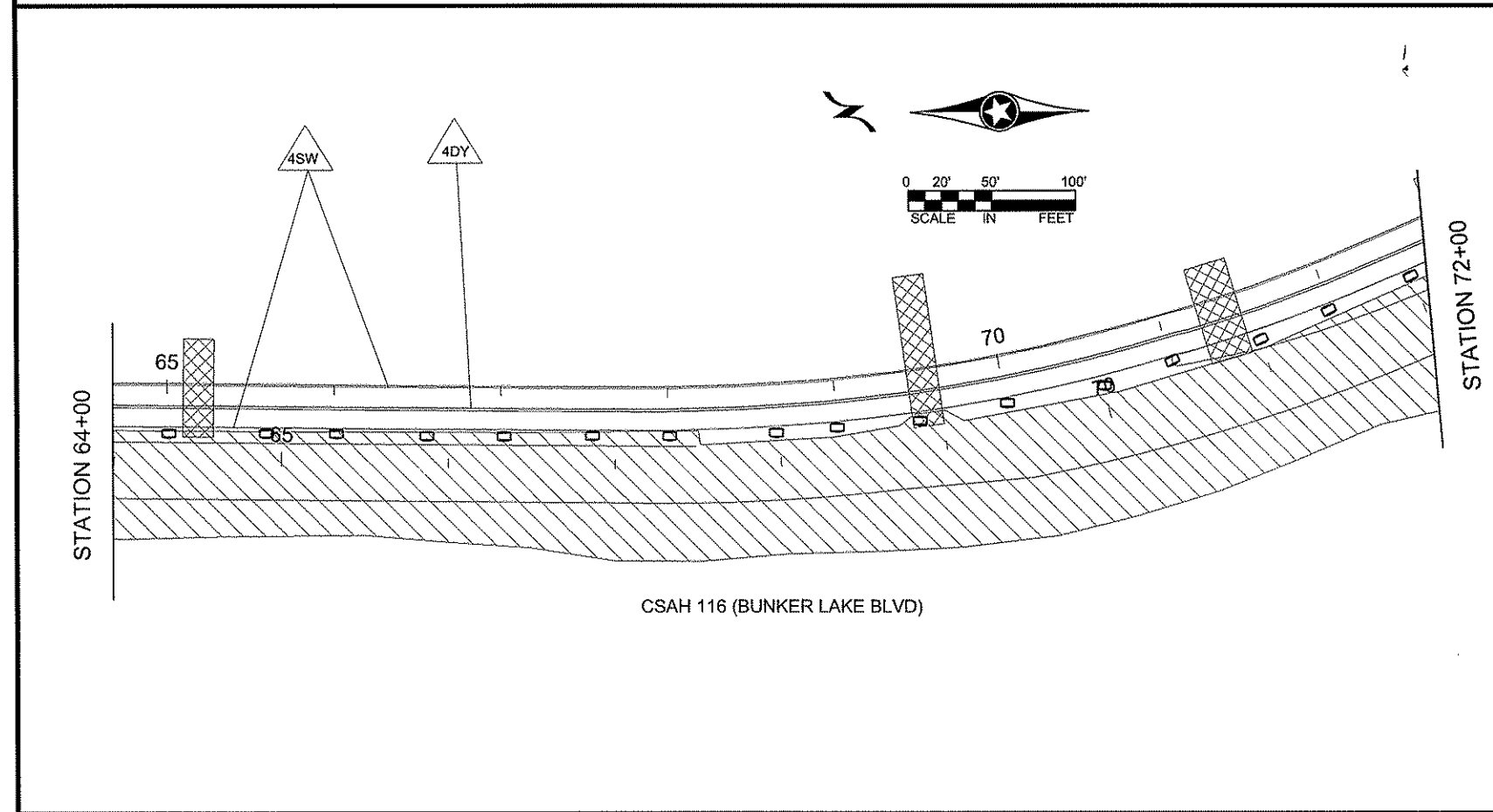
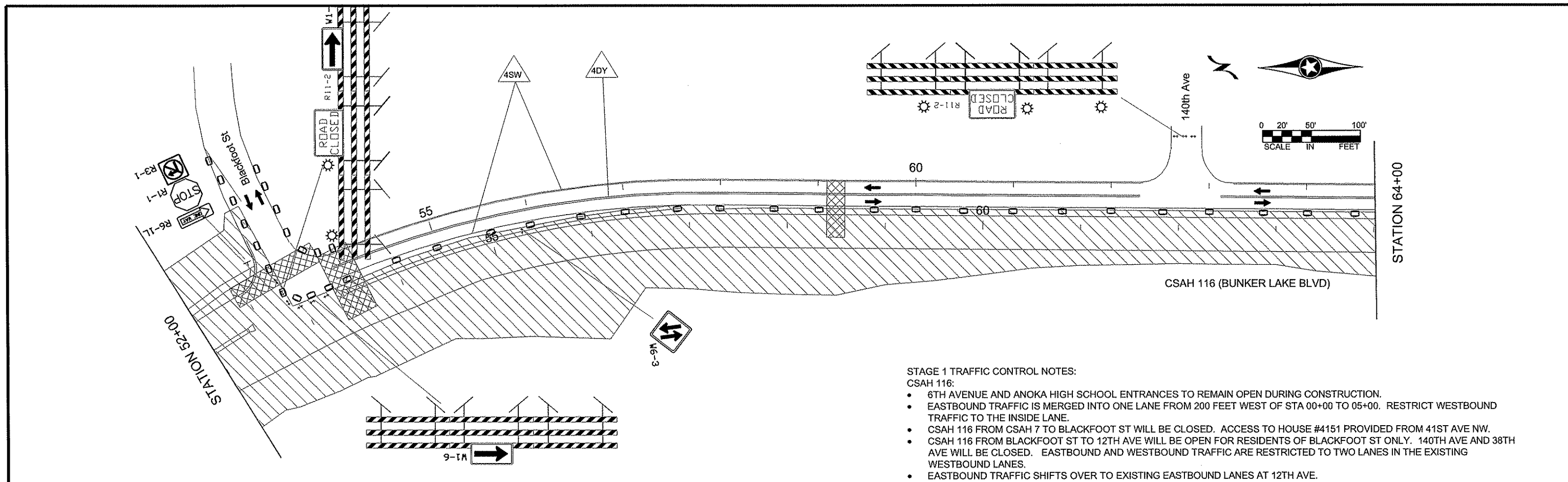


- STAGE 1 TRAFFIC CONTROL NOTES:**
- CSAH 116:**
- 6TH AVENUE AND ANOKA HIGH SCHOOL ENTRANCES TO REMAIN OPEN DURING CONSTRUCTION.
  - EASTBOUND TRAFFIC IS MERGED INTO ONE LANE FROM 200 FEET WEST OF STA 00+00 TO 05+00. RESTRICT WESTBOUND TRAFFIC TO THE INSIDE LANE.
  - CSAH 116 FROM CSAH 7 TO BLACKFOOT ST WILL BE CLOSED. ACCESS TO HOUSE #4151 PROVIDED FROM 41ST AVE NW.
  - CSAH 116 FROM BLACKFOOT ST TO 12TH AVE WILL BE OPEN FOR RESIDENTS OF BLACKFOOT ST ONLY. 140TH AVE AND 38TH AVE WILL BE CLOSED. EASTBOUND AND WESTBOUND TRAFFIC ARE RESTRICTED TO TWO LANES IN THE EXISTING WESTBOUND LANES.
  - EASTBOUND TRAFFIC SHIFTS OVER TO EXISTING EASTBOUND LANES AT 12TH AVE.
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  - WESTBOUND TRAFFIC IS MERGED INTO ONE OUTSIDE LANE FROM STA 87+50 TO 93+50.
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  - ADD 4" DOUBLE YELLOW PAINT FROM STA 53+50 TO 82+50
  - ADD 4" YELLOW LANE TAPE STA 83+50 TO 93+50
- CSAH 7:**
- CSAH 7 WILL REMAIN OPEN TO TRAFFIC DURING CONSTRUCTION.
  - THE SIGNAL AT CSAH 116 & CSAH 7 WILL REMAIN IN OPERATION.
  - NORTHBOUND CSAH 7 WILL BE MERGED INTO ONE LANE BETWEEN 38TH ST & 38TH LN.
  - SOUTHBOUND CSAH 7 WILL BE SHIFTED INTO THE INSIDE NORTHBOUND LANE STA 124+50 TO 129+00. IT WILL BE TRANSITIONED BACK TO TWO LANES FROM STA 89+45 TO 90+50
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- STAGE 1 CONSTRUCTION NOTES:**
- CSAH 116:**
- STATION 9+11 TO 24+50: CONSTRUCT WESTBOUND RIGHT THROUGH LANE, SHOULDER, CURB & GUTTER AND PARTIAL MEDIAN; EXPAND THE EXISTING POND, STORM SEWER AND CROSS-PIPE; CONSTRUCT BITUMINOUS TRAIL ON THE SOUTH SIDE OF CSAH 116 FROM 6TH AVE TO 7TH AVE.
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  - CONSTRUCT SOUTHBOUND ROADWAY, CURB & GUTTER, PARTIAL MEDIAN, POND, STORM SEWER, CULVERT PIPES AND SPECIAL DITCHES.

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA. PRINT NAME: CURT A. KOBILARCSIK SIGNATURE: <i>Curt Kobilarcsik</i> DATE: 6-29-12 REG. NO. 24756					DRAWN BY: MTH DATE 12/12/11 DESIGN BY: MTH DATE 12/12/11 CHECKED BY: RB DATE 12/23/11		<b>ANOKA COUNTY</b> <b>HIGHWAY DEPT.</b>		S.P. 002-716-012 S.P. 198-020-031 S.P. 103-020-014		S.P. 198-020-030 S.P. 198-020-032 S.P. 103-020-015		<b>TRAFFIC CONTROL LAYOUT STAGE 1</b>  Sheet 47 of 282 Sheets	
NO	DATE	BY	CKD	APPR	REVISION	NAME: P:\02-716-12\Bases\Traffic\0271602 STG 1.dwg								



**STAGE 1 TRAFFIC CONTROL NOTES:**

- CSAH 116:**
- 6TH AVENUE AND ANOKA HIGH SCHOOL ENTRANCES TO REMAIN OPEN DURING CONSTRUCTION.
  - EASTBOUND TRAFFIC IS MERGED INTO ONE LANE FROM 200 FEET WEST OF STA 00+00 TO 05+00. RESTRICT WESTBOUND TRAFFIC TO THE INSIDE LANE.
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  - CSAH 116 FROM BLACKFOOT ST TO 12TH AVE WILL BE OPEN FOR RESIDENTS OF BLACKFOOT ST ONLY. 140TH AVE AND 38TH AVE WILL BE CLOSED. EASTBOUND AND WESTBOUND TRAFFIC ARE RESTRICTED TO TWO LANES IN THE EXISTING WESTBOUND LANES.
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**STAGE 1 CONSTRUCTION NOTES:**

- CSAH 116:**
- STATION 9+11 TO 24+50: CONSTRUCT WESTBOUND RIGHT THROUGH LANE, SHOULDER, CURB & GUTTER AND PARTIAL MEDIAN; EXPAND THE EXISTING POND, STORM SEWER AND CROSS-PIPE; CONSTRUCT BITUMINOUS TRAIL ON THE SOUTH SIDE OF CSAH 116 FROM 6TH AVE TO 7TH AVE.
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- CSAH 7**
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  - CONSTRUCT SOUTHBOUND ROADWAY, CURB & GUTTER, PARTIAL MEDIAN, POND, STORM SEWER, CULVERT PIPES AND SPECIAL DITCHES.

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-716-12\Bases\Traffic\0271602 STG 1.dwg

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

PRINT NAME: CURT A. KOBILARCSIK

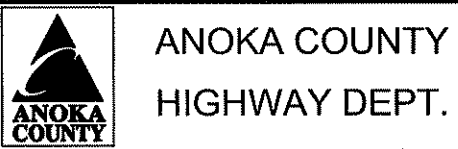
SIGNATURE: *Curt A. Kobilarsik*

DATE: 6-29-12 REG. NO. 24756

DRAWN BY: MTH DATE: 12/12/11

DESIGN BY: MTH DATE: 12/12/11

CHECKED BY: RB DATE: 12/23/11

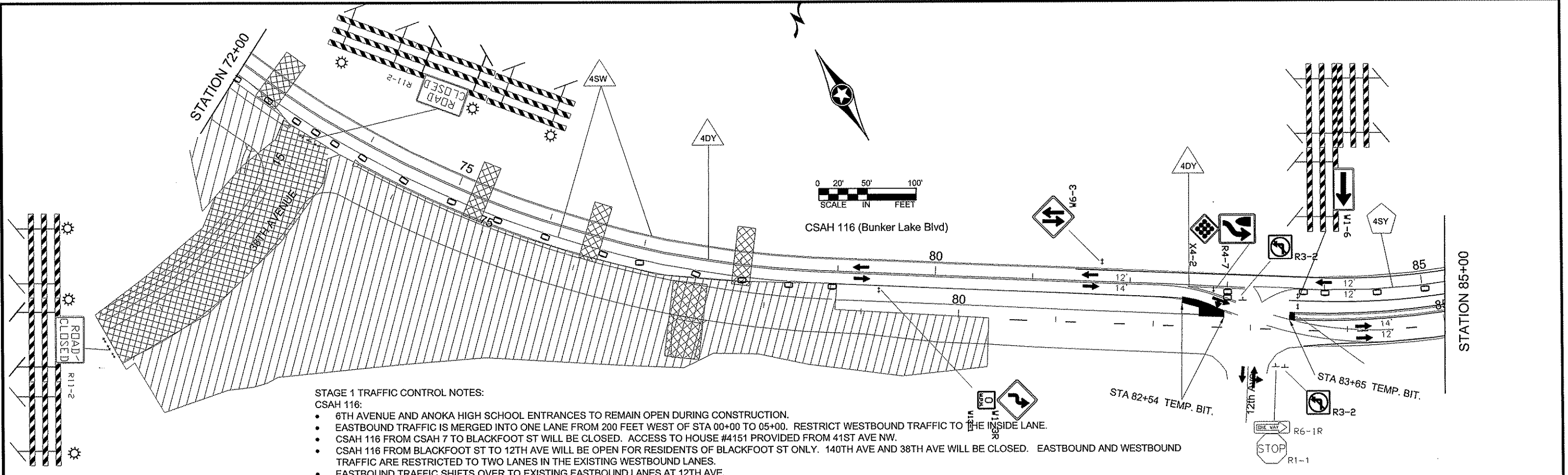


S.P. 002-716-012	S.P. 198-020-030	S.P.002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

TRAFFIC CONTROL LAYOUT STAGE 1

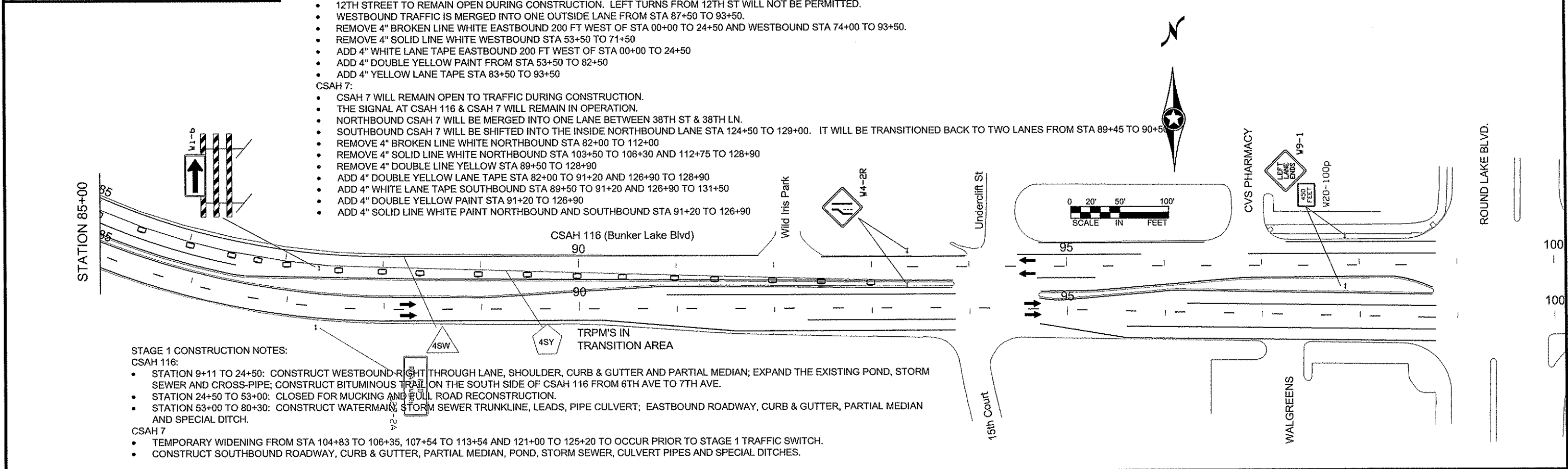
Sheet 48 of 282 Sheets





**STAGE 1 TRAFFIC CONTROL NOTES:**

- CSAH 116:**
- 6TH AVENUE AND ANOKA HIGH SCHOOL ENTRANCES TO REMAIN OPEN DURING CONSTRUCTION.
  - EASTBOUND TRAFFIC IS MERGED INTO ONE LANE FROM 200 FEET WEST OF STA 00+00 TO 05+00. RESTRICT WESTBOUND TRAFFIC TO THE INSIDE LANE.
  - CSAH 116 FROM CSAH 7 TO BLACKFOOT ST WILL BE CLOSED. ACCESS TO HOUSE #4151 PROVIDED FROM 41ST AVE NW.
  - CSAH 116 FROM BLACKFOOT ST TO 12TH AVE WILL BE OPEN FOR RESIDENTS OF BLACKFOOT ST ONLY. 140TH AVE AND 38TH AVE WILL BE CLOSED. EASTBOUND AND WESTBOUND TRAFFIC ARE RESTRICTED TO TWO LANES IN THE EXISTING WESTBOUND LANES.
  - EASTBOUND TRAFFIC SHIFTS OVER TO EXISTING EASTBOUND LANES AT 12TH AVE.
  - 12TH STREET TO REMAIN OPEN DURING CONSTRUCTION. LEFT TURNS FROM 12TH ST WILL NOT BE PERMITTED.
  - WESTBOUND TRAFFIC IS MERGED INTO ONE OUTSIDE LANE FROM STA 87+50 TO 93+50.
  - REMOVE 4" BROKEN LINE WHITE EASTBOUND 200 FT WEST OF STA 00+00 TO 24+50 AND WESTBOUND STA 74+00 TO 93+50.
  - REMOVE 4" SOLID LINE WHITE WESTBOUND STA 53+50 TO 71+50
  - ADD 4" WHITE LANE TAPE EASTBOUND 200 FT WEST OF STA 00+00 TO 24+50
  - ADD 4" DOUBLE YELLOW PAINT FROM STA 53+50 TO 82+50
  - ADD 4" YELLOW LANE TAPE STA 83+50 TO 93+50
- CSAH 7:**
- CSAH 7 WILL REMAIN OPEN TO TRAFFIC DURING CONSTRUCTION.
  - THE SIGNAL AT CSAH 116 & CSAH 7 WILL REMAIN IN OPERATION.
  - NORTHBOUND CSAH 7 WILL BE MERGED INTO ONE LANE BETWEEN 38TH ST & 38TH LN.
  - SOUTHBOUND CSAH 7 WILL BE SHIFTED INTO THE INSIDE NORTHBOUND LANE STA 124+50 TO 129+00. IT WILL BE TRANSITIONED BACK TO TWO LANES FROM STA 89+45 TO 90+50.
  - REMOVE 4" BROKEN LINE WHITE NORTHBOUND STA 82+00 TO 112+00
  - REMOVE 4" SOLID LINE WHITE NORTHBOUND STA 103+50 TO 106+30 AND 112+75 TO 128+90
  - REMOVE 4" DOUBLE LINE YELLOW STA 89+50 TO 128+90
  - ADD 4" DOUBLE YELLOW LANE TAPE STA 82+00 TO 91+20 AND 126+90 TO 128+90
  - ADD 4" WHITE LANE TAPE SOUTHBOUND STA 89+50 TO 91+20 AND 126+90 TO 131+50
  - ADD 4" DOUBLE YELLOW PAINT STA 91+20 TO 126+90
  - ADD 4" SOLID LINE WHITE PAINT NORTHBOUND AND SOUTHBOUND STA 91+20 TO 126+90



**STAGE 1 CONSTRUCTION NOTES:**

- CSAH 116:**
- STATION 9+11 TO 24+50: CONSTRUCT WESTBOUND RIGHT THROUGH LANE, SHOULDER, CURB & GUTTER AND PARTIAL MEDIAN; EXPAND THE EXISTING POND, STORM SEWER AND CROSS-PIPE; CONSTRUCT BITUMINOUS TRAIL ON THE SOUTH SIDE OF CSAH 116 FROM 6TH AVE TO 7TH AVE.
  - STATION 24+50 TO 53+00: CLOSED FOR MUCKING AND FULL ROAD RECONSTRUCTION.
  - STATION 53+00 TO 80+30: CONSTRUCT WATERMAIN, STORM SEWER TRUNKLINE, LEADS, PIPE CULVERT; EASTBOUND ROADWAY, CURB & GUTTER, PARTIAL MEDIAN AND SPECIAL DITCH.
- CSAH 7**
- TEMPORARY WIDENING FROM STA 104+83 TO 106+35, 107+54 TO 113+54 AND 121+00 TO 125+20 TO OCCUR PRIOR TO STAGE 1 TRAFFIC SWITCH.
  - CONSTRUCT SOUTHBOUND ROADWAY, CURB & GUTTER, PARTIAL MEDIAN, POND, STORM SEWER, CULVERT PIPES AND SPECIAL DITCHES.

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-716-12\BaselTraffic\0271602 STG 1.dwg

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

PRINT NAME: CURT A. KOBIARCSIK

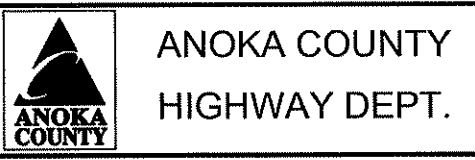
SIGNATURE: *Curt Kobiarcsik*

DATE: 6-29-12 REG. NO. 24756

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CHECKED BY: RB DATE: 12/23/11

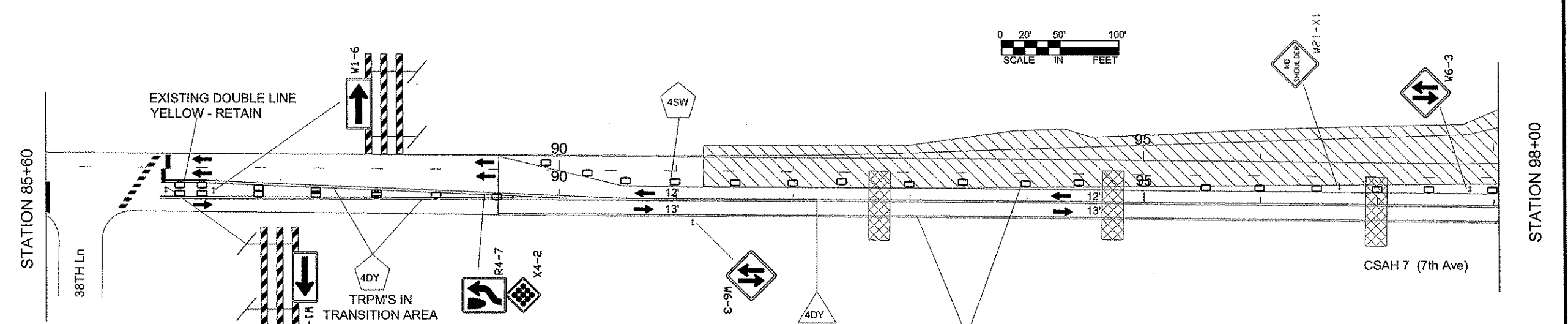
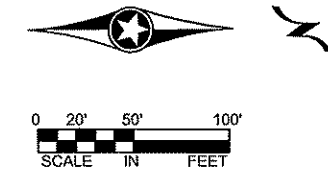
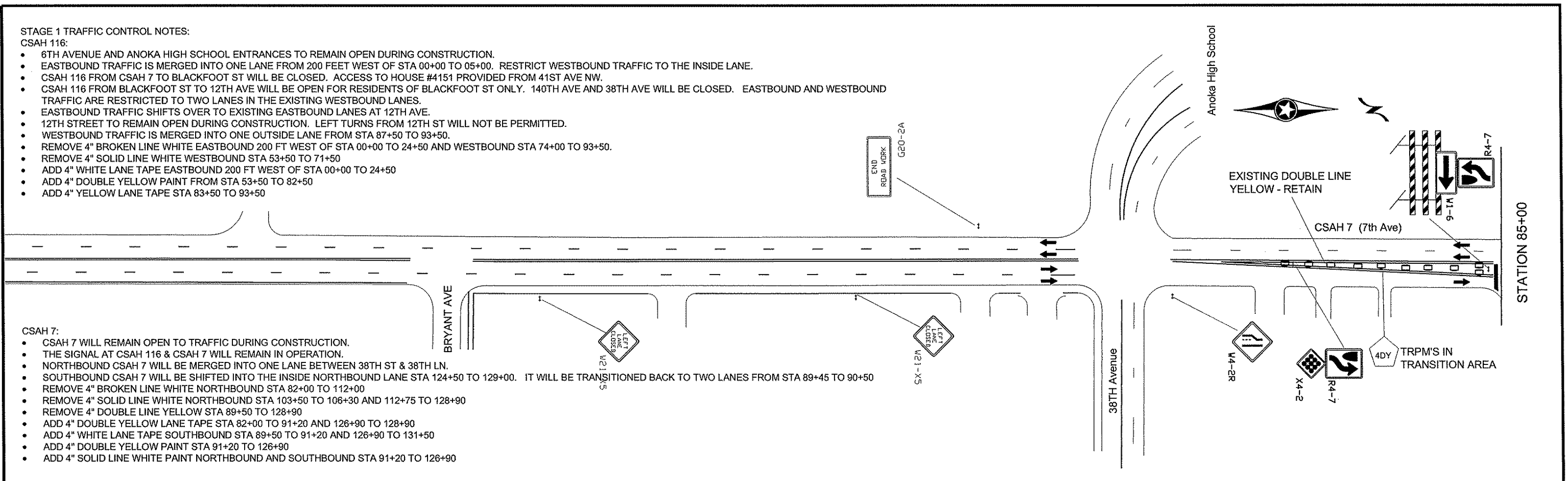


S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

STAGE 1 TRAFFIC CONTROL NOTES:

- CSAH 116:
- 6TH AVENUE AND ANOKA HIGH SCHOOL ENTRANCES TO REMAIN OPEN DURING CONSTRUCTION.
  - EASTBOUND TRAFFIC IS MERGED INTO ONE LANE FROM 200 FEET WEST OF STA 00+00 TO 05+00. RESTRICT WESTBOUND TRAFFIC TO THE INSIDE LANE.
  - CSAH 116 FROM CSAH 7 TO BLACKFOOT ST WILL BE CLOSED. ACCESS TO HOUSE #4151 PROVIDED FROM 41ST AVE NW.
  - CSAH 116 FROM BLACKFOOT ST TO 12TH AVE WILL BE OPEN FOR RESIDENTS OF BLACKFOOT ST ONLY. 140TH AVE AND 38TH AVE WILL BE CLOSED. EASTBOUND AND WESTBOUND TRAFFIC ARE RESTRICTED TO TWO LANES IN THE EXISTING WESTBOUND LANES.
  - EASTBOUND TRAFFIC SHIFTS OVER TO EXISTING EASTBOUND LANES AT 12TH AVE.
  - 12TH STREET TO REMAIN OPEN DURING CONSTRUCTION. LEFT TURNS FROM 12TH ST WILL NOT BE PERMITTED.
  - WESTBOUND TRAFFIC IS MERGED INTO ONE OUTSIDE LANE FROM STA 87+50 TO 93+50.
  - REMOVE 4" BROKEN LINE WHITE EASTBOUND 200 FT WEST OF STA 00+00 TO 24+50 AND WESTBOUND STA 74+00 TO 93+50.
  - REMOVE 4" SOLID LINE WHITE WESTBOUND STA 53+50 TO 71+50
  - ADD 4" WHITE LANE TAPE EASTBOUND 200 FT WEST OF STA 00+00 TO 24+50
  - ADD 4" DOUBLE YELLOW PAINT FROM STA 53+50 TO 82+50
  - ADD 4" YELLOW LANE TAPE STA 83+50 TO 93+50

- CSAH 7:
- CSAH 7 WILL REMAIN OPEN TO TRAFFIC DURING CONSTRUCTION.
  - THE SIGNAL AT CSAH 116 & CSAH 7 WILL REMAIN IN OPERATION.
  - NORTHBOUND CSAH 7 WILL BE MERGED INTO ONE LANE BETWEEN 38TH ST & 38TH LN.
  - SOUTHBOUND CSAH 7 WILL BE SHIFTED INTO THE INSIDE NORTHBOUND LANE STA 124+50 TO 129+00. IT WILL BE TRANSITIONED BACK TO TWO LANES FROM STA 89+45 TO 90+50
  - REMOVE 4" BROKEN LINE WHITE NORTHBOUND STA 82+00 TO 112+00
  - REMOVE 4" SOLID LINE WHITE NORTHBOUND STA 103+50 TO 106+30 AND 112+75 TO 128+90
  - REMOVE 4" DOUBLE LINE YELLOW STA 89+50 TO 128+90
  - ADD 4" DOUBLE YELLOW LANE TAPE STA 82+00 TO 91+20 AND 126+90 TO 128+90
  - ADD 4" WHITE LANE TAPE SOUTHBOUND STA 89+50 TO 91+20 AND 126+90 TO 131+50
  - ADD 4" DOUBLE YELLOW PAINT STA 91+20 TO 126+90
  - ADD 4" SOLID LINE WHITE PAINT NORTHBOUND AND SOUTHBOUND STA 91+20 TO 126+90



STAGE 1 CONSTRUCTION NOTES:

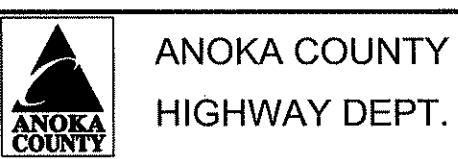
- CSAH 116:
- STATION 9+11 TO 24+50: CONSTRUCT WESTBOUND RIGHT THROUGH LANE, SHOULDER, CURB & GUTTER AND PARTIAL MEDIAN; EXPAND THE EXISTING POND, STORM SEWER AND CROSS-PIPE; CONSTRUCT BITUMINOUS TRAIL ON THE SOUTH SIDE OF CSAH 116 FROM 6TH AVE TO 7TH AVE.
  - STATION 24+50 TO 53+00: CLOSED FOR MUCKING AND FULL ROAD RECONSTRUCTION.
  - STATION 53+00 TO 80+30: CONSTRUCT WATERMAIN, STORM SEWER TRUNKLINE, LEADS, PIPE CULVERT; EASTBOUND ROADWAY, CURB & GUTTER, PARTIAL MEDIAN AND SPECIAL DITCH.
- CSAH 7:
- TEMPORARY WIDENING FROM STA 104+83 TO 106+35, 107+54 TO 113+54 AND 121+00 TO 125+20 TO OCCUR PRIOR TO STAGE 1 TRAFFIC SWITCH.
  - CONSTRUCT SOUTHBOUND ROADWAY, CURB & GUTTER, PARTIAL MEDIAN, POND, STORM SEWER, CULVERT PIPES AND SPECIAL DITCHES.

1	5/09/2012	MTH			TEMP SIGNAL AT CSAH 116/CSAH 7 REVISIONS
NO	DATE	BY	CKD	APPR	REVISION
NAME: P:\02-716-12\Bases\Traffic\0271602 STG 1.dwg					

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

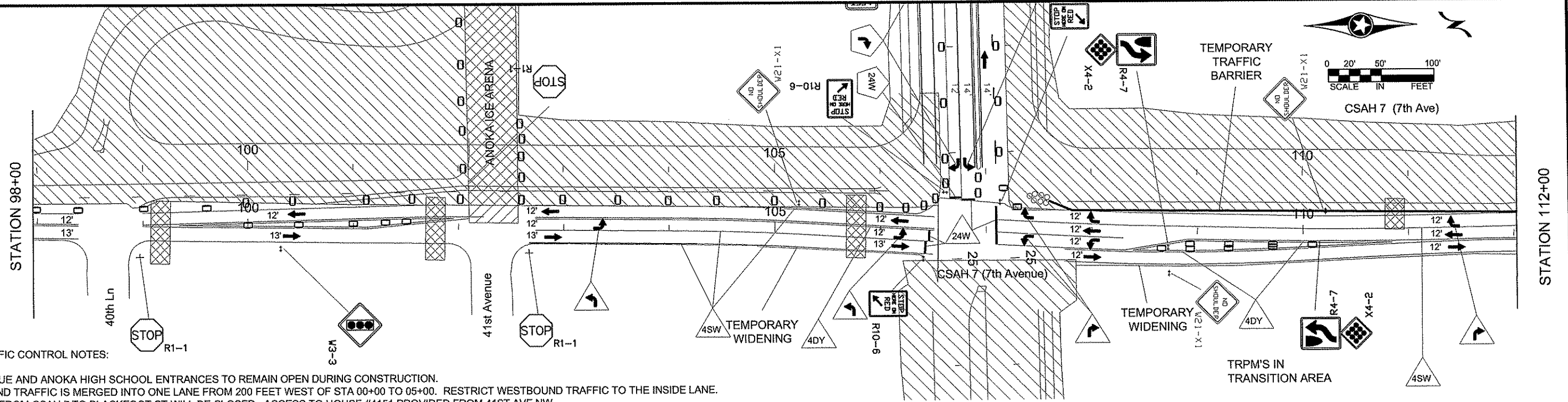
PRINT NAME: CURT A KOBIARCSIK  
 SIGNATURE: *Curt A Kobilarcsik*  
 DATE: 6-29-12 REG. NO. 24756

DRAWN BY MTH DATE 12/12/11  
 DESIGN BY MTH DATE 12/12/11  
 CHECKED BY RB DATE 12/23/11



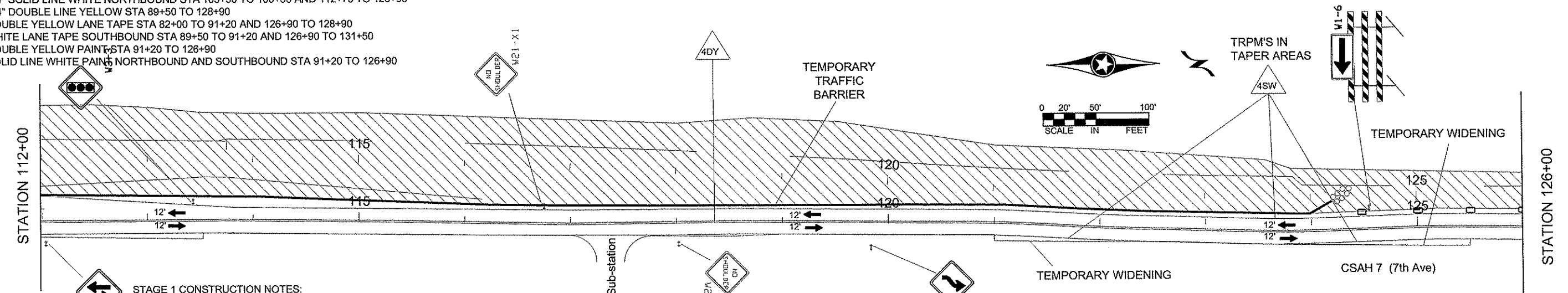
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S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

TRAFFIC CONTROL LAYOUT STAGE 1  
 Sheet 50 of 282 Sheets



**STAGE 1 TRAFFIC CONTROL NOTES:**

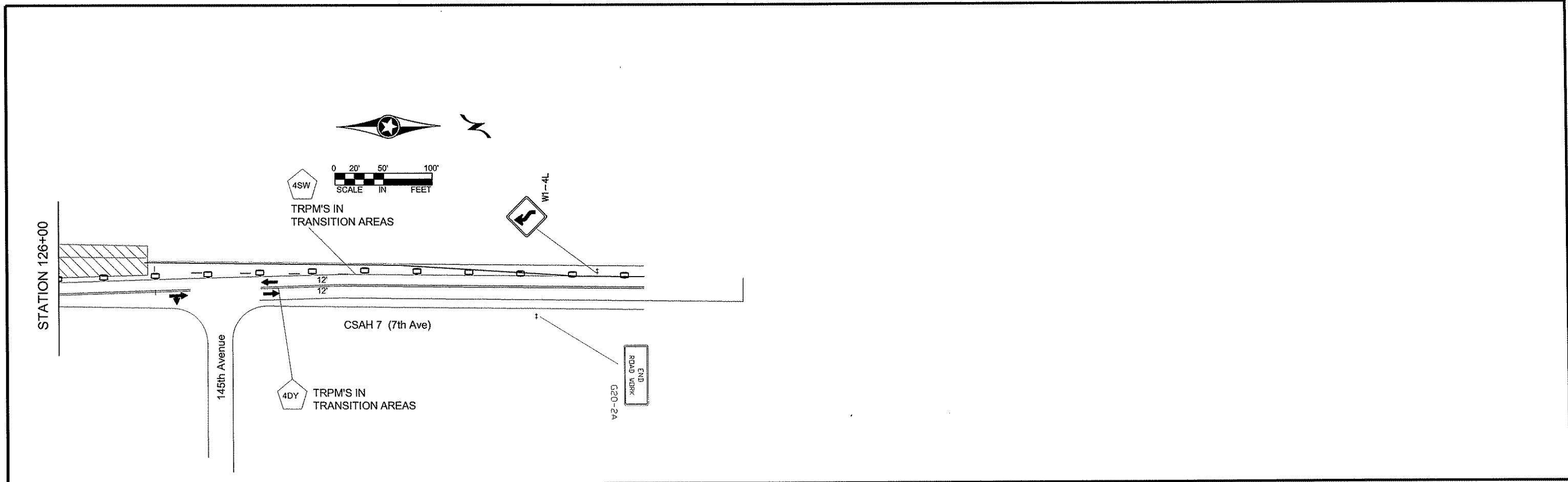
- CSAH 116:**
- 6TH AVENUE AND ANOKA HIGH SCHOOL ENTRANCES TO REMAIN OPEN DURING CONSTRUCTION.
  - EASTBOUND TRAFFIC IS MERGED INTO ONE LANE FROM 200 FEET WEST OF STA 00+00 TO 05+00. RESTRICT WESTBOUND TRAFFIC TO THE INSIDE LANE.
  - CSAH 116 FROM CSAH 7 TO BLACKFOOT ST WILL BE CLOSED. ACCESS TO HOUSE #4151 PROVIDED FROM 41ST AVE NW.
  - CSAH 116 FROM BLACKFOOT ST TO 12TH AVE WILL BE OPEN FOR RESIDENTS OF BLACKFOOT ST ONLY. 140TH AVE AND 38TH AVE WILL BE CLOSED. EASTBOUND AND WESTBOUND TRAFFIC ARE RESTRICTED TO TWO LANES IN THE EXISTING WESTBOUND LANES.
  - EASTBOUND TRAFFIC SHIFTS OVER TO EXISTING EASTBOUND LANES AT 12TH AVE.
  - 12TH STREET TO REMAIN OPEN DURING CONSTRUCTION. LEFT TURNS FROM 12TH ST WILL NOT BE PERMITTED.
  - WESTBOUND TRAFFIC IS MERGED INTO ONE OUTSIDE LANE FROM STA 87+50 TO 93+50.
  - REMOVE 4" BROKEN LINE WHITE EASTBOUND 200 FT WEST OF STA 00+00 TO 24+50 AND WESTBOUND STA 74+00 TO 93+50.
  - REMOVE 4" SOLID LINE WHITE WESTBOUND STA 53+50 TO 71+50
  - ADD 4" WHITE LANE TAPE EASTBOUND 200 FT WEST OF STA 00+00 TO 24+50
  - ADD 4" DOUBLE YELLOW PAINT FROM STA 53+50 TO 82+50
  - ADD 4" YELLOW LANE TAPE STA 83+50 TO 93+50
- CSAH 7:**
- CSAH 7 WILL REMAIN OPEN TO TRAFFIC DURING CONSTRUCTION.
  - THE SIGNAL AT CSAH 116 & CSAH 7 WILL REMAIN IN OPERATION.
  - NORTHBOUND CSAH 7 WILL BE MERGED INTO ONE LANE BETWEEN 38TH ST & 38TH LN.
  - SOUTHBOUND CSAH 7 WILL BE SHIFTED INTO THE INSIDE NORTHBOUND LANE STA 124+50 TO 129+00. IT WILL BE TRANSITIONED BACK TO TWO LANES FROM STA 89+45 TO 90+50
  - REMOVE 4" BROKEN LINE WHITE NORTHBOUND STA 82+00 TO 112+00
  - REMOVE 4" SOLID LINE WHITE NORTHBOUND STA 103+50 TO 106+30 AND 112+75 TO 128+90
  - REMOVE 4" DOUBLE LINE YELLOW STA 89+50 TO 128+90
  - ADD 4" DOUBLE YELLOW LANE TAPE STA 82+00 TO 91+20 AND 126+90 TO 128+90
  - ADD 4" WHITE LANE TAPE SOUTHBOUND STA 89+50 TO 91+20 AND 126+90 TO 131+50
  - ADD 4" DOUBLE YELLOW PAINT STA 91+20 TO 126+90
  - ADD 4" SOLID LINE WHITE PAINT NORTHBOUND AND SOUTHBOUND STA 91+20 TO 126+90



**STAGE 1 CONSTRUCTION NOTES:**

- CSAH 116:**
- STATION 9+11 TO 24+50: CONSTRUCT WESTBOUND RIGHT THROUGH LANE, SHOULDER, CURB & GUTTER AND PARTIAL MEDIAN; EXPAND THE EXISTING POND, STORM SEWER AND CROSS-PIPE; CONSTRUCT BITUMINOUS TRAIL ON THE SOUTH SIDE OF CSAH 116 FROM 6TH AVE TO 7TH AVE.
  - STATION 24+50 TO 53+00: CLOSED FOR MUCKING AND FULL ROAD RECONSTRUCTION.
  - STATION 53+00 TO 80+30: CONSTRUCT WATERMAIN, STORM SEWER TRUNKLINE, LEADS, PIPE CULVERT; EASTBOUND ROADWAY, CURB & GUTTER, PARTIAL MEDIAN AND SPECIAL DITCH.
- CSAH 7:**
- TEMPORARY WIDENING FROM STA 104+83 TO 106+35, 107+54 TO 113+54 AND 121+00 TO 125+20 TO OCCUR PRIOR TO STAGE 1 TRAFFIC SWITCH.
  - CONSTRUCT SOUTHBOUND ROADWAY, CURB & GUTTER, PARTIAL MEDIAN, POND, STORM SEWER, CULVERT PIPES AND SPECIAL DITCHES.

1	5/09/2012	MTH			TEMP SIGNAL AT CSAH 116/CSAH 7 REVISIONS	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA. PRINT NAME: CURT A KOBILARCSIK SIGNATURE: <i>Curt Kobilarsik</i> DATE: 6-29-12 REG. NO. 24756	DRAWN BY MTH DATE 12/12/11 DESIGN BY MTH DATE 12/12/11 CHECKED BY RB DATE 12/23/11		ANOKA COUNTY HIGHWAY DEPT.	S.P. 002-716-012	S.P. 198-020-030	S.P.002-607-021	TRAFFIC CONTROL LAYOUT STAGE 1 Sheet 51 of 282 Sheets
					S.P. 198-020-031						S.P. 198-020-032		
					S.P. 103-020-014		S.P. 103-020-015						



**STAGE 1 TRAFFIC CONTROL NOTES:**

**CSAH 116:**

- 6TH AVENUE AND ANOKA HIGH SCHOOL ENTRANCES TO REMAIN OPEN DURING CONSTRUCTION.
- EASTBOUND TRAFFIC IS MERGED INTO ONE LANE FROM 200 FEET WEST OF STA 00+00 TO 05+00. RESTRICT WESTBOUND TRAFFIC TO THE INSIDE LANE.
- CSAH 116 FROM CSAH 7 TO BLACKFOOT ST WILL BE CLOSED. ACCESS TO HOUSE #4151 PROVIDED FROM 41ST AVE NW.
- CSAH 116 FROM BLACKFOOT ST TO 12TH AVE WILL BE OPEN FOR RESIDENTS OF BLACKFOOT ST ONLY. 140TH AVE AND 38TH AVE WILL BE CLOSED. EASTBOUND AND WESTBOUND TRAFFIC ARE RESTRICTED TO TWO LANES IN THE EXISTING WESTBOUND LANES.
- EASTBOUND TRAFFIC SHIFTS OVER TO EXISTING EASTBOUND LANES AT 12TH AVE.
- 12TH STREET TO REMAIN OPEN DURING CONSTRUCTION. LEFT TURNS FROM 12TH ST WILL NOT BE PERMITTED.
- WESTBOUND TRAFFIC IS MERGED INTO ONE OUTSIDE LANE FROM STA 87+50 TO 93+50.
- REMOVE 4" BROKEN LINE WHITE EASTBOUND 200 FT WEST OF STA 00+00 TO 24+50 AND WESTBOUND STA 74+00 TO 93+50.
- REMOVE 4" SOLID LINE WHITE WESTBOUND STA 53+50 TO 71+50
- ADD 4" WHITE LANE TAPE EASTBOUND 200 FT WEST OF STA 00+00 TO 24+50
- ADD 4" DOUBLE YELLOW PAINT FROM STA 53+50 TO 82+50
- ADD 4" YELLOW LANE TAPE STA 83+50 TO 93+50

**CSAH 7:**

- CSAH 7 WILL REMAIN OPEN TO TRAFFIC DURING CONSTRUCTION.
- THE SIGNAL AT CSAH 116 & CSAH 7 WILL REMAIN IN OPERATION.
- NORTHBOUND CSAH 7 WILL BE MERGED INTO ONE LANE BETWEEN 38TH ST & 38TH LN.
- SOUTHBOUND CSAH 7 WILL BE SHIFTED INTO THE INSIDE NORTHBOUND LANE STA 124+50 TO 129+00. IT WILL BE TRANSITIONED BACK TO TWO LANES FROM STA 89+45 TO 90+50
- REMOVE 4" BROKEN LINE WHITE NORTHBOUND STA 82+00 TO 112+00
- REMOVE 4" SOLID LINE WHITE NORTHBOUND STA 103+50 TO 106+30 AND 112+75 TO 128+90
- REMOVE 4" DOUBLE LINE YELLOW STA 89+50 TO 128+90
- ADD 4" DOUBLE YELLOW LANE TAPE STA 82+00 TO 91+20 AND 126+90 TO 128+90
- ADD 4" WHITE LANE TAPE SOUTHBOUND STA 89+50 TO 91+20 AND 126+90 TO 131+50
- ADD 4" DOUBLE YELLOW PAINT STA 91+20 TO 126+90
- ADD 4" SOLID LINE WHITE PAINT NORTHBOUND AND SOUTHBOUND STA 91+20 TO 126+90

**STAGE 1 CONSTRUCTION NOTES:**

**CSAH 116:**

- STATION 9+11 TO 24+50: CONSTRUCT WESTBOUND RIGHT THROUGH LANE, SHOULDER, CURB & GUTTER AND PARTIAL MEDIAN; EXPAND THE EXISTING POND, STORM SEWER AND CROSS-PIPE; CONSTRUCT BITUMINOUS TRAIL ON THE SOUTH SIDE OF CSAH 116 FROM 6TH AVE TO 7TH AVE.
- STATION 24+50 TO 53+00: CLOSED FOR MUCKING AND FULL ROAD RECONSTRUCTION.
- STATION 53+00 TO 80+30: CONSTRUCT WATERMAIN, STORM SEWER TRUNKLINE, LEADS, PIPE CULVERT; EASTBOUND ROADWAY, CURB & GUTTER, PARTIAL MEDIAN AND SPECIAL DITCH.

**CSAH 7**

- TEMPORARY WIDENING FROM STA 104+83 TO 106+35, 107+54 TO 113+54 AND 121+00 TO 125+20 TO OCCUR PRIOR TO STAGE 1 TRAFFIC SWITCH.
- CONSTRUCT SOUTHBOUND ROADWAY, CURB & GUTTER, PARTIAL MEDIAN, POND, STORM SEWER, CULVERT PIPES AND SPECIAL DITCHES.

1	5/09/2012	MTH			TEMP SIGNAL AT CSAH 116/CSAH 7 REVISIONS
NO	DATE	BY	CKD	APPR	REVISION
NAME: P:\02-716-12\Bases\Traffic\0271602 STG 1.dwg					

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.  
 PRINT NAME: CURT A KOBILARCSIK  
 SIGNATURE: *Curt Kobilarsik*  
 DATE: 6-29-12 REG. NO. 24756

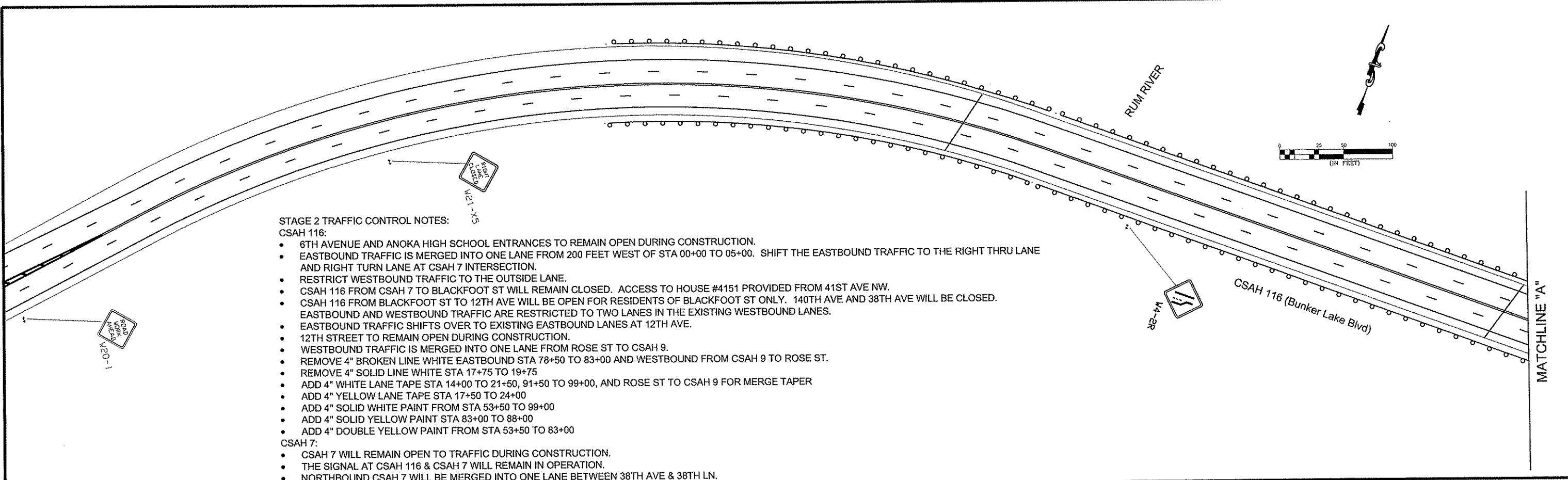
DRAWN BY MTH DATE 12/12/11  
 DESIGN BY MTH DATE 12/12/11  
 CHECKED BY RB DATE 12/23/11



**ANOKA COUNTY  
HIGHWAY DEPT.**

S.P. 002-716-012	S.P. 198-020-030	S.P.002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

**TRAFFIC CONTROL  
LAYOUT STAGE 1**  
 Sheet 52 of 282 Sheets

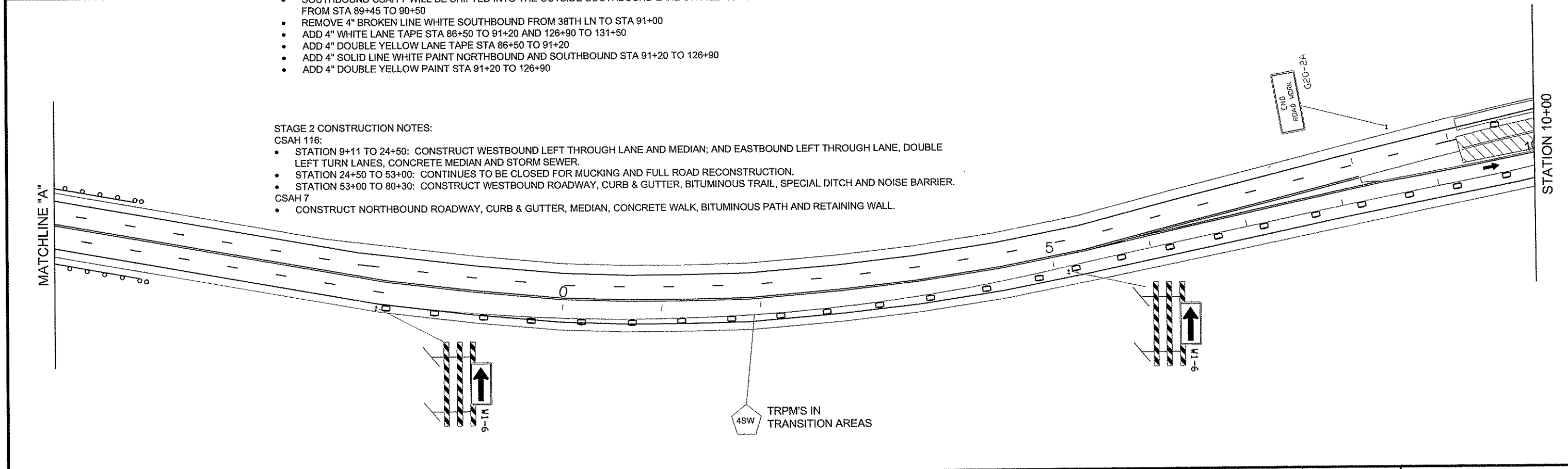


**STAGE 2 TRAFFIC CONTROL NOTES:**

- CSAH 116:**
- 6TH AVENUE AND ANOKA HIGH SCHOOL ENTRANCES TO REMAIN OPEN DURING CONSTRUCTION.
  - EASTBOUND TRAFFIC IS MERGED INTO ONE LANE FROM 200 FEET WEST OF STA 00+00 TO 05+00. SHIFT THE EASTBOUND TRAFFIC TO THE RIGHT THRU LANE AND RIGHT TURN LANE AT CSAH 7 INTERSECTION.
  - RESTRICT WESTBOUND TRAFFIC TO THE OUTSIDE LANE.
  - CSAH 116 FROM CSAH 7 TO BLACKFOOT ST WILL REMAIN CLOSED. ACCESS TO HOUSE #4151 PROVIDED FROM 41ST AVE NW.
  - CSAH 116 FROM BLACKFOOT ST TO 12TH AVE WILL BE OPEN FOR RESIDENTS OF BLACKFOOT ST ONLY. 140TH AVE AND 38TH AVE WILL BE CLOSED. EASTBOUND AND WESTBOUND TRAFFIC ARE RESTRICTED TO TWO LANES IN THE EXISTING WESTBOUND LANES.
  - EASTBOUND TRAFFIC SHIFTS OVER TO EXISTING EASTBOUND LANES AT 12TH AVE.
  - 12TH STREET TO REMAIN OPEN DURING CONSTRUCTION.
  - WESTBOUND TRAFFIC IS MERGED INTO ONE LANE FROM ROSE ST TO CSAH 9.
  - REMOVE 4" BROKEN LINE WHITE EASTBOUND STA 78+50 TO 83+00 AND WESTBOUND FROM CSAH 9 TO ROSE ST.
  - REMOVE 4" SOLID LINE WHITE STA 17+75 TO 19+75
  - ADD 4" WHITE LANE TAPE STA 14+00 TO 21+50, 91+50 TO 99+00, AND ROSE ST TO CSAH 9 FOR MERGE TAPER
  - ADD 4" YELLOW LANE TAPE STA 17+50 TO 24+00
  - ADD 4" SOLID WHITE PAINT FROM STA 53+50 TO 99+00
  - ADD 4" SOLID YELLOW PAINT STA 83+00 TO 88+00
  - ADD 4" DOUBLE YELLOW PAINT FROM STA 53+50 TO 83+00
- CSAH 7:**
- CSAH 7 WILL REMAIN OPEN TO TRAFFIC DURING CONSTRUCTION.
  - THE SIGNAL AT CSAH 116 & CSAH 7 WILL REMAIN IN OPERATION.
  - NORTHBOUND CSAH 7 WILL BE MERGED INTO ONE LANE BETWEEN 38TH AVE & 38TH LN.
  - SOUTHBOUND CSAH 7 WILL BE SHIFTED INTO THE OUTSIDE SOUTHBOUND LANE STA 122+00 TO 126+00. IT WILL BE TRANSITIONED BACK TO TWO LANES FROM STA 89+45 TO 90+50
  - REMOVE 4" BROKEN LINE WHITE SOUTHBOUND FROM 38TH LN TO STA 91+00
  - ADD 4" WHITE LANE TAPE STA 86+50 TO 91+20 AND 126+90 TO 131+50
  - ADD 4" DOUBLE YELLOW LANE TAPE STA 86+50 TO 91+20
  - ADD 4" SOLID LINE WHITE PAINT NORTHBOUND AND SOUTHBOUND STA 91+20 TO 126+90
  - ADD 4" DOUBLE YELLOW PAINT STA 91+20 TO 126+90

**STAGE 2 CONSTRUCTION NOTES:**

- CSAH 116:**
- STATION 9+11 TO 24+50: CONSTRUCT WESTBOUND LEFT THROUGH LANE AND MEDIAN; AND EASTBOUND LEFT THROUGH LANE, DOUBLE LEFT TURN LANES, CONCRETE MEDIAN AND STORM SEWER.
  - STATION 24+50 TO 53+00: CONTINUES TO BE CLOSED FOR MUCKING AND FULL ROAD RECONSTRUCTION.
  - STATION 53+00 TO 80+30: CONSTRUCT WESTBOUND ROADWAY, CURB & GUTTER, BITUMINOUS TRAIL, SPECIAL DITCH AND NOISE BARRIER.
- CSAH 7**
- CONSTRUCT NORTHBOUND ROADWAY, CURB & GUTTER, MEDIAN, CONCRETE WALK, BITUMINOUS PATH AND RETAINING WALL.



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: CURT A KOBLARCSIK

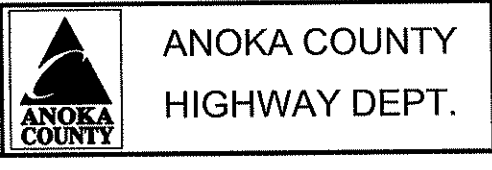
SIGNATURE: *Curt Koblarcsik*

DATE: 6-29-12 REG. NO. 24756

DRAWN BY: MTH DATE 12/12/11

DESIGN BY: MTH DATE 12/12/11

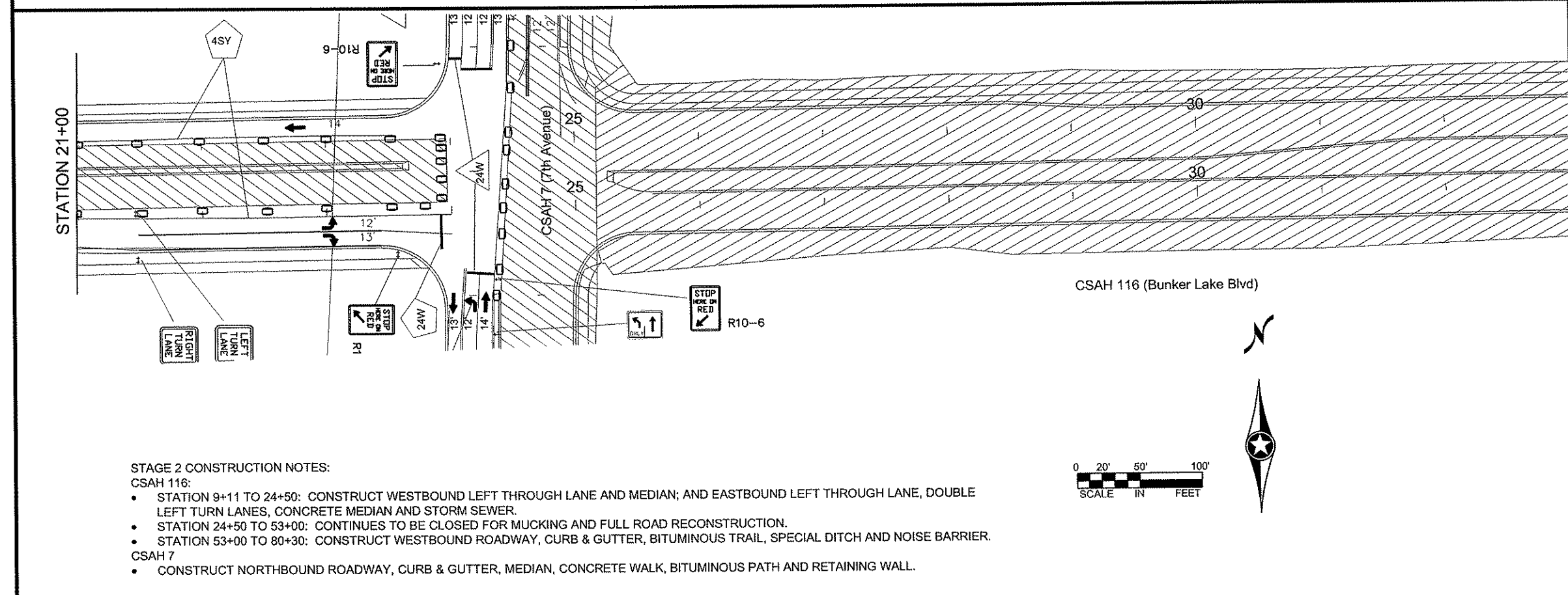
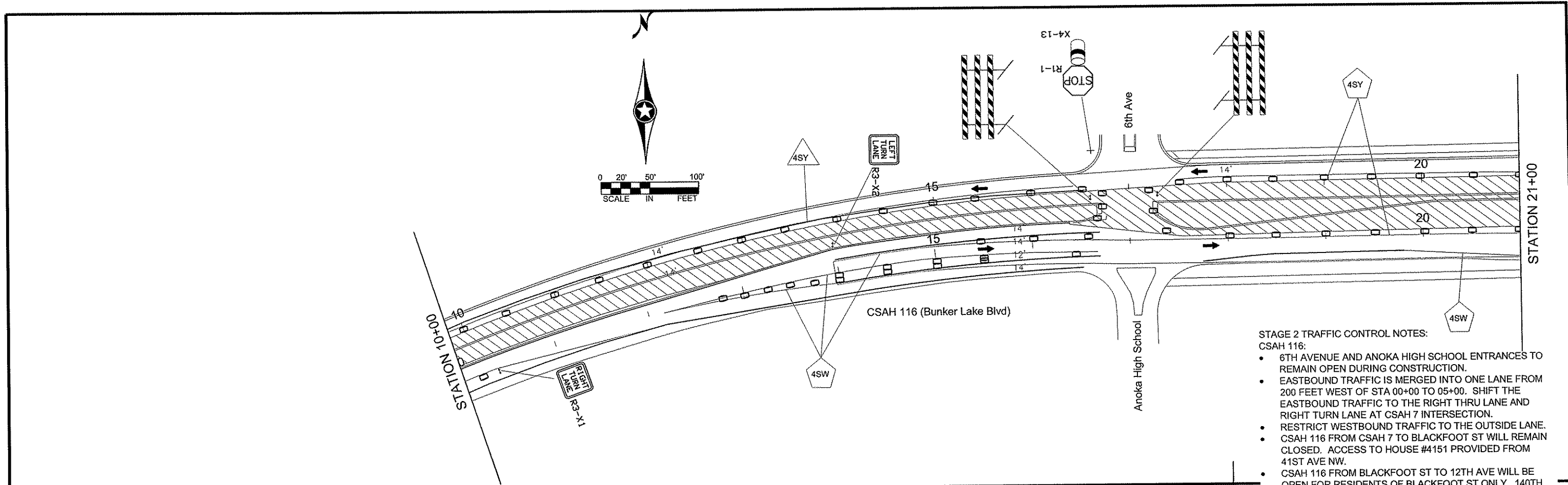
CHECKED BY: RB DATE 12/21/11



S.P. 002-716-012	S.P. 198-020-030	S.P.002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

TRAFFIC CONTROL LAYOUT STAGE 2

Sheet 53 of 282 Sheets



- STAGE 2 TRAFFIC CONTROL NOTES:**
- CSAH 116:**
- 6TH AVENUE AND ANOKA HIGH SCHOOL ENTRANCES TO REMAIN OPEN DURING CONSTRUCTION.
  - EASTBOUND TRAFFIC IS MERGED INTO ONE LANE FROM 200 FEET WEST OF STA 00+00 TO 05+00. SHIFT THE EASTBOUND TRAFFIC TO THE RIGHT THRU LANE AND RIGHT TURN LANE AT CSAH 7 INTERSECTION.
  - RESTRICT WESTBOUND TRAFFIC TO THE OUTSIDE LANE.
  - CSAH 116 FROM CSAH 7 TO BLACKFOOT ST WILL REMAIN CLOSED. ACCESS TO HOUSE #4151 PROVIDED FROM 41ST AVE NW.
  - CSAH 116 FROM BLACKFOOT ST TO 12TH AVE WILL BE OPEN FOR RESIDENTS OF BLACKFOOT ST ONLY. 140TH AVE AND 38TH AVE WILL BE CLOSED. EASTBOUND AND WESTBOUND TRAFFIC ARE RESTRICTED TO TWO LANES IN THE EXISTING WESTBOUND LANES.
  - EASTBOUND TRAFFIC SHIFTS OVER TO EXISTING EASTBOUND LANES AT 12TH AVE.
  - 12TH STREET TO REMAIN OPEN DURING CONSTRUCTION.
  - WESTBOUND TRAFFIC IS MERGED INTO ONE LANE FROM ROSE ST TO CSAH 9.
  - REMOVE 4" BROKEN LINE WHITE EASTBOUND 200 FT WEST OF STA 78+50 TO 83+00 AND WESTBOUND FROM CSAH 9 TO ROSE ST.
  - REMOVE 4" SOLID LINE WHITE STA 17+75 TO 19+75
  - ADD 4" WHITE LANE TAPE STA 14+00 TO 21+50, 91+50 TO 99+00, AND FROM ROSE ST TO CSAH 9 FOR MERGE TAPER
  - ADD 4" YELLOW LANE TAPE STA 17+50 TO 24+00
  - ADD 4" SOLID WHITE PAINT FROM STA 53+50 TO 99+00
  - ADD 4" SOLID YELLOW PAINT STA 83+00 TO 88+00
  - ADD 4" DOUBLE YELLOW PAINT FROM STA 53+50 TO 83+00
- CSAH 7:**
- CSAH 7 WILL REMAIN OPEN TO TRAFFIC DURING CONSTRUCTION.
  - THE SIGNAL AT CSAH 116 & CSAH 7 WILL REMAIN IN OPERATION.
  - NORTHBOUND CSAH 7 WILL BE MERGED INTO ONE LANE BETWEEN 38TH AVE & 38TH LN.
  - SOUTHBOUND CSAH 7 WILL BE SHIFTED INTO THE OUTSIDE SOUTHBOUND LANE STA 122+00 TO 126+00. IT WILL BE TRANSITIONED BACK TO TWO LANES FROM STA 89+45 TO 90+50
  - REMOVE 4" BROKEN LINE WHITE SOUTHBOUND FROM 38TH LN TO STA 91+00
  - ADD 4" WHITE LANE TAPE STA 86+50 TO 91+20 AND 126+90 TO 131+50
  - ADD 4" DOUBLE YELLOW LANE TAPE STA 86+50 TO 91+20
  - ADD 4" SOLID LINE WHITE PAINT NORTHBOUND AND SOUTHBOUND STA 91+20 TO 126+90
  - ADD 4" DOUBLE YELLOW PAINT STA 91+20 TO 126+90

- STAGE 2 CONSTRUCTION NOTES:**
- CSAH 116:**
- STATION 9+11 TO 24+50: CONSTRUCT WESTBOUND LEFT THROUGH LANE AND MEDIAN; AND EASTBOUND LEFT THROUGH LANE, DOUBLE LEFT TURN LANES, CONCRETE MEDIAN AND STORM SEWER.
  - STATION 24+50 TO 53+00: CONTINUES TO BE CLOSED FOR MUCKING AND FULL ROAD RECONSTRUCTION.
  - STATION 53+00 TO 80+30: CONSTRUCT WESTBOUND ROADWAY, CURB & GUTTER, BITUMINOUS TRAIL, SPECIAL DITCH AND NOISE BARRIER.
- CSAH 7**
- CONSTRUCT NORTHBOUND ROADWAY, CURB & GUTTER, MEDIAN, CONCRETE WALK, BITUMINOUS PATH AND RETAINING WALL.

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 REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME: CURT A KOBIARCSIK

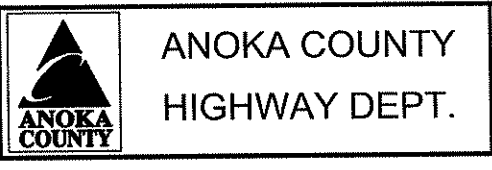
SIGNATURE: *Curt Kobilarcsik*

DATE: 6-29-12 REG. NO. 24756

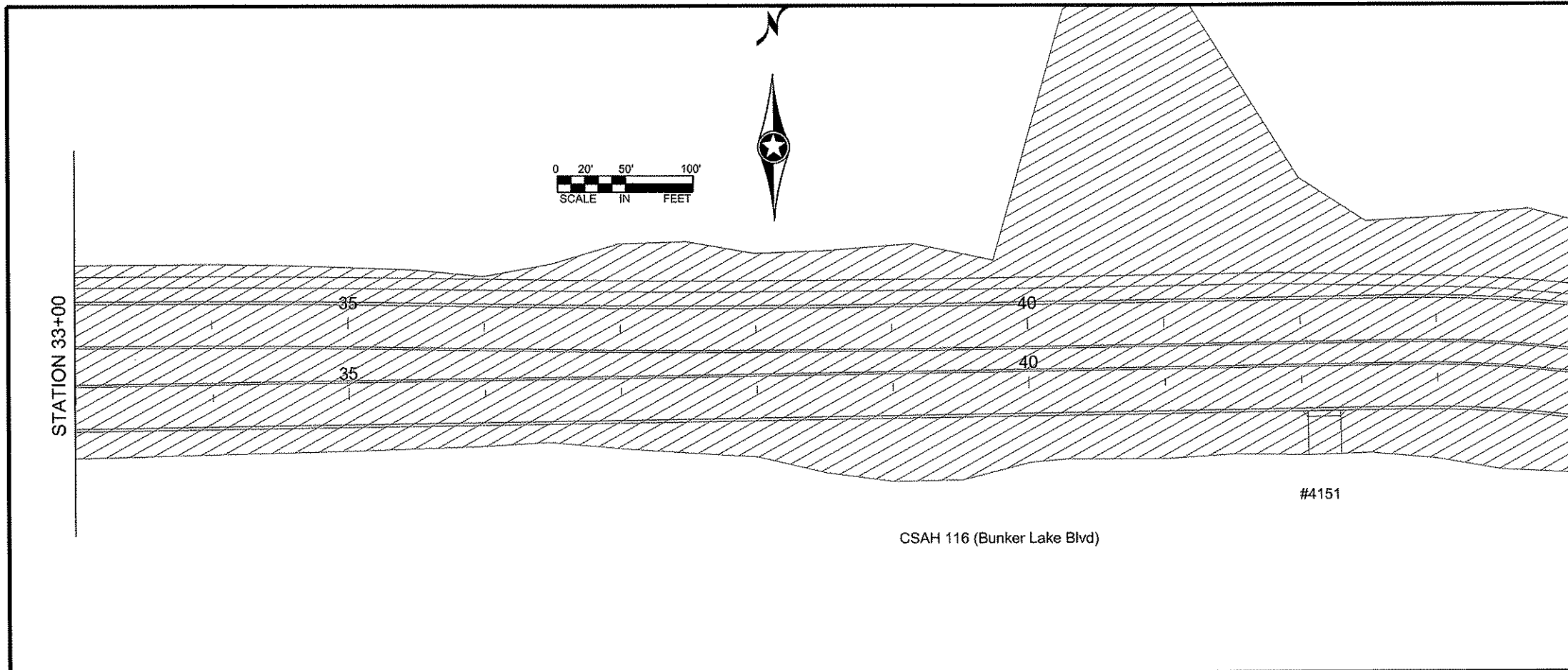
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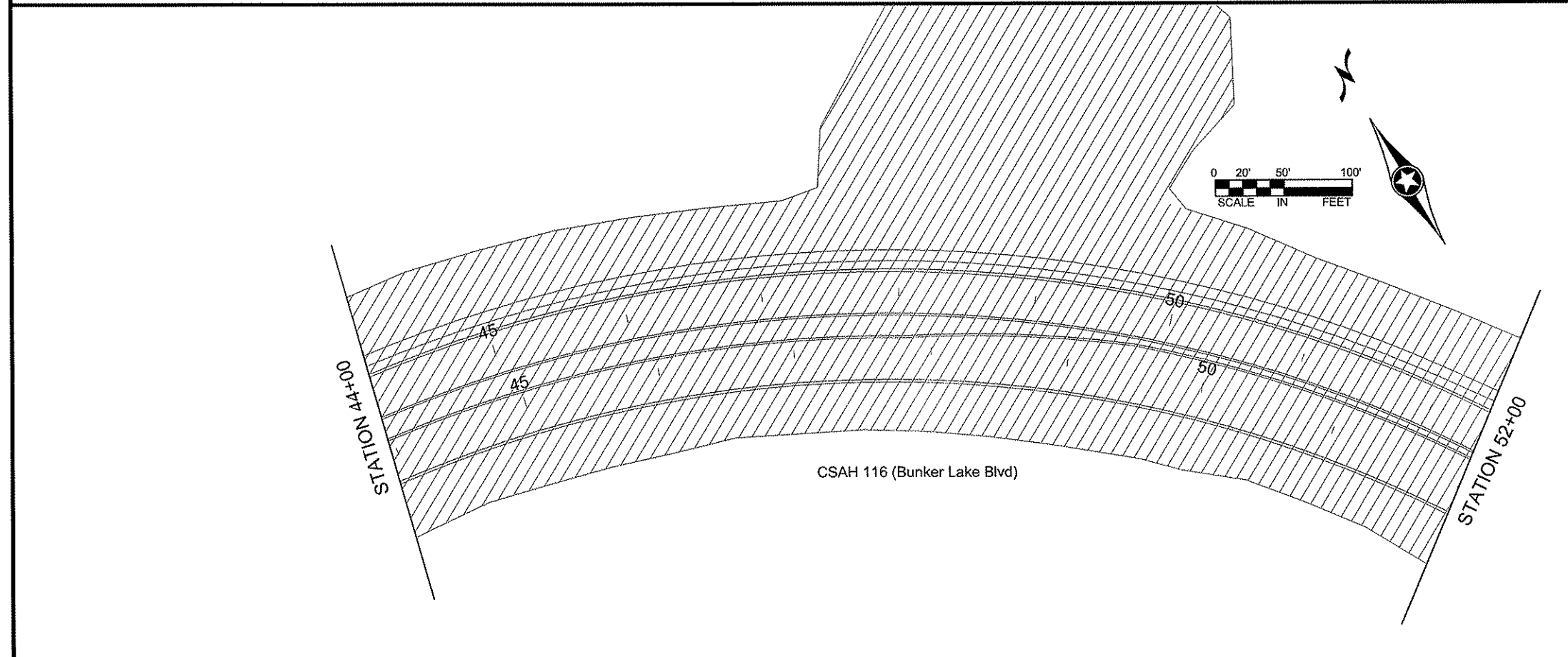
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S.P. 002-716-012	S.P. 198-020-030	S.P.002-607-021
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S.P. 103-020-014		S.P. 103-020-015

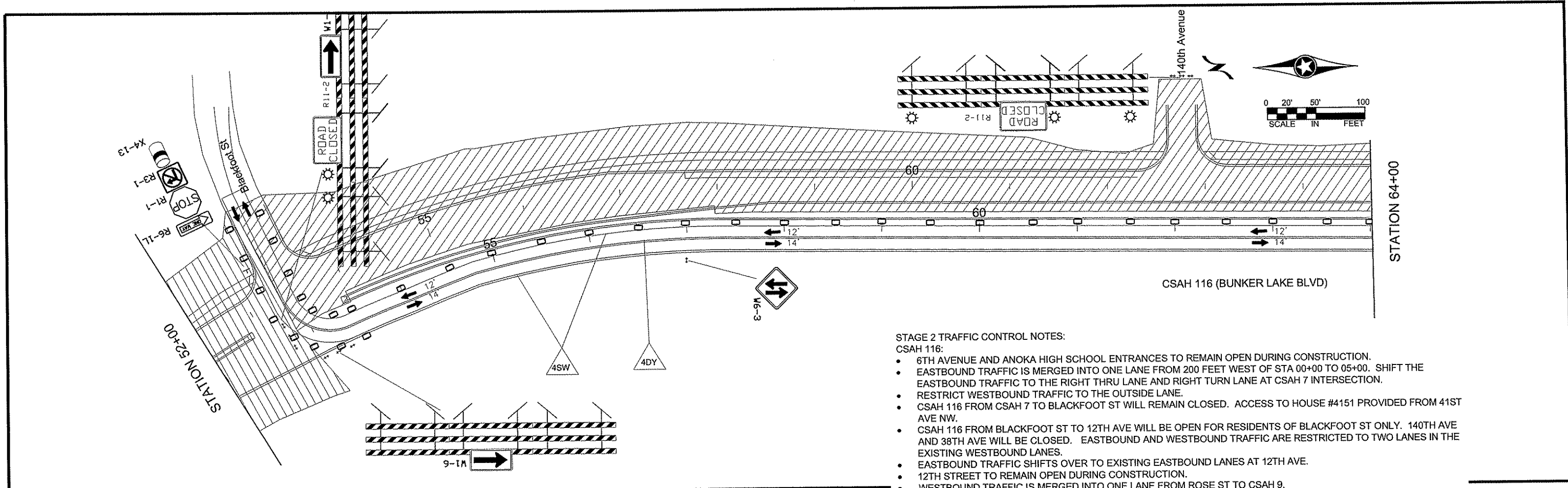


- STAGE 2 TRAFFIC CONTROL NOTES:  
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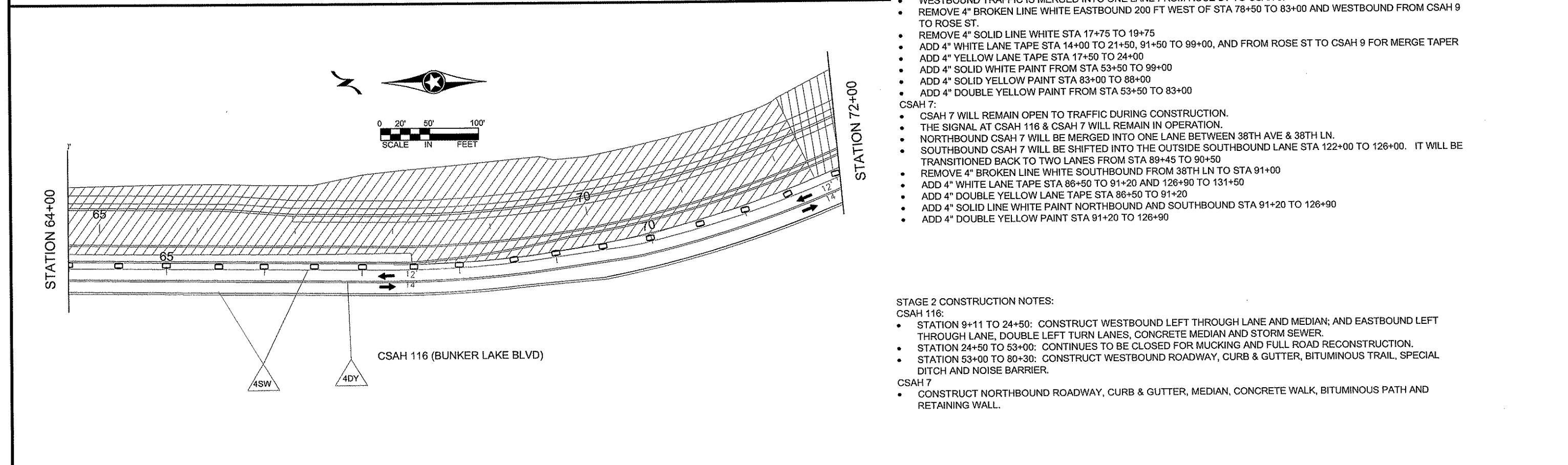


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- CSAH 7
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I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA. PRINT NAME: CURT A. KOBILARCSIK SIGNATURE: <i>Curt Kobilarcsik</i> DATE: 6-29-12 REG. NO. 24756					DRAWN BY: MTH DATE: 12/12/11 DESIGN BY: MTH DATE: 12/12/11 CHECKED BY: RB DATE: 12/21/11	 <b>ANOKA COUNTY</b> HIGHWAY DEPT.	S.P. 002-716-012 S.P. 198-020-031 S.P. 103-020-014	S.P. 198-020-030 S.P. 103-020-015	S.P.002-607-021 S.P. 198-020-032 S.P. 103-020-015	<b>TRAFFIC CONTROL LAYOUT STAGE 2</b> Sheet <u>55</u> of <u>282</u> Sheets	
NO	DATE	BY	CKD	APPR	REVISION	NAME: P:\02-716-12\BaselTraffic\0271602 STG 2.dwg					



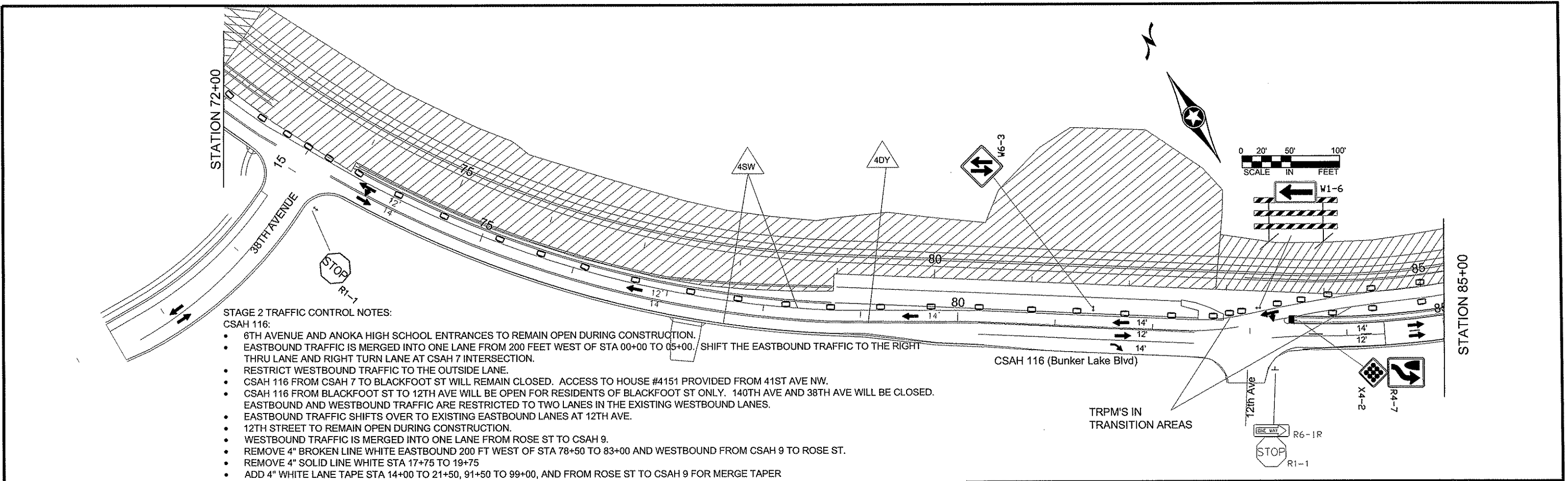
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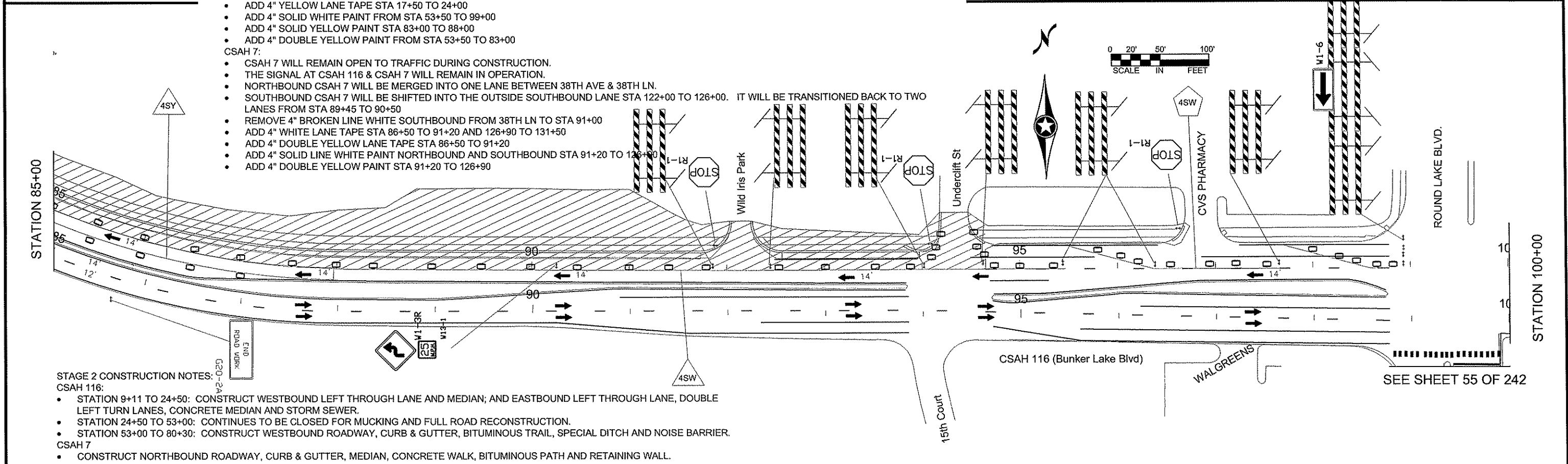
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I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA. PRINT NAME: CURT A KOBIARCSIK SIGNATURE: <i>Curt Kobilarcsik</i> DATE: 6-29-12 REG. NO. 24756					DRAWN BY: MTH DATE: 12/12/11 DESIGN BY: MTH DATE: 12/12/11 CHECKED BY: RB DATE: 12/21/11				ANOKA COUNTY HIGHWAY DEPT.		S.P. 002-716-012 S.P. 198-020-031 S.P. 103-020-014	S.P. 198-020-030   	S.P.002-607-021 S.P. 198-020-032 S.P. 103-020-015	TRAFFIC CONTROL LAYOUT STAGE 2 Sheet 56 of 282 Sheets
NO	DATE	BY	CKD	APPR	REVISION	NAME: P:\02-716-12\Baser\Traffic\0271602 STG 2.dwg								





- STAGE 2 TRAFFIC CONTROL NOTES:**
- CSAH 116:**
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  - SOUTHBOUND CSAH 7 WILL BE SHIFTED INTO THE OUTSIDE SOUTHBOUND LANE STA 122+00 TO 126+00. IT WILL BE TRANSITIONED BACK TO TWO LANES FROM STA 89+45 TO 90+50
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- STAGE 2 CONSTRUCTION NOTES:**
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NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-716-12\Base\Traffic\0271602 STG 2.dwg

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

PRINT NAME: CURT A. KOBILARCSIK

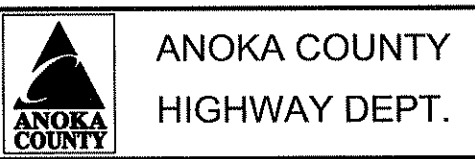
SIGNATURE: *Curt Kobilarsik*

DATE: 6-29-12 REG. NO. 24756

DRAWN BY: MTH DATE: 12/12/11

DESIGN BY: MTH DATE: 12/12/11

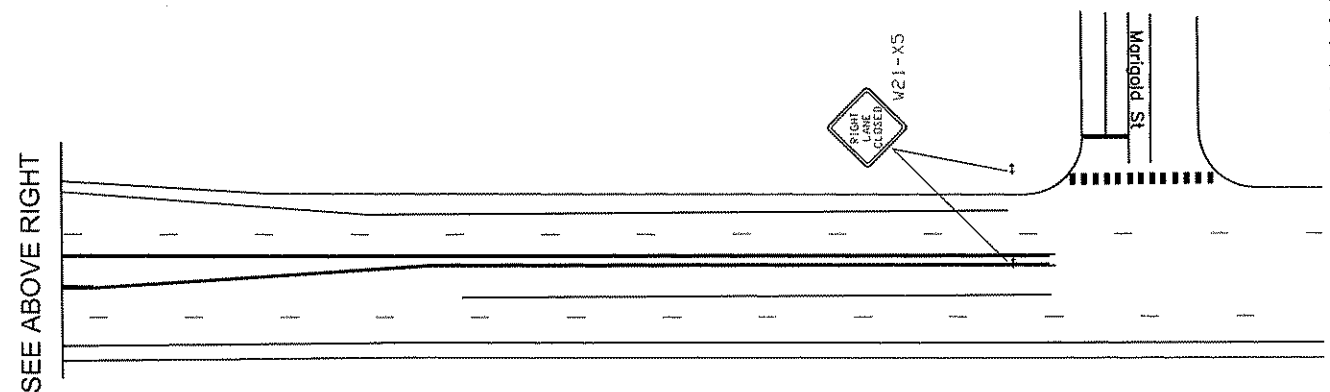
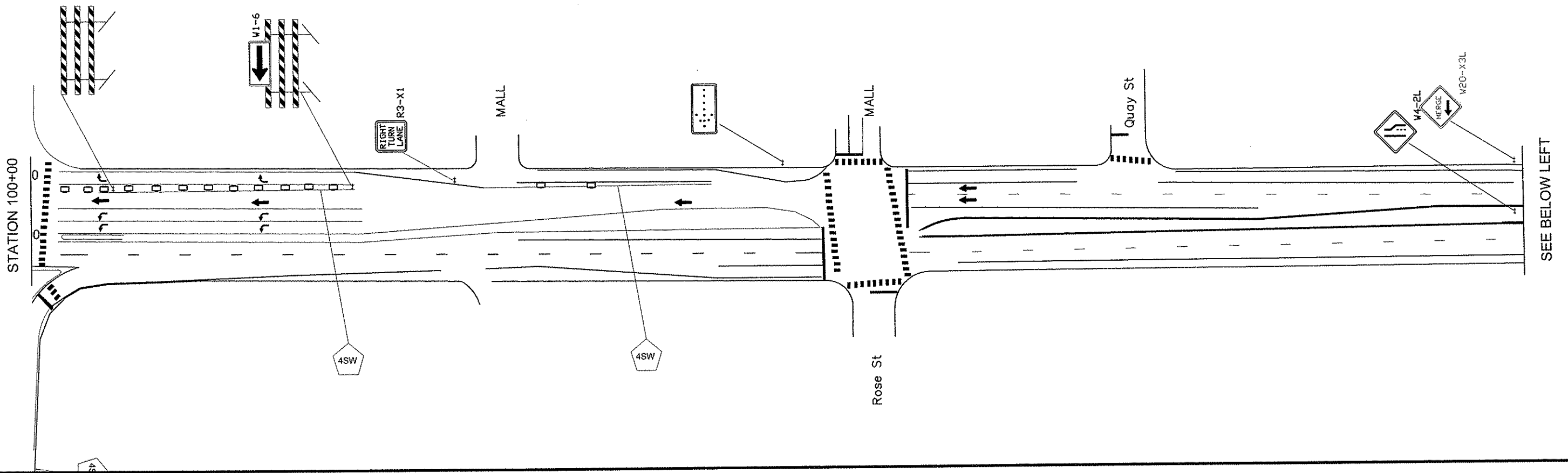
CHECKED BY: RB DATE: 12/21/11



S.P. 002-716-012	S.P. 198-020-030	S.P.002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

TRAFFIC CONTROL LAYOUT STAGE 2

Sheet 57 of 282 Sheets



STAGE 2 TRAFFIC CONTROL NOTES:

CSAH 116:

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- EASTBOUND TRAFFIC IS MERGED INTO ONE LANE FROM 200 FEET WEST OF STA 00+00 TO 05+00. SHIFT THE EASTBOUND TRAFFIC TO THE RIGHT THRU LANE AND RIGHT TURN LANE AT CSAH 7 INTERSECTION.
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- THE SIGNAL AT CSAH 116 & CSAH 7 WILL REMAIN IN OPERATION.
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STAGE 2 CONSTRUCTION NOTES:

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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 REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.  
 PRINT NAME: CURT A KOBLARCSIK  
 SIGNATURE: *Curt Koblarcsik*  
 DATE: 6-29-12 REG. NO. 24756

DRAWN BY: MTH DATE 12/12/11  
 DESIGN BY: MTH DATE 12/12/11  
 CHECKED BY: RB DATE 12/21/11



ANOKA COUNTY  
 HIGHWAY DEPT.

S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

TRAFFIC CONTROL  
 LAYOUT STAGE 2  
 Sheet 58 of 282 Sheets

**STAGE 2 TRAFFIC CONTROL NOTES:**

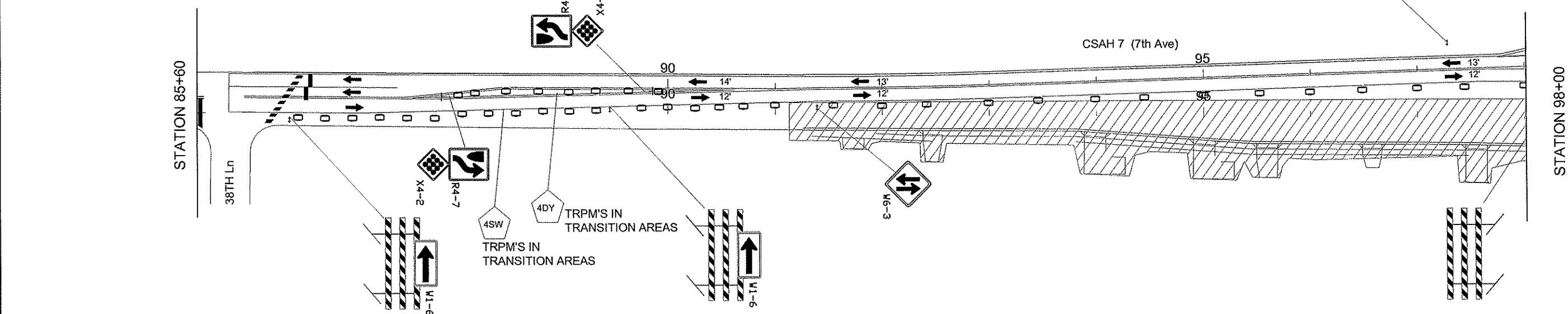
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CSAH 7:

- CSAH 7 WILL REMAIN OPEN TO TRAFFIC DURING CONSTRUCTION.
- THE SIGNAL AT CSAH 116 & CSAH 7 WILL REMAIN IN OPERATION.
- NORTHBOUND CSAH 7 WILL BE MERGED INTO ONE LANE BETWEEN 38TH AVE & 38TH LN.
- SOUTHBOUND CSAH 7 WILL BE SHIFTED INTO THE OUTSIDE SOUTHBOUND LANE STA 122+00 TO 126+00. IT WILL BE TRANSITIONED BACK TO TWO LANES FROM STA 89+45 TO 90+50
- REMOVE 4" BROKEN LINE WHITE SOUTHBOUND FROM 38TH LN TO STA 91+00
- ADD 4" WHITE LANE TAPE STA 86+50 TO 91+20 AND 126+90 TO 131+50
- ADD 4" DOUBLE YELLOW LANE TAPE STA 86+50 TO 91+20
- ADD 4" SOLID LINE WHITE PAINT NORTHBOUND AND SOUTHBOUND STA 91+20 TO 126+90
- ADD 4" DOUBLE YELLOW PAINT STA 91+20 TO 126+90

**STAGE 2 CONSTRUCTION NOTES:**

- CSAH 116:
- STATION 9+11 TO 24+50: CONSTRUCT WESTBOUND LEFT THROUGH LANE AND MEDIAN; AND EASTBOUND LEFT THROUGH LANE, DOUBLE LEFT TURN LANES, CONCRETE MEDIAN AND STORM SEWER.
  - STATION 24+50 TO 53+00: CONTINUES TO BE CLOSED FOR MUCKING AND FULL ROAD RECONSTRUCTION.
  - STATION 53+00 TO 80+30: CONSTRUCT WESTBOUND ROADWAY, CURB & GUTTER, BITUMINOUS TRAIL, SPECIAL DITCH AND NOISE BARRIER.
- CSAH 7:
- CONSTRUCT NORTHBOUND ROADWAY, CURB & GUTTER, MEDIAN, CONCRETE WALK, BITUMINOUS PATH AND RETAINING WALL.



1	5/09/2012	MTH			TEMP SIGNAL AT CSAH 116/CSAH 7 REVISIONS
NO	DATE	BY	CKD	APPR	REVISION
NAME: P:\02-716-12\Base\Traffic\0271602 STG 2.dwg					

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

PRINT NAME: CURT A KOBIARCSIK

SIGNATURE: *Curt Kobilarcsik*

DATE: 6-29-12 REG. NO. 24756

DRAWN BY: MTH DATE: 12/12/11

DESIGN BY: MTH DATE: 12/12/11

CHECKED BY: RB DATE: 12/21/11

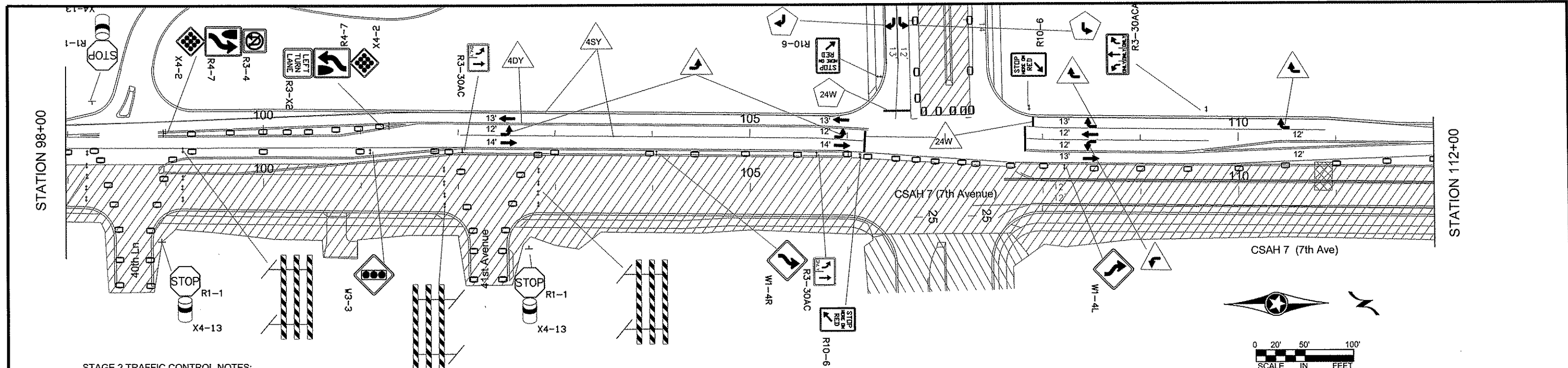


**ANOKA COUNTY**  
HIGHWAY DEPT.

S.P. 002-716-012	S.P. 198-020-030	S.P.002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

TRAFFIC CONTROL LAYOUT STAGE 2

Sheet 59 of 282 Sheets



**STAGE 2 TRAFFIC CONTROL NOTES:**

**CSAH 116:**

- 6TH AVENUE AND ANOKA HIGH SCHOOL ENTRANCES TO REMAIN OPEN DURING CONSTRUCTION.
- EASTBOUND TRAFFIC IS MERGED INTO ONE LANE FROM 200 FEET WEST OF STA 00+00 TO 05+00. SHIFT THE EASTBOUND TRAFFIC TO THE RIGHT THRU LANE AND RIGHT TURN LANE AT CSAH 7 INTERSECTION.
- RESTRICT WESTBOUND TRAFFIC TO THE OUTSIDE LANE.
- CSAH 116 FROM CSAH 7 TO BLACKFOOT ST WILL REMAIN CLOSED. ACCESS TO HOUSE #4151 PROVIDED FROM 41ST AVE NW.
- CSAH 116 FROM BLACKFOOT ST TO 12TH AVE WILL BE OPEN FOR RESIDENTS OF BLACKFOOT ST ONLY. 140TH AVE AND 38TH AVE WILL BE CLOSED. EASTBOUND AND WESTBOUND TRAFFIC ARE RESTRICTED TO TWO LANES IN THE EXISTING WESTBOUND LANES.
- EASTBOUND TRAFFIC SHIFTS OVER TO EXISTING EASTBOUND LANES AT 12TH AVE.
- 12TH STREET TO REMAIN OPEN DURING CONSTRUCTION.
- WESTBOUND TRAFFIC IS MERGED INTO ONE LANE FROM ROSE ST TO CSAH 9.
- REMOVE 4" BROKEN LINE WHITE EASTBOUND 200 FT WEST OF STA 78+50 TO 83+00 AND WESTBOUND FROM CSAH 9 TO ROSE ST.
- REMOVE 4" SOLID LINE WHITE STA 17+75 TO 19+75
- ADD 4" WHITE LANE TAPE STA 14+00 TO 21+50, 91+50 TO 99+00, AND FROM ROSE ST TO CSAH 9 FOR MERGE TAPER
- ADD 4" YELLOW LANE TAPE STA 17+50 TO 24+00
- ADD 4" SOLID WHITE PAINT FROM STA 53+50 TO 99+00
- ADD 4" SOLID YELLOW PAINT STA 83+00 TO 88+00
- ADD 4" DOUBLE YELLOW PAINT FROM STA 53+50 TO 83+00

**CSAH 7:**

- CSAH 7 WILL REMAIN OPEN TO TRAFFIC DURING CONSTRUCTION.
- THE SIGNAL AT CSAH 116 & CSAH 7 WILL REMAIN IN OPERATION.
- NORTHBOUND CSAH 7 WILL BE MERGED INTO ONE LANE BETWEEN 38TH AVE & 38TH LN.
- SOUTHBOUND CSAH 7 WILL BE SHIFTED INTO THE OUTSIDE SOUTHBOUND LANE STA 122+00 TO 126+00. IT WILL BE TRANSITIONED BACK TO TWO LANES FROM STA 89+45 TO 90+50
- REMOVE 4" BROKEN LINE WHITE SOUTHBOUND FROM 38TH LN TO STA 91+00
- ADD 4" WHITE LANE TAPE STA 86+50 TO 91+20 AND 126+90 TO 131+50
- ADD 4" DOUBLE YELLOW LANE TAPE STA 86+50 TO 91+20
- ADD 4" SOLID LINE WHITE PAINT NORTHBOUND AND SOUTHBOUND STA 91+20 TO 126+90
- ADD 4" DOUBLE YELLOW PAINT STA 91+20 TO 126+90

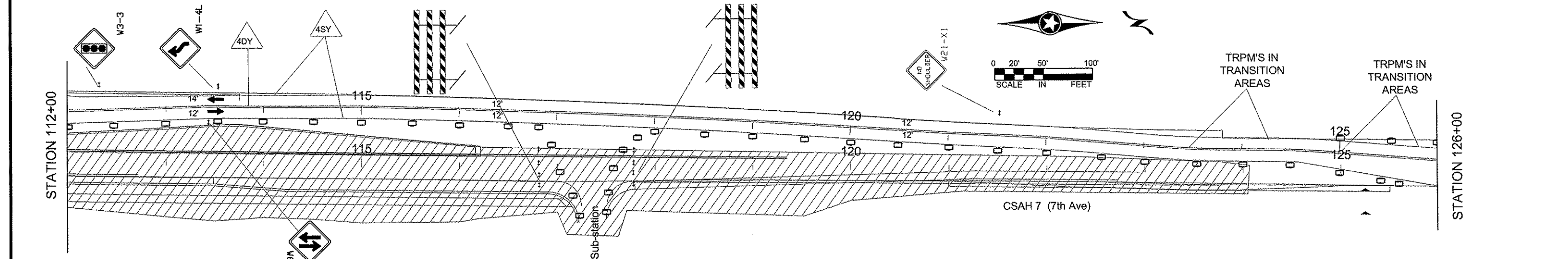
**STAGE 2 CONSTRUCTION NOTES:**

**CSAH 116:**

- STATION 9+11 TO 24+50: CONSTRUCT WESTBOUND LEFT THROUGH LANE AND MEDIAN; AND EASTBOUND LEFT THROUGH LANE, DOUBLE LEFT TURN LANES, CONCRETE MEDIAN AND STORM SEWER.
- STATION 24+50 TO 53+00: CONTINUES TO BE CLOSED FOR MUCKING AND FULL ROAD RECONSTRUCTION.
- STATION 53+00 TO 80+30: CONSTRUCT WESTBOUND ROADWAY, CURB & GUTTER, BITUMINOUS TRAIL, SPECIAL DITCH AND NOISE BARRIER.

**CSAH 7**

- CONSTRUCT NORTHBOUND ROADWAY, CURB & GUTTER, MEDIAN, CONCRETE WALK, BITUMINOUS PATH AND RETAINING WALL.



1	5/09/2012	MTH			TEMP SIGNAL AT CSAH 116/CSAH 7 REVISIONS
NO	DATE	BY	CKD	APPR	REVISION
NAME: P:\02-716-12\Basel\Traffic\0271602 STG 2.dwg					

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.  
 PRINT NAME: CURT A KOBIARCSIK  
 SIGNATURE: *Curt Kobiarcsik*  
 DATE: 6-29-12 REG. NO. 24756

DRAWN BY: MTH DATE: 12/12/11  
 DESIGN BY: MTH DATE: 12/12/11  
 CHECKED BY: RB DATE: 12/21/11

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

S.P. 002-716-012	S.P. 198-020-030	S.P.002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

TRAFFIC CONTROL LAYOUT STAGE 2  
 Sheet 60 of 282 Sheets

STAGE 2 TRAFFIC CONTROL NOTES:

CSAH 116:

- 6TH AVENUE AND ANOKA HIGH SCHOOL ENTRANCES TO REMAIN OPEN DURING CONSTRUCTION.
- EASTBOUND TRAFFIC IS MERGED INTO ONE LANE FROM 200 FEET WEST OF STA 00+00 TO 05+00. SHIFT THE EASTBOUND TRAFFIC TO THE RIGHT THRU LANE AND RIGHT TURN LANE AT CSAH 7 INTERSECTION.
- RESTRICT WESTBOUND TRAFFIC TO THE OUTSIDE LANE.
- CSAH 116 FROM CSAH 7 TO BLACKFOOT ST WILL REMAIN CLOSED. ACCESS TO HOUSE #4151 PROVIDED FROM 41ST AVE NW.
- CSAH 116 FROM BLACKFOOT ST TO 12TH AVE WILL BE OPEN FOR RESIDENTS OF BLACKFOOT ST ONLY. 140TH AVE AND 38TH AVE WILL BE CLOSED. EASTBOUND AND WESTBOUND TRAFFIC ARE RESTRICTED TO TWO LANES IN THE EXISTING WESTBOUND LANES.
- EASTBOUND TRAFFIC SHIFTS OVER TO EXISTING EASTBOUND LANES AT 12TH AVE.
- 12TH STREET TO REMAIN OPEN DURING CONSTRUCTION.
- WESTBOUND TRAFFIC IS MERGED INTO ONE LANE FROM ROSE ST TO CSAH 9.
- REMOVE 4" BROKEN LINE WHITE EASTBOUND 200 FT WEST OF STA 78+50 TO 83+00 AND WESTBOUND FROM CSAH 9 TO ROSE ST.
- REMOVE 4" SOLID LINE WHITE STA 17+75 TO 19+75
- ADD 4" WHITE LANE TAPE STA 14+00 TO 21+50, 91+50 TO 99+00, AND FROM ROSE ST TO CSAH 9 FOR MERGE TAPER
- ADD 4" YELLOW LANE TAPE STA 17+50 TO 24+00
- ADD 4" SOLID WHITE PAINT FROM STA 53+50 TO 99+00
- ADD 4" SOLID YELLOW PAINT STA 83+00 TO 88+00
- ADD 4" DOUBLE YELLOW PAINT FROM STA 53+50 TO 83+00

CSAH 7:

- CSAH 7 WILL REMAIN OPEN TO TRAFFIC DURING CONSTRUCTION.
- THE SIGNAL AT CSAH 116 & CSAH 7 WILL REMAIN IN OPERATION.
- NORTHBOUND CSAH 7 WILL BE MERGED INTO ONE LANE BETWEEN 38TH AVE & 38TH LN.
- SOUTHBOUND CSAH 7 WILL BE SHIFTED INTO THE OUTSIDE SOUTHBOUND LANE STA 122+00 TO 126+00. IT WILL BE TRANSITIONED BACK TO TWO LANES FROM STA 89+45 TO 90+50
- REMOVE 4" BROKEN LINE WHITE SOUTHBOUND FROM 38TH LN TO STA 91+00
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- ADD 4" DOUBLE YELLOW LANE TAPE STA 86+50 TO 91+20
- ADD 4" SOLID LINE WHITE PAINT NORTHBOUND AND SOUTHBOUND STA 91+20 TO 126+90
- ADD 4" DOUBLE YELLOW PAINT STA 91+20 TO 126+90

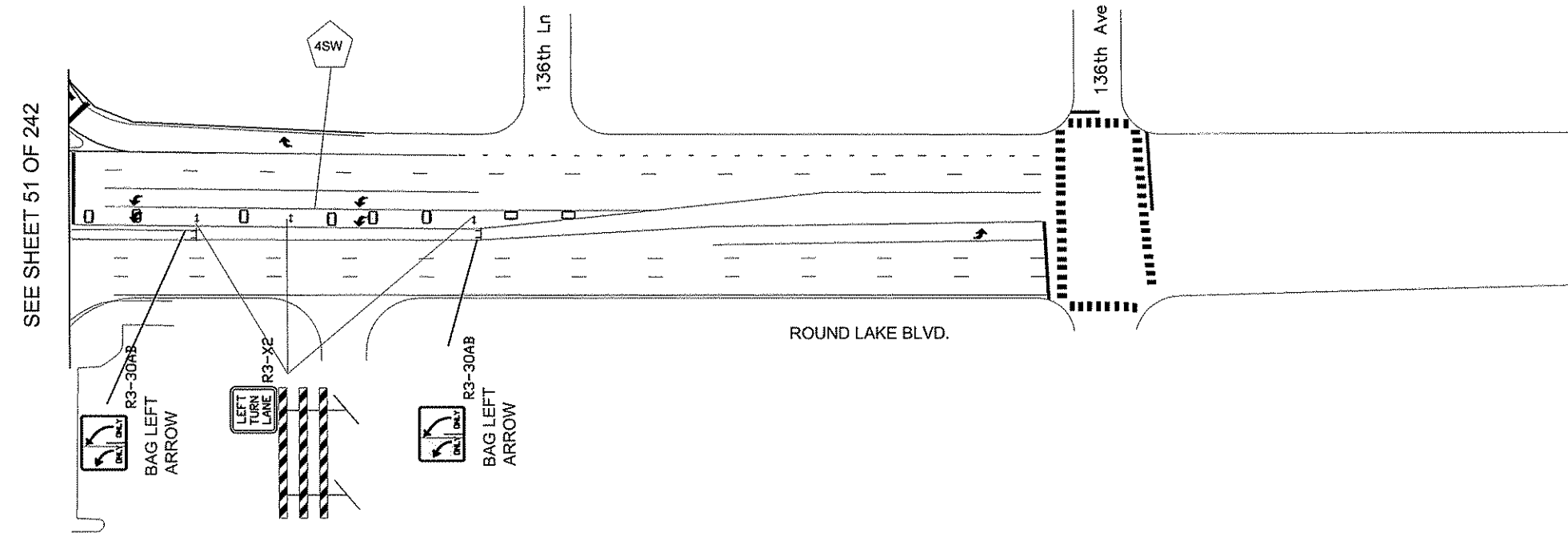
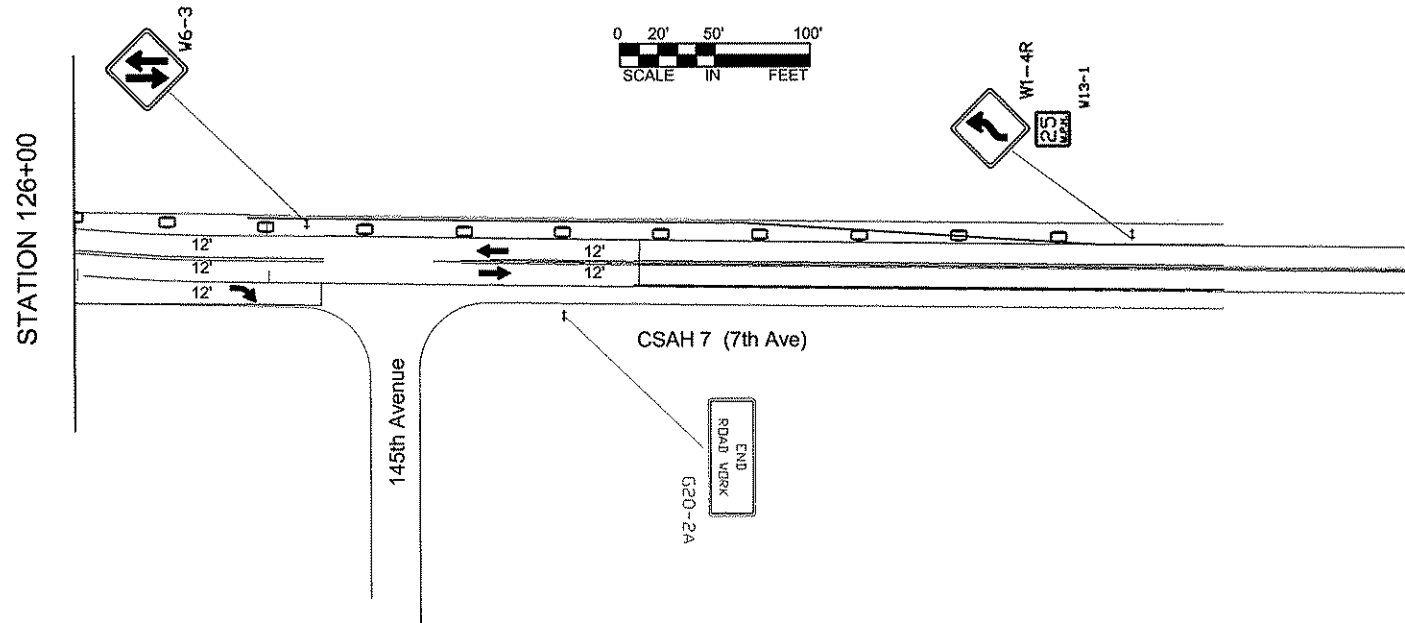
STAGE 2 CONSTRUCTION NOTES:

CSAH 116:

- STATION 9+11 TO 24+50: CONSTRUCT WESTBOUND LEFT THROUGH LANE AND MEDIAN; AND EASTBOUND LEFT THROUGH LANE, DOUBLE LEFT TURN LANES, CONCRETE MEDIAN AND STORM SEWER.
- STATION 24+50 TO 53+00: CONTINUES TO BE CLOSED FOR MUCKING AND FULL ROAD RECONSTRUCTION.
- STATION 53+00 TO 80+30: CONSTRUCT WESTBOUND ROADWAY, CURB & GUTTER, BITUMINOUS TRAIL, SPECIAL DITCH AND NOISE BARRIER.

CSAH 7

- CONSTRUCT NORTHBOUND ROADWAY, CURB & GUTTER, MEDIAN, CONCRETE WALK, BITUMINOUS PATH AND RETAINING WALL.



1	5/09/2012	MTH			TEMP SIGNAL AT CSAH 116/CSAH 7 REVISIONS
NO	DATE	BY	CKD	APPR	REVISION
NAME: P:\02-716-12\BaselTraffic\0271602 STG 2.dwg					

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

PRINT NAME: CURT A. KOBIARCSIK

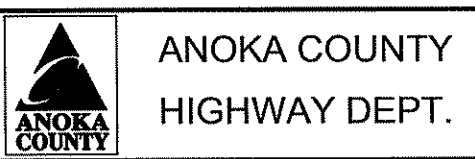
SIGNATURE: *Curt Kobilarcsik*

DATE: 6-29-12 REG. NO. 24756

DRAWN BY: MTH DATE: 12/12/11

DESIGN BY: MTH DATE: 12/12/11

CHECKED BY: RB DATE: 12/21/11



S.P. 002-716-012	S.P. 198-020-030	S.P.002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

TRAFFIC CONTROL LAYOUT STAGE 2

Sheet 61 of 282 Sheets

M.U.T.C.D. CODE	SIZE	INSERT	QTY. STG. 1	QTY. STG. 2
R1-1	30" x 30"		0	0
R1-1	48" x 48"		6	9
R3-30AC	36" x 30"		0	2
R3-30ACA	54" x 30"		0	1
R3-X1	30" x 30"		2	3
R3-X2	30" x 30"		1	4
R3-1	24" x 24"		1	1
R3-2	24" x 24"		2	0
R3-4	24" x 24"		0	1
R4-7	24" x 36"		5	5
X4-2	18" x 18"		4	5
R6-1R	48" x 18"		1	1
R6-1L	48" x 18"		1	1
R10-6	18" x 24"		3	3
W1-3R	48" x 48"		1	1
W1-3L	48" x 48"		0	0

M.U.T.C.D. CODE	SIZE	INSERT	QTY. STG. 1	QTY. STG. 2
W1-4R	48" x 48"		1	1
W1-4L	48" x 48"		1	2
W3-3	48" x 48"		3	3
W6-3	48" x 48"		5	6
W4-2R	48" x 48"		3	0
W4-2L	48" x 48"		1	3
W20-1	48" x 48"		1	1
W20-X3L	48" x 48"		0	1
W21-X1	48" x 48"		6	1
W21-X5	48" x 48"		1	5
W21-X5	48" x 48"		4	0
W20-100p	24" x 24"		2	0
W13-1	24" x 24"		1	2

M.U.T.C.D. CODE	SIZE	INSERT	QTY. STG. 1	QTY. STG. 2
W1-6	48" x 24"		8	1
TYPE III	8 FOOT		8	1
W1-6	48" x 24"		2	9
TYPE III	8 FOOT		2	9
FLASHER			R11-2 4	2
R11-2	48" x 30"		4	2
TYPE III	8 FOOT		4	2
FLASHER			R11-2 0	0
R11-2	48" x 30"		0	0
TYPE III	8 FOOT		0	0
FLASHER			3	0
TYPE III	8 FOOT		3	32
FLASHER			7	3
TYPE III	8 FOOT		10	9
REFLECTORIZED REBOUNDABLE DRUM			305	335
CHANGEABLE MESSAGE SIGN			0	1
G20-2A	48" x 24"		4	4

NOTES:

- ALL TRAFFIC CONTROL DEVICES SHALL CONFORM AND BE PLACED IN ACCORDANCE TO THE "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MN MUTCD), AND PART VI, "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS".
- ALL TYPE III BARRICADES SHALL BE REFLECTORIZED ON BOTH SIDES. BARRICADES MARKINGS SHALL BE SLANTED IN ACCORDANCE WITH THE MN MUTCD .

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-716-12\Bases\Traffic\0271602 STGQTY.dwg

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

PRINT NAME: CURT A. KOBILARCSIK  
SIGNATURE: *Curt Kobilarsik*  
DATE: 6-29-12 REG. NO. 24756

DRAWN BY: MTH DATE 4/24/2012  
DESIGN BY: MTH DATE 4/24/2012  
CHECKED BY: JR DATE 5/15/2012



S.P. 002-716-012	S.P. 198-020-030	S.P.002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

STAGING SIGN QUANTITIES

Sheet 62 of 282 Sheets



**CURVE WB AL2-1**

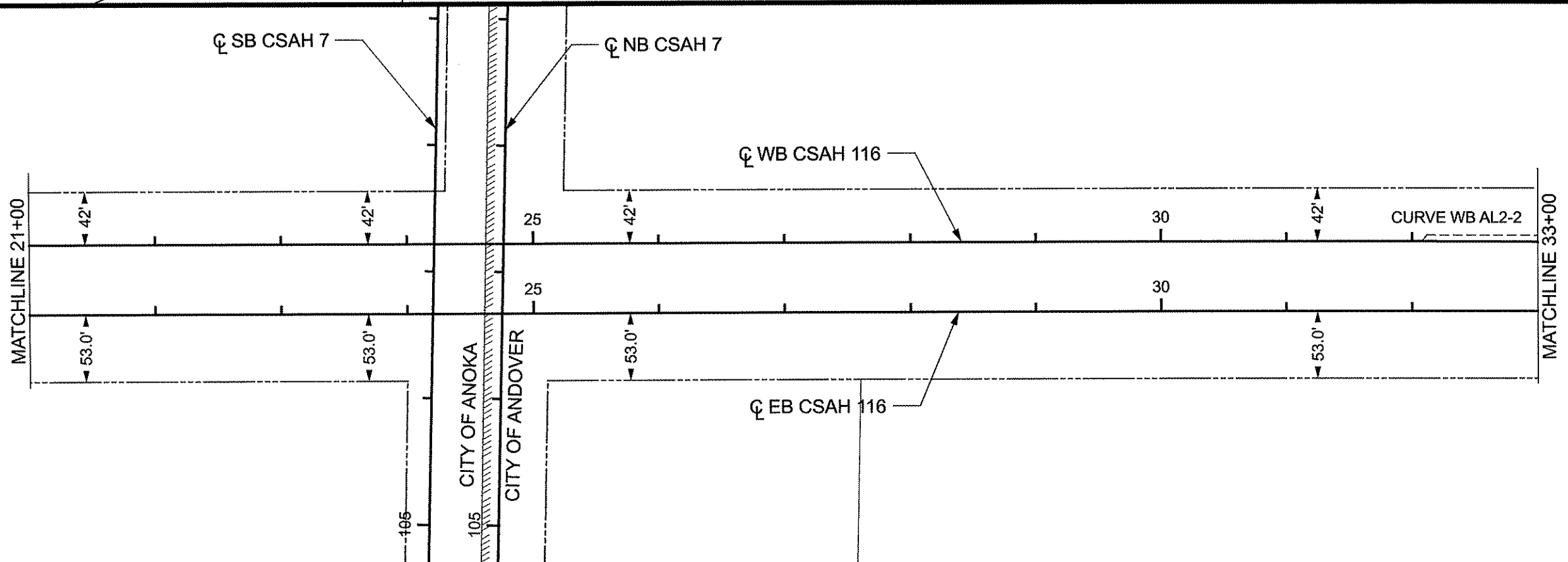
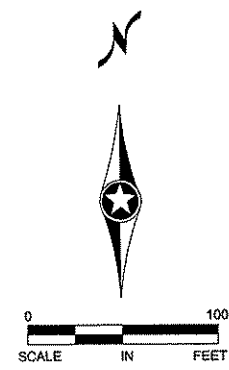
PI 13+17.79  
 X 470,215.245  
 Y 170,457.379  
 I 23° 25' 13.00" (RT)  
 D 2° 55' 23.71"  
 T 406.26'  
 L 801.17'  
 R 1,960.00'  
 PC 9+11.54  
 PT 17+12.71

**CURVE EB AL2-1**

PI 13+48.42  
 X 470,250.463  
 Y 170,402.902  
 I 20° 40' 35.36" (RT)  
 D 2° 59' 59.20"  
 T 348.42'  
 L 689.27'  
 R 1,910.00'  
 PC 10+00.00  
 PT 16+89.27

**CURVE WB AL2-2**

PI 34+01.92  
 X 472,310.477  
 Y 170,488.862  
 I 1° 56' 12.03" (RT)  
 D 0° 30' 00.02"  
 T 193.68'  
 L 387.33'  
 R 11,459.00'  
 PC 32+08.23  
 PT 35+95.56

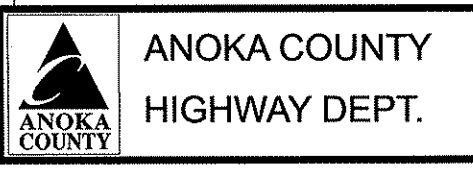


NO	DATE	BY	CKD	APPR	REVISION

NAME: p:\02-716-12\plan\0271612\_ALL\_P1.dgn  
 06/28/2012 8:03:34 AM

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.  
 PRINT NAME: CURT A. KOBILARCSIK  
 SIGNATURE: *Curt A. Kobilarsik*  
 DATE: 6-29-12 LICENSE NO. 24756

DRAWN BY: ND DATE 05/15/2012  
 DESIGN BY: MN DATE 12/01/2010  
 CHECKED BY: CAK DATE 05/29/2012



S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

ALIGNMENT PLAN  
 CSAH 116  
 STA 8+00.00 TO 33+00.00  
 Sheet 63 of 282 Sheets

**CURVE WB AL2-2**

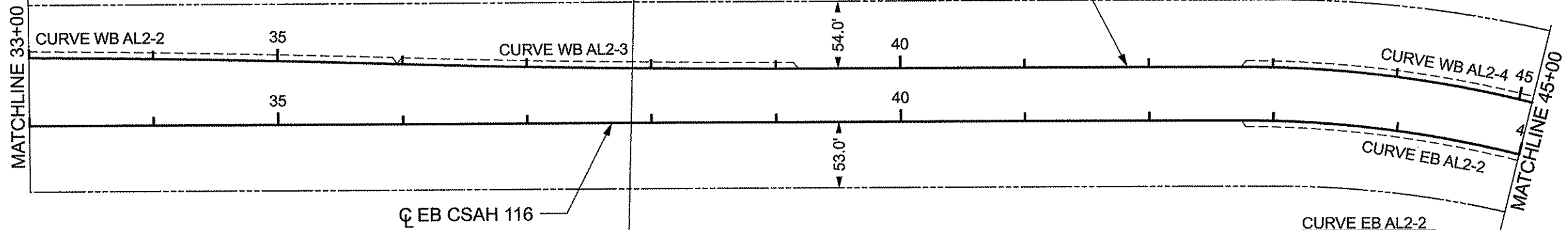
PI 34+01.92  
 X 472,310.477  
 Y 170,488.862  
 | 1° 56' 12.03" (RT)  
 D 0° 30' 00.02"  
 T 193.68'  
 L 387.33'  
 R 11,459.00'  
 PC 32+08.23  
 PT 35+95.56

**CURVE WB AL2-3**

PI 37+56.96  
 X 472,665.498  
 Y 170,482.195  
 | 1° 56' 12.03" (LT)  
 D 0° 36' 00.07"  
 T 161.40'  
 L 322.77'  
 R 9,549.00'  
 PC 35+95.56  
 PT 39+18.33

**CURVE WB AL2-4**

PI 52+57.94  
 X 474,166.335  
 Y 170,504.747  
 | 91° 22' 34.11" (RT)  
 D 5° 58' 05.92"  
 T 983.34'  
 L 1,531.02'  
 R 960.00'  
 PC 42+74.60  
 PT 58+05.62

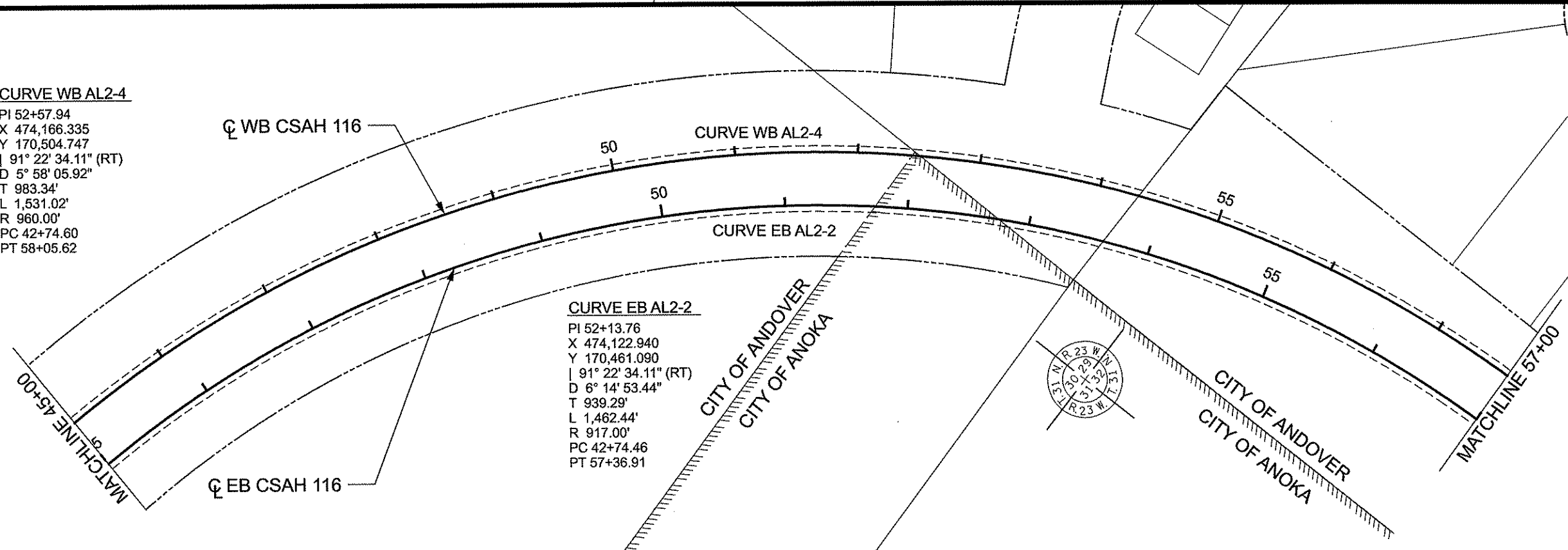


**CURVE EB AL2-2**

PI 52+13.76  
 X 474,122.940  
 Y 170,461.090  
 | 91° 22' 34.11" (RT)  
 D 6° 14' 53.44"  
 T 939.29'  
 L 1,462.44'  
 R 917.00'  
 PC 42+74.46  
 PT 57+36.91

**CURVE WB AL2-4**

PI 52+57.94  
 X 474,166.335  
 Y 170,504.747  
 | 91° 22' 34.11" (RT)  
 D 5° 58' 05.92"  
 T 983.34'  
 L 1,531.02'  
 R 960.00'  
 PC 42+74.60  
 PT 58+05.62



**CURVE EB AL2-2**

PI 52+13.76  
 X 474,122.940  
 Y 170,461.090  
 | 91° 22' 34.11" (RT)  
 D 6° 14' 53.44"  
 T 939.29'  
 L 1,462.44'  
 R 917.00'  
 PC 42+74.46  
 PT 57+36.91

NO	DATE	BY	CKD	APPR	REVISION

NAME: p:02-716-12\plan\0271612\_AL1\_P2.dgn  
 06/28/2012 8:03:36 AM

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

PRINT NAME: CURT A. KOBILARCSIK  
 SIGNATURE: *Curt A. Kobilarsik*  
 DATE: 6-29-12 LICENSE NO. 24756

DRAWN BY: ND DATE 05/15/2012  
 DESIGN BY: MN DATE 12/01/2010  
 CHECKED BY: CAK DATE 06/29/2012

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

S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

**ALIGNMENT PLAN**  
**CSAH 116**

STA 33+00.00 TO 57+00.00

Sheet 64 of 282 Sheets

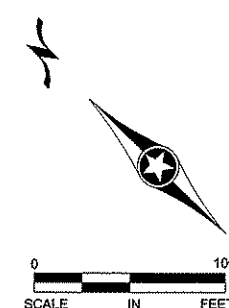
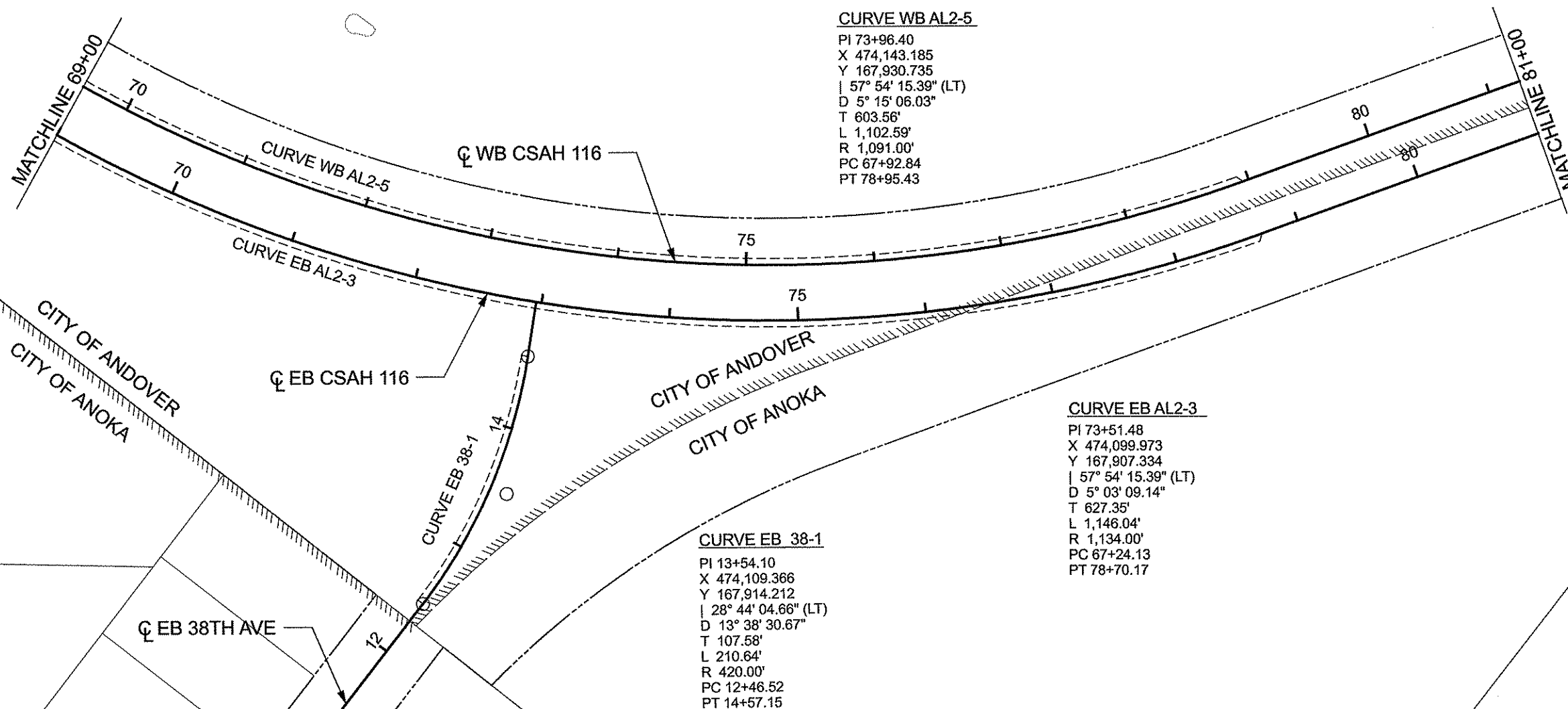
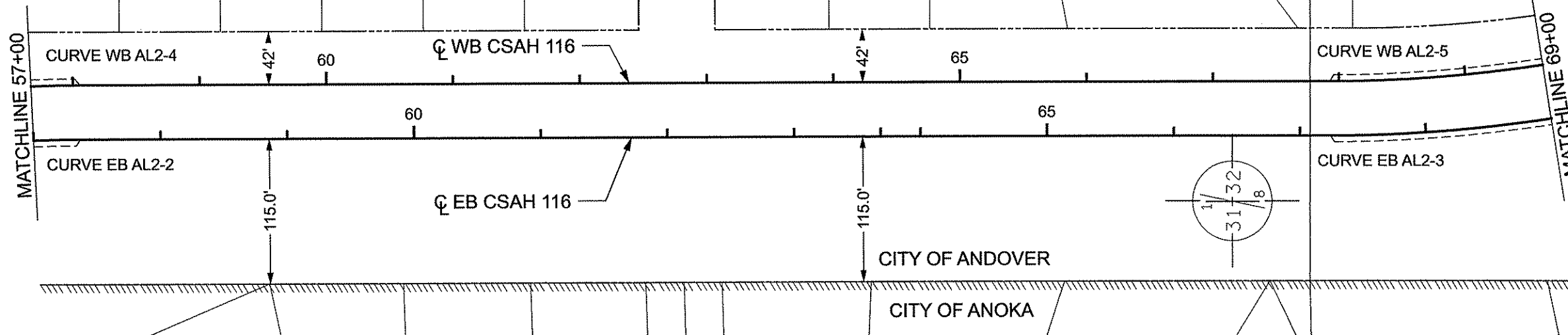
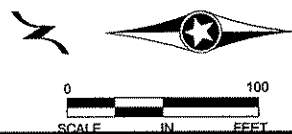


**CURVE WB AL2-4**  
 PI 52+57.94  
 X 474,166.335  
 Y 170,504.747  
 | 91° 22' 34.11" (RT)  
 D 5° 58' 05.92"  
 T 983.34'  
 L 1,531.02'  
 R 960.00'  
 PC 42+74.60  
 PT 58+05.62

**CURVE EB AL2-2**  
 PI 52+13.76  
 X 474,122.940  
 Y 170,461.090  
 | 91° 22' 34.11" (RT)  
 D 6° 14' 53.44"  
 T 939.29'  
 L 1,462.44'  
 R 917.00'  
 PC 42+74.46  
 PT 57+36.91

**CURVE WB AL2-5**  
 PI 73+96.40  
 X 474,143.185  
 Y 167,930.735  
 | 57° 54' 15.39" (LT)  
 D 5° 15' 06.03"  
 T 603.56'  
 L 1,102.59'  
 R 1,091.00'  
 PC 67+92.84  
 PT 78+95.43

**CURVE EB AL2-3**  
 PI 73+51.48  
 X 474,099.973  
 Y 167,907.334  
 | 57° 54' 15.39" (LT)  
 D 5° 03' 09.14"  
 T 627.35'  
 L 1,146.04'  
 R 1,134.00'  
 PC 67+24.13  
 PT 78+70.17



3 OF 6

NO	DATE	BY	CHKD	APPR	REVISION

NAME: p:\02-716-12\plan\0271612\_ALL\_P3.dgn  
 06/28/2012 8:03:39 AM

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.  
 PRINT NAME: CURT A. KOBILARCSIK  
 SIGNATURE: *Curt Kobilarsik*  
 DATE: 6-29-12 LICENSE NO. 24756

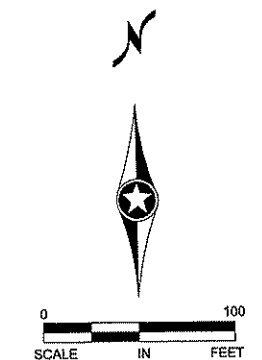
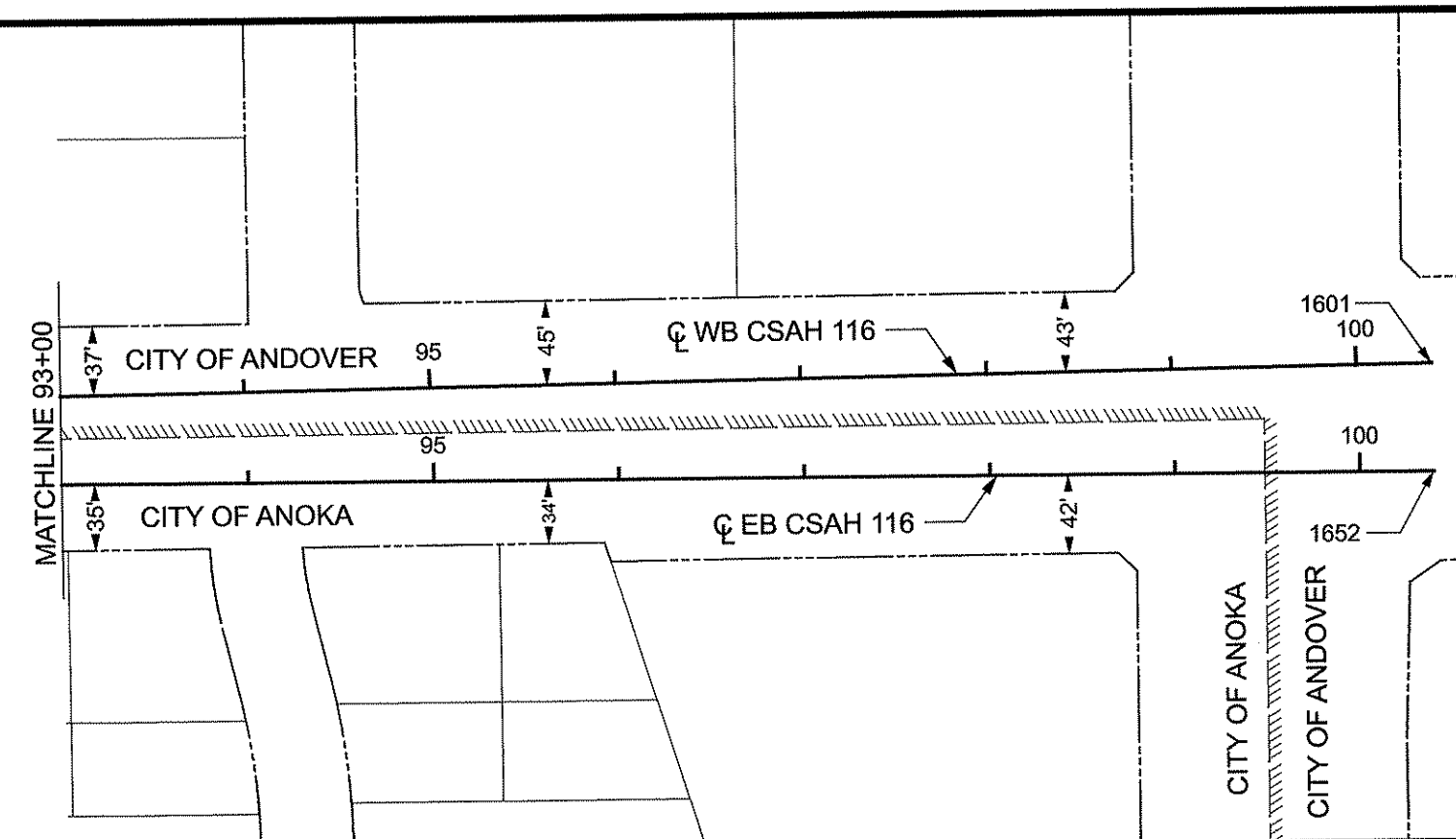
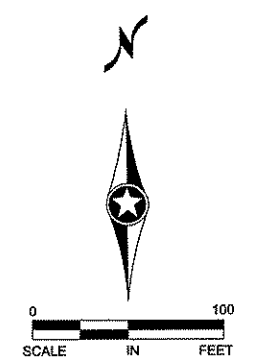
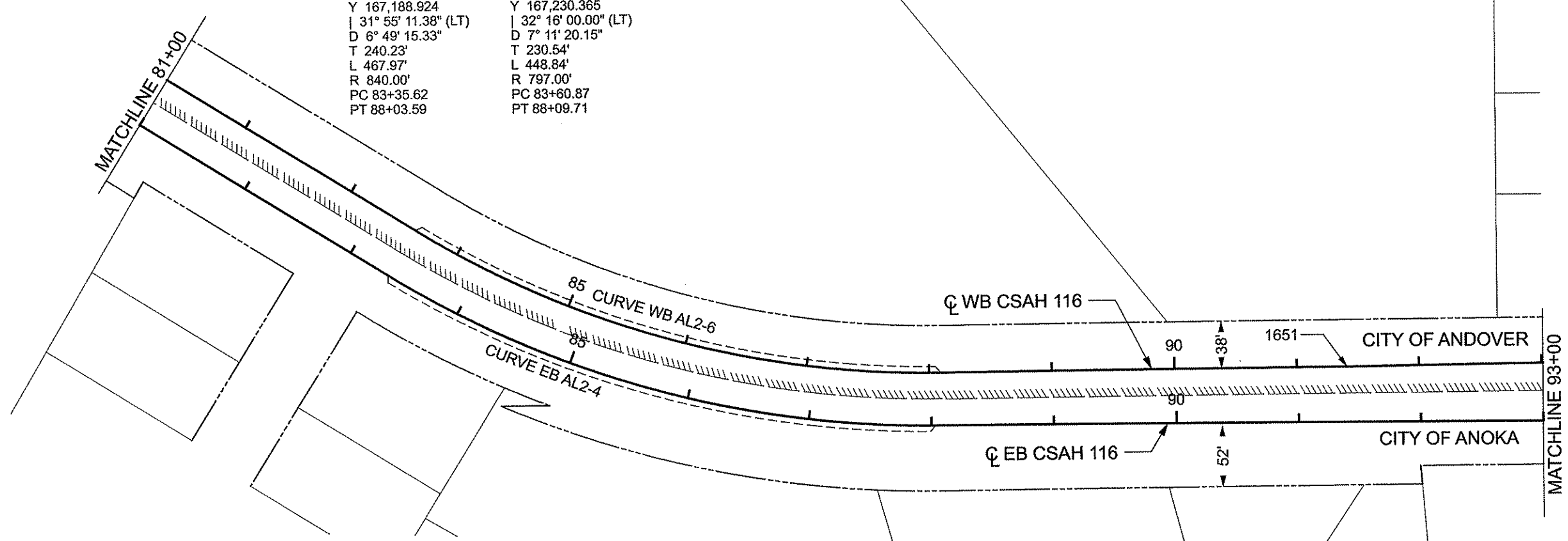
DRAWN BY: ND DATE: 05/15/2012  
 DESIGN BY: MN DATE: 12/01/2010  
 CHECKED BY: CAK DATE: 05/29/2012



S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

ALIGNMENT PLAN  
 CSAH 116  
 STA 57+00.00 TO 81+00.00  
 Sheet 65 of 282 Sheets

<u>CURVE EB AL2-4</u>	<u>CURVE WB AL2-6</u>
PI 85+75.85	PI 85+91.42
X 475,222.846	X 475,237.861
Y 167,188.924	Y 167,230.365
31° 55' 11.38" (LT)	32° 16' 00.00" (LT)
D 6° 49' 15.33"	D 7° 11' 20.15"
T 240.23'	T 230.54'
L 467.97'	L 448.84'
R 840.00'	R 797.00'
PC 83+35.62	PC 83+60.87
PT 88+03.59	PT 88+09.71



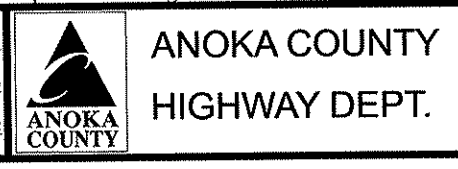
NO	DATE	BY	CKD	APPR	REVISION

NAME: p:\02-716-12\plant\0271612\_ALL\_P4.dgn      08/28/2012      8:03:41 AM

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

PRINT NAME: CURT A. KOBILARCSIK  
 SIGNATURE: *[Signature]*  
 DATE: 6-29-12      LICENSE NO. 24756

DRAWN BY: ND      DATE 05/15/2012  
 DESIGN BY: MN      DATE 12/01/2010  
 CHECKED BY: CAK      DATE 05/29/2012



S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

ALIGNMENT PLAN  
 CSAH 116  
 STA 81+00.00 TO 100+00.00  
 Sheet 66 of 282 Sheets

**CURVE SB AL2-1**

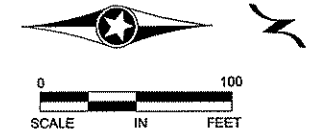
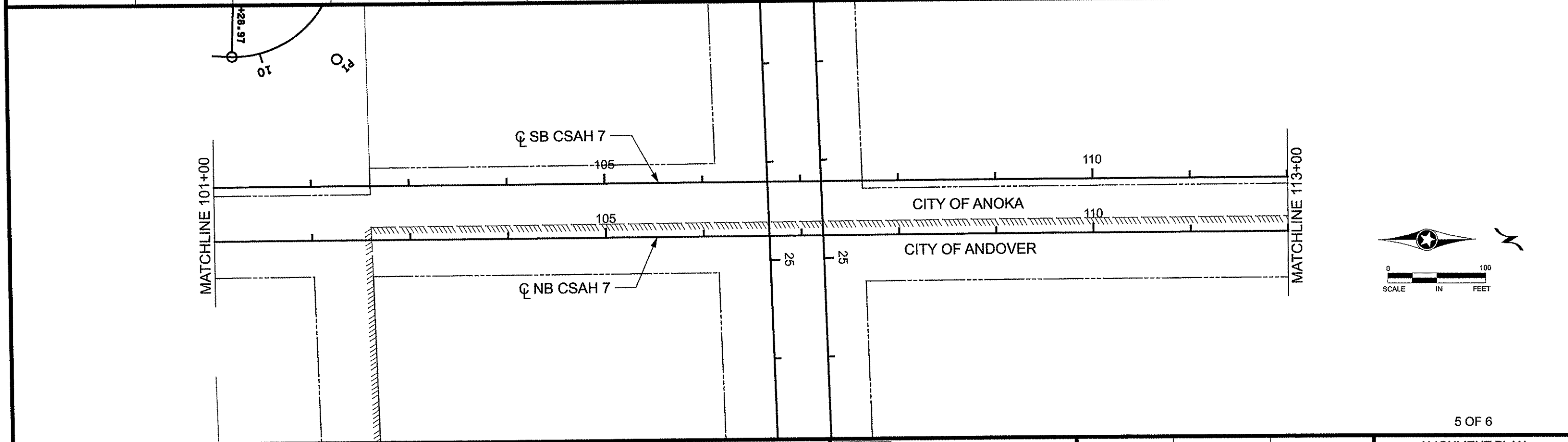
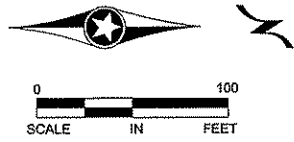
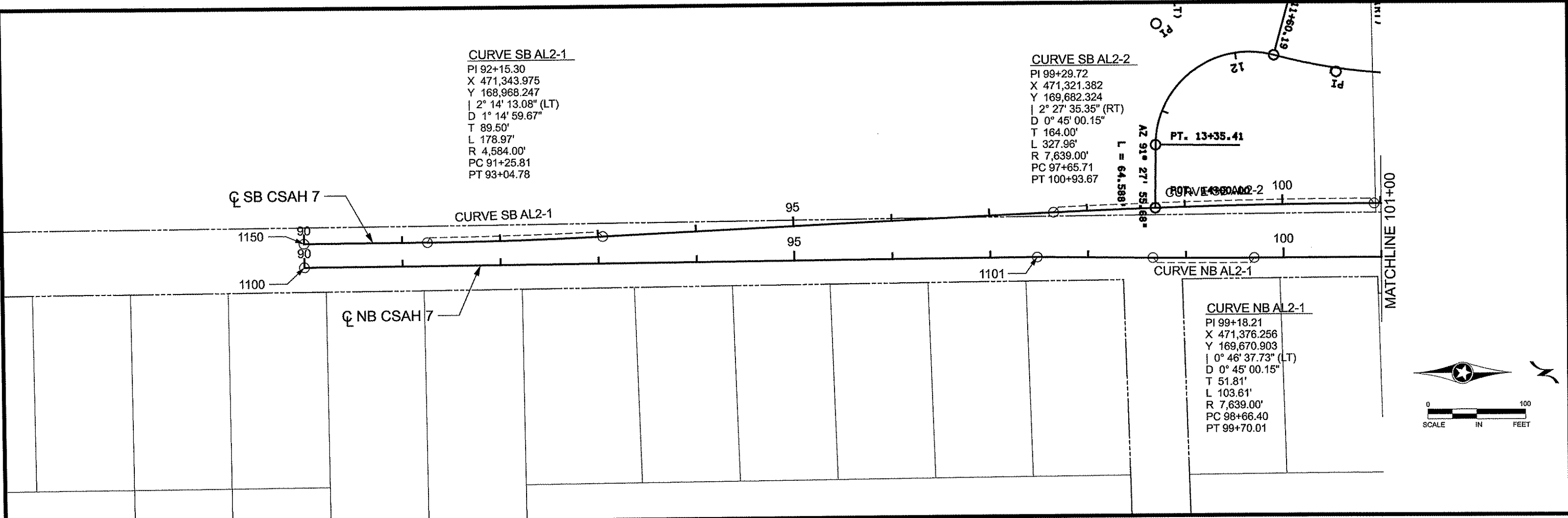
PI 92+15.30  
 X 471,343.975  
 Y 168,968.247  
 I 2° 14' 13.08" (LT)  
 D 1° 14' 59.67"  
 T 89.50'  
 L 178.97'  
 R 4,584.00'  
 PC 91+25.81  
 PT 93+04.78

**CURVE SB AL2-2**

PI 99+29.72  
 X 471,321.382  
 Y 169,682.324  
 I 2° 27' 35.35" (RT)  
 D 0° 45' 00.15"  
 T 164.00'  
 L 327.96'  
 R 7,639.00'  
 PC 97+65.71  
 PT 100+93.67

**CURVE NB AL2-1**

PI 99+18.21  
 X 471,376.256  
 Y 169,670.903  
 I 0° 46' 37.73" (LT)  
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 T 51.81'  
 L 103.61'  
 R 7,639.00'  
 PC 98+66.40  
 PT 99+70.01

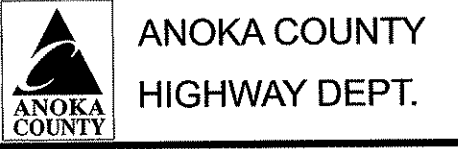


NO	DATE	BY	CKD	APPR	REVISION

NAME: p102-716-12\plan10271612\_ALI\_P5.dgn      06/28/2012      8:03:43 AM

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.  
 PRINT NAME: CURT A. KOBILARCSIK  
 SIGNATURE: *Curt Kobilarsik*  
 DATE: 6-29-12      LICENSE NO. 24756

DRAWN BY: ND      DATE 05/15/2012  
 DESIGN BY: MN      DATE 12/01/2010  
 CHECKED BY: CAK      DATE 05/29/2012



S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

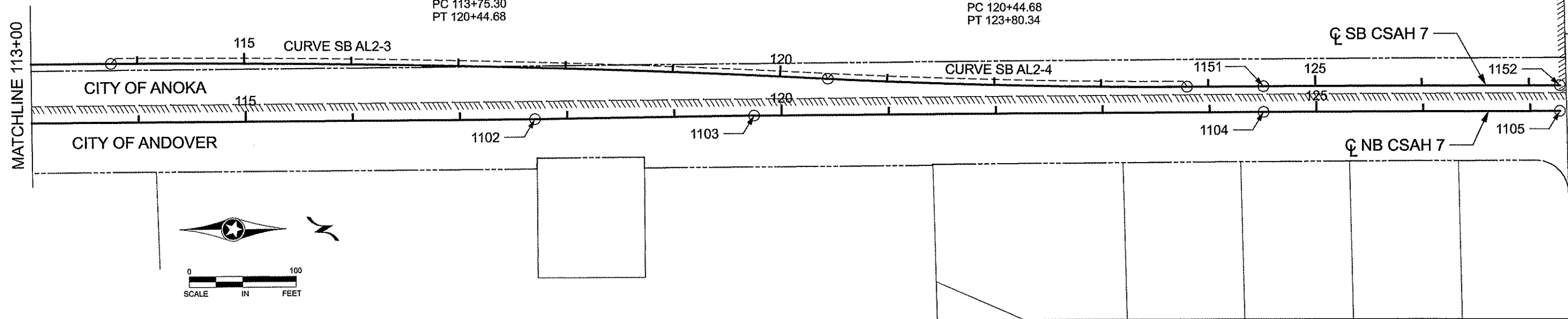
ALIGNMENT PLAN  
 CSAH 7  
 STA 90+00.00 TO 113+00.00  
 Sheet 67 of 282 Sheets

**CURVE SB AL2-3**

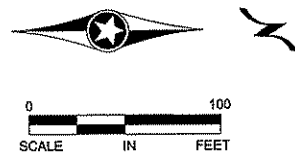
PI 117+10.09  
 X 471,341.505  
 Y 171,462.633  
 Δ 3° 21' 10.08" (RT)  
 D 0° 30' 03.17"  
 T 334.79'  
 L 669.38'  
 R 11,439.00'  
 PC 113+75.30  
 PT 120+44.68

**CURVE SB AL2-4**

PI 122+12.56  
 X 471,376.572  
 Y 171,964.068  
 Δ 3° 21' 08.00" (LT)  
 D 0° 59' 55.39"  
 T 167.87'  
 L 335.65'  
 R 5,736.92'  
 PC 120+44.68  
 PT 123+80.34

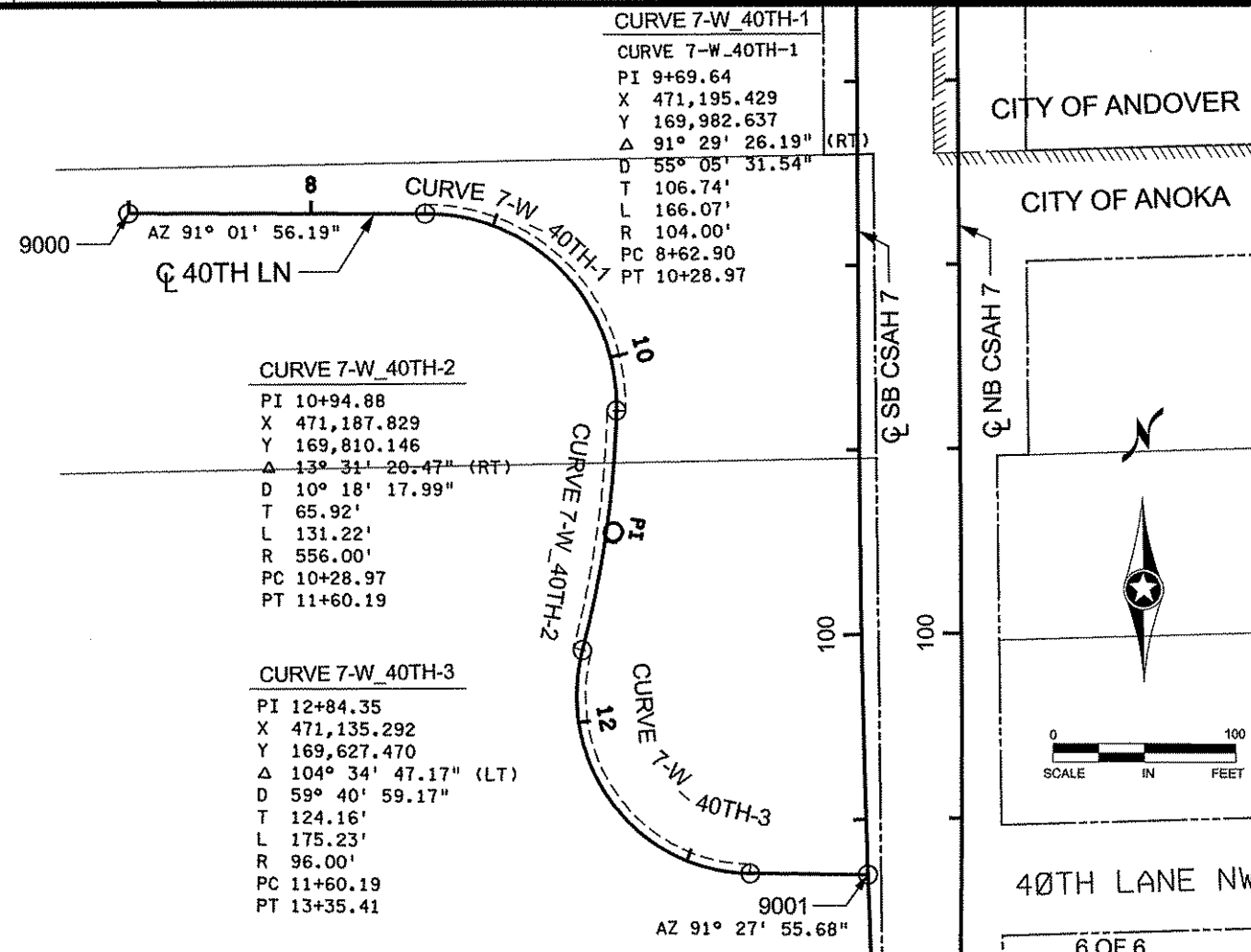


CITY OF ANOKA  
 CITY OF ANDOVER



**ALIGNMENT TABULATION**

POINT NUMBER	POINT	ALIGNMENT	CIRCULAR CURVE DATA					COORDINATES		AZIMUTH
			DELTA	DEGREE	RADIUS	TANGENT	LENGTH	E	N	
<b>☉ 40TH LN &lt;7-W_40TH&gt;</b>										
9000	POT	7+00.000						470,925.8350	169,987.4947	
	PC	8+62.90						471,088.7053	169,984.5600	S 88° 58' 03.81" E
7-W_40TH-1	PI	9+69.647	91° 29' 26.19" RT	55° 05' 31.54"	104.000'	106.07'	166.069'	471,195.4295	169,982.6370	PI
	CC							471,086.8317	169,880.5769	
	PCC	10+28.958						471,190.7309	169,875.9989	S 2° 31' 22.39" W
7-W_40TH-2	PI	10+94.880	13° 31' 20.47" RT	10° 18' 17.99"	556.000'	65.917'	131.2213'	471,187.8293	169,810.1459	PI
	CC							470,635.2698	169,900.4732	
	PRC	11+60.190						471,169.6101	169,746.7969	S 16° 42' 42.085" W
7-W_40TH-3	PI	12+84.350	104° 34' 47.17" LT	59° 40' 59.17"	96.000'	124.1642'	175.2251'	471,135.2916	169,627.4697	PI
	CC							471,261.8703	169,720.2629	
	PT	13+35.406						471,259.4152	169,624.2943	S 88° 32' 04.32" E
9001	POT	14+00.00						471,323.9820	169,622.6425	

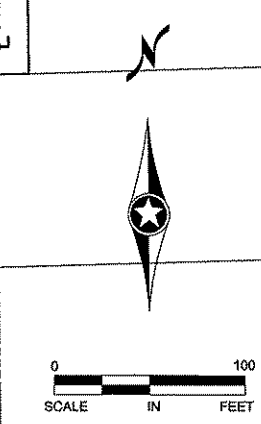


**CURVE 7-W\_40TH-1**  
 CURVE 7-W\_40TH-1  
 PI 9+69.64  
 X 471,195.429  
 Y 169,982.637  
 Δ 91° 29' 26.19" (RT)  
 D 55° 05' 31.54"  
 T 106.74'  
 L 166.07'  
 R 104.00'  
 PC 8+62.90  
 PT 10+28.97

**CURVE 7-W\_40TH-2**  
 CURVE 7-W\_40TH-2  
 PI 10+94.88  
 X 471,187.829  
 Y 169,810.146  
 Δ 13° 31' 20.47" (RT)  
 D 10° 18' 17.99"  
 T 65.92'  
 L 131.22'  
 R 556.00'  
 PC 10+28.97  
 PT 11+60.19

**CURVE 7-W\_40TH-3**  
 CURVE 7-W\_40TH-3  
 PI 12+84.35  
 X 471,135.292  
 Y 169,627.470  
 Δ 104° 34' 47.17" (LT)  
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 T 124.16'  
 L 175.23'  
 R 96.00'  
 PC 11+60.19  
 PT 13+35.41

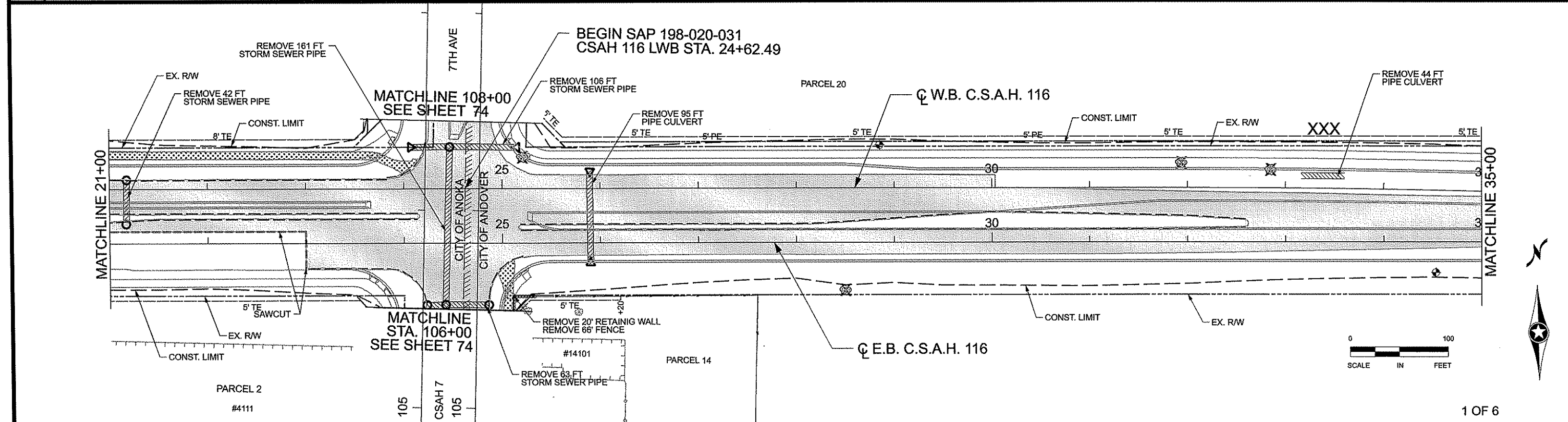
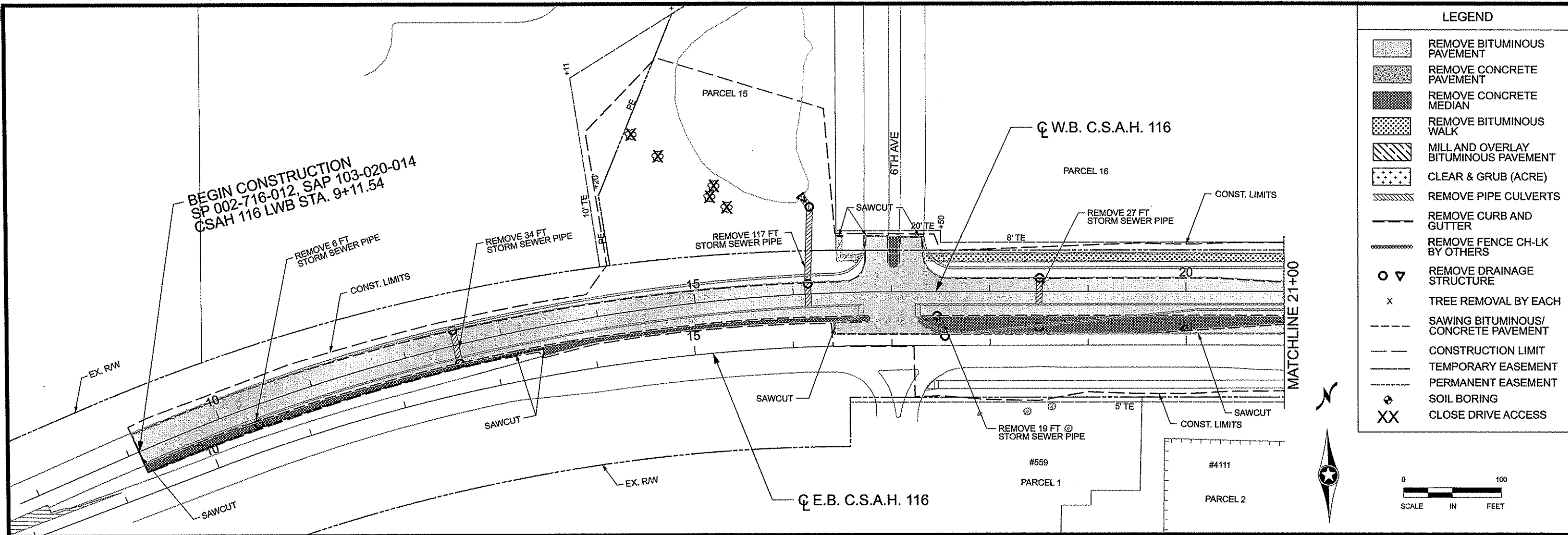
CITY OF ANDOVER  
 CITY OF ANOKA



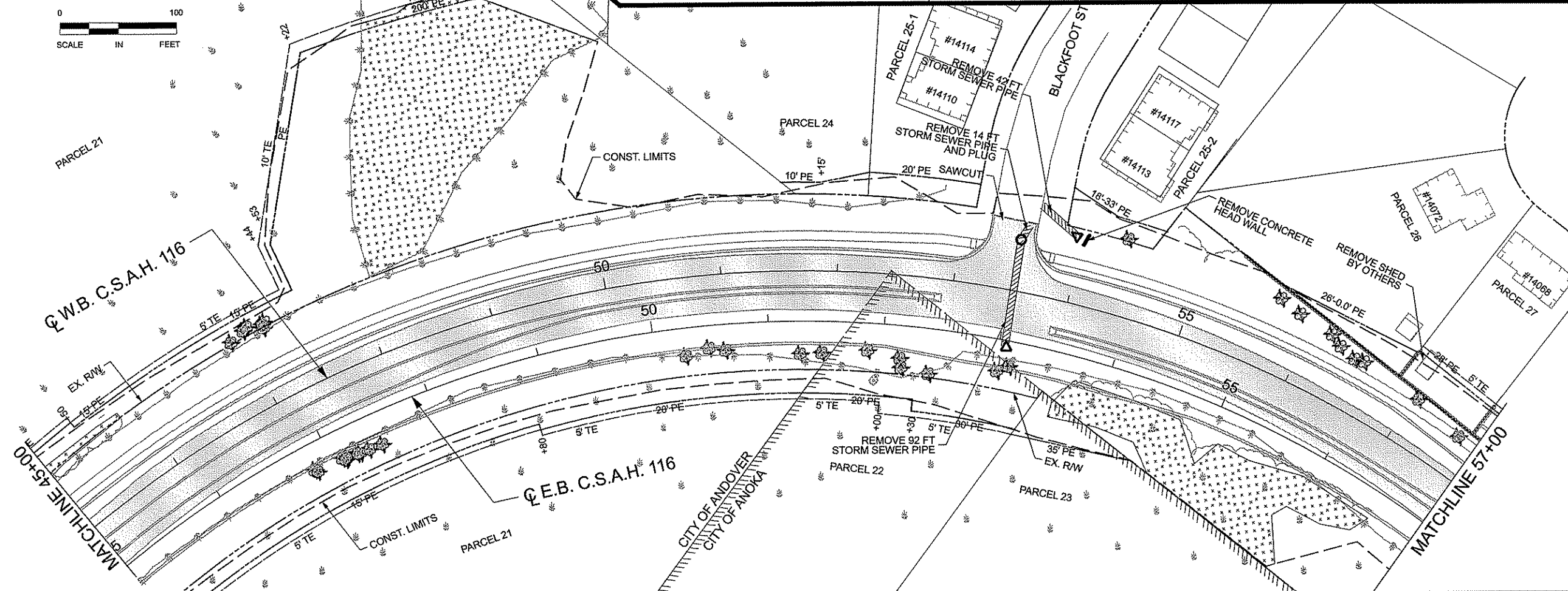
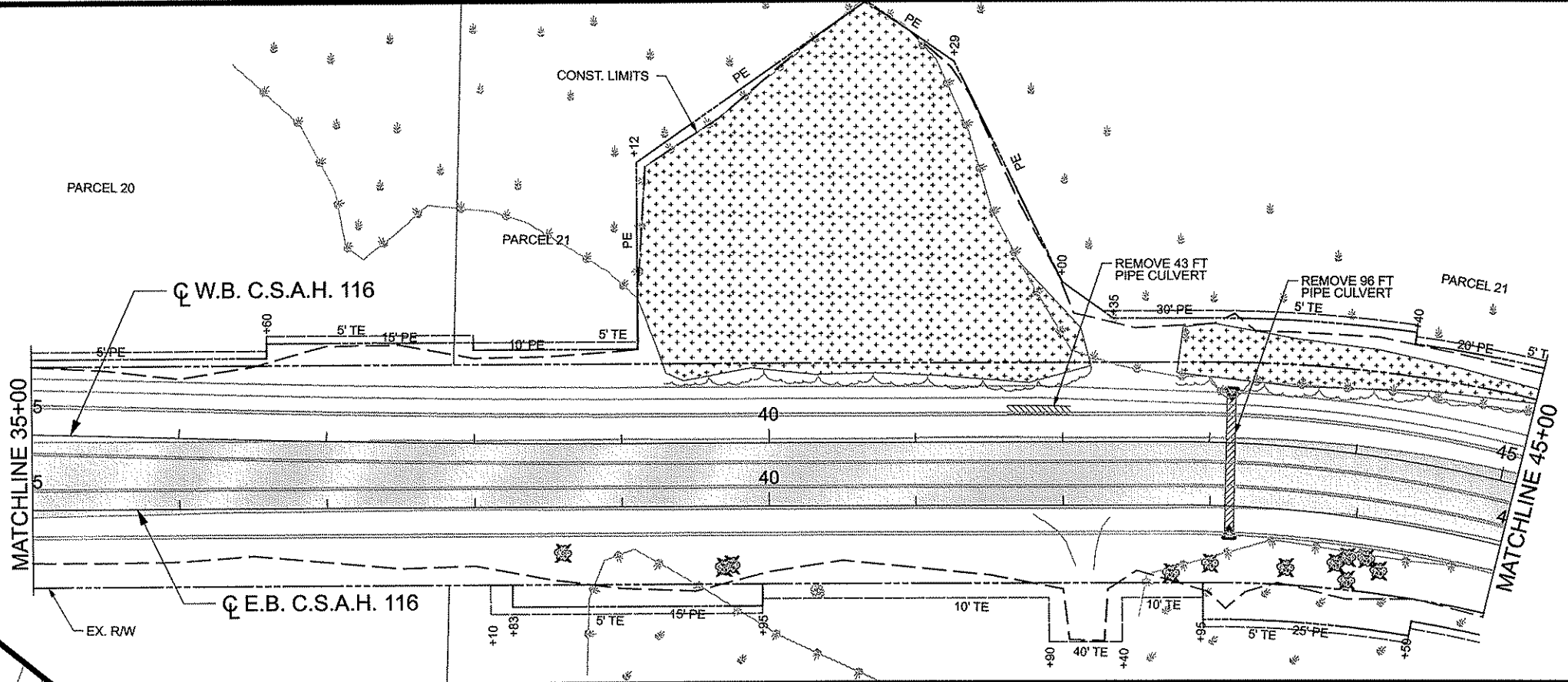
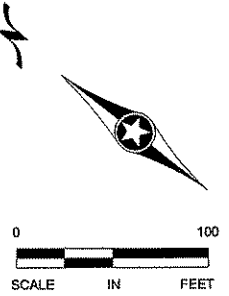
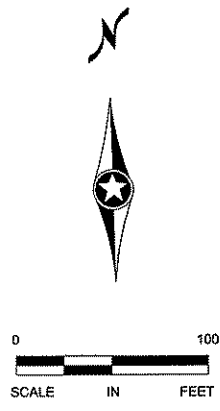
40TH LANE NW

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA. PRINT NAME: CURT A. KOBIARCSIK SIGNATURE: <i>Curt A. Kobiarczik</i> DATE: 6-29-12 LICENSE NO. 24756					DRAWN BY: ND DATE: 05/15/2012 DESIGN BY: MN DATE: 12/01/2010 CHECKED BY: CAK DATE: 05/29/2012		ANOKA COUNTY HIGHWAY DEPT.		S.P. 002-716-012 S.P. 198-020-030 S.P. 002-607-021 S.P. 198-020-031 S.P. 198-020-032 S.P. 103-020-014 S.P. 103-020-015			ALIGNMENT PLAN CSAH 7, 40TH LN Sheet 68 of 282 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: CURT A. KOBIARCSIK SIGNATURE: <i>Curt A. Kobiarsik</i> DATE: 6-29-12 LICENSE NO. 24756					DRAWN BY: EJM DATE: 05/15/2012 DESIGN BY: MN DATE: 12/01/2010 CHECKED BY: CAK DATE: 05/29/2012				S.P. 002-716-012 S.P. 198-020-031 S.P. 103-020-014		S.P. 198-020-030 S.P. 198-020-032 S.P. 103-020-015		REMOVAL PLAN STA 9+00.00 TO 35+00.00 Sheet 70 of 282 Sheets	
NO	DATE	BY	CKD	APPR	REVISION									
					07/10/2012									



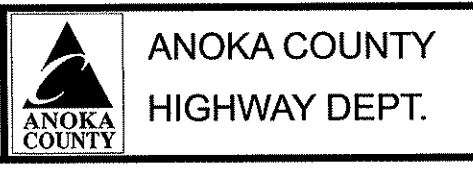
LEGEND	
	REMOVE BITUMINOUS PAVEMENT
	CLEAR & GRUB (ACRE)
	REMOVE PIPE CULVERTS
	REMOVE CURB AND GUTTER
	REMOVE WOOD FENCE BY OTHERS
	REMOVE DRAINAGE STRUCTURE
	TREE REMOVAL BY EACH
	SAWING BITUMINOUS/ CONCRETE PAVEMENT
	CONSTRUCTION LIMIT
	TEMPORARY EASEMENT
	PERMANENT EASEMENT
	SOIL BORING

2 OF 6

NO	DATE	BY	CKD	APPR	REVISION
NAME: p:\02-716-12\plan\0271612_REM_P2.dgn					

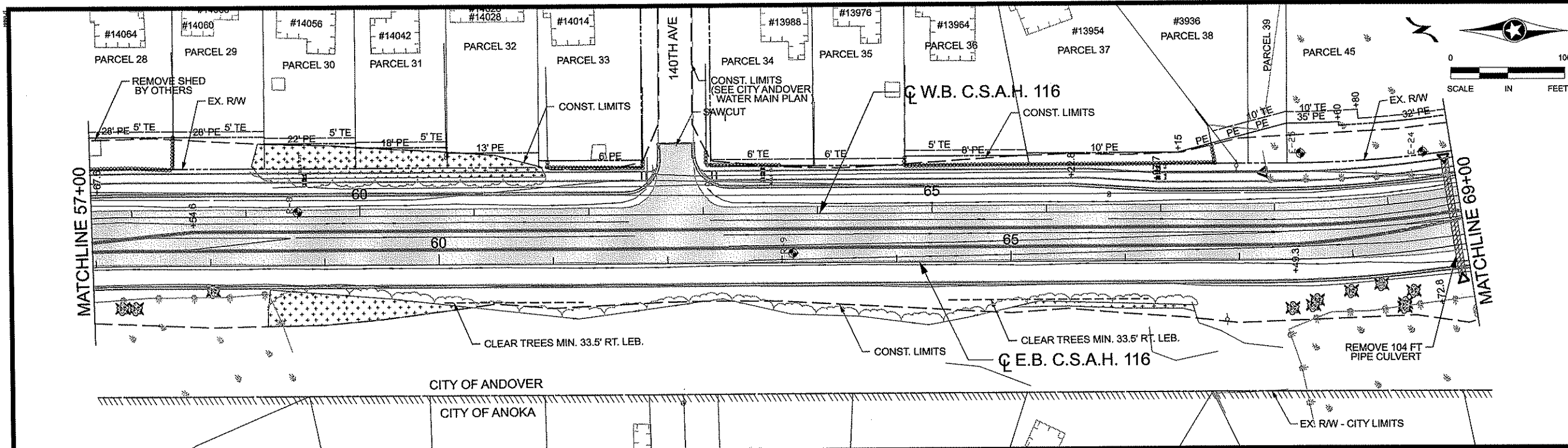
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.  
 PRINT NAME: CURT A. KOBLARCSIK  
 SIGNATURE: *Curt Koblarcsik*  
 DATE: 6-29-12 LICENSE NO. 24756

