

# MINNESOTA DEPARTMENT OF TRANSPORTATION ANOKA COUNTY

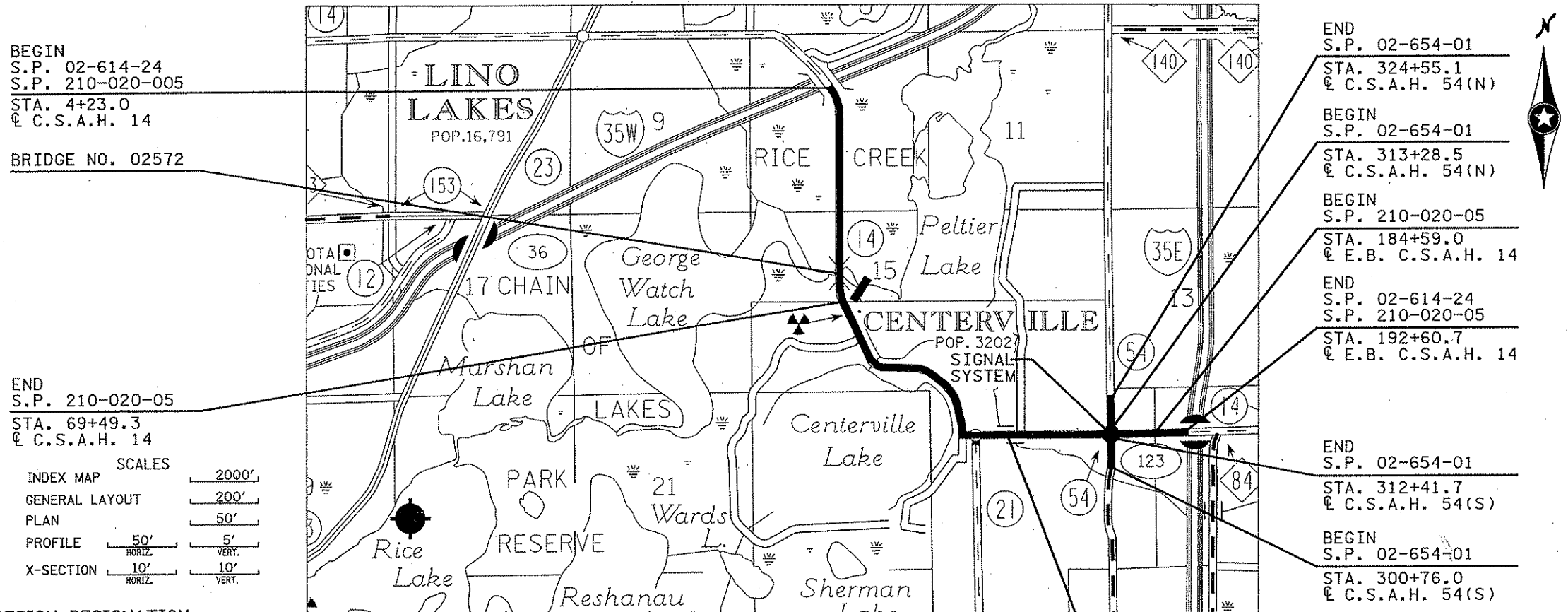
CONSTRUCTION PLAN FOR GRADING, AGG. BASE, BITUMINOUS SURFACING, CONCRETE CURB & GUTTER, SIDEWALK, DRAINAGE,  
SIGNAL SYSTEM, BRIDGE NO. 02572, BRIDGE NO. 97893, RETAINING WALLS

LOCATED ON C.S.A.H. 14 FROM I-35W TO I-35E  
C.S.A.H. 14 - S.P. 02-614-24 C.S.A.H. 54 - S.P. 02-654-01 (N) C.S.A.H. 54 - S.P. 02-654-01 (S)  
S.P. 210-020-05

GROSS LENGTH.....18,837 FEET 3,568 MILES  
 BRIDGES-LENGTH.....90.0 FEET 0.017 MILES  
 EXCEPTIONS-LENGTH 0.00 FEET 0.000 MILES  
 NET LENGTH.....18,747.70 FEET 3,551 MILES  
 REF. POINT.....TO REF. POINT.....  
 LENGTH AND DESCRIPTION BASED UPON (CSAH 14 & E.B. CSAH 14 ALIGNMENTS)

GROSS LENGTH.....1,126.60 FEET 0.213 MILES  
 BRIDGES-LENGTH.....0.00 FEET 0.000 MILES  
 EXCEPTIONS-LENGTH 0.00 FEET 0.000 MILES  
 NET LENGTH.....1,126.60 FEET 0.213 MILES  
 REF. POINT.....TO REF. POINT.....  
 LENGTH AND DESCRIPTION BASED UPON (CSAH 54 ALIGNMENT)

GROSS LENGTH.....1,165.70 FEET 0.221 MILES  
 BRIDGES-LENGTH.....0.00 FEET 0.000 MILES  
 EXCEPTIONS-LENGTH 0.00 FEET 0.000 MILES  
 NET LENGTH.....1,165.70 FEET 0.221 MILES  
 REF. POINT.....TO REF. POINT.....  
 LENGTH AND DESCRIPTION BASED UPON (CSAH 54 ALIGNMENT)



FED. PROJ. NO. STPX 0206 (155)  
**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' (MN MUTCD) AND PART VI, 'FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS'.

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W1 - W10	RETAINING WALL PLANS
S1-S15 BID ALTERNATE NO. 1 STREETSCAPING	

THIS PLAN CONTAINS .492... SHEETS

**SRF CONSULTING GROUP, INC.**

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 Christopher M. Trbojevich  
 DATE 3/26/07 LIC. NO. 41635 PRINT NAME CHRISTOPHER M. TRBOJEVICH

APPROVED [Signature] 3/28/07 ANOKA COUNTY ENGINEER  
 APPROVED [Signature] 4/3/07 CITY ENGINEER, CITY OF CENTERVILLE  
 APPROVED [Signature] 4-3-07 CITY ENGINEER, CITY OF LINO LAKES  
 APPROVED [Signature] 6-28-07 DISTRICT STATE AID ENGINEER REVIEWED FOR COMPLIANCE WITH STATE AID RULES/POLICY  
 APPROVED FOR STATE AND/OR FEDERAL AID FUNDING: STATE AID ENGINEER [Signature] 6-28-07  
 RECOMMENDED FOR APPROVAL: STATE BRIDGE ENGINEER [Signature] 6/29/07

I HEREBY CERTIFY THAT THE FINAL FIELD CHANGES, IF ANY, OF THIS PLAN WERE MADE BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

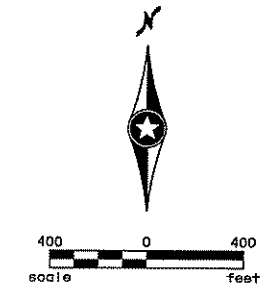
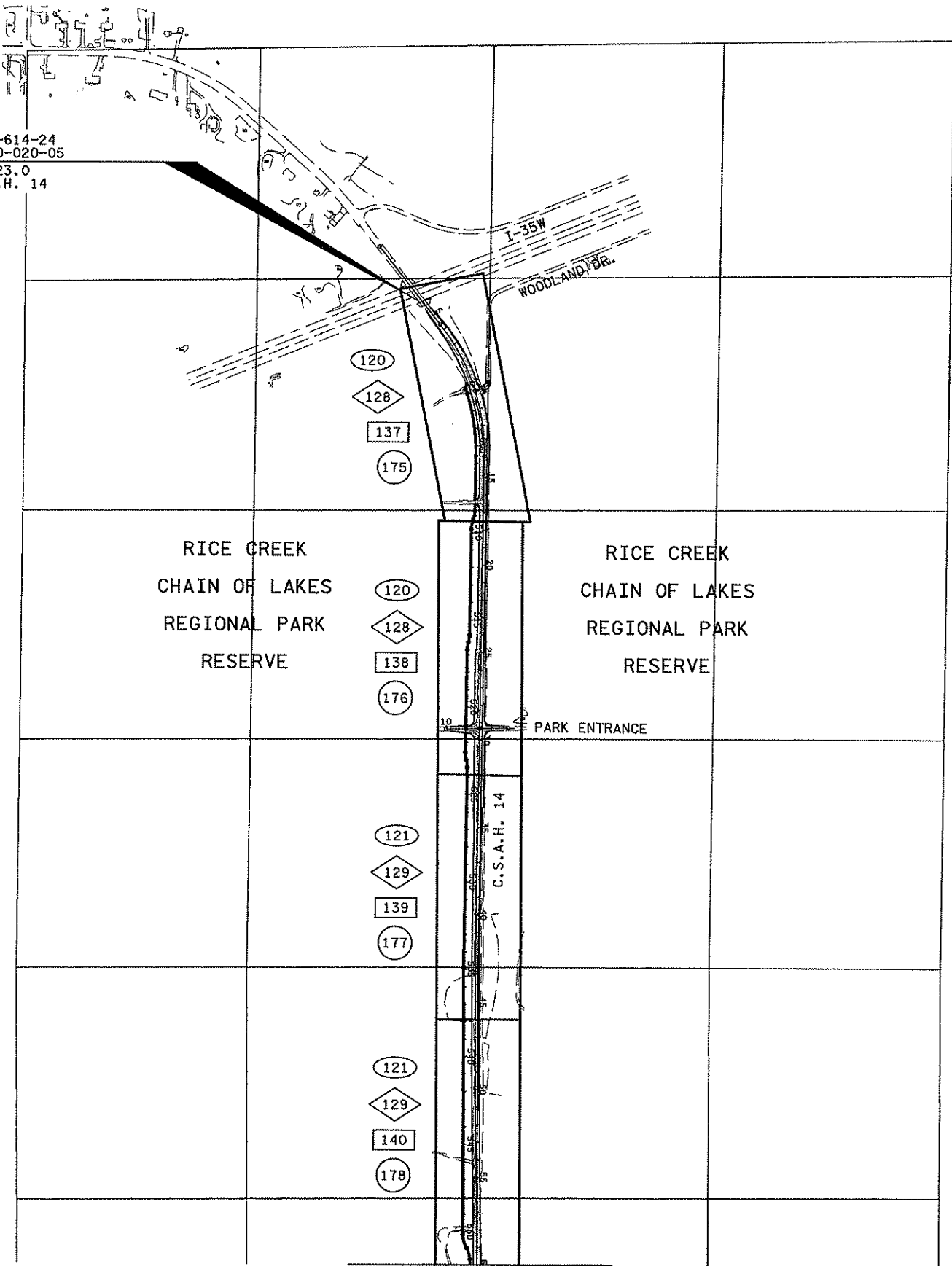
SIGNATURE \_\_\_\_\_  
 DATE \_\_\_\_\_ LIC. NO. \_\_\_\_\_ PRINT NAME \_\_\_\_\_

THIS PLAN AND/OR SPECIFICATION WAS PREPARED SPECIFICALLY FOR THIS PROJECT, AND ANY RE-USE OF DETAILS OR SPECIFICATIONS ON OTHER PROJECTS IS NOT INTENDED OR AUTHORIZED BY THE DESIGNER. LIABILITY FOR ANY RE-USE ON OTHER PROJECTS IS THE RESPONSIBILITY OF THE PERSON, AGENCY, OR CORPORATION USING PLAN OR SPECIFICATION DATA FROM THIS PROJECT.

S.P. 02-614-24, S.P. 210-020-005, S.P. 02-654-01 SHEET

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BEGIN  
 S.P. 02-614-24  
 S.P. 210-020-05  
 STA. 4+23.0  
 C.S.A.H. 14



LEGEND	
(XXX)	TOPOGRAPHY AND UTILITY PLAN SHEET NO.
◇(XXX)	REMOVAL PLAN SHEET NO.
[XXX]	CONSTRUCTION PLAN SHEET NO.
○(XXX)	SUPERELEVATION AND PROPOSED UTILITY PLAN SHEET NO.
---	INPLACE PAVEMENT
▨	PROPOSED CONSTRUCTION

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NO	DATE	BY	CKD	APPR	REVISION

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.  
 Print Name: CHRISTOPHER M. TRBOYEVICH  
*Christopher M. Trbojevich*  
 Date: 3/26/07 License #: 41635

STATE PROJECT NO.  
 S.P. 02-614-24, ETAL

DRAWN BY  
 S. MARTINS  
 DESIGNED BY  
 J. TOULOUSE  
 CHECKED BY  
 C. TRBOYEVICH  
 COMM. NO. 4994

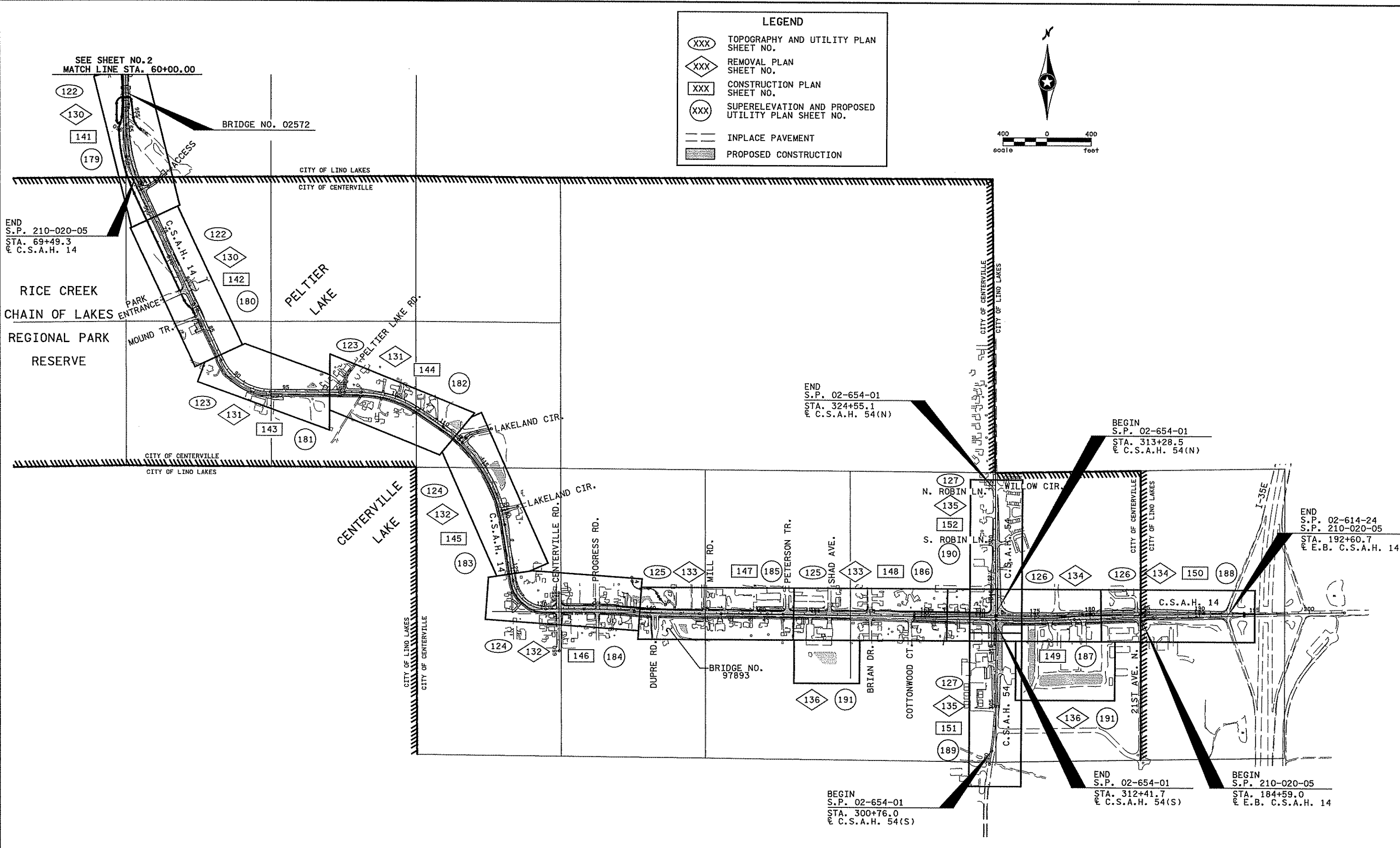
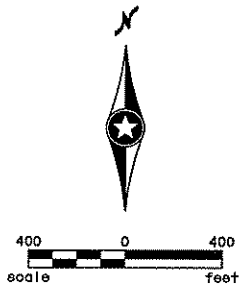


ANOKA COUNTY  
 GENERAL LAYOUT  
 C.S.A.H. 14  
 STA. 4+19.00 TO STA. 60+00.00

SHEET  
 2  
 OF  
 492

**LEGEND**

- (XXX) TOPOGRAPHY AND UTILITY PLAN SHEET NO.
- ◇(XXX) REMOVAL PLAN SHEET NO.
- (XXX) CONSTRUCTION PLAN SHEET NO.
- (XXX) SUPERELEVATION AND PROPOSED UTILITY PLAN SHEET NO.
- INPLACE PAVEMENT
- ▨ PROPOSED CONSTRUCTION



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NO	DATE	BY	CHKD	APPR	REVISION

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

Print Name: **CHRISTOPHER M. TRBOYEVIK**

*Christopher M. Trbojevich*

Date: 3/26/07 License # 41635

STATE PROJECT NO.  
 S.P. 02-614-24, ETAL

DRAWN BY  
 S. MARTINS

DESIGNED BY  
 J. TOULOUSE

CHECKED BY  
 C. TRBOYEVIK

COMM. NO. 4994



**ANOKA COUNTY**

GENERAL LAYOUT  
**C.S.A.H. 14**  
 STA. 60+00.00 TO STA. 192+50.00

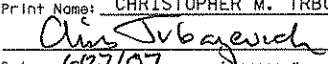

SHEET  
 3  
 OF  
 492

STATEMENT OF ESTIMATED QUANTITIES

TAB/ NOTES	ITEM NO.	ITEM DESCRIPTION	UNIT	TOTAL PROJECT QUANTITIES		C.S.A.H. 14 RECONSTRUCTION													
						S.P. 02-614-24											NON-PARTICIPATING		
						C.S.A.H. 14			C.S.A.H. 54 (S)		C.S.A.H. 54 (N)		STORM SEWER	ANOKA COUNTY	CITY OF LINO LAKES	CITY OF CENTERVILLE			
						ANOKA COUNTY ROADWAY QUANTITIES	CITY OF LINO LAKES ROADWAY QUANTITIES	CITY OF CENTERVILLE ROADWAY QUANTITIES	ANOKA COUNTY ROADWAY QUANTITIES	CITY OF CENTERVILLE ROADWAY QUANTITIES	ANOKA COUNTY ROADWAY QUANTITIES	CITY OF CENTERVILLE ROADWAY QUANTITIES							
																	S.P. 210-020-05	S.P. 02-654-01	S.P. 02-654-01
ESTIMATE	FINAL	ESTIMATED	ESTIMATED	ESTIMATED	ESTIMATED	ESTIMATED	ESTIMATED	ESTIMATED	ESTIMATED	ESTIMATED	ESTIMATED	ESTIMATED	ESTIMATED	ESTIMATED					
		<b>BID GROUP (A)</b>																	
	2013.601	SURVEY EQUIPMENT	LUMP SUM	1															1
(1)	2021.501	MOBILIZATION	LUMP SUM	1		0.95													0.05
(1)	2031.501	FIELD OFFICE, TYPE D	EACH	1		0.95													0.05
(1)	2041.610	TRAINEES	HOUR	3500		3325													175
W	2101.501	CLEARING	ACRE	8.8		8.8													
W	2101.502	CLEARING	TREE	594		592							2						
W	2101.506	GRUBBING	ACRE	8.8		8.8													
W	2101.507	GRUBBING	TREE	590		588							2						
BB	2102.502	PAVEMENT MARKING REMOVAL	LIN FT	23610		21470			970				1170						
(2)	2104.501	REMOVE BITUMINOUS CURB	LIN FT	2000		2000													
X (2)	2104.501	REMOVE CURB AND GUTTER	LIN FT	2951		2927							24						
GG (2)	2104.501	REMOVE WOVEN WIRE FENCE	LIN FT	2011		2011													
GG (2)	2104.501	REMOVE CHAIN LINK FENCE	LIN FT	1462		1462													
GG (2)	2104.501	REMOVE WOOD FENCE	LIN FT	549		549													
(2) (13)	2104.501	REMOVE PIPE CULVERTS	LIN FT	3938		3360			152				426						
(2) (13)	2104.501	REMOVE SEWER PIPE (STORM)	LIN FT	2755		2755													
AAQQ(2)(34)	2104.501	REMOVE WATER MAIN	LIN FT	895				732		15			30						118
FF (2)	2104.501	REMOVE GUARD RAIL	LIN FT	495		495													
X (2)	2104.503	REMOVE BITUMINOUS WALK	SQ FT	4350		4350													
X (2)	2104.503	REMOVE CONCRETE WALK	SQ FT	3310		3310													
X (2)(10)	2104.505	REMOVE BITUMINOUS PAVEMENT	SQ YD	84022		79922			1680				2420						
X (2)	2104.505	REMOVE CONCRETE PAVEMENT	SQ YD	360		360													
(40)	2104.509	REMOVE MISCELLANEOUS STRUCTURES	EACH	3		3													
(41)	2104.509	REMOVE FLASHER SIGNAL	EACH	2		2													
(12)	2104.509	REMOVE DELINEATOR	EACH	10		10													
QQ	2104.509	REMOVE GATE VALVE & BOX	EACH	2															2
(2)	2104.509	REMOVE MANHOLE OR CATCH BASIN	EACH	23		23													
(12)	2104.509	REMOVE MARKER	EACH	25		25													
(2)	2104.509	SALVAGE VEHICULAR GATE	EACH	6		6													
(12)	2104.509	REMOVE SIGN TYPE C	EACH	178		173			5										
X (15)	2104.511	SAWING CONCRETE PAVEMENT (FULL DEPTH)	LIN FT	155		155													
X (24)	2104.513	SAWING BITUMINOUS PAVEMENT (FULL DEPTH)	LIN FT	15713		12221			1534				1958						
(2)(23)	2104.523	SALVAGE CASTING	EACH	18				18											
AA (2)	2104.523	SALVAGE GATE VALVE AND BOX	EACH	27				18		2			3					1	3
AA (2)	2104.523	SALVAGE CURB STOP AND BOX	EACH	6				6											
AA (2)	2104.523	SALVAGE HYDRANT	EACH	23				17		2			3					1	
(2)	2104.523	SALVAGE LIGHT STANDARD AND LUMINARE	EACH	1		1													
(2)(21)	2104.523	SALVAGE PIPE APRON	EACH	2		2													
TT	2104.523	SALVAGE SIGN TYPE SPECIAL	EACH	17		15							2						
VV	2104.523	SALVAGE SIGN TYPE D	EACH	6		6													
(38)	2104.601	RELOCATE CIVIL DEFENSE SIREN	LUMP SUM	1		1													
	2104.601	HAUL SALVAGED MATERIAL	LUMP SUM	1															1

SEE SHEET 10A FOR NOTES.

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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. Print Name: CHRISTOPHER M. TRBOYEVICH  Date: 6/27/07 License #: 41635				STATE PROJECT NO. S.P. 02-614-24, ETAL	DRAWN BY S. MARTINS DESIGNED BY J. TOULOUSE CHECKED BY C. TRBOYEVICH COMM. NO. 4994		ANOKA COUNTY STATEMENT OF ESTIMATED QUANTITIES C.S.A.H. 14	SHEET 4 OF 492
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NO	DATE	BY	CKD	APPR	REVISION

STATEMENT OF ESTIMATED QUANTITIES

TAB/ NOTES	ITEM NO.	ITEM DESCRIPTION	UNIT	TOTAL PROJECT QUANTITIES		C.S.A.H. 14 RECONSTRUCTION											
						S.P. 02-614-24						NON-PARTICIPATING					
						C.S.A.H. 14			C.S.A.H. 54 (S)		C.S.A.H. 54 (N)		STORM SEWER	ANOKA COUNTY	CITY OF LINO LAKES	CITY OF CENTERVILLE	
						S.P. 210-020-05		S.P. 02-654-01		S.P. 02-654-01							
						ANOKA COUNTY	CITY OF LINO LAKES	CITY OF CENTERVILLE	ANOKA COUNTY	CITY OF CENTERVILLE	ANOKA COUNTY	CITY OF CENTERVILLE					
ROADWAY QUANTITIES	ROADWAY QUANTITIES	ROADWAY QUANTITIES	ROADWAY QUANTITIES	ROADWAY QUANTITIES	ROADWAY QUANTITIES	ROADWAY QUANTITIES	ESTIMATED	ESTIMATED	ESTIMATED	ESTIMATED	ESTIMATED						
ESTIMATE	FINAL	ESTIMATED	ESTIMATED	ESTIMATED	ESTIMATED	ESTIMATED	ESTIMATED	ESTIMATED	ESTIMATED	ESTIMATED	ESTIMATED	ESTIMATED					
	2104.602	SALVAGE MAILBOX	EACH	59		55			2		2						
Z	2104.603	ABANDON PIPE SEWER	LIN FT	1050													1050
QQ	2104.603	ABANDON WATERMAIN	LIN FT	620			620										
A-U(3)	2105.501	COMMON EXCAVATION	(P) CU YD	141553		129499			4183		7871						
A-U(3)	2105.505	MUCK EXCAVATION	CU YD	47125		47125											
A-U	2105.507	SUBGRADE EXCAVATION	(P) CU YD	30061		25935			1591		2535						
A-U	2105.522	SELECT GRANULAR BORROW (LV)	CU YD	255315		248164			3321		3830						
A-U	2105.522	SELECT GRANULAR BORROW MOD (LV)	CU YD	486		486											
	2105.601	DEWATERING 1	LUMP SUM	1		1											
(44)	2105.601	DEWATERING 2	LUMP SUM	1													1
	2105.602	SETTLEMENT PLATES	EACH	90		90											
(7)	2105.604	GEOTEXTILE FABRIC TYPE I	SQ YD	848		848											
(26)	2105.604	GEOTEXTILE FABRIC TYPE IV	SQ YD	5490		5490											
	2105.604	GEOTEXTILE FABRIC TYPE V	SQ YD	113926		91100	17120	5706									
A-U(18)(19)	2105.607	EXCAVATION SPECIAL 1	(P) CU YD	39100									39100				
A-U(31)(42)	2105.607	EXCAVATION SPECIAL 2	CU YD	40627		40627											
A-U(32)	2105.607	FILL SPECIAL 1 (LV)	CU YD	20000		20000											
A-U(32)	2105.607	FILL SPECIAL 2 (LV)	CU YD	50000		50000											
A-U(32)	2105.607	HAUL FROM STOCKPILE MATERIAL	CU YD	20000		20000											
A-U(32)	2105.609	FILL SPECIAL 3	TON	46630		34960	8870	2800									
(4)	2130.501	WATER	M GAL	600		400			100		100						
CC HH	2211.503	AGGREGATE BASE (CV) CLASS 5	(P) CU YD	56506		47726	860	1620	2935		2945			100		320	
CC	2221.502	AGGREGATE SHOULDERING (CV) CLASS 5	(P) CU YD	500		460			20		20						
X	2232.501	MILL BITUMINOUS SURFACE (2.0")	SQ YD	5760		3520			940		1300						
	2301.553	BRIDGE APPROACH PANELS	SQ YD	193		193											
CC	2350.501	TYPE LV 3 WEARING COURSE MIXTURE (B)	TON	445		435					10						
CC	2350.501	TYPE LV 4 WEARING COURSE MIXTURE (B)	TON	2510			860	1550						100			
CC	2350.502	TYPE LV 3 NON WEARING COURSE MIXTURE (B)	TON	550		540					10						
HH	2350.503	TYPE LV 4 WEARING COURSE MIXTURE (B) 3.0" THICK	SQ YD	5194		4489			260		445						
CC	2357.502	BITUMINOUS MATERIAL FOR TACK COAT	GALLON	18470		16750			870		850						
CC(33)	2360.501	TYPE SP 12.5 WEARING COURSE MIX (4,C)	TON	25330		24500			250		220						360
CC(33)	2360.501	TYPE SP 12.5 WEARING COURSE MIX (4,F)	TON	8350		5190			1550		1610						
CC(33)	2360.502	TYPE SP 12.5 NON WEAR COURSE MIX (4,B)	TON	18350		15600			1370		1380						
HH	2360.503	TYPE SP 12.5 WEAR COURSE MIX (4,C) 4.0" THICK	SQ YD	535		535											
HH	2360.503	TYPE SP 12.5 NON WEAR COURSE MIX (4,B) 2.0" THICK	SQ YD	535		535											
(8)	2401.501	STRUCTURAL CONCRETE (1A43)	(P) CU YD	360		360											
(8)	2401.501	STRUCTURAL CONCRETE (3Y43)	(P) CU YD	462		462											
(8)	2401.512	BRIDGE SLAB CONCRETE (3Y36)	(P) SQ FT	5490		5490											
(8)	2401.513	TYPE F (TL-4) RAILING CONCRETE (3Y46)	(P) LIN FT	266		266											
(8)	2401.541	REINFORCEMENT BARS	(P) POUND	28335		28335											
(8)	2401.541	REINFORCEMENT BARS (EPOXY COATED)	(P) POUND	69022		69022											
(8)	2401.601	STRUCTURE EXCAVATION	LUMP SUM	1		1											
(8)	2401.601	FOUNDATION PREPARATION NORTH ABUTMENT	LUMP SUM	1		1											
(8)	2401.601	FOUNDATION PREPARATION SOUTH ABUTMENT	LUMP SUM	1		1											
(8)	2402.583	ORNAMENTAL METAL RAILING	(P) LIN FT	559		559											
(8)	2402.591	EXPANSION JOINT DEVICES TYPE 4	(P) LIN FT	116		116											

SEE SHEET 10A FOR NOTES.

4/25/22 PM  
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NO	DATE	BY	CKD	APPR	REVISION

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.  
 Print Name: CHRISTOPHER M. TRBOYEVICH  
*Chris Trbojevich*  
 Date: 6/27/07 License #: 41635

STATE PROJECT NO.  
S.P. 02-614-24, ETAL

DRAWN BY  
S. MARTINS  
DESIGNED BY  
J. TOULOUSE  
CHECKED BY  
C. TRBOYEVICH  
COMM. NO. 4994



ANOKA COUNTY  
STATEMENT OF ESTIMATED QUANTITIES  
C.S.A.H. 14

SHEET  
5  
OF  
492

STATEMENT OF ESTIMATED QUANTITIES

C.S.A.H. 14 RECONSTRUCTION

Table with columns: TAB/NOTES, ITEM NO., ITEM DESCRIPTION, UNIT, TOTAL PROJECT QUANTITIES (ESTIMATE, FINAL), C.S.A.H. 14 (S.P. 210-020-05), C.S.A.H. 54 (S) (S.P. 02-614-24, S.P. 02-654-01), C.S.A.H. 54 (N) (S.P. 02-654-01), ANOKA COUNTY, CITY OF LINO LAKES, CITY OF CENTERVILLE, STORM SEWER, ANOKA COUNTY, CITY OF LINO LAKES, CITY OF CENTERVILLE. Includes rows for BEARING ASSEMBLY, CONCRETE WEARING COURSE, PRESTRESSED CONCRETE BEAMS, DIAPHRAGMS, STRUCTURAL CONCRETE, REINFORCEMENT BARS, ARCH SURFACE FINISH, REMOVE OLD BRIDGE, GRANULAR BEDDING, FINE FILTER AGGREGATE, TRENCH EXCAVATION, C-I-P CONCRETE PILING, PREBORING, STEEL SHEET PILING, CS PIPE CULVERT, GS PIPE APRON, RC PIPE APRON, SPAN RC PIPE-ARCH CULVERT, TRASH GUARD.

SEE SHEET 10A FOR NOTES.

4/26/23 PM  
44994-F.H.I.-mu\p\an\4994-T.ecg

Table with columns: NO, DATE, BY, CKD, APPR, REVISION. Includes a signature line and date 6/27/06.

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.  
Print Name: CHRISTOPHER M. TRBOYEVIK  
*Chris Trbojevich*  
Date: 6/27/06 License #: 41635

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ANOKA COUNTY  
STATEMENT OF ESTIMATED QUANTITIES  
C.S.A.H. 14

SHEET  
6  
OF  
492



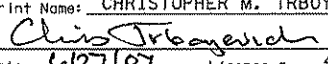
STATEMENT OF ESTIMATED QUANTITIES

TAB/ NOTES	ITEM NO.	ITEM DESCRIPTION	UNIT	TOTAL PROJECT QUANTITIES		C.S.A.H. 14 RECONSTRUCTION											
						S.P. 02-614-24						NON-PARTICIPATING					
						C.S.A.H. 14			C.S.A.H. 54 (S)		C.S.A.H. 54 (N)		STORM SEWER	ANOKA COUNTY	CITY OF LINO LAKES	CITY OF CENTERVILLE	
						S.P. 210-020-05		S.P. 02-654-01		S.P. 02-654-01							
						ANOKA COUNTY ROADWAY	CITY OF LINO LAKES ROADWAY	CITY OF CENTERVILLE ROADWAY	ANOKA COUNTY ROADWAY	CITY OF CENTERVILLE ROADWAY	ANOKA COUNTY ROADWAY	CITY OF CENTERVILLE ROADWAY					
ESTIMATE	FINAL	ESTIMATED	ESTIMATED	ESTIMATED	ESTIMATED	ESTIMATED	ESTIMATED	ESTIMATED	ESTIMATED	ESTIMATED							
AA QQ	2504.602	12" MEGALUG	EACH	40				26									14
AA	2504.602	10"X6" WET TAP	EACH	3				3									
AA	2504.602	12"X6" WET TAP	EACH	2				1									1
AA	2504.602	INSTALL CURB STOP AND BOX	EACH	5				5									
AA	2504.602	WATERMAIN FITTING REPAIR SPECIAL	EACH	3													3
AA	2504.603	6" WATERMAIN DUCTILE IRON CL 52	LIN FT	733				337		105			35				256
AA	2504.603	1" HDPE WATERMAIN	LIN FT	294				294									
AA QQ	2504.603	6" PVC WATERMAIN	LIN FT	139				50									89
AA QQ	2504.603	8" PVC WATERMAIN	LIN FT	643				15									628
AA QQ	2504.603	12" PVC WATERMAIN	LIN FT	1844				1144									700
AA Z	2504.604	4" POLYSTYRENE INSULATION	SQ YD	511				481									30
AA QQ Z	2504.608	WATERMAIN FITTINGS	LBS	7915				4350		375			35				3155
LL	2506.501	CONST DRAINAGE STRUCTURE DES 48-4020	LIN FT	169.4										169.4			
LL	2506.501	CONST DRAINAGE STRUCTURE DES 54-4020	LIN FT	70.7										70.7			
LL	2506.501	CONST DRAINAGE STRUCTURE DES 60-4020	LIN FT	16.1										16.1			
LL	2506.501	CONST DRAINAGE STRUCTURE DES 66-4020	LIN FT	25.2										25.2			
LL	2506.501	CONST DRAINAGE STRUCTURE DES 72-4020	LIN FT	30.3										30.3			
LL	2506.501	CONST DRAINAGE STRUCTURE DES 84-4020	LIN FT	5.9										5.9			
LL	2506.501	CONST DRAINAGE STRUCTURE DES 90-4020	LIN FT	6.6										6.6			
LL	2506.501	CONST DRAINAGE STRUCTURE DES 96-4020	LIN FT	28										28			
LL	2506.501	CONST DRAINAGE STRUCTURE DES 108-4020	LIN FT	20										20			
LL	2506.501	CONST DRAINAGE STRUCTURE DES 120-4020	LIN FT	13										13			
LL	2506.501	CONST DRAINAGE STRUCTURE DESIGN G	LIN FT	278.3										278.3			
LL	2506.501	CONST DRAINAGE STRUCTURE DESIGN H	LIN FT	132										132			
LL	2506.501	CONST DRAINAGE STRUCTURE DESIGN N	LIN FT	31.1										31.1			
LL(17)	2506.502	CONST DRAINAGE STRUCTURE DESIGN SPECIAL 1	EACH	1										1			
LL(22)	2506.502	CONST DRAINAGE STRUCTURE DESIGN SPECIAL 2	EACH	1										1			
LL(20)	2506.502	CONST DRAINAGE STRUCTURE DESIGN SPECIAL 3	EACH	1										1			
LL(25)	2506.502	CONST DRAINAGE STRUCTURE DESIGN SPECIAL 4	EACH	7										7			
LL	2506.502	CONST DRAINAGE STRUCTURE DESIGN SPECIAL 5	EACH	1										1			
LL(25)	2506.502	CONST DRAINAGE STRUCTURE DESIGN SPECIAL 6	EACH	1										1			
LL(20)	2506.502	CONST DRAINAGE STRUCTURE DESIGN SPECIAL 7	EACH	1										1			
LL(22)	2506.502	CONST DRAINAGE STRUCTURE DESIGN SPECIAL 8	EACH	1										1			
Z(23)	2506.503	RECONSTRUCT DRAINAGE STRUCTURE	LIN FT	128.7										128.7			
LL NN	2506.516	CASTING ASSEMBLY	EACH	190										190			
Z(23)	2506.521	INSTALL CASTING	EACH	24				1	20		2		1				
Z(23)	2506.522	ADJUST FRAME & RING CASTING	EACH	13				1	7		5						
LL	2506.602	CONNECT INTO EXISTING DRAINAGE STRUCTURE	EACH	1										1			
(28)	2506.602	RECONSTRUCT DRAINAGE STRUCTURE SPECIAL	EACH	1				1									
(14) (43)	2511.501	RANDOM RIP RAP CLASS II	CU YD	178										178			
(26)	2511.501	RANDOM RIP RAP CLASS III	CU YD	3022				2684						338			
(36)	2511.501	RANDOM RIP RAP CLASS IV	CU YD	311				311									
(19)	2511.505	HAND PLACED RIP RAP	CU YD	35				35									
DD	2521.501	4" CONCRETE WALK	SQ FT	32440				9330		18480	2310		820	1500			
DD	2521.501	6" CONCRETE WALK	SQ FT	190				140			30		20				
DD	2521.511	2" BITUMINOUS WALK	SQ FT	182390				62620		112830						6940	
DD	2531.501	CONCRETE CURB & GUTTER DESIGN B412	LIN FT	350				130		130			45	45			
DD	2531.501	CONCRETE CURB & GUTTER DESIGN B424	LIN FT	14860				8285		4055	680	350	935	555			
DD	2531.501	CONCRETE CURB & GUTTER DESIGN B612	LIN FT	1020				500		500	10	10					
DD	2531.501	CONCRETE CURB & GUTTER DESIGN B618	LIN FT	330				165		165							

SEE SHEET 10A FOR NOTES.

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NO	DATE	BY	CKD	APPR	REVISION

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.  
 Print Name: CHRISTOPHER M. TRBOYEVICH  
  
 Date: 6/27/07 License # 41635

STATE PROJECT NO.  
S.P. 02-614-24, ETAL

DRAWN BY  
S. MARTINS  
DESIGNED BY  
J. TOULOUSE  
CHECKED BY  
C. TRBOYEVICH  
COMM. NO. 4994



ANOKA COUNTY  
STATEMENT OF ESTIMATED QUANTITIES  
C.S.A.H. 14

SHEET  
8  
OF  
492



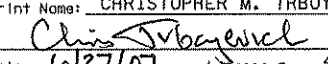
STATEMENT OF ESTIMATED QUANTITIES

TAB/ NOTES	ITEM NO.	ITEM DESCRIPTION	UNIT	TOTAL PROJECT QUANTITIES		C.S.A.H. 14 RECONSTRUCTION												
						S.P. 02-614-24						NON-PARTICIPATING						
						C.S.A.H. 14			C.S.A.H. 54 (S)		C.S.A.H. 54 (N)		STORM SEWER	ANOKA COUNTY	CITY OF LINO LAKES	CITY OF CENTERVILLE		
						S.P. 210-020-05			S.P. 02-654-01		S.P. 02-654-01							
						ANOKA COUNTY ROADWAY QUANTITIES	CITY OF LINO LAKES ROADWAY QUANTITIES	CITY OF CENTERVILLE ROADWAY QUANTITIES	ANOKA COUNTY ROADWAY QUANTITIES	CITY OF CENTERVILLE ROADWAY QUANTITIES	ANOKA COUNTY ROADWAY QUANTITIES	CITY OF CENTERVILLE ROADWAY QUANTITIES					ESTIMATED	ESTIMATED
ESTIMATE	FINAL	ESTIMATED	ESTIMATED	ESTIMATED	ESTIMATED	ESTIMATED	ESTIMATED	ESTIMATED	ESTIMATED	ESTIMATED								
DD	2531.501	CONCRETE CURB & GUTTER DESIGN B624	LIN FT	12040		6020		6020										
DD	2531.501	CONCRETE CURB & GUTTER DESIGN S512	LIN FT	520		260		260										
HH	2531.507	6" CONCRETE DRIVEWAY PAVEMENT	SQ YD	360		340				20								
DD	2531.602	PEDESTRIAN CURB RAMP	EACH	39		10		29										
DD	2531.618	TRUNCATED DOMES	SQ FT	476		120		356										
DD	2531.618	BITUMINOUS ISLAND	SQ FT	2500		2500												
EE	2533.504	PORTABLE PRECAST CONCRETE BARRIER DESIGN 8337	LIN FT	1410		1410												
DD	2535.501	BITUMINOUS CURB	LIN FT	90		90												
	2540.602	MAIL BOX SUPPORT	EACH	59		59												
(8)	2545.509	CONDUIT SYSTEM (P)	LUMP SUM	1		1												
	2545.602	INSTALL LIGHT STANDARD	EACH	1		1												
FF	2554.501	TRAFFIC BARRIER DESIGN B8338	LIN FT	513		513												
FF	2554.501	TRAFFIC BARRIER DESIGN SPECIAL A	LIN FT	150		150												
LL	2554.509	GUIDE POST TYPE B	EACH	87		87												
FF	2554.523	END TREATMENT - ECCENTRIC LOADER BCT	EACH	6		6												
EE	2554.615	IMPACT ATTENUATOR	ASSEMBLY	2		2												
(7)	2557.501	WIRE FENCE DESIGN SPECIAL VINYL COATED (P)	LIN FT	120		120												
GG	2557.501	WIRE FENCE DESIGN 60V-9322	LIN FT	620			540	80										
	2557.602	INSTALL VEHICULAR GATE	EACH	6		6												
(1)(9)	2563.601	DETOUR SIGNING	LUMP SUM	1		1												
KK (1)(6)	2563.601	TRAFFIC CONTROL STAGE 1	LUMP SUM	1		0.95												0.05
KK (1)(6)	2563.601	TRAFFIC CONTROL STAGE 2	LUMP SUM	1		0.95												0.05
KK (1)(6)	2563.601	TRAFFIC CONTROL STAGE 3	LUMP SUM	1		0.95												0.05
KK (1)(6)	2563.601	TRAFFIC CONTROL STAGE 4	LUMP SUM	1		0.95												0.05
KK (1)(6)	2563.601	TRAFFIC CONTROL STAGE 5	LUMP SUM	1		0.95												0.05
BB	2563.602	RAISED PAVEMENT MARKER TEMPORARY	EACH	780		526			108		146							
SS(11)	2564.531	SIGN PANELS TYPE C	SQ FT	1533.9		1334.8			75.9		123.2							
WW(11)	2564.531	SIGN PANELS TYPE D	SQ FT	142.8		142.8												
TT(11)	2564.537	INSTALL SIGN TYPE SPECIAL	EACH	17		15					2							
VV(11)	2564.537	INSTALL SIGN TYPE D	EACH	6		6												
RR(11)	2564.552	HAZARD MARKER X4-2	EACH	14		14												
RR(11)	2564.553	CLEARANCE MARKER X4-4	EACH	2		2												
RR(11)	2564.554	SNOW PLOW MARKER X4-5	EACH	10		6			2		2							
(16)	2565.511	FULL T ACT T CONTROL SIGNAL SYSTEM	SIG SYS	1		0.5			0.25		0.25							
(16)	2565.601	EMERGENCY VEHICLE PREEMPTION SYSTEM	LUMP SUM	1		1												
(16)(27)	2565.602	PVC HANDHOLE (METAL FRAME AND COVER)	EACH	11		11												
(16)(27)	2565.603	2" RIGID STEEL CONDUIT	LIN FT	770		770												
(16)(27)	2565.603	4" RIGID STEEL CONDUIT	LIN FT	260		260												
(16)	2565.616	FLASHING BEACON SYSTEM	SYS	1		1												
JJ(6)(14)	2573.502	SILT FENCE, TYPE MACHINE SLICED	LIN FT	23468		19563			1881		2024							
JJ(6)(14)	2573.505	FLOTATION SILT CURTAIN TYPE STILL WATER	LIN FT	3390		3390												
JJ(14)	2573.505	FLOTATION SILT CURTAIN TYPE MOVING WATER	LIN FT	404		404												
(1)	2573.601	EROSION CONTROL SUPERVISOR	LUMP SUM	1		0.95												0.05
JJ	2573.530	STORM DRAIN INLET PROTECTION	EACH	230									230					
(6)(14)	2573.603	BIOROLL	LIN FT	1538		1095			215		228							
JJ(14)	2575.501	SEEDING (P)	ACRE	34.3		32.2			1.3		0.8							
JJ(14)	2575.502	SEED, MIXTURE 310	POUND	64		64												

SEE SHEET 10A FOR NOTES.

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NO	DATE	BY	CKD	APPR	REVISION

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.  
 Print Name: CHRISTOPHER M. TRBOYEVICH  
  
 Date: 6/27/07 License #: 41635

STATE PROJECT NO.  
S.P. 02-614-24, ETAL

DRAWN BY  
S. MARTINS  
 DESIGNED BY  
J. TOULOUSE  
 CHECKED BY  
C. TRBOYEVICH  
 COMM. NO. 4994



ANOKA COUNTY  
 STATEMENT OF ESTIMATED QUANTITIES  
 C.S.A.H. 14

SHEET  
9  
OF  
492

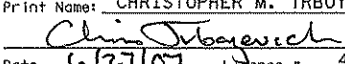

STATEMENT OF ESTIMATED QUANTITIES

C.S.A.H. 14 RECONSTRUCTION																
TAB/ NOTES	ITEM NO.	ITEM DESCRIPTION	UNIT	TOTAL PROJECT QUANTITIES		S.P. 02-614-24						STORM SEWER	NON-PARTICIPATING			
						C.S.A.H. 14			C.S.A.H. 54 (S)		C.S.A.H. 54 (N)		ANOKA COUNTY	CITY OF LINO LAKES	CITY OF CENTERVILLE	
						ANOKA COUNTY	CITY OF LINO LAKES	CITY OF CENTERVILLE	S.P. 210-020-05		S.P. 02-654-01					S.P. 02-654-01
									ROADWAY QUANTITIES	ROADWAY QUANTITIES	ROADWAY QUANTITIES		ROADWAY QUANTITIES	ROADWAY QUANTITIES	ROADWAY QUANTITIES	ROADWAY QUANTITIES
						ESTIMATE	FINAL	ESTIMATED	ESTIMATED	ESTIMATED	ESTIMATED		ESTIMATED	ESTIMATED	ESTIMATED	ESTIMATED
JJ(14)	2575.502	SEED, MIXTURE 350	POUND	2761		2588				107		66				
LL	2575.505	SODDING TYPE EROSION	SQ YD	640								640				
JJ(14)	2575.505	SODDING TYPE LAWN	SQ YD	34320		31490				990		1840				
JJ(14)	2575.511	MULCH MATERIAL, TYPE 3	TON	46.6		43.6				2.6		0.4				
JJ(14)	2575.519	DISK ANCHORING (P)	ACRE	23.3		21.8				1.3		0.2				
JJ(6)(14)	2575.523	EROSION CONTROL BLANKETS CATEGORY 3	SQ YD	48101		45151						2950				
JJ(14)	2575.523	EROSION CONTROL BLANKETS CATEGORY 4	SQ YD	5506		5506										
JJ(14)	2575.532	COMMERCIAL FERTILIZER ANALYSIS 18-1-8	POUND	4128		3876				156		96				
JJ(14)	2575.532	COMMERCIAL FERTILIZER ANALYSIS 22-5-10	POUND	2837		2603				82		152				
(6)	2575.571	RAPID STABILIZATION, METHOD 3	M GAL	15.4		13.09				1.06		1.25				
(19)	2577.603	VEGETATED GEOGRID	LIN FT	400		400										
BB(6)	2581.501	PAVT MSSG (LEFT ARROW) PAINT	EACH	45		45										
PP(11)	2581.501	PAVT MSSG (LT ARROW) PREFORMED THERMOPLASTIC	EACH	83		74				4		5				
BB(6)	2581.501	PAVT MSSG (LT-THRU ARROW) PAINT	EACH	1		1										
PP(11)	2581.501	PAVT MSSG (LT-THRU ARROW) PREFORMED THERMOPLASTIC	EACH	1		1										
BB(6)	2581.501	PAVT MSSG (RIGHT ARROW) PAINT	EACH	22		22										
PP(11)	2581.501	PAVT MSSG (RT ARROW) PREFORMED THERMOPLASTIC	EACH	45		39				4		2				
BB(6)	2581.501	PAVT MSSG (SCHOOL XING) PAINT	EACH	2		2										
PP(11)	2581.501	PAVT MSSG (SCHOOL XING) PERFORMED THERMOPLASTIC	EACH	2		2										
PP(11)	2582.502	4" BROKEN LINE WHITE - EPOXY	LIN FT	1610		1380				180		50				
PP(11)	2582.502	4" BROKEN LINE YELLOW - EPOXY	LIN FT	2140		2140										
BB(6)	2582.502	4" BROKEN LINE YELLOW - PAINT	LIN FT	1550		1550										
PP(11)	2582.502	4" DOUBLE SOLID LINE YELLOW - EPOXY	LIN FT	17140		14180				1360		1600				
BB(6)	2582.502	4" DOUBLE SOLID LINE YELLOW - PAINT	LIN FT	41120		36700				1930		2490				
PP(11)	2582.502	4" SOLID LINE WHITE - EPOXY	LIN FT	48510		44330				2190		1990				
BB(6)	2582.502	4" SOLID LINE WHITE - PAINT	LIN FT	90530		81610				3970		4950				
PP(11)	2582.502	4" SOLID LINE YELLOW - EPOXY	LIN FT	9400		9400										
BB(6)	2582.502	4" SOLID LINE YELLOW - PAINT	LIN FT	6220		6220										
PP(11)	2582.502	8" BROKEN LINE WHITE - EPOXY	LIN FT	160		160										
PP(6)	2582.502	24" SOLID LINE YELLOW - PAINT	LIN FT	2080		1400				480		200				
PP(11)	2582.502	24" SOLID LINE YELLOW - EPOXY	LIN FT	890		210				480		200				
PP(11)	2582.502	24" SOLID LINE WHITE - PREFORMED THERMOPLASTIC	LIN FT	190		190										
PP(11)	2582.502	24" SOLID LINE YELLOW - PREFORMED THERMOPLASTIC	LIN FT	1440		1440										
PP(11)	2582.503	ZEBRA CROSSWALK - WHITE PREFORMED THERMOPLASTIC	SQ FT	2040		2040										
BB(6)	2582.503	ZEBRA CROSSWALK - PAINT	SQ FT	560		560										
		<b>BID GROUP (C)</b>														
	2105.505	MUCK EXCAVATION	CU YD	98975		98975										
	2105.522	SELECT GRANULAR BORROW (LV)	CU YD	329140		321989				3321		3830				
	2105.602	SETTLEMENT PLATES	EACH	62		62										
	2105.604	GEOTEXTILE FABRIC TYPE V	SQ YD	81013		58187		17120	5706							
	2105.607	EXCAVATION SPECIAL 2	CU YD	21351		21351										
	2105.609	FILL SPECIAL 3	TON	35725		24055		8870	2800							

\* SEE BID GROUP (B) SHEET S1 OF S15 FOR STREETSCAPING STATEMENT OF ESTIMATED QUANTITIES.  
 \* \* SEE SHEETS 163 AND 164 FOR BID GROUP (C) ITEMS.

SEE SHEET 10A FOR NOTES.

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6/25/2007  
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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. Print Name: CHRISTOPHER M. TRBOYEVICH  Date: 6/27/07 License #: 41635				STATE PROJECT NO. S.P. 02-614-24, ETAL	DRAWN BY S. MARTINS DESIGNED BY J. TOULOUSE CHECKED BY C. TRBOYEVICH COMM. NO. 4994		ANOKA COUNTY STATEMENT OF ESTIMATED QUANTITIES C.S.A.H. 14	SHEET 10 OF 492
NO	DATE	BY	CKD	APPR	REVISION			
...	4994-f\h1-m\p\an\4994-f.eqg							


NOTES:

- (1) PRORATA ITEM.
- (2) SEE REMOVAL PLAN.
- (3) SEE CONSTRUCTION / SOILS NOTES.
- (4) WATER TO BE USED ONLY FOR DUST CONTROL AS DIRECTED BY THE ENGINEER IN THE FIELD. ALL WATER FOR TURN ESTABLISHMENT SHALL BE INCIDENTAL.
- (5) THE REQUIRED FILTER AGGREGATE (3149.2J) AND GEOTEXTILE WRAP 3733, TYPE 1, SHALL BE INCIDENTAL.
- (6) SEE STAGING PLANS.
- (7) SEE RETAINING WALL PLANS.
- (8) SEE BRIDGE PLANS.
- (9) SEE DETOUR PLAN.
- (10) INCLUDES REMOVAL OF TEMPORARY PAVEMENT.
- (11) SEE SIGNING AND STRIPING PLAN.
- (12) QUANTITY TO BE HAULED TO ANOKA COUNTY HIGHWAY DEPARTMENT.
- (13) QUANTITY INCLUDES REMOVAL OF PIPE APRON.
- (14) SEE EROSION CONTROL / TURF ESTABLISHMENT PLANS.
- (15) SAWCUTTING CONCRETE DRIVEWAY PAVEMENT.
- (16) SEE SIGNAL PLANS AND SPECIFICATIONS.
- (17) GRIT CHAMBER. SEE DRAINAGE DETAILS.
- (18) POND EXCAVATION.
- (19) CLEARWATER CREEK CONSTRUCTION
- (20) JUNCTION VAULT. SEE DRAINAGE DETAILS.
- (21) 122" x 77 1/2" ARCH PIPE APRONS.
- (22) FLOW SPLITTER. SEE DRAINAGE DETAILS.
- (23) INCLUDES ONLY SANITARY SEWERS.
- (24) INCLUDES BITUMINOUS PAVEMENT AND BITUMINOUS DRIVEWAY PAVEMENT.
- (25) POND OUTLET CONTROL STRUCTURE. SEE DRAINAGE DETAILS.

- (26) SLOPE PROTECTION FOR PELTIER LAKE AND CENTERVILLE LAKE. INCLUDES NECESSARY EXCAVATION.
- (27) FUTURE TRAFFIC SIGNAL AT CSAH 21 (SOUTH) AND CSAH 14 IN DOWNTOWN CENTERVILLE
- (28) SEE MISCELLANEOUS DETAILS.
- (29) REPAIRS TO EXISTING RCP ARCH (BRIDGE 97893)
- (30) QUANTITY INCLUDES REMOVAL OF EXISTING NUTS AND BOLTS AND REPLACING WITH STAINLESS STEEL OR CORBLUE HARDWARE .
- (31) QUANTITY INCLUDES REMOVAL OF EXCESS SURCHARGE MATERIAL AFTER SETTLEMENT.
- (32) LIGHTWEIGHT FILL MATERIAL BACKFILLED IN ROAD AND TRAIL SECTION.
- (33) INCLUDES TEMPORARY PAVEMENT FOR STAGING.
- (34) QUANTITY INCLUDES REMOVAL AND REPLACEMENT OF LEAD-IN PIPE TO MAINLINE AND REMOVAL AND REPLACEMENT FOR LOWERING OF WATERMAIN.
- (35) INCLUDES SALVAGE AND INSTALL OF TOP SLAB, CONTROL CABINET, WIRING, CONDUITS AND TEMPORARY PUMPING OF WET WELL.
- (36) SLOPE PROTECTION AT GEORGE WATCH LAKE BRIDGE.
- (37) QUANTITY TO INCLUDE PATCHING 3 HOLES IN THE 122" x 77 1/2 " ARCH PIPES, STRUCTURAL CONCRETE, #14 REINFORCING BARS
- (38) QUANTITY TO INCLUDE SALVAGE & INSTALL OF SIREN, LIGHTING, POLE, OVERHEAD WIRING, WIRE CONNECTION TO LIFT STATION AND INSTALLATION OF NEW BASE.
- (39) BEDDING MATERIAL FOR RC PIPE-ARCH STORM SEWER
- (40) WOOD TIMBER WEIRS AND BRICK SIGN POSTS
- (41) INCLUDES REMOVAL OF POLE FOUNDATIONS AND ELECTRICAL BOX
- (42) SURCHARGE EXCAVATION
- (43) SEE POND OUTLET DETAIL SHEET IN DRAINAGE DETAILS.
- (44) DEWATERING FOR CITY FORCEMAIN AND WATERMAIN RELOCATION
- (P) INDICATES PLAN QUANTITY

\* SEE BID GROUP (B) SHEET S1 OF S15 FOR STREETSCAPING STATEMENT OF ESTIMATED QUANTITIES.  
 \* \* SEE SHEETS 163 AND 164 FOR BID GROUP (C) ITEMS.

4/22/07 PM  
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					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. Print Name: CHRISTOPHER M. TRBOYEVICH <i>Christopher M. Trbojevich</i> Date: 6/27/07 License # 41635		STATE PROJECT NO. S.P. 02-614-24, ETAL		DRAWN BY S. MARTINS DESIGNED BY J. TOULOUSE CHECKED BY C. TRBOYEVICH COMM. NO. 4994		ANOKA COUNTY STATEMENT OF ESTIMATED QUANTITIES C.S.A.H. 14 NOTES		SHEET 10A OF 492											
<table border="1"> <thead> <tr> <th>NO</th> <th>DATE</th> <th>BY</th> <th>CHKD</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>					NO	DATE	BY	CHKD	APPR	REVISION														
NO	DATE	BY	CHKD	APPR	REVISION																			

**CONSTRUCTION /SOILS NOTES**

**GRADING, BASE AND SURFACE**

- 1 TOP OF THE GRADING SUBGRADE IS DEFINED AS THE BOTTOM OF THE CLASS 5 AGGREGATE BASE.
- 2 SUITABLE GRADING MATERIAL ON THIS PROJECT, WHETHER OBTAINED LOCALLY OR FROM BORROW, SHALL CONSIST OF ALL SOILS EXCEPT TOPSOIL, DEBRIS, PEAT, MUCK AND ORGANIC OR OTHER UNSTABLE MATERIAL.
- 3 UNSUITABLE MATERIALS ARE TOPSOILS, PAVEMENT OR CONCRETE DEBRIS, PEAT, MUCK AND ORGANIC OR OTHER UNSTABLE SOILS.
- 4 GRANULAR MATERIAL IS DEFINED AS MATERIAL MEETING THE REQUIREMENTS OF SPEC. 3149.2B1.  
SELECT GRANULAR MATERIAL IS DEFINED AS MATERIAL MEETING THE REQUIREMENTS OF SPEC. 3149.2B2.
- 5 STRIP SOD AND TOPSOIL FROM AREAS TO BE DISTURBED BY CONSTRUCTION AND REUSE AS SLOPE DRESSING. FOR ESTIMATING PURPOSES, THE DEPTH OF TOPSOIL AVAILABLE IS CONSIDERED TO BE 6 INCHES.
- 6 ALL TOPSOIL STRIPPING WILL BE CONSIDERED TO BE COMMON EXCAVATION.
- 7 IN ALL AREAS OF NEW MAINLINE ROADWAY RECONSTRUCTION (PERMANENT AND TEMPORARY), PROVIDE FOR A MINIMUM 12 INCH COMPACTION SUBCUT UNLESS OTHERWISE NOTED. BACKFILL WITH SUITABLE GRADING MATERIAL. ANY UNCONTAMINATED SUITABLE GRANULAR MATERIAL REMOVED FROM THE EXISTING SUBGRADE AREA MAY BE USED IN OTHER AREAS DESIGNATED FOR THE SAME MATERIAL.
- 8 EXCESS TOPSOIL AND MUCK MATERIAL SHALL BE USED THROUGHOUT THE PROJECT AND AS DIRECTED BY THE ENGINEER.
- 9 IN FILL SECTIONS, TOPSOIL AND OTHER UNSUITABLE MATERIALS SHALL BE ELIMINATED FROM THE UPPER 4 FEET OF THE "GRADING GRADE" BENEATH THE ROADWAY, WITHIN THE LIMITS SHOWN ON THE TYPICAL SECTIONS.
- 10 OBTAIN COMPACTION ON THE GRADING PORTIONS OF PERMANENT CONSTRUCTION IN ACCORDANCE WITH THE "SPECIFIED DENSITY METHOD" REQUIREMENTS.
- 11 COMPACTION OF THE AGGREGATE BASE LAYER SHALL BE OBTAINED IN ACCORDANCE WITH THE PENETRATION INDEX METHOD. THE TEST SHALL BE PERFORMED IN ACCORDANCE WITH SECTION C4 AND C4A OF THE (2211) AGGREGATE BASE SPECIFICATION, INCLUDED IN THE SPECIAL PROVISIONS. THIS WOULD INCLUDE ANY AREAS WHERE CRUSHED CONCRETE OR SALVAGED ASPHALT MAY BE USED FOR AGGREGATE BASE.
- 12 COMPACTION OF THE GRADING AND AGGREGATE ITEMS ON BYPASSES AND OTHER TEMPORARY WORK SHALL BE BY THE "QUALITY COMPACTION" METHOD.
- 13 TEST ROLLING SHALL BE REQUIRED ON THIS PROJECT PER MN/DOT 2111 (INCIDENTAL.)
- 14 THE BOTTOM OF ALL SUBCUTS SHALL BE SHAPED AND COMPACTED BY THE "QUALITY COMPACTION METHOD". THE CONTRACTOR SHALL USE A MINIMUM OF 4 PASSES OF AN APPROVED COMPACTION DEVICE.
- 15 AS A PRECAUTIONARY MEASURE FROM A SOILS STANDPOINT, TRAFFIC LANES TO BE USED DURING CONSTRUCTION MUST BE DELINEATED TO KEEP VEHICLES A SAFE DISTANCE AWAY FROM THE ADJACENT EXCAVATION. THE DELINEATION SHOULD COINCIDE WITH POINTS ESTABLISHED BY PROJECTING A 1(V):2(H) OR GREATER (FLATTER) SLOPE BETWEEN THE EDGE OF THE TRAFFIC SURFACE AND THE BOTTOM OF THE EXCAVATION.
- 16 WHERE CONNECTING TO THE INPLACE ROADWAYS AT THE TERMINI OF PROPOSED CONSTRUCTION, CUT VERTICALLY TO THE BOTTOM OF THE INPLACE SURFACING OR TO THE BOTTOM OF THE NEW SURFACING, WHICHEVER IS DEEPER, THEN 1V:20H TO THE BOTTOM OF THE RECOMMENDED SUBGRADE EXCAVATION, UNLESS OTHERWISE NOTED.
- 17 PROVIDE 1V:20H LONGITUDINAL TAPERS BETWEEN CHANGES IN SUBGRADE AND SUBCUT DEPTHS.
- 18 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.
- 19 PROVIDE FOR A UNIFORM BITUMINOUS TACK COAT BETWEEN ALL BITUMINOUS COURSES. THE TACK COAT SHALL BE IN ACCORDANCE WITH MN/DOT SPECIFICATION 2357 WITH THE FOLLOWING MODIFICATIONS:
  1. THE TACK COAT SHALL CONSIST OF EMULSIFIED ASPHALT (CSS-1 OR CSS-1H) AND SHALL BE APPLIED BETWEEN ALL BITUMINOUS COURSES.
  2. THE TACK COAT SHALL BE APPLIED AT A UNIFORM RATE OF 0.03 TO 0.05 GAL/SY BETWEEN BITUMINOUS LAYERS AND 0.07 TO 0.10 GAL/SY ON MILLED BITUMINOUS SURFACES PRIOR TO BEING OVERLAID.
- 20 PROVIDE A SAWCUT WHERE PLACING NEW PAVEMENT ADJACENT TO INPLACE PAVEMENT TO ENSURE A UNIFORM JOINT.

**REMOVALS**

- 21 PROVIDE FOR THE REMOVAL AND DISPOSAL OF ANY INPLACE SURFACING, GUARDRAIL, OTHER STRUCTURES OR DEBRIS THAT WOULD INTERFERE WITH CONSTRUCTION. ALL SUCH MATERIALS SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL EITHER BE RECYCLED TO THE EXTENT ALLOWED OR DISPOSED OF OFF THE RIGHT OF WAY IN ACCORDANCE WITH SPEC. 2104.03.C. PROVIDE FOR SAW CUTTING AS DEEMED NECESSARY BY THE ENGINEER.
- 22 THE EXISTING PAVEMENT THICKNESSES ARE ASSUMED TO BE AS FOLLOWS:
  - C.S.A.H. 14 (MAIN STREET)- 4 TO 6 INCHES BITUMINOUS PAVEMENT
  - C.S.A.H. 21/54 - 4.0 TO 5.5 INCHES BITUMINOUS PAVEMENT

THE EXISTING TOPSOIL THICKNESS IS ASSUMED 6 INCHES. TOPSOIL THICKNESS ALONG E.B. C.S.A.H. 14 IS KNOWN TO VARY IN THICKNESS FROM 4 INCHES TO 2 FEET.

THE CONTRACTOR SHALL INVESTIGATE AND MAKE HIS OWN DETERMINATION.

(INFORMATION TAKEN FROM THE PROJECT SOIL BORINGS AND RECORD DRAWINGS).

**TURF ESTABLISHMENT**

- 23 PLACE A MINIMUM OF 4 INCHES OF TOPSOIL ON ALL AREAS SCHEDULED FOR PERMANENT TURF ESTABLISHMENT, UNLESS OTHERWISE INDICATED ON THE TYPICAL SECTION PLAN SHEETS.
- 24 PLACE A MINIMUM OF 4 INCHES OF MUCK REMOVAL MATERIAL ON ALL POND AREAS.
- 25 SOD ALL AREAS ADJACENT TO RESIDENCES OR BUSINESSES AND AREAS OF HEAVY DRAINAGE RUNOFF, AS INDICATED IN THE TURF ESTABLISHMENT AND EROSION CONTROL PLANS AND DETAILS.
- 27 SEEDING REQUIREMENTS ON THIS PROJECT ARE AS FOLLOWS:
  - A. ON PERMANENT SLOPES FLATTER THAN 1:3 USE SEED MIXTURE 350 AND TYPE 3 MULCH WITH DISK ANCHOR. SEE EROSION CONTROL AND TURF ESTABLISHMENT PLANS FOR SEED TYPE LOCATIONS.
  - B. ON PERMANENT SLOPES 1:3 OR STEEPER USE SEED MIXTURE 350 AND EROSION CONTROL BLANKET CATEGORY 3. DO NOT DISK ANCHOR.
  - C. ON DESIGNATED AREAS IN AND AROUND PONDS, USE SEED MIXTURE 310 OR 350 AND TYPE 3 MULCH WITH DISK ANCHOR.
  - D. PROVIDE COMMERCIAL FERTILIZER, ANALYSIS 22-5-10, SLOW RELEASE TYPE, OR EQUIVALENT ON ALL AREAS TO BE SEEDED OR SODDED. PROVIDE COMMERCIAL FERTILIZER, ANALYSIS 18-1-8 ON ALL AREAS SEEDED AT PONDING LOCATIONS IDENTIFIED.

**MISCELLANEOUS**

- 28 WHERE SEDIMENT DEPOSITS IN WATERS OF THE STATE THE MATERIAL MUST BE REMOVED IN 7 DAYS.
- 29 ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, INCLUDING THE CURRENT FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS.
- 30 THE CONTRACTOR IS HEREBY REMINDED OF HIS RESPONSIBILITY UNDER STATE LAW TO CONTACT ALL UTILITIES THAT MAY HAVE FACILITIES IN THE AREA. CONTACT MUST BE MADE THROUGH GOPHER STATE ONE-CALL.
- 31 WHENEVER THE WORD "INCIDENTAL" IS USED IN THIS PLAN, IT SHALL MEAN THIS WORK WILL BE INCIDENTAL FOR WHICH NO DIRECT COMPENSATION WILL BE MADE.

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NO	DATE	BY	CKD	APPR	REVISION

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

Print Name: CHRISTOPHER M. TRBOYEVICH

*Christopher M. Trbojevich*

Date: 3/26/07 License #: 41635

STATE PROJECT NO. S.P. 02-614-24, ETAL

DRAWN BY S. MARTINS  
DESIGNED BY J. TOULOUSE  
CHECKED BY C. TRBOYEVICH  
COMM. NO. 4994



**ANOKA COUNTY**  
CONSTRUCTION/SOILS NOTES  
C.S.A.H. 14

SHEET  
11  
OF  
492

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

STANDARD PLATES	
PLATE NO.	DESCRIPTION
3000 L	REINFORCED CONCRETE PIPE
3006 G	GASKET JOINT FOR R.C. PIPE
3007 D	SHEAR REINFORCEMENT FOR PRECAST DRAINAGE STRUCTURES
3014 J	REINFORCED CONCRETE PIPE ARCH
3022 C	PRECAST CONCRETE SAFETY APRON
3040 F	CORRUGATED METAL PIPE CULVERT
3041 D	CORRUGATED METAL PIPE
3100 G	CONCRETE APRON FOR REINFORCED CONCRETE PIPE
3110 G	CONCRETE APRON FOR REINFORCED CONCRETE PIPE-ARCH
3114 H	SECTIONAL CONCRETE APRON FOR REINFORCED CONCRETE PIPE-ARCH
3123 K	METAL APRON FOR C.S. PIPE
3124 B	METAL APRON CONNECTION
3133 C	RIPRAP AT RCP OUTLETS
3134 C	RIPRAP AT CMP OUTLETS
3139 A	RIPRAP AT PRECAST CONCRETE END SECTIONS
3145 F	CONCRETE PIPE TIES
3221 C	CORRUGATED STEEL PIPE COUPLING BAND
4005 L	MANHOLE OR CATCH BASIN TYPE A & B CONE SECTIONS PRECAST - DESIGN F
4006 L	MANHOLE OR CATCH BASIN PRECAST - DESIGNS G AND H
4010 H	CONCRETE SHORT CONE & ADJUSTING RING (SECTIONAL CONCRETE)
4011 E	PRECAST CONCRETE BASE
4017 C	CATCH BASIN (CONCRETE PIPE AND METAL PIPE) - DESIGNS PC AND PM
4018 A	MANHOLE OR CATCH BASIN (REDUCER CONE SECTION PRECAST) DESIGN D
4020 J	MANHOLE OR CATCH BASIN (FOR USE WITH OR WITHOUT TRAFFIC LOADS)
4026 A	CONCRETE ENCASED CONCRETE ADJUSTING RINGS
4101 D	RING CASTING FOR MANHOLE OR CATCH BASIN
4108 F	ADJUSTING RINGS FOR CATCH BASINS AND MANHOLES
4110 F	COVER CASTING FOR MANHOLE (FOR USE IN ALL TRAFFIC AREAS)
4129 G	CATCH BASIN FRAME CASTING (FOR SQUARE GRATE)
4143 E	STOOL GRATE & CONCRETE FRAME (MEDIAN DRAINS)
4154 B	CATCH BASIN GRATE CASTING - CASTING No. 816
4160 D	CURB BOX CASTING FOR CATCH BASIN
4180 J	MANHOLE OR CATCH BASIN STEP
7035 M	CONCRETE WALK & CURB RETURNS AT ENTRANCES
7036 F	PEDESTRIAN CURB RAMP (FOR THE HANDICAPPED)
7065 C	BITUMINOUS CURB
7100 H	CONCRETE CURB & GUTTER (DESIGN B AND DESIGN V)
7111 J	INSTALLATION OF CATCH BASIN CASTINGS (CONCRETE CURB AND GUTTER)
7113 A	CONCRETE APPROACH NOSE DETAIL
8000 I	STANDARD BARRICADES
8110 D	TRAFFIC SIGNAL BRACKETING (POLE MOUNTED)
8110 D	TRAFFIC SIGNAL BRACKETING (PEDESTAL MOUNTED)
8112 D	PEDESTAL FOUNDATION
8114 A	P.V.C. HANDHOLE / PULL BOX (NO VEHICLE LOAD)
8115 D	PEDESTRIAN PUSH BUTTON INSTALLATION
8118 C	SERVICE EQUIPMENT & POLE TRAFFIC CONTROL SIGNALS
8119 C	GROUND MOUNTED CABINET FOUNDATION
8120 L	POLE FOUNDATION (PA85)
8121 E	TRANSFORMER BASE AND POLE BASE PLATE
8122 D	PEDESTAL AND PEDESTAL BASE (FOR TRAFFIC CONTROL SIGNALS SUPPORT)
8123 E	POLE AND MAST ARM (LUMINAIRES AND TRAFFIC LIGHTS ASSEMBLY)
8124 E	MAST ARM SIGNAL HEAD MOUNTS (ONE WAY AND TWO WAY MOUNTS)
8126 G	POLE FOUNDATION (PA90 AND PA100)
8130 D	SAW CUT LOOP DETECTORS
8140 B	ROADWAY LIGHTING SERVICE CABINET
8150 C	INSTALLATION OF CULVERT MARKERS
8307 R	W-BEAM GUARDRAIL & END ANCHORAGES (INSTALLATION WITH WOOD POSTS)
8318 C	GUARDRAIL ANCHORAGE PLATE FOR BRIDGES AND BCT'S
8329 H	ECCENTRIC LOADER BREAKAWAY CABLE TERMINAL (ELT)
8337 B	TEMPORARY PORTABLE PRECAST CONCRETE BARRIER (TYPE "F")
9101 B	SHAPING AND SODDING OF SLOPES AT BOX CULVERT ENDS
9102 D	TURF ESTABLISHMENT AREAS (AT PIPE CULVERT ENDS)
9322 J	CHAIN LINK FENCE

BASIS OF QUANTITIES		
SPEC NO	DESCRIPTION	RATE
2105.607	FILL SPECIAL 3	635 LBS / CY
2123.610	1.5 CU YD BACKHOE	1 HR / 300 FT SILT FENCE / SEASON (2 PER SEASON)
2123.610	STREET SWEEPER (WITH PICKUP BROOM)	PROJECT LENGTH / 3 MPH FOR 90 DAYS
2350.503	TYPE LV4 WEARING COURSE MIXTURE	110 LBS / SQ YD / IN
2357.502	BITUMINOUS MATERIAL FOR TACK COAT	0.07 GAL / SQ YD / LIFT
2360.501	TYPE SP12.5 WEARING COURSE MIXTURE	113 LBS / SQ YD / IN
2360.502	TYPE SP12.5 NON-WEARING COURSE MIXTURE	113 LBS / SQ YD / IN
2573.623	RAPID STABILIZATION METHOD 3	6000 GALS / ACRE
2575.502	SEED MIXTURE 310	82 LBS / ACRE
2575.502	SEED MIXTURE 350	84.5 LBS / ACRE
2575.511	MULCH MATERIAL TYPE 3	2 TONS / ACRE
2575.532	COMMERCIAL FERTILIZER 22-5-10	400 LBS / ACRE
2575.532	COMMERCIAL FERTILIZER 18-1-8	120 LBS / ACRE

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NO	DATE	BY	CHKD	APPR	REVISION

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.  
 Print Name: CHRISTOPHER M. TRBOYEVICH  
*Christopher M. Trbojevich*  
 Date: 6/11/07 License #: 41635

STATE PROJECT NO. S.P. 02-614-24, ETAL

DRAWN BY S. MARTINS  
 DESIGNED BY J. TOULOUSE  
 CHECKED BY C. TRBOYEVICH  
 COMM. NO. 4994



ANOKA COUNTY  
 STANDARD PLATES / INDEX OF TABULATIONS  
 C.S.A.H. 14

SHEET 12 OF 492

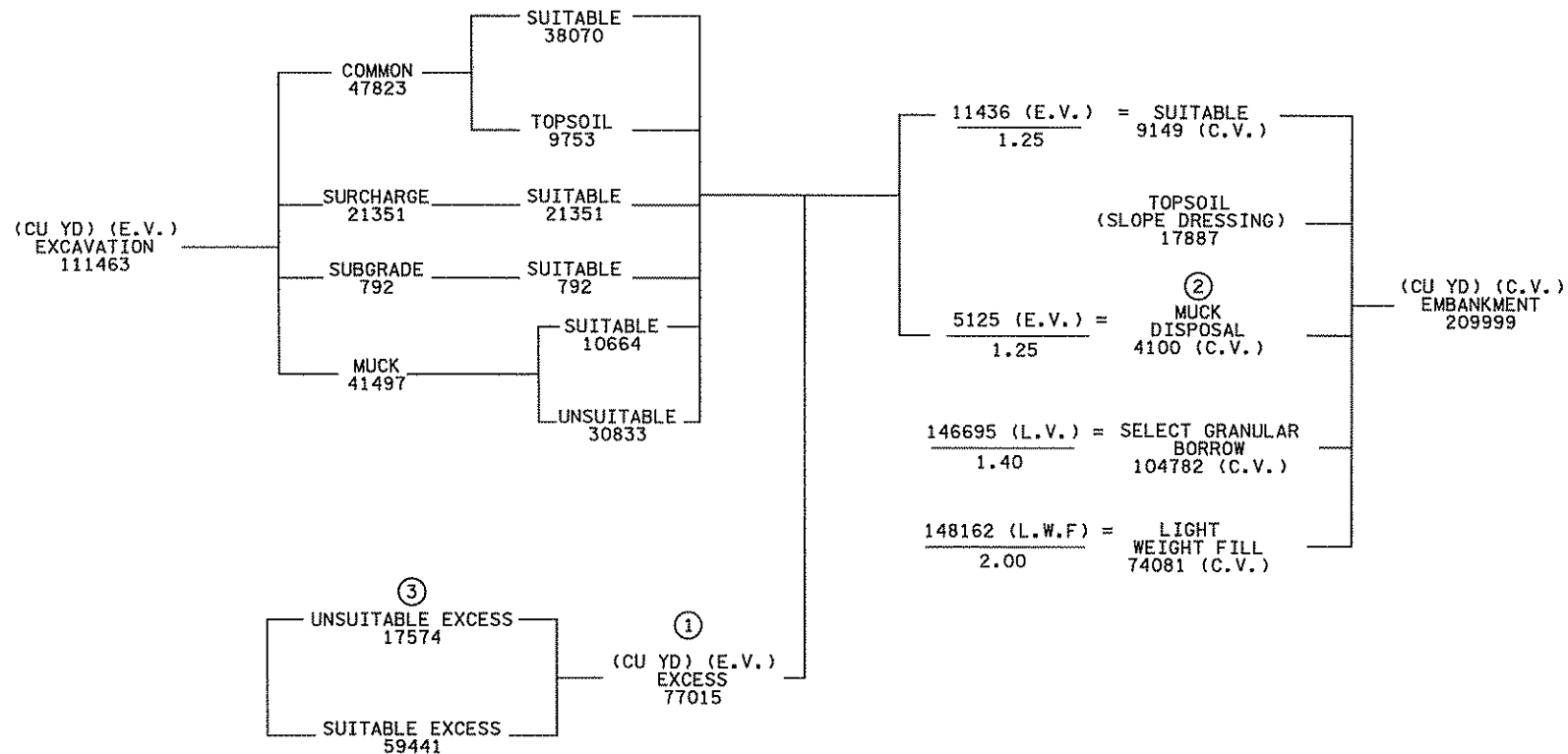
(A) OVERALL EARTHWORK SUMMARY														
ALIGNMENT	EXCAVATION TOTALS (EV)						EMBANKMENT TOTALS (CV)							
	COMMON (CY)	SUBGRADE (CY)	MUCK (CY)	SURCHARGE (3) (CY)	STRUCTURE (CY)	POND/CHANNEL (2) (CY)	SELECTED GRADING (CY)	SLOPE DRESSING (CY)	MUCK DISPOSAL (CY)	MUCK SELECT GRANULAR (CY)	ROADWAY SELECT GRANULAR (CY)	SURCHARGE SELECT GRANULAR (CY)	LIGHTWEIGHT FILL (CY)	SELECT GRANULAR MODIFIED (CY)
SEGMENT 1A	47823	792	41497	21351	0	0	9149	17887	4100	48216	2808	53758	74081	0
SEGMENT 1B	15330	83	5628	19276	0	0	1963	6184	334	7884	705	32428	34346	0
SEGMENT 2	28792	11223	0	0	338	11140	21733	3730	0	0	15326	0	0	347
SEGMENT 3	49608	17963	0	0	0	27960	33826	5952	0	0	21243	0	0	0
TOTALS	141553	30061	47125	40627	338	39100	66671	33753	4434	56100	40082	86186	108427	347

(B) SEGMENT 1A C.S.A.H. 14 (0+00 - 61+28.87) - EARTHWORK SUMMARY												
ALIGNMENT	EXCAVATION TOTALS (EV)				EMBANKMENT TOTALS (CV)							
	COMMON (CY)	SUBGRADE (CY)	MUCK (CY)	SURCHARGE (3) (CY)	SELECTED GRADING (CY)	SLOPE DRESSING (CY)	MUCK DISPOSAL (CY)	MUCK SELECT GRANULAR (CY)	ROADWAY SELECT GRANULAR (CY)	SURCHARGE SELECT GRANULAR (CY)	LIGHTWEIGHT FILL (CY)	
C.S.A.H. 14 (SUBTOTAL A)	22489	558	8623	8453	6887	6167	786	11274	1507	27715	24796	
C.S.A.H. 14 (SUBTOTAL B)	20538	234	32874	7056	2054	6772	3314	36942	1301	17644	19854	
C.S.A.H. 14 (SUBTOTAL C)	4796	0	0	5842	208	746	0	0	0	8399	15467	
TRAIL	0	0	0	0	0	4202	0	0	0	0	13964	
TOTAL	47823	792	41497	21351	9149	17887	4100	48216	2808	53758	74081	

NOTES:

- 1) TOPSOIL STRIPPING PAID FOR AS COMMON EXCAVATION
- 2) EXCAVATION SPECIAL 1
- 3) EXCAVATION SPECIAL 2

© SEGMENT 1A EARTHWORK BALANCE



SPECIFIC NOTES:

- ① EXCESS MATERIAL SHALL BE REMOVED FROM THE PROJECT LIMITS. THE CONTRACTOR SHALL OBTAIN APPROVAL FROM THE ENGINEER BEFORE HAULING EXCESS MATERIAL OFF SITE.
- ② WHEN EXCESS SUITABLE MATERIAL IS AVAILABLE, MUCK DISPOSAL WILL NOT BE REQUIRED, REPLACE IN KIND.
- ③ 8134 CY TO BE USED AS TOPSOIL (SLOPE DRESSING).

GENERAL NOTES:

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

125% SHRINKAGE FACTOR USED FROM EXCAVATED VOLUME (E.V.) TO COMPACTED VOLUME (C.V.).  
 140% SHRINKAGE FACTOR USED FROM LOOSE VOLUME (L.V.) TO COMPACTED VOLUME (C.V.).  
 200% SHRINKAGE FACTOR USED FROM LWF LOOSE VOLUME (L.W.F) TO COMPACTED VOLUME (C.V.).  
 SHRINKAGE FACTORS ARE ASSUMED VALUES, USED ONLY FOR THE PURPOSE OF ESTIMATED QUANTITIES.  
 IT SHALL BE UNDERSTOOD THAT NO WARRANTY IS MADE OR IMPLIED AS TO THE ACCURACY, SUFFICIENCY,  
 OR RELIABILITY OF THE SHRINKAGE FACTOR. SHRINKAGE FACTORS DO NOT APPLY TO TOPSOIL.

EXCESS MATERIAL SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE PROJECT LIMITS WITH NO DIRECT PAYMENT THEREFOR. THE EXCESS MATERIAL QUANTITY IS BASED ON ESTIMATED QUANTITIES. DISPOSAL SHALL BE IN ACCORDANCE WITH SPEC. 2105.

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NO	DATE	BY	CKD	APPR	REVISION

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.  
 Print Name: CHRISTOPHER M. TRBOYEVICH  
*Christopher M. Trbojevich*  
 Date: 3/26/07 License #: 41635

STATE PROJECT NO. S.P. 02-614-24, ETAL  
 DRAWN BY S. MARTINS  
 DESIGNED BY A. VACEK  
 CHECKED BY C. TRBOYEVICH  
 COMM. NO. 4994



ANOKA COUNTY  
 EARTHWORK SUMMARY  
 C.S.A.H. 14

SHEET 13 OF 492

(D) C.S.A.H. 14 SEGMENT 1A - EARTHWORK TABULATION											
STATION	EXCAVATION TOTALS (EV)				EMBANKMENT TOTALS (CV)						
	COMMON	SUBGRADE	MUCK	SURCHARGE	SELECTED GRADING	SLOPE DRESSING	MUCK DISPOSAL	MUCK SELECT GRANULAR	ROADWAY SELECT GRANULAR	SURCHARGE SELECT GRANULAR	LIGHTWEIGHT FILL
	(CY)	(CY)	(CY)	(CY)	(CY)	(CY)	(CY)	(CY)	(CY)	(CY)	(CY)
4+58.00											
5+00.00	160	50	0	0	301	184	0	0	79	0	0
5+50.00	188	55	0	0	651	269	0	0	106	0	0
5+63.83	48	14	0	0	196	74	0	0	30	0	0
6+00.00	125	36	0	0	526	189	0	0	82	0	0
6+50.00	179	55	0	0	768	249	0	0	124	0	0
7+00.00	188	62	0	0	694	231	0	0	128	0	0
7+50.00	187	67	0	0	550	209	0	0	126	0	0
8+00.00	161	66	0	0	470	185	0	0	129	0	0
8+20.35	54	23	0	0	173	69	0	0	52	0	0
8+50.00	86	47	0	0	266	119	0	0	106	0	0
9+00.00	169	68	0	0	424	241	0	0	226	0	0
9+50.00	184	15	0	0	459	223	0	0	216	0	0
10+00.00	140	0	119	0	325	134	10	396	103	0	0
10+50.00	124	0	333	0	115	88	41	797	0	0	0
11+00.00	154	0	588	0	92	105	75	987	0	0	0
11+50.00	131	0	735	0	58	99	83	1133	0	0	0
12+00.00	106	0	870	0	43	92	91	1260	0	0	0
12+50.00	97	0	1214	0	20	90	119	1621	0	0	0
13+00.00	92	0	1311	0	12	89	133	1729	0	0	0
13+30.78	355	0	798	3	12	52	70	942	0	243	196
13+50.00	409	0	513	4	10	32	34	512	0	323	239
13+75.54	541	0	632	5	18	42	40	581	0	446	346
14+00.00	518	0	547	5	20	40	33	454	0	417	387
14+50.00	729	0	755	11	50	80	45	649	0	865	588
14+95.54	354	0	208	35	46	73	12	213	0	768	398
15+50.00	439	0	0	79	42	88	0	0	0	876	603
16+00.00	389	0	0	88	24	79	0	0	0	797	541
16+44.74	400	0	0	82	15	62	0	0	0	688	486
16+89.89	444	0	0	87	14	63	0	0	0	681	531
17+00.00	84	0	0	22	3	16	0	0	0	154	117
17+50.00	404	0	0	134	18	89	0	0	0	764	579
18+00.00	444	0	0	164	22	104	0	0	0	768	638
18+50.00	480	0	0	180	22	108	0	0	0	772	693
19+00.00	498	0	0	197	21	106	0	0	0	774	721
19+50.00	505	0	0	212	18	106	0	0	0	772	730
20+00.00	505	0	0	228	16	106	0	0	0	770	733
20+50.00	490	0	0	240	16	104	0	0	0	769	732
21+00.00	470	0	0	257	12	104	0	0	0	766	724
21+50.00	460	0	0	276	9	103	0	0	0	762	710
22+00.00	466	0	0	290	7	102	0	0	0	757	707
22+50.00	451	0	0	307	4	101	0	0	0	752	691
23+00.00	409	0	0	333	1	100	0	0	0	744	645
23+50.00	385	0	0	364	0	98	0	0	0	754	613
24+00.00	393	0	0	389	0	96	0	0	0	785	609
24+50.00	444	0	0	413	0	101	0	0	0	821	631
24+86.23	347	0	0	311	0	76	0	0	0	617	465
25+00.00	132	0	0	118	0	29	0	0	0	238	175
25+50.00	517	0	0	420	1	105	0	0	0	878	674
26+00.00	614	0	0	413	3	105	0	0	0	901	779
26+50.00	702	0	0	409	5	107	0	0	0	920	881
27+00.00	747	0	0	402	6	108	0	0	0	930	935
27+50.00	814	0	0	393	10	110	0	0	0	940	1003
28+00.00	931	0	0	385	13	112	0	0	0	953	1114
28+50.00	1005	0	0	380	13	113	0	0	0	963	1179
28+78.88	585	0	0	216	7	66	0	0	0	558	681
29+00.00	433	0	0	143	13	47	0	0	0	413	508
29+38.00	680	0	0	205	119	40	0	0	0	720	788
29+84.81	943	0	0	253	134	55	0	0	0	896	1026
<b>SUBTOTAL (A)</b>	<b>22489</b>	<b>558</b>	<b>8623</b>	<b>8453</b>	<b>6887</b>	<b>6167</b>	<b>786</b>	<b>11274</b>	<b>1507</b>	<b>27715</b>	<b>24796</b>

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NO	DATE	BY	CKD	APPR	REVISION

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.  
 Print Name: CHRISTOPHER M. TRBOYEVICH  
*Christopher M. Trbojevich*  
 Date: 3/26/07 License #: 4635

STATE PROJECT NO.  
 S.P. 02-614-24, ETAL

DRAWN BY  
 S. MARTINS  
 DESIGNED BY  
 A. VACEK  
 CHECKED BY  
 C. TRBOYEVICH  
 COMM. NO. 4994



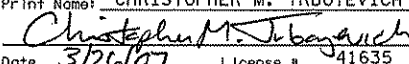
ANOKA COUNTY  
 EARTHWORK TABULATIONS  
 C.S.A.H. 14

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(D) C.S.A.H. 14 SEGMENT 1A - EARTHWORK TABULATION											
STATION	EXCAVATION TOTALS (EV)				EMBANKMENT TOTALS (CV)						
	COMMON (CY)	SUBGRADE (CY)	MUCK (CY)	SURCHARGE (CY)	SELECTED GRADING (CY)	SLOPE DRESSING (CY)	MUCK DISPOSAL (CY)	MUCK SELECT GRANULAR (CY)	ROADWAY SELECT GRANULAR (CY)	SURCHARGE SELECT GRANULAR (CY)	LIGHTWEIGHT FILL (CY)
30+00.00	384	0	0	97	6	37	0	0	0	305	410
30+50.00	1267	0	0	322	22	125	0	0	0	999	1347
31+00.00	1271	0	0	298	25	121	0	0	0	1003	1357
31+50.00	1266	0	0	271	26	109	0	0	0	1007	1381
32+00.00	1260	0	0	254	26	101	0	0	0	1009	1392
32+50.00	1233	0	187	147	28	103	0	128	0	1003	1355
33+00.00	1187	0	495	29	40	105	13	433	0	971	1198
33+50.00	1145	0	842	11	50	107	44	801	0	914	981
33+83.58	750	0	804	7	30	73	51	754	0	578	561
34+00.00	363	0	424	3	10	37	32	416	0	272	250
34+50.00	602	0	1298	5	27	116	131	1469	0	410	370
35+00.00	101	0	1317	0	34	120	161	1631	0	0	0
35+50.00	99	0	1122	0	46	123	142	1451	0	0	0
36+00.00	103	0	837	0	65	127	106	1160	0	0	0
36+50.00	109	0	800	0	72	130	104	1133	0	0	0
37+00.00	114	0	1005	0	55	132	135	1351	0	0	0
37+50.00	118	0	1252	0	43	133	170	1572	0	0	0
38+00.00	123	0	1510	0	39	135	208	1795	0	0	0
38+50.00	130	0	1814	0	27	134	251	2040	0	0	0
39+00.00	113	0	1992	0	21	128	268	2142	0	0	0
39+50.00	103	0	1838	0	24	125	236	1981	0	0	0
40+00.00	122	0	1554	0	30	123	186	1725	0	0	0
40+50.00	120	0	1293	0	33	116	141	1467	0	0	0
41+00.00	113	0	1034	0	34	112	102	1212	0	0	0
41+50.00	120	0	806	0	37	112	70	979	0	0	0
42+00.00	119	0	607	0	28	112	44	766	0	0	0
42+50.00	141	0	381	0	12	113	21	526	0	0	0
43+00.00	183	13	125	0	52	113	5	194	50	0	0
43+30.70	129	16	0	0	45	68	0	0	62	0	0
43+50.00	84	16	0	0	14	42	0	0	39	0	0
44+00.00	196	42	0	0	43	113	0	0	100	0	0
44+50.00	170	34	0	0	44	117	0	0	100	0	0
45+00.00	152	29	0	0	47	116	0	0	100	0	0
45+50.00	135	13	0	0	79	114	0	0	100	0	0
46+00.00	147	13	0	0	59	114	0	0	100	0	0
46+50.00	138	9	0	0	74	114	0	0	100	0	0
47+00.00	124	0	0	0	117	114	0	0	100	0	0
47+50.00	130	1	0	0	114	112	0	0	100	0	0
48+00.00	145	5	0	0	105	110	0	0	100	0	0
48+50.00	167	14	0	0	98	110	0	0	100	0	0
49+00.00	168	19	0	0	97	109	0	0	100	0	0
49+50.00	164	10	94	0	66	108	2	127	50	0	0
50+00.00	158	0	257	0	18	107	10	362	0	0	0
50+50.00	142	0	426	0	1	109	24	570	0	0	0
51+00.00	154	0	658	0	1	114	42	773	0	0	0
51+50.00	192	0	923	0	2	120	61	988	0	0	0
52+00.00	203	0	1195	0	3	124	91	1219	0	0	0
52+50.00	187	0	1480	0	2	125	132	1467	0	0	0
53+00.00	151	0	1500	0	7	128	139	1497	0	0	0
53+50.00	294	0	1174	15	20	132	103	1216	0	339	26
54+00.00	583	0	865	80	30	138	58	862	0	717	230
54+50.00	575	0	671	111	18	136	24	540	0	813	462
55+00.00	461	0	294	283	6	133	7	195	0	917	703
55+50.00	473	0	0	564	2	134	0	0	0	984	971
56+00.00	463	0	0	724	0	135	0	0	0	1021	1124
56+50.00	452	0	0	853	0	136	0	0	0	1054	1260
57+00.00	434	0	0	949	0	138	0	0	0	1086	1396
57+50.00	426	0	0	1004	0	140	0	0	0	1119	1539
58+00.00	382	0	0	1029	0	140	0	0	0	1123	1541
<b>SUBTOTAL (B)</b>	<b>20538</b>	<b>234</b>	<b>32874</b>	<b>7056</b>	<b>2054</b>	<b>6772</b>	<b>3314</b>	<b>36942</b>	<b>1301</b>	<b>17644</b>	<b>19854</b>

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NO	DATE	BY	CKD	APPR	REVISION

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.  
 Print Name: CHRISTOPHER M. TRBOYEVICH  
  
 Date: 3/26/07 License #: 41635

STATE PROJECT NO.  
 S.P. 02-614-24, ETAL

DRAWN BY  
 S. MARTINS  
 DESIGNED BY  
 A. VACEK  
 CHECKED BY  
 C. TRBOYEVICH  
 COMM. NO. 4994



ANOKA COUNTY  
 EARTHWORK TABULATIONS  
 C.S.A.H. 14

SHEET  
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 492



(D) C.S.A.H. 14 SEGMENT 1A - EARTHWORK TABULATION											
STATION	EXCAVATION TOTALS (EV)				EMBANKMENT TOTALS (CV)						
	COMMON (CY)	SUBGRADE (CY)	MUCK (CY)	SURCHARGE (CY)	SELECTED GRADING (CY)	SLOPE DRESSING (CY)	MUCK DISPOSAL (CY)	MUCK SELECT GRANULAR (CY)	ROADWAY SELECT GRANULAR (CY)	SURCHARGE SELECT GRANULAR (CY)	LIGHTWEIGHT FILL (CY)
58+50.00	435	0	0	1001	30	153	0	0	0	1159	1705
59+00.00	578	0	0	917	30	143	0	0	0	1227	2044
59+50.00	678	0	0	860	0	117	0	0	0	1268	2271
60+00.00	783	0	0	817	11	109	0	0	0	1313	2522
60+50.00	834	0	0	873	13	108	0	0	0	1352	2736
61+00.00	909	0	0	1042	2	88	0	0	0	1392	2948
61+28.87	579	0	0	332	122	28	0	0	0	688	1241
<b>SUBTOTAL (C)</b>	<b>4796</b>	<b>0</b>	<b>0</b>	<b>5842</b>	<b>208</b>	<b>746</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>8399</b>	<b>15467</b>
<b>TOTAL</b>	<b>47823</b>	<b>792</b>	<b>41497</b>	<b>21351</b>	<b>9149</b>	<b>13685</b>	<b>4100</b>	<b>48216</b>	<b>2808</b>	<b>53758</b>	<b>60117</b>

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 Print Name: CHRISTOPHER M. TRBOYEVICH  
*Christopher M. Trbojevich*  
 Date: 3/26/07 License # 41635

STATE PROJECT NO.  
S.P. 02-614-24, ETAL

DRAWN BY  
S. MARTINS  
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C. TRBOYEVICH  
COMM. NO. 4994



ANOKA COUNTY  
EARTHWORK TABULATIONS  
C.S.A.H. 14

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OF  
492

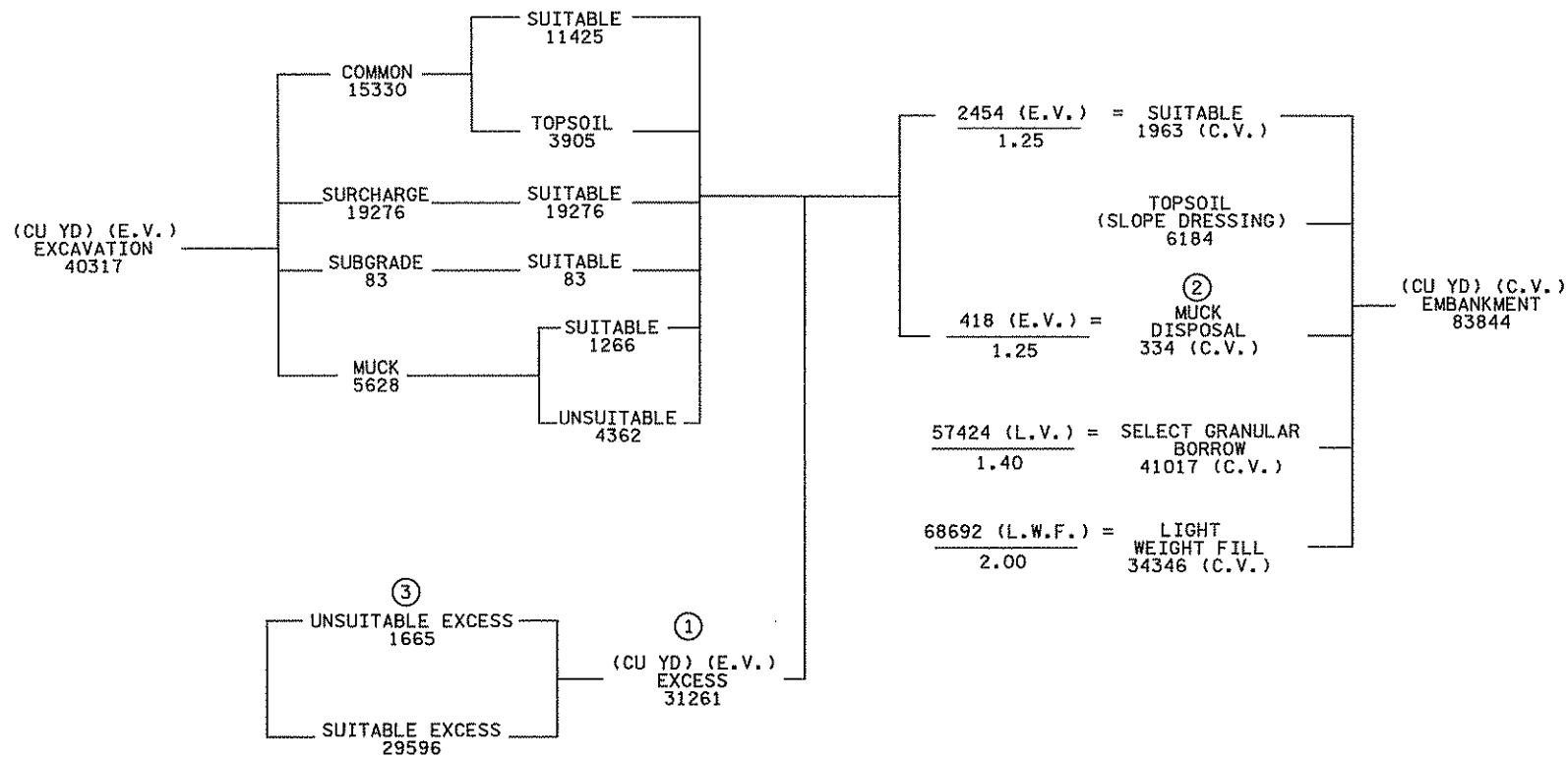
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NO	DATE	BY	CKD	APPR	REVISION

(E) SEGMENT 1B C.S.A.H. 14 (62+18.87 - 83+89.52) - EARTHWORK SUMMARY											
ALIGNMENT	EXCAVATION TOTALS (EV)				EMBANKMENT TOTALS (CV)						
	COMMON (CY)	SUBGRADE (CY)	MUCK (CY)	SURCHARGE (3) (CY)	SELECTED GRADING (CY)	SLOPE DRESSING (CY)	MUCK DISPOSAL (CY)	MUCK SELECT GRANULAR (CY)	ROADWAY SELECT GRANULAR (CY)	SURCHARGE SELECT GRANULAR (CY)	LIGHT WEIGHT FILL (CY)
C.S.A.H. 14 (SUBTOTAL A)	15057	83	5628	18975	1419	4418	334	7884	705	29498	27962
TRAIL	0	0	0	0	0	1638	0	0	0	0	4407
BOAT ACCESS	273	0	0	301	544	128	0	0	0	2930	1977
<b>TOTAL</b>	<b>15330</b>	<b>83</b>	<b>5628</b>	<b>19276</b>	<b>1963</b>	<b>6184</b>	<b>334</b>	<b>7884</b>	<b>705</b>	<b>32428</b>	<b>34346</b>

- NOTES:  
 1) TOPSOIL STRIPPING PAID FOR AS COMMON EXCAVATION  
 3) EXCAVATION SPECIAL 2

(F) SEGMENT 1B EARTHWORK BALANCE



SPECIFIC NOTES:

- EXCESS MATERIAL SHALL BE REMOVED FROM THE PROJECT LIMITS. THE CONTRACTOR SHALL OBTAIN APPROVAL FROM THE ENGINEER BEFORE HAULING EXCESS MATERIAL OFF SITE.
- WHEN EXCESS SUITABLE MATERIAL IS AVAILABLE, MUCK DISPOSAL WILL NOT BE REQUIRED, REPLACE IN KIND.
- 2279 CY TO BE USED AS TOPSOIL (SLOPE DRESSING).

GENERAL NOTES:

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

125% SHRINKAGE FACTOR USED FROM EXCAVATED VOLUME (E.V.) TO COMPACTED VOLUME (C.V.).  
 140% SHRINKAGE FACTOR USED FROM LOOSE VOLUME (L.V.) TO COMPACTED VOLUME (C.V.).  
 200% SHRINKAGE FACTOR USED FROM LWF LOOSE VOLUME (L.W.F.) TO COMPACTED VOLUME (C.V.).  
 SHRINKAGE FACTORS ARE ASSUMED VALUES, USED ONLY FOR THE PURPOSE OF ESTIMATED QUANTITIES.  
 IT SHALL BE UNDERSTOOD THAT NO WARRANTY IS MADE OR IMPLIED AS TO THE ACCURACY, SUFFICIENCY,  
 OR RELIABILITY OF THE SHRINKAGE FACTOR. SHRINKAGE FACTORS DO NOT APPLY TO TOPSOIL.

EXCESS MATERIAL SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE PROJECT LIMITS WITH NO DIRECT PAYMENT THEREFOR. THE EXCESS MATERIAL QUANTITY IS BASED ON ESTIMATED QUANTITIES. DISPOSAL SHALL BE IN ACCORDANCE WITH SPEC. 2105.

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NO	DATE	BY	CKD	APPR	REVISION

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 Print Name: CHRISTOPHER M. TRBOYEVICH  
*Christopher M. Trbojevich*  
 Date: 3/26/07 License # 41635

STATE PROJECT NO. S.P. 02-614-24, ETAL

DRAWN BY S. MARTINS  
 DESIGNED BY A. VACEK  
 CHECKED BY C. TRBOYEVICH  
 COMM. NO. 4994



ANOKA COUNTY  
 EARTHWORK SUMMARY  
 C.S.A.H. 14

SHEET 17 OF 492

(G) C.S.A.H. 14 SEGMENT 1B - EARTHWORK TABULATION											
STATION	EXCAVATION TOTALS (EV)				EMBANKMENT TOTALS (CV)						
	COMMON	SUBGRADE	MUCK	SURCHARGE	SELECTED GRADING	SLOPE DRESSING	MUCK DISPOSAL	MUCK SELECT GRANULAR	ROADWAY SELECT GRANULAR	SURCHARGE SELECT GRANULAR	LIGHTWEIGHT FILL
	(CY)	(CY)	(CY)	(CY)	(CY)	(CY)	(CY)	(CY)	(CY)	(CY)	(CY)
62+18.87											
62+50.00	533	0	0	823	0	34	0	0	0	833	1693
63+00.00	814	0	0	1026	0	65	0	0	0	1301	2512
63+50.00	702	0	0	787	11	74	0	0	0	1271	2211
64+00.00	559	0	0	697	22	83	0	0	0	1212	1793
64+50.00	451	0	0	761	12	97	0	0	0	1155	1478
64+65.34	128	0	0	269	1	36	0	0	0	347	435
65+00.00	321	0	0	635	5	90	0	0	0	801	1002
65+50.00	504	0	0	947	7	138	0	0	0	1178	1404
66+00.00	523	0	0	920	3	131	0	0	0	1180	1325
66+50.00	522	0	0	829	0	118	0	0	0	1188	1267
67+00.00	450	0	0	695	0	115	0	0	0	1138	1178
67+50.00	296	0	0	575	0	114	0	0	0	1071	1009
68+00.00	240	0	0	526	0	113	0	0	0	1058	899
68+50.00	343	0	0	509	0	112	0	0	0	1035	838
69+00.00	411	0	0	499	0	111	0	0	0	954	699
69+50.00	384	0	0	501	0	109	0	0	0	892	610
70+00.00	345	0	0	511	0	109	0	0	0	881	566
70+27.17	183	0	0	282	0	59	0	0	0	474	290
70+50.00	156	0	0	225	3	44	0	0	0	398	237
70+72.16	155	0	0	207	14	29	0	0	0	389	224
71+00.00	198	0	0	261	22	34	0	0	0	489	269
71+26.00	188	0	0	264	8	47	0	0	0	459	246
71+50.00	176	0	0	269	0	52	0	0	0	426	233
72+00.00	379	0	0	606	0	107	0	0	0	896	516
72+50.00	401	0	0	664	0	106	0	0	0	906	559
73+00.00	423	0	0	701	0	107	0	0	0	916	600
73+50.00	435	0	0	741	0	108	0	0	0	925	636
74+00.00	425	0	0	839	0	109	0	0	0	933	674
74+50.00	434	0	0	925	0	109	0	0	0	948	733
75+00.00	460	0	0	929	0	108	0	0	0	953	750
75+46.00	418	0	539	461	0	99	4	194	0	844	555
76+06.56	511	0	1092	64	13	129	34	796	0	1019	404
76+50.00	340	0	695	17	14	93	55	920	0	663	98
77+00.00	246	0	838	10	17	108	70	1123	0	365	19
77+50.00	112	0	582	0	25	110	51	922	0	0	0
78+00.00	115	0	371	0	39	111	34	728	0	0	0
78+50.00	126	0	278	0	38	111	24	611	0	0	0
79+00.00	142	0	278	0	25	112	18	569	0	0	0
79+50.00	178	0	267	0	17	114	14	527	0	0	0
80+00.00	217	0	236	0	8	117	11	485	0	0	0
80+21.57	106	0	88	0	3	52	4	197	0	0	0
80+50.00	107	0	122	0	8	63	6	266	0	0	0
80+77.84	50	0	127	0	10	47	5	254	0	0	0
81+00.00	30	0	74	0	12	35	2	172	0	0	0
81+34.40	111	0	41	0	107	70	2	120	0	0	0
81+50.00	79	1	0	0	67	36	0	0	21	0	0
82+00.00	237	5	0	0	159	108	0	0	133	0	0
82+50.00	166	2	0	0	171	87	0	0	131	0	0
83+00.00	104	0	0	0	189	64	0	0	129	0	0
83+50.00	71	42	0	0	176	47	0	0	171	0	0
83+89.52	52	33	0	0	213	37	0	0	120	0	0
<b>TOTAL</b>	<b>15057</b>	<b>83</b>	<b>5628</b>	<b>18975</b>	<b>1419</b>	<b>4418</b>	<b>334</b>	<b>7884</b>	<b>705</b>	<b>29498</b>	<b>27962</b>

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 Print Name: CHRISTOPHER M. TRBOYEVICH  
*Christopher M. Trbojevich*  
 Date: 3/26/07 License #: 41635

STATE PROJECT NO. S.P. 02-614-24, ETAL

DRAWN BY S. MARTINS  
 DESIGNED BY A. VACEK  
 CHECKED BY C. TRBOYEVICH  
 COMM. NO. 4994



ANOKA COUNTY  
 EARTHWORK TABULATIONS  
 C.S.A.H. 14

SHEET 18 OF 492

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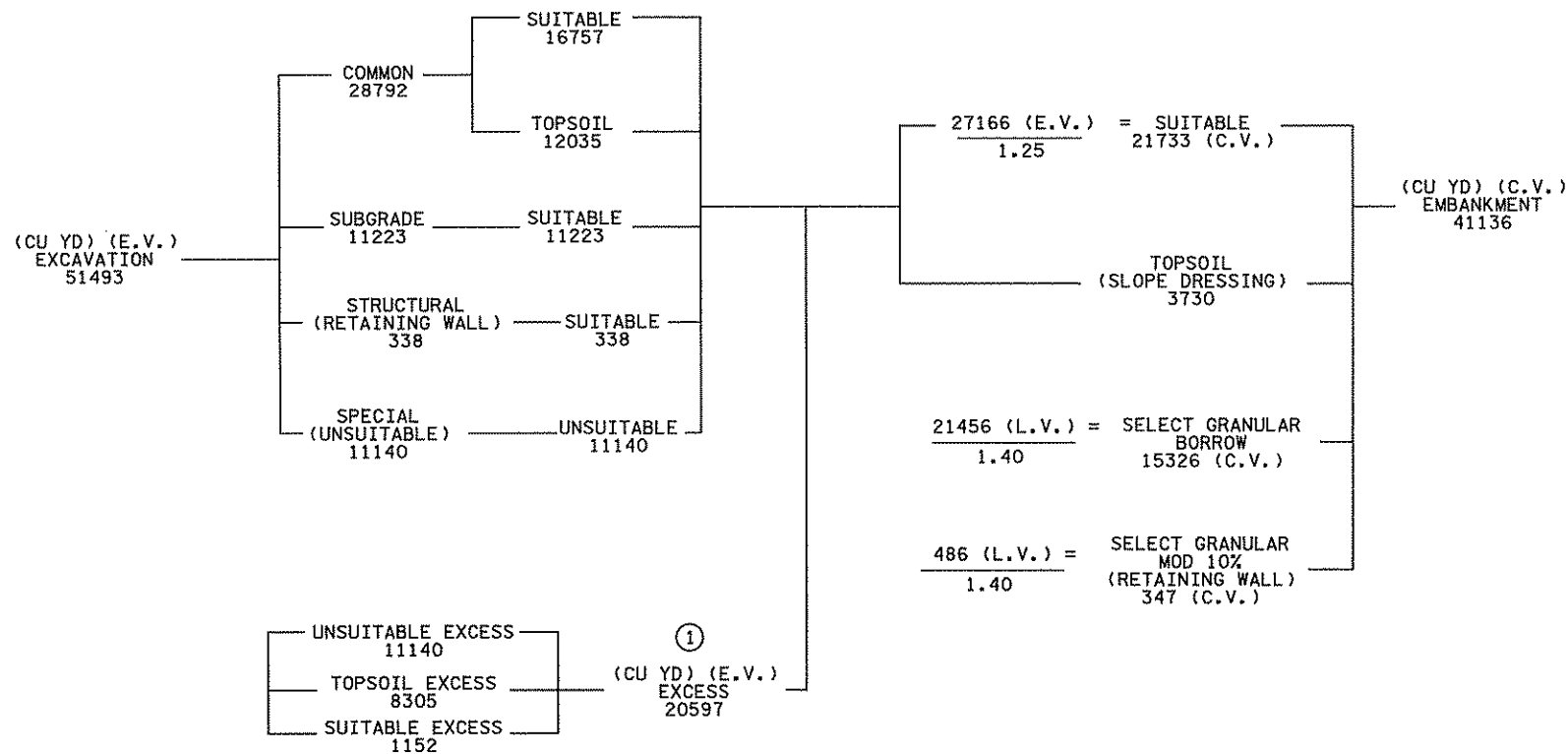
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(J) SEGMENT 2 C.S.A.H. 14 (83+89.52 - 138+00) - EARTHWORK SUMMARY								
ALIGNMENT	EXCAVATION TOTALS (EV)				EMBANKMENT TOTALS (CV)			
	COMMON (CY)	SUBGRADE (CY)	STRUCTURE (CY)	POND/CHANNEL (2) (CY)	SELECTED GRADING (CY)	SLOPE DRESSING (CY)	ROADWAY SELECT GRANULAR (CY)	SELECT GRANULAR MODIFIED (CY)
C.S.A.H. 14 (SUBTOTAL A)	9068	4791	338	0	5471	1353	7210	347
C.S.A.H. 14 (SUBTOTAL B)	8682	2915	0	0	6817	1794	4528	0
C.S.A.H. 14 (SUBTOTAL C)	5024	2100	0	0	108	297	2100	0
C.S.A.H. 14 TEMPORARY WIDENING	4502	0	0	0	3280	0	0	0
PELTIER RD.	450	300	0	0	405	101	325	0
LAKELAND CIR.	225	373	0	0	163	87	416	0
CENTERVILLE RD.	841	744	0	0	79	98	747	0
PELTIER POND	0	0	0	430	60	0	0	0
LAKELAND NORTH POND	0	0	0	1400	480	0	0	0
LAKELAND SOUTH POND	0	0	0	4010	470	0	0	0
CLEARWATER NORTH POND (3)	0	0	0	5300	4400	0	0	0
<b>TOTAL</b>	<b>28792</b>	<b>11223</b>	<b>338</b>	<b>11140</b>	<b>21733</b>	<b>3730</b>	<b>15326</b>	<b>347</b>

NOTES:

- 1) TOPSOIL STRIPPING PAID FOR AS COMMON EXCAVATION
- 2) EXCAVATION SPECIAL 1
- 3) INCLUDES CLEARWATER CREEK REALIGNMENT

Ⓚ SEGMENT 2 EARTHWORK BALANCE



SPECIFIC NOTES:

- 1) EXCESS MATERIAL SHALL BE REMOVED FROM THE PROJECT LIMITS. THE CONTRACTOR SHALL OBTAIN APPROVAL FROM THE ENGINEER BEFORE HAULING EXCESS MATERIAL OFF SITE.

GENERAL NOTES:

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

125% SHRINKAGE FACTOR USED FROM EXCAVATED VOLUME (E.V.) TO COMPACTED VOLUME (C.V.).  
 140% SHRINKAGE FACTOR USED FROM LOOSE VOLUME (L.V.) TO COMPACTED VOLUME (C.V.).  
 200% SHRINKAGE FACTOR USED FROM LWF LOOSE VOLUME (L.W.F.) TO COMPACTED VOLUME (C.V.).  
 SHRINKAGE FACTORS ARE ASSUMED VALUES, USED ONLY FOR THE PURPOSE OF ESTIMATED QUANTITIES.  
 IT SHALL BE UNDERSTOOD THAT NO WARRANTY IS MADE OR IMPLIED AS TO THE ACCURACY, SUFFICIENCY,  
 OR RELIABILITY OF THE SHRINKAGE FACTOR. SHRINKAGE FACTORS DO NOT APPLY TO TOPSOIL.

EXCESS MATERIAL SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE PROJECT LIMITS WITH NO DIRECT PAYMENT THEREFOR. THE EXCESS MATERIAL QUANTITY IS BASED ON ESTIMATED QUANTITIES. DISPOSAL SHALL BE IN ACCORDANCE WITH SPEC. 2105.

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.  
 Print Name: CHRISTOPHER M. TRBOYEVICH  
*Christopher M. Trbojevich*  
 Date: 3/26/07 License #: 41635

STATE PROJECT NO.  
 S.P. 02-614-24, ETAL

DRAWN BY  
 S. MARTINS  
 DESIGNED BY  
 A. VACEK  
 CHECKED BY  
 C. TRBOYEVICH  
 COMM. NO. 4994



ANOKA COUNTY  
 EARTHWORK SUMMARY  
 C.S.A.H. 14

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NO	DATE	BY	CKD	APPR	REVISION



(L) C.S.A.H. 14 SEGMENT 2 - EARTHWORK TABULATION							
STATION	EXCAVATION TOTALS (EV)			EMBANKMENT TOTALS (CV)			
	COMMON	SUBGRADE	STRUCTURE	SELECTED GRADING	SLOPE DRESSING	ROADWAY SELECT GRANULAR	SELECT GRANULAR MODIFIED
	(CY)	(CY)	(CY)	(CY)	(CY)	(CY)	(CY)
131+00.00	534	131	0	6	30	131	0
131+50.00	348	155	0	3	11	155	0
132+00.00	296	161	0	6	11	161	0
132+16.90	102	40	0	4	8	40	0
132+50.00	201	76	0	7	15	76	0
133+00.00	306	114	0	10	17	114	0
133+50.00	342	114	0	10	19	114	0
133+88.10	325	87	0	5	19	87	0
134+00.00	111	27	0	1	6	27	0
134+50.00	434	115	0	5	29	115	0
134+64.50	114	33	0	1	10	33	0
135+00.00	237	161	0	1	12	161	0
135+13.00	61	91	0	0	0	91	0
135+57.30	184	214	0	3	10	214	0
136+00.00	203	104	0	10	20	104	0
136+43.90	200	107	0	13	16	107	0
136+74.80	147	75	0	6	9	75	0
137+00.00	155	61	0	3	10	61	0
137+34.50	248	80	0	4	17	80	0
137+58.00	161	54	0	3	12	54	0
137+66.40	65	20	0	1	3	20	0
<b>SUBTOTAL (C)</b>	<b>5024</b>	<b>2100</b>	<b>0</b>	<b>108</b>	<b>297</b>	<b>2100</b>	<b>0</b>
<b>TOTAL</b>	<b>22774</b>	<b>9806</b>	<b>338</b>	<b>12396</b>	<b>3444</b>	<b>13838</b>	<b>347</b>

(M) PELTIER LAKE RD. - EARTHWORK TABULATION					
STATION	EXCAVATION TOTALS (EV)		EMBANKMENT TOTALS (CV)		
	COMMON	SUBGRADE	SELECTED GRADING	SLOPE DRESSING	ROADWAY SELECT GRANULAR
	(CY)	(CY)	(CY)	(CY)	(CY)
800+52.22					
800+78.05	172	46	58	28	46
801+00.00	97	39	60	19	39
801+43.64	105	73	114	33	77
801+73.70	36	46	57	6	53
801+99.92	19	40	49	5	46
802+10.74	6	17	20	3	19
802+12.31	1	2	3	0	3
802+36.00	14	37	44	7	42
<b>TOTAL</b>	<b>450</b>	<b>300</b>	<b>405</b>	<b>101</b>	<b>325</b>

(N) LAKELAND CIR. - EARTHWORK TABULATION					
STATION	EXCAVATION TOTALS (EV)		EMBANKMENT TOTALS (CV)		
	COMMON	SUBGRADE	SELECTED GRADING	SLOPE DRESSING	ROADWAY SELECT GRANULAR
	(CY)	(CY)	(CY)	(CY)	(CY)
900+54.56					
901+00.00	128	114	84	38	124
901+50.00	63	112	57	24	117
901+74.18	10	45	5	7	51
902+00.00	11	46	7	8	55
902+32.50	13	56	10	10	69
<b>TOTAL</b>	<b>225</b>	<b>373</b>	<b>163</b>	<b>87</b>	<b>416</b>

(H) ACCESS - EARTHWORK TABULATION						
STATION	EXCAVATION TOTALS (EV)		EMBANKMENT TOTALS (CV)			
	COMMON	SURCHARGE	SELECTED GRADING	SLOPE DRESSING	SURCHARGE SELECT GRANULAR	LIGHT WEIGHT FILL
	(CY)	(CY)	(CY)	(CY)	(CY)	(CY)
700+57.00						
700+72.37	17	26	67	14	219	148
701+00.00	28	43	96	21	394	266
701+50.00	49	74	144	34	713	481
702+00.00	50	75	153	36	713	481
702+50.00	77	61	84	21	713	481
702+74.90	52	22	0	2	178	120
<b>TOTAL</b>	<b>273</b>	<b>301</b>	<b>544</b>	<b>128</b>	<b>2930</b>	<b>1977</b>

(P) CENTERVILLE RD. - EARTHWORK TABULATION					
STATION	EXCAVATION TOTALS (EV)		EMBANKMENT TOTALS (CV)		
	COMMON	SUBGRADE	SELECTED GRADING	SLOPE DRESSING	ROADWAY SELECT GRANULAR
	(CY)	(CY)	(CY)	(CY)	(CY)
652+74.37					
652+89.39	8	39	1	1	41
653+00.00	11	29	0	1	30
653+33.94	116	103	15	13	103
654+41.96	516	330	51	53	330
655+00.00	160	166	7	21	166
655+28.37	30	77	5	9	77
<b>TOTAL</b>	<b>841</b>	<b>744</b>	<b>79</b>	<b>98</b>	<b>747</b>

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NO	DATE	BY	CKD	APPR	REVISION

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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.  
 Print Name: CHRISTOPHER M. TRBOYEVICH  
*Christopher M. Trbojevich*  
 Date: 3/26/07 License #: 41635

STATE PROJECT NO.  
S.P. 02-614-24, ETAL

DRAWN BY  
S. MARTINS  
DESIGNED BY  
A. VACEK  
CHECKED BY  
C. TRBOYEVICH  
COMM. NO. 4994



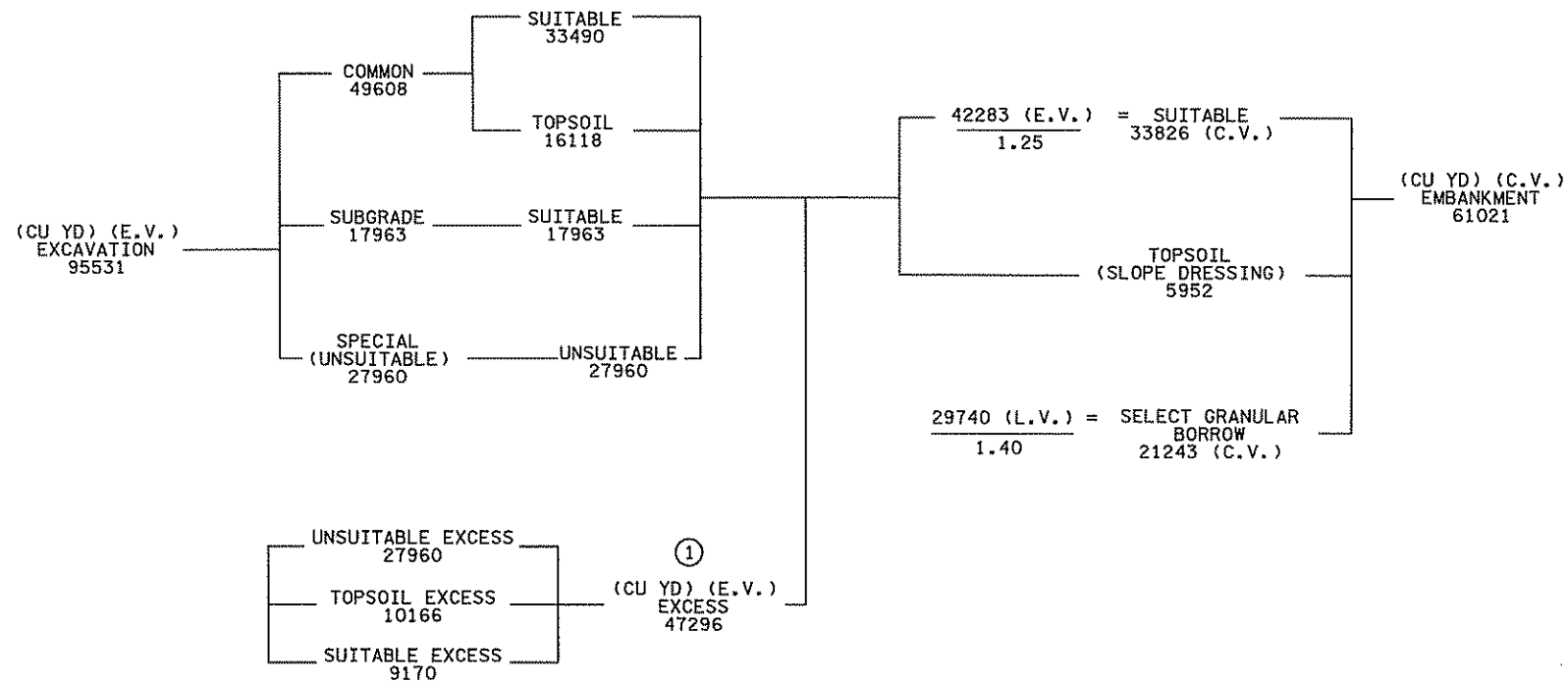
ANOKA COUNTY  
EARTHWORK TABULATIONS  
C.S.A.H. 14

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(Q) SEGMENT 3 C.S.A.H. 14 (138+00 - 192+00) - EARTHWORK SUMMARY						
ALIGNMENT	EXCAVATION TOTALS (EV)			EMBANKMENT TOTALS (CV)		
	COMMON (CY)	SUBGRADE (CY)	POND/CHANNEL (2) (CY)	SELECTED GRADING (CY)	SLOPE DRESSING (CY)	ROADWAY SELECT GRANULAR (CY)
C.S.A.H. 14 (SUBTOTAL A)	8443	3769	0	3093	994	4054
C.S.A.H. 14 (SUBTOTAL B)	14327	5871	0	1910	1107	6046
C.S.A.H. 14 (SUBTOTAL C)	12170	4197	0	13387	2501	6035
C.S.A.H. 14 TEMPORARY WIDENING	2614	0	0	7094	0	0
C.S.A.H. 54 (S)	3524	1591	0	1907	620	2372
C.S.A.H. 54 (S) TEMPORARY WIDENING	659	0	0	2192	0	0
C.S.A.H. 54 (N)	7368	2535	0	562	730	2736
C.S.A.H. 54 (N) TEMPORARY WIDENING	503	0	0	1241	0	0
CLEARWATER SOUTH POND	0	0	1750	630	0	0
CITY HALL POND	0	0	7170	250	0	0
DITCH 55 EAST POND	0	0	12460	840	0	0
DITCH 55 WEST POND	0	0	6580	720	0	0
<b>TOTAL</b>	<b>49608</b>	<b>17963</b>	<b>27960</b>	<b>33826</b>	<b>5952</b>	<b>21243</b>

NOTES:  
 1) TOPSOIL STRIPPING PAID FOR AS COMMON EXCAVATION  
 2) EXCAVATION SPECIAL 1

Ⓜ EARTHWORK BALANCE



SPECIFIC NOTES:  
 ① EXCESS MATERIAL SHALL BE REMOVED FROM THE PROJECT LIMITS. THE CONTRACTOR SHALL OBTAIN APPROVAL FROM THE ENGINEER BEFORE HAULING EXCESS MATERIAL OFF SITE.

GENERAL NOTES:  
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NO	DATE	BY	CKD	APPR	REVISION

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.  
 Print Name: CHRISTOPHER M. TRBOYEVICH  
*Christopher M. Trbojevich*  
 Date: 3/26/07 License #: 41635

STATE PROJECT NO. S.P. 02-614-24, ETAL

DRAWN BY S. MARTINS  
 DESIGNED BY A. VACEK  
 CHECKED BY C. TRBOYEVICH  
 COMM. NO. 4994



ANOKA COUNTY  
 EARTHWORK SUMMARY  
 C.S.A.H. 14

SHEET 22 OF 492

(S) C.S.A.H. 14 SEGMENT 3 - EARTHWORK TABULATION. Table with 6 columns: STATION, COMMON (CY), SUBGRADE (CY), SELECTED GRADING (CY), SLOPE DRESSING (CY), ROADWAY SELECT GRANULAR (CY). Rows include stations from 138+00.00 to 154+60.11. Summary row: SUBTOTAL (A) 8443, 3769, 3093, 994, 4054.

(S) C.S.A.H. 14 SEGMENT 3 - EARTHWORK TABULATION. Table with 6 columns: STATION, COMMON (CY), SUBGRADE (CY), SELECTED GRADING (CY), SLOPE DRESSING (CY), ROADWAY SELECT GRANULAR (CY). Rows include stations from 155+00.00 to 173+50.00. Summary row: SUBTOTAL (B) 14327, 5871, 1910, 1107, 6046.

(S) C.S.A.H. 14 SEGMENT 3 - EARTHWORK TABULATION. Table with 6 columns: STATION, COMMON (CY), SUBGRADE (CY), SELECTED GRADING (CY), SLOPE DRESSING (CY), ROADWAY SELECT GRANULAR (CY). Rows include stations from 174+00.00 to 180+00.00. Summary rows: SUBTOTAL (C) 12170, 4197, 13387, 2501, 6035. TOTAL 34940, 13837, 18390, 4602, 16135.

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Table with 5 columns: NO, DATE, BY, CKD, APPR. Includes a REVISION section and a footer row with text: ...4994-f\h1-m\plan\4994-f.ETG

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. Print Name: CHRISTOPHER M. TRBOYEVICH Date: 3/26/07 License: 41635

STATE PROJECT NO. S.P. 02-614-24, ETAL

DRAWN BY S. MARTINS DESIGNED BY A. VACEK CHECKED BY C. TRBOYEVICH COMM. NO. 4994



ANOKA COUNTY EARTHWORK TABULATIONS C.S.A.H. 14 SHEET 23 OF 492



(T) C.S.A.H. 54 (S) - EARTHWORK TABULATION					
STATION	EXCAVATION TOTALS (EV)		EMBANKMENT TOTALS (CV)		
	COMMON	SUBGRADE	SELECTED GRADING	SLOPE DRESSING	ROADWAY SELECT GRANULAR
	(CY)	(CY)	(CY)	(CY)	(CY)
304+00.00					
304+50.00	38	19	46	15	22
304+80.15	65	30	85	29	40
305+00.00	57	21	71	24	38
305+50.00	155	38	171	58	107
306+00.00	163	28	235	63	112
306+50.00	168	26	265	63	117
307+00.00	160	31	257	55	122
307+50.00	137	36	198	49	128
308+00.00	170	102	104	35	169
308+75.00	249	240	137	31	337
309+00.00	68	63	83	14	107
309+50.00	172	111	155	37	187
309+73.00	99	60	45	16	86
310+00.00	132	97	22	15	111
310+50.00	364	197	6	25	197
311+00.00	436	166	9	30	166
311+50.00	416	160	9	31	160
312+00.00	475	166	9	30	166
<b>TOTAL</b>	<b>3524</b>	<b>1591</b>	<b>1907</b>	<b>620</b>	<b>2372</b>

(U) C.S.A.H. 54 (N) - EARTHWORK TABULATION					
STATION	EXCAVATION TOTALS (EV)		EMBANKMENT TOTALS (CV)		
	COMMON	SUBGRADE	SELECTED GRADING	SLOPE DRESSING	ROADWAY SELECT GRANULAR
	(CY)	(CY)	(CY)	(CY)	(CY)
313+57.05					
313+78.57	289	91	5	4	91
314+00.00	332	84	3	12	84
314+25.09	429	89	4	23	89
314+50.00	440	84	3	21	84
314+73.41	410	76	3	19	76
315+00.00	434	86	7	24	86
315+50.00	734	161	15	44	161
315+61.62	154	37	3	9	37
316+00.00	503	123	4	28	123
316+29.61	366	94	2	19	94
316+50.00	238	64	2	14	64
316+93.18	457	133	3	25	133
317+16.00	213	69	7	12	69
317+39.82	227	69	17	13	70
318+00.00	463	155	70	42	165
318+24.44	129	56	37	21	63
318+50.00	131	57	43	22	65
319+00.00	237	112	103	52	128
319+50.00	168	124	57	33	133
319+74.82	69	88	1	3	88
320+00.00	90	86	1	10	88
320+50.00	191	112	19	46	133
321+00.00	169	101	33	53	132
321+50.00	151	102	27	51	128
322+00.00	106	74	22	37	96
322+24.82	32	23	13	12	32
322+50.00	30	23	14	11	32
323+00.00	55	47	22	21	61
323+50.00	51	47	15	20	58
324+00.00	45	45	7	19	50
324+26.89	25	23	0	10	23
<b>TOTAL</b>	<b>7368</b>	<b>2535</b>	<b>562</b>	<b>730</b>	<b>2736</b>

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NO	DATE	BY	CKD	APPR	REVISION

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.  
 Print Name: CHRISTOPHER M. TRBOYEVICH  
*Christopher M. Trbojevich*  
 Date: 3/20/07 License #: 41635

STATE PROJECT NO. S.P. 02-614-24, ETAL  
 DRAWN BY S. MARTINS  
 DESIGNED BY J. TOULOUSE  
 CHECKED BY C. TRBOYEVICH  
 COMM. NO. 4994



ANOKA COUNTY  
 EARTHWORK TABULATIONS  
 C.S.A.H. 14

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(X) ALIGNMENT	STATION TO STATION	REMOVALS, SAWING AND MILLING								
		(B) REMOVE (SPEC. 2104)						(A), (B), (C), (D) SAWING (SPEC. 2104)		(B) MILLING (SPEC. 2232)
		BITUMINOUS PAVEMENT (SQ YD)	BITUMINOUS WALK (SQ FT)	CONCRETE PAVEMENT (SQ YD)	CONCRETE WALK (SQ FT)	CURB & GUTTER (LIN FT)	BITUMINOUS PAVEMENT (LIN FT)	CONCRETE PAVEMENT (LIN FT)	BITUMINOUS SURFACE (2") (SQ YD)	
C.S.A.H. 14	4+22.6 - 69+49.3	18000						72		
C.S.A.H. 14	69+49.3 - 184+58.7	55700	4350	360	2597	2350	10780	155		
C.S.A.H. 14	184+58.7 - 192+53.7	3952					728		3520	
WOODLAND DR.	600+61.2 - 602+02.0						46			
PARK ENTRANCE	10+24.7 - 11+19.4						24			
PARK ENTRANCE	12+57.2 - 13+25.8						26			
ACCESS	700+66.0 - 702+75.0									
PELTIER LAKE RD.	800+63.8 - 802+36.4	470					156			
LAKELAND CIR. (N)	900+64.3 - 902+32.5	700				365	63			
LAKELAND CIR. (S)	20+06.6 - 20+25.6						88			
CENTERVILLE RD.	652+74.4 - 653+19.5	850				102	154			
CENTERVILLE RD.	654+46.8 - 655+28.4	250			713	110	84			
<b>SUBTOTAL</b>		<b>79922</b>	<b>4350</b>	<b>360</b>	<b>3310</b>	<b>2927</b>	<b>12221</b>	<b>155</b>	<b>3520</b>	
C.S.A.H. 54 (S)	304+16.8 - 311+89.5	1680					1534		940	
C.S.A.H. 54 (N)	313+78.5 - 323+86.5	2420				24	1958		1300	
<b>SUBTOTAL</b>		<b>4100</b>				<b>24</b>	<b>3492</b>		<b>2240</b>	
<b>PROJECT TOTAL</b>		<b>84022</b>	<b>4350</b>	<b>360</b>	<b>3310</b>	<b>2951</b>	<b>15713</b>	<b>155</b>	<b>5760</b>	

NOTES:  
(A) ALL BITUMINOUS PAVEMENT & CONCRETE PAVEMENT SAWING IS FULL DEPTH.  
(B) REFER TO REMOVAL PLANS FOR EXACT LOCATIONS.  
(C) SAWCUTS TO REMOVE TEMPORARY BYPASS PAVING.  
(D) SAWCUTS ALONG EXISTING PAVEMENT EDGE TO TIE-IN TEMPORARY PAVEMENT

(EE)	PORTABLE PRECAST CONCRETE BARRIER	
STAGE	(A), (B) F & I PORTABLE CONCRETE MEDIAN BARRIER (LIN FT)	IMPACT ATTENUATOR  (AMBY)
	STAGE 2	1410
<b>PROJECT TOTALS</b>	<b>1410</b>	<b>2</b>

NOTES:  
(A) RELOCATION OF BARRIER DELINEATORS SHALL BE INCIDENTAL TO RELOCATE CONCRETE MEDIAN BARRIER AND NO DIRECT PAYMENT WILL BE MADE.  
(B) BARRIER DELINEATORS SHALL BE INCIDENTAL TO CONCRETE MEDIAN BARRIERS AND NO DIRECT PAYMENT WILL BE MADE.

(BB) STAGE	TEMPORARY PAVEMENT MARKINGS (SPEC. 2582)											TRPM'S (EACH)
	PAINT											
	4" SOLID WHITE (LIN FT)	4" SOLID YELLOW (LIN FT)	(1) 4" BROKEN YELLOW (LIN FT)	24" SOLID YELLOW (LIN FT)	4" DOUBLE SOLID YELLOW (LIN FT)	ZEBRA CROSSWALK MARKING (SQ FT)	SCHOOL CROSSING (EACH)	PAVEMENT MESSAGE LT.-THRU ARROW (EACH)	PAVEMENT MESSAGE LT. ARROW (EACH)	PAVEMENT MESSAGE RT. ARROW (EACH)	PAVEMENT MARKING REMOVAL (LIN FT)	
STAGE 2	25330	1080	520	270	10450				5	7		72
STAGE 3	31480	5140	1030	1130	14600	560	2	1	40	15	19510	136
STAGE 4	17390				8170							509
STAGE 5	16330				7900						4100	63
<b>PROJECT TOTALS</b>	<b>90530</b>	<b>6220</b>	<b>1550</b>	<b>1400</b>	<b>41120</b>	<b>560</b>	<b>2</b>	<b>1</b>	<b>45</b>	<b>22</b>	<b>23610</b>	<b>780</b>

NOTES:  
1) BROKEN LINE SHALL CONSIST OF A 10 FOOT LINE FOLLOWED BY A 40 FOOT GAP UNLESS NOTED OTHERWISE.

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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. Print Name: CHRISTOPHER M. TRBOYEVICH <i>Christopher M. Trbojevich</i> Date: 3/26/07 License #: 49635				STATE PROJECT NO. S.P. 02-614-24, ETAL	DRAWN BY S. MARTINS DESIGNED BY J. TOULOUSE CHECKED BY C. TRBOYEVICH COMM. NO. 4994	<b>SRF CONSULTING GROUP, INC.</b>	ANOKA COUNTY TABULATIONS C.S.A.H. 14	SHEET 26 OF 492
NO DATE BY CKD APPR REVISION								

(HH)

DRIVEWAY CONSTRUCTION

ALIGNMENT	STATION	LOCATION (RT/LT)	AGGREGATE BASE	BITUMINOUS	BITUMINOUS	BITUMINOUS	CONCRETE
			CLASS 5 (SPEC 2211) (CY)	2350 TYPE LV4 (LVWE45030B) 3" WE (SY)	2360 TYPE SP 12.5 (SPWEB440C) 4" WE (SY)	2360 TYPE SP 12.5 (SPNWB430B) 2" NW (SY)	6" (SY)
EB 14	16+41.4	RT	35	150			
EB 14	80+79.8	LT	65				
EB 14	84+57.2	RT	95	60			
EB 14	94+50.0	RT	150	75			
EB 14	98+54.0	LT	30	160			
EB 14	101+85.2	RT	20	50			
EB 14	103+79.1	RT	9	55			
EB 14	103+81.1	LT	7	20			
EB 14	105+06.1	LT	4	25			
EB 14	105+66.1	LT	10	60			
EB 14	107+14.8	RT	10	35			
EB 14	107+62.2	LT	10	60			
EB 14	109+19.5	LT	6	20			
EB 14	127+11.5	RT	8	25			20
EB 14	128+19.6	RT	70	400			
EB 14	132+97.7	RT	15	70			
EB 14	133+85.7	RT	15	70			
EB 14	135+29.8	LT	1	1			
EB 14	136+47.4	RT	8	35			15
EB 14	137+71.8	LT	50	260			25
EB 14	138+21.8	RT	15	35			
EB 14	139+73.9	RT	7	45			
EB 14	142+18.8	LT	15	25			20
EB 14	143+71.2	LT	3	4			15
EB 14	144+86.6	RT	15	85			
EB 14	145+08.5	RT	20	120			
EB 14	146+30.3	RT	30	175			
EB 14	146+69.8	LT	15	65			
EB 14	147+32.4	RT	30	60			
EB 14	149+15.0	RT	20	100			
EB 14	149+47.3	LT	25	140			
EB 14	150+46.6	RT	15	80			
EB 14	151+91.9	RT	20	110			
EB 14	153+15.6	RT	20	95			
EB 14	153+83.0	RT	25	135			
EB 14	154+31.5	LT	20	95			
EB 14	154+52.8	RT	35	190			
EB 14	155+75.5	LT	2	9			
EB 14	156+29.3	RT	30	170			
EB 14	156+43.6	LT	7	40			
EB 14	159+88.0	RT	15	95			
EB 14	160+13.6	RT	4	20			
EB 14	163+77.9	RT	4	20			
EB 14	165+40.1	RT	25	70			65
EB 14	165+82.1	RT	25	120			
EB 14	166+88.6	LT	25	120			25
EB 14	166+91.6	RT	10	40			
EB 14	167+77.3	LT	20				100
EB 14	168+04.5	RT	30	160			
EB 14	168+81.9	LT	25	110			30
EB 14	169+17.2	RT	15	85			
EB 14	169+87.8	LT	4				25
EB 14	170+66.3	RT	4	25			
EB 14	176+37.5	RT	50		125	125	
EB 14	178+49.4	RT	45		125	125	
EB 14	179+39.2	RT	55		165	165	
EB 14	184+21.2	LT	40		120	120	
PELTIER	800+78.5	LT	55	110			
PELTIER	801+43.7	LT	7	40			
PELTIER	801+65.0	RT	4	25			
PELTIER	801+71.5	LT	5	30			
CENTERV	652+90.5	LT	2	10			
NB 54	307+78.8	LT	55				
NB 54	308+70.0	LT	30	150			
NB 54	310+09.3	LT	20	110			
NB 54	314+42.7	LT	15	65			20
NB 54	316+12.6	LT	30	160			
NB 54	316+95.0	LT	30	160			
NB 54	317+39.7	RT	10	60			
PROJECT TOTALS			1646	5194	535	535	360

NOTES:  
SEE DRIVEWAY DETAILS ON SHEET 77 AND 78

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NO	DATE	BY	CKD	APPR	REVISION

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

Print Name: CHRISTOPHER M. TRBOYEVICH  
*Christopher M. Trbojevich*  
 Date: 3/20/07 License #: 41635

STATE PROJECT NO.  
S.P. 02-614-24, ETAL

DRAWN BY  
S. MARTINS  
 DESIGNED BY  
J. DAUER  
 CHECKED BY  
C. TRBOYEVICH  
 COMM. NO. 4994



ANOKA COUNTY  
 TABULATIONS  
 C.S.A.H. 14

SHEET  
27  
OF  
492

(CC)		AGGREGATE AND BITUMINOUS SUMMARY									
ALIGNMENT	STATION TO STATION	BASE (SPEC 2211)	SHOULDERING (SPEC. 2221)	2350 TYPE LV 3 NON WEAR (LVNW35030B)	2350 TYPE LV 3 WEAR (LVWE35030B)	2350 TYPE LV 4 WEAR (4) (LVWE45030B)	2360 TYPE SP 12.5 NON WEAR (SPNWB430B)	2360 TYPE SP 12.5 WEAR (1) (2) (SPWEB440C)	2360 TYPE SP 12.5 WEAR (1) (SPWEB440F)	TACK (SPEC. 2357)	
		CLASS 5 (1) (3) (5) (CU. YD.)	CLASS 5 (CU. YD.)	(TON)	(TON)	(TON)	(TON)	(TON)	(TON)	(GAL.)	
C.S.A.H. 14	4+22.6 - 69+49.3	9490	260			960	3120	7120		3430	
C.S.A.H. 14	69+49.3 - 184+58.7	36230	120	130	100	1550	11720	17270	3730	12140	
C.S.A.H. 14	184+58.7 - 192+53.7	2520	60				730	420	1460	890	
WOODLAND DR.	600+61.2 - 602+02.0	100	10	60	50					40	
PARK ENTRANCE	10+24.7 - 11+19.4	80	10	40	40					30	
PARK ENTRANCE	12+57.2 - 13+25.8	50									
ACCESS	700+66.0 - 702+75.0	210		110	85					60	
PELTIER LAKE RD.	800+63.8 - 802+36.4	120		60	50					40	
LAKELAND CIR. (N)	900+64.3 - 902+32.5	150		80	60					50	
LAKELAND CIR. (S)	20+06.6 - 20+25.6	40		10	10					10	
CENTERVILLE RD.	652+74.4 - 653+19.5	90					30	50		30	
CENTERVILLE RD.	654+46.8 - 655+28.4	90		50	40					30	
<b>SUBTOTAL</b>		<b>49170</b>	<b>460</b>	<b>540</b>	<b>435</b>	<b>2510</b>	<b>15600</b>	<b>24860</b>	<b>5190</b>	<b>16750</b>	
C.S.A.H. 54 (S)	304+16.8 - 311+89.5	2830	20				1370	250	1550	870	
C.S.A.H. 54 (N)	313+78.5 - 323+86.5	2860	20	10	10		1380	220	1610	850	
<b>SUBTOTAL</b>		<b>5690</b>	<b>40</b>	<b>10</b>	<b>10</b>		<b>2750</b>	<b>470</b>	<b>3160</b>	<b>1720</b>	
<b>PROJECT TOTALS</b>		<b>54860</b>	<b>500</b>	<b>550</b>	<b>445</b>	<b>2510</b>	<b>18350</b>	<b>25330</b>	<b>8350</b>	<b>18470</b>	

NOTES:  
(1) QUANTITIES INCLUDE MATERIAL FOR TEMPORARY PAVEMENT DURING CONSTRUCTION.  
(2) INCLUDES 360 TONS FOR TEMPORARY PAVEMENT PATCH FOR WATERMAIN AND FORCEMAIN RELOCATION IN STAGE 1 (NON-PARTICIPATING).  
(3) INCLUDES 320 CY FOR TEMPORARY PAVEMENT PATCH FOR WATERMAIN AND FORCEMAIN RELOCATION IN STAGE 1 (NON-PARTICIPATING).  
(4) INCLUDES 100 TONS FOR TRAIL CONSTRUCTION UNDER BRIDGE (NON-PARTICIPATING).  
(5) INCLUDES 100 CY FOR TRAIL CONSTRUCTION UNDER BRIDGE (NON-PARTICIPATING).

NOTES:  
(A) BITUMINOUS MIXTURE DESIGNATION SHALL BE LVWE45030B.  
(B) PAID FOR AS 4" CONCRETE WALK.  
(C) QUANTITY FOR 6" CONCRETE APPROACH NOSES ON MEDIANS (SEE STD. PLT. 7113)  
(D) INSTALLATION OF TRUNCATED DOMES (PER STD. PLT. 7036)

(DD)		CURB & GUTTER AND WALK														
ALIGNMENT	STATION TO STATION	WALK (SPEC. 2521)					CONCRETE CURB & GUTTER (SPEC. 2531)									
		(A) 2" BITUMINOUS (SQ. FT.)	(B) 4" CONCRETE (SQ. FT.)	(C) 6" CONCRETE (SQ. FT.)	PEDESTRIAN CURB RAMP (EACH)	(D) TRUNCATED DOME (SQ. FT.)	B412 (LIN FT.)	B424 (LIN FT.)	B612 (LIN FT.)	B618 (LIN FT.)	B624 (LIN FT.)	S512 (LIN FT.)	(A) BITUMINOUS CURB (LIN FT.)	(A) BITUMINOUS ISLAND (SQ. FT.)	4" CONCRETE MEDIAN (B) (SQ. FT.)	
C.S.A.H. 14	4+22.6 - 69+49.3	69560														
C.S.A.H. 14	69+49.3 - 184+58.7	112830	19180	140	39	476	260	12340	670	100	11780	190	70	1750	7730	
C.S.A.H. 14	184+58.7 - 192+53.7													750		
WOODLAND DR.	600+61.2 - 602+02.0															
PARK ENTRANCE	10+24.7 - 11+19.4															
PARK ENTRANCE	12+57.2 - 13+25.8															
ACCESS	700+66.0 - 702+75.0															
PELTIER LAKE RD.	800+63.8 - 802+36.4										40	330				
LAKELAND CIR. (N)	900+64.3 - 902+32.5									330		80			150	
LAKELAND CIR. (S)	20+06.6 - 20+25.6										100				150	
CENTERVILLE RD.	652+74.4 - 653+19.5		600							90	20					
CENTERVILLE RD.	654+46.8 - 655+28.4								140	20		20				
<b>SUBTOTAL</b>		<b>182390</b>	<b>19780</b>	<b>140</b>	<b>39</b>	<b>476</b>	<b>260</b>	<b>12340</b>	<b>1000</b>	<b>330</b>	<b>12040</b>	<b>520</b>	<b>90</b>	<b>2500</b>	<b>8030</b>	
C.S.A.H. 54 (S)	304+16.8 - 311+89.5			30							1030	20			2310	
C.S.A.H. 54 (N)	313+78.5 - 323+86.5		1500	20			90	1490							820	
<b>SUBTOTAL</b>			<b>1500</b>	<b>50</b>			<b>90</b>	<b>2520</b>	<b>20</b>						<b>3130</b>	
<b>PROJECT TOTALS</b>		<b>182390</b>	<b>21280</b>	<b>190</b>	<b>39</b>	<b>476</b>	<b>350</b>	<b>14860</b>	<b>1020</b>	<b>330</b>	<b>12040</b>	<b>520</b>	<b>90</b>	<b>2500</b>	<b>11160</b>	

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.  
Print Name: CHRISTOPHER M. TRBOYEVICH  
*Christopher M. Trbojevich*  
Date: 3/26/07 License #: 41635

STATE PROJECT NO.  
S.P. 02-614-24, ETAL

DRAWN BY  
S. MARINS  
DESIGNED BY  
J. TOULOUSE  
CHECKED BY  
C. TRBOYEVICH  
COMM. NO. 4994



ANOKA COUNTY  
TABULATIONS  
C.S.A.H. 14  
SHEET  
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OF  
492

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NO	DATE	BY	CHKD	APPR	REVISION

(AA)		WATERMAIN (SPEC. 2504)													
ALIGNMENT (FIRE HYD. NO.)	STA. TO STA.	OFFSET		OWNER	REMOVE	ABANDON	SALVAGE (SPEC. 2104)			INSTALL			ADJUST		
		LT	RT		WATERMAIN (SPEC. 2104) (LF)	WATERMAIN (SPEC. 2104) (LF)	CURB STOP & BOX (EACH)	HYDRANT (EACH)	G.V. & BOX (EACH)	CURB STOP & BOX (EACH)	HYDRANT (EACH)	G.V. & BOX (EACH)	CURB BOX (EACH)	VALVE BOX (EACH)	HYDRANT (EACH)
EB 14	89+35		46	CENTERVILLE											
EB 14	89+35 - 95+50	17'	46	CENTERVILLE		620									
EB 14	89+70	5'		CENTERVILLE											
EB 14	89+82	5'		CENTERVILLE											
EB 14	90+63 - 91+06	5'		CENTERVILLE											
EB 14	94+20	5'		CENTERVILLE											
EB 14	94+20	5'	40'	CENTERVILLE											
EB 14	94+20		32'	CENTERVILLE											
EB 14	94+20		40'	CENTERVILLE											
EB 14	94+20		43'	CENTERVILLE											
EB 14	94+20 - 94+25		40'	CENTERVILLE											
EB 14	94+22		40'	CENTERVILLE											
EB 14	94+25		40'	CENTERVILLE											
EB 14	95+11	5'		CENTERVILLE											
EB 14	95+50	17'		CENTERVILLE											
EB 14	89+44		42	CENTERVILLE											1
EB 14	92+52		37	CENTERVILLE											1
EB 14	95+50 - 99+97	30	37	CENTERVILLE						1					
EB 14	92+58		21	CENTERVILLE	16										
EB 14	98+26	33		CENTERVILLE											
EB 14	99+97	30-60		CENTERVILLE											1
EB 14	99+97	30		CENTERVILLE											
EB 14	99+97 - 100+10	30		CENTERVILLE											1
EB 14	100+10	30	47	CENTERVILLE											
EB 14	100+10		42	CENTERVILLE											1
EB 14	100+10 - 100+25	30		CENTERVILLE											
EB 14	100+15	40		CENTERVILLE											1
EB 14	100+25	30		CENTERVILLE											1
EB 14	100+25 - 102+75	30		CENTERVILLE											1
EB 14	102+75 - 112+75	30-232		CENTERVILLE											
EB 14	103+12		46	CENTERVILLE											
EB 14	103+18	33		CENTERVILLE											1
EB 14	104+53		33	CENTERVILLE											1
EB 14	104+73	33		CENTERVILLE											1
EB 14	104+76	37		CENTERVILLE											1
EB 14	104+89 - 105+19	29	46	CENTERVILLE											1
EB 14	105+91	33		CENTERVILLE											1
EB 14	107+97	32		CENTERVILLE											1
EB 14	108+36	29		CENTERVILLE											1
EB 14	119+74	6-77		CENTERVILLE											
EB 14	119+94	35		CENTERVILLE	21					1	1				
EB 14	119+92.97	35		CENTERVILLE											
EB 14 (FH1)	120+01.41	44		CENTERVILLE								1	1		
EB 14	134+85 - 135+15		39	CENTERVILLE											
EB 14	134+86 - 135+14		13	CENTERVILLE											
EB 14	135+12 - 135+13	74-42		CENTERVILLE											
EB 14	135+13 - 135+36	42		CENTERVILLE											
EB 14	135+13	42		CENTERVILLE											1
EB 14	135+13 - 135+14	42-13		CENTERVILLE											
EB 14	135+14	13		CENTERVILLE											1
EB 14	135+14 - 135+15	13	39	CENTERVILLE											
EB 14	135+15		39	CENTERVILLE											1
EB 14	135+15 - 135+16		39-62	CENTERVILLE											
EB 14	135+15 - 140+22		39-9	CENTERVILLE											
EB 14	135+40		49	CENTERVILLE	11										
EB 14 (FH2)	135+40.56		52	CENTERVILLE								1	1		
EB 14	135+79		46	CENTERVILLE											1
EB 14	136+29		45	CENTERVILLE											1
EB 14	136+88		41	CENTERVILLE											1
EB 14	137+16.68	48		CENTERVILLE											
EB 14	137+18		41	CENTERVILLE											1
EB 14	137+18	9		CENTERVILLE											
EB 14	137+80.85	48		CENTERVILLE											
EB 14	138+31	14		CENTERVILLE											
EB 14 (FH3)	138+60.01		52	CENTERVILLE											
EB 14	138+59		33	CENTERVILLE	14							1	1		
EB 14	138+99	22		CENTERVILLE											
EB 14	139+02		30	CENTERVILLE											
EB 14	139+03.55		49	CENTERVILLE											
EB 14 (FH4)	139+98.61		57	CENTERVILLE											
EB 14	140+11		57	CENTERVILLE	15										
EB 14	140+22 - 140+26		9-67	CENTERVILLE											
EB 14	140+22		9	CENTERVILLE											
EB 14	140+22 - 141+95	22	9	CENTERVILLE											1
EB 14	141+95	22		CENTERVILLE											1
EB 14	141+95 - 144+78	22-48		CENTERVILLE											
<b>SUBTOTAL</b>					<b>77</b>	<b>620</b>	<b>4</b>	<b>6</b>	<b>6</b>	<b>3</b>	<b>4</b>	<b>4</b>	<b>12</b>	<b>12</b>	<b>2</b>

NOTES:  
 (1) LEAVE IN PLACE (2) NON-PARTICIPATING ITEMS. SEE SHEET 30 FOR NOTES.

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NO	DATE	BY	CKD	APPR	REVISION
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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.  
 Print Name: CHRISTOPHER M. TRBOYEVICH  
*Christopher M. Trbojevich*  
 Date: 3/26/07 License #: 41635

STATE PROJECT NO.  
 S.P. 02-614-24, ETAL  
 DRAWN BY  
 S. MARTINS  
 DESIGNED BY  
 J. DAUER  
 CHECKED BY  
 C. TRBOYEVICH  
 COMM. NO. 4994



ANOKA COUNTY  
 TABULATIONS  
 C.S.A.H. 14

SHEET  
 29  
 OF  
 492



(AA) WATERMAIN (SPEC. 2504) CONTINUED

ALIGNMENT (FIRE HYD. NO.)	STA. TO STA.	OFFSET		OWNER	REMOVE	ABANDON	SALVAGE (SPEC. 2104)			INSTALL		ADJUST				
		LT	RT		WATERMAIN (SPEC. 2104) (LF)	WATERMAIN (SPEC. 2104) (LF)	CURB STOP & BOX (EACH)	HYDRANT (EACH)	G.V. & BOX (EACH)	CURB STOP & BOX (EACH)	HYDRANT (EACH)	G.V. & BOX (EACH)	CURB BOX (EACH)	VALVE BOX (EACH)	HYDRANT (EACH)	
EB 14	142+28	37		CENTERVILLE											1	
EB 14	144+26		40	CENTERVILLE											1	
EB 14	144+70	43		CENTERVILLE	9				1	1						
EB 14 (FH5)	144+70.52	52		CENTERVILLE							1	1				
EB 14	144+78.35	44		CENTERVILLE												
EB 14	144+78	48-104		CENTERVILLE												
EB 14	144+78	48		CENTERVILLE											1	
EB 14	144+78 - 144+97	48		CENTERVILLE												
EB 14	144+97	48		CENTERVILLE											1	
EB 14	144+97 - 148+10	48-43		CENTERVILLE												
EB 14	145+47		42	CENTERVILLE											1	
EB 14	145+95		42	CENTERVILLE											1	
EB 14 (FH6)	146+80.18		31	CENTERVILLE								1				
EB 14	147+91		48	CENTERVILLE											1	
EB 14	148+10	43-51		CENTERVILLE												
EB 14	148+10 - 150+74	43-40		CENTERVILLE												
EB 14	148+62		52	CENTERVILLE											1	
EB 14 (FH7)	149+26.85	47		CENTERVILLE						1	1					
EB 14	149+30	34		CENTERVILLE	9				1	1						
EB 14	150+03		47	CENTERVILLE											1	
EB 14	150+74 - 150+92	40-67		CENTERVILLE												
EB 14	150+74 - 152+48	40-38		CENTERVILLE												
EB 14	151+43		51	CENTERVILLE											1	
EB 14	152+48 - 152+47	38-97		CENTERVILLE												
EB 14	152+48	38		CENTERVILLE											1	
EB 14	152+48 - 152+79	38		CENTERVILLE												
EB 14	152+61	58		CENTERVILLE					1	1		1	1			
EB 14	152+69		74	CENTERVILLE										1		
EB 14	152+79	38		CENTERVILLE											1	
EB 14	152+79 - 152+85	38		CENTERVILLE												
EB 14	152+85 - 156+38	38-33		CENTERVILLE	353											
EB 14	152+85.00	38		CENTERVILLE												
EB 14	152+90.63	43		CENTERVILLE												
EB 14	154+20.69	42		CENTERVILLE												
EB 14 (FH8)	154+20.69		48	CENTERVILLE							1	1				
EB 14	156+37 - 156+38	113-58		CENTERVILLE												
EB 14	156+37.81	43		CENTERVILLE												
EB 14	156+38	33-58		CENTERVILLE	25								1			
EB 14	156+38	33		CENTERVILLE												
EB 14	156+38 - 157+90	33-36		CENTERVILLE	153											
EB 14	157+82.40		43	CENTERVILLE												
EB 14	157+90.00		36	CENTERVILLE												
EB 14	157+90 - 158+00	36		CENTERVILLE												
EB 14	158+00 - 158+02	36	97	CENTERVILLE												
EB 14	158+00 - 159+55	36-39		CENTERVILLE												
EB 14	159+55 - 160+09	39-36		CENTERVILLE												
EB 14 (FH9)	159+76.98		50	CENTERVILLE							1	1				
EB 14	160+09	36		CENTERVILLE												
EB 14	160+09	36-60		CENTERVILLE											1	
EB 14	160+09	60		CENTERVILLE											1	
EB 14	160+09 - 161+67	60-82		CENTERVILLE												
EB 14	160+09	36-38		CENTERVILLE												
EB 14	160+20	54		CENTERVILLE	12				1	1						
EB 14 (FH10)	160+27.77	65		CENTERVILLE							1	1				
EB 14	161+67 - 161+74	38-50		CENTERVILLE												
EB 14	161+74	50		CENTERVILLE											1	
EB 14	161+74 - 161+88	50-67		CENTERVILLE												
EB 14	161+67	38		CENTERVILLE											1	
EB 14	161+67 - 163+52	38	38	CENTERVILLE												
EB 14 (FH11)	163+37.04		53	CENTERVILLE							1	1				
EB 14	163+40		53	CENTERVILLE	12				1	1						
EB 14	163+52	38		CENTERVILLE											1	
EB 14	163+52 - 163+53	38-109		CENTERVILLE												
EB 14	163+52 - 168+08	38-18		CENTERVILLE												
EB 14	165+64	24		CENTERVILLE											1	
SUBTOTAL					573				5	6		7	9		10	9

NOTES: (1) LEAVE IN PLACE (2) NON-PARTICIPATING ITEMS. SEE SHEET 32 FOR NOTES.

2:35:02 PM 7/27/2006 \\p02\office\4994-f\h1-mu\p1an\4994-f.tbk

NO	DATE	BY	CKD	APPR	REVISION

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.  
 Print Name: CHRISTOPHER M. TRBOYEVICH  
*Christopher M. Trbojevich*  
 Date: 3/26/07 License #: 41635

STATE PROJECT NO. S.P. 02-614-24, ETAL  
 DRAWN BY S. MARTINS  
 DESIGNED BY J. DAUER  
 CHECKED BY C. TRBOYEVICH  
 COMM. NO. 4994



ANOKA COUNTY  
 TABULATIONS  
 C.S.A.H. 14



(AA)

WATERMAIN (SPEC. 2504) CONTINUED

Table with columns: ALIGNMENT (FIRE HYD. NO.), STA. TO STA., OFFSET (LT, RT), OWNER, DIP WATERMAIN (6" CL. 52), HDPE WATERMAIN (1"), PVC WATERMAIN (6" CS 207-60, 8" C900, 12" C900), HYDRANT (EACH), GATE VALVE (EACH), WET TAPS (12"X6", 10"X6"), MEGALUGS (6", 8", 12"), 4" POLYSTYRENE INSULATION (SY), WATERMAIN FITTINGS (LBS), WATERMAIN FITTING REPAIR - SPECIAL (2) (EACH), CONNECT TO EXISTING (EACH), NOTES.

NOTES: (1) LEAVE IN PLACE

(2) NON-PARTICIPATING ITEMS.

2:35:03 PM  
D:\Projects\4994-F\H-mu\VP\an\4994-f.tbl

Table with columns: NO, DATE, BY, CKD, APPR, REVISION

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.  
Print Name: CHRISTOPHER M. TRBOYEVICH  
*Christopher M. Trbojevich*  
Date: 3/26/07 License #: 41635

STATE PROJECT NO. S.P. 02-614-24, ETAL  
DRAWN BY S. MARTINS  
DESIGNED BY J. DAUER  
CHECKED BY C. TRBOYEVICH  
COMM. NO. 4994



ANOKA COUNTY  
TABULATIONS  
C.S.A.H. 14

SHEET  
32  
OF  
492

(AA)		WATERMAIN (SPEC. 2504) CONTINUED															
ALIGNMENT (FIRE HYD. NO.)	STA. TO STA.	OFFSET		OWNER	REMOVE	ABANDON	SALVAGE (SPEC. 2104)			INSTALL			ADJUST				
		LT	RT		WATERMAIN (SPEC. 2104) (LF)	WATERMAIN (SPEC. 2104) (LF)	CURB STOP & BOX (EACH)	HYDRANT (EACH)	G.V. & BOX (EACH)	CURB STOP & BOX (EACH)	HYDRANT (EACH)	G.V. & BOX (EACH)	CURB BOX (EACH)	VALVE BOX (EACH)	HYDRANT (EACH)		
EB 14	165+98	72		CENTERVILLE											1		
EB 14	166+08	52	18	CENTERVILLE													
EB 14	166+43		8	CENTERVILLE	10				1	1							
EB 14	166+49	74		CENTERVILLE											1		
EB 14	167+29		35	CENTERVILLE											1		
EB 14	167+53	70		CENTERVILLE											1		
EB 14	168+08	51	18	CENTERVILLE													
EB 14 (FH12)	168+18.41	63		CENTERVILLE							1	1					
EB 14	168+08 - 169+98		18	CENTERVILLE													
EB 14	168+26	60		CENTERVILLE	21			1									
EB 14	168+31.93	70		CENTERVILLE							1						
EB 14	168+52		24	CENTERVILLE				1									
EB 14	168+52.36		40	CENTERVILLE							1						
EB 14	169+38	64		CENTERVILLE													
EB 14	169+98		18-56	CENTERVILLE													
EB 14	169+98 - 170+82		18	CENTERVILLE													
EB 14	170+29	68		CENTERVILLE											1		
EB 14	170+77.8		39	CENTERVILLE								1					
EB 14	170+73.23		35	CENTERVILLE													
EB 14 (FH13)	170+81.50		43	CENTERVILLE							1					1	
EB 14	170+82		18	CENTERVILLE													
EB 14	170+82 - 171+75		18-27	CENTERVILLE													
EB 14	170+93		11	CENTERVILLE	8				1	1							
EB 14	171+74	49		CENTERVILLE												1	
EB 14	171+74 - 177+08	49-51		CENTERVILLE													
EB 14	175+20	62		CENTERVILLE	9				1	1							
EB 14 (FH14)	175+19.94	75		CENTERVILLE							1	1					
EB 14	177+08	51-43		CENTERVILLE												1	
EB 14	177+08		43	CENTERVILLE													
EB 14	177+08 - 181+13	51-44		CENTERVILLE													
EB 14	179+47	57		CENTERVILLE	9				1	1							
EB 14 (FH15)	179+47.14	74		CENTERVILLE							1	1					
EB 14 (FH16)	181+10.63		31	CENTERVILLE							1	1					
EB 14	181+13	44-36		CENTERVILLE													
EB 14	181+13 - 182+57	44-39		CENTERVILLE													
EB 14	182+57	39-109		CENTERVILLE													
EB 14	182+57	102		CENTERVILLE													
EB 14	182+57 - 184+17	39-36		CENTERVILLE													
EB 14	182+76	50		CENTERVILLE	13				1	1							
EB 14	184+17 - 184+44	36		CENTERVILLE													
EB 14	184+17	36	68	CENTERVILLE													
EB 14	184+17		68	CENTERVILLE												1	
EB 14 (FH17)	184+22.16		58	CENTERVILLE							1	1					
EB 14	184+22.28		49	CENTERVILLE													
EB 14	184+28		49	CENTERVILLE	12				1	1							
EB 14	184+44	36-106		CENTERVILLE													
EB 14	184+44	36		CENTERVILLE												1	
EB 14	184+73	64-99		LINO LAKES													
EB 14	184+73	114		LINO LAKES					1	1		1	1				
NB 54	303+99 - 304+49		24-26	CENTERVILLE													
NB 54	304+01 - 304+43	25-26		CENTERVILLE													
NB 54	304+43	26-65		CENTERVILLE													
NB 54	304+43	26		CENTERVILLE												1	
NB 54	304+43 - 305+19	26-29		CENTERVILLE													
NB 54	304+49		26	CENTERVILLE	23												
NB 54	304+49 - 305+29		26-30	CENTERVILLE													
NB 54	305+19	29		CENTERVILLE	22												
NB 54	305+19 - 305+24	28		CENTERVILLE													
NB 54	305+24 - 306+00	28-27		CENTERVILLE													
NB 54	305+24	28		CENTERVILLE												1	
NB 54	305+29		30	CENTERVILLE	21												
NB 54	305+29 - 305+98		30-33	CENTERVILLE													
NB 54	305+98		33	CENTERVILLE												1	
NB 54	305+98 - 306+00	27	33	CENTERVILLE													
NB 54	305+98 - 306+36		33-32	CENTERVILLE													
SUBTOTAL					148			2	7	10	2	7	7	5	8		

NOTES:  
 (1) LEAVE IN PLACE (2) NON-PARTICIPATING ITEMS. SEE SHEET 34 FOR NOTES.

1:23:36 PM 3/23/2007 H:\proj\cortr\4994-f\ht-mu\plan\4994-f.TBM

NO	DATE	BY	CKD	APPR	REVISION

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.  
 Pr Int Name: CHRISTOPHER M. TRBOYEVICH  
*Christopher M. Trbojevich*  
 Date: 3/26/07 License #: 41635

STATE PROJECT NO.  
S.P. 02-614-24. ETAL

DRAWN BY  
S. MARTINS  
 DESIGNED BY  
J. DAUER  
 CHECKED BY  
C. TRBOYEVICH  
 COMM. NO. 4994



ANOKA COUNTY  
 TABULATIONS  
 C.S.A.H. 14

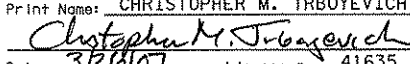

SHEET  
33  
OF  
492



(AA)		WATERMAIN (SPEC. 2504) CONTINUED															
ALIGNMENT (FIRE HYD. NO.)	STA. TO STA.	OFFSET		OWNER	REMOVE	ABANDON	SALVAGE (SPEC. 2104)			INSTALL			ADJUST				
		LT	RT		WATERMAIN	WATERMAIN	CURB STOP	HYDRANT	G.V.	CURB STOP	HYDRANT	G.V.	CURB	VALVE	HYDRANT		
					(SPEC. 2104)	(SPEC. 2104)	& BOX	(EACH)	& BOX	(EACH)	(EACH)	(EACH)	(EACH)	(EACH)	BOX	BOX	(EACH)
(LF)	(LF)	(EACH)	(EACH)	(EACH)	(EACH)	(EACH)	(EACH)	(EACH)	(EACH)	(EACH)	(EACH)	(EACH)	(EACH)				
NB 54	306+00	27		CENTERVILLE												1	
NB 54	306+00 - 307+16	27-31		CENTERVILLE													
NB 54	306+36		32	CENTERVILLE												1	
NB 54	306+36 - 312+34		32	CENTERVILLE													
NB 54 (FH18)	306+41.22		78	CENTERVILLE							1	1					
NB 54	306+42		39	CENTERVILLE	8					1	1						
NB 54	307+16	31-70		CENTERVILLE													
NB 54	307+16	31		CENTERVILLE												1	
NB 54	307+16 - 308+36	31-30		CENTERVILLE													
NB 54	308+36 - 308+76	30-72		CENTERVILLE													
NB 54	309+87		39	CENTERVILLE	7					1	1						
NB 54	309+86.70		37	CENTERVILLE													
NB 54 (FH19)	310+22.96		74	CENTERVILLE							1	1					
NB 54	312+07		49	CENTERVILLE	17					1	1						
NB 54	312+34		32	CENTERVILLE												1	
NB 54	312+34 - 313+37		32	CENTERVILLE													
NB 54	313+37		32	CENTERVILLE												1	
NB 54	313+34 - 316+32		32	CENTERVILLE													
NB 54	316+32	32-53		CENTERVILLE													
NB 54	316+32	53		CENTERVILLE												1	
NB 54	316+32	53-64		CENTERVILLE													
NB 54	316+32 - 316+59	53-52		CENTERVILLE													
NB 54	316+32 - 319+46		32	CENTERVILLE													
NB 54	316+59	52		CENTERVILLE												1	
NB 54	316+86		38	CENTERVILLE	7					1	1						
NB 54 (FH20)	316+86.37		46	CENTERVILLE							1	1					
NB 54	319+46	22	70	CENTERVILLE													
NB 54	319+46 - 320+99	22		CENTERVILLE													
NB 54	319+46 - 319+95		32	CENTERVILLE													
NB 54	319+95		32	CENTERVILLE												1	
NB 54	319+95 - 323+87		32	CENTERVILLE													
NB 54	320+65	60		CENTERVILLE													
NB 54	321+15	60		CENTERVILLE													
NB 54	322+57		38	CENTERVILLE	6					1	1						
NB 54 (FH21)	322+57.28		52	CENTERVILLE							1	1					
SUBTOTAL					45			5	5		4	4			8		
PROJECT TOTALS					843	620	6	23	27	5	22	24	27	37	2		

NOTES:  
(1) LEAVE IN PLACE    (2) NON-PARTICIPATING ITEMS.    SEE SHEET 36 FOR NOTES.

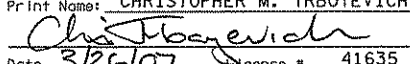
1:23:37 PM  
1/23/2008  
... \4994-f\h1-mu\p1on\4994-f.TB0

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. Print Name: CHRISTOPHER M. TRBOYEVICH  Date: 3/28/07 License # 41635					STATE PROJECT NO. S.P. 02-614-24, ETAL	DRAWN BY S. MARTINS DESIGNED BY J. DAUER CHECKED BY C. TRBOYEVICH COMM. NO. 4994		<b>ANOKA COUNTY</b> TABULATIONS C.S.A.H. 14	<b>SHEET</b> 35 OF 492	
NO    DATE    BY    CKD    APPR    REVISION										

(AA)		WATERMAIN (SPEC. 2504) CONTINUED																			
ALIGNMENT (FIRE HYD. NO.)	STA. TO STA.	OFFSET		OWNER	DIP WATERMAIN	HDPE WATERMAIN	PVC WATERMAIN			HYDRANT	GATE VALVE 6"	WET TAPS		MEGALUGS			4" POLYSTYRENE INSULATION	WATERMAIN FITTINGS (LBS)	WATERMAIN FITTING REPAIR - SPECIAL (2) (EACH)	CONNECT TO EXISTING (EACH)	NOTES
		6" CL. 52 (LF)	1" (LF)		6" CS 207-60 (LF)	8" C900 (LF)	12" C900 (LF)	12"X6" (EACH)	10"X6" (EACH)			6" (EACH)	8" (EACH)	12" (EACH)	(SY)						
NB 54	306+00		27	CENTERVILLE																	
NB 54	306+00 - 307+16	27-31		CENTERVILLE																	(1)
NB 54	306+36		32	CENTERVILLE																	(1)
NB 54	306+36 - 312+34		32	CENTERVILLE																	(1)
NB 54 (FH18)	306+41.22		78	CENTERVILLE	48									4				300		1	6"-45 BEND X4
NB 54	306+42		39	CENTERVILLE																	(1)
NB 54	307+16	31-70		CENTERVILLE																	(1)
NB 54	307+16	31		CENTERVILLE																	(1)
NB 54	307+16 - 308+36	31-30		CENTERVILLE																	(1)
NB 54	308+36 - 308+76	30-72		CENTERVILLE																	(1)
NB 54	309+87		39	CENTERVILLE																	(1)
NB 54	309+86.70		37	CENTERVILLE	5									2				75		1	6"-45 BEND
NB 54 (FH19)	310+22.96		74	CENTERVILLE	52									3							(1)
NB 54	312+07		49	CENTERVILLE										1				35			6" PLUG
NB 54	312+34		32	CENTERVILLE																	(1)
NB 54	312+34 - 313+37		32	CENTERVILLE																	(1)
NB 54	313+37		32	CENTERVILLE																	(1)
NB 54	313+34 - 316+32		32	CENTERVILLE																	(1)
NB 54	316+32	32-53		CENTERVILLE																	(1)
NB 54	316+32	53		CENTERVILLE																	(1)
NB 54	316+32	53-64		CENTERVILLE																	(1)
NB 54	316+32 - 316+59	53-52		CENTERVILLE																	(1)
NB 54	316+32 - 319+46		32	CENTERVILLE																	(1)
NB 54	316+59	52		CENTERVILLE																	(1)
NB 54	316+86		38	CENTERVILLE																	(1)
NB 54 (FH20)	316+86.37		46	CENTERVILLE	15									4						1	(1)
NB 54	319+46	22	70	CENTERVILLE																	(1)
NB 54	319+46 - 320+99	22		CENTERVILLE																	(1)
NB 54	319+46 - 319+95		32	CENTERVILLE																	(1)
NB 54	319+95		32	CENTERVILLE																	(1)
NB 54	319+95 - 323+87		32	CENTERVILLE																	(1)
NB 54	320+65	60		CENTERVILLE																	(1)
NB 54	321+15	60		CENTERVILLE																	(1)
NB 54	322+57		38	CENTERVILLE																	(1)
NB 54 (FH21)	322+57.28		52	CENTERVILLE	20									4						1	(1)
SUBTOTAL					140									18				410		4	
PROJECT TOTALS					733	294	50	15	1144	2	3	2	3	94	7	26	462	5165	3	21	

NOTES:  
 (1) LEAVE IN PLACE (2) NON-PARTICIPATING ITEMS.

2:36:07 PM 3/21/2007 ... \4994-f\h1-m\p\an\4994-f.TBP

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. Print Name: CHRISTOPHER M. TRBOYEVICH  Date: 3/26/07 License # 41635				STATE PROJECT NO. S.P. 02-614-24, ETAL	DRAWN BY S. MARTINS DESIGNED BY J. TOULOUSE CHECKED BY C. TRBOYEVICH COMM. NO. 4994	<b>SRF</b> CONSULTING GROUP, INC.	ANOKA COUNTY TABULATIONS C.S.A.H. 14	SHEET 36 OF 492	
NO	DATE	BY	CKD	APPR	REVISION			... \4994-f\h1-m\p\an\4994-f.TBP	



(Z)

SANITARY SEWER

Table with columns: ALIGNMENT, STATION, OFFSET (LEFT, RIGHT), EXISTING ITEM, OWNER, INSTALL CASTING (EACH), PROPOSED RIM ELEV (FT), EXISTING RIM ELEV (FT), ABANDON PIPE SEWER (LIN FT), ADJUST FRAME AND RING CASTING (EACH), (A) RECONSTRUCT STRUCTURE (LIN FT), FURNISH AND INSTALL (4" PVC FORCEMAIN C900 (K), 6" PVC SDR 35, 8" PVC SDR 35 (K), 21" PVC SDR 35 (K)), WATERMAIN FITTINGS (K), 4" POLYSTYRENE INSULATION (SQ YD), NOTES.

- NOTES:
(A) PAID FOR UNDER 2506.503 RECONSTRUCT DRAINAGE STRUCTURE AND INCLUDES THE SALVAGE OF EXISTING CASTINGS.
(B) REALIGN STEPS INSIDE SANITARY MANHOLE.
(C) LEAVE AS IS.
(E) FURNISH AND INSTALL 8" or 21" PLUG (INCLUDED IN BID PRICE FOR 8" or 21" PVC PIPE SEWER.)
(F) CONNECT TO EXISTING WITH CORE-CUT AND RUBBER BOOT- RECONSTRUCT INVERT
(G) LAY AT MINIMUM GRADE (0.40%)
(H) SALVAGE AND INSTALL 6" PLUG (INCLUDED IN BID PRICE FOR 6" PVC PIPE SEWER)
(K) NON-PARTICIPATING ITEM.

2:36:09 PM 3/21/2007 ...4994-F\H1-mu\plan\4994-f.TBR

Table with columns: NO, DATE, BY, CKD, APPR, REVISION

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.
Pr Int Name: CHRISTOPHER M. TRBOYE VICH
Date: 3/26/07 License #: 41635

STATE PROJECT NO. S.P. 02-614-24, ETAL

DRAWN BY S. MARTINS
DESIGNED BY J. DAUER
CHECKED BY C. TRBOYE VICH
COMM. NO. 4994



ANOKA COUNTY
TABULATIONS
C.S.A.H. 14

SHEET 38 OF 492

(MM) SUBSURFACE DRAINS (SPEC. 2502)						
ALIGNMENT	STATION TO STATION	OFFSET		F & I	FINE FILTER	NOTES
		LEFT (FT)	RIGHT (FT)	4" PERFORATED TP PIPE DRAIN (SPEC. 2502) (LIN FT)	AGGREGATE (CV) (SPEC. 2451) (CY)	
E. B. C.S.A.H. 14	90+40.0 - 91+40.0	25.0		100	6	
E. B. C.S.A.H. 14	90+40.0 - 91+40.0		25.0	100	6	
E. B. C.S.A.H. 14	111+43.0 - 112+43.0	25.0		100	6	
E. B. C.S.A.H. 14	111+43.0 - 112+43.0		25.0	100	6	
E. B. C.S.A.H. 14	119+90.0 - 120+90.0	35.0		100	6	
E. B. C.S.A.H. 14	119+90.0 - 120+90.0		25.0	100	6	
E. B. C.S.A.H. 14	133+35.0 - 134+35.0	31.0		100	6	
E. B. C.S.A.H. 14	133+35.0 - 134+35.0		31.0	100	6	
E. B. C.S.A.H. 14	140+75.5 - 141+75.4	31.0		100	6	
E. B. C.S.A.H. 14	140+75.3 - 141+75.4		29.0	100	6	
E. B. C.S.A.H. 14	146+91.0 - 147+91.0	35.0		100	6	
E. B. C.S.A.H. 14	146+91.0 - 147+91.0		29.0	100	6	
E. B. C.S.A.H. 14	155+50.0 - 156+50.0	35.0		100	6	
E. B. C.S.A.H. 14	155+50.0 - 156+50.0		29.0	100	6	
E. B. C.S.A.H. 14	161+50.0 - 162+50.0	46.4-41.1		100	6	
E. B. C.S.A.H. 14	161+50.0 - 162+50.0		35.5-37.7	100	6	
W. B. C.S.A.H. 14	176+80.9 - 177+80.9	22.0		100	6	
E. B. C.S.A.H. 14	176+44.9 - 177+44.9		28.0	100	6	
PROJECT TOTALS (A)				1800	108	

NOTES:

A) REFER TO RETAINING WALL PLANS FOR ADDITIONAL SUBSURFACE DRAINS.

(NN) CASTING ASSEMBLIES SUMMARY						
ASSEMBLY	RING OR FRAME CASTING	(A) COVER OR GRATE CASTING	(B) CURB BOX	STANDARD PLATE NO.	QUANTITY	REMARKS
B - 5	802A			4129	157	CATCH BASIN
		816		4154		
			823	4160		
A - 7D	700-7			4101	18	MANHOLE
		715		4110		
			N/A			
M - 11	ROUND CONC.			4143	15	DROP INLET
		731		4143		
			N/A			
PROJECT TOTALS					190	

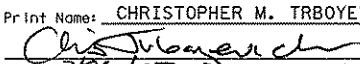
NOTES:

A) USE BENT BOLT WITH 816 GRATES.

B) USE ELONGATED BOLT SLOTS ON CURB BOXES WITH 4 IN CURB.

2:36:05 PM  
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NO	DATE	BY	CKD	APPR	REVISION

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.  
 Print Name: CHRISTOPHER M. TRBOYEVICH  
  
 Date: 3/26/07 License # 41635

STATE PROJECT NO.  
S.P. 02-614-24, ETAL

DRAWN BY  
J. TOULOUSE  
 DESIGNED BY  
J. TOULOUSE  
 CHECKED BY  
C. TRBOYEVICH  
 COMM. NO. 4994



ANOKA COUNTY  
 TABULATIONS  
 C.S.A.H. 14

SHEET  
39  
OF  
492



(JJ) TURF ESTABLISHMENT / EROSION CONTROL (SPEC. 2573 & 2575) (1)																
ALIGNMENT	STATION TO STATION	STORM DRAIN INLET PROTECTION (EACH)	BIOROLL (LIN. FT.)	SILT FENCE MACHINE SLICED (4) (LIN. FT.)	FLOTATION SILT CURTAIN, TYPE (4)		SEEDING (ACRE)	SEED MIXTURE (2)		SODDING TYPE LAWN (SQ. YD.)	MULCH MATERIAL (2) TYPE 3 (TON)	DISK ANCHOR. (ACRE)	EROSION CONTROL BLANKET CATEGORY 3 (SQ. YD.)	EROSION CONTROL BLANKET CATEGORY 4 (5) (SQ. YD.)	(2)(3) COMM. FERT. 18-1-8 (POUND)	(2)(3) COMM. FERT. 22-5-10 (POUND)
					MOVING WATER (LIN. FT.)	STILL WATER (LIN. FT.)		310 (LB)	350 (LB)							
C.S.A.H. 14	4+22.6 - 69+49.3	5	142	2224	404		14.6		1200		17.4	8.7	28625		1752	
C.S.A.H. 14	69+49.3 - 184+58.7	190	953	15525		3390	15.4	64	1200	30210	24.4	12.2	10045	5506	1848	2497
C.S.A.H. 14	184+58.7 - 192+53.7	5		1814			2.1		172		1.4	0.7	6481		252	
PELTIER LAKE RD.	800+63.8 - 802+36.4	2								800						66
LAKELAND CIR. (N)	900+64.3 - 902+32.5	2					0.2		16		0.4	0.2			24	
LAKELAND CIR. (S)	20+06.6 - 20+25.6	2														
CENTERVILLE RD.	652+74.4 - 655+28.4	1								480						40
<b>SUBTOTAL</b>		<b>207</b>	<b>1095</b>	<b>19563</b>	<b>404</b>	<b>3390</b>	<b>32.3</b>	<b>64</b>	<b>2588</b>	<b>31490</b>	<b>43.6</b>	<b>21.8</b>	<b>45151</b>	<b>5506</b>	<b>3876</b>	<b>2603</b>
C.S.A.H. 54 (S)	304+16.8 - 311+89.5	10	215	1881			1.3		107	990	2.6	1.3			156	82
C.S.A.H. 54 (N)	313+78.5 - 323+86.5	13	228	2024			0.8		66	1840	0.4	0.2	2950		96	152
<b>SUBTOTAL</b>		<b>23</b>	<b>443</b>	<b>3905</b>			<b>2.0</b>		<b>173</b>	<b>2830</b>	<b>3.0</b>	<b>1.5</b>	<b>2950</b>		<b>252</b>	<b>234</b>
<b>PROJECT TOTALS</b>		<b>230</b>	<b>1538</b>	<b>23468</b>	<b>404</b>	<b>3390</b>	<b>34.3</b>	<b>64</b>	<b>2761</b>	<b>34320</b>	<b>46.6</b>	<b>23.3</b>	<b>48101</b>	<b>5506</b>	<b>4128</b>	<b>2837</b>

- (1) QUANTITIES ARE BASED ON 110 % OF THE COMPUTED AREA OR LENGTH.
- (2) QUANTITIES ARE BASED ON THE FOLLOWING BASIS:  
 SEED MIXTURE 310 - 82 LB/ACRE  
 SEED MIXTURE 350 - 84.5 LB/ACRE  
 MULCH TYPE 3 - 2 TON/ACRE  
 COMM. FERT. 18-1-8 - 120 LB/ACRE  
 COMM. FERT. 22-5-10 - 400 LB/ACRE
- (3) COMMERCIAL FERTILIZER SHALL BE TYPE 3 - SLOW RELEASE.
- (4) INCLUDES QUANTITY FOR BOTH STAGING & TRAFFIC CONTROL AND EROSION CONTROL & TURF ESTABLISHMENT PLAN.
- (5) TO BE PLACED ALONG REALIGNED CLEARWATER CREEK NORTH AND SOUTH OF CSAH 14 AS SHOWN ON PAGES 243 AND 244

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NO	DATE	BY	CKD	APPR	REVISION

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.  
 Print Name: CHRISTOPHER M. TRBOYEVICH  
*Christopher M. Trbojevich*  
 Date: 3/20/07 License # 41635

STATE PROJECT NO. S.P. 02-614-24, ETAL

DRAWN BY J. TOULOUSE  
 DESIGNED BY J. TOULOUSE  
 CHECKED BY C. TRBOYEVICH  
 COMM. NO. 4994



ANOKA COUNTY  
 TABULATIONS  
 C.S.A.H. 14

SHEET  
 40  
 OF  
 492

(FF)		TRAFFIC BARRIER (SPEC. 2554)						NOTES
ALIGNMENT	STATION TO STATION	OFFSET		REMOVE (SPEC. 2104) (LIN FT)	DESIGN B8338 (LIN FT)	DESIGN SPECIAL A (LIN FT)	END TREATMENT ECCENTRIC LOADER BCT FURNISH AND INSTALL (EACH)	
		LEFT (FT)	RIGHT (FT)					
C.S.A.H. 14	4+22.1 - 5+48.2		17.4-26.1	127				
C.S.A.H. 14	4+22.6 - 4+84.0		14.9-21.7			25	1	
C.S.A.H. 14	4+31.9 - 5+44.8	14.1-21.5		114				
C.S.A.H. 14	4+32.8 - 6+42.9	15.0-27.7			150	25	1	
C.S.A.H. 14	59+19.2 - 61+28.0		20.8-24.3		150	25	1	
C.S.A.H. 14	60+09.3 - 61+13.9	20.9-25.3			50	25	1	
C.S.A.H. 14	62+19.7 - 64+13.4		20.8-25.2		138	25	1	
C.S.A.H. 14	62+87.9 - 63+78.5	20.9-24.5			25	25	1	
C.S.A.H. 14	123+09.4 - 125+28.4		33.4-87.4	254				
PROJECT TOTALS				495	513	150	6	

(GG)		FENCING (SPEC. 2557)					NOTES	
ALIGNMENT	STATION TO STATION	OFFSET		REMOVE (SPEC. 2104)				F&I DESIGN 60V-9322 (LIN FT)
		LEFT (FT)	RIGHT (FT)	CHAIN LINK FENCE (LIN FT)	WOOVEN WIRE FENCE (LIN FT)	WOOD FENCE (LIN FT)		
C.S.A.H. 14	4+51.0 - 16+15.0		22.6-95.6		1320			
C.S.A.H. 14	37+37.0 - 38+59.0	55.4-70.2			145			
C.S.A.H. 14	58+30.0 - 61+13.9		36.8-86.0			300	1	
C.S.A.H. 14	62+497.9 - 64+36.6		37.7-58.5			200	1	
C.S.A.H. 14	64+63.9 - 65+00.0		68.9-75.4			40	1	
C.S.A.H. 14	83+88.3 - 84+91.0		30.9-112.4	243				
C.S.A.H. 14	93+83.2 - 97+50.0		37.6-71.7			340		
C.S.A.H. 14	101+87.8 - 102+14.8	35.4-57.1		45				
C.S.A.H. 14	109+92.1 - 111+37.8	8.2-82.8			186			
C.S.A.H. 14	122+28.9 - 125+23.5	21.0-67.5			360			
C.S.A.H. 14	130+75.4 - 132+87.7	0.0-129.3		241				
C.S.A.H. 14	135+42.4 - 135+53.3	15.0-25.1				21		
C.S.A.H. 14	141+49.7 - 142+27.7		45.0			80	1	
C.S.A.H. 14	157+10.9 - 157+51.6	61.7-72.3				51		
C.S.A.H. 14	161+81.6 - 162+89.1		57.1-70.0			123		
C.S.A.H. 14	161+91.7 - 164+79.7	61.0-85.7		312				
C.S.A.H. 14	168+97.6 - 168+98.7	34.2-47.8				14		
C.S.A.H. 14	170+10.8 - 170+61.0	23.0-46.9		99				
C.S.A.H. 14	189+65.2 - 192+00.6	85.2-132.3		269				
C.S.A.H. 14	189+64.1 - 191+90.0		67.6-106.2	253				
PROJECT TOTALS				1462	2011	549	620	

NOTES:  
1) FENCE POST ANCHORAGE TO BE INCIDENTAL TO WIRE FENCE DESIGN SPECIAL VINYL COATED.

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NO	DATE	BY	CKD	APPR	REVISION

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Print Name: CHRISTOPHER M. TRBOYE VICH  
*Christopher M. Trboye Vich*  
Date: 3/26/07 License # 41635

STATE PROJECT NO.  
S.P. 02-614-24, ETAL

DRAWN BY  
S. MARTINS  
DESIGNED BY  
J. TOULOUSE  
CHECKED BY  
C. TRBOYE VICH  
COMM. NO. 4994



ANOKA COUNTY  
TABULATIONS  
C.S.A.H. 14

SHEET  
41  
OF  
492



(V)

UTILITIES TABULATION - CONTINUED

Table with 5 columns: ALIGNMENT, LOCATION STATION AND OFFSET, IN PLACE UTILITY, UTILITY OWNER, NOTES. Contains utility tabulation data for alignment E.B. C.S.A.H. 14.

(V)

UTILITIES TABULATION - CONTINUED

Table with 5 columns: ALIGNMENT, LOCATION STATION AND OFFSET, IN PLACE UTILITY, UTILITY OWNER, NOTES. Contains utility tabulation data for alignment E.B. C.S.A.H. 14.

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STATE PROJECT NO. S.P. 02-614-24, ETAL

DRAWN BY S. MARTINS DESIGNED BY J. TOULOUSE CHECKED BY C. TRBOYE VICH COMM. NO. 4994



ANOKA COUNTY UTILITIES TABULATION C.S.A.H. 14

SHEET 43 OF 492

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Table with 5 columns: NO, DATE, BY, CKD, APPR. Includes a REVISION section.



(V)

UTILITIES TABULATION - CONTINUED

Table with 5 columns: ALIGNMENT, LOCATION STATION AND OFFSET, IN PLACE UTILITY, UTILITY OWNER, NOTES. Contains utility tabulation data for various alignment points and stationing.

(V)

UTILITIES TABULATION - CONTINUED

Table with 5 columns: ALIGNMENT, LOCATION STATION AND OFFSET, IN PLACE UTILITY, UTILITY OWNER, NOTES. Contains utility tabulation data for various alignment points and stationing.

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Print Name: CHRISTOPHER M. TRBOYE VICH
Date: 3/26/07 License #: 41635

STATE PROJECT NO.
S.P. 02-614-24, ETAL

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S. MARTINS
DESIGNED BY
J. TOULOUSE
CHECKED BY
C. TRBOYE VICH
COMM. NO. 4994



ANOKA COUNTY
UTILITIES TABULATION
C.S.A.H. 14

SHEET
45
OF
492

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Table with 5 columns: NO, DATE, BY, CKD, APPR. Includes a revision entry.

(V)

UTILITIES TABULATION - CONTINUED

Table with 5 columns: ALIGNMENT, LOCATION STATION AND OFFSET, IN PLACE UTILITY, UTILITY OWNER, NOTES. Contains utility data for E.B. C.S.A.H. 14.

(V)

UTILITIES TABULATION - CONTINUED

Table with 5 columns: ALIGNMENT, LOCATION STATION AND OFFSET, IN PLACE UTILITY, UTILITY OWNER, NOTES. Contains utility data for E.B. C.S.A.H. 14.

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Print Name: CHRISTOPHER M. TRBOYEVICH  
*Christopher M. Trbojevich*  
Date: 3/26/07 License #: 41635

STATE PROJECT NO.  
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S. MARTINS  
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J. TOULOUSE  
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COMM. NO. 4994



ANOKA COUNTY  
UTILITIES TABULATION  
C.S.A.H. 14

SHEET  
46  
OF  
492

Table with 5 columns: NO, DATE, BY, CKD, APPR. Includes a REVISION row.

(V) UTILITIES TABULATION - CONTINUED

Table with 5 columns: ALIGNMENT, LOCATION STATION AND OFFSET, IN PLACE UTILITY, UTILITY OWNER, NOTES. Lists utility locations for E.B. C.S.A.H. 14 alignment, mostly buried TV lines.

(V) UTILITIES TABULATION - CONTINUED

Table with 5 columns: ALIGNMENT, LOCATION STATION AND OFFSET, IN PLACE UTILITY, UTILITY OWNER, NOTES. Lists utility locations for E.B. C.S.A.H. 14 and N.B. C.S.A.H. 54 alignments, including buried TV, fiber, and power poles.

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Print Name: CHRISTOPHER M. TRBOYEVOICH
Signature: Christopher M. Trbojevich
Date: 3/26/07 License #: 41635

STATE PROJECT NO. S.P. 02-614-24, ETAL

DRAWN BY S. MARTINS
DESIGNED BY J. TOULOUSE
CHECKED BY C. TRBOYEVOICH
COMM. NO. 4994



ANOKA COUNTY
UTILITIES TABULATION
C.S.A.H. 14

SHEET 47 OF 492

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Table with 3 columns: NO, DATE, BY, CKD, APPR, REVISION



(V)

UTILITIES TABULATION - CONTINUED

Table with 5 columns: ALIGNMENT, LOCATION STATION AND OFFSET, IN PLACE UTILITY, UTILITY OWNER, NOTES. Contains utility data for N.B. C.S.A.H. 54.

NOTES:

THE "LEAVE AS IS", "ADJUST", AND "RELOCATE" COLUMNS ARE BASED UPON THE BEST INFORMATION AVAILABLE AND MAY NOT REFLECT THE THE ACTUAL EFFECTS ON THE UTILITIES BY CONSTRUCTION. ACTUAL DETERMINATION WILL BE MADE IN THE FIELD DURING CONSTRUCTION.

UTILITIES ARE SHOWN AT APPROXIMATE LOCATIONS. THE CONTRACTOR SHALL DETERMINE THE ACTUAL LOCATION OF ALL UTILITIES IN THE FIELD.

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

THE QUALITY LEVEL IS ASSUMED TO BE "D". THE QUALITY LEVEL REPRESENTS THE RELIABILITY OF THE UTILITY INFORMATION AND DETERMINED BY THE MEANS AND METHODS OF THE DATA COLLECTION AND INTERPRETATION BY THE PROFESSIONAL. SEE "CONSTRUCTION INSTITUTE OF THE AMERICAN SOCIETY OF CIVIL ENGINEERS" DOCUMENT CI/ASCE 38-02

- 1) LEAVE AS IS.
2) ADJUST.
3) RELOCATE
4) LEAVE IN PLACE/OUT OF SERVICE

UTILITY COMPANIES table listing: ANOKA COUNTY HIGHWAY DEPARTMENT, CENTERPOINT ENERGY MINNESOTA GAS, CITY OF CENTERVILLE, CITY OF LIND LAKES, COMCAST CABLE COMMUNICATIONS INC., CONNEXUS ENERGY, INDEPENDENT SCHOOL DISTRICT #12, MINNESOTA DEPARTMENT OF TRANSPORTATION, QWEST CORPORATION, X-CEL ENERGY.

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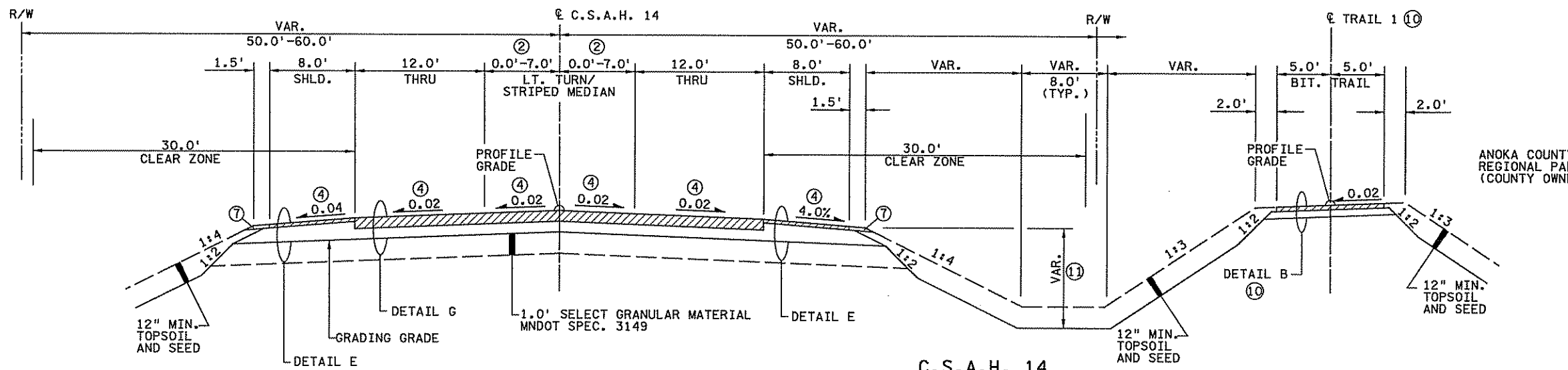
STATE PROJECT NO. S.P. 02-614-24, ETAL

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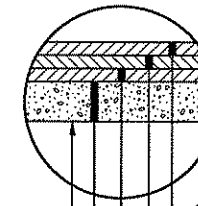
ANOKA COUNTY UTILITIES TABULATION C.S.A.H. 14

SHEET 48 OF 492



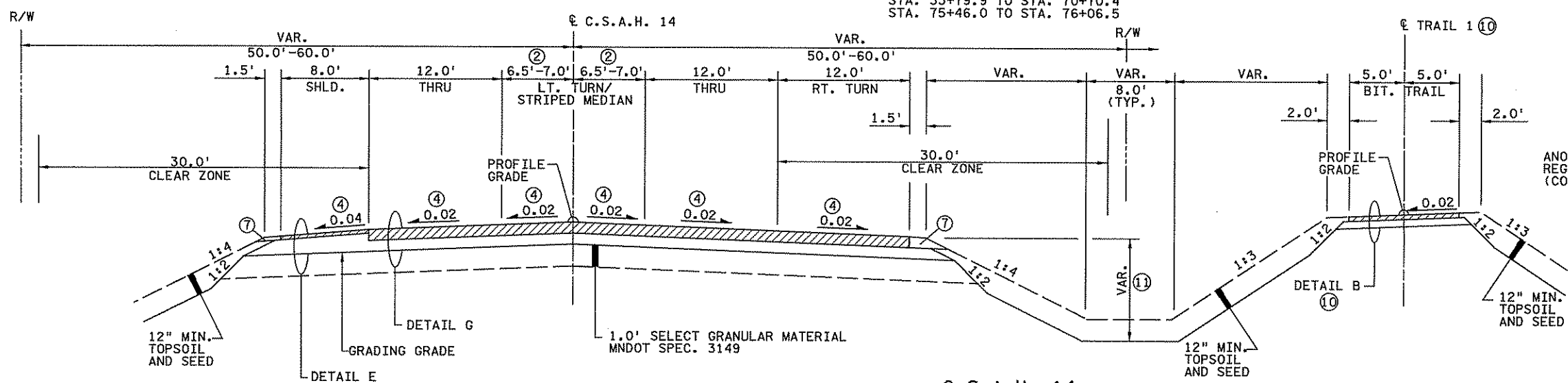
**C.S.A.H. 14**

STA. 4+53.4 TO STA. 24+82.4  
 STA. 33+79.9 TO STA. 70+70.4  
 STA. 75+46.0 TO STA. 76+06.5



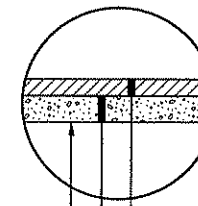
**DETAIL G**  
C.S.A.H. 14

2" TYPE SP 12.5 WEARING COURSE MIXTURE SPWEB440C MNDOT SPEC. 2360  
 2" TYPE SP 12.5 WEARING COURSE MIXTURE SPWEB440C MNDOT SPEC. 2360  
 2" TYPE SP 12.5 NON-WEARING COURSE MIXTURE SPNWB430B MNDOT SPEC. 2360  
 6" AGGREGATE BASE, CLASS 5 MNDOT SPEC. 2211, 100% CRUSHED  
 GRADING GRADE



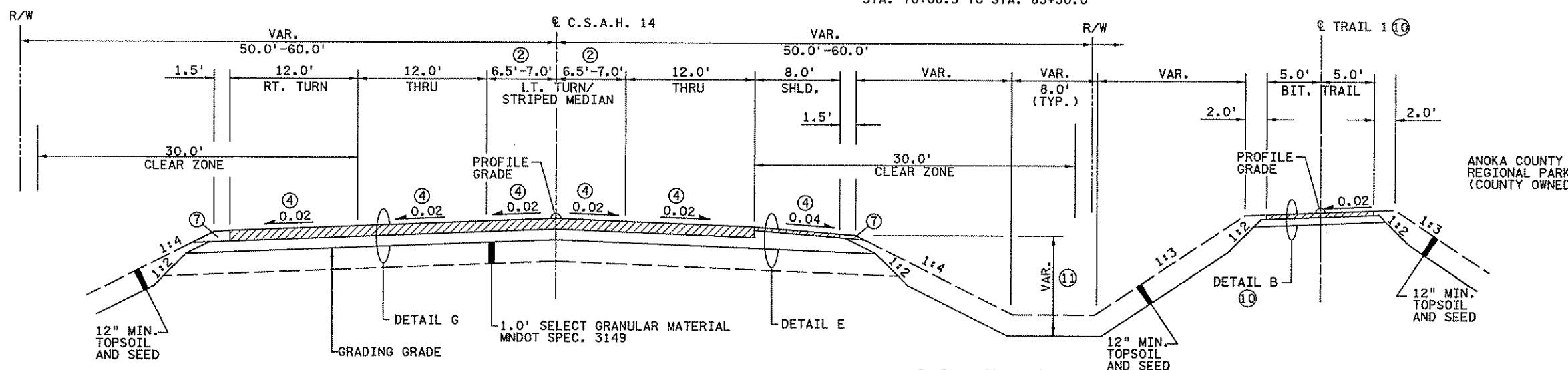
**C.S.A.H. 14**

STA. 24+82.4 TO STA. 29+30.2  
 STA. 76+06.5 TO STA. 83+50.0



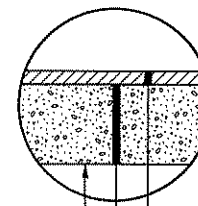
**DETAIL B**  
BIT. TRAIL

2" TYPE LV 4 WEARING COURSE MNDOT SPEC. 2350 (LVWE45030B)  
 4" AGGREGATE BASE, CLASS 5 MNDOT SPEC. 2211  
 GRADING GRADE



**C.S.A.H. 14**

STA. 29+30.2 TO STA. 33+79.9  
 STA. 70+70.4 TO STA. 75+46.0



**DETAIL E**  
BITUMINOUS SHOULDER

2" TYPE SP 12.5 WEARING COURSE MIXTURE SPWEB440C MNDOT SPEC. 2360  
 VAR. AGGREGATE BASE, CLASS 5 MNDOT SPEC. 2211, 100% CRUSHED  
 GRADING GRADE

- NOTES:
- ② SEE CONSTRUCTION PLANS AND STRIPING PLANS FOR LANE WIDTHS AND LOCATIONS.
  - ④ SEE SUPERELEVATION AND PROPOSED UTILITY PLANS FOR CROSS SLOPE TRANSITIONS.
  - ⑦ AGGREGATE SHOULDERING, CLASS 5 MNDOT SPEC. 2221.
  - ⑩ SEE SHEET NO. 57 FOR LOCATION OF TRAIL SECTION WITH LIGHTWEIGHT FILL.
  - ⑪ SPECIAL DITCH GRADE (S.D.G.) ELEVATIONS SHOWN ON PROFILES AND CROSS SECTIONS.

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NO	DATE	BY	CHKD	APPR	REVISION

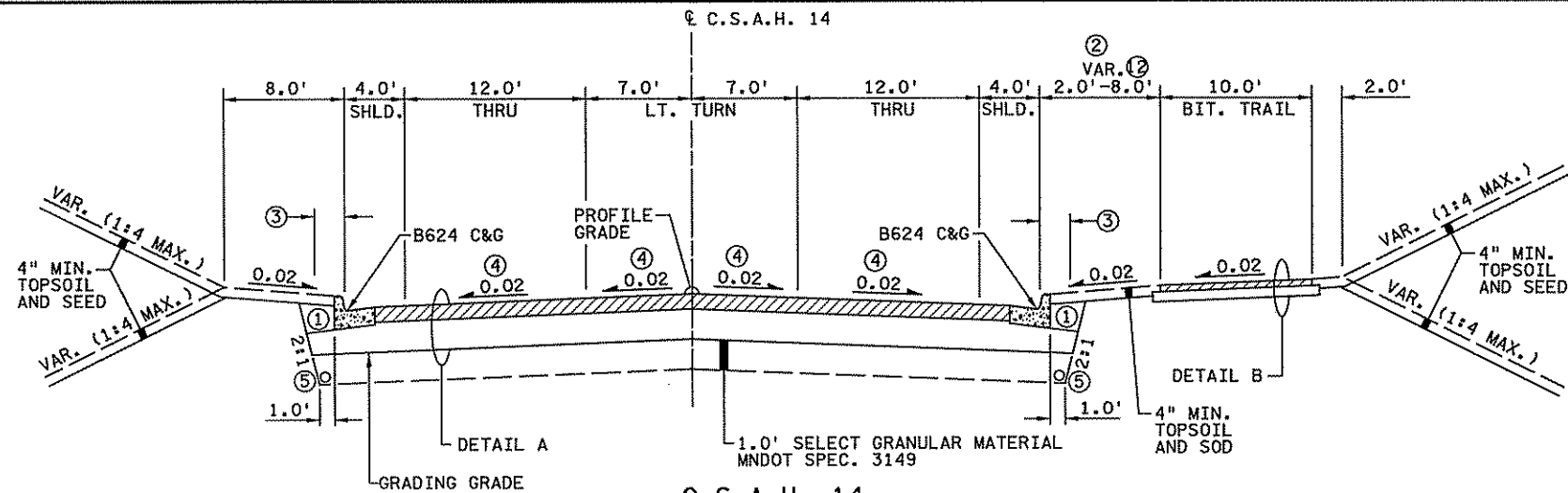
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*Christopher M. Trbojevich*  
 Date: 3/26/07 License #: 41635

STATE PROJECT NO. S.P. 02-614-24, ETAL

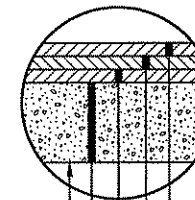
DRAWN BY S. MARTINS  
 DESIGNED BY J. TOULOUSE  
 CHECKED BY C. TRBOYEVICH  
 COMM. NO. 4994



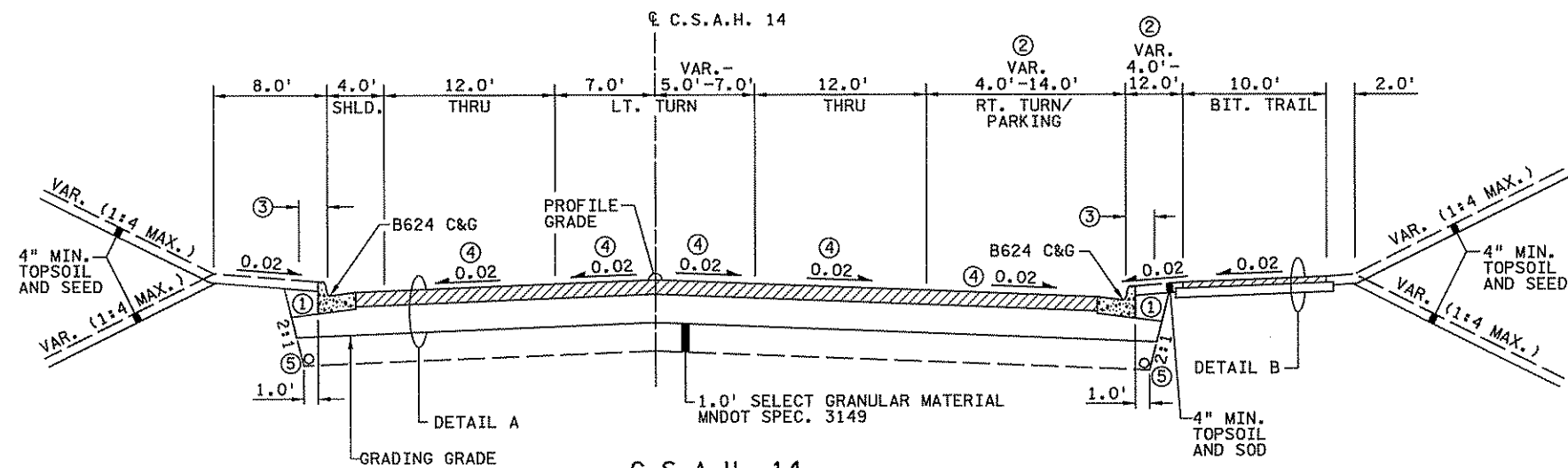


**C.S.A.H. 14**

STA. 83+50.0 TO STA. 87+51.9  
 STA. 89+80.0 TO STA. 100+36.2  
 STA. 102+83.3 TO STA. 112+36.0  
 STA. 114+96.1 TO STA. 119+64.2  
 STA. 122+86.1 TO STA. 128+67.0

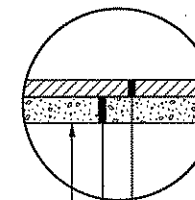


**DETAIL A**  
C.S.A.H. 14

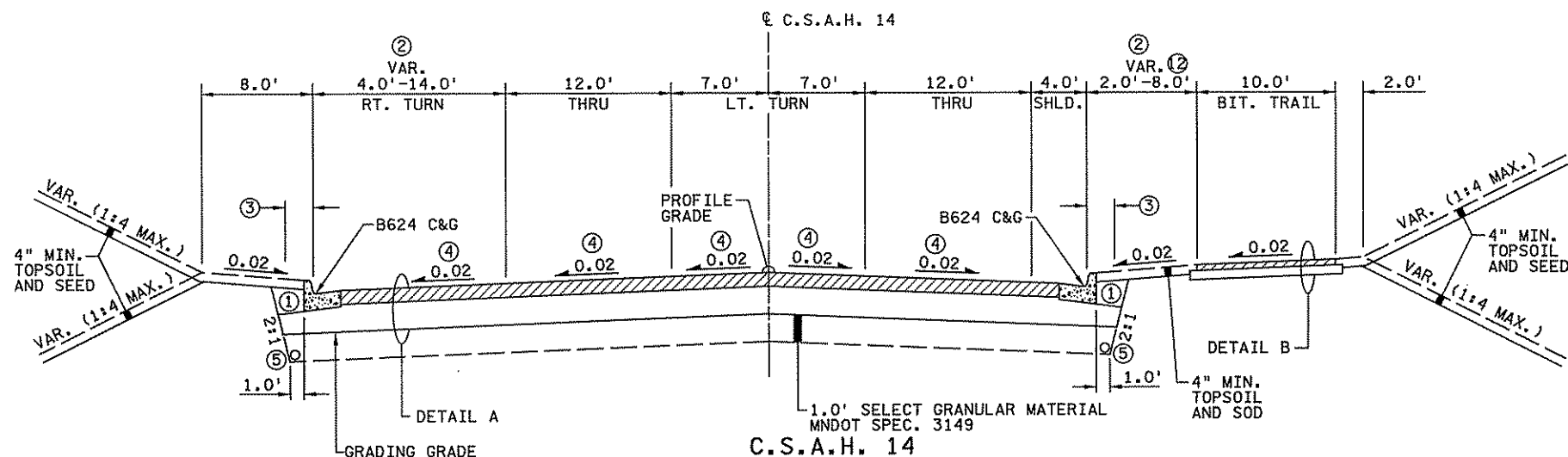


**C.S.A.H. 14**

STA. 87+51.9 TO STA. 89+80.0  
 STA. 128+67.0 TO STA. 131+61.6



**DETAIL B**  
BIT. TRAIL



**C.S.A.H. 14**

STA. 100+36.2 TO STA. 102+83.3  
 STA. 112+36.0 TO STA. 114+96.1  
 STA. 119+64.2 TO STA. 122+86.1

**NOTES:**

- ① BACKFILL WITH SUITABLE GRADING MATERIAL.
- ② SEE CONSTRUCTION PLANS AND STRIPING PLANS FOR LANE WIDTHS AND LOCATIONS.
- ③ 2.0' OBSTACLE FREE CLEAR ZONE.
- ④ SEE SUPERELEVATION AND PROPOSED UTILITY PLANS FOR CROSS SLOPE TRANSITIONS.
- ⑤ 4" PERFORATED TP PIPE DRAIN. SEE SUPERELEVATION AND PROPOSED UTILITY PLANS FOR LOCATIONS.
- ⑥ WHERE 2.0' OR LESS, EXTEND BITUMINOUS TRAIL WIDTH TO BACK OF CURB.

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NO	DATE	BY	CHKD	APPR	REVISION

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 Date: 3/26/07 License #: 41635

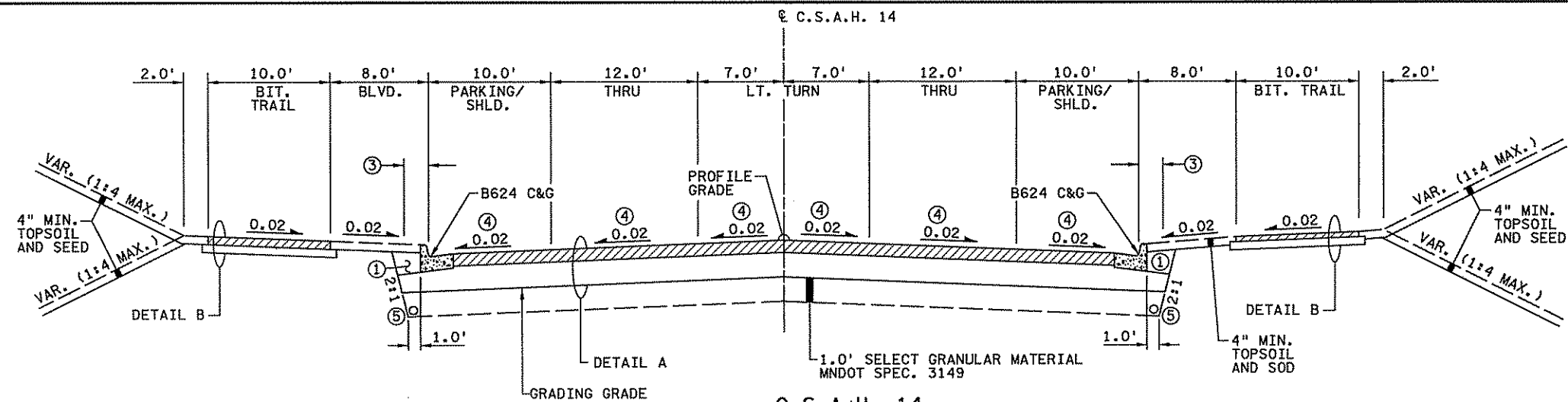
STATE PROJECT NO. S.P. 02-614-24, ETAL

DRAWN BY S. MARTINS  
 DESIGNED BY J. TOULOUSE  
 CHECKED BY C. TRBOYEVICH  
 COMM. NO. 4994



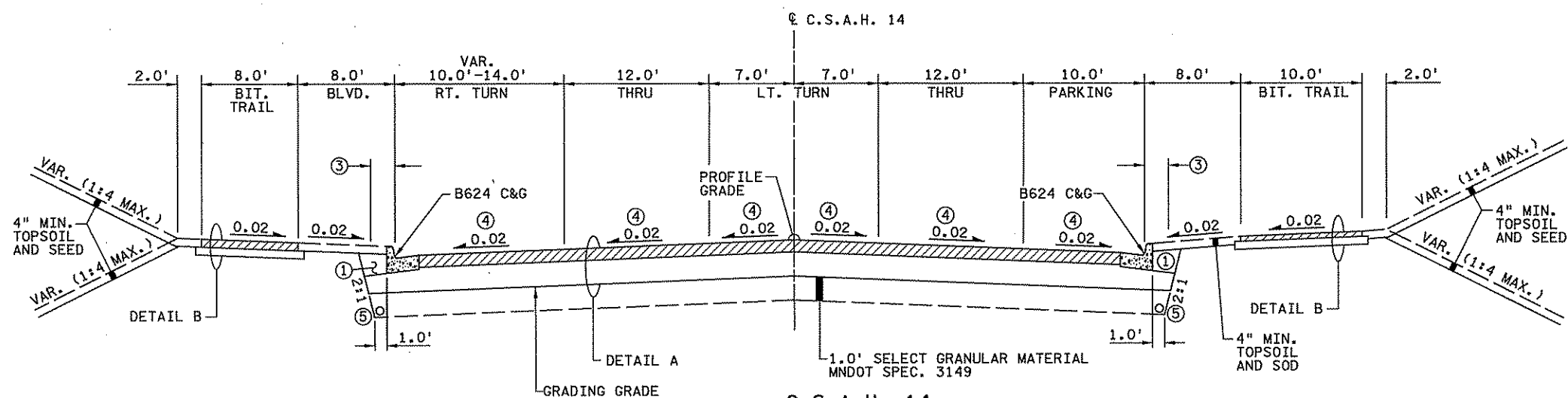
ANOKA COUNTY  
 TYPICAL SECTIONS  
 C.S.A.H. 14

SHEET 50 OF 492



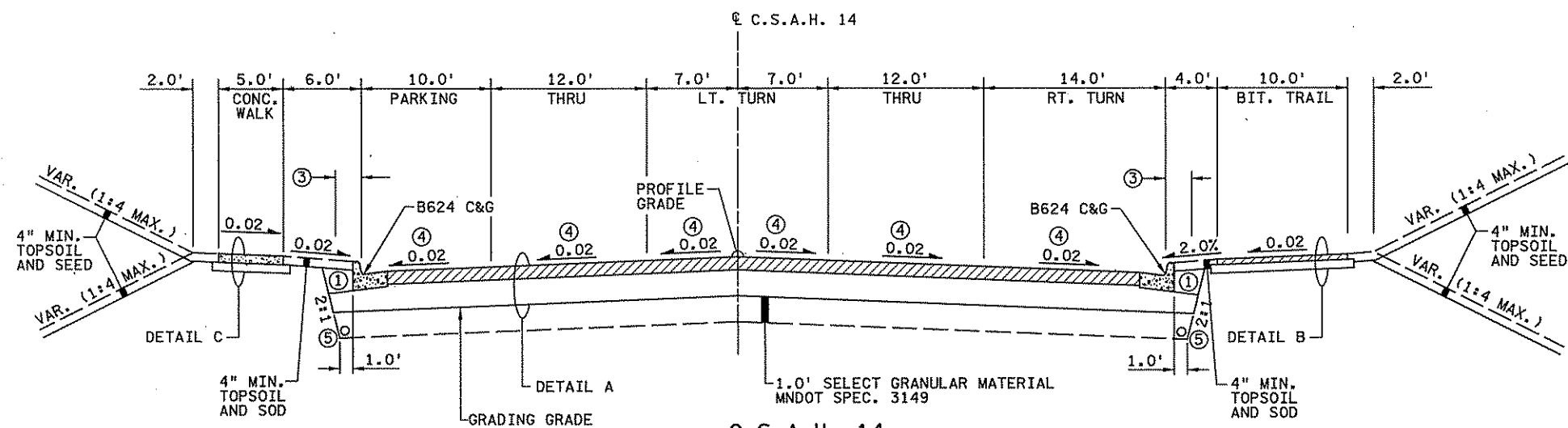
C.S.A.H. 14

STA. 131+61.6 TO STA. 135+10.0  
STA. 136+77.8 TO STA. 137+61.8



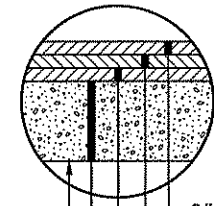
C.S.A.H. 14

STA. 135+10.0 TO STA. 136+77.8



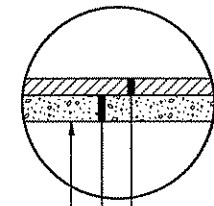
C.S.A.H. 14

STA. 137+61.8 TO STA. 140+00.00



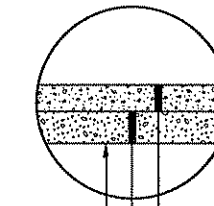
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2" TYPE SP 12.5 NON-WEARING COURSE MIXTURE SPNWB430B MNDOT SPEC. 2360  
12" AGGREGATE BASE, CLASS 5 MNDOT SPEC. 2211, 100% CRUSHED  
GRADING GRADE

DETAIL A  
C.S.A.H. 14



2" TYPE LV4 WEARING COURSE MNDOT SPEC. 2350 (LVWE45030B)  
4" AGGREGATE BASE, CLASS 5 MNDOT SPEC. 2211  
GRADING GRADE

DETAIL B  
BIT. TRAIL



4" CONCRETE WALK (SPEC. 2521)  
VAR. (4" MIN.) AGGREGATE BASE, CLASS 5, (INCIDENTAL TO 4" CONC. WALK) MNDOT SPEC. 2211  
GRADING GRADE

DETAIL C  
CONCRETE WALK

- NOTES:
- ① BACKFILL WITH SUITABLE GRADING MATERIAL.
  - ② SEE CONSTRUCTION PLANS AND STRIPING PLANS FOR LANE WIDTHS AND LOCATIONS.
  - ③ 2.0' OBSTACLE FREE CLEAR ZONE.
  - ④ SEE SUPERELEVATION AND PROPOSED UTILITY PLANS FOR CROSS SLOPE TRANSITIONS.
  - ⑤ 4" PERFORATED TP PIPE DRAIN. SEE SUPERELEVATION AND PROPOSED UTILITY PLANS FOR LOCATIONS.

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.  
Print Name: CHRISTOPHER M. TRBOYEVICH  
*Christopher M. Trbojevich*  
Date: 3/26/07 License #: 41635

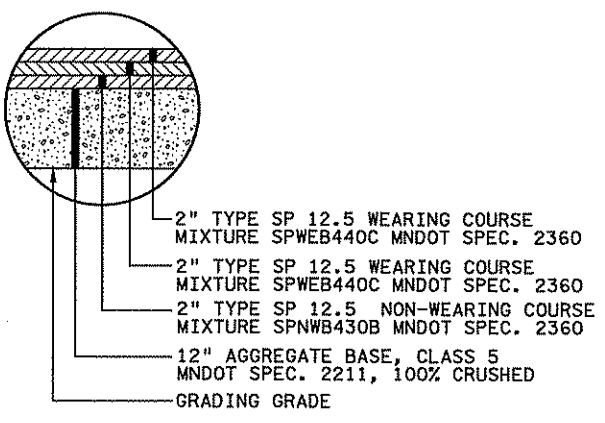
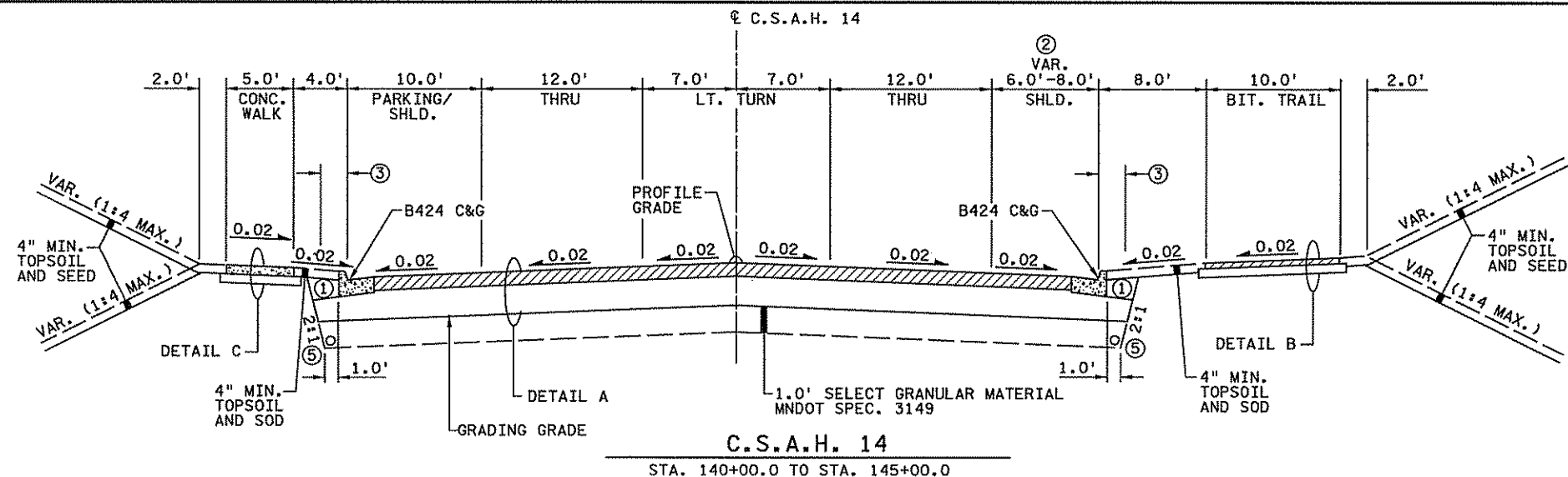
STATE PROJECT NO. S.P. 02-614-24, ETAL  
DRAWN BY S. MARTINS  
DESIGNED BY J. TOULOUSE  
CHECKED BY C. TRBOYEVICH  
COMM. NO. 4994



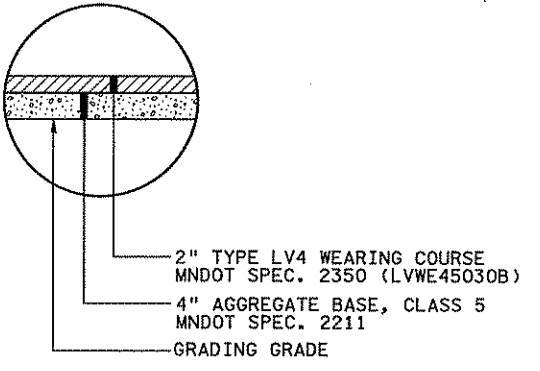
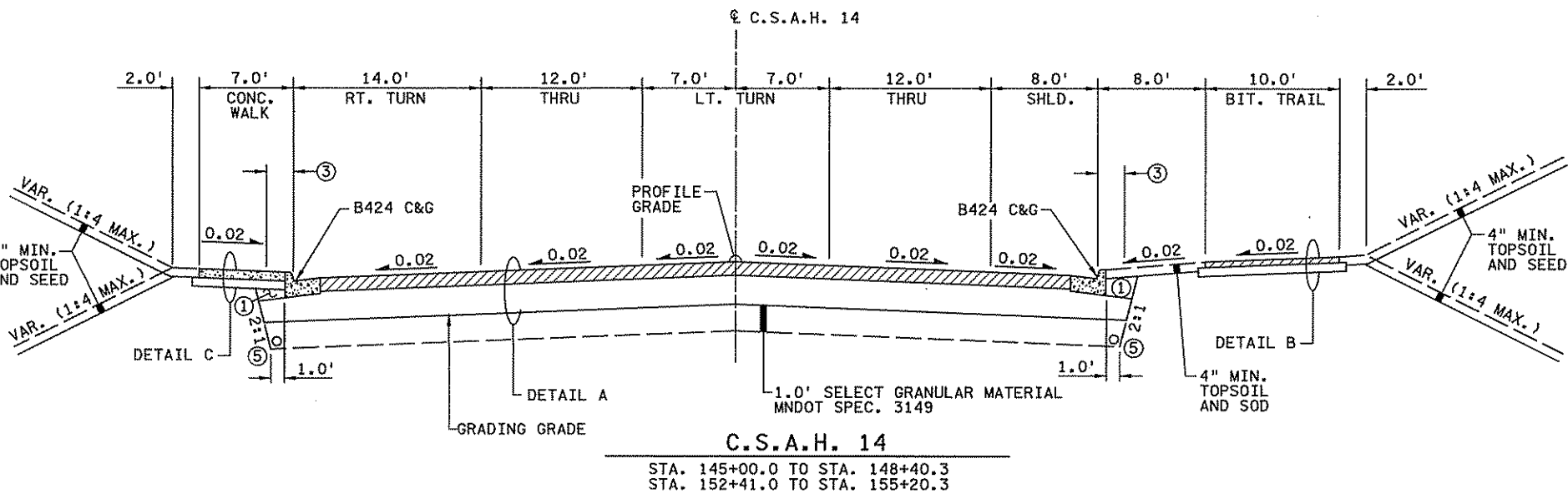
ANOKA COUNTY	SHEET
TYPICAL SECTIONS	51
C.S.A.H. 14	OF
	492

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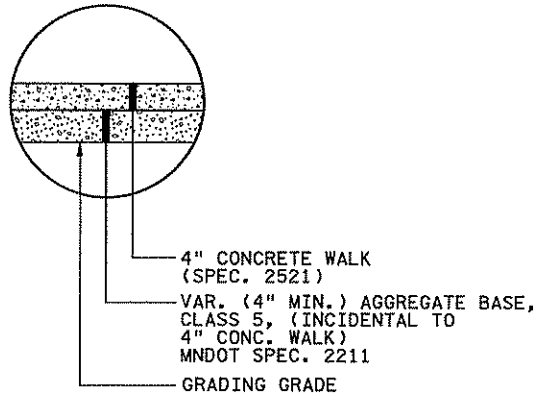
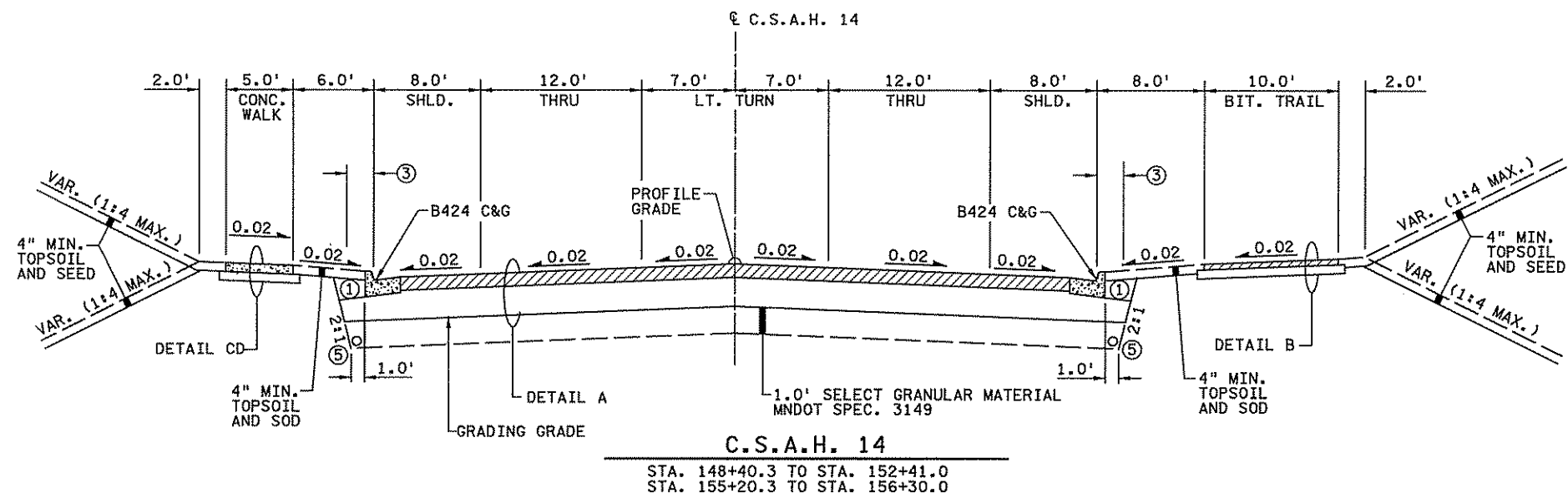
NO	DATE	BY	CKD	APPR	REVISION



DETAIL A  
C.S.A.H. 14



DETAIL B  
BIT. TRAIL



DETAIL C  
CONCRETE WALK

- NOTES:
- ① BACKFILL WITH SUITABLE GRADING MATERIAL.
  - ② SEE CONSTRUCTION PLANS AND STRIPING PLANS FOR LANE WIDTHS AND LOCATIONS.
  - ③ 2.0' OBSTACLE FREE CLEAR ZONE.
  - ④ SEE SUPERELEVATION AND PROPOSED UTILITY PLANS FOR CROSS SLOPE TRANSITIONS.
  - ⑤ 4" PERFORATED TP PIPE DRAIN. SEE SUPERELEVATION AND PROPOSED UTILITY PLANS FOR LOCATIONS.

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NO	DATE	BY	CHKD	APPR	REVISION

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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.

Print Name: CHRISTOPHER M. TRBOYEVICH

*Christopher M. Trbojevich*

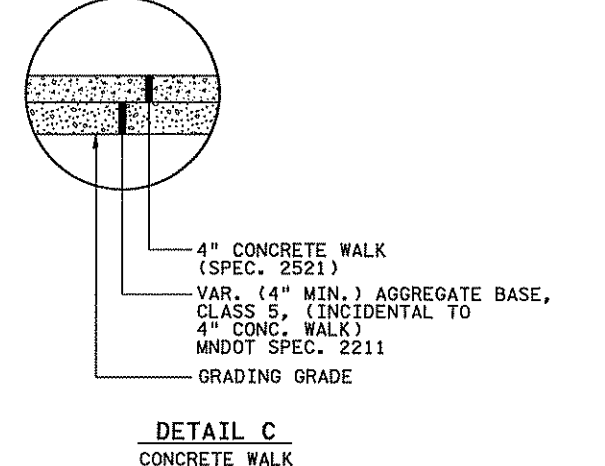
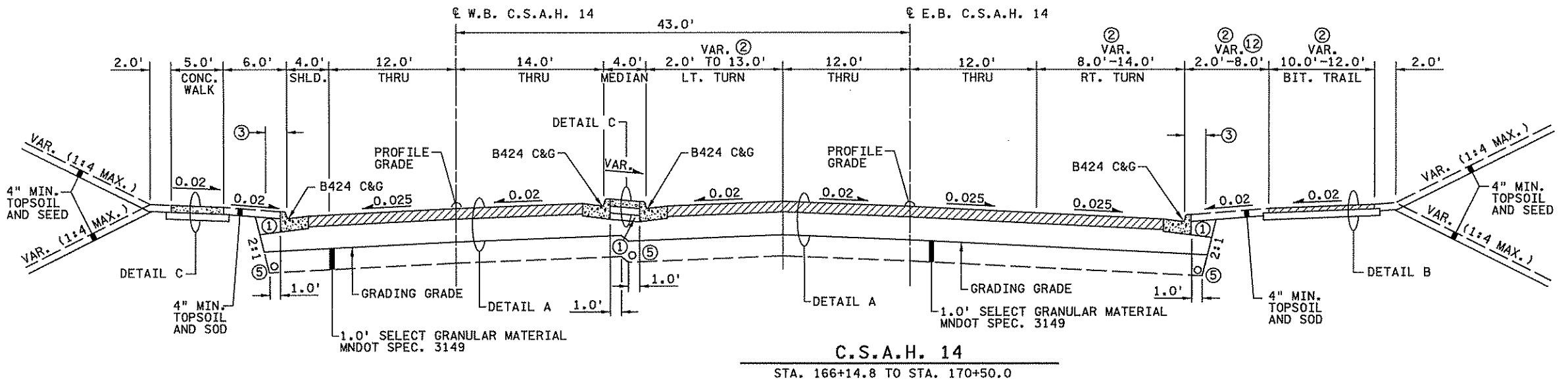
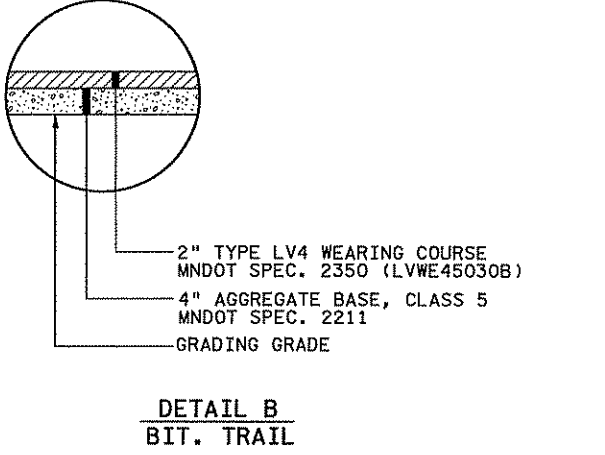
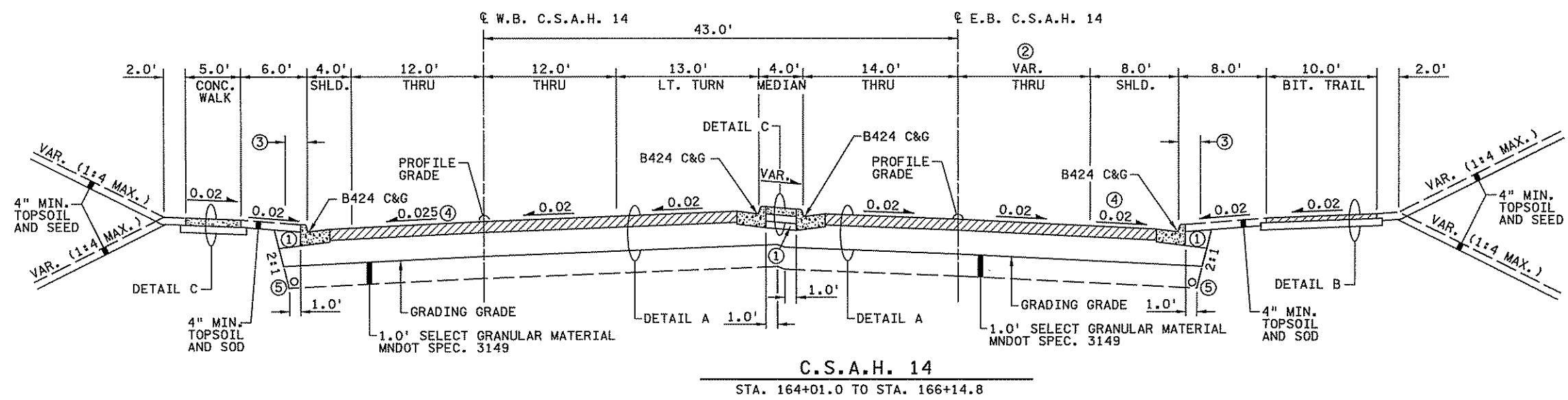
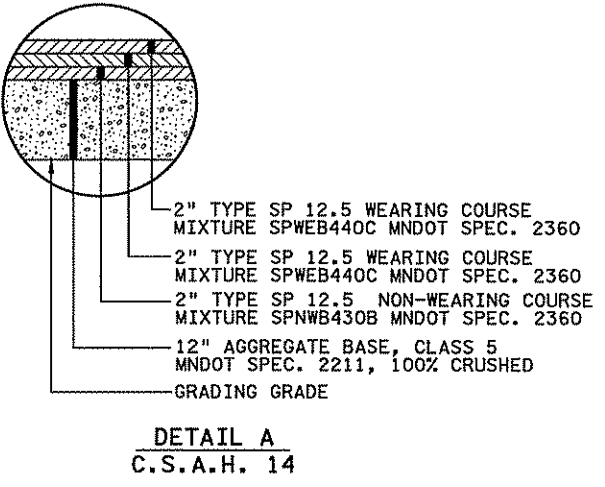
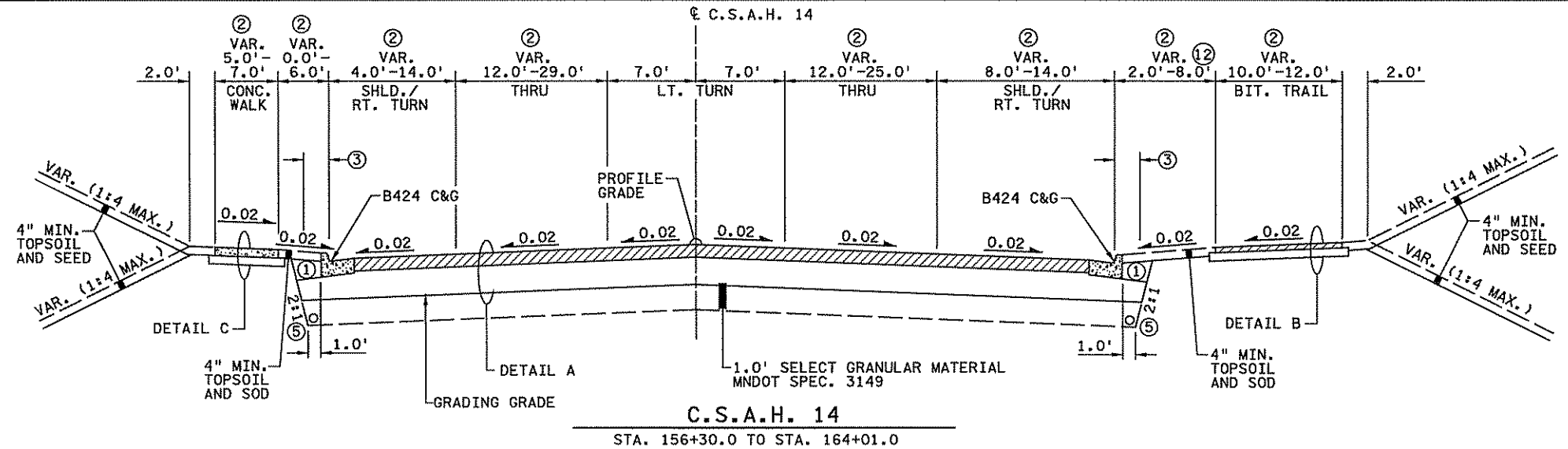
Date: 3/26/10 License: 41635

STATE PROJECT NO. S.P. 02-614-24, ETAL

DRAWN BY S. MARTINS  
DESIGNED BY J. TOULOUSE  
CHECKED BY C. TRBOYEVICH  
COMM. NO. 4994



ANOKA COUNTY	SHEET 52 OF 492
TYPICAL SECTIONS C.S.A.H. 14	



- NOTES:
- ① BACKFILL WITH SUITABLE GRADING MATERIAL.
  - ② SEE CONSTRUCTION PLANS AND STRIPING PLANS FOR LANE WIDTHS AND LOCATIONS.
  - ③ 2.0' OBSTACLE FREE CLEAR ZONE.
  - ④ SEE SUPERELEVATION AND PROPOSED UTILITY PLANS FOR CROSS SLOPE TRANSITIONS.
  - ⑤ 4" PERFORATED TP PIPE DRAIN. SEE SUPERELEVATION AND PROPOSED UTILITY PLANS FOR LOCATIONS.
  - ⑫ WHERE 2.0' OR LESS, EXTEND BITUMINOUS TRAIL WIDTH TO BACK OF CURB.

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NO	DATE	BY	CHKD	APPR	REVISION

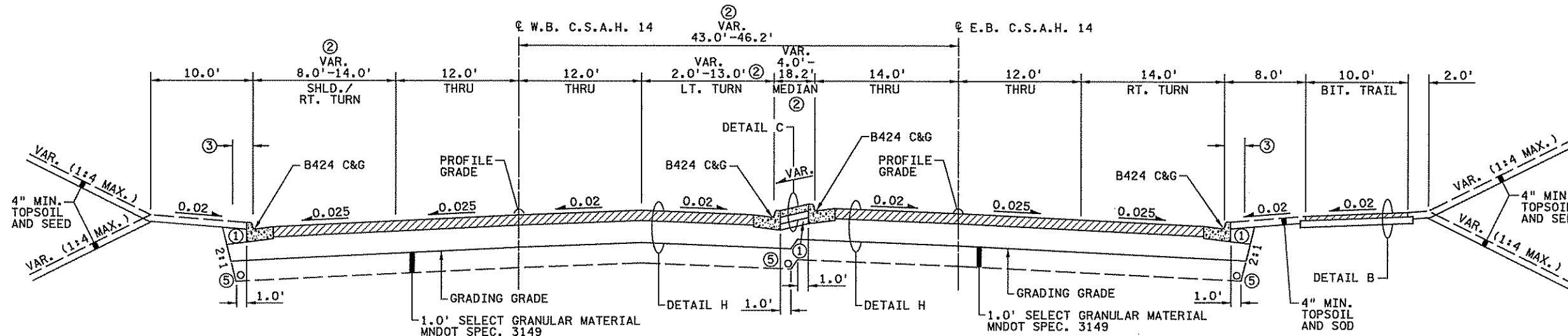
I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.  
 Print Name: CHRISTOPHER M. TRBOYEVICH  
*Christopher M. Trbojevich*  
 Date: 3/26/07 License #: 41635

STATE PROJECT NO. S.P. 02-614-24, ETAL

DRAWN BY S. MARTINS  
 DESIGNED BY J. TOULOUSE  
 CHECKED BY C. TRBOYEVICH  
 COMM. NO. 4994

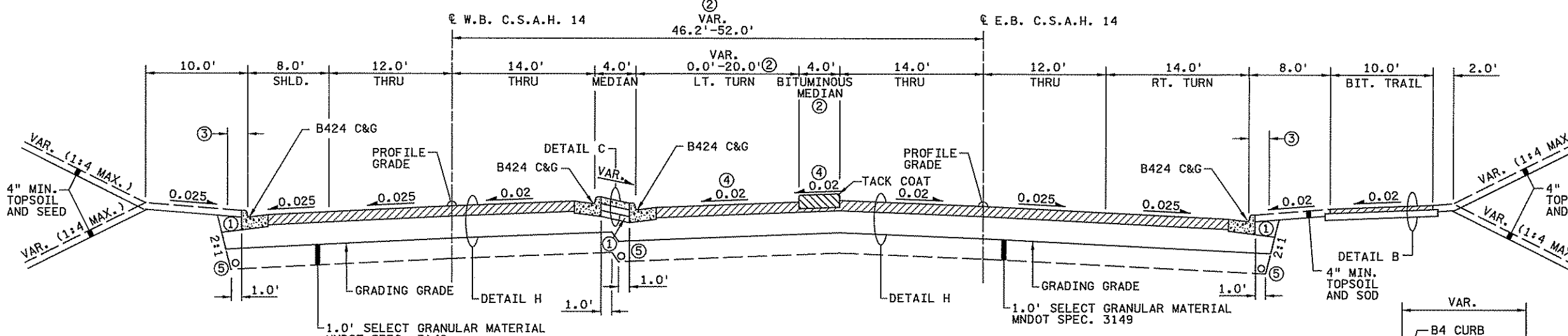


ANOKA COUNTY  
 TYPICAL SECTIONS  
 C.S.A.H. 14  
 SHEET 53 OF 492



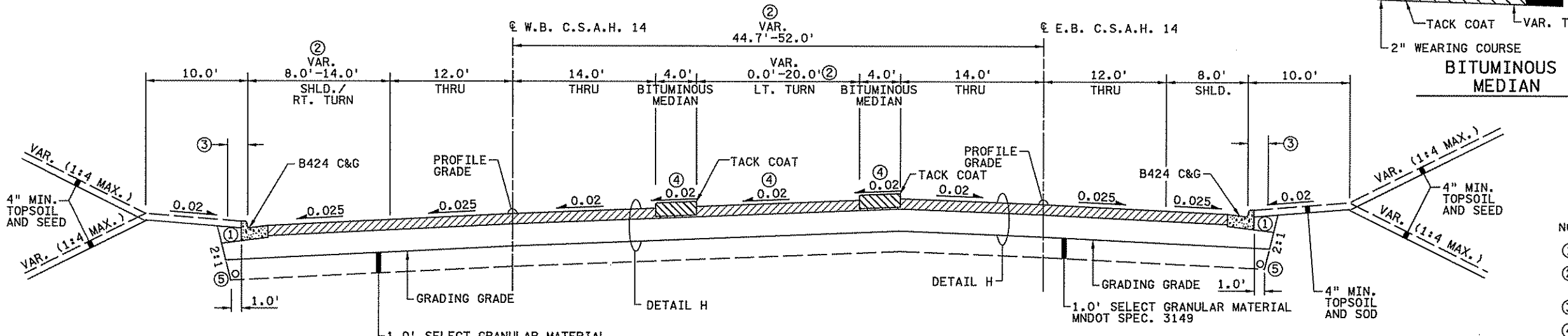
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STA. 170+50.0 TO STA. 178+73.8



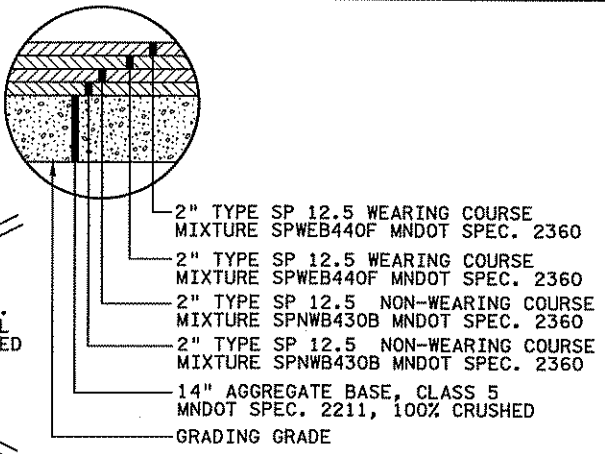
**C.S.A.H. 14**

STA. 178+73.8 TO STA. 180+65.0

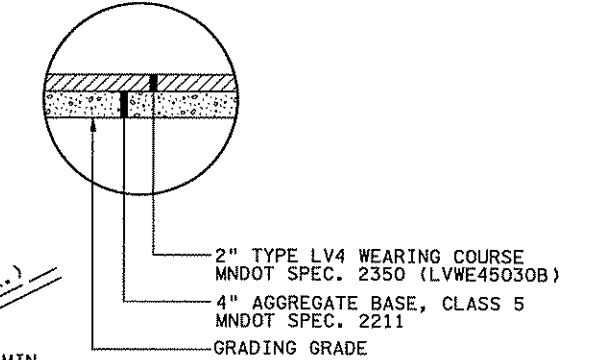


**C.S.A.H. 14**

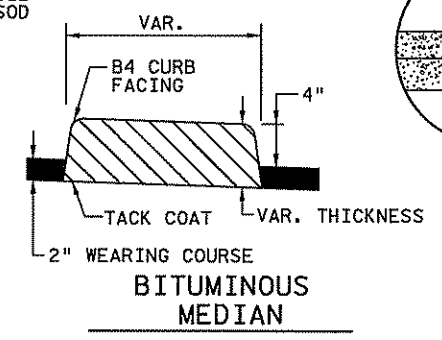
STA. 180+65.0 TO STA. 185+00.0



**DETAIL H**  
C.S.A.H. 14



**DETAIL B**  
BIT. TRAIL



**DETAIL C**  
CONCRETE WALK

- NOTES:
- ① BACKFILL WITH SUITABLE GRADING MATERIAL.
  - ② SEE CONSTRUCTION PLANS AND STRIPING PLANS FOR LANE WIDTHS AND LOCATIONS.
  - ③ 2.0' OBSTACLE FREE CLEAR ZONE.
  - ④ SEE SUPERELEVATION AND PROPOSED UTILITY PLANS FOR CROSS SLOPE TRANSITIONS.
  - ⑤ 4" PERFORATED TP PIPE DRAIN. SEE SUPERELEVATION AND PROPOSED UTILITY PLANS FOR LOCATIONS.