DRAWN BY: EJM DATE: 05/15/2012  
 DESIGN BY: MN DATE: 12/01/2010  
 CHECKED BY: CAK DATE: 05/29/2012



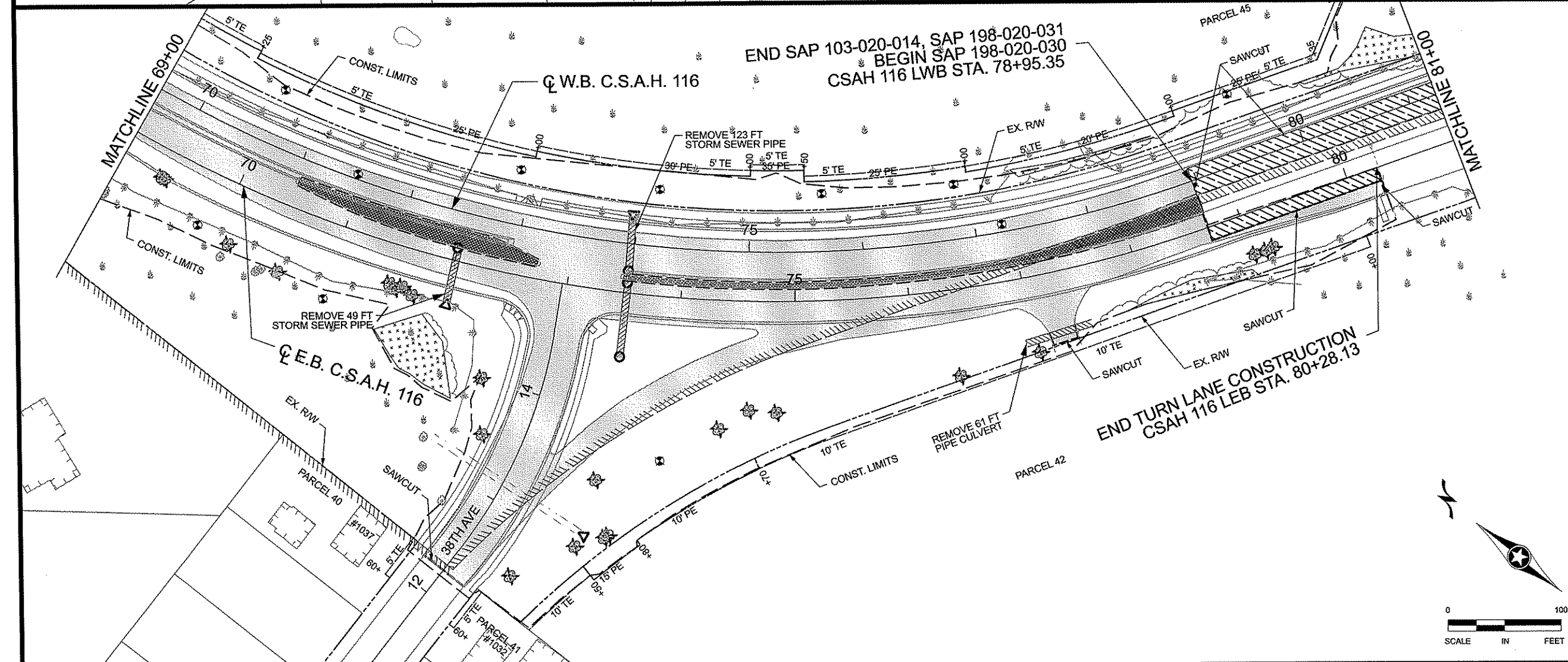
S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

REMOVAL PLAN		
STA	35+00.00	TO 57+00.00
Sheet	71	of 282 Sheets



**LEGEND**

- REMOVE BITUMINOUS PAVEMENT
- REMOVE CONCRETE MEDIAN
- MILL AND OVERLAY BITUMINOUS PAVEMENT
- CLEAR & GRUB (ACRE)
- REMOVE PIPE CULVERTS
- REMOVE CURB AND GUTTER
- REMOVE WOOD FENCE BY OTHERS
- REMOVE DRAINAGE STRUCTURE
- TREE REMOVAL BY EACH
- SAWING BITUMINOUS/ CONCRETE PAVEMENT
- CONSTRUCTION LIMIT
- TEMPORARY EASEMENT
- PERMANENT EASEMENT
- SOIL BORING



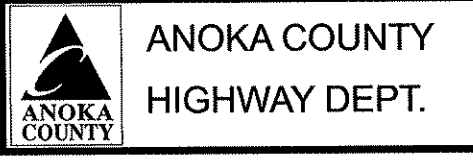
NO	DATE	BY	CKD	APPR	REVISION

NAME: p:102-716-12\plan0271612\_REM\_F3.dgn  
06/28/2012 8:04:06 AM

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

PRINT NAME: CURT A. KOBILARCSIK  
SIGNATURE: *Curt Kobilarcsik*  
DATE: 6-29-12 LICENSE NO. 24756

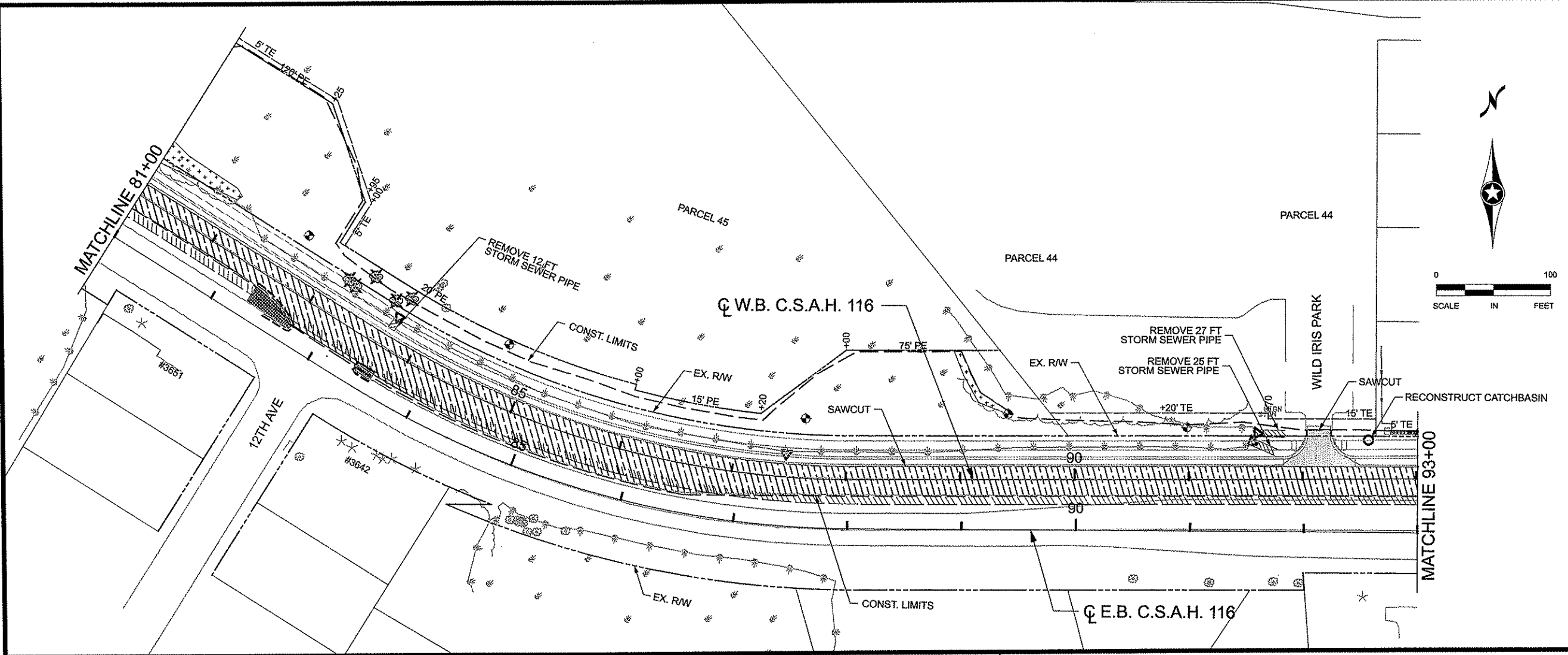
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DESIGN BY: MN DATE 12/01/2010  
CHECKED BY: CAK DATE 05/29/2012



S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

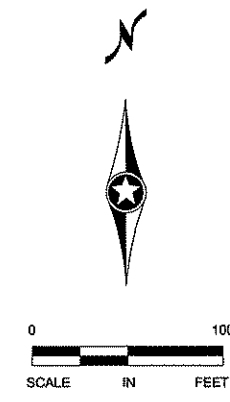
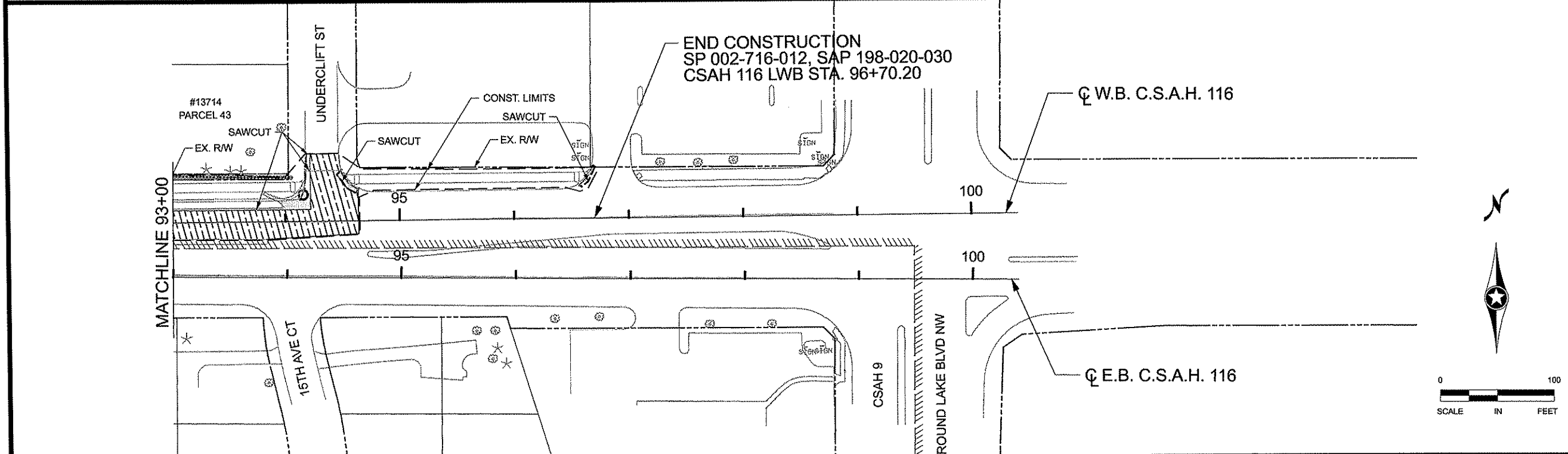
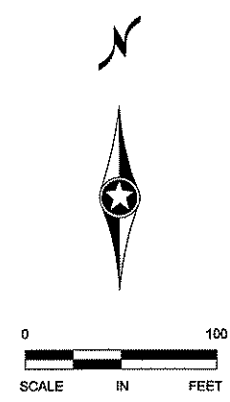
**REMOVAL PLAN**  
STA 57+00.00 TO 81+00.00  
Sheet 72 of 282 Sheets





**LEGEND**

- REMOVE BITUMINOUS PAVEMENT
- REMOVE CONCRETE MEDIAN
- MILL AND OVERLAY BITUMINOUS PAVEMENT
- CLEAR & GRUB (ACRE)
- REMOVE PIPE CULVERTS
- REMOVE CURB AND GUTTER
- REMOVE WOOD FENCE BY OTHERS
- REMOVE DRAINAGE STRUCTURE
- TREE REMOVAL BY EACH
- SAWING BITUMINOUS/ CONCRETE PAVEMENT
- CONSTRUCTION LIMIT
- TEMPORARY EASEMENT
- PERMANENT EASEMENT
- SOIL BORING



4 OF 6

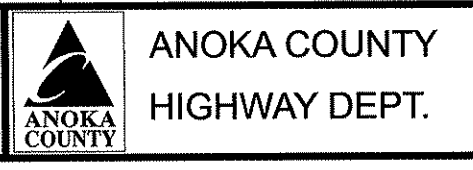
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NAME: p:\02-716-12\plan\0271612\_REM\_P4.dgn  
06/28/2012 8:04:10 AM

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

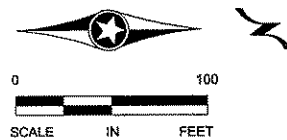
PRINT NAME: CURT A. KOBILARCSIK  
SIGNATURE: *Curt Kobilarcsik*  
DATE: 6-29-12 LICENSE NO. 24756

DRAWN BY: EJM DATE 05/15/2012  
DESIGN BY: MN DATE 12/01/2010  
CHECKED BY: CAK DATE 05/29/2012

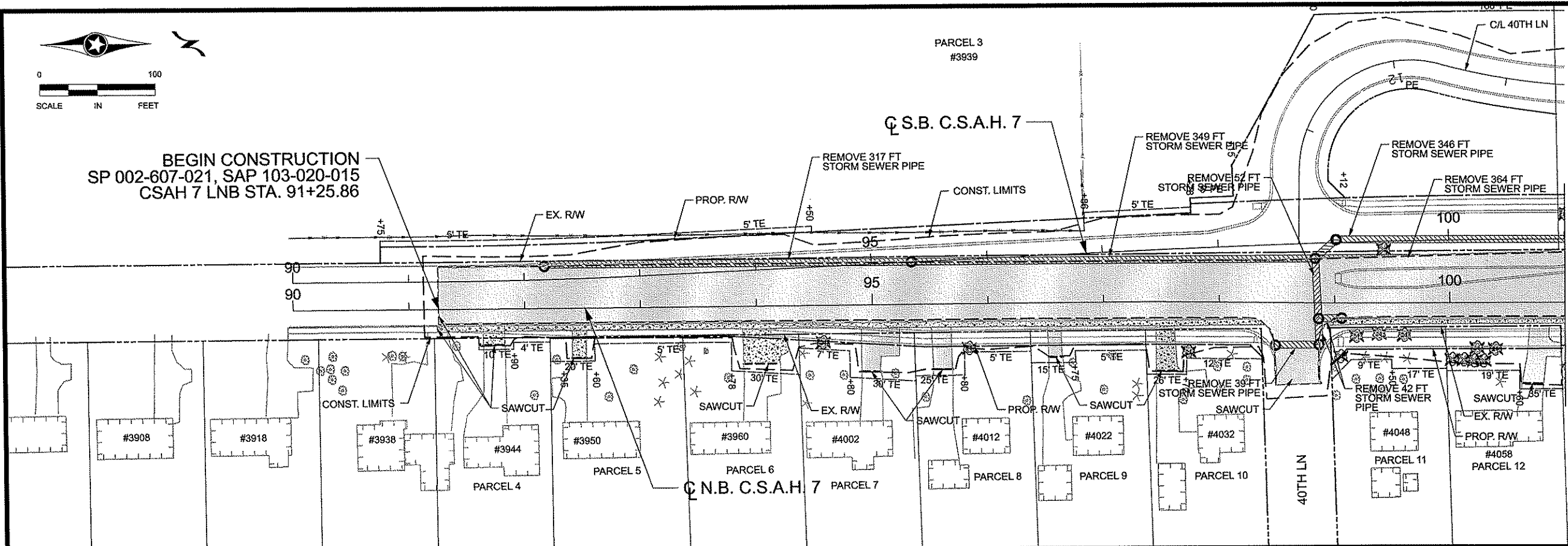


S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

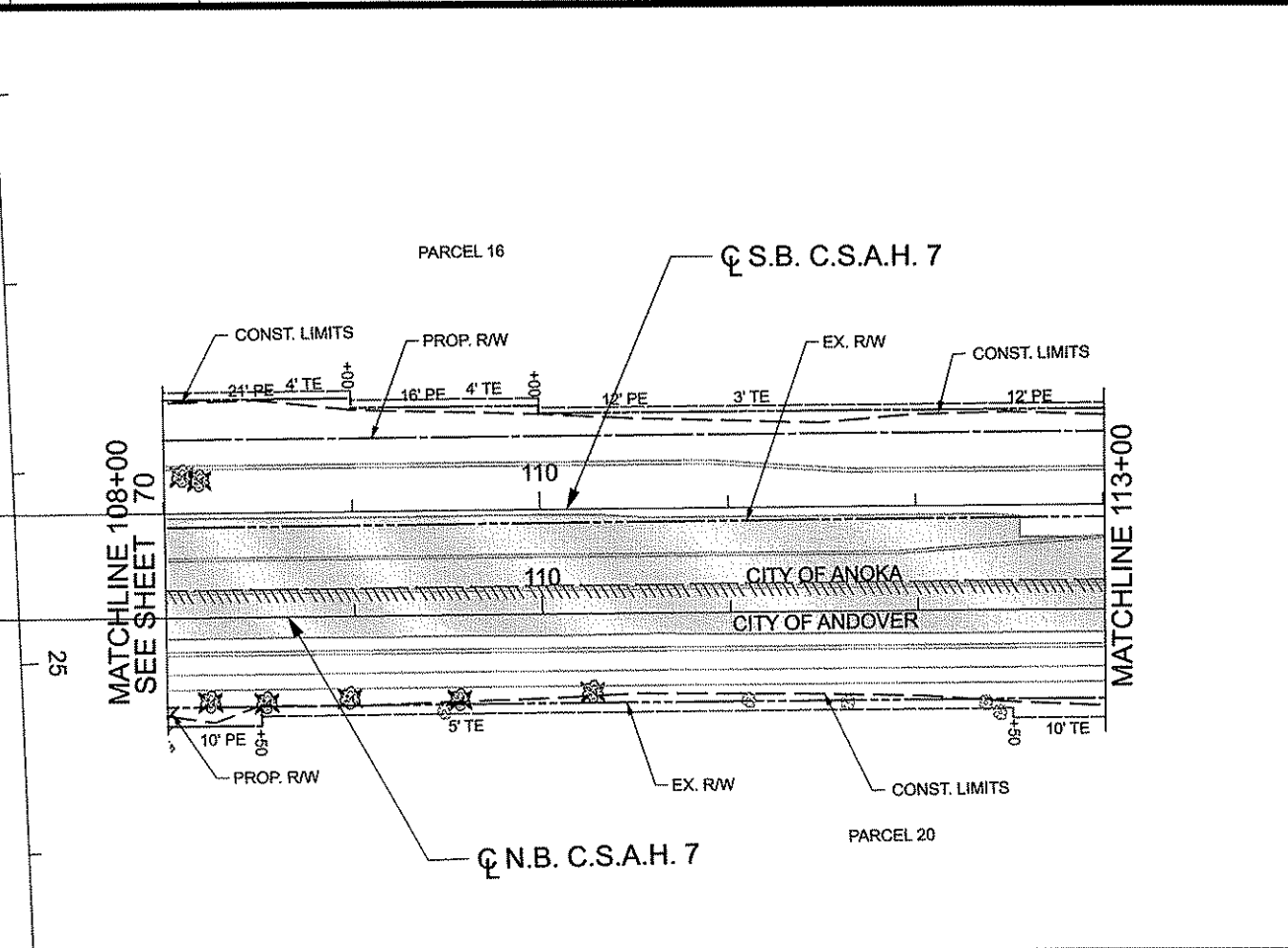
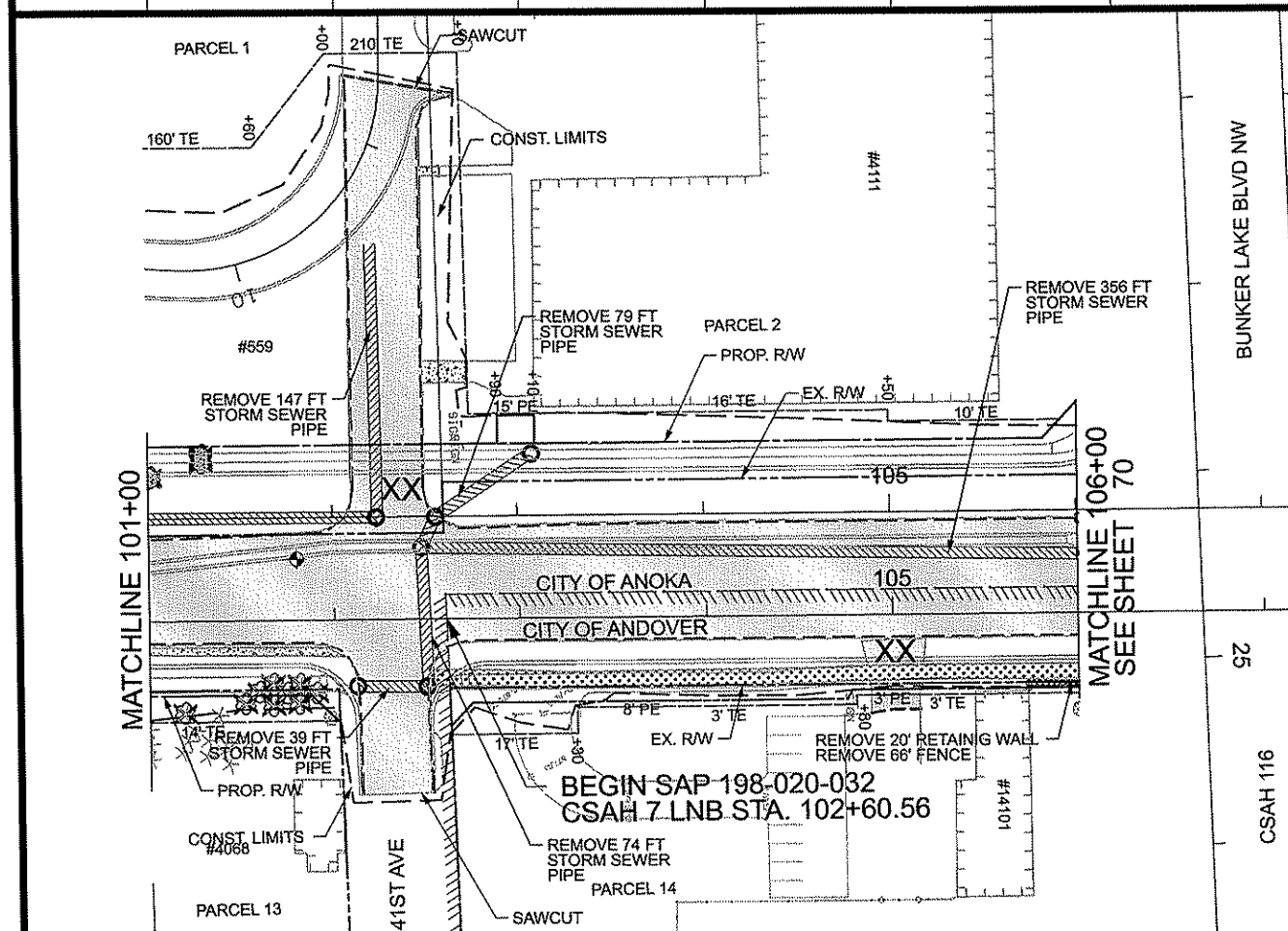
REMOVAL PLAN  
STA 81+00.00 TO 100+00.00  
Sheet 73 of 282 Sheets



BEGIN CONSTRUCTION  
 SP 002-607-021, SAP 103-020-015  
 CSAH 7 LNB STA. 91+25.86



LEGEND	
[Pattern]	REMOVE BITUMINOUS PAVEMENT
[Pattern]	REMOVE CONCRETE PAVEMENT
[Pattern]	REMOVE BITUMINOUS WALK
[Pattern]	CLEAR & GRUB (ACRE)
[Pattern]	REMOVE PIPE CULVERTS
[Line]	REMOVE CURB AND GUTTER
[Line]	REMOVE FENCE CH-LK BY OTHERS
[Symbol]	REMOVE DRAINAGE STRUCTURE
[Symbol]	TREE REMOVAL BY EACH
[Line]	SAWING BITUMINOUS/ CONCRETE PAVEMENT
[Line]	CONSTRUCTION LIMIT
[Line]	TEMPORARY EASEMENT
[Line]	PERMANENT EASEMENT
[Symbol]	SOIL BORING
[Symbol]	CLOSE DRIVE ACCESS

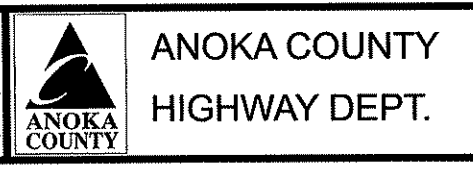


NO	DATE	BY	CKD	APPR	REVISION

NAME: p:\02-716-12\plan\0271612\_REM\_P5.dgn  
 06/28/2012 8:04:16 AM

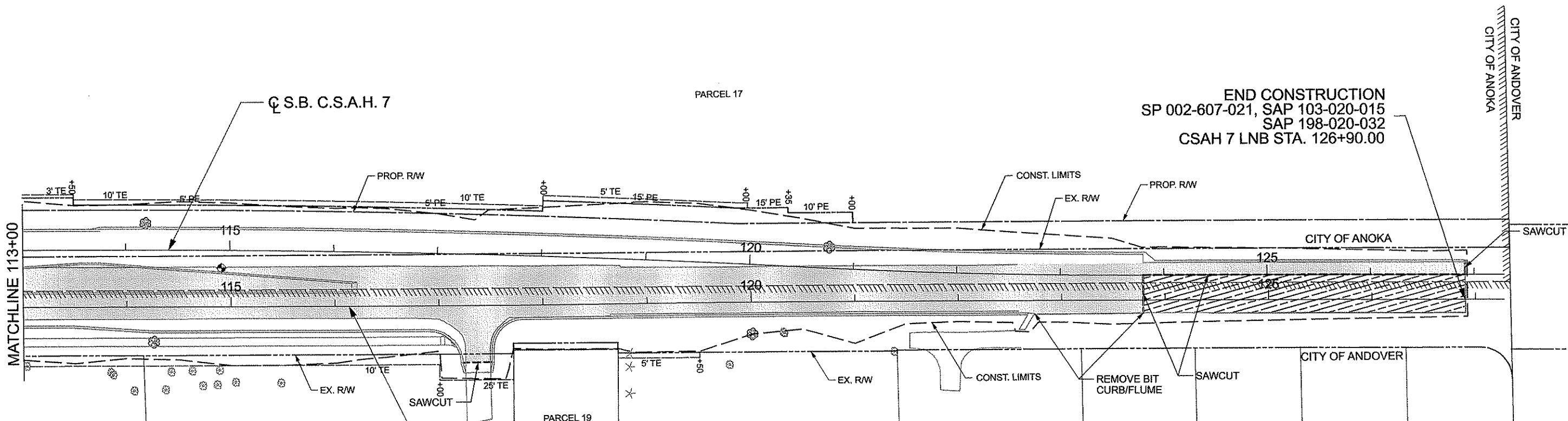
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.  
 PRINT NAME: CURT A. KOBILARCSIK  
 SIGNATURE: *[Signature]*  
 DATE: 6.29.12 LICENSE NO. 24758

DRAWN BY: EJM DATE: 05/15/2012  
 DESIGN BY: MN DATE: 12/01/2010  
 CHECKED BY: CAK DATE: 05/29/2012



S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

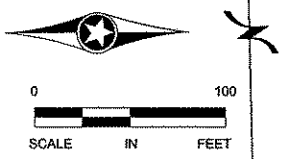
REMOVAL PLAN  
 STA 101+00.00 TO 113+00.00  
 Sheet 74 of 282 Sheets



END CONSTRUCTION  
 SP 002-607-021, SAP 103-020-015  
 SAP 198-020-032  
 CSAH 7 LNB STA. 126+90.00

**LEGEND**

	REMOVE BITUMINOUS PAVEMENT
	REMOVE BITUMINOUS WALK
	CLEAR & GRUB (ACRE)
	MILL AND OVERLAY BITUMINOUS PAVEMENT
	REMOVE PIPE CULVERTS
	REMOVE CURB AND GUTTER
	REMOVE FENCE CH-LK BY OTHERS
	REMOVE DRAINAGE STRUCTURE
	TREE REMOVAL BY EACH
	SAWING BITUMINOUS/ CONCRETE PAVEMENT
	CONSTRUCTION LIMIT
	TEMPORARY EASEMENT
	PERMANENT EASEMENT
	SOIL BORING



6 OF 6

NO	DATE	BY	CKD	APPR	REVISION

NAME: p:\02-716-12\plan\0271612\_REM\_P6.dgn 06/28/2012 8:04:19 AM

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

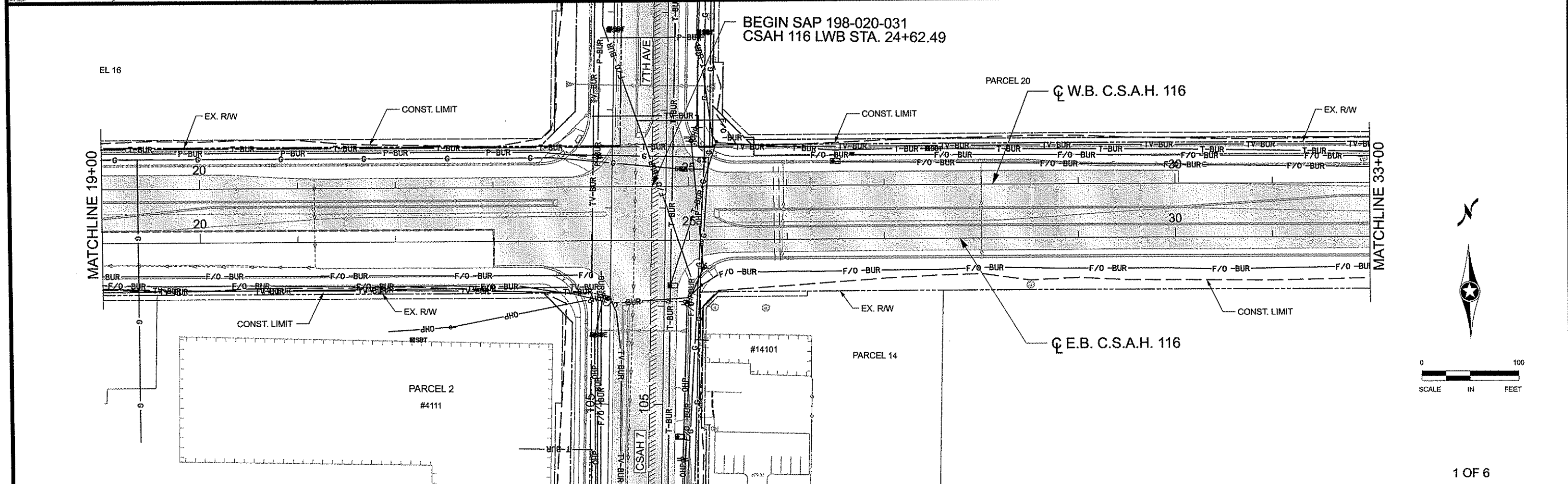
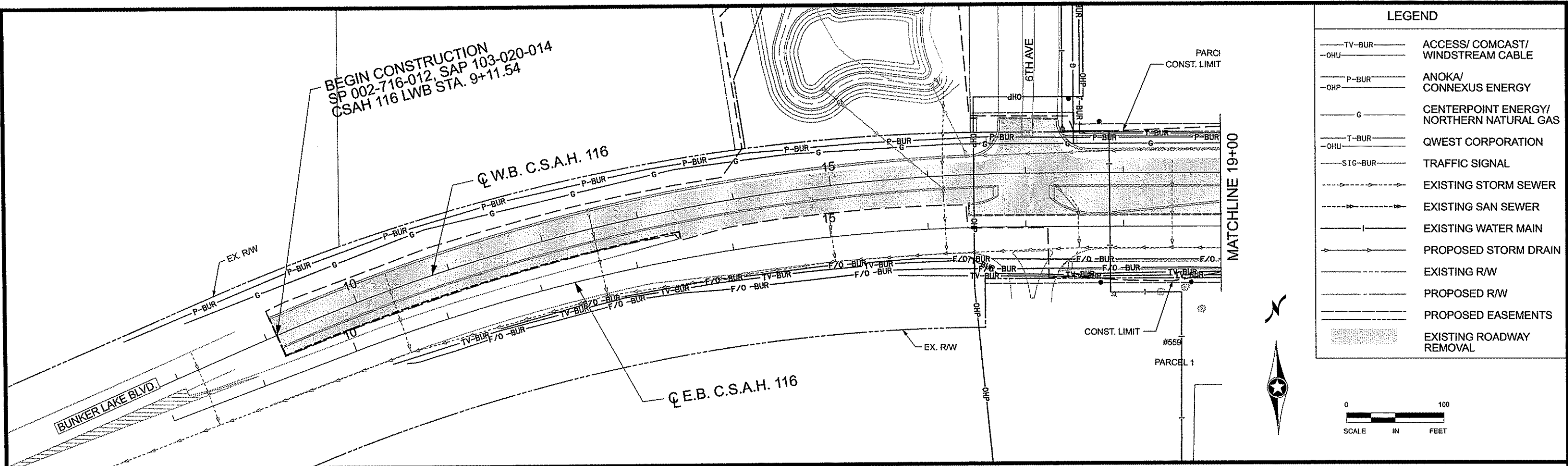
PRINT NAME: CURT A. KOBILARCSIK  
 SIGNATURE: *Curt A. Kobilarsik*  
 DATE: 6-29-12 LICENSE NO. 24756

DRAWN BY: EJM DATE: 05/15/2012  
 DESIGN BY: MN DATE: 12/01/2010  
 CHECKED BY: CAK DATE: 05/29/2012

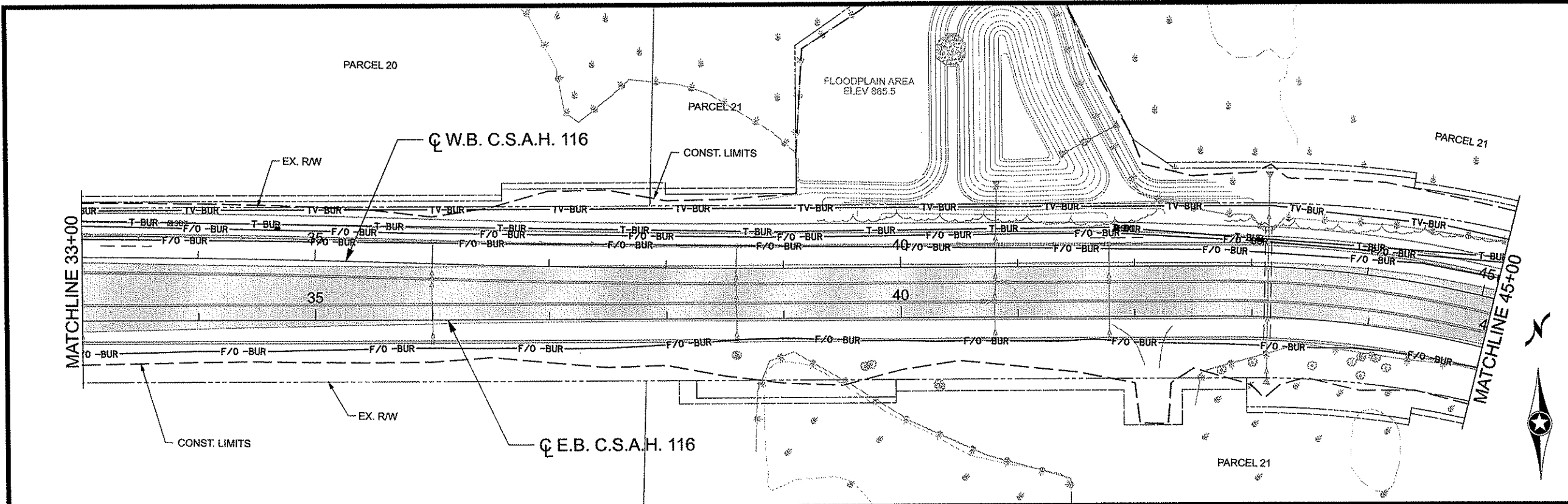
**ANOKA COUNTY**  
**HIGHWAY DEPT.**

S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

**REMOVAL PLAN**  
 STA 113+00.00 TO 125+00.00  
 Sheet 75 of 282 Sheets

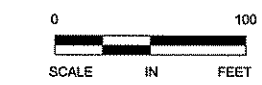
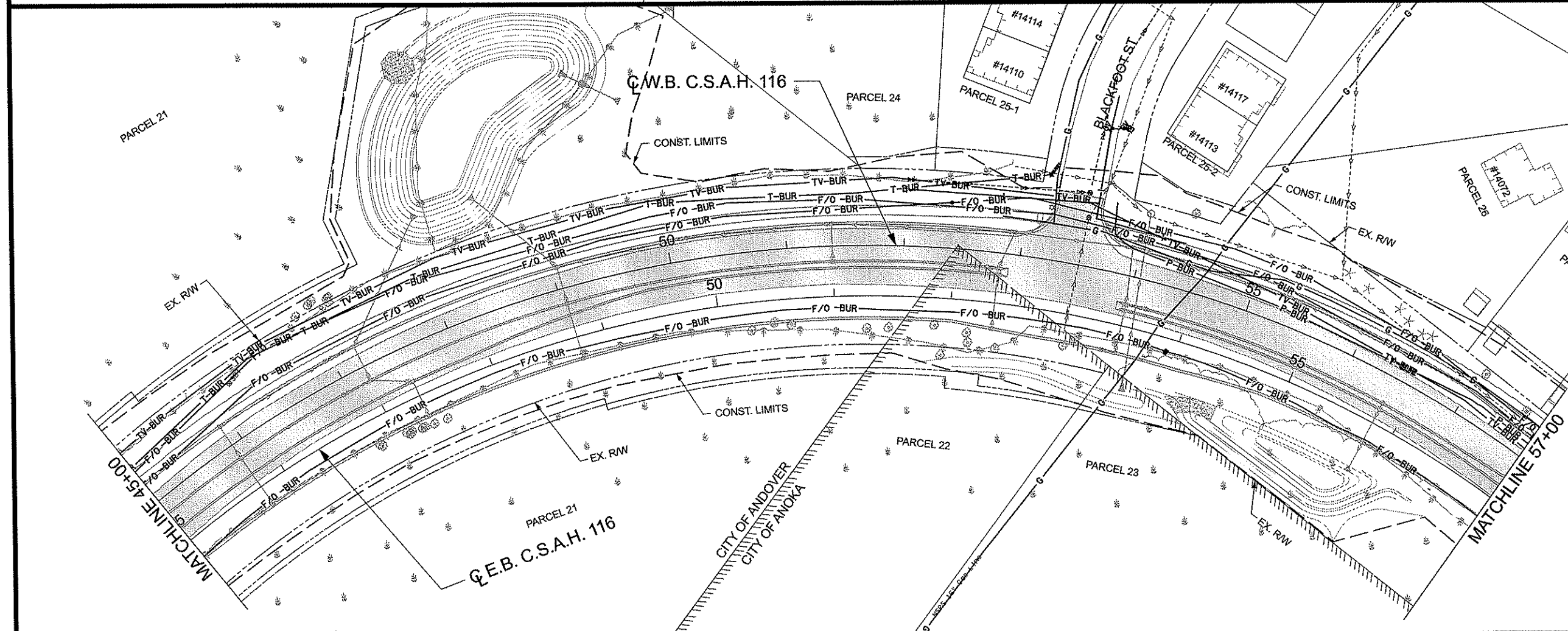


NO DATE BY CKD APPR REVISION NAME: p:102-716-12\plan0271612_UT_P1.dgn 06/28/2012 8:04:24 AM					I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA. PRINT NAME: CURT A. KOBILARCSIK SIGNATURE: <i>Curt Kobilarcsik</i> DATE: 6-29-12 LICENSE NO. 24756		DRAWN BY: EJM DATE 05/15/2012 DESIGN BY: MN DATE 12/01/2010 CHECKED BY: CAK DATE 05/29/2012		ANOKA COUNTY HIGHWAY DEPT.		S.P. 002-716-012 S.P. 198-020-031 S.P. 103-020-014		S.P. 198-020-030 S.P. 198-020-032 S.P. 103-020-015		EXISTING UTILITY PLAN STA 9+00.00 TO 33+00.00 Sheet 76 of 282 Sheets	
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**LEGEND**

TV-BUR	ACCESS/ COMCAST/ WINDSTREAM CABLE
-OHU F/O-BUR	
P-BUR	ANOKA/ CONNEXUS ENERGY
-OHP	
G	CENTERPOINT ENERGY/ NORTHERN NATURAL GAS
T-BUR	QWEST CORPORATION
-OHU SIG-BUR	
	TRAFFIC SIGNAL
- - - - -	EXISTING STORM SEWER
- - - - -	EXISTING SAN SEWER
- - - - -	EXISTING WATER MAIN
- - - - -	PROPOSED STORM DRAIN
- - - - -	EXISTING RW
- - - - -	PROPOSED RW
- - - - -	PROPOSED EASEMENTS
- - - - -	EXISTING ROADWAY REMOVAL



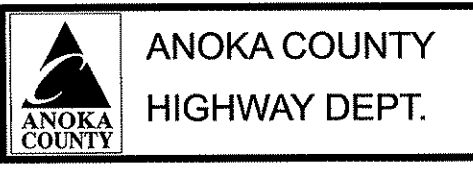
2 OF 6

NO	DATE	BY	CHKD	APPR	REVISION

NAME: p:102-716-121plan0271612\_UT\_P2.dgn  
06/28/2012 8:04:28 AM

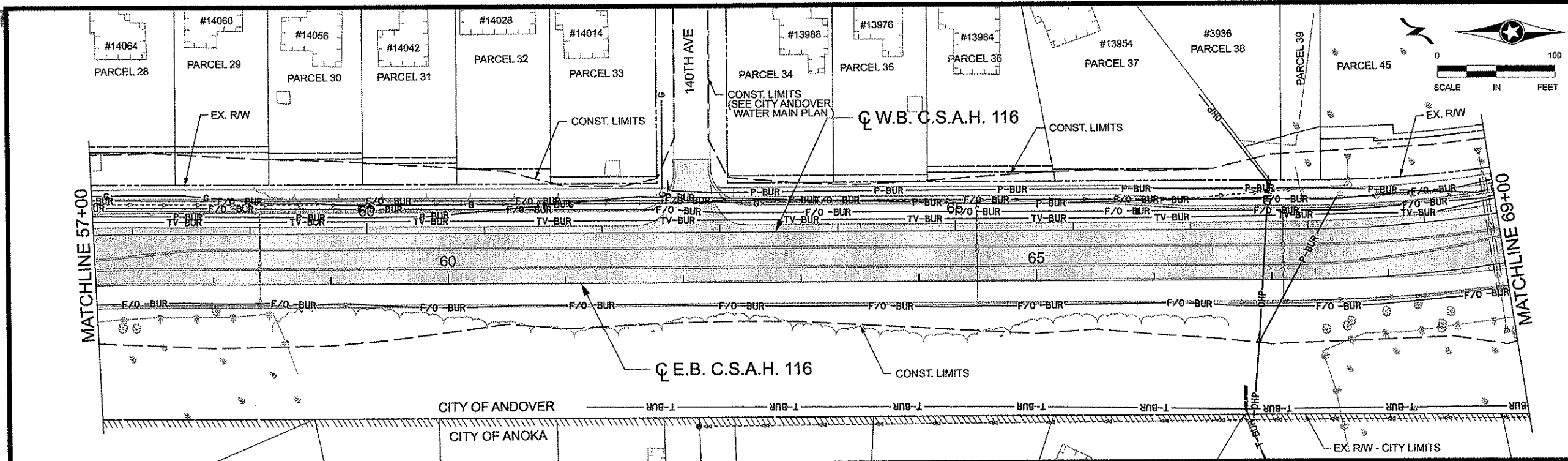
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.  
 PRINT NAME: CURT A. KOBILARCSIK  
 SIGNATURE: *Curt A. Kobilarsik*  
 DATE: 6-29-12 LICENSE NO. 24756

DRAWN BY: EJM DATE 05/15/2012  
 DESIGN BY: MN DATE 12/01/2010  
 CHECKED BY: CAK DATE 05/29/2012



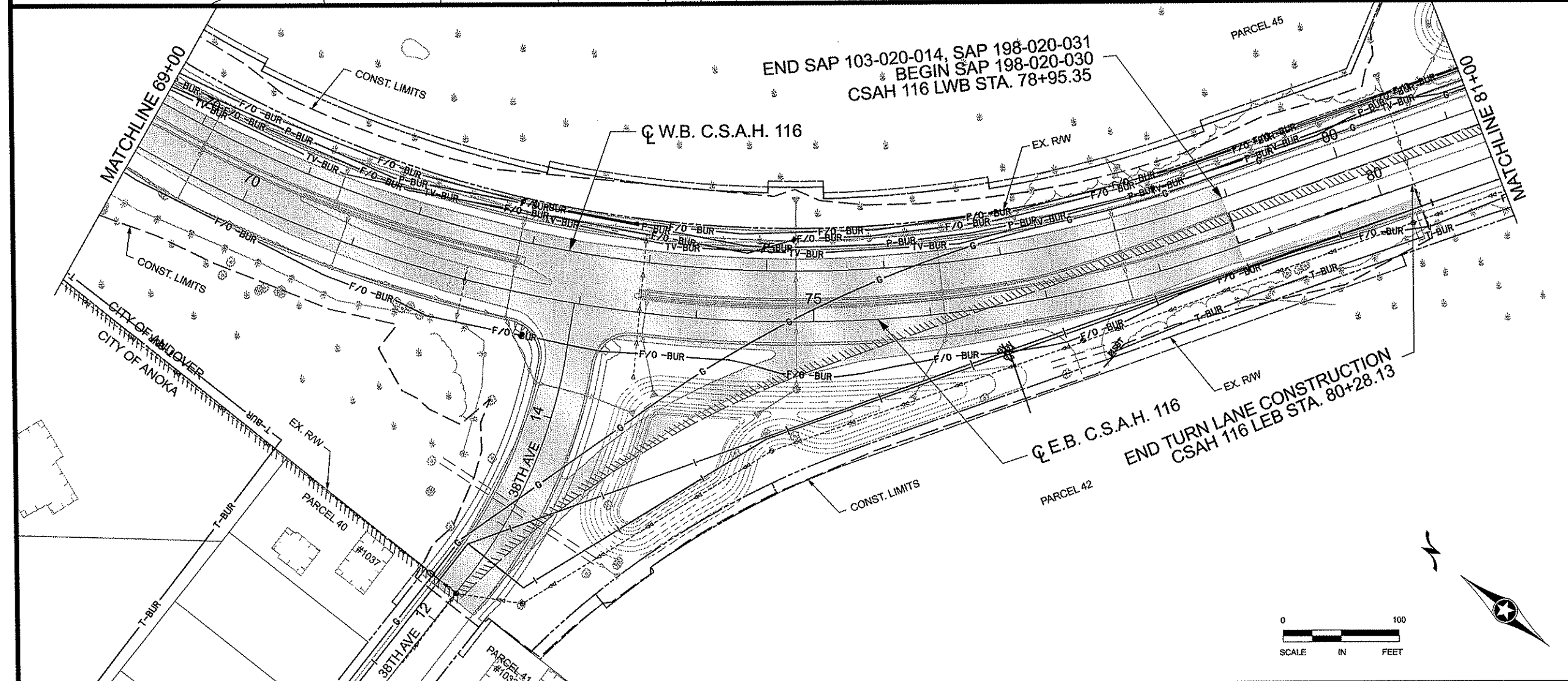
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S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

**EXISTING UTILITY PLAN**  
 STA 33+00.00 TO 57+00.00  
 Sheet 77 of 282 Sheets



**LEGEND**

TV-BUR	ACCESS/ COMCAST/ WINDSTREAM CABLE
-OHU- F/O-BUR	
P-BUR	ANOKA/ CONNEXUS ENERGY
-OHP-	
G	CENTERPOINT ENERGY/ NORTHERN NATURAL GAS
T-BUR	QWEST CORPORATION
SIG-BUR	TRAFFIC SIGNAL
- - - - -	EXISTING STORM SEWER
- - - - -	EXISTING SAN SEWER
- - - - -	EXISTING WATER MAIN
- - - - -	PROPOSED STORM DRAIN
- - - - -	EXISTING RW
- - - - -	PROPOSED RW
- - - - -	PROPOSED EASEMENTS
- - - - -	EXISTING ROADWAY REMOVAL



3 OF 6

NO	DATE	BY	CKD	APPR	REVISION		
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I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME: CURT A. KOBILARCSIK

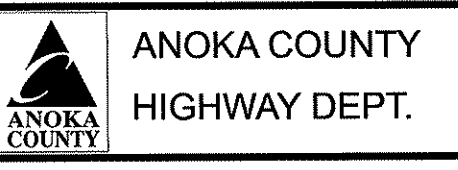
SIGNATURE: *Curt Kobilarcsik*

DATE: 6-29-12 LICENSE NO. 24756

DRAWN BY: EJM DATE: 05/15/2012

DESIGN BY: MN DATE: 12/01/2010

CHECKED BY: CAK DATE: 05/29/2012

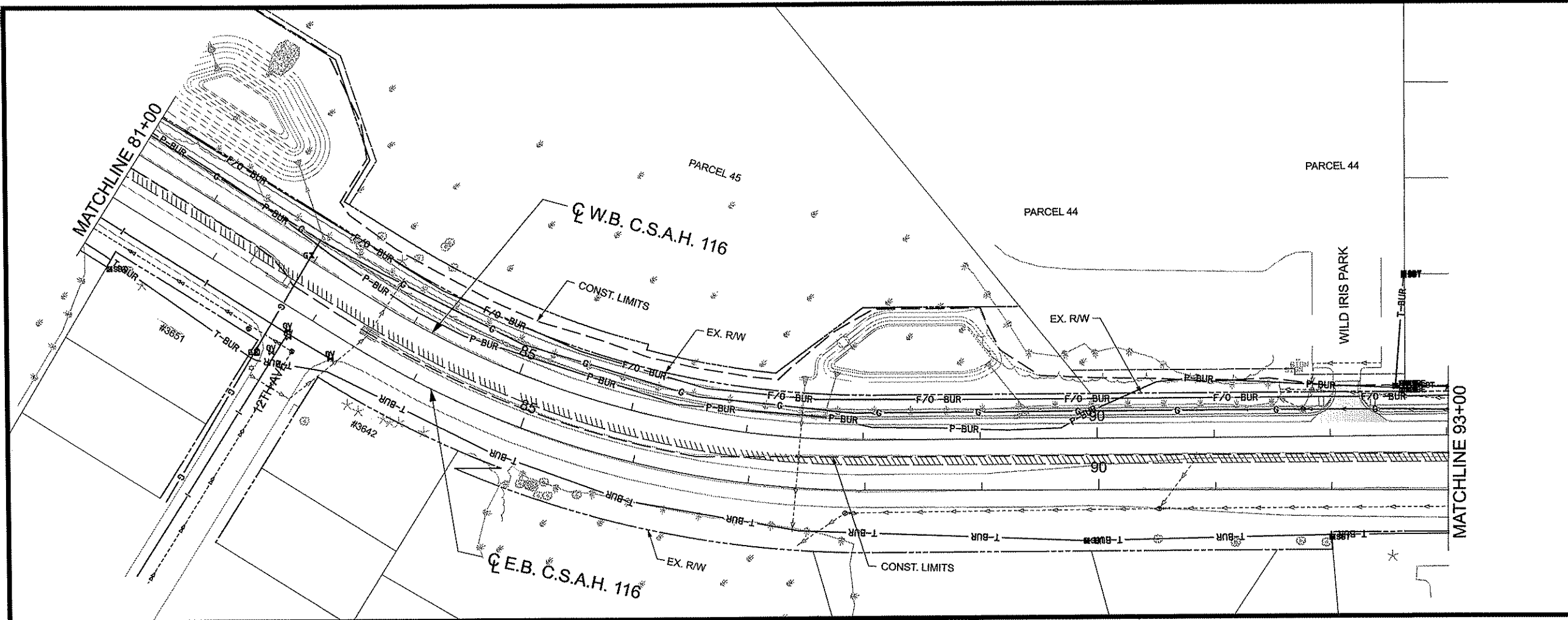


S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

EXISTING UTILITY PLAN

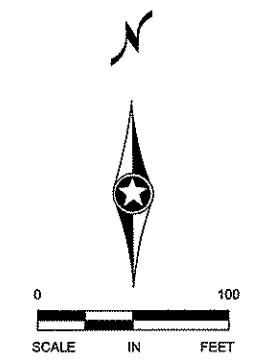
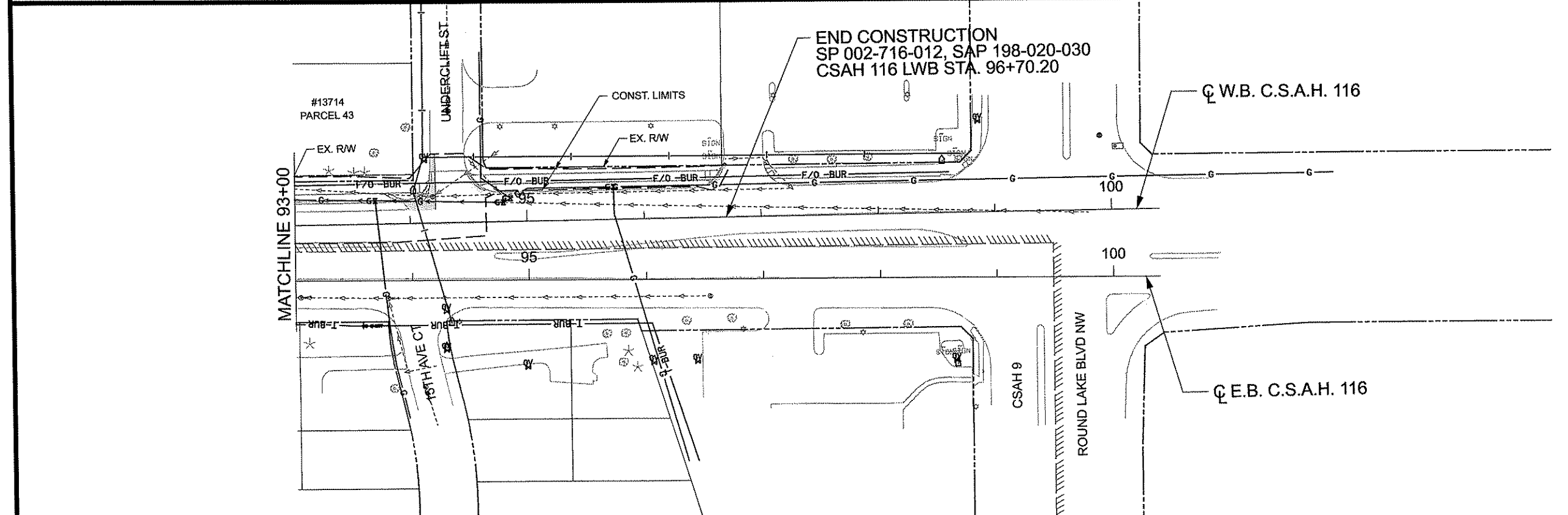
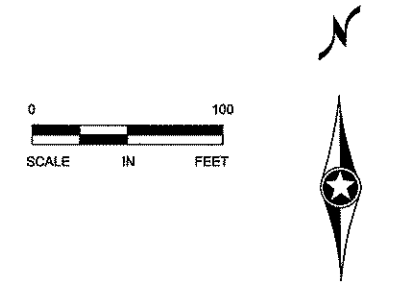
STA 57+00.00 TO 81+00.00

Sheet 78 of 282 Sheets



**LEGEND**

TV-BUR	ACCESS/ COMCAST/ WINDSTREAM CABLE
-OHU- F/O -BUR	
P-BUR	ANOKA/ CONNEXUS ENERGY
-OHP-	
G	CENTERPOINT ENERGY/ NORTHERN NATURAL GAS
T-BUR	QWEST CORPORATION
-OHU-	
SIG-BUR	TRAFFIC SIGNAL
- - - - -	EXISTING STORM SEWER
- - - - -	EXISTING SAN SEWER
- - - - -	EXISTING WATER MAIN
- - - - -	PROPOSED STORM DRAIN
- - - - -	EXISTING R/W
- - - - -	PROPOSED R/W
- - - - -	PROPOSED EASEMENTS
- - - - -	EXISTING ROADWAY REMOVAL



4 OF 6

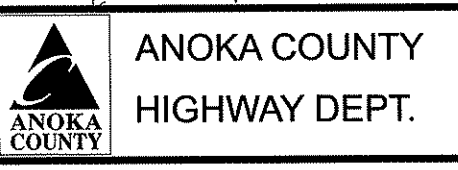
NO	DATE	BY	CKD	APPR	REVISION

NAME: p:\02-716-12\plan\0271612\_UT\_P4.dgn  
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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: CURT A. KOBIARCSIK  
SIGNATURE: *Curt A. Kobiarcsik*  
DATE: 6.29.12 LICENSE NO. 24756

DRAWN BY: EJM DATE: 05/15/2012  
DESIGN BY: MN DATE: 12/01/2010  
CHECKED BY: CAK DATE: 05/29/2012

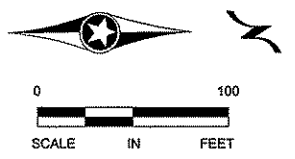
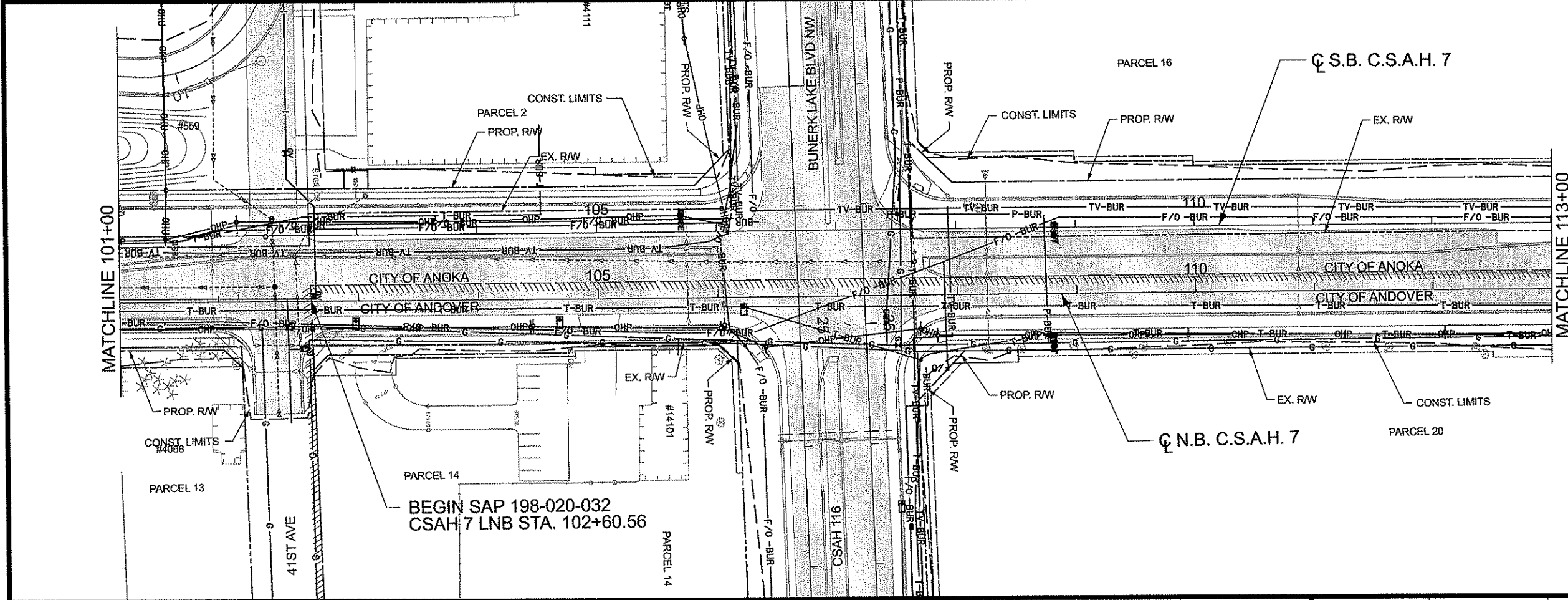
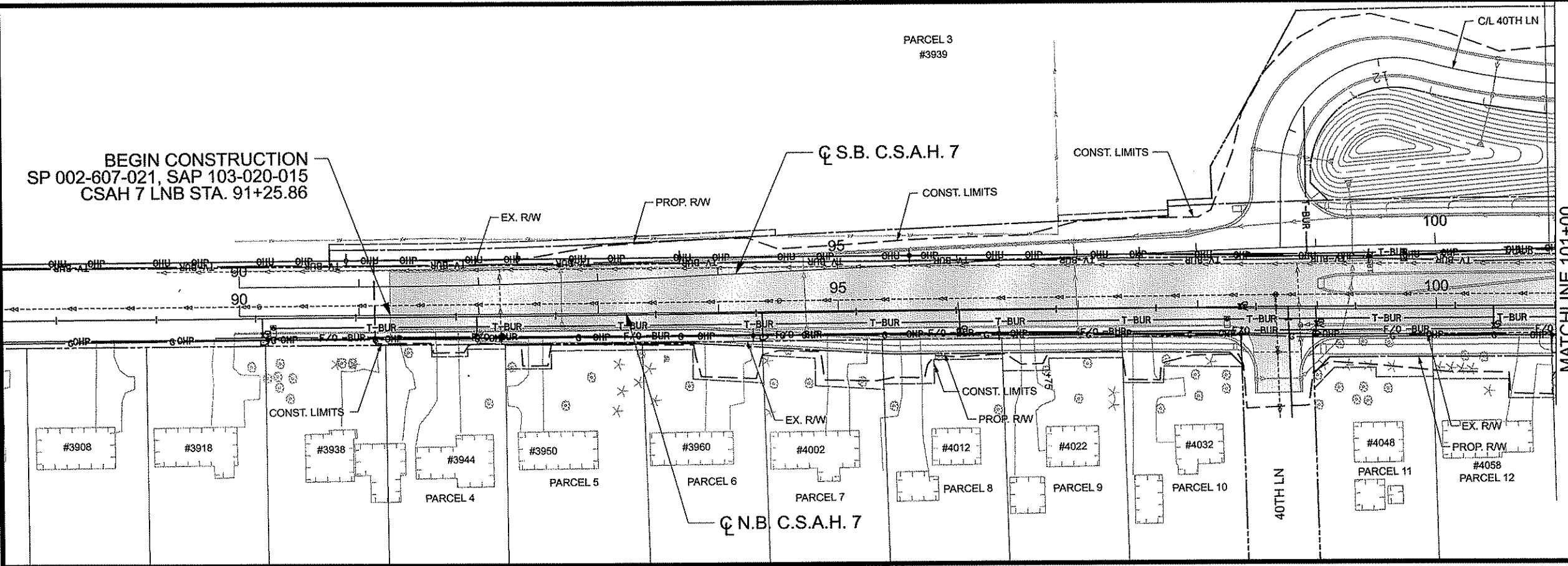
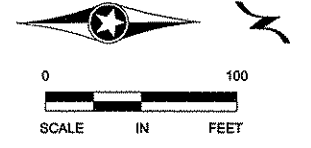


S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

**EXISTING UTILITY PLAN**  
STA 81+00.00 TO 100+00.00  
Sheet 79 of 282 Sheets

LEGEND

- TV-BUR ACCESS/ COMCAST/ WINDSTREAM CABLE
- OHU F/O -BUR
- P-BUR ANOKA/ CONNEXUS ENERGY
- OHP
- G CENTERPOINT ENERGY/ NORTHERN NATURAL GAS
- T-BUR QWEST CORPORATION
- OHU
- SIG-BUR TRAFFIC SIGNAL
- EXISTING STORM SEWER
- EXISTING SAN SEWER
- EXISTING WATER MAIN
- PROPOSED STORM DRAIN
- EXISTING R/W
- PROPOSED R/W
- PROPOSED EASEMENTS
- EXISTING ROADWAY REMOVAL



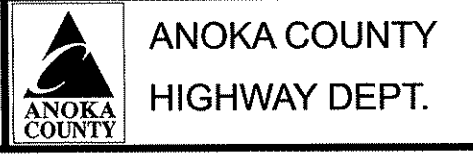
NO	DATE	BY	CKD	APPR	REVISION

NAME: p:102-716-12\plan\0271612\_UT\_P5.dgn  
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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: CURT A. KOBILARCSIK  
 SIGNATURE: *[Signature]*  
 DATE: 6-29-12 LICENSE NO. 24756

DRAWN BY: EJM DATE: 05/15/2012  
 DESIGN BY: MN DATE: 12/01/2010  
 CHECKED BY: CAK DATE: 05/29/2012



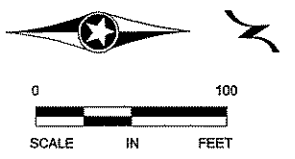
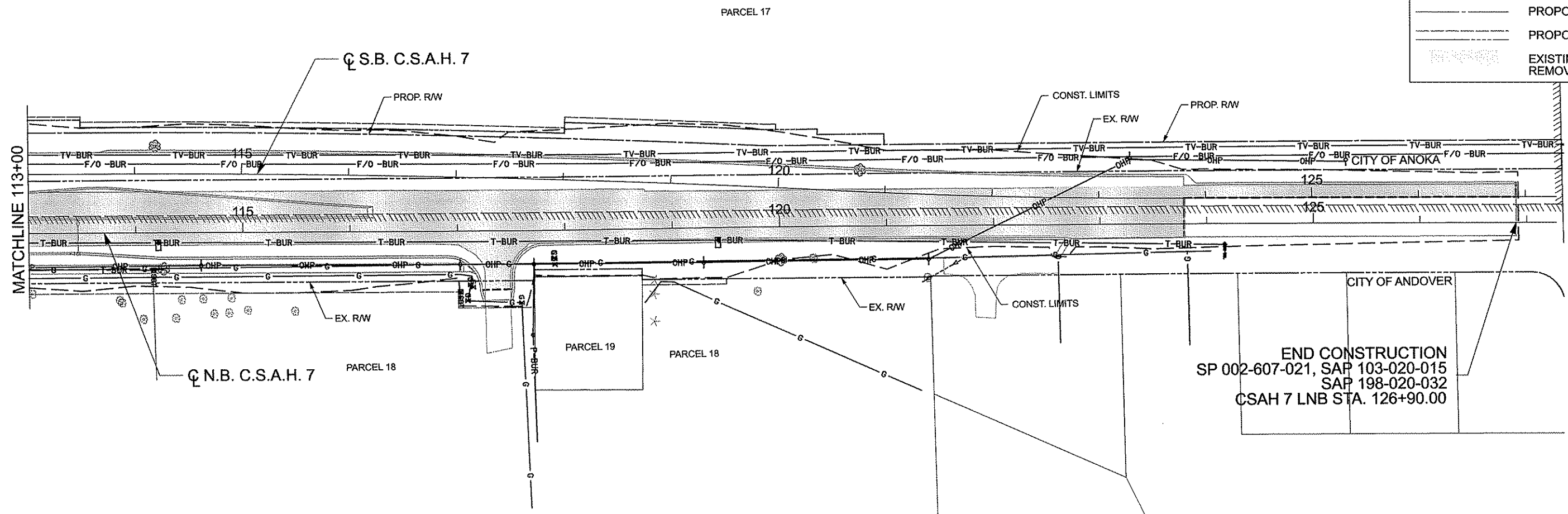
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S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

EXISTING UTILITY PLAN  
 STA 101+00.00 TO 113+00.00  
 Sheet 80 of 282 Sheets



LEGEND

TV-BUR	ACCESS/ COMCAST/ WINDSTREAM CABLE
-OHU- F/O -BUR	
P-BUR	ANOKA/ CONNEXUS ENERGY
-OHP-	
G	CENTERPOINT ENERGY/ NORTHERN NATURAL GAS
T-BUR	QWEST CORPORATION
-OHU-	
SIG-BUR	TRAFFIC SIGNAL
- - - - -	EXISTING STORM SEWER
- - - - -	EXISTING SAN SEWER
- - - - -	EXISTING WATER MAIN
- - - - -	PROPOSED STORM DRAIN
- - - - -	EXISTING RW
- - - - -	PROPOSED RW
- - - - -	PROPOSED EASEMENTS
- - - - -	EXISTING ROADWAY REMOVAL



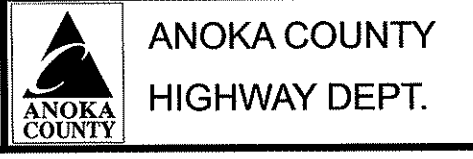
NO	DATE	BY	CKD	APPR	REVISION

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

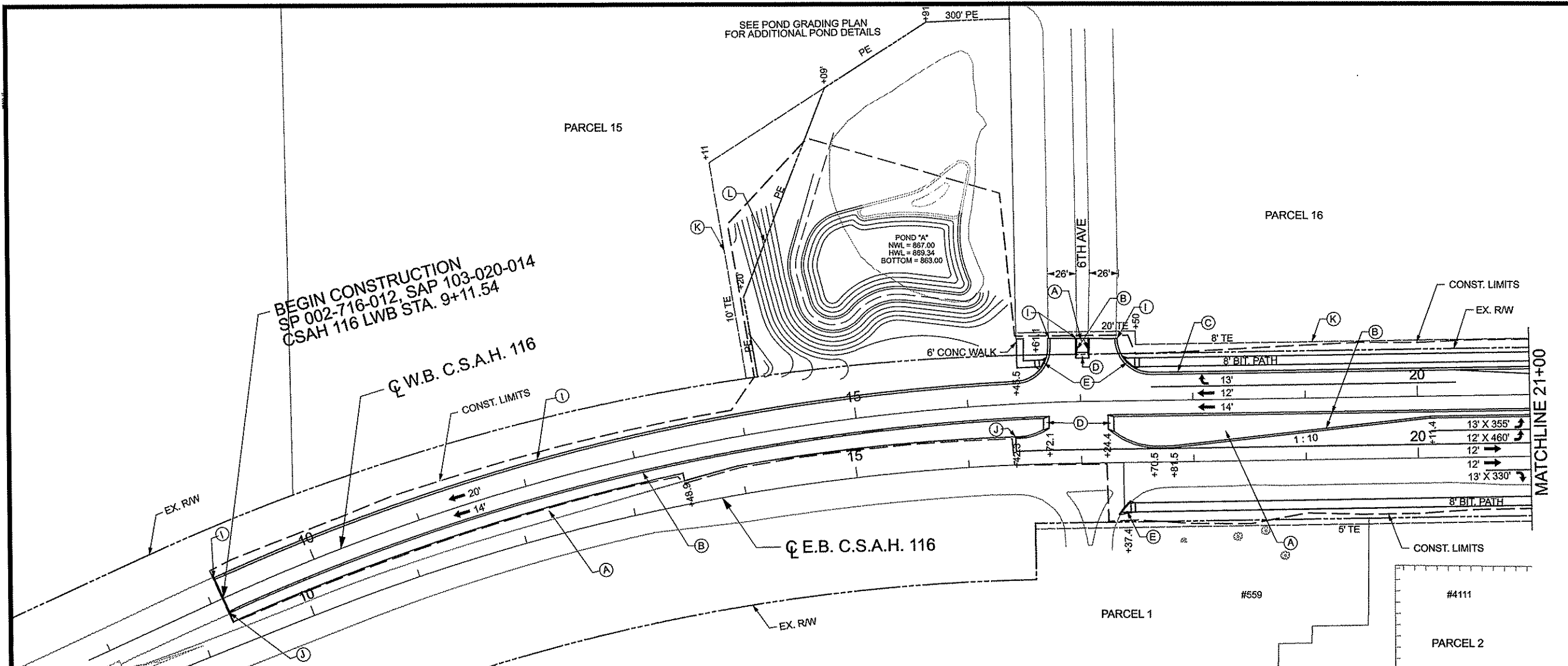
PRINT NAME: CURT A. KOBILARCSIK  
 SIGNATURE: *Curt Kobilarcsik*  
 DATE: 6.29.12 LICENSE NO. 24756

DRAWN BY: EJM DATE: 05/15/2012  
 DESIGN BY: MN DATE: 12/01/2010  
 CHECKED BY: CAK DATE: 05/29/2012

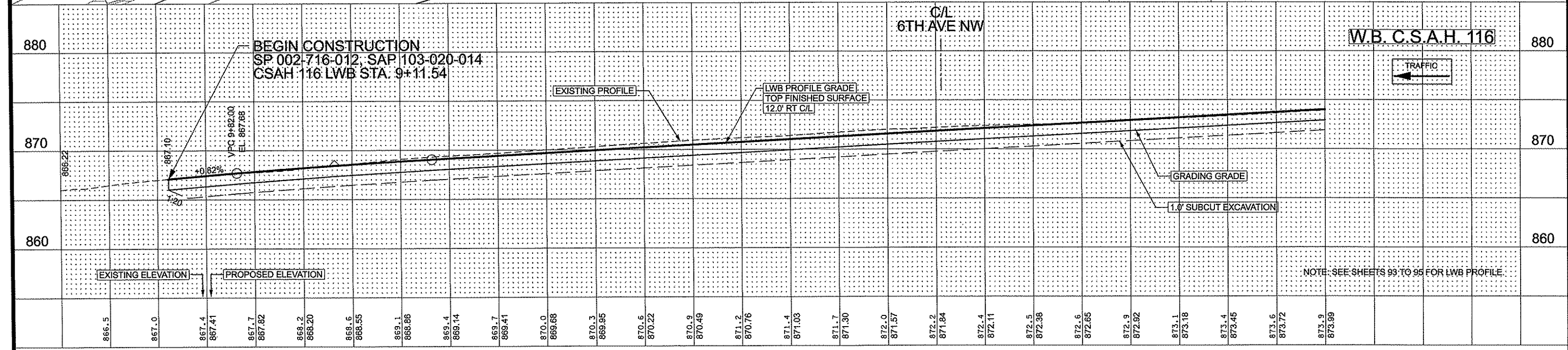
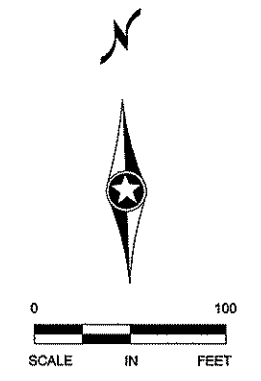


S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

EXISTING UTILITY PLAN  
 STA 113+00.00 TO 125+00.00  
 Sheet 81 of 282 Sheets



- LEGEND**
- (A) CONCRETE MEDIAN
  - (B) B418 CURB & GUTTER
  - (C) B424 CURB & GUTTER
  - (D) CONCRETE APPROACH NOSE STD. PLATE 7113
  - (E) PEDESTRIAN CURB RAMP & TRUNCATED DOME
  - (I) MATCH B618 CURB & GUTTER
  - (J) MATCH B612 CURB & GUTTER
  - (K) TEMPORARY EASEMENT
  - (L) PERMANENT EASEMENT
- ALL DIMENSIONS ARE TO FACE OF CURB OR EDGE OF PAVEMENT UNLESS OTHERWISE NOTED.  
SEE SHEET 100 FOR INTERSECTION DETAILS.



<b>BEGIN CONSTRUCTION</b> SP 002-716-012, SAP 103-020-014 CSAH 116 LWB STA. 9+11.54					<b>EXISTING PROFILE</b>	<b>LWB PROFILE GRADE</b> TOP FINISHED SURFACE 12.0' RT C/L	<b>GRADING GRADE</b>	<b>TRAFFIC</b>	<b>W.B. C.S.A.H. 116</b>																																				
866.22	867.10	867.41	867.82	868.20	868.55	869.11	869.66	869.4	869.14	869.7	869.41	870.0	869.68	870.3	869.95	870.6	870.22	870.9	870.49	871.2	870.76	871.4	871.03	871.7	871.30	872.0	871.57	872.2	871.84	872.4	872.11	872.5	872.38	872.6	872.65	872.9	872.92	873.1	873.18	873.4	873.45	873.6	873.72	873.9	873.99
8+00	9+00	10+00	11+00	12+00	13+00	14+00	15+00	16+00	17+00	18+00	19+00	20+00	21+00	1 OF 11																															

NO	DATE	BY	CHKD	APPR	REVISION		
NAME: p:\02-716-12\plan\0271612_PP1.dgn					07/10/2012	7:06:20 AM	

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

PRINT NAME: CURT A. KOBILARCSIK

SIGNATURE: *Curt Kobilarcsik*

DATE: 6-29-12 LICENSE NO. 24756

DRAWN BY: MN DATE 05/15/2012

DESIGN BY: MN DATE 12/01/2010

CHECKED BY: CAK DATE 05/29/2012

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

S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

**CONSTRUCTION PLAN AND PROFILE**

STA 9+00.00 TO 22+00.00

Sheet 82 of 282 Sheets

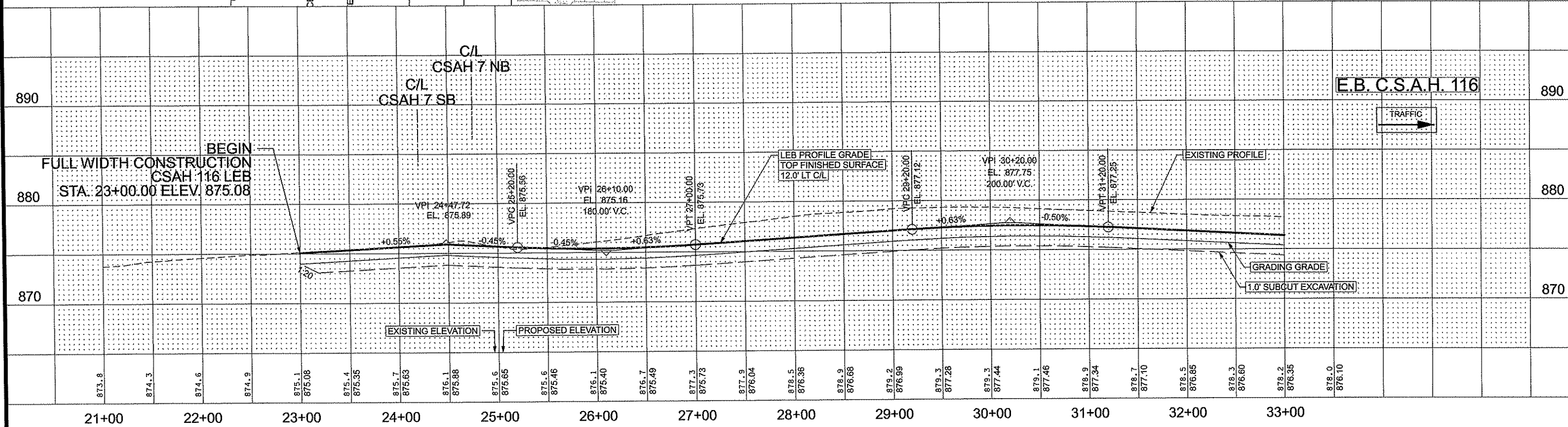
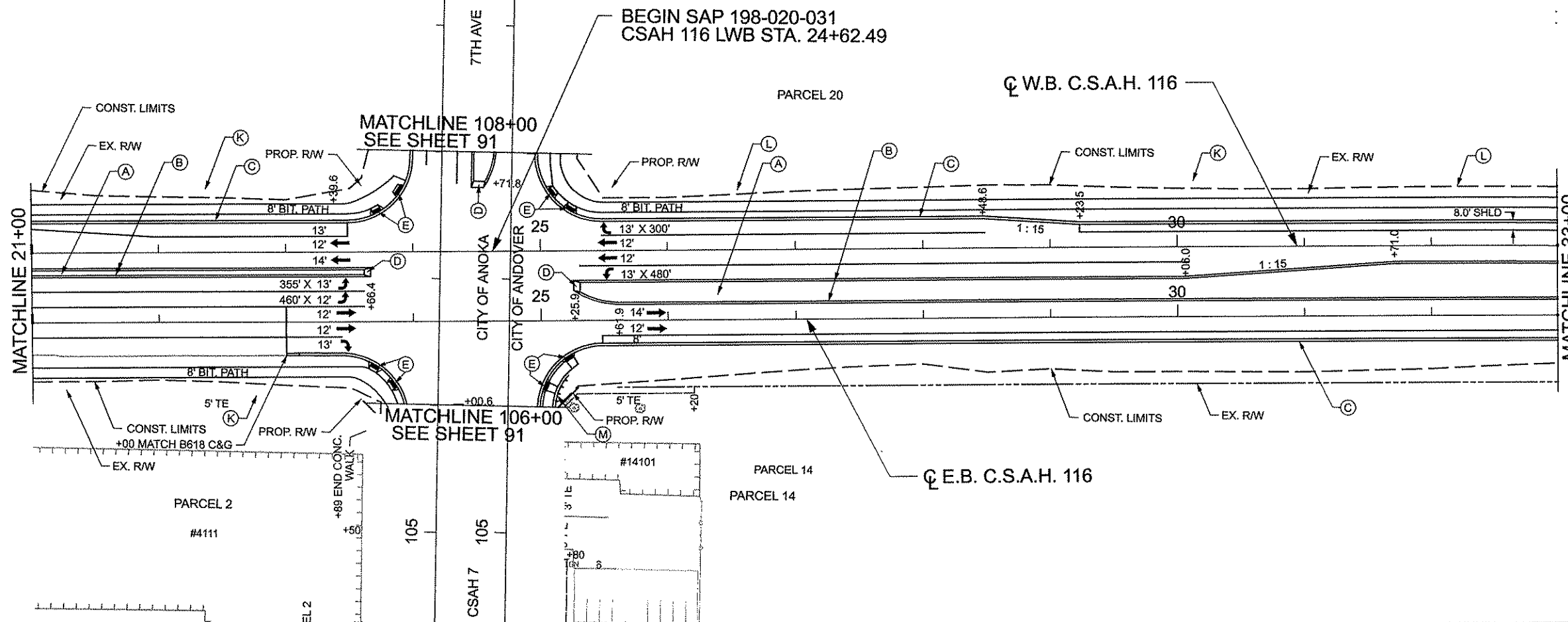
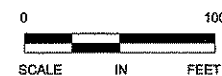
LEGEND

- (A) CONCRETE MEDIAN
- (B) B418 CURB & GUTTER
- (C) B424 CURB & GUTTER
- (D) CONCRETE APPROACH NOSE STD. PLATE 7113
- (E) PEDESTRIAN CURB RAMP & TRUNCATED DOME
- (K) TEMPORARY EASEMENT
- (L) PERMANENT EASEMENT
- (M) RETAINING WALL

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

SEE SHEET 101 FOR INTERSECTION DETAILS.

SEE SHEET 27 FOR RETAINING WALL DETAILS.



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: CURT A. KOBIARCSIK  
 SIGNATURE: *Curt A. Kobiarcsik*  
 DATE: 6.29.12 LICENSE NO. 24756

DRAWN BY: MN DATE: 05/15/2012  
 DESIGN BY: MN DATE: 12/01/2010  
 CHECKED BY: CAK DATE: 05/29/2012



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

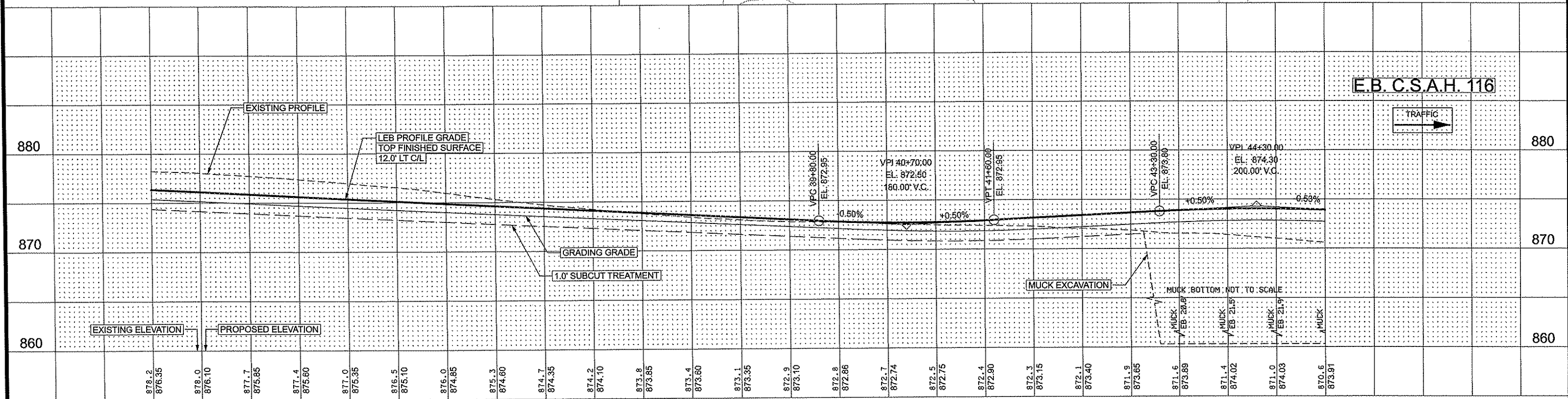
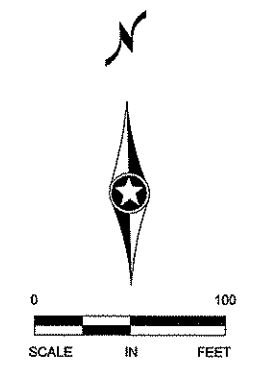
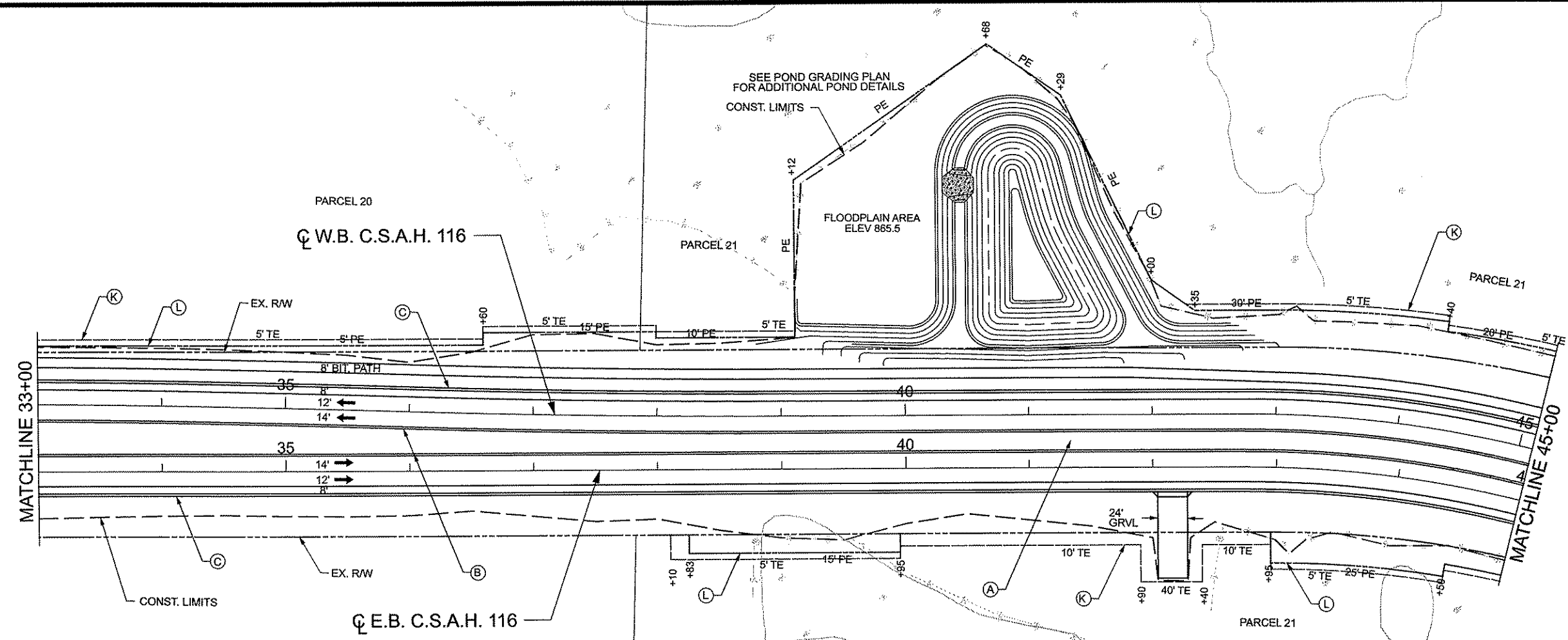
S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

**CONSTRUCTION PLAN AND PROFILE**  
 STA 21+00.00 TO 33+00.00  
 Sheet 83 of 282 Sheets

NAME: p:\02-716-12\plan\0271612\_PP2.dgn

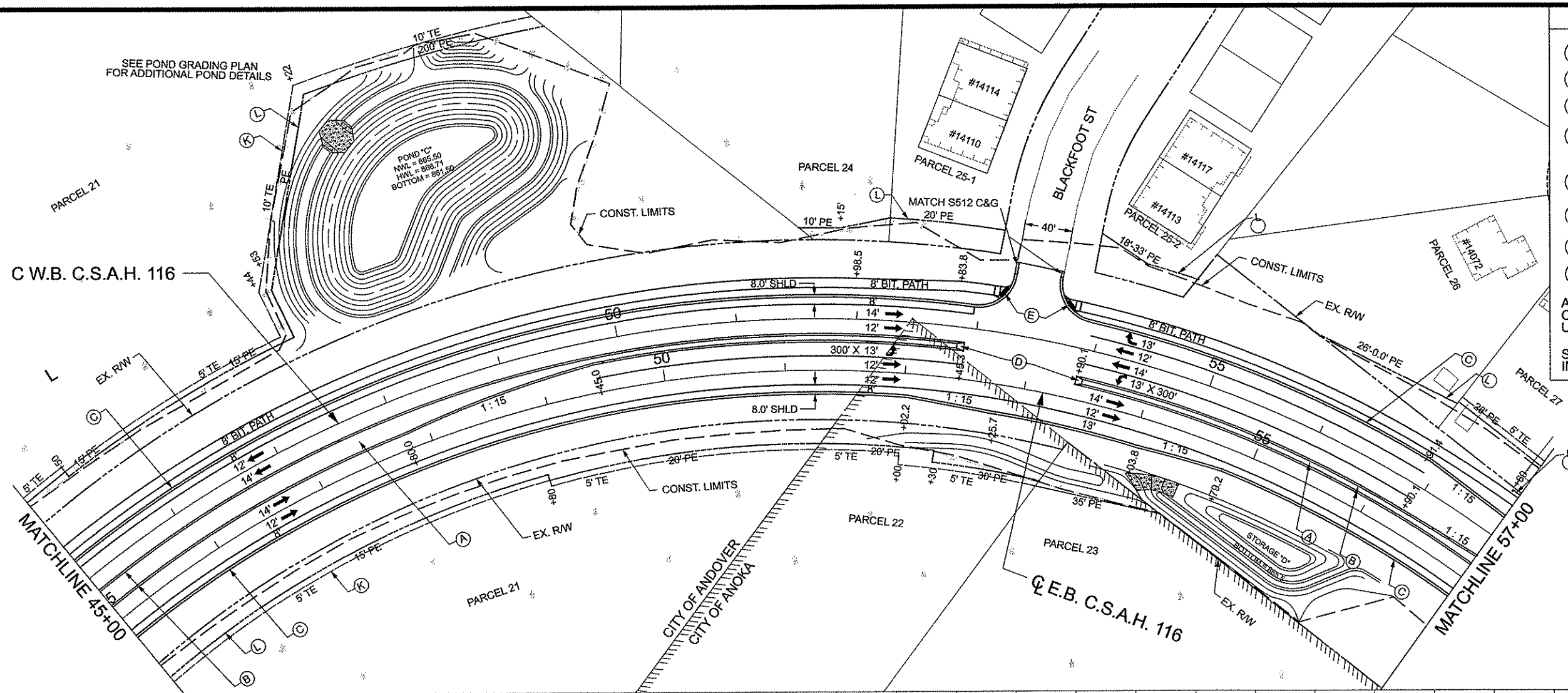
06/28/2012 8:04:51 AM

- LEGEND**
- (A) CONCRETE MEDIAN
  - (B) B418 CURB & GUTTER
  - (C) B424 CURB & GUTTER
  - (K) TEMPORARY EASEMENT
  - (L) PERMANENT EASEMENT
- ALL DIMENSIONS ARE TO FACE OF CURB OR EDGE OF PAVEMENT UNLESS OTHERWISE NOTED.

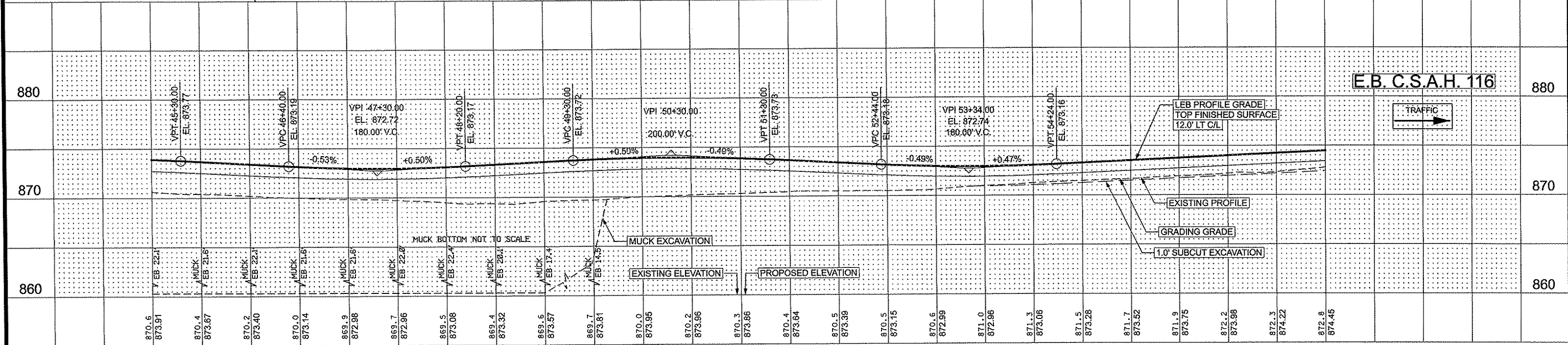
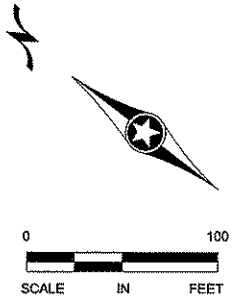


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33+00		34+00		35+00		36+00		37+00		38+00		39+00		40+00		41+00		42+00		43+00		44+00		45+00																									

NO DATE BY CKD APPR REVISION NAME: p102-716-12\plan10271612_PP3.dgn 06/28/2012 8:04:55 AM					I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA. PRINT NAME: CURT A. KOBILARCSIK SIGNATURE: <i>Curt A. Kobilarsik</i> DATE: 6-29-12 LICENSE NO. 24756					DRAWN BY: MN DATE 05/15/2012 DESIGN BY: MN DATE 12/01/2010 CHECKED BY: CAK DATE 05/29/2012					ANOKA COUNTY HIGHWAY DEPT.					S.P. 002-716-012 S.P. 198-020-031 S.P. 103-020-014			S.P. 198-020-030 S.P. 198-020-032 S.P. 103-020-015			CONSTRUCTION PLAN AND PROFILE STA 33+00.00 TO 45+00.00 Sheet 84 of 282 Sheets		
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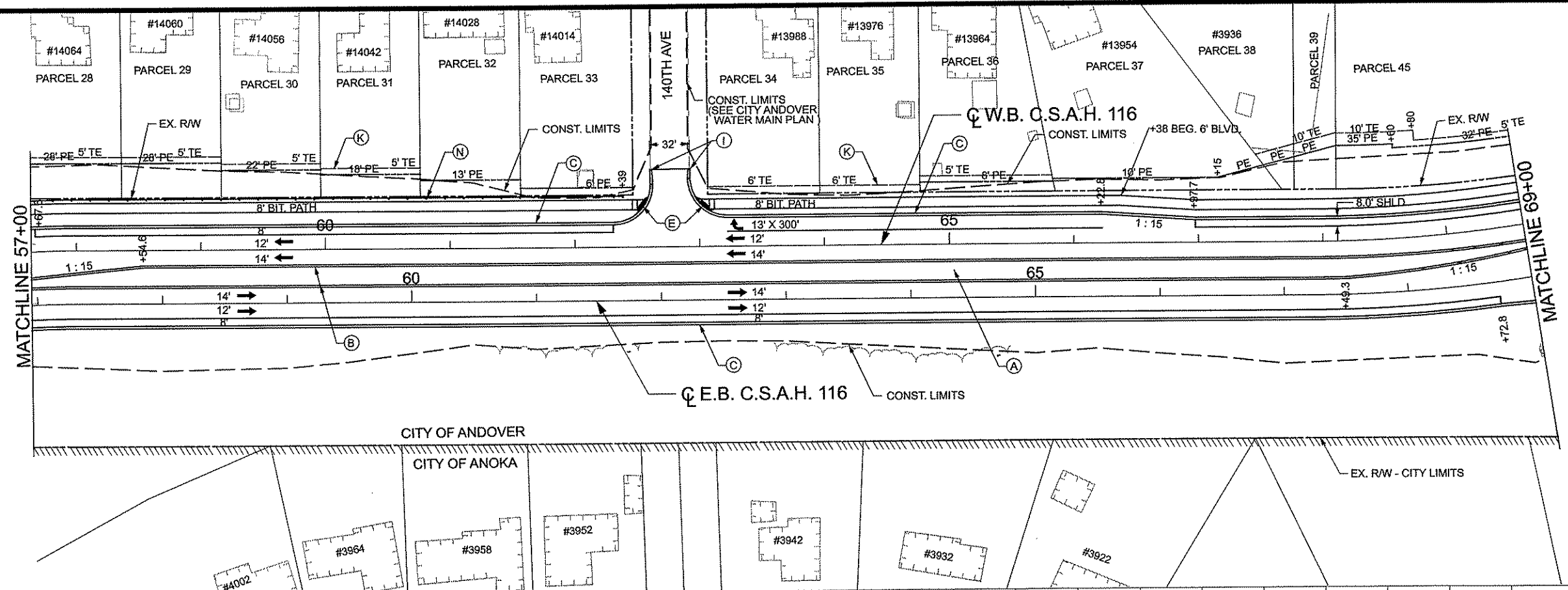


- LEGEND**
- (A) CONCRETE MEDIAN
  - (B) B418 CURB & GUTTER
  - (C) B424 CURB & GUTTER
  - (D) CONCRETE APPROACH NOSE STD. PLATE 7113
  - (E) PEDESTRIAN CURB RAMP & TRUNCATED DOME
  - (K) TEMPORARY EASEMENT
  - (L) PERMANENT EASEMENT
  - (N) NOISE WALL
- ALL DIMENSIONS ARE TO FACE OF CURB OR EDGE OF PAVEMENT UNLESS OTHERWISE NOTED.
- SEE SHEET 102 FOR INTERSECTION DETAILS.



870	870.6	873.91	870.4	873.67	870.2	873.40	870.0	873.14	869.9	872.98	869.7	872.96	869.5	873.08	869.4	873.32	869.6	873.57	869.7	873.81	870.0	873.95	870.2	873.96	870.3	873.86	870.4	873.64	870.5	873.39	870.5	873.15	870.6	872.99	871.0	872.96	871.3	873.06	871.5	873.28	871.7	873.52	871.9	873.75	872.2	873.98	872.3	874.22	872.6	874.45
45+00	46+00	47+00	48+00	49+00	50+00	51+00	52+00	53+00	54+00	55+00	56+00	57+00																																						

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA. PRINT NAME: CURT A. KOBILARCSIK SIGNATURE: <i>Curt Kobilarsik</i> DATE: 6-29-12 LICENSE NO. 24756					DRAWN BY: MN DATE 05/15/2012 DESIGN BY: MN DATE 12/01/2010 CHECKED BY: CAK DATE 05/29/2012				S.P. 002-716-012 S.P. 198-020-031 S.P. 103-020-014			S.P. 198-020-030 S.P. 198-020-032 S.P. 103-020-015			<b>CONSTRUCTION PLAN AND PROFILE</b> STA 45+00.00 TO 57+00.00 Sheet 85 of 282 Sheets			
NO DATE BY CKD APPR REVISION NAME: p:\02-716-12\plan\0271612_PP4.dgn 06/28/2012 8:04:59 AM																		

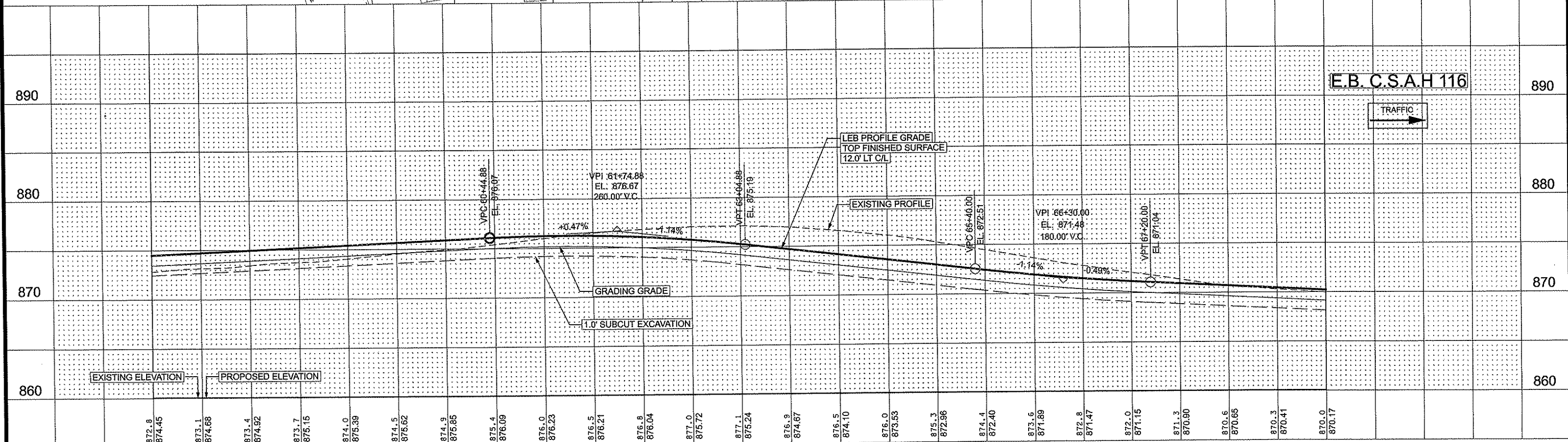
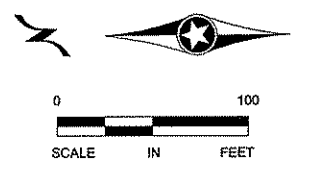


**LEGEND**

- (A) CONCRETE MEDIAN
- (B) B418 CURB & GUTTER
- (C) B424 CURB & GUTTER
- (E) PEDESTRIAN CURB RAMP & TRUNCATED DOME
- (I) MATCH S418 CURB & GUTTER
- (K) TEMPORARY EASEMENT
- (L) PERMANENT EASEMENT
- (N) NOISE WALL

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

SEE SHEET 102 FOR INTERSECTION DETAILS.



890																					890
880																					880
870																					870
860																					860
	57+00	58+00	59+00	60+00	61+00	62+00	63+00	64+00	65+00	66+00	67+00	68+00	69+00								

NO	DATE	BY	CKD	APPR	REVISION
NAME: p:\02-716-12\plan\0271612_PP5.dgn					
DATE: 06/28/2012 8:05:02 AM					

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

PRINT NAME: CURT A. KOBIARCSIK

SIGNATURE: *Curt A. Kobiarcsik*

DATE: 6-29-12 LICENSE NO. 24756

DRAWN BY: MN DATE 05/15/2012

DESIGN BY: MN DATE 12/01/2010

CHECKED BY: CAK DATE 05/29/2012


**ANOKA COUNTY**  
HIGHWAY DEPT.

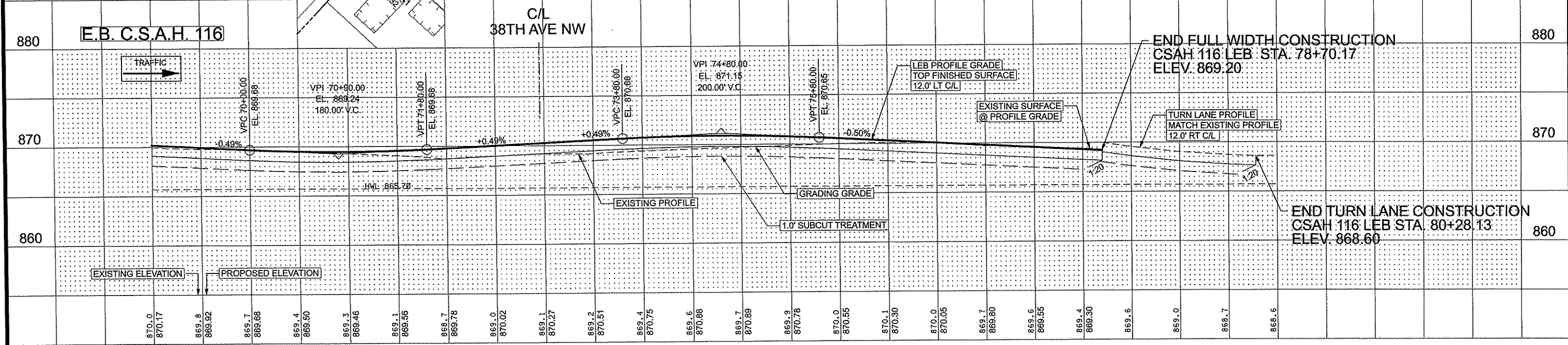
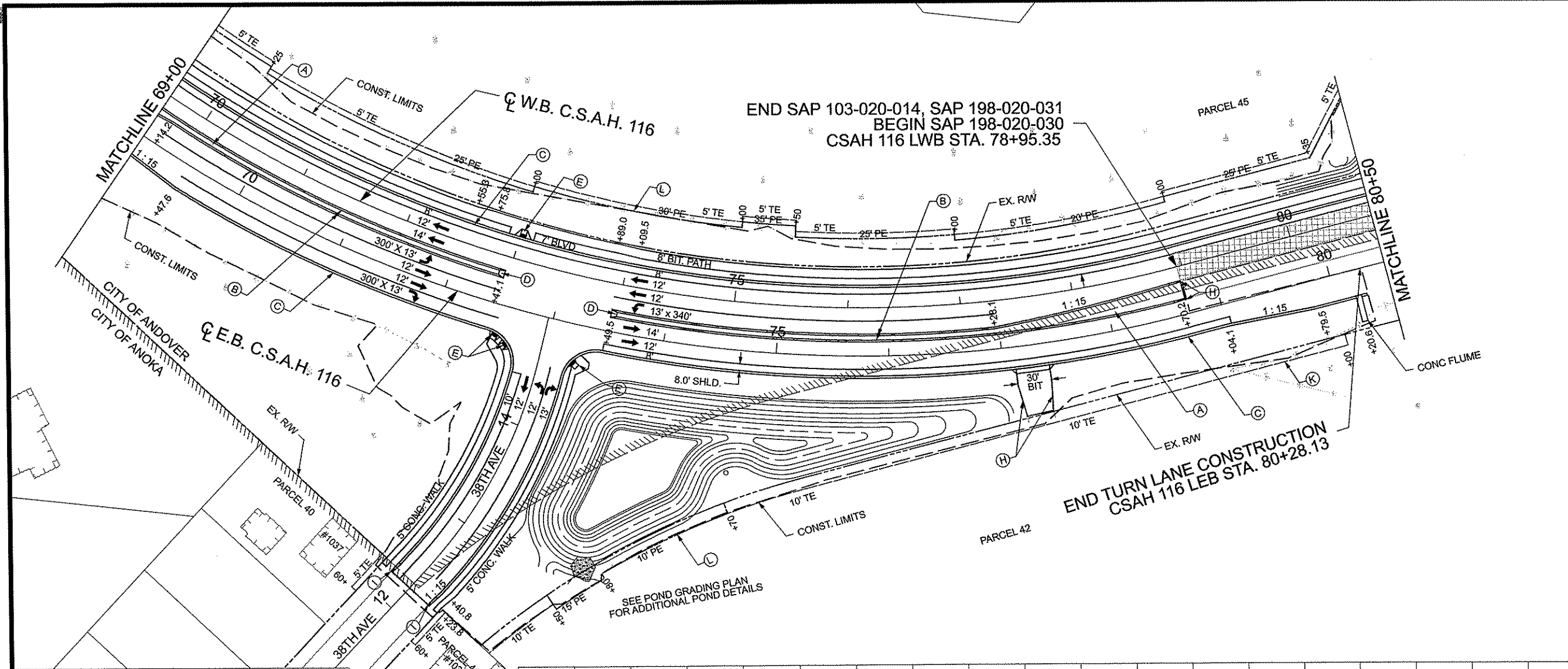
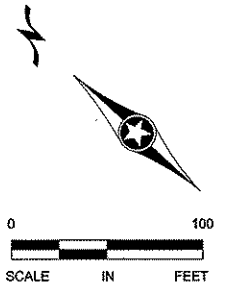
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S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

**CONSTRUCTION PLAN AND PROFILE**

STA 57+00.00 TO 69+00.00

Sheet 86 of 282 Sheets

- LEGEND**
- (A) CONCRETE MEDIAN
  - (B) B418 CURB & GUTTER
  - (C) B424 CURB & GUTTER
  - (D) CONCRETE APPROACH NOSE STD. PLATE 7113
  - (E) PEDESTRIAN CURB RAMP & TRUNCATED DOME
  - (H) MATCH B612 CURB & GUTTER
  - (I) MATCH S418 CURB & GUTTER
  - (K) TEMPORARY EASEMENT
  - (L) PERMANENT EASEMENT
-  2" BITUMINOUS OVERLAY
- ALL DIMENSIONS ARE TO FACE OF CURB OR EDGE OF PAVEMENT UNLESS OTHERWISE NOTED.
- SEE SHEET 103 FOR INTERSECTION DETAILS.
- SEE SHEET 97 FOR 38TH AVE PROFILE.



69+00      70+00      71+00      72+00      73+00      74+00      75+00      76+00      77+00      78+00      79+00      80+00      6 OF 11

NO	DATE	BY	CKD	APPR	REVISION

NAME: p:\02-716-12\plan\0271612\_PP6.dgn      06/28/2012      8:05:06 AM

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

PRINT NAME: CURT A. KOBILARCSIK

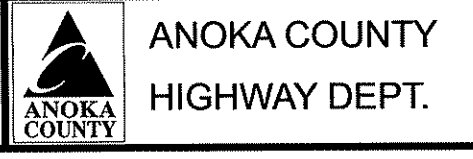
SIGNATURE: *Curt Kobilarcsik*

DATE: 6-29-12      LICENSE NO. 24758

DRAWN BY: MN      DATE 05/15/2012

DESIGN BY: MN      DATE 12/01/2010

CHECKED BY: CAK      DATE 05/29/2012

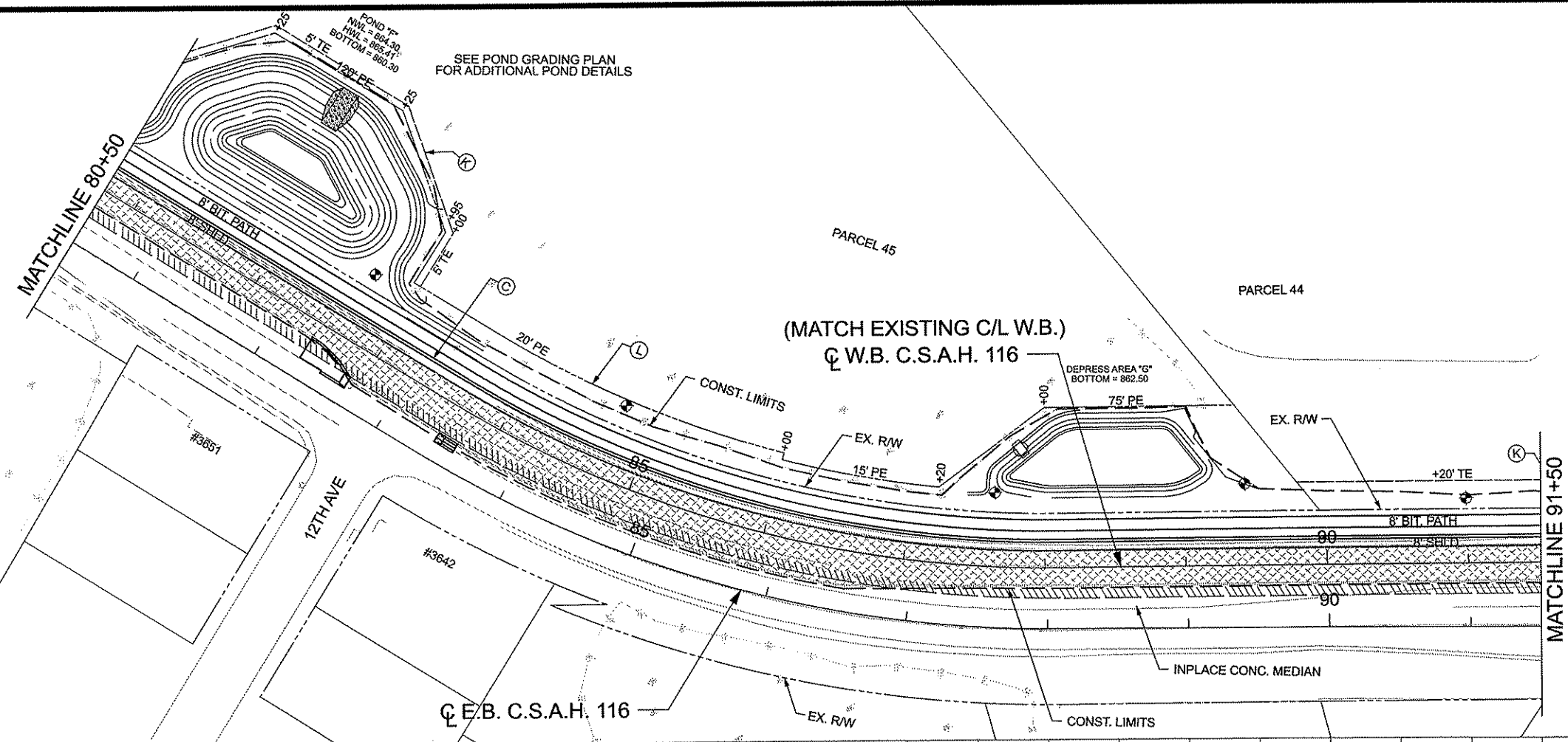


S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

**CONSTRUCTION PLAN AND PROFILE**

STA 69+00.00 TO 80+50.00

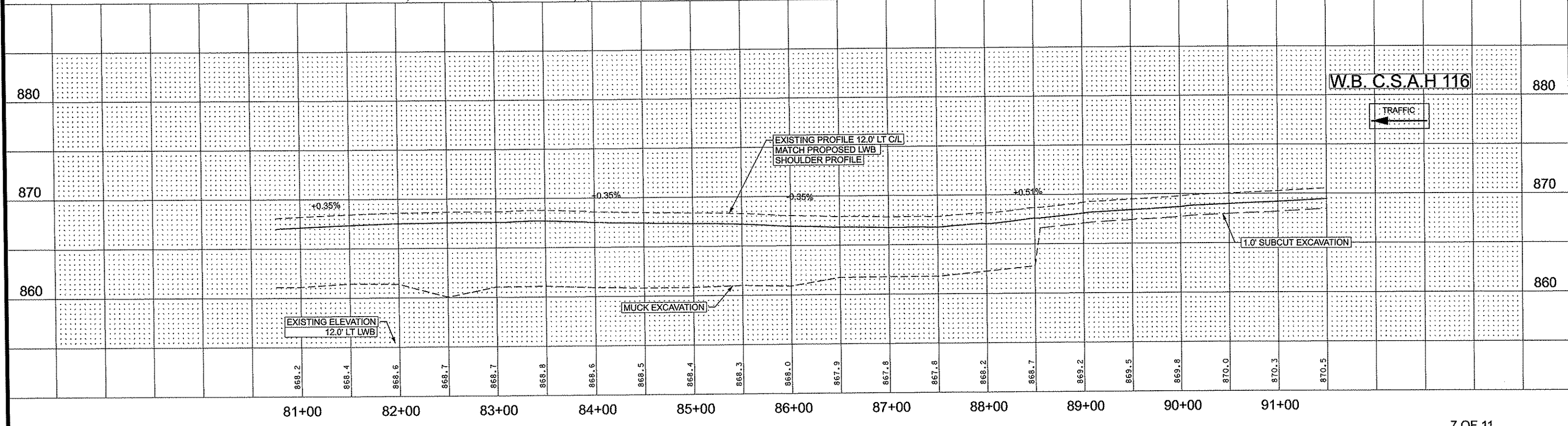
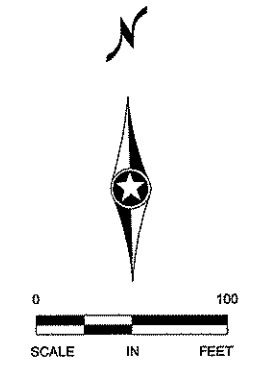
Sheet 87 of 282 Sheets



**LEGEND**

- (C) B424 CURB & GUTTER
- (K) TEMPORARY EASEMENT
- (L) PERMANENT EASEMENT
- [Hatched Box] 2" BITUMINOUS OVERLAY

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



NO	DATE	BY	CKD	APPR	REVISION

NAME: p:\02-716-12\plan\0271612\_PP7.dgn 06/28/2012 8:05:10 AM

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

PRINT NAME: CURT A. KOBIARCSIK

SIGNATURE: *Curt A. Kobiarcsik*

DATE: 6-29-12 LICENSE NO. 24758

DRAWN BY: MN DATE: 05/15/2012

DESIGN BY: MN DATE: 12/01/2010

CHECKED BY: CAK DATE: 05/29/2012



**ANOKA COUNTY  
HIGHWAY DEPT.**

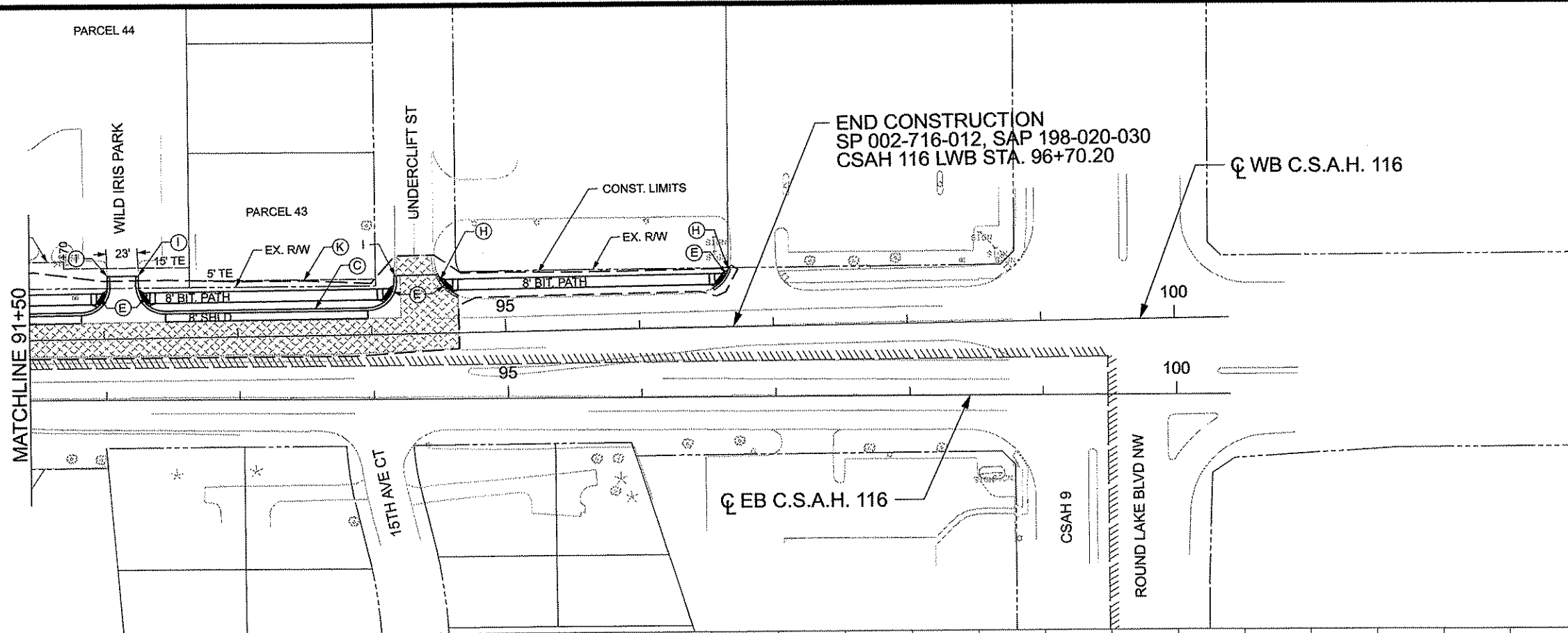
S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

**CONSTRUCTION PLAN AND PROFILE**

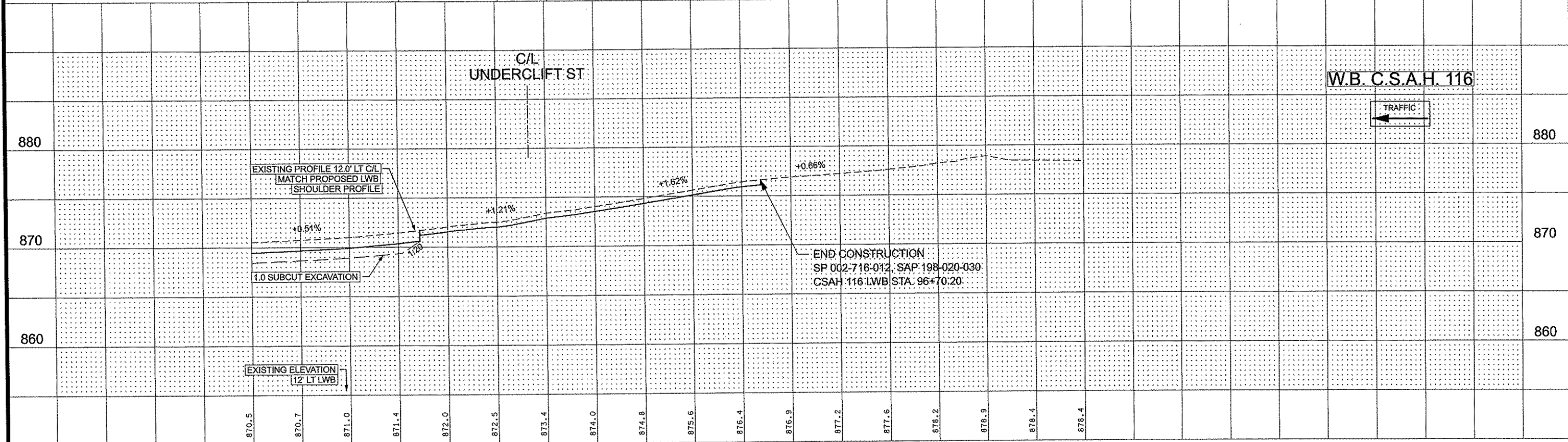
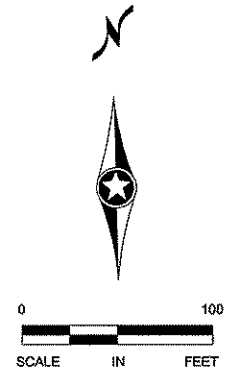
STA 80+50.00 TO 91+50.00

Sheet 88 of 282 Sheets





- LEGEND**
- (C) B424 CURB & GUTTER
  - (E) PEDESTRIAN CURB RAMP & TRUNCATED DOME
  - (H) B4 MODIFIED CURB & GUTTER
  - (I) MATCH B618 CURB & GUTTER
  - (K) TEMPORARY EASEMENT
  - (L) PERMANENT EASEMENT
  - [Hatched Box] 2" BITUMINOUS OVERLAY
- ALL DIMENSIONS ARE TO FACE OF CURB OR EDGE OF PAVEMENT UNLESS OTHERWISE NOTED.



870.5 870.7 871.0 871.4 872.0 872.5 873.4 874.0 874.8 875.6 876.4 876.9 877.2 877.6 878.2 878.9 878.4 878.4

92+00 93+00 94+00 95+00 96+00 97+00 98+00 99+00 100+00

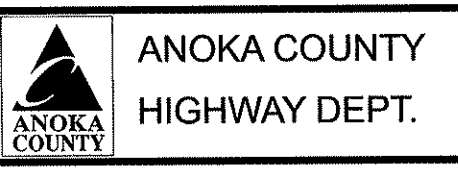
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NAME: p:\02-716-12\plan\0271612\_PP8.dgn 06/28/2012 8:05:12 AM

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

PRINT NAME: CURT A. KOBILARCSIK  
 SIGNATURE: *Curt Kobilarsik*  
 DATE: 6-29-12 LICENSE NO. 24756

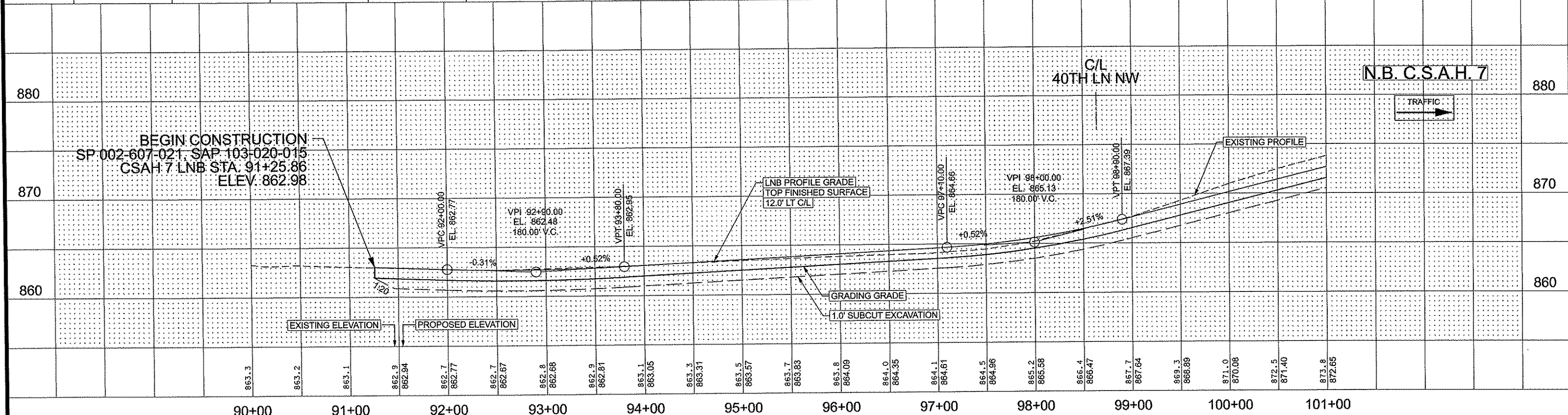
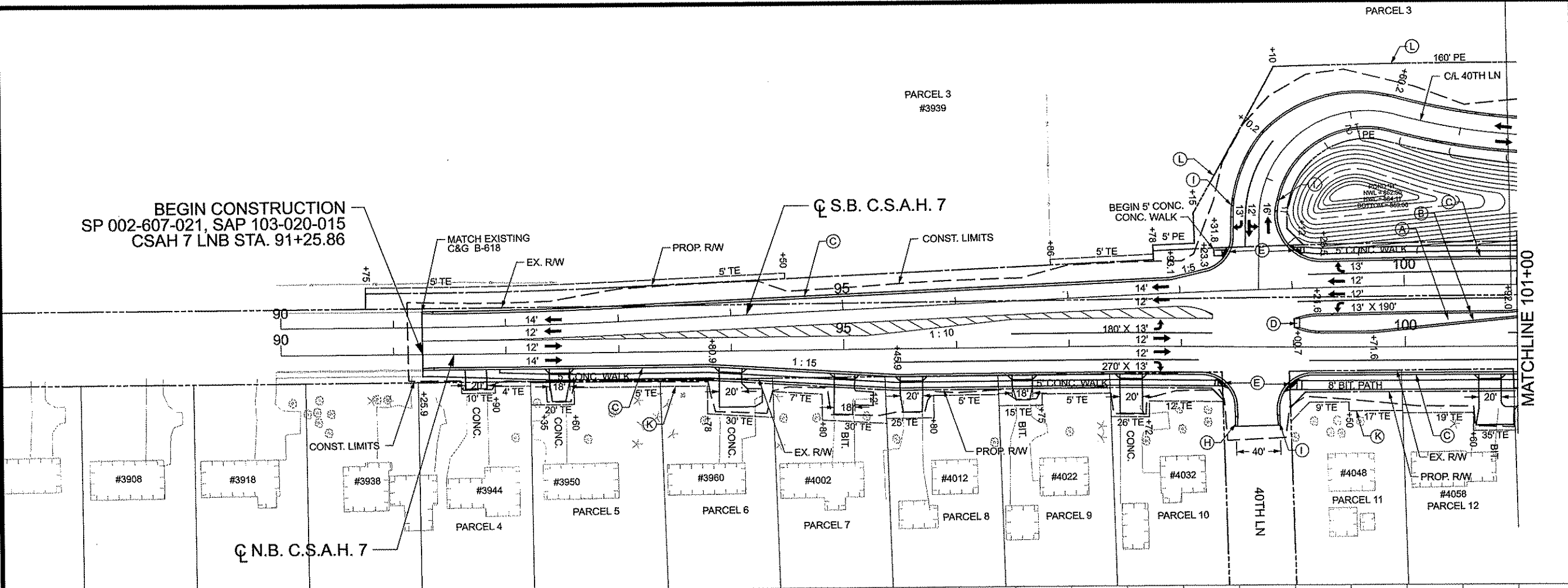
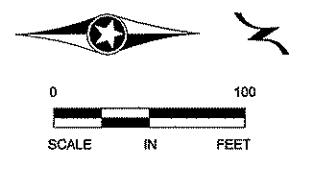
DRAWN BY: MN DATE 05/15/2012  
 DESIGN BY: MN DATE 12/01/2010  
 CHECKED BY: CAK DATE 05/29/2012



S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

**CONSTRUCTION PLAN AND PROFILE**  
 STA 91+50.00 TO 100+00.00  
 Sheet 89 of 282 Sheets

- LEGEND**
- (A) CONCRETE MEDIAN
  - (B) B418 CURB & GUTTER
  - (C) B424 CURB & GUTTER
  - (D) CONCRETE APPROACH NOSE STD. PLATE 7113
  - (E) PEDESTRIAN CURB RAMP & TRUNCATED DOME
  - (H) MATCH B612 CURB & GUTTER
  - (I) MATCH B618 CURB & GUTTER
  - (K) TEMPORARY EASEMENT
  - (L) PERMANENT EASEMENT
- ALL DIMENSIONS ARE TO FACE OF CURB OR EDGE OF PAVEMENT UNLESS OTHERWISE NOTED.
- SEE SHEET 104 FOR INTERSECTION DETAILS.
- SEE SHEET 97 FOR ICE ARENA ACCESS PROFILE.



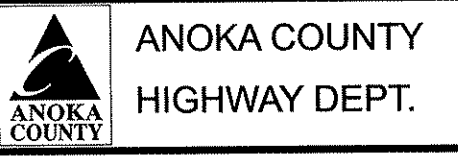
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I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

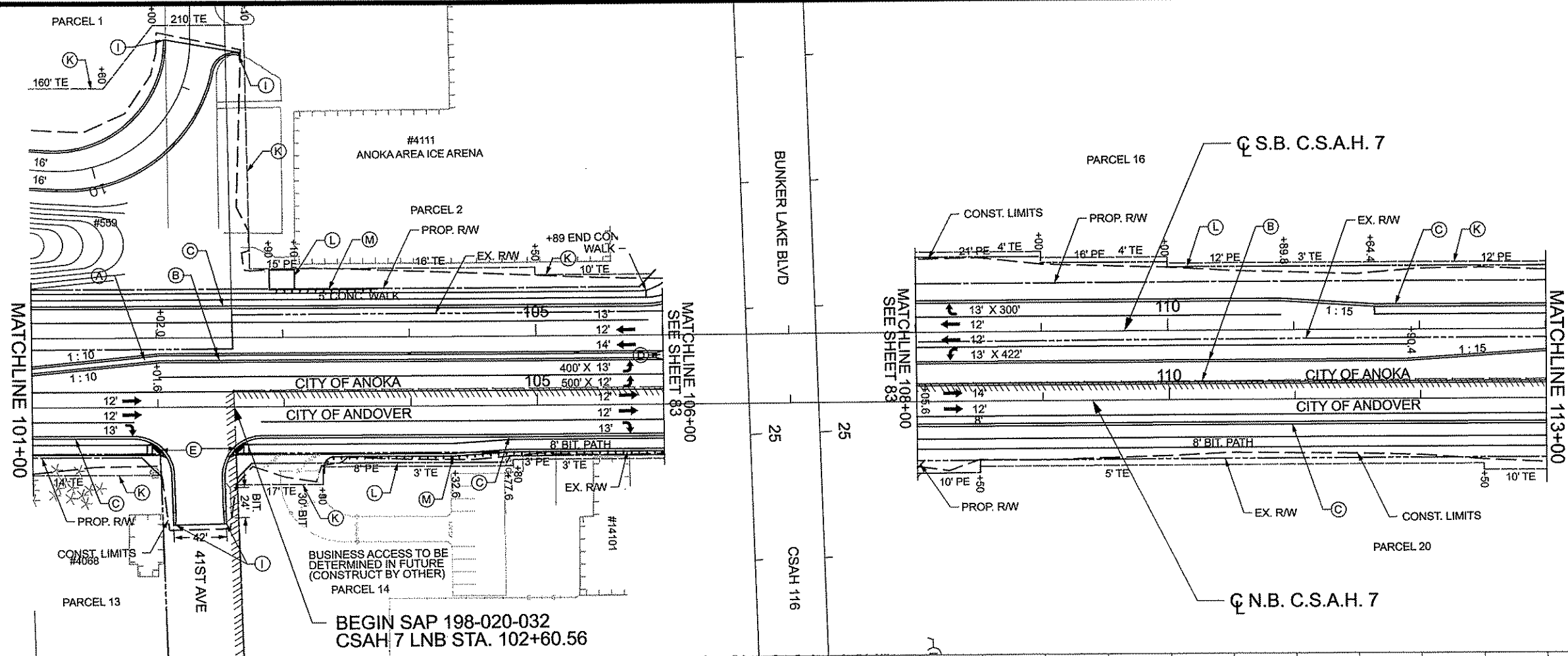
PRINT NAME: CURT A. KOBILARCSIK  
 SIGNATURE: *Curt Kobilarcsik*  
 DATE: 6.29.12 LICENSE NO. 24756

DRAWN BY: MN DATE 05/15/2012  
 DESIGN BY: MN DATE 12/01/2010  
 CHECKED BY: CAK DATE 05/29/2012

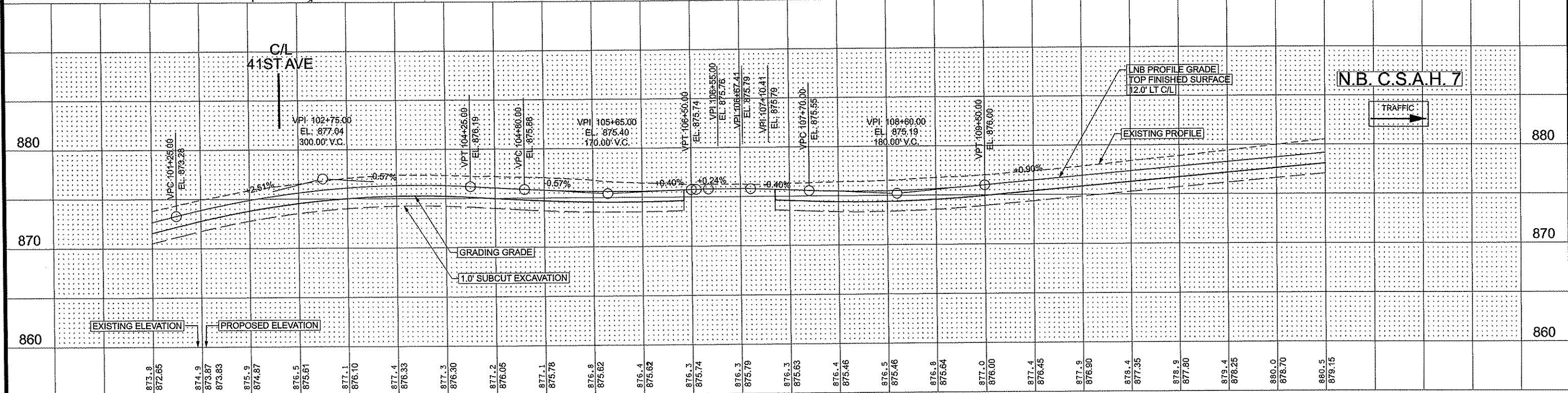
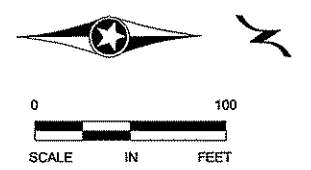


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S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

**CONSTRUCTION PLAN AND PROFILE**  
 STA 90+00.00 TO 101+00.00  
 Sheet 90 of 282 Sheets



- LEGEND**
- (A) CONCRETE MEDIAN
  - (B) B418 CURB & GUTTER
  - (C) B424 CURB & GUTTER
  - (D) CONCRETE APPROACH NOSE STD. PLATE 7113
  - (E) PEDESTRIAN CURB RAMP & TRUNCATED DOME
  - (I) MATCH B618 CURB & GUTTER
  - (K) TEMPORARY EASEMENT
  - (L) PERMANENT EASEMENT
  - (M) RETAINING WALL
- ALL DIMENSIONS ARE TO FACE OF CURB OR EDGE OF PAVEMENT UNLESS OTHERWISE NOTED.
- SEE SHEET 101 AND 104 FOR INTERSECTION DETAILS.
- SEE SHEET 97 FOR ICE ARENA ACCESS PROFILE.



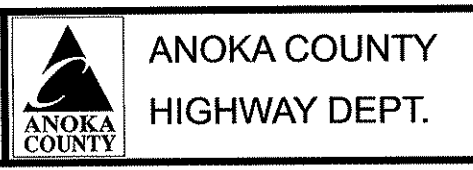
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NAME: p102-716-12plan0271612\_PP10.dgn 06/28/2012 8:05:20 AM

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

PRINT NAME: CURT A. KOBILARCSIK  
 SIGNATURE: *Curt Kobilarcsik*  
 DATE: 6-29-12 LICENSE NO. 24756

DRAWN BY: MN DATE 05/15/2012  
 DESIGN BY: MN DATE 12/01/2010  
 CHECKED BY: CAK DATE 05/29/2012



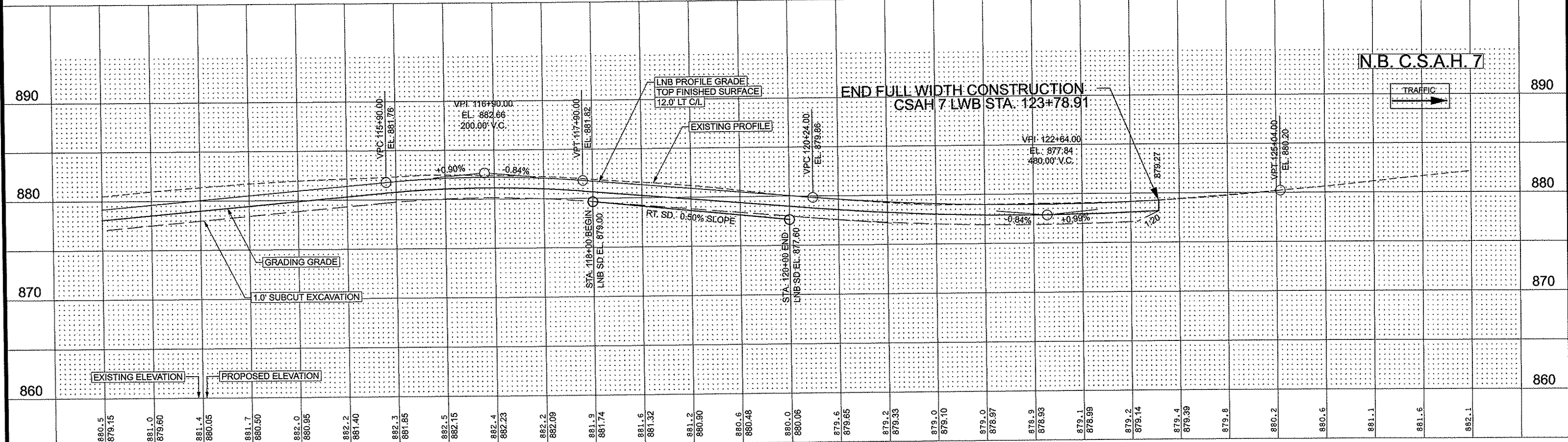
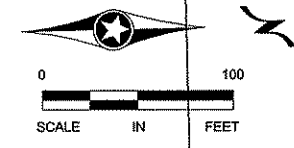
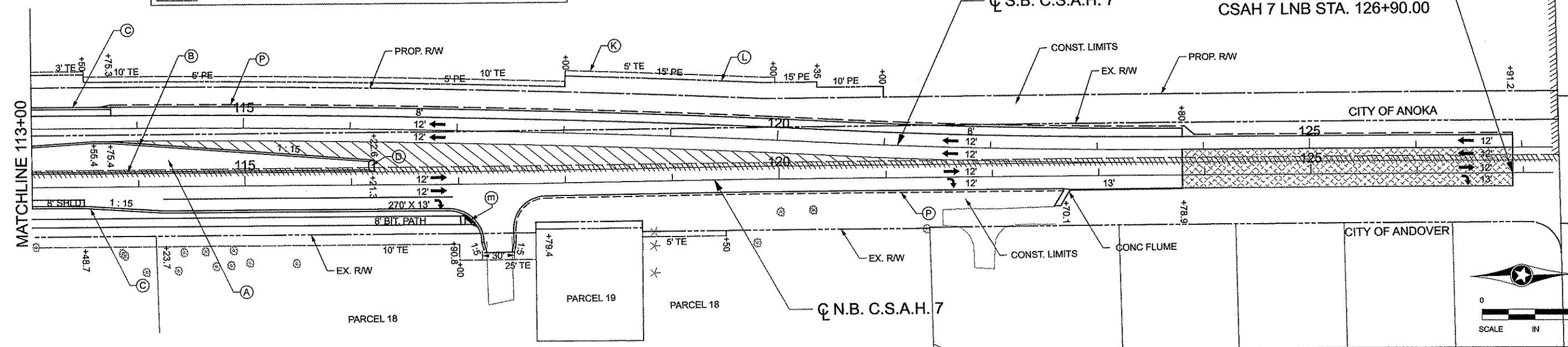
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S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

**CONSTRUCTION PLAN AND PROFILE**  
 STA 101+00.00 TO 113+00.00  
 Sheet 91 of 282 Sheets

- LEGEND**
- (A) CONCRETE MEDIAN
  - (B) B418 CURB & GUTTER
  - (C) B424 CURB & GUTTER
  - (D) CONCRETE APPROACH NOSE STD. PLATE 7113
  - (E) PEDESTRIAN CURB RAMP & TRUNCATED DOME
  - (K) TEMPORARY EASEMENT
  - (L) PERMANENT EASEMENT
  - (P) 2' AGGREGATE SHOULDER
  - 2" BITUMINOUS OVERLAY

ALL DIMENSIONS ARE TO FACE OF CURB OR EDGE OF PAVEMENT UNLESS OTHERWISE NOTED.  
SEE SHEET 101 FOR INTERSECTION DETAILS.

END CONSTRUCTION  
SP 002-607-021, SAP 103-020-015  
SAP 198-020-032  
CSAH 7 LNB STA. 126+90.00



860.5	879.15	880.0	879.60	881.4	880.05	881.7	880.50	882.0	880.95	882.2	881.40	882.3	881.75	882.5	882.15	882.4	882.23	882.2	882.09	881.74	881.6	881.32	881.2	880.90	880.6	880.48	880.0	880.06	879.6	879.65	879.2	879.33	879.0	879.10	879.0	878.97	878.9	878.93	879.1	878.99	879.2	879.14	879.4	879.39	879.8	880.2	880.6	881.1	881.6	882.1
113+00	114+00	115+00	116+00	117+00	118+00	119+00	120+00	121+00	122+00	123+00	124+00	125+00														11 OF 11																								

NO	DATE	BY	CKD	APPR	REVISION
NAME: p:\02-716-12\plan\0271612_PP11.dgn					
08/28/2012 8:05:24 AM					

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.  
PRINT NAME: CURT A. KOBILARCSIK  
SIGNATURE: *Curt Kobilarcsik*  
DATE: 6.29.12 LICENSE NO. 24756

DRAWN BY: MN DATE 05/15/2012  
DESIGN BY: MN DATE 12/01/2010  
CHECKED BY: CAK DATE 05/29/2012



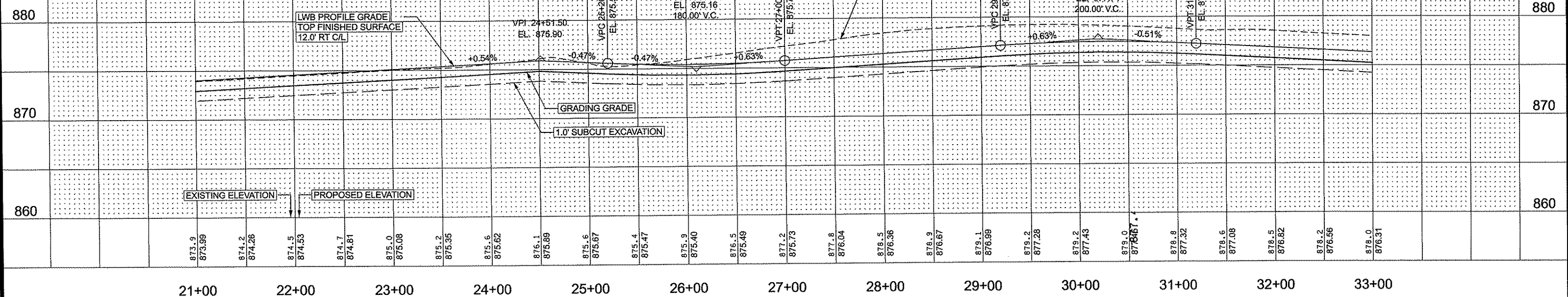
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S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

CONSTRUCTION PLAN AND PROFILE  
STA 113+00.00 TO 125+00.00  
Sheet 92 of 282 Sheets

W.B. C.S.A.H. 116

TRAFFIC

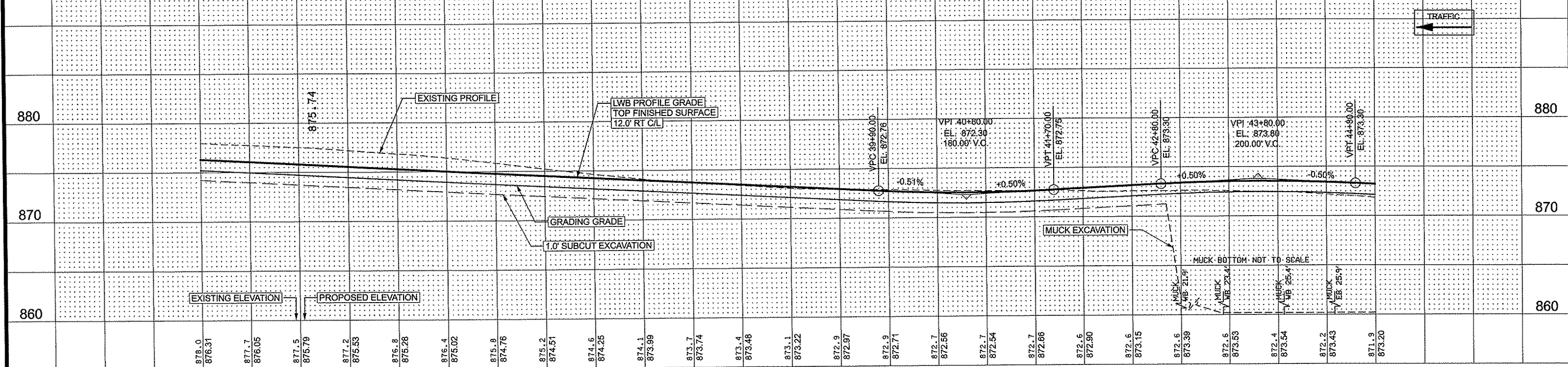
NOTE: SEE SHEET 82 FOR LWB PROFILE STA. 9+00 TO 21+00.



21+00 22+00 23+00 24+00 25+00 26+00 27+00 28+00 29+00 30+00 31+00 32+00 33+00

W.B. C.S.A.H. 116

TRAFFIC



33+00 34+00 35+00 36+00 37+00 38+00 39+00 40+00 41+00 42+00 43+00 44+00 45+00

1 OF 5

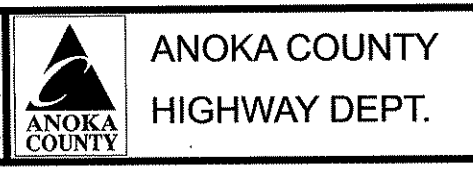
NO	DATE	BY	CKD	APPR	REVISION

NAME: p:\02-716-12\plan\0271612\_PS1.dgn  
08/28/2012 8:05:29 AM

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

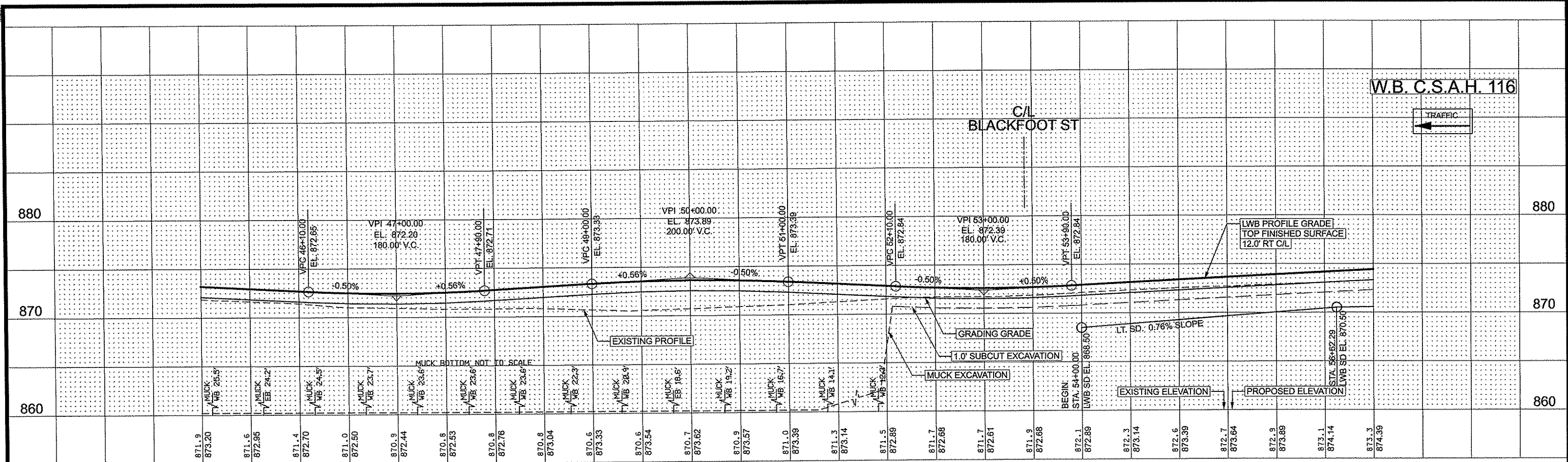
PRINT NAME: CURT A. KOBIARCSIK  
SIGNATURE: *Curt A. Kobiarcsik*  
DATE: 6.29.12 LICENSE NO. 24756

DRAWN BY: MN DATE DATE  
DESIGN BY: MN DATE DATE  
CHECKED BY: CAK DATE DATE



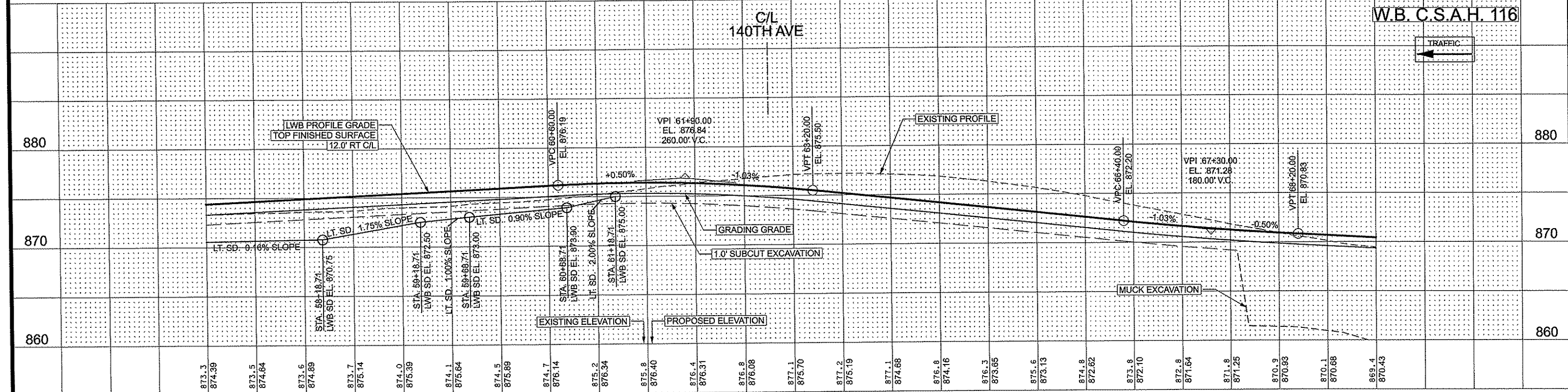
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S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

PROFILE  
WEST BOUND CSAH 116  
STA 21+00.00 TO 45+00.00  
Sheet 93 of 282 Sheets



871.9 873.20 871.6 872.95 871.4 872.70 871.0 872.50 870.8 872.44 870.8 872.53 870.8 872.76 870.8 873.04 870.6 873.33 870.5 873.54 870.7 873.62 870.9 873.57 871.0 873.39 871.3 873.14 871.5 872.89 871.7 872.68 871.7 872.61 871.9 872.68 872.1 872.89 872.3 873.14 872.6 873.39 872.7 873.64 872.9 873.89 873.1 874.14 873.3 874.39

45+00 46+00 47+00 48+00 49+00 50+00 51+00 52+00 53+00 54+00 55+00 56+00 57+00



873.3 874.39 873.5 874.64 873.6 874.89 873.7 875.14 874.0 875.39 874.1 875.64 874.5 875.89 874.7 876.14 875.2 876.34 875.8 876.40 876.4 876.31 876.8 876.08 877.1 875.70 877.2 875.19 877.1 874.68 876.8 874.16 876.3 873.65 875.6 873.13 874.8 872.62 873.8 872.10 872.8 871.64 871.8 871.25 870.9 870.93 870.1 870.68 869.4 870.43

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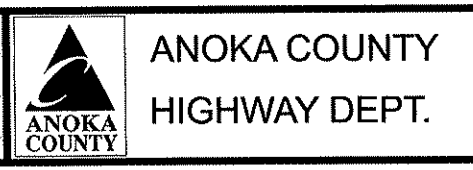
NO	DATE	BY	CKD	APPR	REVISION

NAME: p:\02-716-12\plan\0271612\_PS1.dgn 06/28/2012 8:05:31 AM

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

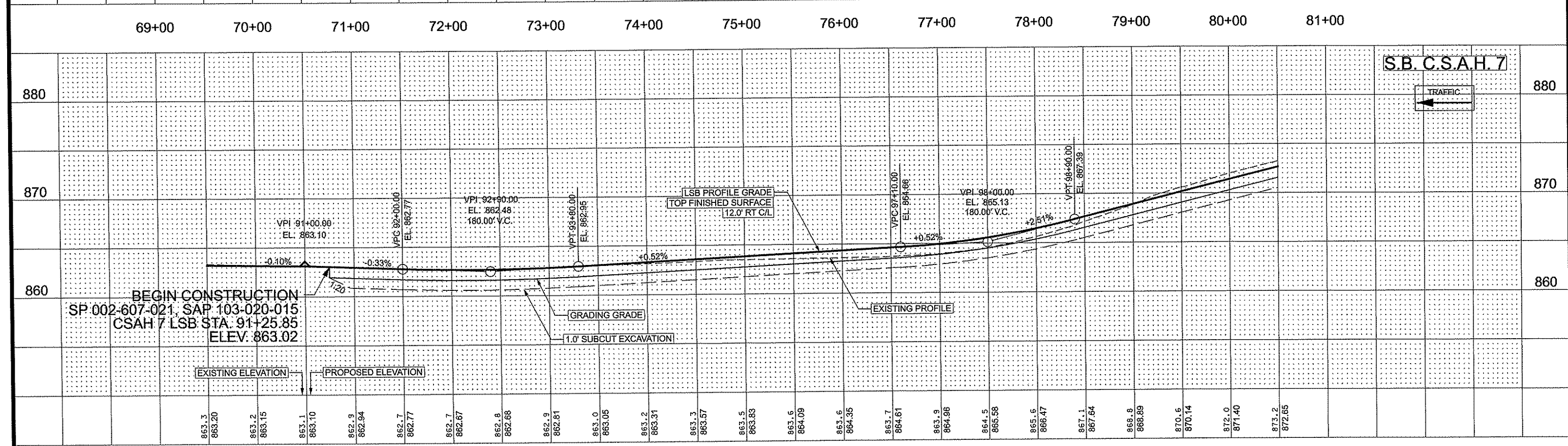
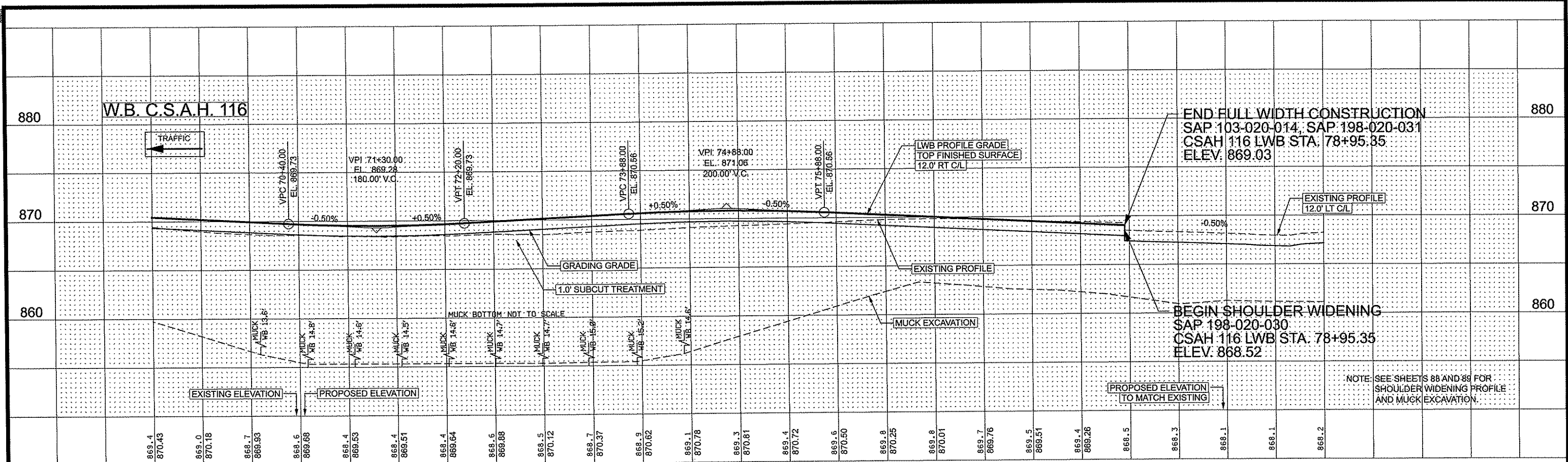
PRINT NAME: CURT A. KOBIARCSIK  
 SIGNATURE: *Curt A. Kobilarcsik*  
 DATE: 6-29-12 LICENSE NO. 24756

DRAWN BY: MN DATE: DATE  
 DESIGN BY: MN DATE: DATE  
 CHECKED BY: CAK DATE: DATE



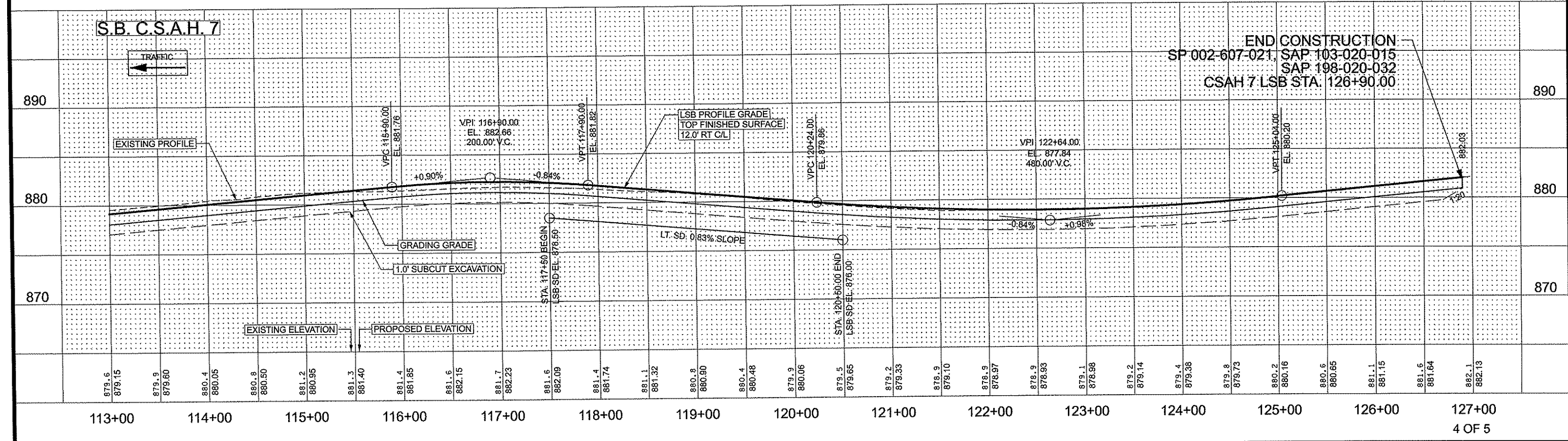
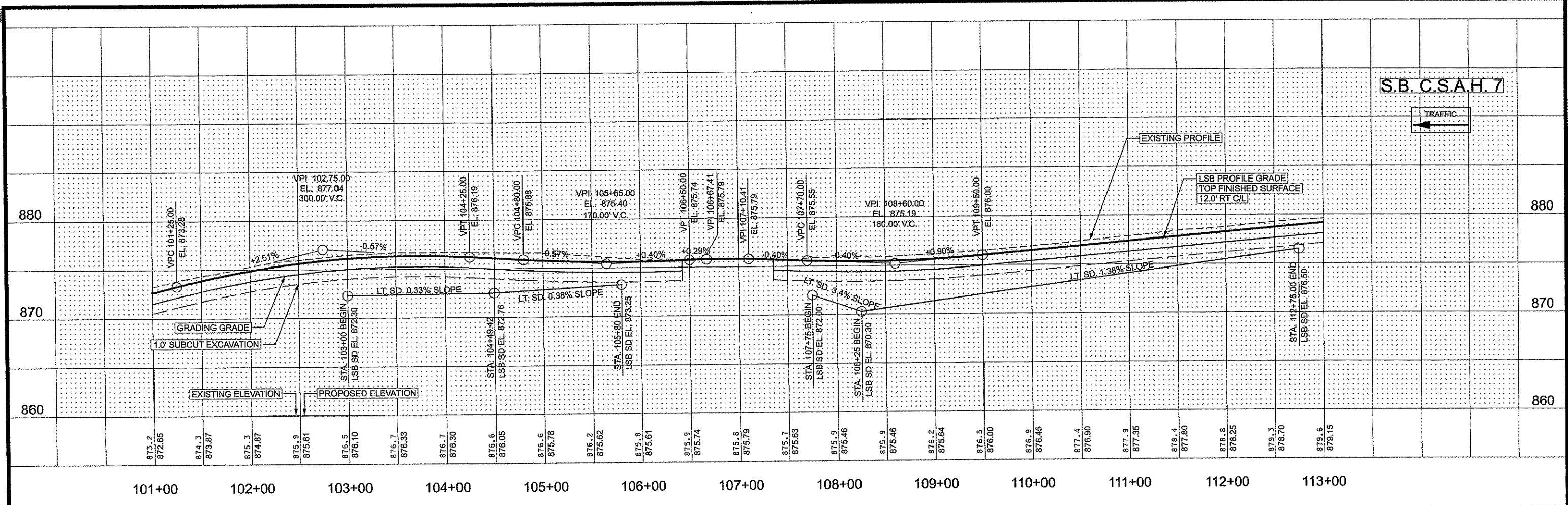
S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

PROFILE  
 WEST BOUND CSAH 116  
 STA 45+00.00 TO 69+00.00  
 Sheet 94 of 282 Sheets




3 OF 5

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA. PRINT NAME: CURT A. KOBILARCSIK SIGNATURE: <i>Curt Kobilarcsik</i> DATE: 6-29-12 LICENSE NO. 24756					DRAWN BY: MN DATE DATE DESIGN BY: MN DATE DATE CHECKED BY: CAK DATE DATE		<p><b>ANOKA COUNTY HIGHWAY DEPT.</b></p>	S.P. 002-716-012 S.P. 198-020-031 S.P. 103-020-014	S.P. 198-020-030 S.P. 198-020-032 S.P. 103-020-015	S.P. 002-607-021 S.P. 198-020-032 S.P. 103-020-015	<b>PROFILE</b> WB CSAH 116 & SB CSAH 7 STA 21+00.00 TO 45+00.00 Sheet 95 of 282 Sheets
NO DATE BY CKD APPR REVISION NAME: p:\02-716-12\plan\0271612_PS1.dgn 08/28/2012 8:05:34 AM											

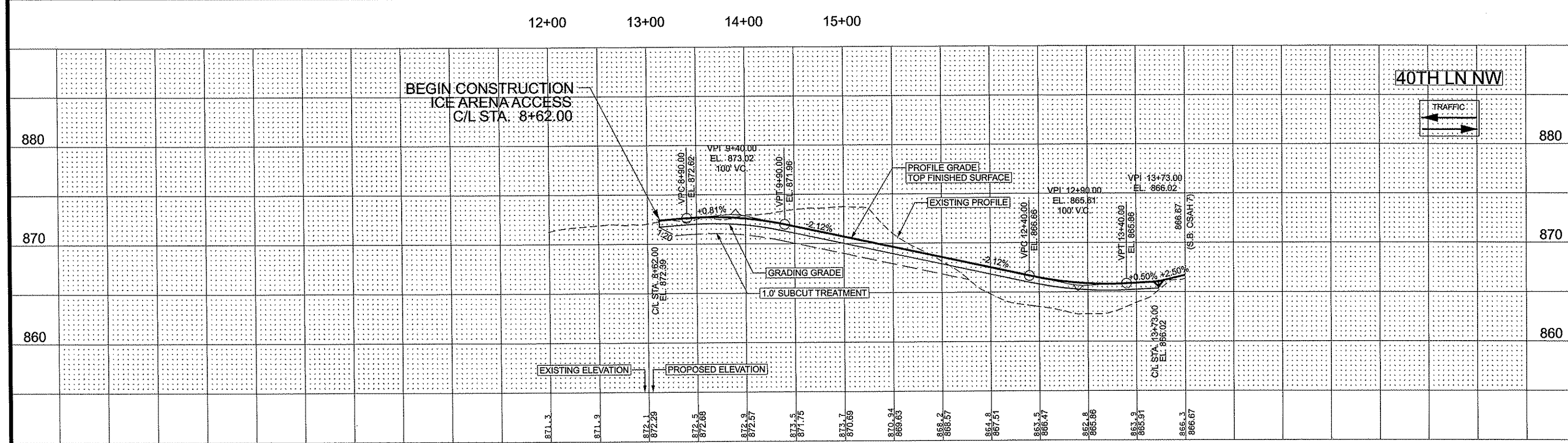
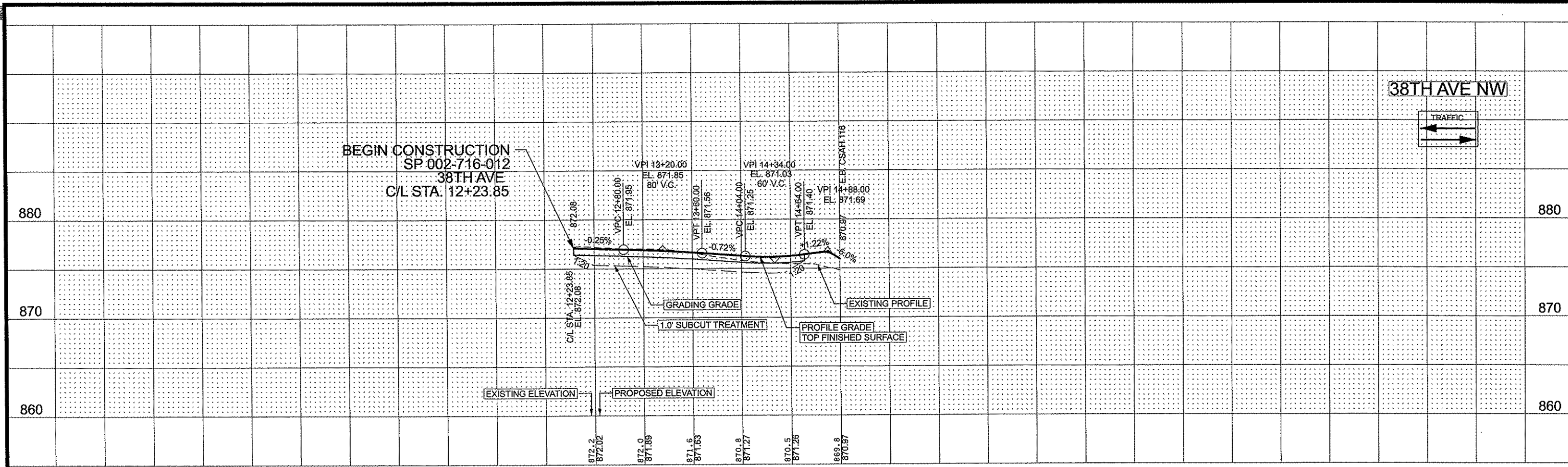


4 OF 5

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA. PRINT NAME: CURT A. KOBLARCSIK SIGNATURE: <i>Curt A. Koblarcsik</i> DATE: 6-29-12 LICENSE NO. 24756	DRAWN BY: MN DATE DATE DESIGN BY: MN DATE DATE CHECKED BY: CAK DATE DATE	 <b>ANOKA COUNTY HIGHWAY DEPT.</b>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>S.P. 002-716-012</td> <td>S.P. 198-020-030</td> <td>S.P. 002-607-021</td> </tr> <tr> <td>S.P. 198-020-031</td> <td></td> <td>S.P. 198-020-032</td> </tr> <tr> <td>S.P. 103-020-014</td> <td></td> <td>S.P. 103-020-015</td> </tr> </table> <p style="text-align: center;">PROFILE SOUTH BOUND CSAH 7 STA 21+00.00 TO 45+00.00</p> <p style="text-align: center;">Sheet 96 of 282 Sheets</p>	S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021	S.P. 198-020-031		S.P. 198-020-032	S.P. 103-020-014		S.P. 103-020-015
S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021										
S.P. 198-020-031		S.P. 198-020-032										
S.P. 103-020-014		S.P. 103-020-015										

NAME: p:\02-716-12\plan\0271612\_PS1.dgn 06/28/2012 8:05:39 AM





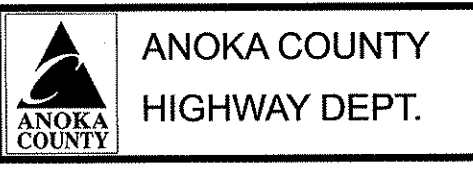
NO	DATE	BY	CKD	APPR	REVISION

NAME: p:\02-716-12\plan\0271612\_PS1.dgn      06/28/2012      8:05:37 AM

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

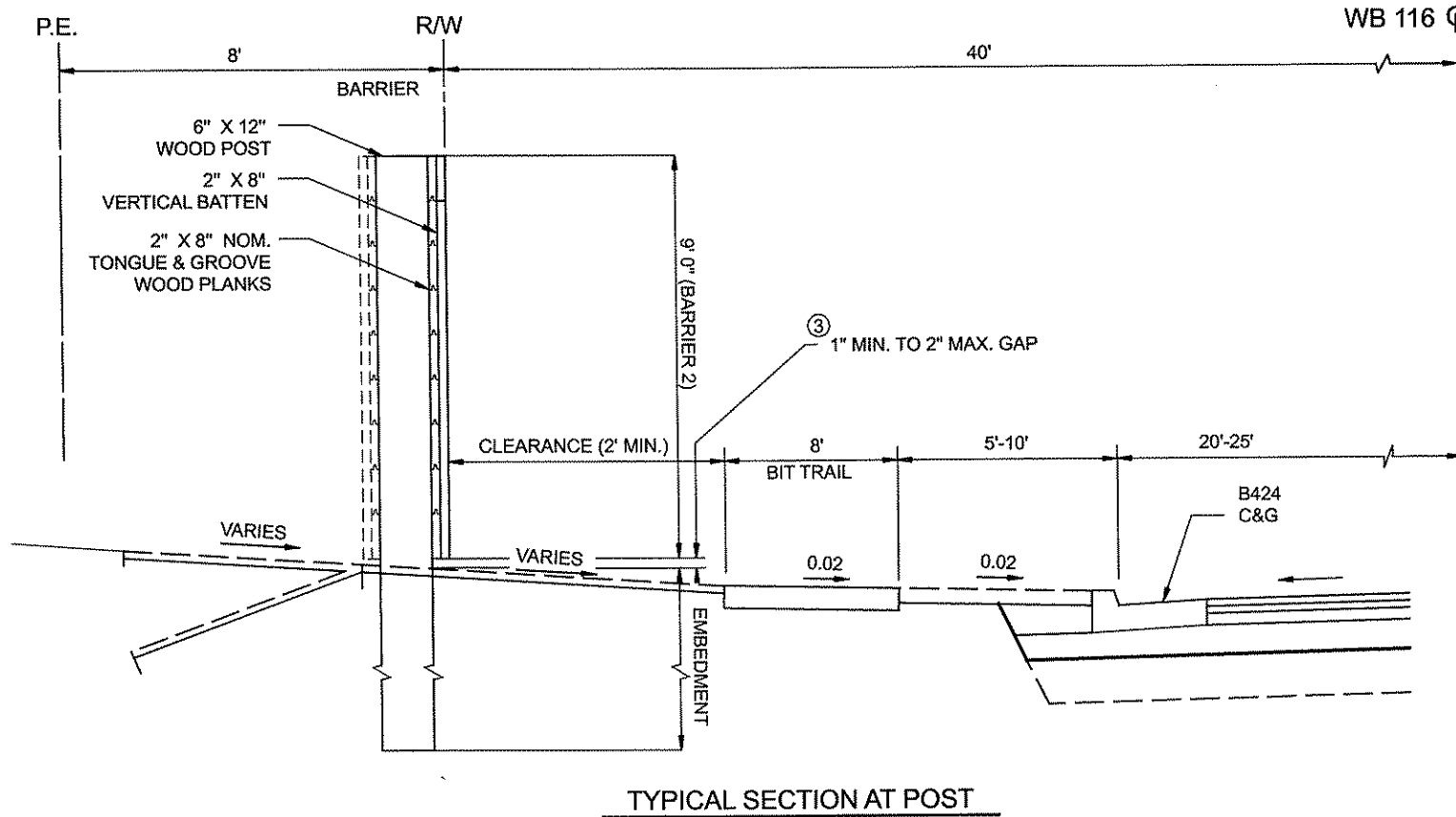
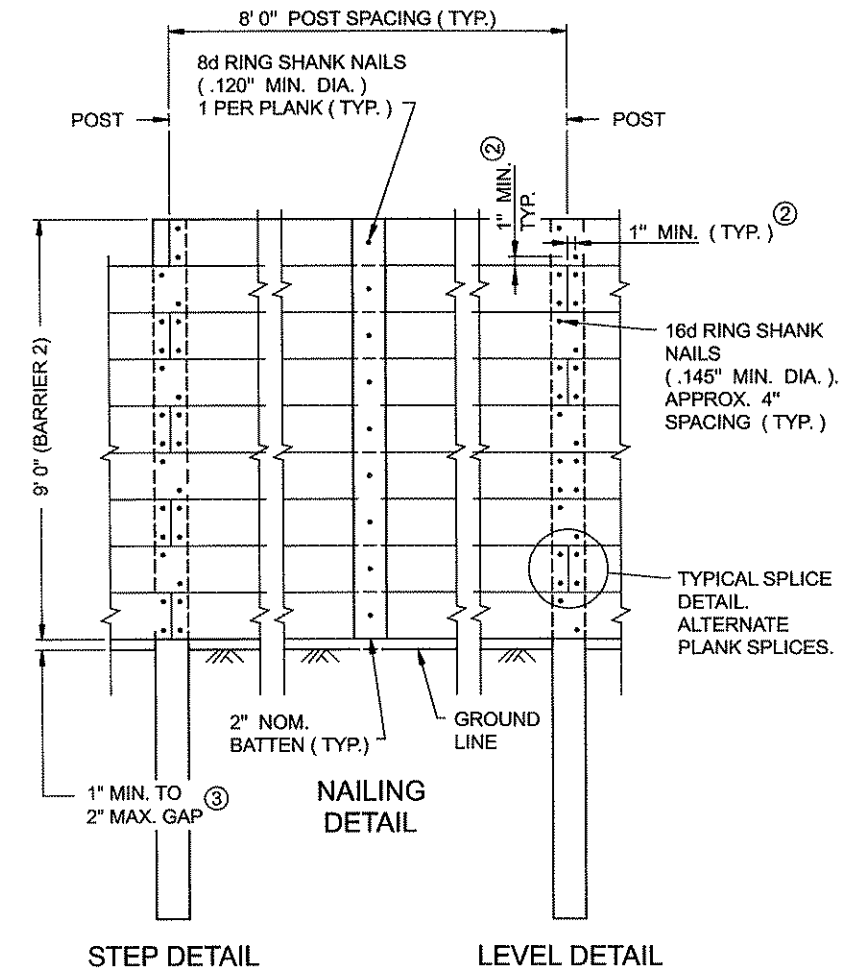
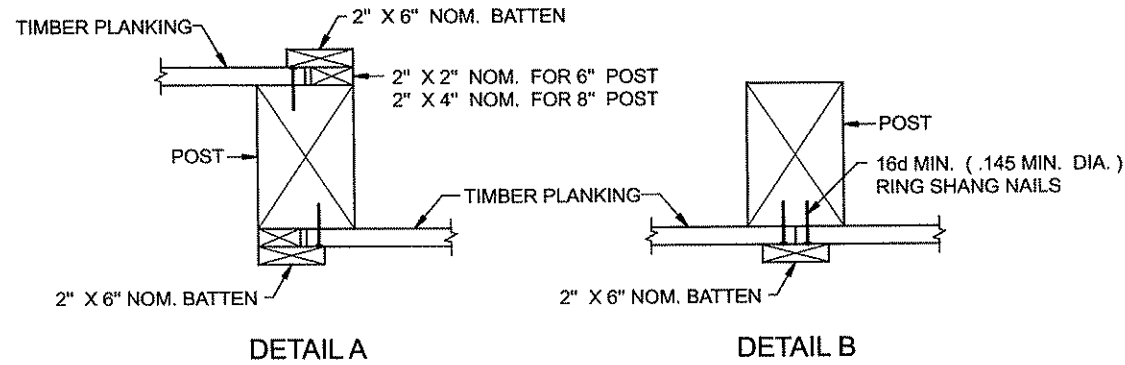
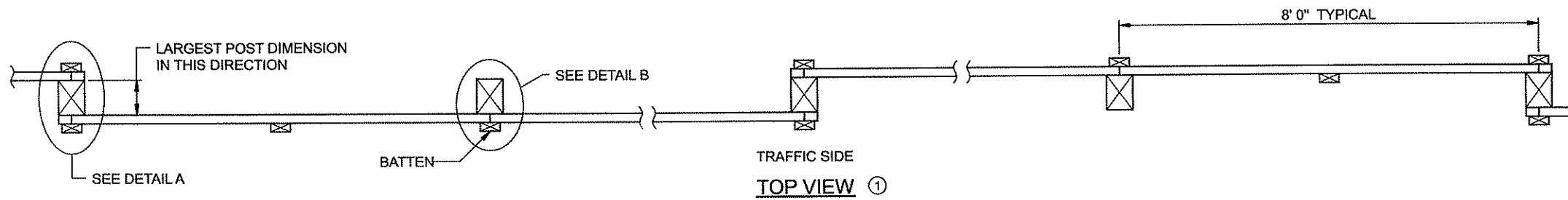
PRINT NAME: CURT A. KOBILARCSIK  
 SIGNATURE: *Curt Kobilarcsik*  
 DATE: 6-29-12      LICENSE NO. 24758

DRAWN BY: MN      DATE: 05/15/2012  
 DESIGN BY: MN      DATE: 12/01/2010  
 CHECKED BY: CAK      DATE: 05/29/2012



S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

9' NOISE BARRIER 2 DETAIL  
W.B. STA. 57+60 TO 62+39.00



FRONT ELEVATION  
POST BATTENS NOT SHOWN

NOTES:

- EMBEDMENT LENGTH IS BASED ON THE WATER TABLE BEING BELOW THE EMBEDMENT DEPTH. OTHER CONDITIONS REQUIRE A SPECIAL DESIGN.
  - SOIL TREATMENT AND BACKFILL SHALL CONFORM TO SPEC. 2451.
  - GALVANIZE NAILS PER SPEC. 3392. NAILING REQUIREMENTS SHOWN ARE BASED ON FULL HEAD NAILS AND ENTIRE LENGTH OF SHANK BEING DEFORMED. SEE SPECIAL PROVISIONS FOR POWER NAIL ALTERNATE.
  - SEE SPEC. 2554 FOR ADDITIONAL CONST. INFORMATION, UNLESS OTHERWISE NOTED.
  - POSTS SHALL BE STANDARD ROUGH SAWN DIMENSIONS AS SHOWN
- ① 48" BETWEEN PLANKING SIDE REVERSALS.  
② 1" MIN. DISTANCE FROM EDGE OR END OF PLANK.  
③ ALLOW DRAINAGE TO FLOW UNDER BARRIER.

DESIGN CRITERIA:

$\phi = 30^\circ$  ( GRANULAR )  
WIND LOAD = 23 P.S.F.  
 $f_b = 4000$  P.S.I. CONCRETE POSTS.  
 $f_b = 1400$  P.S.I. WOOD PLANKING.  
 $f_b = 1200$  P.S.I. ALL OTHER WOOD MEMBERS.  
STRESS LEVEL SYMBOL  
PER AITC-117-(LATEST ADDITION):  
24F = 2400 PSI ALLOWABLE BENDING STRESS  
20F = 2000 PSI ALLOWABLE BENDING STRESS

NO	DATE	BY	CKD	APPR	REVISION

NAME: p:\02-716-12\plan\0271612\_NW2.dgn  
06/28/2012 8:05:42 AM

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

PRINT NAME: CURT A. KOBIARCSIK  
SIGNATURE: *Curt A. Kobiarcsik*  
DATE: 6-29-12 LICENSE NO. 24756

DRAWN BY: MN DATE: 06/28/2012  
DESIGN BY: MN DATE: 06/28/2012  
CHECKED BY: CAK DATE: 06/28/2012



ANOKA COUNTY  
HIGHWAY DEPT.

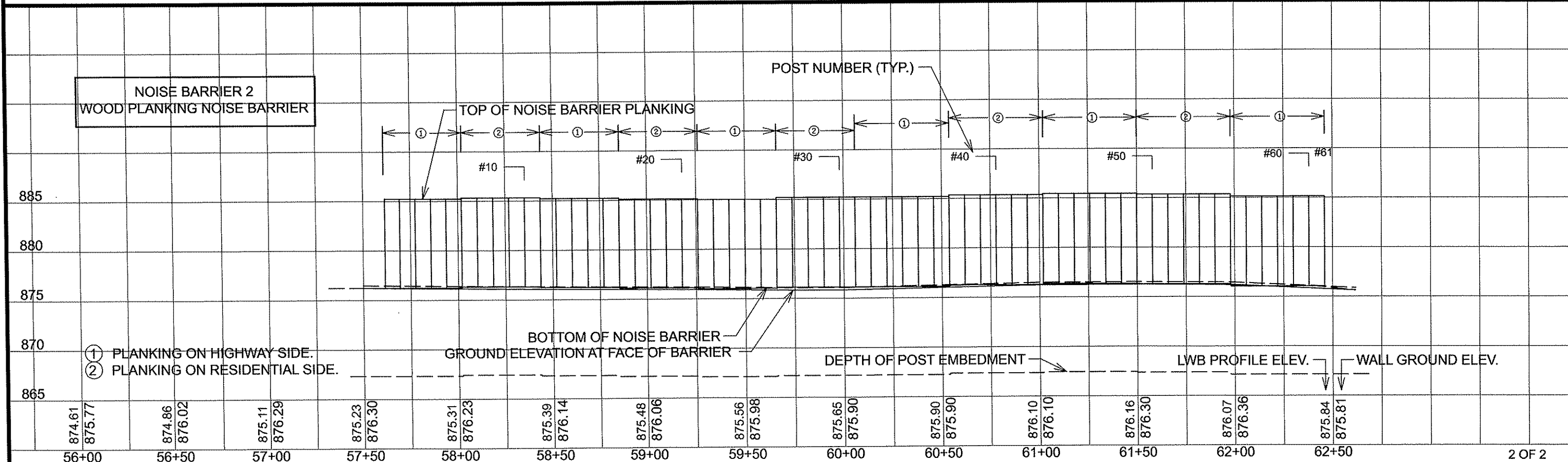
S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

DETAIL  
NOISE BARRIER PLANS  
Sheet 98 of 282 Sheets

WOOD NOISE BARRIER 2							
POST NO.	WALL STA.	GROUND	PLANKING		POST LENGTH	EMBED.	
			TOP	AREA		ACTUAL POST	POST BOTTOM
ALI	LIN FT	ELEV.	ELEV.	SQ FT	LN FT	LN FT	ELEV
1	57+60.32	876.30	885.42	72.00	18	8.88	867.42
2	57+68.10	876.30	885.42	72.00	18	8.88	867.42
3	57+75.88	876.30	885.42	72.00	18	8.88	867.42
4	57+83.66	876.30	885.42	72.00	18	8.88	867.42
5	57+91.44	876.30	885.42	72.00	18	8.88	867.42
6	57+99.22	876.20	885.32	72.00	18	8.88	867.32
7	58+07.00	876.20	885.32	72.00	18	8.88	867.32
8	58+15.00	876.20	885.32	72.00	18	8.88	867.32
9	58+23.00	876.20	885.32	72.00	18	8.88	867.32
10	58+31.00	876.20	885.32	72.00	18	8.88	867.32
11	58+39.00	876.25	885.37	72.00	18	8.88	867.37
12	58+47.00	876.25	885.37	72.00	18	8.88	867.37
13	58+55.00	876.25	885.37	72.00	18	8.88	867.37
14	58+63.00	876.25	885.37	72.00	18	8.88	867.37
15	58+71.00	876.25	885.37	72.00	18	8.88	867.37
16	58+79.00	876.10	885.22	72.00	18	8.88	867.22
17	58+87.00	876.10	885.22	72.00	18	8.88	867.22
18	58+95.00	876.10	885.22	72.00	18	8.88	867.22
19	59+03.00	876.10	885.22	72.00	18	8.88	867.22
20	59+11.00	876.10	885.22	72.00	18	8.88	867.22
21	59+19.00	876.05	885.17	72.00	18	8.88	867.42

WOOD NOISE BARRIER 2							
POST NO.	WALL STA.	GROUND	PLANKING		POST LENGTH	EMBED.	
			TOP	AREA		ACTUAL POST	POST BOTTOM
ALI	LIN FT	ELEV.	ELEV.	SQ FT	LN FT	LN FT	ELEV
22	59+27.00	876.05	885.17	72.00	18	8.88	867.17
23	59+35.00	876.05	885.17	72.00	18	8.88	867.17
24	59+43.00	876.05	885.17	72.00	18	8.88	867.17
25	59+51.00	876.05	885.17	72.00	18	8.88	867.17
26	59+59.00	875.90	885.02	72.00	18	8.88	867.02
27	59+67.00	875.90	885.02	72.00	18	8.88	867.02
28	59+75.00	875.90	885.02	72.00	18	8.88	867.02
29	59+83.00	875.90	885.02	72.00	18	8.88	867.02
30	59+91.00	875.90	885.02	72.00	18	8.88	867.02
31	59+99.00	875.90	885.02	72.00	18	8.88	867.02
32	60+07.00	875.90	885.02	72.00	18	8.88	867.02
33	60+15.00	875.90	885.02	72.00	18	8.88	867.02
34	60+23.00	875.90	885.02	72.00	18	8.88	867.02
35	60+31.00	875.90	885.02	72.00	18	8.88	867.02
36	60+39.00	875.90	885.02	72.00	18	8.88	867.02
37	60+47.00	876.15	885.27	72.00	18	8.88	867.27
38	60+55.00	876.15	885.27	72.00	18	8.88	867.27
39	60+63.00	876.15	885.27	72.00	18	8.88	867.27
40	60+71.00	876.15	885.27	72.00	18	8.88	867.27
41	60+79.00	876.15	885.27	72.00	18	8.88	867.27
42	60+87.00	876.15	885.27	72.00	18	8.88	867.27

WOOD NOISE BARRIER 2							
POST NO.	WALL STA.	GROUND	PLANKING		POST LENGTH	EMBED.	
			TOP	AREA		ACTUAL POST	POST BOTTOM
ALI	LIN FT	ELEV.	ELEV.	SQ FT	LN FT	LN FT	ELEV
43	60+95.00	876.30	885.42	72.00	18	8.88	867.42
44	61+03.00	876.30	885.42	72.00	18	8.88	867.42
45	61+11.00	876.30	885.42	72.00	18	8.88	867.42
46	61+19.00	876.30	885.42	72.00	18	8.88	867.42
47	61+27.00	876.30	885.42	72.00	18	8.88	867.42
48	61+35.00	876.30	885.42	72.00	18	8.88	867.42
49	61+43.00	876.40	885.52	72.00	18	8.88	867.52
50	61+51.00	876.40	885.52	72.00	18	8.88	867.52
51	61+59.00	876.40	885.52	72.00	18	8.88	867.52
52	61+67.00	876.40	885.52	72.00	18	8.88	867.52
53	61+75.00	876.40	885.52	72.00	18	8.88	867.52
54	61+83.00	876.40	885.52	72.00	18	8.88	867.52
55	61+91.00	876.20	885.32	72.00	18	8.88	867.32
56	61+99.00	876.20	885.32	72.00	18	8.88	867.32
57	62+07.00	876.20	885.32	72.00	18	8.88	867.32
58	62+15.00	876.20	885.32	72.00	18	8.88	867.32
59	62+23.00	876.20	885.32	72.00	18	8.88	867.32
60	62+31.00	876.20	885.32	72.00	18	8.88	867.32
61	62+39.00	876.20	885.12		18	8.88	867.32
61	TOTAL			4320	1080		



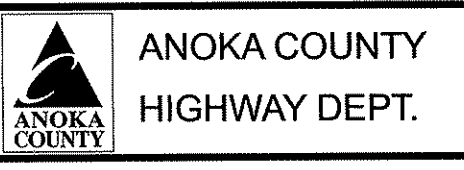
NO	DATE	BY	CKD	APPR	REVISION

NAME: p:\02-716-12\plan\0271612\_NW2.dgn  
06/28/2012 8:05:43 AM

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

PRINT NAME: CURT A. KOBIARCSIK  
SIGNATURE: *[Signature]*  
DATE: 6-28-12 LICENSE NO. 24766

DRAWN BY: MN DATE 06/28/2012  
DESIGN BY: MN DATE 06/28/2012  
CHECKED BY: CAK DATE 06/28/2012



S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

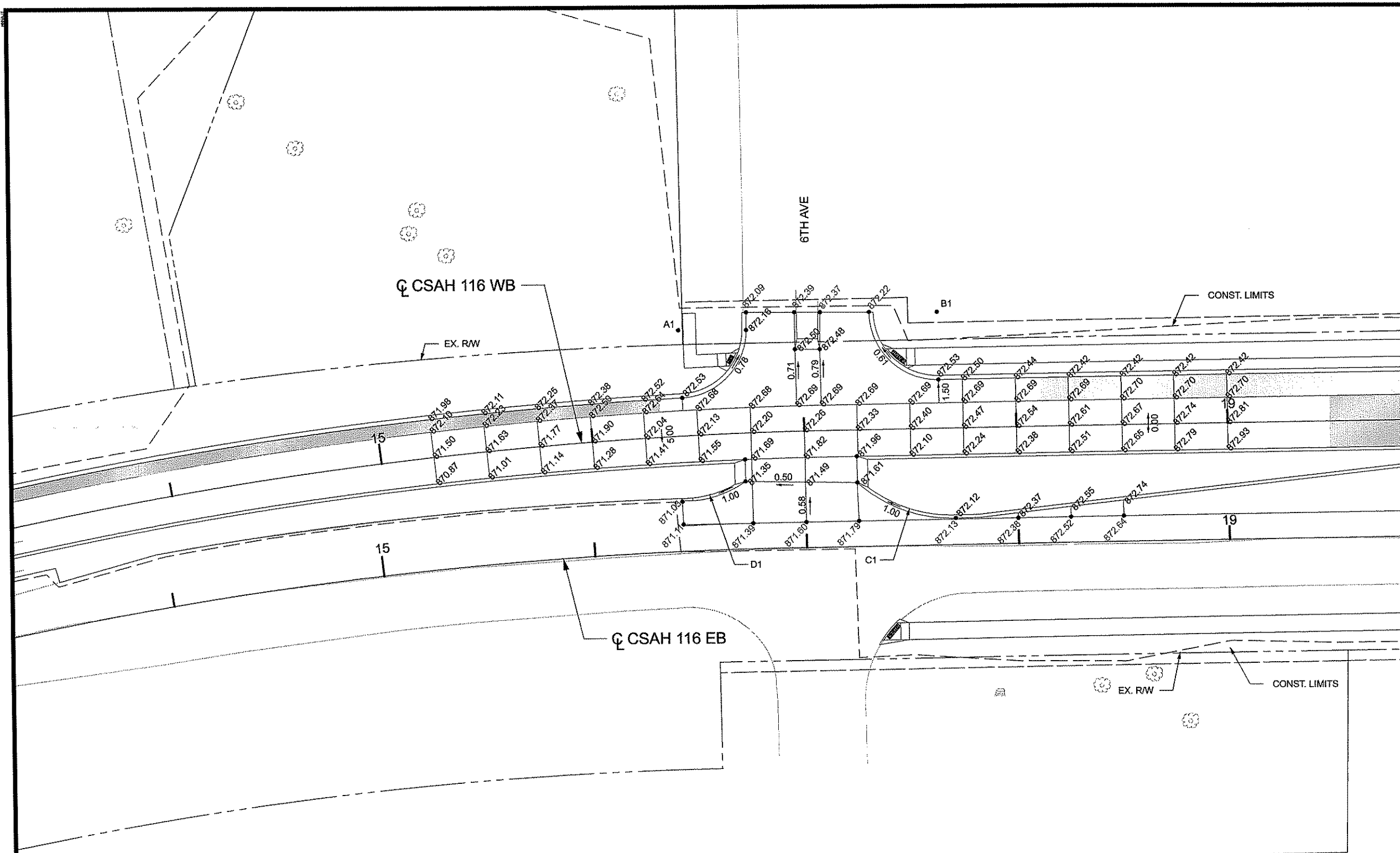
NOISE BARRIER 2  
CSAH 116  
STA 57+60.00 TO 62+39.00  
Sheet 99 of 282 Sheets

**LEGEND**

- 999.99 EXISTING SPOT ELEVATION
- 999.99 PROPOSED SPOT ELEVATION
- 2.00 PROPOSED LANE SLOPE (%)
- ← 2.00% CROSS SLOPE
- ← 2.50% CROSS SLOPE

**NOTES**

- SEE CONSTRUCTION PLAN SHEETS 82 - 97 FOR LONGITUDINAL PROFILE
- SEE SUPERELEVATION PLAN SHEETS 105- 110 FOR MAINLINE TRANSITIONS
- ELEVATIONS TAKEN AT EVEN STATIONS AT 25.0' INCREMENTS UNLESS OTHERWISE NOTED
- EB / NB INCREMENTS BASED ON EB / NB ALIGNMENT
- WB / SB INCREMENTS BASED ON WB / SB ALIGNMENT



CSAH 116 / 6TH AVE					
POINT	ALIGNMENT	STATION	LOCATION	RADIUS	DESCRIPTION
A1	116 WB	16+43.49	50.00' LT	30'	RADIUS POINT
B1	116 WB	17+63.79	55.00' LT	30'	RADIUS POINT
C1	116 EB	17+69.52	79.00' LT	65'	RADIUS POINT
D1	116 EB	16+44.31	75.65' LT	50.8'	RADIUS POINT

NO	DATE	BY	CKD	APPR	REVISION

NAME: p:\02-716-12\plan\0271612\_in-1.dgn      06/28/2012      8:19:46 AM

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

PRINT NAME: CURT A. KOBILARCSIK

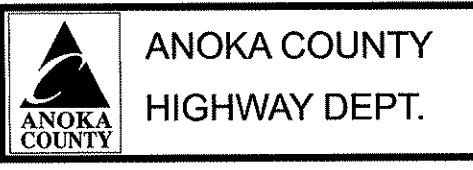
SIGNATURE: *Curt Kobilarcsik*

DATE: 6-29-12      LICENSE NO. 24756

DRAWN BY: MN      DATE 05/15/2012

DESIGN BY: MN      DATE 12/01/2010

CHECKED BY: CAK      DATE 05/29/2012



S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

**LEGEND**

- 999.99 EXISTING SPOT ELEVATION
- 999.99 PROPOSED SPOT ELEVATION
- 2.00 PROPOSED LANE SLOPE (%)
- 2.00% CROSS SLOPE
- 2.50% CROSS SLOPE

**NOTES**

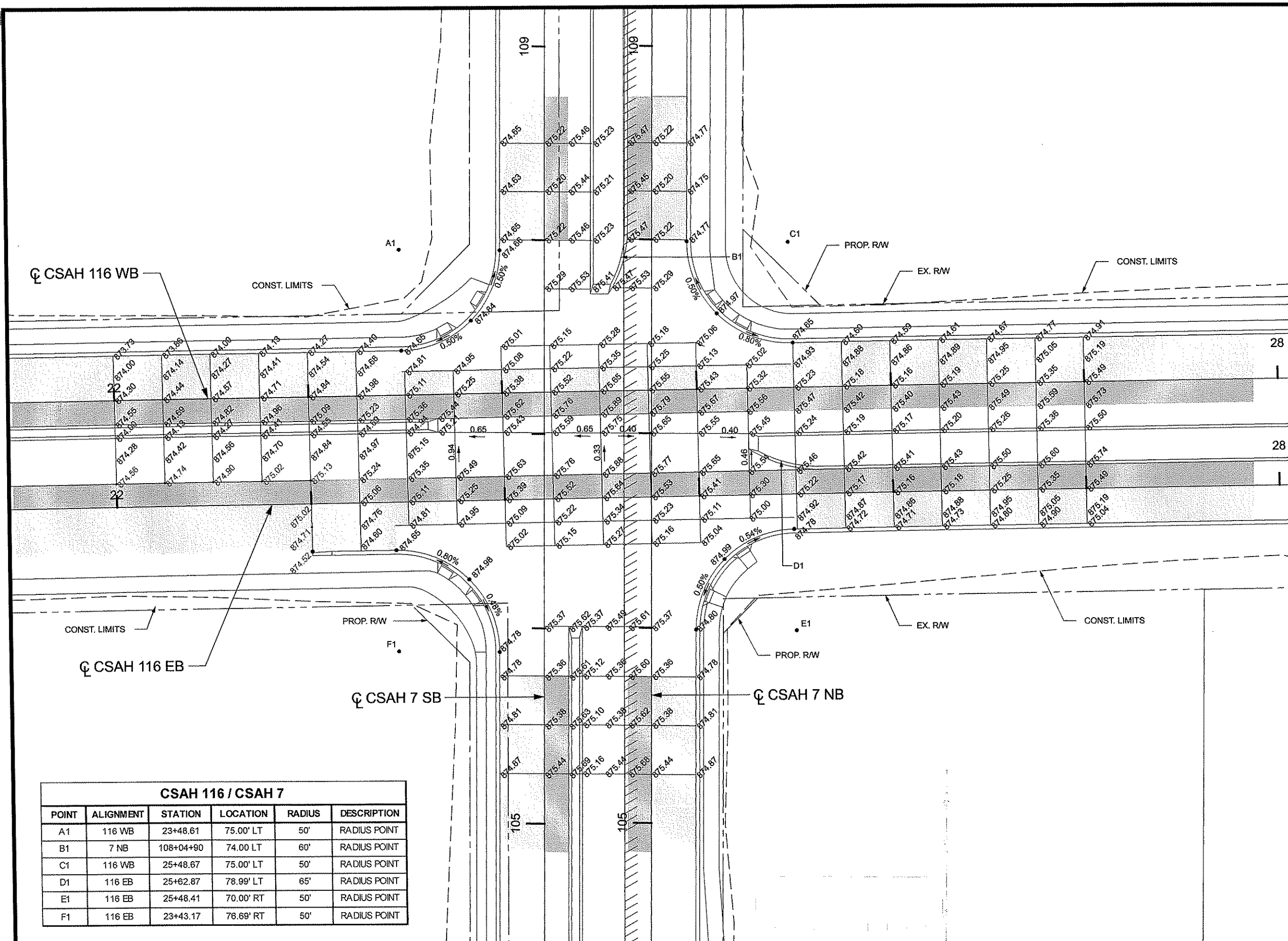
SEE CONSTRUCTION PLAN SHEETS 82 - 97 FOR LONGITUDINAL PROFILE

SEE SUPERELEVATION PLAN SHEETS 105- 110 FOR MAINLINE TRANSITIONS

ELEVATIONS TAKEN AT EVEN STATIONS AT 25.0' INCREMENTS UNLESS OTHERWISE NOTED

EB / NB INCREMENTS BASED ON EB / NB ALIGNMENT

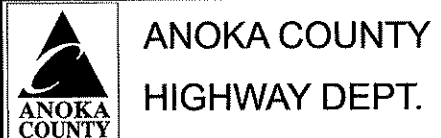
WB / SB INCREMENTS BASED ON WB / SB ALIGNMENT



CSAH 116 / CSAH 7					
POINT	ALIGNMENT	STATION	LOCATION	RADIUS	DESCRIPTION
A1	116 WB	23+48.61	75.00' LT	50'	RADIUS POINT
B1	7 NB	108+04+90	74.00 LT	60'	RADIUS POINT
C1	116 WB	25+48.67	75.00' LT	50'	RADIUS POINT
D1	116 EB	25+62.87	78.99' LT	65'	RADIUS POINT
E1	116 EB	25+48.41	70.00' RT	50'	RADIUS POINT
F1	116 EB	23+43.17	76.69' RT	50'	RADIUS POINT

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.  
 PRINT NAME: CURT A. KOBILARCSIK  
 SIGNATURE: *Curt Kobilarcsik*  
 DATE: 6-29-12 LICENSE NO. 24758

DRAWN BY: MN DATE: DATE  
 DESIGN BY: MN DATE: DATE  
 CHECKED BY: CAK DATE: DATE





S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

CSAH 116 / BLACKFOOT STREET					
POINT	ALIGNMENT	STATION	LOCATION	RADIUS	DESCRIPTION
A1	116 WB	52+95.68	50.00' LT	30'	RADIUS POINT
B1	116 WB	53+90.67	55.00' LT	30'	RADIUS POINT

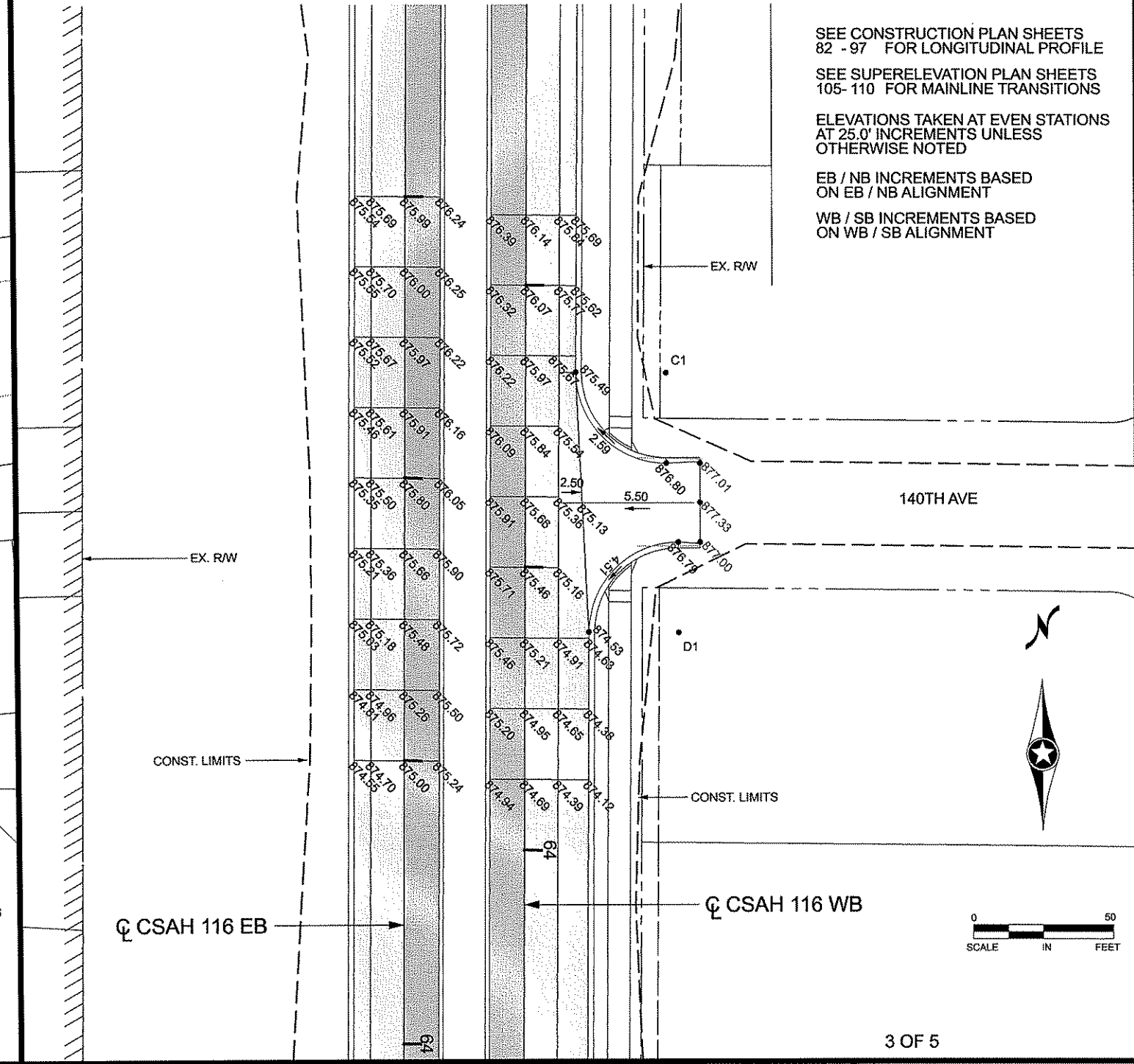
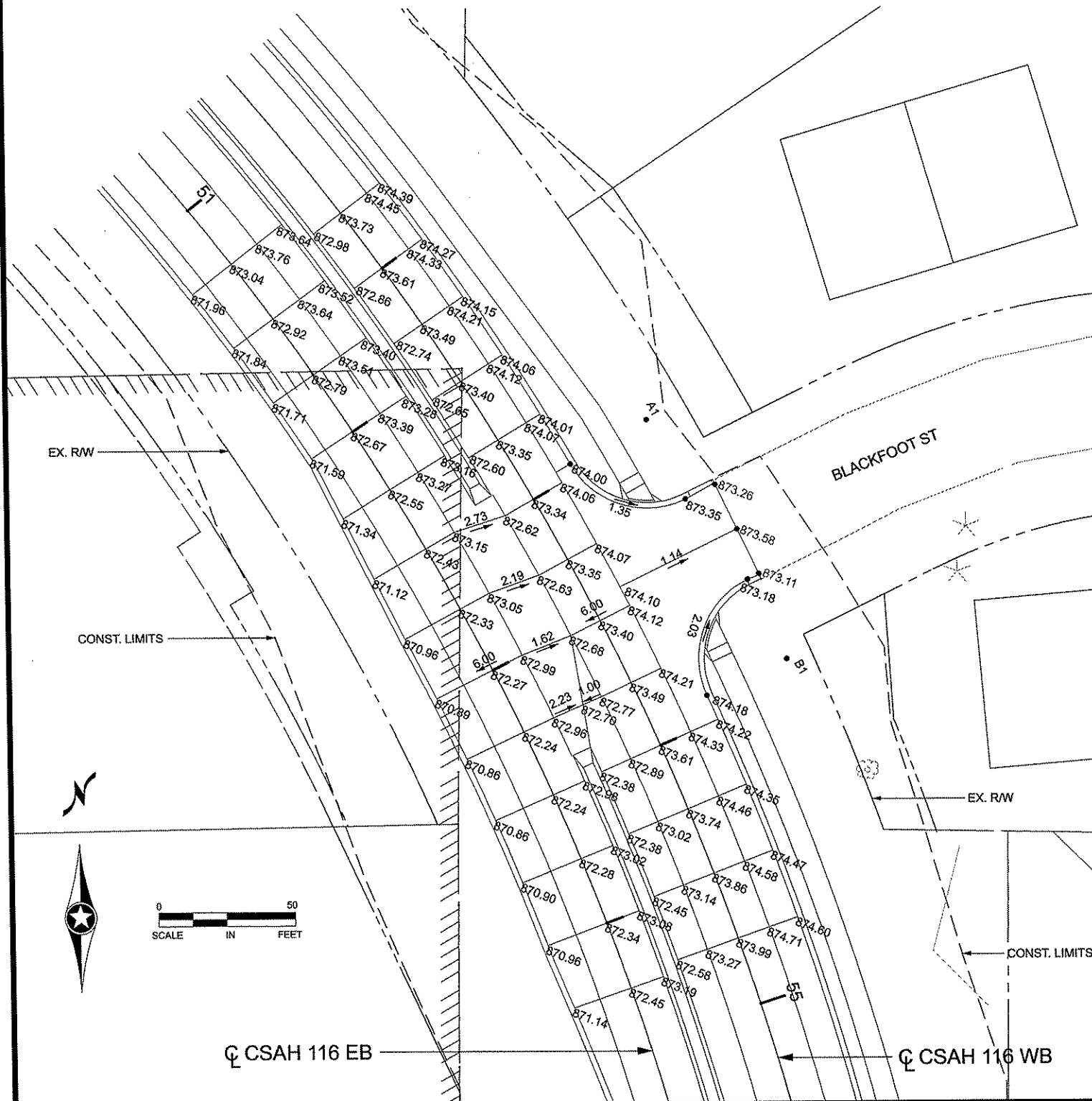
CSAH 116 / 140TH AVE					
POINT	ALIGNMENT	STATION	LOCATION	RADIUS	DESCRIPTION
C1	116 WB	62+30.84	50.00' LT	30'	RADIUS POINT
D1	116 WB	63+22.80	55.00' LT	30'	RADIUS POINT

**LEGEND**

- 999.99 EXISTING SPOT ELEVATION
- 999.99 PROPOSED SPOT ELEVATION
- 2.00 PROPOSED LANE SLOPE (%)
-  2.00% CROSS SLOPE
-  2.50% CROSS SLOPE

**NOTES**

- SEE CONSTRUCTION PLAN SHEETS 82 - 97 FOR LONGITUDINAL PROFILE
- SEE SUPERELEVATION PLAN SHEETS 105- 110 FOR MAINLINE TRANSITIONS
- ELEVATIONS TAKEN AT EVEN STATIONS AT 25.0' INCREMENTS UNLESS OTHERWISE NOTED
- EB / NB INCREMENTS BASED ON EB / NB ALIGNMENT
- WB / SB INCREMENTS BASED ON WB / SB ALIGNMENT



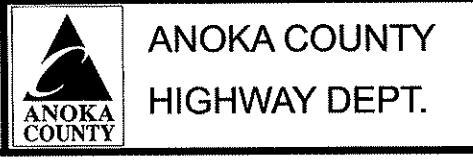
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06/28/2012 8:19:53 AM

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

PRINT NAME: CURT A. KOBILARCSIK  
SIGNATURE: *Curt Kobilarcsik*  
DATE: 6-29-12 LICENSE NO. 24756

DRAWN BY: MN DATE: DATE  
DESIGN BY: MN DATE: DATE  
CHECKED BY: CAK DATE: DATE



S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

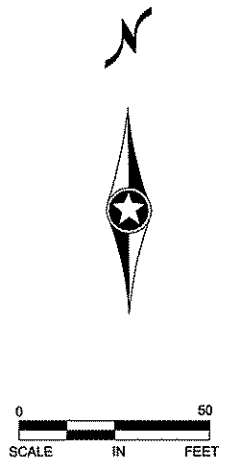
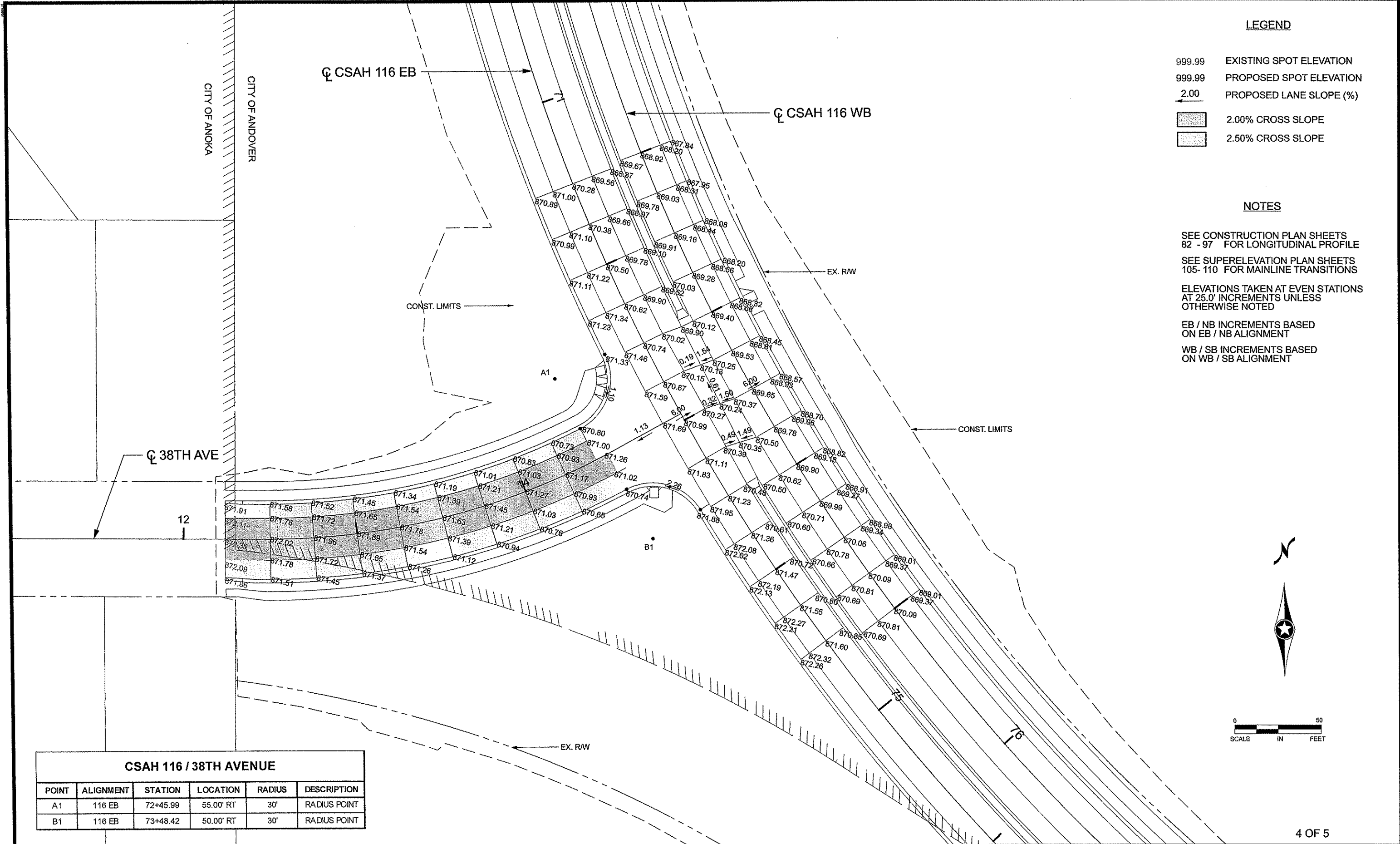
INTERSECTION DETAIL  
CSAH 116 AT BLACKFOOT ST  
CSAH 116 AT 140TH AVE  
Sheet 102 of 282 Sheets

**LEGEND**

- 999.99 EXISTING SPOT ELEVATION
- 999.99 PROPOSED SPOT ELEVATION
- 2.00 PROPOSED LANE SLOPE (%)
- 2.00% CROSS SLOPE
- 2.50% CROSS SLOPE

**NOTES**

SEE CONSTRUCTION PLAN SHEETS 82 - 97 FOR LONGITUDINAL PROFILE  
 SEE SUPERELEVATION PLAN SHEETS 105- 110 FOR MAINLINE TRANSITIONS  
 ELEVATIONS TAKEN AT EVEN STATIONS AT 25.0' INCREMENTS UNLESS OTHERWISE NOTED  
 EB / NB INCREMENTS BASED ON EB / NB ALIGNMENT  
 WB / SB INCREMENTS BASED ON WB / SB ALIGNMENT



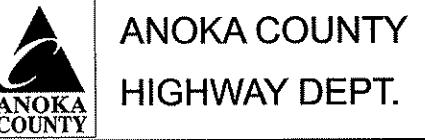
CSAH 116 / 38TH AVENUE					
POINT	ALIGNMENT	STATION	LOCATION	RADIUS	DESCRIPTION
A1	116 EB	72+45.99	55.00' RT	30'	RADIUS POINT
B1	116 EB	73+48.42	50.00' RT	30'	RADIUS POINT

NO	DATE	BY	CHKD	APPR	REVISION

NAME: p:\02-716-12\plan\0271612\_IN-4.dgn      08/28/2012      8:19:57 AM

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.  
 PRINT NAME: CURT A. KOBILARCSIK  
 SIGNATURE: *[Signature]*  
 DATE: 6-29-12      LICENSE NO. 24756



DRAWN BY: MN      DATE:      DATE:      DATE:  
 DESIGN BY: MN      DATE:      DATE:      DATE:  
 CHECKED BY: CAK      DATE:      DATE:      DATE:



S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

INTERSECTION DETAIL  
 CSAH 116 AT 38TH AVE  
 STA 71+00.00 TO 76+00.00  
 Sheet 103 of 282 Sheets

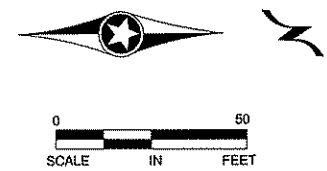
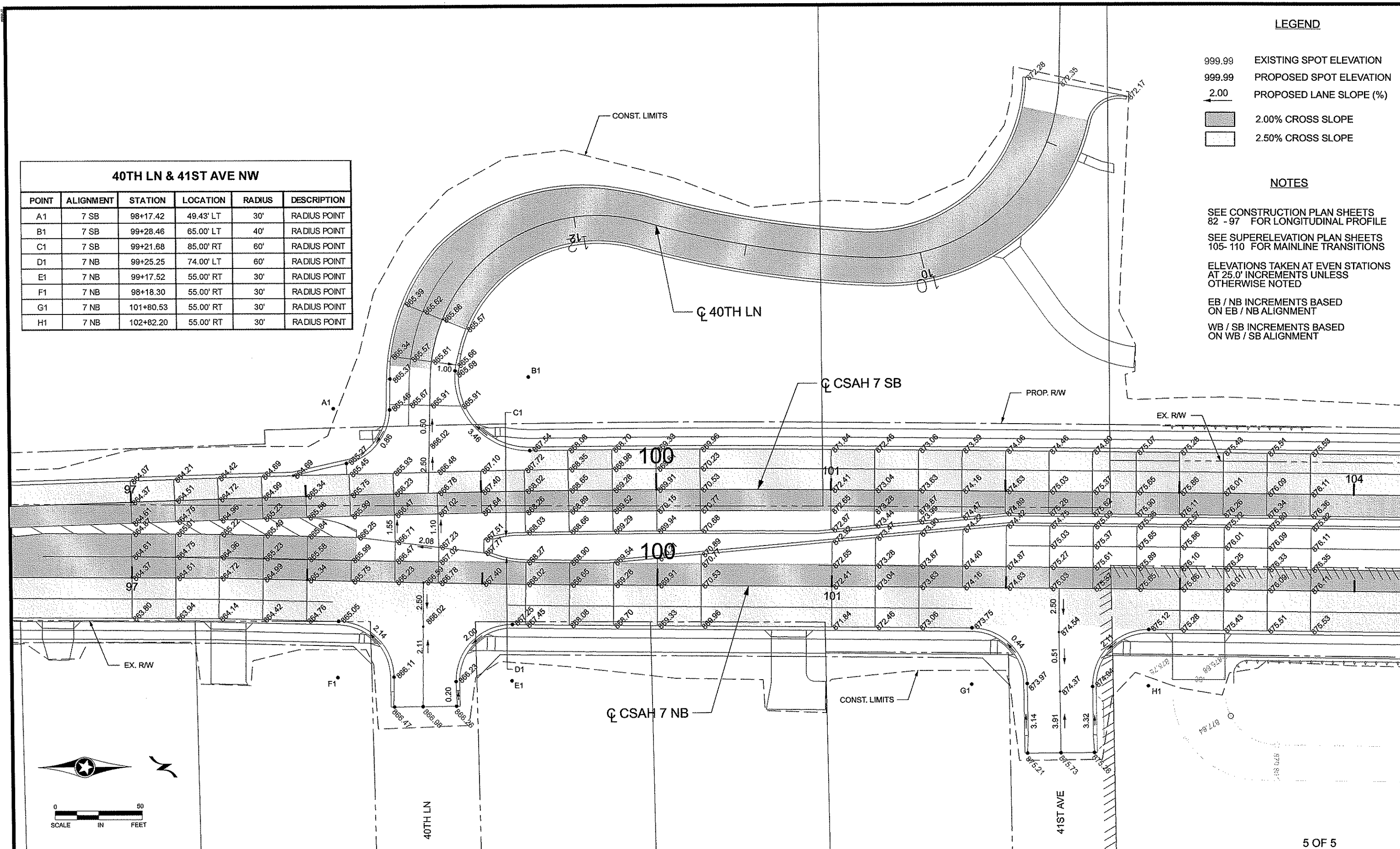
**LEGEND**

- 999.99 EXISTING SPOT ELEVATION
- 999.99 PROPOSED SPOT ELEVATION
- 2.00 PROPOSED LANE SLOPE (%)
-  2.00% CROSS SLOPE
-  2.50% CROSS SLOPE

**NOTES**

SEE CONSTRUCTION PLAN SHEETS 82 - 97 FOR LONGITUDINAL PROFILE  
 SEE SUPERELEVATION PLAN SHEETS 105- 110 FOR MAINLINE TRANSITIONS  
 ELEVATIONS TAKEN AT EVEN STATIONS AT 25.0' INCREMENTS UNLESS OTHERWISE NOTED  
 EB / NB INCREMENTS BASED ON EB / NB ALIGNMENT  
 WB / SB INCREMENTS BASED ON WB / SB ALIGNMENT

40TH LN & 41ST AVE NW					
POINT	ALIGNMENT	STATION	LOCATION	RADIUS	DESCRIPTION
A1	7 SB	98+17.42	49.43' LT	30'	RADIUS POINT
B1	7 SB	99+28.46	65.00' LT	40'	RADIUS POINT
C1	7 SB	99+21.68	85.00' RT	60'	RADIUS POINT
D1	7 NB	99+25.25	74.00' LT	60'	RADIUS POINT
E1	7 NB	99+17.52	55.00' RT	30'	RADIUS POINT
F1	7 NB	98+18.30	55.00' RT	30'	RADIUS POINT
G1	7 NB	101+80.53	55.00' RT	30'	RADIUS POINT
H1	7 NB	102+82.20	55.00' RT	30'	RADIUS POINT




NO	DATE	BY	CKD	APPR	REVISION

NAME: p:102-716-12\plan\0271612\_IN-5.dgn  
 06/28/2012 8:20:00 AM

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.  
 PRINT NAME: CURT A. KOBILARCSIK  
 SIGNATURE: *Curt A. Kobilarsik*  
 DATE: 6-29-12 LICENSE NO. 24756

DRAWN BY MN DATE 05/19/2012  
 DESIGN BY MN DATE 12/01/2010  
 CHECKED BY CAK DATE 05/29/2012

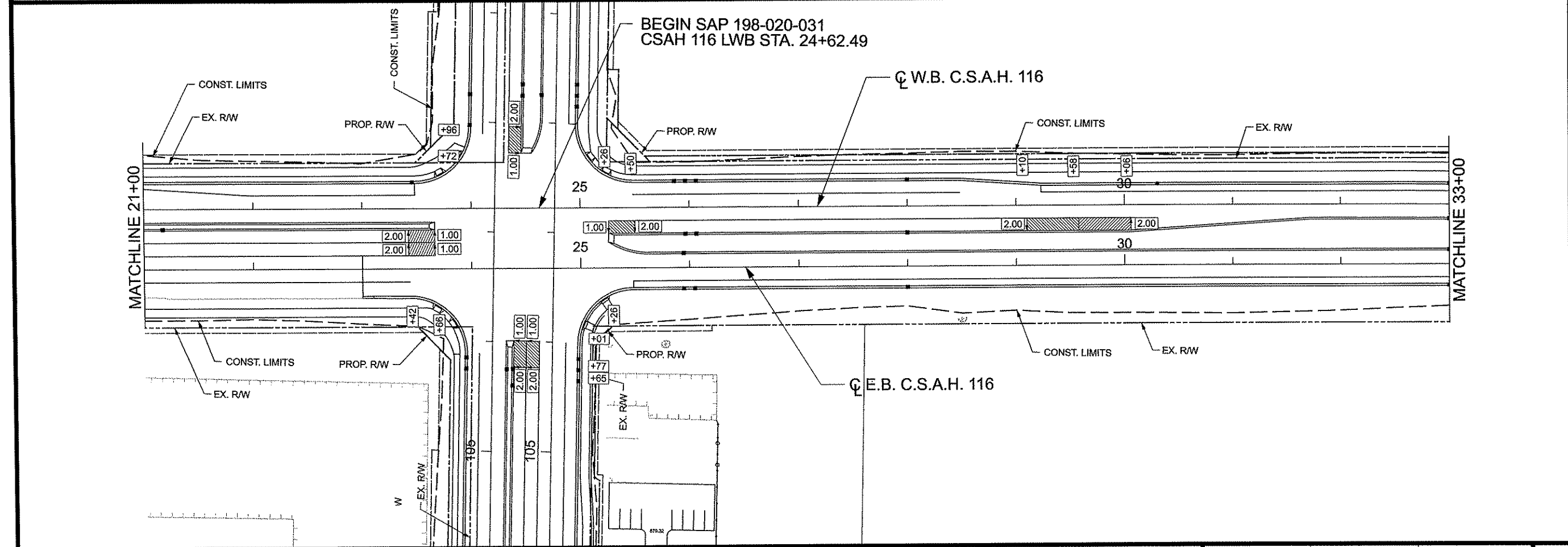
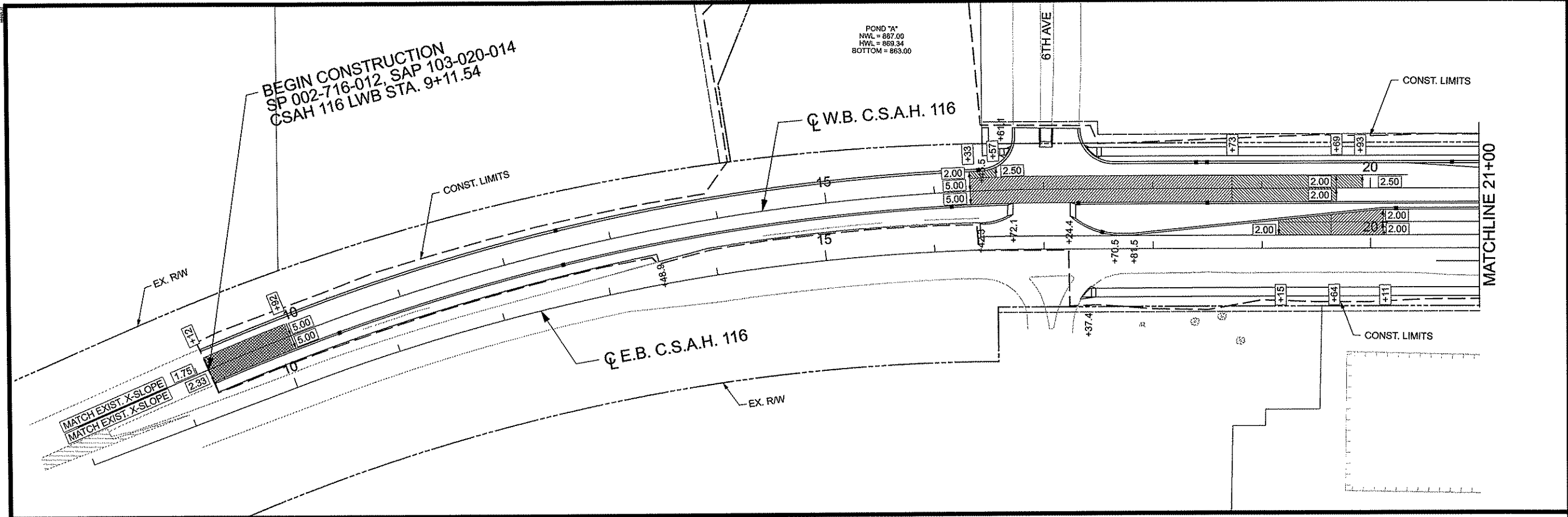
**ANOKA COUNTY**  
**HIGHWAY DEPT.**



S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

INTERSECTION DETAIL  
 CSAH 7 AT 40TH LN  
 CSAH 7 AT 41ST AVE  
 Sheet 104 of 282 Sheets

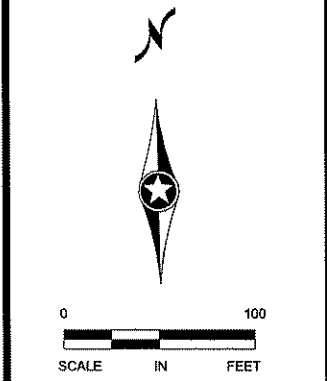




LEGEND



- NOTES:
1. ALL CROSS SLOPES ARE EXPRESSED AS A PERCENTAGE
  2. SEE INTERSECTION DETAIL PLANS FOR MORE INFORMATION.



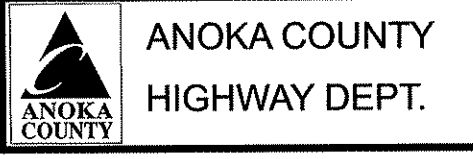
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I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME: CURT A. KOBILARCSIK  
 SIGNATURE: *Curt A. Kobilarsik*  
 DATE: 6-29-12 LICENSE NO. 24756


DRAWN BY: EJM DATE 05/15/2012  
 DESIGN BY: MN DATE 12/01/2010  
 CHECKED BY: CAK DATE 05/29/2012



S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

**SUPERELEVATION PLAN**  
 STA 9+00.00 TO 33+00.00  
 Sheet 105 of 282 Sheets

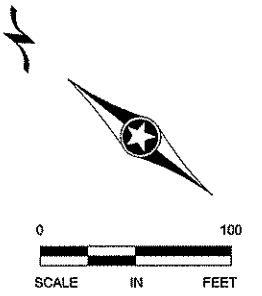
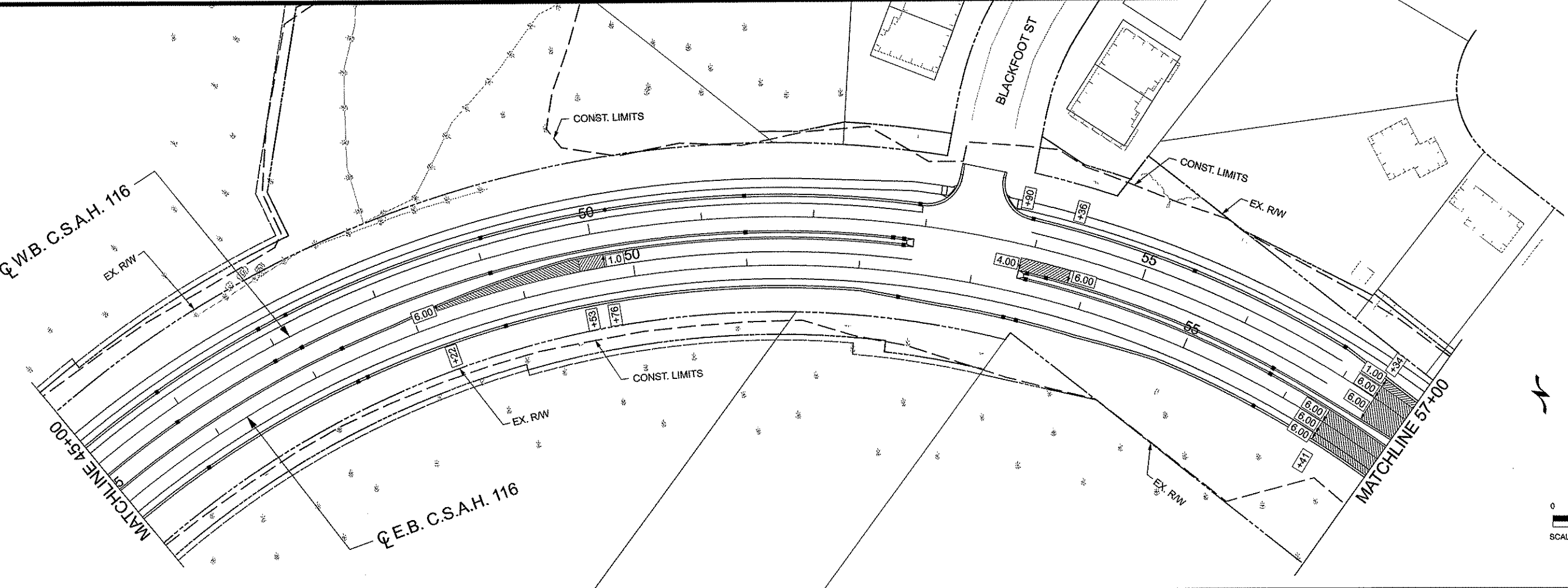
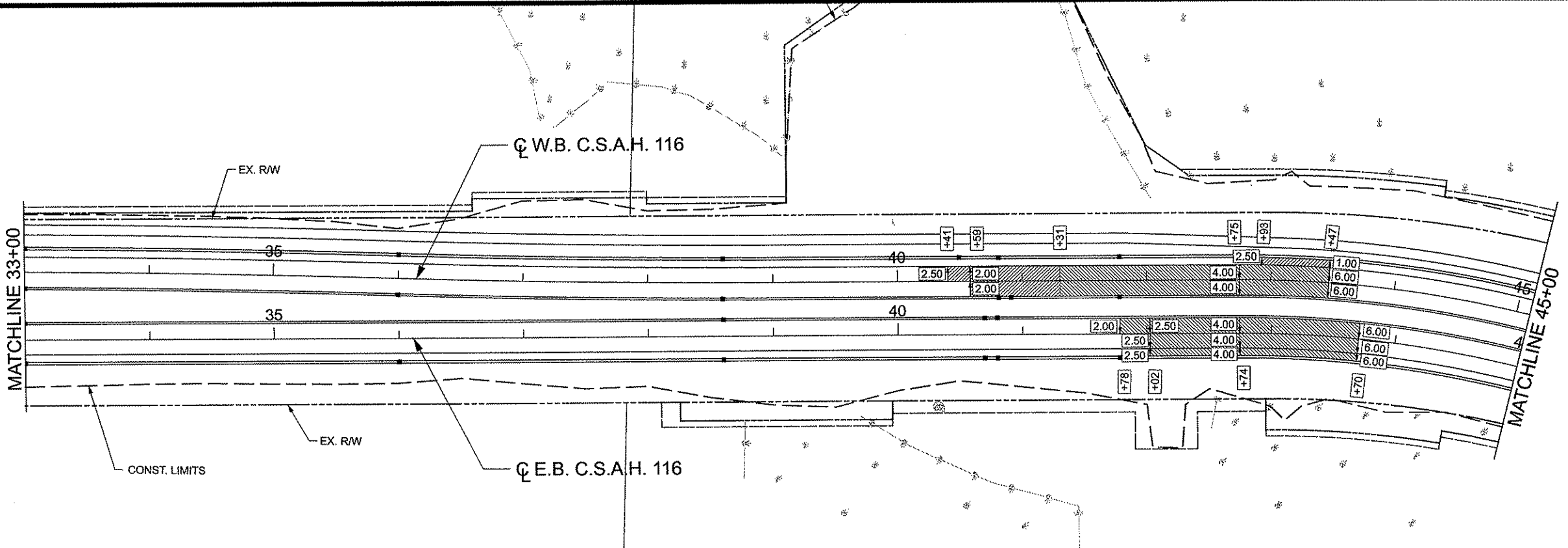
**LEGEND**

 SUPERELEVATION TRANSITION

**NOTES:**

1. ALL CROSS SLOPES ARE EXPRESSED AS A PERCENTAGE

2. SEE INTERSECTION DETAIL PLANS FOR MORE INFORMATION.



NO	DATE	BY	CKD	APPR	REVISION
NAME: p:\02-716-12\plan\0271612_SE_F2.dgn					
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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: CURT A. KOBILARCSIK

SIGNATURE: *Curt A. Kobilarsik*


DATE: 6-29-12 LICENSE NO. 24756

DRAWN BY: EJM DATE: 05/15/2012

DESIGN BY: MN DATE: 12/01/2010

CHECKED BY: CAK DATE: 05/29/2012

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

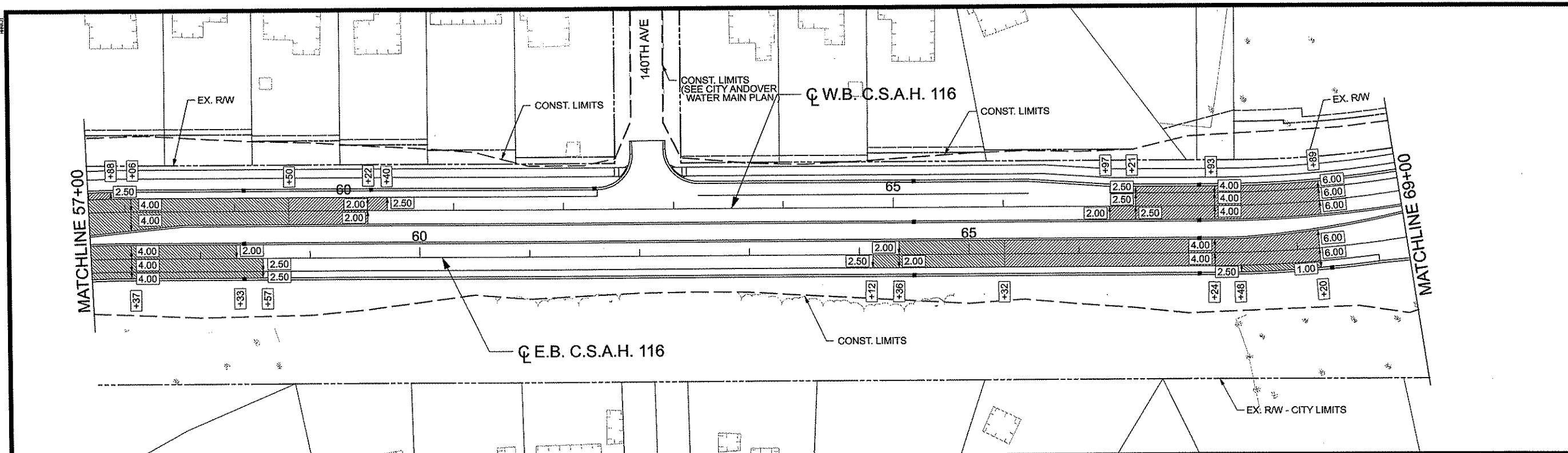


S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

**SUPERELEVATION PLAN**

STA 33+00.00 TO 57+00.00

Sheet 106 of 282 Sheets



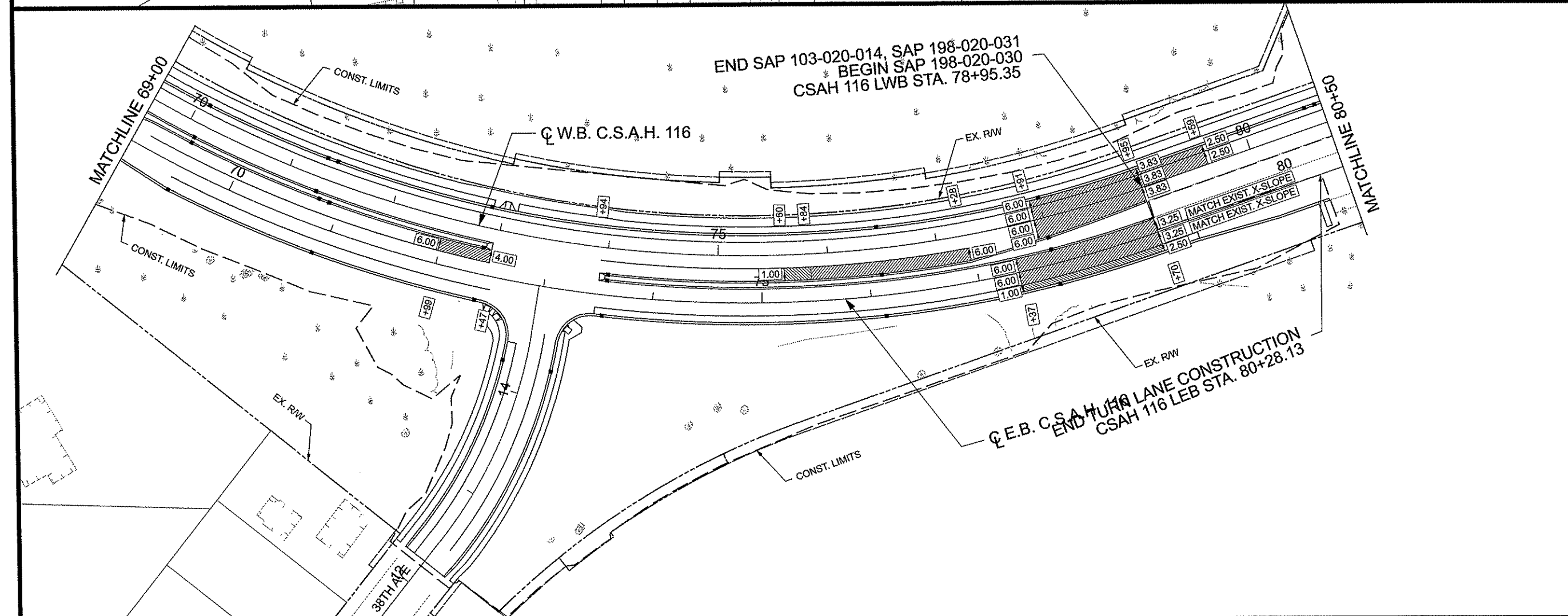
**LEGEND**

SUPERELEVATION TRANSITION

**NOTES:**

1. ALL CROSS SLOPES ARE EXPRESSED AS A PERCENTAGE
2. SEE INTERSECTION DETAIL PLANS FOR MORE INFORMATION.

0 100  
SCALE IN FEET



0 100  
SCALE IN FEET

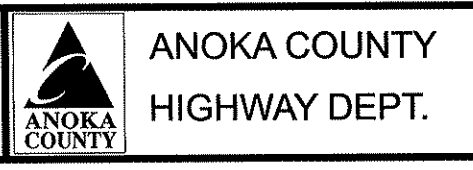
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06/28/2012 8:20:13 AM

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

PRINT NAME: CURT A. KOBILARCSIK  
SIGNATURE: *Curt A. Kobilarsik*  
DATE: 6.29.12 LICENSE NO. 24756

DRAWN BY: EJM DATE: 05/15/2012  
DESIGN BY: MN DATE: 12/01/2010  
CHECKED BY: CAK DATE: 05/29/2012

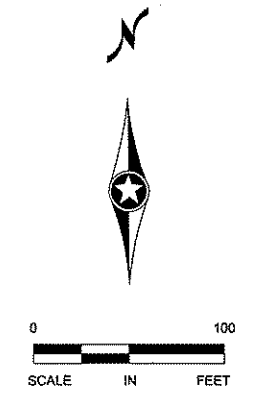
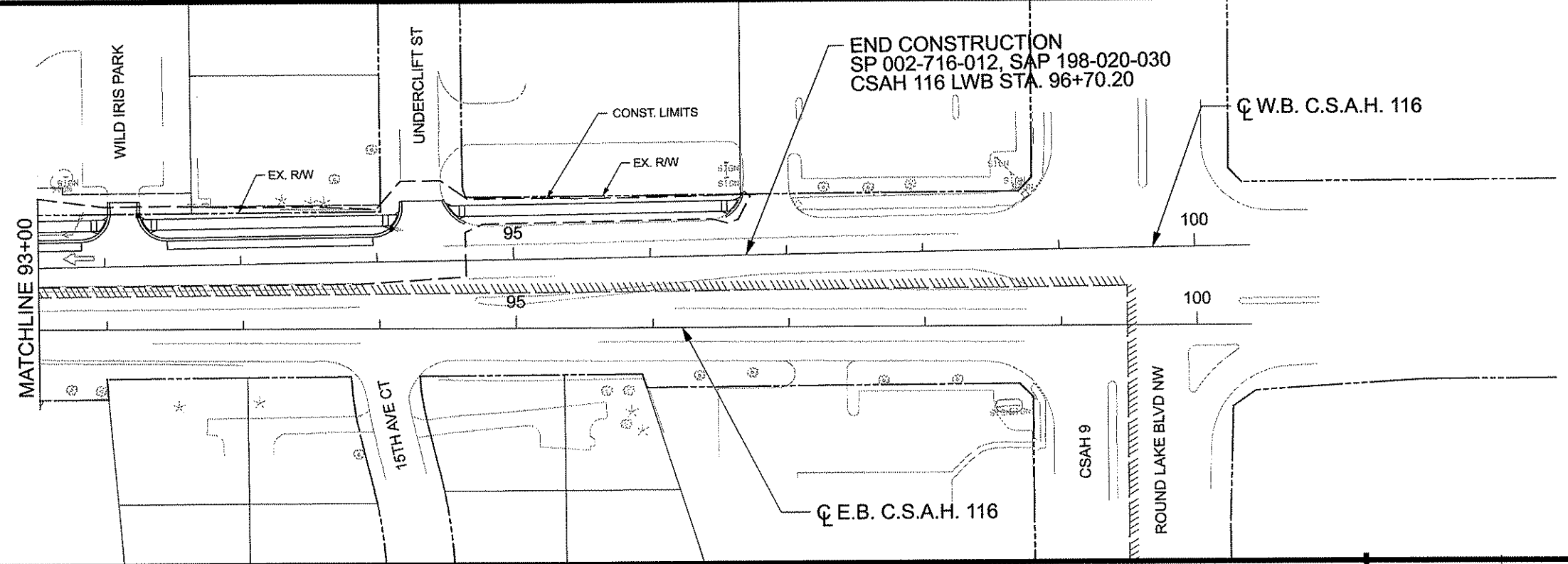
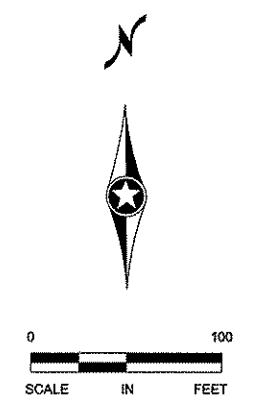
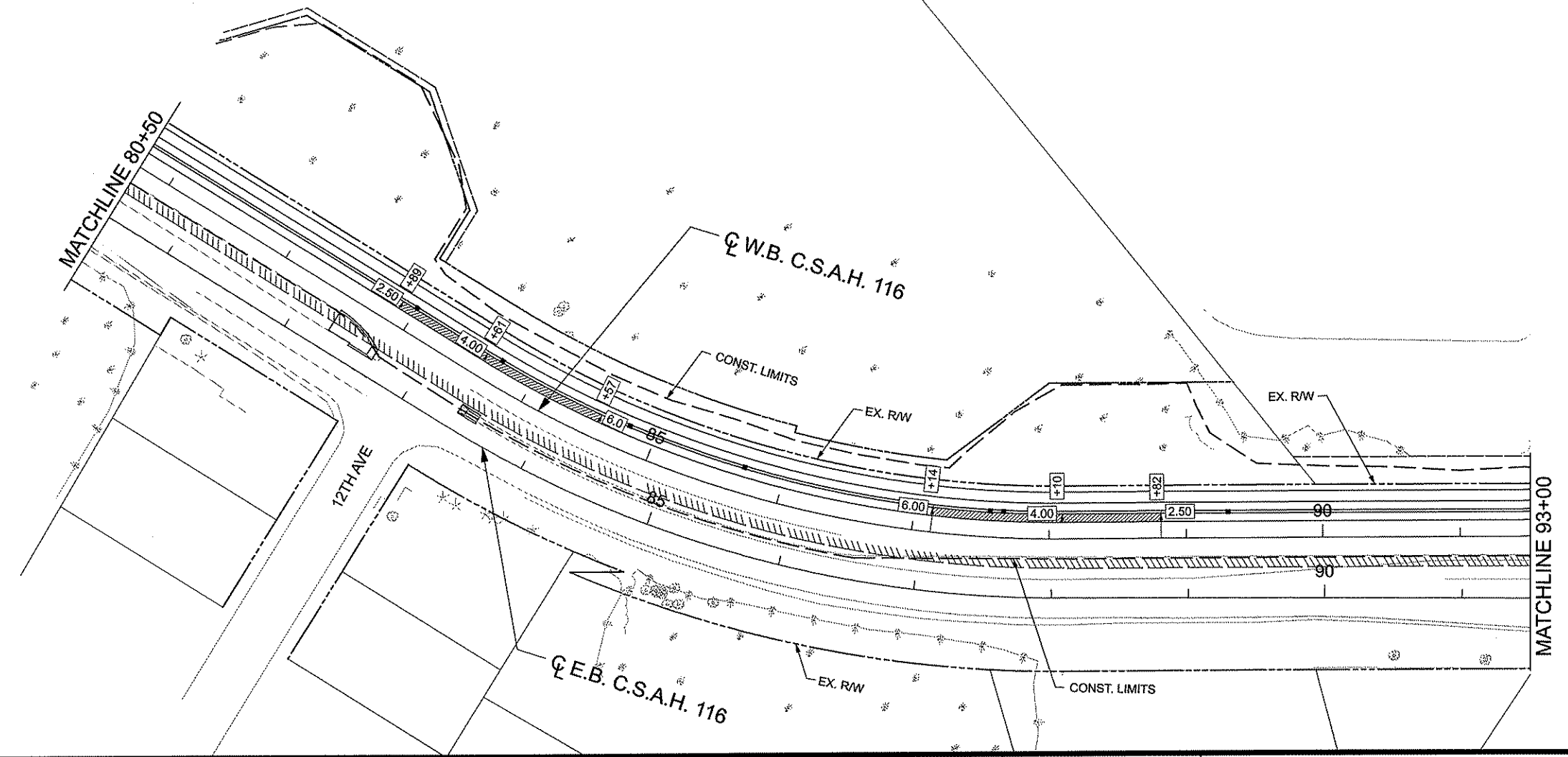


S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

**SUPERELEVATION PLAN**  
STA 57+00.00 TO 80+50.00  
Sheet 107 of 282 Sheets

LEGEND	
	SUPERELEVATION TRANSITION

- NOTES:
1. ALL CROSS SLOPES ARE EXPRESSED AS A PERCENTAGE
  2. SEE INTERSECTION DETAIL PLANS FOR MORE INFORMATION.



4 OF 6

NO	DATE	BY	CKD	APPR	REVISION

NAME: p:102-716-12\plan0271612\_SE\_P4.dgn  
 06/28/2012 8:20:16 AM

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.  
 PRINT NAME: CURT A. KOBILARCSIK  
 SIGNATURE: *Curt Kobilarcsik*  
 DATE: 6-29-12 LICENSE NO. 24756

DRAWN BY: EJM DATE: 05/15/2012  
 DESIGN BY: MN DATE: 12/01/2010  
 CHECKED BY: CAK DATE: 05/29/2012



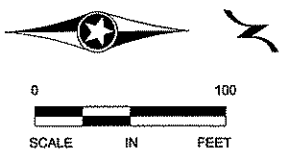
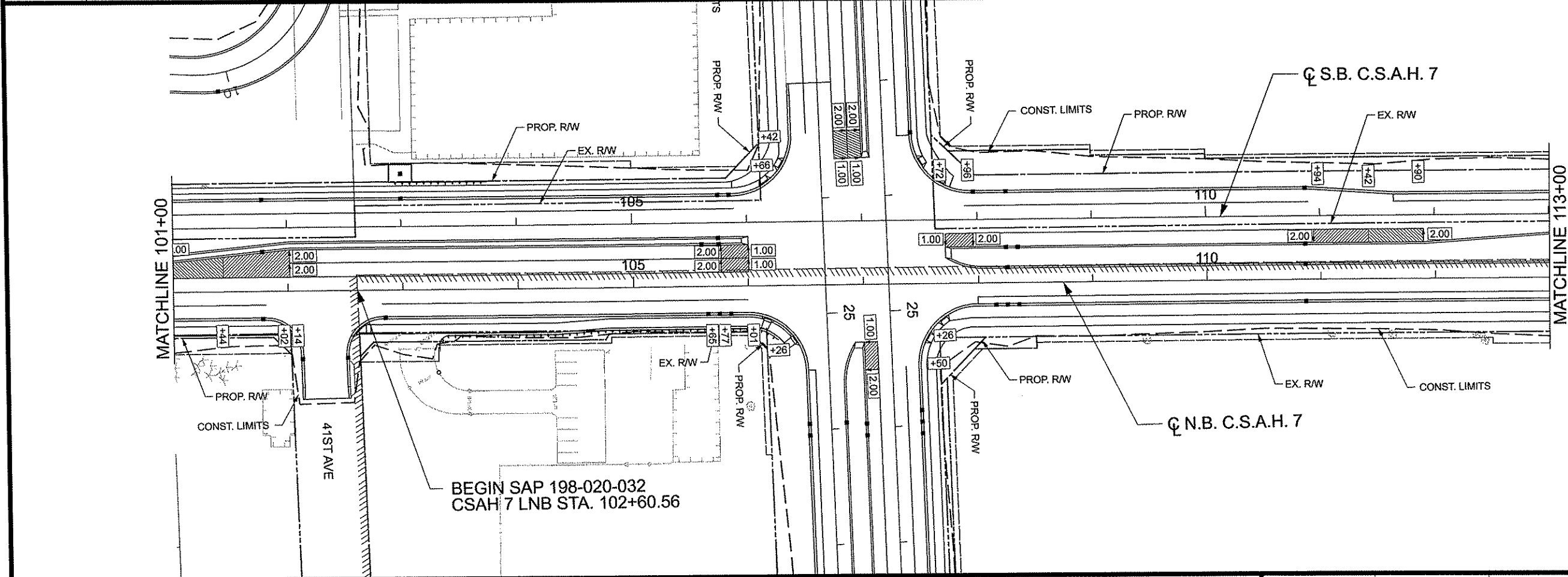
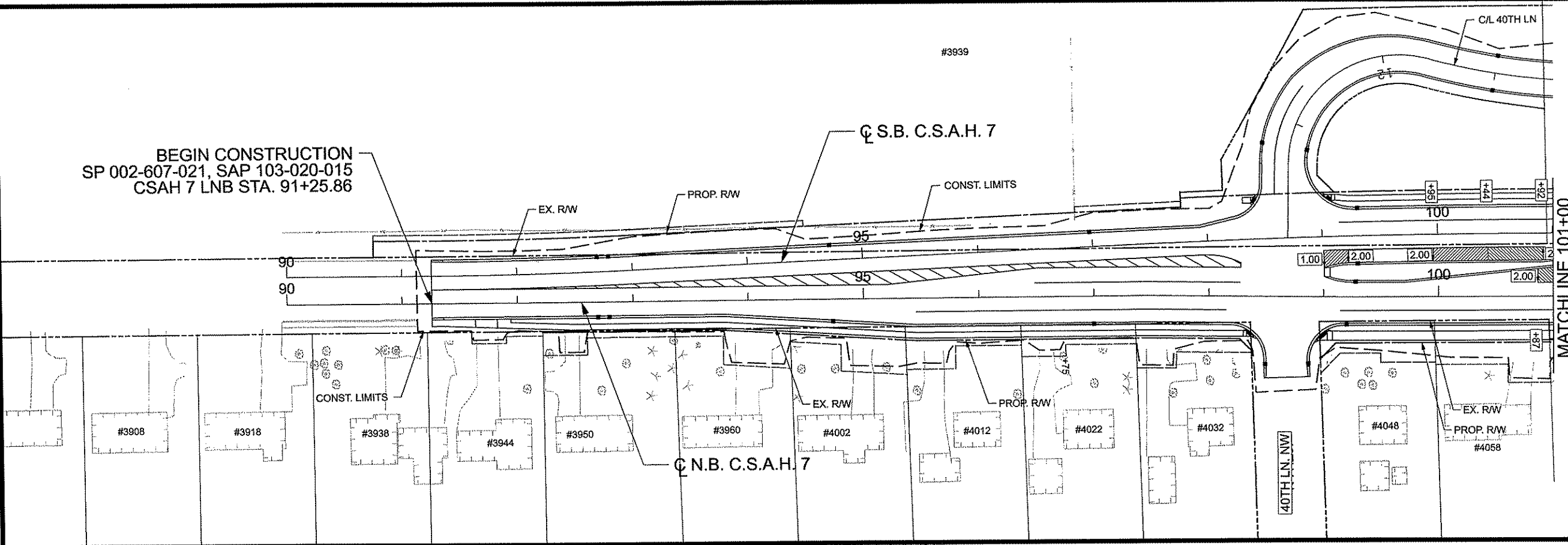
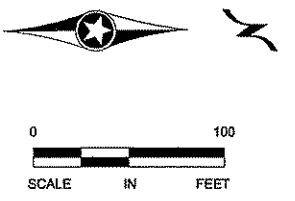
**ANOKA COUNTY**  
**HIGHWAY DEPT.**

S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

**SUPERELEVATION PLAN**  
 STA 80+50.00 TO 100+00.00  
 Sheet 108 of 282 Sheets

LEGEND	
	SUPERELEVATION TRANSITION

NOTES:  
 1. ALL CROSS SLOPES ARE EXPRESSED AS A PERCENTAGE  
 2. SEE INTERSECTION DETAIL PLANS FOR MORE INFORMATION.

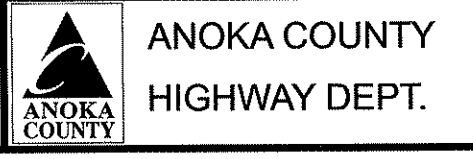


NO	DATE	BY	CKD	APPR	REVISION

NAME: p:\02-716-12\plan\0271612\_SE\_F5.dgn  
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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: CURT A. KOBILARCSIK  
 SIGNATURE: *Curt A. Kobilarsik*  
 DATE: 6-29-12 LICENSE NO. 24756

DRAWN BY: EJM DATE 05/15/2012  
 DESIGN BY: MN DATE 12/01/2010  
 CHECKED BY: CAK DATE 05/29/2012



S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

**SUPERELEVATION PLAN**  
 STA 101+00.00 TO 113+00.00  
 Sheet 109 of 282 Sheets

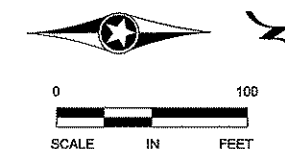
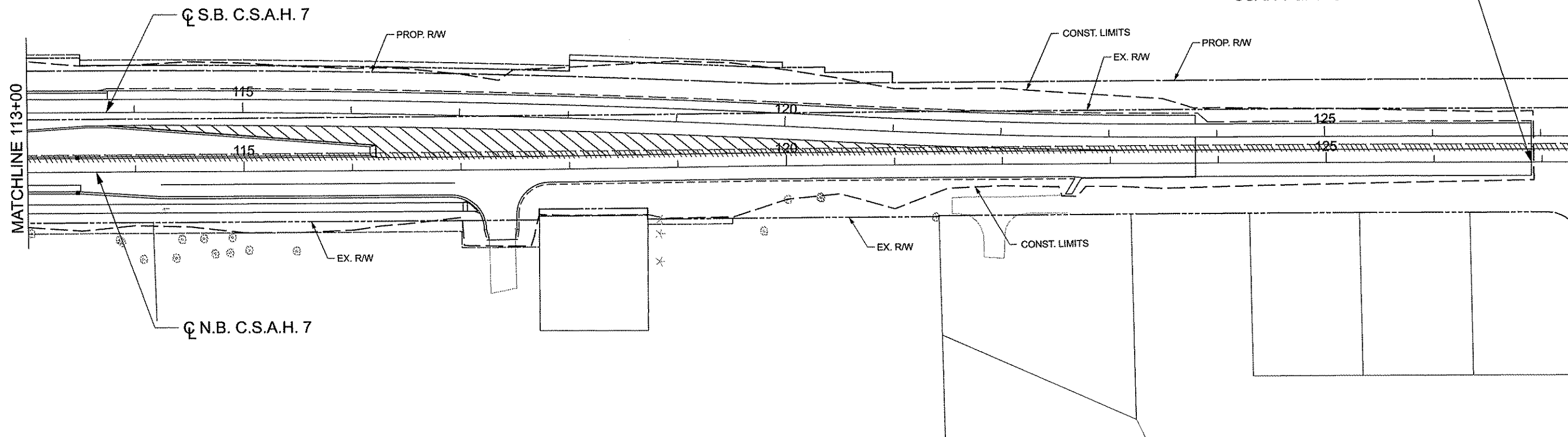
LEGEND

 SUPERELEVATION TRANSITION

NOTES:

1. ALL CROSS SLOPES ARE EXPRESSED AS A PERCENTAGE
2. SEE INTERSECTION DETAIL PLANS FOR MORE INFORMATION.

END CONSTRUCTION  
 SP 002-607-021, SAP 103-020-015  
 SAP 198-020-032  
 CSAH 7 LNB STA. 126+90.00



6 OF 6

NO	DATE	BY	CKD	APPR	REVISION
NAME: p:\02-716-12\plan\0271612_SE_P6.dgn					
8:20:23 AM					

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.  
 PRINT NAME: CURT A. KOBILARCSIK  
 SIGNATURE: *Curt A. Kobilarsik*  
 DATE: 6-29-12 LICENSE NO. 24756

DRAWN BY: EJM DATE: 05/15/2012  
 DESIGN BY: MN DATE: 12/01/2010  
 CHECKED BY: CAK DATE: 05/29/2012



S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

SUPERELEVATION PLAN  
 STA 113+00.00 TO 125+00.00  
 Sheet 110 of 282 Sheets

DRAINAGE TABULATION

S

STRUCTURE NO.	CENTER OF CASTING LOCATION			DRAINAGE STRUCTURES											DOWN-STREAM INLET ELEV.	SLOPE %	PIPE SIZES												APRON TYPE	SODDING SALT RESIST.	RIPRAP CLASS II	GEOTEXTILE FILTER TYPE III	CONNECT TO EX. STORM SEWER	CULVERT MARKER X4-3	STORM DRAIN INLET PROTECTION EACH	NOTES					
	FLOWS FROM	FLOWS TO	ALIGN.	STATION	OFFSET	TYPE	DESIGN	G									CASTING ASSEMBLY TYPE	STEPS REQ'D	TOP OF CASTING ELEV.	OUTLET ELEV.	15"	18"	21"	24"	24"	27"	28"	30"									36"	44"	54"		
								LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT							LIN FT	LIN FT	CL V	CL III	CL III	CL III	CL V	CL V									CL IIA	CL V	CL IIA	CL IIA	CL III
CB102	X11	WB_AL2	10+36.08	13.25	CB	48-4020		5.4						R-3448-C	YES	867.66	862.39	861.35	1.92	6												1		1							
CB103	CB104	WB_AL2	12+52.99	-19.00	CB	48-4020		5.5						B-9	YES	870.14	864.52	863.88	2.00	32											1		1								
CB104	X12	WB_AL2	12+52.35	13.25	CB	48-4020		5.4						R-3448-C	YES	869.21	863.88	862.73	2.00	6											1		1								
A105	CB106	WB_AL2	15+03.85	-100.51	APR											866.25	865.00	865.00	0.00	18						15" RCP											1				
CB106	CB109	WB_AL2	15+19.26	-83.28	CB	SPECIAL		4.2						SPECIAL		869.34	867.00	866.31	0.50	137														1	(1)						
A107	PONDA	WB_AL2	16+09.03	-97.25	APR											869.00	867.00									24" RCP	5.5	16.8													
CB108	A107	WB_AL2	16+41.01	-19.00	CB	54-4020			5.2					B-9	YES	872.59	867.25	867.00	0.30					77												1					
CB109	X15	WB_AL2	16+14.98	13.25	CB	48-4020		5.9						R-3448-C	YES	871.21	865.46	864.80	1.00	10									1		1										
CB110	CB111	WB_AL2	17+31.93	13.25	CB	48-4020		5.3						R-3448-C	YES	872.00	866.85	866.68	0.50	34																					
CB111	X16	WB_AL2	17+53.59	-15.20	CB	48-4020		5.4						R-3448-C	YES	871.92	866.68	866.31	1.00										1		1										
CB112	CB108	WB_AL2	18+40.00	-24.00	CB	48-4020		4.3						B-17		872.26	867.85	867.25	0.30				200															1			
CB113	CB112	WB_AL2	18+50.00	-24.00	CB	48-4020		4.0						B-17		872.26	868.13	868.10	0.30			10														1					
CB114	X18	WB_AL2	18+49.97	13.25	CB	48-4020		5.1						R-3448-C	YES	872.49	867.49	867.17	0.50											1		1									
CB115	CB117	WB_AL2	20+23.43	-36.25	CB	G	3.9							R-3448-C		872.88	869.11	868.64	0.50	93																		1			
CB116	CB113	WB_AL2	20+75.00	-24.00	CB	48-4020		4.0						B-9		872.88	868.81	868.13	0.30			225															1				
CB117	X19	WB_AL2	21+16.90	-36.25	CB	48-4020		4.9						R-3448-C	YES	873.39	868.64	868.33	0.50	15														1		1					
CB118	CB116	WB_AL2	23+46.11	-24.00	CB	48-4020		4.6						B-9	YES	874.35	869.62	868.81	0.30			271															1				
CB119	CB118	WB_AL2	107+97.08	-24.00	CB	48-4020		4.5						B-17		874.49	869.84	869.62	0.30			75															1				
CB120	CB119	WB_AL2	108+25.38	-24.00	CB	60-4020				4.4				B-17		874.47	869.93	869.84	0.30			28															1				
CB121	CB120	WB_AL2	108+25.38	24.25	CB	48-4020		4.1						R-3448-C		875.07	871.04	870.80	0.50	48																	1				
CB122	CB121	WB_AL2	108+35.38	24.25	CB	G	4.1							R-3448-C		875.07	871.09	871.04	0.50	10																		1			
CB123	CB121	WB_AL2	108+25.38	-13.25	CB	48-4020		4.3						R-3448-C		875.31	871.13	871.04	0.50	18																		1			
CB124	CB125	WB_AL2	108+35.38	19.00	CB	G	3.1							B-17		874.59	871.34	871.29	0.50	10																		1			
CB125	CB123	WB_AL2	108+25.38	19.00	CB	54-4020				3.2				B-17		874.59	871.29	871.13	0.50	32																		1			
A126	CB125	WB_AL2	108+25.38	47.50	APR											874.75	873.50	872.64	3.00	29						15" RCP	8										2				
A127	CB120	WB_AL2	108+25.38	-47.80	APR											871.75	870.50	870.43	0.30	24						15" RCP	8									2		1			
CB128	CB120	WB_AL2	110+87.28	-24.00	CB	48-4020		4.0						B-9		876.26	872.15	870.18	0.75			262																1			
CB129	CB128	WB_AL2	110+87.28	24.25	CB	48-4020		4.2						R-3448-C		876.89	872.76	872.40	0.75	48																		1			
CB130	CB129	WB_AL2	110+86.62	-13.25	CB	48-4020		4.3						R-3448-C		877.10	872.89	872.76	0.75	18																			1		
CB131	CB130	WB_AL2	110+86.62	19.00	CB	48-4020		3.1						B-9		876.38	873.13	872.89	0.75	32																		1			
CB132	CB131	WB_AL2	113+46.23	19.00	CB	48-4020		3.1						B-9		878.72	875.47	873.13	0.90	260																			1		
CB133	CB132	WB_AL2	113+46.23	-13.25	CB	G	3.4							R-3448-C		879.43	876.18	875.47	2.22	32																			1		
CB202	EX.SYS	WB_AL2	92+18.27	-13.00	CB	54-4020				4.3				B-9		862.02	857.62																						1		
CB203	CB205	WB_AL2	92+69.53	13.00	CB	48-4020		3.2						B-17		861.96	858.62	858.36	0.50	52																			1		
CB204	CB203	WB_AL2	92+79.53	13.00	CB	G	3.1							B-17		861.96	858.71	858.62	0.91	10																			1		
CB205	CB202	WB_AL2	92+69.53	-13.00	CB	66-4020					4.1			B-17		861.96	857.77	857.62	0.30							51			1									1			
CB206	CB205	WB_AL2	92+79.53	-13.00	CB	54-4020				4.1				B-17		861.96	857.80	857.77	0.30							10													1		
CB207	CB208	WB_AL2	94+73.64	19.18	CB	G	3.1							B-9		862.58	859.33	859.00	0.50	66																			1		
CB208	CB206	WB_AL2	94+71.73	-13.00	CB	66-4020				4.2				B-9		862.72	858.38	857.80	0.30							192													1		
CB209	CB210	WB_AL2	97+00.00	24.00	CB	G	3.2							B-9		863.64	860.37	859.97	0.50	80																			1		
CB210	CB208	WB_AL2	96+97.73	-13.00	CB	72-4020					4.2			B-9		863.90	859.59	858.63	0.42					226															1		
CB211	CB212	WB_AL2	98+49.45	59.01	CB	G	3.4							R-3448-C		865.96	862.71	862.60	0.30	38																		1			
CB212	CB213	WB_AL2	98+86.82	58.34	CB	48-4020		3.6						R-3448-C		866.08	862.60	862.45	0.30	48																			1		
CB213	CB214	WB_AL2	99+20.01	24.00	CB	48-4020		4.6						B-17	YES	867.16	862.45	862.34	0.30	38																			1		
CB214	CB215	WB_AL2	99+27.75	-13.25	CB	48-4020		6.0						R-3448-C	YES	868.20	862.34	862.29	0.30	16																				1	
CB215	CB216	WB_AL2	99+30.19	24.25	CB	48-4020		5.9						R-3448-C	YES	868.03	862.29	862.15	0.30	48																				1	
CB216	CB210	WB_AL2	99+30.95	-24.00	CB	60-4020				5.8				B-17	YES	867.44	861.49	859.84	0.71																				1		
A217	CB216	WB_AL2	99+28.66	-54.65	APR											864.75	863.50	864.11	1.98	25									15" RCP			2.9	9								

**DRAINAGE TABULATION**

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STRUCTURE NO.		CENTER OF CASTING LOCATION			DRAINAGE STRUCTURES										CASTING ASSEMBLY TYPE	STEPS REQ'D	TOP OF CASTING ELEV.	OUTLET ELEV.	DOWN-STREAM INLET ELEV.	SLOPE %	PIPE SIZES										APRON TYPE	SODDING TYPE SALT RESIST.	RIPRAP CLASS II	GEOTEXTILE FILTER TYPE III	CONNECT TO EX. STORM SEWER	CULVERT MARKER X4-3	STORM DRAIN INLET PROTECTION	NOTES											
FROM	TO	ALIGN.	STATION	OFFSET	TYPE	DESIGN	G	48-4020	54-4020	60-4020	66-4020	72-4020	102-4020	120-4020							15"	18"	21"	24"	24"	27"	28"	30"	36"	44"									54"										
												LIN FT		CL V							CL III	CL III	CL III	CL V	CL V	CL IIA	CL V	CL IIA	CL IIA	CL III																			
CB218	CB216	SB_AL2	101+78.70	-24.00	CB	54-4020			5.1							B-9	YES	873.50	868.33	863.36	2.00																							1					
CB219	CB218	SB_AL2	103+00.00	-24.00	CB	54-4020			6.1							B-9	YES	875.12	868.93	868.33	0.50																									1			
219A	CB219	SB_AL2	103+00.00	-45.56	CB	G	2.6									A-7		872.30	869.60	869.49	0.50	22																						2	1	(2)			
CB220	CB218	NB_AL2	101+78.03	-33.89	CB	48-4020		4.3								R-3448-C		874.06	869.85	869.62	0.50	45																							1				
CB221	CB220	NB_AL2	101+78.03	24.00	CB	48-4020		3.2								B-9		873.49	870.14	869.85	0.50	58																								1			
CB222	CB221	NB_AL2	102+11.63	59.05	CB	48-4020		3.6								R-3448-C		873.83	870.38	870.14	0.50	49																								1			
CB223	CB222	NB_AL2	102+51.27	58.18	CB	48-4020		3.4								R-3448-C		873.83	870.58	870.82	0.50	40																								1			
CB224	CB223	NB_AL2	102+84.70	24.00	CB	G	4.1									B-17		875.00	870.82	870.58	0.50	48																									1		
CB225	CB219	SB_AL2	105+75.00	-24.00	CB	54-4020			4.0							B-17		874.62	870.56	869.18	0.50		275																								1		
CB226	CB225	SB_AL2	105+85.00	-24.00	CB	G	3.3									B-17		874.62	871.17	870.87	3.00	10																									1		
CB227	CB225	SB_AL2	105+75.00	13.25	CB	48-4020		4.6								R-3448-C	YES	875.46	871.00	870.81	0.50	37																									1		
CB228	CB229	NB_AL2	105+60.00	-36.25	CB	G	3.5									R-3448-C		874.94	871.53	871.08	3.00	15																									1		
CB229	CB227	NB_AL2	105+75.00	-36.25	CB	54-4020			4.1							R-3448-C		874.98	871.02	871.00	0.50	6																									1		
CB230	CB229	NB_AL2	105+75.00	24.00	CB	48-4020		3.2								B-17		874.62	871.33	871.02	0.50	60																									1		
CB231	CB230	NB_AL2	105+85.00	24.00	CB	G	3.1									B-17		874.62	871.38	871.33	0.50	10																										1	
CB233	CB235	EB_AL2	25+94.86	19.00	CB	48-4020		3.2								B-17		874.55	871.27	871.17	0.30	32																									1		
CB234	CB233	EB_AL2	26+04.86	19.00	CB	G	3.1									B-17		874.55	871.30	871.27	0.30	10																									1		
CB235	CB237	EB_AL2	25+94.86	-13.25	CB	48-4020		4.2								R-3448-C		875.26	871.17	871.12	0.30	18																									1		
CB237	CB239	WB_AL2	25+96.62	24.25	CB	48-4020		4.0								R-3448-C		875.03	871.12	870.97	0.30	48																									1		
CB238	CB237	WB_AL2	26+06.62	24.25	CB	G	3.7									R-3448-C		875.03	871.42	871.12	3.00	10																									1		
CB239	CB240	WB_AL2	25+96.62	-24.00	CB	48-4020		3.3								B-17		874.43	870.97	870.94	0.30	10																									1		
CB240	CB244	WB_AL2	26+06.62	-24.00	CB	48-4020		3.6								B-17		874.43	870.69	870.11	0.30		193																								1		
CB241	CB243	EB_AL2	28+00.00	19.00	CB	G	3.1									B-9		875.51	872.26	872.11	0.30	50																									1		
CB243	CB244	WB_AL2	28+00.00	24.25	CB	48-4020		4.0								R-3448-C		875.98	872.11	871.97	0.30	48																									1		
CB244	CB245	WB_AL2	28+00.00	-24.00	CB	54-4020			5.4							B-9	YES	875.38	869.86	869.17	0.30																									1			
CB245	CB304	WB_AL2	30+30.53	-19.00	CB	48-4020		7.3								B-9	YES	876.61	869.17	868.36	0.30																										1		
CB301	CB302	EB_AL2	33+00.00	19.00	CB	G	3.1									B-9		875.50	872.25	872.09	0.50	32																										1	
CB302	CB303	EB_AL2	33+00.00	-13.25	CB	48-4020		4.2								R-3448-C		876.21	872.09	871.95	0.50	28																									1		
CB303	CB304	WB_AL2	33+00.33	13.25	CB	48-4020		4.3								R-3448-C		876.17	871.95	871.79	0.50	32																										1	
CB304	CB308	WB_AL2	33+00.33	-19.00	CB	60-4020				7.2						B-9	YES	875.45	868.11	867.21	0.30																											1	
CB305	CB307	EB_AL2	36+00.00	19.00	CB	G	3.1									B-9		874.00	870.75	870.48	0.50	54																									1		
CB307	CB308	WB_AL2	36+00.00	13.25	CB	48-4020		4.2								R-3448-C		874.58	870.48	870.32	0.50	32																										1	
CB308	CB312	WB_AL2	36+00.00	-19.00	CB	60-4020			6.6							B-9	YES	873.91	867.21	866.43	0.30																										1		
CB309	CB310	EB_AL2	38+60.00	19.00	CB	G	3.1									B-9		872.70	869.45	869.29	0.50	32																										1	
CB310	CB311	EB_AL2	38+60.00	-13.25	CB	48-4020		4.2								R-3448-C		873.41	869.29	869.21	0.50	17																										1	
CB311	CB312	WB_AL2	38+60.00	13.25	CB	48-4020		4.2																																									







**DRAINAGE TABULATION**

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STRUCTURE NO.	CENTER OF CASTING LOCATION		DRAINAGE STRUCTURES												CASTING ASSEMBLY	STEPS REQ'D	TOP OF CASTING ELEV.	OUTLET ELEV.	DOWN-STREAM INLET ELEV.	SLOPE %	16"	18"	21"	24"	24"	27"	28"	30"	36"	44"	54"	APRON TYPE	SODDING	RIPRAP	GEOTEXTILE	CONNECT	CULVERT	STORM	NOTES
			RCP CL V	RCP CL III	RCP CL III	RCP CL III	RCP CL V	RCP CL V	RCP-A CL III	RCP CL V	RCP-A CL III	RCP-A CL III	RCP CL III	TYPE							CLASS II	TYPE III	TO EX. STORM SEWER	MARKER X4-3	DRAIN INLET PROTECTION														
FLOW FROM	FLOW TO	ALIGN.	STATION	OFFSET	TYPE	DESIGN	G	48-4020	54-4020	60-4020	66-4020	72-4020	102-4020	120-4020	TYPE	REQ'D	ELEV.	ELEV.	ELEV.	%	CL V	CL III	CL III	CL III	CL V	CL V	CL III	CL V	CL III	CL III	SQ YD	CU YD	SQ YD	EACH	EACH	EACH			
CB616	CB615	WB_AL2	83+73.17	-19.00	CB	48-4020		4.0							B-9		868.40	864.29	864.14	0.20																1			
CB617	CB616	WB_AL2	84+80.00	-19.00	CB	48-4020		3.0							B-9		867.91	864.75	864.55	0.20	104															1			
CB618	CB617	WB_AL2	85+70.00	-19.00	CB	48-4020		2.6							B-9		867.67	864.93	864.75	0.20	88																1		
CB671	CB672	WB_AL2	87+56.00	-19.00	CB	G	2.9								B-17		867.46	864.46	864.43	0.30	10																1		
CB672	A673	WB_AL2	87+66.00	-19.00	CB	48-4020		3.0							B-17		867.56	864.43	864.32	0.30	29																1		
A673	POND G	WB_AL2	87+66.00	-54.18	APR												865.57	864.32											15" RCP		2.9		9						
A701	POND G	WB_AL2	89+07.01	-65.57	APR												866.81	862.50										54" RCP											
CB702	MH703	WB_AL2	89+30.00	-19.00	CB	48-4020		3.1							B-9		869.06	865.81	865.75	0.50	11															1			
MH703	A701	WB_AL2	89+40.00	-24.00	MH	120-4020							6.5		M-7	YES	869.14	862.50	862.50	0.00											45					1	(3)		
MH704	MH703	WB_AL2	91+77.04	-23.81	MH	102-4020							7.2		M-7	YES	869.94	862.60	862.50	0.04											237					1	(3)		
X72	MH704	WB_AL2	91+85.11	-39.94	EX MH												869.78	865.37	865.19	1.00	18															1	(5)		
CB705	X72	WB_AL2	92+25.72	-36.74	CB	48-4020		4.1							B-9		869.90	865.94	865.37																	1			
CB706	CB705	WB_AL2	94+10.15	-23.34	CB	48-4020		4.2							B-9		872.72	868.65	865.94																		1		
X74	CB706	WB_AL2	94+19.47	-22.83	EX MH												872.91	868.80	868.65	1.60	9																1	(6)	
CB801	CB802	7-W_40TH	13+20.91	24.25	CB	G	3.4								R-3448-C		865.19	861.94	861.82	0.30	40															1			
CB802	A803	7-W_40TH	13+20.91	-15.25	CB	48-4020		3.7							R-3448-C		865.37	861.82	861.74	0.30	22																1		
A803	POND H	7-W_40TH	13+21.31	-42.99	APR												862.99	861.74											15" RCP		2.9		9						
A804	POND H	7-W_40TH	11+03.20	-60.30	APR												864.00	862.50											18" RCP		3.9		12						
CB805	A804	7-W_40TH	11+00.00	-15.25	CB	54-4020			6.6						R-3448-C	YES	869.20	862.67	862.50	0.38												39					1		
CB806	CB805	7-W_40TH	11+00.00	15.25	CB	48-4020		3.4							R-3448-C		869.20	865.95	865.79	0.50	31																1		
CB807	CB805	7-W_40TH	10+10.00	-15.99	CB	48-4020		8.2							R-3448-C	YES	871.10	863.02	862.67	0.38													95					1	
MH808	CB807	7-W_40TH	9+40.28	-29.50	MH	48-4020		8.8							M-7	YES	872.30	863.59	863.27	0.38	84																	1	(3)
SUBTOTAL							6.3	48.1	6.6					7.2	6.5	16			446	207												282		10	30	4		14	
TOTAL							147.9	490.1	86.1	68.0	14.3	17.9	7.2	6.5	186						5600	1707	1788	1521	234	226	244	253	407	145	282		45	168	508	13	14	194	

**CASTING ASSEMBLY DETAILS**

ASSEMBLY	RING OR FRAME CASTING	COVER OR GRATE CASTING	CURB BOX	STANDARD PLATE NO.	QUANTITY	REMARKS
M-7	700-7			4101	4	MANHOLE
		716		4110		
A-7	700-7			4101	2	CATCH BASIN
		721		4140		
B-9	805	816		4132, 4154	44	
B-17	806	816	825	4125, 4134, 4154	59	
R-3448-C					72	

NOTES:

- (1) PAID FOR AS 2506.603 CONSTRUCT DRAINAGE STRUCTURE DESIGN SPECIAL BY LIN FT. SEE SHEETS 130 - 135 FOR COVER DETAILS.
- (2) SEE CHART ON SHEET 115 FOR CASTING ASSEMBLY A-7 DETAILS.
- (3) SEE CHART ON SHEET 115 FOR CASTING ASSEMBLY M-7 DETAILS.
- (4) RIPRAP FOR EMERGENCY OVERFLOW WEIR.
- (5) RECONSTRUCT EXISTING MANHOLE.
- (6) ADJUST EXISTING MANHOLE.

GENERAL NOTES:

- 1. R-3448C NEENAH CASTING ASSEMBLIES OR EAST JORDAN IRON WORKS PRODUCT NO. 00500050C01 OR APPROVED EQUALS.
- 2. STATION AND OFFSET FOR EACH STRUCTURE GIVEN AT CENTER OF GRATE/CASTING FOR CATCH BASINS AND MANHOLES, AND AT APRON END FOR APRONS. INVERT ELEVATIONS GIVEN AT CENTER OF STRUCTURE OR END OF APRON.
- 3. IF STEPS REQUIRED, STRUCTURE TO INCLUDE MANHOLE STEPS 16" ON CENTER. SEE MN/DOT STANDARD PLATE 4180.
- 4. PIPE LENGTH DOES NOT INCLUDE APRON.
- 5. TIE LAST THREE JOINTS AT APRON END. FURNISHING AND INSTALLING PIPE TIES SHALL BE CONSIDERED INCIDENTAL. SEE MN/DOT STANDARD PLATE 3145.
- 6. SEE TAB CHART H FOR EXISTING CATCH BASIN ADJUSTMENTS.

**AGGREGATE BEDDING**

STATION TO STATION	ALIGNMENT	OFFSET	LENGTH	DESCRIPTION	T
		LIN FT	LIN FT		AGGREGATE
					CU YD
89+07.50 89+39.50	CSAH 116 -WB	66'-24' LT	53	5' W x 1' H	32
89+39.50 91+76.50	CSAH 116 -WB	24' LT	237	5' W x 1' H	145
<b>TOTAL</b>					<b>177</b>

**SUBSURFACE DRAINAGE**

STATION TO STATION	LOCATION	3" PERF TP	FINE FILTER	U
	ALIGNMENT	PIPE DRAIN	AGGREGATE (LV)	DESCRIPTION
		LIN FT	CU YD	
		LIN FT		
40+00.00 41+60.00	EB - WB	22.6' RT/LT	11	SHOULDER
40+00.00 41+60.00	EB - WB	16.6' LT/RT	11	MEDIAN
46+29.00 48+43.00	EB	22.6' RT	7	SHOULDER
52+42.00 54+49.00	EB	22.6' RT	7	SHOULDER
70+28.00 72+32.00	WB	22.6' LT	7	SHOULDER
79+59.00 81+70.00	WB	22.6' LT	7	SHOULDER
86+52.00 88+67.00	WB	22.6' LT	7	SHOULDER
<b>TOTAL</b>				<b>56</b>

NOTE: SEE DRAINAGE PLAN AND DETAILS FOR MORE INFORMATION.

NO	DATE	BY	CHKD	APPR	REVISION
NAME: P:\02-716-12\Plant\0271612_DR_TABS.dgn					
REVISION 06/29/2012 9:11:02 AM					

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.  
 PRINT NAME: CURT A. KOBILARCSIK  
 SIGNATURE: *Curt A. Kobilarscik*  
 DATE: 6.29.12 LICENSE NO. 24759

DRAWN BY EM DATE 05/15/2012  
 DESIGN BY MN DATE 12/01/2010  
 CHECKED BY CAK DATE 05/29/2012



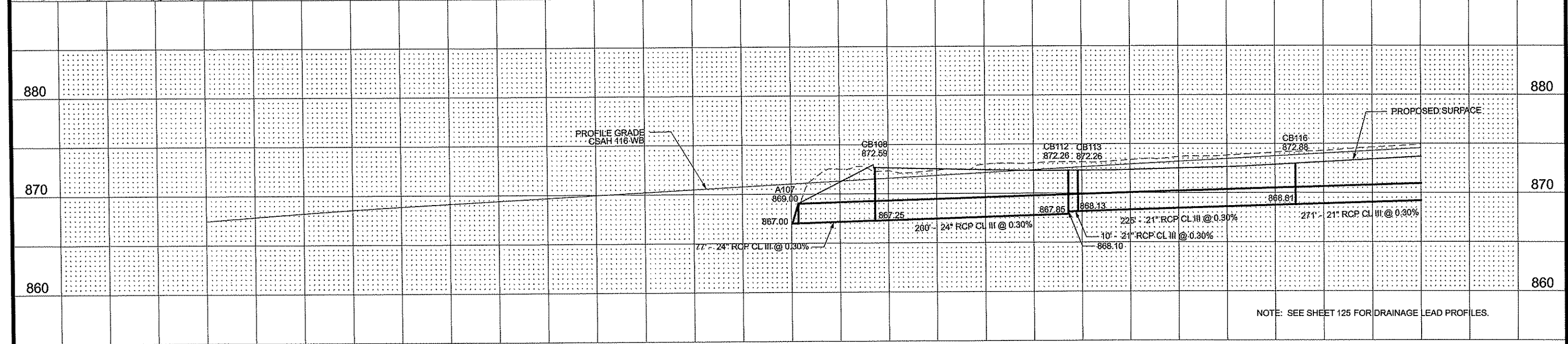
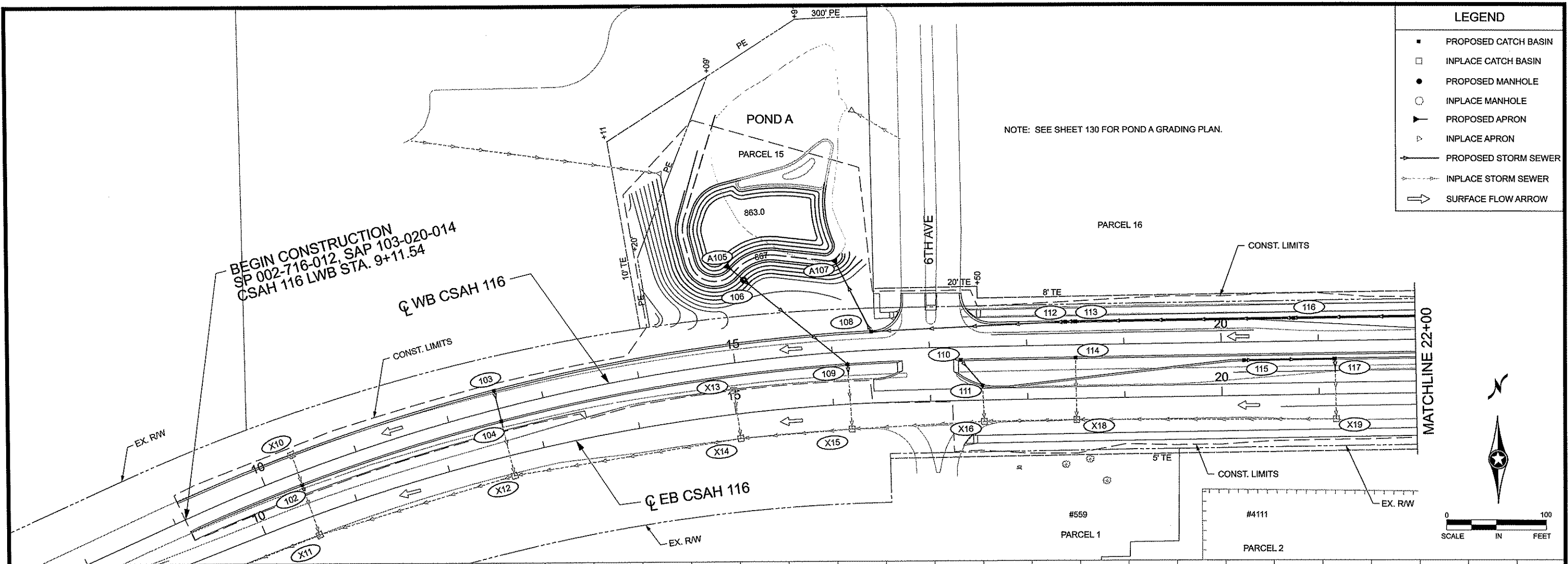
**ANOKA COUNTY  
HIGHWAY DEPT.**

S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

**DRAINAGE TABULATIONS**

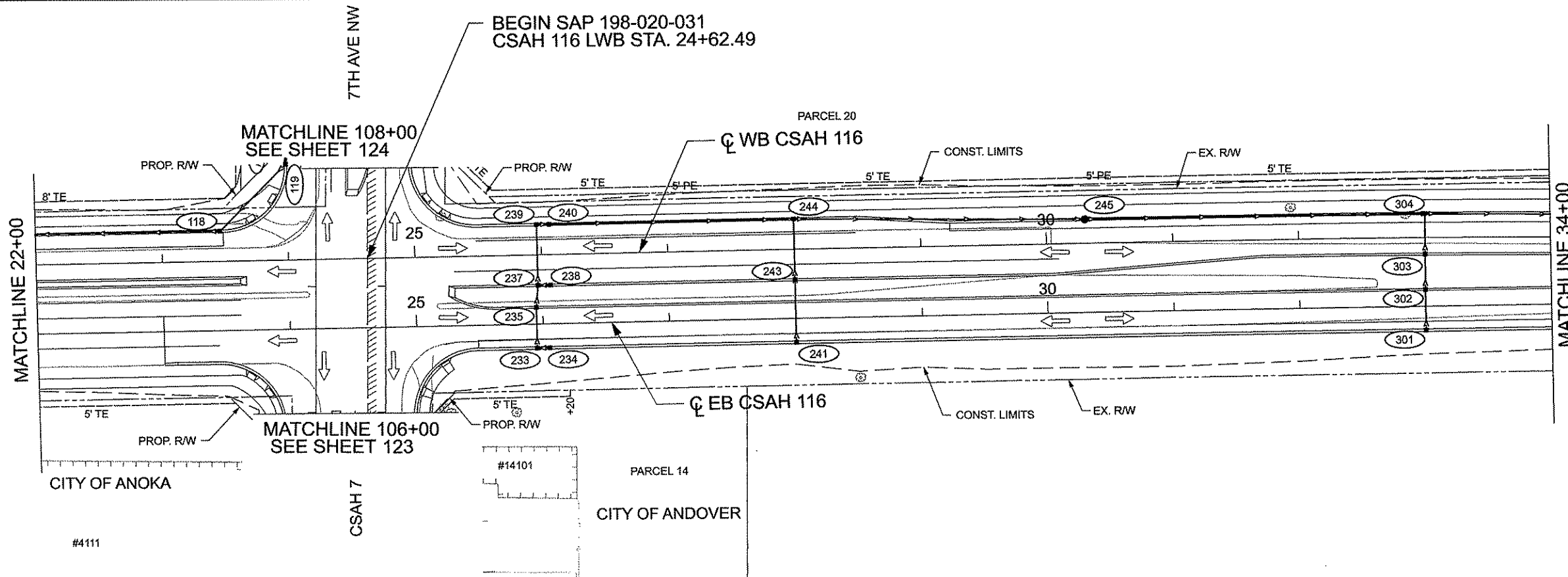
Sheet 115 of 282 Sheets

- LEGEND**
- PROPOSED CATCH BASIN
  - INPLACE CATCH BASIN
  - PROPOSED MANHOLE
  - INPLACE MANHOLE
  - ▲ PROPOSED APRON
  - ▷ INPLACE APRON
  - PROPOSED STORM SEWER
  - - - INPLACE STORM SEWER
  - ⇒ SURFACE FLOW ARROW

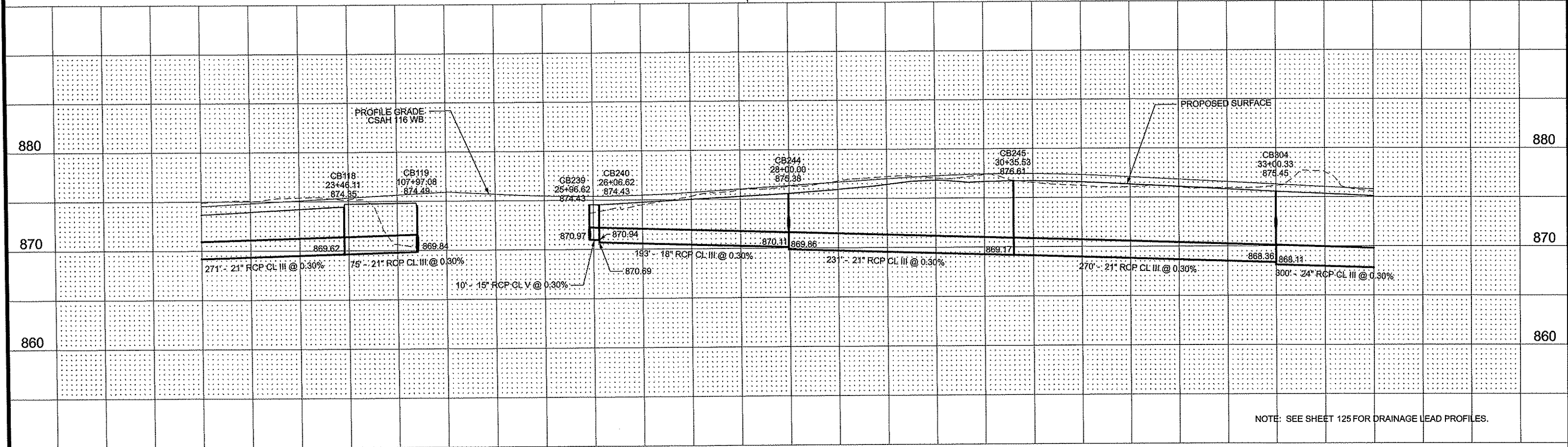
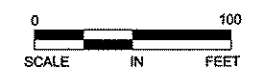


10+00	11+00	12+00	13+00	14+00	15+00	16+00	17+00	18+00	19+00	20+00	21+00	22+00
-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA. PRINT NAME: CURT A. KOBILARCSIK SIGNATURE: <i>Curt Kobilarcsik</i> DATE: 6-29-12 LICENSE NO. 24756					DRAWN BY: EJM DATE: 05/15/2012 DESIGN BY: MN DATE: 12/01/2010 CHECKED BY: CAK DATE: 05/29/2012				ANOKA COUNTY HIGHWAY DEPT.			S.P. 002-716-012 S.P. 198-020-031 S.P. 103-020-014			S.P. 198-020-030 S.P. 198-020-032 S.P. 103-020-015			S.P. 002-607-021 S.P. 198-020-032 S.P. 103-020-015			DRAINAGE PLAN STA 9+00.00 TO 22+00.00 Sheet 116 of 282 Sheets										
NO	DATE	BY	CKD	APPR	REVISION																										
NAME: p102-716-12\plan0271612_DR_P1.dgn					06/28/2012					8:20:33 AM																					



- LEGEND**
- PROPOSED CATCH BASIN
  - INPLACE CATCH BASIN
  - PROPOSED MANHOLE
  - INPLACE MANHOLE
  - ▶ PROPOSED APRON
  - ◀ INPLACE APRON
  - PROPOSED STORM SEWER
  - SURFACE FLOW ARROW



NOTE: SEE SHEET 125 FOR DRAINAGE LEAD PROFILES.

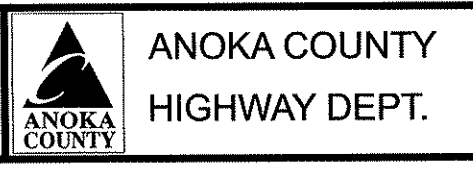
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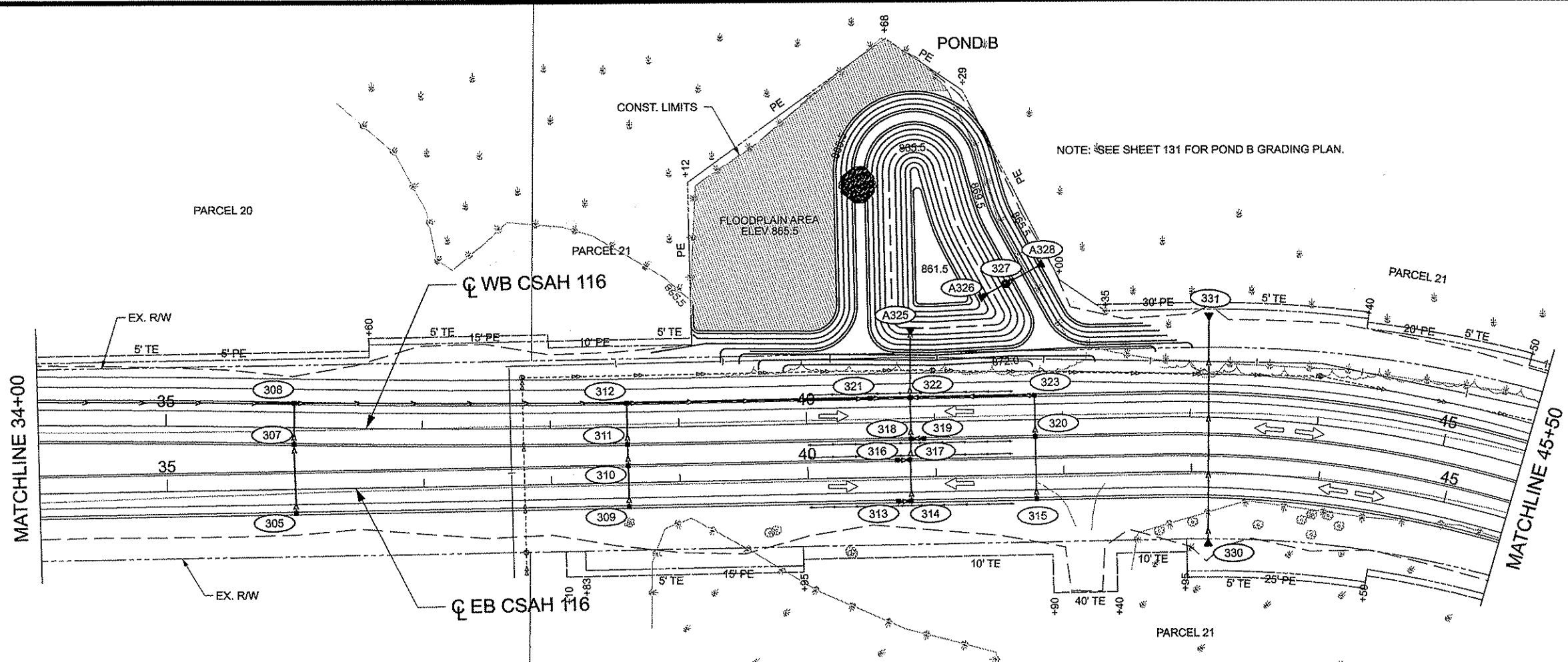
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 SIGNATURE: *Curt A. Kobilarsik*  
 DATE: 6-29-12 LICENSE NO. 24756

DRAWN BY: EJM DATE: 05/15/2012  
 DESIGN BY: MN DATE: 12/01/2010  
 CHECKED BY: CAK DATE: 05/29/2012



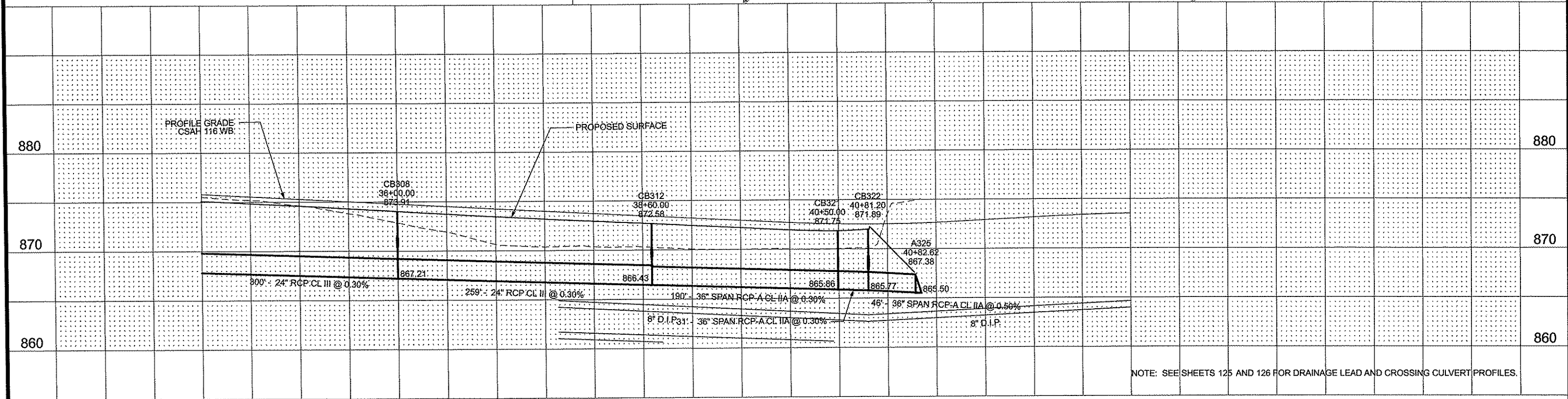
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S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

**DRAINAGE PLAN**  
 STA 22+00.00 TO 34+00.00  
 Sheet 117 of 282 Sheets



**LEGEND**

- PROPOSED CATCH BASIN
- INPLACE CATCH BASIN
- PROPOSED MANHOLE
- INPLACE MANHOLE
- ▲ PROPOSED APRON
- ▽ INPLACE APRON
- PROPOSED STORM SEWER
- - - INPLACE STORM SEWER
- 3" PERF PIPE DRAIN
- WETLAND BOUNDARIES
- SURFACE FLOW ARROW



34+00    35+00    36+00    37+00    38+00    39+00    40+00    41+00    42+00    43+00    44+00    45+00

3 OF 9

NO	DATE	BY	CKD	APPR	REVISION
NAME: p:\02-716-12\plan\0271612_DR_P3.dgn					

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

PRINT NAME: CURT A. KOBILARCSIK

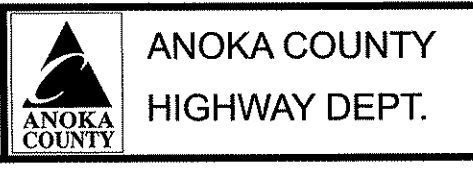
SIGNATURE: *Curt A. Kobilarcsik*

DATE: 6-29-12 LICENSE NO. 24756

DRAWN BY: EJM DATE: 05/15/2012

DESIGN BY: MN DATE: 12/01/2010

CHECKED BY: CAK DATE: 05/29/2012



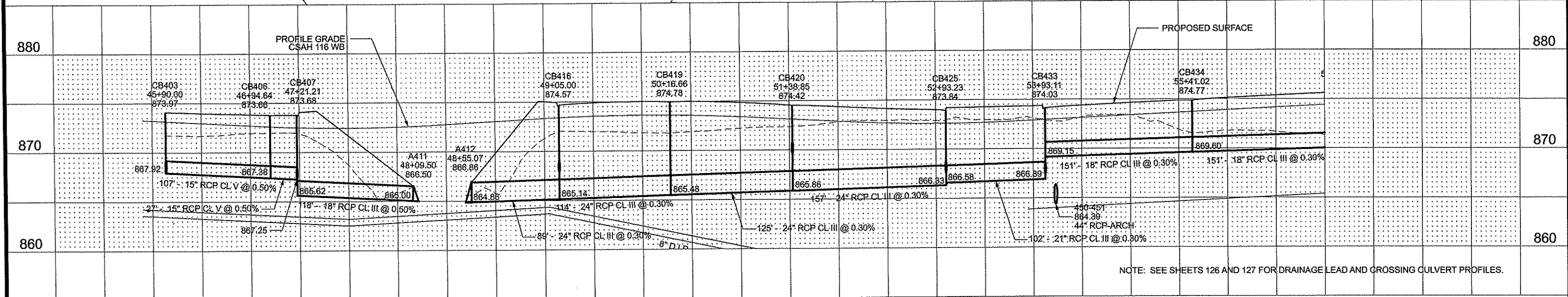
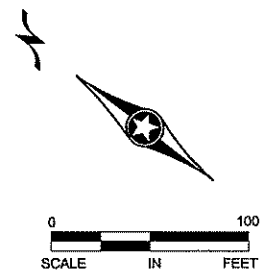
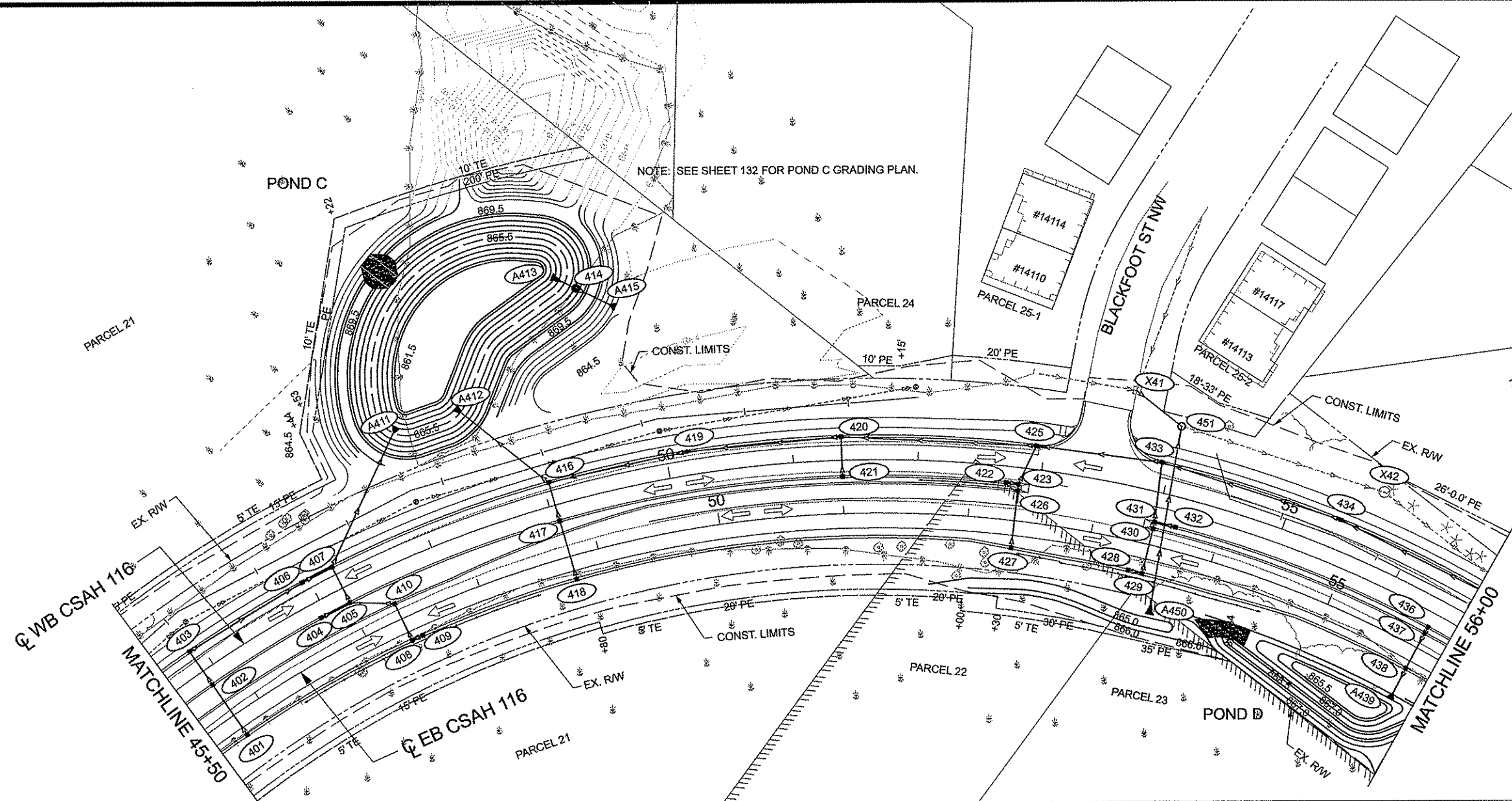
S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

**DRAINAGE PLAN**

STA 34+00.00 TO 45+50.00

Sheet 118 of 282 Sheets

- LEGEND**
- PROPOSED CATCH BASIN
  - INPLACE CATCH BASIN
  - PROPOSED MANHOLE
  - INPLACE MANHOLE
  - ▲ PROPOSED APRON
  - ▽ INPLACE APRON
  - PROPOSED STORM SEWER
  - - - INPLACE STORM SEWER
  - 3" PERF PIPE DRAIN
  - WETLAND BOUNDARIES
  - SURFACE FLOW ARROW



46+00    47+00    48+00    49+00    50+00    51+00    52+00    53+00    54+00    55+00    56+00    4 OF 9

NO	DATE	BY	CKD	APPR	REVISION	
					06/28/2012	8:20:44 AM

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

PRINT NAME: CURT A. KOBILARCSIK

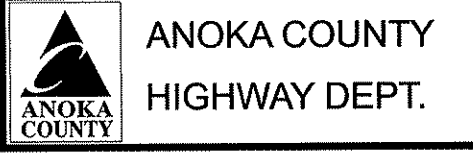
SIGNATURE: *Curt Kobilarcsik*

DATE: 6-29-12    LICENSE NO. 24756

DRAWN BY: EJM    DATE: 05/15/2012

DESIGN BY: MN    DATE: 12/01/2010

CHECKED BY: CAK    DATE: 05/28/2012

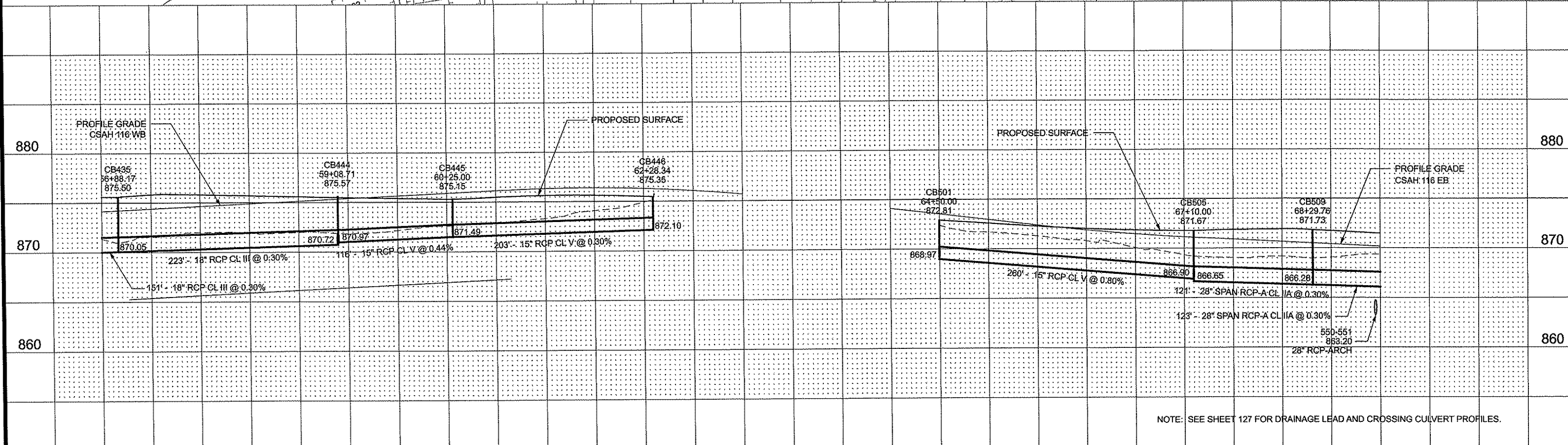
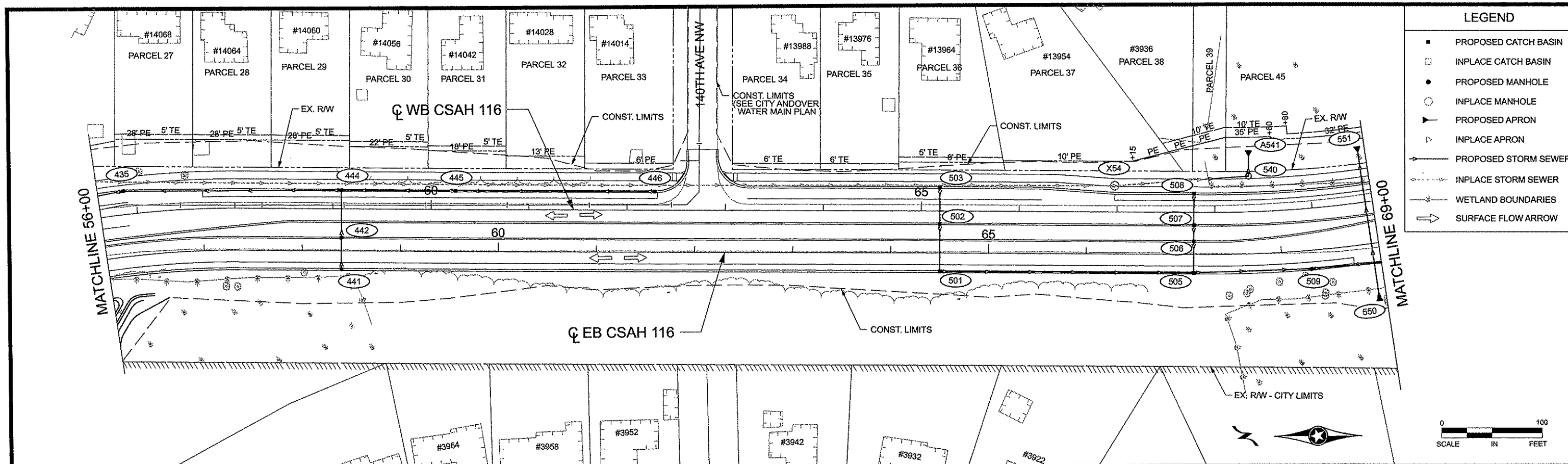


S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

**DRAINAGE PLAN**

STA 45+50.00 TO 55+50.00

Sheet 119 of 282 Sheets



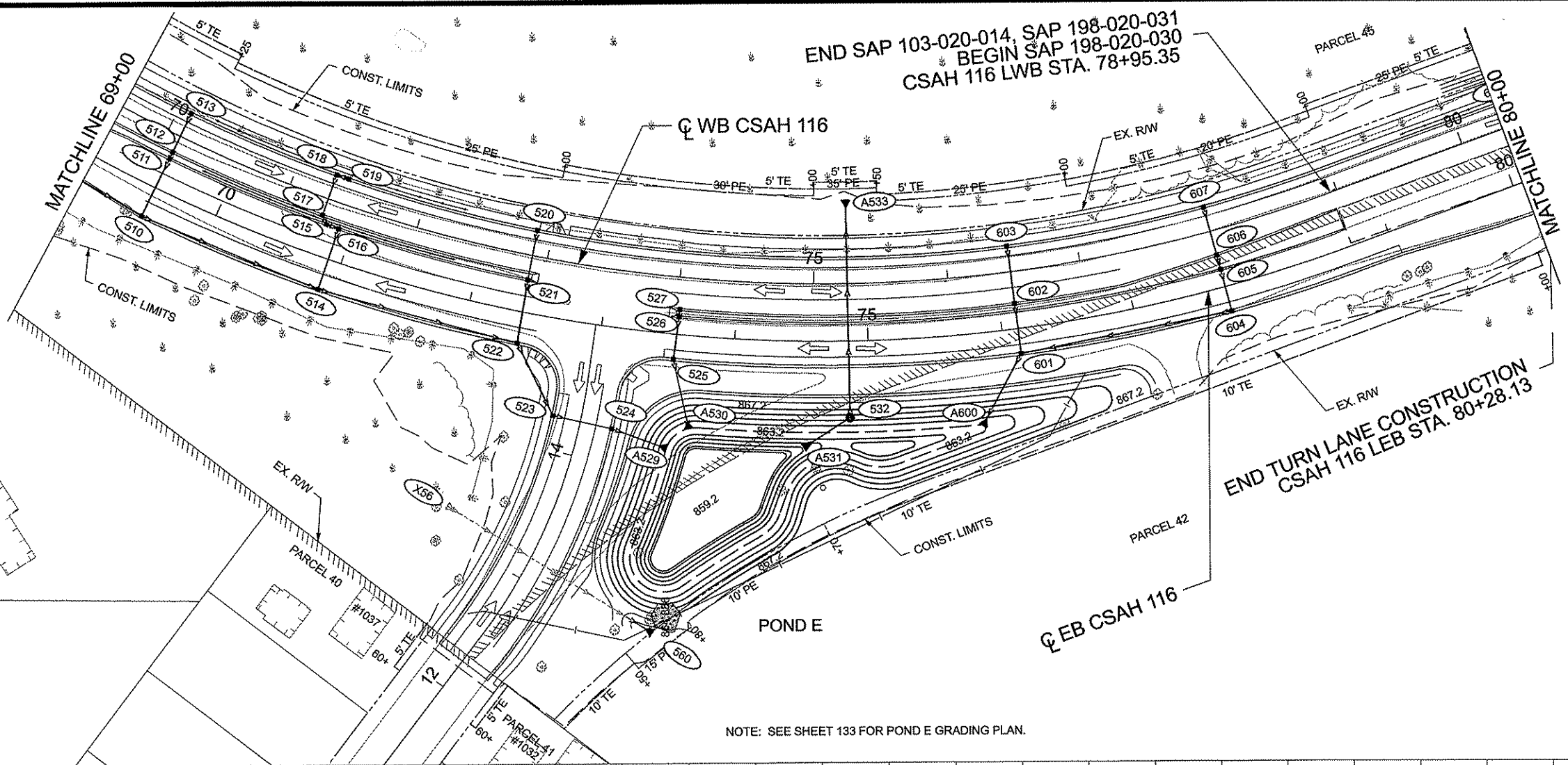
NOTE: SEE SHEET 127 FOR DRAINAGE LEAD AND CROSSING CULVERT PROFILES.

56+00 57+00 58+00 59+00 60+00 61+00 62+00 63+00 64+00 65+00 66+00 67+00 68+00 69+00

5 OF 9

<p>NO DATE BY CKD APPR REVISION</p> <p>NAME: p102-716-12\plant0271612_DR_P5.dgn 06/28/2012 8:20:48 AM</p>	<p>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.</p> <p>PRINT NAME: CURT A. KOBILARCSIK</p> <p>SIGNATURE: <i>Curt Kobilarcsik</i></p> <p>DATE: 6.29.12 LICENSE NO. 24756</p>	<p>DRAWN BY: EJM DATE: 05/15/2012</p> <p>DESIGN BY: MN DATE: 12/01/2010</p> <p>CHECKED BY: CAK DATE: 05/29/2012</p>	<p><b>ANOKA COUNTY</b> <b>HIGHWAY DEPT.</b></p>	<p>S.P. 002-716-012</p> <p>S.P. 198-020-031</p> <p>S.P. 103-020-014</p>	<p>S.P. 198-020-030</p> <p>S.P. 198-020-032</p> <p>S.P. 103-020-015</p>	<p>S.P. 002-607-021</p> <p>S.P. 198-020-032</p> <p>S.P. 103-020-015</p>	<p><b>DRAINAGE PLAN</b></p> <p>STA 55+50.00 TO 69+00.00</p> <p>Sheet 120 of 282 Sheets</p>
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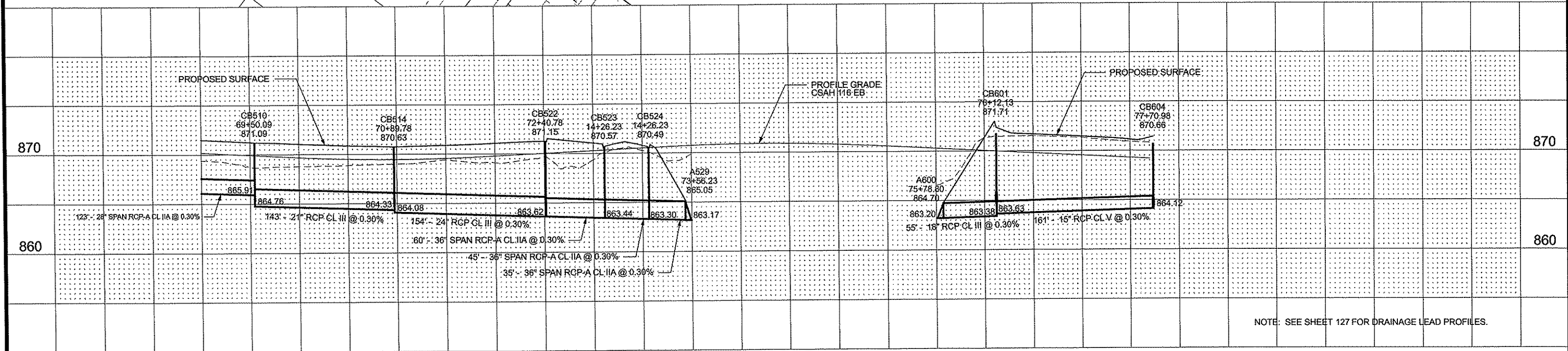




**LEGEND**

- PROPOSED CATCH BASIN
- INPLACE CATCH BASIN
- PROPOSED MANHOLE
- INPLACE MANHOLE
- ▲ PROPOSED APRON
- ▽ INPLACE APRON
- PROPOSED STORM SEWER
- - - INPLACE STORM SEWER
- 3" PERF PIPE DRAIN
- ~ WETLAND BOUNDARIES
- SURFACE FLOW ARROW

NOTE: SEE SHEET 133 FOR POND E GRADING PLAN.

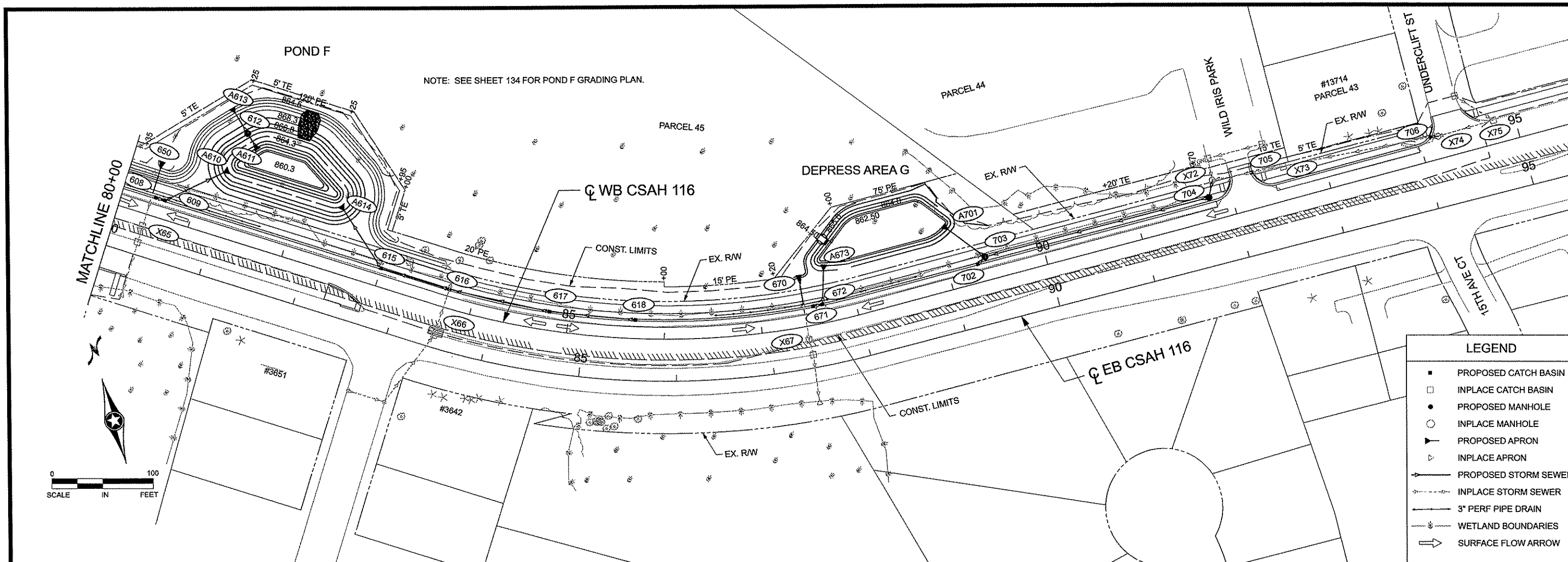


NOTE: SEE SHEET 127 FOR DRAINAGE LEAD PROFILES.

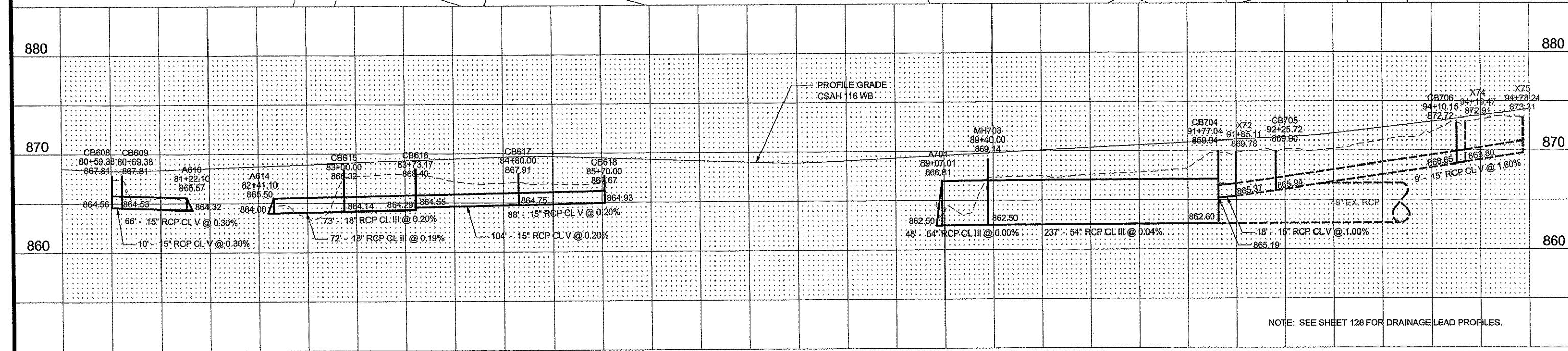
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6 OF 9

<p>NO. DATE BY CKD APPR</p> <p>REVISION 06/28/2012 8:20:52 AM</p> <p>NAME: p:\02-716-12\plan\0271612_DR_P6.dgn</p>	<p>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.</p> <p>PRINT NAME: CURT A. KOBILARCSIK</p> <p>SIGNATURE: <i>Curt Kobilarsik</i></p> <p>DATE: 6-29-12 LICENSE NO. 24756</p>	<p>DRAWN BY: EJM DATE: 06/15/2011</p> <p>DESIGN BY: MN DATE: 12/01/2011</p> <p>CHECKED BY: CAK DATE: 05/29/2011</p>	<p><b>ANOKA COUNTY</b> HIGHWAY DEPT.</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>S.P. 002-716-012</td> <td>S.P. 198-020-030</td> <td>S.P. 002-607-021</td> </tr> <tr> <td>S.P. 198-020-031</td> <td></td> <td>S.P. 198-020-032</td> </tr> <tr> <td>S.P. 103-020-014</td> <td></td> <td>S.P. 103-020-015</td> </tr> </table>	S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021	S.P. 198-020-031		S.P. 198-020-032	S.P. 103-020-014		S.P. 103-020-015	<p><b>DRAINAGE PLAN</b></p> <p>STA 69+00.00 TO 80+00.00</p> <p>Sheet 121 of 282 Sheets</p>
S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021												
S.P. 198-020-031		S.P. 198-020-032												
S.P. 103-020-014		S.P. 103-020-015												



LEGEND	
■	PROPOSED CATCH BASIN
□	INPLACE CATCH BASIN
●	PROPOSED MANHOLE
○	INPLACE MANHOLE
▲	PROPOSED APRON
▽	INPLACE APRON
—	PROPOSED STORM SEWER
- - -	INPLACE STORM SEWER
—	3" PERF PIPE DRAIN
⊘	WETLAND BOUNDARIES
→	SURFACE FLOW ARROW



NOTE: SEE SHEET 128 FOR DRAINAGE LEAD PROFILES.

80+00 81+00 82+00 83+00 84+00 85+00 86+00 87+00 88+00 89+00 90+00 91+00 92+00 93+00 94+00 95+00

7 OF 9

NO	DATE	BY	CKD	APPR	REVISION

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

PRINT NAME: CURT A. KOBIARCSIK

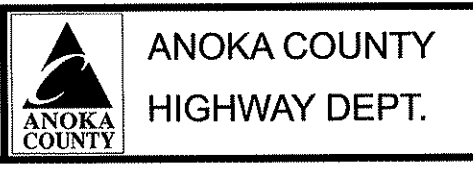
SIGNATURE: *Curt Kobilarcsik*

DATE: 6-29-12 LICENSE NO. 24758

DRAWN BY: EJM DATE: 05/15/2012

DESIGN BY: MN DATE: 12/01/2010

CHECKED BY: CAK DATE: 05/29/2012



S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

**DRAINAGE PLAN**

STA 80+00.00 TO 94+00.00

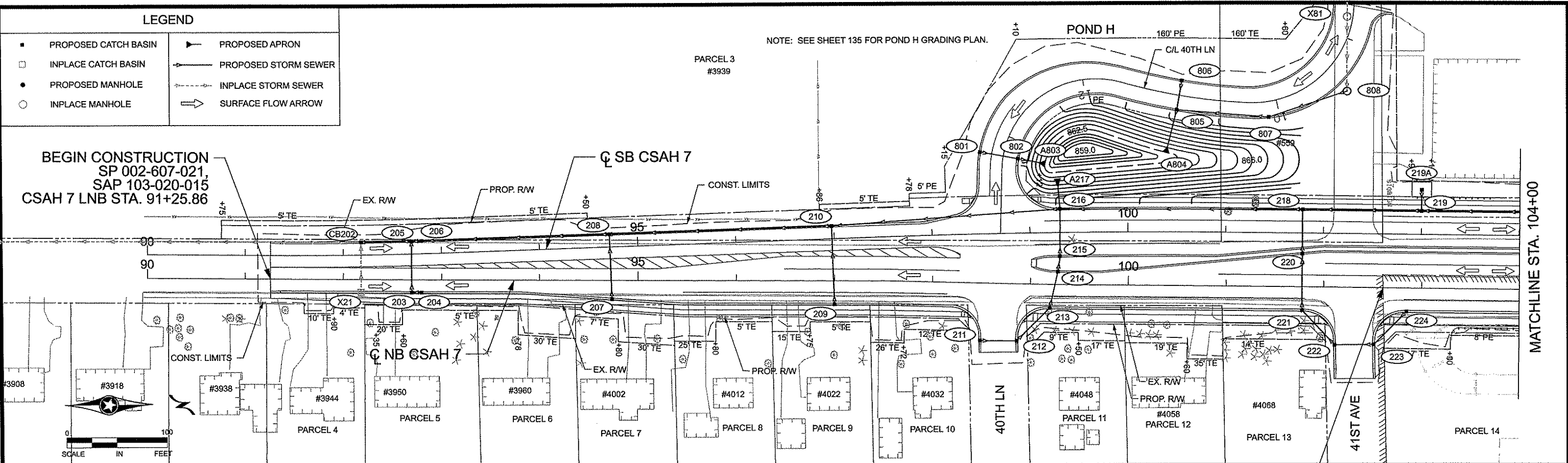
Sheet 122 of 282 Sheets

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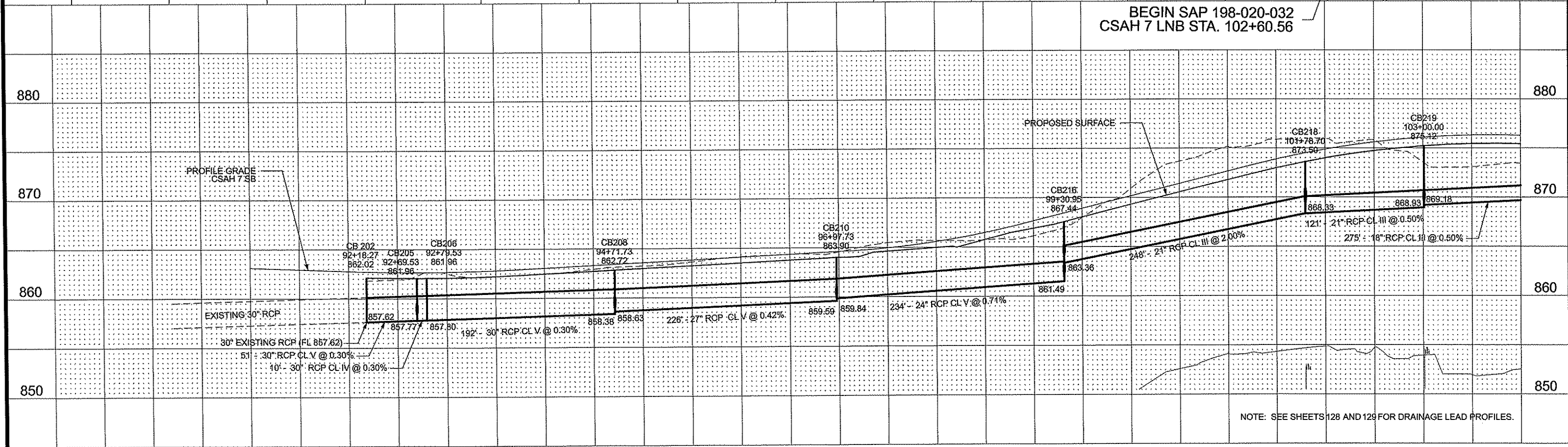
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- INPLACE CATCH BASIN
- PROPOSED MANHOLE
- INPLACE MANHOLE
- PROPOSED APRON
- PROPOSED STORM SEWER
- INPLACE STORM SEWER
- SURFACE FLOW ARROW

NOTE: SEE SHEET 135 FOR POND H GRADING PLAN.

BEGIN CONSTRUCTION  
SP 002-607-021,  
SAP 103-020-015  
CSAH 7 LNB STA. 91+25.86



BEGIN SAP 198-020-032  
CSAH 7 LNB STA. 102+60.56



NOTE: SEE SHEETS 128 AND 129 FOR DRAINAGE LEAD PROFILES.

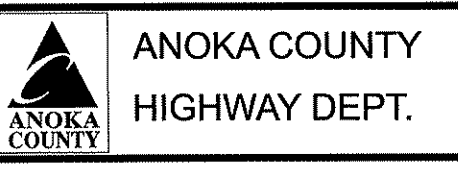
90+00 91+00 92+00 93+00 94+00 95+00 96+00 97+00 98+00 99+00 100+00 101+00 102+00 103+00 104+00

NO	DATE	BY	CKD	APPR	REVISION

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I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.  
PRINT NAME: CURT A. KOBILARCSIK  
SIGNATURE: *C. Kobilarsik*  
DATE: 6-29-12 LICENSE NO. 24756

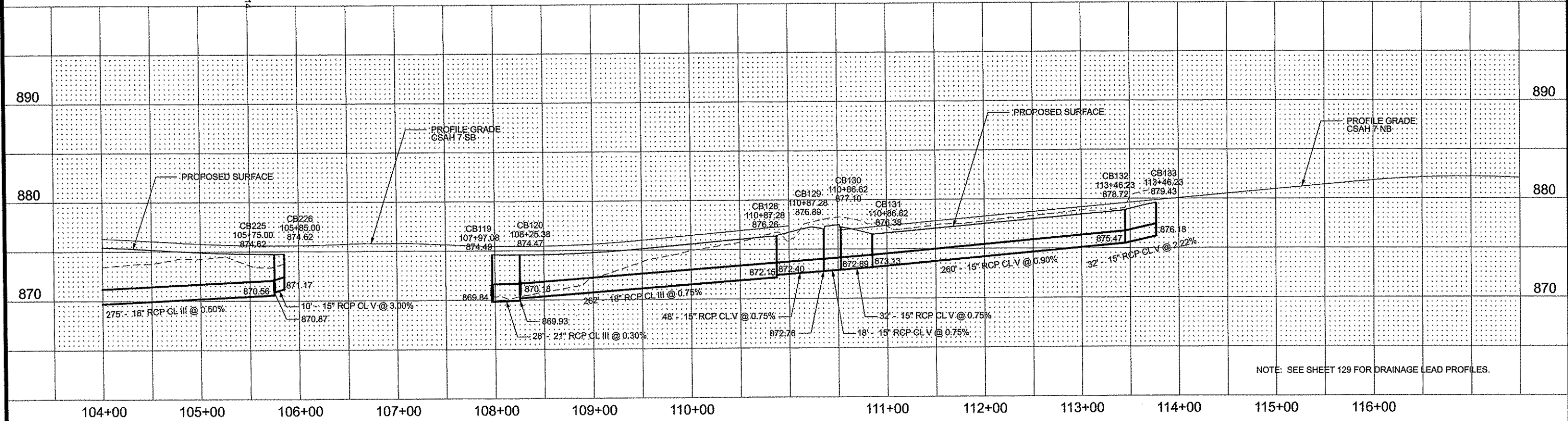
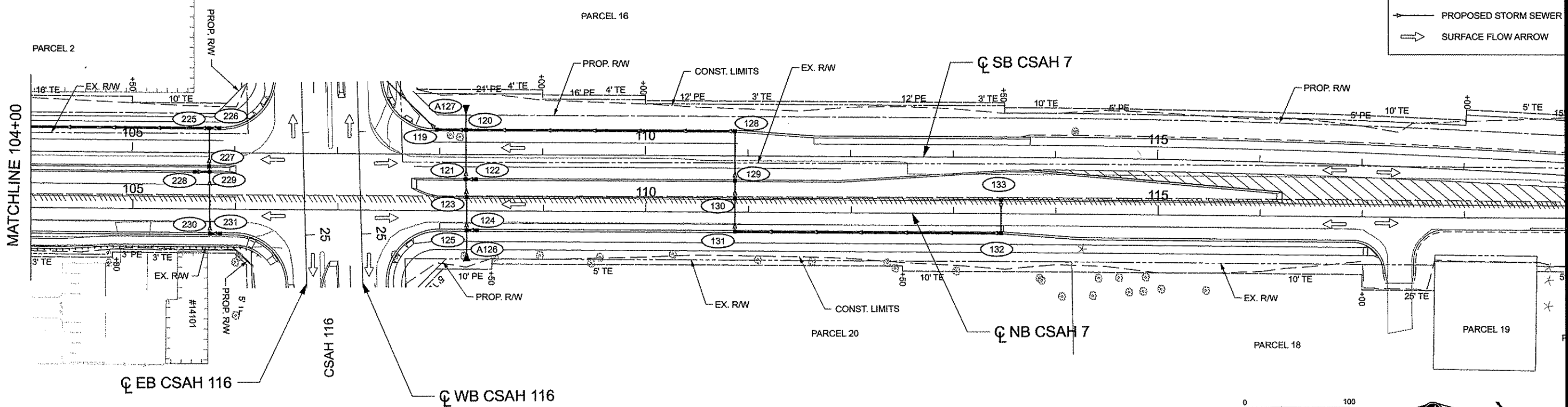
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CHECKED BY: CAK DATE: 05/29/2012



S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021	DRAINAGE PLAN STA 90+00.00 TO 104+00.00 Sheet 123 of 282 Sheets
S.P. 198-020-031		S.P. 198-020-032	
S.P. 103-020-014		S.P. 103-020-015	

**LEGEND**

- PROPOSED CATCH BASIN
- PROPOSED MANHOLE
- ▶ PROPOSED APRON
- PROPOSED STORM SEWER
- ⇨ SURFACE FLOW ARROW



NOTE: SEE SHEET 129 FOR DRAINAGE LEAD PROFILES.