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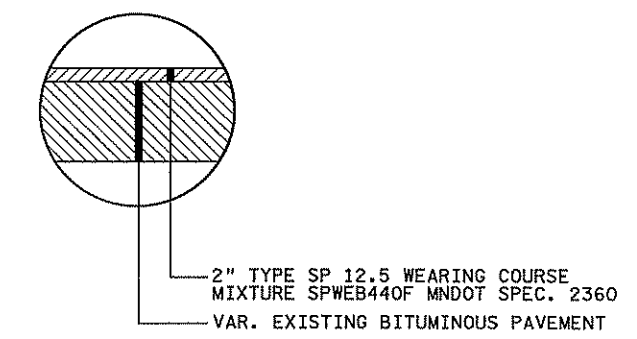
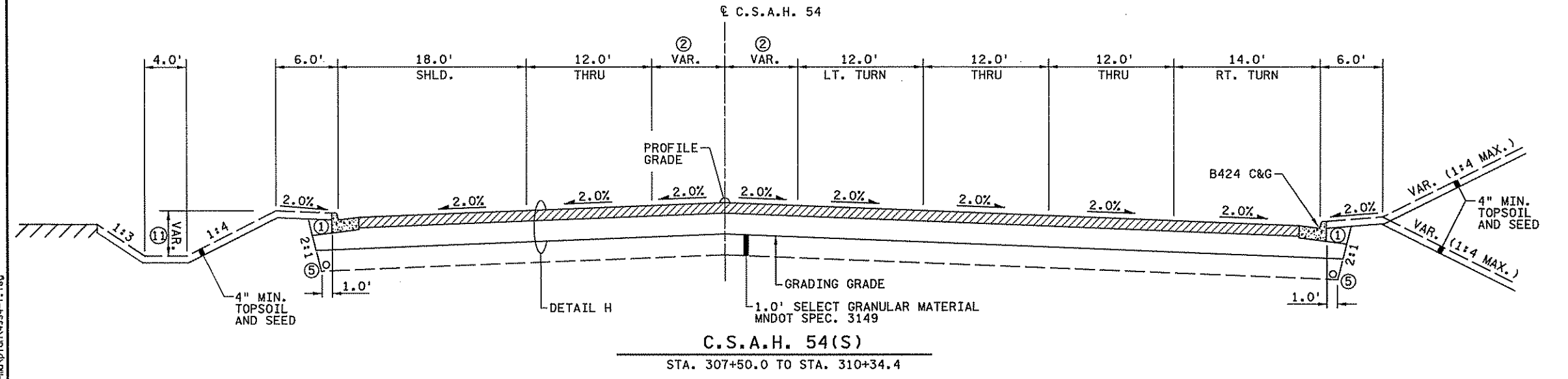
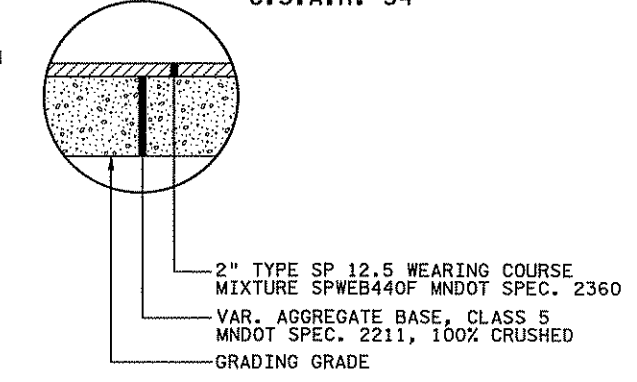
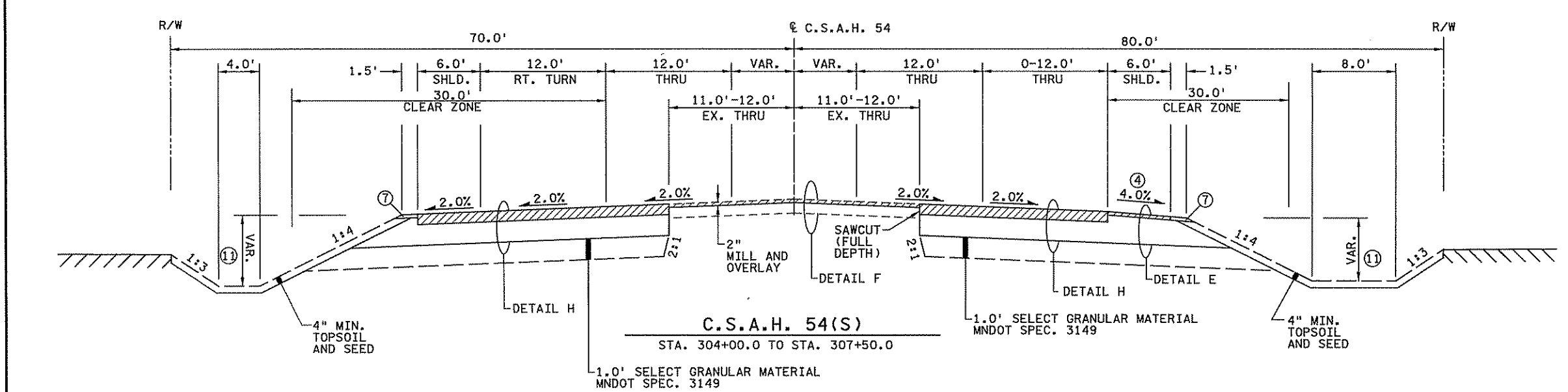
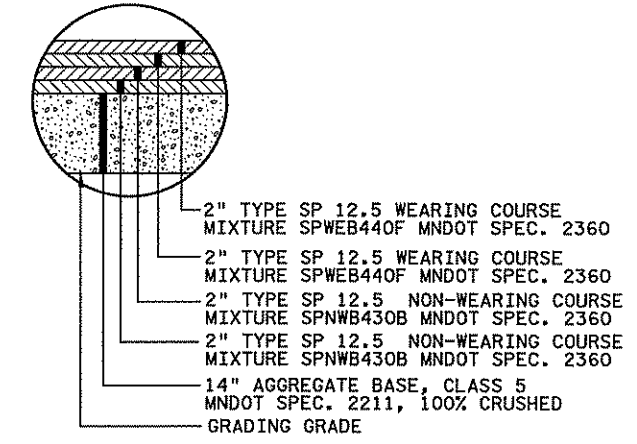
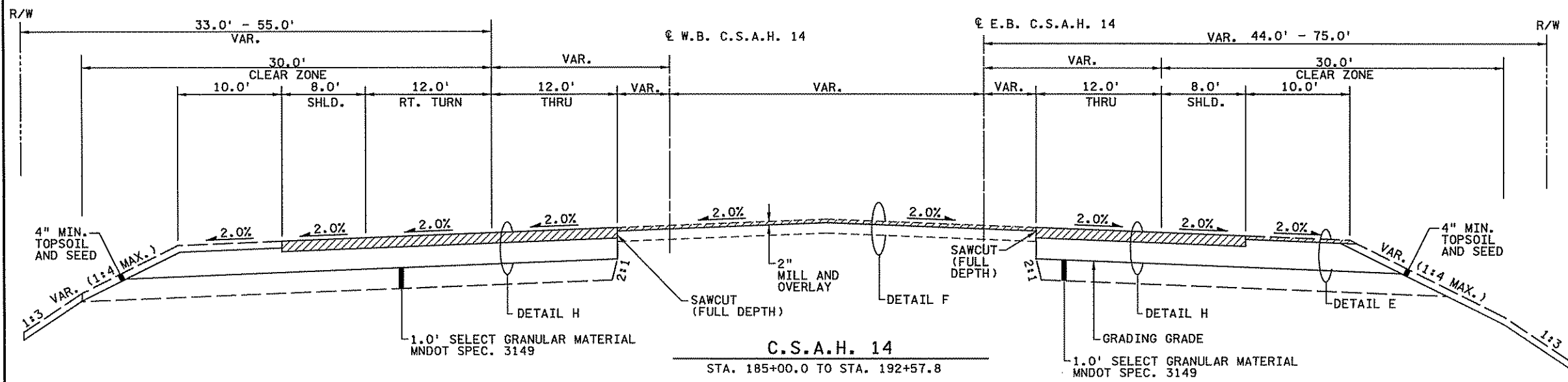
NO	DATE	BY	CHKD	APPR	REVISION

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.  
 Print Name: CHRISTOPHER M. TRBOYEVICH  
*Christopher M. Trbojevich*  
 Date: 3/20/07 License #: 41635

STATE PROJECT NO. S.P. 02-614-24, ETAL  
 DRAWN BY D. FITCHORN  
 DESIGNED BY J. TOULOUSE  
 CHECKED BY C. TRBOYEVICH  
 COMM. NO. 4994



ANOKA COUNTY  
 TYPICAL SECTIONS  
 C.S.A.H. 14  
 SHEET 54 OF 492



- NOTES:
- BACKFILL WITH SUITABLE GRADING MATERIAL.
  - SEE CONSTRUCTION PLANS AND STRIPING PLANS FOR LANE WIDTHS AND LOCATIONS.
  - 2.0' OBSTACLE FREE CLEAR ZONE.
  - SEE SUPERELEVATION AND PROPOSED UTILITY PLANS FOR CROSS SLOPE TRANSITIONS.
  - 4" PERFORATED TP PIPE DRAIN. SEE SUPERELEVATION AND PROPOSED UTILITY PLANS FOR LOCATIONS.
  - AGGREGATE SHOULDERING, CLASS 5 MNDOT SPEC. 2221.
  - SPECIAL DITCH GRADE (S.P.G.) ELEVATIONS SHOWN ON PROFILES AND CROSS SECTIONS

NO				DATE				BY				CKD				APPR			
REVISION																			

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Print Name: CHRISTOPHER M. TRBOYEVICH  
 Signature: *Christopher M. Trbojevich*  
 Date: 3/26/07 License #: 41635

STATE PROJECT NO. S.P. 02-614-24, ETAL  
 DRAWN BY S. MARTINS  
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 COMM. NO. 4994

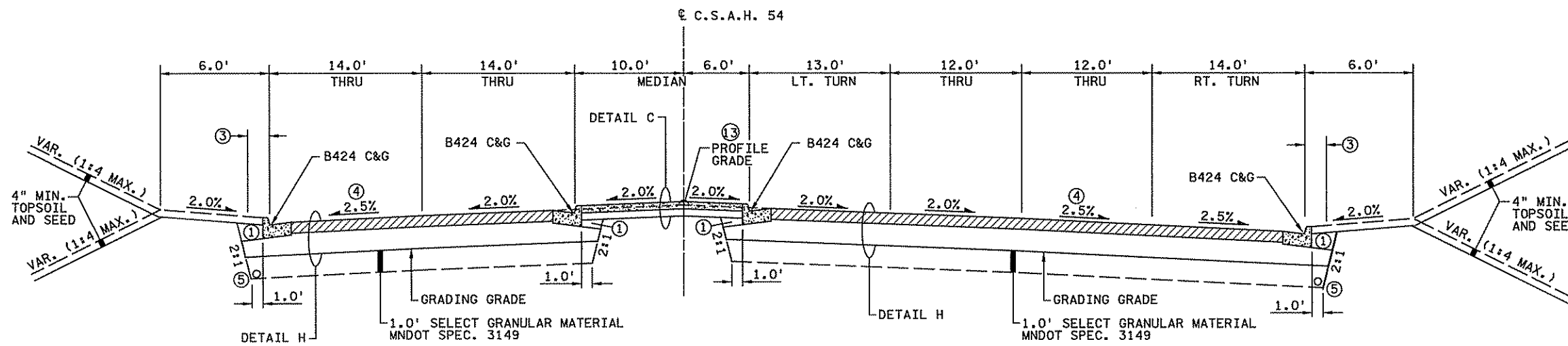


ANOKA COUNTY  
 TYPICAL SECTIONS  
 C.S.A.H. 14

SHEET 55 OF 492

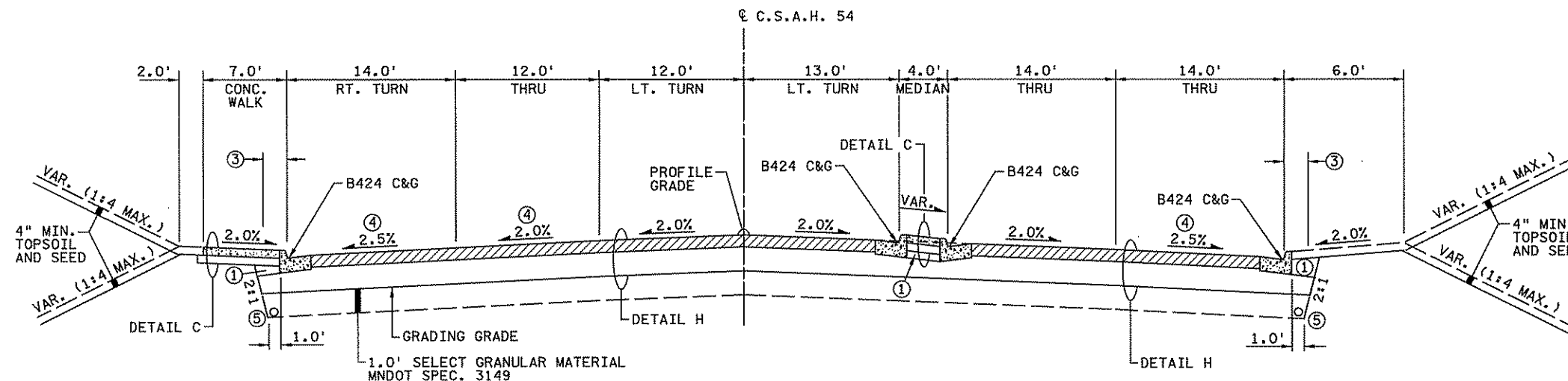
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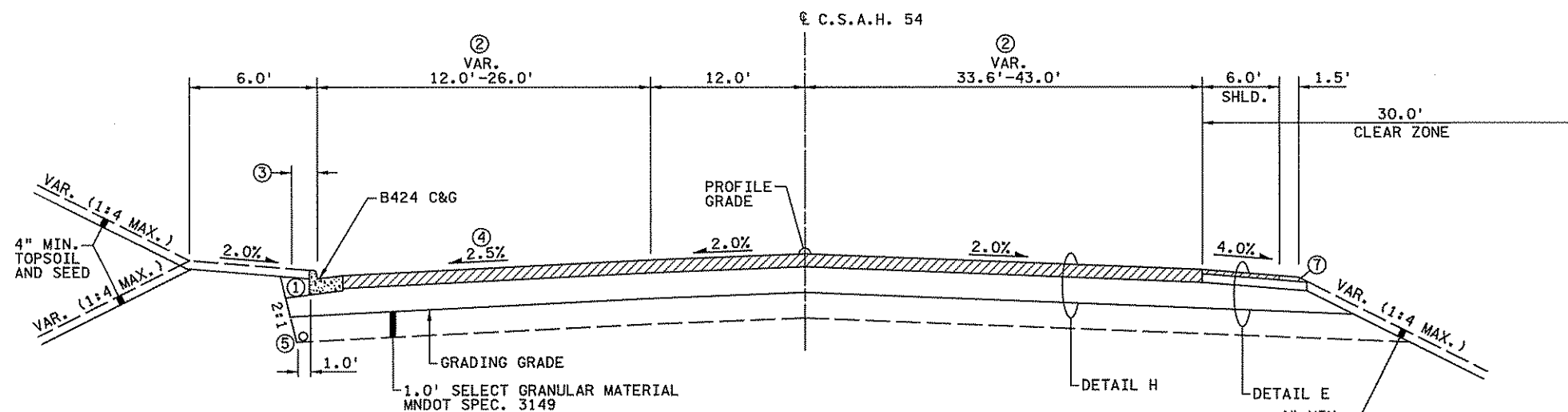
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STA. 310+34.4 TO STA. 312+43.5



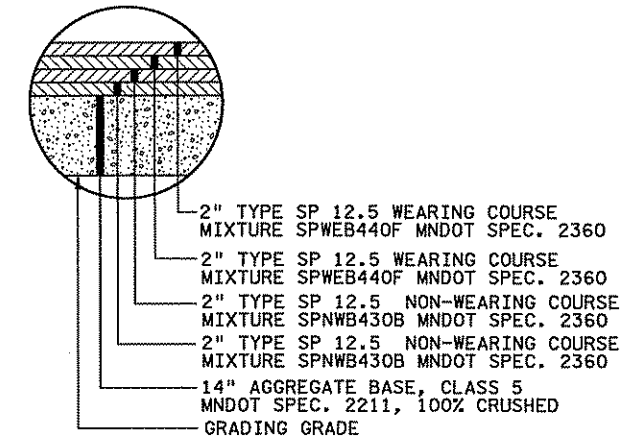
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STA. 313+28.5 TO STA. 315+74.7



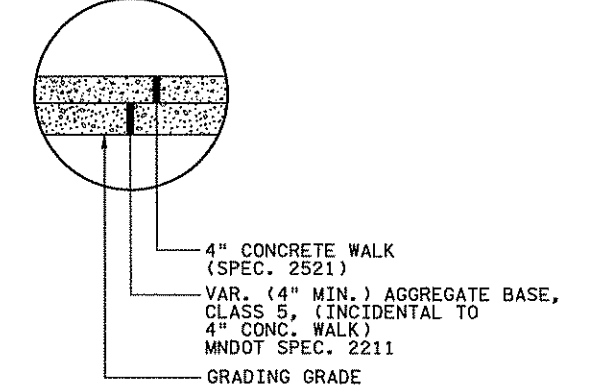
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STA. 315+74.7 TO STA. 318+50.2



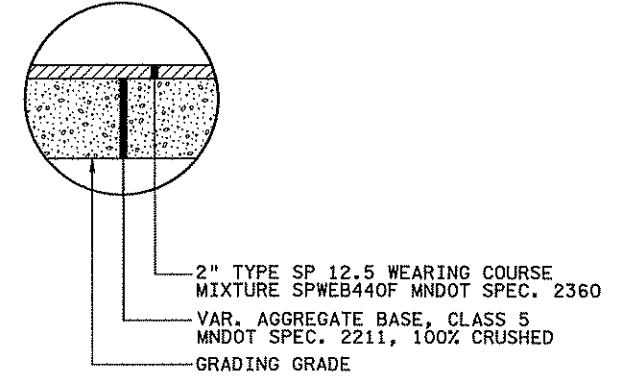
**DETAIL H**

C.S.A.H. 14  
C.S.A.H. 54



**DETAIL C**

CONCRETE WALK



**DETAIL E**

BITUMINOUS SHOULDER

- NOTES:
- ① BACKFILL WITH SUITABLE GRADING MATERIAL.
  - ② SEE CONSTRUCTION PLANS AND STRIPING PLANS FOR LANE WIDTHS AND LOCATIONS.
  - ③ 2.0' OBSTACLE FREE CLEAR ZONE.
  - ④ SEE SUPERELEVATION AND PROPOSED UTILITY PLANS FOR CROSS SLOPE TRANSITIONS.
  - ⑤ 4" PERFORATED TP PIPE DRAIN. SEE SUPERELEVATION AND PROPOSED UTILITY PLANS FOR LOCATIONS.
  - ⑦ AGGREGATE SHOULDERING, CLASS 5 MNDOT SPEC. 2221.
  - ⑬ PROFILE GRADE AT PROJECTION OF PAVEMENT CROSS SLOPES.

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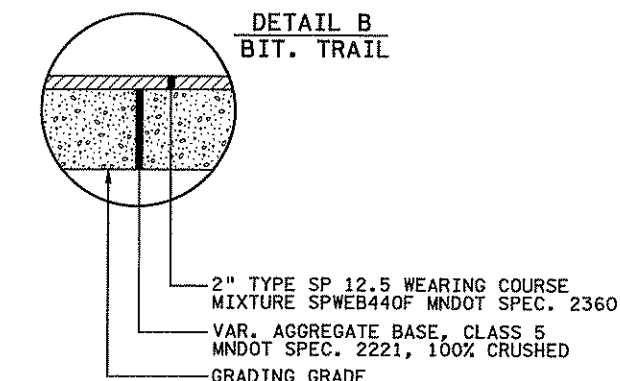
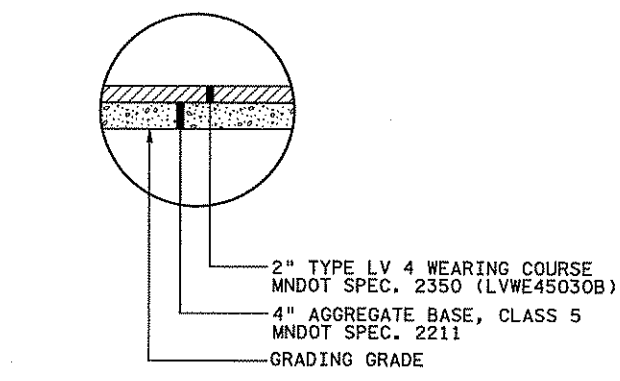
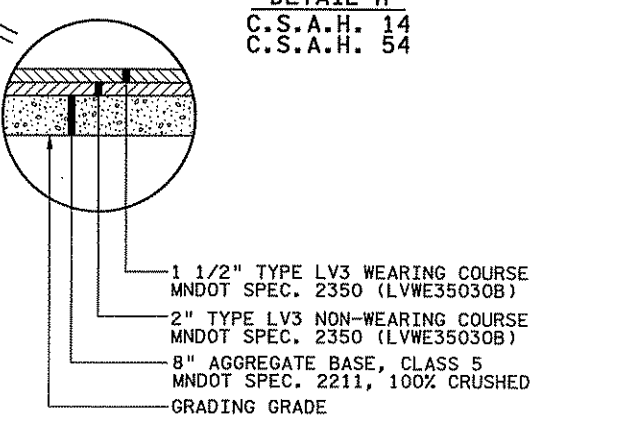
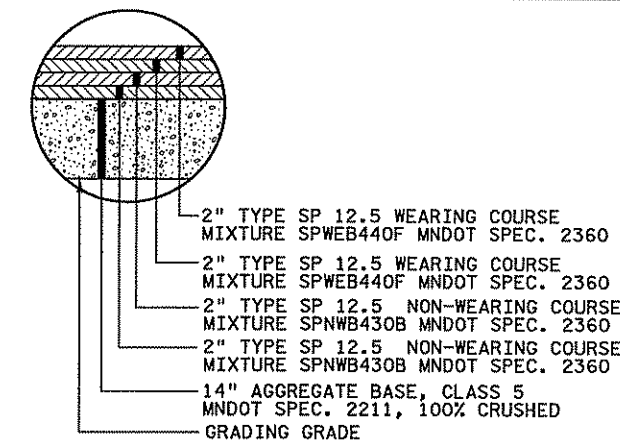
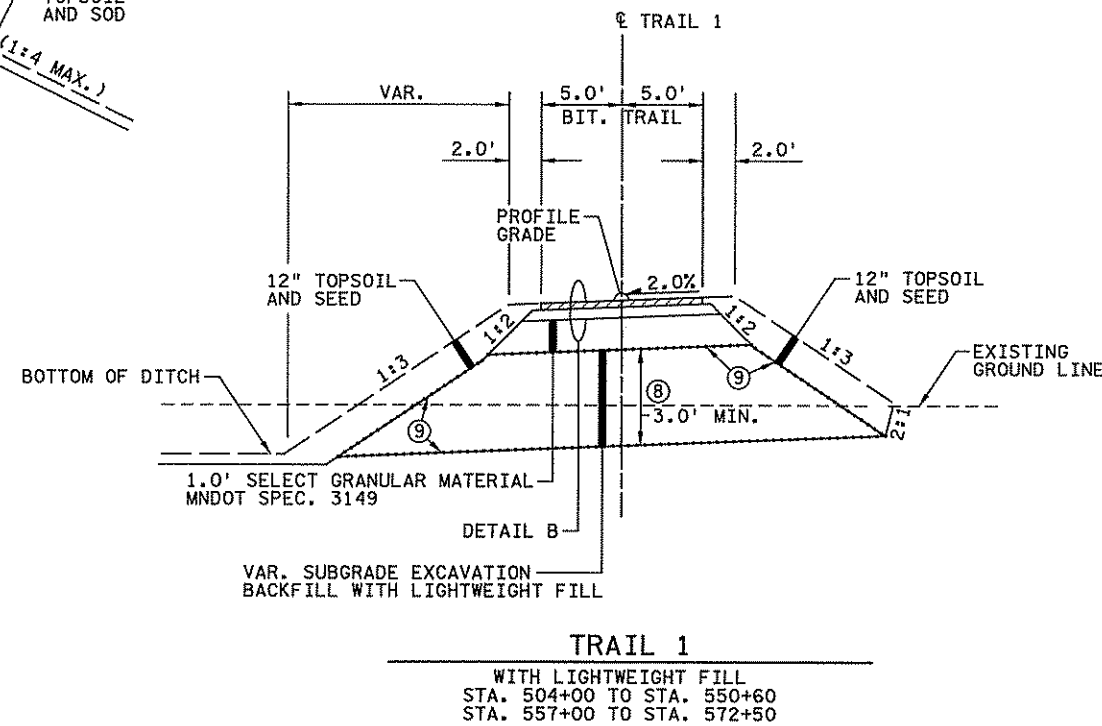
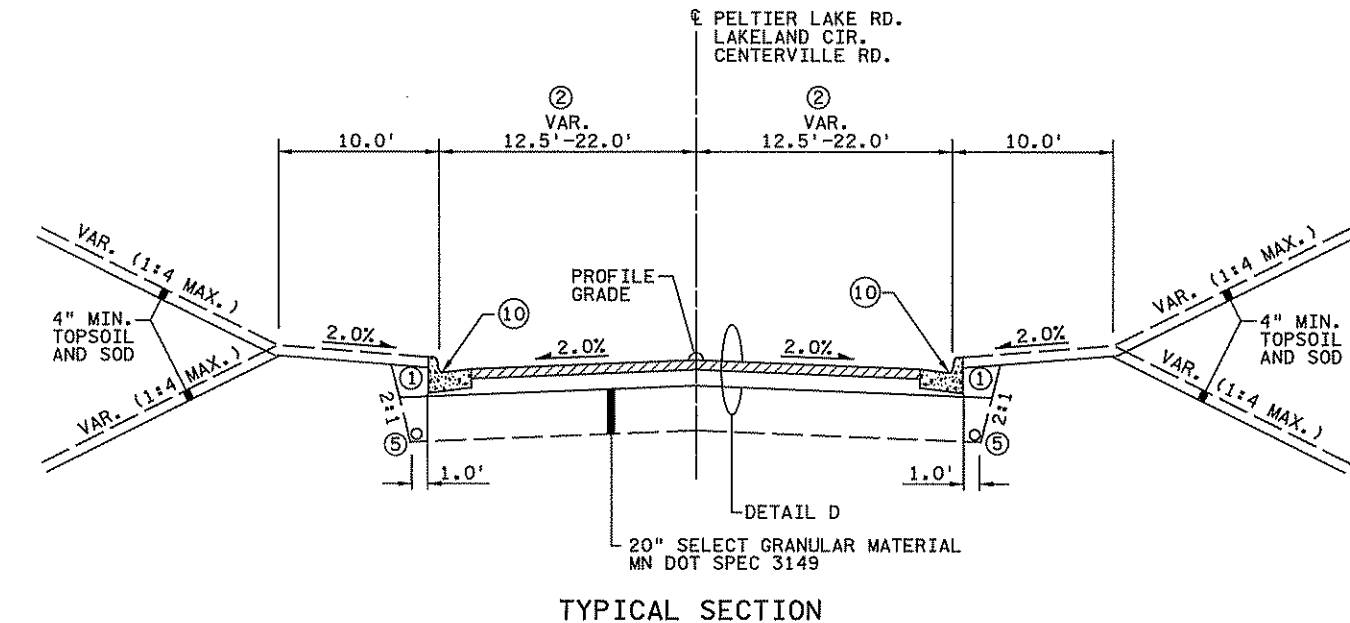
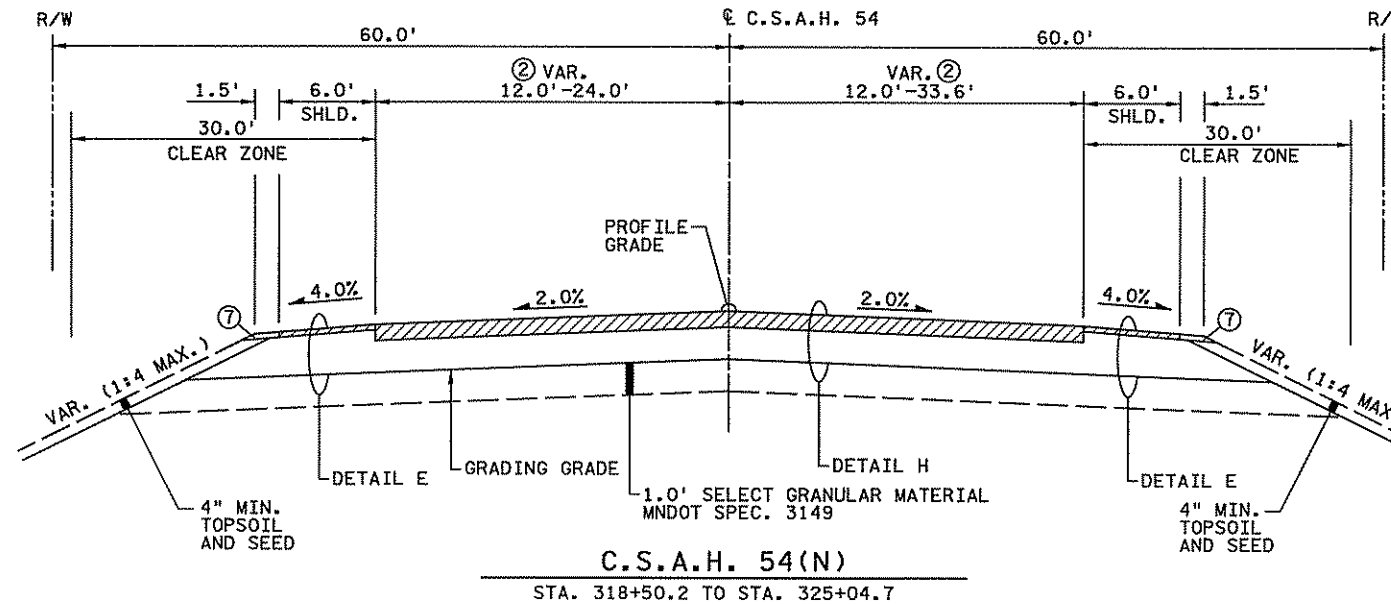
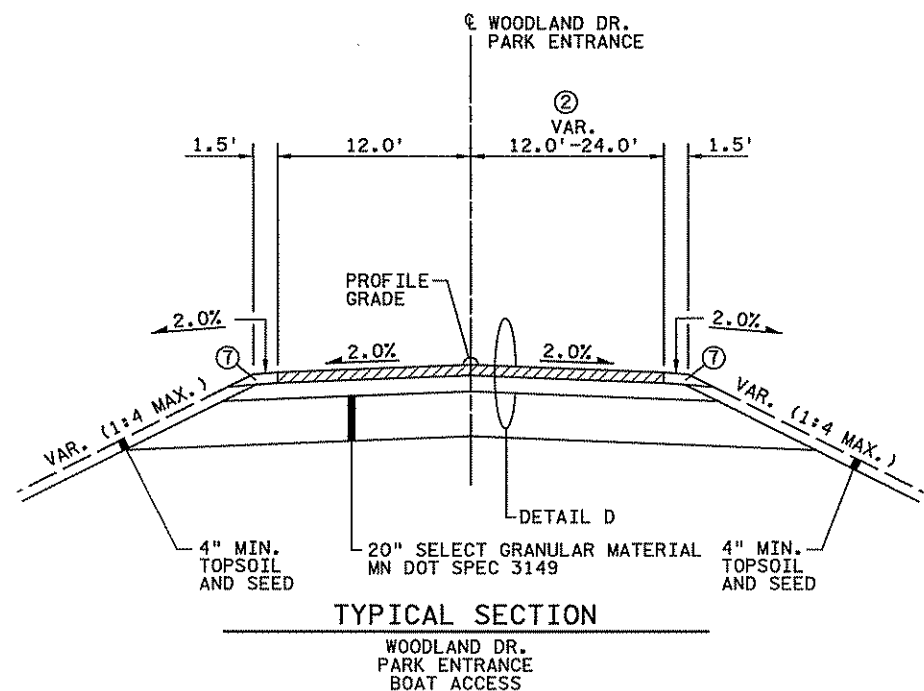
NO	DATE	BY	CKD	APPR	REVISION

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 Print Name: CHRISTOPHER M. TRBOYEVICH  
*Christopher M. Trbovich*  
 Date: 3/26/07 License #: 41635

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 DESIGNED BY J. TOULOUSE  
 CHECKED BY C. TRBOYEVICH  
 COMM. NO. 4994



ANOKA COUNTY  
 TYPICAL SECTIONS  
 C.S.A.H. 14  
 SHEET 56 OF 492



- NOTES:
- ① BACKFILL WITH SUITABLE GRADING MATERIAL.
  - ② SEE CONSTRUCTION PLANS AND STRIPING PLANS FOR LANE WIDTHS AND LOCATIONS.
  - ④ SEE SUPERELEVATION AND PROPOSED UTILITY PLANS FOR CROSS SLOPE TRANSITIONS.
  - ⑤ 4" PERFORATED TP PIPE DRAIN. SEE SUPERELEVATION AND PROPOSED UTILITY PLANS FOR LOCATIONS.
  - ⑦ AGGREGATE SHOULDERING, CLASS 5 MNDOT SPEC. 2221.
  - ⑧ LIGHTWEIGHT FILL.
  - ⑨ LIGHTWEIGHT FILL SHALL BE ENCASED IN GEOTEXTILE TYPE V.
  - ⑩ PELTIER LAKE RD. - S512  
LAKELAND CIR. - B612  
CENTERVILLE RD. - B618

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*Christopher M. Trbojevich*  
Date: 3/26/07 License # 41635

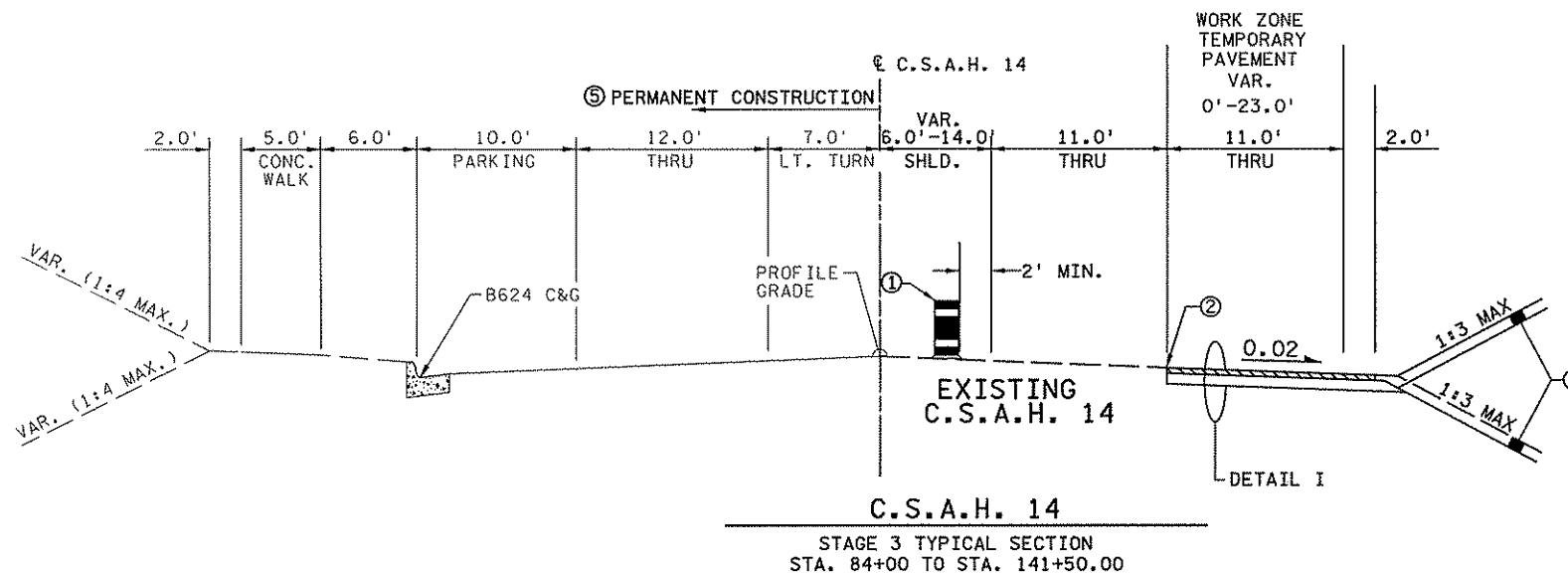
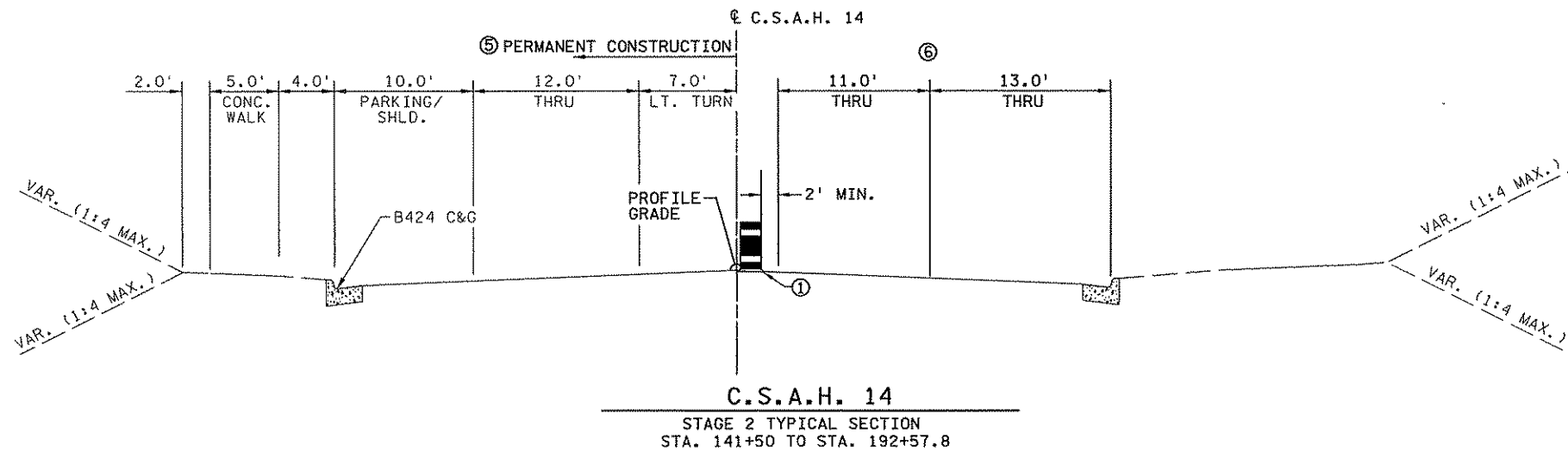
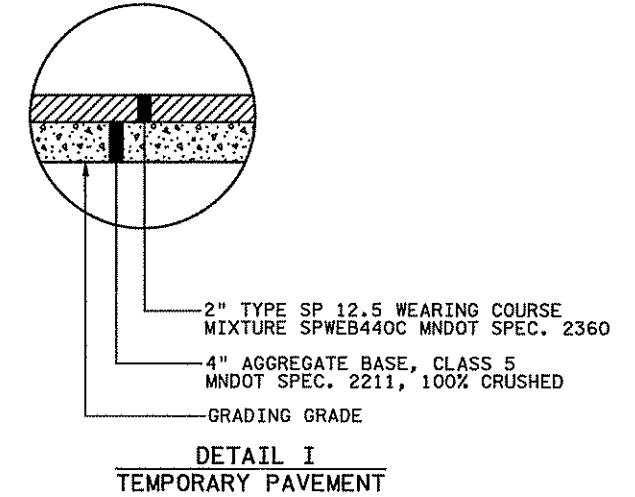
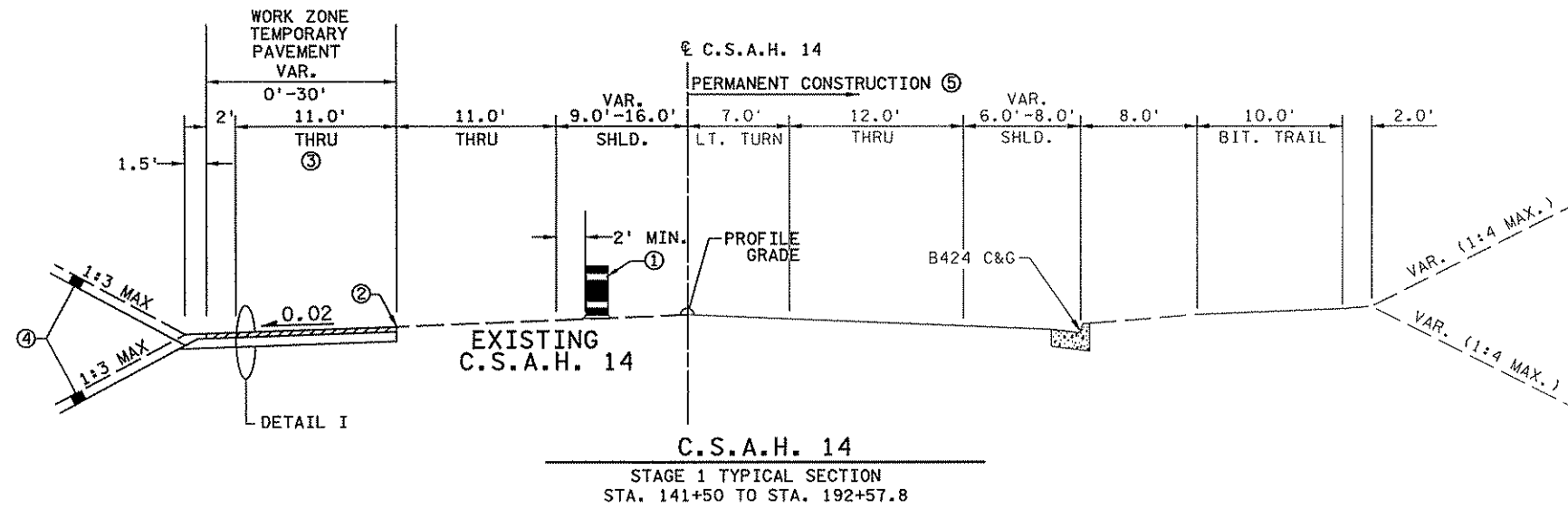
STATE PROJECT NO. S.P. 02-614-24, ETAL  
DRAWN BY D. FITCHORN  
DESIGNED BY J. TOULOUSE  
CHECKED BY C. TRBOYEVICH  
COMM. NO. 4994



ANOKA COUNTY  
TYPICAL SECTIONS  
C.S.A.H. 14  
SHEET 57 OF 492

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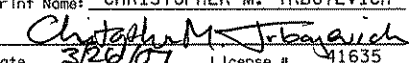
NO	DATE	BY	CKD	APPR	REVISION



- NOTES:
- ① REFLECTORIZED DRUM. SEE STAGING PLANS FOR LOCATIONS.
  - ② SAW CUT PAVEMENT (FULL DEPTH).
  - ③ TEMPORARY PAVEMENT, SEE STAGING PLANS FOR LOCATIONS AND WIDTHS.
  - ④ 4" MIN. SLOPE DRESSING.
  - ⑤ SEE STAGING PLANS FOR LOCATIONS OF PERMANENT CONSTRUCTION AND TYPICAL SECTIONS FOR PERMANENT PAVEMENT CROSS SLOPES.
  - ⑥ TRAFFIC LOCATED ON PERMANENT PAVEMENT CONSTRUCTED IN PREVIOUS STAGE.

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NO	DATE	BY	CHKD	APPR	REVISION

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 Print Name: CHRISTOPHER M. TRBOYEVIICH  
  
 Date: 3/20/07 License #: 11635

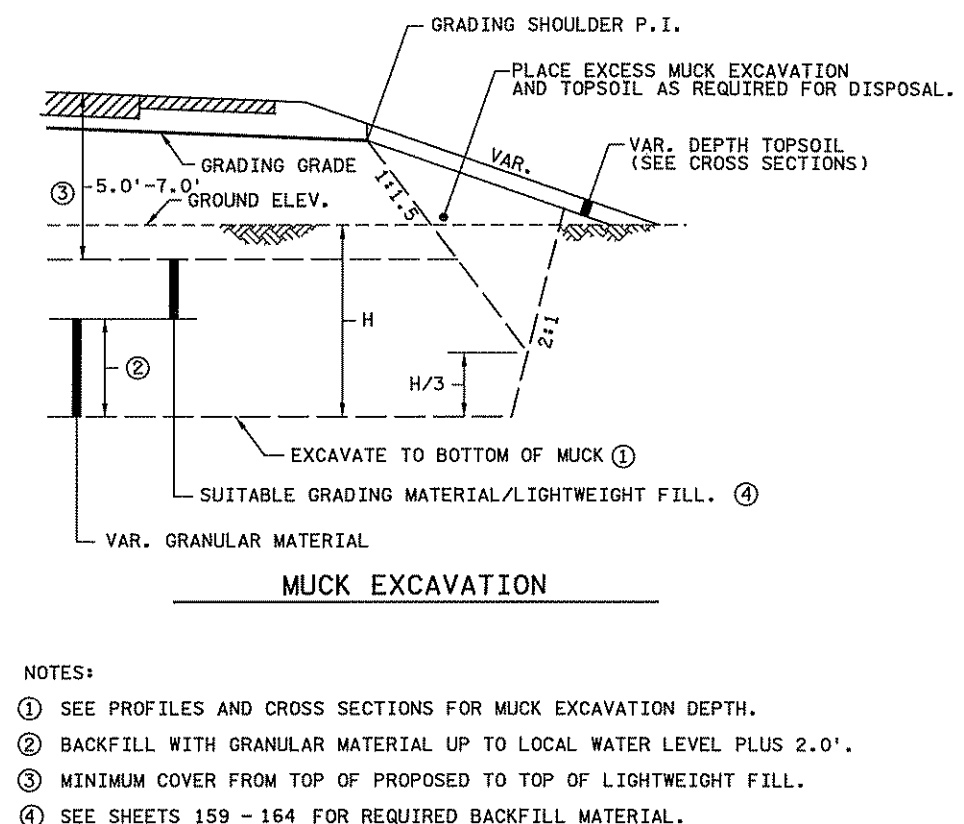
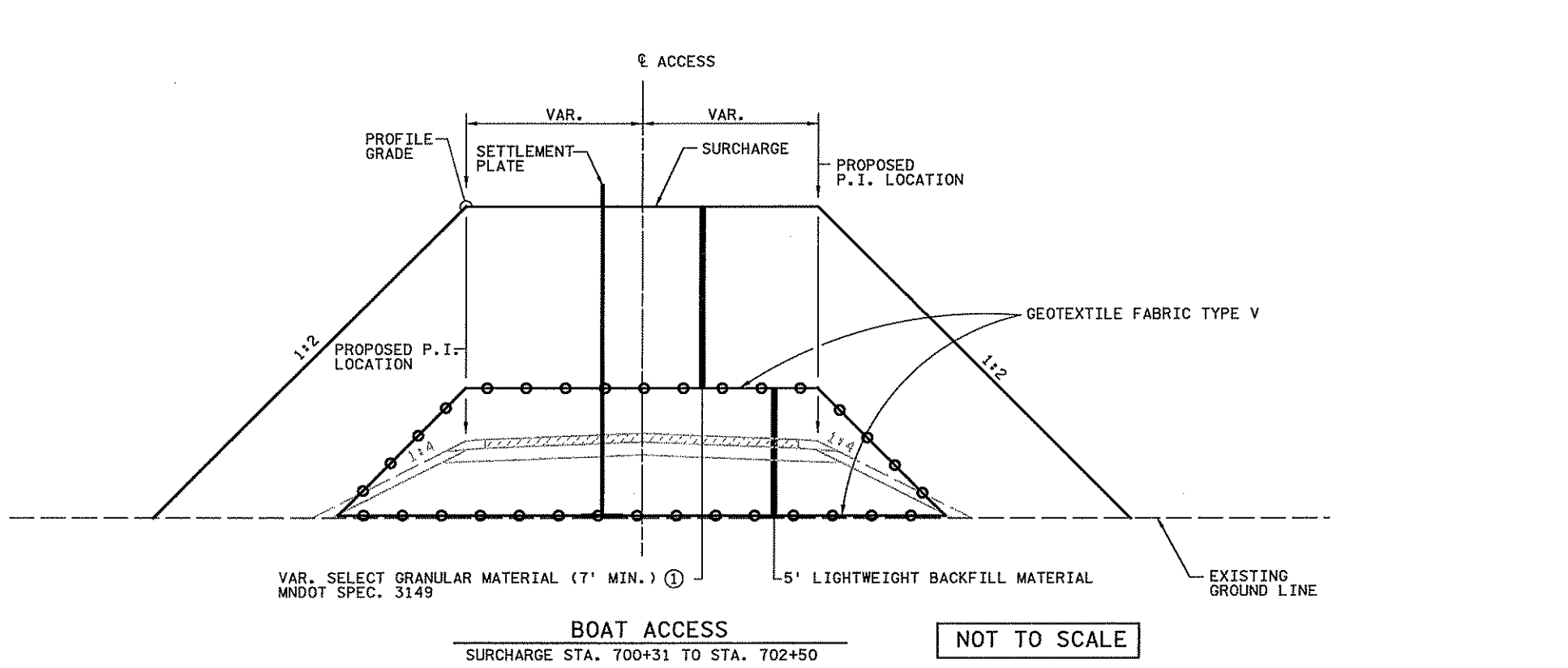
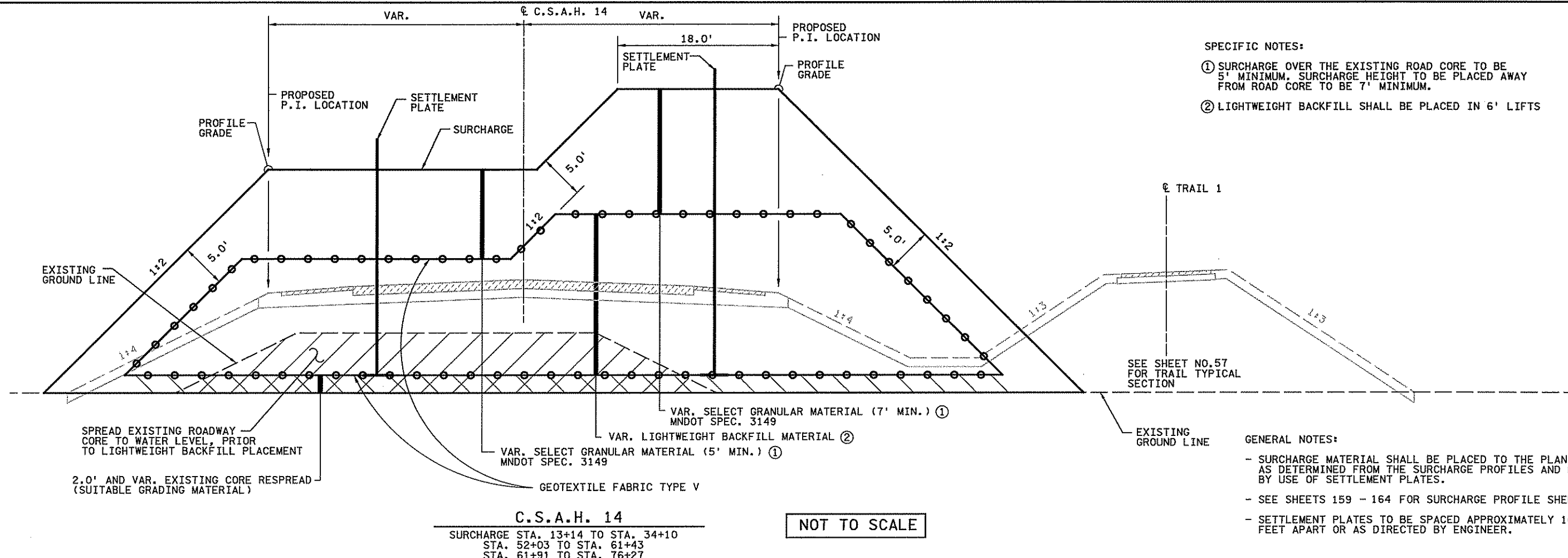
STATE PROJECT NO.  
 S.P. 02-614-24, ETAL

DRAWN BY  
 S. MARTINS  
 DESIGNED BY  
 J. TOULOUSE  
 CHECKED BY  
 C. TRBOYEVIICH  
 COMM. NO. 4994



ANOKA COUNTY  
 TYPICAL SECTIONS  
 C.S.A.H. 14  
 STAGING

SHEET  
 58  
 OF  
 492



10:58:10 AM  
 6/11/2007  
 H:\Projects\4994-F\h1-mu\PI\an\4994-f.tsk

NO	DATE	BY	CHKD	APPR	REVISION

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

Print Name: **CHRISTOPHER M. TRBOYEVICH**  
*Christopher M. Trbojevich*  
 Date: **6/11/07** License #: **41635**

STATE PROJECT NO.  
 S.P. 02-614-24, ETAL

DRAWN BY  
 S. MARTINS

DESIGNED BY  
 J. TOULOUSE

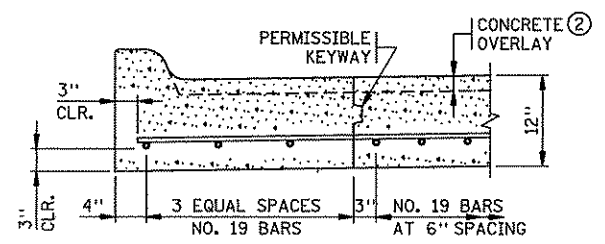
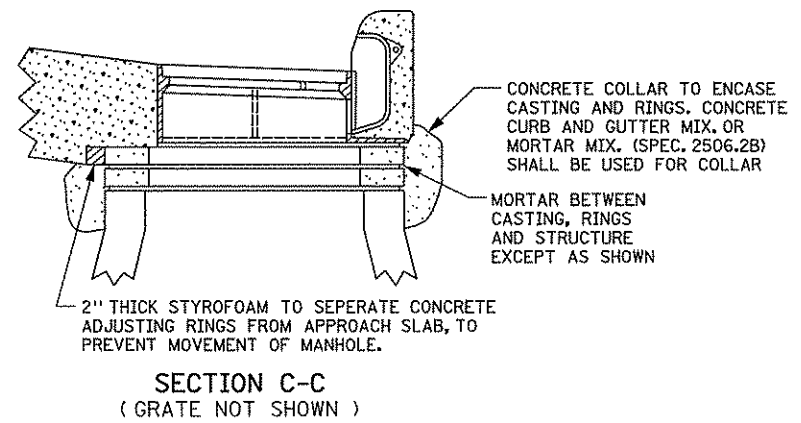
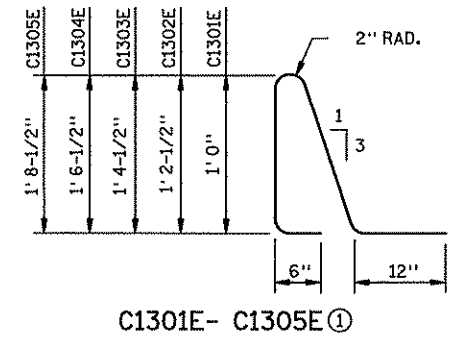
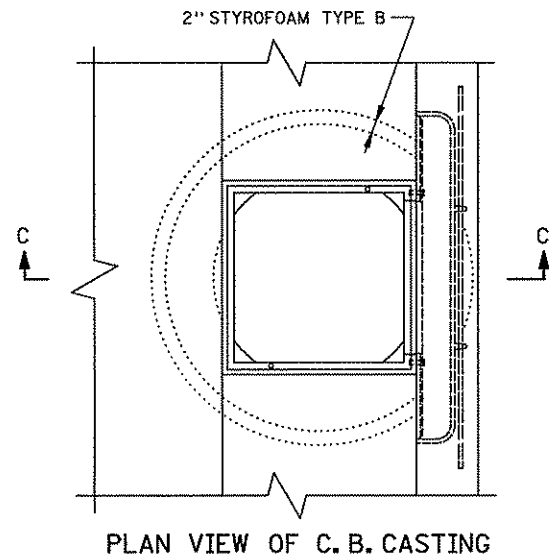
CHECKED BY  
 C. TRBOYEVICH

COMM. NO. 4994



**SUMMARY OF QUANTITIES FOR  
BRIDGE APPROACH PANEL**

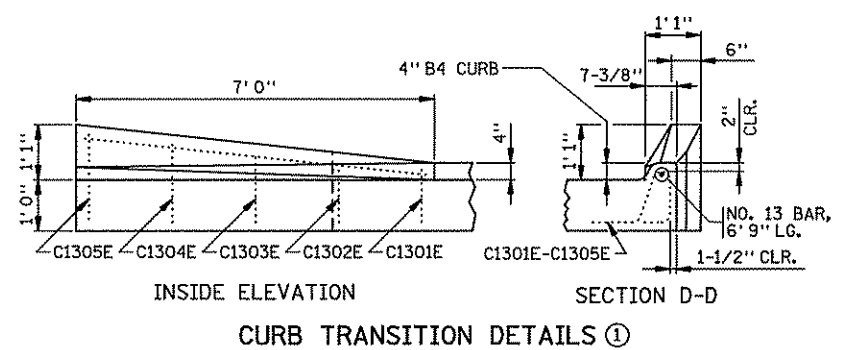
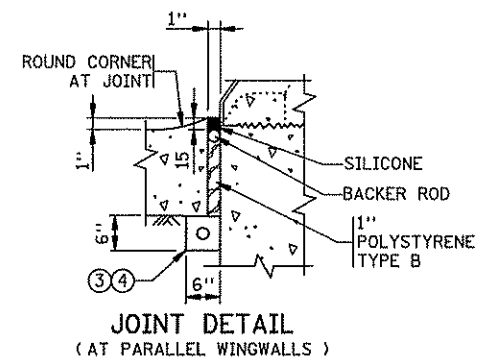
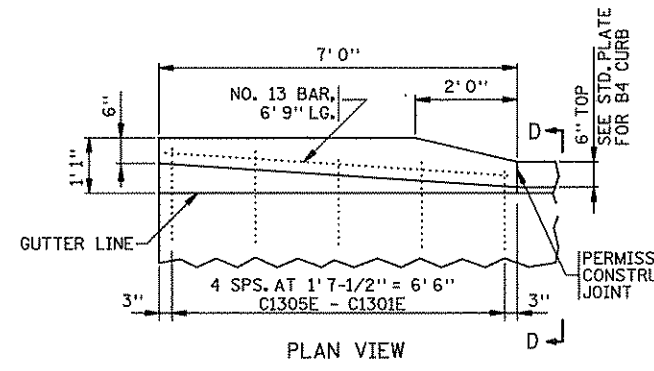
CONCRETE MIX NO. 3X42	CU. YD.
REINFORCEMENT BARS	LBS.
CURB DESIGN B4 INTEGRANT	LIN. FT.
CURB DESIGN B424	LIN. FT.



**NOTES:**

ALL REBARS ARE IN METRIC DESIGNATIONS

- ① ALL REINFORCEMENT IN APPROACH PANEL AND CURB SHALL BE GRADE 60 AND EPOXY COATED AS PER SPEC. 3301.
- ② APPROACH SLAB THICKNESS SHOWN INCLUDES ANY CONCRETE OVERLAY THAT MAY BE REQUIRED. SEE BRIDGE PLANS FOR REQUIREMENTS. CONCRETE OVERLAYS TO BE INCLUDED IN BRIDGE QUANTITIES AND DONE AT THE SAME TIME BY BRIDGE CONTRACTOR.
- ③ 2" NOMINAL DIA. THERMOPLASTIC PIPE, AS PER ASTM D1785M, SCHEDULE 40. SLOPE PIPE TO DITCH. FURNISHING AND INSTALLING DRAIN SYSTEM SHALL BE INCIDENTAL, WITH NO DIRECT PAYMENT. WRAP PERFORATED PIPE WITH GEOTEXTILE AS PER SPEC. 3733. 1/8" PER 12" MINIMUM SLOPE.
- ④ BACKFILL WITH FINE AGGREGATE, SPEC. 3149, MODIFIED TO 0-3% PASSING A NO. 200 SIEVE.

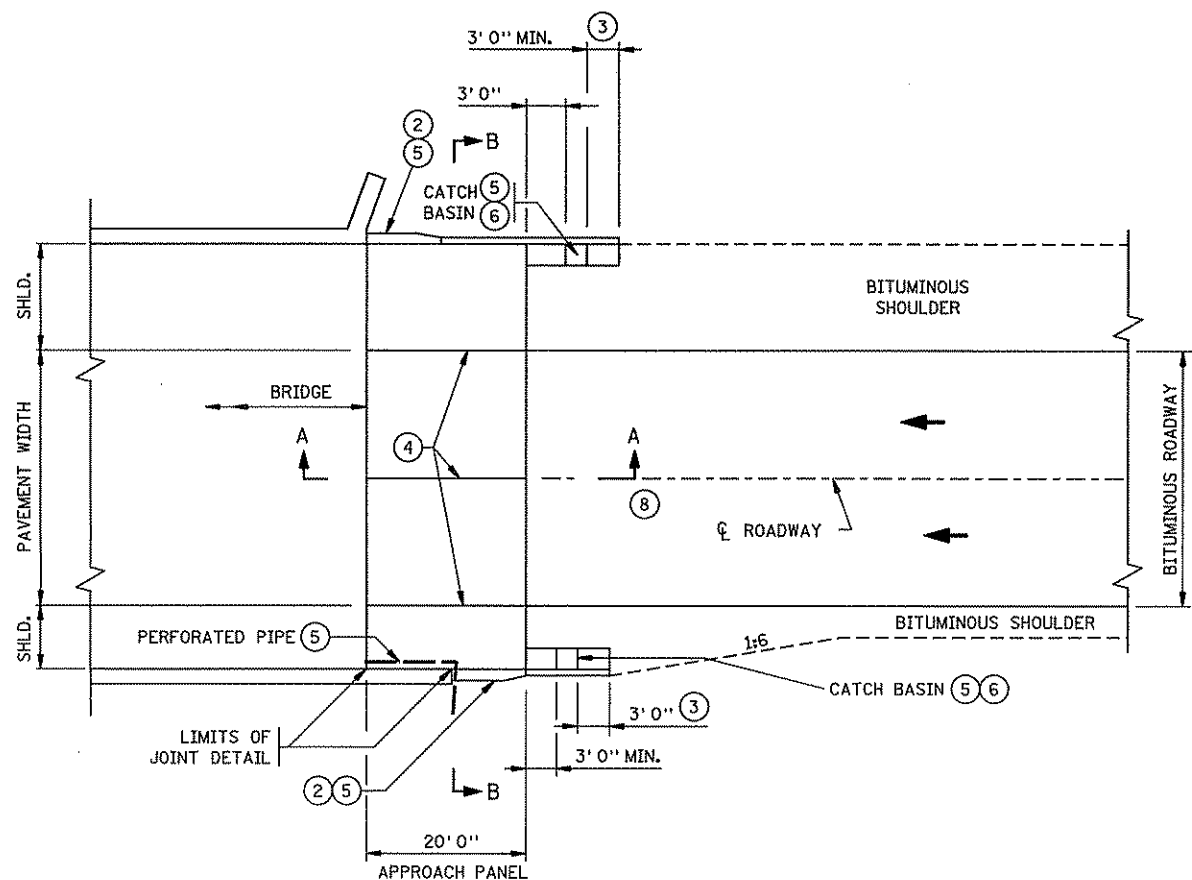


STANDARD SHEET NO. 5-297.224	TITLE:
STANDARD APPROVED: NOVEMBER 9, 1999	BRIDGE APPROACH PANEL BITUMINOUS MAINLINE ROADWAY ( MISCELLANEOUS DETAILS )

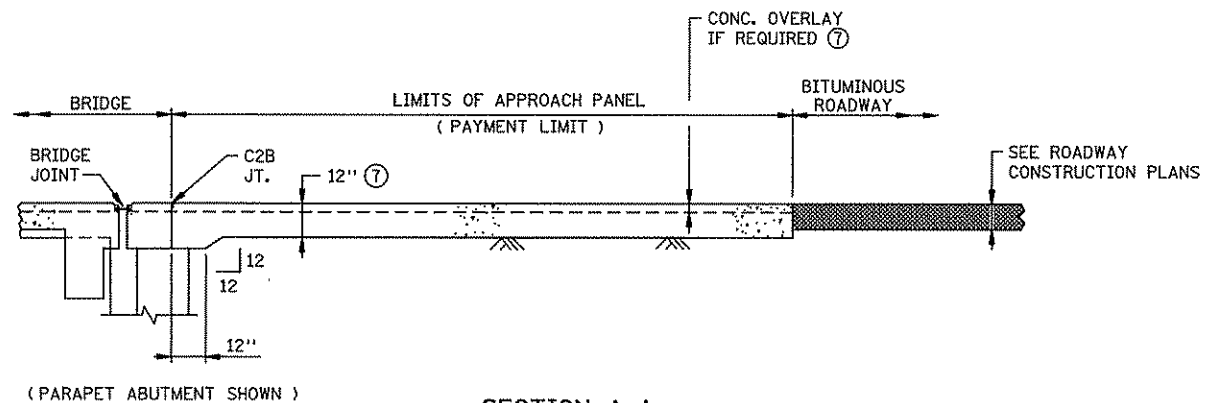
REVISION DATE  
2-7-2000

STATE PROJ. NO. 02-614-24

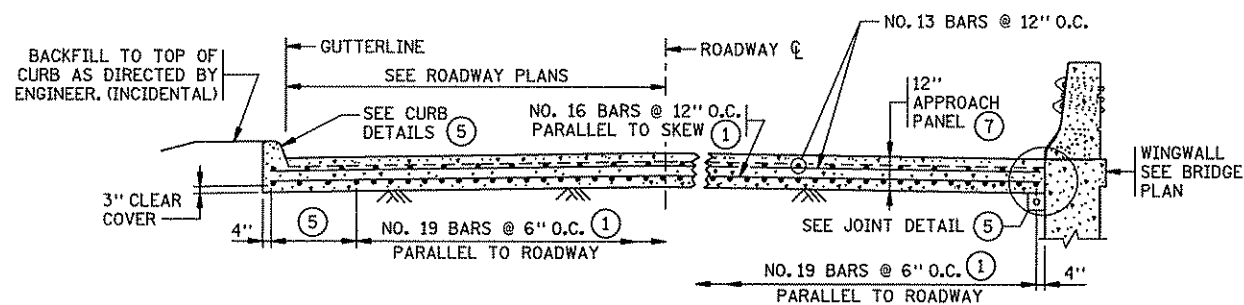
SHEET NO. 60 OF 492 SHEETS



**DIVIDED-URBAN ROADWAY PLAN**  
PARALLEL & NONPARALLEL WINGWALLS



**SECTION A-A**  
(REINFORCEMENT NOT SHOWN)



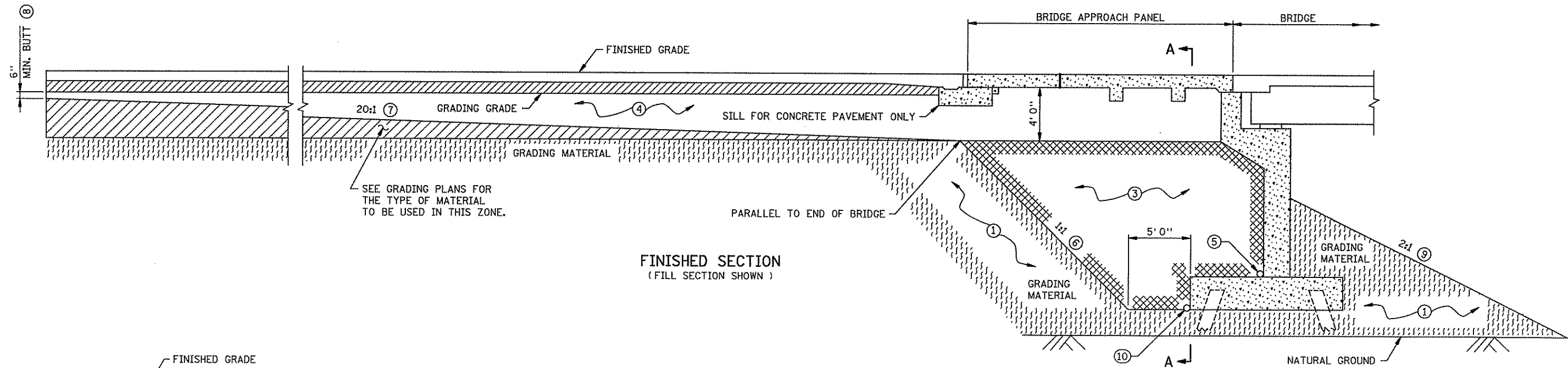
**SECTION B-B**  
(SEE ROADWAY PLAN VIEW)

**NOTES:**

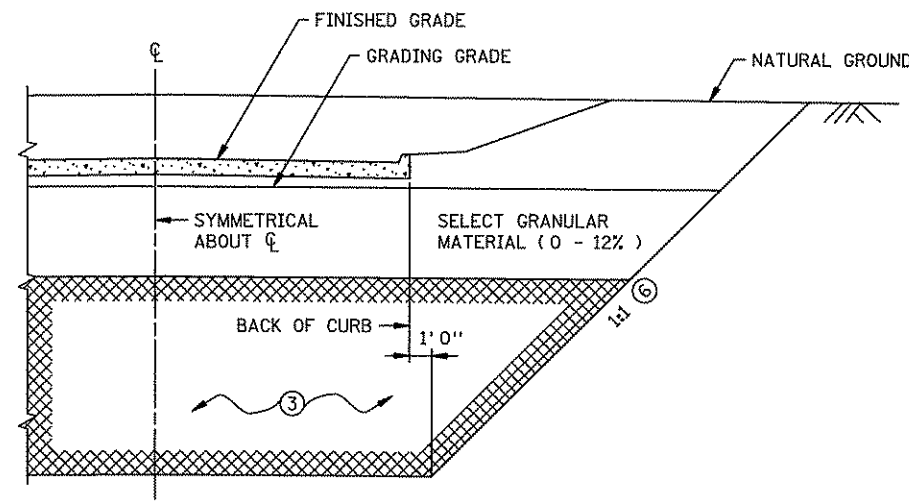
ALL REBARS ARE IN METRIC DESIGNATIONS

- ① ALL REINFORCEMENT IN APPROACH PANEL, SILL AND CURB SHALL BE GRADE 60 AND EPOXY COATED AS PER SPEC. 3301.
- ② TRANSITION FACE OF 4" CURB INTO PROFILE OF BRIDGE RAILING. SEE CURB TRANSITION DETAILS.
- ③ TRANSITION APPROACH PANEL CURB HEIGHT 4" TO 0" WHERE THERE IS NO ROADWAY CURB.
- ④ L2KT OR L1T LONGITUDINAL JOINT IS REQUIRED. SEE STANDARD PAVEMENT JOINT SHEET FOR DETAILS.
- ⑤ SEE PLAN SHEET 60 FOR REQUIRED MISCELLANEOUS DETAILS.
- ⑥ LOCATE BETWEEN GUARD RAIL POSTS OR AS DETERMINED BY THE DESIGNER. SEE ROAD DESIGN MANUAL CHAPTER 7 FOR CATCH BASIN INFORMATION.
- ⑦ APPROACH SLAB THICKNESS SHOWN INCLUDES ANY CONCRETE OVERLAY THAT MAY BE REQUIRED. SEE BRIDGE PLANS FOR REQUIREMENTS. CONCRETE OVERLAYS TO BE INCLUDED IN BRIDGE QUANTITIES AND DONE AT THE SAME TIME BY BRIDGE CONTRACTOR.
- ⑧ SEE PLAN SHEET 141 FOR BRIDGE APPROACH ROADWAY INFORMATION.

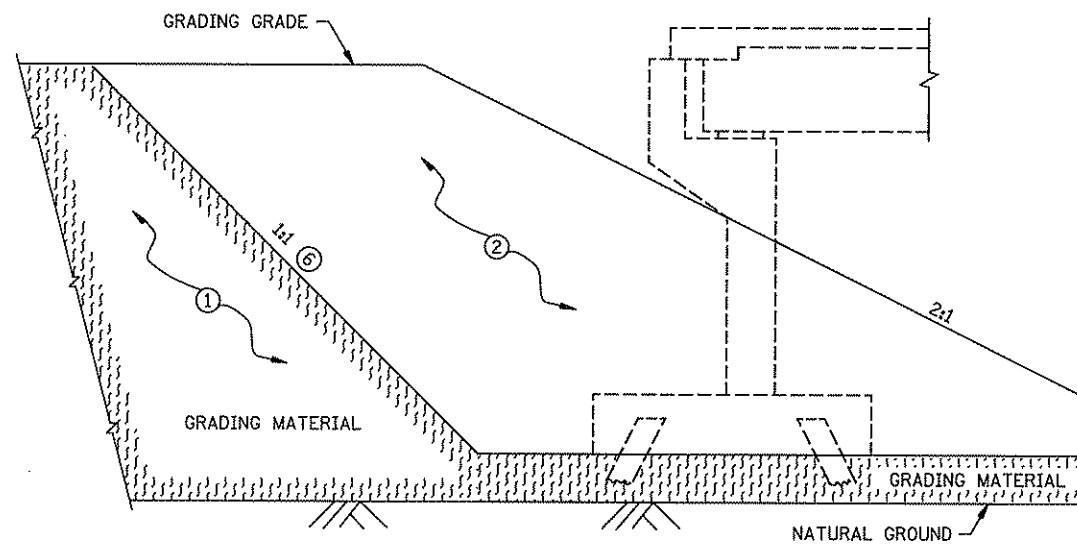
STANDARD SHEET NO. 5-297.229	TITLE: <b>BRIDGE APPROACH PANEL</b> BITUMINOUS MAINLINE - JOINT AT ABUTMENT SQUARE TO 10° SKEWS
STANDARD APPROVED: MAY 7, 2002	
STATE PROJ. NO. 02-614-24	SHEET NO. 61 OF 492 SHEETS



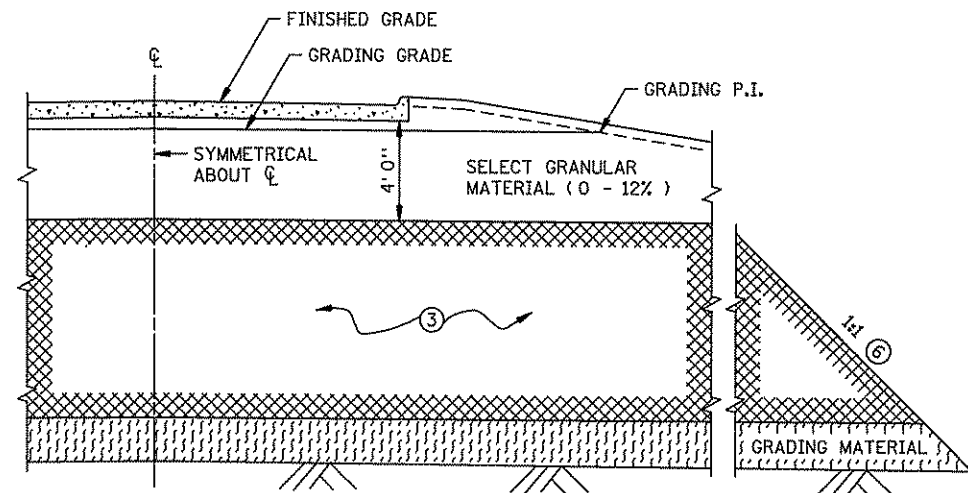
FINISHED SECTION  
(FILL SECTION SHOWN)



HALF SECTION A-A  
(CUT SECTION)



GRADING SECTION AT ABUTMENT

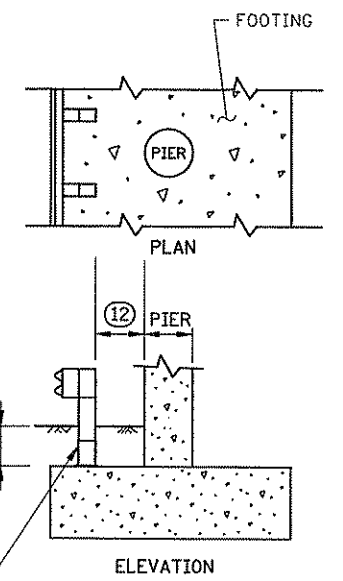
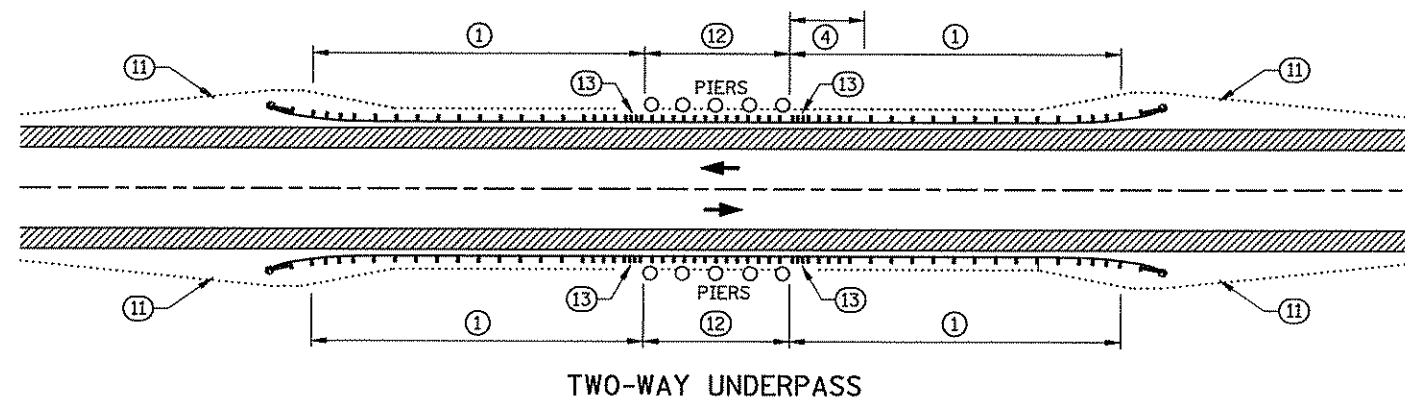
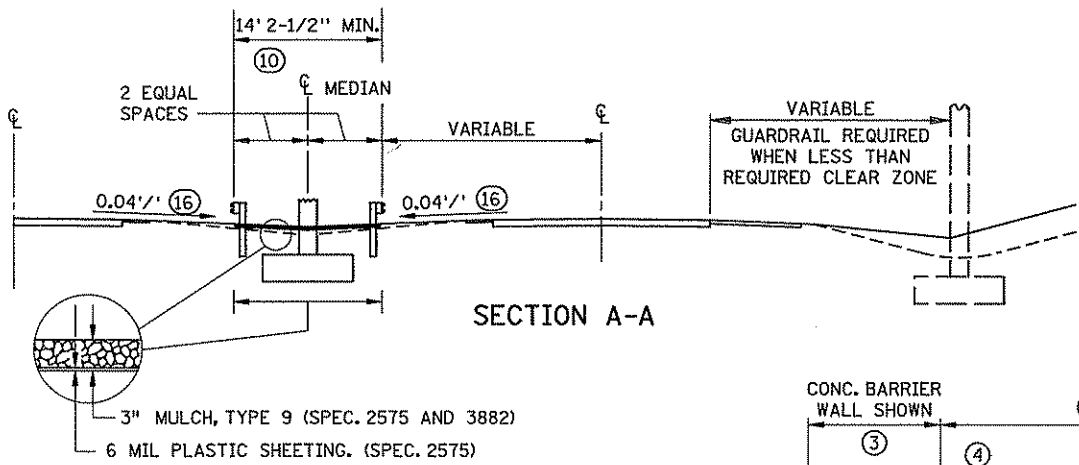


HALF SECTION A-A  
(FILL SECTION)

- NOTES:
- ① GRADING MATERIAL PLACED BY THE CONTRACTOR.
  - ② GRADING MATERIAL CONSTRUCTED BY THE CONTRACTOR PRIOR TO THE BRIDGE CONSTRUCTION. TO BE REMOVED LATER BY THE CONTRACTOR.
  - ③ SELECT GRANULAR MATERIAL MODIFIED SHALL COMPLY WITH SPEC. 3149.2B, MODIFIED TO 10% OR LESS PASSING THE NUMBER 200 SIEVE. MATERIAL SHALL BE PLACED BY THE CONTRACTOR AFTER COMPLETION OF THE ABUTMENT.
  - ④ BACKFILL PLACED BY THE CONTRACTOR. MATERIAL SHALL COMPLY WITH SPEC. 3149.2B (SELECT GRANULAR BORROW).
  - ⑤ DRAIN IF REQUIRED. SEE BRIDGE STANDARD DETAIL B910.
  - ⑥ ACTUAL SLOPE TO BE DETERMINED DURING CONSTRUCTION BY THE CONTRACTOR, DEPENDING ON INSITU SOIL PROPERTIES AND/OR SAFETY FACTORS. (USE 1:1 FOR DESIGN)
  - ⑦ START 20:1 TAPER AT END OF APPROACH PANELS ON SKEWED BRIDGES.
  - ⑧ GRADING TO BE SQUARED OFF ON SKEWED APPROACHES.
  - ⑨ SEE BRIDGE PLANS FOR SLOPE PAVING.
  - ⑩ SUBSURFACE PIPE DRAIN WHEN REQUIRED AS DIRECTED BY THE DISTRICT SOILS ENGINEER. 4 INCH NOM. DIA. PLASTIC PIPE PER SPEC. 3245 PLACED BY THE CONTRACTOR. PERFORATED PIPE TO BE WRAPPED WITH GEOTEXTILE MEETING THE REQUIREMENTS OF SPEC. 3733 TYPE 1. FOUNDATION SHALL BE SHAPED TO FIT LOWER ONE THIRD CIRCUMFERENCE OF PIPE.

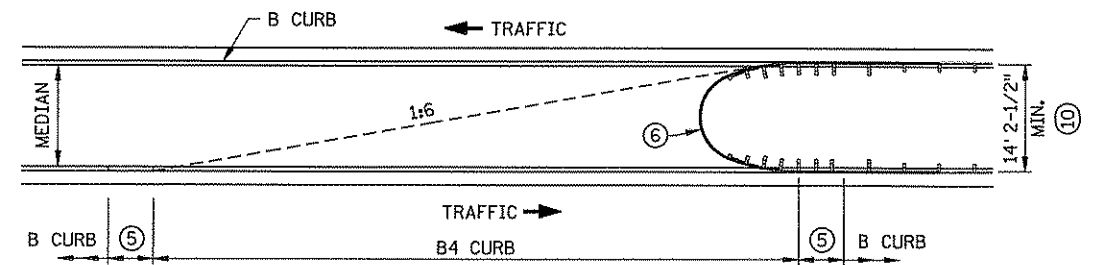
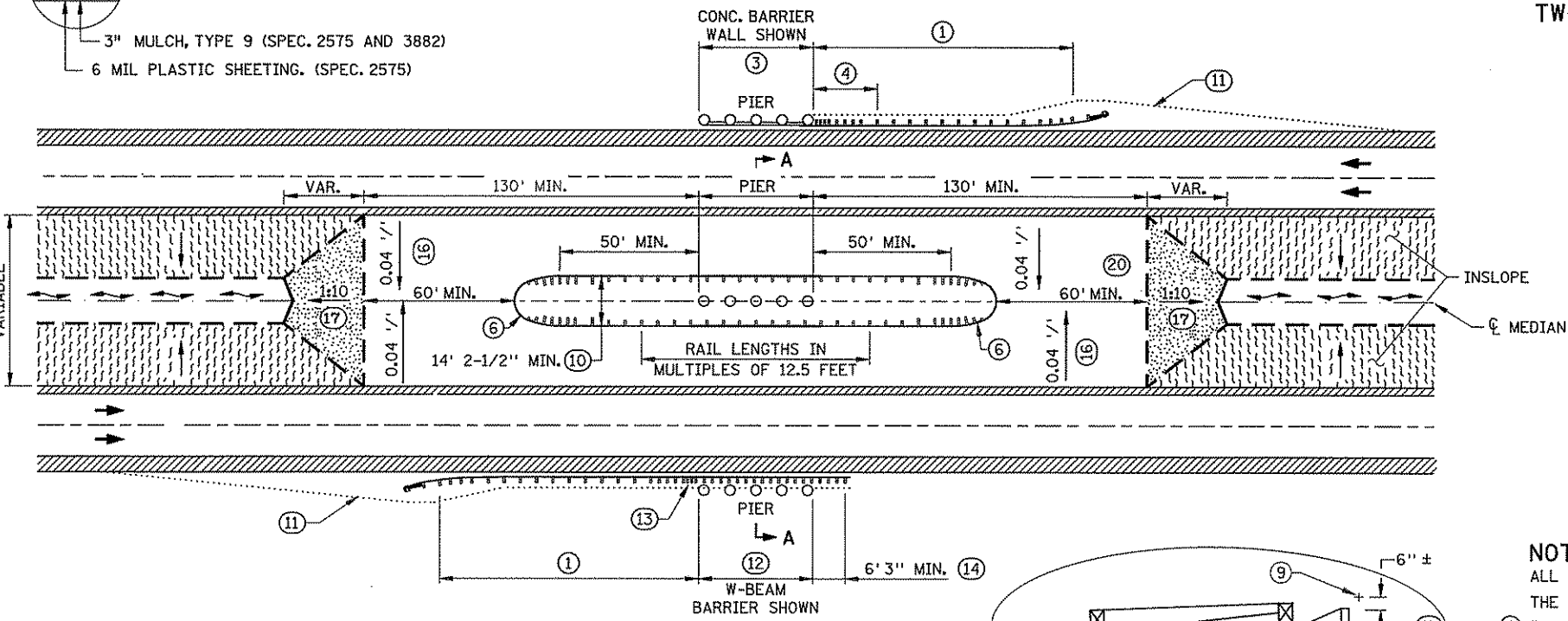
STANDARD SHEET NO. 5-297.233	TITLE: BRIDGE APPROACH TREATMENT FOR BOTH HIGH AND LOW ABUTMENTS ON PILING
STANDARD APPROVED: AUGUST 4, 1992	
STATE PROJ. NO. 02-614-24	SHEET NO. 62 OF 492 SHEETS

REVISION DATE  
8-20-99



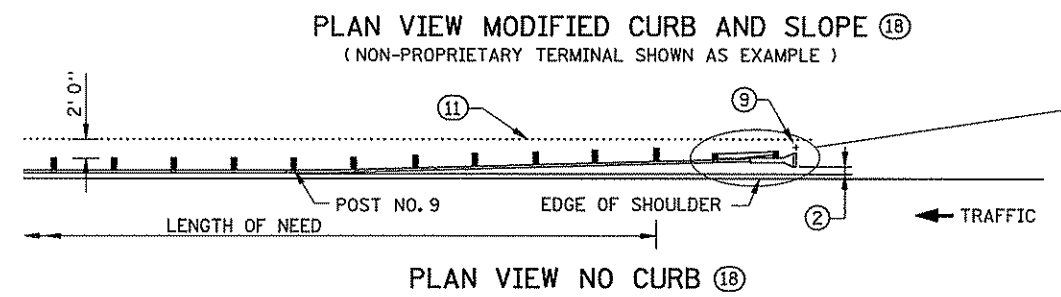
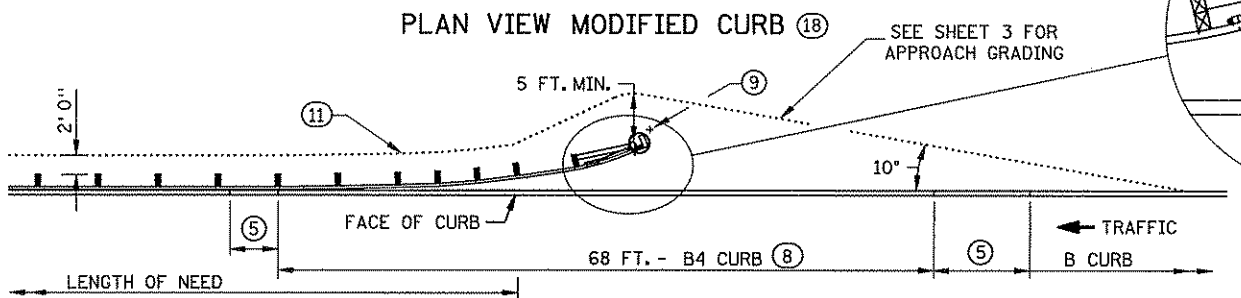
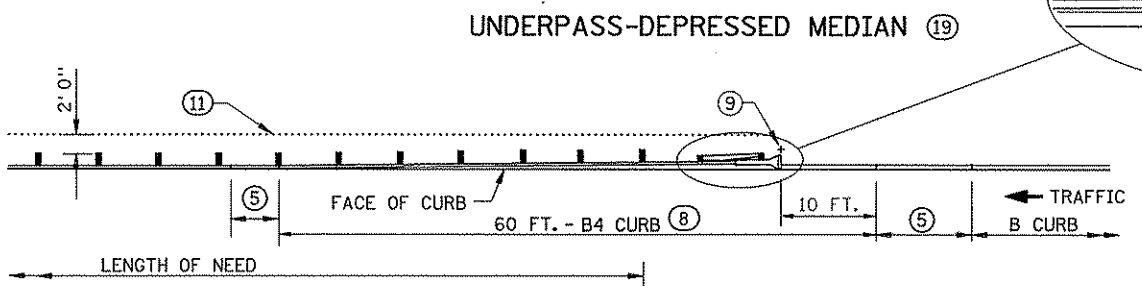
ESTIMATED DESIGN DEFLECTION TABLE FOR DESIGN B W-BEAM GUARDRAIL

6' 3" POST SPACING	3' 0"
6' 3" POST SPACING WITH DOUBLE NESTED RAIL	2' 8"
MODIFIED 3' 1-1/2" POST SPACING	2' 3"
MODIFIED POST SPACING WITH DOUBLE NESTED RAIL	2' 0"

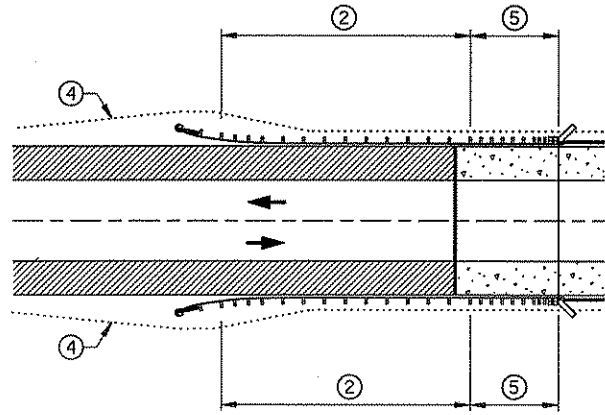


NOTES:

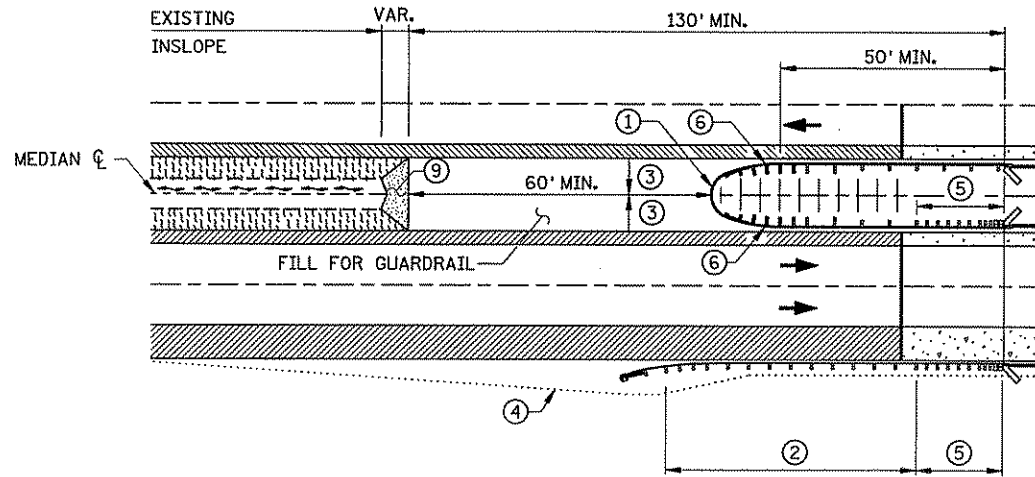
- ALL GUARDRAIL POSTS SHALL BE 6 FT. 3 IN. CENTER TO CENTER (DESIGN B), EXCEPT WHERE NOTED.
- THE LATEST APPROVED VERSION OF STANDARD PLATES SHOWN OR AS INDICATED IN THE PLANS SHALL APPLY.
- 1 FOR REQUIRED LENGTH OF INSTALLATION SEE ROAD DESIGN MANUAL CHAPTER 10.
- 2 THE LAST 50 FT. OF TANGENT TERMINALS MAY BE FLARED AT 1:50 TAPER.
- 3 CONC. BARRIER WALL BETWEEN PIER COLUMNS MAY BE USED, STD. PLAN 5-297.610. SEE SHEET NO. \_\_\_ FOR WALL DETAILS. CONNECT GUARDRAIL TO BARRIER WALL ANCHORAGE PLATE, SEE SHEET NO. \_\_\_ FOR DETAILS.
- 4 AN APPROVED TRANSITION MUST BE USED.
- 5 10 FT. CURB TRANSITION, USE IF ADJACENT CURB IS GREATER THAN 4 INCHES.
- 6 THRIE BEAM BULLNOSE. SEE SHEET NO. \_\_\_ FOR DETAILS.
- 7 IF EMBEDMENT IS GREATER THAN 3 FT. 0 IN., OR IF EMBEDMENT IS 2 FT. 6 IN. TO 3 FT. 0 IN. AND ADJACENT POSTS ARE EMBEDDED 3 FT. 0 IN. OR MORE, POST SEAT IS NOT REQUIRED.
- 8 FOR CURB 6 IN. OR HIGHER, MILL TO 3 IN. HEIGHT.
- 9 SNOWPLOW MARKER (X4-5) WITH A 2 LB./FT. DELINEATOR POST 8 FT. LONG (SPEC. 3401) DRIVEN INTO THE GROUND. EXTEND 3 FT. ABOVE TERMINAL. THE MARKER IS INCIDENTAL FOR WHICH NO DIRECT PAYMENT WILL BE MADE.
- 10 MEASUREMENT IS FROM BACK OF RAIL TO BACK OF RAIL.
- 11 1:10 OR FLATTER SLOPE P.I.
- 12 SEE ESTIMATED DESIGN DEFLECTION TABLE FOR DESIGN B W-BEAM GUARDRAIL.
- 13 WHEN CLOSE POST SPACING OR DOUBLE NESTED RAIL IS USED, THIS POST SPACING SHOULD EXTEND A MINIMUM OF 12 FT. IN THE DIRECTION OF APPROACHING TRAFFIC.
- 14 THE ANCHOR ASSEMBLY MUST BE LOCATED DOWNSTREAM OF THE HAZARD.
- 15 MARK THE APPROACH END OF PLATE BEAM GUARDRAIL INSTALLATIONS WITH A STRIPED OBJECT MARKER SIZED TO FIT THE END TERMINAL, HAVING ALTERNATING BLACK AND REFLECTIVE YELLOW (WIDE ANGLE PRISMATIC RETROREFLECTIVE SHEETING) STRIPES SLOPED DOWNWARD AT A 45 DEGREE ANGLE TOWARD THE SIDE ON WHICH TRAFFIC PASSES. FOR FLAT END TREATMENTS THE OBJECT MARKER SHALL FIT INSIDE THE RECESSED AREA. FOR ROUNDED END TREATMENTS THE OBJECT MARKER SHALL WRAP AROUND THE CIRCULAR END AND BE MOUNTED SO THE TOP OF THE OBJECT MARKER LINES UP WITH THE TOP OF THE END TREATMENT.
- 16 0.04 FT./FT. CROSS SLOPE TYPICAL. 0.10 FT./FT. CROSS SLOPE MAXIMUM.
- 17 1:10 SLOPE OR FLATTER.
- 18 USE ONLY FOR RETROFITS WITH SITE RESTRICTIONS. FOR RETROFITS WITHOUT SITE RESTRICTIONS AND NEW CONSTRUCTION, SEE SHEET 3.
- 19 MEDIAN GRADING DETAIL SHOWN APPLIES TO THRIE-BEAM BULLNOSE ONLY.
- 20 DRAINAGE DETAILS SHOWN ON GRADING PLAN.



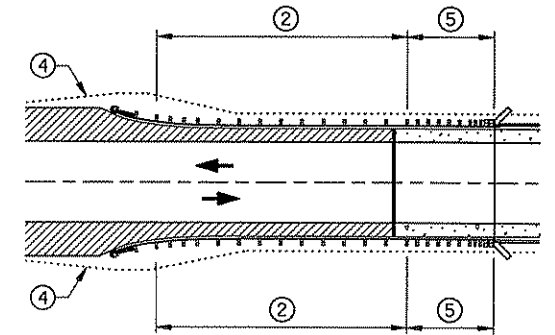




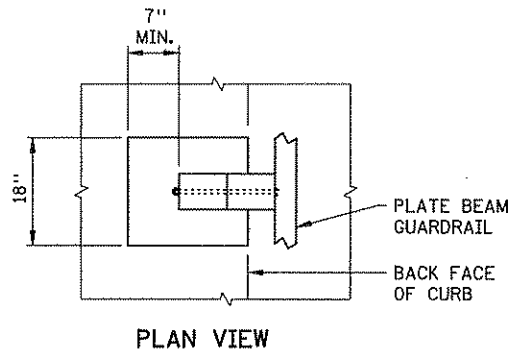
TWO - WAY BRIDGE WITH FULL SHOULDERS



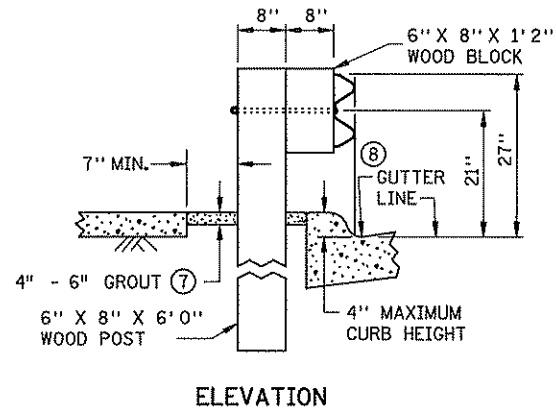
ONE - WAY BRIDGE WITH FULL RIGHT SHOULDER (FOR 14' 2-1/2" THRIE BEAM BULLNOSE)



TWO - WAY BRIDGE WITHOUT FULL SHOULDERS

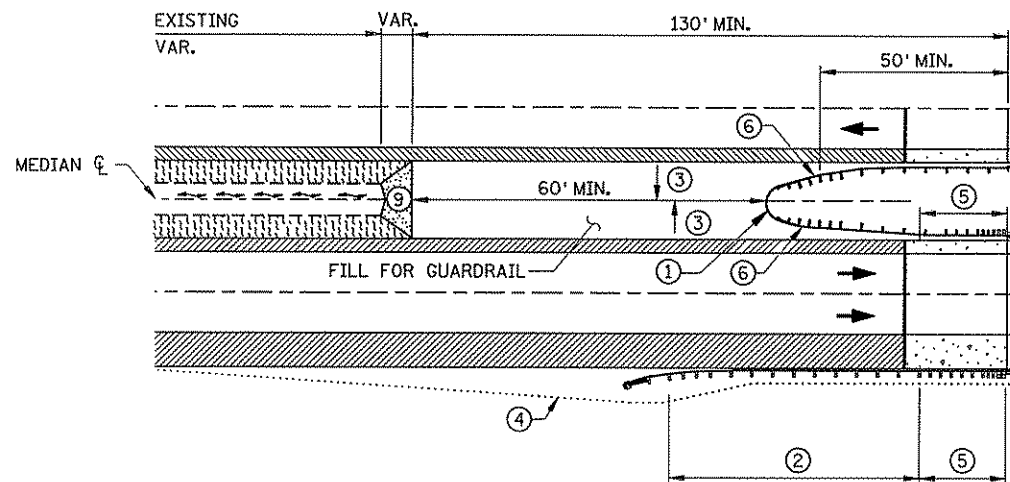


PLAN VIEW



ELEVATION

TYPICAL SECTION AT POST SET IN CONCRETE



ONE - WAY BRIDGE WITH FULL RIGHT SHOULDER (FOR MEDIANS WIDER THAN 14' 2-1/2" THRIE BEAM BULLNOSE)

NOTES:

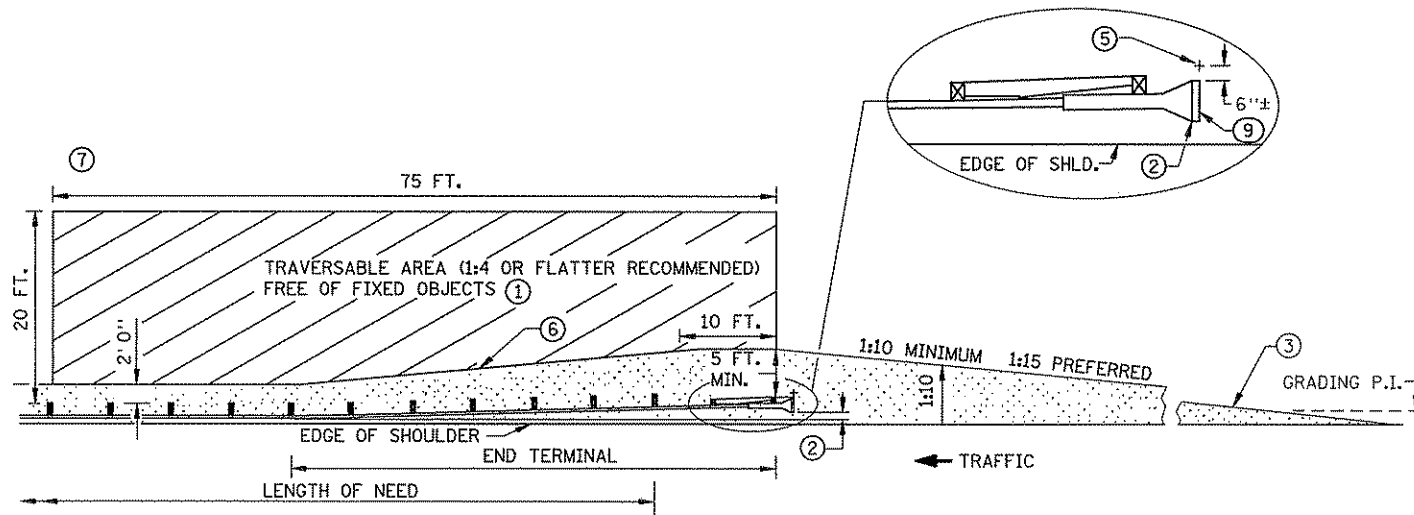
- ALL GUARDRAIL POSTS SHALL BE 6 FT. 3 IN. CENTER TO CENTER (DESIGN B), EXCEPT WHERE NOTED.
- THE LATEST APPROVED VERSION OF STANDARD PLATES SHOWN OR AS INDICATED IN THE PLANS SHALL APPLY.
- ① THRIE BEAM BULLNOSE, SEE SHEET NO. \_\_\_\_ FOR DETAILS.
- ② FOR THE REQUIRED LENGTH SEE ROAD DESIGN MANUAL CHAPTER 10.
- ③ 0.04 FT./FT. CROSS SLOPE TYPICAL, 0.10 FT./FT. CROSS SLOPE MAXIMUM.
- ④ 1:10 OR FLATTER SLOPE P.I.. APPROACH GRADING VARIES WITH TERMINAL TYPE.
- ⑤ PLATE BEAM GUARDRAIL ATTACHMENTS TO FIXED OBJECTS REQUIRE AN APPROVED TRANSITION SECTION.
- ⑥ FOR MEDIANS WIDER THAN THE 14 FT. 2-1/2 IN., BEFORE TAPERING THE APPROACH SIDE TAPER THE OPPOSING SIDE AS SHOWN ON THE BULLNOSE DESIGN DETAIL. APPROACH TAPER SHOULD NOT EXCEED 1:25 IF THE BARRIER IS WITHIN THE SHY LINE OR 1:15 IF IT IS OUTSIDE.
- ⑦ TWO-SACK GROUT MIX (BY VOLUME: 1 PART CEMENT, 14 PARTS SAND, 5 PARTS WATER).
- ⑧ PLACE FRONT FACE OF W-BEAM DIRECTLY ABOVE FRONT FACE OF CURB.
- ⑨ 1:10 SLOPE OR FLATTER.

STANDARD SHEET NO. 5-297.601 ( 2 OF 3 )	TITLE:
STANDARD APPROVED: AUGUST 17, 2005	

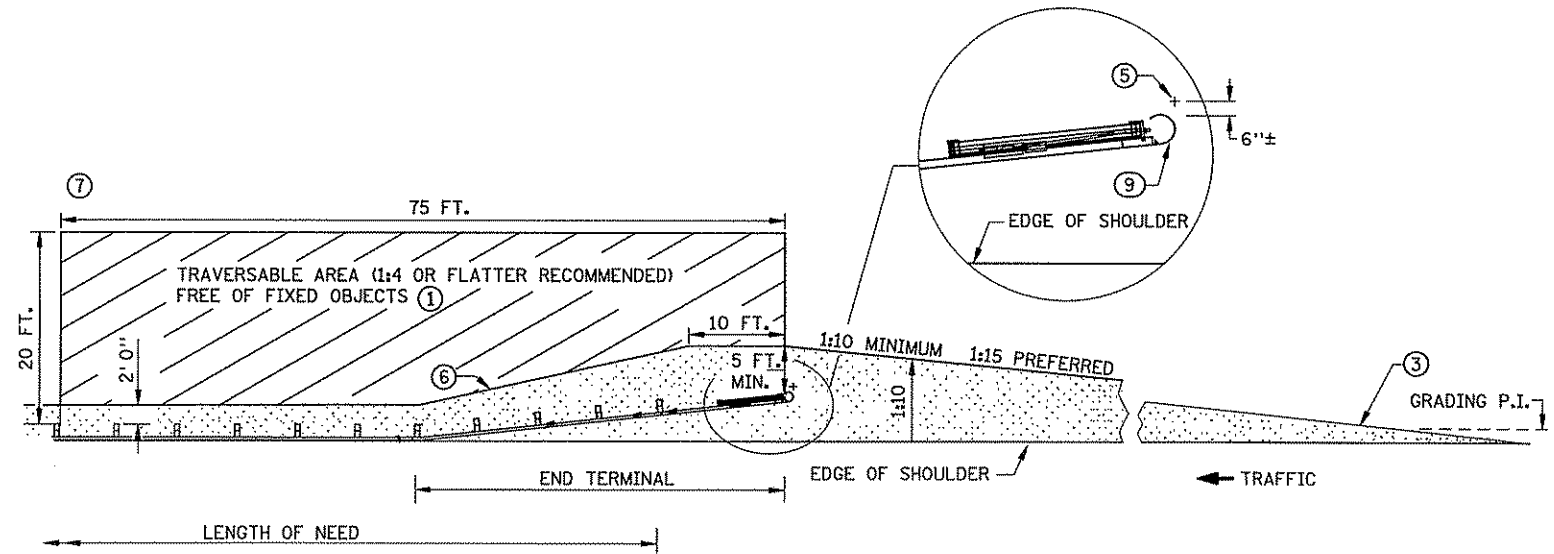
GUARDRAIL INSTALLATIONS AT MEDIANS AND END TREATMENTS

STATE PROJ. NO. 02-614-24

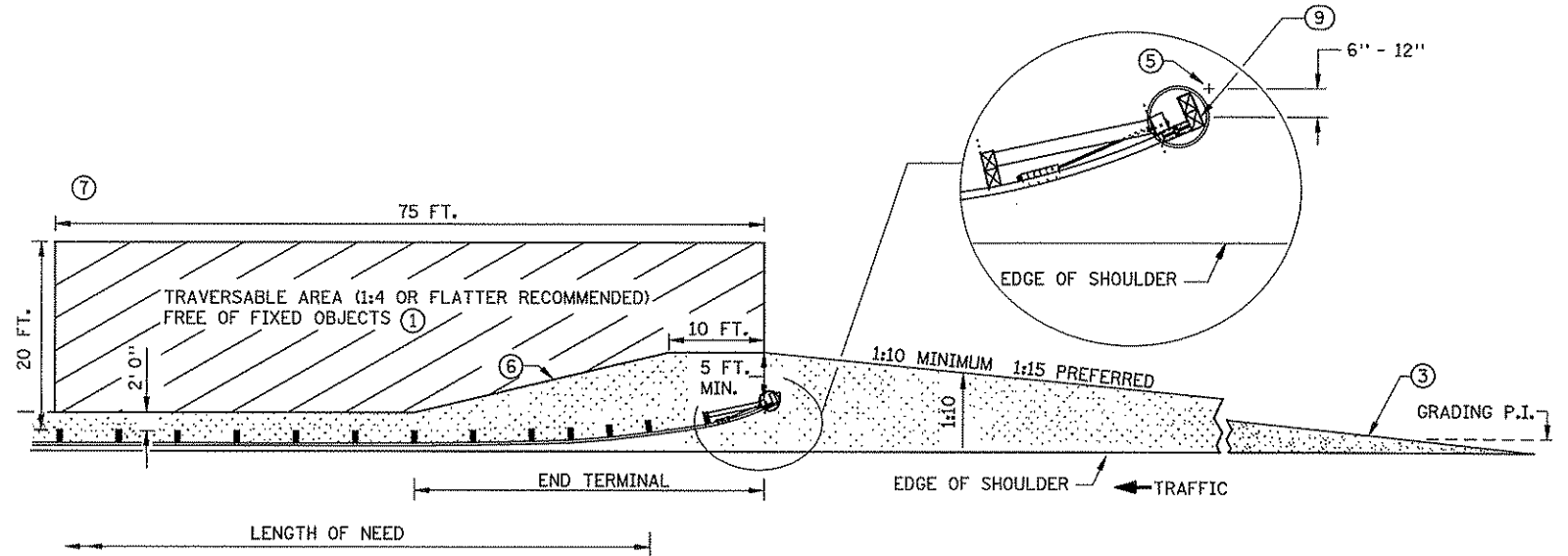
SHEET NO. 64 OF 492 SHEETS



PLAN VIEW  
(PROPRIETARY TANGENT TERMINAL SHOWN AS EXAMPLE)



PLAN VIEW ⑧  
(PROPRIETARY FLARED TERMINAL SHOWN AS EXAMPLE)



PLAN VIEW ④ ⑧  
(ELT)

**NOTES:**

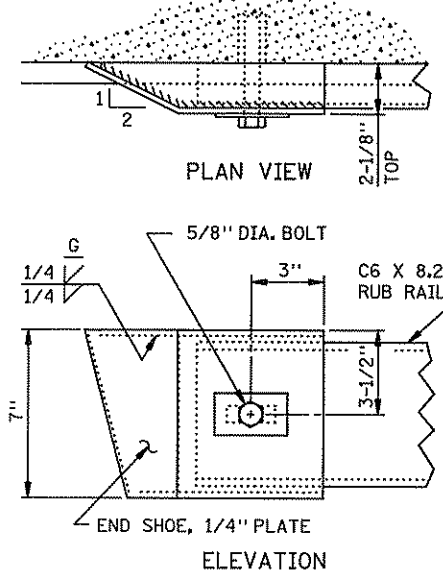
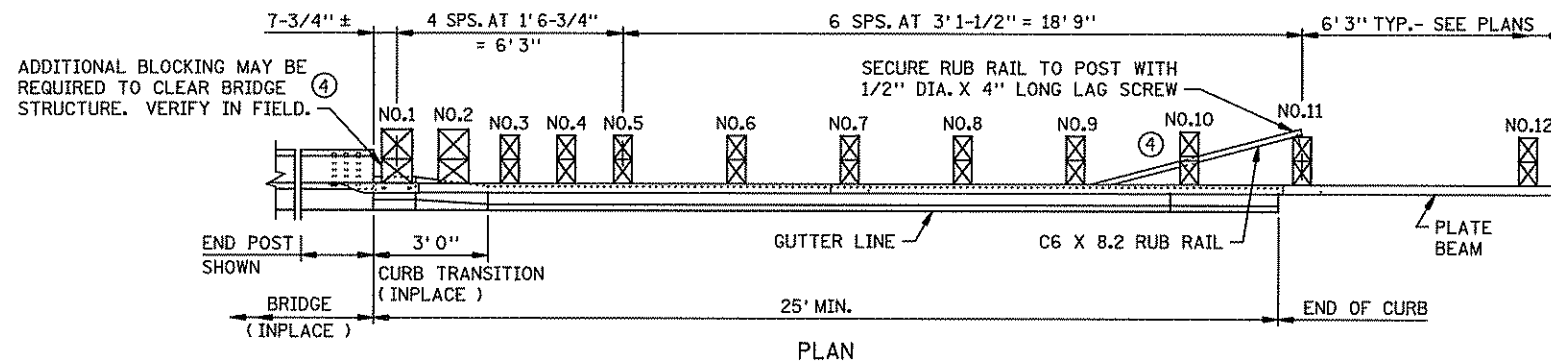
- ALL CROSS SLOPES ARE IN FOOT/FOOT UNLESS OTHERWISE NOTED.
- ALL GUARDRAIL POSTS SHALL BE 6 FT. 3 IN. CENTER TO CENTER (DESIGN B), EXCEPT WHERE NOTED.
- CHANGES TO SUBJECTS COVERED BY THIS SHEET INDICATED IN THE PLANS OR ON PLATES WITH MORE RECENT APPROVAL DATES SHALL APPLY.
- GRADING AND DRAINAGE HARDWARE ARE NOT INCIDENTAL TO GUARDRAIL INSTALLATION.
- ① SLOPES BETWEEN 1:3 AND 1:4 PERMITTED WHEN 1:4 OR FLATTER IS NOT POSSIBLE. FOR SLOPES STEEPER THAN 1:3 THE AREA IMMEDIATELY BEHIND AND BEYOND THE END TERMINAL SHOULD, AT LEAST, BE SIMILAR IN CROSS SECTION TO THE UNSHIELDED ROADSIDE AREA UPSTREAM OF THE END TERMINAL.
- ② THE LAST 50 FT. OF TANGENT TERMINALS CAN BE FLARED AT 1:50 TAPER.
- ③ WHEN GRADING PLATFORMS ARE BUILT, THEY MUST BE SMOOTHLY TRANSITIONED TO EXISTING SIDE SLOPE SO THE ENTIRE ROADSIDE APPROACH TO THE BARRIER REMAINS TRAVERSABLE, AS WELL AS THE AREA IMMEDIATELY BEHIND IT.

- ④ SEE STANDARD PLATE 8329.
- ⑤ SNOWPLOW MARKER (X4-5) WITH A 2 LB./FT. DELINEATOR POST 8 FT. LONG (SPEC. 3401) DRIVEN INTO THE GROUND. EXTEND 3 FT. ABOVE TERMINAL. THE MARKER IS INCIDENTAL FOR WHICH NO DIRECT PAYMENT WILL BE MADE. MARK BOTH THE BEGINNING AND END OF PLATE BEAM GUARDRAIL INSTALLATION.
- ⑥ 1:10 OR FLATTER SLOPE P.I..
- ⑦ GRADUALLY BLEND SLOPE FROM TRAVERSABLE AREA TO STEEP EXISTING SLOPE (WHEN SLOPE IS STEEPER THAN 1:6).
- ⑧ IF THE TERRAIN BEYOND THE TERMINAL END AND IMMEDIATELY BEHIND THE BARRIER IS NOT SAFELY TRAVERSABLE, A TANGENT (ENERGY- ABSORBING) TERMINAL SHALL BE USED.

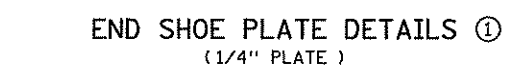
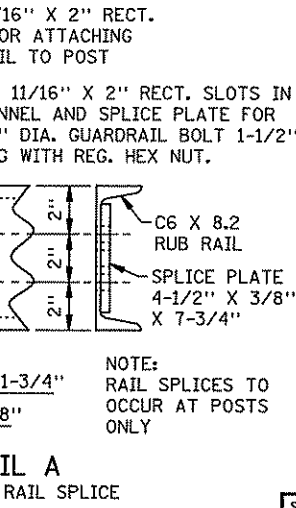
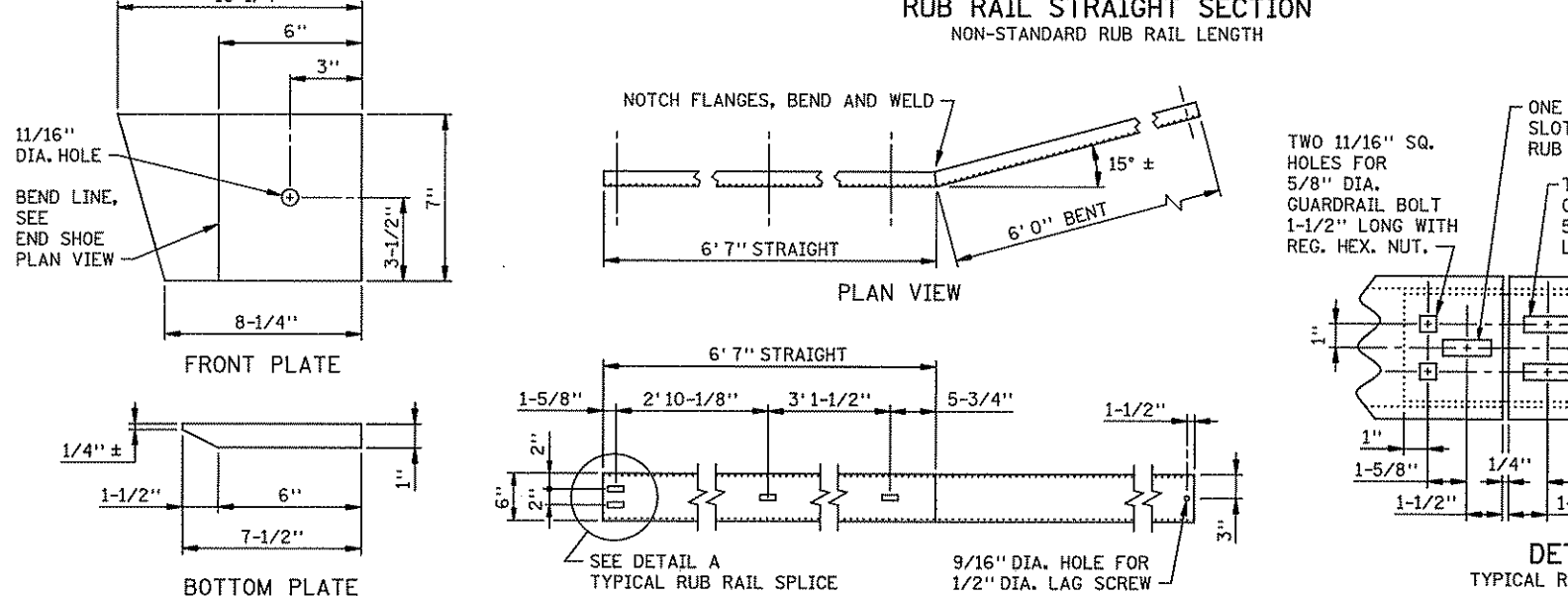
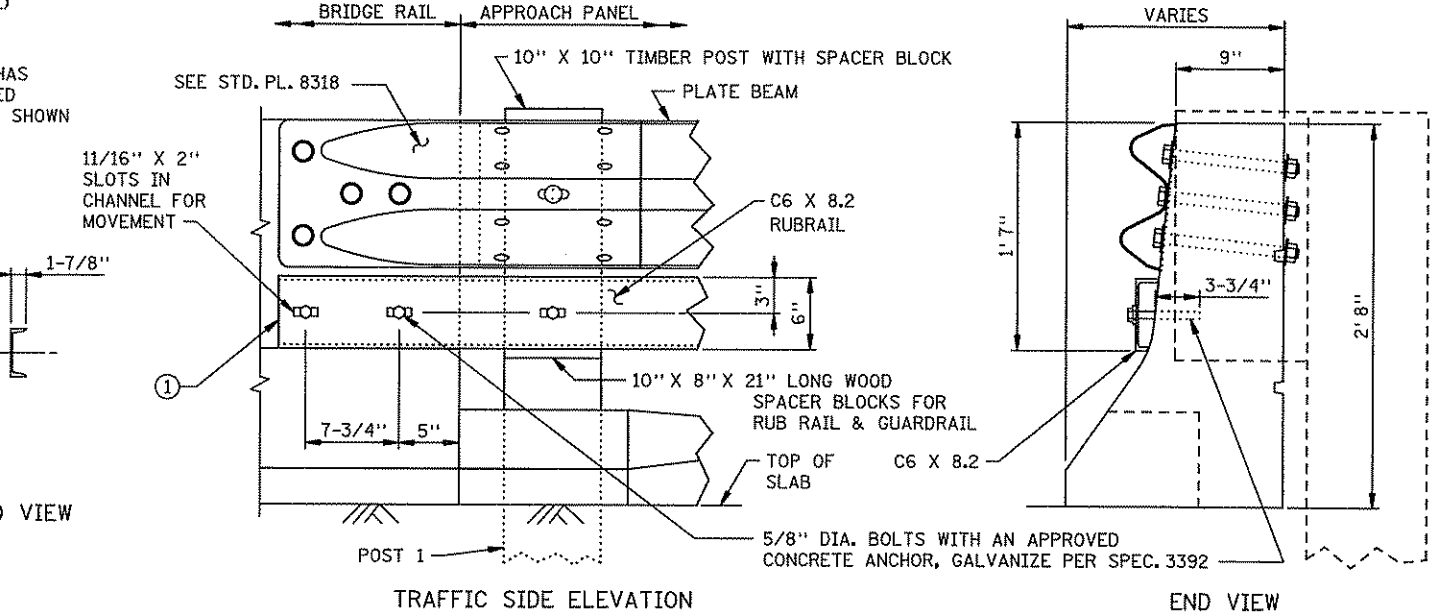
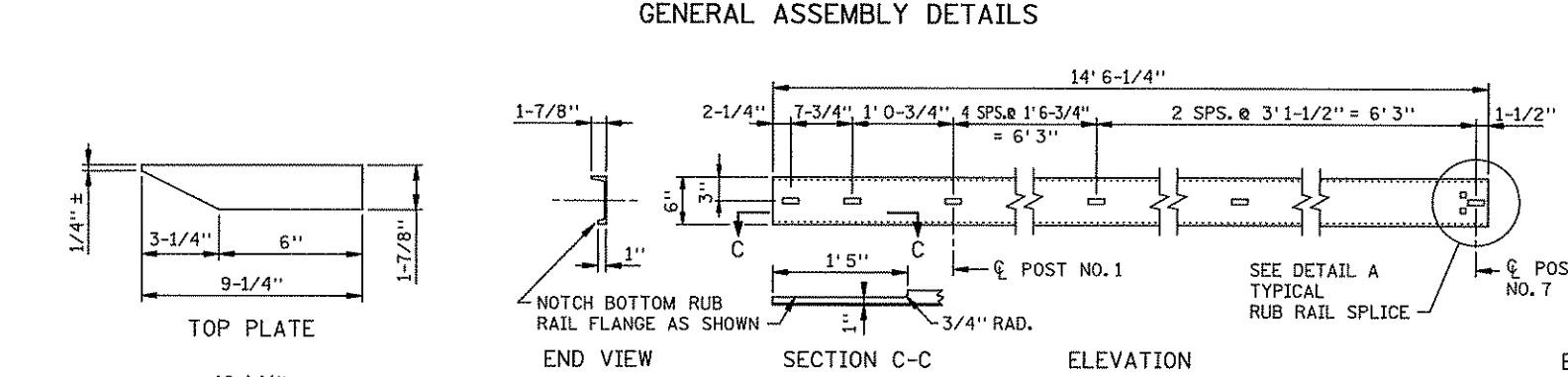
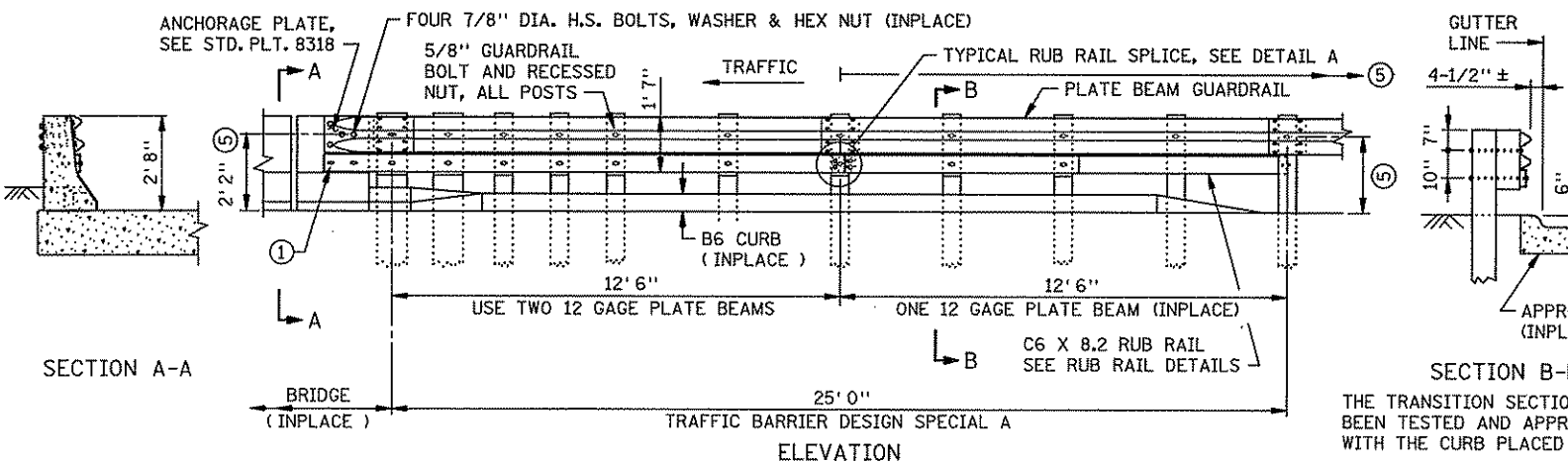
- ⑨ MARK THE APPROACH END OF PLATE BEAM GUARDRAIL INSTALLATIONS WITH A STRIPED OBJECT MARKER SIZED TO FIT THE END TERMINAL, HAVING ALTERNATING BLACK AND REFLECTIVE YELLOW (WIDE ANGLE PRISMATIC RETROREFLECTIVE SHEETING). STRIPES SHALL SLOPE DOWNWARD AT A 45 DEGREE ANGLE TOWARD THE SIDE ON WHICH TRAFFIC PASSES. FOR FLAT END TREATMENTS THE OBJECT MARKER SHALL FIT INSIDE THE RECESSED AREA. FOR ROUNDED END TREATMENTS THE OBJECT MARKER SHALL WRAP AROUND THE CIRCULAR END AND BE MOUNTED SO THE TOP OF THE OBJECT MARKER LINES UP WITH THE TOP OF THE END TREATMENT.

STANDARD SHEET NO.  
5-297.601 (3 OF 3)  
STANDARD APPROVED  
AUGUST 17, 2005

TITLE:  
**GUARDRAIL INSTALLATIONS AT MEDIANS & END TREATMENTS**  
(FOR NEW CONSTRUCTION AND RETROFITS WITHOUT SITE RESTRICTIONS)



QUANTITIES PER BRIDGE CORNER IMPROVEMENT ②		
DESCRIPTION	LENGTH/SIZE	NO.
5/8" DIA. GUARDRAIL BOLT & RECESSED NUT (POSTS 1-2)	20" MIN.	2
5/8" DIA. GUARDRAIL BOLT & RECESSED NUT (POSTS 3-5)	18" MIN.	3
5/8" DIA. GUARD. BOLT & RECESSED NUT (RUB RAIL) (POSTS 1-2)	22" MIN.	2
5/8" DIA. GUARD. BOLT & RECESSED NUT (RUB RAIL) (POSTS 3-9)	20" MIN.	7
5/8" DIA. GUARDRAIL BOLT WITH NUT (RAIL SPLICE)	1-1/2"	4
5/8" DIA. BOLTS WITH CONCRETE ANCHORS	5-3/4"	2
1/2" DIA. LAG SCREW (POST NO. 11)	4"	1
③ C6 X 8.2 RUB RAIL	14'6-1/4"	1
③ C6 X 8.2 RUB RAIL	12'7"	1
3/8" THICK SPLICE PLATE (RUB RAIL)	4-1/2" X 7-3/4"	1
12 GAGE PLATE BEAM	12'6"	1
10" X 10" TIMBER POSTS (POSTS 1-2)	8'0" MIN.	2
6" X 8" TIMBER POSTS (POSTS 3-5)	7'0" MIN.	3
④ 10" X 8" SPACER BLOCKS (RUB RAIL & GUARDRAIL) (POSTS 1-2)	21"	2
④ 6" X 8" SPACER BLOCKS (RUB RAIL & GUARDRAIL) (POSTS 3-9)	21"	7



**NOTES:**

STRUCTURAL STEEL TO BE 3306, EXCEPT AS NOTED.

ALL SLOTTED HOLES ARE 11/16" X 2".

ALL SQUARE HOLES ARE 11/16".

RUB RAIL IS C6 X 8.2

GALVANIZE STRUCTURAL SHAPES PER SPEC. 3394 AFTER FABRICATION, EXCEPT AS NOTED.

MATERIALS AND CONSTRUCTION PER SPEC. 2554, EXCEPT AS NOTED.

GALVANIZE ALL HARDWARE PER SPEC. 3392.

① END SHOE REQUIRED IF TWO WAY TRAFFIC AND NO MEDIAN.

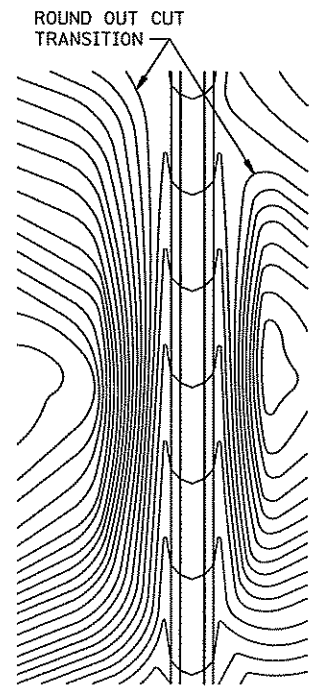
② QUANTITIES LISTED ARE FOR INFORMATIONAL PURPOSES. ANY ADDITIONAL MINOR ITEMS AND SLIGHT CHANGES IN QUANTITIES REQUIRED SHALL BE FURNISHED BY THE CONTRACTOR WITH NO ADDITIONAL COMPENSATION. SOME ITEMS LISTED ARE FROM "A GUIDE TO STANDARDIZED HIGHWAY BARRIER RAIL HARDWARE" AS APPROVED BY AASHTO.

③ NON-STANDARD LENGTHS, SEE RUB RAIL DETAILS FOR STRAIGHT, SPLICES AND BENT SECTIONS.

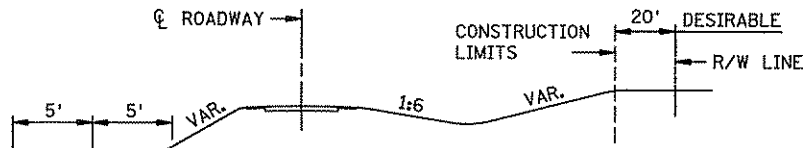
④ ADDITIONAL BLOCKING MAY BE REQUIRED AT POST NO. 1 OR 10.

⑤ HEIGHT IS 2'2" FROM 0' TO 12'6" FROM BRIDGE. HEIGHT TAPERS FROM 2'2" TO 1'9" BETWEEN 12'6" TO 37'6" FROM BRIDGE.

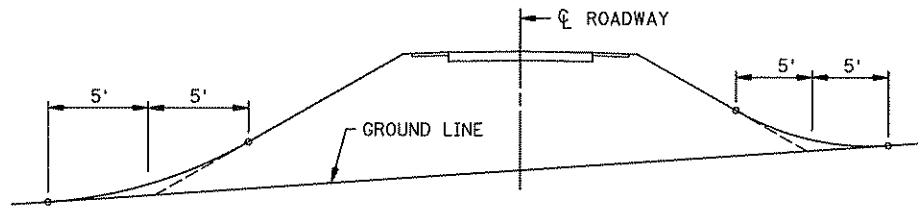
STANDARD SHEET NO. 5-297.606	UPGRADED W-BEAM TRANSITION TO CONCRETE J-SHAPE SAFETY RAIL WITH APPROACH CURB (WOOD POST)
STANDARD APPROVED: APRIL 19, 2001	
REVISION DATE 2-12-03	STATE PROJ. NO. 02-614-24
SHEET NO. 66 OF 492 SHEETS	



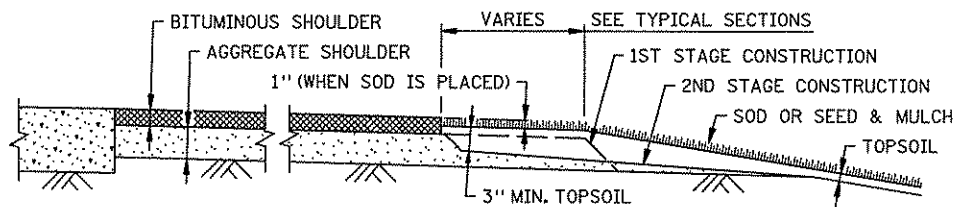
CONTOURING ROAD CUTS



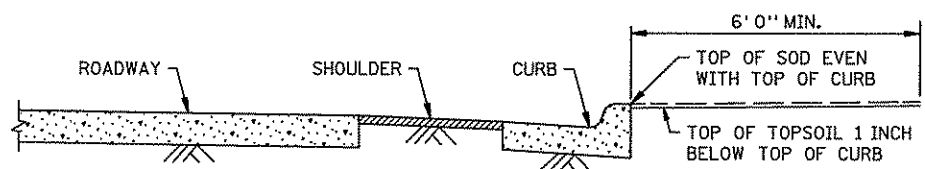
ROUNDING SHOULDERS AND BACKSLOPES



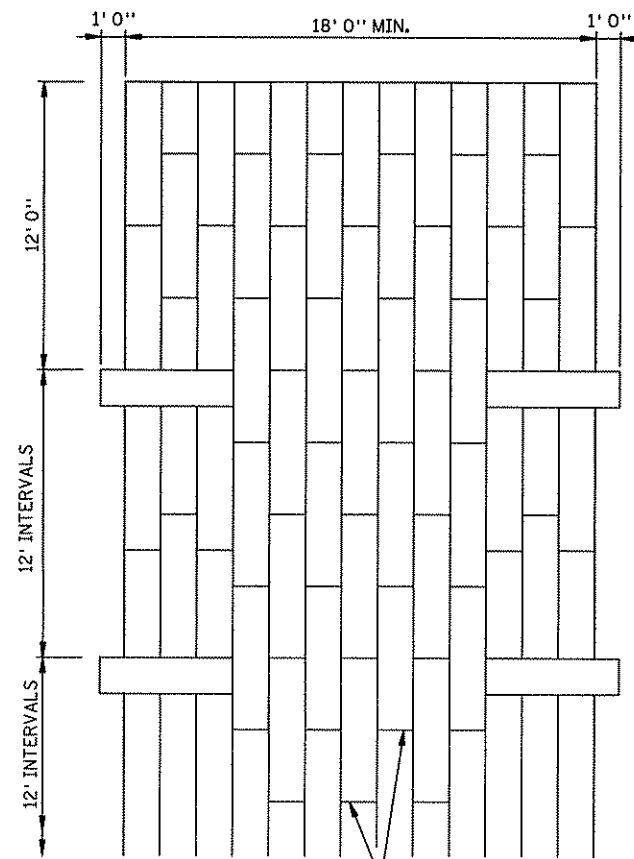
SHAPING FOR DRAINAGE ALONG THE TOE OF FILL SLOPES



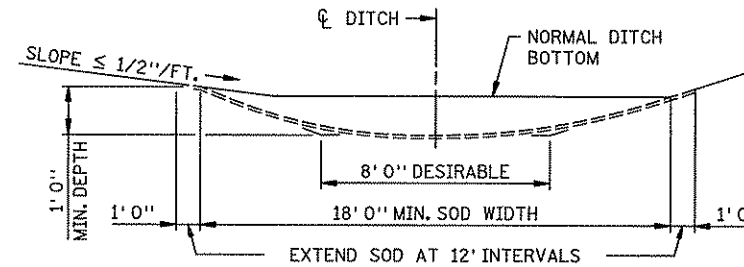
SHAPING AND TOPSOILING INSLOPES



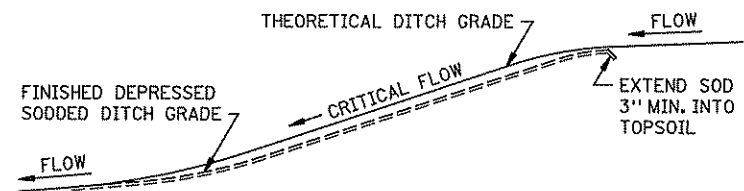
SHAPING ADJACENT TO CURBS WHEN SOD IS PLACED



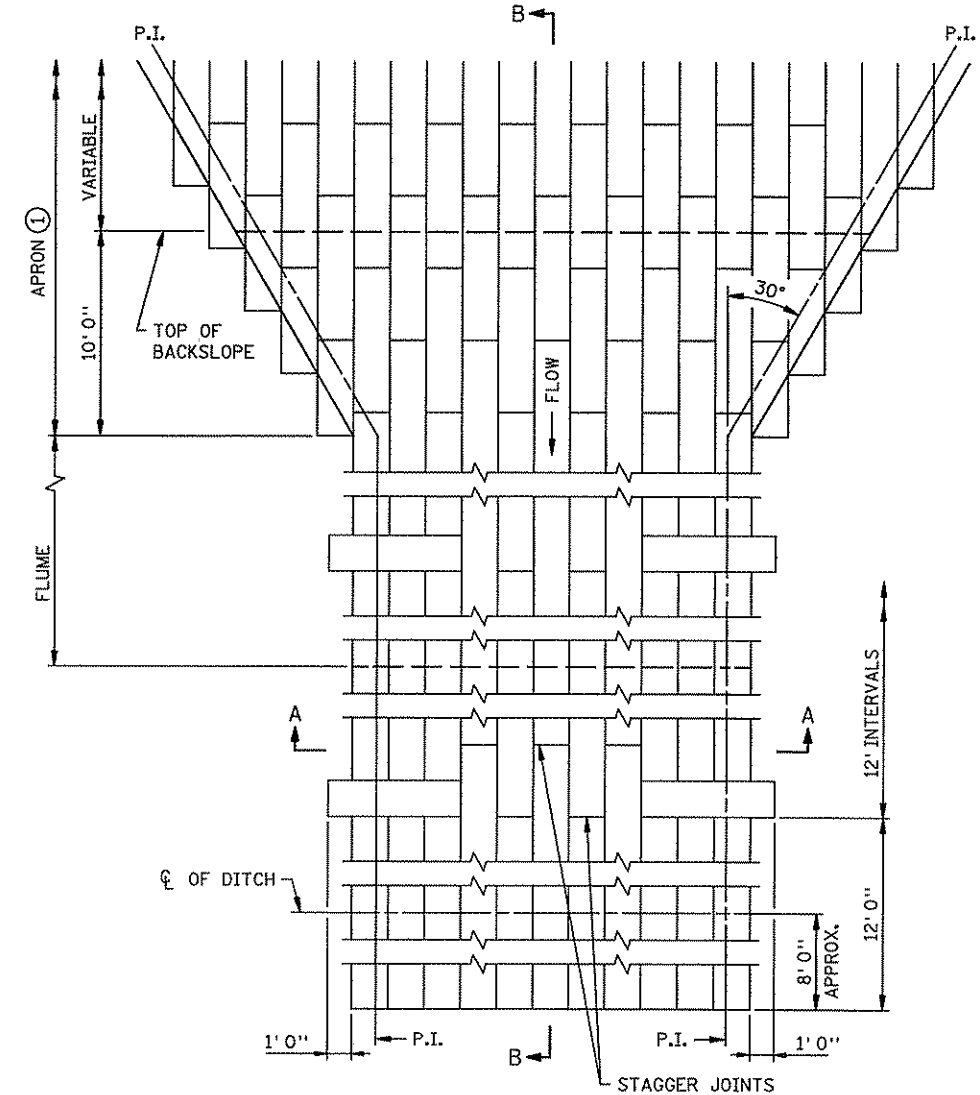
STAGGER JOINTS  
PLAN VIEW



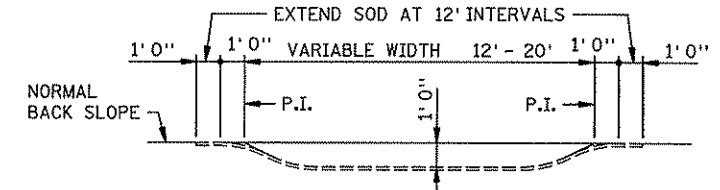
SODDED DITCH CROSS SECTION  
WHERE FRONT OR BACK SLOPE IS FLAT (LESS THAN 1/2"/FT.),  
FIRST NOTCH DITCH AND THEN PROVIDE ROUNDING.



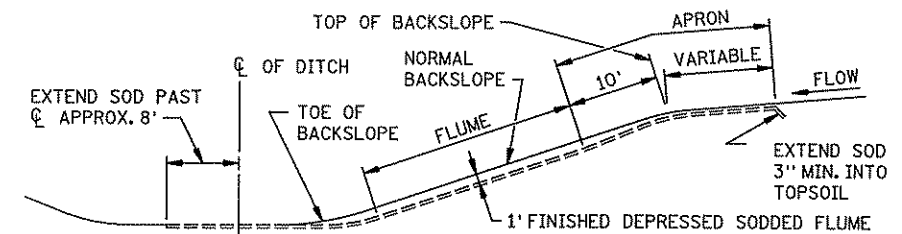
DITCH PROFILE  
SODDED DITCH DETAILS



PLAN VIEW



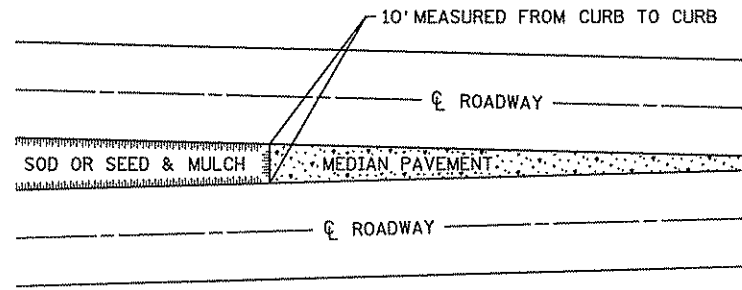
SECTION A-A



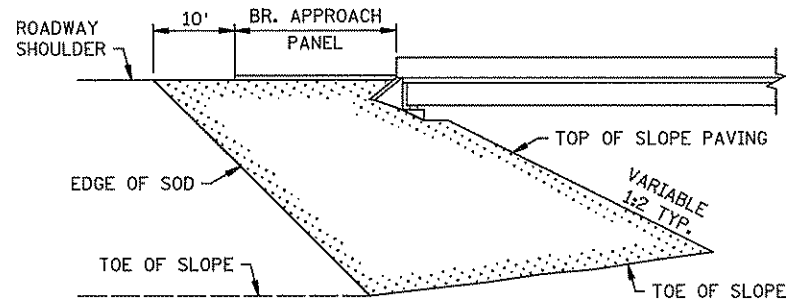
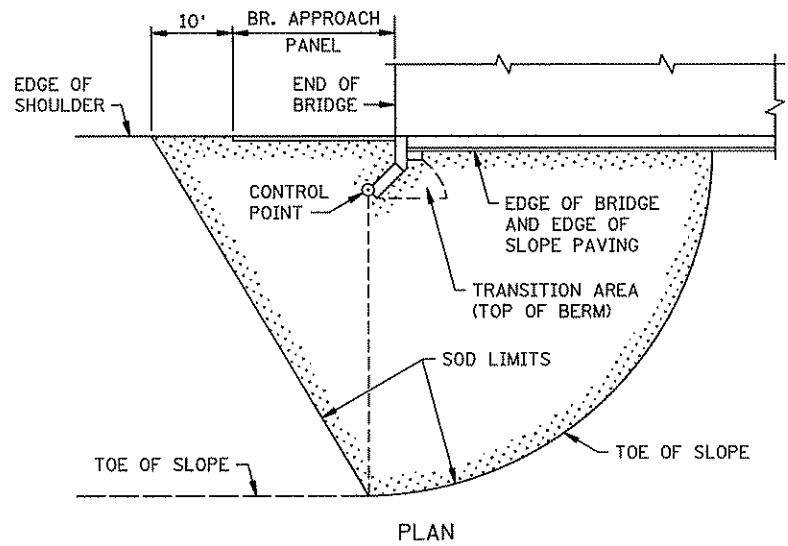
SECTION B-B  
SODDED FLUME DETAILS

NOTES:  
SEE SPEC. 2575.3 FOR ADDITIONAL INFORMATION.  
① CONSTRUCT TAPER AS DIRECTED BY THE ENGINEER.

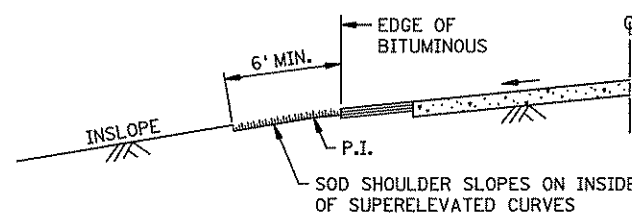
STANDARD SHEET NO. 5-297.404	TITLE: PERMANENT EROSION CONTROL ALONG ROADWAYS, DITCHES AND FLUMES
STANDARD APPROVED: NOVEMBER 20, 2002	
STATE PROJ. NO. 02-614-24	SHEET NO. 67 OF 492 SHEETS



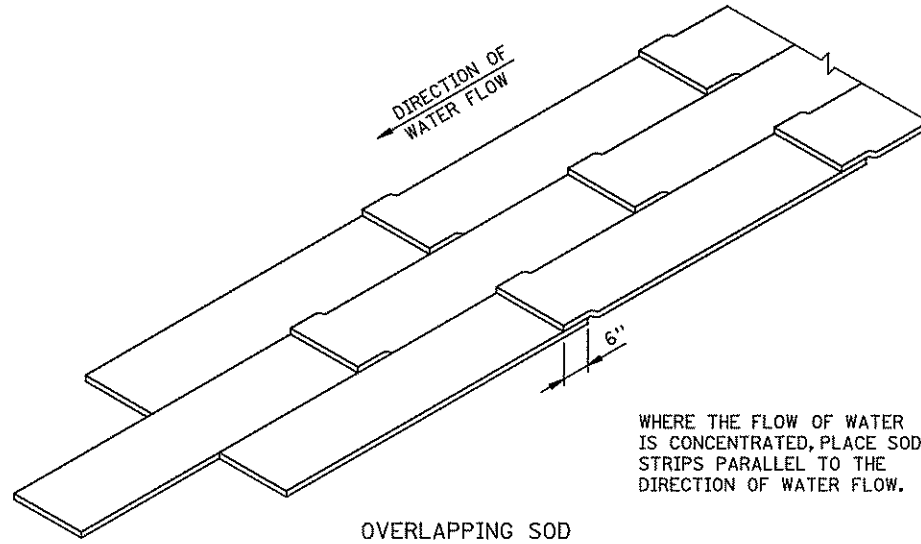
SODDING LIMITS AT GORE AREA



SODDING LIMITS AT BRIDGE APPROACH FILLS

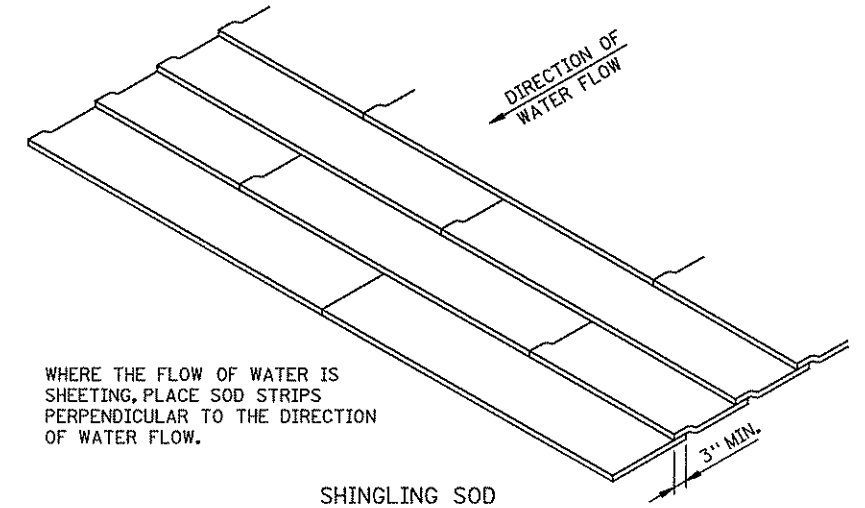


SODDING INSLOPES OF SUPERELEVATED CURVES



OVERLAPPING SOD

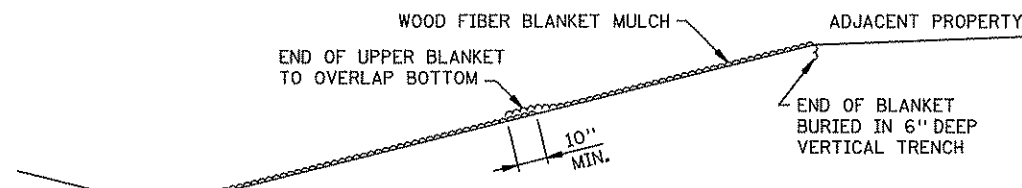
WHERE THE FLOW OF WATER IS CONCENTRATED, PLACE SOD STRIPS PARALLEL TO THE DIRECTION OF WATER FLOW.



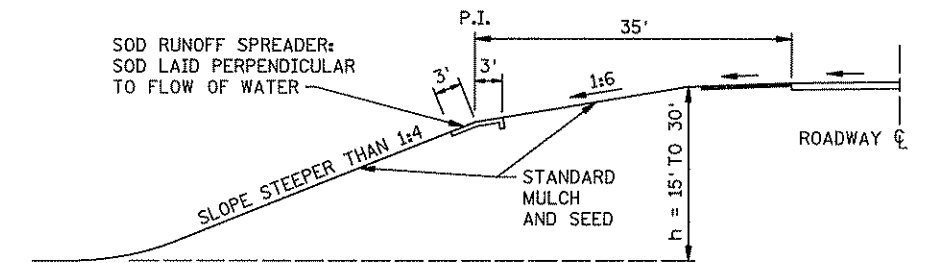
SHINGLING SOD

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

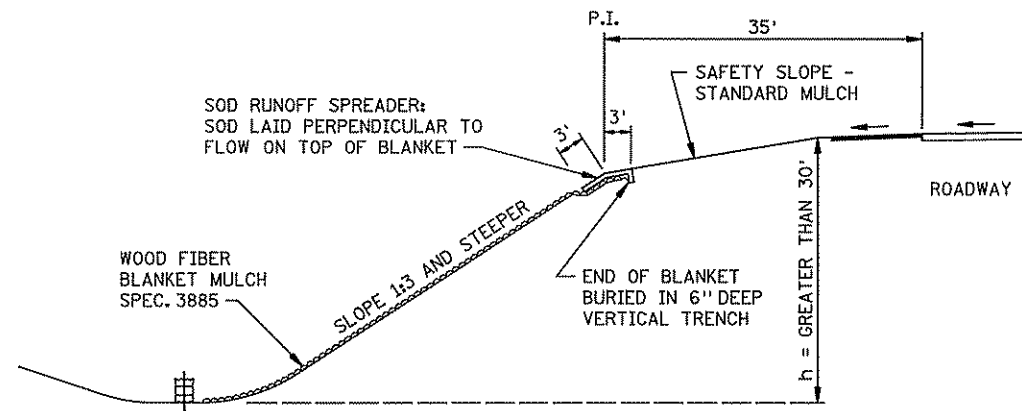
SPECIAL SOD PLACEMENT TECHNIQUES



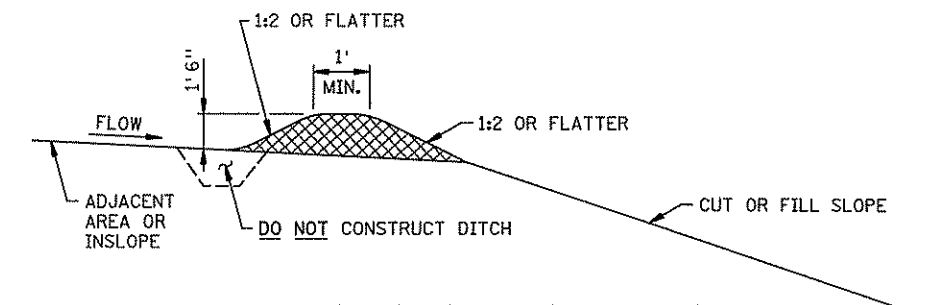
WOOD FIBER BLANKET INSTALLATION ON A CUT SLOPE



BROKEN-BACK SAFETY FILL SLOPE

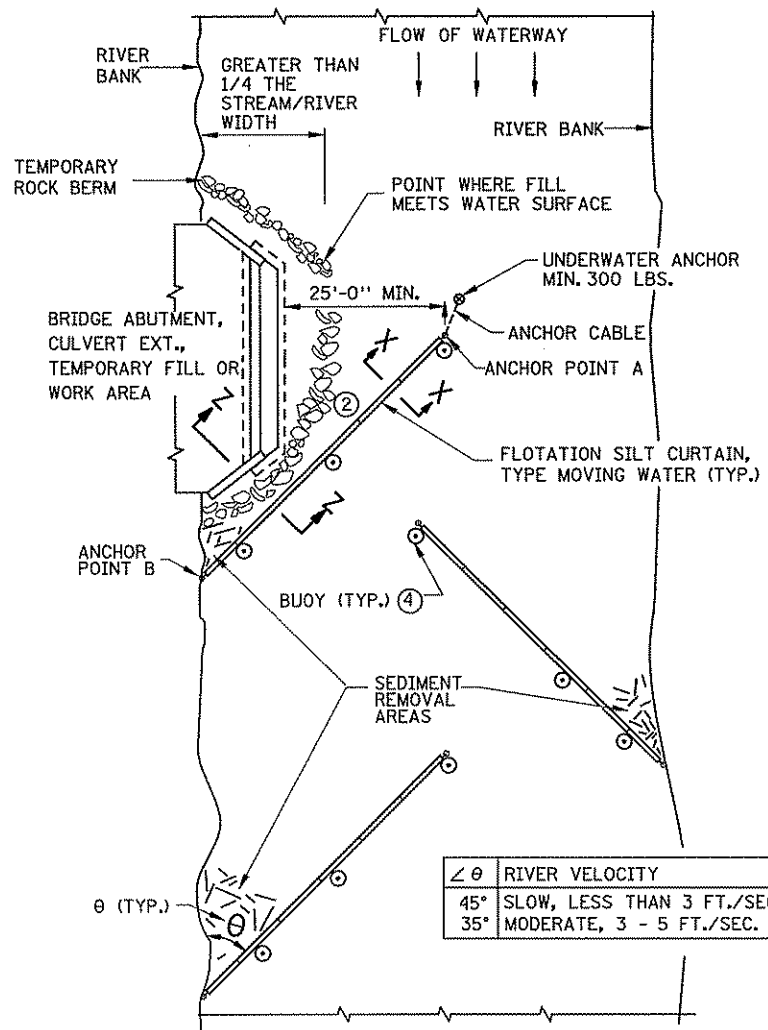


WOOD FIBER BLANKET INSTALLATION ON AN INSLOPE (WHEN REQUIRED)



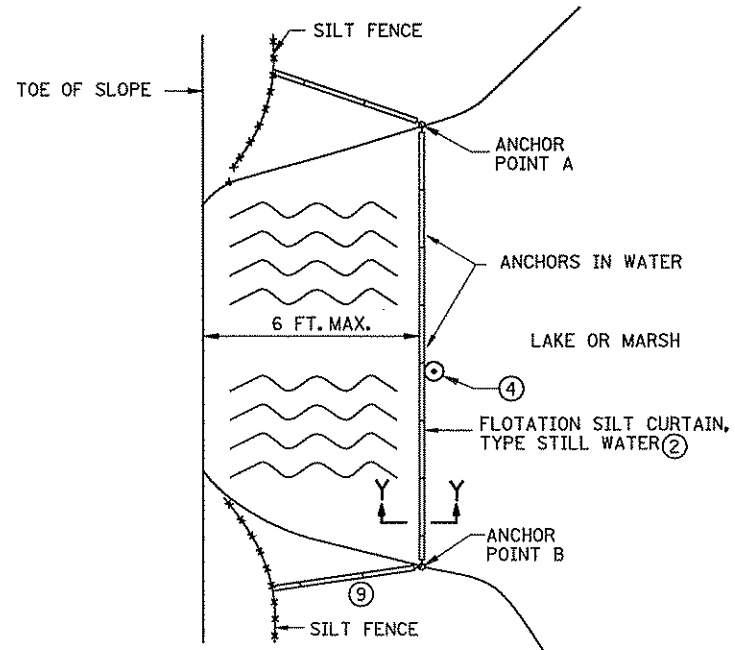
PERMANENT SLOPE PROTECTION DIKE

STANDARD SHEET NO. 5-297.406	TITLE: PERMANENT EROSION CONTROL ALONG ROADWAYS AND AT GORE AREAS & BRIDGE APPROACH FILLS
STANDARD APPROVED: JANUARY 31, 1985	
STATE PROJ. NO. 02-614-24	
SHEET NO. 68 OF 492 SHEETS	

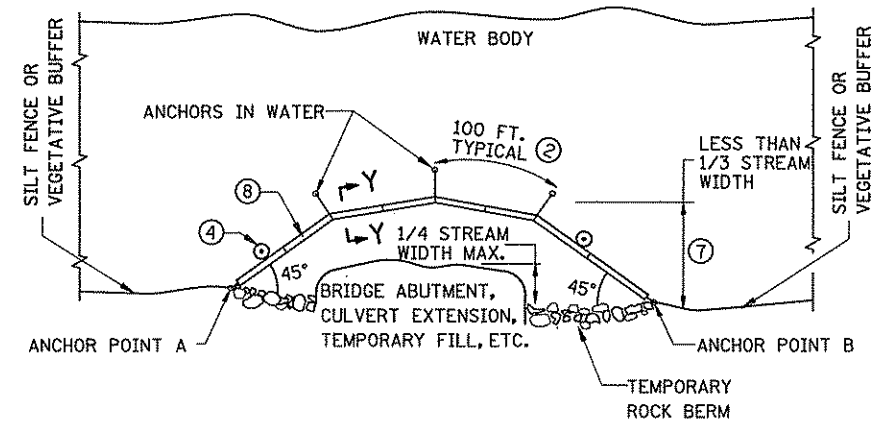


PLAN VIEW (TYPE: MOVING WATER)

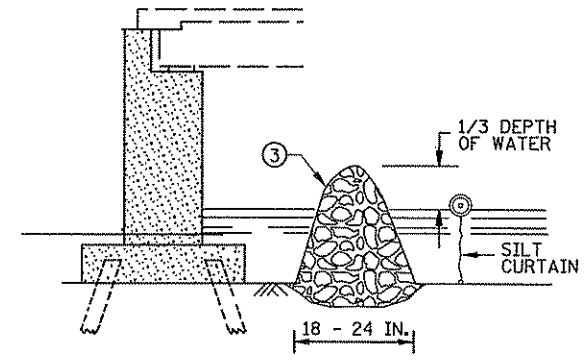
$\angle \theta$	RIVER VELOCITY
45°	SLOW, LESS THAN 3 FT./SEC.
35°	MODERATE, 3 - 5 FT./SEC.



PLAN VIEW (TYPE: STILL WATER)



PLAN VIEW (TYPE: WORK AREA)

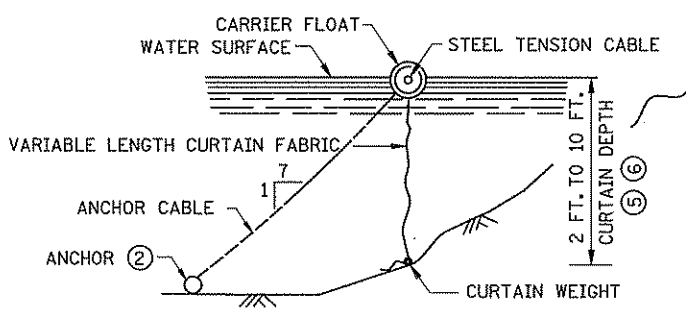


SECTION Z-Z TEMPORARY ROCK BERM FOR SEDIMENT CONTROL

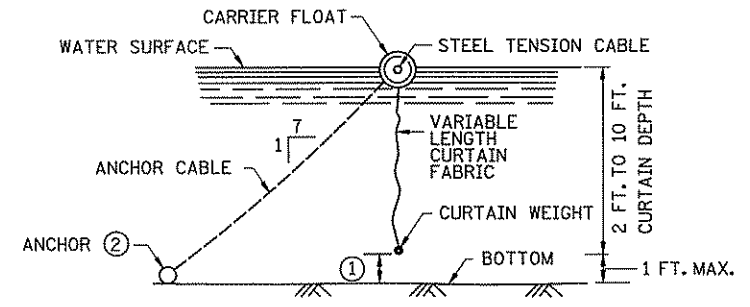
**DESIGN GUIDELINES: MOVING WATER**  
 WHEN TEMPORARY FILL ENCLOSES MORE THAN 1/4 BUT LESS THAN 1/3 WIDTH OF THE STREAM.  
 MINIMUM WATER DEPTH: 3 FT. (1) (6)  
 MAXIMUM WATER DEPTH: 11 FT.  
 MAXIMUM WATER VELOCITY: 5 FT./SEC.

**DESIGN GUIDELINES: WORK AREA**  
 WHEN TEMPORARY FILL ENCLOSES LESS THAN 1/4 OF THE WIDTH OF STREAM.  
 MAXIMUM WATER DEPTH: 10 FT.  
 MAXIMUM WATER VELOCITY: 5 FT./SEC.

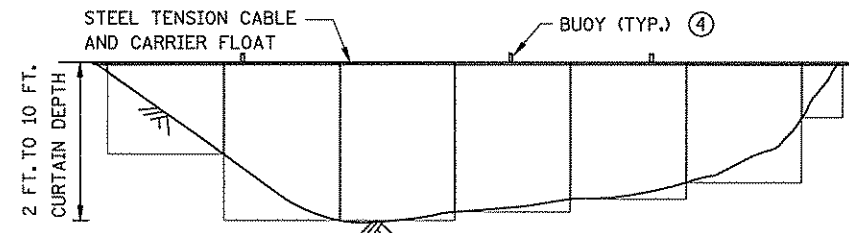
**DESIGN GUIDELINES: STILL WATER** (6)  
 MINIMUM WATER DEPTH: 0 FT.  
 MAXIMUM WATER DEPTH: 10 FT.



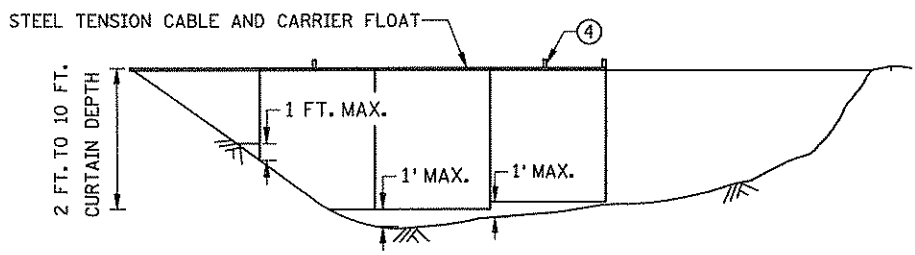
SECTION Y-Y



SECTION X-X



FLOTATION SILT CURTAIN - TYPE: WORK AREA AND STILL WATER (5)  
 FOR CONTAINING OVERFLOWS FROM WEIRS, STANDPIPES, SETTLING PONDS

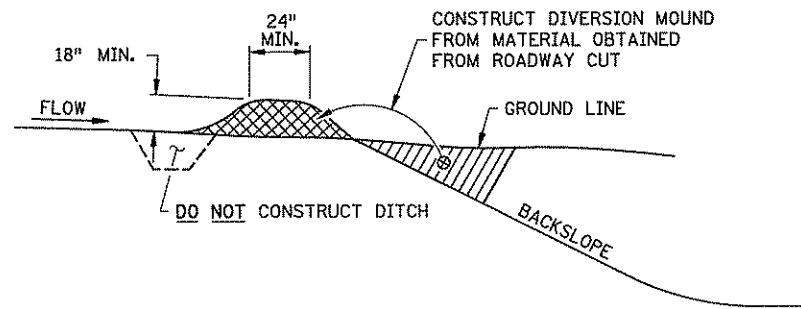


FLOTATION SILT CURTAIN - TYPE: MOVING WATER (5)  
 USE FOR SMALLER RIVERS WITH SLOW AND MODERATE VELOCITIES

**NOTES:**

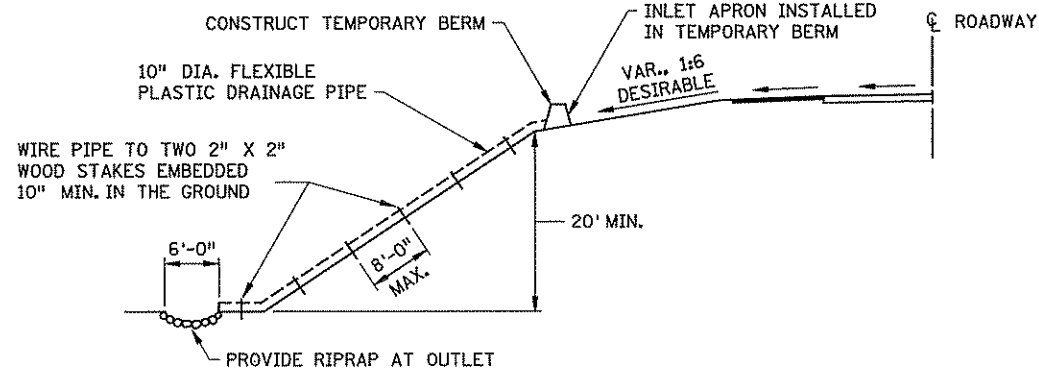
- SEE SPECS. 2573 & 3887.
- (1) CURTAIN EXTENDS TO 1 FT. MAXIMUM FROM BOTTOM OF WATER BODY.
- (2) FOR ANCHOR AND WEIGHT REQUIREMENTS, SEE SPEC. 2573.
- (3) IN AREAS WHERE THE PLAN CALLS FOR RIPRAP AT THE BRIDGE, A TEMPORARY ROCK BERM WILL BE USED TO PROVIDE ADDITIONAL PROTECTION. THE TEMPORARY ROCK BERM 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	
STATE PROJ. NO. 02-614-24	SHEET NO. 69 OF 492 SHEETS



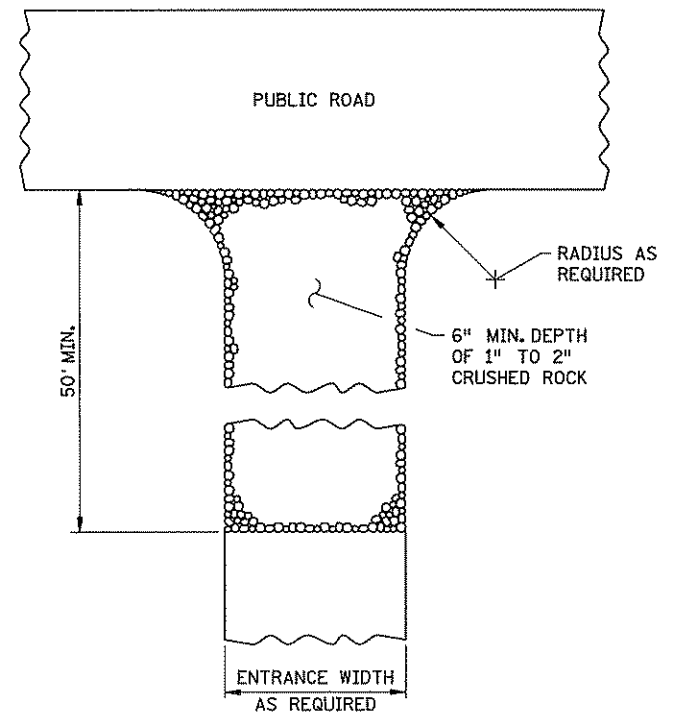
**DIVERSION MOUND**

DESIGN GUIDELINES:  
 STORM FREQUENCY: 10 YEAR - 24 HOUR  
 MAXIMUM DRAINAGE AREA: 5 ACRES  
 MAXIMUM DIVERSION: GRADE 5%

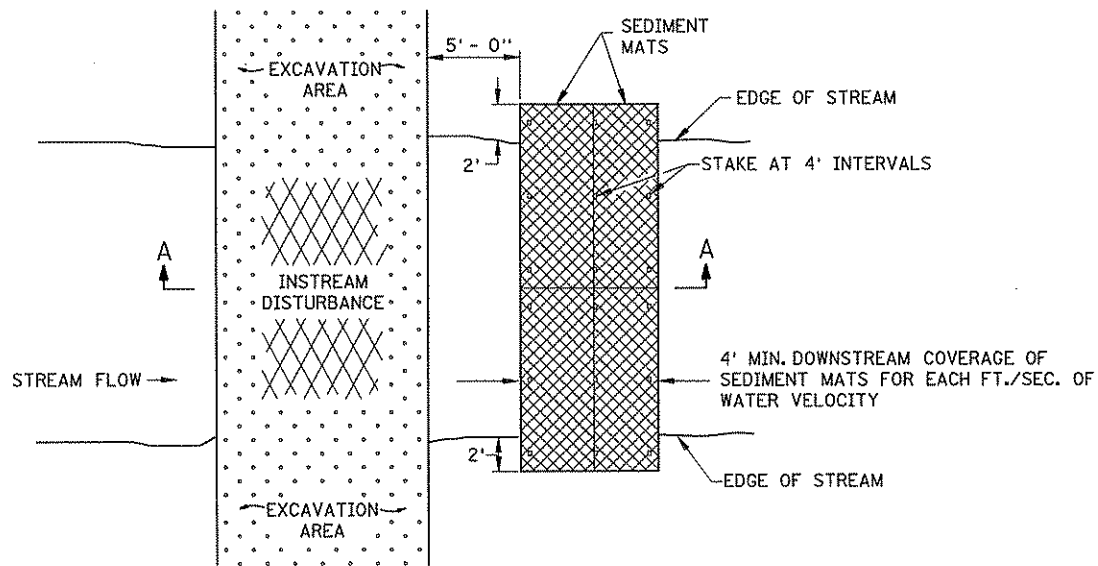


**TEMPORARY DOWN DRAIN ON FILL SLOPE**

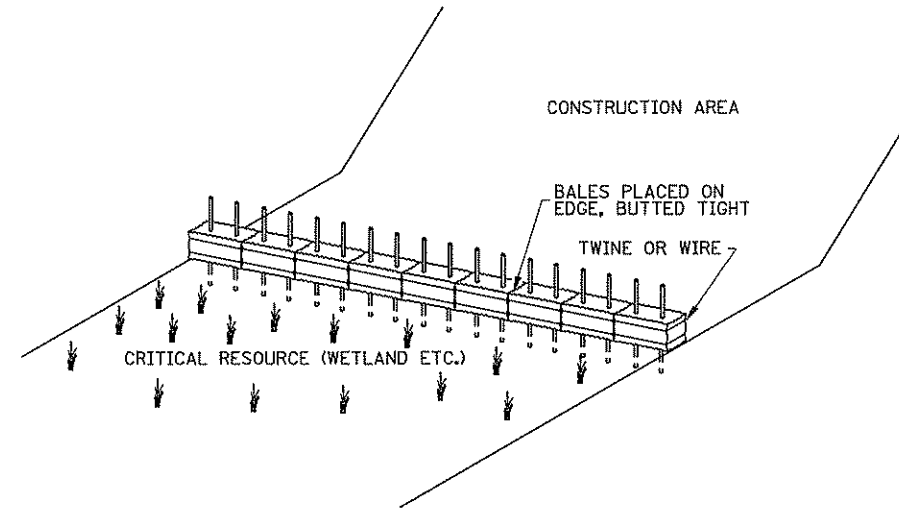
DESIGN GUIDELINES:  
 STORM FREQUENCY: 2 YEAR - 24 HOUR  
 MAXIMUM DRAINAGE AREA: 3 ACRES



**ROCK CONSTRUCTION ENTRANCE ①**

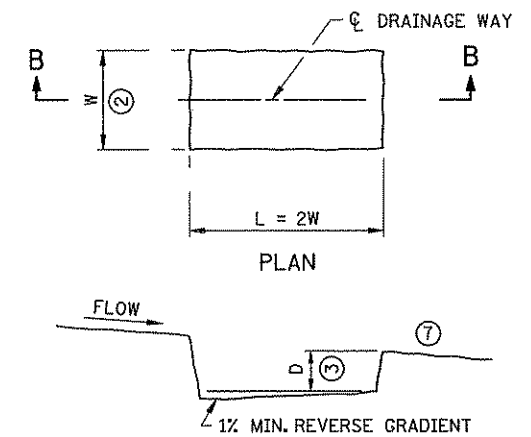


**PLAN VIEW**

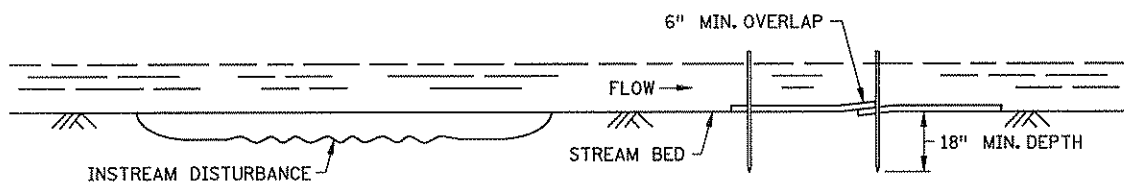


**BALE BARRIERS**

TO BE USED FOR CRITICAL PERIMETER CONTROL AREAS



**SECTION B-B  
 SEDIMENT TRAP DETAIL**

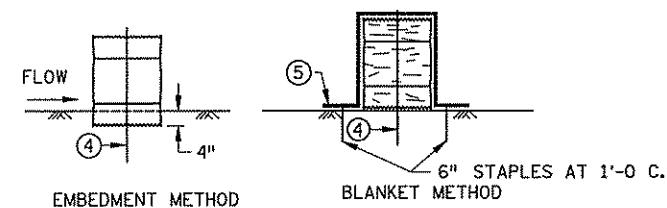


**SECTION A-A**

**SEDIMENT MAT ⑥**

TYPICAL STREAM BED INSTALLATION

DESIGN GUIDELINES:  
 MAXIMUM FLOW VELOCITY: 5 FT./SEC.  
 MAXIMUM FLOW DEPTH: 2 FT.



**BALE BARRIER DETAIL**

APPROX. BALE SIZE: 14" X 18" X 36" LONG

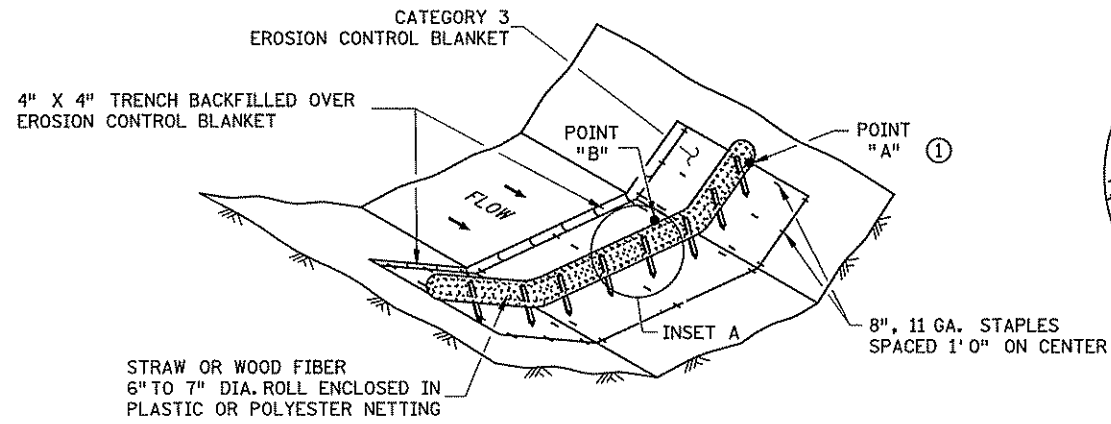
**NOTES:**

SEE SPECS. 2573, 3892, & 3894.

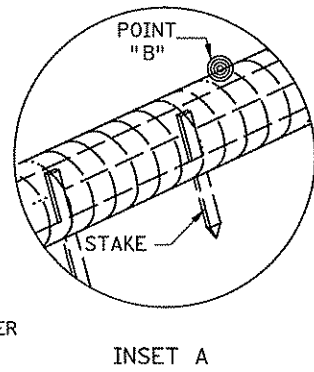
- ① ROCKS AT ENTRANCE CLEAN WORKSITE MUD OFF OF TRUCK TIRES BEFORE TRUCKS ENTER MAIN ROAD. KEEPING MUD OFF THE ROAD WILL PREVENT AUTO DAMAGE AND KEEP CONSTRUCTION SEDIMENT OUT OF DRAINAGE SYSTEMS AND WETLANDS. GEOTEXTILE MAY BE PLACED UNDER THE ROCK TO KEEP ROCKS SEPARATE FROM SOIL.
- ② W = 10 FT. MIN., 20 FT. MAX.
- ③ D = 2 FT.
- ④ TWO 2 IN. X 2 IN. WOOD STAKES OR REINFORCING BARS IN EACH BALE EMBEDDED 10 INCHES MINIMUM IN THE GROUND.
- ⑤ PLACE A CATEGORY 3 EROSION CONTROL BLANKET, 6 FT. WIDE MINIMUM, OVER THE BALE INSTEAD OF TRENCHING.
- ⑥ THIS DETAIL MAY NOT BE ACCEPTABLE FOR WORK ON PUBLIC WATERS, SEE GENERAL PUBLIC WATERS PERMIT (GP) 2004-0001.
- ⑦ LOCATION OF DOWNSTREAM TEMPORARY SEDIMENT CONTROL DEVICE.

STANDARD SHEET NO. 5-297.405 ( 2 of 4 )	TITLE:
STANDARD APPROVED: SEPTEMBER 27, 2006	

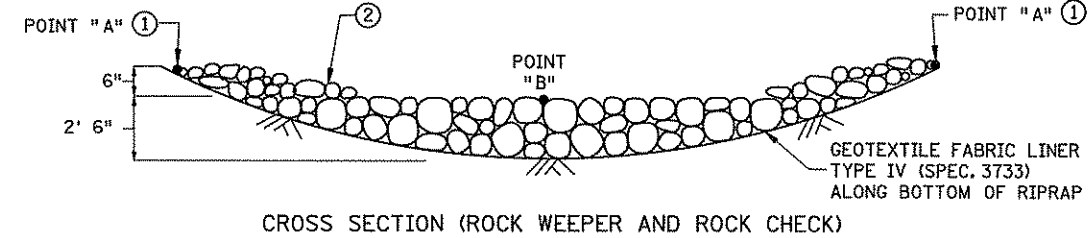
**TEMPORARY SEDIMENT CONTROL  
 MISCELLANEOUS DETAILS**



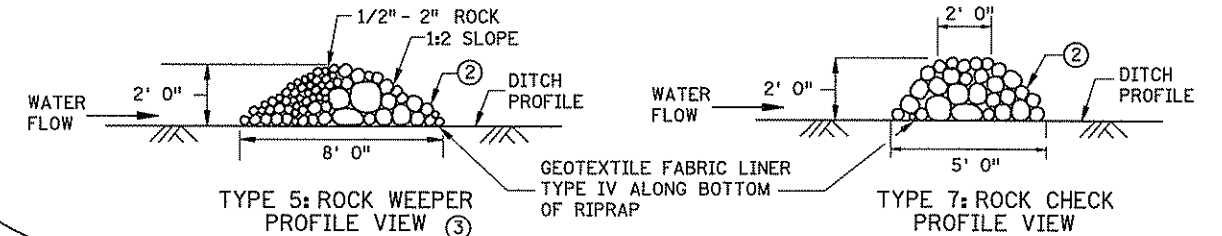
**TYPE 3: BIOROLL BLANKET SYSTEM DITCH CHECK**



INSET A

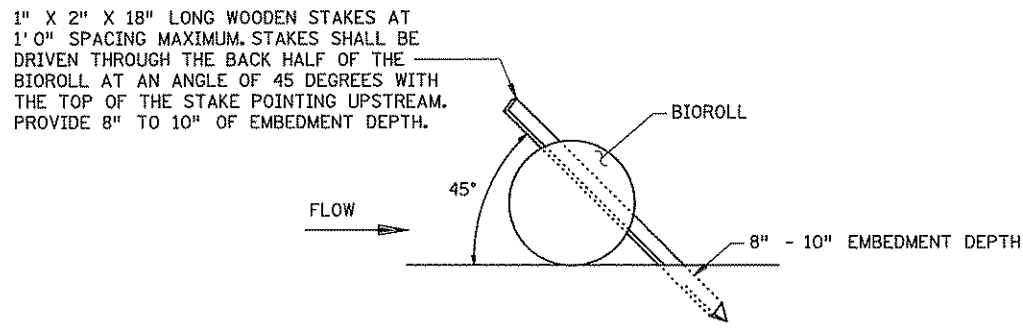


CROSS SECTION (ROCK WEEPER AND ROCK CHECK)

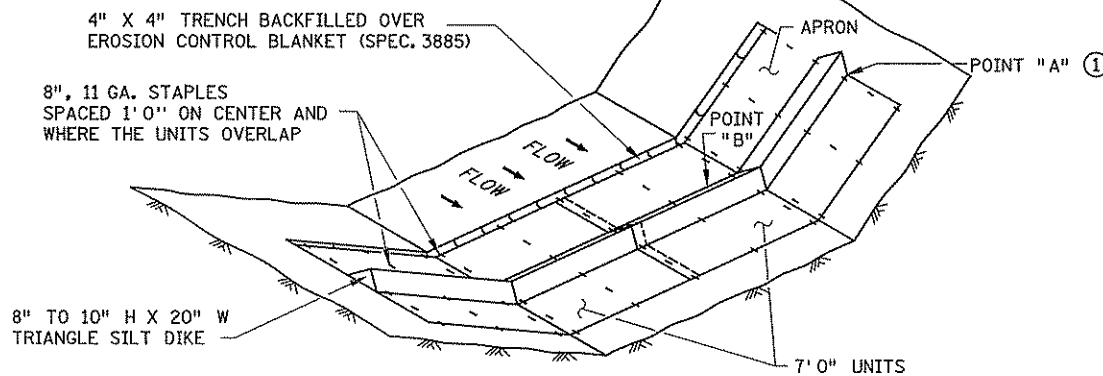


TYPE 5: ROCK WEEPER PROFILE VIEW  
TYPE 7: ROCK CHECK PROFILE VIEW

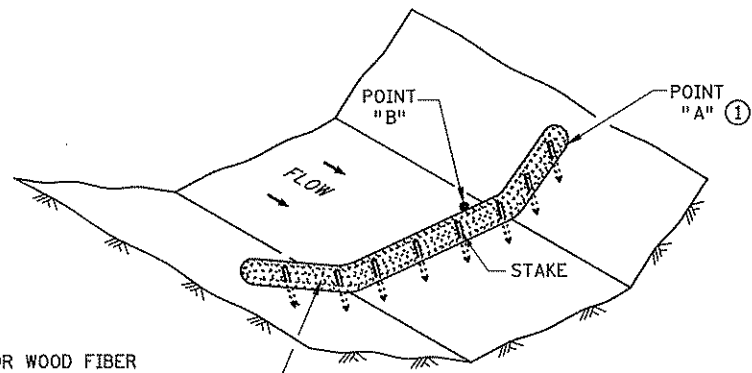
**TYPE 5: ROCK WEEPER AND TYPE 7: ROCK CHECK DITCH CHECKS**  
USE ON ROUGH GRADED AREAS



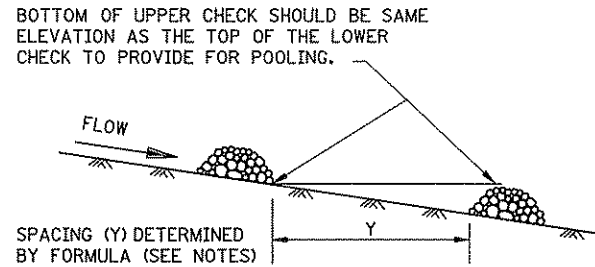
BIOROLL STAKING DETAIL



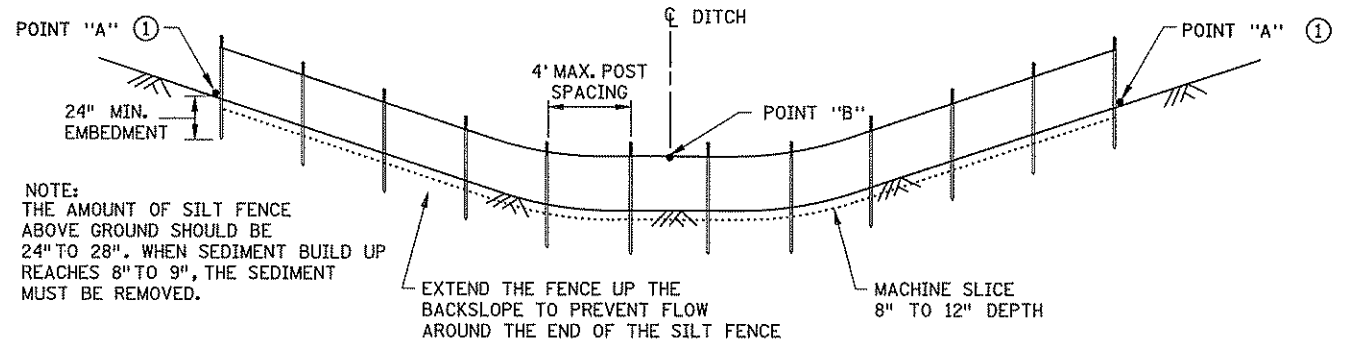
**TYPE 6: GEOTEXTILE TRIANGULAR DIKE DITCH CHECK**



**TYPE 2: BIOROLL DITCH CHECK**  
USE ON ROUGH GRADED AREAS



**DITCH CHECK SPACING**



**TYPE 1: SLICED IN SILT FENCE DITCH CHECK**

- NOTES:**
- SEE SPECS. 2573, 3601, 3733, 3885, 3886 & 3889.
  - APPROXIMATE SPACING BETWEEN EACH DITCH CHECK SHOULD BE DETERMINED FROM THE FOLLOWING SPACING FORMULA:  

$$\text{APPROXIMATE SPACING OF DITCH CHECKS (FT.)} = Y = \frac{\text{DITCH CHECK HEIGHT (FT)}}{\% \text{ CHANNEL SLOPE}} \times 100$$
  - ① POINT "A" MUST BE A MINIMUM OF 6 INCHES HIGHER THAN POINT "B" TO ENSURE THAT WATER FLOWS OVER THE DIKE AND NOT AROUND THE ENDS.
  - ② CLASS I - IV RIPRAP (SPEC. 3601) WITH GEOTEXTILE FABRIC LINER, TYPE IV (SPEC. 3733).
  - ③ THE ROCK WEEPER FILTERS SEDIMENT OUT OF THE WATER BETTER THAN THE OTHER DITCH CHECKS. THE ROCK WEEPER COULD BE USED AS A PERMANENT WATER FILTERING FEATURE.
  - ④ PERMANENT ROCK DITCH CHECKS PLACED WITHIN THE CLEAR ZONE WILL NEED TO BE 18" OR LESS IN HEIGHT. A 1:6 APPROACH AND DEPARTURE SLOPE SHALL BE PROVIDED.

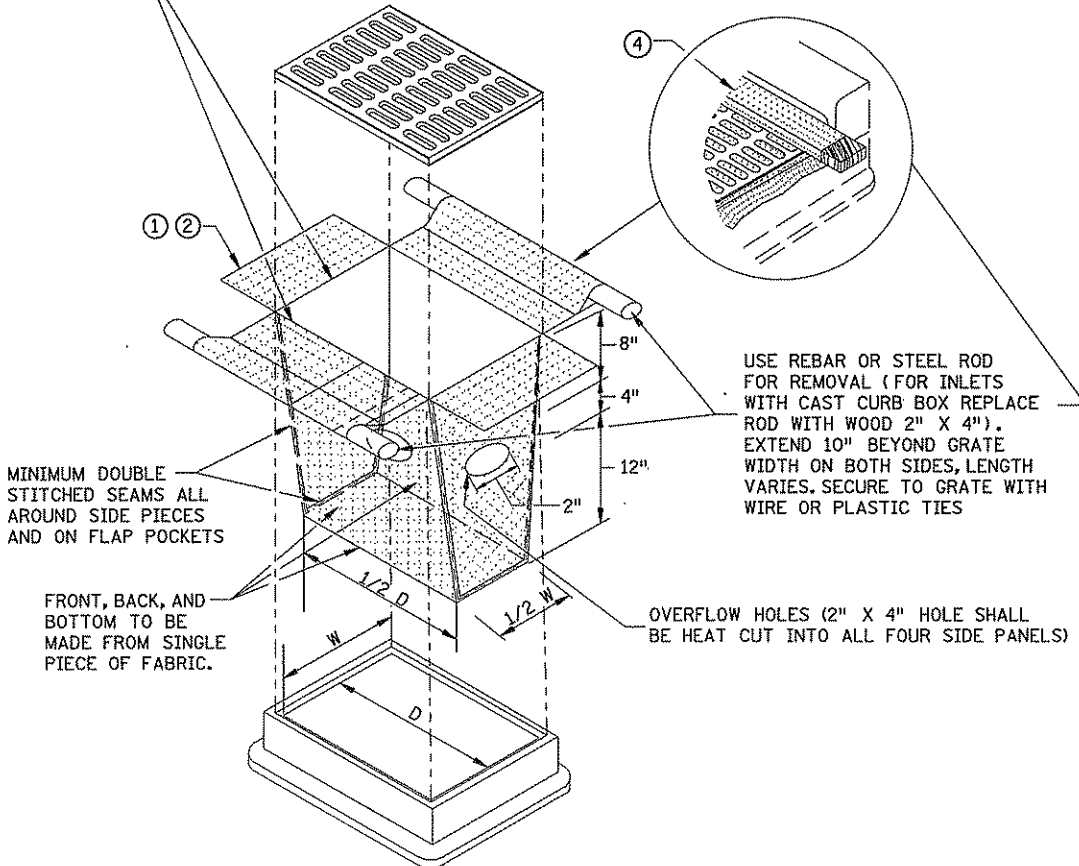
GENERAL DESIGN GUIDELINES						
DITCH CHECK TYPE	SILT FENCE	BIOROLL	BIOROLL BLANKET	TRIANGULAR DIKE	ROCK WEEPER	ROCK CHECK
STORM FREQUENCY:	2 YR. - 24 HR.	2 YR. - 24 HR.	2 YR. - 24 HR.	2 YR. - 24 HR.	5 YR. - 24 HR.	5 YR. - 24 HR.
MAX. FLOW VELOCITY:	< 1 FT./SECOND	1.5 FT./SECOND	4.5 FT./SECOND	1.5 FT./SECOND	12 FT./SECOND	12 FT./SECOND
MAX. DITCH GRADE:	0% - 0.5%	1.5% - 3%	1.5% - 3%	1.5% - 2.0%	3% - 5%	3% - 5%
MAX. DRAINAGE AREA:	1 ACRE	2 ACRE	2 ACRE	4 ACRE	4+ ACRE	4+ ACRE

STANDARD SHEET NO.  
5-297.405 ( 3 OF 4 )  
STANDARD APPROVED:  
SEPTEMBER 27, 2006

TEMPORARY SEDIMENT CONTROL  
DITCH CHECK/BARRIER



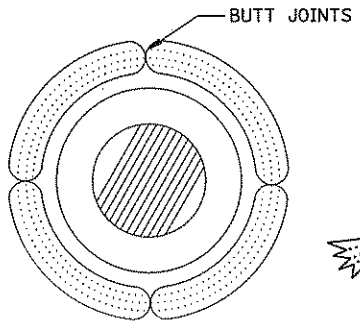
INLET SPECIFICATIONS AS PER THE PLAN DIMENSION LENGTH AND WIDTH TO MATCH FLAP POCKET



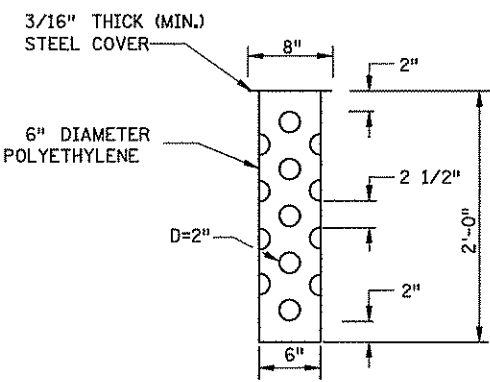
**FILTER BAG INSERT ③**

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

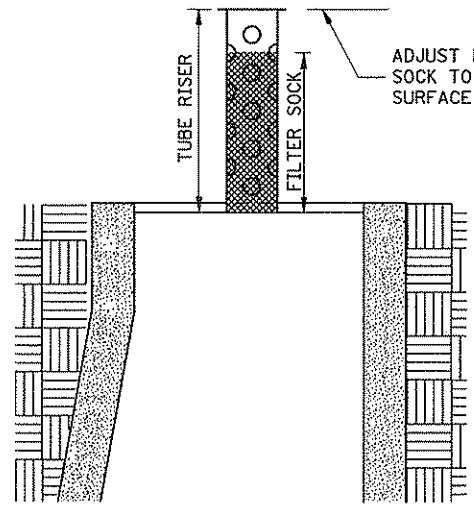
ENDS SECURELY CLOSED TO PREVENT LOSS OF OPEN GRADED AGGREGATE FILL. SECURED WITH 50 PSI. ZIP TIE.



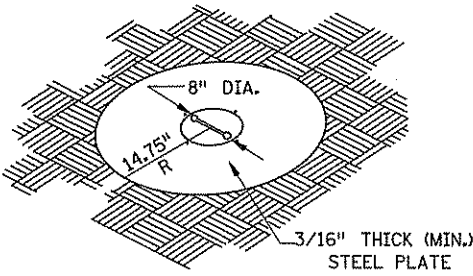
**ROCK LOG/COMPOST LOG**



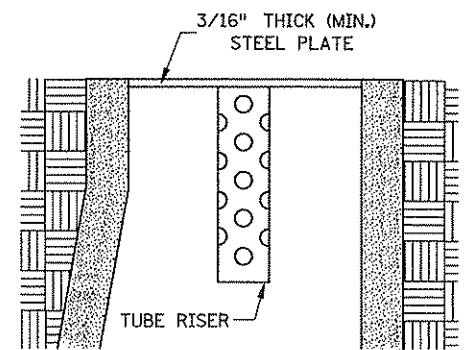
**TUBE RISER**



**SECTION (UP POSITION)**

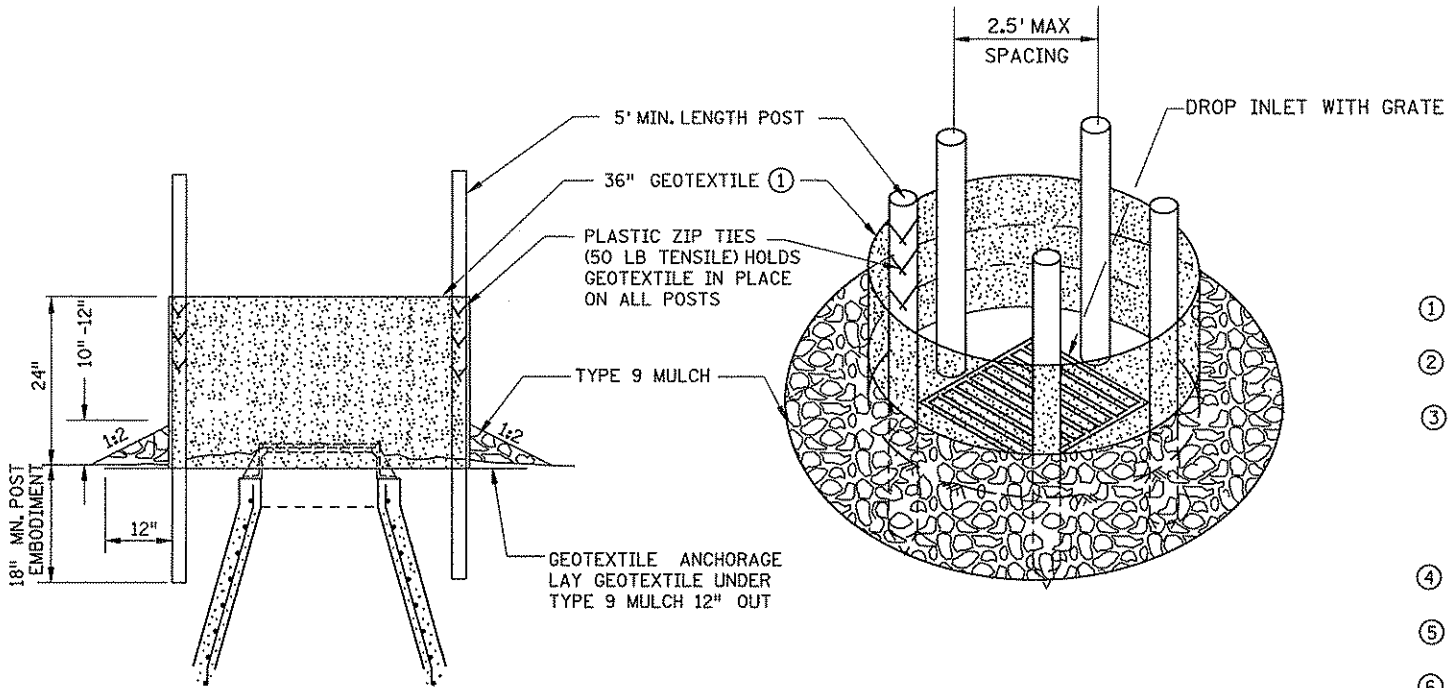


**PERSPECTIVE VIEW**



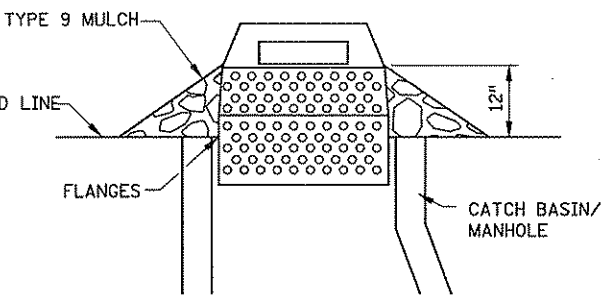
**SECTION (DOWN POSITION)**

**POP-UP HEAD**



**SILT FENCE RING AND ROCK FILTER BERM**

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



**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.

**NOTES:**

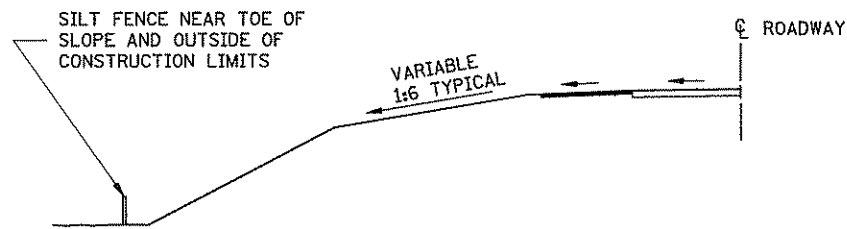
SEE SPECS. 2573, 3137, 3886 & 3891.

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

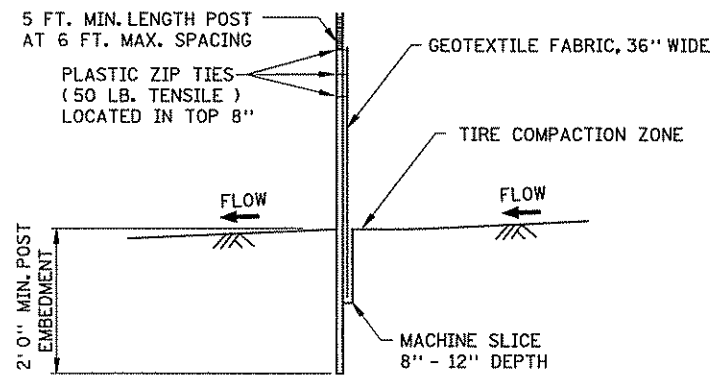
- ① ALL GEOTEXTILE USED FOR INLET PROTECTION SHALL BE MONOFILAMENT IN BOTH DIRECTIONS, MEETING SPEC. 3886.
- ② FINISHED SIZE, INCLUDING POCKETS WHERE REQUIRED SHALL EXTEND A MINIMUM OF 10 INCHES AROUND THE PERIMETER TO FACILITATE MAINTENANCE OR REMOVAL.
- ③ INSTALLATION NOTES:  
DO NOT INSTALL FILTER 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 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.

STANDARD SHEET NO. 297.405 (4 OF 4)
STANDARD APPROVED: SEPTEMBER 27, 2006

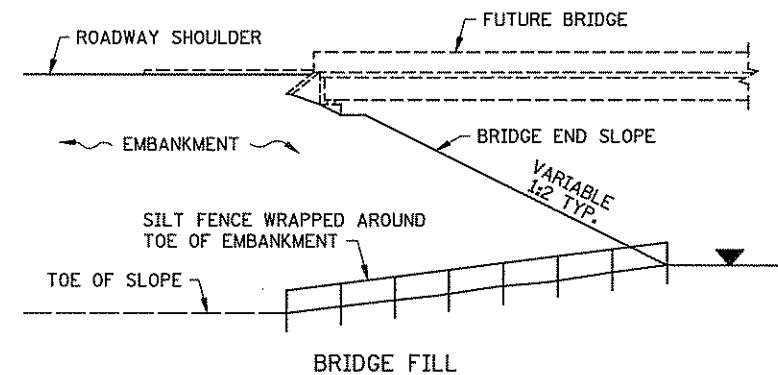
TITLE: <b>TEMPORARY SEDIMENT CONTROL STORM DRAIN INLET PROTECTION</b>
--



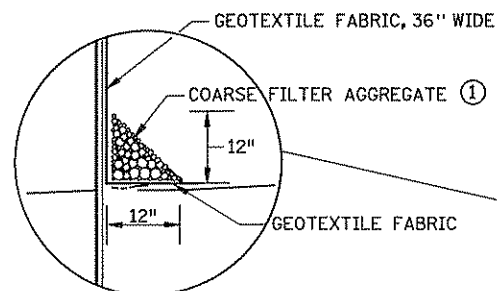
LOCATION OF SILT FENCE AT TOE OF ROADWAY EMBANKMENT



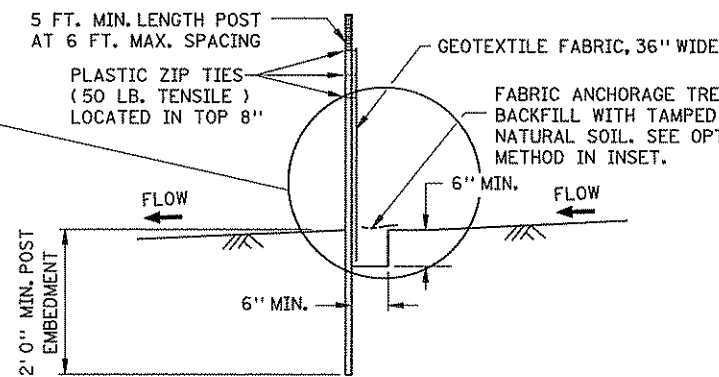
SILT FENCE, MACHINE SLICED  
DESIGN GUIDELINES:  
TO PROTECT AREAS FROM SHEET FLOW.  
MAXIMUM CONTRIBUTING AREA: 1 ACRE.



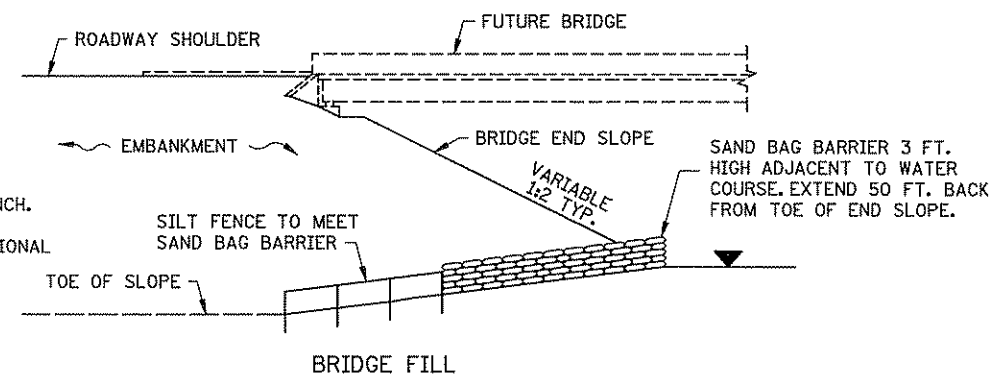
DESIGN GUIDELINES:  
WATER COURSE FLOW VELOCITY: STAGNANT  
CONTRIBUTING SLOPE AREA: 1/2 ACRE



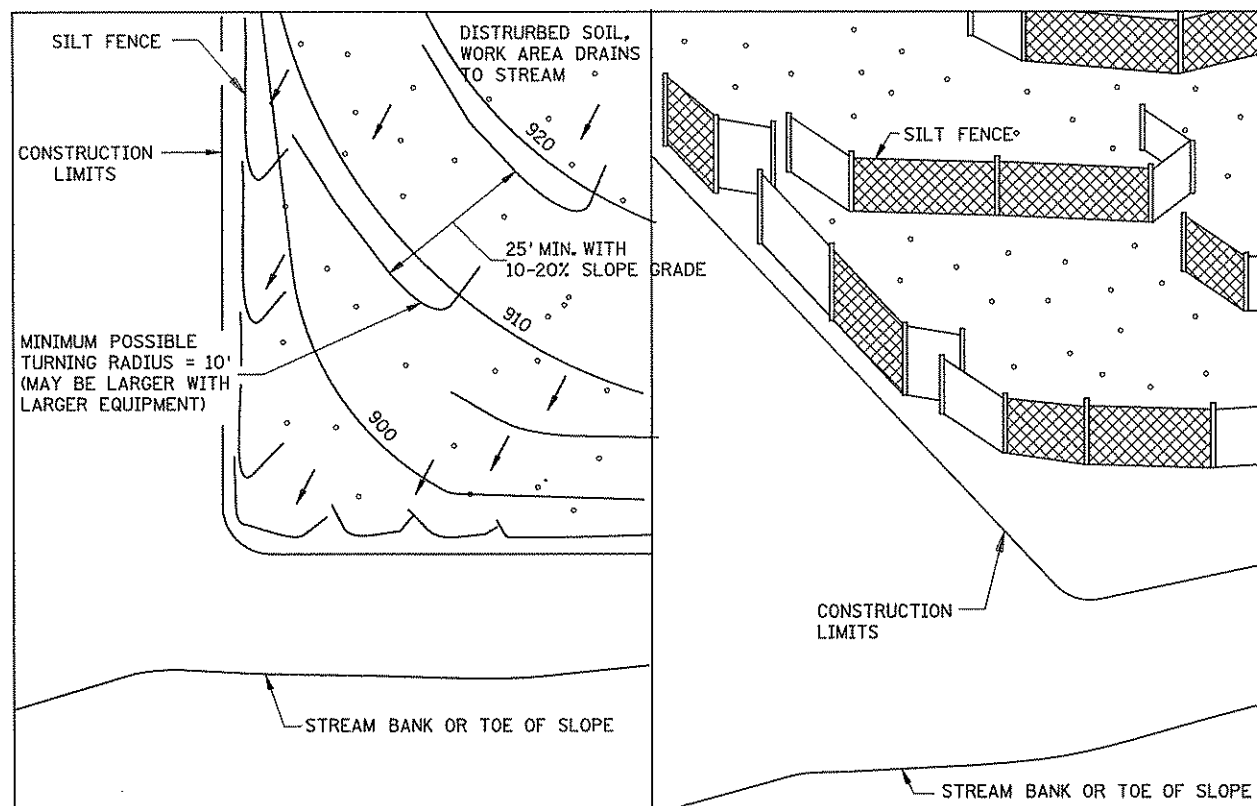
OPTIONAL METHOD FOR SILT FENCE, HEAVY DUTY



SILT FENCE, HEAVY DUTY (HAND INSTALLED)  
DESIGN GUIDELINES:  
TO PROTECT AREAS FROM SHEET FLOW.  
MAXIMUM CONTRIBUTING AREA: 1 ACRE.



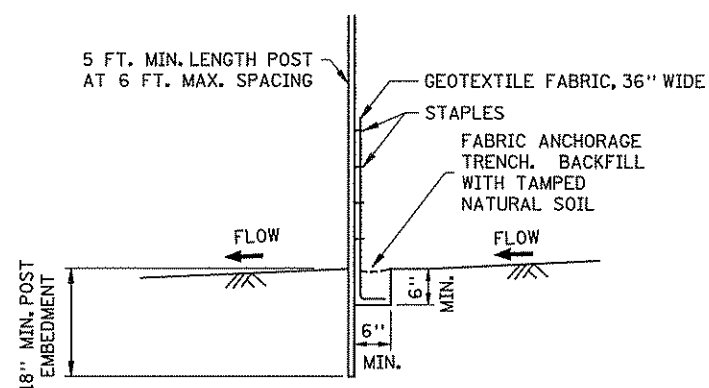
DESIGN GUIDELINES:  
WATER COURSE FLOW VELOCITY: 1 TO 7 FT./SEC.  
CONTRIBUTING SLOPE AREA: 1 ACRE



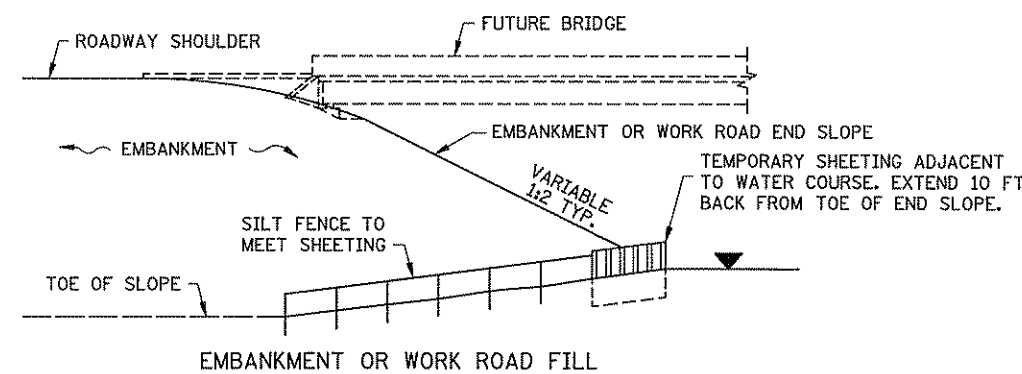
PLAN VIEW

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

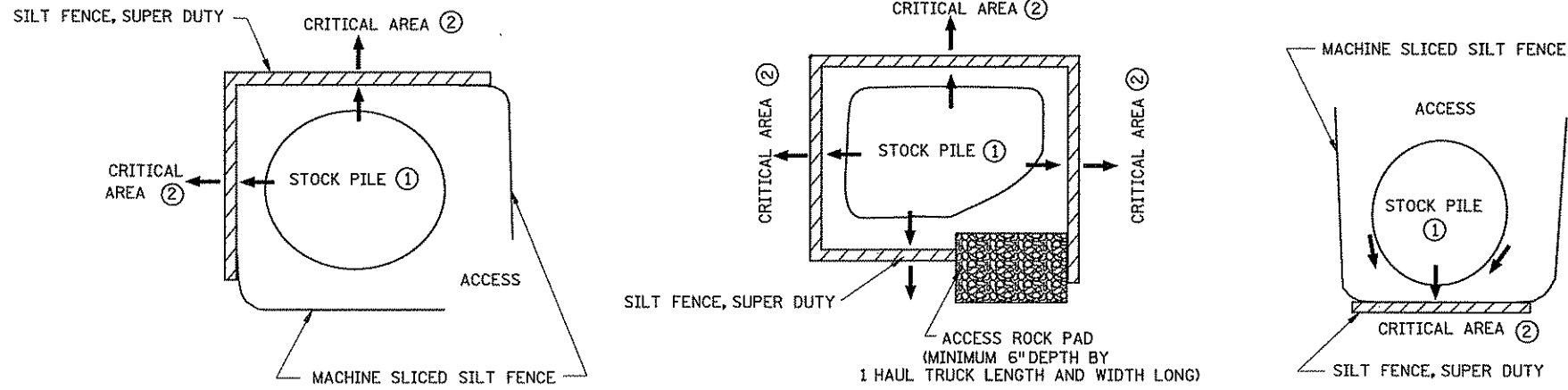
SILT FENCE AT BRIDGE EMBANKMENT ADJACENT TO WATER

NOTES:

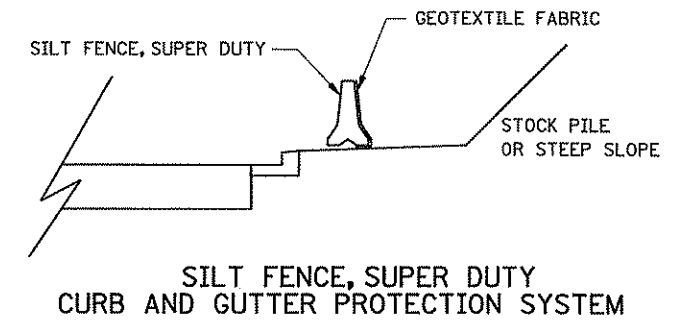
SEE SPECS. 2573, 3149 & 3886.

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

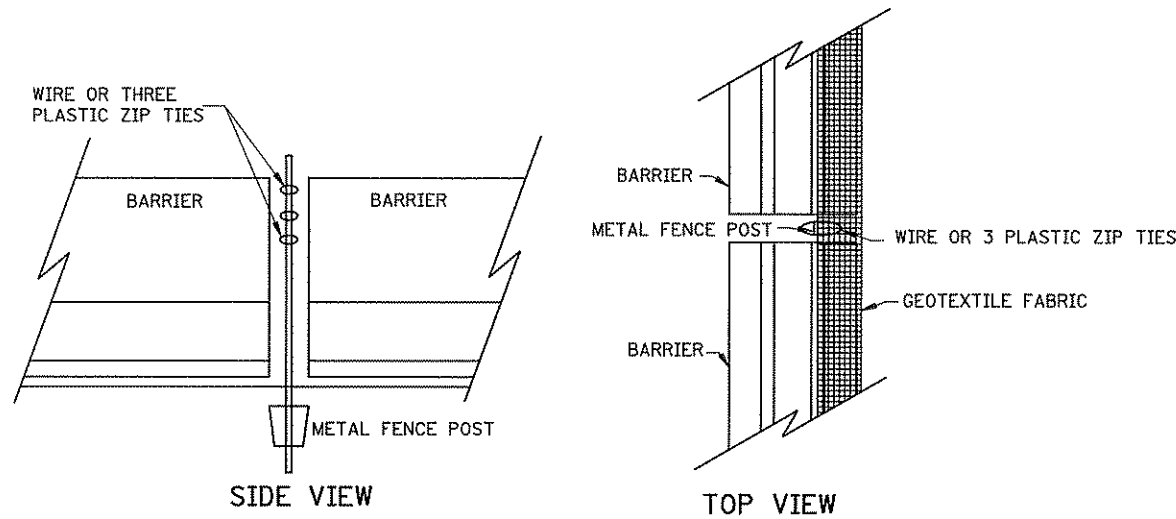
STANDARD SHEET NO. 5-297.408 (1 OF 2)	TITLE: TEMPORARY SEDIMENT CONTROL
STANDARD APPROVED: SEPTEMBER 27, 2006	SILT FENCE
STATE PROJ. NO. 02-614-24	SHEET NO. 73 OF 492 SHEETS



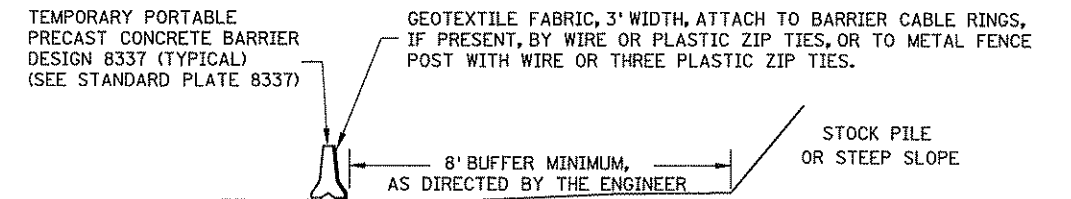
SILT FENCE, SUPER DUTY STOCK PILE CONTAINMENT



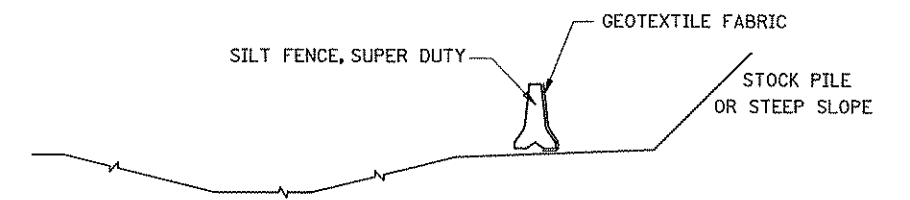
SILT FENCE, SUPER DUTY CURB AND GUTTER PROTECTION SYSTEM



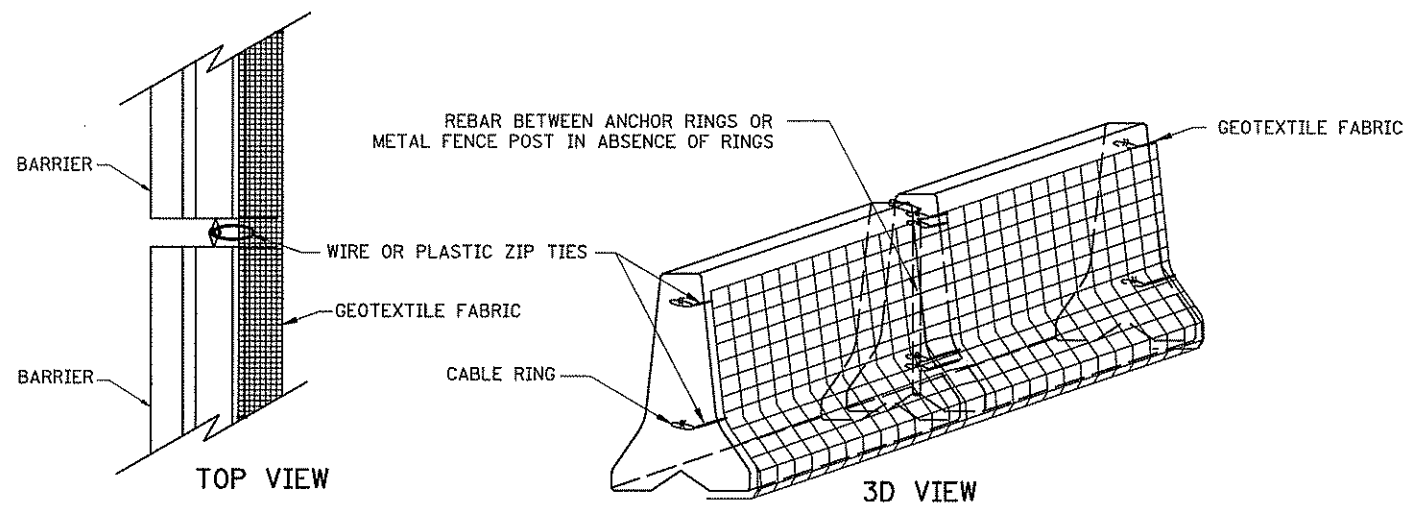
BARRIER WITHOUT CABLE RINGS



SILT FENCE, SUPER DUTY STOCKPILE SEDIMENT CONTROL



SILT FENCE, SUPER DUTY DITCH PROTECTION SYSTEM

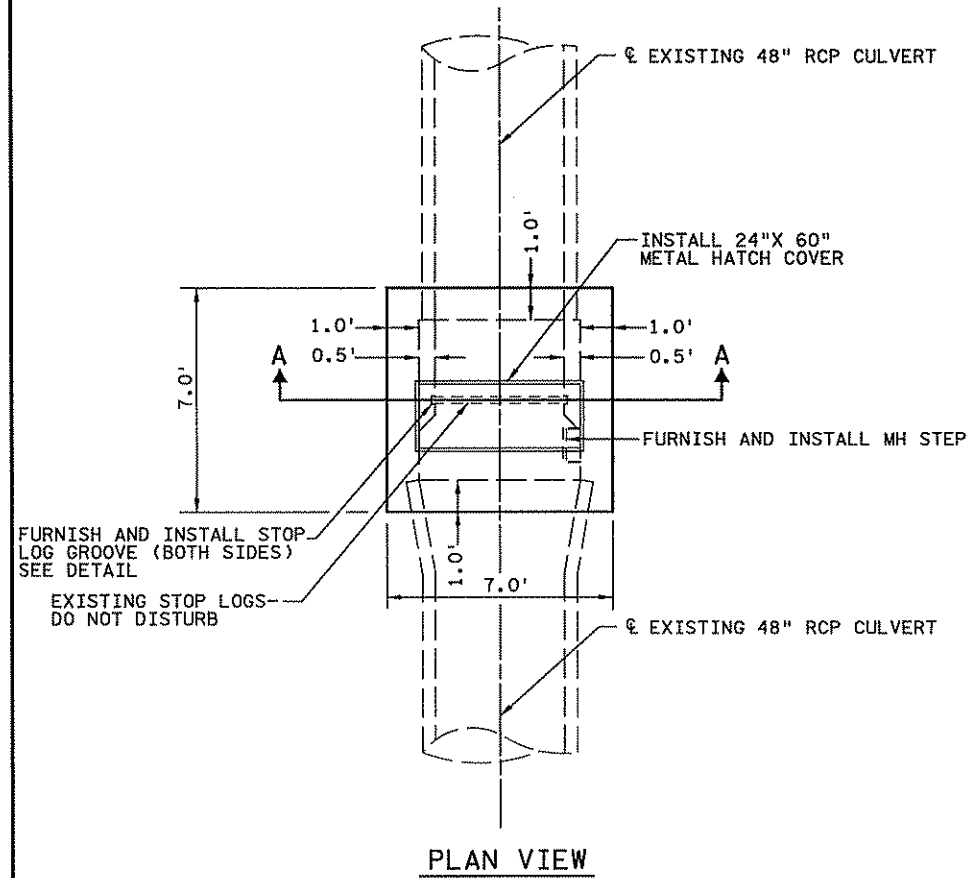


BARRIER WITH CABLE RINGS SILT FENCE, SUPER DUTY

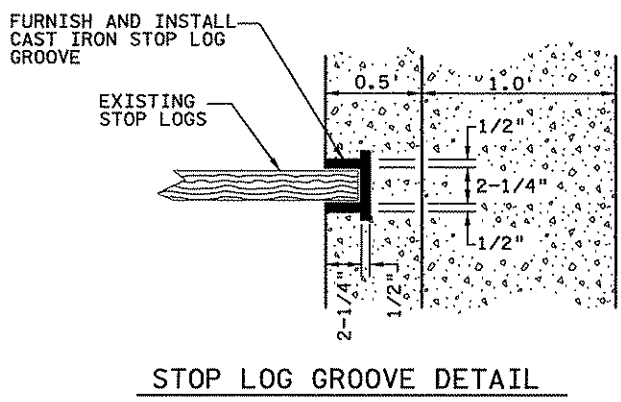
NOTES:

- SEE SPECS. 2533, 2573 & 3886.
- PLACE SUPER DUTY SILT FENCE ALONG A CONSTANT ELEVATION. SUPER DUTY SILT FENCE CAN UTILIZE EITHER A CONCRETE, OR WATER FILLED, TEMPORARY MEDIAN BARRIER.
- ① PLACING STOCK PILES NEXT TO AN ENVIRONMENTALLY SENSITIVE AREA IS NOT RECOMMENDED. WHEN THERE ARE NO FEASIBLE ALTERNATIVES, THE SUPER DUTY SILT FENCE IS TO BE USED AS SHOWN OR AS DIRECTED BY THE ENGINEER.
- ② CRITICAL AREAS INCLUDE WETLANDS, JUDICIAL DITCHES, STREAMS, WATER BODIES, AND OTHER AREAS REQUIRING PROTECTION.

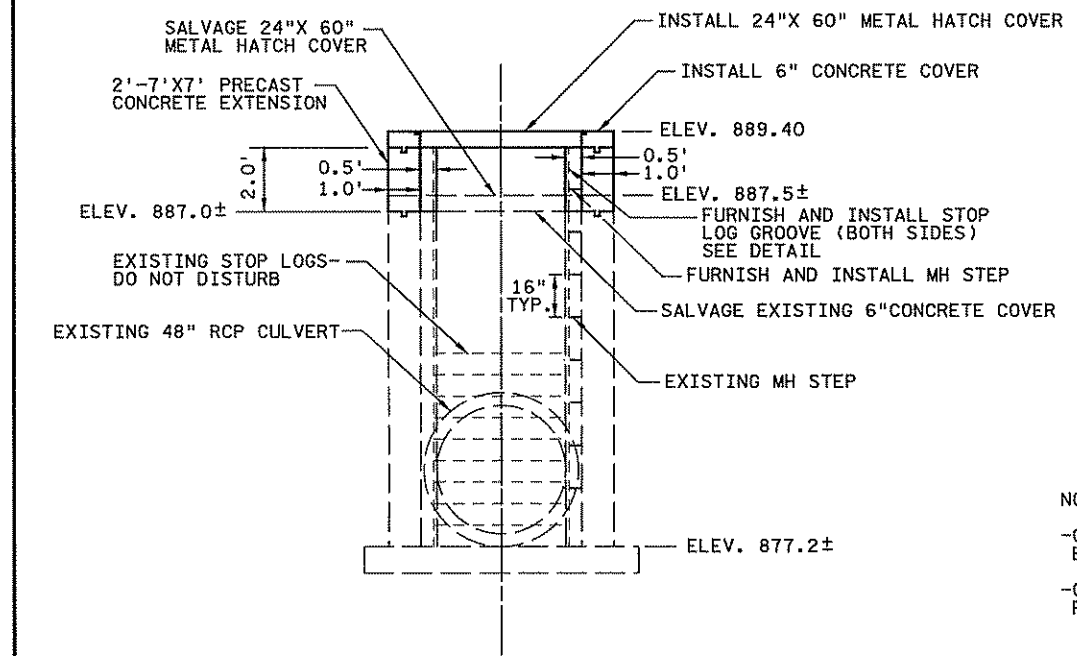
STANDARD SHEET NO. 5-297.408 (2 of 2)	TITLE: TEMPORARY SEDIMENT CONTROL SUPER DUTY SILT FENCE
STANDARD APPROVED: SEPTEMBER 27, 2006	
STATE PROJ. NO. 02-614-24	SHEET NO. 74 OF 492 SHEETS



PLAN VIEW



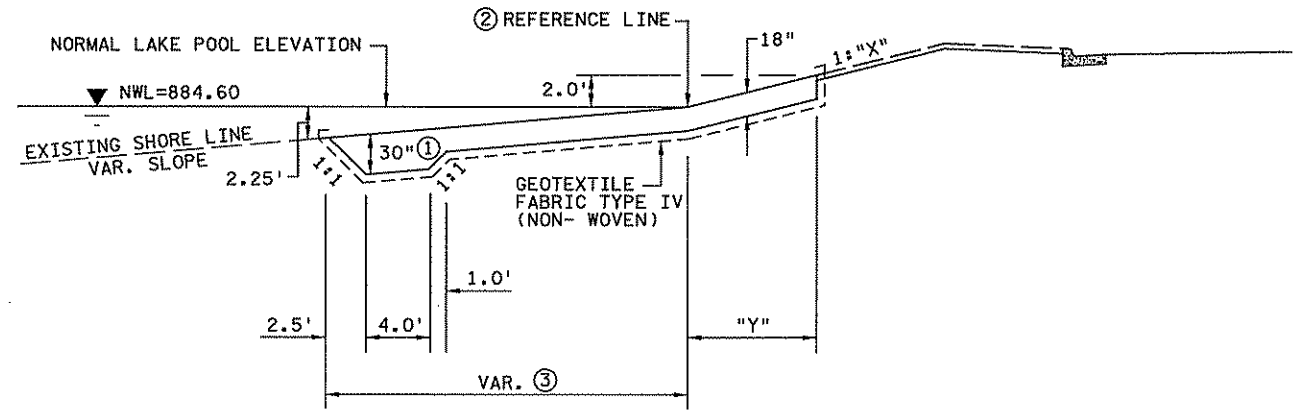
STOP LOG GROOVE DETAIL



SECTION A-A

NOTES:  
 -CONTRACTOR SHALL VERIFY ALL DIMENSIONS OF EXTENSION AND SUBMIT TO ENGINEER FOR APPROVAL.  
 -CONTRACTOR SHALL HAVE THE OPTION TO FIELD CAST EXTENSION.

RECONSTRUCT DRAINAGE STRUCTURE--SPECIAL  
 STA. 90+91.50 - 31.70' LT



"X"	"Y"(FT)
2	4
3	6
4	8
6	12

FOR OTHER VALUES OF "X"  
 "Y" = 2"X"

- NOTES:
- ① RANDOM RIP RAP CLASS IV.
  - ② REFERENCE LINE BASED ON INTERSECTION POINT OF PROPOSED ROAD SLOPE WITH NORMAL LAKE POOL ELEVATION=884.60.
  - ③ LENGTH BASED ON A REQUIRED DISTANCE NECESSARY TO ATTAINED DEPTH OF 2.25' ON RIP RAP.

SHORELINE PROTECTION FOR LAKE SHORE  
 SEE EROSION CONTROL AND TURF ESTABLISHMENT PLAN FOR LOCATION.

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 2/21/2008  
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NO	DATE	BY	CHK	APPR	REVISION

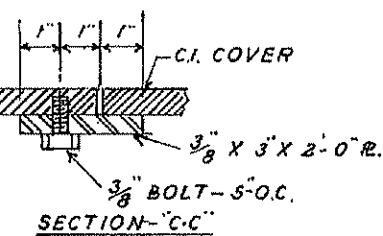
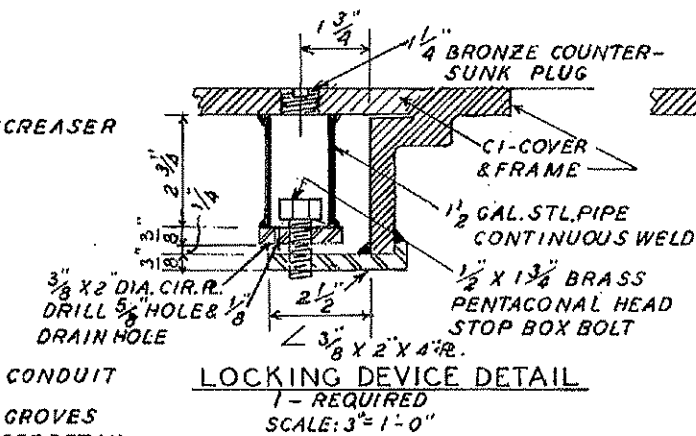
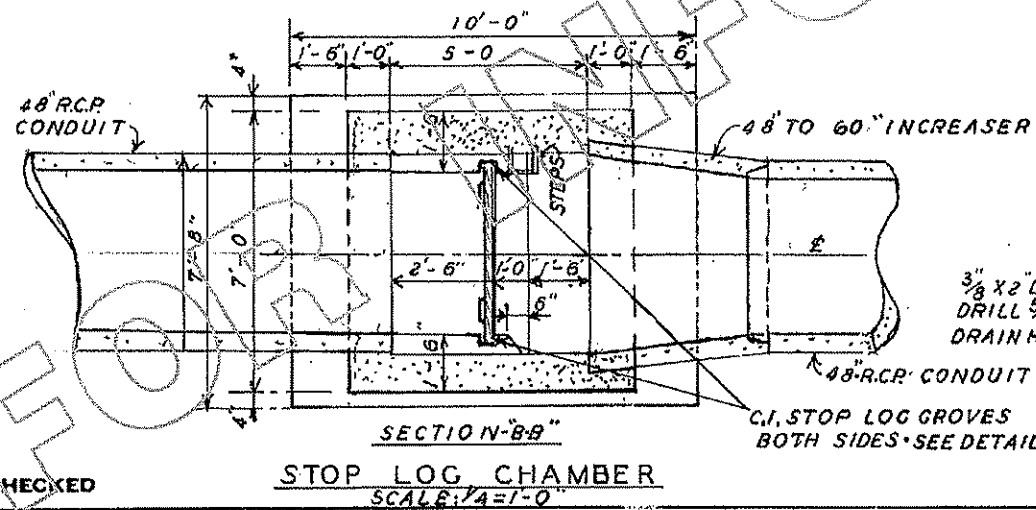
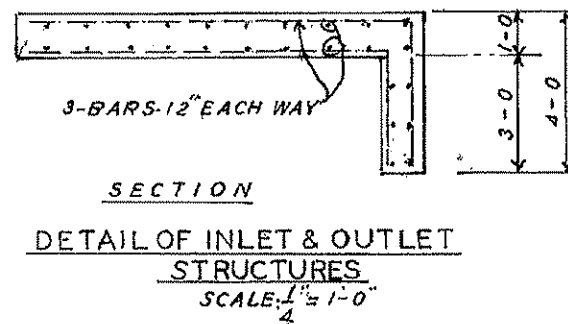
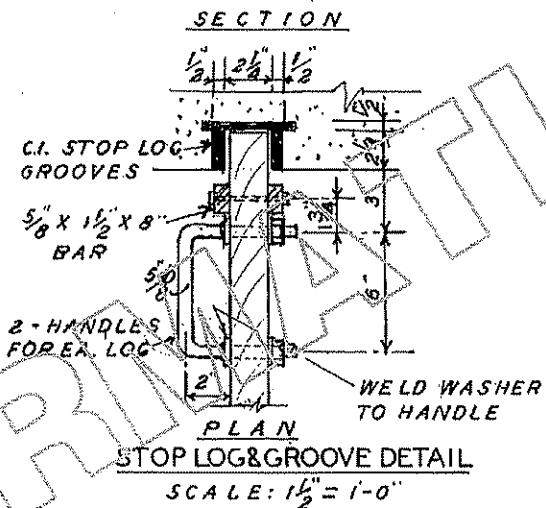
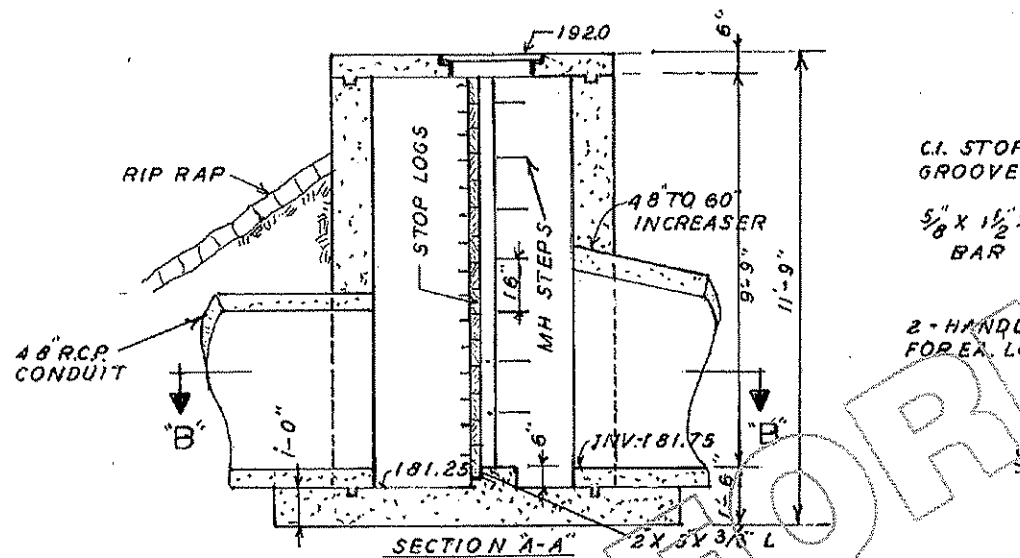
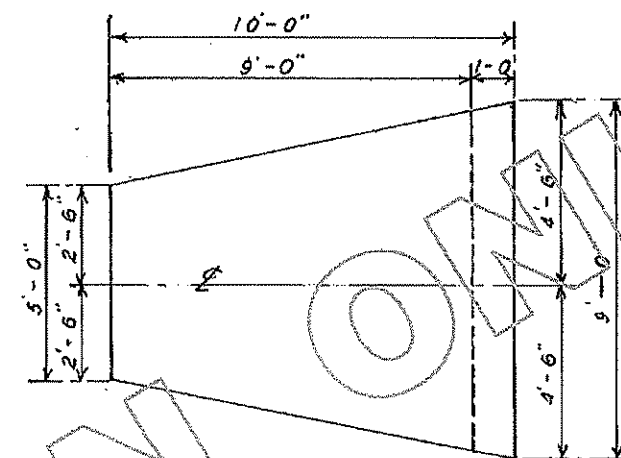
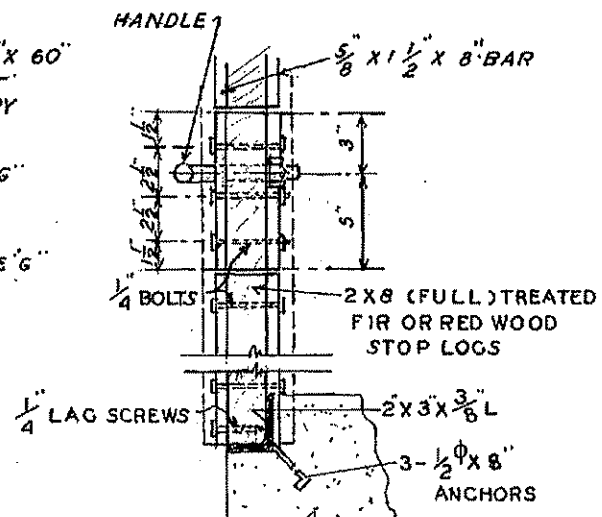
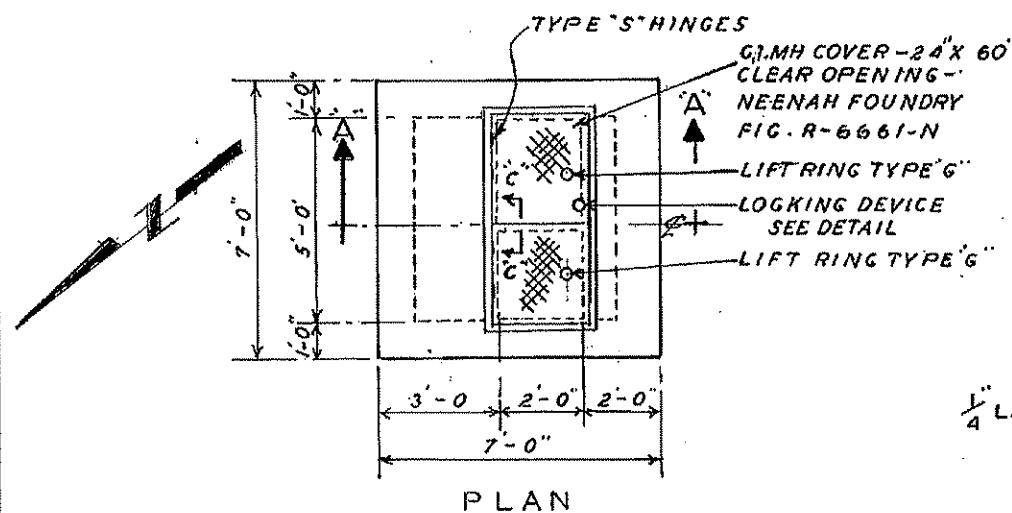
I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.  
 Print Name: CHRISTOPHER M. TRBOYEVICH  
*Christopher M. Trbojevich*  
 Date: 3/20/08 License #: 41635

STATE PROJECT NO. S.P. 02-614-24, ETAL  
 DRAWN BY S. MARTINS  
 DESIGNED BY C. TRBOYEVICH  
 CHECKED BY C. TRBOYEVICH  
 COMM. NO. 4994



ANOKA COUNTY  
 MISCELLANEOUS DETAILS  
 C.S.A.H. 14

SHEET  
 75  
 OF  
 492



REFERENCE  
 A6-5248-SH, 1 & 2 - 48" R.C.P. CONDUIT (1956)  
 A2-4973-WALL REPAIR

DR	LK	TR	REVISIONS

SCALE: AS SHOWN

CENTERVILLE LAKE-PELTIER LAKE CONNECTION  
 48" RCP CONDUIT  
 DETAILS

A 2

6635

SH 2

PAGE

CHECKED

STOP LOG CHAMBER  
 SCALE: 1/4" = 1'-0"

REFER TO GENERAL PLANS PAGES

REFER TO DETAIL PLANS PAGES

TRIM PRINTS TO THIS LINE

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NO	DATE	BY	CRD	APPR	REVISION

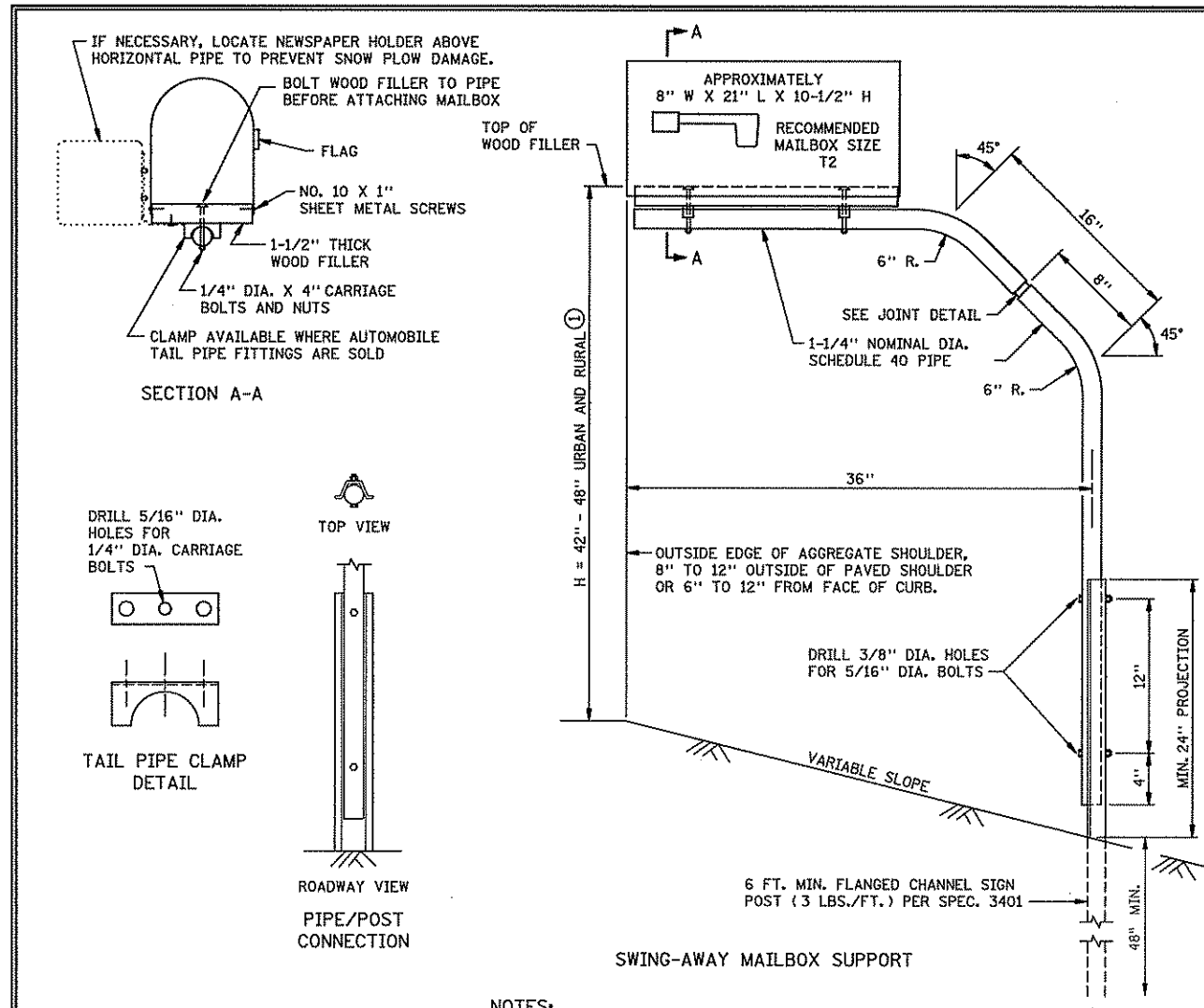
STATE PROJECT NO.  
 S.P. 02-614-24, ETAL

DRAWN BY  
 S. MARTINS  
 DESIGNED BY  
 C. TRBOYEVIK  
 CHECKED BY  
 N. WILL  
 COMM. NO. 4994

**SRF** CONSULTING  
 GROUP, INC.

ANOKA COUNTY  
 MISCELLANEOUS DETAILS  
 C.S.A.H. 14  
 RECONSTRUCT DRAINAGE STRUCTURE-SPECIAL

SHEET  
 76  
 OF  
 492



**NOTES:**

MAILBOX LOCATIONS SHOULD BE STAKED BEFORE INSTALLATION FOR PROPER HEIGHT AND DISTANCE FROM THE ROADWAY. ONCE STAKED, THE INSTALLER MUST NOTIFY THE ENGINEER AND THE POST OFFICE. THE ENGINEER AND THE POSTMASTER SHALL APPROVE THE STAKED LOCATIONS PRIOR TO FINAL INSTALLATION.

IN ACCORDANCE WITH THE CRASH TEST REPORT, THE RECOMMENDED MINIMUM SPACING CENTER TO CENTER BETWEEN MULTIPLE MAILBOXES OF THIS TYPE SHALL BE EQUAL TO THE HEIGHT OF EACH PARTICULAR MAILBOX, SEE NOTE 1.

OTHER MAILBOX SUPPORT DESIGNS MAY BE USED IF THEY SATISFY NCHRP REPORT 350 CRITERIA IN ACCORDANCE WITH FHWA ACCEPTANCE LETTER, MEET MINNESOTA RULES 8818 AND U.S. POST OFFICE RECOMMENDATIONS AND ARE IN COMPLIANCE WITH MN/DOT REQUIREMENTS WHICH MAY INCLUDE THE FOLLOWING:

PIPE SHALL CONFORM TO SPEC. 3362, SCHEDULE 40 OF ASTM A53/A53M.  
ALL FASTENERS SHALL CONFORM TO SPEC. 3391.  
PIPES, POST AND OTHER STEEL COMPONENTS SHALL BE GALVANIZED PER SPEC. 3392.

THE CONTRACTOR SHALL SEND THE PROJECT ENGINEER SHOP DRAWINGS FOR APPROVAL. FOR MAILBOX SUPPORTS SUBMITTED FOR APPROVAL, THE BASIC DESIGN DIMENSIONS SHALL BE AS SHOWN ON THIS DETAIL DRAWING.

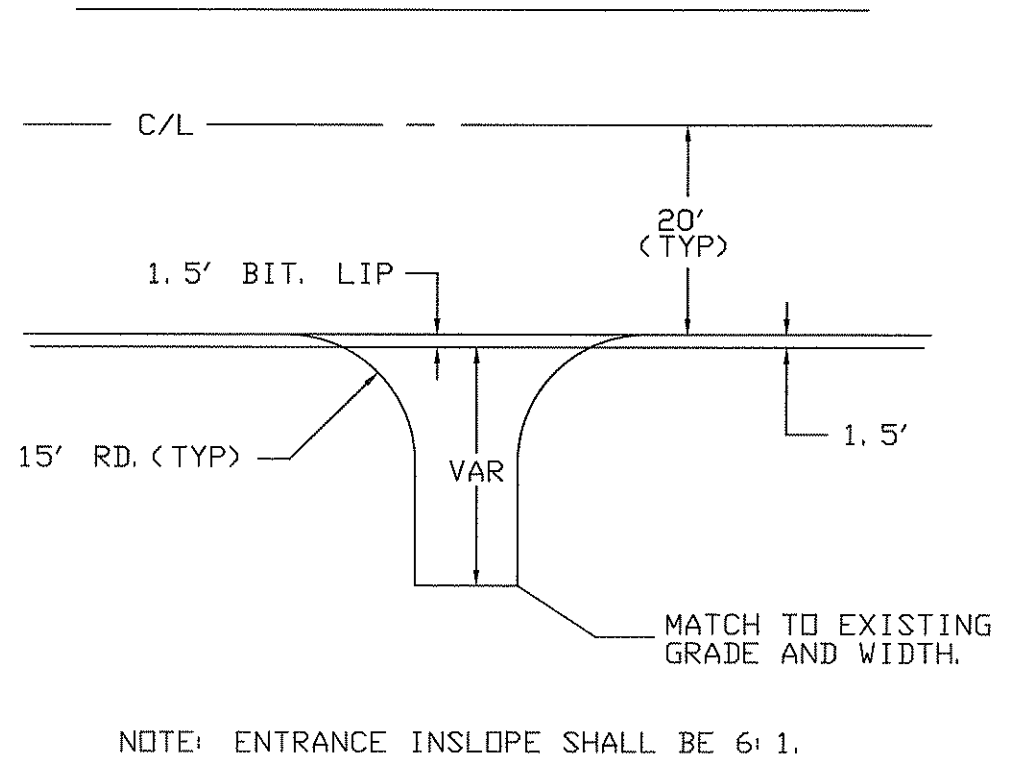
FOR QUESTIONS REGARDING DESIGN ELEMENTS AND BREAKAWAY FEATURES, CONTACT THE DESIGN STANDARD UNIT.

① ANY CHANGE IN HEIGHT MUST BE APPROVED BY LOCAL POSTMASTER.

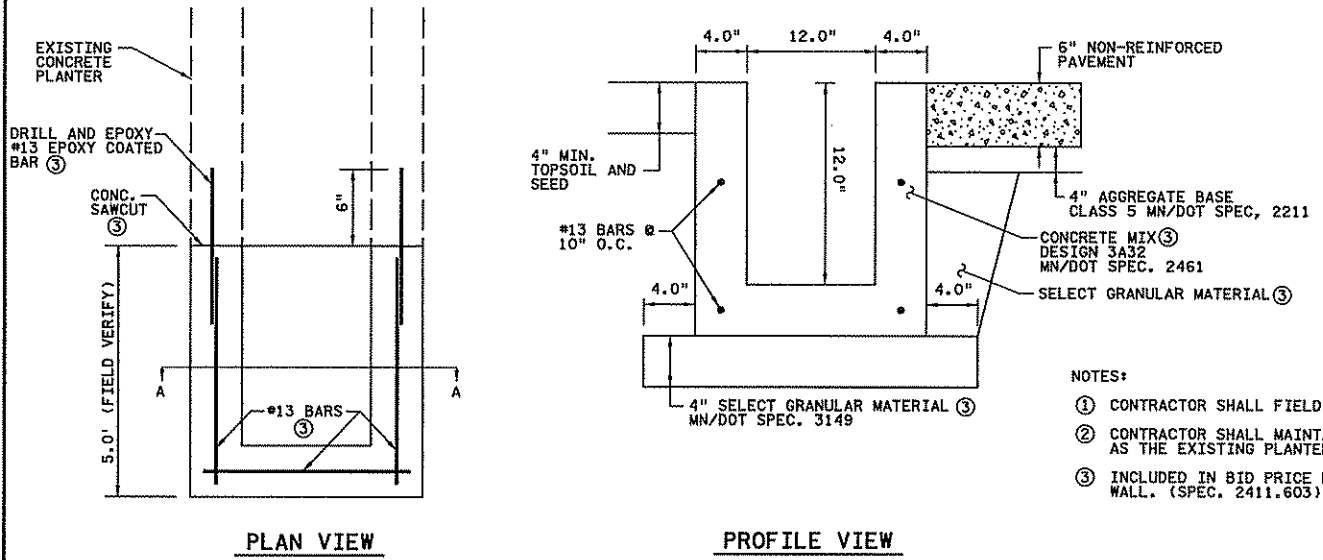
MEETS NCHRP 350 CRASH TESTING FOR SPEEDS 40 MPH OR GREATER

**MAILBOX SUPPORT**

REFERENCE DATE  
4-26-06



NOTE: ENTRANCE INSLOPE SHALL BE 6:1.



**NOTES:**

① CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS.

② CONTRACTOR SHALL MAINTAIN THE SAME LINE AS THE EXISTING PLANTER.

③ INCLUDED IN BID PRICE FOR CONCRETE PLANTER WALL. (SPEC. 2411.603)

PLAN VIEW PROFILE VIEW

CONCRETE PLANTER WALL DETAIL (PARCEL 122)  
C.S.A.H. 14 STA. 167+70, 75' LT.