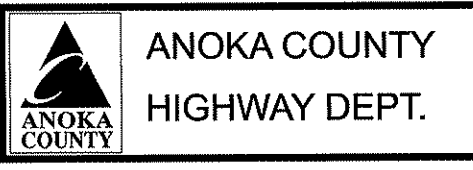
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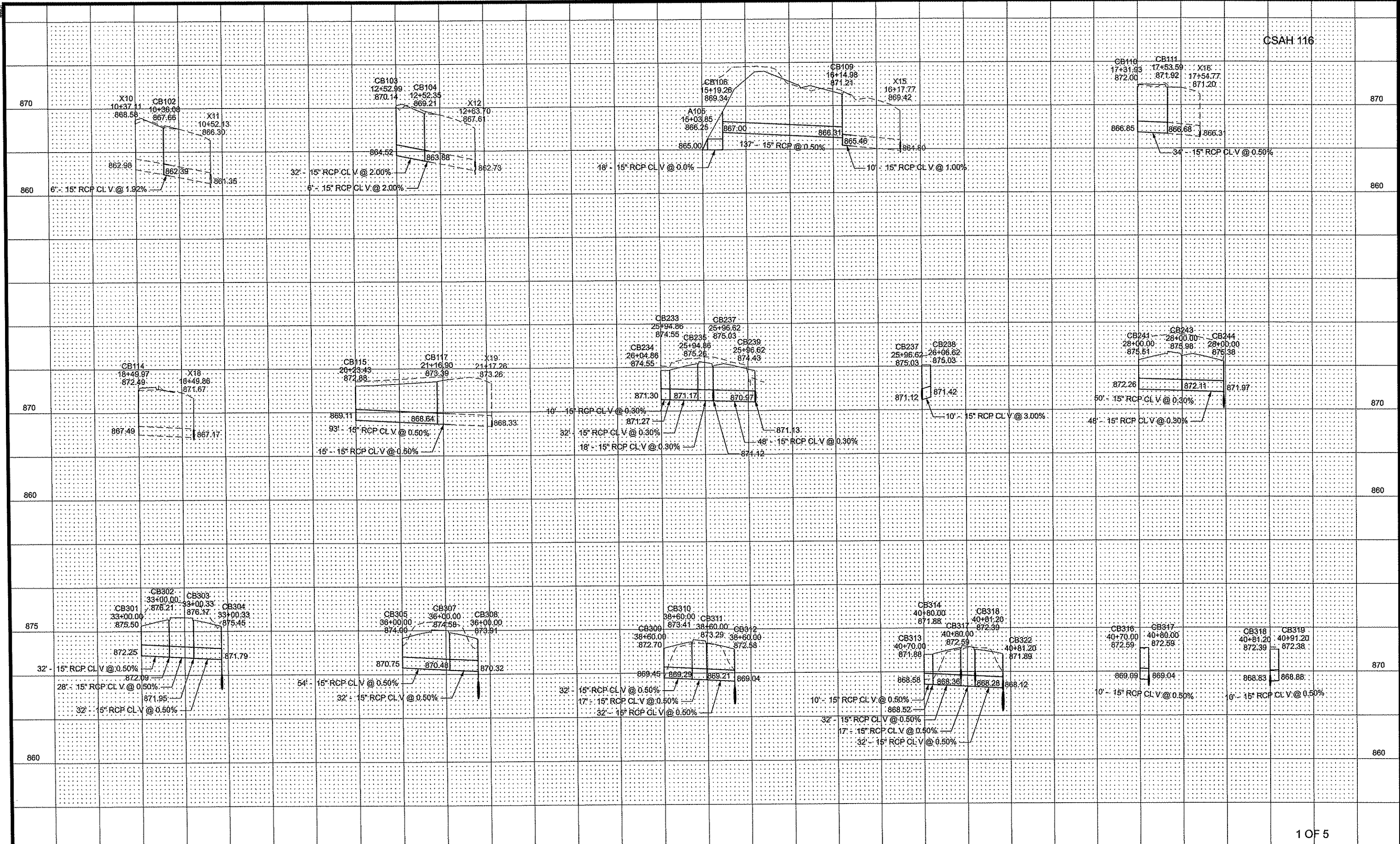
PRINT NAME: CURT A. KOBILARCSIK  
SIGNATURE: *Curt Kobilarcsik*  
DATE: 6.29.12 LICENSE NO. 24756

DRAWN BY: EJM DATE: 05/15/2012  
DESIGN BY: MN DATE: 12/01/2010  
CHECKED BY: CAK DATE: 05/29/2012



S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

**DRAINAGE PLAN**  
STA 104+00.00 TO 115+00.00  
Sheet 124 of 282 Sheets



NO	DATE	BY	CKD	APPR	REVISION
NAME: p:\02-716-12\plan\0271612_DR_LEADS.dgn					
8:21:06 AM					

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

PRINT NAME: CURT A. KOBILARCSIK

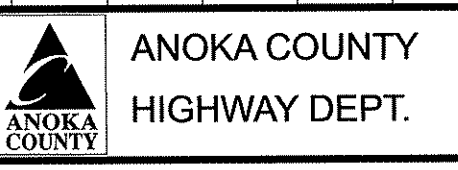
SIGNATURE: *Curt Kobilarcsik*

DATE: 6-29-12 LICENSE NO. 24756

DRAWN BY EM DATE 05/15/2012

DESIGN BY MN DATE 12/01/2010

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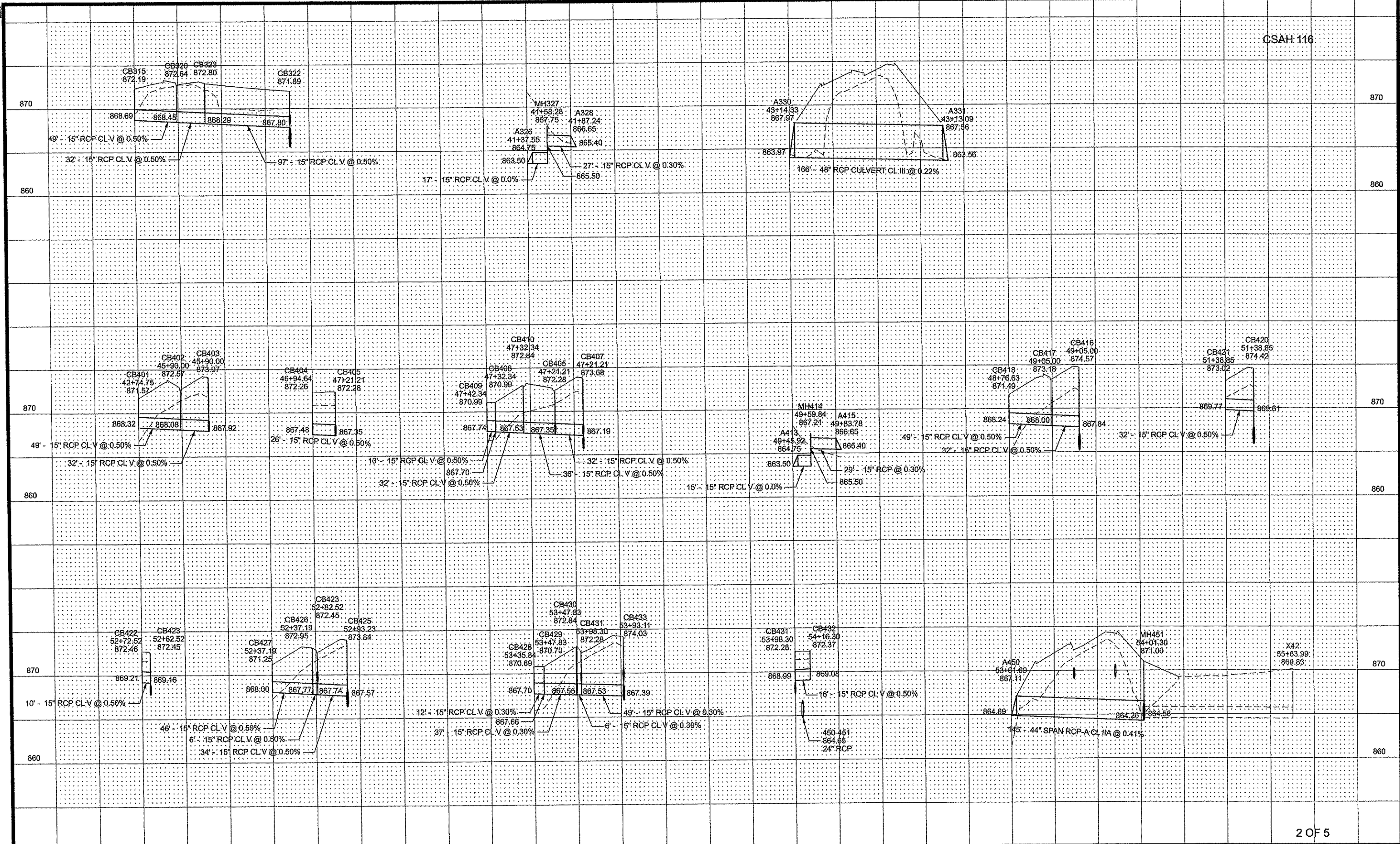


S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

DRAINAGE LEADS

STA 10+53 TO 40+91

Sheet 125 of 282 Sheets



NO	DATE	BY	CKD	APPR	REVISION
NAME: p:\02-716-12\plan\0271612_DR_LEADS.dgn					
DATE: 06/28/2012 8:21:09 AM					

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

PRINT NAME: CURT A. KOBILARCSIK

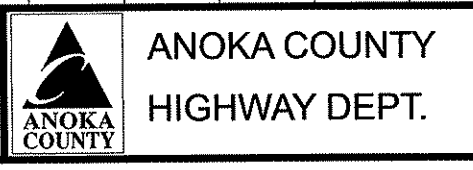
SIGNATURE: *Curt A. Kobilarsik*

DATE: 6-29-12 LICENSE NO. 24756

DRAWN BY: EM DATE 05/15/2012

DESIGN BY: MN DATE 12/01/2010

CHECKED BY: CAK DATE 05/29/2012

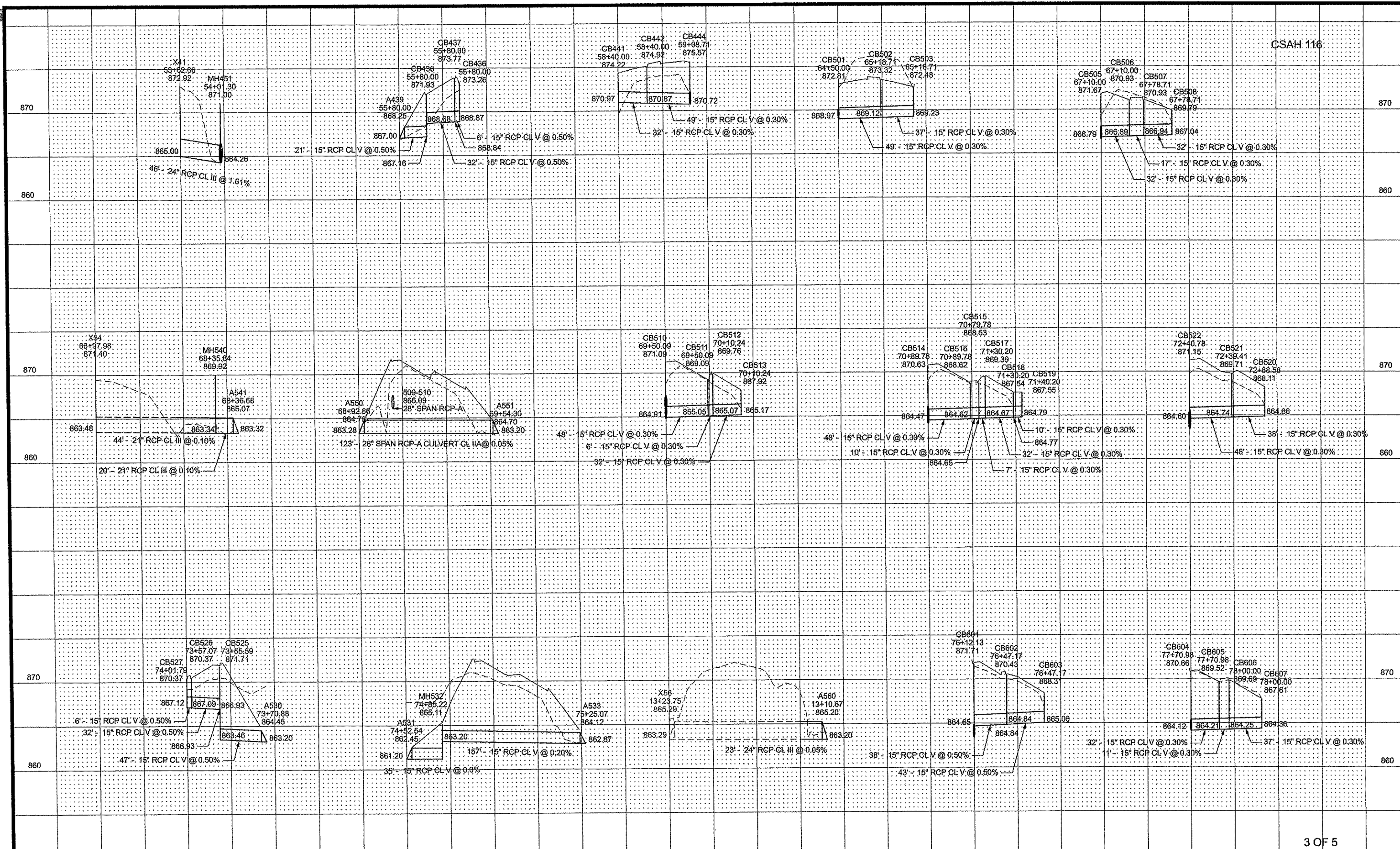


S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

DRAINAGE LEADS

STA 41+78 TO 53+62

Sheet 126 of 282 Sheets



NO	DATE	BY	CKD	APPR	REVISION
NAME: p:102-716-12\plan\0271612_DR_LEADS.dgn					
REVISION					
06/29/2012 8:21:13 AM					

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

PRINT NAME: CURT A. KOBIARCSIK

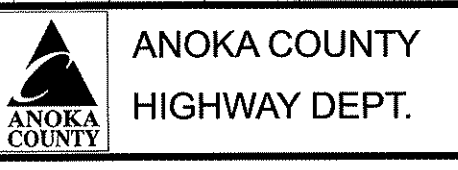
SIGNATURE: *Curt A. Kobiarcsik*

DATE: 6-29-12 LICENSE NO. 24756

DRAWN BY EM DATE 05/15/2012

DESIGN BY MN DATE 12/01/2010

CHECKED BY CAK DATE 05/29/2012

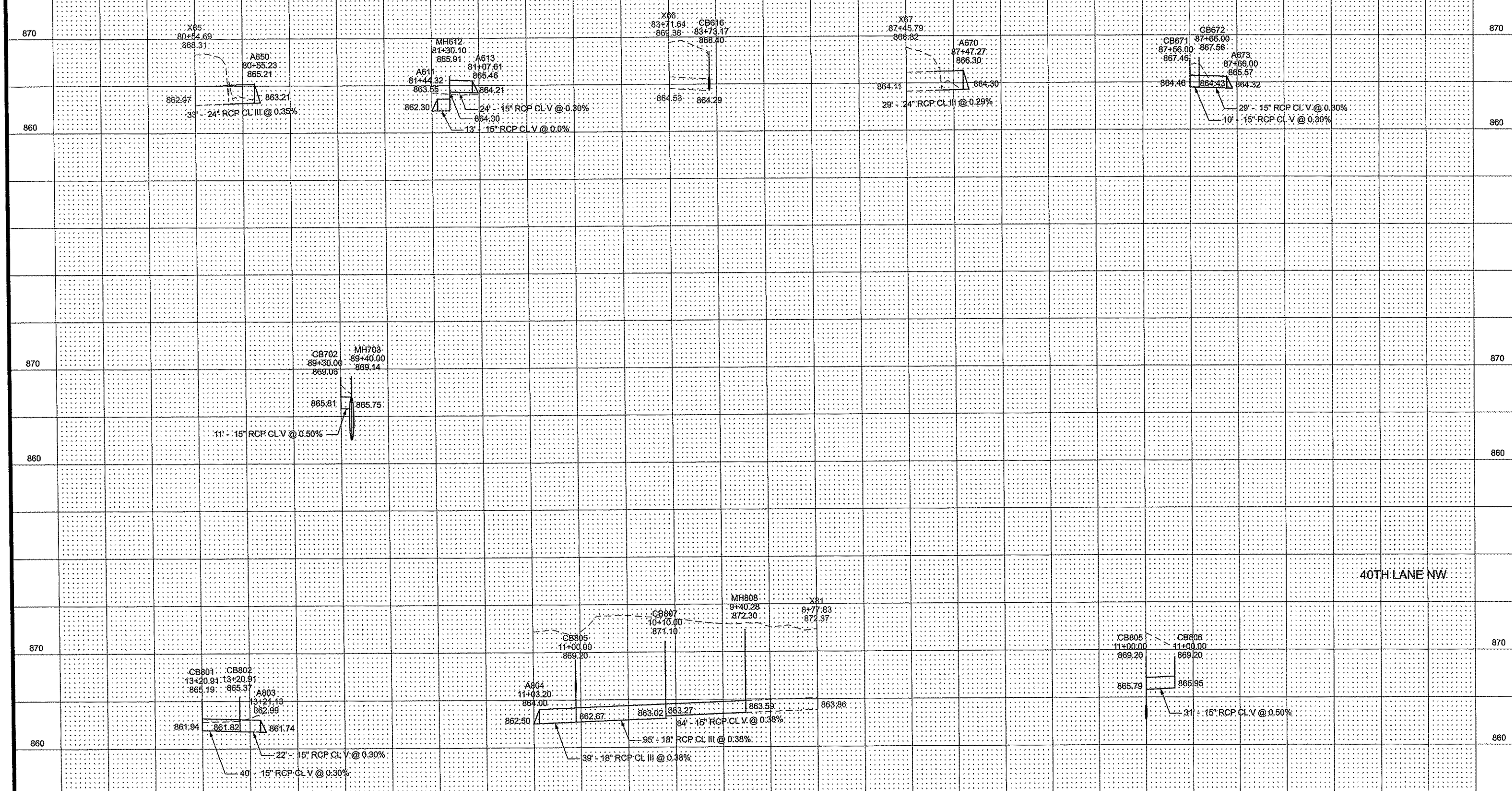


S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

DRAINAGE LEADS

STA 53+62 TO 77+71

Sheet 127 of 282 Sheets



40TH LANE NW

NO	DATE	BY	CKD	APPR	REVISION
NAME: p:\02-716-12\plan\0271612_DR_LEADS.dgn					
06/28/2012 8:21:17 AM					

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

PRINT NAME: CURT A. KOBILARCSIK

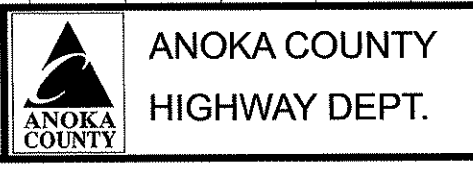
SIGNATURE: *Curt A. Kobilarsik*

DATE: 6-29-12 LICENSE NO. 24756

DRAWN BY EM DATE 05/15/2012

DESIGN BY MN DATE 12/01/2010

CHECKED BY CAK DATE 05/29/2012



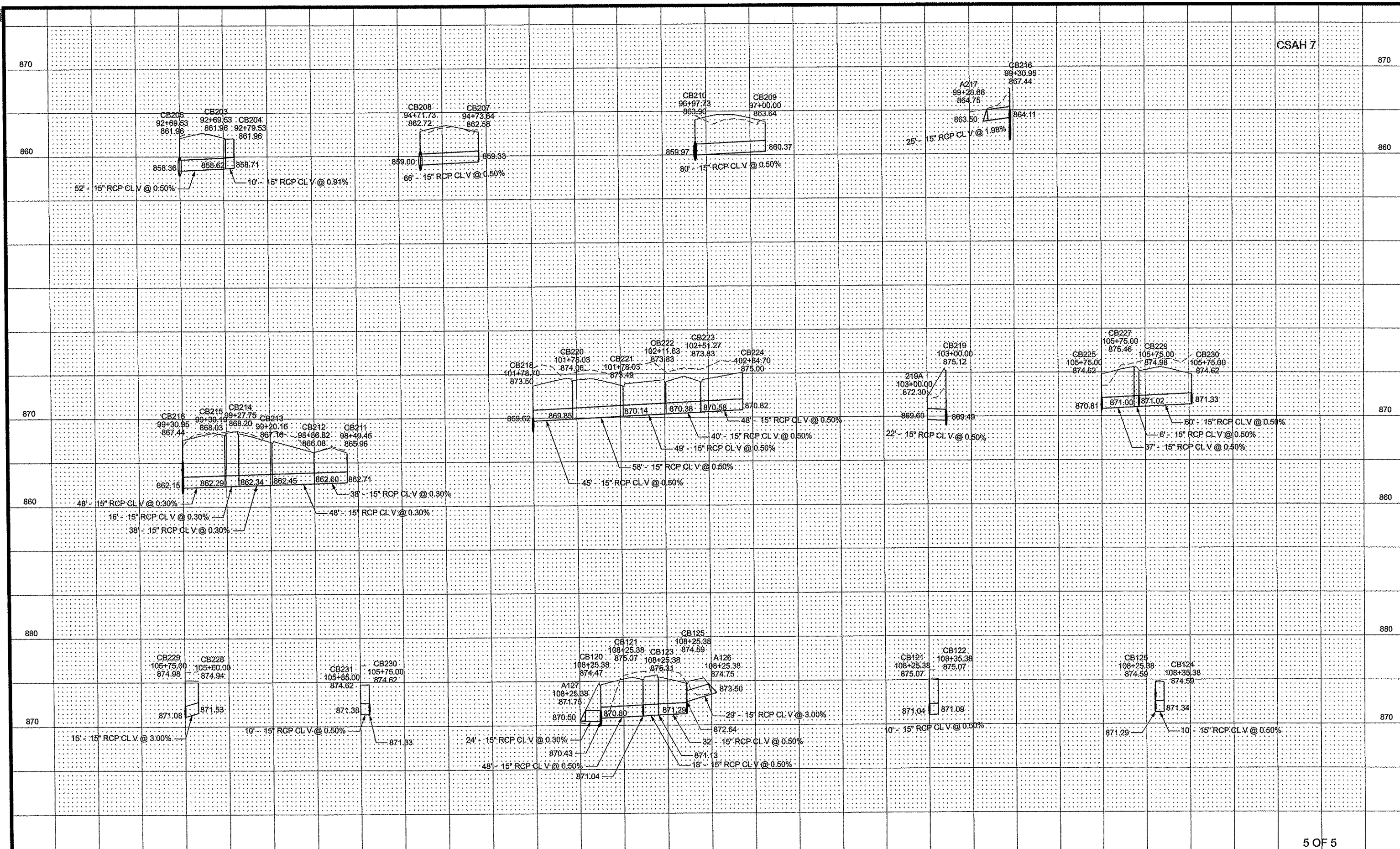
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S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

DRAINAGE LEADS

STA 77+71 TO 92+69

Sheet 128 of 282 Sheets

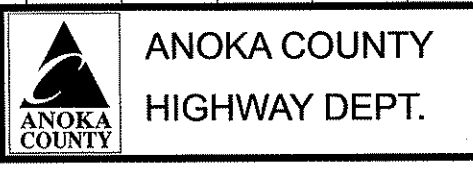




NO	DATE	BY	CKD	APPR	REVISION
NAME: p:\02-716-12\plan\0271612_DR_LEADS.dgn					

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.  
 PRINT NAME: CURT A. KOBILARCSIK  
 SIGNATURE: *Curt Kobilarcsik*  
 DATE: 6.29.12 LICENSE NO. 24756

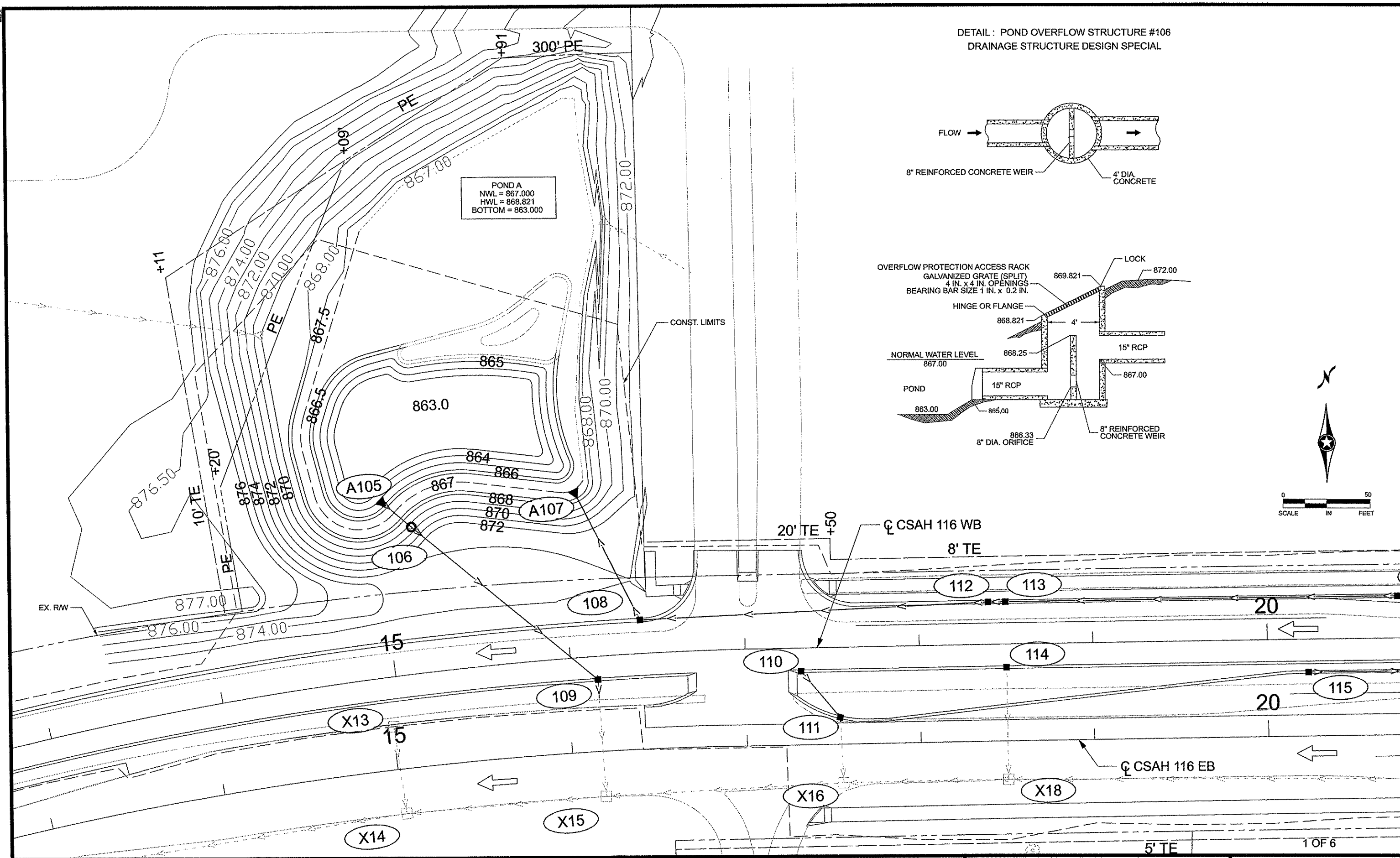
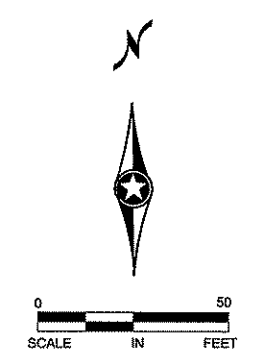
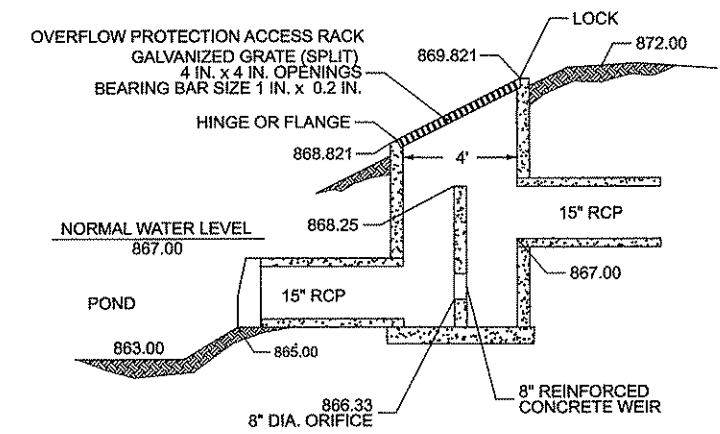
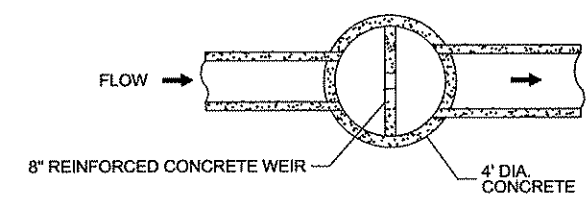
DRAWN BY EM DATE 05/15/2012  
 DESIGN BY MN DATE 12/01/2010  
 CHECKED BY CAK DATE 05/29/2012



S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

DRAINAGE LEADS  
 STA 92+69 TO 108+35  
 Sheet 129 of 282 Sheets

DETAIL : POND OVERFLOW STRUCTURE #106  
DRAINAGE STRUCTURE DESIGN SPECIAL

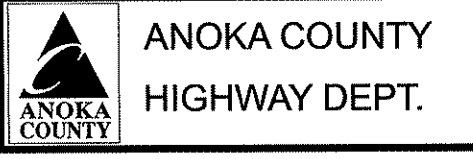


NO	DATE	BY	CKD	APPR	REVISION

NAME: p:\02-716-12\plan\0271612\_DR\_PND1.dgn  
08/28/2012 8:21:23 AM

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.  
PRINT NAME: CURT A. KOBILARCSIK  
SIGNATURE: *Curt Kobilarcsik*  
DATE: 6.29.12 LICENSE NO. 24756

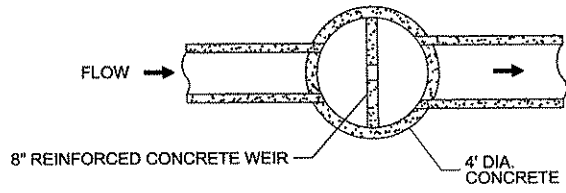
DRAWN BY: EJM DATE: 05/15/2012  
DESIGN BY: MN DATE: 12/01/2010  
CHECKED BY: CAK DATE: 05/29/2012



S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

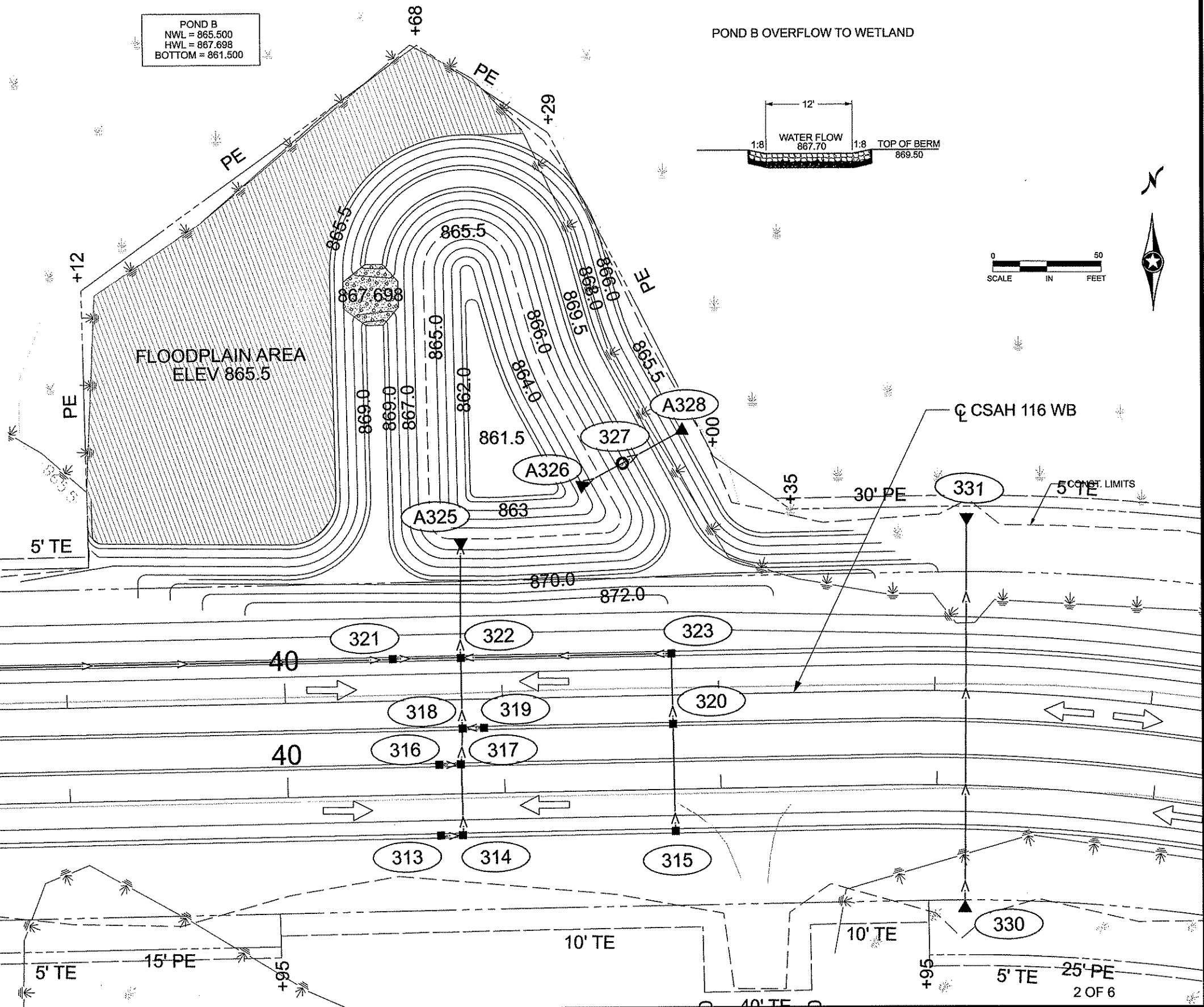
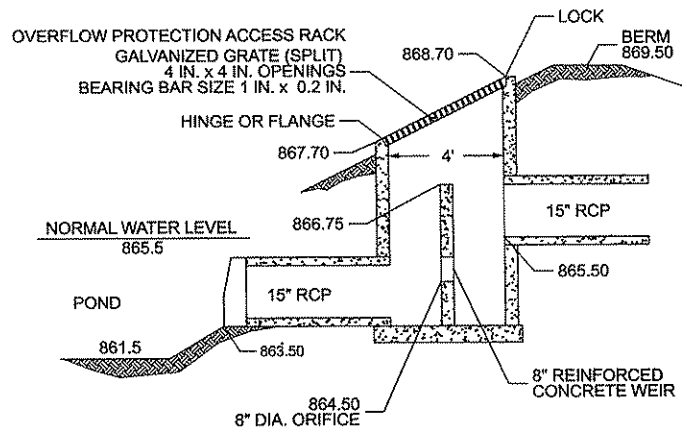
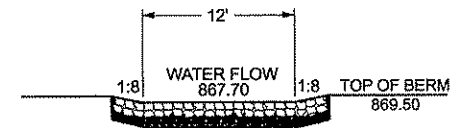
POND GRADING PLAN  
STA 14+00.00 TO 16+50.00  
Sheet 130 of 282 Sheets

DETAIL: POND OVERFLOW STRUCTURE #327  
DRAINAGE STRUCTURE DESIGN SPECIAL



POND B  
NWL = 865.500  
HWL = 867.698  
BOTTOM = 861.500

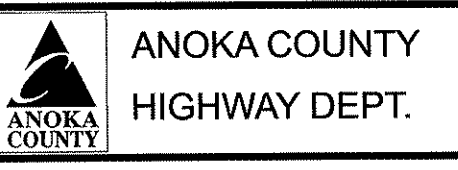
POND B OVERFLOW TO WETLAND



NO	DATE	BY	CKD	APPR	REVISION
NAME: p:\102-716-12\plant\0271612_OR_PND3.dgn					
06/28/2012 8:21:26 AM					

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.  
 PRINT NAME: CURT A. KOBILARCSIK  
 SIGNATURE: *Curt A. Kobilarsik*  
 DATE: 6.29.12 LICENSE NO. 24756

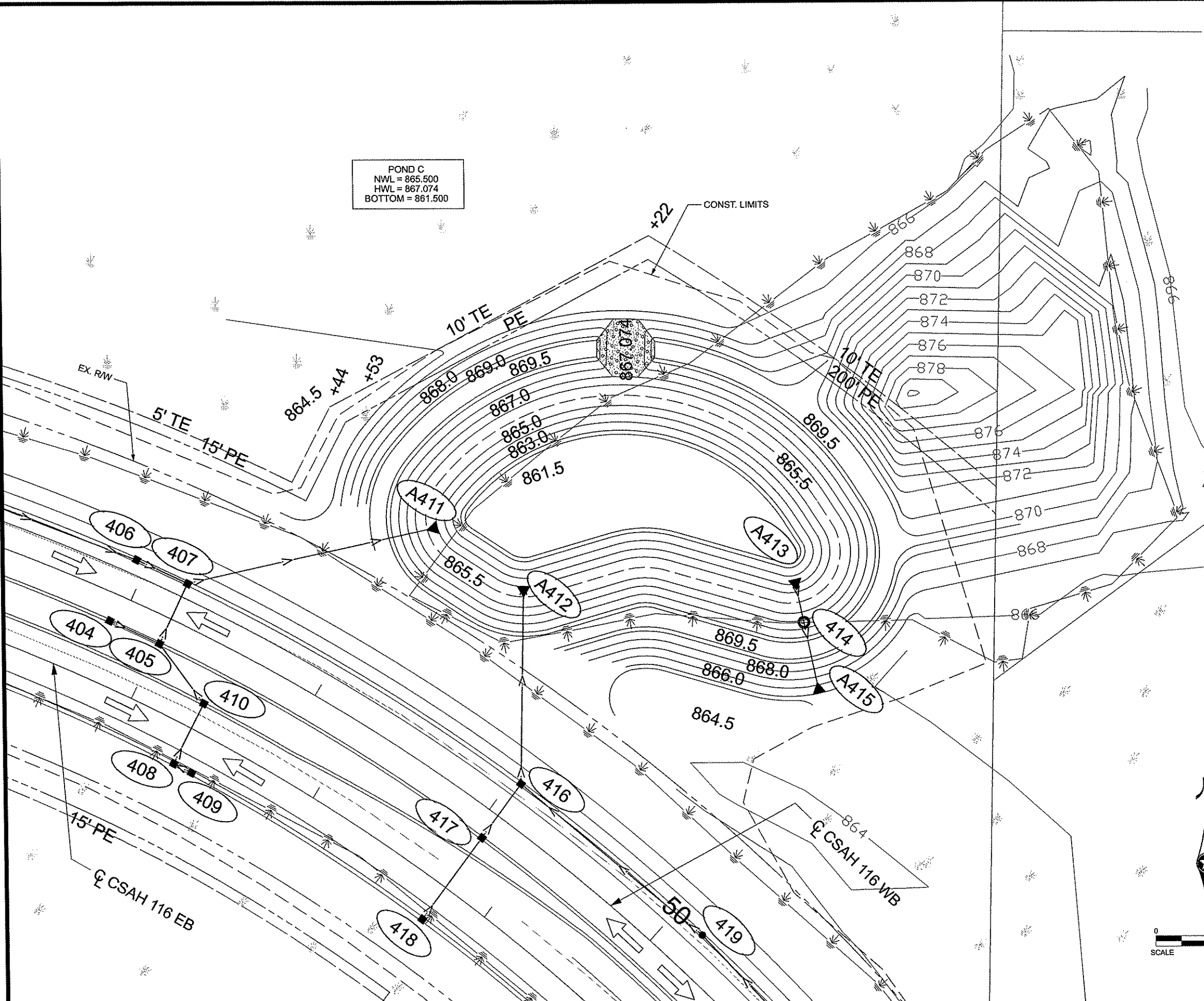
DRAWN BY: EJM DATE: 05/15/2012  
 DESIGN BY: MN DATE: 12/01/2010  
 CHECKED BY: CAK DATE: 05/29/2012



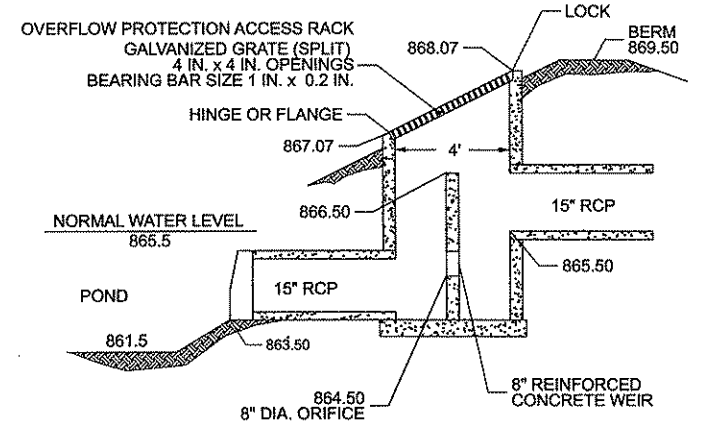
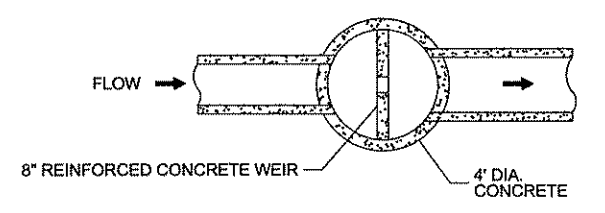
S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

POND GRADING PLAN  
 STA 39+75.00 TO 42+25.00  
 Sheet 131 of 282 Sheets

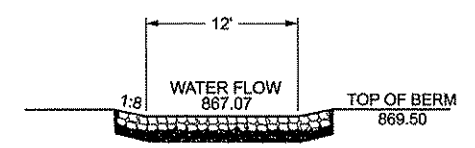
POND C  
 NWL = 865.500  
 HWL = 867.074  
 BOTTOM = 861.500



DETAIL: POND OVERFLOW STRUCTURE #414  
 DRAINAGE STRUCTURE DESIGN SPECIAL



POND C OVERFLOW TO WETLAND



NO	DATE	BY	CKD	APPR	REVISION

NAME: p:102-716-12\plan\0271612\_DR\_FND4.dgn 06/28/2012 8:21:29 AM

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.  
 PRINT NAME: CURT A. KOBILARCSIK  
 SIGNATURE: *Curt Kobilarsik*  
 DATE: 6.29.12 LICENSE NO. 24756

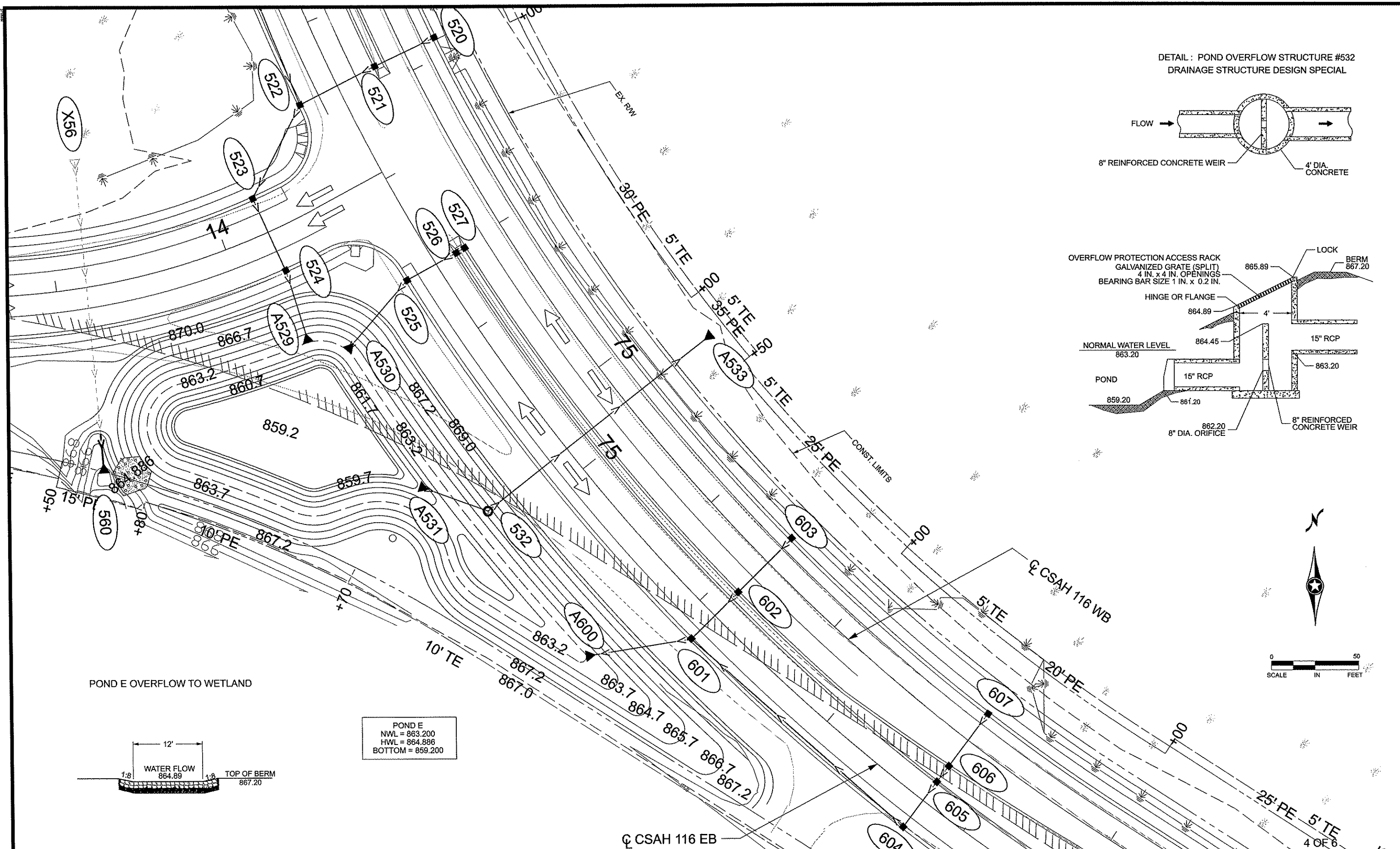
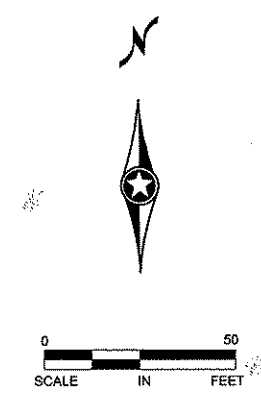
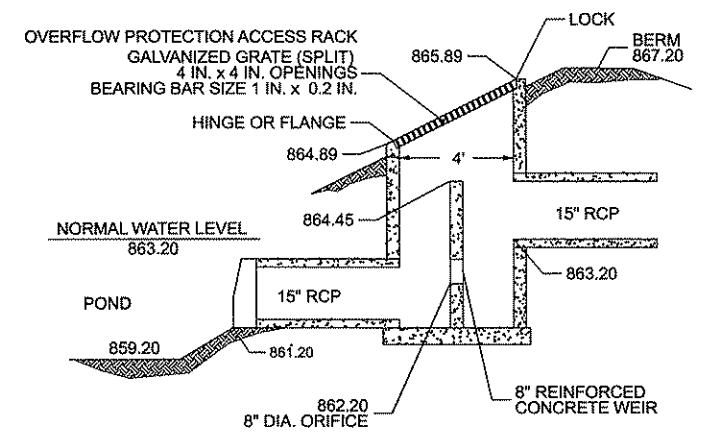
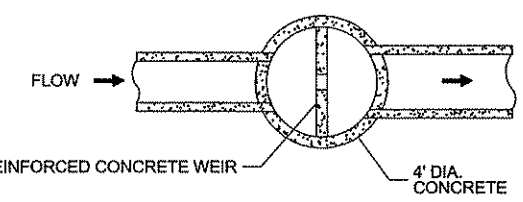
DRAWN BY: EJM DATE 05/15/2012  
 DESIGN BY: MN DATE 12/01/2010  
 CHECKED BY: CAK DATE 05/29/2012

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

S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

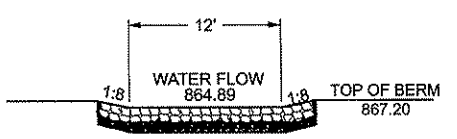
**POND GRADING PLAN**  
 STA 47+00.00 TO 50+00.00  
 Sheet 132 of 282 Sheets

DETAIL : POND OVERFLOW STRUCTURE #532  
DRAINAGE STRUCTURE DESIGN SPECIAL



POND E OVERFLOW TO WETLAND

POND E  
 NWL = 863.200  
 HWL = 864.886  
 BOTTOM = 859.200



Q CSAH 116 EB

Q CSAH 116 WB

NO	DATE	BY	CKD	APPR	REVISION

NAME: p:102-716-12\plan\0271612\_DR\_PND05.dgn 08/28/2012 8:21:32 AM

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.  
 PRINT NAME: CURT A. KOBILARCSIK  
 SIGNATURE: *Curt Kobilarsik*  
 DATE: 6-29-12 LICENSE NO. 24756

DRAWN BY: EJM DATE 05/15/2012  
 DESIGN BY: MN DATE 12/01/2010  
 CHECKED BY: CAK DATE 05/29/2012

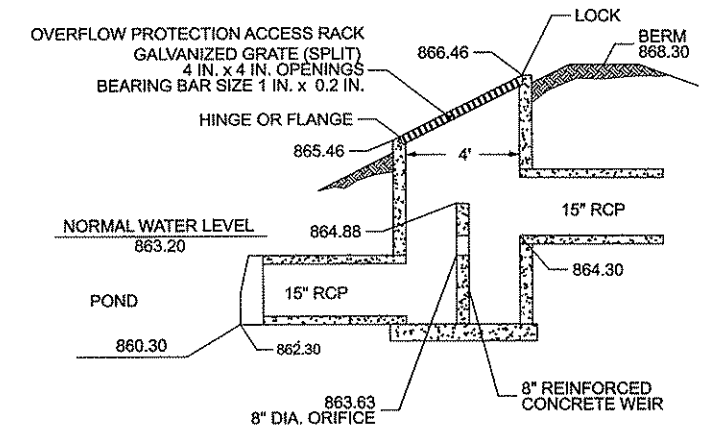
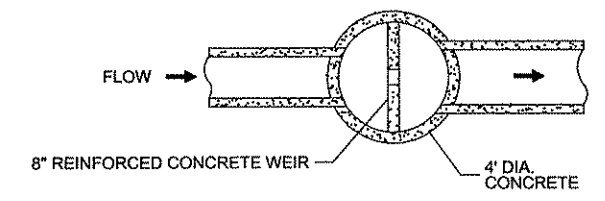
**ANOKA COUNTY**  
**HIGHWAY DEPT.**

S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

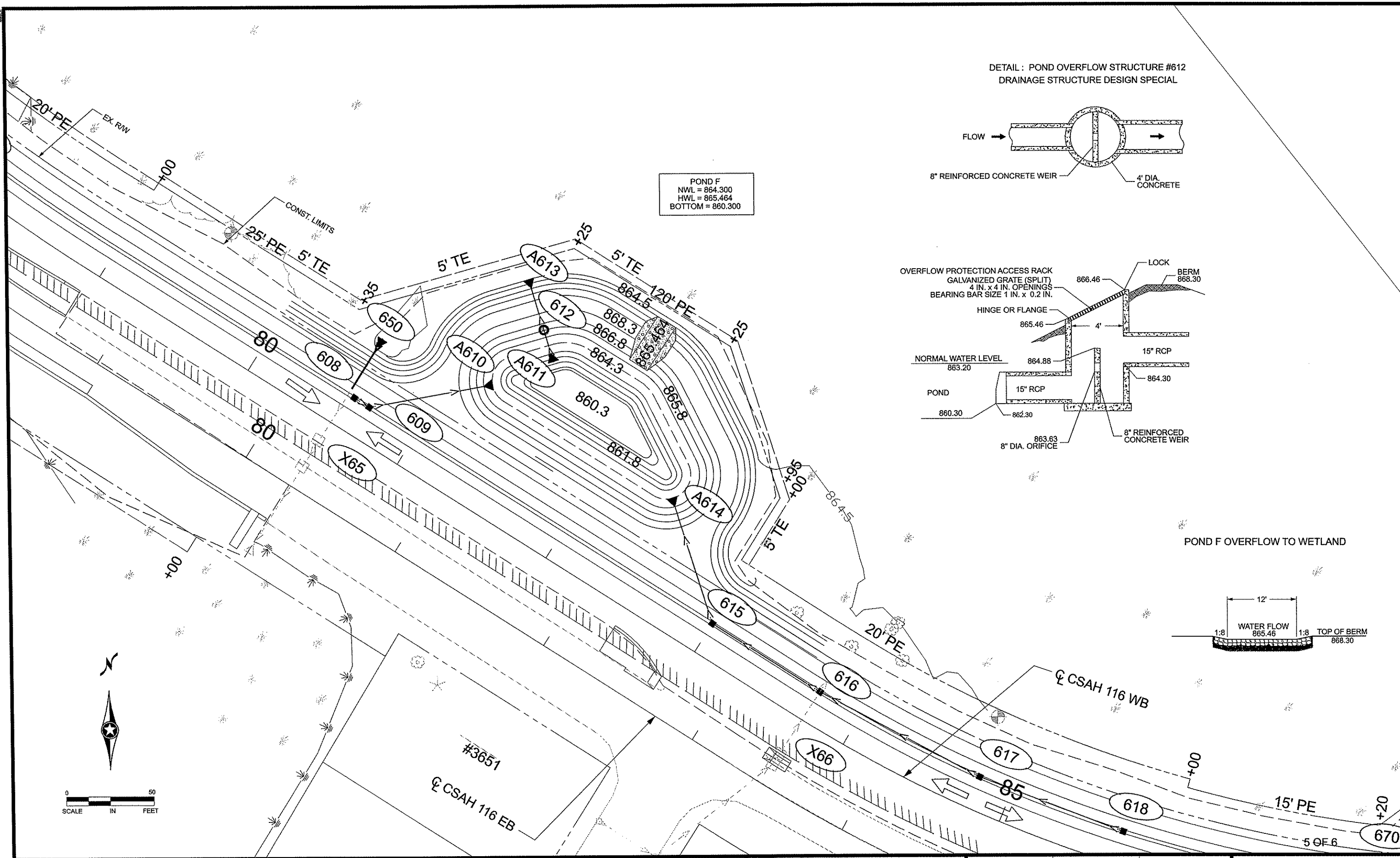
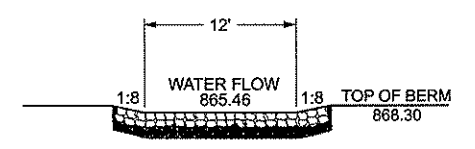
**POND GRADING PLAN**  
 STA 73+50.00 TO 77+00.00  
 Sheet 133 of 282 Sheets

POND F  
 NWL = 864.300  
 HWL = 865.464  
 BOTTOM = 860.300

DETAIL : POND OVERFLOW STRUCTURE #612  
 DRAINAGE STRUCTURE DESIGN SPECIAL



POND F OVERFLOW TO WETLAND

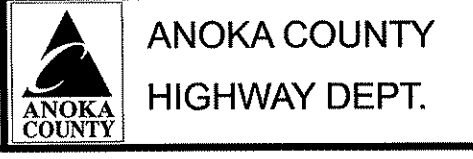


NO	DATE	BY	CKD	APPR	REVISION

NAME: p102-716-12\plan\0271612\_DR\_PND6.dgn 06/28/2012 8:21:36 AM

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.  
 PRINT NAME: CURT A. KOBILARCSIK  
 SIGNATURE: *Curt A. Kobilarsik*  
 DATE: 6.29.12 LICENSE NO. 24756

DRAWN BY: EJM DATE: 05/15/2012  
 DESIGN BY: MN DATE: 12/01/2010  
 CHECKED BY: CAK DATE: 05/29/2012

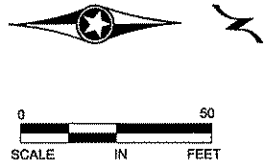
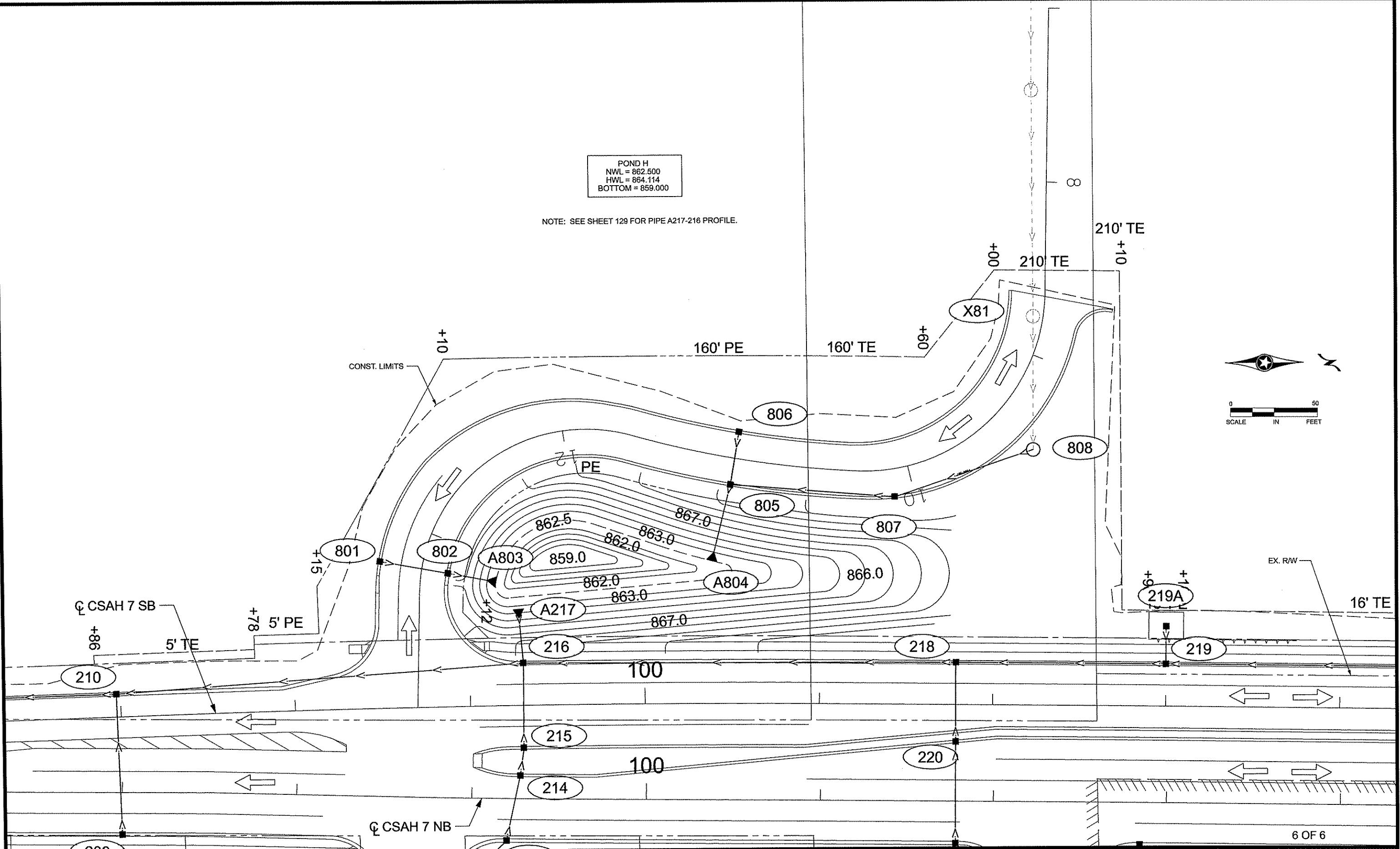


S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

POND GRADING PLAN  
 STA 80+50.00 TO 83+00.00  
 Sheet 134 of 282 Sheets

POND H  
 NWL = 862.500  
 HWL = 864.114  
 BOTTOM = 859.000

NOTE: SEE SHEET 129 FOR PIPE A217-218 PROFILE.



6 OF 6

NO	DATE	BY	CKD	APPR	REVISION

NAME: p:\02-716-12\plan\0271612\_DR\_FND8.dgn  
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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: CURT A. KOBILARCSIK  
 SIGNATURE: *Curt A. Kobilarsik*  
 DATE: 6.29.12 LICENSE NO. 24758

DRAWN BY: EJM DATE 05/15/2012  
 DESIGN BY: MN DATE 12/01/2010  
 CHECKED BY: CAK DATE 05/29/2012



ANOKA COUNTY  
 HIGHWAY DEPT.

S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

POND GRADING PLAN  
 STA 98+00.00 TO 102+50.00  
 Sheet 135 of 282 Sheets

**PROJECT LOCATION AND GENERAL INFORMATION**

THIS ROAD CONSTRUCTION PROJECT EXTENDS THE MEDIAN, ADDS DOUBLE LEFT TURN LANES, RIGHT TURN LANES, ADDITIONAL THRU LANE BOTH DIRECTIONS ON CSAH 116, AND BITUMINOUS TRAIL ALONG THE WEST SIDE OF CSAH 116.

THIS PROJECT WILL PRIMARILY CONSIST OF GRADING, AGGREGATE BASE, BITUMINOUS SURFACING, CURB AND GUTTER, STORM SEWER CONSTRUCTION, STORM WATER PONDING, TRAFFIC SIGNAL AND NOISE BARRIER.

THIS PROJECT WILL REQUIRE THE DISTURBANCE OF 42.61 ACRES OF SOILS AND DOES CREATE THE POTENTIAL FOR SEDIMENT DISCHARGE FROM THE SITE.

**TRAINING REQUIREMENTS**

THE CONTRACTOR WILL ENSURE COMPLIANCE WITH THE TRAINING REQUIRED IN PART 111.A.2 OF THE GENERAL STORMWATER PERMIT FOR CONSTRUCTION ACTIVITY.

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

**LONG TERM OPERATION AND MAINTENANCE**

THE STREETS DIVISION OF CITIES OF ANDOVER AND ANOKA WILL BE RESPONSIBLE FOR THE LONG TERM OPERATION AND MAINTENANCE OF THE PERMANENT STORMWATER MANAGEMENT AND SNOW REMOVAL OPERATIONS ALONG THE PROPOSED WALK.

IRWIN RUSSELL CITY OF ANDOVER STREETS SUPERVISOR 1885 CROSSTOWN BLVD NW ANDOVER, MN 55304 OFFICE - (763) 767-5179	J HOLMES CITY OF ANOKA STREETS SUPERVISOR 2015 FIRST AVENUE NORTH ANOKA, MN 55303 OFFICE - (763) 576-2924
---	---

**RECEIVING SURFACE WATERS, DISCHARGE TO IMPAIRED WATERS & SPECIAL WATERS**

THE FOLLOWING TABLE IDENTIFIES ALL SURFACE WATERS WITHIN 1 MILE OF THE PROJECT BOUNDARIES, WHICH WILL RECEIVE STORMWATER RUNOFF FROM THE CONSTRUCTION SITE, DURING OR AFTER CONSTRUCTION.

- STORMWATER FROM A DISCHARGE POINT ON THE PROJECT THAT FLOWS TO A SURFACE WATER IDENTIFIED AS IMPAIRED AND/OR SPECIAL MUST INCLUDE THE FOLLOWING ADDITIONAL BMP REQUIREMENTS:
- 1) ALL EXPOSED SOIL AREAS MUST BE STABILIZED AS SOON AS POSSIBLE TO LIMIT SOIL EROSION BUT IN NO CASE LATER THAN SEVEN (7) DAYS AFTER THE CONSTRUCTION ACTIVITY IN THAT PORTION OF THE SITE HAS TEMPORARILY OR PERMANENTLY CEASED.
  - 2) TEMPORARY SEDIMENT BASINS MUST BE USED FOR COMMON DRAINAGE LOCATIONS THAT SERVE AN AREA WITH FIVE (5) OR MORE ACRES DISTURBED AT ONE TIME. THIS PROJECT AS DESIGNED DOES NOT HAVE FIVE (5) DISTURBED ACRES DRAINING TO A COMMON LOCATION AND TEMPORARY SEDIMENT BASINS WILL NOT BE REQUIRED.

RECEIVING SURFACE WATERS		
NAME OF WATER BODY	SPECIAL WATER	IMPAIRED WATER
ANOKA COUNTY		
RUM RIVER	YES	YES

**DISTURBED SOIL AREA**

TOTAL DISTURBED SOILS AREA FOR THIS PROJECT IS 42.61 ACRES

**IMPERVIOUS SOIL AREA**

EXISTING AREA OF IMPERVIOUS SURFACE IS 14.94 ACRES.  
POST CONSTRUCTION AREA OF IMPERVIOUS SURFACE 23.53 ACRES.

**SOIL TYPES**

THE PREDOMINANT SOIL TYPE FOUND ON THIS PROJECT IS SAND.

**CONSTRUCTION PHASING**

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

WHEN TOPSOIL IS DISTURBED, THE TOPSOIL WILL BE STRIPPED AND STOCKPILED IN SOIL BERMS AT THE TOE OF THE STRIPPED SLOPES ALONG THE PROJECT LIMITS. TEMPORARY VEGATATION WILL BE ESTABLISHED ON THE STOCKPILED TOPSOIL BERMS WITH SEED MIXTURE 150, TYPE 1 FERTILIZER, AND DISK ANCHORED TYPE 1 MULCH AS PROVIDED IN THE PLAN. STOCKPILED TOPSOIL BERMS WILL NOT BE PLACED IN ANY STORMWATER CONVEYANCES.

AFTER STRIPPING THE TOPSOIL THE EXPOSED SOIL INSLOPES WILL BE STABILIZED WITH DISK ANCHORED TYPE 1 MULCH WITHIN 14 DAYS AFTER THE CONSTRUCTION ACTIVITY IN THAT PORTION OF THE SITE HAS BEEN TEMPORARILY OR PERMANENTLY CEASED.

**TEMPORARY SEDIMENT BASINS**

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

**PERMANENT STORMWATER MANAGEMENT SYSTEM**

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

THIS ROAD CONSTRUCTION PROJECT HAS MORE THAN 1 ACRE INCREASE IN IMPERVIOUS AREA.

**EROSION PREVENTION PRACTICES**

ALL EXPOSED SOIL AREAS MUST BE STABILIZED AS SOON AS POSSIBLE TO LIMIT SOIL EROSION BUT IN NO CASE LATER THAN 14 DAYS AFTER THE CONSTRUCTION ACTIVITY IN THAT PORTION OF THE SITE HAS TEMPORARILY OR PERMANENTLY CEASED. FOR ALL AREAS WHERE DISTURBED SOILS DRAIN TO AN IMPAIRED OR SPECIAL WATER THE EXPOSED SOIL MUST BE STABILIZED NO LATER THAN 7 DAYS AFTER THE CONSTRUCTION ACTIVITY IN THAT AREA CEASED. SEE THE IMPAIRED & SPECIAL WATERS SECTION OF THIS SWPPP FOR ADDITIONAL BMP REQUIREMENTS FOR DISTURBED AREAS THAT DRAIN TO A SPECIAL OR IMPAIRED WATER

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

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

PROJECT CONTACTS			
MPCA	NPDES	LARAL MEZNER	218-316-3889
MPCA	EMERGENCY	STATE DUTY OFFICER	800-422-0798
DNR	NOT REQUIRED		
COE	NOT REQUIRED		
ANOKA COUNTY DESIGN SWPPP PREPARATION	U OF MN DESIGN OF SWPPP EXPIRES 5/14	ELIZABETH MARKOSE	763-862-4222
ANOKA COUNTY PROJECT REPRESENTATIVE	U OF MN SITE MANAGEMENT EXPIRES 5/15	HARRY GRAMS	763-862-4250
EROSION CONTROL SUPERVISOR (CONTRACTOR)			

**SEDIMENT CONTROL PRACTICES**

TEMPORARY STOCKPILED TOPSOIL BERMS MUST INCLUDE PERIMETER BMP'S AS PROVIDED IN THE PLAN AT LOCATIONS WHERE CONSTRUCTION STORMWATER DRAINS FROM THE PROJECT

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

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

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

**POLLUTION PREVENTION MEASURES**

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

THESE MANAGEMENT MEASURES FOR POLLUTION PREVENTION WILL BE STRICTLY ENFORCED.

**LOCATION OF SWPPP REQUIREMENTS**

REQUIREMENT	PLAN		MN/DOT SPECIFICATION	SPECIAL PROVISION
	TITLE	LOCATION		
NPDES PERMIT COMPLIANCE			1701, 1702, & 1717	1717 (AIR, LAND & WATER) 1717 (NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT)
CERTIFIED PERSONNEL IN EROSION AND SEDIMENT CONTROL SITE MANAGEMENT			1506, 1717, & 2573	1717 (AIR, LAND & WATER) 1717 (NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT)
CHAIN OF RESPONSIBILITY	AGENCY CONTACTS	SHEET 136	1506, 1717, & 2573	
PROJECT SCHEDULE / WEEKLY EROSION & SEDIMENT CONTROL SCHEDULE / COMPLETING INSPECTION / MAINTENANCE LOG	AGENCY CONTACTS	SHEET 136	1717 & 2573	1717 (AIR, LAND & WATER) 1717 (NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT)
SWPPP PREPARATION	AGENCY CONTACTS	SHEET 136		
SITE MAP / RECEIVING WATERS / DIRECTION OF FLOW			1717	
PROJECT SPECIFIC CONSTRUCTION STAGING			1717	1717 (AIR, LAND & WATER) 1717 (NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT) 1806 (DETERMINATION AND EXTENSION OF CONTRACT TIME)
TEMPORARY EROSION AND SEDIMENT CONTROL BMP LOCATIONS, INSTALLATION, TIMING OF INSTALLATION AND TYPE OF BMP	TABULATIONS	SHEET 16	2573 & 2525	2575 (RAPID STABILIZATION SPECIFICATION)
ADDITIONAL TEMPORARY AND OR PERMANENT EROSION AND SEDIMENT CONTROL BMP'S NOT PROVIDED OR SHOWN IN THE PLAN			1717, 2573, & 2575	1717 (AIR, LAND & WATER) 1717 (NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT) 2575 (RAPID STABILIZATION SPECIFICATION)
MAINTENANCE OF EROSION AND SEDIMENT CONTROL DEVICES, REMOVAL OF TRACKED SEDIMENT, REMOVAL OF DEVICES			1717 & 2573	1514 (MAINTENANCE DURING CONSTRUCTION) 1717 (LAND AIR & WATER) 1717 (NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT)
DEWATERING			2105.3B, & 2451.3C	DEWATERING MAY ALSO REQUIRE DNR PERMIT. NO DEWATERING IS ANTICIPATED FOR THIS PROJECT 1717 (AIR, LAND & WATER)
FINAL STABILIZATION	QUANTITY TABULATIONS PERMANENT EROSION CONTROL PLAN	SHEET 16 SHEET 149 - 154	1717, 2573, & 2575	1717 (NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT)
TEMPORARY EROSION AND SEDIMENT CONTROL DETAILS	QUANTITY TABULATIONS TEMPORARY EROSION CONTROL PLAN	SHEET 16 SHEET 143 - 148	2575	2575 (RAPID STABILIZATION SPECIFICATION)
PERMANENT EROSION CONTROL DETAILS	EROSION CONTROL DETAILS	SHEET 138 - 142	2575	2575 (CONTROLLING EROSION AND ESTABLISHING VEGETATION)

NO	DATE	BY	CHKD	APPR	REVISION

NAME: P:\02-716-12\Plan\0271612\_SWPPP.dgn 09/28/2012 8:21:41 AM

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

PRINT NAME: CURT A. KOBILARCSIK  
SIGNATURE: *Curt Kobilarsik*  
DATE: 6.29.12 LICENSE NO. 24756

DRAWN BY EM DATE 05/15/2012  
DESIGN BY MN DATE 12/01/2010  
CHECKED BY CAK DATE 05/29/2012



**ANOKA COUNTY  
HIGHWAY DEPT.**

S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

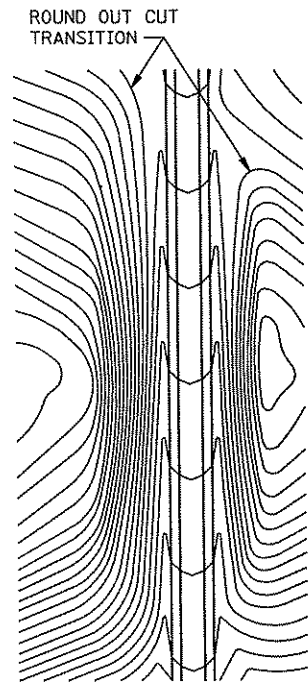
SWPPP NARRATIVE

Sheet 136 of 282 Sheets

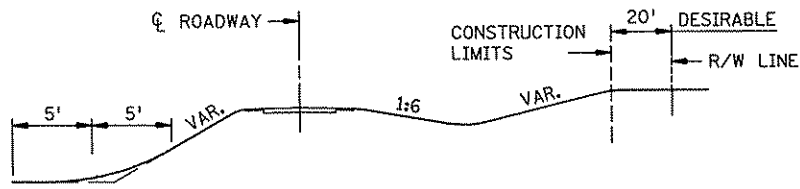




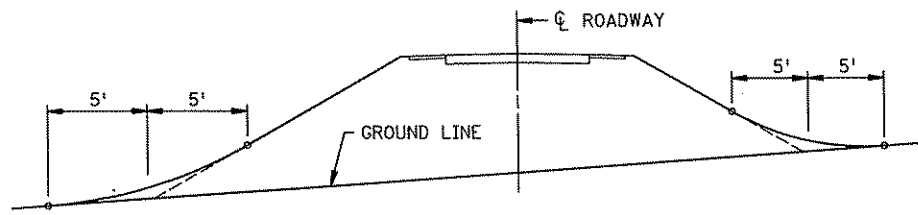
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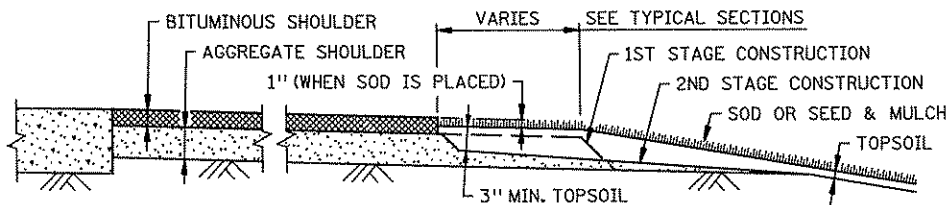
CONTOURING ROAD CUTS



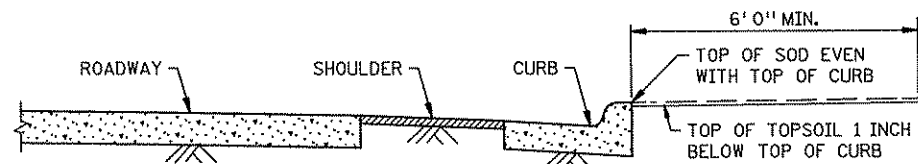
ROUNDING SHOULDERS AND BACKSLOPES



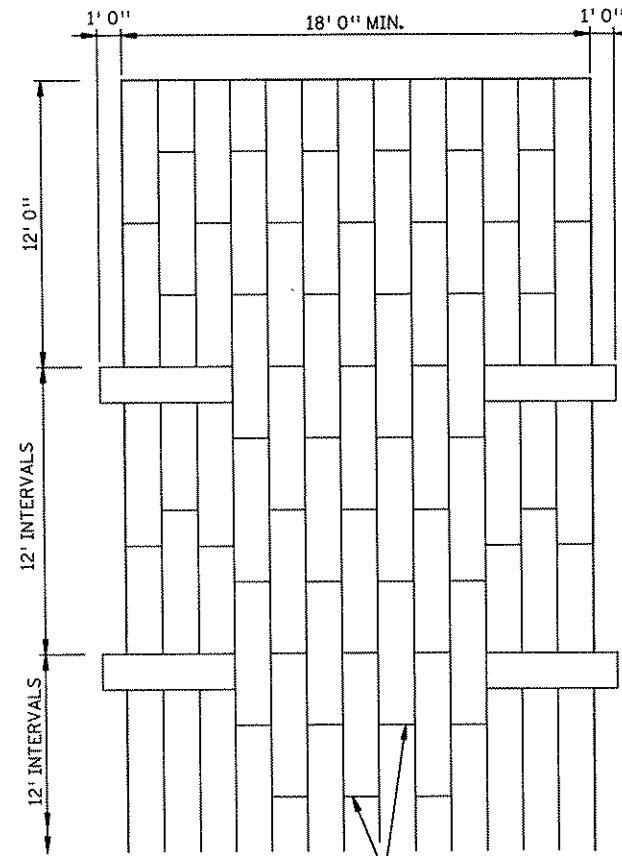
SHAPING FOR DRAINAGE ALONG THE TOE OF FILL SLOPES



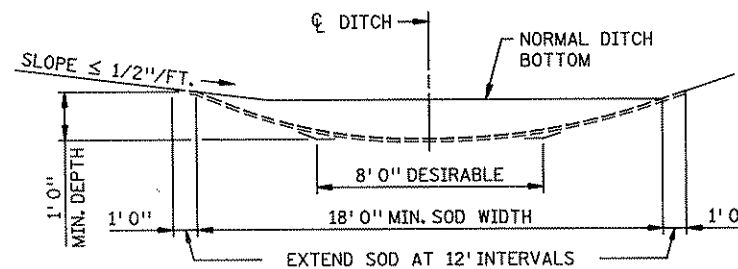
SHAPING AND TOPSOILING INSLOPES



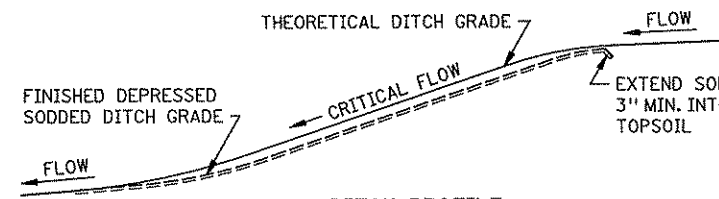
SHAPING ADJACENT TO CURBS WHEN SOD IS PLACED



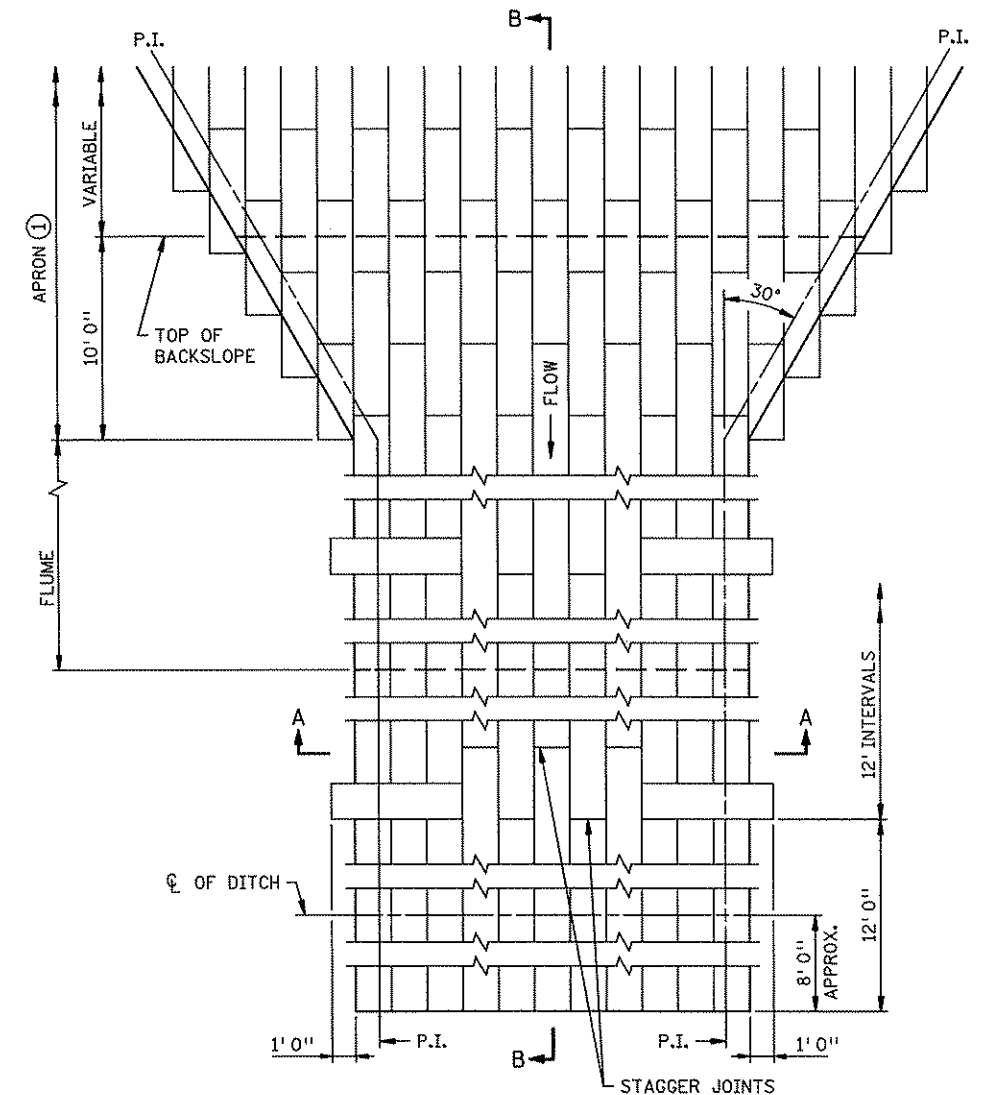
PLAN VIEW



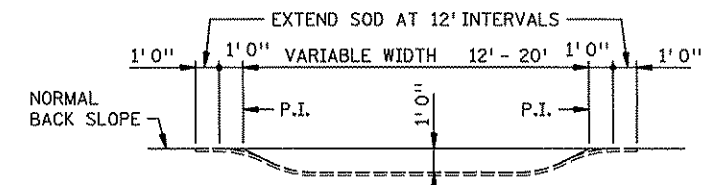
SODDED DITCH CROSS SECTION WHERE FRONT OR BACK SLOPE IS FLAT (LESS THAN 1/2''/FT.), FIRST NOTCH DITCH AND THEN PROVIDE ROUNDING.



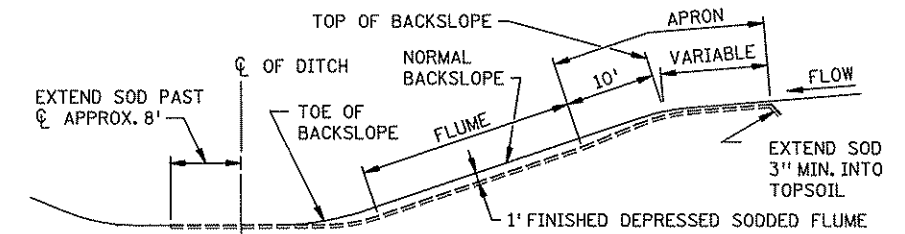
DITCH PROFILE SODDED DITCH DETAILS



PLAN VIEW



SECTION A-A



SECTION B-B

SODDED FLUME DETAILS

NOTES:

- SEE SPEC. 2575.3 FOR ADDITIONAL INFORMATION.
- ① CONSTRUCT TAPER AS DIRECTED BY THE ENGINEER.

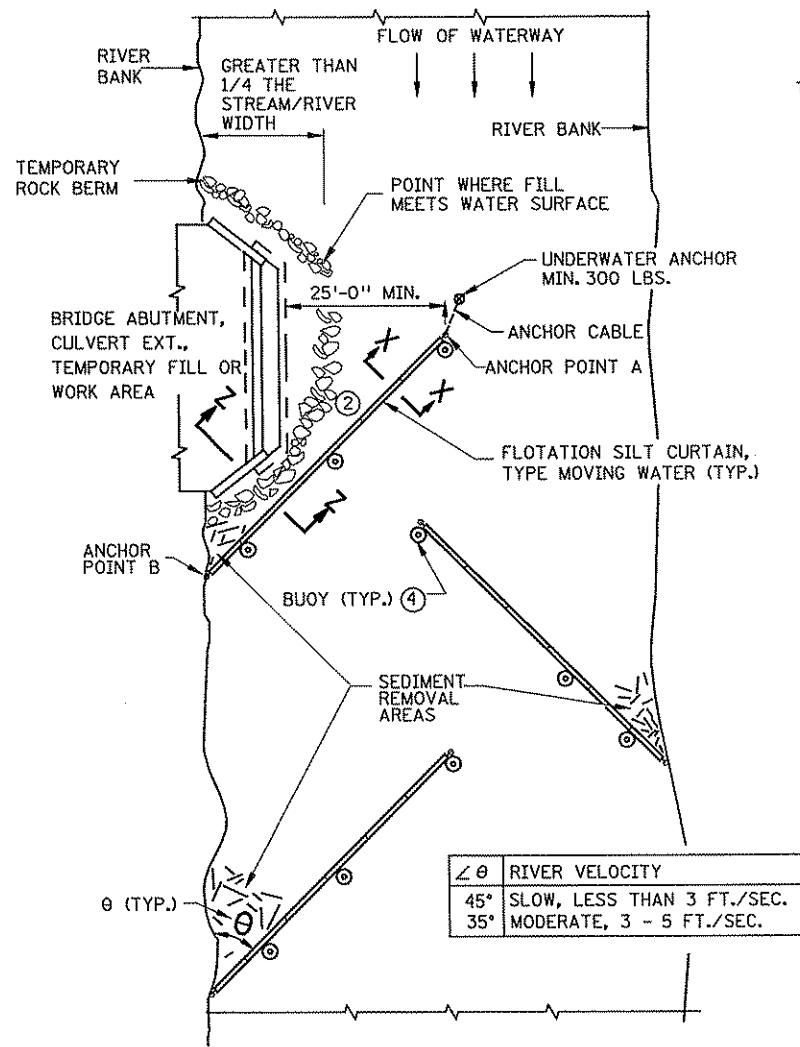
STANDARD SHEET NO. 5-297.404	TITLE: PERMANENT EROSION CONTROL ALONG ROADWAYS, DITCHES AND FLUMES
STANDARD APPROVED: NOVEMBER 20, 2002	
S.P. 002-716-012 S.P. 198-020-030 S.P. 103-020-014 S.P. 198-020-032	
S.P. 002-607-021 S.P. 198-020-031 S.P. 103-020-015	

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USER NAME: \$\$\$@USER@NAME@\$\$\$  
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FILE NAME: @FILENAME@

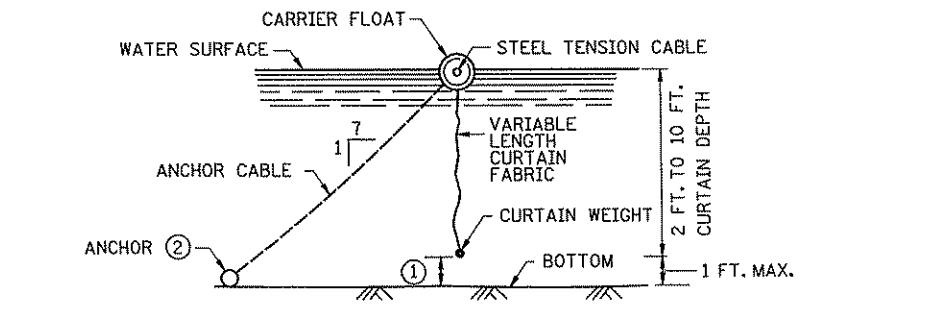
PLOTTED/REVISED: \$\$\$@DATE@\$\$\$

DISTRICT #: \$\$\$@DISTRICT@  
USER NAME: \$\$\$@USER@NAME@  
PATH & FILENAME: \$\$\$@PATH@FILENAME@\$\$\$

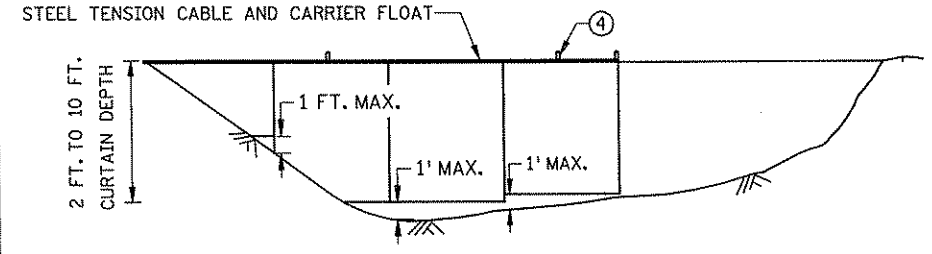
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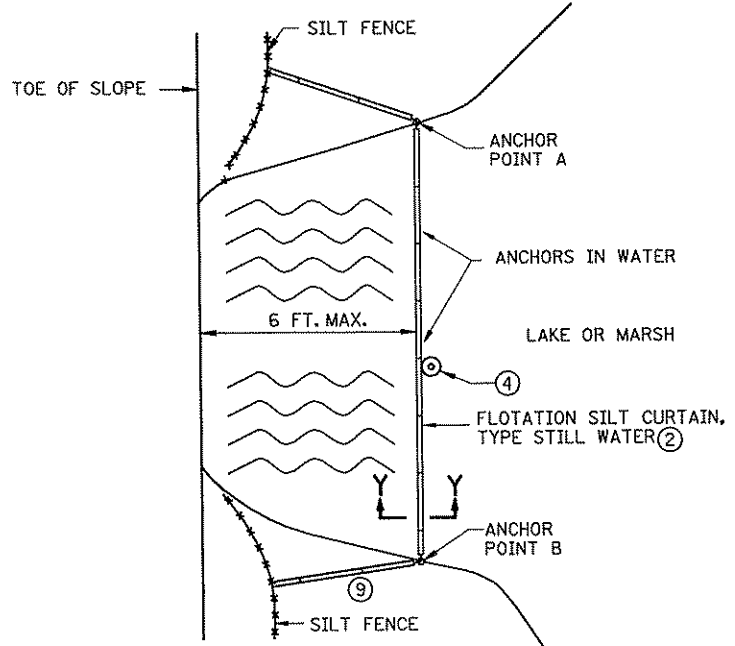
PLAN VIEW (TYPE: MOVING WATER)



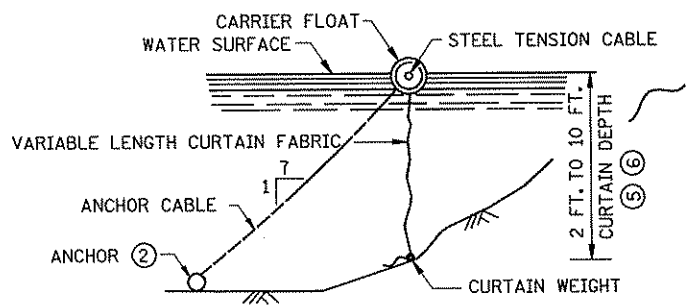
SECTION X-X



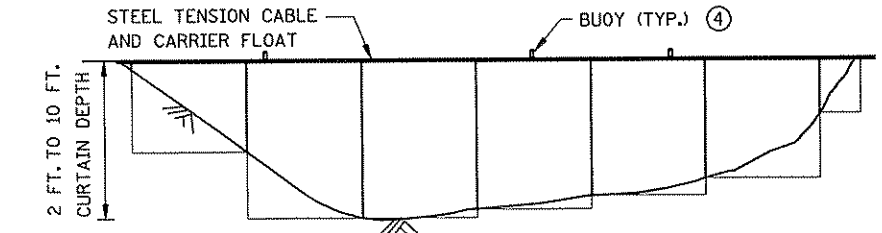
FLOTATION SILT CURTAIN - TYPE: MOVING WATER ⑤  
USE FOR SMALLER RIVERS WITH SLOW AND MODERATE VELOCITIES



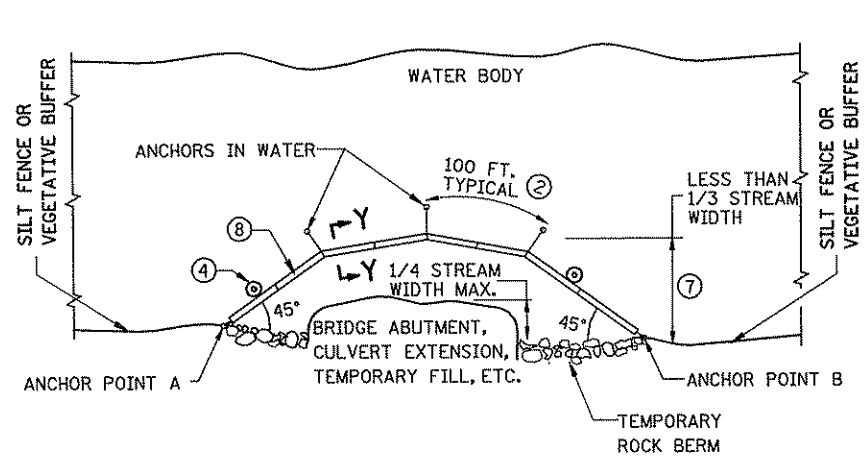
PLAN VIEW (TYPE: STILL WATER)



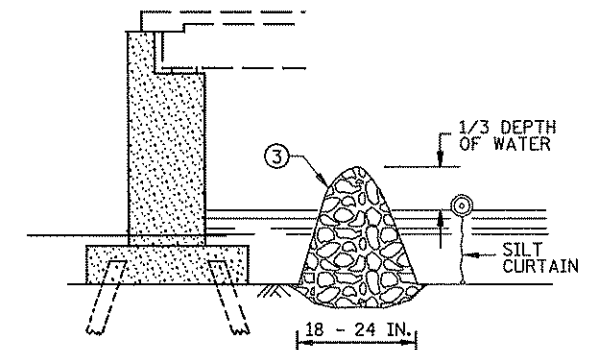
SECTION Y-Y



FLOTATION SILT CURTAIN - TYPE: WORK AREA AND STILL WATER ⑤  
FOR CONTAINING OVERFLOWS FROM WEIRS, STANDPIPES, SETTLING PONDS



PLAN VIEW (TYPE: WORK AREA)



SECTION Z-Z TEMPORARY ROCK BERM FOR SEDIMENT CONTROL

**DESIGN GUIDELINES: MOVING WATER**  
 WHEN TEMPORARY FILL ENEROACHES MORE THAN 1/4 BUT LESS THAN 1/3 WIDTH OF THE STREAM.  
 MINIMUM WATER DEPTH: 3 FT.  
 MAXIMUM WATER DEPTH: 11 FT.  
 MAXIMUM WATER VELOCITY: 5 FT./SEC. ① ⑥

**DESIGN GUIDELINES: WORK AREA**  
 WHEN TEMPORARY FILL ENEROACHES LESS THAN 1/4 OF THE WIDTH OF STREAM.  
 MINIMUM WATER DEPTH: 10 FT.  
 MAXIMUM WATER VELOCITY: 5 FT./SEC.

**DESIGN GUIDELINES: STILL WATER** ⑥  
 MINIMUM WATER DEPTH: 0 FT.  
 MAXIMUM WATER DEPTH: 10 FT.

**NOTES:**

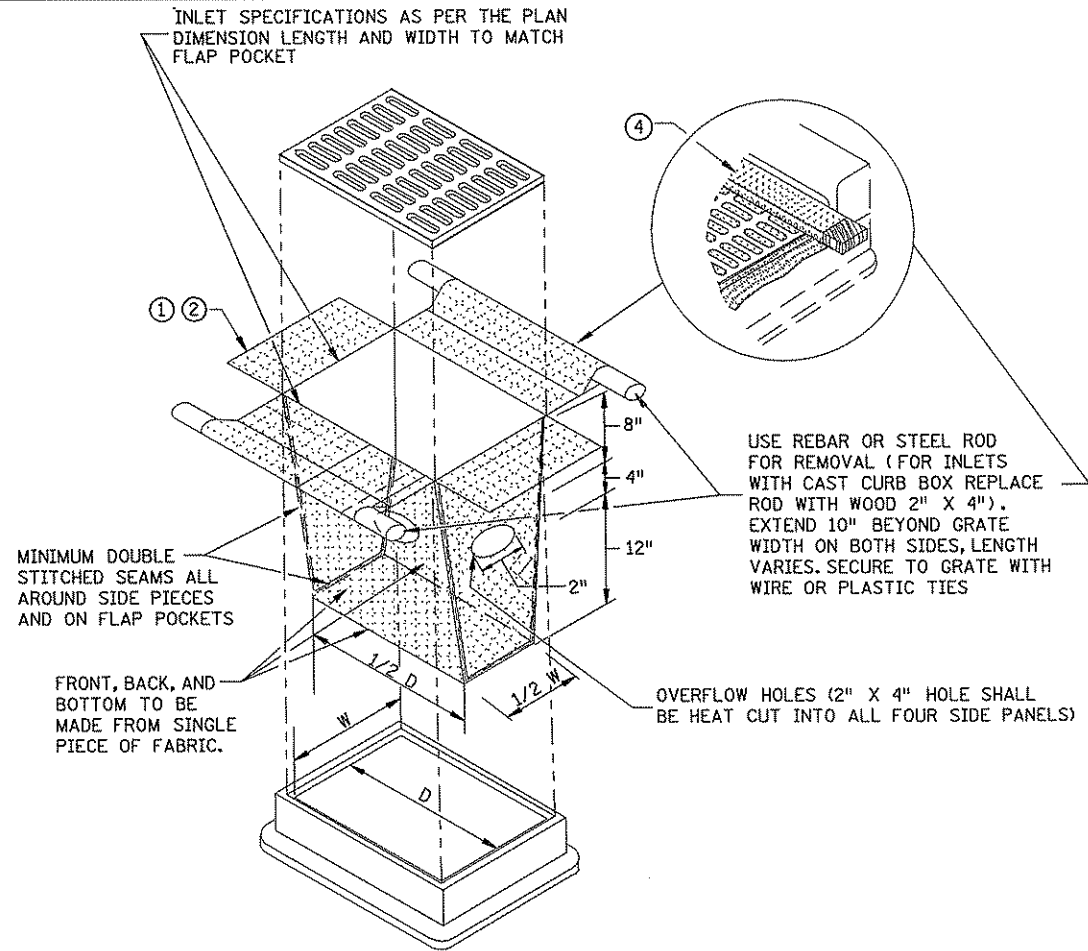
- SEE SPECS. 2573 & 3887.
- ① CURTAIN EXTENDS TO 1 FT. MAXIMUM FROM BOTTOM OF WATER BODY.
- ② FOR ANCHOR AND WEIGHT REQUIREMENTS, SEE SPEC. 2573.
- ③ IN AREAS WHERE THE PLAN CALLS FOR RIPRAP AT THE BRIDGE, A TEMPORARY ROCK BERM WILL BE USED TO PROVIDE ADDITIONAL PROTECTION. THE TEMPORARY ROCK BERM IS INCIDENTAL FOR WHICH NO DIRECT PAYMENT WILL BE MADE.
- ④ ON U.S. COAST GUARD OR OTHER MOTORIZED WATERWAYS, BUOYS ARE REQUIRED TO MARK THE ENDS AND SPECIAL AREAS FOR VISIBILITY. PLACE BUOYS AS REQUIRED FOR NAVIGATIONAL PURPOSES.
- ⑤ WATER DEPTH CAN BE 0 TO 10 FEET, 0 TO 11 FEET FOR TYPE MOVING WATER.
- ⑥ SILT CURTAIN HEIGHT INCLUDES MAXIMUM WAVE HEIGHT FOR WATER BODY.
- ⑦ KEEP AS CLOSE TO WORK AREA AS POSSIBLE.
- ⑧ SILT CURTAIN, ROCK BERM OR SHEET PILE AS REQUIRED TO CONTROL THE INFILTRATION OF SILT.
- ⑨ IF 6 INCHES OR LESS OF WATER, USE BALE BARRIERS, SEE SHEET 2.

STANDARD SHEET NO. 5-297.405 (1 OF 4)	TITLE: TEMPORARY SEDIMENT CONTROL SILT CURTAIN
STANDARD APPROVED: SEPTEMBER 27, 2006	
S.P. 002-716-012 S.P. 198-020-030 S.P. 103-020-014 S.P. 198-020-032 S.P. 002-607-021 S.P. 198-020-031 S.P. 103-020-015	SHEET NO. 139 OF 282 SHEETS

PLOTTED/REVISED: \$\$\$@DATE@\$\$\$

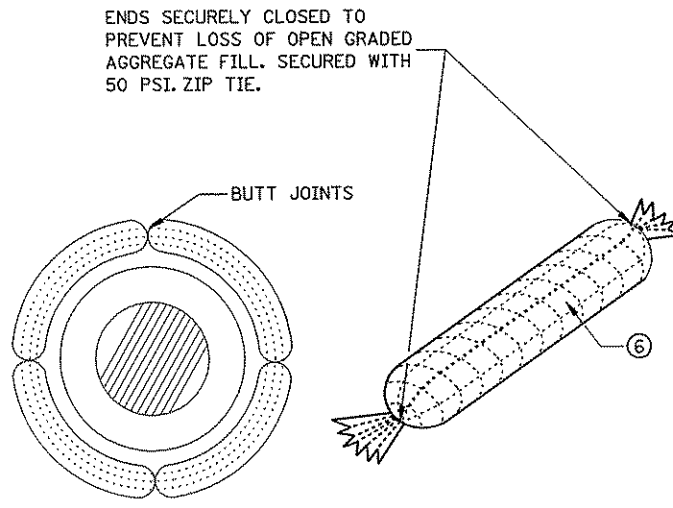
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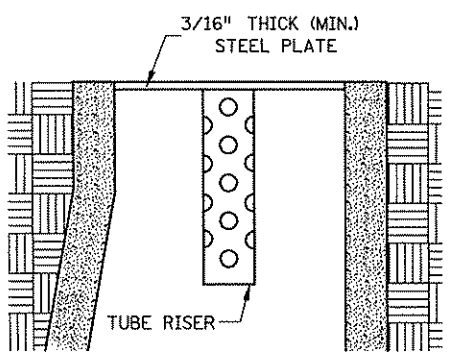
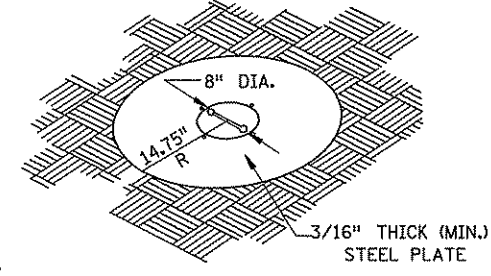
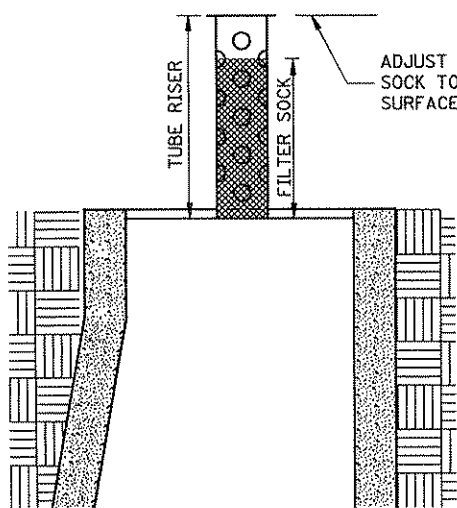
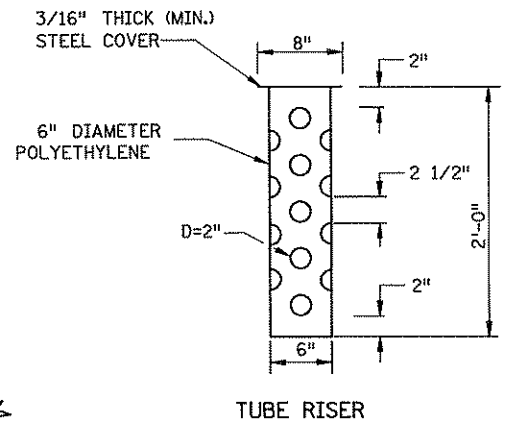


**FILTER BAG INSERT ③**

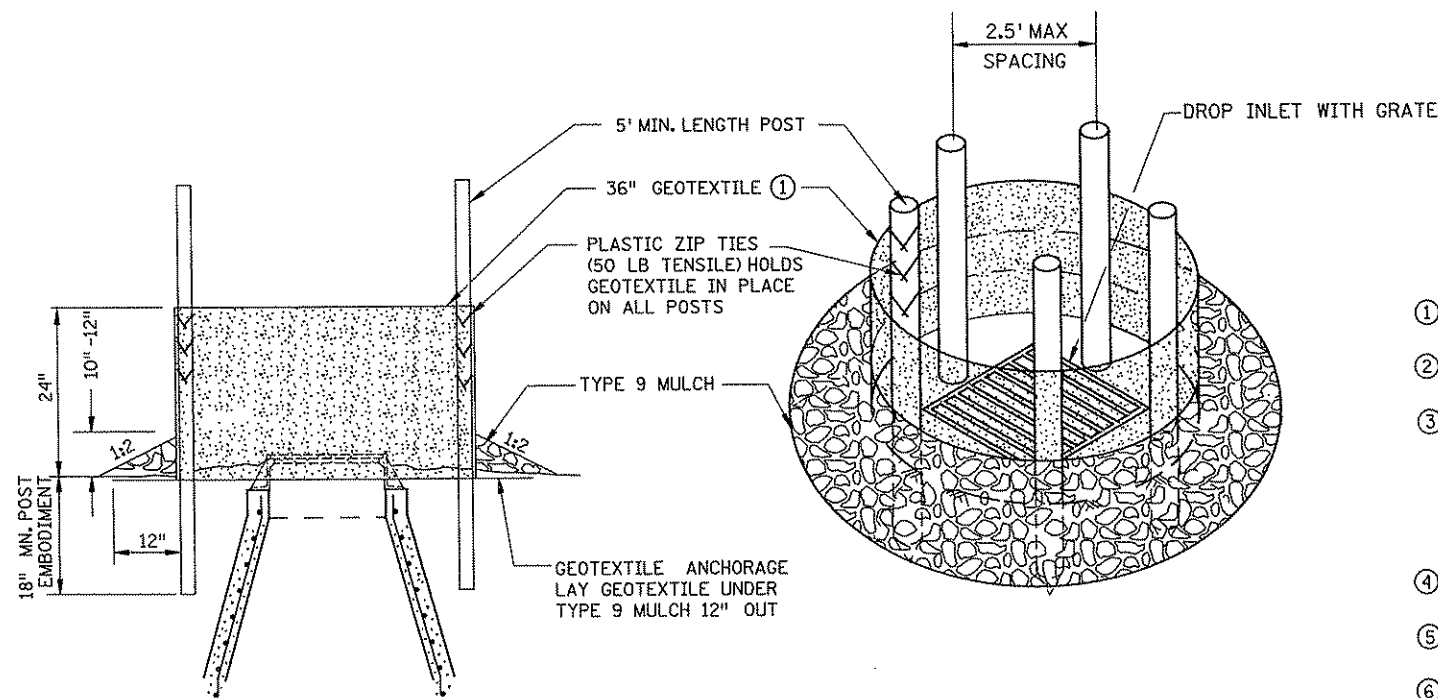
(CAN BE INSTALLED IN ANY INLET TYPE WITH OR WITHOUT A CURB BOX)



**ROCK LOG/COMPOST LOG**



**POP-UP HEAD**

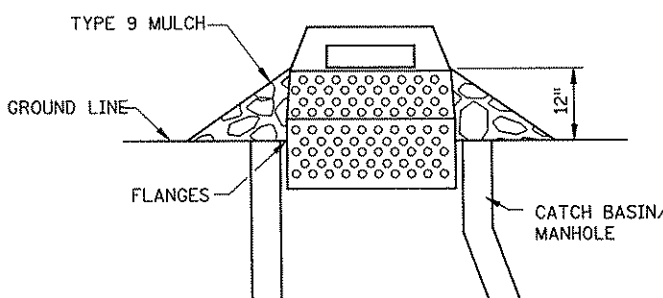


**SILT FENCE RING AND ROCK FILTER BERM**

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

**NOTES:**

- SEE SPECS. 2573, 3137, 3886 & 3891.
- MANUFACTURED ALTERNATIVES LISTED ON Mn/DOT'S APPROVED PRODUCTS LIST MAY BE SUBSTITUTED.
- ① ALL GEOTEXTILE USED FOR INLET PROTECTION SHALL BE MONOFILAMENT IN BOTH DIRECTIONS, MEETING SPEC. 3886.
- ② FINISHED SIZE, INCLUDING POCKETS WHERE REQUIRED SHALL EXTEND A MINIMUM OF 10 INCHES AROUND THE PERIMETER TO FACILITATE MAINTENANCE OR REMOVAL.
- ③ INSTALLATION NOTES:  
 DO NOT INSTALL FILTER BAG INSERT IN INLETS SHALLOWER THAN 30 INCHES, MEASURED FROM THE BOTTOM OF THE INLET TO THE TOP OF THE GRATE. THE INSTALLED BAG SHALL HAVE A MINIMUM SIDE CLEARANCE OF 3 INCHES BETWEEN THE INLET WALLS AND THE BAG, MEASURED AT THE BOTTOM OF THE OVERFLOW HOLES. WHERE NECESSARY THE CONTRACTOR SHALL CLINCH THE BAG, USING PLASTIC ZIP TIES, TO ACHIEVE THE 3 INCH SIDE CLEARANCE.
- ④ FLAP POCKETS SHALL BE LARGE ENOUGH TO ACCEPT WOOD 2 INCH X 4 INCH OR USE A ROCK SOCK OR SAND BAGS IN PLACE OF THE FLAP POCKETS.
- ⑤ SOCK HEIGHT MUST NOT BE SO HIGH AS TO SLOW DOWN WATER FILTRATION TO CAUSE FLOODING OF THE ROADWAY.
- ⑥ GEOTEXTILE SOCK BETWEEN 4-10 FEET LONG AND 4-6 INCH DIAMETER. SEAM TO BE JOINED BY TWO ROWS OF STITCHING WITH A PLASTIC MESH BACKING OR PROVIDE A HEAT BONDED SEAM (OR APPROVED EQUIVALENT). FILL ROCK LOG WITH OPEN GRADED AGGREGATE CONSISTING OF SOUND DURABLE PARTICLES OF COARSE AGGREGATE CONFORMING TO SPEC. 3137 TABLE 3137-1; CA-3 GRADATION.

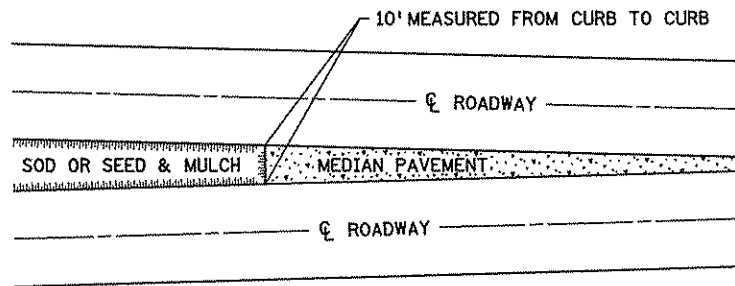


**SEDIMENT CONTROL INLET HAT**

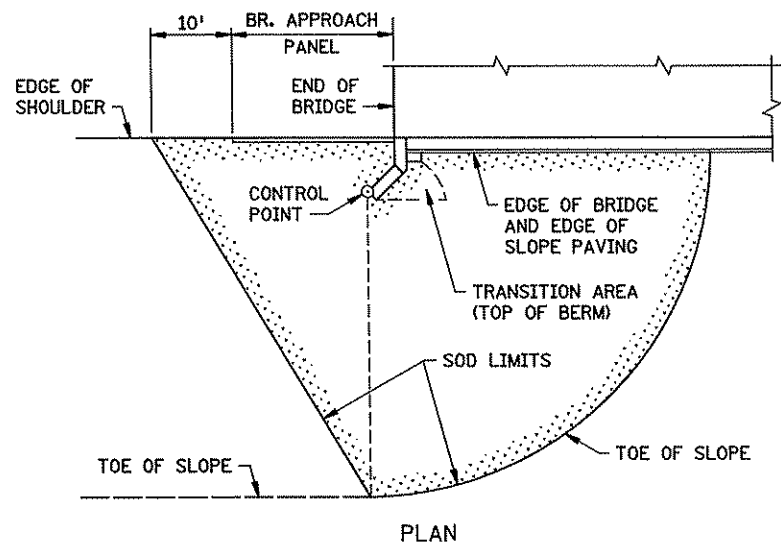
NOTE:  
 THE SEDIMENT CONTROL BARRIER SHALL BE A METAL OR PLASTIC/POLYETHYLENE RISER SIZED TO FIT INSIDE THE CATCH BASIN/MANHOLE; HAVE PERFORATIONS TO ALLOW FOR WATER INFILTRATION; HAVE AN OVERFLOW OPENING, FLANGES AND A LID/COVER.

STANDARD SHEET NO. 297.405 (4 OF 4)	TITLE: <b>TEMPORARY SEDIMENT CONTROL STORM DRAIN INLET PROTECTION</b>
STANDARD APPROVED: SEPTEMBER 27, 2006	
S.P. 002-716-012 S.P. 198-020-030 S.P. 103-020-014 S.P. 198-020-032	
S.P. 002-607-021 S.P. 198-020-031 S.P. 103-020-015	SHEET NO. 140 OF 282 SHEETS

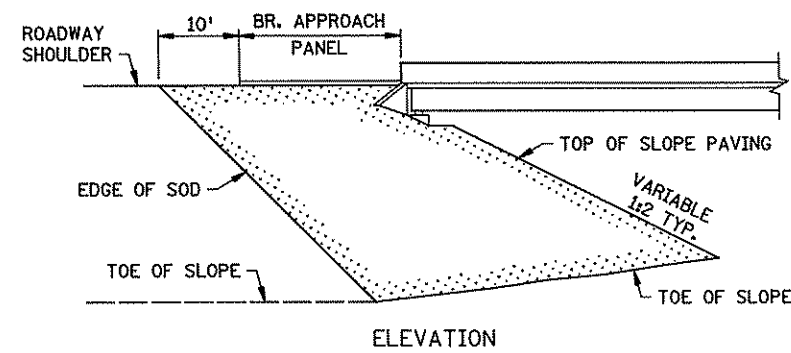
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SODDING LIMITS AT GORE AREA

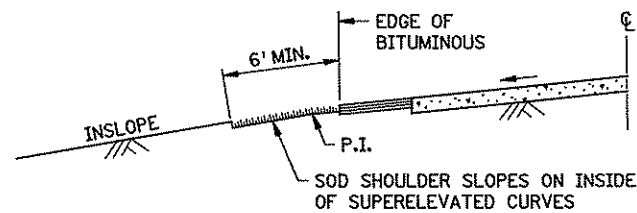


PLAN

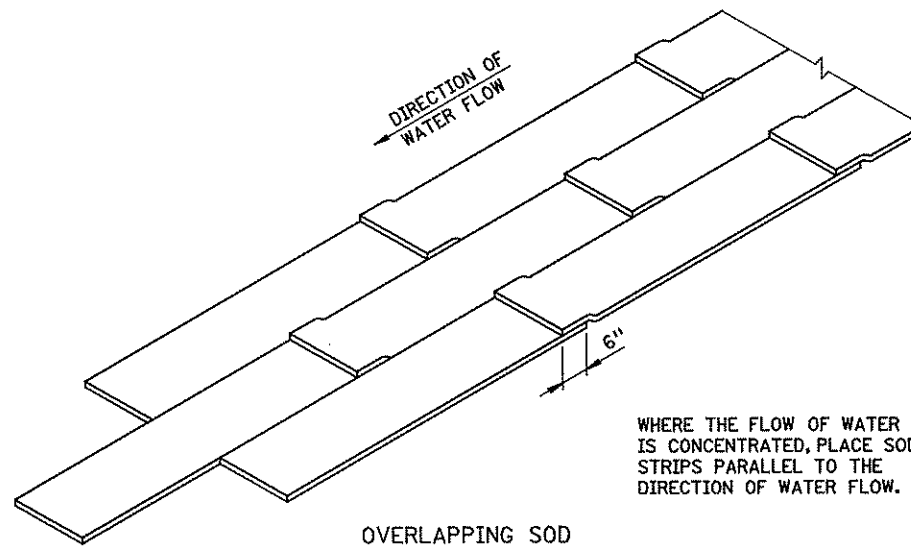


ELEVATION

SODDING LIMITS AT BRIDGE APPROACH FILLS

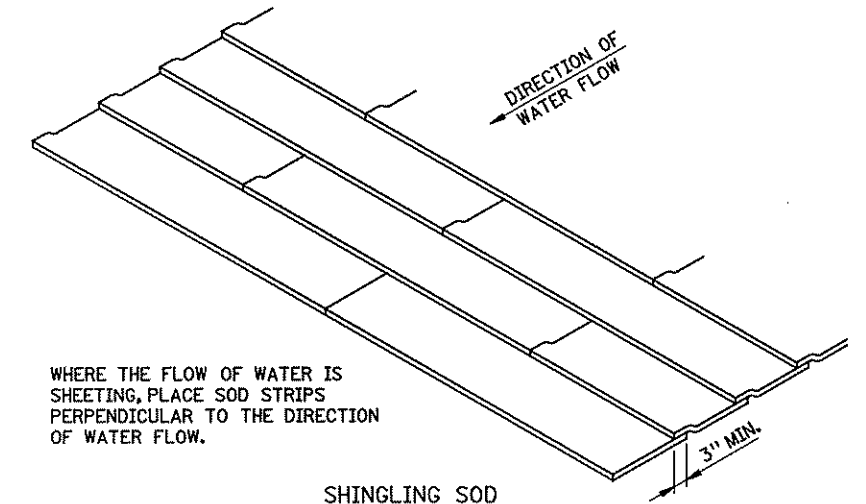


SODDING INSLOPES OF SUPERELEVATED CURVES



OVERLAPPING SOD

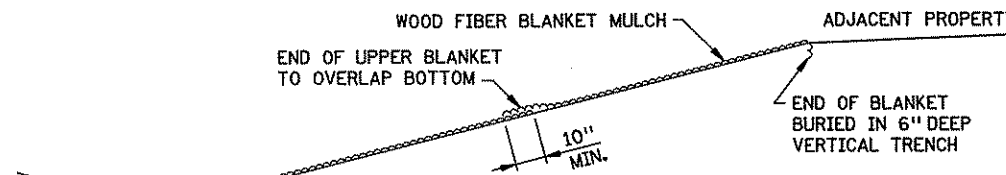
WHERE THE FLOW OF WATER IS CONCENTRATED, PLACE SOD STRIPS PARALLEL TO THE DIRECTION OF WATER FLOW.



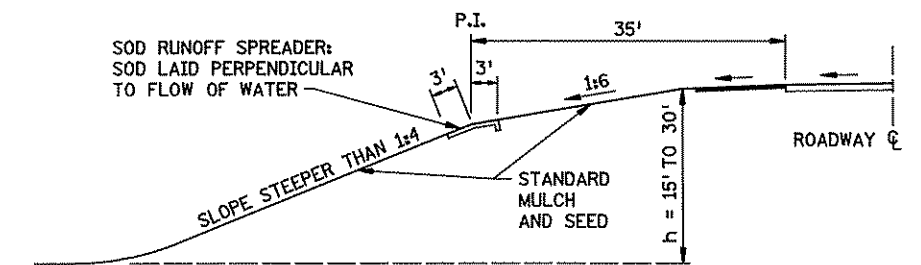
SHINGLING SOD

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

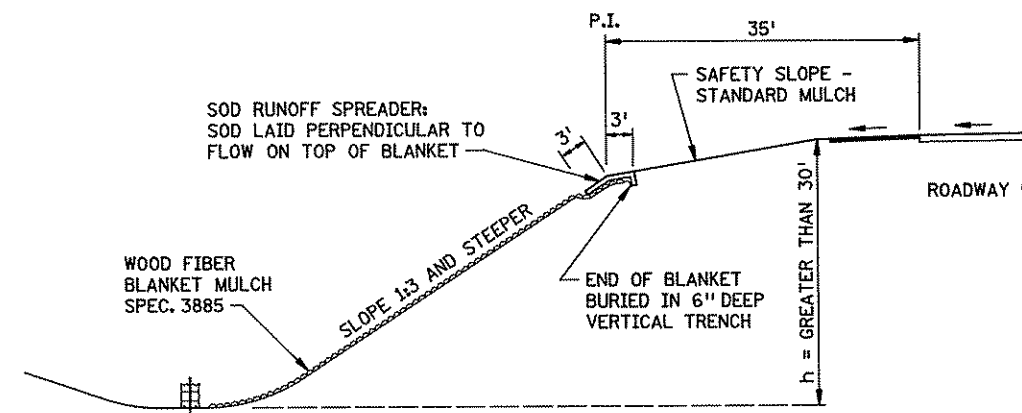
SPECIAL SOD PLACEMENT TECHNIQUES



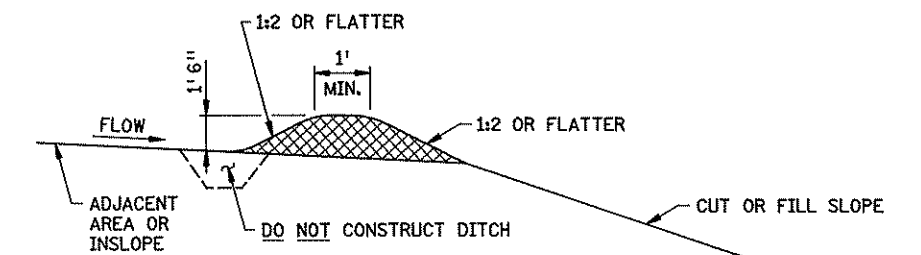
WOOD FIBER BLANKET INSTALLATION ON A CUT SLOPE



BROKEN-BACK SAFETY FILL SLOPE



WOOD FIBER BLANKET INSTALLATION ON AN INSLOPE (WHEN REQUIRED)



PERMANENT SLOPE PROTECTION DIKE

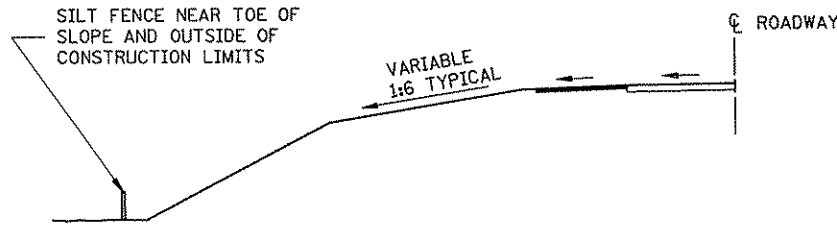
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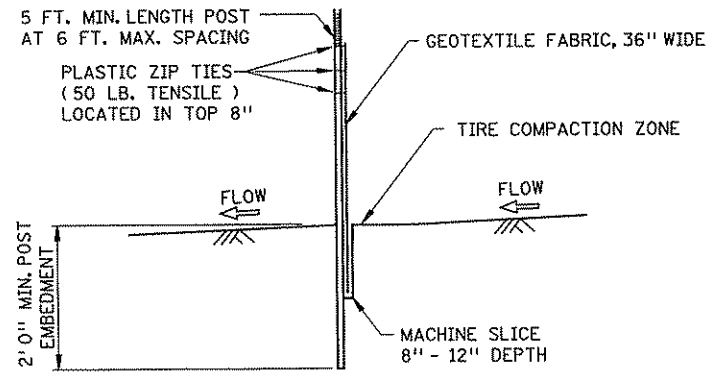
REVISION DATE  
10-26-2000

STANDARD SHEET NO. 5-297.406	TITLE: <b>PERMANENT EROSION CONTROL</b> ALONG ROADWAYS AND AT GORE AREAS & BRIDGE APPROACH FILLS			
STANDARD APPROVED: JANUARY 31, 1985	S.P. 002-716-012	S.P. 198-020-030	S.P. 103-020-014	S.P. 198-020-032
	S.P. 002-607-021	S.P. 198-020-031	S.P. 103-020-015	
				SHEET NO. 141 OF 282 SHEETS

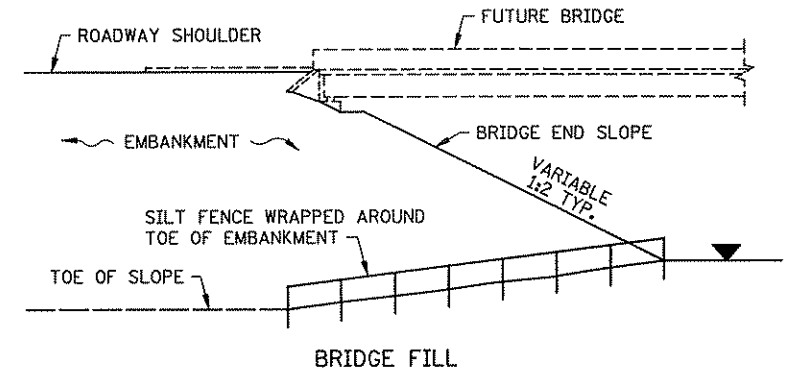
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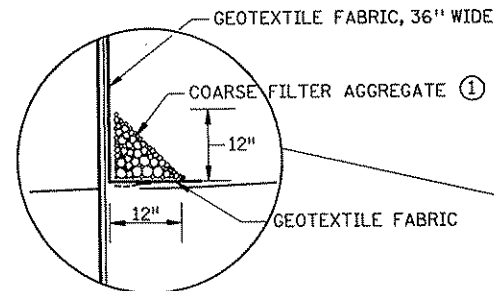
LOCATION OF SILT FENCE AT TOE OF ROADWAY EMBANKMENT



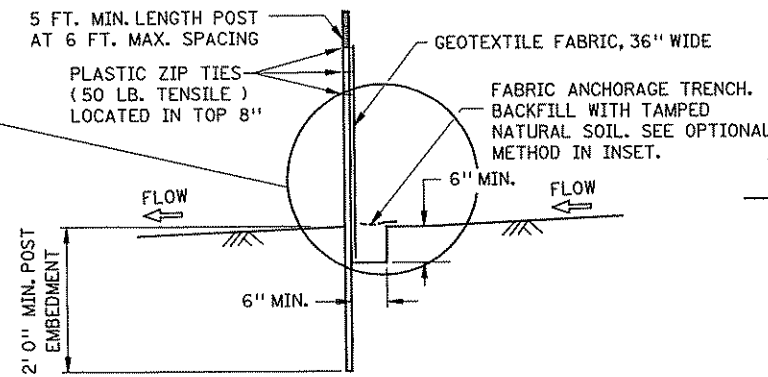
SILT FENCE, MACHINE SLICED  
DESIGN GUIDELINES:  
TO PROTECT AREAS FROM SHEET FLOW.  
MAXIMUM CONTRIBUTING AREA: 1 ACRE.



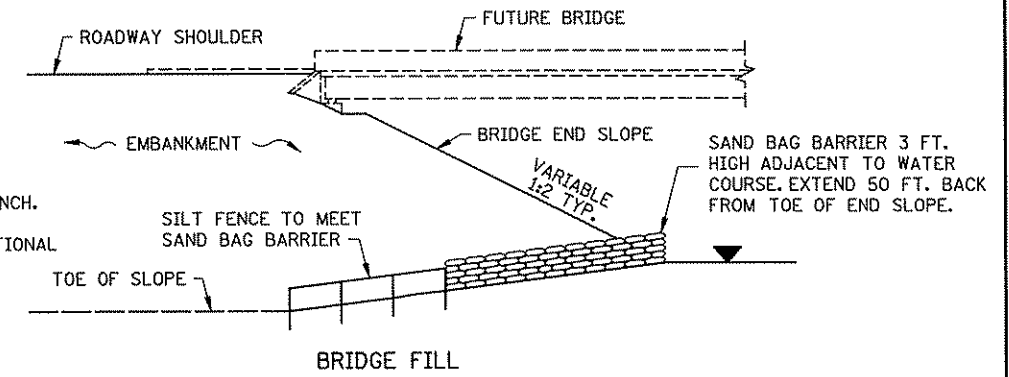
DESIGN GUIDELINES:  
WATER COURSE FLOW VELOCITY: STAGNANT  
CONTRIBUTING SLOPE AREA: 1/2 ACRE



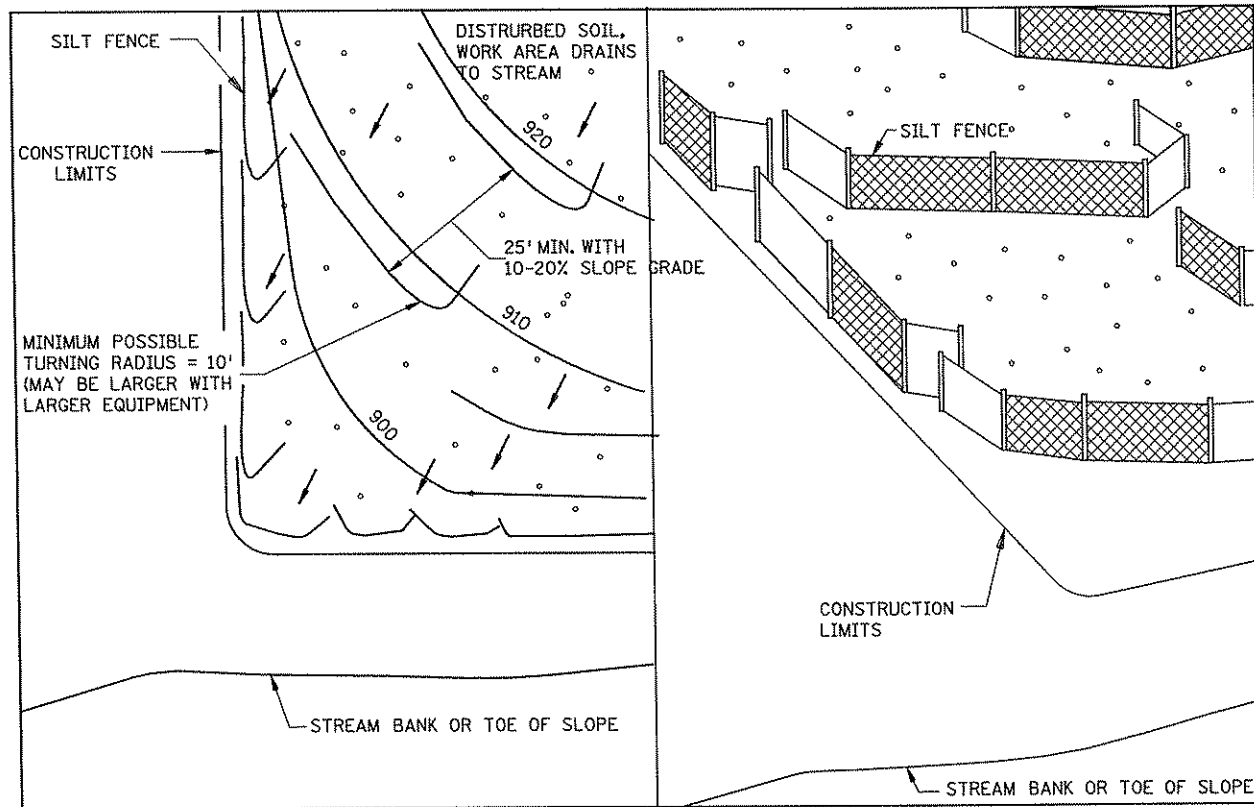
OPTIONAL METHOD FOR SILT FENCE, HEAVY DUTY



SILT FENCE, HEAVY DUTY (HAND INSTALLED)  
DESIGN GUIDELINES:  
TO PROTECT AREAS FROM SHEET FLOW.  
MAXIMUM CONTRIBUTING AREA: 1 ACRE.



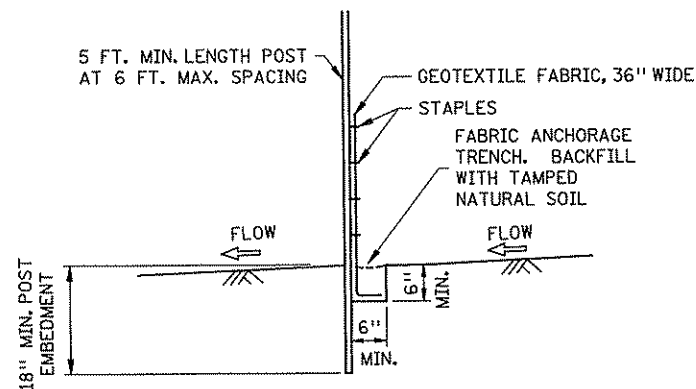
DESIGN GUIDELINES:  
WATER COURSE FLOW VELOCITY: 1 TO 7 FT./SEC.  
CONTRIBUTING SLOPE AREA: 1 ACRE



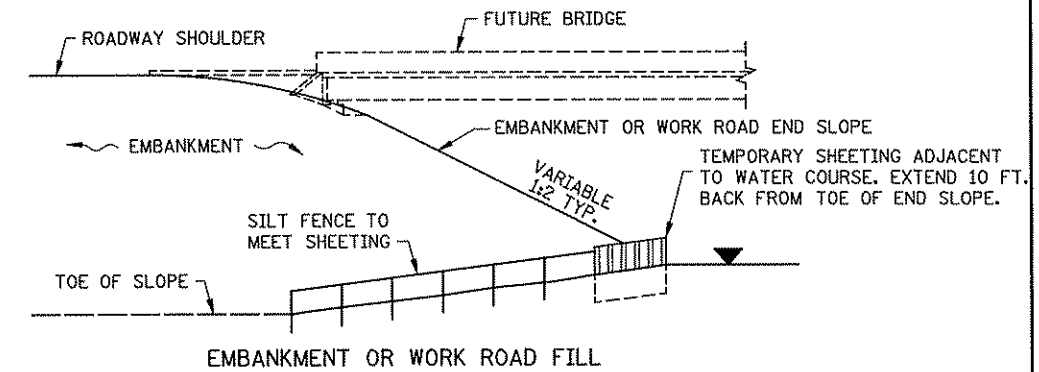
PLAN VIEW

SIDE VIEW

SILT FENCE, J-HOOK INSTALLATION



SILT FENCE, PREASSEMBLED  
DESIGN GUIDELINES:  
TO PROTECT AREAS FROM SHEET FLOW.  
MAXIMUM CONTRIBUTING AREA: 1 ACRE.



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

SILT FENCE AT BRIDGE EMBANKMENT ADJACENT TO WATER

NOTES:

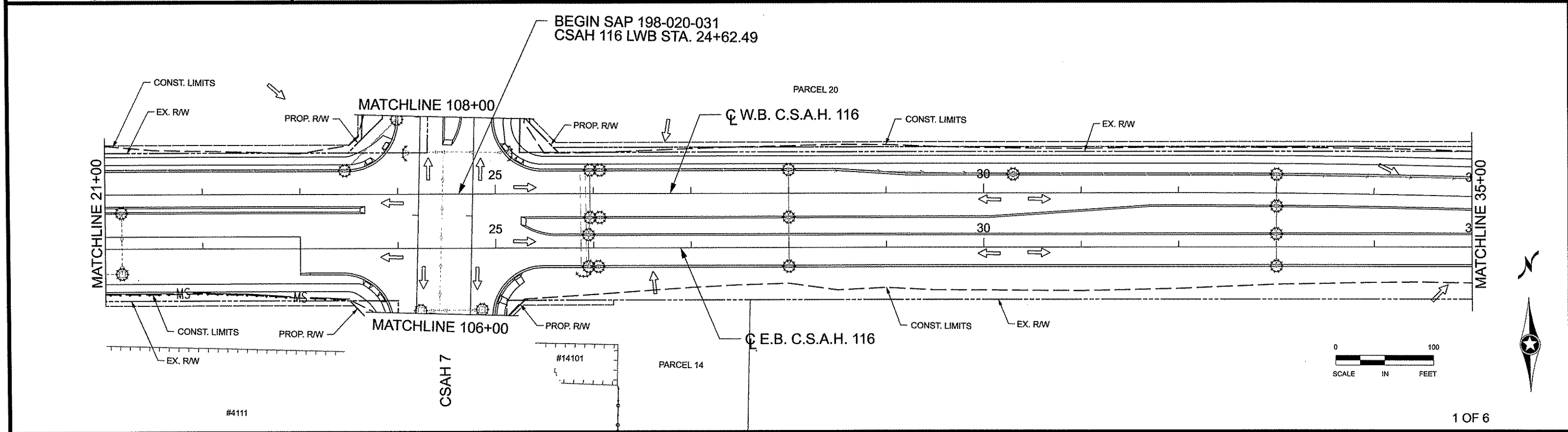
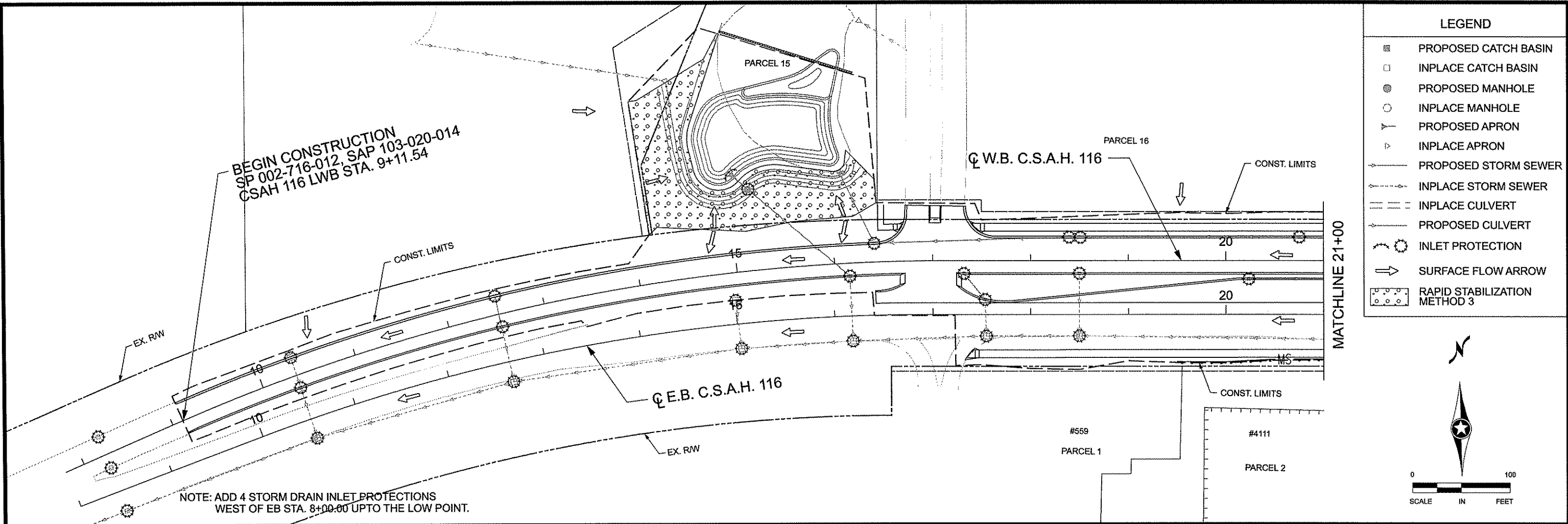
SEE SPECS. 2573, 3149 & 3886.

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

DISTRICT #: \$\$\$@DISTRICT@\$\$  
USER NAME: \$\$\$@USER@NAME@\$\$\$  
PATH & FILENAME: \$\$\$@PATH@FILENAME@\$\$\$

FILE NAME: \$\$\$@FILENAME@\$\$\$

STANDARD SHEET NO. 5-297,408 (1 OF 2)	TITLE: TEMPORARY SEDIMENT CONTROL SILT FENCE
STANDARD APPROVED: SEPTEMBER 27, 2006	
S.P. 002-716-012 S.P. 198-020-030 S.P. 103-020-014 S.P. 198-020-032 S.P. 002-607-021 S.P. 198-020-031 S.P. 103-020-015	SHEET NO. 142 OF 282 SHEETS



NO	DATE	BY	CKD	APPR	REVISION
NAME: p:102-716-12\plan\0271612_EC_P1.dgn					

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

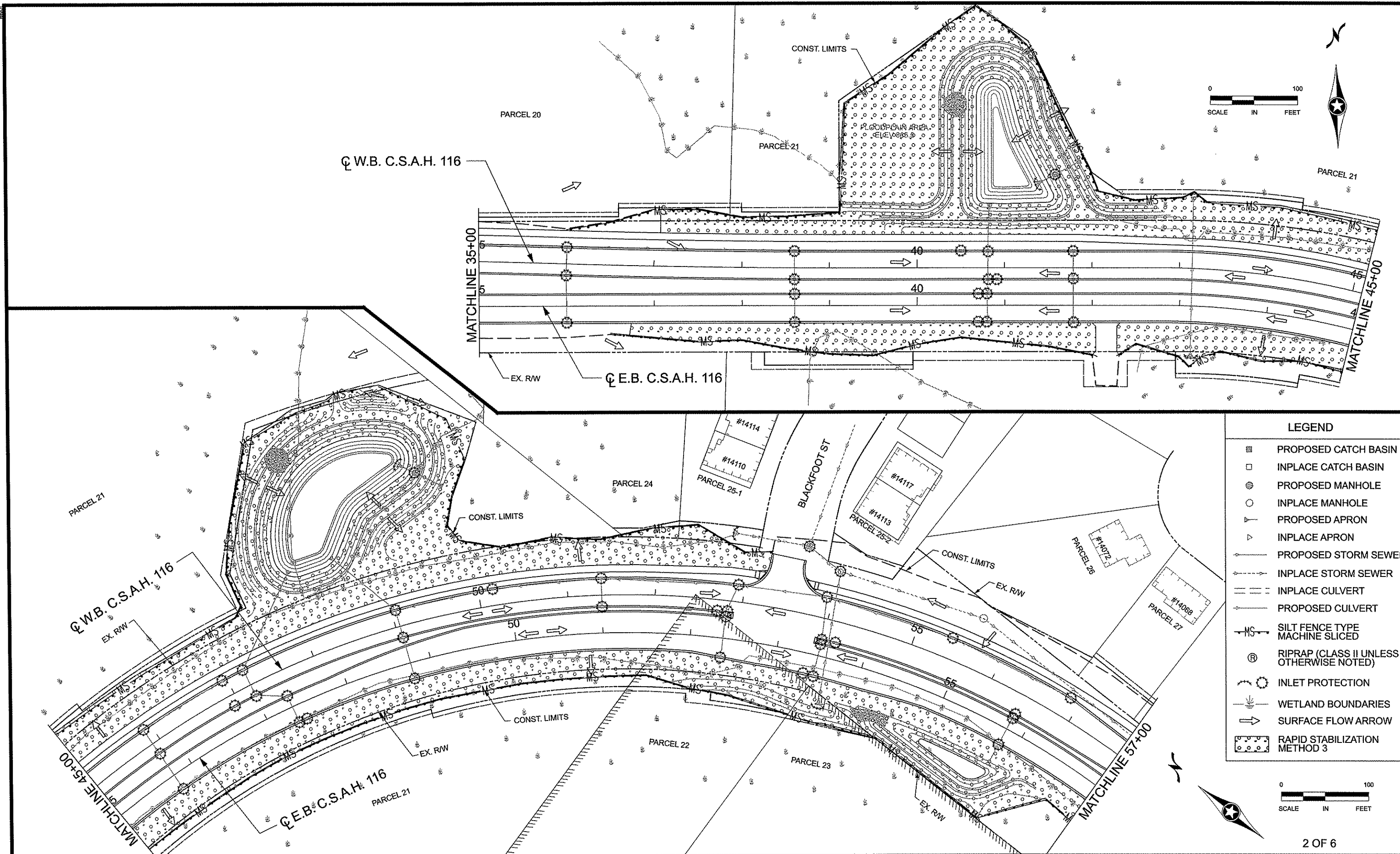
PRINT NAME: CURT A. KOBILARCSIK  
 SIGNATURE: *Curt Kobilarcsik*  
 DATE: 6-29-12 LICENSE NO. 24756

DRAWN BY: EJM DATE 05/15/2012  
 DESIGN BY: MN DATE 12/01/2010  
 CHECKED BY: CAK DATE 05/29/2012



S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

TEMPORARY EROSION CONTROL PLAN  
 STA 9+00.00 TO 35+00.00  
 Sheet 143 of 282 Sheets



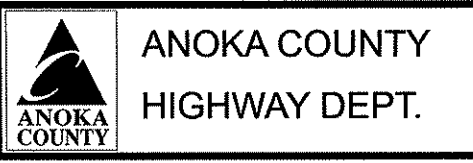
- LEGEND**
- PROPOSED CATCH BASIN
  - INPLACE CATCH BASIN
  - PROPOSED MANHOLE
  - INPLACE MANHOLE
  - ▽ PROPOSED APRON
  - ▷ INPLACE APRON
  - PROPOSED STORM SEWER
  - INPLACE STORM SEWER
  - INPLACE CULVERT
  - PROPOSED CULVERT
  - MS SILT FENCE TYPE MACHINE SLICED
  - ⊗ RIPRAP (CLASS II UNLESS OTHERWISE NOTED)
  - ⊙ INLET PROTECTION
  - WETLAND BOUNDARIES
  - SURFACE FLOW ARROW
  - RAPID STABILIZATION METHOD 3

NO	DATE	BY	CHKD	APPR	REVISION
NAME: p:102-716-12\plan\0271612_EC_P2.dgn					

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

PRINT NAME: CURT A. KOBIARCSIK  
 SIGNATURE: *C. Kobilarcsik*  
 DATE: 6-29-12 LICENSE NO. 24758

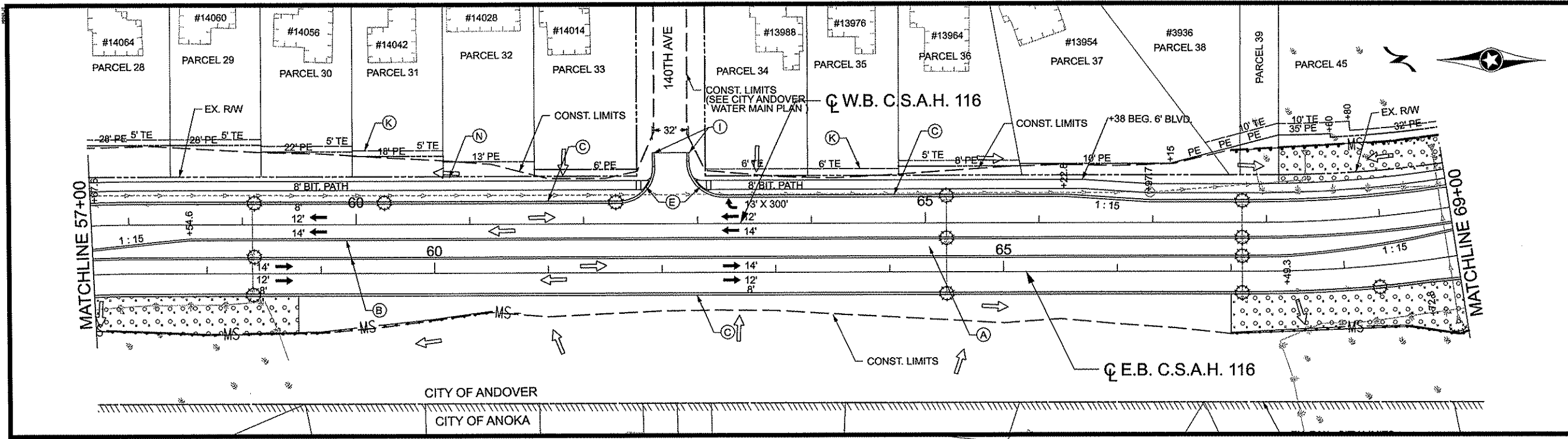
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 DESIGN BY: MN DATE: 12/01/2010  
 CHECKED BY: CAK DATE: 05/29/2012



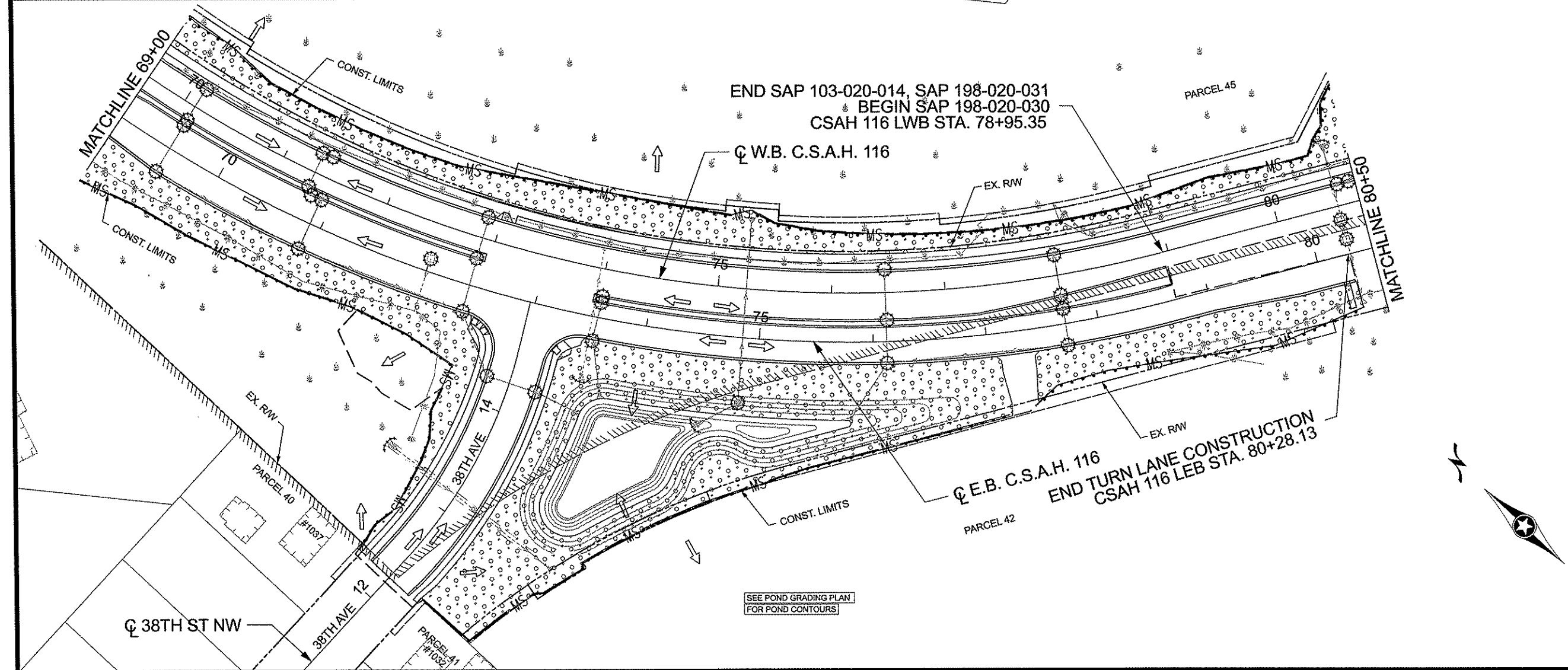
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S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

TEMPORARY EROSION CONTROL PLAN  
 STA 35+00.00 TO 57+00.00  
 Sheet 144 of 282 Sheets





- LEGEND**
- PROPOSED CATCH BASIN
  - INPLACE CATCH BASIN
  - PROPOSED MANHOLE
  - INPLACE MANHOLE
  - PROPOSED APRON
  - INPLACE APRON
  - PROPOSED STORM SEWER
  - INPLACE STORM SEWER
  - INPLACE CULVERT
  - PROPOSED CULVERT
  - SILT FENCE TYPE MACHINE SLICED
  - RIPRAP (CLASS II UNLESS OTHERWISE NOTED)
  - INLET PROTECTION
  - WETLAND BOUNDARIES
  - SURFACE FLOW ARROW
  - RAPID STABILIZATION METHOD 3



0 100  
SCALE IN FEET

3 OF 6

TEMPORARY EROSION CONTROL PLAN  
STA 57+00.00 TO 80+50.00  
Sheet 145 of 282 Sheets

NO	DATE	BY	CKD	APPR	REVISION

NAME: p:\02-718-12\plan\0271612\_EC\_P3.dgn  
06/28/2012 9:16:07 AM

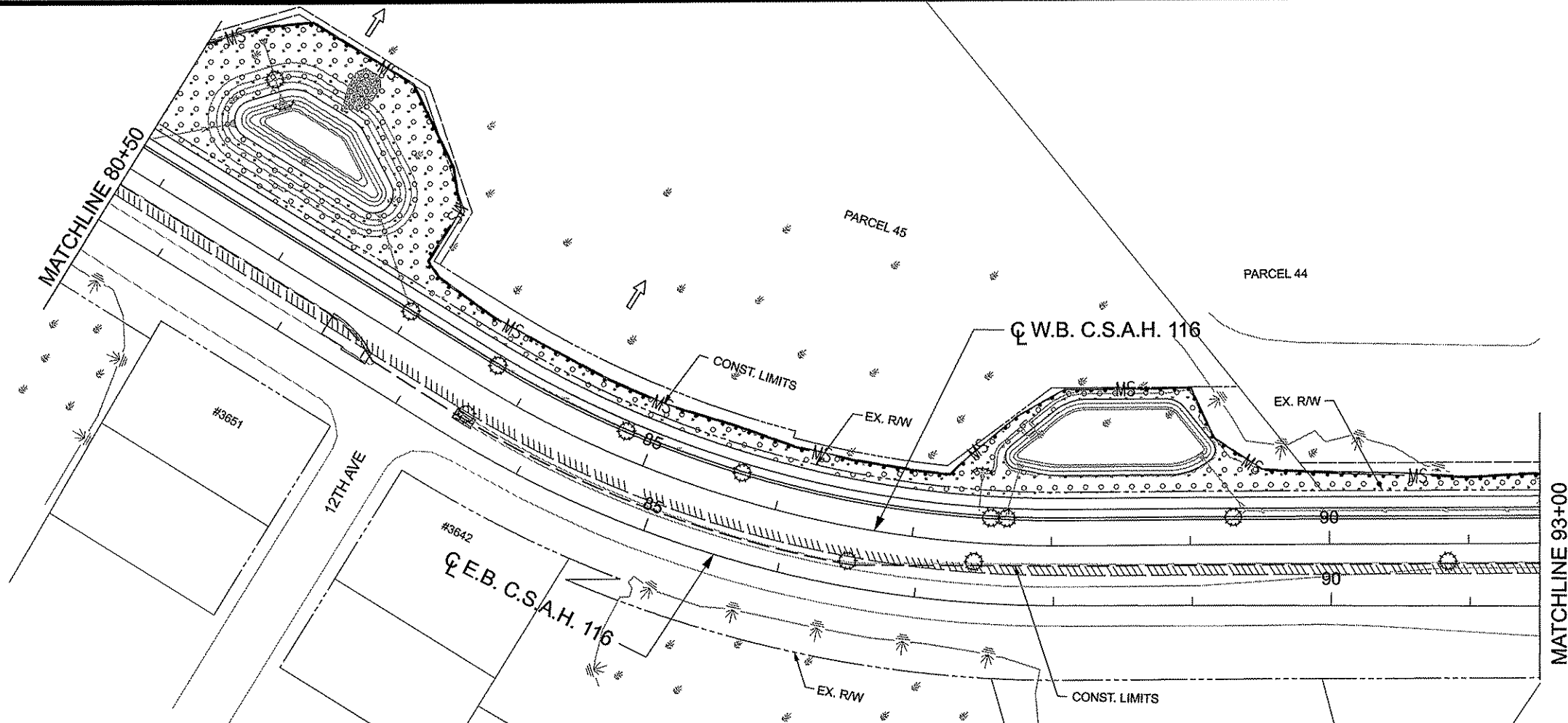
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME: CURT A. KOBILARCSIK  
SIGNATURE: *Curt Kobilarscik*  
DATE: 6.29.12 LICENSE NO. 24756

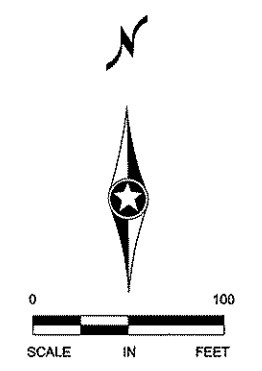
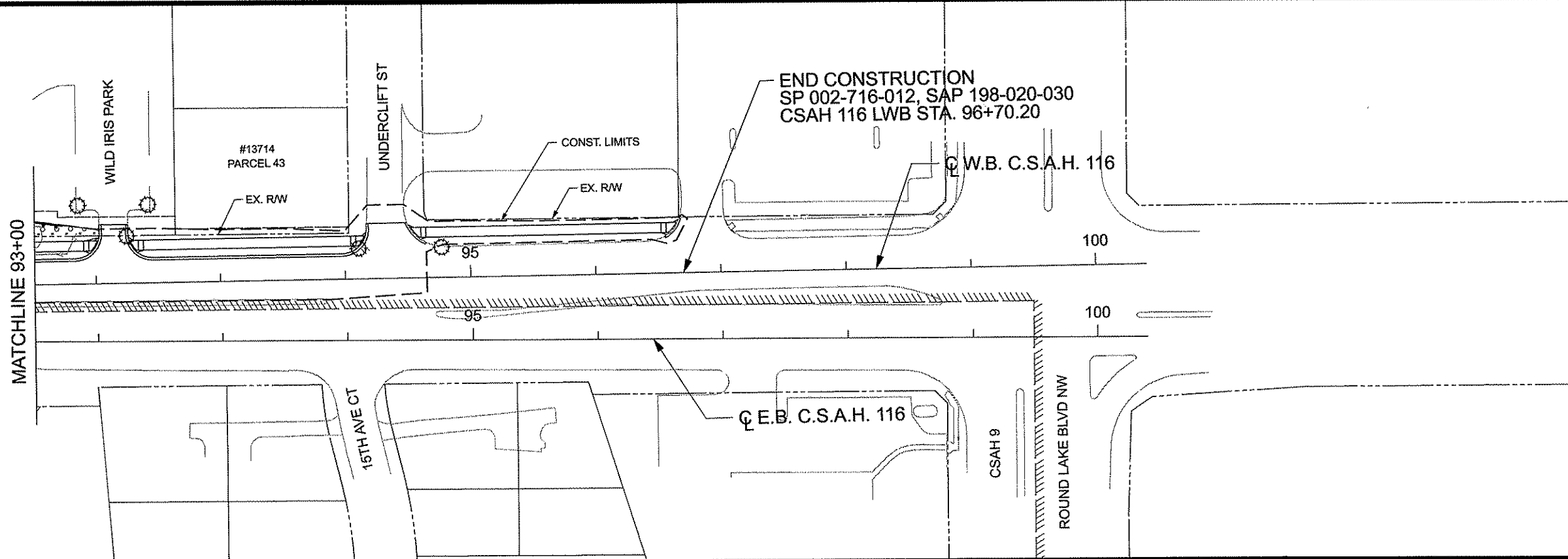
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DESIGN BY: MN DATE: 12-1-10  
CHECKED BY: \*\*\* DATE: \*\*\*



S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015



LEGEND	
	PROPOSED CATCH BASIN
	INPLACE CATCH BASIN
	PROPOSED MANHOLE
	INPLACE MANHOLE
	PROPOSED APRON
	INPLACE APRON
	PROPOSED STORM SEWER
	INPLACE STORM SEWER
	PROPOSED CULVERT
	INPLACE CULVERT
	SILT FENCE TYPE MACHINE SLICED
	RIPRAP (CLASS II UNLESS OTHERWISE NOTED)
	INLET PROTECTION
	WETLAND BOUNDARIES
	SURFACE FLOW ARROW
	RAPID STABILIZATION METHOD 3



4 OF 6

NO	DATE	BY	CKD	APPR	REVISION

NAME: p:\02-716-12\plant\0271612\_EC\_P4.dgn 06/28/2012 9:16:12 AM

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

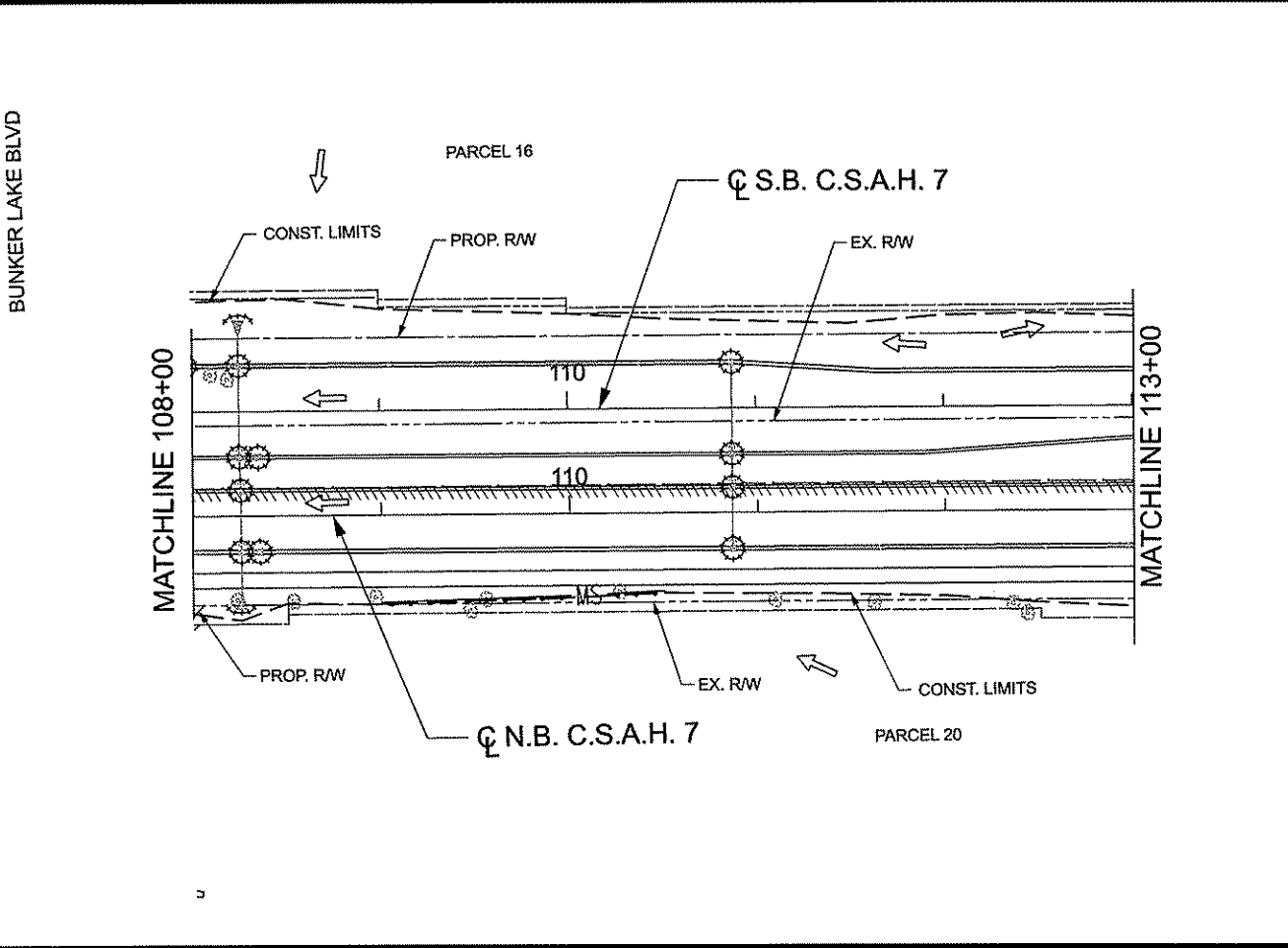
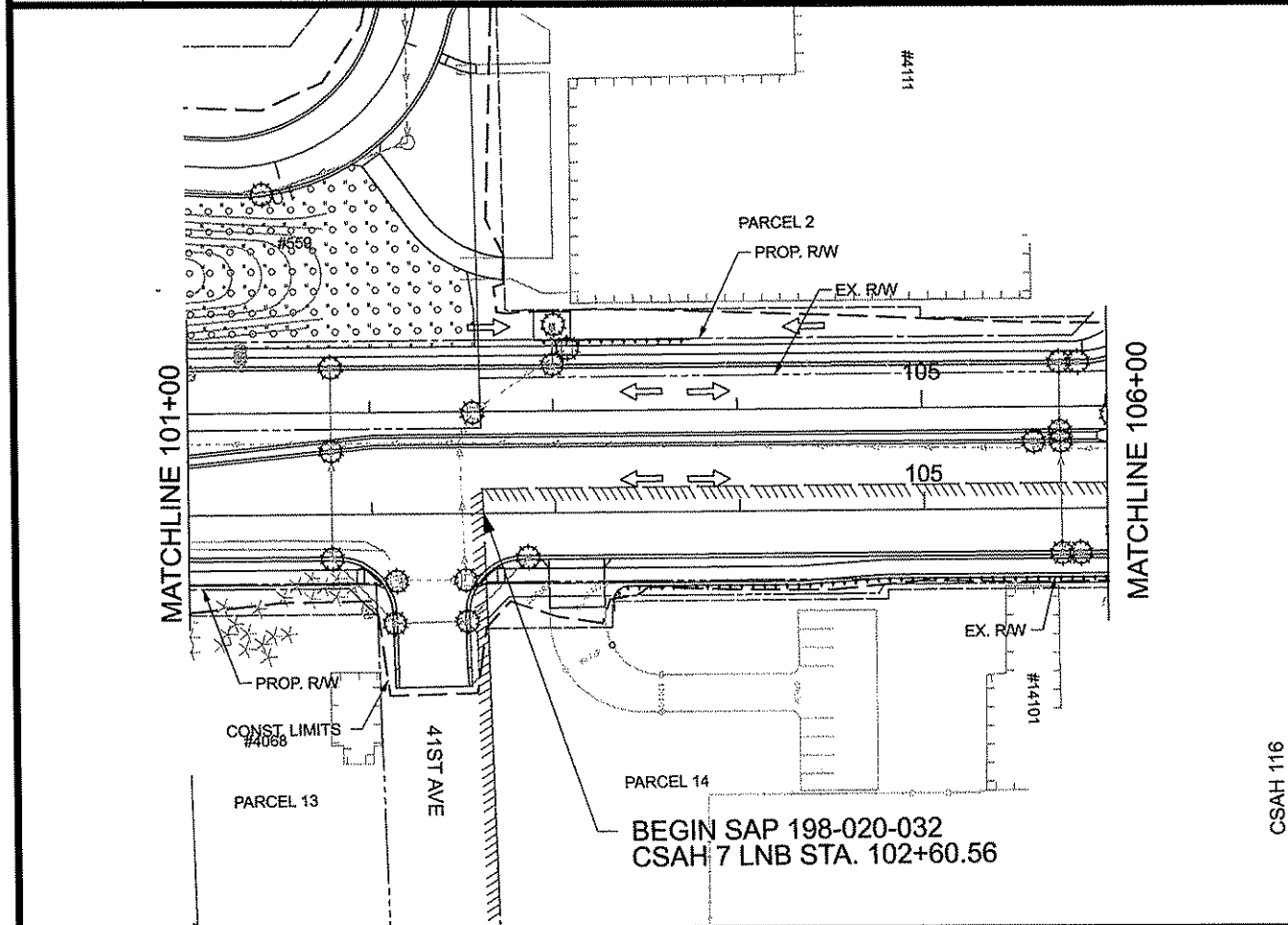
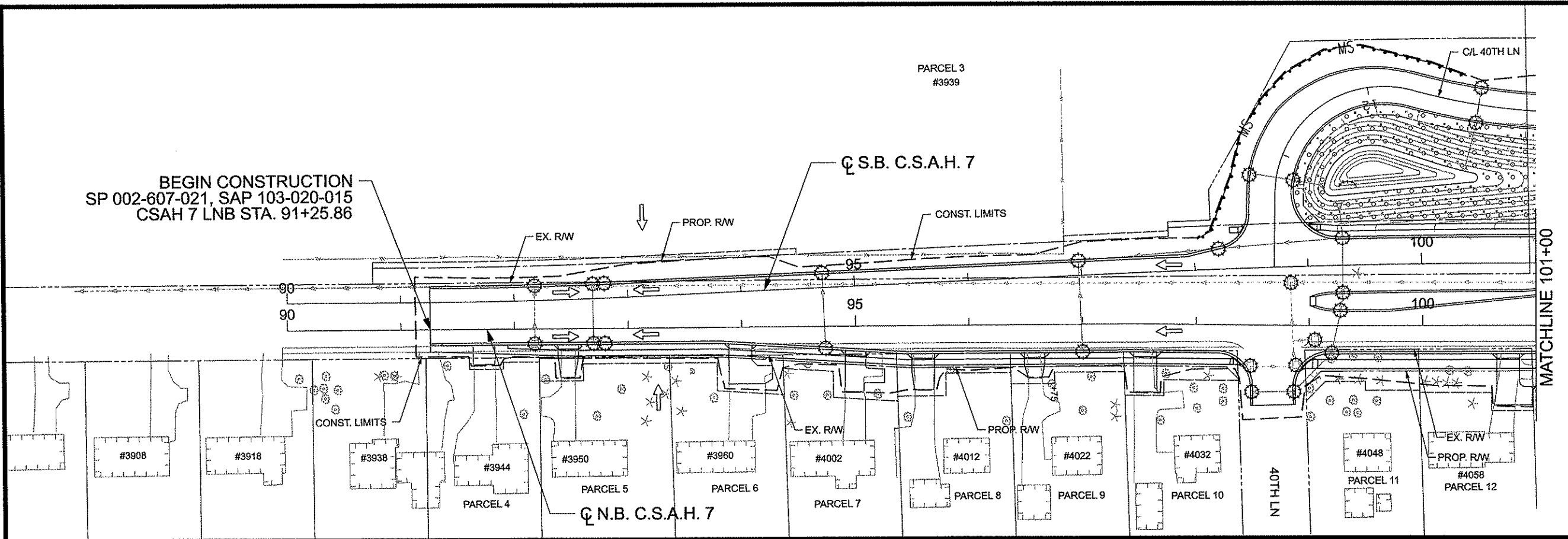
PRINT NAME: CURT A. KOBILARCSIK  
 SIGNATURE: *Curt A. Kobilarsik*  
 DATE: 6.29.12 LICENSE NO. 24756

DRAWN BY: EJM DATE 05/15/2012  
 DESIGN BY: MN DATE 12/01/2010  
 CHECKED BY: CAK DATE 05/29/2012

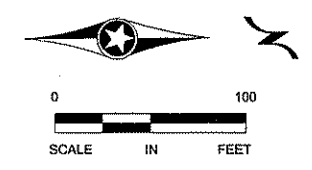


S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

TEMPORARY EROSION CONTROL PLAN  
 STA 80+50.00 TO 100+00.00  
 Sheet 146 of 282 Sheets



- LEGEND**
- PROPOSED CATCH BASIN
  - INPLACE CATCH BASIN
  - PROPOSED MANHOLE
  - INPLACE MANHOLE
  - ▽ PROPOSED APRON
  - ▽ INPLACE APRON
  - PROPOSED STORM SEWER
  - INPLACE STORM SEWER
  - INPLACE CULVERT
  - PROPOSED CULVERT
  - MS SILT FENCE TYPE MACHINE SLICED
  - INLET PROTECTION
  - SURFACE FLOW ARROW



5 OF 6

NO	DATE	BY	CKD	APPR	REVISION

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

PRINT NAME: CURT A. KOBILARCSIK  
 SIGNATURE: *Curt Kobilarcsik*  
 DATE: 6.29.12 LICENSE NO. 24758

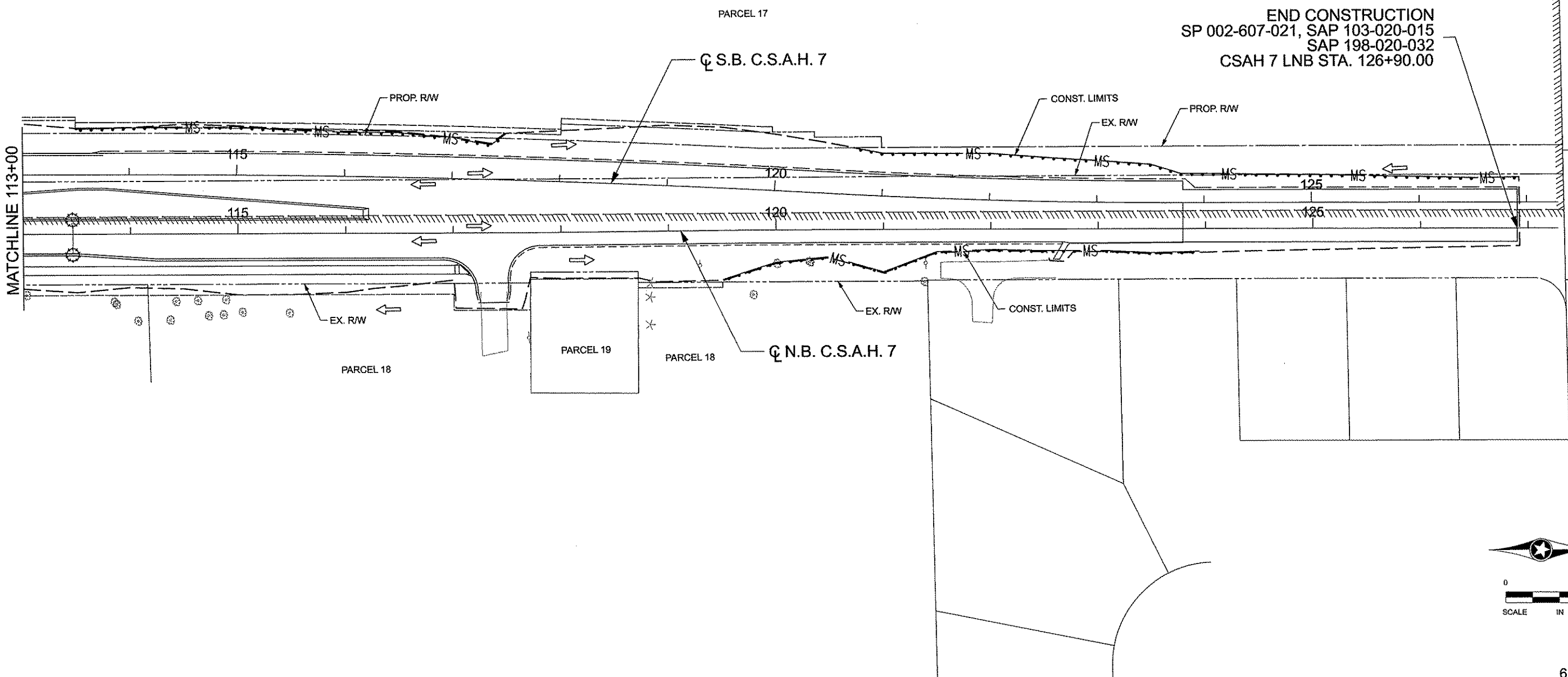
DRAWN BY: EJM DATE: 05/15/2012  
 DESIGN BY: MN DATE: 12/01/2010  
 CHECKED BY: CAK DATE: 05/29/2012



S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

TEMPORARY EROSION CONTROL PLAN  
 STA 101+00.00 TO 113+00.00  
 Sheet 147 of 282 Sheets

LEGEND	
	PROPOSED CATCH BASIN
	INPLACE CATCH BASIN
	PROPOSED MANHOLE
	INPLACE MANHOLE
	PROPOSED APRON
	INPLACE APRON
	PROPOSED STORM SEWER
	INPLACE STORM SEWER
	PROPOSED CULVERT
	INPLACE CULVERT
	SILT FENCE TYPE MACHINE SLICED
	INLET PROTECTION
	SURFACE FLOW ARROW



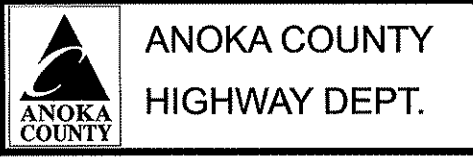
END CONSTRUCTION  
 SP 002-607-021, SAP 103-020-015  
 SAP 198-020-032  
 CSAH 7 LNB STA. 126+90.00

6 OF 6

NO	DATE	BY	CKD	APPR	REVISION
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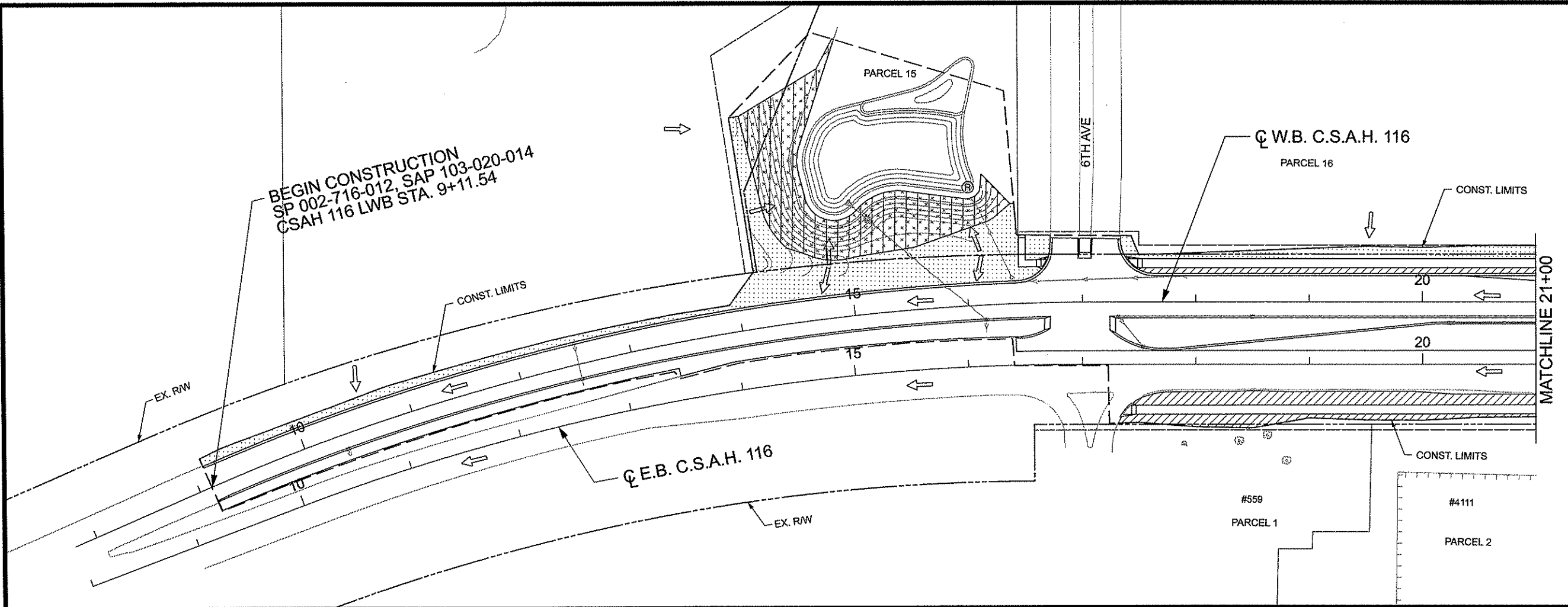
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.  
 PRINT NAME: CURT A. KOBILARCSIK  
 SIGNATURE: *Curt A. Kobilarsik*  
 DATE: 6-29-12 LICENSE NO. 24758

DRAWN BY: EJM DATE: 05/15/2012  
 DESIGN BY: MN DATE: 12/01/2010  
 CHECKED BY: CAK DATE: 05/29/2012



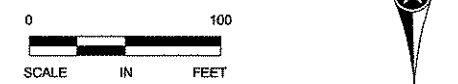
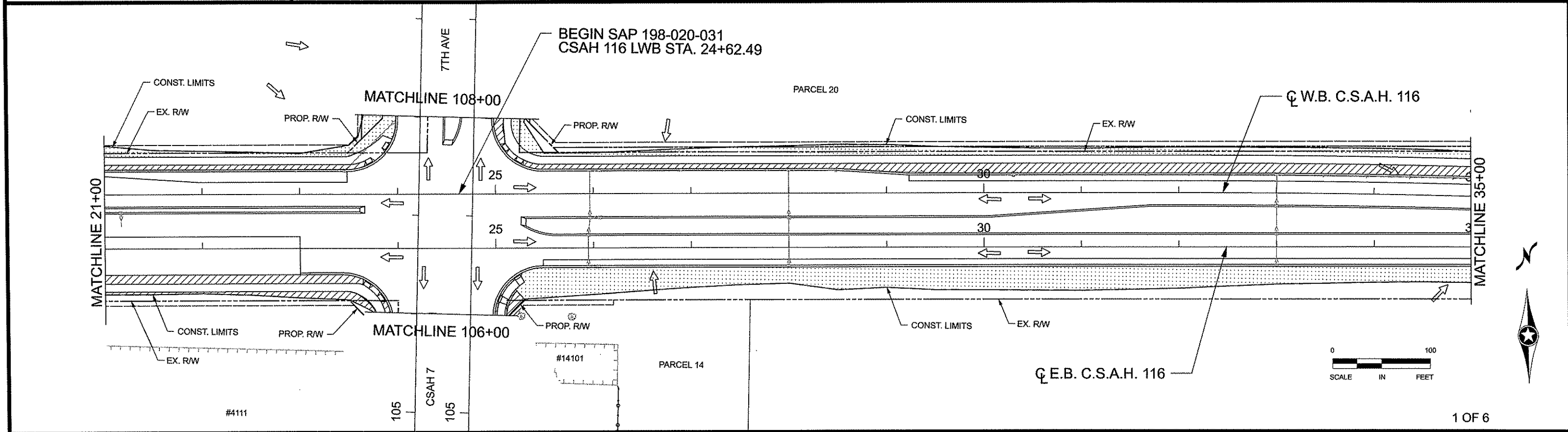
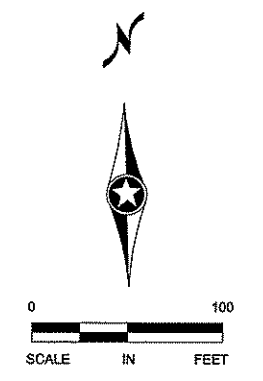
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S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

TEMPORARY EROSION CONTROL PLAN  
 STA 113+00.00 TO 125+00.00  
 Sheet 148 of 282 Sheets



**LEGEND**

- PROPOSED CATCH BASIN
- PROPOSED MANHOLE
- PROPOSED APRON
- PROPOSED STORM SEWER
- PROPOSED CULVERT
- RIPRAP (CLASS II UNLESS OTHERWISE NOTED)
- SOD APRON INLET OR OUTLET
- SURFACE FLOW ARROW
- SODDING TYPE SALT RESISTANT
- SEEDING MIX 350, MULCH TYPE 3
- SEEDING MIX 310, BLANKET CATEGORY 3



NO	DATE	BY	CKD	APPR	REVISION
NAME: p:\02-716-12\plan\0271612_TE_P1.dgn					

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

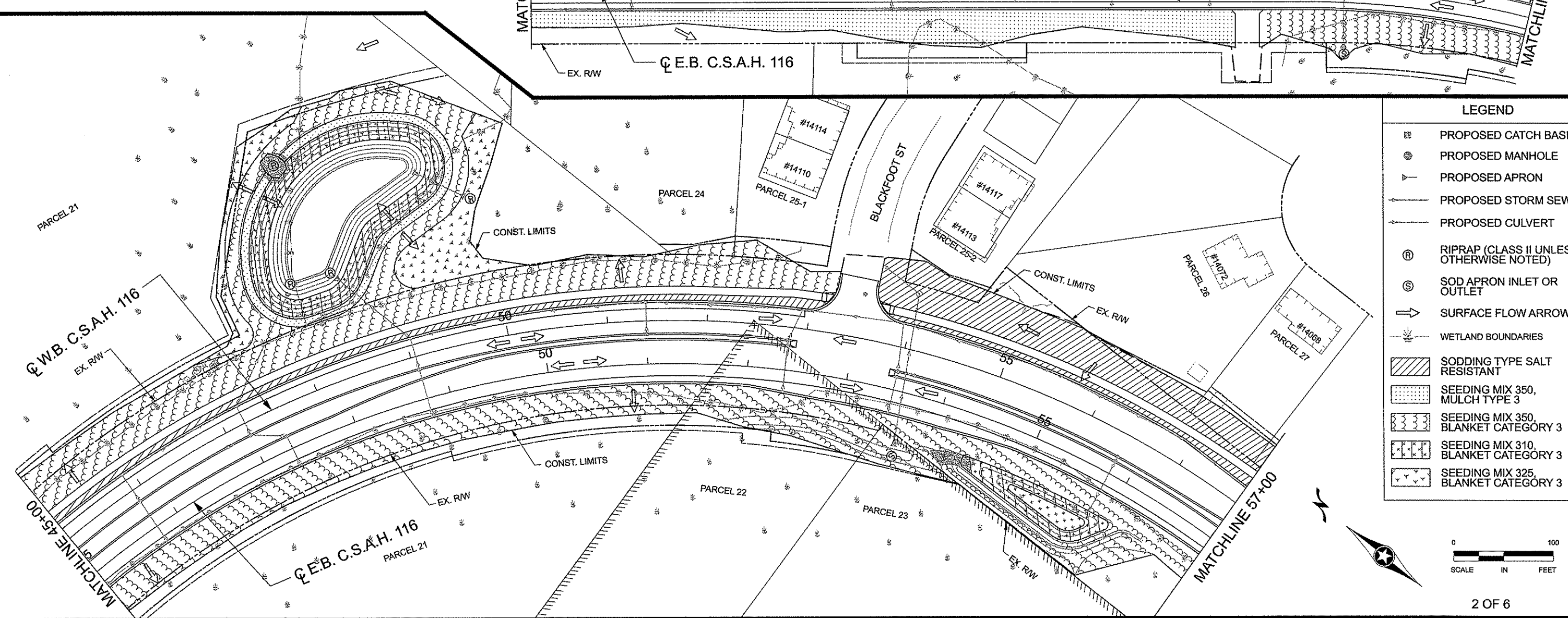
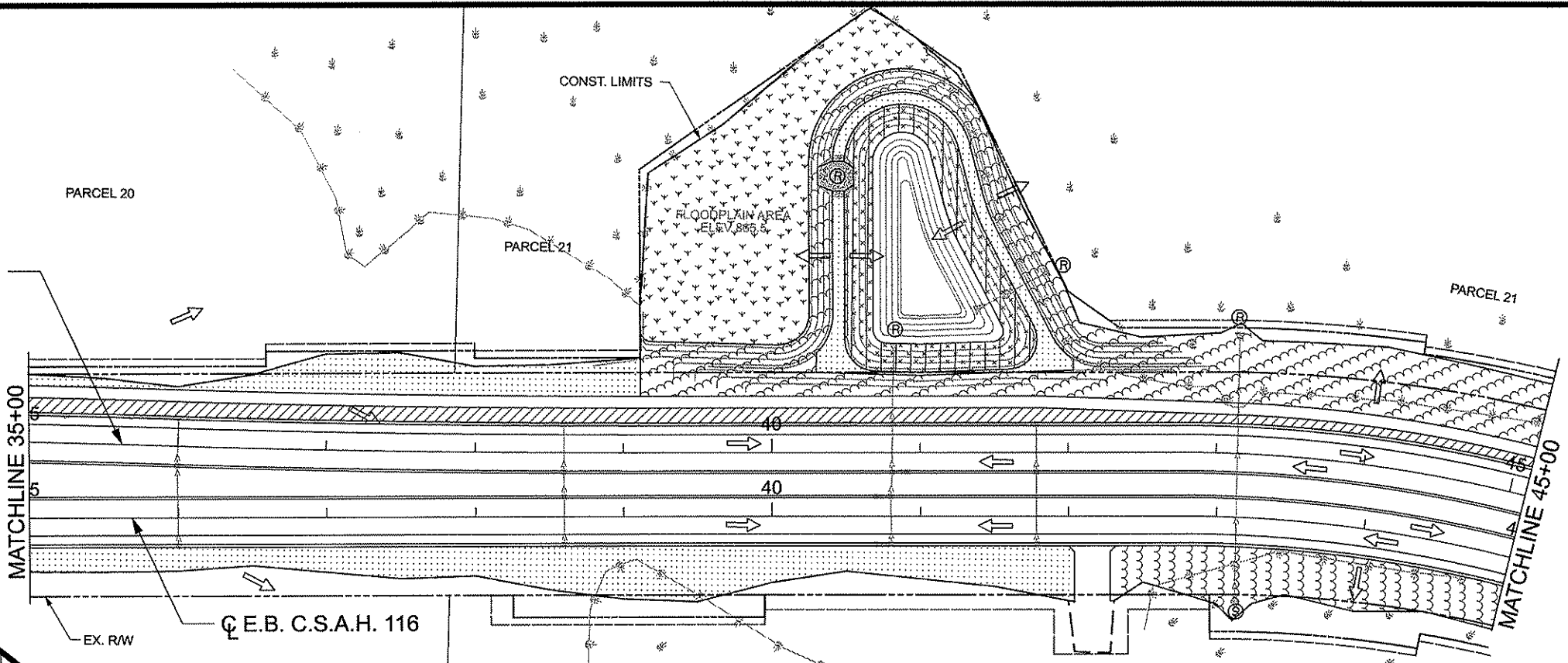
PRINT NAME: CURT A. KOBILARCSIK  
 SIGNATURE: *Curt Kobilarcsik*  
 DATE: 6-29-12 LICENSE NO. 24756

DRAWN BY: EJM DATE 05/15/2012  
 DESIGN BY: MN DATE 12/01/2010  
 CHECKED BY: CAK DATE 05/29/2012

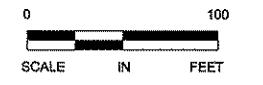


S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

PERMANENT EROSION CONTROL PLAN  
 STA 9+00.00 TO 35+00.00  
 Sheet 149 of 282 Sheets



LEGEND	
	PROPOSED CATCH BASIN
	PROPOSED MANHOLE
	PROPOSED APRON
	PROPOSED STORM SEWER
	PROPOSED CULVERT
	RIPRAP (CLASS II UNLESS OTHERWISE NOTED)
	SOD APRON INLET OR OUTLET
	SURFACE FLOW ARROW
	WETLAND BOUNDARIES
	SODDING TYPE SALT RESISTANT
	SEEDING MIX 350, MULCH TYPE 3
	SEEDING MIX 350, BLANKET CATEGORY 3
	SEEDING MIX 310, BLANKET CATEGORY 3
	SEEDING MIX 325, BLANKET CATEGORY 3



2 OF 6

NO	DATE	BY	CKD	APPR	REVISION

NAME: p:\02-716-12\plant\0271612\_TE\_P2.dgn 06/28/2012 9:16:29 AM

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

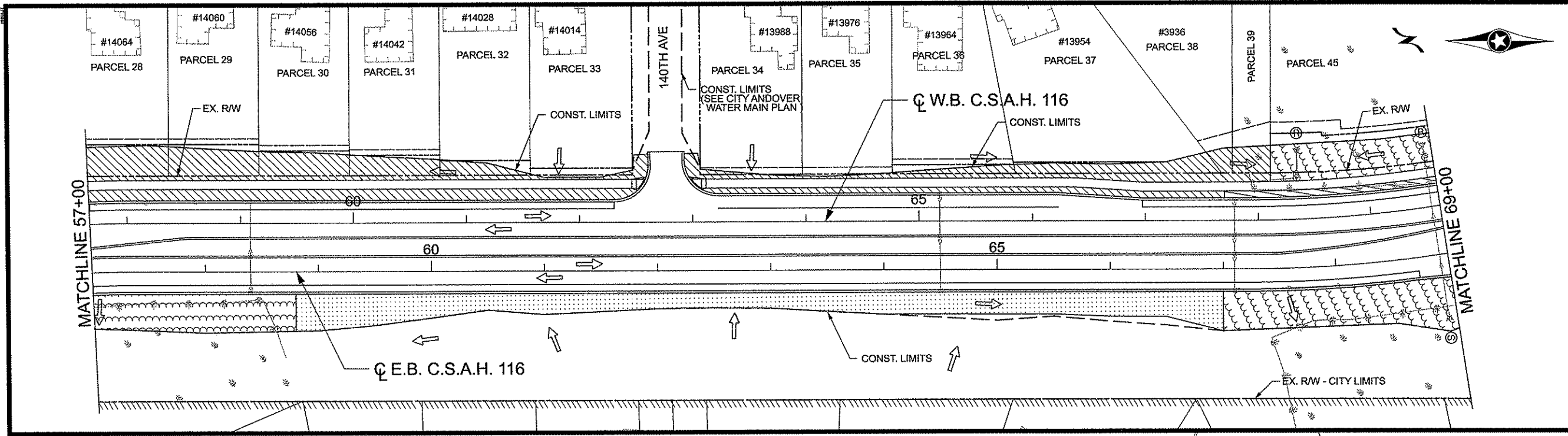
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 SIGNATURE: *Curt Kobilarsik*  
 DATE: 6-29-12 LICENSE NO. 24756

DRAWN BY: EJM DATE: 05/15/2012  
 DESIGN BY: MN DATE: 12/01/2010  
 CHECKED BY: CAK DATE: 05/29/2012



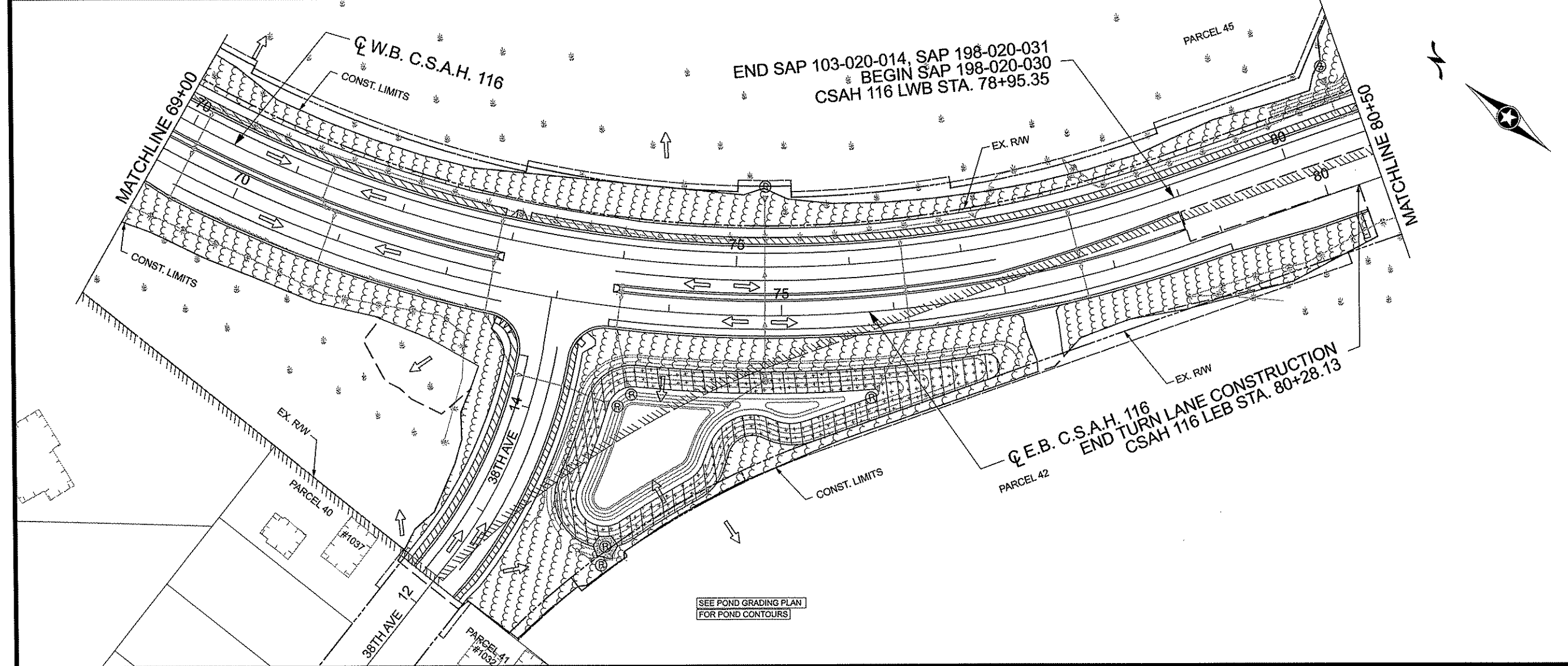
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S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

PERMANENT EROSION CONTROL PLAN  
 STA 35+00.00 TO 57+00.00  
 Sheet 150 of 282 Sheets



**LEGEND**

- PROPOSED CATCH BASIN
- PROPOSED MANHOLE
- PROPOSED APRON
- PROPOSED STORM SEWER
- PROPOSED CULVERT
- RIPRAP (CLASS II UNLESS OTHERWISE NOTED)
- SOD APRON INLET OR OUTLET
- SURFACE FLOW ARROW
- WETLAND BOUNDARIES
- SODDING TYPE SALT RESISTANT
- SEEDING MIX 350, MULCH TYPE 3
- SEEDING MIX 350, BLANKET CATEGORY 3
- SEEDING MIX 310, BLANKET CATEGORY 3



0 100  
SCALE IN FEET

3 OF 6

NO	DATE	BY	CKD	APPR	REVISION
NAME: p:\02-716-12\plan\0271612_TE_P3.dgn					
9:18:34 AM					

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

PRINT NAME: CURT A. KOBILARCSIK

SIGNATURE: *Curt Kobilarscik*

DATE: 6-29-12 LICENSE NO. 24756

DRAWN BY: EJM DATE 05/15/2012

DESIGN BY: MN DATE 12/01/2010

CHECKED BY: CAK DATE 05/29/2012

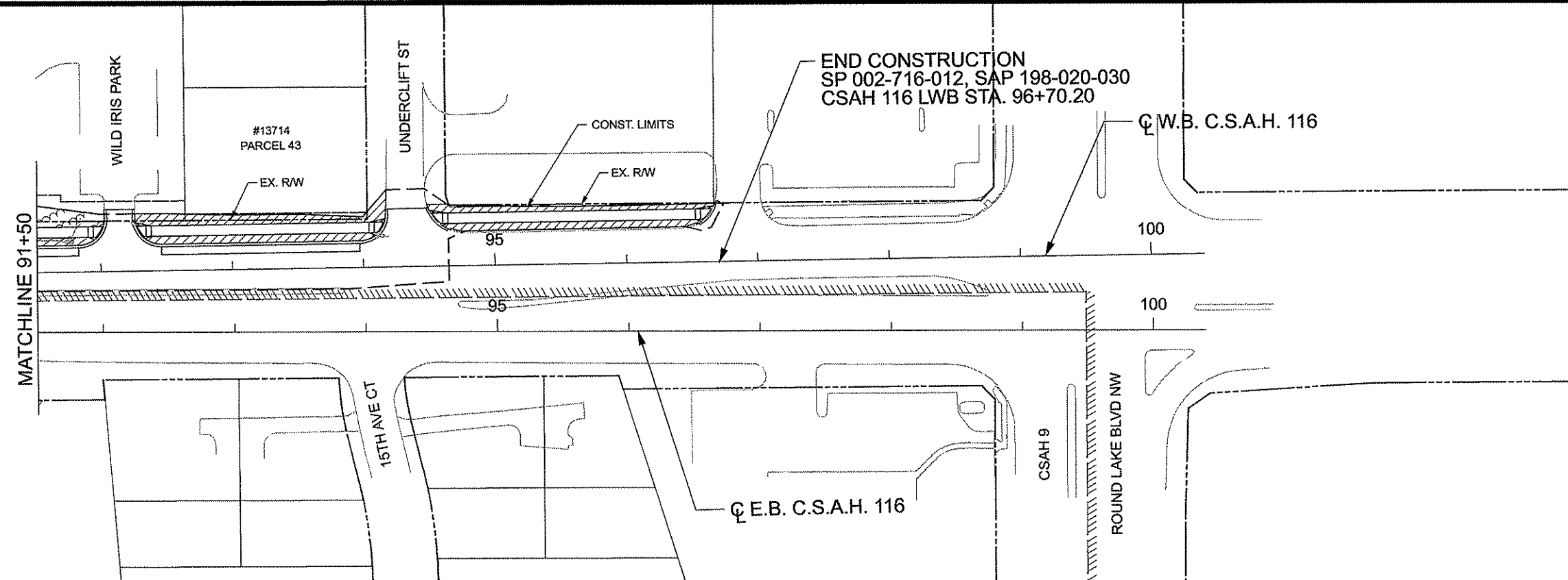
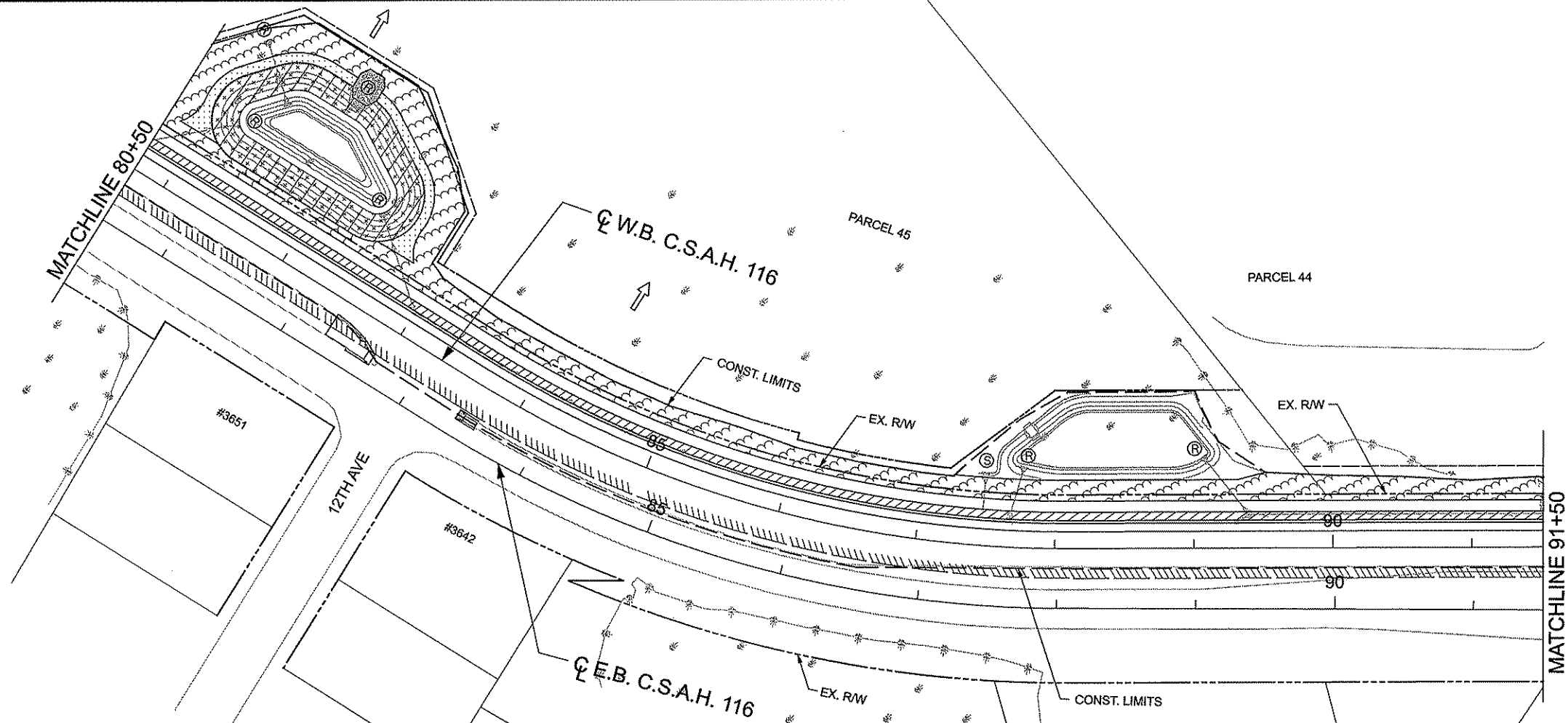
**ANOKA COUNTY**  
HIGHWAY DEPT.

S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

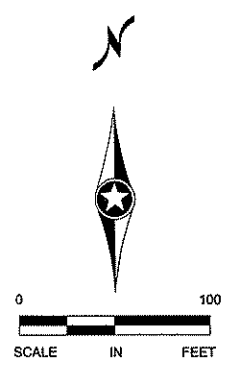
**PERMANENT EROSION CONTROL PLAN**

STA 57+00.00 TO 80+50.00

Sheet 151 of 282 Sheets



LEGEND	
	PROPOSED CATCH BASIN
	PROPOSED MANHOLE
	PROPOSED APRON
	PROPOSED STORM SEWER
	PROPOSED CULVERT
	RIPRAP (CLASS II UNLESS OTHERWISE NOTED)
	SOD APRON INLET OR OUTLET
	SURFACE FLOW ARROW
	WETLAND BOUNDARIES
	SODDING TYPE SALT RESISTANT
	SEEDING MIX 350, BLANKET CATEGORY 3
	SEEDING MIX 310, BLANKET CATEGORY 3



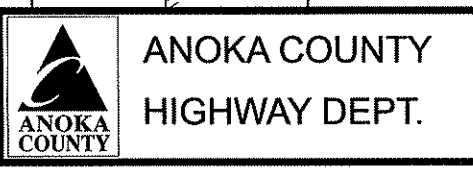
4 OF 6

NO	DATE	BY	CHKD	APPR	REVISION

NAME: p:\02-716-12\plan\0271612\_TE\_P4.dgn 06/28/2012 9:16:38 AM

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.  
 PRINT NAME: CURT A. KOBILARCSIK  
 SIGNATURE: *Curt Kobilarcsik*  
 DATE: 6-29-12 LICENSE NO. 24758

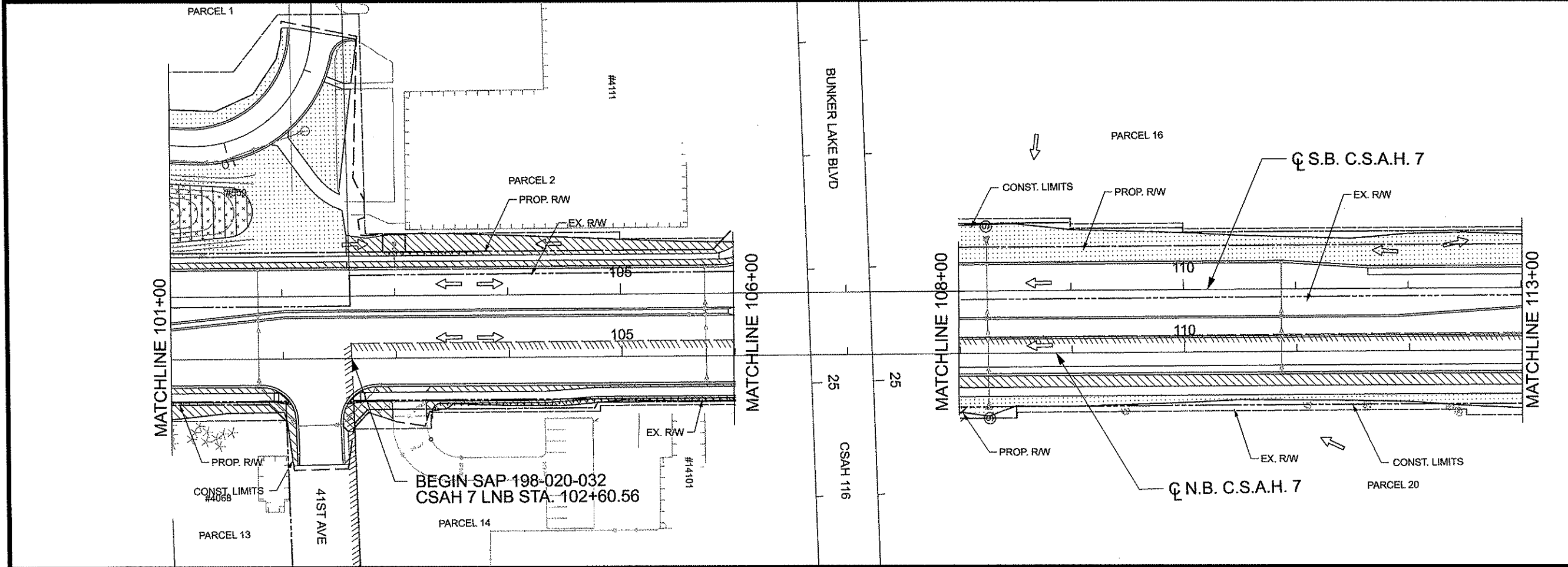
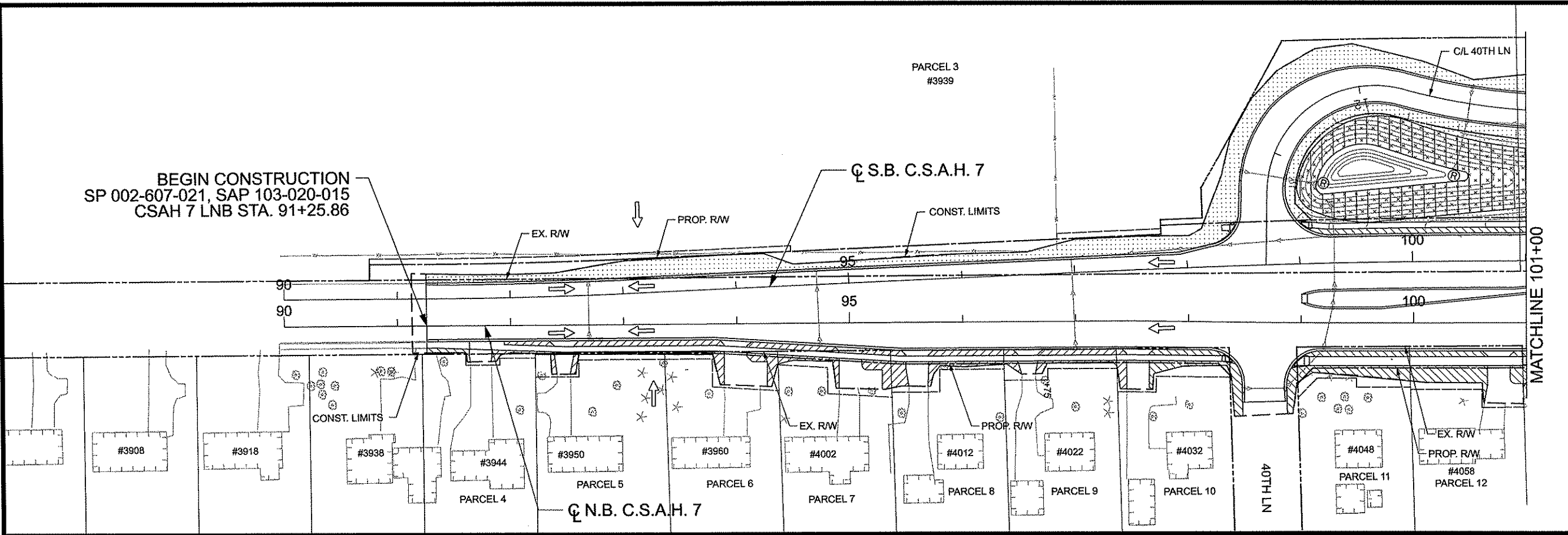
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 DESIGN BY: MN DATE: 12/01/2010  
 CHECKED BY: CAK DATE: 05/29/2012



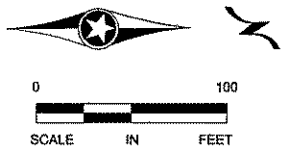
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S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

PERMANENT EROSION CONTROL PLAN  
 STA 80+50.00 TO 100+00.00  
 Sheet 152 of 282 Sheets





- LEGEND**
- PROPOSED CATCH BASIN
  - PROPOSED MANHOLE
  - PROPOSED APRON
  - PROPOSED STORM SEWER
  - PROPOSED CULVERT
  - RIPRAP (CLASS II UNLESS OTHERWISE NOTED)
  - SOD APRON INLET OR OUTLET
  - SURFACE FLOW ARROW
  - SODDING TYPE SALT RESISTANT
  - SEEDING MIX 350, MULCH TYPE 3
  - SEEDING MIX 310, BLANKET CATEGORY 3



5 OF 6

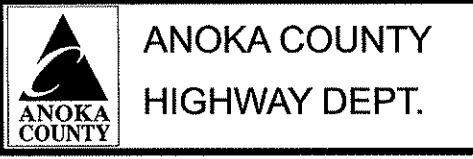
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I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME: CURT A. KOBILARCSIK  
 SIGNATURE: *Curt A. Kobilarsik*  
 DATE: 6-29-12 LICENSE NO. 24756

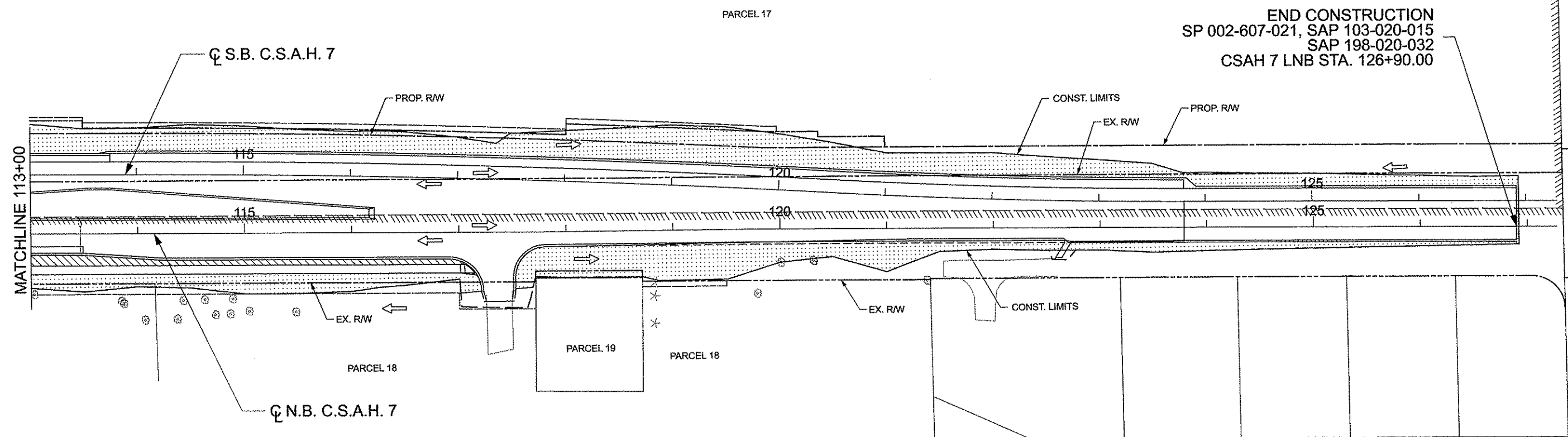
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 DESIGN BY: MN DATE 12/01/2010  
 CHECKED BY: CAK DATE 05/29/2012



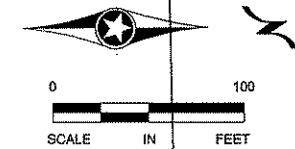
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S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

PERMANENT EROSION CONTROL PLAN  
 STA 90+00.00 TO 113+00.00  
 Sheet 153 of 282 Sheets

LEGEND	
	PROPOSED CATCH BASIN
	PROPOSED MANHOLE
	PROPOSED APRON
	PROPOSED STORM SEWER
	PROPOSED CULVERT
	RIPRAP (CLASS II UNLESS OTHERWISE NOTED)
	SOD APRON INLET OR OUTLET
	SURFACE FLOW ARROW
	SODDING TYPE SALT RESISTANT
	SEEDING MIX 350, MULCH TYPE 3



END CONSTRUCTION  
 SP 002-607-021, SAP 103-020-015  
 SAP 198-020-032  
 CSAH 7 LNB STA. 126+90.00



6 OF 6

NO	DATE	BY	CHKD	APPR	REVISION

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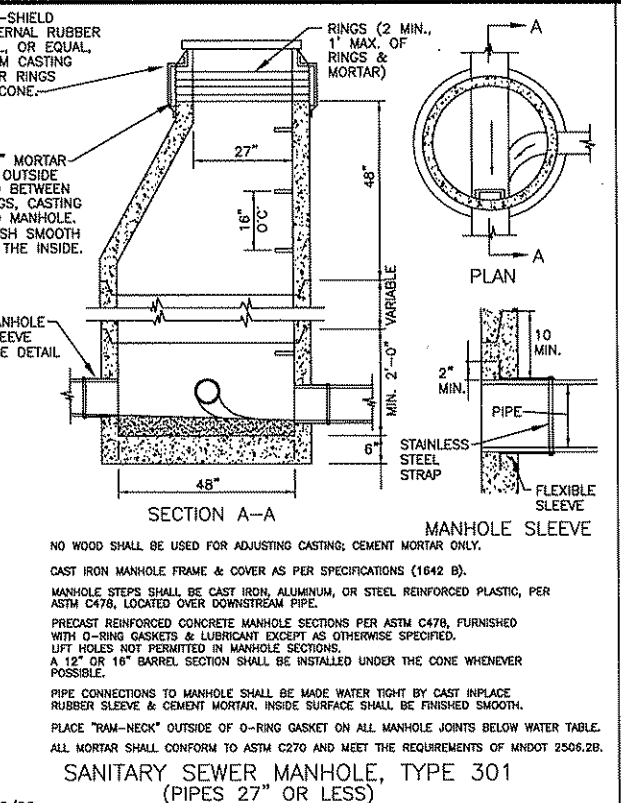
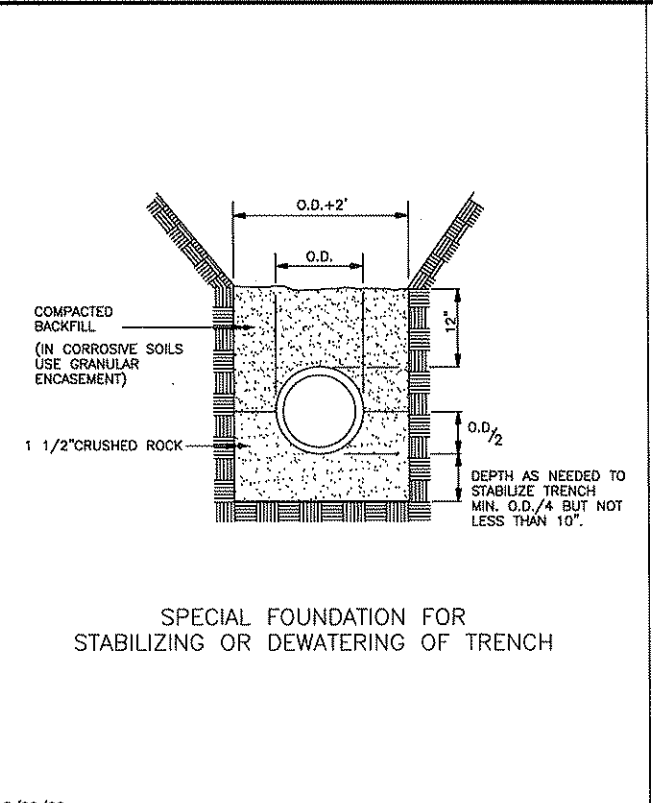
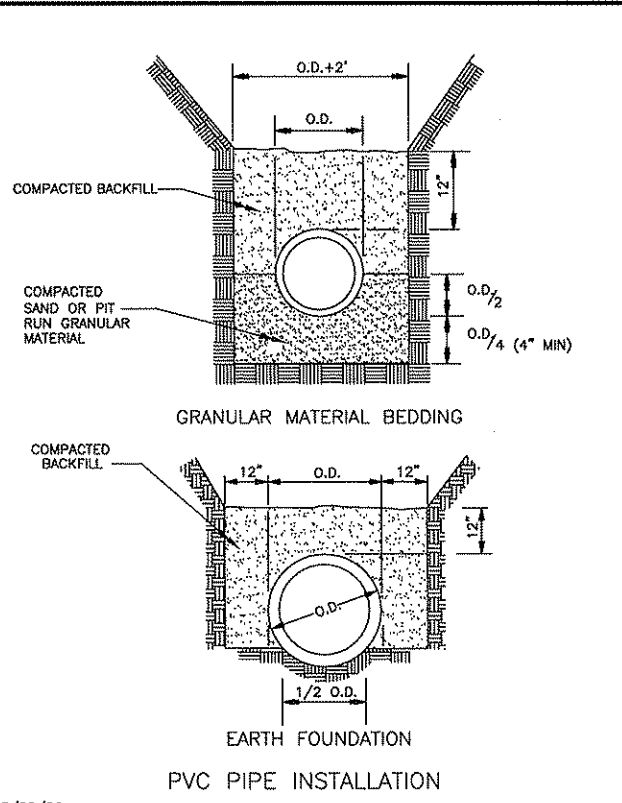
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.  
 PRINT NAME: CURT A. KOBILARCSIK  
 SIGNATURE: *Curt A. Kobilarsik*  
 DATE: 6.29.12 LICENSE NO. 24758

DRAWN BY: EJM DATE: 05/15/2012  
 DESIGN BY: MN DATE: 12/01/2010  
 CHECKED BY: CAK DATE: 05/29/2012



S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

PERMANENT EROSION CONTROL PLAN  
 STA 113+00.00 TO 125+00.00  
 Sheet 154 of 282 Sheets



ITEM NO.	DESCRIPTION	UNITS	City Project 11-16		City Project 12-11	
			EST. QUAN.	ACT. QUAN.	EST. QUAN.	ACT. QUAN.
1	2104.505 REMOVE BITUMINOUS PAVEMENT	SY	0		750	
2	2104.513 SAWING BIT PAVEMENT (FULL DEPTH)	LF	0		100	
3	2211.501 AGGREGATE BASE, CLASS 5	TON	0		120	
4	2380.501 TYPE SP 12.5 WEARING COURSE MIX (3,F)	TON	0		150	
5	2451.607 TRENCH STABILIZATION MATERIAL (CV)	CY	120		0	
6	2503.602 CONNECT TO EXISTING SANITARY SEWER	EACH	1		0	
7	2503.603 8\"/>					

5/22/06

**CITY OF ANDOVER**

STANDARD DRAWING NO. 101B

5/22/06

**CITY OF ANDOVER**

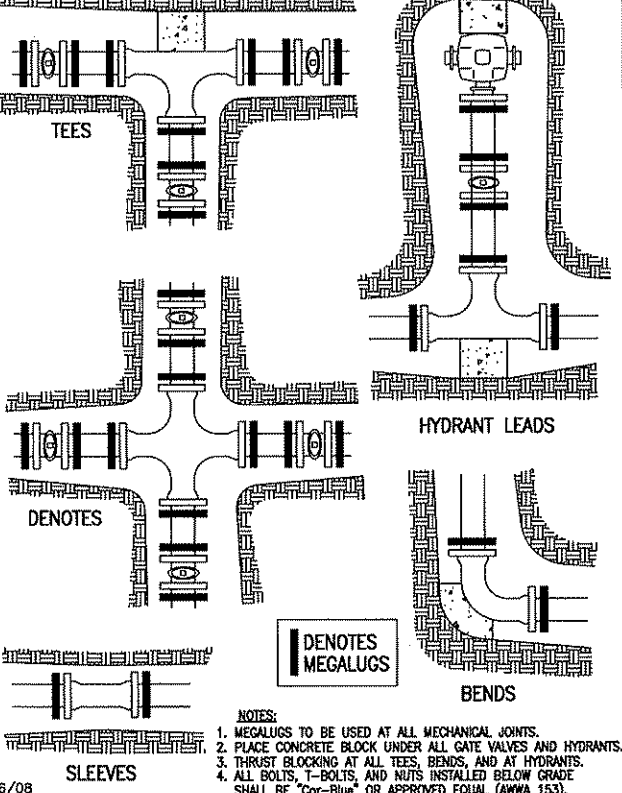
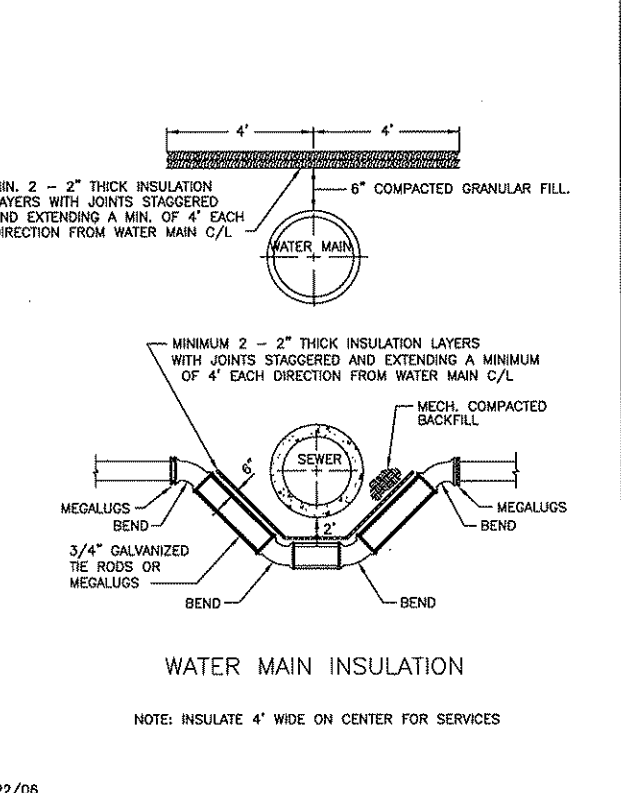
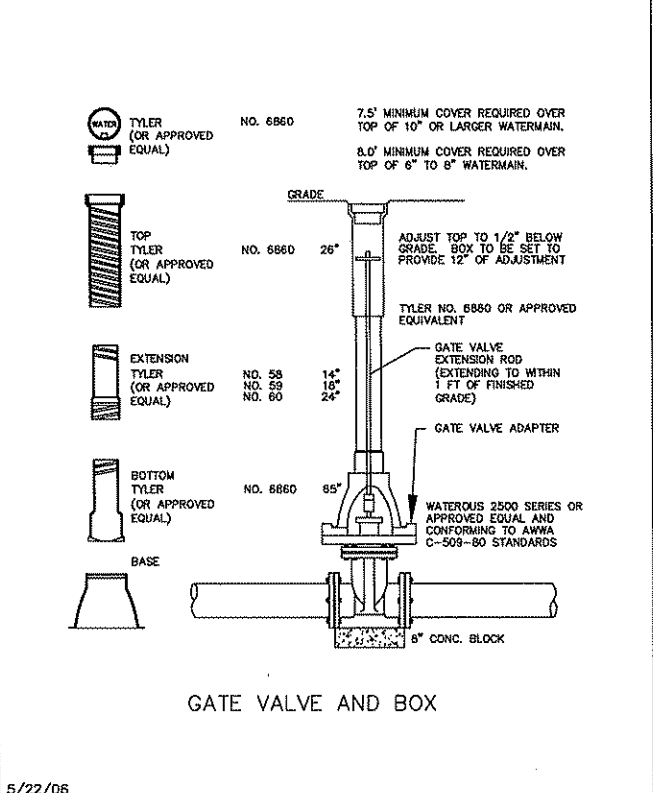
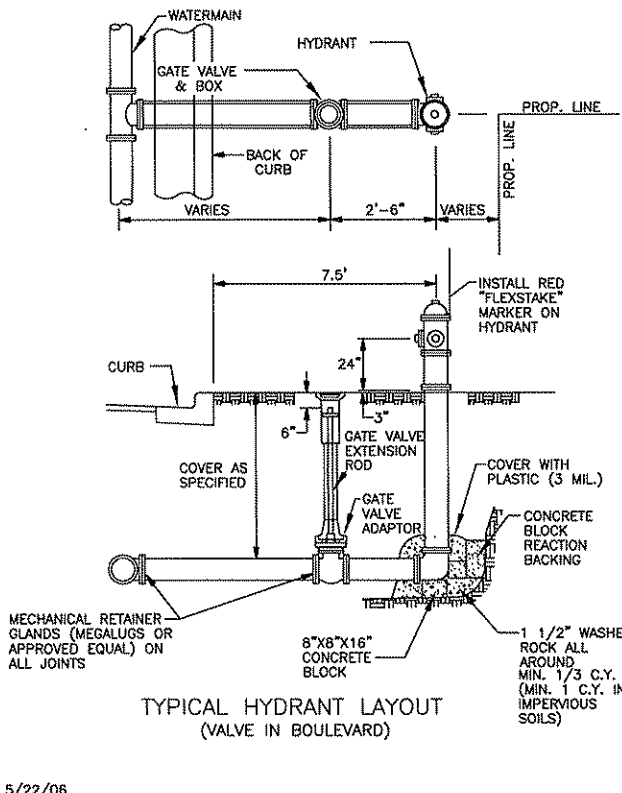
STANDARD DRAWING NO. 105A

5/22/06

**CITY OF ANDOVER**

STANDARD DRAWING NO. 301B

**LEGEND**



**EXISTING**

- SANITARY SEWER
- SANITARY SEWER MANHOLE
- WATERMAIN
- FIRE HYDRANT
- WATERMAIN GATE VALVE
- STORM SEWER
- STORM SEWER MANHOLE
- STORM SEWER APRON

**PROPOSED**

- SANITARY SEWER
- SANITARY SEWER MANHOLE
- WATERMAIN
- FIRE HYDRANT
- WATERMAIN GATE VALVE
- STORM SEWER
- STORM SEWER MANHOLE
- STORM SEWER APRON

5/22/06

**CITY OF ANDOVER**

STANDARD DRAWING NO. 201B

5/22/06

**CITY OF ANDOVER**

STANDARD DRAWING NO. 202

5/22/06

**CITY OF ANDOVER**

STANDARD DRAWING NO. 203A

3/6/08

**CITY OF ANDOVER**

STANDARD DRAWING NO. 210

NO.	DATE	BY	DESCRIPTION OF REVISIONS

DESIGNED: JUL

DRAWN: JAK

CHECKED: DDB

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

DATE: 8/5/2012 LIC. NO.: 28757

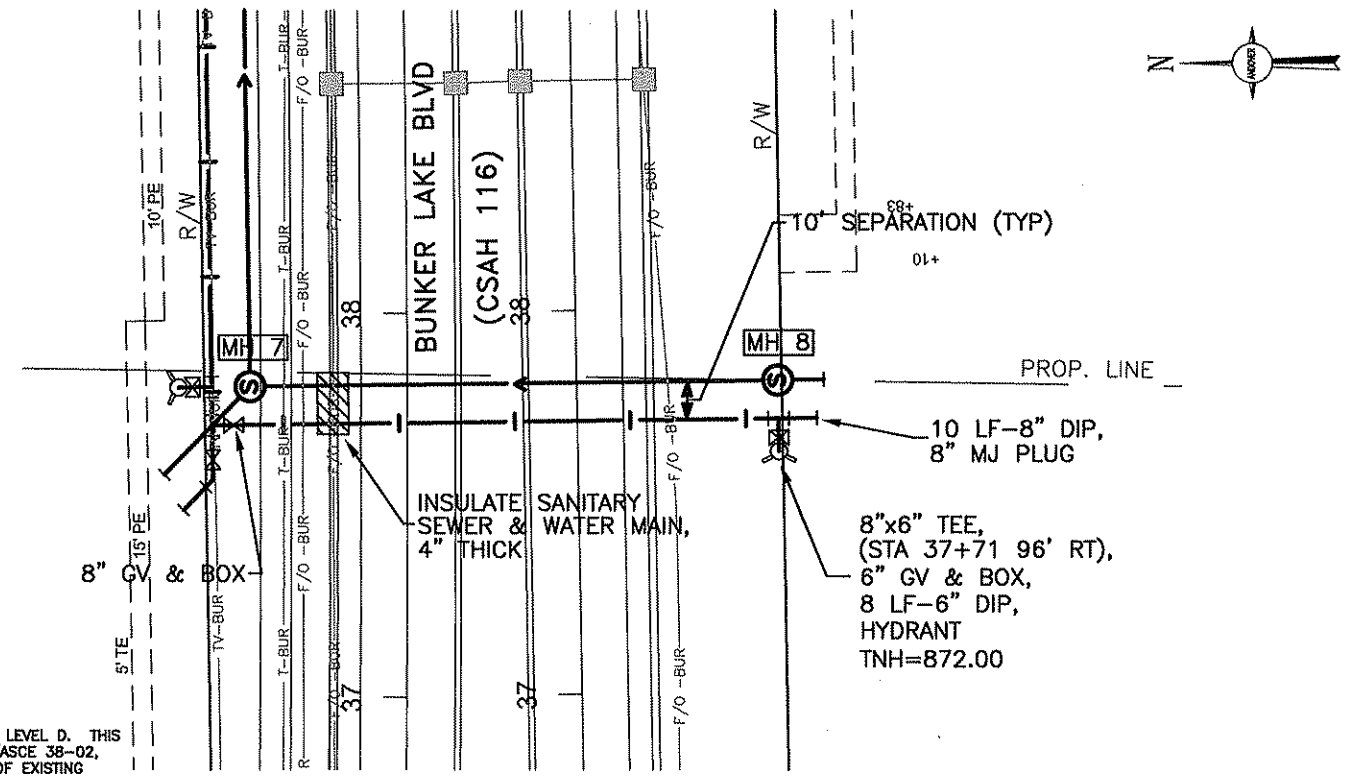
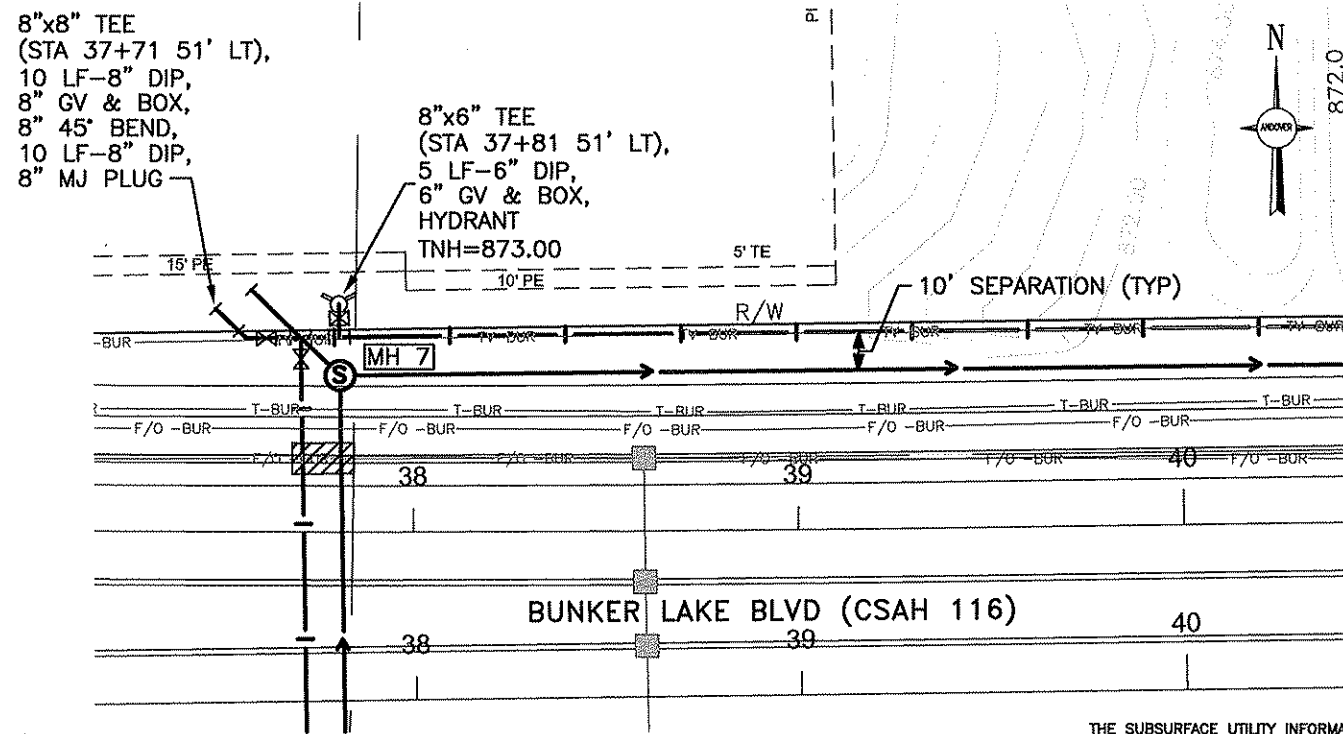
**CITY OF ANDOVER**

SONSTEBY PROPERTY SEWER/WATER EXTENSION & BUNKER LAKE BLVD. WATER MAIN EXTENSION

CITY PROJECTS 11-16 & 12-11

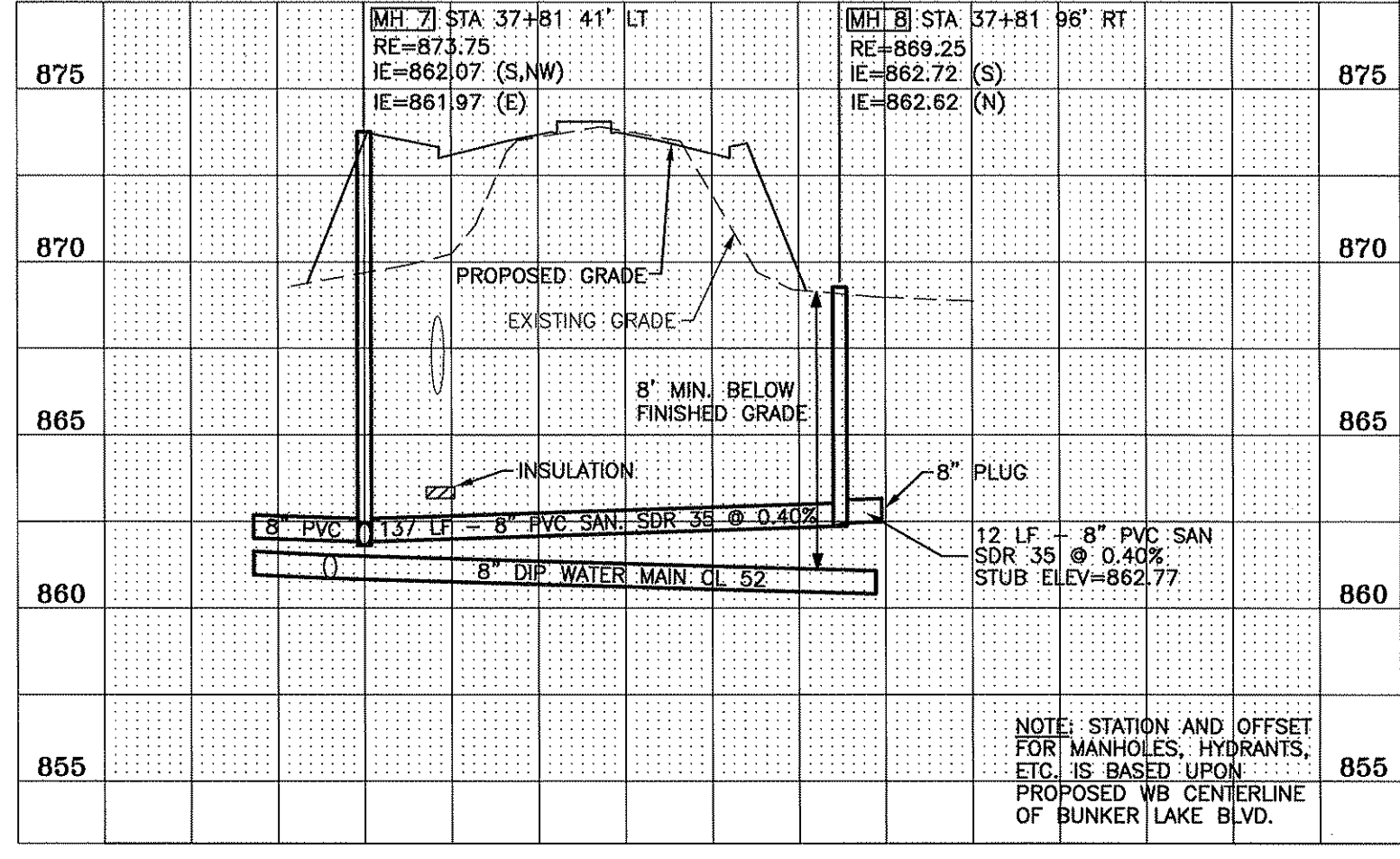
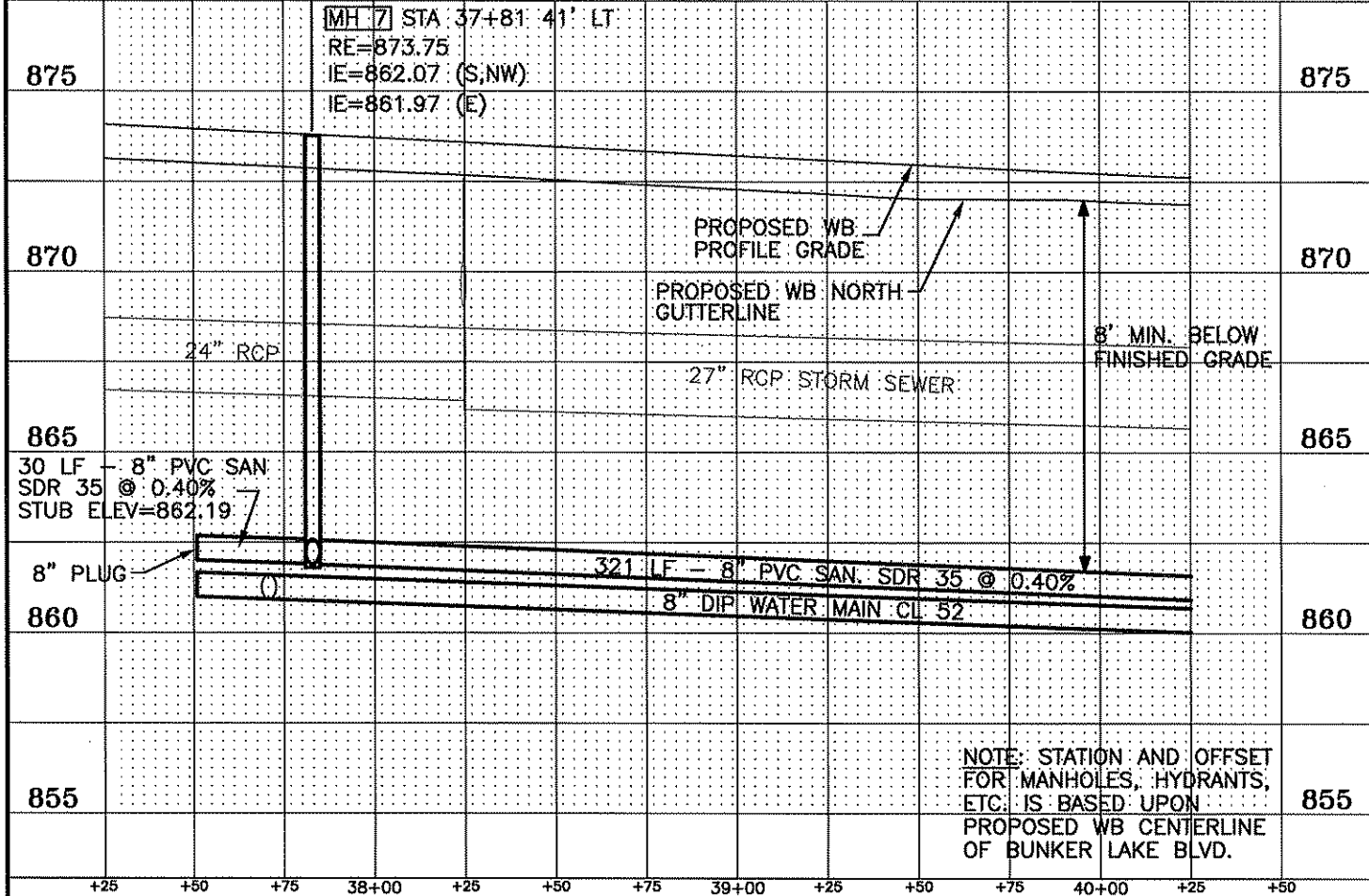
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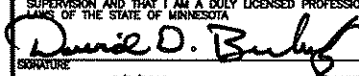
SHEET NO.155 OF 282 SHEETS



H: 1"=50'  
V: 1"=5'

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



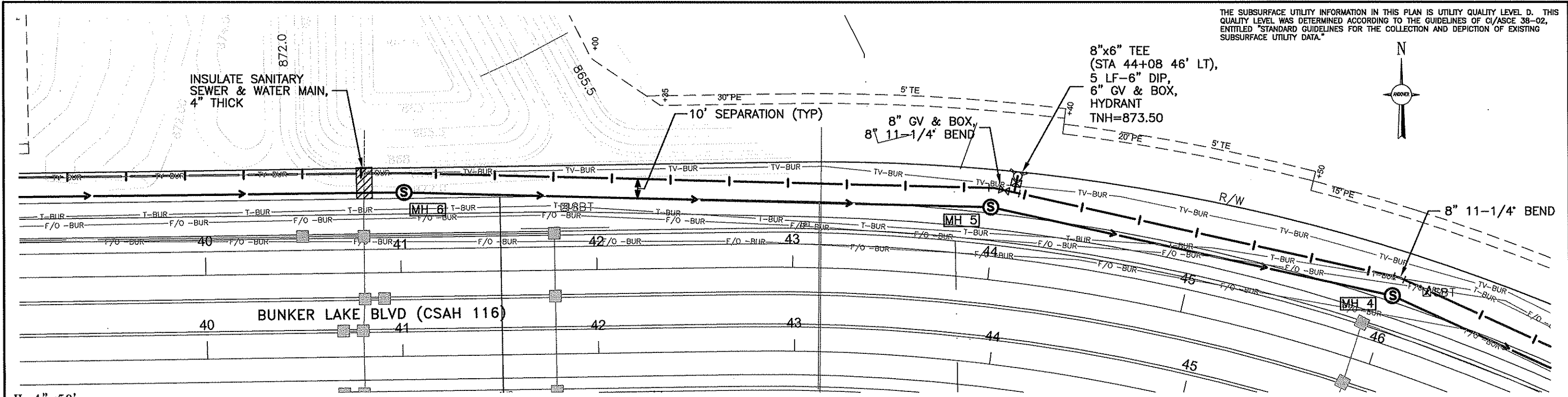
DESIGNED	JUL	DRAWN	JAK	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA	
CHECKED	DDB	 DAVID D. BERKOWITZ TYPED OR PRINTED NAME		DATE	8/8/2012
NO.	DATE	BY	DESCRIPTION OF REVISIONS		



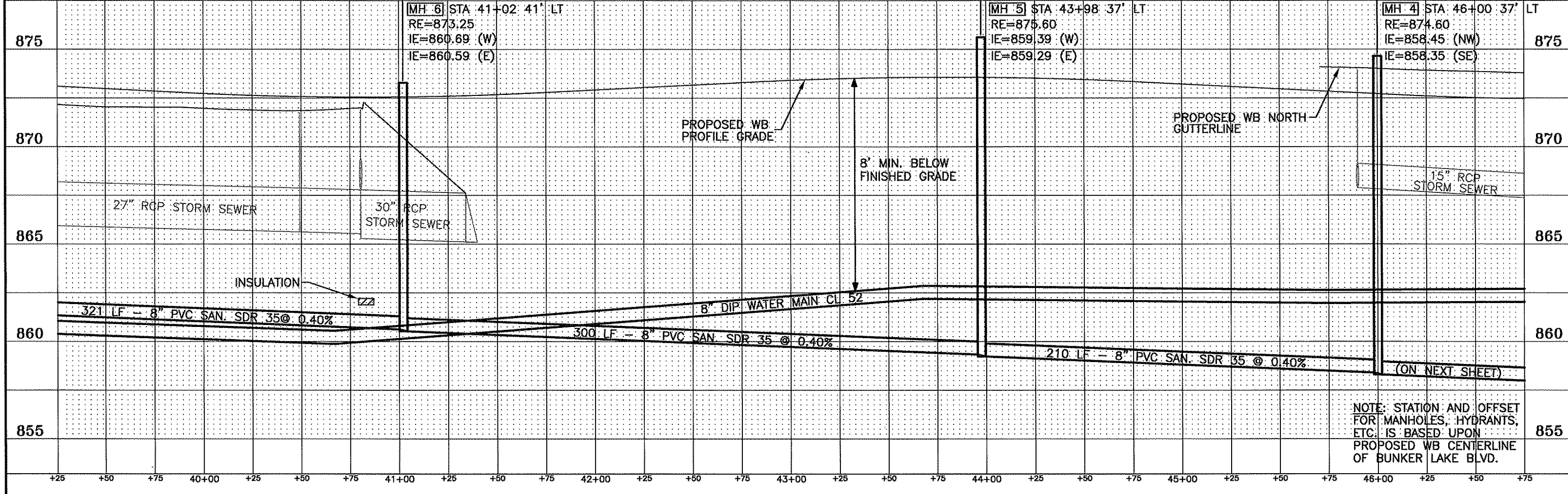
SONSTEBY PROPERTY SEWER & WATER EXTENSION  
CITY PROJECT 11-16

SANITARY SEWER AND WATER MAIN  
PLAN & PROFILE  
SHEET NO.156 OF 282 SHEETS

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



H: 1"=50'  
V: 1"=5'



NOTE: STATION AND OFFSET FOR MANHOLES, HYDRANTS, ETC. IS BASED UPON PROPOSED WB CENTERLINE OF BUNKER LAKE BLVD.

NO.	DATE	BY	DESCRIPTION OF REVISIONS

DESIGNED: JUL  
DRAWN: JAK  
CHECKED: DDB  
DATE: 8/5/2012  
LIC. NO. 96257

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.

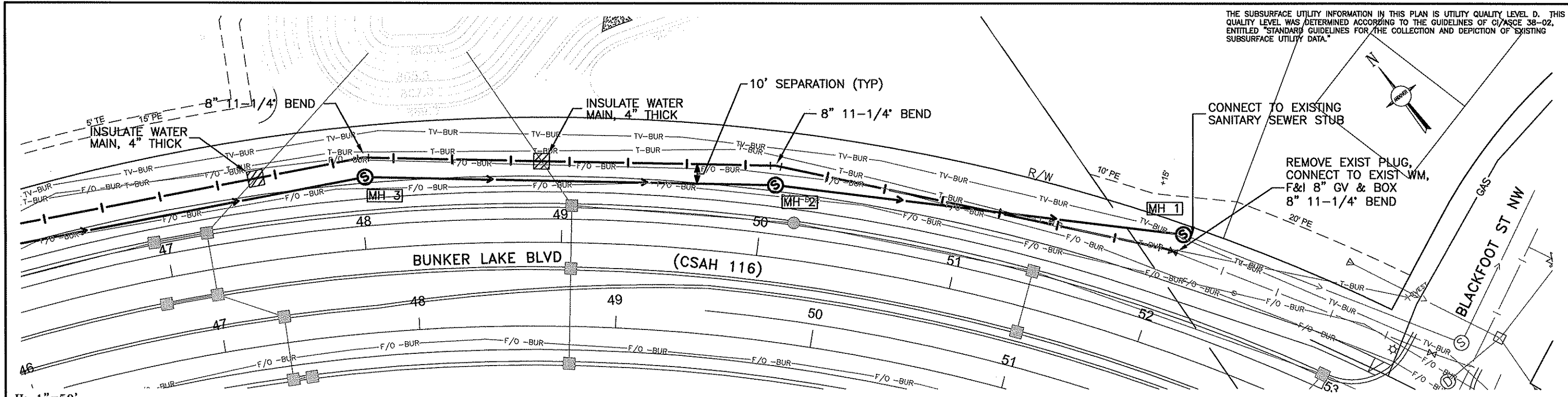
*David D. Berkowitz*  
DAVID D. BERKOWITZ  
TYPED OR PRINTED NAME



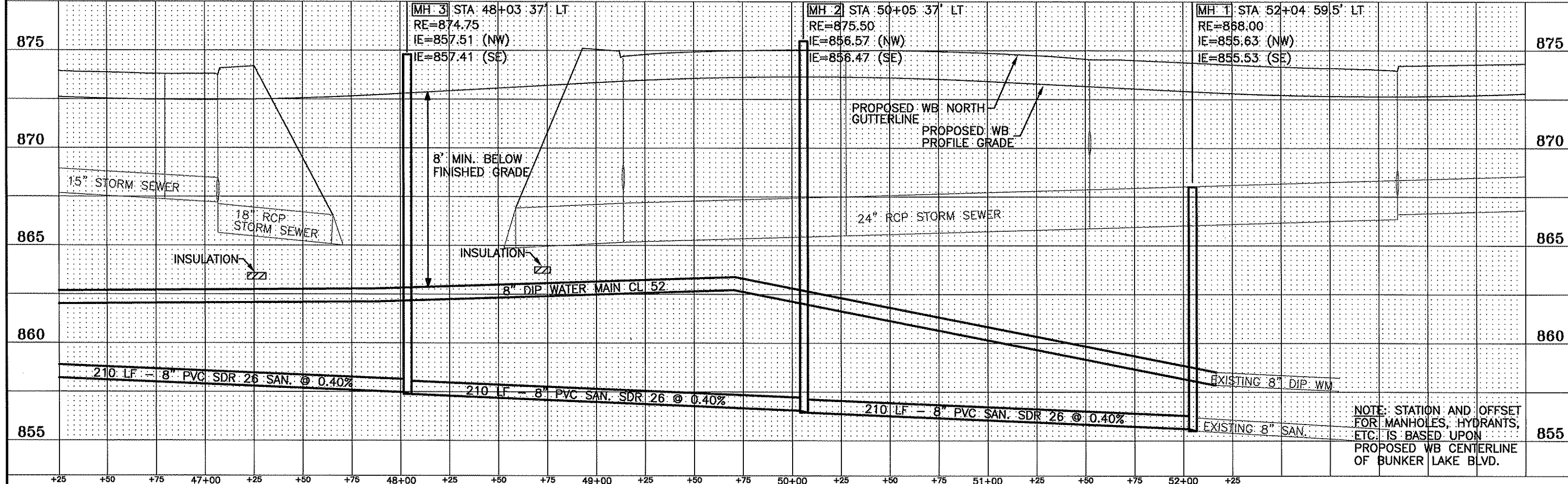
SONSTEBY PROPERTY SEWER & WATER EXTENSION  
CITY PROJECT 11-16

SANITARY SEWER AND WATER MAIN  
PLAN & PROFILE  
SHEET NO.157 OF 282 SHEETS

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



H: 1"=50'  
V: 1"=5'



NO.	DATE	BY	DESCRIPTION OF REVISIONS

DESIGNED: J.J.L.  
DRAWN: J.A.K.  
CHECKED: D.D.B.  
DATE: 8/8/2012

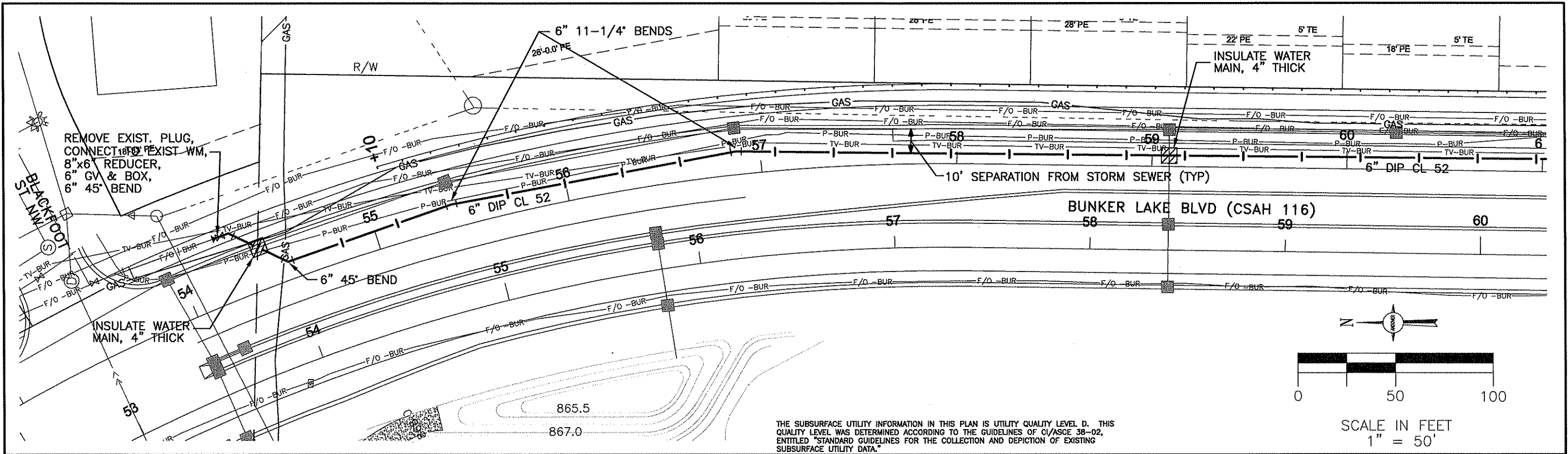
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

*David D. Berkowitz*  
DAVID D. BERKOWITZ  
DATE: 8/8/2012 LIC. NO. 4757

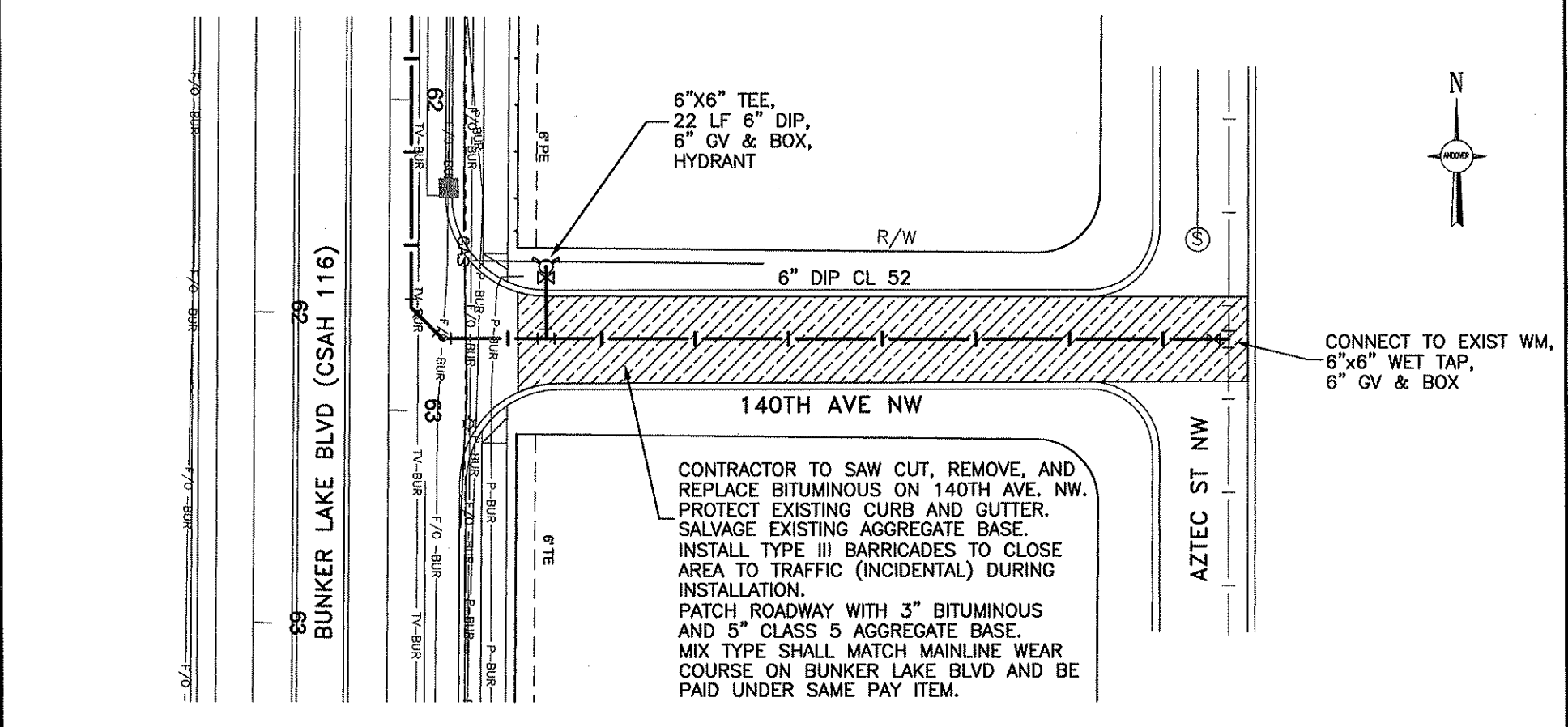
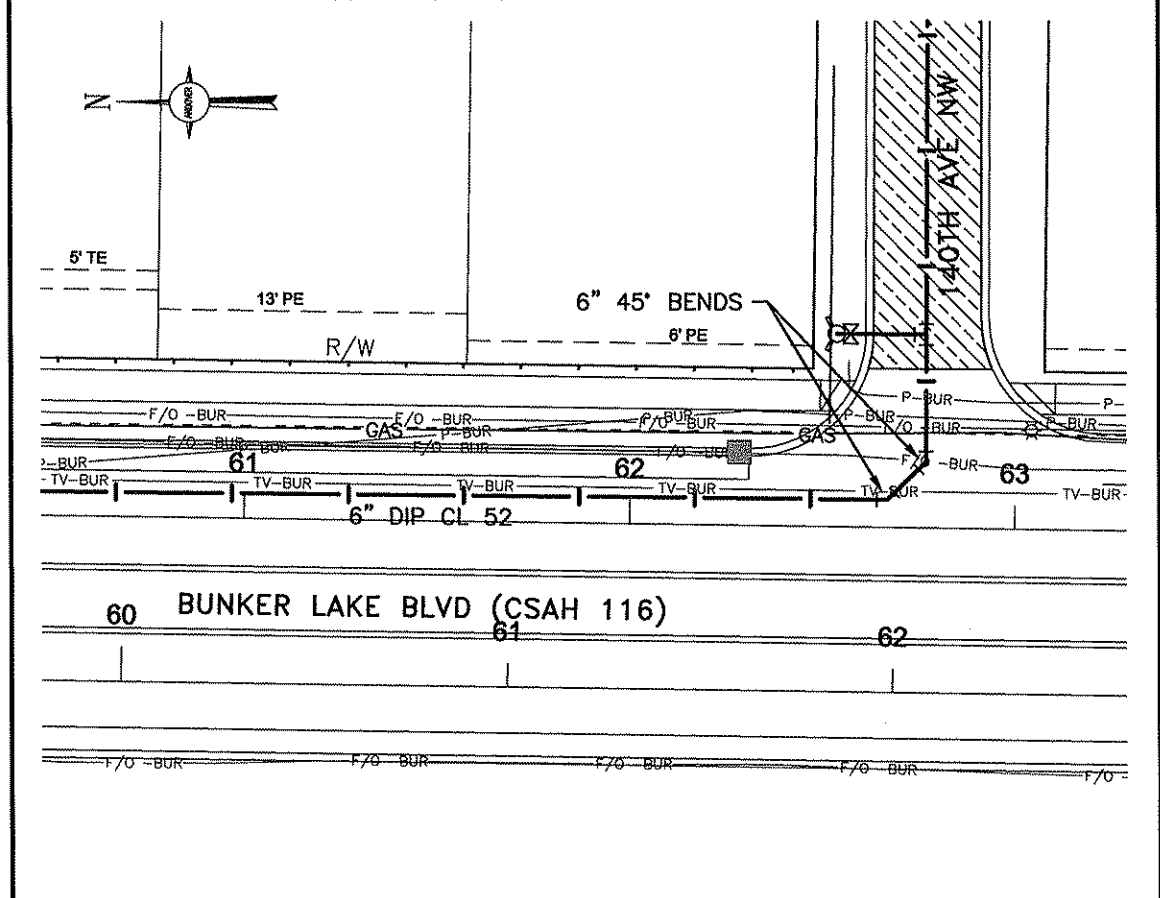
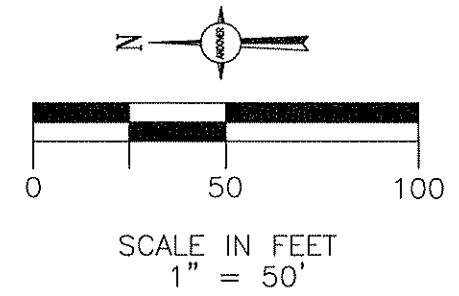


SONSTEBY PROPERTY SEWER & WATER EXTENSION  
CITY PROJECT 11-16

SANITARY SEWER AND WATER MAIN  
PLAN & PROFILE  
SHEET NO.158 OF 282 SHEETS



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



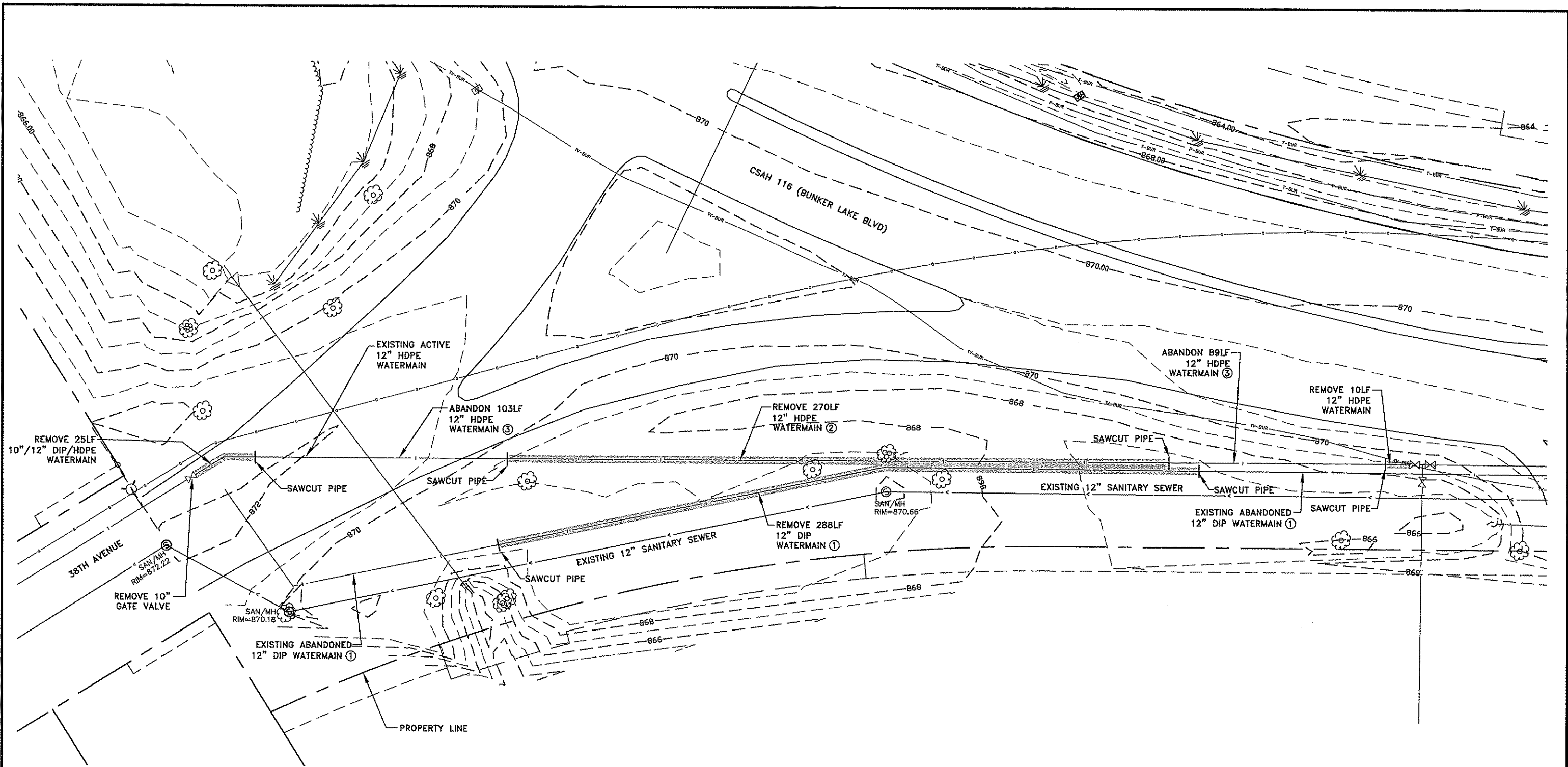
NO.	DATE	BY	DESCRIPTION OF REVISIONS

DESIGNED J.J.L.  
 DRAWN J.A.K.  
 CHECKED D.D.B.  
 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.  
 Signature: *David D. Berkowitz*  
 DATE: 8/5/2012 LIC. NO. 28757



BUNKER LAKE BOULEVARD WATER MAIN EXTENSION  
 CITY PROJECT 12-11

WATER MAIN  
 BLACKFOOT ST TO 140TH AVE  
 SHEET NO.159 OF 282 SHEETS



**REFERENCE NOTES:**

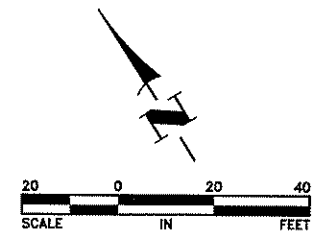
① WATERMAIN WAS ABANDONED IN 2007 AND FILLED WITH SAND GROUT. CONTRACTOR SHALL REMOVE THE ABANDONED WATERMAIN AS NECESSARY TO CONSTRUCT POND. ITEM 2104-REMOVE WATERMAIN SHALL INCLUDE SAWCUTTING, REMOVING AND DISPOSING OF THE WATERMAIN. CONTRACTOR WILL BE PAID FOR THE LENGTH OF PIPE REMOVED. IF THE PIPE IS NOT ENCOUNTERED DURING EXCAVATION OF THE POND THE PIPE SHALL REMAIN INPLACE.

② CONTRACTOR SHALL REMOVE THE EXISTING ACTIVE WATERMAIN AS NECESSARY TO CONSTRUCT POND. ITEM 2104-REMOVE WATERMAIN SHALL INCLUDE SAWCUTTING, REMOVING AND DISPOSING OF THE WATERMAIN. CONTRACTOR WILL BE PAID FOR THE LENGTH OF PIPE REMOVED. IF THE PIPE IS NOT ENCOUNTERED DURING EXCAVATION OF THE POND THE PIPE SHALL REMAIN INPLACE.

③ THE EXISTING ACTIVE WATERMAIN THAT IS NOT REMOVED DURING CONSTRUCTION SHALL BE ABANDONED BY FILLING THE WATERMAIN WITH FLOWABLE SAND GROUT. THIS WORK SHALL BE PAID PER ITEM 2104-ABANDON WATERMAIN.

**GENERAL NOTES:**

1. IN AREAS WHERE CONTRACTOR IS REMOVING THE EXISTING WATERMAIN, THE CONTRACTOR SHALL REMOVE ALL EXISTING THRUST BLOCKING. REMOVAL AND DISPOSAL OF THRUST BLOCKING SHALL BE INCIDENTAL.



Jun 07, 2012 - 10:29am  
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DATE	REVISION
3/5/12	ISSUED FOR CONSTRUCTION
5/29/12	REVISED SHEET NUMBERS
6/6/12	REVISED SHEET NUMBERS

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. Jochem*  
 CRAIG J. JOCHEM, P.E.  
 Date 1/20/12 Lic. No. 23461

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



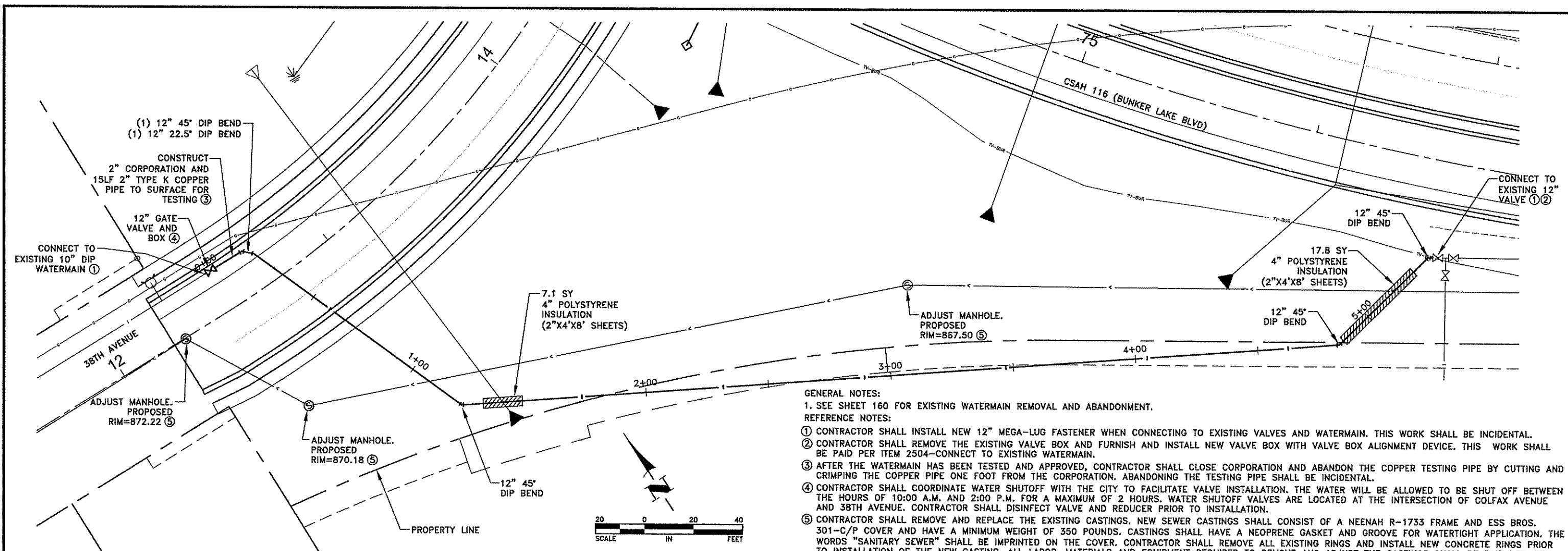
**Hakanson Anderson**  
 Civil Engineers and Land Surveyors  
 3601 Thurston Ave., Anoka, Minnesota 55303  
 763-427-5860 FAX 763-427-0520  
 www.hakanson-anderson.com



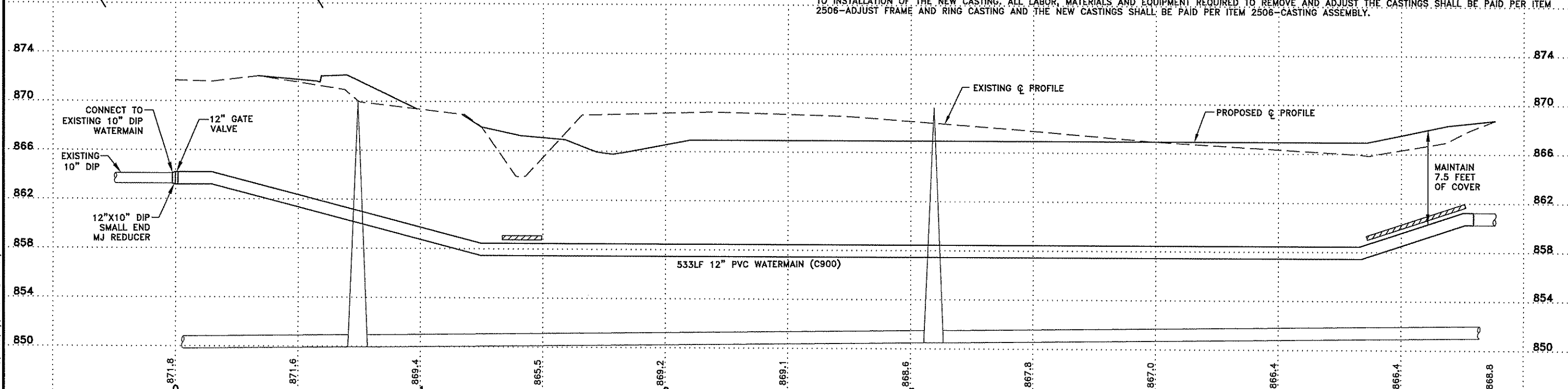
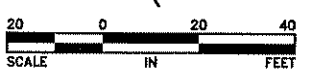
**EXISTING SEWER AND WATER UTILITIES AND WATERMAIN REMOVAL PLAN**  
 CSAH 116-BUNKER LAKE BLVD.  
 CITY OF ANOKA, MINNESOTA

SHEET 160 OF 282 SHEETS





- GENERAL NOTES:**  
 1. SEE SHEET 160 FOR EXISTING WATERMAIN REMOVAL AND ABANDONMENT.
- REFERENCE NOTES:**
- ① CONTRACTOR SHALL INSTALL NEW 12" MEGA-LUG FASTENER WHEN CONNECTING TO EXISTING VALVES AND WATERMAIN. THIS WORK SHALL BE INCIDENTAL.
  - ② CONTRACTOR SHALL REMOVE THE EXISTING VALVE BOX AND FURNISH AND INSTALL NEW VALVE BOX WITH VALVE BOX ALIGNMENT DEVICE. THIS WORK SHALL BE PAID PER ITEM 2504-CONNECT TO EXISTING WATERMAIN.
  - ③ AFTER THE WATERMAIN HAS BEEN TESTED AND APPROVED, CONTRACTOR SHALL CLOSE CORPORATION AND ABANDON THE COPPER TESTING PIPE BY CUTTING AND CRIMPING THE COPPER PIPE ONE FOOT FROM THE CORPORATION. ABANDONING THE TESTING PIPE SHALL BE INCIDENTAL.
  - ④ CONTRACTOR SHALL COORDINATE WATER SHUTOFF WITH THE CITY TO FACILITATE VALVE INSTALLATION. THE WATER WILL BE ALLOWED TO BE SHUT OFF BETWEEN THE HOURS OF 10:00 A.M. AND 2:00 P.M. FOR A MAXIMUM OF 2 HOURS. WATER SHUTOFF VALVES ARE LOCATED AT THE INTERSECTION OF COLFAX AVENUE AND 38TH AVENUE. CONTRACTOR SHALL DISINFECT VALVE AND REDUCER PRIOR TO INSTALLATION.
  - ⑤ CONTRACTOR SHALL REMOVE AND REPLACE THE EXISTING CASTINGS. NEW SEWER CASTINGS SHALL CONSIST OF A NEENAH R-1733 FRAME AND ESS BROS. 301-C/P COVER AND HAVE A MINIMUM WEIGHT OF 350 POUNDS. CASTINGS SHALL HAVE A NEOPRENE GASKET AND GROOVE FOR WATERTIGHT APPLICATION. THE WORDS "SANITARY SEWER" SHALL BE IMPRINTED ON THE COVER. CONTRACTOR SHALL REMOVE ALL EXISTING RINGS AND INSTALL NEW CONCRETE RINGS PRIOR TO INSTALLATION OF THE NEW CASTING. ALL LABOR, MATERIALS AND EQUIPMENT REQUIRED TO REMOVE AND ADJUST THE CASTINGS SHALL BE PAID PER ITEM 2506-ADJUST FRAME AND RING CASTING AND THE NEW CASTINGS SHALL BE PAID PER ITEM 2506-CASTING ASSEMBLY.



Jun 07, 2012 10:28am K:\card\_010\PROJECTS\MUNICIPAL\AN509\WATERMAIN.dwg WATERMAIN.dwg

DATE	REVISION
3/5/12	ISSUED FOR CONSTRUCTION
5/29/12	REVISED SHEET NUMBERS
5/6/12	REVISED SHEET NUMBERS

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.

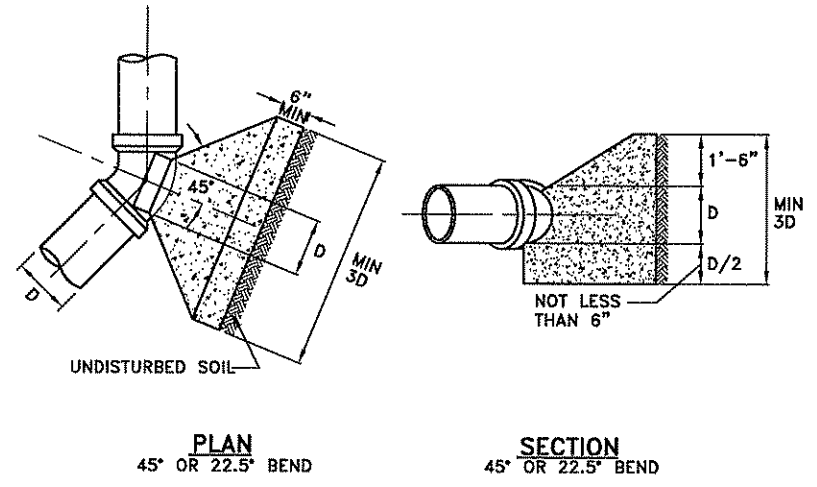
*Craig J. Kochum*  
 CRAIG J. KOCHUM, P.E.  
 Date 1/20/12 Lic. No. 23461

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

**WATERMAIN RELOCATION PLAN**  
 CSAH 116-BUNKER LAKE BLVD.  
 CITY OF ANOKA, MINNESOTA

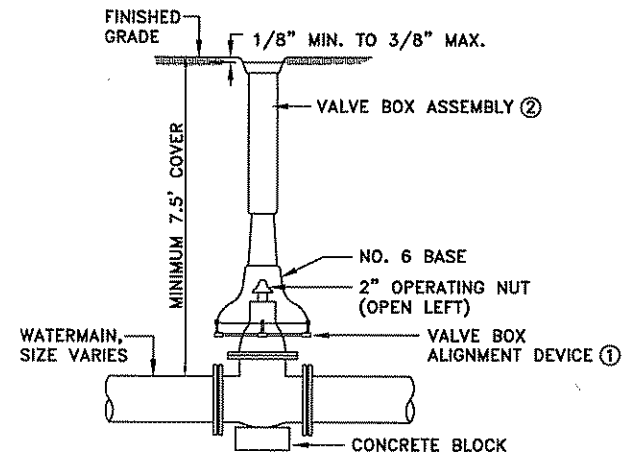
SHEET 161 OF 282 SHEETS  
 AN509



**PLAN**  
45° OR 22.5° BEND

**SECTION**  
45° OR 22.5° BEND

1 CONCRETE REACTION BACKING ③  
162 N.T.S.



TYPICAL RESILIENT WEDGE VALVE AND BOX INSTALLATION FOR WATERMAIN ≤12" DIAMETER

2  
162 N.T.S.

- GENERAL CONSTRUCTION NOTES:
- UNLESS SUPPLEMENTED OR REVISED BY THESE PLANS, ALL WATERMAIN AND SEWER CONSTRUCTION ON SHEETS 160-162 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 PVC PRESSURE PIPE. PVC WATERMAIN SHALL CONFORM TO AWWA C900. ALL PIPE SHALL HAVE A MINIMUM DIMENSION RATIO (DR) OF 18 CORRESPONDING TO A WORKING PRESSURE OF 150 PSI FOR PVC TYPE 1120 PIPE.
  - THE BELL OF THE JOINT SHALL CONSIST OF AN INTEGRAL WALL SECTION WITH A FACTORY INSTALLED, SOLID CROSS SECTION ELASTOMETRIC RING, WHICH MEETS THE REQUIREMENTS OF ASTM F 477. THE BELL SECTION SHALL BE DESIGNED TO BE AT LEAST AS HYDROSTATICALLY STRONG AS THE PIPE WALL AND MEET THE REQUIREMENTS OF AWWA C900. THE PIPE SHALL BE MANUFACTURED TO DUCTILE IRON OUTSIDE DIMENSIONS IN ACCORDANCE WITH AWWA C900.
  - RESTRAINTS FOR C900 PIPE SHALL BE EBBA IRON SERIES 2000PV, UNIFLANGE SERIES 1300C OR APPROVED EQUAL. FITTINGS FOR THE PVC WATERMAIN SHALL BE DUCTILE IRON.
  - ALL DIP FITTINGS SHALL BE FUSION BOND EPOXY COATED FOR WATER SERVICE APPLIED IN ACCORDANCE WITH ANSI/AWWA C116/A21.16 TO THE INTERIOR AND EXTERIOR.
  - ALL NUTS AND BOLTS USED FOR WATERMAIN CONSTRUCTION SHALL BE FLUOROCARBON COATED.
  - ALL MEGA-LUGS SHALL BE EPOXY COATED.
  - ALL PLASTIC PIPE SHALL HAVE A TRACER WIRE INSTALLED IN THE TRENCH DIRECTLY ABOVE THE TOP OF THE PIPE. THE TRACE WIRE SHALL BE "COPPERHEAD" REINFORCED TRACER WIRE OR APPROVED EQUAL. TRACER WIRE SHALL BE 10 AWG WITH A STEEL CORE WITH A COPPER CLADDING AND A 30 MIL INSULATION THICKNESS. THE TRACER WIRE SHALL BE CONNECTED TO ALL METAL FITTINGS, VALVES AND HYDRANTS.
  - 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 WORD "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 ①.
  - ALL VALVES AND FITTINGS SHALL BE ENCASED IN POLYETHYLENE. POLYETHYLENE ENCASEMENT SHALL BE INCIDENTAL.
  - 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 INCLUDED IN ITEM 2563-TRAFFIC CONTROL.

- REFERENCE NOTES:
- 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 INSTALLATIONS 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.
  - 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.
  - DO NOT COVER OR ENCASE PIPE IN CONCRETE.

ESTIMATED QUANTITIES				W
ITEM NO.	SPEC. REF.	DESCRIPTION	UNIT	TOTAL ESTIMATED QUANTITY
1	2104.501	REMOVE WATERMAIN	LIN FT	593
2	2104.509	REMOVE GATE VALVE & BOX	EACH	1
3	2104.509	REMOVE VALVE BOX	EACH	1
4	2104.603	ABANDON WATERMAIN	LIN FT	192
5	2504.602	CONNECT TO EXISTING WATERMAIN	EACH	2
6	2504.602	12" GATE VALVE & BOX	EACH	1
7	2504.602	VALVE BOX	EACH	1
8	2504.602	2" CORPORATION STOP	EACH	1
9	2504.603	2" TYPE K COPPER PIPE	LIN FT	15
10	2504.603	12" PVC WATERMAIN (C900)	LIN FT	533
11	2504.604	4" POLYSTYRENE INSULATION	SQ YD	24.9
12	2504.608	DUCTILE IRON FITTINGS	POUND	1,270
13	2506.516	CASTING ASSEMBLY	EACH	3
14	2506.522	ADJUST FRAME AND RING CASTING	EACH	3

Jun 07, 2012 - 10:29am  
C:\local\_and\_projects\15\WINDUPAL\AN509.dwg AN509 DETAIL.dwg

DATE	REVISION
3/5/12	ISSUED FOR CONSTRUCTION
5/28/12	REVISED SHEET NUMBERS
6/8/12	REVISED SHEET NUMBERS

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. Ochum*  
CRAIG J. OCHUM, P.E.  
Date 1/20/12 Lic. No. 23461

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



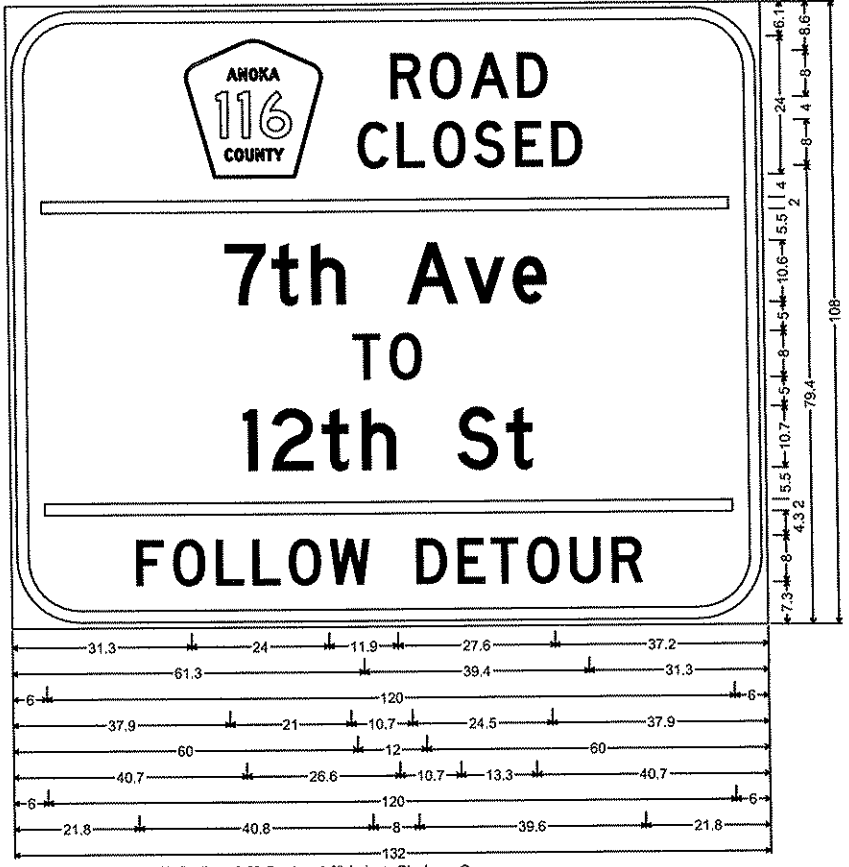
CONSTRUCTION NOTES, DETAILS AND ESTIMATED QUANTITIES  
CSAH 116-BUNKER LAKE BLVD.  
CITY OF ANOKA, MINNESOTA



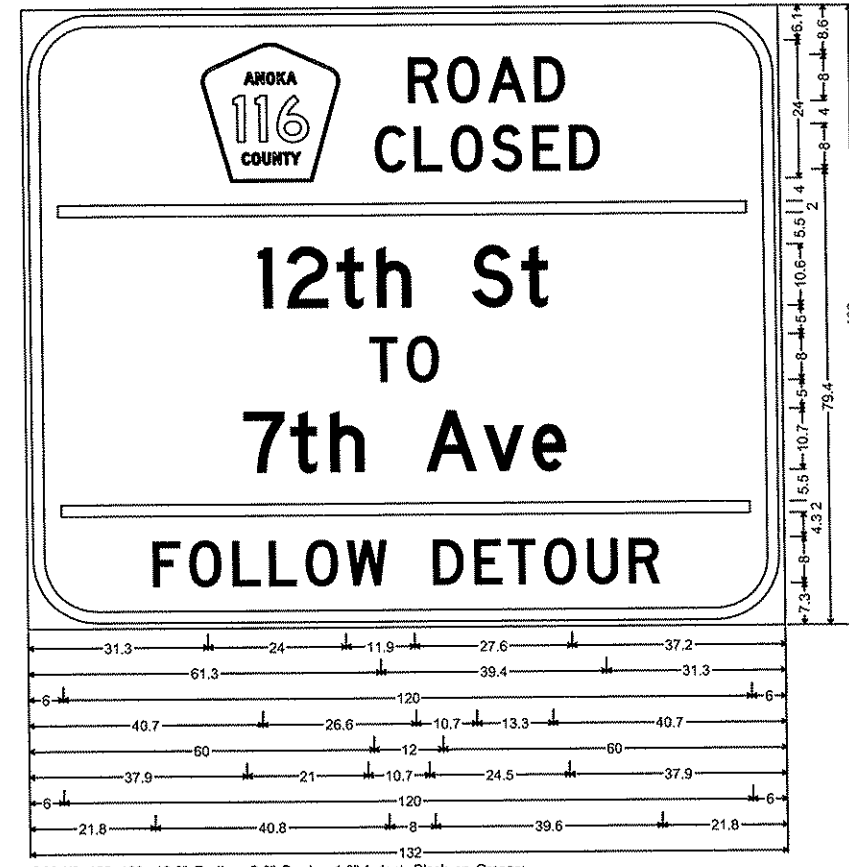
M. U. T. C. D. CODE	SIZE	INSERT	QUANTITY	M. U. T. C. D. CODE	SIZE	INSERT	QUANTITY
W20-1	48" x 48"		• 11	G20-X2	132"x 108"		• 3
W20-2	48" x 48"		• 2	G20-X2	132"x 108"		• 2
W20-3 w/ FLASHER	48" x 48"		• 2				
W20-100P	42" x 24"		• 0				
M4-10L	48" x 18"		• 1				
TYPE III	8 FOOT		• 1				
M4-10R	48" x 18"		• 1				
TYPE III	8 FOOT		• 1				
FLASHER							
R11-2	48" x 30"		• 4				
TYPE III	8 FOOT		• 4				
R11-3	60" x 30"		• 1				
TYPE III	8 FOOT		• 1				
FLASHER			• 0				
TYPE III	8 FOOT		• 4				
FLASHER			• 3				
TYPE III	8 FOOT		• 3				
			• 2				

\* SIGN TO BE PLACED 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.

- NOTES:
- ALL TRAFFIC CONTROL DEVICES SHALL CONFORM AND BE PLACED IN ACCORDANCE TO THE "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MN MUTCD), AND PART VI, "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS".
  - ALL TYPE III BARRICADES SHALL BE REFLECTORIZED ON BOTH SIDES. BARRICADE MARKINGS SHALL BE SLANTED IN ACCORDANCE WITH THE M.U.T.C.D.



G20-X2\_132x108; 12.0" Radius, 2.0" Border, 1.0" Indent, Black on Orange; [ROAD] D; [CLOSED] D; [7th Ave] D; [TO] D; [12th 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; [12th St] D; [TO] D; [7th Ave] D; [FOLLOW] D; [DETOUR] D;

NO	DATE	BY	CHKD	APPR	REVISION

NAME: T:\02-716-12\Base\Traffic\02-716-12\_detour\_north.dwg

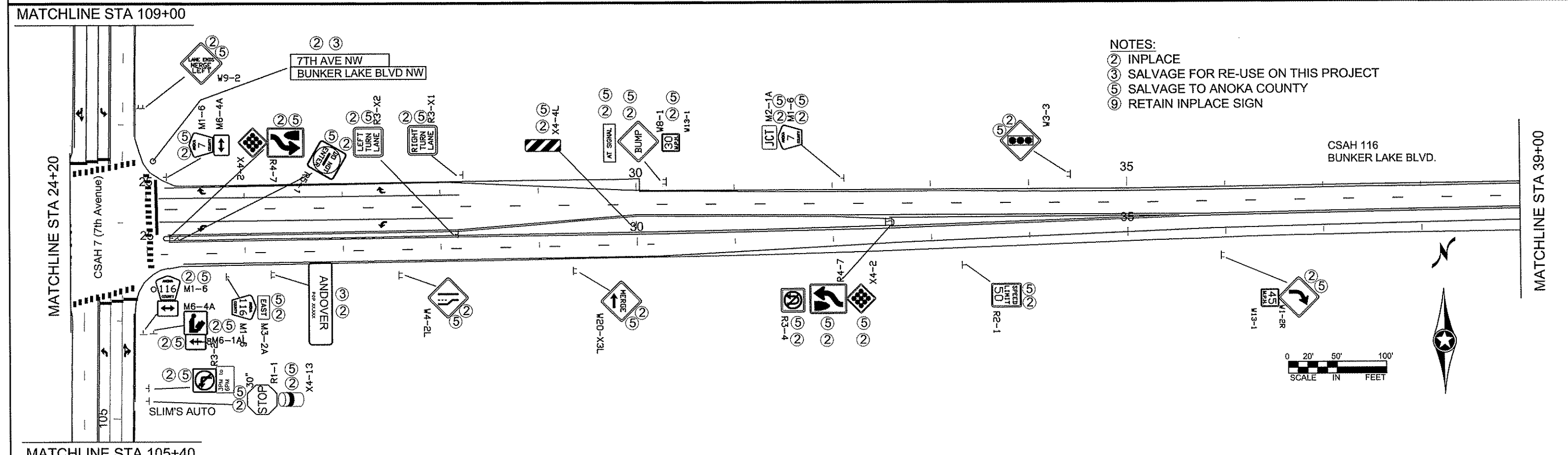
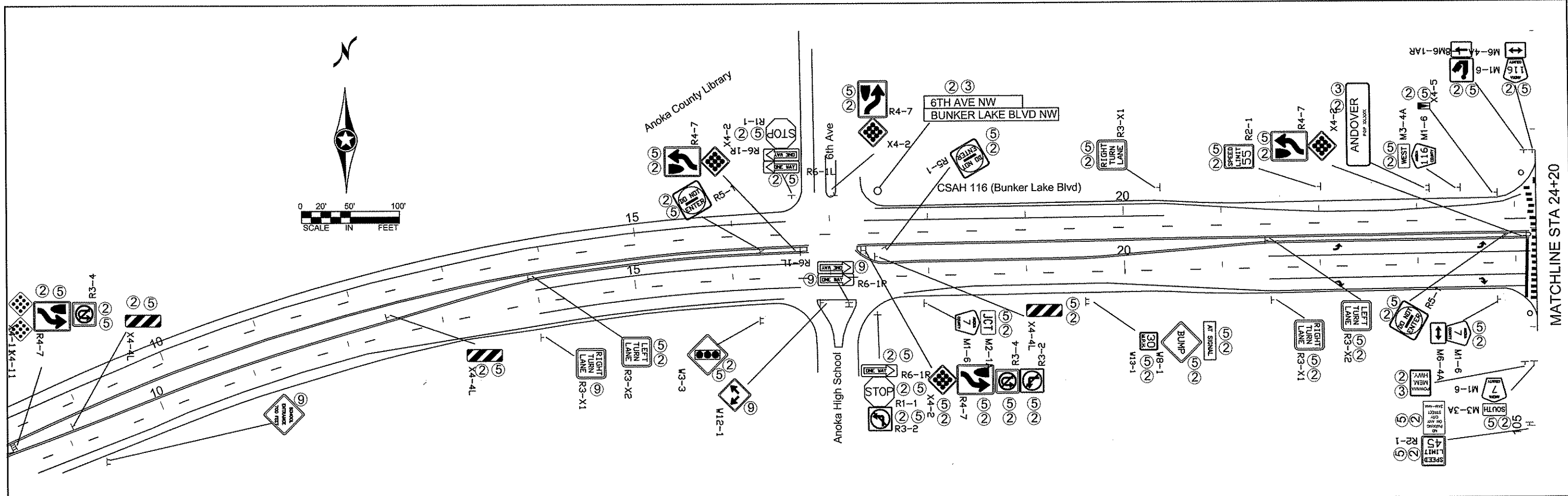
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.  
 PRINT NAME: CURT A. KOBILARCSIK  
 SIGNATURE: *Curt A. Kobilarsik*  
 DATE: 6.29.12 REG. NO. 24756

DRAWN BY: MTH DATE 12/08/11  
 DESIGN BY: MTH DATE 12/08/11  
 CHECKED BY: RB DATE 12/09/11



ANOKA COUNTY  
 HIGHWAY DEPT.

S.P. 002-716-012	S.P. 198-020-030	S.P.002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015



- NOTES:
- ② INPLACE
  - ③ SALVAGE FOR RE-USE ON THIS PROJECT
  - ⑤ SALVAGE TO ANOKA COUNTY
  - ⑨ RETAIN INPLACE SIGN

NO	DATE	BY	CKD	APPR	REVISION
NAME: P:\02-716-12\Bose\TRAFFIC\Existing Signing & Striping.dwg					

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

PRINT NAME: CURT A. KOBILARCSIK

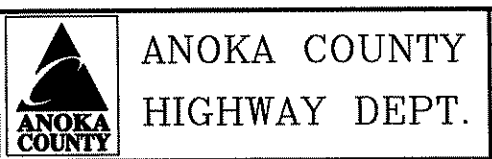
SIGNATURE: *Curt Kobilarcsik*

DATE: 6-29-12 REG. NO. 24756

DRAWN BY: MTH DATE 11/28/11

DESIGN BY: MTH DATE 08/17/11

CHECKED BY: RB DATE 10/01/11



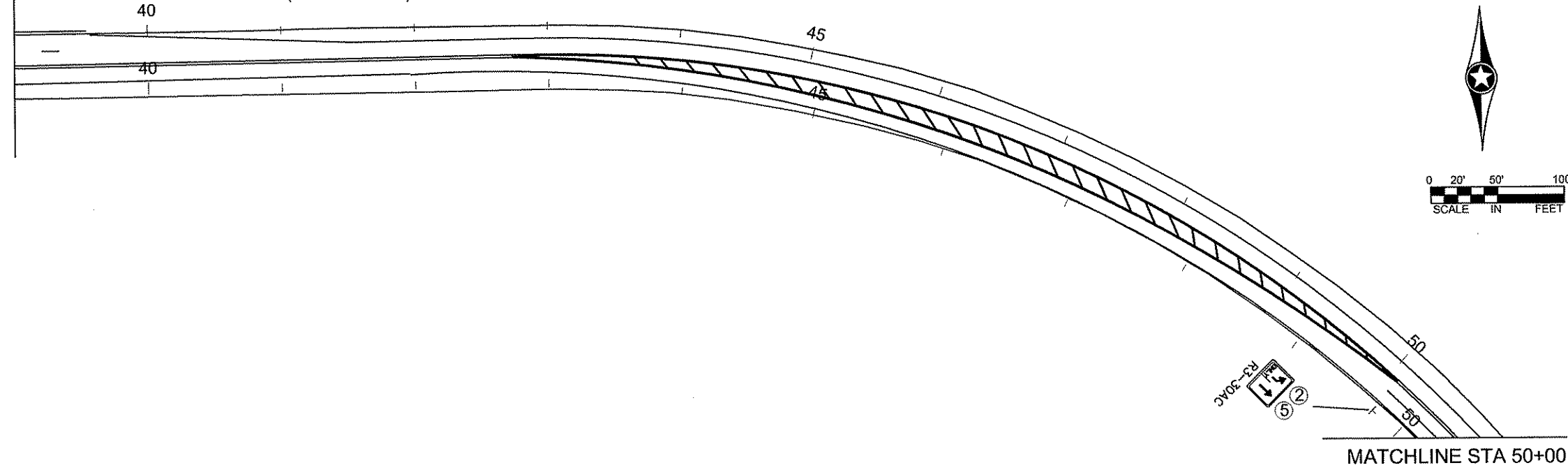
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S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

EXISTING SIGNING AND STRIPING PLAN

Sheet 165 of 282 Sheets

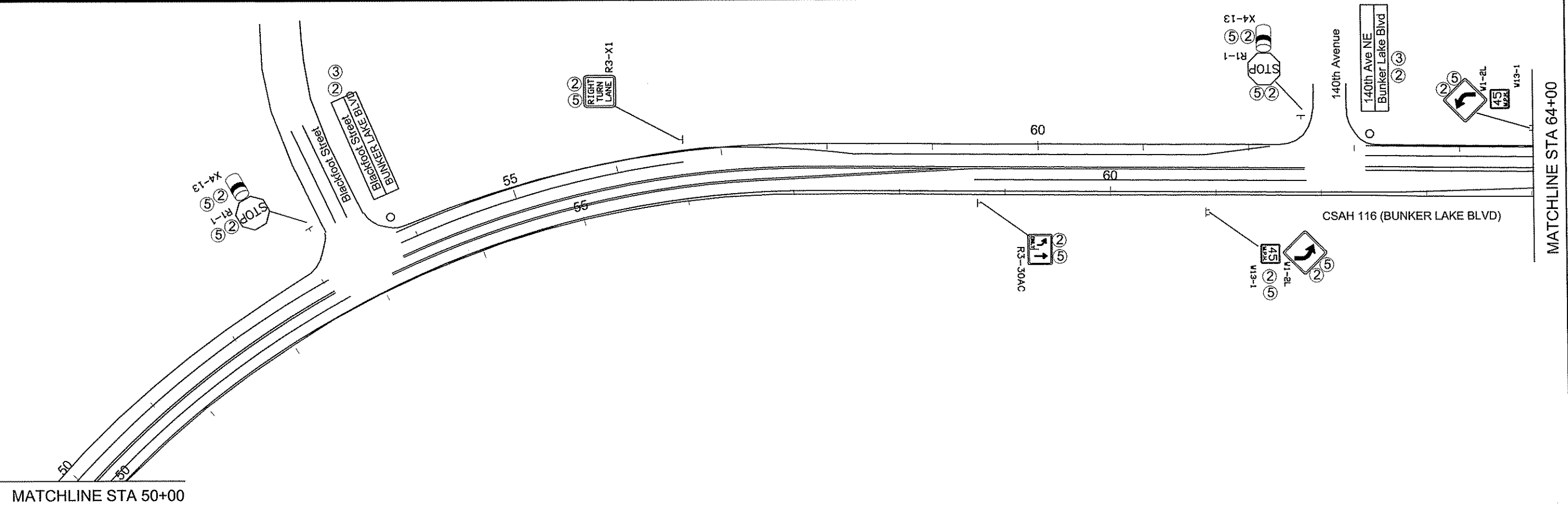
MATCHLINE STA 39+00

CSAH 116 (Bunker Lake Blvd)



- NOTES:
- ② INPLACE
  - ③ SALVAGE FOR RE-USE ON THIS PROJECT
  - ⑤ SALVAGE TO ANOKA COUNTY

MATCHLINE STA 50+00



MATCHLINE STA 50+00

MATCHLINE STA 64+00

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-716-12\Bases\TRAFFIC\Existing Signing & Striping.dwg

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PRINT NAME: CURT A. KOBILARCSIK

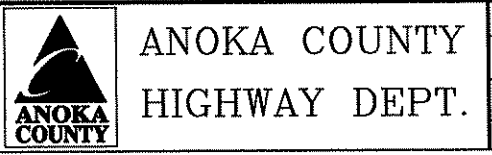
SIGNATURE: *Curt A. Kobilarsik*

DATE: 6-29-12 REG. NO. 24756

DRAWN BY: MTH DATE 11/28/11

DESIGN BY: MTH DATE 08/17/11

CHECKED BY: RB DATE 10/01/11



S.P. 002-716-012	S.P. 198-020-030	S.P.002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

EXISTING SIGNING AND STRIPING PLAN

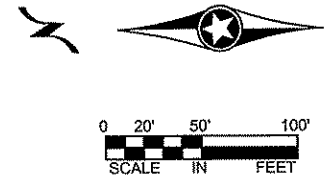
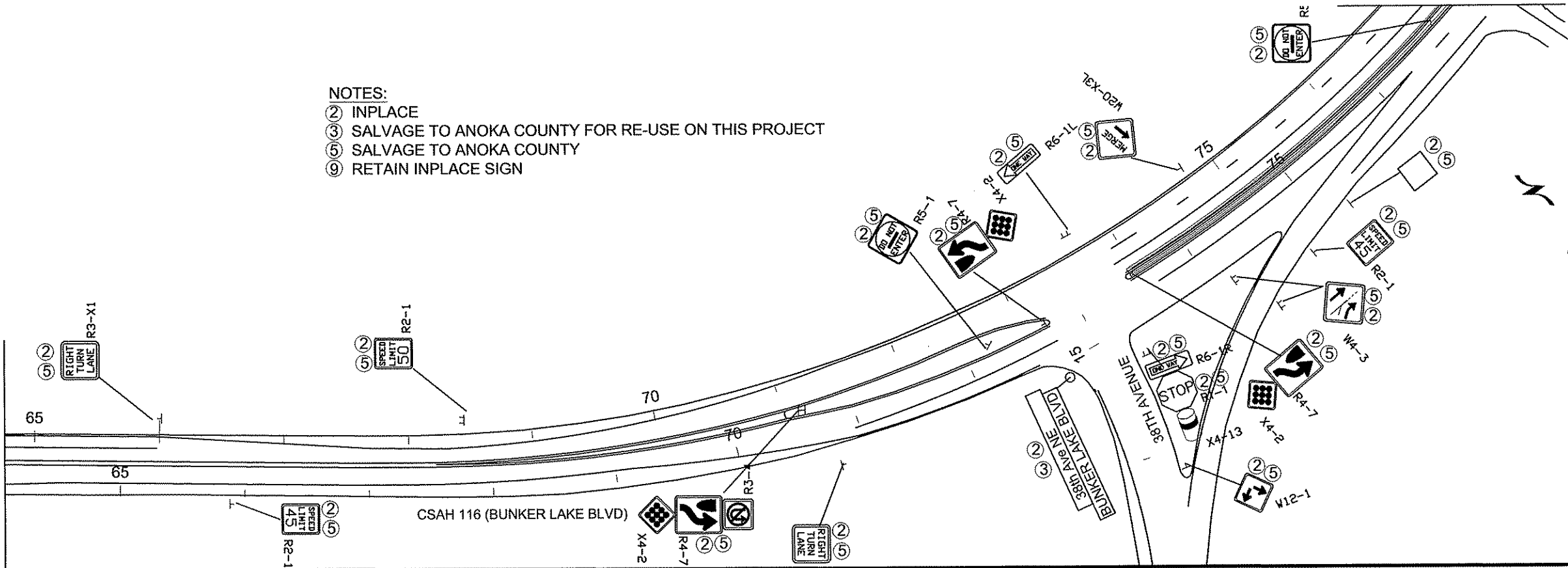
Sheet 166 of 282 Sheets

MATCHLINE STA 77+00

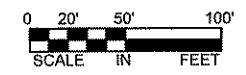
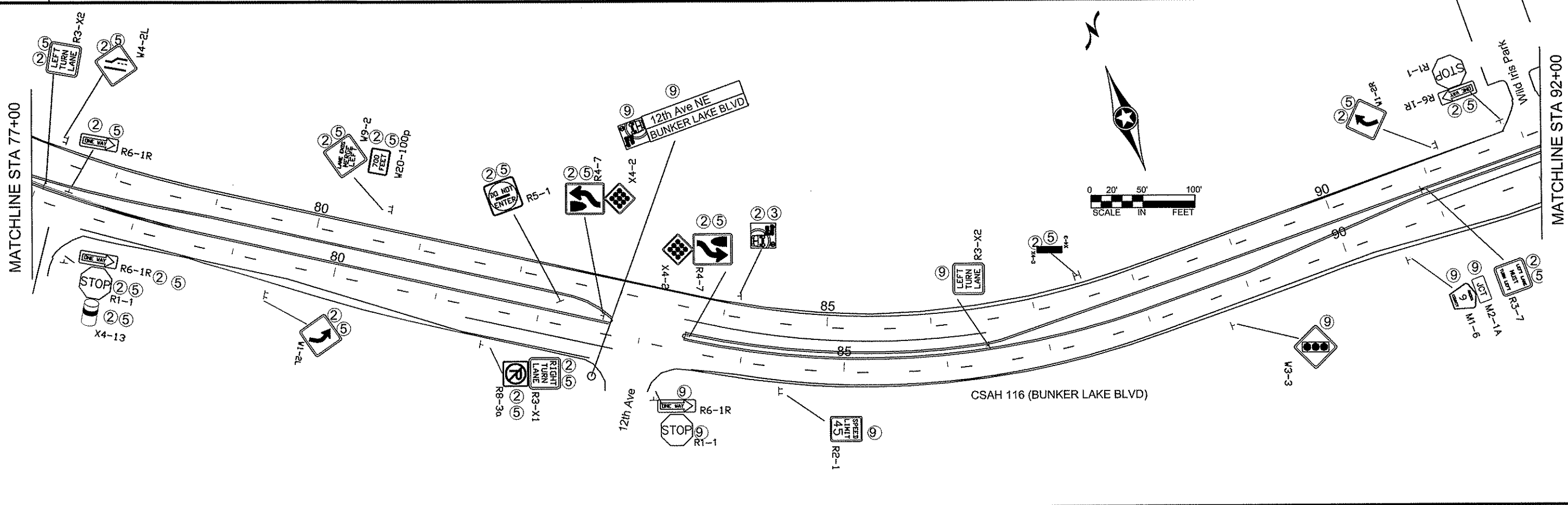
NOTES:

- ② INPLACE
- ③ SALVAGE TO ANOKA COUNTY FOR RE-USE ON THIS PROJECT
- ⑤ SALVAGE TO ANOKA COUNTY
- ⑨ RETAIN INPLACE SIGN

MATCHLINE STA 64+00



MATCHLINE STA 77+00



MATCHLINE STA 92+00

NO	DATE	BY	CHKD	APPR	REVISION

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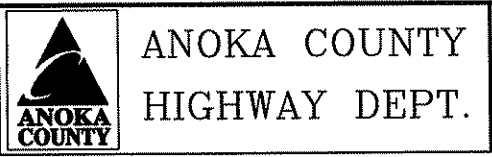
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DESIGN BY: MTH DATE 08/17/11

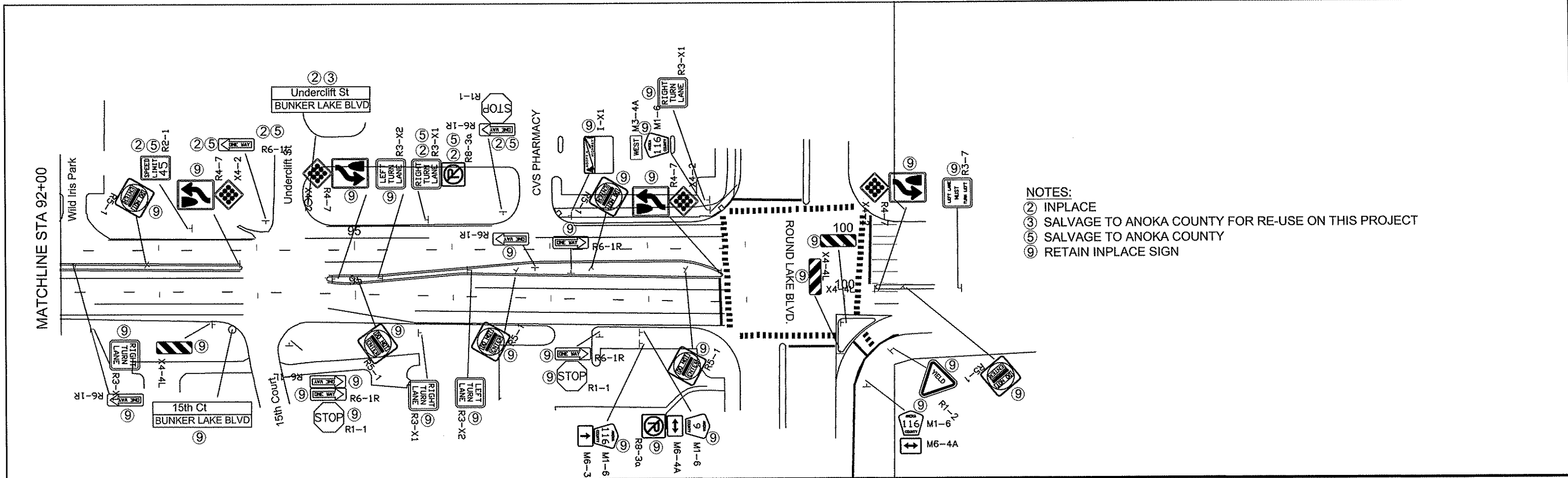
CHECKED BY: RB DATE 10/01/11



S.P. 002-716-012	S.P. 198-020-030	S.P.002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

EXISTING SIGNING AND STRIPING PLAN

Sheet 167 of 282 Sheets

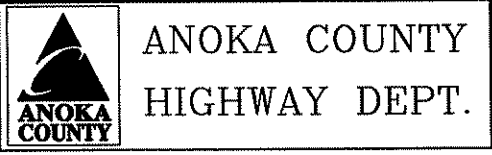


- NOTES:  
 ② INPLACE  
 ③ SALVAGE TO ANOKA COUNTY FOR RE-USE ON THIS PROJECT  
 ⑤ SALVAGE TO ANOKA COUNTY  
 ⑨ RETAIN INPLACE SIGN

NO	DATE	BY	CHKD	APPR	REVISION
NAME: P:\02-716-12\Bose\TRAFFIC\Existing Signing & Striping.dwg					

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.  
 PRINT NAME: CURT A. KOBILARCSIK  
 SIGNATURE: *Curt A. Kobilarsik*  
 DATE: 6-29-12 REG. NO. 24756

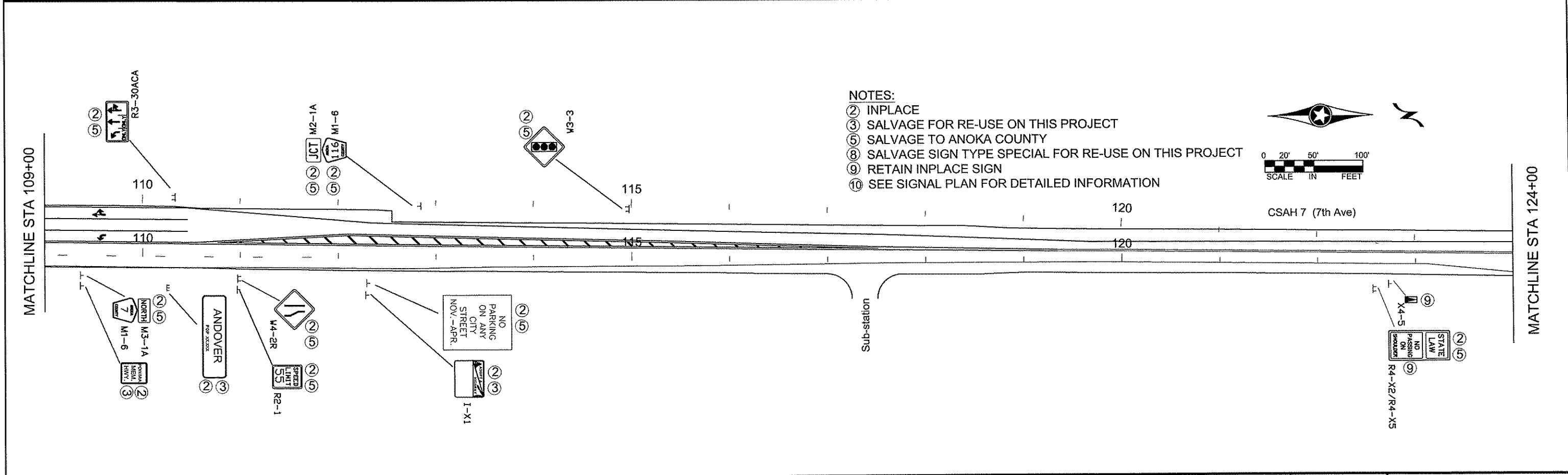
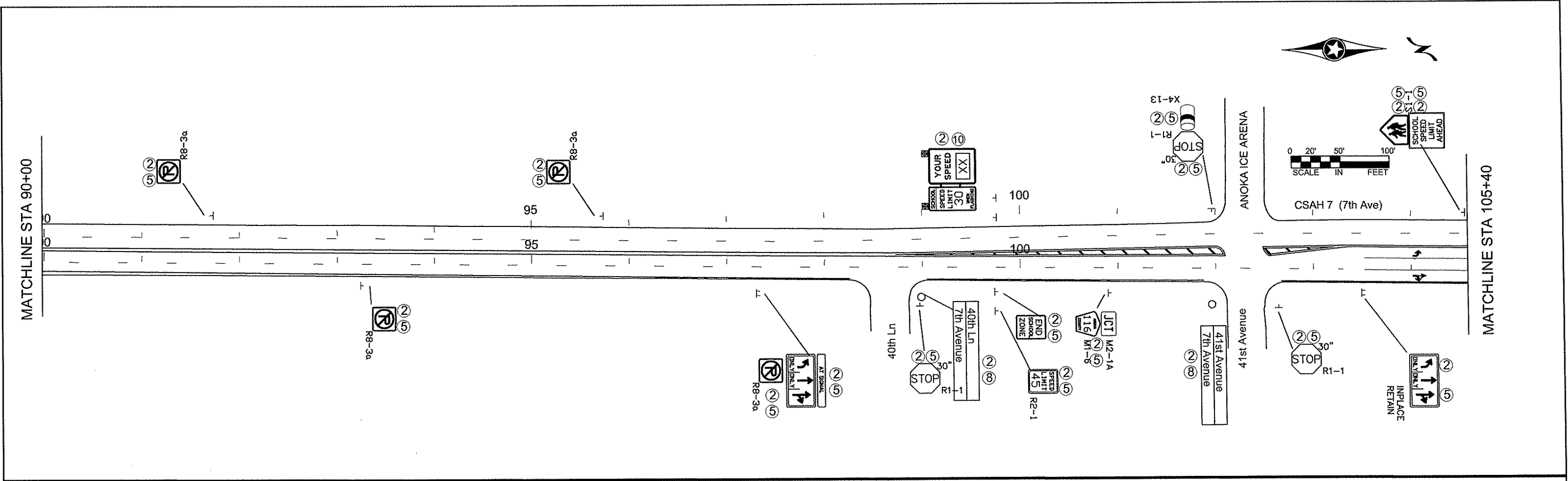
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 DESIGN BY: MTH DATE 08/17/11  
 CHECKED BY: RB DATE 10/01/11



S.P. 002-716-012	S.P. 198-020-030	S.P.002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

EXISTING SIGNING AND STRIPING PLAN  
 Sheet 168 of 282 Sheets





- NOTES:
- ② INPLACE
  - ③ SALVAGE FOR RE-USE ON THIS PROJECT
  - ⑤ SALVAGE TO ANOKA COUNTY
  - ⑧ SALVAGE SIGN TYPE SPECIAL FOR RE-USE ON THIS PROJECT
  - ⑨ RETAIN INPLACE SIGN
  - ⑩ SEE SIGNAL PLAN FOR DETAILED INFORMATION

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-716-12\Bose\TRAFFIC\Existing Signing & Striping.dwg MN.

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

PRINT NAME: CURT A. KOBILARCSIK

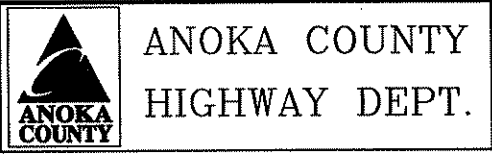
SIGNATURE: *Curt A. Kobilarsik*

DATE: 6-29-12 REG. NO. 24756

DRAWN BY: MTH DATE 11/28/11

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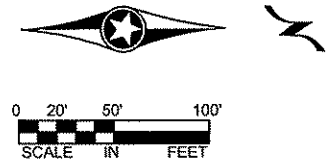
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S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

EXISTING SIGNING AND STRIPING PLAN

Sheet 169 of 282 Sheets

MATCHLINE STA 124+00

ANOKA  
POP. 10,000



NOTES:  
⑨ RETAIN INPLACE SIGN

CSAH 7 (7th Ave)

125

125

RIGHT  
TURN  
LANE  
R3-X1

DEAD  
END  
1-4-11

145th Ave NE  
7th Avenue

145th Avenue

STOP  
R1-1  
30"  
X4-13

NO	DATE	BY	CHKD	APPR	REVISION

NAME: P:\02-716-12\Base\TRAFFIC\Existing Signing & Striping.dwg

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

PRINT NAME: CURT A. KOBILARCSIK

SIGNATURE: *Curt Kobilarsik*

DATE: 6-29-12 REG. NO. 24756

DRAWN BY: MTH DATE 11/28/11

DESIGN BY: MTH DATE 08/17/11

CHECKED BY: RB DATE 10/01/11



ANOKA COUNTY  
HIGHWAY DEPT.

S.P. 002-716-012	S.P. 198-020-030	S.P.002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

EXISTING SIGNING AND STRIPING PLAN

Sheet 170 of 282 Sheets

**PERMANENT & TEMPORARY 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.

**PREFORMED THERMOPLASTIC:**

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

**PAINT:**

AT THE TIME OF APPLYING THE MARKING MATERIAL, THE APPLICATION AREA SHALL BE FREE OF CONTAMINATION. THE CONTRACTOR SHALL CLEAN THE ROADWAY SURFACE PRIOR TO THE LINE 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.

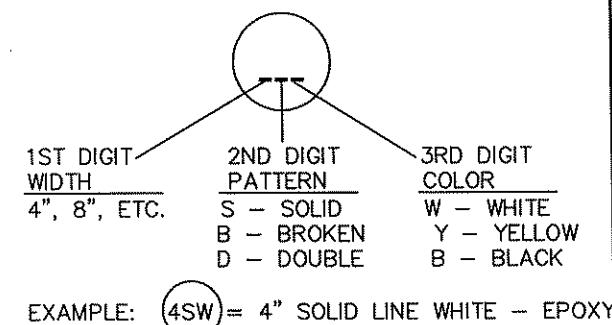
PERMANENT & TEMPORARY PAVEMENT MARKING TABULATION		Y
ITEM	UNIT	TOTAL QUANTITY
PAVEMENT MARKING REMOVAL	LIN FT	13665
RAISED PAVEMENT MARKER TEMPORARY	EACH	934
REMOVABLE PREFORM PLASTIC MARKING (WHITE)	LIN FT	6676
REMOVABLE PREFORM PLASTIC MARKING (YELLOW)	LIN FT	5330
PAVEMENT MESSAGE (RT ARROW) PAINT	EACH	6
PAVEMENT MESSAGE (LT ARROW) PAINT	EACH	6
PAVEMENT MSSG (LT ARROW) PREFORMED THERMOPLASTIC	EACH	16
PAVEMENT MSSG (RT ARROW) PREFORMED THERMOPLASTIC	EACH	10
24" SOLID LINE YELLOW - PREFORMED THERMOPLASTIC	LIN FT	1197
24" SOLID LINE WHITE - PREFORMED THERMOPLASTIC	LIN FT	322
3' x 6' CROSSWALK MARKING - PREFORMED THERMOPLASTIC	SQ FT	1620
4" SOLID LINE WHITE - PAINT	LIN FT	35180
4" SOLID LINE YELLOW - PAINT	LIN FT	26480
4" SOLID LINE WHITE - EPOXY	LIN FT	25810
4" SOLID LINE YELLOW - EPOXY	LIN FT	15033
4" BROKEN LINE WHITE - EPOXY (10 ft stripe / 40 ft gap)	LIN FT	3340
8" BROKEN LINE WHITE - EPOXY (3 ft stripe / 12 ft gap)	LIN FT	150
4" BROKEN LINE YELLOW - EPOXY (10 ft stripe / 40 ft gap)	LIN FT	0
4" DOUBLE SOLID LINE YELLOW - EPOXY	LIN FT	3492
PAVEMENT MSSG (LT ARROW) REMOVABLE POLY PREF	EACH	4
PAVEMENT MSSG (RT ARROW) REMOVABLE POLY PREF	EACH	2
24" STOP LINE WHITE - PAINT (WR)	LIN FT	132

**SYMBOLS & MATERIALS LEGEND**

- CROSSWALK BLOCK WHITE - PREFORMED THERMOPLASTIC
- ← PAVEMENT MESSAGE (LEFT ARROW) PREFORMED THERMOPLASTIC

**STRIPING KEY**

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



NO	DATE	BY	CKD	APPR	REVISION

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.  
 PRINT NAME: CURT A. KOBILARCSIK  
 SIGNATURE: *Curt Kobilarcsik*  
 DATE: 6-29-12 LICENSE NO. 24756

DRAWN BY: MTH DATE: 8/01/11  
 DESIGN BY: DATE: \_\_\_\_\_  
 CHECKED BY: RB DATE: 8/01/11



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

S.P. 002-716-012	S.P. 198-020-030	S.P.002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

**PERMANENT & TEMPORARY MARKING NOTES & TABULATION**  
 Sheet 171 of 282 Sheets

SIGN PANELS TYPE C							N
M.U.T.C.D. CODE	SIZE	INSERT	QUANTITY	SQ FT PANEL AREA	SQ FT TOTAL AREA	MOUNTING POST PER INSTALLATION	MOUNTING HEIGHT
R6-1L	12" x 36"		3	3.00	9.00		
R6-1R	12" x 36"		11	3.00	33.00		
R1-1	30" x 30"		12	6.25	75.00	1	7.0'
X4-13	4" diameter x 15"		12	1.31	0		
R2-1	24" x 36"		2	6.00	12.00	1	7.0'
R2-1	24" x 36"		2	6.00	12.00	1	7.0'
R2-1	24" x 36"		4	6.00	24.00	1	7.0'
R3-X1	24" x 36"		14	6.00	84.00	1	7.0'
R3-7	30" x 30"		2	6.25	12.50	1	7.0'
R3-X2	24" x 36"		9	6.00	48.00	1	7.0'
R3-30AB	36" x 30"		2	7.5	15.00	2	7.0'
R3-30ACCA	66" x 30"		1	13.75	13.75	2	7.0'
R3-2	24" x 24"		5	4.00	20.00	1	7.0'
R3-4	24" x 24"		4	4.00	16.00		7.0'
R4-7	24" x 30"		17	5.00	85.00	1	7.0'
X4-2	18" x 18"		17	2.25	0		
R5-1	30" x 30"		11	6.25	68.75	1	7.0'
R6-1R	12" x 36"		3	3.00	9.00	1	7.0'
R6-1L	18" x 48"		3	6.00	18.00	2	7.0'

SIGN PANELS TYPE C							N
M.U.T.C.D. CODE	SIZE	INSERT	QUANTITY	SQ FT PANEL AREA	SQ FT TOTAL AREA	MOUNTING POST PER INSTALLATION	MOUNTING HEIGHT
R8-3a	24" x 24"		6	4.00	24.00	1	7.0'
W1-2R	48" x 48"		2	16.00	32.00	2	7.0'
W1-2L	48" x 48"		3	16.00	48.00	2	7.0'
W13-1	30" x 30"		3	6.25	18.75		7.0'
W3-3	48" x 48"		5	16.00	80.00	2	7.0'
W20-X3L	48" x 48"		0	16.00	0	2	7.0'
W9-1	48" x 48"		1	16.00	16.00	2	7.0'
W20-100p	24" x 30"		1	5.00	5.00		
X4-4L	12" X 36"		3	3.00	0	1	7.0'
X4-3	6" X 12"		2	0.50	1.00	1	5.0'
M2-1	21" x 15"		2	2.19	4.38		
M3-1	24" x 12"		1	2.00	2.00		
M3-3	24" x 12"		1	2.00	2.00		
M1-6	24" x 24"		6	4.00	24.00	1	7.0'
M6-4A	21" x 15"		2	2.19	4.38		
M2-1	21" x 15"		2	2.19	4.38		
M3-4	24" x 12"		1	2.00	2.00		
M3-2	24" x 12"		1	2.00	2.00		
M1-6	24" x 24"		6	4.00	24.00	1	7.0'
M6-4A	21" x 15"		2	2.19	4.38		

SIGN PANELS TYPE C							N
M.U.T.C.D. CODE	SIZE	INSERT	QUANTITY	SQ FT PANEL AREA	SQ FT TOTAL AREA	MOUNTING POST PER INSTALLATION	MOUNTING HEIGHT
I-8	24" x 24"		2	4.00	8.00	1	
M6-1AL	21" x 15"		1	2.19	2.19		
M6-1AR	21" x 15"		1	2.19	2.19		
Sxx-x	24" x 30"		1	5.00	5.00	1	7.0'
S5-2	24" x 30"		1	5.00	5.00	1	7.0'
TOTAL			156		869.38	132	

**NOTES:**

- ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE MOST RECENT EDITION OF THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES INCLUDING THE FIELD MANUAL DATED JANUARY, 2011
- LOCATIONS OF ALL PERMANENT STRIPING AND PAVEMENT MESSAGES ARE APPROXIMATE. EXACT LOCATIONS SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER.
- ALL MAINLINE PERMANENT STRIPING AND PAVEMENT MESSAGES SHALL BE PLACED WITHIN 72 HOURS OF MAINLINE PAVING.
- SEE PERMANENT SIGN TABULATIONS FOR ADDITIONAL INFORMATION.
- ALL SEGMENT STRIPE LINES SHALL BE EPOXY. PERMANENT MESSAGES AND ARROWS SHALL BE PREFORMED THERMOPLASTIC.
- ALL SIGNS SHALL BE FURNISHED AND INSTALLED UNLESS OTHERWISE NOTED.

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 REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.  
 PRINT NAME: CURT A. KOBILARCSIK  
 SIGNATURE:   
 DATE: 6-29-12 REG. NO. 24756

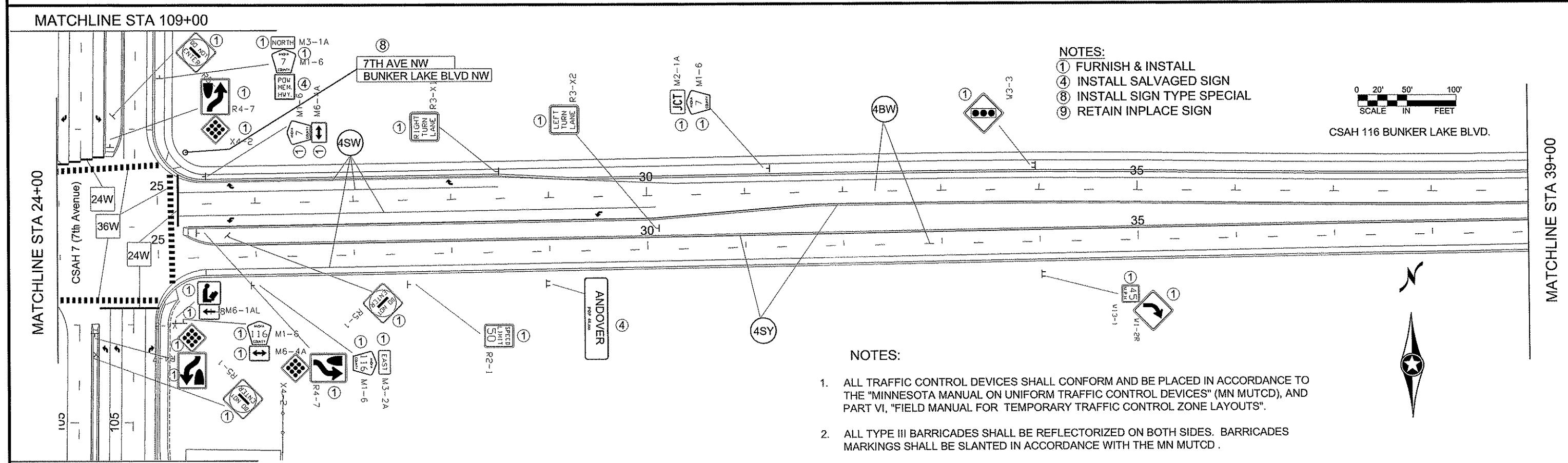
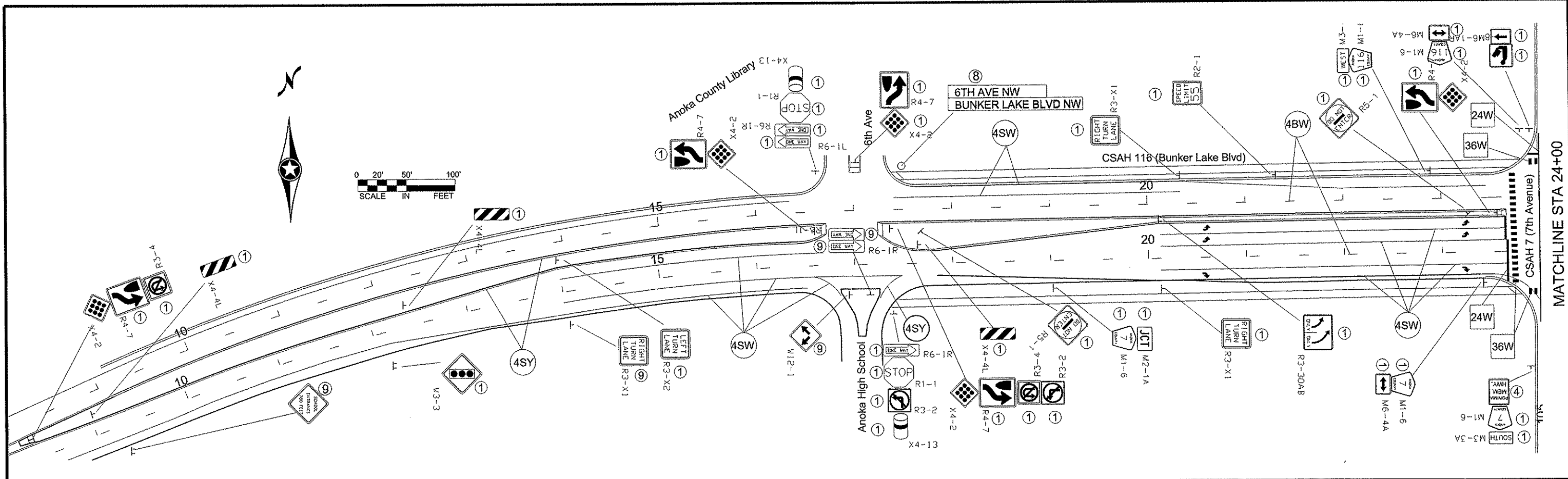
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 DESIGN BY: \_\_\_\_\_ DATE \_\_\_\_\_  
 CHECKED BY: RB DATE 10/01/11



**ANOKA COUNTY  
HIGHWAY DEPT.**

S.P. 002-716-012	S.P. 198-020-030	S.P.002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

PERMANENT SIGNING QUANTITY  
 Sheet 172 of 282 Sheets



- NOTES:**
- ① FURNISH & INSTALL
  - ④ INSTALL SALVAGED SIGN
  - ⑧ INSTALL SIGN TYPE SPECIAL
  - ⑨ RETAIN INPLACE SIGN

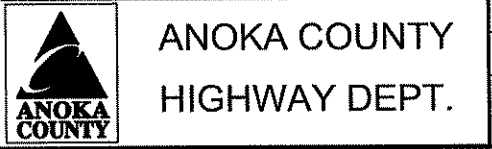
- NOTES:**
1. ALL TRAFFIC CONTROL DEVICES SHALL CONFORM AND BE PLACED IN ACCORDANCE TO THE "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MN MUTCD), AND PART VI, "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS".
  2. ALL TYPE III BARRICADES SHALL BE REFLECTORIZED ON BOTH SIDES. BARRICADES MARKINGS SHALL BE SLANTED IN ACCORDANCE WITH THE MN MUTCD.

NO	DATE	BY	CKD	APPR	REVISION

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 SIGNATURE: *Curt Kobilarsik*  
 DATE: 6.29.12 REG. NO. 24756

DRAWN BY: MTH DATE 11/28/11  
 DESIGN BY: DATE  
 CHECKED BY: RB DATE 10/01/11



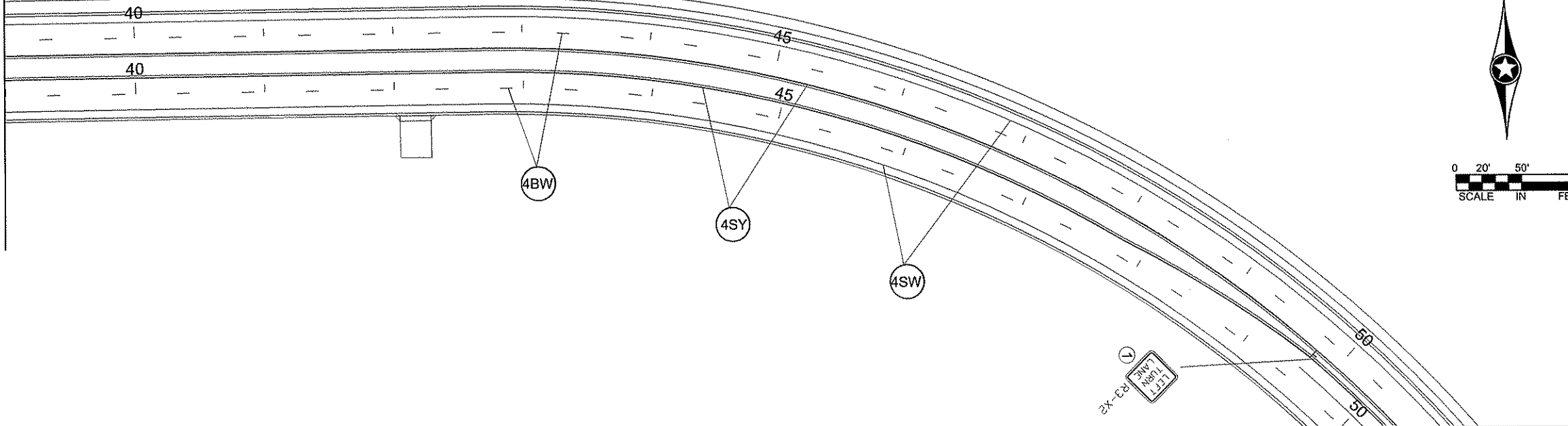
S.P. 002-716-012	S.P. 198-020-030	S.P.002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

PERMANENT SIGNING AND STRIPING PLAN

Sheet 173 of 282 Sheets

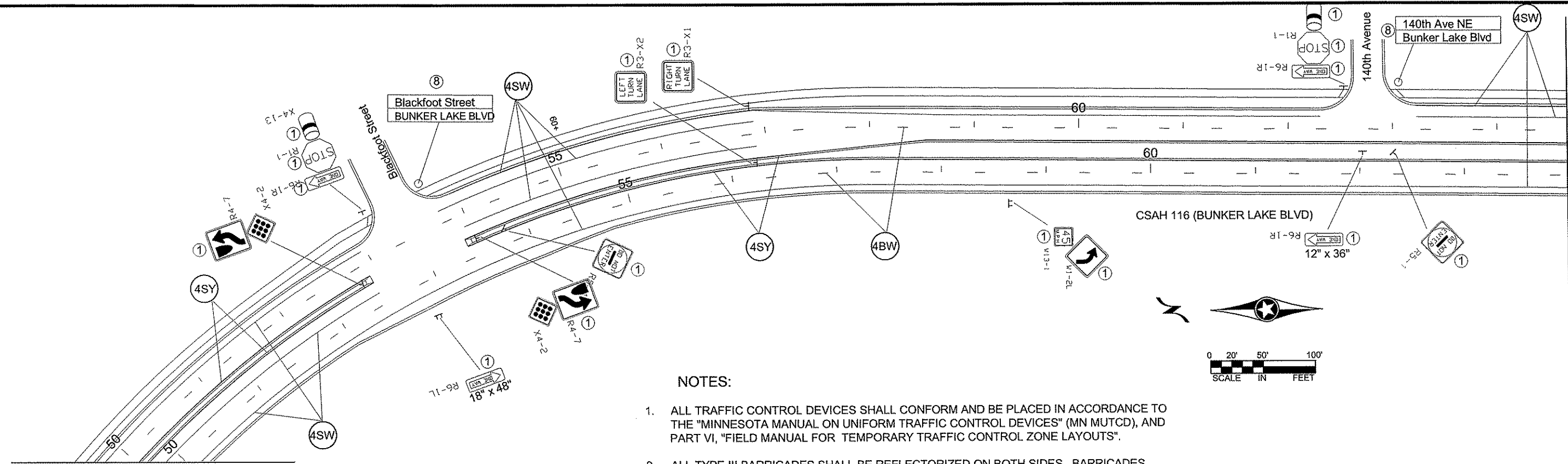
MATCHLINE STA 39+00

CSAH 116 (Bunker Lake Blvd)



- NOTES:  
 ① FURNISH & INSTALL  
 ④ INSTALL SALVAGED SIGN  
 ⑧ INSTALL SIGN TYPE SPECIAL

MATCHLINE STA 50+00



- NOTES:
1. ALL TRAFFIC CONTROL DEVICES SHALL CONFORM AND BE PLACED IN ACCORDANCE TO THE "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MN MUTCD), AND PART VI, "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS".
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MATCHLINE STA 50+00

MATCHLINE STA 64+00

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: CURT A. KOBILARCSIK  
 SIGNATURE: *Curt Kobilarcsik*  
 DATE: 6-29-12 REG. NO. 24756

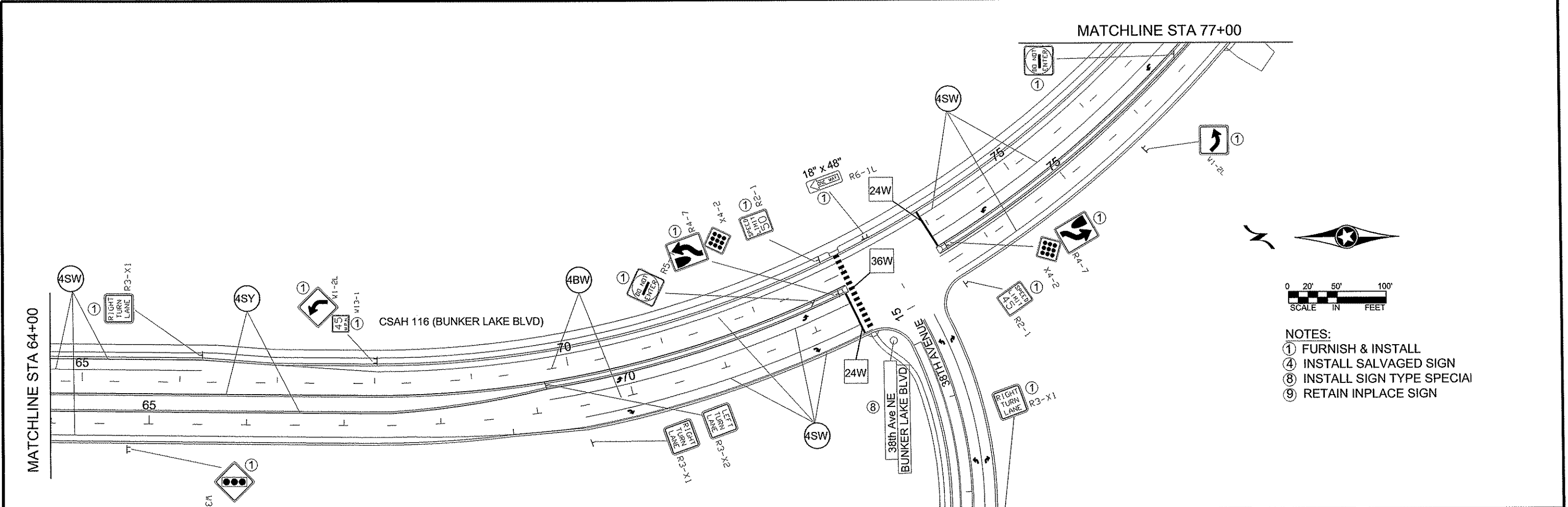
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 DESIGN BY: DATE  
 CHECKED BY: RB DATE 10/01/11



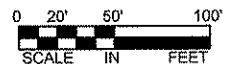
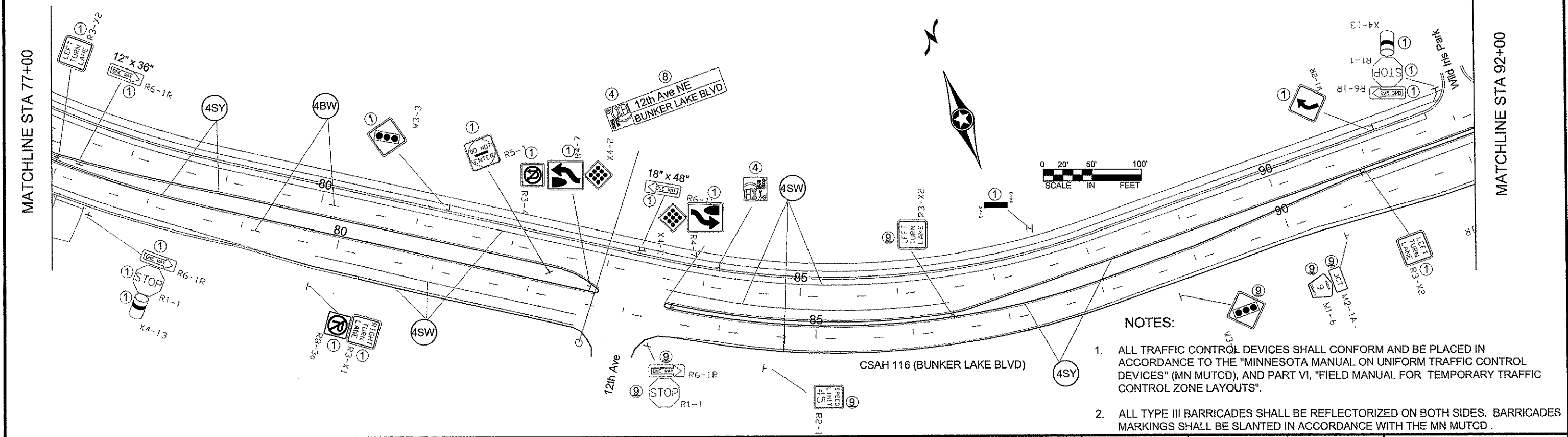
ANOKA COUNTY  
 HIGHWAY DEPT.

S.P. 002-716-012	S.P. 198-020-030	S.P.002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

PERMANENT SIGNING AND STRIPING PLAN  
 Sheet 174 of 282 Sheets



- NOTES:
- ① FURNISH & INSTALL
  - ④ INSTALL SALVAGED SIGN
  - ⑧ INSTALL SIGN TYPE SPECIAL
  - ⑨ RETAIN INPLACE SIGN



- NOTES:
1. ALL TRAFFIC CONTROL DEVICES SHALL CONFORM AND BE PLACED IN ACCORDANCE TO THE "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MN MUTCD), AND PART VI, "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS".
  2. ALL TYPE III BARRICADES SHALL BE REFLECTORIZED ON BOTH SIDES. BARRICADES MARKINGS SHALL BE SLANTED IN ACCORDANCE WITH THE MN MUTCD.

NO	DATE	BY	CKD	APPR	REVISION

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PRINT NAME: CURT A. KOBILARCSIK  
 SIGNATURE: *Curt Kobilarsik*  
 DATE: 6-29-12 REG. NO. 24756

DRAWN BY: MTH DATE 11/28/11  
 DESIGN BY: DATE  
 CHECKED BY: RB DATE 10/01/11

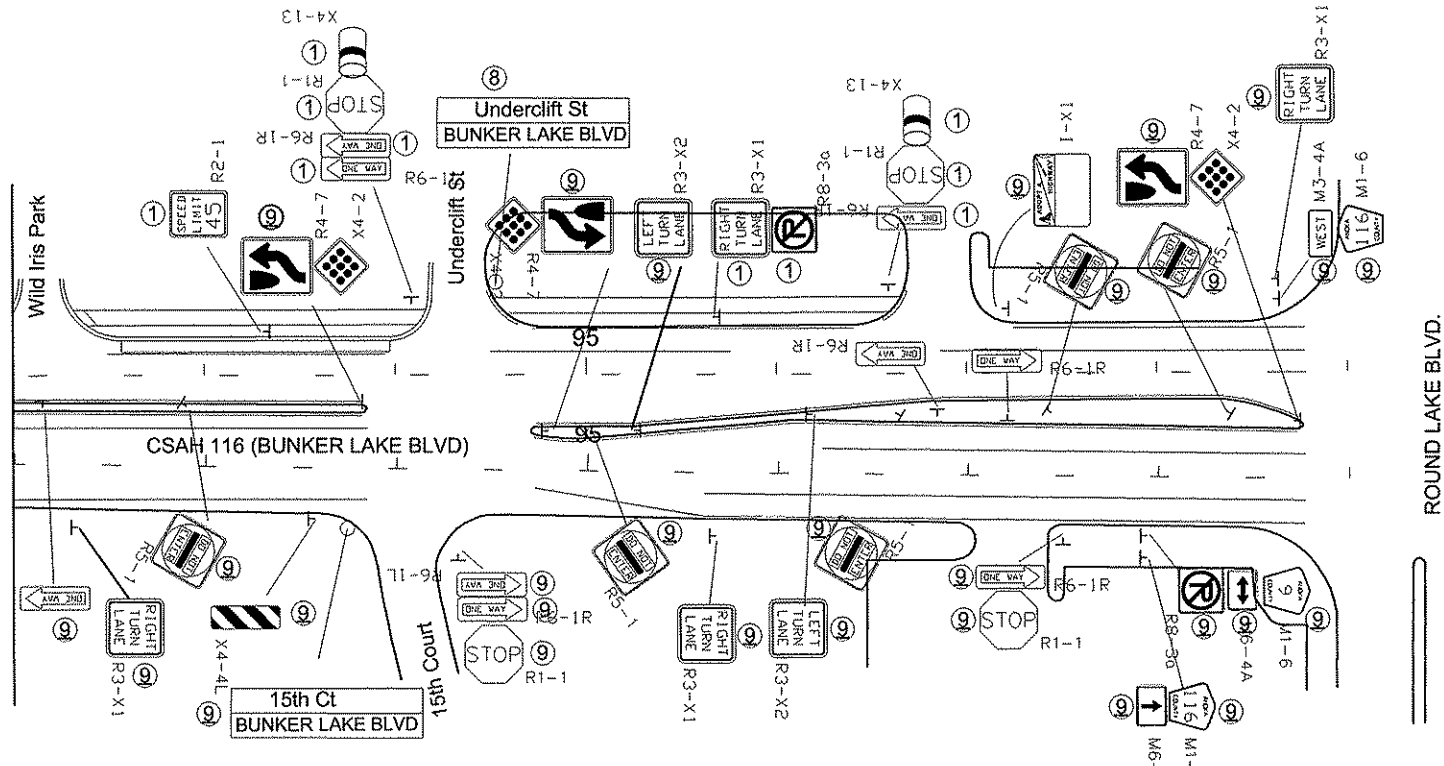


S.P. 002-716-012	S.P. 198-020-030	S.P.002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

PERMANENT SIGNING AND STRIPING PLAN

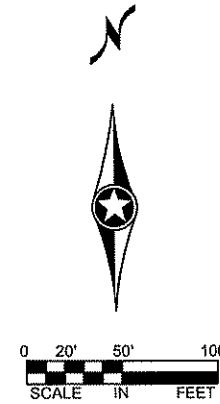
Sheet 175 of 282 Sheets

MATCHLINE STA 92+00



ROUND LAKE BLVD.

100  
100



- NOTES:
- ① FURNISH & INSTALL
  - ④ INSTALL SALVAGED SIGN
  - ⑧ INSTALL SIGN TYPE SPECIAL
  - ⑨ RETAIN INPLACE SIGN

NOTES:

1. ALL TRAFFIC CONTROL DEVICES SHALL CONFORM AND BE PLACED IN ACCORDANCE TO THE "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MN MUTCD), AND PART VI, "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS".
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NO	DATE	BY	CKD	APPR	REVISION
NAME: P:\02-716-12\BASE\TRAFFIC\Permanent Signing & Striping.dwg					

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.  
 PRINT NAME: CURT A. KOBILARCSIK  
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DRAWN BY MTH DATE 11/28/11  
 DESIGN BY \_\_\_\_\_ DATE \_\_\_\_\_  
 CHECKED BY RB DATE 10/01/11



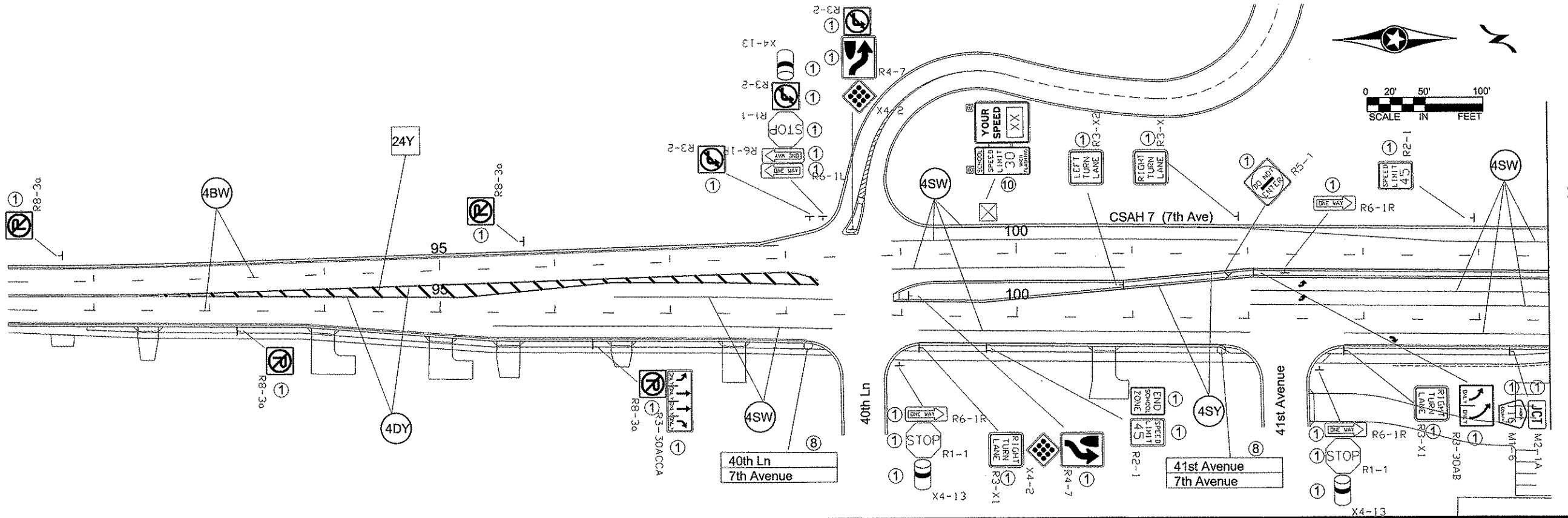
ANOKA COUNTY  
HIGHWAY DEPT.

S.P. 002-716-012	S.P. 198-020-030	S.P.002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

PERMANENT SIGNING AND STRIPING PLAN  
 Sheet 176 of 282 Sheets



MATCHLINE STA 90+00

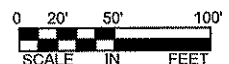
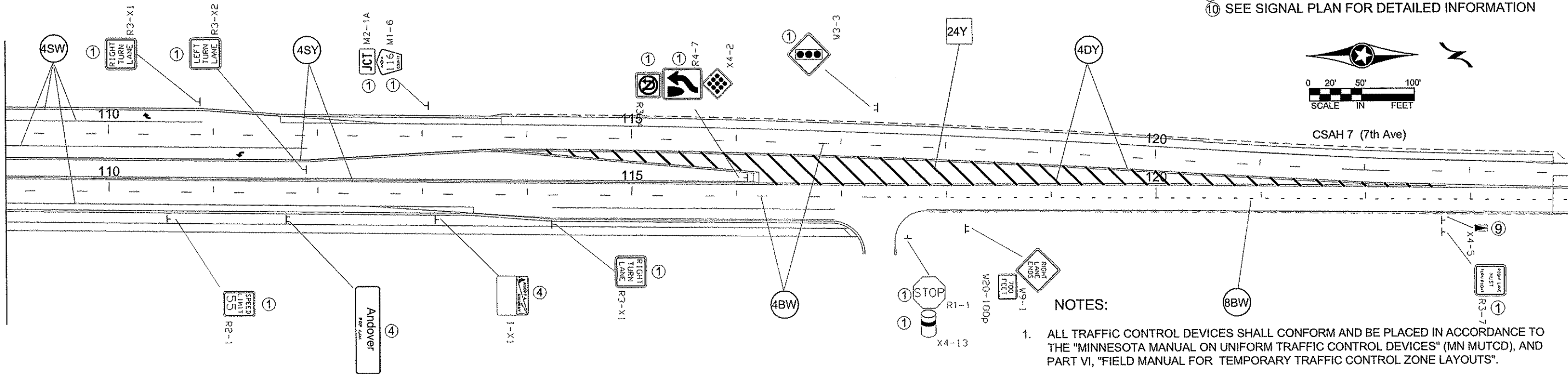


MATCHLINE STA 104+60

NOTES:

- ① FURNISH & INSTALL
- ④ INSTALL SALVAGED SIGN
- ⑧ INSTALL SIGN TYPE SPECIAL
- ⑨ RETAIN INPLACE SIGN
- ⑩ SEE SIGNAL PLAN FOR DETAILED INFORMATION

MATCHLINE STA 109+00



MATCHLINE STA 124+00

NOTES:

1. ALL TRAFFIC CONTROL DEVICES SHALL CONFORM AND BE PLACED IN ACCORDANCE TO THE "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MN MUTCD), AND PART VI, "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS".
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NO	DATE	BY	CHKD	APPR	REVISION

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DATE: 6-29-12 REG. NO. 24756

DRAWN BY: MTH DATE 11/28/11

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CHECKED BY: RB DATE 10/01/11



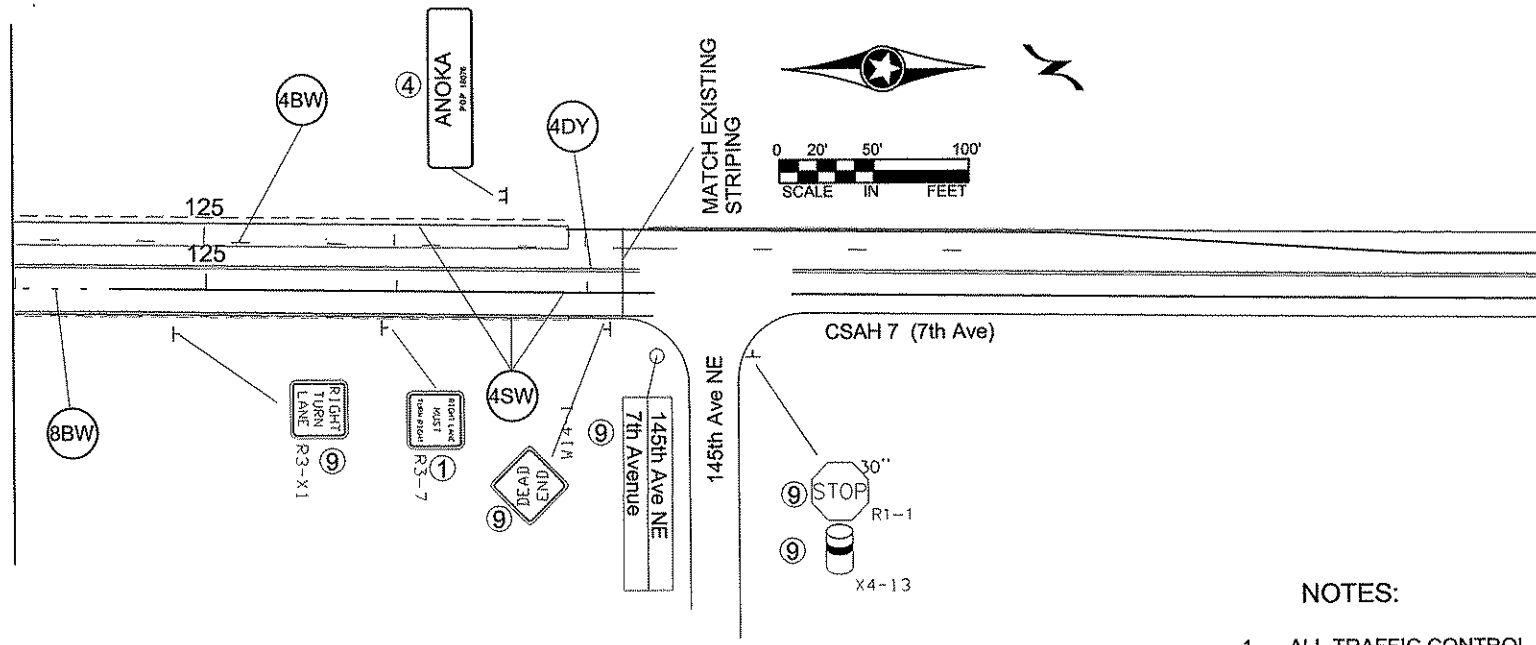
ANOKA COUNTY  
HIGHWAY DEPT.

S.P. 002-716-012	S.P. 198-020-030	S.P.002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

PERMANENT SIGNING AND STRIPING PLAN

Sheet 177 of 282 Sheets

MATCHLINE STA 124+00



NOTES:

1. ALL TRAFFIC CONTROL DEVICES SHALL CONFORM AND BE PLACED IN ACCORDANCE TO THE "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MN MUTCD), AND PART VI, "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS".
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NO	DATE	BY	CHKD	APPR	REVISION

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 PRINT NAME: CURT A. KOBILARCSIK  
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 DATE: 6-29-12 REG. NO. 24756

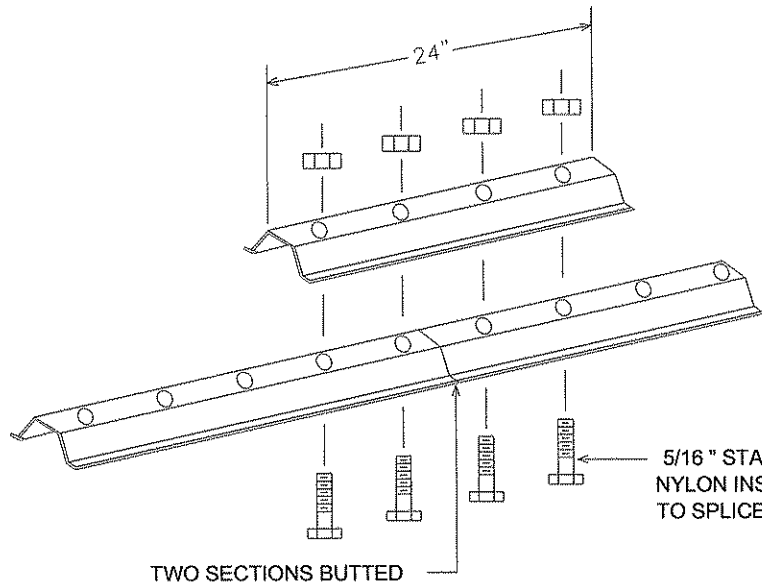
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 CHECKED BY: RB DATE 10/01/11



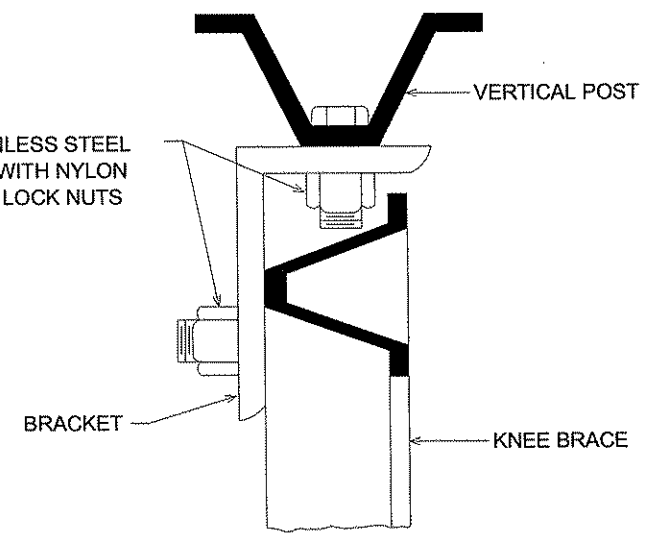
ANOKA COUNTY  
 HIGHWAY DEPT.

S.P. 002-716-012	S.P. 198-020-030	S.P.002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

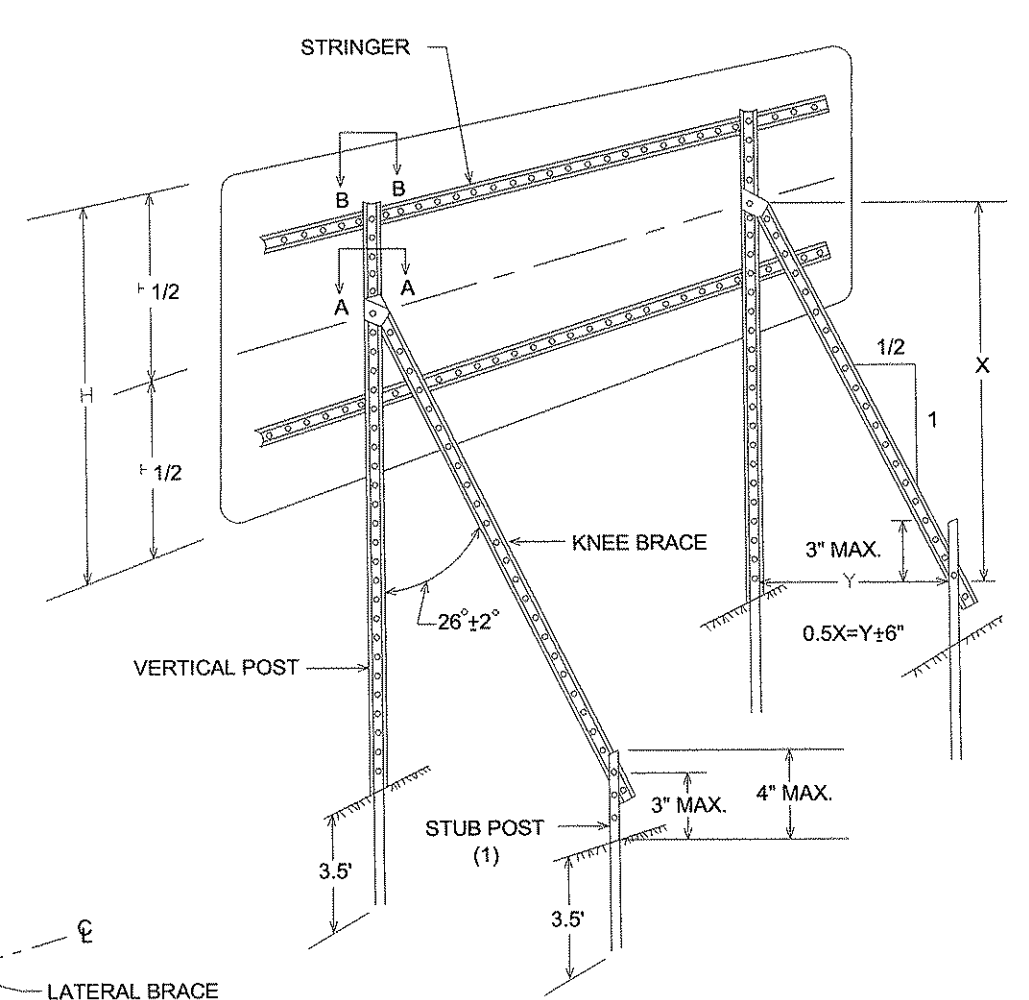
PERMANENT SIGNING AND STRIPING PLAN  
 Sheet 178 of 282 Sheets



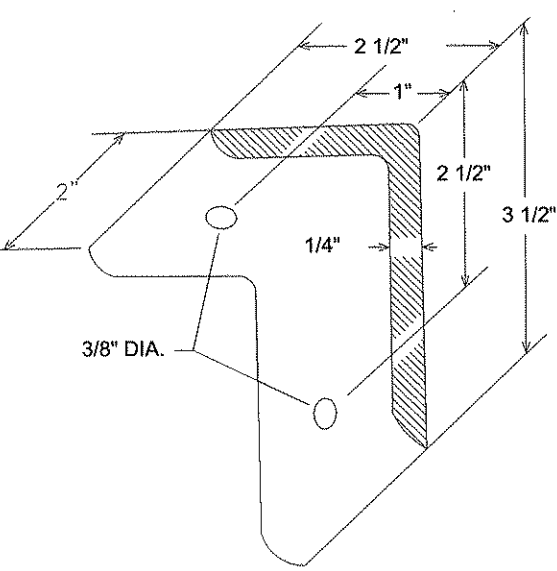
**LATERAL BRACE OR STRINGER  
SPlice DETAIL (EXPLODED VIEW)**



**SECTION A-A**

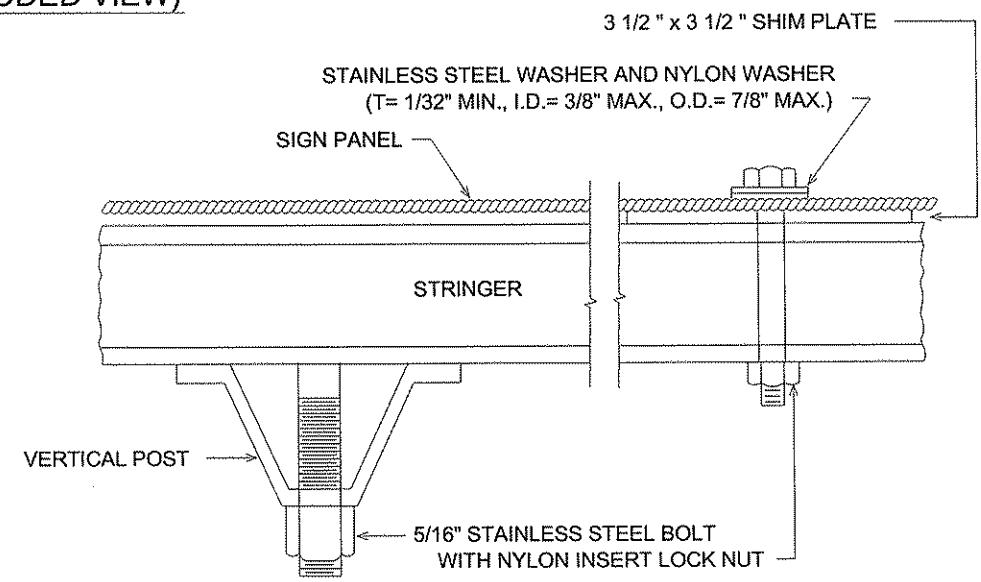


**TYPICAL "A-FRAME" INSTALLATION  
TYPE "D" SIGNS**

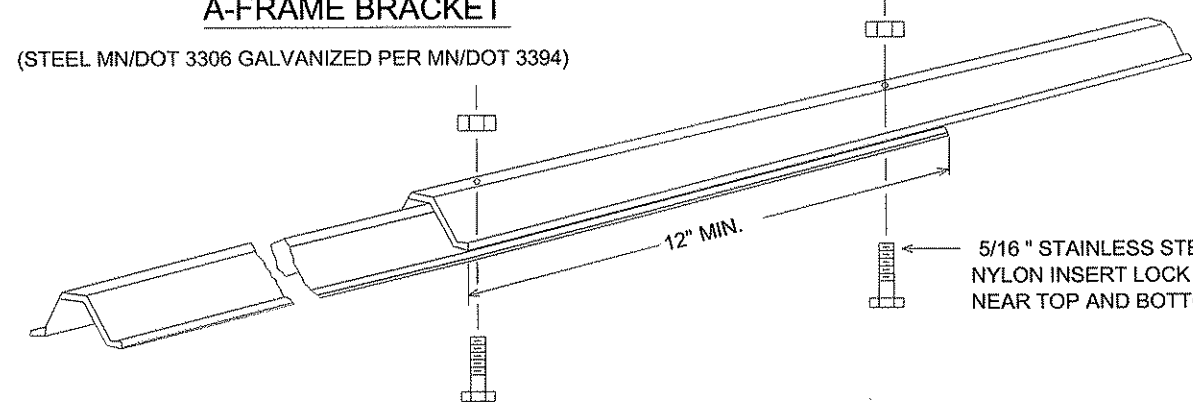


**A-FRAME BRACKET**

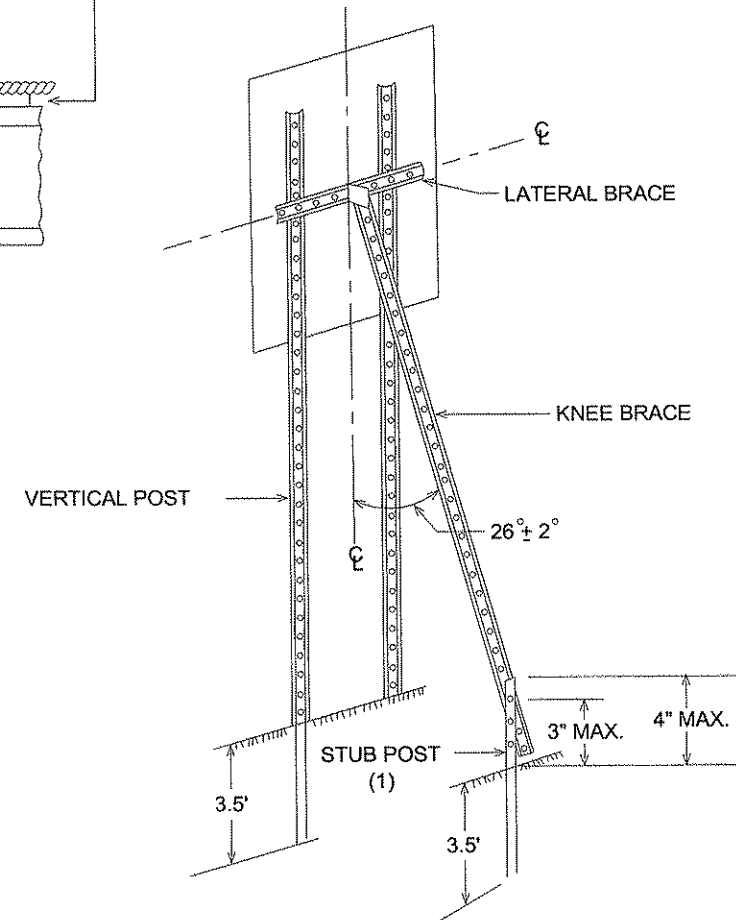
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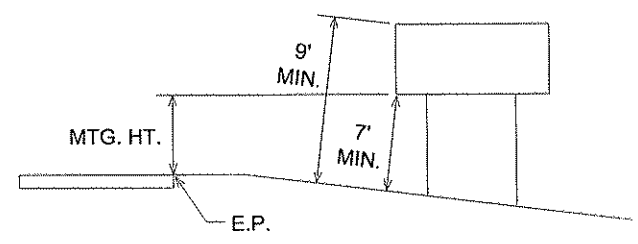
**SECTION B-B**



**KNEE BRACE SPLICE**



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



**TYPICAL MOUNTING**

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

**TYPE C & D SIGN  
STRUCTURAL DETAILS**

NO	DATE	BY	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.  
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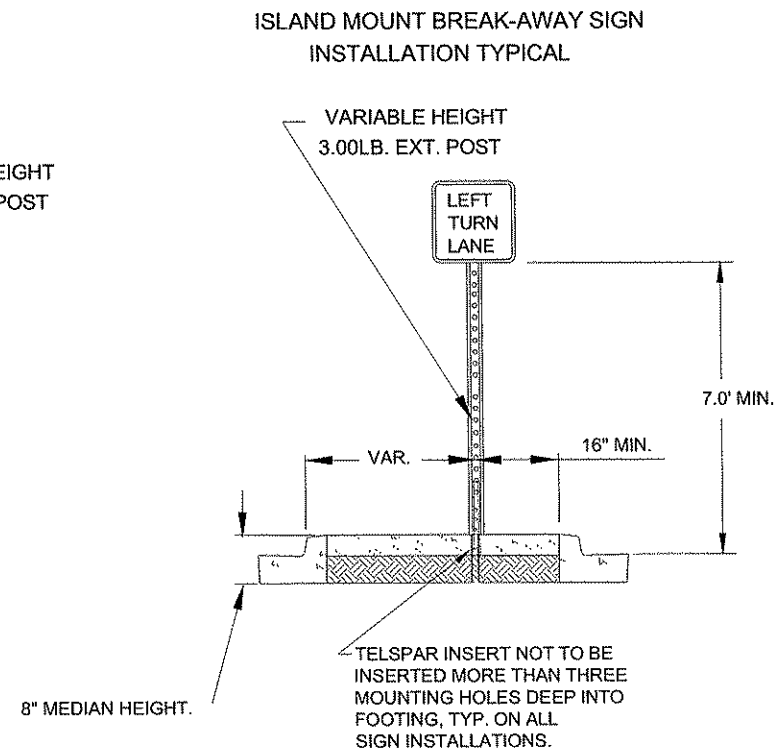
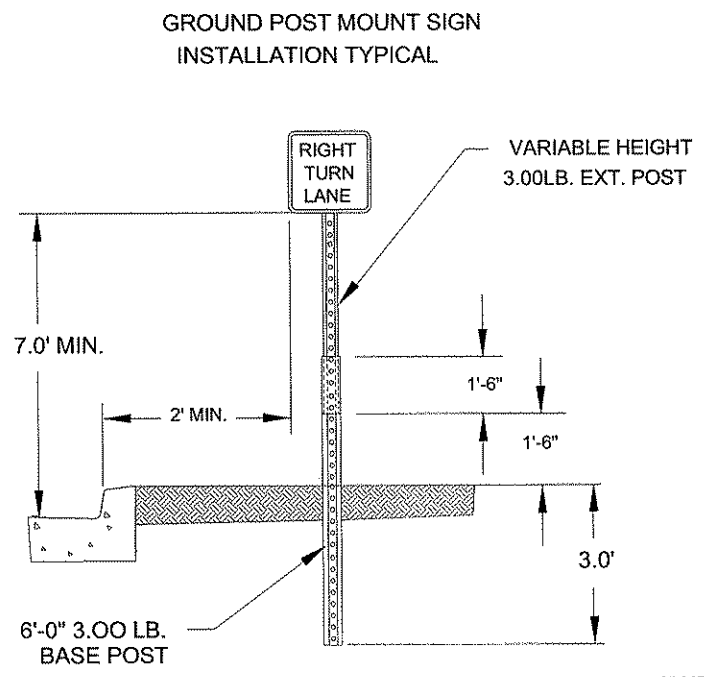
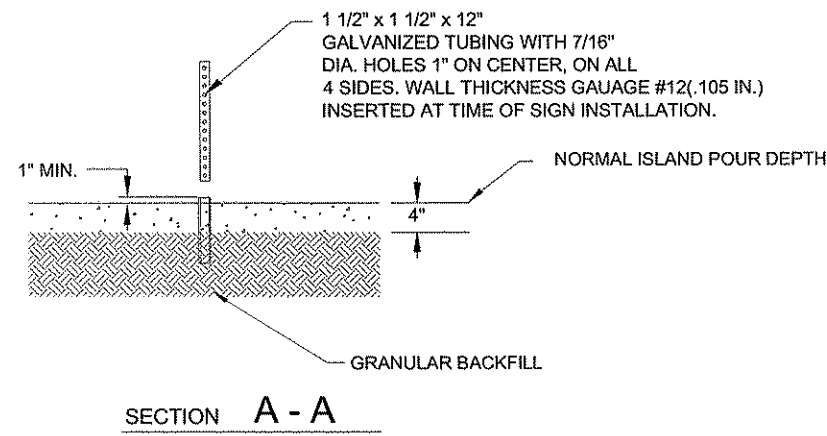
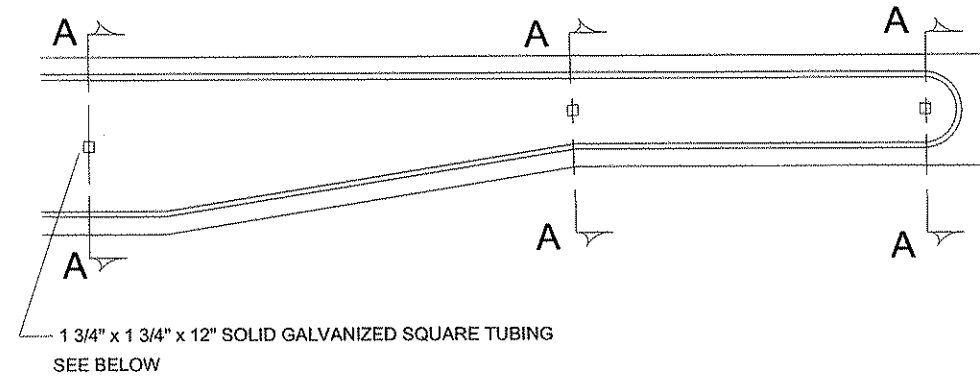
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**ANOKA COUNTY  
HIGHWAY DEPT.**

S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

**SIGNING & STRIPING DETAILS**  
 Sheet 179 of 282 Sheets



NO	DATE	BY	CKD	APPR	REVISION

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PRINT NAME: CURT A. KOBIARCSIK  
 SIGNATURE: *Curt A. Kobilarcsik*  
 DATE: 6-29-12 LICENSE NO. 24756

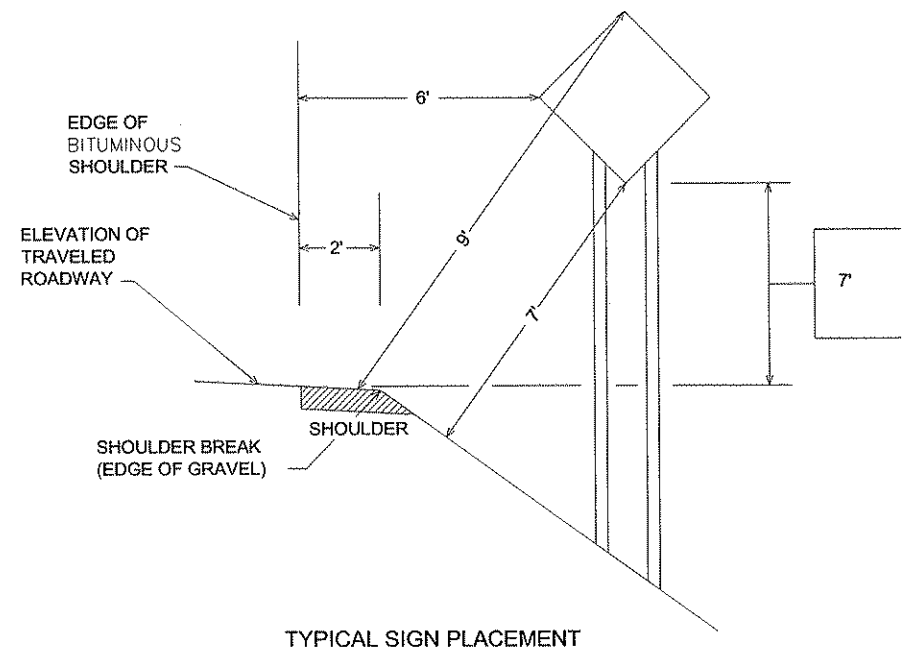
DRAWN BY MTH DATE 1-21-11  
 DESIGN BY MTH DATE 1-21-11  
 CHECKED BY JR DATE 1-21-11



**ANOKA COUNTY  
 HIGHWAY DEPT.**

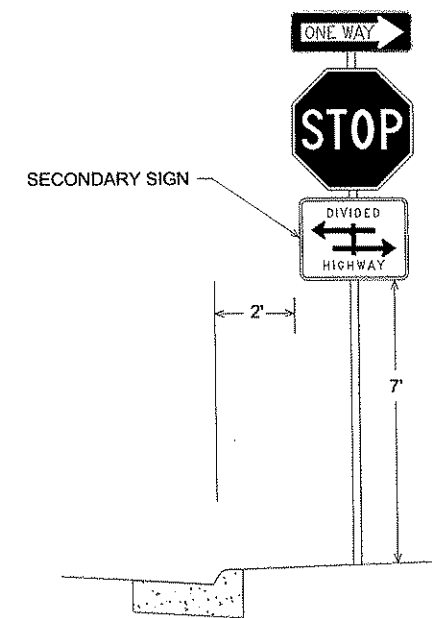
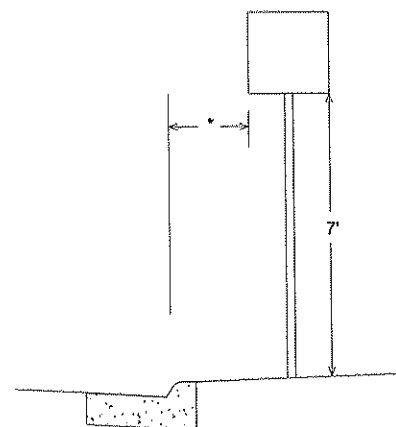
S.P. 002-716-012	S.P. 198-020-030	S.P.002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

RURAL



URBAN

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



NOTE:

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

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: CURT A. KOBLARCSIK

SIGNATURE: *Curt A. Koblarczik*

DATE: 6-29-12 LICENSE NO. 24756

DRAWN BY MTH DATE 1-21-11

DESIGN BY MTH DATE 1-21-11

CHECKED BY JR DATE 1-21-11



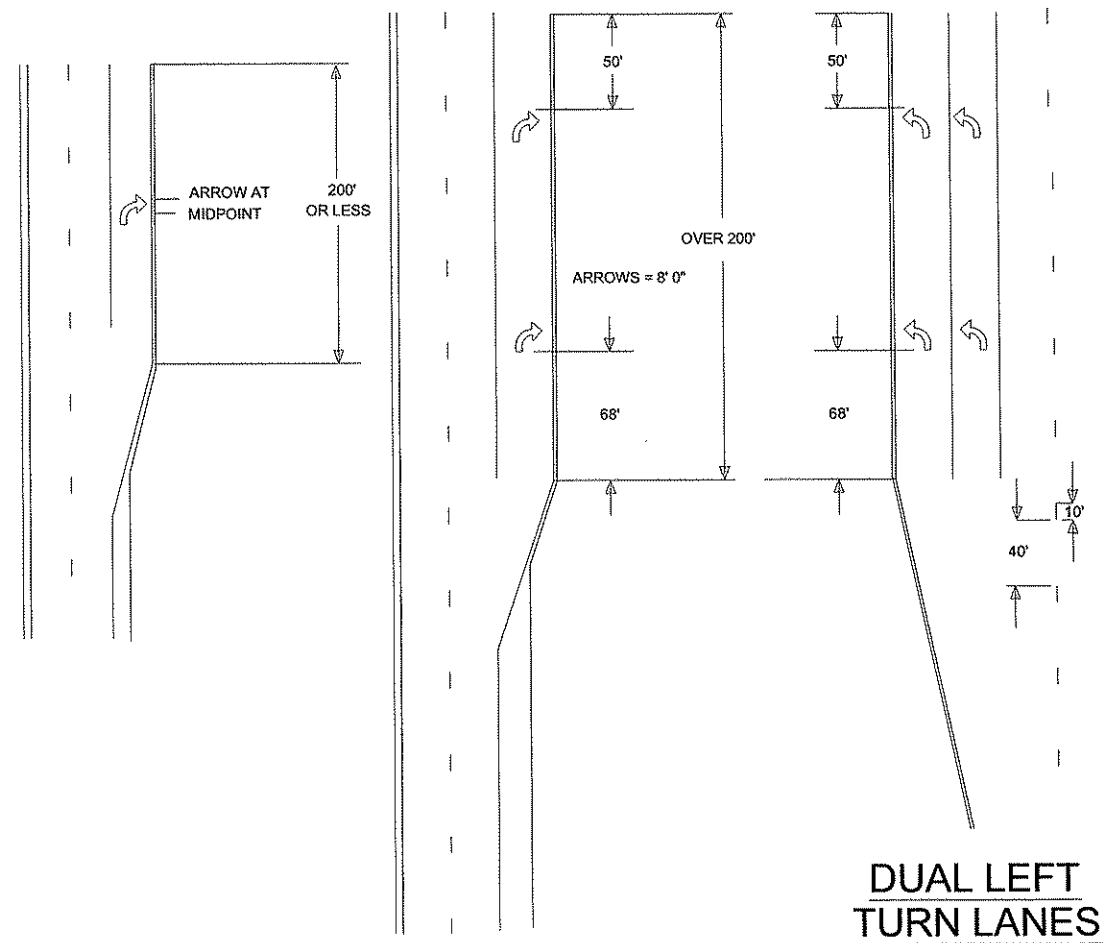
ANOKA COUNTY  
HIGHWAY DEPT.