P:\4994-F\1-MAILBOX SUPPORT.dwg  
 3/21/2007  
 P:\4994-F\1-MAILBOX SUPPORT.dwg

NO	DATE	BY	CHKD	APPR	REVISION

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

Print Name: CHRISTOPHER M. TRBOYEVICH  
*Christopher M. Trbojevich*  
 Date: 3/26/07 License #: 41635

STATE PROJECT NO.  
S.P. 02-614-24, ETAL

DRAWN BY  
S. MARTINS

DESIGNED BY  
J. TOULOUSE

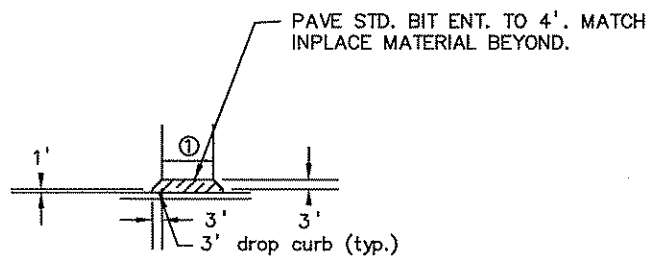
CHECKED BY  
C. TRBOYEVICH

COMM. NO. 4994

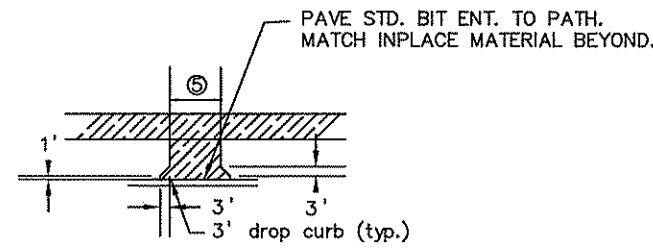


ANOKA COUNTY  
MISCELLANEOUS DETAILS  
C.S.A.H. 14  
MAILBOX SUPPORT/DRIVEWAY DETAIL

SHEET  
77  
OF  
492

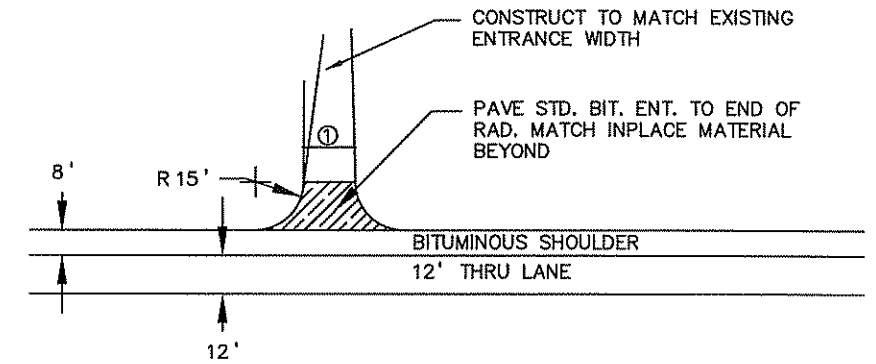


URBAN RESIDENTIAL ENTRANCE WITHOUT BITUMINOUS PATH

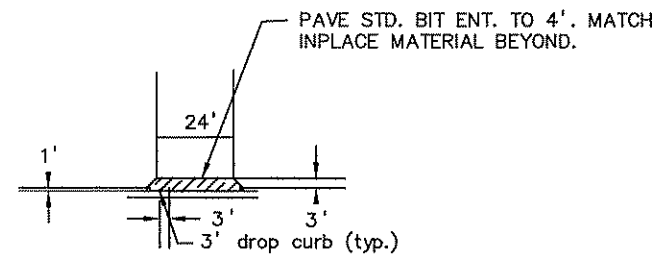


URBAN RESIDENTIAL ENTRANCE WITH BITUMINOUS PATH

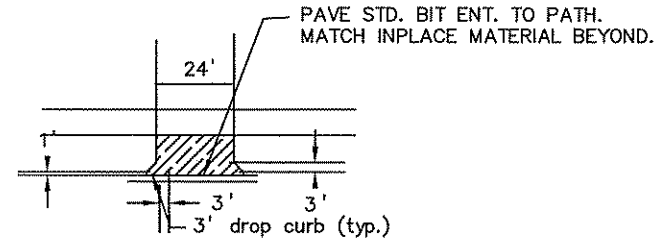
- 1) EXISTING WIDTH (16' MIN / 24' MAX) TO R/W LINE.
- 2) EXISTING WIDTH (32' MIN / 50' MAX) TO END OF RADII.
- 3) EXISTING WIDTH (20' MIN / 32' MAX).
- 4) FOR EXISTING CONCRETE DRIVEWAYS AND ENTRANCES. REPLACE IN KIND USING BITUMINOUS DRIVEWAY DIMENSIONS. FOR EXISTING CONCRETE APRONS, REPLACE IN KIND USING STANDARD PLATE 7035.
- 5) EXISTING WIDTH (16' MIN / 24' MAX) TO BACK OF PATH.



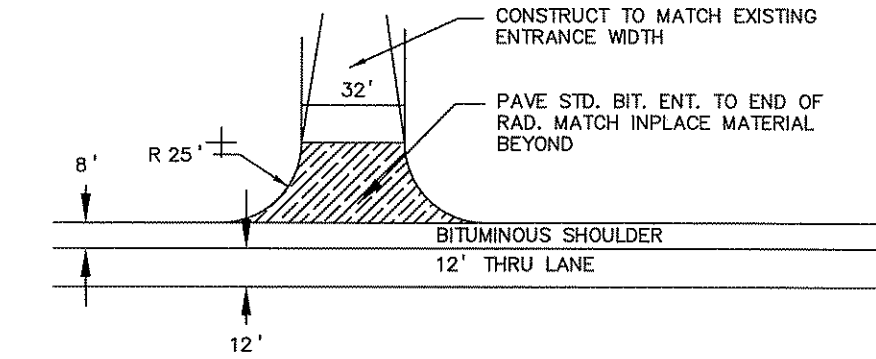
RURAL RESIDENTIAL ENTRANCE



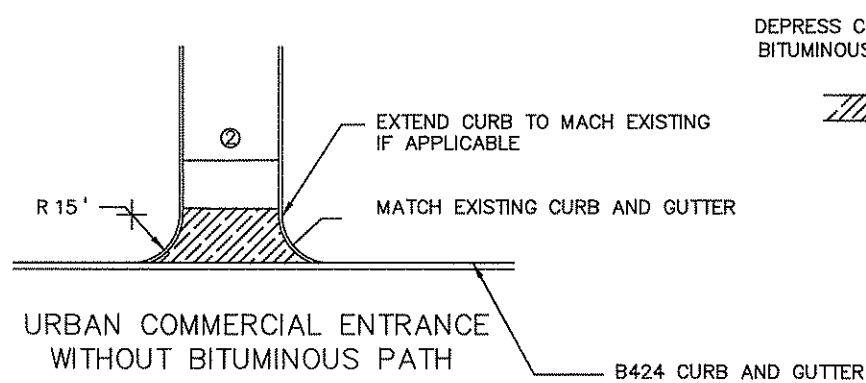
URBAN FIELD ENTRANCE WITHOUT BITUMINOUS PATH



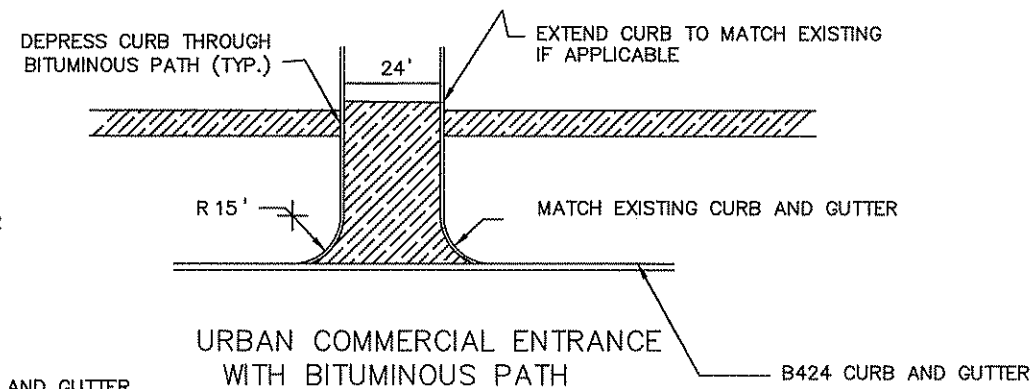
URBAN FIELD ENTRANCE WITH BITUMINOUS PATH



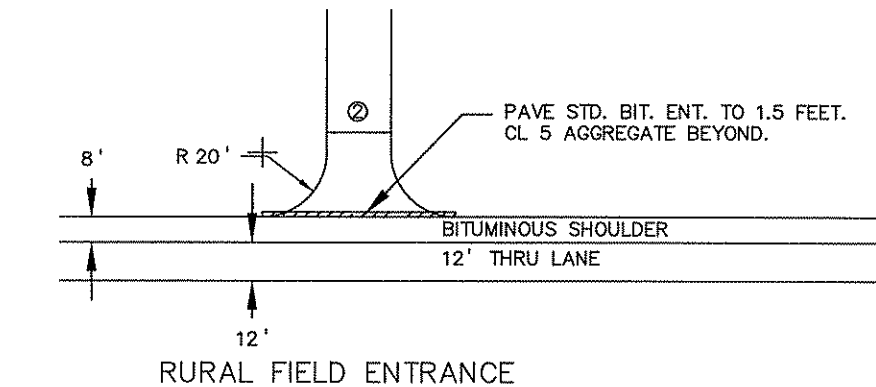
RURAL COMMERCIAL ENTRANCE



URBAN COMMERCIAL ENTRANCE WITHOUT BITUMINOUS PATH



URBAN COMMERCIAL ENTRANCE WITH BITUMINOUS PATH



RURAL FIELD ENTRANCE

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NO	DATE	BY	CHKD	APPR	REVISION

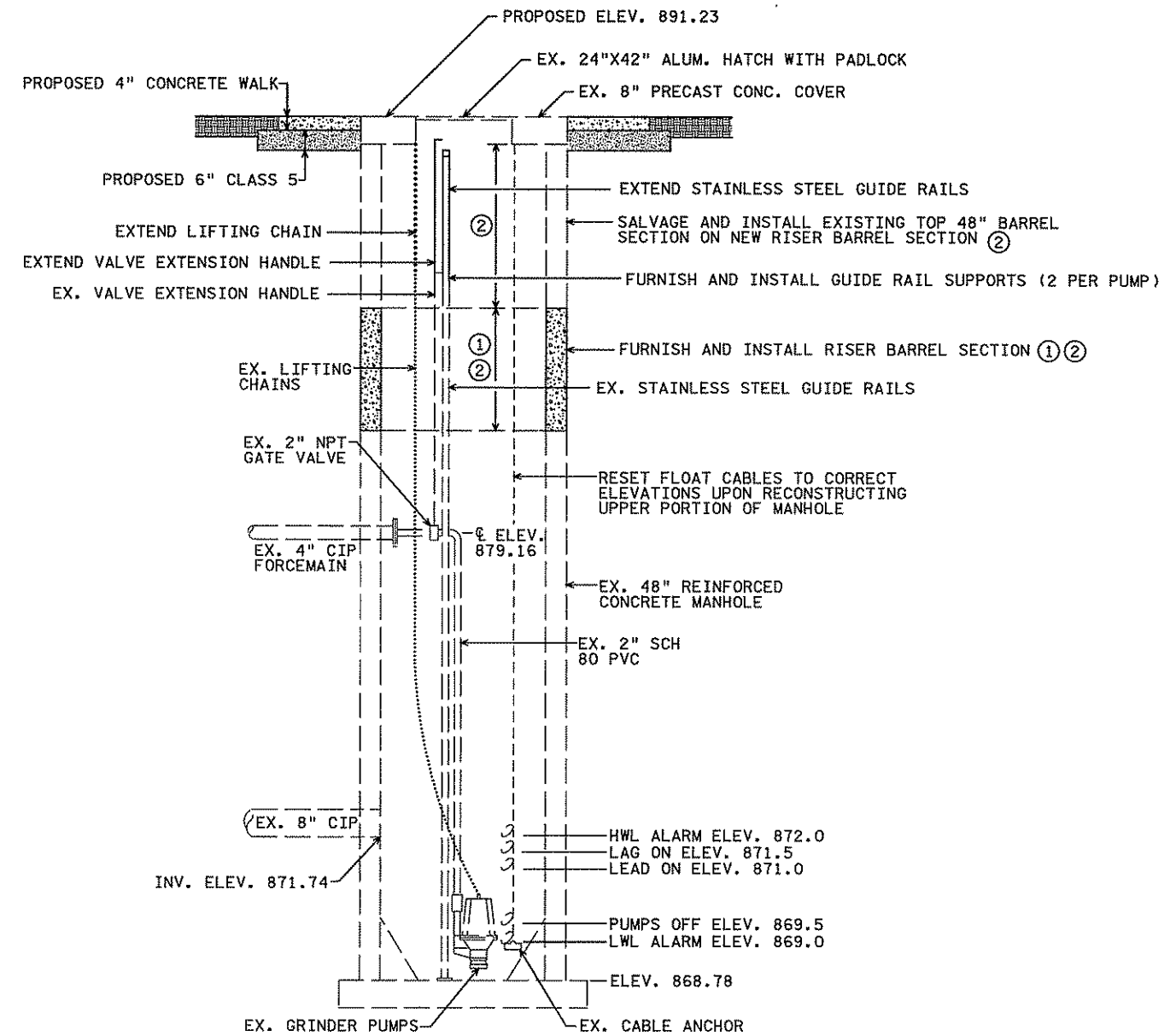
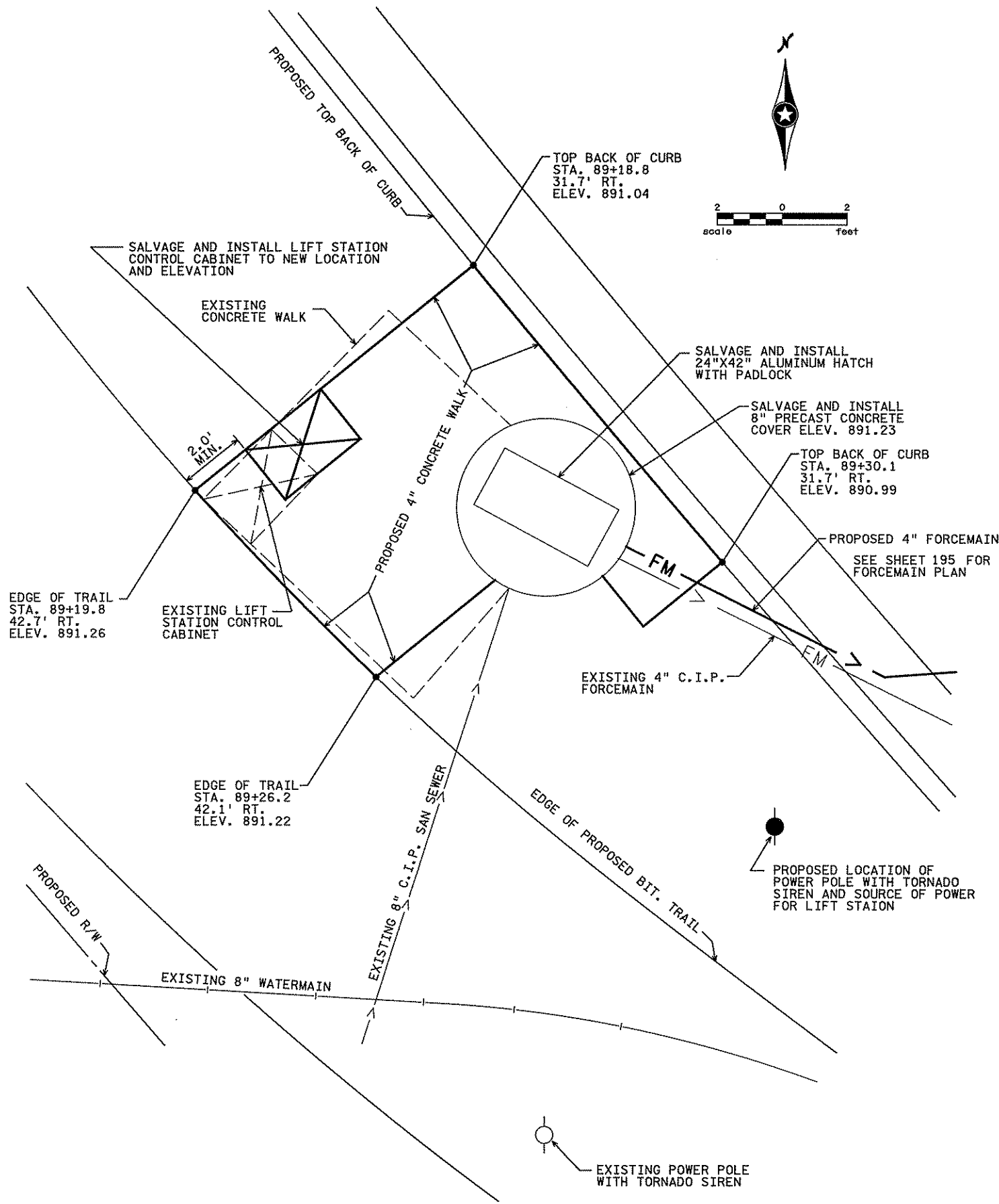
STATE PROJECT NO.  
S.P. 02-614-24, ETAL

DRAWN BY  
S. MARTINS  
DESIGNED BY  
J. TOULOUSE  
CHECKED BY  
C. TRBOYEVICH  
COMM. NO. 4994

**SRF** CONSULTING  
GROUP, INC.

ANOKA COUNTY  
MISCELLANEOUS DETAILS  
C.S.A.H. 14  
DRIVEWAY DETAIL

SHEET  
78  
OF  
492



- NOTES:
- ① CONTRACTOR SHALL CONFIRM HEIGHT OF EXISTING BARREL SECTION PRIOR TO ORDERING THE NECESSARY RISER BARREL SECTION.
  - ② HEIGHT OF NEW RISER BARREL SECTION TO BE FIELD VERIFIED PRIOR TO SHOP DRAWING SUBMITTAL.

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NO	DATE	BY	CHKD	APPR	REVISION

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

Print Name: CHRISTOPHER M. TRBOYEVIK

*Christopher Trbojevich*

Date: 3/26/07 License #: 41635

STATE PROJECT NO.  
S.P. 02-614-24, ETAL

DRAWN BY  
S. MARTINS

DESIGNED BY  
N. WILL

CHECKED BY  
C. TRBOYEVIK

COMM. NO. 4994



ANOKA COUNTY

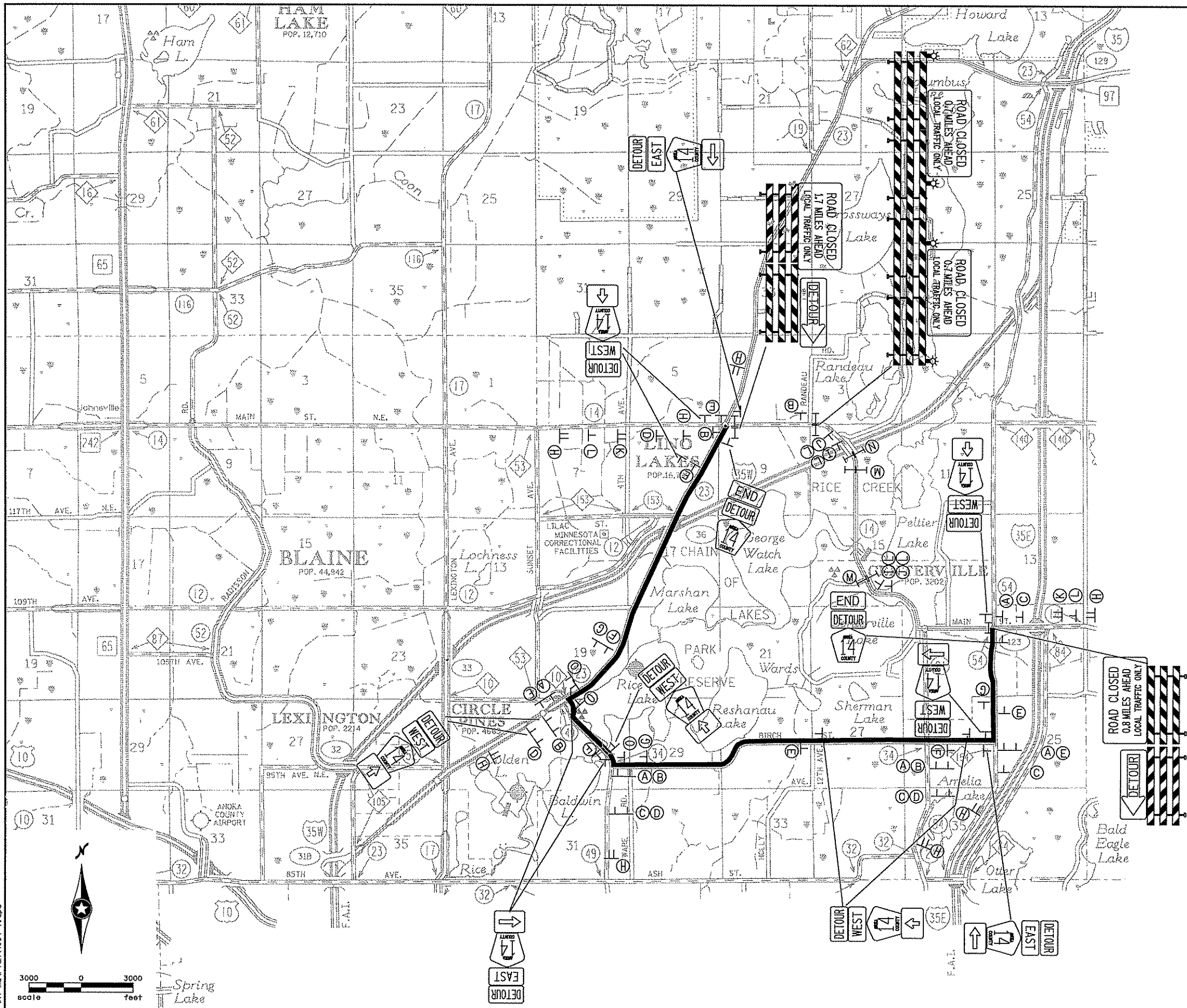
MISCELLANEOUS DETAILS

C.S.A.H. 14

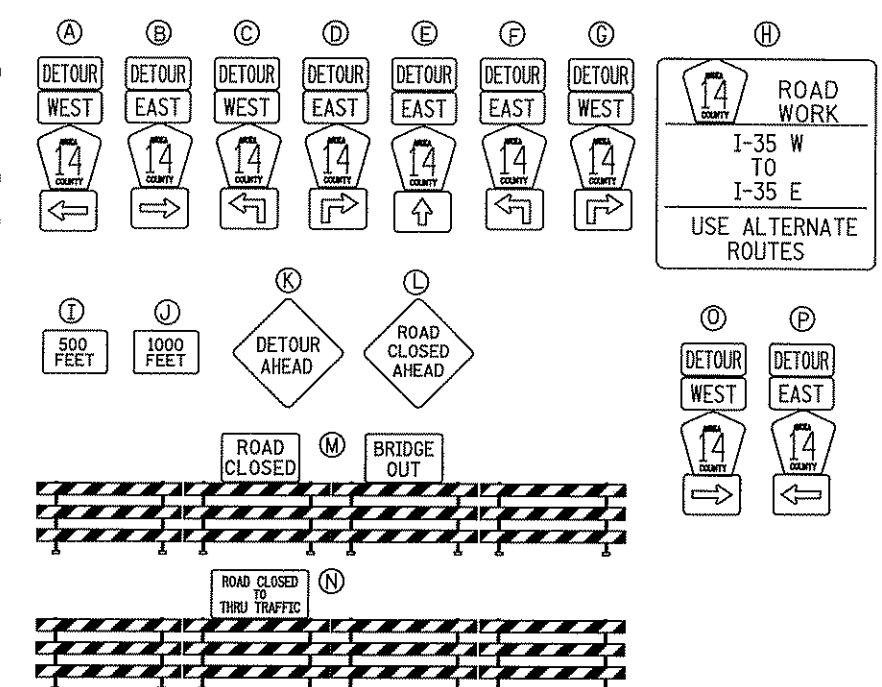
SANITARY SEWER LIFT STATION DETAILS

SHEET  
79  
OF  
492





DETOUR SIGN TABULATION			
LEGEND	SIZE	COLOR	QUANTITY
	21" X 15"	WHITE ON BLUE	7
	21" X 15"	WHITE ON BLUE	7
	21" X 15"	WHITE ON BLUE	10
	21" X 15"	WHITE ON BLUE	14
	21" X 15"	WHITE ON BLUE	10
	30" X 15"	BLACK ON ORANGE	48
	30" X 15"	WHITE ON BLUE	25
	30" X 15"	WHITE ON BLUE	2
	30" X 15"	WHITE ON BLUE	25
	36" X 36"	WHITE & YELLOW ON BLUE	46
	48" X 48"	BLACK ON ORANGE	2
	48" X 18"	BLACK ON ORANGE	1
	48" X 18"	BLACK ON ORANGE	1
	48" X 30"	BLACK ON WHITE	2
	48" X 30"	BLACK ON WHITE	2
	60" X 30"	BLACK ON WHITE	1
	TYPE III BARRICADE	ORANGE AND WHITE	18
	48" X 48"	BLACK ON ORANGE	6
	132" X 124"	BLACK ON ORANGE	8
	60" X 30"	BLACK ON WHITE	4
	42" X 24"	BLACK ON ORANGE	2
	42" X 24"	BLACK ON ORANGE	2



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NO	DATE	BY	CHKD	APPR	REVISION
1	4/30/2007	CMT	CMT	CMT	REVISIONS TO DETOUR PLAN PER ANOKA COUNTY COMMENTS

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.  
 Print Name: CHRISTOPHER M. TRBOYEVICH  
  
 Date: 6/27/07 License #: 41635

STATE PROJECT NO. S.P. 02-614-24, ETAL  
 DRAWN BY D. FITCHORN  
 DESIGNED BY J. TOULOUSE  
 CHECKED BY C. TRBOYEVICH  
 COMM. NO. 4994



ANOKA COUNTY  
 DETOUR PLAN  
 C.S.A.H. 14  
 SHEET 80 OF 492

(KK) TRAFFIC CONTROL SIGN TABULATION								
LEGEND	DESIGNATION	SIZE (ENGLISH DIMENSIONS)	COLOR	QUANTITY				
				STAGE 1	STAGE 2	STAGE 3	STAGE 4	STAGE 5
	W20-1	48"x48"	BLACK ON ORANGE	8	15	29	24	24
	G20-2A	48"x24"	BLACK ON ORANGE	5	11	22	18	18
	R11-2R	48"x30"	BLACK ON WHITE	4	4	4	-	-
	TYPE III	6" MIN.	ORANGE ON WHITE	22	22	17	-	-
	DRUM	18"x36" MIN.	WHITE ON ORANGE	78	126	306	219	210
	W1-4L	48"x48"	BLACK ON ORANGE	-	2	1	4	-
	W1-4R	48"x48"	BLACK ON ORANGE	-	1	2	5	7
	R11-4	60"x30"	BLACK ON WHITE	1	1	-	-	-
	R11-3a	60"x30"	BLACK ON WHITE	1	1	-	-	-
	W20-100p	42"x24"	BLACK ON ORANGE	-	-	2	-	-
	W20-3	48"x48"	BLACK ON ORANGE	-	2	-	-	-
	R11-2R	48"x30"	BLACK ON WHITE	3	3	3	-	-
	R1-1	48"x48"	WHITE ON RED	6	12	21	10	12
	R1-4	18"x6"	WHITE ON RED	-	2	7	5	7
	W1-1L	48"x48"	BLACK ON ORANGE	1	1	1	-	-
	W1-1R	48"x48"	BLACK ON ORANGE	-	1	1	-	-
	W13-1	30"x30"	BLACK ON ORANGE	1	2	2	-	-
		72"x60"	BLACK ON ORANGE	-	1	1	-	-
	R3-30DA	36"x30"	BLACK ON WHITE	-	-	-	1	1

**STAGING NARRATIVE**

**GENERAL NOTES:**  
 \* INSTALL SIGNING AND STRIPING PER EACH STAGING AND TRAFFIC CONTROL PLAN.  
 \* INSTALL TEMPORARY AND/OR PERMANENT SEDIMENT AND EROSION CONTROL MEASURES DURING AND AFTER COMPLETION OF EACH PARTIAL STAGE OF CONSTRUCTION.  
 \* MAINTAIN ACCESS TO DRIVEWAYS SHOWN AS CONSTRUCTION UNDER TRAFFIC IN THE STAGING PLANS AT ALL TIMES

**STAGE 1**

1. INSTALL DETOUR SIGNAGE.
2. PLACE SHEET PILE AND REMOVE CULVERTS LOCATED BETWEEN STA 90+00 AND STA 91+50 ON CSAH 14 BEFORE ANY OTHER ROAD CLOSURES CAN BEGIN.
3. TEMPORARY CLOSURE OF C.S.A.H. 14 BETWEEN MOUND TRAIL AND PELTIER LAKE RD, STA 83+50 TO STA 100+00, TO RELOCATE THE WATERMAIN AND FORCEMAIN.
4. CLOSE CSAH 14 FROM STA 17+00 TO STA 80+20.
5. BEGIN CLEARING AND GRUBBING CSAH 14 FROM STA 4+50 TO STA 140+00.
6. COMPLETE MUCK OPERATIONS, PLACE LIGHT WEIGHT AND SURCHARGE FROM I-35W TO MOUND TRAIL, STA 9+00 TO STA 81+50.
7. BUILD RETAINING WALL CSAH 14 STA 90+00 TO 94+00.
8. REMOVE AND REPLACE BRIDGE.
9. CONSTRUCT TEMPORARY PAVEMENT AS SHOWN IN STAGE 1 STAGING AND TRAFFIC CONTROL PLANS.
10. BEGIN CONSTRUCTION OF CLEARWATER CREEK REALIGNMENT.
11. CONSTRUCT PONDS NORTH OF CSAH 14.

**STAGE 2**

1. DETOUR SIGNAGE CONTINUES
2. SHIFT CSAH 14 TRAFFIC SOUTH HALF OF ROADWAY FROM MOUND TR. TO DUPRE RD. AS SHOWN IN STAGING PLANS
3. CONSTRUCT NORTH HALF OF CSAH 14 ROADWAY AND PROPOSED STORM SEWER FROM MOUND TR. TO DUPRE RD.
4. REMOVE SURCHARGE, CONSTRUCT PROPOSED STORM SEWER, GRADE, PLACE CLASS 5, BITUMINOUS BASE AND BINDER.
5. SIGN AND STRIPE WITH PAINT AS SHOWN IN SIGNING AND STRIPING PLAN ON CSAH 14 FROM I-35W TO PARK ACCESS.

**STAGE 3**

1. DETOUR SIGNAGE CONTINUES
2. SHIFT CSAH 14 TRAFFIC NORTH HALF OF ROADWAY FROM MOUND TR. TO DUPRE RD. AS SHOWN IN STAGING PLANS
3. CONSTRUCT SOUTH HALF OF CSAH 14 ROADWAY AND PROPOSED STORM SEWER FROM MOUND TR. TO DUPRE RD.
4. REMOVE SURCHARGE, CONSTRUCT PROPOSED STORM SEWER, GRADE, PLACE CLASS 5 AND BITUMINOUS BASE AND BINDER ON CSAH 14 FROM BRIDGE TO MOUND TR.
5. CONSTRUCT TRAIL ALONG CSAH 14 FROM I-35W TO MOUND TR.
6. SIGN AND STRIPE WITH PAINT AS SHOWN IN SIGNING AND STRIPING PLAN FROM PARK ACCESS TO DUPRE RD.
7. CONSTRUCT TEMPORARY PAVEMENT AS SHOWN IN STAGE 3 STAGING AND TRAFFIC CONTROL PLANS.
8. CONSTRUCT PONDS SOUTH OF CSAH 14
9. REMOVE DETOUR SIGNAGE.

**STAGE 4**

1. SHIFT CSAH 14 TRAFFIC TO THE NORTH HALF OF ROADWAY FROM DUPRE RD. TO I-35E AND TO THE WEST HALF OF CSAH 54. AS SHOWN IN STAGING PLANS
2. CONSTRUCT THE EAST HALF OF CSAH 54 AND THE SOUTH HALF OF CSAH 14 ROADWAY AND PROPOSED STORM SEWER FROM DUPRE RD. TO I-35E.

**STAGE 5**

1. SHIFT CSAH 14 TRAFFIC TO THE SOUTH HALF OF ROADWAY FROM DUPRE RD. TO I-35E AND TO THE EAST HALF OF CSAH 54. AS SHOWN IN STAGING PLANS
2. CONSTRUCT THE WEST HALF OF CSAH 54 AND THE NORTH HALF OF CSAH 14 ROADWAY AND PROPOSED STORM SEWER FROM DUPRE RD. TO I-35E.

**STAGE 6**

1. CONSTRUCT BITUMINOUS WEARING COURSE.
2. CONSTRUCT PERMANENT PAVEMENT MARKINGS AS SHOWN IN SIGNING AND STRIPING PLANS.

(Y) TEMPORARY DRAINAGE ITEMS (SPEC. 2501)		FURNISH PIPE CULVERT (2)						
ALIGNMENT	STATION	OFFSET	15" CSP		18" CSP		36" CSP	
			LIN. FT.	APRON	LIN. FT.	APRON	LIN. FT.	APRON
EB 14	84+43	38 RT		1				
EB 14	84+83	38 RT	40	1				
EB 14	101+65	38 RT		1				
EB 14	102+05	38 RT	40	1				
EB 14	103+60	38 RT		1				
EB 14	104+00	38 RT	40	1				
EB 14	106+94	38 RT		1				
EB 14	107+34	38 RT	40	1				
NB 54	308+40	44 LT		1				
NB 54	309+00	44 LT	60	1				
NB 54	313+24	31 LT						(1)
NB 54	313+43	54 LT					30	1
NB 54	314+24	44 LT						
NB 54	314+64	44 LT	40					
NB 54	315+96	44 LT						
NB 54	317+16	44 LT	120					
NB 54	319+38	44 LT				1		
NB 54	319+98	44 LT			60	1		
<b>PROJECT TOTALS</b>			<b>380</b>	<b>10</b>	<b>60</b>	<b>2</b>	<b>30</b>	<b>1</b>

(1) 36" BEND INCLUDED IN BID PRICE FOR FURNISH PIPE CULVERT.  
 (2) APRONS PAID FOR UNDER SEPARATE ITEMS.

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NO	DATE	BY	CKD	APPR	REVISION

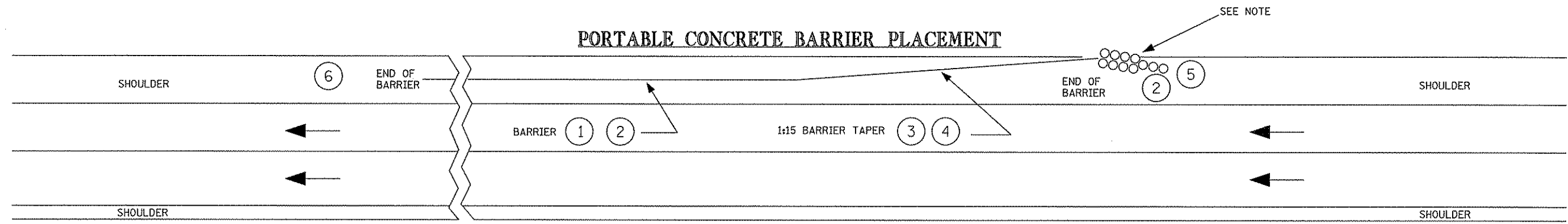
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 Print Name: CHRISTOPHER M. TRBOYEVICH  
*Christopher M. Trbojevich*  
 Date 6/27/07 License # 41635

STATE PROJECT NO.  
 S.P. 02-614-24, ETAL  
 DRAWN BY  
 S. MARTINS  
 DESIGNED BY  
 J. TOULOUSE  
 CHECKED BY  
 C. TRBOYEVICH  
 COMM. NO. 4994



ANOKA COUNTY  
 TRAFFIC CONTROL NOTES AND STAGING NARRATIVE  
 C.S.A.H. 14



① IT IS DESIRABLE TO MAINTAIN FULL SHOULDER WIDTH WHENEVER POSSIBLE. IF NOT POSSIBLE, MINIMUM DESIRABLE LATERAL OFFSETS ARE BASED ON THE FOLLOWING POSTED SPEEDS:

- 70 MPH - 12 FEET
- 60 MPH - 8 FEET
- 50 MPH - 6.5 FEET
- 40 MPH - 5 FEET

FOR RESTRICTED CONDITIONS, LESSER OFFSETS MAY BE USED. THE OFFSETS SHOULD BE A MINIMUM OF 2 FEET UNLESS THE CONDITIONS ARE EXTREME. LATERAL OFFSETS ARE MEASURED TO THE BOTTOM OF THE BARRIER. BARRIER OFFSET FROM EDGE OF THRU LANE SHOULD NOT EXCEED 15 FEET.

② DESIRABLE TREATMENTS FOR EXPOSED BARRIER ENDS ARE; A CONNECTION TO EXISTING BARRIER; IMPACT ATTENUATOR; TAPER AWAY TO THE EDGE OF THE CLEAR ZONE; AND EXTENDING THROUGH A PLATE BEAM GUARDRAIL BY REMOVING A PANEL.

FOR POSTED SPEEDS 30 MPH OR LESS, THE TAPERING AWAY FROM THE TRAFFIC IS DESIRABLE AND USE OF IMPACT ATTENUATOR ARE OPTIONAL

③ A 1:8 TAPER MAY BE USED WHEN POSTED SPEED LIMIT IS 35 MPH OR LESS.

A 1:12 TAPER MAY BE USED WHEN POSTED SPEED LIMIT IS 45MPH OR LESS

⑤ THE IMPACT ATTENUATOR SHOULD BE OFFSET A MINIMUM OF 2 FT. FROM THE EDGE OF THE THRU LANE (SEE SAND BARREL OFFSET DETAIL). THE IMPACT ATTENUATOR SHOULD BE ORIENTED TO ACCOMMODATE THE PROBABLE IMPACT ANGLE OF AN ENCROACHING VEHICLE. FOR MOST ROADSIDE CONDITIONS, AN ANGLE APPROXIMATELY 10 DEGREES, AS MEASURED BETWEEN THE HIGHWAY AND THE IMPACT ATTENUATOR LONGITUDINAL CENTERLINE, IS CONSIDERED APPROPRIATE (SEE SHOULDER FILL DETAIL). FOR SAND BARREL ARRANGEMENT SEE DETAIL BELOW.

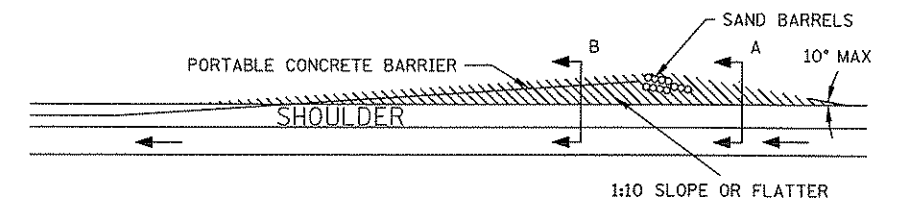
⑥ FOR TWO-LANE TWO-WAY TRAFFIC BOTH ENDS OF THE BARRIER SHOULD BE TREATED IN THE SAME MANNER AS DESCRIBED IN ②

**NOTE:**

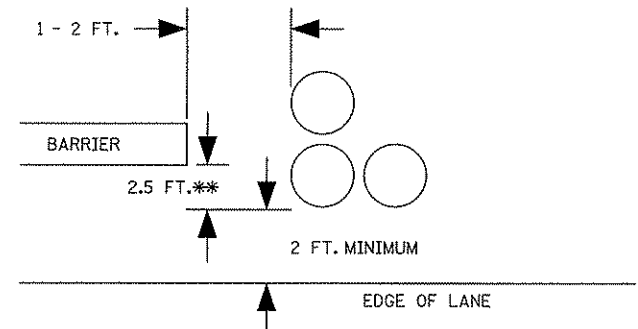
AT THE DIRECTION OF THE ENGINEER, OTHER APPROVED IMPACT ATTENUATORS CAN BE SUBSTITUTED IN LIEU OF THE SAND BARRELS ESPECIALLY WHERE REDIRECTION IS DESIRED OR AT WIDTH RESTRICTED AREAS.

④ IF THE BARRIER IS TO BE EXTENDED BEYOND THE SHOULDER, ADDITIONAL FILL WILL BE NEEDED IN ORDER TO PROVIDE A FLAT (1:10) APPROACH AREA TO THE BARRIER. FILL WILL BE INCIDENTAL TO BARRIER AND/OR IMPACT ATTENUATOR. (SEE SHOULDER FILL DETAIL BELOW)

**SHOULDER FILL**

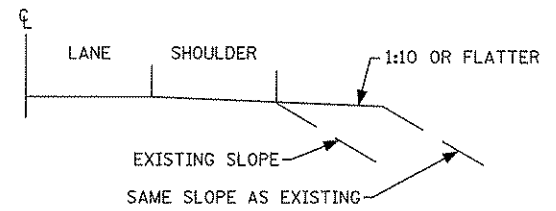


**SAND FILLED BARREL OFFSET**

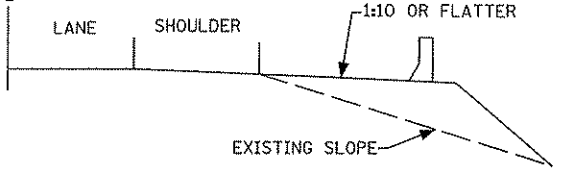


\*\* DISTANCE MAY BE REDUCED TO MINIMUM OF 15 IN. (1.25 FT.). THIS IS ACCEPTABLE ONLY WHERE A GREATER OFFSET WOULD CAUSE UNACCEPTABLE INTERFERENCE WITH TRAFFIC.

**SECTION A**

























**SECTION B**



TITLE: PORTABLE CONCRETE BARRIER END TREATMENT DETAIL

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LEGEND

- |   |  |  |   |
|---|--|--|---|
|  | PERMANENT CONSTRUCTION THIS STAGE                        |   | SILT FENCE, TYPE MACHINE SLICED               |
|  | TEMPORARY CONSTRUCTION THIS STAGE                        |  | FLOATATION SILT CURTAIN - STILL WATER         |
|  | CONSTRUCTION UNDER TRAFFIC THIS STAGE                    |  | FLOATATION SILT CURTAIN - MOVING WATER        |
|  | RAPID STABILIZATION METHOD 3 (W/ SEED MIXTURE 150TS)     |  | PROPOSED CIP OR MODULAR BLOCK WALLS           |
|  | EROSION CONTROL BLANKETS CATEGORY 3                      |  | STEEL SHEET PILING (TEMPORARY)                |
|  | TRAFFIC LOCATION AND DIRECTION                           |  | INLET PROTECTION                              |
|  | PORTABLE PRECAST CONCRETE BARRIER (PPCB) STD. PLATE 8337 |  | PROPOSED CATCH BASIN                          |
|  | IMPACT ATTENUATOR (50 MPH UNLESS NOTED OTHERWISE)        |  | PROPOSED MANHOLE/DROP INLET                   |
|  | REFLECTORIZED PLASTIC DRUM (50' SPACING)                 |  | PROPOSED APRON                                |
|   |  |  | PROPOSED STORM SEWER/CULVERT                  |
|   |  |  | TYPE III BARRICADE (REFLECTORIZED BOTH SIDES) |
|   |  |  | STANDARD SIGN (POST OR STAND MOUNTED)         |
|   |  |  | TEMPORARY RAISED PAVEMENT MARKINGS            |

THIS LEGEND APPLIES TO ALL STAGING PLAN SHEETS

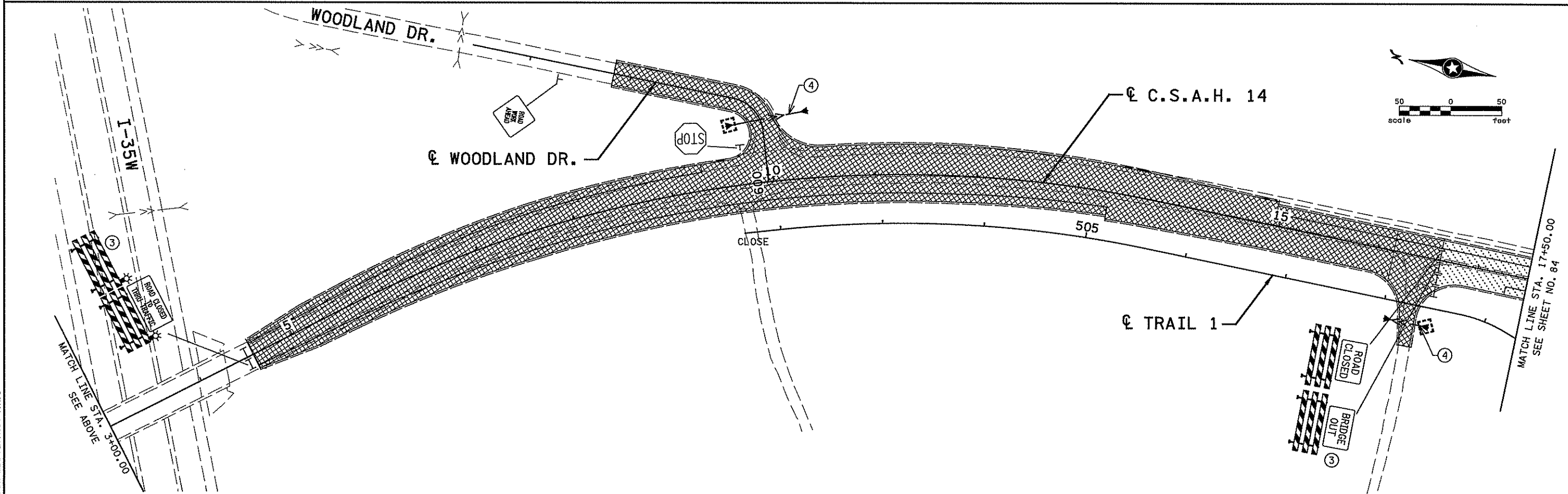
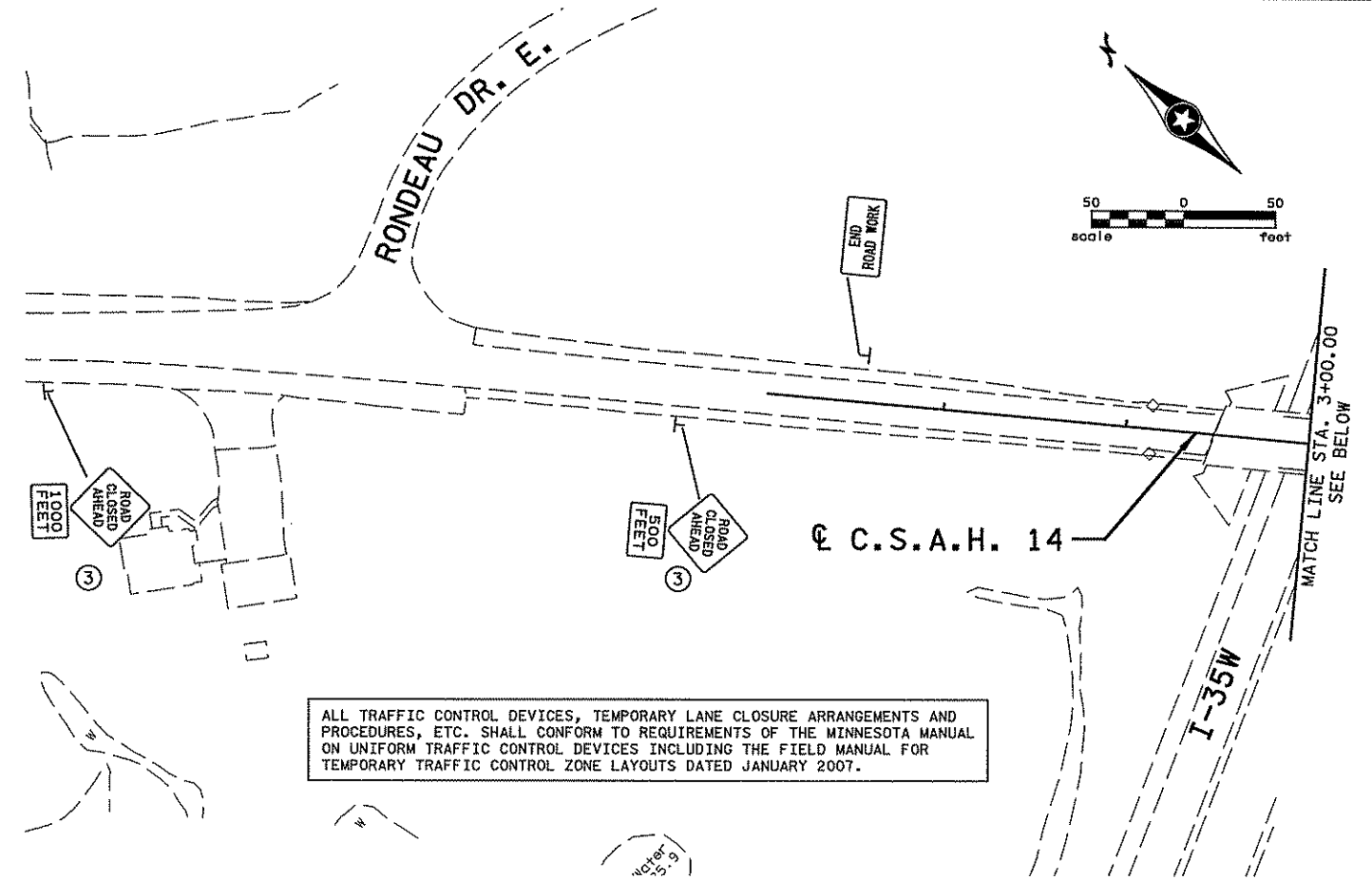
STAGING NOTES TO BE USED FOR ALL STAGING AND TRAFFIC CONTROL SHEETS:

- ① 4" SOLID LINE WHITE (PAINT)
- ② 4" SOLID DOUBLE LINE YELLOW (PAINT)
- ③ SEE DETOUR PLAN SHEET 80 FOR DETAILS AND QUANTITIES
- ④ CONSTRUCT STORM SEWER UNDER TRAFFIC THIS STAGE

GENERAL NOTES:

- INSTALL PERMANENT TURF ESTABLISHMENT AND EROSION CONTROL MEASURES ALONG THE PERMANENT CONSTRUCTION. SEE SHEETS 239 TO 247.
- CONTRACTOR SHALL COORDINATE ALL GRADING OPERATIONS WITH UTILITY COMPANIES.
- TYPE III BARRICADES WITH NO SIGN ATTACHMENTS ARE OMITTED FOR PLAN CLARITY.

ALL TRAFFIC CONTROL DEVICES, TEMPORARY LANE CLOSURE ARRANGEMENTS AND PROCEDURES, ETC. SHALL CONFORM TO REQUIREMENTS OF THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES INCLUDING THE FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS DATED JANUARY 2007.



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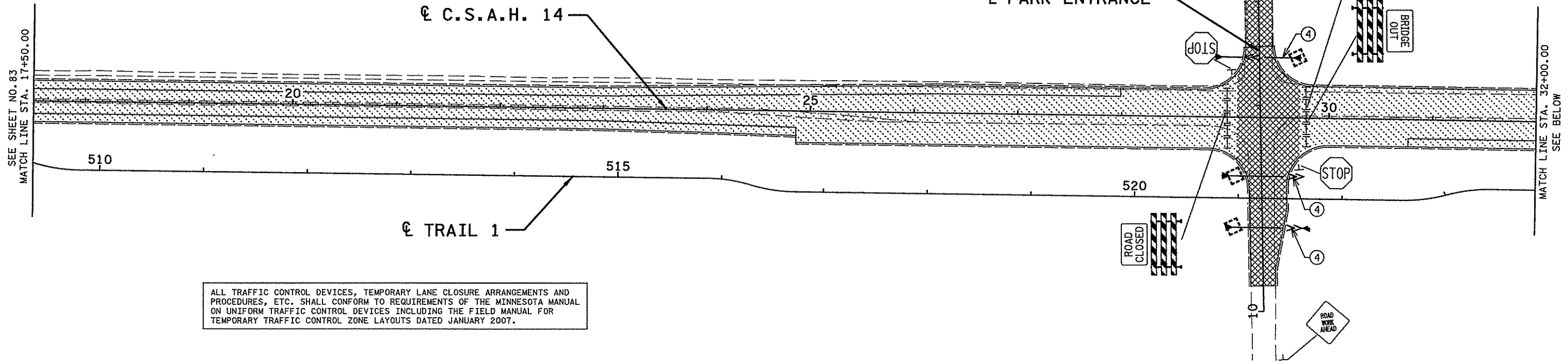
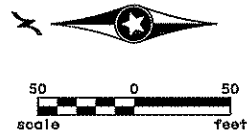
STATE PROJECT NO. S.P. 02-614-24, ETAL

DRAWN BY S. MARTINS  
DESIGNED BY J. TOULOUSE  
CHECKED BY C. TRBOYEVICH  
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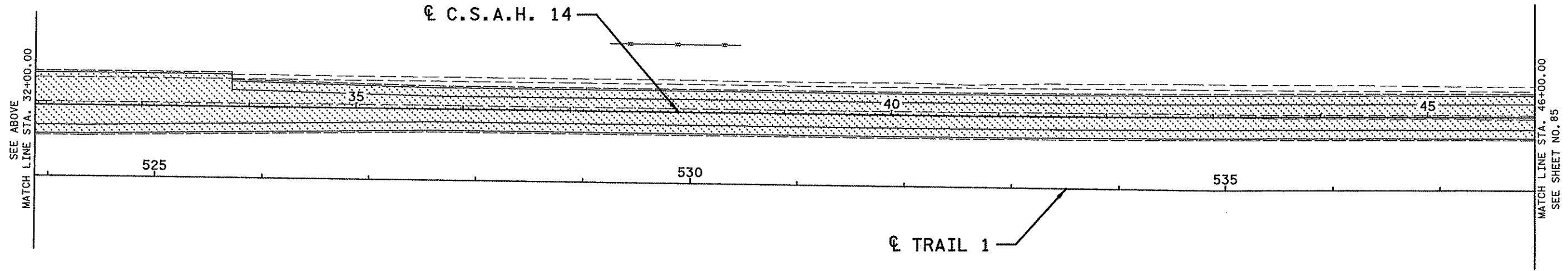
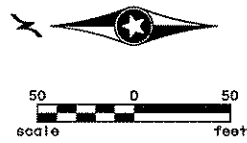


ANOKA COUNTY  
STAGING AND TRAFFIC CONTROL  
C.S.A.H. 14  
STAGE 1

SHEET 83 OF 492



ALL TRAFFIC CONTROL DEVICES, TEMPORARY LANE CLOSURE ARRANGEMENTS AND PROCEDURES, ETC. SHALL CONFORM TO REQUIREMENTS OF THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES INCLUDING THE FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS DATED JANUARY 2007.



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NO	DATE	BY	CKD	APPR	REVISION

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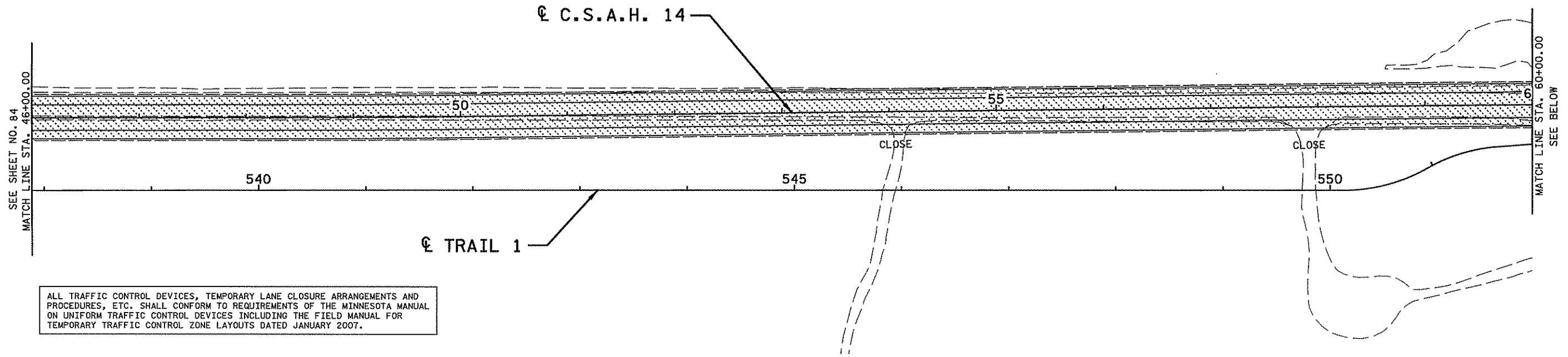
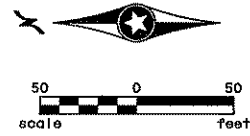
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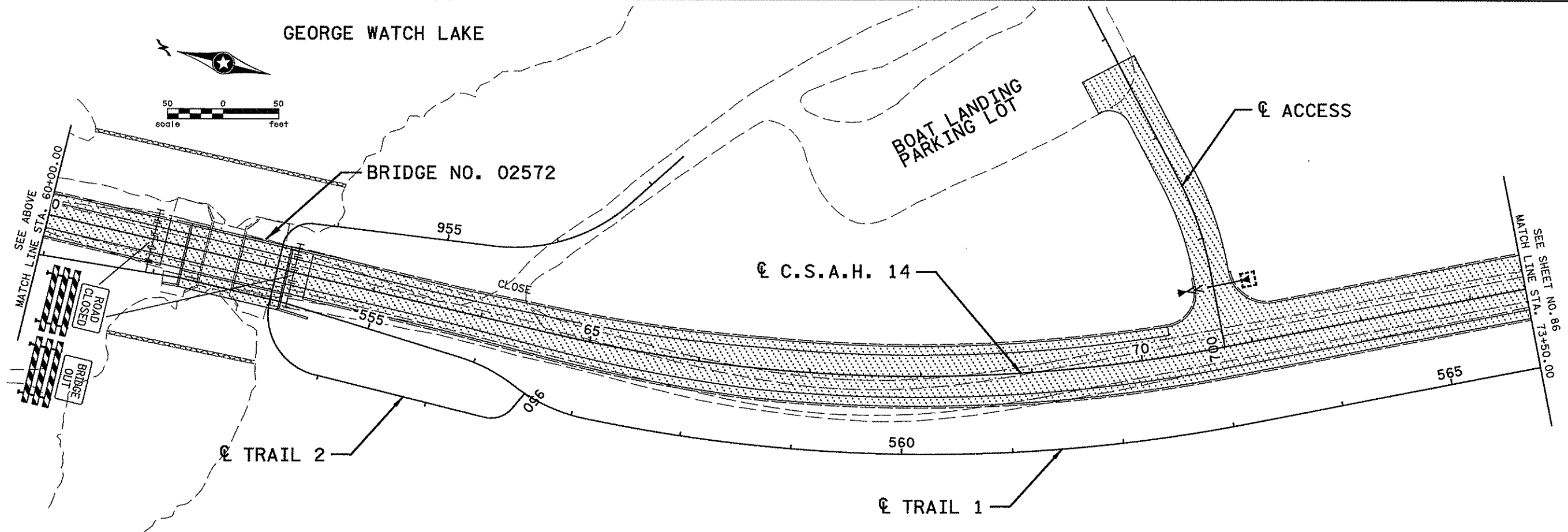
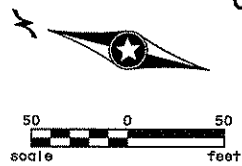


ANOKA COUNTY  
 STAGING AND TRAFFIC CONTROL  
 C.S.A.H. 14  
 STAGE 1

SHEET  
 84  
 OF  
 492



ALL TRAFFIC CONTROL DEVICES, TEMPORARY LANE CLOSURE ARRANGEMENTS AND PROCEDURES, ETC. SHALL CONFORM TO REQUIREMENTS OF THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES INCLUDING THE FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS DATED JANUARY 2007.



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NO	DATE	BY	CKD	APPR	REVISION

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 Print Name: CHRISTOPHER M. TRBOYEVICH  
*Christopher M. Trbojevich*  
 Date: 3/26/07 License #: 41635

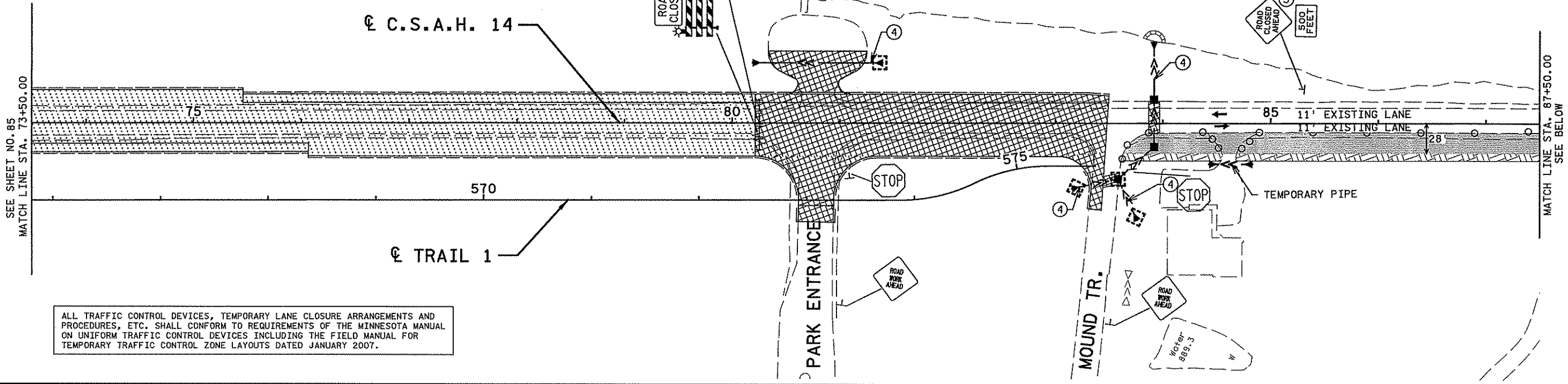
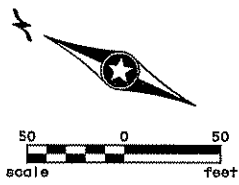
STATE PROJECT NO.  
S.P. 02-614-24, ETAL

DRAWN BY  
S. MARTINS  
 DESIGNED BY  
J. TOULOUSE  
 CHECKED BY  
C. TRBOYEVICH  
 COMM. NO. 4994



ANOKA COUNTY  
 STAGING AND TRAFFIC CONTROL  
 C.S.A.H. 14  
 STAGE 1

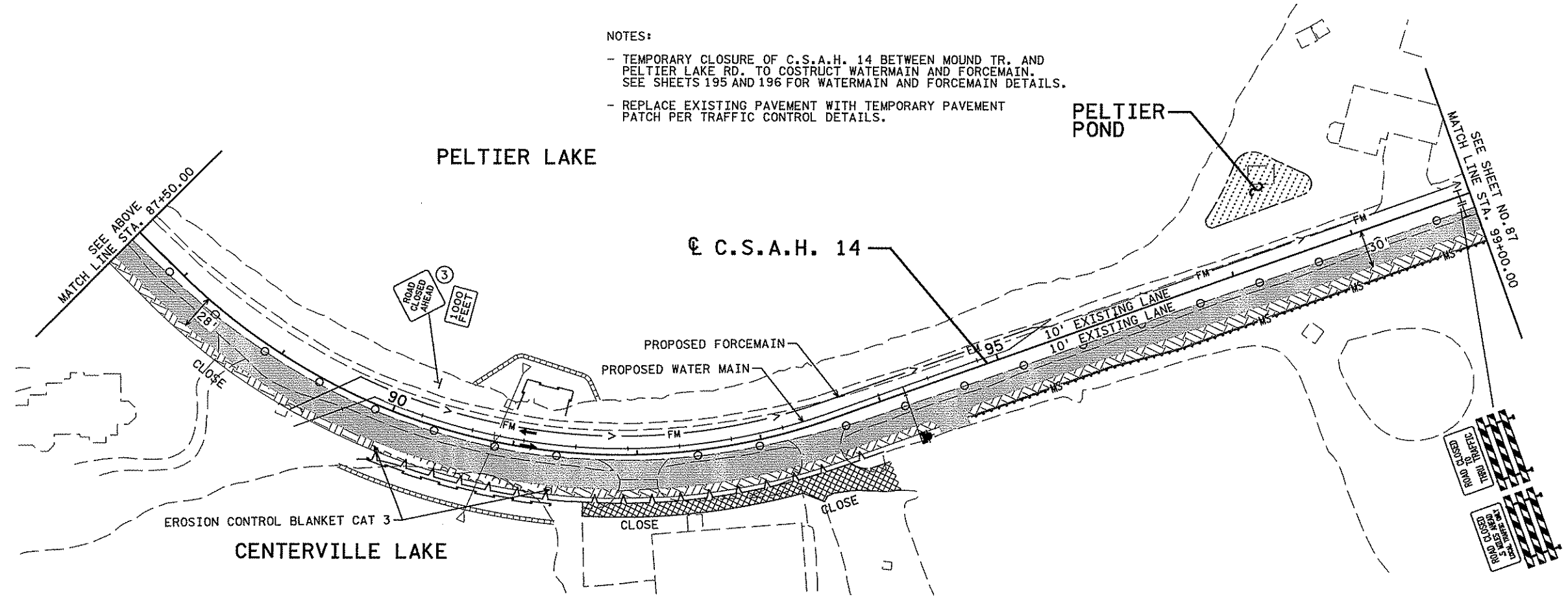
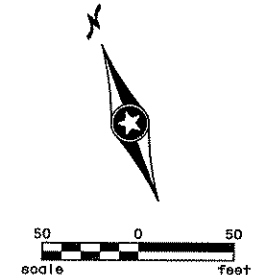
SHEET  
85  
OF  
492



ALL TRAFFIC CONTROL DEVICES, TEMPORARY LANE CLOSURE ARRANGEMENTS AND PROCEDURES, ETC. SHALL CONFORM TO REQUIREMENTS OF THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES INCLUDING THE FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS DATED JANUARY 2007.

NOTES:

- TEMPORARY CLOSURE OF C.S.A.H. 14 BETWEEN MOUND TR. AND PELTIER LAKE RD. TO COSTRUCT WATERMAIN AND FORCEMAIN. SEE SHEETS 195 AND 196 FOR WATERMAIN AND FORCEMAIN DETAILS.
- REPLACE EXISTING PAVEMENT WITH TEMPORARY PAVEMENT PATCH PER TRAFFIC CONTROL DETAILS.



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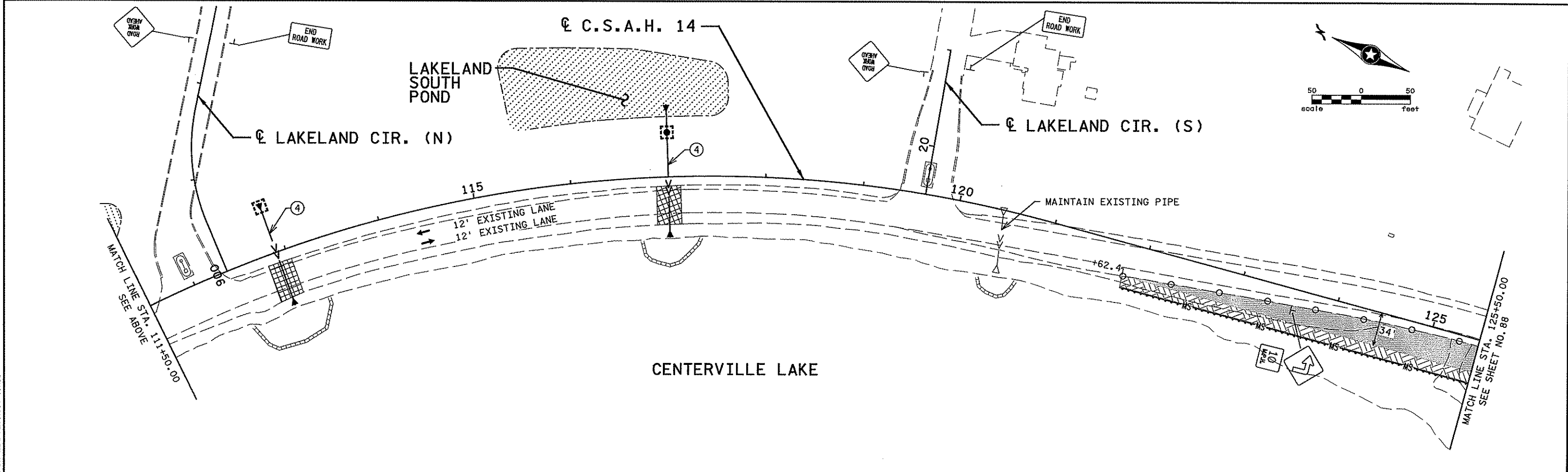
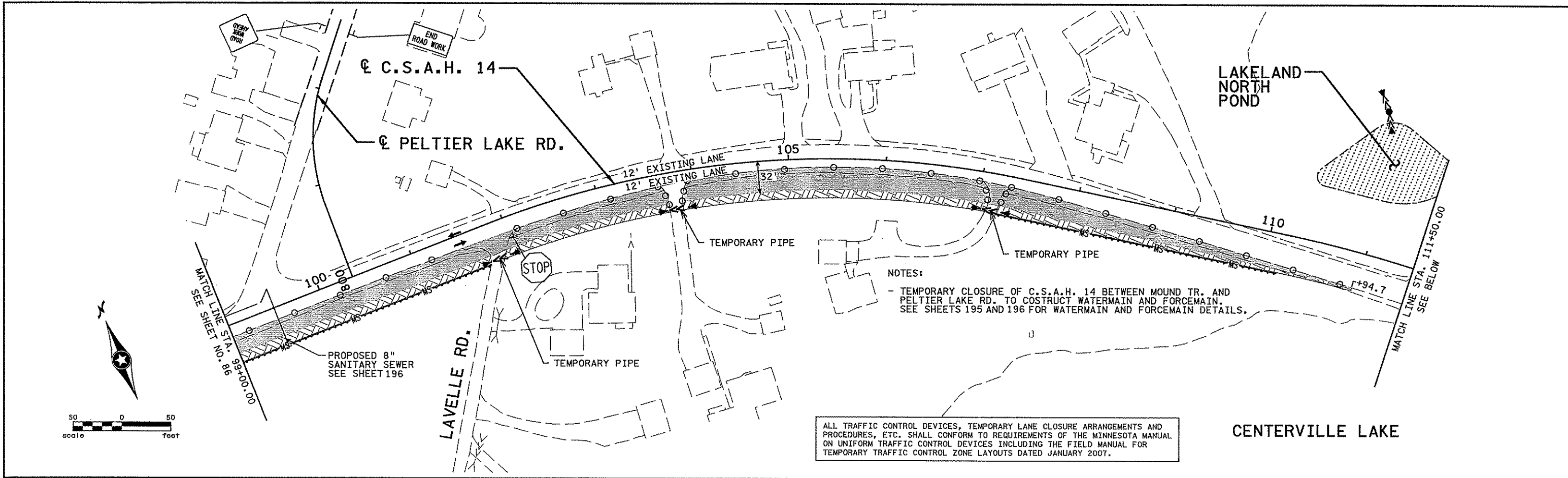
STATE PROJECT NO. S.P. 02-614-24, ETAL

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 DESIGNED BY J. TOULOUSE  
 CHECKED BY C. TRBOYEVICH  
 COMM. NO. 4994



ANOKA COUNTY  
 STAGING AND TRAFFIC CONTROL  
 C.S.A.H. 14  
 STAGE 1

SHEET 86 OF 492



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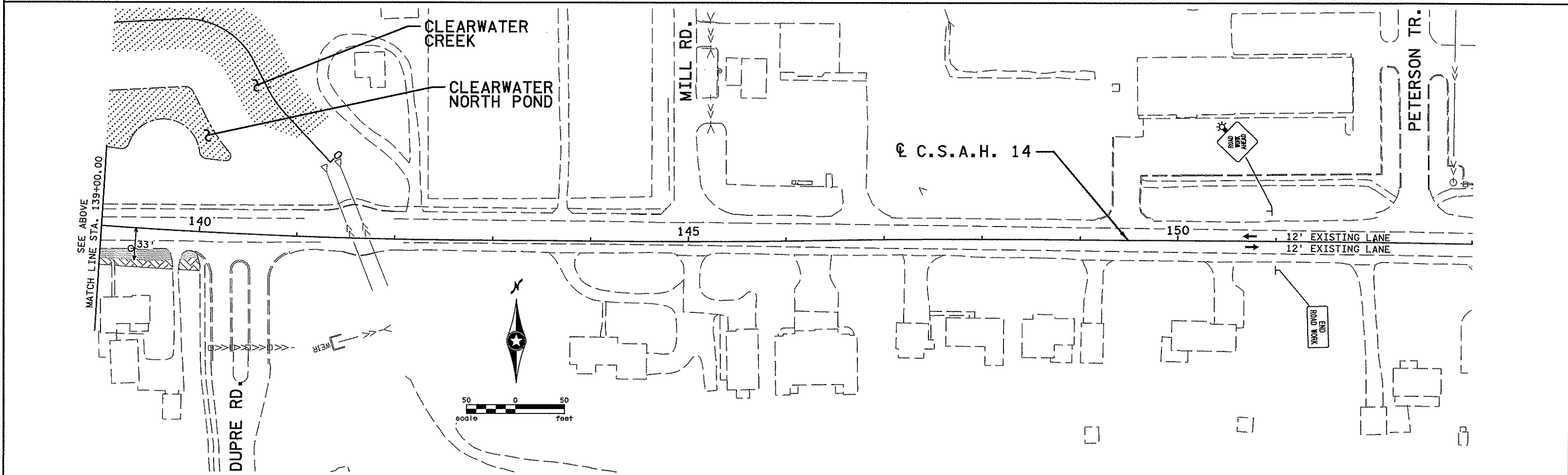
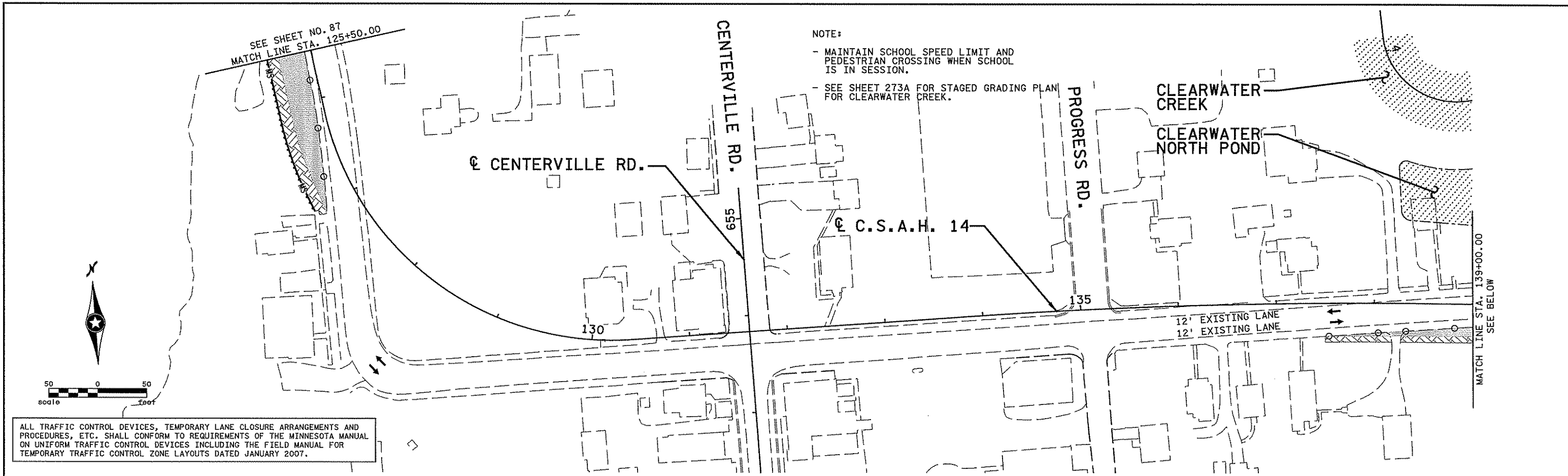
STATE PROJECT NO. S.P. 02-614-24, ETAL  
 DRAWN BY S. MARTINS  
 DESIGNED BY J. TOULOUSE  
 CHECKED BY C. TRBOYEVICH  
 COMM. NO. 4994



ANOKA COUNTY  
 STAGING AND TRAFFIC CONTROL  
 C.S.A.H. 14  
 STAGE 1

SHEET 87 OF 492





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Print Name: CHRISTOPHER M. TRBOYEVICH

*Christopher M. Trbojevich*

Date: 6/27/07 License # 41635

STATE PROJECT NO.  
S.P. 02-614-24, ETAL

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S. MARTINS

DESIGNED BY  
J. TOULOUSE

CHECKED BY  
C. TRBOYEVICH

COMM. NO. 4994



ANOKA COUNTY

STAGING AND TRAFFIC CONTROL

C.S.A.H. 14

STAGE 1

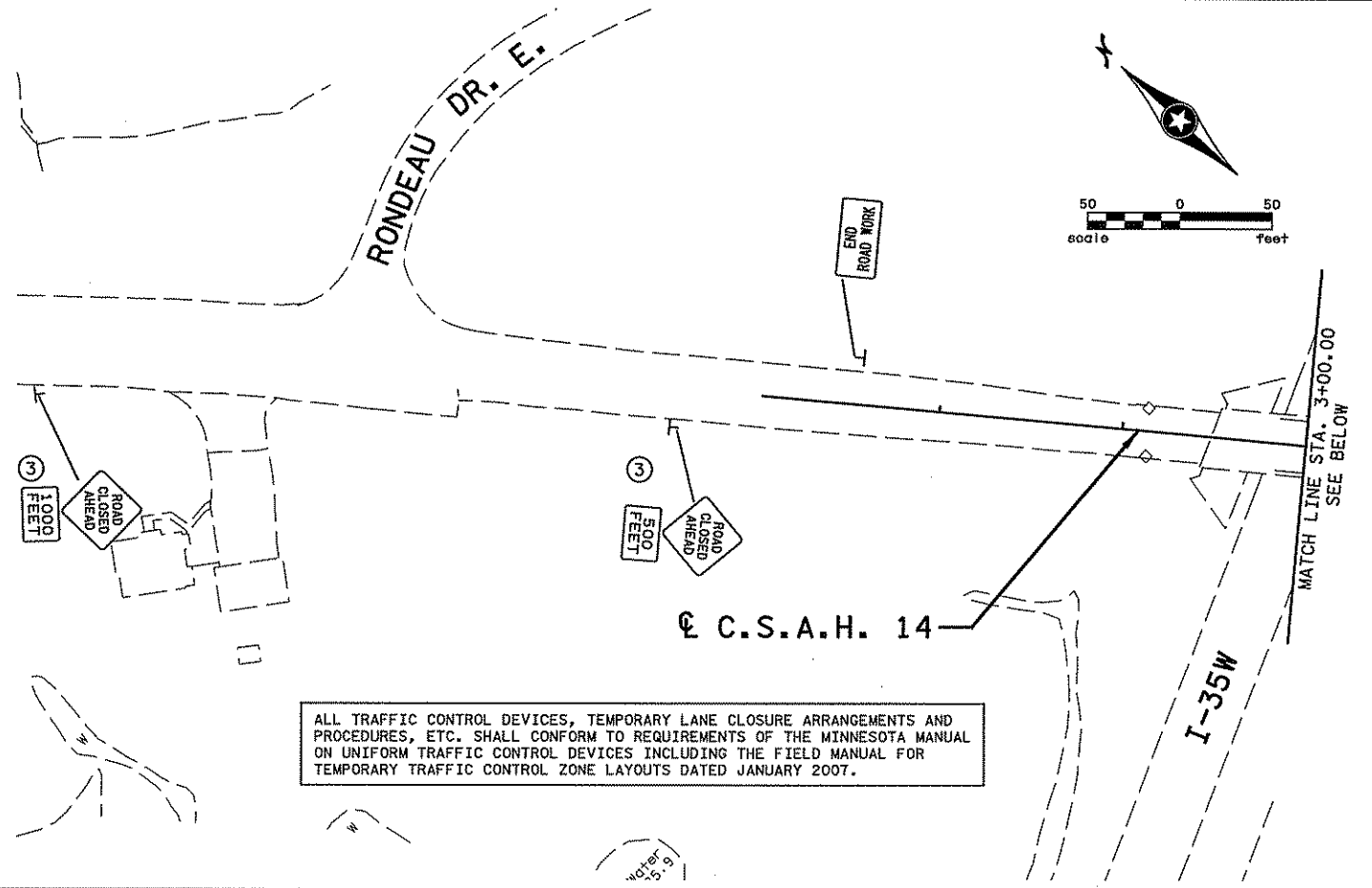
SHEET  
88  
OF  
492

LEGEND	
	PERMANENT CONSTRUCTION THIS STAGE
	TEMPORARY CONSTRUCTION THIS STAGE
	CONSTRUCTION UNDER TRAFFIC THIS STAGE
	RAPID STABILIZATION METHOD 3 (W/ SEED MIXTURE 150TS)
	EROSION CONTROL BLANKETS CATEGORY 3
	TRAFFIC LOCATION AND DIRECTION
	PORTABLE PRECAST CONCRETE BARRIER (PPCB) STD. PLATE 8337
	IMPACT ATTENUATOR (50 MPH UNLESS NOTED OTHERWISE)
	REFLECTORIZED PLASTIC DRUM (50' SPACING)
	SILT FENCE, TYPE MACHINE SLICED
	FLOATATION SILT CURTAIN - STILL WATER
	FLOATATION SILT CURTAIN - MOVING WATER
	PROPOSED CIP OR MODULAR BLOCK WALLS
	STEEL SHEET PILING (TEMPORARY)
	INLET PROTECTION
	PROPOSED CATCH BASIN
	PROPOSED MANHOLE/DROP INLET
	PROPOSED APRON
	PROPOSED STORM SEWER/CULVERT
	TYPE III BARRICADE (REFLECTORIZED BOTH SIDES)
	STANDARD SIGN (POST OR STAND MOUNTED)
	TEMPORARY RAISED PAVEMENT MARKINGS

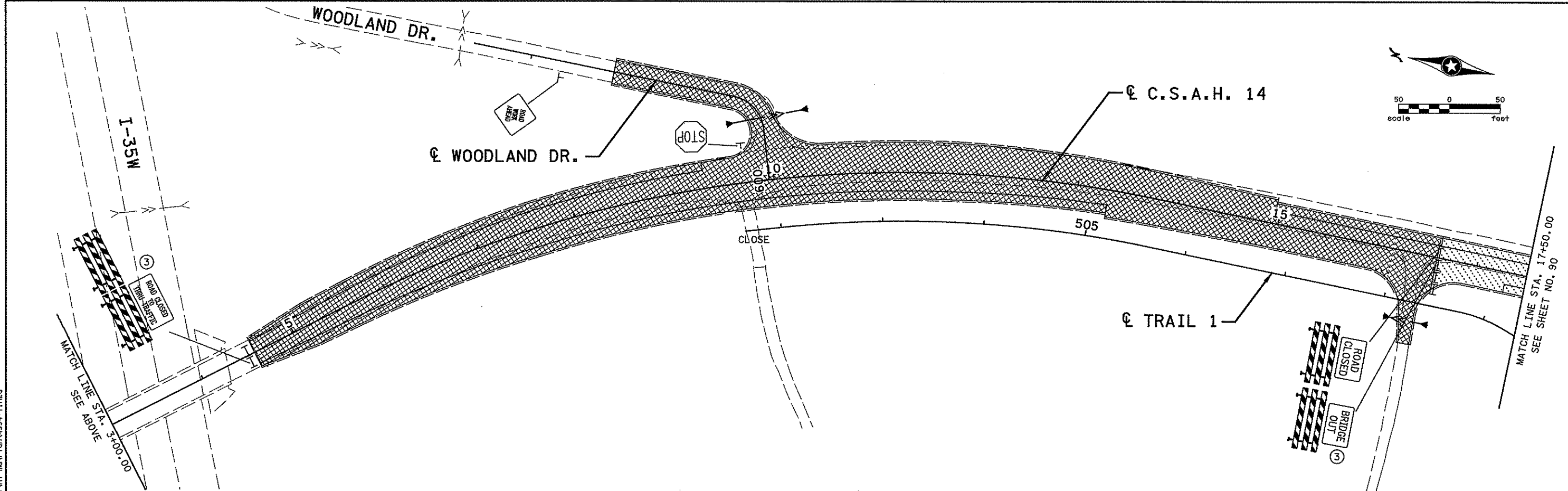
THIS LEGEND APPLIES TO ALL STAGING PLAN SHEETS  
 STAGING NOTES TO BE USED FOR ALL STAGING AND TRAFFIC CONTROL SHEETS:

- ① 4" SOLID LINE WHITE (PAINT)
- ② 4" SOLID DOUBLE LINE YELLOW (PAINT)
- ③ SEE DETOUR PLAN SHEET 80 FOR DETAILS AND QUANTITIES
- ④ CONSTRUCT STORM SEWER UNDER TRAFFIC THIS STAGE
- ⑤ TEMPORARY RAISED PAVEMENT MARKINGS (TRPM) AT 10' INTERVALS THROUGH TRANSITION AREAS

- GENERAL NOTES:
- INSTALL PERMANENT TURF ESTABLISHMENT AND EROSION CONTROL MEASURES ALONG THE PERMANENT CONSTRUCTION. SEE SHEETS 239 TO 247.
  - CONTRACTOR SHALL COORDINATE ALL GRADING OPERATIONS WITH UTILITY COMPANIES.
  - TYPE III BARRICADES WITH NO SIGN ATTACHMENTS ARE OMITTED FOR PLAN CLARITY.



ALL TRAFFIC CONTROL DEVICES, TEMPORARY LANE CLOSURE ARRANGEMENTS AND PROCEDURES, ETC. SHALL CONFORM TO REQUIREMENTS OF THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES INCLUDING THE FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS DATED JANUARY 2007.



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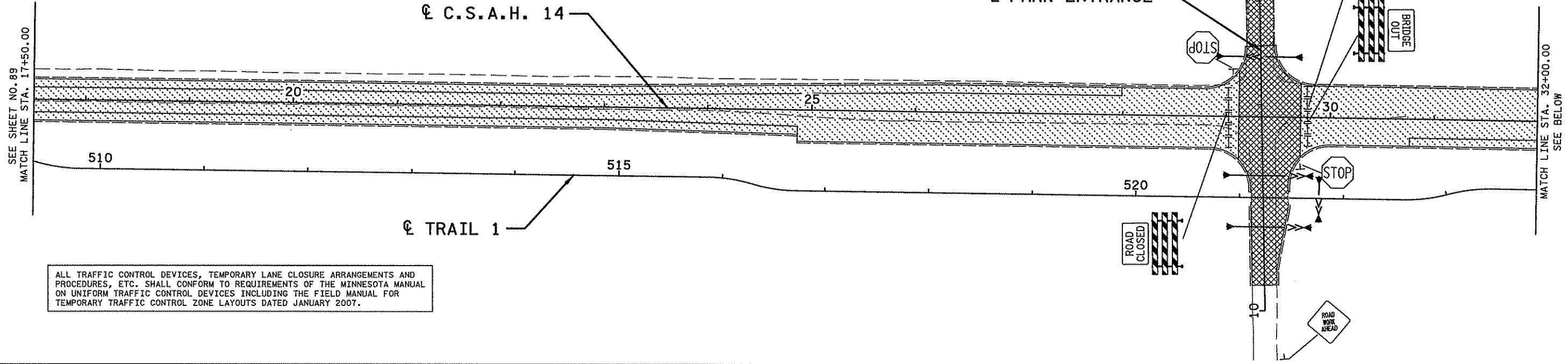
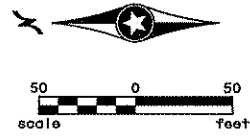
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 Print Name: CHRISTOPHER M. TRBOYEVICH  
*Christopher M. Trbojevich*  
 Date: 3/26/07 License #: 41635

STATE PROJECT NO. S.P. 02-614-24, ETAL  
 DRAWN BY S. MARTINS  
 DESIGNED BY J. TOULOUSE  
 CHECKED BY C. TRBOYEVICH  
 COMM. NO. 4994

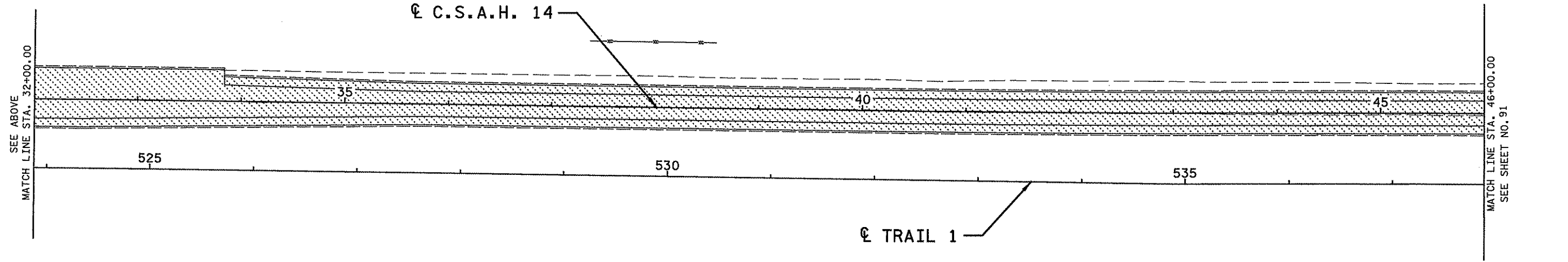
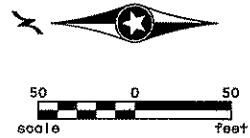


ANOKA COUNTY  
 STAGING AND TRAFFIC CONTROL  
 C.S.A.H. 14  
 STAGE 2

SHEET 89 OF 492



ALL TRAFFIC CONTROL DEVICES, TEMPORARY LANE CLOSURE ARRANGEMENTS AND PROCEDURES, ETC. SHALL CONFORM TO REQUIREMENTS OF THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES INCLUDING THE FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS DATED JANUARY 2007.



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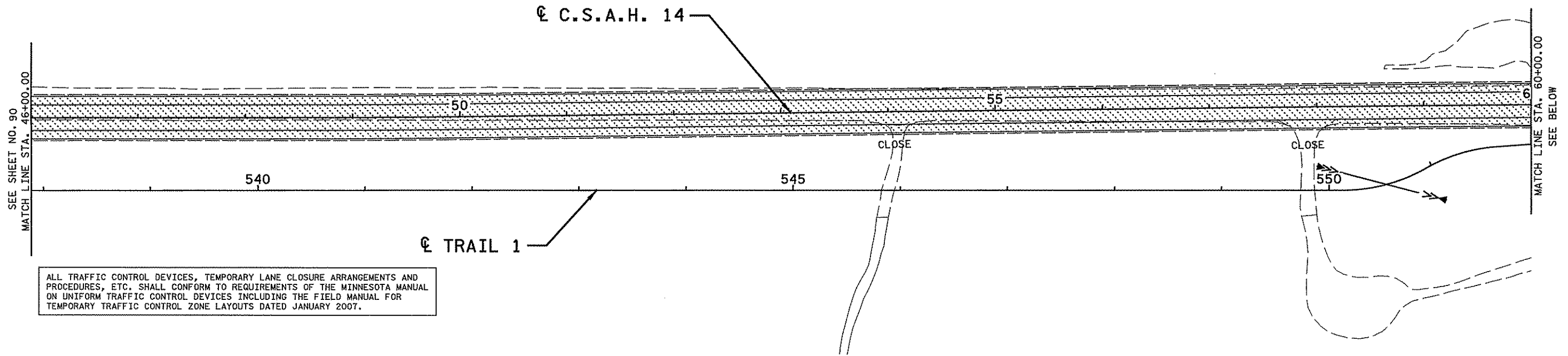
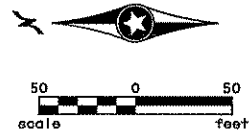
STATE PROJECT NO.  
S.P. 02-614-24, ETAL

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S. MARTINS  
 DESIGNED BY  
J. TOULOUSE  
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 COMM. NO. 4994



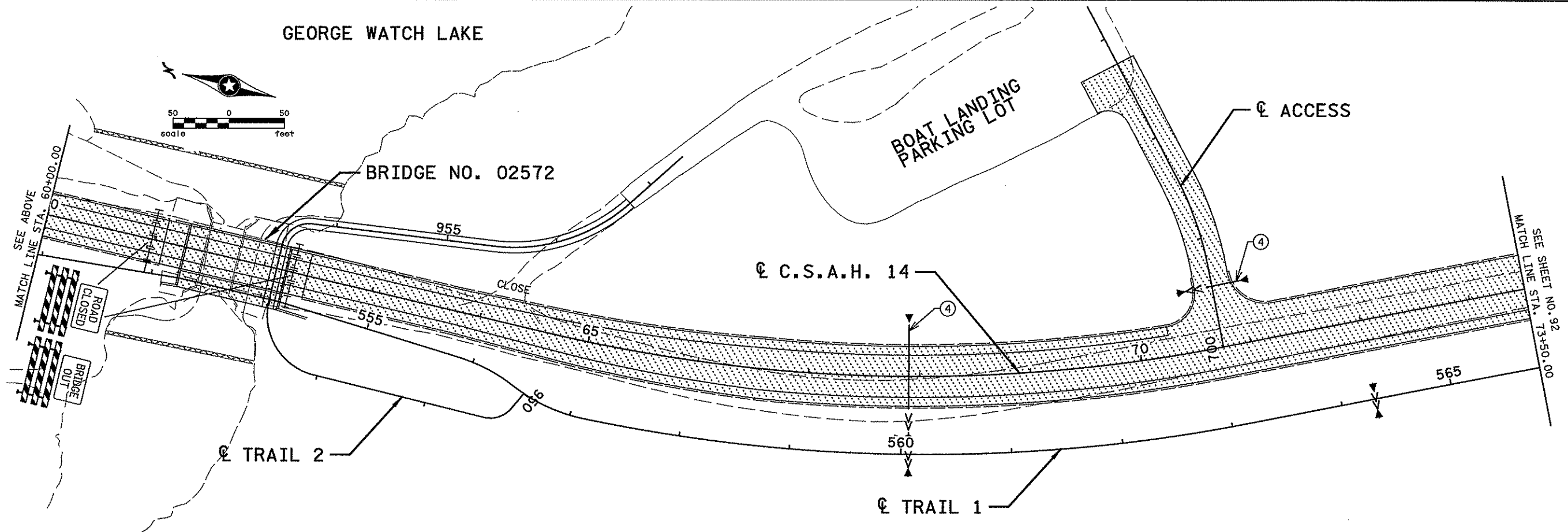
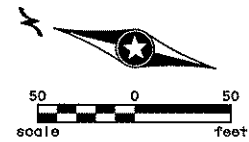
ANOKA COUNTY  
 STAGING AND TRAFFIC CONTROL  
 C.S.A.H. 14  
 STAGE 2

SHEET  
90  
OF  
492



ALL TRAFFIC CONTROL DEVICES, TEMPORARY LANE CLOSURE ARRANGEMENTS AND PROCEDURES, ETC. SHALL CONFORM TO REQUIREMENTS OF THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES INCLUDING THE FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS DATED JANUARY 2007.

GEORGE WATCH LAKE



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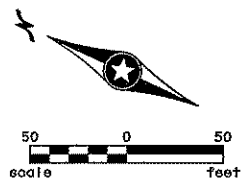
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 Print Name: CHRISTOPHER M. TRBOYEVIK  
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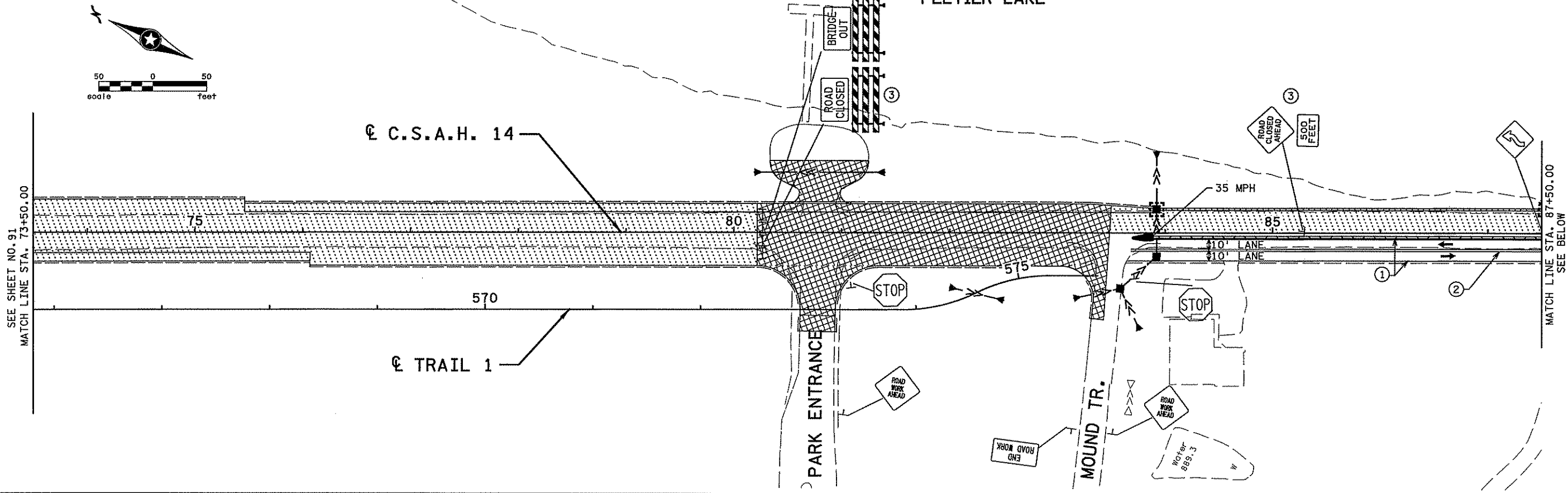
ANOKA COUNTY  
 STAGING AND TRAFFIC CONTROL  
 C.S.A.H. 14  
 STAGE 2

SHEET 91 OF 92

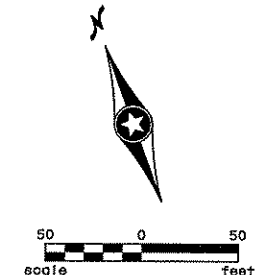


SEE SHEET NO. 91  
MATCH LINE STA. 73+50.00

MATCH LINE STA. 87+50.00  
SEE BELOW

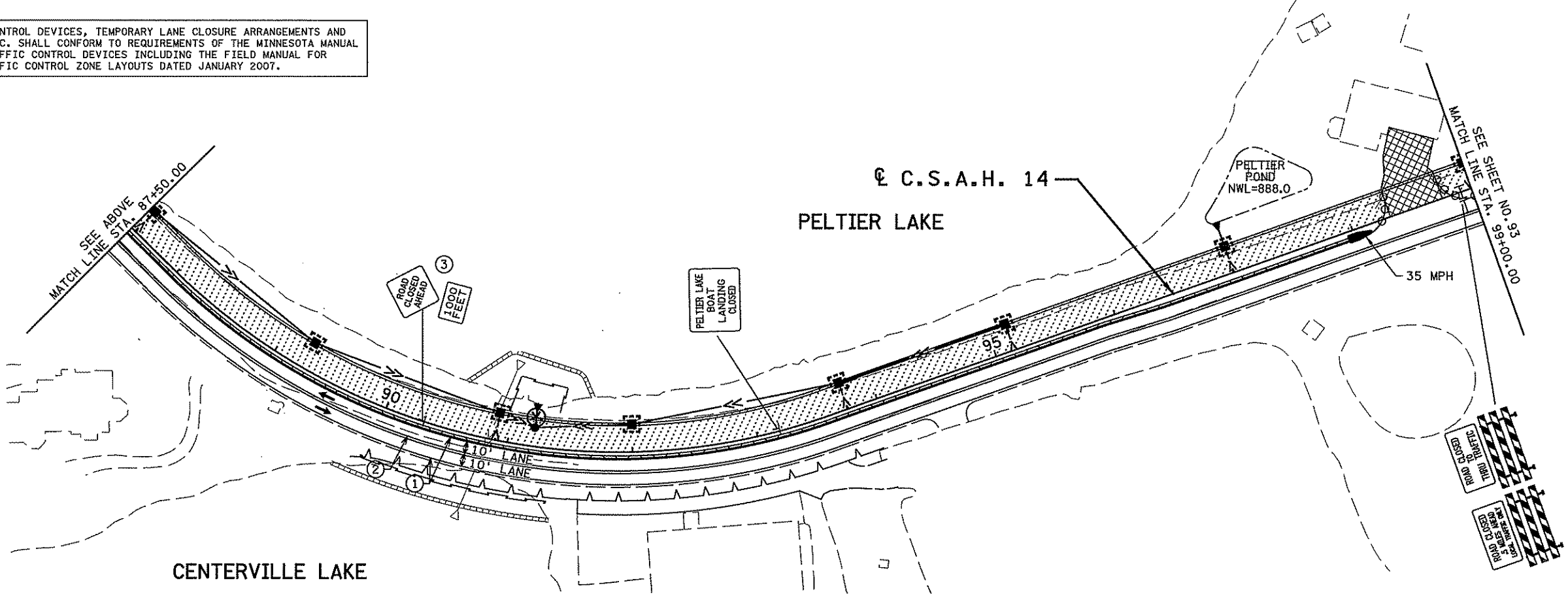


ALL TRAFFIC CONTROL DEVICES, TEMPORARY LANE CLOSURE ARRANGEMENTS AND PROCEDURES, ETC. SHALL CONFORM TO REQUIREMENTS OF THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES INCLUDING THE FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS DATED JANUARY 2007.



SEE ABOVE  
MATCH LINE STA. 87+50.00

SEE SHEET NO. 93  
MATCH LINE STA. 89+00.00



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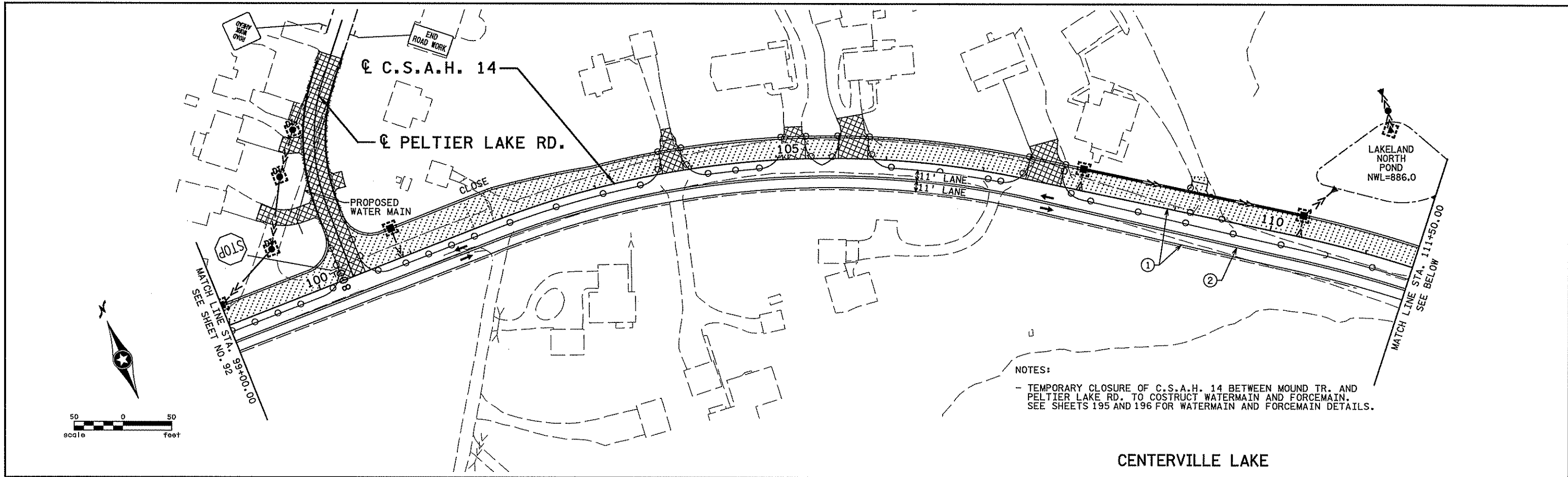
STATE PROJECT NO.  
S.P. 02-614-24, ETAL

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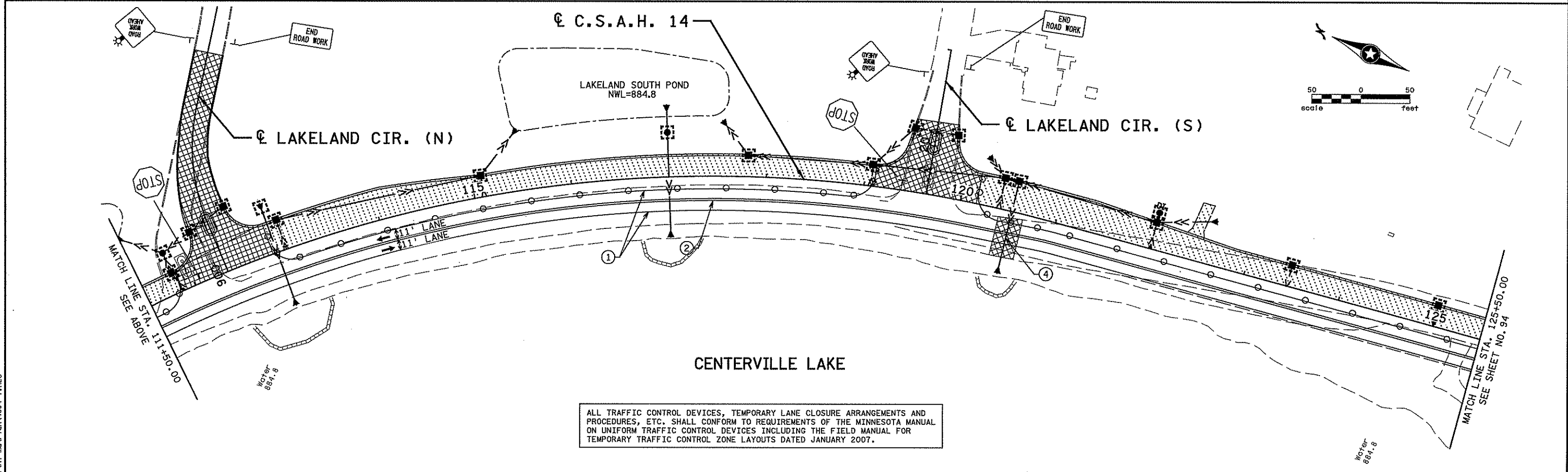


ANOKA COUNTY  
 STAGING AND TRAFFIC CONTROL  
 C.S.A.H. 14  
 STAGE 2

SHEET  
92  
OF  
492



CENTERVILLE LAKE



CENTERVILLE LAKE

ALL TRAFFIC CONTROL DEVICES, TEMPORARY LANE CLOSURE ARRANGEMENTS AND PROCEDURES, ETC. SHALL CONFORM TO REQUIREMENTS OF THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES INCLUDING THE FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS DATED JANUARY 2007.

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NO	DATE	BY	CHKD	APPR	REVISION

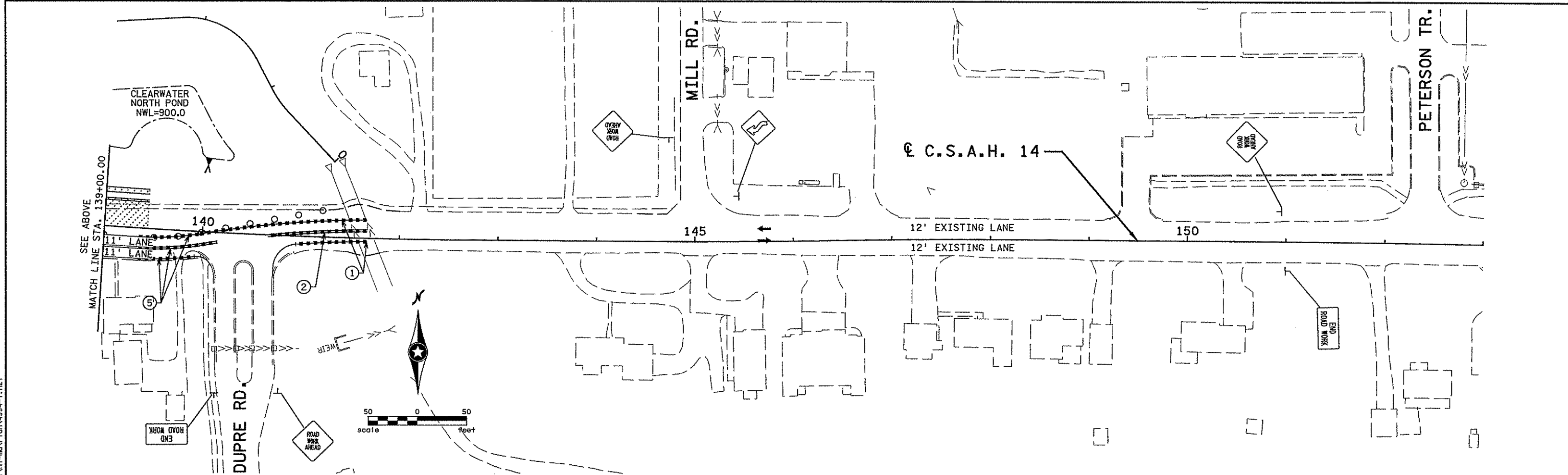
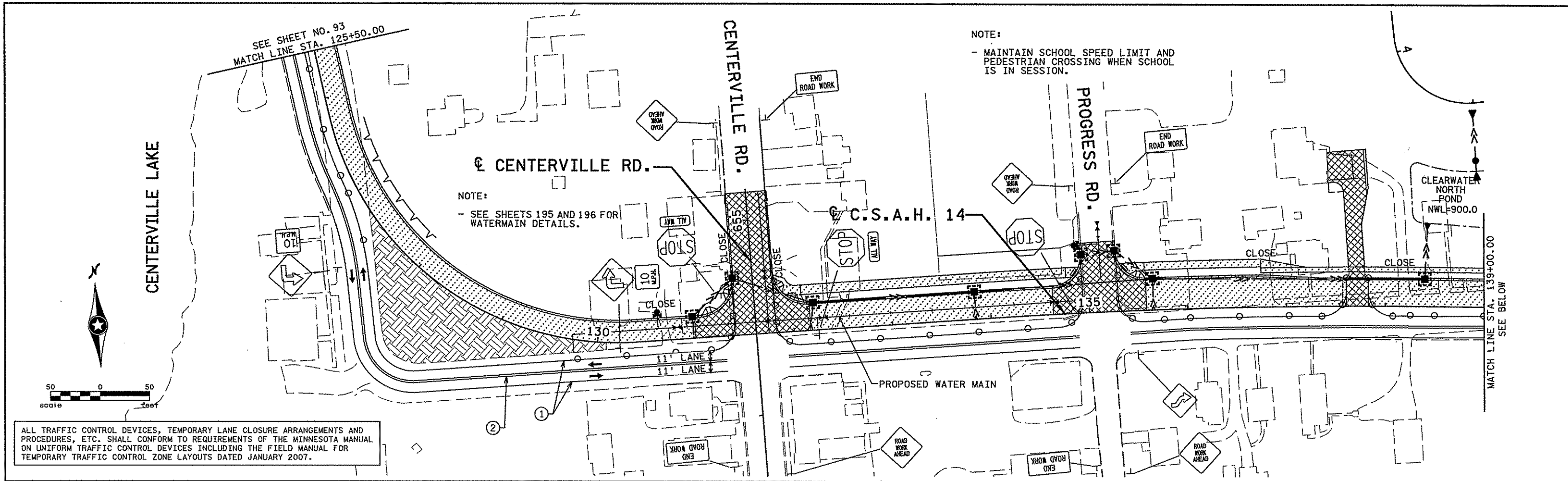
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ANOKA COUNTY  
 STAGING AND TRAFFIC CONTROL  
 C.S.A.H. 14  
 STAGE 2

SHEET  
 93  
 OF  
 492



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ANOKA COUNTY  
STAGING AND TRAFFIC CONTROL  
C.S.A.H. 14  
STAGE 2

SHEET  
94  
OF  
492

### LEGEND

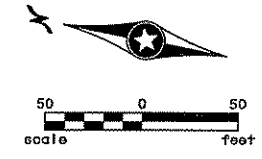
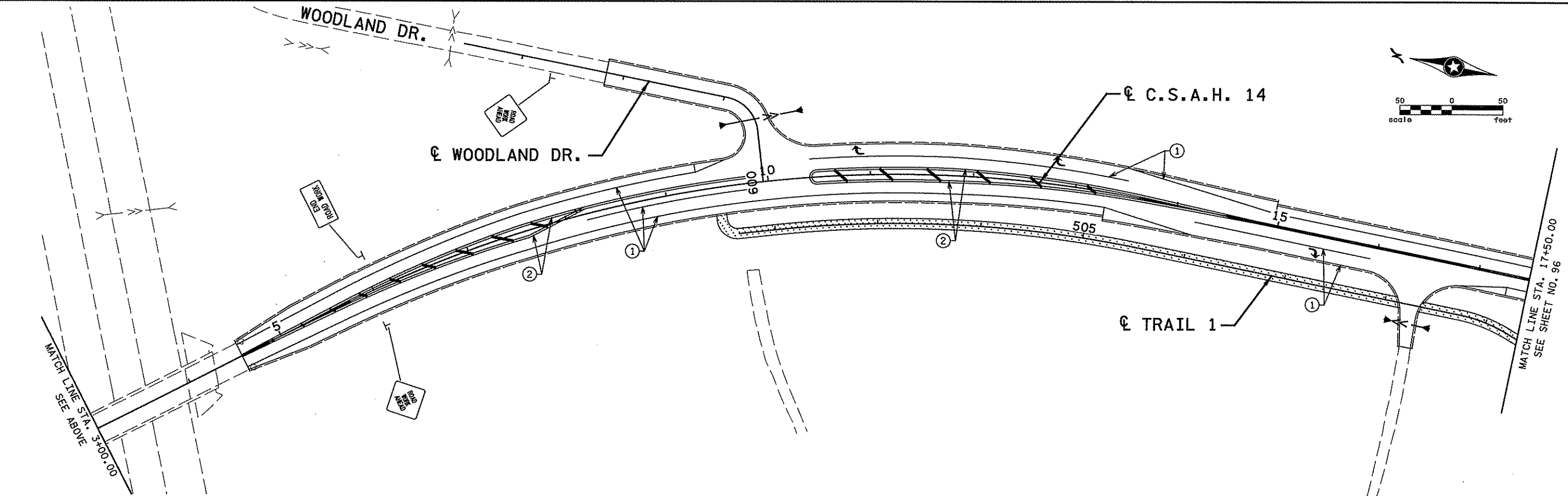
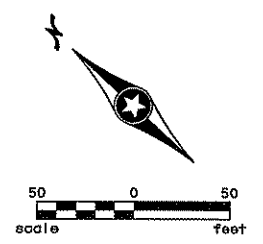
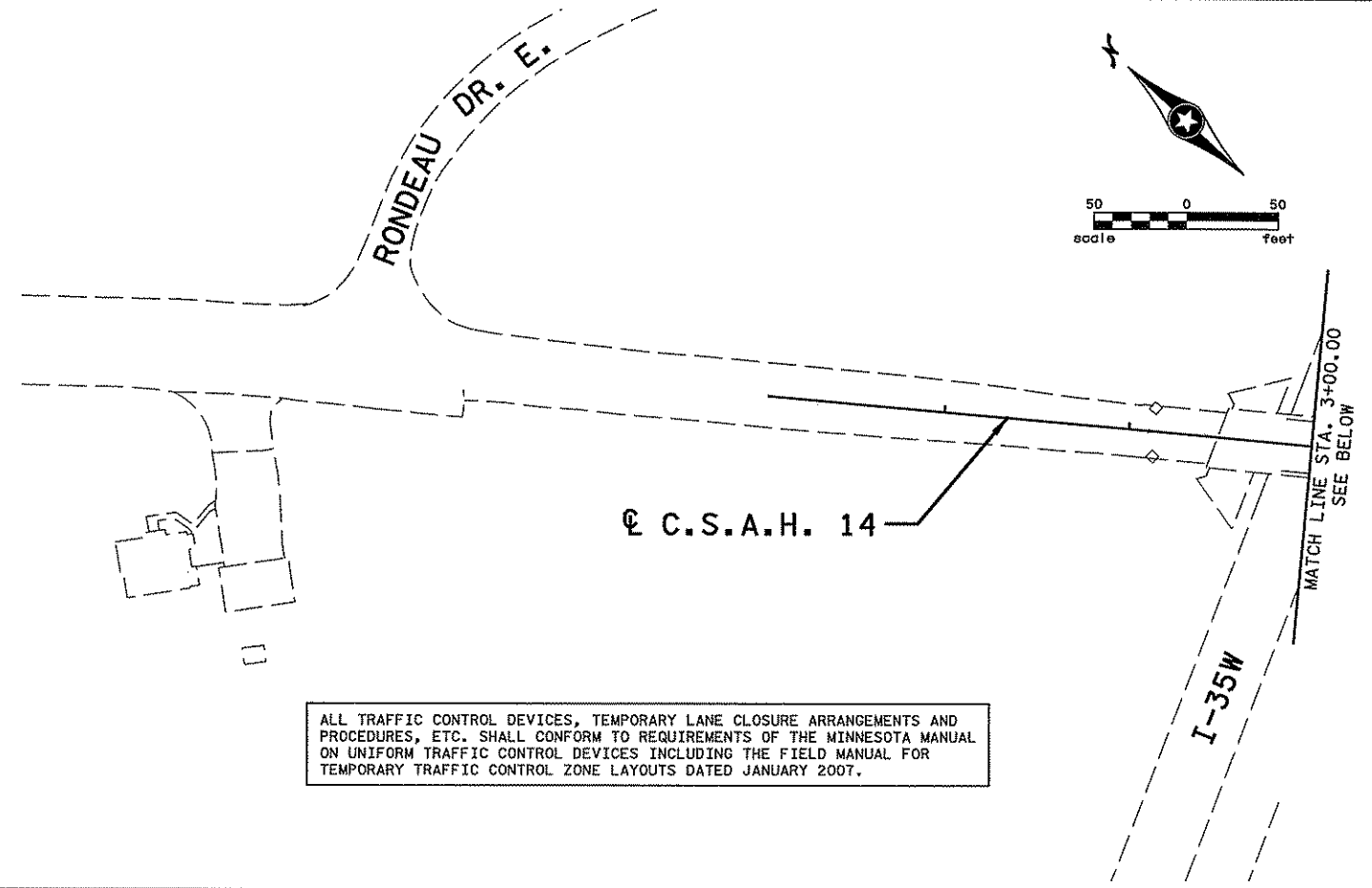
PERMANENT CONSTRUCTION THIS STAGE TEMPORARY CONSTRUCTION THIS STAGE CONSTRUCTION UNDER TRAFFIC THIS STAGE RAPID STABILIZATION METHOD 3 (W/ SEED MIXTURE 150TS) EROSION CONTROL BLANKETS CATEGORY 3 TRAFFIC LOCATION AND DIRECTION PORTABLE PRECAST CONCRETE BARRIER (PPCB) STD. PLATE 8337 IMPACT ATTENUATOR (50 MPH UNLESS NOTED OTHERWISE) REFLECTORIZED PLASTIC DRUM (50' SPACING)	SILT FENCE, TYPE MACHINE SLICED FLOATATION SILT CURTAIN - STILL WATER FLOATATION SILT CURTAIN - MOVING WATER PROPOSED CIP OR MODULAR BLOCK WALLS STEEL SHEET PILING (TEMPORARY) INLET PROTECTION PROPOSED CATCH BASIN PROPOSED MANHOLE/DROP INLET PROPOSED APRON PROPOSED STORM SEWER/CULVERT TYPE III BARRICADE (REFLECTORIZED BOTH SIDES) STANDARD SIGN (POST OR STAND MOUNTED) TEMPORARY RAISED PAVEMENT MARKINGS
---	--

THIS LEGEND APPLIES TO ALL STAGING PLAN SHEETS

- STAGING NOTES TO BE USED FOR ALL STAGING AND TRAFFIC CONTROL SHEETS:
- ① 4" SOLID LINE WHITE (PAINT)
  - ② 4" SOLID DOUBLE LINE YELLOW (PAINT)
  - ③ SEE DETOUR PLAN SHEET 80 FOR DETAILS AND QUANTITIES
  - ⑤ TEMPORARY RAISED PAVEMENT MARKERS (TRPM) AT 10' INTERVALS THROUGH TRANSITION AREAS

- GENERAL NOTES:
- INSTALL PERMANENT TURF ESTABLISHMENT AND EROSION CONTROL MEASURES ALONG THE PERMANENT CONSTRUCTION. SEE SHEETS 239 TO 247.
  - CONTRACTOR SHALL COORDINATE ALL GRADING OPERATIONS WITH UTILITY COMPANIES.
  - TYPE III BARRICADES WITH NO SIGN ATTACHMENTS ARE OMITTED FOR PLAN CLARITY.

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 Date: 3/20/07 License #: 41635

STATE PROJECT NO.  
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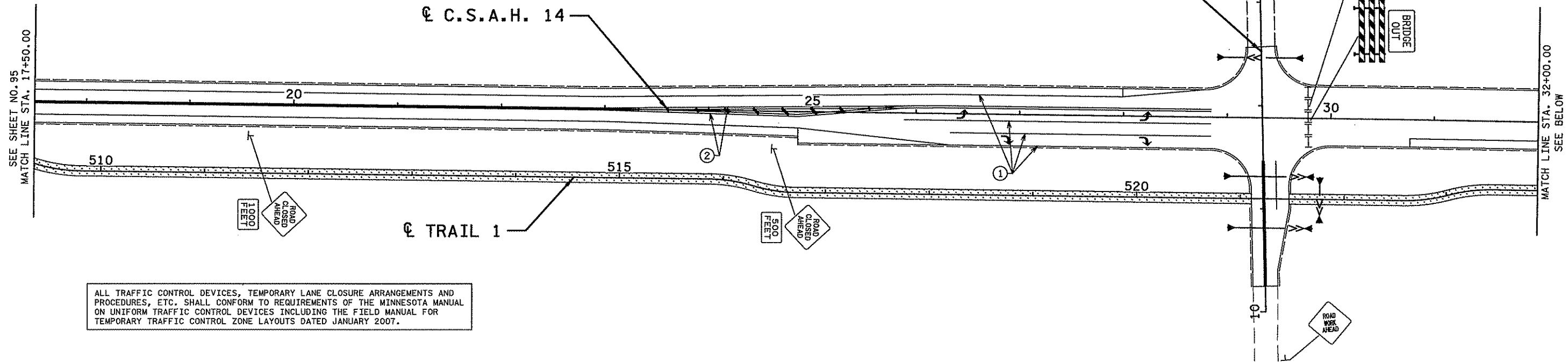
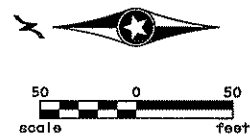
DRAWN BY  
S. MARTINS  
DESIGNED BY  
J. TOULOUSE  
CHECKED BY  
C. TRBOYEVICH  
COMM. NO. 4994



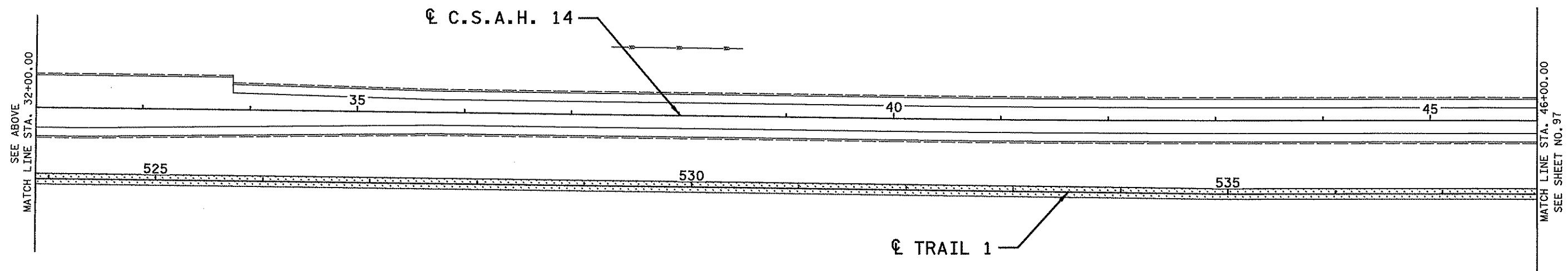
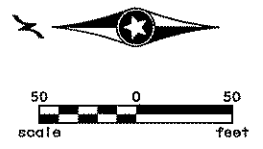
ANOKA COUNTY  
STAGING AND TRAFFIC CONTROL  
C.S.A.H. 14  
STAGE 3

SHEET  
95  
OF  
492





ALL TRAFFIC CONTROL DEVICES, TEMPORARY LANE CLOSURE ARRANGEMENTS AND PROCEDURES, ETC. SHALL CONFORM TO REQUIREMENTS OF THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES INCLUDING THE FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS DATED JANUARY 2007.



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 Date: 3/26/07 License #: 41635

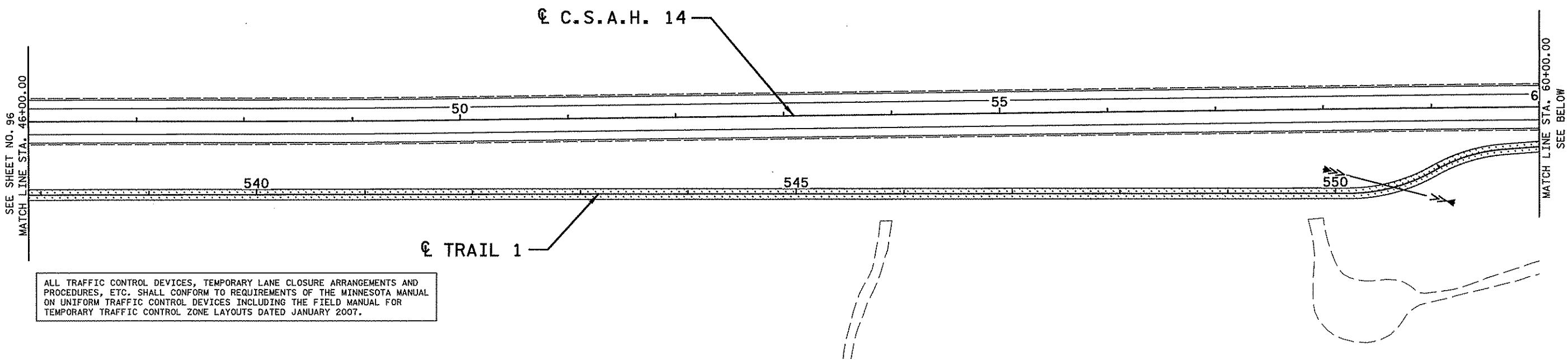
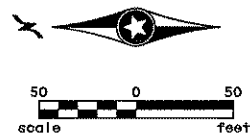
STATE PROJECT NO.  
S.P. 02-614-24, ETAL

DRAWN BY  
S. MARTINS  
 DESIGNED BY  
J. TOULOUSE  
 CHECKED BY  
C. TRBOYEVICH  
 COMM. NO. 4994



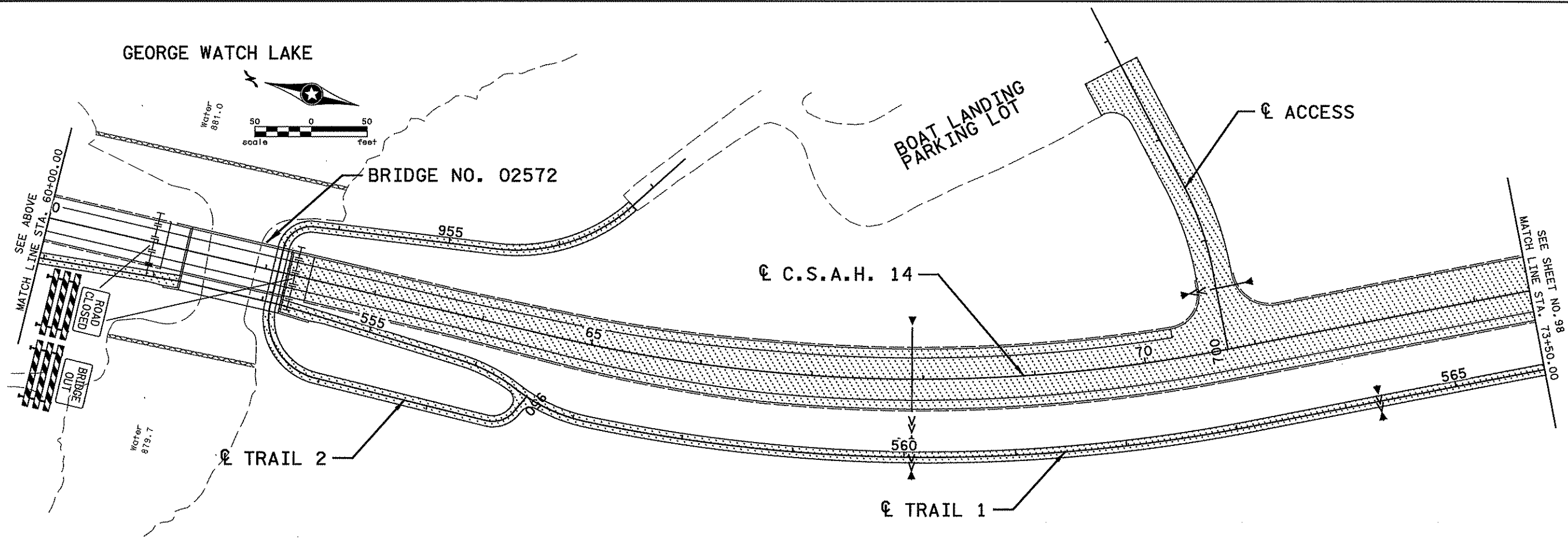
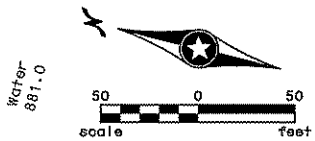
ANOKA COUNTY  
 STAGING AND TRAFFIC CONTROL  
 C.S.A.H. 14  
 STAGE 3

SHEET  
96  
OF  
492



ALL TRAFFIC CONTROL DEVICES, TEMPORARY LANE CLOSURE ARRANGEMENTS AND PROCEDURES, ETC. SHALL CONFORM TO REQUIREMENTS OF THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES INCLUDING THE FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS DATED JANUARY 2007.

GEORGE WATCH LAKE



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 Print Name: CHRISTOPHER M. TRBOYEVICH  
*Christopher M. Trbojevich*  
 Date: 3/26/07 License #: 41635

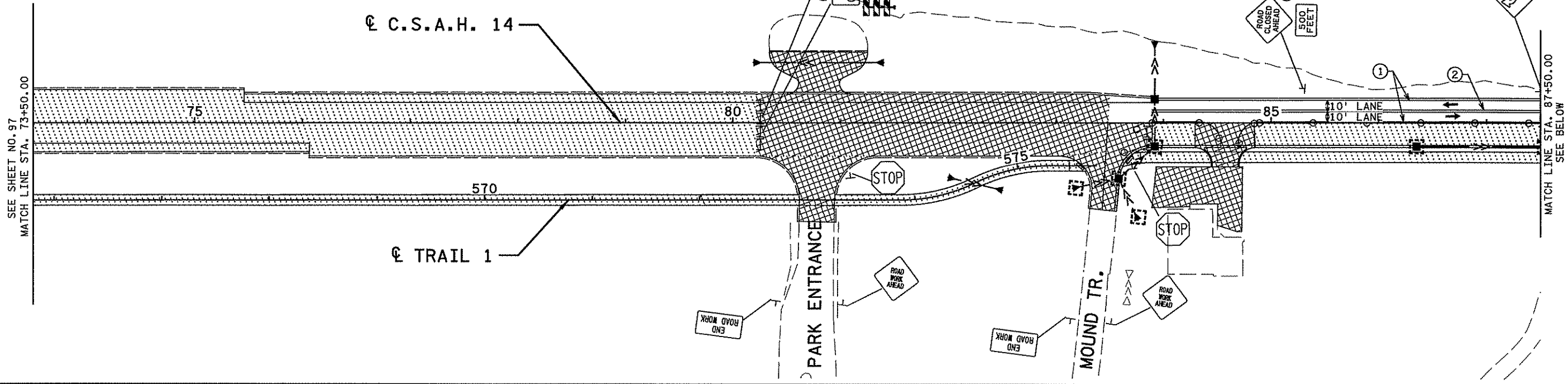
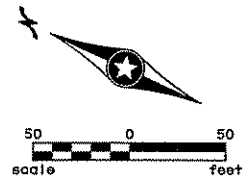
STATE PROJECT NO.  
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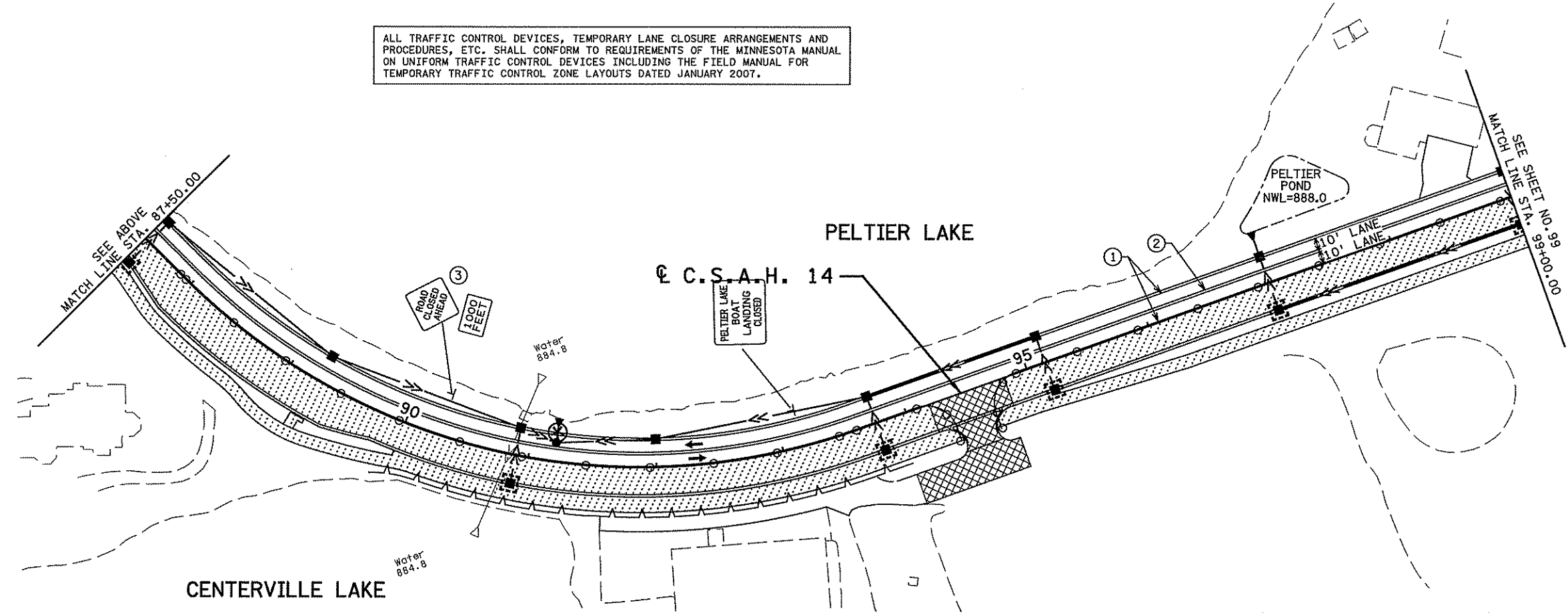
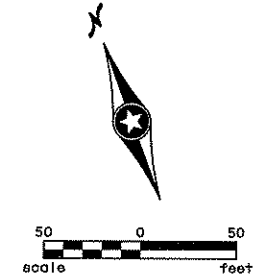


ANOKA COUNTY  
 STAGING AND TRAFFIC CONTROL  
 C.S.A.H. 14  
 STAGE 3

SHEET  
 97  
 OF  
 492



ALL TRAFFIC CONTROL DEVICES, TEMPORARY LANE CLOSURE ARRANGEMENTS AND PROCEDURES, ETC. SHALL CONFORM TO REQUIREMENTS OF THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES INCLUDING THE FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS DATED JANUARY 2007.



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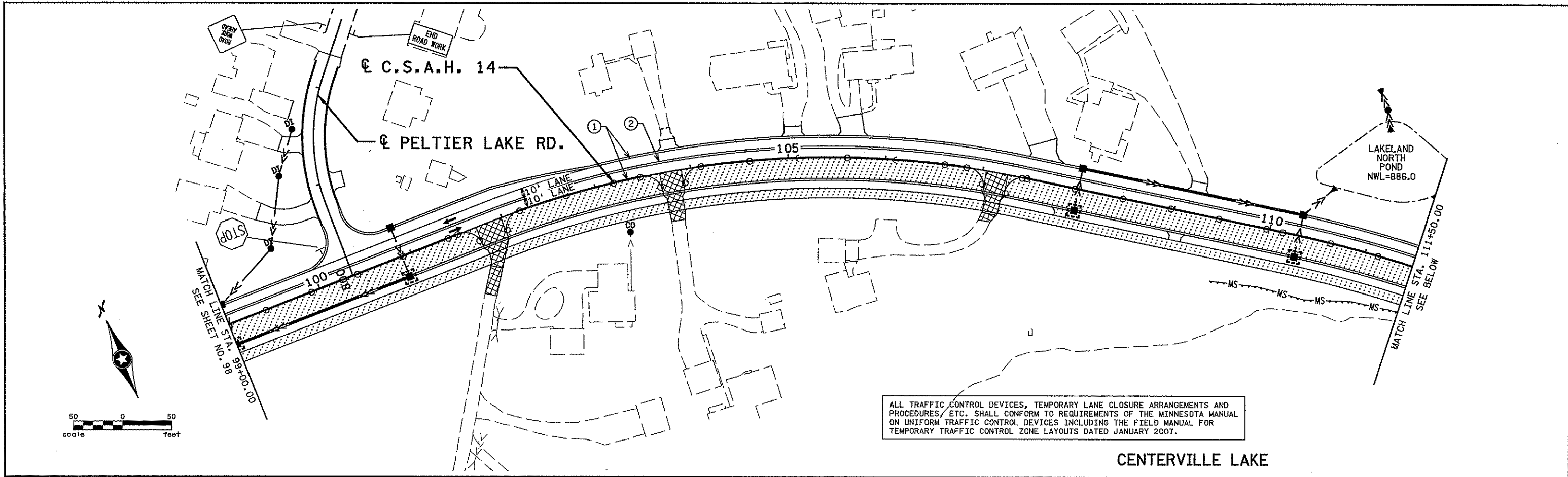
STATE PROJECT NO. S.P. 02-614-24, ETAL

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 DESIGNED BY J. TOULOUSE  
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 COMM. NO. 4994

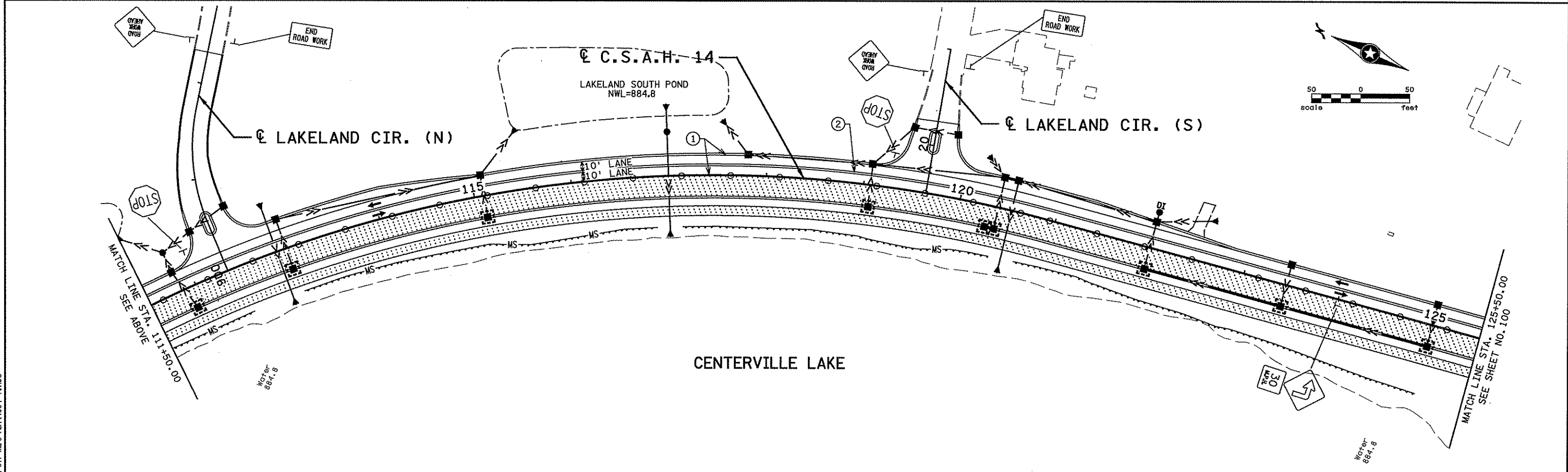


ANOKA COUNTY  
 STAGING AND TRAFFIC CONTROL  
 C.S.A.H. 14  
 STAGE 3

SHEET 98 OF 492



CENTERVILLE LAKE



CENTERVILLE LAKE

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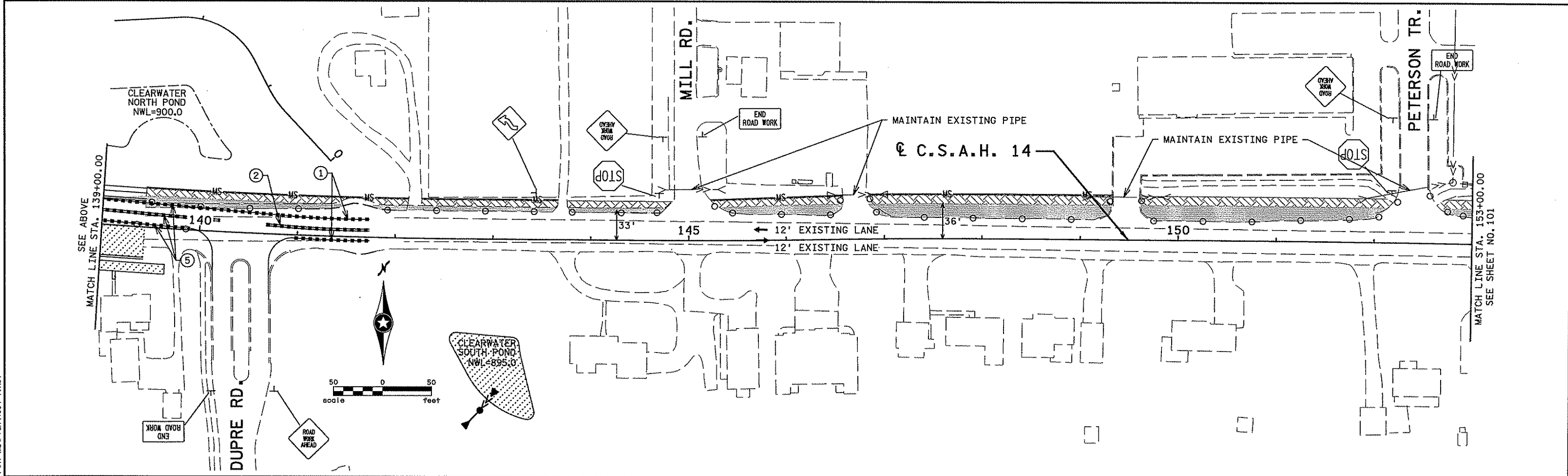
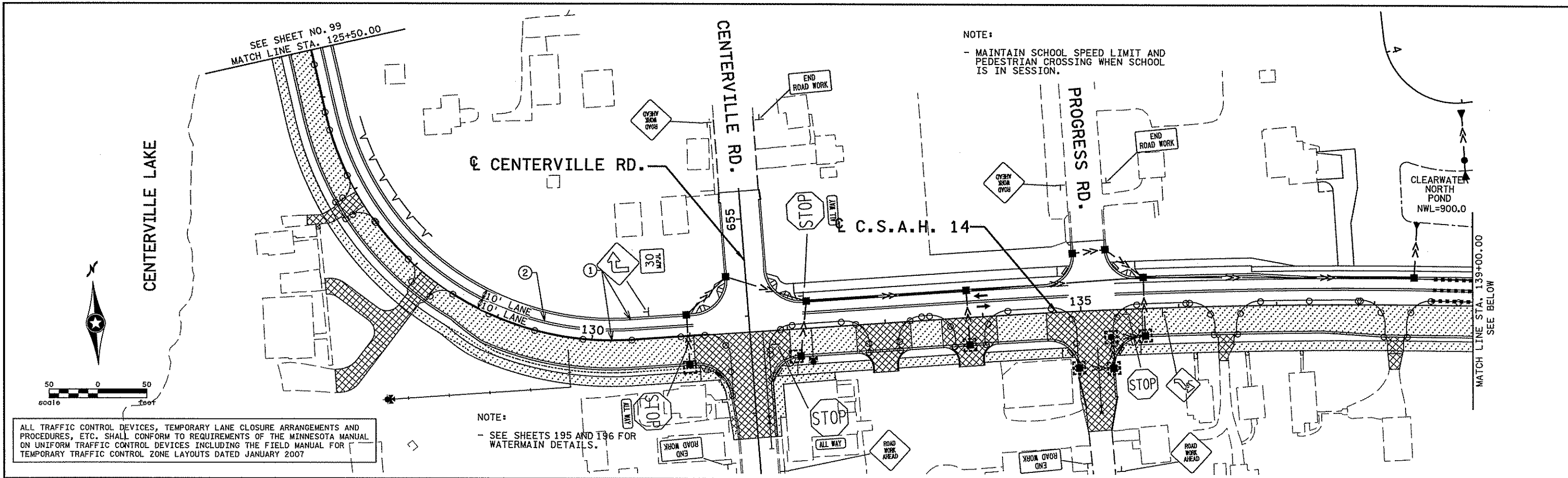
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ANOKA COUNTY  
 STAGING AND TRAFFIC CONTROL  
 C.S.A.H. 14  
 STAGE 3

SHEET 99  
 OF 92  
 492



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*Christopher M. Trbojevich*

Date: 3/26/07 License #: 41635

STATE PROJECT NO. S.P. 02-614-24, ETAL

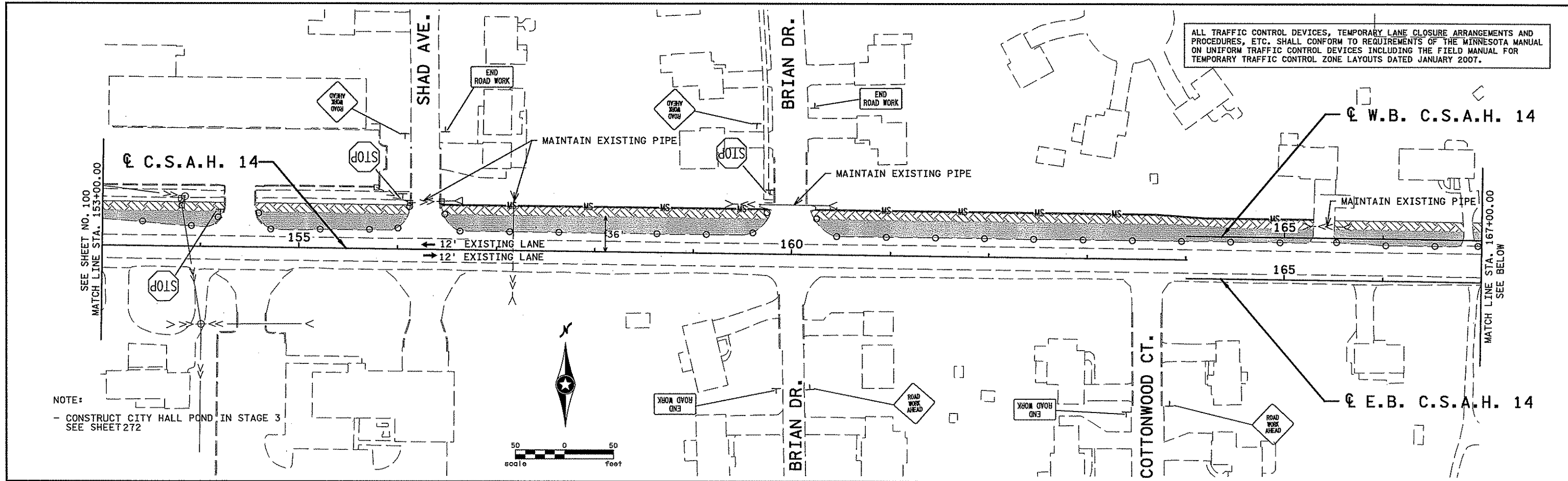
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 CHECKED BY C. TRBOYEVICH  
 COMM. NO. 4994



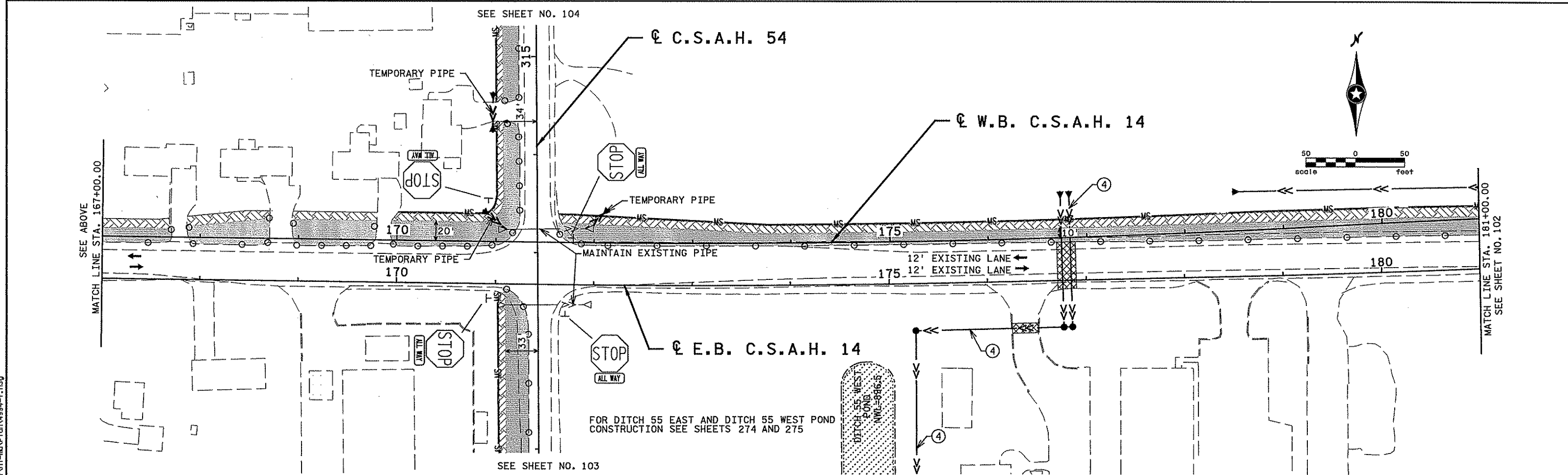
ANOKA COUNTY  
 STAGING AND TRAFFIC CONTROL  
 C.S.A.H. 14  
 STAGE 3

SHEET 100 OF 492

ALL TRAFFIC CONTROL DEVICES, TEMPORARY LANE CLOSURE ARRANGEMENTS AND PROCEDURES, ETC. SHALL CONFORM TO REQUIREMENTS OF THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES INCLUDING THE FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS DATED JANUARY 2007.



NOTE:  
- CONSTRUCT CITY HALL POND IN STAGE 3  
SEE SHEET 272



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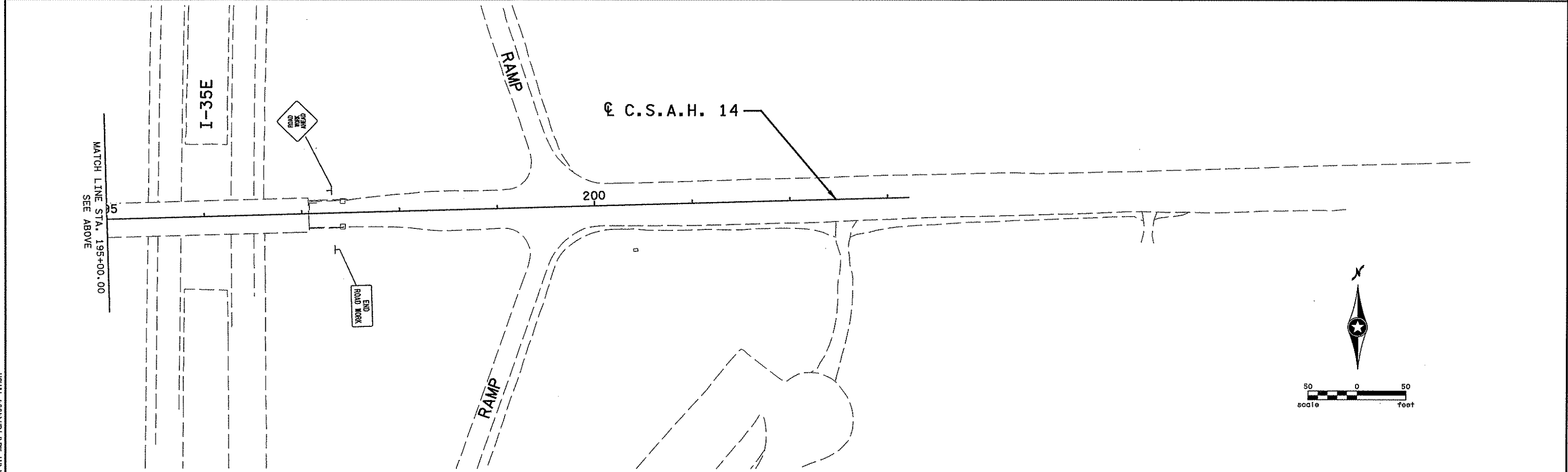
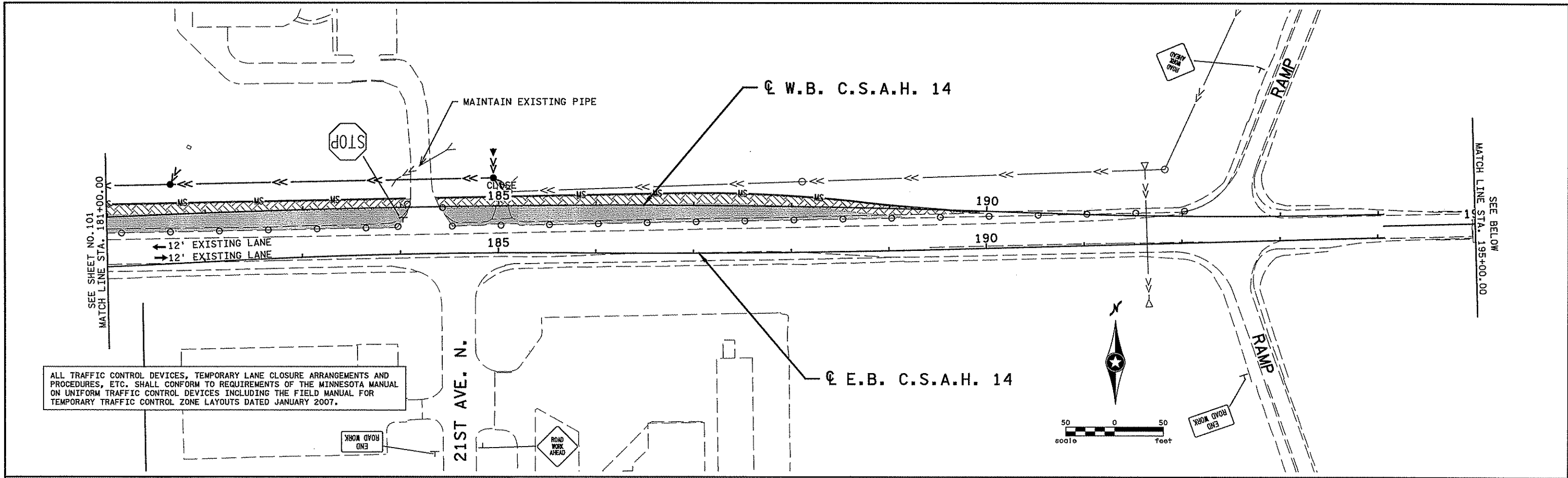
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*Christopher M. Trbojevich*  
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 DESIGNED BY  
J. TOULOUSE  
 CHECKED BY  
C. TRBOYEVICH  
 COMM. NO. 4994



ANOKA COUNTY  
 STAGING AND TRAFFIC CONTROL  
 C.S.A.H. 14  
 STAGE 3  
 SHEET 101 OF 492



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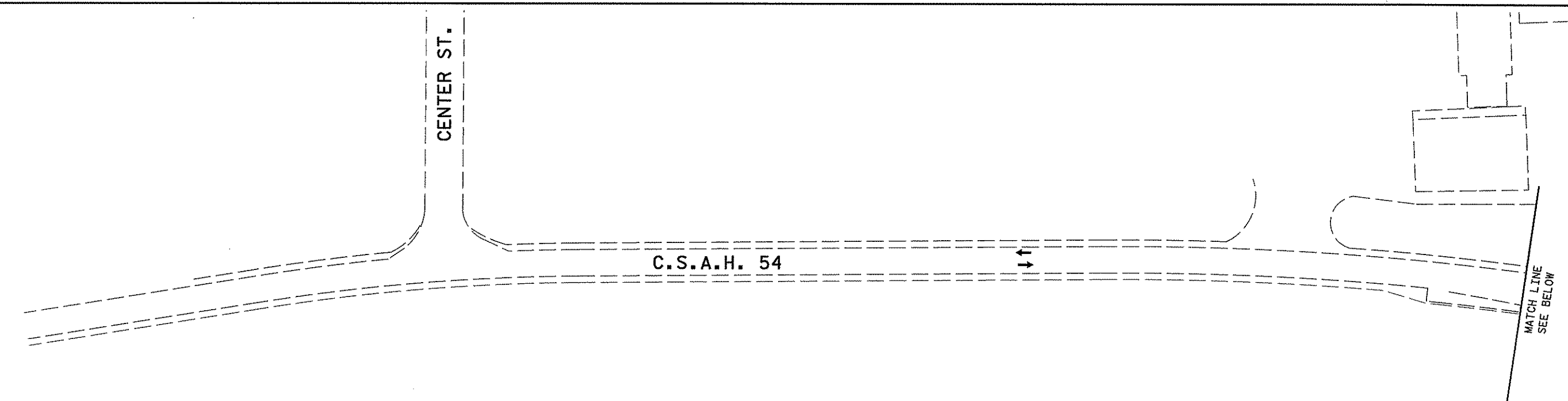
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COMM. NO. 4994

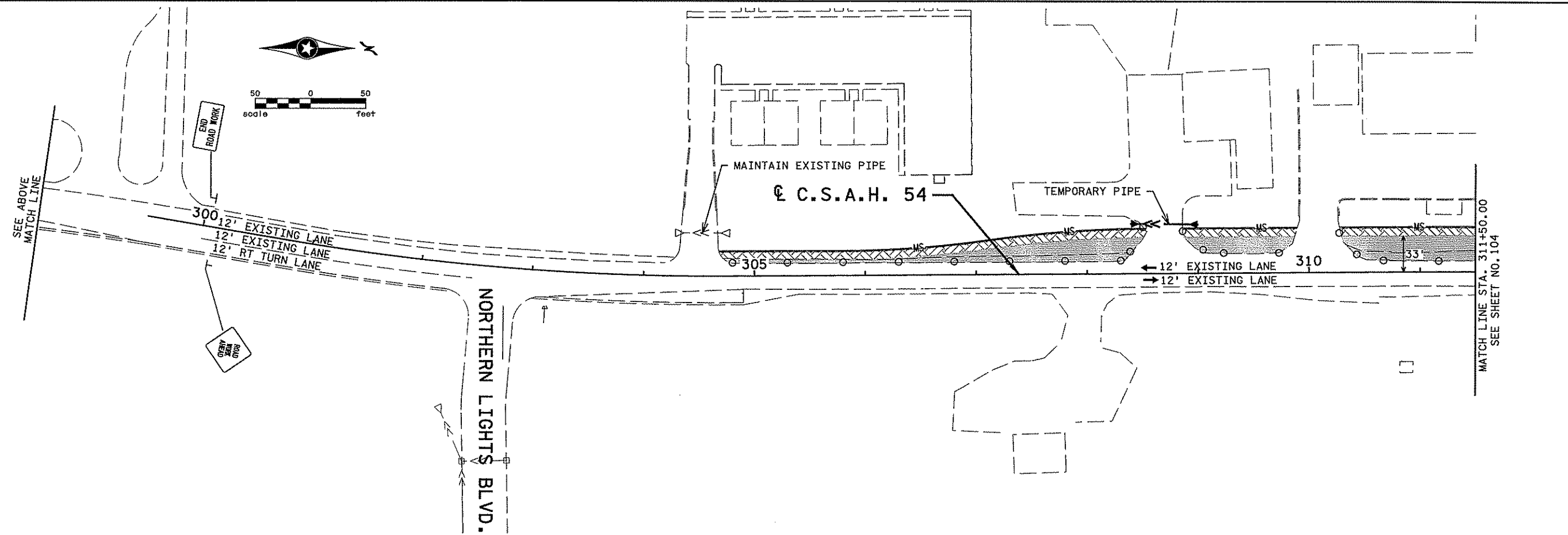


ANOKA COUNTY  
STAGING AND TRAFFIC CONTROL  
C.S.A.H. 14  
STAGE 3

SHEET  
102  
OF  
492



ALL TRAFFIC CONTROL DEVICES, TEMPORARY LANE CLOSURE ARRANGEMENTS AND PROCEDURES, ETC. SHALL CONFORM TO REQUIREMENTS OF THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES INCLUDING THE FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS DATED JANUARY 2007.



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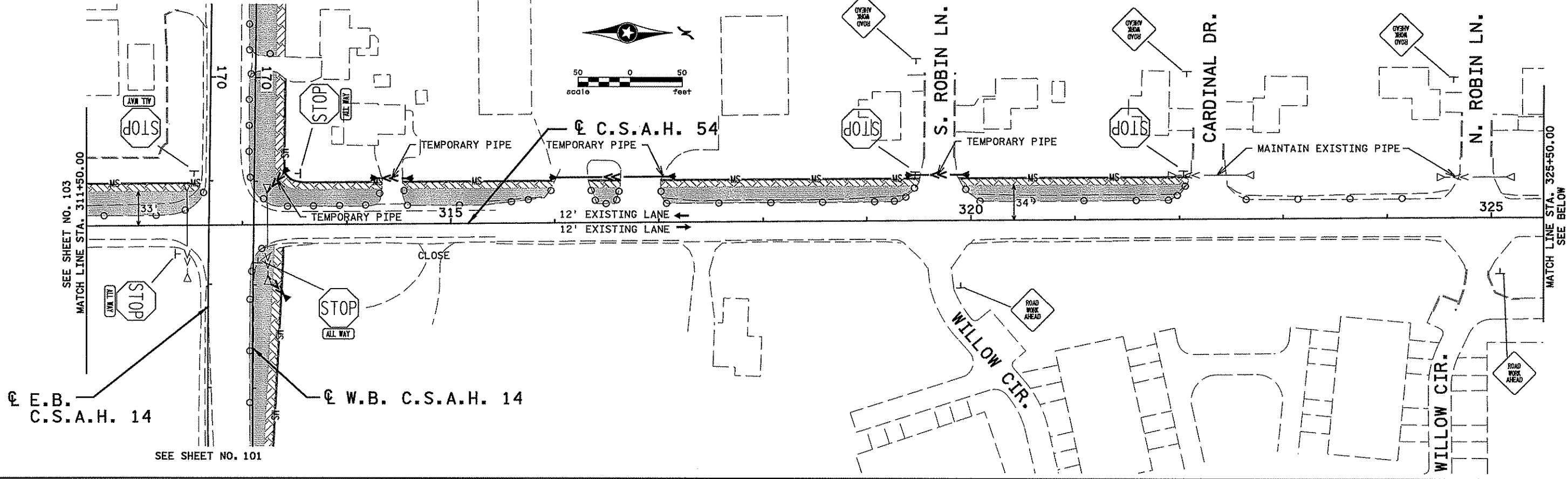
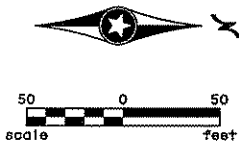


ANOKA COUNTY  
 STAGING AND TRAFFIC CONTROL  
 C.S.A.H. 14  
 STAGE 3

SHEET 103 OF 492



SEE SHEET NO. 101

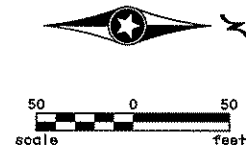


SEE SHEET NO. 103  
MATCH LINE STA. 311+50.00

MATCH LINE STA. 325+50.00  
SEE BELOW

SEE SHEET NO. 101

SEE ABOVE  
MATCH LINE STA. 325+50.00



ALL TRAFFIC CONTROL DEVICES, TEMPORARY LANE CLOSURE ARRANGEMENTS AND PROCEDURES, ETC. SHALL CONFORM TO REQUIREMENTS OF THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES INCLUDING THE FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS DATED JANUARY 2007.

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S. MARTINS  
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J. TOULOUSE  
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COMM. NO. 4994



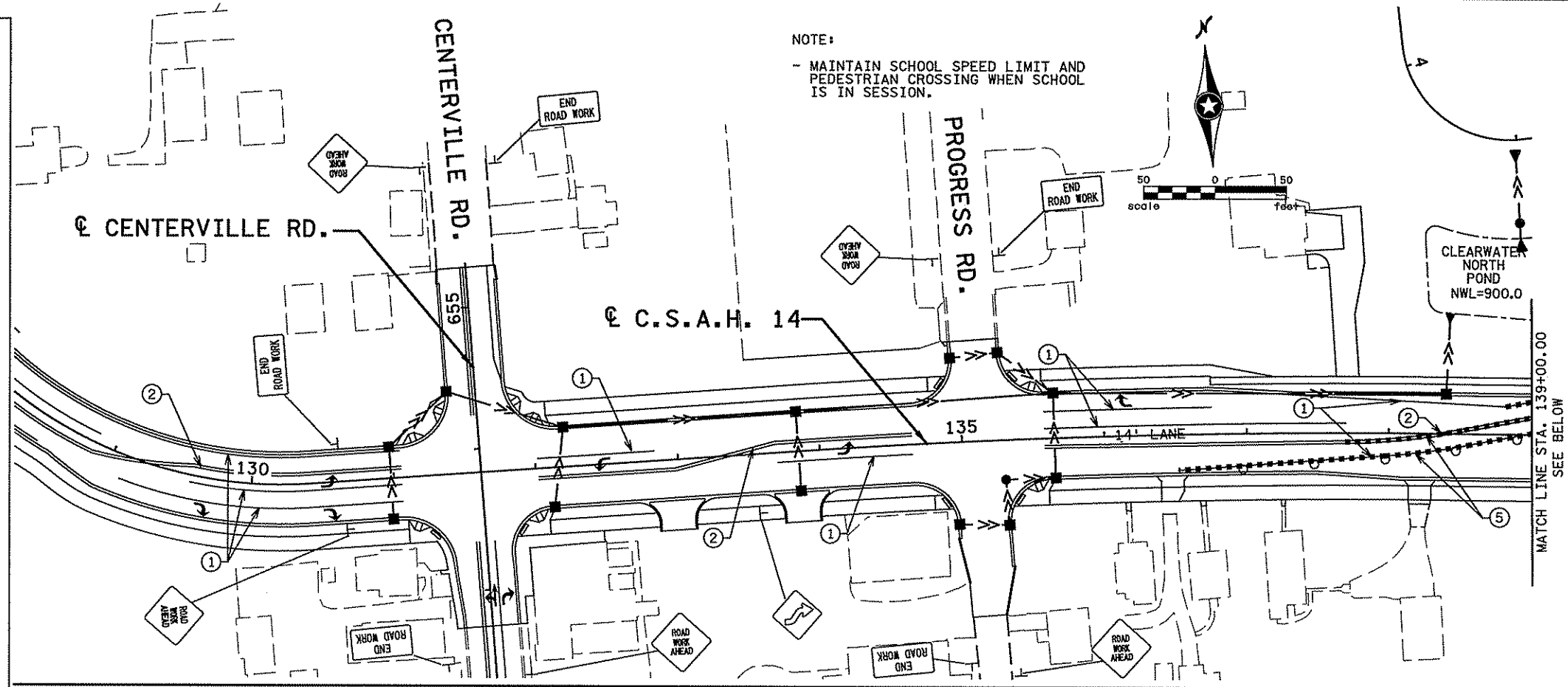
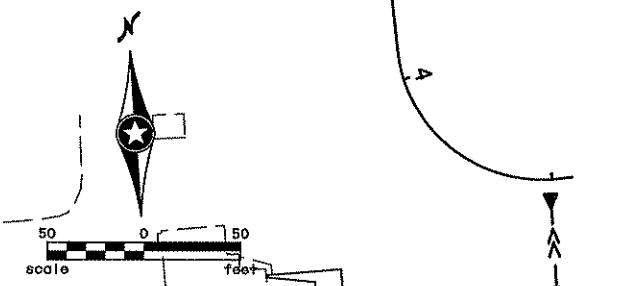
ANOKA COUNTY  
STAGING AND TRAFFIC CONTROL  
C.S.A.H. 14  
STAGE 3

SHEET  
104  
OF  
492

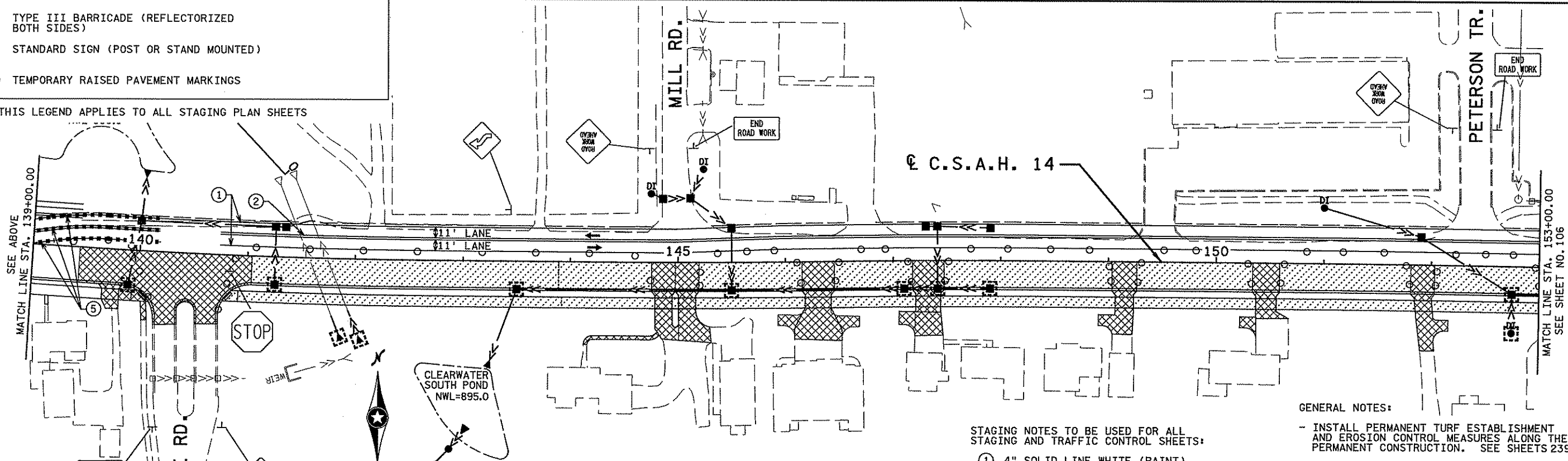
**LEGEND**

	PERMANENT CONSTRUCTION THIS STAGE
	TEMPORARY CONSTRUCTION THIS STAGE
	CONSTRUCTION UNDER TRAFFIC THIS STAGE
	RAPID STABILIZATION METHOD 3 (W/ SEED MIXTURE 150TS)
	EROSION CONTROL BLANKETS CATEGORY 3
	TRAFFIC LOCATION AND DIRECTION
	PORTABLE PRECAST CONCRETE BARRIER (PPCB) STD. PLATE 8337
	IMPACT ATTENUATOR (50 MPH UNLESS NOTED OTHERWISE)
	REFLECTORIZED PLASTIC DRUM (50' SPACING)
	SILT FENCE, TYPE MACHINE SLICED
	FLOATATION SILT CURTAIN - STILL WATER
	STEEL SHEET PILING (TEMPORARY)
	INLET PROTECTION
	PROPOSED CATCH BASIN
	PROPOSED MANHOLE/DROP INLET
	PROPOSED APRON
	PROPOSED STORM SEWER/CULVERT
	TYPE III BARRICADE (REFLECTORIZED BOTH SIDES)
	STANDARD SIGN (POST OR STAND MOUNTED)
	TEMPORARY RAISED PAVEMENT MARKINGS

NOTE:  
- MAINTAIN SCHOOL SPEED LIMIT AND PEDESTRIAN CROSSING WHEN SCHOOL IS IN SESSION.



THIS LEGEND APPLIES TO ALL STAGING PLAN SHEETS



ALL TRAFFIC CONTROL DEVICES, TEMPORARY LANE CLOSURE ARRANGEMENTS AND PROCEDURES, ETC. SHALL CONFORM TO REQUIREMENTS OF THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES INCLUDING THE FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS DATED JANUARY 2007.

STAGING NOTES TO BE USED FOR ALL STAGING AND TRAFFIC CONTROL SHEETS:

- ① 4" SOLID LINE WHITE (PAINT)
- ② 4" SOLID DOUBLE LINE YELLOW (PAINT)
- ⑤ TEMPORARY RAISED PAVEMENT MARKERS (TRPM) AT 10' INTERVALS THROUGH TRANSITION AREAS

- GENERAL NOTES:
- INSTALL PERMANENT TURF ESTABLISHMENT AND EROSION CONTROL MEASURES ALONG THE PERMANENT CONSTRUCTION. SEE SHEETS 239 TO 247.
  - CONTRACTOR SHALL COORDINATE ALL GRADING OPERATIONS WITH UTILITY COMPANIES.
  - TYPE III BARRICADES WITH NO SIGN ATTACHMENTS ARE OMITTED FOR PLAN CLARITY.

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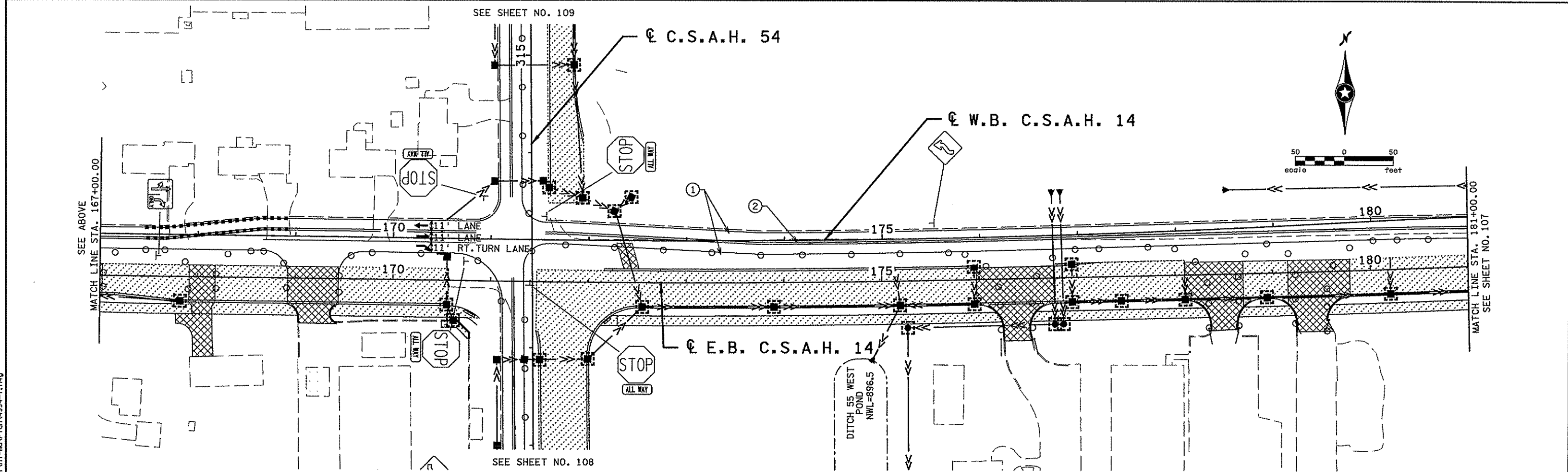
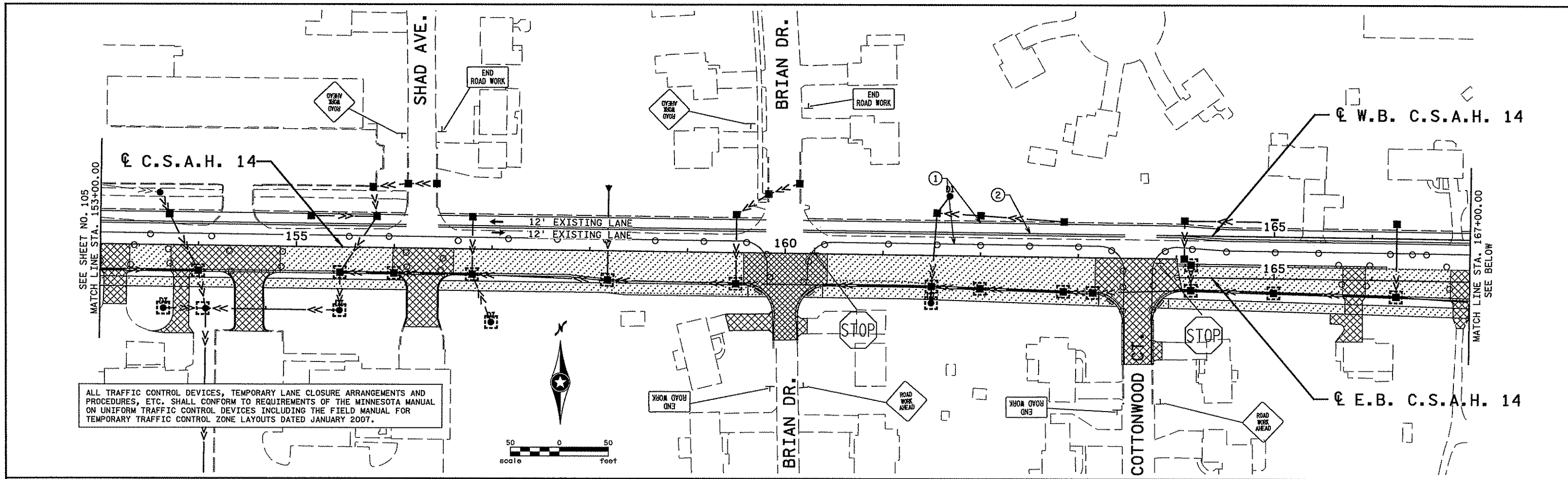
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Print Name: CHRISTOPHER M. TRBOYEVICH  
*Christopher M. Trbovich*  
Date: 3/26/07 License #: 41635

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DESIGNED BY J. TOLLOUSE  
CHECKED BY C. TRBOYEVICH  
COMM. NO. 4994



ANOKA COUNTY  
STAGING AND TRAFFIC CONTROL  
C.S.A.H. 14  
STAGE 4

SHEET  
105  
OF  
492



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NO	DATE	BY	CKD	APPR	REVISION

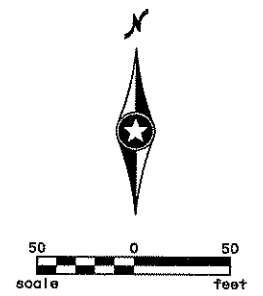
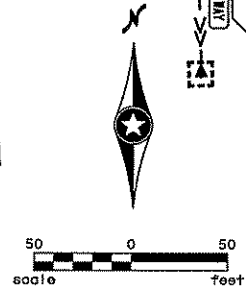
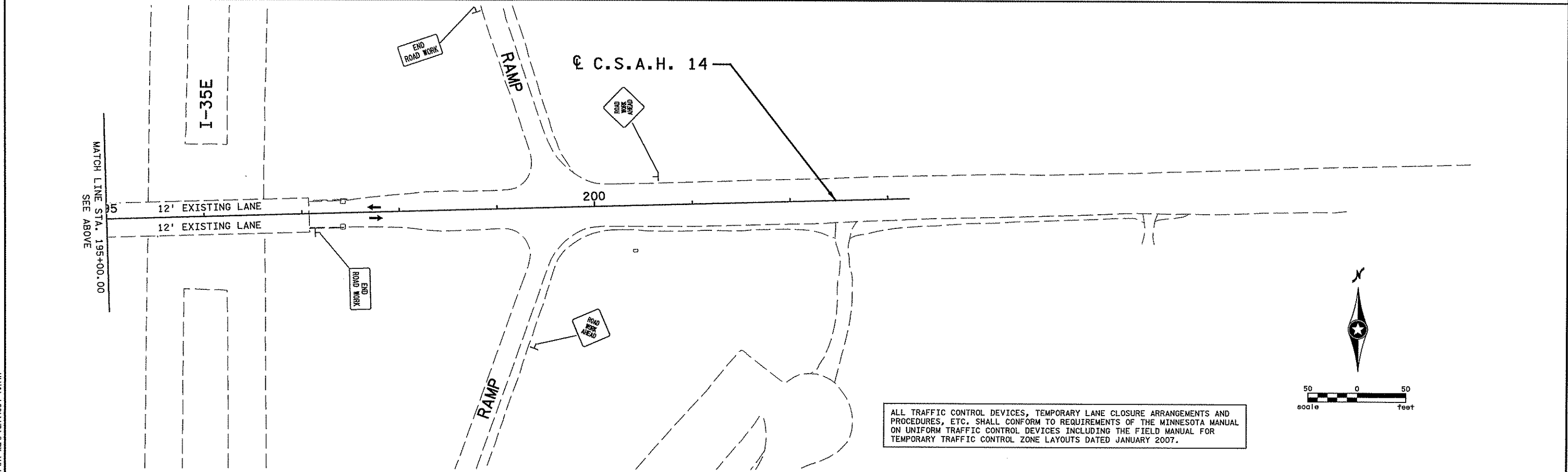
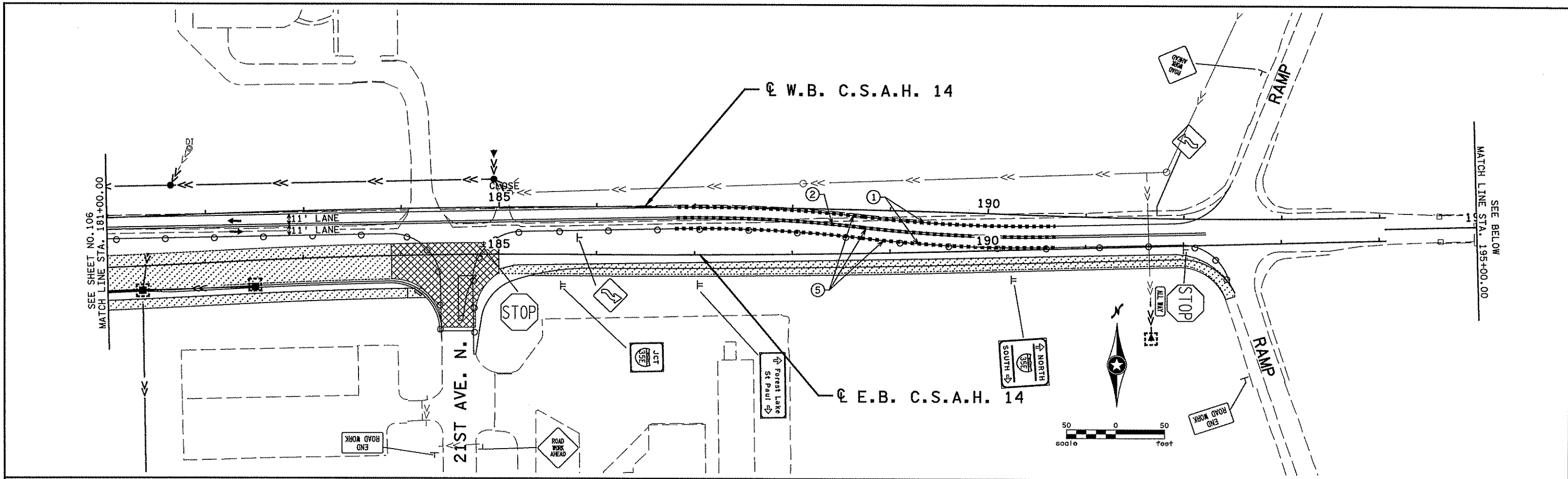
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ANOKA COUNTY  
 STAGING AND TRAFFIC CONTROL  
 C.S.A.H. 14  
 STAGE 4

SHEET  
 106  
 OF  
 492



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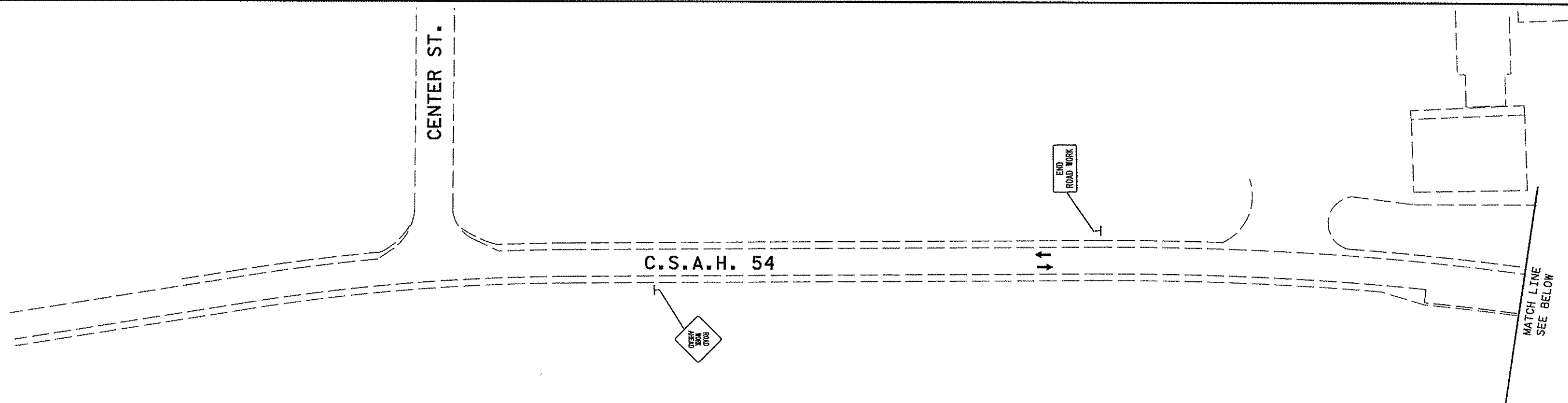
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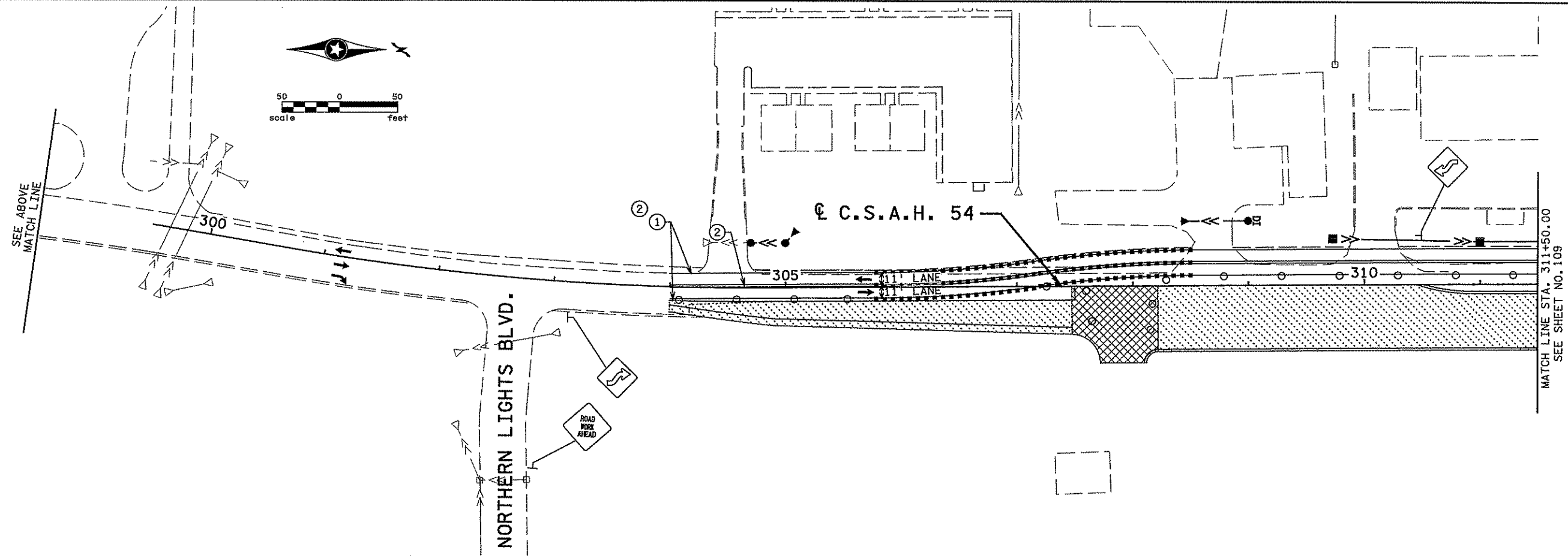
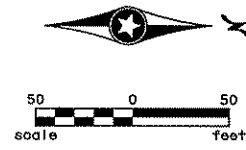


ANOKA COUNTY  
STAGING AND TRAFFIC CONTROL  
C.S.A.H. 14  
STAGE 4

SHEET  
107  
OF  
492



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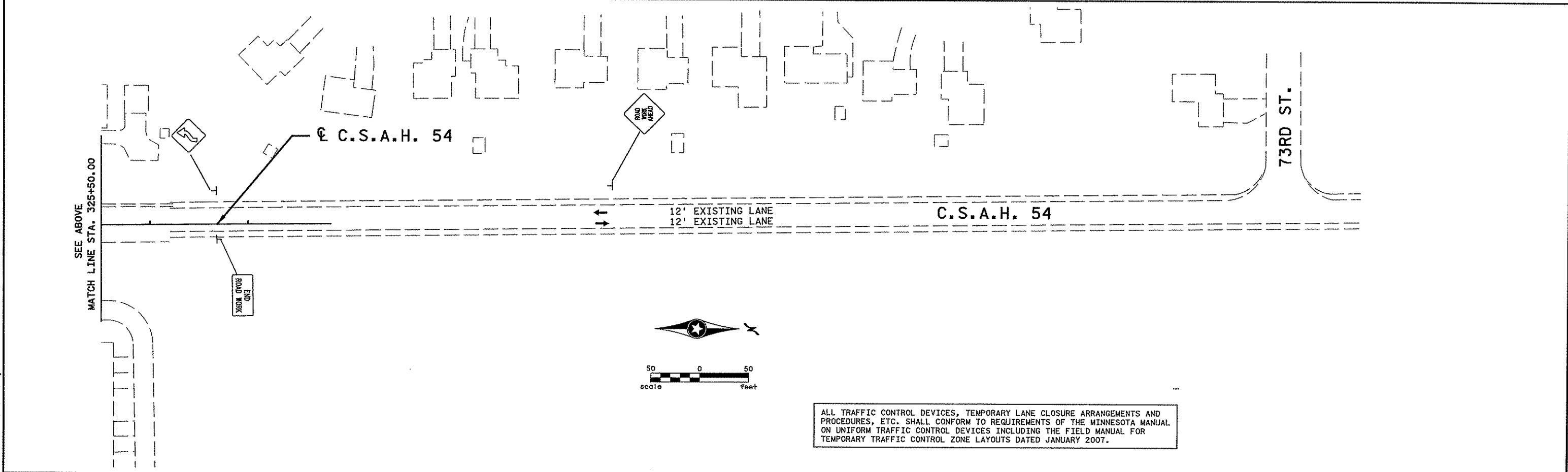
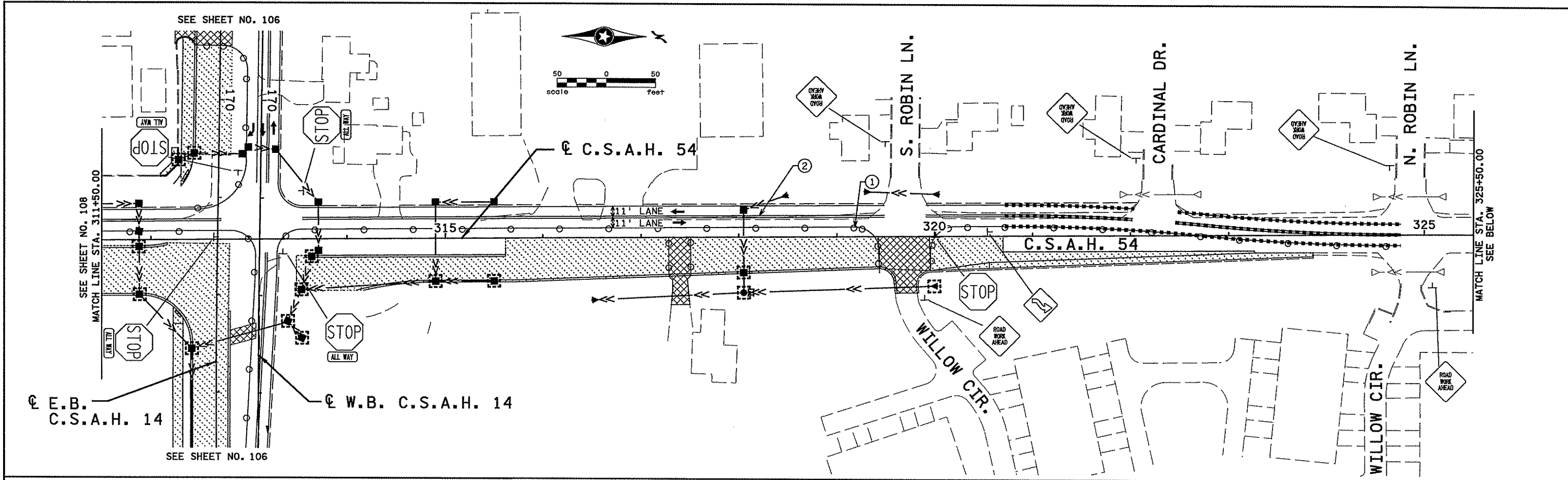
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ANOKA COUNTY  
 STAGING AND TRAFFIC CONTROL  
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 STAGE 4

SHEET 108 OF 492



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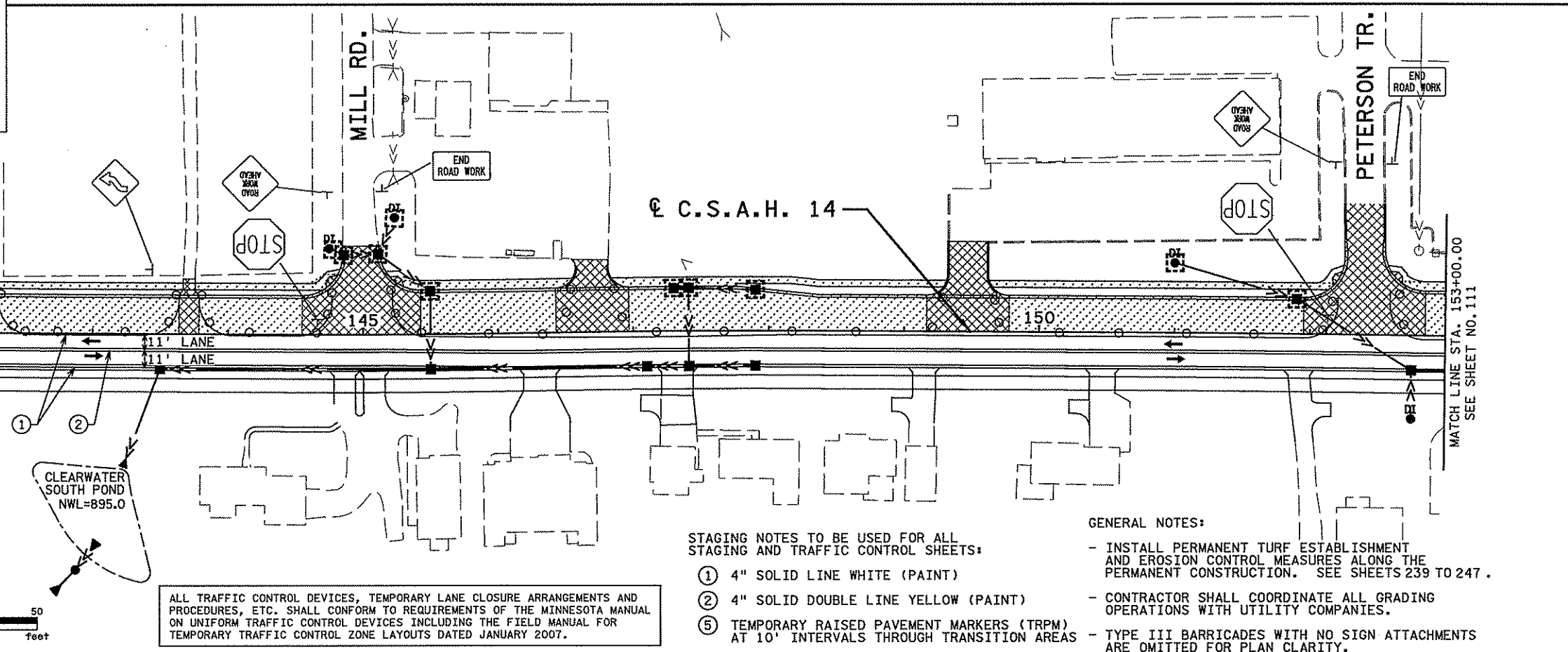
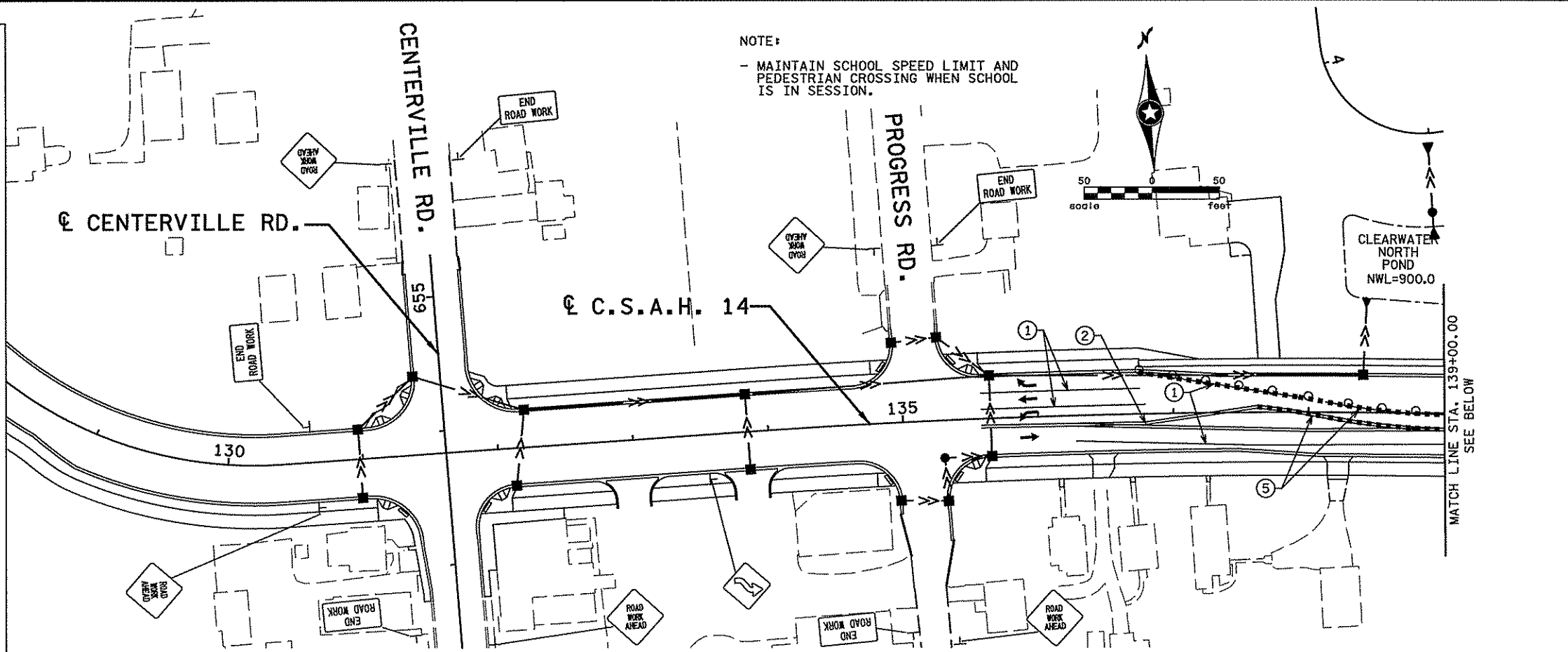
ANOKA COUNTY  
 STAGING AND TRAFFIC CONTROL  
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 STAGE 4

SHEET  
109  
OF  
492

LEGEND	
	PERMANENT CONSTRUCTION THIS STAGE
	TEMPORARY CONSTRUCTION THIS STAGE
	CONSTRUCTION UNDER TRAFFIC THIS STAGE
	RAPID STABILIZATION METHOD 3 (W/ SEED MIXTURE 150TS)
	EROSION CONTROL BLANKETS CATEGORY 3
	TRAFFIC LOCATION AND DIRECTION
	PORTABLE PRECAST CONCRETE BARRIER (PPCB) STD. PLATE 8337
	IMPACT ATTENUATOR (50 MPH UNLESS NOTED OTHERWISE)
	REFLECTORIZED PLASTIC DRUM (50' SPACING)
	SILT FENCE, TYPE MACHINE SLICED
	FLOATATION SILT CURTAIN - STILL WATER
	STEEL SHEET PILING (TEMPORARY)
	INLET PROTECTION
	PROPOSED CATCH BASIN
	PROPOSED MANHOLE/DROP INLET
	PROPOSED APRON
	PROPOSED STORM SEWER/CULVERT
	TYPE III BARRICADE (REFLECTORIZED BOTH SIDES)
	STANDARD SIGN (POST OR STAND MOUNTED)
	TEMPORARY RAISED PAVEMENT MARKINGS

THIS LEGEND APPLIES TO ALL STAGING PLAN SHEETS

NOTE:  
- MAINTAIN SCHOOL SPEED LIMIT AND PEDESTRIAN CROSSING WHEN SCHOOL IS IN SESSION.



STAGING NOTES TO BE USED FOR ALL STAGING AND TRAFFIC CONTROL SHEETS:

- ① 4" SOLID LINE WHITE (PAINT)
- ② 4" SOLID DOUBLE LINE YELLOW (PAINT)
- ⑤ TEMPORARY RAISED PAVEMENT MARKERS (TRPM) AT 10' INTERVALS THROUGH TRANSITION AREAS

GENERAL NOTES:

- INSTALL PERMANENT TURF ESTABLISHMENT AND EROSION CONTROL MEASURES ALONG THE PERMANENT CONSTRUCTION. SEE SHEETS 239 TO 247.
- CONTRACTOR SHALL COORDINATE ALL GRADING OPERATIONS WITH UTILITY COMPANIES.
- TYPE III BARRICADES WITH NO SIGN ATTACHMENTS ARE OMITTED FOR PLAN CLARITY.

ALL TRAFFIC CONTROL DEVICES, TEMPORARY LANE CLOSURE ARRANGEMENTS AND PROCEDURES, ETC. SHALL CONFORM TO REQUIREMENTS OF THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES INCLUDING THE FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS DATED JANUARY 2007.

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Print Name: CHRISTOPHER M. TRBOYEVICH  
*Christopher M. Trbojevich*  
Date: 3/26/07 License #: 41635

STATE PROJECT NO. S.P. 02-614-24, ETAL

DRAWN BY S. MARTINS  
DESIGNED BY J. TOULOUSE  
CHECKED BY C. TRBOYEVICH  
COMM. NO. 4994

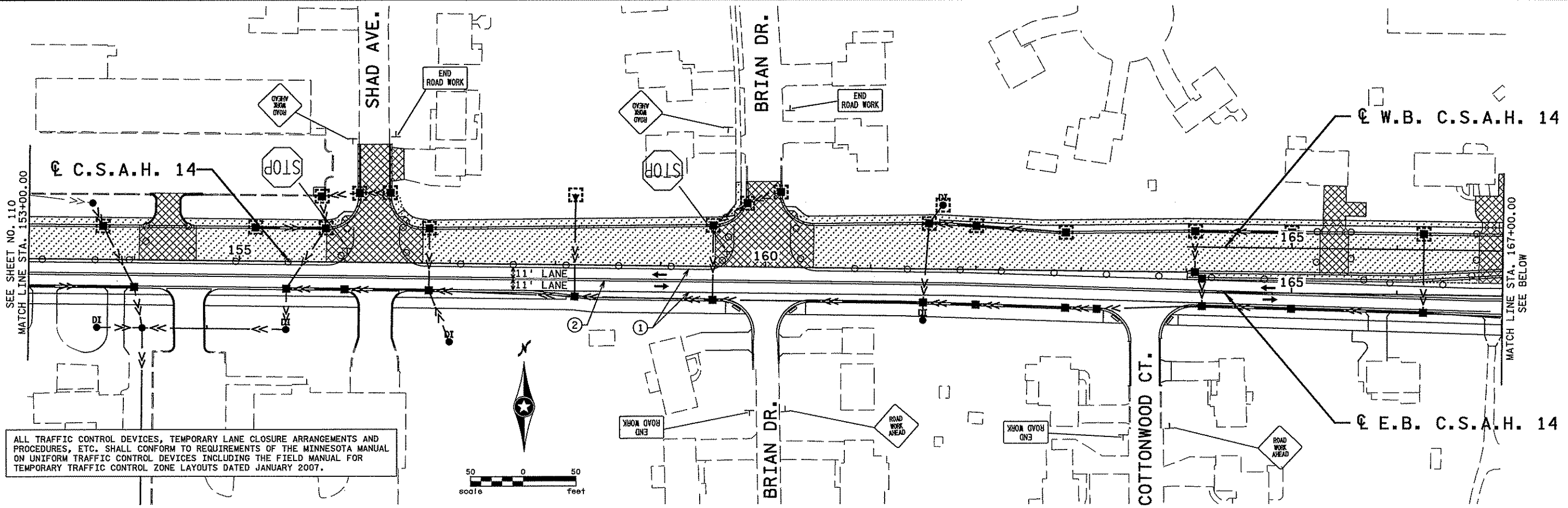


ANOKA COUNTY  
STAGING AND TRAFFIC CONTROL  
C.S.A.H. 14  
STAGE 5

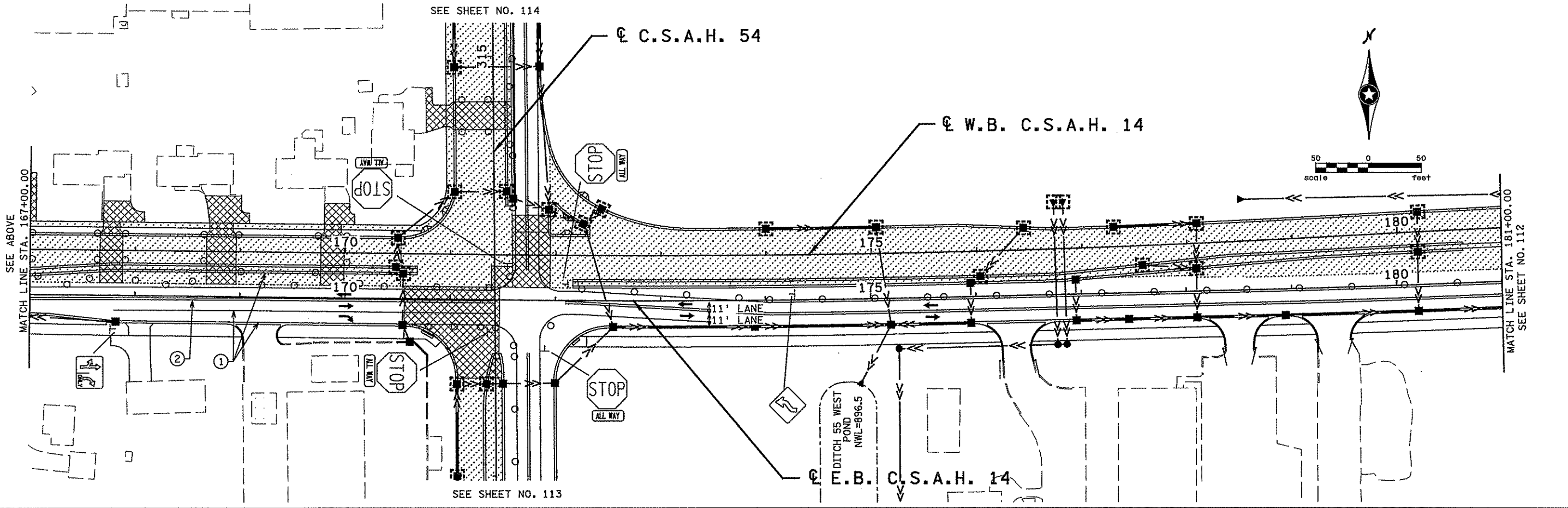
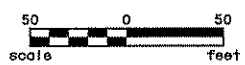
SHEET 110 OF 492

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NO	DATE	BY	CHKD	APPR	REVISION

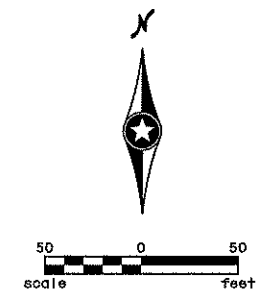


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SEE ABOVE  
MATCH LINE STA. 167+00.00

MATCH LINE STA. 181+00.00  
SEE SHEET NO. 112



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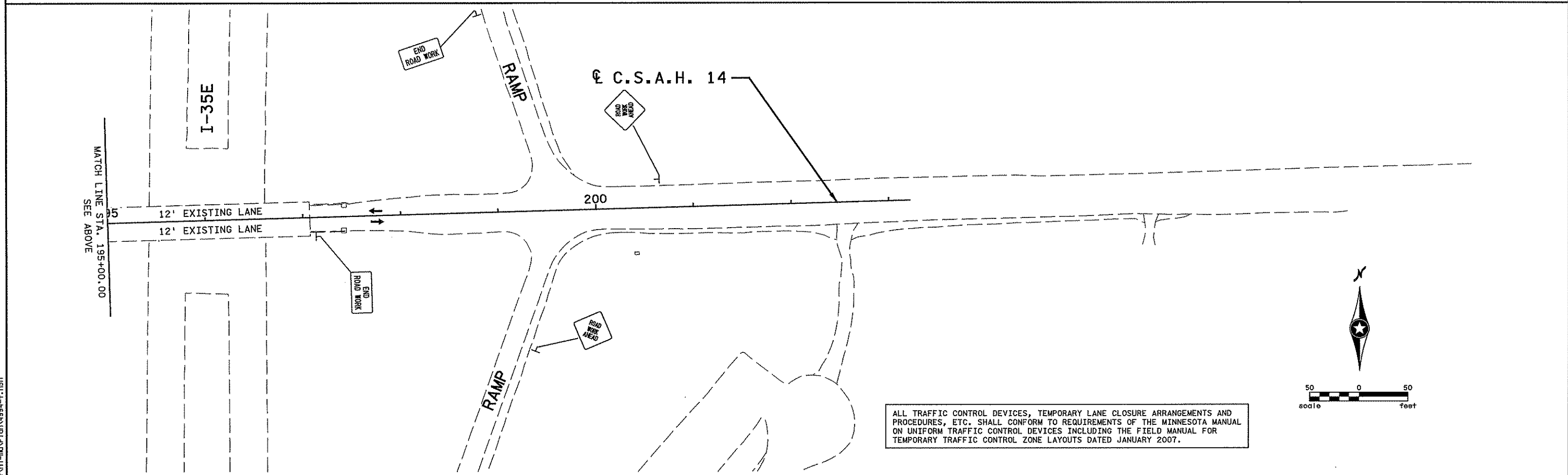
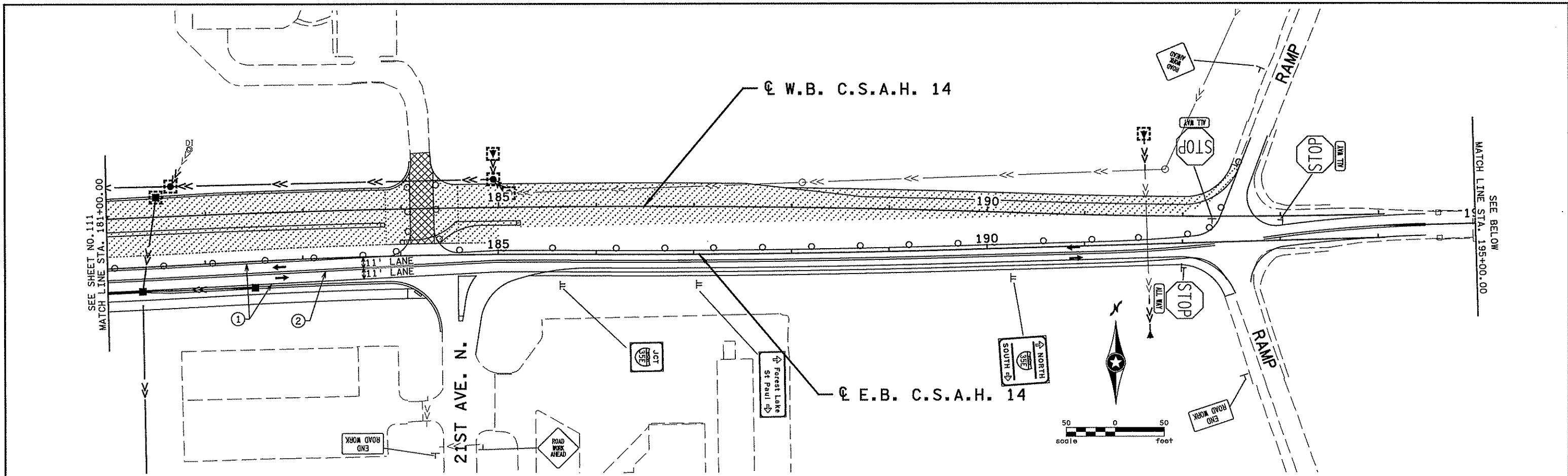
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S. MARTINS  
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ANOKA COUNTY  
STAGING AND TRAFFIC CONTROL  
C.S.A.H. 14  
STAGE 5

SHEET  
111  
OF  
492





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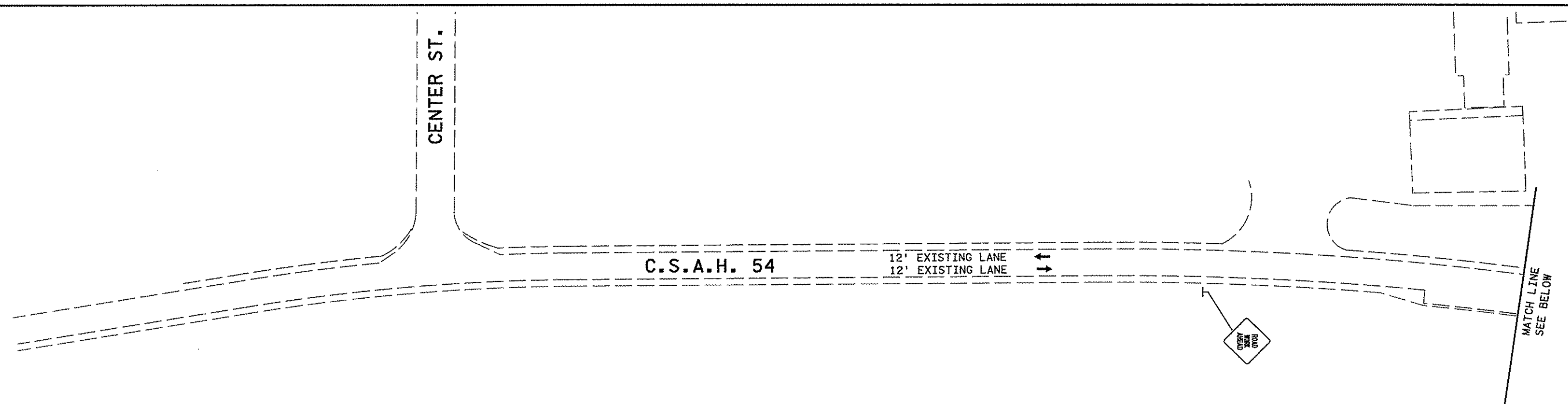


ANOKA COUNTY  
 STAGING AND TRAFFIC CONTROL  
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 STAGE 5

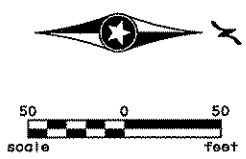
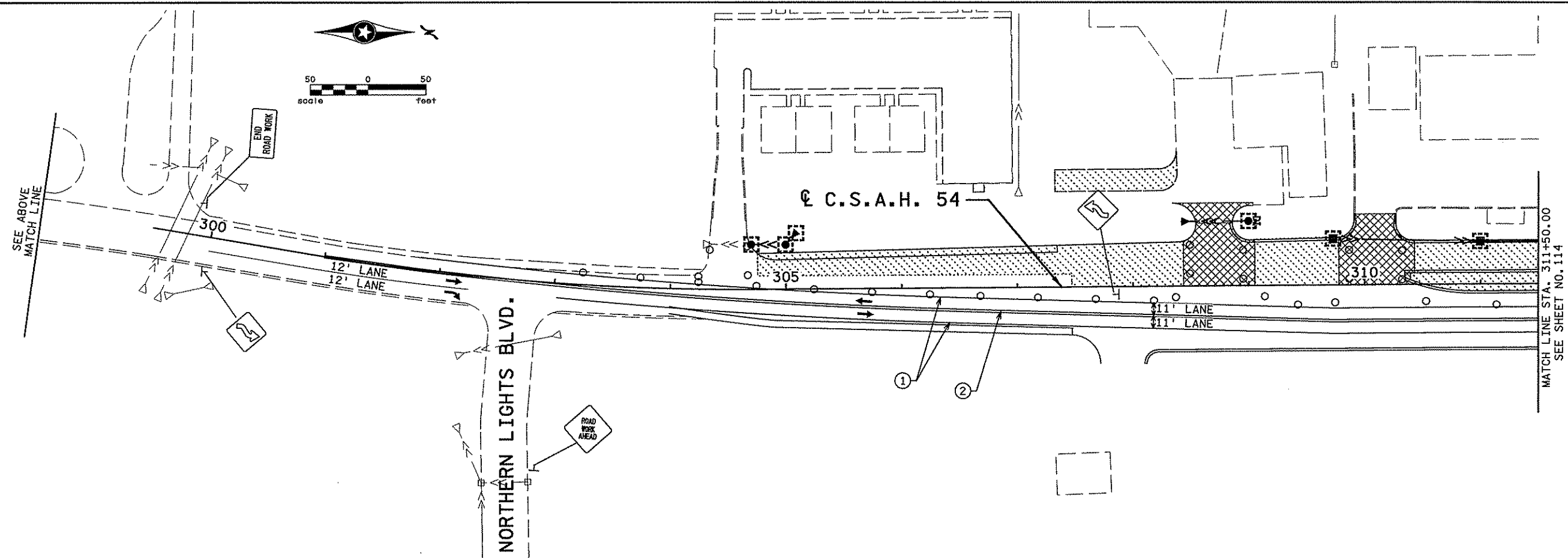
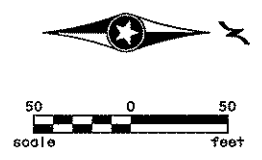
SHEET 112 OF 492

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NO	DATE	BY	CKD	APPR	REVISION



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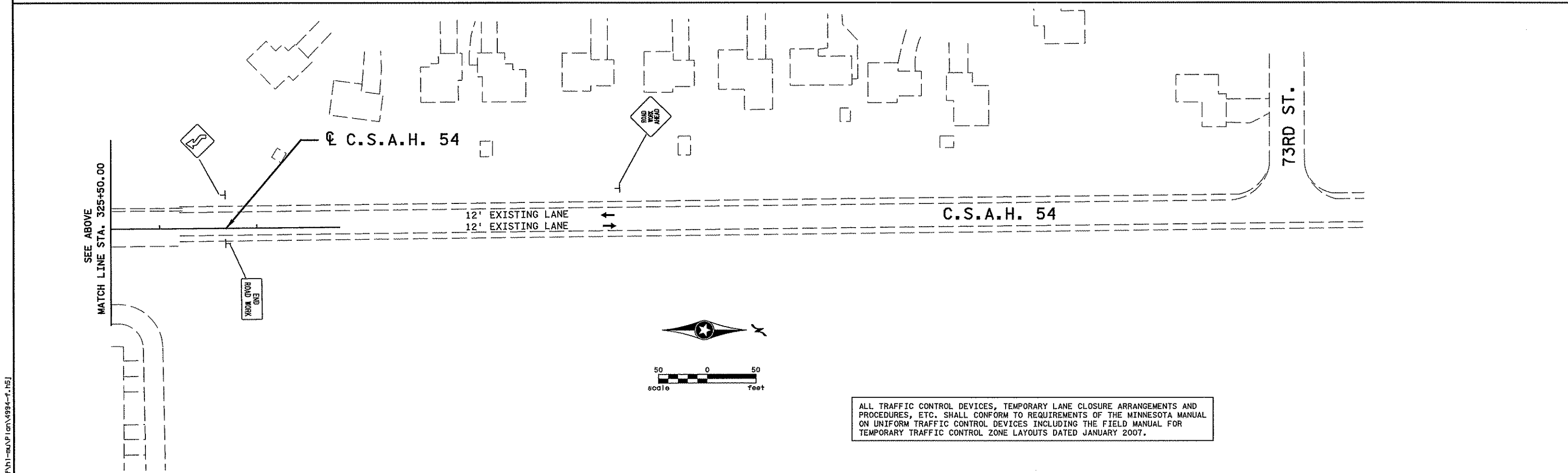
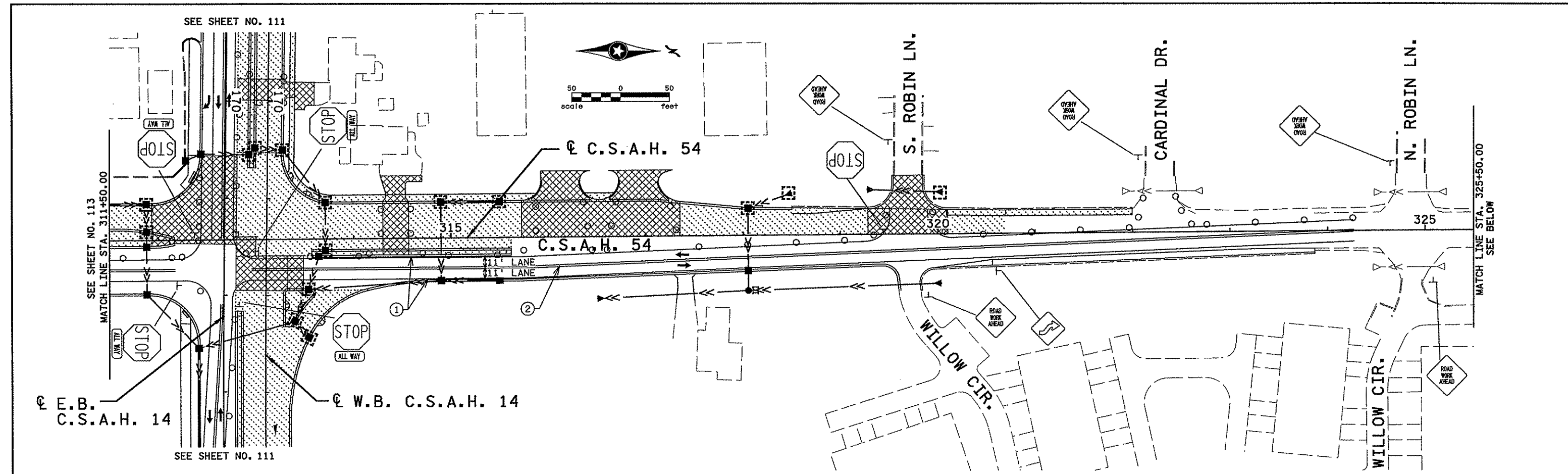
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ANOKA COUNTY  
 STAGING AND TRAFFIC CONTROL  
 C.S.A.H. 14  
 STAGE 5

SHEET 113 OF 492



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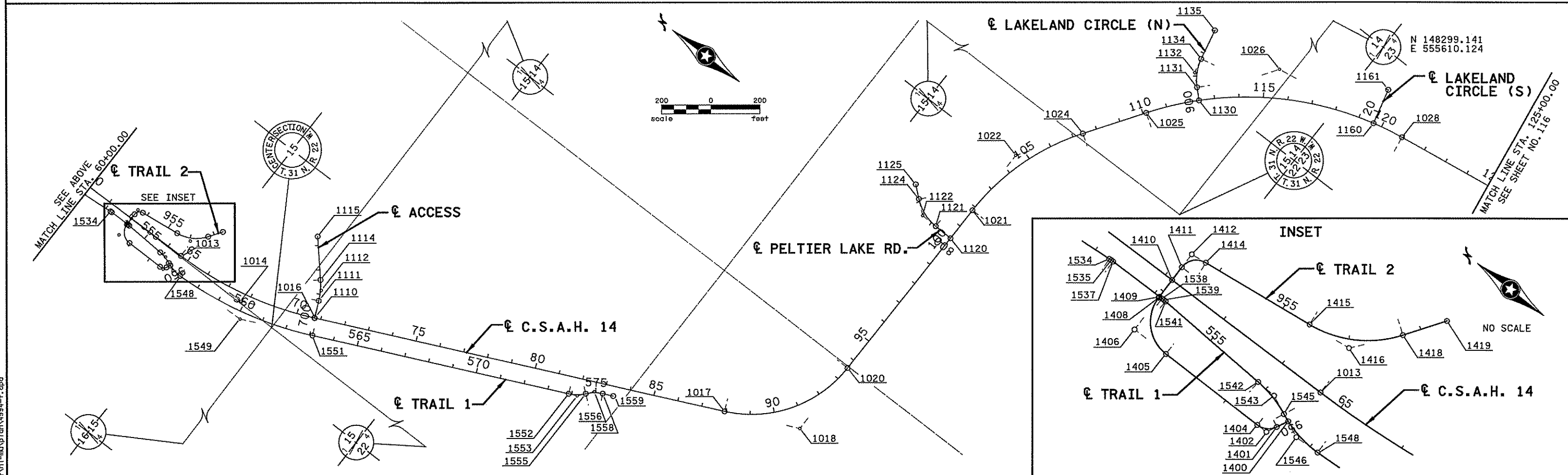
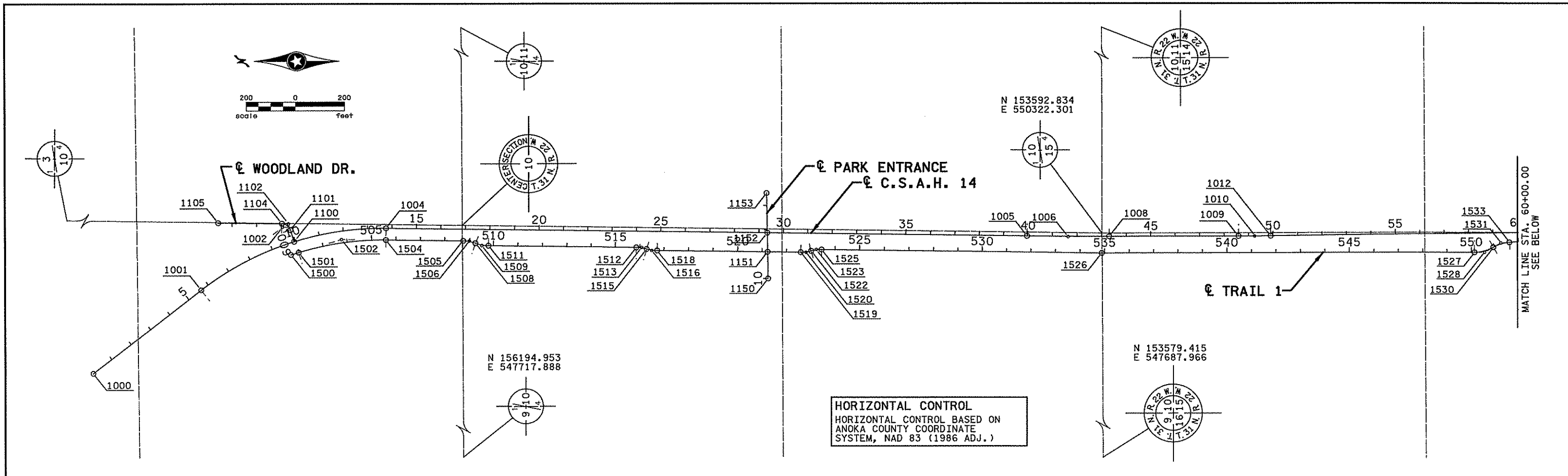
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ANOKA COUNTY  
STAGING AND TRAFFIC CONTROL  
C.S.A.H. 14  
STAGE 5

SHEET  
114  
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492



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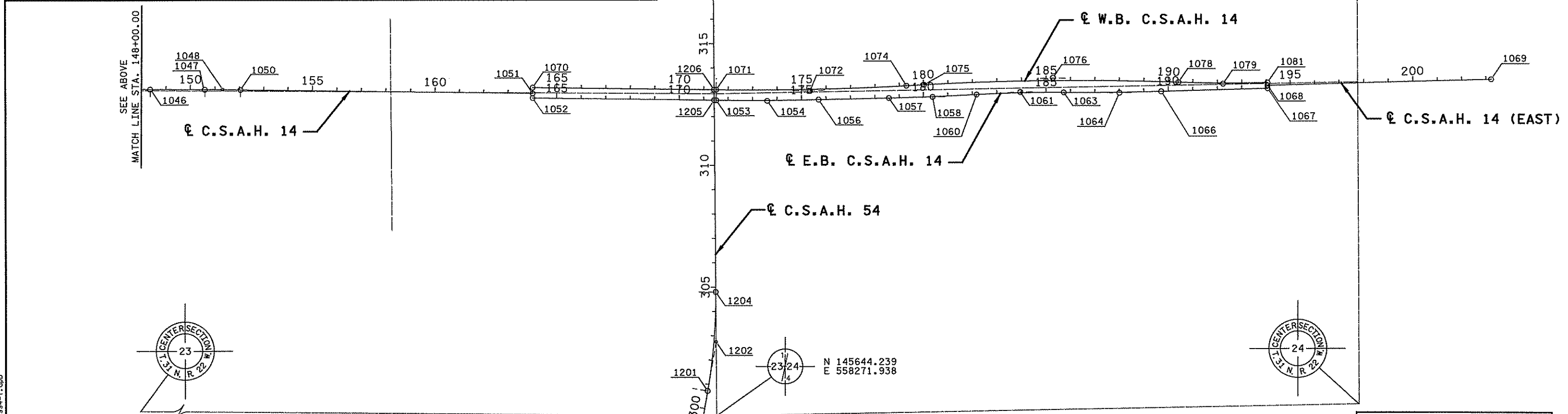
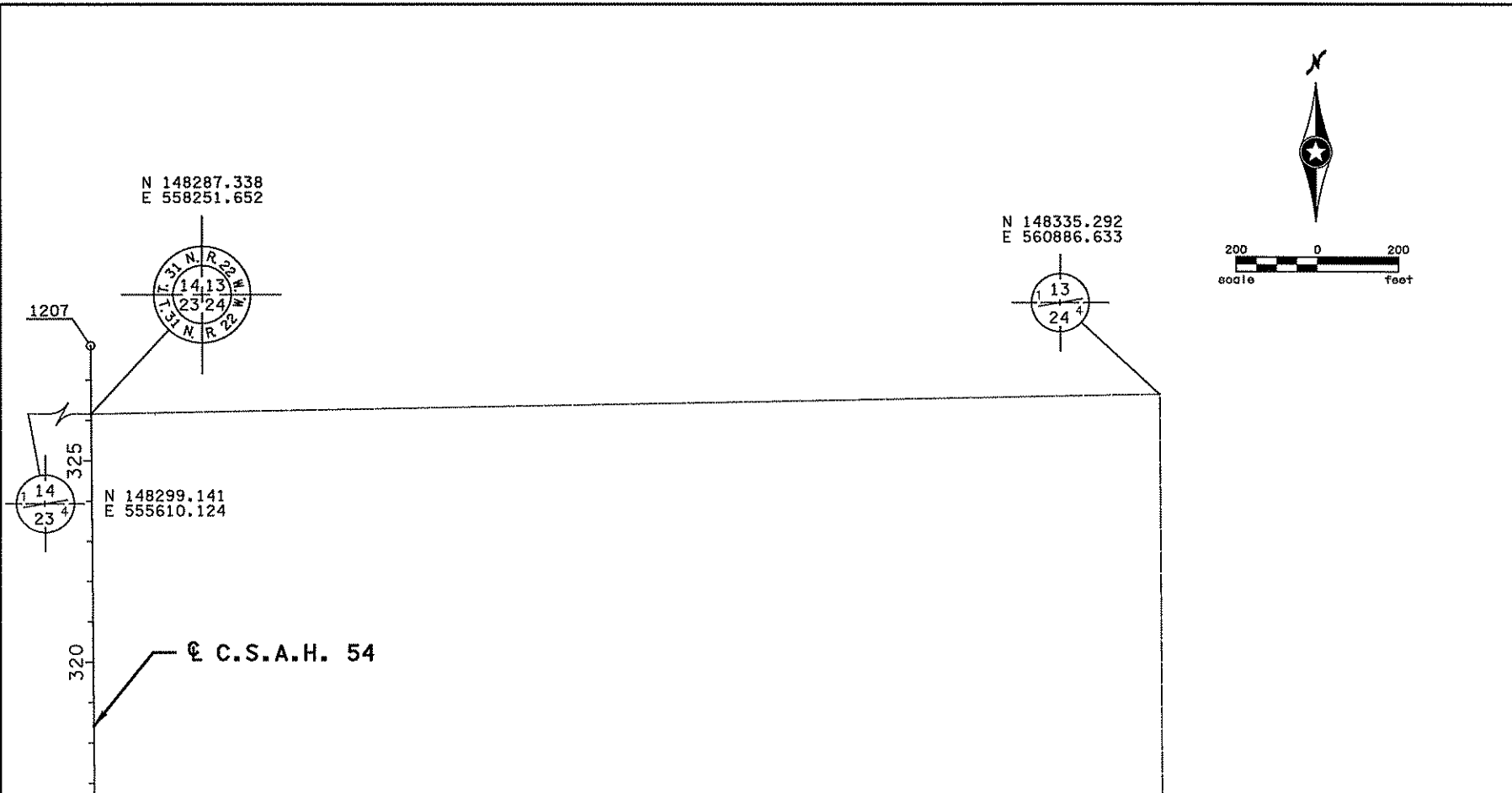
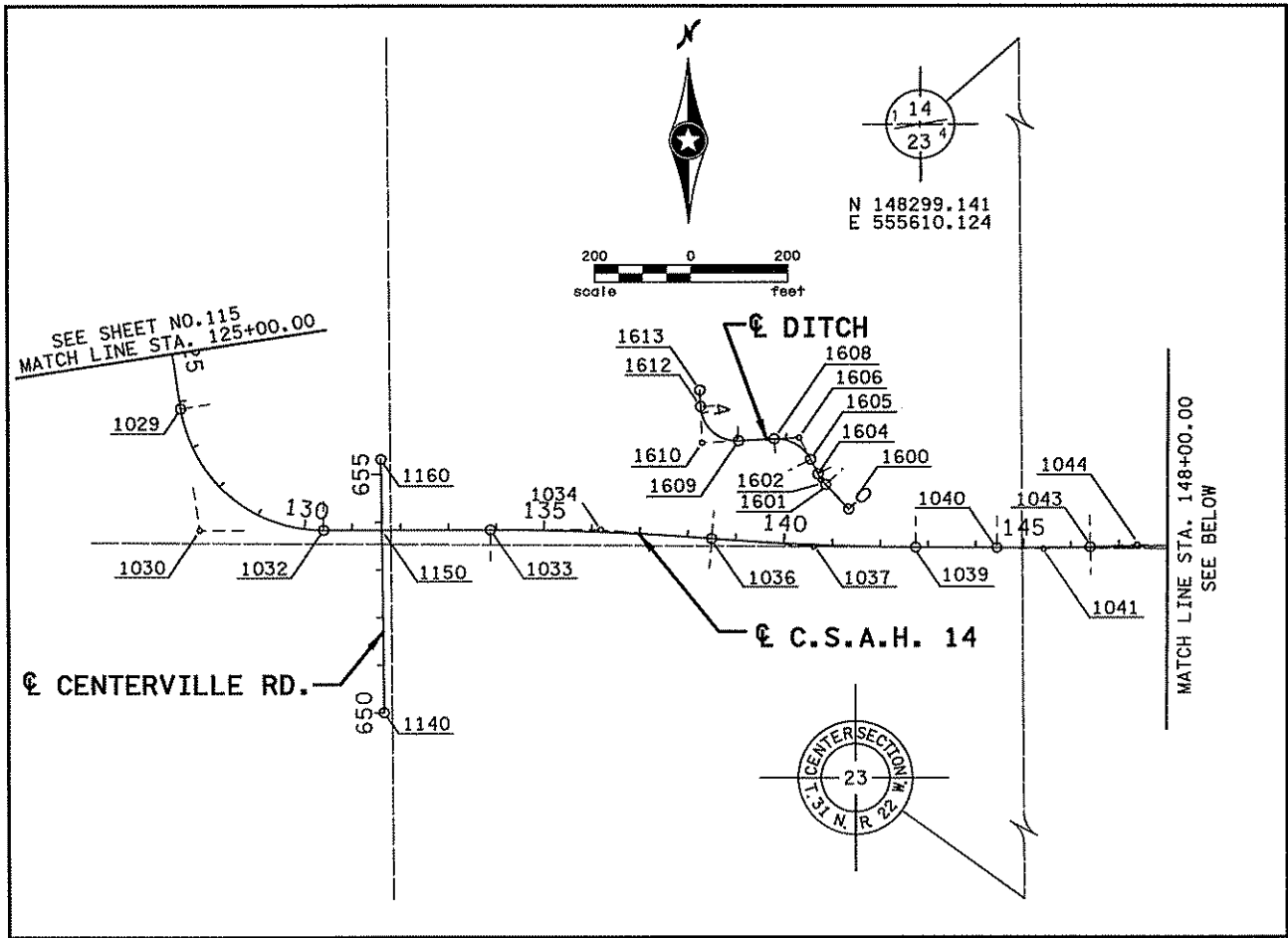
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 COMM. NO. 4994



ANOKA COUNTY  
 ALIGNMENT PLAN  
 C.S.A.H. 14

SHEET 115 OF 492

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HORIZONTAL CONTROL  
HORIZONTAL CONTROL BASED ON  
ANOKA COUNTY COORDINATE  
SYSTEM, NAD 83, (1986 ADJ.)

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ANOKA COUNTY  
ALIGNMENT PLAN  
C.S.A.H. 14

SHEET  
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OF  
492





PT. NO.	POINT	STATION	CURVE DATA					COORDINATES		AZIMUTH
			Δ	D	R	T	L	X	Y	
<b>☉ TRAIL 2</b>										
	A PT. ON ☉ TRAIL 1 POC	556+54.053=								
1400	POT ☉ TRAIL 2	950+00.000						550,271.9887	151,439.1109	295° 55' 20.75"
1401	PC	950+17.269						550,256.4573	151,446.6601	
1402	PI	950+32.884	63° 58' 36.04" RT	229° 10' 59.22"	25.000'	15.615'	27.915'	550,242.4137	151,453.4861	PI
1403	CC							550,267.3862	151,469.1448	
1404	PT	950+45.184						550,242.3862	151,469.1007	359° 53' 56.80"
1405	PC	952+03.254						550,242.1079	151,627.1705	
1406	PI	952+57.628	89° 20' 39.11" RT	104° 10' 26.92"	55.000'	54.374'	85.764'	550,242.0121	151,681.5444	PI
1407	CC							550,297.1078	151,627.2673	
1408	PT	952+89.018						550,296.3814	151,682.2625	89° 14' 35.91"
1409	POT ☉ TRAIL 2	952+91.029=						550,298.3920	151,682.2891	
	A PT. ON ☉ TRAIL 1 POT	554+07.942								
1410	POT ☉ TRAIL 2	953+19.529=						550,326.8895	151,682.6654	
	A PT. ON ☉ C.S.A.H. 14 POT	62+11.374								
1411	PC	953+41.379						550,348.7381	151,682.9540	
1412	PI	953+63.760	83° 40' 20.92" RT	229° 10' 59.22"	25.000'	22.381'	36.509'	550,371.1172	151,683.2496	PI
1413	CC							550,349.0682	151,657.9562	
1414	PT	953+77.888						550,373.8774	151,661.0394	172° 54' 56.83"
1415	PC	955+42.487						550,394.1770	151,497.8969	
1416	PI	956+12.803	48° 48' 10.12" LT	36° 57' 54.07"	155.000'	70.316'	132.024'	550,402.8489	151,427.9180	PI
1417	CC							550,547.9938	151,516.8128	
1418	PT	956+74.512						550,461.0657	151,388.4831	124° 06' 46.71"
1419	POT ☉ TRAIL 2	957+37.880						550,513.5302	151,352.9446	
<b>☉ DITCH</b>										
1600	POT ☉ DITCH	0+00.000						555,253.9748	147,064.0480	317° 09' 09.43"
1601	PC	0+70.132						555,206.2820	147,115.4662	
1602	PI	0+83.899	15° 40' 39.27" RT	57° 17' 44.81"	100.000'	13.767'	27.363'	555,196.9196	147,125.5599	PI
1603	CC							555,279.5988	147,183.4710	
1604	PT	0+97.494						555,190.6330	147,137.8081	332° 49' 48.69"
1605	PC	1+31.323						555,175.1859	147,167.9040	
1606	PI	1+82.876	65° 55' 26.56" LT	72° 04' 12.59"	79.500'	51.553'	91.472'	555,151.6452	147,213.7686	PI
1607	CC							555,104.4581	147,131.6020	
1608	PT	2+22.795						555,100.1674	147,210.9862	266° 54' 22.14"
1609	PC	2+96.306						555,026.7633	147,207.0186	
1610	PI	3+72.316	90° 45' 59.42" RT	76° 23' 39.74"	75.000'	76.010'	118.813'	554,950.8639	147,202.9162	PI
1611	CC							555,022.7154	147,281.9093	
1612	PT	4+15.119						554,947.7773	147,278.8637	357° 40' 21.55"
1613	POT ☉ DITCH	4+49.001						554,946.4014	147,312.7178	

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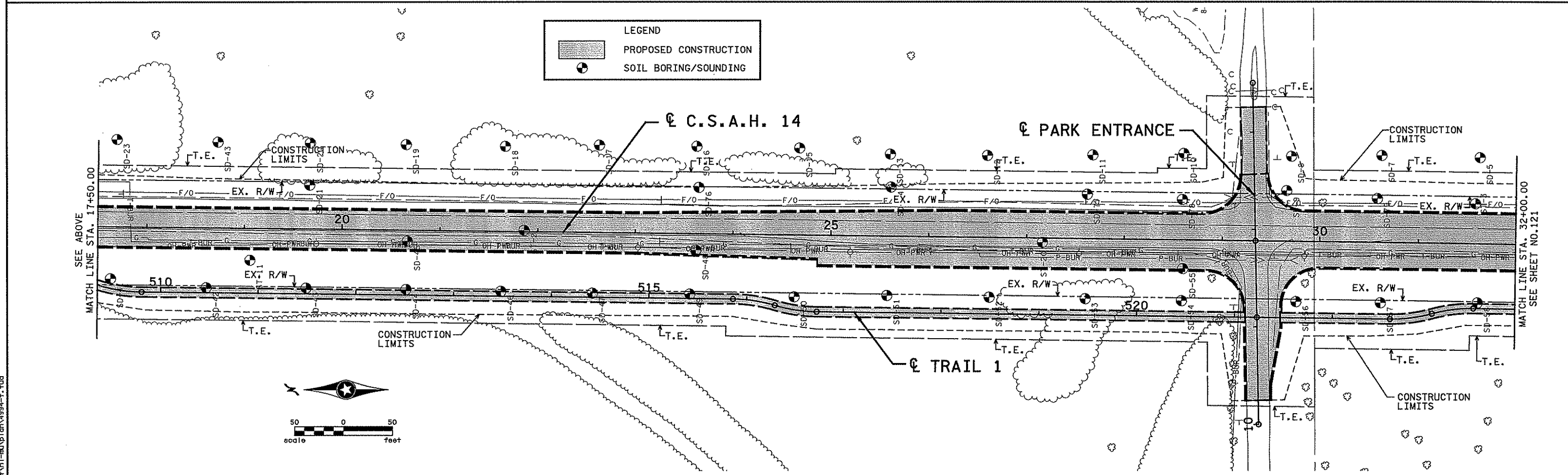
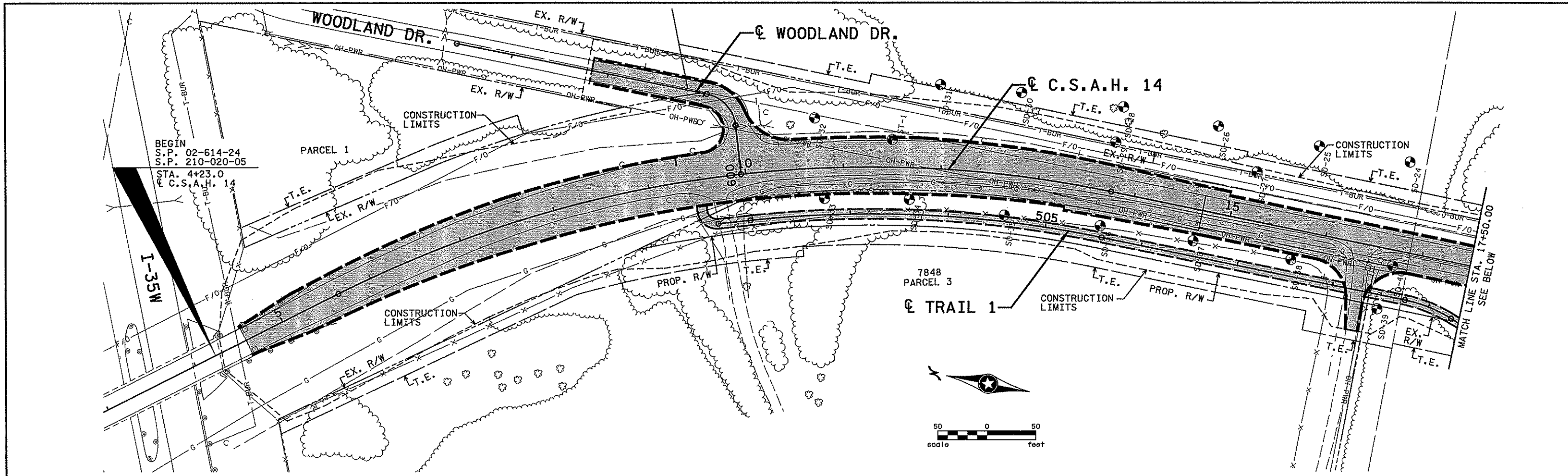
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ANOKA COUNTY  
ALIGNMENT TABULATION  
C.S.A.H. 14

SHEET  
119  
OF  
492





LEGEND	
	PROPOSED CONSTRUCTION
	SOIL BORING/SOUNDING

NO.	DATE	BY	CKD	APPR	REVISION

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ANOKA COUNTY

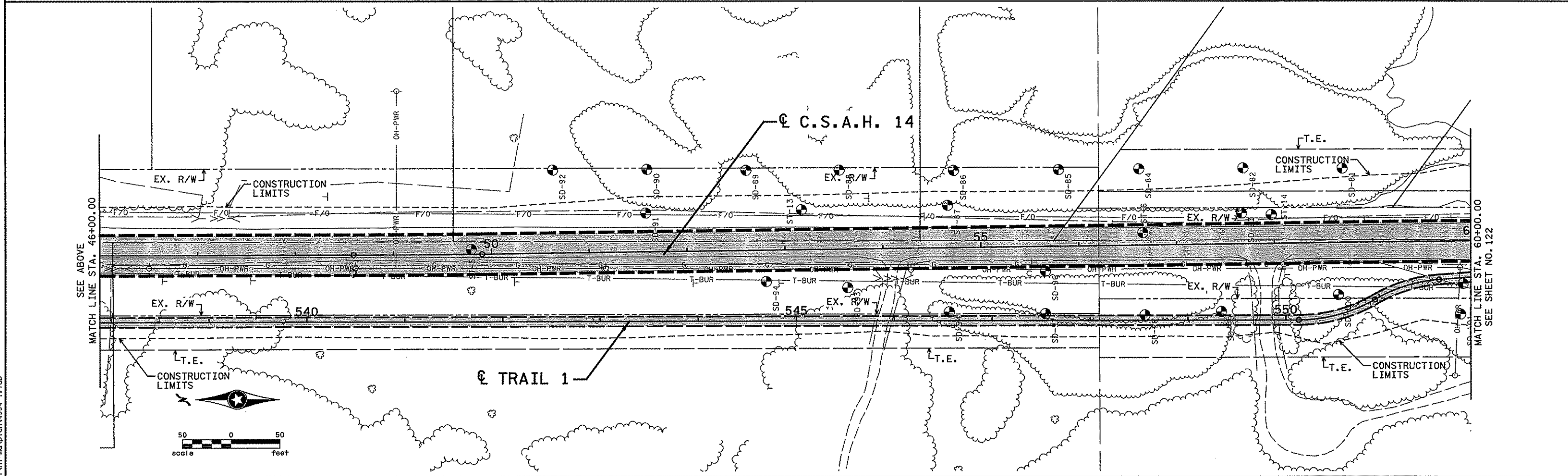
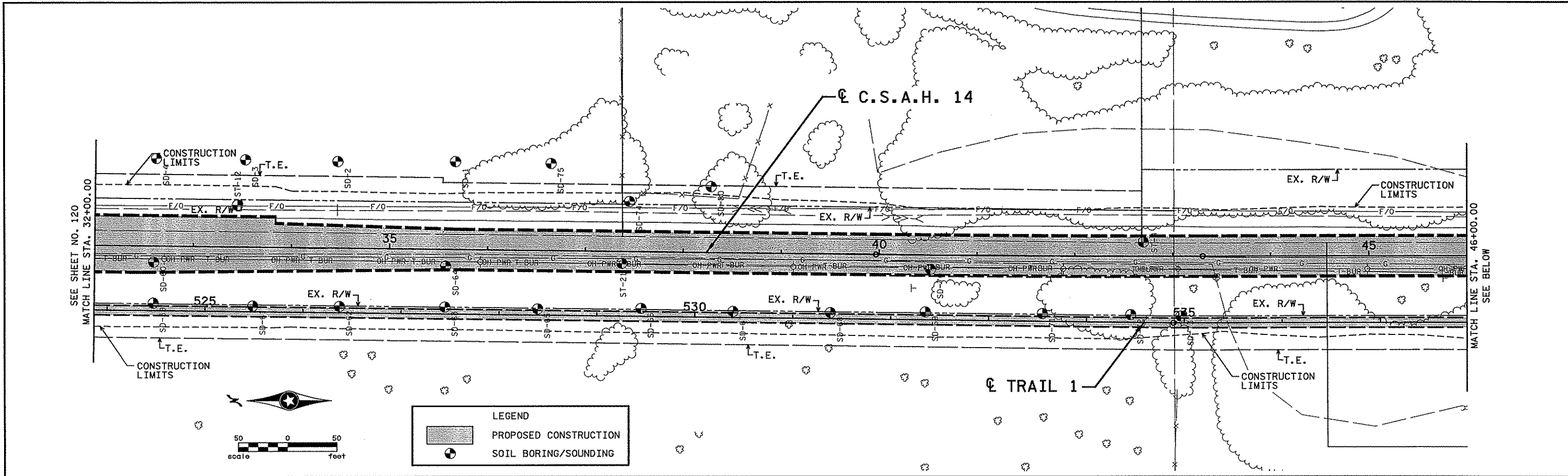
TOPOGRAPHY AND UTILITY PLAN

C.S.A.H. 14

STA. 4+00.00 TO STA. 32+00.00

SHEET  
120  
OF  
492

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TOPOGRAPHY AND UTILITY PLAN  
C.S.A.H. 14  
STA. 32+00.00 TO STA. 60+00.00

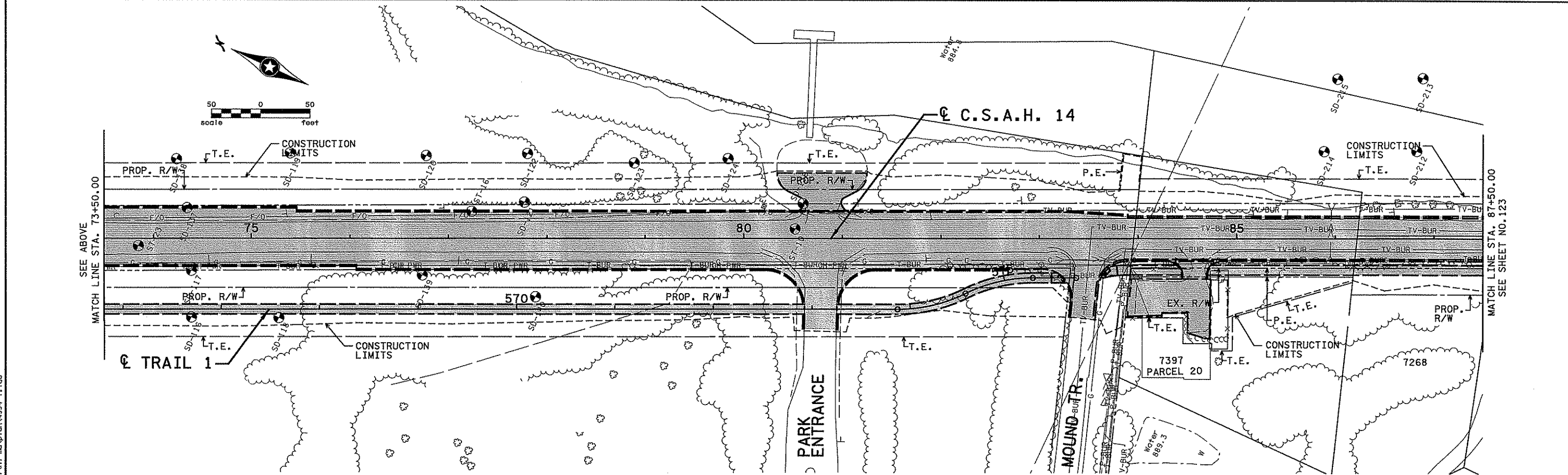
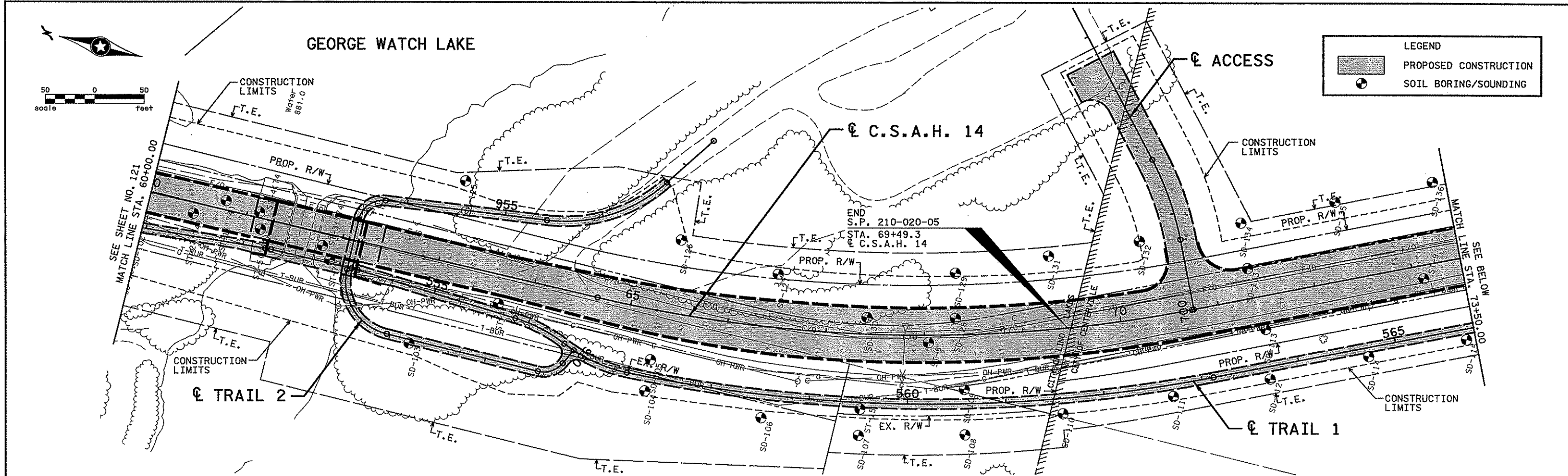
SHEET  
121  
OF  
492

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GEORGE WATCH LAKE

**LEGEND**

- PROPOSED CONSTRUCTION
- SOIL BORING/SOUNDING



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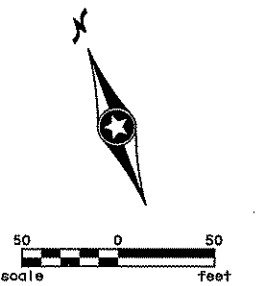
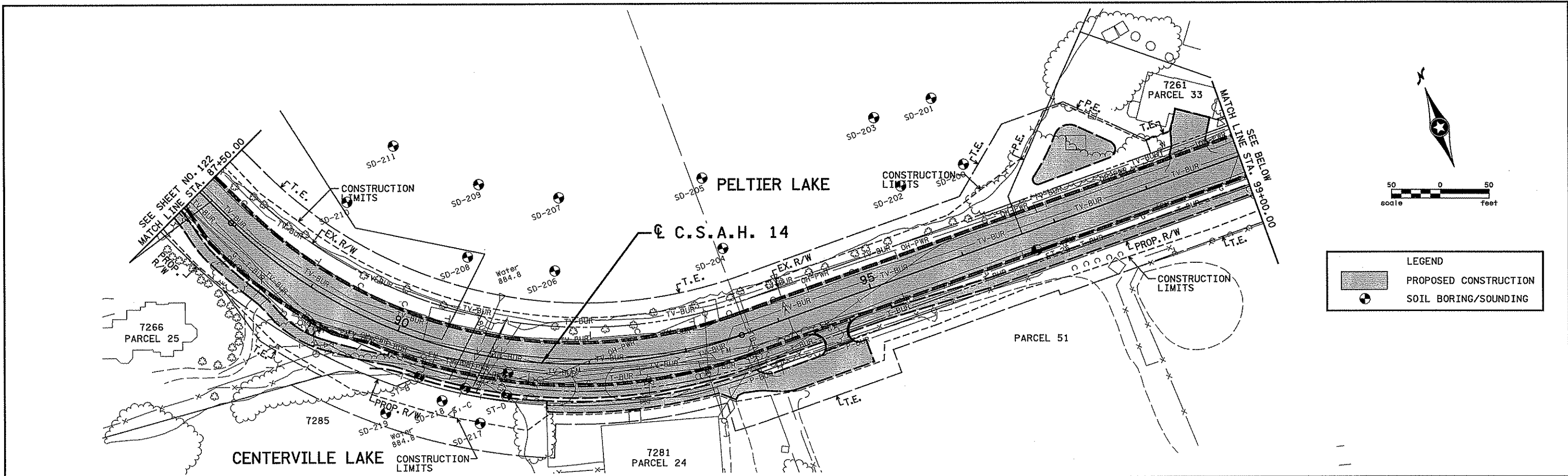
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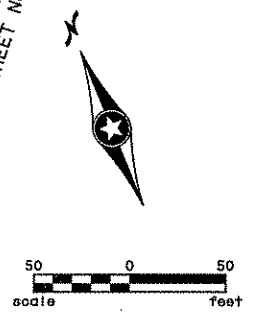
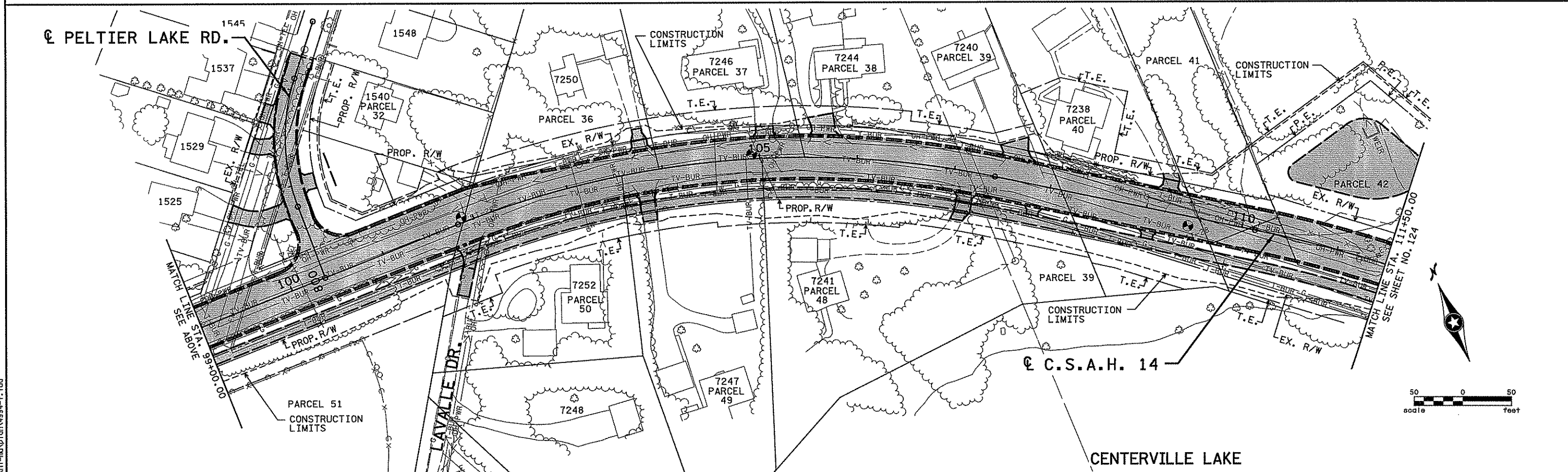


**ANOKA COUNTY**  
 TOPOGRAPHY AND UTILITY PLAN  
**C.S.A.H. 14**  
 STA. 60+00.00 TO STA. 87+50.00

**SHEET 122 OF 492**



LEGEND	
	PROPOSED CONSTRUCTION
	SOIL BORING/SOUNDING



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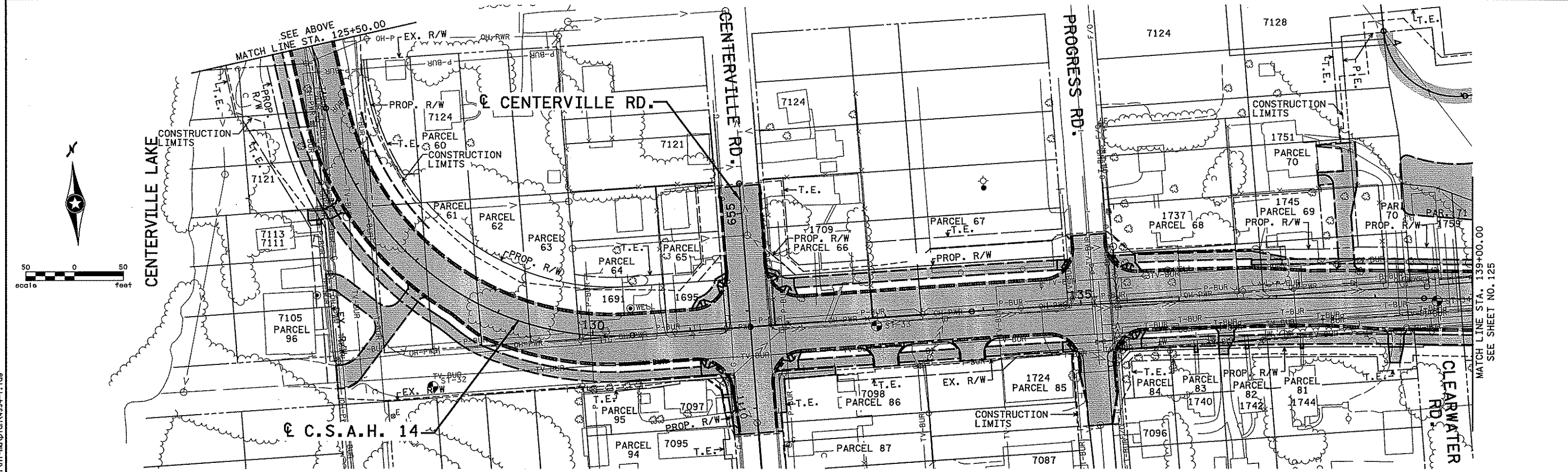
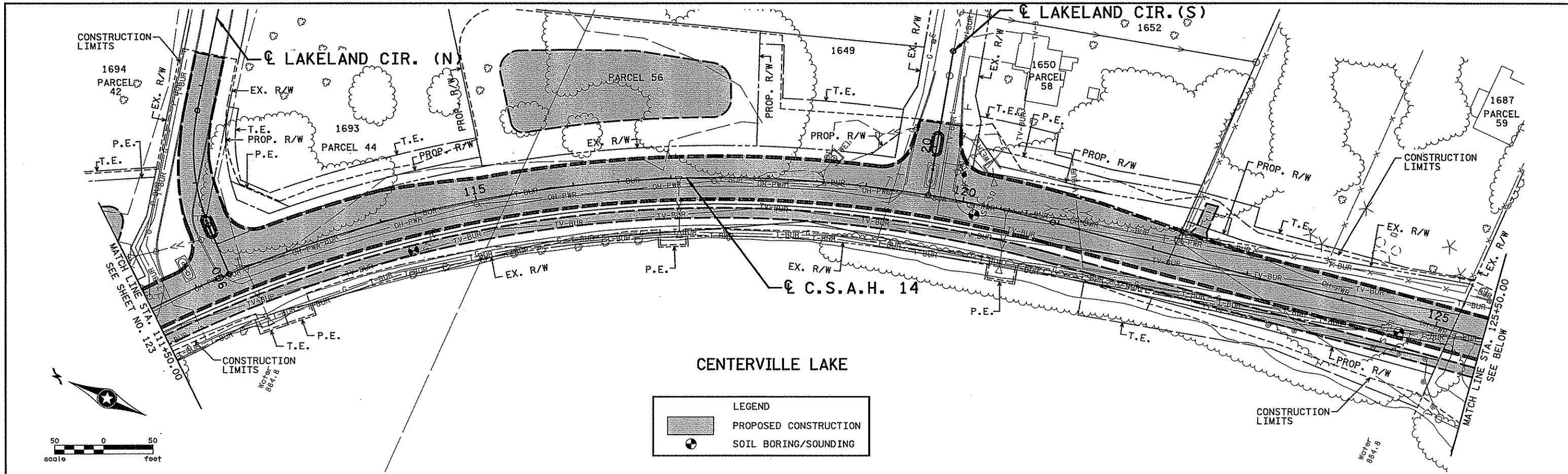
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SHEET  
 123  
 OF  
 492



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 11/11/2009  
 N:\4994-F\11-m\plan\4994-f.tue

NO	DATE	BY	CHKD	APPR	REVISION

NO. 4994-F\11-m\plan\4994-f.tue

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.