S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

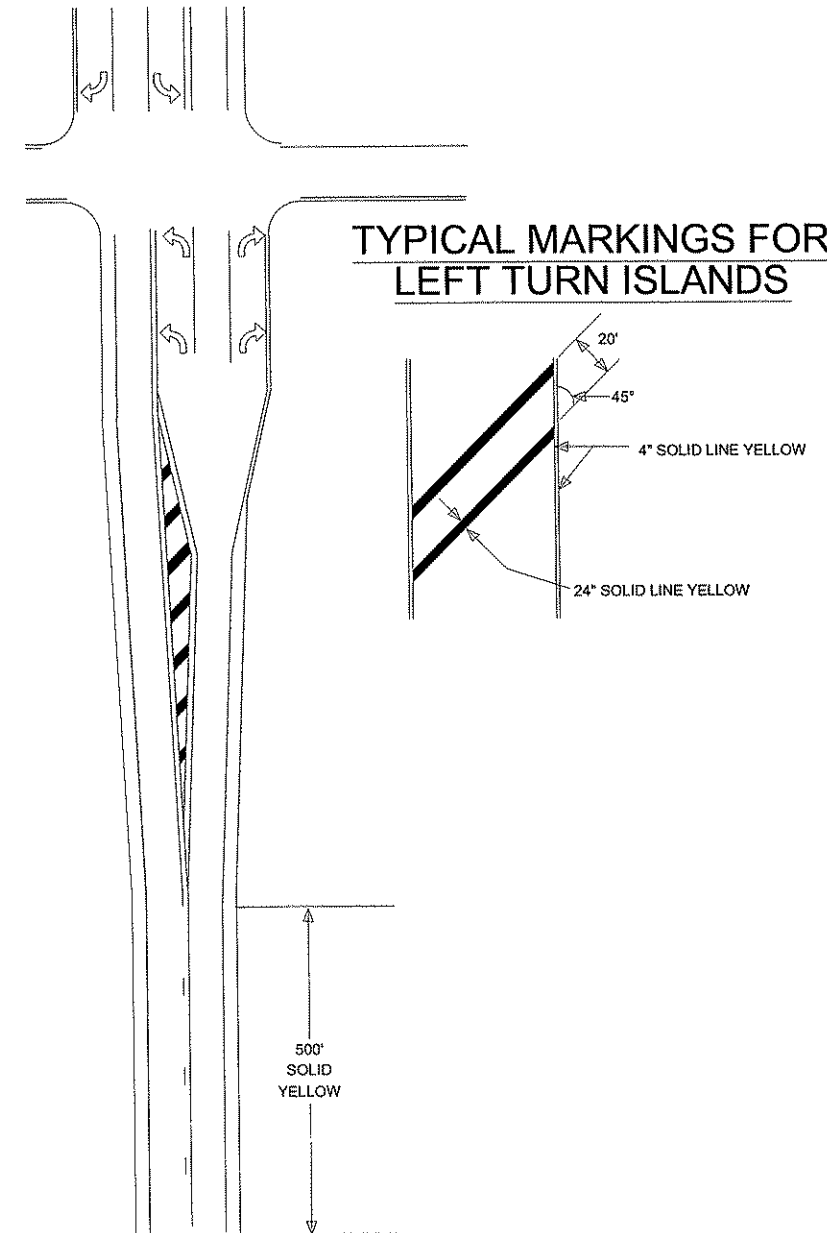
SIGNING & STRIPING DETAILS

Sheet 181 of 282 Sheets

**TYPICAL MESSAGE PLACEMENT  
FOR TURN LANES**



**TYPICAL MARKINGS FOR  
LEFT TURN ISLANDS**



NO	DATE	BY	CKD	APPR	REVISION

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

PRINT NAME: CURT A. KOBILARCSIK

SIGNATURE: *Curt Kobilarcsik*

DATE: 6-29-12 LICENSE NO. 24756

DRAWN BY MTH DATE 1-21-11

DESIGN BY MTH DATE 1-21-11

CHECKED BY JR DATE 1-21-11



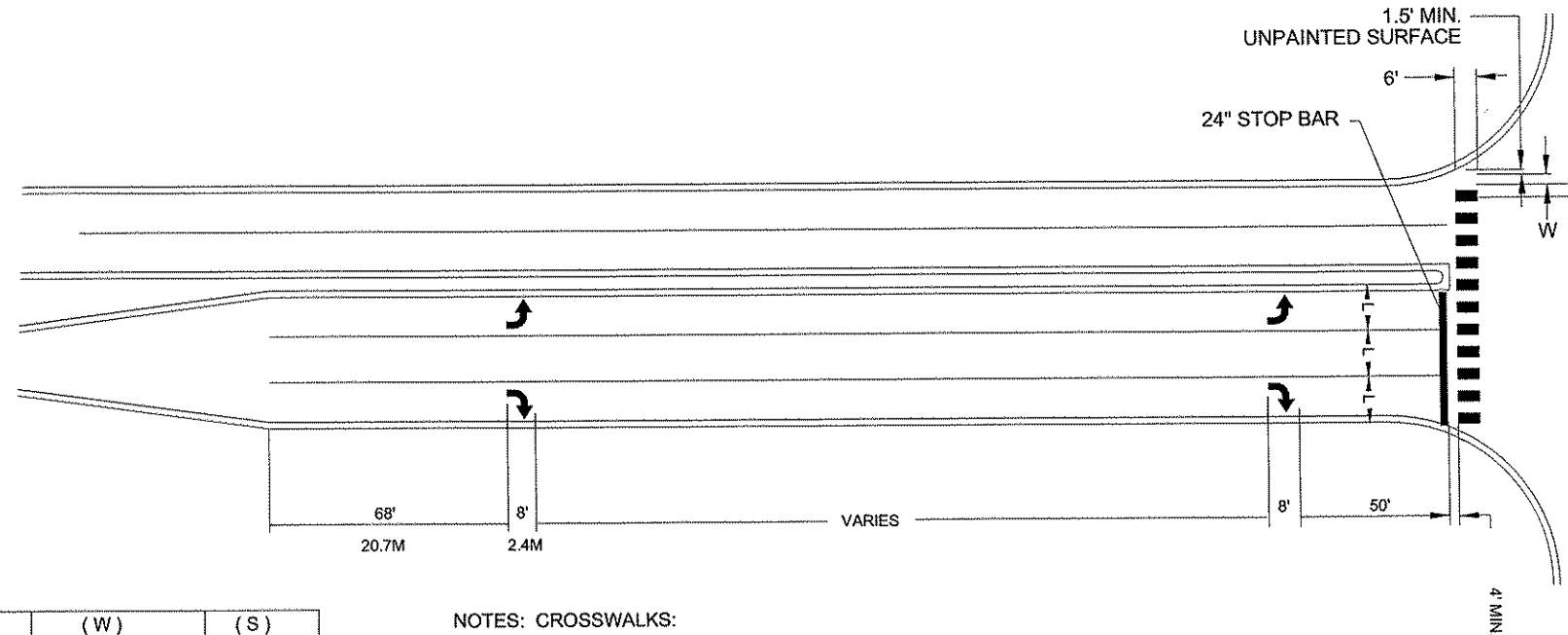
**ANOKA COUNTY  
HIGHWAY DEPT.**

S.P. 002-716-012	S.P. 198-020-030	S.P.002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

**SIGNING & STRIPING DETAILS**

Sheet 182 of 282 Sheets

# MARKINGS FOR PEDESTRIAN CROSSWALKS



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

**NOTES: CROSSWALKS:**

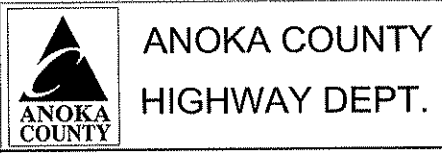
- 1.) PAINTED AREAS ARE TO BE CENTERED ON CENTER AND LANE LINES, EVEN IF INTERSECTION IS NOT ALIGNED.
- 2.) LOCATION OF ZEBRA CROSSWALKS AND STOP BARS, SIGNAL LOOPS AND PED RAMP ARE APPROXIMATE. FINAL LOCATIONS ARE TO BE DETERMINED AND FIELD VERIFIED DURING CONSTRUCTION BY THE FIELD ENGR.
- 3.) ZEBRA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

NO	DATE	BY	CKD	APPR	REVISION

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 SIGNATURE: *Curt Kobiarcsik*  
 DATE: 6-29-11 LICENSE NO. 24756

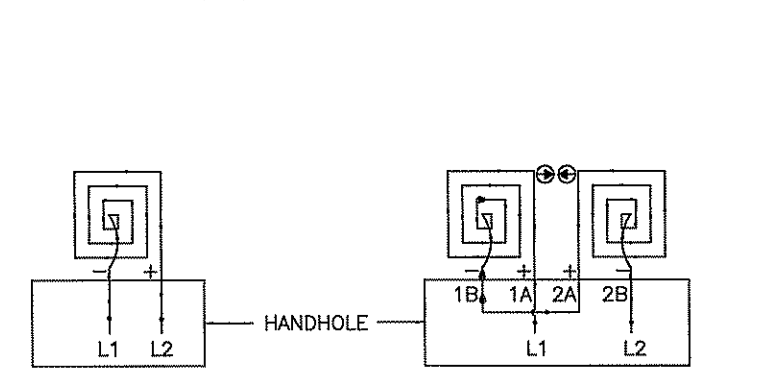
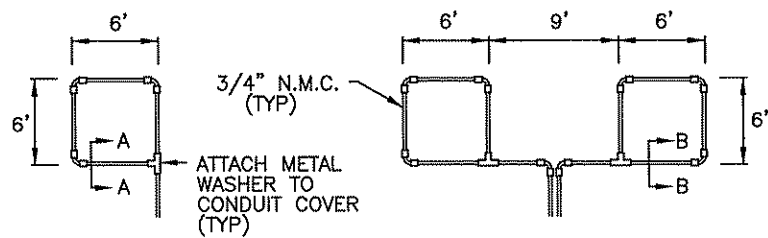
DRAWN BY MTH DATE 1-21-11  
 DESIGN BY MTH DATE 1-21-11  
 CHECKED BY JR DATE 8-28-12



S.P. 002-716-012	S.P. 198-020-030	S.P.002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

SIGNING & STRIPING DETAILS

Sheet 183 of 282 Sheets

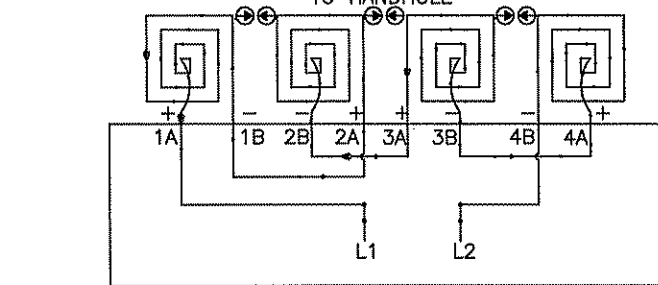
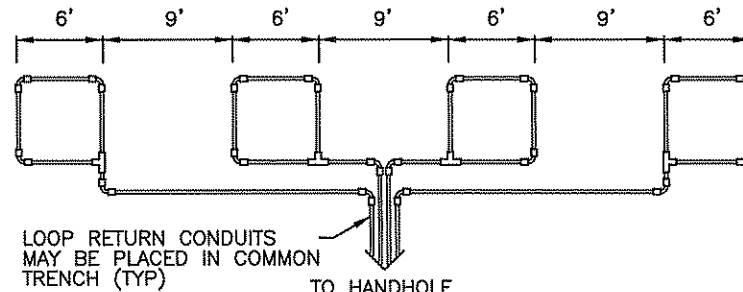


**LOOP DETECTOR  
DETAIL 'A'**  
(LOOP PHASING FOR  
SINGLE CONNECTION)

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

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

**LOOP DETECTOR  
DETAIL 'B'**  
(LOOP PHASING FOR  
SERIES CONNECTION)

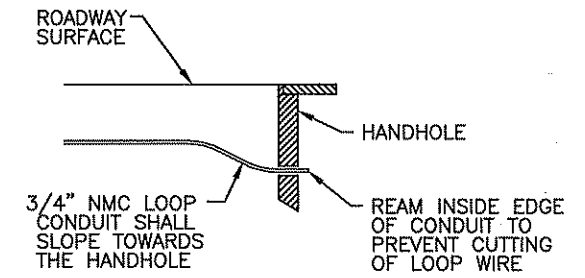
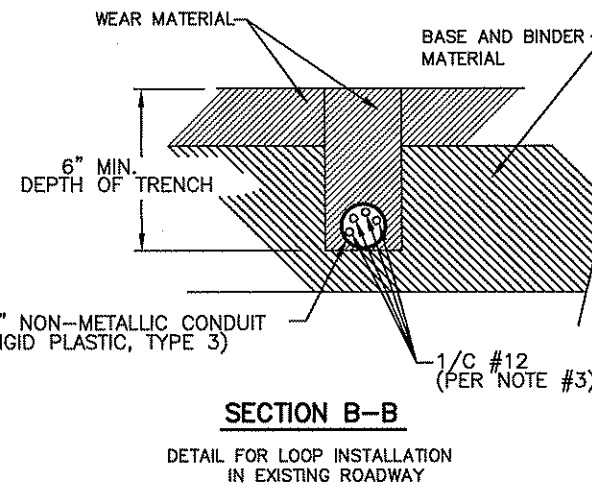
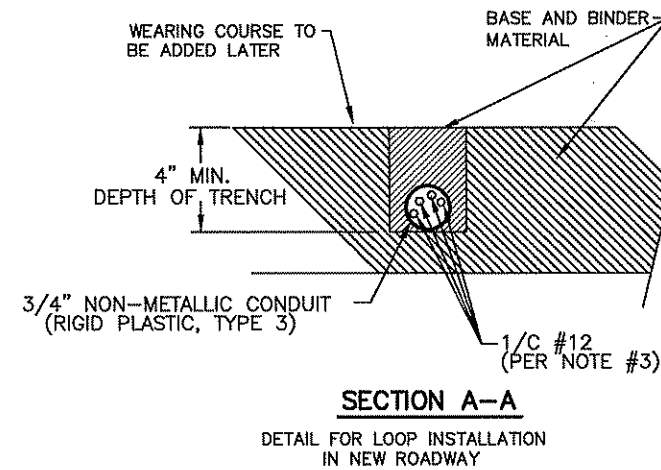


LOOP CONNECTIONS SHALL BE LABELED AND SPLICED  
IN THE HANDHOLE AS FOLLOWS:

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

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

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



**DRAINAGE DETAIL**

**LOOP DETECTOR WIRING**

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

**LEGEND OF SYMBOLS**

CONTROLLER AND SERVICE EQUIP. NO's	(A)
SIGNAL BASE NO.	(1)
SIGNAL FACE NO.	(2)
LUMINAIRE NO.	(3)
CONTROLLER AND CABINET	(4)
CONTROLLER AND CABINET - IN PLACE	(5)
HANDHOLE	(6)
HANDHOLE - IN PLACE	(7)
RIGID STEEL CONDUIT (RSC)	(8)
RIGID STEEL CONDUIT (RSC) - IN PLACE	(9)
SIGNAL FACE WITH BACKGROUND SHIELD	(10)
SIGNAL FACE W/O BACKGROUND SHIELD	(11)
SIGNAL FACE - IN PLACE	(12)
PEDESTRIAN INDICATORS	(13)
PEDESTRIAN INDICATORS - IN PLACE	(14)
PEDESTRIAN PUSH BUTTONS ON PEDESTAL OR POLE	(15)
PEDESTRIAN PUSH BUTTON STATION	(16)
TRAFFIC SIGNAL PEDESTAL	(17)
TRAFFIC SIGNAL PEDESTAL - INPLACE	(18)
TRAFFIC SIGNAL POLE AND MAST ARM	(19)
TRAFFIC SIGNAL POLE AND MAST ARM - IN PLACE	(20)
STREET LIGHT POLE AND LUMINAIRE	(21)
STREET LIGHT POLE AND LUMINAIRE - IN PLACE	(22)
MAST ARM AND LUMINAIRE	(23)
MAST ARM AND LUMINAIRE - INPLACE	(24)
WOOD POLE	(25)
WOOD POLE - IN PLACE	(26)
SOURCE OF POWER	(27)
RAILROAD SIGNAL - IN PLACE	(28)
RIGHT OF WAY LINE	(29)
CENTERLINE	(30)
EDGE OF ROADWAY	(31)
SHOULDERLINE	(32)
CURB LINE	(33)
STOP BAR	(34)
EMERGENCY VEHICLE PREEMPTION DETECTOR	(35)

**ABBREVIATIONS**

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

**CONDUCTOR COLOR CODE**

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

**TRAFFIC SIGNAL TABULATION**

ITEM NO	ITEM	UNIT	TOTAL ESTIMATED QUANTITY
2565	TRAFFIC CONTROL SIGNAL SYSTEM "A"	SIG. SYS.	1
2565	TRAFFIC CONTROL SIGNAL SYSTEM "B"	SIG. SYS.	1
2565	EMERGENCY VEHICLE PREEMPTION SYSTEM "A"	LUMP SUM	1
2565	EMERGENCY VEHICLE PREEMPTION SYSTEM "B"	LUMP SUM	1
2565	TRAFFIC CONTROL INTERCONNECTION	LUMP SUM	1
2565	SIGNAL SERVICE CABINET	EACH	2
2565	TEMPORARY SIGNAL SYSTEM	SYSTEM	1

**TRAFFIC SIGNAL STANDARD PLATES**

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

PLATE NO.	DESCRIPTION
* 8000 I	STANDARD BARRICADES
* 8110 E	TRAFFIC SIGNAL BRACKETING (POLE MOUNTED)
* 8111 E	TRAFFIC SIGNAL BRACKETING (PEDESTAL MOUNTED) (3 SHEETS)
* 8112 G	PEDESTAL FOUNDATION (TRAFFIC CONTROL SIGNALS)
* 8114 A	PVC HANDHOLE/PULLBOX (NO VEHICLE LOAD) (2 SHEETS)
* 8118 D	SERVICE EQUIPMENT & POLE-TRAFFIC CONTROL SIGNALS
* 8119 C	GROUND MOUNTED CABINET FOUNDATION
* 8120 P	POLE FOUNDATION (PA 85)
* 8121 G	TRANSFORMER BASE & POLE BASE PLATE (2 SHEETS)
* 8122 F	PEDESTAL & PEDESTAL BASE (FOR TRAFFIC CONTROL SIGNALS SUPPORT)
* 8123 G	POLE & MAST ARM-LUMINAIRES & TRAFFIC LIGHTS ASSEMBLY (2 SHEETS)
* 8126 J	POLE FOUNDATION (PA90 & PA100)

\* - APPLIES TO THIS PROJECT

S.P. 002-607-021  
S.P. 002-716-012

S.A.P. 103-020-014 & 103-020-015  
S.A.P. 198-020-010, 198-020-031 & 198-020-032

DRAWN BY: JMG  
DESIGNER: JMG  
CHECKED BY: JMG

NO.	BY	DATE

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.  
Date: June 7, 2012      Name: John M. Gray, PE      Lic. No. 22457

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

**ANOKA COUNTY,  
MINNESOTA**  
CITIES OF ANDOVER, ANOKA

**TRAFFIC SIGNAL SYSTEMS 'A-B'**  
DETAILS AND STANDARD PLATES  
CSAH 116 (BUNKER LAKE BLVD NW)

FILE NO.  
ANOKC 120319  
SIGNAL SHEET  
1 OF 26  
**184**  
**282**

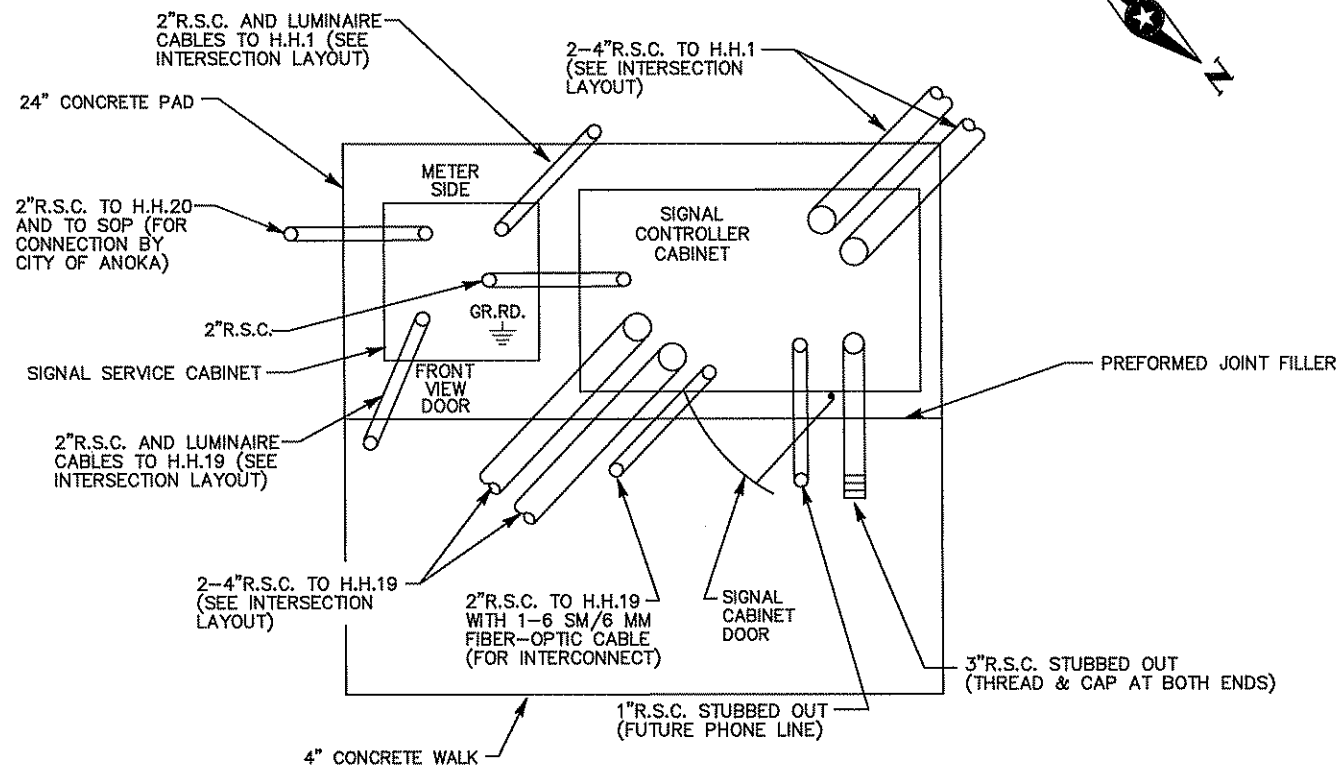


# TYPICAL PAD WITH CONTROLLER CABINET AND SERVICE CABINET

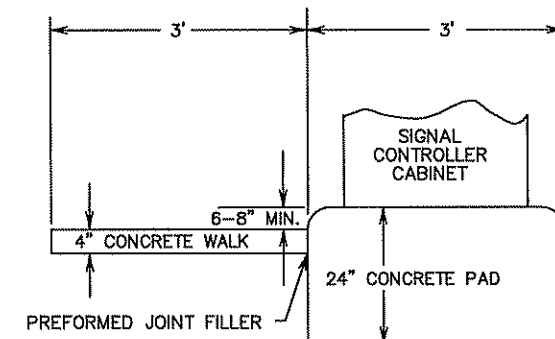
SEE INTERSECTION LAYOUT FOR CABLE INFORMATION (NOT TO SCALE)

## PLAN VIEW

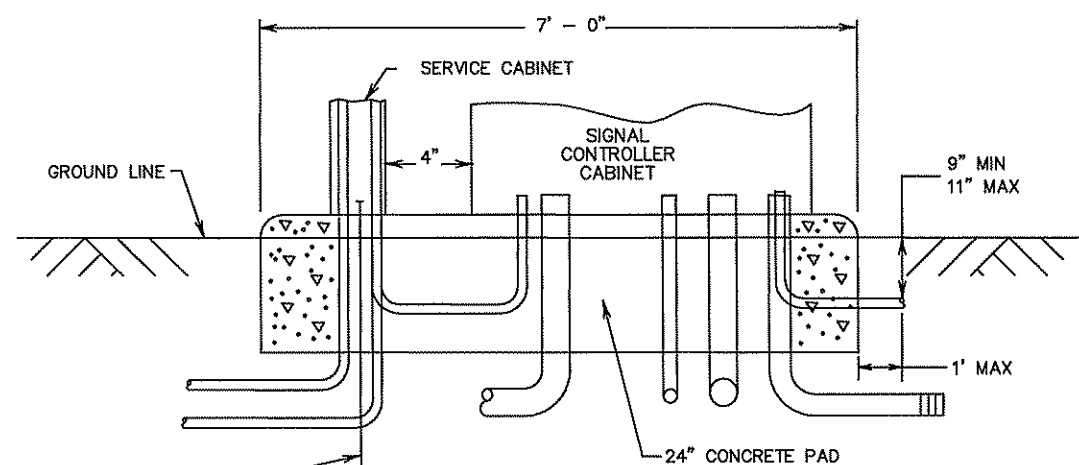
CSAH 116 (BUNKER LAKE BOULEVARD NW)  
AT CSAH 7 (7TH AVENUE NW)



## SIDE VIEW

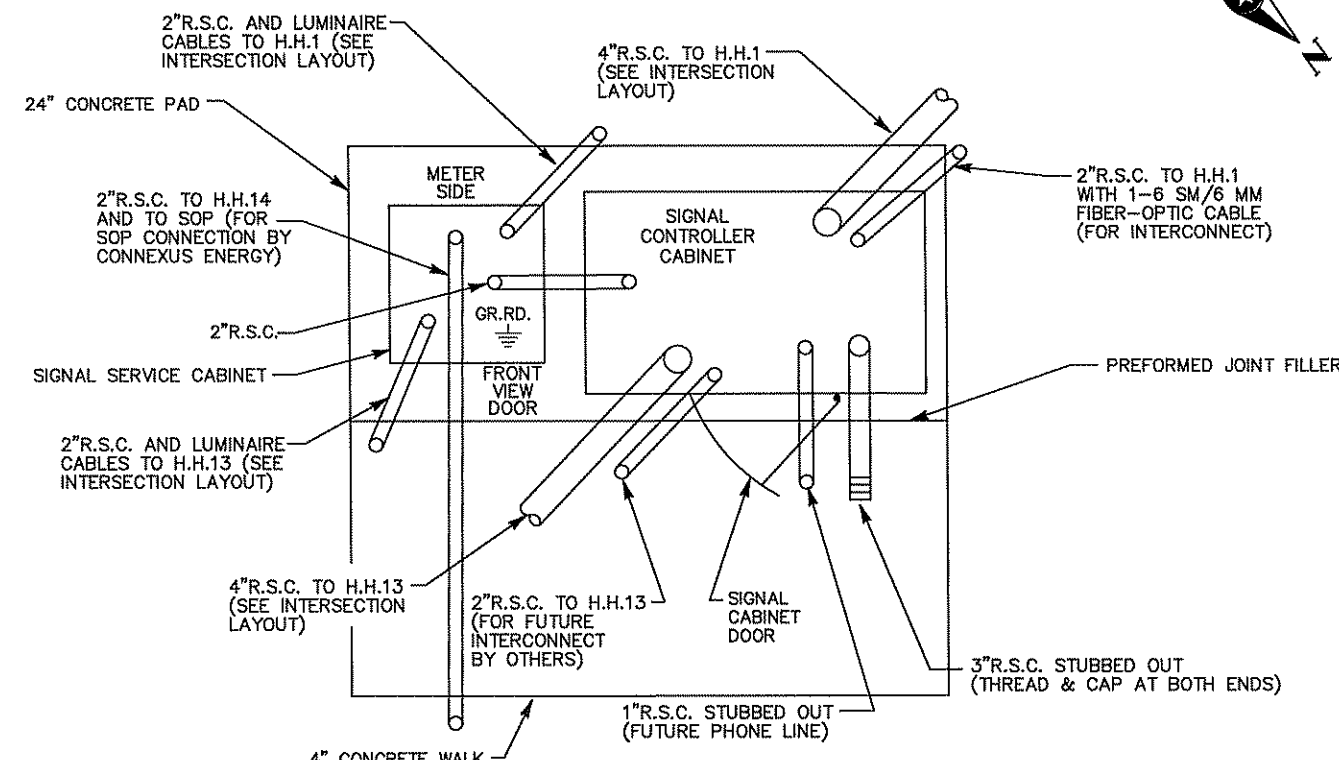


## FRONT VIEW



## PLAN VIEW

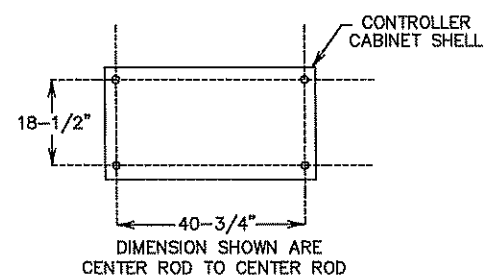
CSAH 116 (BUNKER LAKE BOULEVARD NW)  
AT 38TH AVENUE NW



## NOTES:

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

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



S.P. 002-607-021  
S.P. 002-716-012  
S.A.P. 103-020-014 & 103-020-015  
S.A.P. 198-020-C\_0, 198-020-031 & 198-020-032

0271612\_SIGSHEETS.DWG 06/07/2012

DRAWN BY: JMG					
DESIGNER: JMG					
CHECKED BY: JMG					
DESIGN TEAM	NO.	BY	DATE	REVISIONS	

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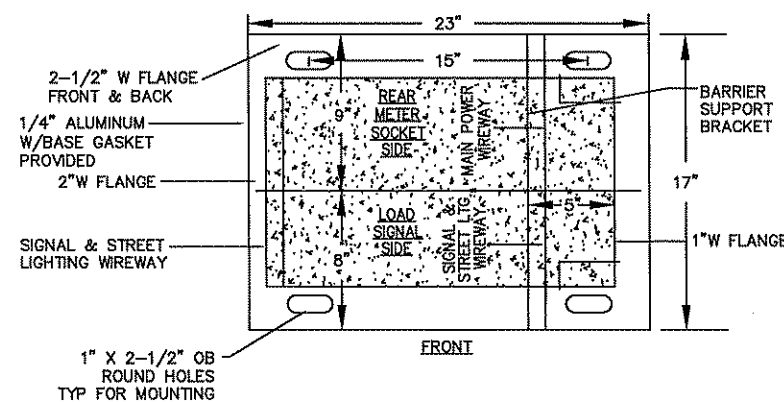
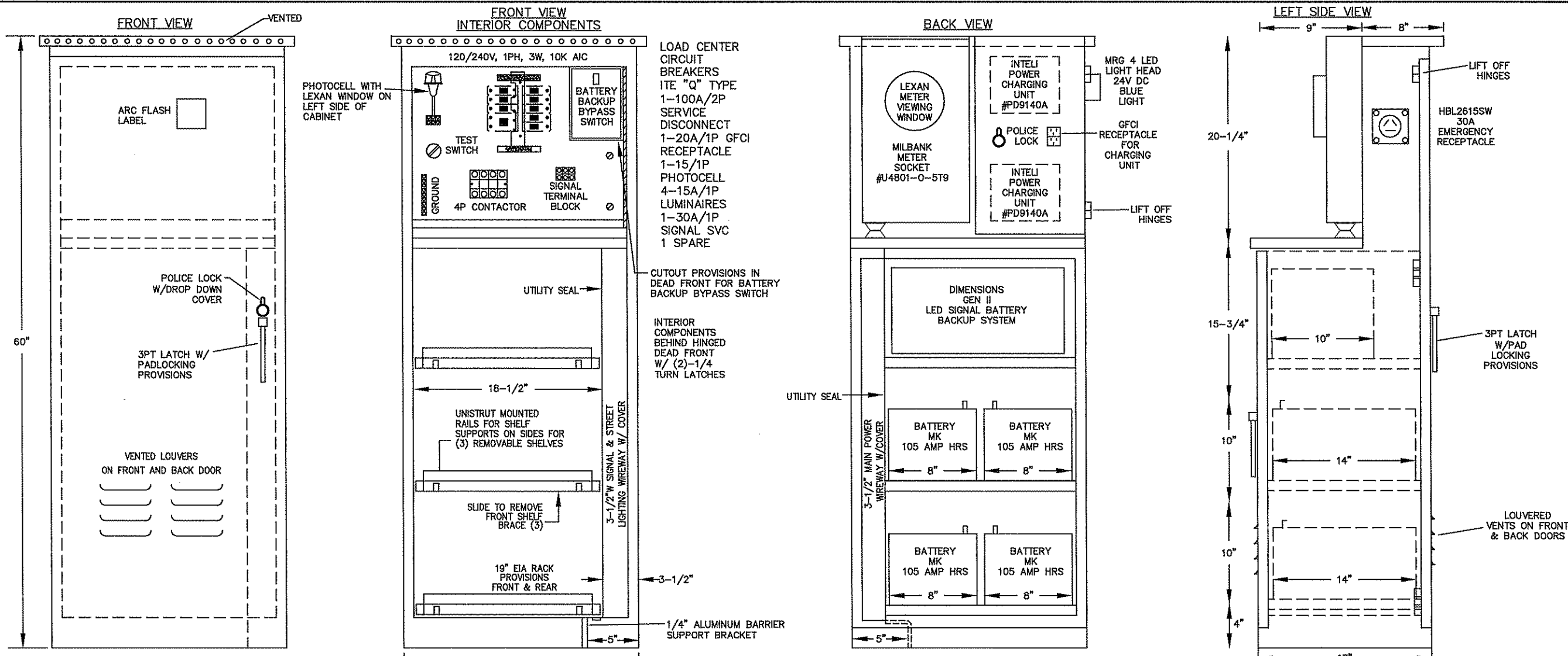
*John M. Gray*  
Name: John M. Gray, PE  
Lic. No. 22457  
Date: June 7, 2012

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

**ANOKA COUNTY, MINNESOTA**  
CITIES OF ANDOVER, ANOKA

**TRAFFIC SIGNAL SYSTEMS "A-B"**  
EQUIPMENT PAD DETAILS  
CSAH 116 (BUNKER LAKE BLVD NW)

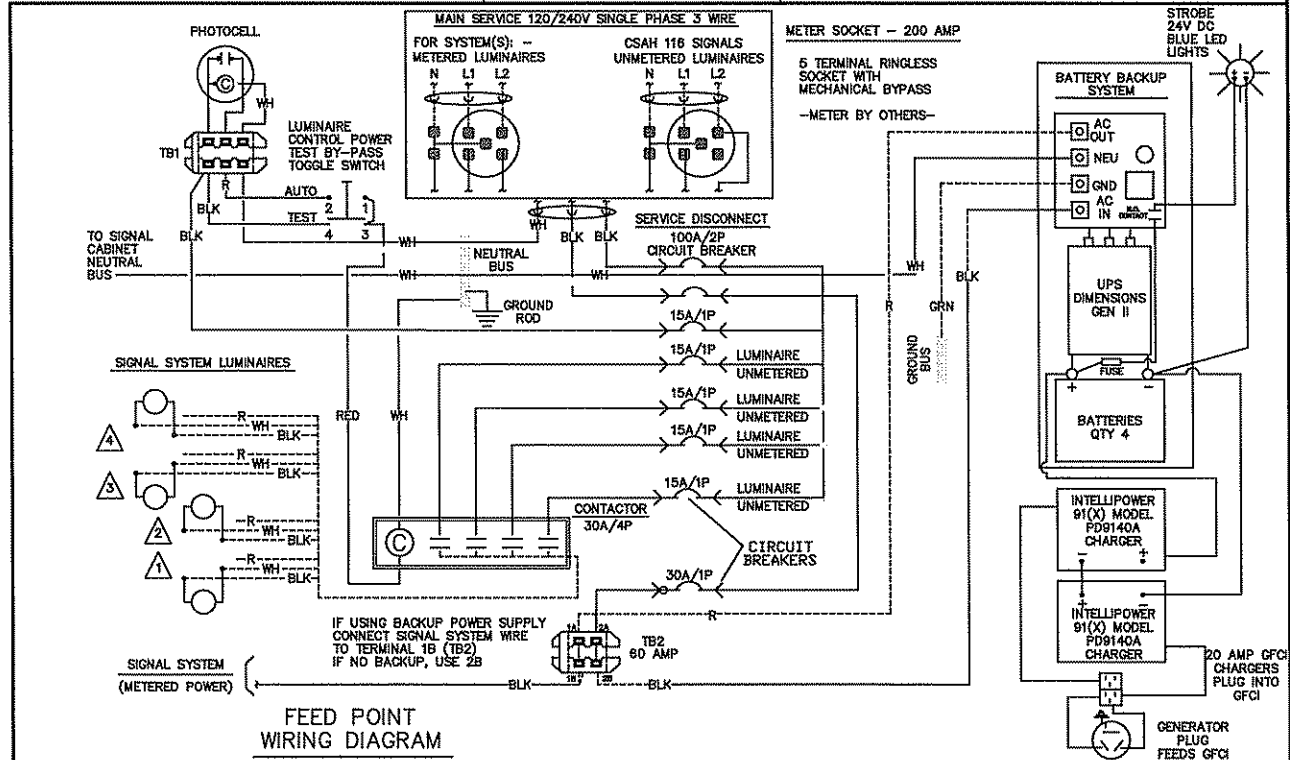
FILE NO. ANOKC 120319  
SIGNAL SHEET 2 OF 26  
**185**  
**282**



**CABINET CONSTRUCTION**

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

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



0271612\_SIGSETS.DWG  
 08/07/2012

DRAWN BY: JMG  
 DESIGNER: JMG  
 CHECKED BY: JMG

DESIGN TEAM	NO.	BY	DATE	REVISIONS

S.P. 002-607-021  
 S.P. 002-716-012  
 S.A.P. 103-020-014 & 103-020-015  
 S.A.P. 198-020-000, 198-020-031 & 198-020-032

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ANOKA COUNTY,  
 MINNESOTA  
 CITIES OF ANDOVER, ANOKA

TRAFFIC SIGNAL SYSTEMS "A-B"  
 SERVICE CABINET DETAILS  
 CSAH 116 (BUNKER LAKE BLVD NW)

FILE NO.  
 ANOKC 120319  
 SIGNAL SHEET  
 3 OF 26

186  
 282

MAST ARM MOUNTED SIGNS								
SIGN PANELS -- TYPE D (FURNISH AND INSTALL)								
SIGNAL SYSTEM	SIGN PANEL	SIZE (Inches)	NO. REQ.	BRACKETS PER SIGN	BRACKET SPACING (**)	AREA (sq. ft.) PER SIGN	POLE NO.	a
A	D-1	150x24	1	5	-	25.00	1	28'
A	D-2	90x24	1	4	-	15.00	3	28'
A	D-3	150x24	1	5	-	25.00	5	34'
A	D-4	90x24	1	4	-	15.00	7	34'
B	D-5	96x24	1	4	-	16.00	1	28'
B	D-6	96x24	1	4	-	16.00	3	28'
B	D-7	150x24	1	5	-	25.00	4	6'
TOTALS			7			137.00		

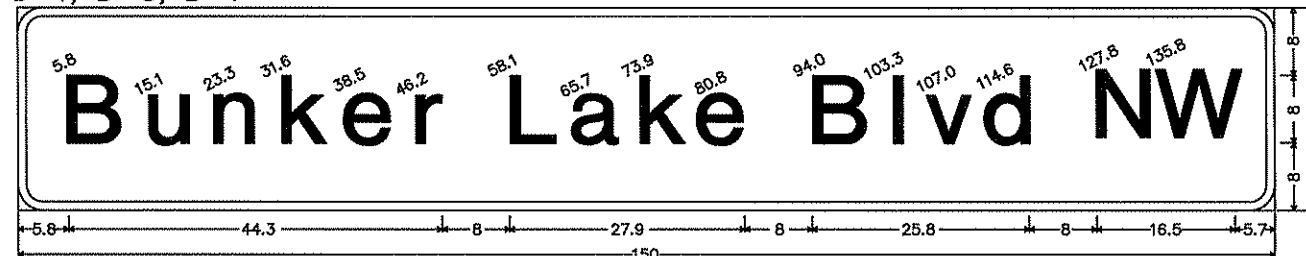
(\*\*)= SPACING BETWEEN STIFFENERS SHALL NOT EXCEED 36 INCHES AND SHALL BE UNIFORMLY SPACED. SEE SPECIAL PROVISIONS AND STANDARD SIGNS MANUAL, PAGE 105A (REVISION DATE: 7/06/07) FOR BRACKET SPACING REQUIREMENTS.

MAST ARM POLE MOUNTED SIGNS								
SIGN PANELS -- TYPE C (FURNISH AND INSTALL)								
SIGNAL SYSTEM	SIGN PANEL	SIZE (In.)	NO. REQ.	NO. POSTS PER SIGN	POST SPACING (In.)	SQ. FT. PER SIGN	POLE NO.	a
A	R6-1L	36x12	4	①	-	3.00	1,3,5,7	-
B	R6-1L	36x12	1	①	-	3.00	3	-
A	R6-1R	36x12	4	①	-	3.00	1,3,5,7	-
B	R6-1R	36x12	1	①	-	3.00	1	-
B	R9-3	18x18	2	①	-	2.25	1,4	-
TOTALS			12			34.50		

GENERAL SIGNING NOTES:

- COLOR FOR ALL TYPE D SIGNS SHALL BE WHITE LEGEND AND BORDER ON GREEN BACKGROUND, FULLY REFLECTORIZED.
- CORNERS EXTENDING BEYOND THE BORDER SHALL NOT BE TRIMMED.
- FOR STRUCTURAL DETAILS OF MAST ARM MOUNTED SIGNS, SEE STANDARD SIGNS MANUAL, PAGE 105A (REVISION DATE: 7/06/07), AND SPECIAL PROVISIONS.
- SEE STANDARD SIGNS MANUAL FOR DETAILED DRAWINGS OF TYPE C SIGN PANELS.
- FURNISHING AND INSTALLING TYPE C AND D SIGNS SHALL BE INCLUDED UNDER ITEM NO. 2565 (TRAFFIC CONTROL SIGNAL SYSTEMS A-B). SEE SPECIAL PROVISIONS.
- ALL NEW TYPE C AND D SIGN PANELS SHALL BE FABRICATED USING HP SHEETING. SEE SPECIAL PROVISIONS.
- ① = INSTALL SIGN PANEL ON TRAFFIC SIGNAL POLE.

D-1, D-3, D-7



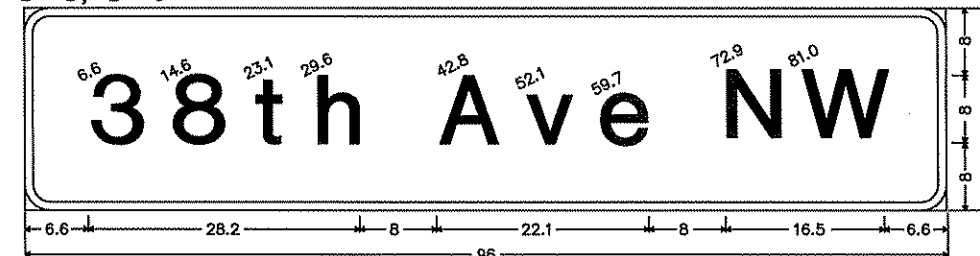
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[Bunker Lake Blvd NW] E Mod;

D-2, D-4

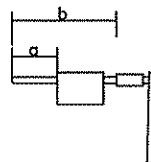


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[7th Ave NW] E Mod;

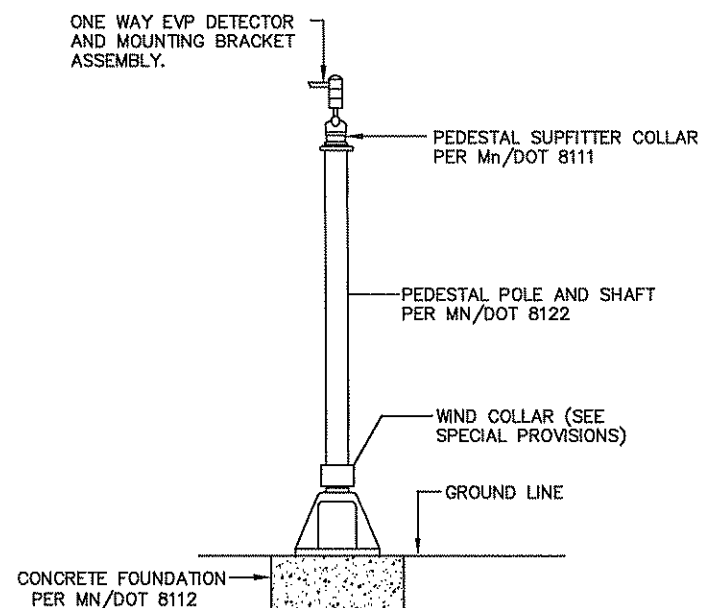
D-5, D-6



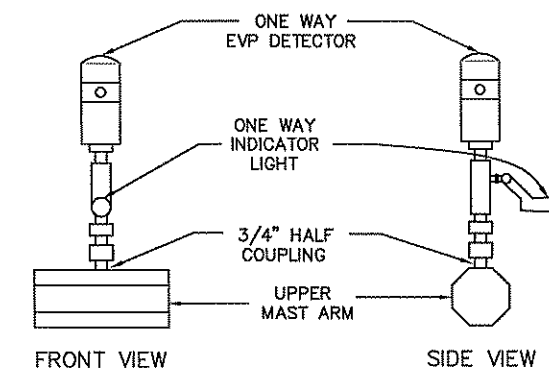
3.0" Radius, 1.0" Border, White on Green;  
[38th Ave NW] E Mod;



PEDESTAL POLE MOUNTED  
EVP DETECTOR DETAIL



EVP DETECTOR AND LIGHT  
MOUNTING DETAIL ON MAST ARM



S.P. 002-607-021  
S.P. 002-716-012  
S.A.P. 103-020-014 & 103-020-015  
S.A.P. 198-020-C 0, 198-020-031 & 198-020-032

DRAWN BY: JMG  
DESIGNER: JMG  
CHECKED BY: JMG

NO.	BY	DATE	REVISIONS

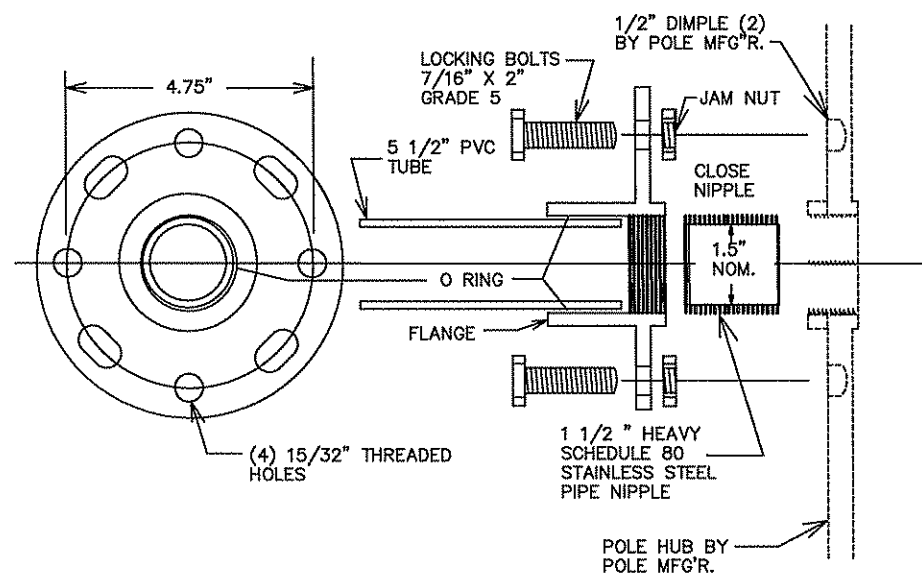
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.  
Name: John M. Gray, PE  
Date: June 7, 2012  
Lic. No. 22457

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

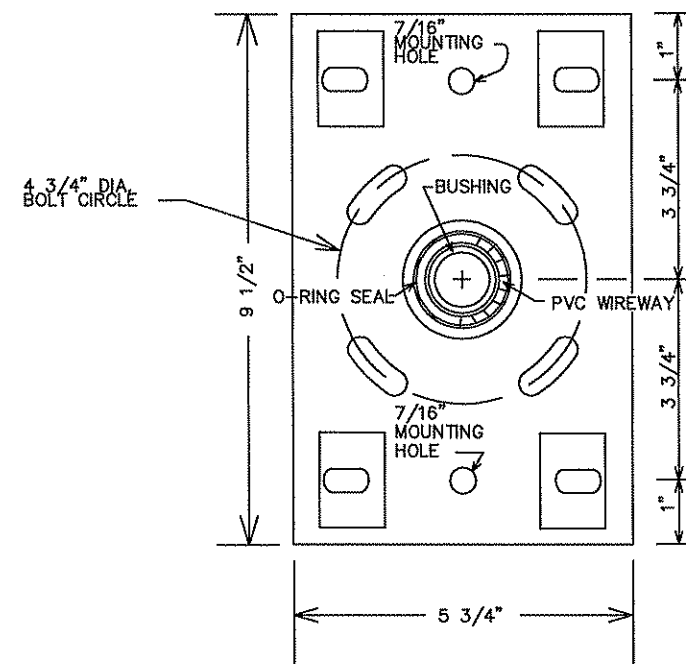
ANOKA COUNTY,  
MINNESOTA  
CITIES OF ANDOVER, ANOKA

TRAFFIC SIGNAL SYSTEMS 'A-B'  
SIGNING AND EVP DETAILS  
CSAH 116 (BUNKER LAKE BLVD NW)

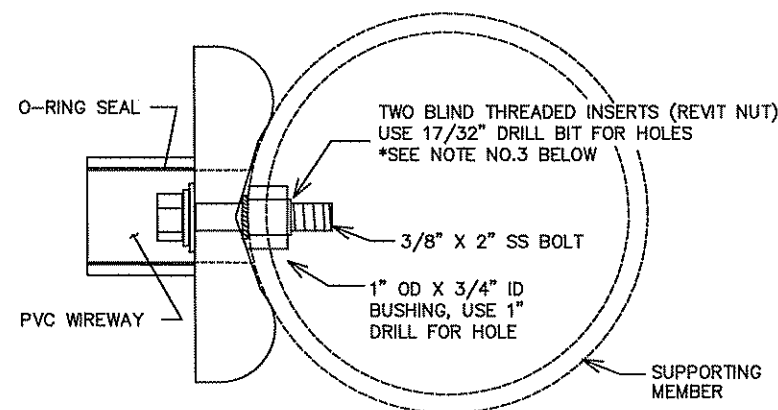
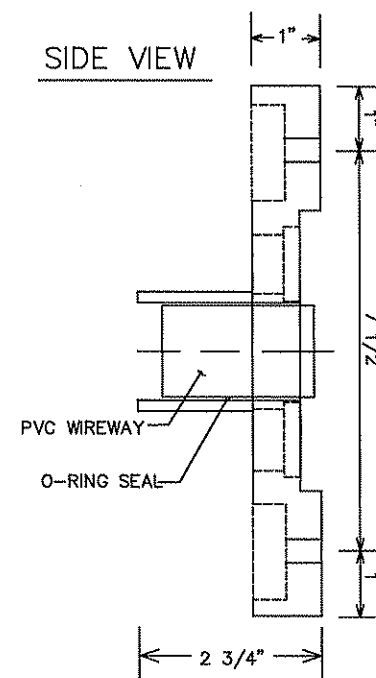
FILE NO. 187  
SIGNAL SHEET 282  
4 OF 26



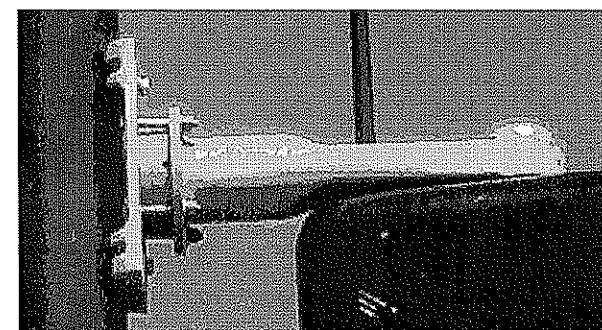
**THREADED HUB AND FLANGE POLE ADAPTOR**



**BOLT ON HUB & FLANGE**

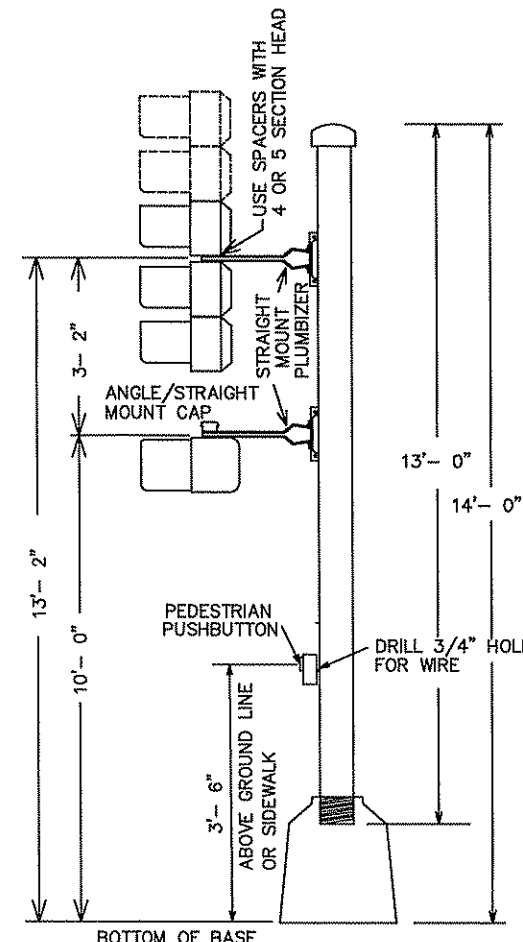


**TOP VIEW**

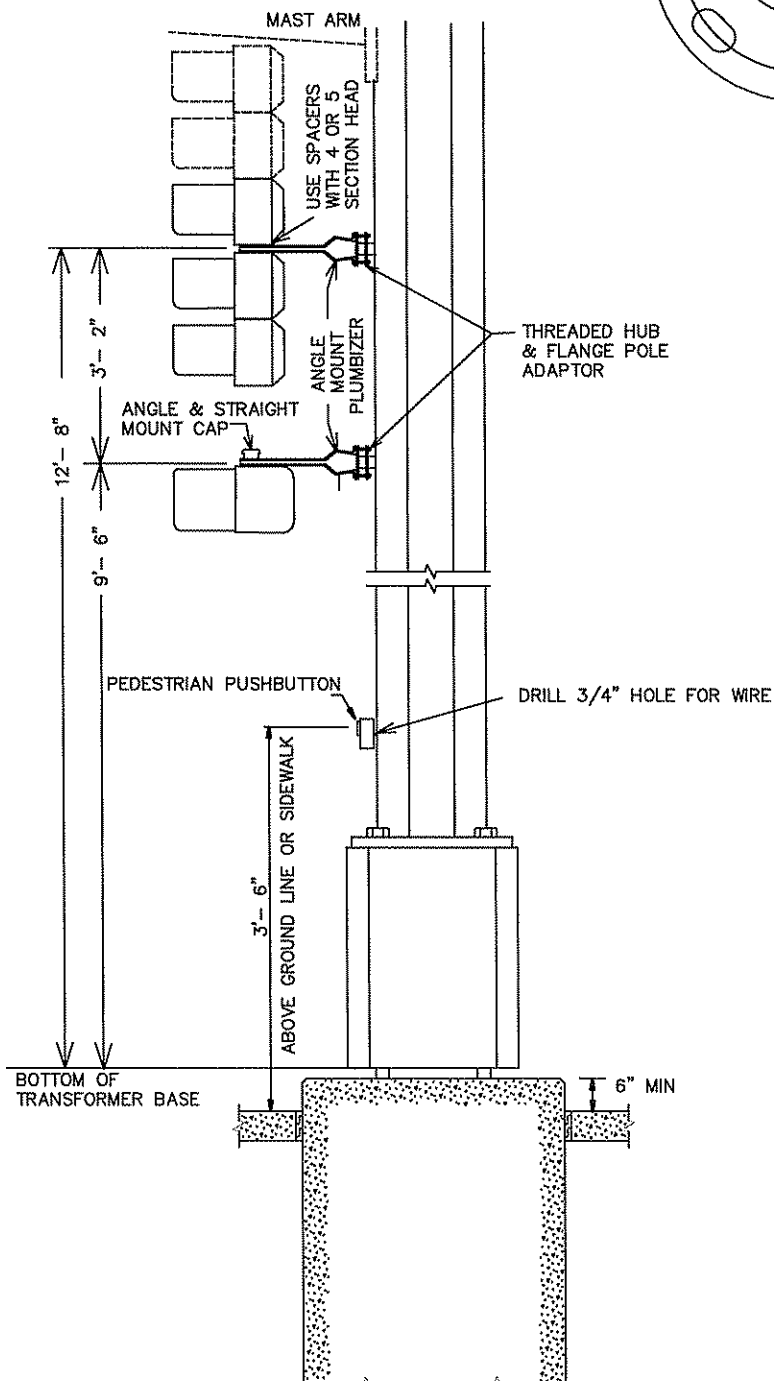


NOTE:

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



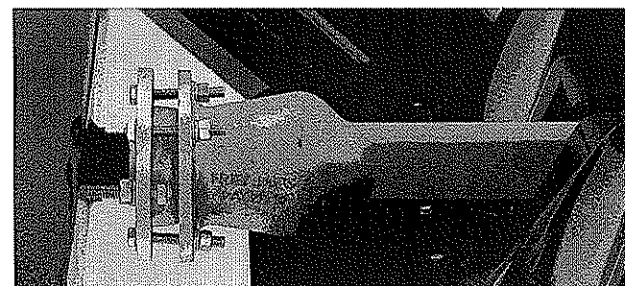
**TYPICAL PEDESTAL MOUNTING**  
NOT TO SCALE



**TYPICAL SIGNAL POLE MOUNTING**  
NOT TO SCALE

NOTE:

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



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

Date: June 7, 2012 Name: John M. Gray, PE Lic. No. 22457

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

ANOKA COUNTY, MINNESOTA CITIES OF ANDOVER, ANOKA

TRAFFIC SIGNAL SYSTEMS 'A-B' ONE WAY POLE MOUNT DETAILS CSAH 116 (BUNKER LAKE BLVD NW)

FILE NO. ANOKC 120319 SIGNAL SHEET 5 OF 26

188 282

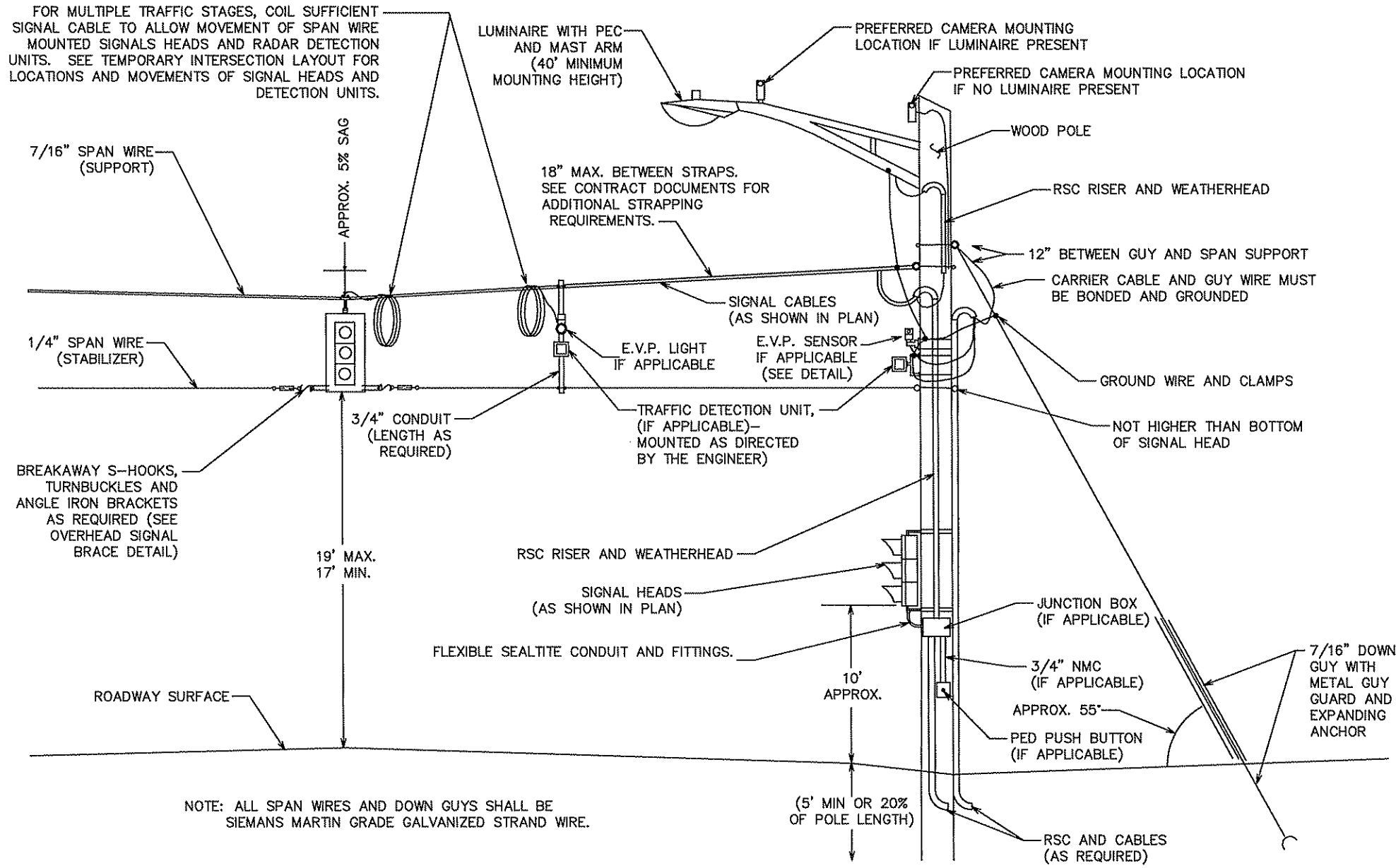
S.P. 002-607-021 S.P. 002-716-012 S.A.P. 103-020-014 & 103-020-015 S.A.P. 198-020-010, 198-020-031 & 198-020-032

DRAWN BY: JMG  
DESIGNER: JMG  
CHECKED BY: JMG

DESIGN TEAM	NO.	BY	DATE	REVISIONS

**TYPICAL WOOD POLE AND SPAN WIRE MOUNTED TRAFFIC SIGNALS**

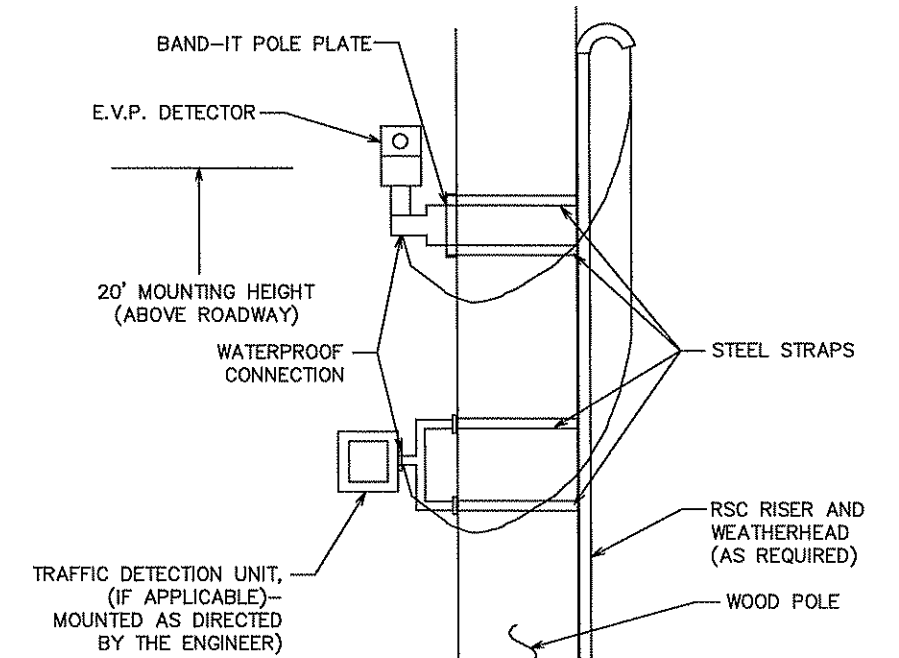
(NOT TO SCALE)



NOTE: ALL SPAN WIRES AND DOWN GUYS SHALL BE SIEMANS MARTIN GRADE GALVANIZED STRAND WIRE.

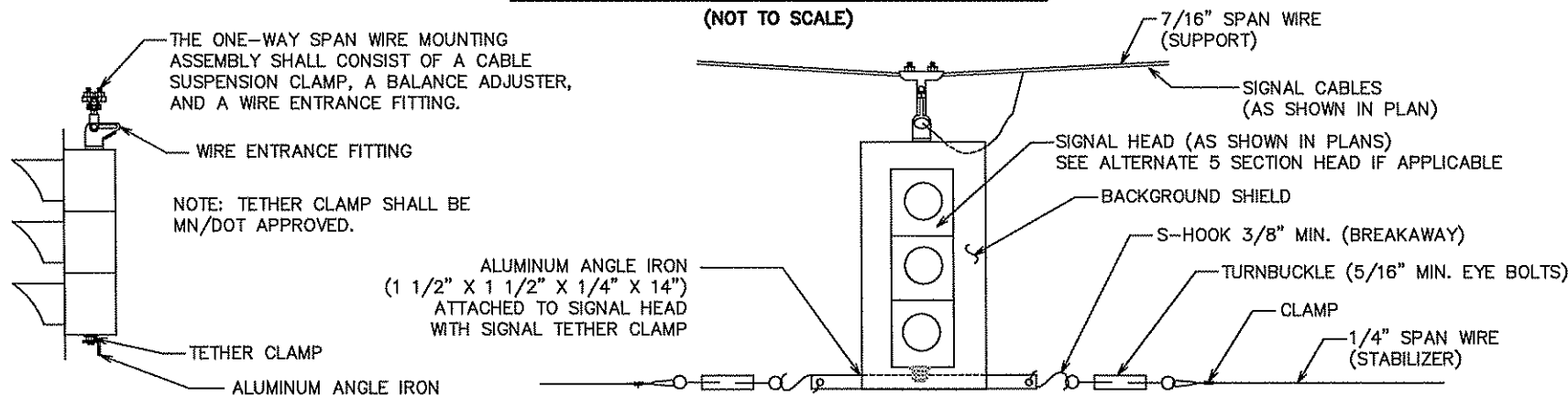
**E.V.P. OR TRAFFIC DETECTOR WOOD POLE MOUNT**

(NOT TO SCALE)



**OVERHEAD SIGNAL BRACE DETAIL**

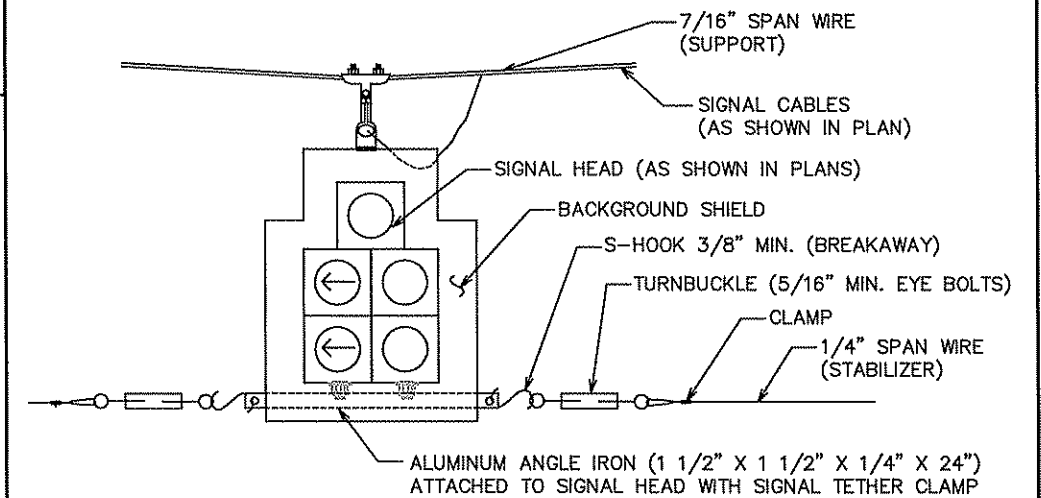
(NOT TO SCALE)



NOTE: TETHER CLAMP SHALL BE MN/DOT APPROVED.

**5 SECTION HEAD OVERHEAD SIGNAL BRACE DETAIL**

(NOT TO SCALE)



S.P. 002-607-021  
S.P. 002-716-012  
S.A.P. 103-020-014 & 103-020-015  
S.P. 198-020-031 & 198-020-032

0271612\_SIGSETS.DWG  
08/07/2012

DRAWN BY: JMG				
DESIGNER: JMG				
CHECKED BY: JMG				
DESIGN TEAM	NO.	BY	DATE	REVISIONS

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*John M. Gray*  
Name: John M. Gray, PE  
Date: June 7, 2012  
Lic. No. 22457

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

**ANOKA COUNTY, MINNESOTA**  
CITIES OF ANDOVER, ANOKA

**TEMPORARY SIGNAL SYSTEM**  
WOOD POLE AND SPAN WIRE DETAILS  
CSAH 116 AT CSAH 7 (7TH AVE NW)

FILE NO.  
ANOKC 120319  
SIGNAL SHEET  
6 OF 26

189  
282

- NOTES:**
- 1) LOCATION OF FOUNDATIONS, WOOD POLES, AND NEW HANDHOLE 100 SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER.
  - 2) NEW HANDHOLE 100 SHALL BE PVC HANDHOLE WITH METAL FRAME AND COVER.
  - 3) EACH SIGNAL FACE SHALL HAVE BACKGROUND SHIELD.
  - 4) SEE DETAILS FOR WOOD POLE AND SPAN WIRE MOUNTING DETAILS.
  - 5) ALL NEW VEHICLE SIGNAL INDICATIONS SHALL BE LED AND SHALL BE FURNISHED AND INSTALLED BY CONTRACTOR AS SHOWN BELOW.
  - 6) ALL TRAFFIC SIGNAL MATERIALS AND ELECTRICAL EQUIPMENT TO BE FURNISHED AND INSTALLED BY CONTRACTOR FOR THE TEMPORARY SIGNAL SYSTEM SHALL BE APPROVED BY THE ENGINEER PRIOR TO INSTALLATION AT THE INTERSECTION. SEE SPECIAL PROVISIONS.
  - 7) MOVEMENT OF HEADS, EVP DETECTORS AND INDICATOR LIGHTS, AND VIDEO DETECTOR CAMERAS AS NECESSARY SHALL BE INCLUDED IN THE PAY ITEM FOR "TEMPORARY SIGNAL SYSTEM."
  - 8) PROPOSED TEMPORARY SIGNAL SYSTEM PLAN IS PROPOSED LAYOUT FOR STAGES 1 AND 2 OF THE TRAFFIC CONTROL PLAN. PLACEMENT OF ALL SIGNAL INDICATIONS AND OTHER ITEMS FOR STAGES 1 AND 2 STAGING PLANS SHALL BE IN ACCORDANCE WITH STAGING PLANS INCLUDED ELSEWHERE IN THE PLANS.
  - 9) CONTRACTOR SHALL BAG (AND MAKE IN-OPERATIONAL) ALL VEHICLE SIGNAL HEADS NOT IN USE DURING EACH STAGE OF CONSTRUCTION.
  - 10) SEE SPECIAL PROVISIONS REGARDING COUNTY FURNISHED MATERIALS.
  - 11) CONTRACTOR SHALL MAINTAIN A SIGNAL SYSTEM IN OPERATION AT THIS INTERSECTION AT ALL TIMES, UNLESS OTHERWISE APPROVED BY THE ENGINEER FOR THE SIGNAL SYSTEM TO BE TURNED OFF DURING NON-PEAK TRAFFIC PERIODS (FOR SWITCHOVERS FROM EXISTING WOOD POLE SYSTEM TO TEMPORARY SYSTEM, AND FROM TEMPORARY SYSTEM TO NEW PERMANENT SYSTEM).

**(A) INPLACE (S & I) CONTROLLER AND CABINET SIGNAL SERVICE CABINET**

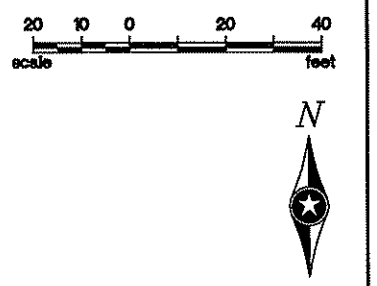
**F & I TEMPORARY CABINET BASES (FOR CONTROLLER AND SERVICE CABINETS) BETWEEN CONTROLLER CABINET AND SERVICE CABINET:**

METERED SIGNAL SERVICE  
2"R.S.C.  
3-1/c#6  
UNMETERED STREET LIGHT SERVICE  
4-3/c#14 (LUM)  
CONTROLLER CABINET TO H.H.100:  
2-4"R.S.C.  
4-12/c#14  
2-6/c#14  
10-4/c#14  
4-3/c#14 (EVP)  
8-2/c#14  
4-3/c#20 (EVP)  
6-3/c#14 (VIDEO)  
4-3/c#14 (LUM)  
SERVICE CABINET TO SOP:  
2"R.S.C.  
3-1/c#2  
1-7/16" SPAN WIRE  
1-1/4" SPAN WIRE  
1-12/c#14  
5-4/c#14  
1-3/c#14 (EVP)  
4-2/c#14  
1-3/c#20 (EVP)  
3-3/c#14 (VIDEO)  
2-3/c#14 (LUM)

**INSTALL VIDEO DETECTORS (FURNISHED BY COUNTY)**

CAMERA NO.	INTERSECTION APPROACH FACING	SIGNAL POLE (CAMERA) LOCATION	CAMERA MOUNTED AT	MOUNTING HEIGHT
V2/5-1	SB CSAH 7	WP 1, 4 (*)	ON LUMINAIRE EXTENSION	40'
V3-1	EB CSAH 116	WOOD POLE 4	ON LUMINAIRE EXTENSION	40'
V4-1	WB CSAH 116	WOOD POLE 2	ON LUMINAIRE EXTENSION	40'
V6/1-1	NB CSAH 7	WP 2, 3 (*)	ON LUMINAIRE EXTENSION	40'

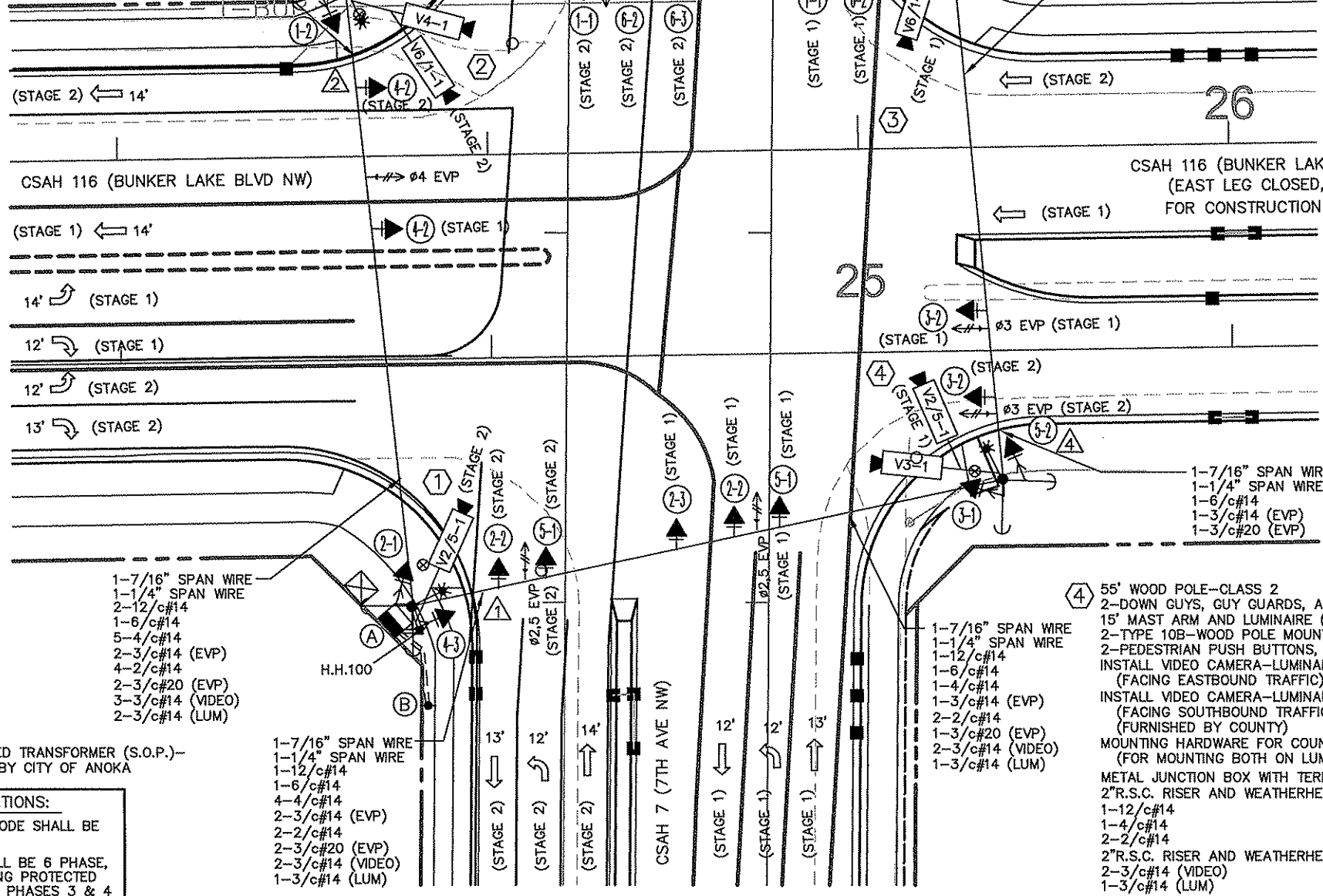
NOTE: MOUNTING HEIGHT = APPROXIMATE HEIGHT ABOVE ADJACENT GROUND LINE.  
(\* DENOTES CAMERA TO BE RELOCATED DURING STAGE 2 (SEE PLANS).)



NOTE: THIS PLAN IS INTENDED TO SHOW WOOD POLE LOCATION AND EQUIPMENT THAT IS TO BE USED AS PART OF THE TEMPORARY SIGNAL SYSTEM INSTALLATION. SPECIFIC ROADWAY ELEMENTS MAY OR MAY NOT BE INPLACE AT THE TIME THE TEMPORARY SIGNAL IS IN OPERATION. THE LOCATION OF OVERHEAD SIGNALS AND DETECTORS FOR EACH STAGE OR PHASE WILL NEED TO BE ADJUSTED ACCORDINGLY.

- 1** 55' WOOD POLE-CLASS 2  
2-DOWN GUYS, GUY GUARDS, AND SCREW ANCHORS  
15' MAST ARM AND LUMINAIRE (250 W HPS) WITH PEC  
2-TYPE 10B-WOOD POLE MOUNTED 90° & 180°  
2-PEDESTRIAN PUSH BUTTONS, R10-4b SIGNS, AND RISERS  
HUB FOR VIDEO CAMERA INSTALLATION-LUMINAIRE MAST ARM MOUNTED (FOR CAMERA TO BE RELOCATED TO THIS LOCATION DURING STAGE 2 OF CONSTRUCTION (FOR V2/5-1)  
MOUNTING HARDWARE FOR COUNTY FURNISHED VIDEO CAMERA (FOR MOUNTING ON LUMINAIRE MAST ARM DURING STAGE 2)  
METAL JUNCTION BOX WITH TERMINAL BLOCKS  
2-4"R.S.C. RISERS AND WEATHERHEADS FROM H.H.100 TO SPAN WIRES WITH:  
3-12/c#14  
2-6/c#14  
9-4/c#14  
4-3/c#14 (EVP)  
6-2/c#14  
4-3/c#20 (EVP)  
6-3/c#14 (VIDEO)  
4-3/c#14 (LUM)  
2"R.S.C. BELOW JUNCTION BOX TO H.H.100 WITH:  
1-12/c#14  
1-4/c#14  
2-2/c#14  
2"R.S.C. RISER AND WEATHERHEAD ABOVE SPAN WIRE WITH:  
1-3/c#14 (VIDEO)  
1-3/c#14 (LUM)

1-7/16" SPAN WIRE  
1-1/4" SPAN WIRE  
2-12/c#14  
5-4/c#14  
1-3/c#14 (EVP)  
4-2/c#14  
1-3/c#20 (EVP)  
3-3/c#14 (VIDEO)  
2-3/c#14 (LUM)

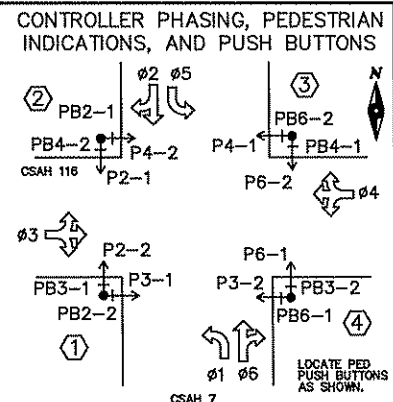


- 2** 55' WOOD POLE-CLASS 2  
2-DOWN GUYS, GUY GUARDS, AND SCREW ANCHORS  
15' MAST ARM AND LUMINAIRE (250 W HPS) WITH PEC  
2-TYPE 10B-WOOD POLE MOUNTED 90° & 180°  
2-PEDESTRIAN PUSH BUTTONS, R10-4b SIGNS, AND RISERS  
INSTALL VIDEO CAMERA-LUMINAIRE MAST ARM MOUNTED (FACING WESTBOUND TRAFFIC) (V4-1) (FURNISHED BY COUNTY)  
MOUNTING HARDWARE FOR COUNTY FURNISHED VIDEO CAMERA (FOR MOUNTING ON LUMINAIRE MAST ARM)  
HUB FOR ADDITIONAL CAMERA-LUMINAIRE MAST ARM MOUNTED (FOR CAMERA TO BE RELOCATED TO THIS LOCATION DURING STAGE 2 OF CONSTRUCTION) (FOR V6/1-1)  
METAL JUNCTION BOX WITH TERMINAL BLOCKS  
2"R.S.C. RISER AND WEATHERHEAD ABOVE JUNCTION BOX WITH:  
1-12/c#14  
1-4/c#14  
2-2/c#14  
2"R.S.C. RISER AND WEATHERHEAD ABOVE SPAN WIRE WITH:  
2-3/c#14 (VIDEO)  
1-3/c#14 (LUM)

- 3** 55' WOOD POLE-CLASS 2  
2-DOWN GUYS, GUY GUARDS, AND SCREW ANCHORS  
15' MAST ARM AND LUMINAIRE (250 W HPS) WITH PEC  
2-TYPE 10B-WOOD POLE MOUNTED 90° & 180°  
2-PEDESTRIAN PUSH BUTTONS, R10-4b SIGNS, AND RISERS  
INSTALL VIDEO CAMERA-LUMINAIRE MAST ARM MOUNTED (FACING NORTHBOUND TRAFFIC) (V6/1-1, STAGE 1) (FURNISHED BY COUNTY)  
MOUNTING HARDWARE FOR COUNTY FURNISHED VIDEO CAMERA (FOR MOUNTING ON LUMINAIRE MAST ARM)  
METAL JUNCTION BOX WITH TERMINAL BLOCKS  
2"R.S.C. RISER AND WEATHERHEAD ABOVE JUNCTION BOX WITH:  
1-12/c#14  
1-4/c#14  
2-2/c#14  
2"R.S.C. RISER AND WEATHERHEAD ABOVE SPAN WIRE WITH:  
1-3/c#14 (VIDEO)  
1-3/c#14 (LUM)

- 4** 55' WOOD POLE-CLASS 2  
2-DOWN GUYS, GUY GUARDS, AND SCREW ANCHORS  
15' MAST ARM AND LUMINAIRE (250 W HPS) WITH PEC  
2-TYPE 10B-WOOD POLE MOUNTED 90° & 180°  
2-PEDESTRIAN PUSH BUTTONS, R10-4b SIGNS, AND RISERS  
INSTALL VIDEO CAMERA-LUMINAIRE MAST ARM MOUNTED (FACING EASTBOUND TRAFFIC) (V3-1) (FURNISHED BY COUNTY)  
INSTALL VIDEO CAMERA-LUMINAIRE MAST ARM MOUNTED (FACING SOUTHBOUND TRAFFIC) (V2/5-1, STAGE 1) (FURNISHED BY COUNTY)  
MOUNTING HARDWARE FOR COUNTY FURNISHED VIDEO CAMERAS (FOR MOUNTING BOTH ON LUMINAIRE MAST ARM)  
METAL JUNCTION BOX WITH TERMINAL BLOCKS  
2"R.S.C. RISER AND WEATHERHEAD ABOVE JUNCTION BOX WITH:  
1-12/c#14  
1-4/c#14  
2-2/c#14  
2"R.S.C. RISER AND WEATHERHEAD ABOVE SPAN WIRE WITH:  
2-3/c#14 (VIDEO)  
1-3/c#14 (LUM)

NOTE: CONTRACTOR SHALL BAG SIGNAL FACE 2-3 DURING STAGE 2 AND SIGNAL FACE 6-3 DURING STAGE 1.



**(B) GROUND MOUNTED TRANSFORMER (S.O.P.) TO BE F & I BY CITY OF ANOKA**

**SIGNAL SYSTEM OPERATIONS:**

- SIGNAL SYSTEM FLASH MODE SHALL BE ALL RED.
- NORMAL OPERATION SHALL BE 6 PHASE, WITH PHASES 1 & 5 BEING PROTECTED LEFT TURN PHASES, AND PHASES 3 & 4 BEING SPLIT PHASED.

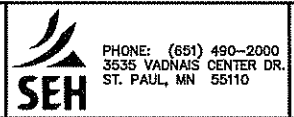
DRAWN BY: JMG  
DESIGNER: JMG  
CHECKED BY: JMG

DESIGN TEAM	NO.	BY	DATE

REVISIONS

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

Date: June 7, 2012 Name: John M. Gray, PE Lic. No. 22457



**ANOKA COUNTY, MINNESOTA**  
CITIES OF ANDOVER, ANOKA

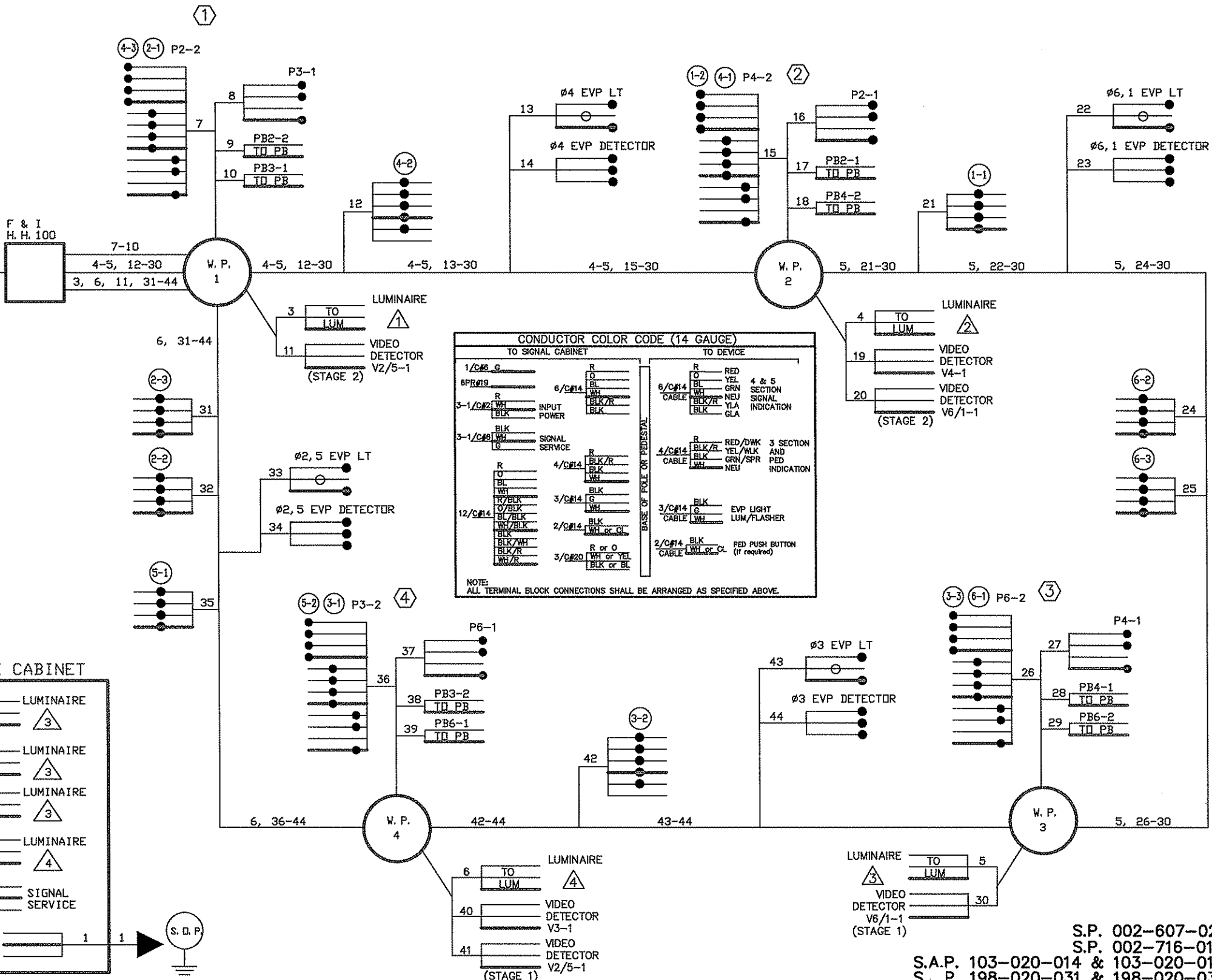
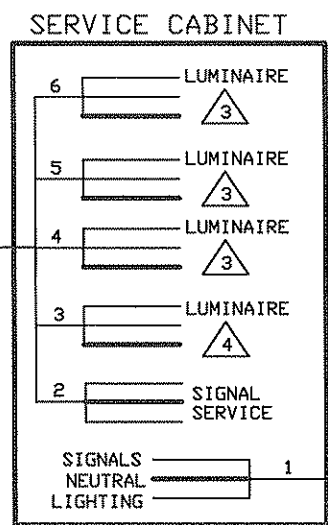
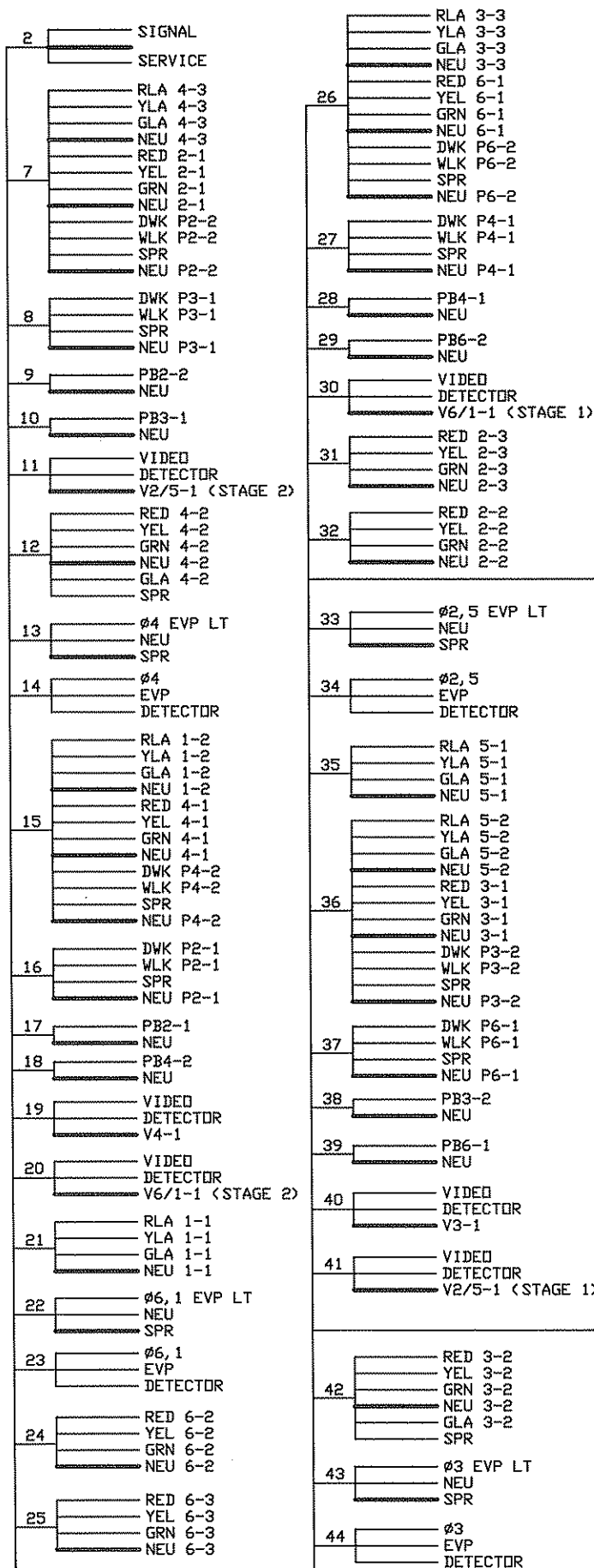
**TEMPORARY SIGNAL SYSTEM INTERSECTION LAYOUT**  
CSAH 116 AT CSAH 7 (7TH AVE NW)

FILE NO. ANOKC 120319	<b>190</b>
SIGNAL SHEET 7 OF 26	

S.P. 002-607-021  
S.P. 002-716-012  
S.A.P. 103-020-014 & 103-020-015  
S. P. 198-020-031 & 198-020-032

0271612\_SIGNAGE-PERMDWG 08/07/2012

CONTROLLER CABINET



**CONDUCTOR COLOR CODE (14 GAUGE)**

TO SIGNAL CABINET	TO DEVICE
1/C#6 G	R RED
6PR#19	O YEL
R	BL GRN
3-1/C#2 WH	WH NEU
BLK	BLK/R YLA
3-1/C#8 WH	BLK GLA
BLK	R RED/DWK 3 SECTION
3-1/C#8 WH	O YEL/WLK AND
R	BLK/R GRN/SPR PED
O	WH NEU
BL	4/C#14 BLK GRN/SPR PED
WH	WH NEU
3/C#14 G	3/C#14 BLK EVP LIGHT
R/Y/BLK	CABLE WH LUM/FLASHER
O/BLK	3/C#14 G
BL/BLK	2/C#14 BLK PED PUSH BUTTON
WH/BLK	CABLE WH or CL (if required)
BLK	R or O
BLK/WH	WH or YEL
BLK/R	BLK or BL
WH/R	

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

0271612\_SIGRASE-PER/DWG  
08/07/2012

DRAWN BY: JMG			
DESIGNER: JMG			
CHECKED BY: JMG			
DESIGN TEAM	NO.	BY	DATE

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Date: June 7, 2012 Lic. No. 22457

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

**ANOKA COUNTY, MINNESOTA**  
CITIES OF ANDOVER, ANOKA

**TEMPORARY SIGNAL SYSTEM**  
FIELD WIRING DIAGRAM  
CSAH 116 AT CSAH 7 (7TH AVE NW)

S.P. 002-607-021  
S.P. 002-716-012  
S.A.P. 103-020-014 & 103-020-015  
S.A.P. 198-020-031 & 198-020-032

FILE NO. ANOKC 120319  
SIGNAL SHEET 8 OF 26  
**191**  
**282**

**NOTES:**

- THE EXACT LOCATION OF HANDHOLES, FOUNDATIONS, AND LOOP DETECTORS SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER.
- SEE SPECIAL PROVISIONS FOR COUNTY FURNISHED MATERIALS.
- NEW HANDHOLES SHALL BE PVC HANDHOLES WITH METAL FRAMES AND COVERS.
- A 3/4" HALF COUPLING, 3/4" PIPE NIPPLE, AND CONDUIT OUTLET BODY SHALL BE FURNISHED AND INSTALLED 6 FEET FROM THE END OF EACH MAST ARM (FOR EVP).
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING THE POWER COMPANY TO ARRANGE FOR THE POWER CONNECTION (CITY OF ANOKA). SEE SPECIAL PROVISIONS.
- SEE SPECIAL PROVISIONS AND DETAILS REGARDING SIGNS TO BE FURNISHED AND INSTALLED BY CONTRACTOR (INCLUDED AS PART OF PAY ITEM FOR "TRAFFIC CONTROL SIGNAL SYSTEM A").
- EACH PEDESTRIAN INDICATION SHALL BE ONE SECTION FILLED COUNTDOWN TIMER "HAND/WALKING PERSON" INDICATION.
- ALL VEHICLE AND PEDESTRIAN SIGNAL INDICATIONS SHALL BE LED.
- EACH SIGNAL FACE SHALL HAVE A BACKGROUND SHIELD.
- SEE DETAILS, SPECIAL PROVISIONS, AND STATEMENT OF ESTIMATED QUANTITIES REGARDING BATTERY BACK-UP SIGNAL SERVICE CABINET TO BE FURNISHED AND INSTALLED BY CONTRACTOR (SEPARATE FROM ITEM NO. 2565 FOR THIS SIGNAL SYSTEM).
- LOOP DETECTOR WIRES SHALL BE CROSS-LINKED POLYETHYLENE (XLP) IN 3/4" N.M.C. SEE SPECIAL PROVISIONS.
- (\*\*) DENOTES ITEMS TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR UNDER ITEM NO. 2565 (TRAFFIC CONTROL INTERCONNECTION). SEE STATEMENT OF ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.
- (EVP) DENOTES ITEMS TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR UNDER ITEM NO. 2565 (EMERGENCY VEHICLE PREEMPTION SYSTEM "A"). SEE STATEMENT OF ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.
- SEE SPECIAL PROVISIONS REGARDING REMOVAL OF INPLACE WOOD POLE AND SPAN WIRE SIGNAL SYSTEM (INCLUDED AS PART OF PAY ITEM FOR "TRAFFIC CONTROL SIGNAL SYSTEM A").
- CONTRACTOR SHALL MAINTAIN OPERATION OF A SIGNAL SYSTEM AT THIS INTERSECTION AT ALL TIMES, UNLESS OTHERWISE APPROVED BY THE ENGINEER. SEE SPECIAL PROVISIONS AND TEMPORARY SIGNAL SYSTEM PLANS.

LED SIGNAL FACES				
ALL SIGNAL INDICATIONS SHALL BE 12"				
SIGNAL FACE	R	Y	FYA	G
1-1, 1-2, 1-3	●	●	●	●
2-1, 2-2, 2-3, 2-4	●	●	●	●
3-1, 3-2, 3-3	●	●	●	●
4-1, 4-2, 4-3, 4-4	●	●	●	●
5-1, 5-2, 5-3	●	●	●	●
6-1, 6-2, 6-3, 6-4	●	●	●	●
7-1, 7-2, 7-3	●	●	●	●
8-1, 8-2, 8-3, 8-4	●	●	●	●

MATCH LINE "C" - SEE NEXT SHEET

F & I N.M.C. LOOP DETECTORS			
NUMBER	SIZE (FT.)	LOCATION	FUNCTION
D1-1	6x6	40'	1
D1-2	6x6	10'	1
D2-1	6x6	475'	1
D2-2	6x6	475'	1
D3-1	6x6	40'	1
D3-2	6x6	40'	1
D3-3	6x6	10'	1
D3-4	6x6	10'	1
D4-1	6x6	475'	3,8
D4-2	6x6	475'	3,8
D4-3	2-6x6	5' & 20'	7
D4-4	2-6x6	5' & 20'	1
D4-5	2-6x6	5' & 20'	1

F & I N.M.C. LOOP DETECTORS			
NUMBER	SIZE (FT.)	LOCATION	FUNCTION
D5-1	6x6	40'	1
D5-2	6x6	40'	1
D5-3	6x6	10'	1
D5-4	6x6	10'	1
D6-1	6x6	400'	1
D6-2	6x6	400'	1
D7-1	6x6	40'	1
D7-2	6x6	10'	1
D8-1	6x6	300'	3,8
D8-2	6x6	300'	3,8
D8-3	2-6x6	5' & 20'	7
D8-4	2-6x6	5' & 20'	1
D8-5	2-6x6	5' & 20'	1



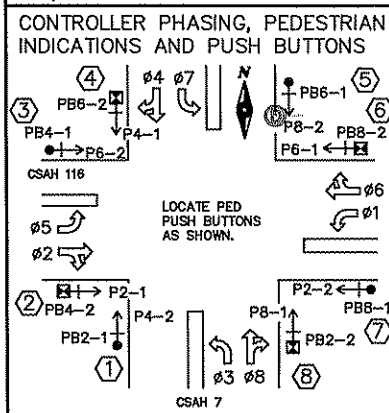
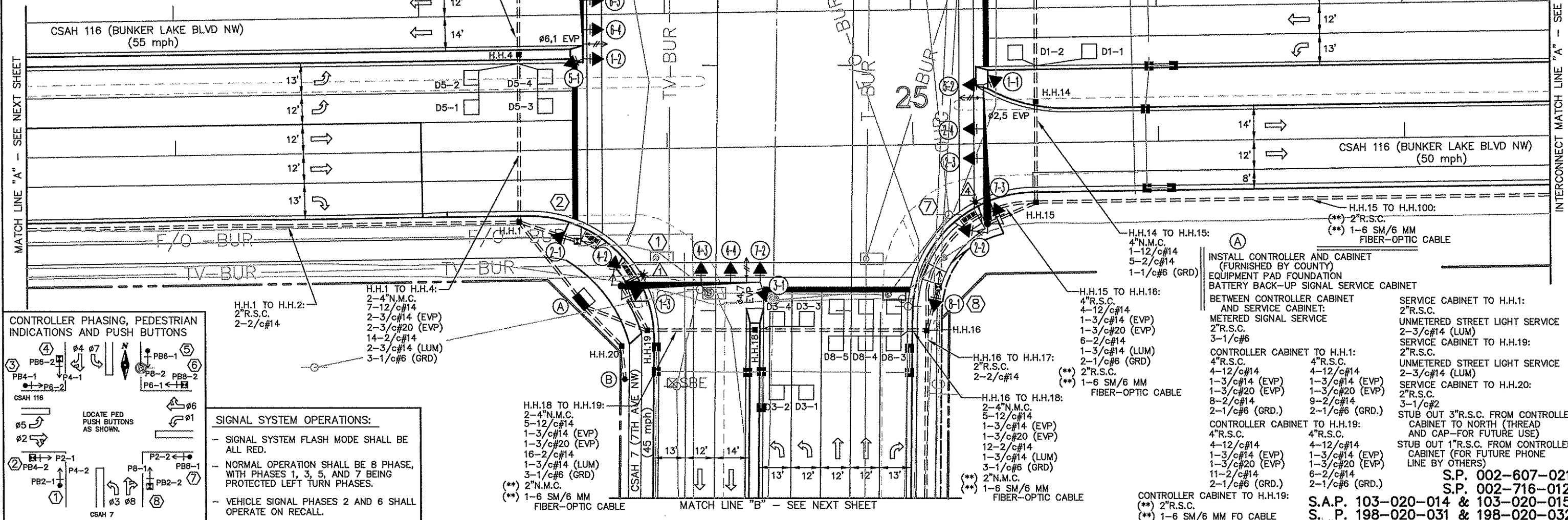
**LOOP DETECTORS FUNCTIONS:**

- CALL AND EXTEND
- EXTEND ONLY
- DELAYED CALL, IMMEDIATE EXTEND
- CARRY OVER (STRETCH)

SEE NEXT SHEET FOR DETAILED POLE NOTES.

MATCH LINE "A" - SEE NEXT SHEET

INTERCONNECT MATCH LINE "A" - SEE NEXT SHEETS



**SIGNAL SYSTEM OPERATIONS:**

- SIGNAL SYSTEM FLASH MODE SHALL BE ALL RED.
- NORMAL OPERATION SHALL BE 8 PHASE, WITH PHASES 1, 3, 5, AND 7 BEING PROTECTED LEFT TURN PHASES.
- VEHICLE SIGNAL PHASES 2 AND 6 SHALL OPERATE ON RECALL.

DRAWN BY:	JMG
DESIGNER:	JMG
CHECKED BY:	JMG

NO.	BY	DATE	REVISIONS

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

*John M. Gray*  
Name: John M. Gray, PE  
Lic. No. 22457  
Date: June 7, 2012

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

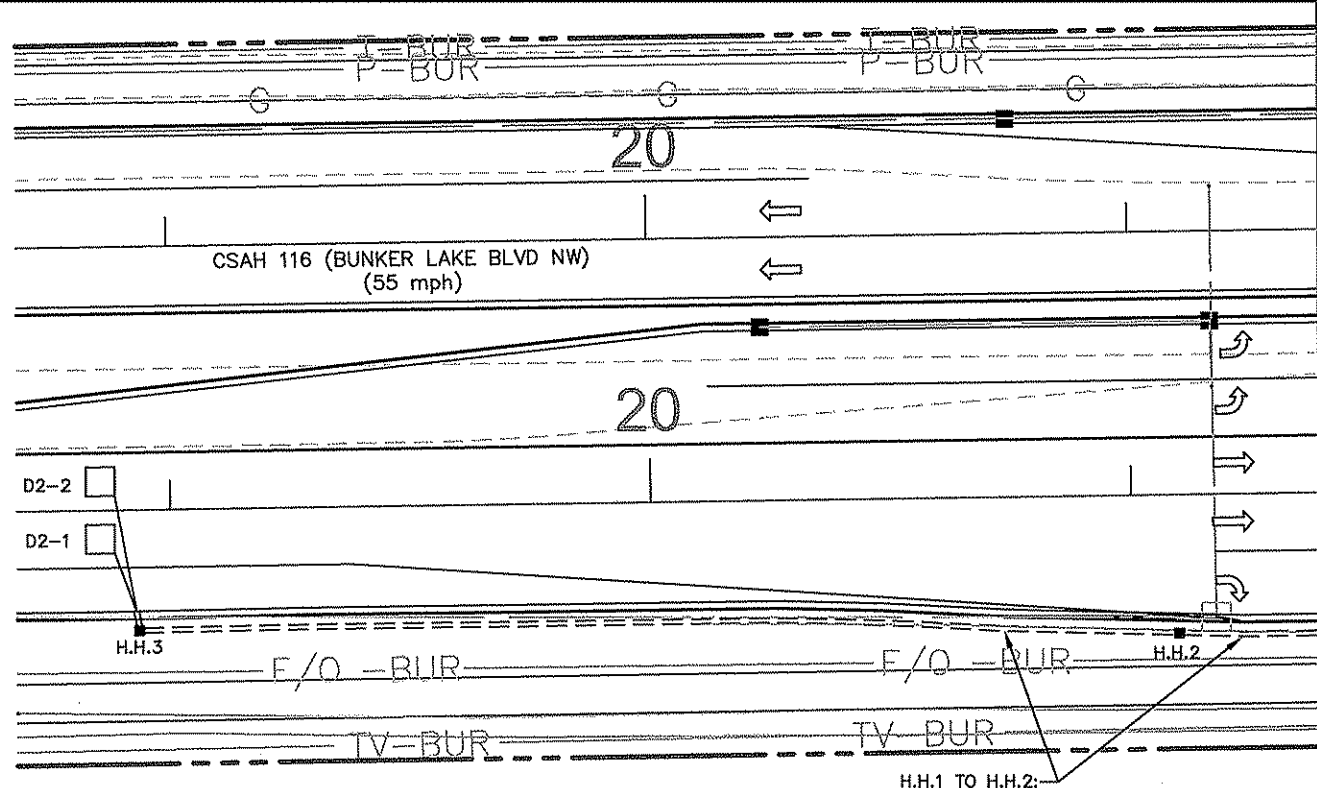
**ANOKA COUNTY, MINNESOTA**  
CITIES OF ANDOVER, ANOKA

**TRAFFIC SIGNAL SYSTEM "A"**  
INTERSECTION LAYOUT  
CSAH 116 AT CSAH 7 (7TH AVE NW)

FILE NO. ANOK 120319  
SIGNAL SHEET 9 OF 26  
192  
282

0271612.SIGBASE-PERMDWG 06/07/2012





1 PA100 POLE FOUNDATION  
 TYPE PA100-A-55-D40-9 (DAVIT AT 350°)  
 LUMINAIRE-250 W HPS  
 2-ANGLE MOUNT SIGNALS-OVERHEAD AT 0' (TWO WAY MOUNT)  
 2-STRAIGHT MOUNT SIGNALS-OVERHEAD AT 11' & 23'  
 2-ANGLE MOUNT SIGNALS-POLE MOUNTED 90° & 180°  
 1-ANGLE MOUNT C.D. PED INDICATION-POLE MOUNTED 180°  
 1-PEDESTRIAN PUSH BUTTON  
 2-R6-1 SIGN PANELS-POLE MOUNTED 0° & 180°  
 TYPE D SIGN PANEL-OVERHEAD (D-1)  
 ONE WAY EVP DETECTOR AND LIGHT (Ø4,7) (EVP)  
 EXTEND INTO H.H.19:  
 3"R.S.C.  
 3-12/c#14  
 1-3/c#14 (EVP)  
 1-3/c#20 (EVP)  
 1-2/c#14  
 1-3/c#14 (LUM)  
 1-1/c#6 (GRD.)

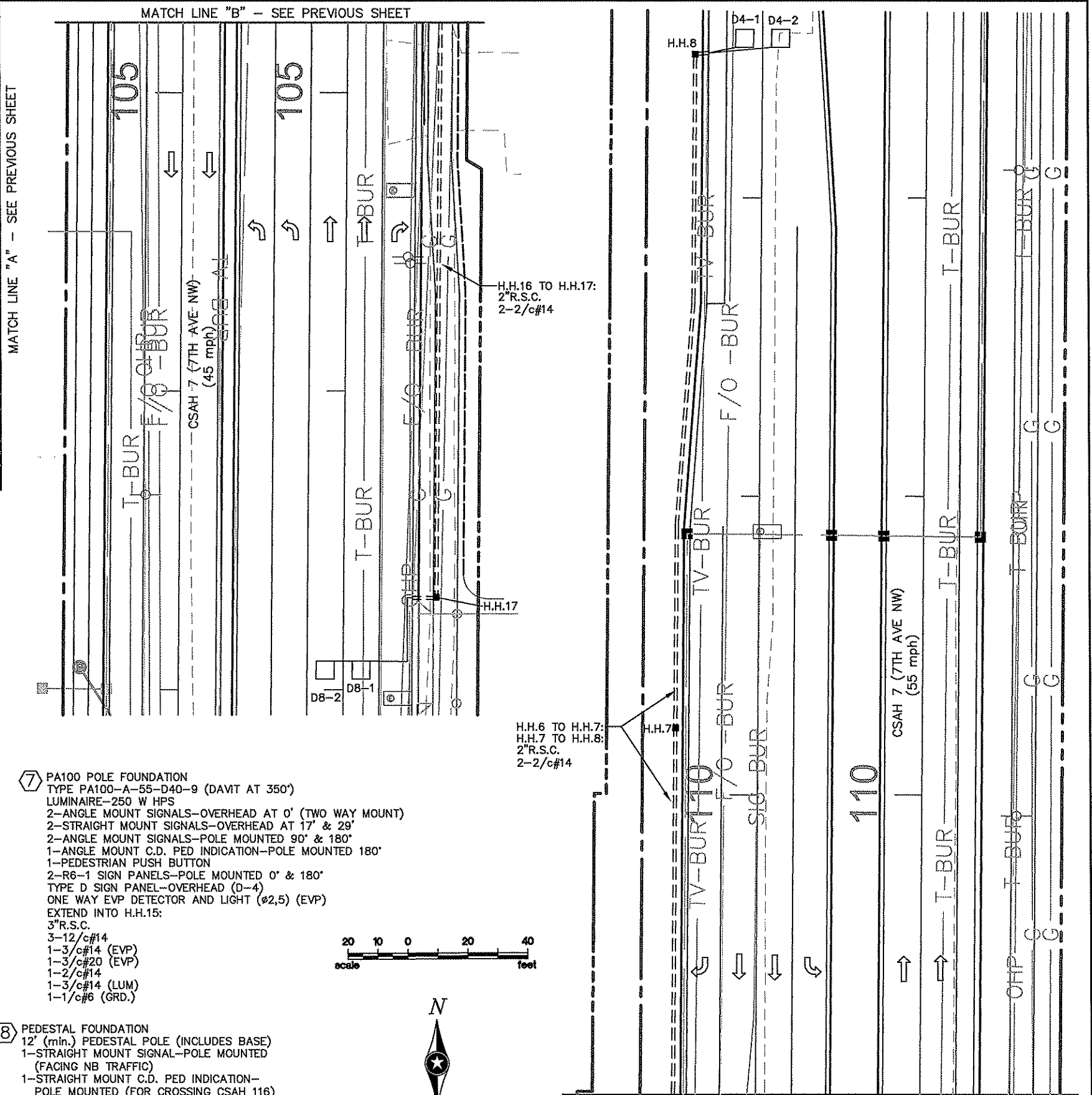
4 PEDESTAL FOUNDATION  
 12' (min.) PEDESTAL POLE (INCLUDES BASE)  
 1-STRAIGHT MOUNT SIGNAL-POLE MOUNTED  
 (FACING SB TRAFFIC)  
 1-STRAIGHT MOUNT C.D. PED INDICATION-  
 POLE MOUNTED (FOR CROSSING CSAH 116)  
 1-PEDESTRIAN PUSH BUTTON  
 EXTEND INTO H.H.6:  
 3"R.S.C.  
 1-12/c#14  
 1-2/c#14  
 1-1/c#6 (GRD.)

2 PEDESTAL FOUNDATION  
 12' (min.) PEDESTAL POLE (INCLUDES BASE)  
 1-STRAIGHT MOUNT SIGNAL-POLE MOUNTED  
 (FACING EB TRAFFIC)  
 1-STRAIGHT MOUNT C.D. PED INDICATION-  
 POLE MOUNTED (FOR CROSSING CSAH 7)  
 1-PEDESTRIAN PUSH BUTTON  
 EXTEND INTO H.H.1:  
 3"R.S.C.  
 1-12/c#14  
 1-2/c#14  
 1-1/c#6 (GRD.)

5 PA100 POLE FOUNDATION  
 TYPE PA100-A-55-D40-9 (DAVIT AT 350°)  
 LUMINAIRE-250 W HPS  
 2-ANGLE MOUNT SIGNALS-OVERHEAD AT 0' (TWO WAY MOUNT)  
 2-STRAIGHT MOUNT SIGNALS-OVERHEAD AT 17' & 29'  
 2-ANGLE MOUNT SIGNALS-POLE MOUNTED 90° & 180°  
 1-ANGLE MOUNT C.D. PED INDICATION-POLE MOUNTED 180°  
 1-PEDESTRIAN PUSH BUTTON  
 2-R6-1 SIGN PANELS-POLE MOUNTED 0° & 180°  
 TYPE D SIGN PANEL-OVERHEAD (D-3)  
 ONE WAY EVP DETECTOR AND LIGHT (Ø8,3) (EVP)  
 EXTEND INTO H.H.10:  
 3"R.S.C.  
 3-12/c#14  
 1-3/c#14 (EVP)  
 1-3/c#20 (EVP)  
 1-2/c#14  
 1-3/c#14 (LUM)  
 1-1/c#6 (GRD.)

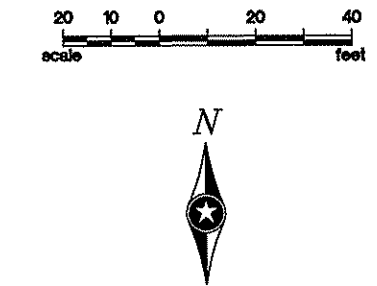
3 PA100 POLE FOUNDATION  
 TYPE PA100-A-55-D40-9 (DAVIT AT 350°)  
 LUMINAIRE-250 W HPS  
 2-ANGLE MOUNT SIGNALS-OVERHEAD AT 0' (TWO WAY MOUNT)  
 2-STRAIGHT MOUNT SIGNALS-OVERHEAD AT 11' & 23'  
 2-ANGLE MOUNT SIGNALS-POLE MOUNTED 90° & 180°  
 1-ANGLE MOUNT C.D. PED INDICATION-POLE MOUNTED 180°  
 1-PEDESTRIAN PUSH BUTTON  
 2-R6-1 SIGN PANELS-POLE MOUNTED 0° & 180°  
 TYPE D SIGN PANEL-OVERHEAD (D-2)  
 ONE WAY EVP DETECTOR AND LIGHT (Ø6,1) (EVP)  
 EXTEND INTO H.H.5:  
 3"R.S.C.  
 3-12/c#14  
 1-3/c#14 (EVP)  
 1-3/c#20 (EVP)  
 1-2/c#14  
 1-3/c#14 (LUM)  
 1-1/c#6 (GRD.)

6 PEDESTAL FOUNDATION  
 12' (min.) PEDESTAL POLE (INCLUDES BASE)  
 1-STRAIGHT MOUNT SIGNAL-POLE MOUNTED  
 (FACING WB TRAFFIC)  
 1-STRAIGHT MOUNT C.D. PED INDICATION-  
 POLE MOUNTED (FOR CROSSING CSAH 7)  
 1-PEDESTRIAN PUSH BUTTON  
 EXTEND INTO H.H.11:  
 3"R.S.C.  
 1-12/c#14  
 1-2/c#14  
 1-1/c#6 (GRD.)



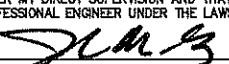
7 PA100 POLE FOUNDATION  
 TYPE PA100-A-55-D40-9 (DAVIT AT 350°)  
 LUMINAIRE-250 W HPS  
 2-ANGLE MOUNT SIGNALS-OVERHEAD AT 0' (TWO WAY MOUNT)  
 2-STRAIGHT MOUNT SIGNALS-OVERHEAD AT 17' & 29'  
 2-ANGLE MOUNT SIGNALS-POLE MOUNTED 90° & 180°  
 1-ANGLE MOUNT C.D. PED INDICATION-POLE MOUNTED 180°  
 1-PEDESTRIAN PUSH BUTTON  
 2-R6-1 SIGN PANELS-POLE MOUNTED 0° & 180°  
 TYPE D SIGN PANEL-OVERHEAD (D-4)  
 ONE WAY EVP DETECTOR AND LIGHT (Ø2,5) (EVP)  
 EXTEND INTO H.H.15:  
 3"R.S.C.  
 3-12/c#14  
 1-3/c#14 (EVP)  
 1-3/c#20 (EVP)  
 1-2/c#14  
 1-3/c#14 (LUM)  
 1-1/c#6 (GRD.)


8 PEDESTAL FOUNDATION  
 12' (min.) PEDESTAL POLE (INCLUDES BASE)  
 1-STRAIGHT MOUNT SIGNAL-POLE MOUNTED  
 (FACING NB TRAFFIC)  
 1-STRAIGHT MOUNT C.D. PED INDICATION-  
 POLE MOUNTED (FOR CROSSING CSAH 116)  
 1-PEDESTRIAN PUSH BUTTON  
 EXTEND INTO H.H.16:  
 3"R.S.C.  
 1-12/c#14  
 1-2/c#14  
 1-1/c#6 (GRD.)



DRAWN BY: JMG				
DESIGNER: JMG				
CHECKED BY: JMG				
DESIGN TEAM	NO.	BY	DATE	REVISIONS

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


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 Lic. No. 22457


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 3535 VADNAIS CENTER DR.  
 ST. PAUL, MN 55110

**ANOKA COUNTY,**  
**MINNESOTA**  
 CITIES OF ANDOVER, ANOKA

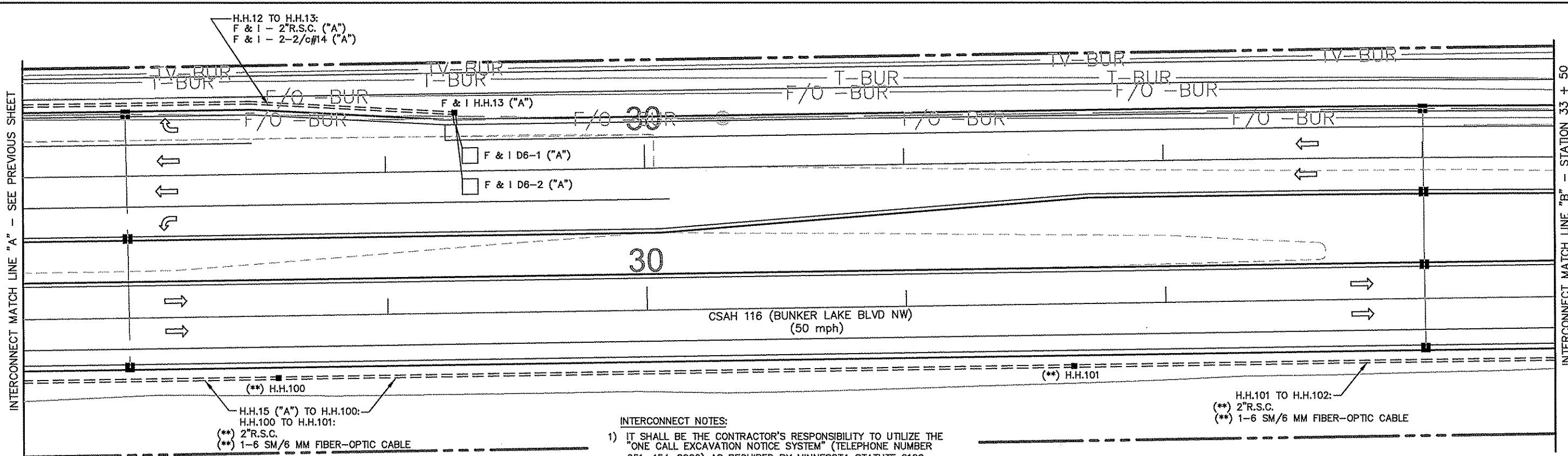
**TRAFFIC SIGNAL SYSTEM "A"**  
**INTERSECTION LAYOUT**  
 CSAH 116 AT CSAH 7 (7TH AVE NW)

S.P. 002-607-021  
 S.P. 002-716-012  
 S.A.P. 103-020-014 & 103-020-015  
 S.P. 198-020-031 & 198-020-032

FILE NO.  
 ANOKC 120319  
 SIGNAL SHEET  
 10 OF 26

**193**  
**282**

0271612\_SIGNALS-PERMDWG 06/07/2012



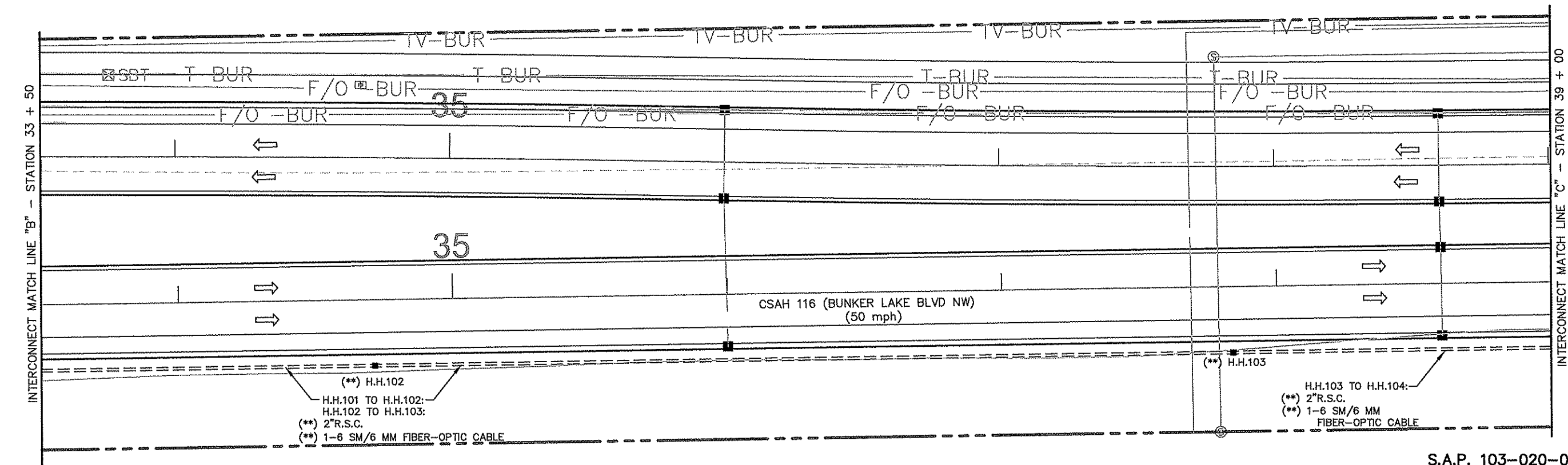
H.H.12 TO H.H.13:  
 F & I - 2"R.S.C. ("A")  
 F & I - 2-2/c#14 ("A")

H.H.15 ("A") TO H.H.100:  
 H.H.100 TO H.H.101:  
 (\*\*) 2"R.S.C.  
 (\*\*) 1-6 SM/6 MM FIBER-OPTIC CABLE

H.H.101 TO H.H.102:  
 (\*\*) 2"R.S.C.  
 (\*\*) 1-6 SM/6 MM FIBER-OPTIC CABLE

**INTERCONNECT NOTES:**

- 1) IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO UTILIZE THE "ONE CALL EXCAVATION NOTICE SYSTEM" (TELEPHONE NUMBER 651-454-0002) AS REQUIRED BY MINNESOTA STATUTE 2160.
- 2) DISTANCE OFF SHOULDER OR CURB FOR INTERCONNECT CONDUIT SHALL BE 1-2 FEET.
- 3) (\*\*) DENOTES ITEMS TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR UNDER ITEM NO. 2565 (TRAFFIC CONTROL INTERCONNECTION). SEE STATEMENT OF ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.
- 4) NEW HANDHOLES SHALL BE PVC HANDHOLES WITH METAL FRAMES AND COVERS PER MNDOT STANDARD PLATE NO. 8114A.



(\*\*) H.H.102  
 H.H.101 TO H.H.102:  
 H.H.102 TO H.H.103:  
 (\*\*) 2"R.S.C.  
 (\*\*) 1-6 SM/6 MM FIBER-OPTIC CABLE

H.H.103 TO H.H.104:  
 (\*\*) 2"R.S.C.  
 (\*\*) 1-6 SM/6 MM FIBER-OPTIC CABLE

S.P. 002-607-021  
 S.P. 002-716-012  
 S.A.P. 103-020-014 & 103-020-015  
 S. P. 198-020-031 & 198-020-032

0271612\_SIGNAGE-PERMDWG 06/07/2012

DRAWN BY: JMG	DESIGNER: JMG	CHECKED BY: JMG	DESIGN TEAM	NO.	BY	DATE	REVISIONS

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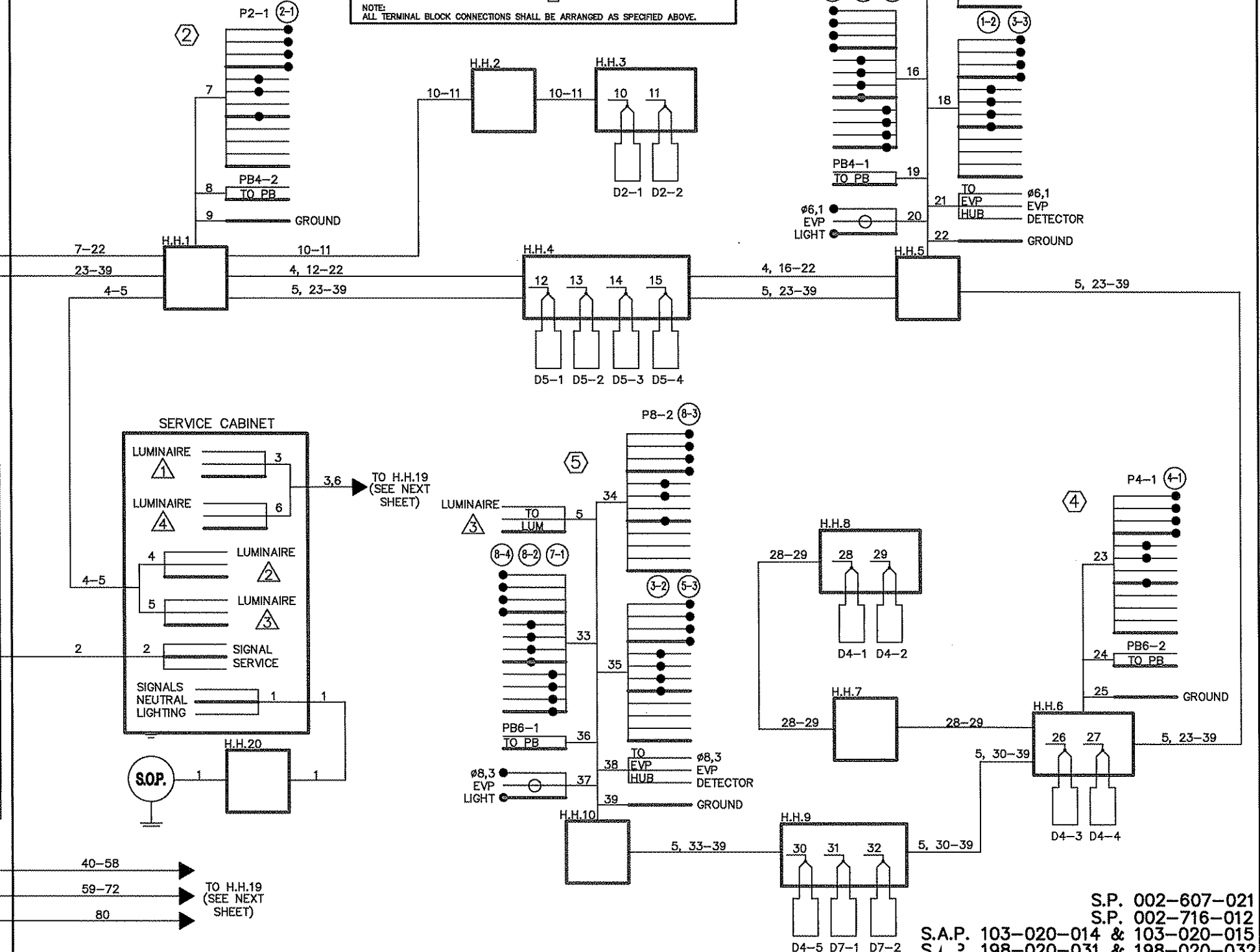
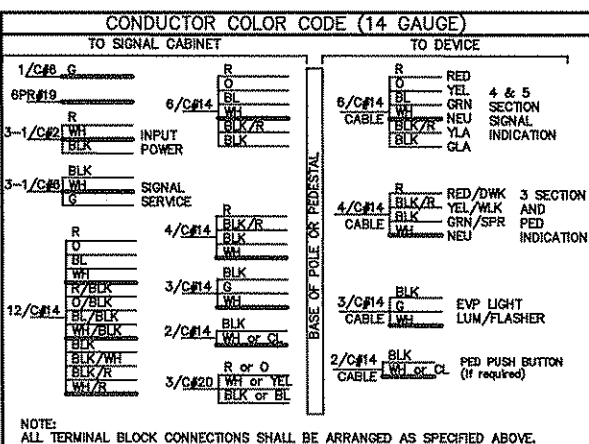
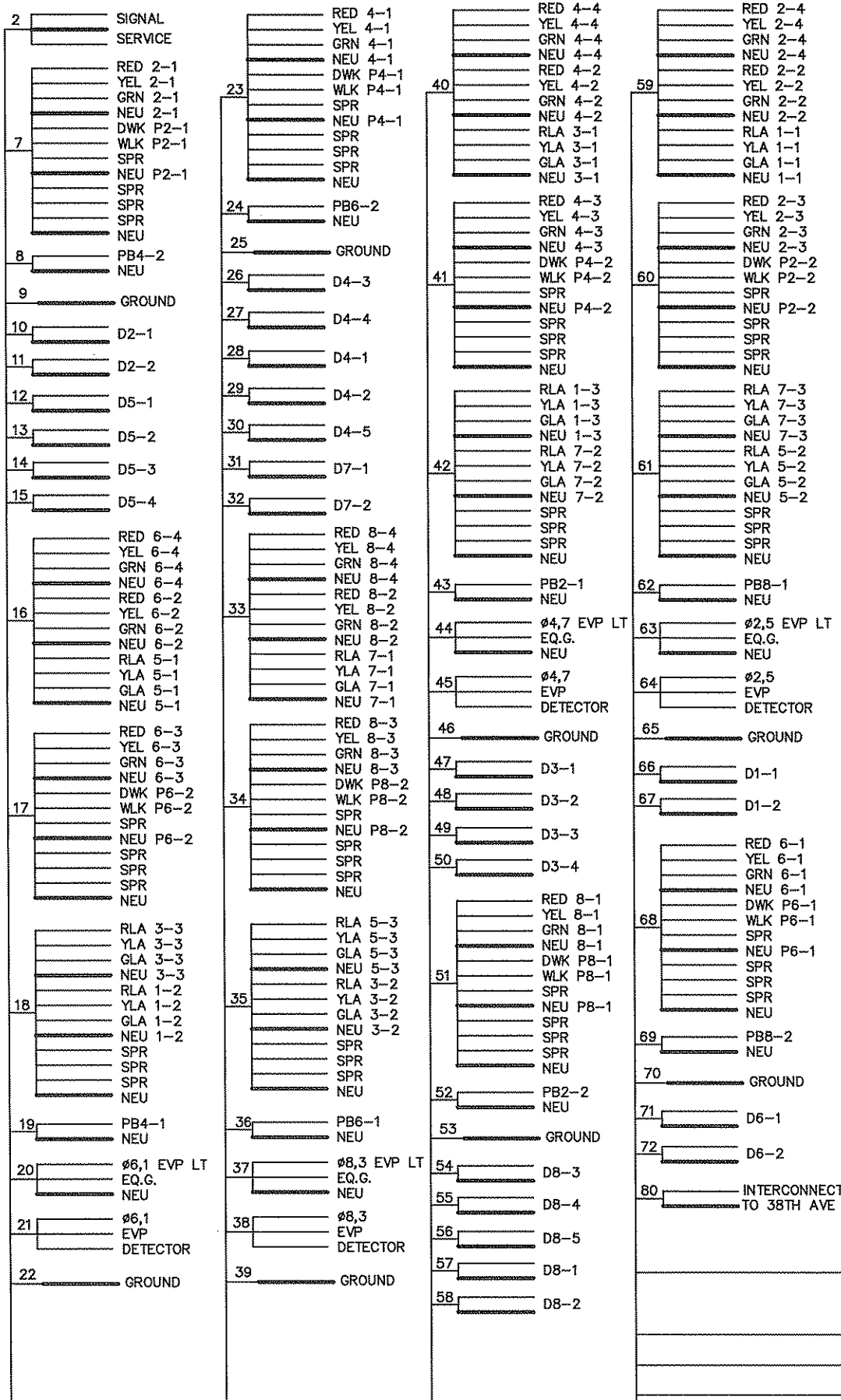
**SEH**  
 PHONE: (651) 490-2000  
 3535 VADNAIS CENTER DR.  
 ST. PAUL, MN 55110

**ANOKA COUNTY, MINNESOTA**  
 CITIES OF ANDOVER, ANOKA

**TRAFFIC SIGNAL SYSTEM 'A'/INTERCONNECT INTERSECTION LAYOUT**  
 CSAH 116 AT CSAH 7 (7TH AVE NW)

FILE NO. ANOKC 120319  
 SIGNAL SHEET 11 OF 26  
**194**  
**282**

CONTROLLER AND CABINET



0271612\_SIGBASE-PERU.DWG  
08/07/2012

DRAWN BY: JMG  
DESIGNER: JMG  
CHECKED BY: JMG

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ST. PAUL, MN 55110

**ANOKA COUNTY, MINNESOTA**  
CITIES OF ANDOVER, ANOKA

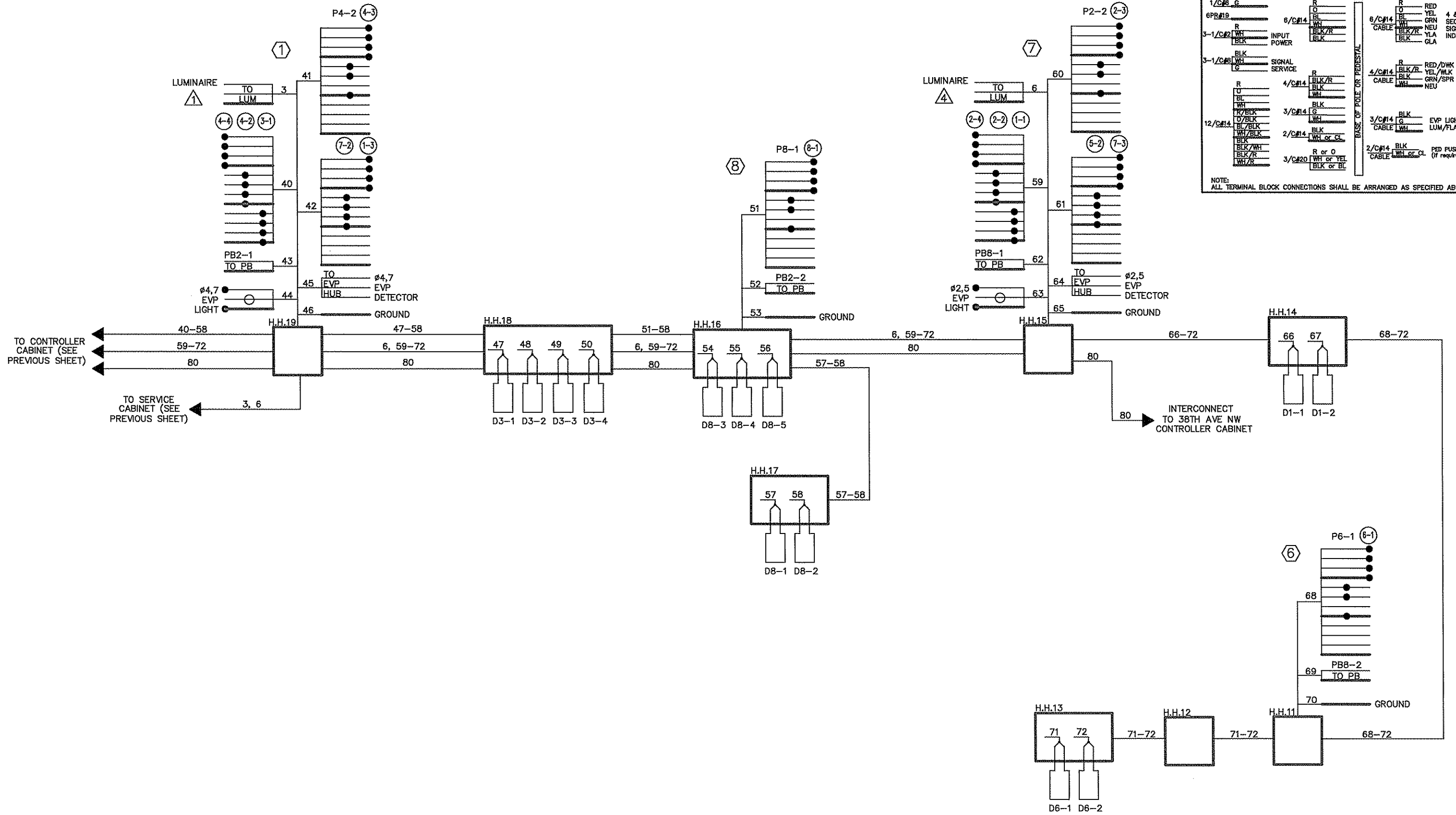
**TRAFFIC SIGNAL SYSTEM 'A'**  
FIELD WIRING DIAGRAM  
CSAH 116 AT CSAH 7 (7TH AVE NW)

S.P. 002-607-021  
S.P. 002-716-012  
S.A.P. 103-020-014 & 103-020-015  
S./ 198-020-031 & 198-020-032

FILE NO. ANOKC 120319  
SIGNAL SHEET 12 OF 26  
**195**  
**282**

CONDUCTOR COLOR CODE (14 GAUGE)			
TO SIGNAL CABINET		TO DEVICE	
1/C#6 G	R	O	RED
6PR#19	BL	YEL	4 & 5 SECTION
3-1/C#2 WH	WH	GRN	3 SECTION AND PED INDICATION
BLK	BLK/R	YLA	YLA
BLK	BLK	GLA	GLA
3-1/C#8 WH	BLK	RED/DWK	3 SECTION AND PED INDICATION
BLK	BLK/R	YEL/WLK	YEL/WLK
BLK	BLK	GRN/SPR	GRN/SPR
BLK	BLK	NEU	NEU
4/C#14 BLK/R	BLK/R	BLK	EVP LIGHT
4/C#14 WH	WH	WH	LUM/FLASHER
3/C#14 G	G	BLK	EVP LIGHT
3/C#14 WH	WH	WH	LUM/FLASHER
2/C#14 BLK	BLK	WH or CL	PED PUSH BUTTON (if required)
3/C#20 WH or YEL	WH or YEL	BLK or BL	
3/C#20 BLK or BL	BLK or BL		

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



S.P. 002-607-021  
 S.P. 002-716-012  
 S.A.P. 103-020-014 & 103-020-015  
 S.P. 198-020-031 & 198-020-032

0271612\_SIGBASE-PERAWING 08/07/2012

DRAWN BY: JMG				
DESIGNER: JMG				
CHECKED BY: JMG				
DESIGN TEAM	NO.	BY	DATE	REVISIONS

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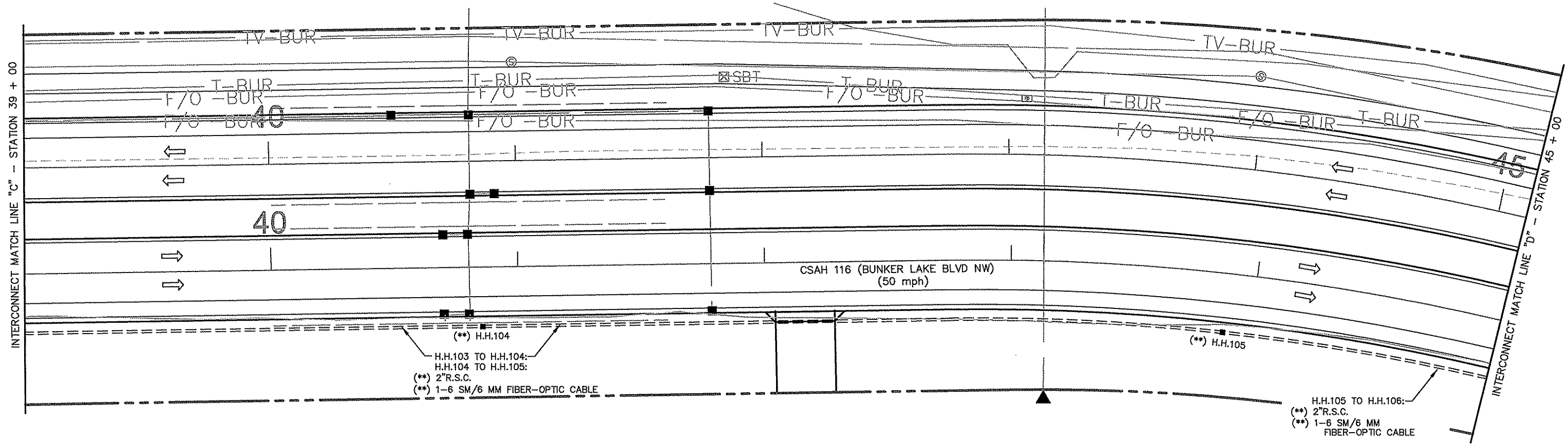
*John M. Gray*  
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 Date: June 7, 2012

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**ANOKA COUNTY, MINNESOTA**  
 CITIES OF ANDOVER, ANOKA

**TRAFFIC SIGNAL SYSTEM 'A'**  
 FIELD WIRING DIAGRAM  
 CSAH 116 AT CSAH 7 (7TH AVE NW)

FILE NO. ANOKC 120319  
 SIGNAL SHEET 13 OF 26  
**196**  
**282**



**INTERCONNECT NOTES:**

- 1) IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO UTILIZE THE "ONE CALL EXCAVATION NOTICE SYSTEM" (TELEPHONE NUMBER 651-454-0002) AS REQUIRED BY MINNESOTA STATUTE 2160.
- 2) DISTANCE OFF SHOULDER OR CURB FOR INTERCONNECT CONDUIT SHALL BE 1-2 FEET.
- 3) (\*\*) DENOTES ITEMS TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR UNDER ITEM NO. 2565 (TRAFFIC CONTROL INTERCONNECTION). SEE STATEMENT OF ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.
- 4) NEW HANDHOLES SHALL BE PVC HANDHOLES WITH METAL FRAMES AND COVERS PER MNDOT STANDARD PLATE NO. 8114A.

S.P. 002-716-012  
 S.A.P. 103-020-014  
 S. P. 198-020-031

0271812\_SIGBASE-PERBLD.WG 06/07/2012

DRAWN BY: JMG			
DESIGNER: JMG			
CHECKED BY: JMG			
DESIGN TEAM	NO.	BY	DATE
			REVISIONS

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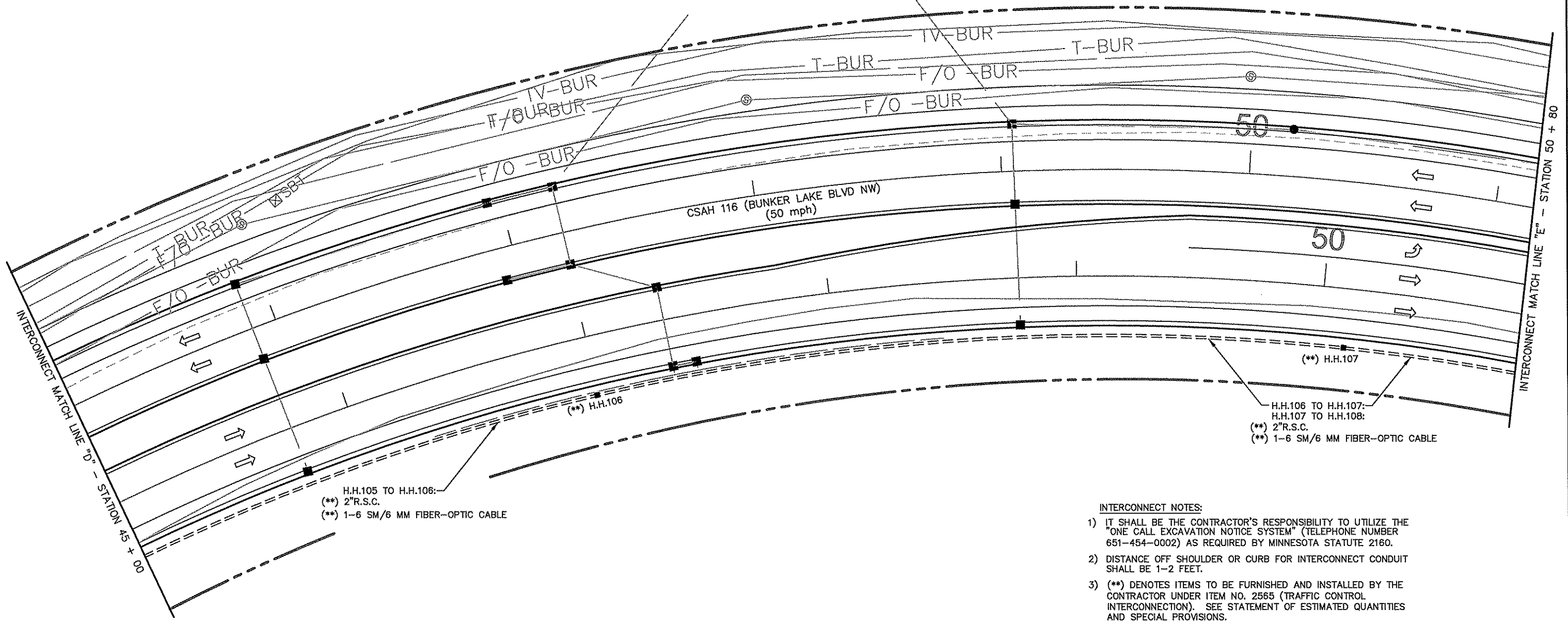
*JMG* Name: John M. Gray, PE  
 Date: June 7, 2012 Lic. No. 22457

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

**ANOKA COUNTY, MINNESOTA**  
 CITIES OF ANDOVER, ANOKA

**TRAFFIC CONTROL INTERCONNECTION**  
 INTERSECTION LAYOUT  
 CSAH 116 (CSAH 7 TO 38TH AVE NW)

FILE NO. ANOKC 120319	<b>197</b>
SIGNAL SHEET 14 OF 26	<b>282</b>



H.H.105 TO H.H.106:  
 (\*\*) 2" R.S.C.  
 (\*\*) 1-6 SM/6 MM FIBER-OPTIC CABLE

(\*\*) H.H.107  
 H.H.106 TO H.H.107:  
 H.H.107 TO H.H.108:  
 (\*\*) 2" R.S.C.  
 (\*\*) 1-6 SM/6 MM FIBER-OPTIC CABLE

**INTERCONNECT NOTES:**

- 1) IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO UTILIZE THE "ONE CALL EXCAVATION NOTICE SYSTEM" (TELEPHONE NUMBER 651-454-0002) AS REQUIRED BY MINNESOTA STATUTE 2160.
- 2) DISTANCE OFF SHOULDER OR CURB FOR INTERCONNECT CONDUIT SHALL BE 1-2 FEET.
- 3) (\*\*) DENOTES ITEMS TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR UNDER ITEM NO. 2555 (TRAFFIC CONTROL INTERCONNECTION). SEE STATEMENT OF ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.
- 4) NEW HANDHOLES SHALL BE PVC HANDHOLES WITH METAL FRAMES AND COVERS PER MNDOT STANDARD PLATE NO. 8114A.

0271612\_SCSBASE-FERBLD.WG 06/07/2012

DRAWN BY: JMG				
DESIGNER: JMG				
CHECKED BY: JMG				
DESIGN TEAM	NO.	BY	DATE	REVISIONS

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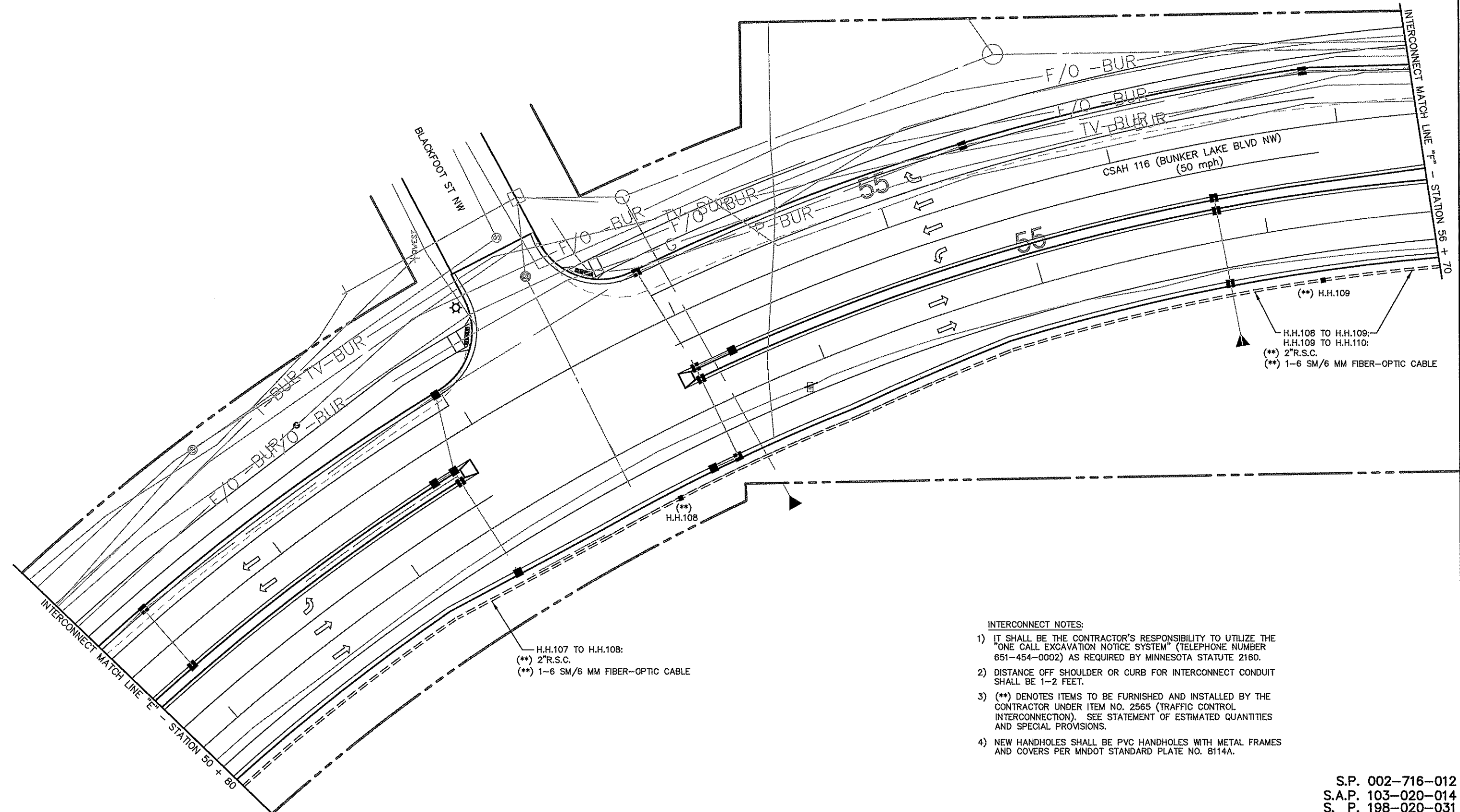
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 3535 VADNAIS CENTER DR.  
 ST. PAUL, MN 55110

**ANOKA COUNTY, MINNESOTA**  
 CITIES OF ANDOVER, ANOKA

**TRAFFIC CONTROL INTERCONNECTION**  
 INTERSECTION LAYOUT  
 CSAH 116 (CSAH 7 TO 38TH AVE NW)

FILE NO. ANOKC 120319  
 SIGNAL SHEET 15 OF 26  
**198**  
**282**

S.P. 002-716-012  
 S.A.P. 103-020-014  
 S. P. 198-020-031



H.H.107 TO H.H.108:  
 (\*\*) 2"R.S.C.  
 (\*\*) 1-6 SM/6 MM FIBER-OPTIC CABLE

(\*\*) H.H.109  
 H.H.108 TO H.H.109:  
 H.H.109 TO H.H.110:  
 (\*\*) 2"R.S.C.  
 (\*\*) 1-6 SM/6 MM FIBER-OPTIC CABLE

**INTERCONNECT NOTES:**

- 1) IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO UTILIZE THE "ONE CALL EXCAVATION NOTICE SYSTEM" (TELEPHONE NUMBER 651-454-0002) AS REQUIRED BY MINNESOTA STATUTE 2160.
- 2) DISTANCE OFF SHOULDER OR CURB FOR INTERCONNECT CONDUIT SHALL BE 1-2 FEET.
- 3) (\*\*) DENOTES ITEMS TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR UNDER ITEM NO. 2565 (TRAFFIC CONTROL INTERCONNECTION). SEE STATEMENT OF ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.
- 4) NEW HANDHOLES SHALL BE PVC HANDHOLES WITH METAL FRAMES AND COVERS PER MNDOT STANDARD PLATE NO. 8114A.

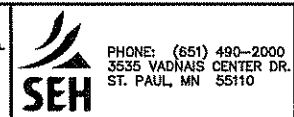
S.P. 002-716-012  
 S.A.P. 103-020-014  
 S. P. 198-020-031

0271612\_SCSBASE-REBUILDING 05/07/2012

DRAWN BY: JMG				
DESIGNER: JMG				
CHECKED BY: JMG				
DESIGN TEAM	NO.	BY	DATE	REVISIONS

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.

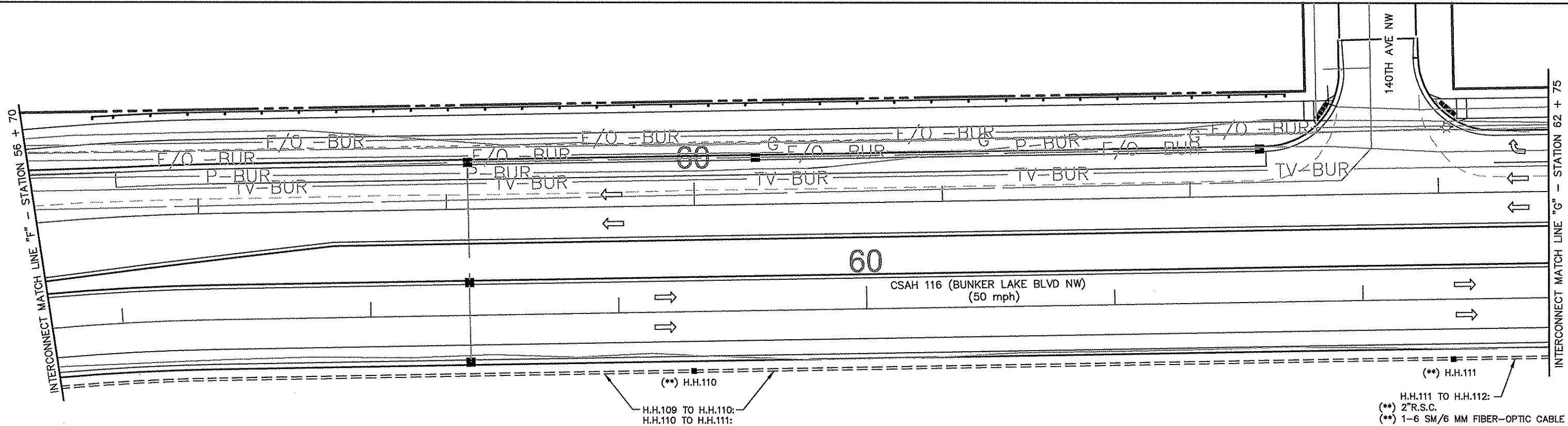
*JMG*  
 Name: John M. Gray, PE  
 Date: June 7, 2012  
 Lic. No. 22457



**ANOKA COUNTY, MINNESOTA**  
 CITIES OF ANDOVER, ANOKA

**TRAFFIC CONTROL INTERCONNECTION**  
 INTERSECTION LAYOUT  
 CSAH 116 (CSAH 7 TO 38TH AVE NW)

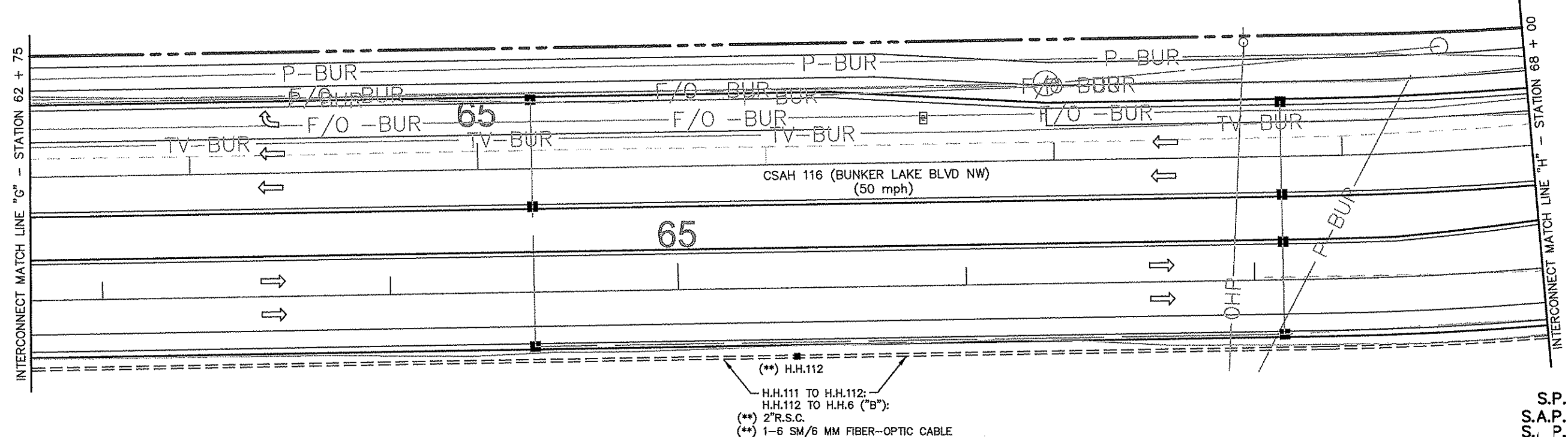
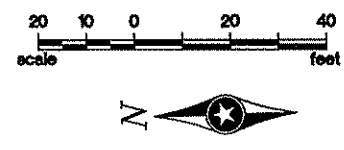
FILE NO. ANOKC 120319	199
SIGNAL SHEET 16 OF 26	
282	



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  - 4) NEW HANDHOLES SHALL BE PVC HANDHOLES WITH METAL FRAMES AND COVERS PER MNDOT STANDARD PLATE NO. 8114A.

H.H.109 TO H.H.110:  
H.H.110 TO H.H.111:  
(\*\*) 2"R.S.C.  
(\*\*) 1-6 SM/6 MM FIBER-OPTIC CABLE

H.H.111  
H.H.111 TO H.H.112:  
(\*\*) 2"R.S.C.  
(\*\*) 1-6 SM/6 MM FIBER-OPTIC CABLE



(\*\*) H.H.112  
H.H.111 TO H.H.112:  
H.H.112 TO H.H.6 ("B"):  
(\*\*) 2"R.S.C.  
(\*\*) 1-6 SM/6 MM FIBER-OPTIC CABLE

0271612\_SIGBASE-PERMDWG  
08/07/2012

DRAWN BY: JMG				
DESIGNER: JMG				
CHECKED BY: JMG				
DESIGN TEAM	NO.	BY	DATE	REVISIONS

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*John M. Gray*  
Name: John M. Gray, PE  
Lic. No. 22457  
Date: June 7, 2012

**SEH**  
PHONE: (651) 490-2000  
3535 VADNAIS CENTER DR.  
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**ANOKA COUNTY, MINNESOTA**  
CITIES OF ANDOVER, ANOKA

**TRAFFIC CONTROL INTERCONNECTION**  
INTERSECTION LAYOUT  
CSAH 116 (CSAH 7 TO 38TH AVE NW)

S.P. 002-716-012  
S.A.P. 103-020-014  
S.P. 198-020-031

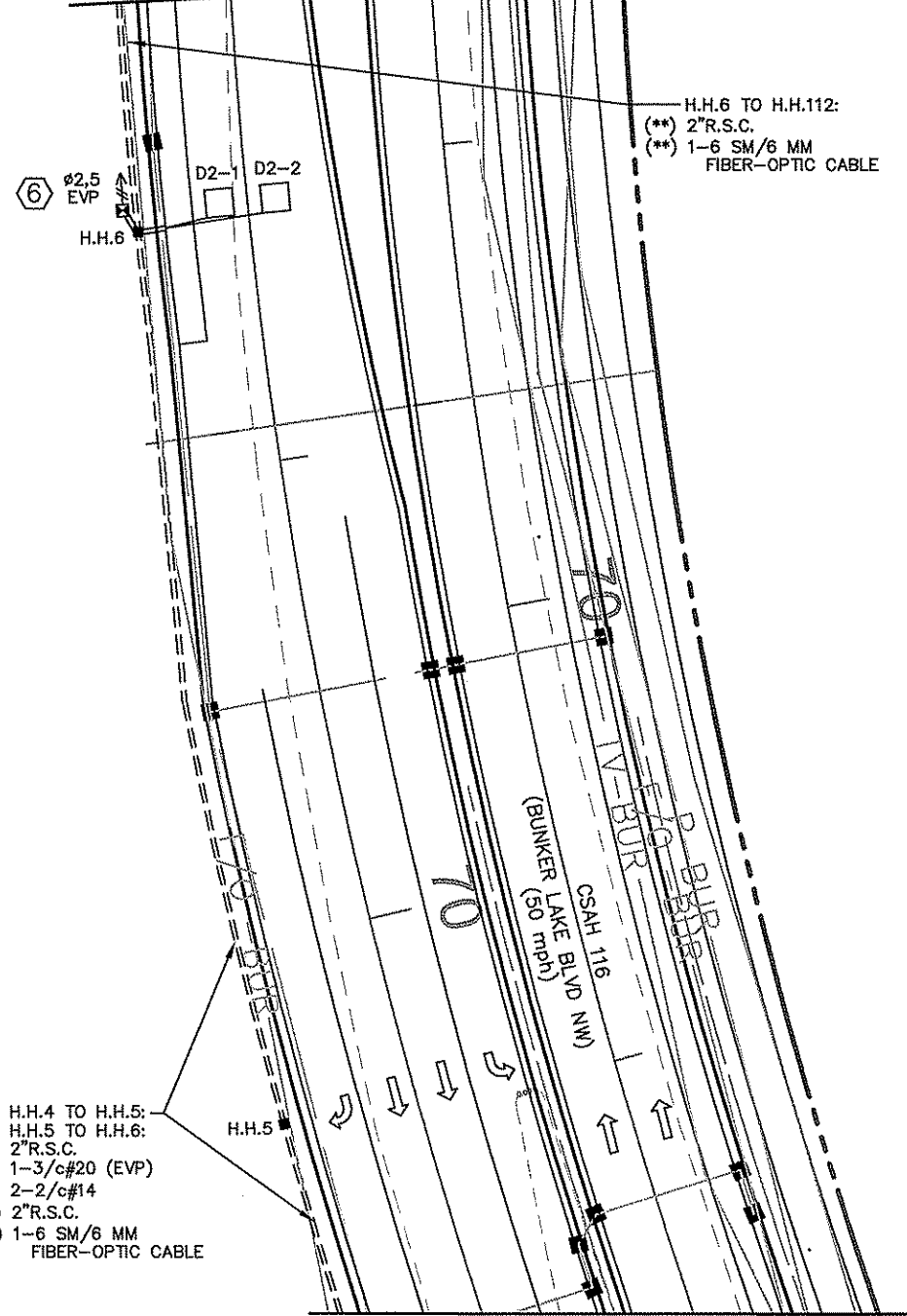
FILE NO. ANOKC 120319  
SIGNAL SHEET 17 OF 26

**200**  
**282**





INTERCONNECT MATCH LINE "H" - STATION 68 + 00



H.H.6 TO H.H.112:  
 (\*\*) 2"R.S.C.  
 (\*\*) 1-6 SM/6 MM FIBER-OPTIC CABLE

⑥ Ø2.5 EVP  
 H.H.6

① PA100 POLE FOUNDATION  
 TYPE PA100-A-50-D40-9 (DAVIT AT 350')  
 LUMINAIRE-250 W HPS  
 1-ANGLE MOUNT SIGNAL-OVERHEAD AT 0'  
 2-STRAIGHT MOUNT SIGNALS-OVERHEAD AT 11' & 23'  
 1-ANGLE MOUNT SIGNAL-POLE MOUNTED 180'  
 1-ANGLE MOUNT C.D. PED INDICATION-POLE MOUNTED 180'  
 1-PEDESTRIAN PUSH BUTTON  
 1-R9-3 SIGN PANEL-FACING POLE 4  
 1-R6-1R SIGN PANEL-POLE MOUNTED 180'  
 TYPE D SIGN PANEL-OVERHEAD (D-5)  
 ONE WAY EVP DETECTOR AND LIGHT (Ø2,5) (EVP)  
 EXTEND INTO H.H.13:  
 3"R.S.C.  
 2-12/c#14  
 1-3/c#14 (EVP)  
 1-3/c#20 (EVP)  
 1-2/c#14  
 1-3/c#14 (LUM)  
 1-1/c#6 (GRD.)

③ PA100 POLE FOUNDATION  
 TYPE PA100-A-45-D40-9 (DAVIT AT 350')  
 LUMINAIRE-250 W HPS  
 1-ANGLE MOUNT SIGNAL-OVERHEAD AT 0'  
 2-STRAIGHT MOUNT SIGNALS-OVERHEAD AT 11' & 23'  
 2-ANGLE MOUNT SIGNALS-POLE MOUNTED 90' & 270'  
 1-ANGLE MOUNT C.D. PED INDICATION-POLE MOUNTED 270'  
 1-PEDESTRIAN PUSH BUTTON  
 1-R6-1L SIGN PANELS-POLE MOUNTED 0'  
 TYPE D SIGN PANEL-OVERHEAD (D-6)  
 ONE WAY EVP DETECTOR AND LIGHT (Ø6,1) (EVP)  
 EXTEND INTO H.H.8:  
 3"R.S.C.  
 3-12/c#14  
 1-3/c#14 (EVP)  
 1-3/c#20 (EVP)  
 1-2/c#14  
 1-3/c#14 (LUM)  
 1-1/c#6 (GRD.)

⑤ PEDESTAL FOUNDATION (EVP)  
 12' PEDESTAL POLE (INCLUDES BASE) (EVP)  
 ONE WAY EVP DETECTOR-MOUNT ON TOP OF PEDESTAL POLE (ON SLIPFITTER COLLAR) (Ø8) (EVP)  
 EXTEND INTO H.H.2:  
 2"R.S.C. (EVP)  
 1-3/c#20 (EVP)

⑥ PEDESTAL FOUNDATION (EVP)  
 12' PEDESTAL POLE (INCLUDES BASE) (EVP)  
 ONE WAY EVP DETECTOR-MOUNT ON TOP OF PEDESTAL POLE (ON SLIPFITTER COLLAR) (Ø2,5) (EVP)  
 EXTEND INTO H.H.6:  
 2"R.S.C. (EVP)  
 1-3/c#20 (EVP)

② PEDESTAL FOUNDATION  
 14' PEDESTAL POLE (INCLUDES BASE)  
 1-STRAIGHT MOUNT SIGNAL-POLE MOUNTED  
 2-STRAIGHT MOUNT C.D. PED INDICATIONS-POLE MOUNTED  
 2-PEDESTRIAN PUSH BUTTONS  
 EXTEND INTO H.H.3:  
 3"R.S.C.  
 1-12/c#14  
 2-2/c#14  
 1-1/c#6 (GRD.)