Print Name: **CHRISTOPHER M. TRBOYEVICH**

*Christopher M. Trbojevich*

Date: 3/26/07 License # 41635

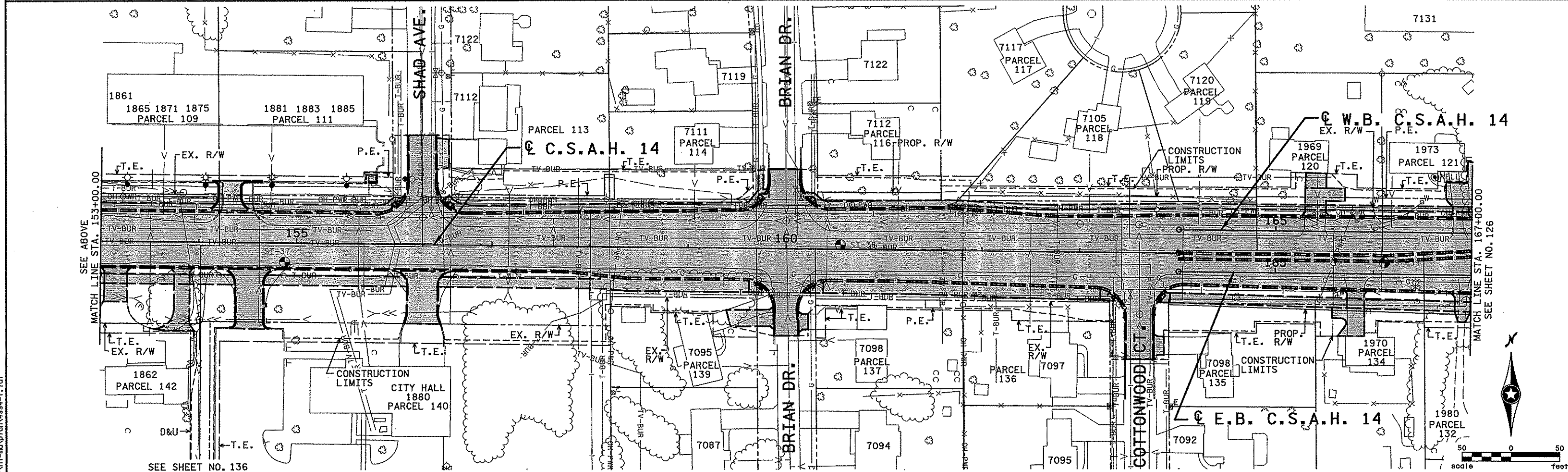
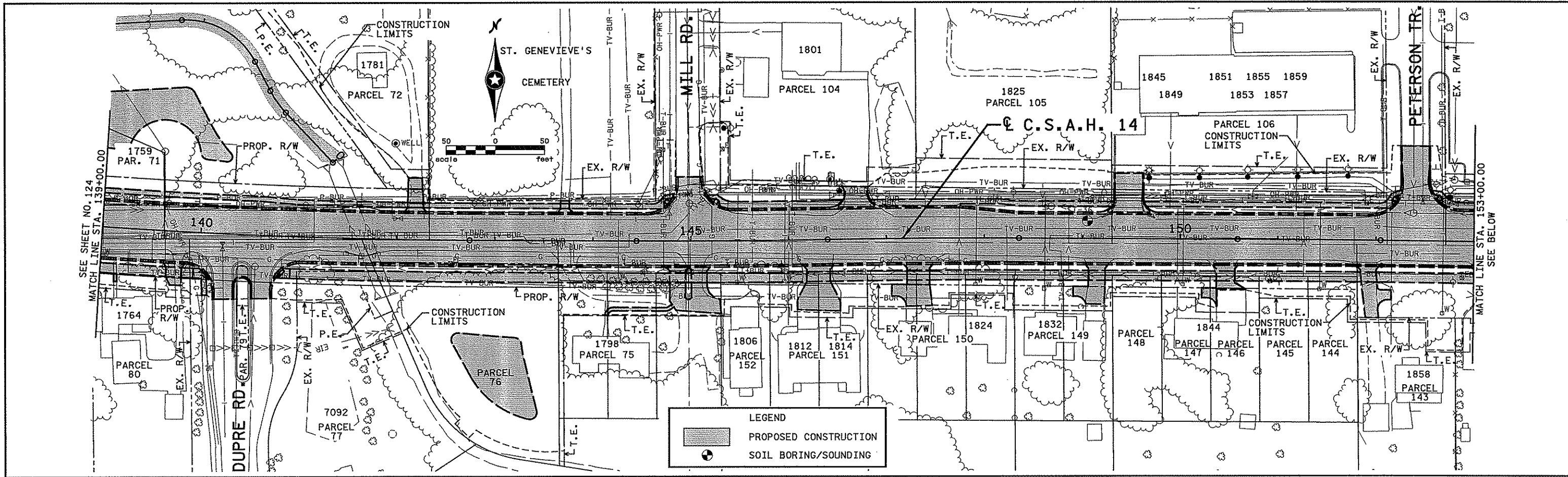
STATE PROJECT NO. S.P. 02-614-24, ETAL

DRAWN BY S. MARTINS  
 DESIGNED BY J. TOULOUSE  
 CHECKED BY C. TRBOYEVICH  
 COMM. NO. 4994



ANOKA COUNTY  
 TOPOGRAPHY AND UTILITY PLAN  
 C.S.A.H. 14  
 STA. 111+50.00 TO STA. 137+00.00

SHEET 124 OF 492



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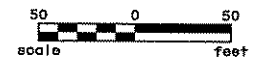
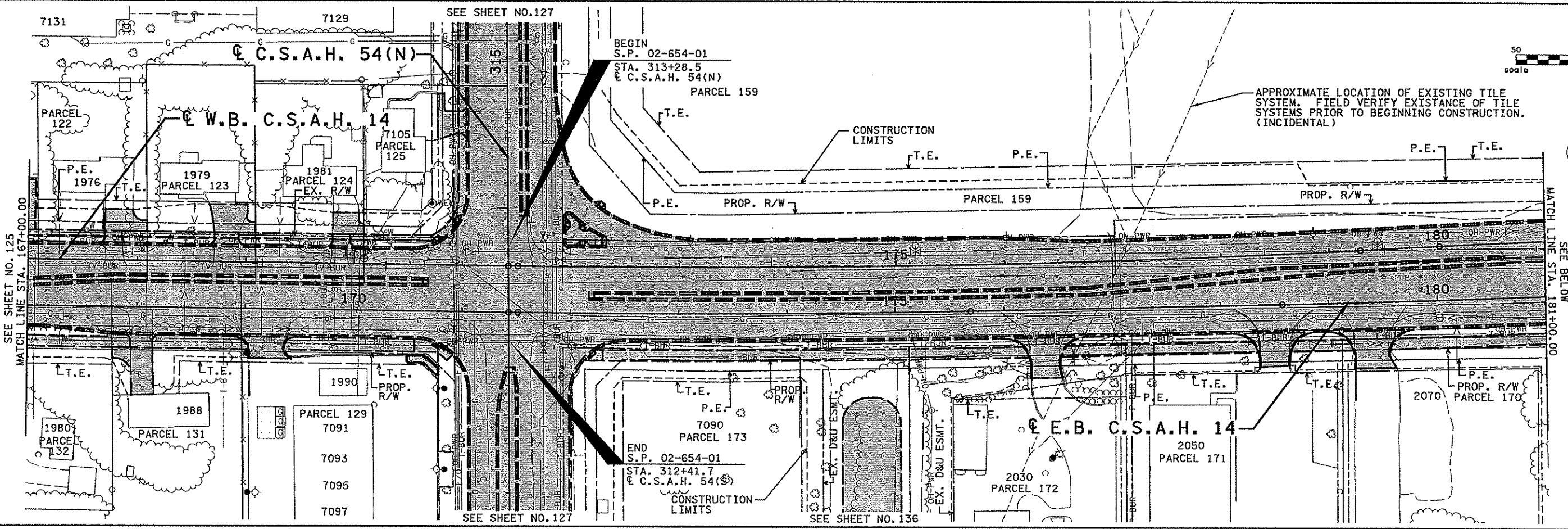
NO	DATE	BY	CKD	APPR	REVISION

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 Print Name: CHRISTOPHER M. TRBOYEVICH  
*Christopher M. Trbojevich*  
 Date: 3/26/07 License #: 41635

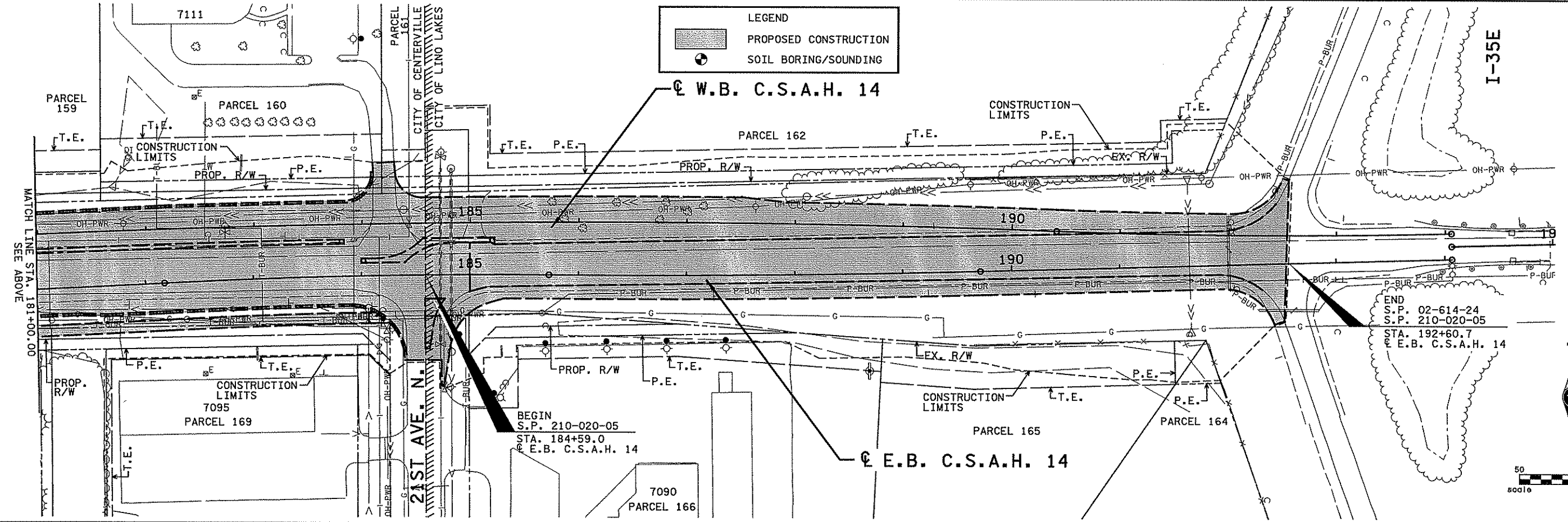
STATE PROJECT NO. S.P. 02-614-24, ETAL  
 DRAWN BY S. MARTINS  
 DESIGNED BY J. TOULOUSE  
 CHECKED BY C. TRBOYEVICH  
 COMM. NO. 4994

**SRF** CONSULTING GROUP, INC.  
 ANOKA COUNTY  
 TOPOGRAPHY AND UTILITY PLAN  
 C.S.A.H. 14  
 STA. 139+00.00 TO STA. 167+00.00

SHEET 125 OF 492



**LEGEND**  
 PROPOSED CONSTRUCTION  
 SOIL BORING/SOUNDING



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NO	DATE	BY	CHKD	APPR	REVISION

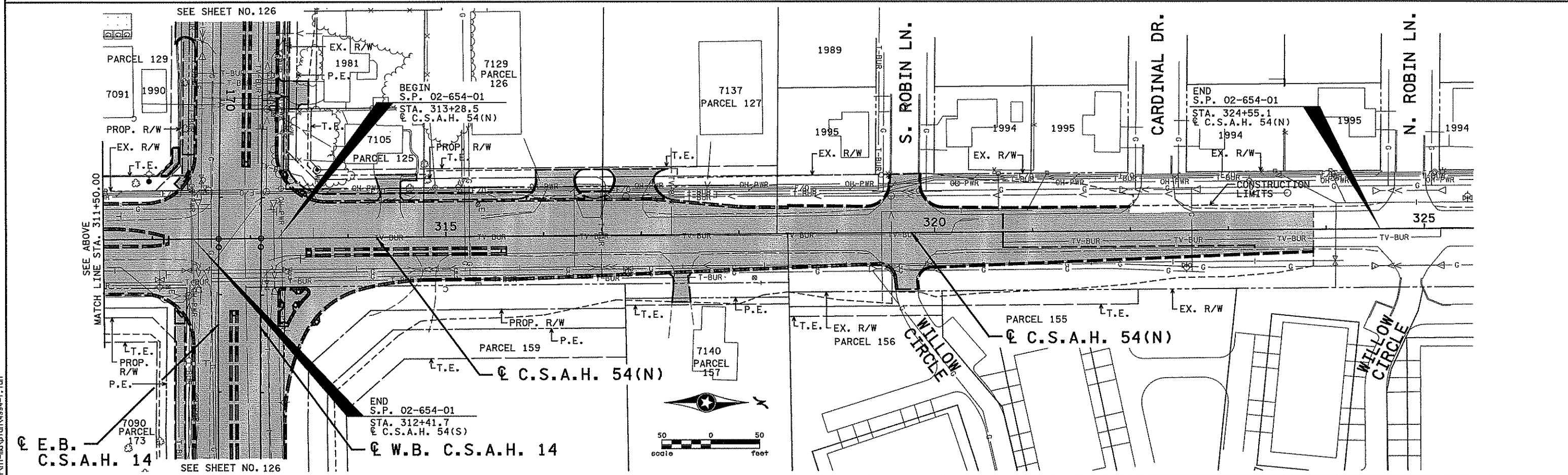
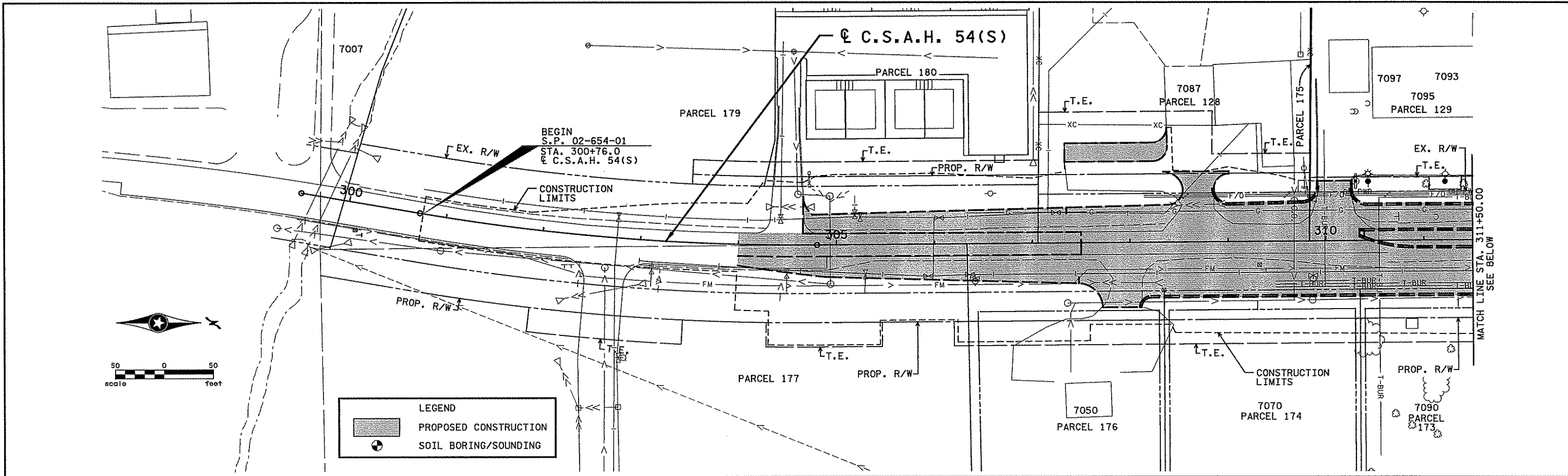
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 Print Name: **CHRISTOPHER M. TRBOYEVICH**  
*Christopher M. Trbojevich*  
 Date: 3/26/07 License # 41635

STATE PROJECT NO. S.P. 02-614-24, ETAL  
 DRAWN BY S. MARTINS  
 DESIGNED BY J. TOULOUSE  
 CHECKED BY C. TRBOYEVICH  
 COMM. NO. 4994



ANOKA COUNTY  
 TOPOGRAPHY AND UTILITY PLAN  
 C.S.A.H. 14  
 STA. 167+00.00 TO STA. 193+00.00

SHEET 126 OF 492



2/21/2007 2:54:33 PM ... \4994-f\h1-mu\p1an\4994-f.tuh

NO	DATE	BY	CKD	APPR	REVISION

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Print Name: **CHRISTOPHER M. TRBOYEVICH**

*Christopher M. Trbojevich*

Date: **3/26/07** License #: **41635**

STATE PROJECT NO.  
S.P. 02-614-24, ETAL

DRAWN BY  
**S. MARTINS**

DESIGNED BY  
**J. TOULOUSE**

CHECKED BY  
**C. TRBOYEVICH**

COMM. NO. 4994



**ANOKA COUNTY**

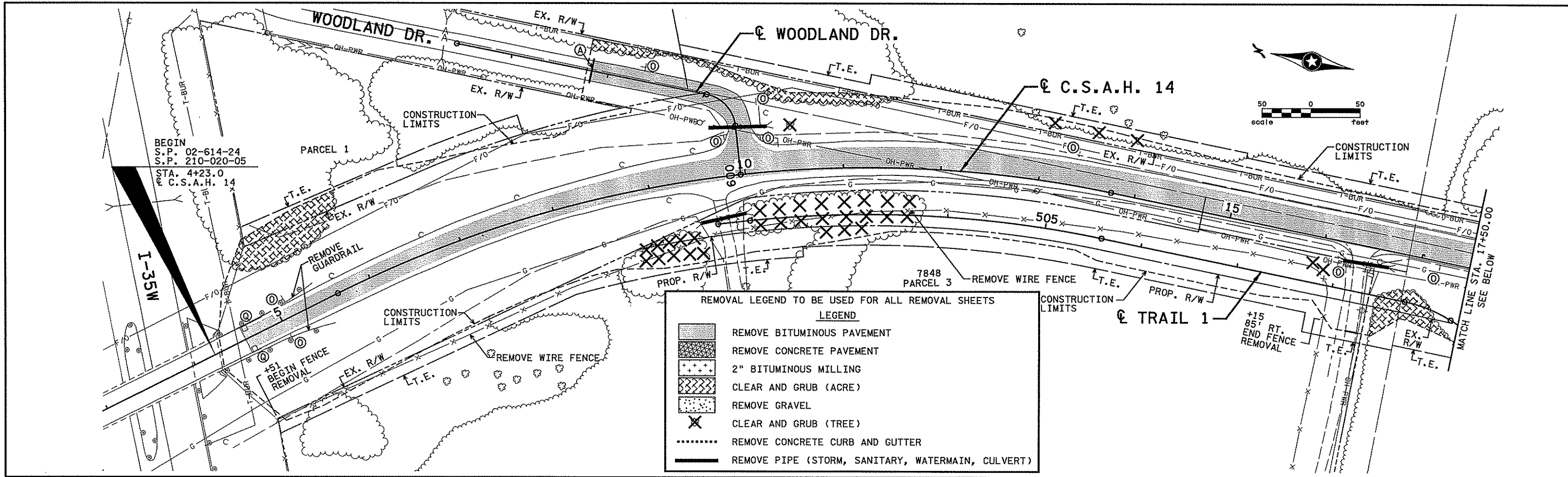
TOPOGRAPHY AND UTILITY PLAN

**C.S.A.H. 14**

**C.S.A.H. 54**

**SHEET**  
**127**  
**OF**  
**492**

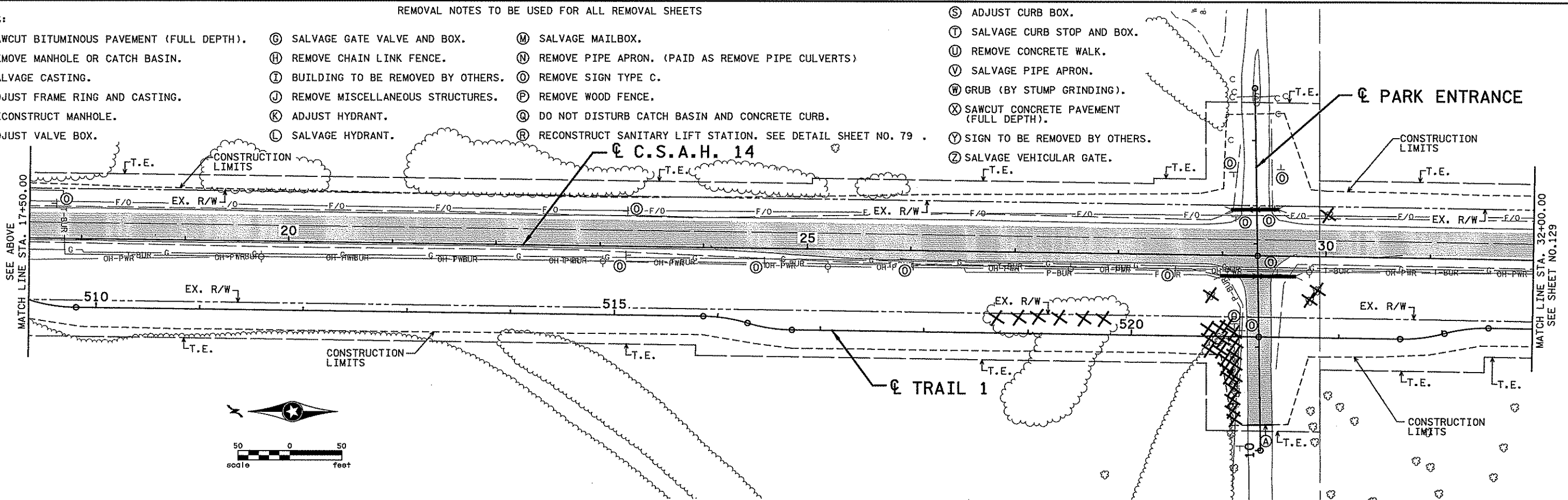




**NOTES:**

- |  |                                       |   |  |
|--|---------------------------------------|---|--|
| (A) SAWCUT BITUMINOUS PAVEMENT (FULL DEPTH). | (G) SALVAGE GATE VALVE AND BOX.       | (M) SALVAGE MAILBOX.  | (S) ADJUST CURB BOX.                       |
| (B) REMOVE MANHOLE OR CATCH BASIN.           | (H) REMOVE CHAIN LINK FENCE.          | (N) REMOVE PIPE APRON. (PAID AS REMOVE PIPE CULVERTS)           | (T) SALVAGE CURB STOP AND BOX.             |
| (C) SALVAGE CASTING.                         | (I) BUILDING TO BE REMOVED BY OTHERS. | (O) REMOVE SIGN TYPE C.   | (U) REMOVE CONCRETE WALK.                  |
| (D) ADJUST FRAME RING AND CASTING.           | (J) REMOVE MISCELLANEOUS STRUCTURES.  | (P) REMOVE WOOD FENCE.  | (V) SALVAGE PIPE APRON.                    |
| (E) RECONSTRUCT MANHOLE.                     | (K) ADJUST HYDRANT.                   | (Q) DO NOT DISTURB CATCH BASIN AND CONCRETE CURB.               | (W) GRUB (BY STUMP GRINDING).              |
| (F) ADJUST VALVE BOX.                        | (L) SALVAGE HYDRANT.                  | (R) RECONSTRUCT SANITARY LIFT STATION. SEE DETAIL SHEET NO. 79. | (X) SAWCUT CONCRETE PAVEMENT (FULL DEPTH). |
|  |                                       |   | (Y) SIGN TO BE REMOVED BY OTHERS.          |
|  |                                       |   | (Z) SALVAGE VEHICULAR GATE.                |

**REMOVAL NOTES TO BE USED FOR ALL REMOVAL SHEETS**



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NO	DATE	BY	CHKD	APPR	REVISION

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 Print Name: CHRISTOPHER M. TRBOYEVICH  
*Christopher M. Trbojevich*  
 Date: 3/26/04 License #: 41635

STATE PROJECT NO. S.P. 02-614-24, ETAL

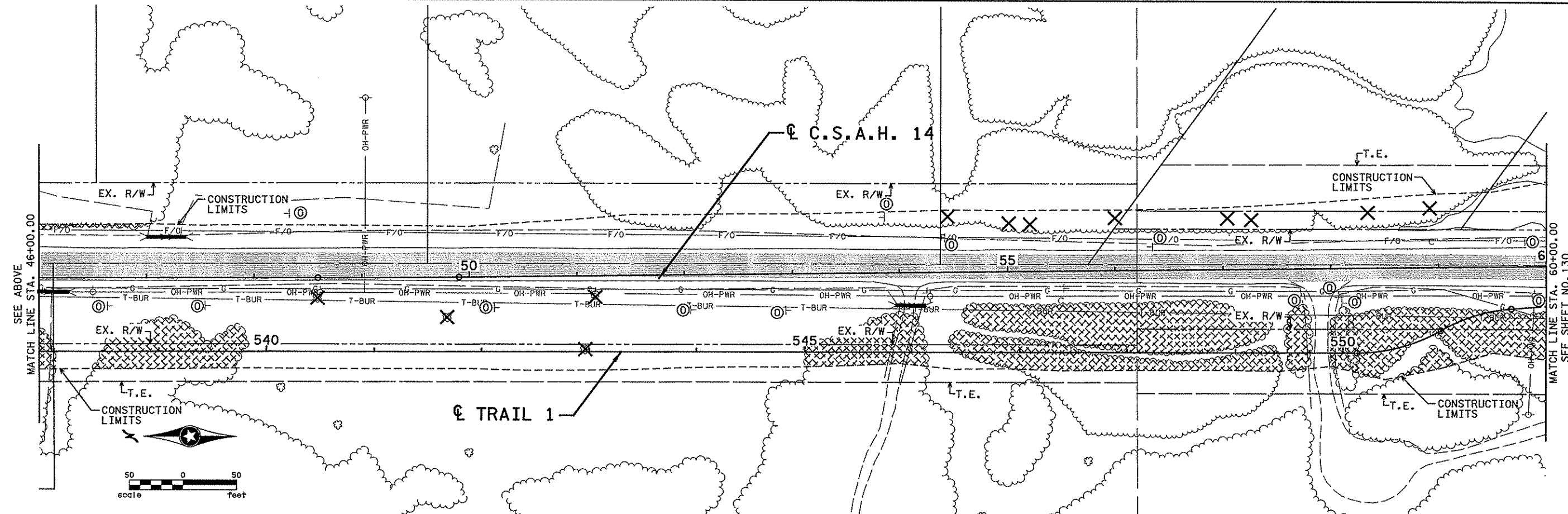
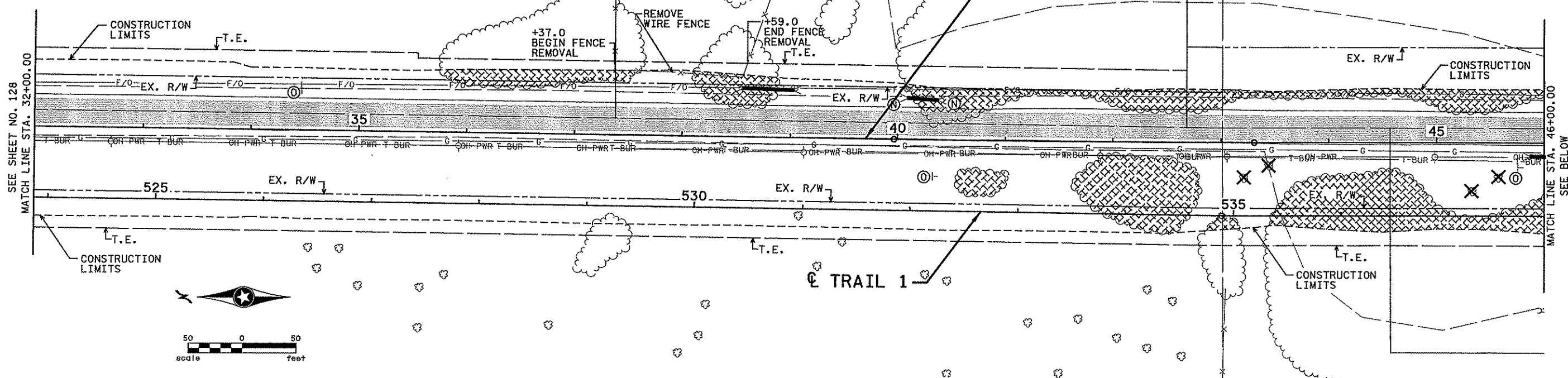
DRAWN BY S. MARTINS  
 DESIGNED BY J. TOULOUSE  
 CHECKED BY C. TRBOYEVICH  
 COMM. NO. 4994



ANOKA COUNTY  
 REMOVAL PLAN  
 C.S.A.H. 14  
 STA. 4+00.00 TO STA. 32+00.00

SHEET 128 OF 492

SEE SHEET 128 FOR REMOVAL LEGEND AND NOTES.



NO.	DATE	BY	CKD	APPR	REVISION
...4994-f-h1-mu\plan\4994-f.rpb					

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.  
 Print Name: CHRISTOPHER M. TRBOYEVICH  
*Christopher M. Trbovich*  
 Date: 3/26/07 License #: 4635

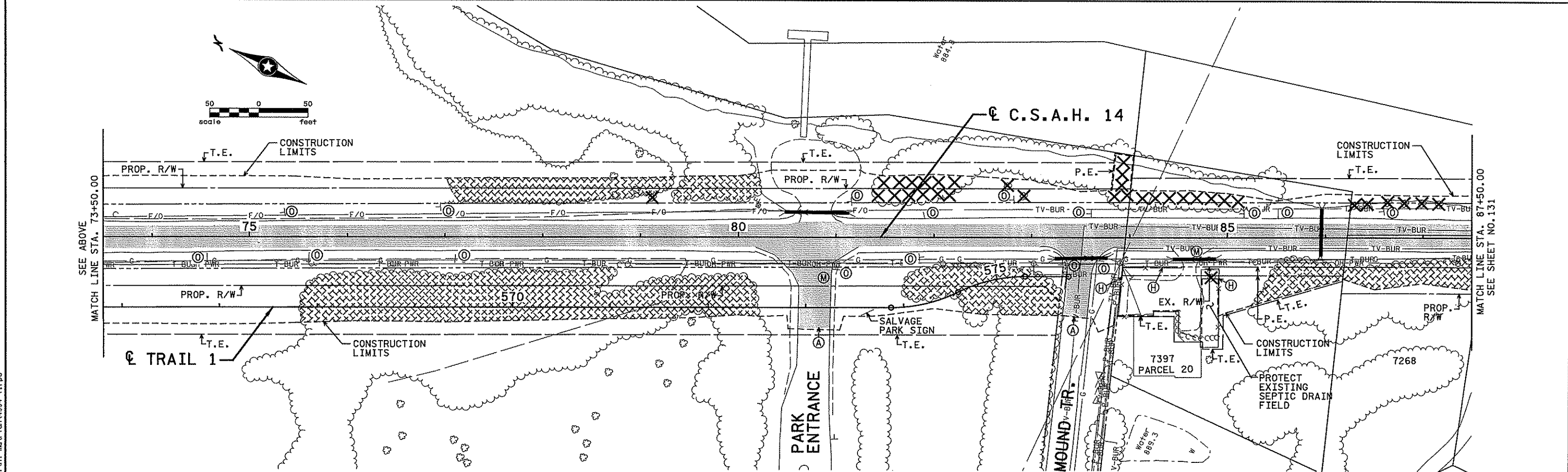
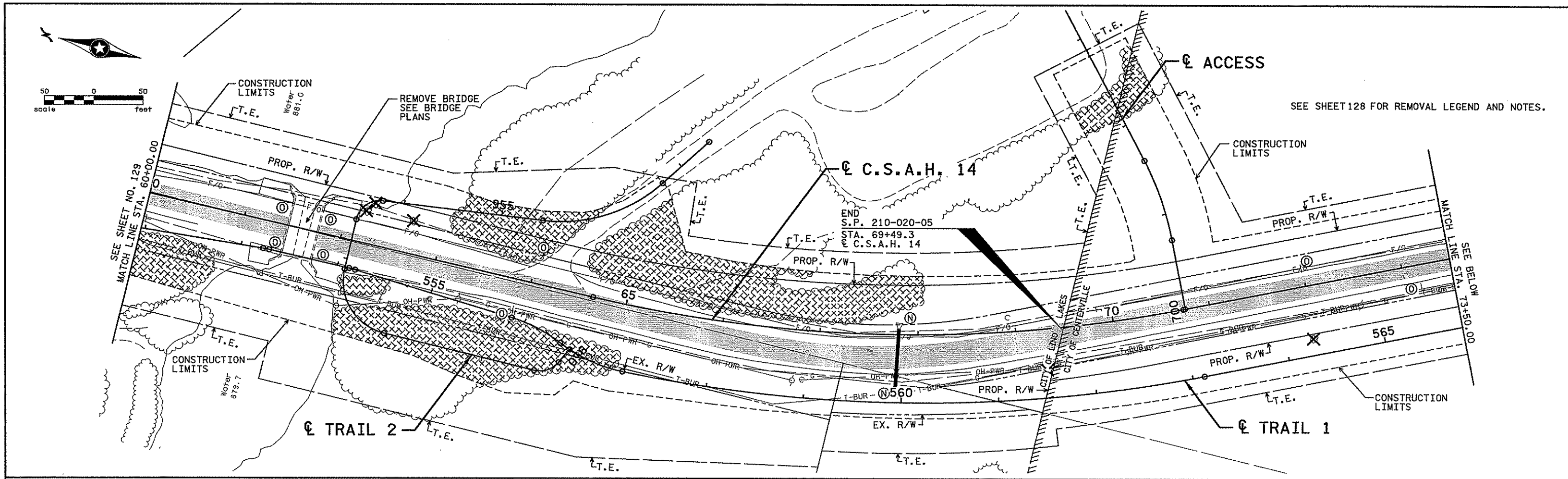
STATE PROJECT NO. S.P. 02-614-24, ETAL  
 DRAWN BY S. MARTINS  
 DESIGNED BY J. TOULOUSE  
 CHECKED BY C. TRBOYEVICH  
 COMM. NO. 4994



ANOKA COUNTY  
 REMOVAL PLAN  
 C.S.A.H. 14  
 STA. 32+00.00 TO STA. 60+00.00

SHEET 129 OF 492

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NO	DATE	BY	CKD	APPR	REVISION

...4994-f\hl-mu\Plan\4994-f.rpc

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Print Name: CHRISTOPHER M. TRBOYEVICH

*Christopher M. Trbojevich*

Date: 3/26/17 License #: 1635

STATE PROJECT NO.  
S.P. 02-614-24, ETAL

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S. MARTINS

DESIGNED BY  
J. TOULOUSE

CHECKED BY  
C. TRBOYEVICH

COMM. NO. 4994



ANOKA COUNTY

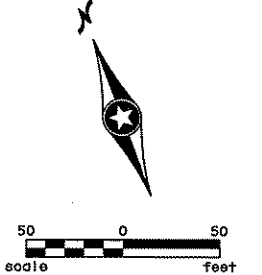
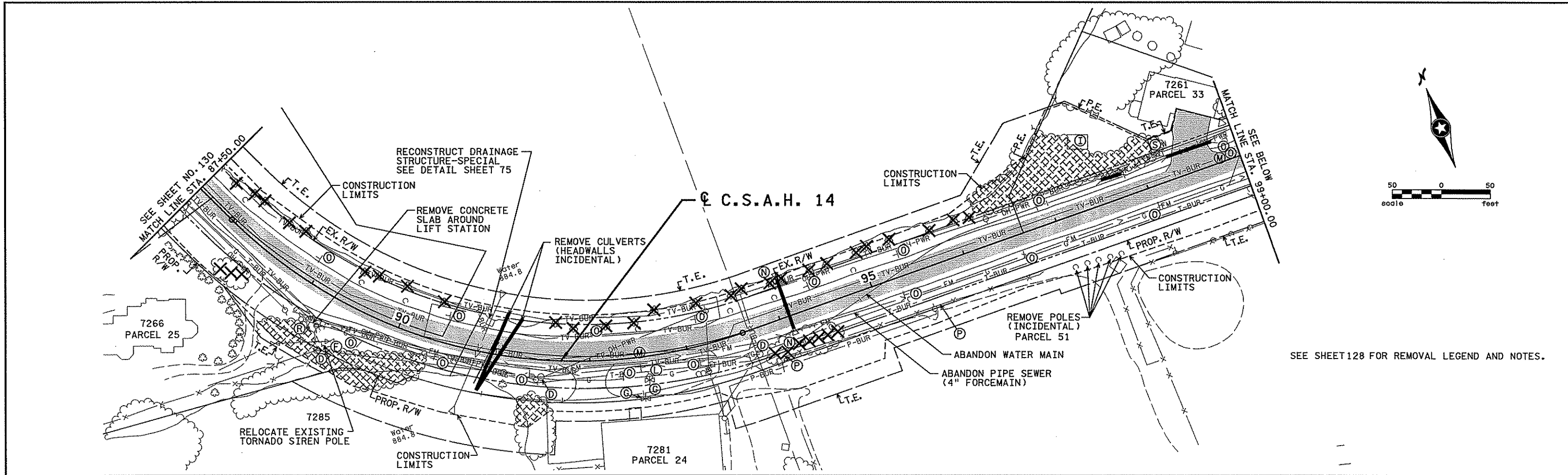
REMOVAL PLAN

C.S.A.H. 14

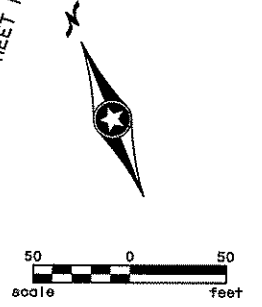
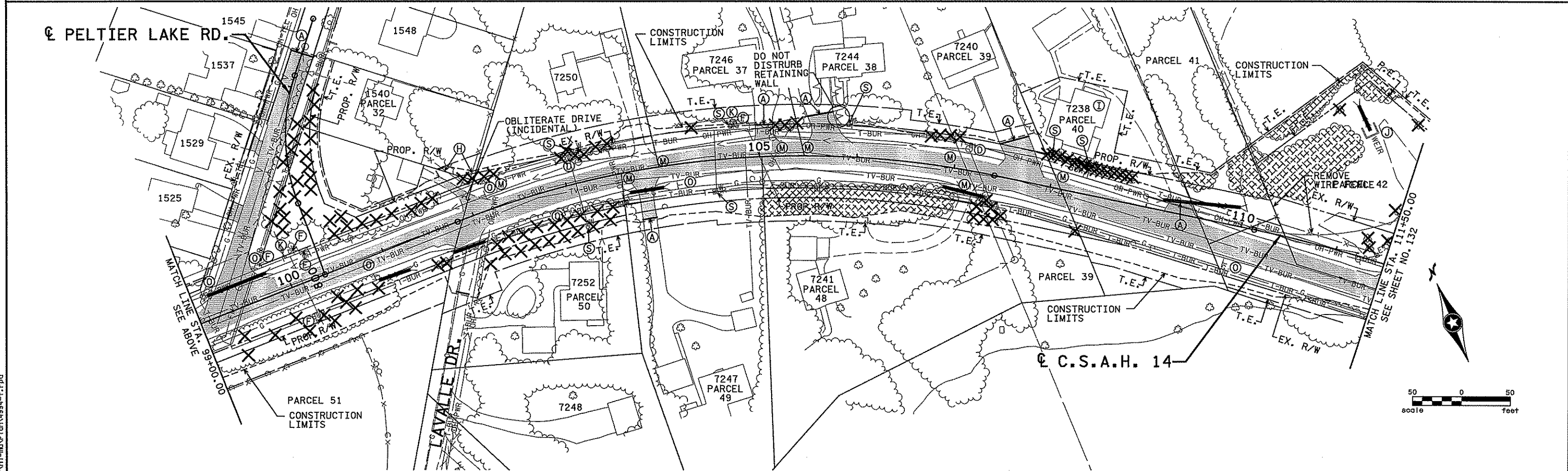
STA. 60+00.00 TO STA. 87+50.00

SHEET 130 OF 492

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SEE SHEET 128 FOR REMOVAL LEGEND AND NOTES.



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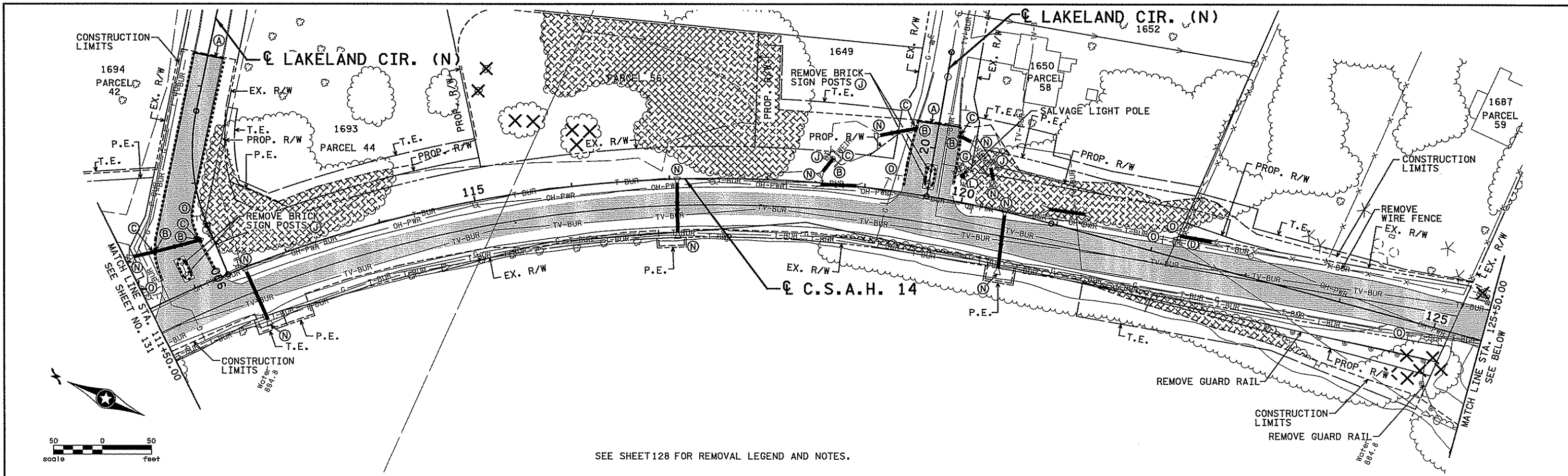
NO	DATE	BY	CRD	APPR	REVISION

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 Print Name: CHRISTOPHER M. TRBOYEVICH  
*Christopher M. Trbojevich*  
 Date: 3/26/07 License #: 41635

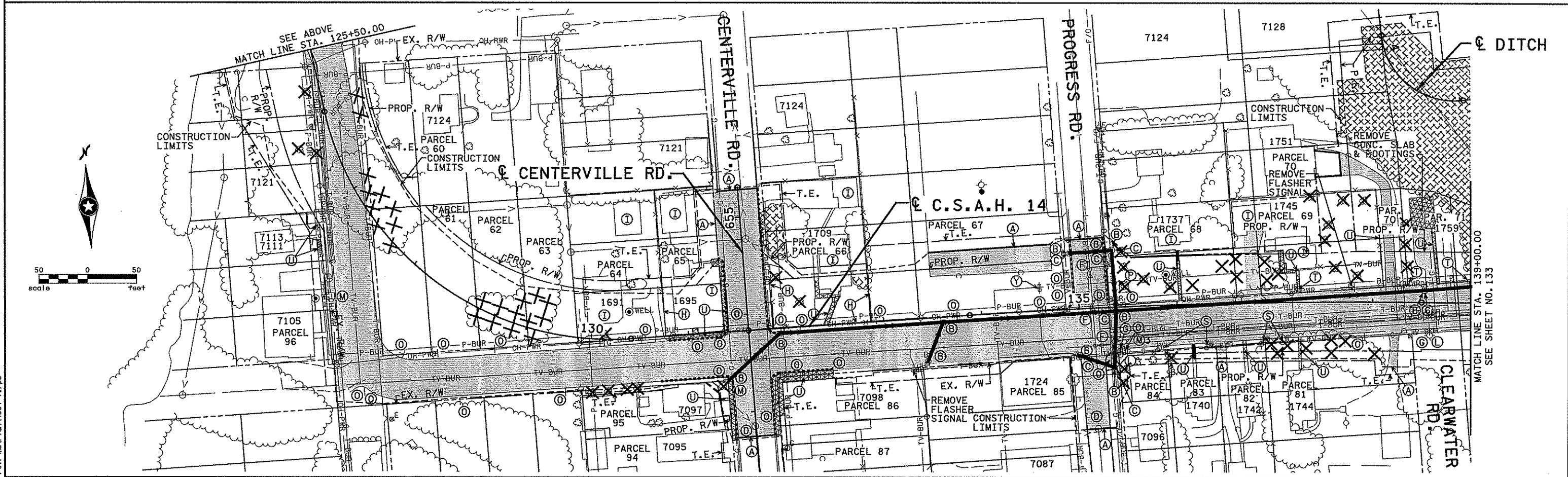
STATE PROJECT NO.  
S.P. 02-614-24, ETAL  
 DRAWN BY  
S. MARTINS  
 DESIGNED BY  
J. TOULOUSE  
 CHECKED BY  
C. TRBOYEVICH  
 COMM. NO. 4994



ANOKA COUNTY	SHEET 131
REMOVAL PLAN	OF 492
C.S.A.H. 14	
STA. 87+50.00 TO STA. 111+50.00	



SEE SHEET 128 FOR REMOVAL LEGEND AND NOTES.



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 Print Name: CHRISTOPHER M. TRBOYEVICH  
*Christopher M. Trbojevich*  
 Date: 3/20/07 License #: 11635

STATE PROJECT NO. S.P. 02-614-24, ETAL

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 DESIGNED BY J. TOULOUSE  
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 COMM. NO. 4994



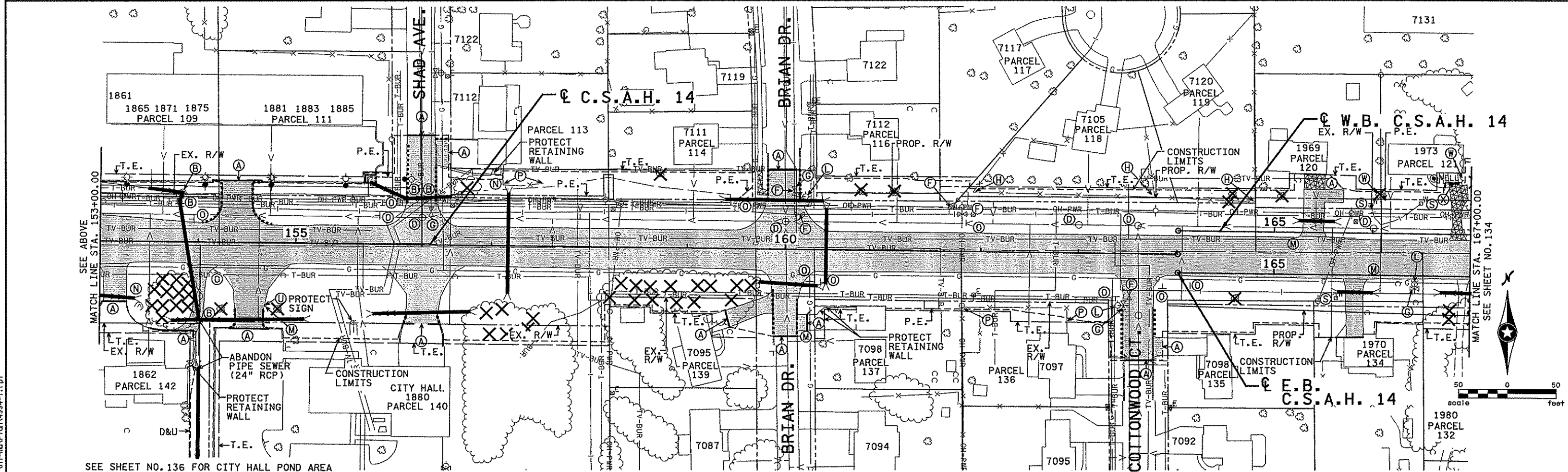
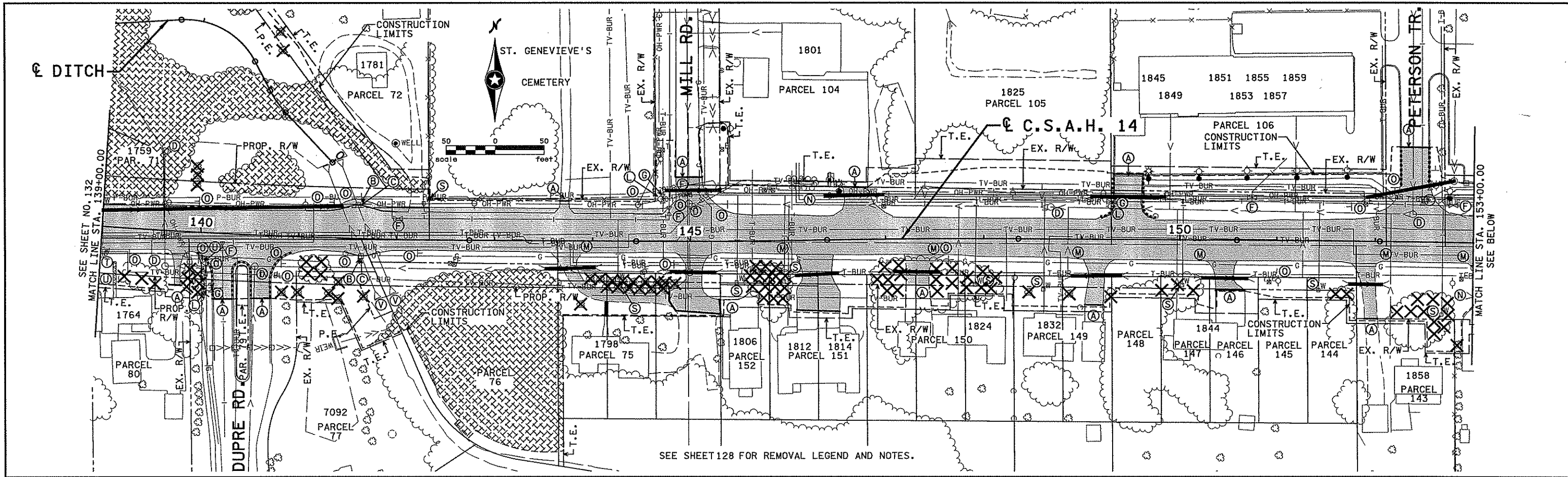
ANOKA COUNTY  
 REMOVAL PLAN  
 C.S.A.H. 14  
 STA. 111+50.00 TO STA. 137+00.00

SHEET 132 OF 492

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NO	DATE	BY	CHKD	APPR	REVISION

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NO	DATE	BY	CKD	APPR	REVISION

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Print Name: CHRISTOPHER M. TRBOYEVICH

*Christopher M. Trbojevich*

Date: 3/20/07 License # 41635

STATE PROJECT NO.  
S.P. 02-614-24, ETAL

DRAWN BY  
S. MARTINS

DESIGNED BY  
J. TOULOUSE

CHECKED BY  
C. TRBOYEVICH

COMM. NO. 4994



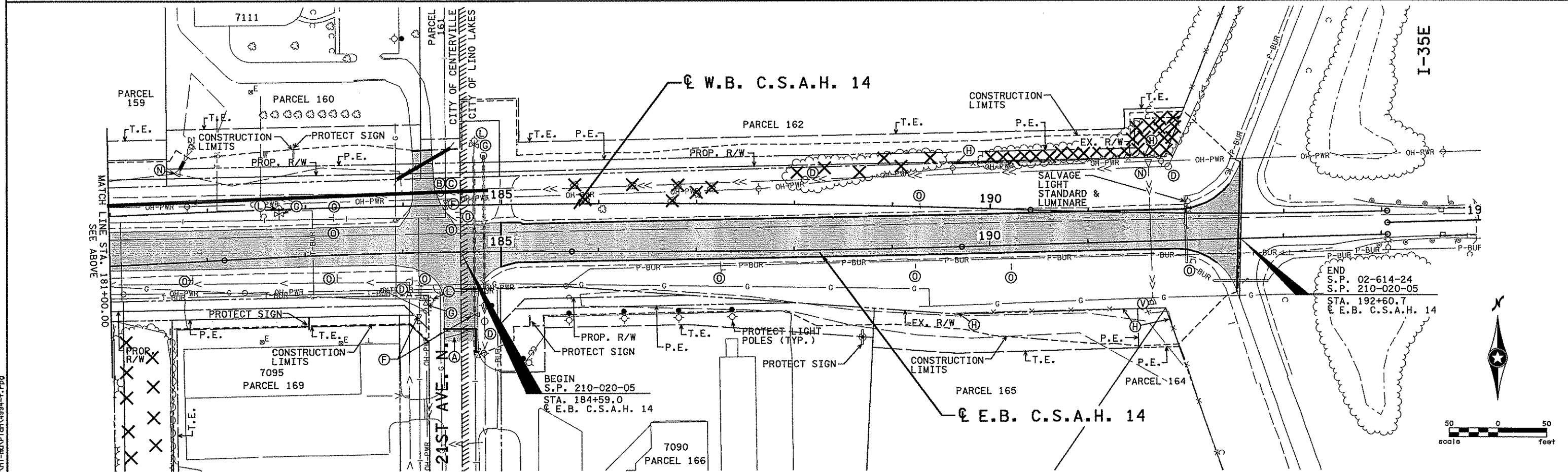
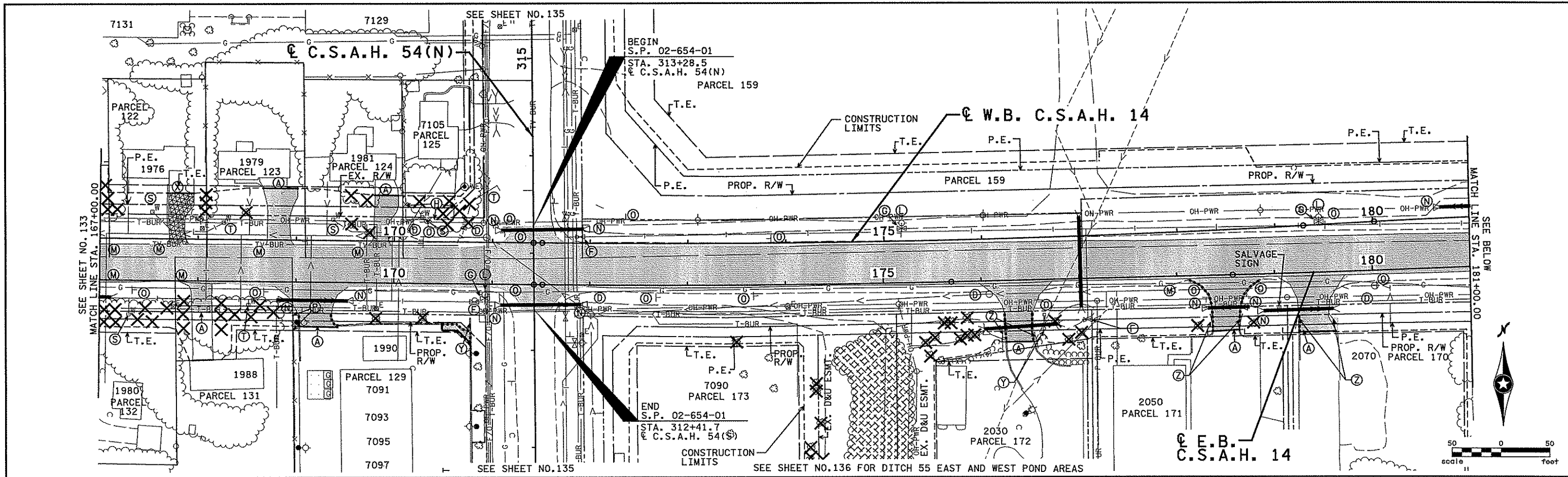
ANOKA COUNTY

REMOVAL PLAN

C.S.A.H. 14

STA. 139+00.00 TO STA. 167+00.00

SHEET  
133  
OF  
492



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Print Name: CHRISTOPHER M. TRBOYEVICH  
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STATE PROJECT NO. S.P. 02-614-24, ETAL

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 DESIGNED BY J. TOULOUSE  
 CHECKED BY C. TRBOYEVICH  
 COMM. NO. 4994

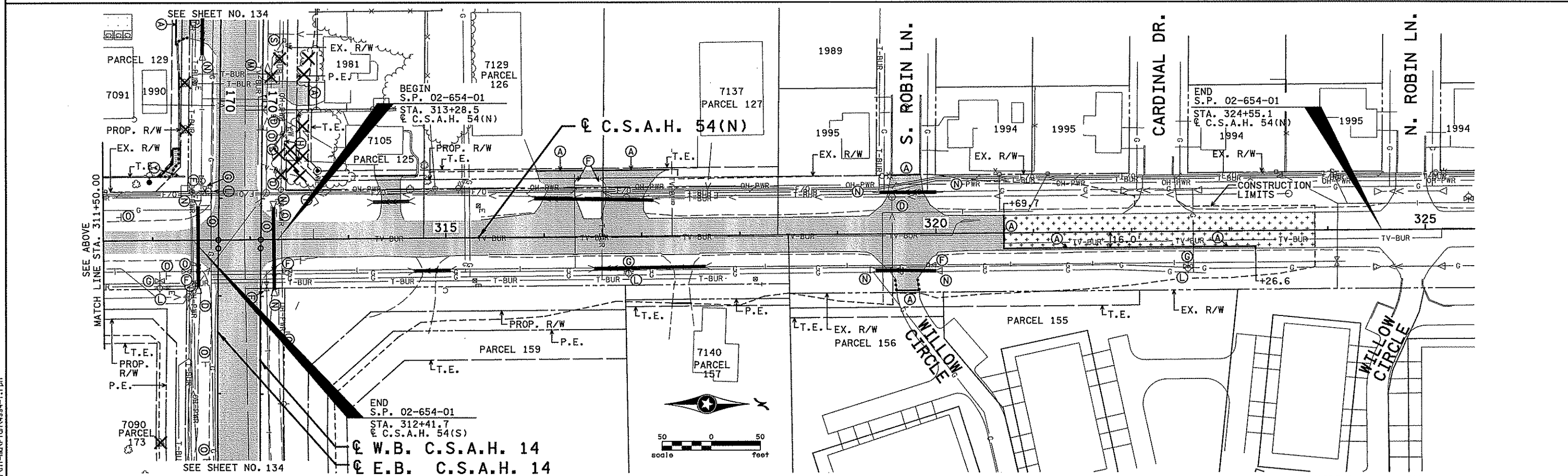
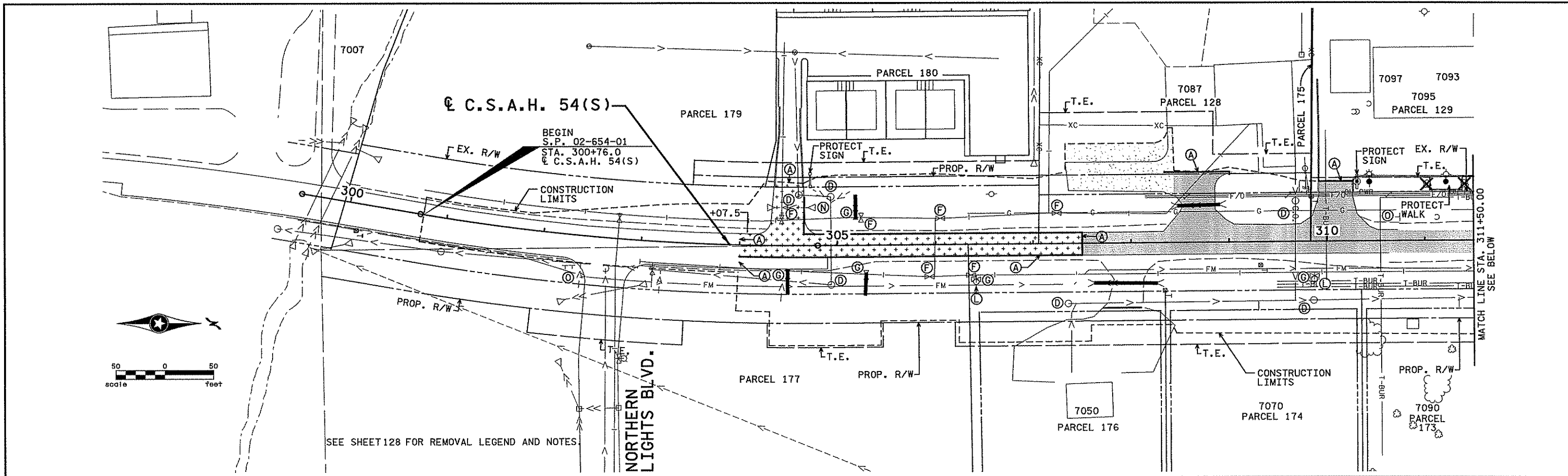


ANOKA COUNTY  
 REMOVAL PLAN  
 C.S.A.H. 14  
 STA. 167+00.00 TO STA. 193+00.00

SHEET 134 OF 492

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NO	DATE	BY	CHKD	APPR	REVISION



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NO	DATE	BY	CRD	APPR	REVISION

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 Print Name: CHRISTOPHER M. TRBOYEVIICH  
*Christopher M. Trbojevich*  
 Date: 3/20/07 License #: 47635

STATE PROJECT NO.  
 S.P. 02-614-24, ETAL

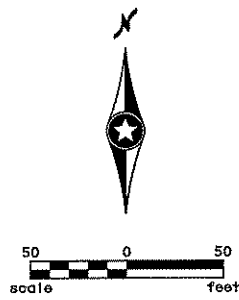
DRAWN BY  
 S. MARTINS  
 DESIGNED BY  
 J. TOULOUSE  
 CHECKED BY  
 C. TRBOYEVIICH  
 COMM. NO. 4994



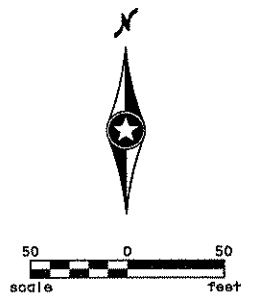
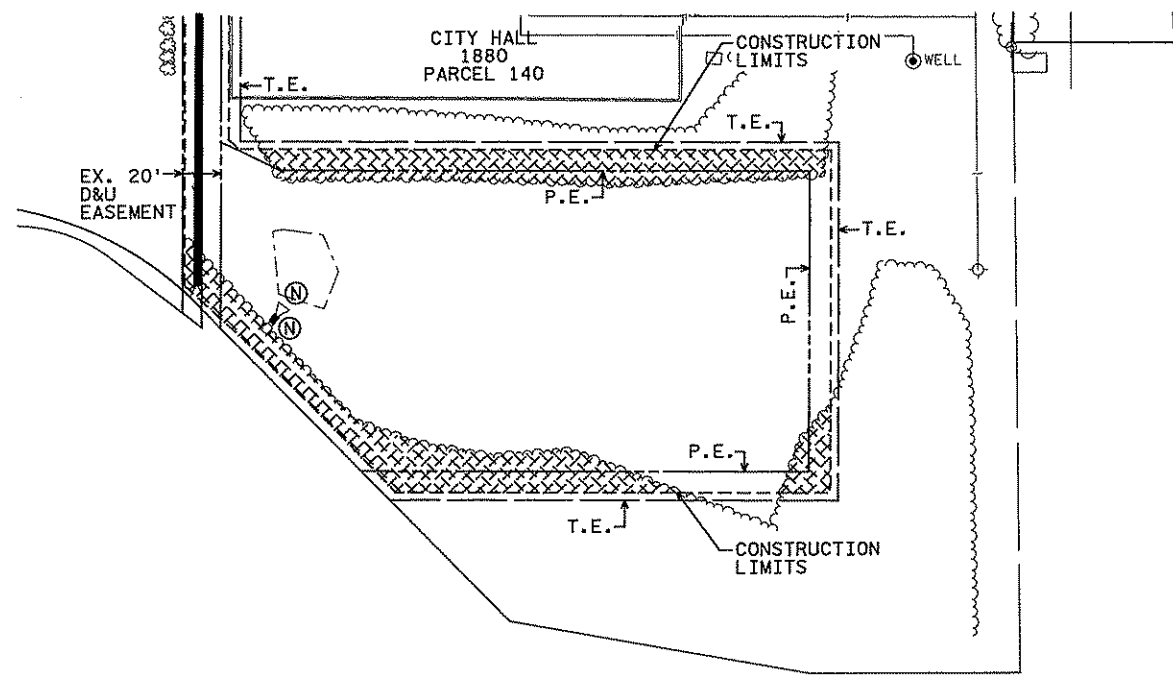
ANOKA COUNTY  
 REMOVAL PLAN  
 C.S.A.H. 14  
 C.S.A.H. 54

SHEET  
 135  
 OF  
 492

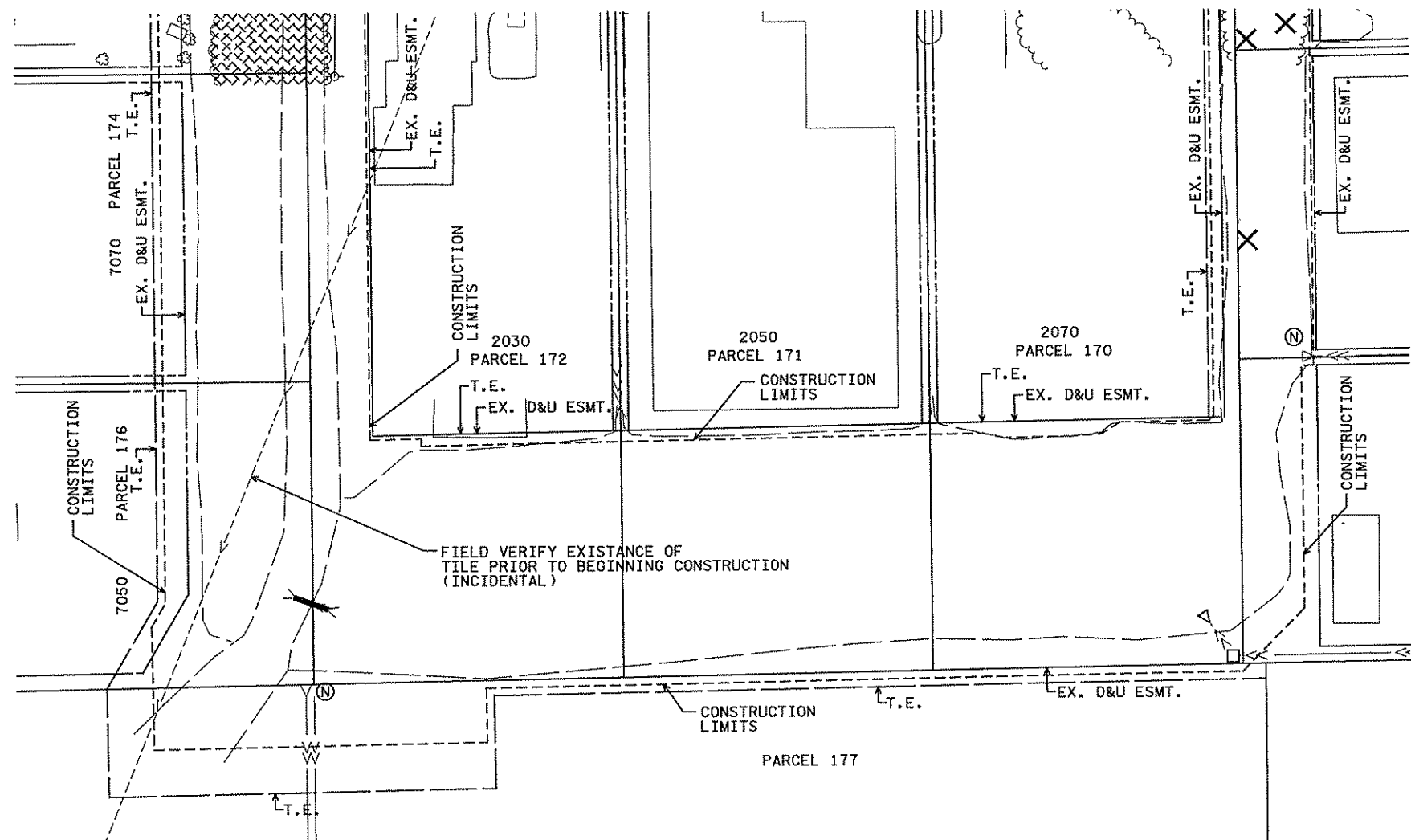




**CITY HALL POND AREA**



**DITCH 55 EAST AND WEST POND AREAS**



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 Print Name: **CHRISTOPHER M. TRBOYEVICH**  
*Christopher M. Trbojevich*  
 Date: 3/26/07 License: 41635

STATE PROJECT NO.  
S.P. 02-614-24. ETAL

DRAWN BY  
S. MARTINS  
DESIGNED BY  
J. TOULOUSE  
CHECKED BY  
C. TRBOYEVICH  
COMM. NO. 4994



ANOKA COUNTY  
REMOVAL PLAN  
C.S.A.H. 14  
MISC. POND AREAS

SHEET  
136  
OF  
492

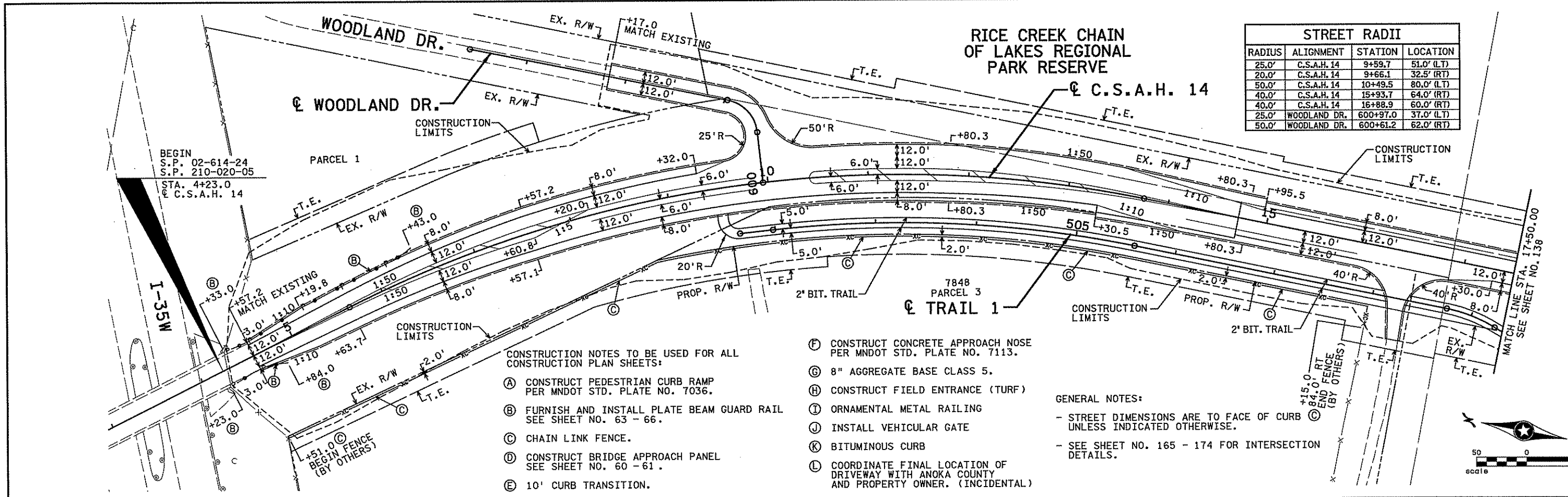
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NO	DATE	BY	CHKD	APPR	REVISION

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**RICE CREEK CHAIN  
OF LAKES REGIONAL  
PARK RESERVE**

STREET RADII			
RADIUS	ALIGNMENT	STATION	LOCATION
25.0'	C.S.A.H. 14	9+59.7	51.0' (LT)
20.0'	C.S.A.H. 14	9+66.1	32.5' (RT)
50.0'	C.S.A.H. 14	10+49.5	80.0' (LT)
40.0'	C.S.A.H. 14	15+93.7	64.0' (RT)
40.0'	C.S.A.H. 14	16+88.9	60.0' (RT)
25.0'	WOODLAND DR.	600+97.0	37.0' (LT)
50.0'	WOODLAND DR.	600+61.2	62.0' (RT)

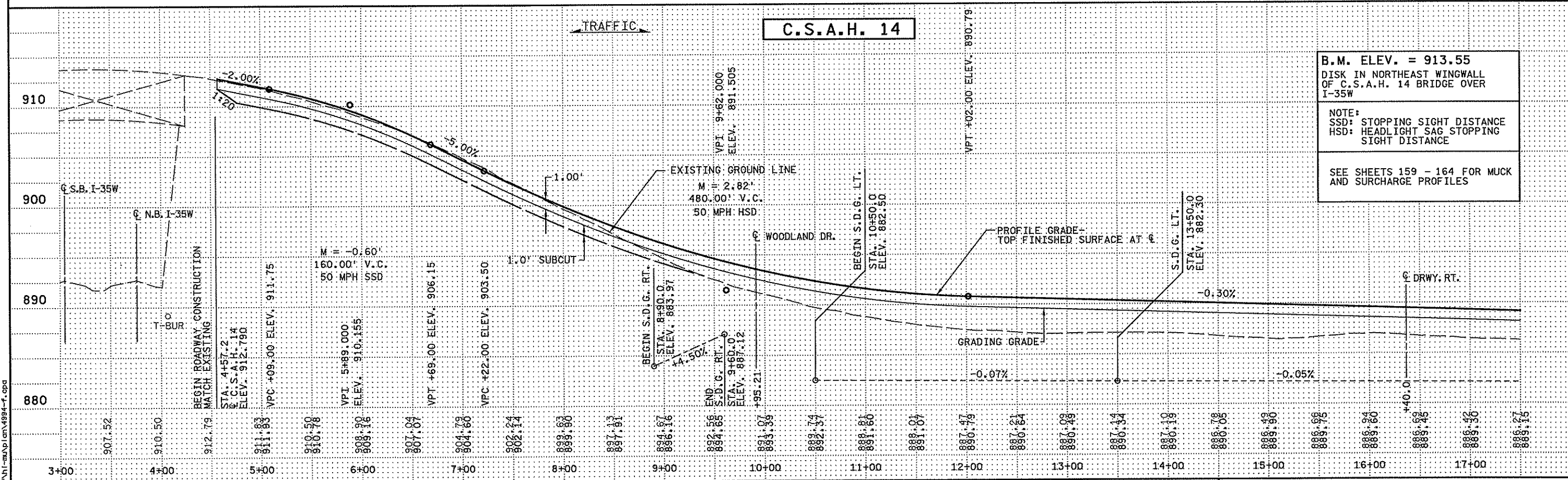


CONSTRUCTION NOTES TO BE USED FOR ALL CONSTRUCTION PLAN SHEETS:

- (A) CONSTRUCT PEDESTRIAN CURB RAMP PER MNDOT STD. PLATE NO. 7036.
- (B) FURNISH AND INSTALL PLATE BEAM GUARD RAIL SEE SHEET NO. 63 - 66.
- (C) CHAIN LINK FENCE.
- (D) CONSTRUCT BRIDGE APPROACH PANEL SEE SHEET NO. 60 - 61.
- (E) 10' CURB TRANSITION.
- (F) CONSTRUCT CONCRETE APPROACH NOSE PER MNDOT STD. PLATE NO. 7113.
- (G) 8" AGGREGATE BASE CLASS 5.
- (H) CONSTRUCT FIELD ENTRANCE (TURF)
- (I) ORNAMENTAL METAL RAILING
- (J) INSTALL VEHICULAR GATE
- (K) BITUMINOUS CURB
- (L) COORDINATE FINAL LOCATION OF DRIVEWAY WITH ANOKA COUNTY AND PROPERTY OWNER. (INCIDENTAL)

**GENERAL NOTES:**

- STREET DIMENSIONS ARE TO FACE OF CURB UNLESS INDICATED OTHERWISE.
- SEE SHEET NO. 165 - 174 FOR INTERSECTION DETAILS.



NO	DATE	BY	CHKD	APPR	REVISION

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 Print Name: **CHRISTOPHER M. TRBOYEVICH**  
 Signature: *Christopher M. Trbojevich*  
 Date: 3/26/07 License #: 41635

STATE PROJECT NO.  
S.P. 02-614-24, ETAL

DRAWN BY  
**S. MARTINS**  
 DESIGNED BY  
**J. TOULOUSE**  
 CHECKED BY  
**C. TRBOYEVICH**  
 COMM. NO. 4994



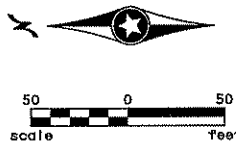
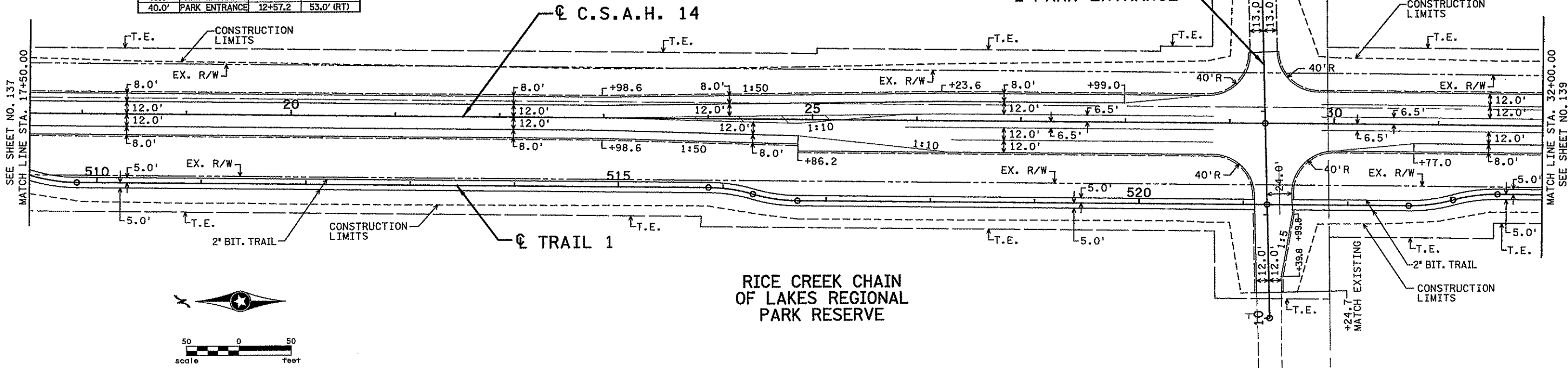
**ANOKA COUNTY**  
 CONSTRUCTION PLAN AND PROFILE  
**C.S.A.H. 14**  
 STA. 4+23.0 TO STA. 17+50.00

**SHEET**  
 137  
 OF  
 492

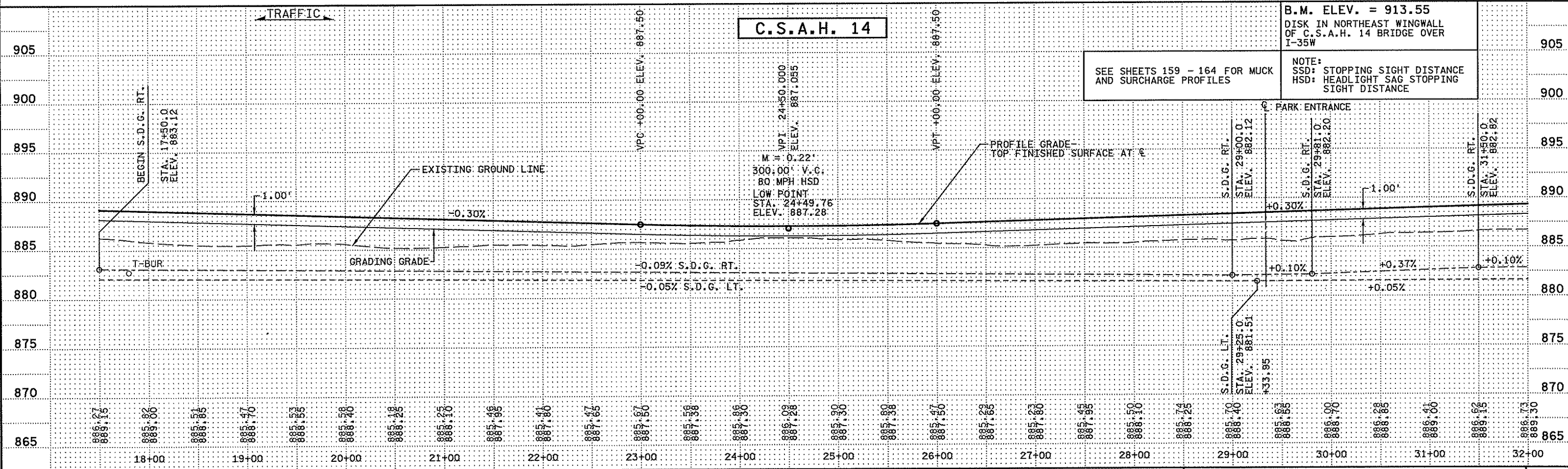
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STREET RADII			
RADIUS	ALIGNMENT	STATION	LOCATION
40.0'	C.S.A.H. 14	28+78.9	66.5' (LT)
40.0'	C.S.A.H. 14	28+84.1	70.5' (RT)
40.0'	C.S.A.H. 14	29+84.8	70.5' (LT)
40.0'	C.S.A.H. 14	30+00.0	66.5' (RT)
40.0'	PARK ENTRANCE	11+19.4	52.0' (LT)
40.0'	PARK ENTRANCE	11+19.8	64.0' (RT)
40.0'	PARK ENTRANCE	12+56.4	53.0' (LT)
40.0'	PARK ENTRANCE	12+57.2	53.0' (RT)

RICE CREEK CHAIN OF LAKES REGIONAL PARK RESERVE



RICE CREEK CHAIN OF LAKES REGIONAL PARK RESERVE



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.  
 Pr Int Name: CHRISTOPHER M. TRBOYEVICH  
*Christopher M. Trbojevich*  
 Date: 3/26/07 License #: 44635

STATE PROJECT NO. S.P. 02-614-24, ETAL  
 DRAWN BY S. MARTINS  
 DESIGNED BY J. TOULOUSE  
 CHECKED BY C. TRBOYEVICH  
 COMM. NO. 4994

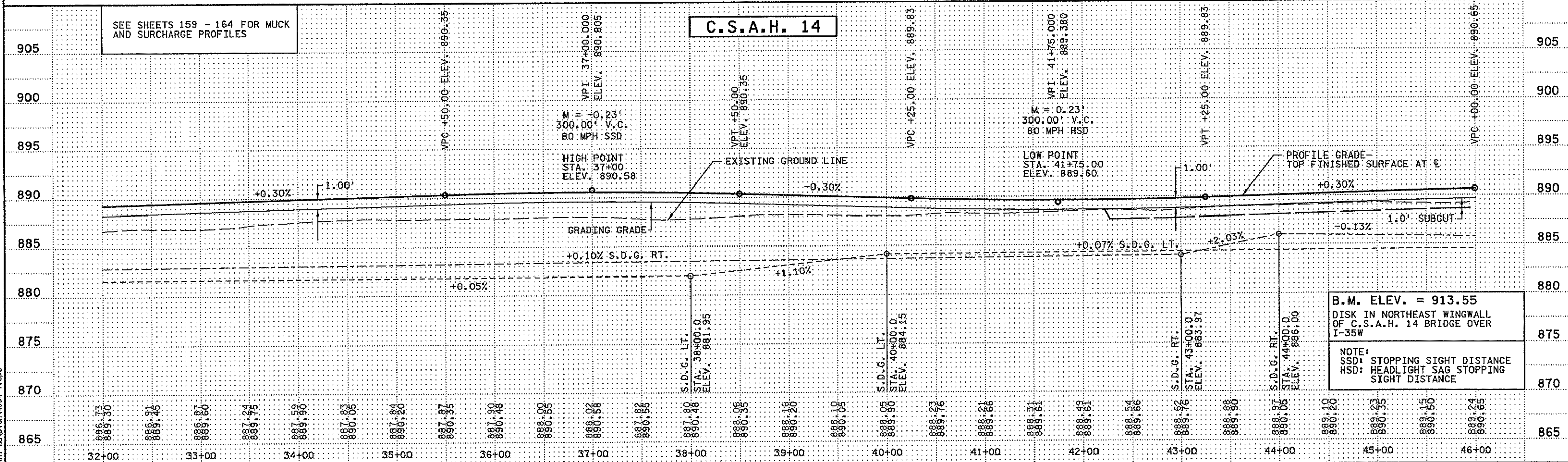
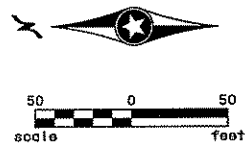
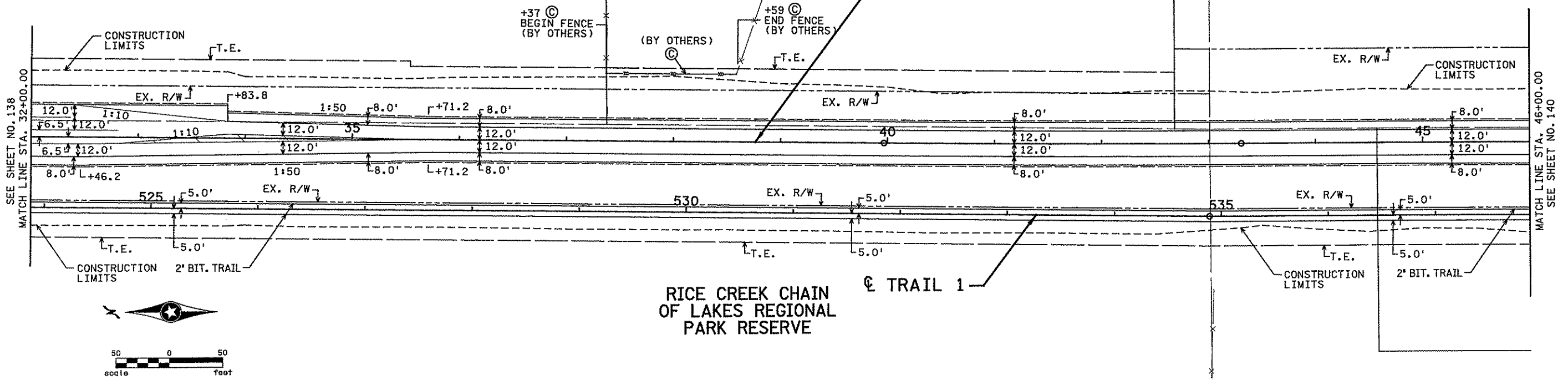


ANOKA COUNTY  
 CONSTRUCTION PLAN AND PROFILE  
 C.S.A.H. 14  
 STA. 17+50.00 TO STA. 32+00.00  
 SHEET 138 OF 492

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NO	DATE	BY	CKD	APPR	REVISION

RICE CREEK CHAIN OF LAKES REGIONAL PARK RESERVE  
 C.S.A.H. 14



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.  
 Print Name: CHRISTOPHER M. TRBOYEVICH  
*Christopher M. Trbojevich*  
 Date: 3/26/07 License #: 41635

STATE PROJECT NO. S.P. 02-614-24, ETAL  
 DRAWN BY S. MARTINS  
 DESIGNED BY J. TOULOUSE  
 CHECKED BY C. TRBOYEVICH  
 COMM. NO. 4994



ANOKA COUNTY  
 CONSTRUCTION PLAN AND PROFILE  
 C.S.A.H. 14  
 STA. 32+00.00 TO STA. 46+00.00

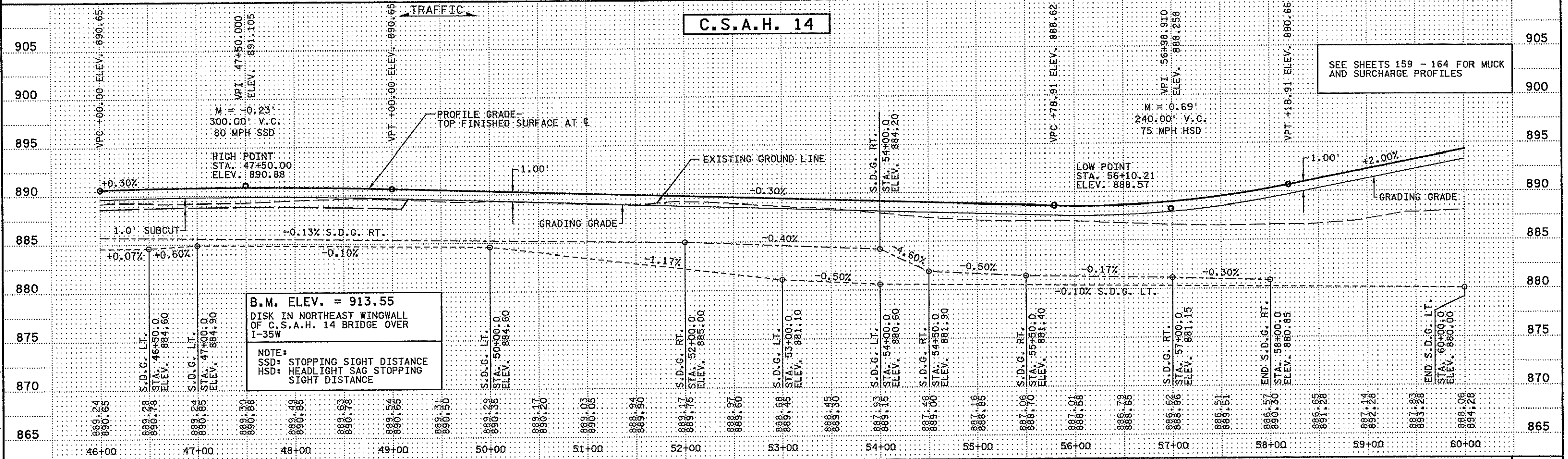
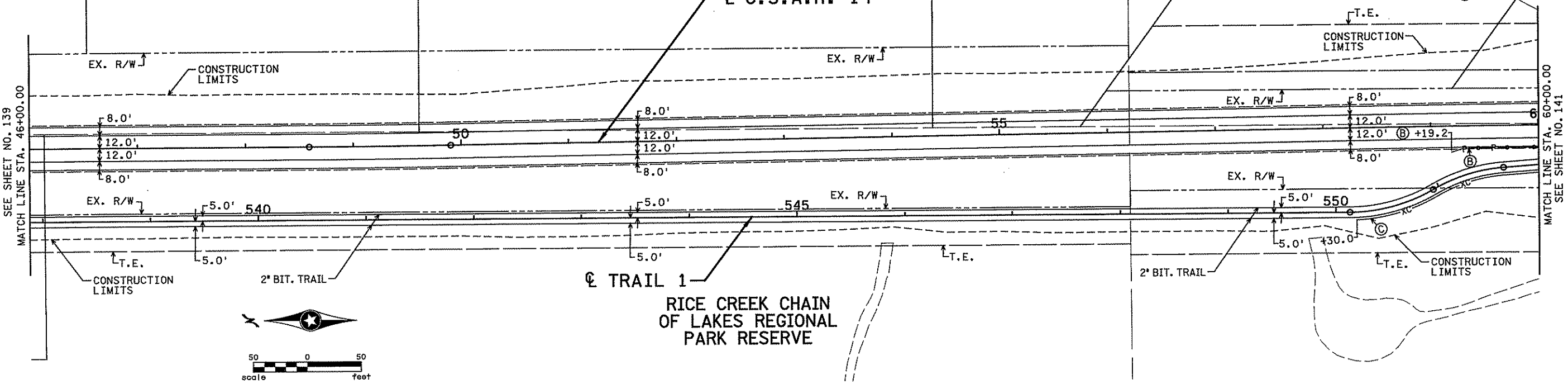
SHEET 139 OF 492

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RICE CREEK CHAIN OF LAKES REGIONAL PARK RESERVE  
 C.S.A.H. 14

RICE CREEK CHAIN OF LAKES REGIONAL PARK RESERVE  
 TRAIL 1



SEE SHEETS 159 - 164 FOR MUCK AND SURCHARGE PROFILES

**B.M. ELEV. = 913.55**  
 DISK IN NORTHEAST WINGWALL OF C.S.A.H. 14 BRIDGE OVER I-35W

NOTE:  
 SSD: STOPPING SIGHT DISTANCE  
 HSD: HEADLIGHT SAG STOPPING SIGHT DISTANCE

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Print Name: CHRISTOPHER M. TRBOYEVICH  
*Christopher M. Trbojevich*  
 Date: 3/26/07 License: 41635

STATE PROJECT NO. S.P. 02-614-24, ETAL

DRAWN BY S. MARTINS  
 DESIGNED BY J. TOULOUSE  
 CHECKED BY C. TRBOYEVICH  
 COMM. NO. 4994

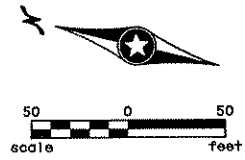
**SRF CONSULTING GROUP, INC.**

ANOKA COUNTY  
 CONSTRUCTION PLAN AND PROFILE  
 C.S.A.H. 14  
 STA. 46+00.00 TO STA. 60+00.00

SHEET 140 OF 492

2:55:22 PM 3/21/2007  
 ...\\4994-f\h1-mu\p\an\4994-f.cpd

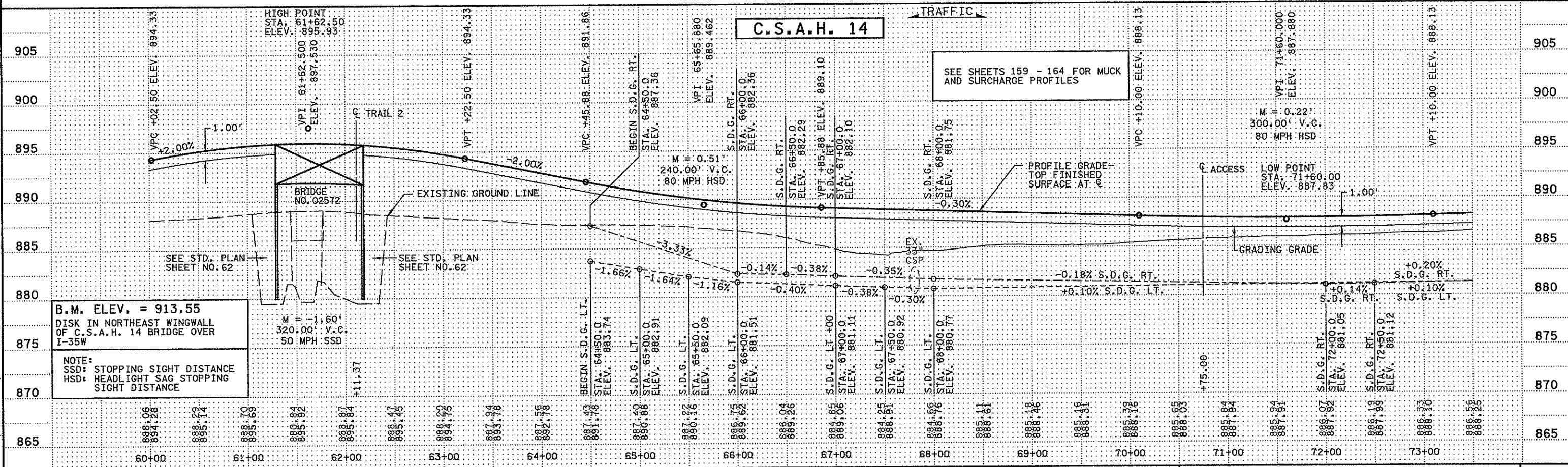
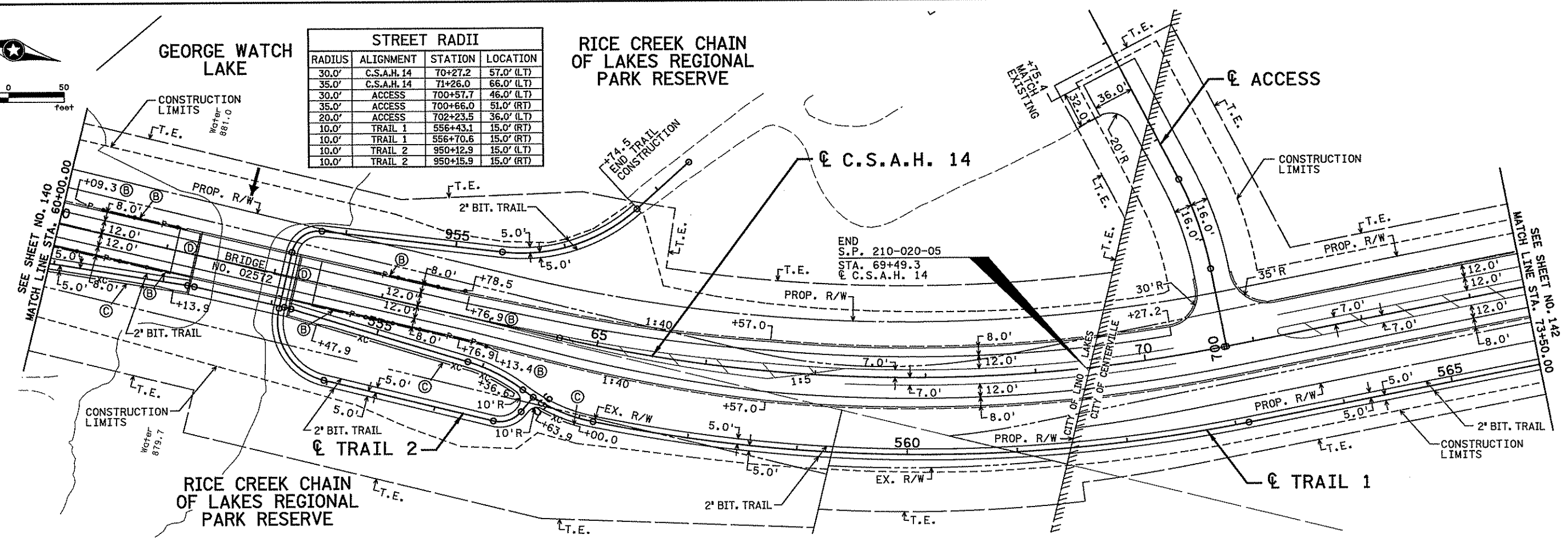
NO	DATE	BY	CKD	APPR	REVISION



GEORGE WATCH LAKE

STREET RADII			
RADIUS	ALIGNMENT	STATION	LOCATION
30.0'	C.S.A.H. 14	70+27.2	57.0' (LT)
35.0'	C.S.A.H. 14	71+26.0	66.0' (LT)
30.0'	ACCESS	700+57.7	46.0' (LT)
35.0'	ACCESS	700+66.0	51.0' (RT)
20.0'	ACCESS	702+23.5	36.0' (LT)
10.0'	TRAIL 1	556+43.1	15.0' (RT)
10.0'	TRAIL 1	556+70.6	15.0' (RT)
10.0'	TRAIL 2	950+12.9	15.0' (LT)
10.0'	TRAIL 2	950+15.9	15.0' (RT)

RICE CREEK CHAIN OF LAKES REGIONAL PARK RESERVE



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3/21/2007  
... \4994-f\h1-m\plan\4994-f.dwg

NO	DATE	BY	CHKD	APPR	REVISION

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

Print Name: CHRISTOPHER M. TRBOYEVICH  
*Christopher M. Trbojevich*  
 Date: 3/26/07 License: 41635

STATE PROJECT NO. S.P. 02-614-24.ETAL

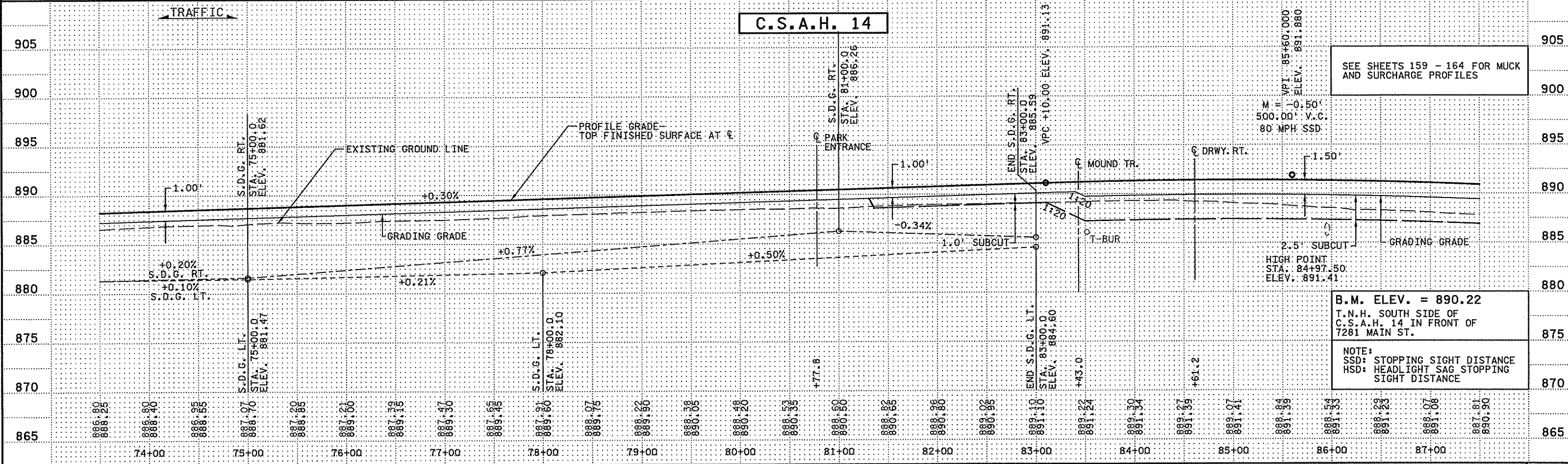
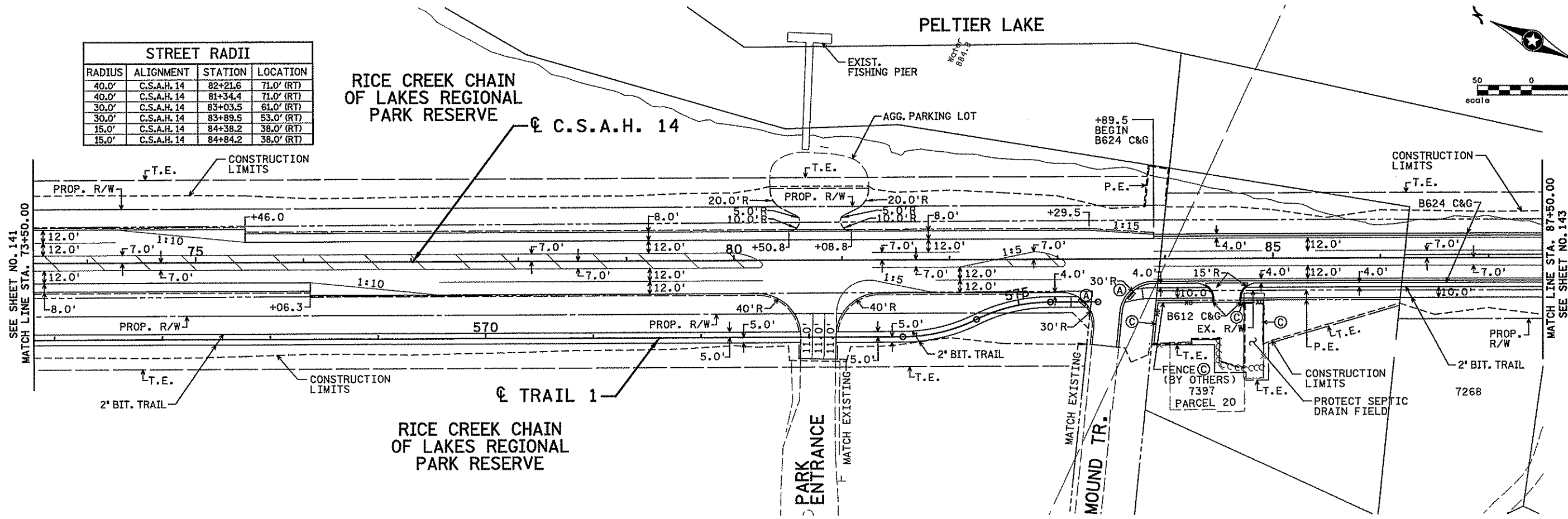
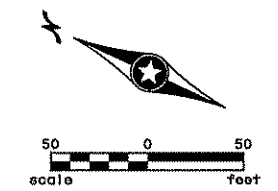
DRAWN BY S. MARTINS  
 DESIGNED BY J. TOULOUSE  
 CHECKED BY C. TRBOYEVICH  
 COMM. NO. 4994



ANOKA COUNTY  
 CONSTRUCTION PLAN AND PROFILE  
 C.S.A.H. 14  
 STA. 60+00.00 TO STA. 73+50.00

SHEET 141 OF 492

STREET RADII			
RADIUS	ALIGNMENT	STATION	LOCATION
40.0'	C.S.A.H. 14	82+21.6	71.0' (RT)
40.0'	C.S.A.H. 14	81+34.4	71.0' (RT)
30.0'	C.S.A.H. 14	83+03.5	61.0' (RT)
30.0'	C.S.A.H. 14	83+89.5	53.0' (RT)
15.0'	C.S.A.H. 14	84+36.2	38.0' (RT)
15.0'	C.S.A.H. 14	84+84.2	38.0' (RT)



SEE SHEETS 159 - 164 FOR MUCK AND SURCHARGE PROFILES

B.M. ELEV. = 890.22  
T.N.H. SOUTH SIDE OF  
C.S.A.H. 14 IN FRONT OF  
7281 MAIN ST.

NOTE:  
SSD: STOPPING SIGHT DISTANCE  
HSD: HEADLIGHT SAG STOPPING  
SIGHT DISTANCE

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NO	DATE	BY	CKD	APPR	REVISION

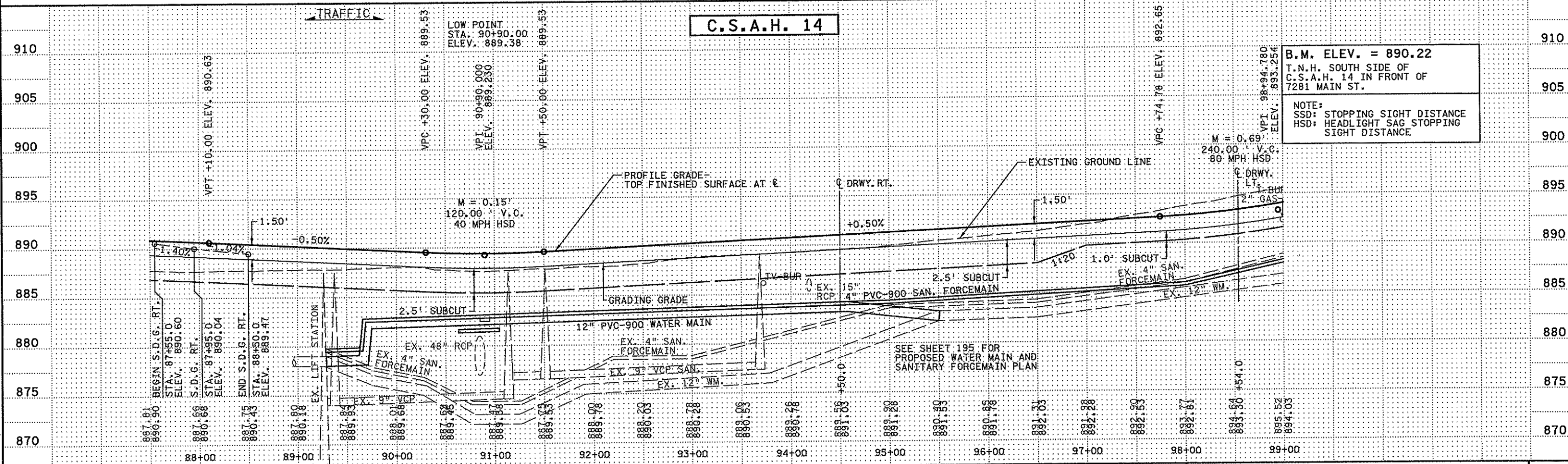
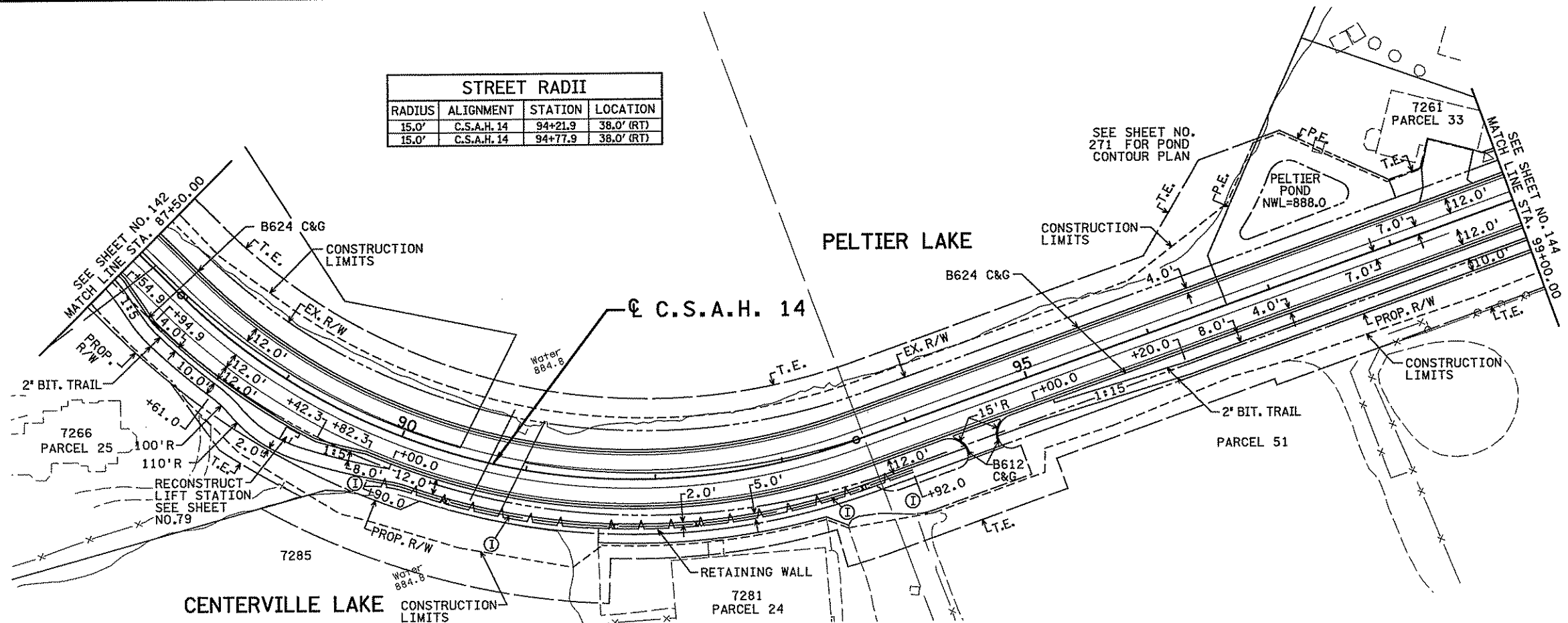
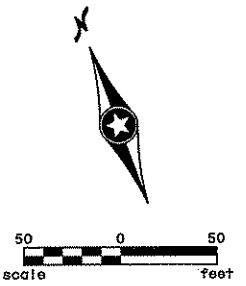
I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.  
 Print Name: CHRISTOPHER M. TRBOYEVICH  
*Christopher Trbojevich*  
 Date: 3/21/07 License #: 41635

STATE PROJECT NO. S.P. 02-614-24, ETAL  
 DRAWN BY S. MARTINS  
 DESIGNED BY J. TOULOUSE  
 CHECKED BY C. TRBOYEVICH  
 COMM. NO. 4994



ANOKA COUNTY  
 CONSTRUCTION PLAN AND PROFILE  
 C.S.A.H. 14  
 STA. 73+50.00 TO STA. 87+50.00  
 SHEET 142 OF 492

STREET RADII			
RADIUS	ALIGNMENT	STATION	LOCATION
15.0'	C.S.A.H. 14	94+21.9	38.0' (RT)
15.0'	C.S.A.H. 14	94+77.9	38.0' (RT)



B.M. ELEV. = 890.22  
 T.N.H. SOUTH SIDE OF  
 C.S.A.H. 14 IN FRONT OF  
 7281 MAIN ST.  
 NOTE:  
 SSD: STOPPING SIGHT DISTANCE  
 HSD: HEADLIGHT SAG STOPPING  
 SIGHT DISTANCE

NO	DATE	BY	CKD	APPR	REVISION

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 Print Name: CHRISTOPHER M. TRBOYEVICH  
*Christopher Trbojevich*  
 Date: 3/26/07 License #: 41635

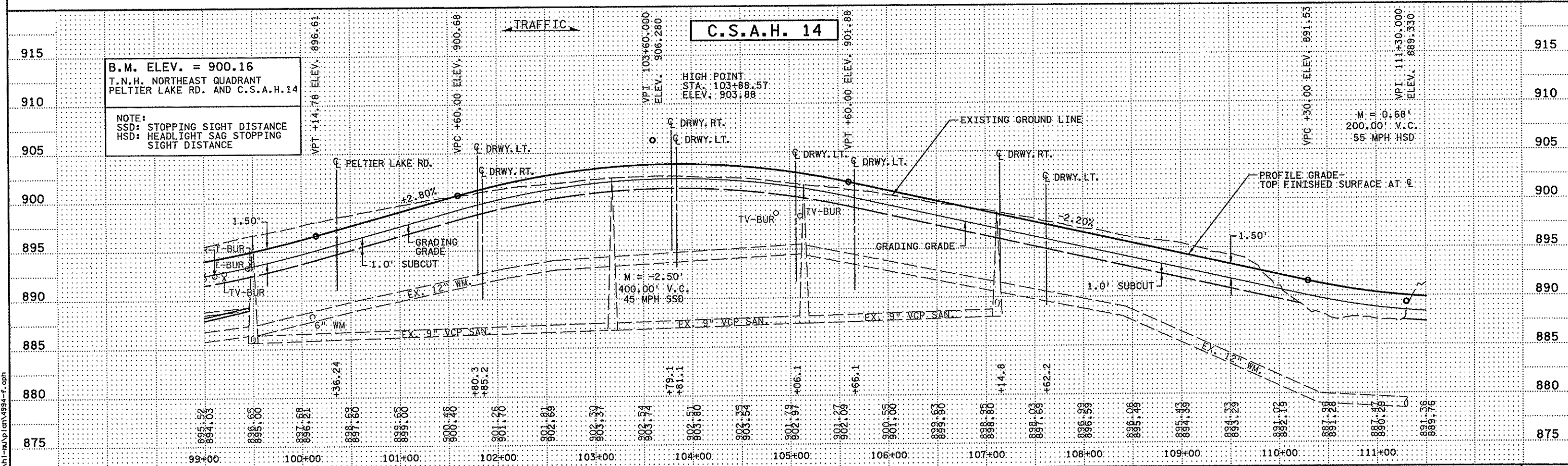
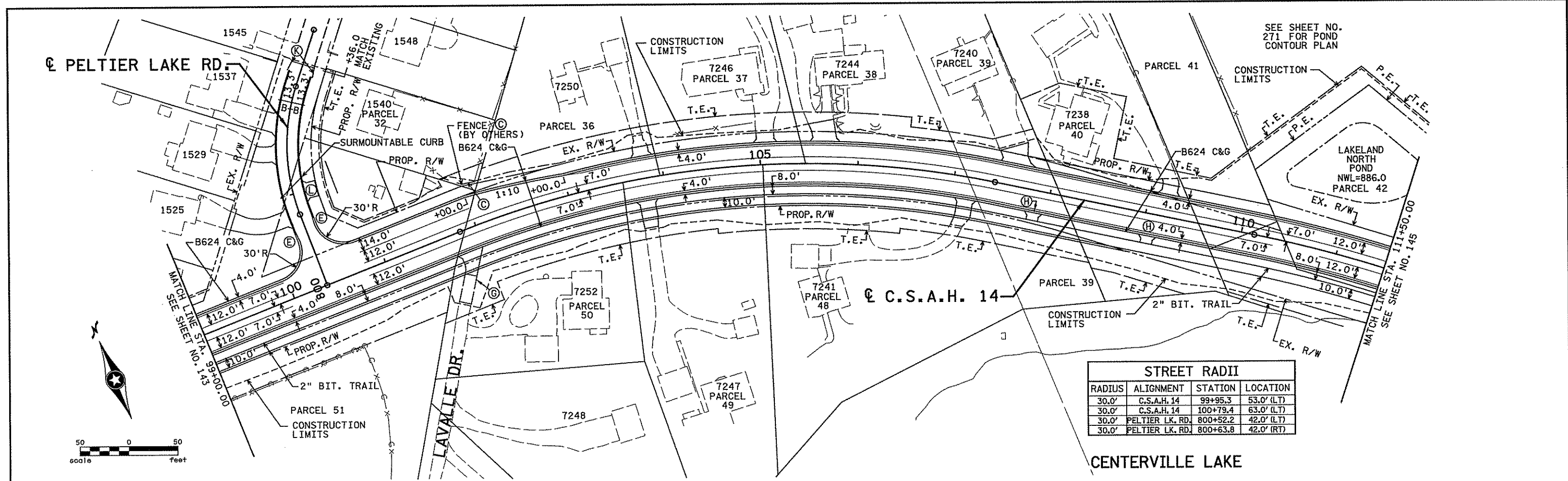
STATE PROJECT NO. S.P. 02-614-24, ETAL  
 DRAWN BY S. MARTINS  
 DESIGNED BY J. TOULOUSE  
 CHECKED BY C. TRBOYEVICH  
 COMM. NO. 4994



ANOKA COUNTY  
 CONSTRUCTION PLAN AND PROFILE  
 C.S.A.H. 14  
 STA. 87+50.00 TO STA. 99+00.00

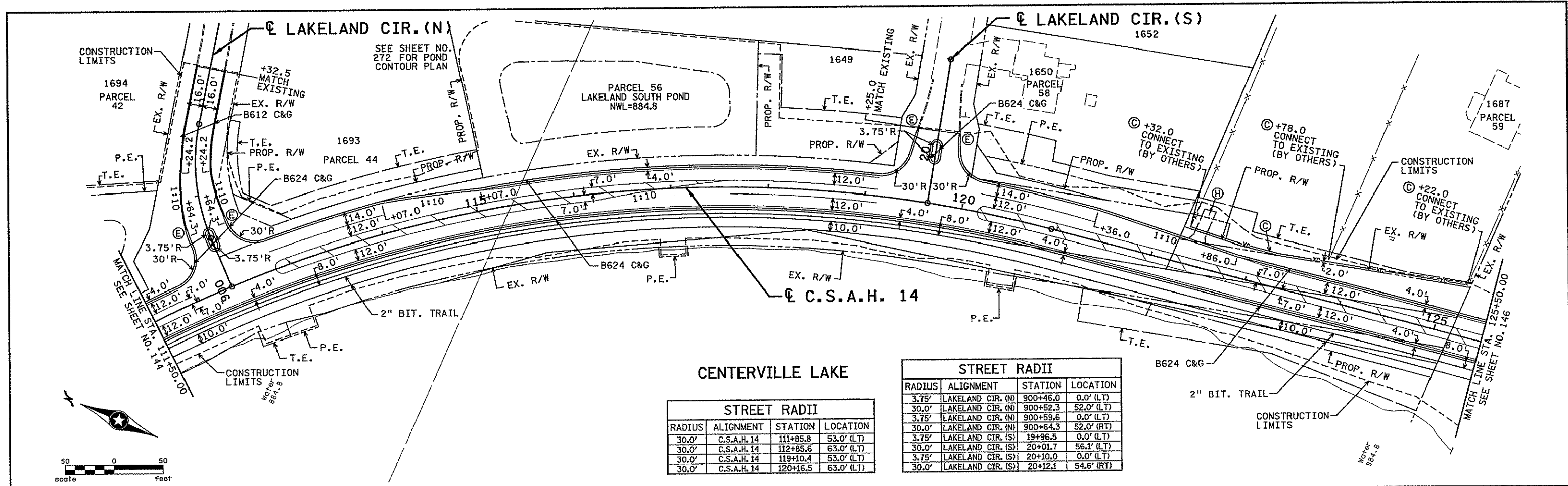
SHEET 143 OF 492





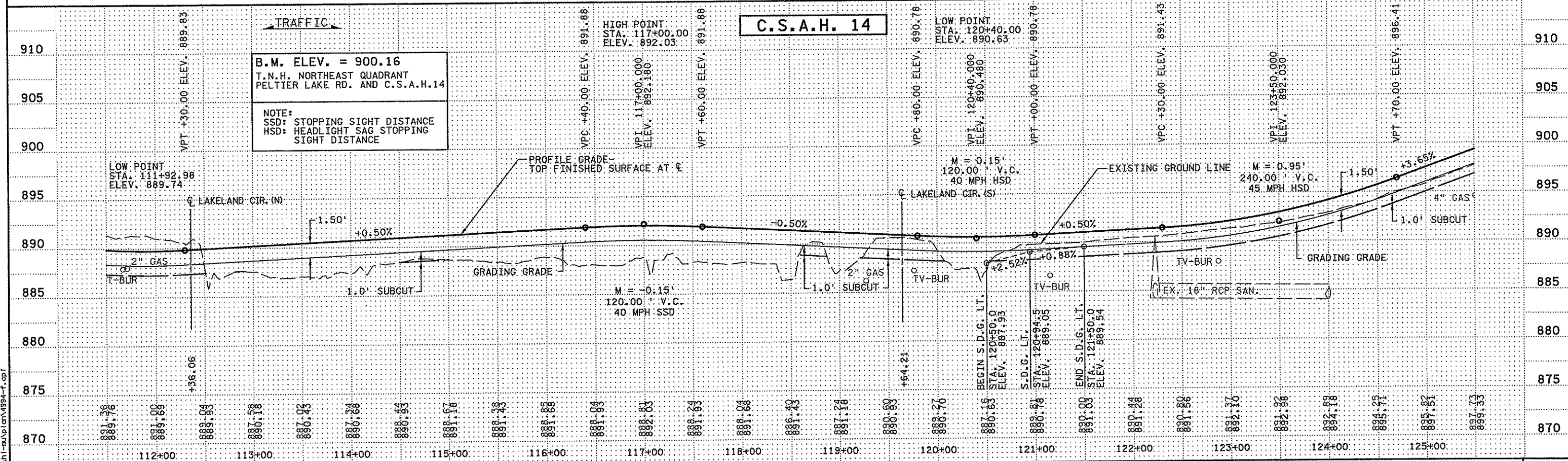
NO. DATE BY CKD APPR REVISION	I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota. Prt Name: CHRISTOPHER M. TRBOYE VICH <i>Christopher Trboye Vich</i> Date: 3/26/07 License: 41635	STATE PROJECT NO. S.P. 02-614-24, ETAL DRAWN BY S. MARTINS DESIGNED BY J. TOULOUSE CHECKED BY C. TRBOYE VICH COMM. NO. 4994	<b>SRF CONSULTING GROUP, INC.</b> ANOKA COUNTY CONSTRUCTION PLAN AND PROFILE C.S.A.H. 14 STA. 99+00.00 TO STA. 111+50.00	SHEET 144 OF 492
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RADIUS	ALIGNMENT	STATION	LOCATION
30.0'	C.S.A.H. 14	111+85.8	53.0' (LT)
30.0'	C.S.A.H. 14	112+85.6	63.0' (LT)
30.0'	C.S.A.H. 14	119+10.4	53.0' (LT)
30.0'	C.S.A.H. 14	120+16.5	63.0' (LT)

RADIUS	ALIGNMENT	STATION	LOCATION
3.75'	LAKELAND CIR. (N)	900+46.0	0.0' (LT)
30.0'	LAKELAND CIR. (N)	900+52.3	52.0' (LT)
3.75'	LAKELAND CIR. (N)	900+59.6	0.0' (LT)
30.0'	LAKELAND CIR. (N)	900+64.3	52.0' (RT)
3.75'	LAKELAND CIR. (S)	19+96.5	0.0' (LT)
30.0'	LAKELAND CIR. (S)	20+01.7	56.1' (LT)
3.75'	LAKELAND CIR. (S)	20+10.0	0.0' (LT)
30.0'	LAKELAND CIR. (S)	20+12.1	54.6' (RT)



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NO	DATE	BY	CHK	APPR	REVISION

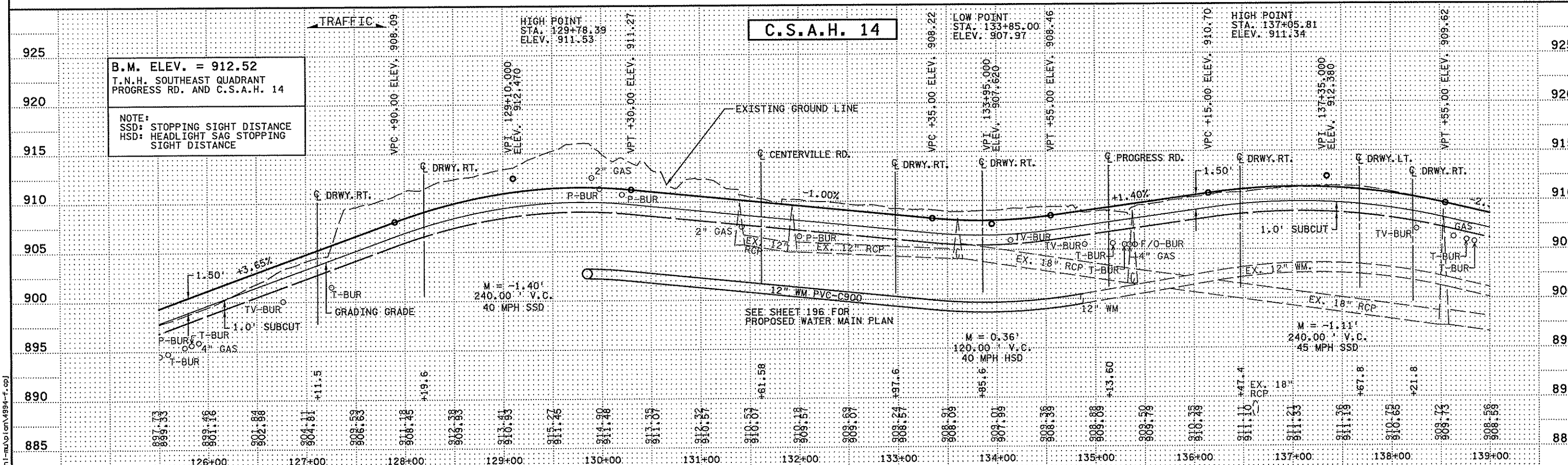
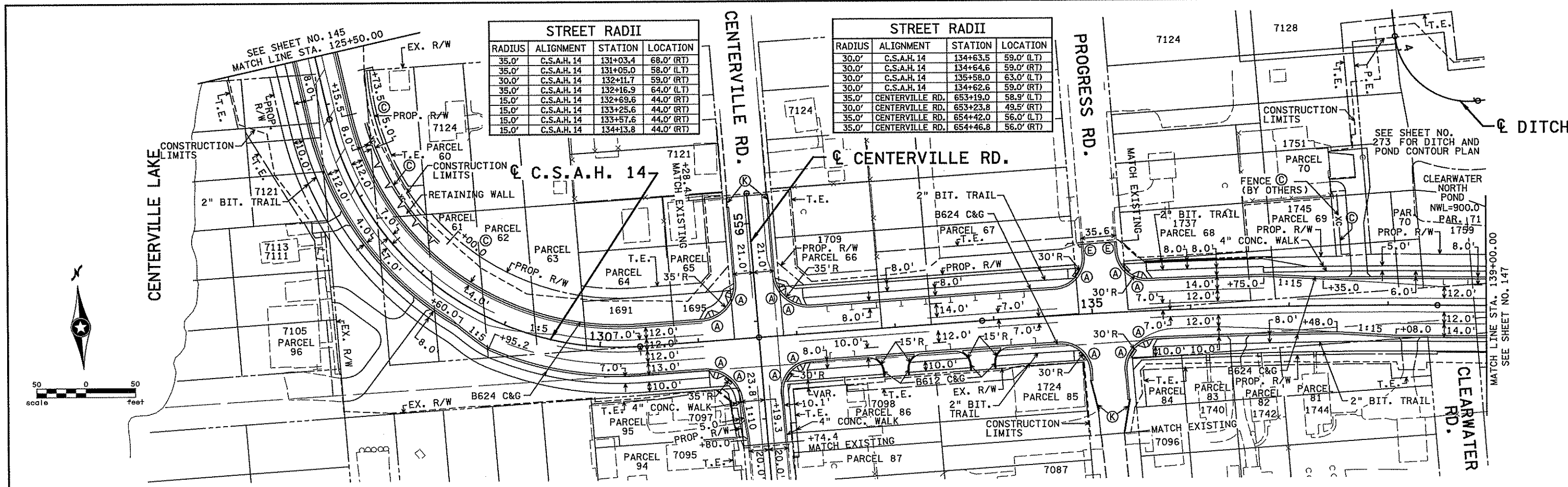
I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.  
 Pr. Int Name: CHRISTOPHER M. TRBOYEVICH  
*Christopher M. Trbojevich*  
 Date: 3/26/07 License #: 41635

STATE PROJECT NO. S.P. 02-614-24, ETAL  
 DRAWN BY S. MARTINS  
 DESIGNED BY J. TOULOUSE  
 CHECKED BY C. TRBOYEVICH  
 COMM. NO. 4994



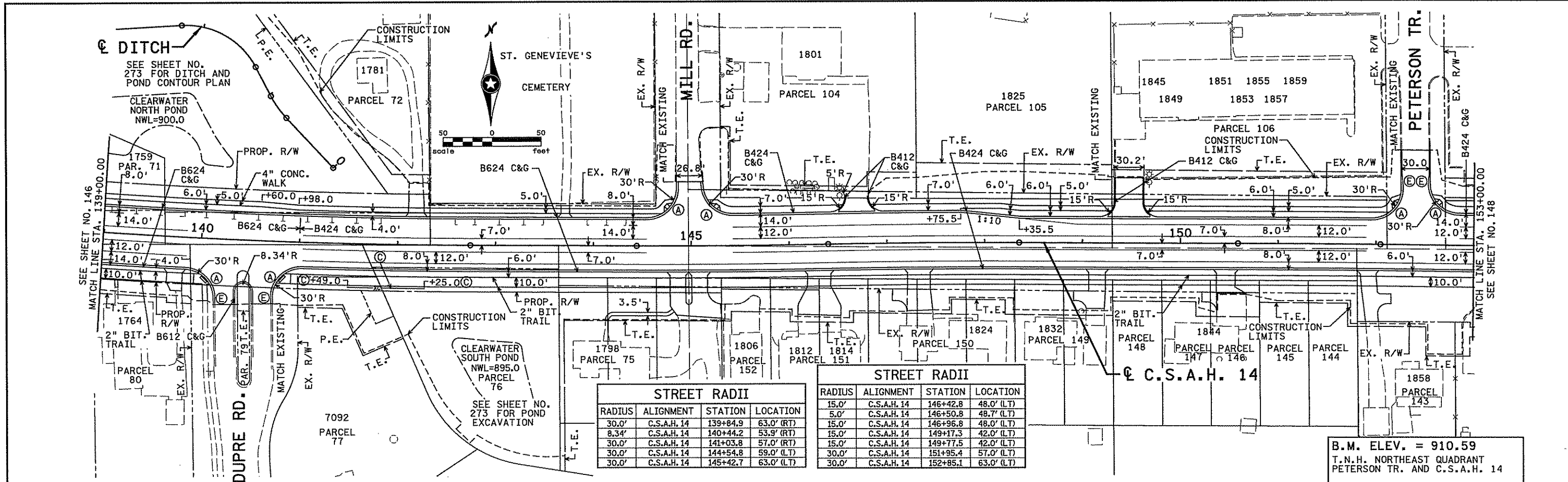
ANOKA COUNTY  
 CONSTRUCTION PLAN AND PROFILE  
 C.S.A.H. 14  
 STA. 111+50.00 TO STA. 125+50.00

SHEET  
 145  
 OF  
 492

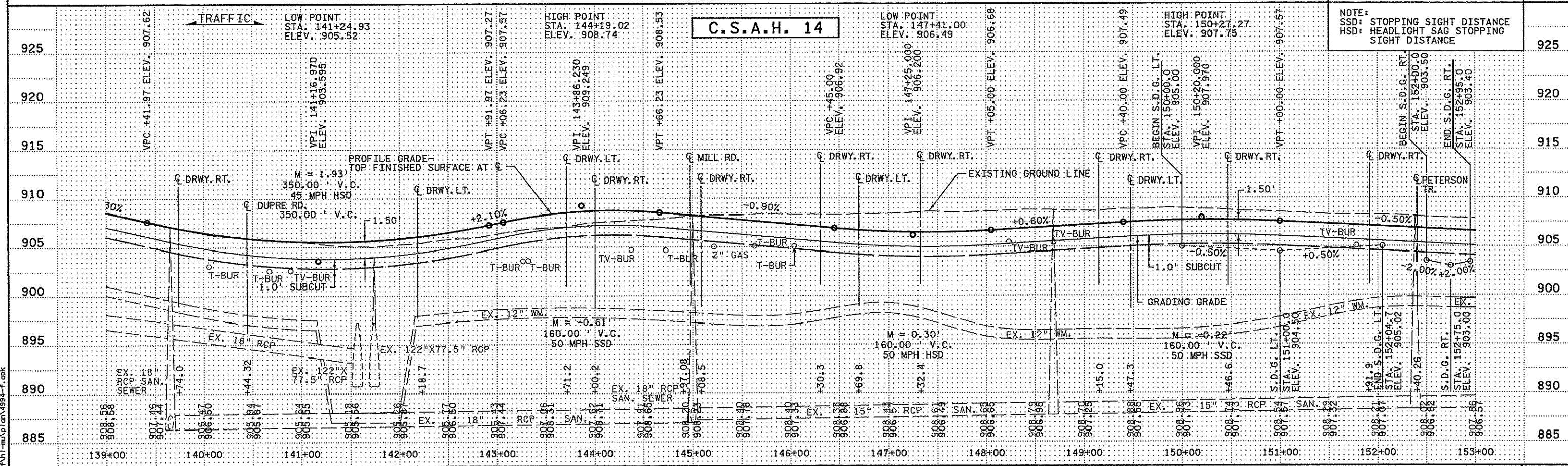


I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota. Print Name: CHRISTOPHER M. TRBOYEVICH <i>Christopher Trbojevich</i> Date: 3/26/07 License: 41635		DRAWN BY: S. MARTINS DESIGNED BY: J. TOULOUSE CHECKED BY: C. TRBOYEVICH COMM. NO. 4994	ANOKA COUNTY CONSTRUCTION PLAN AND PROFILE C.S.A.H. 14 STA. 125+50.00 TO STA. 139+00.00	SHEET 146 OF 492
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B.M. ELEV. = 910.59  
T.N.H. NORTHEAST QUADRANT  
PETERSON TR. AND C.S.A.H. 14



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3/21/2007  
...\\4994-F\h1-mu\plan\4994-f.apk

NO	DATE	BY	CHKD	APPR	REVISION

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Print Name: CHRISTOPHER M. TRBOYEVICH  
Date: 3/26/07 License #: 41635

STATE PROJECT NO. S.P. 02-614-24, ETAL

DRAWN BY S. MARTINS  
DESIGNED BY J. TOULOUSE  
CHECKED BY C. TRBOYEVICH  
COMM. NO. 4994

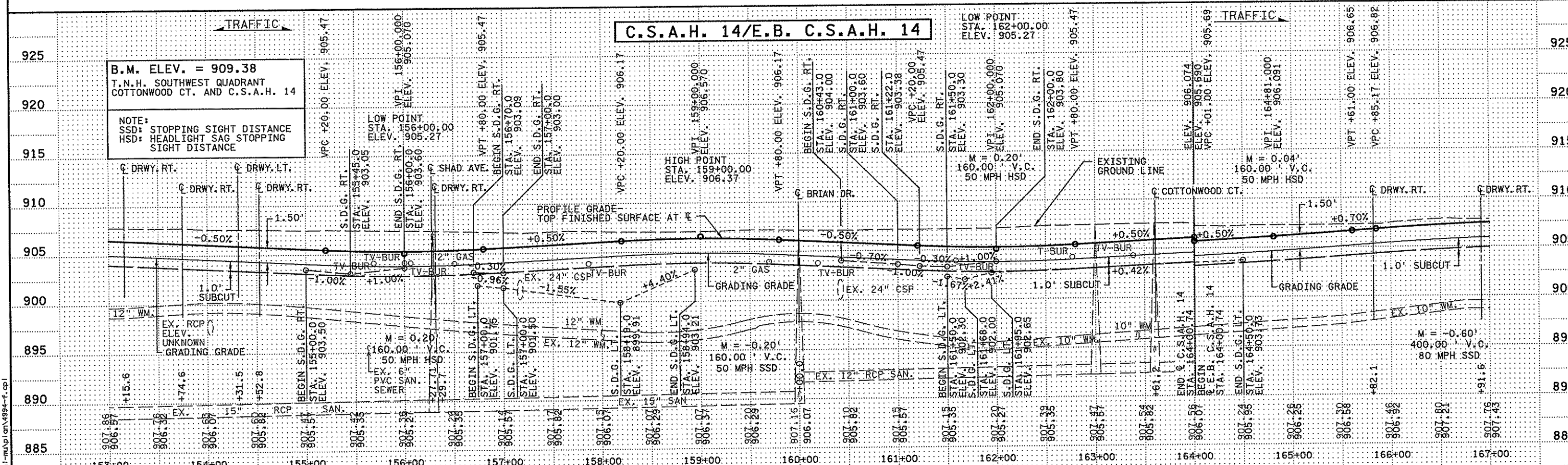
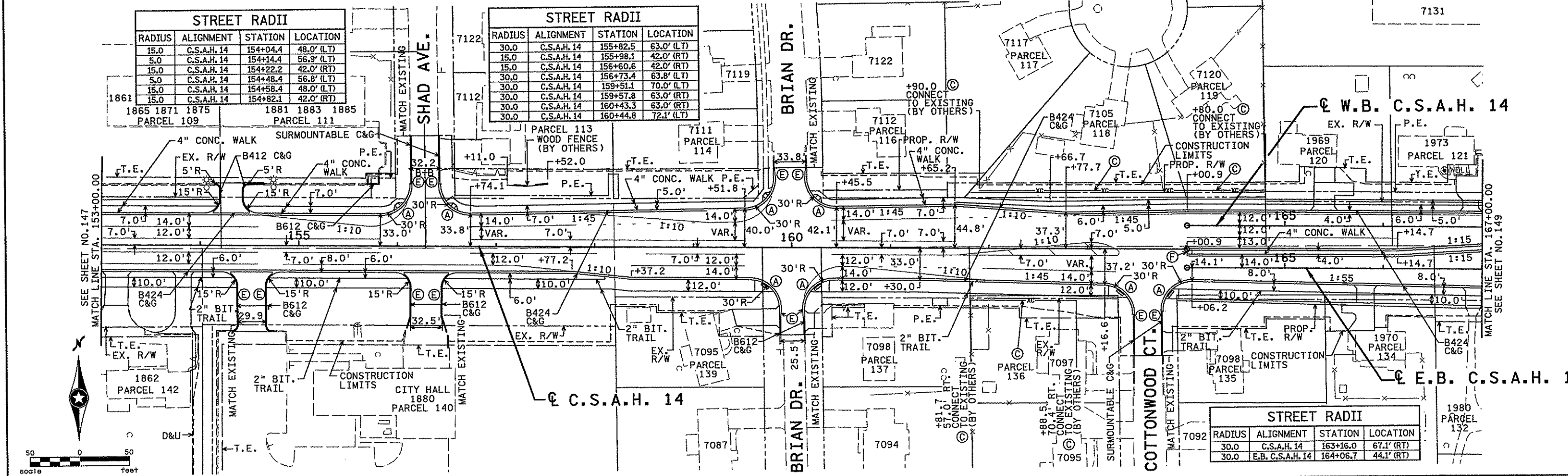
**SRF CONSULTING GROUP, INC.**

ANOKA COUNTY  
CONSTRUCTION PLAN AND PROFILE  
C.S.A.H. 14  
STA. 139+00.00 TO STA. 153+00.00

STREET RADII			
RADIUS	ALIGNMENT	STATION	LOCATION
15.0	C.S.A.H. 14	154+04.4	48.0' (LT)
5.0	C.S.A.H. 14	154+14.4	56.9' (LT)
15.0	C.S.A.H. 14	154+22.2	42.0' (RT)
5.0	C.S.A.H. 14	154+48.4	56.8' (LT)
15.0	C.S.A.H. 14	154+58.4	48.0' (LT)
15.0	C.S.A.H. 14	154+82.1	42.0' (RT)

STREET RADII			
RADIUS	ALIGNMENT	STATION	LOCATION
30.0	C.S.A.H. 14	155+82.5	63.0' (LT)
15.0	C.S.A.H. 14	155+98.1	42.0' (RT)
15.0	C.S.A.H. 14	156+60.6	42.0' (RT)
30.0	C.S.A.H. 14	156+73.4	63.8' (LT)
30.0	C.S.A.H. 14	159+51.1	70.0' (LT)
30.0	C.S.A.H. 14	159+57.8	63.0' (RT)
30.0	C.S.A.H. 14	160+43.3	63.0' (RT)
30.0	C.S.A.H. 14	160+44.8	72.1' (LT)

STREET RADII			
RADIUS	ALIGNMENT	STATION	LOCATION
30.0	C.S.A.H. 14	163+16.0	67.1' (RT)
30.0	E.B. C.S.A.H. 14	164+06.7	44.1' (RT)

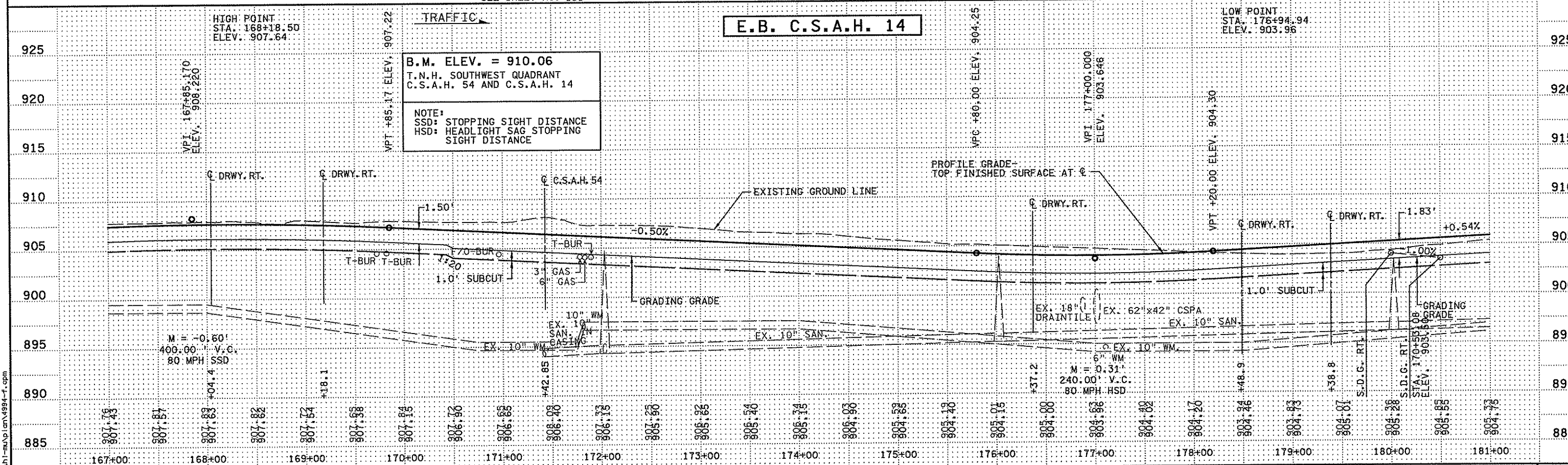
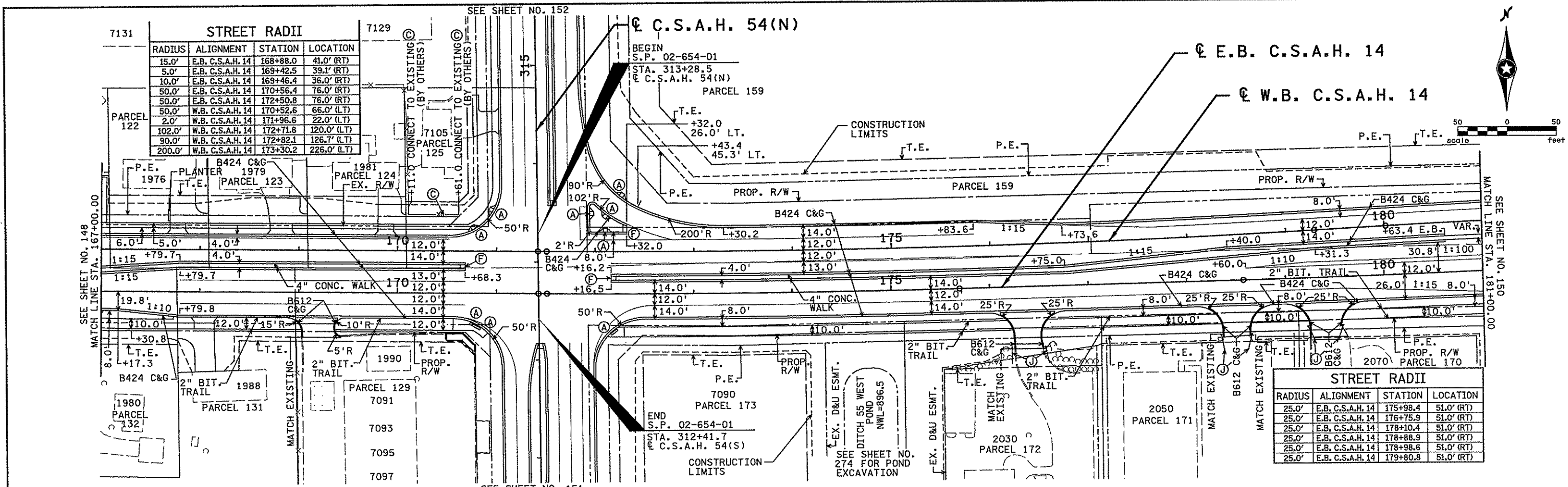


I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota. Print Name: CHRISTOPHER M. TRBOYEVICH <i>Christopher Trbojevich</i> Date: 3/26/07 License # 41635	STATE PROJECT NO. S.P. 02-614-24, ETAL DRAWN BY S. MARTINS DESIGNED BY J. TOULOUSE CHECKED BY C. TRBOYEVICH COMM. NO. 4994	<b>SRF CONSULTING GROUP, INC.</b> ANOKA COUNTY CONSTRUCTION PLAN AND PROFILE C.S.A.H. 14 STA. 153+00.00 TO STA. 167+00.00	SHEET 148 OF 492
	NO. DATE BY CKD APPR REVISION		

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RADIUS	ALIGNMENT	STATION	LOCATION
15.0'	E.B. C.S.A.H. 14	168+88.0	41.0' (RT)
5.0'	E.B. C.S.A.H. 14	169+42.5	39.1' (RT)
10.0'	E.B. C.S.A.H. 14	169+46.4	36.0' (RT)
50.0'	E.B. C.S.A.H. 14	170+56.4	76.0' (RT)
50.0'	E.B. C.S.A.H. 14	172+50.8	76.0' (RT)
50.0'	W.B. C.S.A.H. 14	170+52.6	66.0' (LT)
2.0'	W.B. C.S.A.H. 14	171+96.6	22.0' (LT)
102.0'	W.B. C.S.A.H. 14	172+71.8	120.0' (LT)
90.0'	W.B. C.S.A.H. 14	172+82.1	126.7' (LT)
200.0'	W.B. C.S.A.H. 14	173+30.2	226.0' (LT)

RADIUS	ALIGNMENT	STATION	LOCATION
25.0'	E.B. C.S.A.H. 14	175+98.4	51.0' (RT)
25.0'	E.B. C.S.A.H. 14	176+75.9	51.0' (RT)
25.0'	E.B. C.S.A.H. 14	178+10.4	51.0' (RT)
25.0'	E.B. C.S.A.H. 14	178+88.9	51.0' (RT)
25.0'	E.B. C.S.A.H. 14	178+98.6	51.0' (RT)
25.0'	E.B. C.S.A.H. 14	179+80.8	51.0' (RT)



**B.M. ELEV. = 910.06**  
 T.N.H. SOUTHWEST QUADRANT  
 C.S.A.H. 54 AND C.S.A.H. 14

NOTE:  
 SSD: STOPPING SIGHT DISTANCE  
 HSD: HEADLIGHT SAG STOPPING  
 SIGHT DISTANCE

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.

Print Name: **CHRISTOPHER M. TRBOYEYICH**  
*Christopher Trboveyich*  
 Date: **3/26/10** License # **41635**

STATE PROJECT NO. S.P. 02-614-24, ETAL

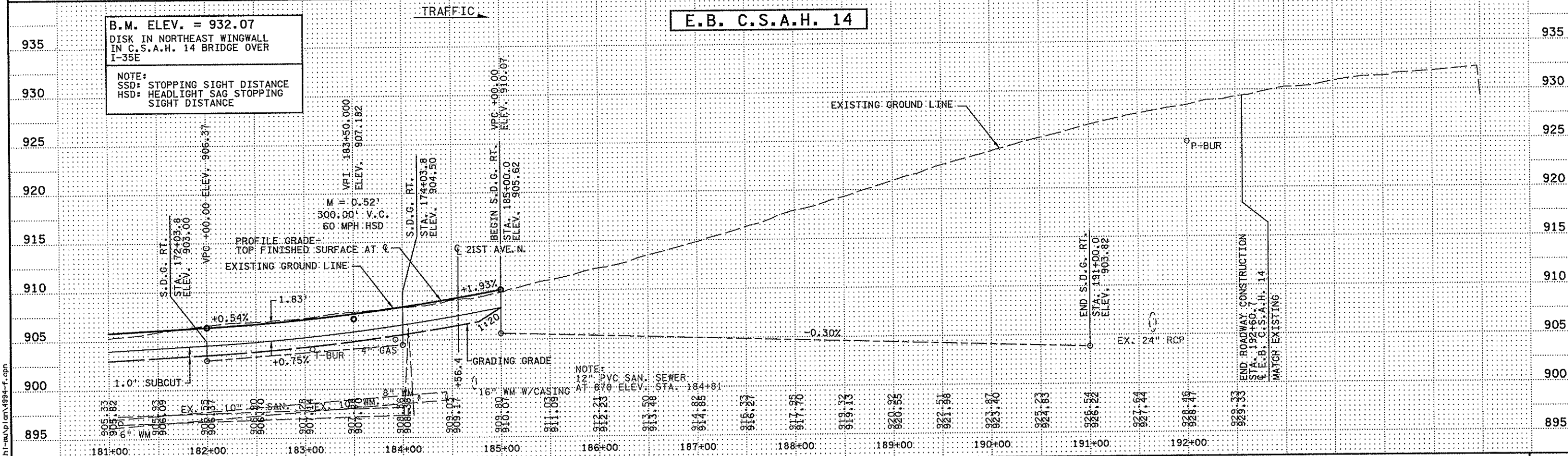
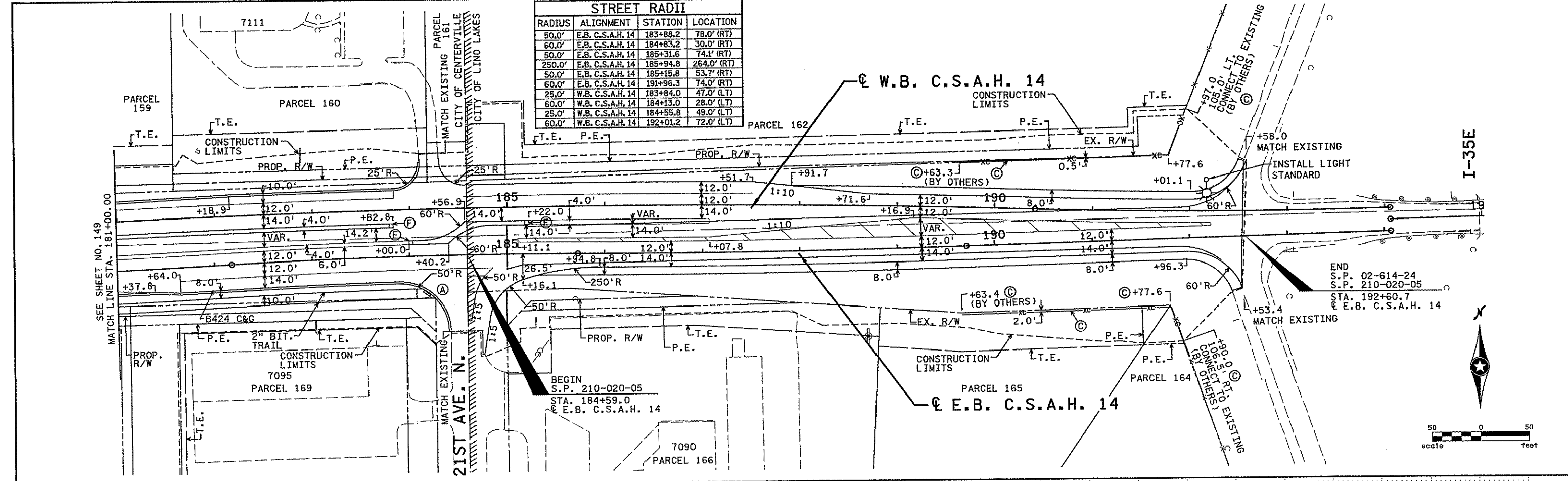
DRAWN BY S. MARTINS  
 DESIGNED BY J. TOULOUSE  
 CHECKED BY C. TRBOYEYICH  
 COMM. NO. 4994



**ANOKA COUNTY**  
 CONSTRUCTION PLAN AND PROFILE  
**C.S.A.H. 14**  
 STA. 167+00.00 TO STA. 181+00.00

**SHEET**  
 149  
 OF  
 492

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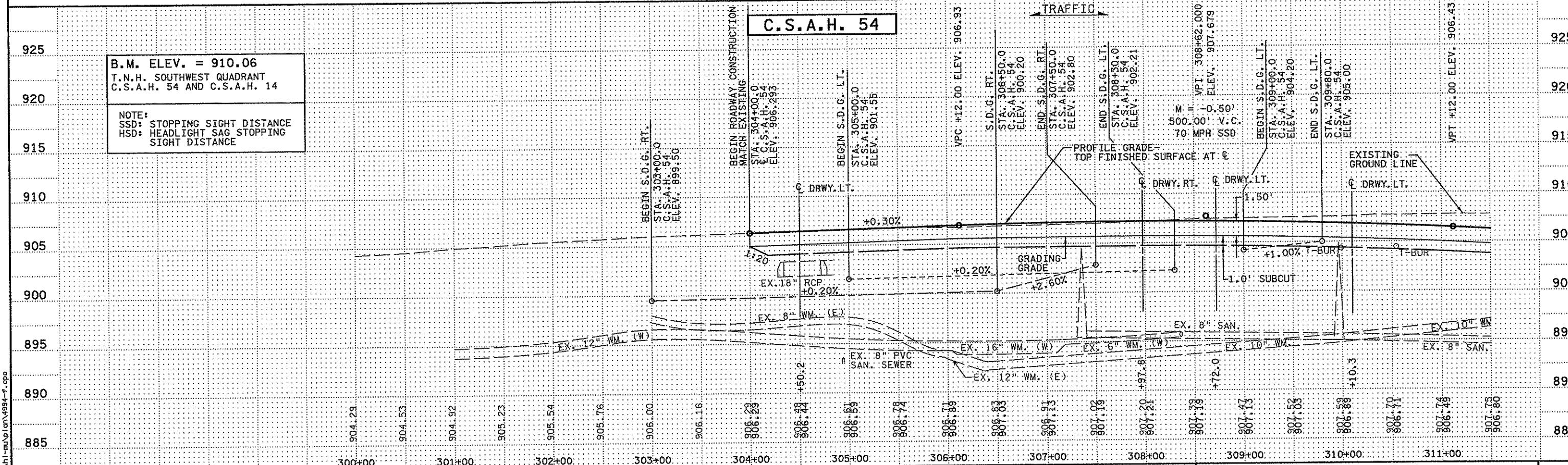
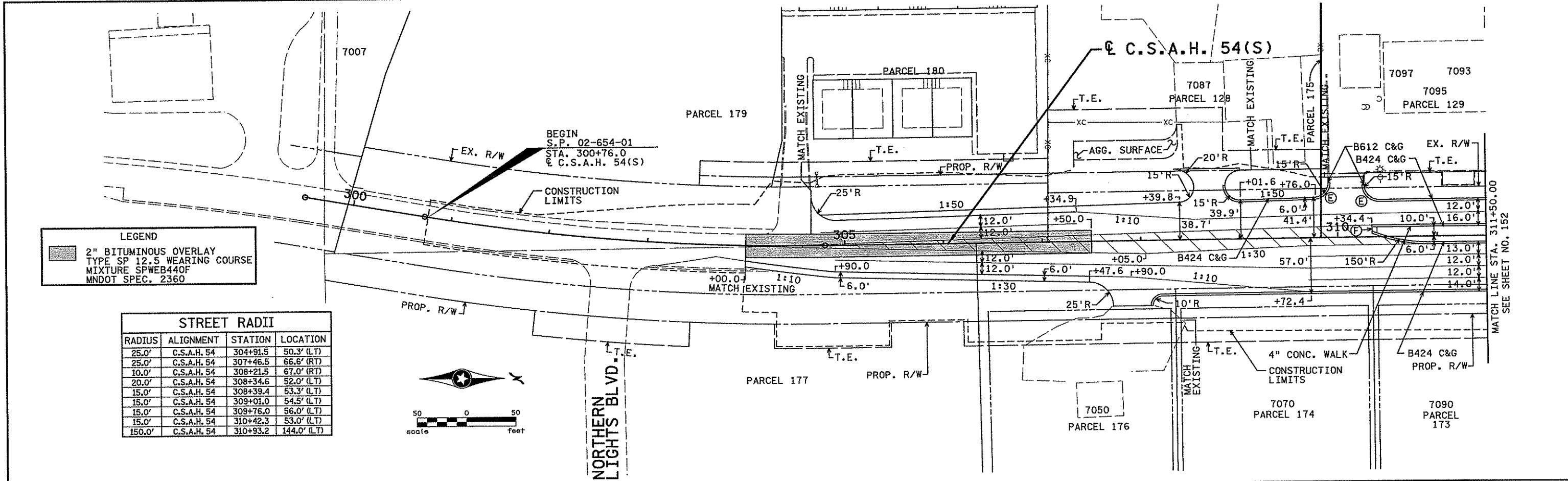
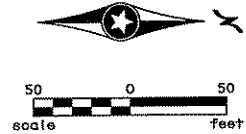


NO		DATE	BY	CKD	APPR	REVISION
I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota. Print Name: <b>CHRISTOPHER M. TRBOYEVICH</b> <i>Christopher M. Trbojevich</i> Date: <i>3/26/07</i> License # <i>41635</i>						
STATE PROJECT NO.		DRAWN BY		<b>SRF CONSULTING GROUP, INC.</b>		
S.P. 02-614-24, ETAL		S. MARTINS				
		DESIGNED BY J. TOULOUSE				
		CHECKED BY C. TRBOYEVICH		ANOKA COUNTY CONSTRUCTION PLAN AND PROFILE <b>C.S.A.H. 14</b> STA. 181+00.00 TO STA. 193+00.00		
		COMM. NO. 4994				
						SHEET 150 OF 492

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 3/21/2007  
 H:\p\02\614\4994-F\11-mu\plan\4994-f.cpn  
 ...4994-F\11-mu\plan\4994-f.cpn

**LEGEND**  
 2" BITUMINOUS OVERLAY  
 TYPE SP 12.5 WEARING COURSE  
 MIXTURE SPWEB440F  
 MNDOT SPEC. 2360

STREET RADII			
RADIUS	ALIGNMENT	STATION	LOCATION
25.0'	C.S.A.H. 54	304+91.5	50.3' (LT)
25.0'	C.S.A.H. 54	307+46.5	66.8' (RT)
10.0'	C.S.A.H. 54	308+21.5	67.0' (RT)
20.0'	C.S.A.H. 54	308+34.6	52.0' (LT)
15.0'	C.S.A.H. 54	308+39.4	53.3' (LT)
15.0'	C.S.A.H. 54	309+01.0	54.5' (LT)
15.0'	C.S.A.H. 54	309+76.0	56.0' (LT)
15.0'	C.S.A.H. 54	310+42.3	53.0' (LT)
150.0'	C.S.A.H. 54	310+93.2	144.0' (LT)



B.M. ELEV. = 910.06  
 T.N.H. SOUTHWEST QUADRANT  
 C.S.A.H. 54 AND C.S.A.H. 14

NOTE:  
 SSD: STOPPING SIGHT DISTANCE  
 HSD: HEADLIGHT SAG STOPPING  
 SIGHT DISTANCE

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 3/21/2007  
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NO	DATE	BY	CHKD	APPR	REVISION

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Print Name: CHRISTOPHER M. TRBOYEVICH  
*Christopher Trbojevich*  
 Date: 3/26/07 License: 41635

STATE PROJECT NO.  
 S.P. 02-614-24, ETAL

DRAWN BY  
 S. MARTINS

DESIGNED BY  
 J. TOULOUSE

CHECKED BY  
 C. TRBOYEVICH

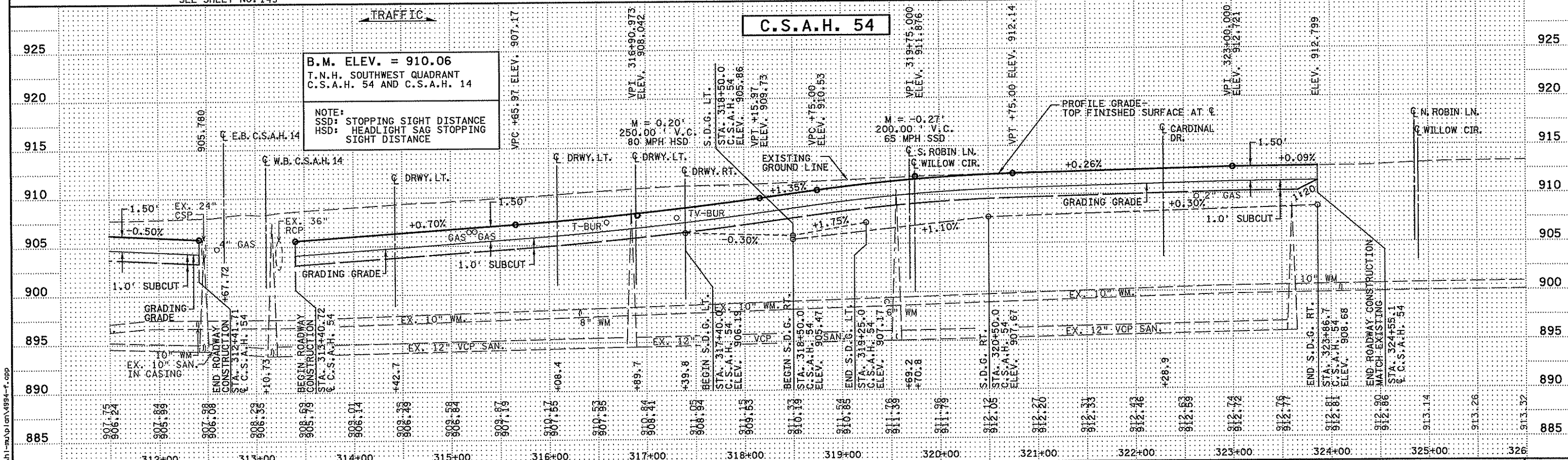
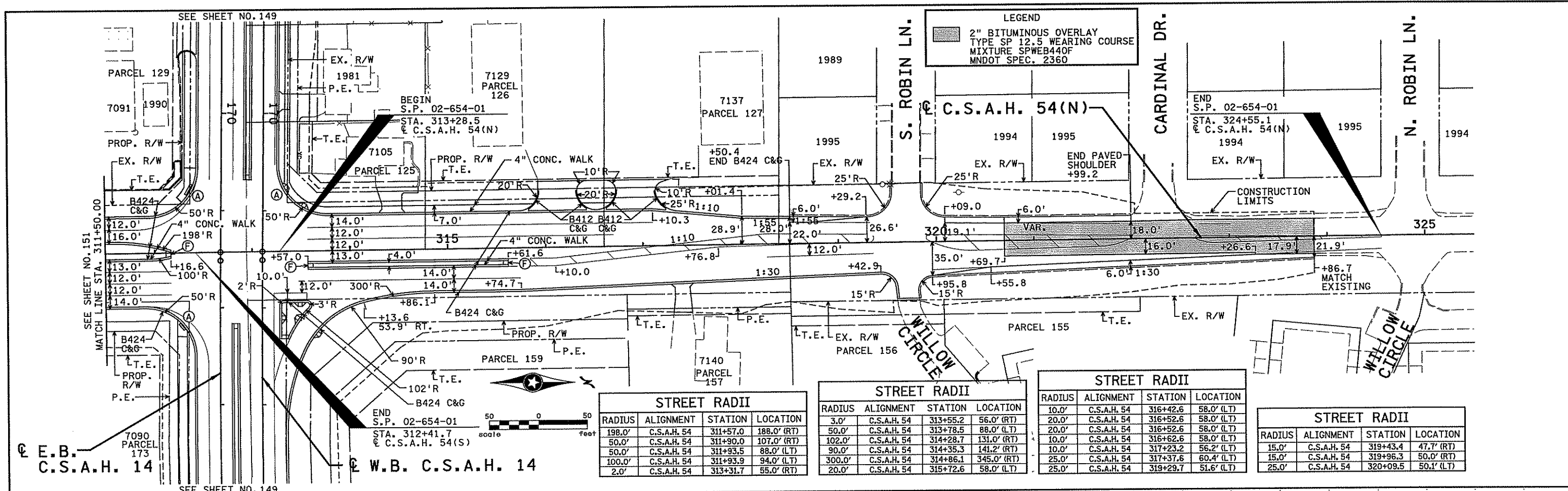
COMM. NO. 4994



ANOKA COUNTY  
 CONSTRUCTION PLAN AND PROFILE  
 C.S.A.H. 14  
 C.S.A.H. 54

SHEET  
 151  
 OF  
 492





NO.	DATE	BY	CHKD	APPR	REVISION

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Date: 3/29/07 License #: 41635

STATE PROJECT NO. S.P. 02-614-24, ETAL

DRAWN BY S. MARTINS  
DESIGNED BY J. TOULOUSE  
CHECKED BY C. TRBOYEVIICH  
COMM. NO. 4994

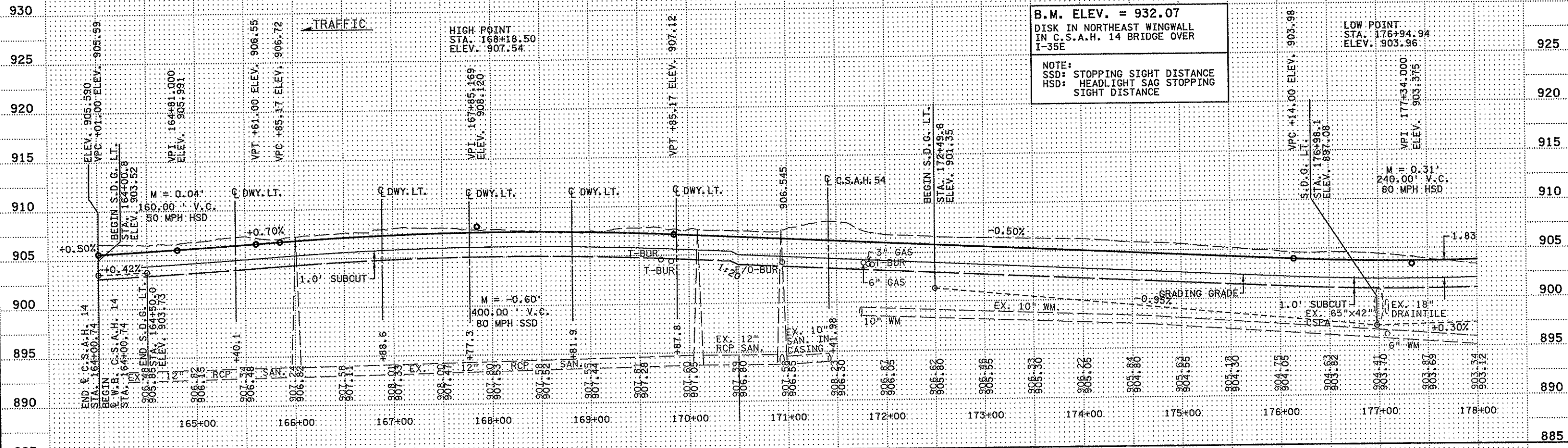
**SRF CONSULTING GROUP, INC.**

ANOKA COUNTY  
CONSTRUCTION PLAN AND PROFILE  
C.S.A.H. 14  
C.S.A.H. 54

SHEET 152 OF 492

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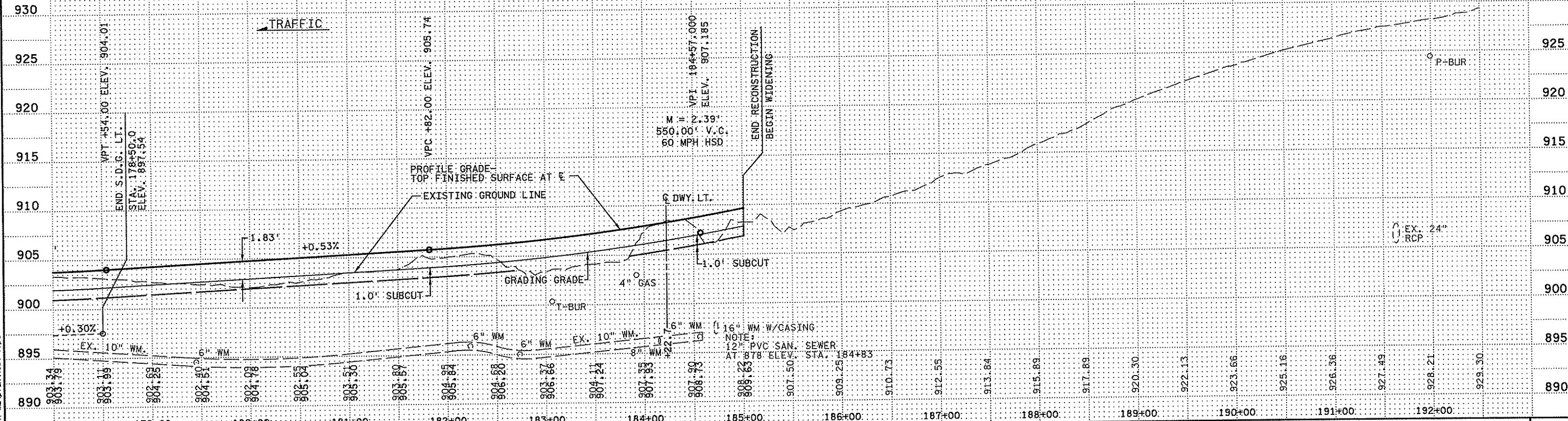
W.B. C.S.A.H. 14



B.M. ELEV. = 932.07  
 DISK IN NORTHEAST WINGWALL  
 IN C.S.A.H. 14 BRIDGE OVER  
 I-35E

NOTE:  
 SSD: STOPPING SIGHT DISTANCE  
 HSD: HEADLIGHT SAG STOPPING  
 SIGHT DISTANCE

W.B. C.S.A.H. 14



NO	DATE	BY	CHK	APPR	REVISION

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Print Name: CHRISTOPHER M. TRBOYEVICH

*Christopher M. Trbojevich*

Date: 3/26/07 License #: 41635

STATE PROJECT NO. S.P. 02-614-24, ETAL

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 DESIGNED BY J. TOULOUSE  
 CHECKED BY C. TRBOYEVICH  
 COMM. NO. 4994

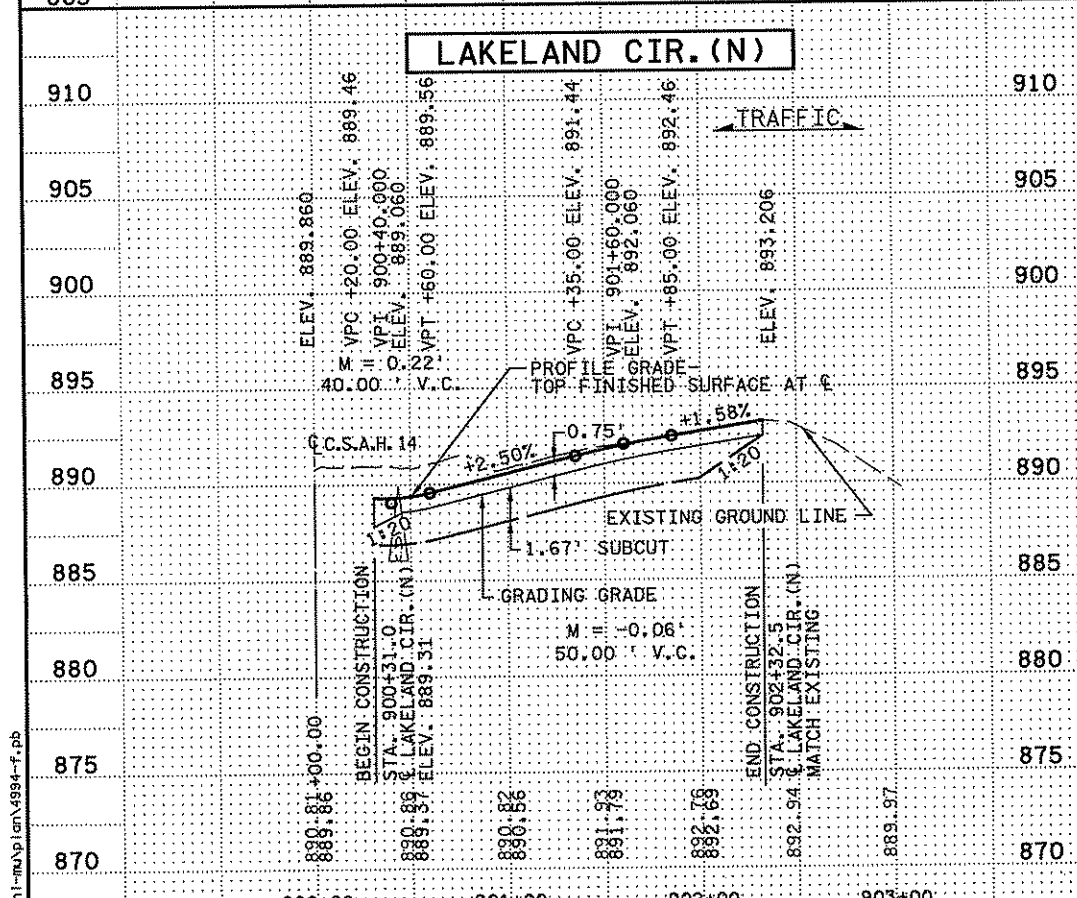
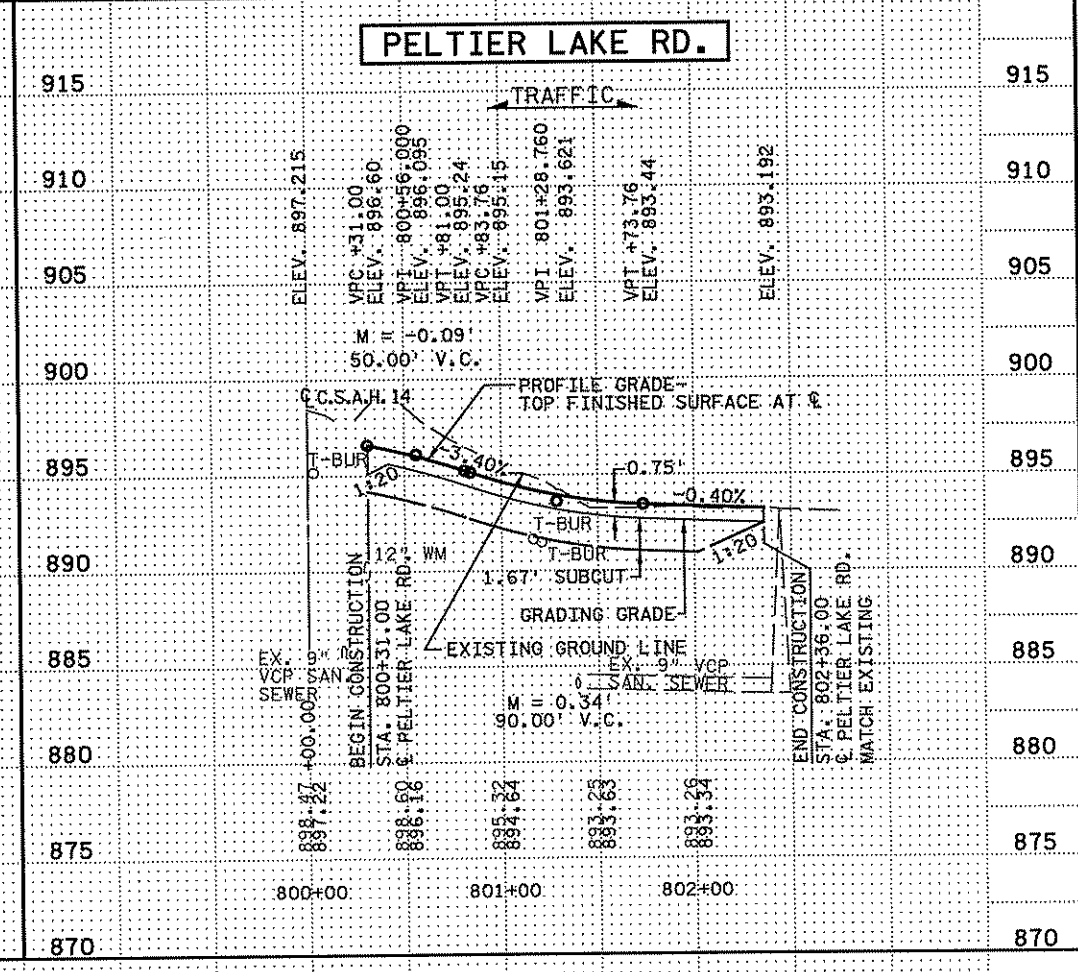
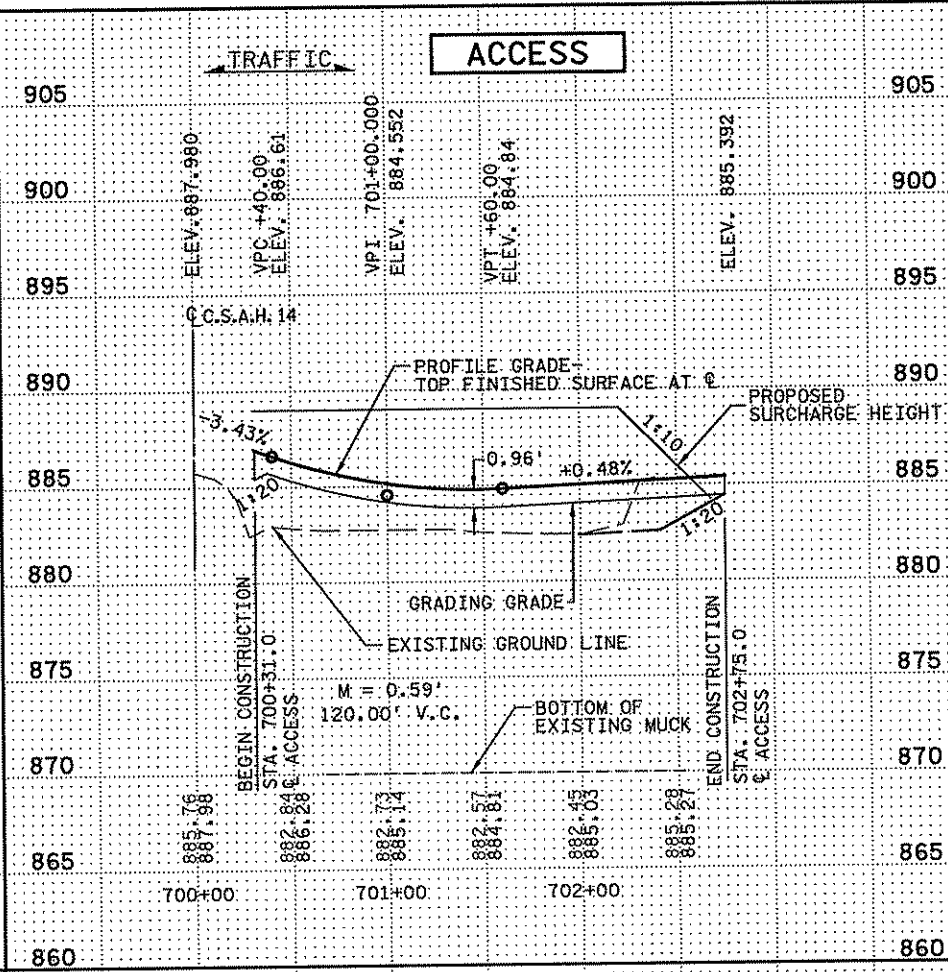
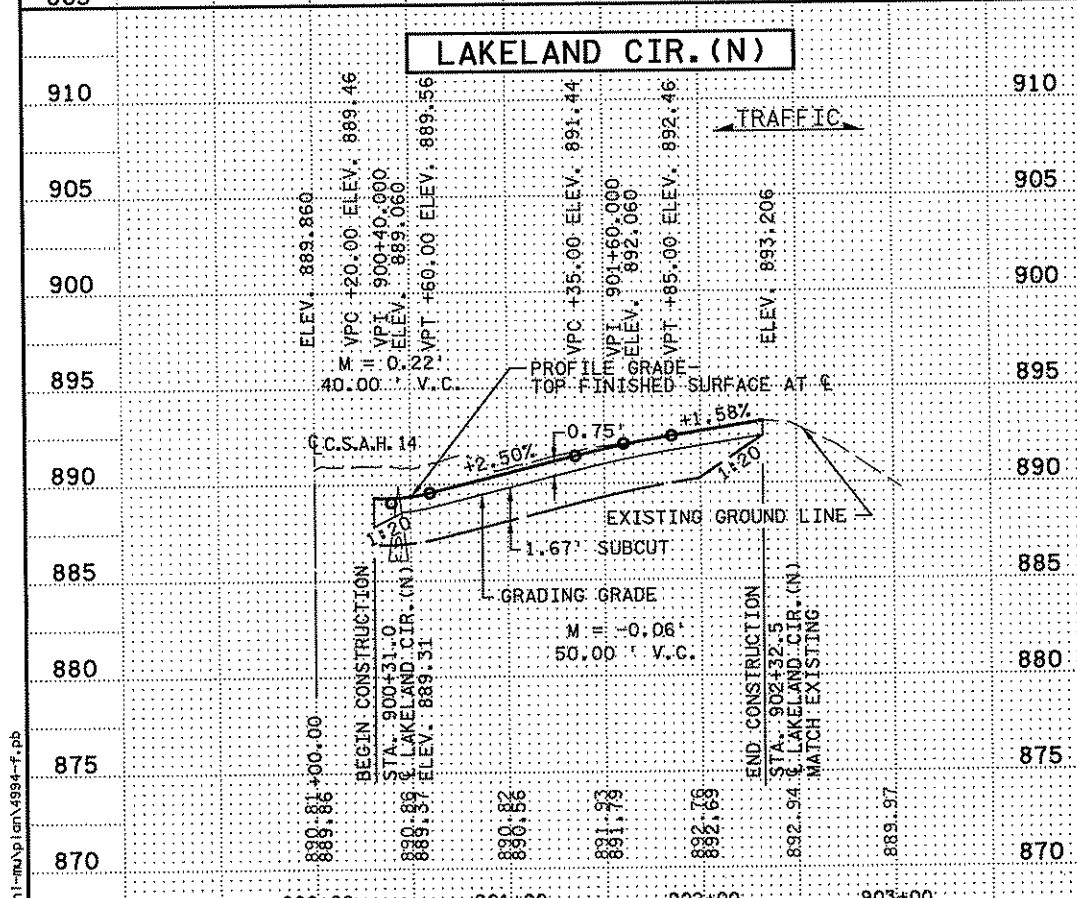
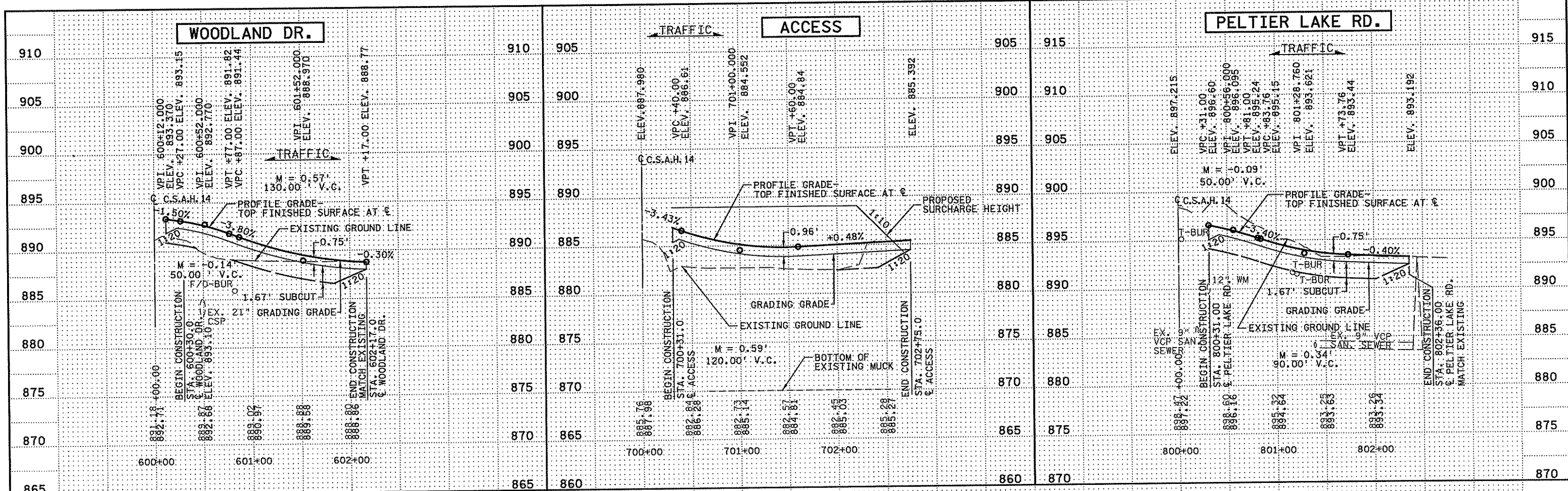


ANOKA COUNTY  
 PROFILES  
 C.S.A.H. 14  
 W.B. C.S.A.H. 14

SHEET  
 153  
 OF  
 492

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 2/21/2007  
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B.M. ELEV. = 912.52  
 T.N.H. SOUTHEAST QUADRANT  
 PROGRESS RD. AND C.S.A.H. 14

NOTE:  
 SSD: STOPPING SIGHT DISTANCE  
 HSD: HEADLIGHT SAG STOPPING  
 SIGHT DISTANCE

NO	DATE	BY	CKD	APPR	REVISION

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*Christopher M. Trbojevich*  
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STATE PROJECT NO.  
 S.P. 02-614-24, ETAL

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DESIGNED BY  
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CHECKED BY  
 C. TRBOYEVICH

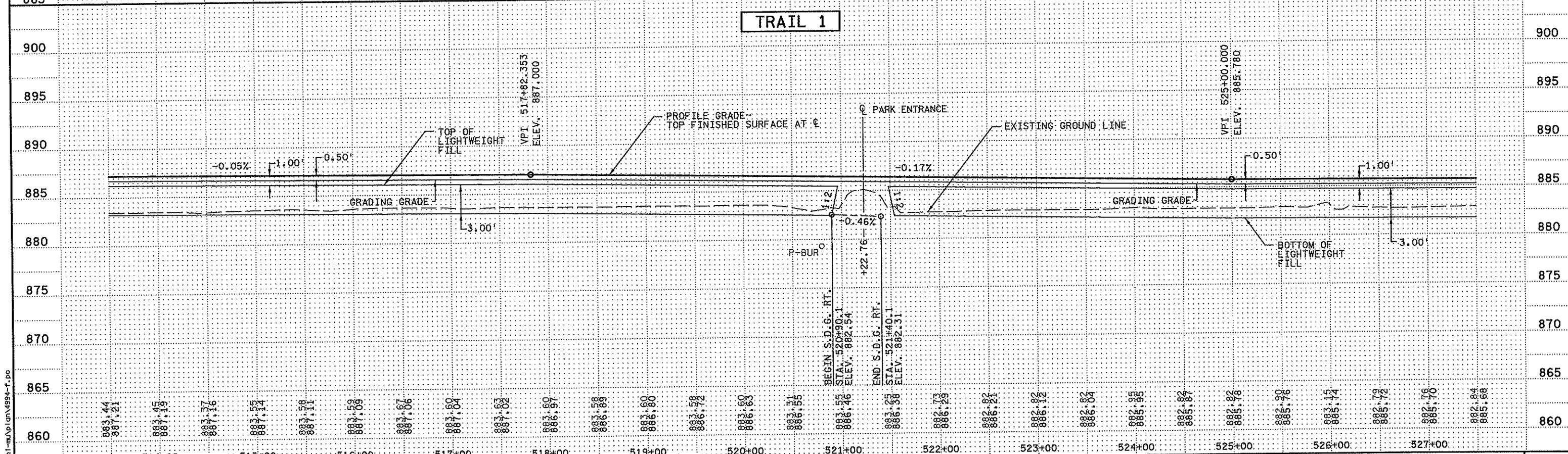
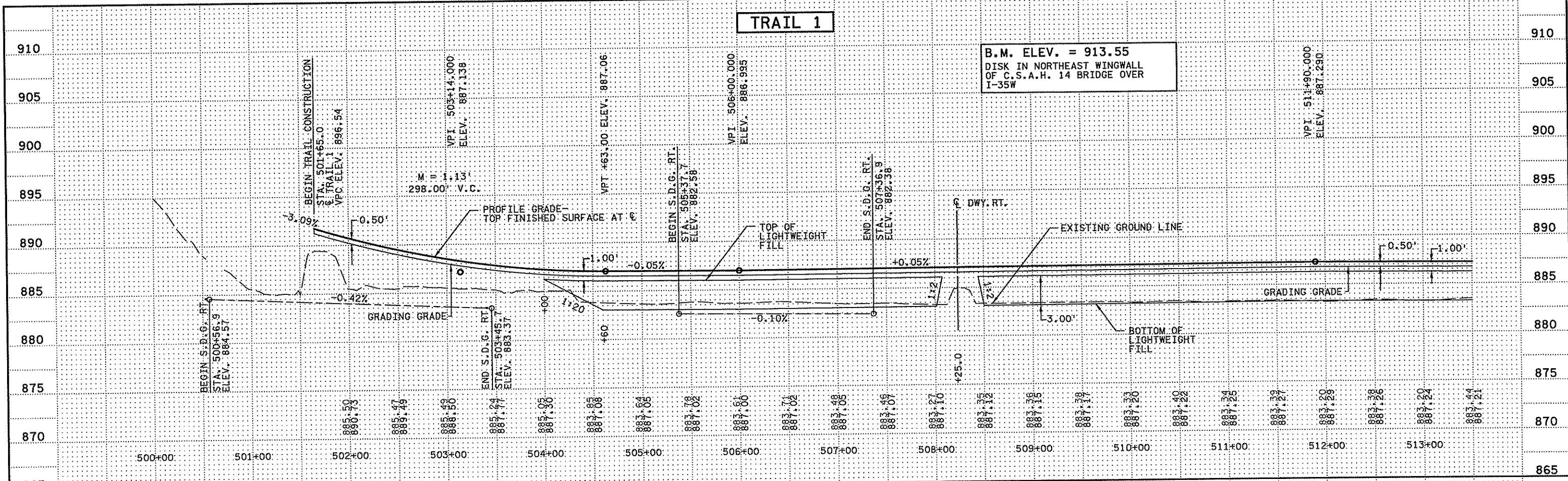
COMM. NO. 4994



ANOKA COUNTY  
 PROFILES  
 C.S.A.H. 14

SHEET  
 154  
 OF  
 492

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2/21/2007  
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NO	DATE	BY	CKD	APPR	REVISION

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*Christopher M. Trbojevich*  
 Date: 3/26/07 License # 41635

STATE PROJECT NO.  
S.P. 02-614-24, ETAL

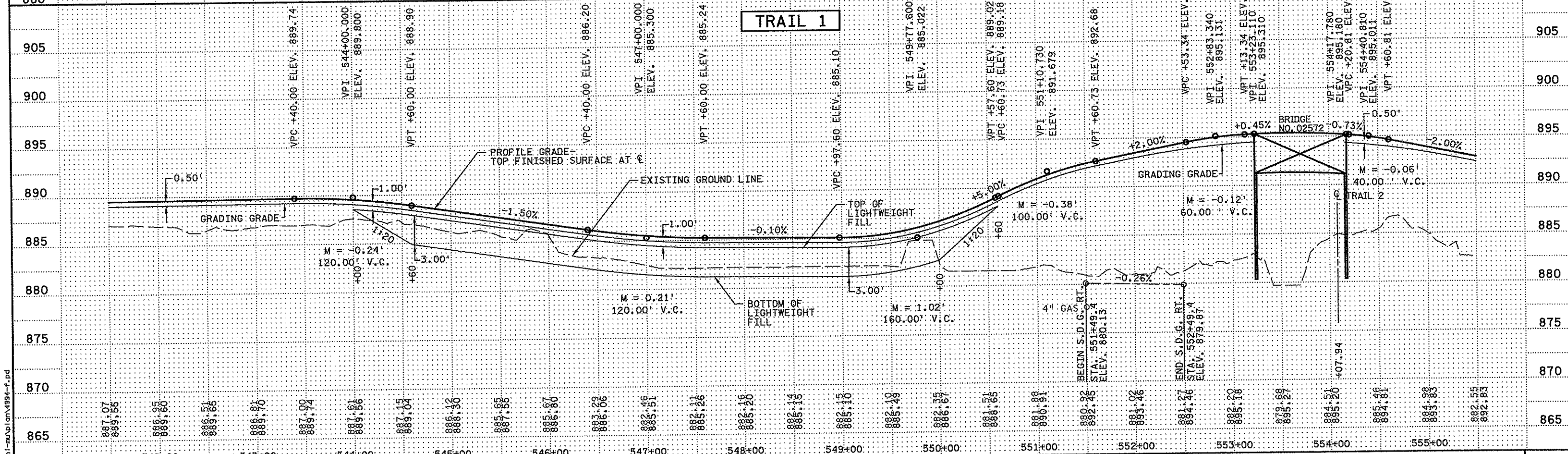
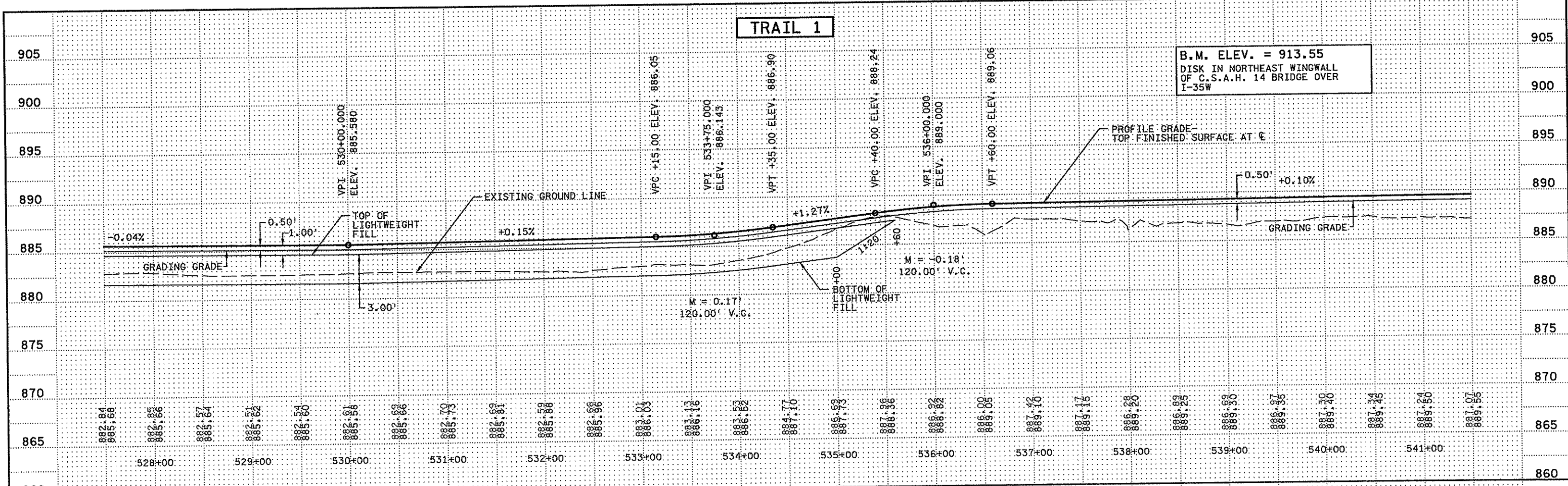
DRAWN BY  
S. MARTINS  
 DESIGNED BY  
J. TOULOUSE  
 CHECKED BY  
C. TRBOYEVICH  
 COMM. NO. 4994



ANOKA COUNTY  
 PROFILES  
 C.S.A.H. 14  
 TRAIL 1

SHEET  
155  
OF  
492

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 5/21/2007  
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NO	DATE	BY	CKD	APPR	REVISION

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 Print Name: CHRISTOPHER M. TRBOYEVICH  
*Christopher M. Trbojevich*  
 Date: 5/20/07 License #: 41635

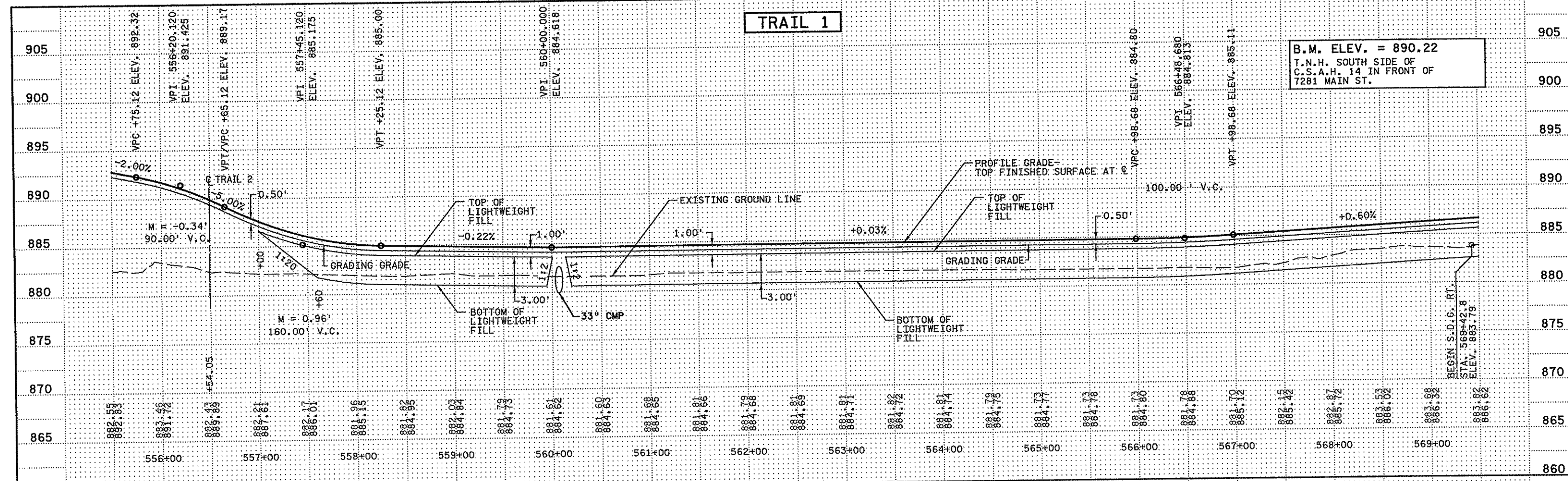
STATE PROJECT NO.  
 S.P. 02-614-24, ETAL

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 S. MARTINS  
 DESIGNED BY  
 J. TOULOUSE  
 CHECKED BY  
 C. TRBOYEVICH  
 COMM. NO. 4994

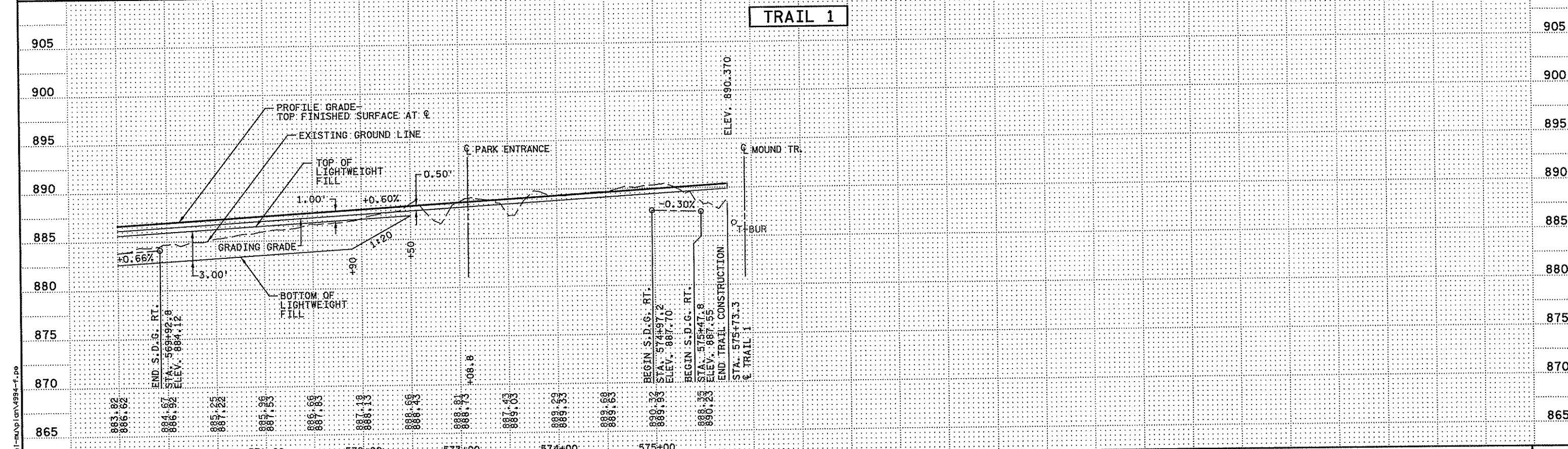


ANOKA COUNTY  
 PROFILES  
 C.S.A.H. 14  
 TRAIL 1

SHEET  
 156  
 OF  
 492



B.M. ELEV. = 890.22  
 T.N.H. SOUTH SIDE OF  
 C.S.A.H. 14 IN FRONT OF  
 7281 MAIN ST.



NO	DATE	BY	CKD	APPR	REVISION

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 Print Name: CHRISTOPHER M. TRBOYEVICH  
*Christopher M. Trbojevich*  
 Date: 3/26/07 License #: 41635

STATE PROJECT NO.  
 S.P. 02-614-24, ETAL

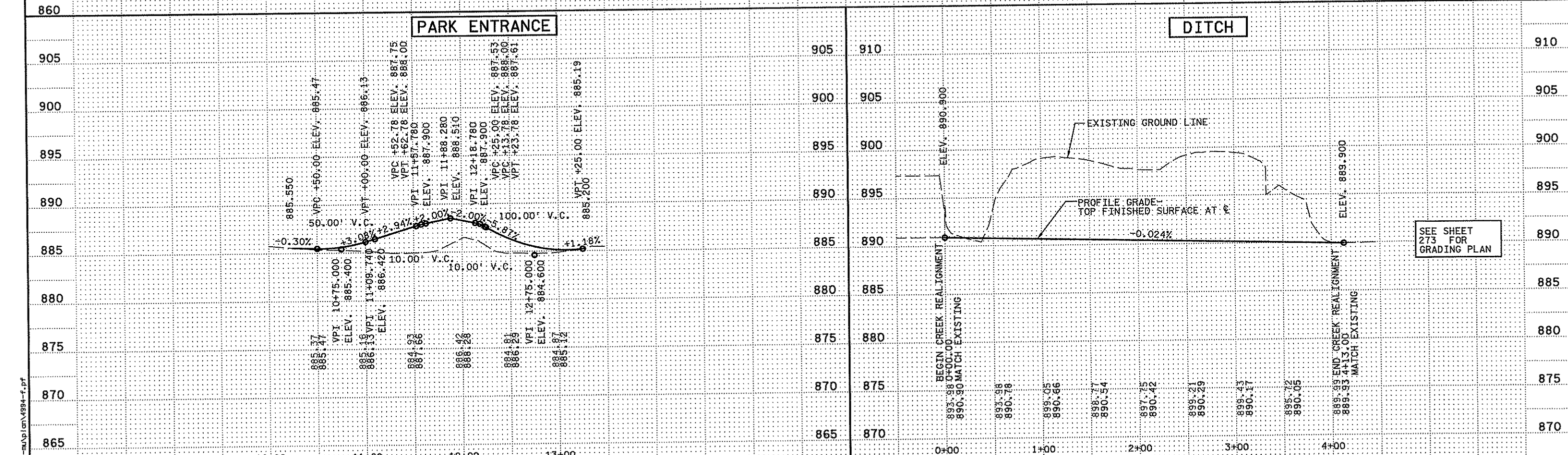
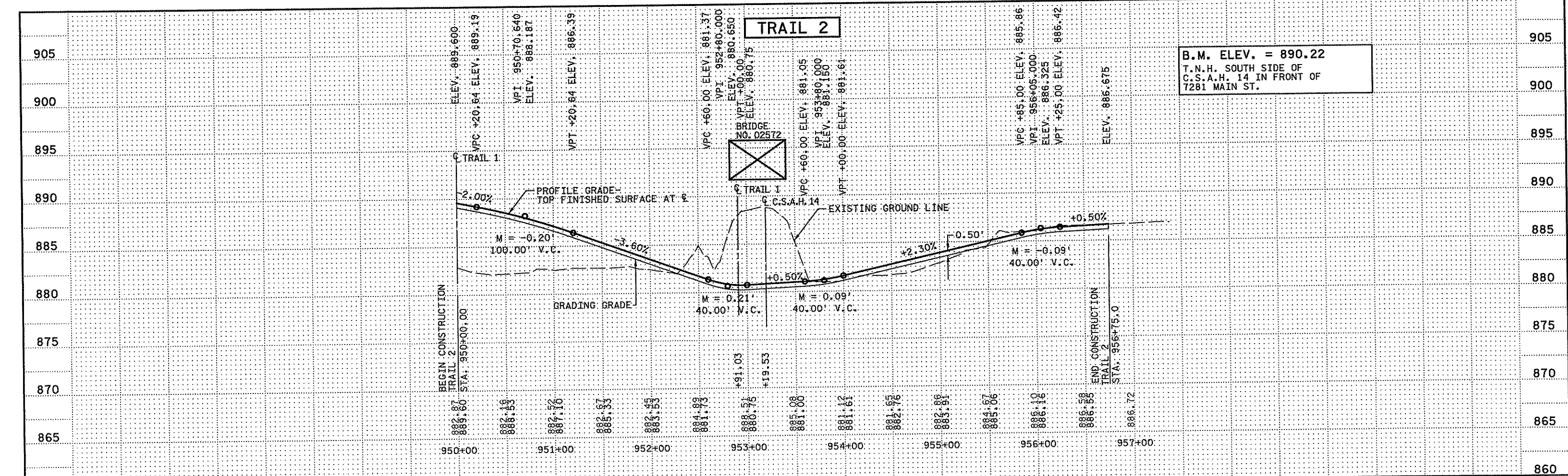
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 S. MARTINS  
 DESIGNED BY  
 J. TOULOUSE  
 CHECKED BY  
 C. TRBOYEVICH  
 COMM. NO. 4994



ANOKA COUNTY  
 PROFILES  
 C.S.A.H. 14  
 TRAIL 1

SHEET  
 157  
 OF  
 492

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 3/21/2007  
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NO	DATE	BY	CKD	APPR	REVISION

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 Print Name: CHRISTOPHER M. TRBOYEVICH  
*Chris Trbojevich*  
 Date: 5/26/07 License # 41635

STATE PROJECT NO.  
 S.P. 02-614-24, ETAL

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 S. MARTINS  
 DESIGNED BY  
 J. TOULOUSE  
 CHECKED BY  
 C. TRBOYEVICH  
 COMM. NO. 4994



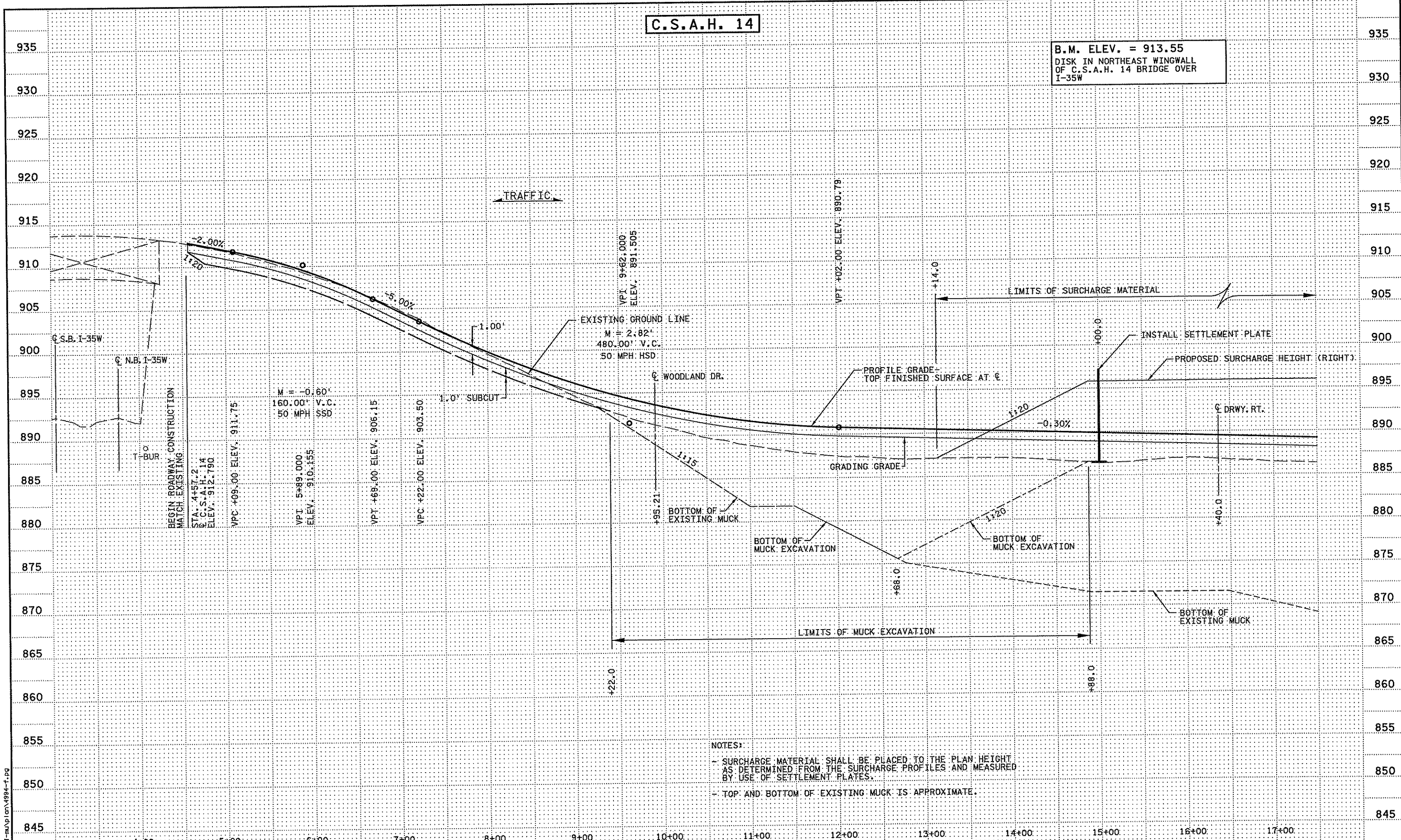
ANOKA COUNTY  
 PROFILES  
 C.S.A.H. 14  
 TRAIL 2 / PARK ACCESS / DITCH

SHEET  
 158  
 OF  
 492

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 3/21/2007  
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C.S.A.H. 14

B.M. ELEV. = 913.55  
DISK IN NORTHEAST WINGWALL  
OF C.S.A.H. 14 BRIDGE OVER  
I-35W



NOTES:

- SURCHARGE MATERIAL SHALL BE PLACED TO THE PLAN HEIGHT AS DETERMINED FROM THE SURCHARGE PROFILES AND MEASURED BY USE OF SETTLEMENT PLATES.
- TOP AND BOTTOM OF EXISTING MUCK IS APPROXIMATE.

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NO	DATE	BY	CHKD	APPR	REVISION

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*Christopher M. Trbojevich*  
Date: 3/26/07 License: 41635

STATE PROJECT NO. S.P. 02-614-24, ETAL

DRAWN BY S. MARTINS  
DESIGNED BY J. TOULOUSE  
CHECKED BY C. TRBOYEVICH  
COMM. NO. 4994



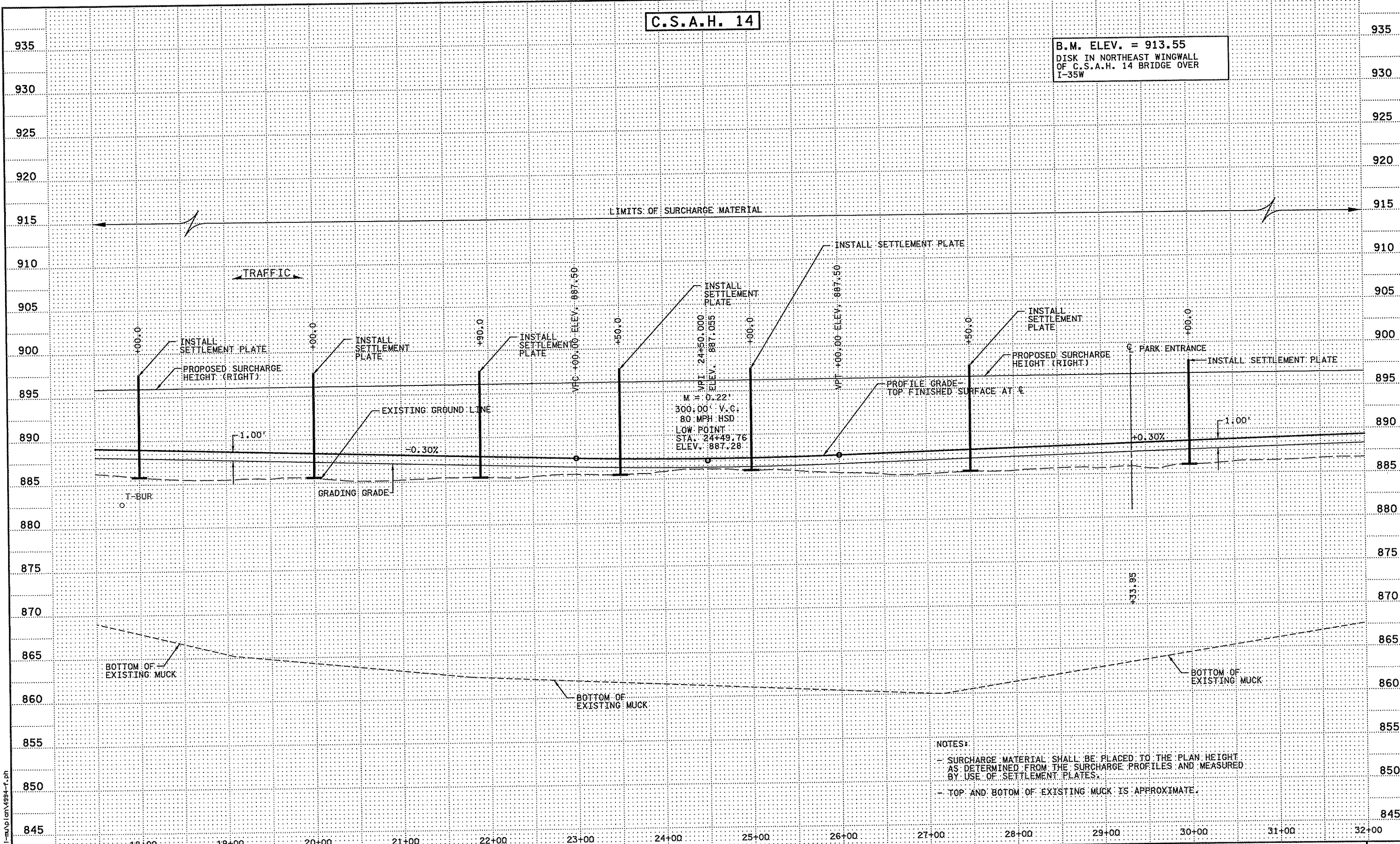
ANOKA COUNTY  
MUCK EXCAVATION AND SURCHARGE PROFILES  
C.S.A.H. 14  
STA. 4+57.20 TO STA. 17+50.00

SHEET 159 OF 492



C.S.A.H. 14

B.M. ELEV. = 913.55  
DISK IN NORTHEAST WINGWALL  
OF C.S.A.H. 14 BRIDGE OVER  
I-35W



NOTES:  
- SURCHARGE MATERIAL SHALL BE PLACED TO THE PLAN HEIGHT AS DETERMINED FROM THE SURCHARGE PROFILES AND MEASURED BY USE OF SETTLEMENT PLATES.  
- TOP AND BOTOM OF EXISTING MUCK IS APPROXIMATE.

2/5/13, PH 3/21/2007  
... \4994-F\hi-mu\plan\4994-f.ph

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Date: 3/26/07 License: 41635

STATE PROJECT NO.  
S.P. 02-614-24, ETAL

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S. MARTINS  
DESIGNED BY  
J. TOULOUSE  
CHECKED BY  
C. TRBOYEVICH  
COMM. NO. 4994

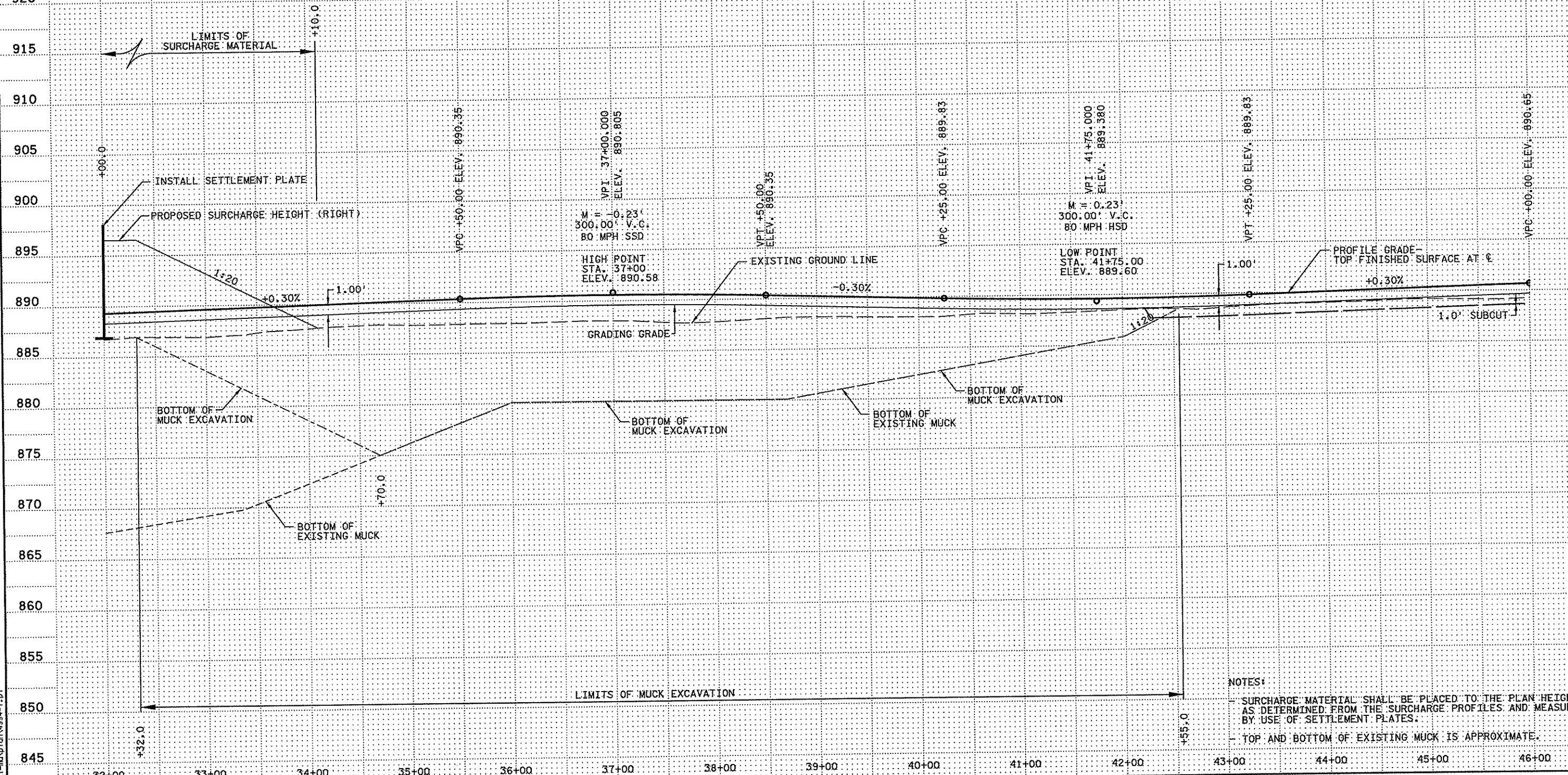


ANOKA COUNTY  
MUCK EXCAVATION AND SURCHARGE PROFILES  
C.S.A.H. 14  
STA. 17+50.00 TO STA. 32+00.00

SHEET  
160  
OF  
492

C.S.A.H. 14

B.M. ELEV. = 913.55  
DISK IN NORTHEAST WINGWALL  
OF C.S.A.H. 14 BRIDGE OVER  
I-35W



NOTES:  
- SURCHARGE MATERIAL SHALL BE PLACED TO THE PLAN HEIGHT AS DETERMINED FROM THE SURCHARGE PROFILES AND MEASURED BY USE OF SETTLEMENT PLATES.  
- TOP AND BOTTOM OF EXISTING MUCK IS APPROXIMATE.

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*Christopher M. Trbojevich*  
Date: 3/21/07 License #: 41835

STATE PROJECT NO.  
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S. MARTINS  
DESIGNED BY  
J. TOULOUSE  
CHECKED BY  
C. TRBOYEVICH  
COMM. NO. 4994

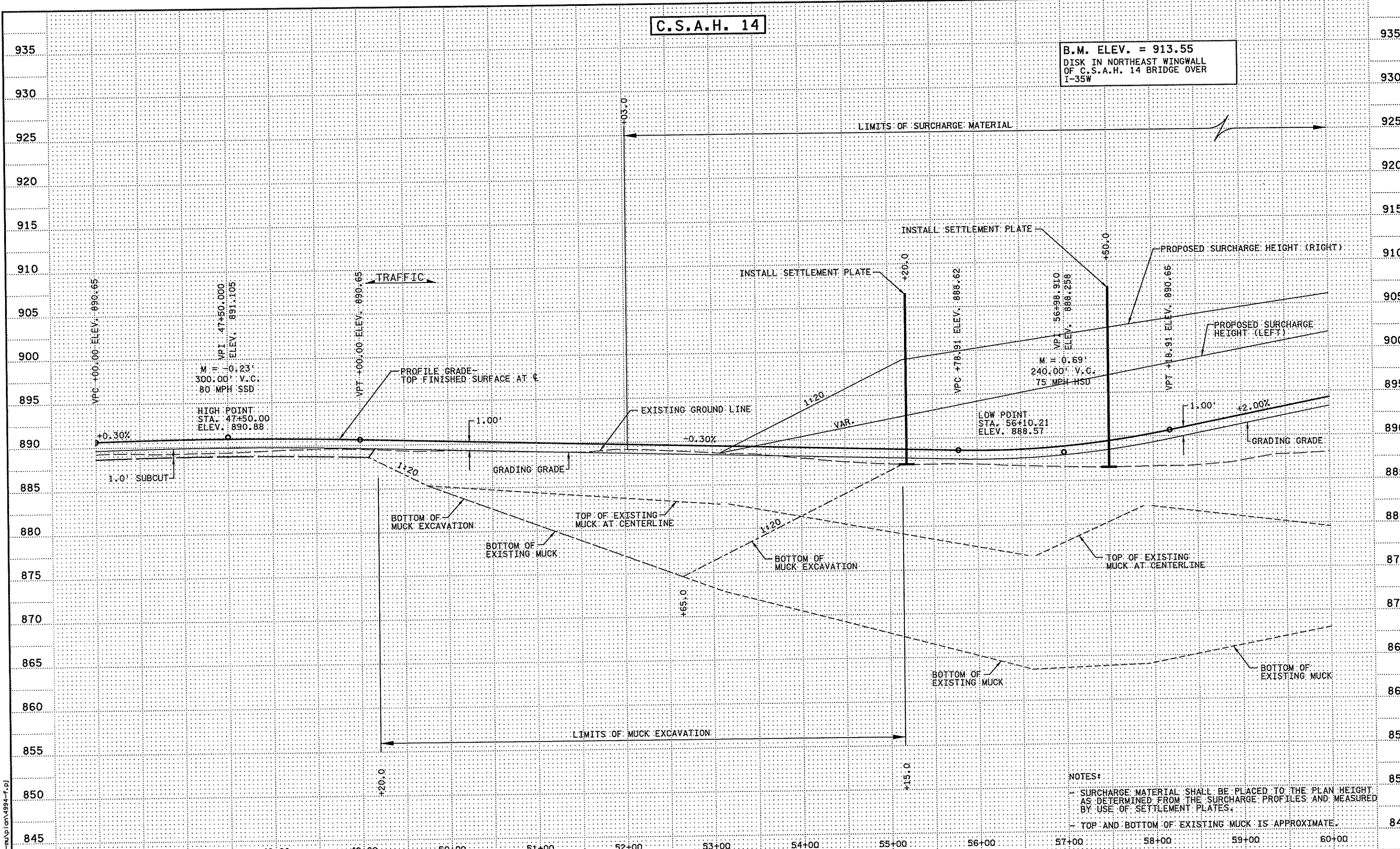


ANOKA COUNTY  
MUCK EXCAVATION AND SURCHARGE PROFILES  
C.S.A.H. 14  
STA. 32+00.00 TO STA. 46+00.00

SHEET  
161  
OF  
492

C.S.A.H. 14

B.M. ELEV. = 913.55  
DISK IN NORTHEAST WINGWALL  
OF C.S.A.H. 14 BRIDGE OVER  
I-35W



NOTES:  
- SURCHARGE MATERIAL SHALL BE PLACED TO THE PLAN HEIGHT AS DETERMINED FROM THE SURCHARGE PROFILES AND MEASURED BY USE OF SETTLEMENT PLATES.  
- TOP AND BOTTOM OF EXISTING MUCK IS APPROXIMATE.

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NO	DATE	BY	CKD	APPR	REVISION

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Signature: *Christopher M. Trbojevich*  
Date: 3/26/07 License # 41635

STATE PROJECT NO. S.P. 02-614-24, ETAL

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DESIGNED BY J. TOULOUSE  
CHECKED BY C. TRBOYEVICH  
COMM. NO. 4994

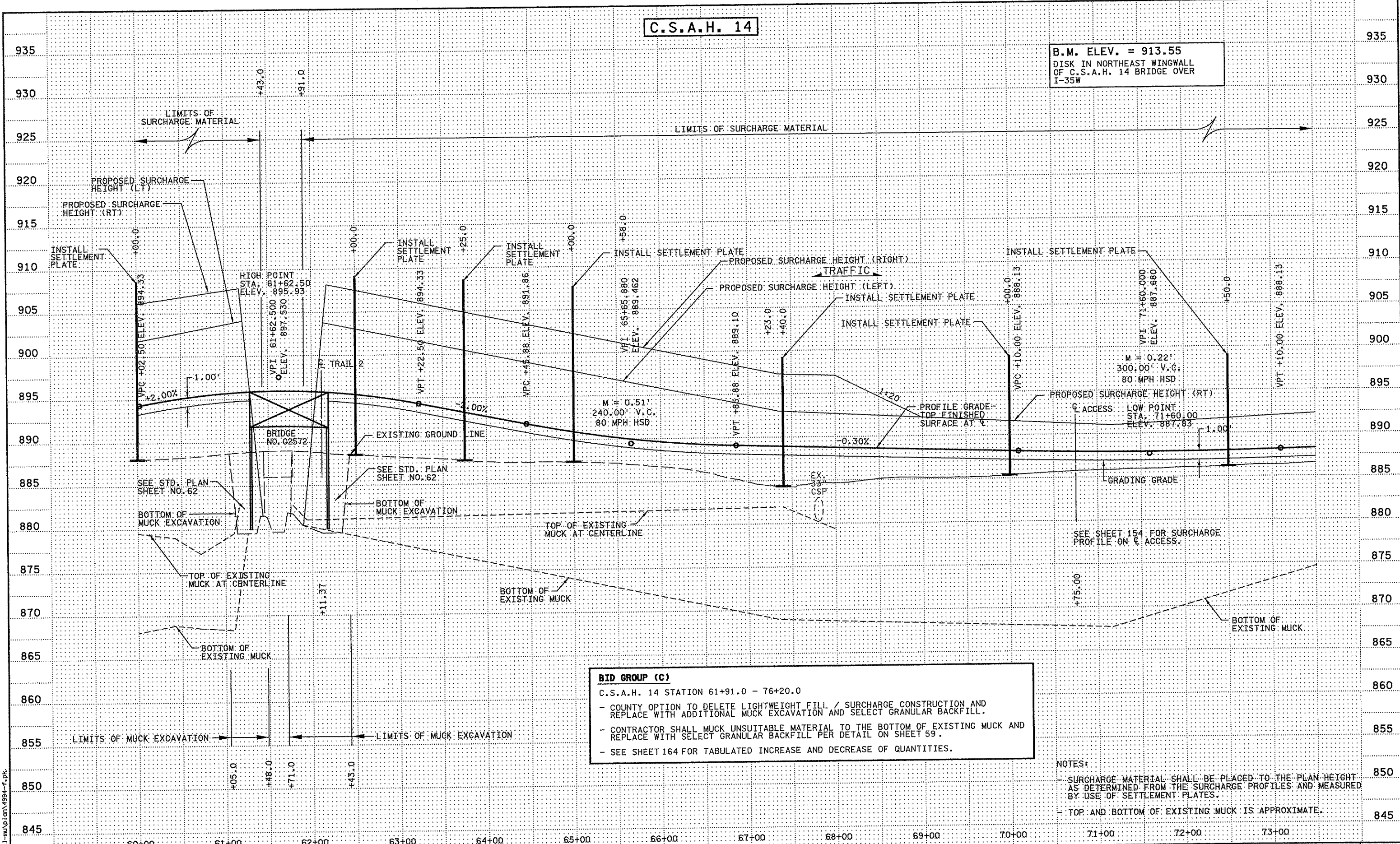


ANOKA COUNTY  
MUCK EXCAVATION AND SURCHARGE PROFILES  
C.S.A.H. 14  
STA. 46+00.00 TO STA. 60+00.00

SHEET 162 OF 492

C.S.A.H. 14

B.M. ELEV. = 913.55  
DISK IN NORTHEAST WINGWALL  
OF C.S.A.H. 14 BRIDGE OVER  
I-35W



**BID GROUP (C)**  
C.S.A.H. 14 STATION 61+91.0 - 76+20.0

- COUNTY OPTION TO DELETE LIGHTWEIGHT FILL / SURCHARGE CONSTRUCTION AND REPLACE WITH ADDITIONAL MUCK EXCAVATION AND SELECT GRANULAR BACKFILL.
- CONTRACTOR SHALL MUCK UNSUITABLE MATERIAL TO THE BOTTOM OF EXISTING MUCK AND REPLACE WITH SELECT GRANULAR BACKFILL PER DETAIL ON SHEET 59.
- SEE SHEET 164 FOR TABULATED INCREASE AND DECREASE OF QUANTITIES.

**NOTES:**

- SURCHARGE MATERIAL SHALL BE PLACED TO THE PLAN HEIGHT AS DETERMINED FROM THE SURCHARGE PROFILES AND MEASURED BY USE OF SETTLEMENT PLATES.
- TOP AND BOTTOM OF EXISTING MUCK IS APPROXIMATE.

4/21/07 4:21:38 PM 6/25/2007 h:\projects\4994-f\h1-m\p\an\4994-f.pk

NO	DATE	BY	CHKD	APPR	REVISION

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*Christopher M. Trbojevich*  
Date: 6/27/07 License #: 41635

STATE PROJECT NO. S.P. 02-614-24, ETAL

DRAWN BY S. MARTINS  
DESIGNED BY J. TOULOUSE  
CHECKED BY C. TRBOYEVICH  
COMM. NO. 4994



ANOKA COUNTY  
MUCK EXCAVATION AND SURCHARGE PROFILES  
C.S.A.H. 14  
STA. 60+00.00 TO STA. 73+50.00

SHEET 163 OF 492

C.S.A.H. 14

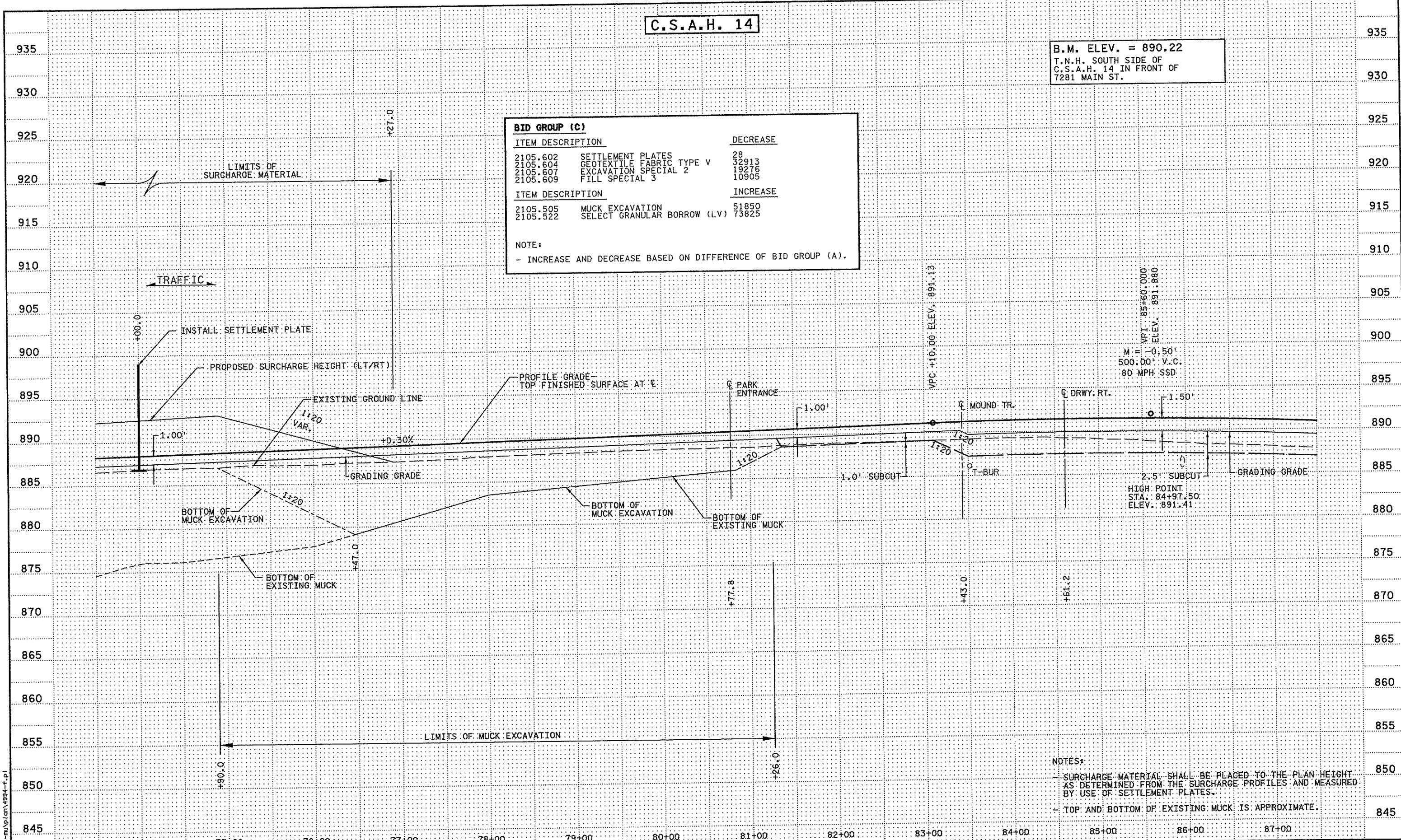
B.M. ELEV. = 890.22  
 T.N.H. SOUTH SIDE OF  
 C.S.A.H. 14 IN FRONT OF  
 7281 MAIN ST.

BID GROUP (C)

ITEM DESCRIPTION	DECREASE
2105.602 SETTLEMENT PLATES	28
2105.604 GEOTEXTILE FABRIC TYPE V	32913
2105.607 EXCAVATION SPECIAL 2	19276
2105.609 FILL SPECIAL 3	10905
ITEM DESCRIPTION	INCREASE
2105.505 MUCK EXCAVATION	51850
2105.522 SELECT GRANULAR BORROW (LV)	73825

NOTE:

- INCREASE AND DECREASE BASED ON DIFFERENCE OF BID GROUP (A).



NOTES:

- SURCHARGE MATERIAL SHALL BE PLACED TO THE PLAN HEIGHT AS DETERMINED FROM THE SURCHARGE PROFILES AND MEASURED BY USE OF SETTLEMENT PLATES.
- TOP AND BOTTOM OF EXISTING MUCK IS APPROXIMATE.

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 S. MARTINS  
 DESIGNED BY  
 J. TOULOUSE  
 CHECKED BY  
 C. TRBOYEVICH  
 COMM. NO. 4994



ANOKA COUNTY  
 MUCK EXCAVATION AND SURCHARGE PROFILES  
 C.S.A.H. 14  
 STA. 73+50.00 TO STA. 87+50.00

SHEET  
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 OF  
 492

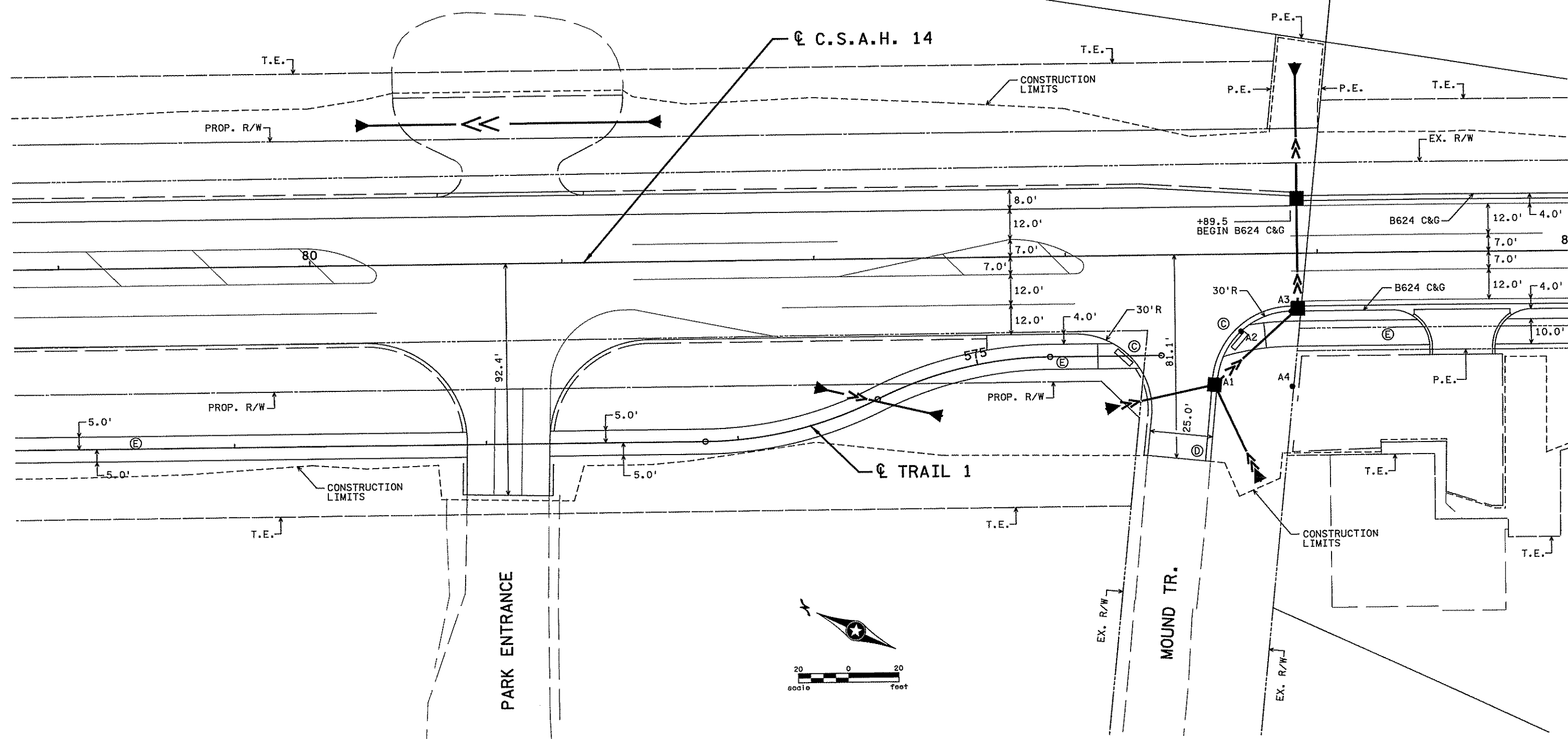
GENERAL NOTES:

- STREET DIMENSIONS ARE TO FACE OF CURB UNLESS INDICATED OTHERWISE
- ALL ELEVATIONS ARE TO TOP BACK OF CURB UNLESS INDICATED OTHERWISE.

NOTES:

- (A) CONSTRUCT CONCRETE APPROACH NOSE PER MN/DOT STD. PLATE 7113.
- (B) 4" CONCRETE WALK.
- (C) CONSTRUCT PEDESTRIAN CURB RAMP PER MN/DOT STD. PLATE 7036.
- (D) 10' CURB TRANSITION.
- (E) 2" BITUMINOUS TRAIL
- (F) BITUMINOUS CURB

INTERSECTION CURB POINTS					
POINT	ALIGNMENT	STATION	LOCATION	ELEVATION	DESCRIPTION
A1	EB14	83+59.67	50.1' (RT)	890.76	
A2	EB14	83+69.37	30.8' (RT)	891.02	
A3	EB14	83+89.52	23.0' (RT)	891.28	
A4	EB14	83+89.52	53.0' (RT)		RADII PT.



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NO	DATE	BY	CHKD	APPR	REVISION

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

Print Name: CHRISTOPHER M. TRBOYEVICH

*Christopher M. Trbojevich*

Date: 3/26/07 License # 41635

STATE PROJECT NO.  
S.P. 02-614-24, ETAL

DRAWN BY  
S. MARTINS

DESIGNED BY  
J. TOULOUSE

CHECKED BY  
C. TRBOYEVICH

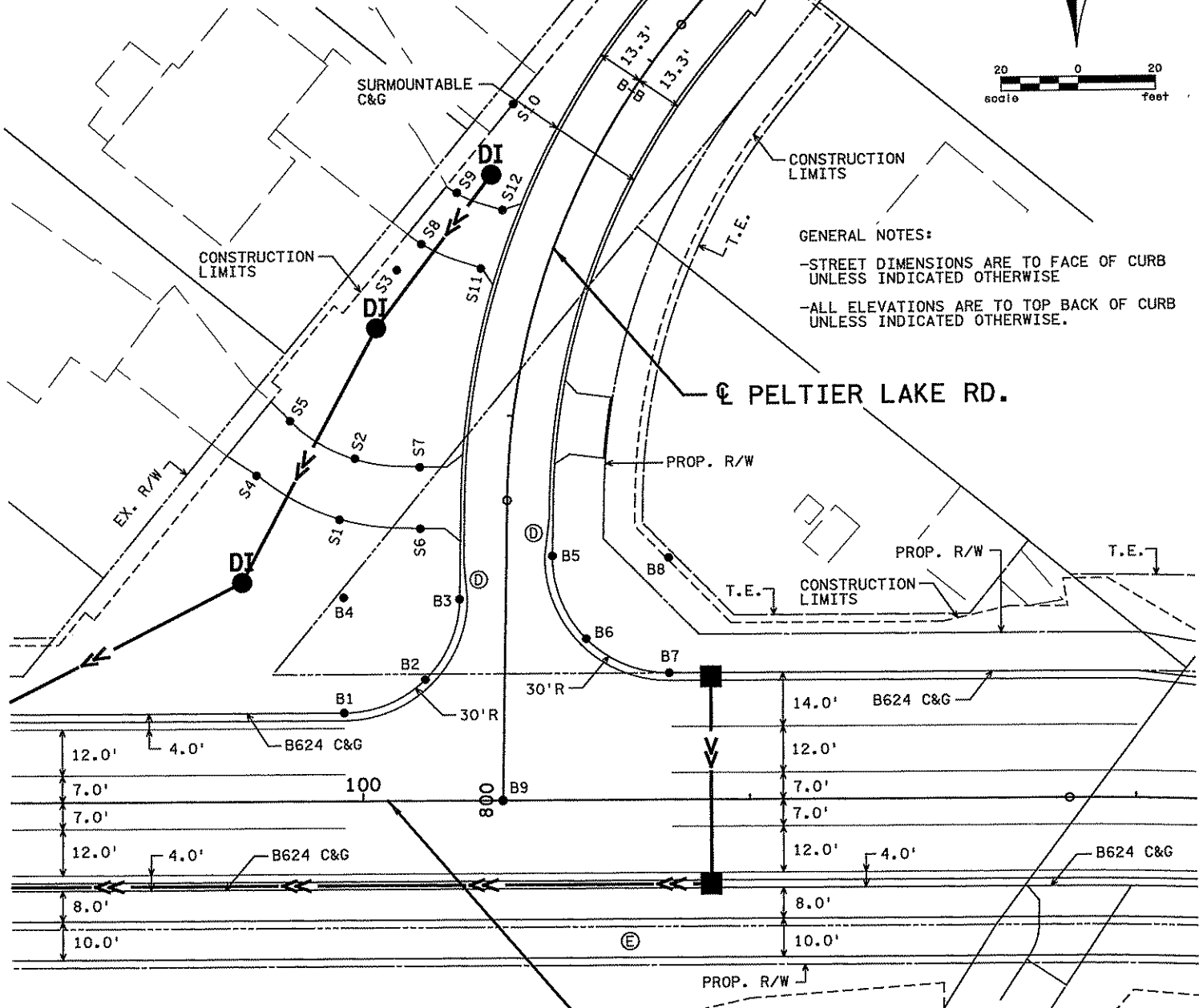
COMM. NO. 4994



ANOKA COUNTY  
INTERSECTION DETAILS  
C.S.A.H. 14

SHEET  
165  
OF  
492

INTERSECTION CURB POINTS					
POINT	ALIGNMENT	STATION	LOCATION	ELEVATION	DESCRIPTION
B1	EB14	99+95.26	23.0' (LT)	895.05	
B2	EB14	100+16.27	31.6' (LT)	896.52	
B3	EB14	100+25.25	52.4' (LT)	896.29	
B4	EB14	99+95.26	53.0' (LT)		RADII PT.
B5	EB14	100+49.37	63.6' (LT)	895.97	
B6	EB14	100+57.96	42.0' (LT)	896.66	
B7	EB14	100+79.37	33.0' (LT)	898.18	
B8	EB14	100+79.37	63.0' (LT)		RADII PT.
B9	EB14	100+36.24	0.0' (LT)	897.21	



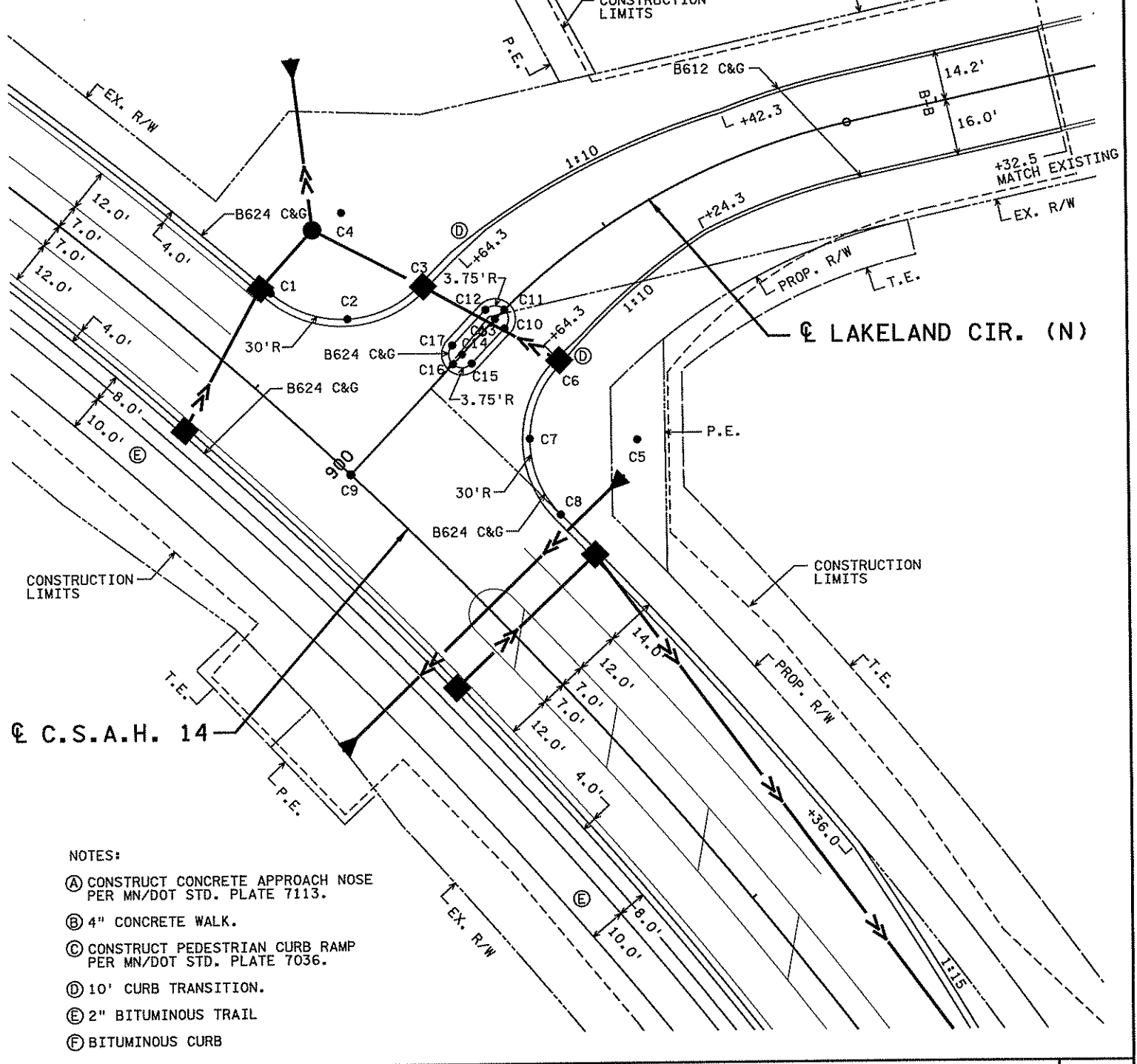
GENERAL NOTES:  
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 -ALL ELEVATIONS ARE TO TOP BACK OF CURB UNLESS INDICATED OTHERWISE.

INTERSECTION CURB POINTS					
POINT	ALIGNMENT	STATION	LOCATION	ELEVATION	DESCRIPTION
S1	EB14	99+90.91	74.6' (LT)	895.10	
S2	EB14	99+90.42	89.6' (LT)	894.79	
S3	EB14	100+10.89	129.0' (LT)		RADII PT.
S4	EB14	99+74.20	84.1' (LT)	894.55	
S5	EB14	99+84.32	96.5' (LT)	894.29	
S6	EB14	100+15.59	70.9' (LT)	895.83	
S7	EB14	100+16.05	86.9' (LT)	895.33	
S8	EB14	100+18.95	143.3' (LT)	893.79	
S9	EB14	100+26.37	157.4' (LT)	893.48	
S10	EB14	100+38.40	180.5' (LT)		RADII PT.
S11	EB14	100+31.49	138.6' (LT)	893.97	
S12	EB14	100+36.77	153.7' (LT)	893.73	

NO	DATE	BY	CHKD	APPR	REVISION

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 Print Name: CHRISTOPHER M. TRBOYEVICH  
*Christopher M. Trbojevich*  
 Date: 3/26/07 License # 41635

INTERSECTION CURB POINTS					
POINT	ALIGNMENT	STATION	LOCATION	ELEVATION	DESCRIPTION
C1	EB14	111+85.84	23.0' (LT)	889.70	
C2	EB14	112+06.30	31.7' (LT)	890.08	
C3	EB14	112+14.67	52.6' (LT)	889.39	
C4	EB14	111+85.84	53.0' (LT)		RADII PT.
C5	EB14	112+85.56	63.0' (LT)		RADII PT.
C6	EB14	112+56.95	63.5' (LT)	889.65	
C7	EB14	112+64.95	42.0' (LT)	890.34	
C8	EB14	112+85.56	33.0' (LT)	889.87	
C9	EB14	112+36.06	0.0' (LT)	889.86	
C10	EB14	112+39.43	59.5' (LT)	889.98	
C11	EB14	112+35.92	63.4' (LT)	890.24	
C12	EB14	112+32.26	59.7' (LT)	889.98	
C13	EB14	112+35.84	59.6' (LT)		RADII PT.
C14	EB14	112+35.84	46.0' (LT)		RADII PT.
C15	EB14	112+39.47	46.1' (LT)	889.75	
C16	EB14	112+35.86	42.3' (LT)	889.84	
C17	EB14	112+32.22	46.0' (LT)	889.75	



NOTES:  
 (A) CONSTRUCT CONCRETE APPROACH NOSE PER MN/DOT STD. PLATE 7113.  
 (B) 4" CONCRETE WALK.  
 (C) CONSTRUCT PEDESTRIAN CURB RAMP PER MN/DOT STD. PLATE 7036.  
 (D) 10' CURB TRANSITION.  
 (E) 2" BITUMINOUS TRAIL  
 (F) BITUMINOUS CURB

STATE PROJECT NO. S.P. 02-614-24, ETAL

DRAWN BY S. MARTINS  
 DESIGNED BY J. TOULOUSE  
 CHECKED BY C. TRBOYEVICH  
 COMM. NO. 4994

**SRF** CONSULTING GROUP, INC.

ANOKA COUNTY  
 INTERSECTION DETAILS  
 C.S.A.H. 14

SHEET 166 OF 492

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**INTERSECTION CURB POINTS**

POINT	ALIGNMENT	STATION	LOCATION	ELEVATION	DESCRIPTION
D1	EB14	119+10.39	23.0' (LT)	891.09	
D2	EB14	119+28.79	31.7' (LT)	890.68	
D3	EB14	119+38.69	52.6' (LT)	890.28	
D4	EB14	119+10.39	53.0' (LT)		RADII PT.
D5	EB14	119+88.35	63.0' (LT)	890.41	
D6	EB14	119+98.14	63.5' (LT)	890.82	
D7	EB14	120+16.47	42.0' (LT)	890.41	
D8	EB14	120+16.47	33.0' (LT)		RADII PT.
D9	EB14	119+64.21	0.0' (LT)	890.86	
D10	EB14	119+64.14	59.5' (LT)		RADII PT.
D11	EB14	119+67.72	63.4' (LT)	891.12	
D12	EB14	119+64.16	59.7' (LT)	891.18	
D13	EB14	119+60.55	59.6' (LT)	891.12	
D14	EB14	119+60.45	46.0' (LT)	891.01	
D15	EB14	119+64.06	46.1' (LT)	891.06	
D16	EB14	119+67.69	42.3' (LT)	891.01	
D17	EB14	119+64.07	46.0' (LT)		RADII PT.

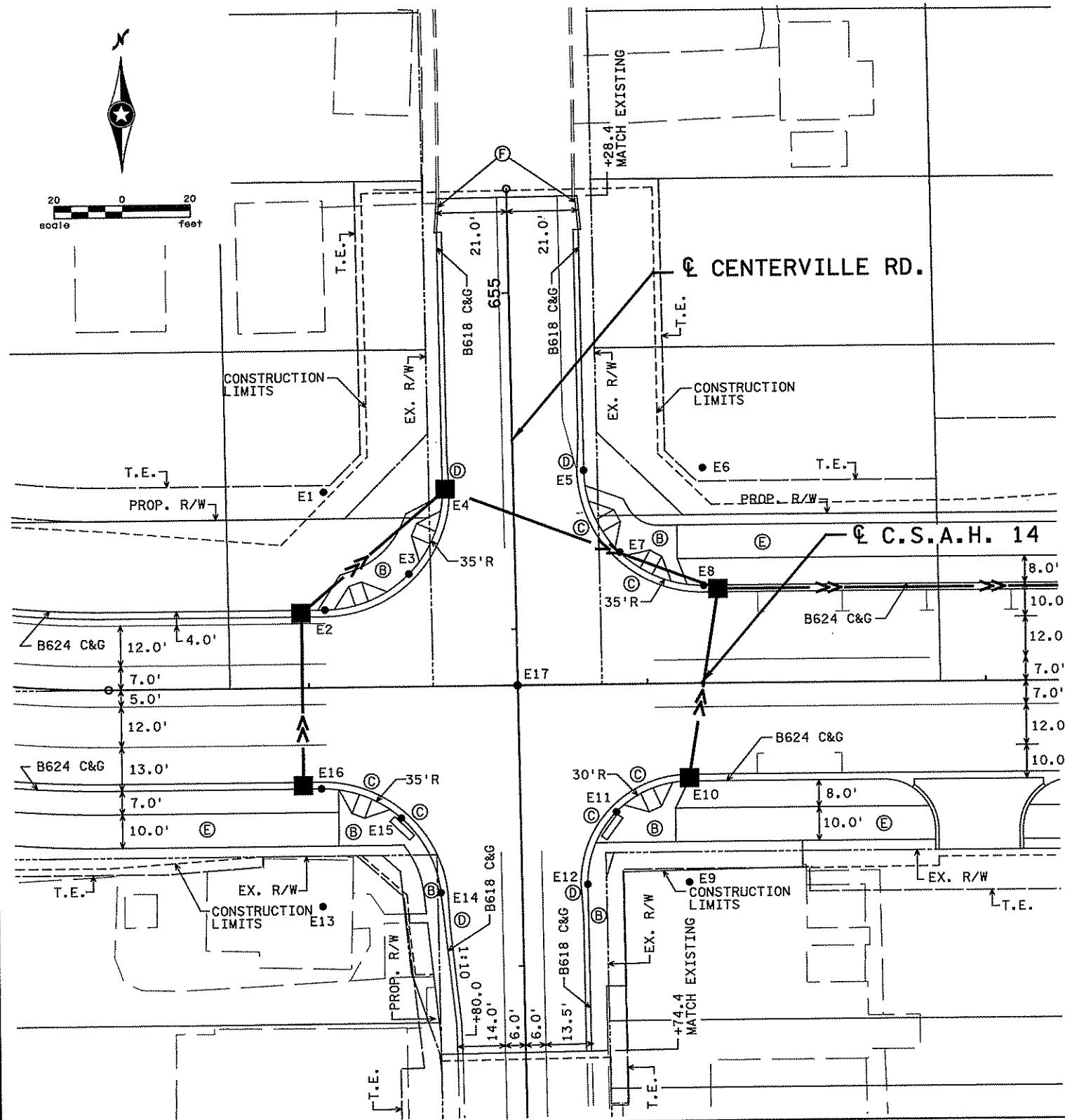
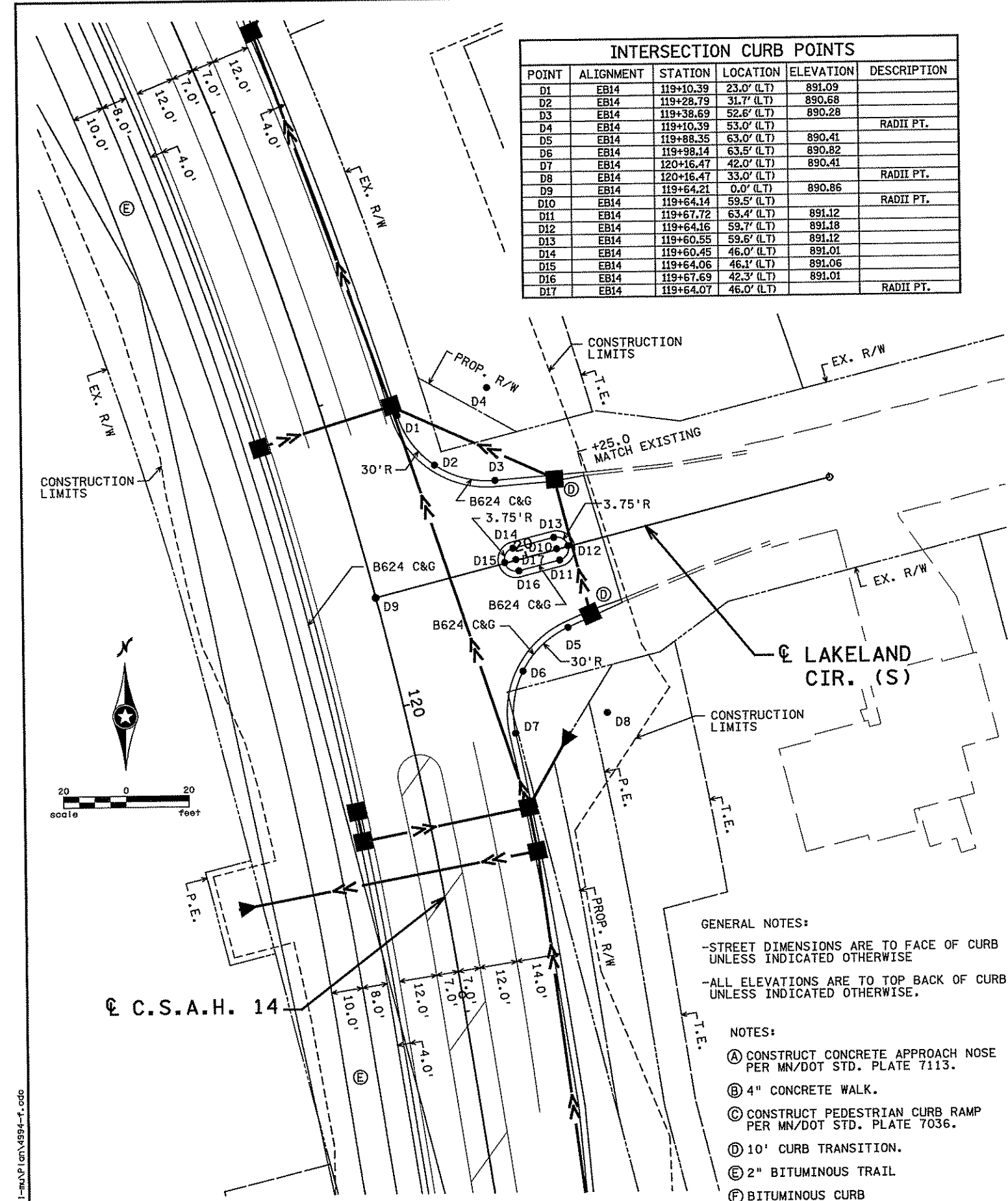
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- NOTES:**
- Ⓐ CONSTRUCT CONCRETE APPROACH NOSE PER MN/DOT STD. PLATE 7113.
  - Ⓑ 4" CONCRETE WALK.
  - Ⓒ CONSTRUCT PEDESTRIAN CURB RAMP PER MN/DOT STD. PLATE 7036.
  - Ⓓ 10' CURB TRANSITION.
  - Ⓔ 2" BITUMINOUS TRAIL
  - Ⓕ BITUMINOUS CURB

**INTERSECTION CURB POINTS**

POINT	ALIGNMENT	STATION	LOCATION	ELEVATION	DESCRIPTION
E1	EB14	131+04.97	58.0' (LT)		RADII PT.
E2	EB14	131+04.97	23.0' (LT)	910.48	
E3	EB14	131+29.85	33.4' (LT)	909.33	
E4	EB14	131+39.97	58.4' (LT)	909.61	
E5	EB14	131+81.91	63.6' (LT)	909.71	
E6	EB14	132+16.91	64.0' (LT)		RADII PT.
E7	EB14	131+91.29	39.1' (LT)	909.48	
E8	EB14	132+16.91	29.0' (LT)	909.24	
E9	EB14	132+11.71	59.0' (RT)		RADII PT.

**INTERSECTION CURB POINTS**

POINT	ALIGNMENT	STATION	LOCATION	ELEVATION	DESCRIPTION
E10	EB14	132+11.71	29.0' (RT)	909.39	
E11	EB14	131+90.38	37.9' (RT)	909.55	
E12	EB14	131+81.71	59.3' (RT)	909.40	
E13	EB14	131+03.36	65.0' (RT)		RADII PT.
E14	EB14	131+38.16	61.3' (RT)	909.41	
E15	EB14	131+26.76	39.0' (RT)	910.03	
E16	EB14	131+03.36	30.0' (RT)	910.39	
E17	EB14	131+61.58	0.0' (RT)	909.92	



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.

Print Name: CHRISTOPHER M. TRBOYEVICH

*Christopher M. Trbojevich*

Date: 3/26/07 License # 11635

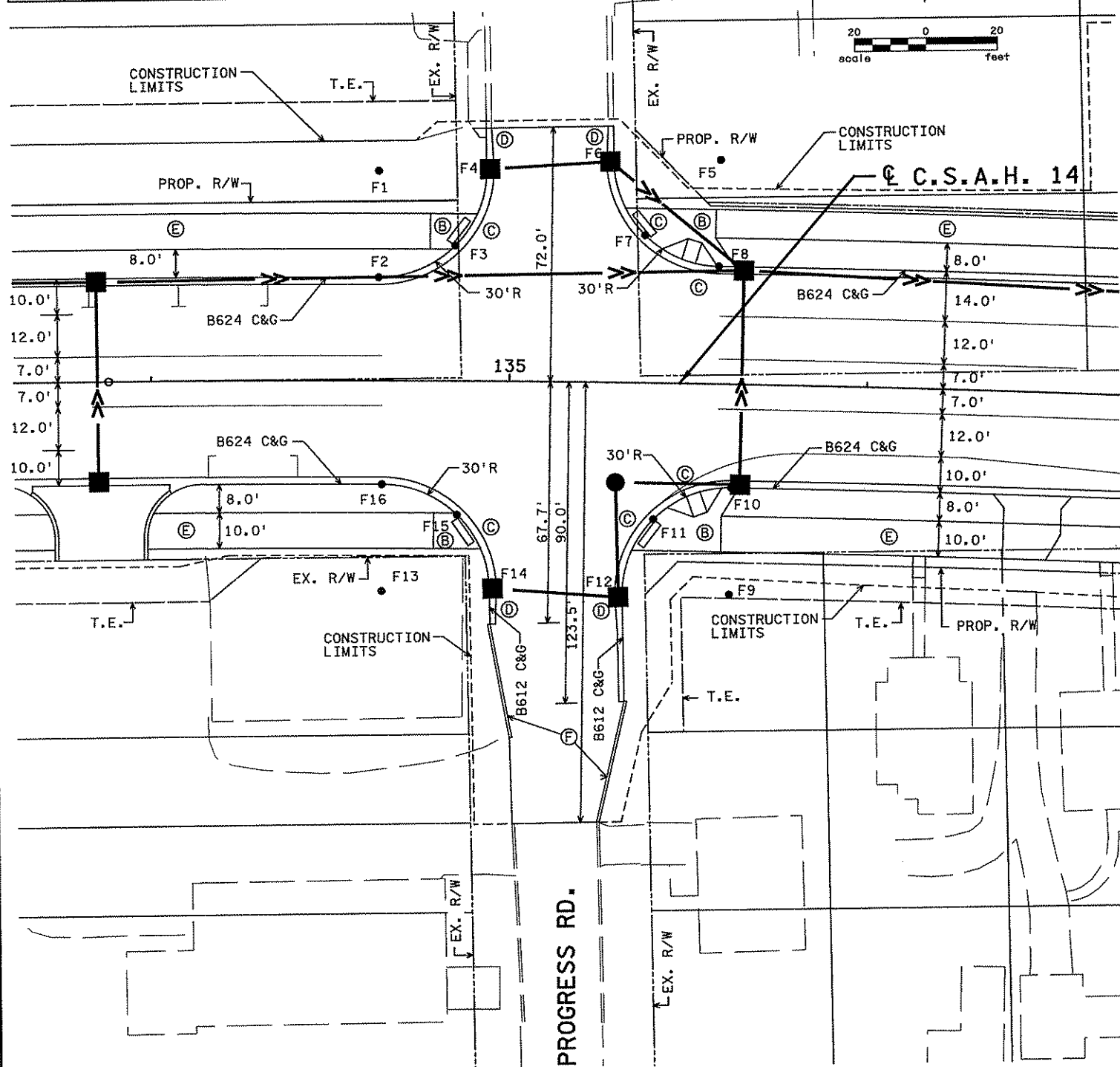
NO	DATE	BY	CHKD	APPR	REVISION

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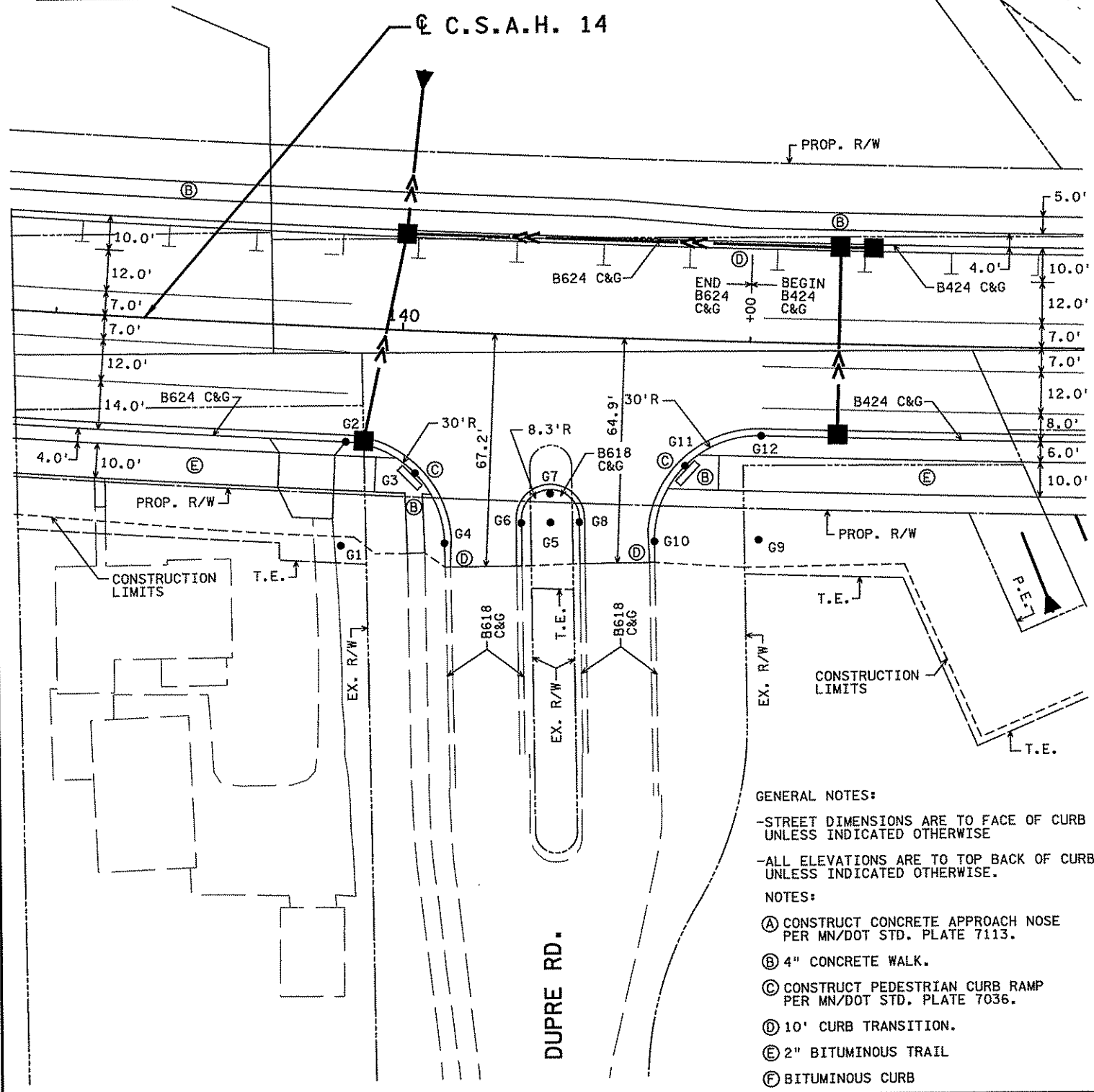
STATE PROJECT NO. S.P. 02-614-24, ETAL	DRAWN BY S. MARTINS DESIGNED BY J. TOULOUSE CHECKED BY C. TRBOYEVICH COMM. NO. 4994	<b>SRF</b> CONSULTING GROUP, INC.	ANOKA COUNTY INTERSECTION DETAILS C.S.A.H. 14	SHEET 167 OF 492
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POINT	ALIGNMENT	STATION	LOCATION	ELEVATION	DESCRIPTION
F1	EB14	134+63.52	59.0' (LT)		RADII PT.
F2	EB14	134+63.52	29.0' (LT)	908.42	
F3	EB14	134+84.77	38.0' (LT)	908.13	
F4	EB14	134+93.20	59.6' (LT)	907.83	
F5	EB14	135+58.03	63.0' (LT)		RADII PT.
F6	EB14	135+28.37	62.1' (LT)	907.86	
F7	EB14	135+37.33	41.5' (LT)	908.76	
F8	EB14	135+58.03	33.0' (LT)	909.66	
F9	EB14	135+62.63	59.0' (RT)		RADII PT.
F10	EB14	135+62.63	29.0' (RT)	909.81	
F11	EB14	135+40.84	38.2' (RT)	909.42	
F12	EB14	135+32.34	60.1' (RT)	909.02	
F13	EB14	134+64.57	59.0' (RT)		RADII PT.
F14	EB14	134+94.87	58.2' (RT)	909.07	
F15	EB14	134+85.67	37.5' (RT)	908.75	
F16	EB14	134+64.57	29.0' (RT)	908.43	



POINT	ALIGNMENT	STATION	LOCATION	ELEVATION	DESCRIPTION
G1	EB14	139+84.86	63.0' (RT)		RADII PT.
G2	EB14	139+84.86	33.0' (RT)	906.44	
G3	EB14	140+05.17	41.1' (RT)	905.81	
G4	EB14	140+14.47	61.0' (RT)	905.17	
G5	EB14	140+44.22	52.6' (RT)		RADII PT.
G6	EB14	140+35.99	52.7' (RT)	905.58	
G7	EB14	140+43.98	44.3' (RT)	905.69	
G8	EB14	140+52.43	52.1' (RT)	905.59	
G9	EB14	140+03.83	57.0' (RT)		RADII PT.
G10	EB14	140+74.16	58.3' (RT)	905.18	
G11	EB14	140+82.33	36.3' (RT)	905.70	
G12	EB14	141+03.83	27.0' (RT)	905.22	



- GENERAL NOTES:
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- NOTES:
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  - (B) 4" CONCRETE WALK.
  - (C) CONSTRUCT PEDESTRIAN CURB RAMP PER MN/DOT STD. PLATE 7036.
  - (D) 10' CURB TRANSITION.
  - (E) 2" BITUMINOUS TRAIL
  - (F) BITUMINOUS CURB

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NO	DATE	BY	CHKD	APPR	REVISION

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 Print Name: CHRISTOPHER M. TRBOYEVICH  
*Christopher M. Trbojevich*  
 Date: 3/26/07 License # 41635

STATE PROJECT NO. S.P. 02-614-24, ETAL

DRAWN BY S. MARTINS  
 DESIGNED BY J. TOULOUSE  
 CHECKED BY C. TRBOYEVICH  
 COMM. NO. 4994

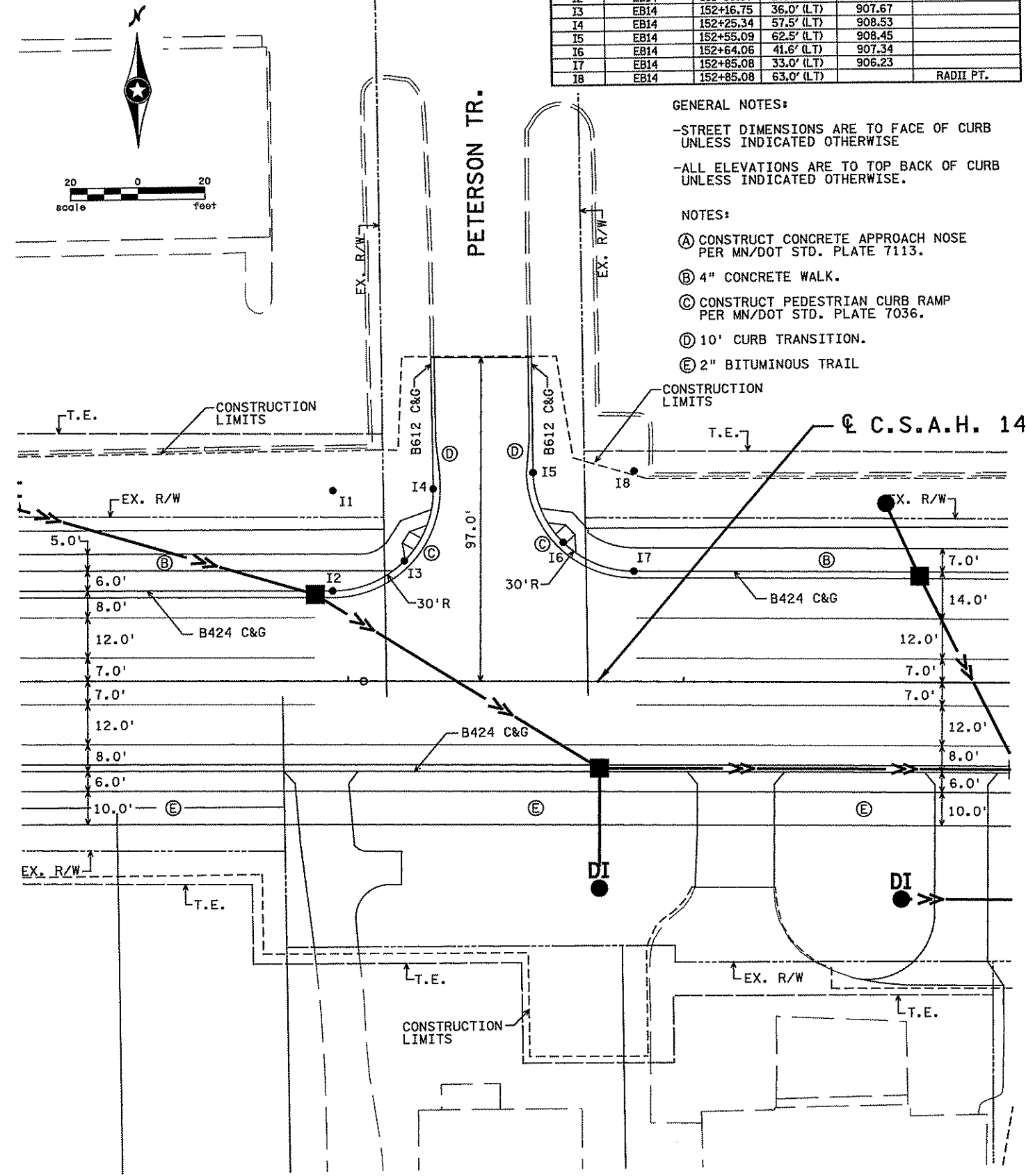
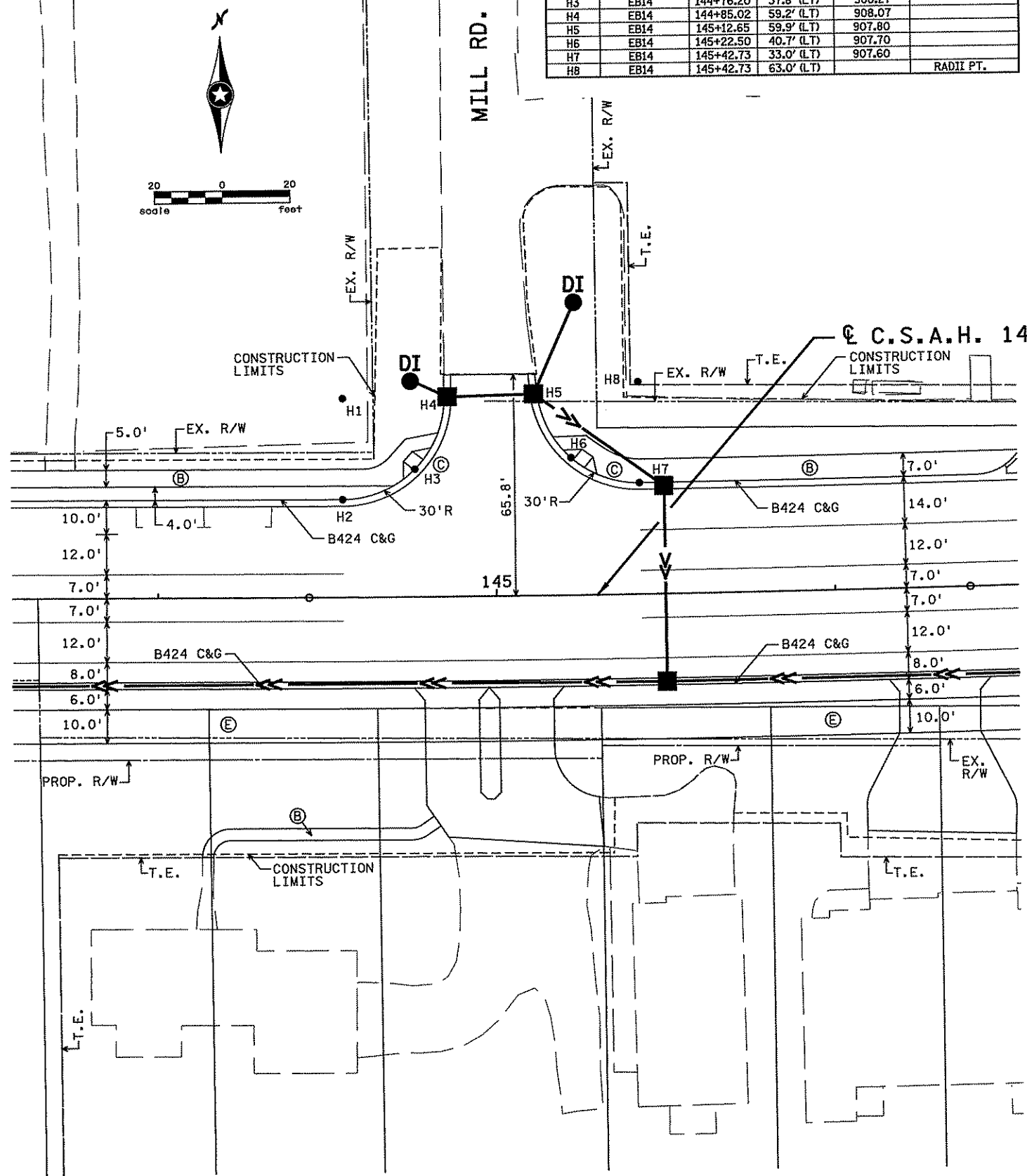


ANOKA COUNTY  
 INTERSECTION DETAILS  
 C.S.A.H. 14

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INTERSECTION CURB POINTS					
POINT	ALIGNMENT	STATION	LOCATION	ELEVATION	DESCRIPTION
H1	EB14	144+54.78	59.0' (LT)		RADII PT.
H2	EB14	144+54.74	29.0' (LT)	908.46	
H3	EB14	144+76.20	37.8' (LT)	908.27	
H4	EB14	144+85.02	59.2' (LT)	908.07	
H5	EB14	145+12.65	59.9' (LT)	907.80	
H6	EB14	145+22.50	40.7' (LT)	907.70	
H7	EB14	145+42.73	33.0' (LT)	907.60	
H8	EB14	145+42.73	63.0' (LT)		RADII PT.

INTERSECTION CURB POINTS					
POINT	ALIGNMENT	STATION	LOCATION	ELEVATION	DESCRIPTION
I1	EB14	151+95.37	57.0' (LT)		RADII PT.
I2	EB14	151+95.37	27.0' (LT)	906.80	
I3	EB14	152+16.75	36.0' (LT)	907.67	
I4	EB14	152+25.34	57.5' (LT)	908.53	
I5	EB14	152+55.09	62.5' (LT)	908.45	
I6	EB14	152+64.06	41.6' (LT)	907.34	
I7	EB14	152+85.08	33.0' (LT)	906.23	
I8	EB14	152+85.08	63.0' (LT)		RADII PT.



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NOTES:

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2/21/2007  
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NO	DATE	BY	CHK	APPR	REVISION

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Print Name: **CHRISTOPHER M. TRBOYEVICH**

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STATE PROJECT NO. S.P. 02-614-24, ETAL

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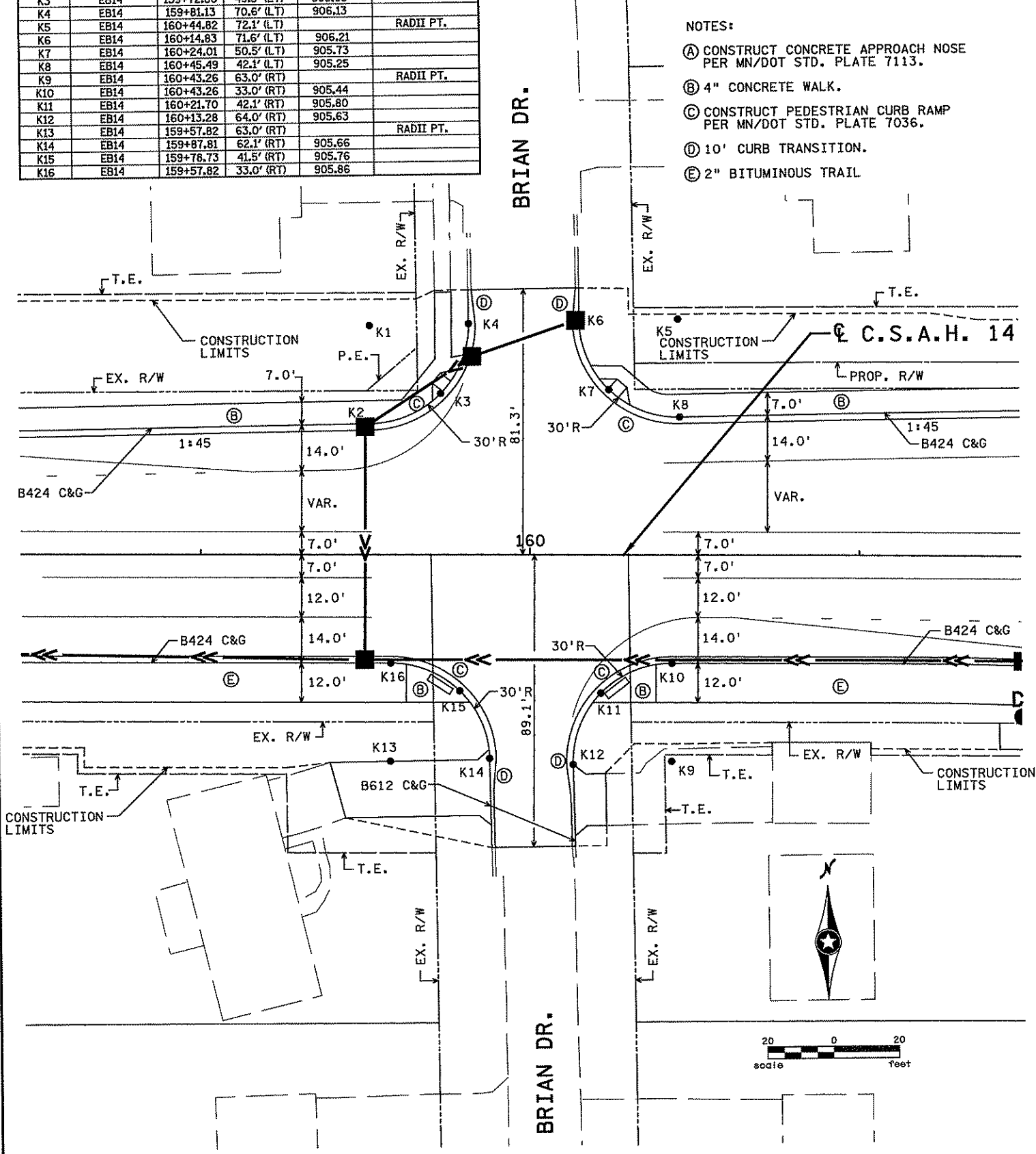
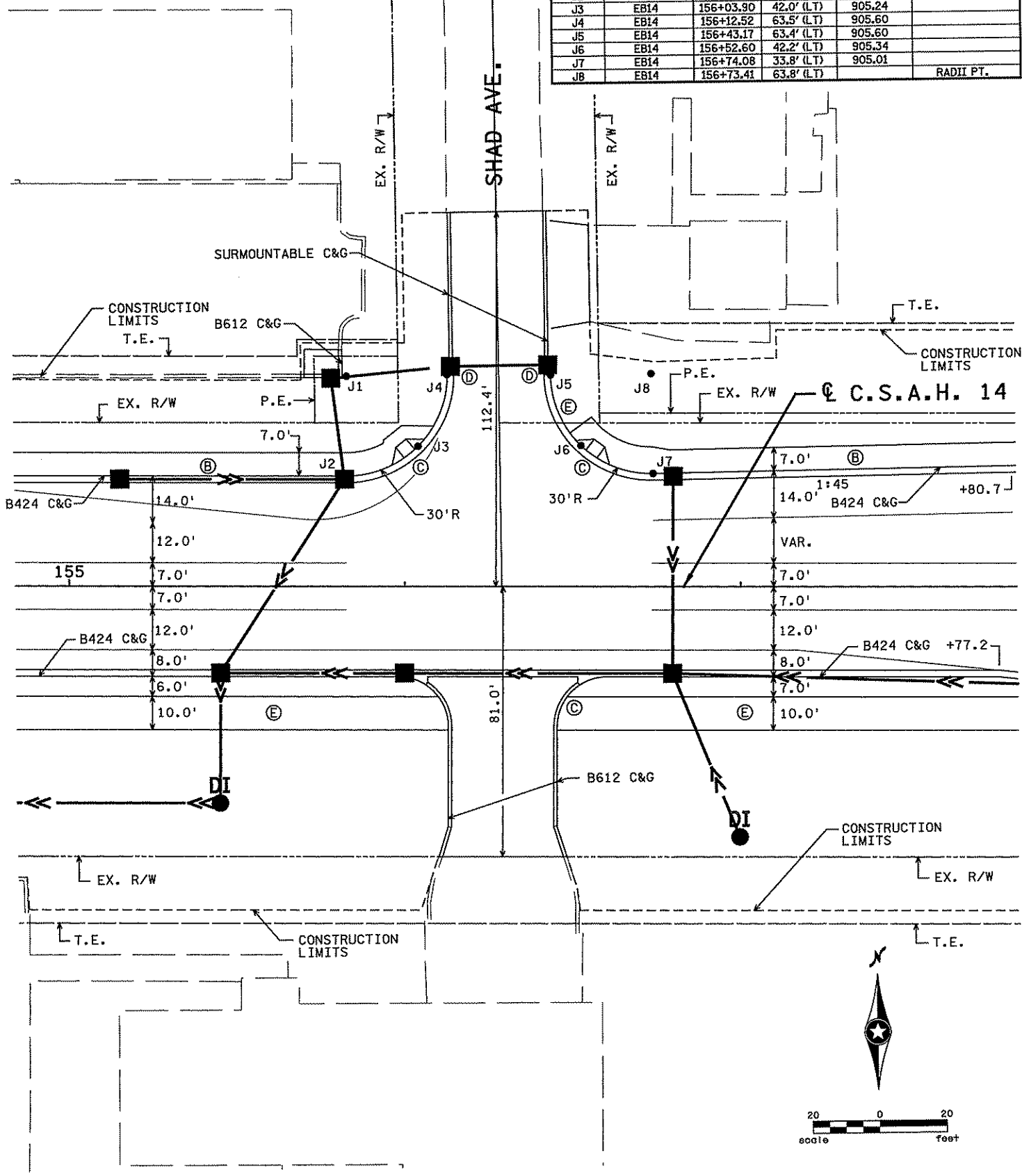
ANOKA COUNTY  
 INTERSECTION DETAILS  
 C.S.A.H. 14

SHEET  
 169  
 OF  
 492

INTERSECTION CURB POINTS					
POINT	ALIGNMENT	STATION	LOCATION	ELEVATION	DESCRIPTION
J1	EB14	155+82.52	63.0' (LT)		RADII PT.
J2	EB14	155+82.52	33.0' (LT)	904.87	
J3	EB14	156+03.30	42.0' (LT)	905.24	
J4	EB14	156+12.52	63.5' (LT)	905.60	
J5	EB14	156+43.17	63.4' (LT)	905.60	
J6	EB14	156+52.60	42.2' (LT)	905.34	
J7	EB14	156+74.08	33.8' (LT)	905.01	
J8	EB14	156+73.41	63.8' (LT)		RADII PT.

INTERSECTION CURB POINTS					
POINT	ALIGNMENT	STATION	LOCATION	ELEVATION	DESCRIPTION
K1	EB14	159+51.14	70.0' (LT)		RADII PT.
K2	EB14	159+51.80	40.0' (LT)	905.74	
K3	EB14	159+72.80	49.3' (LT)	905.93	
K4	EB14	159+81.13	70.6' (LT)	906.13	
K5	EB14	160+44.82	72.1' (LT)		RADII PT.
K6	EB14	160+14.83	71.6' (LT)	906.21	
K7	EB14	160+24.01	50.5' (LT)	905.73	
K8	EB14	160+45.49	42.1' (LT)	905.25	
K9	EB14	160+43.26	63.0' (RT)		RADII PT.
K10	EB14	160+43.26	33.0' (RT)	905.44	
K11	EB14	160+21.70	42.1' (RT)	905.80	
K12	EB14	160+13.28	64.0' (RT)	905.63	
K13	EB14	159+57.82	63.0' (RT)		RADII PT.
K14	EB14	159+87.81	62.1' (RT)	905.66	
K15	EB14	159+78.73	41.5' (RT)	905.76	
K16	EB14	159+57.82	33.0' (RT)	905.86	

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NO	DATE	BY	CHKD	APPR	REVISION

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CHECKED BY  
C. TRBOYEVICH

COMM. NO. 4994



ANOKA COUNTY

INTERSECTION DETAILS

C.S.A.H. 14

SHEET  
170  
OF  
492

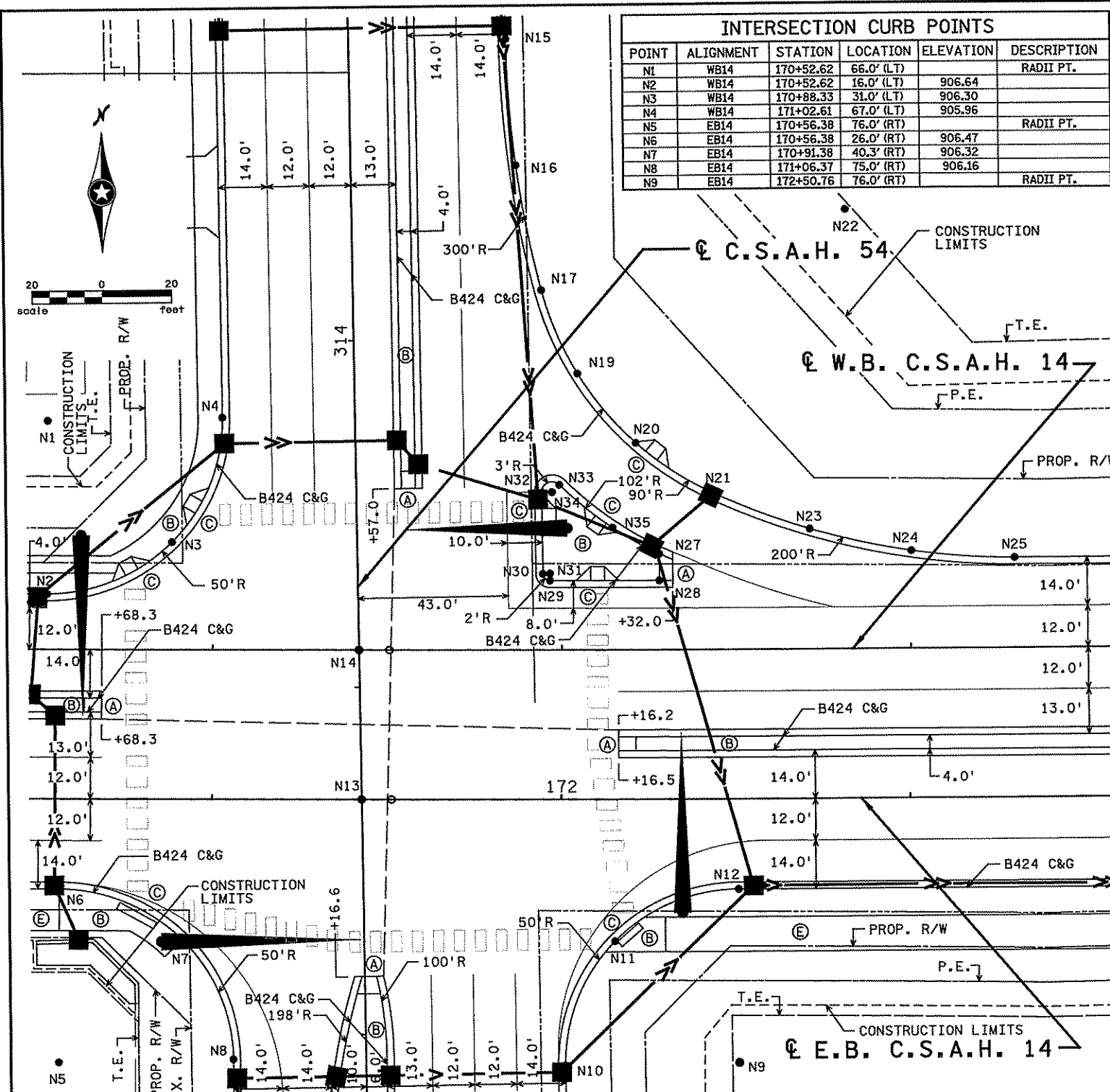
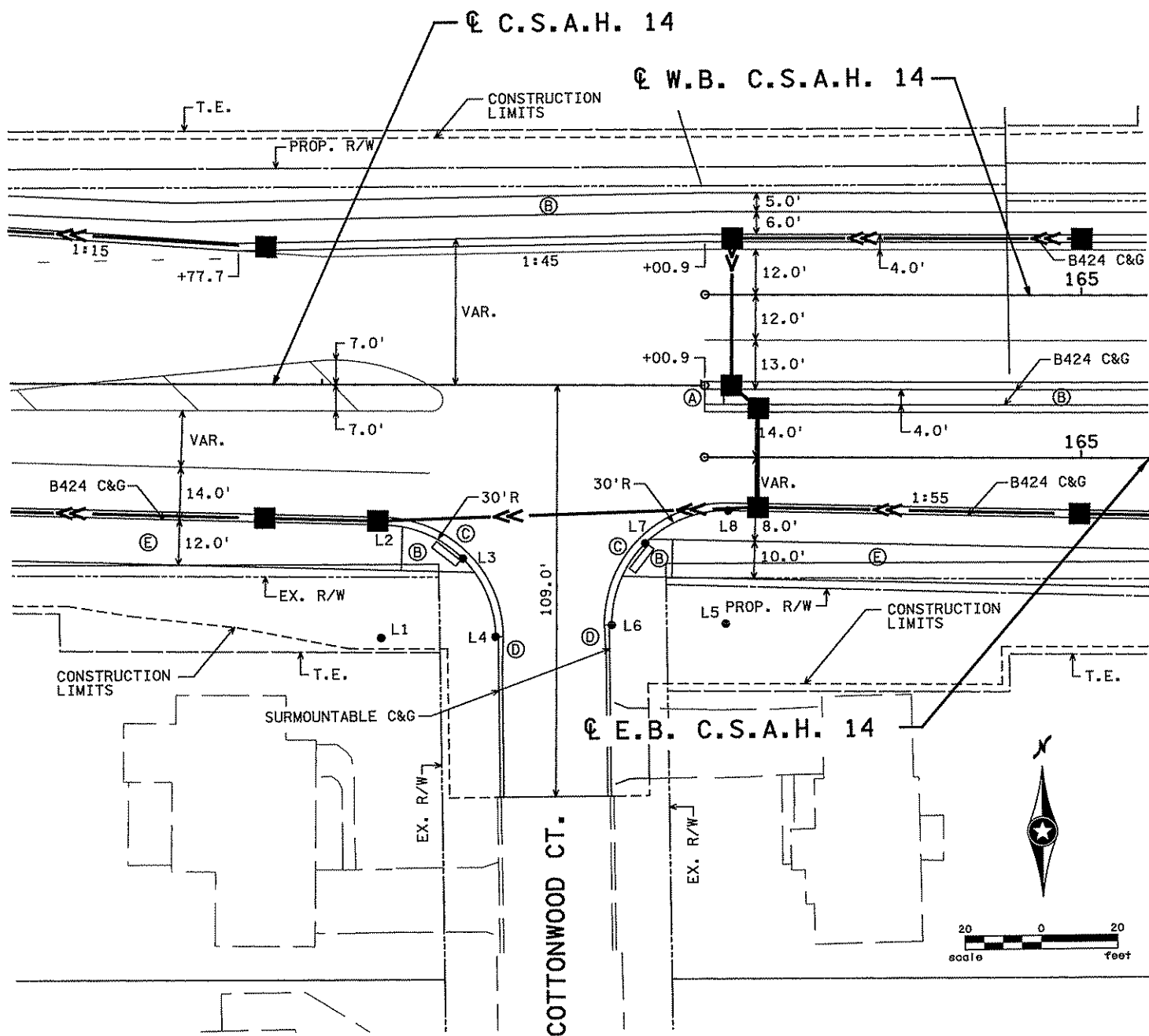
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- (D) 10' CURB TRANSITION.
- (E) 2" BITUMINOUS TRAIL

INTERSECTION CURB POINTS					
POINT	ALIGNMENT	STATION	LOCATION	ELEVATION	DESCRIPTION
L1	EB14	163+15.96	67.1' (RT)		RADII PT.
L2	EB14	163+16.63	37.1' (RT)	905.12	
L3	EB14	163+37.28	46.0' (RT)	905.98	
L4	EB14	163+45.96	66.8' (RT)	906.84	
L5	EB14	164+06.96	44.1' (RT)		RADII PT.
L6	EB14	163+76.69	63.6' (RT)	906.89	
L7	EB14	163+85.51	41.9' (RT)	906.29	
L8	EB14	164+07.24	14.1' (RT)	905.65	



INTERSECTION CURB POINTS					
POINT	ALIGNMENT	STATION	LOCATION	ELEVATION	DESCRIPTION
N1	WB14	170+52.62	66.0' (LT)		RADII PT.
N2	WB14	170+52.62	16.0' (LT)	906.64	
N3	WB14	170+88.33	31.0' (LT)	906.30	
N4	WB14	171+02.61	67.0' (RT)	905.96	
N5	EB14	170+56.38	76.0' (RT)		RADII PT.
N6	EB14	170+56.38	26.0' (RT)	906.47	
N7	EB14	170+91.38	40.3' (RT)	906.32	
N8	EB14	171+06.37	75.0' (RT)	906.16	
N9	EB14	172+50.76	76.0' (RT)		RADII PT.

INTERSECTION CURB POINTS					
POINT	ALIGNMENT	STATION	LOCATION	ELEVATION	DESCRIPTION
N10	EB14	172+01.09	76.7' (RT)	905.90	
N11	EB14	172+15.32	40.9' (RT)	905.70	
N12	EB14	172+50.76	26.0' (RT)	905.50	
N13	EB14	171+42.85	0.0' (RT)	906.43	
N14	WB14	171+49.98	0.0' (RT)	906.34	
N15	WB14	171+83.91	176.3' (LT)	905.90	
N16	WB14	171+86.82	139.7' (LT)	905.53	
N17	WB14	171+94.18	103.8' (LT)	905.17	
N18	WB14	174+88.52	177.5' (LT)		LOW PT.
N19	WB14	172+04.59	79.8' (LT)	904.91	
N20	WB14	172+21.47	59.8' (LT)	904.65	
N21	WB14	172+43.37	45.3' (LT)	904.38	
N22	WB14	172+82.11	126.7' (LT)		LOW PT.
N23	WB14	172+71.28	34.7' (LT)	904.63	

INTERSECTION CURB POINTS					
POINT	ALIGNMENT	STATION	LOCATION	ELEVATION	DESCRIPTION
N24	WB14	173+00.43	28.2' (LT)	904.86	
N25	WB14	173+30.21	26.0' (LT)	905.10	
N26	WB14	173+30.21	226.0' (LT)		RADII PT.
N27	WB14	172+28.14	27.7' (LT)	905.07	
N28	WB14	172+28.14	20.0' (LT)	905.77	
N29	WB14	171+96.63	20.0' (LT)	905.92	
N30	WB14	171+94.62	22.0' (LT)	905.84	
N31	WB14	171+96.63	22.0' (LT)		RADII PT.
N32	WB14	171+94.24	45.4' (LT)	905.33	
N33	WB14	171+99.36	47.7' (LT)	905.33	
N34	WB14	171+99.36	45.5' (LT)		RADII PT.
N35	WB14	172+14.63	35.3' (LT)	905.20	

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NO	DATE	BY	CHK	APPR	REVISION

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.  
 Pr Int Name: CHRISTOPHER M. TRBOYEVICH  
*Christopher M. Trbojevich*  
 Date: 3/20/07 License # 41635

STATE PROJECT NO. S.P. 02-614-24, ETAL

DRAWN BY S. MARTINS  
 DESIGNED BY J. TOULOUSE  
 CHECKED BY C. TRBOYEVICH  
 COMM. NO. 4994



ANOKA COUNTY  
 INTERSECTION DETAILS  
 C.S.A.H. 14

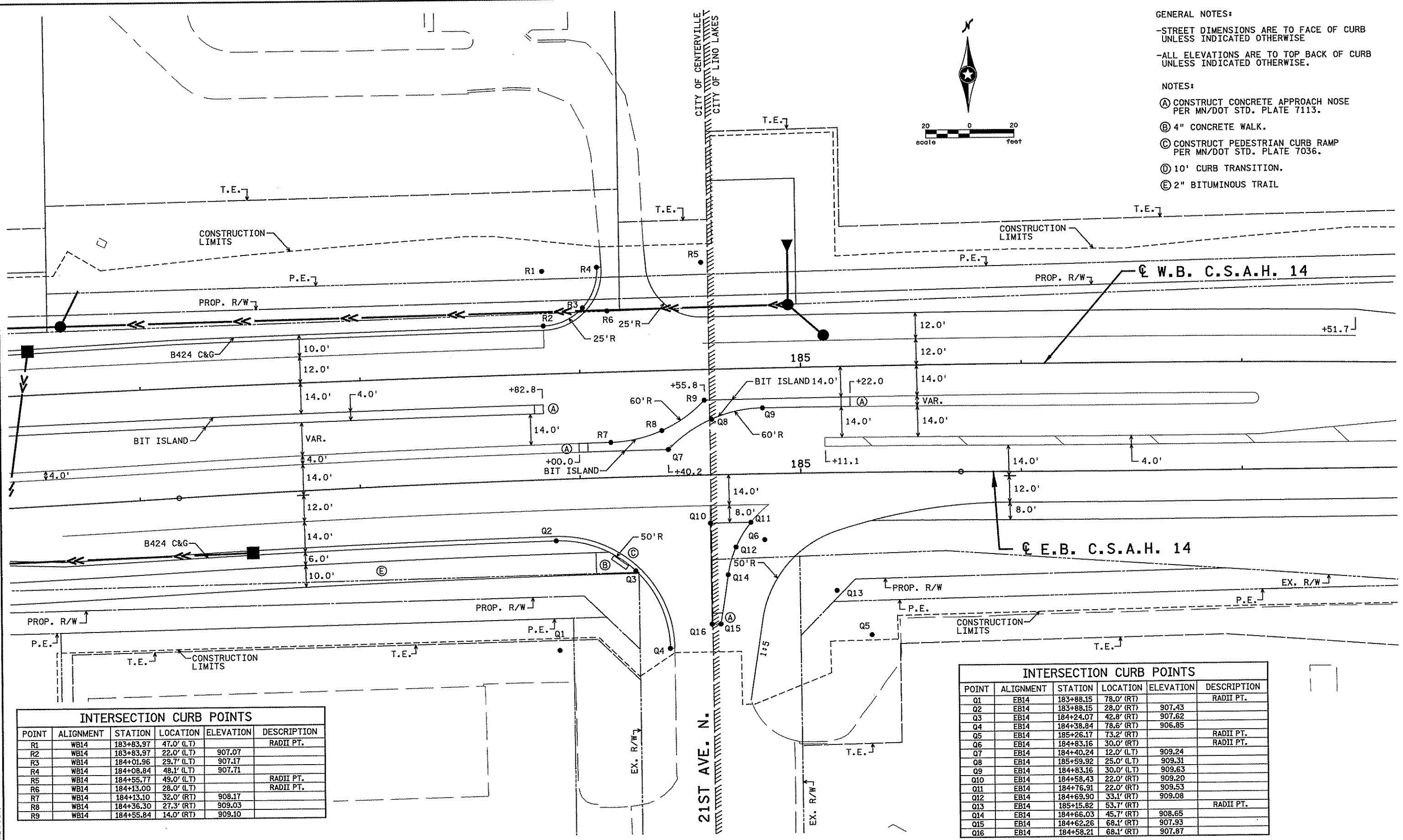
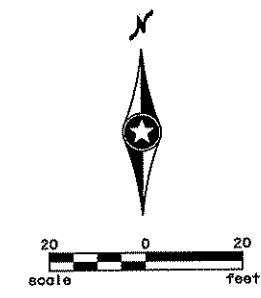
SHEET 171 OF 492

GENERAL NOTES:

- STREET DIMENSIONS ARE TO FACE OF CURB UNLESS INDICATED OTHERWISE
- ALL ELEVATIONS ARE TO TOP BACK OF CURB UNLESS INDICATED OTHERWISE.

NOTES:

- Ⓐ CONSTRUCT CONCRETE APPROACH NOSE PER MN/DOT STD. PLATE 7113.
- Ⓑ 4" CONCRETE WALK.
- Ⓒ CONSTRUCT PEDESTRIAN CURB RAMP PER MN/DOT STD. PLATE 7036.
- Ⓓ 10' CURB TRANSITION.
- Ⓔ 2" BITUMINOUS TRAIL



POINT	ALIGNMENT	STATION	LOCATION	ELEVATION	DESCRIPTION
R1	WB14	183+83.97	47.0' (LT)		RADII PT.
R2	WB14	183+83.97	22.0' (LT)	907.07	
R3	WB14	184+01.96	29.7' (LT)	907.17	
R4	WB14	184+08.84	48.1' (LT)	907.71	
R5	WB14	184+55.77	49.0' (LT)		RADII PT.
R6	WB14	184+13.00	28.0' (LT)		RADII PT.
R7	WB14	184+13.10	32.0' (RT)	908.17	
R8	WB14	184+36.30	27.3' (RT)	909.03	
R9	WB14	184+55.84	14.0' (RT)	909.10	

POINT	ALIGNMENT	STATION	LOCATION	ELEVATION	DESCRIPTION
Q1	EB14	183+88.15	78.0' (RT)		RADII PT.
Q2	EB14	183+88.15	28.0' (RT)	907.43	
Q3	EB14	184+24.07	42.8' (RT)	907.62	
Q4	EB14	184+38.84	78.6' (RT)	906.85	
Q5	EB14	185+26.17	73.2' (RT)		RADII PT.
Q6	EB14	184+83.16	30.0' (RT)		RADII PT.
Q7	EB14	184+40.24	12.0' (LT)	909.24	
Q8	EB14	185+59.92	25.0' (LT)	909.31	
Q9	EB14	184+83.16	30.0' (LT)	909.63	
Q10	EB14	184+58.43	22.0' (RT)	909.20	
Q11	EB14	184+76.91	22.0' (RT)	909.53	
Q12	EB14	184+69.90	33.1' (RT)	909.08	
Q13	EB14	185+15.82	53.7' (RT)		RADII PT.
Q14	EB14	184+66.03	45.7' (RT)	908.65	
Q15	EB14	184+62.26	68.1' (RT)	907.93	
Q16	EB14	184+58.21	68.1' (RT)	907.87	

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NO	DATE	BY	CKD	APPR	REVISION

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.  
 Print Name: **CHRISTOPHER M. TRBOYEVICH**  
 Date: **2/26/07** License #: **41635**

STATE PROJECT NO. S.P. 02-614-24, ETAL  
 DRAWN BY S. MARTINS  
 DESIGNED BY J. TOULOUSE  
 CHECKED BY C. TRBOYEVICH  
 COMM. NO. 4994



ANOKA COUNTY  
 INTERSECTION DETAILS  
 C.S.A.H. 14

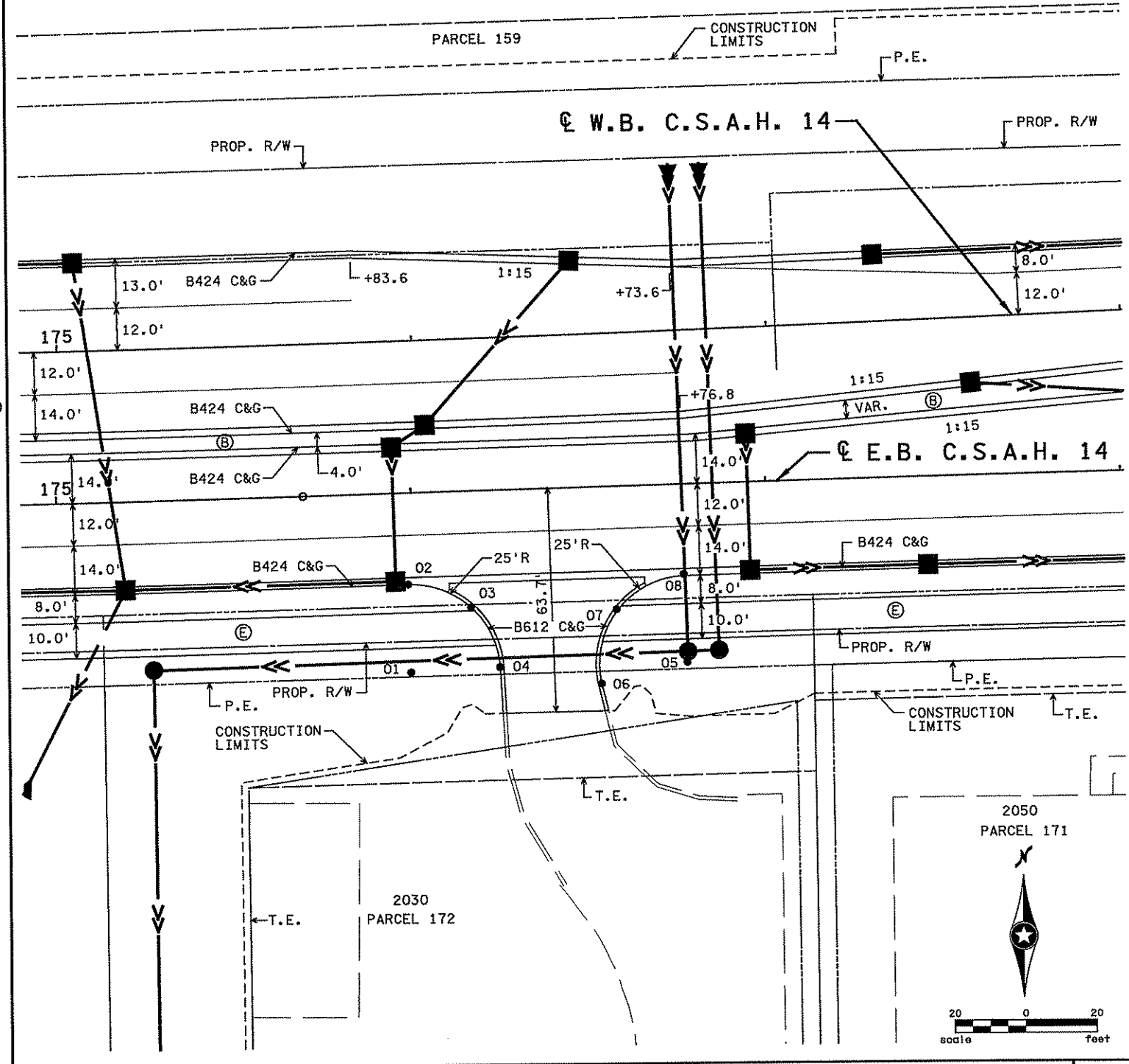
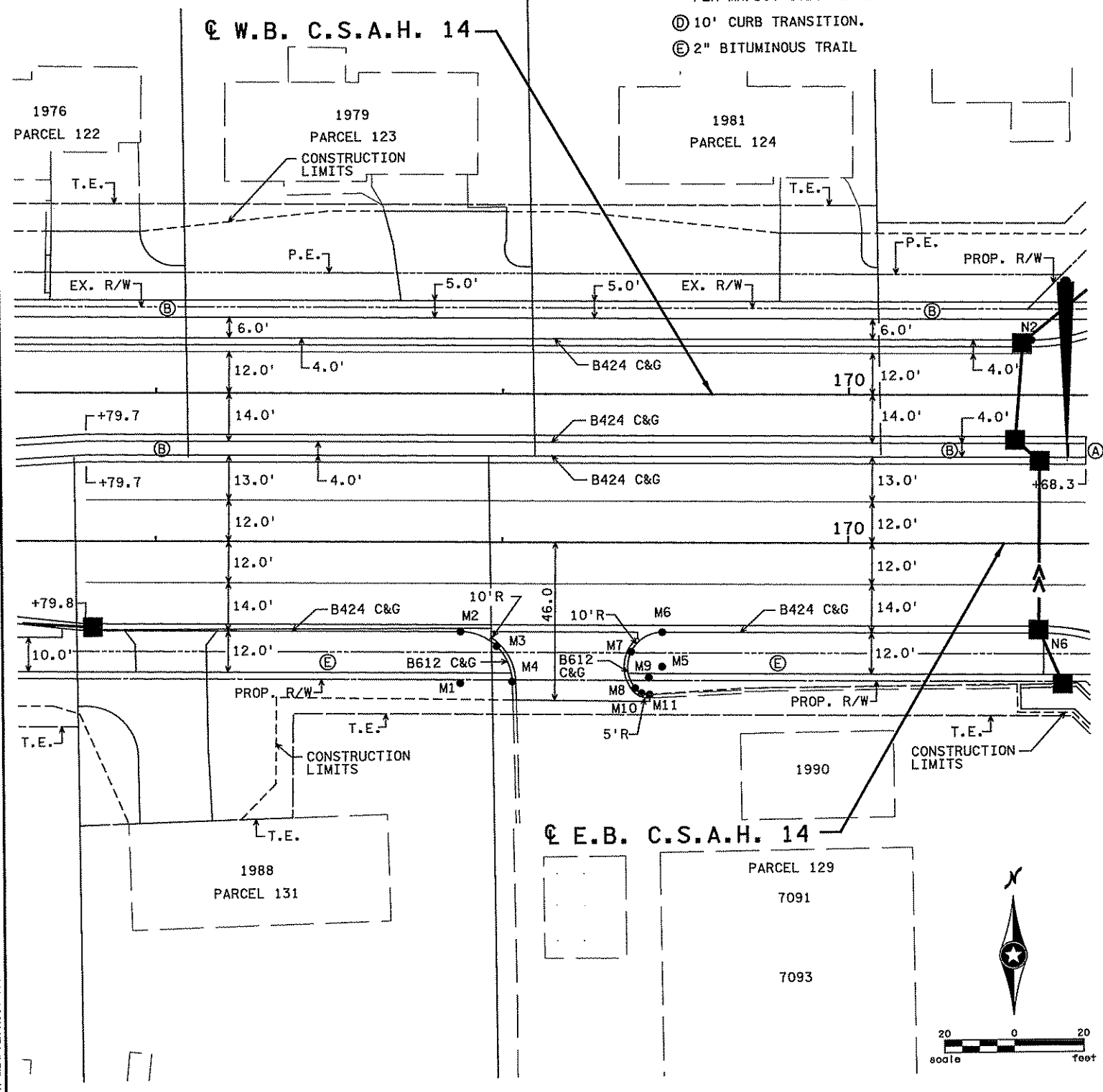
SHEET  
 172  
 OF  
 492

INTERSECTION CURB POINTS					
POINT	ALIGNMENT	STATION	LOCATION	ELEVATION	DESCRIPTION
M1	EB14	168+88.01	41.0' (RT)		RADII PT.
M2	EB14	168+88.01	26.0' (RT)	907.17	
M3	EB14	168+98.43	30.2' (RT)	907.23	
M4	EB14	169+03.00	40.5' (RT)	907.29	
M5	EB14	169+46.40	36.0' (RT)		RADII PT.
M6	EB14	169+46.40	26.0' (RT)	907.00	
M7	EB14	169+37.38	31.7' (RT)	907.15	
M8	EB14	169+38.61	42.3' (RT)	907.30	
M9	EB14	169+42.51	39.1' (RT)		RADII PT.
M10	EB14	169+40.47	43.7' (RT)	907.33	
M11	EB14	169+42.77	44.1' (RT)	907.36	

GENERAL NOTES:  
 -STREET DIMENSIONS ARE TO FACE OF CURB UNLESS INDICATED OTHERWISE  
 -ALL ELEVATIONS ARE TO TOP BACK OF CURB UNLESS INDICATED OTHERWISE.

NOTES:  
 (A) CONSTRUCT CONCRETE APPROACH NOSE PER MN/DOT STD. PLATE 7113.  
 (B) 4" CONCRETE WALK.  
 (C) CONSTRUCT PEDESTRIAN CURB RAMP PER MN/DOT STD. PLATE 7036.  
 (D) 10' CURB TRANSITION.  
 (E) 2" BITUMINOUS TRAIL

INTERSECTION CURB POINTS					
POINT	ALIGNMENT	STATION	LOCATION	ELEVATION	DESCRIPTION
01	EB14	175+98.43	51.0' (RT)		RADII PT.
02	EB14	175+98.43	26.0' (RT)	903.77	
03	EB14	176+15.81	33.1' (RT)	904.31	
04	EB14	176+23.31	50.4' (RT)	904.85	
05	EB14	176+75.93	51.0' (RT)		RADII PT.
06	EB14	176+51.58	56.1' (RT)	905.19	
07	EB14	176+56.59	35.3' (RT)	904.28	
08	EB14	176+75.93	26.0' (RT)	903.37	



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NO	DATE	BY	CHKD	APPR	REVISION

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Print Name: CHRISTOPHER M. TRBOYEVICH  
*Christopher M. Trbojevich*  
 Date: 3/20/07 License: 41635

STATE PROJECT NO. S.P. 02-614-24, ETAL

DRAWN BY S. MARTINS  
 DESIGNED BY J. TOULOUSE  
 CHECKED BY C. TRBOYEVICH  
 COMM. NO. 4994



ANOKA COUNTY  
 INTERSECTION DETAILS  
 C.S.A.H. 14

SHEET 173 OF 492

INTERSECTION CURB POINTS

POINT	ALIGNMENT	STATION	LOCATION	ELEVATION	DESCRIPTION
P1	EB14	178+10.31	51.0' (RT)		RADII PT.
P2	EB14	178+10.31	26.0' (RT)	902.81	
P3	EB14	178+27.84	33.2' (RT)	903.97	
P4	EB14	178+35.29	49.6' (RT)	905.13	
P5	EB14	178+88.52	51.0' (RT)		RADII PT.
P6	EB14	178+63.70	49.1' (RT)	904.62	
P7	EB14	178+71.58	32.7' (RT)	903.74	
P8	EB14	178+88.52	26.0' (RT)	902.86	
P9	EB14	178+98.27	50.3' (RT)		RADII PT.
P10	EB14	178+98.26	26.0' (RT)	902.89	
P11	EB14	179+16.02	33.5' (RT)	903.60	
P12	EB14	179+23.15	51.4' (RT)	904.40	
P13	EB14	179+80.07	51.0' (RT)		RADII PT.
P14	EB14	179+55.20	50.1' (RT)	904.65	
P15	EB14	179+62.78	33.0' (RT)	904.00	
P16	EB14	179+80.07	26.0' (RT)	903.35	

GENERAL NOTES:

-STREET DIMENSIONS ARE TO FACE OF CURB UNLESS INDICATED OTHERWISE

-ALL ELEVATIONS ARE TO TOP BACK OF CURB UNLESS INDICATED OTHERWISE.

NOTES:

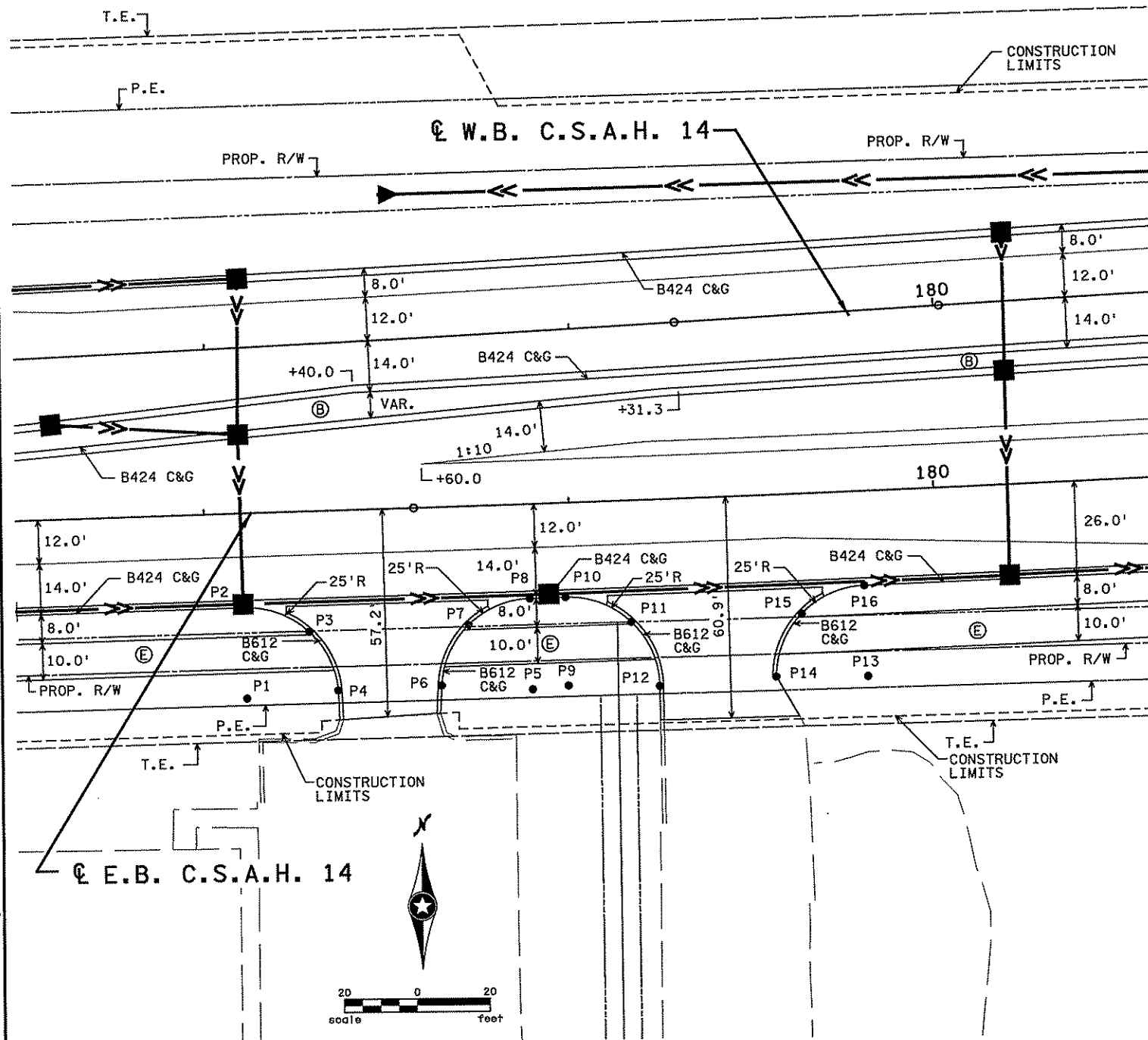
(A) CONSTRUCT CONCRETE APPROACH NOSE PER MN/DOT STD. PLATE 7113.

(B) 4" CONCRETE WALK.

(C) CONSTRUCT PEDESTRIAN CURB RAMP PER MN/DOT STD. PLATE 7036.

(D) 10' CURB TRANSITION.

(E) 2" BITUMINOUS TRAIL



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NO	DATE	BY	CHKD	APPR	REVISION

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 Print Name: CHRISTOPHER M. TRBOYEVIICH  
*Christopher Trbojevich*  
 Date: 3/21/07 License #: 41635

STATE PROJECT NO. S.P. 02-614-24, ETAL

DRAWN BY S. MARTINS  
 DESIGNED BY J. TOULOUSE  
 CHECKED BY C. TRBOYEVIICH  
 COMM. NO. 4994

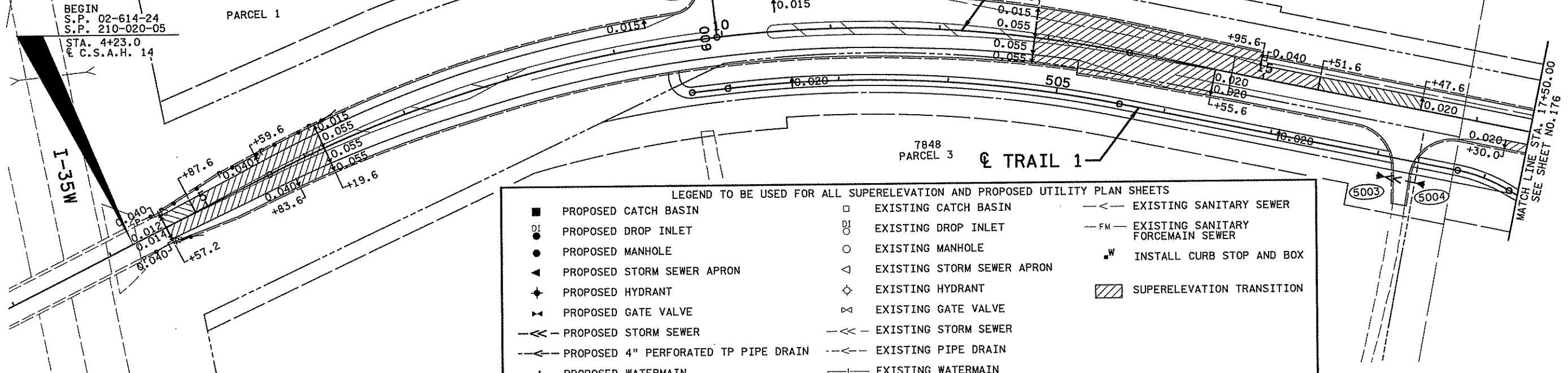
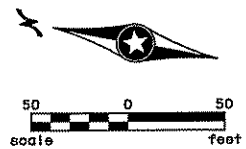


ANOKA COUNTY  
 INTERSECTION DETAILS  
 C.S.A.H. 14

SHEET 174 OF 492

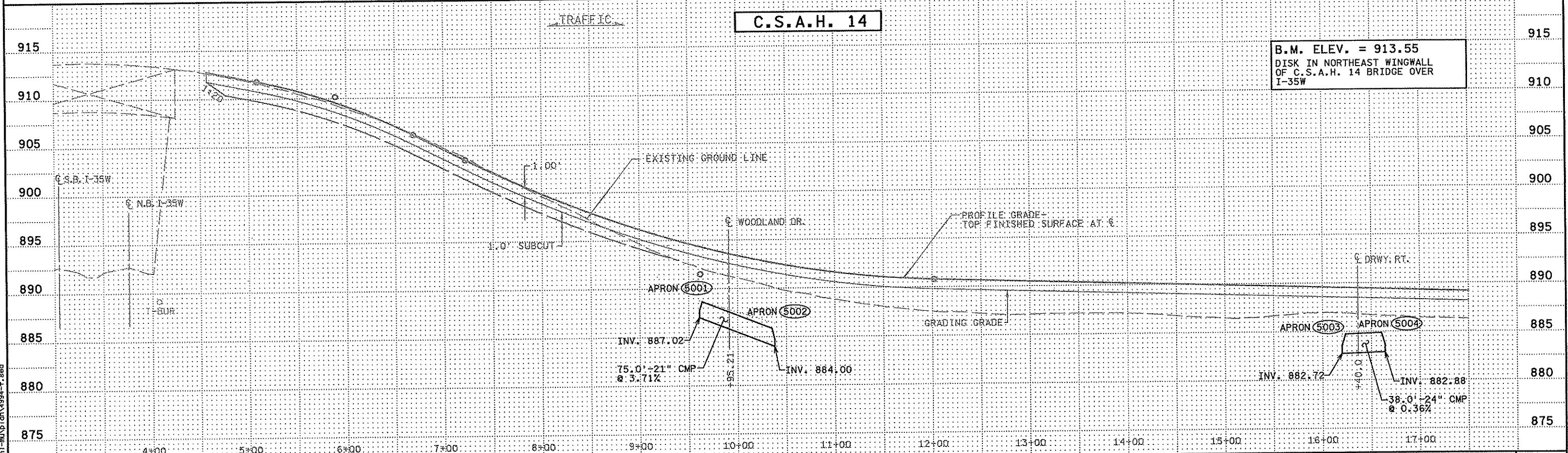
**GENERAL NOTES:**

- EXISTING CROSS SLOPES ARE TO BE VERIFIED IN FIELD. PROPOSED PAVEMENTS SHALL MATCH EXISTING CROSS SLOPES OR AS IDENTIFIED BY THE ENGINEER.
- SEE STORM SEWER PROFILE SHEETS FOR STORM SEWER AND CURRENT INFORMATION.
- ALL CROSS SLOPES ARE FOOT/FOOT.
- THE EXISTING SUBSURFACE UTILITY INFORMATION IS ASSUMED TO BE QUALITY LEVEL D IN ACCORDANCE TO THE GUIDELINES OF CI/ASCE 38-02.



LEGEND TO BE USED FOR ALL SUPERELEVATION AND PROPOSED UTILITY PLAN SHEETS

■	PROPOSED CATCH BASIN	□	EXISTING CATCH BASIN	-<	EXISTING SANITARY SEWER
DI	PROPOSED DROP INLET	DI	EXISTING DROP INLET	-FM-	EXISTING SANITARY FORCEMAIN SEWER
●	PROPOSED MANHOLE	○	EXISTING MANHOLE	W	INSTALL CURB STOP AND BOX
▲	PROPOSED STORM SEWER APRON	△	EXISTING STORM SEWER APRON	▨	SUPERELEVATION TRANSITION
◆	PROPOSED HYDRANT	◇	EXISTING HYDRANT		
▽	PROPOSED GATE VALVE	◇	EXISTING GATE VALVE		
-▲-	PROPOSED STORM SEWER	-▲-	EXISTING STORM SEWER		
-▲-	PROPOSED 4" PERFORATED TP PIPE DRAIN	-▲-	EXISTING PIPE DRAIN		
- -	PROPOSED WATERMAIN	- -	EXISTING WATERMAIN		



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 2/28/2007  
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NO	DATE	BY	CKD	APPR	REVISION

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

Print Name: CHRISTOPHER M. TRBOYEVICH  
*Christopher M. Trbojevich*  
 Date: 5/31/10 License: 41635

STATE PROJECT NO.  
 S.P. 02-614-24, ETAL

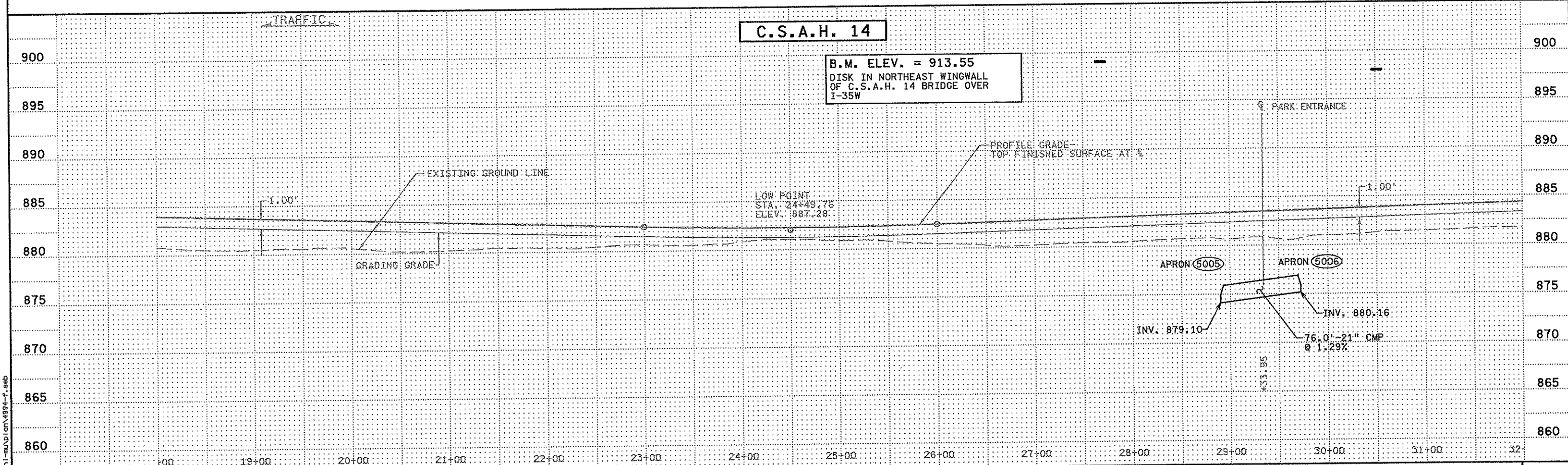
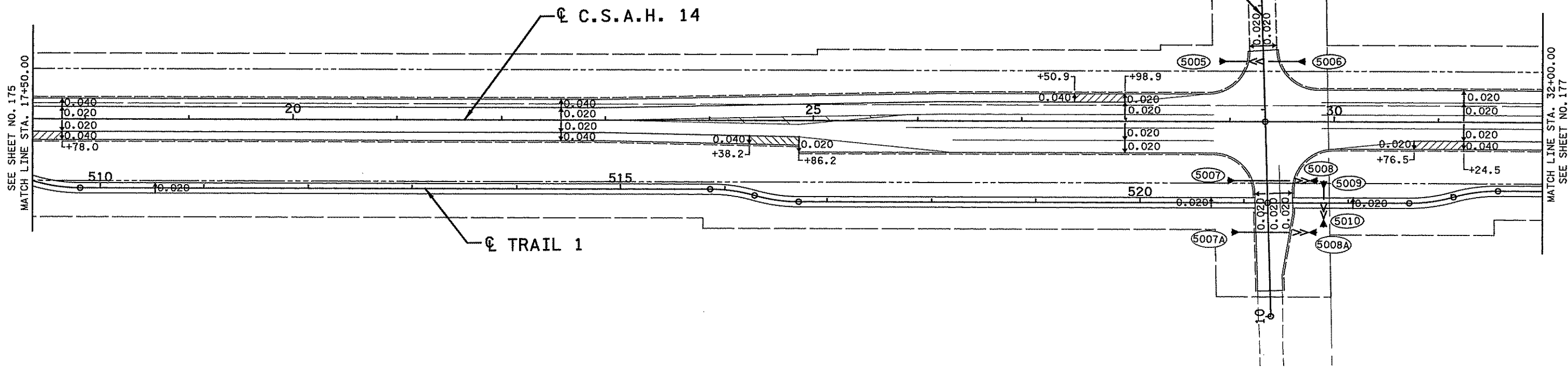
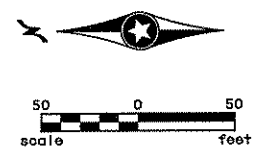
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 S. PERRAULT  
 DESIGNED BY  
 J. TOULOUSE  
 CHECKED BY  
 C. TRBOYEVICH  
 COMM. NO. 4994



ANOKA COUNTY  
 SUPERELEVATION AND PROPOSED UTILITY PLAN  
 C.S.A.H. 14  
 STA. 4+00.00 TO STA. 17+50.00

SHEET  
 175  
 OF  
 492





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NO	DATE	BY	CHKD	APPR	REVISION

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.  
 Pr Int Name: **CHRISTOPHER M. TRBOYEVIICH**  
*Christopher M. Trbojevich*  
 Date: 3/21/07 License # 41635

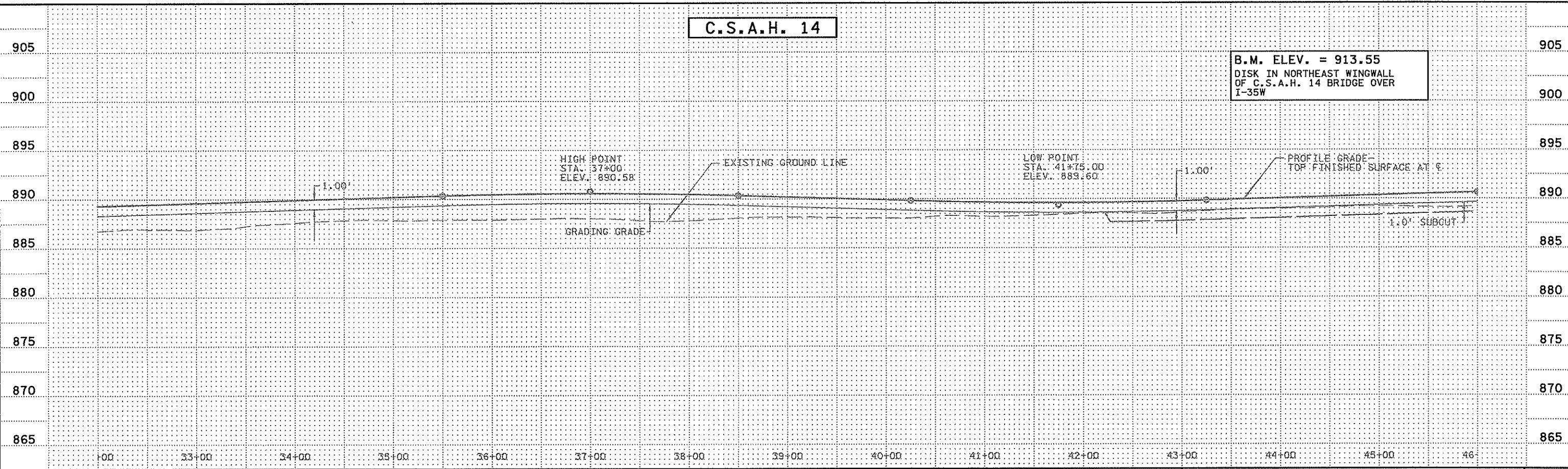
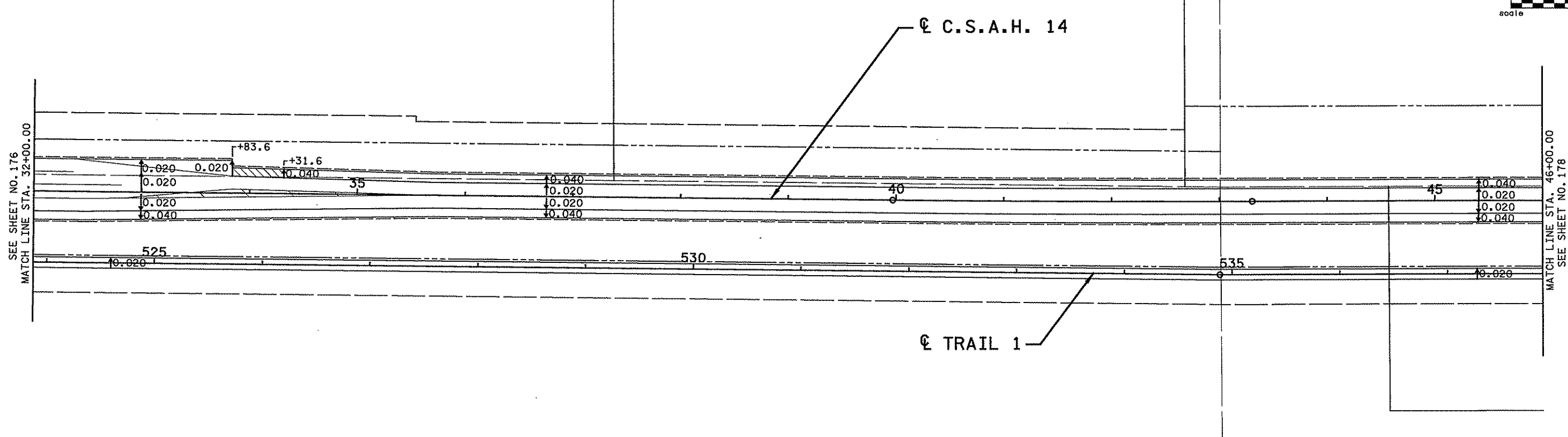
STATE PROJECT NO.  
 S.P. 02-614-24, ETAL

DRAWN BY  
**S. PERRAULT**  
 DESIGNED BY  
**J. TOULOUSE**  
 CHECKED BY  
**C. TRBOYEVIICH**  
 COMM. NO. 4994



**ANOKA COUNTY**  
 SUPERELEVATION AND PROPOSED UTILITY PLAN  
**C.S.A.H. 14**  
 STA. 17+50.00 TO STA. 32+00.00

SHEET  
 176  
 OF  
 492



B.M. ELEV. = 913.55  
DISK IN NORTHEAST WINGWALL  
OF C.S.A.H. 14 BRIDGE OVER  
I-35W

NO	DATE	BY	CHKD	APPR	REVISION

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 Print Name: CHRISTOPHER M. TRBOYEVICH  
*Chris Trbojevich*  
 Date: 3/26/07 License #: 41635

STATE PROJECT NO.  
S.P. 02-614-24, ETAL

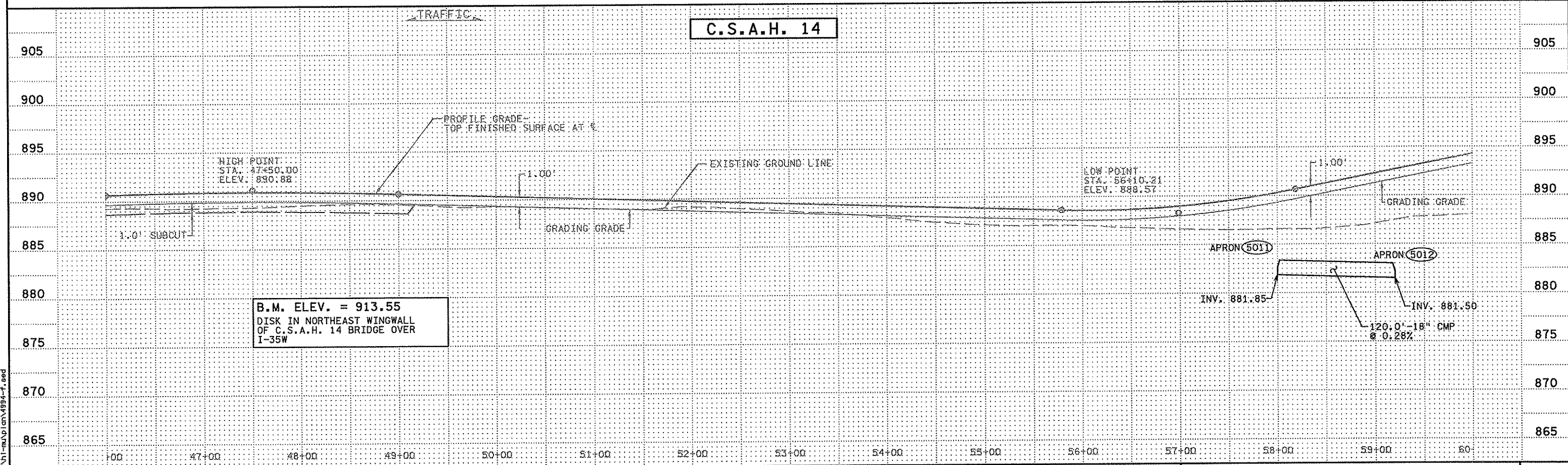
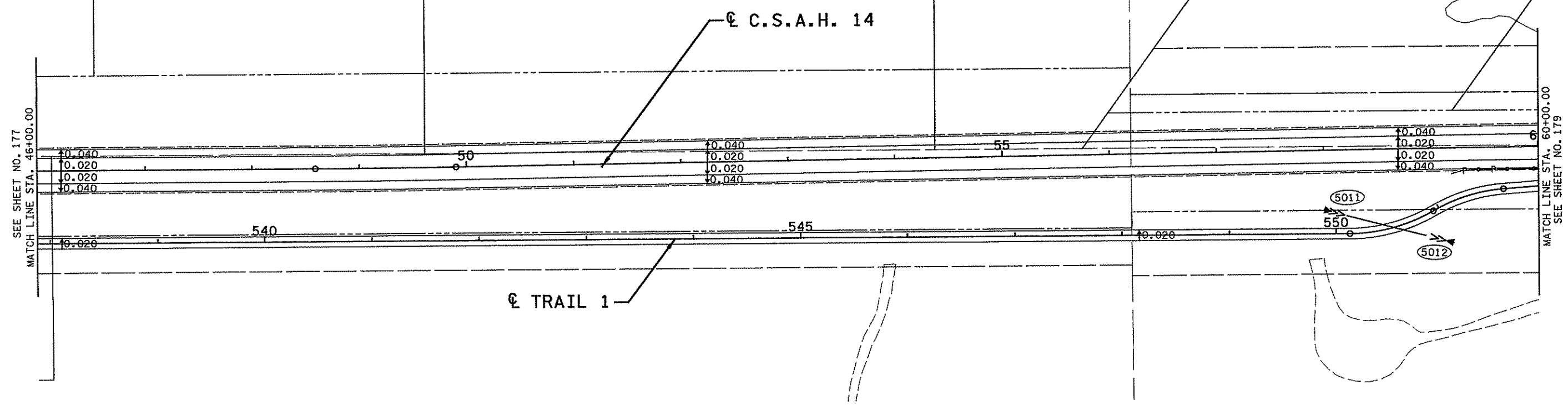
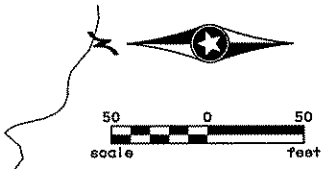
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S. PERRAULT  
DESIGNED BY  
J. TOULOUSE  
CHECKED BY  
C. TRBOYEVICH  
COMM. NO. 4994



ANOKA COUNTY  
SUPERELEVATION AND PROPOSED UTILITY PLAN  
C.S.A.H. 14  
STA. 32+00.00 TO STA. 46+00.00

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177  
OF  
492

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NO	DATE	BY	CHKD	APPR	REVISION

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 Print Name: CHRISTOPHER M. TRBOYEVICH  
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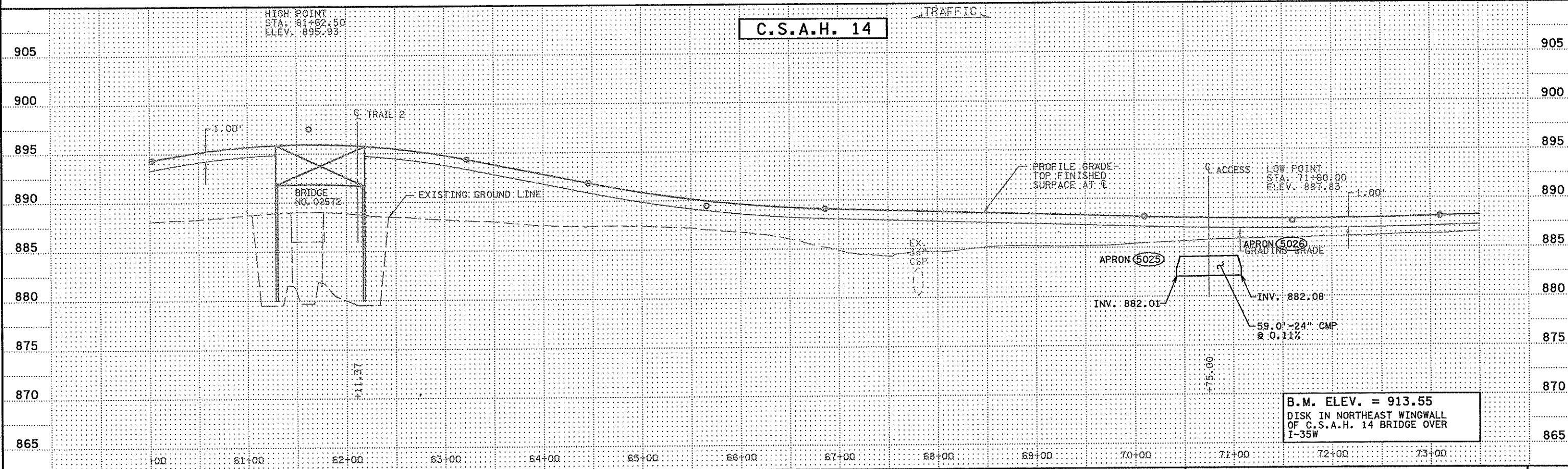
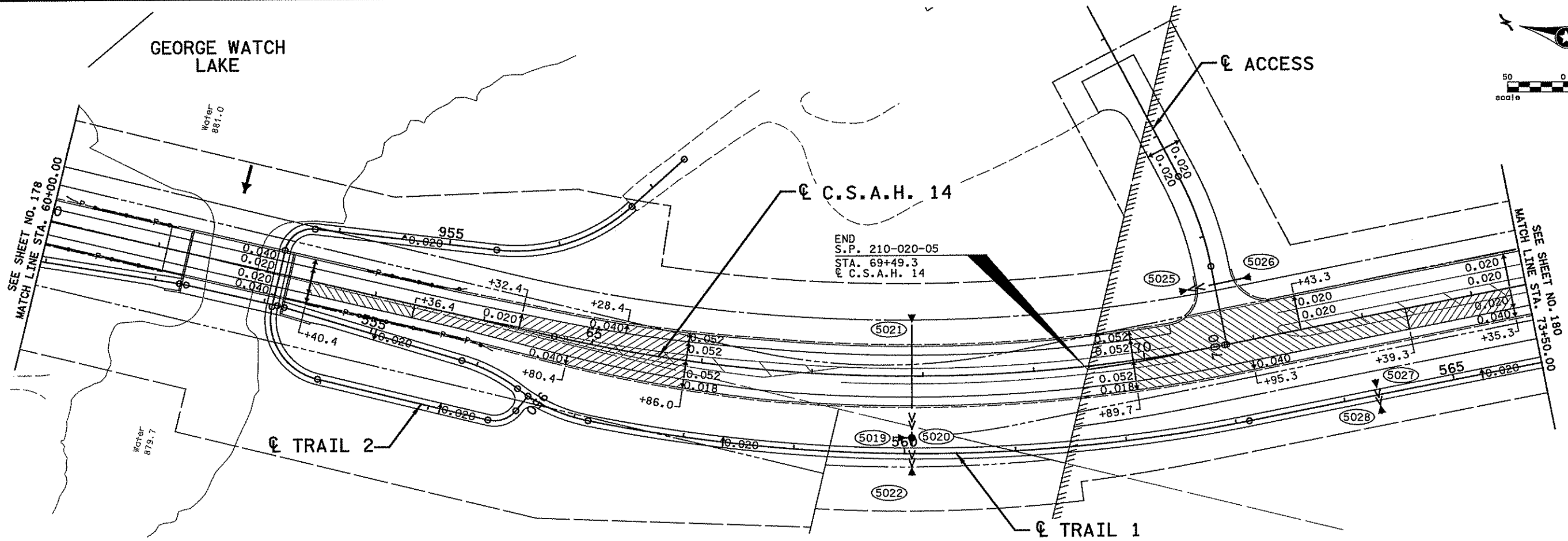
STATE PROJECT NO. S.P. 02-614-24, ETAL

DRAWN BY S. PERRAULT  
 DESIGNED BY J. TOULOUSE  
 CHECKED BY C. TRBOYEVICH  
 COMM. NO. 4994



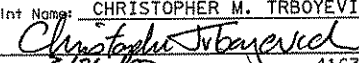
ANOKA COUNTY  
 SUPERELEVATION AND PROPOSED UTILITY PLAN  
 C.S.A.H. 14  
 STA. 46+00.00 TO STA. 60+00.00

SHEET 178 OF 492



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NO	DATE	BY	CKD	APPR	REVISION

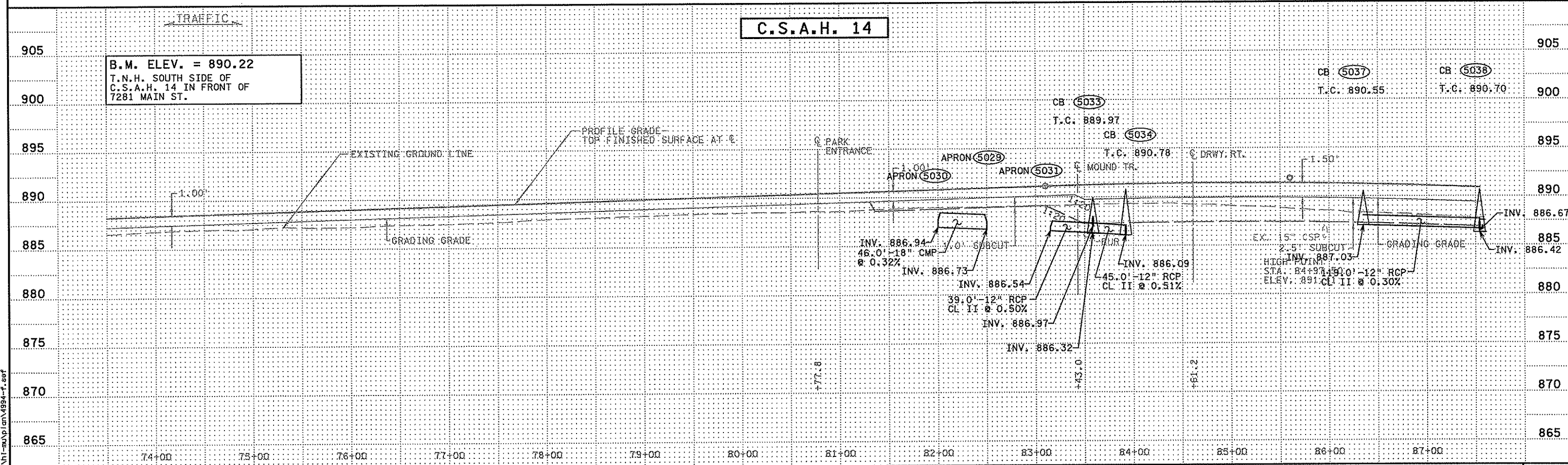
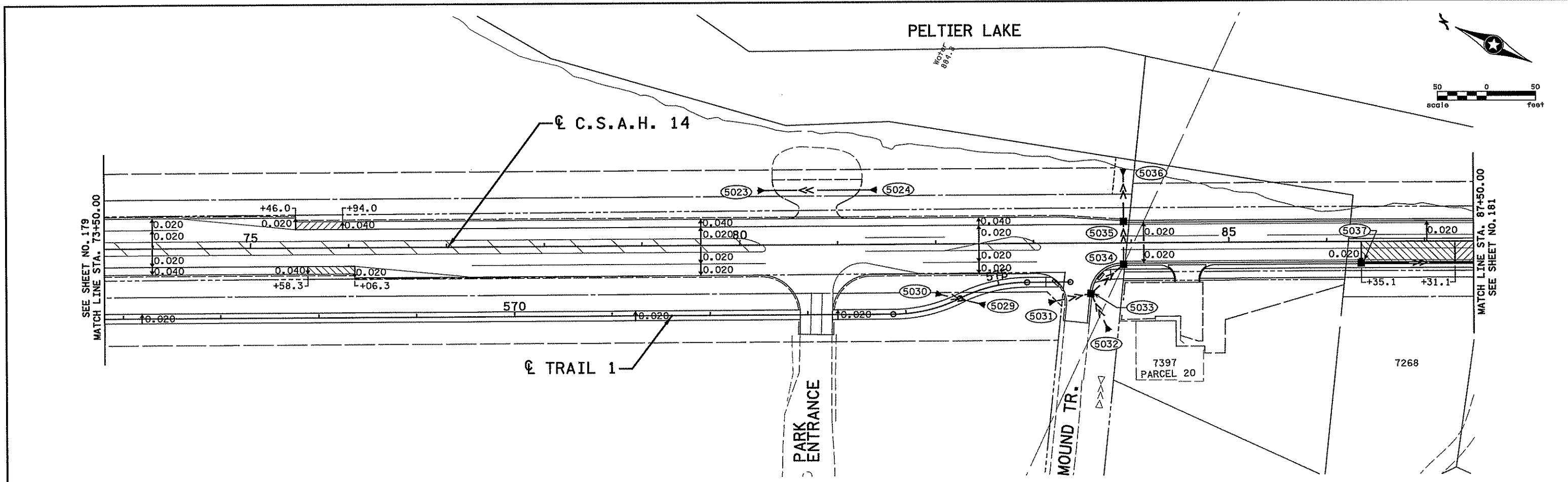
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 Print Name: CHRISTOPHER M. TRBOYEVICH  
  
 Date: 3/26/07 License #: 41635

STATE PROJECT NO. S.P. 02-614-24, ETAL  
 DRAWN BY S. PERRAULT  
 DESIGNED BY J. TOULOUSE  
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 COMM. NO. 4994



ANOKA COUNTY  
 SUPERELEVATION AND PROPOSED UTILITY PLAN  
 C.S.A.H. 14  
 STA. 60+00.00 TO STA. 73+50.00

SHEET  
 179  
 OF  
 492



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NO	DATE	BY	CKD	APPR	REVISION

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Print Name: CHRISTOPHER M. TRBOYEVICH

*Christopher M. Trbojevich*

Date: 3/20/07 License #: 41635

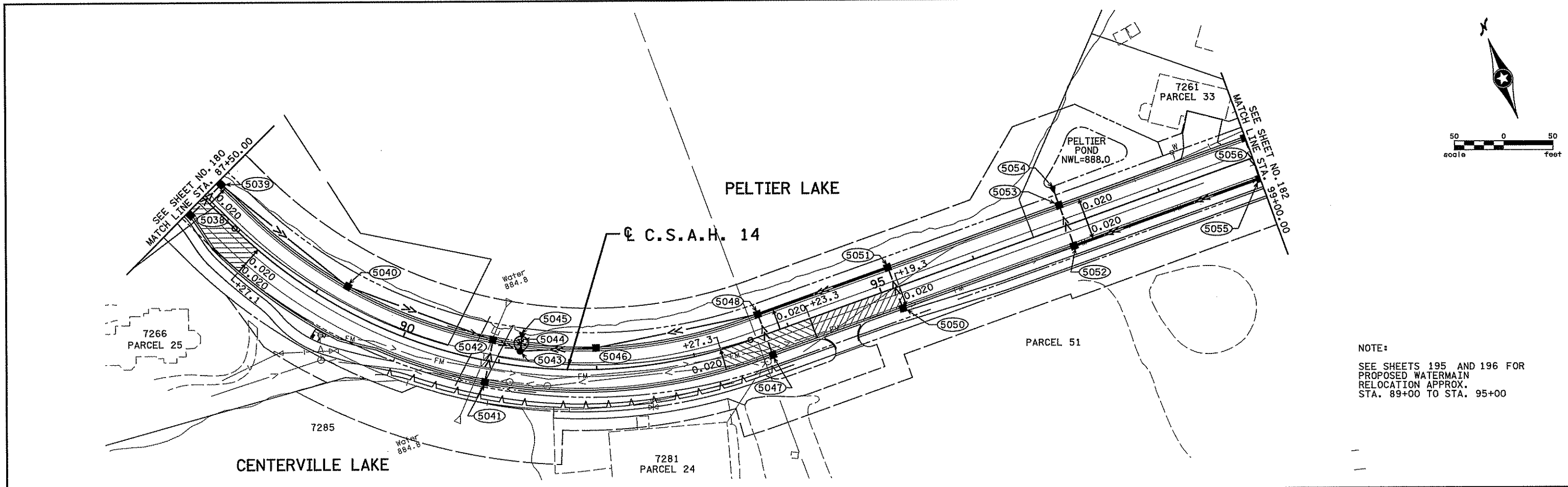
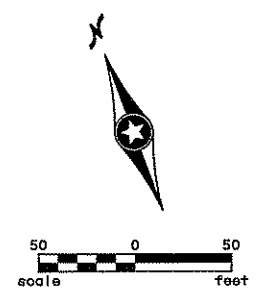
STATE PROJECT NO. S.P. 02-614-24, ETAL

DRAWN BY S. PERRAULT  
DESIGNED BY J. TOULOUSE  
CHECKED BY C. TRBOYEVICH  
COMM. NO. 4994

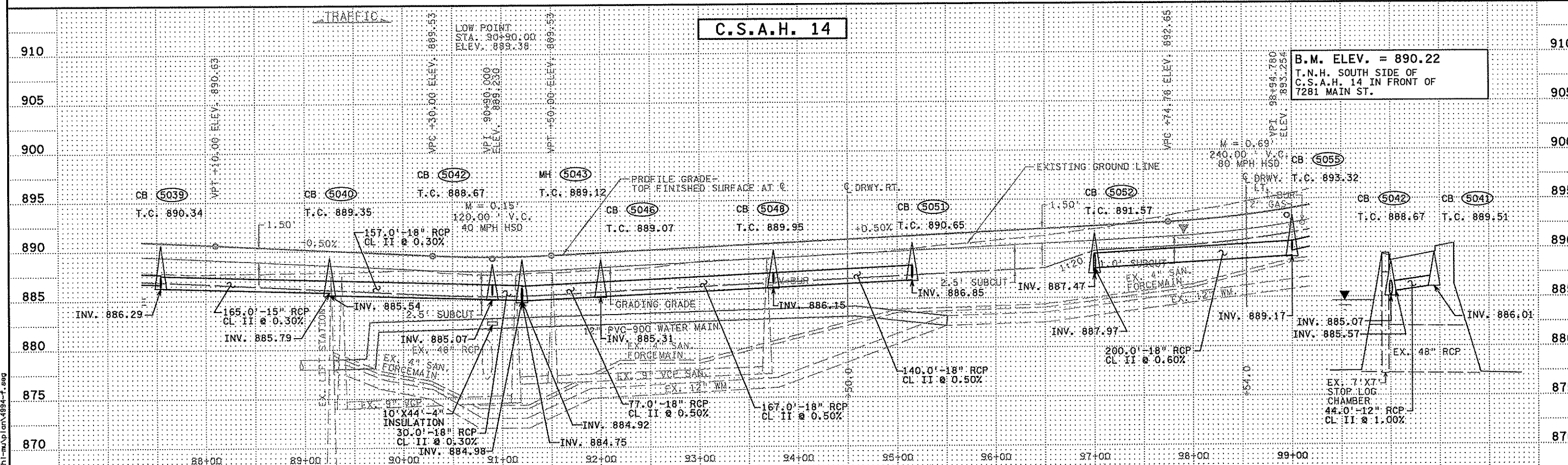


ANOKA COUNTY  
SUPERELEVATION AND PROPOSED UTILITY PLAN  
C.S.A.H. 14  
STA. 73+50.00 TO STA. 87+50.00

SHEET 180 OF 492



NOTE:  
SEE SHEETS 195 AND 196 FOR  
PROPOSED WATERMAIN  
RELOCATION APPROX.  
STA. 89+00 TO STA. 95+00



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NO	DATE	BY	CKD	APPR	REVISION

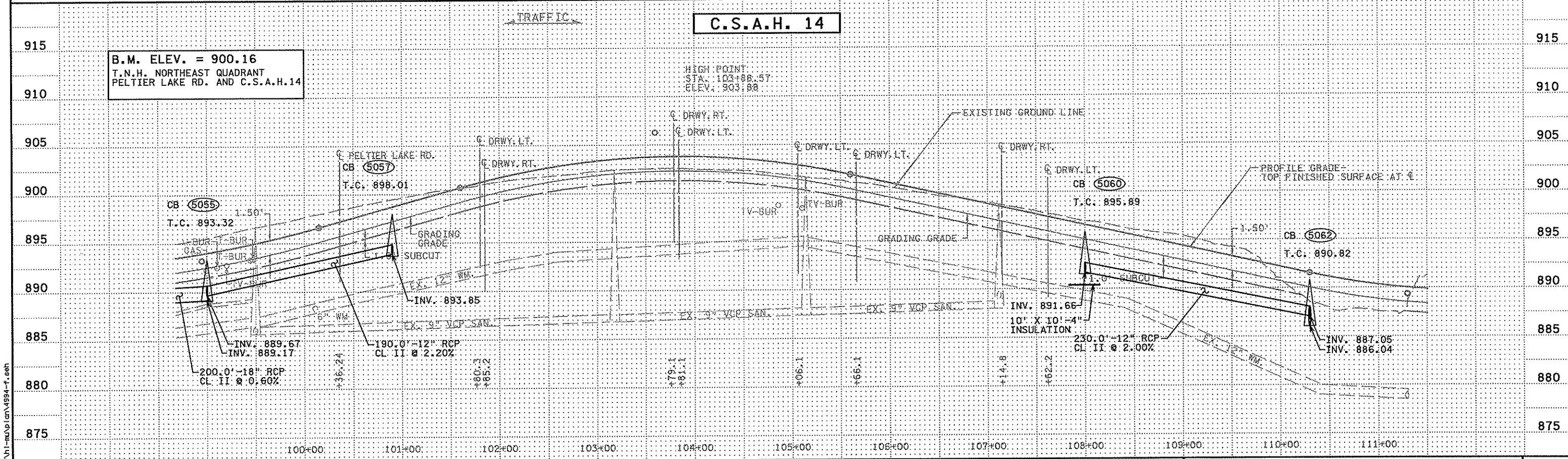
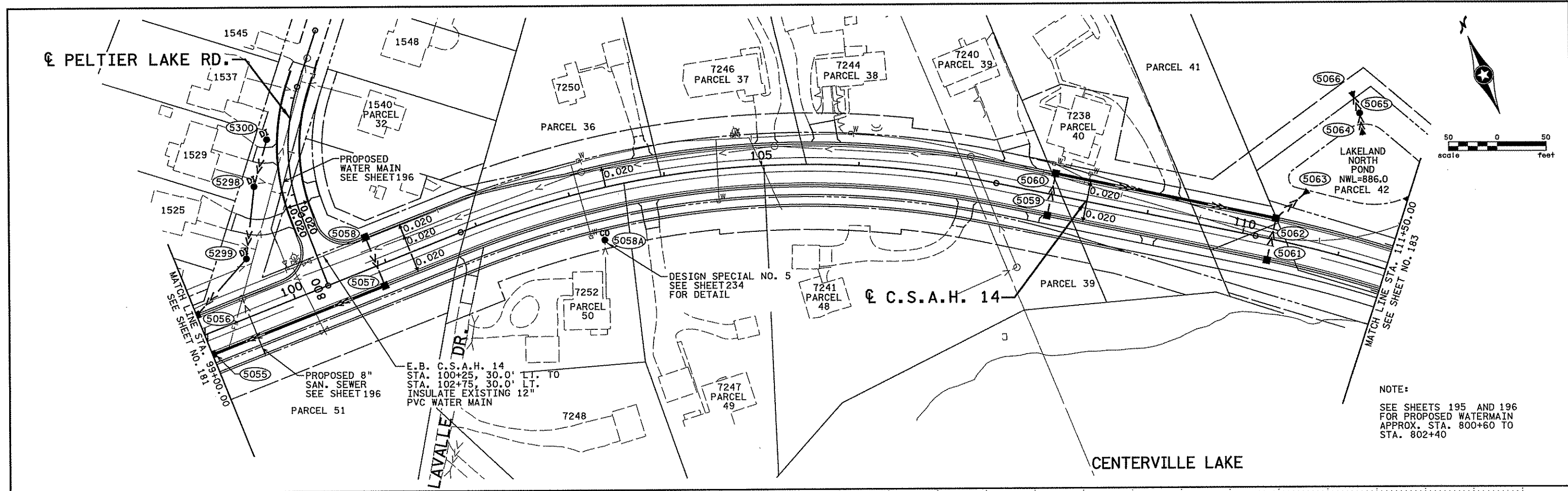
I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.  
Print Name: CHRISTOPHER M. TRBOYEVICH  
*Christopher M. Trbojevich*  
Date: 3/26/07 License #: 41635

STATE PROJECT NO. S.P. 02-614-24, ETAL  
DRAWN BY S. PERRAULT  
DESIGNED BY J. TOULOUSE  
CHECKED BY C. TRBOYEVICH  
COMM. NO. 4994



ANOKA COUNTY  
SUPERELEVATION AND PROPOSED UTILITY PLAN  
C.S.A.H. 14  
STA. 87+50.00 TO STA. 99+00.00

SHEET 181 OF 492



NO.	DATE	BY	CRD	APPR	REVISION

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

Print Name: CHRISTOPHER M. TRBOYEVICH  
*Christopher Trbojevich*  
 Date: 3/26/07 License: 41635

STATE PROJECT NO. S.P. 02-614-24, ETAL

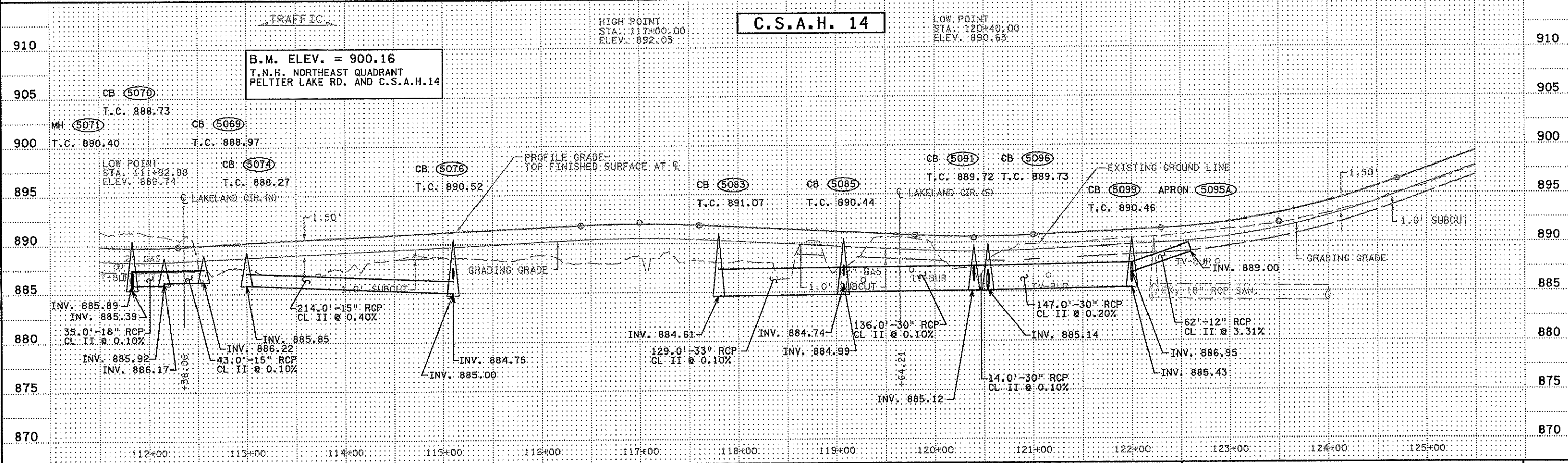
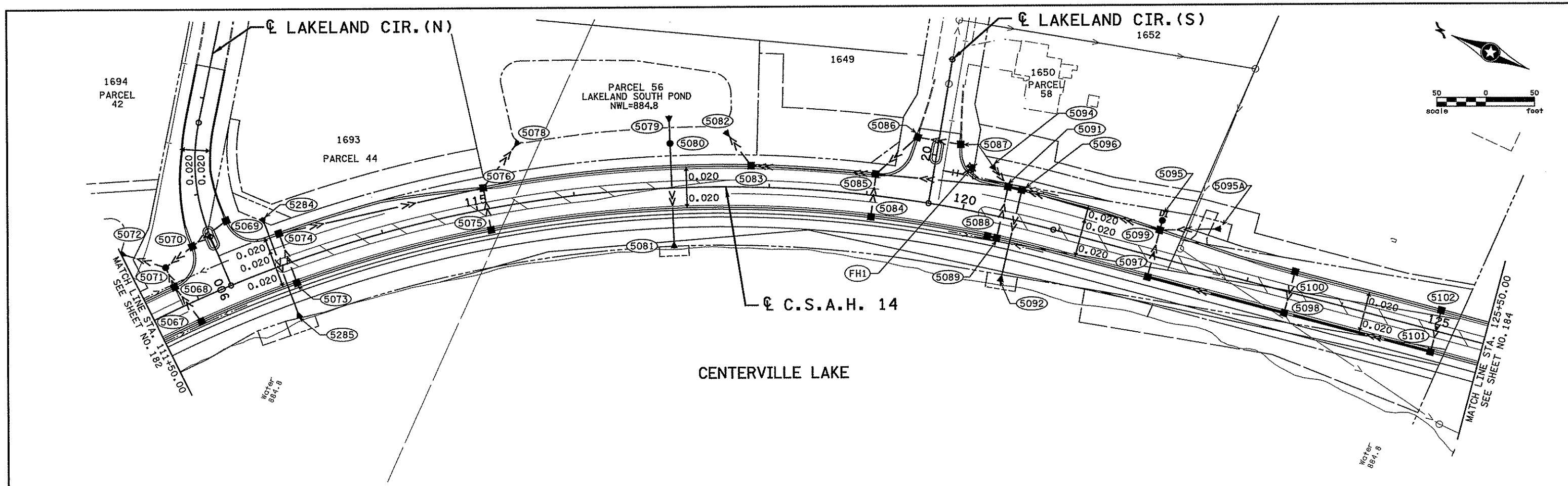
DRAWN BY S. PERRAULT  
 DESIGNED BY J. TOULOUSE  
 CHECKED BY C. TRBOYEVICH  
 COMM. NO. 4994



ANOKA COUNTY  
 SUPERELEVATION AND PROPOSED UTILITY PLAN  
 C.S.A.H. 14  
 STA. 99+00.00 TO STA. 111+50.00

SHEET 182 OF 492

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NO	DATE	BY	CKD	APPR	REVISION

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.  
 Print Name: CHRISTOPHER M. TRBOYEVICH  
*Christopher M. Trbojevich*  
 Date: 3/20/07 License #: 41635

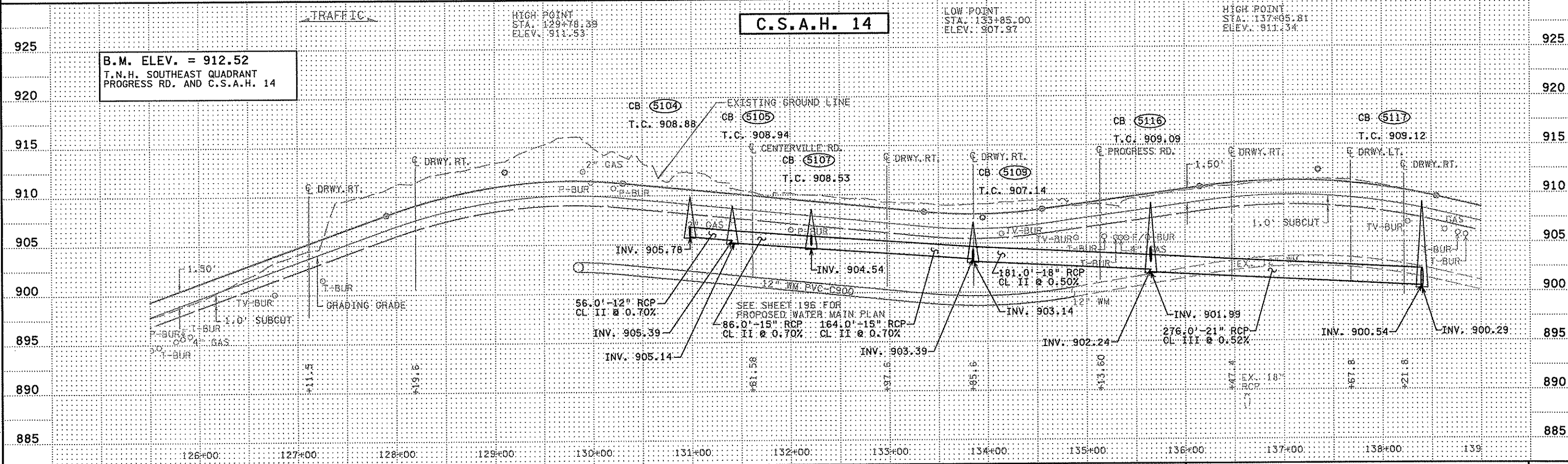
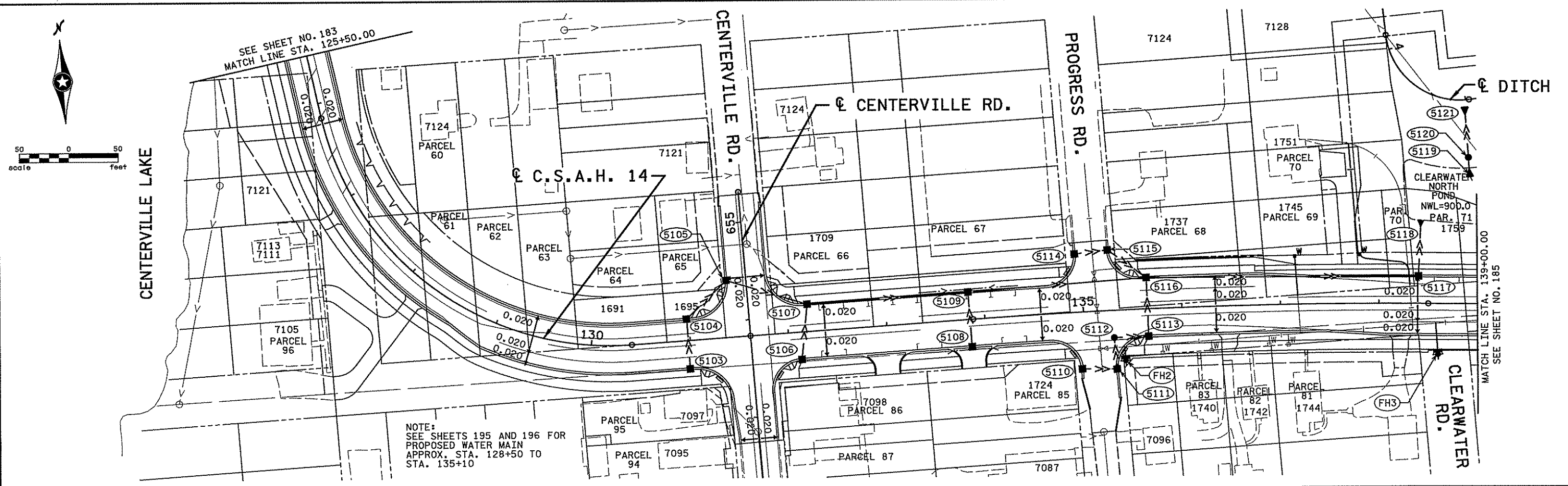
STATE PROJECT NO. S.P. 02-614-24, ETAL  
 DRAWN BY S. PERRAULT  
 DESIGNED BY J. TOULOUSE  
 CHECKED BY C. TRBOYEVICH  
 COMM. NO. 4994



ANOKA COUNTY  
 SUPERELEVATION AND PROPOSED UTILITY PLAN  
 C.S.A.H. 14  
 STA. 111+50.00 TO STA. 125+50.00

SHEET  
 183  
 OF  
 492





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NO	DATE	BY	CHKD	APPR	REVISION

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

Print Name: CHRISTOPHER M. TRBOYEVICH

*Christopher M. Trbojevich*

Date: 3/26/07 License #: 41635

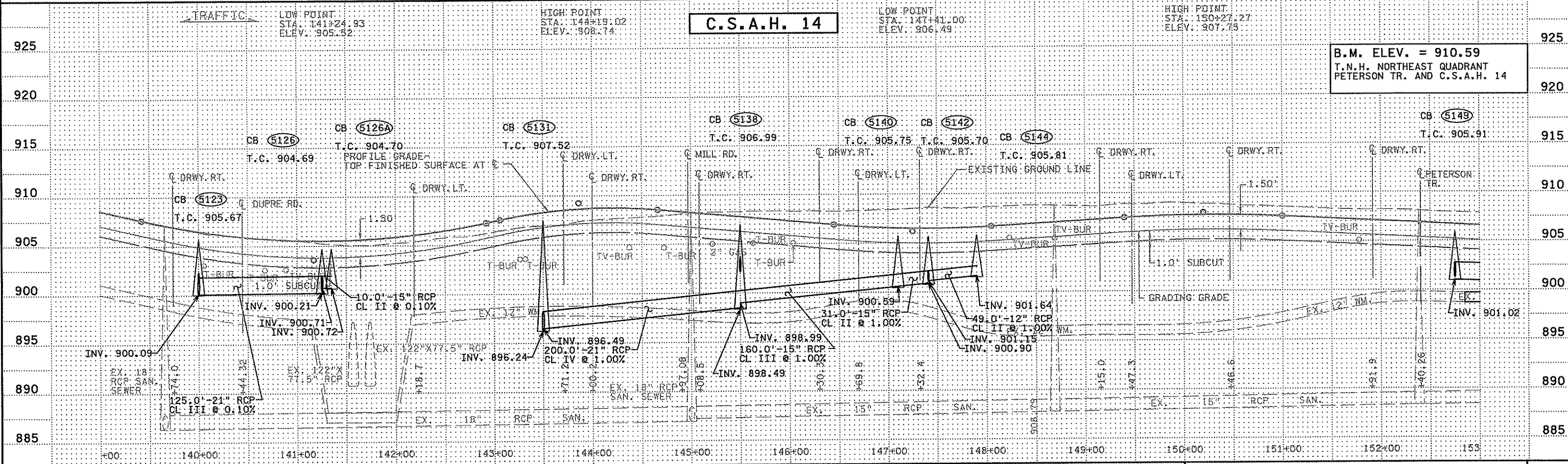
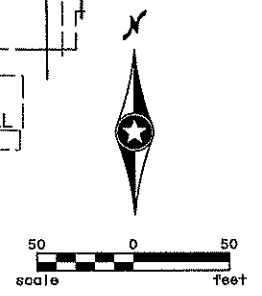
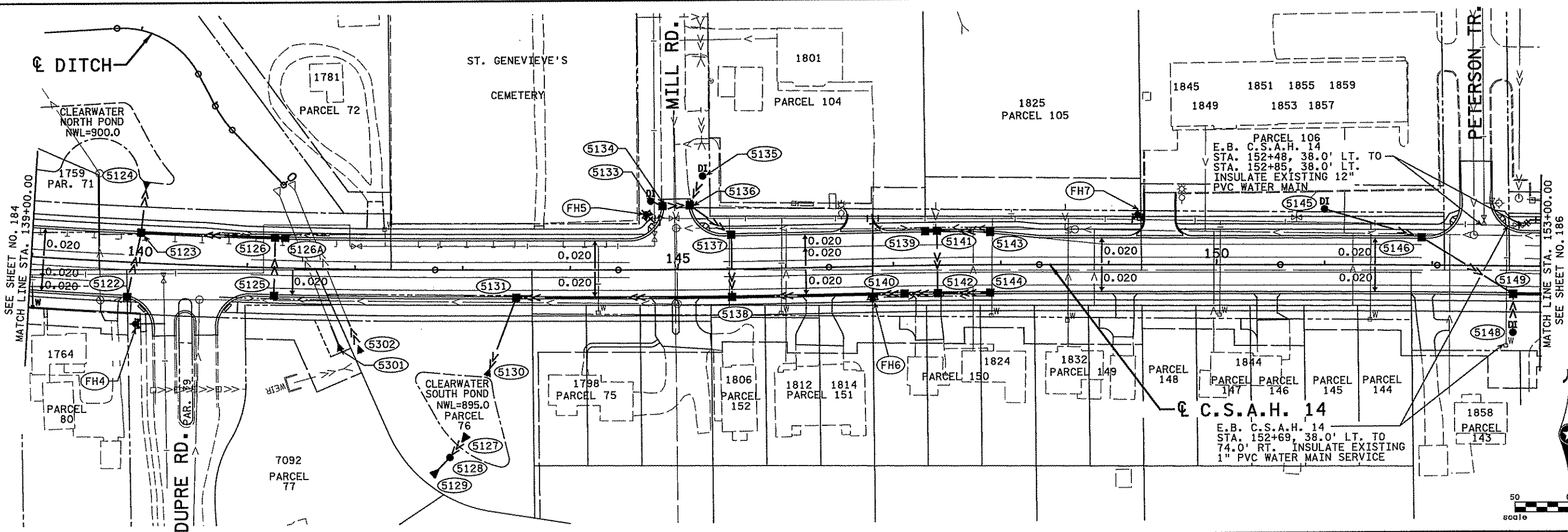
STATE PROJECT NO. S.P. 02-614-24, ETAL

DRAWN BY S. PERRAULT  
DESIGNED BY J. TOULOUSE  
CHECKED BY C. TRBOYEVICH  
COMM. NO. 4994



ANOKA COUNTY  
SUPERELEVATION AND PROPOSED UTILITY PLAN  
C.S.A.H. 14  
STA. 125+50.00 TO STA. 139+00.00

SHEET 184 OF 492



NO.	DATE	BY	CHKD	APPR	REVISION

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

Print Name: **CHRISTOPHER M. TRBOYEVICH**

*Christopher M. Trbojevich*

Date: *3/21/07* License #: **41635**

STATE PROJECT NO. S.P. 02-614-24, ETAL

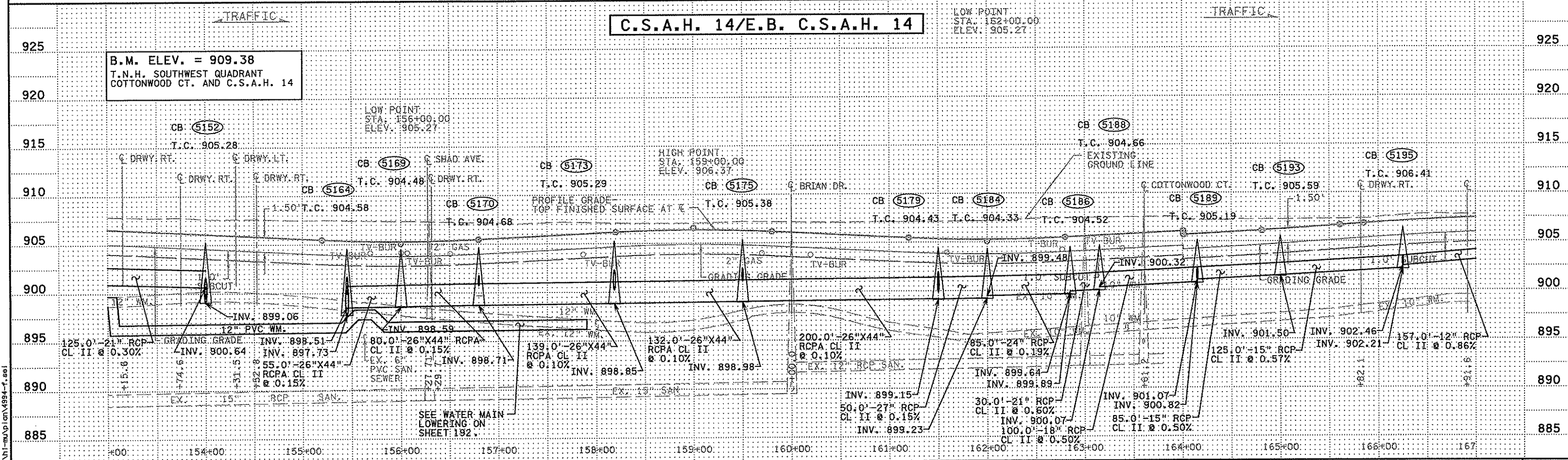
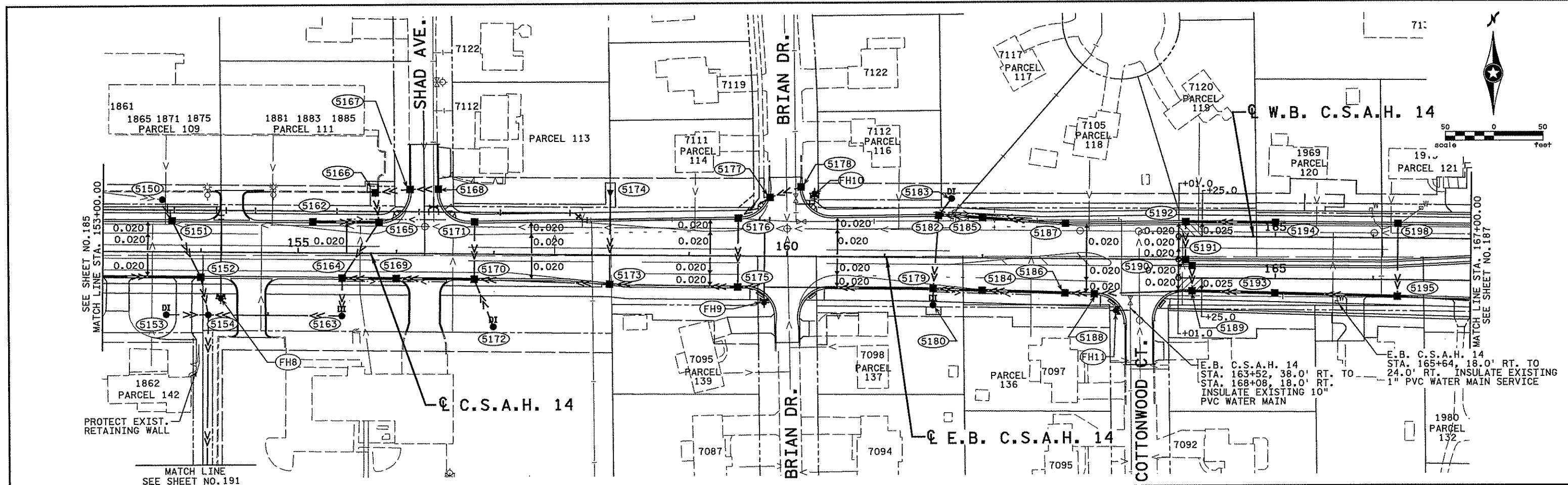
DRAWN BY S. PERRAULT  
 DESIGNED BY J. TOULOUSE  
 CHECKED BY C. TRBOYEVICH  
 COMM. NO. 4994

**SRF CONSULTING GROUP, INC.**

ANOKA COUNTY  
 SUPERELEVATION AND PROPOSED UTILITY PLAN  
 C.S.A.H. 14  
 STA. 139+00.00 TO STA. 153+00.00

SHEET 185 OF 492

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 3/21/2007  
 ...\\4994-f\h1-mu\plan\4994-f.sek



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.  
 Print Name: CHRISTOPHER M. TRBOYEVICH  
*Christopher M. Trbojevich*  
 Date: 3/26/04 License #: 41635

STATE PROJECT NO. S.P. 02-614-24, ETAL  
 DRAWN BY S. PERRAULT  
 DESIGNED BY J. TOULOUSE  
 CHECKED BY C. TRBOYEVICH  
 COMM. NO. 4994

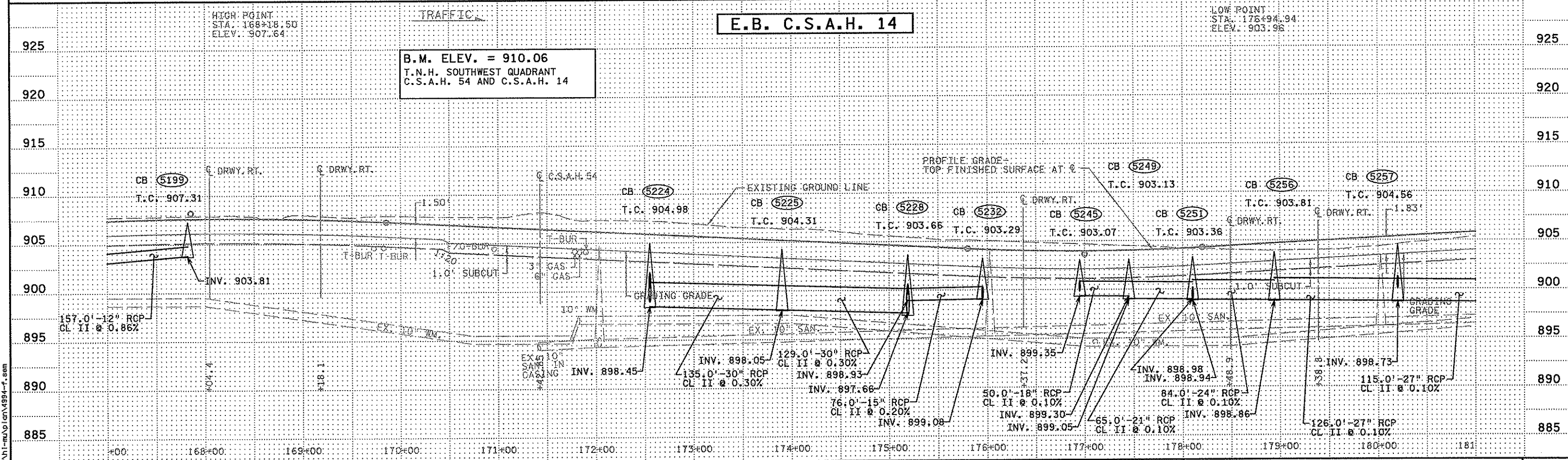
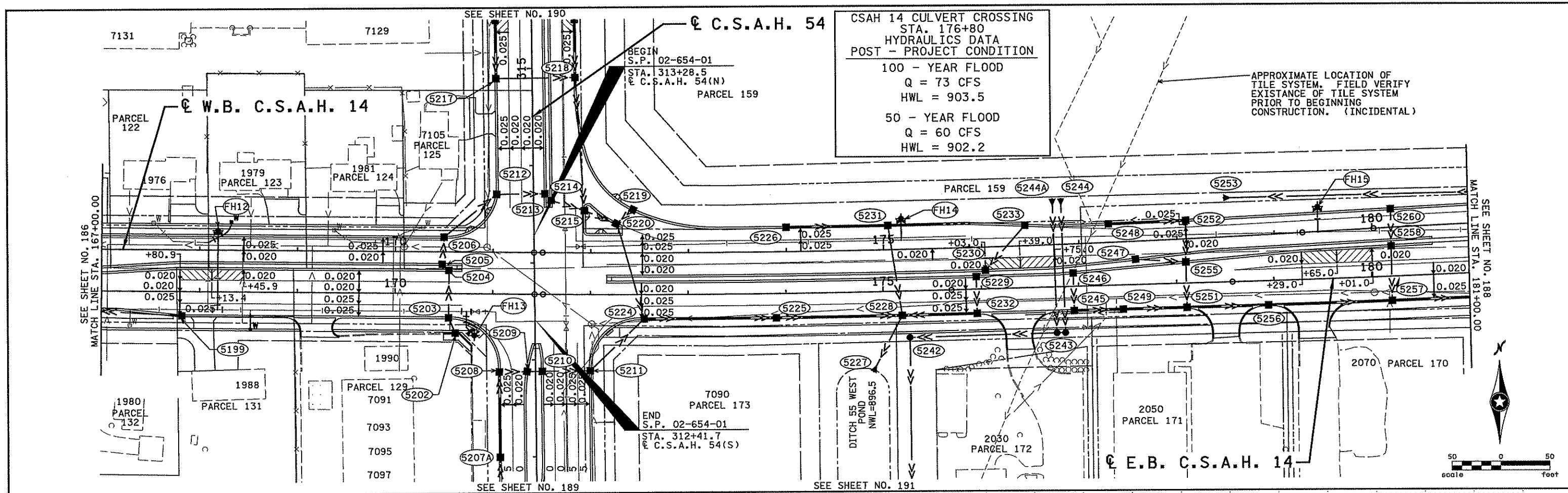


ANOKA COUNTY  
 SUPERELEVATION AND PROPOSED UTILITY PLAN  
 C.S.A.H. 14  
 STA. 153+00.00 TO STA. 167+00.00

SHEET 186 OF 492

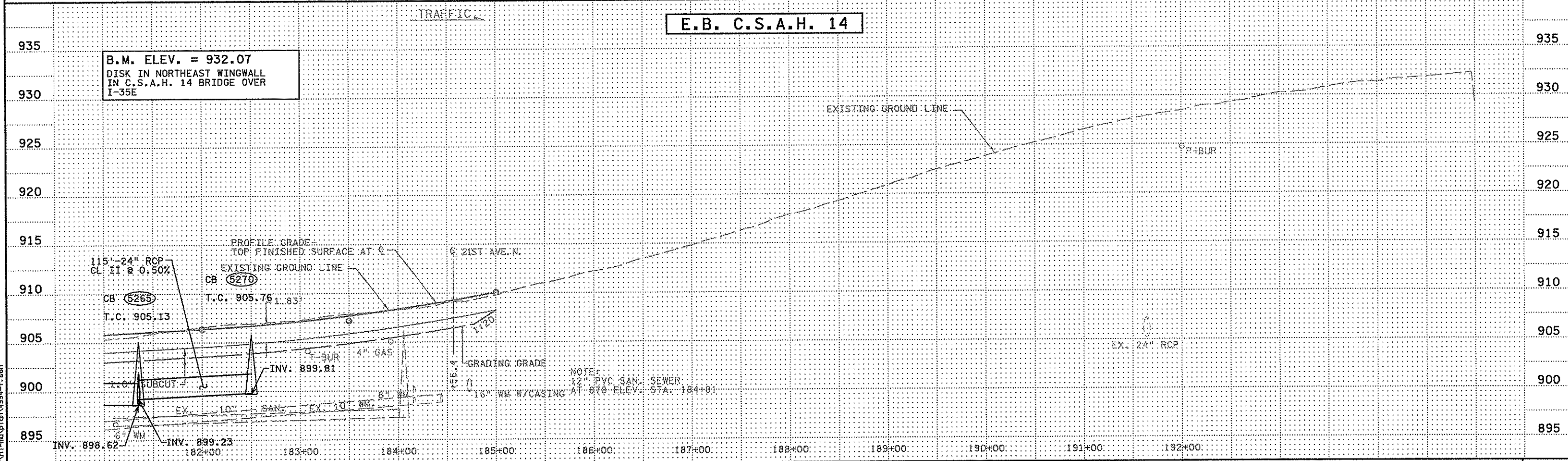
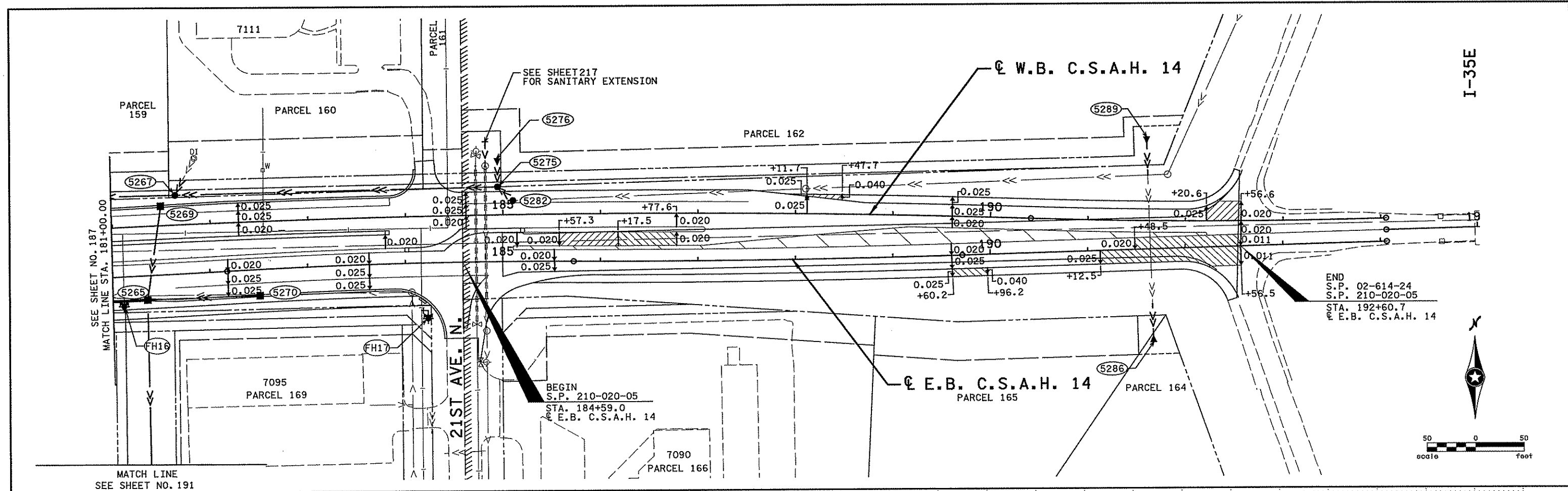
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NO	DATE	BY	CHKD	APPR	REVISION



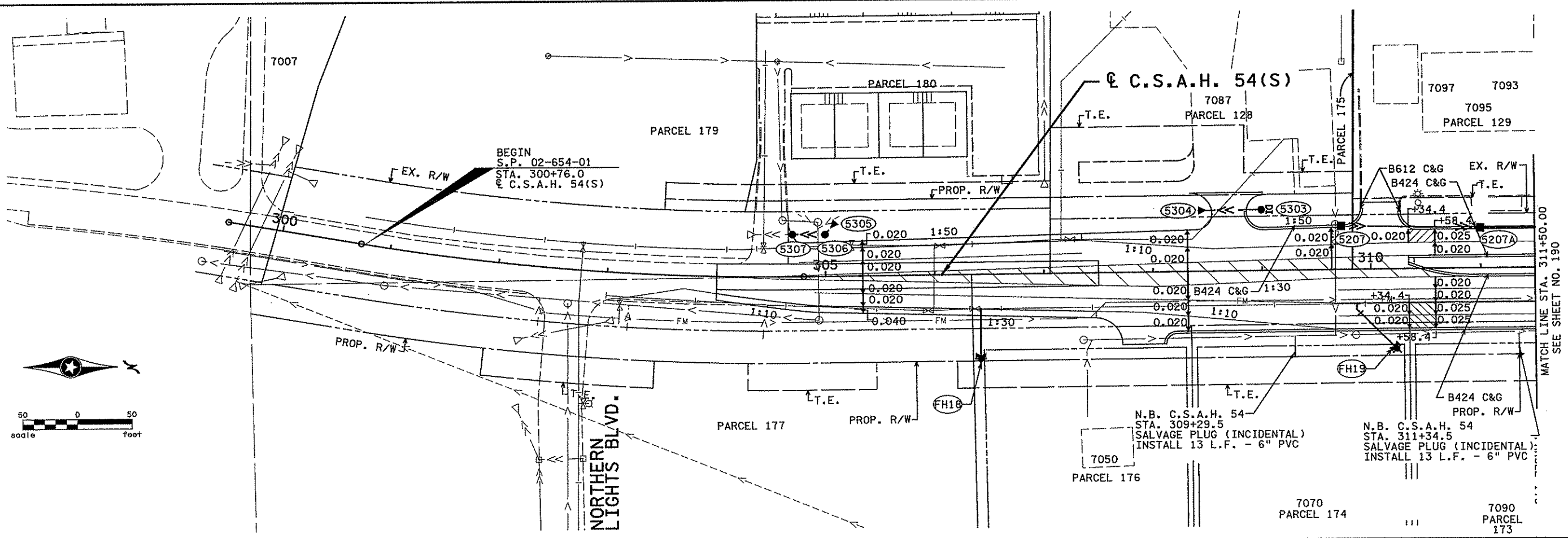
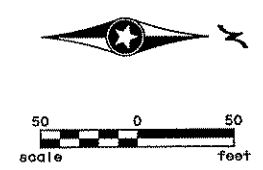
I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota. Print Name: CHRISTOPHER M. TRBOYEVICH <i>Christopher M. Trbojevich</i> Date: 3/26/07 License # 41635					STATE PROJECT NO. S.P. 02-614-24, ETAL	DRAWN BY S. PERRAULT DESIGNED BY J. TOULOUSE CHECKED BY C. TRBOYEVICH COMM. NO. 4994	ANOKA COUNTY SUPERELEVATION AND PROPOSED UTILITY PLAN C.S.A.H. 14 STA. 167+00.00 TO STA. 181+00.00	SHEET 187 OF 492
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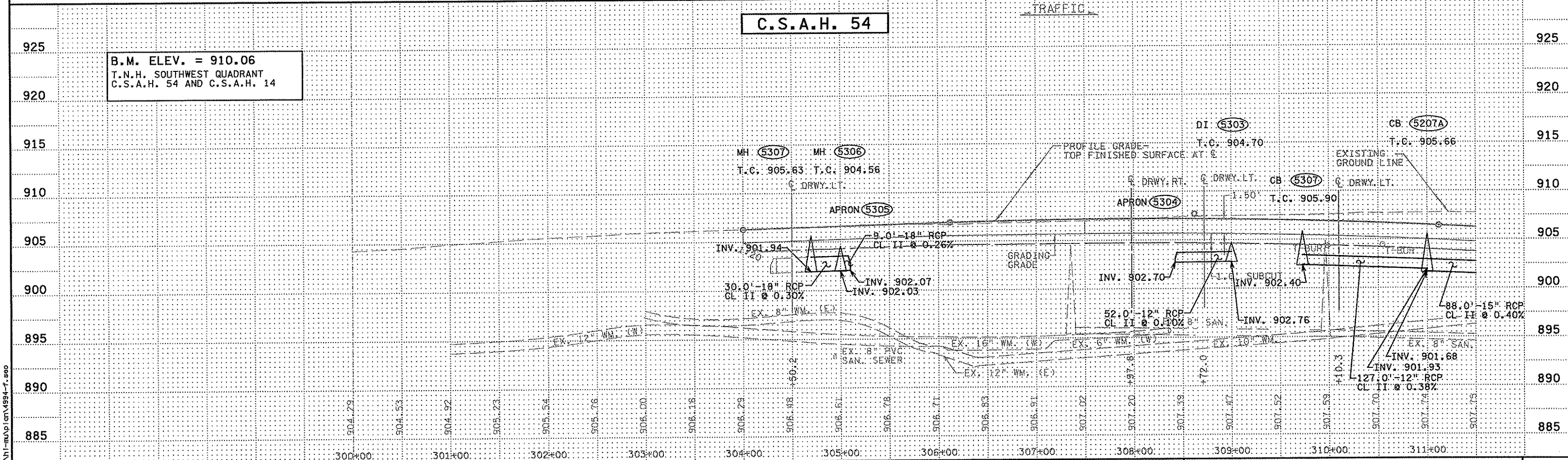
I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota. Print Name: CHRISTOPHER M. TRBOYEVICH <i>Christopher M. Trbojevich</i> Date: 3/26/07 License #: 41635					STATE PROJECT NO. S.P. 02-614-24, ETAL	DRAWN BY S. PERRAULT DESIGNED BY J. TOULOUSE CHECKED BY C. TRBOYEVICH COMM. NO. 4994	ANOKA COUNTY SUPERELEVATION AND PROPOSED UTILITY PLAN C.S.A.H. 14 STA. 181+00.00 TO STA. 193+00.00	SHEET 188 OF 492
NO. DATE BY CKD APPR REVISION								

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**C.S.A.H. 54**

B.M. ELEV. = 910.06  
 T.N.H. SOUTHWEST QUADRANT  
 C.S.A.H. 54 AND C.S.A.H. 14



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NO	DATE	BY	CKD	APPR	REVISION

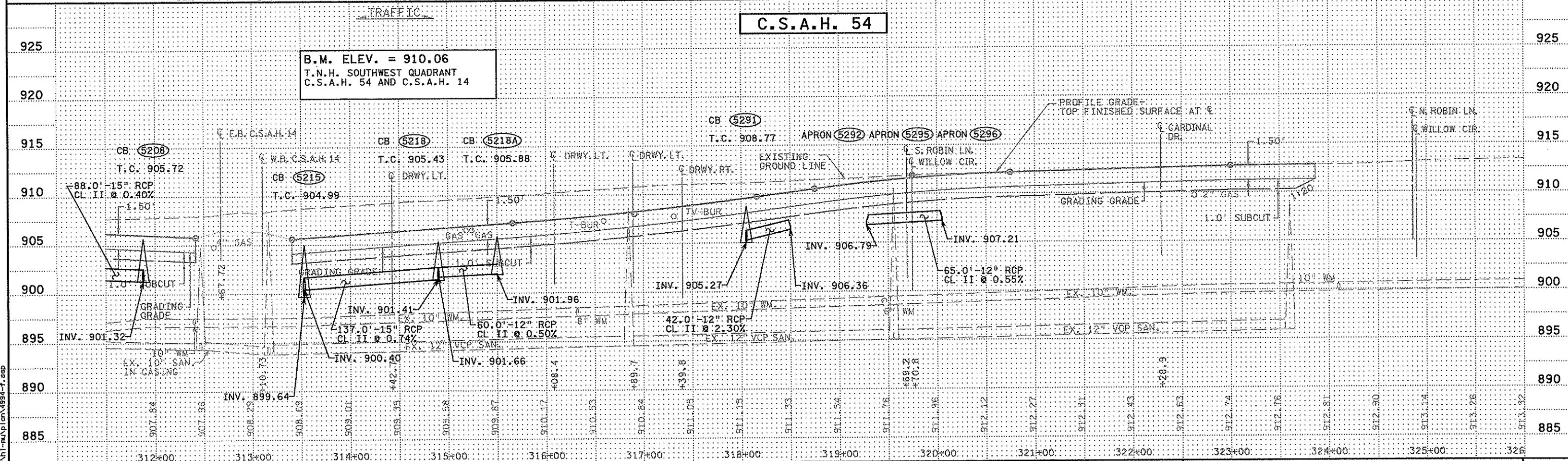
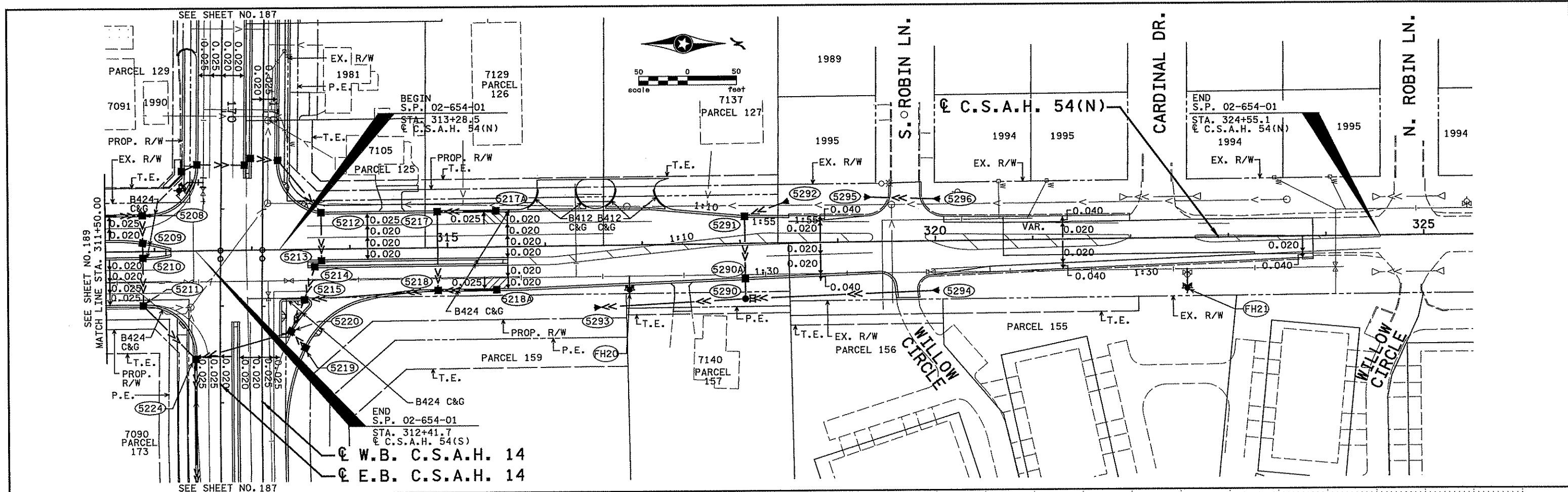
I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.  
 Print Name: CHRISTOPHER M. TRBOYE VICH  
*Christopher M. Trboye Vich*  
 Date: 3/21/07 License # 41635

STATE PROJECT NO. S.P. 02-614-24, ETAL  
 DRAWN BY S. PERRAULT  
 DESIGNED BY J. TOULOUSE  
 CHECKED BY C. TRBOYE VICH  
 COMM. NO. 4994



ANOKA COUNTY  
 SUPERELEVATION AND PROPOSED UTILITY PLAN  
 C.S.A.H. 14  
 C.S.A.H. 54

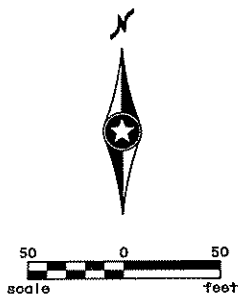
SHEET 189 OF 492



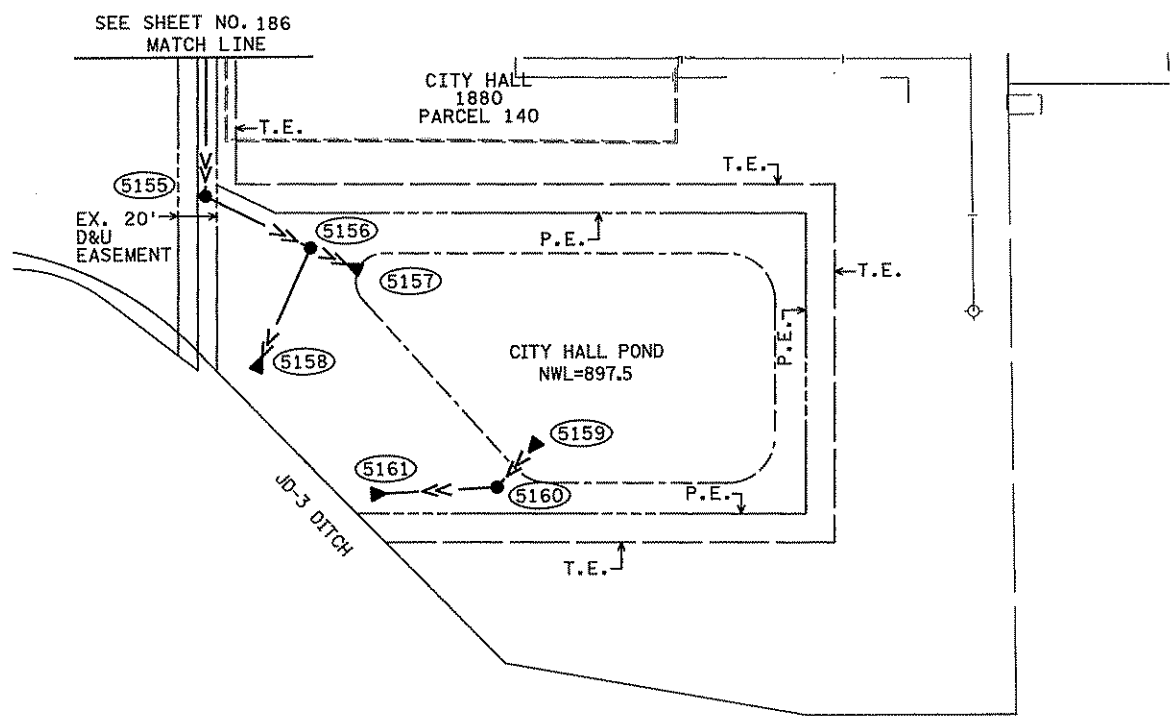
NO.		DATE	BY	CKD	APPR	REVISION
I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota. Print Name: CHRISTOPHER M. TRBOYEVICH <i>Christopher M. Trbojevich</i> Date: 3/26/09 License #: 41635						
STATE PROJECT NO.		S.P. 02-614-24, ETAL		DRAWN BY		S. PERRAULT
				DESIGNED BY		J. TOULOUSE
				CHECKED BY		C. TRBOYEVICH
				COMM. NO.		4994
ANOKA COUNTY						SHEET
SUPERELEVATION AND PROPOSED UTILITY PLAN						190
C.S.A.H. 14						OF
C.S.A.H. 54						492

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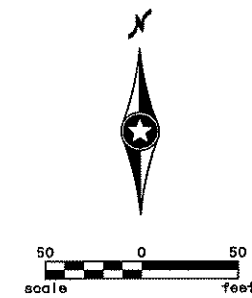
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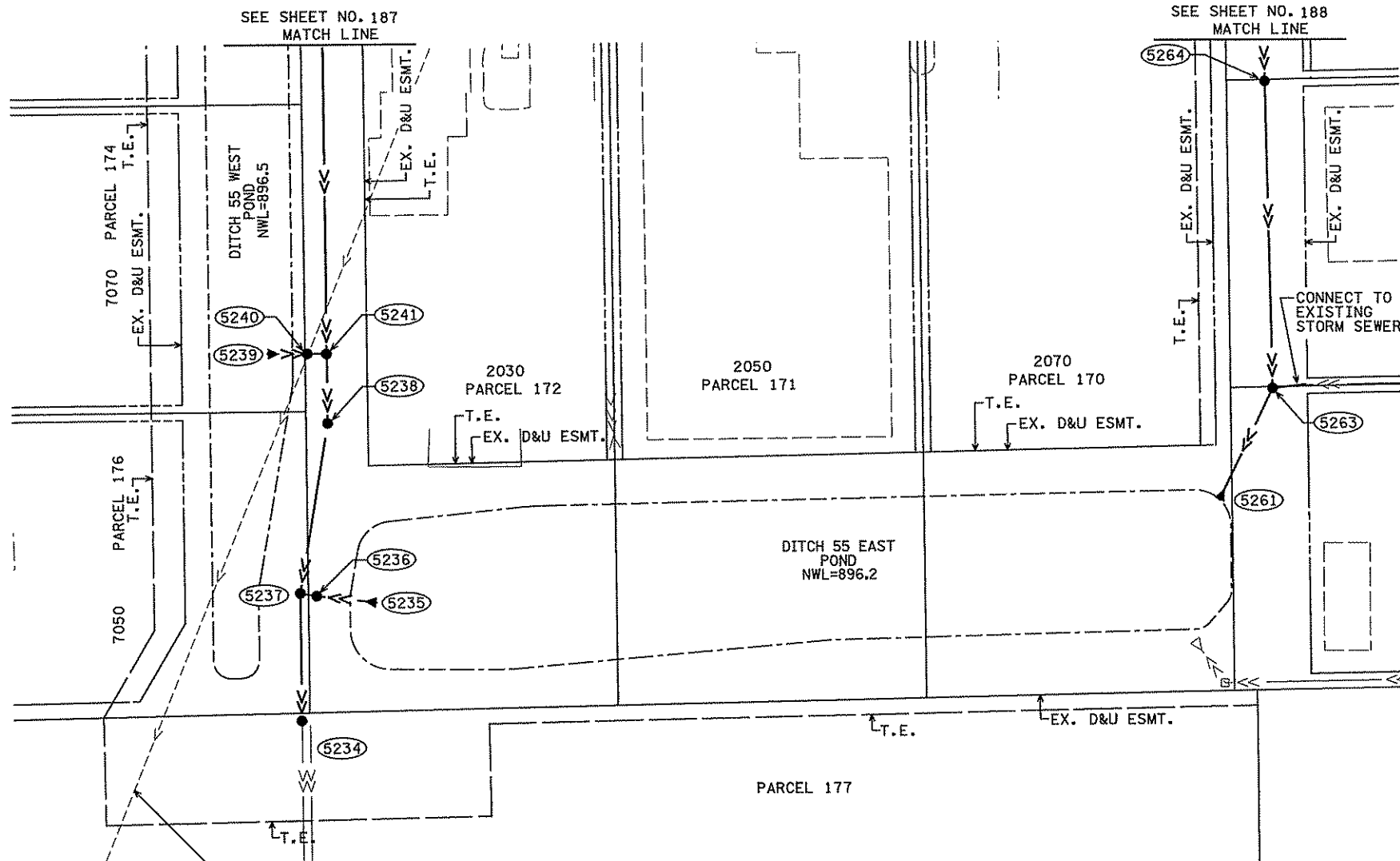
**CITY HALL POND AREA**



NOTE:  
STRUCTURE 5156 SEE DETAIL SHEET 234.



**DITCH 55 EAST AND WEST POND AREAS**



APPROXIMATE LOCATION OF EXISTING TILE SYSTEM. FIELD VERIFY EXACT LOCATION (IF EXISTS) PRIOR TO CONSTRUCTION. (INCIDENTAL)

NOTE:  
STRUCTURES 5240 AND 5236 SEE DETAIL SHEET 232.  
STRUCTURE 5234 SEE DETAIL SHEET 236.

2/15/03 PM 3/21/2007 M:\proj\4994-f\h1-mu\plan\4994-f.seq

NO	DATE	BY	CKD	APPR	REVISION

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.  
 Print Name: CHRISTOPHER M. TRBOYEVICH  
*Christopher M. Trbojevich*  
 Date: 3/26/07 License #: 4635

STATE PROJECT NO. S.P. 02-614-24, ETAL

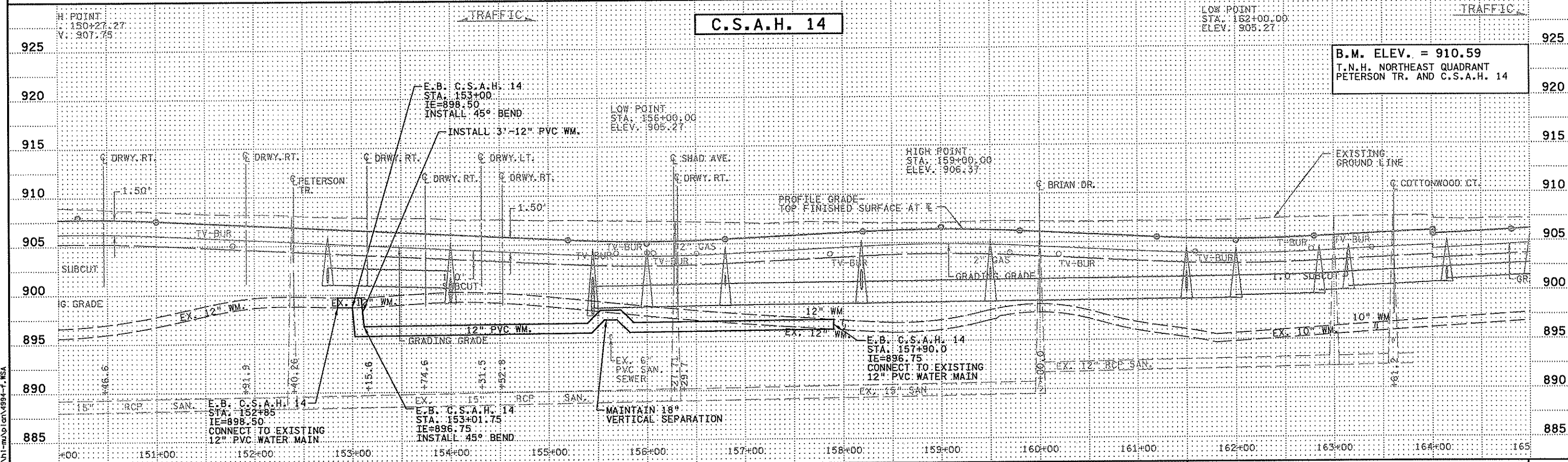
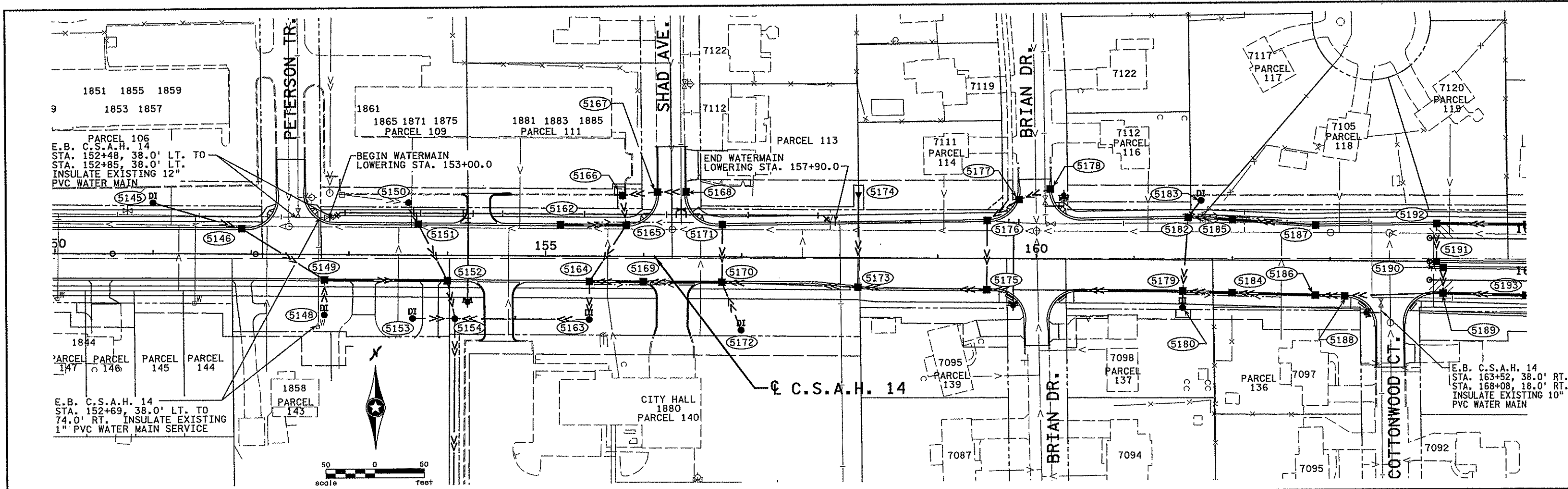
DRAWN BY S. PERRAULT  
 DESIGNED BY J. TOULOUSE  
 CHECKED BY C. TRBOYEVICH  
 COMM. NO. 4994



ANOKA COUNTY  
 SUPERELEVATION AND PROPOSED UTILITY PLAN  
 C.S.A.H. 14  
 MISC. POND AREAS

SHEET 191 OF 492





NO.	DATE	BY	CHKD	APPR	REVISION

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

Print Name: CHRISTOPHER M. TRBOYEVICH  
*Christopher M. Trbojevich*  
 Date: 3/26/07 License #: 41635

STATE PROJECT NO. S.P. 02-614-24, ETAL

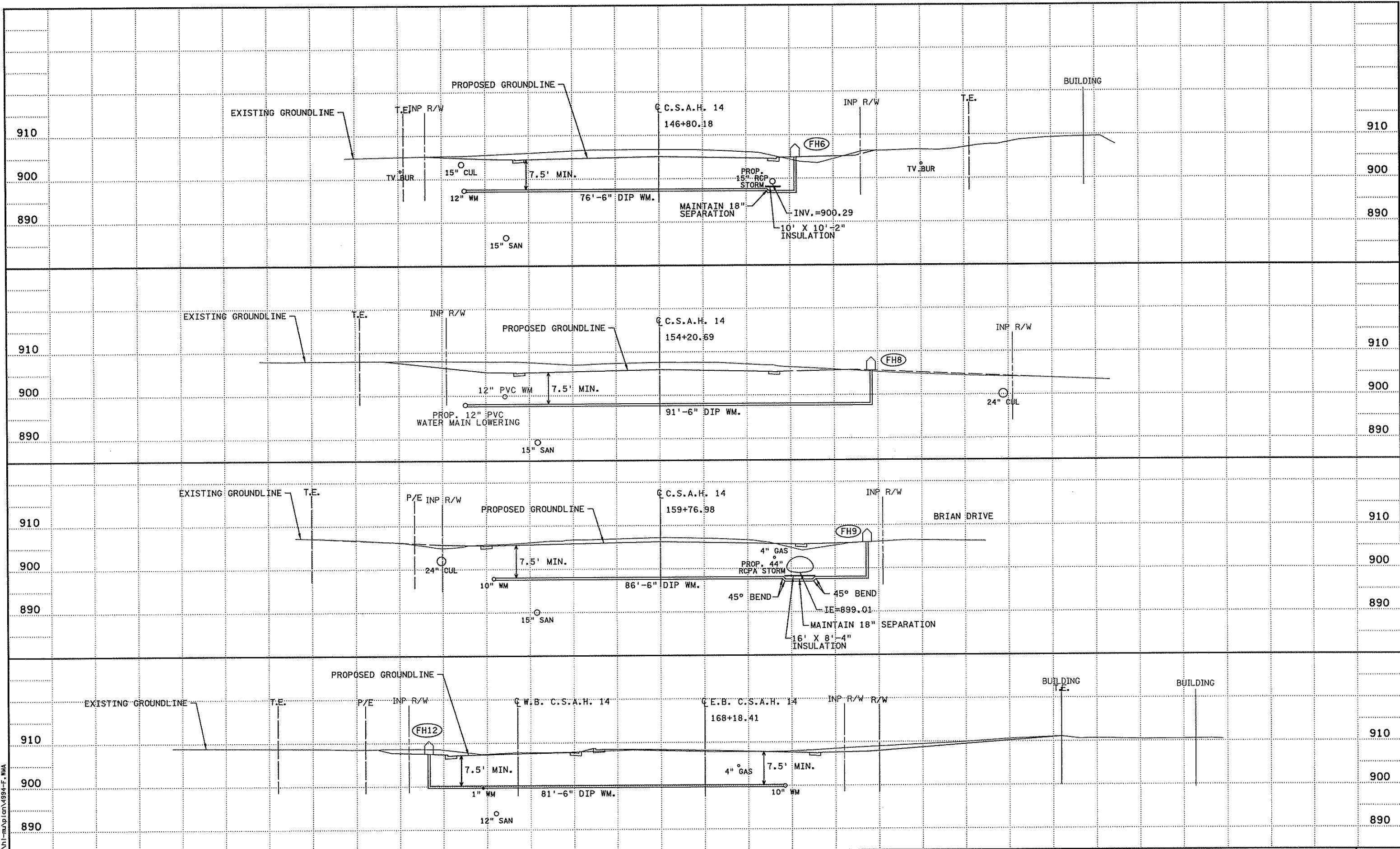
DRAWN BY D.FITCHORN  
 DESIGNED BY J. DAUER  
 CHECKED BY C. TRBOYEVICH  
 COMM. NO. 4994



ANOKA COUNTY  
 MISCELLANEOUS WATER MAIN PROFILES  
 C.S.A.H. 14  
 WATER MAIN LOWERING

SHEET 192 OF 492

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NO	DATE	BY	CHKD	APPR	REVISION

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Print Name: CHRISTOPHER M. TRBOYEVICH  
*Christopher M. Trbojevich*  
 Date: 3/26/07 License # 41635

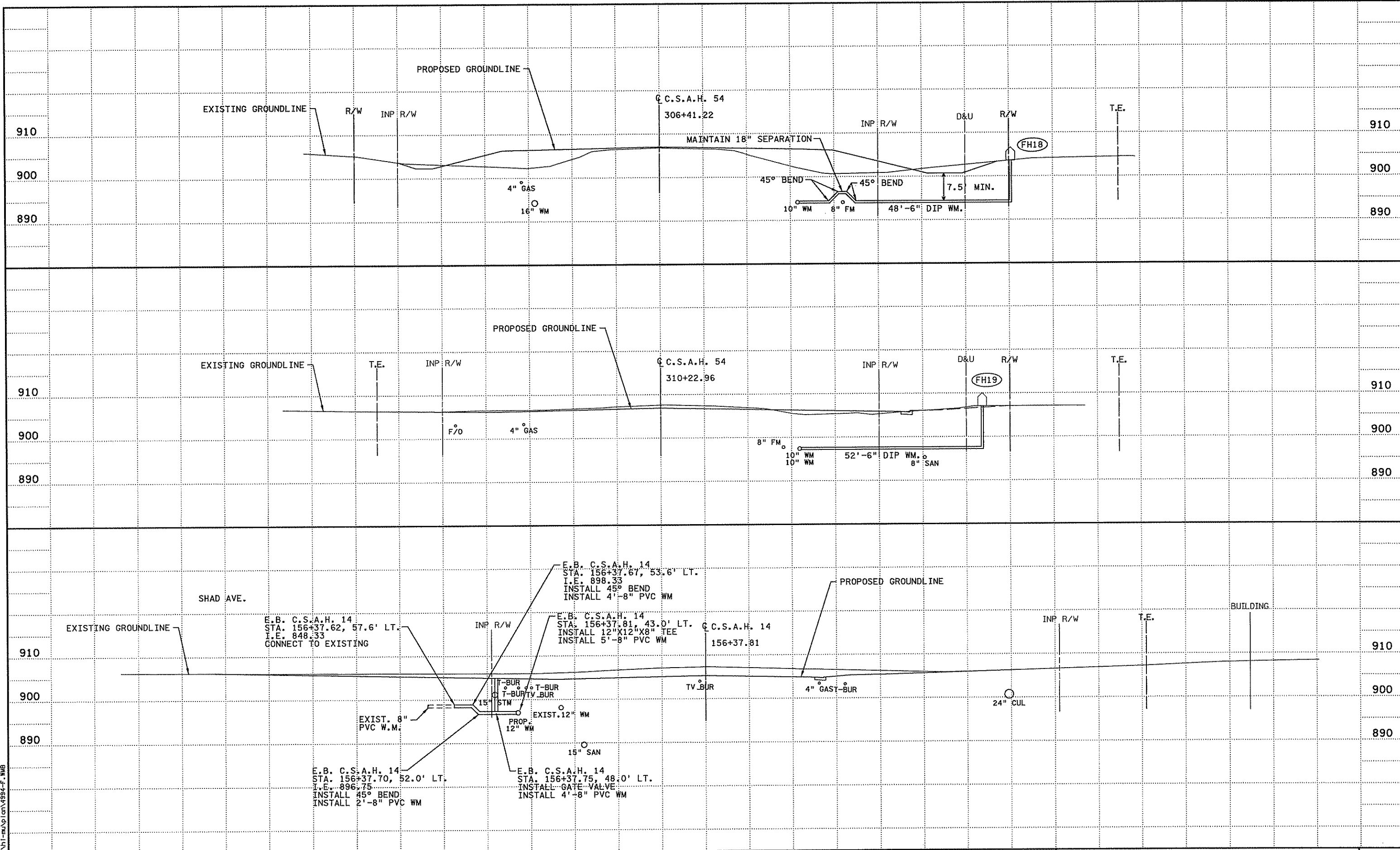
STATE PROJECT NO.  
 S.P. 02-614-24, ETAL

DRAWN BY  
 D.FITCHORN  
 DESIGNED BY  
 C. TRBOYEVICH  
 CHECKED BY  
 N. WILL  
 COMM. NO. 4994



ANOKA COUNTY  
 MISCELLANEOUS WATER MAIN PROFILES  
 C.S.A.H. 14  
 WATER MAIN LOWERING

SHEET  
 193  
 OF  
 492



NO	DATE	BY	CHKD	APPR	REVISION

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Print Name: CHRISTOPHER M. TRBOYEIVICH  
*Christopher M. Trboyeivich*  
 Date: 3/26/07 License # 41635

STATE PROJECT NO.  
S.P. 02-614-24, ETAL

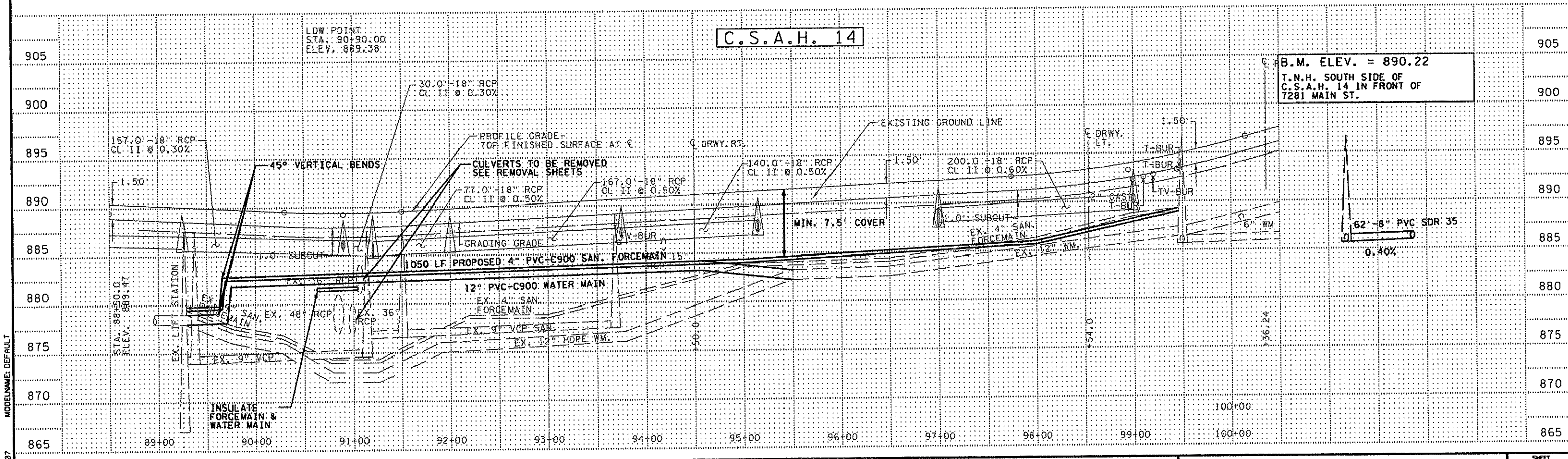
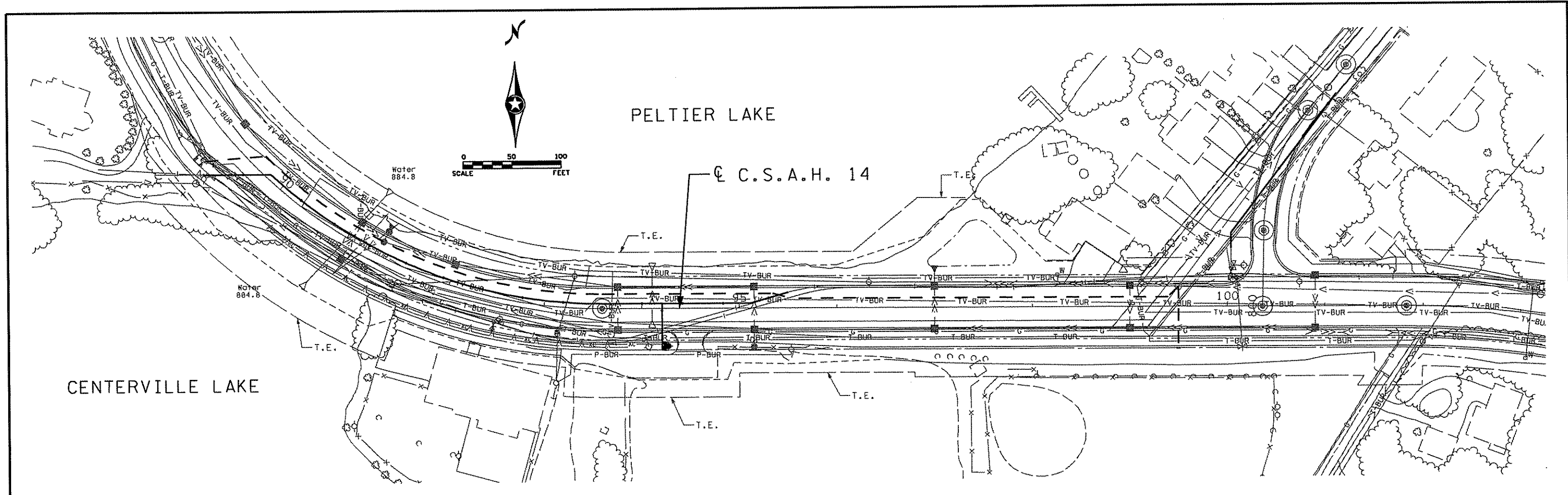
DRAWN BY  
D. FITCHORN  
 DESIGNED BY  
C. TRBOYEIVICH  
 CHECKED BY  
N. WILL  
 COMM. NO. 4994



ANOKA COUNTY  
 MISCELLANEOUS WATER MAIN PROFILES  
 C.S.A.H. 14

SHEET  
194  
OF  
492

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NO	DATE	APPR	REVISION

SURVEY SRF	
DRAWN TAB	
DESIGNED TWP	
APPROVED MRS	
DATE	JULY 06
PRJ. NO.	616-06144

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

PRINT NAME: MARK STATZ  
 SIGNATURE: *[Signature]*  
 DATE: 03/21/07 LIC. NO. 42717

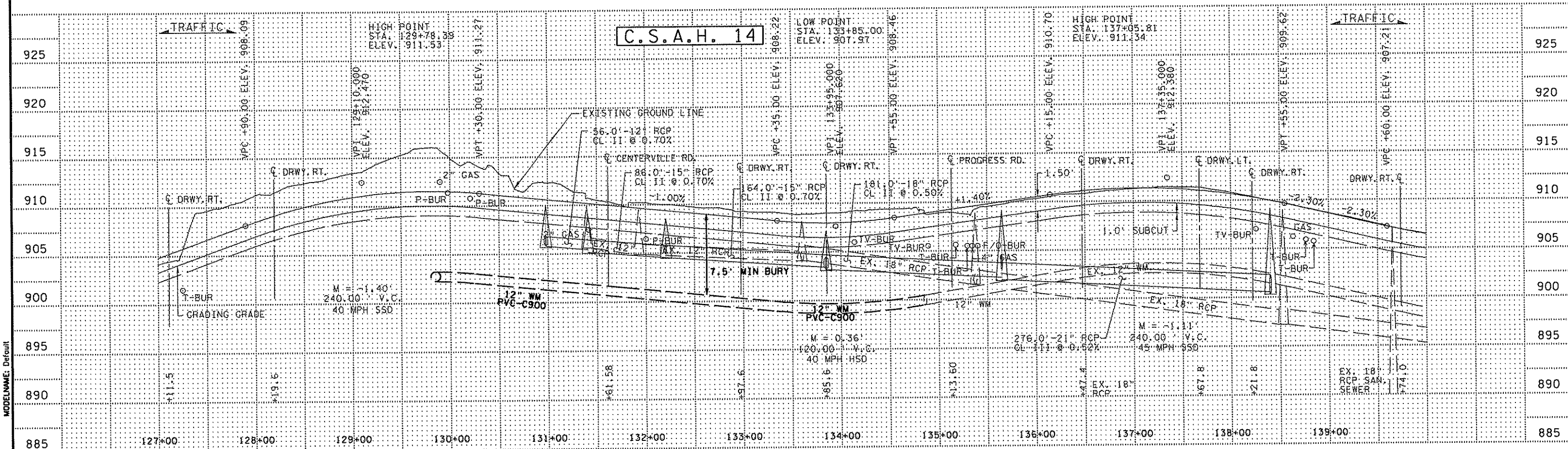
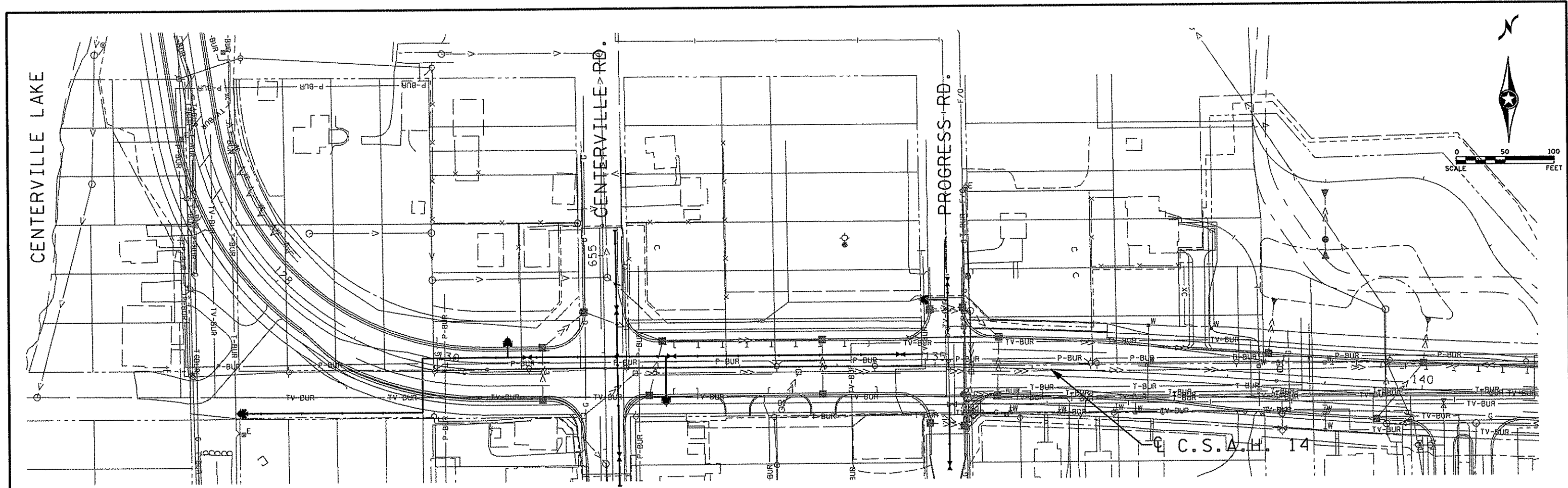


**St. Paul Office**  
 2335 West Highway 36  
 St. Paul, MN 55113  
 Phone: 651-636-4600  
 Fax: 651-636-1311

STATE PROJECT NO. S.P. 02-614-24, ETAL

**ANOKA COUNTY**  
 PROPOSED FORCEMAIN & WATER MAIN  
 C.S.A.H. 14

SHEET	195
OF	492



NO	DATE	APPR	REVISION

SURVEY	SRF
DRAWN	TAB
DESIGNED	TWP
APPROVED	MRS
DATE	JULY 06
PROJ. NO.	616-08144

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

PRINT NAME: MARK STATZ

SIGNATURE: *[Signature]*

DATE: 03/21/97 LIC. NO. 42717

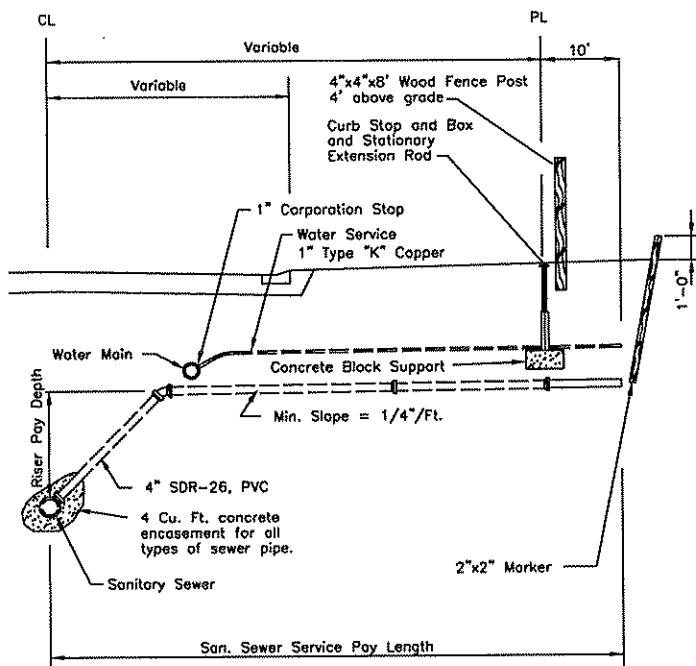
**Bonestroo  
Rosene  
Anderlik &  
Associates**  
Engineers & Architects  
www.bonestroo.com

**St. Paul Office**  
2335 West Highway 36  
St. Paul, MN 55113  
Phone: 651-636-4600  
Fax: 651-636-1311

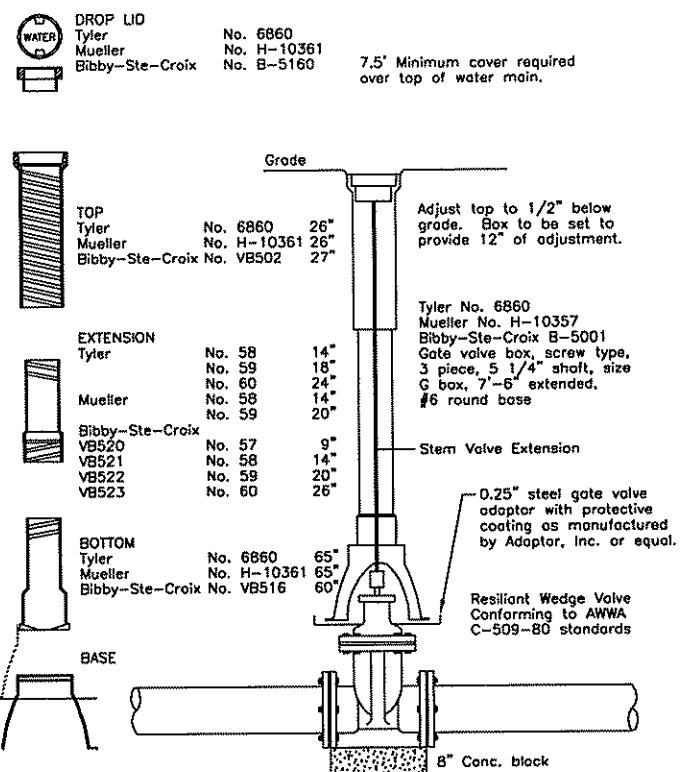
STATE PROJECT NO. S.P. 02-614-24, ETAL

**ANOKA COUNTY**  
**PROPOSED WATER MAIN**  
C.S.A.H. 14

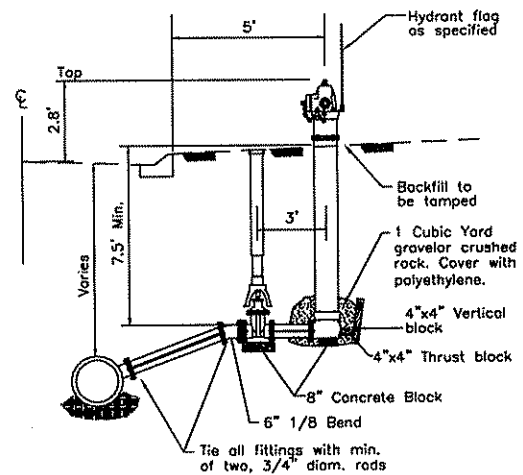
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OF	492



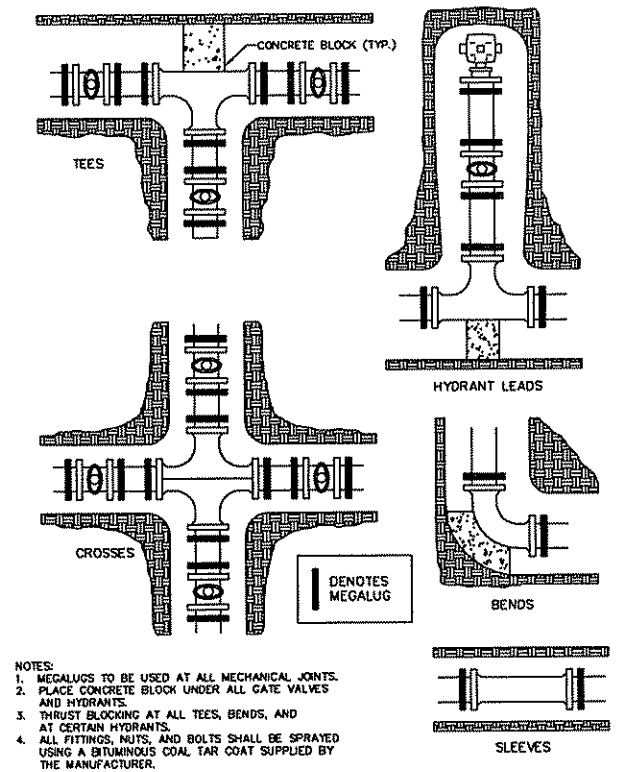
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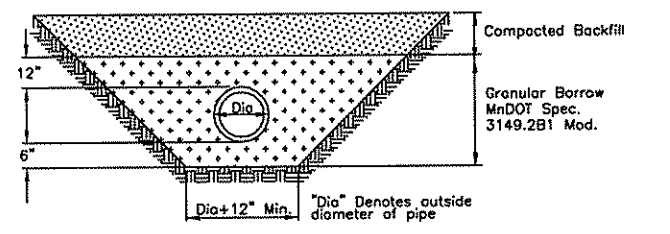
TYPICAL GATE VALVE INSTALLATION



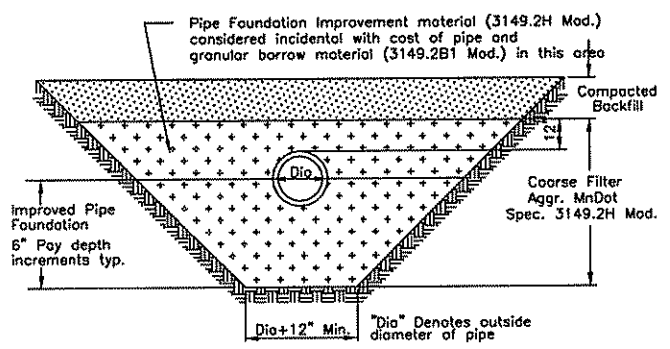
HYDRANT WITH GATE VALVE INSTALLATION



MEGALUG LOCATION



PIPE FOUNDATION & BEDDING IN GOOD SOILS

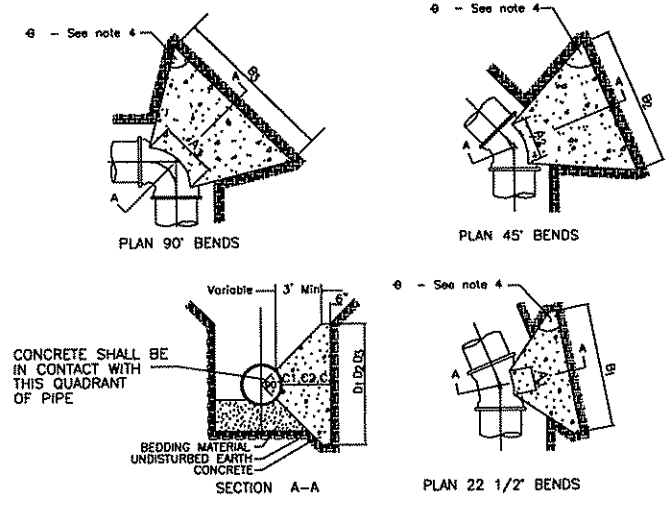


PIPE FOUNDATION & BEDDING IN POOR SOILS

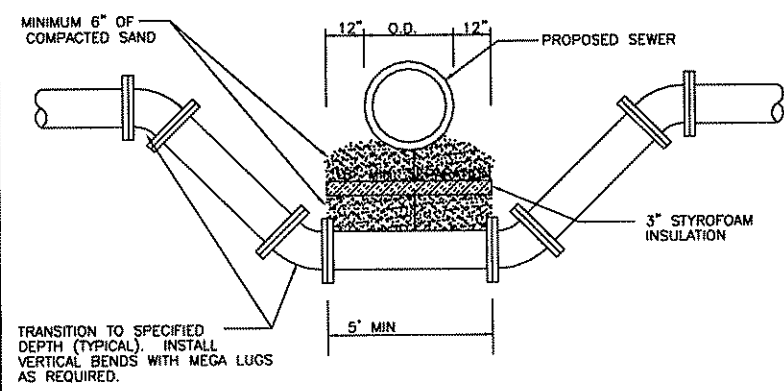
BEDDING METHODS FOR PVC

NOTES:  
1. Shape of back of buttress may vary as long as poured against firm undisturbed earth.  
2. Dimension C1,C2,C3 should be large enough to make angle θ equal to or larger than 45°.  
3. Dimension A1,A2,A3 should be as large as possible without interfering with MJ bolts.  
4. θ = 45° Minimum.  
5. Place polyethylene between concrete & pipe.

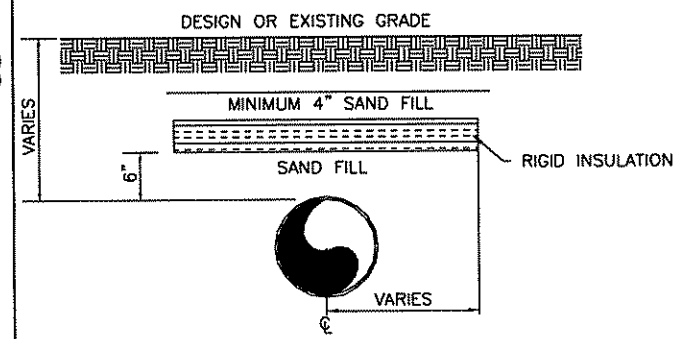
PIPE SIZE	22 1/2° BEND			45° BEND			90° BEND		
	B1	D1	B2	D2	B3	D3	B3	D3	
6"	1'-5"	1'-5"	1'-5"	1'-5"	2'-1"	1'-6"	2'-1"	1'-6"	
8"	1'-5"	1'-5"	2'-1"	1'-6"	2'-8"	2'-0"	2'-8"	2'-0"	
12"	1'-10"	1'-10"	3'-4"	2'-0"	4'-9"	2'-6"	4'-9"	2'-6"	
16"	3'-0"	2'-0"	3'-10"	3'-0"	6'-2"	3'-6"	6'-2"	3'-6"	
20"	3'-6"	2'-8"	5'-6"	3'-4"	8'-4"	4'-0"	8'-4"	4'-0"	
24"	4'-4"	3'-0"	6'-10"	3'-10"	9'-8"	5'-0"	9'-8"	5'-0"	
30"	-	-	9'-3"	6'-0"	17'-0"	6'-0"	17'-0"	6'-0"	



CONCRETE THRUST BLOCKING



WATER MAIN OFFSET



BURIED PIPE INSULATION

MODELNAME: Model  
PLOTDATE: 3/21/2007  
FILENAME: i:\616\61604139\cod\dgn\CD61606139\_wmd.dgn

NO	DATE	APPR	REVISION

SURVEY	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
DRAWN	PRINT NAME: MARK STATZ
DESIGNED	SIGNATURE: <i>[Signature]</i>
APPROVED MRS	DATE: JULY 06
DATE	PRJL NO. 616-06144
PRJL NO. 616-06144	DATE: 03/21/07
	LC. NO. 42717

**Bonestroo**  
Rosene  
Anderlik &  
Associates  
Engineers & Architects  
www.bonestroo.com

**St. Paul Office**  
2335 West Highway 36  
St. Paul, MN 55113  
Phone: 651-636-4600  
Fax: 651-636-1311

STATE PROJECT NO. S.P. 02-614-24, ETAL

**ANOKA COUNTY**  
PROPOSED WATER MAIN  
C.S.A.H. 14  
WATER MAIN DETAILS

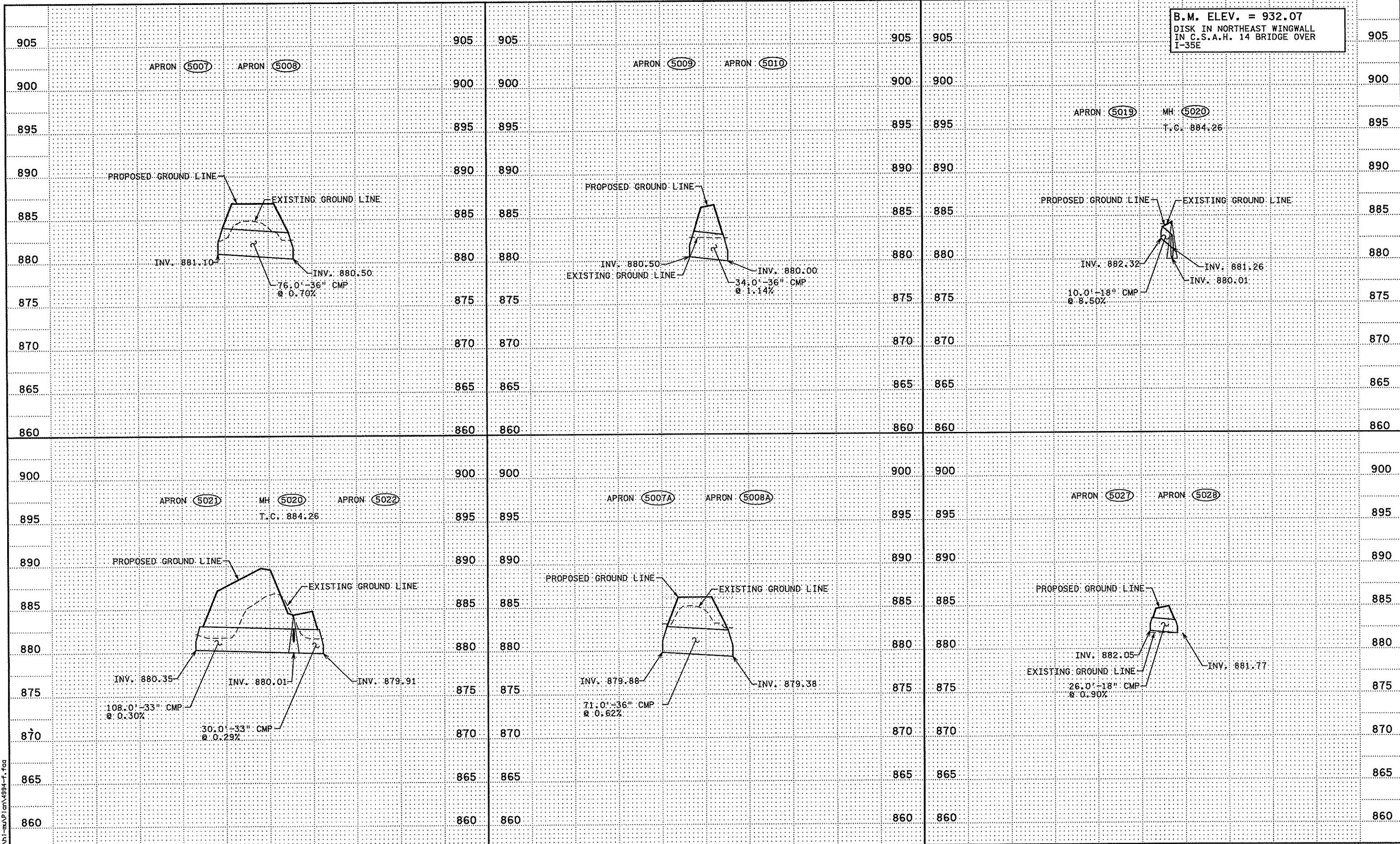
(QQ) WATERMAIN (SPEC. 2504) - CITY CENTERVILLE NON-PARTICIPATING																		
ALIGNMENT	STA. TO STA.	OFFSET		OWNER	REMOVE		FURNISH AND INSTALL			PVC			MEGALUGS			WATERMAIN FITTINGS (LBS)	CONNECT TO EXISTING (EACH)	NOTES
					WATERMAIN (SPEC. 2104) (LF)	GATE VALVE (EACH)	HYDRANT (EACH)	GATE VALVE			WATERMAIN			6"	8"			
					6"	8"	12"	6" CS 207-60 (LF)	8" C900 (LF)	12" C900 (LF)	(EACH)	(EACH)	(EACH)	(LBS)	(EACH)			
		LF	RT															
EB 14	100+05	60'		CENTERVILLE												1		
EB 14	100+05-101+10	60'-220'		CENTERVILLE							195						8"-45 BEND	
EB 14	100+05	76'		CENTERVILLE										2	110		8" PLUG	
EB 14	101+12	220'		CENTERVILLE										1	45			
EB 14	128+50.45		127.17	CENTERVILLE			1											
EB 14	128+51		127.00	CENTERVILLE				1										
EB 14	128+52.15		125.47	CENTERVILLE										1	95		8" X 6" REDUCER	
EB 14	128+52.15 - 129+84.22		125.47 - 50.31	CENTERVILLE							188					1		
EB 14	129+84.22		50.31	CENTERVILLE										1	340		12" X 8" TEE	
EB 14	129+84.22		50.31	CENTERVILLE														
EB 14	129+84.22 - 129+73.51	4.75	50.31	CENTERVILLE							56						12"-90 BEND	
EB 14	129+73.51	4.75		CENTERVILLE											2	255		
EB 14	129+73.51 - 131+74.46		4.75 - 12.16	CENTERVILLE														
EB 14	130+62.38 - 130+62.33	12.16 - 29.00		CENTERVILLE							17							
EB 14	130+62.38	12.16		CENTERVILLE										1		2	325	
EB 14	130+62.33	29.00		CENTERVILLE														
EB 14	130+62.33	29.00		CENTERVILLE						1								
EB 14	130+81.92	12.16		CENTERVILLE														
EB 14	131+75.86		120.99	CENTERVILLE											1	45	12" PLUG	
EB 14	131+75.86 TO 131+74.46	12.16	120.99	CENTERVILLE							133							
EB 14	131+75.57		91.11	CENTERVILLE														
EB 14	131+74.46	12.16		CENTERVILLE										1	1	165	8" X 12" REDUCER	
EB 14	131+74.46	12.16		CENTERVILLE											4	495	12" X 12" CROSS	
EB 14	131+74.46 TO 131+73.08	12.16 TO 142.30		CENTERVILLE								130						
EB 14	131+73.95	60.37		CENTERVILLE														
EB 14	131+73.08	142.30		CENTERVILLE														
EB 14	131+74.46 TO 134+86.31	12.16 TO 13.00		CENTERVILLE														
EB 14	132+24.30		34.99	CENTERVILLE														
EB 14	132+24.30		34.99	CENTERVILLE														
EB 14	132+24.30	12.16		CENTERVILLE										1		2	325	
EB 14	132+24.30 TO 132+24.32	12.16	34.99	CENTERVILLE							47							
EB 14	132+30.38	12.19		CENTERVILLE														
EB 14	134+65.02	12.64		CENTERVILLE														
EB 14	134+86.31	13.00		CENTERVILLE												1		
EB 14	134+87.56	69.23		CENTERVILLE														
EB 14	134+87.56	69.23		CENTERVILLE														
EB 14	134+87.56 TO 135+12.12	69.23 TO 69.71		CENTERVILLE								25						
EB 14	135+16.64		101.64	CENTERVILLE														
EB 14	135+16.66 TO 135+15.26		101.64 TO 38.62	CENTERVILLE								63					8" PLUG	
EB 14	135+16.66		101.64	CENTERVILLE											1	45		
EB 14	135+18.08		38.57	CENTERVILLE														
EB 14	135+12.84	36.11		CENTERVILLE												1		
EB 14	135+12.81	36.11		CENTERVILLE														
EB 14	135+12.84 TO 135+11.70	36.11 TO 88.13		CENTERVILLE	52							52						
EB 14	135+12.84 TO 135+11.70	36.11 TO 88.13		CENTERVILLE														
EB 14	135+12.12	69.71		CENTERVILLE										1	2	175	8" X 6" TEE	
EB 14	135+11.74	88.13		CENTERVILLE														
EB 14	135+11.74	88.13		CENTERVILLE														
SUBTOTAL					52	2	4	4	3	4	89	628	700	4	10	14	2505	5

MODELNAME: Default  
PLOTDATE: 3/21/2007

NO	DATE	APPR	REVISION	SURVEY SRF DRAWN TAB DESIGNED TWP APPROVED MRS DATE MARCH 07 PROJ. NO. 616-06144	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. PRINT NAME: MARK STATZ  SIGNATURE: DATE 03/21/07 LIC. NO. 42717	 <b>Bonestroo Rosene Anderlik &amp; Associates</b> <small>Engineers &amp; Architects www.bonestroo.com</small>	<b>St. Paul Office</b> 2335 West Highway 36 St. Paul, MN 55113 Phone: 651-636-4600 Fax: 651-636-1311	STATE PROJECT NO. S.P. 02-614-24, ETAL	<b>ANOKA COUNTY</b> PROPOSED FORCEMAIN & WATER MAIN C.S.A.H. 14 TABULATIONS	SHEET <b>198</b> OF <b>492</b>
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B.M. ELEV. = 932.07  
DISK IN NORTHEAST WINGWALL  
IN C.S.A.H. 14 BRIDGE OVER  
I-35E



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3/21/2007  
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NO	DATE	BY	CKD	APPR	REVISION

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.  
Print Name: CHRISTOPHER M. TRBOYEVICH  
*Christopher M. Trbojevich*  
Date: 3/26/07 License #: 41635

STATE PROJECT NO.  
S.P. 02-614-24, ETAL

DRAWN BY  
S. PERRAULT  
DESIGNED BY  
J. TOULOUSE  
CHECKED BY  
C. TRBOYEVICH  
COMM. NO. 4994

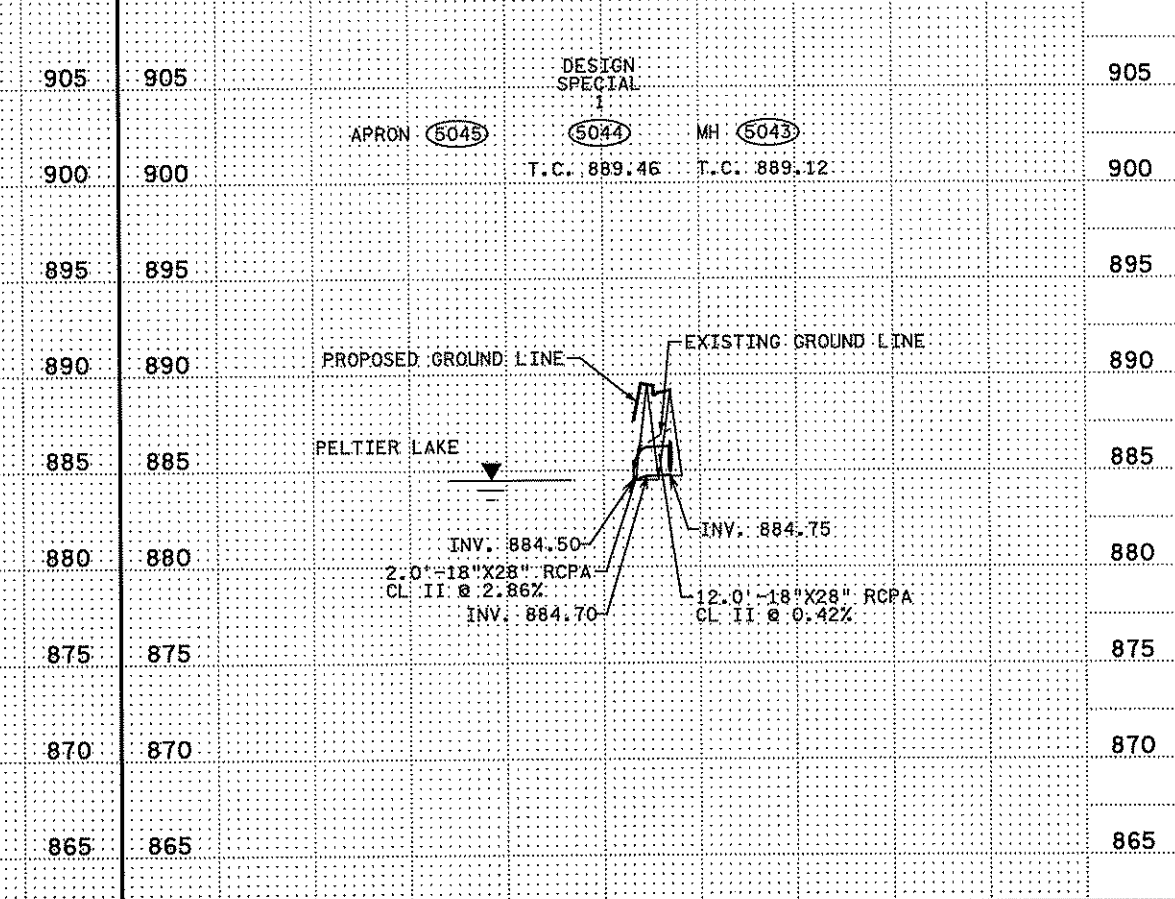
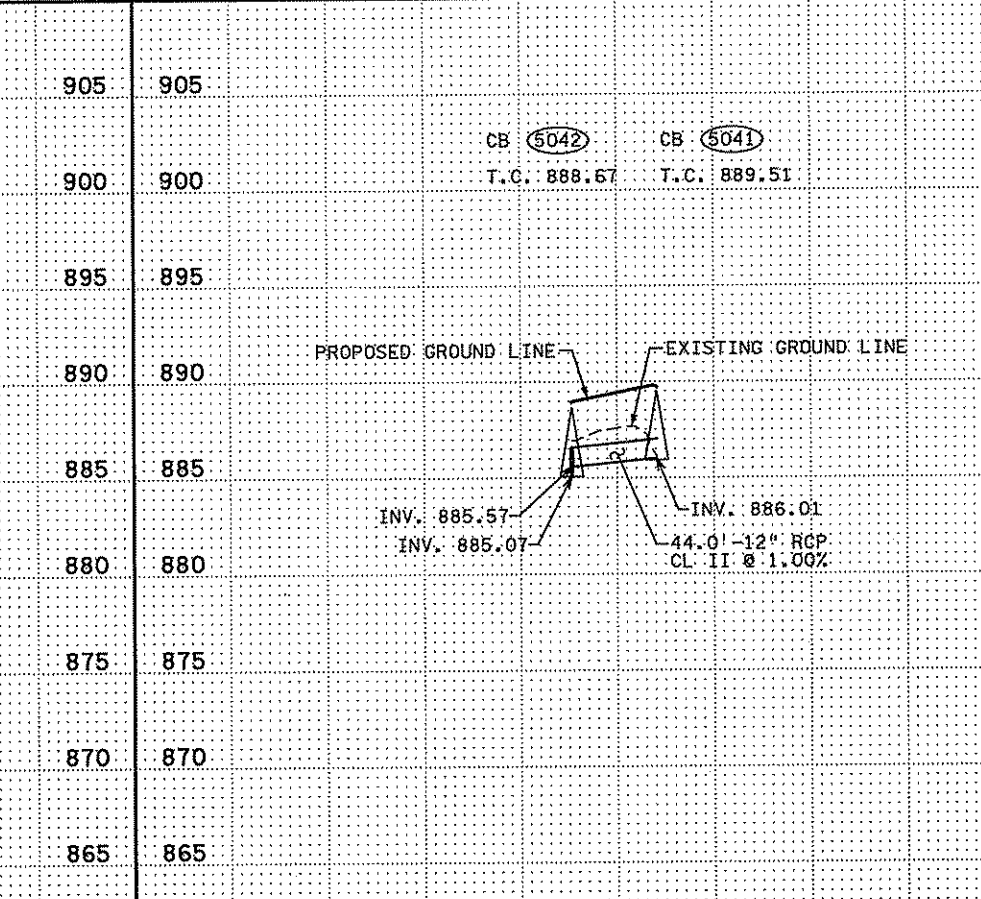
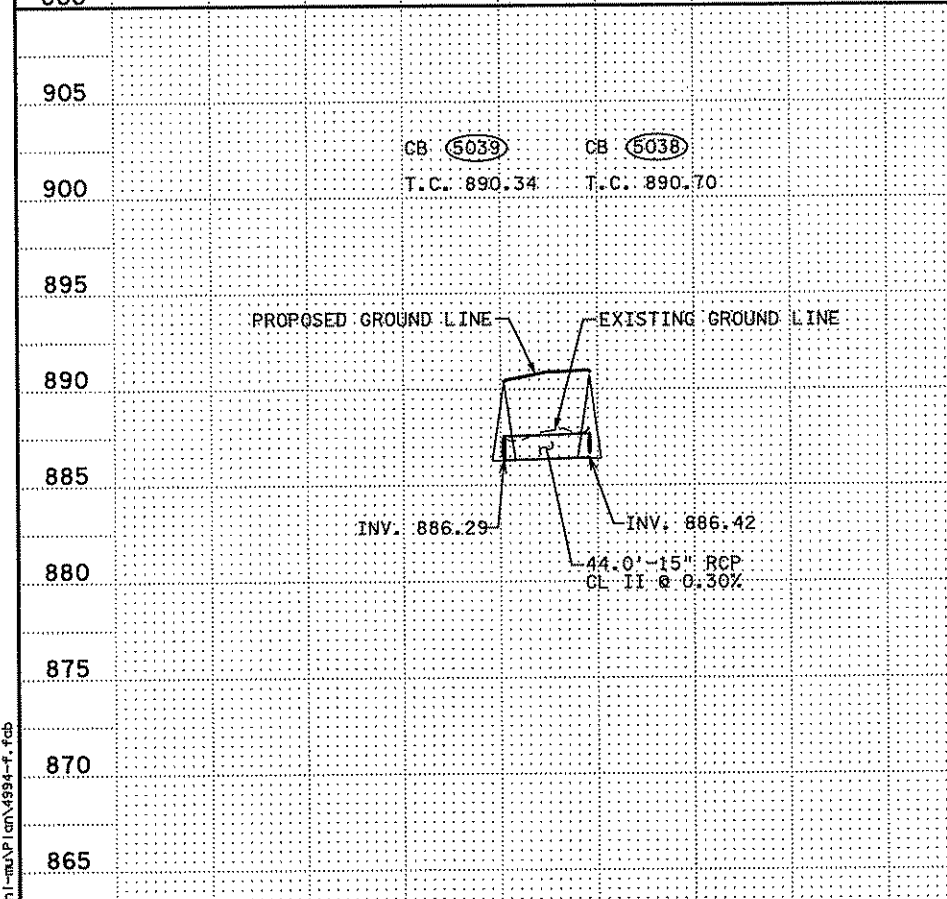
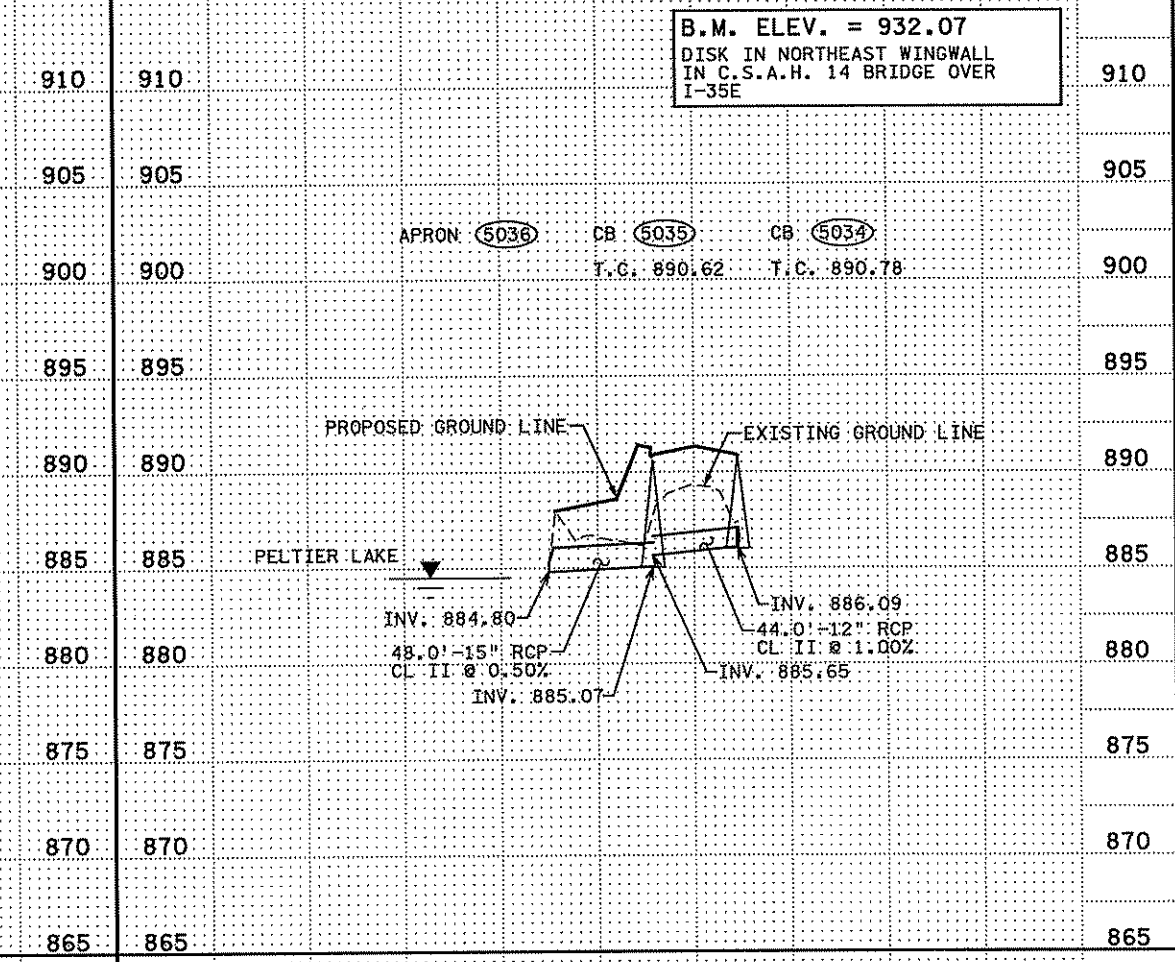
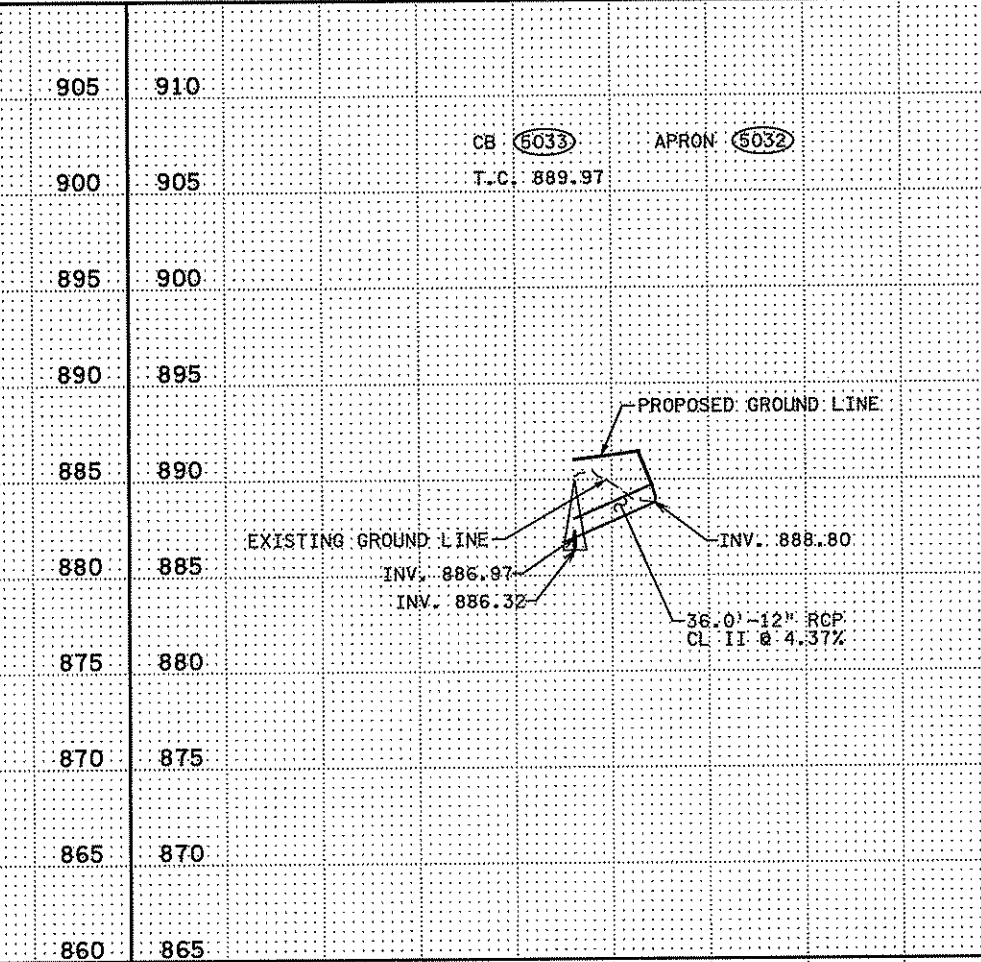
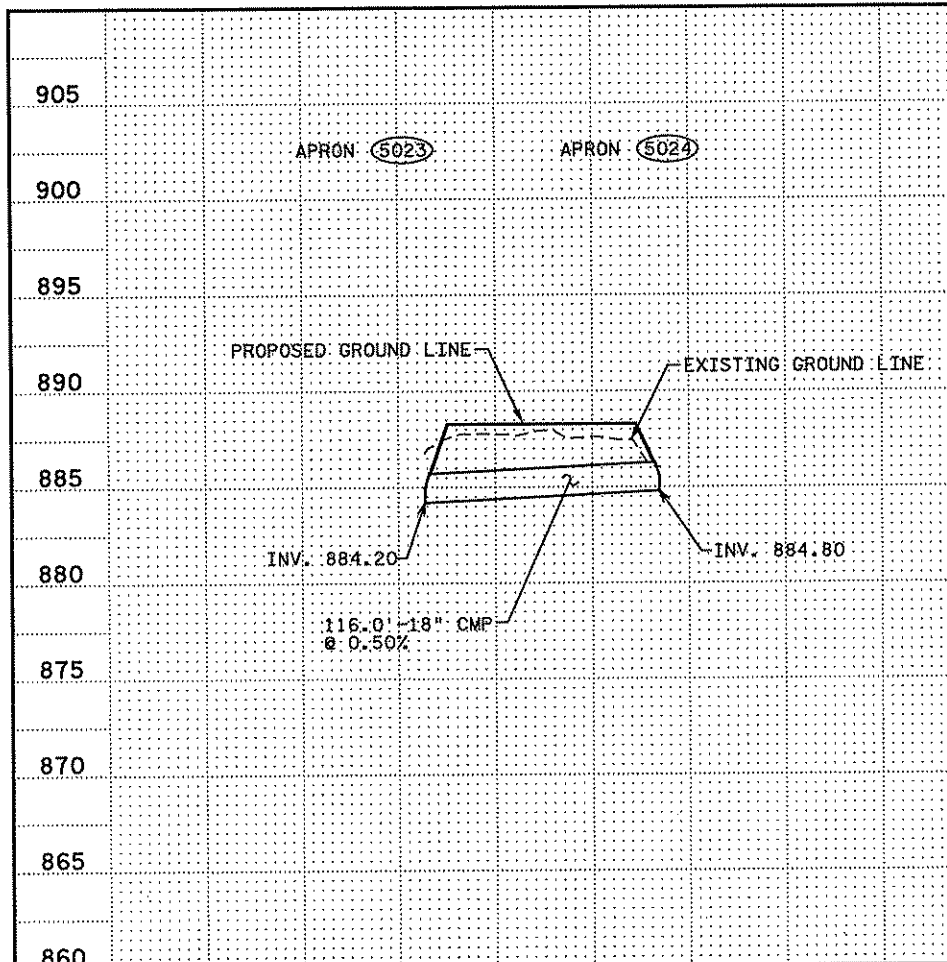


ANOKA COUNTY  
MISCELLANEOUS DRAINAGE PROFILES  
C.S.A.H. 14

SHEET  
199  
OF  
492



B.M. ELEV. = 932.07  
DISK IN NORTHEAST WINGWALL  
IN C.S.A.H. 14 BRIDGE OVER  
I-35E



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*Christopher M. Trboye Vich*  
Date: 3/26/07 License #: 41635

STATE PROJECT NO. S.P. 02-614-24, ETAL

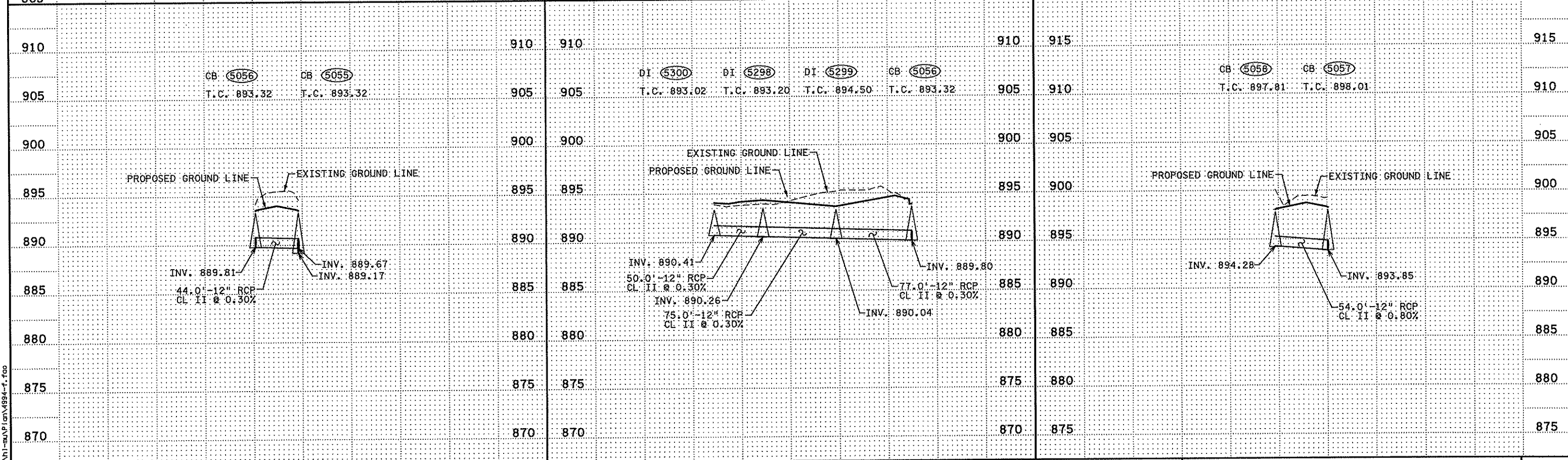
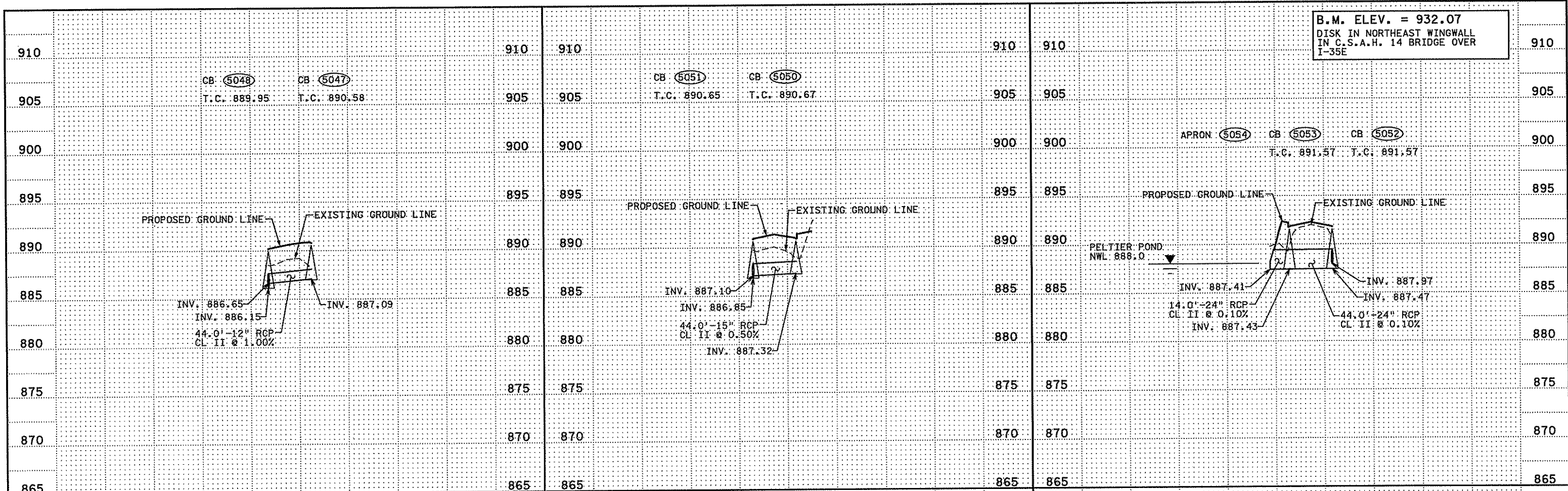
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DESIGNED BY J. TOULOUSE  
CHECKED BY C. TRBOYE VICH  
COMM. NO. 4994



ANOKA COUNTY  
MISCELLANEOUS DRAINAGE PROFILES  
C.S.A.H. 14

SHEET 200 OF 492

B.M. ELEV. = 932.07  
 DISK IN NORTHEAST WINGWALL  
 IN C.S.A.H. 14 BRIDGE OVER  
 I-35E



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*Christopher M. Trbojevich*  
 Date: 3/20/07 License #: 41635

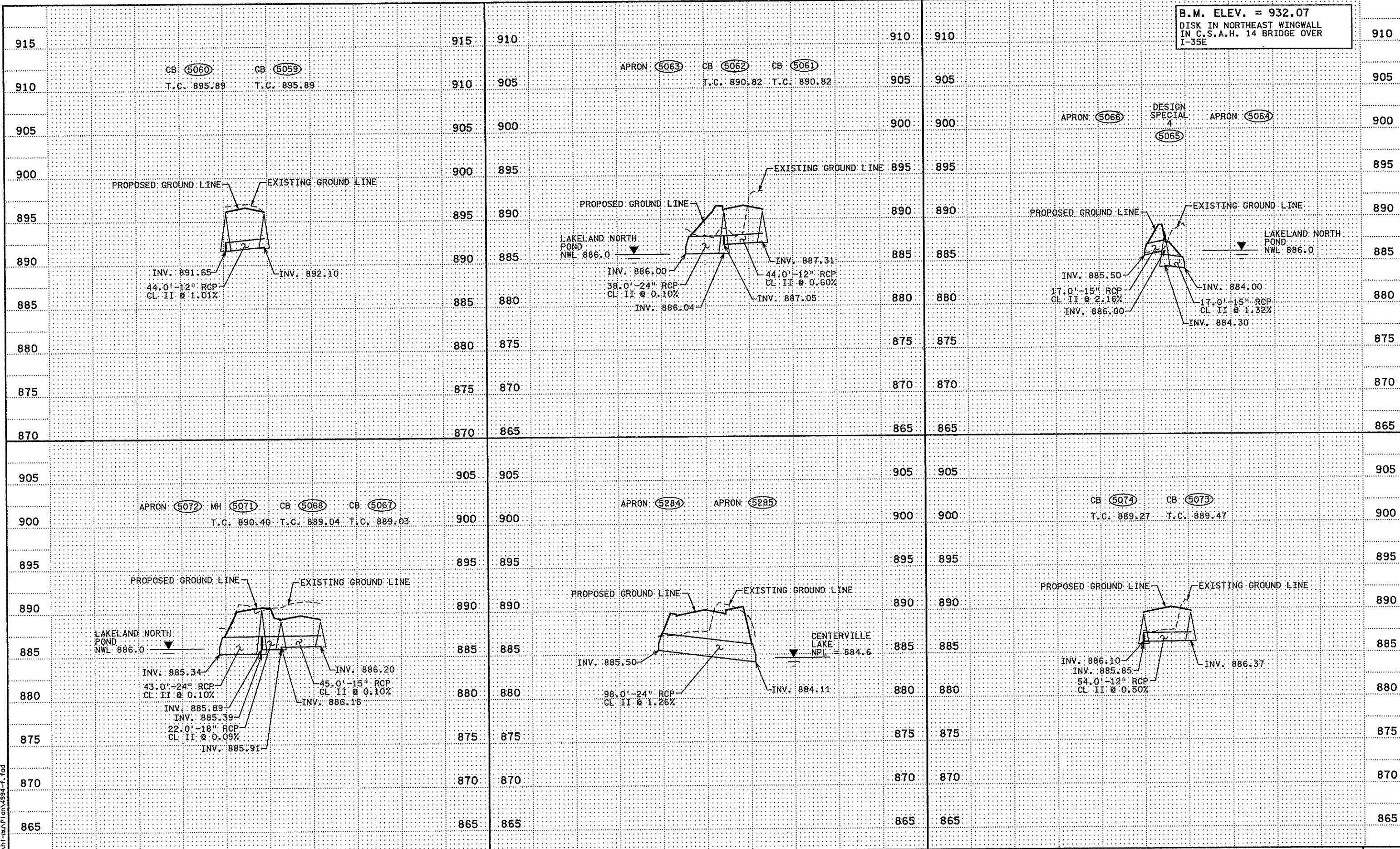
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 DESIGNED BY J. TOLLOUSE  
 CHECKED BY C. TRBOYEVICH  
 COMM. NO. 4994