④ PA85 POLE FOUNDATION  
 TYPE PA85-A-20  
 1-ANGLE MOUNT SIGNAL-OVERHEAD AT 0'  
 1-ANGLE MOUNT SIGNAL-POLE MOUNTED 180'  
 1-R9-3 SIGN PANEL-FACING POLE 1  
 TYPE D SIGN PANEL-OVERHEAD (D-7)  
 ONE WAY EVP DETECTOR AND LIGHT (Ø8) (EVP)  
 EXTEND INTO H.H.9:  
 3"R.S.C.  
 1-12/c#14  
 1-6/c#14  
 1-3/c#14 (EVP)  
 1-3/c#20 (EVP)  
 1-1/c#6 (GRD.)

⑦ PEDESTAL FOUNDATION (EVP)  
 12' PEDESTAL POLE (INCLUDES BASE) (EVP)  
 ONE WAY EVP DETECTOR-MOUNT ON TOP OF PEDESTAL POLE (ON SLIPFITTER COLLAR) (Ø6,1) (EVP)  
 EXTEND INTO H.H.11:  
 2"R.S.C. (EVP)  
 1-3/c#20 (EVP)

H.H.4 TO H.H.5:  
 H.H.5 TO H.H.6:  
 2"R.S.C.  
 1-3/c#20 (EVP)  
 2-2/c#14  
 (\*\*) 2"R.S.C.  
 (\*\*) 1-6 SM/6 MM FIBER-OPTIC CABLE

INTERCONNECT MATCH LINE "I" - SEE NEXT SHEET

S.P. 002-716-012  
 S.A.P. 103-020-014  
 S. P. 198-020-031

0271612\_SIGNBASE-PERMDWG 08/07/2012

DRAWN BY: JMG				
DESIGNER: JMG				
CHECKED BY: JMG				
DESIGN TEAM	NO.	BY	DATE	REVISIONS

HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.  
 Date: June 7, 2012 Name: John M. Gray, PE Lic. No. 22457

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

**ANOKA COUNTY, MINNESOTA**  
 CITIES OF ANDOVER, ANOKA

**TRAFFIC SIGNAL SYSTEM "B"**  
 INTERSECTION LAYOUT  
 CSAH 116 AT 38TH AVENUE NW

FILE NO. ANOKC 120319  
 SIGNAL SHEET 18 OF 26  
**201**  
**282**

**NOTES:**

- THE EXACT LOCATION OF HANDHOLES, FOUNDATIONS, AND LOOP DETECTORS SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER.
- SEE SPECIAL PROVISIONS FOR COUNTY FURNISHED MATERIALS.
- NEW HANDHOLES SHALL BE PVC HANDHOLES WITH METAL FRAMES AND COVERS.
- A 3/4" HALF COUPLING, 3/4" PIPE NIPPLE, AND CONDUIT OUTLET BODY SHALL BE FURNISHED AND INSTALLED 6 FEET FROM THE END OF EACH MAST ARM (FOR EVP).
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING THE POWER COMPANY TO ARRANGE FOR THE POWER CONNECTION (CONNEXUS). SEE SPECIAL PROVISIONS.
- SEE SPECIAL PROVISIONS AND DETAILS REGARDING SIGNS TO BE FURNISHED AND INSTALLED BY CONTRACTOR (INCLUDED AS PART OF PAY ITEM FOR "TRAFFIC CONTROL SIGNAL SYSTEM B").
- EACH PEDESTRIAN INDICATION SHALL BE ONE SECTION FILLED COUNTDOWN TIMER "HAND/WALKING PERSON" INDICATION.
- ALL VEHICLE AND PEDESTRIAN SIGNAL INDICATIONS SHALL BE LED.
- EACH SIGNAL FACE SHALL HAVE A BACKGROUND SHIELD.
- SEE DETAILS, SPECIAL PROVISIONS, AND STATEMENT OF ESTIMATED QUANTITIES REGARDING BATTERY BACK-UP SIGNAL SERVICE CABINET TO BE FURNISHED AND INSTALLED BY CONTRACTOR (SEPARATE FROM ITEM NO. 2565 FOR THIS SIGNAL SYSTEM).
- LOOP DETECTOR WIRES SHALL BE CROSS-LINKED POLYETHYLENE (XLP) IN 3/4" N.M.C. SEE SPECIAL PROVISIONS.
- (\*\*) DENOTES ITEMS TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR UNDER ITEM NO. 2565 (TRAFFIC CONTROL INTERCONNECTION). SEE STATEMENT OF ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.
- (EVP) DENOTES ITEMS TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR UNDER ITEM NO. 2565 (EMERGENCY VEHICLE PREEMPTION SYSTEM "B"). SEE STATEMENT OF ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.

**LOOP DETECTORS FUNCTIONS:**

- CALL AND EXTEND
- EXTEND ONLY
- DELAYED CALL, IMMEDIATE EXTEND
- CARRY OVER (STRETCH)

**F & I N.M.C. LOOP DETECTORS**

NUMBER	SIZE (FT.)	LOCATION	FUNCTION
D1-1	6x6	40'	1
D1-2	6x6	10'	1
D2-1	6x6	400'	1
D2-2	6x6	400'	1
D5-1	6x6	40'	1
D5-2	6x6	10'	1
D6-1	6x6	400'	1
D6-2	6x6	400'	1
D8-1	6x6	180'	3,8
D8-2	6x6	180'	3,8
D8-3	2-6x6	5' & 20'	7
D8-4	2-6x6	5' & 20'	7

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



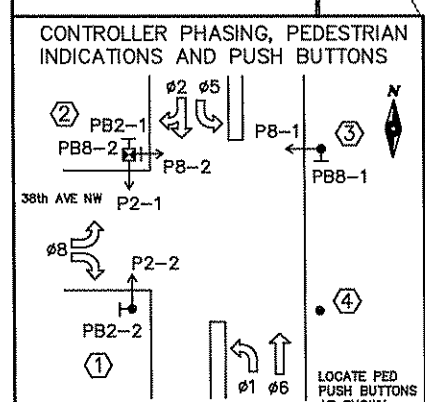
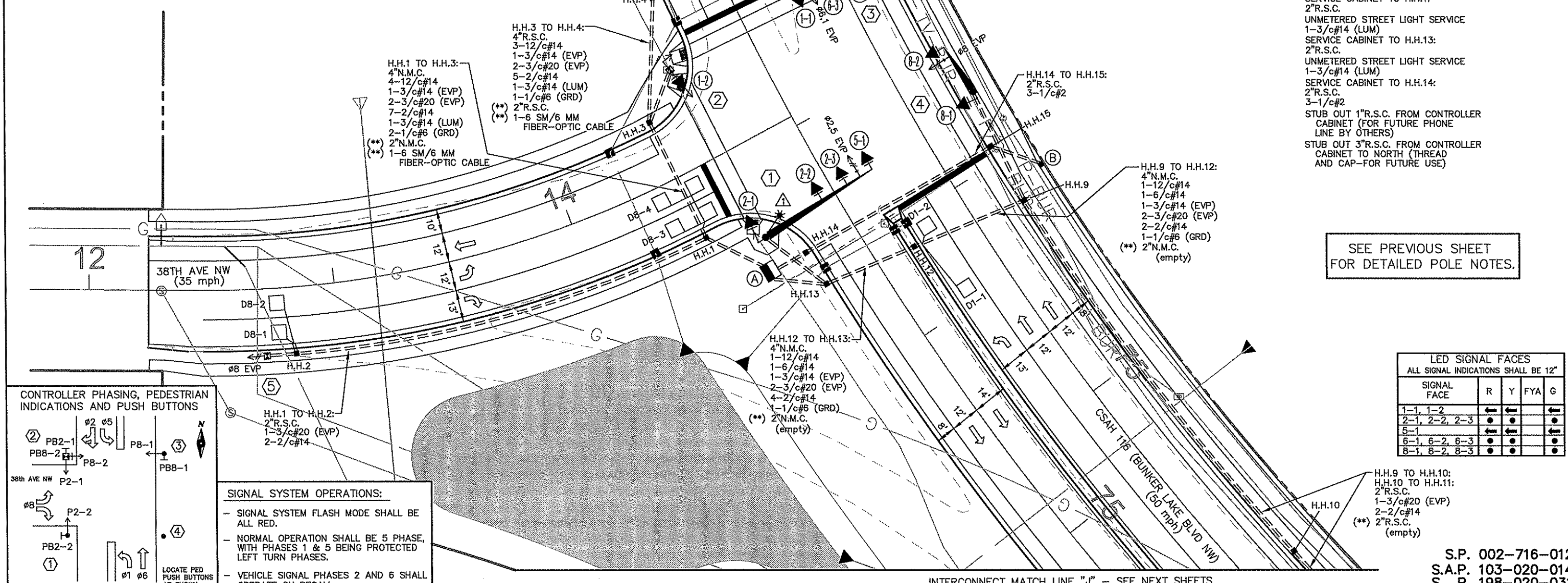
- (A) INSTALL CONTROLLER AND CABINET (FURNISHED BY COUNTY) EQUIPMENT PAD FOUNDATION BATTERY BACK-UP SIGNAL SERVICE CABINET BETWEEN CONTROLLER CABINET AND SERVICE CABINET: METERED SIGNAL SERVICE 2"R.S.C. 3-1/c#6 CONTROLLER CABINET TO H.H.1: 4"R.S.C. 4-12/c#14 1-3/c#14 (EVP) 3-3/c#20 (EVP) 11-2/c#14 2-1/c#6 (GRD.) CONTROLLER CABINET TO H.H.13: 4"R.S.C. 3-12/c#14 1-6/c#14 2-3/c#14 (EVP) 3-3/c#20 (EVP) 5-2/c#14 2-1/c#6 (GRD.) CONTROLLER CABINET TO H.H.1: 2"R.S.C. (\*\*) 2"R.S.C. (\*\*) 1-6 SM/6 MM FIBER-OPTIC CABLE CONTROLLER CABINET TO H.H.13: (\*\*) 2"R.S.C. (FOR FUTURE INTERCONNECT BY OTHERS) SERVICE CABINET TO H.H.1: 2"R.S.C. UNMETERED STREET LIGHT SERVICE 1-3/c#14 (LUM) SERVICE CABINET TO H.H.13: 2"R.S.C. UNMETERED STREET LIGHT SERVICE 1-3/c#14 (LUM) SERVICE CABINET TO H.H.14: 2"R.S.C. 3-1/c#2 STUB OUT 1"R.S.C. FROM CONTROLLER CABINET (FOR FUTURE PHONE LINE BY OTHERS) STUB OUT 3"R.S.C. FROM CONTROLLER CABINET TO NORTH (THREAD AND CAP-FOR FUTURE USE)

- (B) GROUND MOUNTED TRANSFORMER (S.O.P.)- TO BE F & I BY CONNEXUS EXTEND INTO H.H.15: 2"R.S.C. 3-1/c#2

SEE PREVIOUS SHEET FOR DETAILED POLE NOTES.

**LED SIGNAL FACES**  
ALL SIGNAL INDICATIONS SHALL BE 12"

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



**SIGNAL SYSTEM OPERATIONS:**

- SIGNAL SYSTEM FLASH MODE SHALL BE ALL RED.
- NORMAL OPERATION SHALL BE 5 PHASE, WITH PHASES 1 & 5 BEING PROTECTED LEFT TURN PHASES.
- VEHICLE SIGNAL PHASES 2 AND 6 SHALL OPERATE ON RECALL.

DRAWN BY: JMG  
DESIGNER: JMG  
CHECKED BY: JMG

DESIGN TEAM	NO.	BY	DATE

NO.	BY	DATE	REVISIONS

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*John M. Gray*  
Name: John M. Gray, PE  
Date: June 7, 2012  
Lic. No. 22457

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**ANOKA COUNTY, MINNESOTA**  
CITIES OF ANDOVER, ANOKA

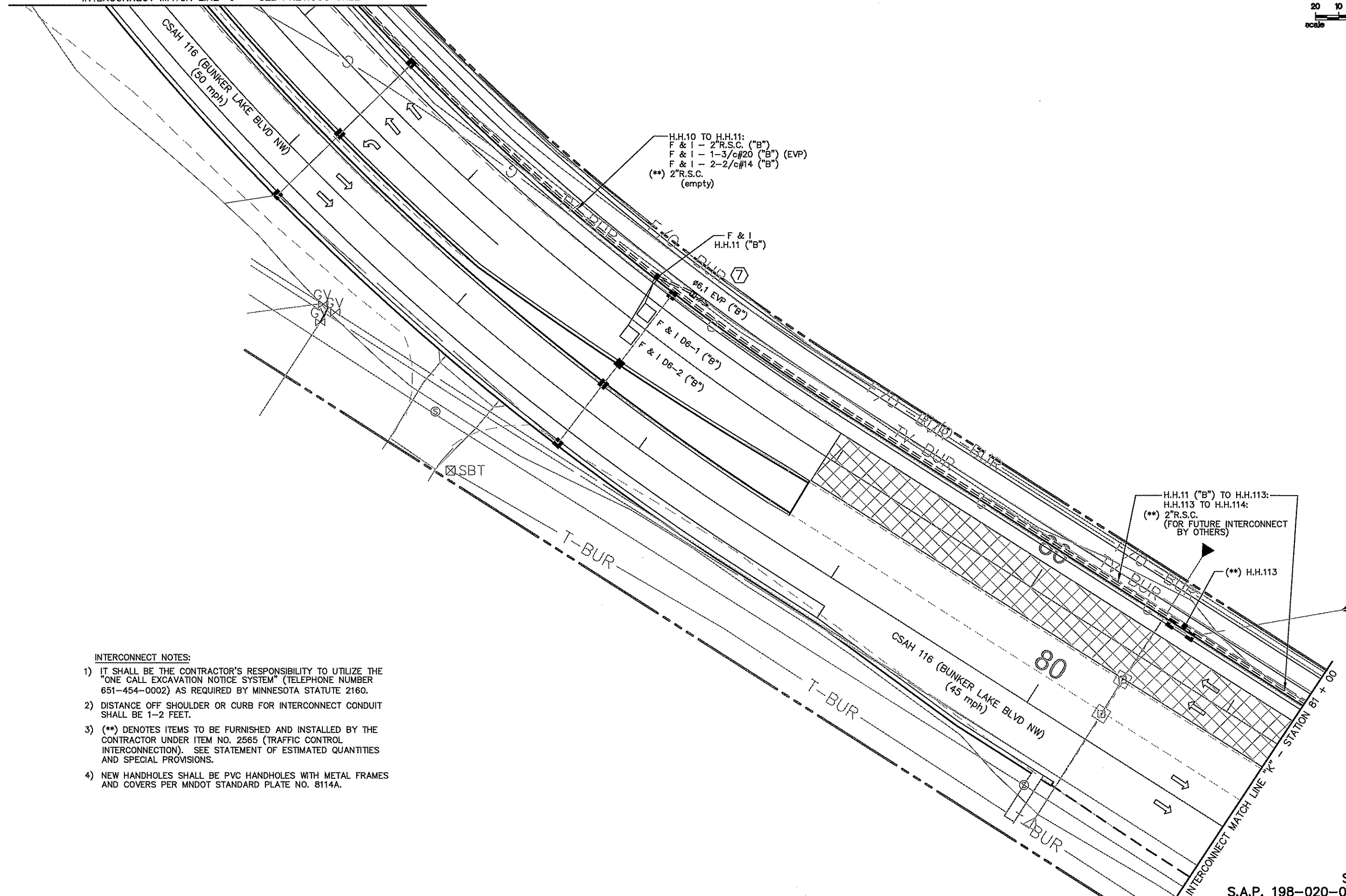
**TRAFFIC SIGNAL SYSTEM "B" INTERSECTION LAYOUT**  
CSAH 116 AT 38TH AVENUE NW

S.P. 002-716-012  
S.A.P. 103-020-014  
S.P. 198-020-031

FILE NO.	202
ANOKC. 120319	
SIGNAL SHEET	282
19 OF 26	

0271612\_SIGBASE-PEN.DWG 06/07/2012

INTERCONNECT MATCH LINE "J" - SEE PREVIOUS SHEET



H.H.10 TO H.H.11:  
 F & I - 2"R.S.C. ("B")  
 F & I - 1-3/c#20 ("B") (EVP)  
 F & I - 2-2/c#14 ("B")  
 (\*\*) 2"R.S.C.  
 (empty)

F & I  
 H.H.11 ("B")

ø6.1 EVP ("B")  
 F & I D6-1 ("B")  
 F & I D6-2 ("B")

H.H.11 ("B") TO H.H.113:  
 H.H.113 TO H.H.114:  
 (\*\*) 2"R.S.C.  
 (FOR FUTURE INTERCONNECT  
 BY OTHERS)

(\*\*) H.H.113

INTERCONNECT NOTES:

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S.P. 002-716-012  
 S.A.P. 103-020-014  
 S.A.P. 198-020-03 & 198-020-031

0271612\_SORBASE-PERADJWG 06/07/2012

DRAWN BY: JMG				
DESIGNER: JMG				
CHECKED BY: JMG				
DESIGN TEAM	NO.	BY	DATE	REVISIONS

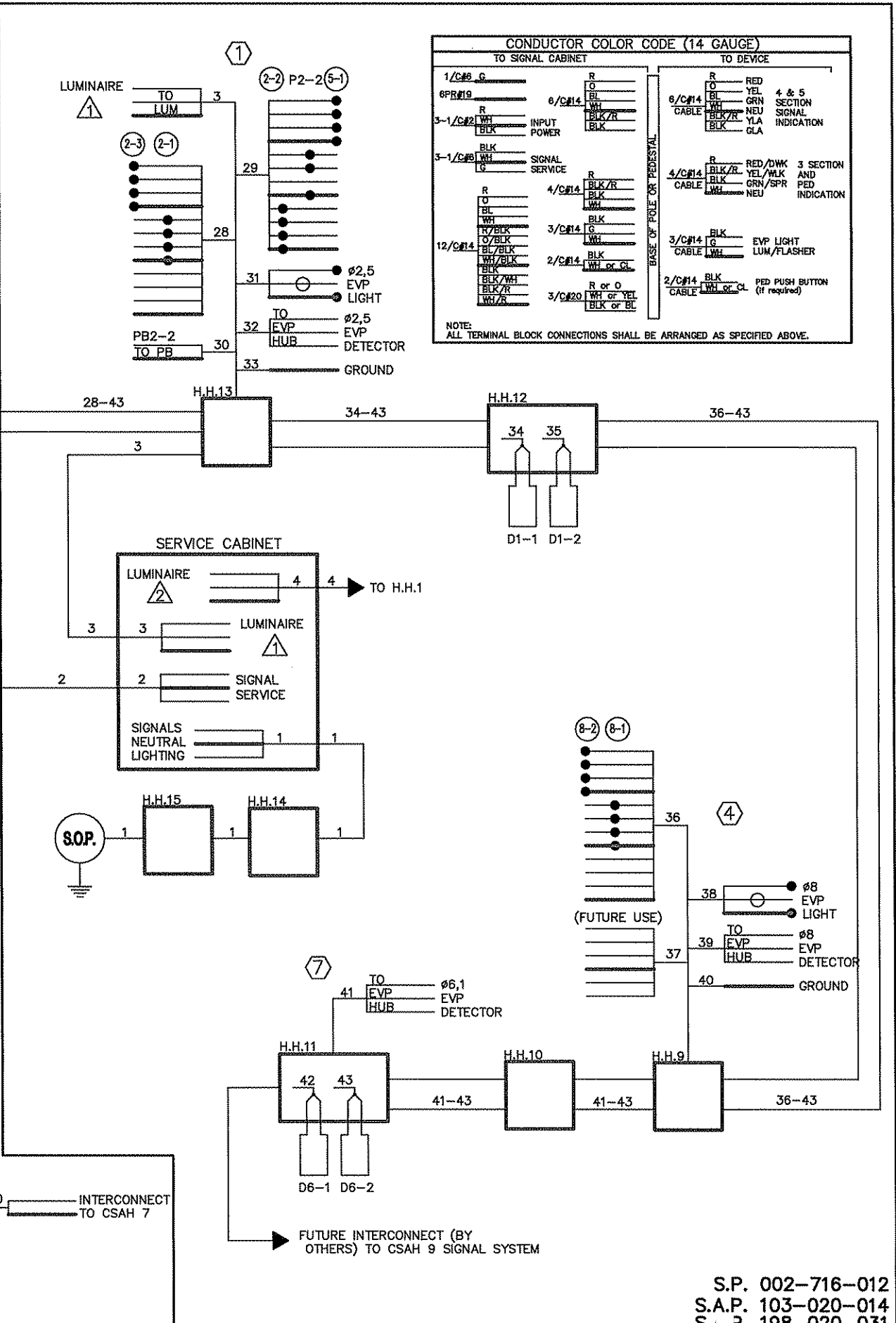
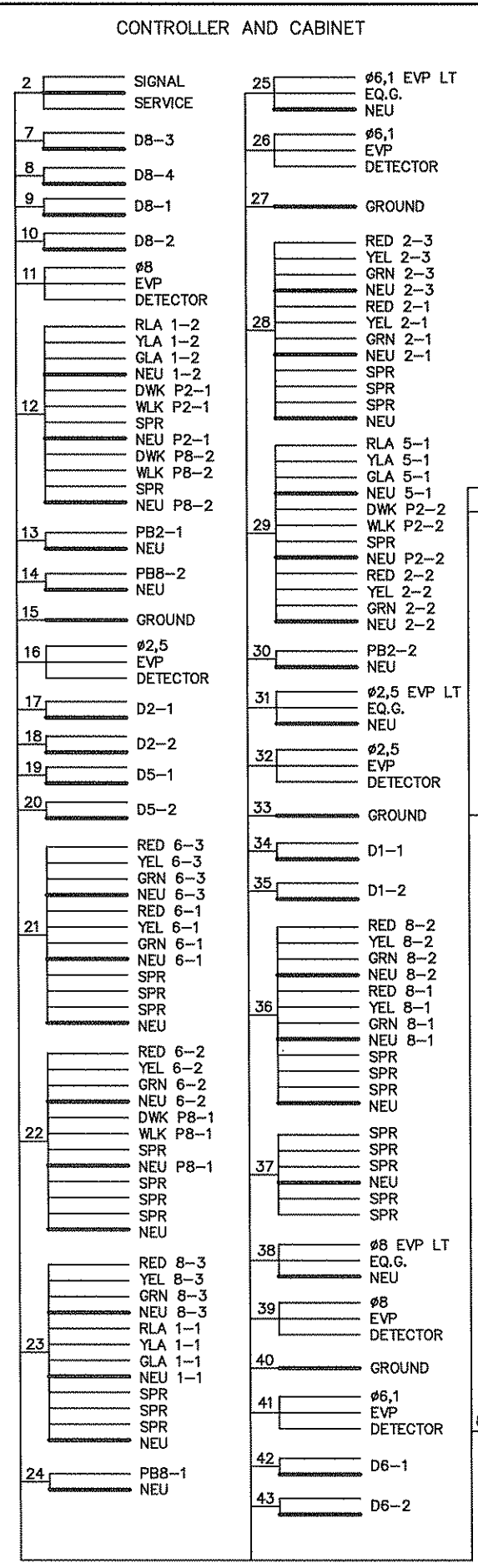
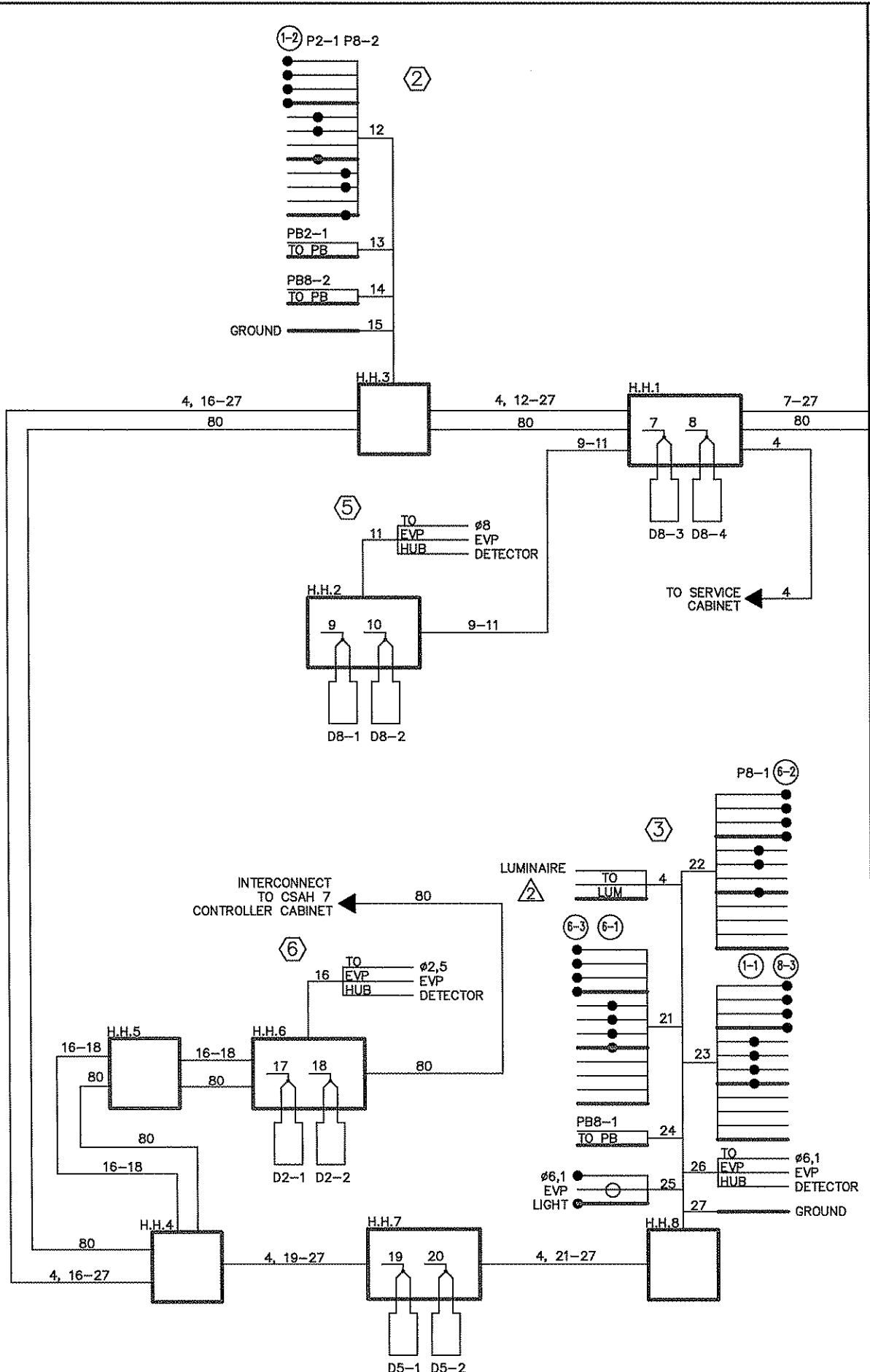
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**ANOKA COUNTY, MINNESOTA**  
 CITIES OF ANDOVER, ANOKA

TRAFFIC SIGNAL SYSTEM "B"/INTERCONNECT  
 INTERSECTION LAYOUT  
 CSAH 116 (38TH AVE NW TO CSAH 9)

FILE NO. ANOKC 120319  
 SIGNAL SHEET 20 OF 26  
**203**  
**282**



#### CONDUCTOR COLOR CODE (14 GAUGE)

TO SIGNAL CABINET		TO DEVICE	
1/C#8 G	R	Ø RED	3 SECTION INDICATION
6PR#9	Ø	Ø YEL	4 & 5 SECTION INDICATION
3-1/C#2 R	Ø	Ø GRN	Ø NEU
3-1/C#2 WH	Ø	Ø BLK/R	Ø YLA
3-1/C#2 BLK	Ø	Ø BLK	Ø GLA
5-1/C#B LG	Ø	Ø RED/DWK	3 SECTION AND PED INDICATION
	Ø	Ø BLK/R	Ø YEL/MLK
	Ø	Ø BLK	Ø GRN/SPR
	Ø	Ø WH	Ø NEU
R	Ø	Ø BLK	Ø EVP LIGHT
Ø	Ø	Ø BLK	Ø LUM/FLASHER
BL	Ø	Ø WH	Ø PED PUSH BUTTON (if required)
WH	Ø	Ø WH	
R/Y/BLK	Ø	Ø WH	
O/BLK	Ø	Ø WH	
BL/BLK	Ø	Ø WH	
BLK	Ø	Ø WH	
BLK/WH	Ø	Ø WH	
BLK/R	Ø	Ø WH	
WH/R	Ø	Ø WH	

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

0271612\_SIGNAGE-PERMANENT

DRAWN BY: JMG					
DESIGNER: JMG					
CHECKED BY: JMG					
DESIGN TEAM	NO.	BY	DATE	REVISIONS	

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ST. PAUL, MN 55119

**ANOKA COUNTY, MINNESOTA**  
CITIES OF ANDOVER, ANOKA

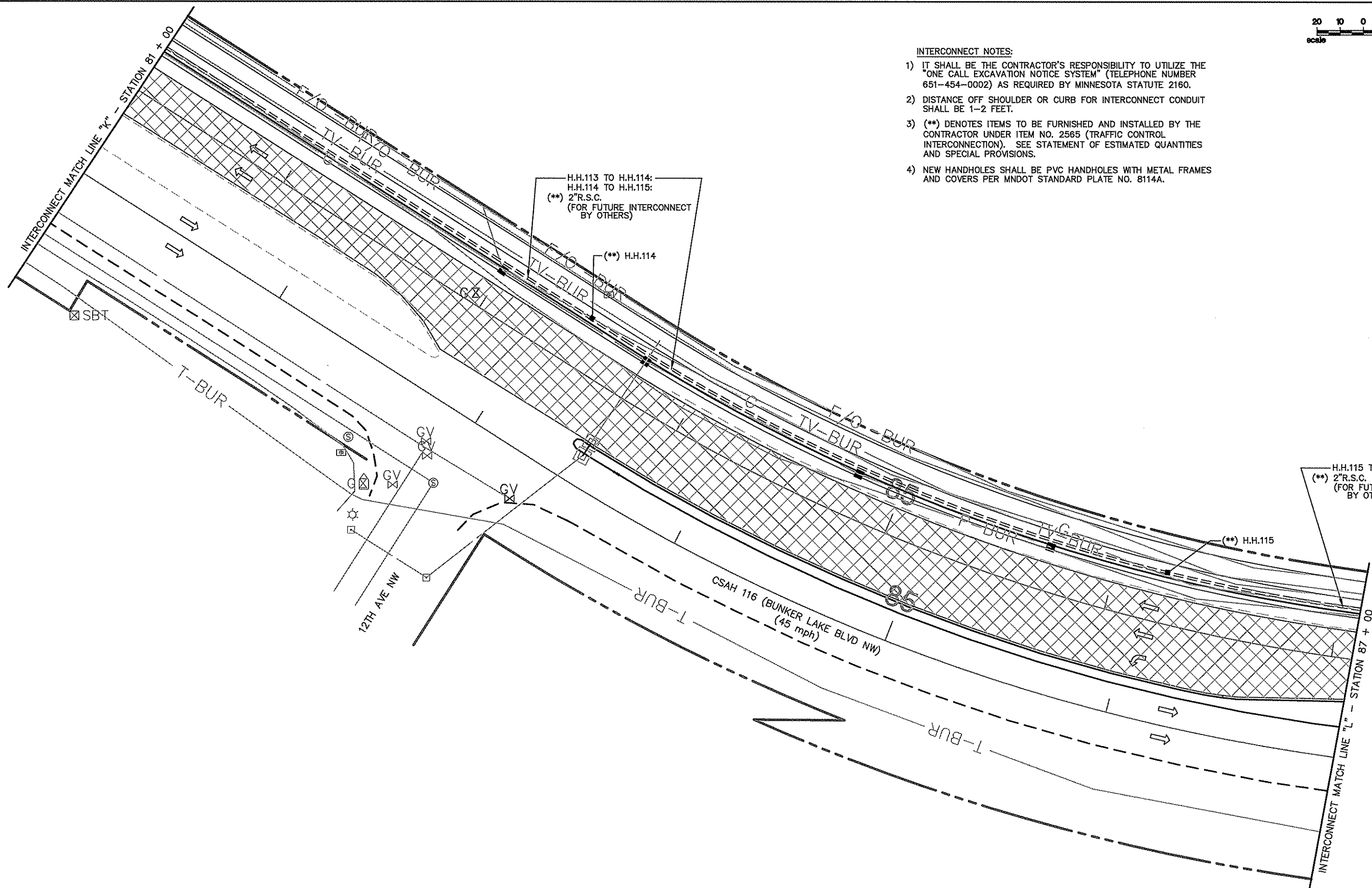
**TRAFFIC SIGNAL SYSTEM 'B'**  
FIELD WIRING DIAGRAM  
CSAH 116 AT 38TH AVENUE NW

S.P. 002-716-012  
S.A.P. 103-020-014  
S.I. P. 198-020-031

FILE NO. ANOKC 120319	<b>204</b>
SIGNAL SHEET 21 OF 26	<b>282</b>



- INTERCONNECT NOTES:**
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  - 4) NEW HANDHOLES SHALL BE PVC HANDHOLES WITH METAL FRAMES AND COVERS PER MNDOT STANDARD PLATE NO. 8114A.



H.H.113 TO H.H.114:  
H.H.114 TO H.H.115:  
(\*\*) 2"R.S.C.  
(FOR FUTURE INTERCONNECT  
BY OTHERS)

(\*\*) H.H.114

H.H.115 TO H.H.116:  
(\*\*) 2"R.S.C.  
(FOR FUTURE INTERCONNECT  
BY OTHERS)

(\*\*) H.H.115

12TH AVE NW

CSAH 116 (BUNKER LAKE BLVD NW)  
(45 mph)

S.P. 002-716-012  
S.A.P. 198-020-030

0271612\_SIGBASE-PERMDWG  
06/07/2012

DRAWN BY: JMG  
DESIGNER: JMG  
CHECKED BY: JMG

DESIGN TEAM	NO.	BY	DATE	REVISIONS

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

*John M. Gray*  
Name: John M. Gray, PE  
Lic. No. 22457  
Date: June 7, 2012

**SEH**  
PHONE: (651) 490-2000  
3635 VADNAIS CENTER DR.  
ST. PAUL, MN 55110

**ANOKA COUNTY,  
MINNESOTA**  
CITIES OF ANDOVER, ANOKA

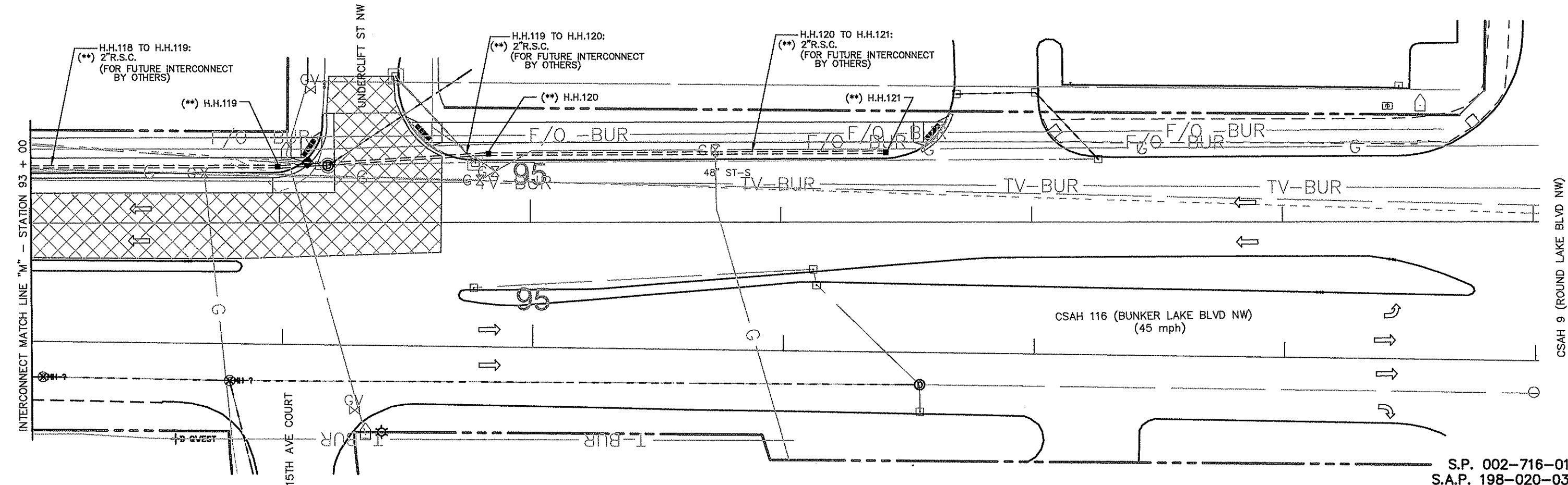
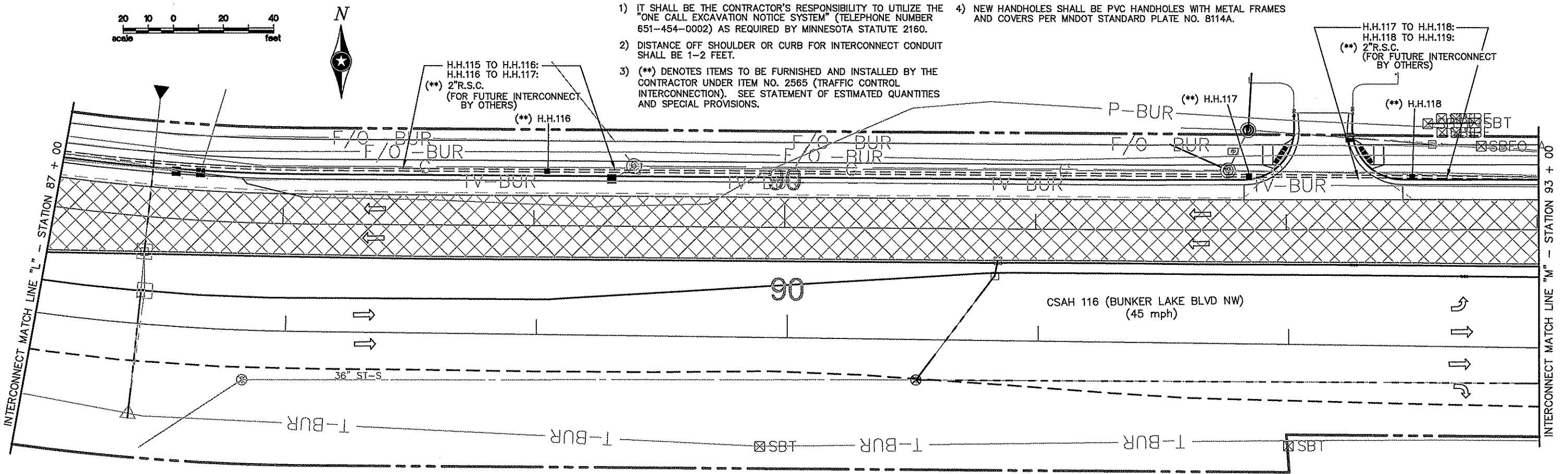
**TRAFFIC CONTROL INTERCONNECTION  
INTERSECTION LAYOUT**  
CSAH 116 (38TH AVE NW TO CSAH 9)

FILE NO. ANOKC 120319  
SIGNAL SHEET 22 OF 26  
**205**  
**282**



**INTERCONNECT NOTES:**

- 1) IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO UTILIZE THE "ONE CALL EXCAVATION NOTICE SYSTEM" (TELEPHONE NUMBER 651-454-0002) AS REQUIRED BY MINNESOTA STATUTE 2160.
- 2) DISTANCE OFF SHOULDER OR CURB FOR INTERCONNECT CONDUIT SHALL BE 1-2 FEET.
- 3) (\*\*) DENOTES ITEMS TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR UNDER ITEM NO. 2565 (TRAFFIC CONTROL INTERCONNECTION). SEE STATEMENT OF ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.
- 4) NEW HANDHOLES SHALL BE PVC HANDHOLES WITH METAL FRAMES AND COVERS PER MNDOT STANDARD PLATE NO. 8114A.



0271612\_SIGBASE-PERMDWG 06/07/2012

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 3635 VADNAIS CENTER DR.  
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**ANOKA COUNTY, MINNESOTA**  
 CITIES OF ANDOVER, ANOKA

**TRAFFIC CONTROL INTERCONNECTION INTERSECTION LAYOUT**  
 CSAH 116 (38TH AVE NW TO CSAH 9)

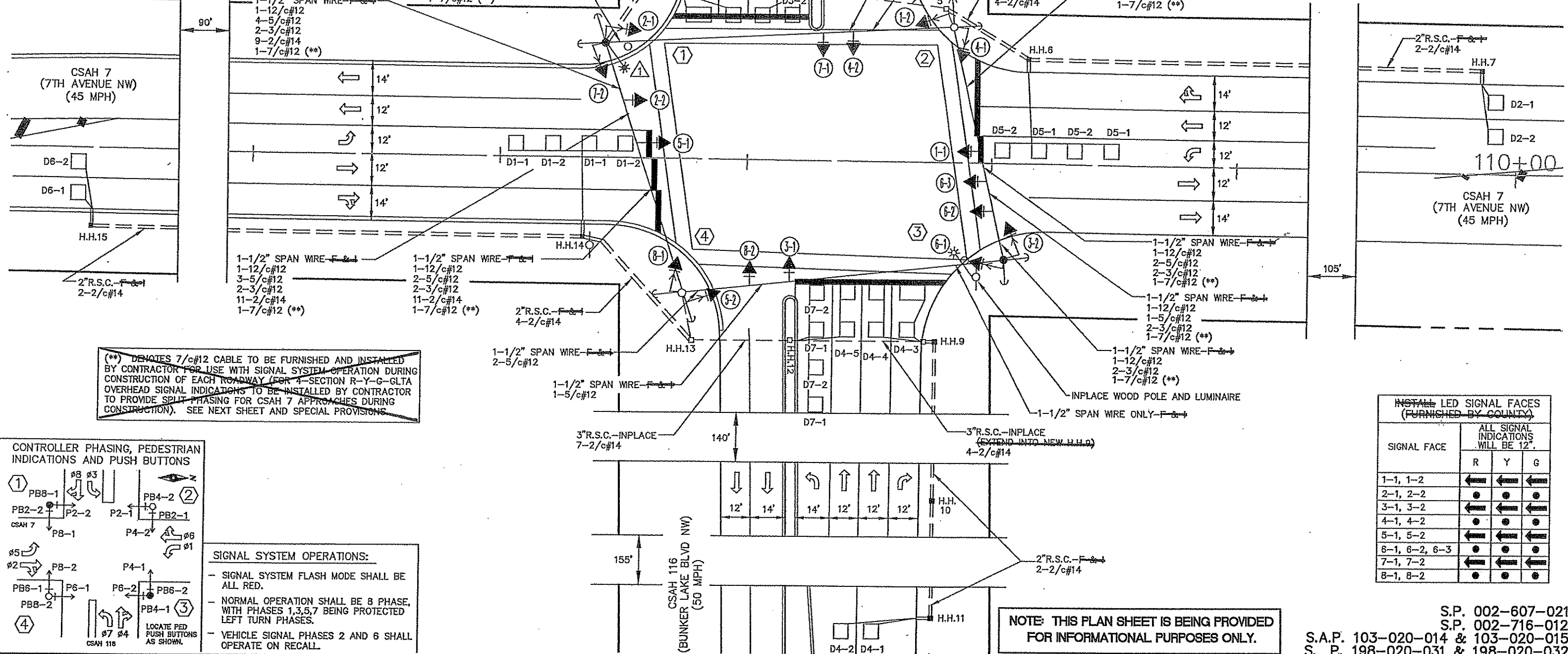
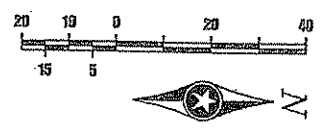
FILE NO. ANOKC 120319	<b>206</b>
SIGNAL SHEET 23 OF 26	
<b>282</b>	

S.P. 002-716-012  
 S.A.P. 198-020-030

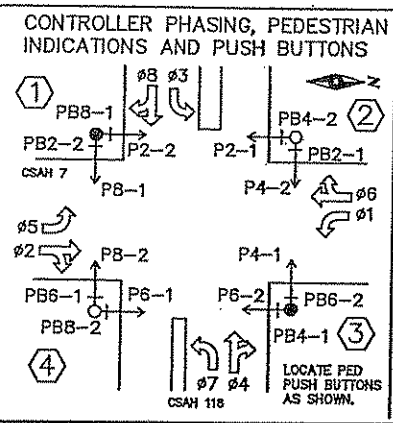
N.M.C. LOOP DETECTORS				
NUMBER	SIZE (FT.)	LOCATION	FUNCTION	STATUS
D1-1	2-6x6	20' & 50'	1	F
D1-2	2-6x6	5' & 35'	1	F
D2-1	6x6	300'	1	F
D2-2	6x6	300'	1	F
D3-1	2-6x6	15' & 45'	1	F
D3-2	2-6x6	0' & 30'	1	F
D4-1	6x6	400'	3,8	F
D4-2	6x6	400'	3,8	F
D4-3	6x10&6x6	0' & 15'	7	F
D4-4	2-6x6	0' & 15'	1	F
D4-5	2-6x6	0' & 15'	1	F
D5-1	2-6x6	20' & 50'	1	F
D5-2	2-6x6	5' & 35'	1	F
D6-1	6x6	300'	1	F
D6-2	6x6	300'	1	F
D7-1	2-6x6	15' & 45'	1	F
D7-2	2-6x6	0' & 30'	1	F
D8-1	2-6x6	400'	3,8	INPLACE
D8-2	6x10&6x6	0' & 15'	7	F
D8-3	2-6x6	0' & 15'	1	F
D8-4	2-6x6	0' & 15'	1	F

- LOOP DETECTORS FUNCTIONS:
- 1) CALL AND EXTEND
  - 2) CALL ONLY
  - 3) EXTEND ONLY
  - 4) CALL ONLY DENSITY
  - 5) DELAYED CALL ONLY
  - 6) DELAYED CALL ONLY DENSITY
  - 7) DELAYED CALL- IMMEDIATE EXTEND
  - 8) CARRY OVER (STRETCH)
  - 9) ADVISORY DETECTOR
  - 10) SAMPLING DETECTOR
  - 11) SPECIAL DETECTOR

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



(\*\*) DENOTES 7/c#12 CABLE TO BE FURNISHED AND INSTALLED BY CONTRACTOR FOR USE WITH SIGNAL SYSTEM OPERATION DURING CONSTRUCTION OF EACH ROADWAY (FOR 4-SECTION R-Y-G-GLTA OVERHEAD SIGNAL INDICATIONS TO BE INSTALLED BY CONTRACTOR TO PROVIDE SPLIT PHASING FOR CSAH 7 APPROACHES DURING CONSTRUCTION). SEE NEXT SHEET AND SPECIAL PROVISIONS.



- SIGNAL SYSTEM OPERATIONS:
- SIGNAL SYSTEM FLASH MODE SHALL BE ALL RED.
  - NORMAL OPERATION SHALL BE 8 PHASE, WITH PHASES 1,3,5,7 BEING PROTECTED LEFT TURN PHASES.
  - VEHICLE SIGNAL PHASES 2 AND 6 SHALL OPERATE ON RECALL.

INSTALL LED SIGNAL FACES (FURNISHED BY COUNTY)

SIGNAL FACE	ALL SIGNAL INDICATIONS WILL BE 12"		
	R	Y	G
1-1, 1-2	←	←	←
2-1, 2-2	●	●	●
3-1, 3-2	←	←	←
4-1, 4-2	●	●	●
5-1, 5-2	←	←	←
6-1, 6-2, 6-3	●	●	●
7-1, 7-2	←	←	←
8-1, 8-2	●	●	●

NOTE: THIS PLAN SHEET IS BEING PROVIDED FOR INFORMATIONAL PURPOSES ONLY.

S.P. 002-607-021  
S.P. 002-716-012  
S.A.P. 103-020-014 & 103-020-015  
S. P. 198-020-031 & 198-020-032

0271612\_SIGSETS.DWG 06/07/2012

DRAWN BY: JMG	NO.	BY	DATE
DESIGNER: JMG			
CHECKED BY: JMG			

REVISIONS			
NO.	BY	DATE	

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ANOKA COUNTY,  
MINNESOTA  
CITIES OF ANDOVER, ANOKA

INPLACE SIGNAL SYSTEM  
'FOR INFORMATION ONLY'  
CSAH 116 AT CSAH 7 (7TH AVE NW)

FILE NO. ANOKC 120319	207
SIGNAL SHEET 24 OF 26	

NOTES:

- 1) LOCATION OF POLES, LOOP DETECTORS AND HANDHOLES SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER.
- 2) ALL SIGNAL FACES WILL BE NEW (FURNISHED BY COUNTY AND INSTALLED BY CONTRACTOR) AND WILL HAVE BACKGROUND SHIELDS.
- 3) LOOP DETECTOR WIRES SHALL BE CROSS-LINKED POLYETHYLENE (XLP) IN 3/4" N.M.C. SEE SPECIAL PROVISIONS.
- 4) NEW HANDHOLES SHALL BE PVC HANDHOLES WITH METAL FRAMES AND COVERS, PER Mn/DOT STANDARD PLATE NO. 8114A.
- 5) SEE DETAILS FOR WOOD POLE, PEDESTRIAN PUSH BUTTON AND SPAN WIRE MOUNTING DETAILS.
- 6) EACH PEDESTRIAN INDICATION WILL BE NEW (FURNISHED BY COUNTY AND INSTALLED BY CONTRACTOR) AND WILL BE A ONE SECTION HAND/WALKING PERSON INDICATION. SEE SPECIAL PROVISIONS.
- 7) ALL VEHICLE AND PEDESTRIAN SIGNAL INDICATIONS WILL BE LED. SEE SPECIAL PROVISIONS.
- 8) ALL TRAFFIC SIGNAL CABLES AND CONDUCTORS, AND SPAN WIRE SHALL BE NEW, FURNISHED AND INSTALLED BY CONTRACTOR, EXCEPT AS OTHERWISE NOTED IN PLANS (REMOVE EXISTING CABLES, CONDUCTORS & SPAN WIRE AS NOTED IN PLANS & SPECIAL PROVISIONS).
- 9) CONTRACTOR SHALL INSTALL EXTENDED BRACKETS FOR EACH POLE MOUNTED VEHICLE AND PEDESTRIAN SIGNAL FACE.
- 10) SEE SPECIAL PROVISIONS REGARDING REMOVAL, SALVAGING AND INSTALLATION OF INPLACE SIGNAL EQUIPMENT.
- 11) INPLACE ITEMS TO BE REUSED INPLACE AS PART OF THE REVISE SIGNAL SYSTEM SHALL BE PROTECTED AND MAINTAINED INPLACE. SEE SPECIAL PROVISIONS.
- 12) CONTRACTOR SHALL MAINTAIN OPERATION OF THE INPLACE SIGNAL SYSTEM, UNTIL OTHERWISE APPROVED BY ENGINEER.
- 13) CONTRACTOR SHALL COORDINATE ALL SIGNAL INSTALLATION WORK WITH ROAD WORK TO BE COMPLETED BY OTHERS AS PART OF THE ENTIRE PROJECT.
- 14) F & I = MATERIALS TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR AS PART OF REVISED SIGNAL SYSTEM.
- 15) CONTRACTOR SHALL COIL AND STORE AN ADDITIONAL 10' OF EACH OVERHEAD 5/c#12 CABLE AT EACH OVERHEAD SIGNAL LOCATION (FOR FUTURE USE BY OTHERS).
- 16) CONTRACTOR SHALL COIL AND STORE AN ADDITIONAL 10' OF EACH SPAN WIRE AND EACH CABLE THAT EXTENDS TO EACH WOOD POLE (FOR FUTURE USE BY OTHERS).
- 17) SEE SPECIAL PROVISIONS REGARDING COUNTY FURNISHED MATERIALS.
- 18) DURING ROAD CONSTRUCTION, CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING OPERATION OF THE SIGNAL SYSTEM (INCLUDING INSTALLATION OF 2-4 SECTION R-Y-G-GLTA OVERHEAD SIGNALS FOR CSAH 7 APPROACHES, REVISING SIGNAL OPERATION TO BE SPLIT PHASED FOR CSAH 7 APPROACHES DURING CONSTRUCTION, AND RELOCATING 4 SECTION SIGNALS DURING CONSTRUCTION TO BE OVER APPROPRIATE LANES) (INCIDENTAL TO ITEM NO. 2565.616 FOR THIS SIGNAL SYSTEM). UPON COMPLETION OF ROAD CONSTRUCTION, CONTRACTOR SHALL SALVAGE 4 SECTION SIGNALS, INSTALL ALL OVERHEAD SIGNALS FOR CSAH 7 APPROACHES, REVISE PHASING FOR CSAH 7 APPROACHES TO OPERATE WITH PROTECTED LEFT TURN PHASING, AND MAKE SIGNAL SYSTEM OPERATIONAL.

Ⓐ INPLACE (MAINTAIN INPLACE) CABINET FOUNDATION  
EXTENDED INTO H.H.17:  
METERED SIGNAL SERVICE  
1 1/4" R.S.C.  
3-1/c#6  
EXTENDED INTO H.H.1:  
4" R.S.C.  
5-2/c#14

INPLACE (REMOVE) - 4-2/c#14

F & I - 5-2/c#14

INPLACE (SALVAGE) - CONTROLLER AND CABINET

INSTALL (FURNISHED BY COUNTY) - CONTROLLER AND CABINET

INPLACE (MAINTAIN INPLACE) - EXTENDED INTO H.H.18:  
3" R.S.C.  
4" R.S.C.

INPLACE (REMOVE) - 8-12/c#12  
5-3/c#12  
8-2/c#14

F & I - 4-12/c#12  
9-5/c#12  
8-3/c#12  
11-2/c#14  
2-7/c#12 (\*\*)

① INPLACE (SALVAGE) 45' WOOD POLE-CLASS 2  
2-DOWN GUYS, GUY GUARDS AND SCREW ANCHORS  
2-ONE WAY SIGNALS-WOOD POLE MOUNTED  
2-SETS PEDESTRIAN INDICATIONS-WOOD POLE MOUNTED  
2-PEDESTRIAN PUSH BUTTONS  
METAL JUNCTION BOX

INPLACE (SALVAGE & INSTALL) LUMINAIRE-250 WATT H.P.S. AND 15' MAST ARM WITH PEC

INPLACE (REMOVE) 2-TYPE 10B BRACKETING-WOOD POLE MOUNTED  
2-PEDESTRIAN INSTRUCTION SIGNS (R10-4c)  
2" R.S.C. RISER AND WEATHERHEAD ABOVE JUNCTION BOX  
2-12/c#12  
2" R.S.C. RISER BELOW JUNCTION BOX INTO H.H.18  
2-12/c#12  
1-3/c#12  
2-3" R.S.C. RISERS AND WEATHERHEADS (EXTENDED INTO H.H.18)  
6-12/c#12  
4-3/c#12  
8-2/c#14  
2-1/c#10 (LUM)

INSTALL (FURNISHED BY COUNTY) TYPE 10B-WOOD POLE MOUNTED (7-2, P8-1)  
TYPE 10B-WOOD POLE MOUNTED (2-1, P2-2)  
2-PEDESTRIAN PUSH BUTTONS AND SIGNS (R10-4b)

F & I 45' WOOD POLE-CLASS 2  
2-DOWN GUYS, GUY GUARDS AND SCREW ANCHORS  
METAL JUNCTION BOX  
EXTEND INTO H.H.18:  
2" R.S.C. RISER BELOW JUNCTION BOX  
1-12/c#12  
2-3/c#12  
EXTEND INTO H.H.18:  
2-4" R.S.C. RISERS AND WEATHERHEADS  
3-12/c#12  
9-5/c#12  
6-3/c#12  
11-2/c#14  
1-3/c#12 (LUM)  
2-7/c#12 (\*\*)  
1" R.S.C. RISER ABOVE SPAN WIRE  
1-3/c#12 (LUM)

Ⓑ INPLACE (MAINTAIN INPLACE) CABINET FOUNDATION  
2" R.S.C. STUB OUT (FOR SERVICE BY CONNEXUS)  
EXTENDED INTO H.H.17:  
METERED SIGNAL SERVICE  
1 1/4" R.S.C.  
3-1/c#6  
EXTENDED INTO H.H.18:  
UNMETERED STREET LIGHT SERVICE  
1 1/4" R.S.C.

INPLACE (SALVAGE) - SIGNAL SERVICE CABINET

INPLACE (REMOVE) - 2-1/c#10 (LUM)

INSTALL (FURNISHED BY COUNTY) - SIGNAL SERVICE CABINET

F & I - 1-3/c#12 (LUM)

② INPLACE (MAINTAIN INPLACE) 45' WOOD POLE-CLASS 2  
2-DOWN GUYS, GUY GUARDS AND SCREW ANCHORS  
METAL JUNCTION BOX  
3" R.S.C. RISER AND WEATHERHEAD ABOVE JUNCTION BOX

INPLACE (SALVAGE) 2-ONE WAY SIGNALS-WOOD POLE MOUNTED  
2-SETS PEDESTRIAN INDICATIONS-WOOD POLE MOUNTED  
2-PEDESTRIAN PUSH BUTTONS

INPLACE (REMOVE) 2-TYPE 10B BRACKETING-WOOD POLE MOUNTED  
2-PEDESTRIAN INSTRUCTION SIGNS (R10-4c)  
3-12/c#12  
1-3/c#12

INSTALL (FURNISHED BY COUNTY) TYPE 10B-WOOD POLE MOUNTED (1-2, P2-1)  
TYPE 10B-WOOD POLE MOUNTED (4-1, P4-2)  
2-PEDESTRIAN PUSH BUTTONS AND SIGNS (R10-4b)

F & I 1-12/c#12  
2-3/c#12

③ INPLACE (SALVAGE) 45' WOOD POLE-CLASS 2  
2-DOWN GUYS, GUY GUARDS AND SCREW ANCHORS  
2-ONE WAY SIGNALS-WOOD POLE MOUNTED  
2-SETS PEDESTRIAN INDICATIONS-WOOD POLE MOUNTED  
2-PEDESTRIAN PUSH BUTTONS  
METAL JUNCTION BOX

INPLACE (REMOVE) 2-TYPE 10B BRACKETING-WOOD POLE MOUNTED  
2-PEDESTRIAN INSTRUCTION SIGNS (R10-4c)  
3" R.S.C. RISER AND WEATHERHEAD ABOVE JUNCTION BOX  
3-12/c#12  
2-3/c#12

INSTALL (FURNISHED BY COUNTY) TYPE 10B-WOOD POLE MOUNTED (3-2, P4-1)  
TYPE 10B-WOOD POLE MOUNTED (6-1, P6-2)  
2-PEDESTRIAN PUSH BUTTONS AND SIGNS (R10-4b)

F & I 45' WOOD POLE-CLASS 2  
2-DOWN GUYS, GUY GUARDS AND SCREW ANCHORS  
METAL JUNCTION BOX  
3" R.S.C. RISER AND WEATHERHEAD ABOVE JUNCTION BOX  
1-12/c#12  
2-3/c#12

④ INPLACE (MAINTAIN INPLACE) 45' WOOD POLE-CLASS 2  
2-DOWN GUYS, GUY GUARDS AND SCREW ANCHORS  
METAL JUNCTION BOX  
3" R.S.C. RISER AND WEATHERHEAD ABOVE JUNCTION BOX  
2" R.S.C. RISER BELOW JUNCTION BOX INTO H.H.13

INPLACE (SALVAGE) 2-ONE WAY SIGNALS-WOOD POLE MOUNTED  
2-SETS PEDESTRIAN INDICATIONS-WOOD POLE MOUNTED  
2-PEDESTRIAN PUSH BUTTONS

INPLACE (REMOVE) 2-TYPE 10B BRACKETING-WOOD POLE MOUNTED  
2-PEDESTRIAN INSTRUCTION SIGNS (R10-4c)  
3-12/c#12  
1-3/c#12  
8-2/c#14

INSTALL (FURNISHED BY COUNTY) TYPE 10B-WOOD POLE MOUNTED (5-2, P6-1)  
TYPE 10B-WOOD POLE MOUNTED (8-1, P8-2)  
2-PEDESTRIAN PUSH BUTTONS AND SIGNS (R10-4b)

F & I 1-12/c#12  
2-3/c#12  
11-2/c#14 (EXTEND INTO H.H.13)

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S.P. 002-607-021

S.P. 002-716-012

S.P. 103-020-014 & 103-020-015

S.P. 198-020-031 & 198-020-032

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**SEH**

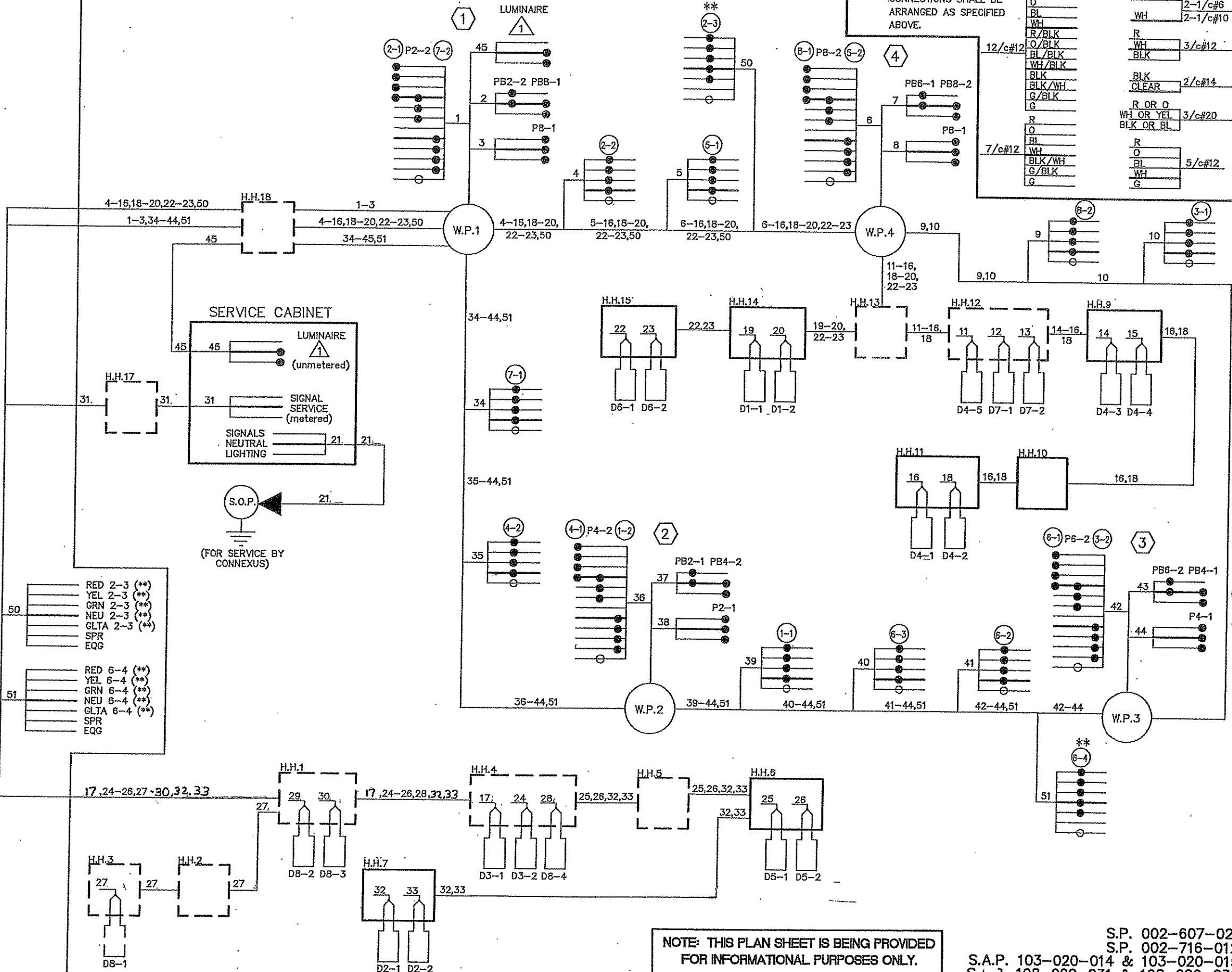
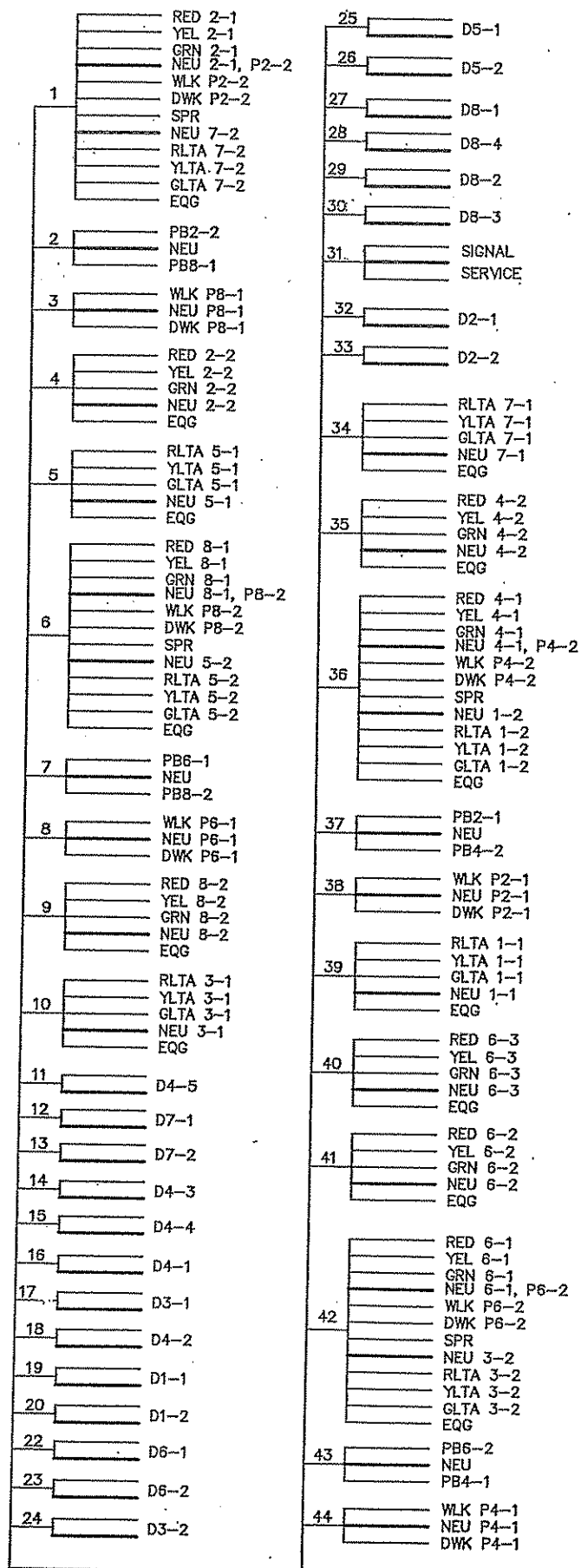
**ANOKA COUNTY, MINNESOTA**  
CITIES OF ANDOVER, ANOKA

**INPLACE SIGNAL SYSTEM**  
**'FOR INFORMATION ONLY'**  
CSAH 116 AT CSAH 7 (7TH AVE NW)

FILE NO. ANOKC 120319  
SIGNAL SHEET 282  
25 OF 26

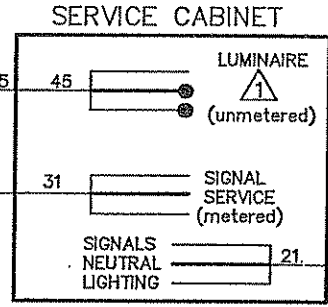


CONTROLLER CABINET



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

CONDUCTOR COLOR CODING	
R	BLK
O	WH
BL	2-1/c#6
WH	2-1/c#10
R/BLK	R
O/BLK	WH
BL/BLK	3/c#12
WH/BLK	BLK
BLK	BLK
BLK/WH	CLEAR
G/BLK	2/c#14
R	R OR O
O	WH OR YEL
BL	3/c#20
WH	BLK OR BL
G	R
	O
	BL
	WH
	G
	5/c#12



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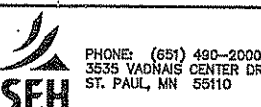
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Date: June 7, 2012 Name: John M. Gray, PE Lic. No. 22457



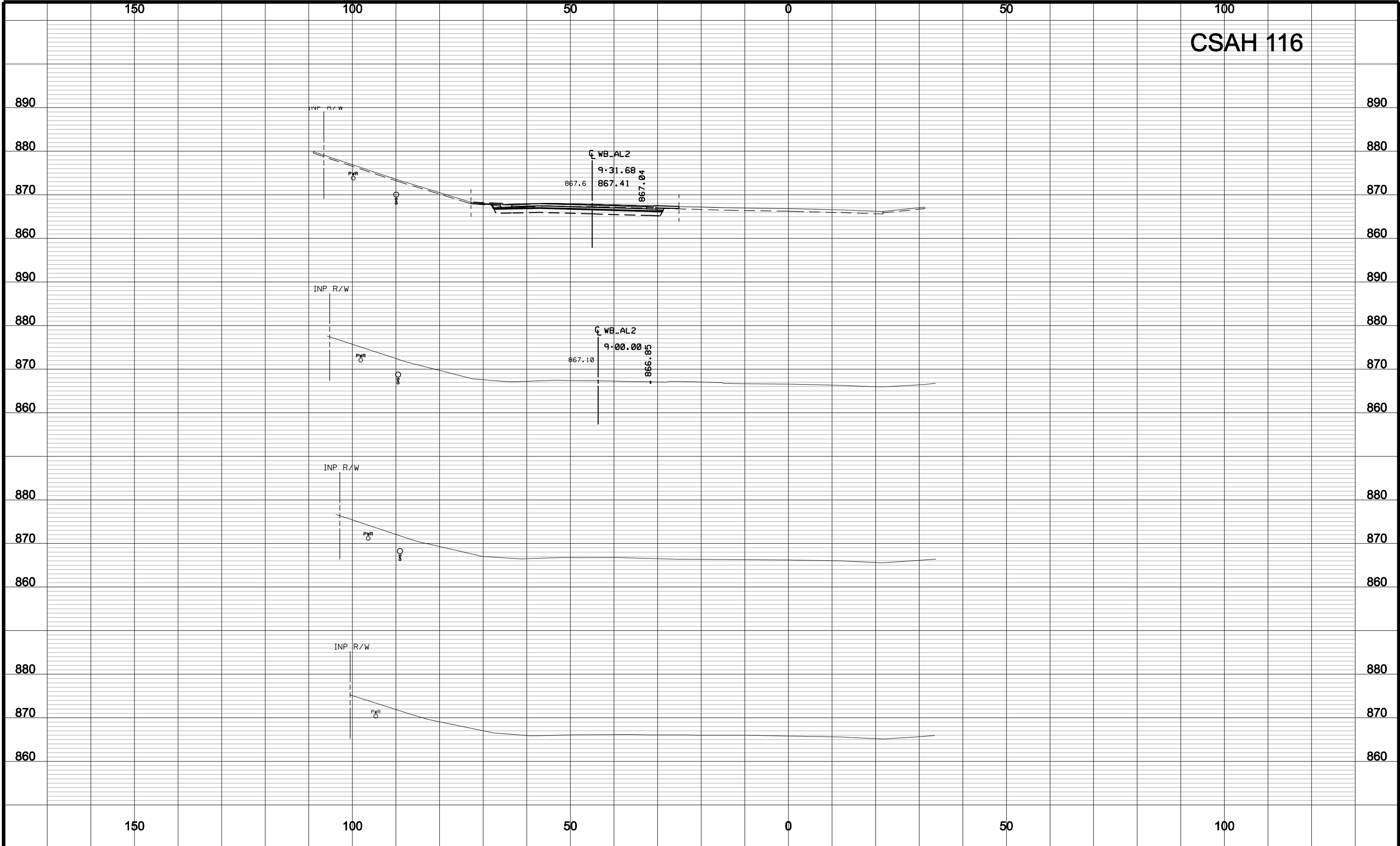
ANOKA COUNTY, MINNESOTA  
 CITIES OF ANDOVER, ANOKA

INPLACE SIGNAL SYSTEM  
 'FOR INFORMATION ONLY'  
 CSAH 116 AT CSAH 7 (7TH AVE NW)

FILE NO. ANOKC 120319  
 SIGNAL SHEET 26 OF 26  
**209**  
**282**

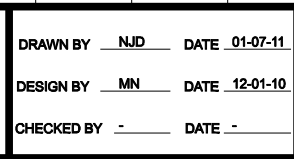
0271612\_SIGSHEETS.DWG 06/07/2012

CSAH 116



NO	DATE	BY	CKD	APPR	REVISION
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DRAWN BY <u>NJD</u> DATE <u>01-07-11</u> DESIGN BY <u>MN</u> DATE <u>12-01-10</u> CHECKED BY <u>-</u> DATE <u>-</u>
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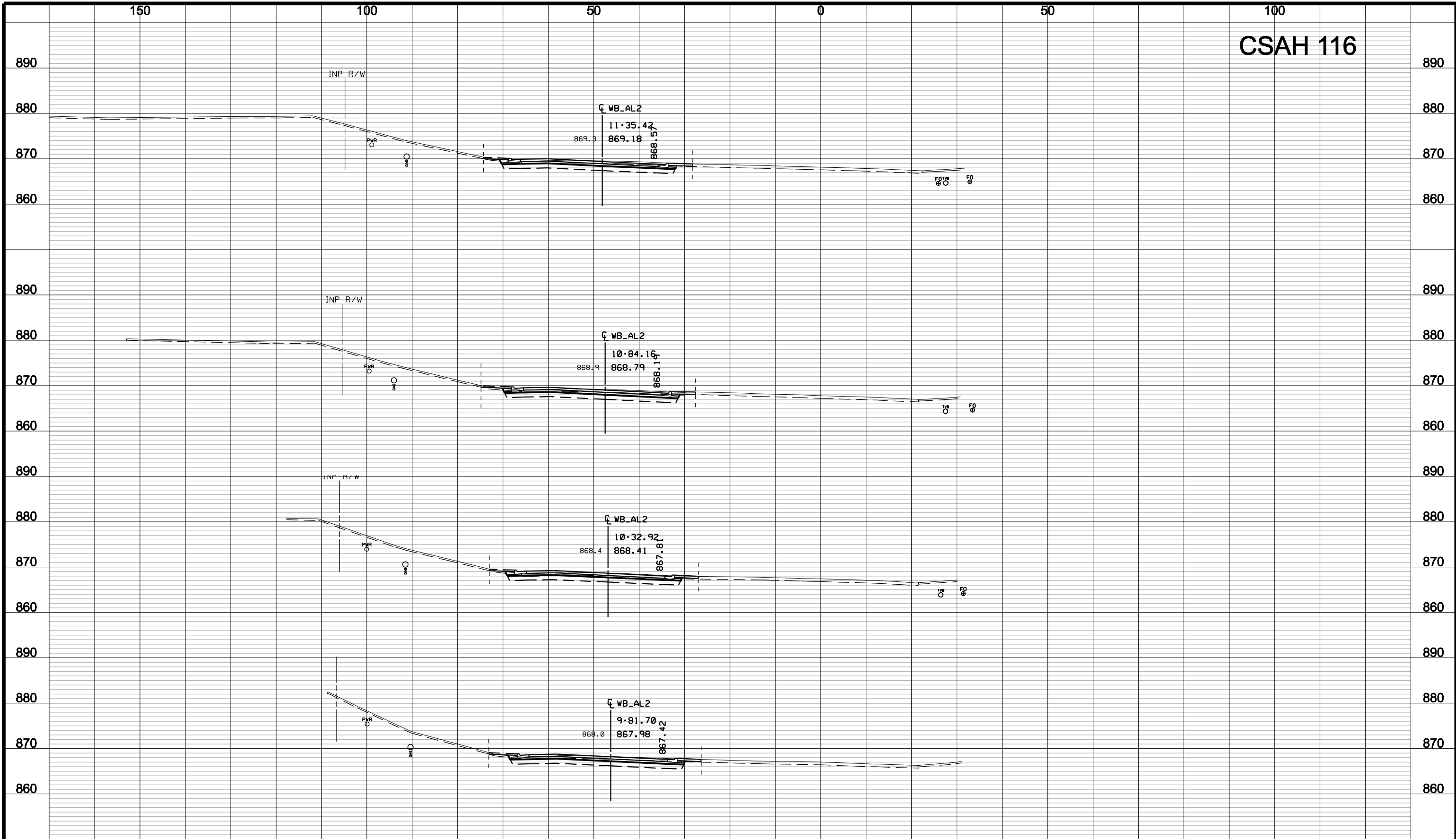


ANOKA COUNTY  
HIGHWAY DEPT.

S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

CROSS SECTIONS	
STA <u>3+91.68</u>	TO <u>3+91.68</u>
Sheet <u>210</u> of <u>282</u> Sheets	

# CSAH 116



150 100 50 0 50 100

NO	DATE	BY	CKD	APPR	REVISION
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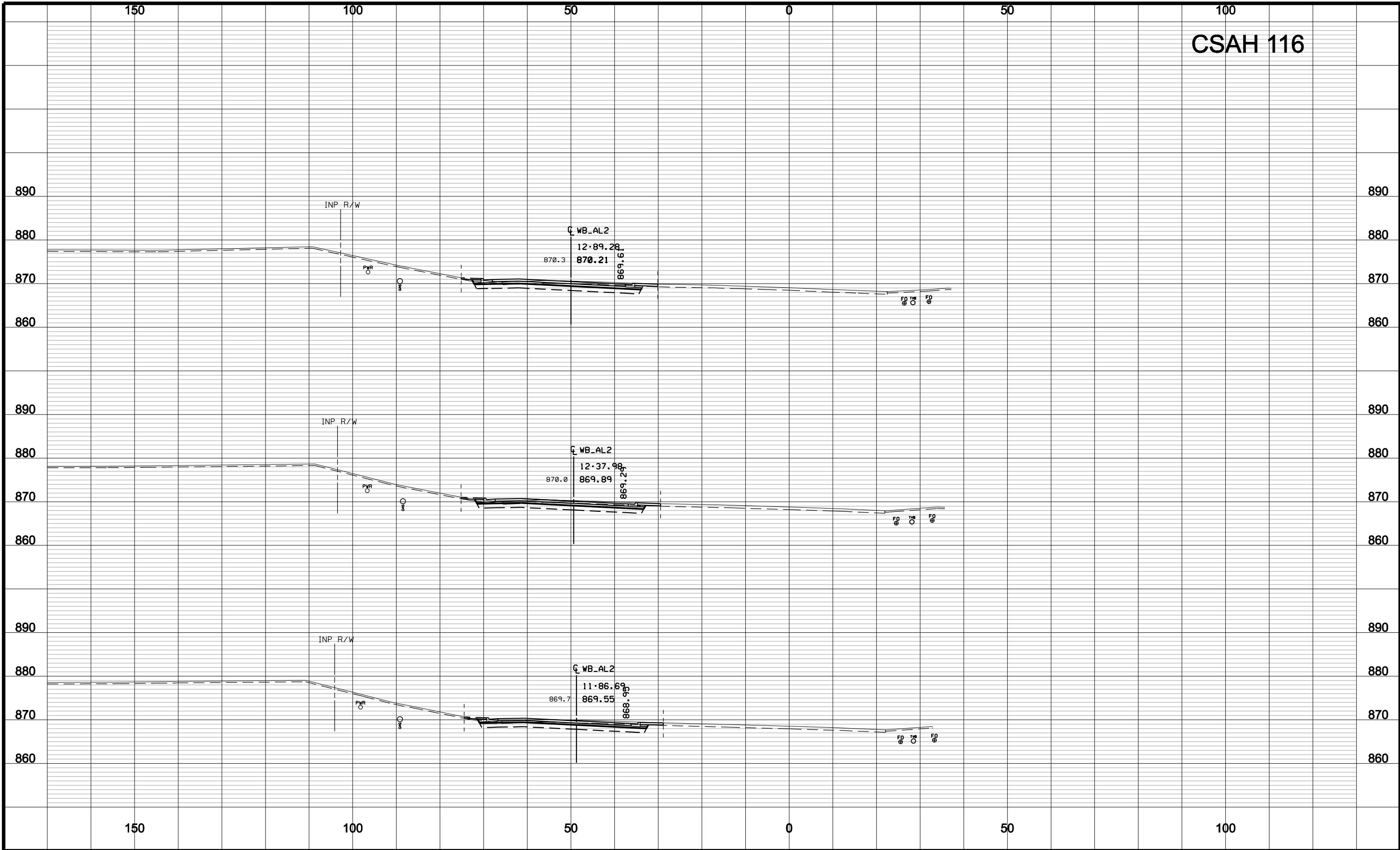
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DRAWN BY NJD DATE 01-07-11  
 DESIGN BY MN DATE 12-01-10  
 CHECKED BY - DATE -



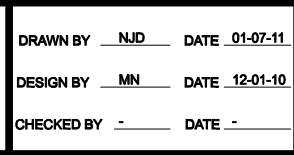
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S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

CROSS SECTIONS  
 STA 9+81.70 TO 11+35.42  
 Sheet 211 of 282 Sheets



NO	DATE	BY	CKD	APPR	REVISION
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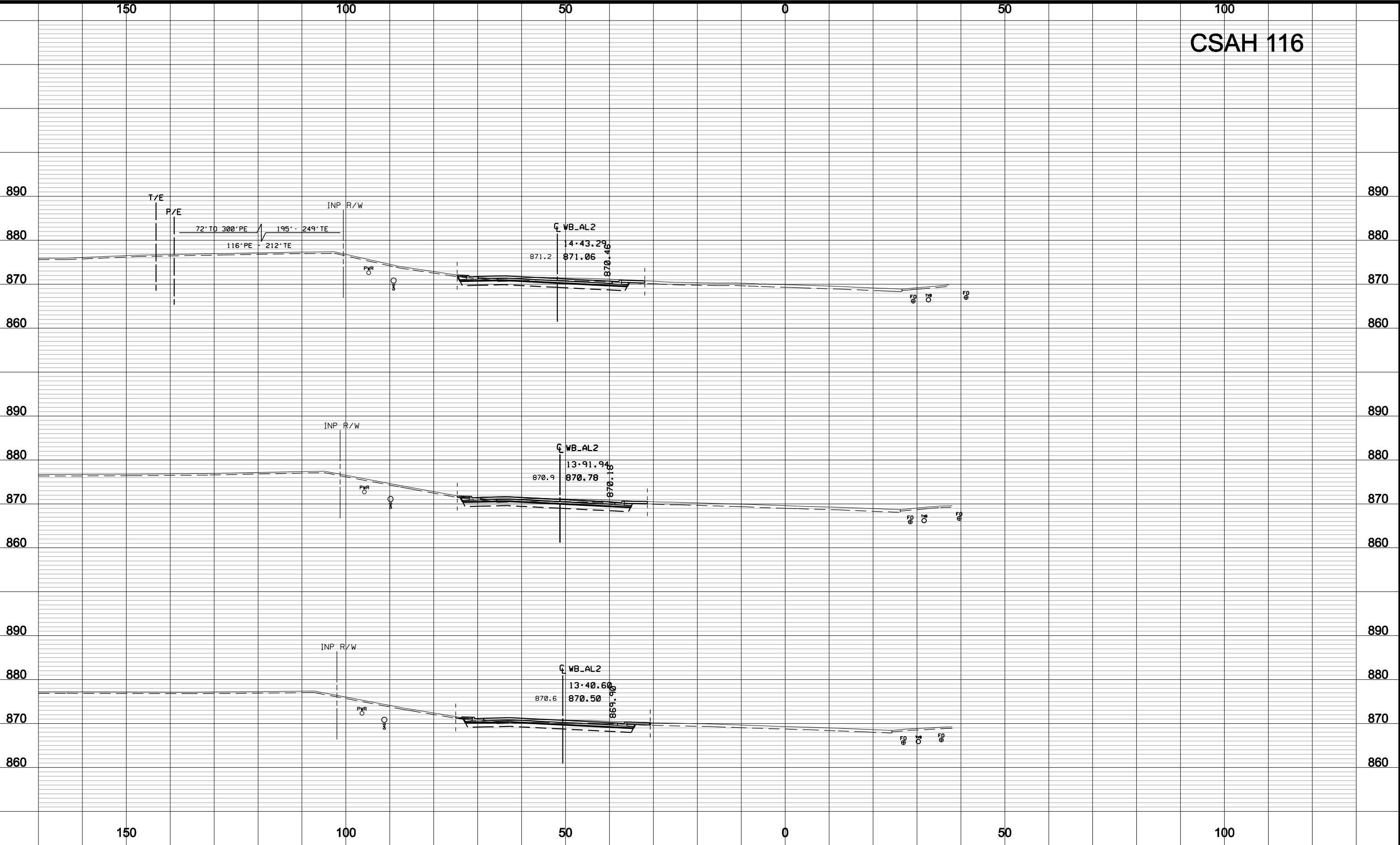
DRAWN BY NJD DATE 01-07-11 DESIGN BY MN DATE 12-01-10 CHECKED BY - DATE -
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**ANOKA COUNTY  
HIGHWAY DEPT.**

S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

<b>CROSS SECTIONS</b>	
STA 11+86.69	TO 12+89.28
Sheet 212 of 282 Sheets	



NO	DATE	BY	CKD	APPR	REVISION	
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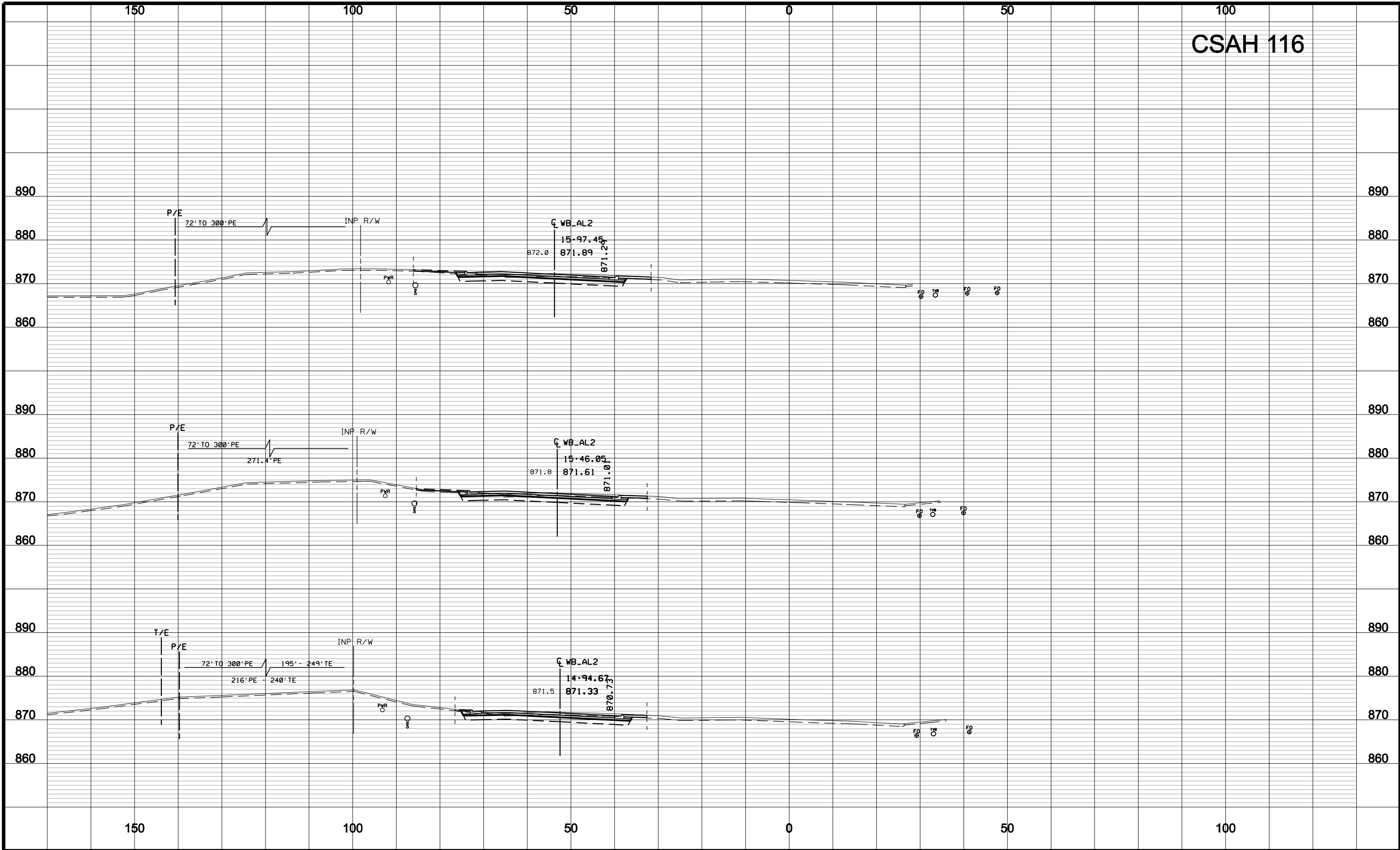
DRAWN BY	NJD	DATE	01-07-11
DESIGN BY	MN	DATE	12-01-10
CHECKED BY	-	DATE	-

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



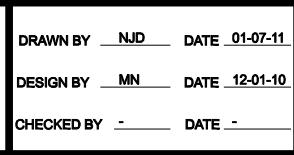
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S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

<b>CROSS SECTIONS</b>	
STA	13+40.60 TO 14+43+29
Sheet 213 of 282 Sheets	



NO	DATE	BY	CKD	APPR	REVISION
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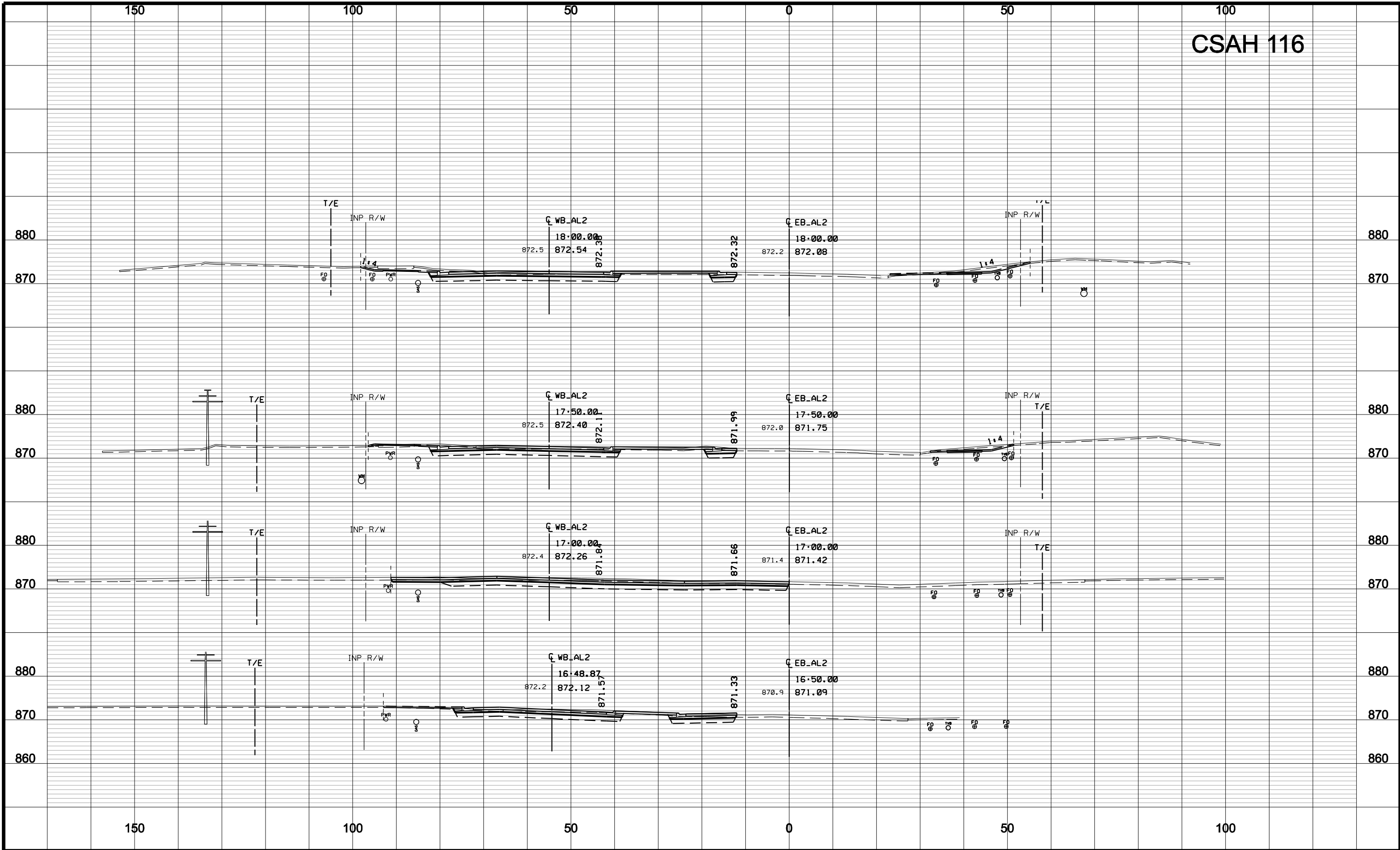
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DESIGN BY	MN	DATE	12-01-10
CHECKED BY	-	DATE	-



S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

CROSS SECTIONS	
STA	14+94.67 TO 15+97.45
Sheet 214 of 282 Sheets	

# CSAH 116



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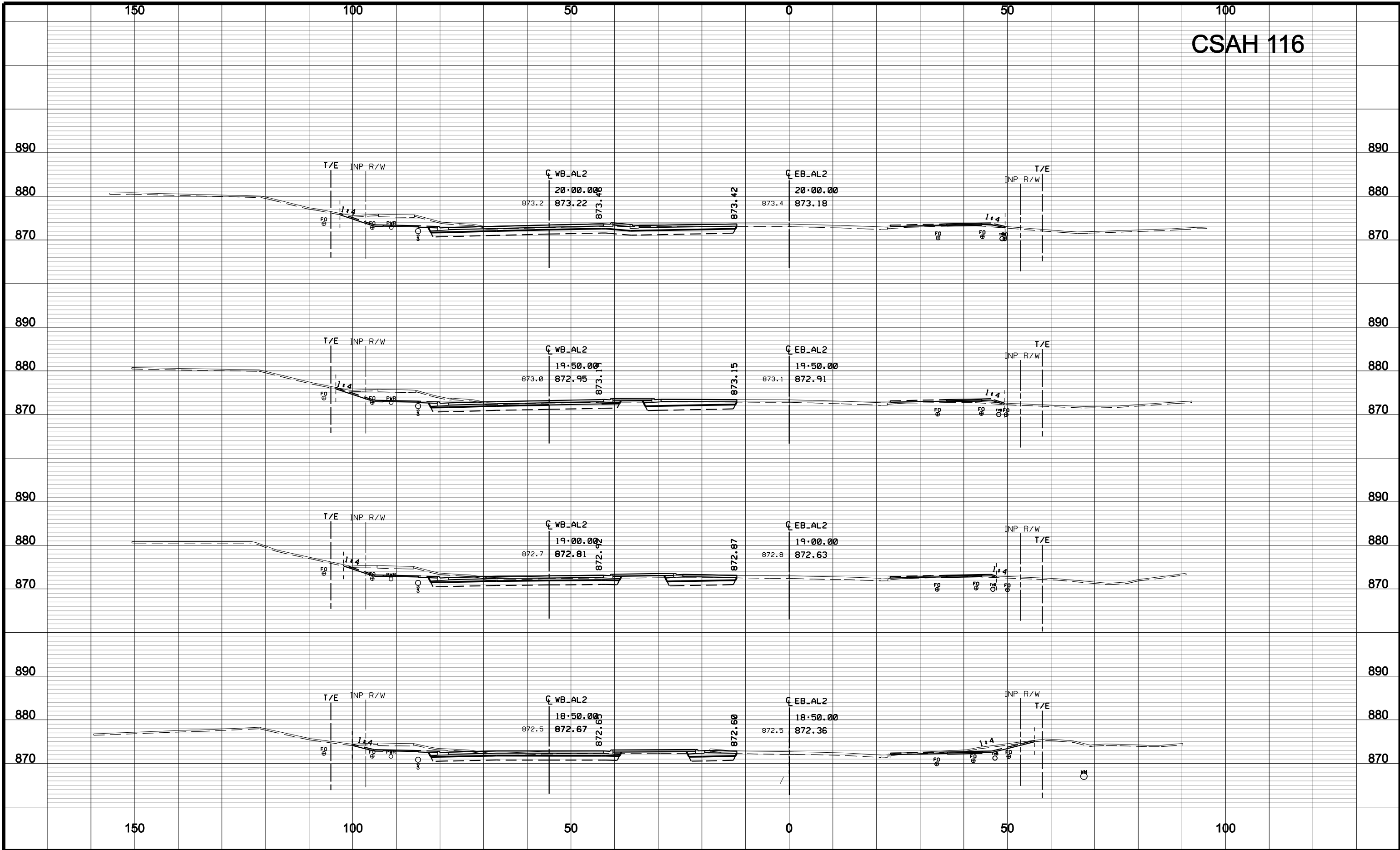
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DESIGN BY	MN	DATE	12-01-10
CHECKED BY	-	DATE	-



S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

CROSS SECTIONS	
STA	16+50.00 TO 18+00.00
Sheet	215 of 282 Sheets

CSAH 116



NO	DATE	BY	CKD	APPR	REVISION

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06/26/2012 2:53:48 PM

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DESIGN BY MN DATE 12-01-10  
CHECKED BY - DATE -

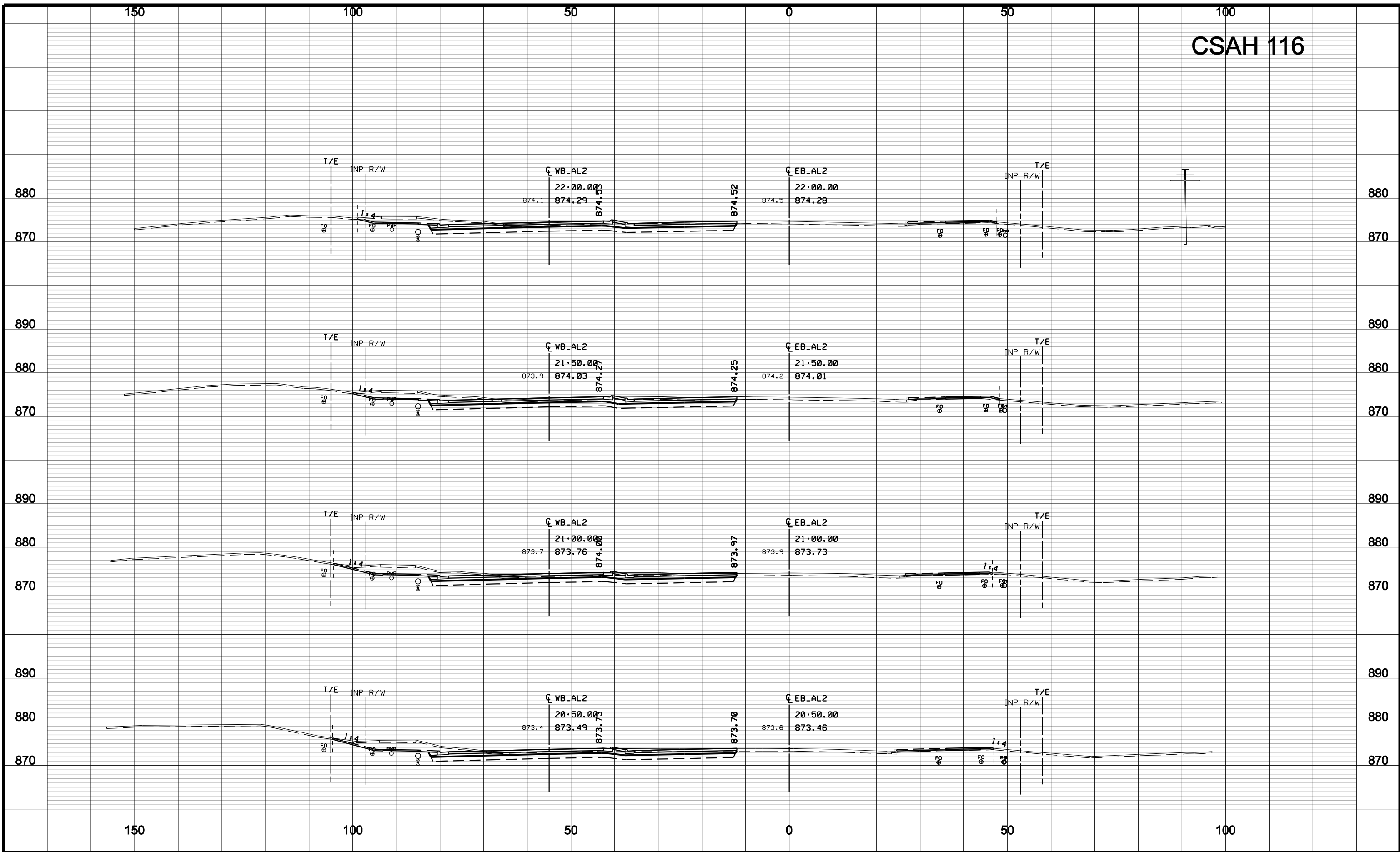


S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

CROSS SECTIONS  
STA 18+50.00 TO 20+00.00  
Sheet 216 of 282 Sheets

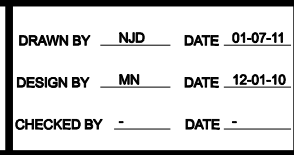


CSAH 116



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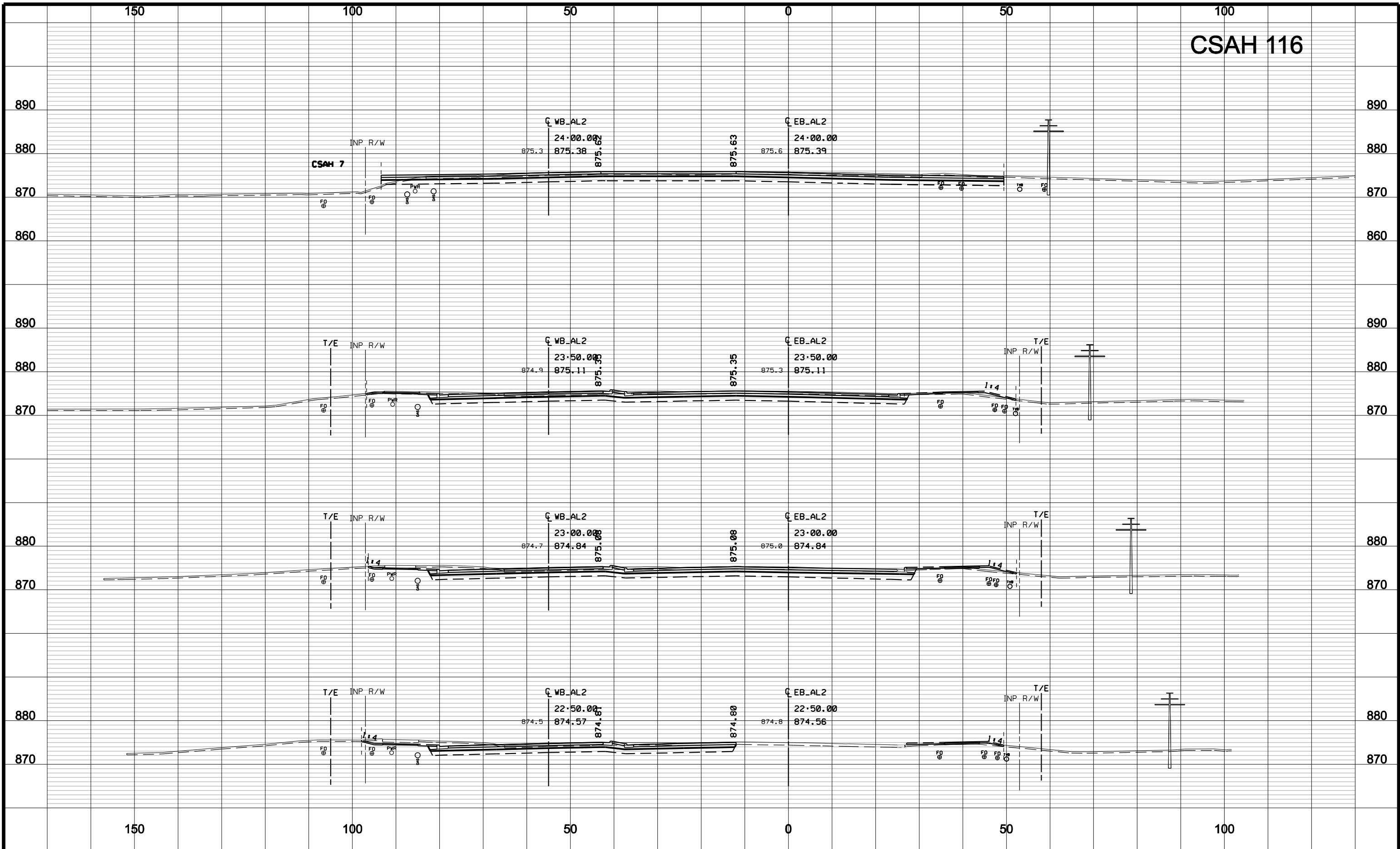
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DESIGN BY	MN	DATE	12-01-10
CHECKED BY	-	DATE	-



S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

CROSS SECTIONS	
STA	20+50.00 TO 22+00.00
Sheet	217 of 282 Sheets

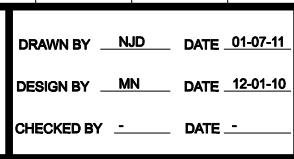
# CSAH 116



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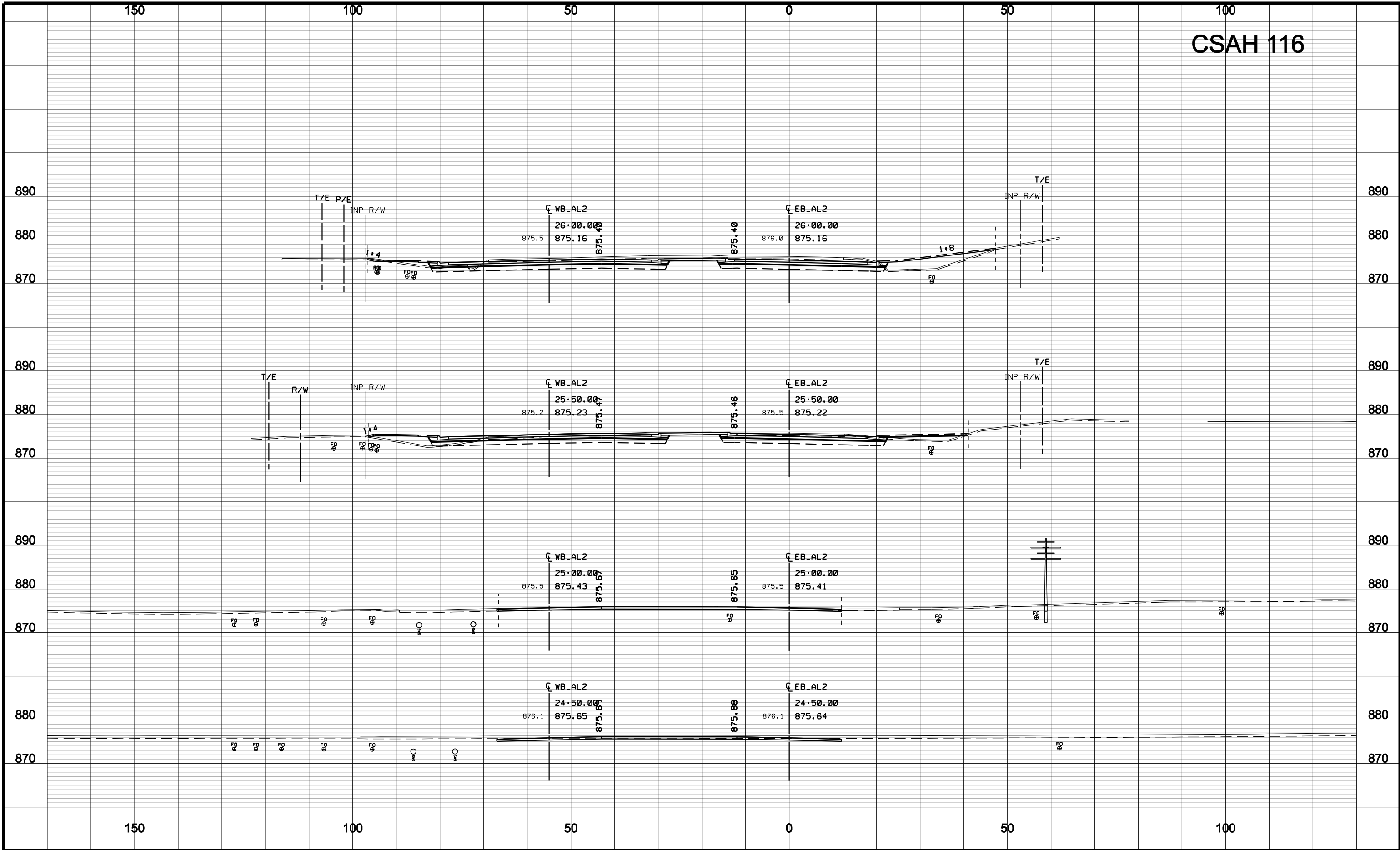
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S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

<b>CROSS SECTIONS</b>	
STA 22+50.00 TO 24+00.00	
Sheet 218 of 282 Sheets	

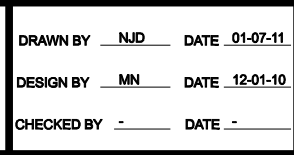
# CSAH 116



NO	DATE	BY	CKD	APPR	REVISION
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DESIGN BY	MN	DATE	12-01-10
CHECKED BY	-	DATE	-

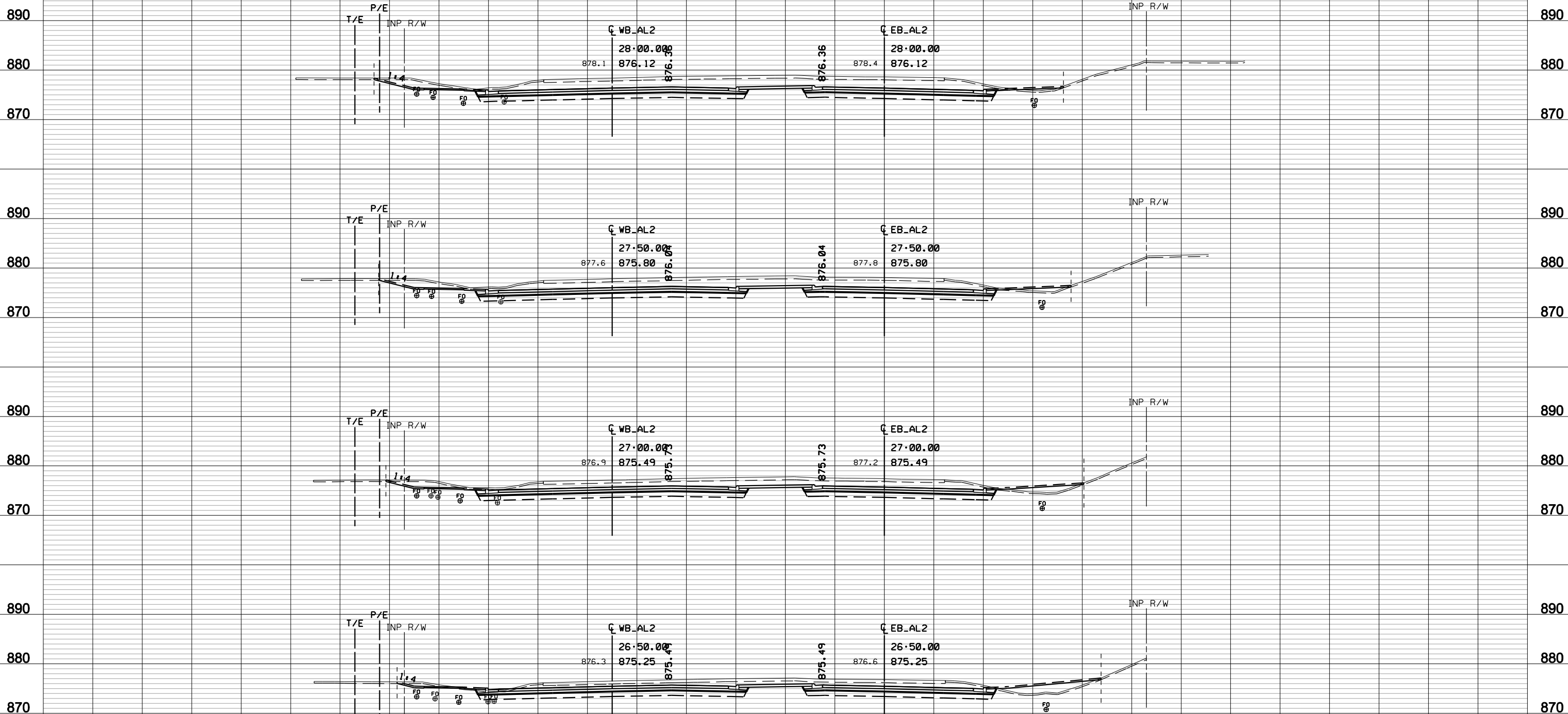


**ANOKA COUNTY  
HIGHWAY DEPT.**

S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

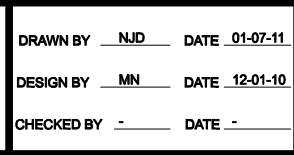
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 Sheet 219 of 282 Sheets

# CSAH 116



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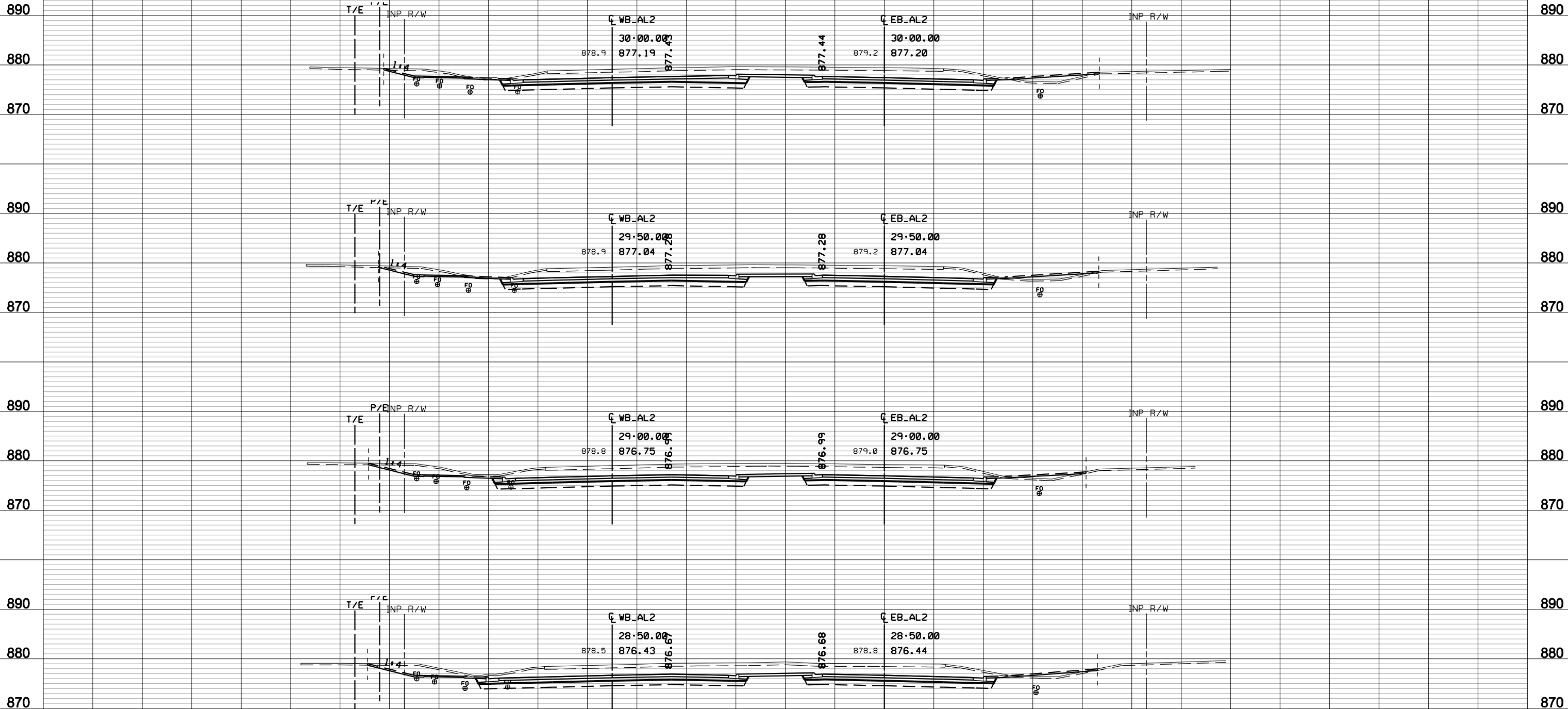
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DESIGN BY	MN	DATE	12-01-10
CHECKED BY	-	DATE	-



S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

CROSS SECTIONS	
STA	26+50.00 TO 28+00.00
Sheet	220 of 282 Sheets

CSAH 116



NO	DATE	BY	CKD	APPR	REVISION
					06/26/2012

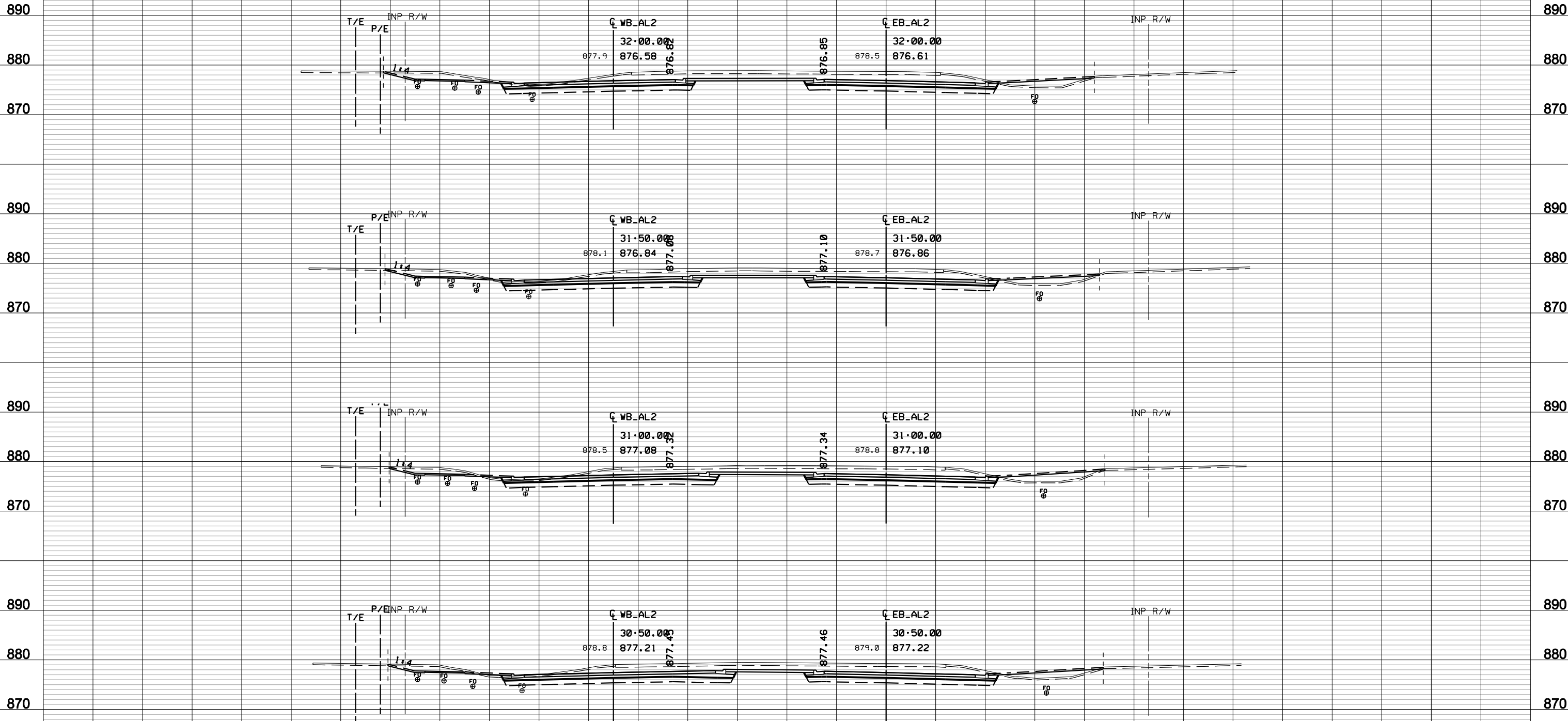
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 DESIGN BY MN DATE 12-01-10  
 CHECKED BY - DATE -



S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

CROSS SECTIONS  
 STA 28+50.00 TO 30+00.00  
 Sheet 221 of 282 Sheets



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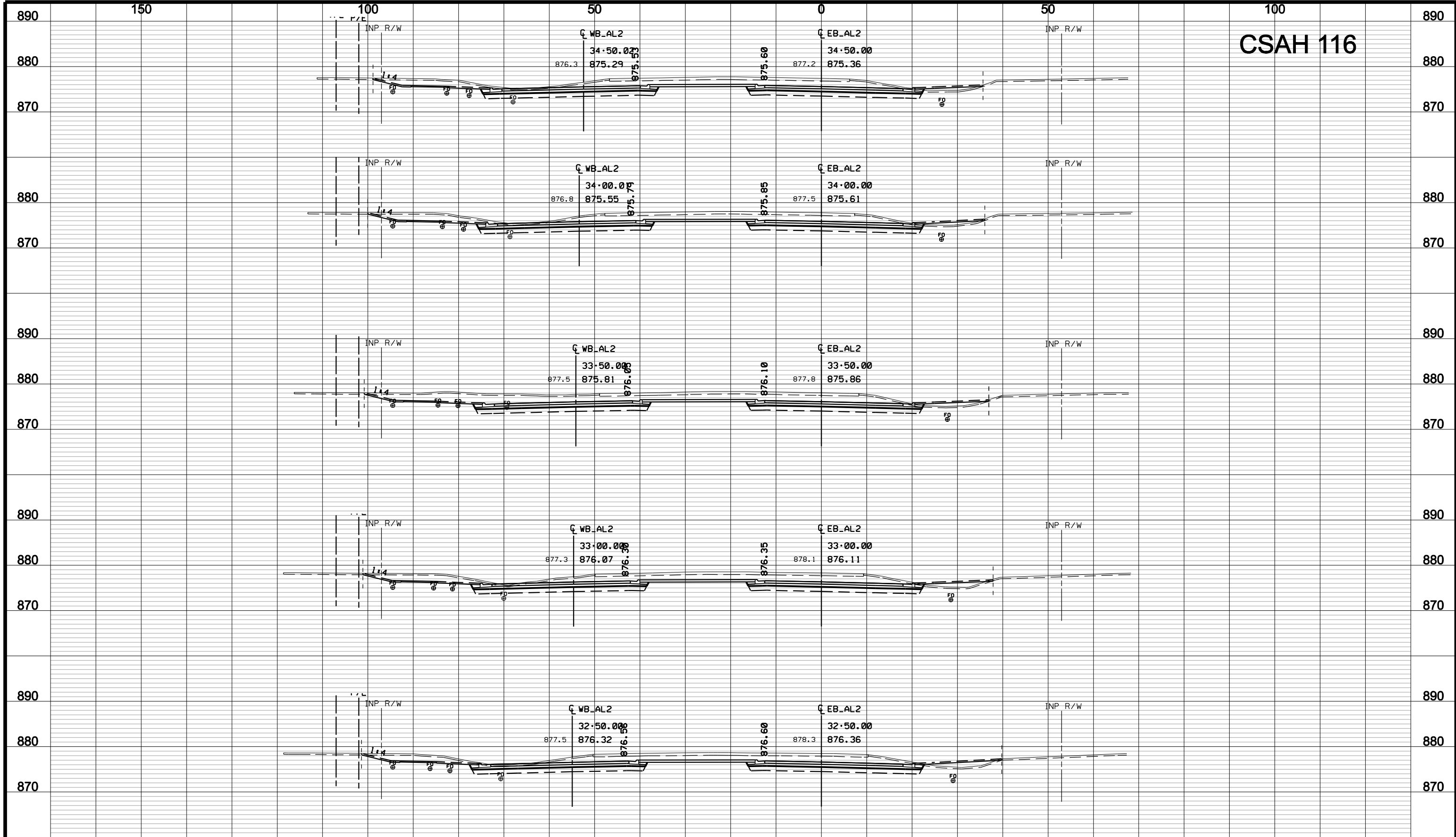
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DESIGN BY	MN	DATE	12-01-10
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S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

<b>CROSS SECTIONS</b>	
STA	30+50.00 TO 32+00.00
Sheet 222 of 282 Sheets	

# CSAH 116



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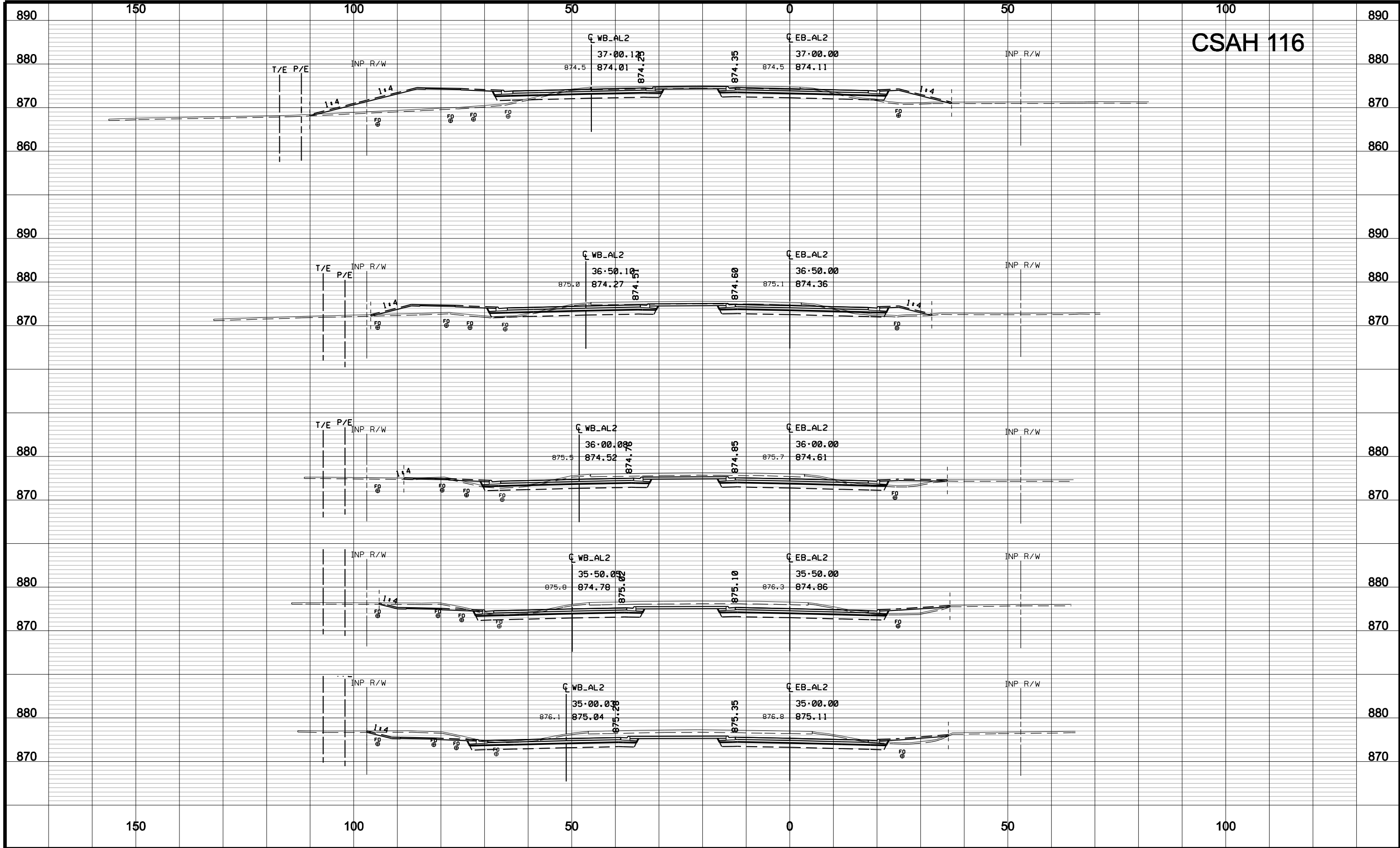
DRAWN BY NJD DATE 01-07-11  
 DESIGN BY MN DATE 12-01-10  
 CHECKED BY - DATE -



S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

**CROSS SECTIONS**  
 STA 32+50.00 TO 34+50.00  
 Sheet 223 of 282 Sheets

# CSAH 116



NO	DATE	BY	CKD	APPR	REVISION
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DESIGN BY	MN	DATE	12-01-10
CHECKED BY	-	DATE	-

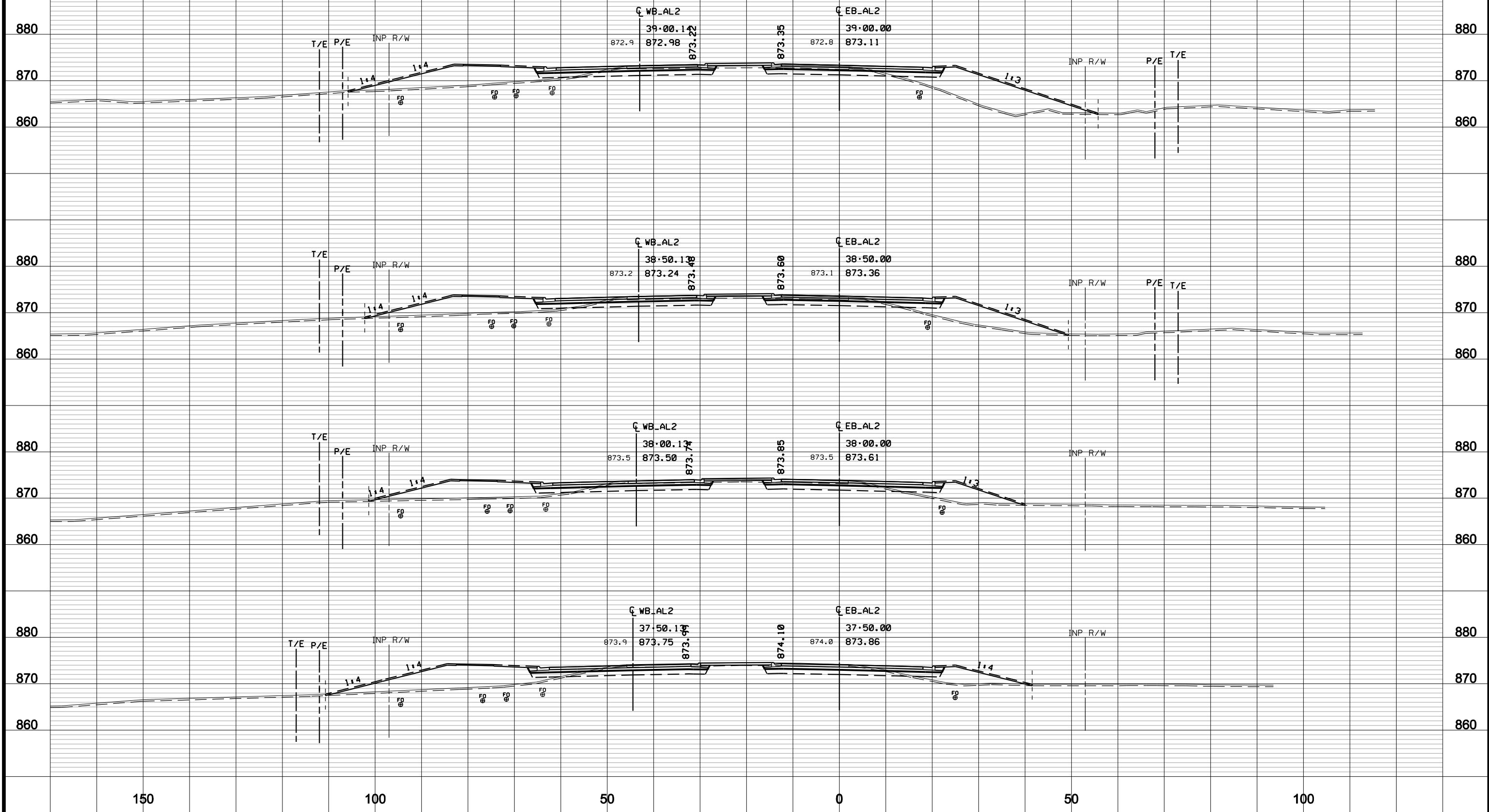


S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

<b>CROSS SECTIONS</b>	
STA	35+00.00 TO 37+00.00
Sheet	224 of 282 Sheets



# CSAH 116



NO	DATE	BY	CKD	APPR	REVISION
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					2:54:00 PM

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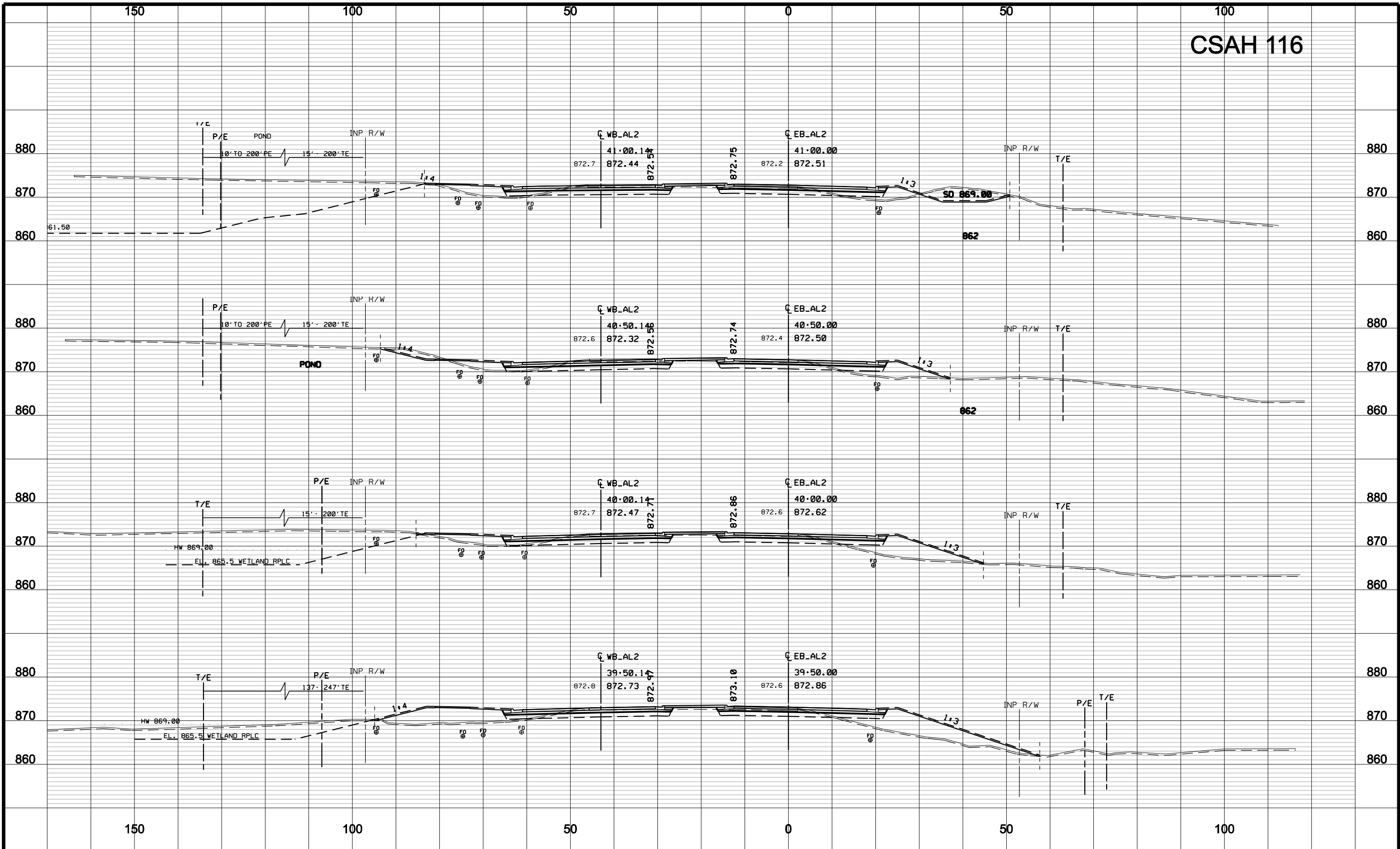
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 DESIGN BY: MN DATE: 12-01-10  
 CHECKED BY: - DATE: -



S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

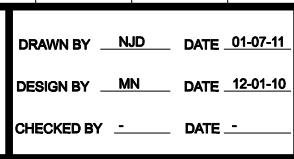
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 Sheet 225 of 282 Sheets

# CSAH 116



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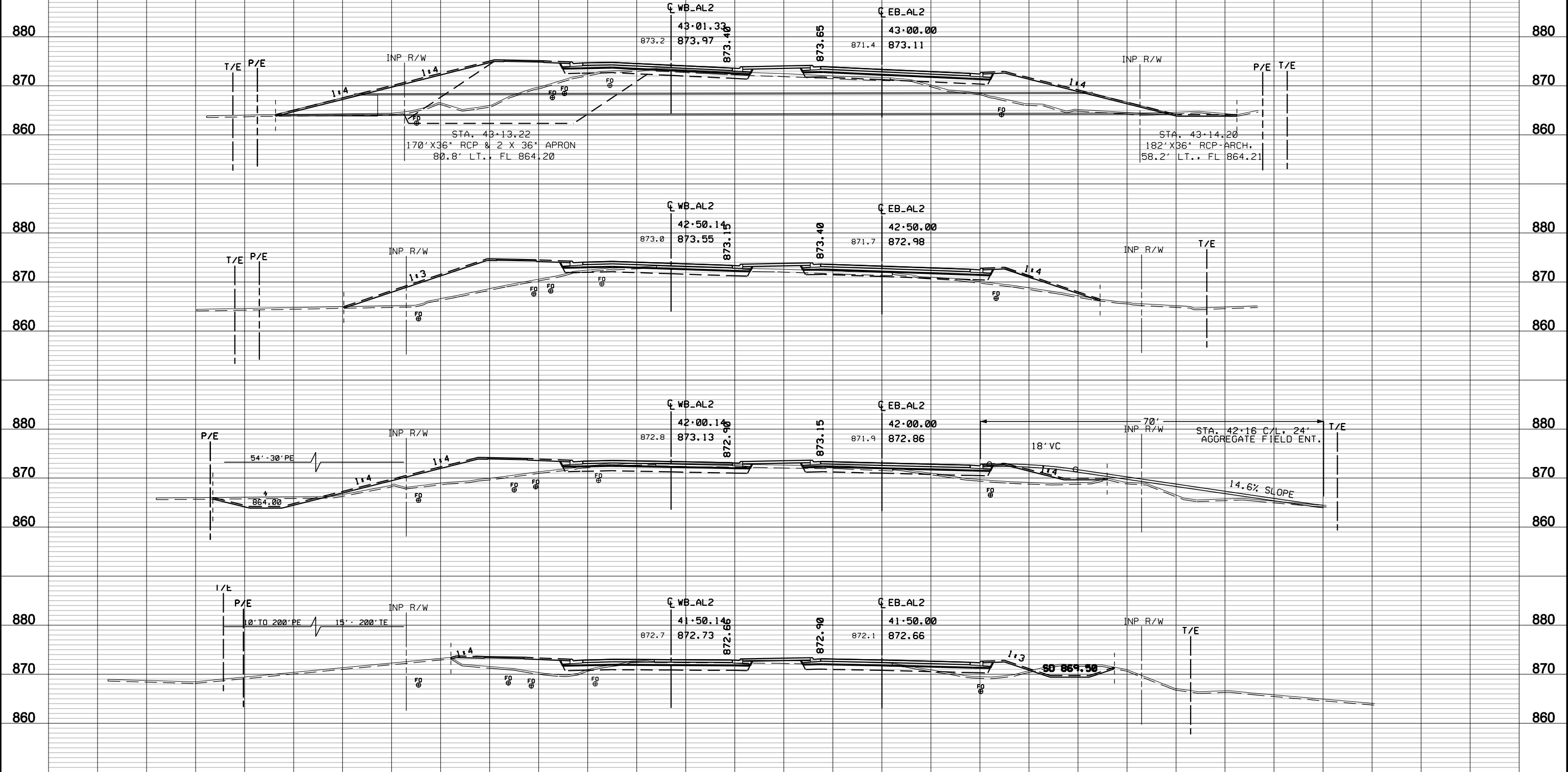
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**ANOKA COUNTY  
HIGHWAY DEPT.**

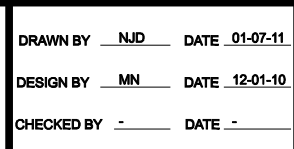
S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

**CROSS SECTIONS**  
 STA 39+50.00 TO 41+00.00  
 Sheet 226 of 282 Sheets



NO	DATE	BY	CKD	APPR	REVISION
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DESIGN BY	MN	DATE	12-01-10
CHECKED BY	-	DATE	-

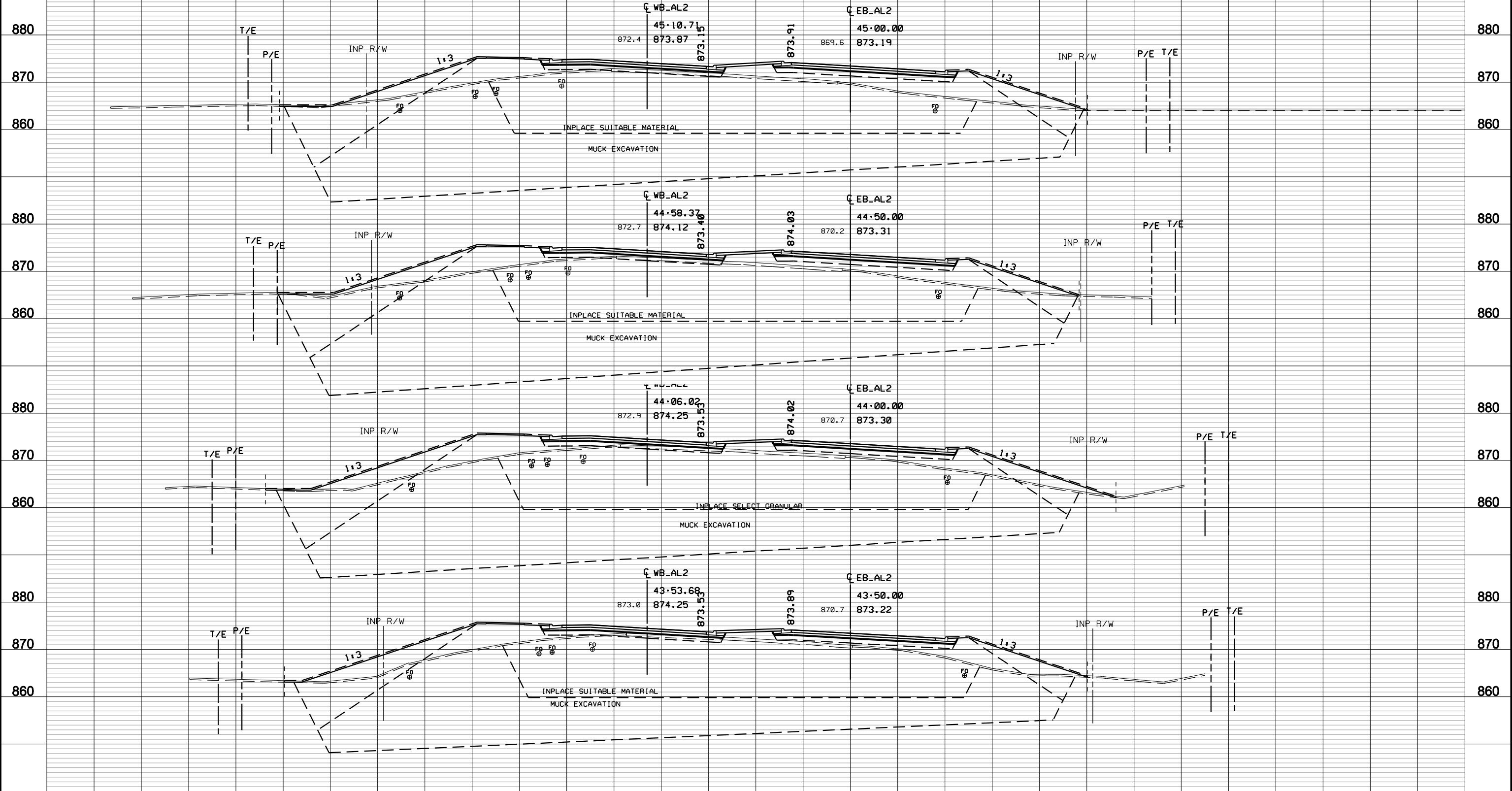


**ANOKA COUNTY  
HIGHWAY DEPT.**

S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

**CROSS SECTIONS**  
 STA 41+50.00 TO 43+00.00  
 Sheet 227 of 282 Sheets

# CSAH 116



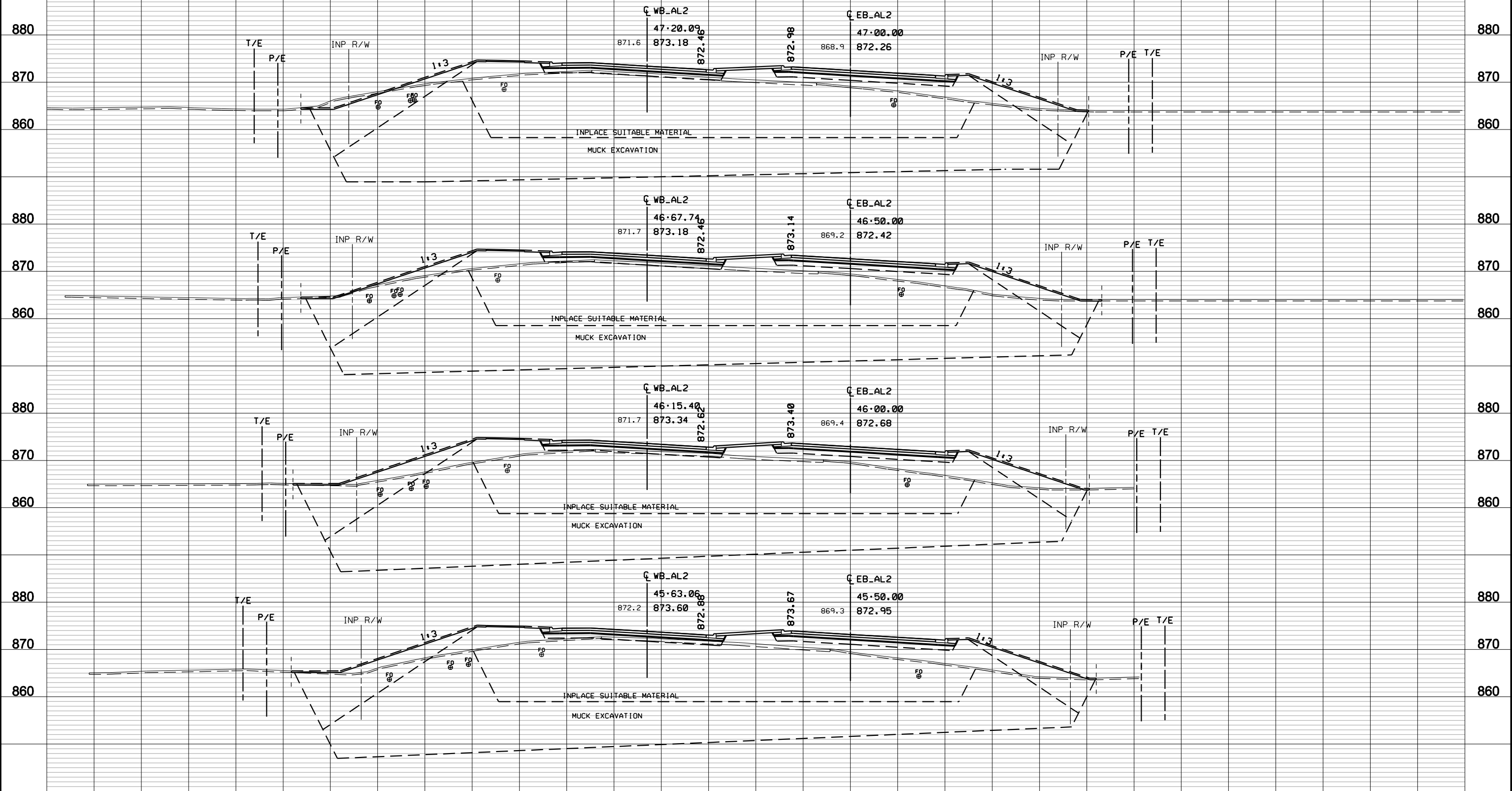
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DESIGN BY	MN	DATE	12-01-10
CHECKED BY	-	DATE	-



S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

CROSS SECTIONS	
STA	43+50.00 TO 45+00.00
Sheet	228 of 282 Sheets



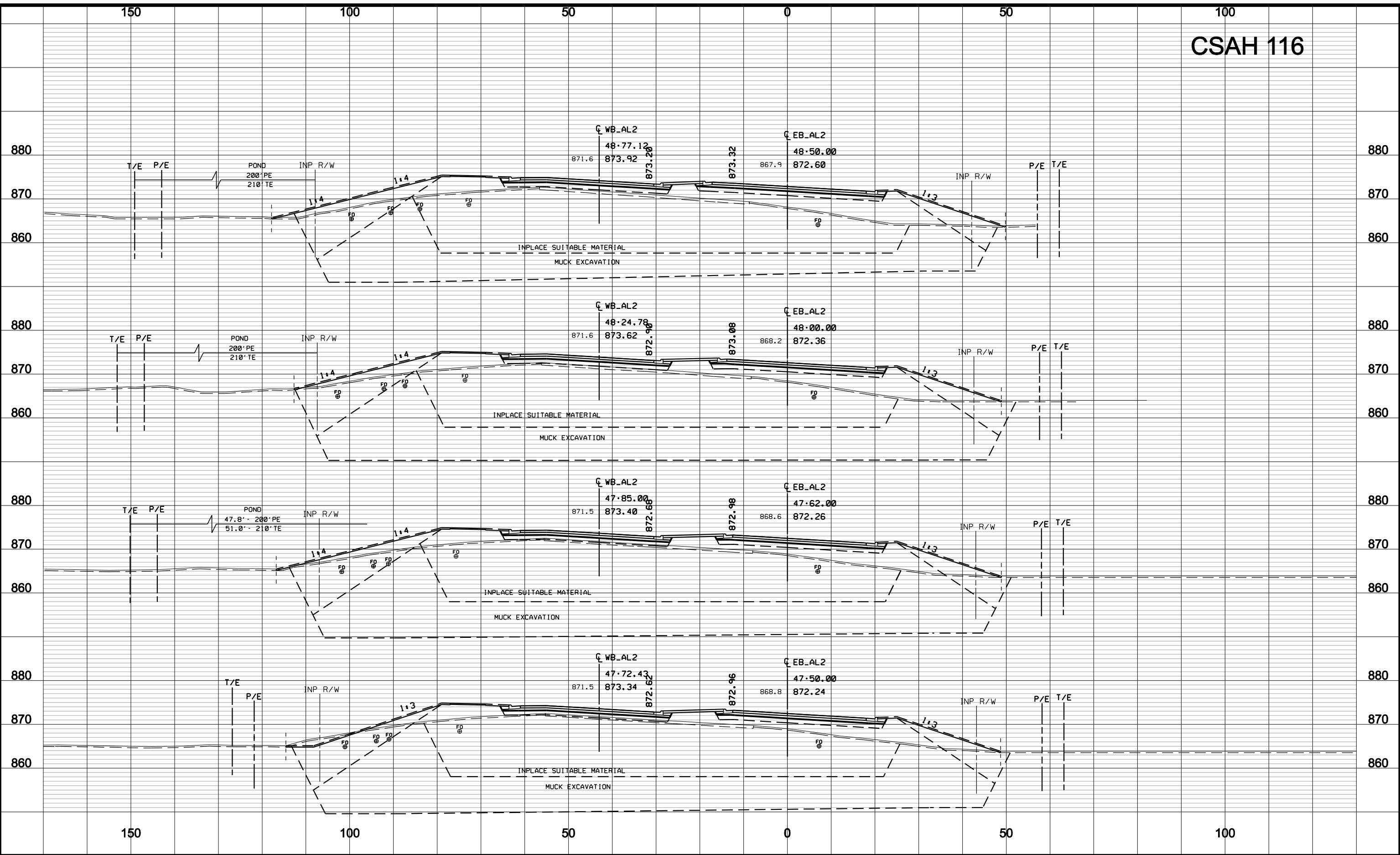
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DESIGN BY	MN	DATE	12-01-10
CHECKED BY	-	DATE	-



S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

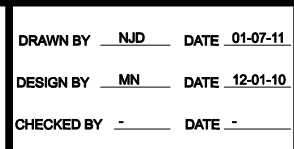
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Sheet	229 of 282 Sheets



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DESIGN BY	MN	DATE	12-01-10
CHECKED BY	-	DATE	-

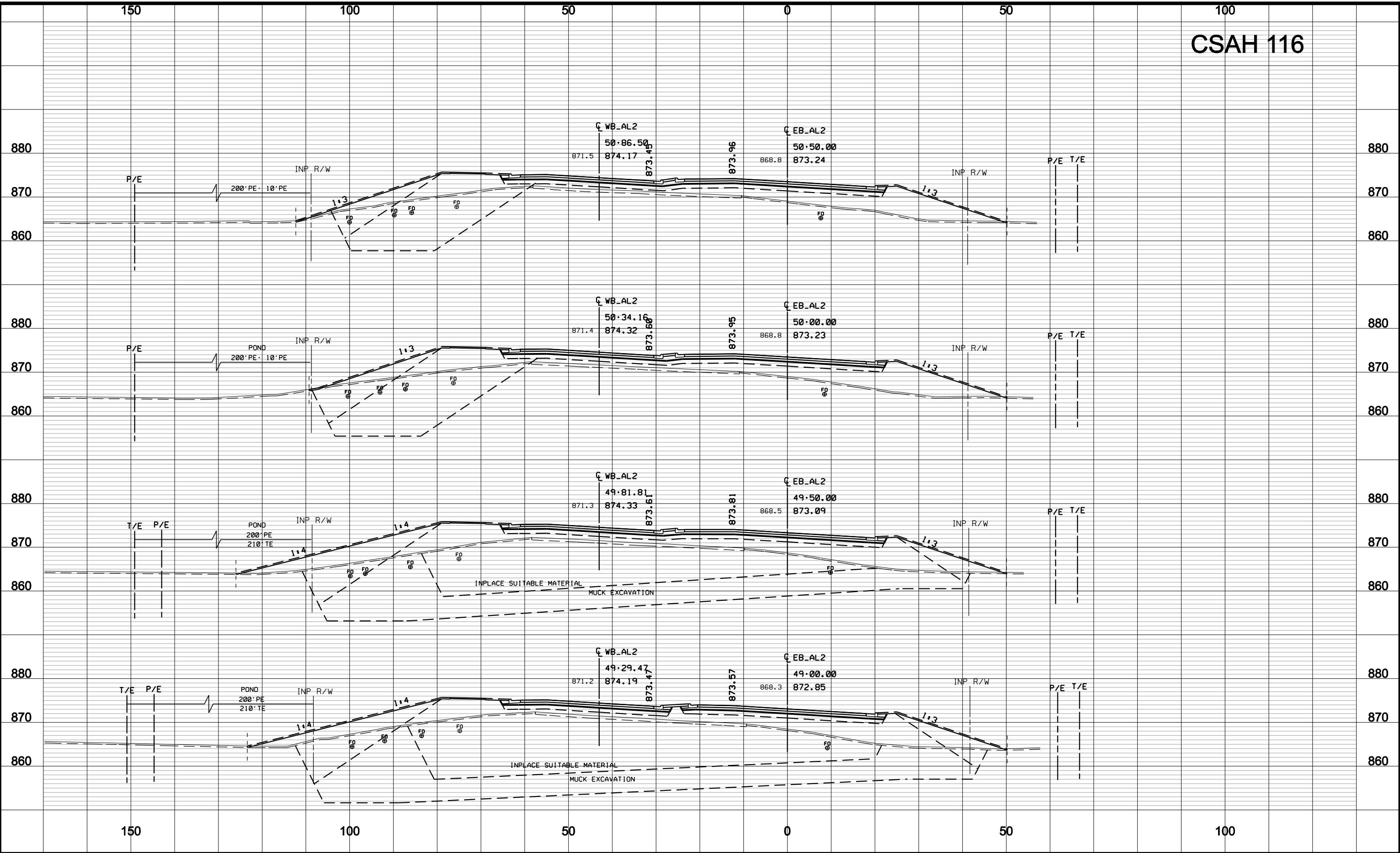


**ANOKA COUNTY  
HIGHWAY DEPT.**

S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

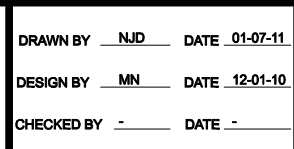
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 Sheet 230 of 282 Sheets

CSAH 116



NO	DATE	BY	CKD	APPR	REVISION
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DESIGN BY	MN	DATE	12-01-10
CHECKED BY	-	DATE	-

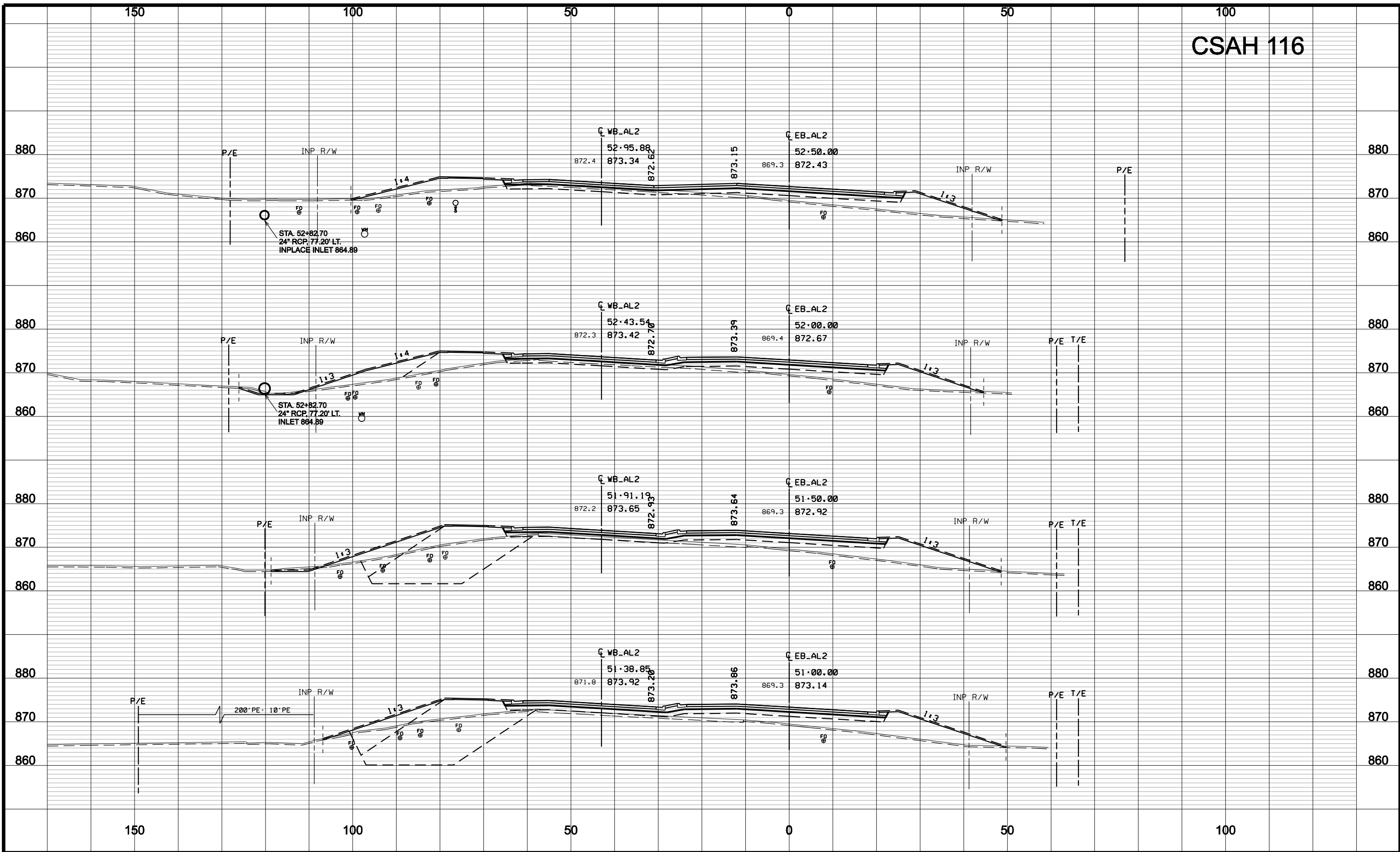


**ANOKA COUNTY  
HIGHWAY DEPT.**

S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
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**CROSS SECTIONS**  
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 Sheet 231 of 282 Sheets

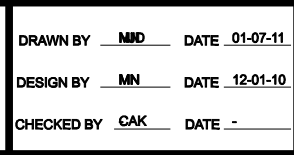
# CSAH 116



NO	DATE	BY	CKD	APPR	REVISION
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					2:54:09 PM

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DESIGN BY	MN	DATE	12-01-10
CHECKED BY	CAK	DATE	-

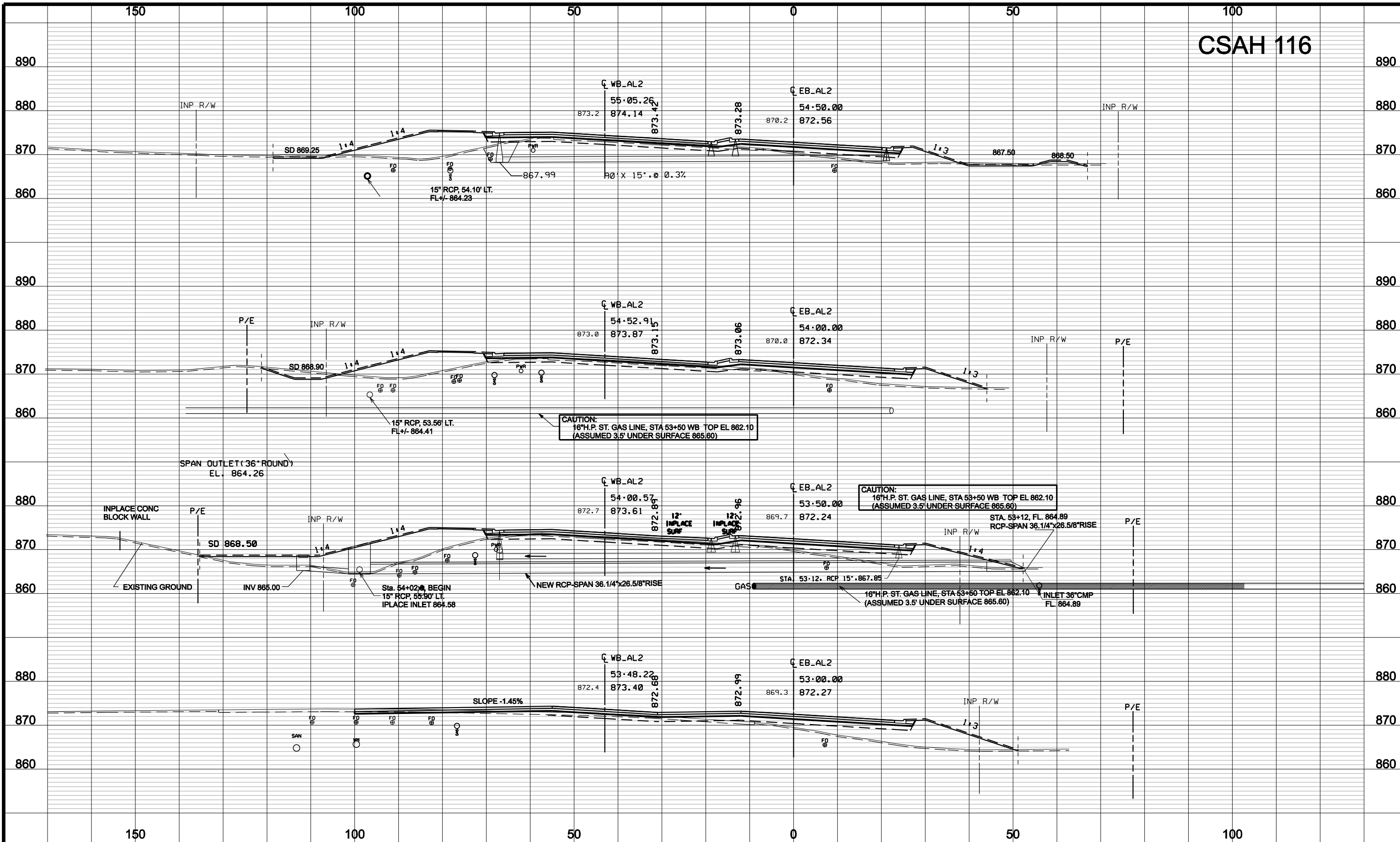


S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

CROSS SECTIONS	
STA	51+00.00 TO 52+50.00
Sheet	232 of 282 Sheets



# CSAH 116



NO	DATE	BY	CKD	APPR	REVISION
NAME: p:\02-716-12\plan\0271612_XS2_P1.dgn					06/26/2012
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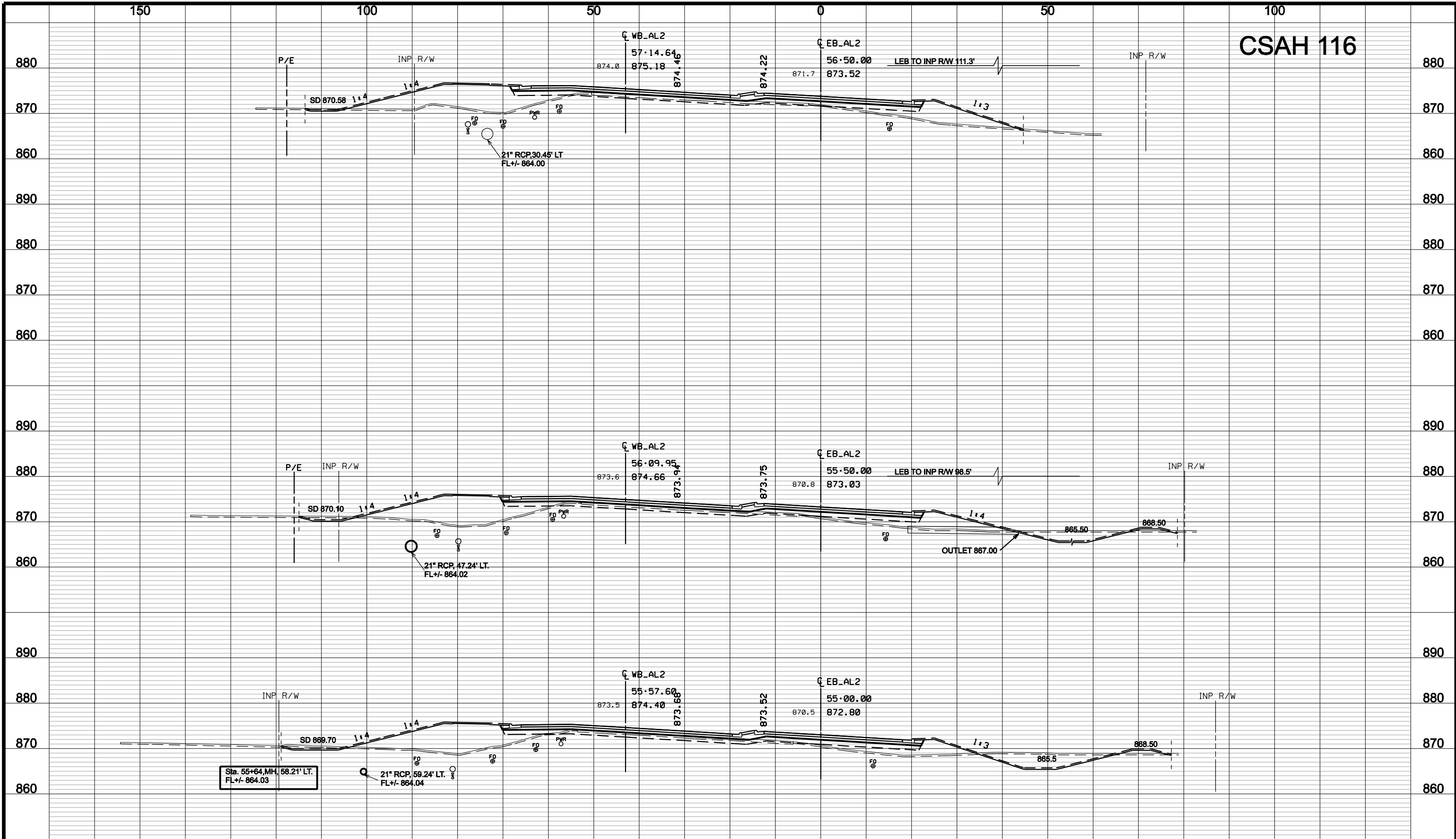
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DESIGN BY	MN	DATE	12-01-10
CHECKED BY	-	DATE	-

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

S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031	S.P. 198-020-032	S.P. 198-020-033
S.P. 103-020-014	S.P. 103-020-015	S.P. 103-020-016

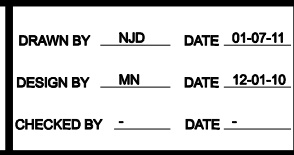
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Sheet	233 of 282 Sheets

# CSAH 116



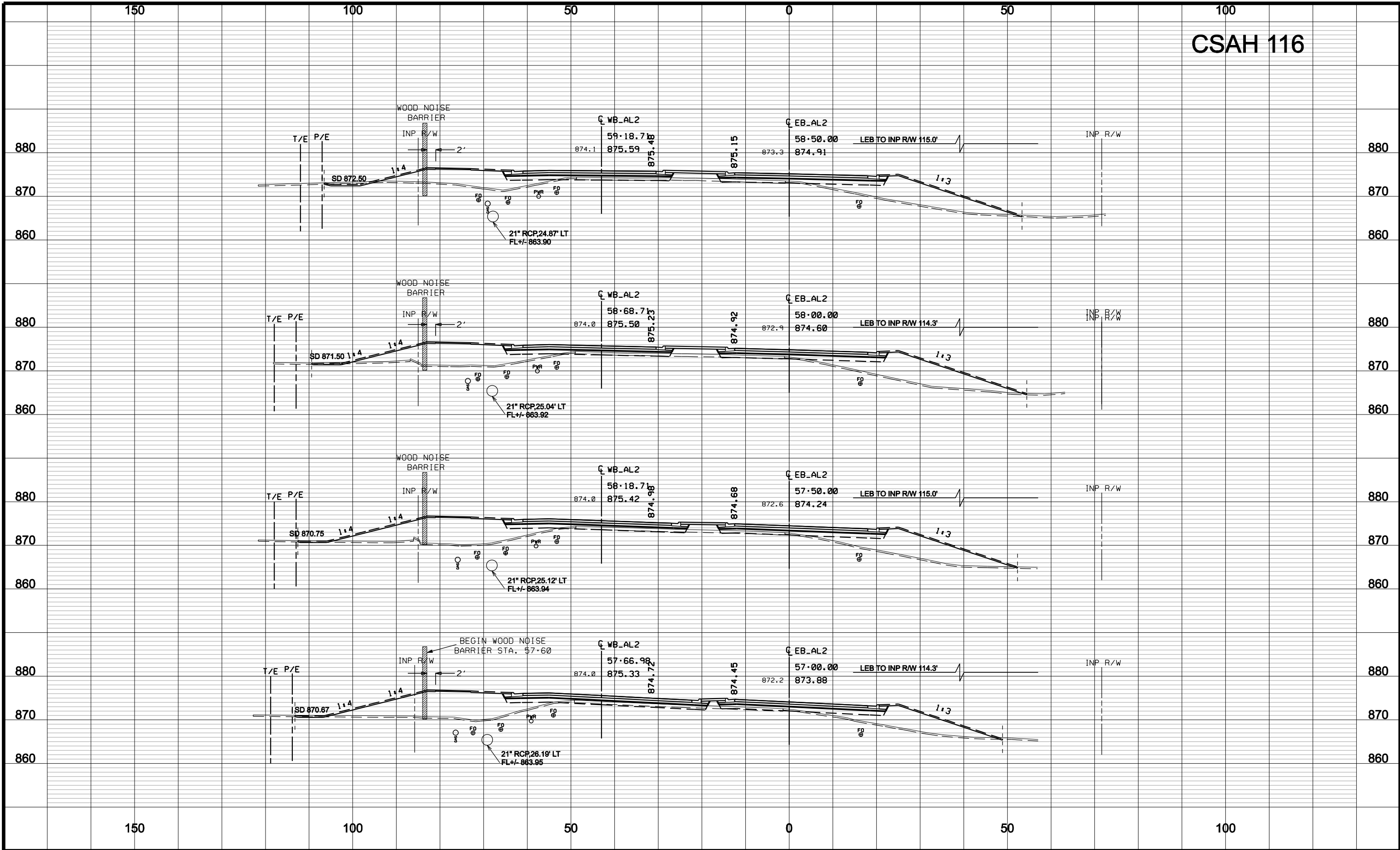
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S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

CROSS SECTIONS	
STA 55+00.00	TO 56+50.00
Sheet 234 of 282 Sheets	



NO	DATE	BY	CKD	APPR	REVISION
					06/26/2012

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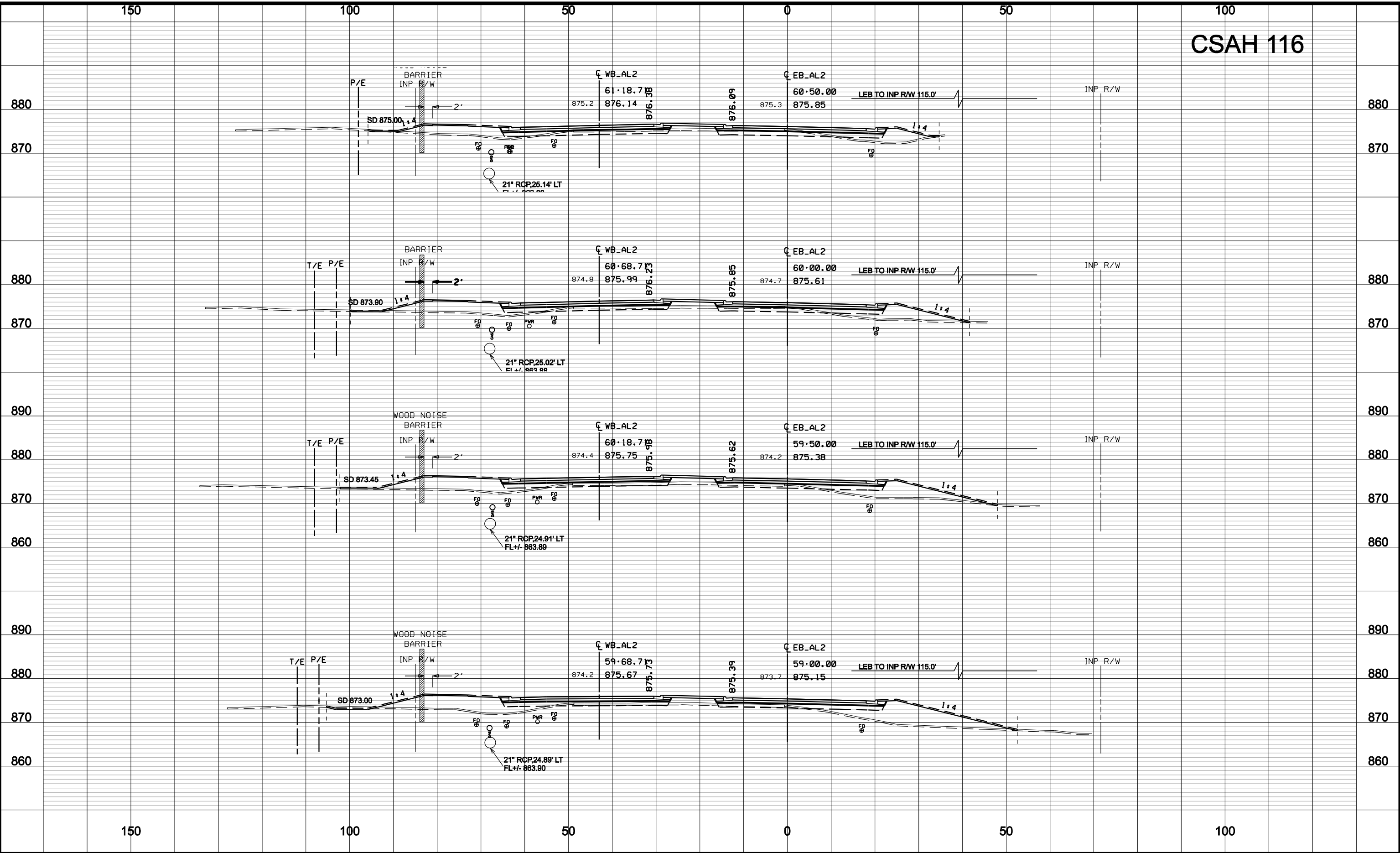
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 CHECKED BY - DATE -



S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

**CROSS SECTIONS**  
 STA 57+00.00 TO 58+50.00  
 Sheet 235 of 282 Sheets

CSAH 116



NO	DATE	BY	CKD	APPR	REVISION
					06/26/2012

NAME: p:\02-716-12\plan\0271612\_XS2\_P1.dgn 2:54:15 PM

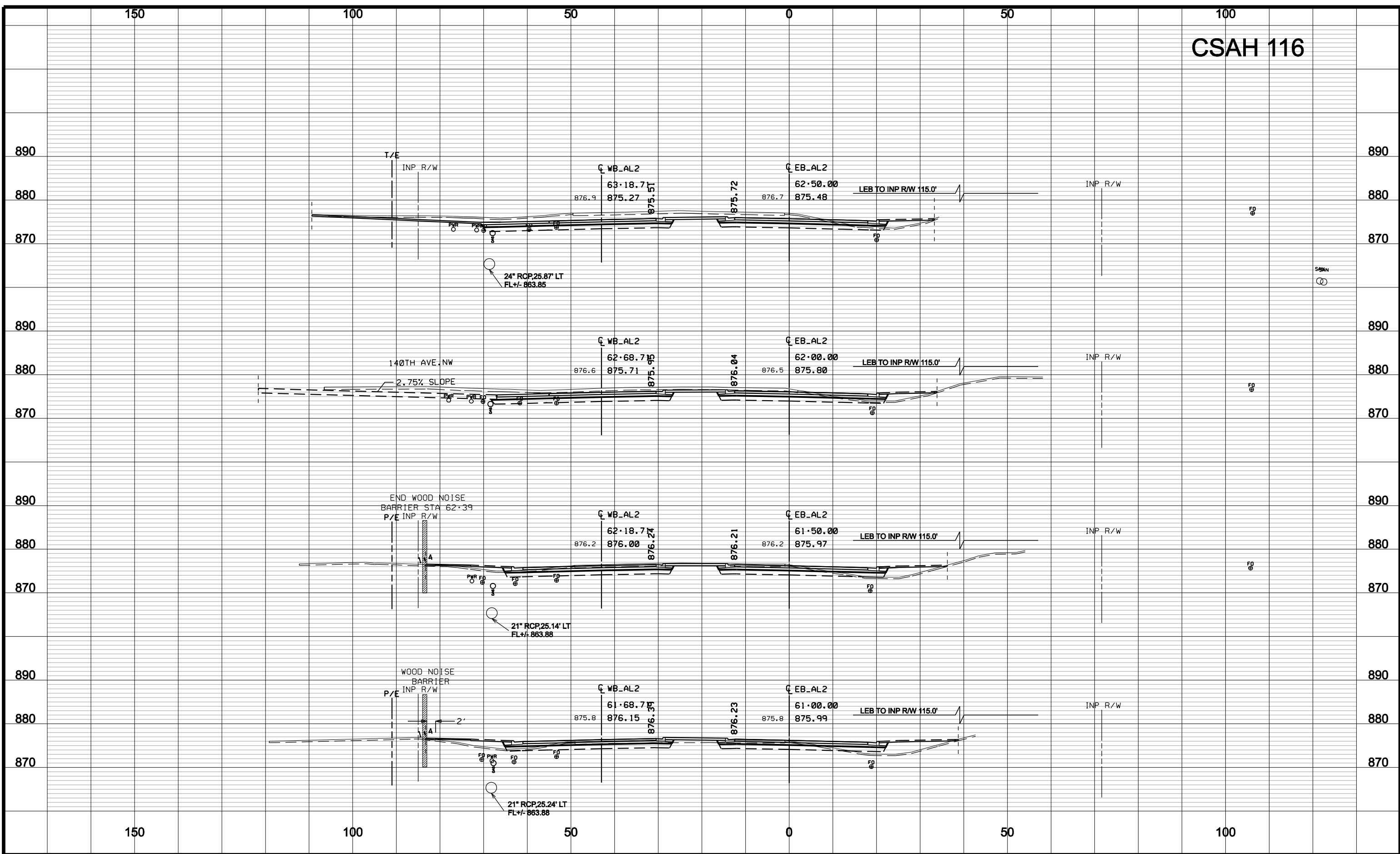
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 DESIGN BY: MN DATE: 12-01-10  
 CHECKED BY: DATE:



S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

**CROSS SECTIONS**  
 STA 59+00.00 TO 60+50.00  
 Sheet 236 of 282 Sheets

# CSAH 116



NO	DATE	BY	CKD	APPR	REVISION
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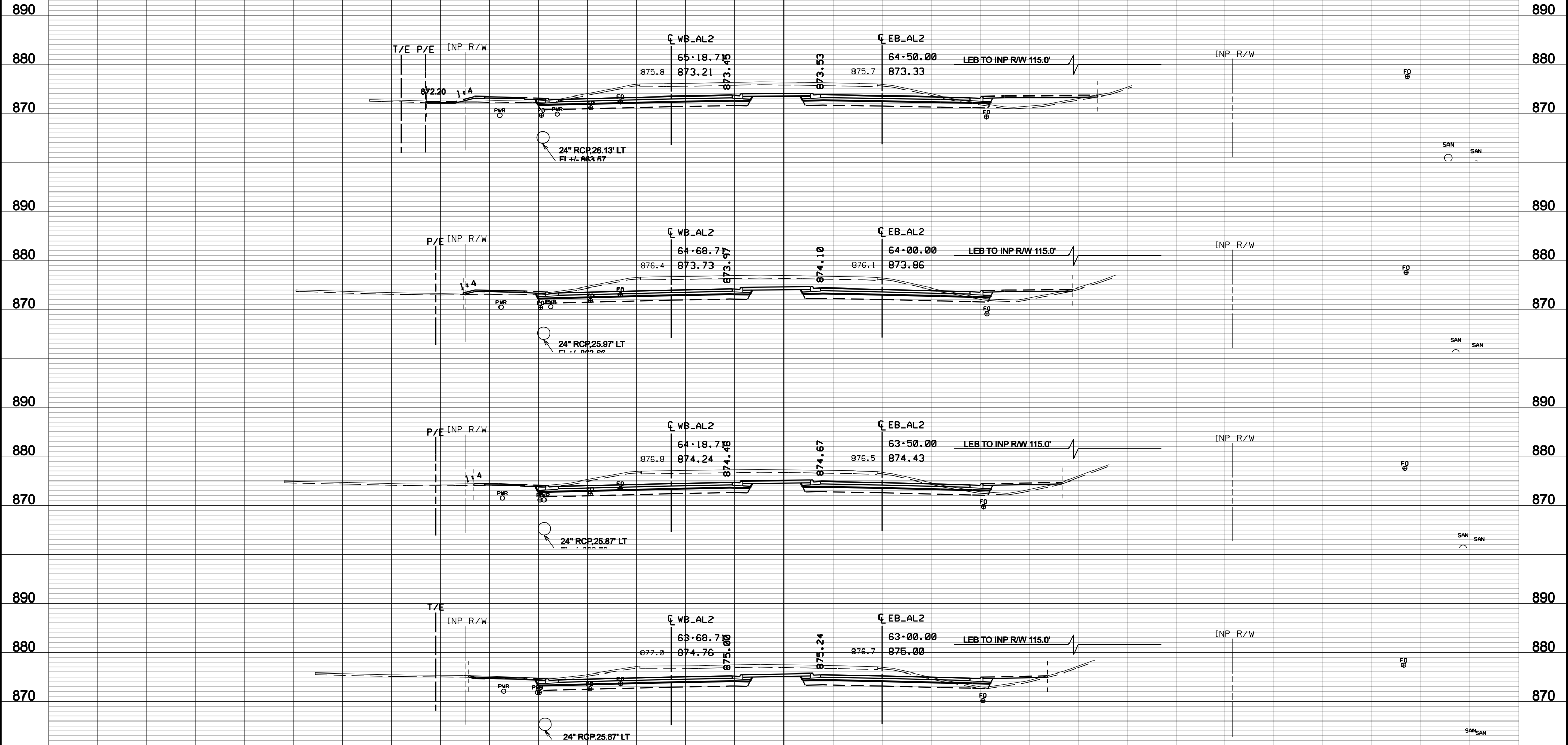
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DESIGN BY	MN	DATE	12-01-10
CHECKED BY	-	DATE	-



S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

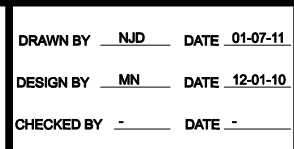
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STA	61+00.00 TO 62+50.00
Sheet	237 of 282 Sheets

# CSAH 116



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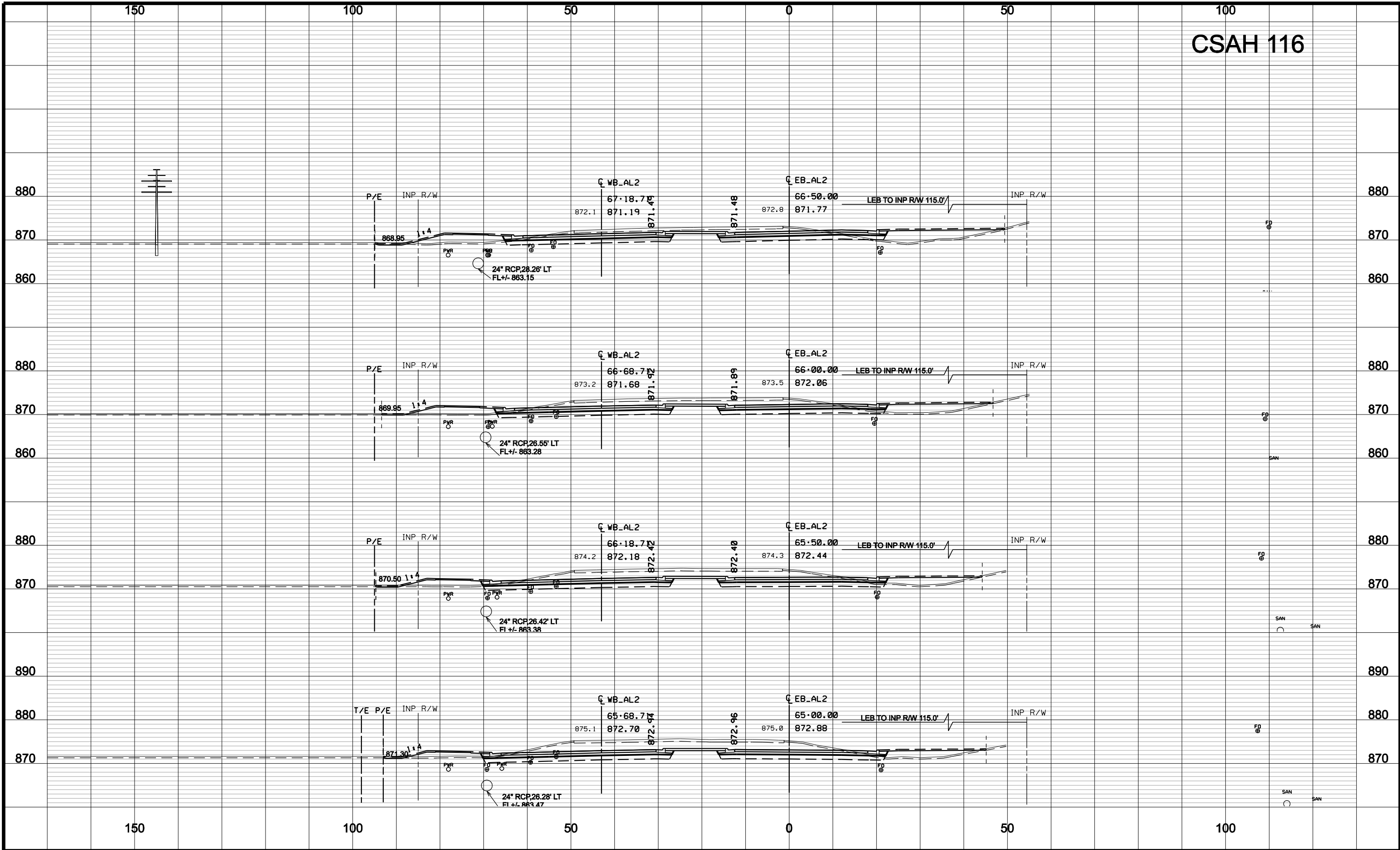


**ANOKA COUNTY  
HIGHWAY DEPT.**

S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

**CROSS SECTIONS**  
 STA 63+00.00 TO 64+50.00  
 Sheet 238 of 282 Sheets

# CSAH 116



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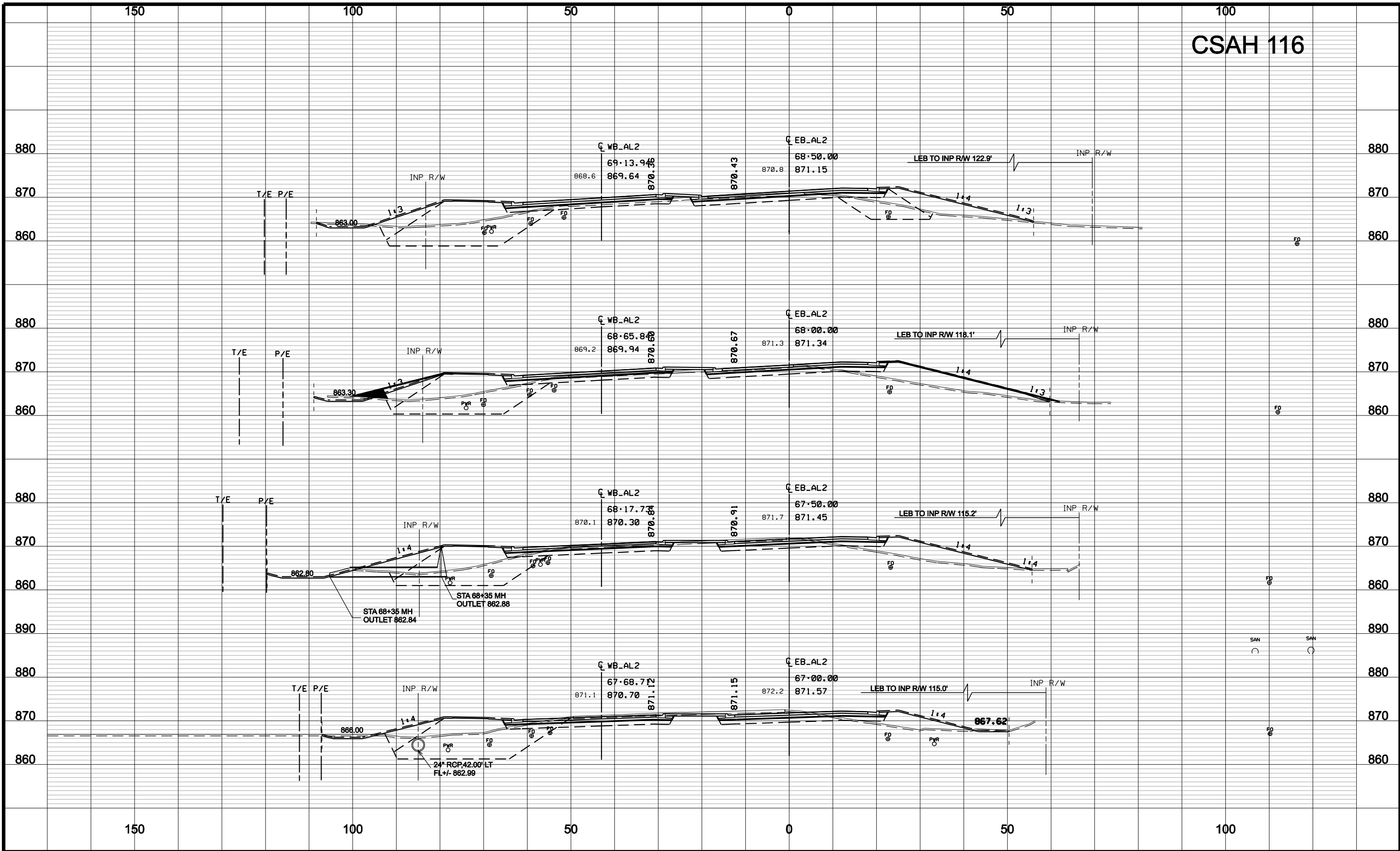
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DESIGN BY	MN	DATE	12-01-10
CHECKED BY	-	DATE	-

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

S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

**CROSS SECTIONS**  
STA 65+00.00 TO 66+50.00  
Sheet 239 of 282 Sheets

# CSAH 116



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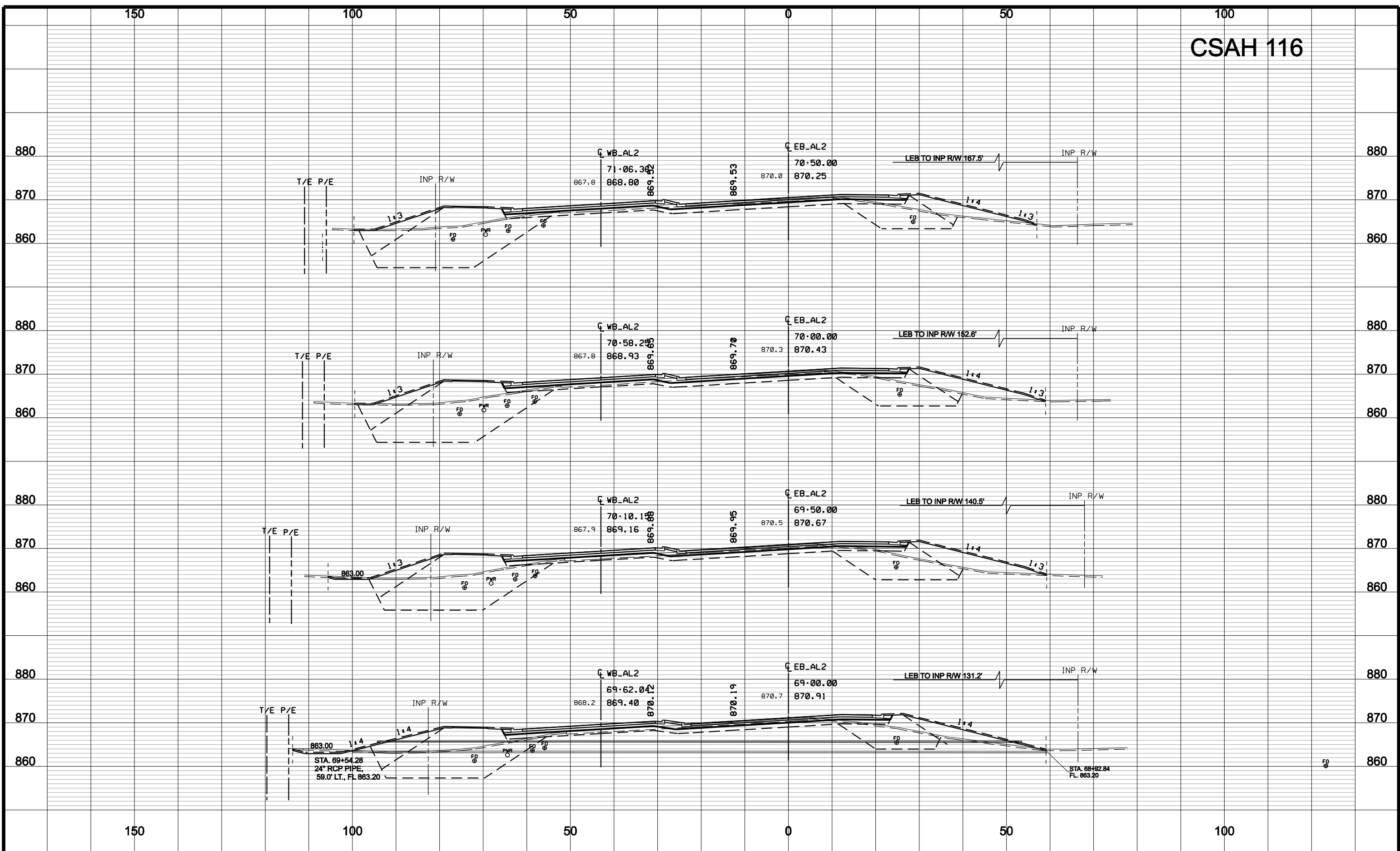
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DESIGN BY	MN	DATE	12-01-10
CHECKED BY	-	DATE	-



S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
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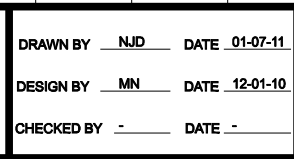
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Sheet	240 of 282 Sheets





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DESIGN BY	MN	DATE	12-01-10
CHECKED BY	-	DATE	-

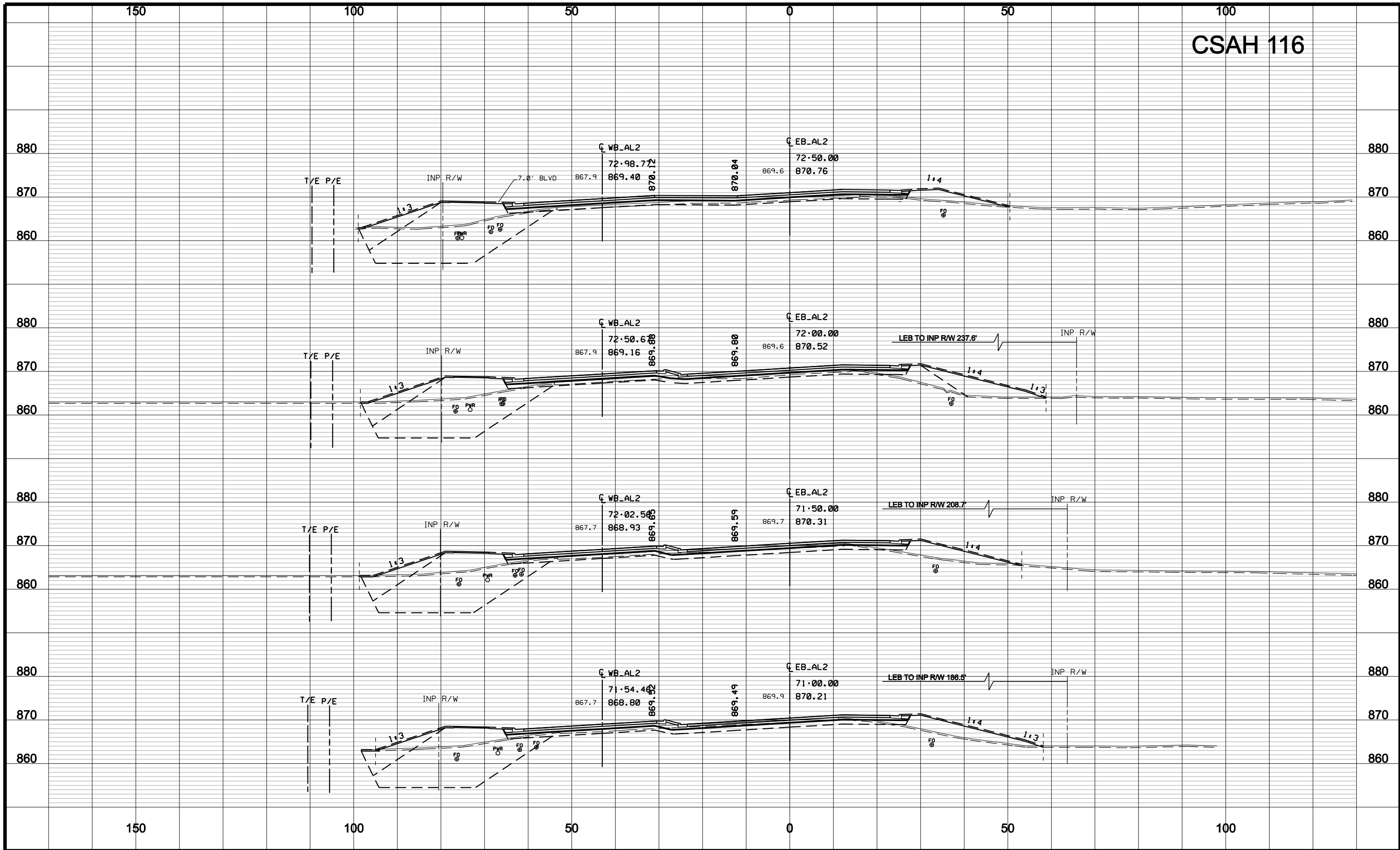


**ANOKA COUNTY  
HIGHWAY DEPT.**

S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

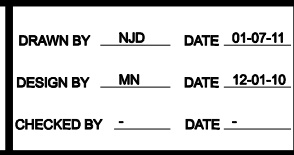
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 Sheet 241 of 282 Sheets

# CSAH 116



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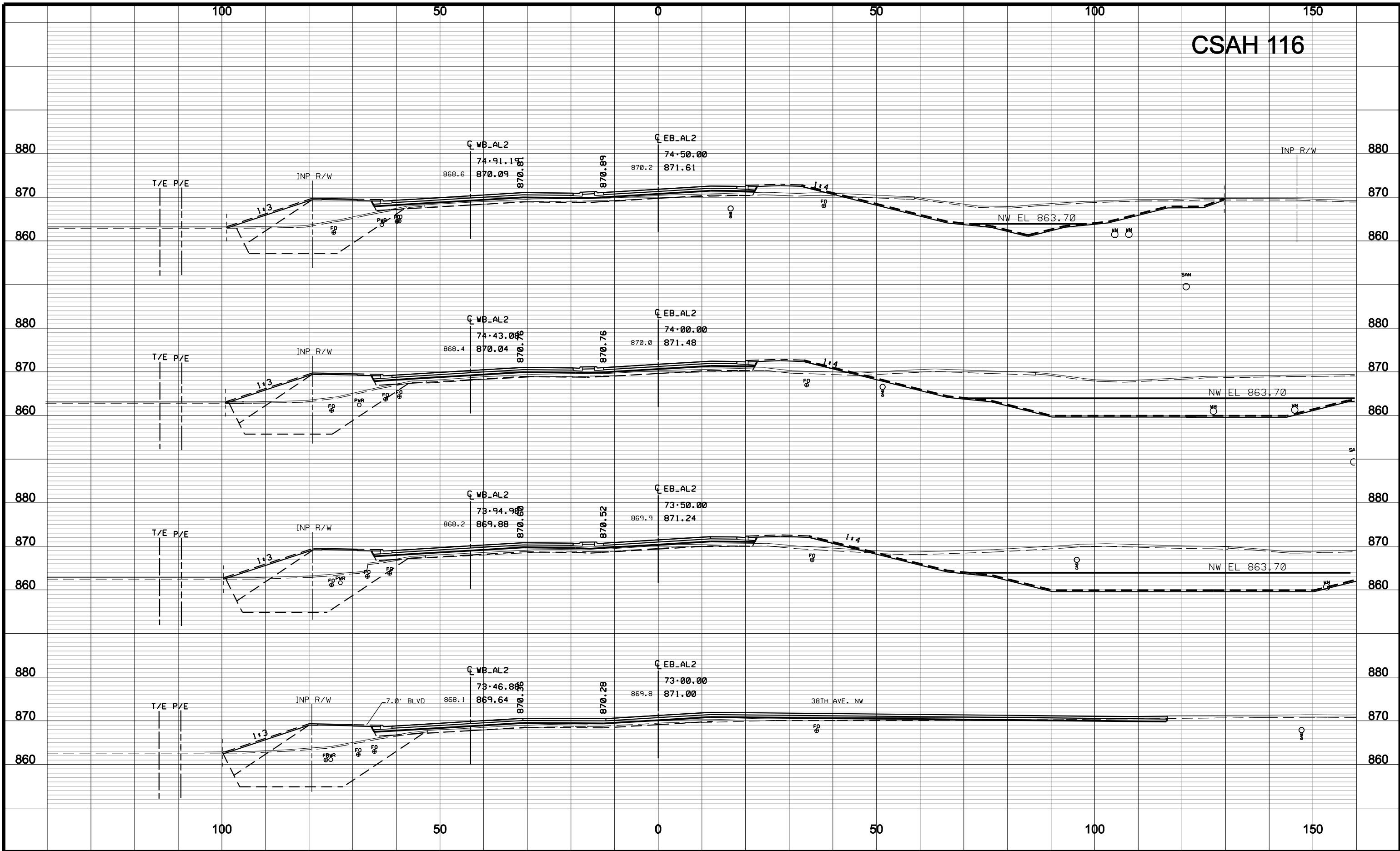


**ANOKA COUNTY  
HIGHWAY DEPT.**

S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

**CROSS SECTIONS**  
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 Sheet 242 of 282 Sheets

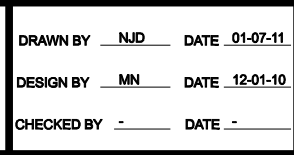
# CSAH 116



NO	DATE	BY	CKD	APPR	REVISION

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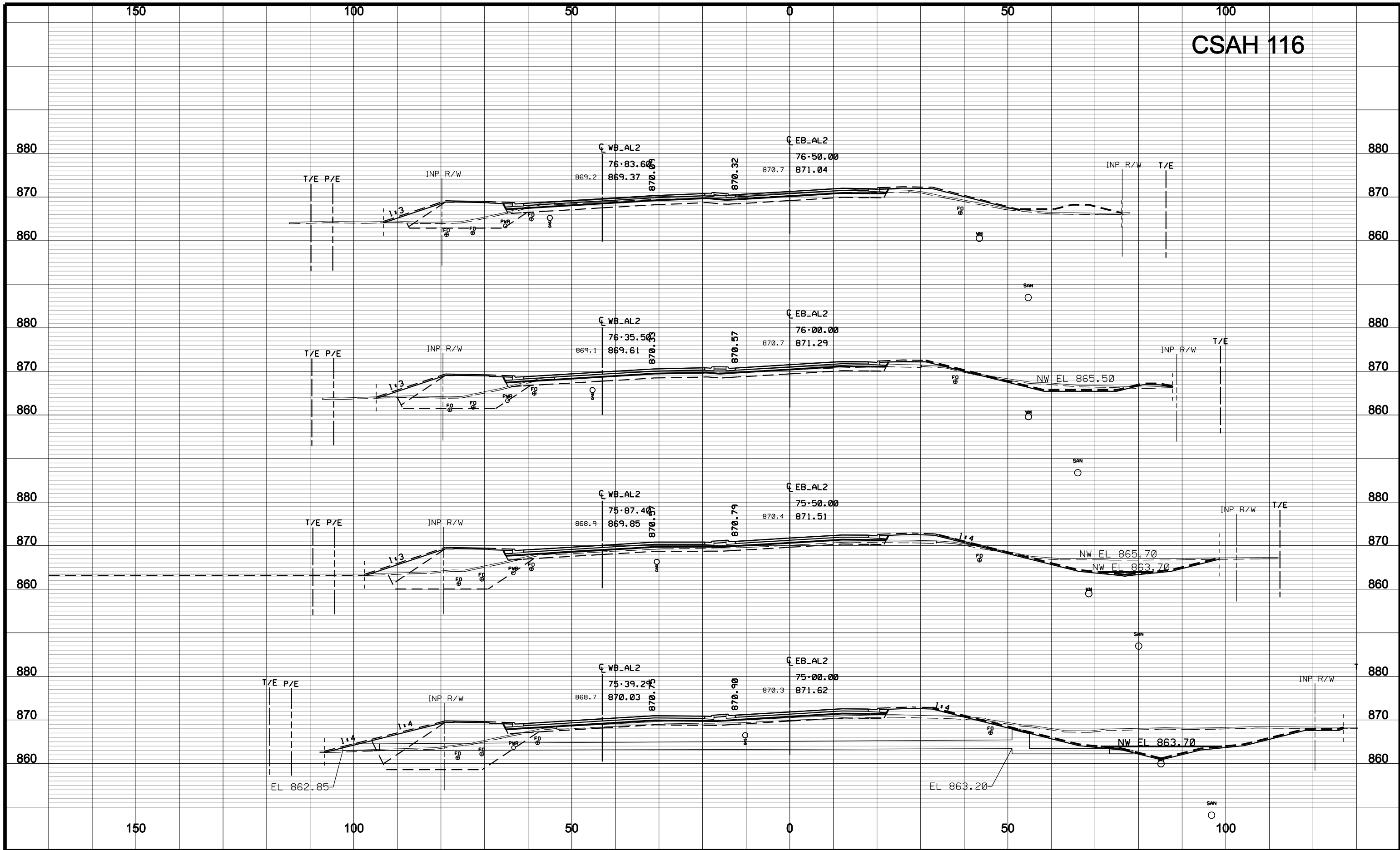
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DESIGN BY	MN	DATE	12-01-10
CHECKED BY	-	DATE	-



S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

CROSS SECTIONS	
STA	73+00.00 TO 74+50.00
Sheet	243 of 282 Sheets

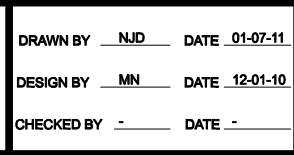
# CSAH 116



NO	DATE	BY	CKD	APPR	REVISION
					06/26/2012

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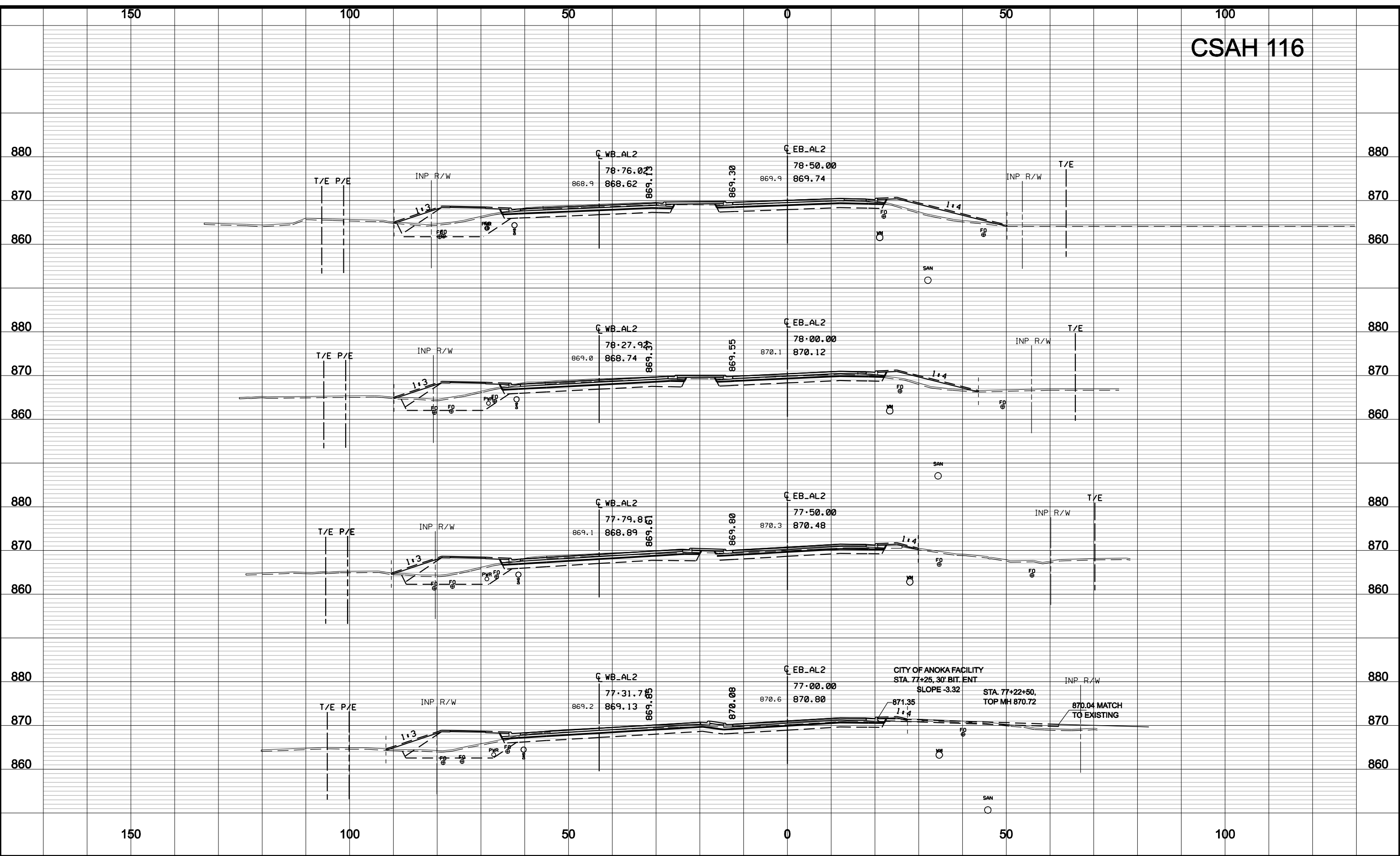
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DESIGN BY	MN	DATE	12-01-10
CHECKED BY	-	DATE	-



**ANOKA COUNTY  
HIGHWAY DEPT.**

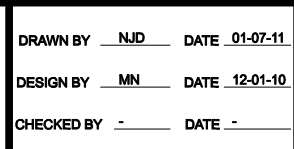
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S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

**CROSS SECTIONS**  
 STA 75+00.00 TO 76+50.00  
 Sheet 244 of 282 Sheets



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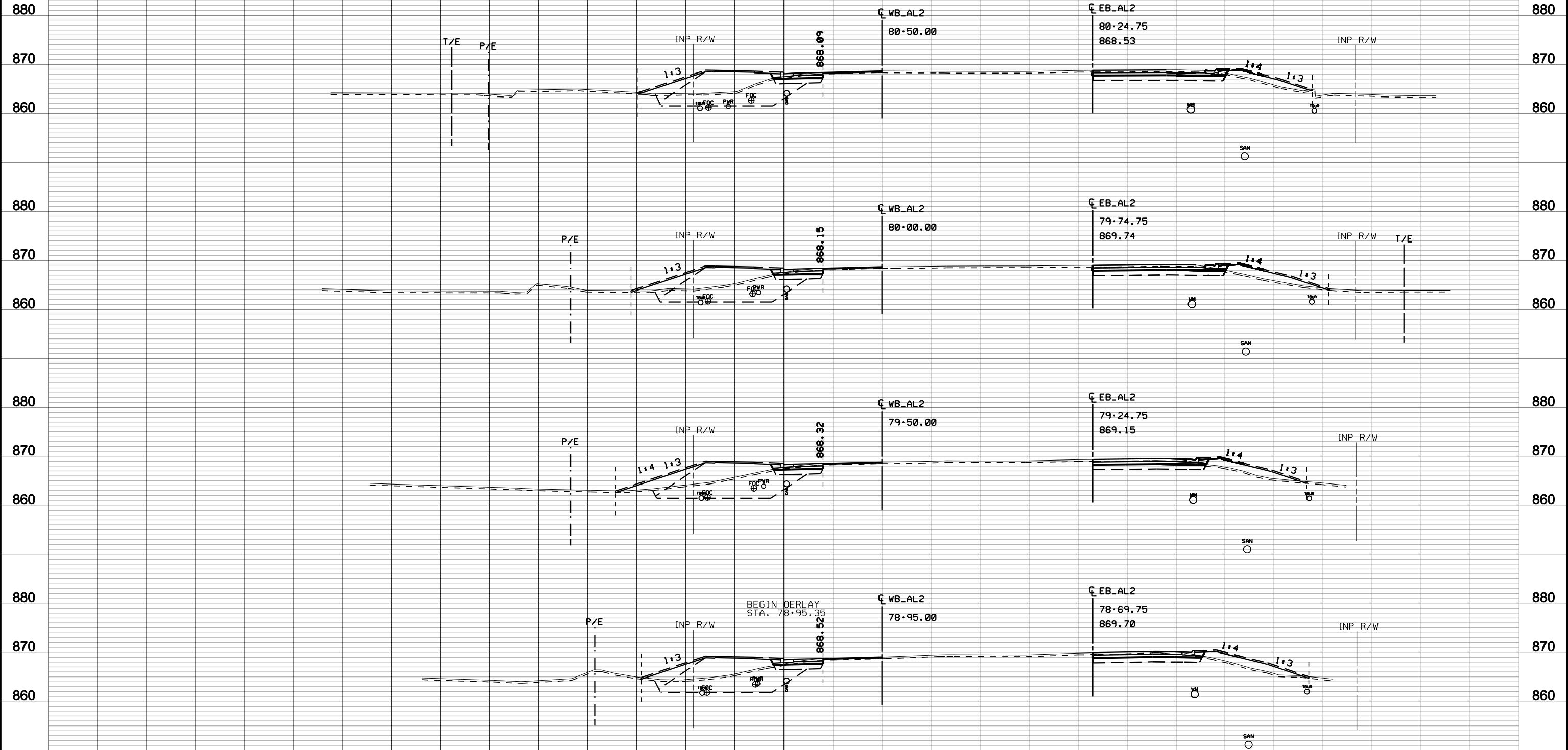
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DESIGN BY	MN	DATE	12-01-10
CHECKED BY	-	DATE	-



**ANOKA COUNTY  
HIGHWAY DEPT.**

S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

**CROSS SECTIONS**  
 STA 77+00.00 TO 78+50.00  
 Sheet 245 of 282 Sheets



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06/26/2012 3:35:02 PM					

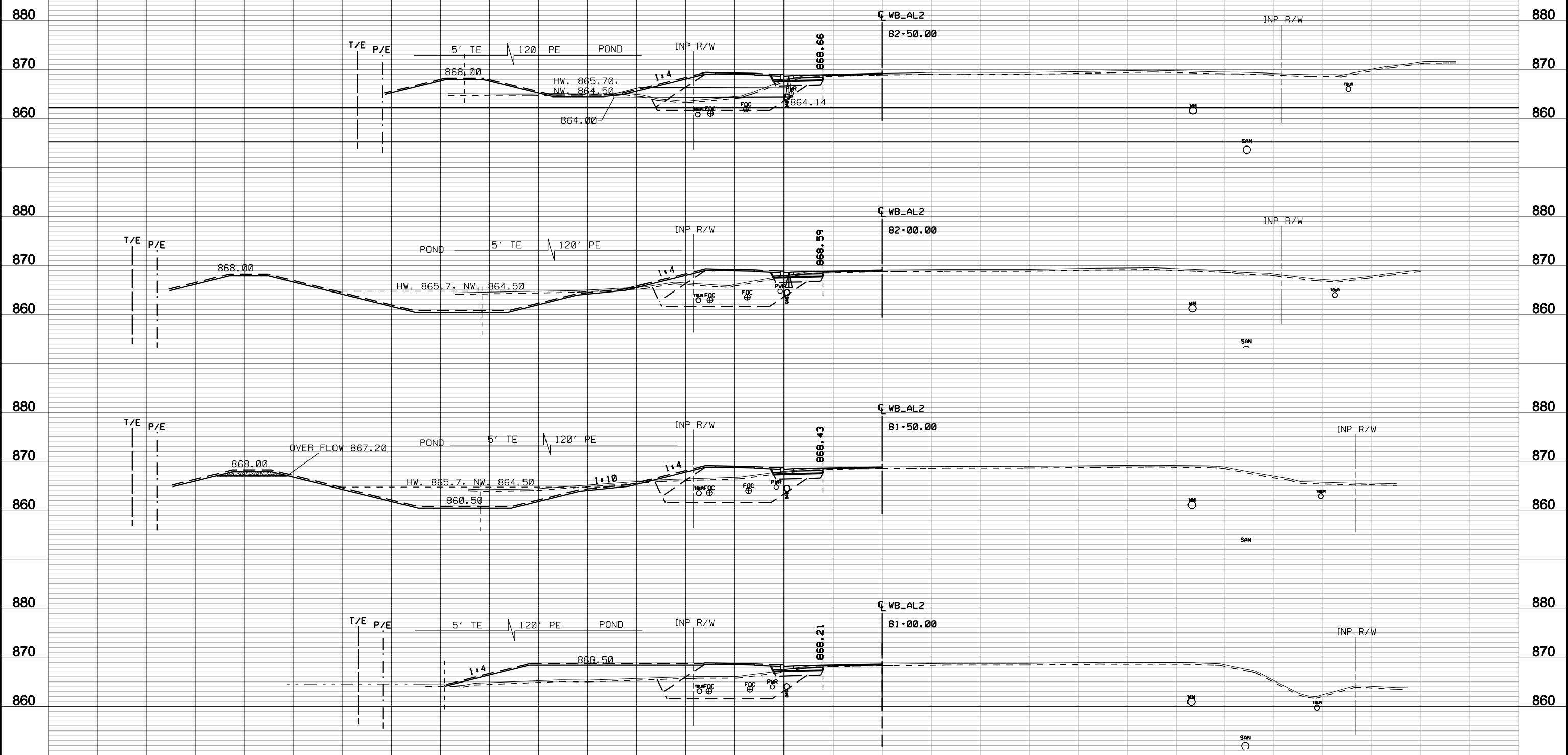
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DESIGN BY	MN	DATE	12-1-10
CHECKED BY	JEO	DATE	

S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

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

TRAIL CROSS SECTIONS	
STA	78+95.00 TO 80+50.00
Sheet 246 of 282 Sheets	

# CSAH 116



NO	DATE	BY	CKD	APPR	REVISION
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06/26/2012 3:35:04 PM					

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DESIGN BY	MN	DATE	12-1-10
CHECKED BY	JEO	DATE	

ANOKA COUNTY  
HIGHWAY DEPT.

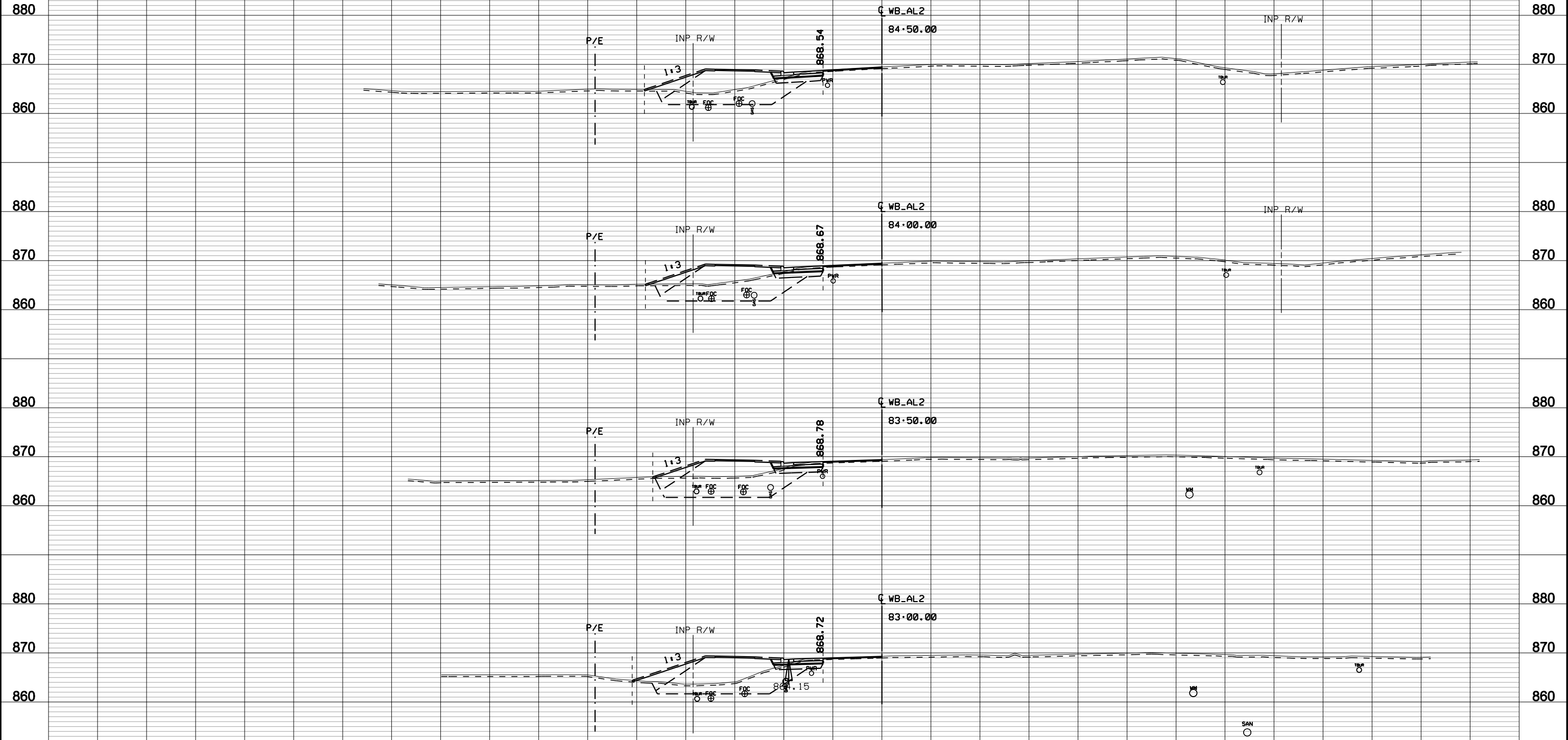


ANOKA COUNTY  
HIGHWAY DEPT.

S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

TRAIL CROSS SECTIONS  
STA 81+00.00 TO 82+50.00  
Sheet 247 of 282 Sheets

CSAH 116



NO	DATE	BY	CKD	APPR	REVISION
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DESIGN BY	MN	DATE	12-1-10
CHECKED BY	JEO	DATE	



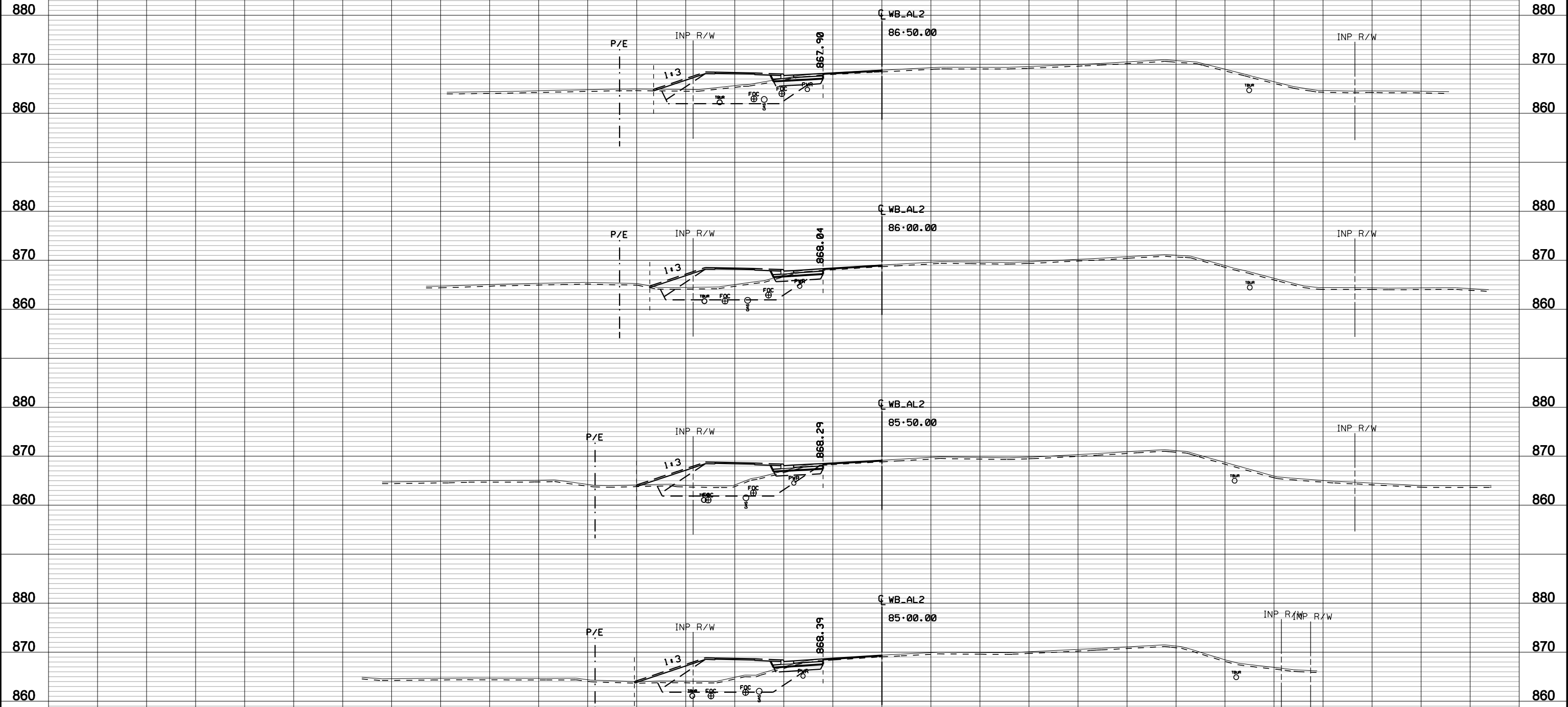
**ANOKA COUNTY  
HIGHWAY DEPT.**

S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

**TRAIL CROSS SECTIONS**  
 STA 83+00.00 TO 84+50.00  
 Sheet 248 of 282 Sheets

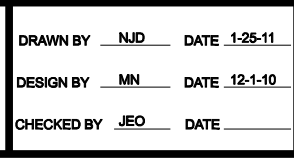


# CSAH 116



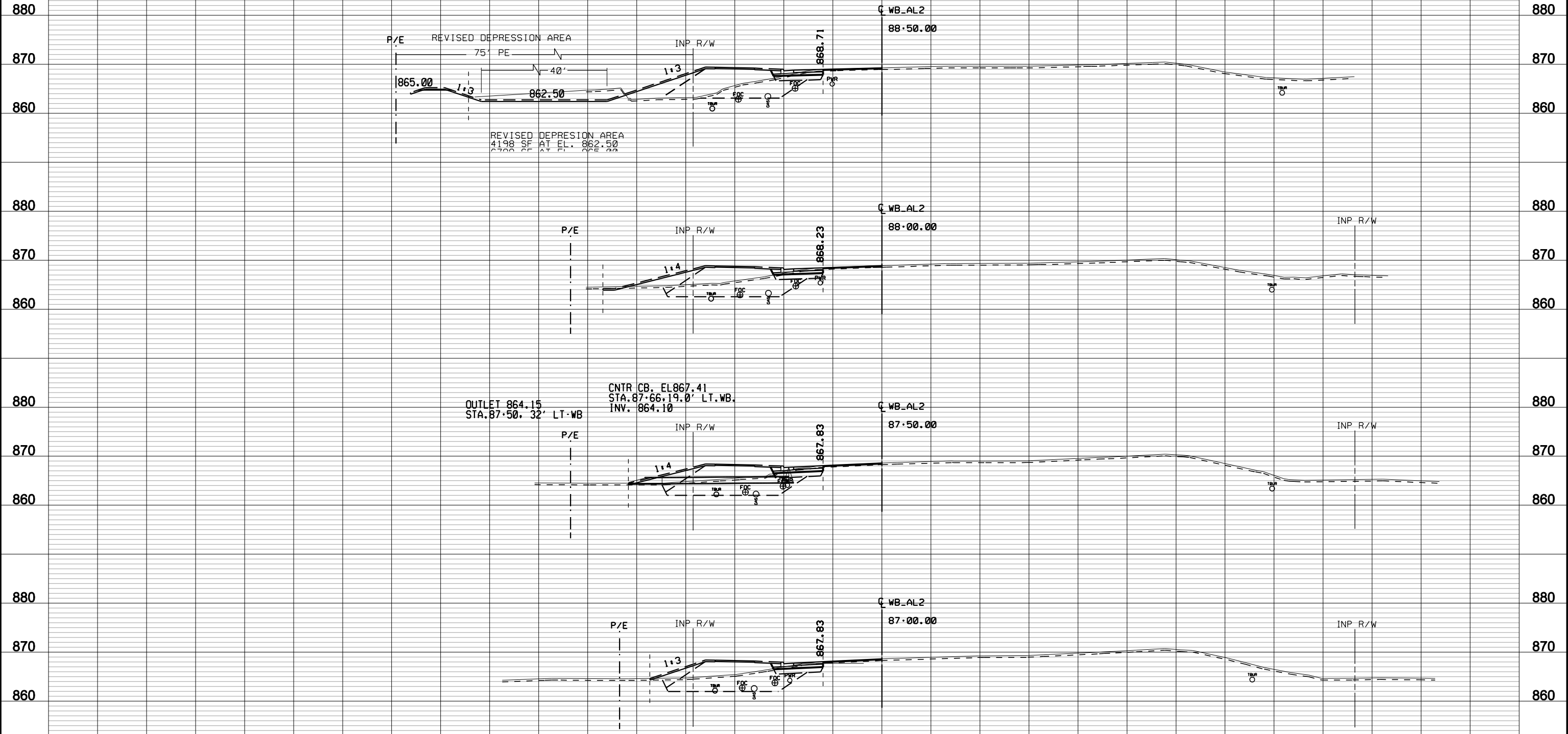
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DESIGN BY	MN	DATE	12-1-10
CHECKED BY	JEO	DATE	



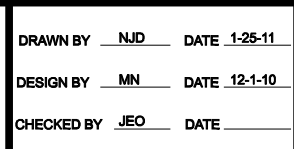
S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

TRAIL CROSS SECTIONS	
STA 85+00.00	TO 86+50.00
Sheet 249 of 282 Sheets	



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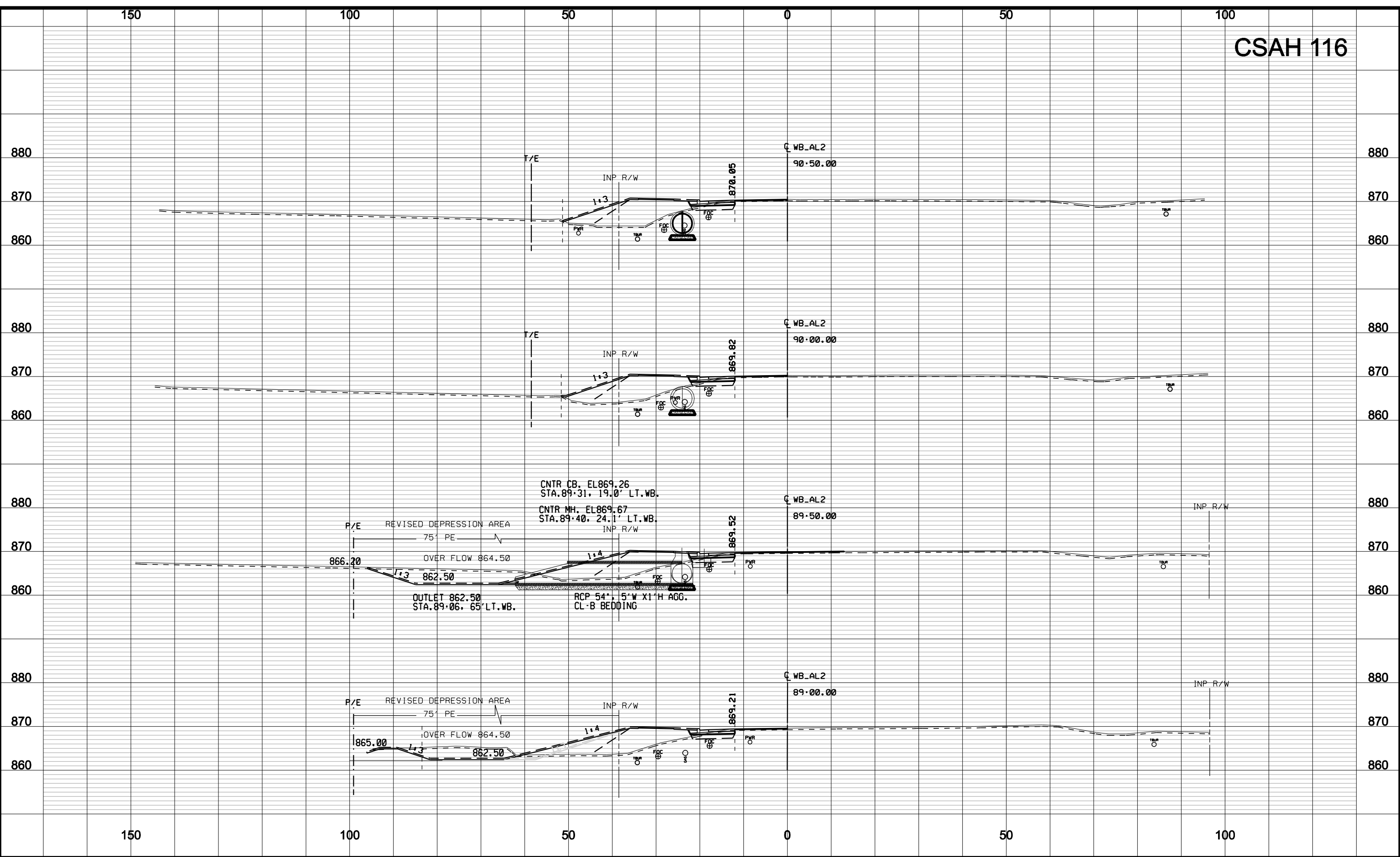
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DESIGN BY	MN	DATE	12-1-10
CHECKED BY	JEO	DATE	



**ANOKA COUNTY  
HIGHWAY DEPT.**

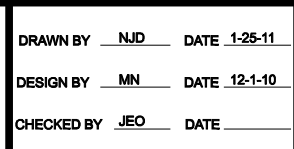
S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

**TRAIL CROSS SECTIONS**  
 STA 87+00.00 TO 88+50.00  
 Sheet 250 of 282 Sheets



NO	DATE	BY	CKD	APPR	REVISION
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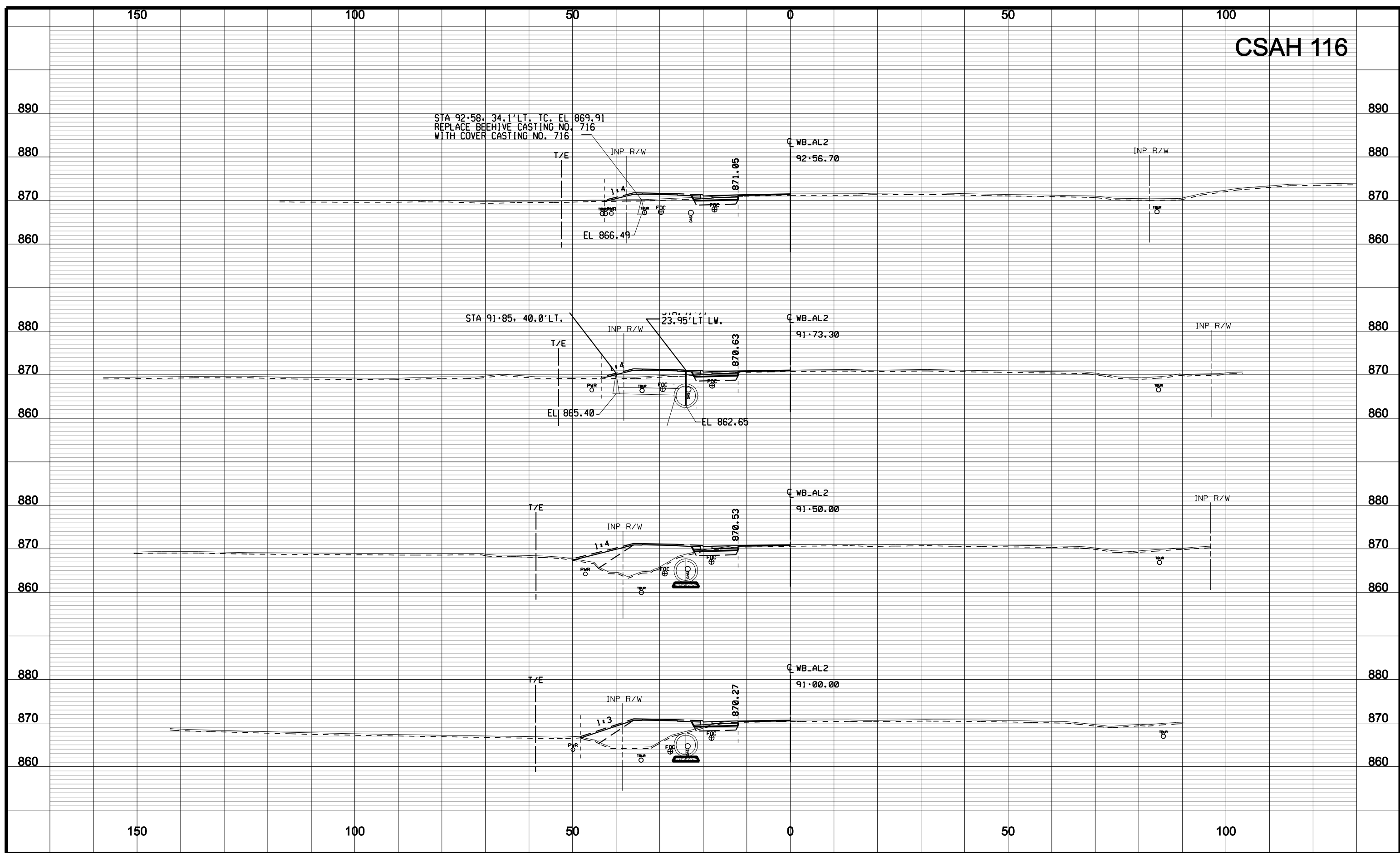


**ANOKA COUNTY  
HIGHWAY DEPT.**

S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

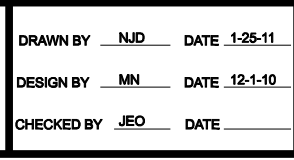
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 Sheet 251 of 282 Sheets

# CSAH 116



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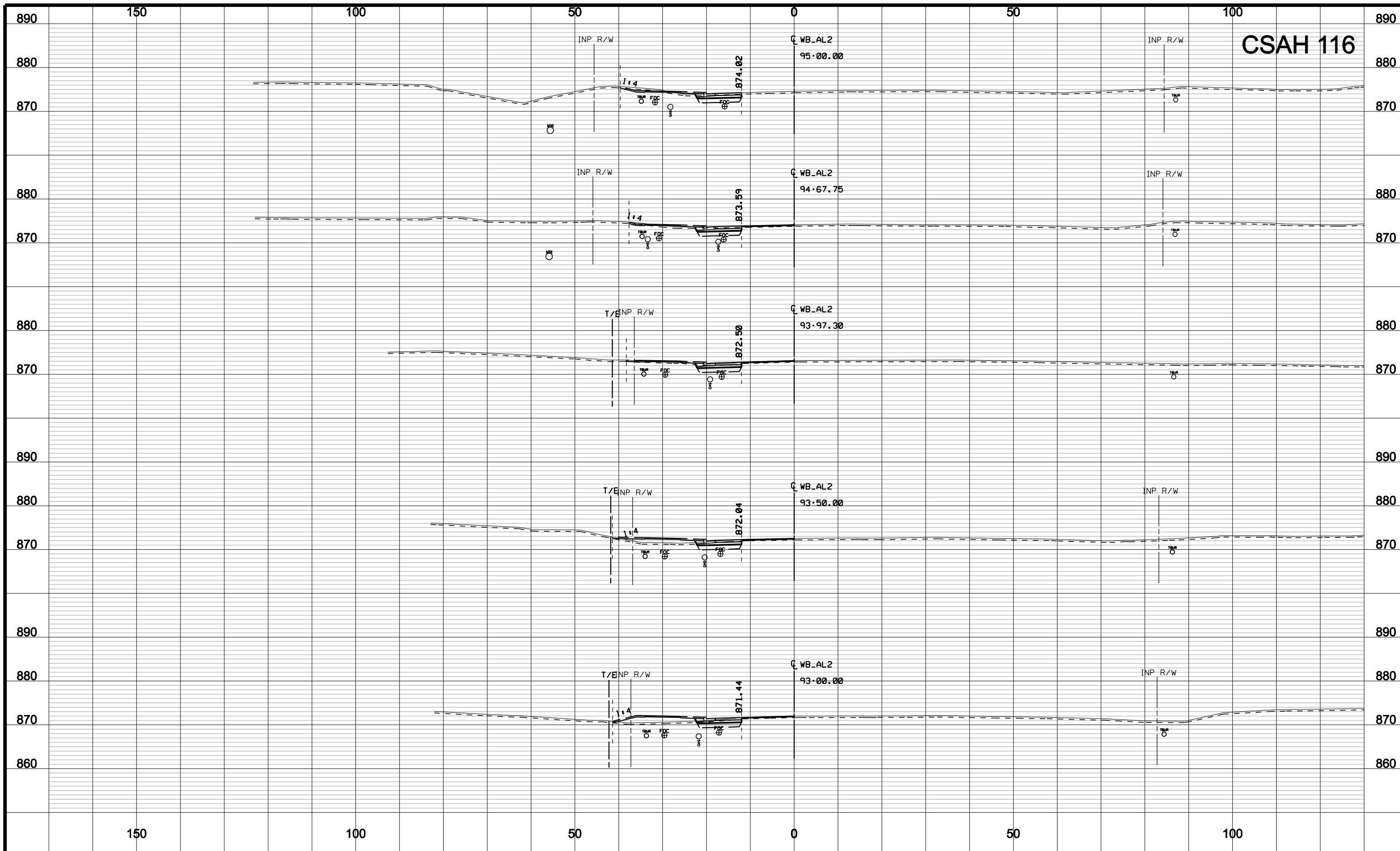
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DESIGN BY	MN	DATE	12-1-10
CHECKED BY	JEO	DATE	



**ANOKA COUNTY  
HIGHWAY DEPT.**

S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

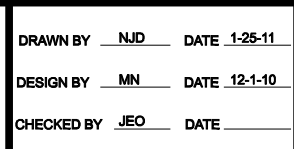
**TRAIL CROSS SECTIONS**  
 STA 91+00.00 TO 92+56.70  
 Sheet 252 of 282 Sheets



CSAH 116

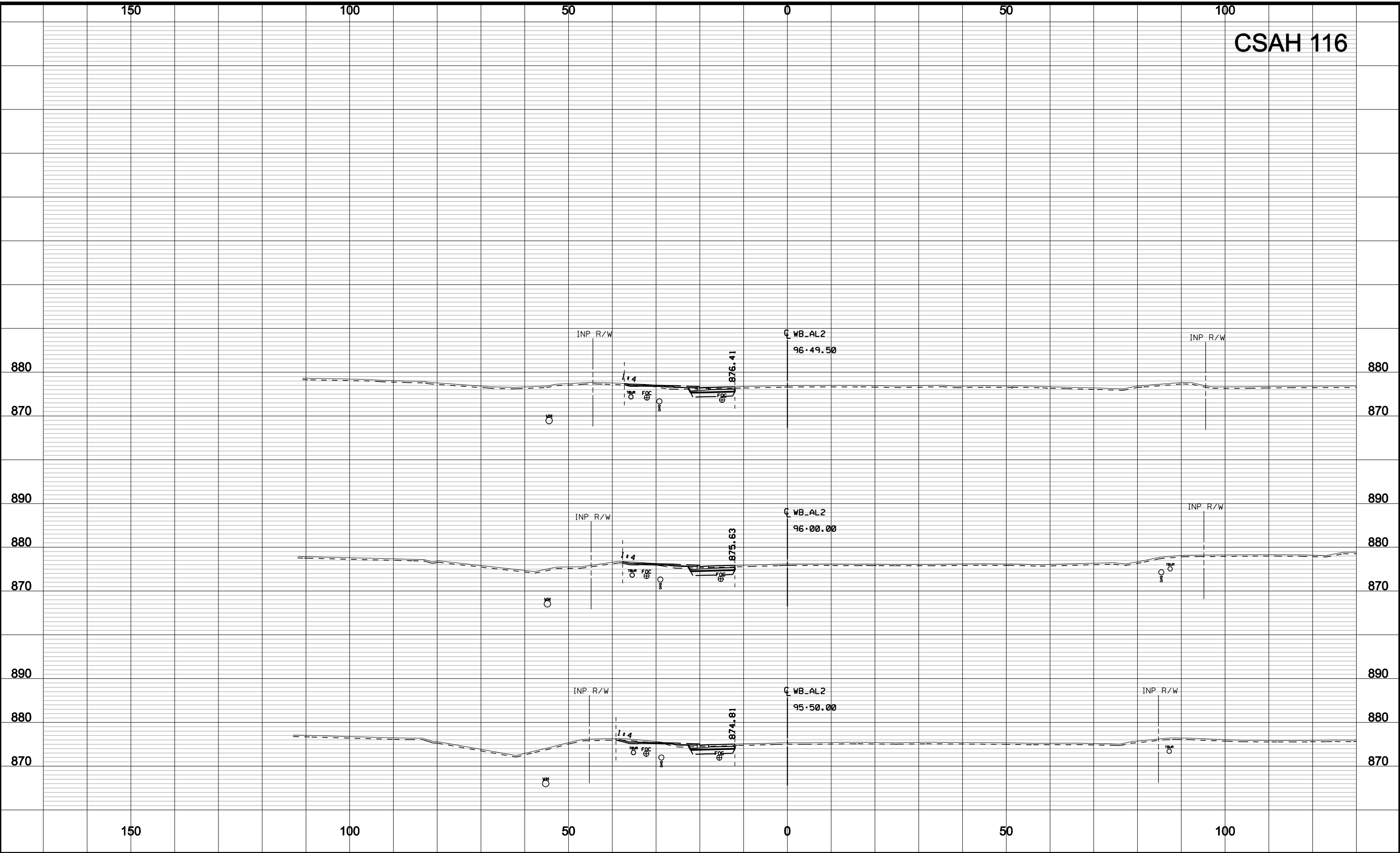
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DESIGN BY	MN	DATE	12-1-10
CHECKED BY	JEO	DATE	



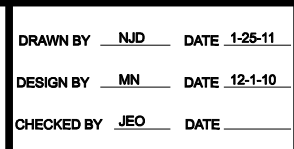
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S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

TRAIL CROSS SECTIONS	
STA 93+00.00	TO 95+00.00
Sheet 253 of 282 Sheets	



NO	DATE	BY	CKD	APPR	REVISION
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06/26/2012 3:35:11 PM					

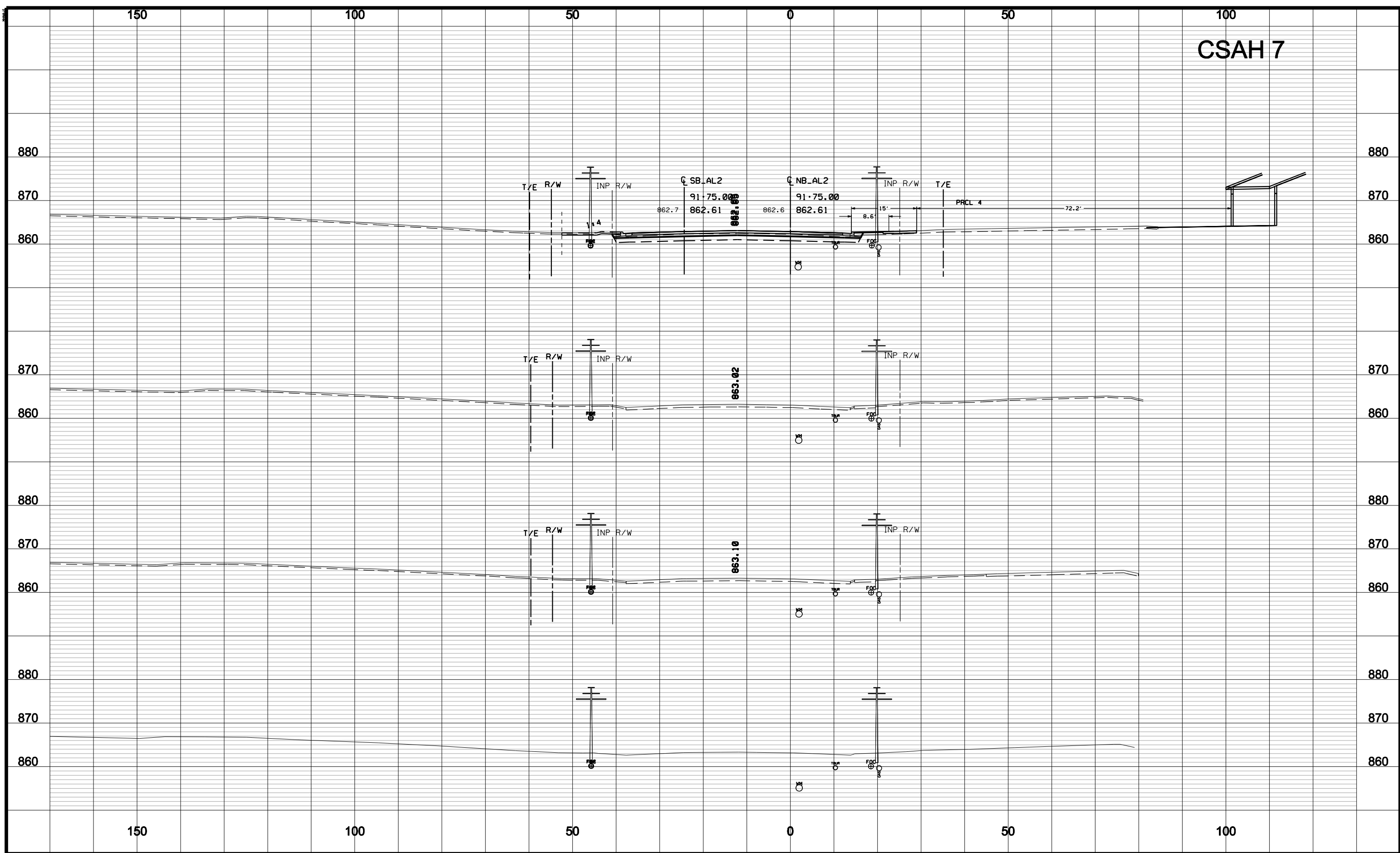
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DESIGN BY	MN	DATE	12-1-10
CHECKED BY	JEO	DATE	



S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
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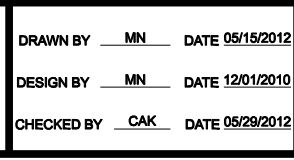
TRAIL CROSS SECTIONS	
STA 95+50.00	TO 94+49.50
Sheet 254 of 282 Sheets	

# CSAH 7



NO	DATE	BY	CKD	APPR	REVISION
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DESIGN BY	MN	DATE	12/01/2010
CHECKED BY	CAK	DATE	05/29/2012

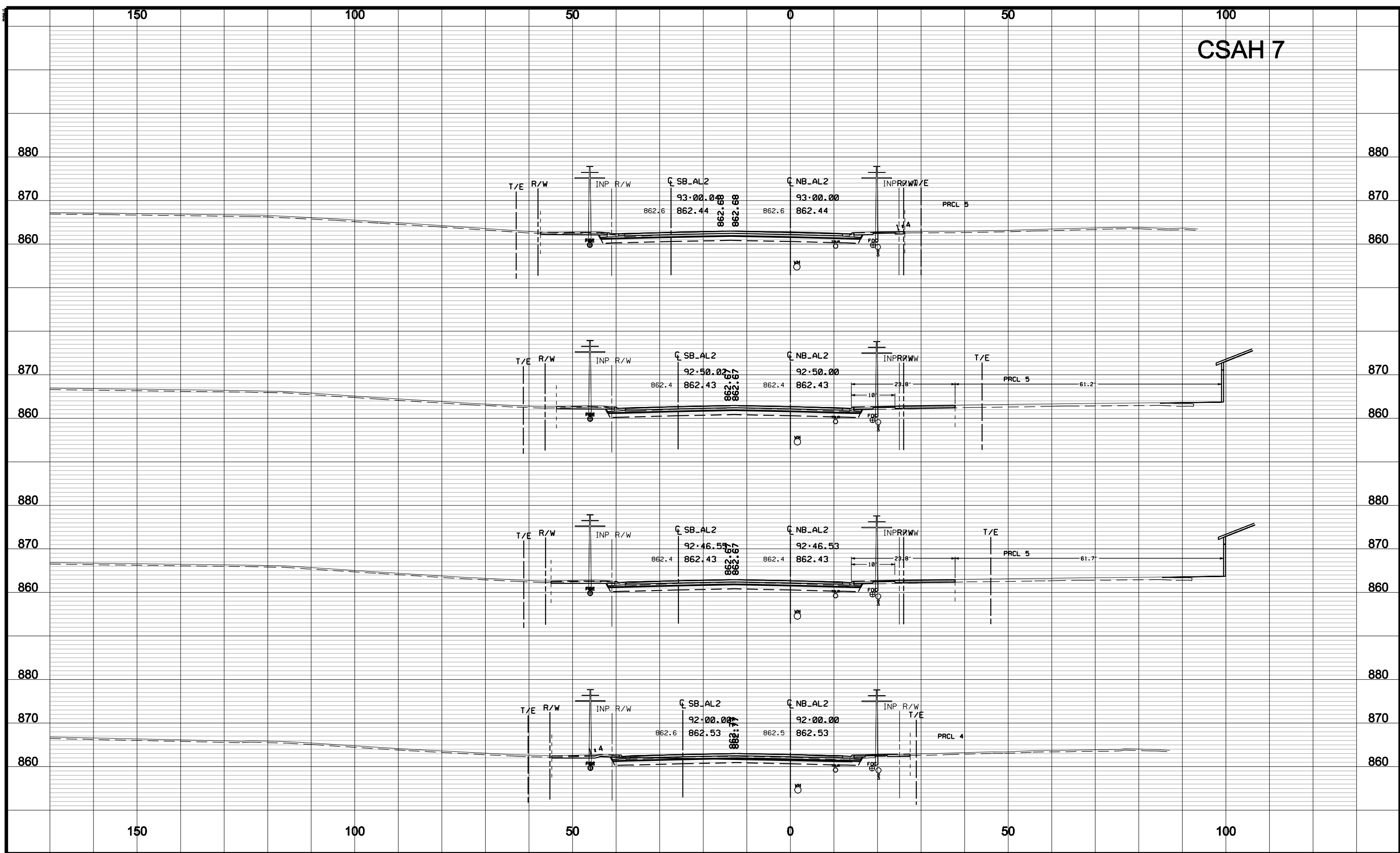


**ANOKA COUNTY  
HIGHWAY DEPT.**

S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

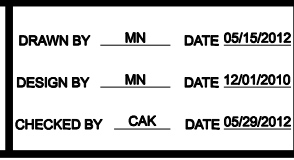
**CROSS SECTIONS**  
 STA 91+00.00 TO 91+75.00  
 Sheet 255 of 282 Sheets

# CSAH 7



NO	DATE	BY	CKD	APPR	REVISION
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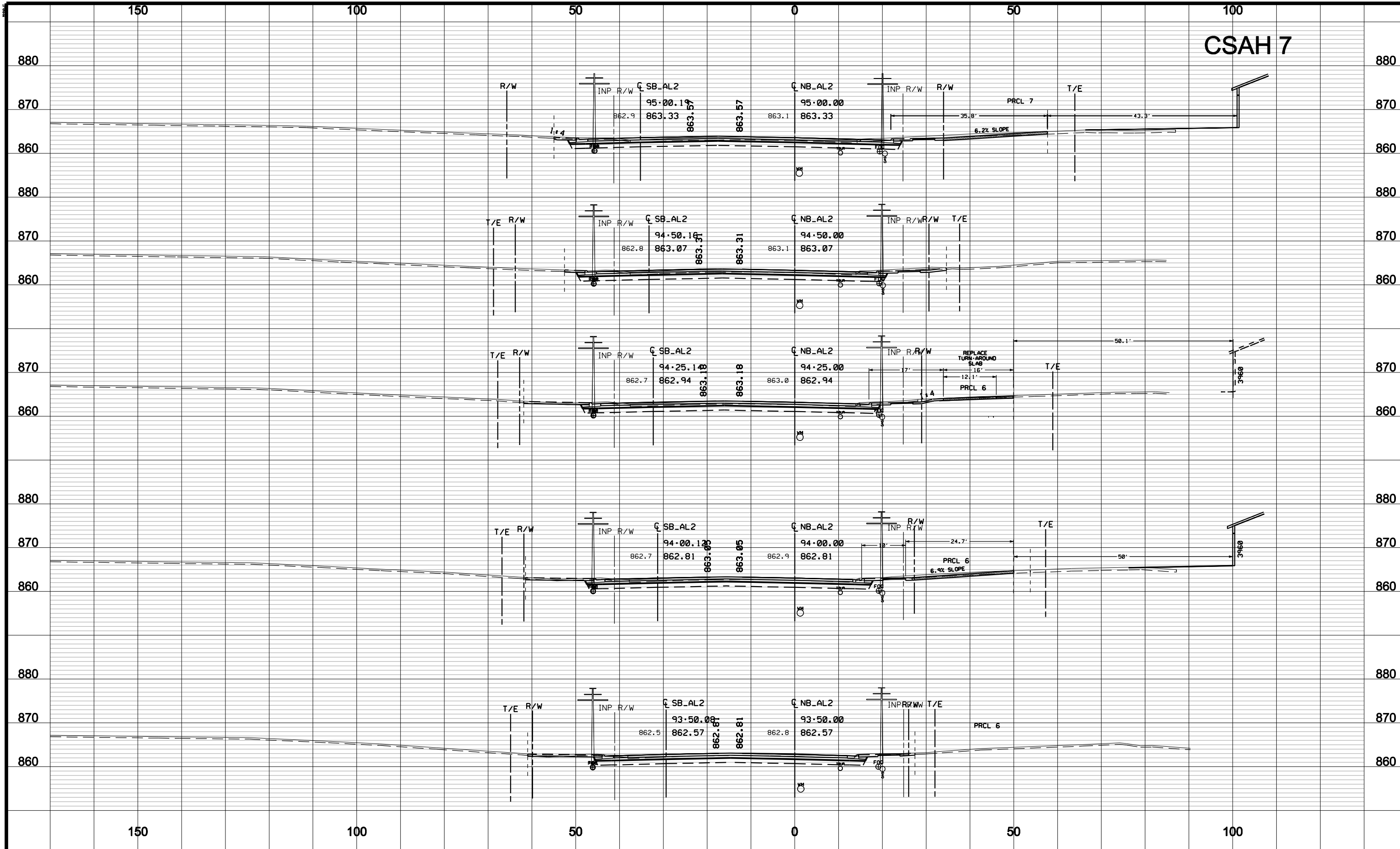


S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

CROSS SECTIONS	
STA	92+00.00 TO 93+00.00
Sheet 256 of 282 Sheets	

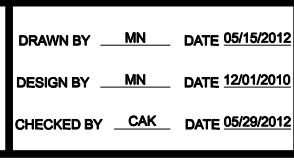


# CSAH 7



NO	DATE	BY	CKD	APPR	REVISION
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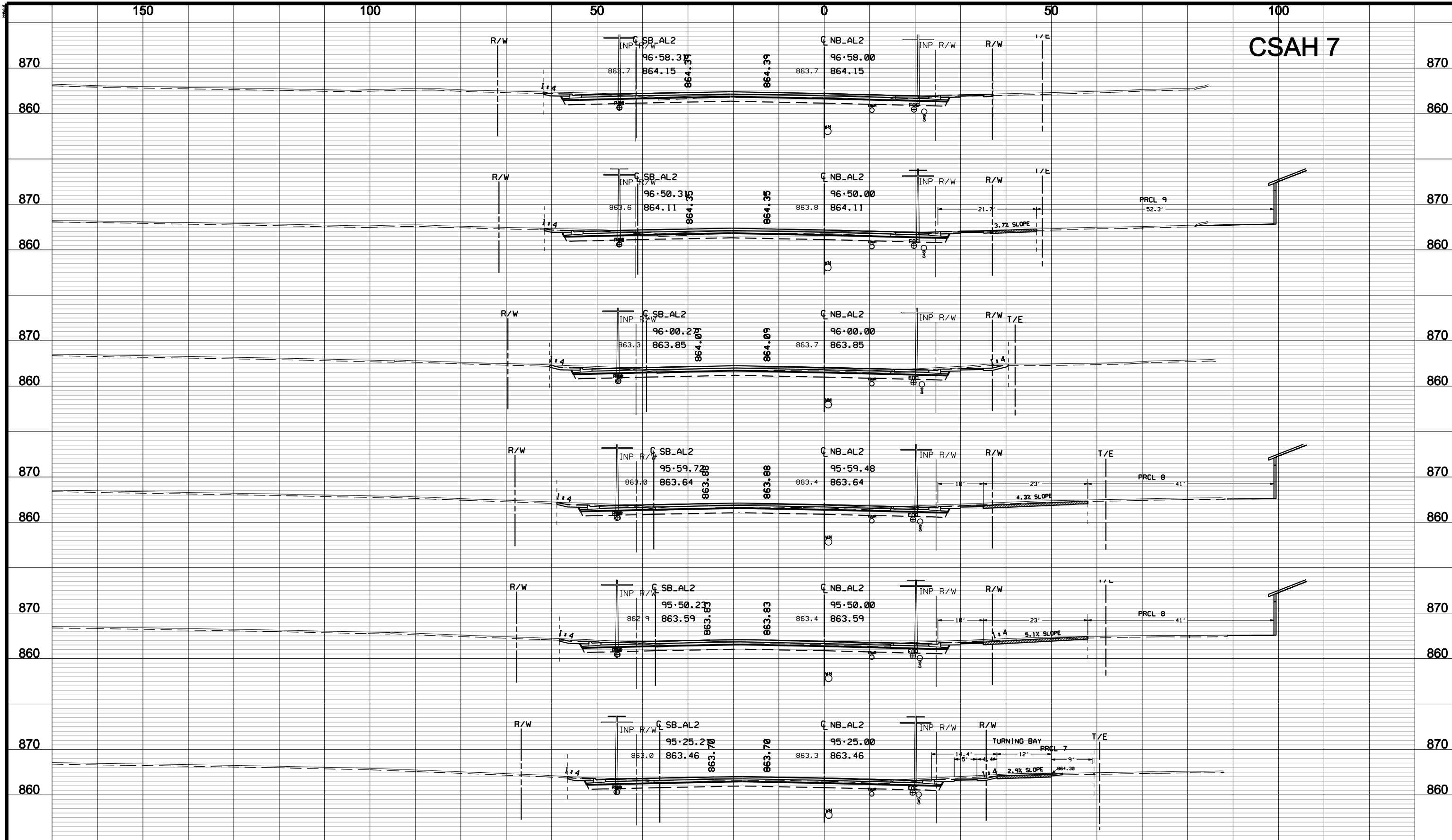
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CHECKED BY	CAK	DATE	05/29/2012



S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
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S.P. 103-020-014		S.P. 103-020-015

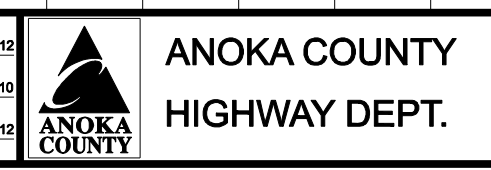
CROSS SECTIONS	
STA	93+50.00 TO 95+00.00
Sheet 257 of 282 Sheets	

# CSAH 7



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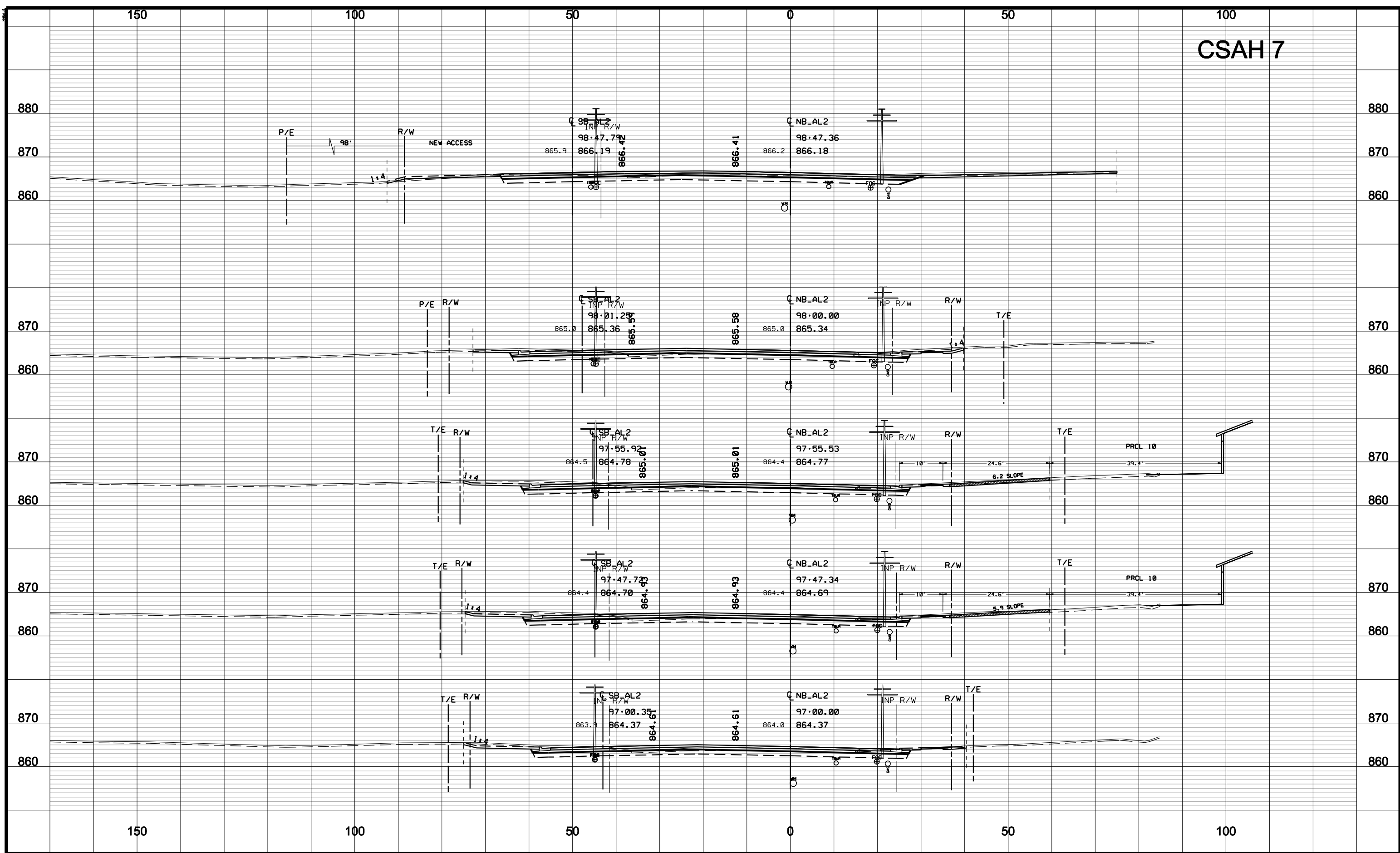
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DESIGN BY	MN	DATE	12/01/2010
CHECKED BY	CAK	DATE	05/29/2012



S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

<b>CROSS SECTIONS</b>	
STA	95+25.00 TO 96+58.00
Sheet 258 of 282 Sheets	

# CSAH 7



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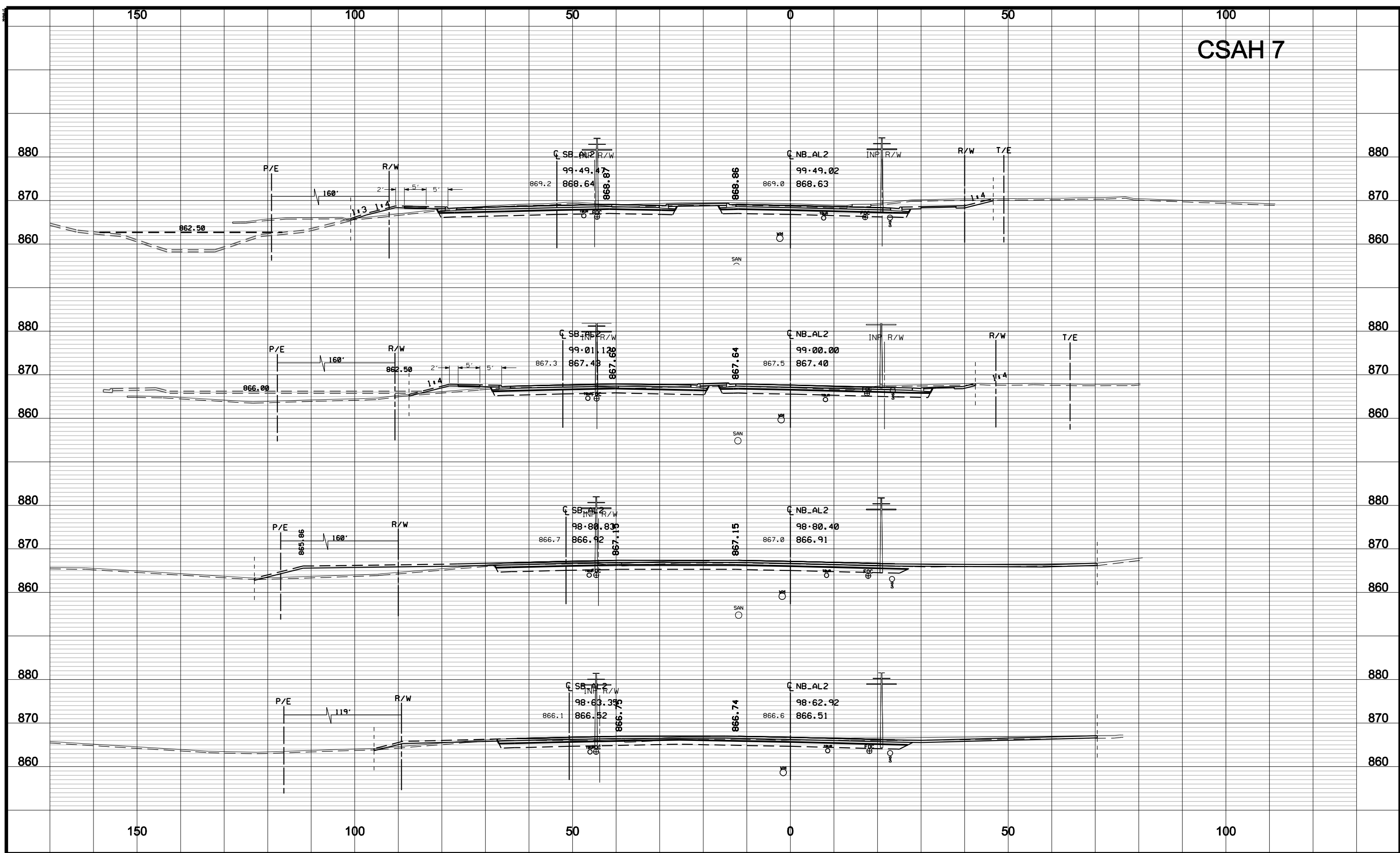
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DESIGN BY	MN	DATE	12/01/2010
CHECKED BY	CAK	DATE	05/29/2012



S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

CROSS SECTIONS	
STA	97+00.00 TO 98+47.36
Sheet 259 of 282 Sheets	

# CSAH 7



NO	DATE	BY	CKD	APPR	REVISION
					06/26/2012

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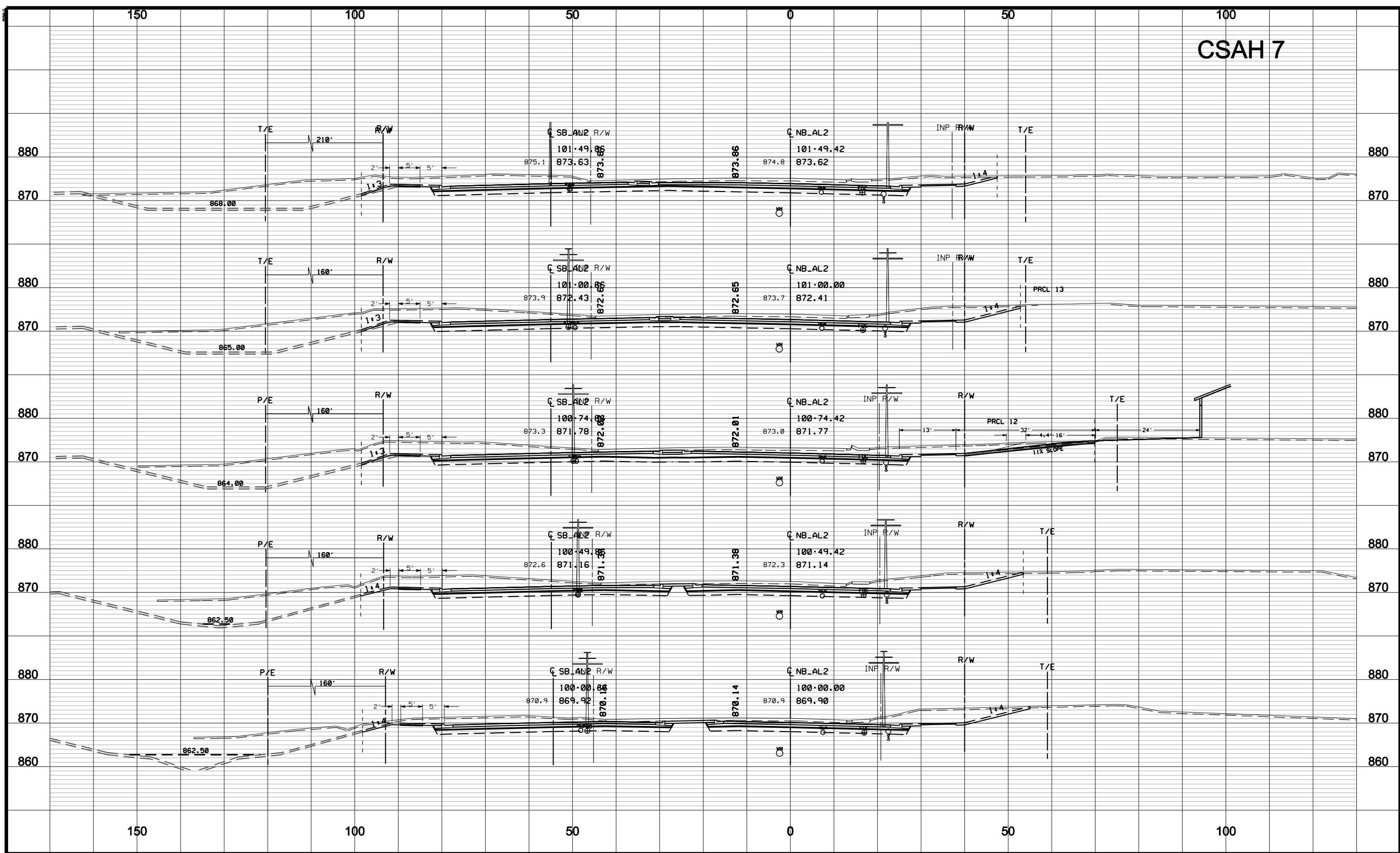
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S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

**CROSS SECTIONS**  
 STA 98+62.92 TO 99+49.02  
 Sheet 260 of 282 Sheets

# CSAH 7



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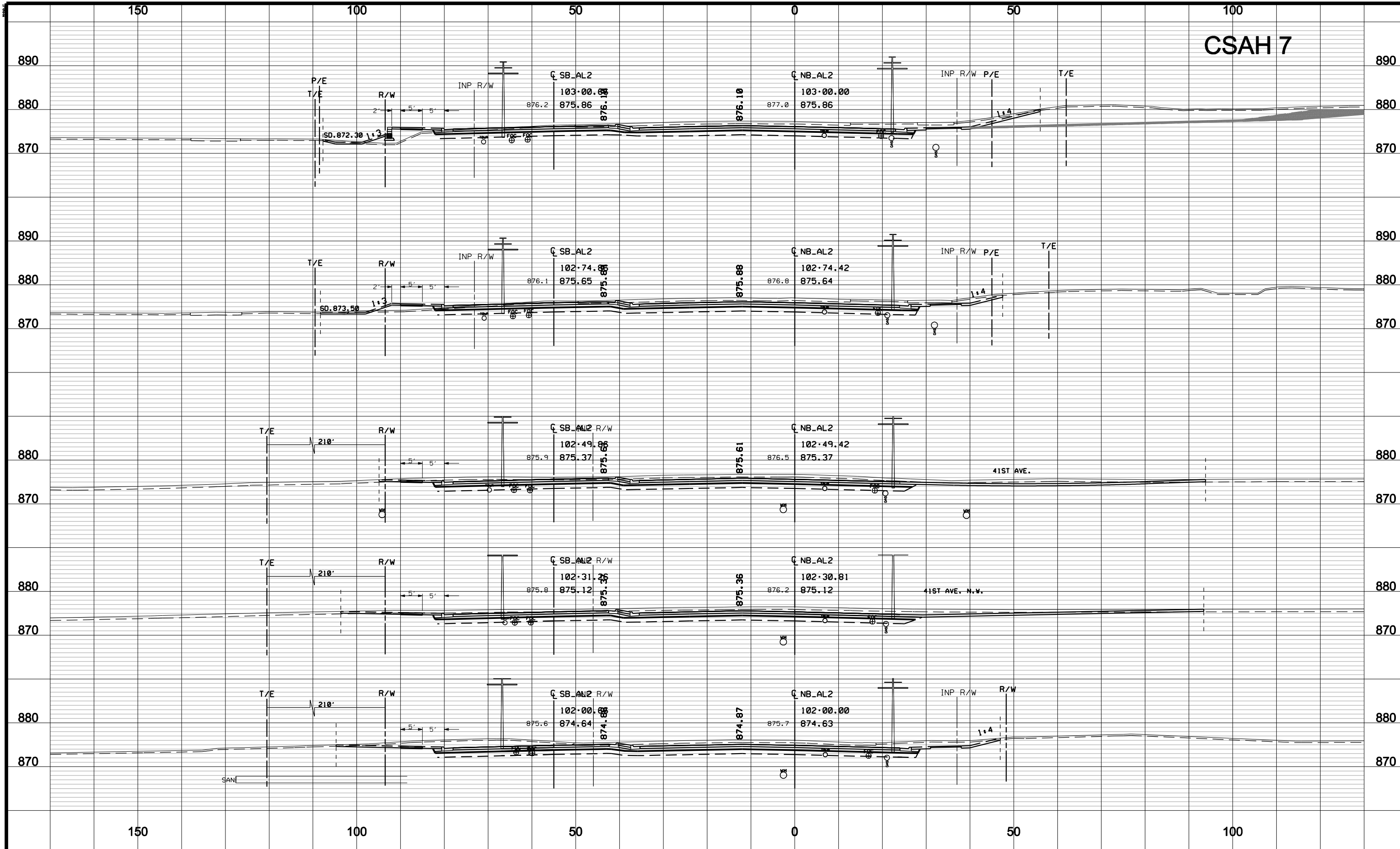
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DESIGN BY	MN	DATE	12/01/2010
CHECKED BY	CAK	DATE	05/29/2012



S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

<b>CROSS SECTIONS</b>	
STA 100+00.00 TO 101+49.42	
Sheet 261 of 282 Sheets	

# CSAH 7



NO	DATE	BY	CKD	APPR	REVISION
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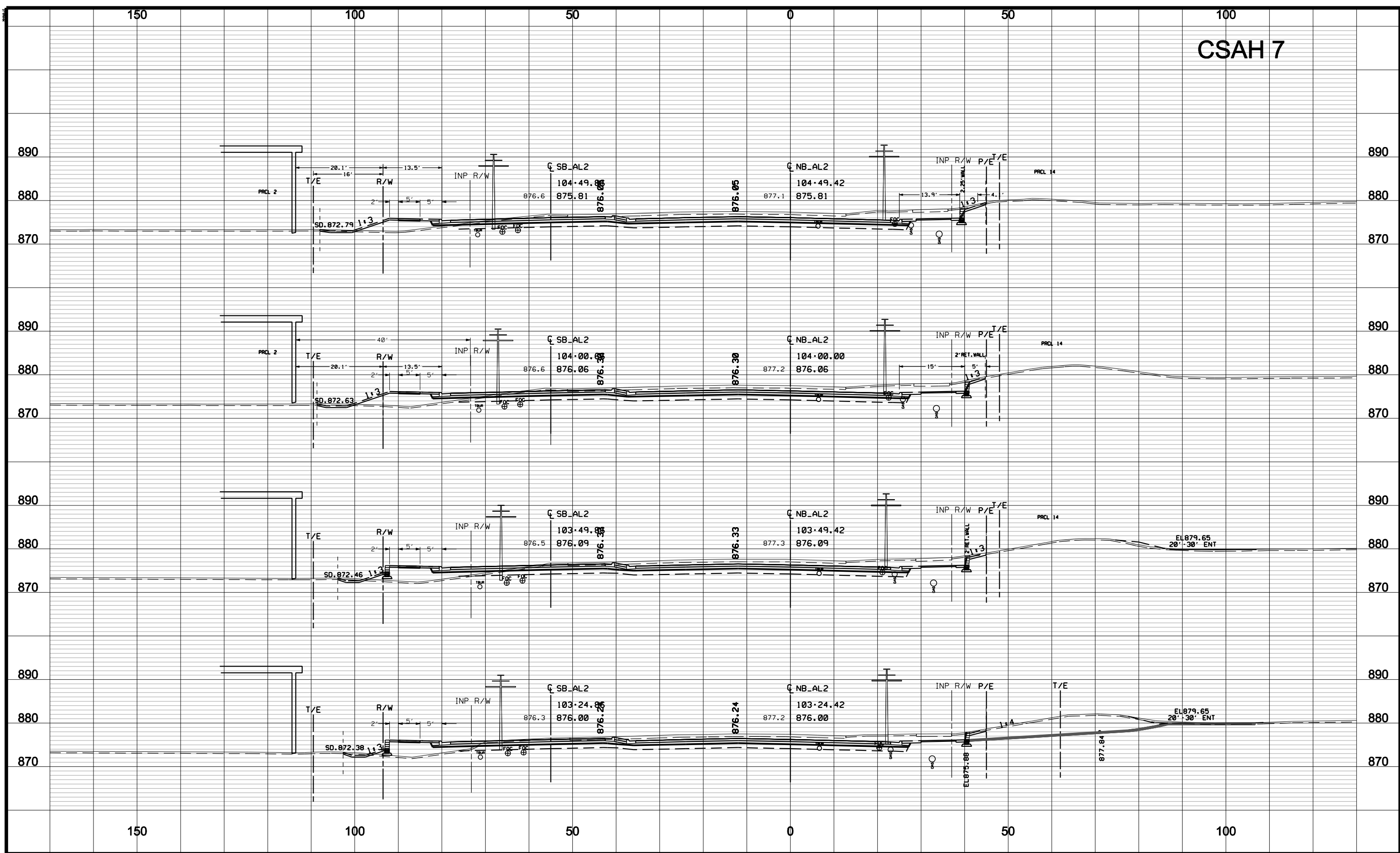
**ANOKA COUNTY**  
**HIGHWAY DEPT.**



S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

<b>CROSS SECTIONS</b>	
STA	102+00.00 TO 103+00.00
Sheet	262 of 282 Sheets

# CSAH 7



NO	DATE	BY	CKD	APPR	REVISION
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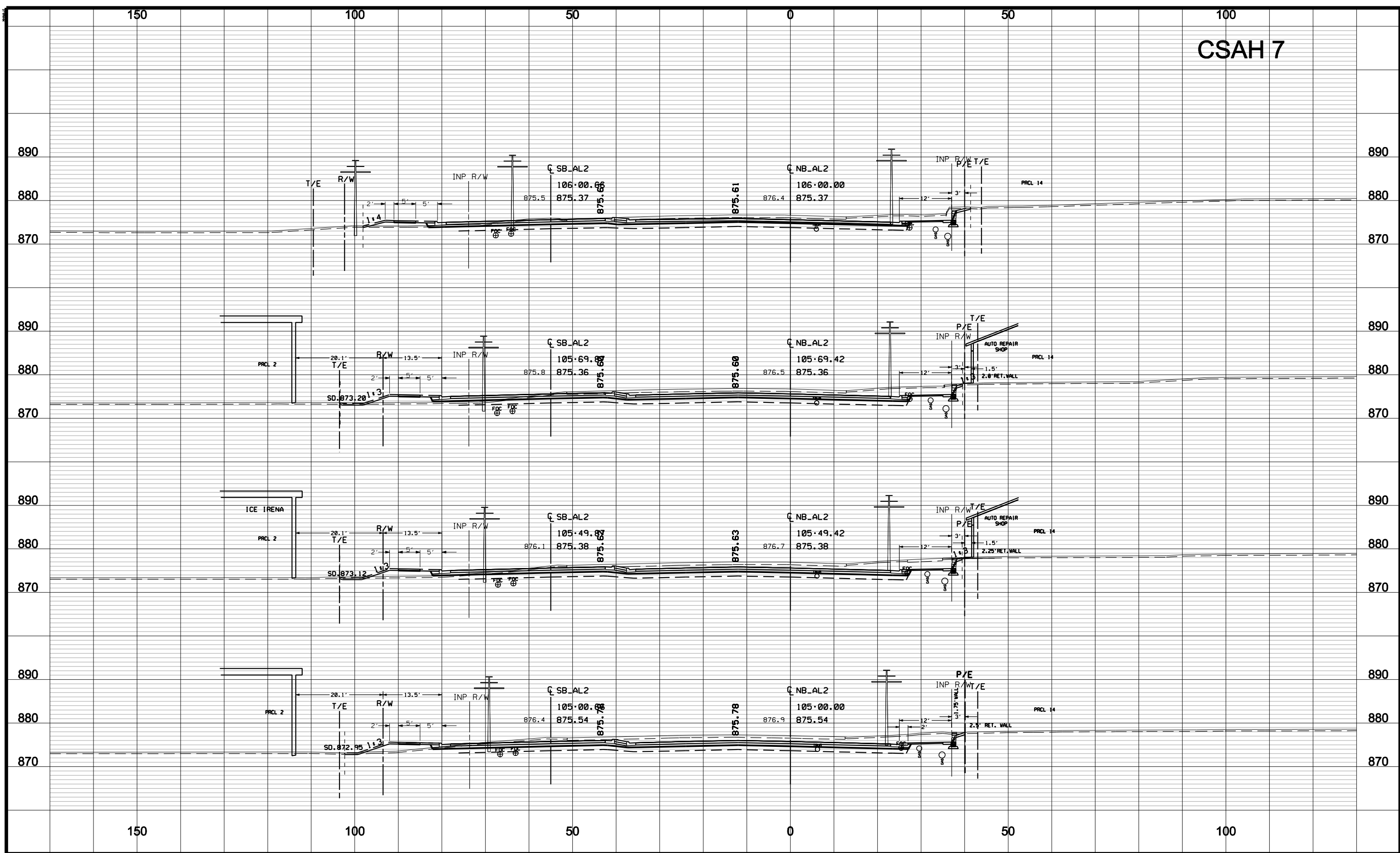
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S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

<b>CROSS SECTIONS</b>	
STA 103+24.42 TO 104+49.42	
Sheet 263 of 282 Sheets	

# CSAH 7



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DESIGN BY	MN	DATE	12/01/2010
CHECKED BY	CAK	DATE	05/29/2012

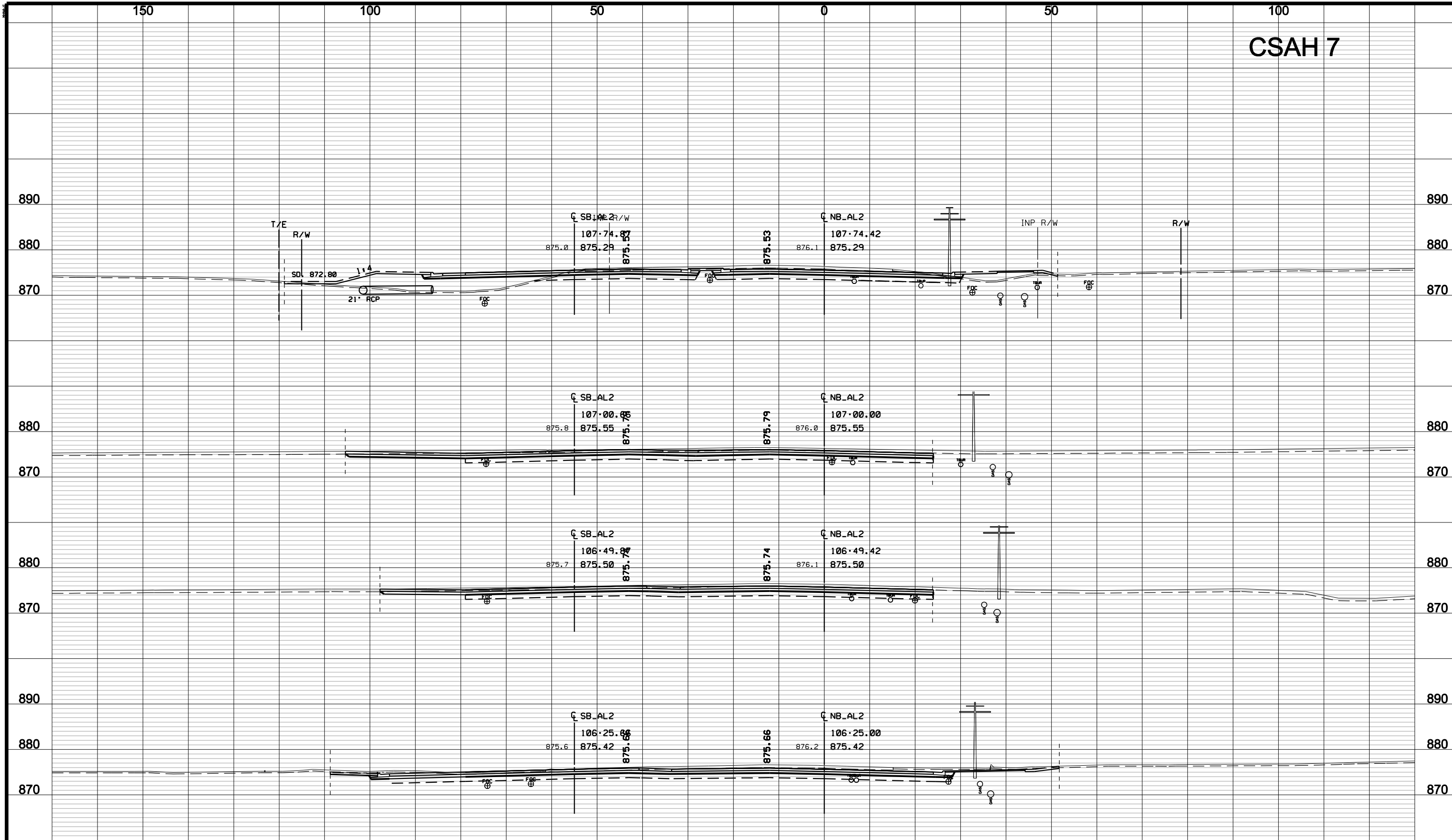
**ANOKA COUNTY**  
**HIGHWAY DEPT.**

S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
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S.P. 103-020-014		S.P. 103-020-015

**CROSS SECTIONS**  
STA 105+00.00 TO 106+00.00  
Sheet 264 of 282 Sheets



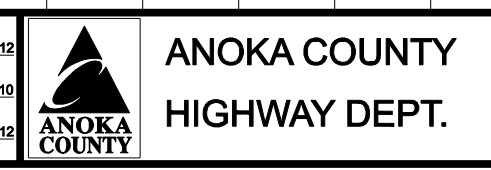
# CSAH 7



NO	DATE	BY	CKD	APPR	REVISION
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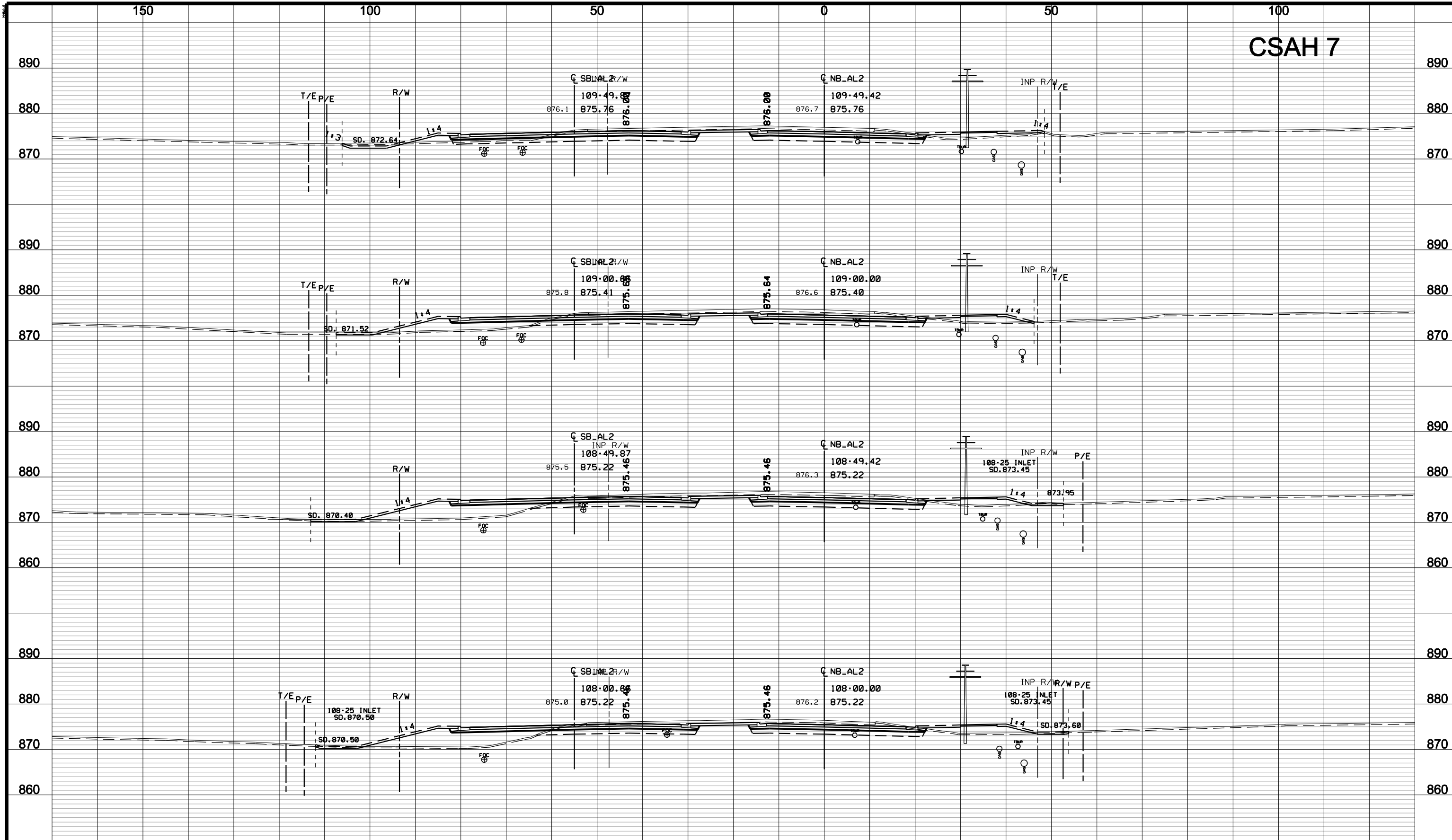
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S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
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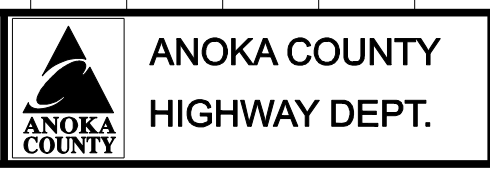
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 Sheet 265 of 282 Sheets

# CSAH 7



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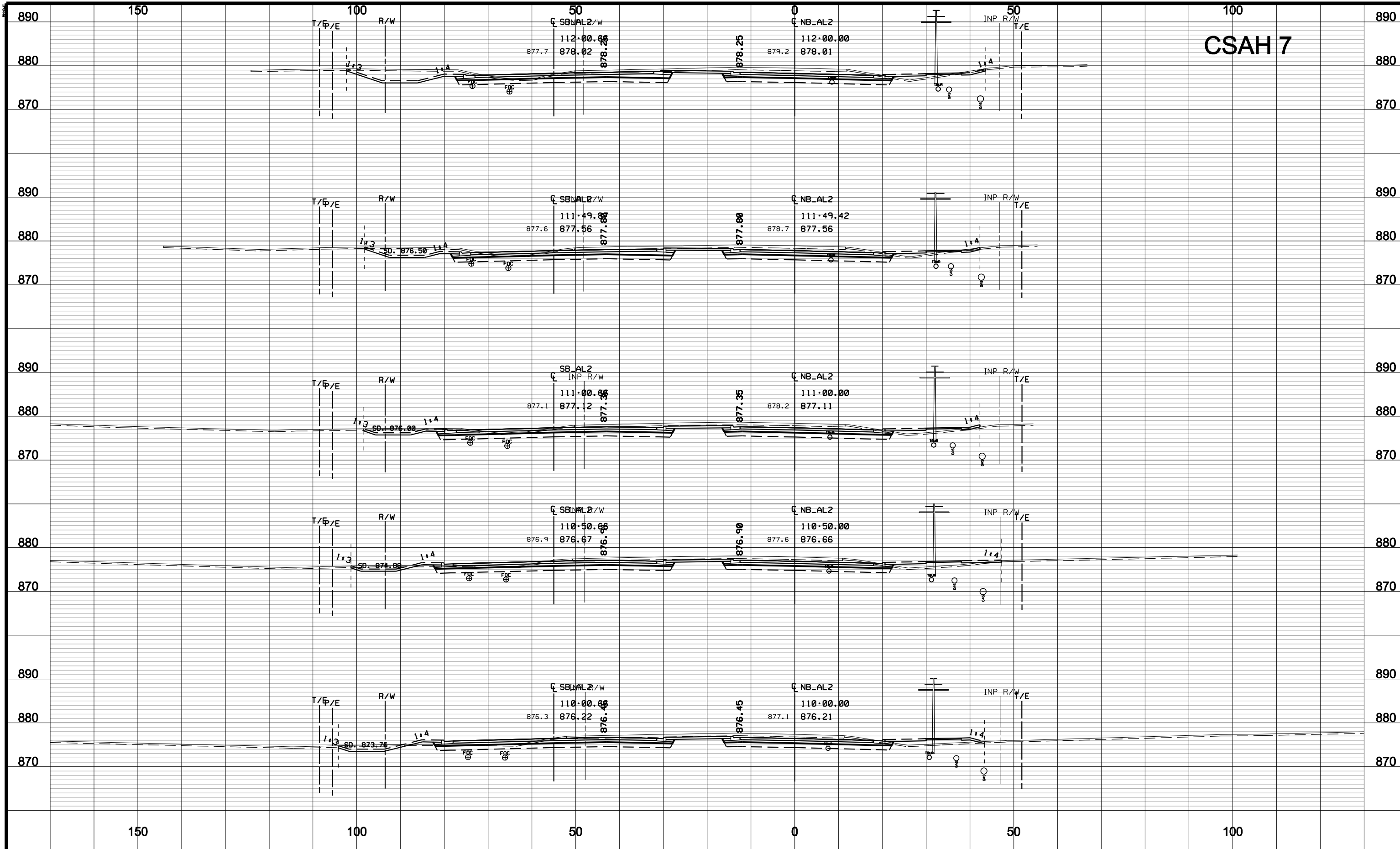

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 DESIGN BY MN DATE 12/01/2010  
 CHECKED BY CAK DATE 05/29/2012



S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

CROSS SECTIONS  
 STA 108+00.00 TO 109+49.42  
 Sheet 266 of 282 Sheets

# CSAH 7



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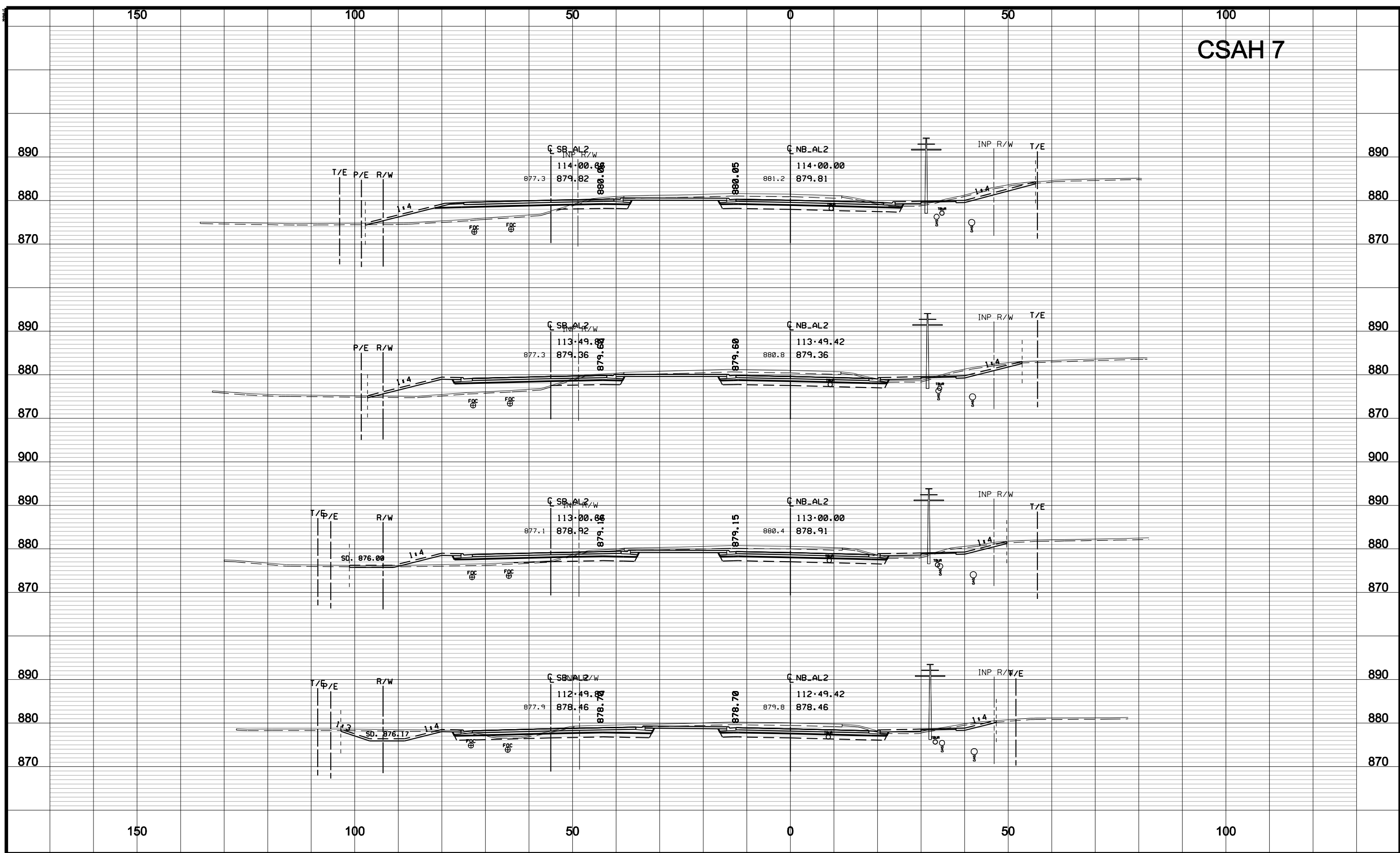
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DESIGN BY	MN	DATE	12/01/2010
CHECKED BY	CAK	DATE	05/29/2012

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

S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

**CROSS SECTIONS**  
 STA 110+00.00 TO 112+00.00  
 Sheet 267 of 282 Sheets

# CSAH 7



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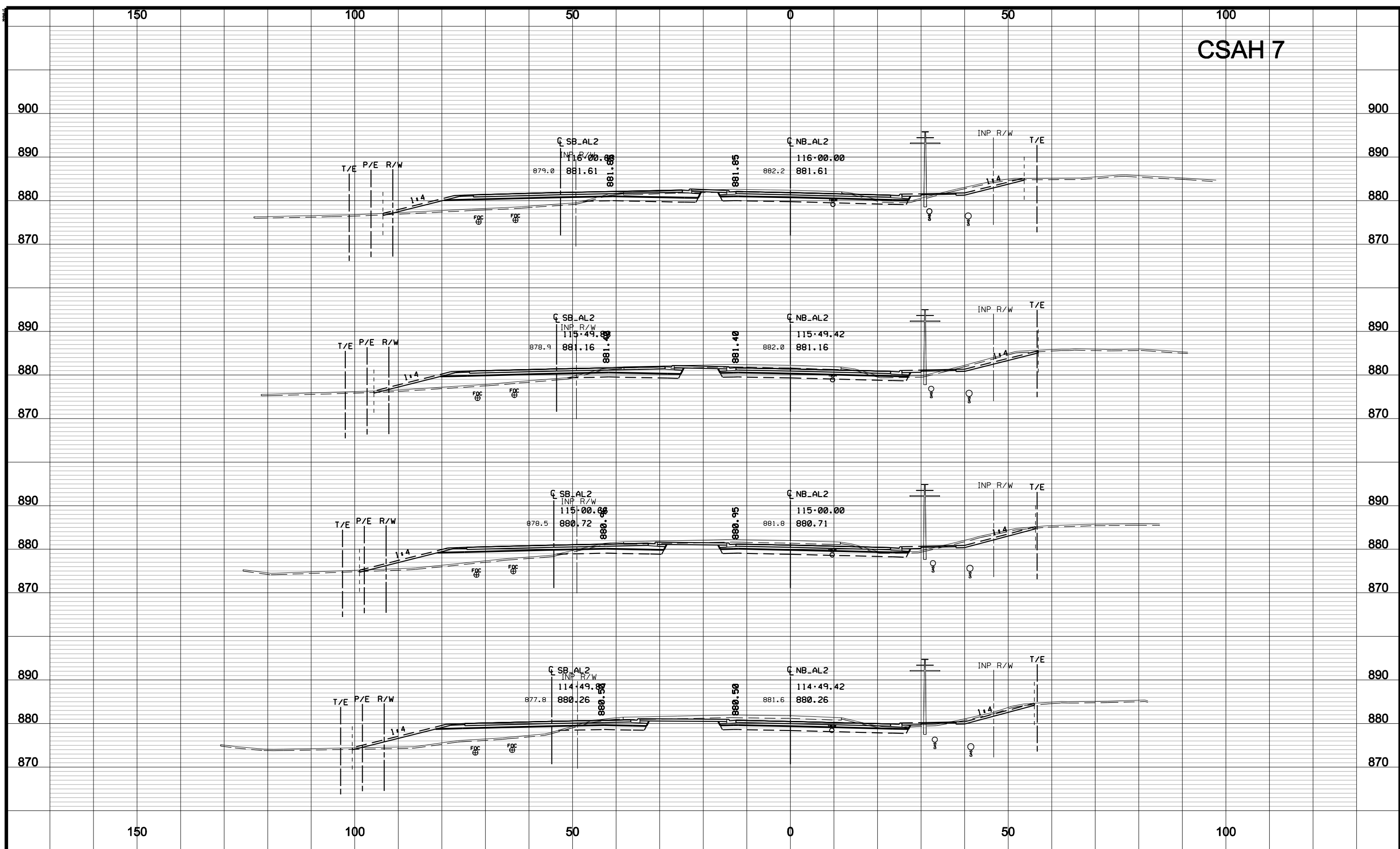
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DESIGN BY	MN	DATE	12/01/2010
CHECKED BY	CAK	DATE	05/29/2012



S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

<b>CROSS SECTIONS</b>	
STA	112+49.42 TO 114+00.00
Sheet	268 of 282 Sheets

# CSAH 7



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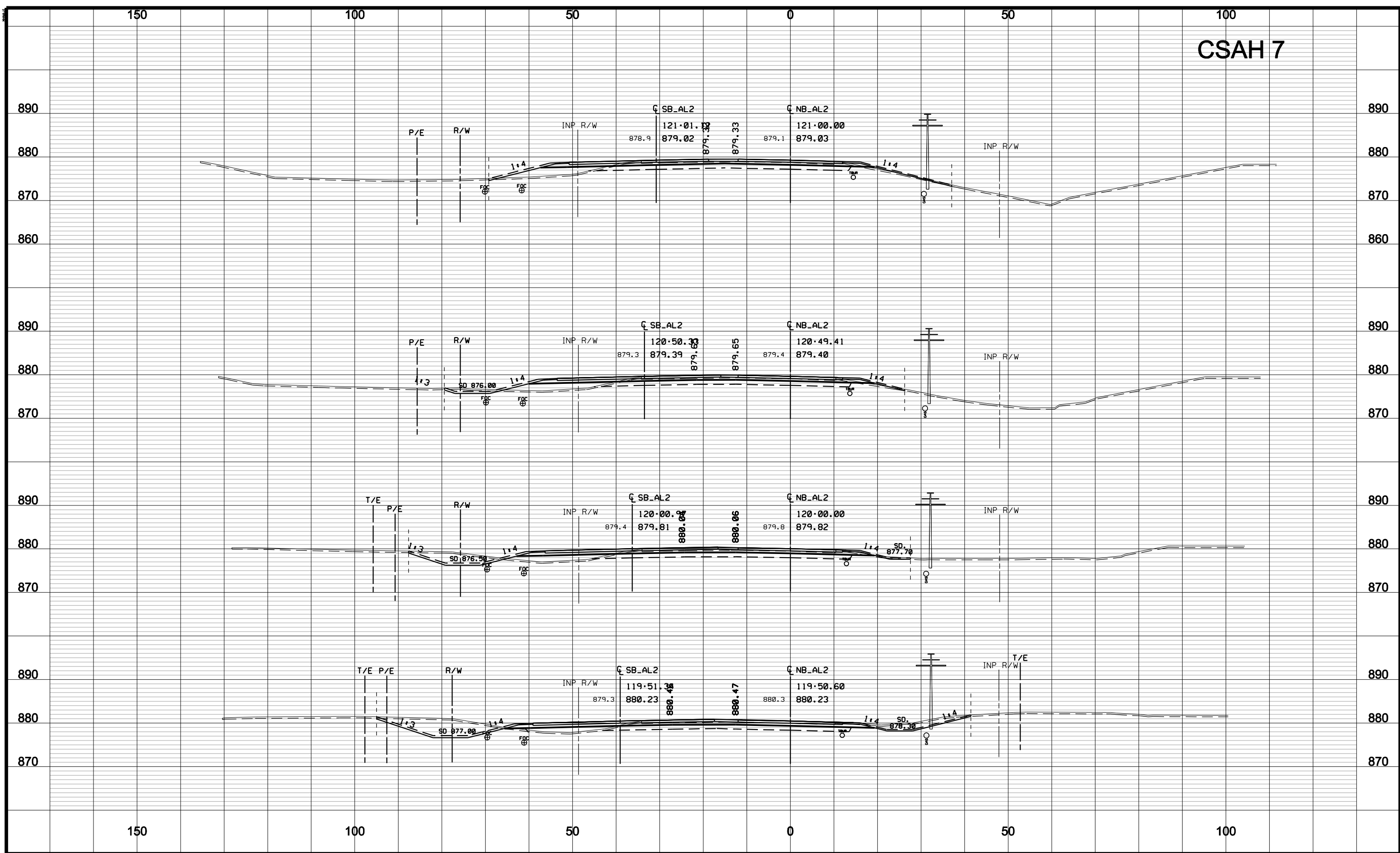
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S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
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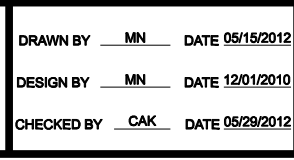
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Sheet	269 of 282 Sheets

# CSAH 7



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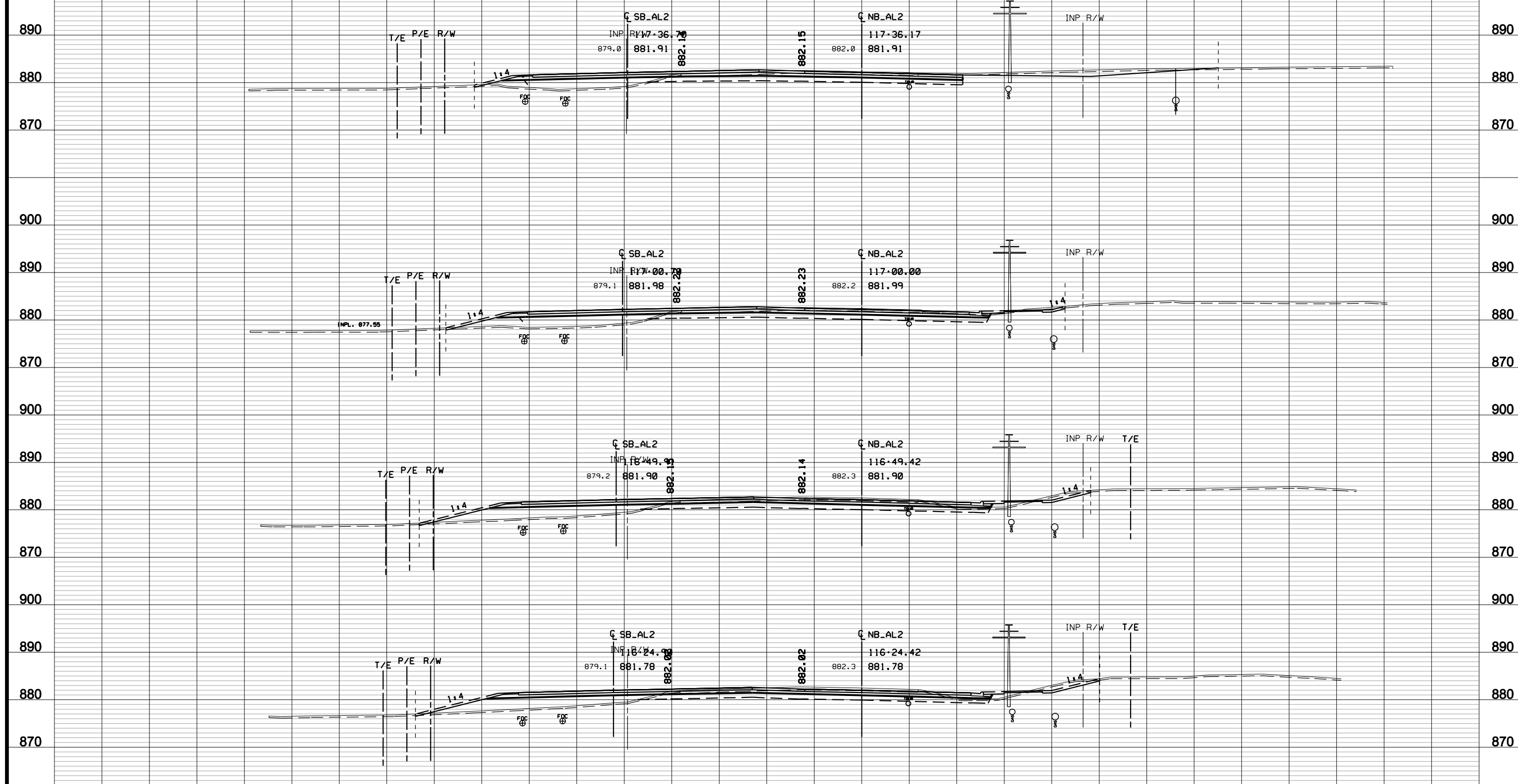
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S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

CROSS SECTIONS	
STA 119+50.60 TO 121+00.00	
Sheet 272 of 282 Sheets	

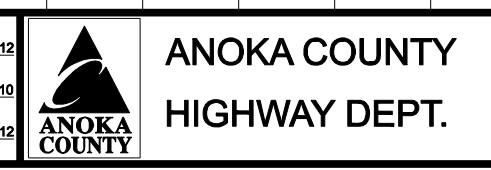
# CSAH 7



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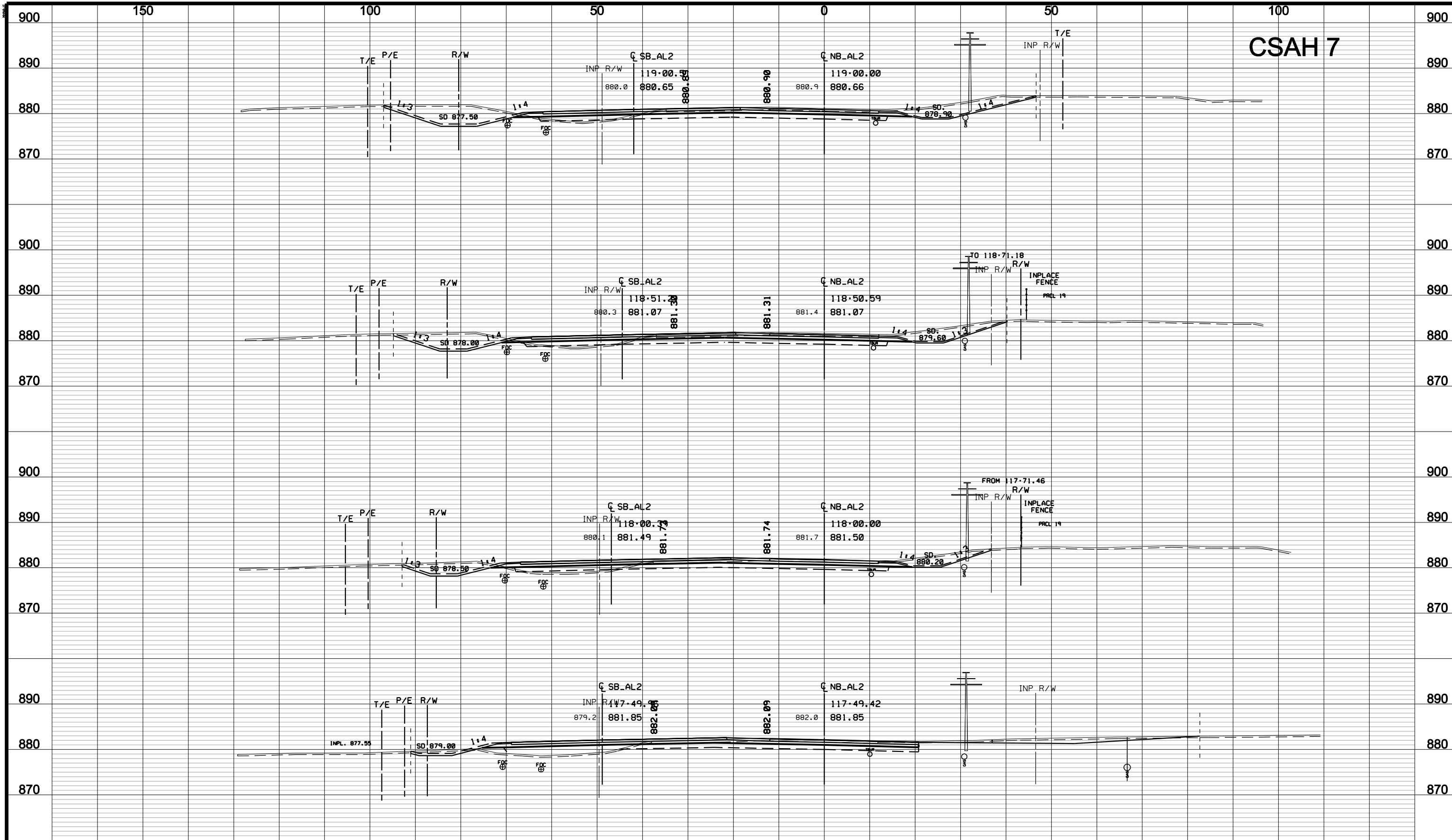
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 DESIGN BY MN DATE 12/01/2010  
 CHECKED BY CAK DATE 05/29/2012



S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

**CROSS SECTIONS**  
 STA 116+24.42 TO 117+36.17  
 Sheet 270 of 282 Sheets

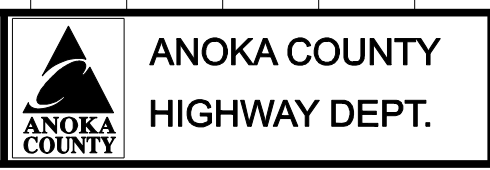
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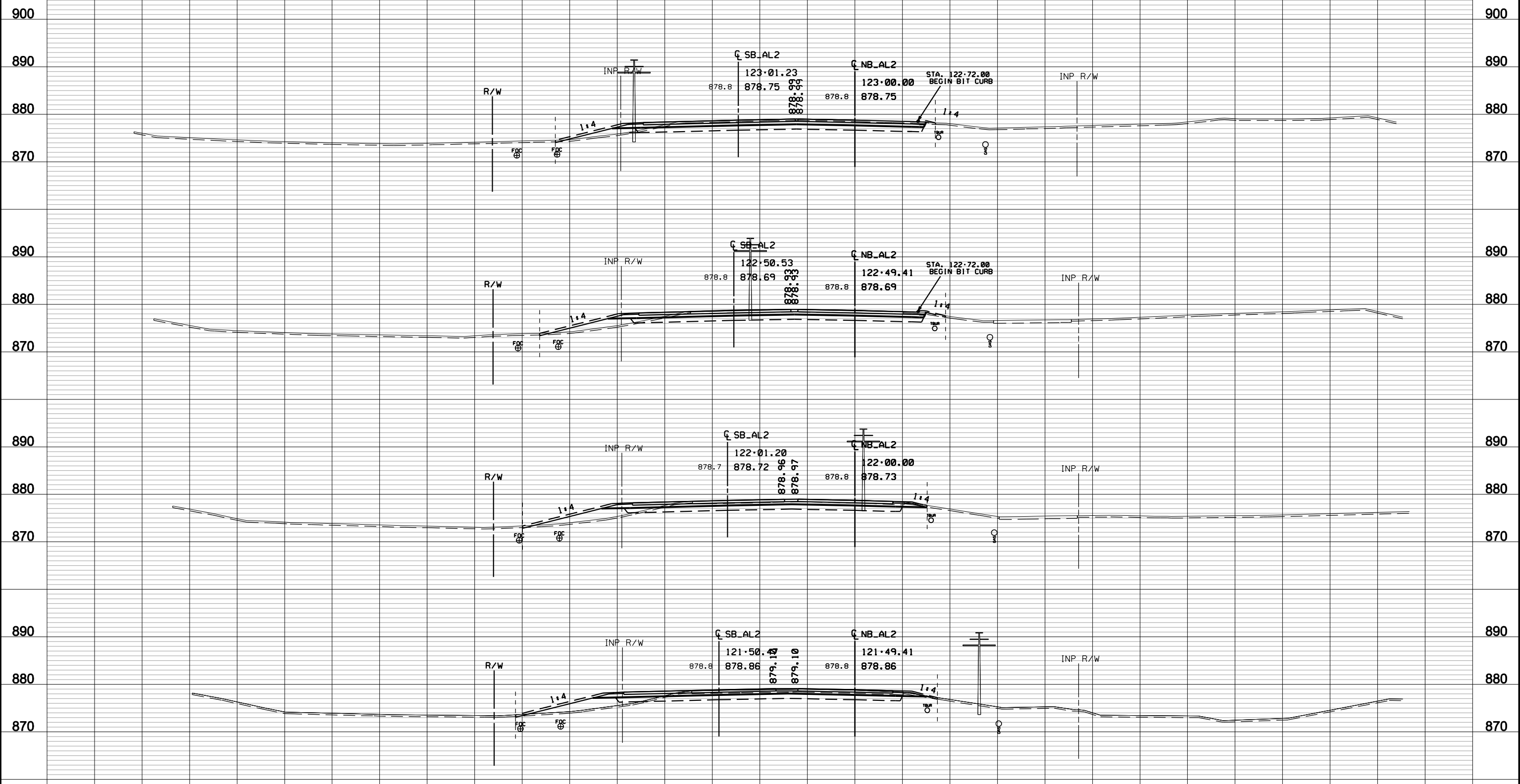


S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

**CROSS SECTIONS**  
 STA 117+49.42 TO 119+00.00  
 Sheet 271 of 282 Sheets



# CSAH 7



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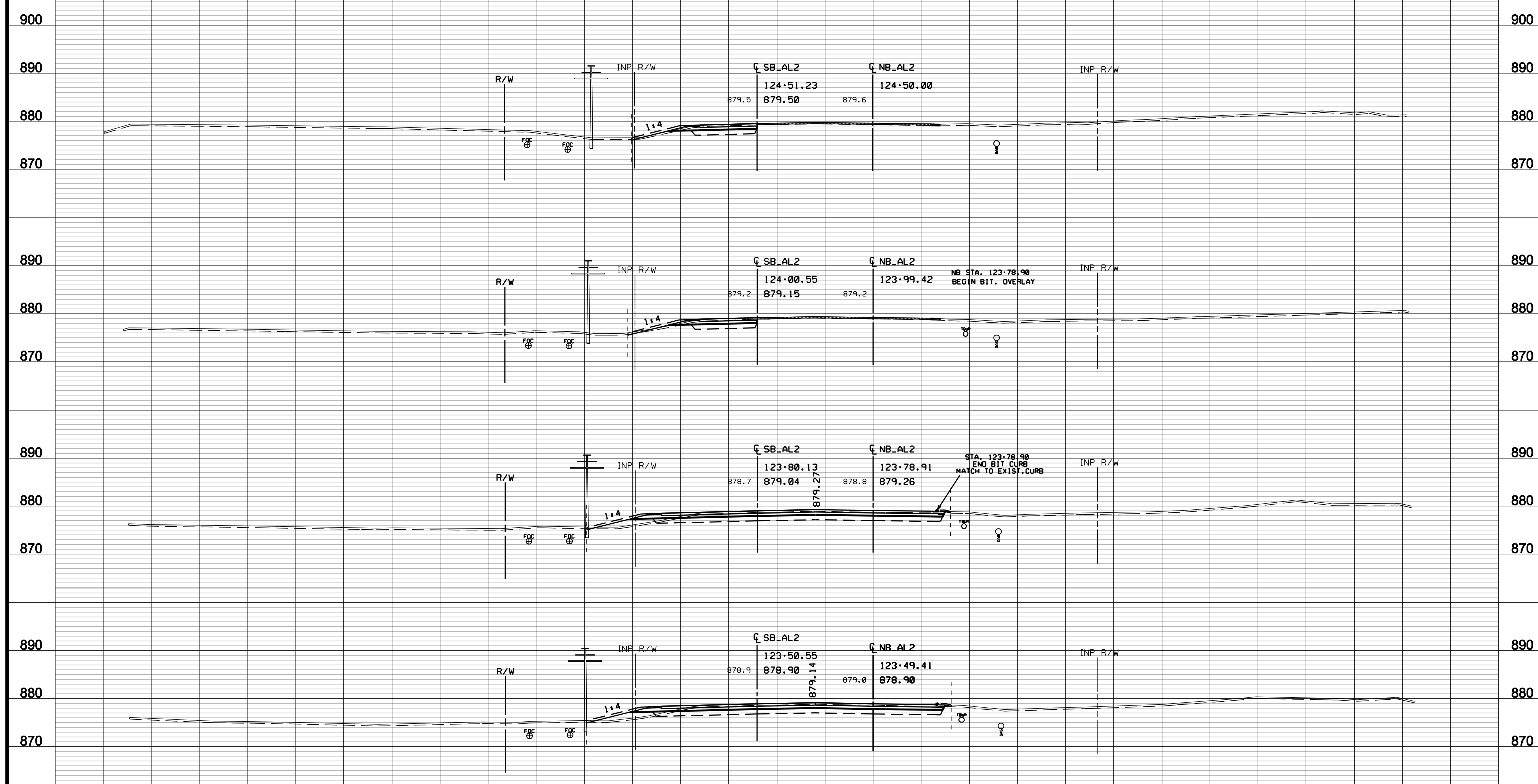
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S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

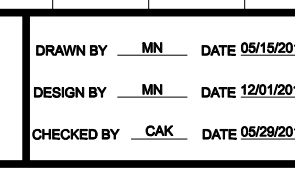
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 Sheet 273 of 282 Sheets

# CSAH 7



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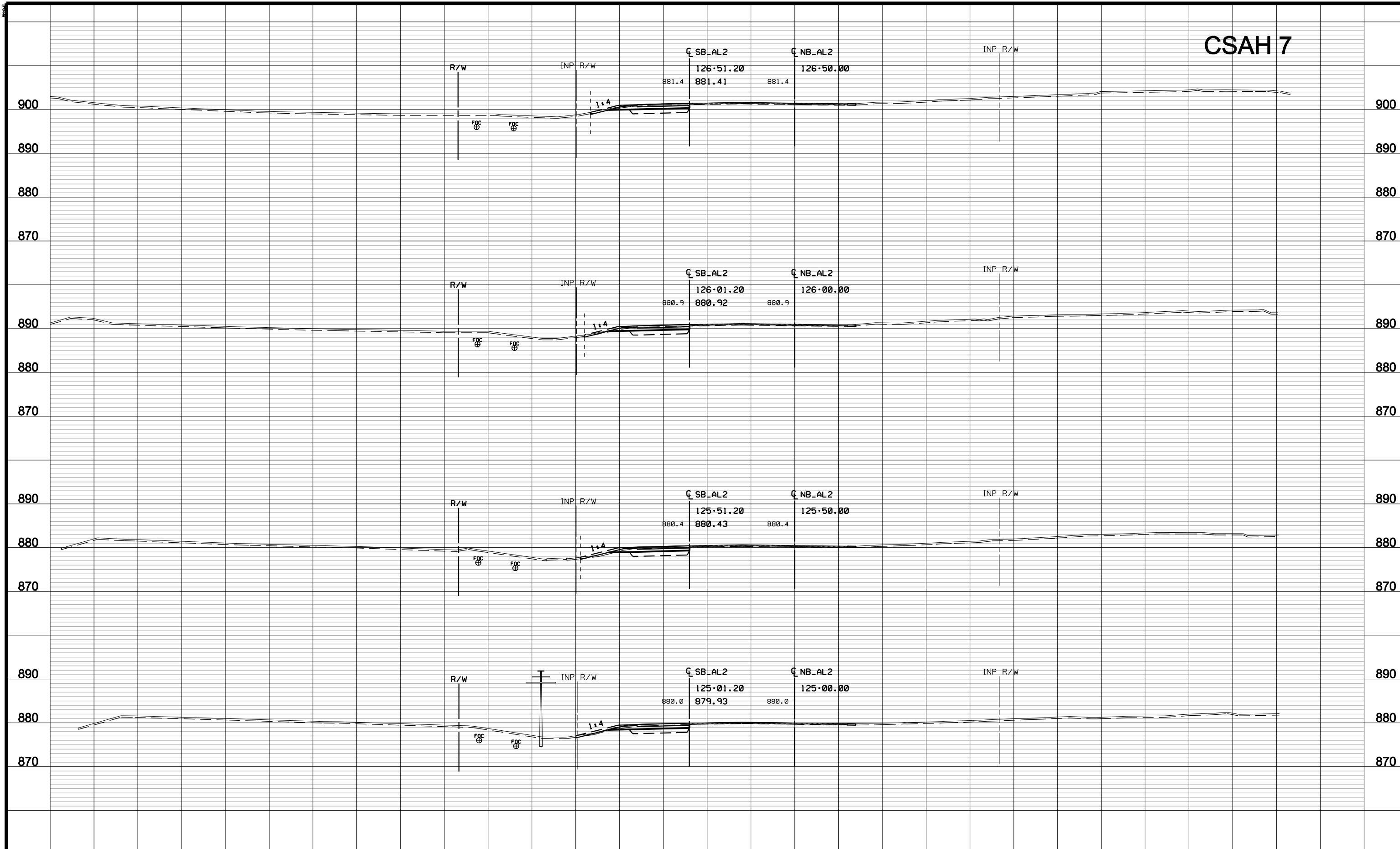
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S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

CROSS SECTIONS	
STA 123+49.41 TO 124+50.00	
Sheet 274 of 282 Sheets	

# CSAH 7



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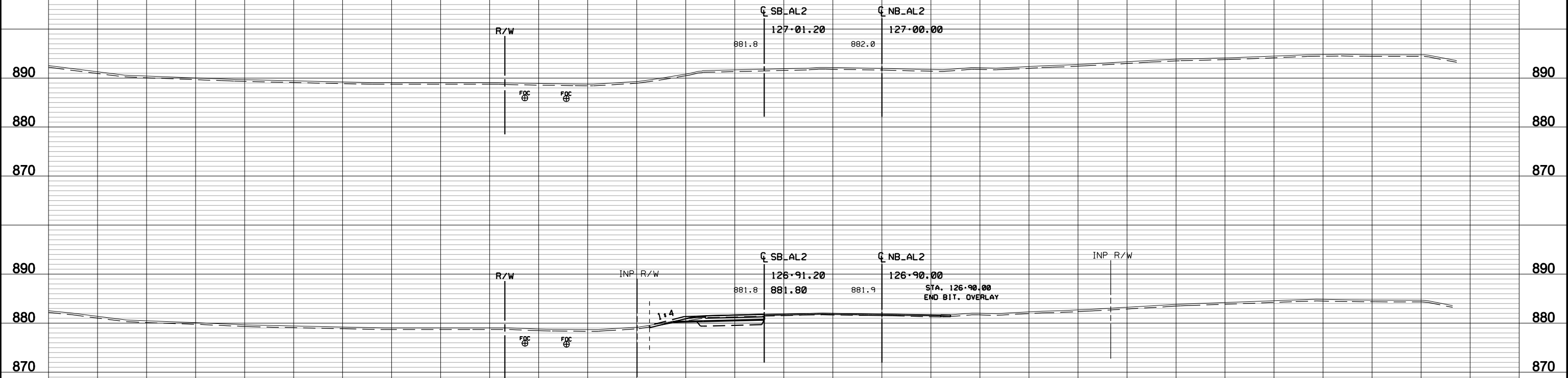

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S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

**CROSS SECTIONS**  
 STA 125+00.00 TO 126+50.00  
 Sheet 275 of 282 Sheets

# CSAH 7



NO	DATE	BY	CKD	APPR	REVISION
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 CHECKED BY CAK DATE 05/29/2012



S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

**CROSS SECTIONS**  
 STA 126+90.00 TO 127+00.00  
 Sheet 276 of 282 Sheets

150

100

50

0

50

100

# 38TH AVE

880

870

860

890

880

870

860

880

870

860

880

870

880

870

860

890

880

870

860

880

870

860

880

870

C EB-38  
13+00.00  
871.89  
872.0

C EB-38  
12+75.00  
871.96  
872.0

C EB-38  
12+50.00  
872.02  
872.2

C EB-38  
12+34.50  
872.06  
872.3

1:4

1:4

1:4

1:4

1:4

1:4

150

100

50

0

50

100

NO	DATE	BY	CKD	APPR	REVISION
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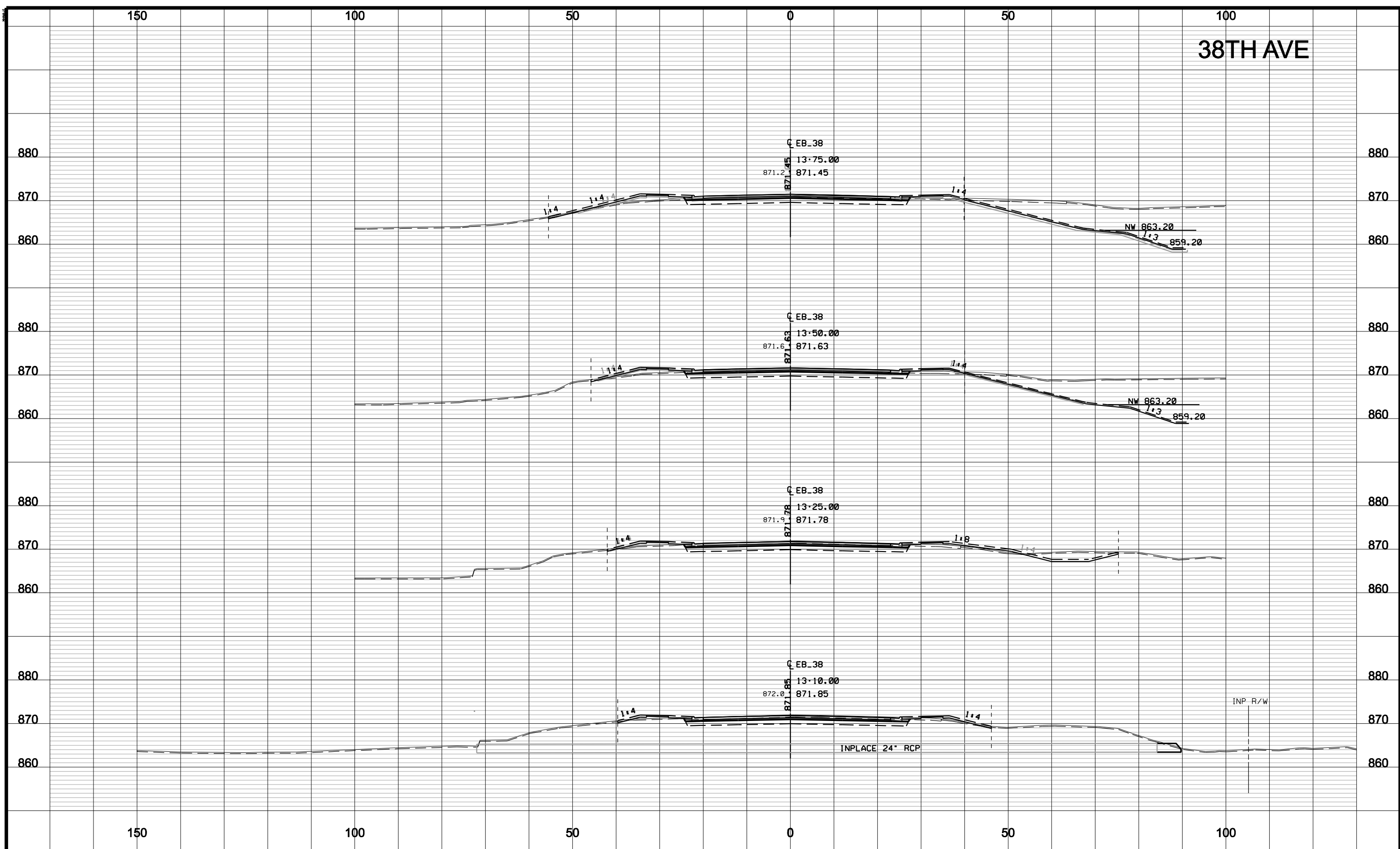


**ANOKA COUNTY  
HIGHWAY DEPT.**

S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
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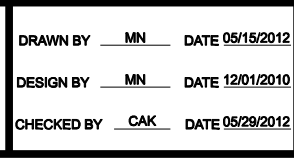
**CROSS SECTIONS**  
 STA 12+34.50 TO 13+00.00  
 Sheet 277 of 282 Sheets

# 38TH AVE



NO	DATE	BY	CKD	APPR	REVISION
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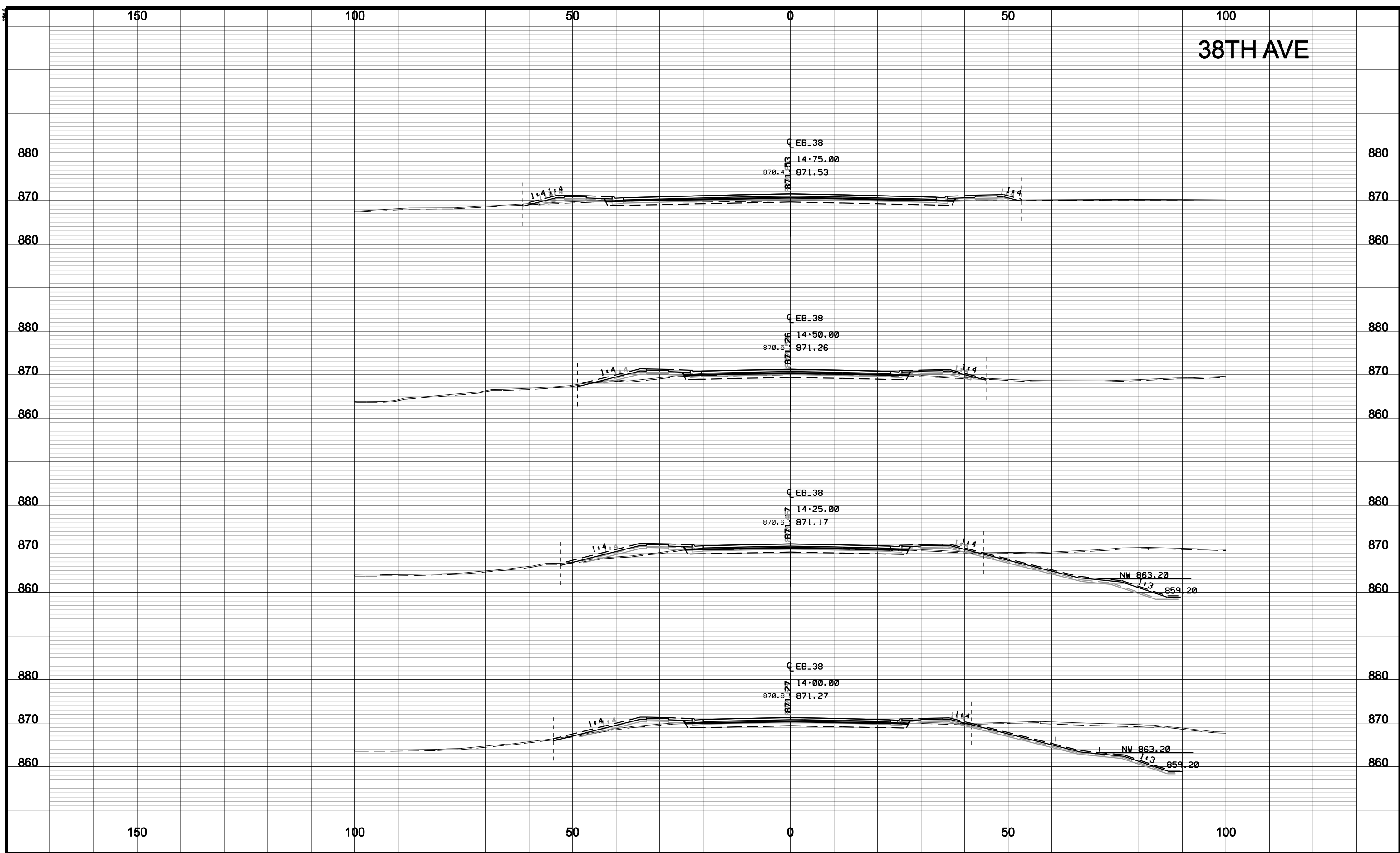


**ANOKA COUNTY  
HIGHWAY DEPT.**

S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

**CROSS SECTIONS**  
 STA 13+10.00 TO 13+75.00  
 Sheet 278 of 282 Sheets

# 38TH AVE



NO	DATE	BY	CKD	APPR	REVISION
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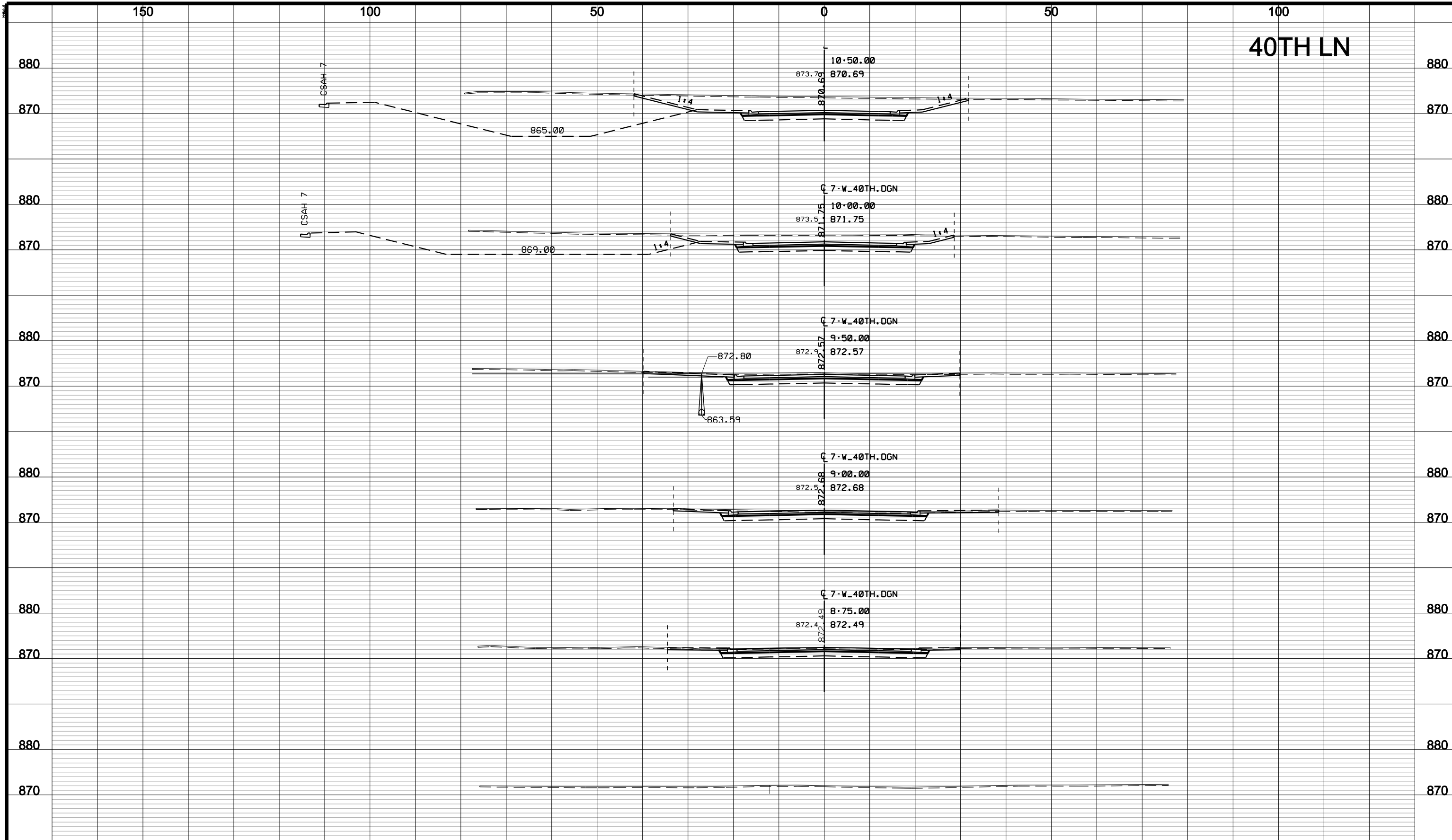

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 DESIGN BY MN DATE 12/01/2010  
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S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
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**CROSS SECTIONS**  
 STA 14+00.00 TO 14+75.00  
 Sheet 279 of 282 Sheets

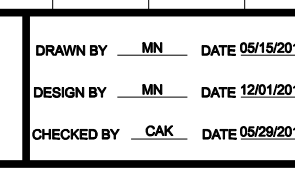
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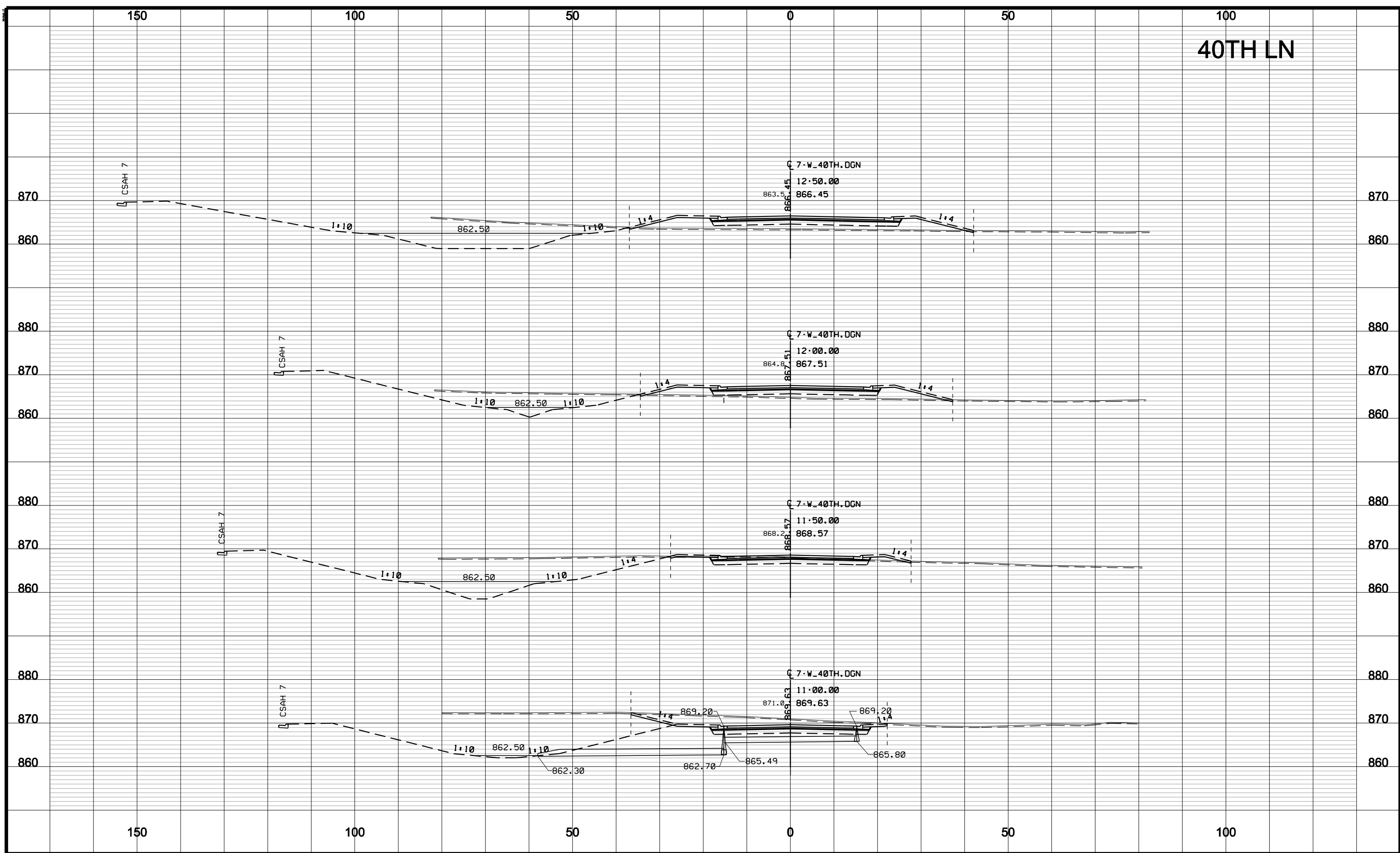
**ANOKA COUNTY  
HIGHWAY DEPT.**

S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

**CROSS SECTIONS**  
 STA 8+50.00 TO 10+50.00  
 Sheet 280 of 282 Sheets

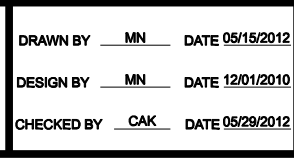


# 40TH LN



NO	DATE	BY	CKD	APPR	REVISION
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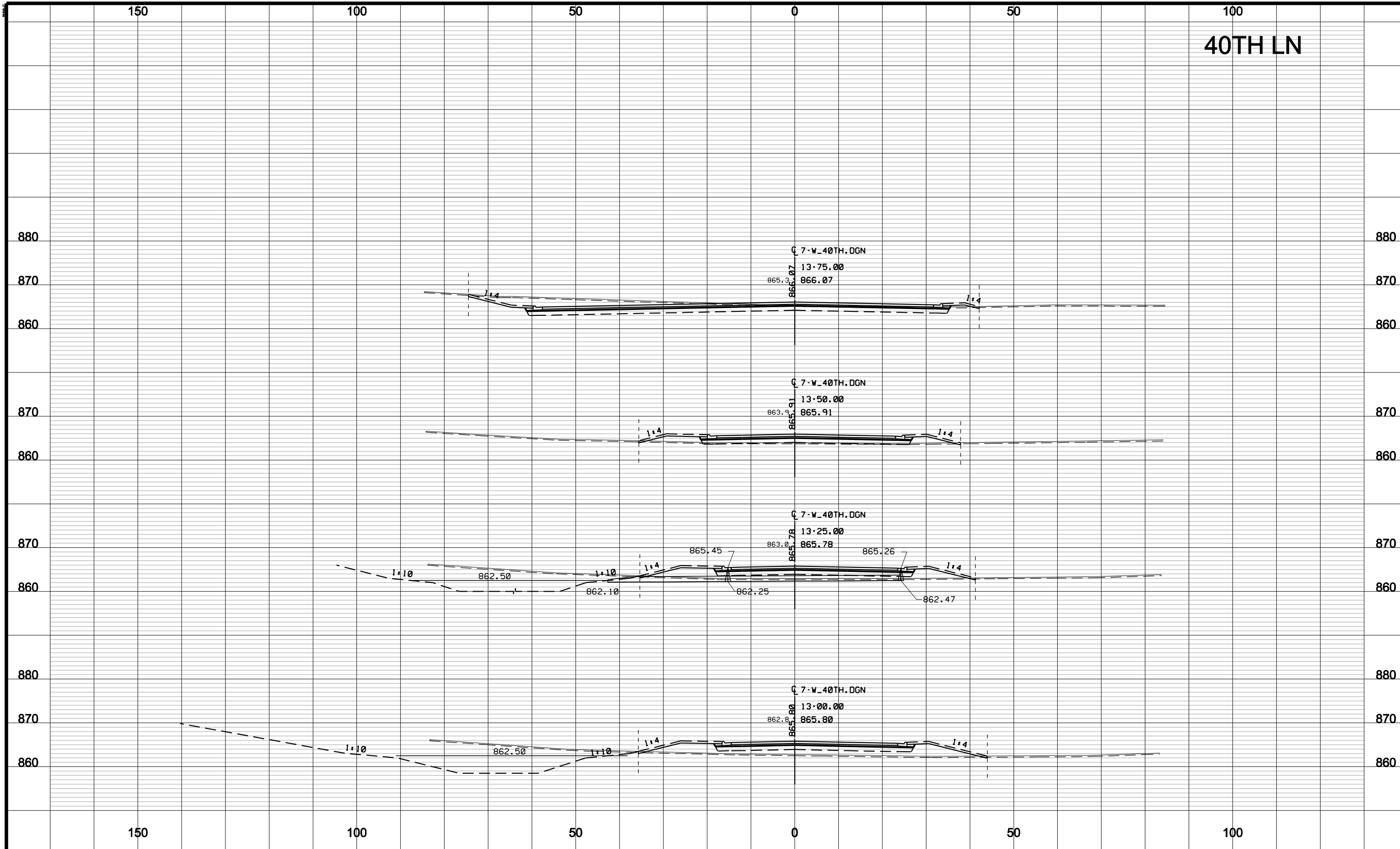
DRAWN BY	MN	DATE	05/15/2012
DESIGN BY	MN	DATE	12/01/2010
CHECKED BY	CAK	DATE	05/29/2012



S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

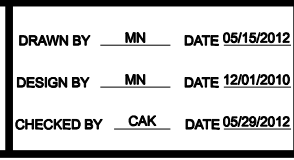
CROSS SECTIONS	
STA 11+00.00	TO 12+50.00
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# 40TH LN



NO	DATE	BY	CKD	APPR	REVISION
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DRAWN BY	MN	DATE	05/15/2012
DESIGN BY	MN	DATE	12/01/2010
CHECKED BY	CAK	DATE	05/29/2012



S.P. 002-716-012	S.P. 198-020-030	S.P. 002-607-021
S.P. 198-020-031		S.P. 198-020-032
S.P. 103-020-014		S.P. 103-020-015

CROSS SECTIONS	
STA 13+00.00	TO 13+75.00
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