ANOKA COUNTY  
 MISCELLANEOUS DRAINAGE PROFILES  
 C.S.A.H. 14

SHEET 201 OF 492

B.M. ELEV. = 932.07  
DISK IN NORTHEAST WINGWALL  
IN C.S.A.H. 14 BRIDGE OVER  
I-35E



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 Prt Name: CHRISTOPHER M. TRBOYEVICH  
*Christopher M. Trbojevich*  
 Date: 3/26/07 License #: 41635

STATE PROJECT NO.  
S.P. 02-614-24, ETAL

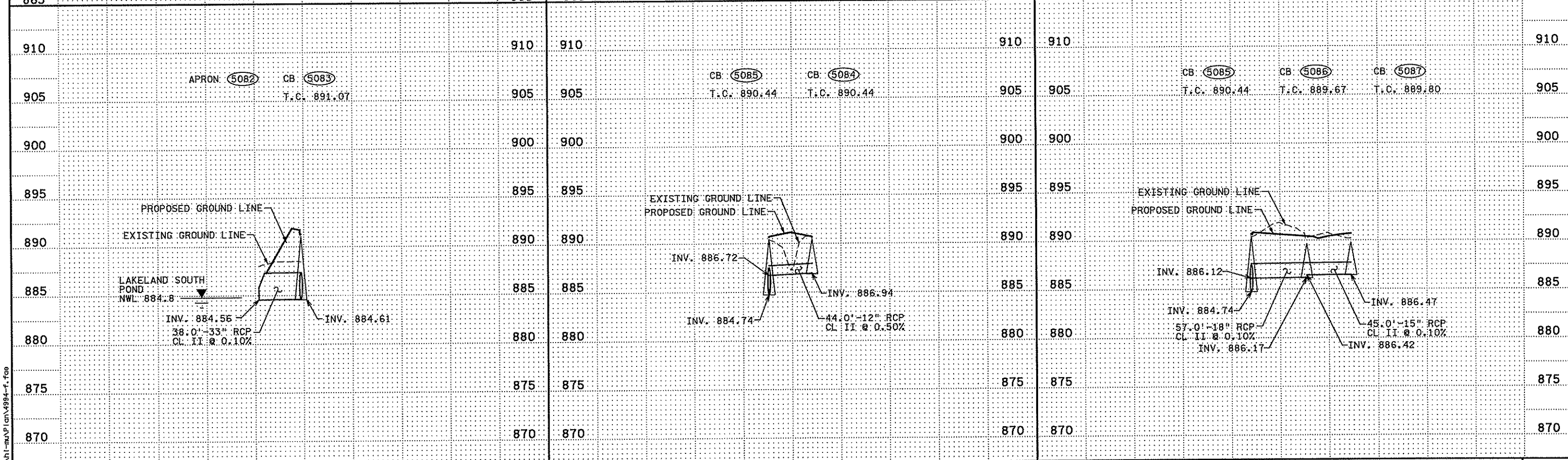
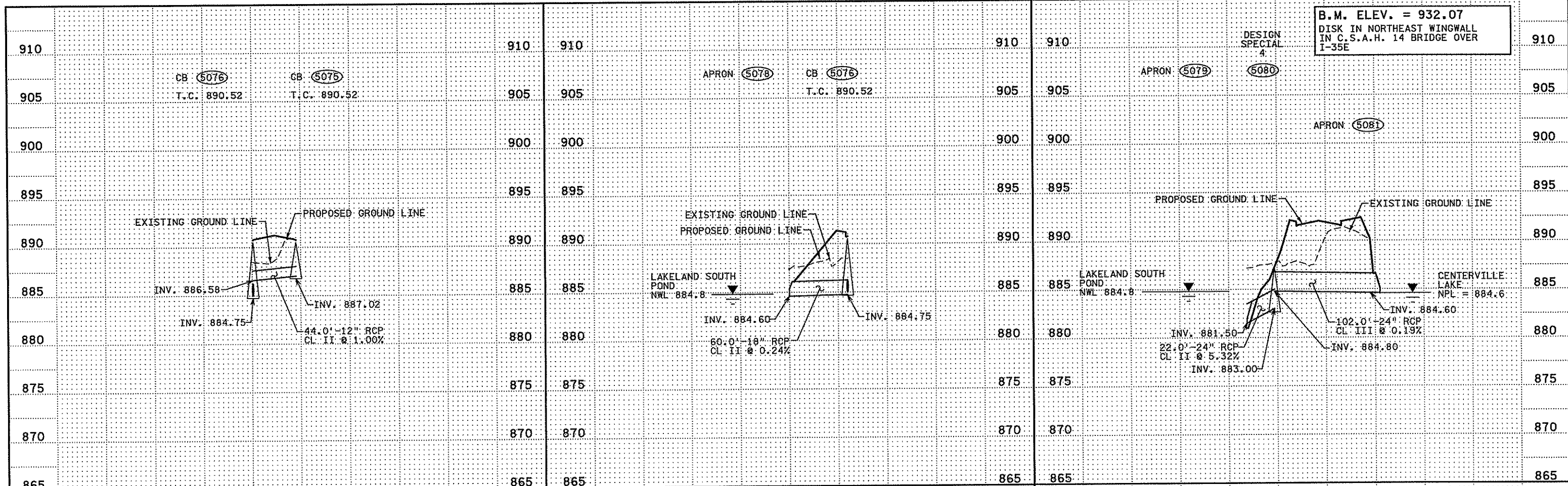
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 DESIGNED BY  
J. TOULOUSE  
 CHECKED BY  
C. TRBOYEVICH  
 COMM. NO. 4994



ANOKA COUNTY  
 MISCELLANEOUS DRAINAGE PROFILES  
 C.S.A.H. 14

SHEET  
202  
OF  
492

B.M. ELEV. = 932.07  
 DISK IN NORTHEAST WINGWALL  
 IN C.S.A.H. 14 BRIDGE OVER  
 I-35E



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 Print Name: CHRISTOPHER M. TRBOYEVICH  
*Christopher M. Trbojevich*  
 Date: 3/26/07 License #: 41635

STATE PROJECT NO.  
 S.P. 02-614-24, ETAL

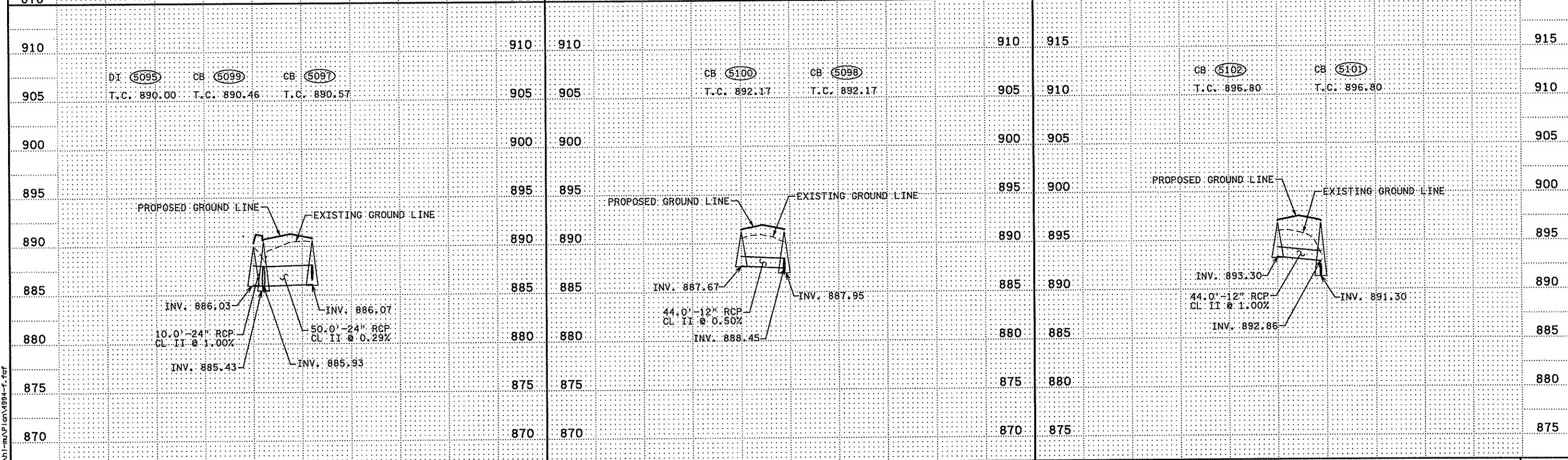
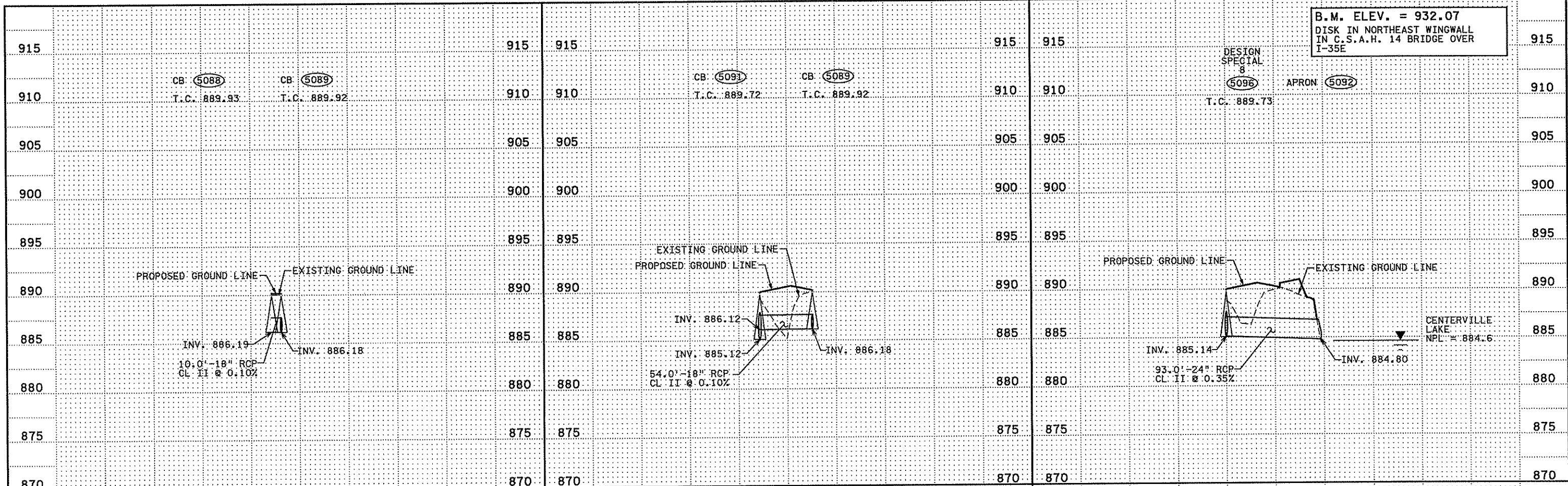
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 DESIGNED BY  
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 CHECKED BY  
 C. TRBOYEVICH  
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ANOKA COUNTY  
 MISCELLANEOUS DRAINAGE PROFILES  
 C.S.A.H. 14

SHEET  
 203  
 OF  
 492

B.M. ELEV. = 932.07  
 DISK IN NORTHEAST WINGWALL  
 IN C.S.A.H. 14 BRIDGE OVER  
 I-35E



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Print Name: CHRISTOPHER M. TRBOYEVICH  
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 Date: 3/26/07 License #: 41635

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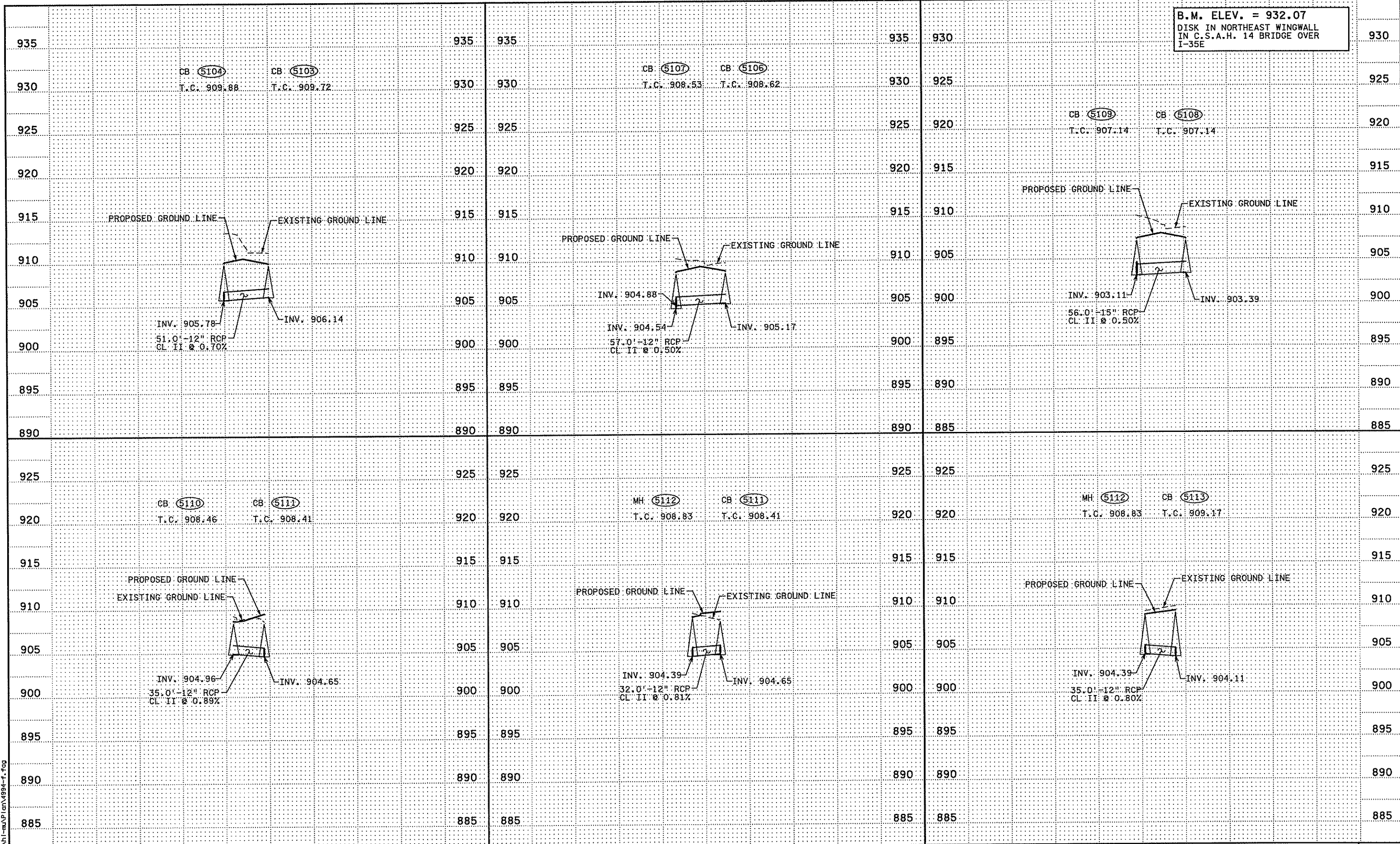
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ANOKA COUNTY  
 MISCELLANEOUS DRAINAGE PROFILES  
 C.S.A.H. 14

SHEET  
 204  
 OF  
 492

B.M. ELEV. = 932.07  
 DISK IN NORTHEAST WINGWALL  
 IN C.S.A.H. 14 BRIDGE OVER  
 I-35E



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 Date: 3/20/07 License #: 41635

STATE PROJECT NO.  
 S.P. 02-614-24, ETAL

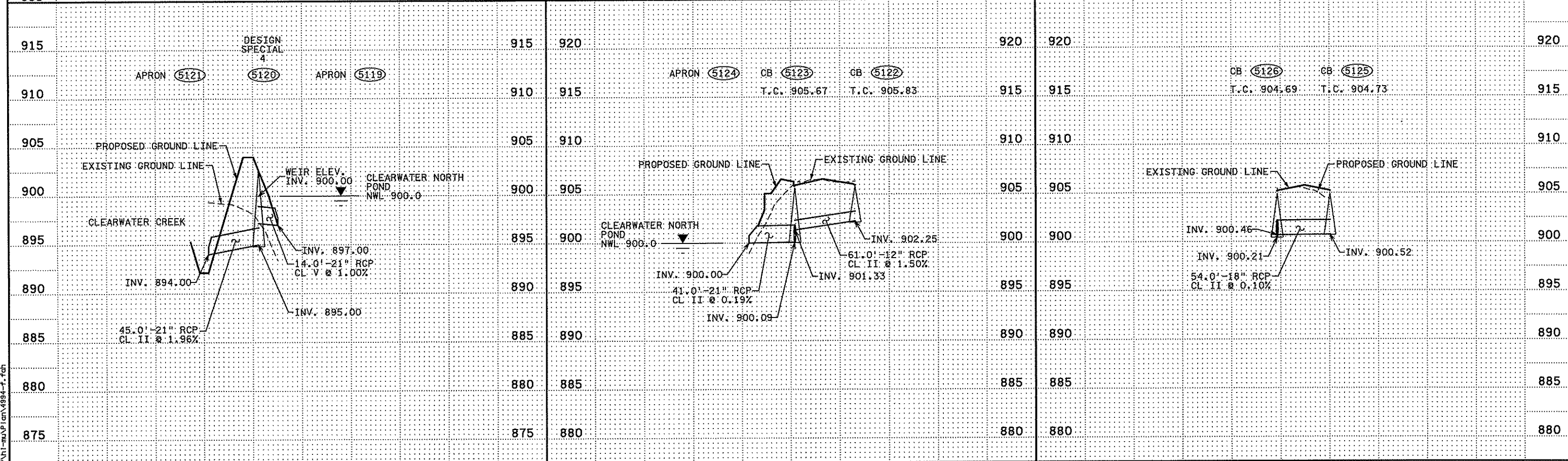
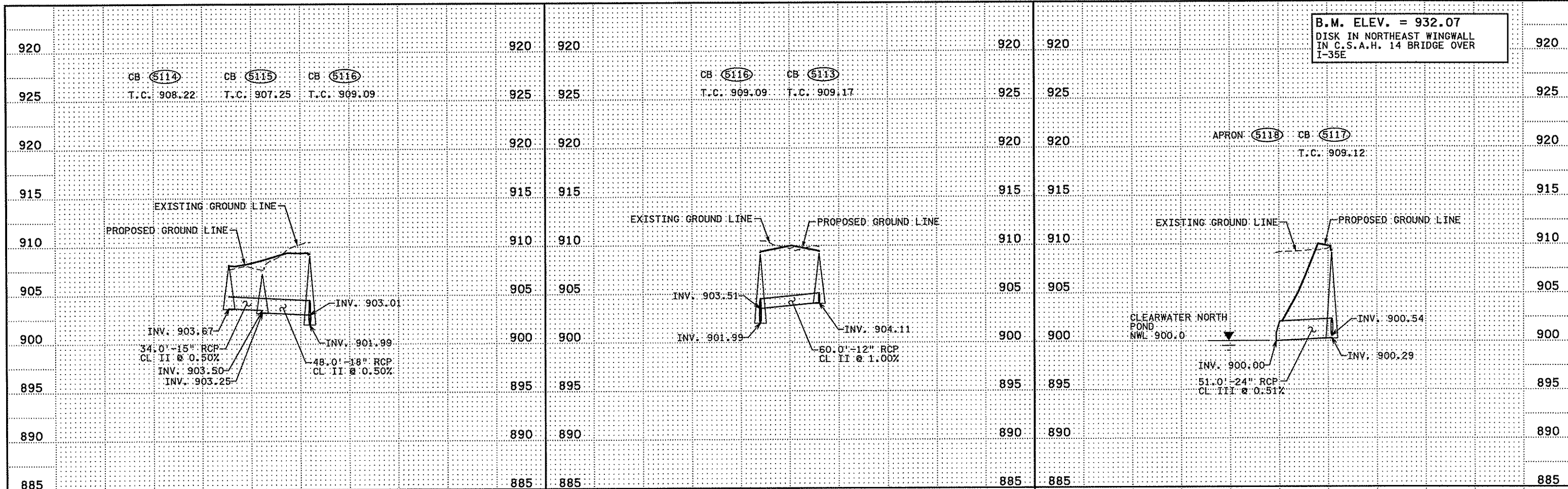
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 J. TOULOUSE  
 CHECKED BY  
 C. TRBOYEVICH  
 COMM. NO. 4994



ANOKA COUNTY  
 MISCELLANEOUS DRAINAGE PROFILES  
 C.S.A.H. 14

SHEET  
 205  
 OF  
 492

B.M. ELEV. = 932.07  
DISK IN NORTHEAST WINGWALL  
IN C.S.A.H. 14 BRIDGE OVER  
I-35E



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Print Name: CHRISTOPHER M. TRBOYEVICH  
*Christopher M. Trbojevich*  
Date: 3/26/07 License #: 41635

STATE PROJECT NO.  
S.P. 02-614-24, ETAL

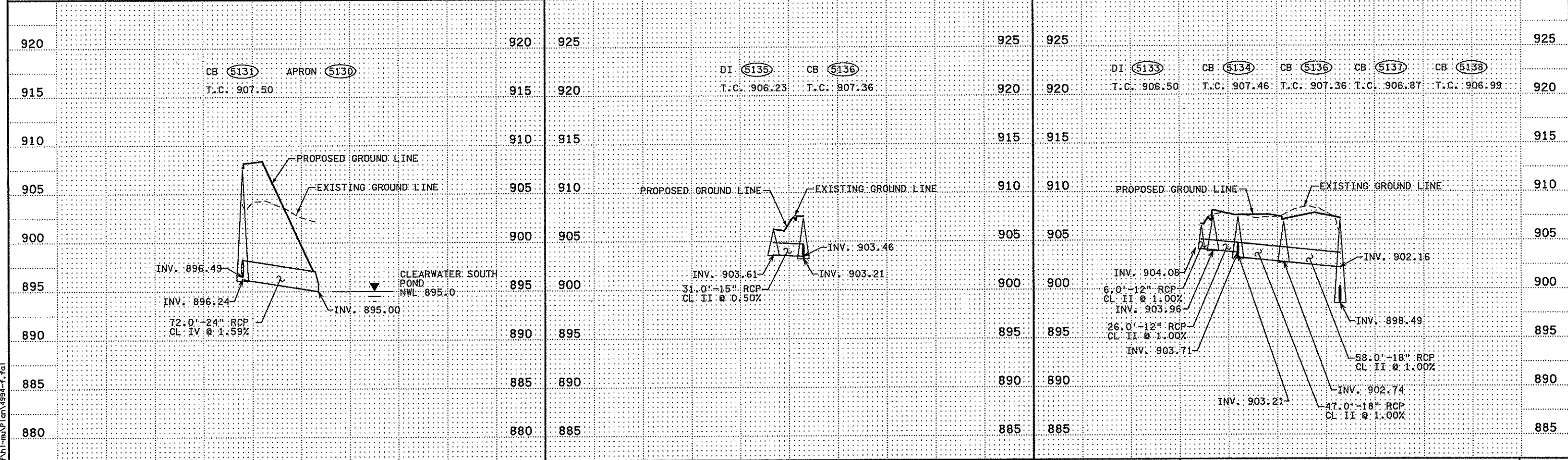
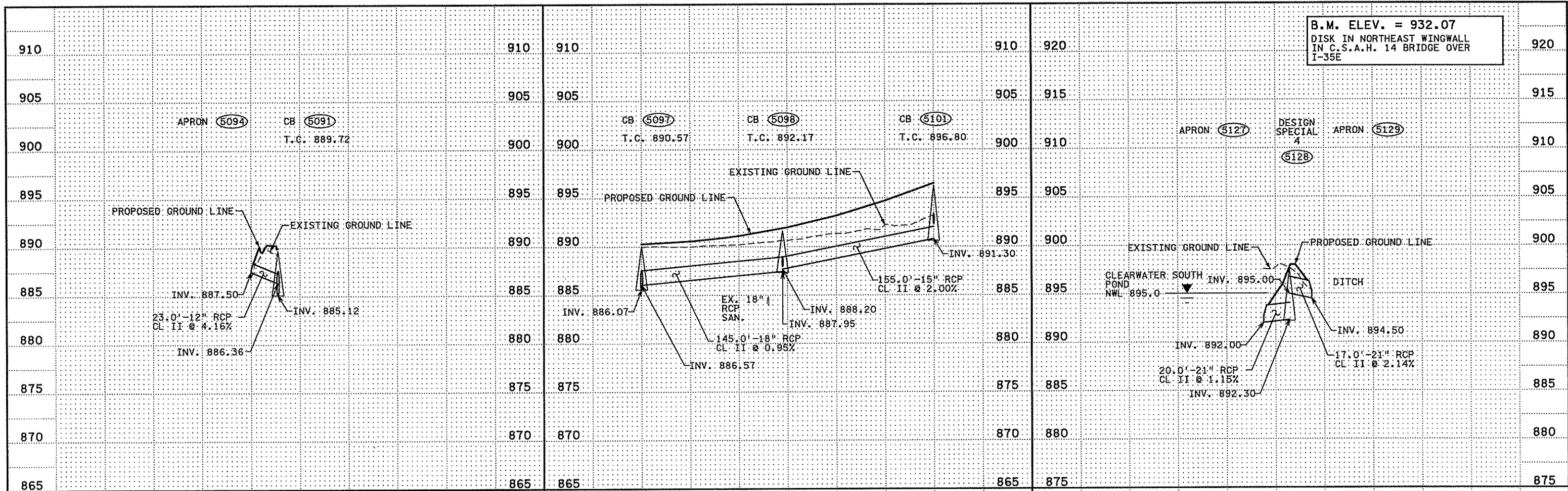
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COMM. NO. 4994



ANOKA COUNTY  
MISCELLANEOUS DRAINAGE PROFILES  
C.S.A.H. 14

SHEET  
206  
OF  
492

B.M. ELEV. = 932.07  
DISK IN NORTHEAST WINGWALL  
IN C.S.A.H. 14 BRIDGE OVER  
I-35E



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 Print Name: CHRISTOPHER M. TRBOYEVICH  
*Christopher M. Trbojevich*  
 Date: 5/26/07 License #: 41635

STATE PROJECT NO.  
S.P. 02-614-24, ETAL

DRAWN BY  
S. PERRAULT  
 DESIGNED BY  
J. TOULOUSE  
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C. TRBOYEVICH  
 COMM. NO. 4994

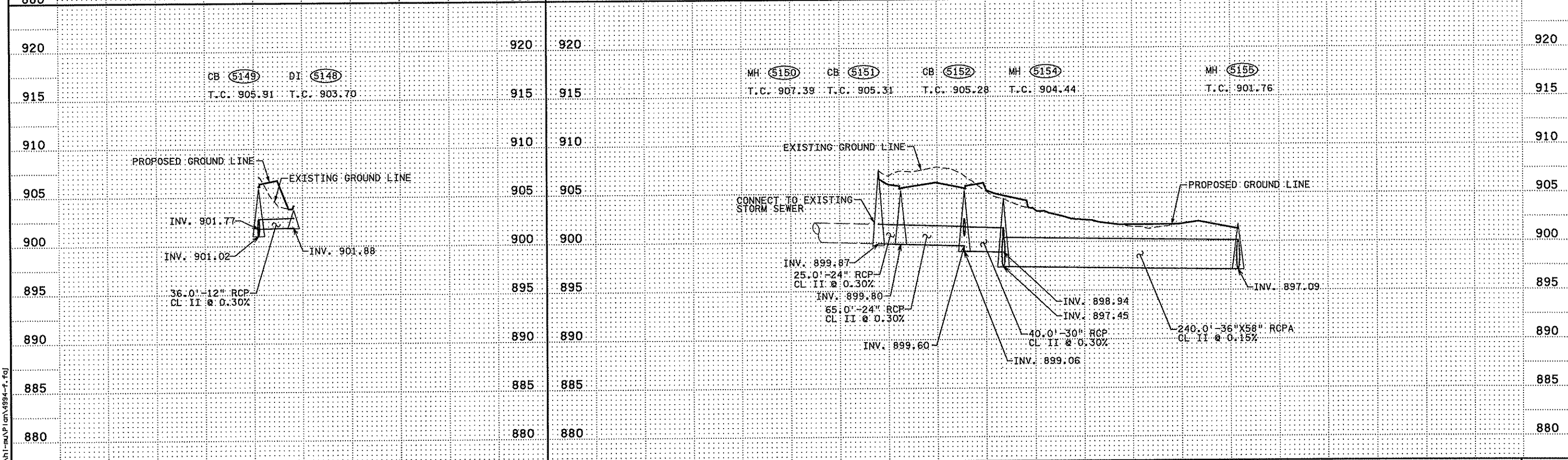
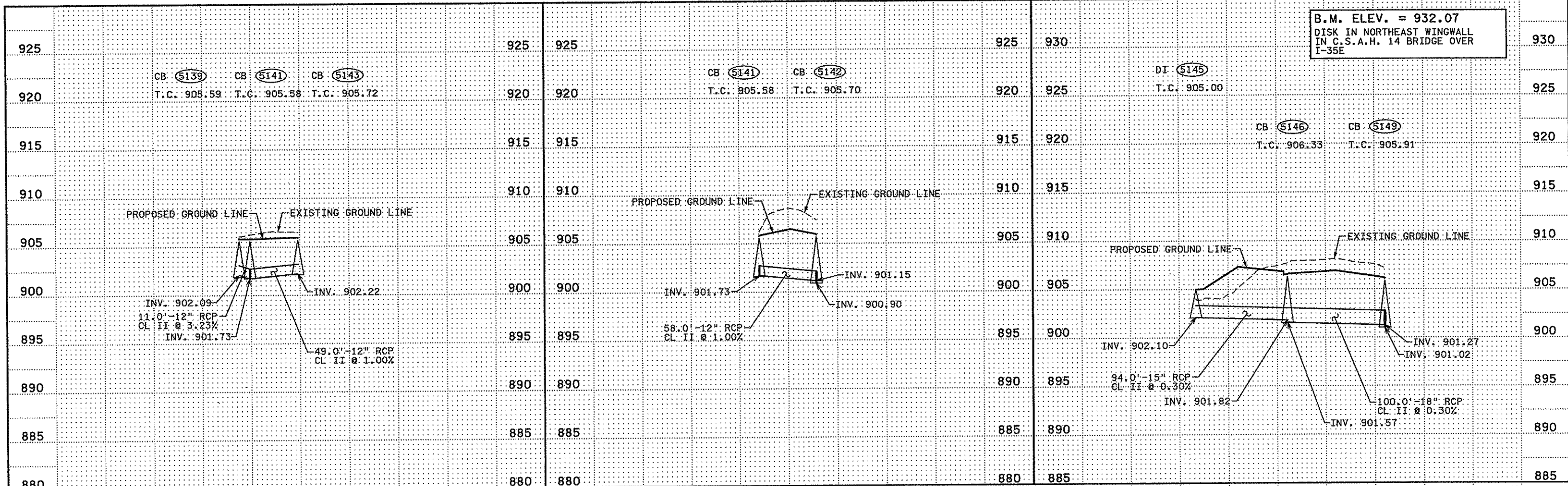


ANOKA COUNTY  
MISCELLANEOUS DRAINAGE PROFILES  
C.S.A.H. 14

SHEET  
207  
OF  
492



B.M. ELEV. = 932.07  
DISK IN NORTHEAST WINGWALL  
IN C.S.A.H. 14 BRIDGE OVER  
I-35E



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NO	DATE	BY	CKD	APPR	REVISION

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Print Name: CHRISTOPHER M. TRBOYEVICH  
*Christopher M. Trbojevich*  
Date: 3/26/07 License #: 41635

STATE PROJECT NO. S.P. 02-614-24, ETAL

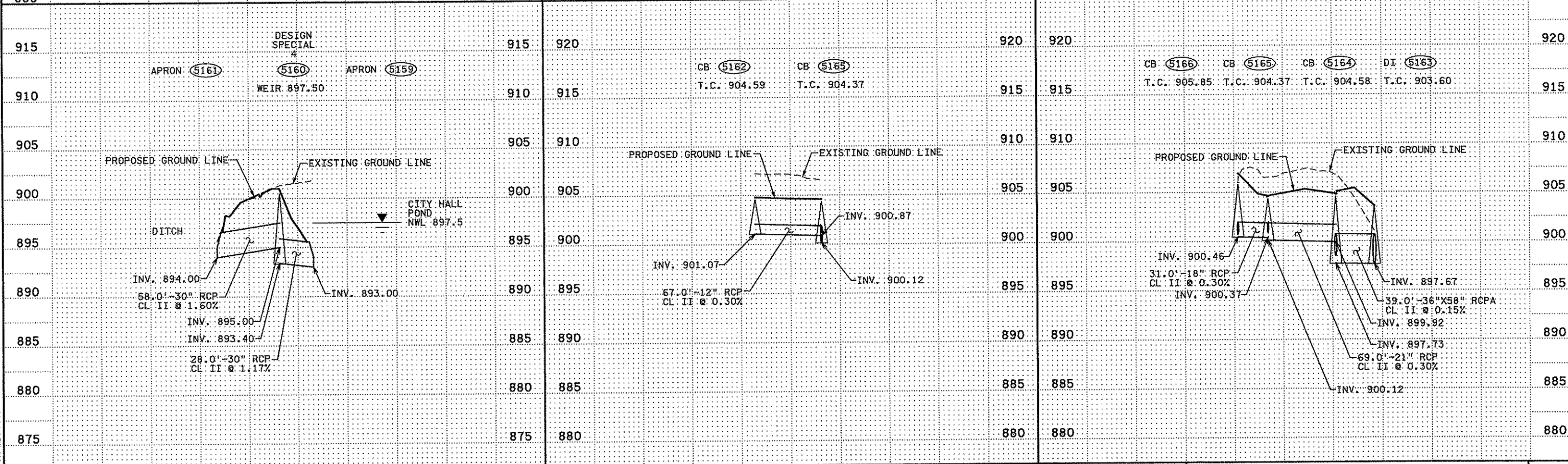
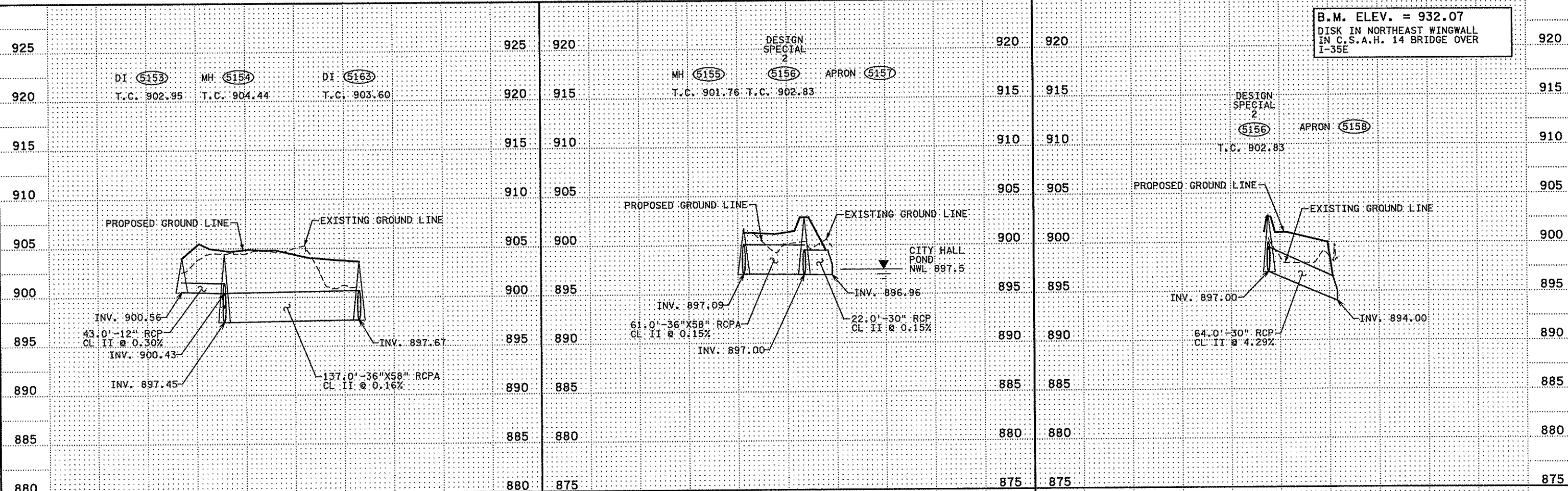
DRAWN BY S. PERRAULT  
DESIGNED BY J. TOULOUSE  
CHECKED BY C. TRBOYEVICH  
COMM. NO. 4994



ANOKA COUNTY  
MISCELLANEOUS DRAINAGE PROFILES  
C.S.A.H. 14

SHEET 208 OF 492

B.M. ELEV. = 932.07  
 DISK IN NORTHEAST WINGWALL  
 IN C.S.A.H. 14 BRIDGE OVER  
 I-35E



3/21/2007  
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NO	DATE	BY	CHKD	APPR	REVISION

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 Print Name: CHRISTOPHER M. TRBOYEVICH  
*Christopher M. Trbojevich*  
 Date: 3/26/07 License #: 41635

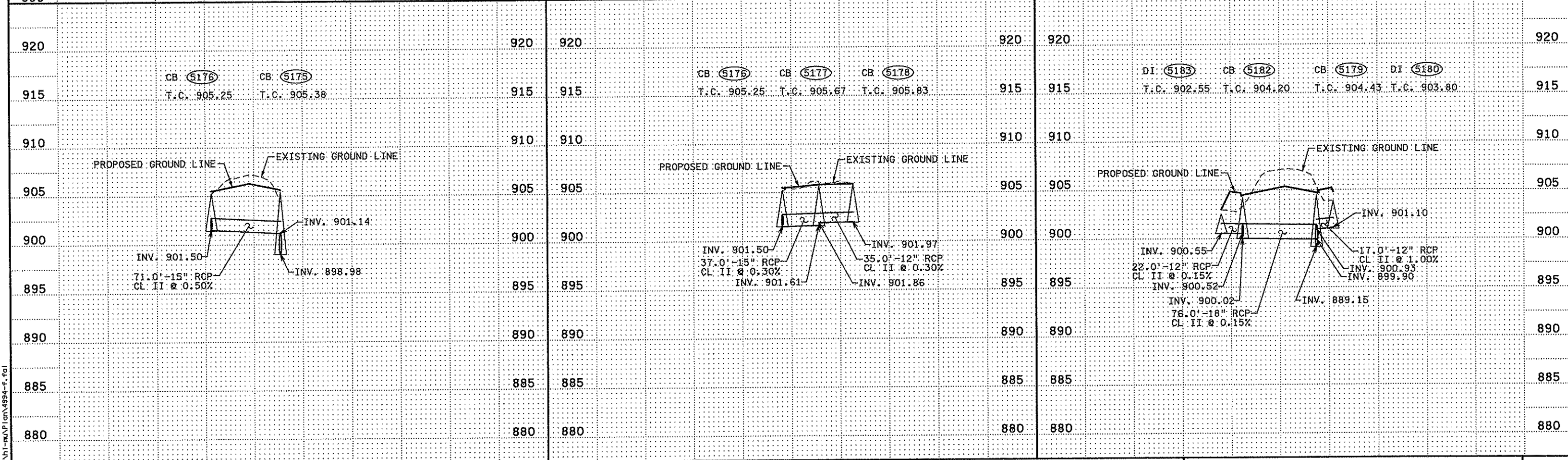
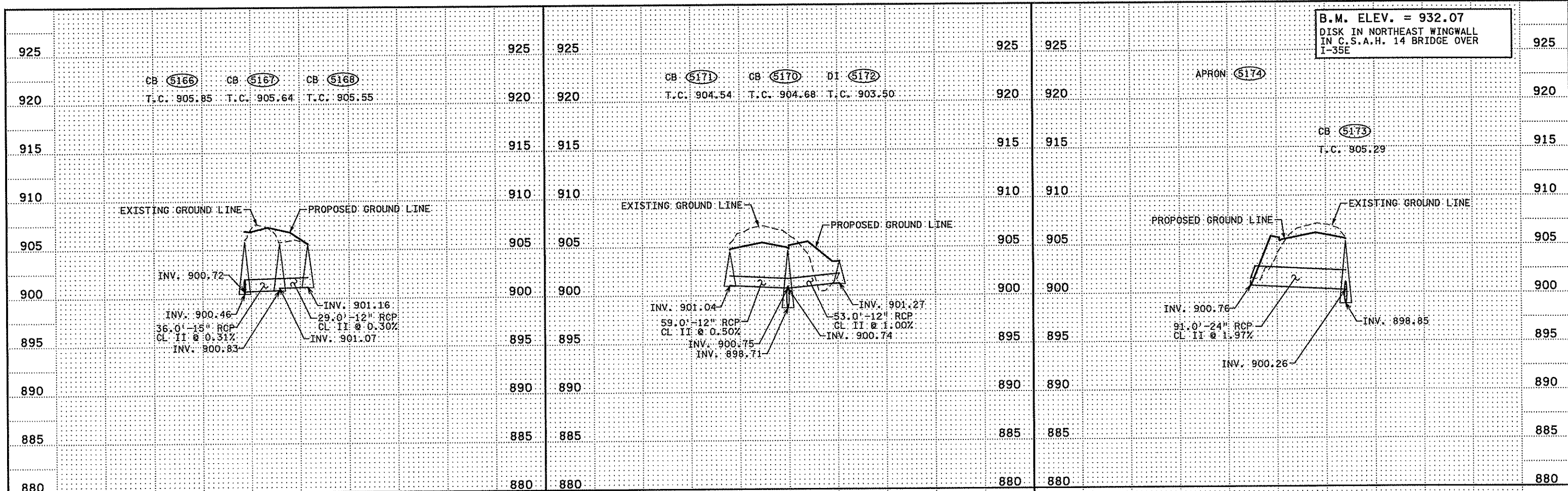
STATE PROJECT NO. S.P. 02-614-24, ETAL  
 DRAWN BY S. PERRAULT  
 DESIGNED BY J. TOULOUSE  
 CHECKED BY C. TRBOYEVICH  
 COMM. NO. 4994



ANOKA COUNTY  
 MISCELLANEOUS DRAINAGE PROFILES  
 C.S.A.H. 14

SHEET 209 OF 492

B.M. ELEV. = 932.07  
 DISK IN NORTHEAST WINGWALL  
 IN C.S.A.H. 14 BRIDGE OVER  
 I-35E



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 Print Name: CHRISTOPHER M. TRBOYEVICH  
*Christopher M. Trbojevich*  
 Date: 3/26/07 License #: 41635

STATE PROJECT NO. S.P. 02-614-24, ETAL

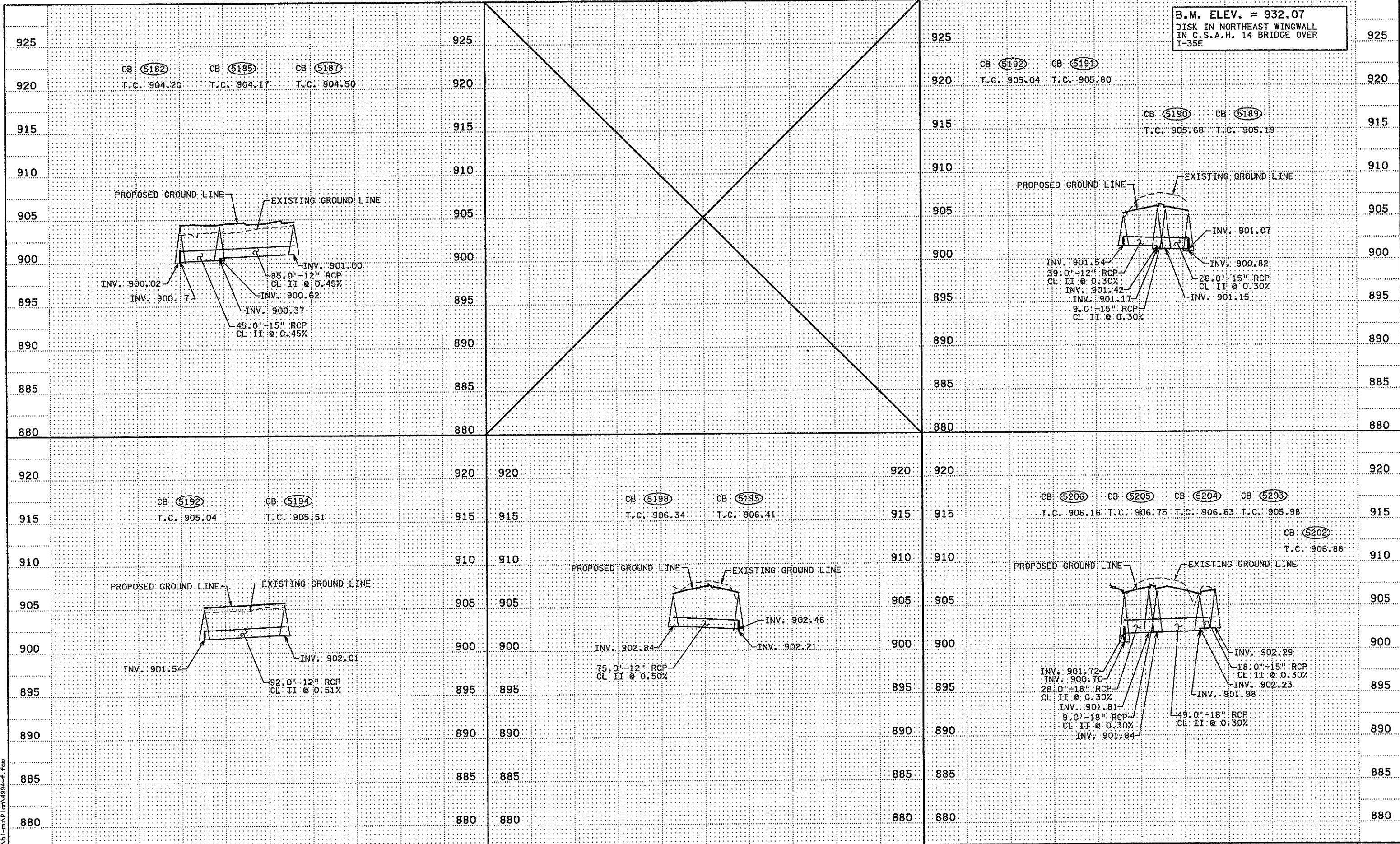
DRAWN BY S. PERRAULT  
 DESIGNED BY J. TOULOUSE  
 CHECKED BY C. TRBOYEVICH  
 COMM. NO. 4994



ANOKA COUNTY  
 MISCELLANEOUS DRAINAGE PROFILES  
 C.S.A.H. 14

SHEET 210 OF 492

B.M. ELEV. = 932.07  
DISK IN NORTHEAST WINGWALL  
IN C.S.A.H. 14 BRIDGE OVER  
I-35E



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NO	DATE	BY	CHKD	APPR	REVISION

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Print Name: CHRISTOPHER M. TRBOYEIVICH  
*Christopher M. Trbojevich*  
 Date: 3/26/07 License #: 41635

STATE PROJECT NO. S.P. 02-614-24, ETAL

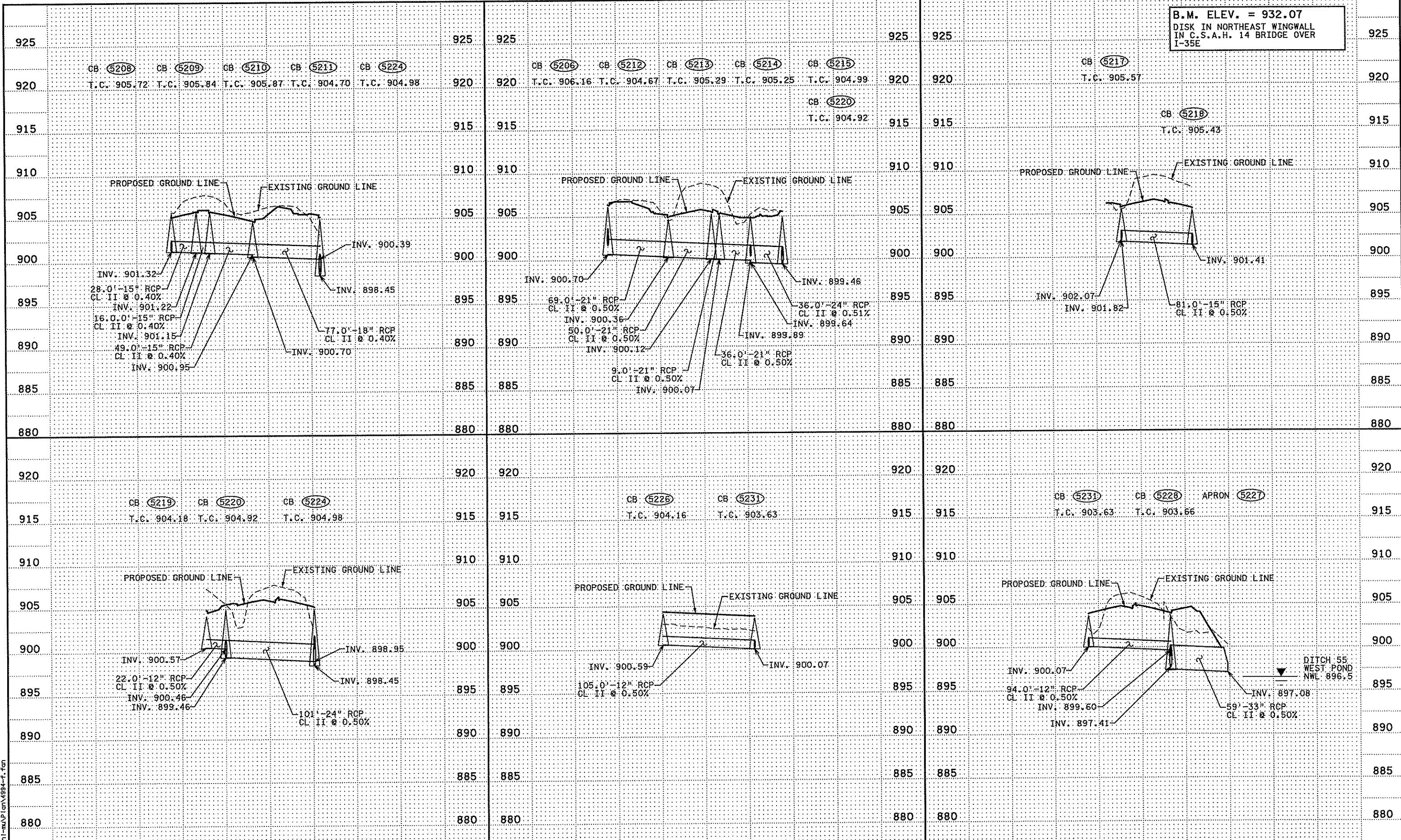
DRAWN BY S. FERRAULT  
 DESIGNED BY J. TOULOUSE  
 CHECKED BY C. TRBOYEIVICH  
 COMM. NO. 4994



ANOKA COUNTY  
 MISCELLANEOUS DRAINAGE PROFILES  
 C.S.A.H. 14

SHEET 211 OF 492

B.M. ELEV. = 932.07  
 DISK IN NORTHEAST WINGWALL  
 IN C.S.A.H. 14 BRIDGE OVER  
 I-35E



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Print Name: CHRISTOPHER M. TRBOYEVICH  
*Christopher M. Trbojevich*  
 Date: 3/26/07 License #: 41635

STATE PROJECT NO.  
 S.P. 02-614-24.ETAL

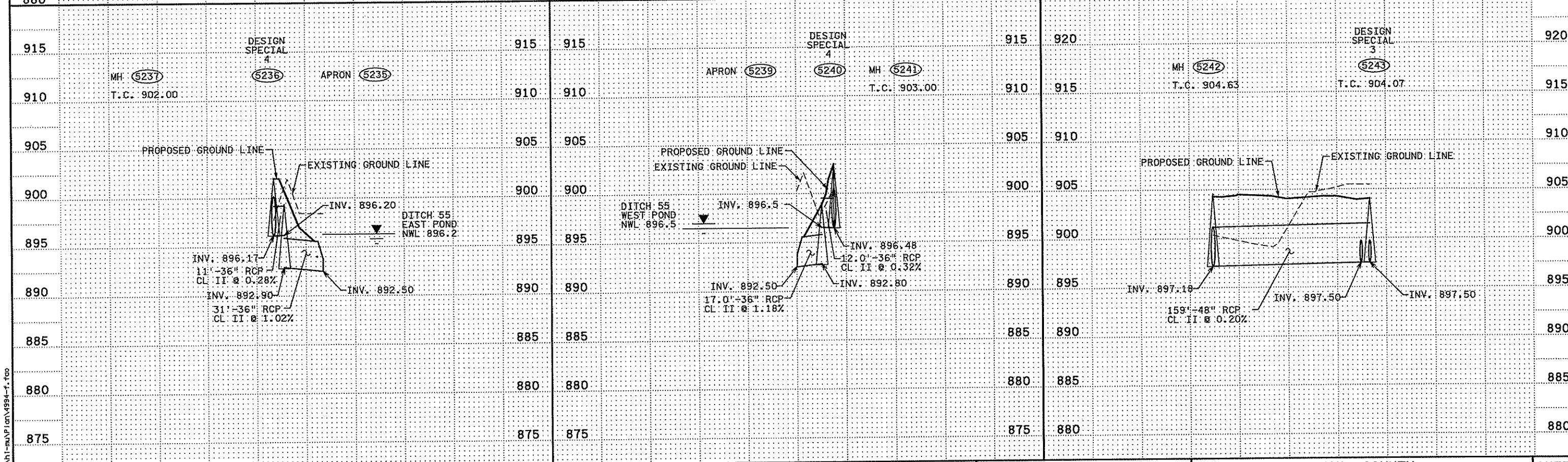
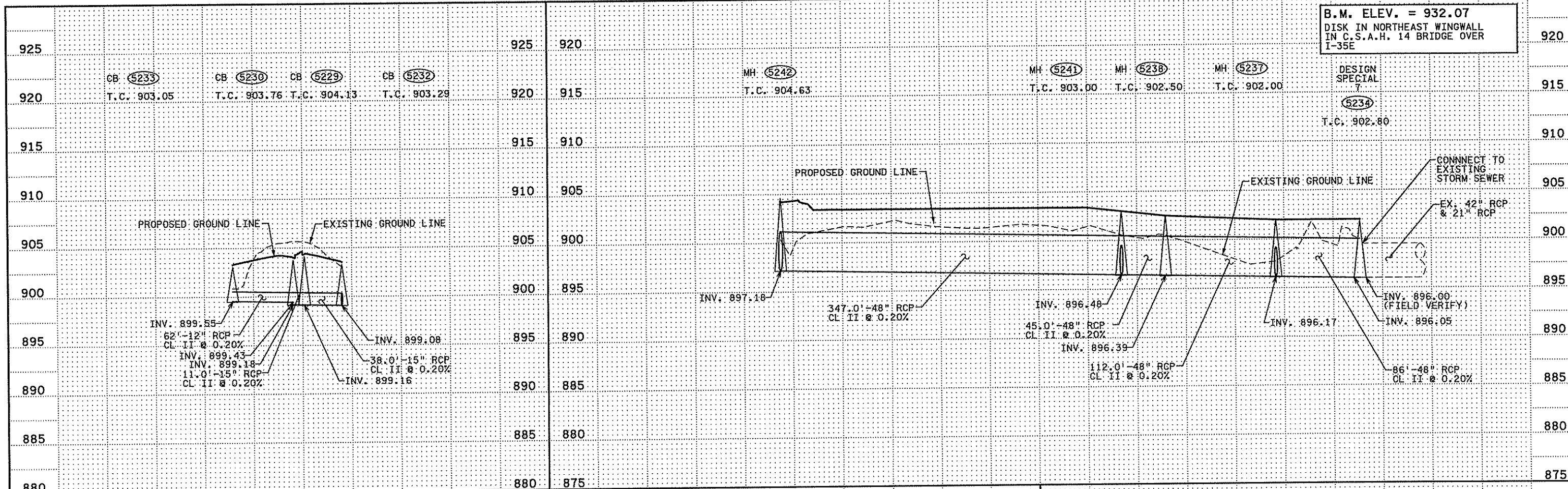
DRAWN BY  
 S. PERRAULT  
 DESIGNED BY  
 J. TOULOUSE  
 CHECKED BY  
 C. TRBOYEVICH  
 COMM. NO. 4994



ANOKA COUNTY  
 MISCELLANEOUS DRAINAGE PROFILES  
 C.S.A.H. 14

SHEET  
 212  
 OF  
 492

B.M. ELEV. = 932.07  
 DISK IN NORTHEAST WINGWALL  
 IN C.S.A.H. 14 BRIDGE OVER  
 I-35E



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NO	DATE	BY	CKD	APPR	REVISION

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 Print Name: CHRISTOPHER M. TRBOYEVICH  
*Christopher M. Trbojevich*  
 Date: 3/26/07 License #: 41635

STATE PROJECT NO.  
 S.P. 02-614-24, ETAL

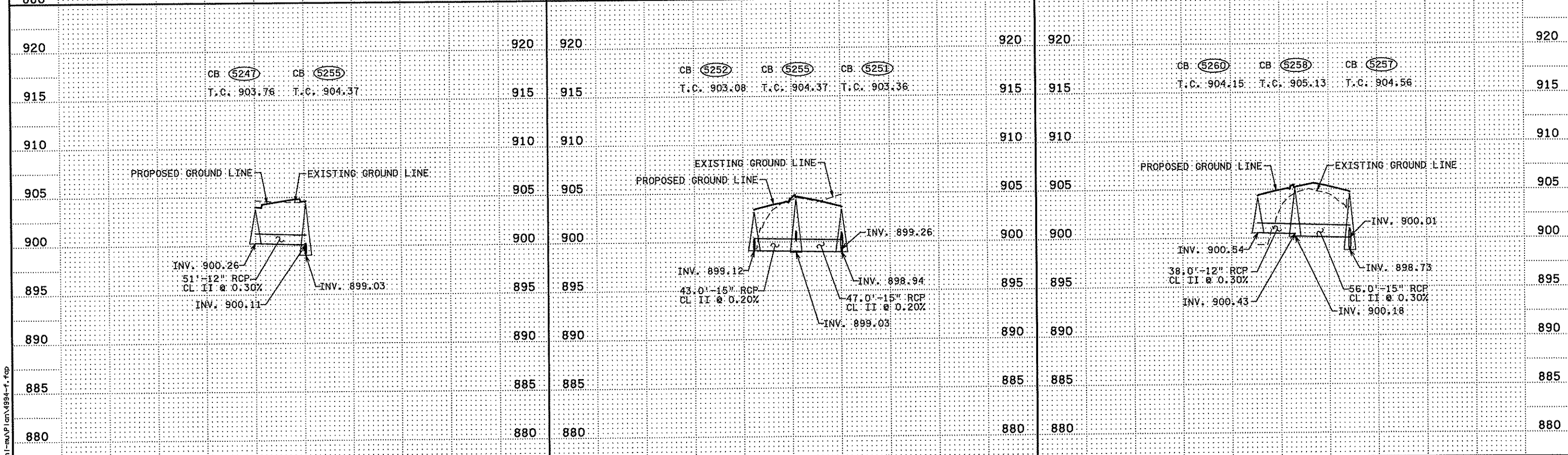
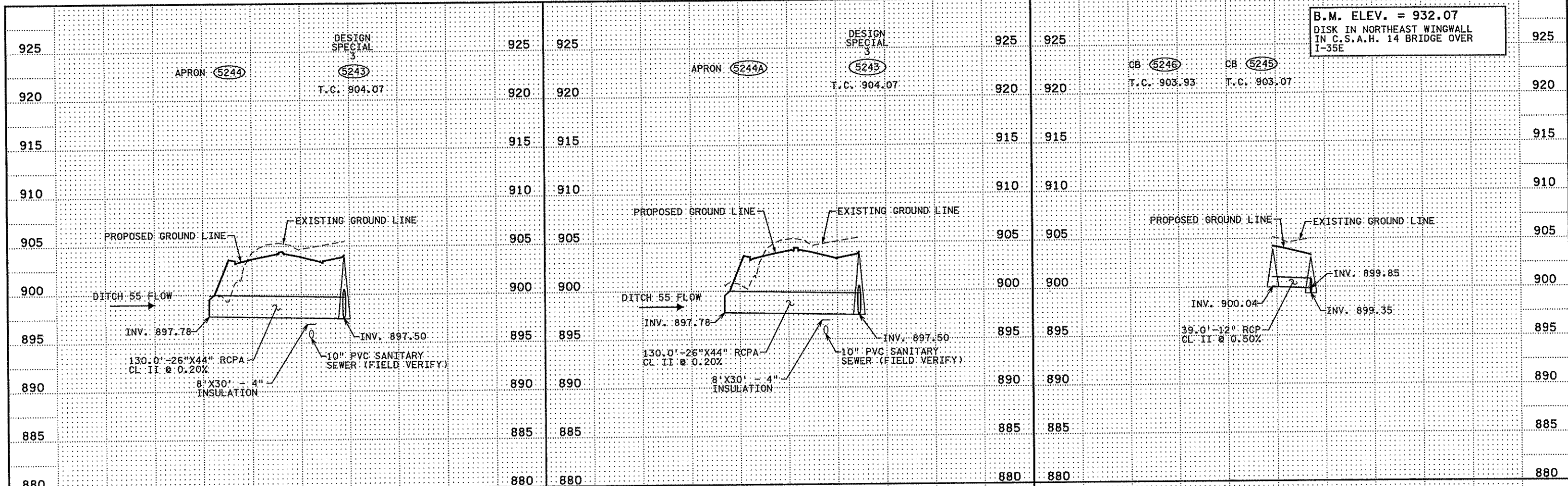
DRAWN BY  
 S. PERRALLI  
 DESIGNED BY  
 J. TOULOUSE  
 CHECKED BY  
 C. TRBOYEVICH  
 COMM. NO. 4994



ANOKA COUNTY  
 MISCELLANEOUS DRAINAGE PROFILES  
 C.S.A.H. 14

SHEET  
 213  
 OF  
 492

B.M. ELEV. = 932.07  
 DISK IN NORTHEAST WINGWALL  
 IN C.S.A.H. 14 BRIDGE OVER  
 I-35E



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NO	DATE	BY	CKD	APPR	REVISION

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 Print Name: CHRISTOPHER M. TRBOYEVICH  
*Christopher M. Trbojevich*  
 Date: 3/26/07 License #: 41635

STATE PROJECT NO.  
 S.P. 02-614-24, ETAL

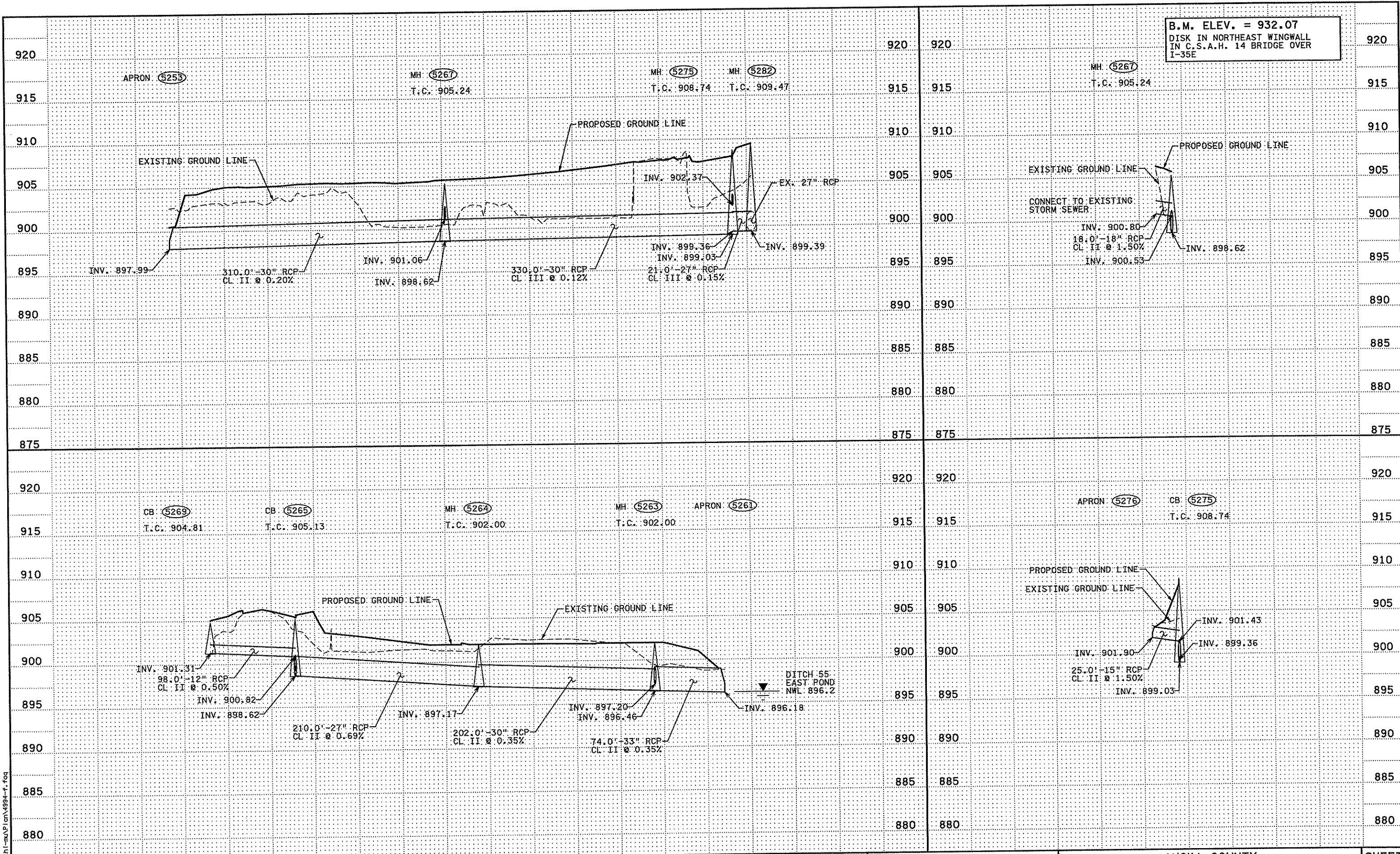
DRAWN BY  
 S. PERRAULT  
 DESIGNED BY  
 J. TOULOUSE  
 CHECKED BY  
 C. TRBOYEVICH  
 COMM. NO. 4994



ANOKA COUNTY  
 MISCELLANEOUS DRAINAGE PROFILES  
 C.S.A.H. 14

SHEET  
 214  
 OF  
 492

B.M. ELEV. = 932.07  
DISK IN NORTHEAST WINGWALL  
IN C.S.A.H. 14 BRIDGE OVER  
I-35E



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Print Name: CHRISTOPHER M. TRBOYEVICH  
*Christopher M. Trbojevich*  
Date: 3/26/07 License #: 41635

STATE PROJECT NO.  
S.P. 02-614-24, ETAL

DRAWN BY  
S. PERRAULT  
DESIGNED BY  
J. TOULOUSE  
CHECKED BY  
C. TRBOYEVICH  
COMM. NO. 4994



ANOKA COUNTY  
MISCELLANEOUS DRAINAGE PROFILES  
C.S.A.H. 14

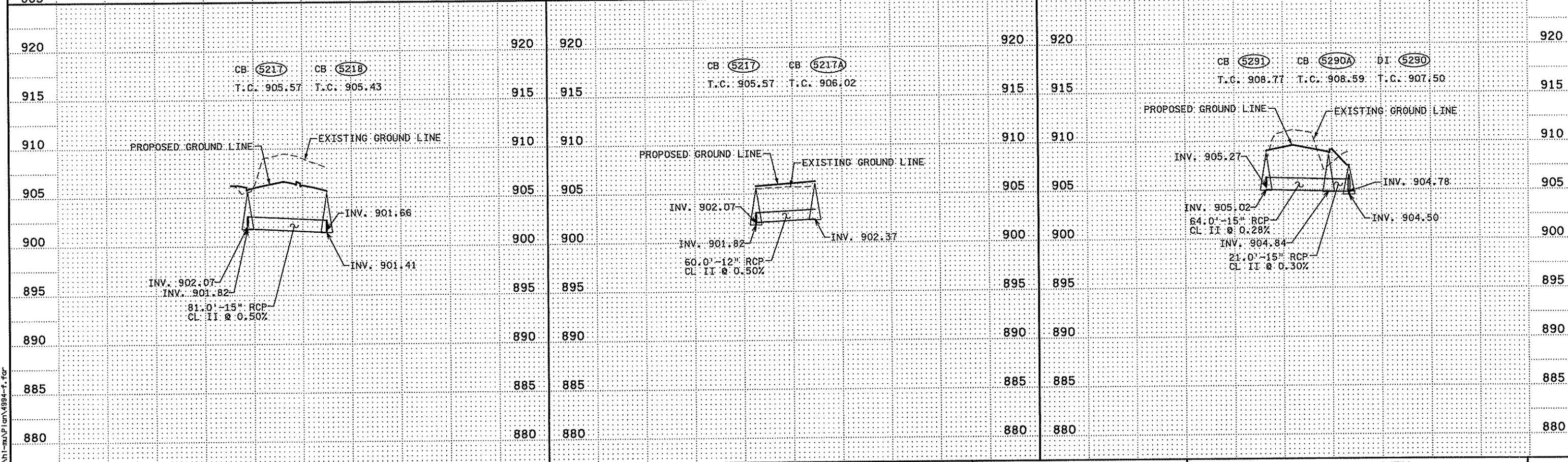
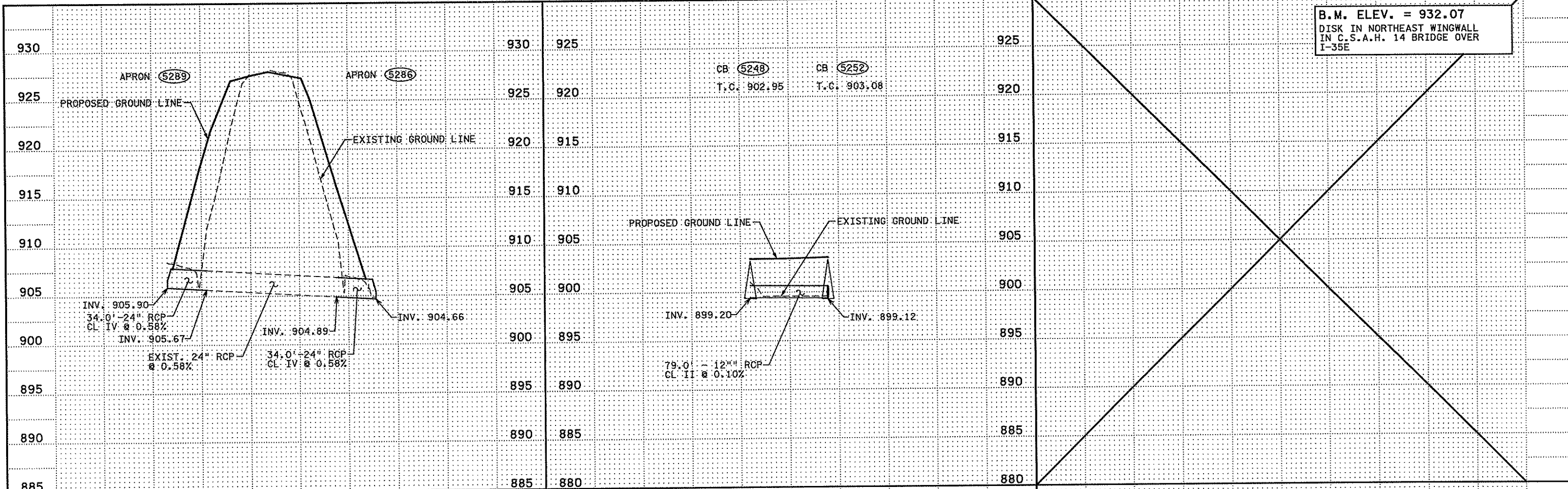
SHEET  
215  
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492

NO	DATE	BY	CKD	APPR	REVISION

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B.M. ELEV. = 932.07  
DISK IN NORTHEAST WINGWALL  
IN C.S.A.H. 14 BRIDGE OVER  
I-35E



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NO	DATE	BY	CHK	APPR	REVISION

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.  
Print Name: CHRISTOPHER M. TRBOYEVICH  
*Christopher M. Trbojevich*  
Date: 3/26/07 License #: 41635

STATE PROJECT NO.  
S.P. 02-614-24, ETAL

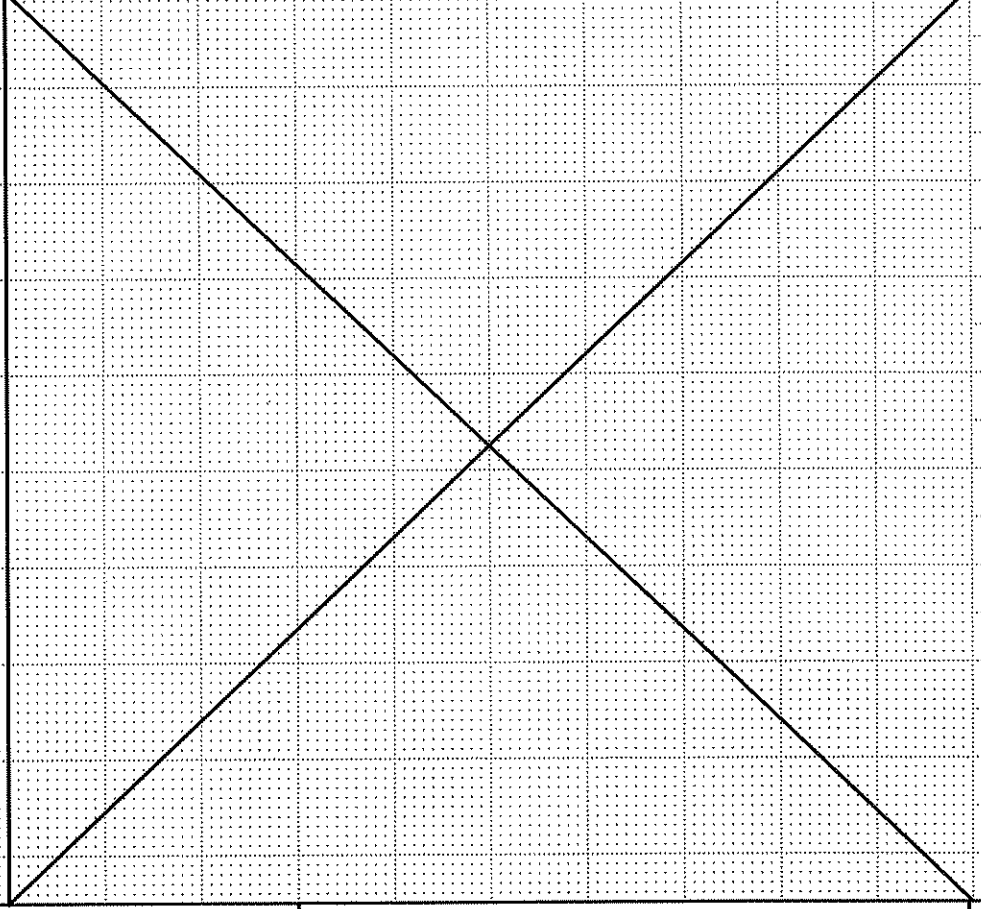
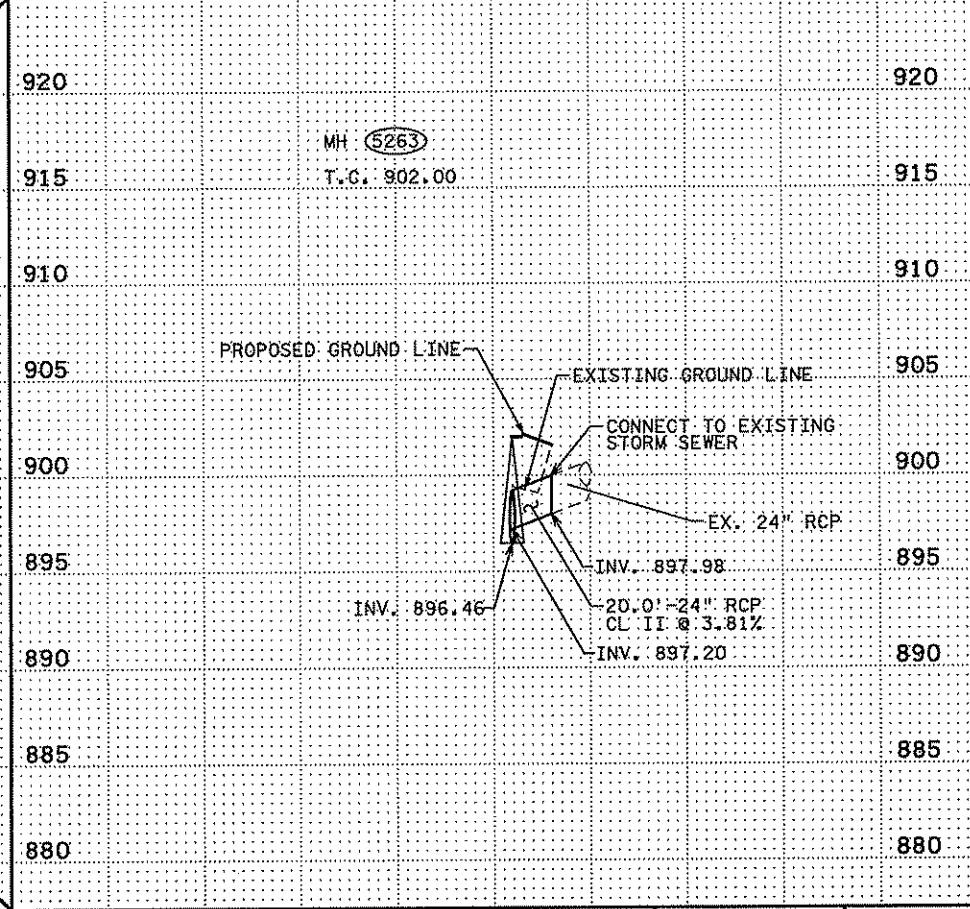
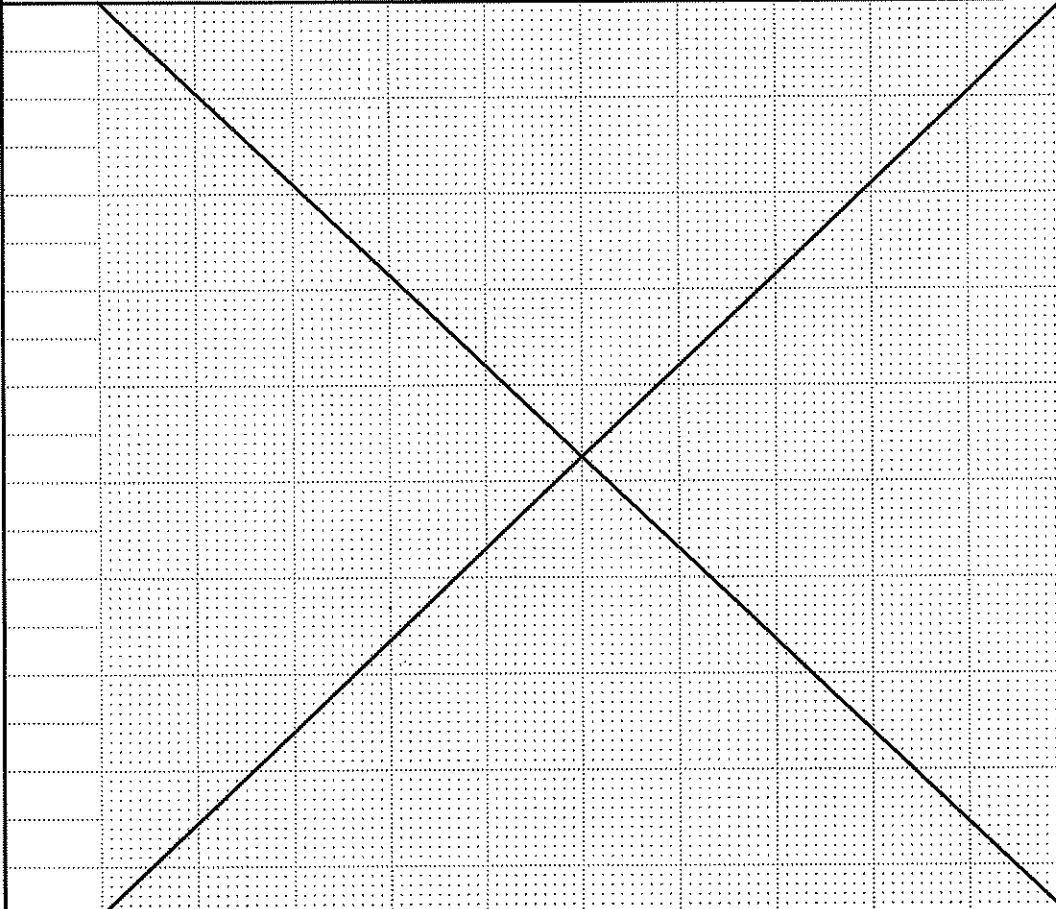
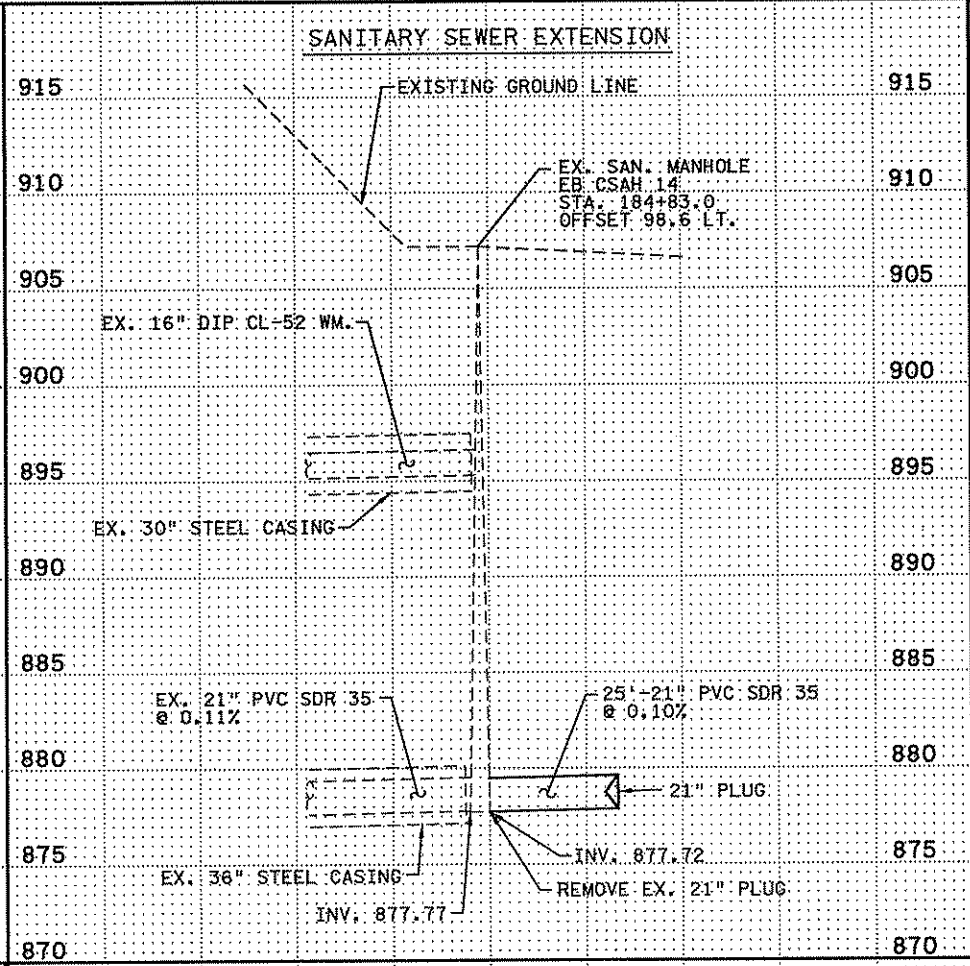
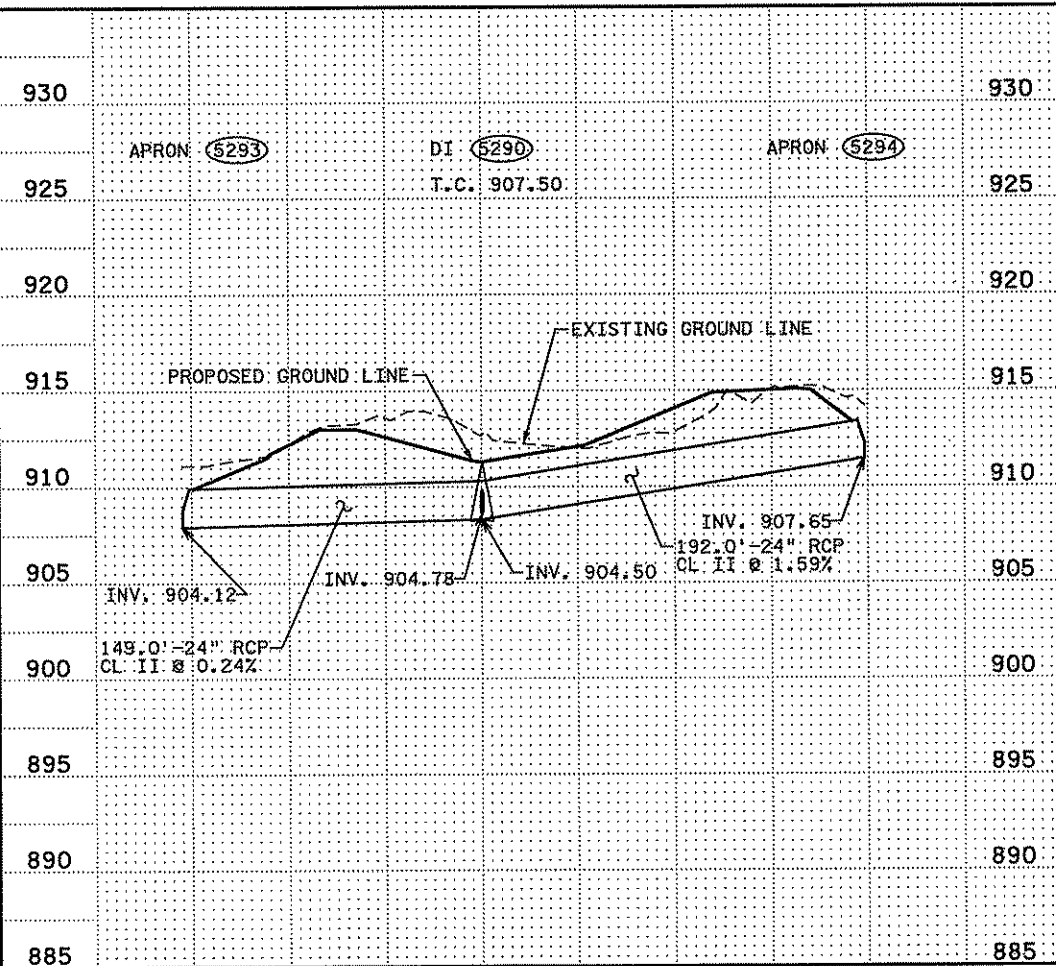
DRAWN BY  
S. PERRAULT  
DESIGNED BY  
J. TOULOUSE  
CHECKED BY  
C. TRBOYEVICH  
COMM. NO. 4994



ANOKA COUNTY  
MISCELLANEOUS DRAINAGE PROFILES  
C.S.A.H. 14

SHEET  
216  
OF  
492

B.M. ELEV. = 932.07  
 DISK IN NORTHEAST WINGWALL  
 IN C.S.A.H. 14 BRIDGE OVER  
 I-35E



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NO	DATE	BY	CKD	APPR	REVISION

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

Print Name: **CHRISTOPHER M. TRBOYEVICH**  
*Christopher M. Trbojevich*  
 Date: 3/26/07 License #: 41635

STATE PROJECT NO. S.P. 02-614-24, ETAL

DRAWN BY S. PERRAULT  
 DESIGNED BY J. TOULOUSE  
 CHECKED BY C. TRBOYEVICH  
 COMM. NO. 4994



ANOKA COUNTY  
 MISCELLANEOUS DRAINAGE PROFILES  
 C.S.A.H. 14

SHEET 217 OF 492



(LL)

DRAINAGE TABULATION CONT.

Main data table with columns for STR. OR APRON INLET POINT NO., STRUCTURE LOCATION (A), STR. OR APRON OUTLET POINT NO., NEW STRUCTURE CONSTRUCTION, RC PIPE ARCH (DESIGN 3014), CORRUGATED METAL PIPE, SEWER TRENCH, SOD, RIP RAP, GUIDE POSTS, and FOOTNOTES.

SEE PAGE 230 FOR DRAINAGE NOTES

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Table with columns for NO, DATE, BY, CKD, APPR, and REVISION.

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

STATE PROJECT NO. S.P. 02-614-24, ETAL

DRAWN BY J. TOULOUSE DESIGNED BY J. TOULOUSE CHECKED BY C. TRBOYE VICH COMM. NO. 4994



ANOKA COUNTY DRAINAGE TABULATIONS C.S.A.H. 14 SHEET 219 OF 492





(LL)

DRAINAGE TABULATION CONT.

Table with columns: STR. OR APRON INLET POINT NO., STRUCTURE LOCATION (A), STR. OR APRON OUTLET POINT NO., NEW STRUCTURE CONSTRUCTION (DESIGN, PAY QUANTITY, CASTING ASSEMBLY, STEPS RE-QUIRED), RC PIPE (DESIGN 3006) (12" to 48" CL II, CL III, CL IV).

SEE PAGE 230 FOR DRAINAGE NOTES

3/21/03 PM 3:21/2007 in:\projects\4994-f\h1-mu\plan\4994-f.dre

Table with columns: NO, DATE, BY, CKD, APPR, REVISION.

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota. Print Name: CHRISTOPHER M. TRBOYEVICH Date: 3/26/07 License #: 41635

STATE PROJECT NO. S.P. 02-614-24, ETAL DRAWN BY J. TOULOUSE DESIGNED BY J. TOULOUSE CHECKED BY C. TRBOYEVICH COMM. NO. 4994



ANOKA COUNTY DRAINAGE TABULATIONS C.S.A.H. 14 SHEET 222 OF 492

(LL)

DRAINAGE TABULATION CONT.

Table with columns: STR. OR APRON INLET POINT NO., STRUCTURE LOCATION (A), STR. OR APRON OUTLET POINT NO., NEW STRUCTURE CONSTRUCTION, RC PIPE ARCH (DESIGN 3014), CORRUGATED METAL PIPE, SEWER TRENCH, SOD, RIP RAP, GUIDE POSTS, FOOTNOTES. Includes project subtotal row at the bottom.

SEE PAGE 230 FOR DRAINAGE NOTES

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Table with columns: NO, DATE, BY, CKD, APPR, REVISION. Includes a signature and date stamp for Christopher M. Trbojevich.

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. Print Name: CHRISTOPHER M. TRBOJEVICH Date: 3/26/09 License #: 41635

STATE PROJECT NO. S.P. 02-614-24, ETAL

DRAWN BY J. TOULOUSE DESIGNED BY J. TOULOUSE CHECKED BY C. TRBOJEVICH COMM. NO. 4994



ANOKA COUNTY DRAINAGE TABULATIONS C.S.A.H. 14

SHEET 223 OF 492



(LL)

DRAINAGE TABULATION CONT.

Table with columns: STR. OR APRON INLET POINT NO., STRUCTURE LOCATION (A), STR. OR APRON OUTLET POINT NO., NEW STRUCTURE CONSTRUCTION (DESIGN, PAY QUANTITY, CASTING ASSEMBLY, STEPS RE-QUIRED), RC PIPE (DESIGN 3006) with various pipe sizes and types.

SEE PAGE 230 FOR DRAINAGE NOTES

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Table with columns: NO, DATE, BY, CKD, APPR, REVISION

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STATE PROJECT NO. S.P. 02-614-24, ETAL

DRAWN BY J. TOULOUSE DESIGNED BY J. TOULOUSE CHECKED BY C. TRBOYEIVICH COMM. NO. 4994



ANOKA COUNTY DRAINAGE TABULATIONS C.S.A.H. 14 SHEET 224 OF 492



(LL)

DRAINAGE TABULATION CONT.

Table with columns: STR. OR APRON INLET POINT NO., STRUCTURE LOCATION (A), STR. OR APRON OUTLET POINT NO., NEW STRUCTURE CONSTRUCTION (DESIGN, PAY QUANTITY, CASTING ASSEMBLY, STEPS RE-QUIRED), RC PIPE (DESIGN 3006) (12" to 48" CL II, CL III, CL IV, CL V).

SEE PAGE 230 FOR DRAINAGE NOTES

3/21/2007 ...4994-f\h1-mu\p\an\4994-f.dri

Table with columns: NO, DATE, BY, CKD, APPR, REVISION

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota. Print Name: CHRISTOPHER M. TRBOYEVICH Date: 3/26/07 License #: 41635

STATE PROJECT NO. S.P. 02-614-24, ETAL

DRAWN BY J. TOULOUSE DESIGNED BY J. TOULOUSE CHECKED BY C. TRBOYEVICH COMM. NO. 4994



ANOKA COUNTY DRAINAGE TABULATIONS C.S.A.H. 14 SHEET 226 OF 492

(LL)

DRAINAGE TABULATION CONT.

Table with columns: STR. OR APRON INLET POINT NO., STRUCTURE LOCATION (A), STR. OR APRON OUTLET POINT NO., NEW STRUCTURE CONSTRUCTION (DESIGN, QUANTITY, CASTING ASSEMBLY TYPE, STEPS RE-REQUIRED), RC PIPE ARCH (DESIGN 3014) (18" X 28", 26" X 44", 36" X 58", 77" X 122"), CORRUGATED METAL PIPE (18", 21", 24", 33", 36"), SEWER TRENCH CL. "B" BEDDING, SOD TYPE EROSION (I), RIP RAP CLASS III (L), GUIDE POSTS TYPE B, and FOOTNOTES. Includes a PROJECT SUBTOTAL row at the bottom of the table.

SEE PAGE 230 FOR DRAINAGE NOTES

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. Print Name: CHRISTOPHER M. TRBOYEVICH Date: 3/26/02 License # 41635

STATE PROJECT NO. S.P. 02-614-24, ETAL

DRAWN BY J. TOULOUSE, DESIGNED BY J. TOULOUSE, CHECKED BY C. TRBOYEVICH, COMM. NO. 4994



ANOKA COUNTY DRAINAGE TABULATIONS C.S.A.H. 14

SHEET 227 OF 492

Table with columns: NO, DATE, BY, CKD, APPR, REVISION

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(LL)

DRAINAGE TABULATION CONT.

STR. OR APRON INLET POINT NO.	STRUCTURE LOCATION (A)				STR. OR APRON OUTLET POINT NO.	NEW STRUCTURE CONSTRUCTION			RC PIPE (DESIGN 3006)																															
	ALIGNMENT NAME	STATION	OFFSET FT	L / R		DESIGN (B)	PAY QUANTITY LIN FT	CASTING ASSEMBLY (C) TYPE	STEPS RE-REQUIRED (D)	12"		15"		18"		21"		21"		21"		24"		24"		27"		27"		30"		30"		33"		36"		48"		
										CL II	L.F.	CL II	L.F.	CL III	L.F.	CL II	L.F.	CL II	L.F.	CL III	L.F.	CL II	L.F.	CL II	L.F.	CL III	L.F.	CL II	L.F.	CL III	L.F.	CL II	L.F.	CL III	L.F.	CL II	L.F.	CL III	L.F.	CL II
5303	C.S.A.H. 54	309+00.00	56.0	L	5304	N	1.9	M - 11	52																															
5304	C.S.A.H. 54	308+42.00	56.0	L		APRON				1																														
5305	C.S.A.H. 54	305+10.00	50.0	L	5306	APRON																																		
5306	C.S.A.H. 54	305+00.00	38.5	L	5307	G	2.7	A - 7D																																
5307	C.S.A.H. 54	304+69.63	39.0	L		G	3.8	A - 7D																																
5007A	E.B. C.S.A.H. 14	29+02.00	107.0	R	5008A	APRON																																		
5008A	E.B. C.S.A.H. 14	29+83.00	107.0	R		APRON																																		
5058A	E.B. C.S.A.H. 14	103+25.00	52.8	R		DES. SPEC. 5																																		
5095A	E.B. C.S.A.H. 14	122+60.00	45.0	L	5099	APRON				56	1																													
5126A	E.B. C.S.A.H. 14	141+35.00	28.0	L	5126	H	3.9	B - 5				10																												
5207A	C.S.A.H. 54	311+00.00	37.0	L	5208	G	3.9	B - 5				88																												
5217A	C.S.A.H. 54	315+50.00	37.0	L	5217	H	3.6	B - 5		60																														
5218A	C.S.A.H. 54	315+50.00	44.0	R	5218	G	3.8	B - 5		60																														
5244A	E.B. C.S.A.H. 14	176+75.25	90.0	L	5243	APRON																																		
5290A	C.S.A.H. 54	318+05.00	36.4	R	5290	G	3.7	B - 5			21																													
PROJECT SUBTOTAL									228	2	119			39	1																									
PROJECT TOTALS									3877	8	2566	4	160	2113	2	660	3	276	200	14	1	1411	11	153	2	140	3	323	1	231	1286	5	330	601	3	71	2	749		

SEE PAGE 230 FOR DRAINAGE NOTES

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NO	DATE	BY	CKD	APPR	REVISION

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Print Name: CHRISTOPHER M. TRBOYEVICH  
*Christopher M. Trbojevich*  
 Date: 3/26/07 License #: 41635

STATE PROJECT NO.  
S.P. 02-614-24, ETAL

DRAWN BY  
J. TOULOUSE

DESIGNED BY  
J. TOULOUSE

CHECKED BY  
C. TRBOYEVICH

COMM. NO. 4994



ANOKA COUNTY  
DRAINAGE TABULATIONS  
C.S.A.H. 14

SHEET  
228  
OF  
492

(LL)

DRAINAGE TABULATION CONT.

STR. OR APRON INLET POINT NO.	STRUCTURE LOCATION (A)				STR. OR APRON OUTLET POINT NO.	NEW STRUCTURE CONSTRUCTION				RC PIPE ARCH (DESIGN 3014)				CORRUGATED METAL PIPE					SEWER TRENCH	SOD	RIP RAP	GUIDE POSTS	FOOTNOTES							
	ALIGNMENT NAME	STATION	OFFSET FT	L / R		DESIGN (B)	PAY QUANTITY LIN FT	CASTING ASSEMBLY (C) TYPE	STEPS RE-REQUIRED (D)	18" X 28" CL II		26" X 44" CL II		36" X 58" CL II		77" X 122" CL II		18"	21"	24"	33"	36"		CL. "B" BEDDING	TYPE EROSION (I)	CLASS III (L)	TYPE B			
										L.F.	APR	L.F.	APR	L.F.	APR	L.F.	APR	L.F.	APR	L.F.	APR	L.F.		APR	L.F.	APR	L.F.	APR	L.F.	APR
5303	C.S.A.H. 54	309+00.00	56.0	L	5304	N	1.9	M - 11															10.0		1					
5304	C.S.A.H. 54	308+42.00	56.0	L		APRON																		4.1	1	(G), (K)				
5305	C.S.A.H. 54	305+10.00	50.0	L	5306	APRON																	10.0		1	(G), (K)				
5306	C.S.A.H. 54	305+00.00	38.5	L	5307	G	2.7	A - 7D																						
5307	C.S.A.H. 54	304+69.63	39.0	L		G	3.8	A - 7D																						
5007A	E.B. C.S.A.H. 14	29+02.00	107.0	R	5008A	APRON																	71	1	28.0	1				
5008A	E.B. C.S.A.H. 14	29+83.00	107.0	R		APRON																		1	1	16.3	1			
5058A	E.B. C.S.A.H. 14	103+25.00	52.8	R		DES. SPEC. 5																								
5095A	E.B. C.S.A.H. 14	122+60.00	45.0	L	5099	APRON																				8.0	1	(G), (K)		
5126A	E.B. C.S.A.H. 14	141+35.00	28.0	L	5126	H	3.9	B - 5																						
5207A	C.S.A.H. 54	311+00.00	37.0	L	5208	G	3.9	B - 5																						
5217A	C.S.A.H. 54	315+50.00	37.0	L	5217	H	3.6	B - 5																						
5218A	C.S.A.H. 54	315+50.00	44.0	R	5218	G	3.8	B - 5																						
5244A	E.B. C.S.A.H. 14	176+75.25	90.0	L	5243	APRON					130	1																		
5290A	C.S.A.H. 54	318+05.00	36.4	R	5290	G	3.7	B - 5																11		29.0	1	(G), (L), (M)		
<b>PROJECT SUBTOTAL</b>																														
<b>PROJECT TOTALS</b>									14	1	866	2	477	64			318	9	151	4	97	4	138	2	181	6	156	640.0	338.1	87

SEE PAGE 230 FOR DRAINAGE NOTES

3:12:52 PM 3/21/2007

NO	DATE	BY	CKD	APPR	REVISION

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.  
 Print Name: CHRISTOPHER M. TRBOYEVICH  
*Christopher M. Trbojevich*  
 Date: 3/26/07 License #: 41635

STATE PROJECT NO. S.P. 02-614-24, ETAL  
 DRAWN BY J. TOULOUSE  
 DESIGNED BY J. TOULOUSE  
 CHECKED BY C. TRBOYEVICH  
 COMM. NO. 4994



ANOKA COUNTY  
 DRAINAGE TABULATIONS  
 C.S.A.H. 14

SHEET  
 229  
 OF  
 492

NOTES:

GENERAL NOTE: PIPE LENGTH IN PROFILE DOES NOT INCLUDE APRON LENGTH.

- (A) STATIONS, OFFSETS, AND ELEVATIONS ARE GIVEN TO:  
 - END OF APRON (RCP CULVERT)  
 - CENTER OF GRATE

- (B) THE FOLLOWING DESIGNATIONS ARE USED IN THE TABULATIONS TO INDICATE THE DESIGN OF DRAINAGE STRUCTURE TO BE USED:
- DES. SPEC. 1 SEE DRAINAGE DETAILS SHEET 231
  - DES. SPEC. 2 SEE DRAINAGE DETAILS SHEET 234
  - DES. SPEC. 3 SEE DRAINAGE DETAILS SHEET 235
  - DES. SPEC. 4 SEE OUTLET DETAIL SHEET 232
  - DES. SPEC. 5 SEE DRAINAGE DETAILS SHEET 234
  - DES. SPEC. 7 SEE DRAINAGE DETAILS SHEET 236
  - DES. SPEC. 8 SEE DRAINAGE DETAILS SHEET 237
  - N SEE MN/DOT STD. PLATE. 4003
  - G,H SEE MN/DOT STD. PLATE. 4006
  - 4020 SEE MN/DOT STD. PLATE. 4020 AND COVER
  - APRON SEE MN/DOT STD. PLATE 3100

- (C) XX-4020 STRUCTURES SHALL BE STAKED TO CENTER OF STRUCTURE. SEE XX-4020 OFFSET TABLE.
- (D) STEPS REQUIRED WHEN PAY HEIGHT IS GREATER THAN 4.5 FEET.
- (E) CONNECT TO EXISTING STORM SEWER.
- (F) CONNECT TO EXISTING DRAINAGE STRUCTURE.
- (G) TIE LAST THREE JOINTS AT APRON END/PIPE END.
- (H) SEE DRAINAGE DETAILS
- (I) SEE MN/DOT STD. PLATE 9102

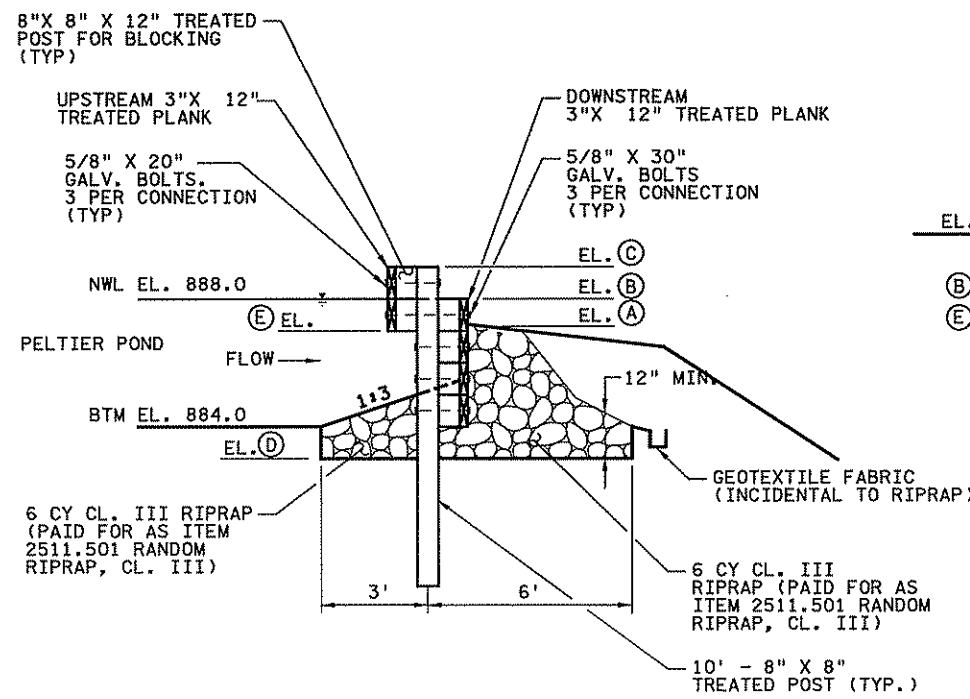
- (J) FURNISH AND INSTALL APRON - SEE MN/DOT STD. PLATE 3123
- (K) FURNISH AND INSTALL APRON - SEE MN/DOT STD. PLATE 3100
- (L) FURNISH AND INSTALL APRON - SEE MN/DOT STD. PLATES 3110 & 3114
- (M) FURNISH AND INSTALL TRASH GUARD OVER APRON
- (N) SEE MN/DOT STD. PLATE 3133

XX - 4020 OFFSET TABLE	
C.B./ M.H. DIAMETER (IN)	OFFSET (IN)
48"	9.50
54"	13.00
60"	15.50
66"	19.00
72"	21.50
78"	25.00
84"	27.50
90"	31.00
96"	34.50
102"	38.00
108"	39.50
120"	45.50

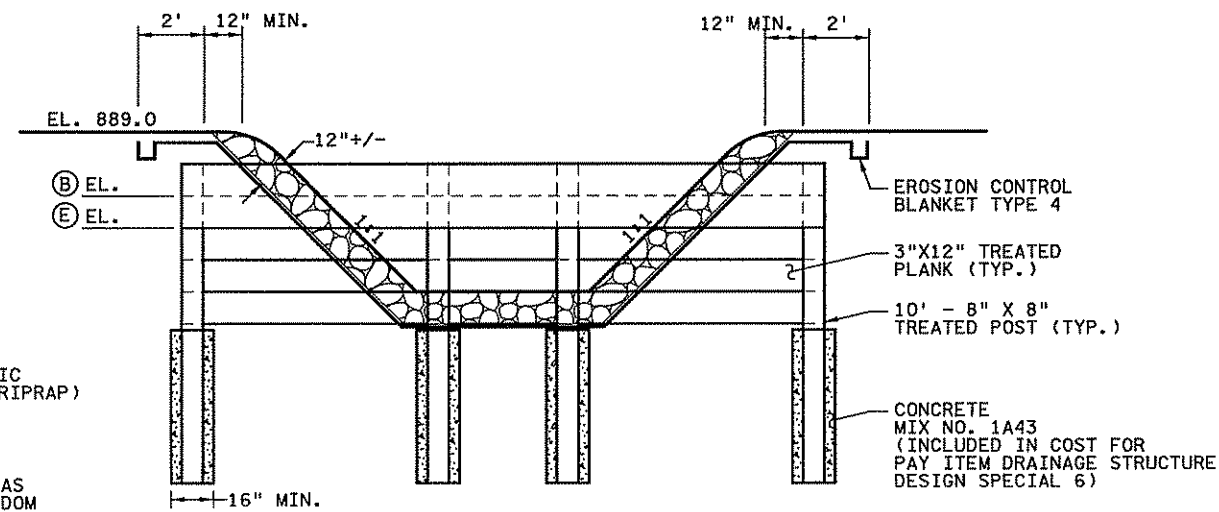
NOTE: OFFSET DISTANCE IS FROM CENTER OF GRATE TO CENTER OF XX-4020 STRUCTURE.

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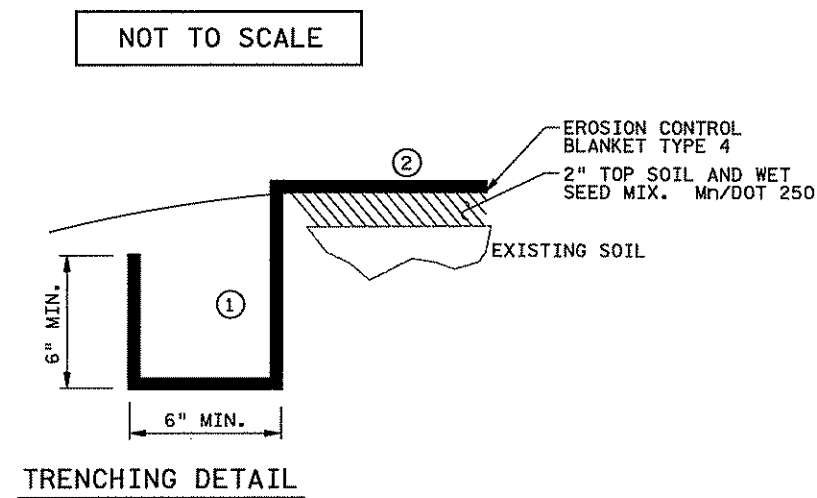
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>NO</th> <th>DATE</th> <th>BY</th> <th>CKD</th> <th>APPR</th> <th>REVISION</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	NO	DATE	BY	CKD	APPR	REVISION							<p>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.</p> <p>Print Name: CHRISTOPHER M. TRBOYEVICH</p> <p><i>Christopher M. Trbojevich</i></p> <p>Date: 3/26/07 License # 41635</p>	<p>STATE PROJECT NO. S.P. 02-614-24, ETAL</p>	<p>DRAWN BY J. TOULOUSE</p> <p>DESIGNED BY J. TOULOUSE</p> <p>CHECKED BY C. TRBOYEVICH</p> <p>COMM. NO. 4994</p>	<p><b>SRF</b> CONSULTING GROUP, INC.</p>	<p>ANOKA COUNTY</p> <p>DRAINAGE TABULATION NOTES</p> <p>C.S.A.H. 14</p>	<p>SHEET 230 OF 492</p>
NO	DATE	BY	CKD	APPR	REVISION													



CROSS-SECTION

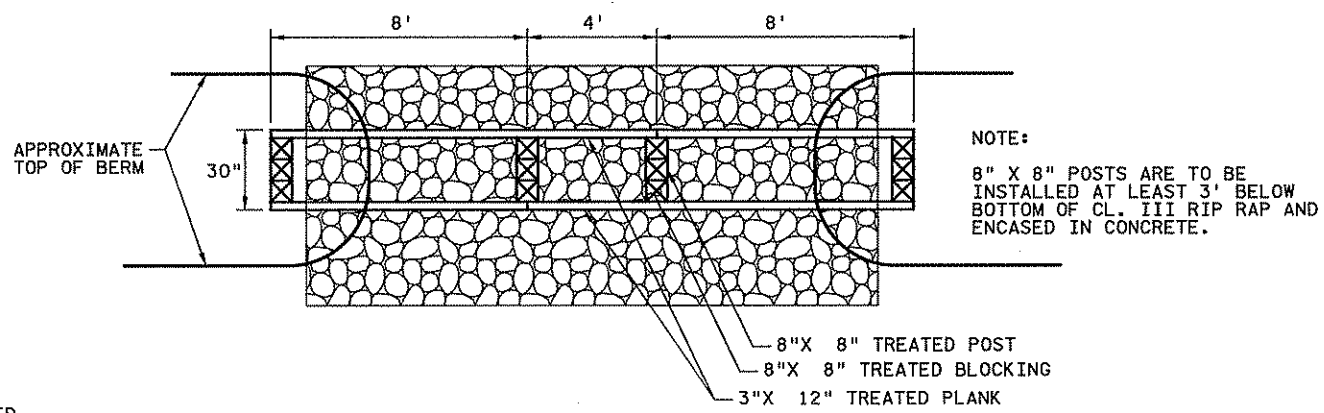


ELEVATION FROM POND



TRENCHING DETAIL

- NOTES:
- DRAINAGE STRUCTURE DESIGN SPECIAL 6 SHALL BE PAID FOR PER EACH AND SHALL INCLUDE ALL ITEMS NOTED ON THIS DETAIL, UNLESS NOTED OTHERWISE.
  - SEE CONSTRUCTION PLAN (SHEET 271 ) FOR DRAINAGE STRUCTURE DESIGN SPECIAL 6 LOCATION.
  - ① TRENCH ALL EDGES OF FIBER MAT OR PLACE UNDER RIPRAP. FIBER MAT TO EXTEND AT A MINIMUM TO SAME WIDTH AS RIPRAP.
  - ② STAKE WITH LIVE RED OSIER DOGWOOD AND WILLOW STAKES PER MANUFACTURER'S SPACING RECOMMENDATIONS, WITH A MINIMUM OF 2 STAKES PER SQUARE YARD.



PLAN VIEW

NOTE:  
 ALL POSTS AND PLANKS USED TO CONSTRUCT THE TIMBER BAFFLED WEIRS SHALL BE SOUTHERN YELLOW PINE No. 2 (Mn/DOT STANDARD SPEC. 3426) AND SHALL BE TREATED IN ACCORDANCE WITH Mn/DOT STANDARD SPEC. 3491 EXCEPT THAT THE USE OF CREOSOTE OIL AND PENTACHLOROPHENOL AS THE PRESERVATIVE SHALL NOT BE PERMITTED.

	(A)	(B)	(C)	(D)	(E)
PELTIER POND	887.0	888.0	888.5	883.0	887.0

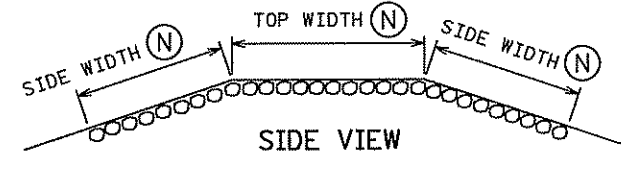
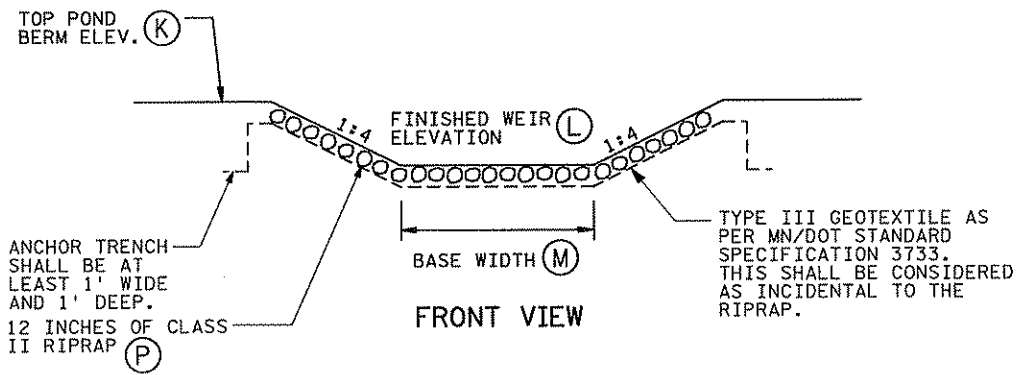
ALL DIMENSIONS ARE IN FEET UNLESS NOTED OTHERWISE.

DRAINAGE STRUCTURE DESIGN SPECIAL 6  
 PELTIER POND  
 TIMBER BAFFLED WEIR DETAIL

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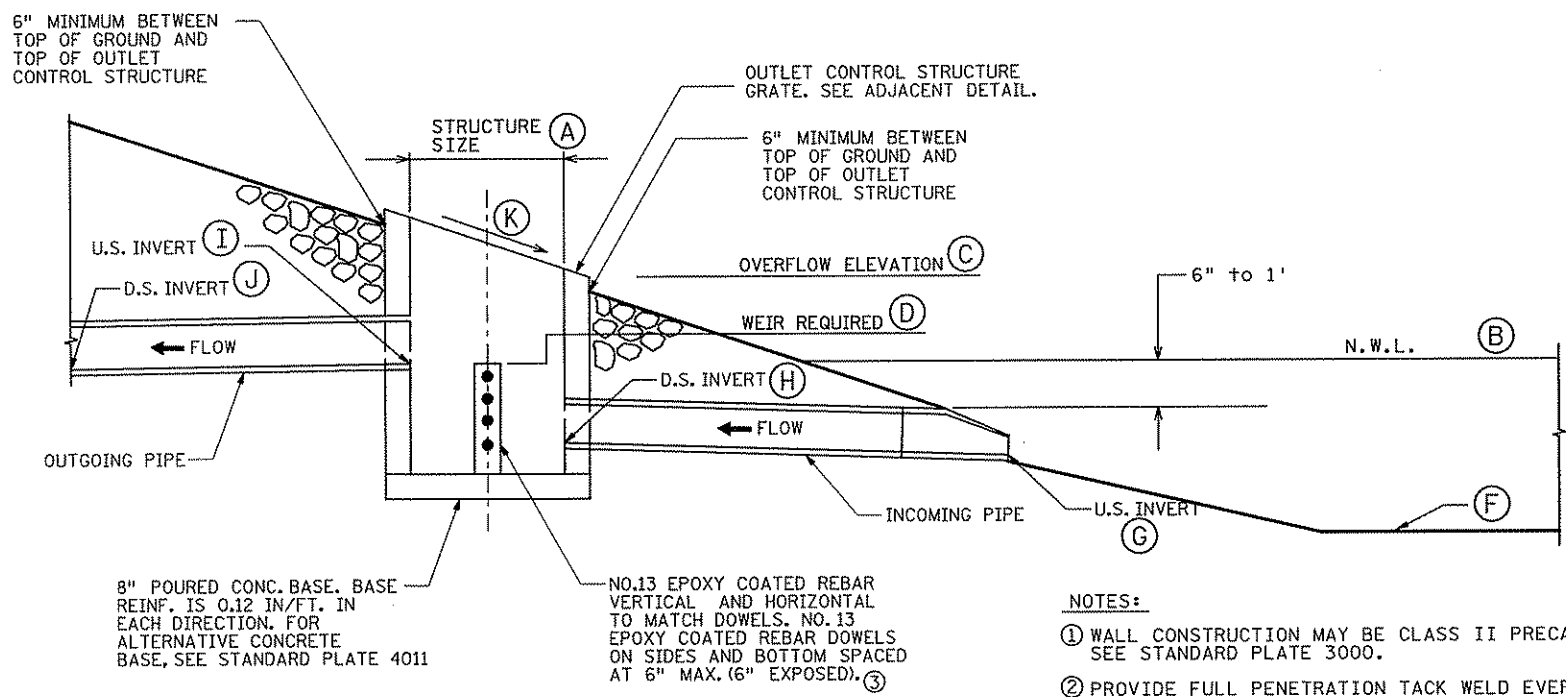
I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota. Print Name: <b>WALTER C. ESHENAU</b> <i>Walter C. Eshenau</i> Date: <u>3/22/07</u> License # <u>40929</u>	STATE PROJECT NO. S.P. 02-614-24, ETAL	DRAWN BY D. FITCHORN DESIGNED BY E. ROERISH CHECKED BY N. WILL COMM. NO. 4994	<b>SRF</b> CONSULTING GROUP, INC.	ANOKA COUNTY DRAINAGE DETAILS C.S.A.H. 14 DRAINAGE STRUCTURE DESIGN SPECIAL 6	SHEET 231 OF 492
	NO. DATE BY CKD APPR REVISION				



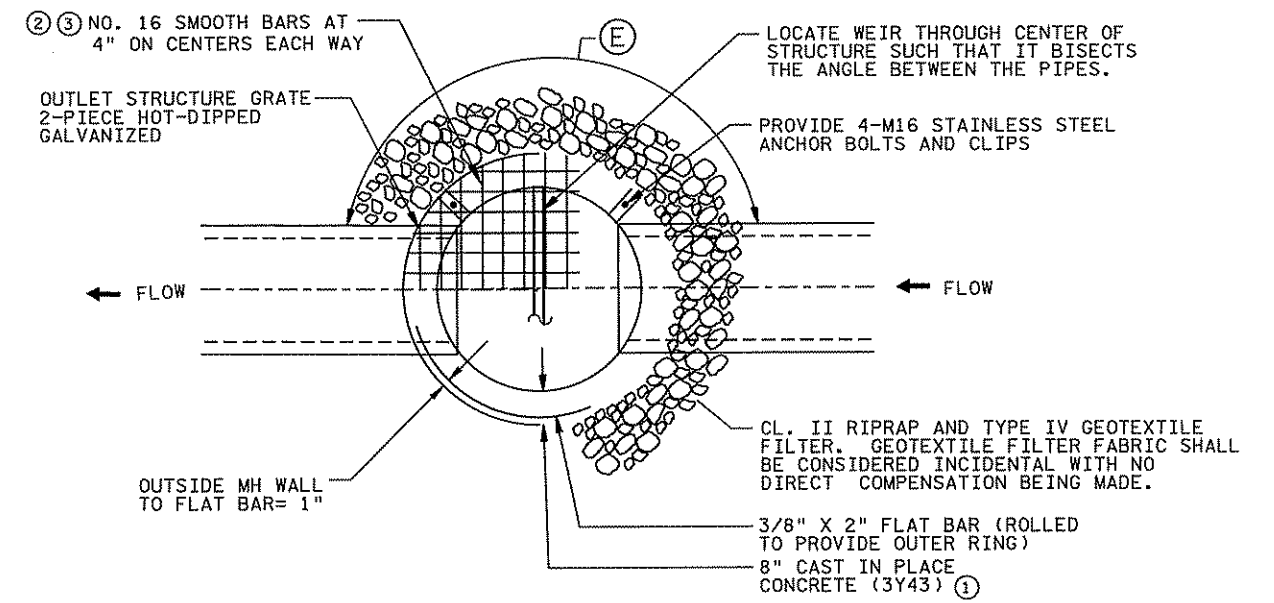


**WEIR DETAIL**

POND	K TOP POND BERM ELEV.	L FINISHED WEIR ELEV.	M BASE WIDTH	N TOP/SIDE WIDTH	P RANDOM RIPRAP CLASS II
Peltier Lake Pond	889.00	888.00	4 FT	10 FT	13.0 CY
Lakeland North Pond	889.00	888.20	10 FT	10 FT	18.0 CY
Lakeland South Pond	889.00	887.20	10 FT	10 FT	27.0 CY
Clearwater North Pond	904.00	902.60	10 FT	10 FT	24.0 CY
Clearwater South Pond	898.00	897.30	10 FT	10 FT	17.0 CY
City Hall Pond	901.00	900.40	10 FT	10 FT	16.0 CY
Ditch 55 West Pond	902.00	900.70	10 FT	10 FT	23.0 CY
Ditch 55 East Pond	902.00	900.70	10 FT	10 FT	23.0 CY
TOTAL					161.0 CY



- NOTES:**
- ① WALL CONSTRUCTION MAY BE CLASS II PRECAST RC PIPE. SEE STANDARD PLATE 3000.
  - ② PROVIDE FULL PENETRATION TACK WELD EVERY OTHER BAR - MINIMUM.
  - ③ ALL REBAR SIZES ARE METRIC UNLESS OTHERWISE NOTED.



**OUTLET STRUCTURE GRATE AND RIPRAP DETAIL**

**POND OUTLET CONTROL STRUCTURE**

OCS ID	POND	A STRUCTURE SIZE	B NWL	C OVERFLOW ELEV.	D WEIR REQUIRED	E ANGLE DEGREE	F POND BOTTOM ELEV.	G INCOMING PIPE				H OUTGOING PIPE					RANDOM RIPRAP CLASS II	K SLOPE	
								DIAMETER	U.S. INVERT	D.S. INVERT	LENGTH	SLOPE	DIAMETER	U.S. INVERT	D.S. INVERT	LENGTH			SLOPE
5065	LAKELAND NORTH POND	48 IN	886.00	888.20		192	882.00	15 IN	884.00	884.30	23 FT	-1.30%	15 IN	886.00	885.50	23 FT	2.16%	2.0 CY	1V:6H
5080	LAKELAND SOUTH POND	48 IN	884.80	887.20		180	881.00	24 IN	881.50	883.00	22 FT	-1.40%	24 IN	884.80	884.60	102 FT	0.19%	2.0 CY	1V:6H
5120	CLEARWATER NORTH POND	48 IN	900.00	902.60	900.00	180	895.00	21 IN	897.00	897.20	20 FT	-1.00%	21 IN	895.00	894.00	51 FT	1.96%	2.0 CY	1V:6H
5128	CLEARWATER SOUTH POND	48 IN	895.00	897.30		172	889.00	21 IN	892.00	892.30	29 FT	-1.04%	21 IN	895.00	894.50	23 FT	2.14%	2.0 CY	1V:6H
5160	CITY HALL POND	60 IN	897.50	899.20	897.50	134	891.00	30 IN	893.00	893.40	34 FT	-1.17%	30 IN	894.00	895.00	64 FT	1.60%	3.0 CY	1V:6H
5240	DITCH 55 WEST POND	60 IN	896.50	900.70		180	892.00	36 IN	892.50	892.80	25 FT	-1.20%	36 IN	896.50	896.48	12 FT	0.32%	3.0 CY	1V:3H
5236	DITCH 55 EAST POND	60 IN	896.20	900.70		180	892.00	36 IN	892.50	892.90	39 FT	-1.02%	36 IN	896.20	896.17	11 FT	0.28%	3.0 CY	1V:3H
																	TOTAL	17.0 CY	

**DESIGN SPECIAL NO. 4**

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NO	DATE	BY	CKD	APPR	REVISION

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

Pr Int Name: **WALTER C. ESHENAU**

*Walter C. Eshenau*

Date: 3/22/07 License # 40929

STATE PROJECT NO. S.P. 02-614-24, ETAL

DRAWN BY E. ROERISH  
 DESIGNED BY E. ROERISH  
 CHECKED BY R. JONES  
 COMM. NO. 4994

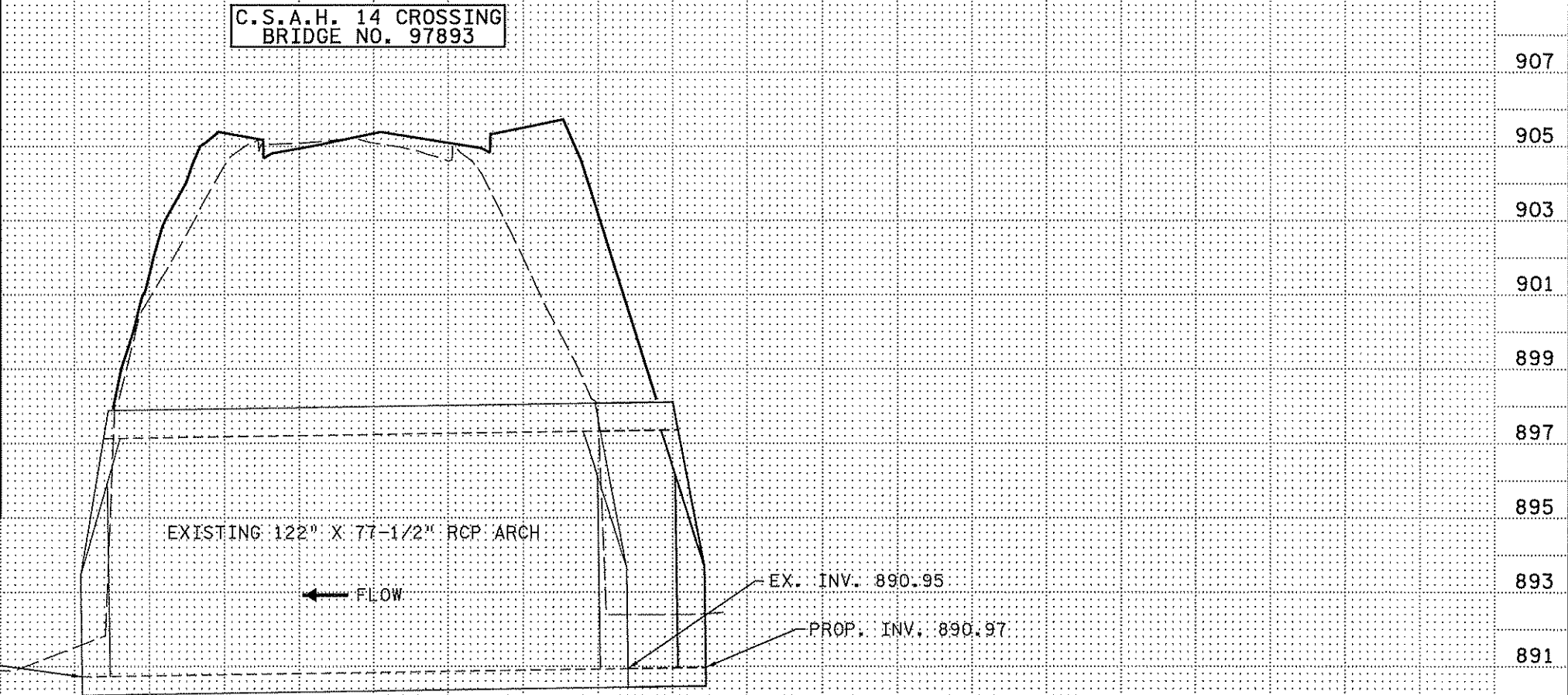
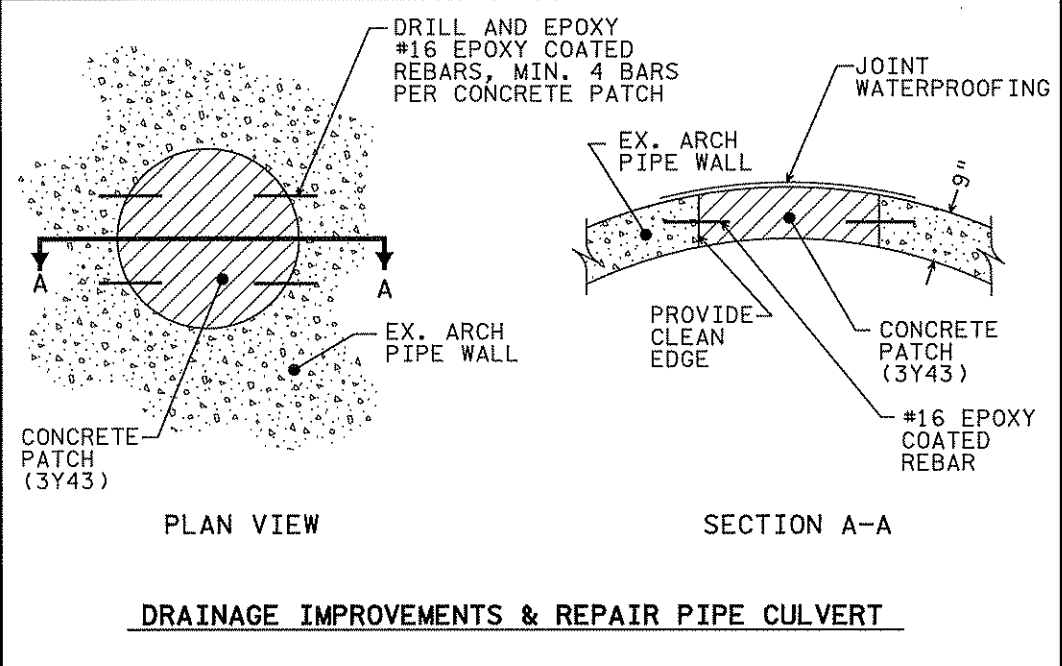
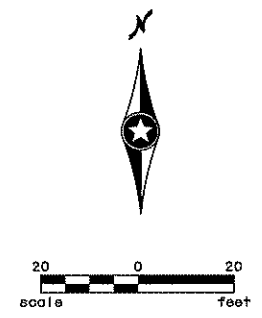
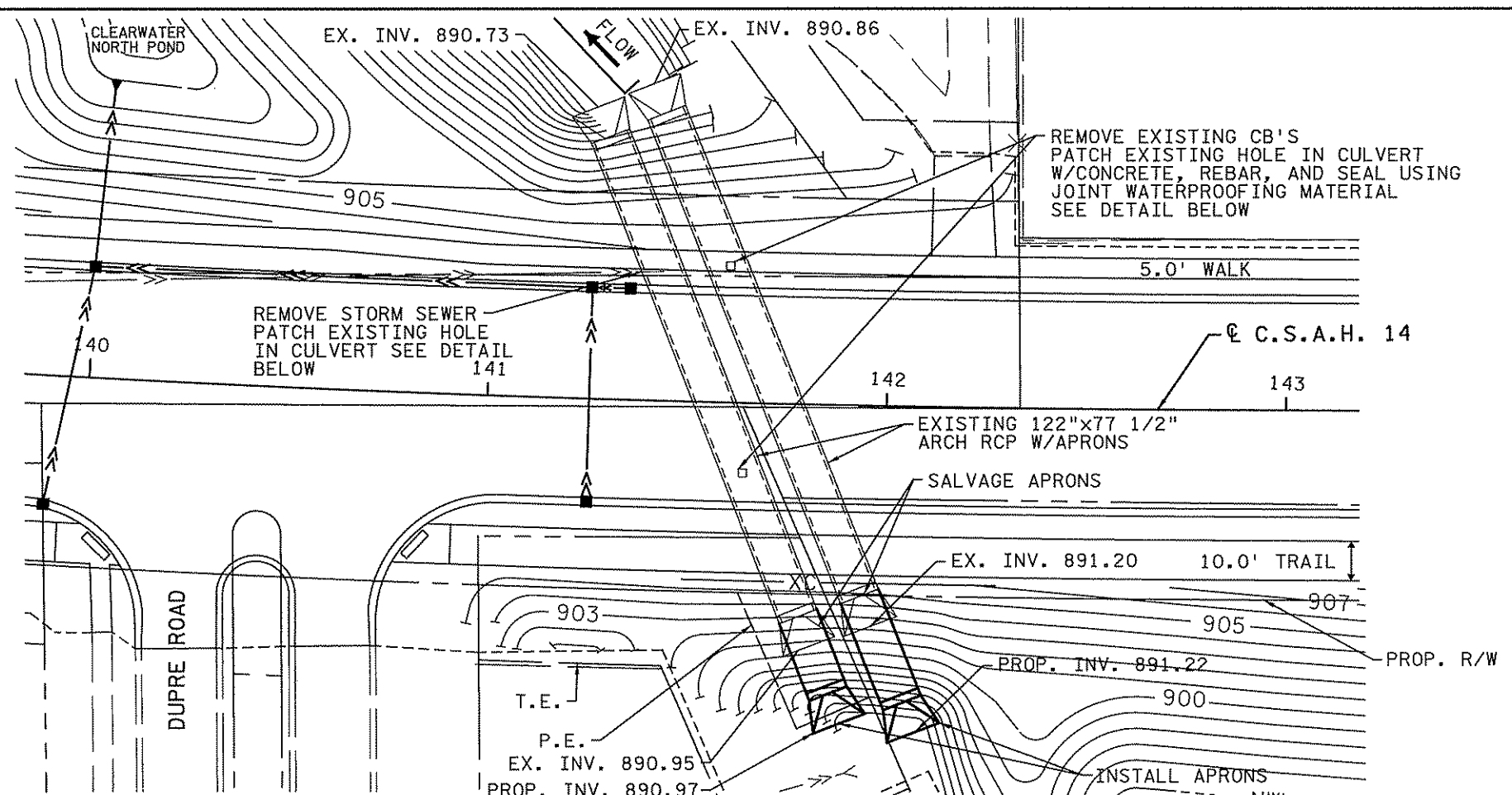


ANOKA COUNTY  
 DRAINAGE DETAILS  
 C.S.A.H. 14  
 PONDS OUTLET DETAIL

SHEET 232 OF 492

CSAH 14 CROSSING HYDRAULICS DATA POST - PROJECT CONDITION	
100 - YEAR FLOOD	Q = 719 CFS HWL = 899.6
10 - YEAR FLOOD	Q = 420 CFS HWL = 897.5

- NOTES:
1. PROFILE VIEW IS NOT SKEWED FOR CLARITY PURPOSES.
  2. SEE SHEET 133 FOR ADDITIONAL REMOVAL ITEMS NEAR THIS AREA.
  3. SEE SHEET 273 FOR CONTOUR PLAN.



8/14/13 AM  
 5/17/2007  
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NO	DATE	BY	CHKD	APPR	REVISION

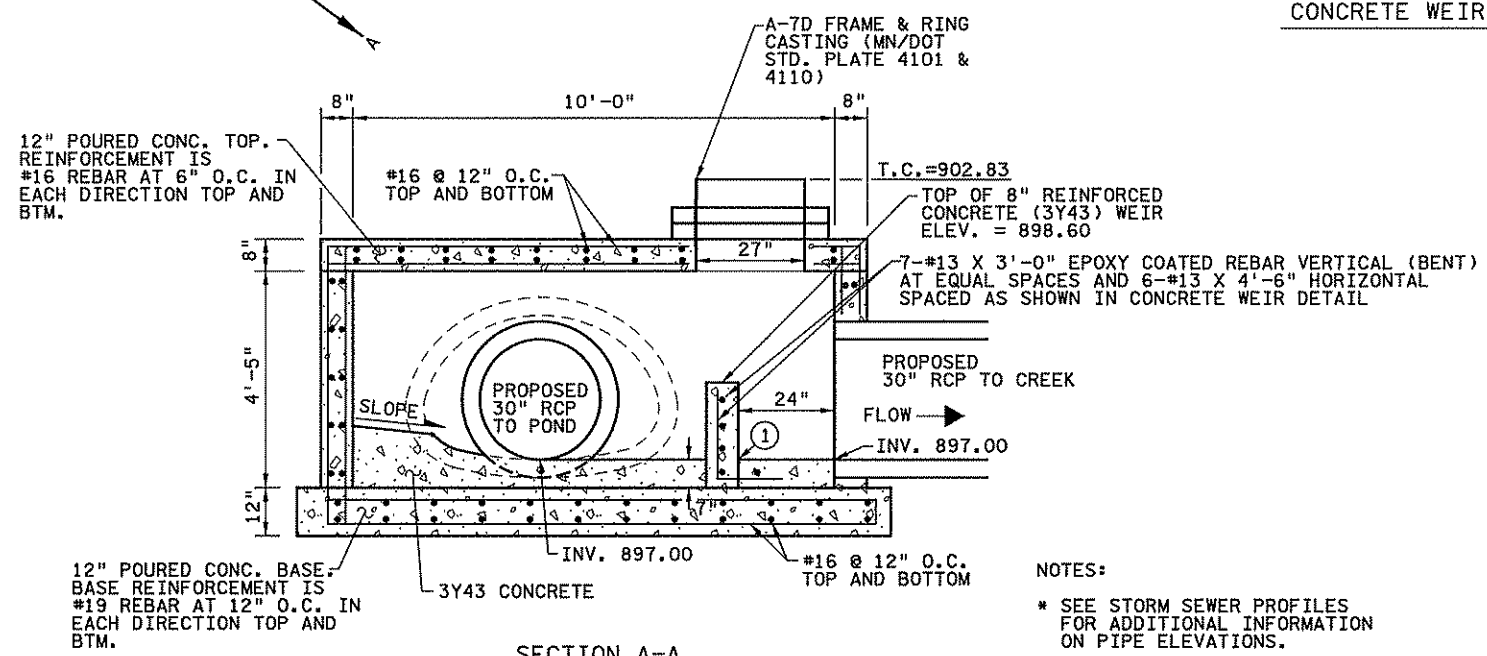
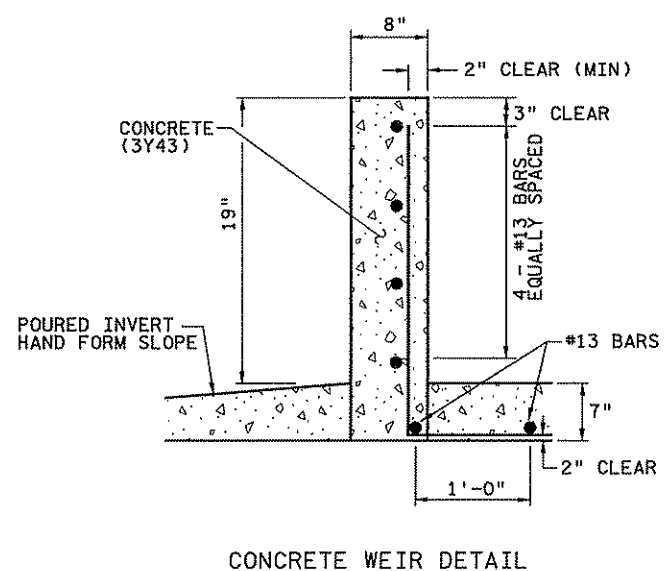
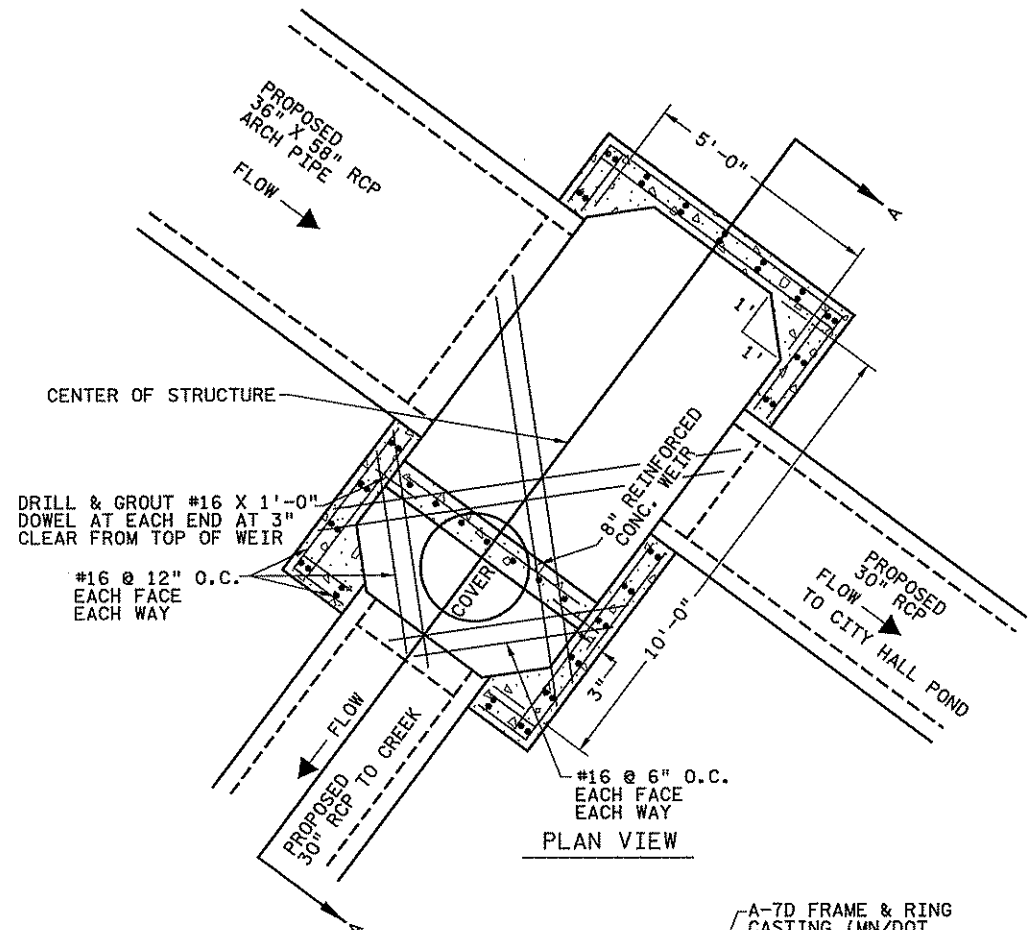
I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.  
 Print Name: **CHRISTOPHER M. TRBOYEVICH**  
*Christopher M. Trbojevich*  
 Date: 6/27/07 License # 41635

STATE PROJECT NO. S.P. 02-614-24, ETAL  
 DRAWN BY D. FITCHORN  
 DESIGNED BY C. TRBOYEVICH  
 CHECKED BY N. WILL  
 COMM. NO. 4994



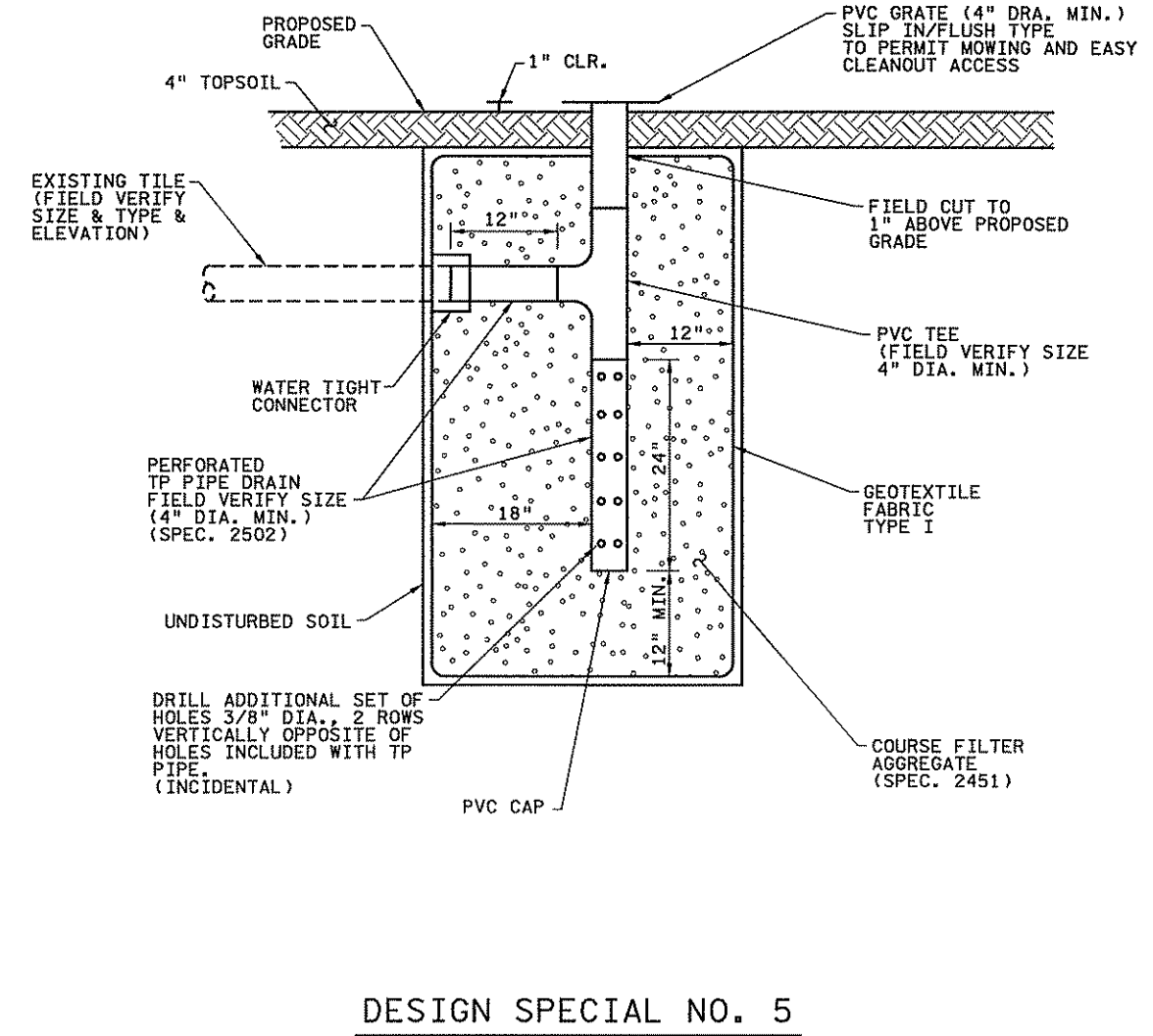
ANOKA COUNTY  
 DRAINAGE DETAILS  
 C.S.A.H. 14  
 BRIDGE NO. 97893-EXTENSION  
 SHEET 233 OF 492

	STATION (E.B. C.S.A.H. 14)	OFFSET (FT.)
CENTER OF CASTING	154+61.25	335.50' RT.
CENTER OF STRUCTURE	154+62.50	332.50' RT.



DESIGN SPECIAL NO. 2 (5156)

- NOTES:
- \* SEE STORM SEWER PROFILES FOR ADDITIONAL INFORMATION ON PIPE ELEVATIONS.
  - ① FILL JOINT WITH EPOXY SEALANT.



CONSTRUCTION NOTES

- STRUCTURE TO BE CONSTRUCTED AS PER Mn/DOT SPEC. 2461 EXCEPT AS NOTED.
- ALL REBAR AND DOWELS SHALL BE EPOXY COATED.
- JOINTS SHALL BE SEALED PER ASTM C-990 WITH BUTYL JOINT SEALANT.
- 2" MINIMUM CONCRETE COVER ON ALL REINFORCEMENT, UNLESS NOTED OTHERWISE.
- CONTRACTOR SHALL GROUT BOTTOM OF BOX TO FORM TRANSITIONS BETWEEN TRUNKLINE PIPE INVERTS.
- ONLY NON SHRINK GROUT SHALL BE USED FOR THE STRUCTURES. CAST-IN-PLACE CONCRETE SHALL BE MIX 3Y43.

BASIS OF DESIGN

DESIGNED IN ACCORDANCE WITH AASHTO "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES", 2002 AND Mn/DOT BRIDGE DESIGN MANUAL.

WEIGHT OF SOIL - 130 P.C.F.

CONCRETE STRENGTH - 5000 P.S.I. MINIMUM

STEEL REINFORCEMENT YIELD STRENGTH - 60,000 P.S.I.

LATERAL PRESSURE:  
30 P.S.F./FT. MINIMUM  
60 P.S.F./FT. MAXIMUM

HS 25 LIVE LOAD.

3/12/09 PM 2/27/2009 4994-f\h1-mu\p1an\4994-f.mds

NO	DATE	BY	CHKD	APPR	REVISION

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

Print Name: CHRISTOPHER M. TRBOYEVICH

*Christopher M. Trbojevich*

Date: 3/26/09 License #: 41635

STATE PROJECT NO. S.P. 02-614-24, ETAL

DRAWN BY D.FITCHORN

DESIGNED BY E.ROERISH

CHECKED BY N.WILL

COMM. NO. 4994

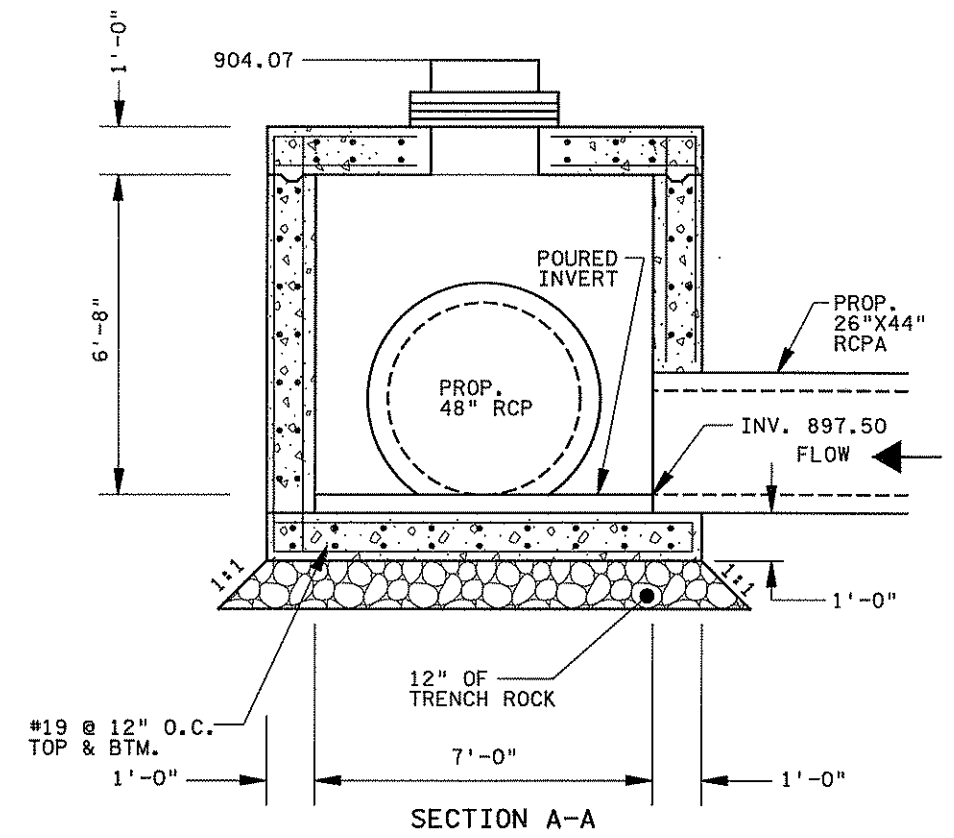
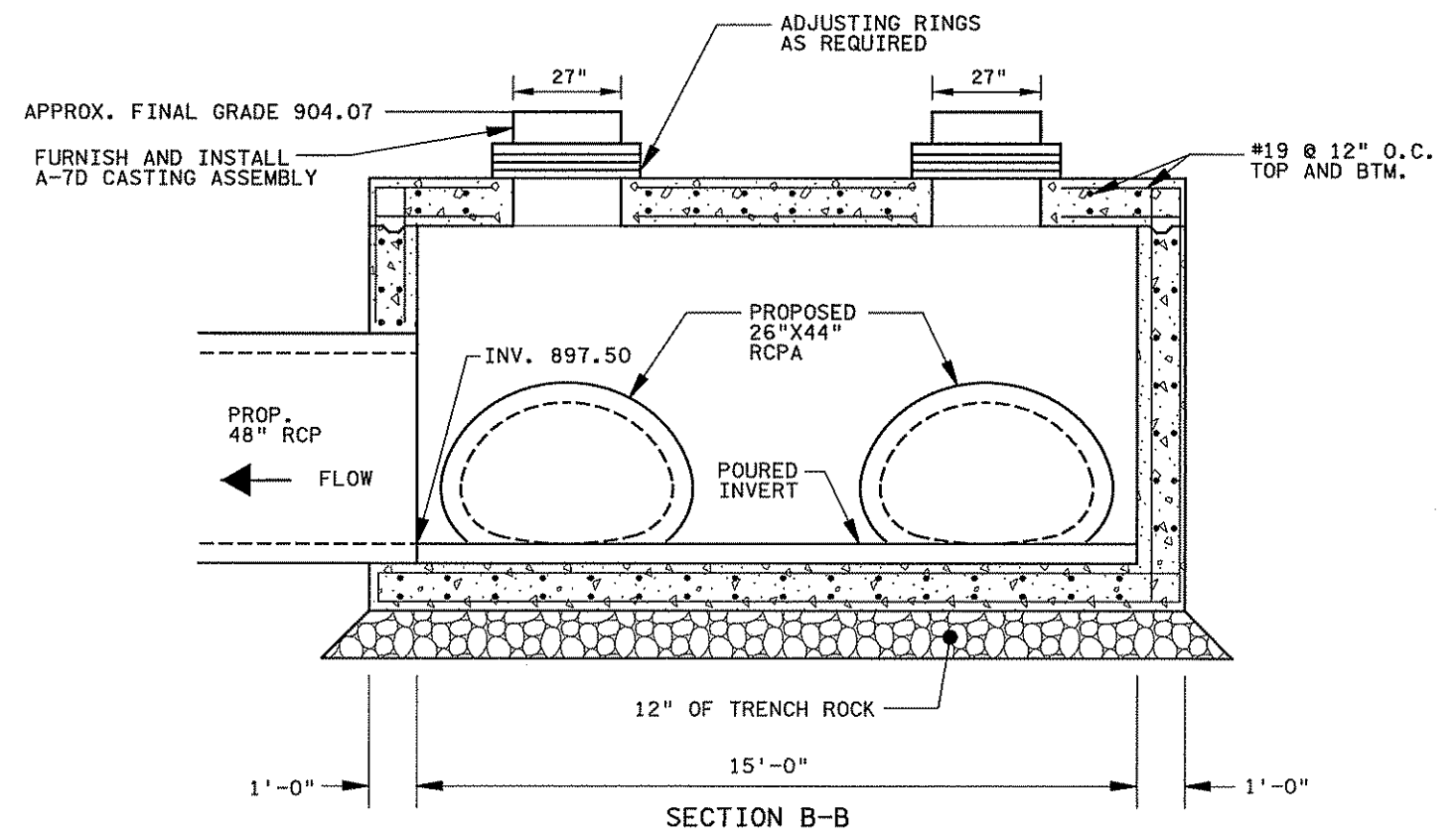
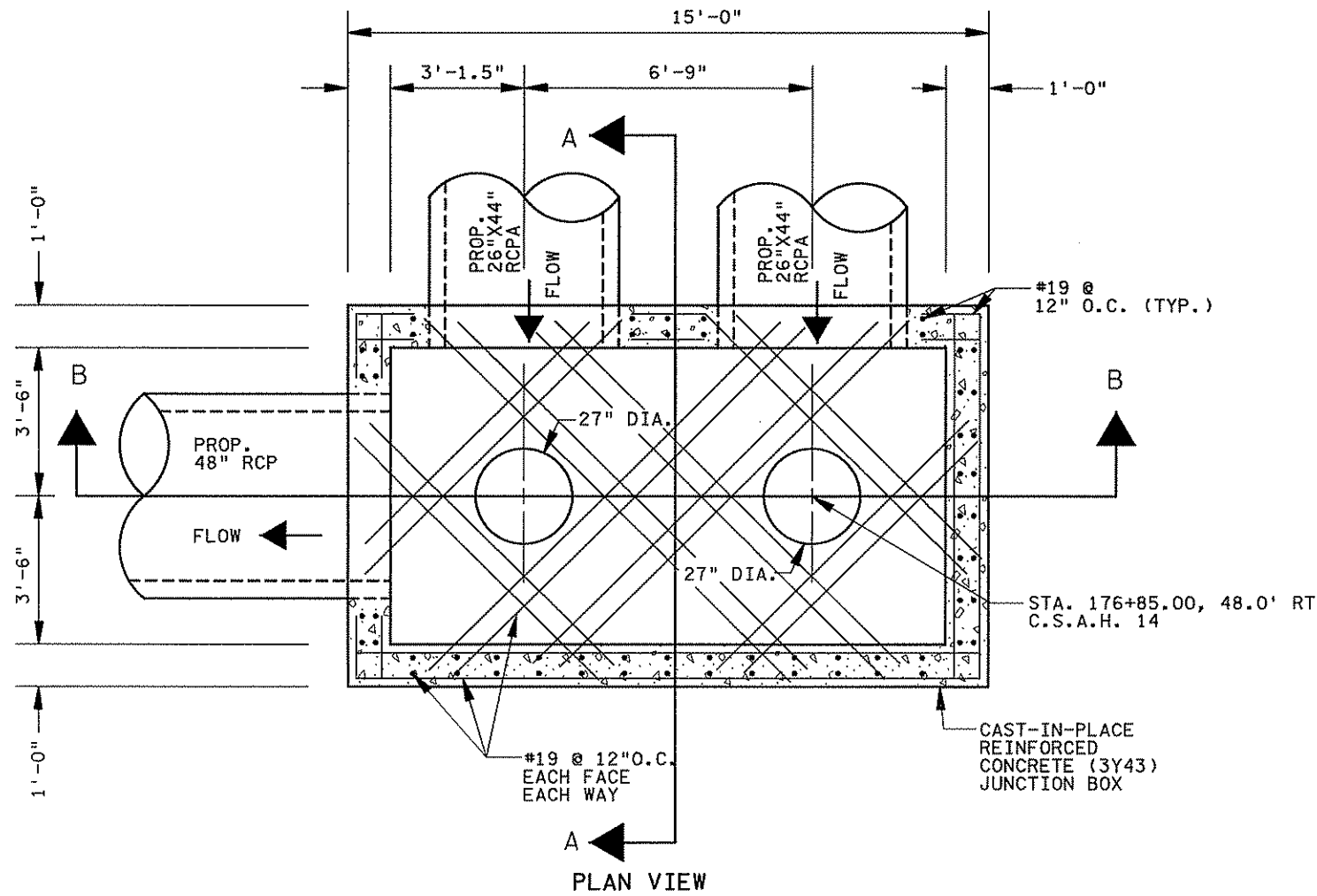


ANOKA COUNTY

DRAINAGE DETAILS

C.S.A.H. 14

SHEET 234 OF 492



**CONSTRUCTION NOTES**

- 1 STRUCTURE TO BE CONSTRUCTED AS PER Mn/DOT SPEC. 2461 EXCEPT AS NOTED.
- 2 ALL REBAR AND DOWELS SHALL BE EPOXY COATED.
- 3 JOINTS SHALL BE SEALED PER ASTM C-990 WITH BUTYL JOINT SEALANT.
- 4 2" MINIMUM CONCRETE COVER ON ALL REINFORCEMENT, UNLESS NOTED OTHERWISE.
- 5 CONTRACTOR SHALL GROUT BOTTOM OF BOX TO FORM TRANSITIONS BETWEEN TRUNKLINE PIPE INVERTS.
- 6 ONLY NON SHRINK GROUT SHALL BE USED FOR THE STRUCTURES. CAST-IN-PLACE CONCRETE SHALL BE MIX 3Y43.

**BASIS OF DESIGN**

DESIGNED IN ACCORDANCE WITH AASHTO "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES", 2002 AND Mn/DOT BRIDGE DESIGN MANUAL.

WEIGHT OF SOIL - 130 P.C.F.

CONCRETE STRENGTH - 5000 P.S.I. MINIMUM

STEEL REINFORCEMENT YIELD STRENGTH - 60,000 P.S.I.

LATERAL PRESSURE:  
30 P.S.F./FT. MINIMUM  
60 P.S.F./FT. MAXIMUM

HS 25 LIVE LOAD.

DITCH 55 JUNCTION VAULT: DESIGN SPECIAL 3 (5243)

3/23/07 PM 3:23:00 PM D:\projects\4994-f\h1-mu\plan\4994-f.mdt

NO	DATE	BY	CKD	APPR	REVISION

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

Print Name: CHRISTOPHER M. TRBOYEVICH

*Chris Trbojevich*

Date: 3/26/07 License #: 41635

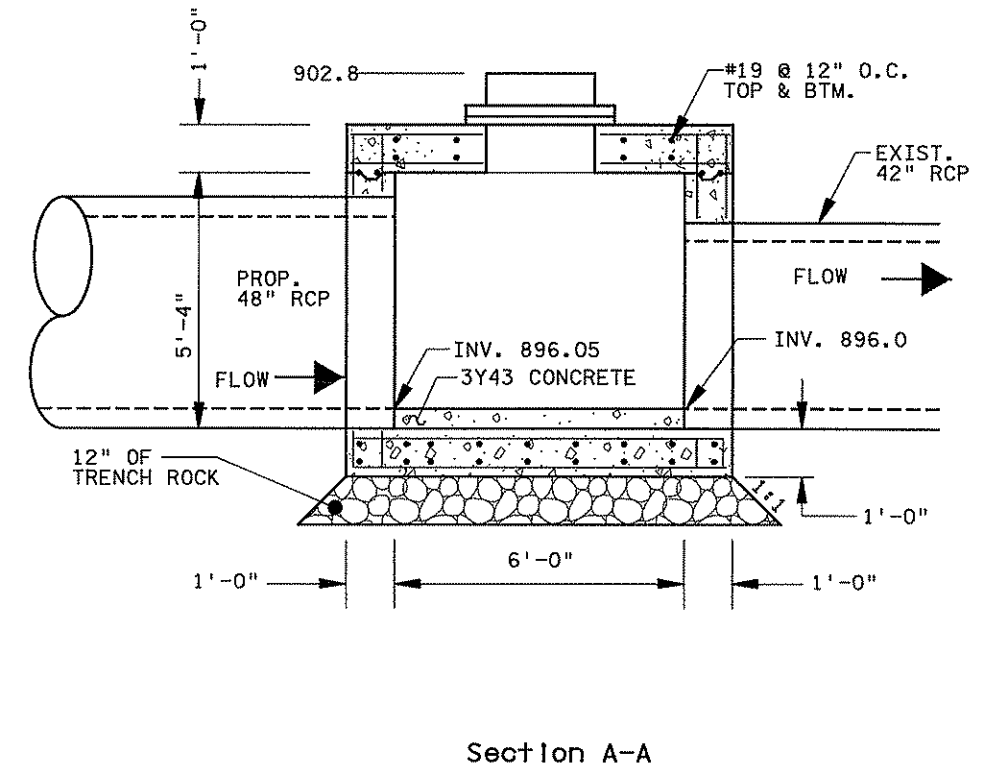
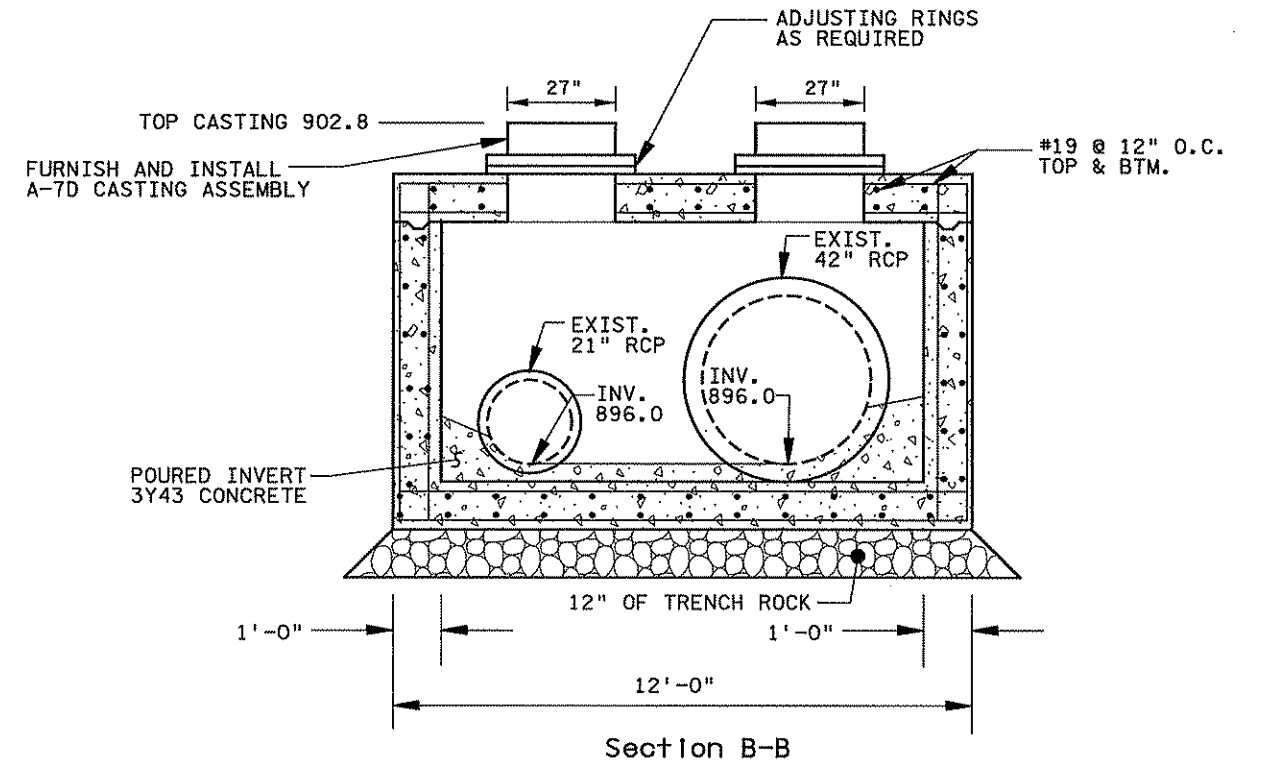
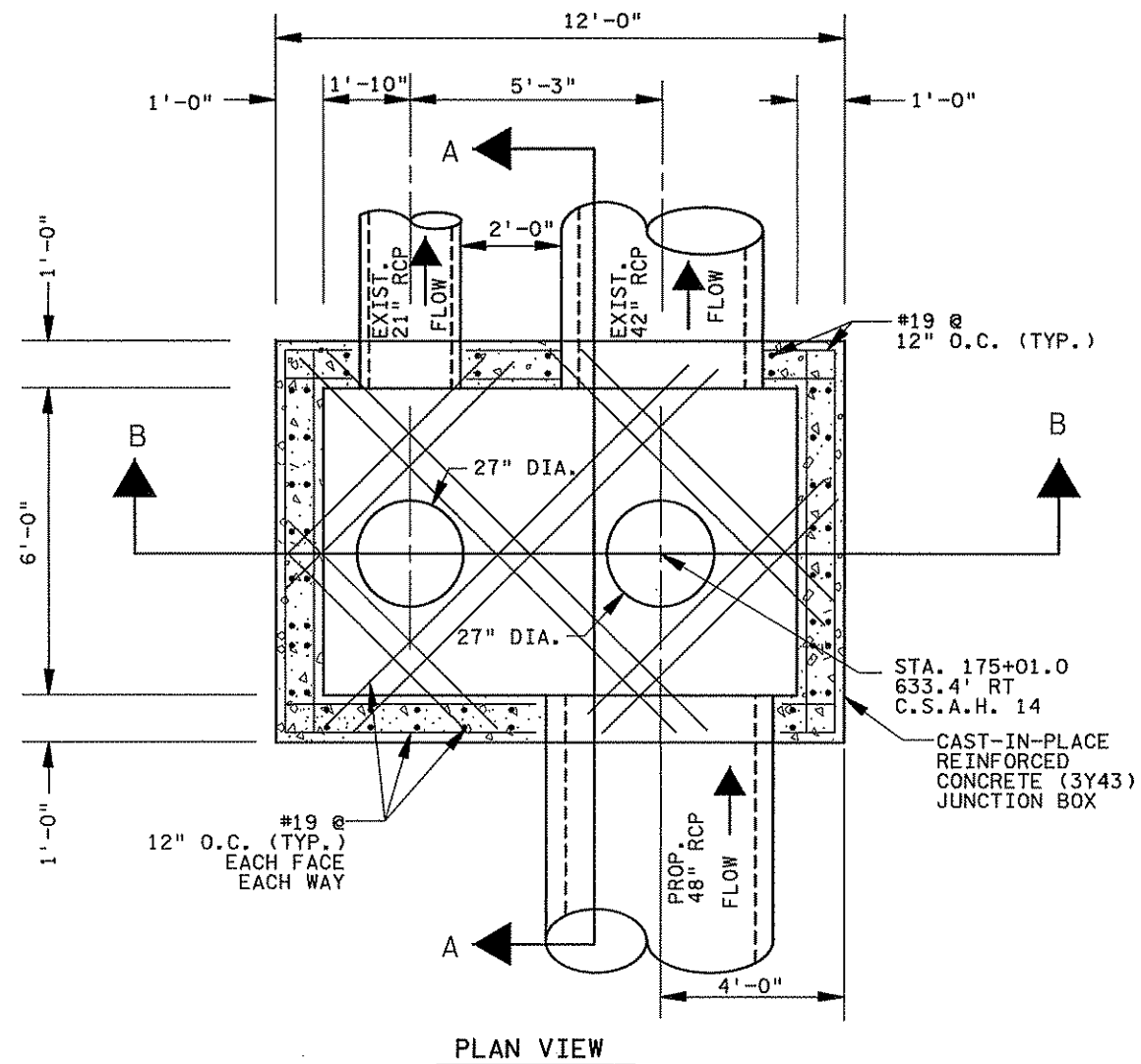
STATE PROJECT NO. S.P. 02-614-24, ETAL

DRAWN BY D. FITCHORN  
DESIGNED BY J. TOULOUSE  
CHECKED BY C. TRBOYEVICH  
COMM. NO. 4994

**SRF** CONSULTING GROUP, INC.

ANOKA COUNTY  
DRAINAGE DETAILS  
C.S.A.H. 14

SHEET 235 OF 492



**CONSTRUCTION NOTES**

- 1 STRUCTURE TO BE CONSTRUCTED AS PER Mn/DOT SPEC. 2461 EXCEPT AS NOTED.
- 2 ALL REBAR AND DOWELS SHALL BE EPOXY COATED.
- 3 JOINTS SHALL BE SEALED PER ASTM C-990 WITH BUTYL JOINT SEALANT.
- 4 2" MINIMUM CONCRETE COVER ON ALL REINFORCEMENT, UNLESS NOTED OTHERWISE.
- 5 CONTRACTOR SHALL GROUT BOTTOM OF BOX TO FORM TRANSITIONS BETWEEN TRUNKLINE PIPE INVERTS.
- 6 ONLY NON SHRINK GROUT SHALL BE USED FOR THE STRUCTURES. CAST-IN-PLACE CONCRETE SHALL BE MIX 3Y43.

**BASIS OF DESIGN**

DESIGNED IN ACCORDANCE WITH AASHTO "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES", 2002 AND Mn/DOT BRIDGE DESIGN MANUAL.

WEIGHT OF SOIL - 130 P.C.F.

CONCRETE STRENGTH - 5000 P.S.I. MINIMUM

STEEL REINFORCEMENT YIELD STRENGTH - 60,000 P.S.I.

LATERAL PRESSURE:  
30 P.S.F./FT. MINIMUM  
60 P.S.F./FT. MAXIMUM

HS 25 LIVE LOAD.

**DITCH 55 JUNCTION VAULT: DESIGN SPECIAL 7 (5234)**

3/13/01 PM 3/21/2007 H:\Projects\4994-F\h1-mu\plan\4994-F.MDU

NO	DATE	BY	CKD	APPR	REVISION

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

Print Name: CHRISTOPHER M. TRBOYEVICH

*Christopher M. Trbojevich*

Date: 3/26/07 License #: 41635

STATE PROJECT NO. S.P. 02-614-24, ETAL

DRAWN BY D.FITCHORN

DESIGNED BY N. WILL

CHECKED BY C. TRBOYEVICH

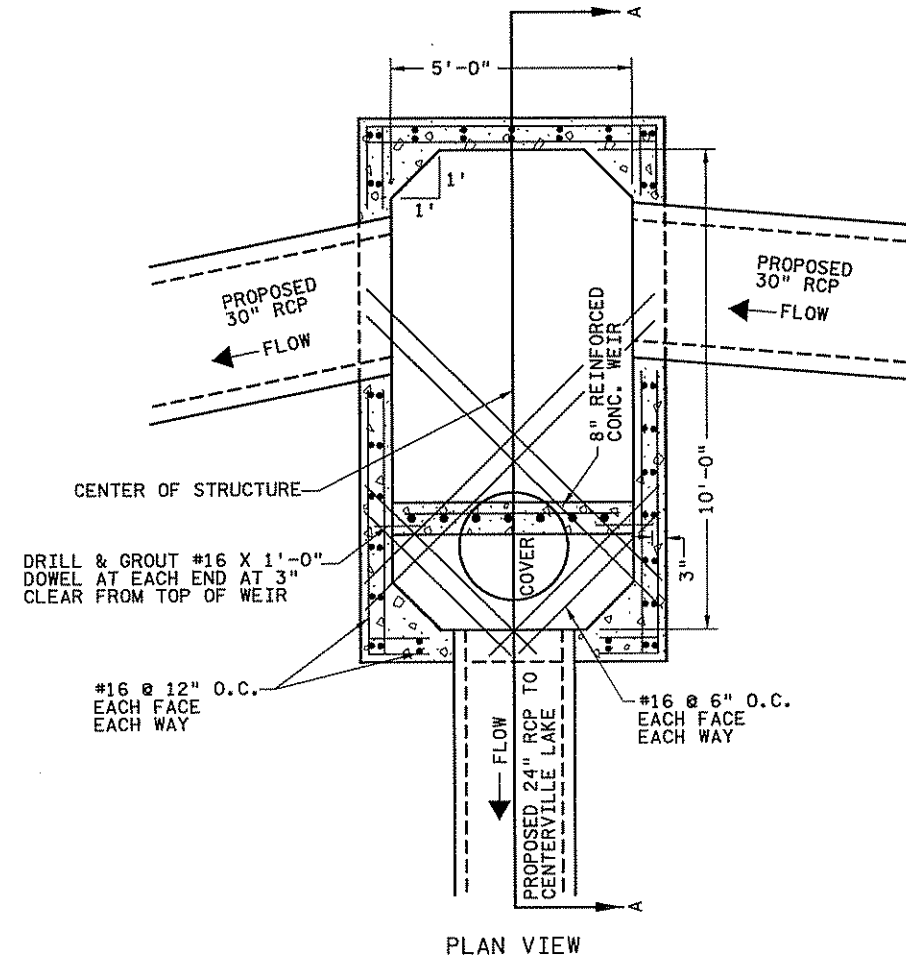
COMM. NO. 4994



ANOKA COUNTY  
DRAINAGE DETAILS  
C.S.A.H. 14

SHEET 236 OF 492

	STATION (E.B. C.S.A.H. 14)	OFFSET (FT.)
CENTER OF CASTING	120+54.00	35.25' LT.
CENTER OF STRUCTURE	120+54.00	32.00' LT.



**CONSTRUCTION NOTES**

- STRUCTURE TO BE CONSTRUCTED AS PER Mn/DOT SPEC. 2461 EXCEPT AS NOTED.
- ALL REBAR AND DOWELS SHALL BE EPOXY COATED.
- JOINTS SHALL BE SEALED PER ASTM C-990 WITH BUTYL JOINT SEALANT.
- 2" MINIMUM CONCRETE COVER ON ALL REINFORCEMENT, UNLESS NOTED OTHERWISE.
- CONTRACTOR SHALL GROUT BOTTOM OF BOX TO FORM TRANSITIONS BETWEEN TRUNKLINE PIPE INVERTS.
- ONLY NON SHRINK GROUT SHALL BE USED FOR THE STRUCTURES. CAST-IN-PLACE CONCRETE SHALL BE MIX 3Y43.

**BASIS OF DESIGN**

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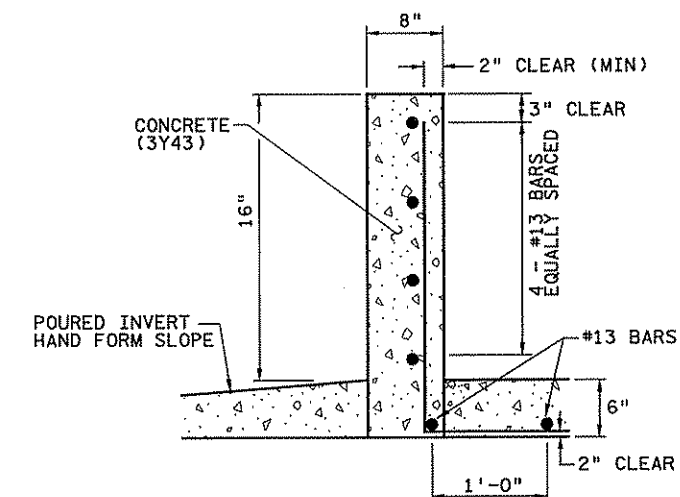
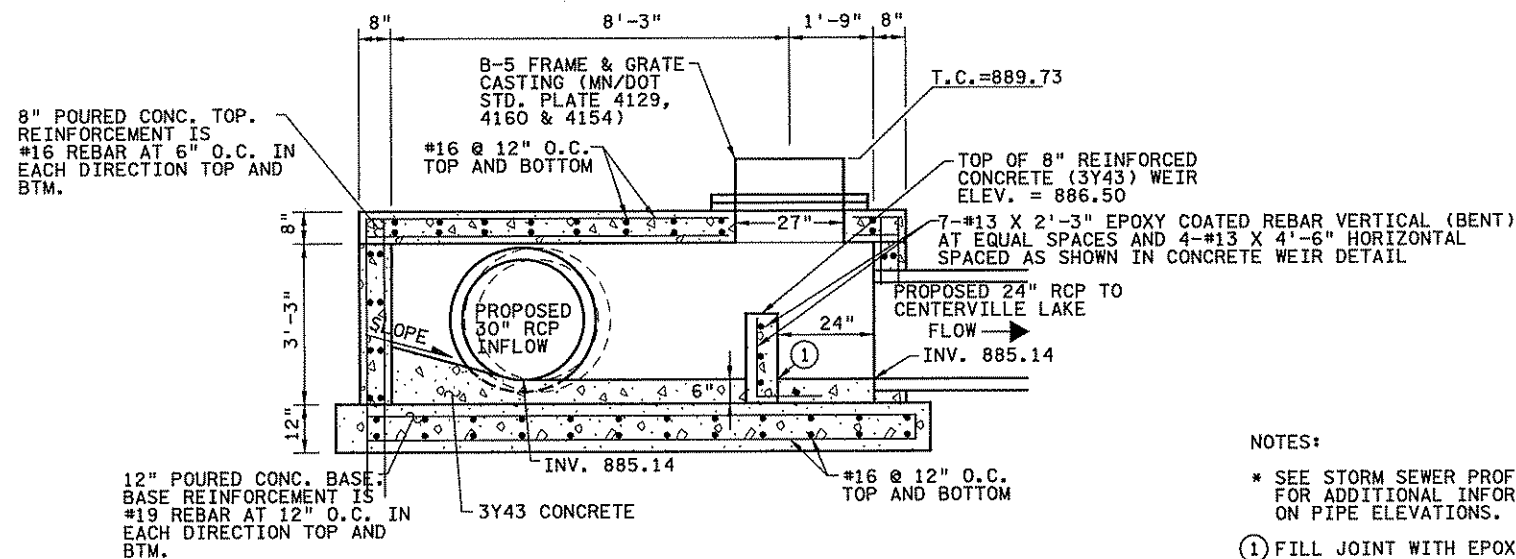
WEIGHT OF SOIL - 130 P.C.F.

CONCRETE STRENGTH - 5000 P.S.I. MINIMUM

STEEL REINFORCEMENT YIELD STRENGTH - 60,000 P.S.I.

LATERAL PRESSURE:  
30 P.S.F./FT. MINIMUM  
60 P.S.F./FT. MAXIMUM

HS 25 LIVE LOAD.



**NOTES:**

- \* SEE STORM SEWER PROFILES FOR ADDITIONAL INFORMATION ON PIPE ELEVATIONS.
- ① FILL JOINT WITH EPOXY SEALANT.

SECTION A-A  
**DESIGN SPECIAL NO. 8 (5096)**

3:13:01 PM 5/21/2007 ...4994-F\h1-mu\plan\4994-f.mdx

NO	DATE	BY	CKD	APPR	REVISION

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

Print Name: **CHRISTOPHER M. TRBOYEVICH**

*Christopher M. Trbojevich*

Date: 3/26/10 License # 41635

STATE PROJECT NO. S.P. 02-614-24, ETAL

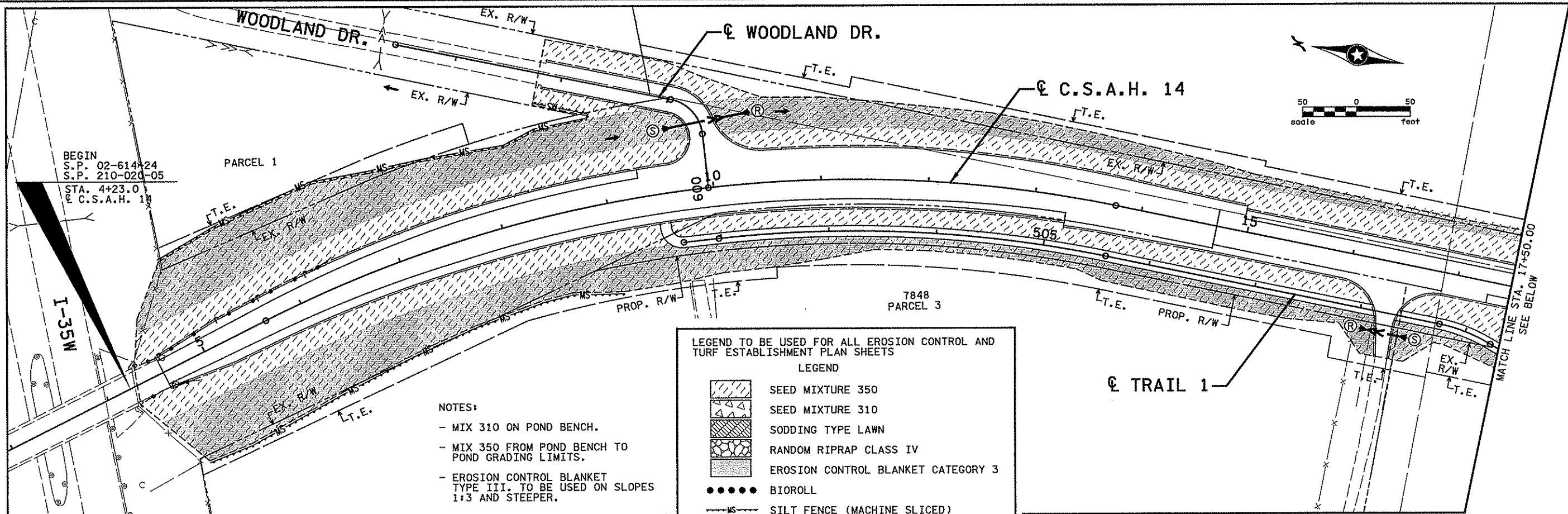
DRAWN BY D. FITCHORN  
 DESIGNED BY E. ROERISH  
 CHECKED BY N. WILL  
 COMM. NO. 4994



ANOKA COUNTY  
 DRAINAGE DETAILS  
 C.S.A.H. 14

SHEET 237 OF 492





BEGIN  
S.P. 02-614-24  
S.P. 210-020-05  
STA. 4+23.0  
C.S.A.H. 14

I-35W

PARCEL 1

7848  
PARCEL 3

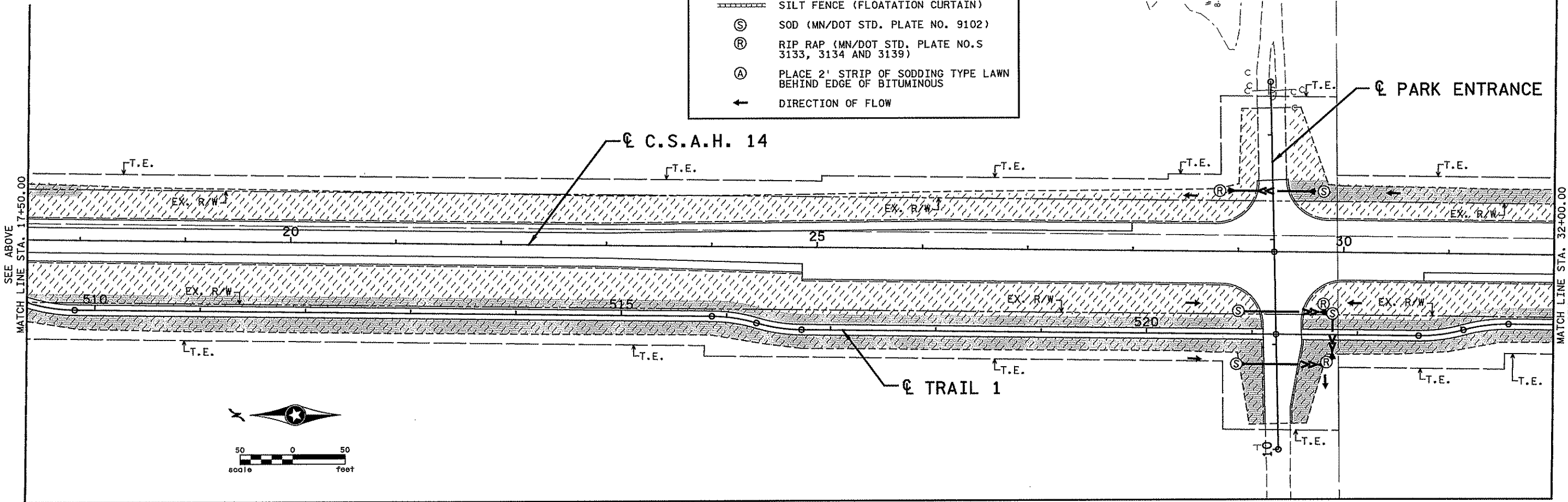
MATCH LINE STA. 17+50.00  
SEE BELOW

- NOTES:
- MIX 310 ON POND BENCH.
  - MIX 350 FROM POND BENCH TO POND GRADING LIMITS.
  - EROSION CONTROL BLANKET TYPE III. TO BE USED ON SLOPES 1:3 AND STEEPER.

LEGEND TO BE USED FOR ALL EROSION CONTROL AND TURF ESTABLISHMENT PLAN SHEETS

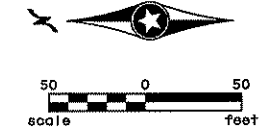
LEGEND

- SEED MIXTURE 350
- SEED MIXTURE 310
- SODDING TYPE LAWN
- RANDOM RIPRAP CLASS IV
- EROSION CONTROL BLANKET CATEGORY 3
- BIOROLL
- SILT FENCE (MACHINE SLICED)
- SILT FENCE (FLOATATION CURTAIN)
- SOD (MN/DOT STD. PLATE NO. 9102)
- RIP RAP (MN/DOT STD. PLATE NO. S 3133, 3134 AND 3139)
- PLACE 2' STRIP OF SODDING TYPE LAWN BEHIND EDGE OF BITUMINOUS
- DIRECTION OF FLOW



SEE ABOVE  
MATCH LINE STA. 17+50.00

MATCH LINE STA. 32+00.00  
SEE SHEET NO. 240



3/13/12 PM 3/21/2007 ...\\4994-f\h1-mu\plan\4994-f.ted

NO	DATE	BY	CHKD	APPR	REVISION

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

Print Name: CHRISTOPHER M. TRBOYEVIČ

*Christopher M. Trbojevich*

Date: 3/26/07 License #: 41635

STATE PROJECT NO.  
S.P. 02-614-24, ETAL

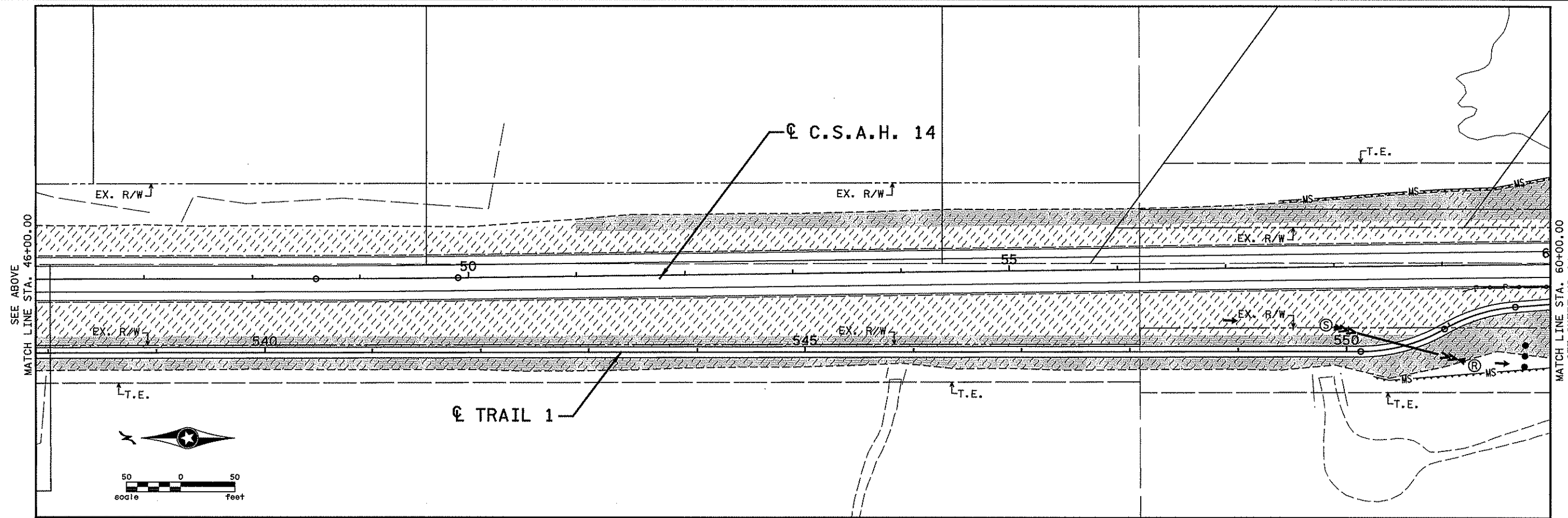
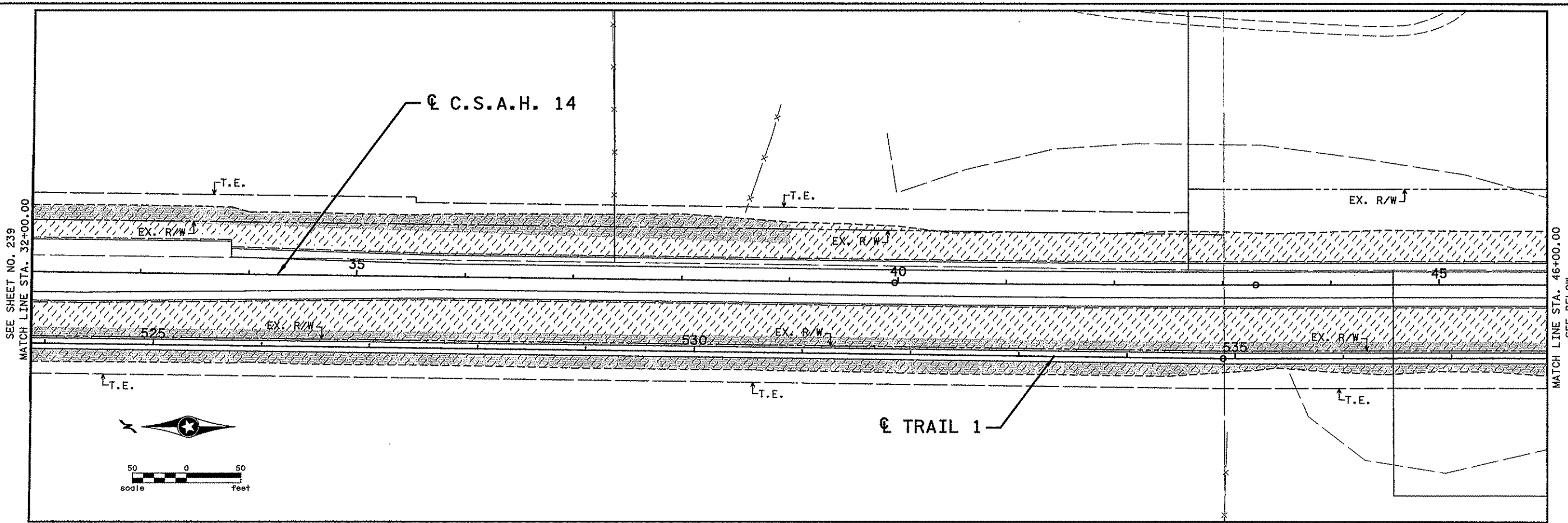
DRAWN BY  
S. MARTINS  
DESIGNED BY  
J. TOULOUSE  
CHECKED BY  
C. TRBOYEVIČ  
COMM. NO. 4994

**SRF** CONSULTING GROUP, INC.

ANOKA COUNTY  
EROSION CONTROL AND TURF ESTABLISHMENT PLAN  
C.S.A.H. 14  
STA. 4+00.00 TO STA. 32+00.00

SHEET  
239  
OF  
492





3/13/17 PM  
 3/13/2007  
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NO	DATE	BY	CHKD	APPR	REVISION

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.  
 Print Name: **CHRISTOPHER M. TRBOYEVICH**  
*Christopher M. Trbojevich*  
 Date: 3/26/07 License # 41635

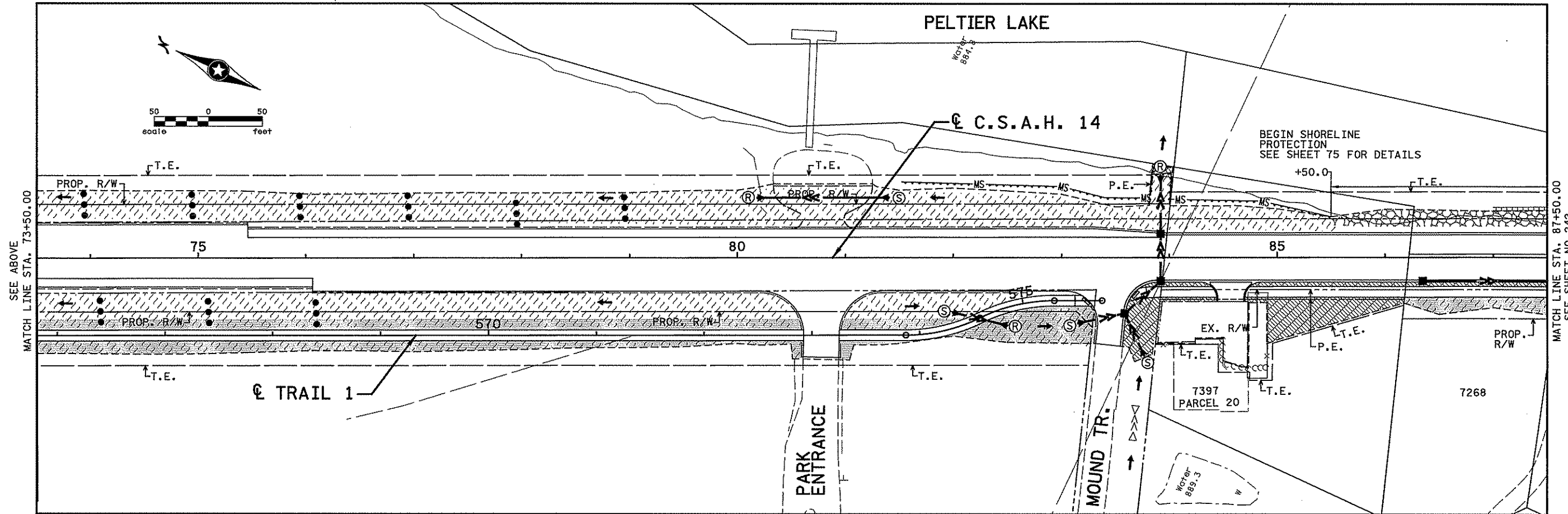
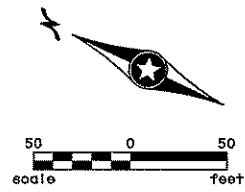
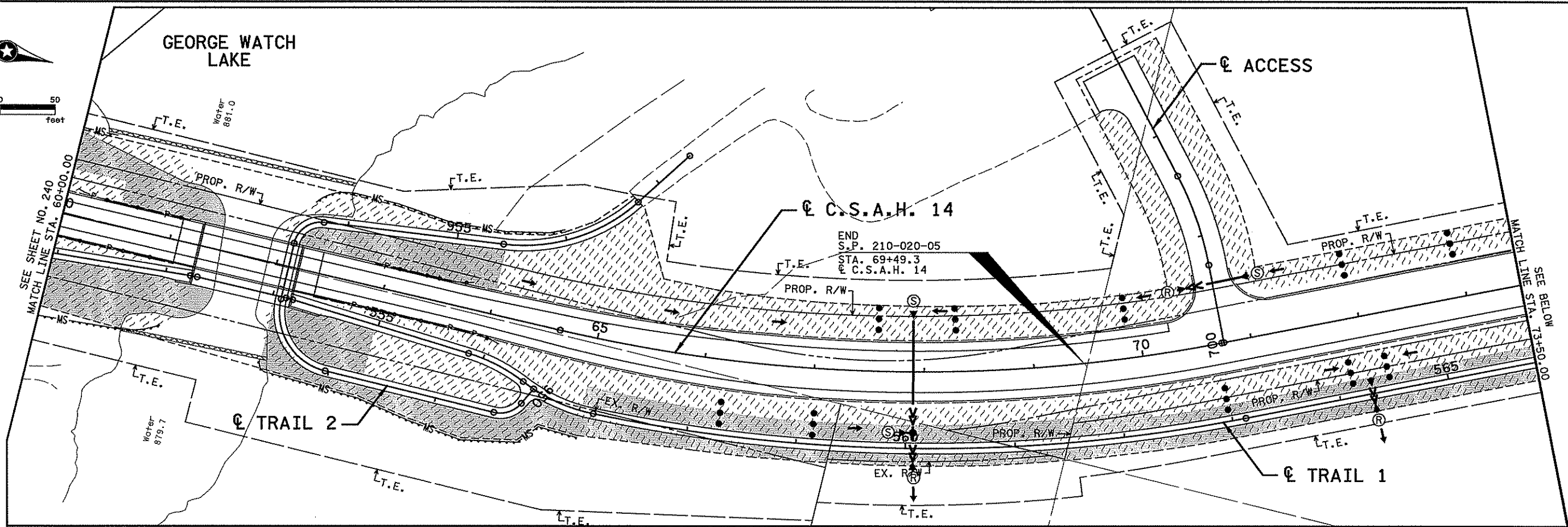
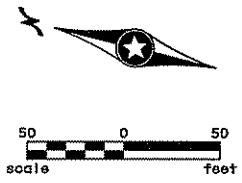
STATE PROJECT NO.  
 S.P. 02-614-24, ETAL

DRAWN BY  
 S. MARTINS  
 DESIGNED BY  
 J. TOULOUSE  
 CHECKED BY  
 C. TRBOYEVICH  
 COMM. NO. 4994



**ANOKA COUNTY**  
 EROSION CONTROL AND TURF ESTABLISHMENT PLAN  
**C.S.A.H. 14**  
 STA. 32+00.00 TO STA. 60+00.00

SHEET  
 240  
 OF  
 492




3/13/21 PW  
3/21/2007  
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NO	DATE	BY	CKD	APPR	REVISION

...4994-f\h1-m\p1\m\4994-f.tec

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Print Name: **CHRISTOPHER M. TRBOYEVICH**



Date: 3/20/07 License # 41635

STATE PROJECT NO.  
S.P. 02-614-24, ETAL

DRAWN BY  
S. MARTINS  
DESIGNED BY  
J. TOULOUSE  
CHECKED BY  
C. TRBOYEVICH  
COMM. NO. 4994



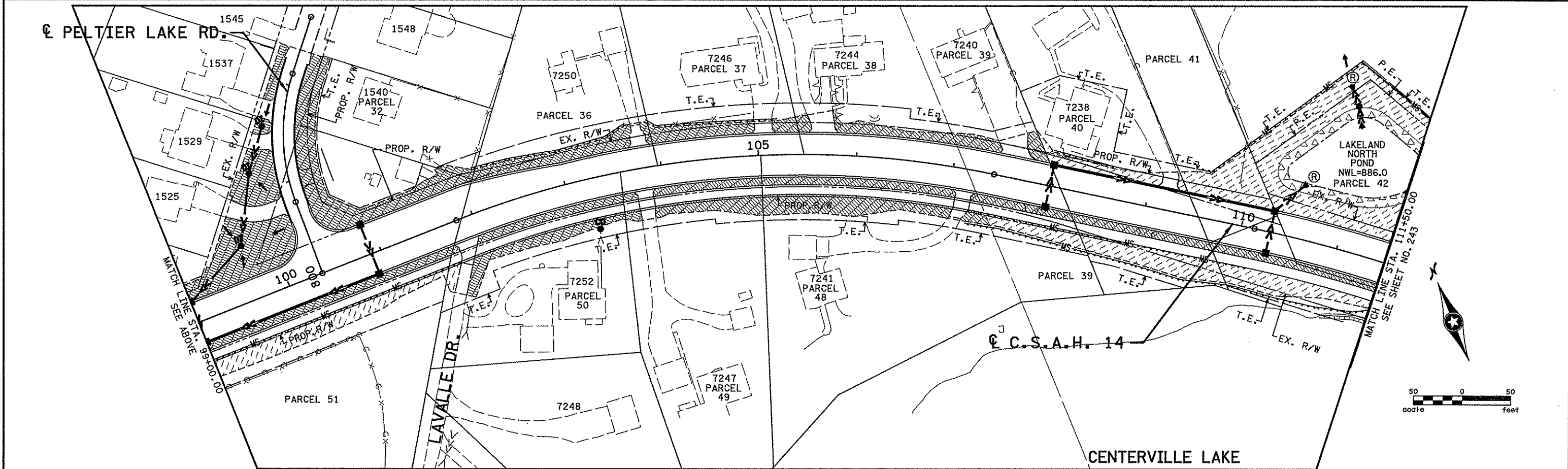
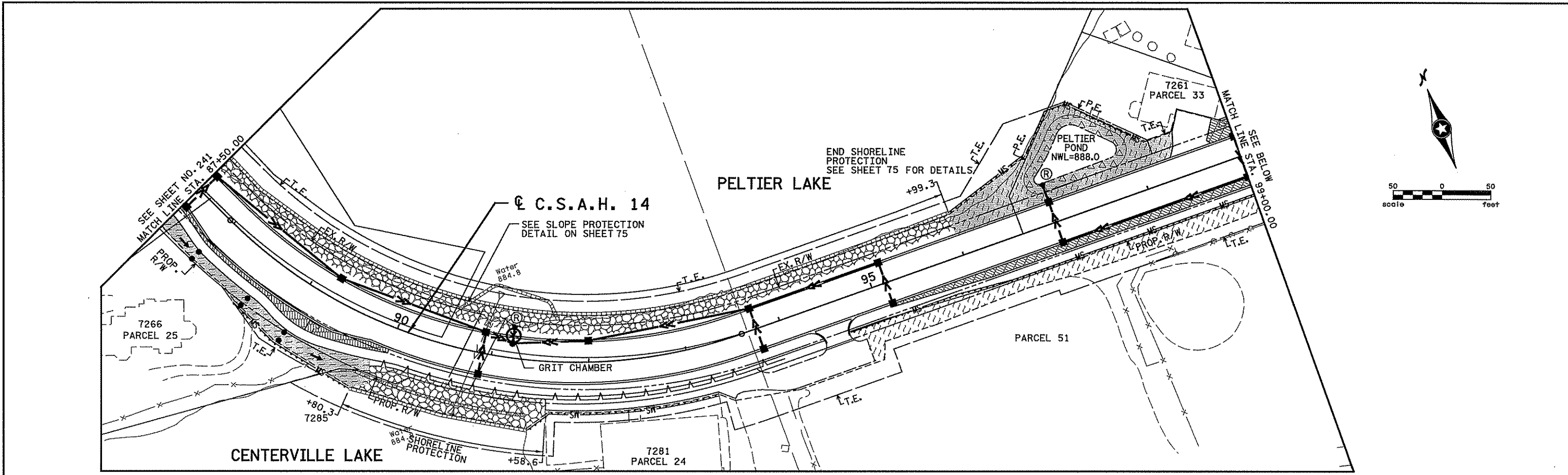
ANOKA COUNTY

EROSION CONTROL AND TURF ESTABLISHMENT PLAN

C.S.A.H. 14

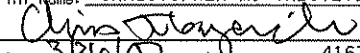
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SHEET  
241  
OF  
492



3/13/26 PM  
 3/21/2007  
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NO	DATE	BY	CHKD	APPR	REVISION

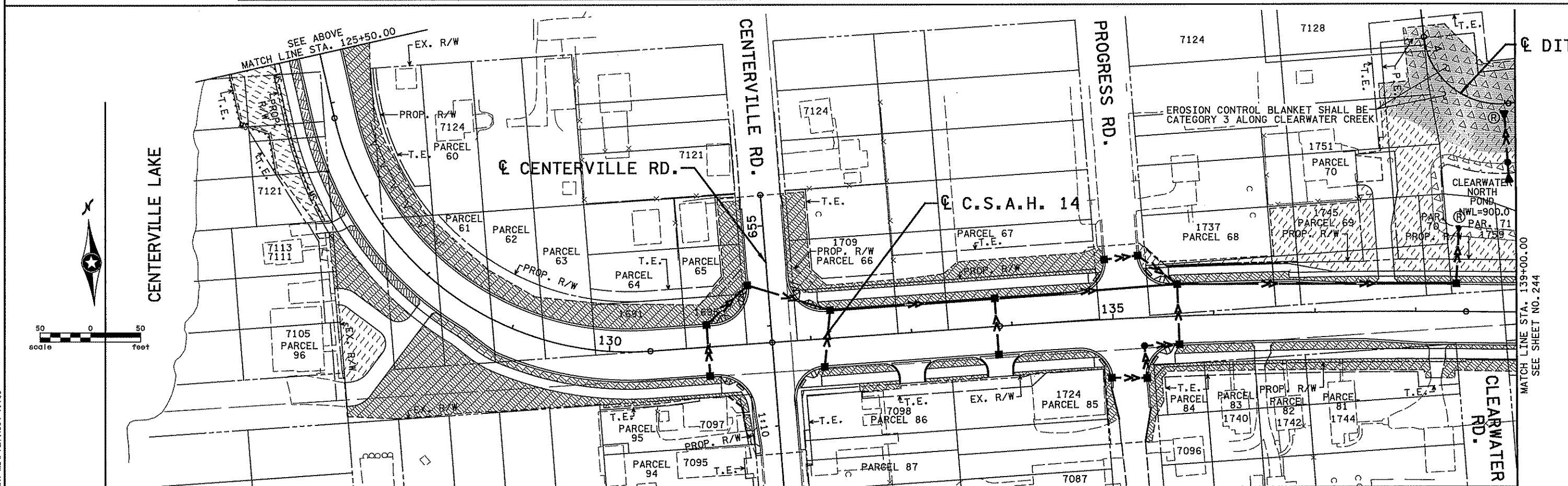
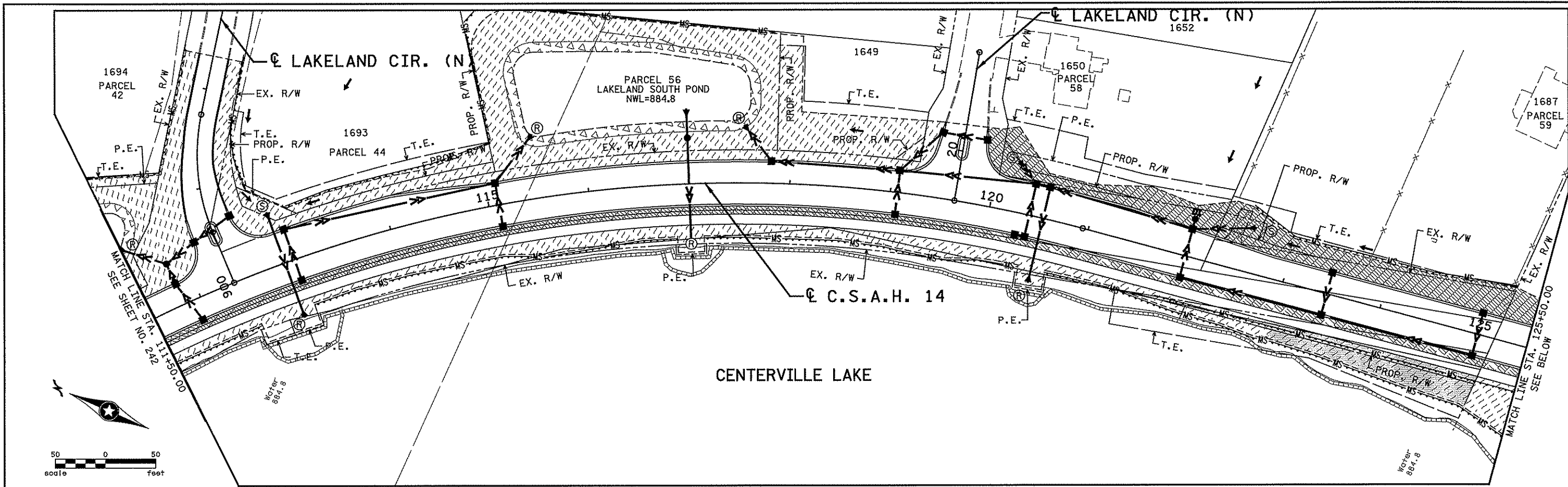
I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.  
 Print Name: CHRISTOPHER M. TRBOYEVICH  
  
 Date: 3/26/07 License # 41635

STATE PROJECT NO.  
 S.P. 02-614-24, ETAL  
 DRAWN BY  
 S. MARTINS  
 DESIGNED BY  
 J. TOULOUSE  
 CHECKED BY  
 C. TRBOYEVICH  
 COMM. NO. 4994



ANOKA COUNTY  
 EROSION CONTROL AND TURF ESTABLISHMENT PLAN  
 C.S.A.H. 14  
 STA. 87+50.00 TO STA. 111+50.00

SHEET  
 242  
 OF  
 492



NO	DATE	BY	CKD	APPR	REVISION

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Print Name: **CHRISTOPHER M. TRBOYEVICH**

*Christopher M. Trbojevich*

Date: **6/27/07** License # **41635**

STATE PROJECT NO. S.P. 02-614-24, ETAL

DRAWN BY S. MARTINS

DESIGNED BY J. TOULOUSE

CHECKED BY C. TRBOYEVICH

COMM. NO. 4994



ANOKA COUNTY

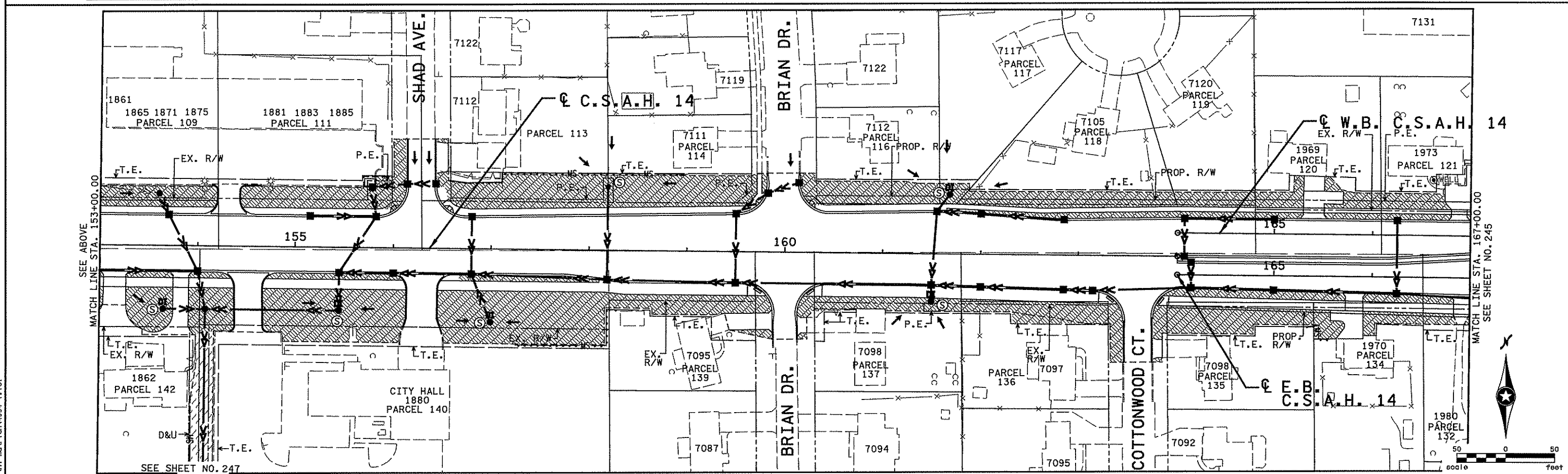
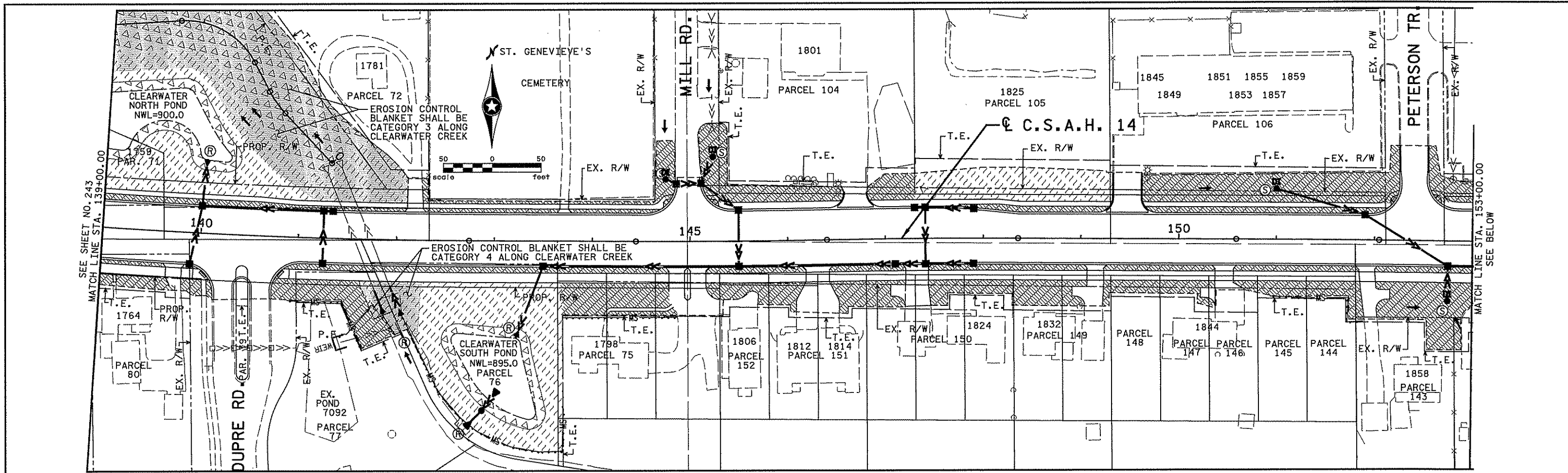
EROSION CONTROL AND TURF ESTABLISHMENT PLAN

C.S.A.H. 14

STA. 111+50.00 TO STA. 139+00.00

SHEET 243 OF 492

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NO	DATE	BY	CHKD	APPR	REVISION

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Print Name: CHRISTOPHER M. TRBOYEVICH

*Christopher M. Trbojevich*

Date: 6/27/07 License # 41635

STATE PROJECT NO.  
S.P. 02-614-24, ETAL

DRAWN BY  
S. MARTINS

DESIGNED BY  
J. TOULOUSE

CHECKED BY  
C. TRBOYEVICH

COMM. NO. 4994



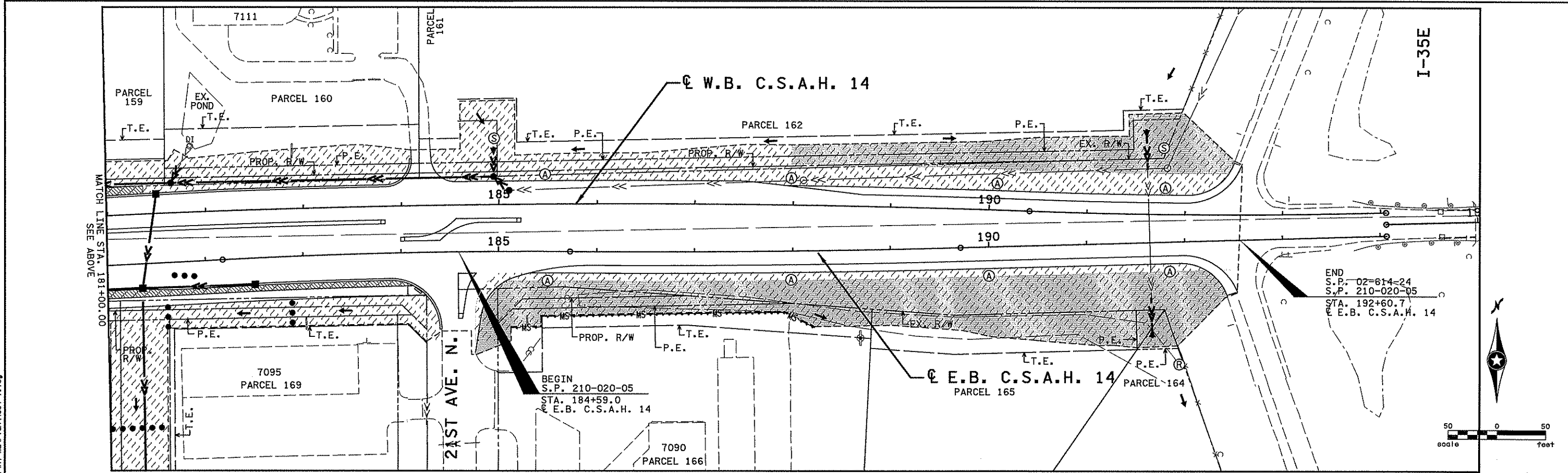
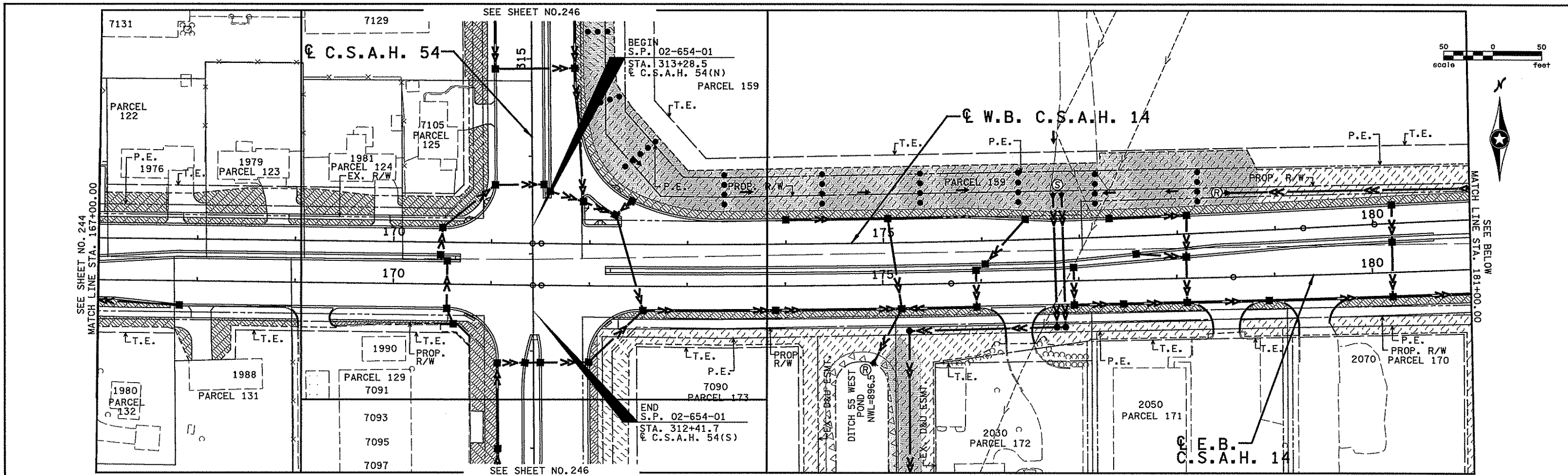
ANOKA COUNTY

EROSION CONTROL AND TURF ESTABLISHMENT PLAN

C.S.A.H. 14

STA. 139+00.00 TO STA. 167+00.00

SHEET  
244  
OF  
492



3/13/11 PM  
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NO	DATE	BY	CKD	APPR	REVISION

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.  
 Print Name: CHRISTOPHER M. TRBOYEVICH  
*Christopher M. Trbojevich*  
 Date: 3/26/11 License # 41635

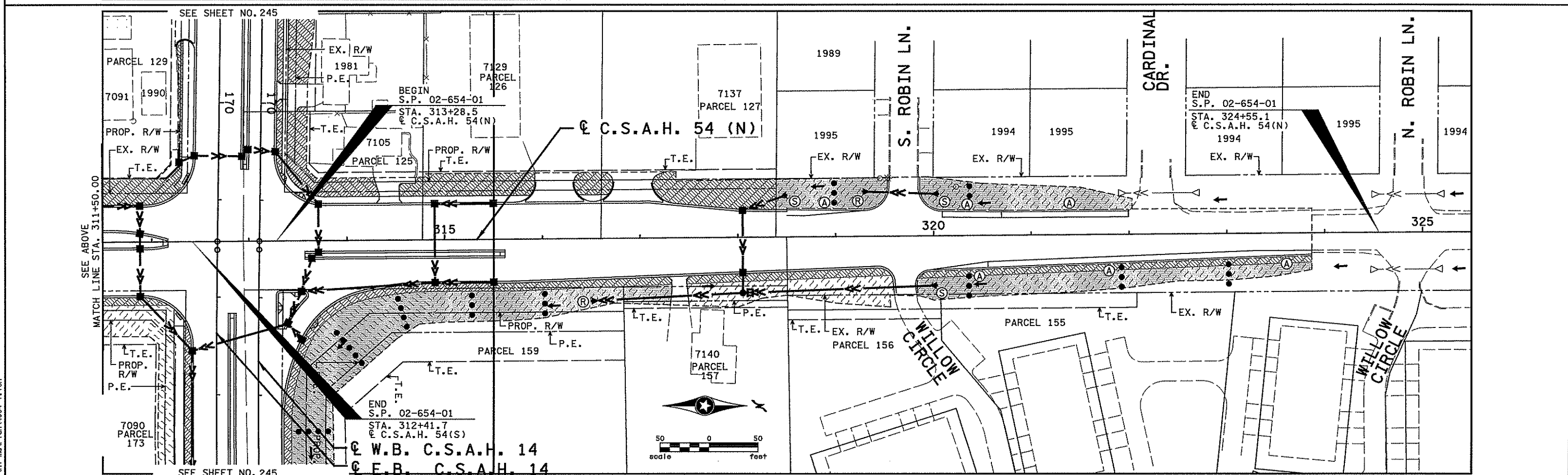
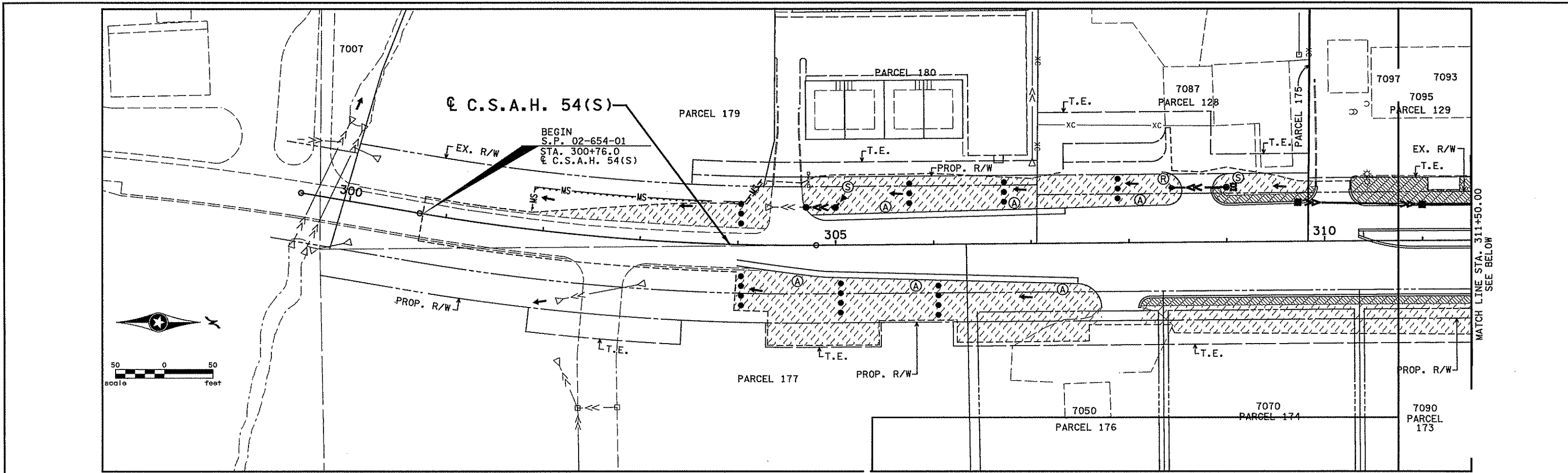
STATE PROJECT NO.  
 S.P. 02-614-24, ETAL

DRAWN BY  
 S. MARTINS  
 DESIGNED BY  
 J. TOULOUSE  
 CHECKED BY  
 C. TRBOYEVICH  
 COMM. NO. 4994



ANOKA COUNTY  
 EROSION CONTROL AND TURF ESTABLISHMENT PLAN  
 C.S.A.H. 14  
 STA. 167+00.00 TO STA. 193+00.00

SHEET  
 245  
 OF  
 492



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NO	DATE	BY	CHKD	APPR	REVISION

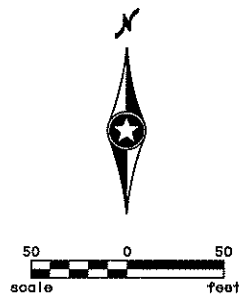
I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.  
 Print Name: CHRISTOPHER M. TRBOYEVICH  
  
 Date: 3/26/07 License: 41635

STATE PROJECT NO. S.P. 02-614-24, ETAL  
 DRAWN BY S. MARTINS  
 DESIGNED BY J. TOULOUSE  
 CHECKED BY C. TRBOYEVICH  
 COMM. NO. 4994

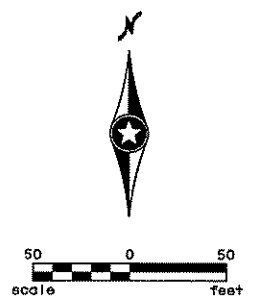
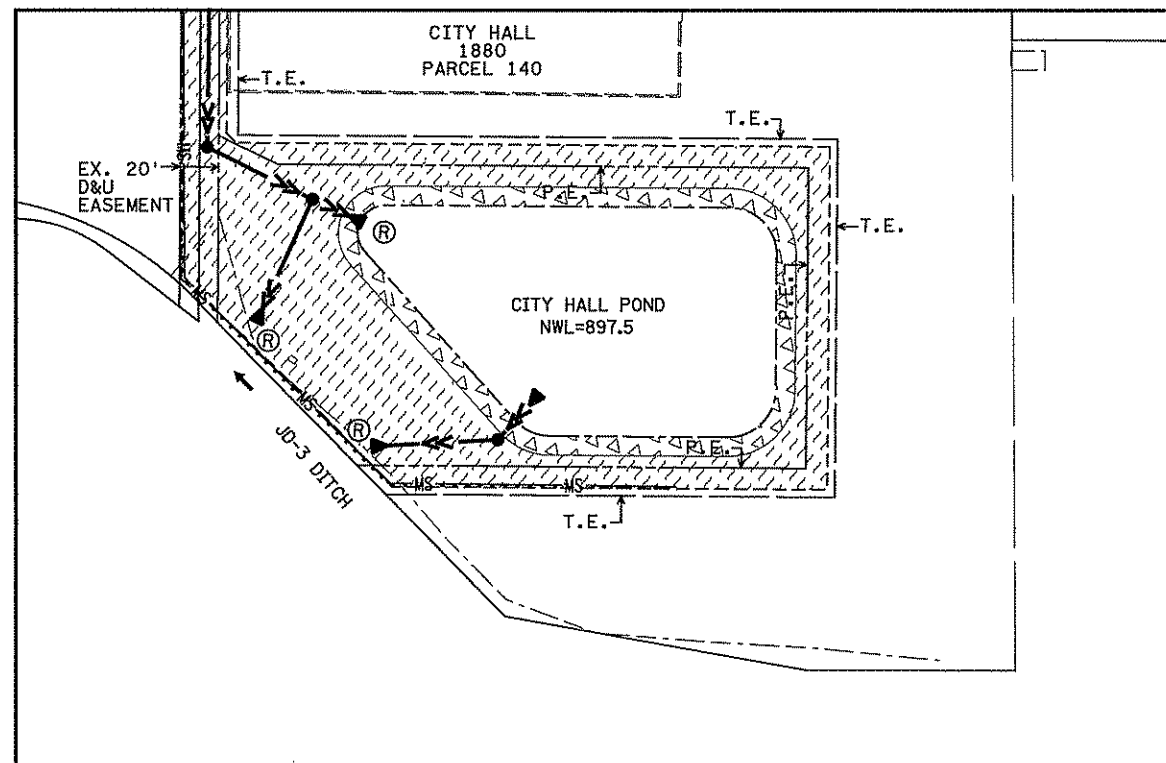


ANOKA COUNTY  
 EROSION CONTROL AND TURF ESTABLISHMENT PLAN  
 C.S.A.H. 14  
 C.S.A.H. 54

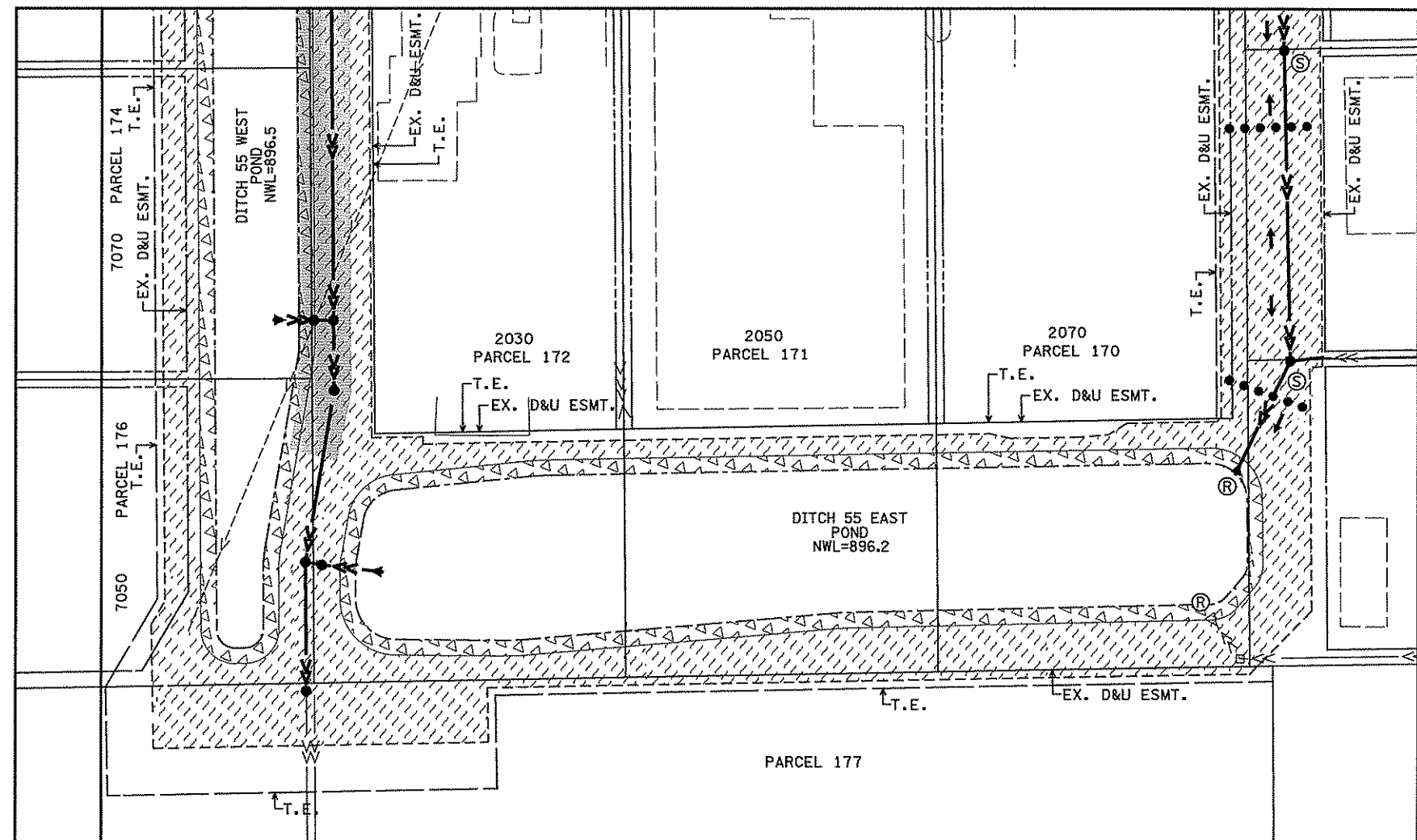
SHEET 246 OF 492



**CITY HALL POND AREA**



**DITCH 55 EAST AND WEST POND AREAS**



11/13/07 PM  
 11/13/2007  
 ...\\4994-F\h1-mu\p1an\4994-f.tol

NO	DATE	BY	CHKD	APPR	REVISION

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 Print Name: **CHRISTOPHER M. TRBOYEVICH**  
*Christopher M. Trbojevich*  
 Date: 5/26/10 License # 41635

STATE PROJECT NO. S.P. 02-614-24, ETAL  
 DRAWN BY S. MARTINS  
 DESIGNED BY J. TOULOUSE  
 CHECKED BY C. TRBOYEVICH  
 COMM. NO. 4994



**ANOKA COUNTY**  
 EROSION CONTROL AND TURF ESTABLISHMENT PLAN  
**C.S.A.H. 14**  
 MISC. POND AREAS

SHEET 247 OF 492



(PP)		PERMANENT PAVEMENT MARKINGS													
ALIGNMENT	STATION TO STATION	PAVEMENT MESSAGE (3)				SOLID LINE					BROKEN LINE		DOTTED LINE	DOUBLE SOLID LINE	ZEBRA CROSS WALK MARKING (3)
		LEFT ARROW (EACH)	RIGHT ARROW (EACH)	LEFT-THRU ARROW (EACH)	SCHOOL CROSSING (EACH)	4" WHITE (LF)	24" WHITE (LF)	4" YELLOW (LF)	24" YELLOW (LF)	24" YELLOW (3) (LF)	4" WHITE (4) (LF)	4" YELLOW(5) (LF)	8" WHITE (6) (LF)	4" YELLOW (LF)	(SF)
C.S.A.H. 14	4+22.6 - 69+49.3	6	7			15320		1110		370		520		5560	
C.S.A.H. 14	69+49.3 - 184+58.7	66	27		2	25800	190	8290		1070	1000	1620	80	6970	2040
C.S.A.H. 14	184+58.7 - 192+53.7	2	4			2780			210		380		80	1150	
WOODLAND DR.	600+61.2 - 602+02.0														
PARK ENTRANCE	10+24.7 - 11+19.4					30								100	
PARK ENTRANCE	12+57.2 - 13+25.8														
ACCESS	700+66.0 - 702+75.0														
PELTIER LAKE RD.	800+63.8 - 802+36.4														
LAKELAND CIR. (N)	900+64.3 - 902+32.5														
LAKELAND CIR. (S)	20+06.6 - 20+25.6														
CENTERVILLE RD.	652+74.4 - 653+19.5		1	1		310								310	
CENTERVILLE RD.	654+46.8 - 655+28.4					90								90	
<b>SUBTOTAL</b>		<b>74</b>	<b>39</b>	<b>1</b>	<b>2</b>	<b>44330</b>	<b>190</b>	<b>9400</b>	<b>210</b>	<b>1440</b>	<b>1380</b>	<b>2140</b>	<b>160</b>	<b>14180</b>	<b>2040</b>
C.S.A.H. 54 (S)	304+16.8 - 311+89.5	4	4			2190			480		180			1360	
C.S.A.H. 54 (N)	313+78.5 - 323+86.5	5	2			1990			200		50			1600	
<b>SUBTOTAL</b>		<b>9</b>	<b>6</b>			<b>4180</b>			<b>680</b>		<b>230</b>			<b>2960</b>	
<b>PROJECT TOTALS</b>		<b>83</b>	<b>45</b>	<b>1</b>	<b>2</b>	<b>48510</b>	<b>190</b>	<b>9400</b>	<b>890</b>	<b>1440</b>	<b>1610</b>	<b>2140</b>	<b>160</b>	<b>17140</b>	<b>2040</b>

- NOTES:  
(1) ALL PERMANENT PAVEMENT MARKINGS SHALL BE EPOXY UNLESS OTHERWISE NOTED.  
(2) SEE TEMPORARY PAVEMENT MARKINGS FOR ALL MARKINGS RELATED TO STAGING.  
(3) MARKINGS SHALL BE PREFORMED THERMOPLASTIC.  
(4) BROKEN LINES SHALL BE 10' SOLID WITH 30' GAP.  
(5) BROKEN LINES SHALL BE 10' SOLID WITH 40' GAP.  
(6) DOTTED LINES SHALL BE 3' SOLID WITH 12' GAP.

3/13/02 PM 3/21/2007 ...4994-f\h1-mu\p1an\4994-f.STD

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. Print Name: <b>CHRISTOPHER M. TRBOYEVICH</b> <i>Christopher M. Trbojevich</i> Date: <u>3/26/07</u> License # <u>41635</u>		STATE PROJECT NO. S.P. 02-614-24, ETAL DRAWN BY S. MARTINS DESIGNED BY J. TOULOUSE CHECKED BY C. TRBOYEVICH COMM. NO. 4994	<b>SRF CONSULTING GROUP, INC.</b>	ANOKA COUNTY SIGNING AND STRIPING TABULATIONS C.S.A.H. 14	SHEET 248 OF 492
NO. DATE BY CKD APPR REVISION					

(SS)													
SIGN PANELS TYPE C													
SIGN NO.	C.S.A.H. 14	C.S.A.H. 54 (S)	C.S.A.H. 54 (N)	QUANTITY	POSTS			(1) MTG. HGT. MIN. (FT)	PANEL			CODE NO.	PANEL LEGEND
					NO. & TYPE	KNEE BRACE QUANT.	LENGTH (FT)		SIZE (IN)	AREA (SF)	TOTAL AREA (SF)		
C-1	1			1	1	0	13	7	18 X 18	2.3	2.3	R1-1	STOP
C-2	1			1	1	0	13	7	30 X 30	6.3	6.3	R1-1	STOP
C-3	6			6	1	0	13	7	36 X 36	9.0	54.0	R1-1	STOP
C-4	4			4	1	0	13	4	18X18X18	1.0	4.0	R1-2	YIELD
C-5	7			7	1	0	10	4	24 X 24	4.0	28.0	R5-3	NO MOTOR VEHICLES
C-6	2			2	1	0	13	7	24 X 30	5.0	10.0	R2-1	SPEED LIMIT 30
C-7	3			3	1	0	10	7	36 X 36	9.0	27.0	R3-1A	STOP AHEAD
C-8	2			2	1	0	13	7	24 X 30	5.0	10.0	R2-1	SPEED LIMIT 45
C-9	5	1		6	1	0	13	7	24 X 30	5.0	30.0	R2-1	SPEED LIMIT 50
C-10			1	1	1	0	13	7	24 X 30	5.0	5.0	R2-1	SPEED LIMIT 55
C-11	4			4	1	0	13	7	24 X 30	5.0	20.0	R2-2	SPEED LIMIT 35
C-12	13	1		14	1	0	13	7	30 X 30	6.3	88.2	R3-X1	RIGHT TURN LANE
C-13	6			6	1	0	13	7	54 X 30	11.3	67.8	R3-30ACA	LEFT ONLY/THRU ONLY/RIGHT ONLY
C-14	6		1	7	1	0	13	7	36 X 30	7.5	52.5	R3-30AC	LEFT ONLY/THRU ONLY
C-15	7			7	1	0	13	7	24 X 24	4.0	28.0	R8-3a	NO PARKING SYMBOL
C-16	1			1	1	0	13	7	36 X 30	7.5	7.5	R3-30AC	LEFT ONLY/THRU ONLY
C-17	6			6	1	0	13	7	24 X 24	4.0	4.0	R8-3a	NO PARKING SYMBOL
C-18	6			6	1	0	13	7	24 X 12	2.0	12.0	M2-X1	BEGIN
C-19	2			2	1	0	13	7	24 X 36	6.0	36.0	R3-9b	TWO WAY LEFT TURNS
C-20	4	1		5	2	0	13	7	24 X 12	2.0	12.0	M4-6	END
C-21	7	1	1	9	1	0	13	7	24 X 36	6.0	36.0	R3-9b	TWO WAY LEFT TURNS
C-22	10			10	1	0	13	7	24 X 30	5.0	10.0	R8-2(MOD)	NO PARKING EXCEPT AUTHORIZED VEHICLES
C-23	1			1	1	0	14	7	66 X 30	13.8	69.0	R3-30ACCA	LEFT ONLY/THRU ONLY/THRU ONLY/RIGHT ONLY
C-24			1	1	2	0	13	7	24 X 30	5.0	45.0	R4-7	KEEP RIGHT
C-25	1			1	1	0	14	7	18 X 18			X4-2	HAZARD MARKER
C-26	2			2	1	0	11	7	30 X 30	6.3	63.0	R5-1	DO NOT ENTER
C-27	1			1	1	0	14	7	30 X 30	6.3	6.3	W1-2( R )	CURVE
C-28	2			2	1	0	14	7	18 X 18	2.3	2.3	W13-1	30 M.P.H
C-29	1			1	1	0	13	7	66 X 30	13.8	13.8	R3-30ABCA	DOUBLE LEFT ONLY/THRU ONLY/RIGHT ONLY
C-30	2			2	1	0	14	7	48 X 24	8.0	8.0	W1-6	RIGHT ARROW
C-31	2	1	1	4	1	0	14	7	18 X 18			X4-2	HAZARD MARKER
C-32	1			1	1	0	14	7	48X60X60	9.2	18.4	W14-3	NO PASSING ZONE
C-33	2		1	3	1	0	14	7	30 X 30	6.3	6.3	W1-2(L)	CURVE
C-34	1			1	1	0	14	7	18 X 18	2.3	2.3	W13-1	30 M.P.H
C-35	1			1	1	0	14	7	36 PENT.	6.9	13.8	SS-1	SCHOOL CROSSING
C-36	2			2	1	0	14	7	30 X 24	5.0	10.0	W16-7mp(R)	DOWN ARROW
C-37	3	1		4	1	0	14	7	36 PENT.	6.9	13.8	SS-1	SCHOOL CROSSING
C-38	1			1	1	0	14	7	30 X 24	5.0	10.0	W16-7mp(L)	DOWN ARROW
C-39		1		1	1	0	14	7	30 X 30	6.3	6.3	R3-7	RIGHT LANE MUST TURN RIGHT
C-40	2		1	3	1	0	14	7	36 X 36	9.0	18.0	W6-1	DIVIDED HIGHWAY
									36 X 36	9.0	36.0	W3-3	SIGNAL AHEAD
									30 X 30	6.3	6.3	W12-1	DOUBLE ARROW
									36 X 36	9.0	27.0	W9-1	RIGHT LANE ENDS
									36X36X36	3.9	3.9	R1-2	YIELD
									24 X 12	2.0	2.0	M3-2ma	EAST
									24 X 24	4.0	4.0	M1-6	COUNTY 14
									24 X 12	2.0	4.0	M3-4ma	WEST
									24 X 24	4.0	8.0	M1-6	COUNTY 14
									21 X 15	2.2	8.8	M2-1a	JCT
									24 X 24	4.0	16.0	M1-6	COUNTY 21
									24 X 24	4.0	4.0	M1-6	COUNTY 21
									21 X 15	2.2	2.2	M6-6a( R )	UP/RIGHT ARROW
									24 X 24	4.0	4.0	M1-6	COUNTY 21
									21 X 15	2.2	2.2	M6-6a(L)	LEFT/UP ARROW
									21 X 15	2.2	6.6	M2-1a	JCT
									24 X 24	4.0	12.0	M1-6	COUNTY 54
SUBTOTAL 1											1006.9		

(3)

- GENERAL NOTES:
- POST LENGTHS ARE APPROXIMATE AND INCLUDE EMBEDMENT, BUT DO NOT INCLUDE ADDITIONAL LENGTH REQUIRED FOR SPLICE.
  - SEE STANDARD SIGNS MANUAL FOR PUNCHING CODE AND DETAIL DRAWINGS OF TYPE C PANELS.

- SPECIFIC NOTES:
- (1) MOUNTING HEIGHT IS MINIMUM. REFER TO ANOKA COUNTY STANDARDS FOR TYPICAL MOUNTING.
  - (2) MOUNTED BACK TO BACK, NOTE DIFFERENT MOUNTING HEIGHTS.
  - (3) LOCATION OF NO PASSING ZONES TO BE DETERMINED IN FIELD BY ENGINEER PER MN MUTCD.

3/13/53 PM 3/27/2006 4994-F\h1-mu\p1\an\4994-f STA

NO	DATE	BY	CHKD	APPR	REVISION

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

Print Name: CHRISTOPHER M. TRBOYEIVICH

*Christopher M. Trboyeivich*

Date: 3/26/10 License # 41635

STATE PROJECT NO. S.P. 02-614-24, ETAL

DRAWN BY S. MARTINS  
DESIGNED BY J. TOULOUSE  
CHECKED BY C. TRBOYEIVICH  
COMM. NO. 4994



ANOKA COUNTY

SIGNING AND STRIPING TABULATIONS

C.S.A.H. 14

SHEET 249 OF 492

(SS) SIGN PANELS TYPE C													
SIGN NO.	C.S.A.H. 14	C.S.A.H. 54 (S)	C.S.A.H. 54 (N)	QUANTITY	POSTS			(1) MTG. HGT. MIN. (FT)	PANEL			CODE NO.	PANEL LEGEND
					NO. & TYPE	KNEE BRACE QUANT.	LENGTH (FT)		SIZE (IN)	AREA (SF)	TOTAL AREA (SF)		
C-41	2			2	1	0	14	7	24 X 24	4.0	8.0	M1-6	COUNTY 21
									21 X 15	2.2	4.4	M6-1a(L)	LEFT ARROW
C-42	1			1	1	0	14	7	24 X 24	4.0	4.0	M1-6	COUNTY 54
									21 X 15	2.2	2.2	M6-1a(R)	RIGHT ARROW
C-43	1			1	1	0	14	7	24 X 12	2.0	2.0	M3-3a	SOUTH
									24 X 24	4.0	4.0	M1-6	COUNTY 21
C-44		1		1	1	0	14	7	24 X 12	2.0	2.0	M4-6a	END
									24 X 24	4.0	4.0	M1-6	COUNTY 54
C-45	1			1	1	0	14	7	24 X 24	4.0	4.0	M1-6	COUNTY 54
									21 X 15	2.2	2.2	M6-1a(L)	LEFT ARROW
C-46			1	1	1	0	14	7	24 X 12	2.0	2.0	M3-1ma	NORTH
									24 X 24	4.0	4.0	M1-6	COUNTY 21
C-47		1	2	3	1	0	11	7	21 X 15	2.2	6.6	M2-1a	JCT
									24 X 24	4.0	12.0	M1-6	COUNTY 14
C-48			1	1	1	0	11	7	24 X 24	4.0	4.0	M1-6	COUNTY 54
									21 X 15	2.2	2.2	M6-3a	UP ARROW
C-49		1	1	2	1	0	11	7	24 X 24	4.0	8.0	M1-6	COUNTY 14
									21 X 15	2.2	4.4	M6-4a	DOUBLE ARROW
C-50			1	1	1	0	11	7	24 X 24	4.0	4.0	M1-6	COUNTY 21
									21 X 15	2.2	2.2	M6-1a(R)	RIGHT ARROW
C-51	1			1	1	0	11	4	24 X 18	3.0	3.0	D11-1	BIKE ROUTE
									12 X 9	0.8	0.8	M7-6(L)	LEFT/UP ARROW
C-52	2			2	1	0	11	4	24 X 6	1.0	2.0	M4-12	END
									24 X 18	3.0	6.0	D11-1	BIKE ROUTE
C-53	1			1	1	0	11	4	24 X 18	3.0	3.0	D11-1	BIKE ROUTE
									12 X 9	0.8	0.8	M7-6(R)	UP/RIGHT ARROW
C-54	1			1	1	0	11	4	24 X 18	3.0	3.0	D11-1	BIKE ROUTE
									12 X 9	0.8	0.8	M7-5	DOUBLE ARROW
C-55	2			2	1	0	11	7	30 X 30	6.3	12.6	R3-X2	LEFT TURN LANE
C-56	9			9	1	0	12	7	36 X 12	3.0	27.0	R6-1(R)	ONE WAY
									24 X 12	2.0	2.0	M3-3ma	SOUTH
C-57		1		1	1	0	11	5	24 X 24	4.0	4.0	M1-6	COUNTY 54
C-58	16		1	17	1	0	14	7	36 X 12	3.0	51.0	R6-1(R)	ONE WAY
									30 X 30	6.3	107.1	R1-1	STOP
C-59	11		1	12	1	0	12	7	36 X 12	3.0	36.0	R6-1(L)	ONE WAY
									36 X 12	3.0	36.0	R6-1(L)	ONE WAY
C-60	10		2	12	1	0	14	7	36 X 12	3.0	36.0	R6-1(R)	ONE WAY
									30 X 30	6.3	75.6	R1-1	STOP
C-61	1			1	2	0	13	7	54 X 30	11.3	11.3	R3-30ACC	LEFT ONLY/THRU ONLY/RIGHT ONLY
C-62	2			2	2	0	13	7	36 X 30	7.5	15.0	R3-30AD	LEFT ONLY/THRU RIGHT
C-63	1			1	2	0	13	7	36 X 30	7.5	7.5	R3-30DA	THRU LEFT/ RIGHT ONLY
SUBTOTAL											526.7		
SUBTOTAL 1											1006.9		
PROJECT TOTAL											1533.6		

- GENERAL NOTES:
- POST LENGTHS ARE APPROXIMATE AND INCLUDE EMBEDMENT, BUT DO NOT INCLUDE ADDITIONAL LENGTH REQUIRED FOR SPLICE.
  - SEE STANDARD SIGNS MANUAL FOR PUNCHING CODE AND DETAIL DRAWINGS OF TYPE C PANELS.
- SPECIFIC NOTES:
- MOUNTING HEIGHT IS MINIMUM. REFER TO ANOKA COUNTY STANDARDS FOR TYPICAL MOUNTING.
  - MOUNTED BACK TO BACK, NOTE DIFFERENT MOUNTING HEIGHTS.
  - LOCATION OF NO PASSING ZONES TO BE DETERMINED IN FIELD BY ENGINEER PER MN MUTCD.

(TT) SALVAGE AND INSTALL SIGN PANELS TYPE C													
SIGN NO.	C.S.A.H. 14	C.S.A.H. 54(S)	C.S.A.H. 54(N)	QUANTITY	POSTS			(1) MTG. HGT. MIN. (FT)	PANEL			CODE NO.	PANEL LEGEND
					NO. & TYPE	LENGTH (FT)	SIZE (IN)		AREA (SF)	TOTAL AREA (SF)			
C-101	15		2	17									STREET SIGN
PROJECT TOTAL				17									

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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.

Print Name: CHRISTOPHER M. TRBOYEVICH

*Christopher M. Trbojevich*

Date: 3/26/07 License #: 41635

STATE PROJECT NO. S.P. 02-614-24, ETAL	DRAWN BY S. MARTINS DESIGNED BY J. TOULOUSE CHECKED BY C. TRBOYEVICH COMM. NO. 4994	ANOKA COUNTY SIGNING AND STRIPING TABULATIONS C.S.A.H. 14	SHEET 250 OF 492
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(VV) SALVAGE AND INSTALL SIGN PANELS TYPE D SEE SHEETS 252 - 259 FOR LOCATIONS						
SIGN	QUANTITY	POSTS		PANEL (1) MTG. HEIGHT (MIN.) (FT)	PANEL LEGEND	
		NO. & TYPE	LENGTH (FT)			SPACING (IN)
D-1	1	2	15	54	7	
D-2	1	2	15	42	7	
D-3	1	2	20	78	7	
D-4	1	2	17	78	7	
D-5	1	2	17	78	7	
D-6	1	2	20	42	7	
<b>TOTAL</b>	<b>6</b>					

(WW) SIGN PANELS TYPE D SEE SHEETS 252 - 259 FOR LOCATIONS										
SIGN	QUANTITY	POSTS				PANEL				PANEL LEGEND
		NO. & TYPE	KNEE BRACES QUANT.	LENGTH (FT)	SPACING (IN)	(1) MTG. HEIGHT (MIN.) (FT)	SIZE (IN)	AREA (SF)	TOTAL AREA (SF)	
D-12	1	2-U	1	15	30	7	48 X 54	18.0	18.0	
D-13	1	2-U	2	17	54	7	78 X 78	42.3	42.3	
D-14	1	2-U	2	14	66	7	108 X 42.0	31.5	31.5	
D-15	2	2		14	60	7	102 X 36	25.5	51.0	
<b>TOTAL</b>									<b>142.8</b>	

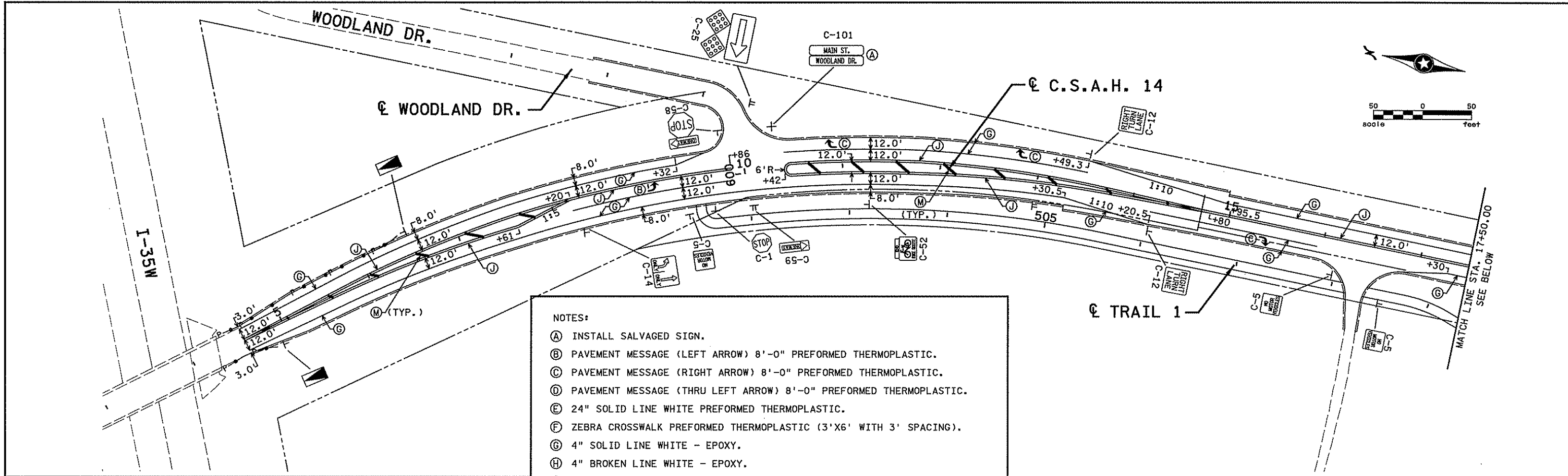
(RR) DELINEATORS AND MARKERS (3)		
TYPE	QUANTITY	LOCATION
HAZARD MARKER (X4-2)	12	MOUNTED ON TYPE C SIGN
HAZARD MARKER (X4-2)	2	ISLAND
CLEARANCE MARKER (X4-4R)	2	ISLAND
SNOW PLOW MARKER (X4-5)	10	GUARDRAIL ENDS / CURBS

- GENERAL NOTES:
- POST LENGTHS ARE APPROXIMATE AND INCLUDE EMBEDMENT, BUT DO NOT INCLUDE ADDITIONAL LENGTH REQUIRED FOR SPLICE.
  - SEE MN/DOT STANDARD SIGNS MANUAL FOR DETAILED DRAWINGS OF PANELS UNLESS OTHERWISE NOTED.

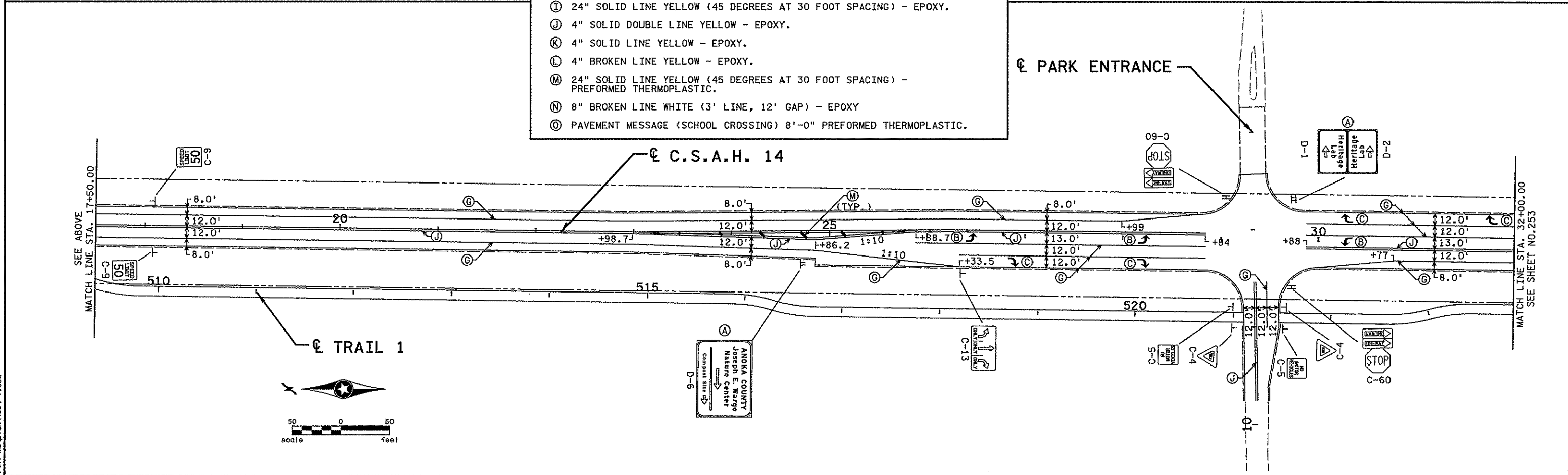
- SPECIFIC NOTES:
- (1) MOUNTING HEIGHT IS PER MN MUTCD.
  - (3) SEE SHEETS 252 - 259 FOR SIGN PANEL DETAILED DRAWING.

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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. Print Name: <b>CHRISTOPHER M. TRBOYEVICH</b>  Date: <u>3/16/09</u> License # <u>41635</u>				STATE PROJECT NO. S.P. 02-614-24, ETAL	DRAWN BY <b>S. MARTINS</b> DESIGNED BY <b>J. TOULOUSE</b> CHECKED BY <b>C. TRBOYEVICH</b> COMM. NO. 4994	<b>SRF CONSULTING GROUP, INC.</b>	<b>ANOKA COUNTY</b> SIGNING AND STRIPING TABULATIONS C.S.A.H. 14	<b>SHEET 251 OF 492</b>
NO DATE BY CKD APPR REVISION								



- NOTES:
- (A) INSTALL SALVAGED SIGN.
  - (B) PAVEMENT MESSAGE (LEFT ARROW) 8'-0" PREFORMED THERMOPLASTIC.
  - (C) PAVEMENT MESSAGE (RIGHT ARROW) 8'-0" PREFORMED THERMOPLASTIC.
  - (D) PAVEMENT MESSAGE (THRU LEFT ARROW) 8'-0" PREFORMED THERMOPLASTIC.
  - (E) 24" SOLID LINE WHITE PREFORMED THERMOPLASTIC.
  - (F) ZEBRA CROSSWALK PREFORMED THERMOPLASTIC (3'X6' WITH 3' SPACING).
  - (G) 4" SOLID LINE WHITE - EPOXY.
  - (H) 4" BROKEN LINE WHITE - EPOXY.
  - (I) 24" SOLID LINE YELLOW (45 DEGREES AT 30 FOOT SPACING) - EPOXY.
  - (J) 4" SOLID DOUBLE LINE YELLOW - EPOXY.
  - (K) 4" SOLID LINE YELLOW - EPOXY.
  - (L) 4" BROKEN LINE YELLOW - EPOXY.
  - (M) 24" SOLID LINE YELLOW (45 DEGREES AT 30 FOOT SPACING) - PREFORMED THERMOPLASTIC.
  - (N) 8" BROKEN LINE WHITE (3' LINE, 12' GAP) - EPOXY
  - (O) PAVEMENT MESSAGE (SCHOOL CROSSING) 8'-0" PREFORMED THERMOPLASTIC.



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NO	DATE	BY	CKD	APPR	REVISION

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

Print Name: **CHRISTOPHER M. TRBOYEVICH**

*Christopher M. Trbojevich*

Date: **3/26/07** License #: **41635**

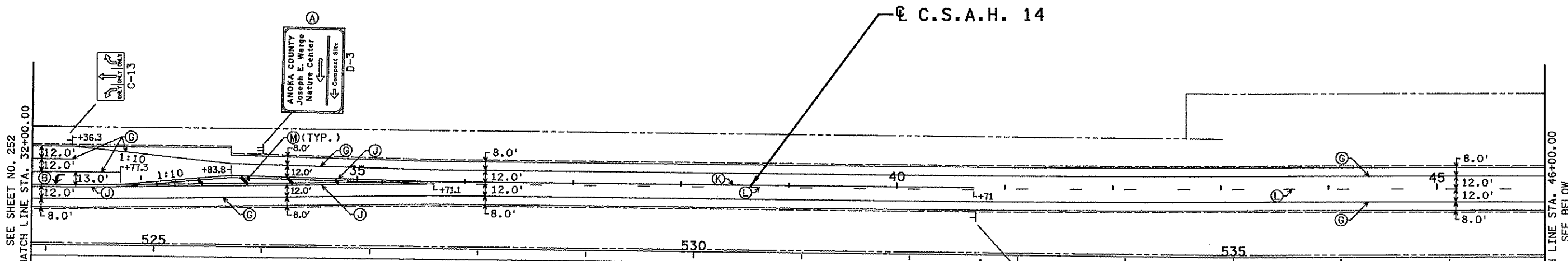
STATE PROJECT NO. S.P. 02-614-24, ETAL

DRAWN BY S. MARTINS  
DESIGNED BY B. ROSAND  
CHECKED BY C. TRBOYEVICH  
COMM. NO. 4994



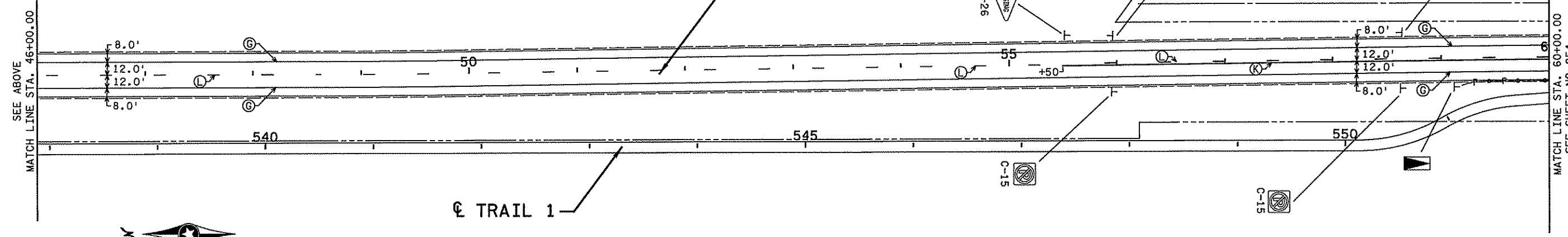
ANOKA COUNTY  
SIGNING AND STRIPING PLAN  
C.S.A.H. 14  
STA. 4+00.00 TO STA. 32+00.00

SHEET 252 OF 492



- NOTES:
- (A) INSTALL SALVAGED SIGN.
  - (B) PAVEMENT MESSAGE (LEFT ARROW) 8'-0" PREFORMED THERMOPLASTIC.
  - (C) PAVEMENT MESSAGE (RIGHT ARROW) 8'-0" PREFORMED THERMOPLASTIC.
  - (D) PAVEMENT MESSAGE (THRU LEFT ARROW) 8'-0" PREFORMED THERMOPLASTIC.
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  - (F) ZEBRA CROSSWALK PREFORMED THERMOPLASTIC (3'X6' WITH 3' SPACING).
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  - (J) 4" SOLID DOUBLE LINE YELLOW - EPOXY.
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  - (O) PAVEMENT MESSAGE (SCHOOL CROSSING) 8'-0" PREFORMED THERMOPLASTIC.

GENERAL NOTES:  
 LOCATION OF NO PASSING ZONES TO BE DETERMINED  
 IN THE FIELD BY THE ENGINEER PER THE MN MUTCD.



3/13/09 PM 3:21/2007  
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NO	DATE	BY	CKD	APPR	REVISION

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

Pr Int Name: CHRISTOPHER M. TRBOYEVICH

*Christopher M. Trbojevich*

Date: 3/26/07 License #: 41635

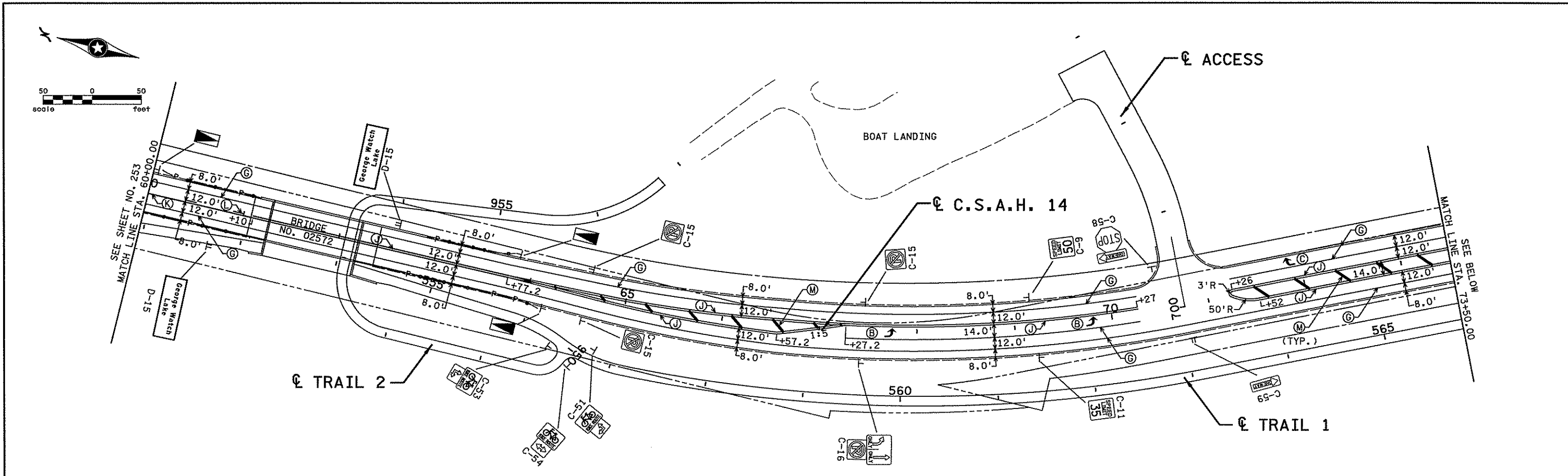
STATE PROJECT NO. S.P. 02-614-24, ETAL

DRAWN BY S. MARTINS  
 DESIGNED BY B. ROSAND  
 CHECKED BY C. TRBOYEVICH  
 COMM. NO. 4994



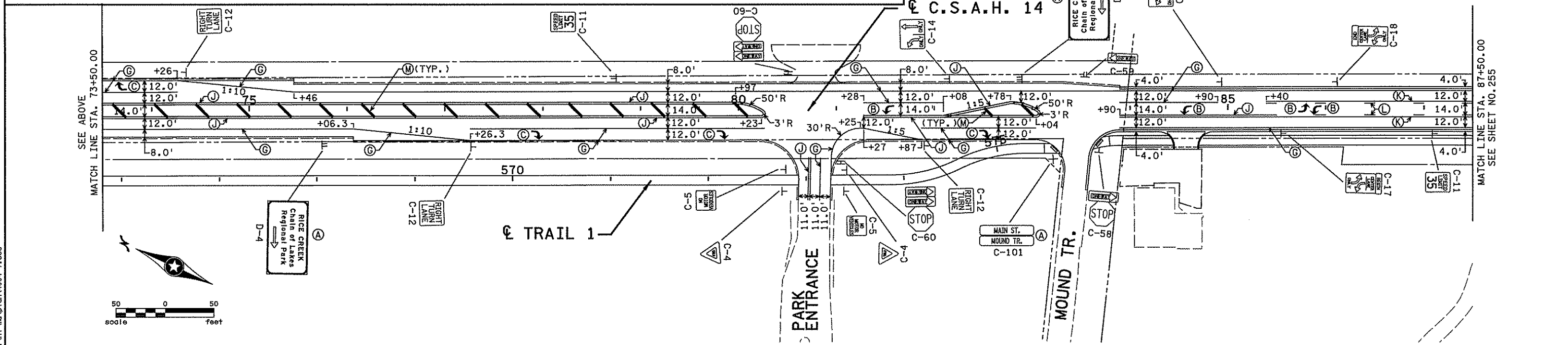
ANOKA COUNTY  
 SIGNING AND STRIPING PLAN  
 C.S.A.H. 14  
 STA. 32+00.00 TO STA. 60+00.00

SHEET 253 OF 492



NOTES:

- (A) INSTALL SALVAGED SIGN.
- (B) PAVEMENT MESSAGE (LEFT ARROW) 8'-0" PREFORMED THERMOPLASTIC.
- (C) PAVEMENT MESSAGE (RIGHT ARROW) 8'-0" PREFORMED THERMOPLASTIC.
- (D) PAVEMENT MESSAGE (THRU LEFT ARROW) 8'-0" PREFORMED THERMOPLASTIC.
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- (F) ZEBRA CROSSWALK PREFORMED THERMOPLASTIC (3'X6' WITH 3' SPACING).
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- (M) 24" SOLID LINE YELLOW (45 DEGREES AT 30 FOOT SPACING) - PREFORMED THERMOPLASTIC.
- (N) 8" BROKEN LINE WHITE (3' LINE, 12' GAP) - EPOXY.
- (O) PAVEMENT MESSAGE (SCHOOL CROSSING) 8'-0" PREFORMED THERMOPLASTIC.



3/14/03 PM 3/21/2007 ... \4994-F\H1-mu\p1an\4994-f.sso

NO	DATE	BY	CKD	APPR	REVISION

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.  
 Print Name: CHRISTOPHER M. TRBOYEIVICH  
*Christopher M. Trbojevich*  
 Date: 3/26/07 License #: 41635

STATE PROJECT NO. S.P. 02-614-24, ETAL

DRAWN BY S. MARTINS  
 DESIGNED BY B. ROSAND  
 CHECKED BY C. TRBOYEIVICH  
 COMM. NO. 4994



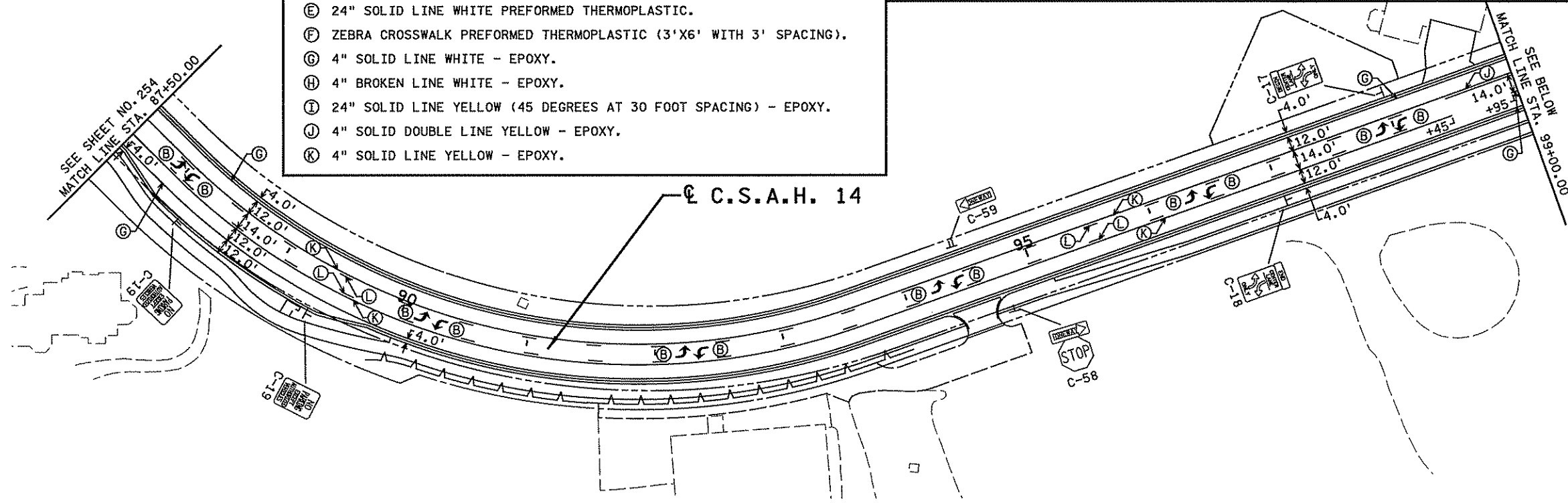
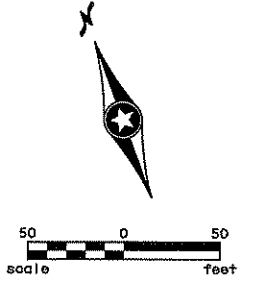
ANOKA COUNTY  
 SIGNING AND STRIPING PLAN  
 C.S.A.H. 14  
 STA. 60+00.00 TO STA. 87+50.00

SHEET 254 OF 492

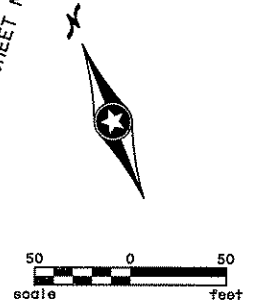
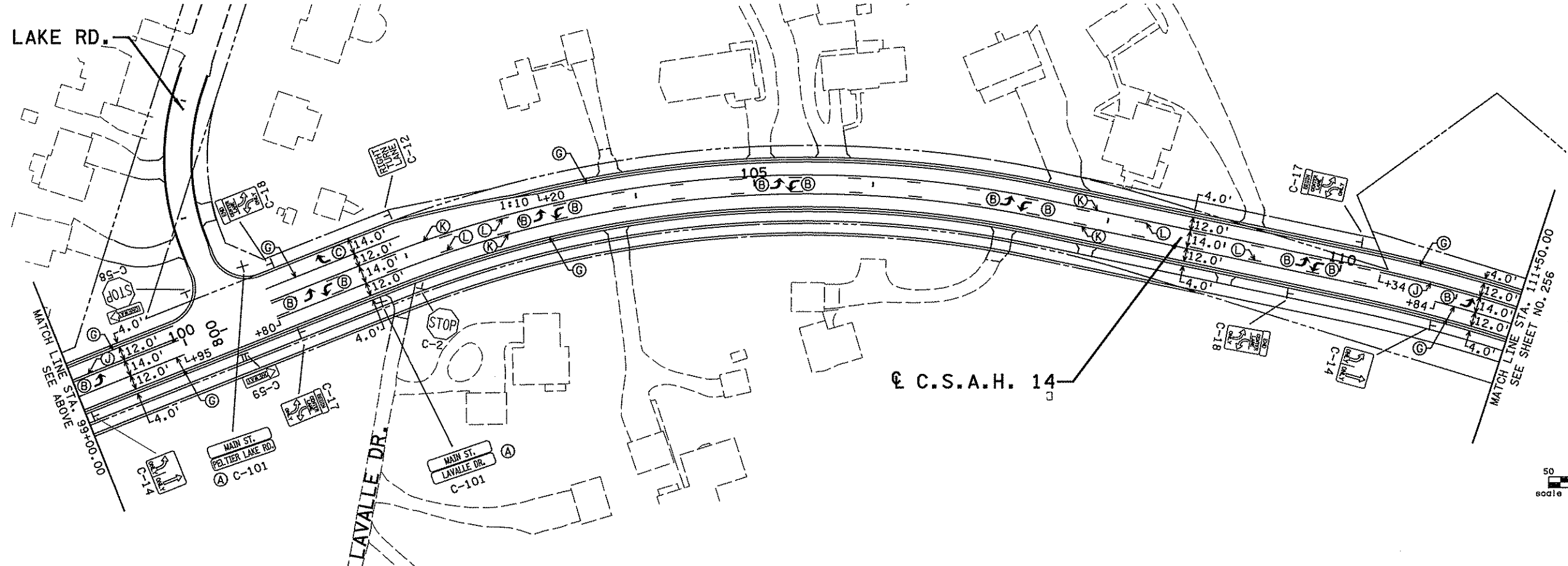
NOTES:

- (A) INSTALL SALVAGED SIGN.
- (B) PAVEMENT MESSAGE (LEFT ARROW) 8'-0" PREFORMED THERMOPLASTIC.
- (C) PAVEMENT MESSAGE (RIGHT ARROW) 8'-0" PREFORMED THERMOPLASTIC.
- (D) PAVEMENT MESSAGE (THRU LEFT ARROW) 8'-0" PREFORMED THERMOPLASTIC.
- (E) 24" SOLID LINE WHITE PREFORMED THERMOPLASTIC.
- (F) ZEBRA CROSSWALK PREFORMED THERMOPLASTIC (3'X6' WITH 3' SPACING).
- (G) 4" SOLID LINE WHITE - EPOXY.
- (H) 4" BROKEN LINE WHITE - EPOXY.
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- (O) PAVEMENT MESSAGE (SCHOOL CROSSING) 8'-0" PREFORMED THERMOPLASTIC.



€ PELTIER LAKE RD.



3/14/04 PM 3:21/2007 \\snp02\cbs\4994-f\h1-mu\p1an\4994-f.ssd

NO	DATE	BY	CHKD	APPR	REVISION

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.  
 Print Name: CHRISTOPHER M. TRBOYEVICH  
*Christopher M. Trbojevich*  
 Date: 3/26/04 License #: 41635

STATE PROJECT NO. S.P. 02-614-24, ETAL

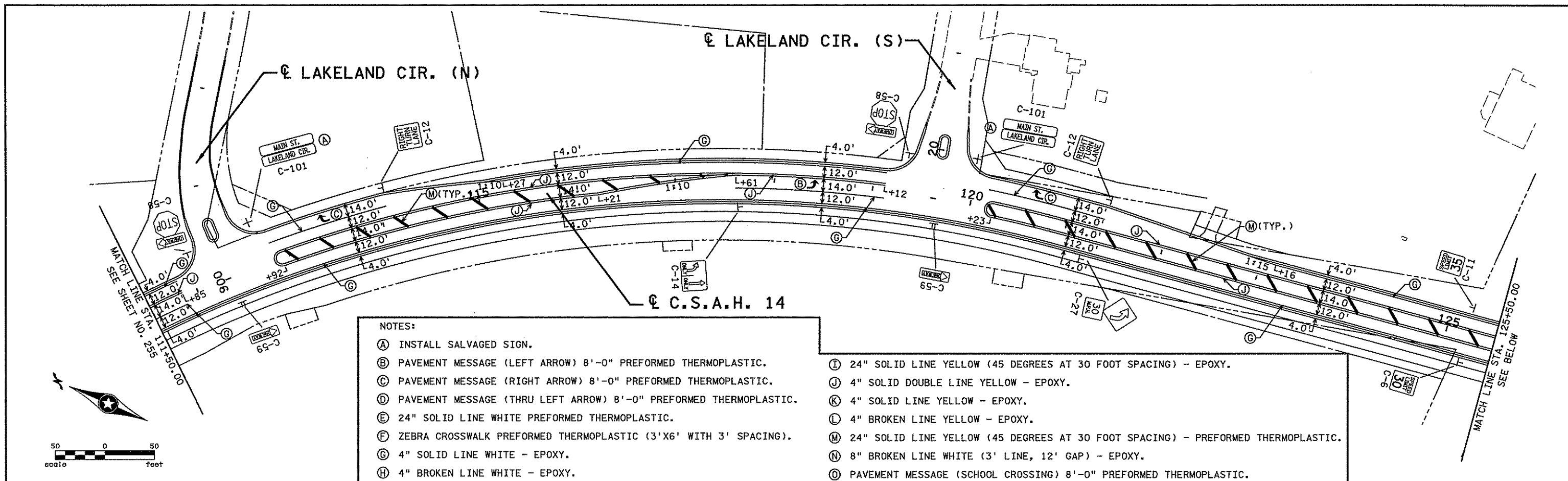
DRAWN BY S. REARRAINST  
 DESIGNED BY B. ROSAND  
 CHECKED BY C. TRBOYEVICH  
 COMM. NO. 4994



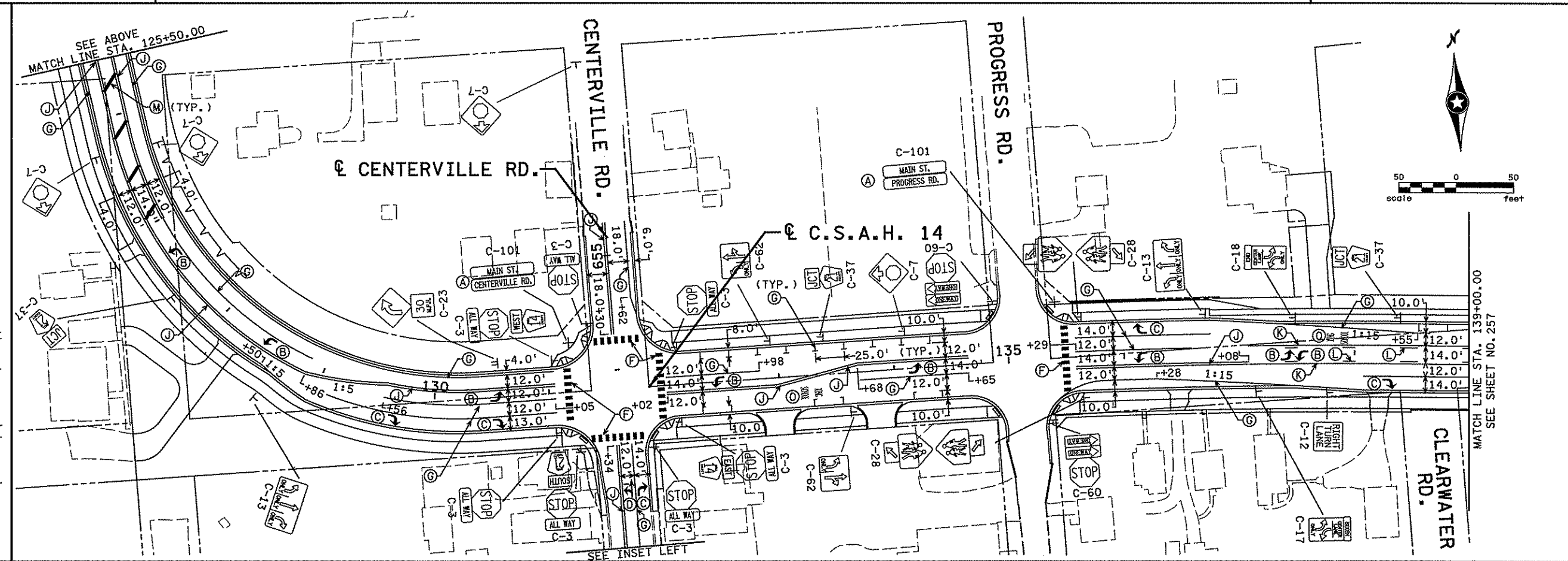
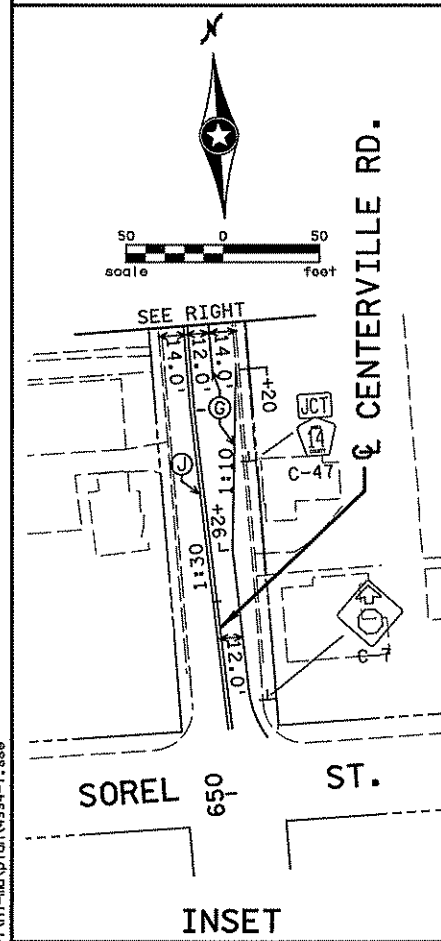
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SHEET 255 OF 492





- NOTES:
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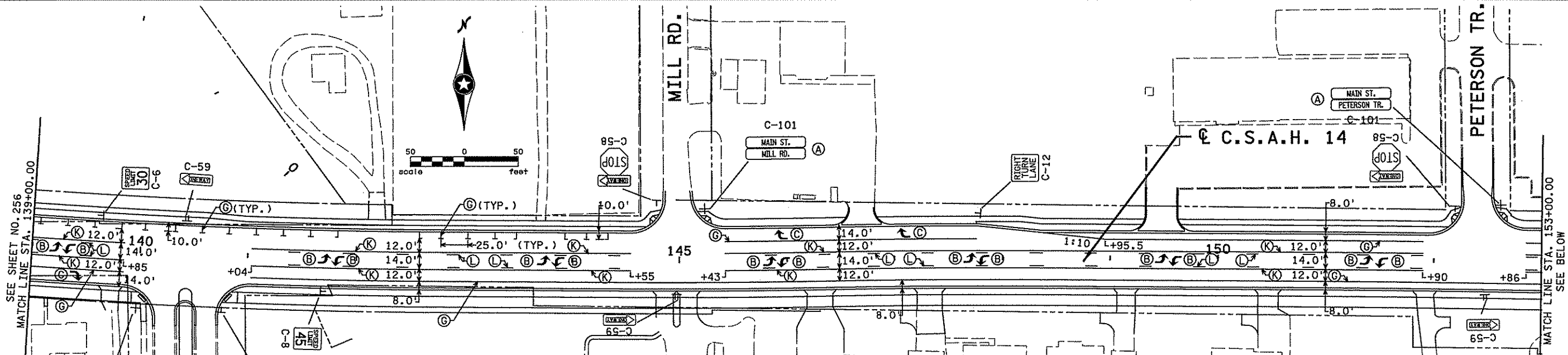
NO.	DATE	BY	CHKD	APPR	REVISION

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.  
 Print Name: CHRISTOPHER M. TRBOYEVICH  
*Christopher M. Trbojevich*  
 Date: 3/26/07 License #: 41635

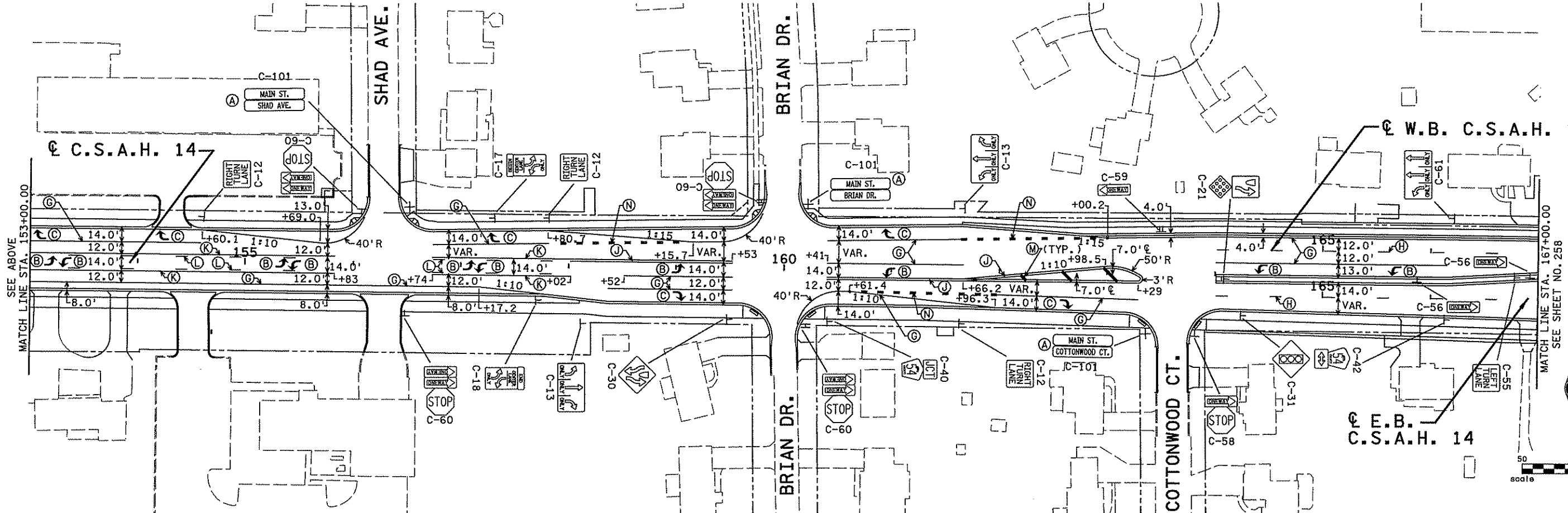
STATE PROJECT NO. S.P. 02-614-24, ETAL  
 DRAWN BY S. MARTINS  
 DESIGNED BY B. ROSAND  
 CHECKED BY C. TRBOYEVICH  
 COMM. NO. 4994



ANOKA COUNTY  
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 C.S.A.H. 14  
 STA. 111+50.00 TO STA. 137+00.00  
 SHEET 256 OF 492



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NO	DATE	BY	CKD	APPR	REVISION

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Print Name: CHRISTOPHER M. TRBOYEVICH

*Chris Trbojevich*

Date: 3/26/09 License #: 41635

STATE PROJECT NO.  
S.P. 02-614-24, ETAL

DRAWN BY  
S. MARTINS

DESIGNED BY  
B. ROSAND

CHECKED BY  
C. TRBOYEVICH

COMM. NO. 4994



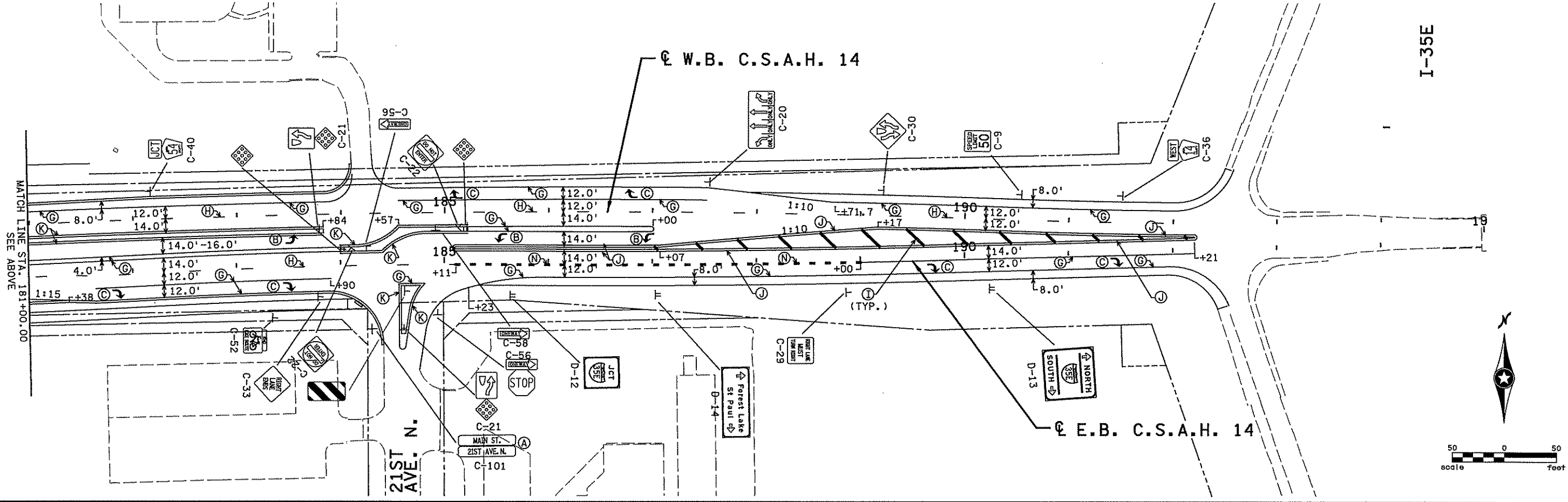
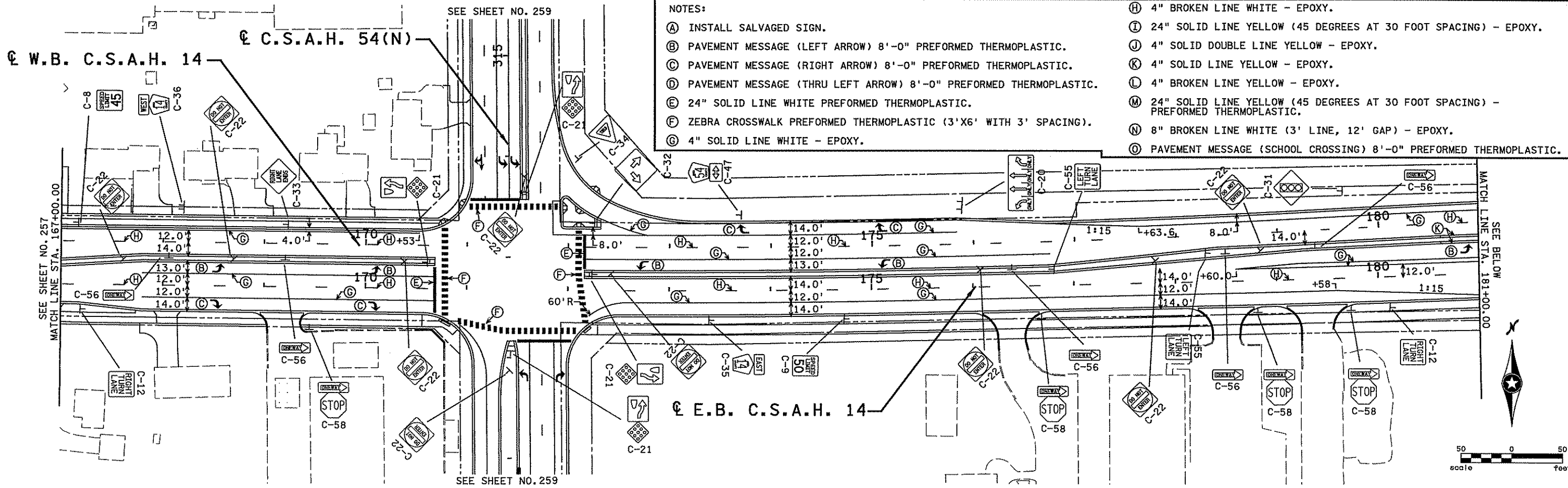
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OF  
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Print Name: CHRISTOPHER M. TRBOJEVICH

*Christopher M. Trbojevich*

Date: 3/26/11 License # 41635

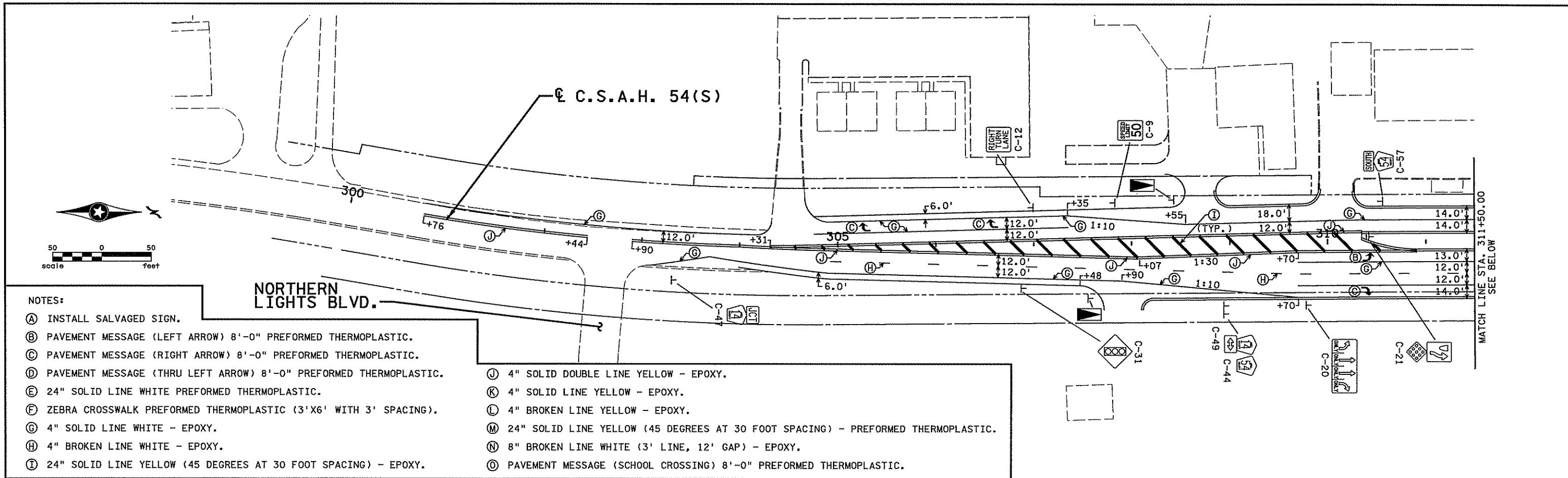
STATE PROJECT NO. S.P. 02-614-24, ETAL

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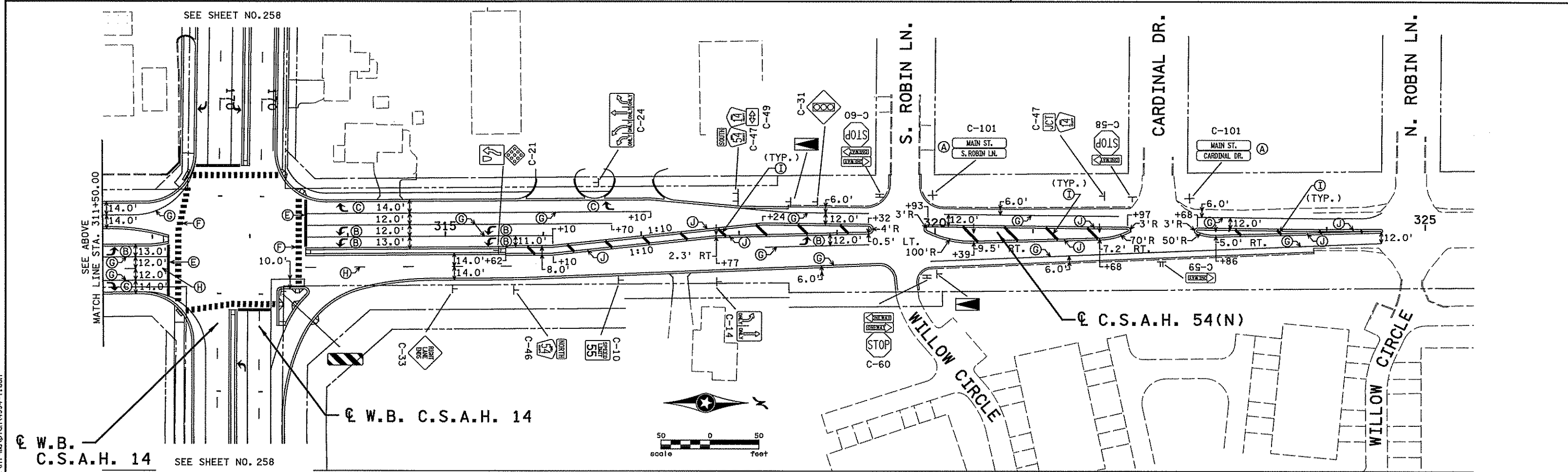
ANOKA COUNTY  
 SIGNING AND STRIPING PLAN  
 C.S.A.H. 14  
 STA. 167+00.00 TO STA. 193+00.00

SHEET 258 OF 492



NOTES:

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Print Name: CHRISTOPHER M. TRBOYEVICH

*Christopher M. Trbojevich*

Date: 3/26/13 License #: 41635

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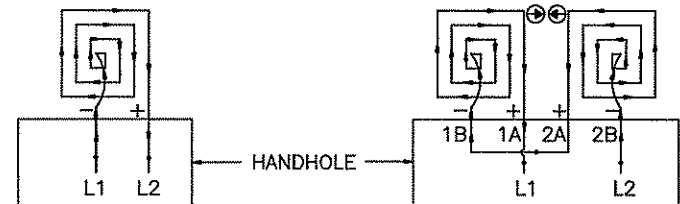
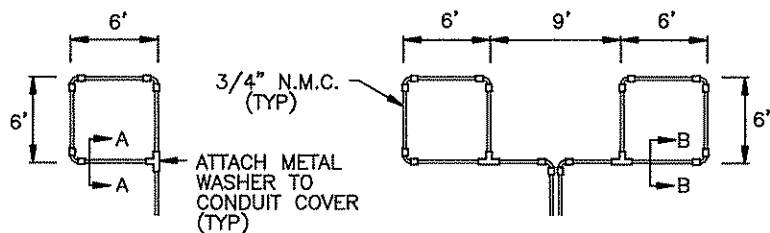
ANOKA COUNTY

SIGNING AND STRIPING PLAN

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SHEET 259 OF 492

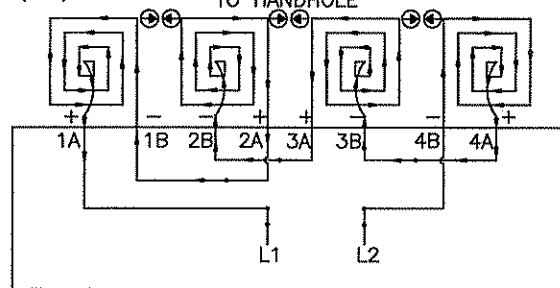
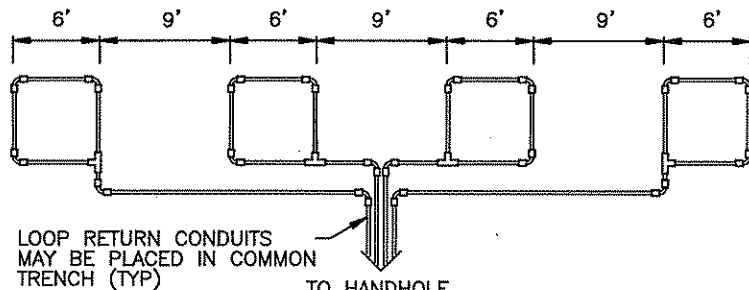


LOOP DETECTOR  
DETAIL 'A'  
(LOOP PHASING FOR  
SINGLE CONNECTION)

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)

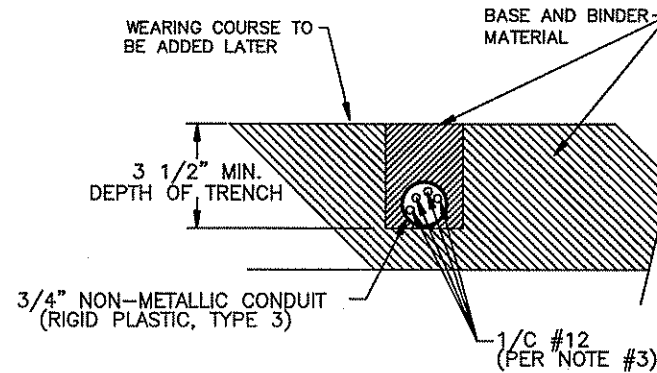


LOOP CONNECTIONS SHALL BE LABELED AND SPLICED  
IN THE HANDHOLE AS FOLLOWS:

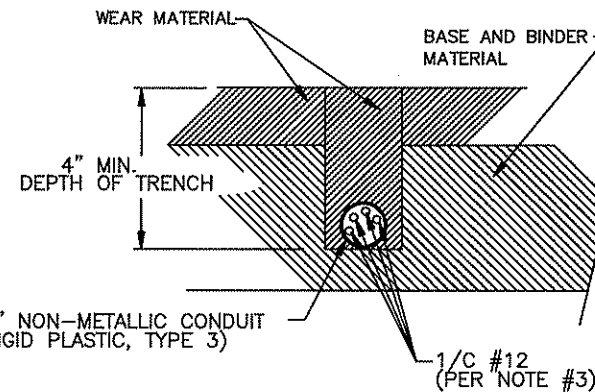
L1 TO 1A      3B TO 4A  
1B TO 2A      4B TO L2  
2B TO 3A

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

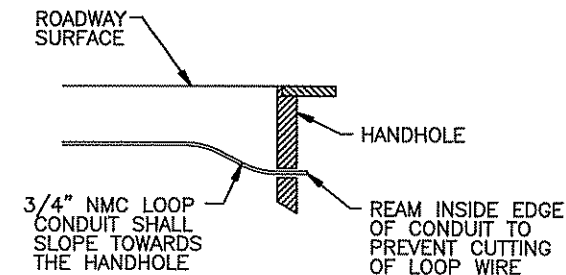
LOOP DETECTOR  
DETAIL 'C'  
(LOOP PHASING FOR  
SERIES CONNECTION)



SECTION A-A  
DETAIL FOR LOOP INSTALLATION  
IN NEW ROADWAY



SECTION B-B  
DETAIL FOR LOOP INSTALLATION  
IN EXISTING ROADWAY



DRAINAGE DETAIL

LOOP DETECTOR WIRING

- 1) ALL CORNERS SHALL BE 90° CONDUIT BENDS.
- 2) CONNECT WIRES IN HANDHOLES USING SPLICE KIT METHOD DESCRIBED IN THE SPECIAL PROVISIONS.
- 3) LOOP DETECTOR WIRES SHALL BE #12 AWG 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 EQUIPMENT	⊖
SIGNAL BASE NO.	⊖
SIGNAL FACE NO.	⊖
LUMINAIRE NO.	⊖
CONTROLLER AND CABINET	⊖
CONTROLLER AND CABINET - IN PLACE	⊖
SIGNAL SERVICE AND CABINET	⊖
SIGNAL SERVICE AND CABINET - IN PLACE	⊖
HANDHOLE	⊖
HANDHOLE - IN PLACE	⊖
RIGID STEEL CONDUIT (RSC)	⊖
RIGID STEEL CONDUIT (RSC) - IN PLACE	⊖
SIGNAL FACE WITH BACKGROUND SHIELD	⊖
SIGNAL FACE W/O BACKGROUND SHIELD	⊖
SIGNAL FACE - IN PLACE	⊖
PEDESTRIAN INDICATORS	⊖
PEDESTRIAN INDICATORS - IN PLACE	⊖
PEDESTRIAN PUSH BUTTONS ON PEDESTAL OR POLE	⊖
PEDESTRIAN PUSH BUTTON STATION	⊖
TRAFFIC SIGNAL PEDESTAL	⊖
TRAFFIC SIGNAL PEDESTAL - INPLACE	⊖
TRAFFIC SIGNAL POLE AND MAST ARM	⊖
TRAFFIC SIGNAL POLE AND MAST ARM - IN PLACE	⊖
STREET LIGHT POLE AND LUMINAIRE	⊖
STREET LIGHT POLE AND LUMINAIRE - IN PLACE	⊖
MAST ARM AND LUMINAIRE	⊖
MAST ARM AND LUMINAIRE - INPLACE	⊖
WOOD POLE	⊖
WOOD POLE - IN PLACE	⊖
SOURCE OF POWER	⊖
RAILROAD SIGNAL - IN PLACE	⊖
RIGHT OF WAY LINE	⊖
CENTERLINE	⊖
EDGE OF ROADWAY	⊖
SHOULDERLINE	⊖
CURB LINE	⊖
STOP BAR	⊖
EMERGENCY VEHICLE PREEMPTION DETECTOR	⊖

STANDARD PLATES

THESE STANDARD PLATES AS APPROVED BY FHWA SHALL APPLY:

PLATE NO.	DESCRIPTION
7035 M	CONCRETE WALK AND CURB RETURNS AT ENTRANCES
7036 F	PEDESTRIAN CURB RAMP FOR THE HANDICAPPED
7100 G	CONCRETE CURB AND GUTTER (DESIGN B)
8110 D	TRAFFIC SIGNAL BRACKETING - POLE MOUNTED
8111 D	TRAFFIC SIGNAL BRACKETING - PEDESTAL MOUNTED
8112 D	PEDESTAL FOUNDATION
* 8114 A	PVC HANDHOLE/PULLBOX
* 8115 D	PEDESTRIAN PUSH BUTTON INSTALLATION
8118 C	SERVICE EQUIPMENT AND POLE-TRAFFIC CONTROL SIGNALS
* 8119 C	GROUND MOUNTED CABINET FOUNDATION
8120 K	PAB5 POLE FOUNDATION
* 8121 D	TRANSFORMER BASE AND POLE BASE PLATE
8122 D	PEDESTAL AND PEDESTAL BASE
* 8123 E	POLE AND MAST ARM
* 8124 E	MAST ARM SIGNAL HEAD MOUNTS
* 8126 F	PA90 AND PA100 POLE FOUNDATION

\* - APPLIES TO SIGNAL PORTION OF THIS PROJECT

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

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
EKG	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

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NO	DATE	BY	CHKD	APPR	REVISION

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.  
 Print Name: **ADRIAN S. POTTER**  
*Adrian S. Potter*  
 Date: **03/22/07** License #: **42785**

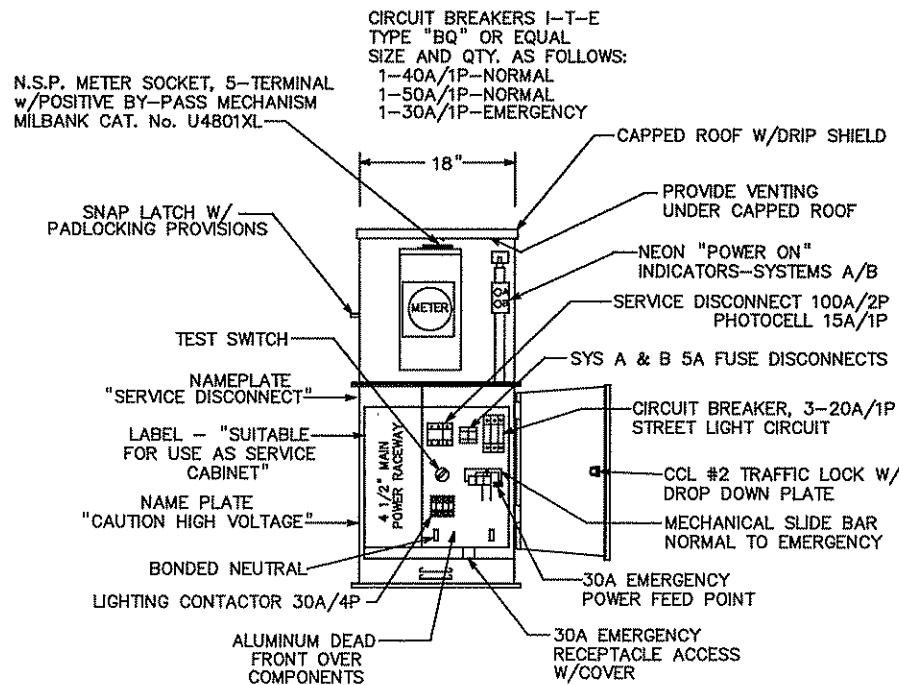
STATE PROJECT NO. S.P. 02-614-24, ETAL  
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 DESIGNED BY A.POTTER  
 CHECKED BY G.STUEMPFIG  
 COMM. NO. 4994



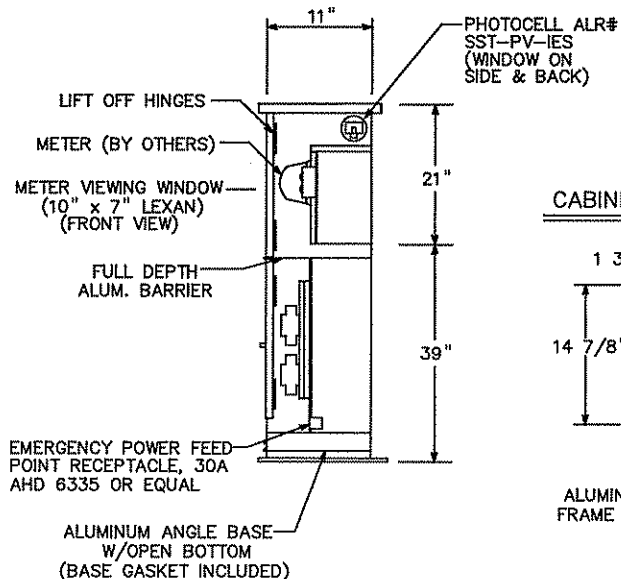
ANOKA COUNTY  
 NMC LOOP DETECTOR DETAILS AND STANDARD PLATES  
 C.S.A.H. 14

SHEET 260 OF 492

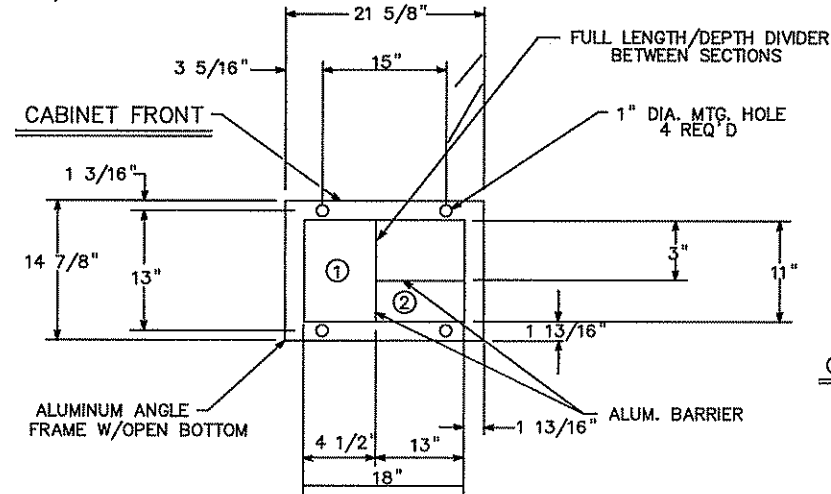
**SIGNAL SERVICE CABINET**



**FRONT ELEV.**



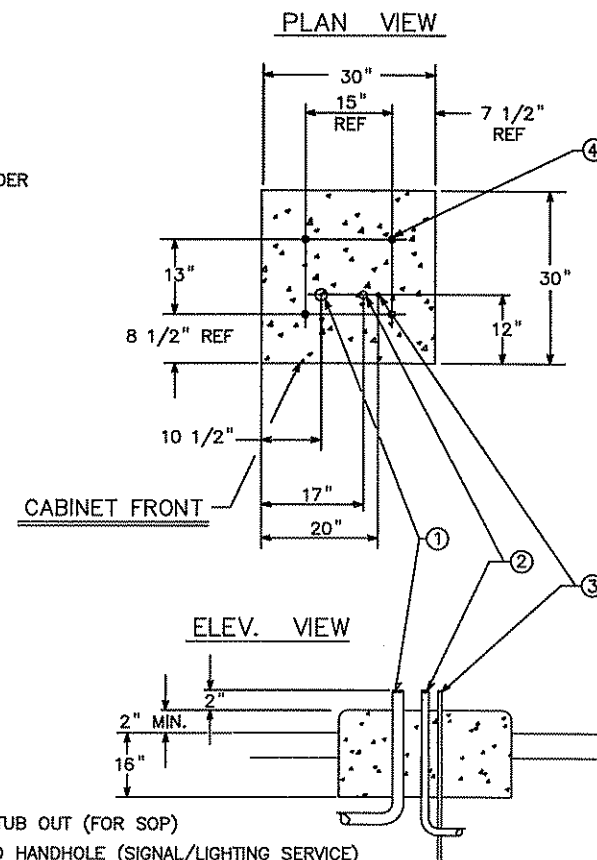
**RIGHT SIDE ELEV.**



- ① MAIN POWER CONDUIT SPACE
- ② LIGHTING & SIGNAL CONDUIT SPACE

**BASE VIEW**

**SERVICE CABINET FOUNDATION**



- ① 2" RSC STUB OUT (FOR SOP)
- ② 2" RSC TO HANDHOLE (SIGNAL/LIGHTING SERVICE)
- ③ GROUNDING ROD
- ④ ANCHOR BOLT LOCATIONS (4 REQUIRED)

**CONSTRUCTION NOTES**

ENCLOSURE SHALL BE FABRICATED FROM 1/8" ALUMINUM FOR OUTDOOR WEATHERPROOF SERVICE.

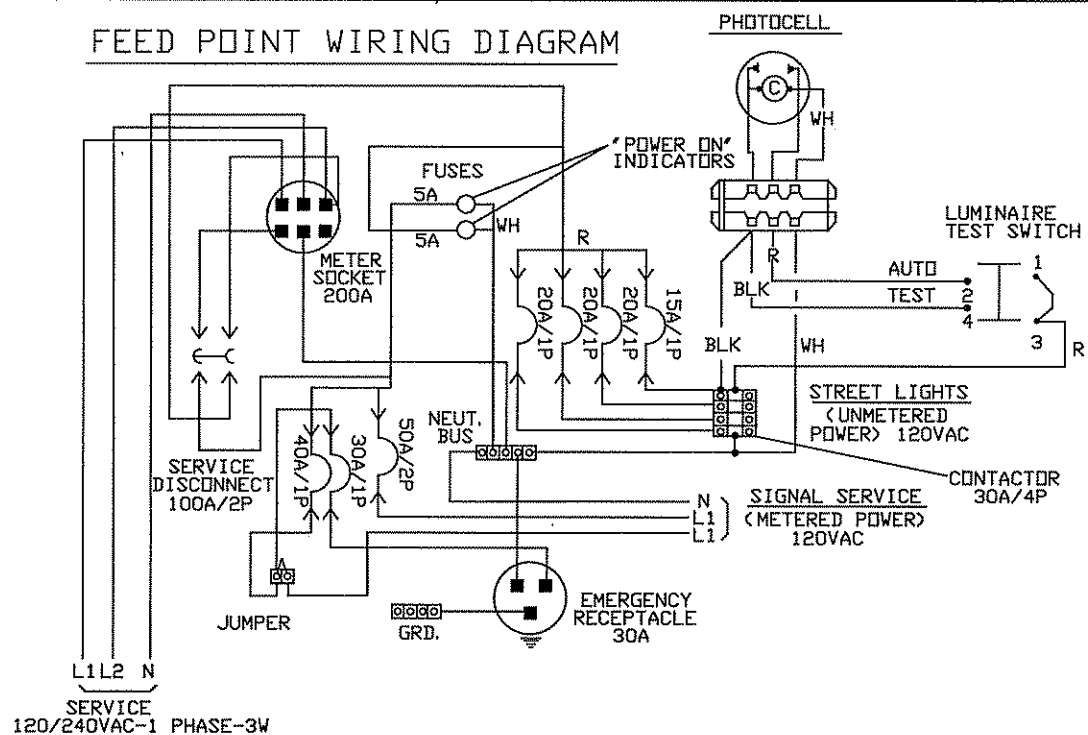
DOORS TO BE NEOPRENE GASKETED. ALL HINGES, PINS AND LOCKS TO BE OF NON-CORRODING CONSTRUCTION.

CABINET SHALL HAVE ANODIC COATING FOR ALL ALUMINUM SURFACES. SEE SPECIAL PROVISIONS.

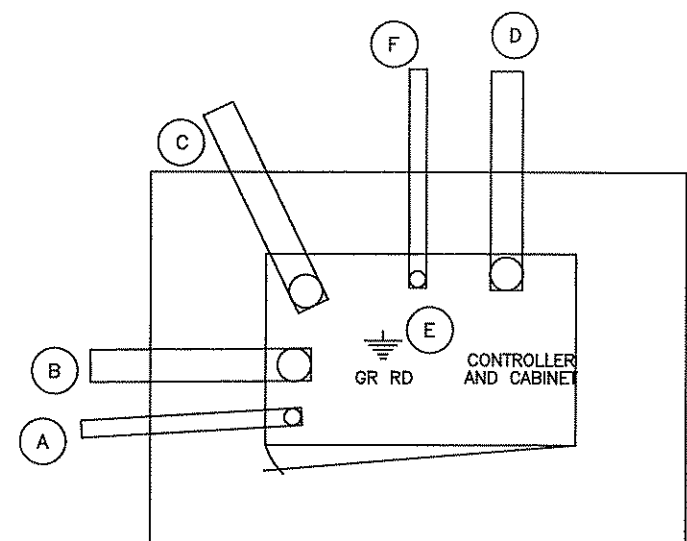
NEMA 3R ENCLOSURE SHALL BE "UL" APPROVED.

CABINET SHALL HAVE BASE GASKET INCLUDED.

**FEED POINT WIRING DIAGRAM**



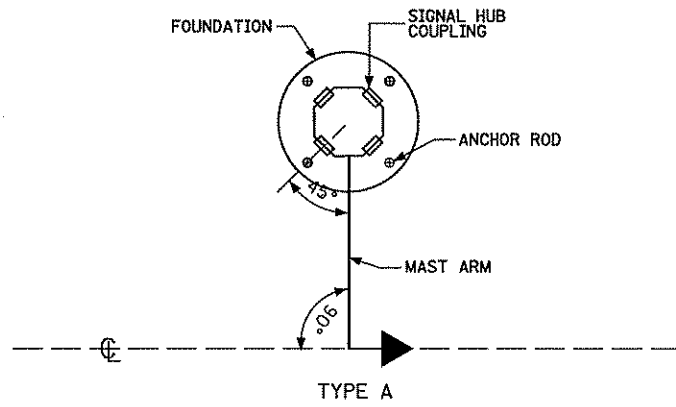
- (A) 2" R.S.C. FOR SERVICE CONNECTION (VIA HH-22)
- (B) 4" R.S.C. TO HH-1
- (C) 4" R.S.C. TO HH-20
- (D) 3" R.S.C. STUBOUT, THREAD & CAP BOTH ENDS (FOR FUTURE USE).
- (E) 5/8" DIA X 15' GROUND ROD
- (F) 2" R.S.C. STUBOUT, THREAD & CAP BOTH ENDS (FOR FUTURE USE).



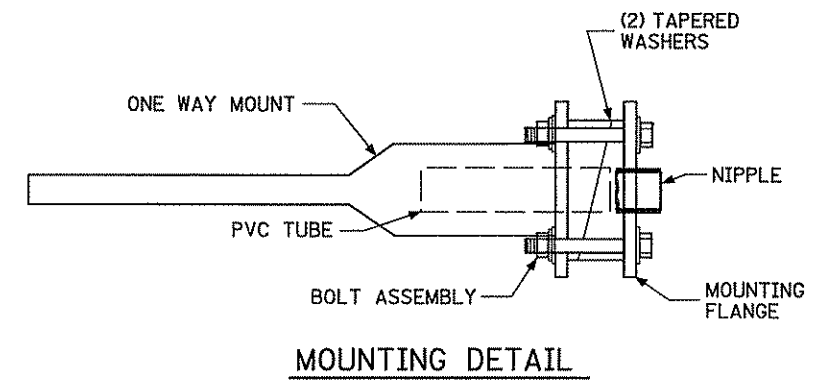
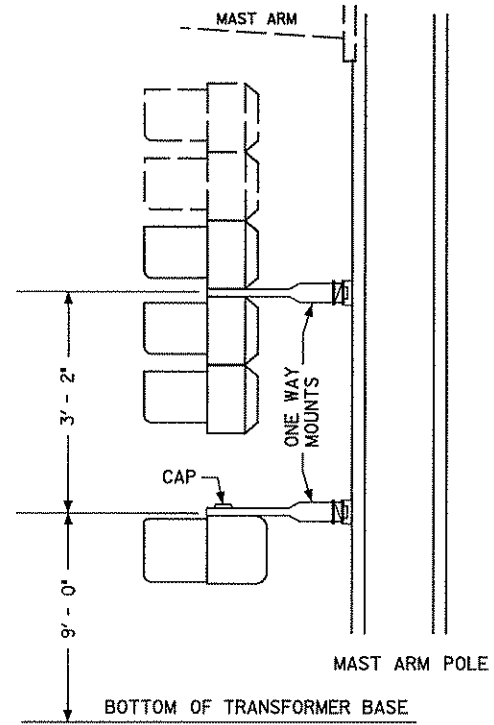
**TYPICAL CONTROLLER CABINET PAD LAYOUT**

3/14/15 PM 3/21/2007 ...4994-f\h1-mu\plan\4994-F.dwg

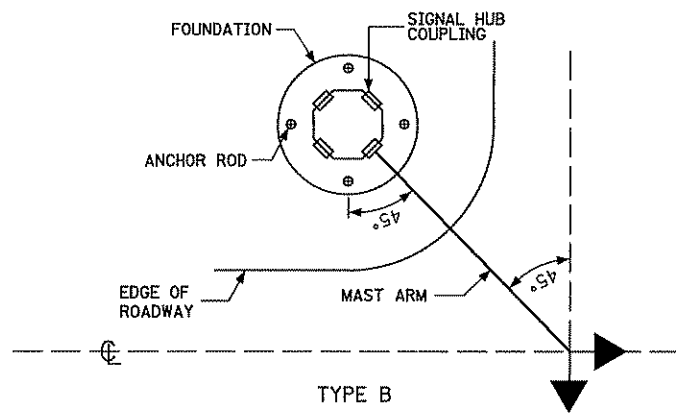
I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Electrical Engineer under the laws of the State of Minnesota. Print Name: <b>BRIAN D. HOLT</b> Signature: <i>Brian D. Holt</i> Date: <b>3/22/07</b> License #: <b>21428</b>				I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Electrical Engineer under the laws of the State of Minnesota. Print Name: <b>ADRIAN S. POTTER</b> Signature: <i>Adrian S. Potter</i> Date: <b>03/22/07</b> License #: <b>42785</b>				STATE PROJECT NO. S.P. 02-614-24, ETAL DRAWN BY <b>B.BETTS</b> DESIGNED BY <b>A.POTTER</b> CHECKED BY <b>G.STUEMPFIG</b> COMM. NO. 4994		<b>ANOKA COUNTY</b> CONTROLLER AND SERVICE CABINET DETAILS C.S.A.H. 14		SHEET <b>261</b> OF <b>492</b>	
---	--	--	--	--	--	--	--	---	--	--	--	-----------------------------------	--



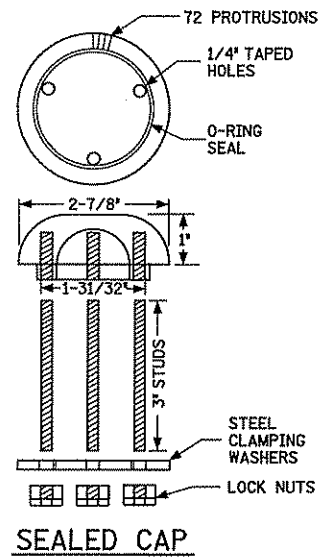
ANCHOR ROD PLACEMENT,  
MAST ARM ORIENTATION  
AND SIGNAL HUB LOCATIONS



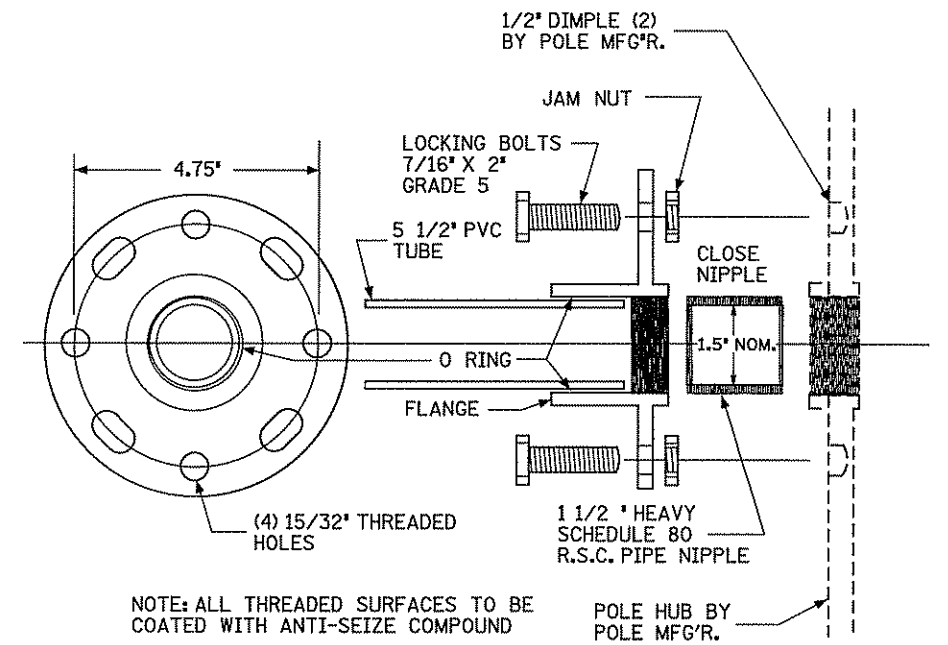
MOUNTING DETAIL



ANCHOR ROD PLACEMENT,  
MAST ARM ORIENTATION  
AND SIGNAL HUB LOCATIONS



SEALED CAP



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

MACHINE HUB & NIPPLE

3/14/16 PM 3/21/2007 ...\\4994-f\hl-mu\plan\4994-F.dwg

NO	DATE	BY	CKD	APPR	REVISION

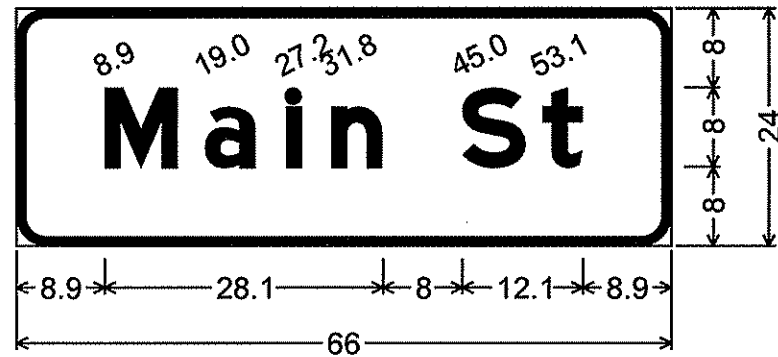
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*Adrian S. Potter*  
 Date: 03/22/07 License # 42785

STATE PROJECT NO. S.P. 02-614-24, ETAL  
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 DESIGNED BY A.POTTER  
 CHECKED BY G.STUEMPFIG  
 COMM. NO. 4994

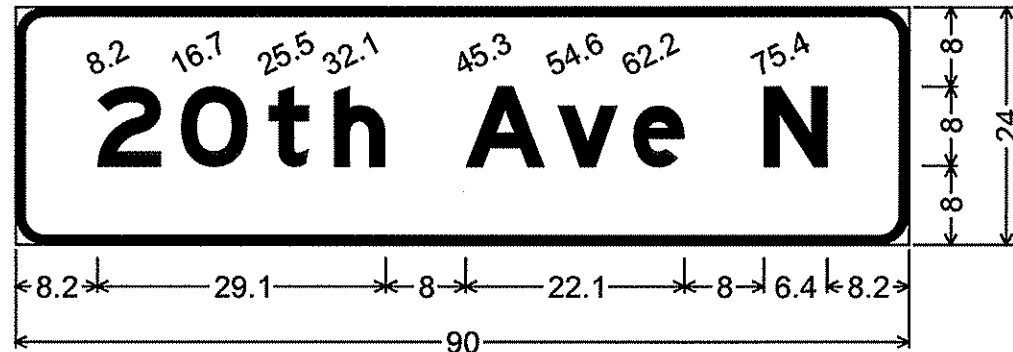


ANOKA COUNTY  
 POLE MOUNTED ONE WAY SIGNAL AND PEDESTRIAN INDICATION  
 C.S.A.H. 14

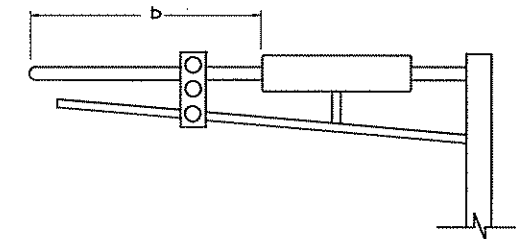
SHEET 262 OF 492



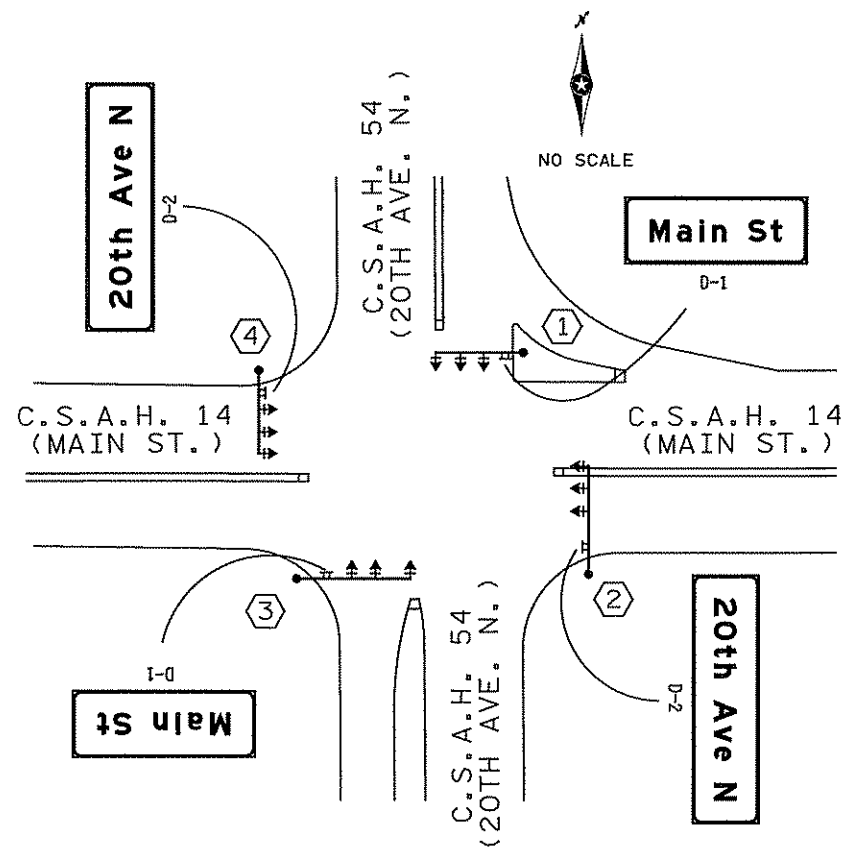
D-1; 3.0" Radius, 1.0" Border, White on Green;  
[Main St] E Mod;



D-2; 3.0" Radius, 1.0" Border, White on Green;  
[20th Ave N] E Mod;



MAST ARM SIGN DIMENSIONING DETAIL



C.S.A.H. 14 (MAIN ST.) AT C.S.A.H. 54 (20TH AVE. N.)

TYPE "D" SIGNS						
SIGN PANEL	POLE NUMBER	b (FT)	SIZE (IN)	STIFFENERS PER SIGN	SQUARE FT. PER SIGN	NO. REQ.
D-1	①③	32,36	24x66	3	11	2
D-2	②④	32,25	24x90	4	15	2

**NOTES:**

- 1) SHEETING SHALL BE TYPE IX DIAMOND GRADE VIP RETROREFLECTIVE SHEETING. COLOR SHALL BE A WHITE LEGEND AND BORDER ON GREEN BACKGROUND.
- 2) CORNERS EXTENDING BEYOND THE BORDER SHALL NOT BE TRIMMED.
- 3) BORDERS SHALL BE AS SHOWN ON PLANS.
- 4) FOR STRUCTURAL DETAILS, TYPE "D" SIGNS, SEE STANDARD SIGNS MANUAL, PAGE 105A.
- 5) LETTERING STYLE SHALL BE HIGHWAY GOTHIC CONFORMING TO MN/DOT STANDARDS.
- 6) FURNISHING AND INSTALLING TYPE "D" SIGNS SHALL BE INCIDENTAL TO THE SIGNAL SYSTEM PAY ITEM. (SEE SPECIAL PROVISIONS).

3/14/17 PM 2/21/2008 ...4994-f\h1-mu\plan\4994-F.dwg

NO	DATE	BY	CKD	APPR	REVISION

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*Adrian S. Potter*  
 Date: **03/22/07** License # **42785**

STATE PROJECT NO. S.P. 02-614-24, ETAL  
 DRAWN BY **B.BETTS**  
 DESIGNED BY **A.POTTER**  
 CHECKED BY **G.STUEMPFIG**  
 COMM. NO. 4994



ANOKA COUNTY  
 MAST ARM SIGN DETAILS  
 C.S.A.H. 14

SHEET  
 263  
 OF  
 492



**LED SIGNAL INDICATIONS**

FACE	R	Y	G	RLTA	YLTA	GLTA
1-1,1-2				←	←	←
2-1,2-2,2-3,2-4	●	●	●			
3-1,3-2				←	←	←
4-1,4-2,4-3	●	●	●			
5-1,5-2				←	←	←
6-1,6-2,6-3,6-4	●	●	●			
7-1,7-2				←	←	←
8-1,8-2,8-3	●	●	●			

-ALL VEHICLE SIGNAL INDICATIONS SHALL BE 12" LED WITH BACKGROUND SHIELDS.

**5** PUSH BUTTON STATION  
 PUSH BUTTON FOUNDATION  
 1 - PED. PB AND SIGN (R10-4b)  
 EXTEND INTO HH-16:  
 3" RSC  
 1-3/C #12

**4** TYPE PA100-A50-D30-9 (DAVIT AT 350°)  
 PA100 POLE FOUNDATION  
 3 - ONE WAY SIGNALS (OVERHEAD)  
 (0', 12' AND 24' FROM END OF MAST ARM)  
 ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT  
 (6' FROM END OF MAST ARM)  
 2 - POLE MOUNTED ONE-WAY SIGNALS AT 45° AND 225°  
 2 - COUNTDOWN PEDESTRIAN INDICATIONS MOUNTED AT 45° AND 225° (SEE DETAIL)  
 LUMINAIRE - 250 WATT H.P.S.  
 2 - PEDESTRIAN PUSH BUTTONS  
 TYPE D SIGN-SEE SIGNING DETAIL  
 1-SIGN (R6-1L) ONE WAY  
 1-SIGN (R6-1R) ONE WAY  
 EXTEND INTO HH-16 WITH:  
 3" RSC  
 2-12/C #12  
 4-3/C #12  
 1-3/C #12 (LUM.)  
 1-3/C #20  
 2" RSC  
 1-2/C #14

**1** TYPE PA100-A45-D30-9 (DAVIT AT 350°)  
 PA100 POLE FOUNDATION  
 3 - ONE WAY SIGNALS (OVERHEAD)  
 (0', 12' AND 24' FROM END OF MAST ARM)  
 ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT  
 (6' FROM END OF MAST ARM)  
 3 - POLE MOUNTED ONE-WAY SIGNALS AT 45°, 135° AND 225°  
 2 - COUNTDOWN PEDESTRIAN INDICATIONS MOUNTED AT 45° AND 225° (SEE DETAIL)  
 LUMINAIRE - 250 WATT H.P.S.  
 2 - PEDESTRIAN PUSH BUTTONS  
 TYPE D SIGN-SEE SIGNING DETAIL  
 1-SIGN (R6-1L) ONE WAY  
 1-SIGN (R6-1R) ONE WAY  
 EXTEND INTO HH-4 WITH:  
 3" RSC  
 3-12/C #12  
 2-3/C #12  
 1-3/C #12 (LUM.)  
 1-3/C #20

**A** EQUIPMENT PAD - SEE DETAIL  
 CONTROLLER AND CABINET  
 EXTEND 4" RSC INTO HH-1 WITH:  
 5-12/C #12, 5-3/C #12  
 7-2/C #14, 2-3/C #20  
 EXTEND 4" RSC INTO HH-20 WITH:  
 5-12/C #12, 7-3/C #12  
 8-2/C #14, 2-3/C #20  
 2" RSC TO SIGNAL SERVICE CABINET (VIA HH 22) WITH:  
 3-1/C #6  
 2" & 3" RSC STUBBED OUT (THREADED AND CAPPED BOTH ENDS)

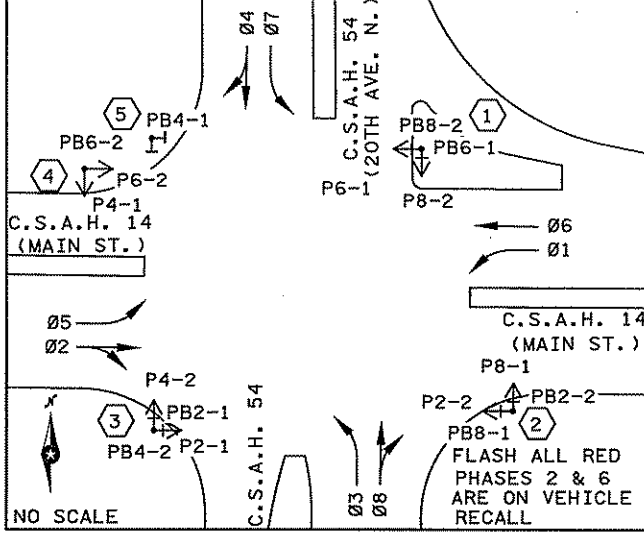
**B** SIGNAL SERVICE CABINET TO HH-22 WITH:  
 2" RSC  
 2-3/C #12 (LUM.)  
 SIGNAL SERVICE CABINET TO HH-1  
 2-3/C #12 (LUM.)  
 SIGNAL SERVICE CABINET TO S.O.P.  
 (VIA HH-21) WITH:  
 3-1/C #2

**C** S.O.P.-WOOD POLE  
 2" RSC RISER AND WEATHERHEAD  
 3-1/C #2  
 EXTEND 2" RSC TO HH-21 WITH:  
 3-1/C #2

MATCH LINE "A"  
 SEE SHEET NO. 266

MATCH LINE "C"  
 SEE SHEET NO. 265

**CONTROLLER PHASING, PEDESTRIAN INDICATIONS & PUSHBUTTON LAYOUT**



**3** TYPE PA100-A55-D30-9 (DAVIT AT 350°)  
 PA100 POLE FOUNDATION  
 3 - ONE WAY SIGNALS (OVERHEAD)  
 (0', 18' AND 30' FROM END OF MAST ARM)  
 ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT  
 (6' FROM END OF MAST ARM)  
 3 - POLE MOUNTED ONE-WAY SIGNALS AT 45°, 135° AND 225°  
 2 - COUNTDOWN PEDESTRIAN INDICATIONS MOUNTED AT 45° AND 225° (SEE DETAIL)  
 LUMINAIRE - 250 WATT H.P.S.  
 2 - PEDESTRIAN PUSH BUTTONS  
 TYPE D SIGN-SEE SIGNING DETAIL  
 1-SIGN (R6-1L) ONE WAY  
 1-SIGN (R6-1R) ONE WAY  
 EXTEND INTO HH-11 WITH:  
 3" RSC  
 3-12/C #12  
 2-3/C #12  
 1-3/C #12 (LUM.)  
 1-3/C #20

**2** TYPE PA100-A50-D30-9 (DAVIT AT 350°)  
 PA100 POLE FOUNDATION  
 3 - ONE WAY SIGNALS (OVERHEAD)  
 (0', 12' AND 24' FROM END OF MAST ARM)  
 ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT  
 (6' FROM END OF MAST ARM)  
 2 - POLE MOUNTED ONE-WAY SIGNALS AT 45° AND 225°  
 2 - COUNTDOWN PEDESTRIAN INDICATIONS MOUNTED AT 45° & 225° (SEE DETAIL)  
 LUMINAIRE - 250 WATT H.P.S.  
 2 - PEDESTRIAN PUSH BUTTONS  
 TYPE D SIGN-SEE SIGNING DETAIL  
 1-SIGN (R6-1L) ONE WAY  
 1-SIGN (R6-1R) ONE WAY  
 EXTEND INTO HH-6 WITH:  
 3" RSC  
 2-12/C #12  
 3-3/C #12  
 1-3/C #12 (LUM.)  
 6-2/C #14  
 1-3/C #20

SEE SHEET 265 FOR NOTES.

**LOOP DETECTOR CHART**

DESIGNATION	SIZE	FUNCTION	DISTANCE FROM STOP LINE
D1-1	2-6' x 6'	(1)	0', 15'
D2-1, D2-2	1-6' x 6'	(1)	300'
D3-1	2-6' x 6'	(1)	0', 15'
D4-1	1-6' x 6'	(3/8)	475'
D4-2	3-6' x 6'	(7)	-15', 0', 15'
D4-3	2-6' x 6'	(1)	0', 15'
D5-1	2-6' x 6'	(1)	0', 15'
D6-1, D6-2	1-6' x 6'	(1)	300'
D7-1	2-6' x 6'	(1)	0', 15'
D7-2	2-6' x 6'	(1)	0', 15'
D8-1, D8-2	1-6' x 6'	(3/8)	400'
D8-3	3-6' x 6'	(7)	-15', 0', 15'
D8-4	2-6' x 6'	(1)	0', 15'
D8-5	2-6' x 6'	(1)	0', 15'

**FUNCTIONS:**  
 (1) - CALL AND EXTEND  
 (3) - EXTEND ONLY  
 (7) - IMMEDIATE EXTEND, DELAY CALL  
 (8) - DENSITY ONLY

NO	DATE	BY	CKD	APPR	REVISION

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 Print Name: **BRIAN D. HOLT**  
*Brian D. Holt*  
 Date: **3/22/07** License #: **21428**

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*Adrian S. Potter*  
 Date: **03/22/07** License #: **42785**

STATE PROJECT NO. S.P. 02-614-24, ETAL

DRAWN BY **B.BETTS**  
 DESIGNED BY **A.POTTER**  
 CHECKED BY **G.STUEMPFIC**  
 COMM. NO. 4994

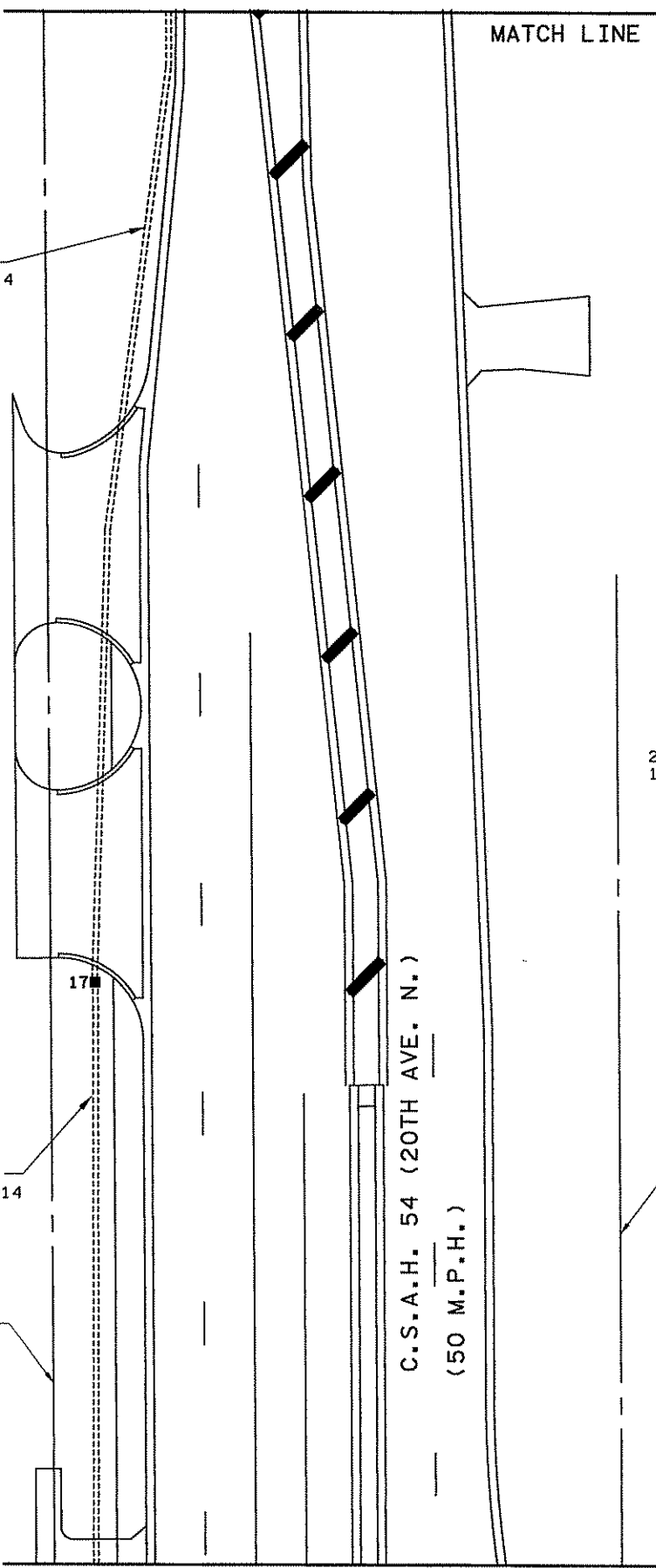


**ANOKA COUNTY**  
 INTERSECTION LAYOUT  
**C.S.A.H. 14**  
**C.S.A.H. 14 (MAIN ST.) AT**  
**C.S.A.H. 54 (20TH AVE. N.)**

**SHEET 264 OF 492**

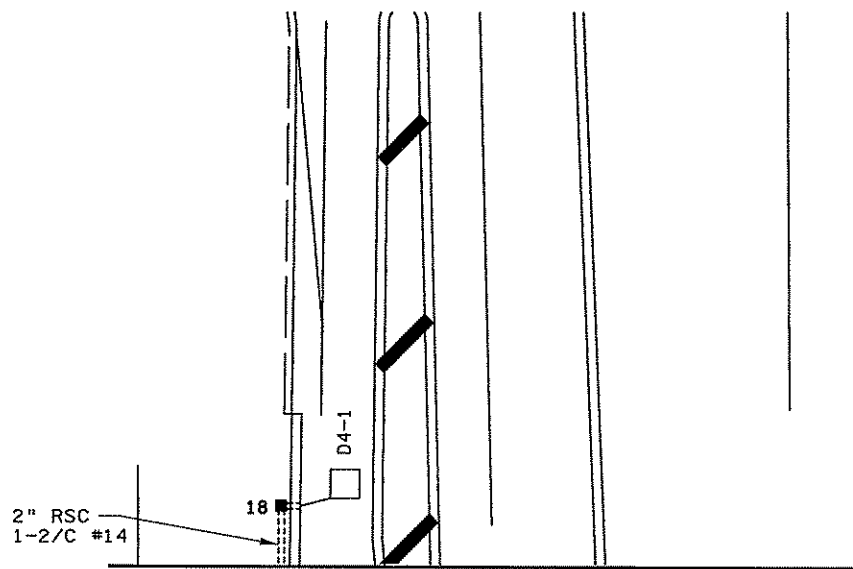
MATCH LINE "E" SEE THIS SHEET

2" RSC  
1-2/C #14



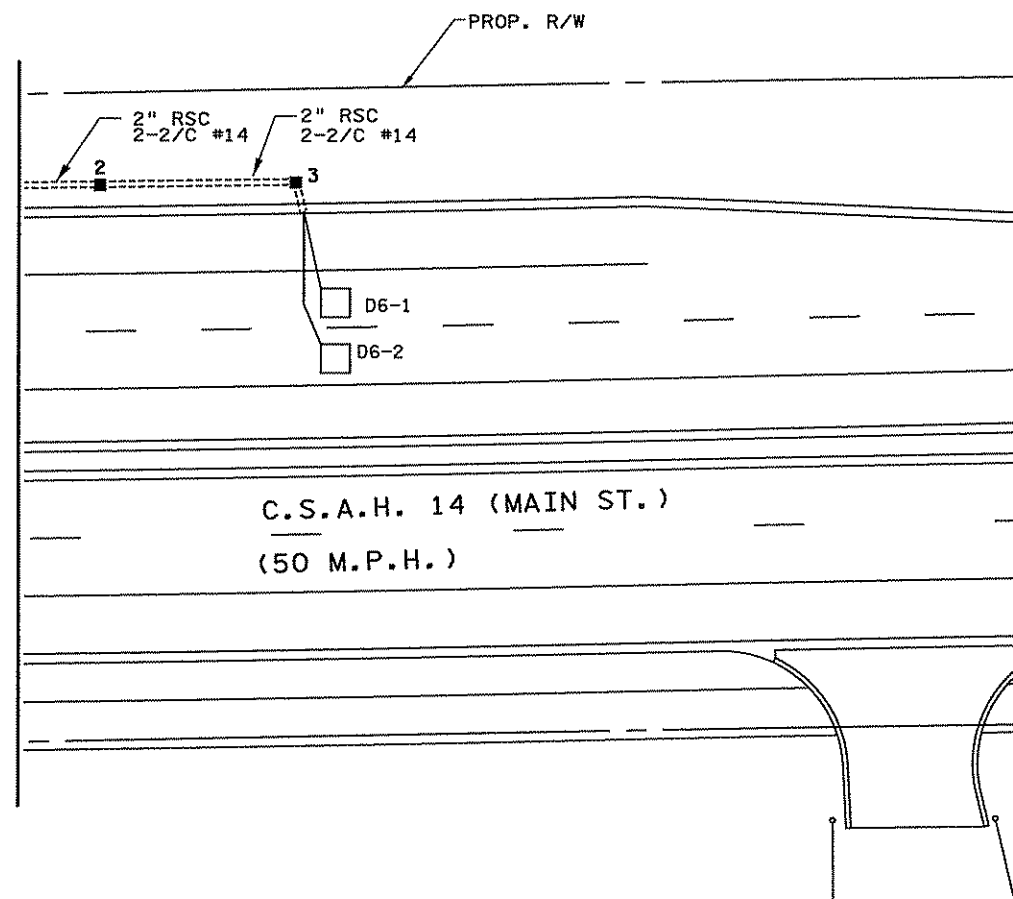
MATCH LINE "D" SEE SHEET 264

2" RSC  
1-2/C #14



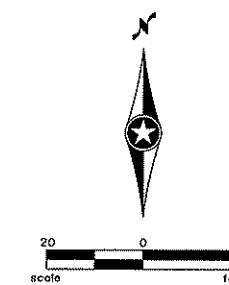
MATCH LINE "E" SEE THIS SHEET

MATCH LINE "C"  
SEE SHEET NO. 264



NOTES:

- 1) SEE SPECIAL PROVISIONS FOR COUNTY FURNISHED MATERIALS, LED COUNTDOWN PEDESTRIAN INDICATIONS, LED VEHICLE INDICATIONS, AND PAINTING OF THE SIGNAL SYSTEM.
- 2) EXACT LOCATION OF HANDHOLES, POLES, LOOP DETECTORS, AND EQUIPMENT PAD SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER.
- 3) A 3/4 INCH HALF COUPLING, 3/4 INCH PIPE NIPPLE AND CONDUIT OUTLET BODY FOR EMERGENCY VEHICLE PREEMPTION EQUIPMENT SHALL BE MOUNTED 6' FROM THE END OF EACH MAST ARM.
- 4) ALL LOOP DETECTORS SHALL BE IN NMC, SEE NMC LOOP DETECTOR DETAIL.
- 5) FOR PAVEMENT MARKINGS, SEE PAVEMENT MARKING PLANS.
- 6) FOR TYPE "D" SIGNS, SEE DETAIL SHEETS. ALL MAST ARM MOUNTED TYPE "D" SIGNS ARE TO BE INCLUDED IN THE SIGNAL SYSTEM PAY ITEM.
- 7) HANDHOLES SHALL BE PVC TYPE WITH METAL FRAME AND COVER (SEE SPECIAL PROVISIONS).
- 8) CONTRACTOR SHALL PROVIDE EXTENDED BRACKETS FOR EACH POLE MOUNTED VEHICLE AND PEDESTRIAN SIGNAL FACE.
- 9) ALL POLE MOUNTED SIGNAL FACES AND PEDESTRIAN INDICATIONS SHALL USE ONE WAY MOUNTS (SEE DETAIL).



3/14/07 PM 3:51:20 PM In:\projects\4994-f\hl-mu\plan\4994-f.mib

NO	DATE	BY	CKD	APPR	REVISION

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STATE PROJECT NO.  
S.P. 02-614-24, ETAL

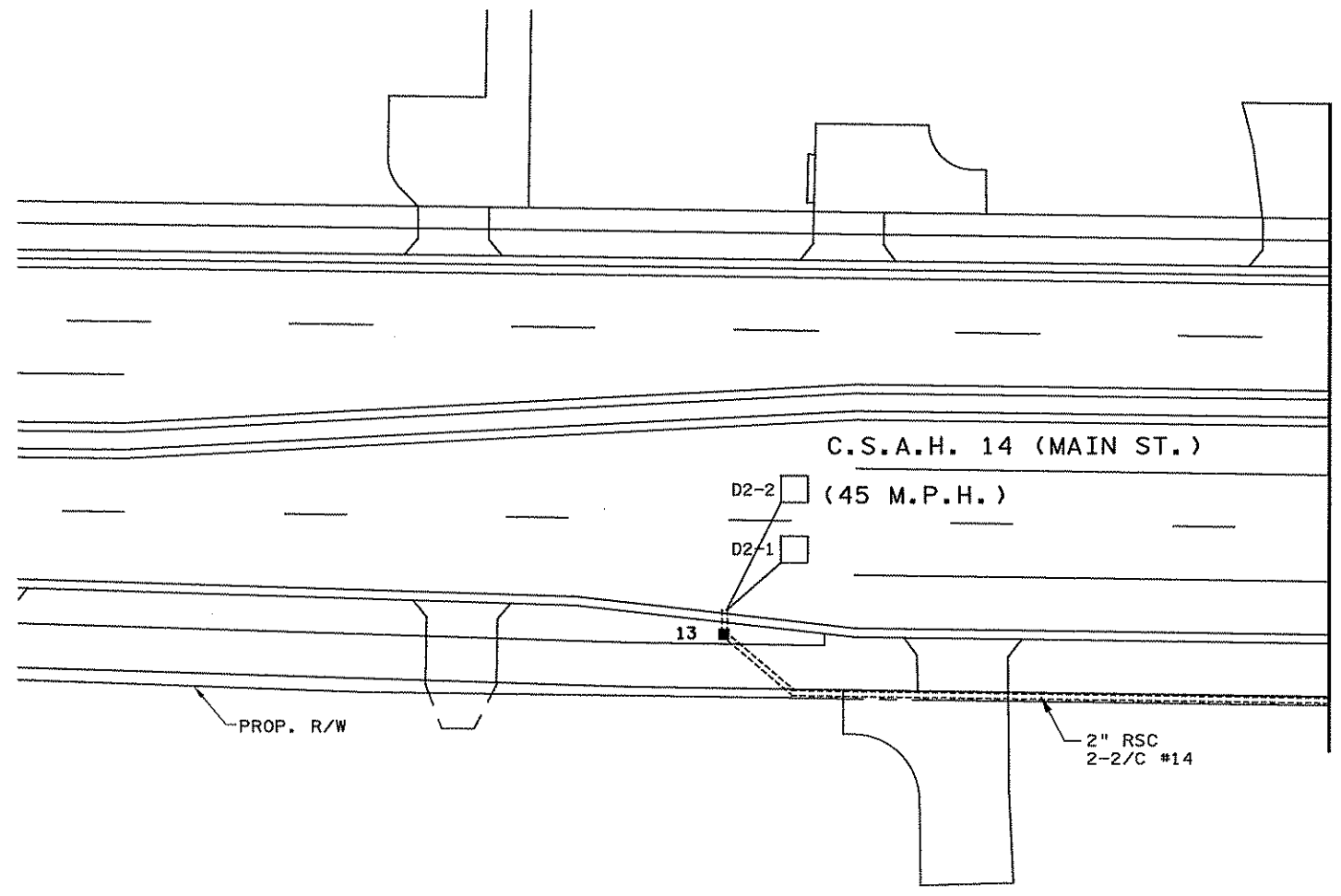
DRAWN BY  
**B.BETTS**  
 DESIGNED BY  
**A.POTTER**  
 CHECKED BY  
**G.STUEMPF**  
 COMM. NO. 4994



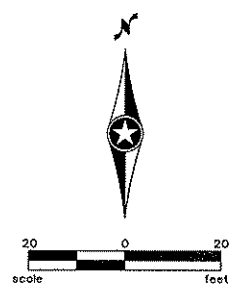
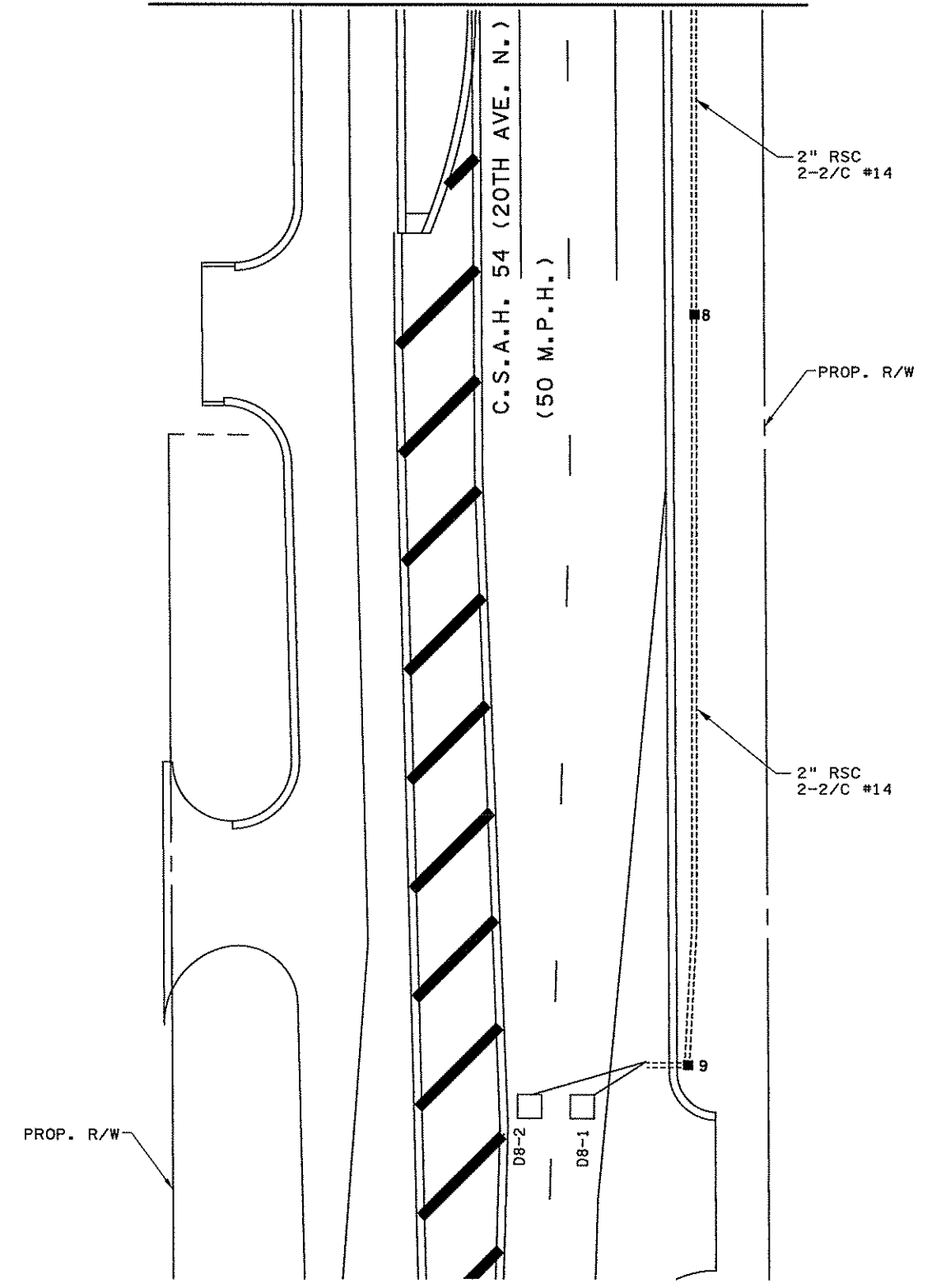
**ANOKA COUNTY**  
**MATCH LINE LAYOUT**  
**C.S.A.H. 14**  
**C.S.A.H. 14 (MAIN ST.) AT**  
**C.S.A.H. 54 (20TH AVE. N.)**

**SHEET**  
**265**  
**OF**  
**492**

MATCH LINE "B"  
SEE SHEET NO. 264



MATCH LINE "A"  
SEE SHEET NO. 264



3/14/22 BH  
3/21/2007  
...\\4994-F\h1-mu\plan\4994-F.mxd

NO	DATE	BY	CHKD	APPR	REVISION

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*Brian D. Holt*  
Date: 3/22/07 License # 21428

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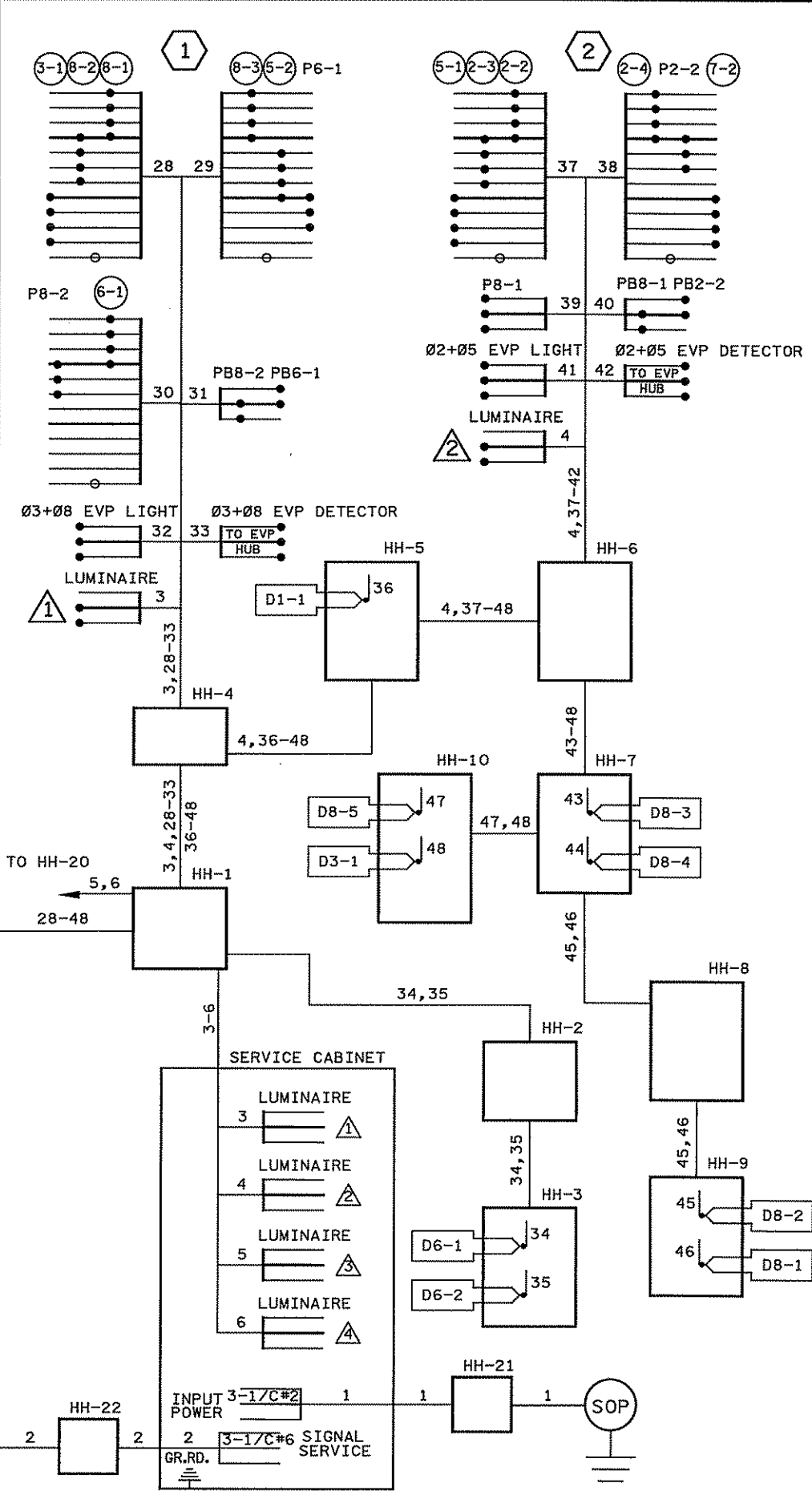
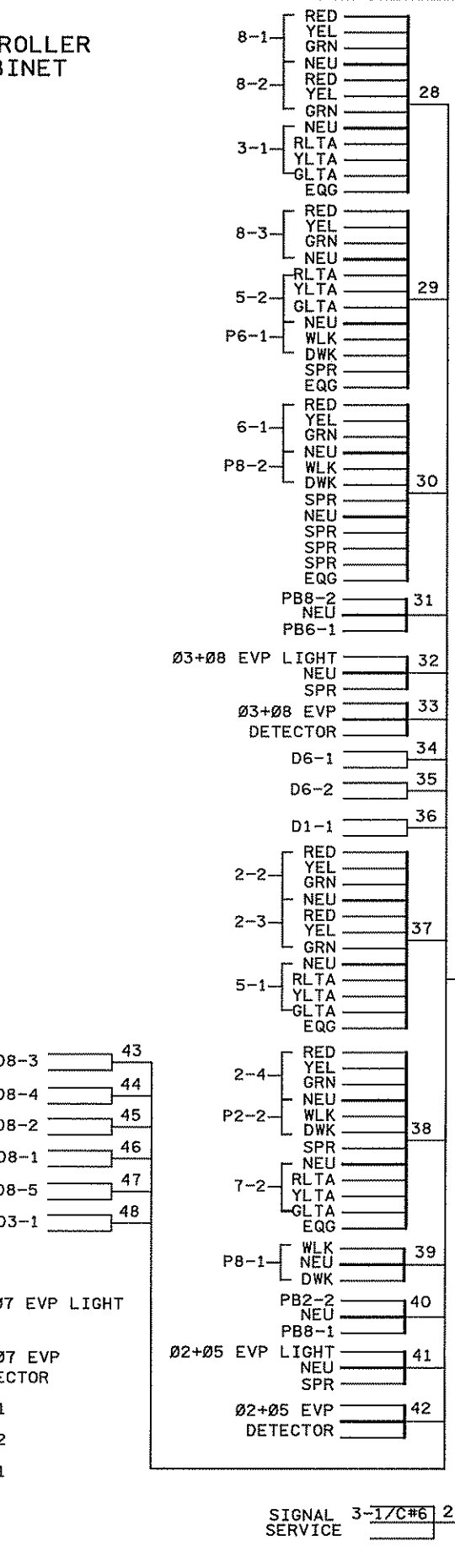
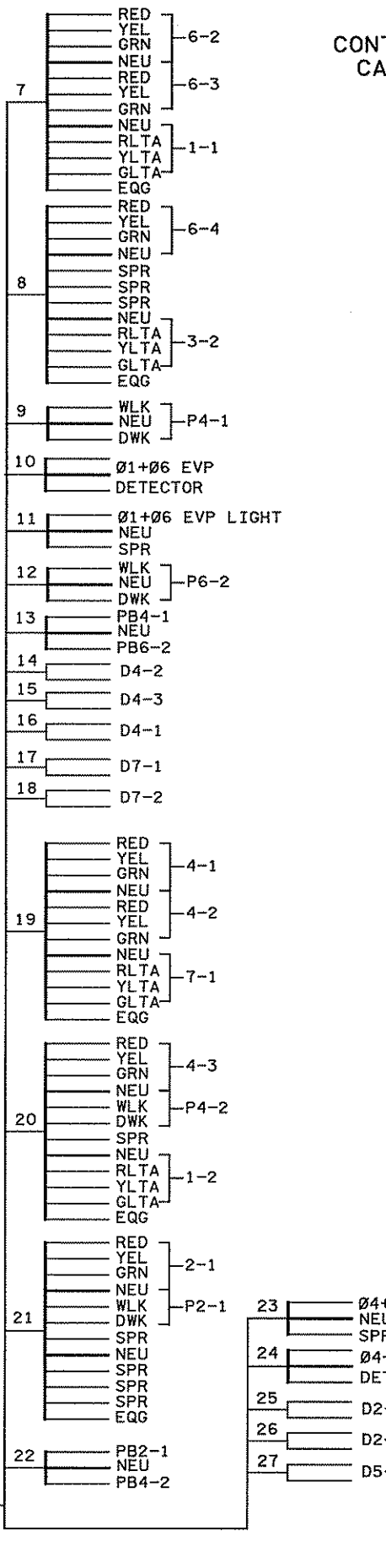
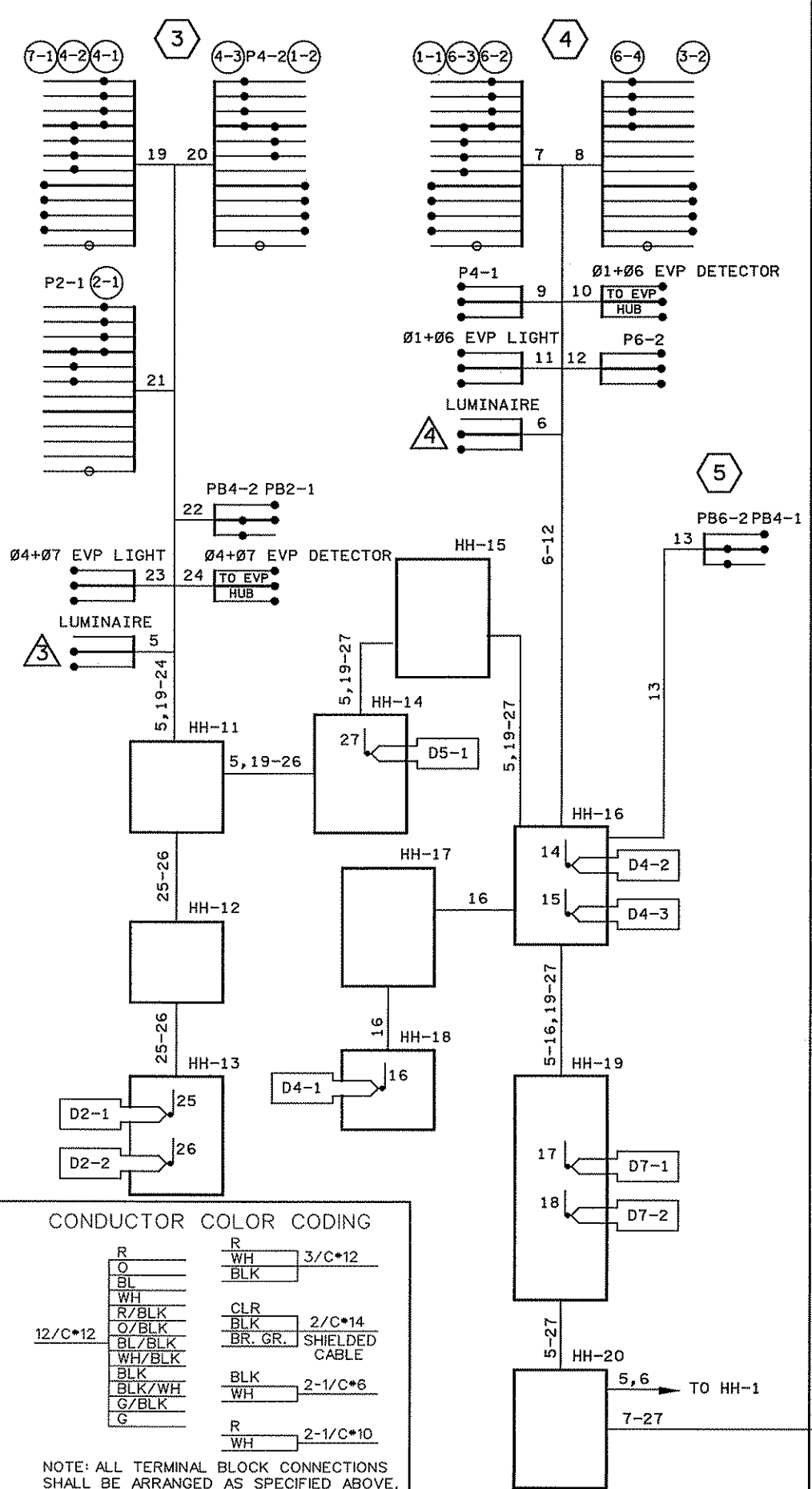
STATE PROJECT NO.  
S.P. 02-614-24, ETAL

DRAWN BY  
B.BETTS  
DESIGNED BY  
A.POTTER  
CHECKED BY  
G.STUEMPF  
COMM. NO. 4994



ANOKA COUNTY  
MATCH LINE LAYOUT  
C.S.A.H. 14  
C.S.A.H. 14 (MAIN ST.) AT  
C.S.A.H. 54 (20TH AVE. N.)

SHEET  
266  
OF  
492



**CONDUCTOR COLOR CODING**

R	WH	3/C*12
O	BLK	
BL		
WH	CLR	2/C*14
R/BLK	BLK	SHIELDED CABLE
O/BLK	BR. GR.	
BL/BLK		
WH/BLK	BLK	2-1/C*6
BLK	WH	
BLK/WH		
G/BLK	R	2-1/C*10
G	WH	

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

3/14/23 PM 3/21/2007 ...\\4994-f\h1-m\p1\an\4994-f.wdg

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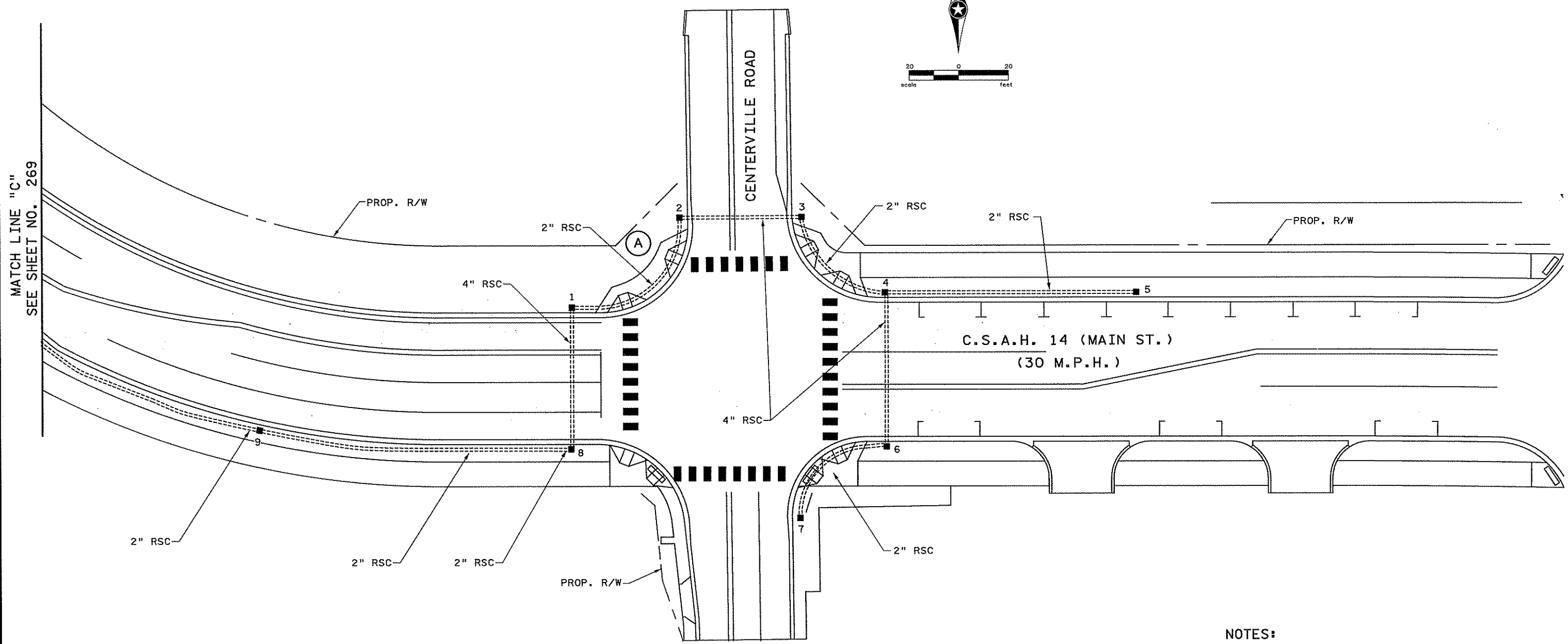
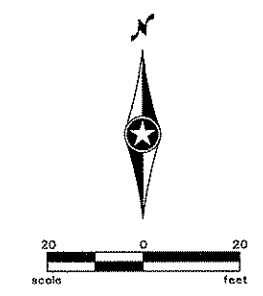
STATE PROJECT NO. S.P. 02-614-24, ETAL  
 DRAWN BY **B.BETTS**  
 DESIGNED BY **A.POTTER**  
 CHECKED BY **G.STUEMPFIG**  
 COMM. NO. 4994



**ANOKA COUNTY**  
 FIELD WIRING DIAGRAM  
 C.S.A.H. 14  
 C.S.A.H. 14 (MAIN ST.) AT  
 C.S.A.H. 54 (20TH AVE. N.)

SHEET **267**  
 OF **492**

(A) STUB OUT 2" RSC FROM HH-2 TO NORTHERN EDGE OF CONCRETE SIDEWALK. THREAD AND CAP BOTH ENDS (FOR FUTURE USE.)



MATCH LINE "C"  
SEE SHEET NO. 269

- NOTES:**
- 1) FURNISHING AND INSTALLING ALL CONDUIT AS SHOWN IN THIS SHEET SHALL BE PAID FOR UNDER THE "4" RIGID STEEL CONDUIT" AND "2" RIGID STEEL CONDUIT" PAY ITEMS.
  - 2) FURNISHING AND INSTALLING ALL HANDHOLES AS SHOWN IN THIS SHEET SHALL BE PAID FOR UNDER THE "PVC HANDHOLES" PAY ITEM.

2:42:35 PM  
3/22/2007  
H:\Projects\4994-F\1-mu\Plan\4994-F.11b

NO	DATE	BY	CHKD	APPR	REVISION

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Prjct. Name: **ADRIAN S. POTTER**

*Adrian S. Potter*

Date: 03/22/07 License # 42785

STATE PROJECT NO.  
S.P. 02-614-24, ETAL

DRAWN BY  
**B.BETIS**

DESIGNED BY  
**A.POTTER**

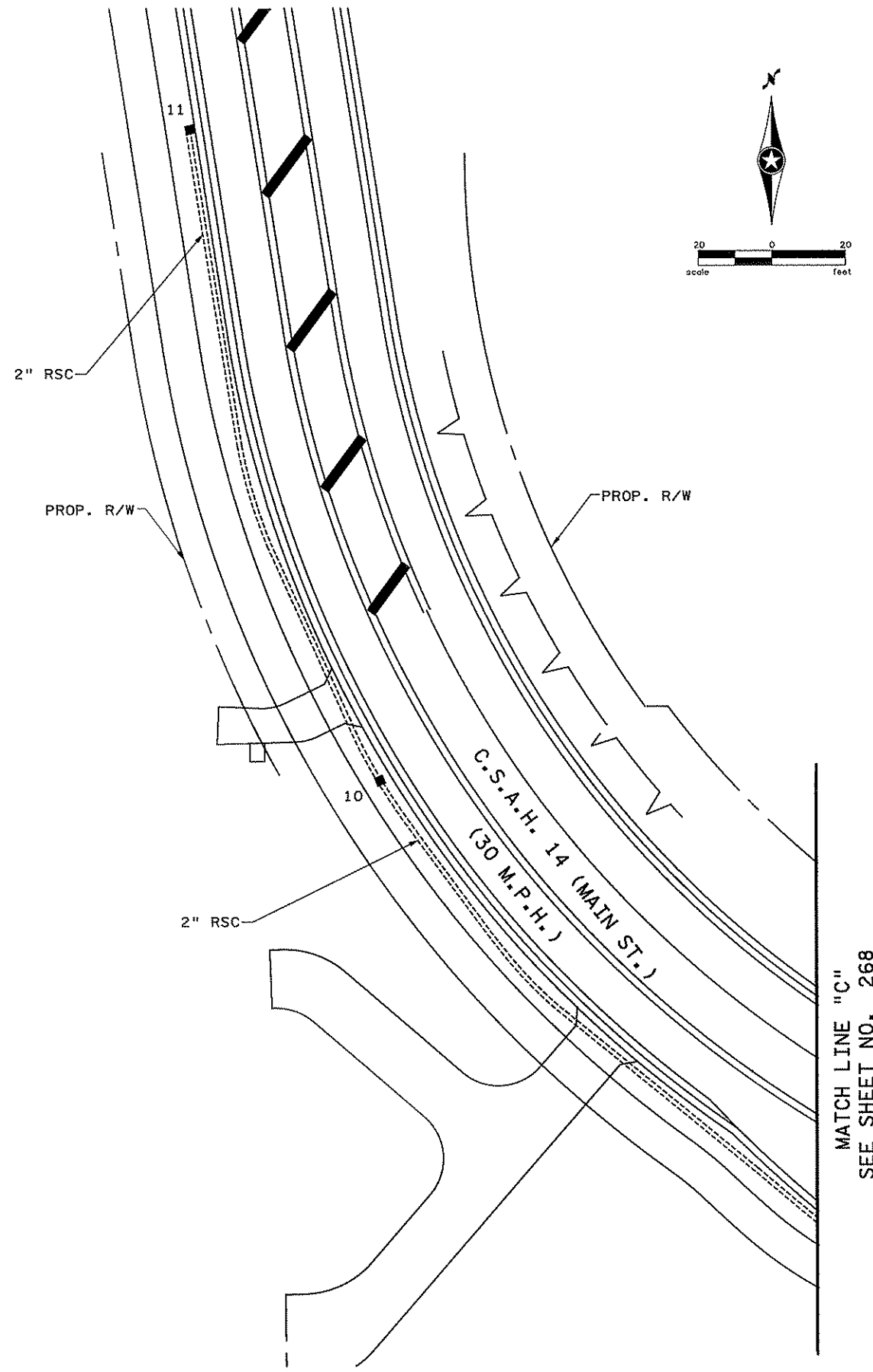
CHECKED BY  
**G.STUEMPFEG**

COMM. NO. 4994



**ANOKA COUNTY**  
INTERSECTION LAYOUT  
C.S.A.H. 14  
C.S.A.H. 14 (MAIN ST.) AT  
CENTERVILLE ROAD

SHEET  
268  
OF  
492



MATCH LINE "C"  
SEE SHEET NO. 268

NOTES:

- 1) FURNISHING AND INSTALLING ALL CONDUIT AS SHOWN IN THIS SHEET SHALL BE PAID FOR UNDER THE "2" RIGID STEEL CONDUIT" PAY ITEM.
- 2) FURNISHING AND INSTALLING ALL HANDLES AS SHOWN IN THIS SHEET SHALL BE PAID FOR UNDER THE "PVC HANDHOLES" PAY ITEM.

2:42:37 PM 3/22/2007 C:\p01\4994-F\4994-F.mxd

NO	DATE	BY	CHKD	APPR	REVISION

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

Print Name: **ADRIAN S. POTTER**

*Adrian S. Potter*

Date: **03/22/07** License # **42785**

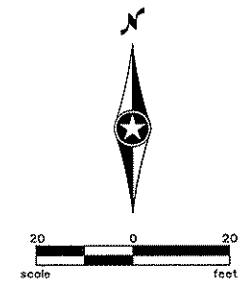
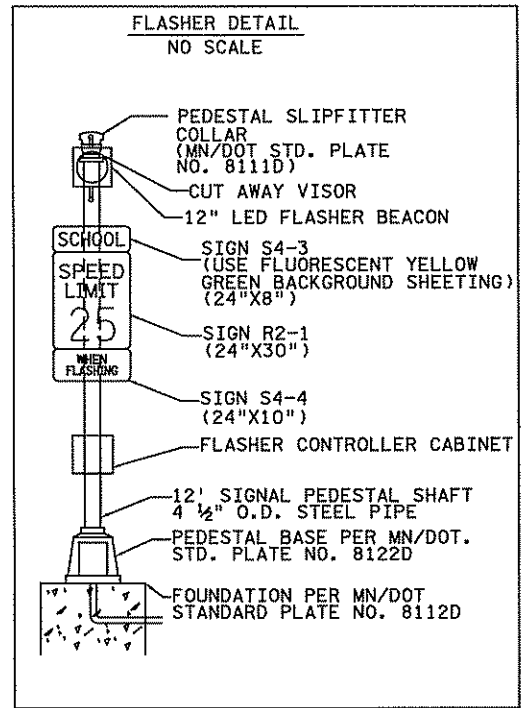
STATE PROJECT NO.  
S.P. 02-614-24, ETAL

DRAWN BY  
B.BETTS  
DESIGNED BY  
A.POTTER  
CHECKED BY  
G.STUEMPFIC  
COMM. NO. 4994



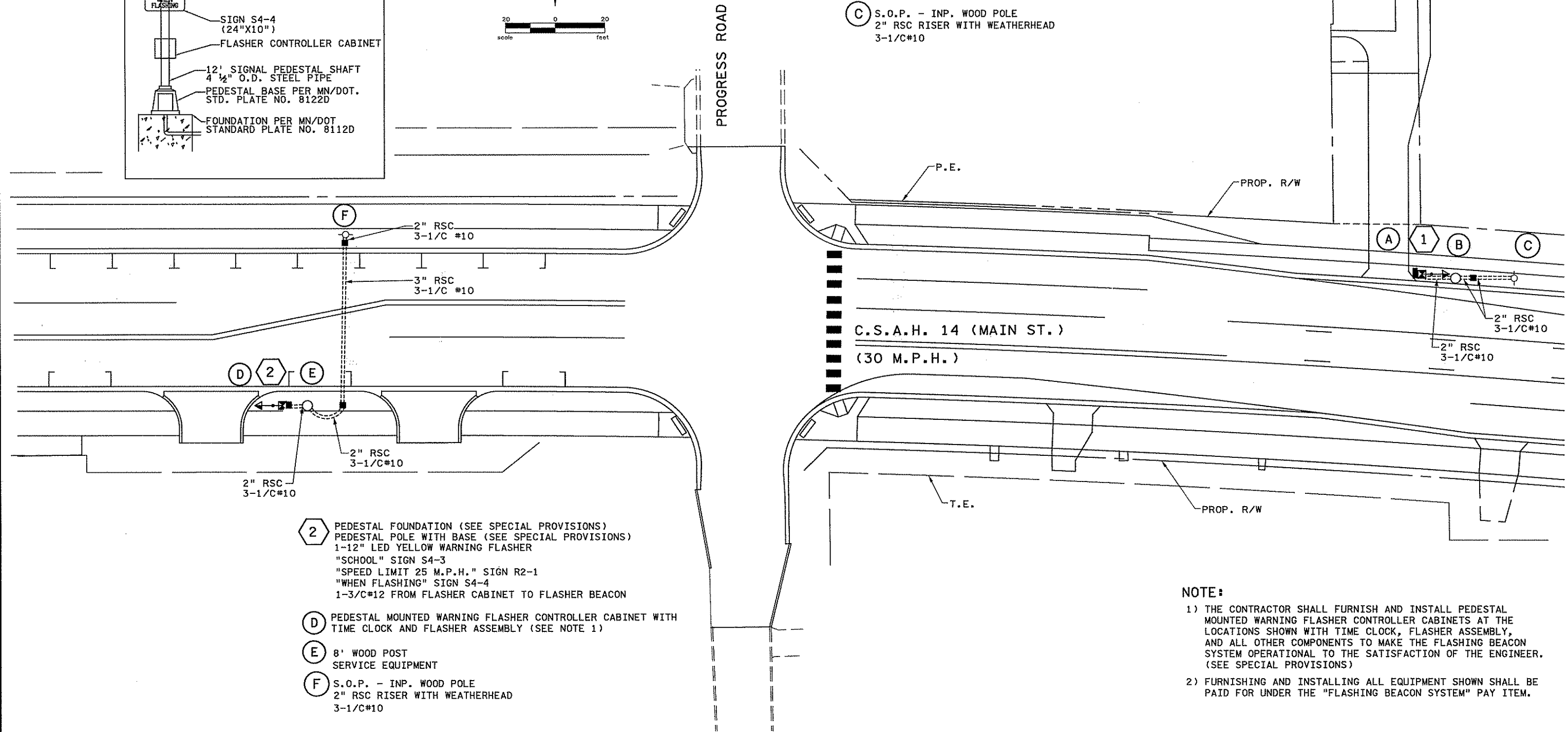
ANOKA COUNTY  
MATCH LINE LAYOUT  
C.S.A.H. 14  
C.S.A.H. 14 (MAIN ST.) AT  
CENTERVILLE ROAD

SHEET  
269  
OF  
492



- 1 PEDESTAL FOUNDATION (SEE SPECIAL PROVISIONS)
- PEDESTAL POLE WITH BASE (SEE SPECIAL PROVISIONS)
- 1-12" LED YELLOW WARNING FLASHER
- "SCHOOL" SIGN S4-3
- "SPEED LIMIT 25 M.P.H." SIGN R2-1
- "WHEN FLASHING" SIGN S4-4
- 1-3/C#12 FROM FLASHER CABINET TO FLASHER BEACON

- A PEDESTAL MOUNTED WARNING FLASHER CONTROLLER CABINET WITH TIME CLOCK AND FLASHER ASSEMBLY (SEE NOTE 1)
- B 8' WOOD POST SERVICE EQUIPMENT
- C S.O.P. - INP. WOOD POLE
- 2" RSC RISER WITH WEATHERHEAD
- 3-1/C#10



- 2 PEDESTAL FOUNDATION (SEE SPECIAL PROVISIONS)
- PEDESTAL POLE WITH BASE (SEE SPECIAL PROVISIONS)
- 1-12" LED YELLOW WARNING FLASHER
- "SCHOOL" SIGN S4-3
- "SPEED LIMIT 25 M.P.H." SIGN R2-1
- "WHEN FLASHING" SIGN S4-4
- 1-3/C#12 FROM FLASHER CABINET TO FLASHER BEACON

- D PEDESTAL MOUNTED WARNING FLASHER CONTROLLER CABINET WITH TIME CLOCK AND FLASHER ASSEMBLY (SEE NOTE 1)
- E 8' WOOD POST SERVICE EQUIPMENT
- F S.O.P. - INP. WOOD POLE
- 2" RSC RISER WITH WEATHERHEAD
- 3-1/C#10

**NOTE:**

- 1) THE CONTRACTOR SHALL FURNISH AND INSTALL PEDESTAL MOUNTED WARNING FLASHER CONTROLLER CABINETS AT THE LOCATIONS SHOWN WITH TIME CLOCK, FLASHER ASSEMBLY, AND ALL OTHER COMPONENTS TO MAKE THE FLASHING BEACON SYSTEM OPERATIONAL TO THE SATISFACTION OF THE ENGINEER. (SEE SPECIAL PROVISIONS)
- 2) FURNISHING AND INSTALLING ALL EQUIPMENT SHOWN SHALL BE PAID FOR UNDER THE "FLASHING BEACON SYSTEM" PAY ITEM.

9/28/54 AM 3/25/2007 ...4994-F\HI-MUNPlan\4994-F.11c

NO	DATE	BY	CHKD	APPR	REVISION

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

Print Name: BRIAN D. HOLZ  
*Brian D. Holz*  
 Date: 3/22/07 License # 21428

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

Print Name: ADRIAN S. POTTER  
*Adrian S. Potter*  
 Date: 03/22/07 License # 42785

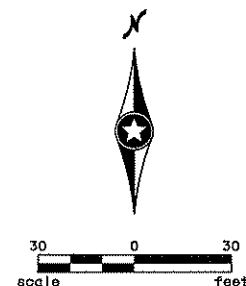
STATE PROJECT NO. S.P. 02-614-24, ETAL

DRAWN BY B.BETTS  
 DESIGNED BY A.POTTER  
 CHECKED BY G.STUEMPF  
 COMM. NO. 4994



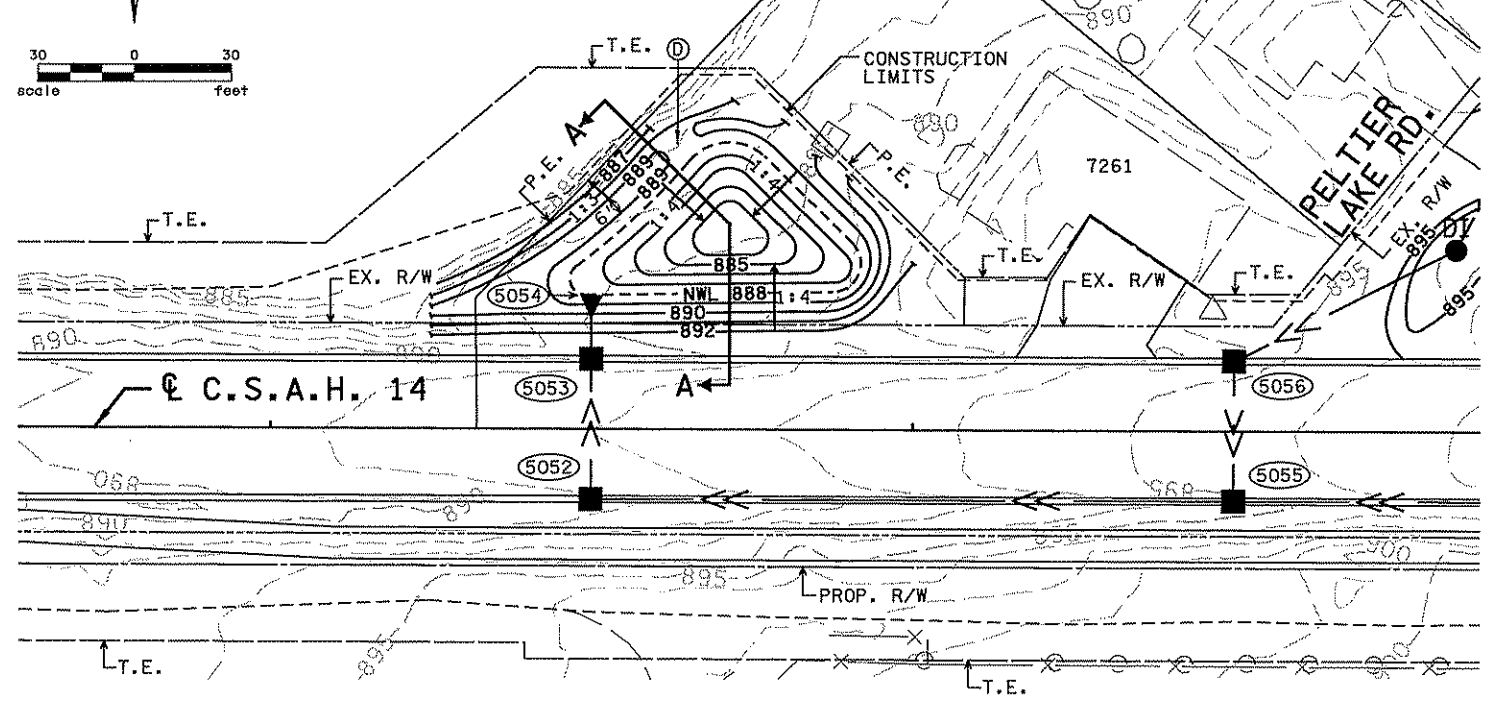
ANOKA COUNTY  
 FLASHING BEACON SYSTEM  
 C.S.A.H. 14  
 C.S.A.H. 14 (MAIN ST.) AT  
 PROGRESS ROAD

SHEET 270 OF 492

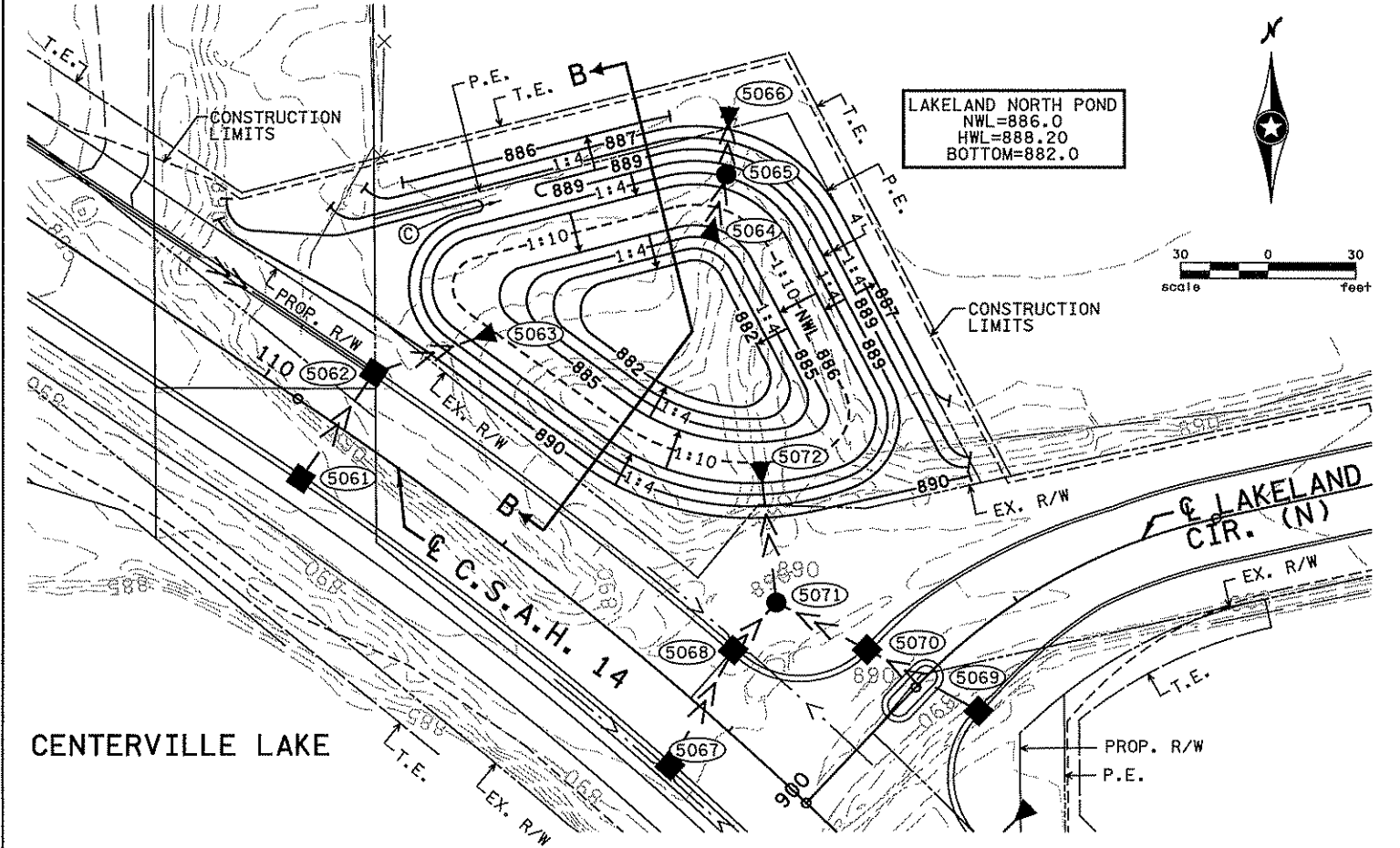
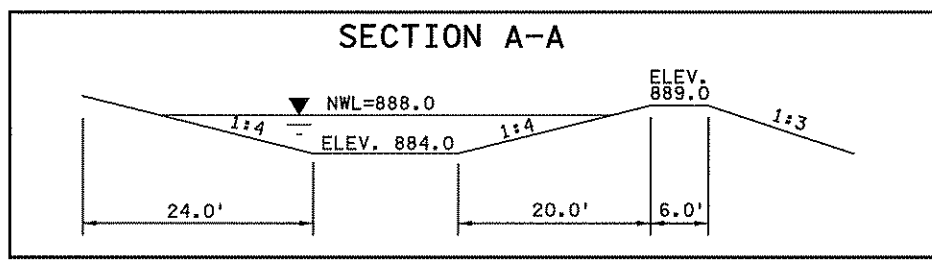


PELTIER LAKE POND  
 NWL=888.0  
 HWL=889.0  
 BOTTOM=884.0

PELTIER LAKE

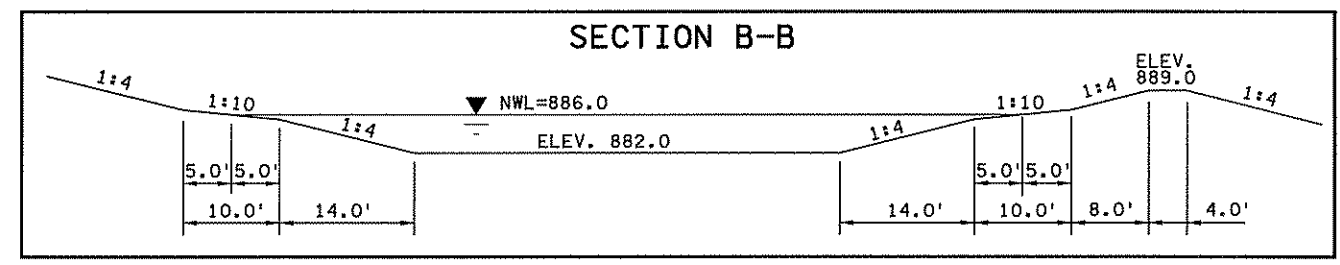


PELTIER POND



LAKELAND NORTH POND  
 NWL=886.0  
 HWL=888.20  
 BOTTOM=882.0

LAKELAND NORTH POND



- NOTES:
- (A) SEE CROSS SECTIONS FOR GRADING ALONG ROADWAYS.
  - (B) CONTOURS SHOWN ARE TO FINISHED GRADE.
  - (C) SEE SHEET 232 FOR WEIR DETAILS.
  - (D) SEE SHEET 231 FOR DRAINAGE STRUCTURE DESIGN SPECIAL 6 DETAILS.

4:43:00 PM  
 6/28/2007  
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NO	DATE	BY	CHKD	APPR	REVISION

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

Print Name: CHRISTOPHER M. TRBOYEVIK

*Christopher M. Trbojevich*

Date: 6/27/07 License #: 41635

STATE PROJECT NO.  
 S.P. 02-614-24, ETAL

DRAWN BY  
 S. MARTINS

DESIGNED BY  
 J. TOULOUSE

CHECKED BY  
 C. TRBOYEVIK

COMM. NO. 4994



ANOKA COUNTY

CONTOUR PLAN

C.S.A.H. 14

PELTIER POND/LAKELAND NORTH POND

SHEET  
 271  
 OF  
 492



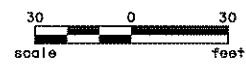
LAKELAND SOUTH POND  
 NWL=884.8  
 HWL=887.2  
 BOTTOM=880.0

CONSTRUCTION LIMITS

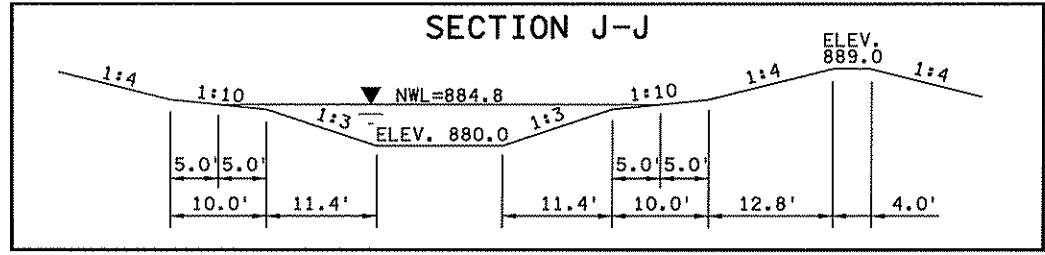
EXISTING WEIR

EXIST. POND

CENTERVILLE LAKE



LAKELAND SOUTH POND



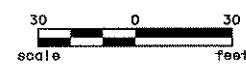
CITY HALL POND  
 NWL=897.5  
 HWL=900.4  
 BOTTOM=891.0

CONSTRUCTION LIMITS

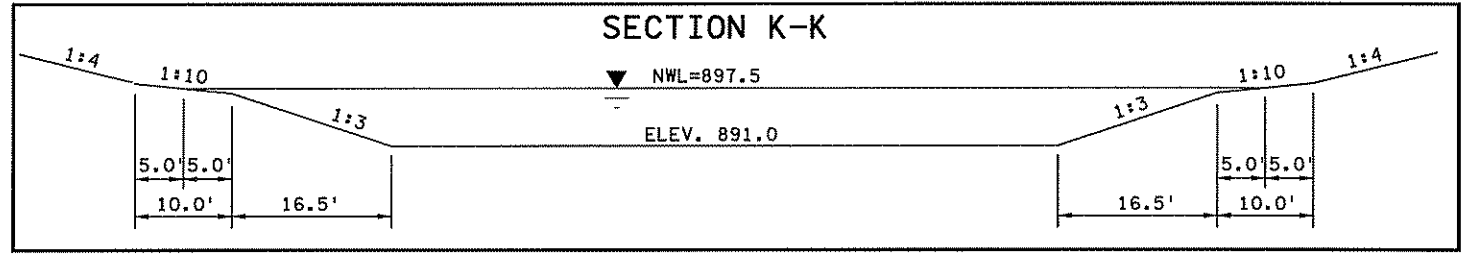
CONSTRUCTION LIMITS

CONSTRUCTION LIMITS

100-YR FLOODWAY



CITY HALL POND



NOTES:

- (A) SEE CROSS SECTIONS FOR GRADING ALONG ROADWAYS.
- (B) CONTOURS SHOWN ARE TO FINISHED GRADE.
- (C) SEE SHEET 232 FOR WEIR DETAILS.

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NO	DATE	BY	CHKD	APPR	REVISION

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.  
 Print Name: CHRISTOPHER M. TRBOYEVIK  
*Christopher M. Trbojevich*  
 Date: 6/27/07 License #: 41635

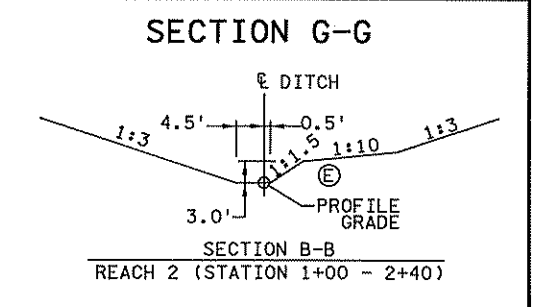
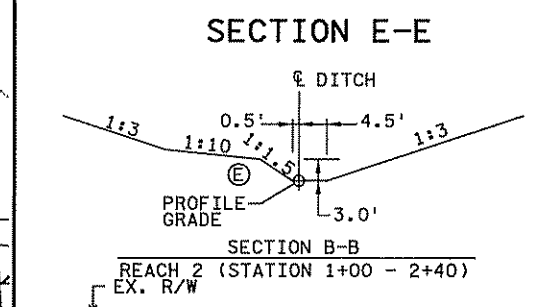
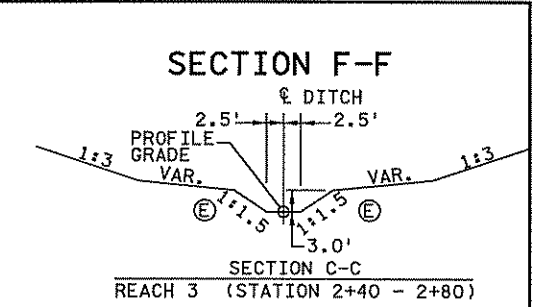
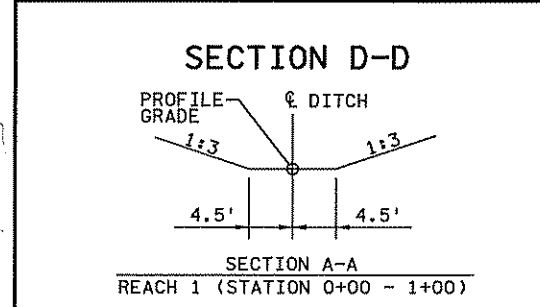
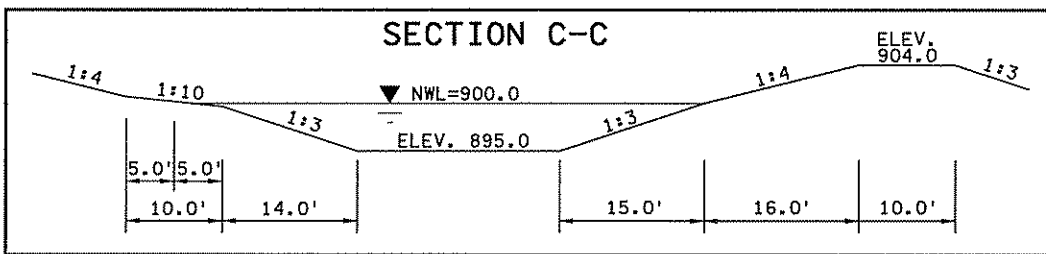
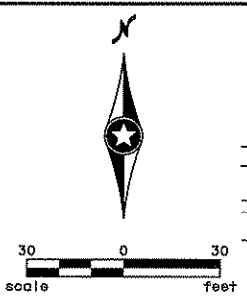
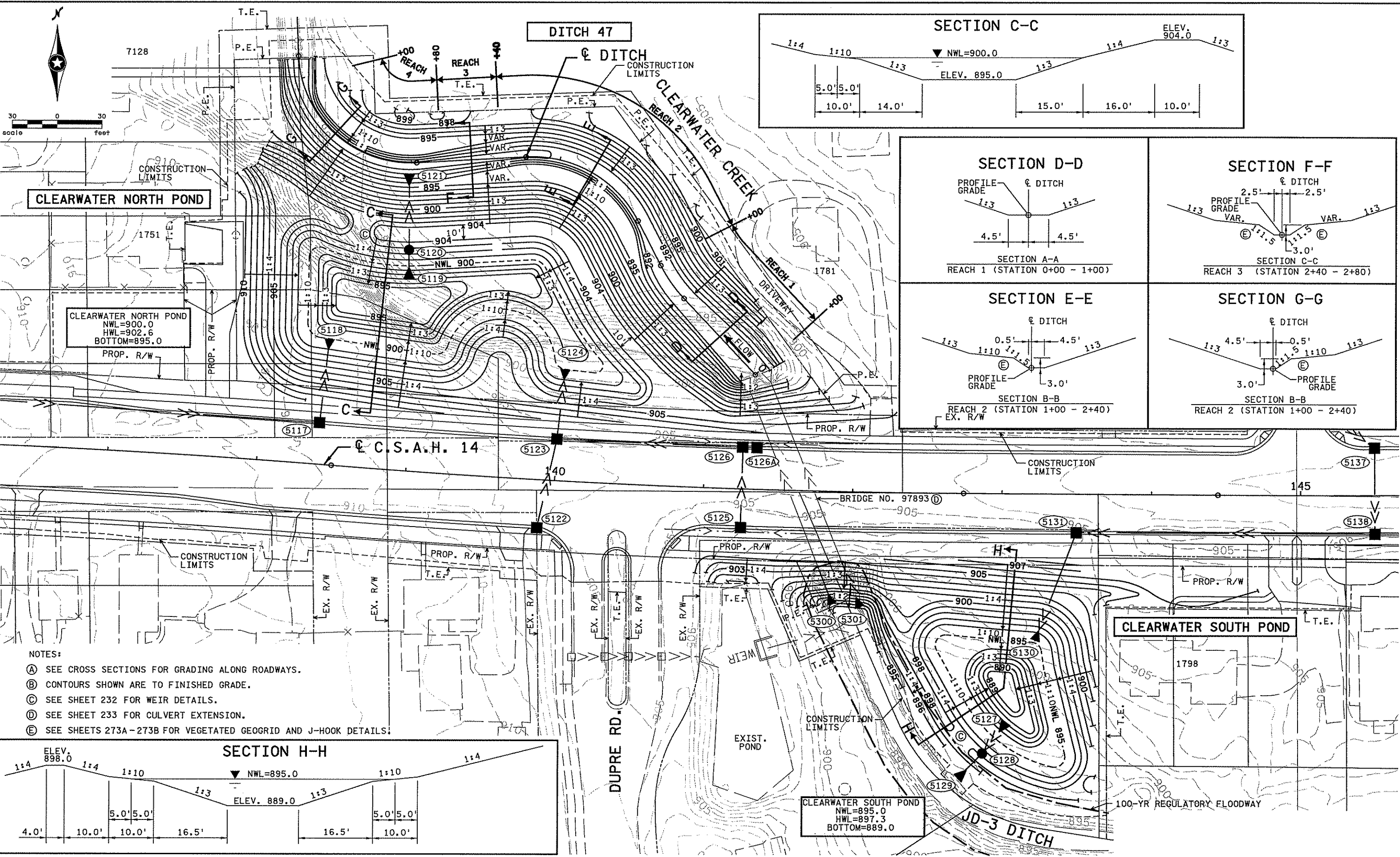
STATE PROJECT NO.  
 S.P. 02-614-24, ETAL

DRAWN BY  
 S. MARTINS  
 DESIGNED BY  
 J. TOULOUSE  
 CHECKED BY  
 C. TRBOYEVIK  
 COMM. NO. 4994

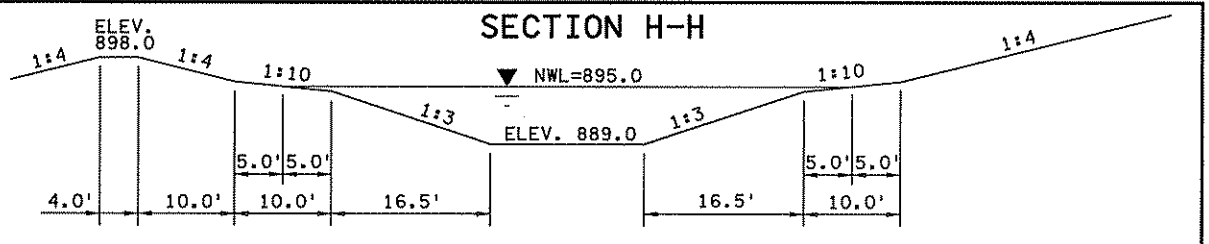


ANOKA COUNTY  
 CONTOUR PLAN  
 C.S.A.H. 14  
 LAKELAND SOUTH POND/CITY HALL POND

SHEET  
 272  
 OF  
 492



- NOTES:
- (A) SEE CROSS SECTIONS FOR GRADING ALONG ROADWAYS.
  - (B) CONTOURS SHOWN ARE TO FINISHED GRADE.
  - (C) SEE SHEET 232 FOR WEIR DETAILS.
  - (D) SEE SHEET 233 FOR CULVERT EXTENSION.
  - (E) SEE SHEETS 273A-273B FOR VEGETATED GEOGRID AND J-HOOK DETAILS.



**CLEARWATER SOUTH POND**

NWL=895.0

HWL=897.3

BOTTOM=889.0

**CLEARWATER SOUTH POND**

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.

Print Name: CHRISTOPHER M. TRBOYEVICH

*Christopher M. Trbojevich*

Date: 6/27/07 License # 41635

STATE PROJECT NO. S.P. 02-614-24, ETAL

DRAWN BY S. MARTINS

DESIGNED BY J. TOULOUSE

CHECKED BY C. TRBOYEVICH

COMM. NO. 4994



ANOKA COUNTY

CONTOUR PLAN

C.S.A.H. 14

CLEARWATER NORTH POND/CLEARWATER SOUTH POND/DITCH 47



SHEET 273 OF 492

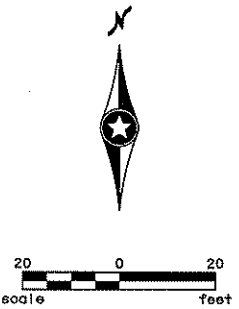
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NO	DATE	BY	CHKD	APPR	REVISION

DITCH 47

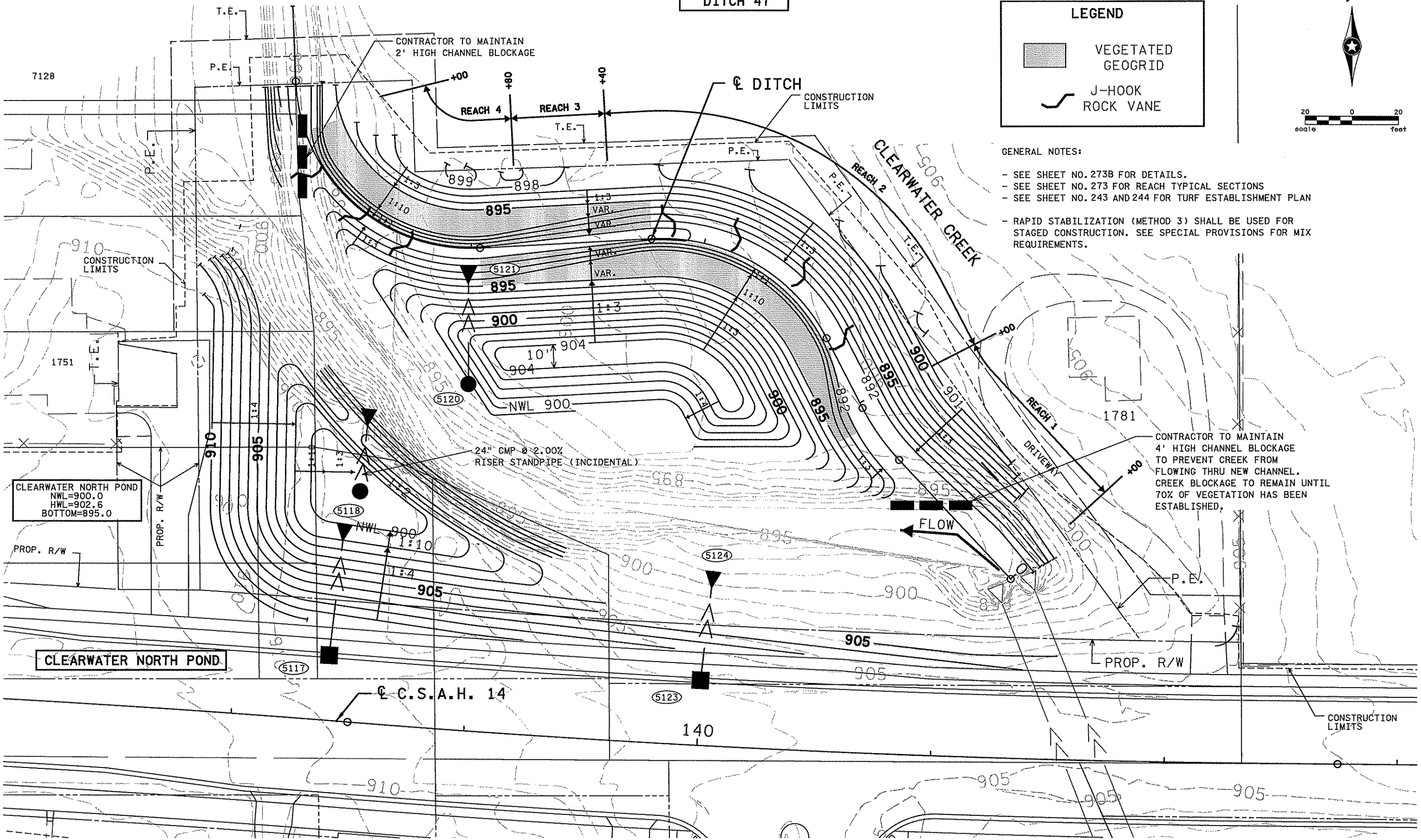
**LEGEND**

 VEGETATED GEOGRID  
 J-HOOK ROCK VANE



GENERAL NOTES:

- SEE SHEET NO. 273B FOR DETAILS.
- SEE SHEET NO. 273 FOR REACH TYPICAL SECTIONS
- SEE SHEET NO. 243 AND 244 FOR TURF ESTABLISHMENT PLAN
- RAPID STABILIZATION (METHOD 3) SHALL BE USED FOR STAGED CONSTRUCTION. SEE SPECIAL PROVISIONS FOR MIX REQUIREMENTS.



CLEARWATER NORTH POND  
 NWL=900.0  
 HWL=902.6  
 BOTTOM=895.0

CONTRACTOR TO MAINTAIN  
 4' HIGH CHANNEL BLOCKAGE  
 TO PREVENT CREEK FROM  
 FLOWING THRU NEW CHANNEL.  
 CREEK BLOCKAGE TO REMAIN UNTIL  
 70% OF VEGETATION HAS BEEN  
 ESTABLISHED.

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.  
 Print Name: CHRISTOPHER M. TRBOYEVICH  
*Christopher M. Trbojevich*  
 Date: 6/27/07 License # 41635

STATE PROJECT NO.  
 S.P. 02-614-24, ETAL

DRAWN BY  
 S. MARTINS  
 DESIGNED BY  
 J. TOULOUSE  
 CHECKED BY  
 C. TRBOYEVICH  
 COMM. NO. 4994

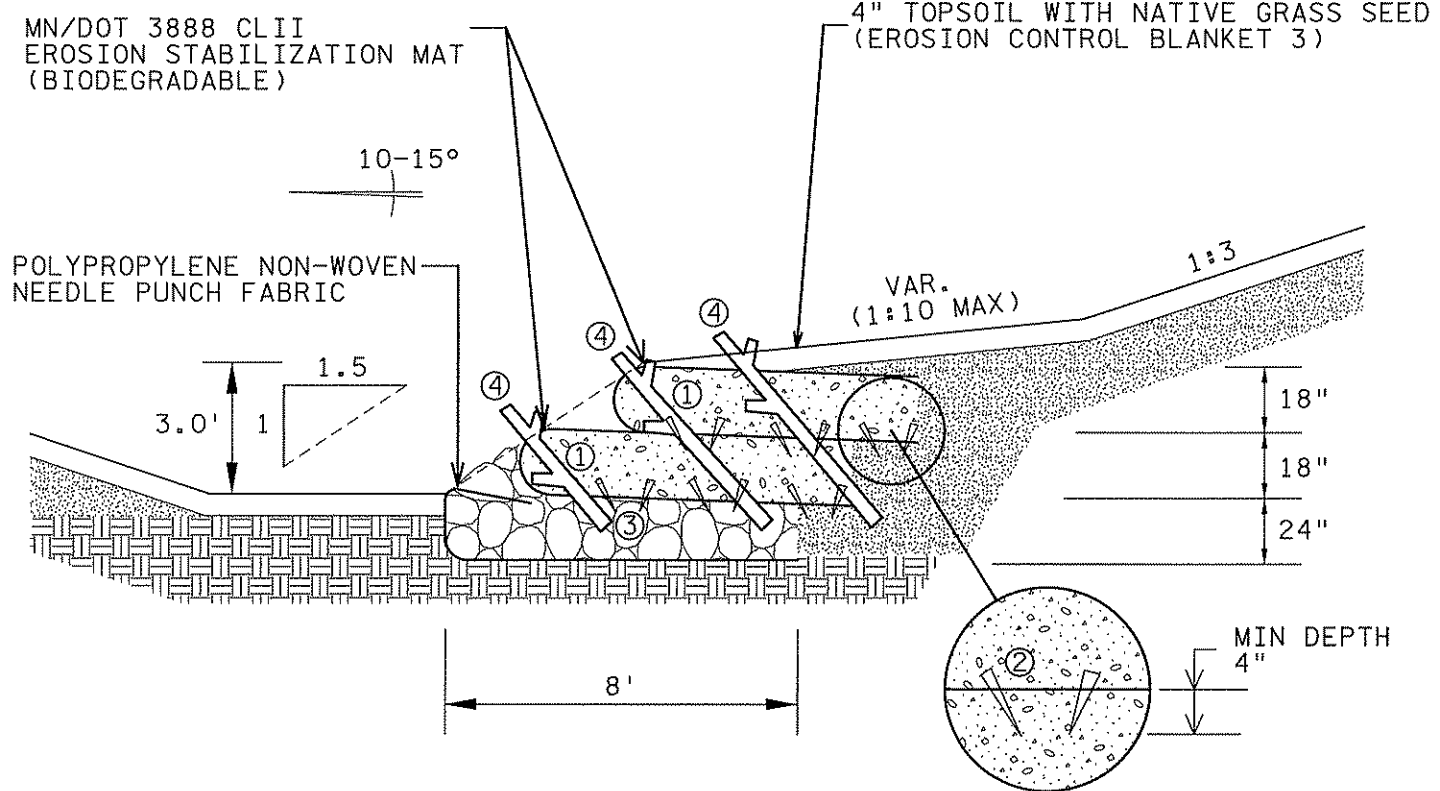


ANOKA COUNTY  
 CONTOUR PLAN  
 C.S.A.H. 14  
 STAGED GRADING PLAN-CLEARWATER NORTH

SHEET  
 273A  
 OF  
 492

4/23/11 PK  
 6/25/2007  
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NO	DATE	BY	CKD	APPR	REVISION



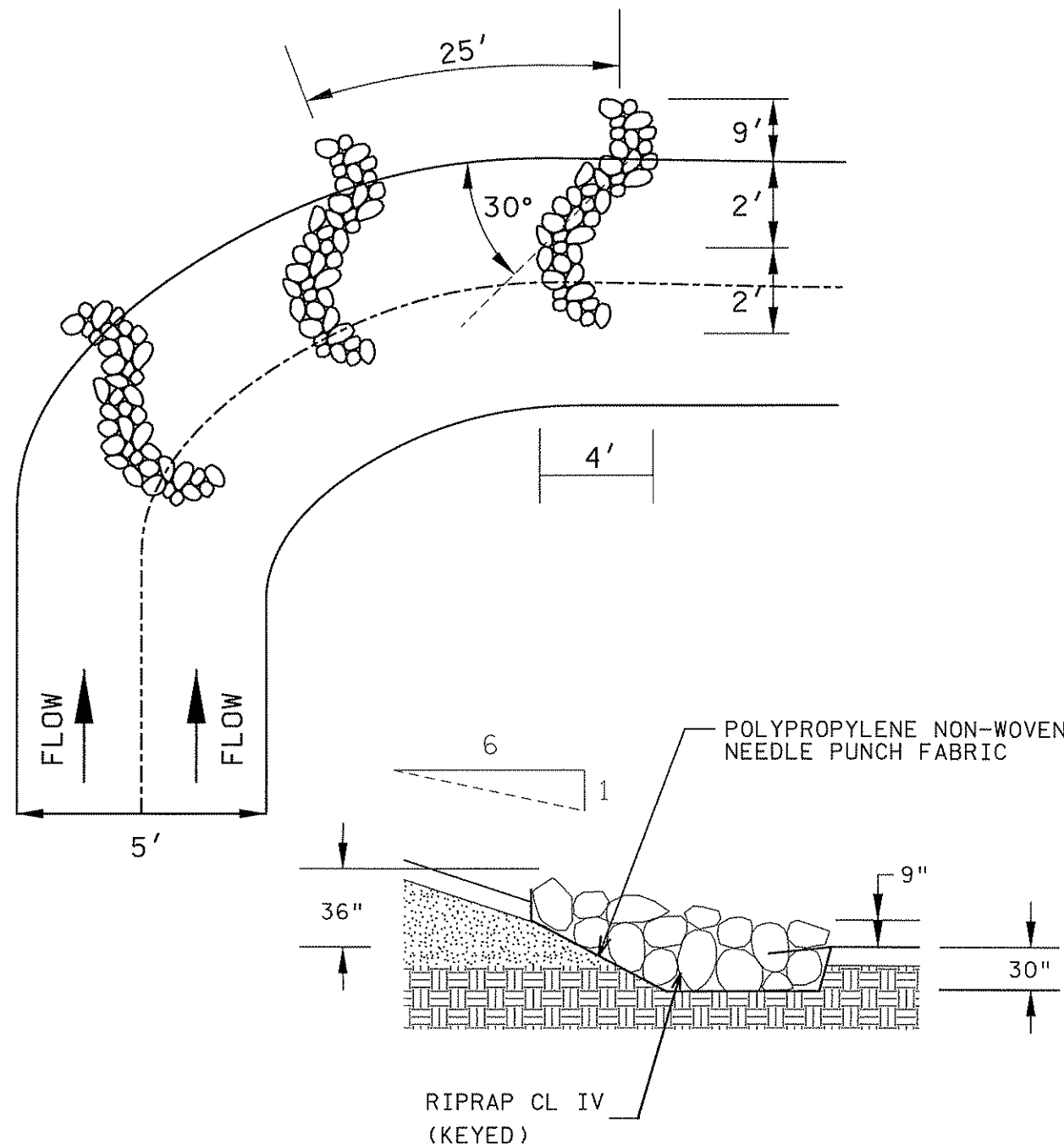
CONSTRUCTION NOTES:

- ① SUITABLE BACKFILL MATERIAL
- ② 2" X 1" X 18" WOOD STAKES
- ③ CLASS III RIPRAP (INCIDENTAL)
- ④ HARVEST AND PLANT STAKES DURING THE DORMANT SEASON. USE HEALTHY, STRAIGHT AND LIVE WOOD AT LEAST ONE YEAR OLD. MAKE CLEAN CUTS AND DO NOT SPLIT ENDS DURING INSTALLATION, USE A PILOT BAR IN FIRM SOILS. SOAK CUTTINGS FOR 24 HOURS (MIN.) PRIOR TO INSTALLATION. CUTTINGS MUST BE INSTALLED THE SAME DAY AS REMOVAL FROM WATER. DO NOT ALLOW STAKES TO DRY OUT. TAMP SOIL AROUND STAKE.

SEE TYPICAL SECTIONS ON SHEET 273 AND 273A FOR LOCATIONS.

PAID FOR UNDER ITEM NO. 2577.603 (VEGETATED GEOGRID)

TYPICAL SECTION  
VEGETATED GEOGRID



NOTES:

SEE SHEET NO. 273A FOR J-HOOK LOCATIONS.

PAID FOR UNDER ITEM NO. 2511.505 (HAND PLACED RIP RAP).

J-HOOK ROCK VANE  
NOT TO SCALE

4/23/14 PH  
6/25/2007  
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NO	DATE	BY	CHKD	APPR	REVISION

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

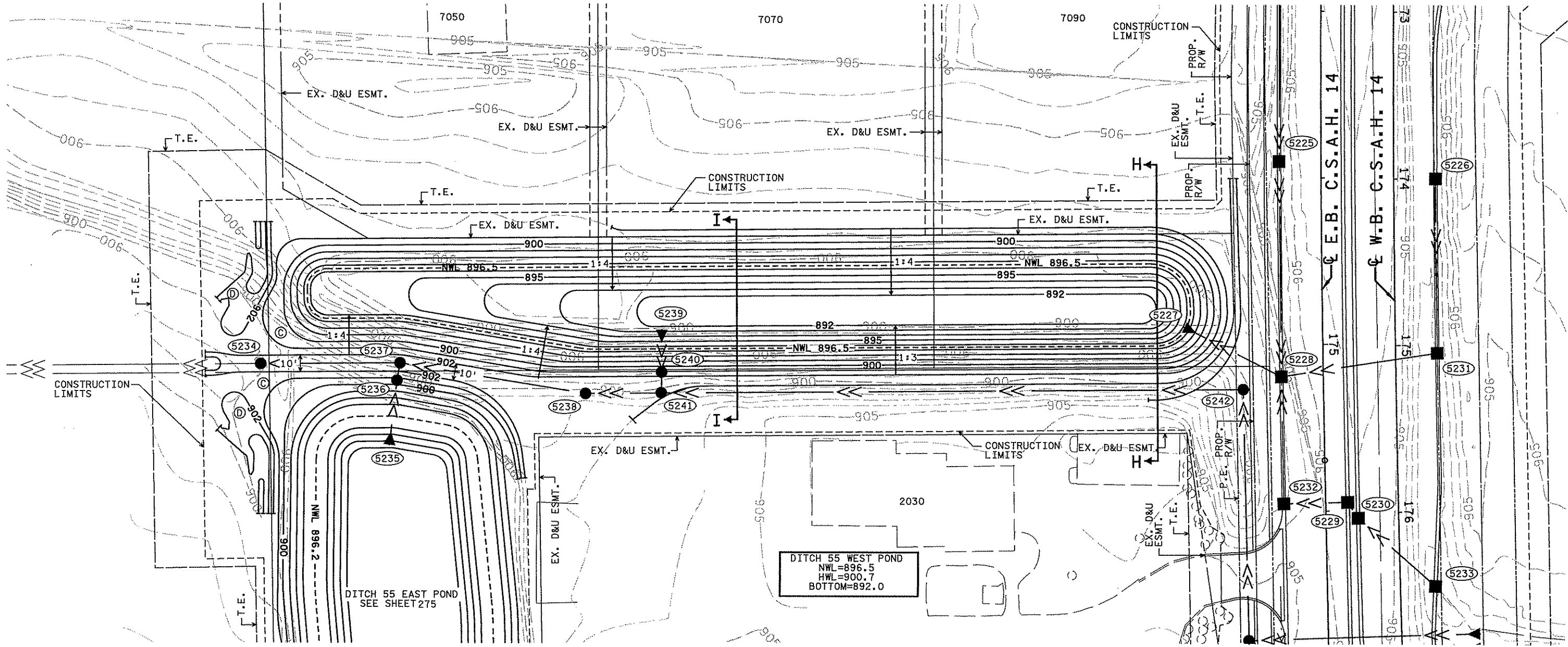
Print Name: CHRISTOPHER M. TRBOYEVICH

*Christopher M. Trbojevich*

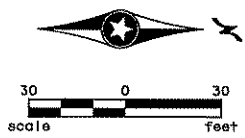
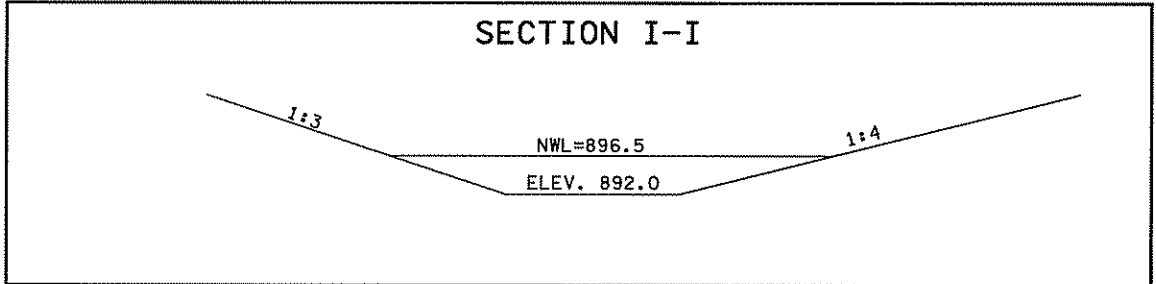
Date: 6/27/07 License #: 41635

STATE PROJECT NO. S.P. 02-614-24, ETAL	DRAWN BY D. FITCHORN	
DESIGNED BY E. ROERISH	CHECKED BY N. WILL	
COMM. NO. 4994		

ANOKA COUNTY		SHEET 273B
VEGETATED GEOGRID / J-HOOK VANE DETAILS		OF
C.S.A.H. 14		492
CLEARWATER CREEK REALIGNMENT		



DITCH 55 WEST POND



- NOTES:
- (A) SEE CROSS SECTIONS FOR GRADING ALONG ROADWAYS.
  - (B) CONTOURS SHOWN ARE TO FINISHED GRADE.
  - (C) SEE SHEET 232 FOR WEIR DETAILS.
  - (D) FIELD ADJUST PROPOSED CONTOURS TO MATCH FINAL CONTOURS IN NORTHERN LIGHTS INDUSTRIAL DEVELOPMENT. (INCIDENTAL TO EXCAVATION SPECIAL 1)

4/13/20 PM 6/25/2007 H:\proj\4994-f\h1-mu\plan\4994-f.dwg

NO	DATE	BY	CHKD	APPR	REVISION

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.  
 Print Name: CHRISTOPHER M. TRBOYEVICH  
*Christopher M. Trbojevich*  
 Date: 6/27/07 License #: 41635

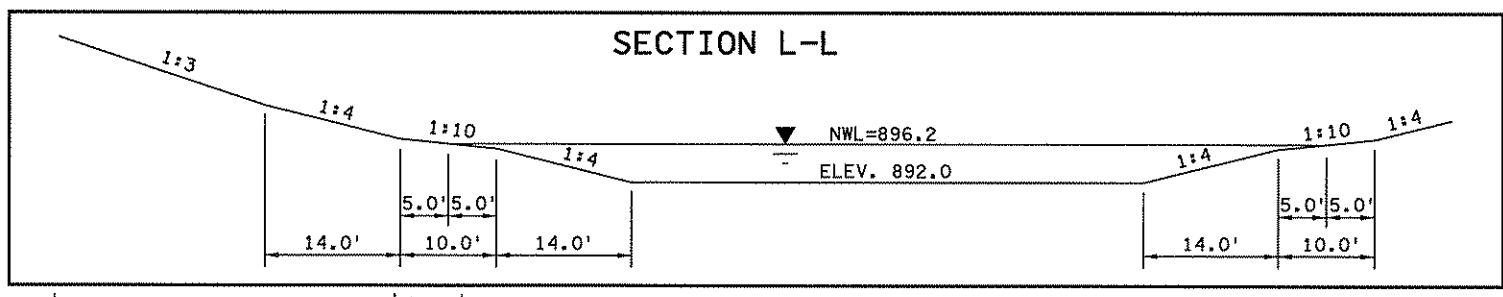
STATE PROJECT NO. S.P. 02-614-24, ETAL  
 DRAWN BY S. MARTINS  
 DESIGNED BY J. TOULOUSE  
 CHECKED BY C. TRBOYEVICH  
 COMM. NO. 4994



ANOKA COUNTY  
 CONTOUR PLAN  
 C.S.A.H. 14  
 DITCH 55 WEST POND

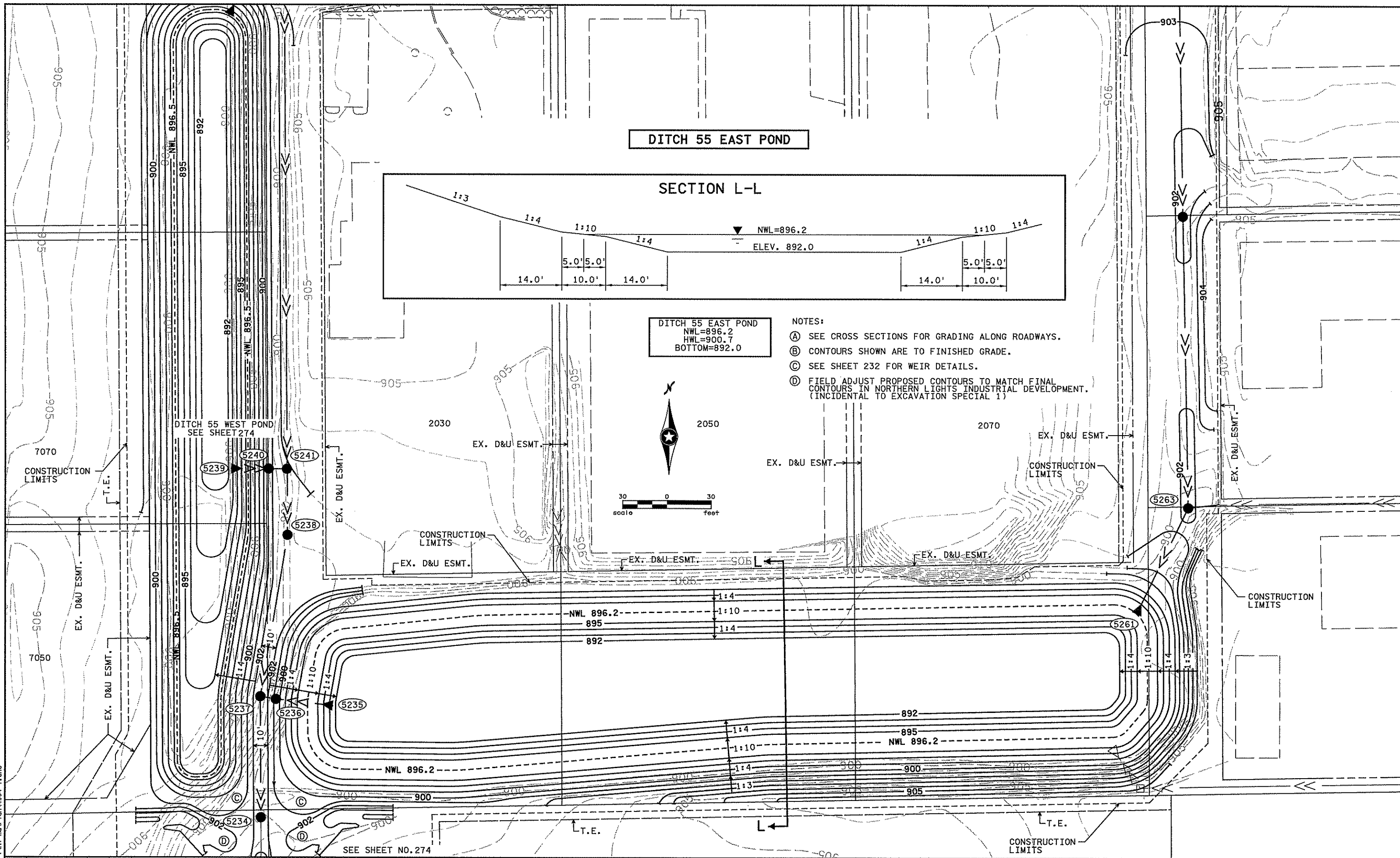
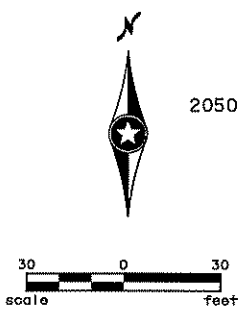
SHEET 274 OF 492

DITCH 55 EAST POND



DITCH 55 EAST POND  
 NWL=896.2  
 HWL=900.7  
 BOTTOM=892.0

- NOTES:
- (A) SEE CROSS SECTIONS FOR GRADING ALONG ROADWAYS.
  - (B) CONTOURS SHOWN ARE TO FINISHED GRADE.
  - (C) SEE SHEET 232 FOR WEIR DETAILS.
  - (D) FIELD ADJUST PROPOSED CONTOURS TO MATCH FINAL CONTOURS IN NORTHERN LIGHTS INDUSTRIAL DEVELOPMENT. (INCIDENTAL TO EXCAVATION SPECIAL 1)



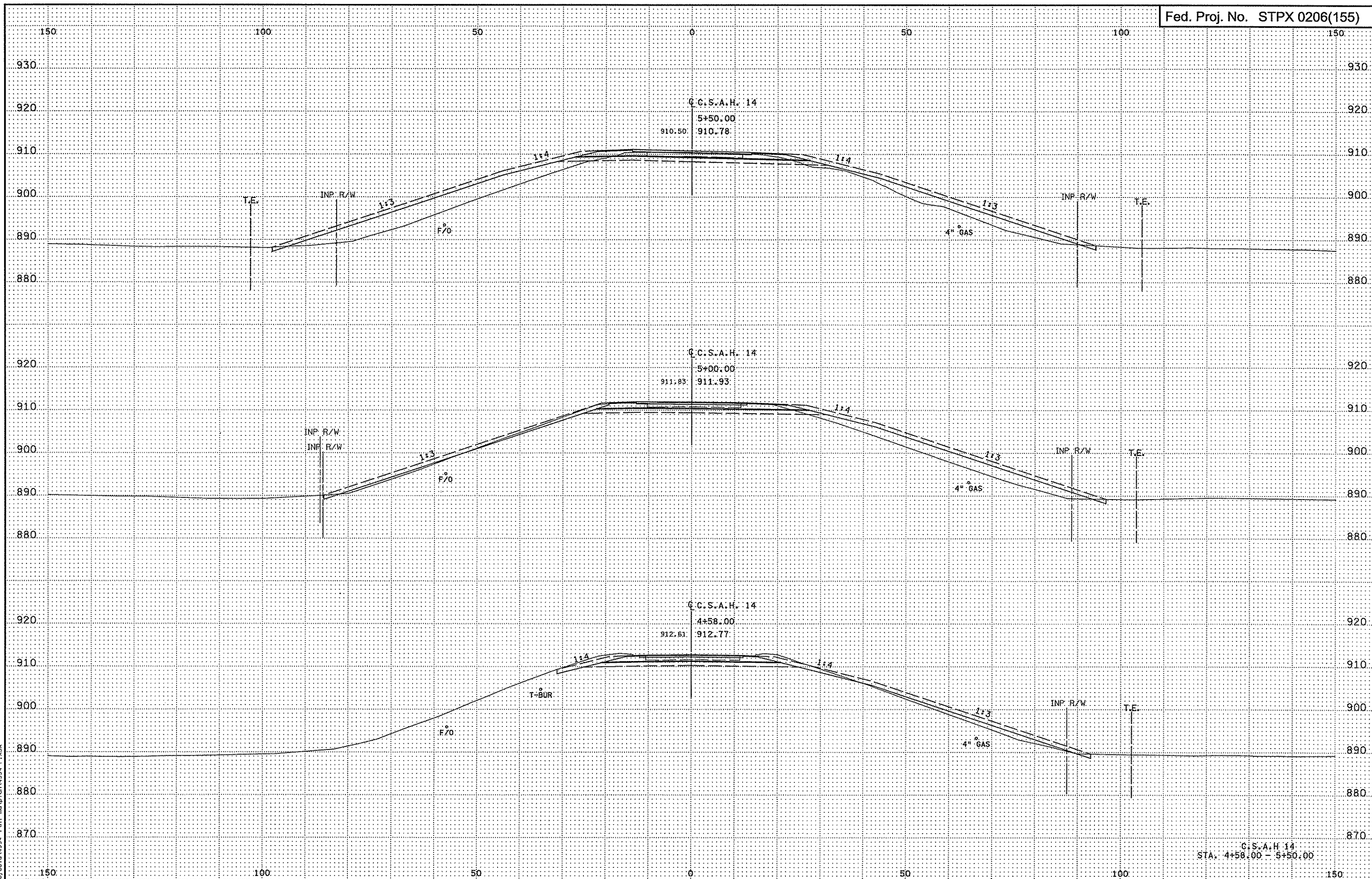
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NO	DATE	BY	CKD	APPR	REVISION

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.  
 Print Name: CHRISTOPHER M. TRBOYEVICH  
*Christopher M. Trbojevich*  
 Date: 6/27/07 License #: 41635

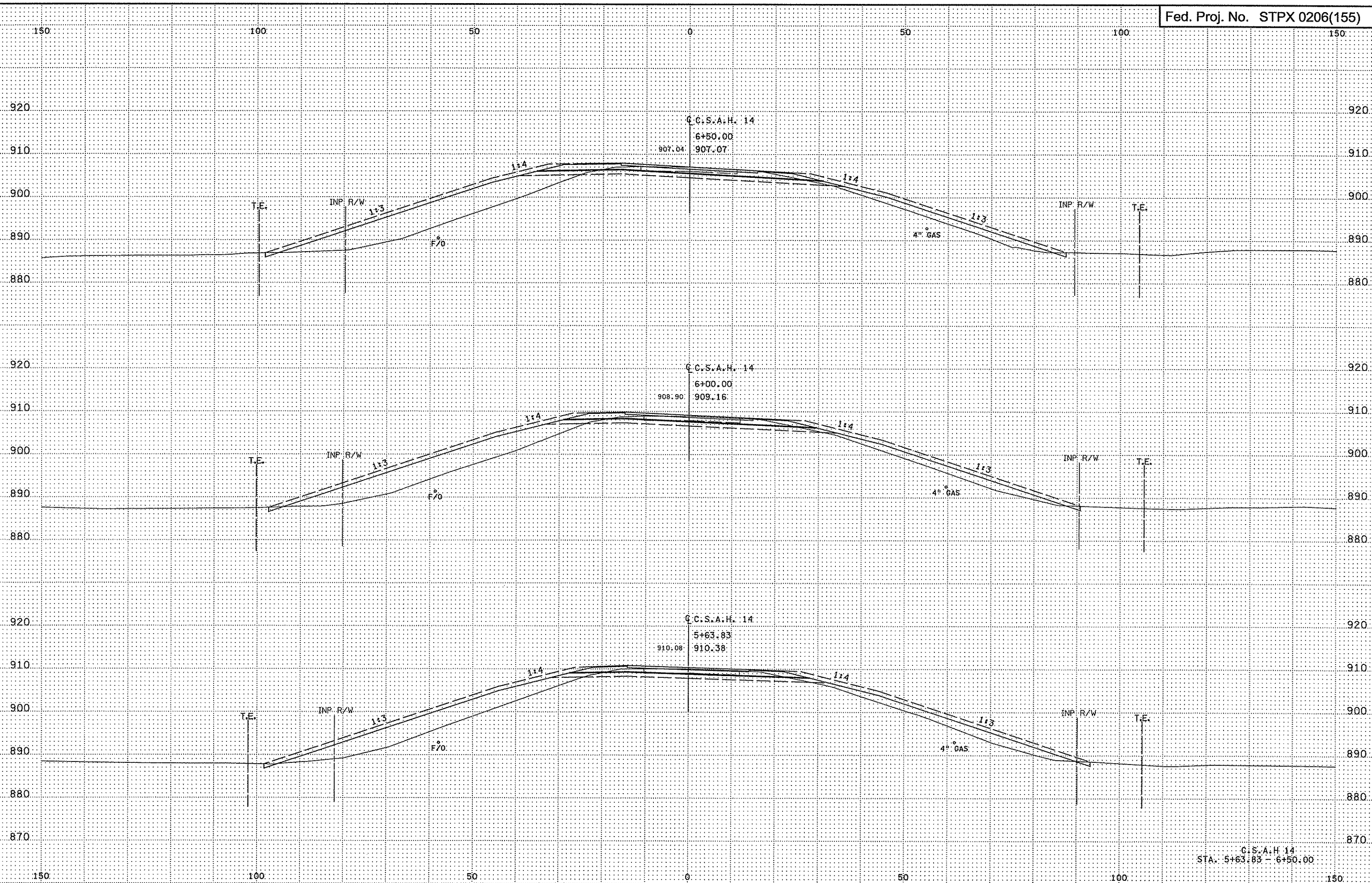
STATE PROJECT NO.  
 S.P. 02-614-24, ETAL  
 DRAWN BY  
 S. MARTINS  
 DESIGNED BY  
 J. TOULOUSE  
 CHECKED BY  
 C. TRBOYEVICH  
 COMM. NO. 4994





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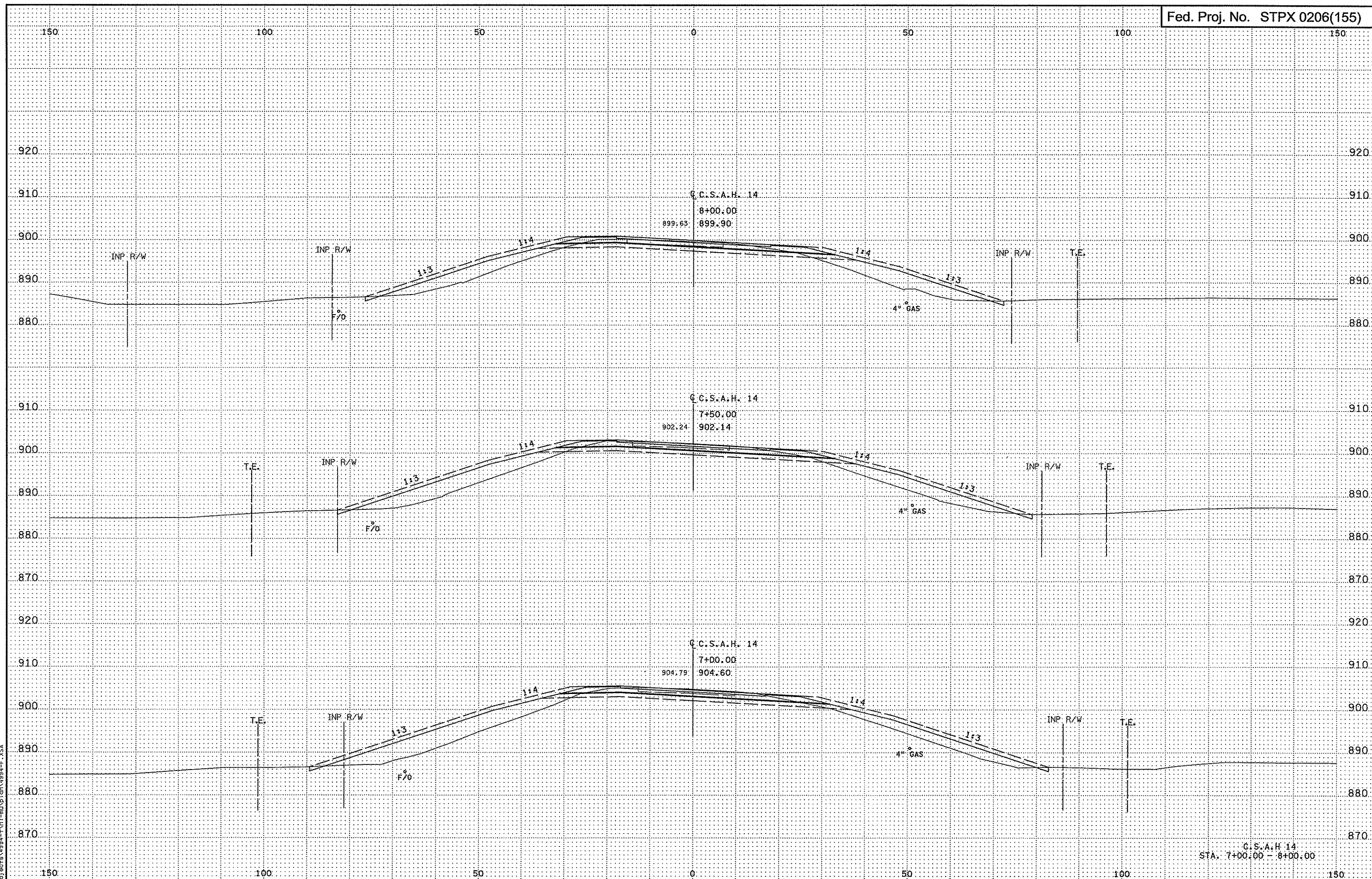
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STA. 4+58.00 - 5+50.00



C.S.A.H. 14  
STA. 5+63.83 - 6+50.00

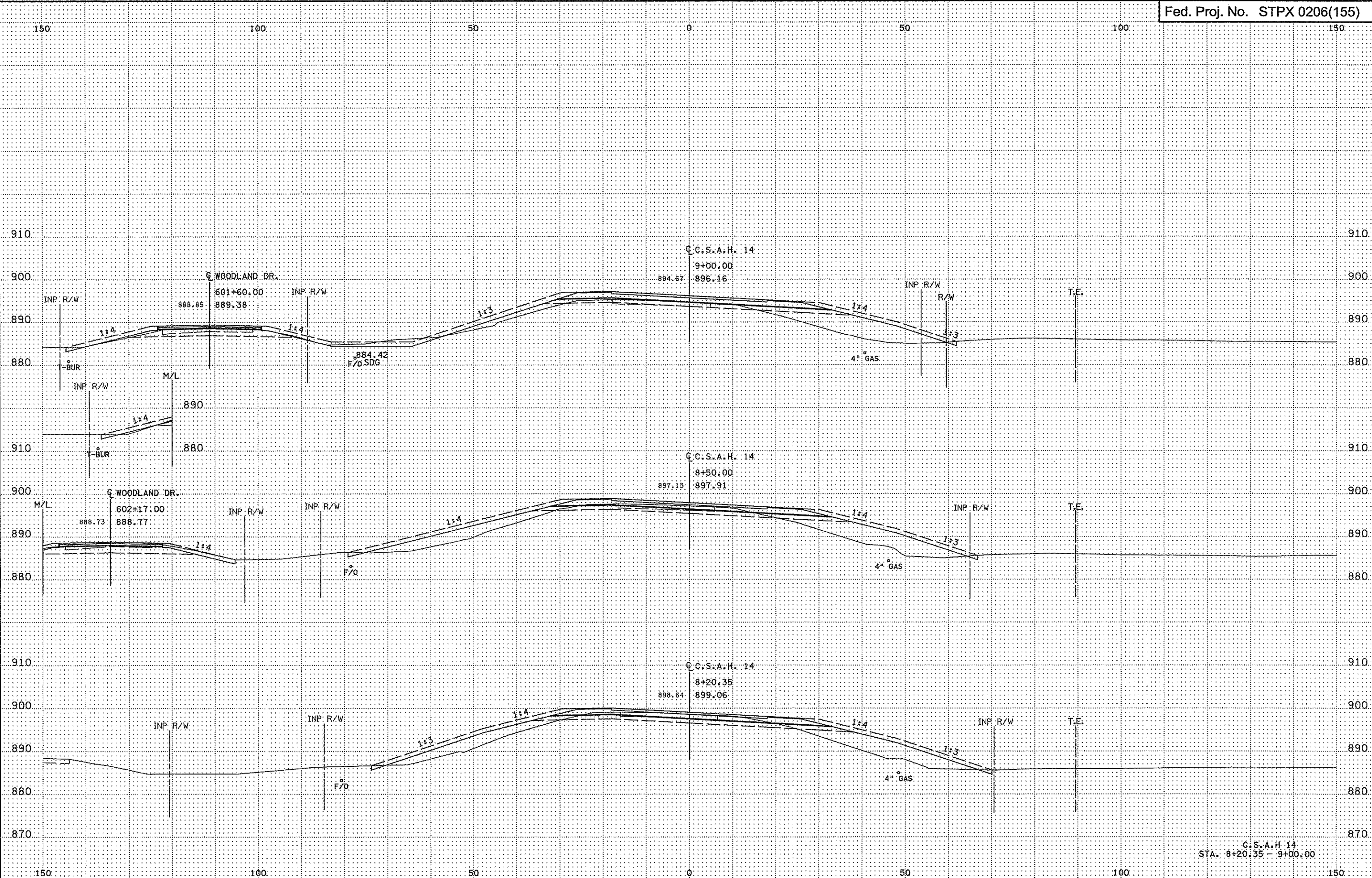
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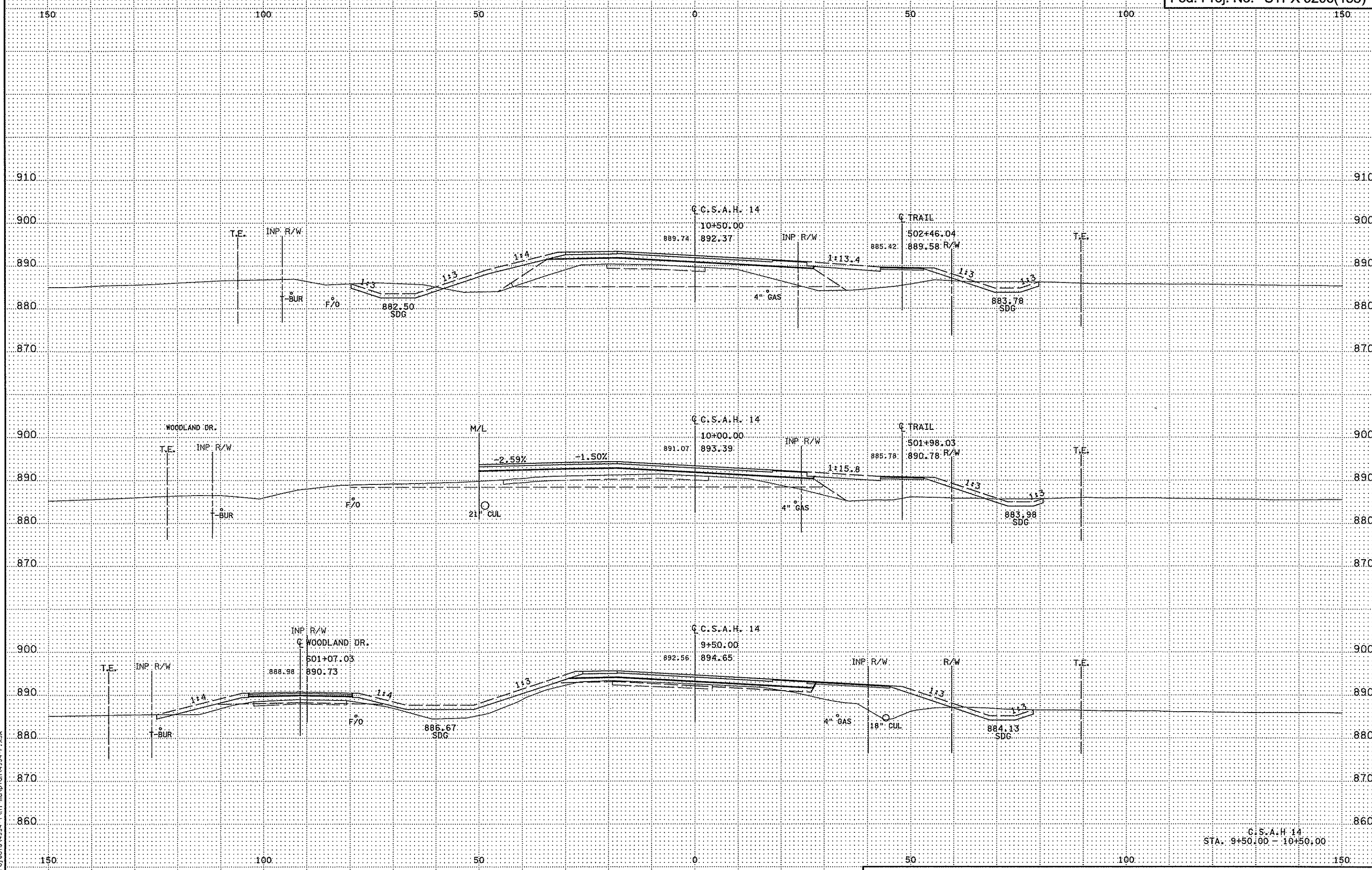
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STA. 7+00.00 - 8+00.00

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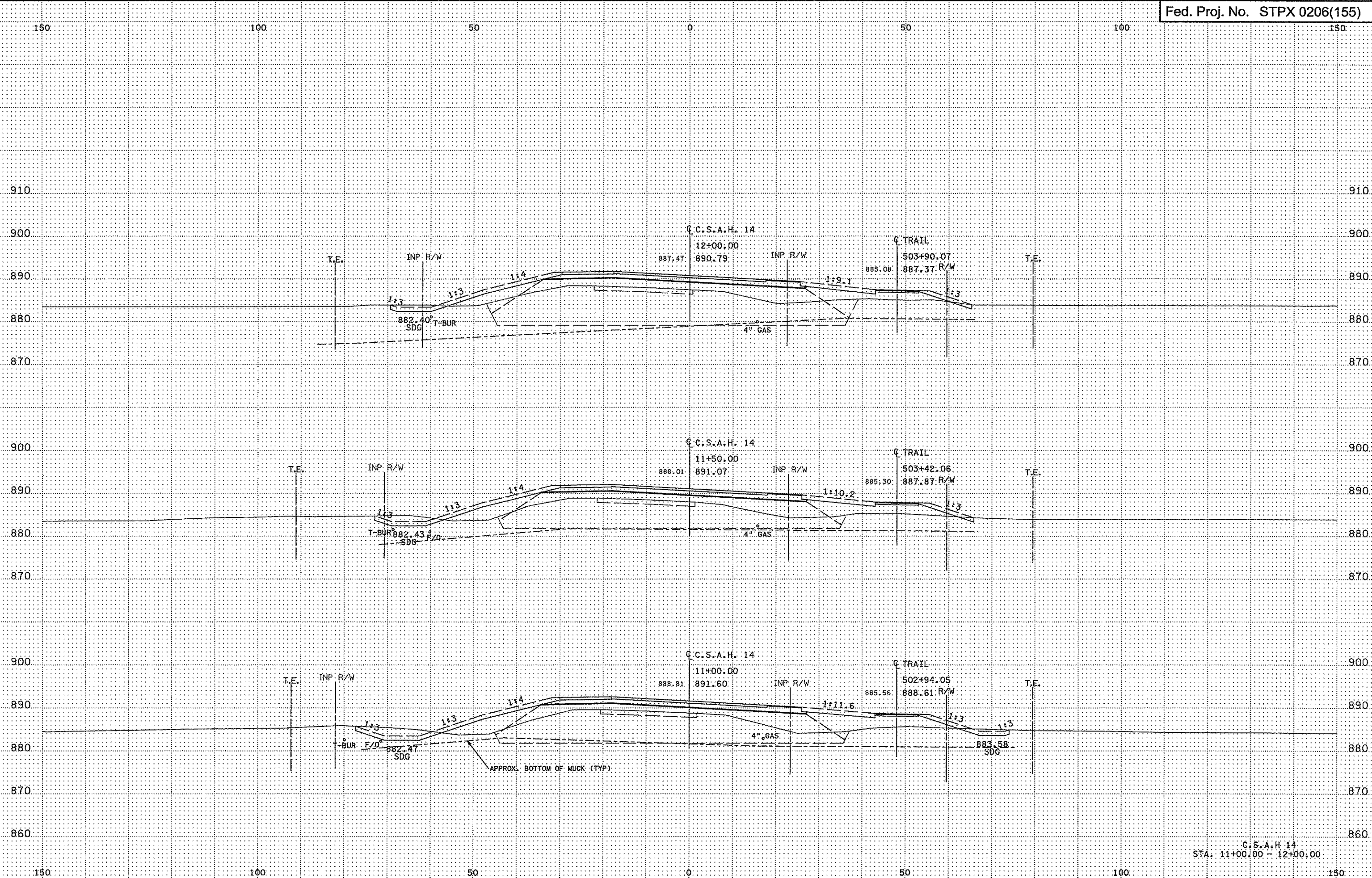
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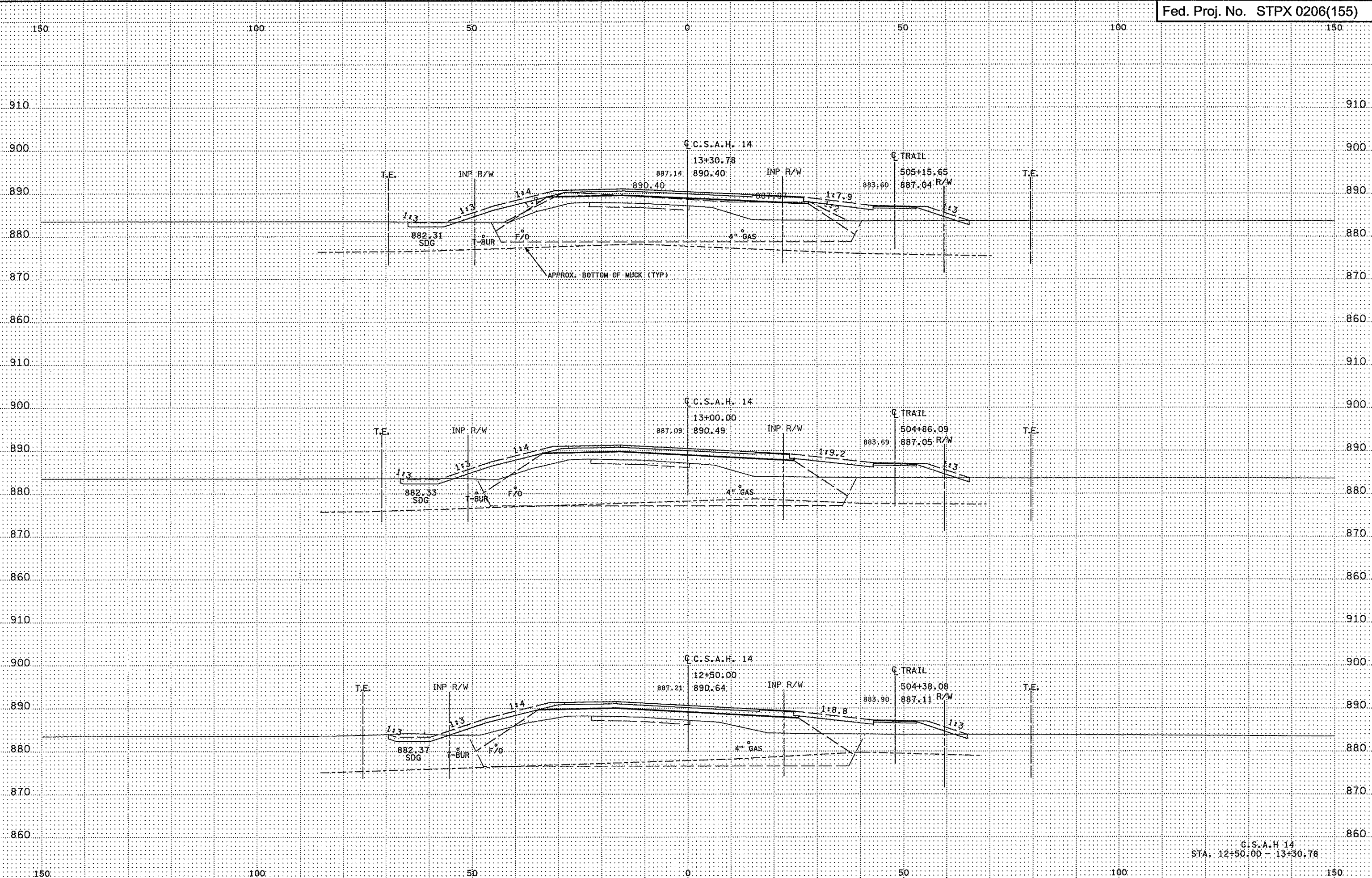
3:27:57 PM  
 3/21/2007  
 H:\projects\4994-F\11-ml-v1-on\4994-F.XSA

C.S.A.H. 14  
 STA. 9+50.00 - 10+50.00



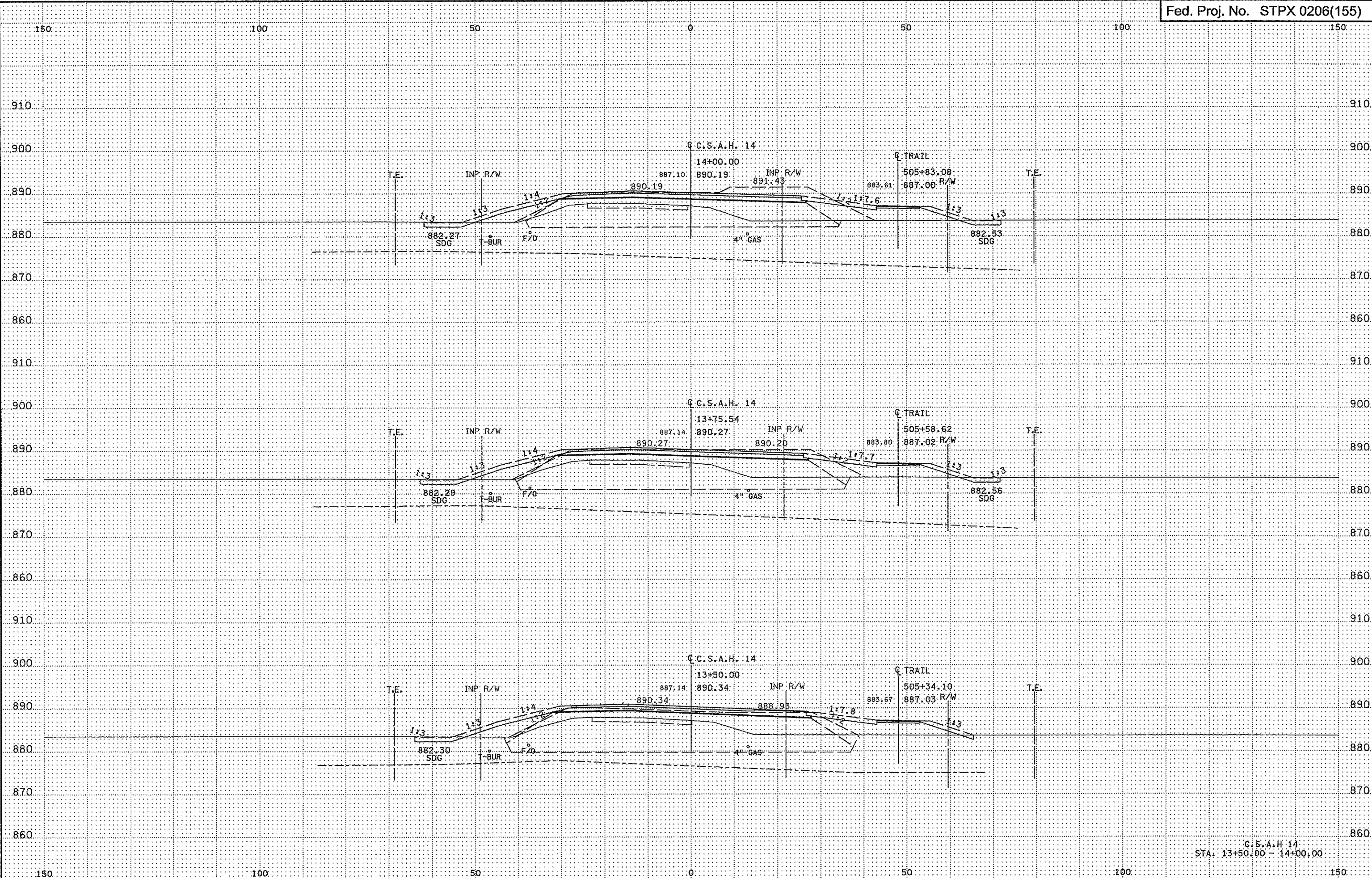
C.S.A.H. 14  
STA: 11+00.00 - 12+00.00

3:27:58 PM  
3/21/2007  
H:\projects\4994-F\11-m\p\cm\4994-F\_XSA



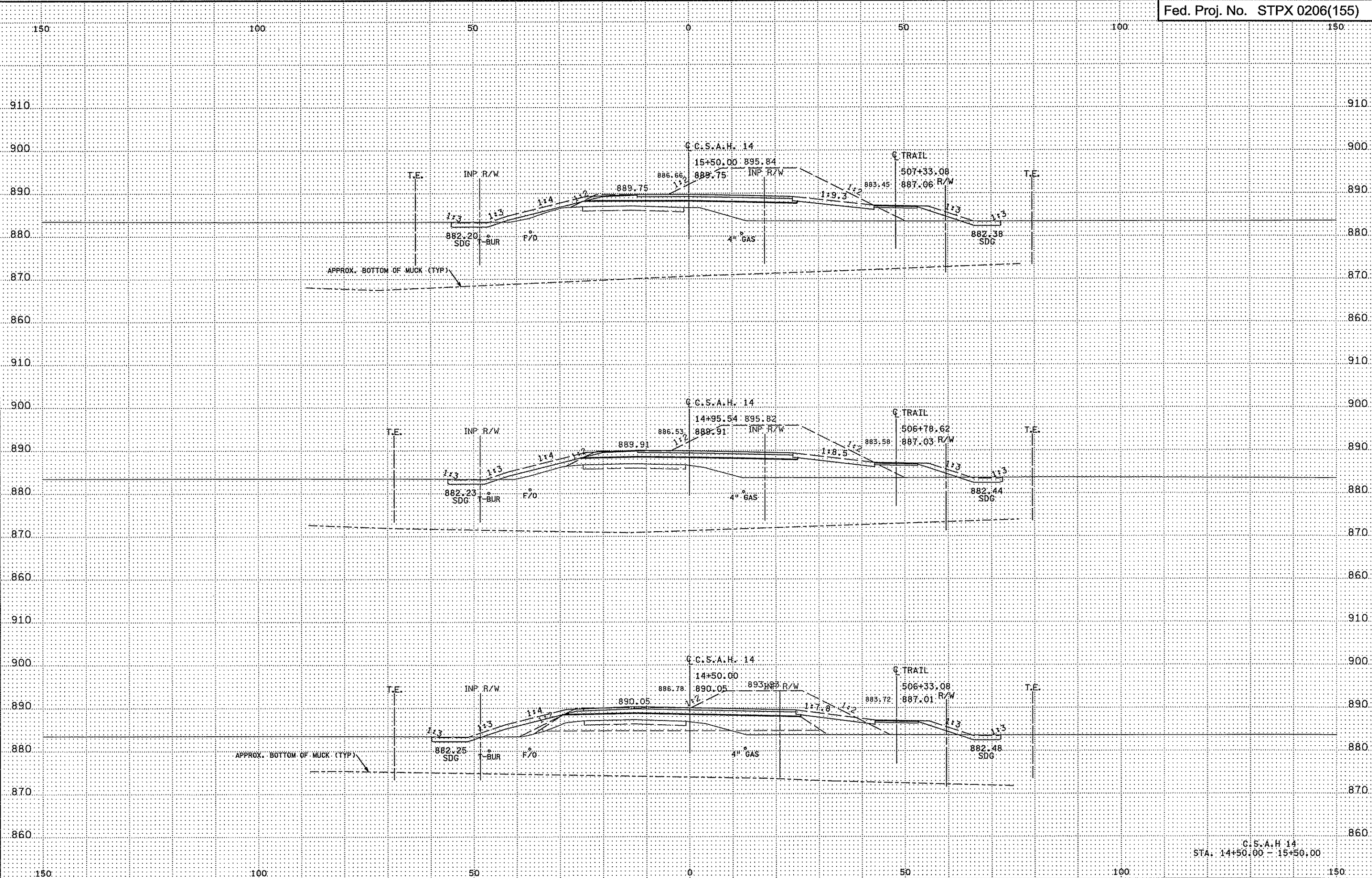
3:27:59 PM  
3/31/2007  
H:\projects\4994-f\h1-m\p10n\4994-f\_xsa

C.S.A.H. 14  
STA. 12+50.00 - 13+30.78



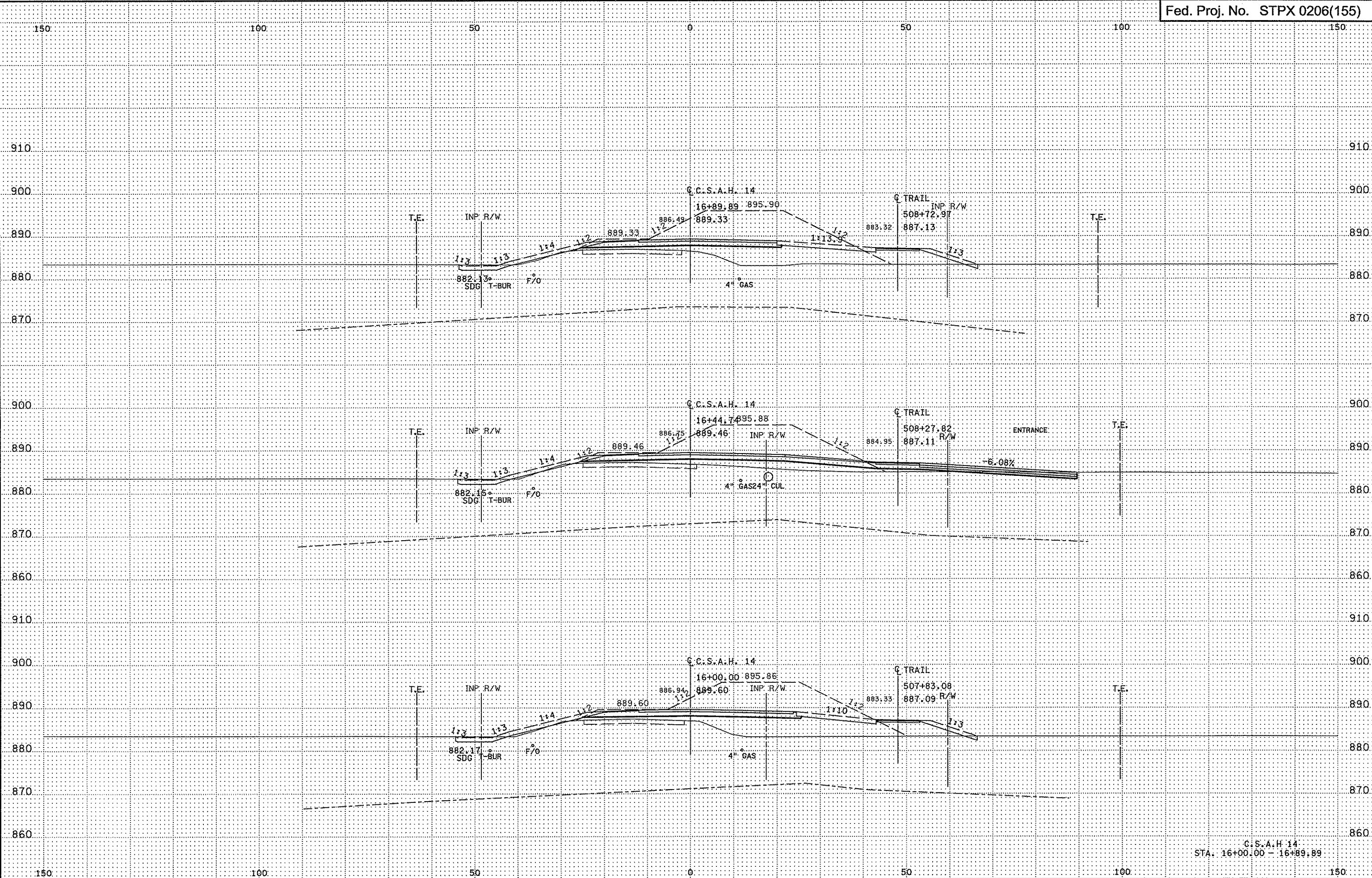
C.S.A.H. 14  
STA. 13+50.00 - 14+00.00

3:28:00 PM  
3/21/2007  
nt:\proj\6676\4994-F\11-m\p\cvt\4994-F.dwg



3:28:01 PM  
N:\C\2006  
N:\C\2006\STPX\4994-F\N1-M\AD\GN\4994-F.XSA

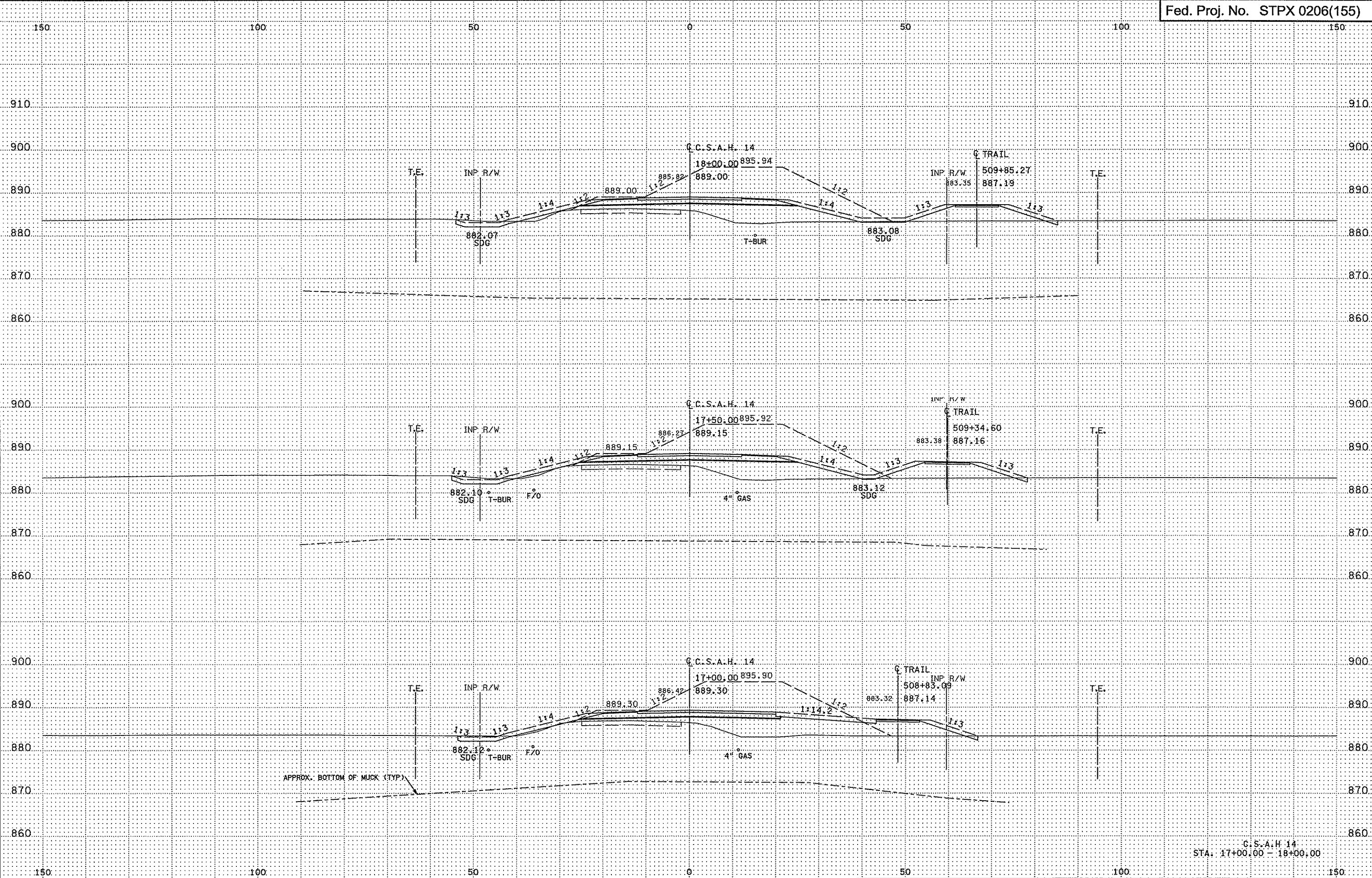
C.S.A.H. 14  
STA. 14+50.00 - 15+50.00



3:28:02 PM  
7/21/2009  
P:\projects\4894\FIN\mld\DWG\4894-F.dwg

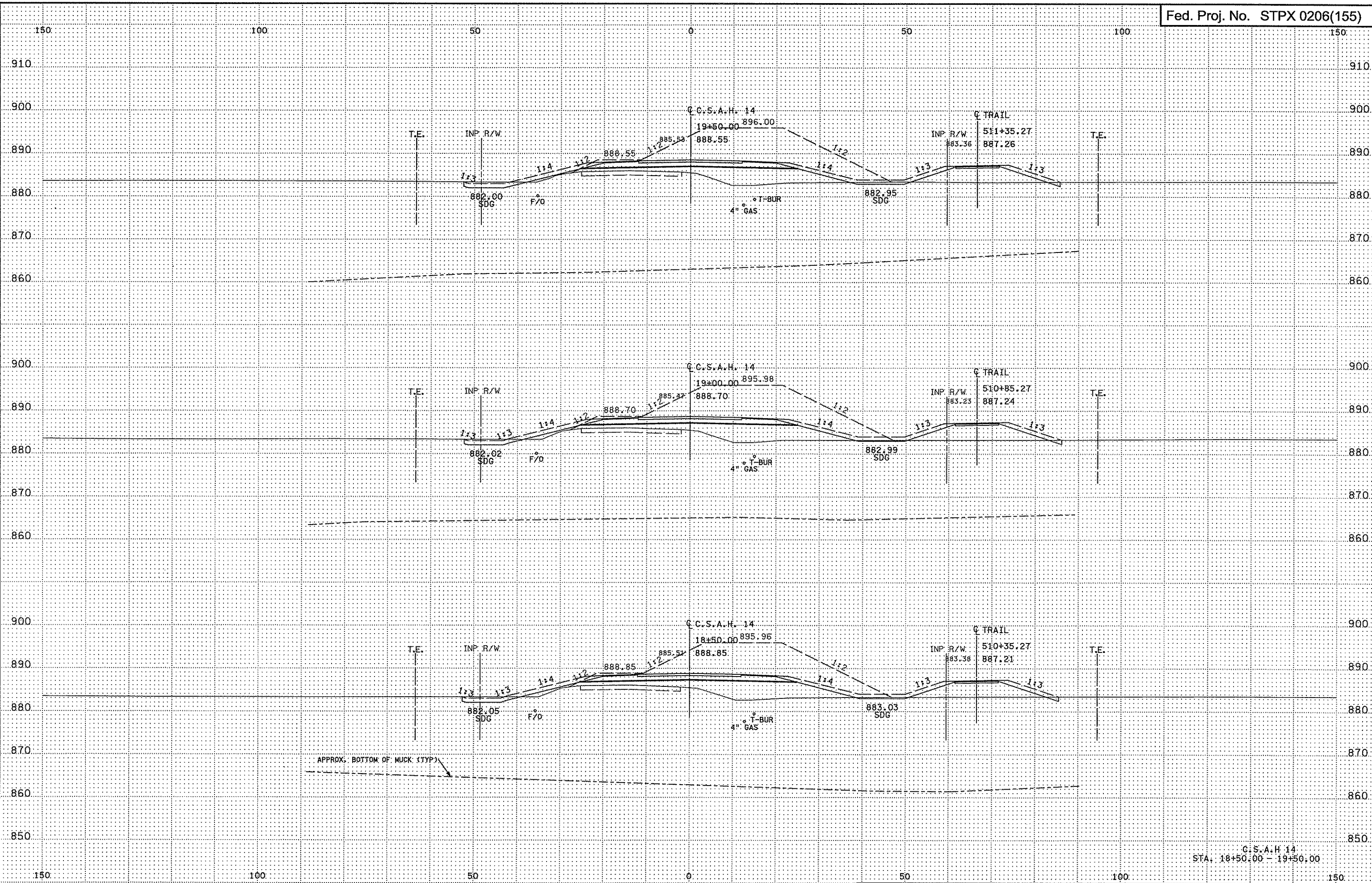
C.S.A.H. 14  
STA. 16+00.00 - 16+89.89





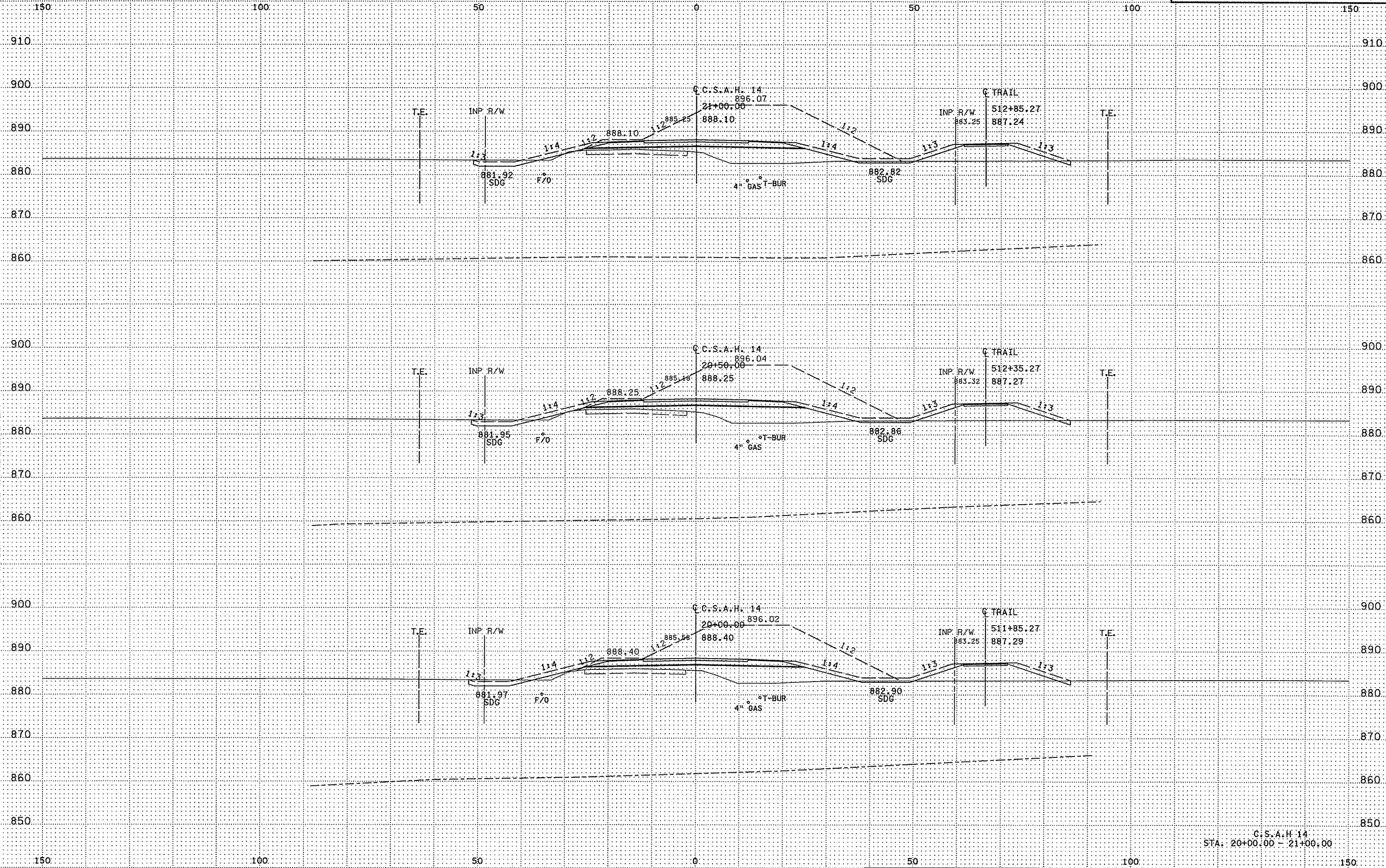
3:28:05 PM  
3/28/2007  
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C.S.A.H. 14  
STA. 17+00.00 - 18+00.00



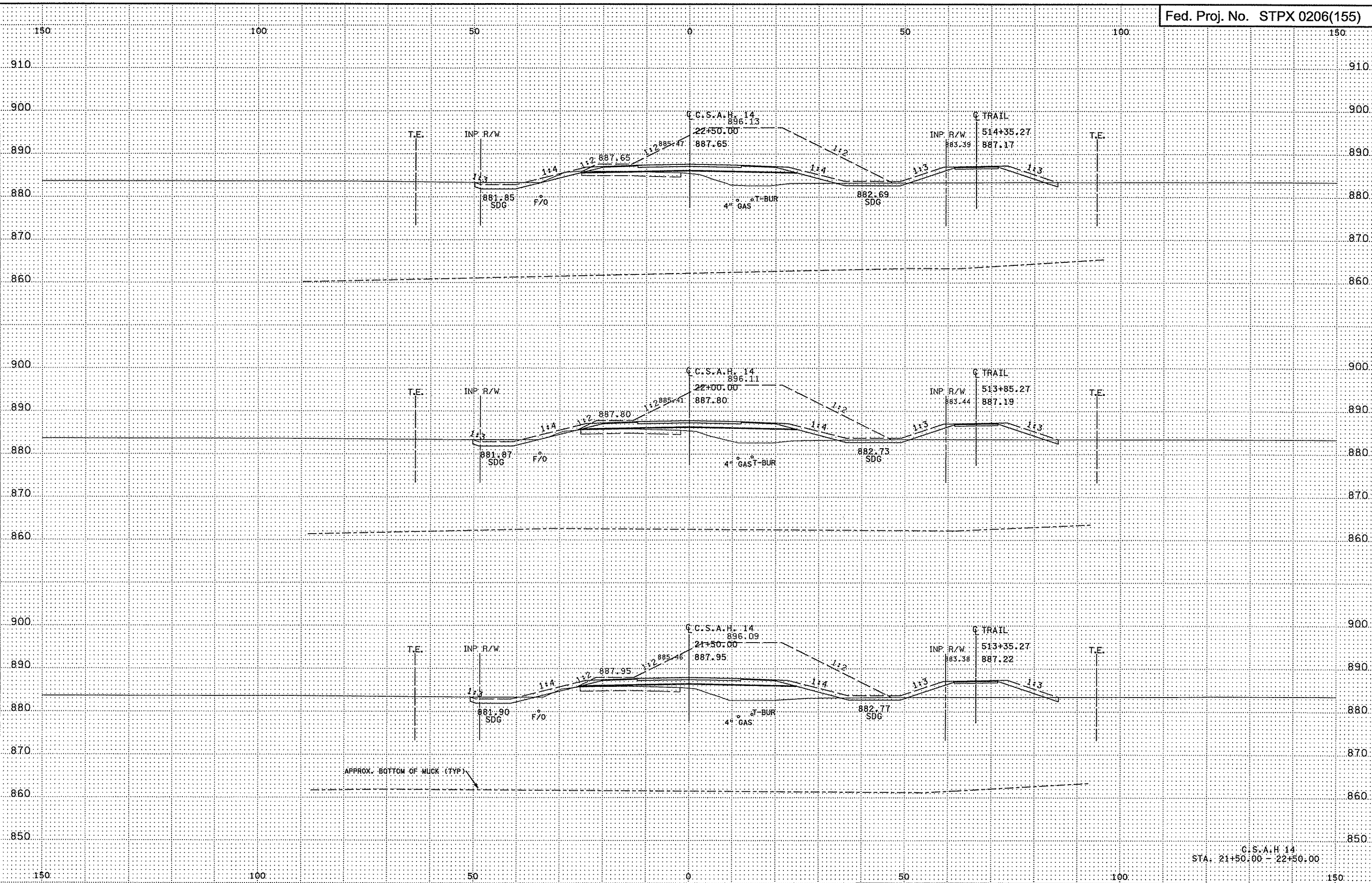
3:28:03 PM  
3/21/2007  
P:\Projects\4994-F\11-mu\plan\4994-F.XSA

C.S.A.H. 14  
STA: 18+50.00 - 19+50.00



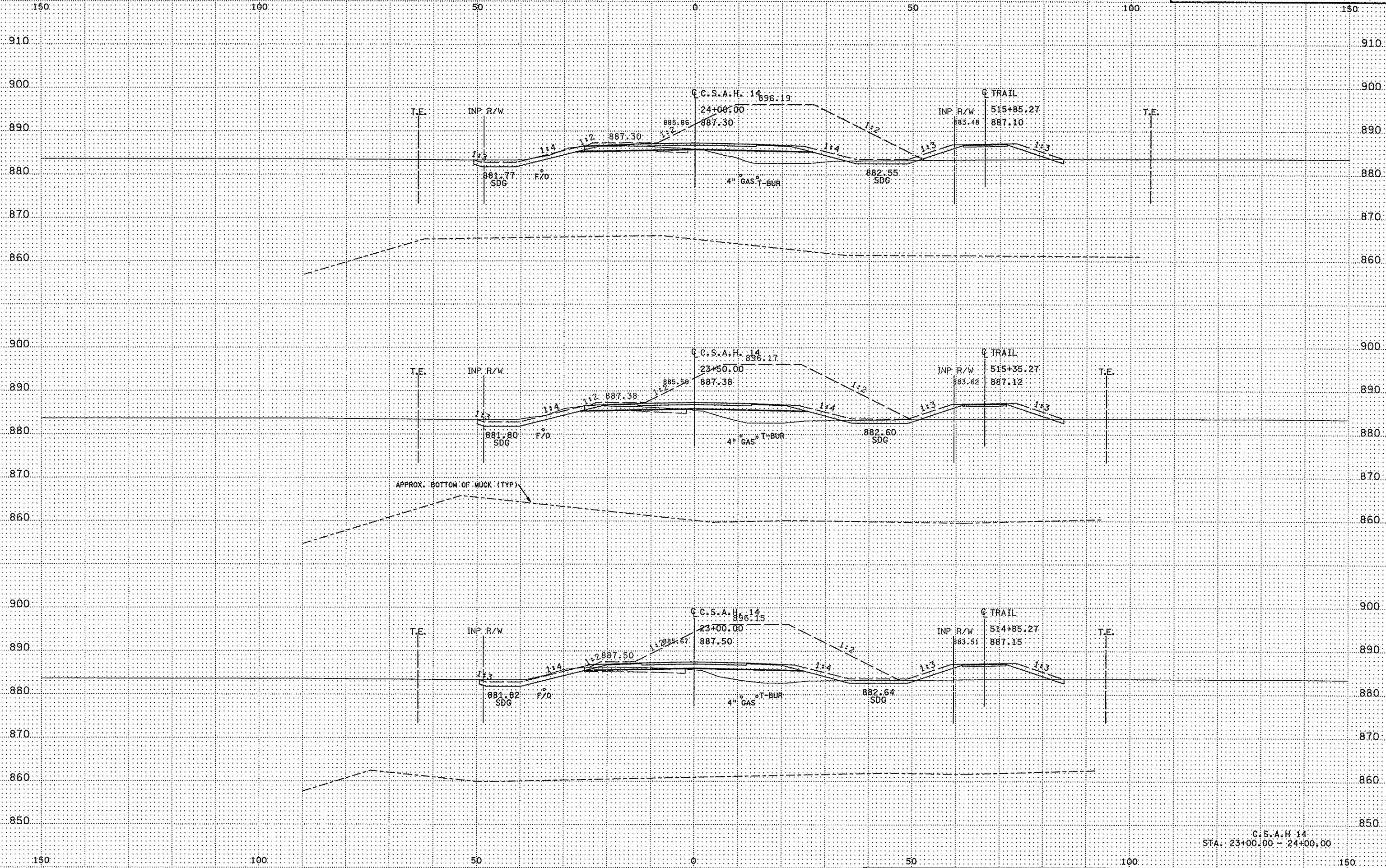
3:28:04 PM  
3/21/2007  
R:\proj\lects\4994-f\hl-m\p\m\4994-f\_xsa

C.C.S.A.H. 14  
STA. 20+00.00 - 21+00.00



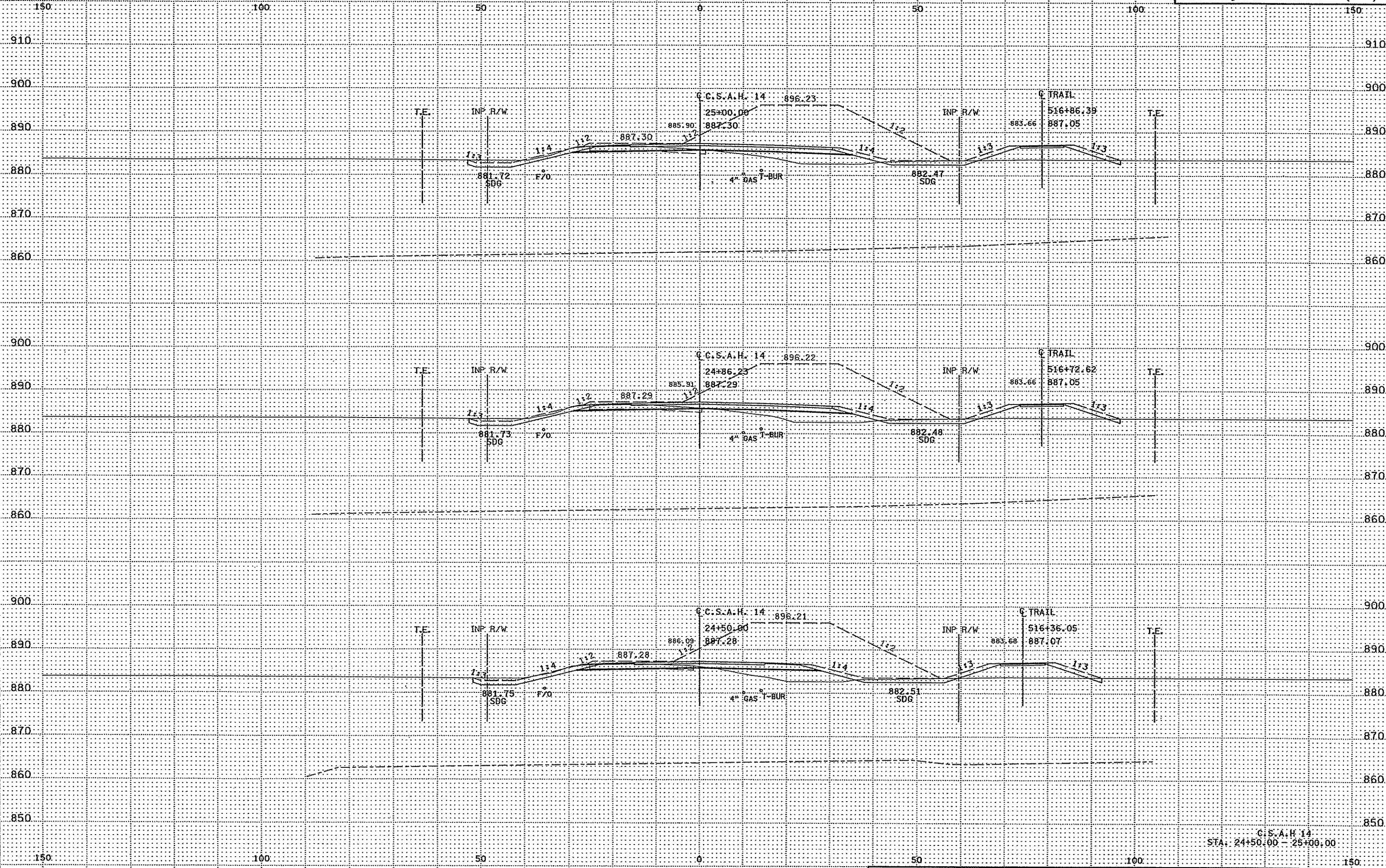
3:28:05 PM  
3/21/2007  
ht:\proj\sects\4994-f\h1-m\up\cm\4994-f.XSA

C.S.A.H. 14  
STA. 21+50.00 - 22+50.00



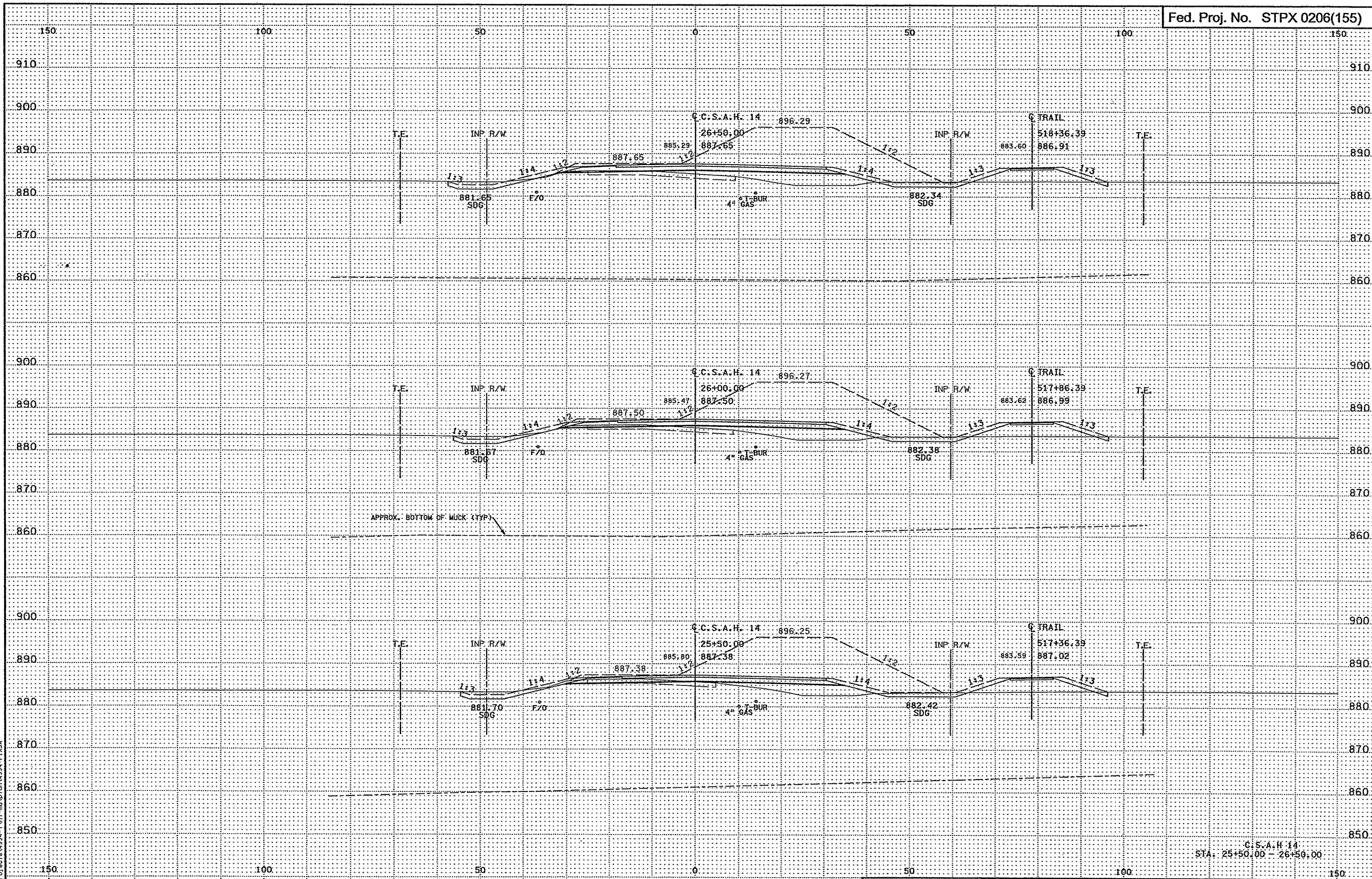
3/28/06 PM  
3/21/2007  
H:\projects\1994-f\11-m\plan\4994-f.XSA

C.C.S.A.H. 14  
STA. 23+00.00 - 24+00.00



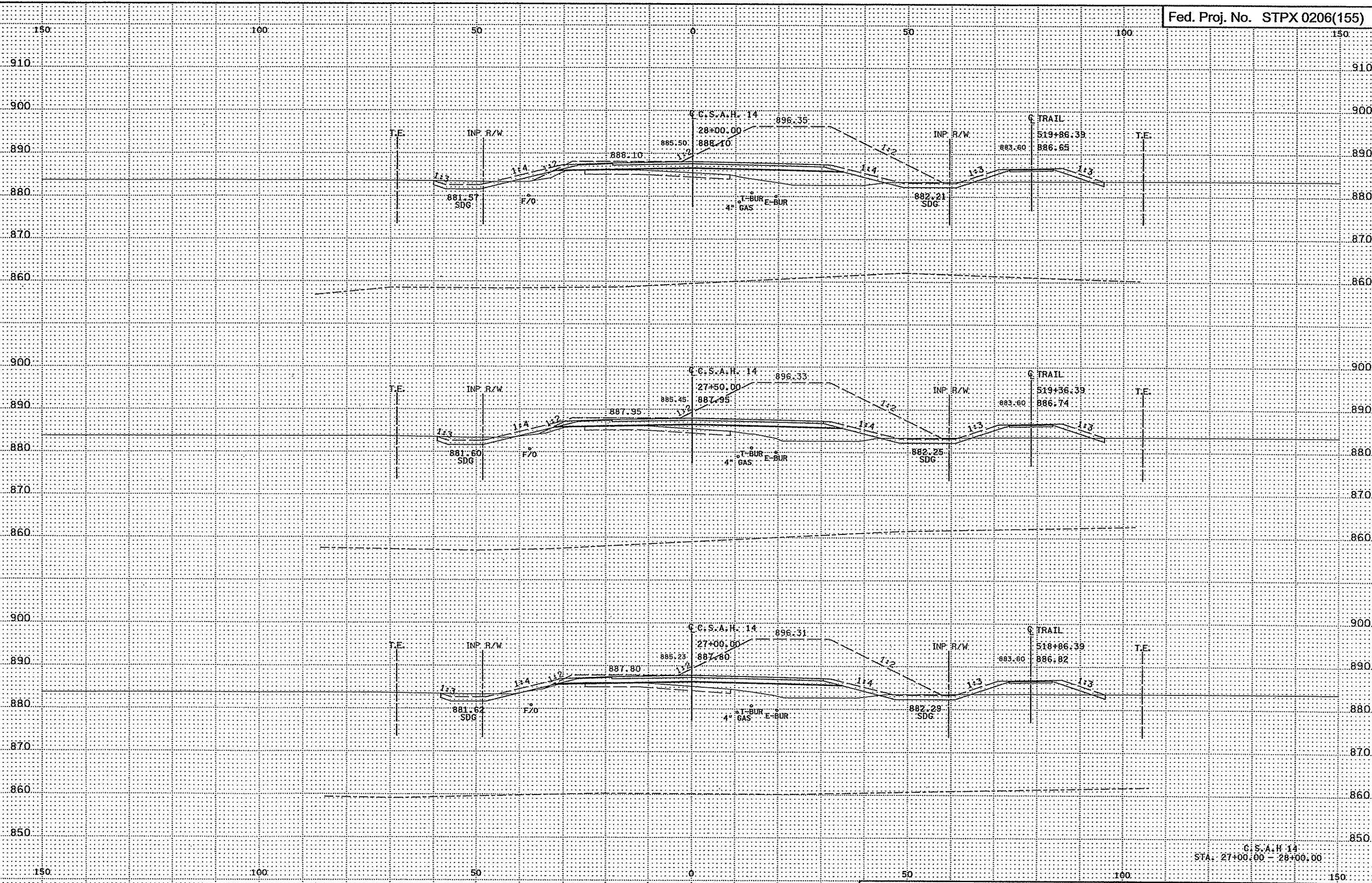
C.C.S.A.H. 14  
STA. 24+50.00 - 25+00.00

3:28:07 PM  
3/27/2007  
H:\proj\lects\4994-f\h1-m\p\gn\4994-f\_xsa



3/28/08 PM  
3/21/2007  
h:\proj\ecrs\994-f\h1-mu\p1\m\4994-f.XSA

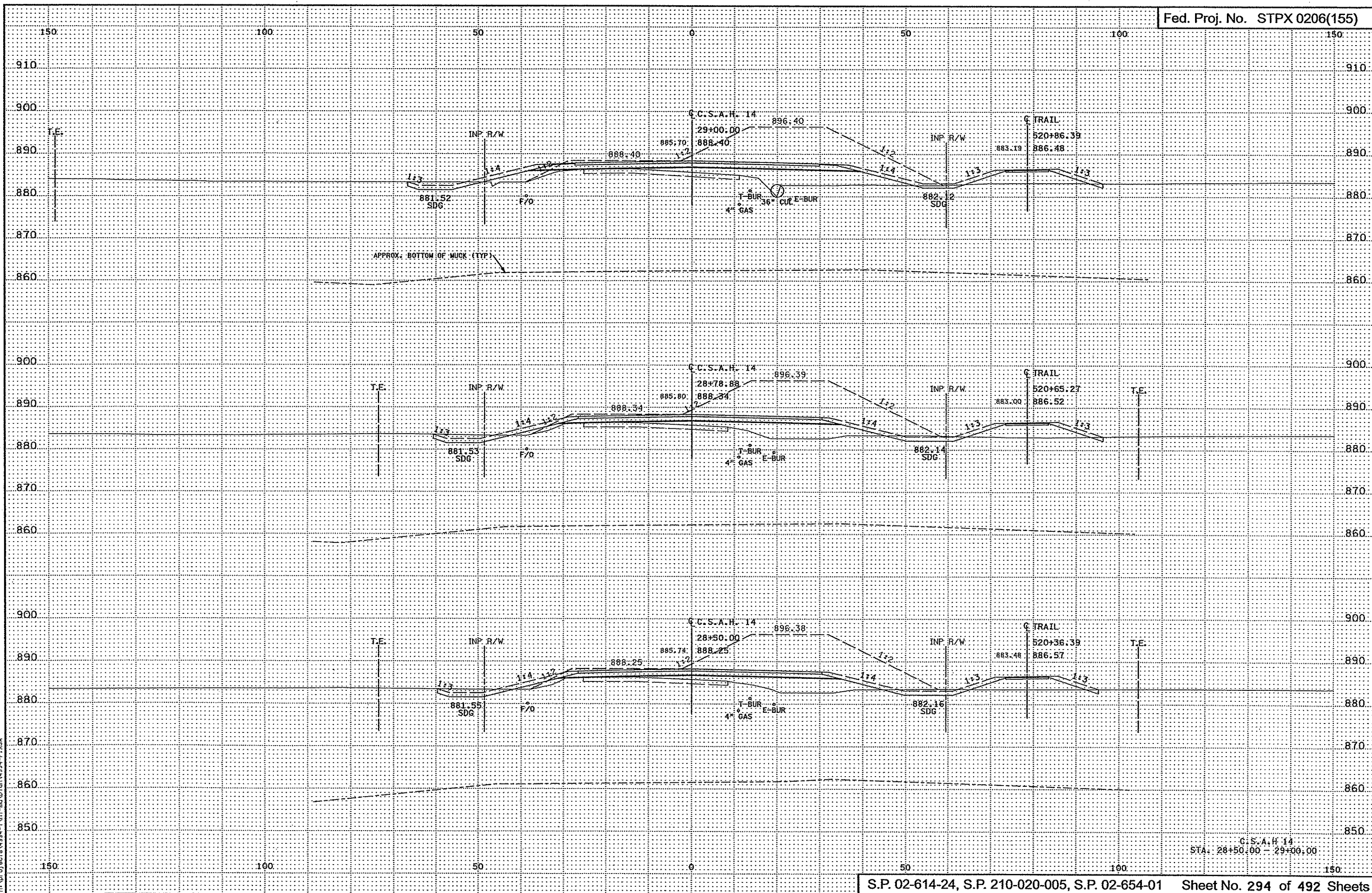
C.S.A.H. 14  
STA. 25+50.00 - 26+50.00



1:2010 08 PM  
3/21/2007  
h:\spr\jects\4994-f\h\mu\p\cn\4994-f\_xsa

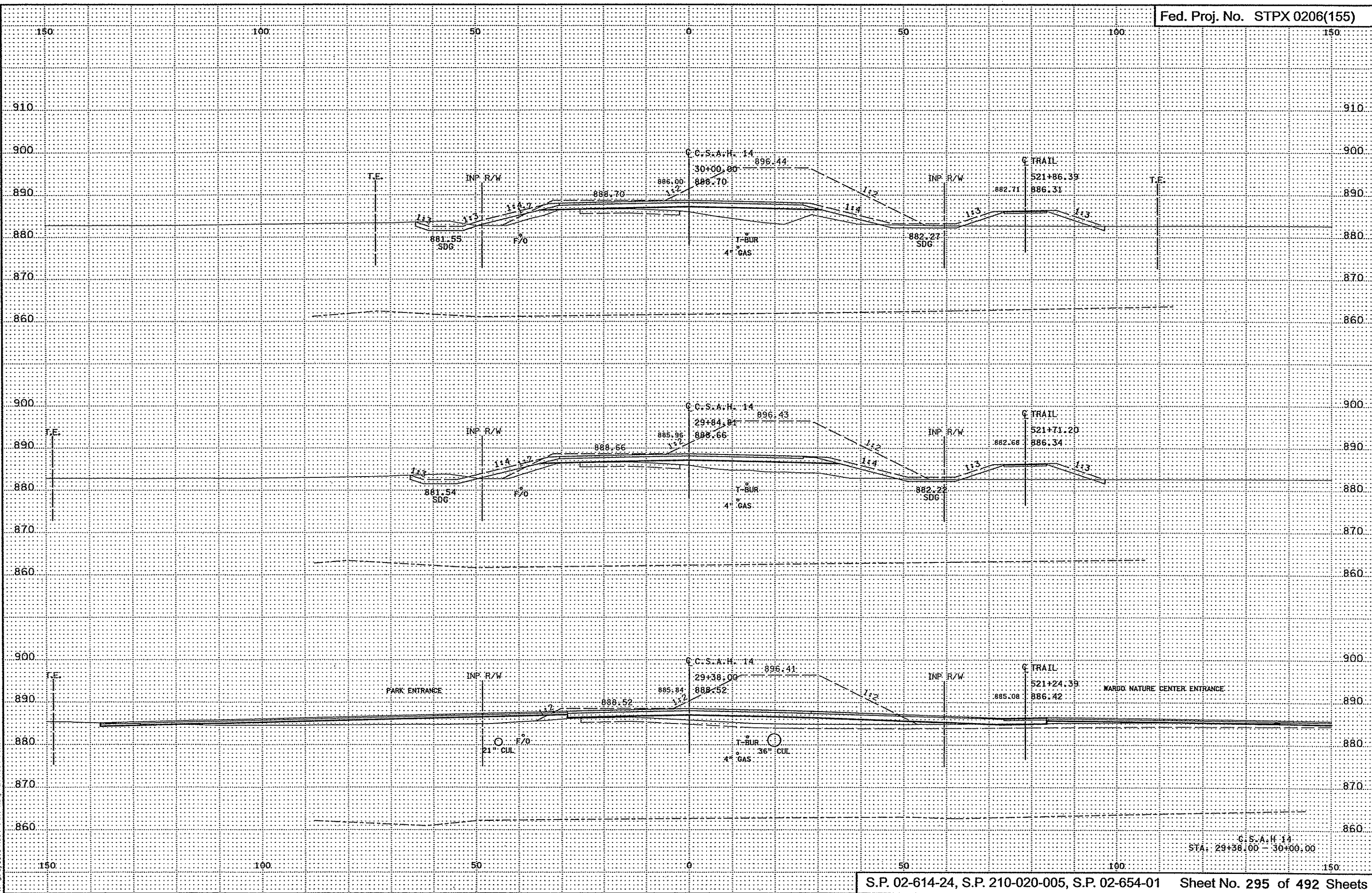
C.S.A.H. 14  
STA. 27+00.00 - 28+00.00



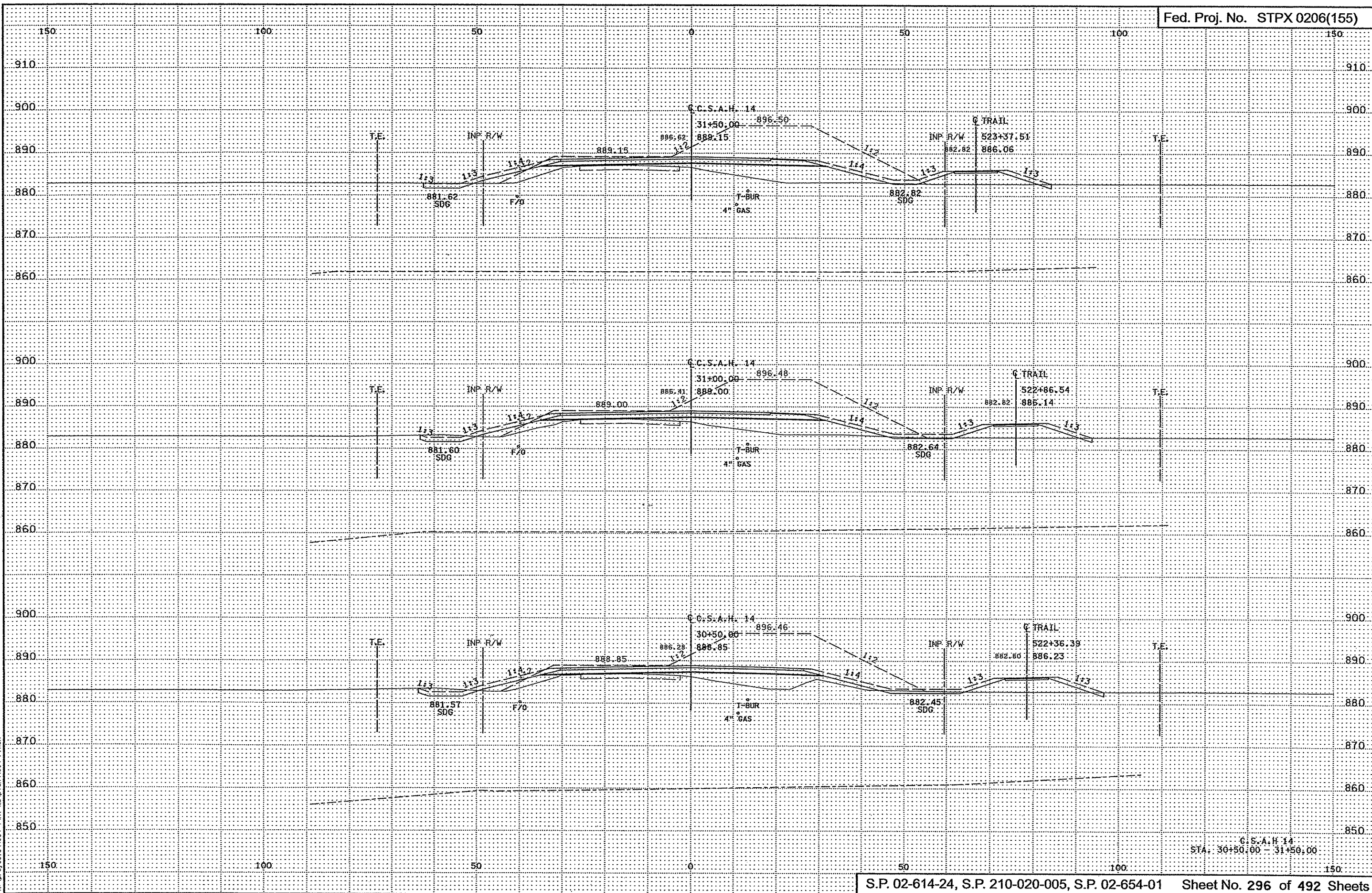


C.S.A.H. 14  
STA. 28+50.00 - 29+00.00

3:28:10 PM  
3/21/2007  
m:\projects\4994-f\h1-m\p\m\4994-f.XSA

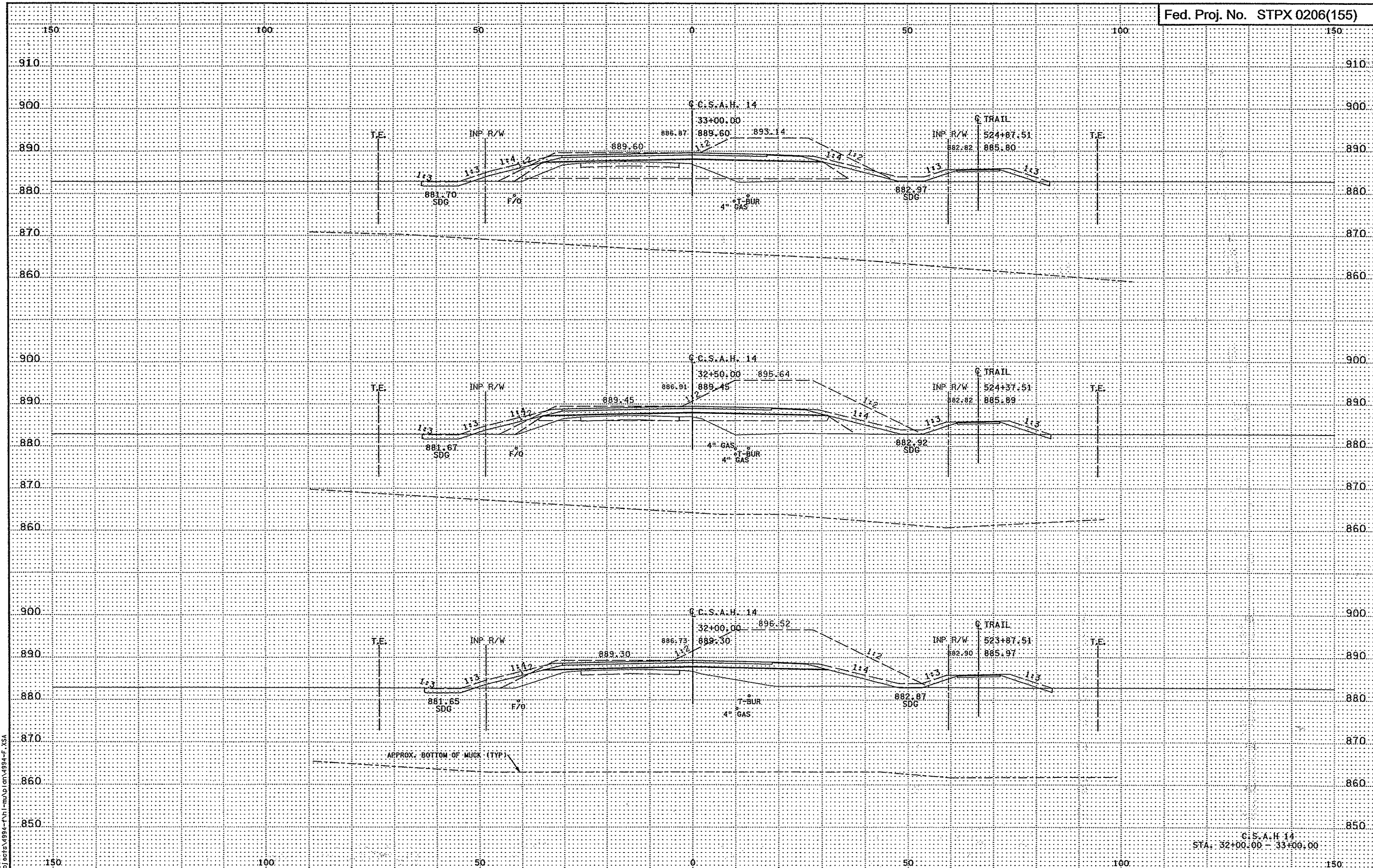


3:28:11 PM  
3/21/2007  
H:\proj\ects\4994-f\h1-mu\p1an\4994-f.XSA



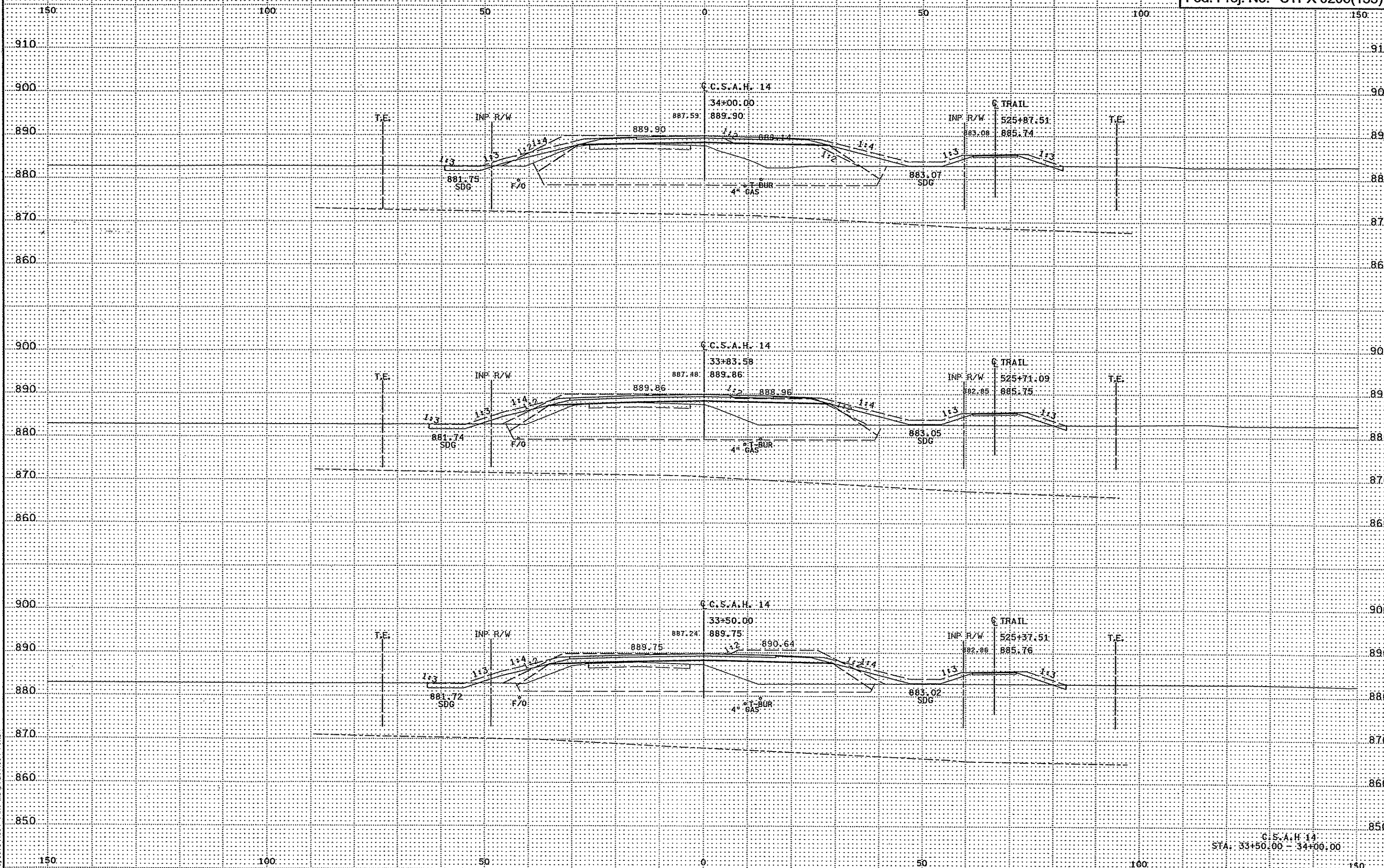
3/28/12 PM  
3/21/2007  
H:\proj\ects\4994-f\h1-m\p\lan\4994-f.XSA

C.S.A.H. 14  
STA. 30+50.00 - 31+50.00



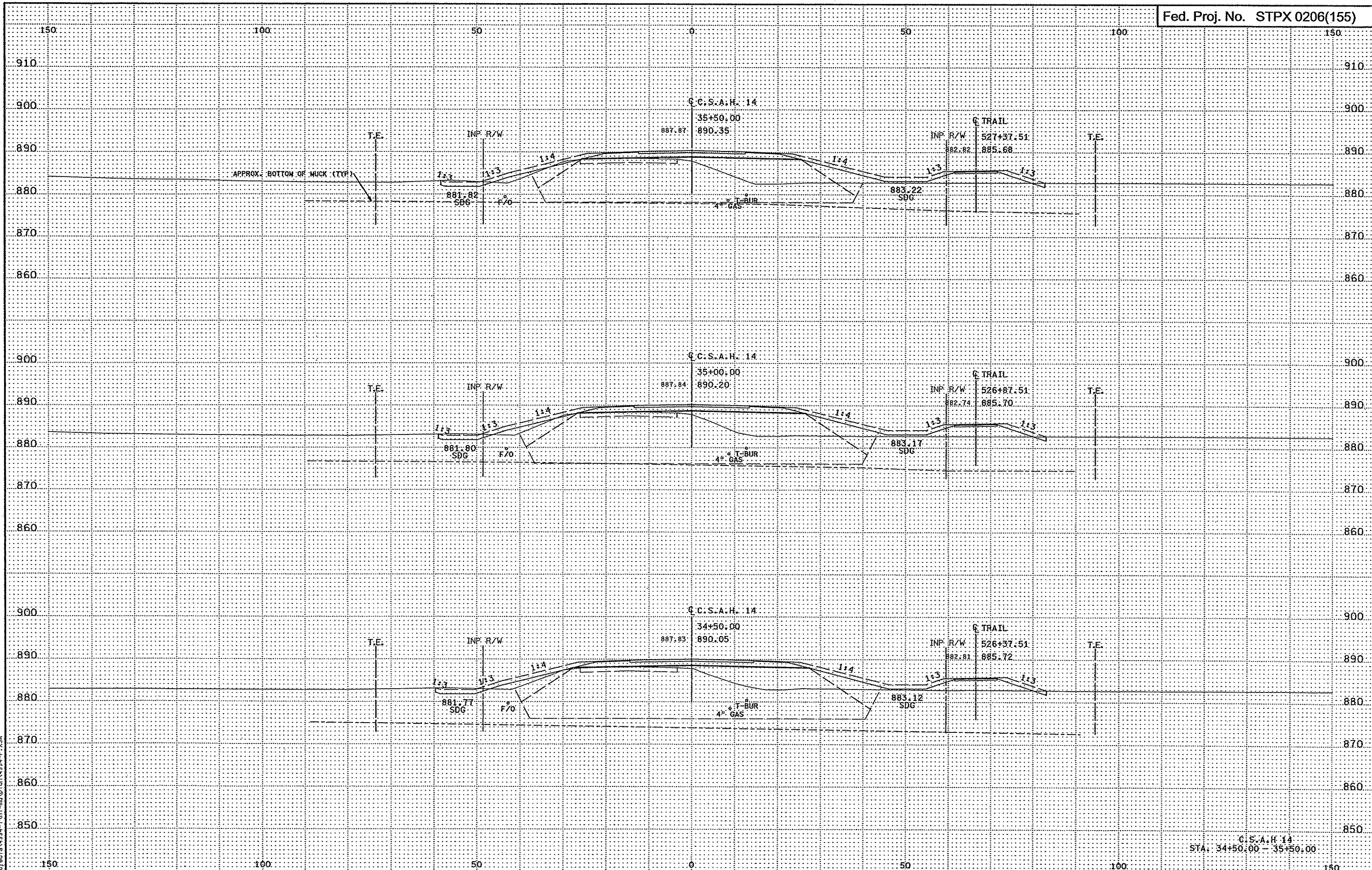
3:28:13 PM  
3/21/2007  
P:\projects\4994-F\1-1\m\di\gn\4994-F.XSA

C.C.S.A.H. 14  
STA. 32+00.00 - 33+00.00



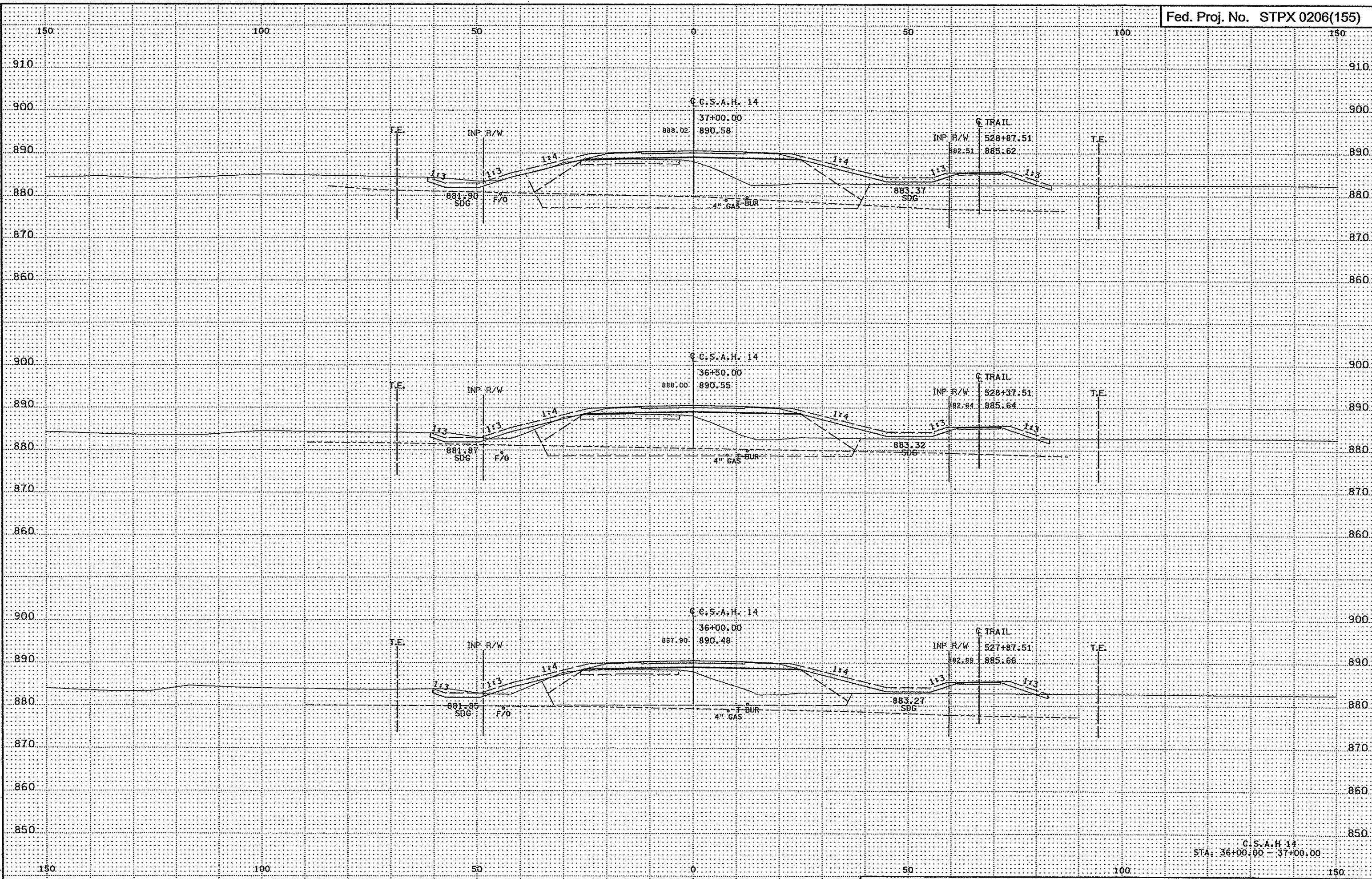
3:28:15 PM  
3/21/2007  
D:\Projects\4894-F\1-m\A\1-on\4894-F.XSA

C.C.S.A.H. 14  
STA. 33+50.00 - 34+00.00



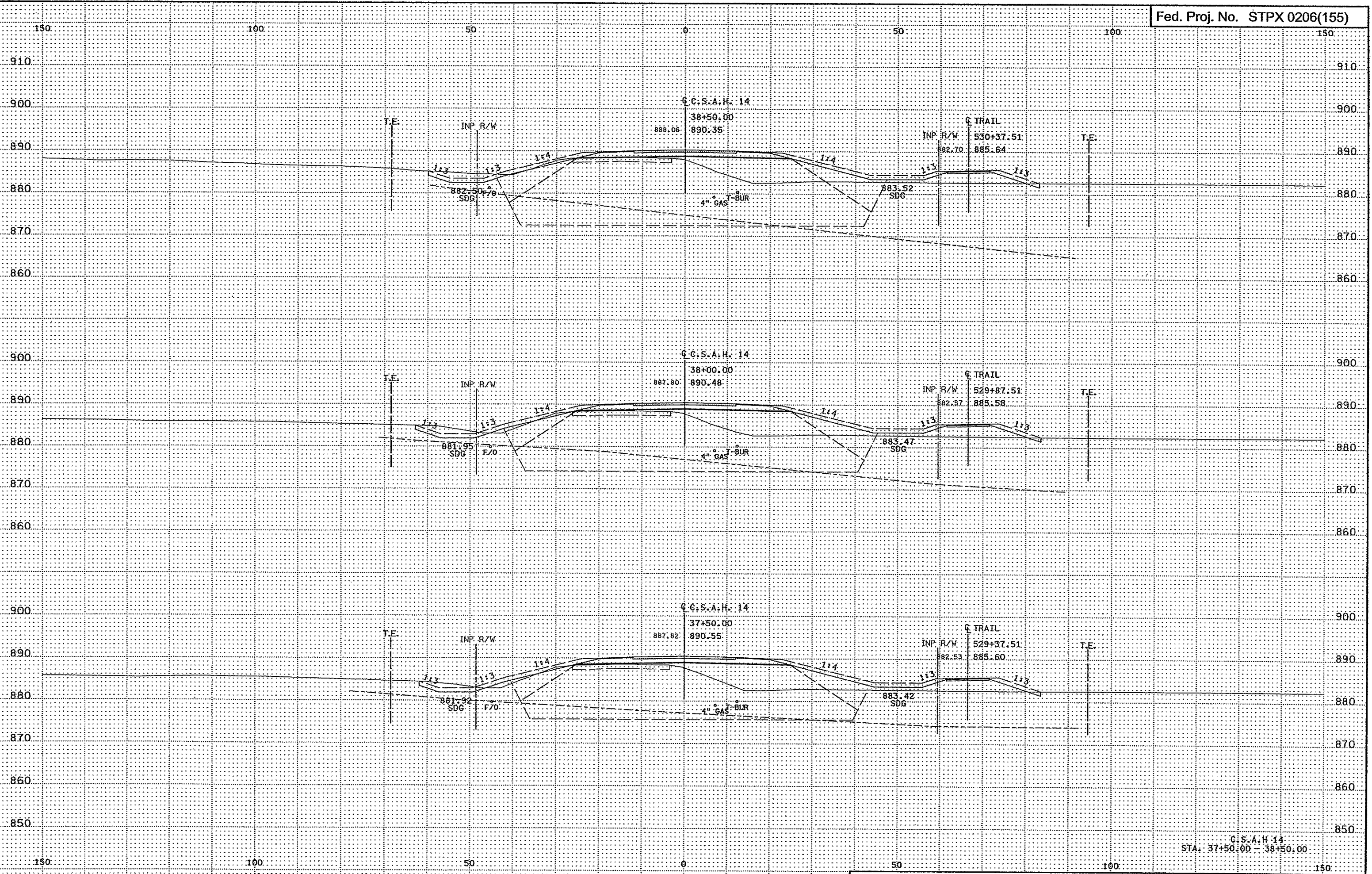
3:28:16 PM  
3/21/2007  
h:\proj\ecfs\4994-f\h1-m\0\gn\4994-f.XSA

C.C.S.A.H. 14  
STA: 34+50.00 - 35+50.00



C.C.S.A.H. 14  
STA: 36+00.00 - 37+00.00

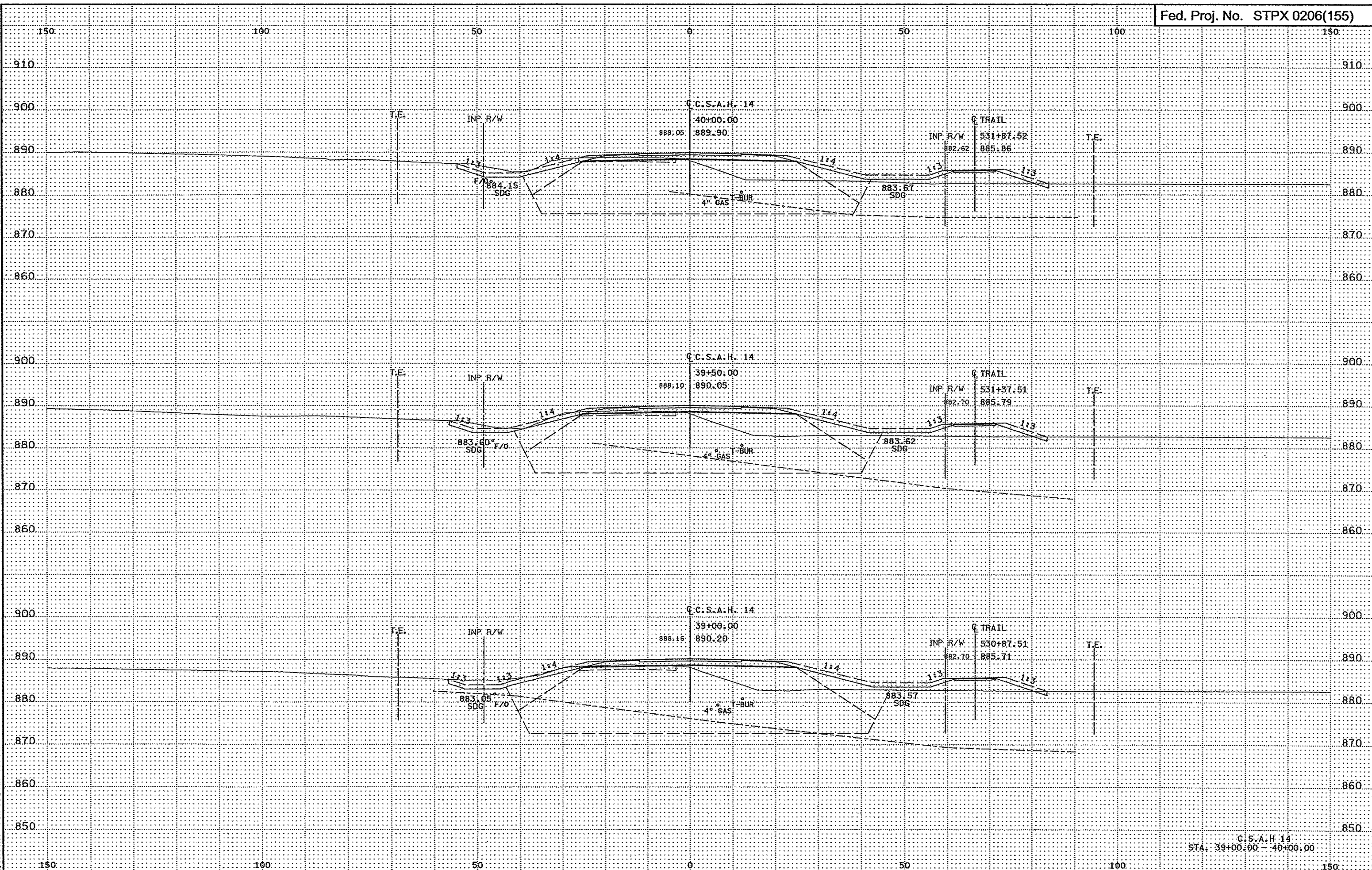
3:28:18 PM  
3/21/2007  
h:\projects\4994-F\1-m\plan\4994-F.XSA



C.S.A.H. 14  
STA. 37+50.00 - 38+50.00

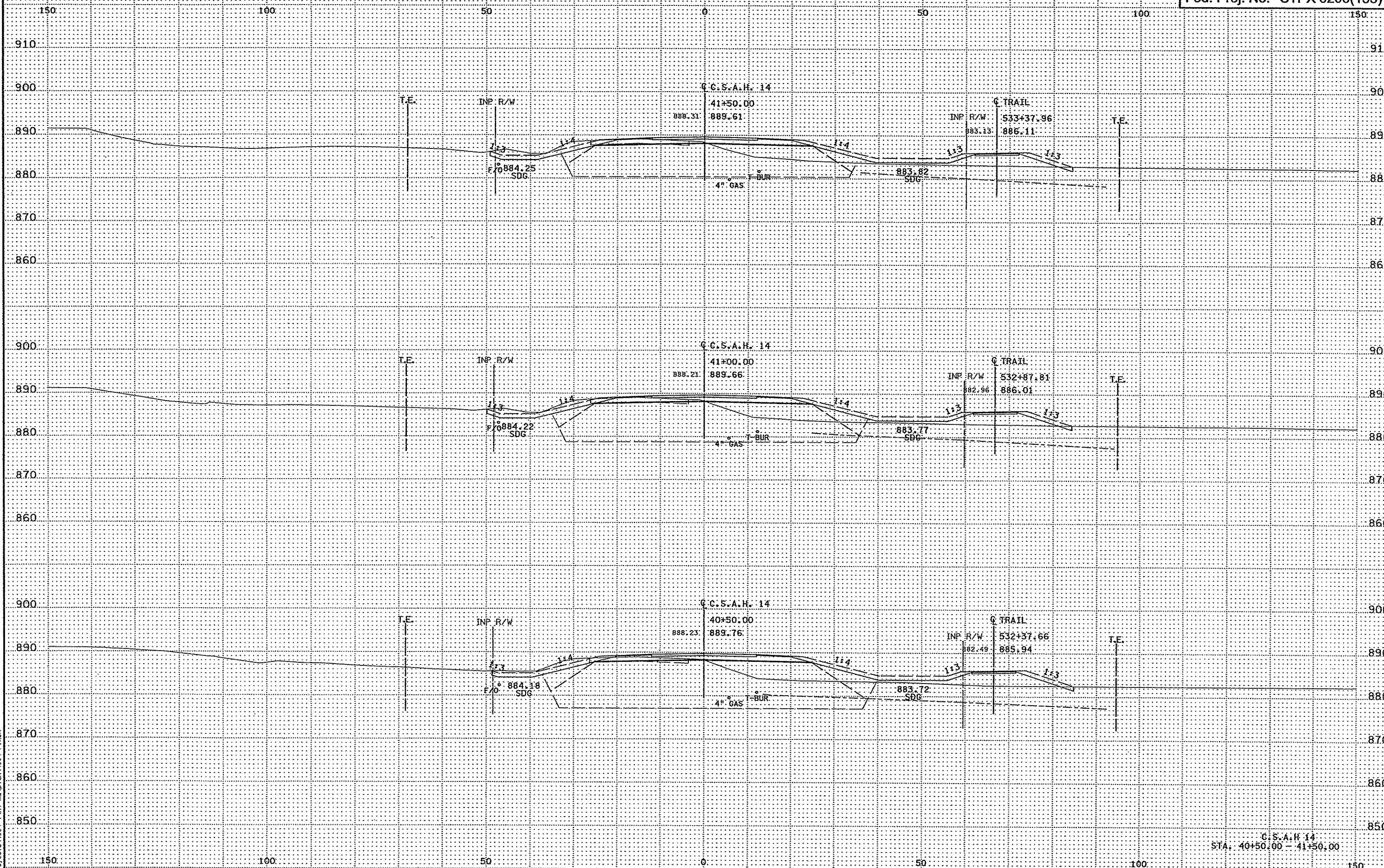
3:26:18 PM  
3/21/2007  
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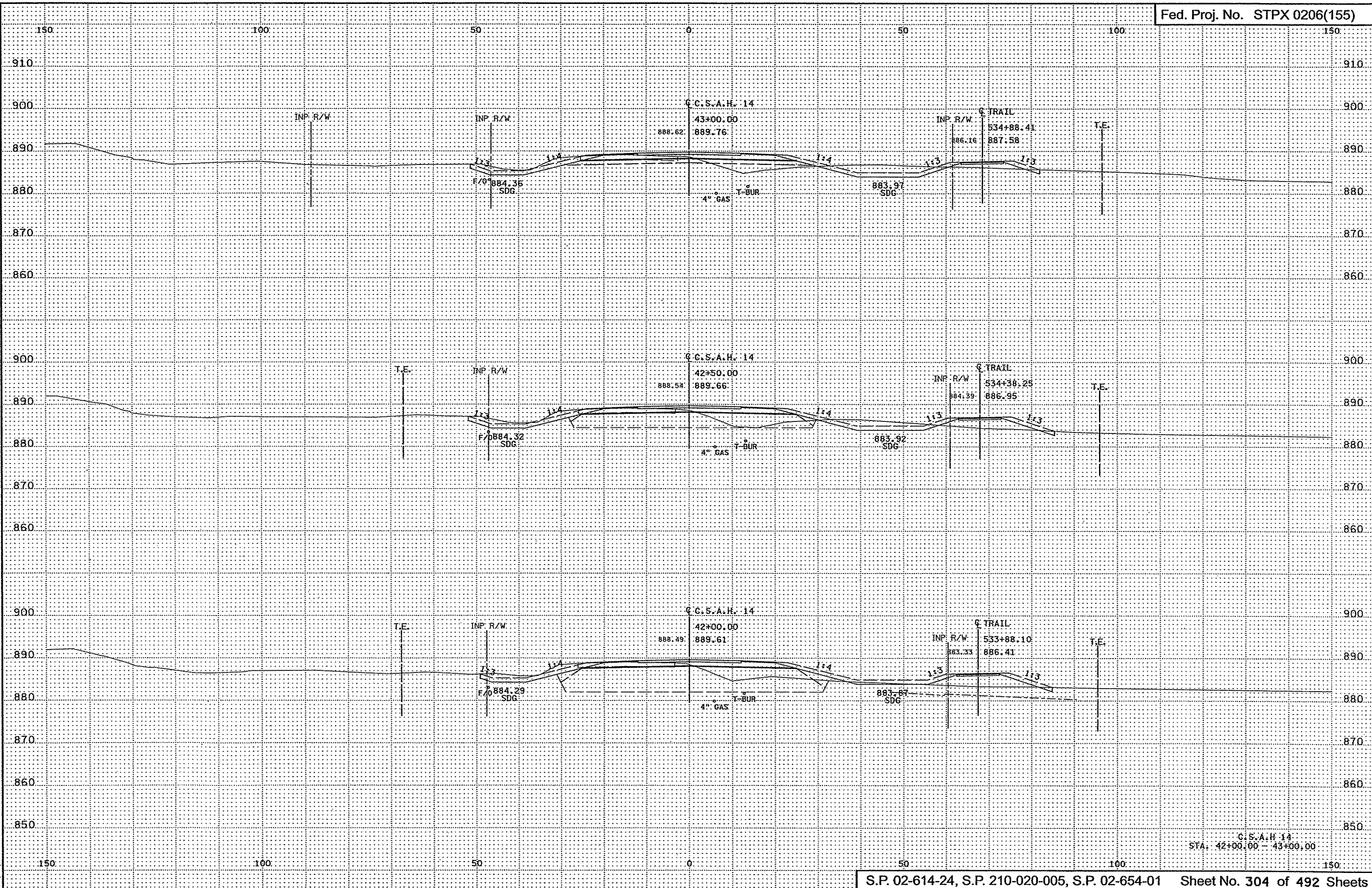
3:28:20 PM  
3/21/2007  
H:\projects\4934-FNH-mu\plan\4934-F.XSA

C.S.A.H. 14  
STA. 39+00.00 - 40+00.00



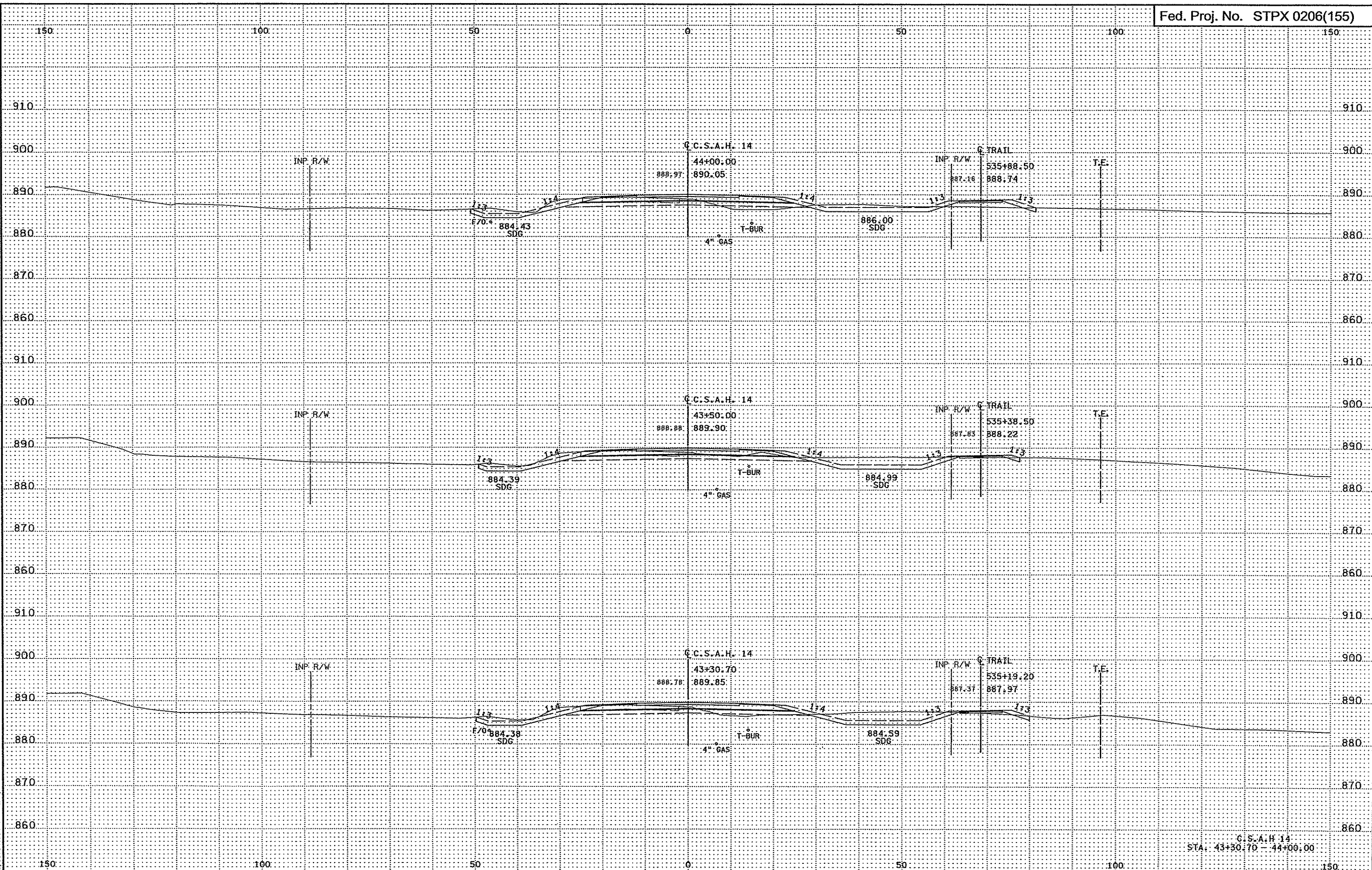
3/28/21 PM  
3/21/2007  
P:\projects\4994-FNH-1-mu\01 on\4994-F\_XSA

C.S.A.H. 14  
STA. 40+50.00 - 41+50.00



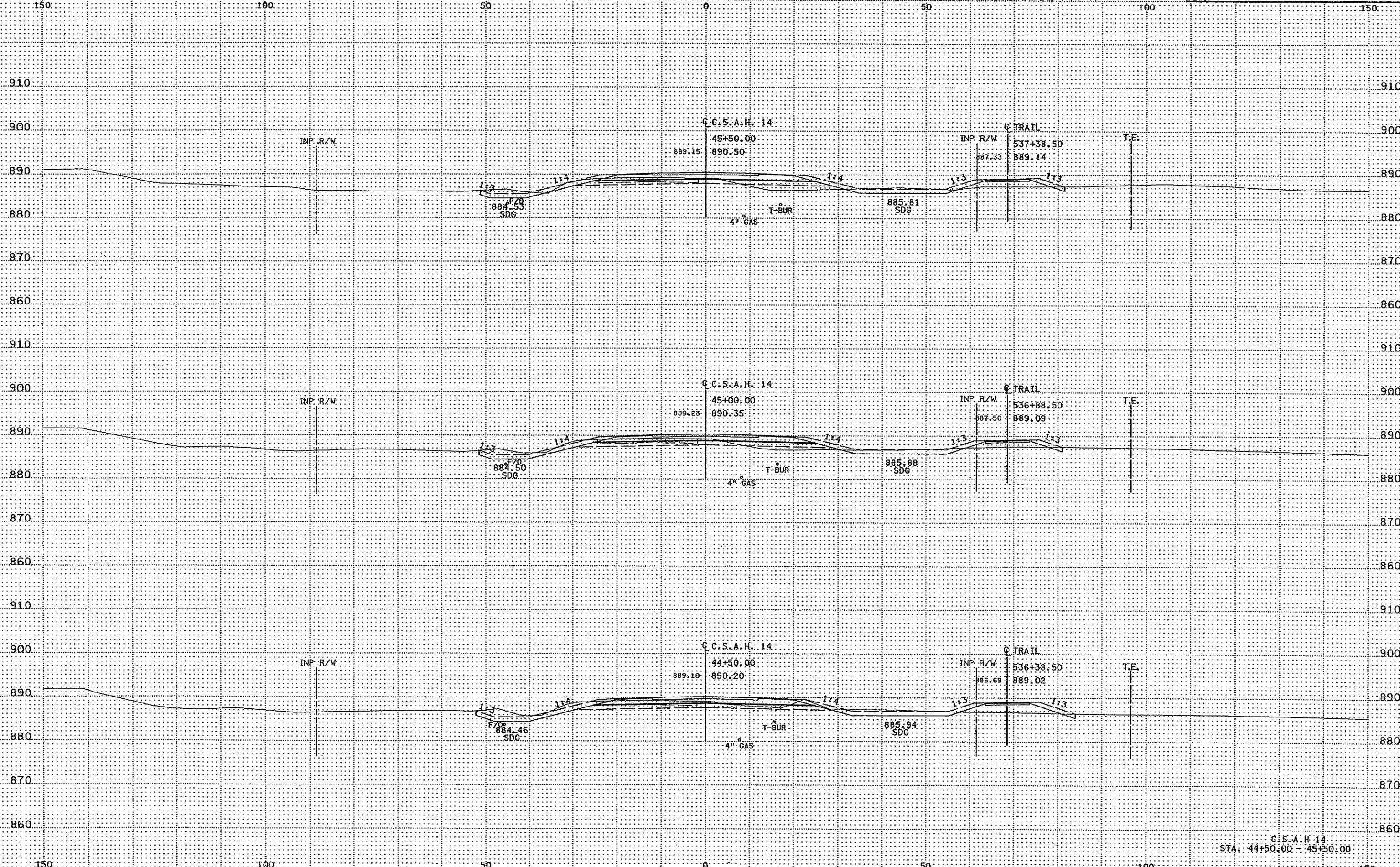
C.S.A.H. 14  
STA. 42+00.00 - 43+00.00

3:28:22 PM  
3/21/2007  
h:\proj\ecrs\4994-FAN\m\plan\4994-F.XSA



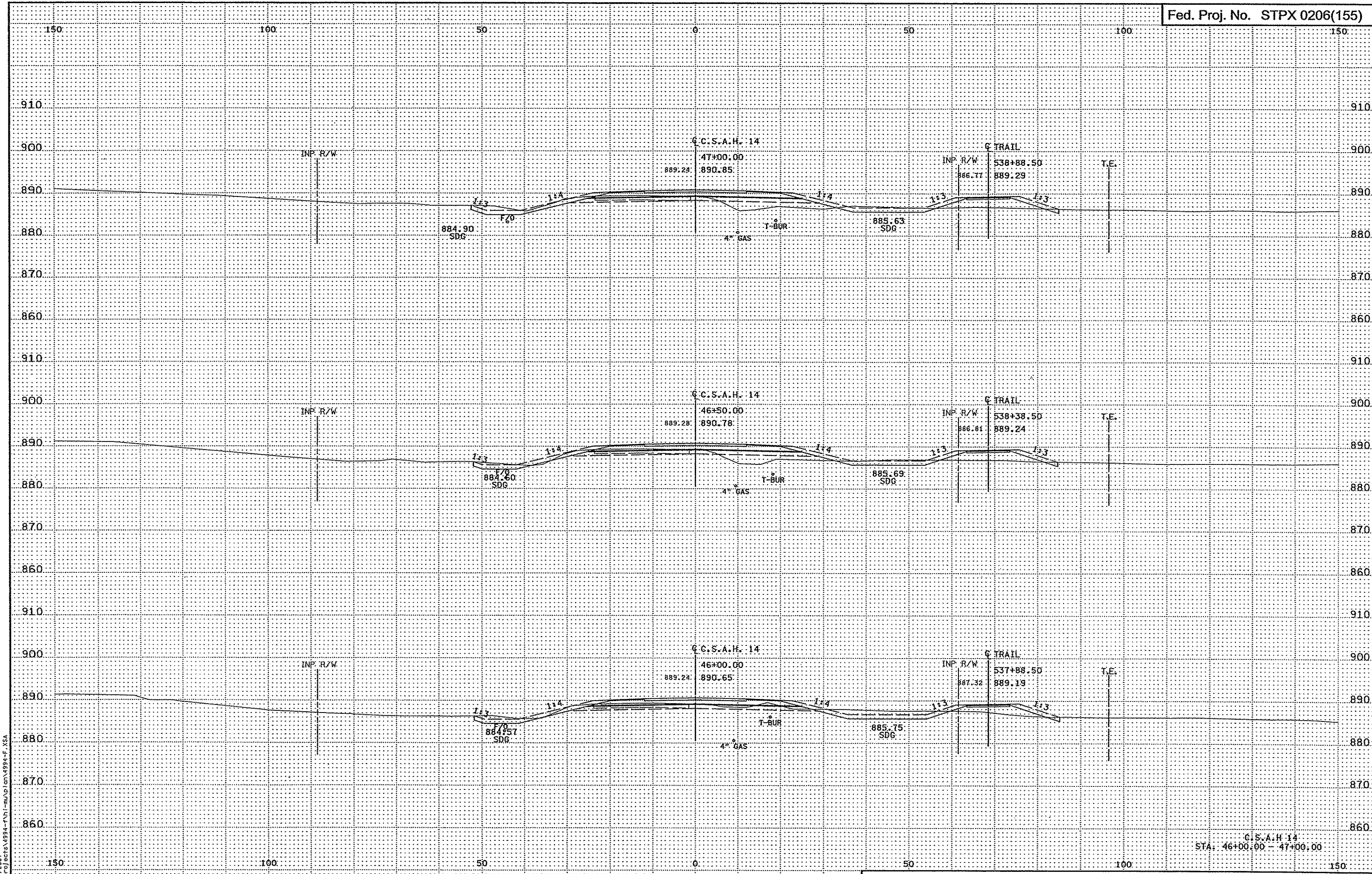
C.C.S.A.H. 14  
STA: 43+30.70 - 44+00.00

3:28:23 PM  
3/21/2007  
H:\proj\cets\4994-f\h1-m\api\on\4994-f\_xsa



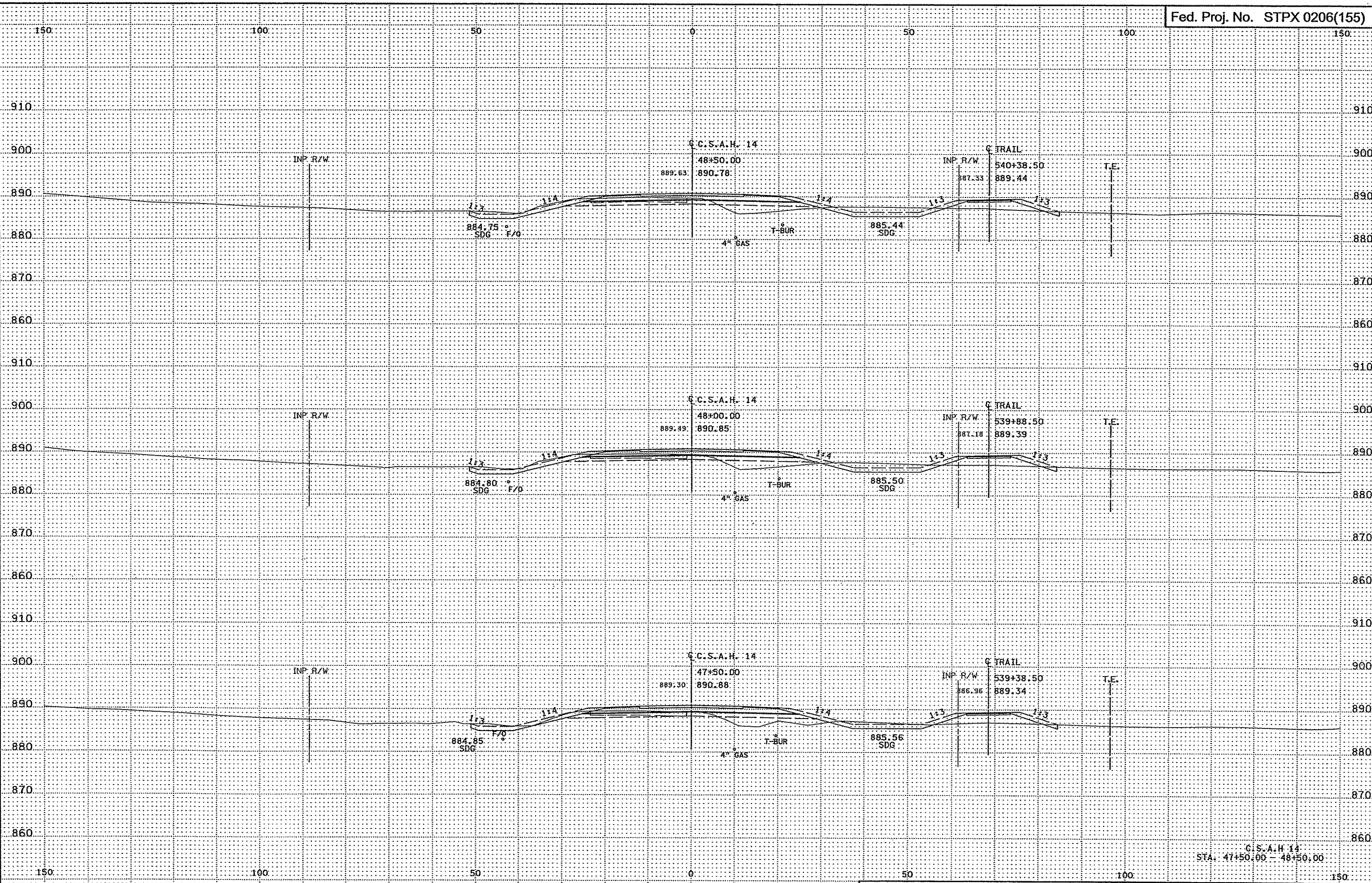
C.S.A.H. 14  
STA: 44+50.00 - 45+50.00

1:28:24 PM  
3/21/2007  
h:\projects\4994-F\H1-m\A\plan\4994-F.XSA



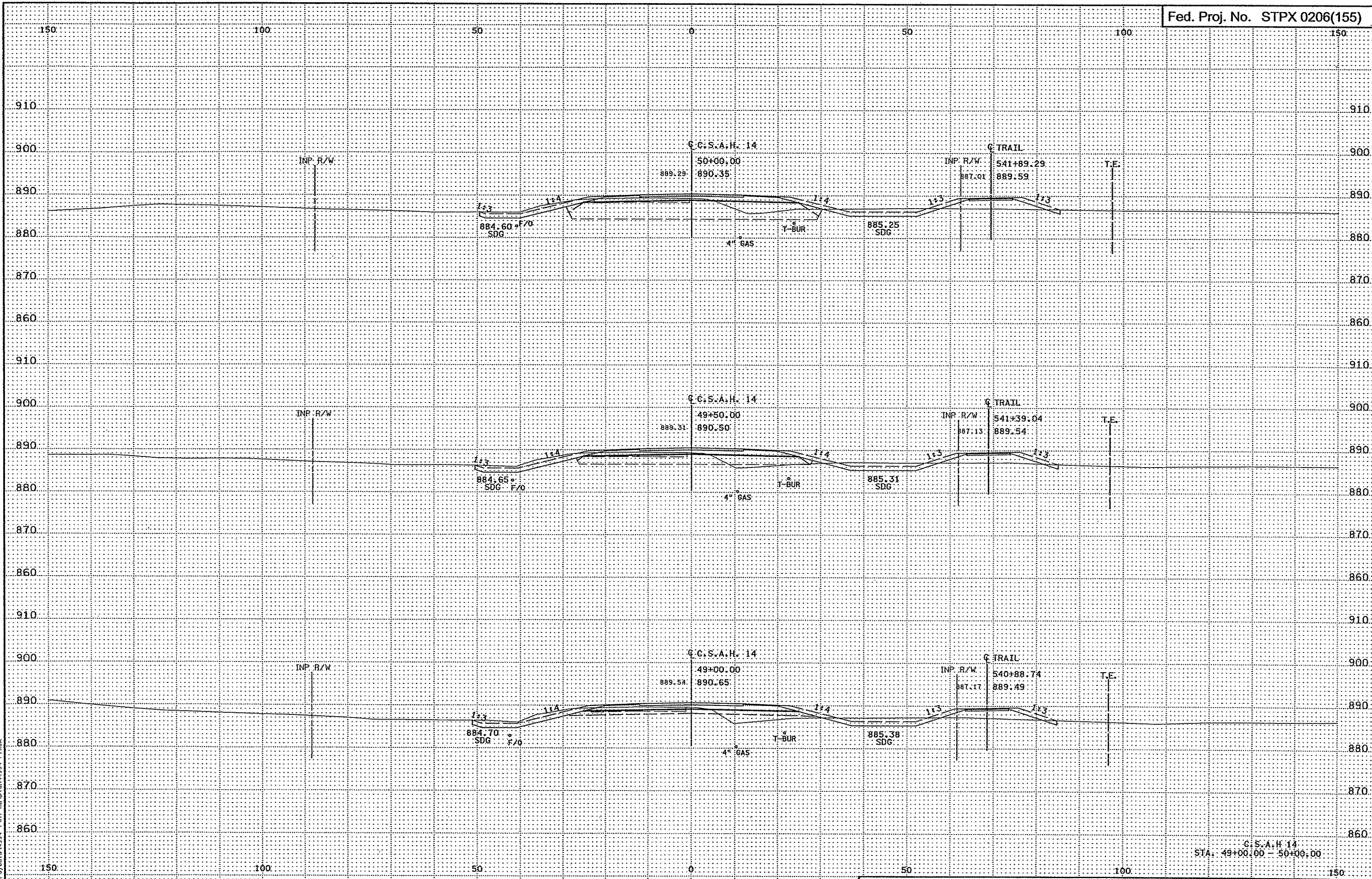
3/28/25 PM  
3/21/2007  
h:\projects\4994-fan\mud\en\4994-f\_xsa

C.S.A.H. 14  
STA: 46+00.00 - 47+00.00



C.S.A.H. 14  
STA. 47+50.00 - 48+50.00

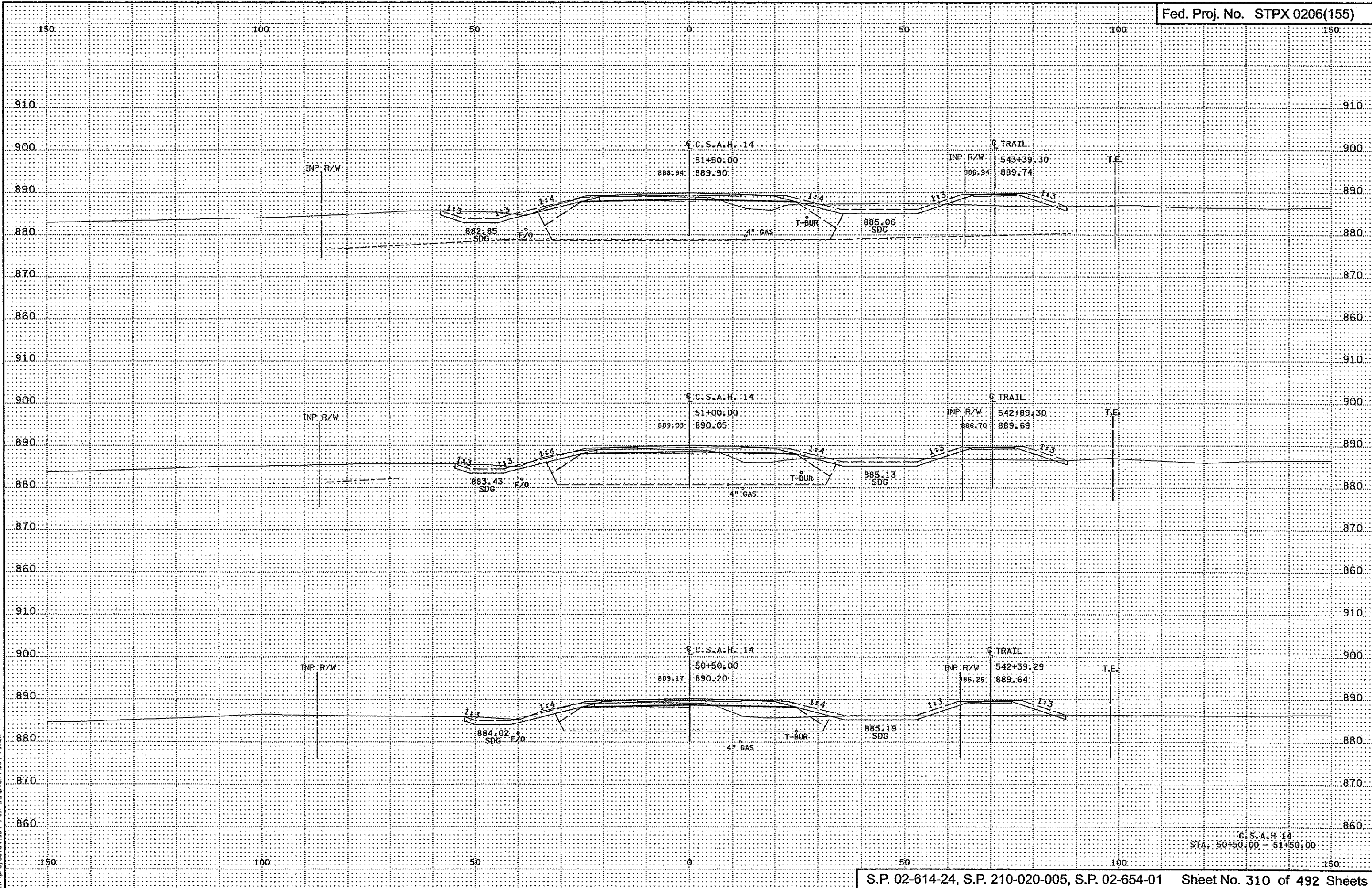
3/28/20 PM  
N:\proj\cts\4994-f\h1-m\apl\cn\4994-f.dwg



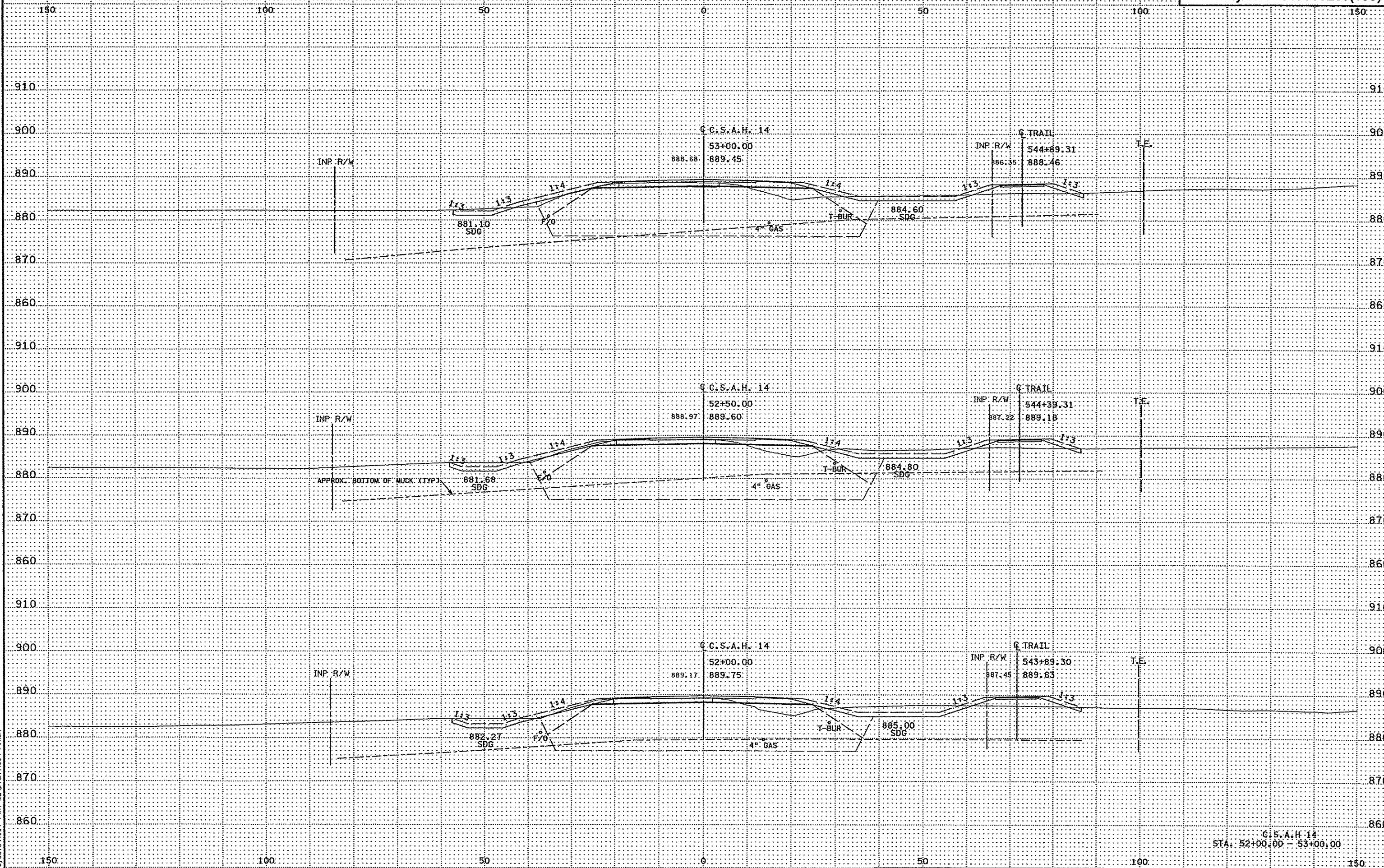
3:28:27 PM  
3/21/2007  
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C.S.A.H. 14  
STA. 49+00.00 - 50+00.00



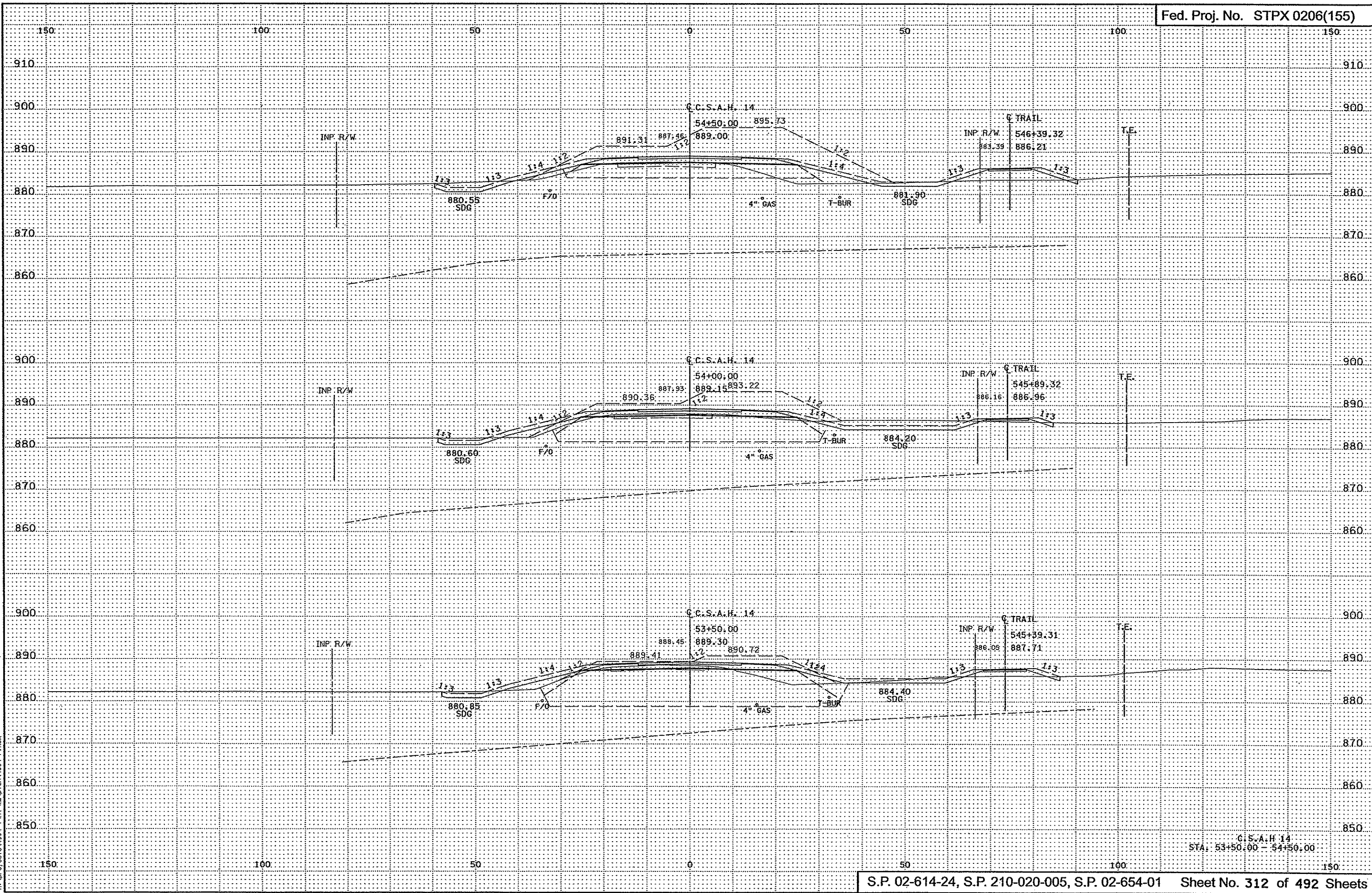


3:28:28 PM  
3/21/2007  
h:\projects\4994-FN1-mun\1 on\4994-F\_XSA



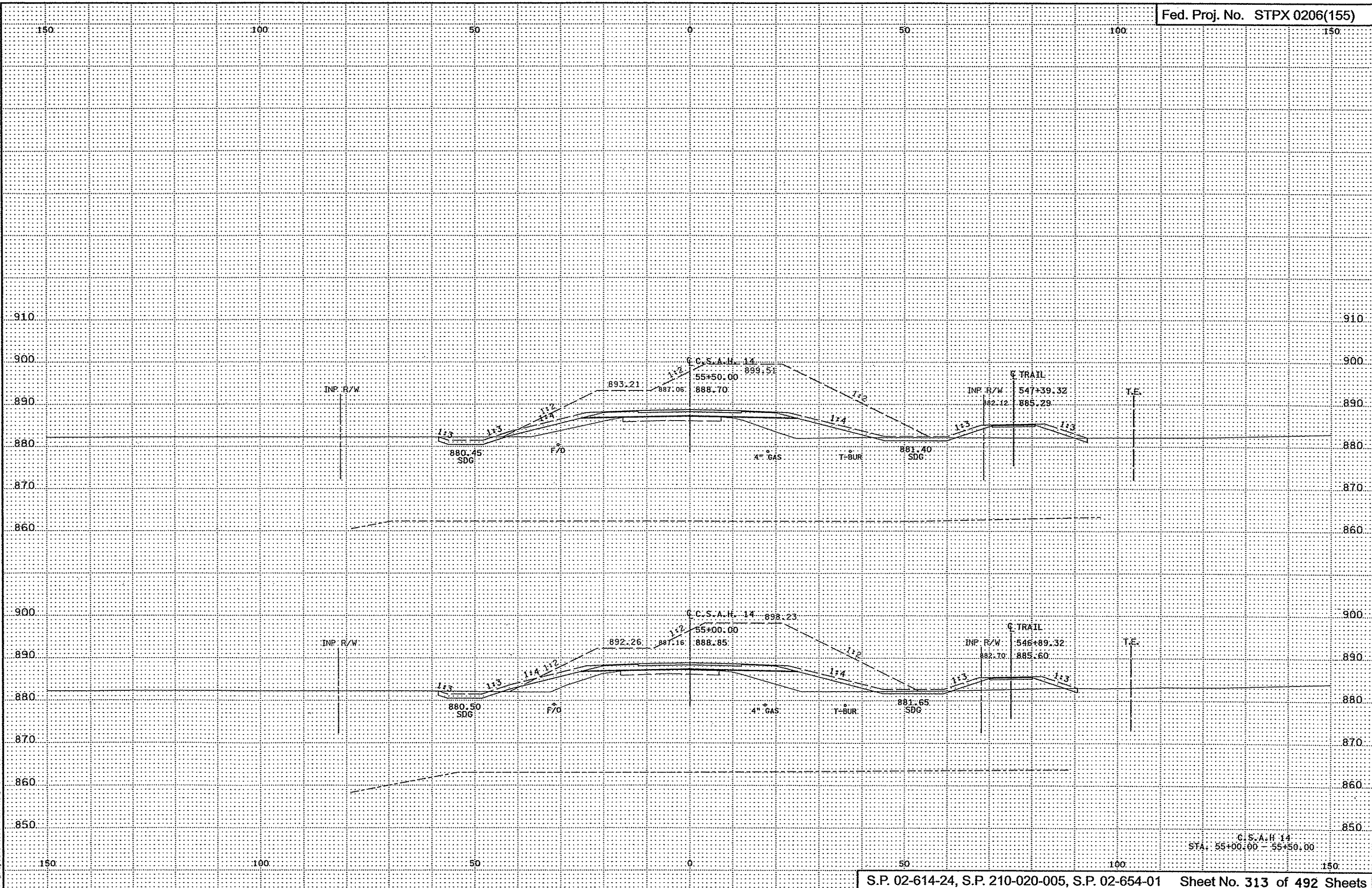
3:28:29 PM  
3/21/2007  
H:\projects\4994-F\1-1-m\1-1-m\1-1-m\4994-F.XSA

C.C.S.A.H. 14  
STA. 52+00.00 - 53+00.00



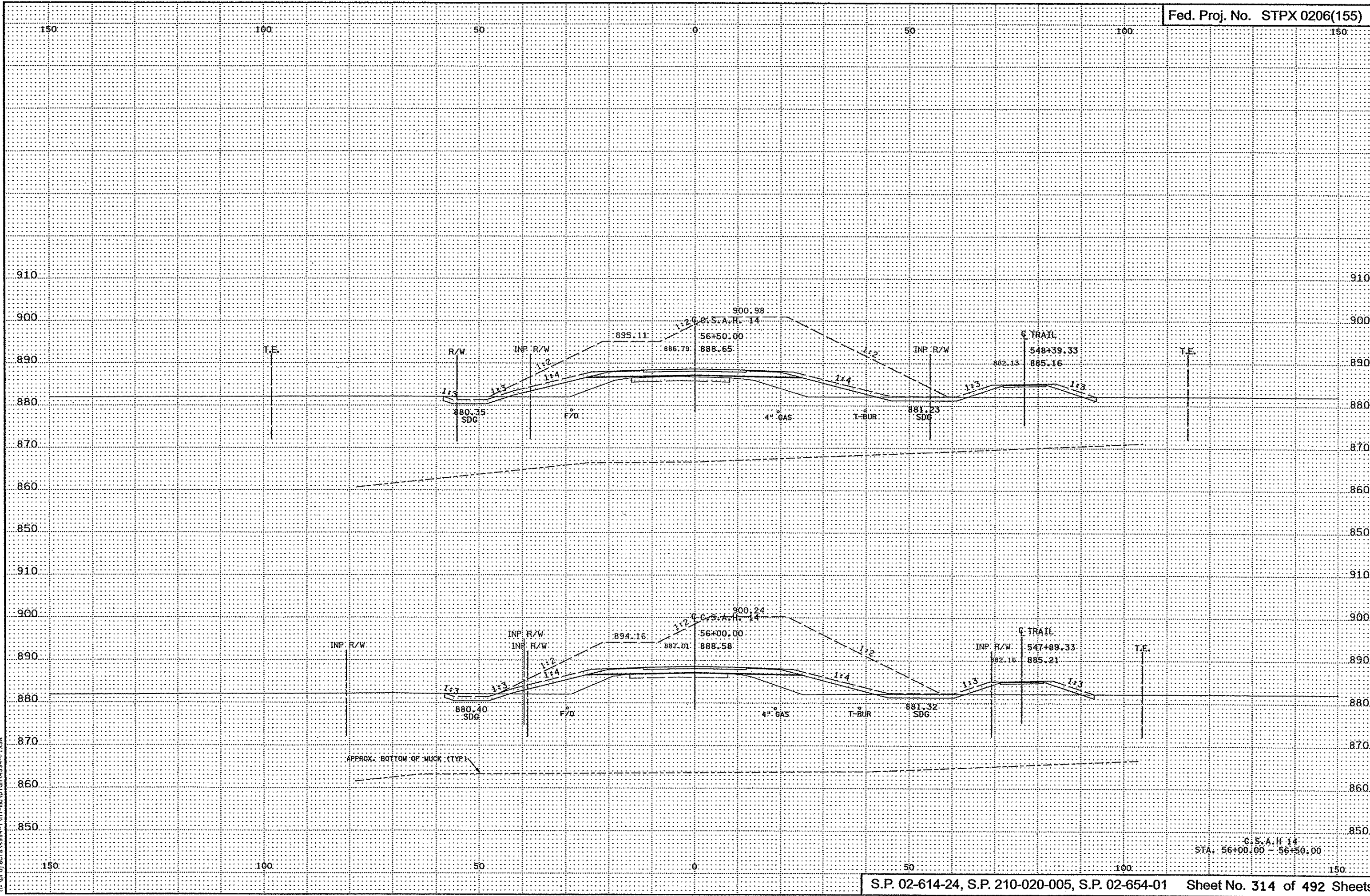
3:28:30 PM  
3/21/2007  
h:\proj\ccts\4994-f\h1-mu\p1\m\4994-f\_xsa

C.C.S.A.H. 14  
STA: 53+50.00 - 54+50.00



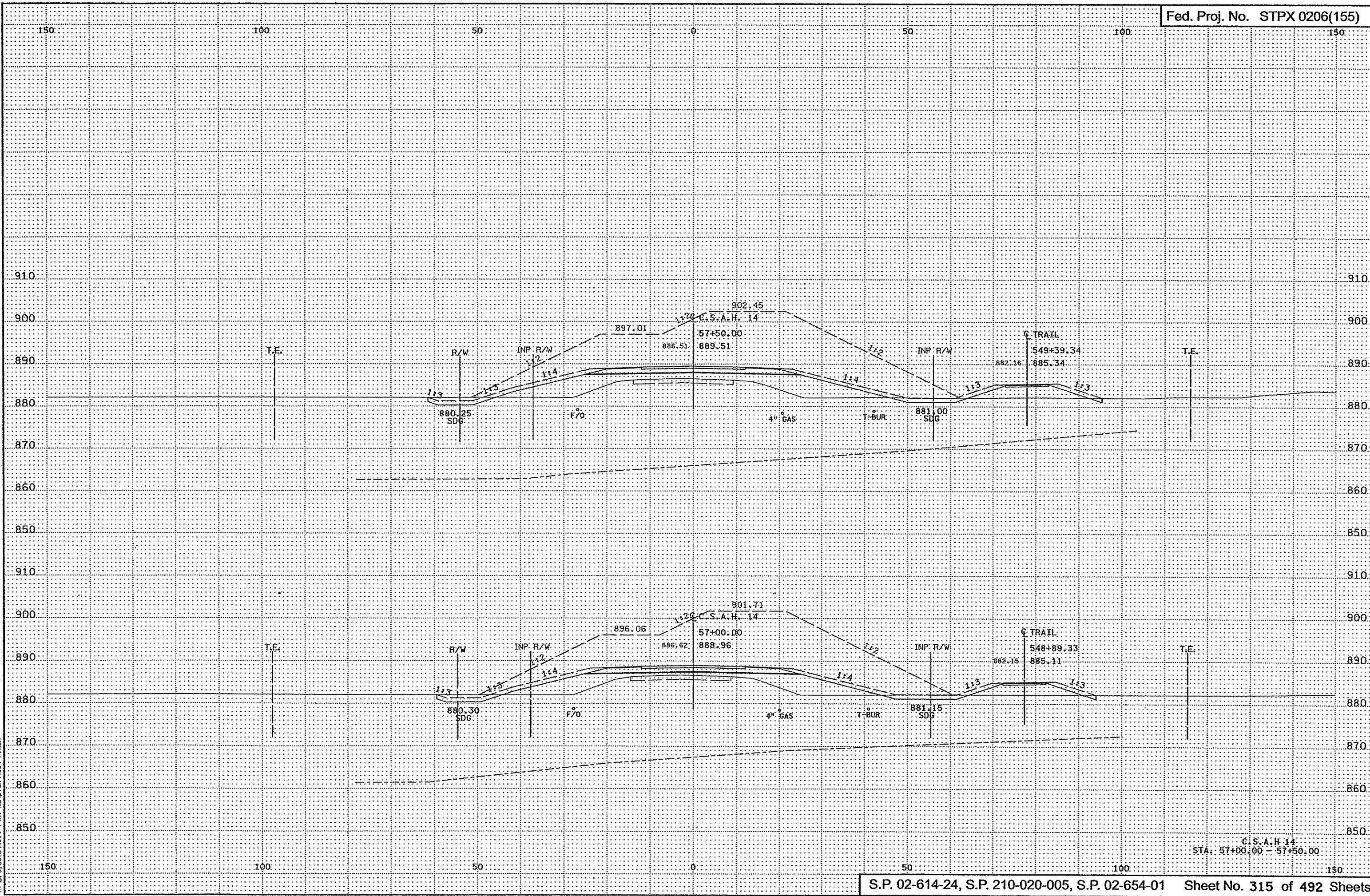
3:28:31 PM  
3/21/2007  
h:\proj\ecfs\4994-F\11-m\AD\cn\4994-F.XSA

C.S.A.H. 14  
STA. 55+00.00 - 55+50.00



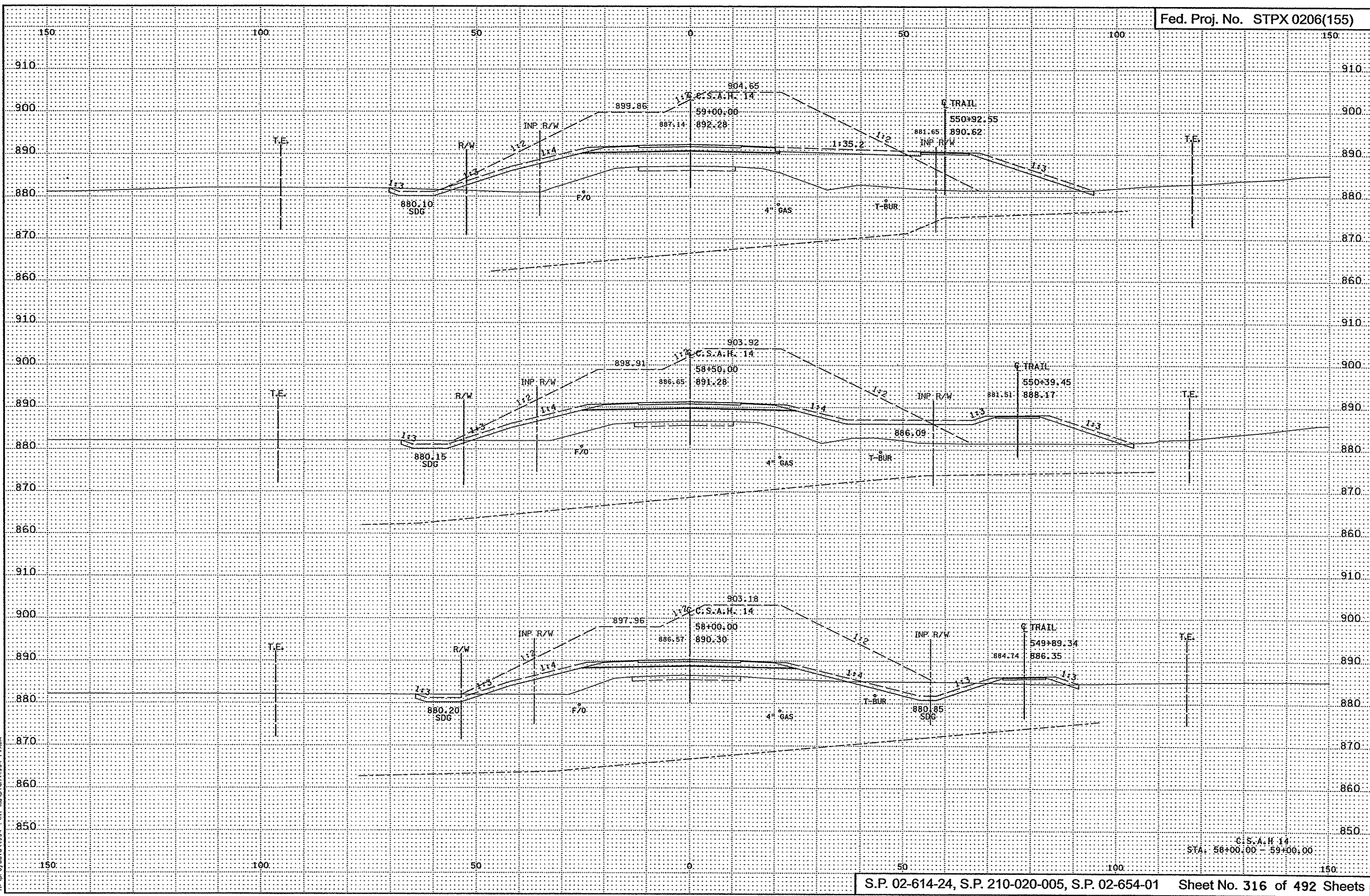
3:28:12 PM  
3/21/2007  
h:\projects\4994-FNH\map\101\4994-F\_XSA

C.S.A.H. 14  
STA. 56+00.00 - 56+50.00



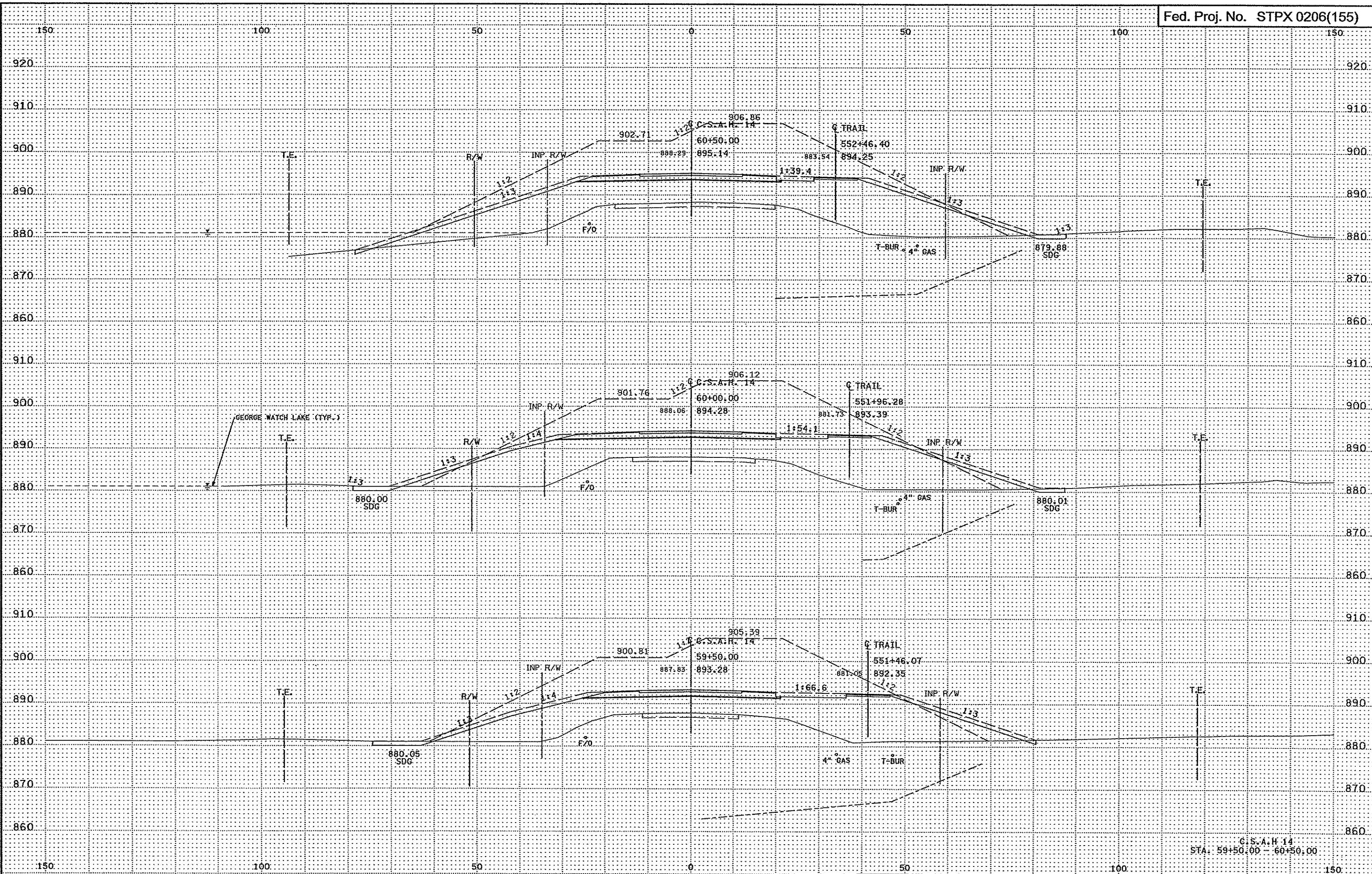
3:28:33 PM  
3/21/2007  
H:\proj\oct05\4994-FNH\mud\gn\4994-F.XSA

C.S.A.H. 14  
STA: 57+00.00 - 57+50.00



3:28:13 PM  
3/21/2007  
P:\Projects\4994-F\1-MUV\gn\4994-F.XSA

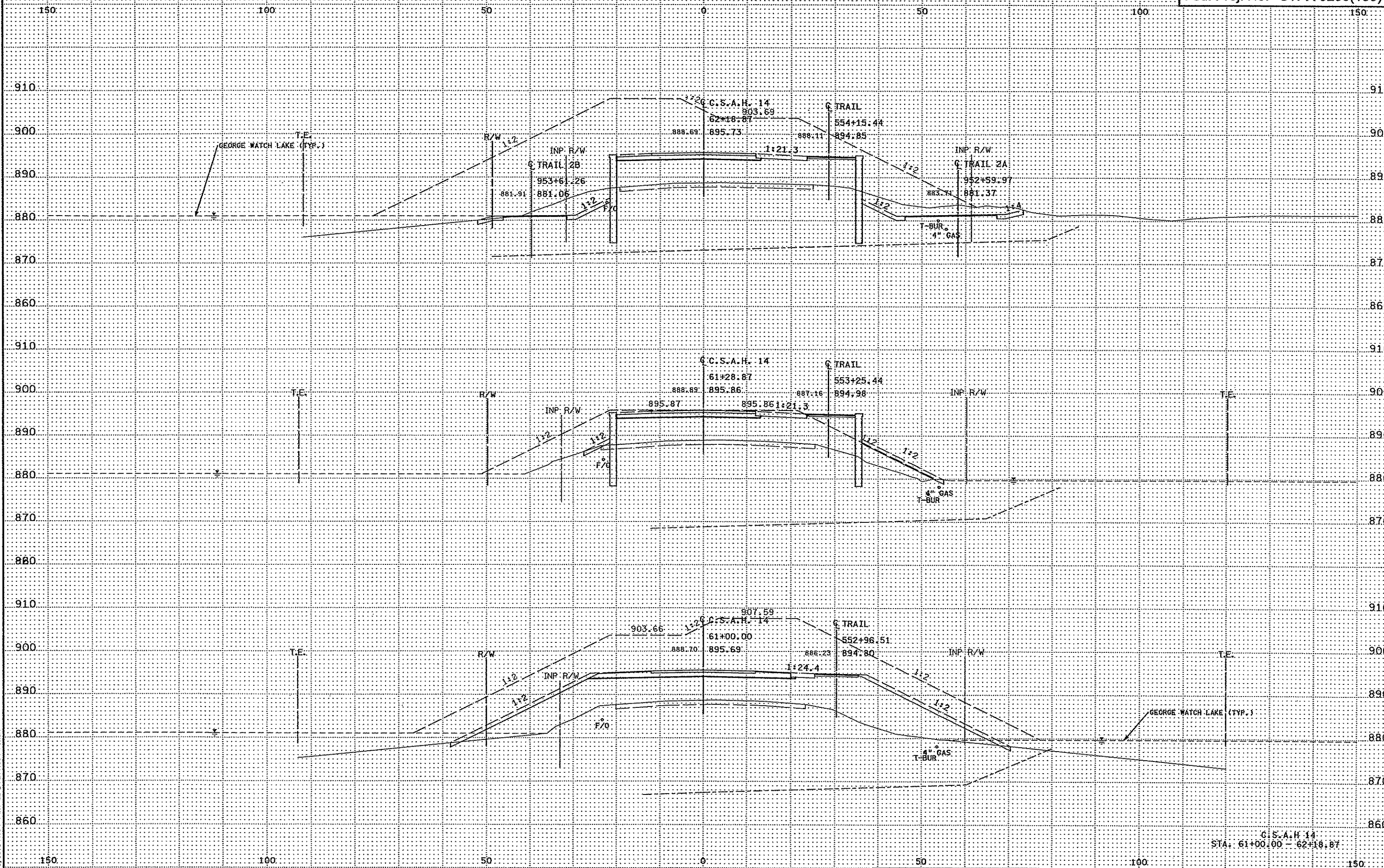
C.S.A.H. 14  
STA. 58+00.00 - 59+00.00



3:28:35 PM  
3/21/2007  
D:\projects\4994-F\1-DRAWING\4994-F.XSD

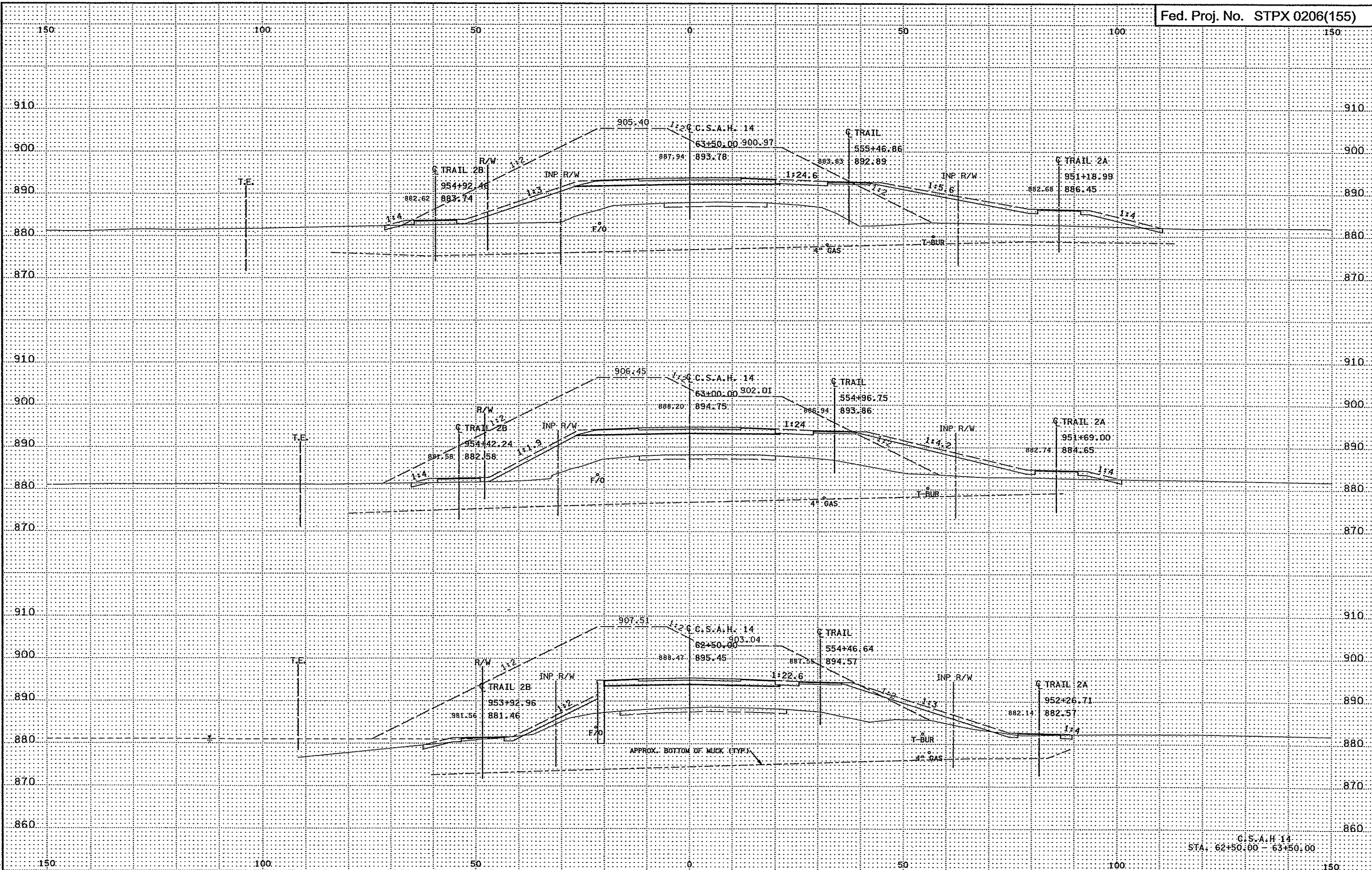
C.S.A.H. 14  
STA: 59+50.00 - 60+50.00





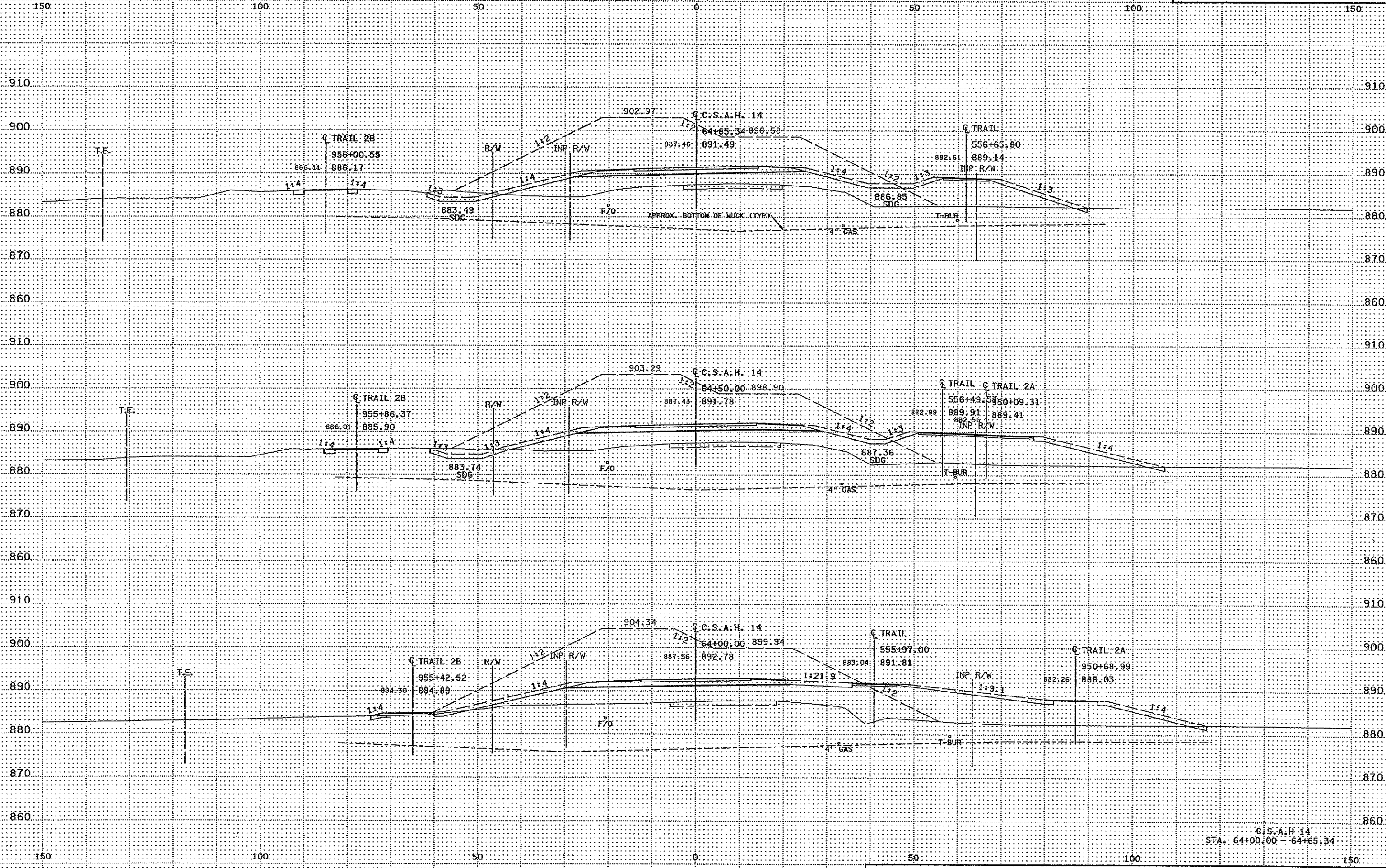
3:28:36 PM  
3/21/2007  
Prj\Projects\4994-F\1-m\vd\on\4994-F.XSA

C.S.A.H. 14  
STA: 61+00.00 - 62+18.87



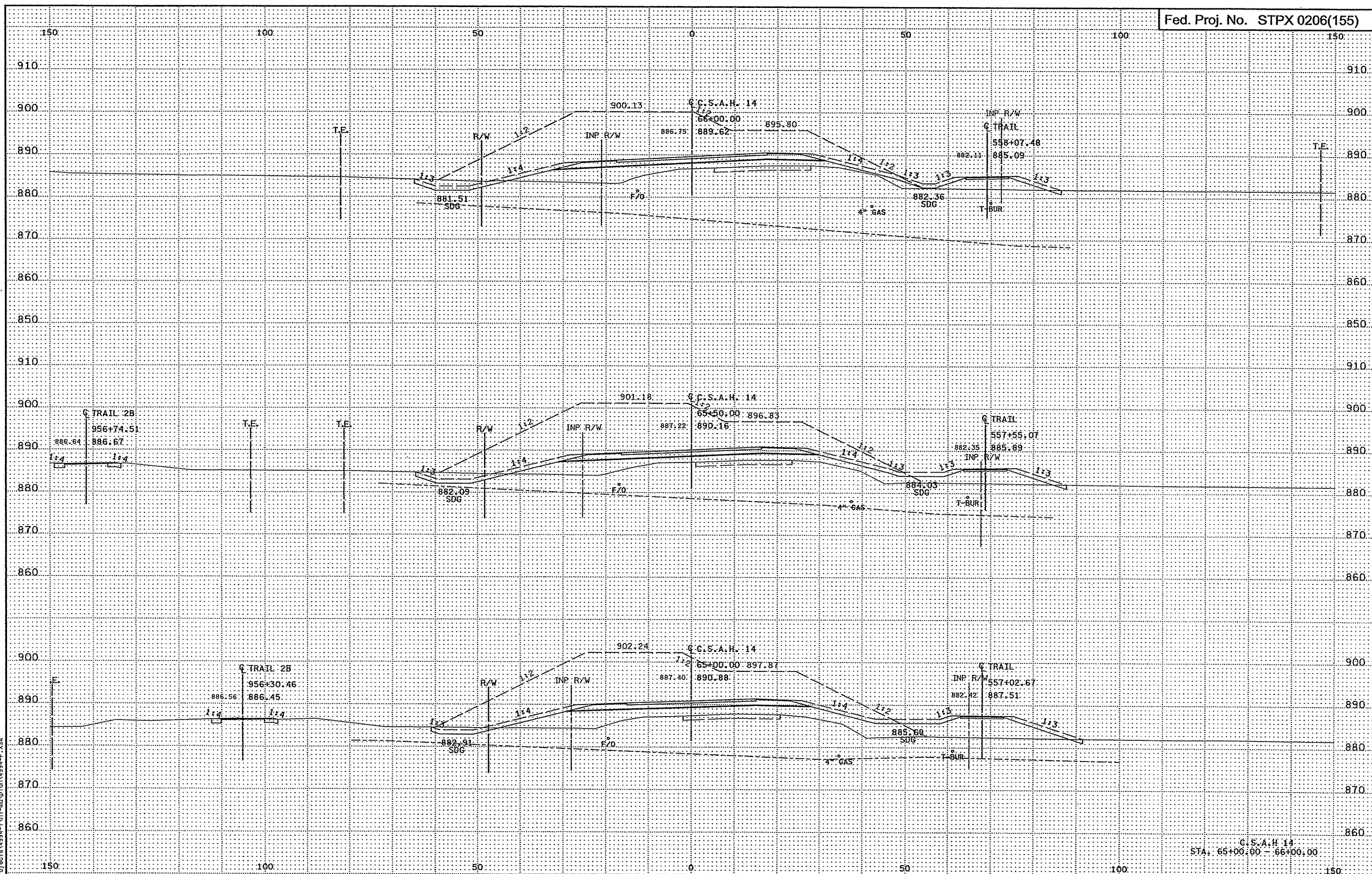
3:28:37 PM  
3/21/2007  
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C.S.A.H. 14  
STA: 62+50.00 - 63+50.00



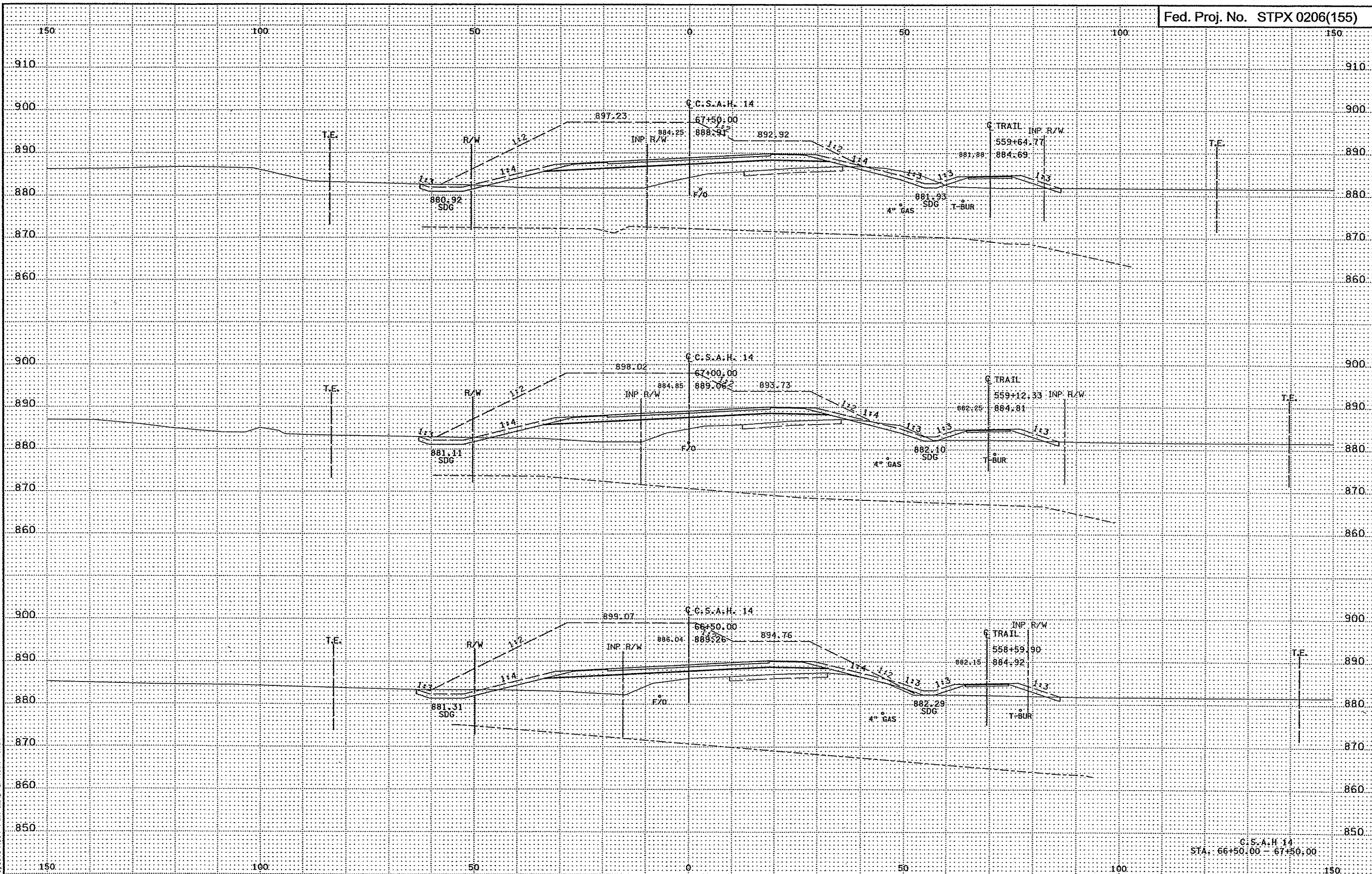
C.C.S.A.H. 14  
STA: 64+00.00 - 64+65.34

3/28/07 PM  
3/21/2007  
ht:\proj\scot\4994-FNH\1-m\dwg\1on\4994-F\_XSA



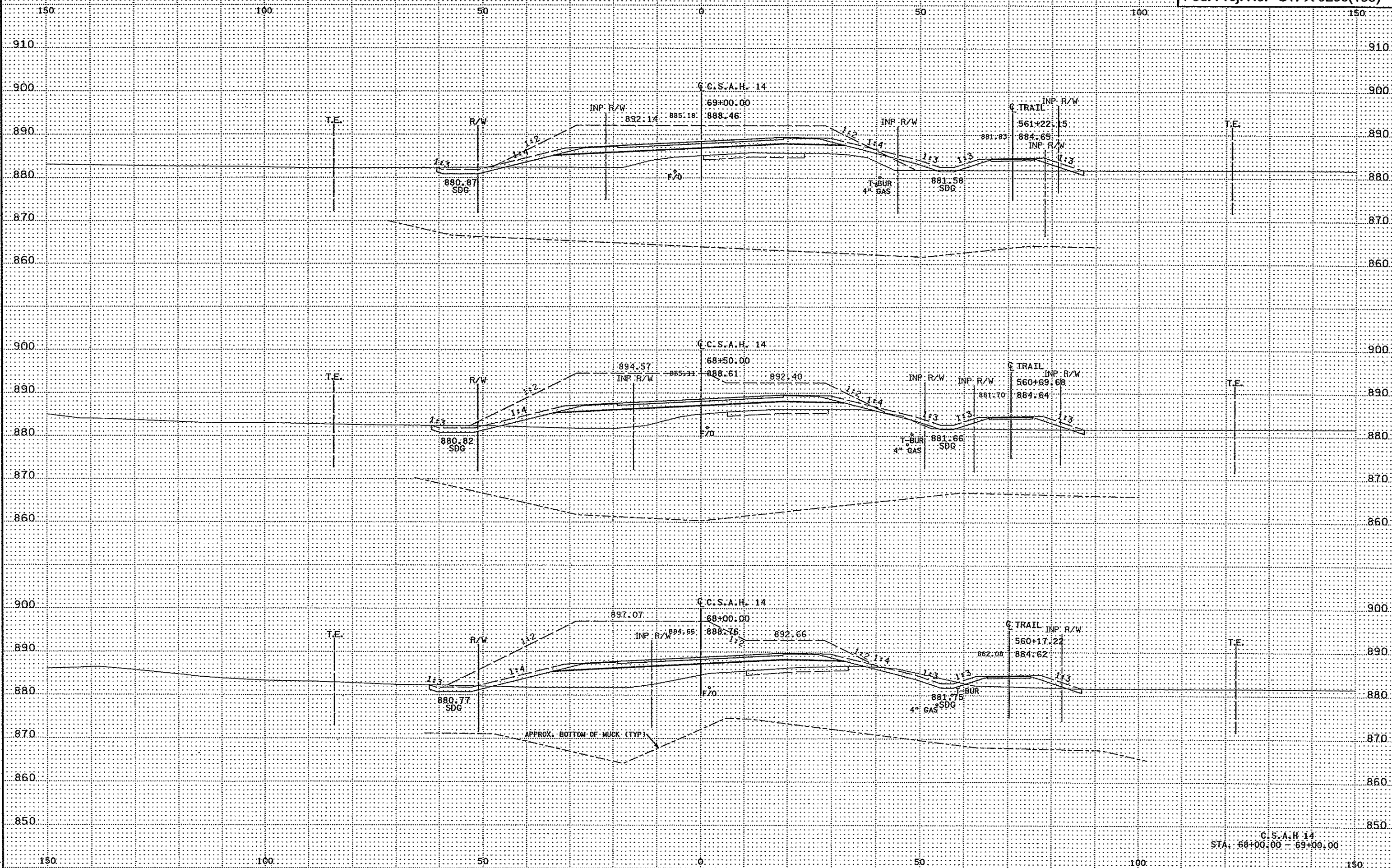
C.S.A.H. 14  
STA. 65+00.00 - 66+00.00

1:28:40 PM  
3/21/2007  
D:\projects\4994-F\1-m\vd\cn\4994-F\_XSA



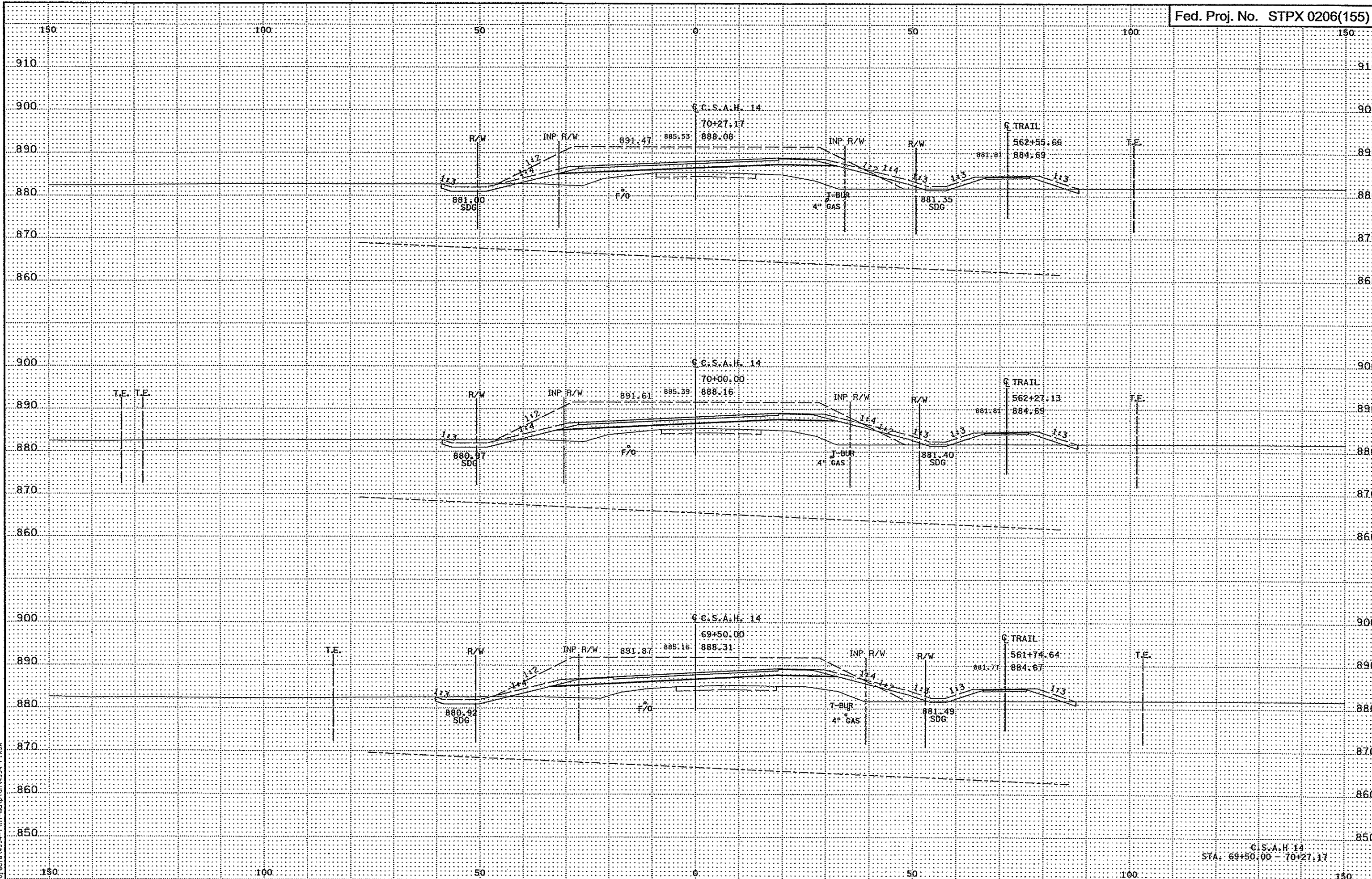
3/28/11 PM  
3/31/2007  
h:\projects\4994-F\h1-m\p1\on\4994-F.XSA

C.S.A.H. 14  
STA: 66+50.00 - 67+50.00



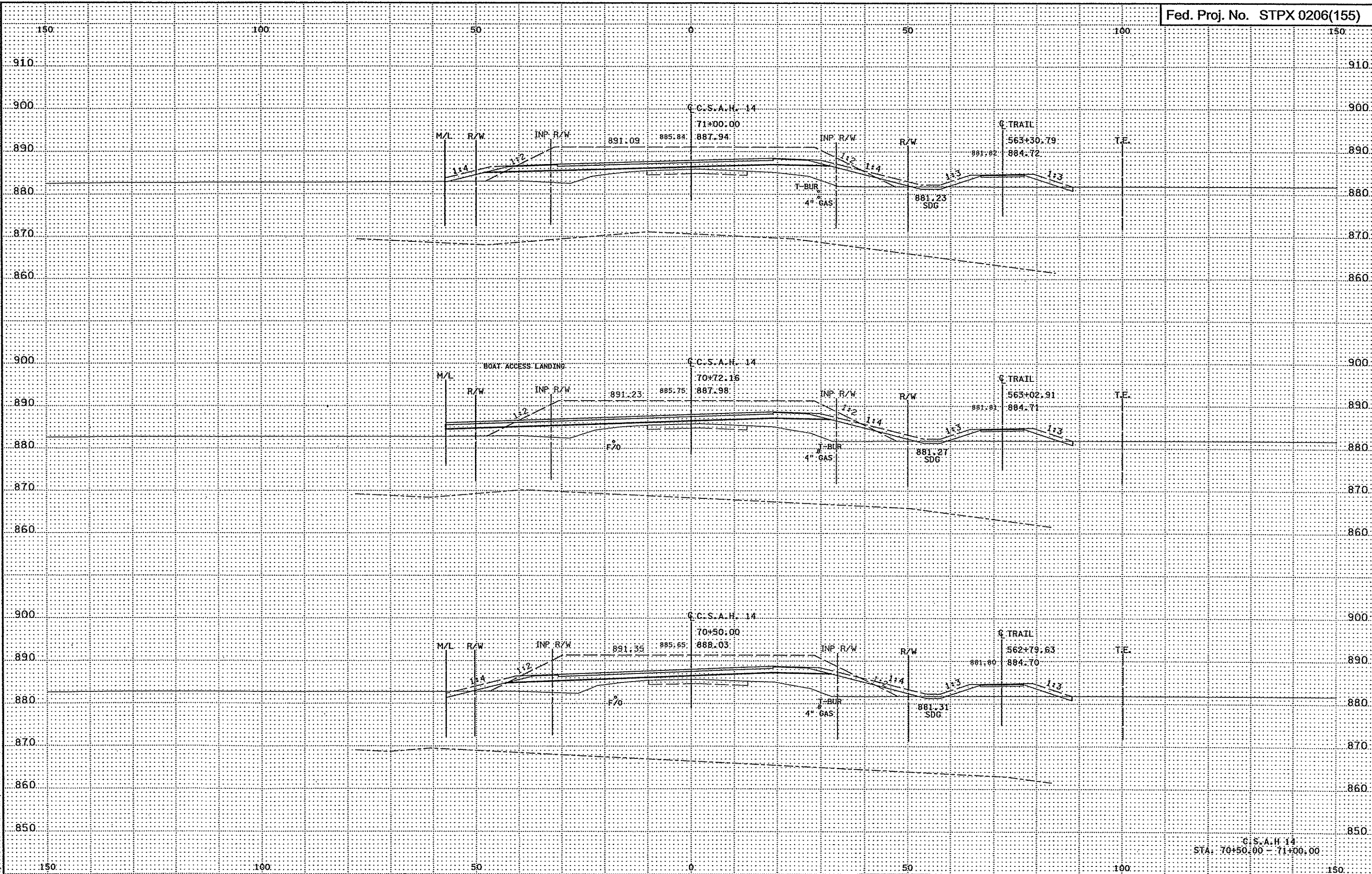
C.C.S.A.H. 14  
STA: 68+00.00 - 69+00.00

3:28:42 PM  
3/21/2007  
ht:\projects\4994-FH1-m\VD\1014994-F.XSA



3:28:43 PM  
3/21/2007  
h:\projects\4994-F\h1-mu\p1on\4994-F.XSA

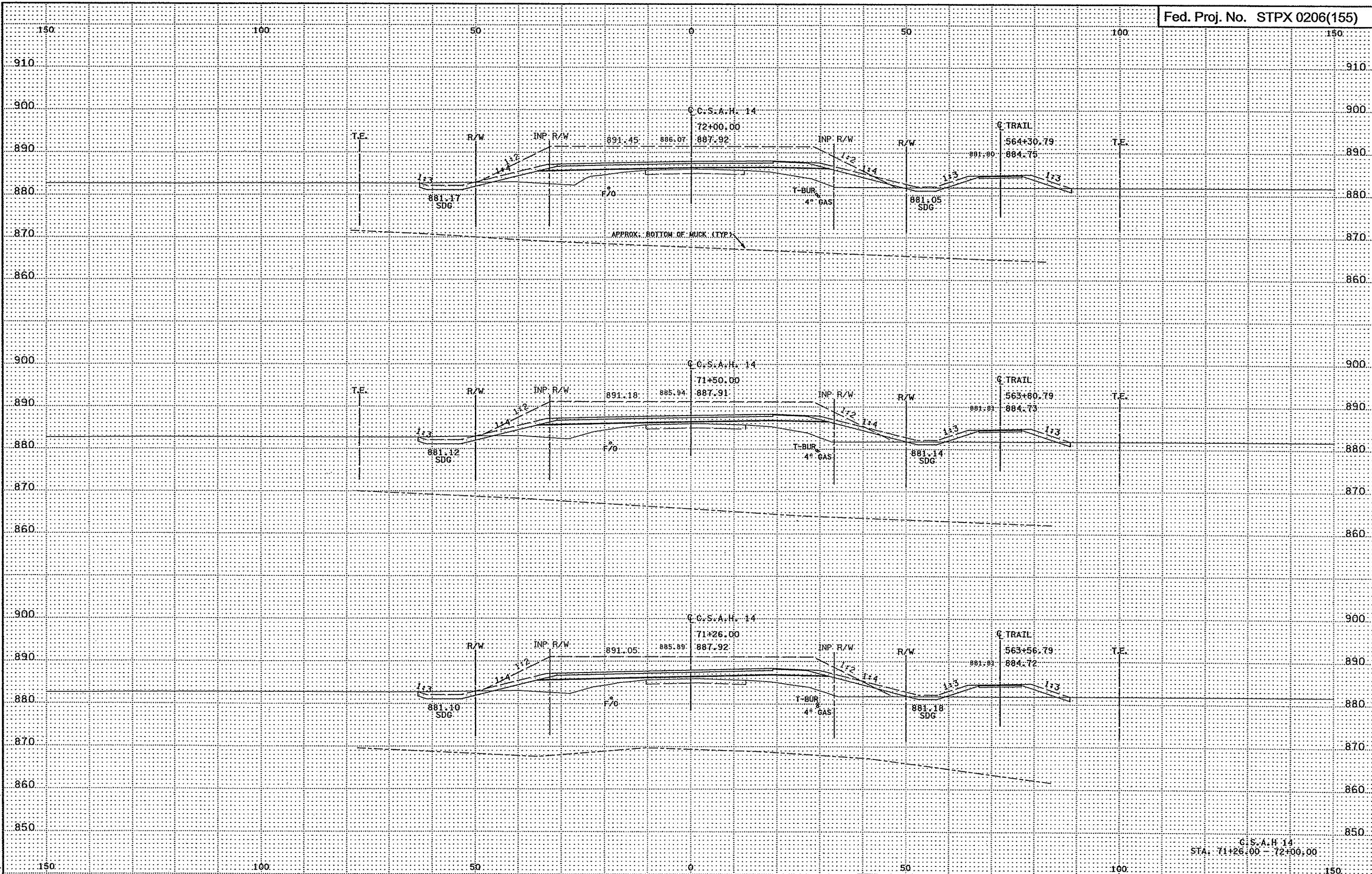
C.S.A.H. 14  
STA. 69+50.00 - 70+27.17



C.C.S.A.H. 14  
STA: 70+50.00 - 71+00.00

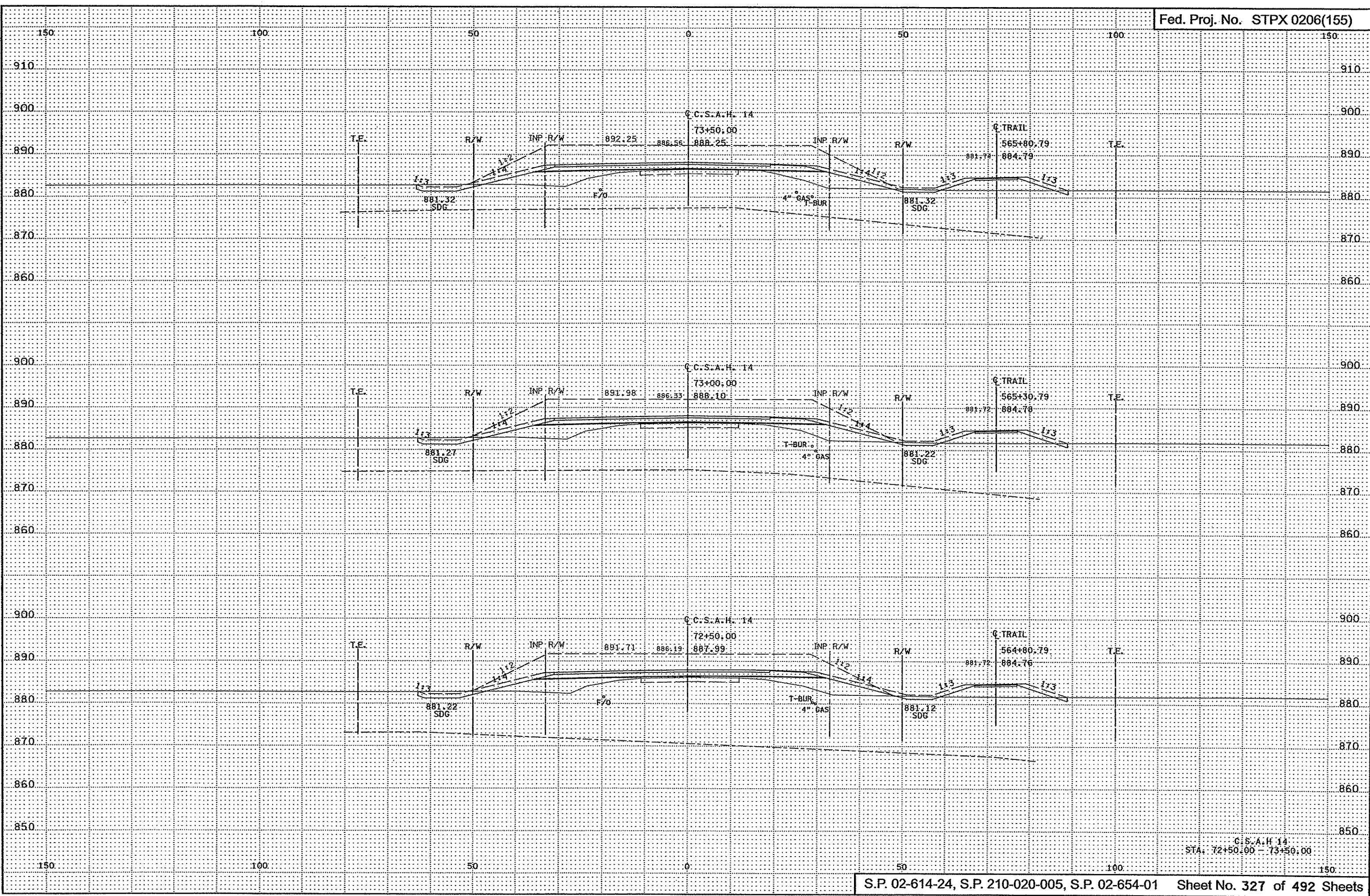
3:28:44 PM  
3/21/2007  
ht:\projects\4994-F\1-1-m\0\0\1014994-F.XSA



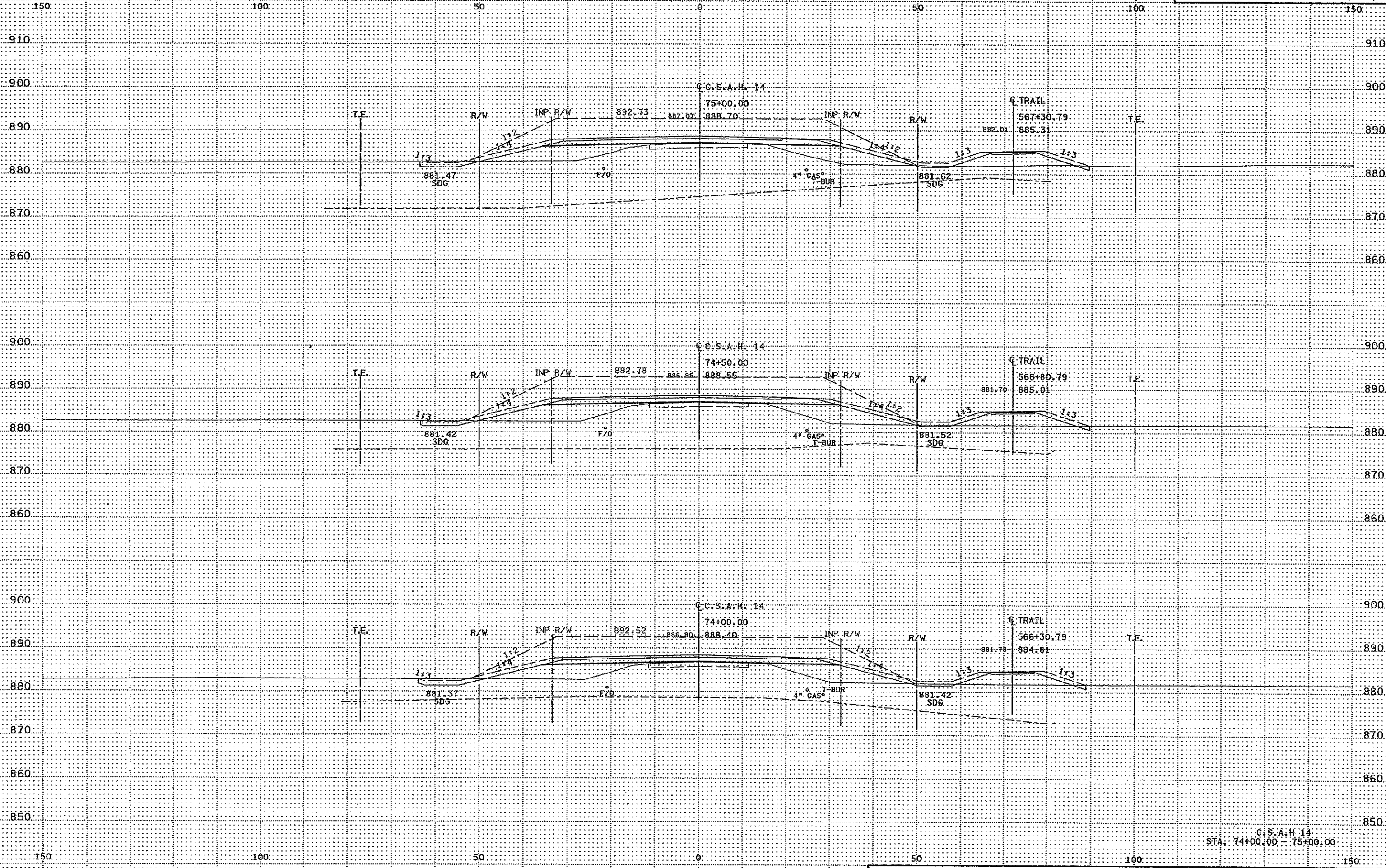


3:28:45 PM  
3/21/2007  
P:\Projects\4994-F\1-m\VDI\dn\4994-F.XSA

C.S.A.H. 14  
STA: 71+26.00 - 72+00.00

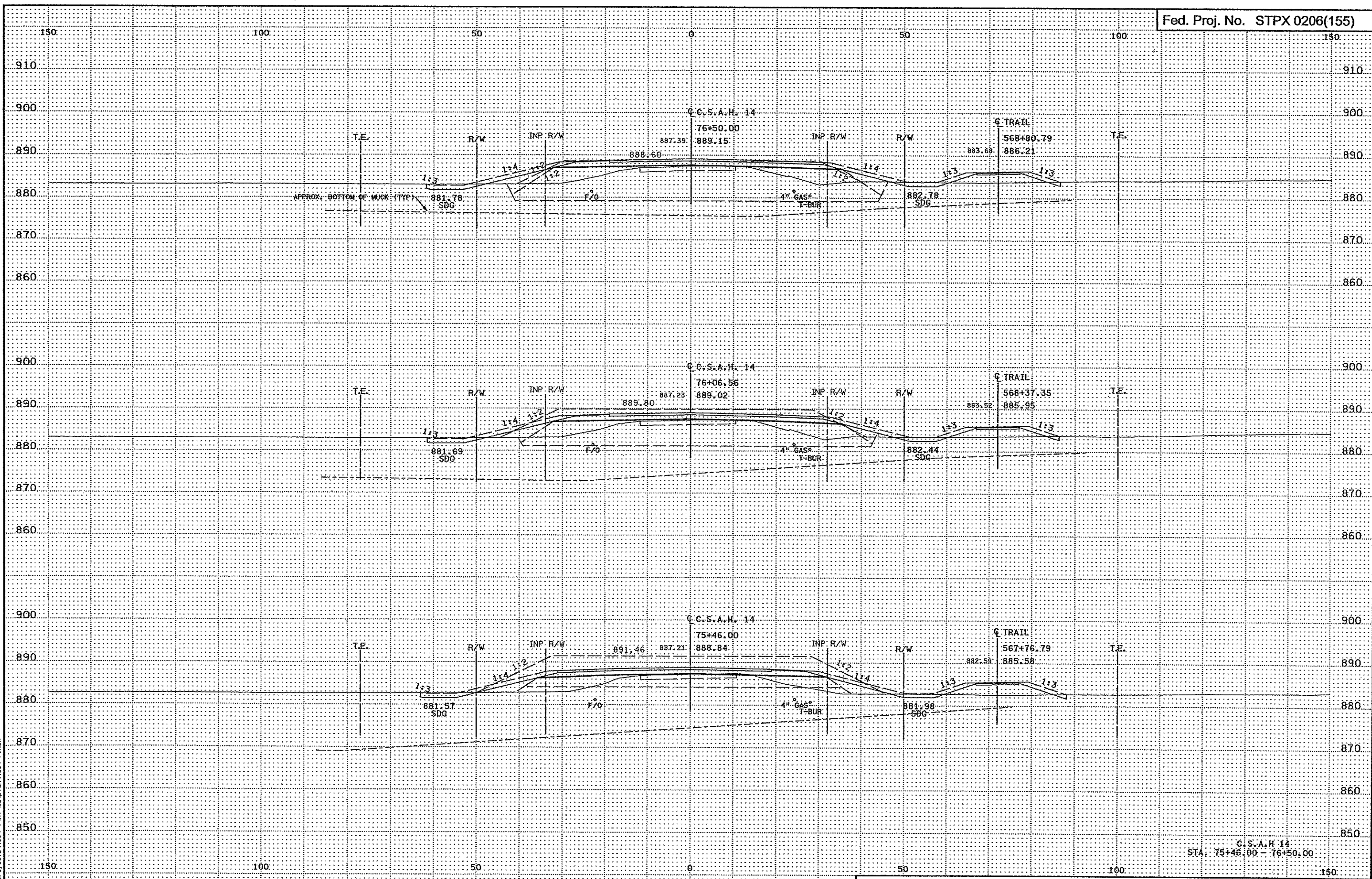


3:28:46 PM  
3/21/2007  
H:\projects\4994-F\11-m\VD\ton\4994-F\_XSA



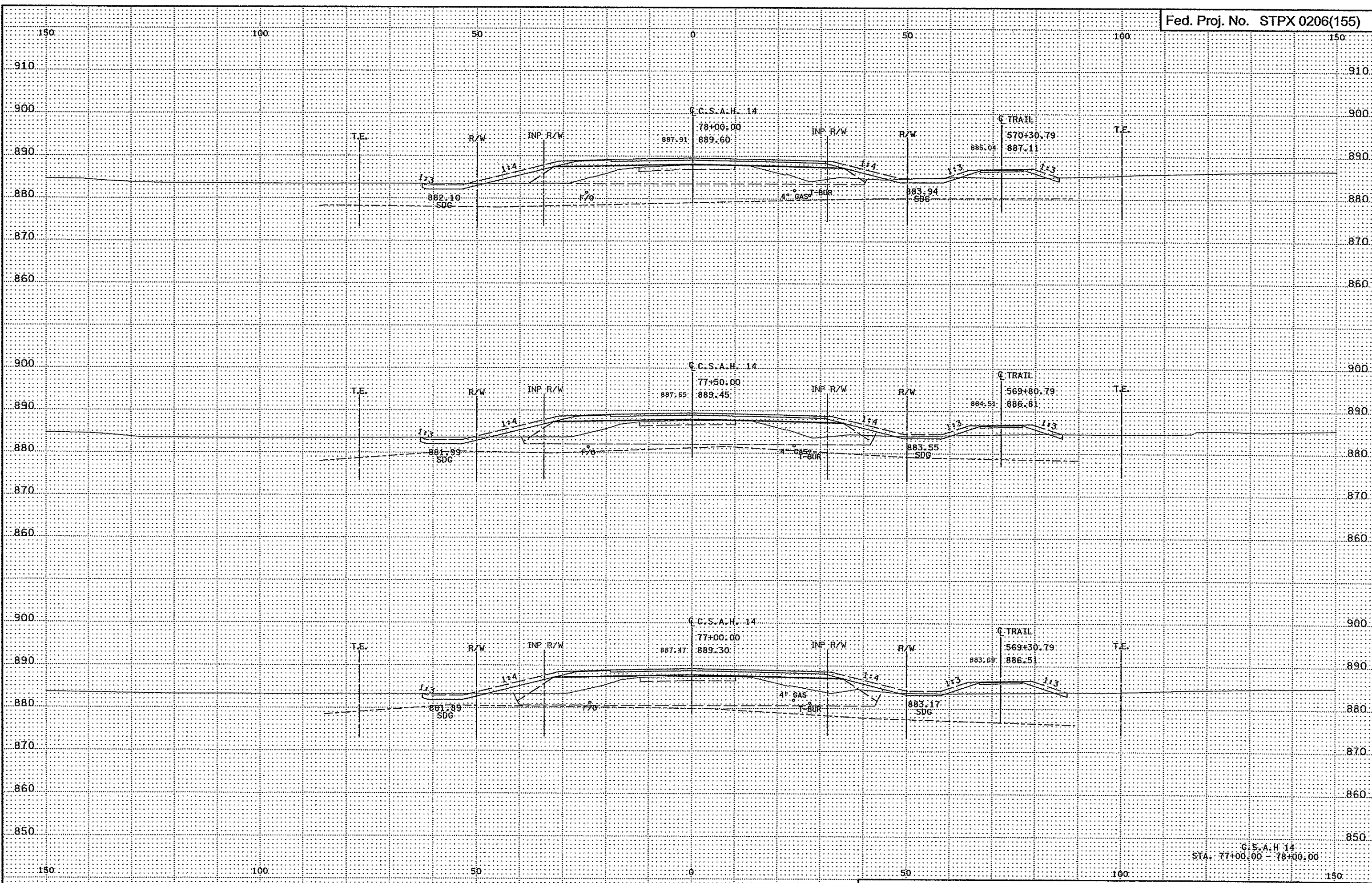
1/28/17 BH  
3/21/2007  
ht:\proj\ecoris\4994-f\h1-mu\p1on\4994-f\_xsa

C.S.A.H. 14  
STA. 74+00.00 - 75+00.00



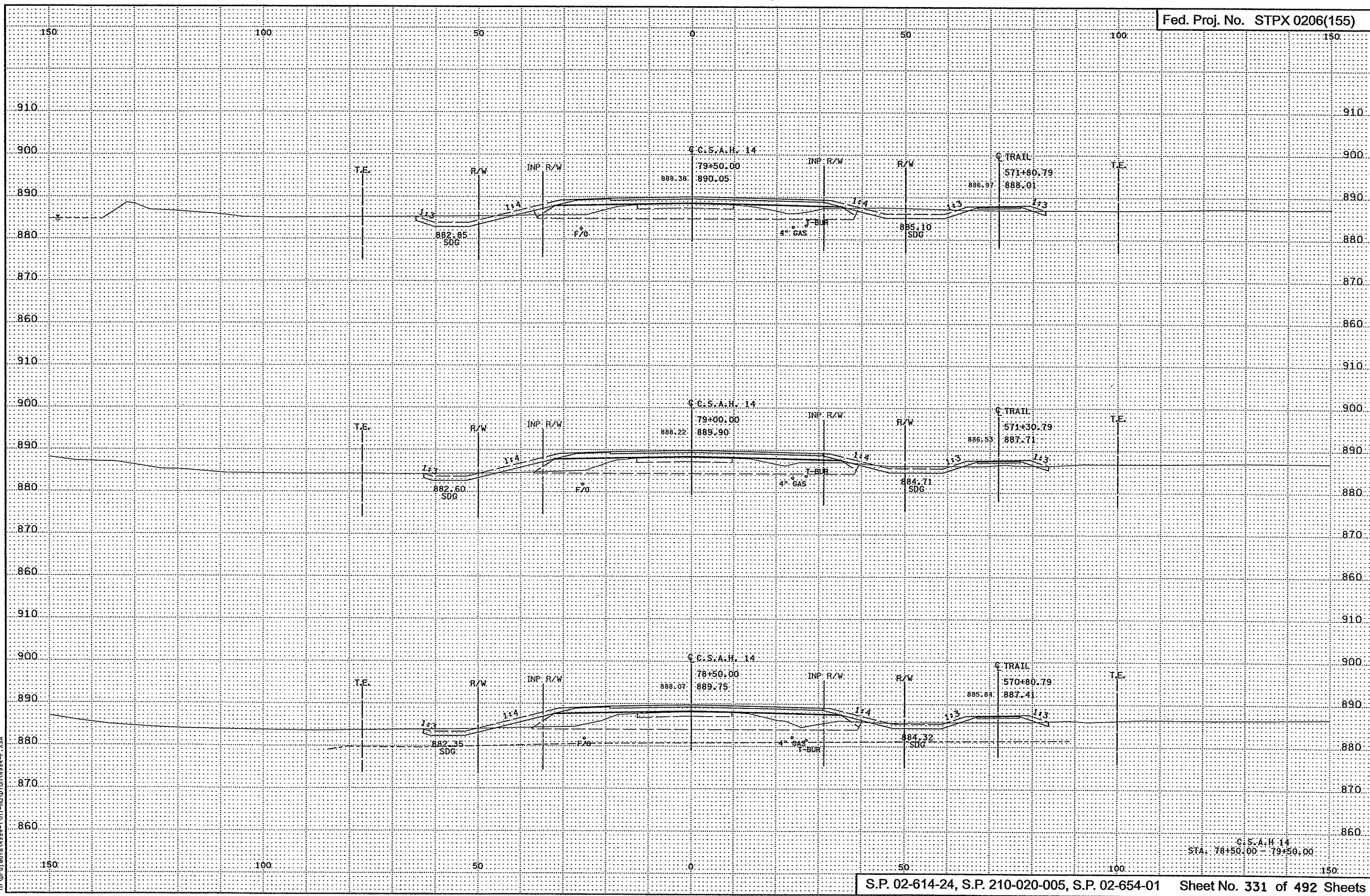
C.S.A.H. 14  
STA: 75+46.00 - 76+50.00

3/28/14 8 PM  
3/21/2007  
P:\Projects\4894-F\VI-M\1010\4894-F.XSA



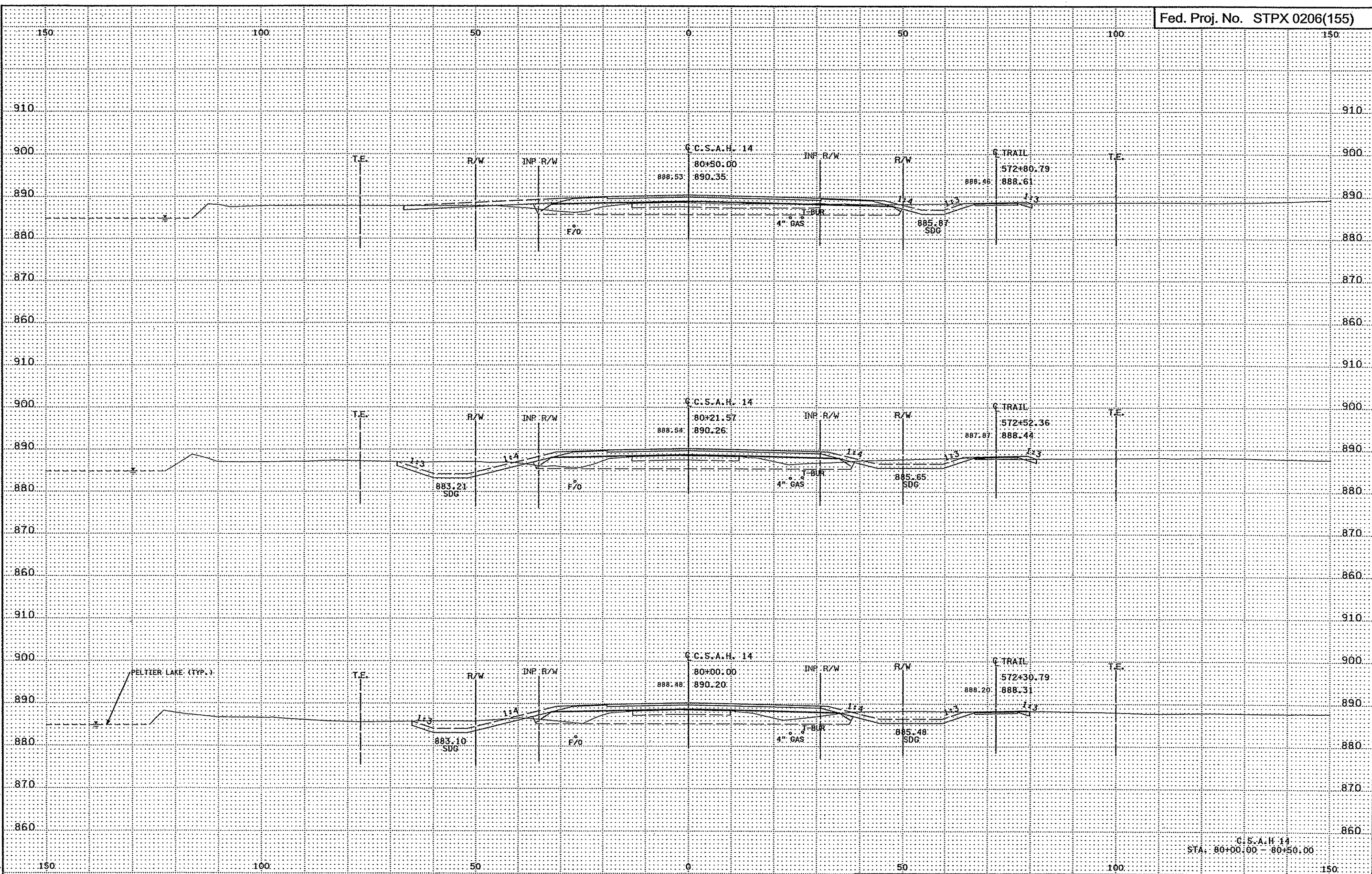
C.C.S.A.H. 14  
STA. 77+00.00 - 78+00.00

3:28:49 PM  
3/21/2007  
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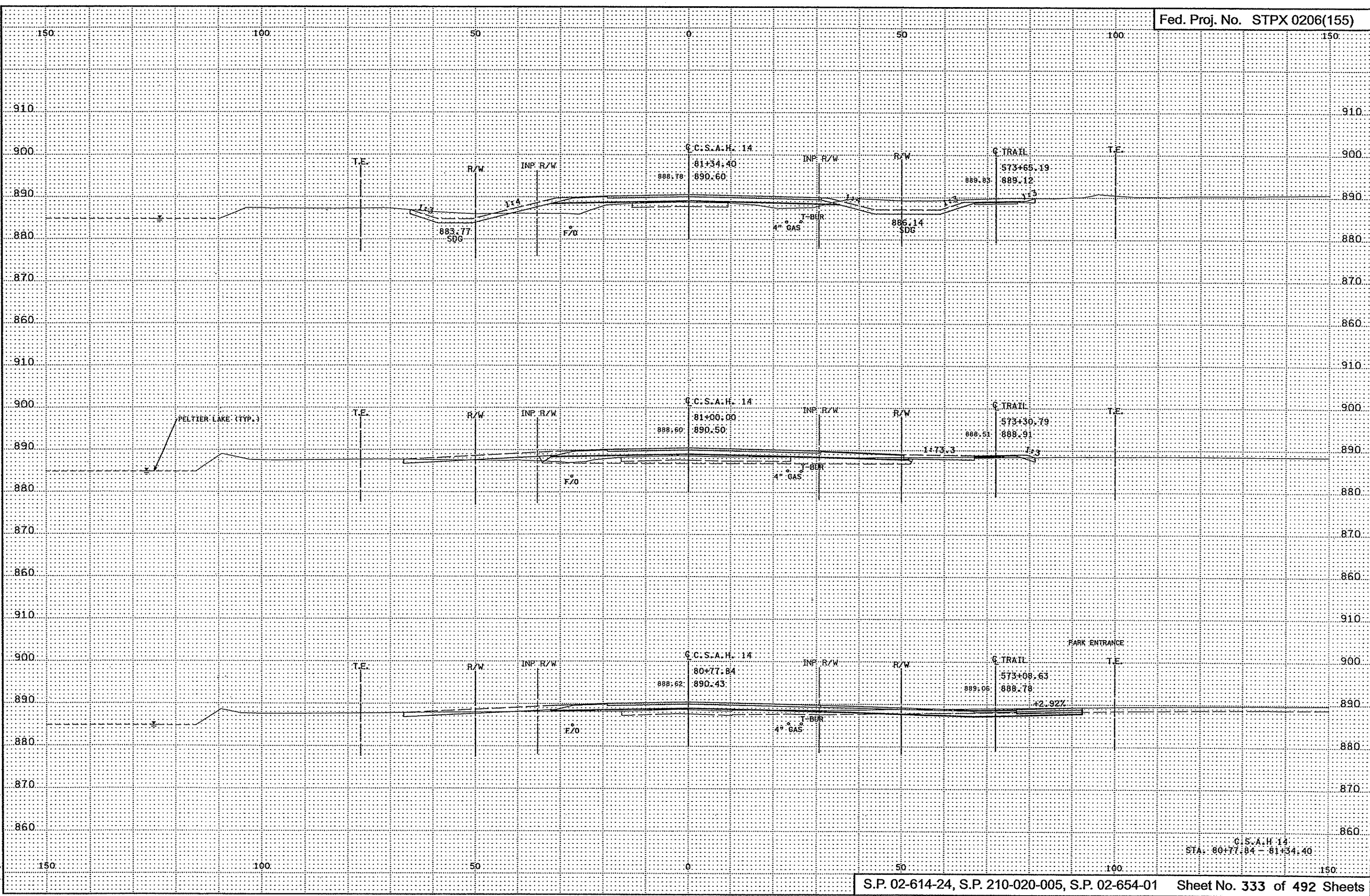
I:\98451.PW  
3/21/2007  
h:\projects\4894-F\VI-m\vd\gn\4894-F.XSA

C.C.S.A.H. 14  
STA: 78+50.00 - 79+50.00



3:28:52 PM  
3/21/2007  
I:\Projects\4994-F\VT-m\VP\gn\4994-F.XSA

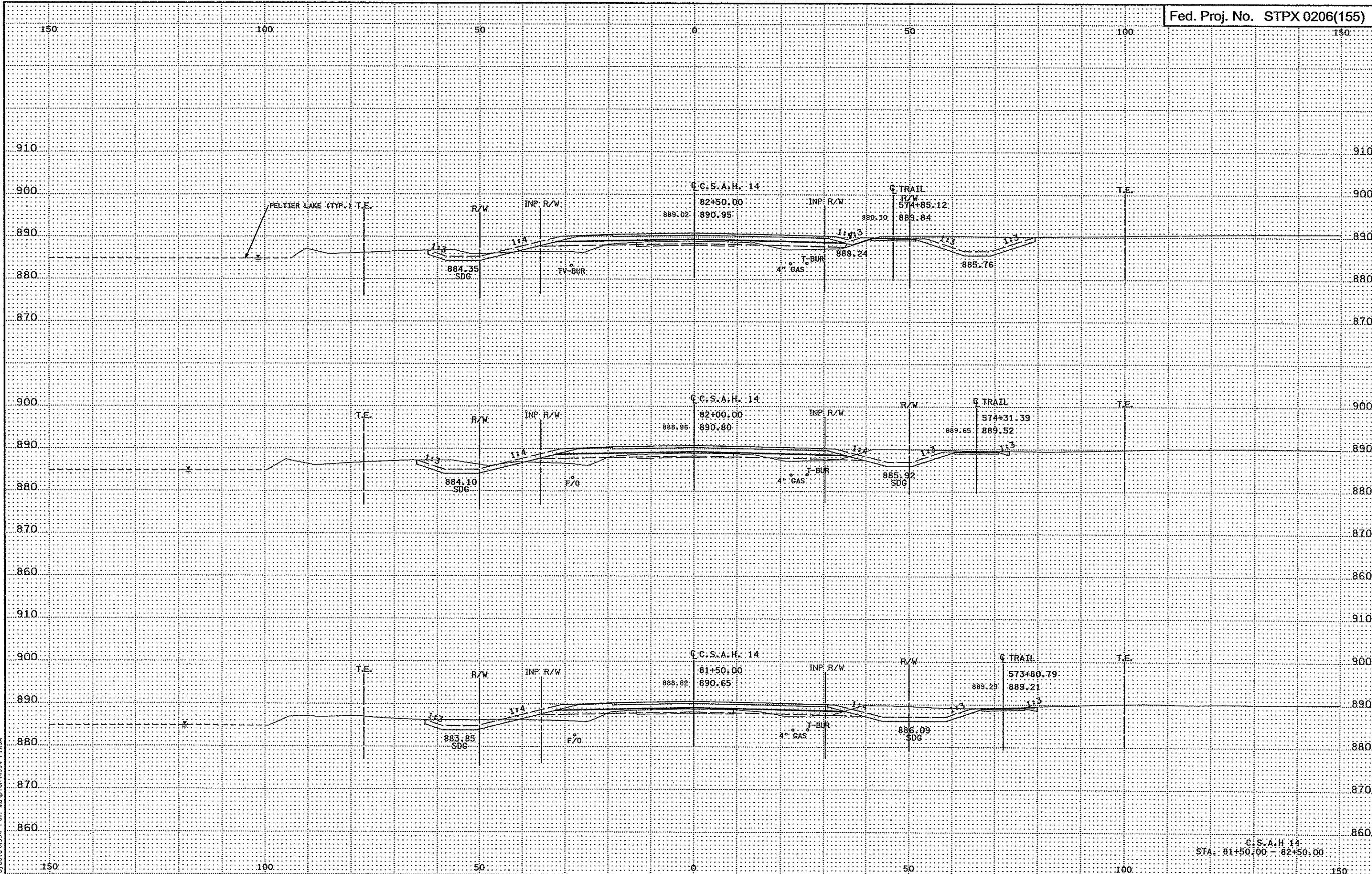
C.S.A.H. 14  
STA: 80+00.00 - 80+50.00



3:28:53 PM  
3/21/2007  
h:\projects\4994-f\h1-m\p1\on\4994-f\_xsa

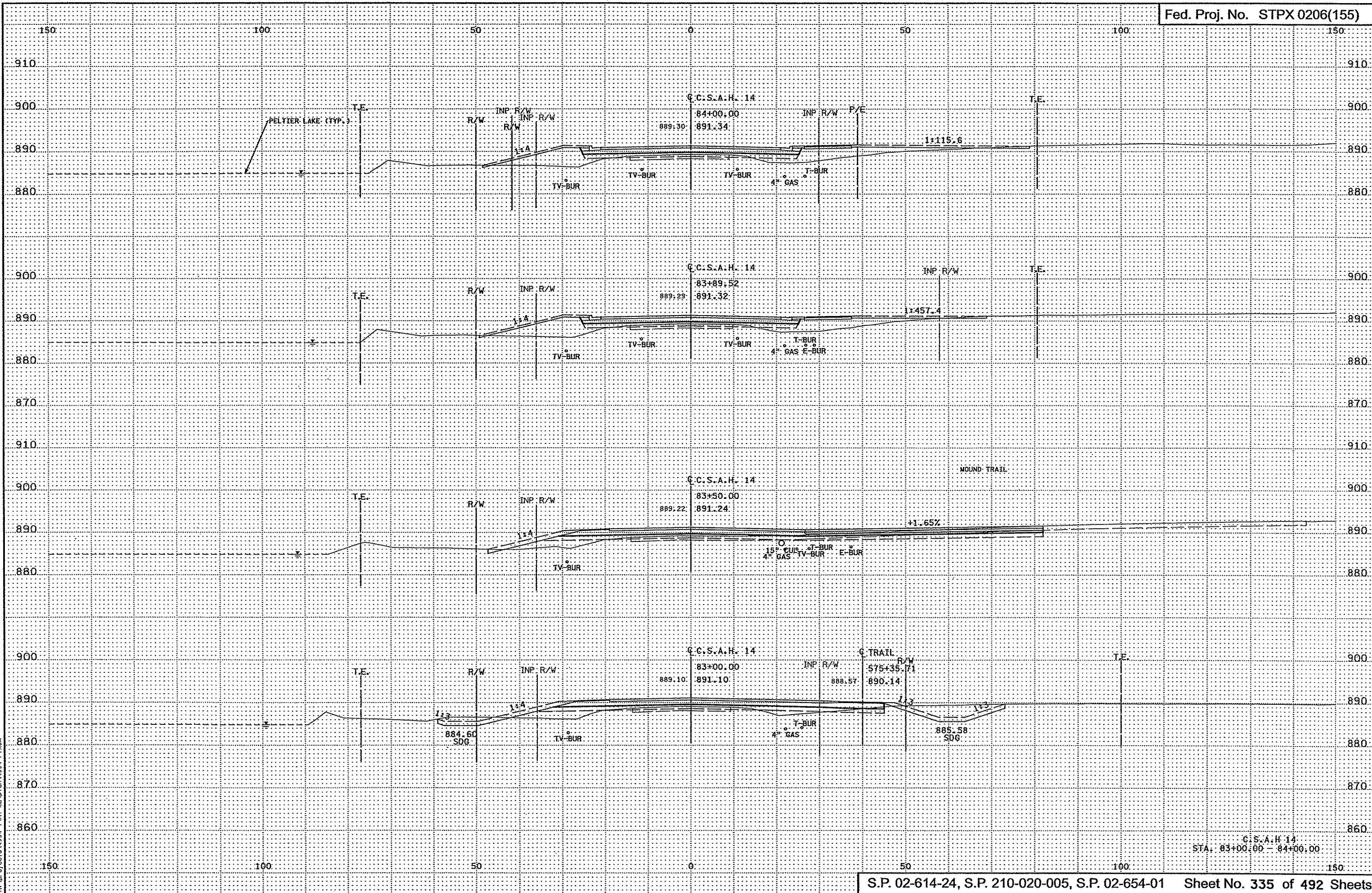
C.S.A.H. 14  
STA: 80+77.84 - 81+34.40



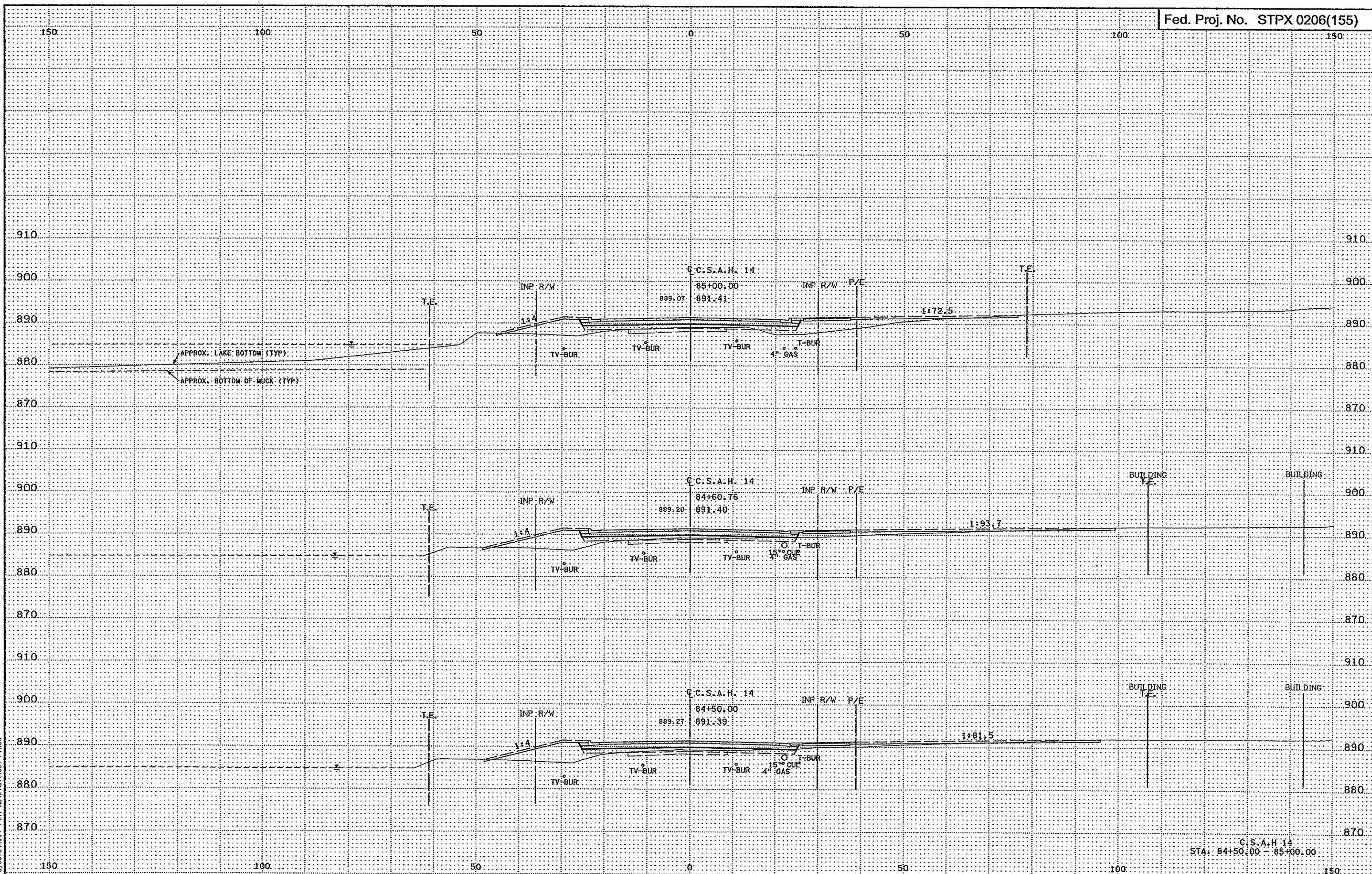


3/28/04 PW  
3/21/2007  
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C.C.S.A.H. 14  
STA: 81+50.00 - 82+50.00

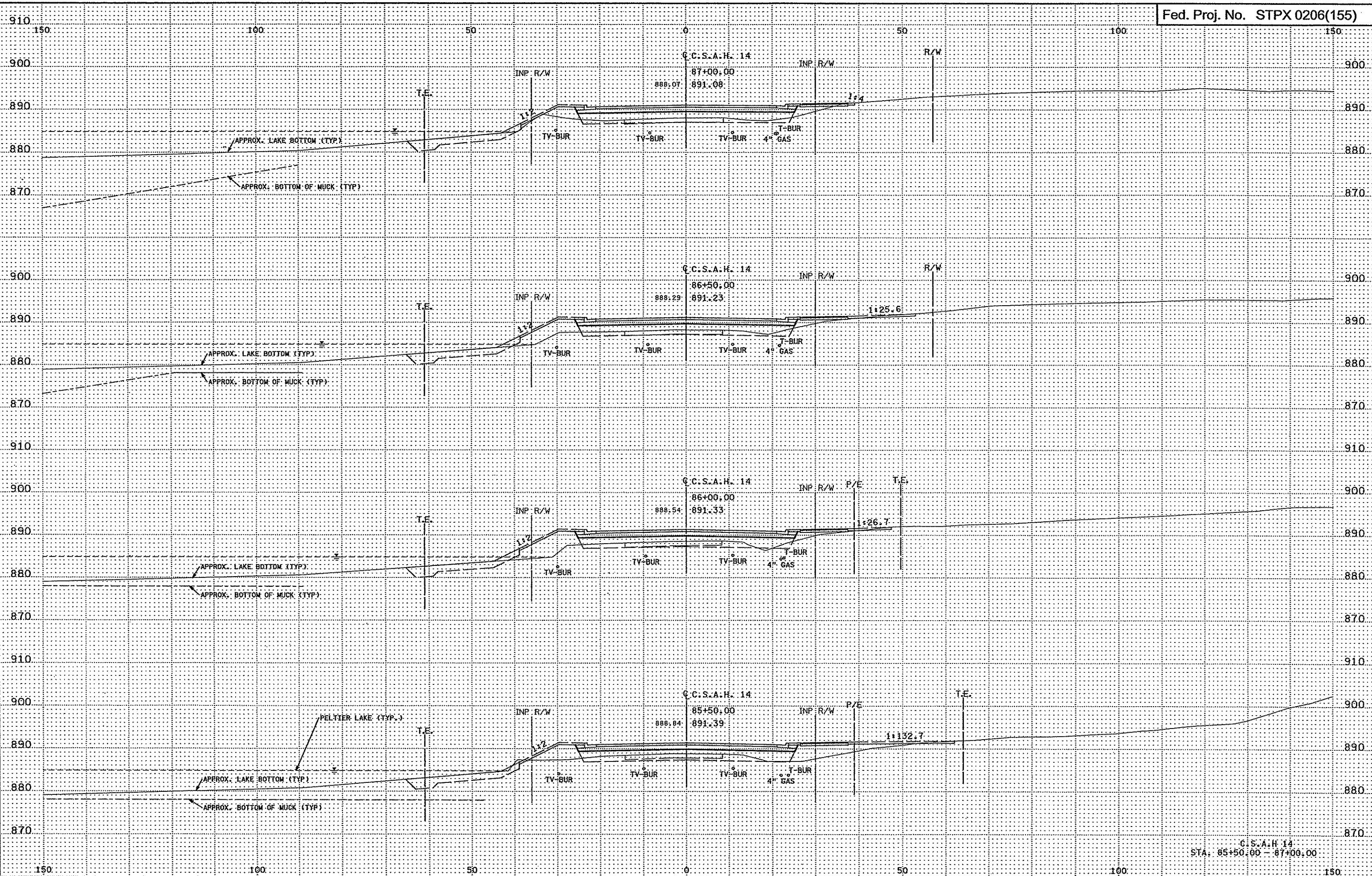


1:28155 BH  
3/2/2007  
h:\projects\4994-f\h1-mu\p1\m\4994-f\_xsa



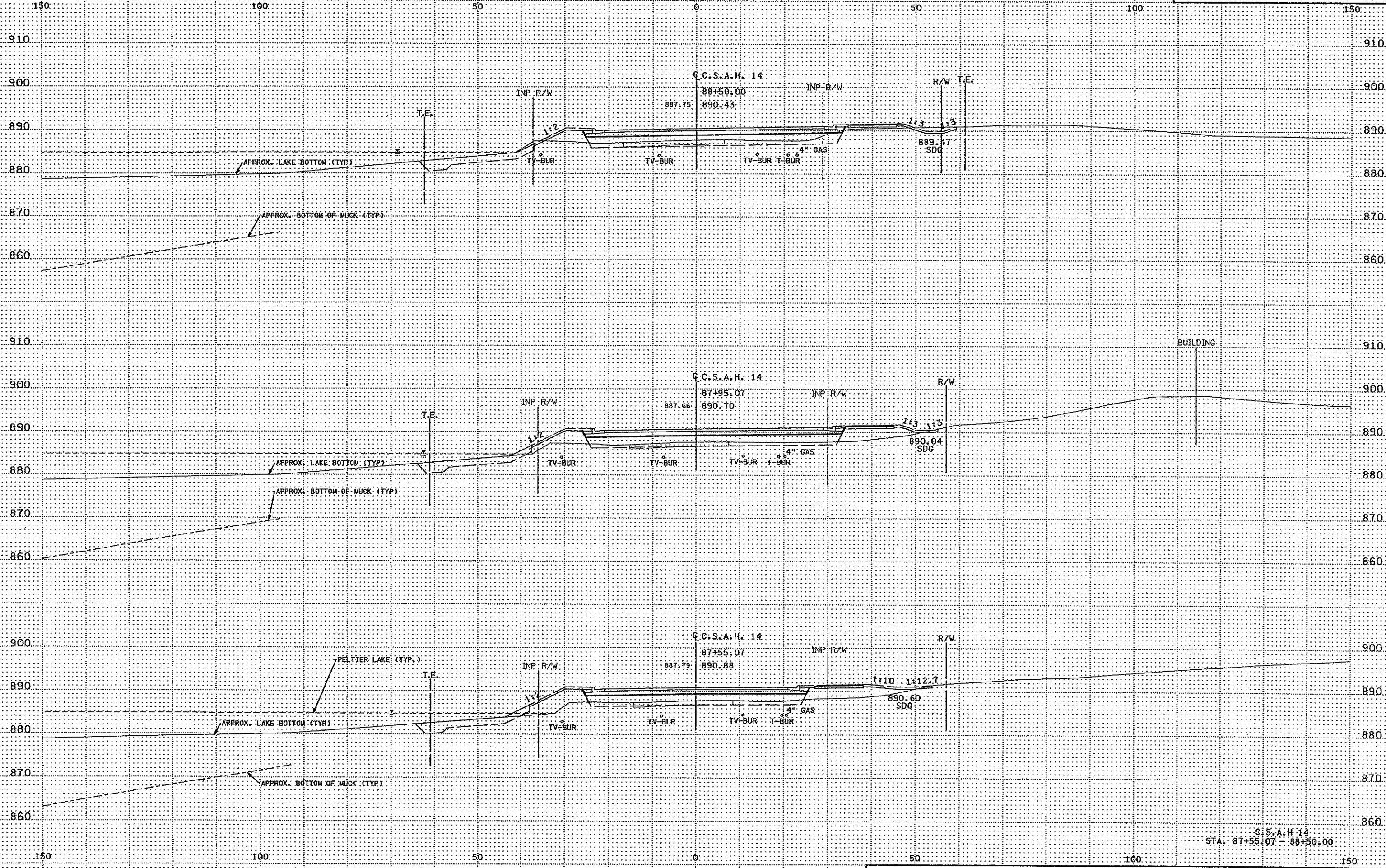
C.C.S.A.H. 14  
STA: 84+50.00 - 85+00.00

3:28:56 PM  
3/21/2007  
H:\Projects\4994-F\VI-m\VP\m\4994-F.XSA



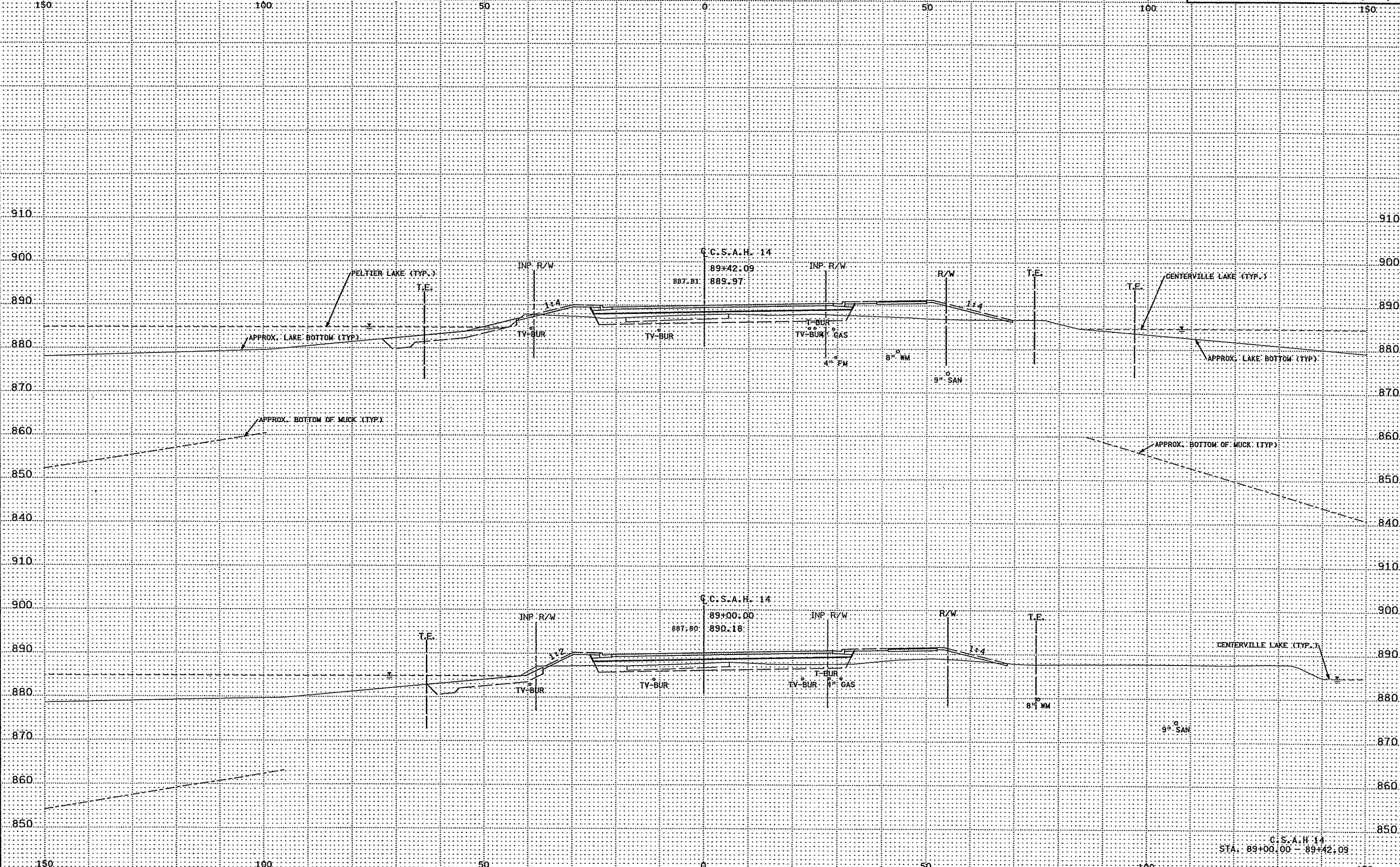
1:281 ET, PA  
3/21/2007  
h:\proj\ecrs\4994-f\h1-m\p\cm\4994-f\_xsa

C.S.A.H. 14  
STA. 85+50.00 - 87+00.00



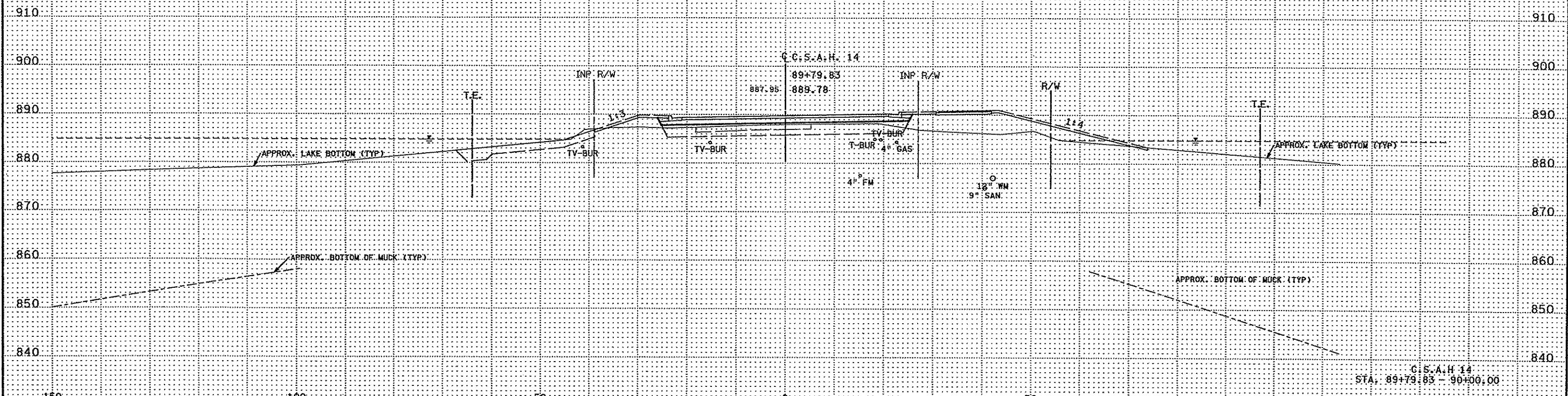
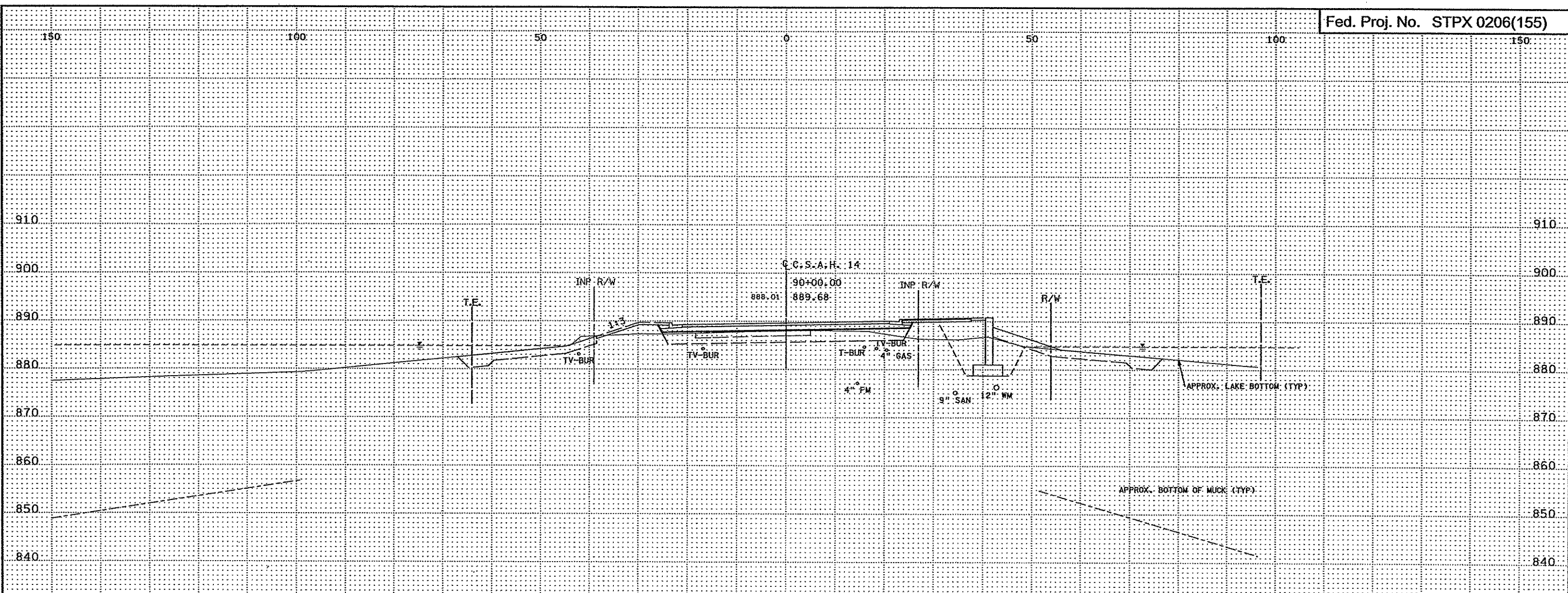
3/28/58 PM  
3/21/2007  
ht:\projects\4994-F\N\1-m\N\1-on\4994-F.XSA

C.S.A.H. 14  
STA. 87+55.07 - 88+50.00



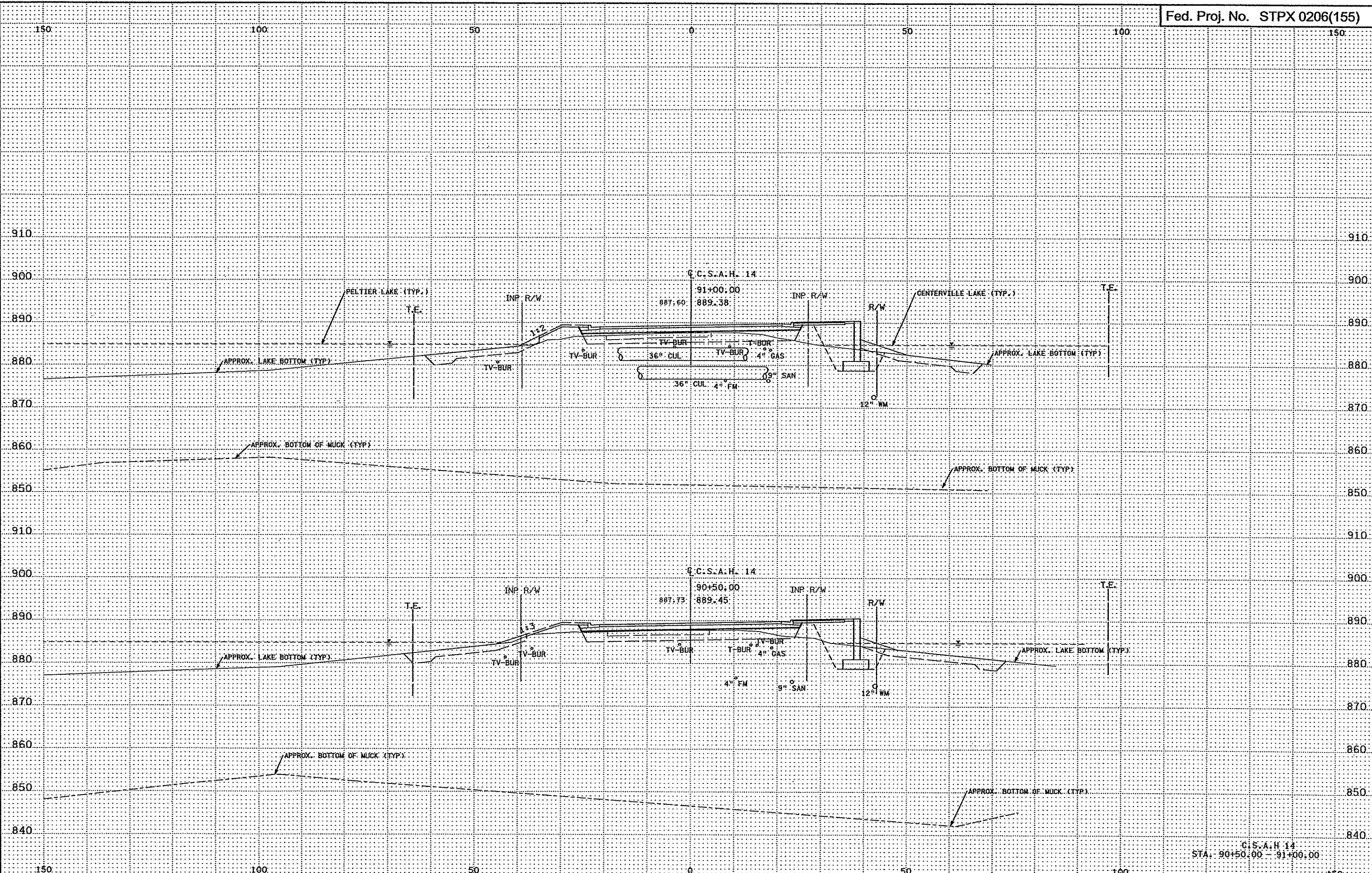
3/28/58 PM  
3/17/60  
D:\proj\stpx\4994-T\1-ml\01\4994-F.dwg

C.C.S.A.H. 14  
STA. 89+00.00 - 89+42.09



C.C.S.A.H. 14  
STA. 89+79.83 - 90+00.00

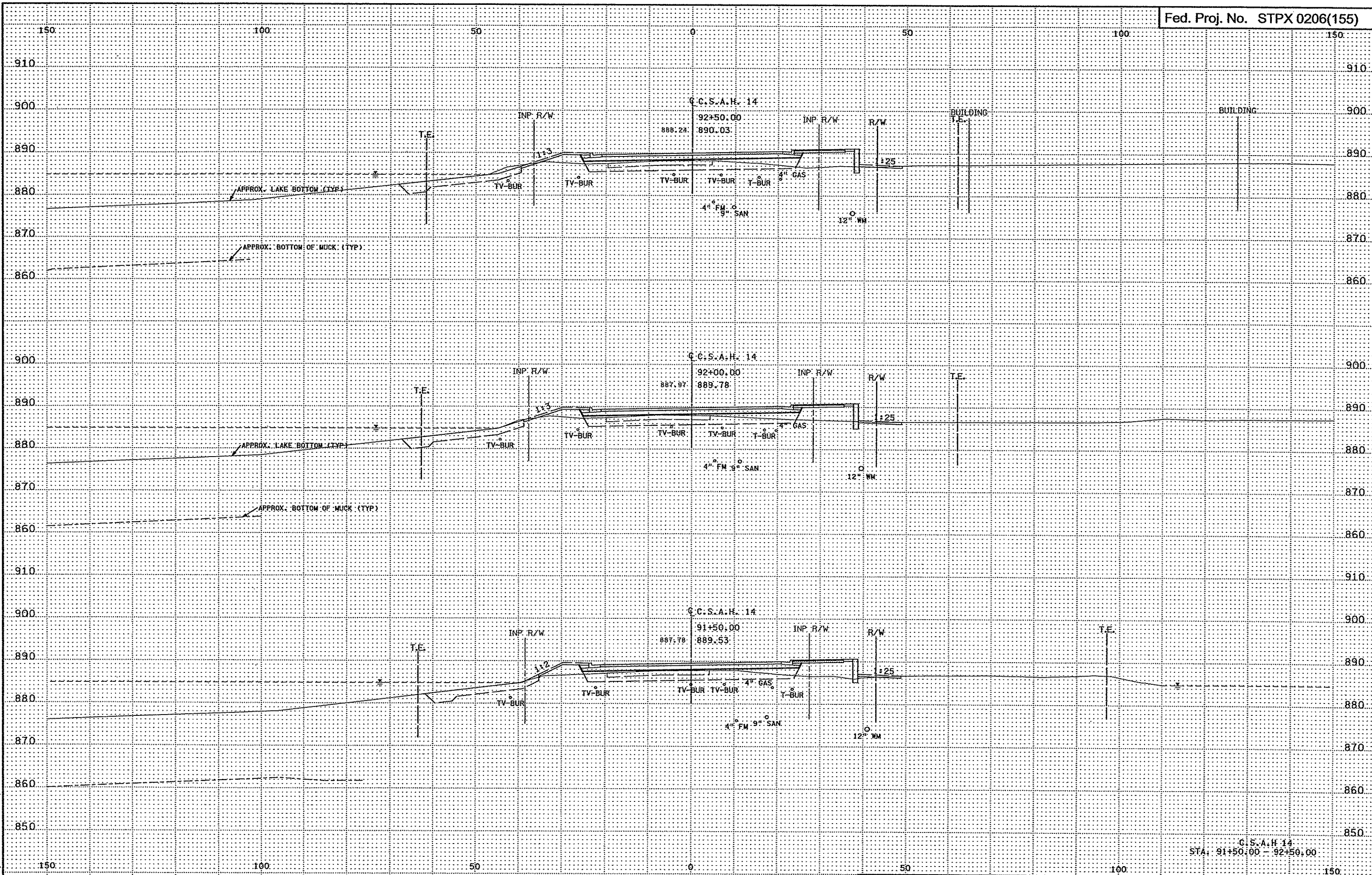
3:29:00 PM  
3/21/2007  
H:\Projects\4994-F\1-m\up\gn\4994-F.XSA



3:29:01 PM  
D:\Projects\4994-F\1-ROAD\1-ROAD\1-ROAD\4994-F.XSA

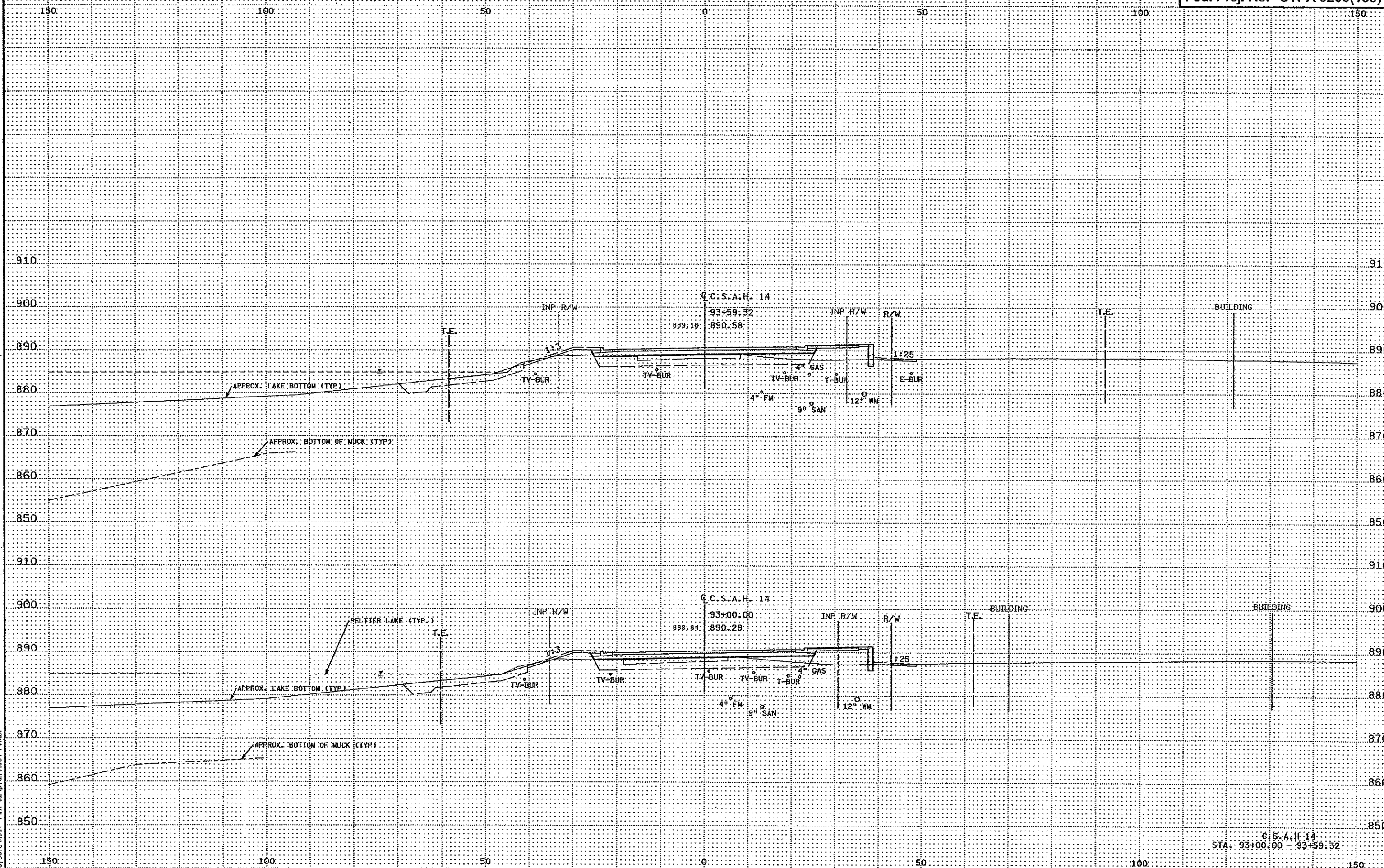
C.S.A.H. 14  
STA. 90+50.00 - 91+00.00





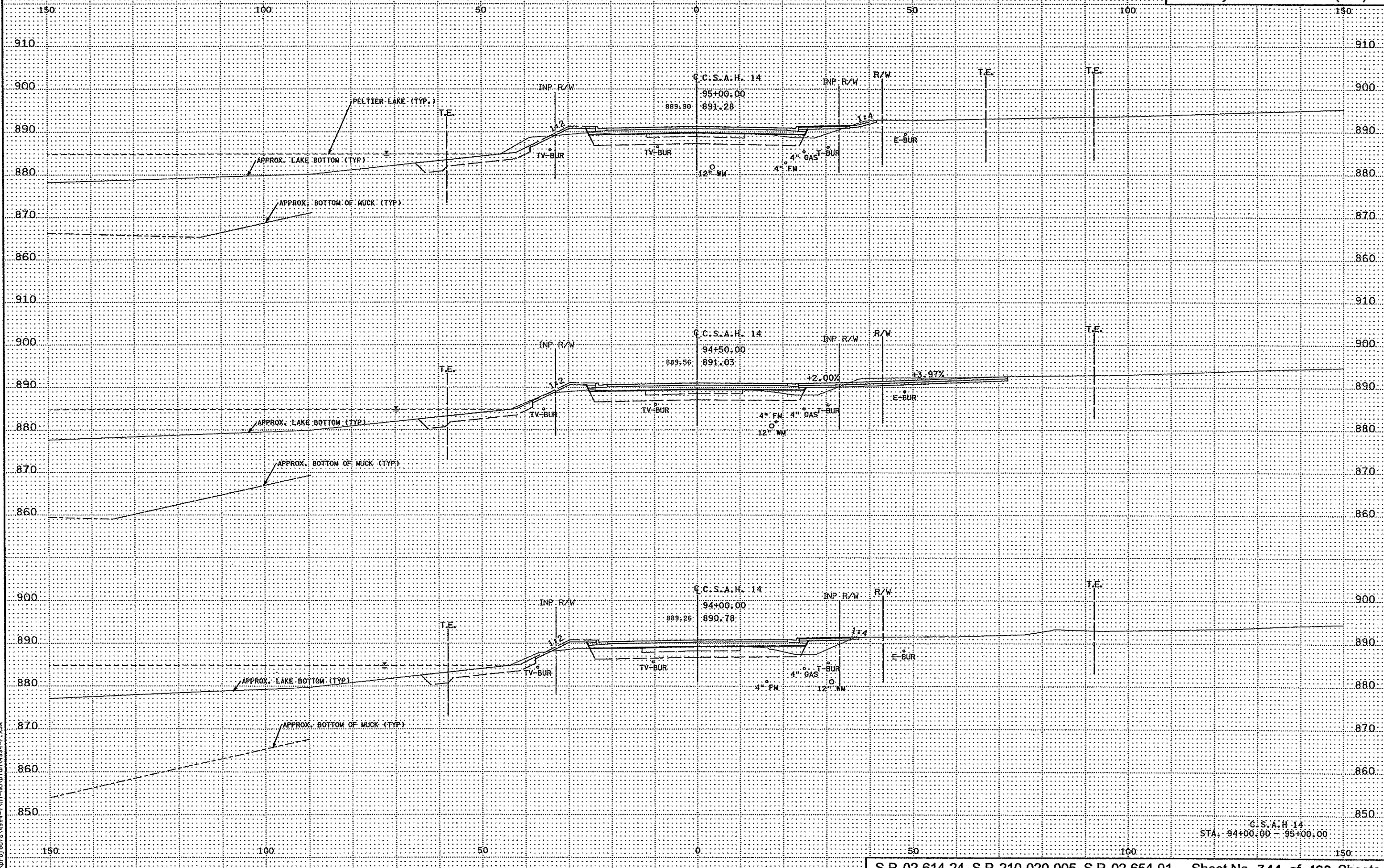
C.S.A.H. 14  
STA: 91+50.00 - 92+50.00

3:29:02 PM  
3/21/2007  
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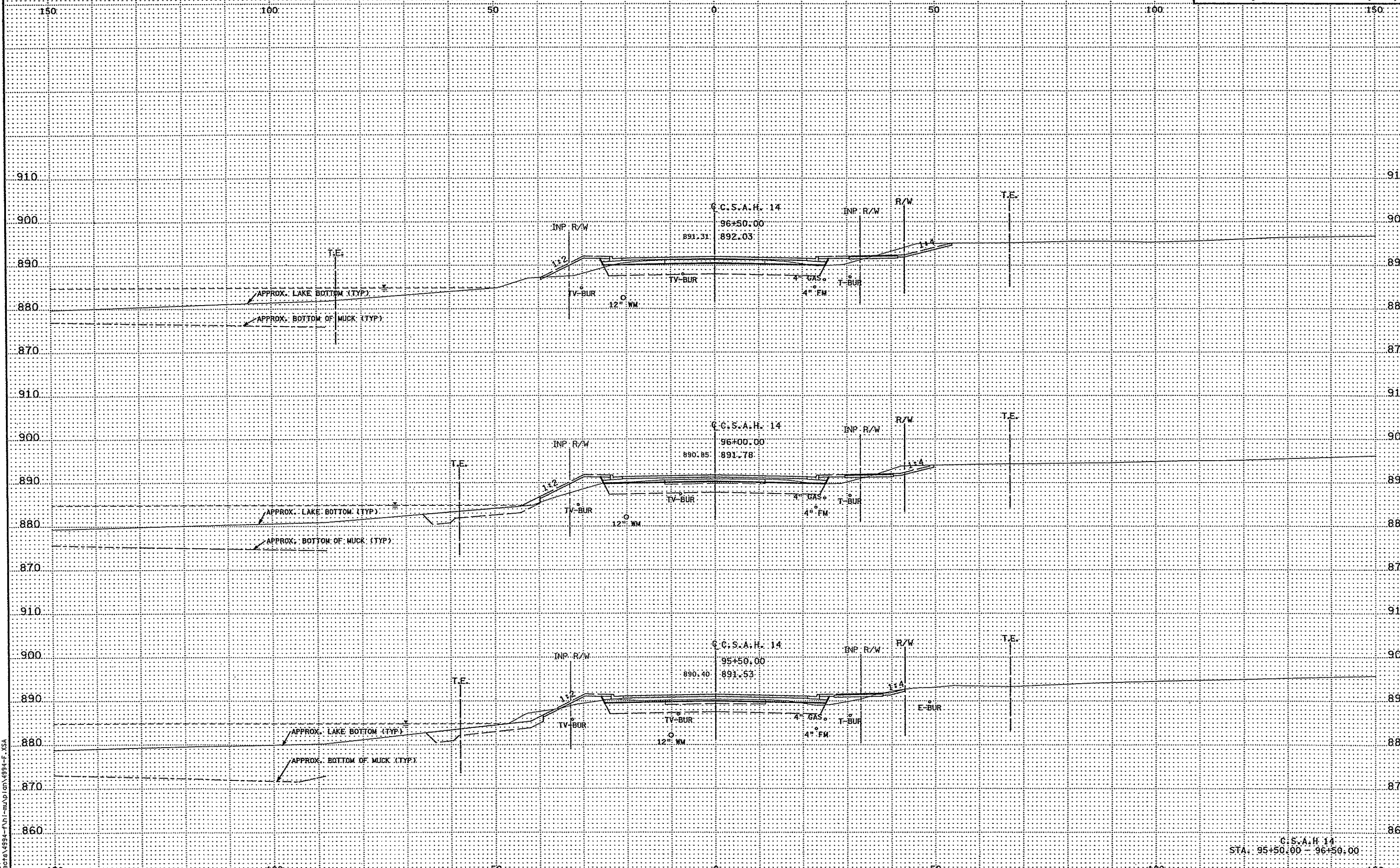
3:29:03 PM  
3/21/2007  
ht:\proj\ecotr\4994-fnhl-mud\on\4994-f\_xsa

C.S.A.H. 14  
STA: 93+00.00 - 93+59.32



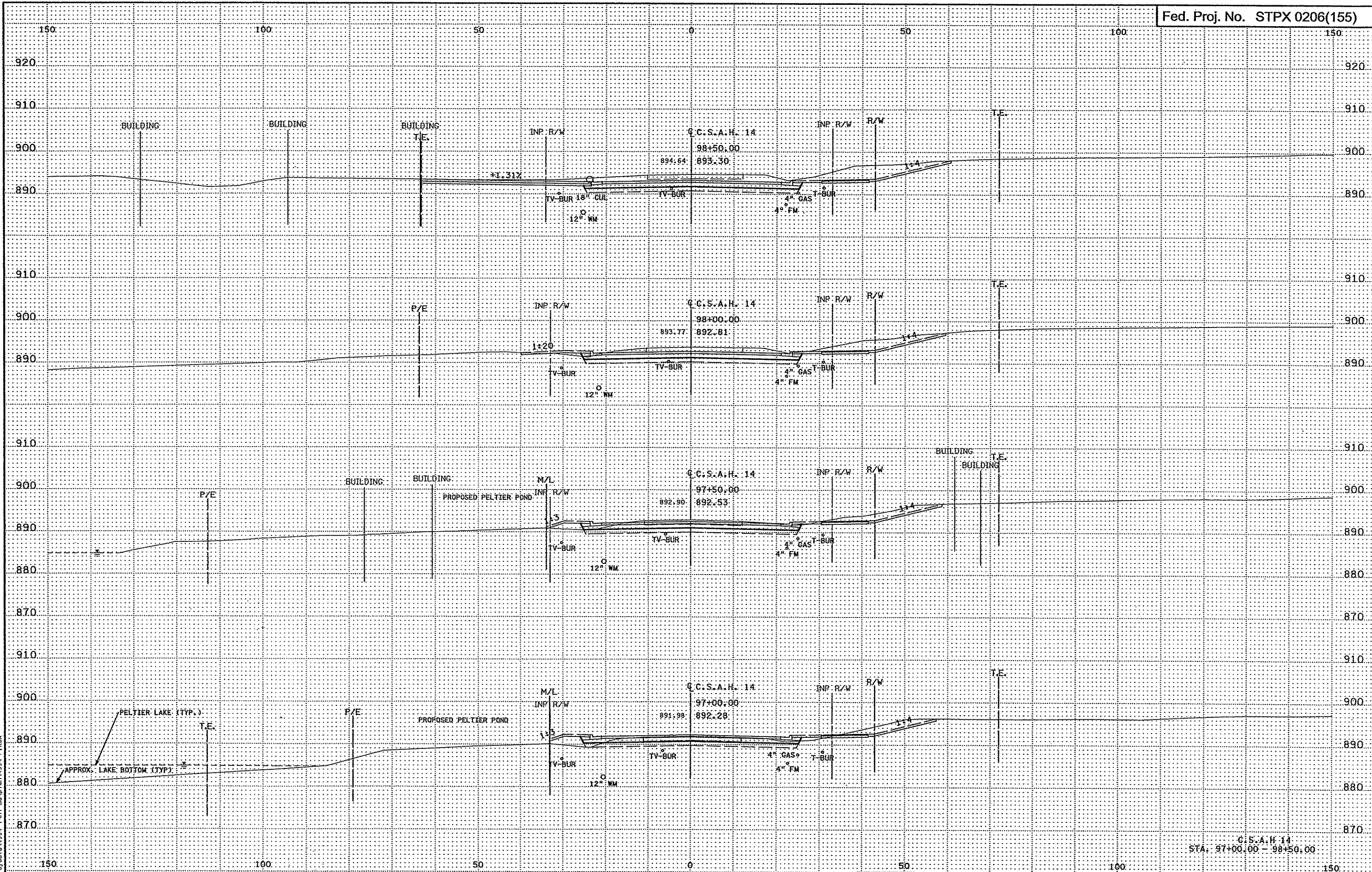
3:29:05 PM  
3/21/2007  
D:\projects\4994-F\A\1-m\A\1on\4994-F.XSA

C.S.A.H. 14  
STA: 94+00.00 - 95+00.00



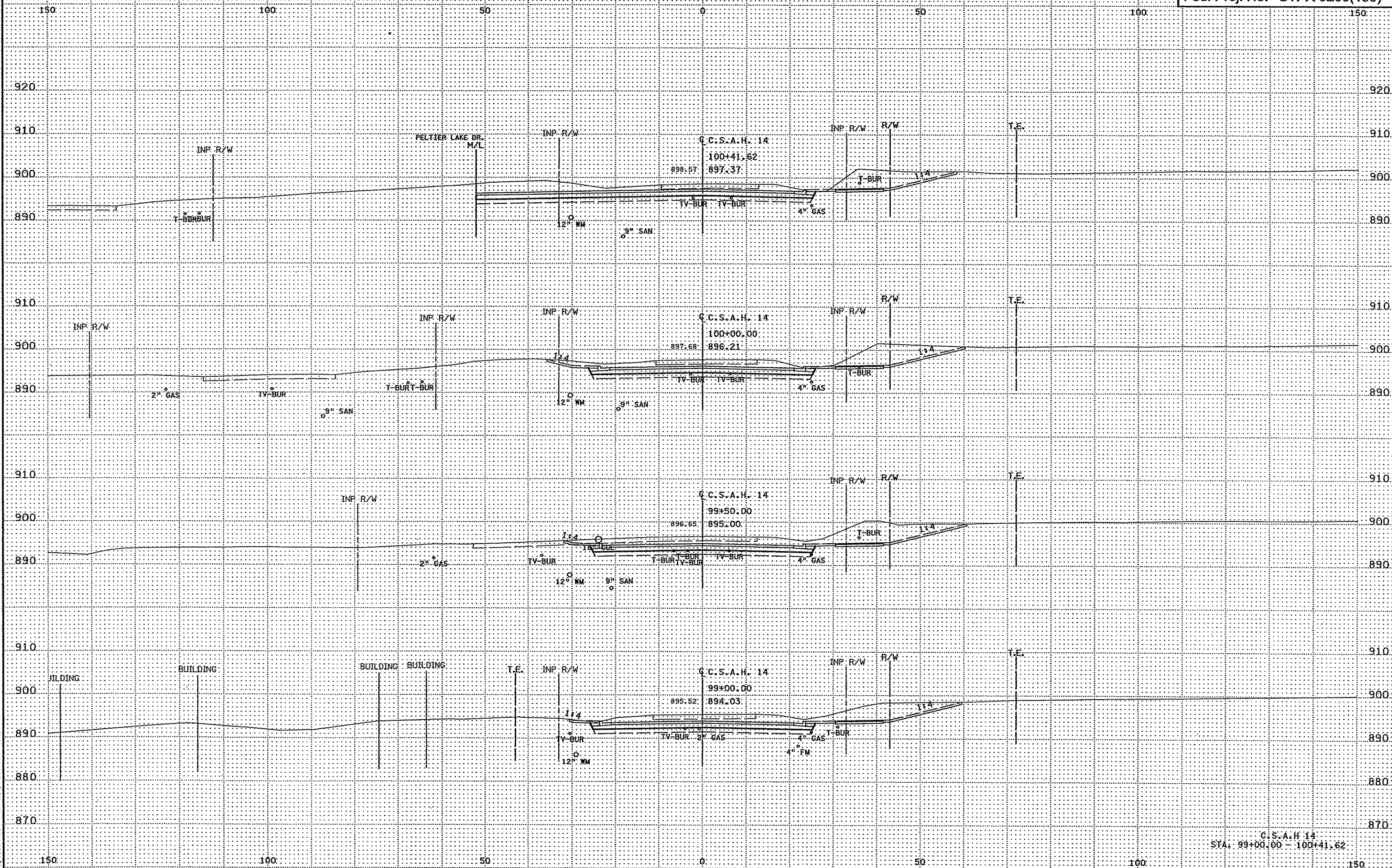
3:29:06 PM  
3/21/2007  
H:\projects\4994-F\1-m\AD\1m\4994-F.XSA

C.C.S.A.H. 14  
STA. 95+50.00 - 96+50.00



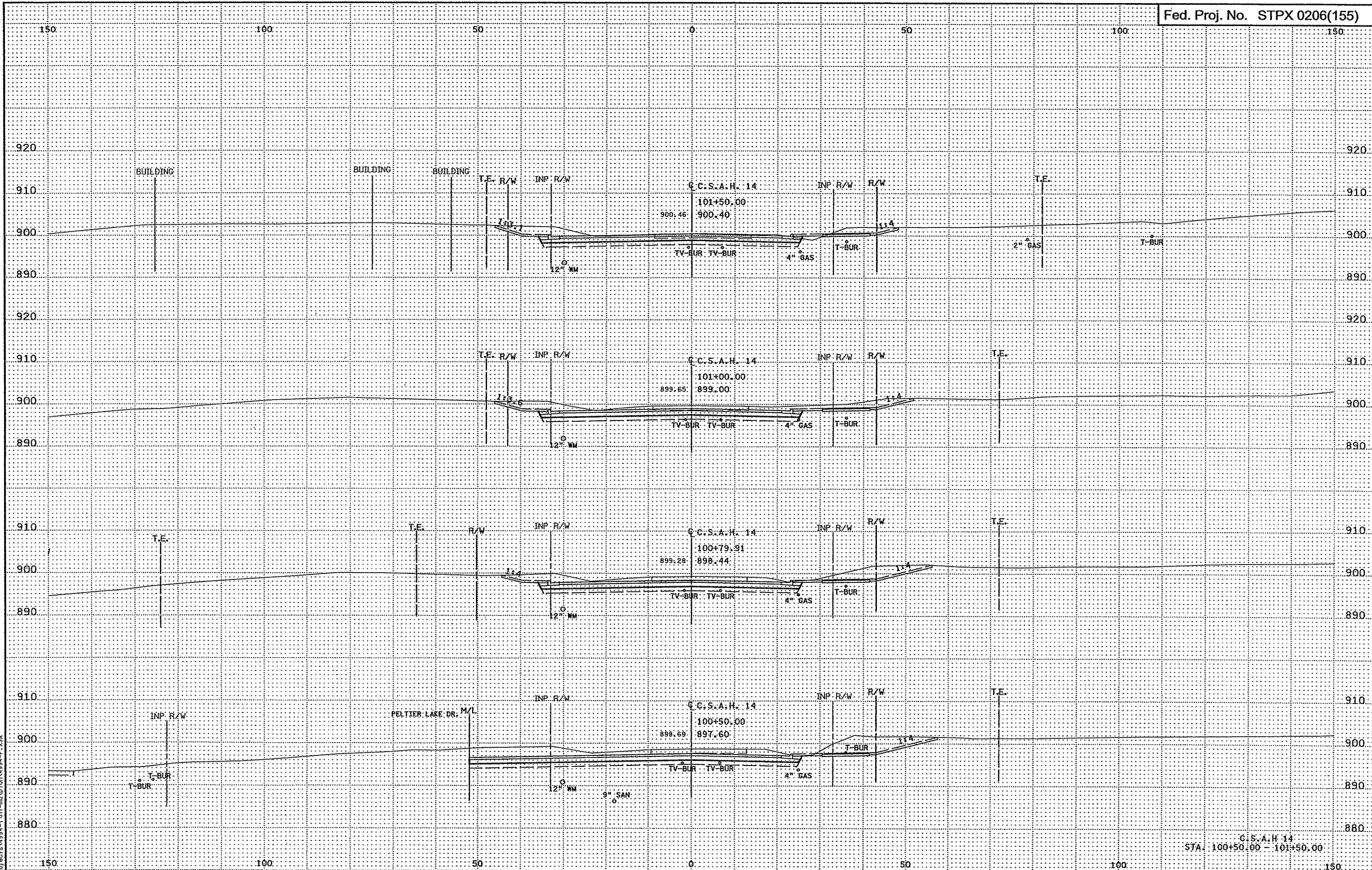
3:29:07 PM  
3/21/2007  
P:\Projects\4994-F\VI-MVD\04\4994-F.XSA

C.S.A.H. 14  
STA: 97+00.00 - 98+50.00



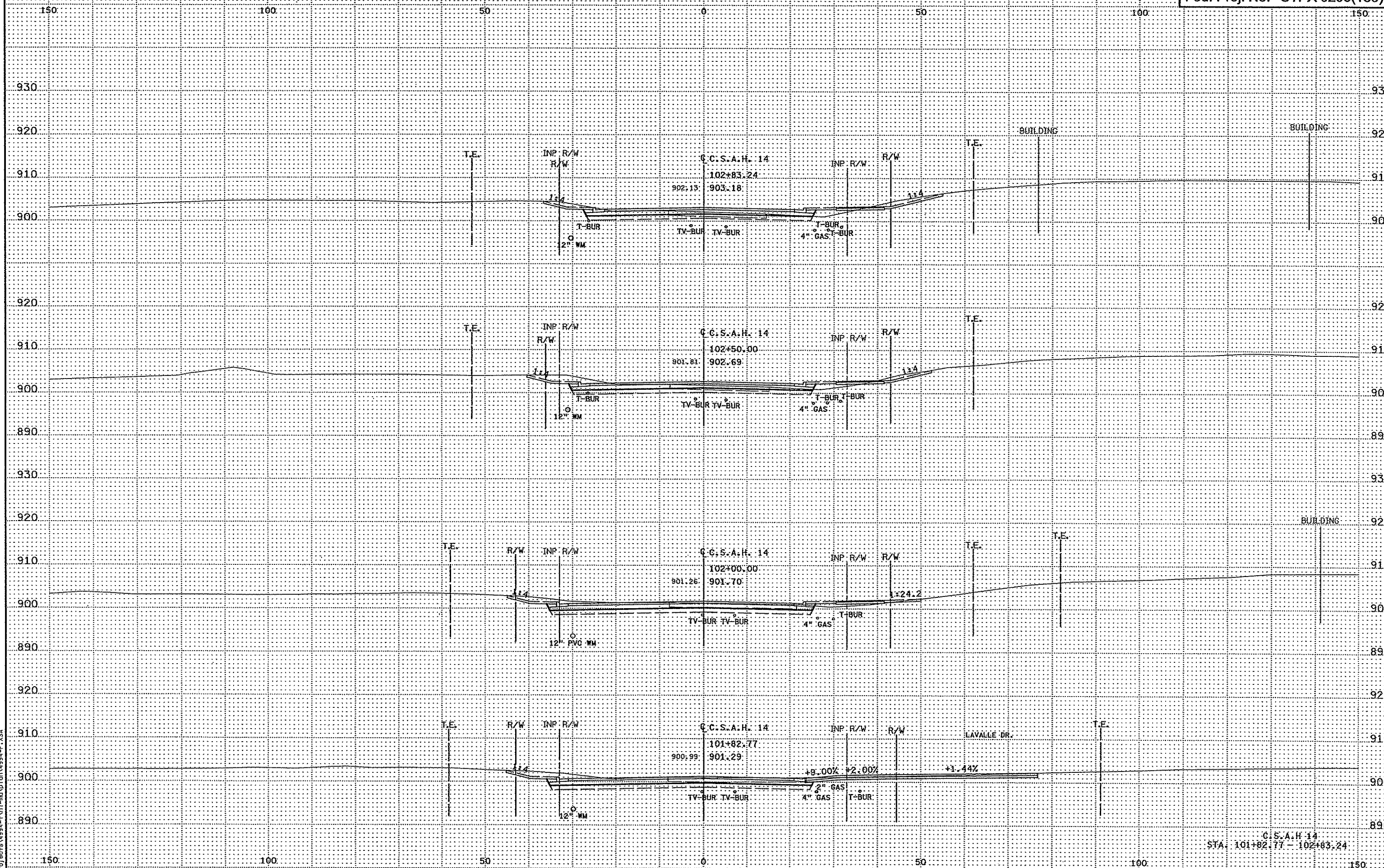
3:29:08 PM  
3/21/2007  
H:\Projects\4994-F\1-m\A\1014894-F.XSA

C.C.S.A.H. 14  
STA: 99+00.00 - 100+41.62



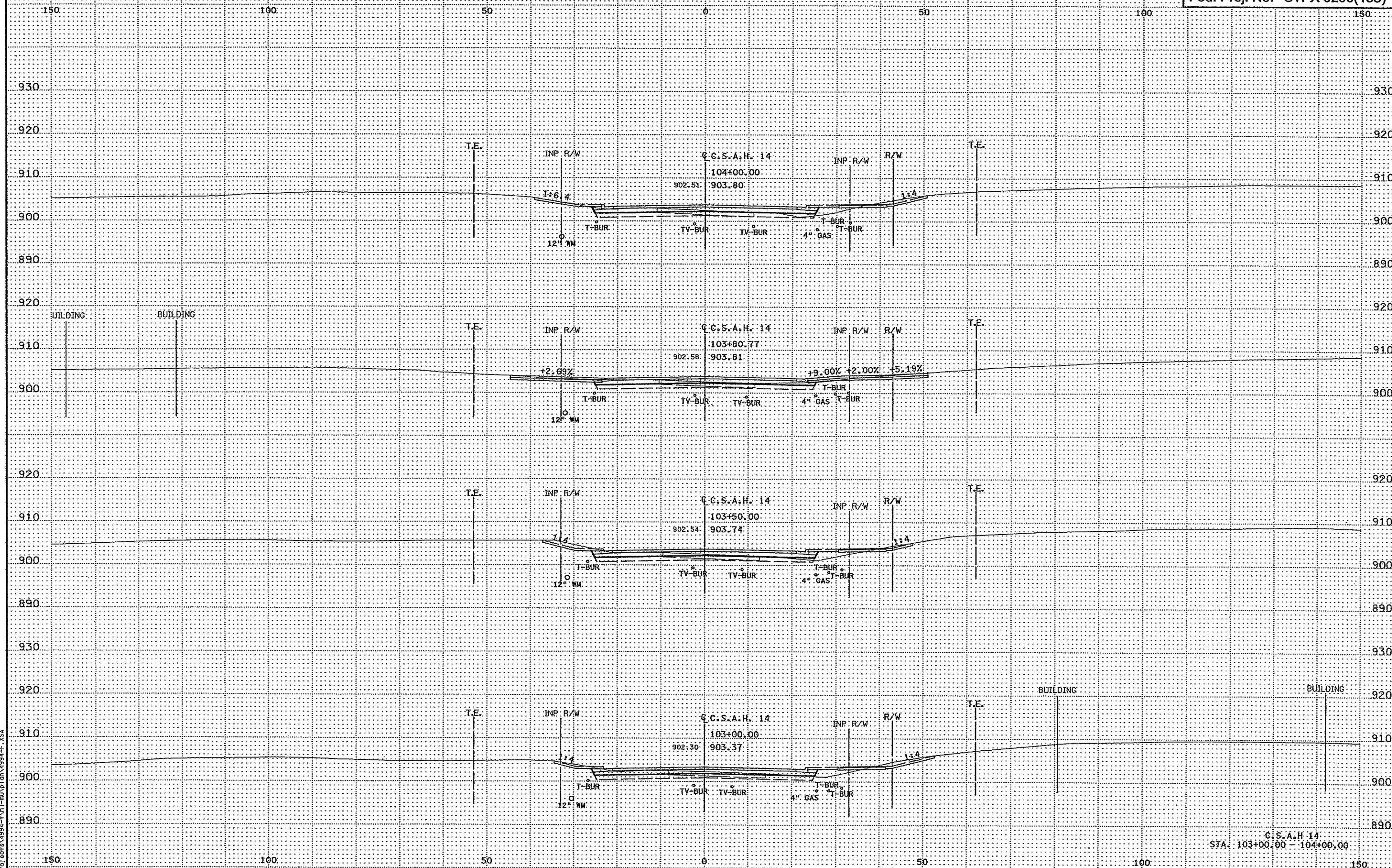
3/29/08 BH  
3/21/2007  
h:\proj\sects\4994-f\h1-m\map\on\4994-f\_x34

C.C.S.A.H. 14  
STA. 100+50.00 - 101+50.00



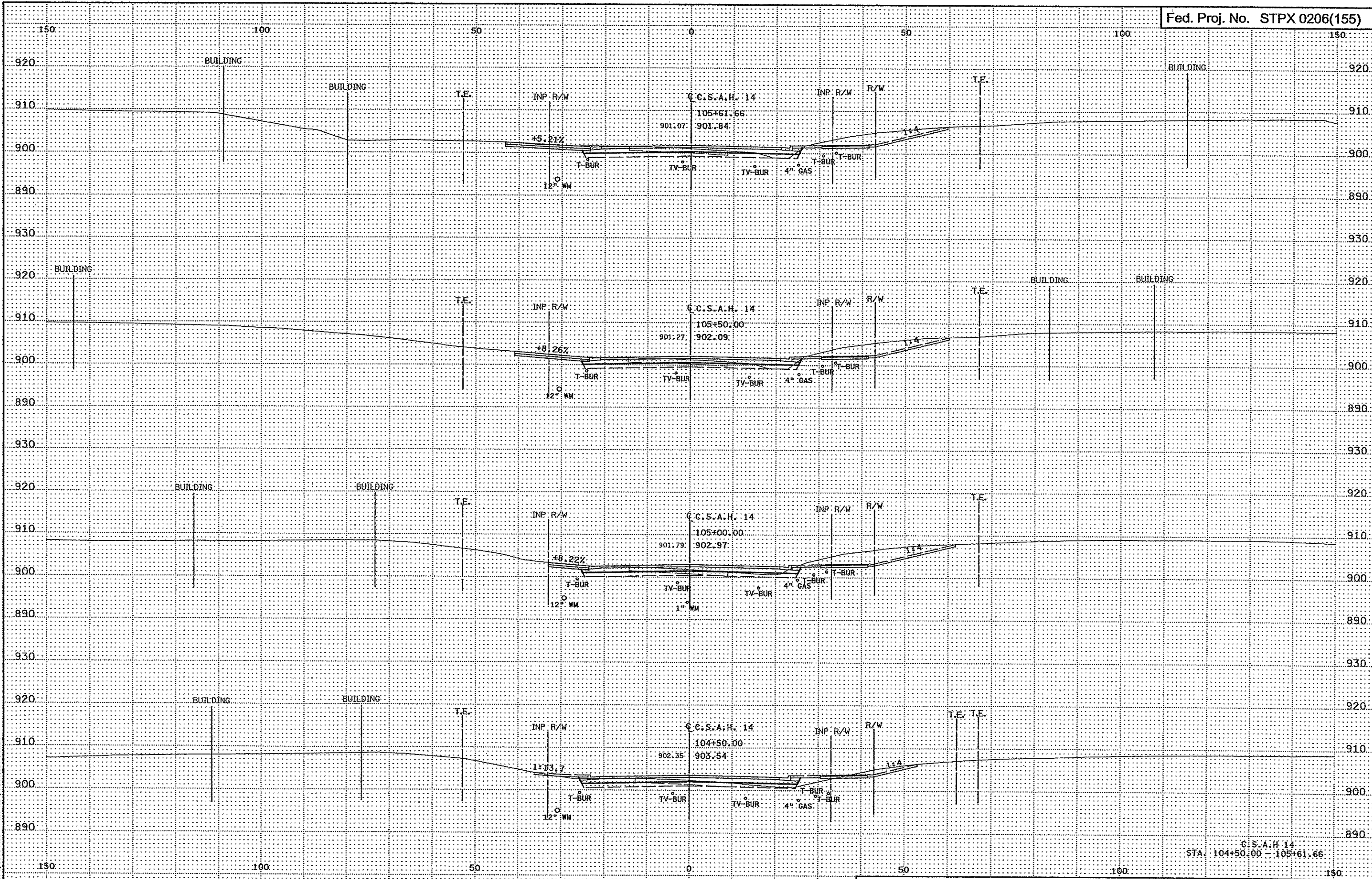
1:25 10 RW  
3/21/2007  
P:\Projects\4994-F\1-m\1-m\1-m\4994-F.XSA





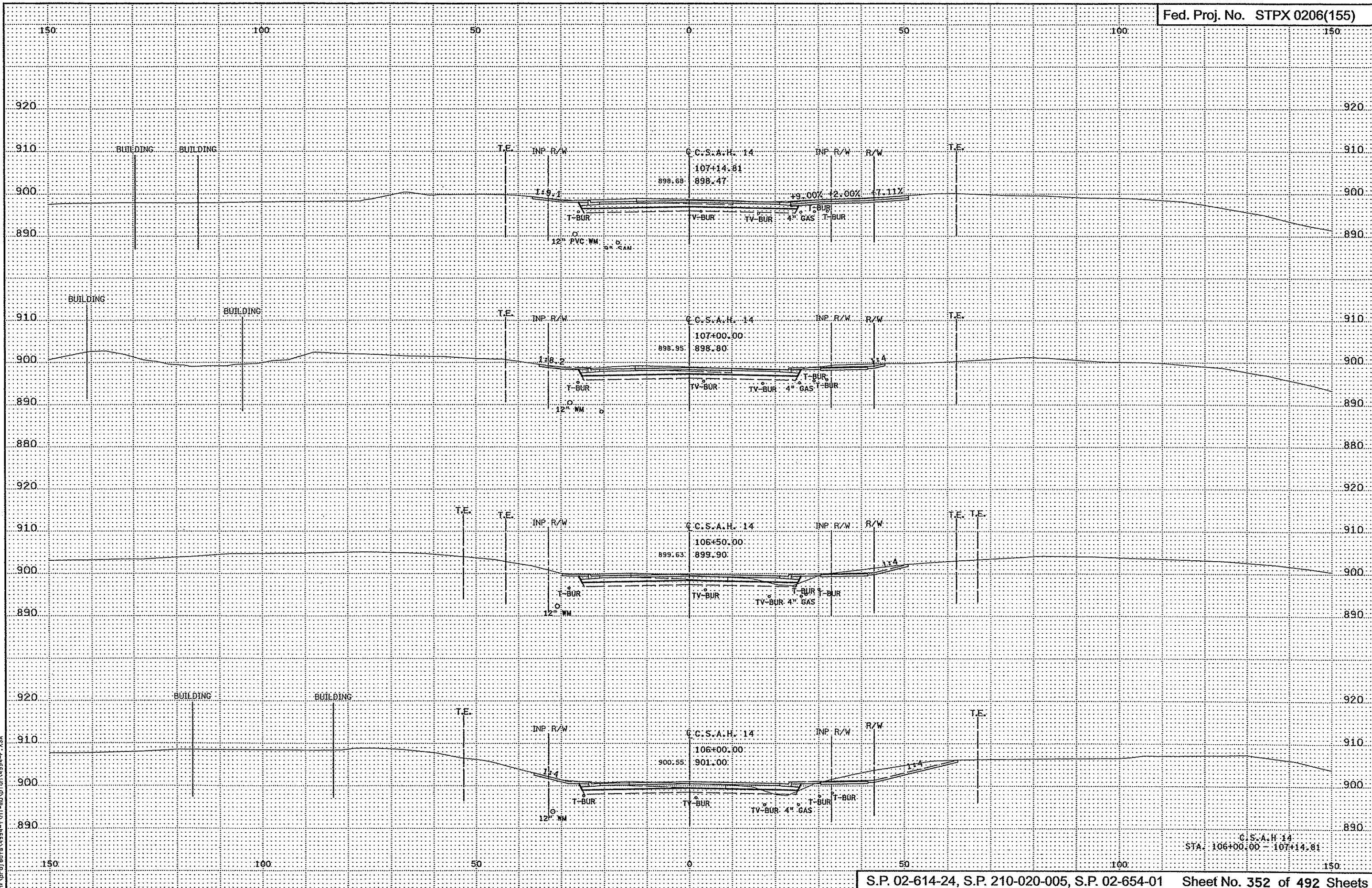
3:23:11 PM  
7/21/2006  
P:\proj\stpx\4994-F-14\mxd\en\4994-F\_15A

C.S.A.H. 14  
STA: 103+00.00 - 104+00.00



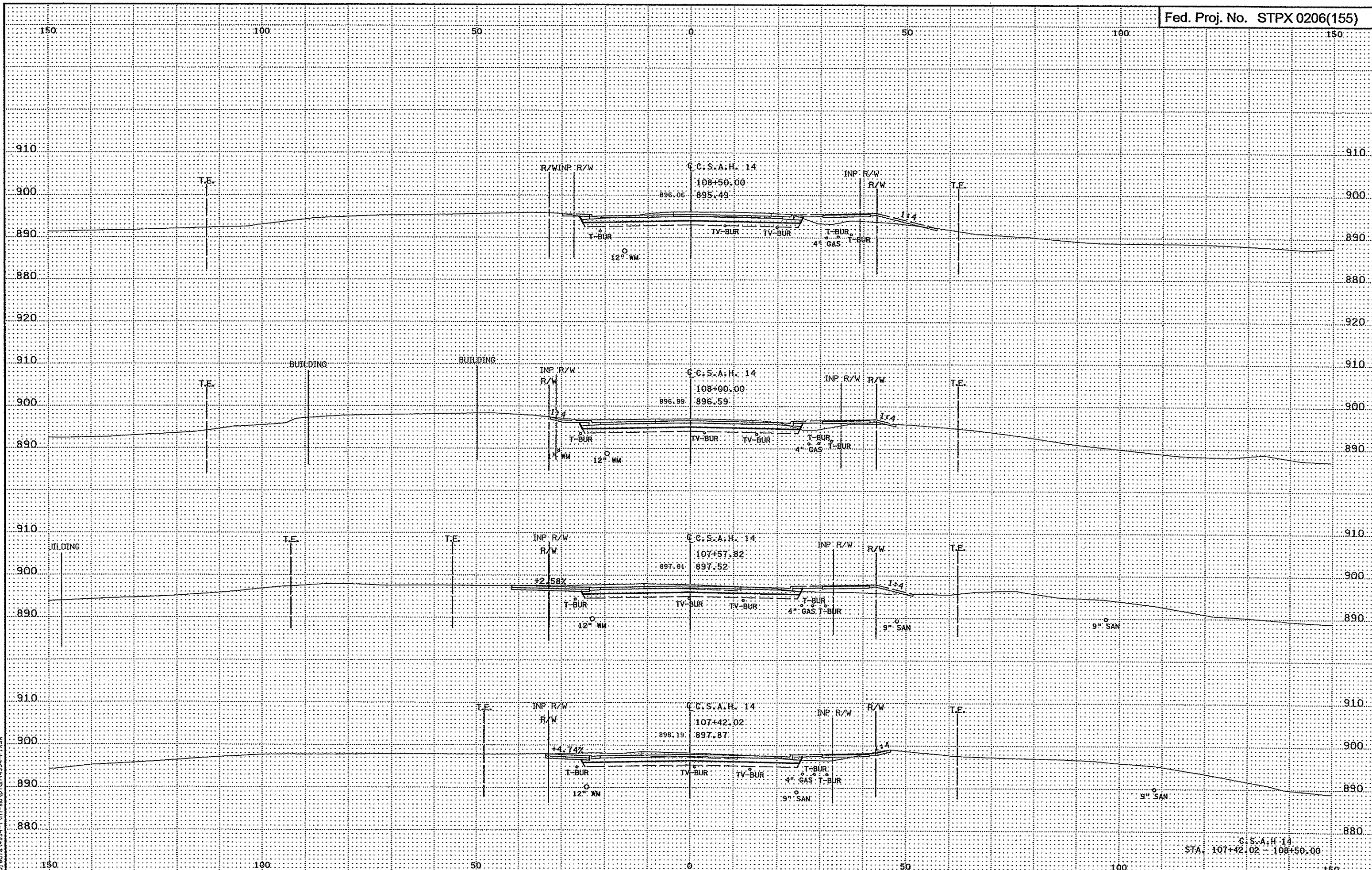
C.C.S.A.H. 14  
STA. 104+50.00 - 105+61.66

T:\2011\12 PM  
3/21/2007  
m:\proj\sectrs\4994-T\VI-m\vd\gn\4994-F.XSA



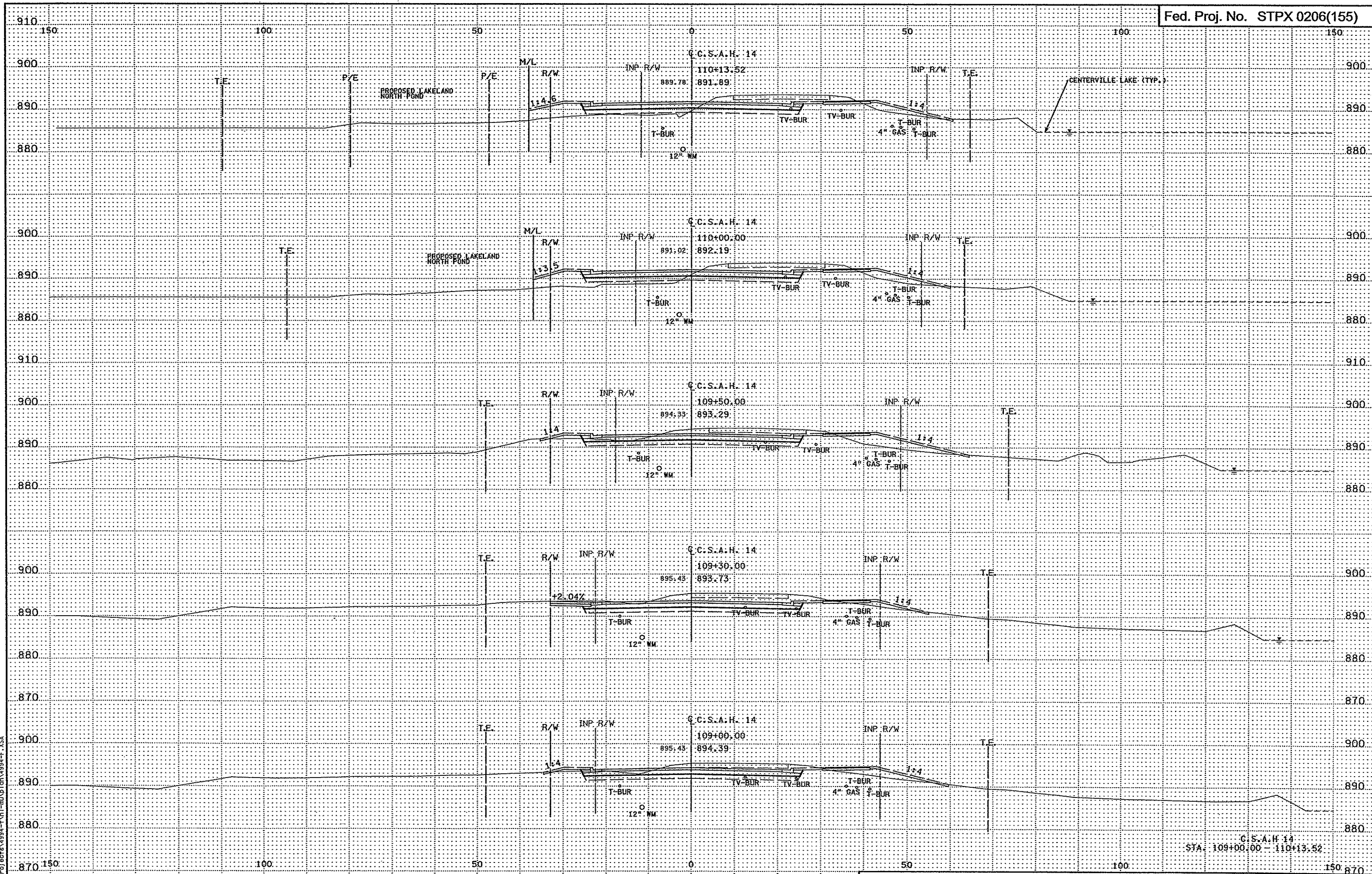
3/29/13 PM  
3/21/2007  
R:\proj\sects\1994-f\h1-m\ad\an\4994-f\_xsa

C.S.A.H. 14  
STA. 106+00.00 - 107+14.81

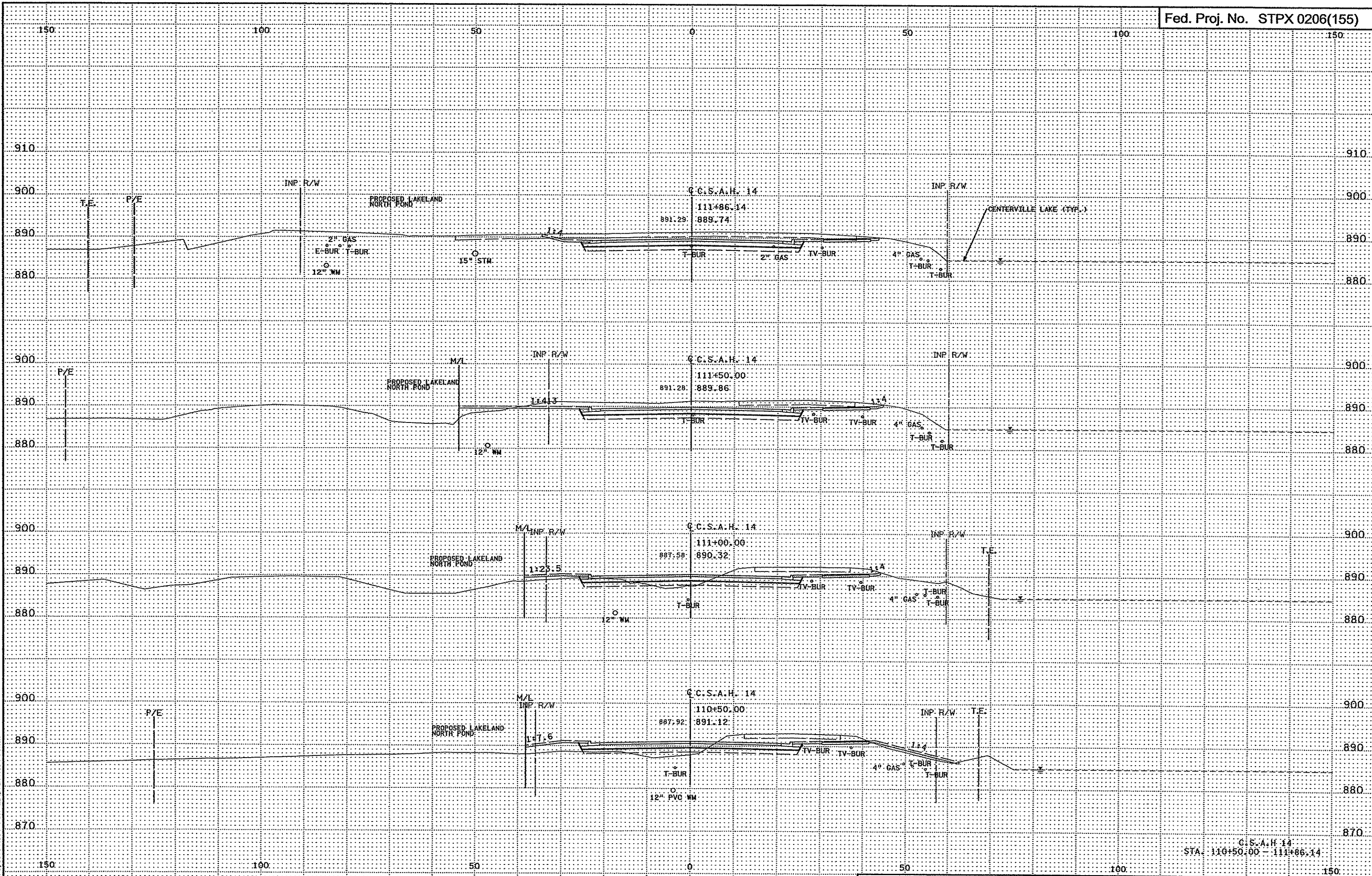


3/21/2007  
3:29:14 PM  
m:\proj\ecrs\4994-f\h1-mu\p1\gn\4994-f.XSA

C.C.S.A.H. 14  
STA. 107+42.02 - 108+50.00

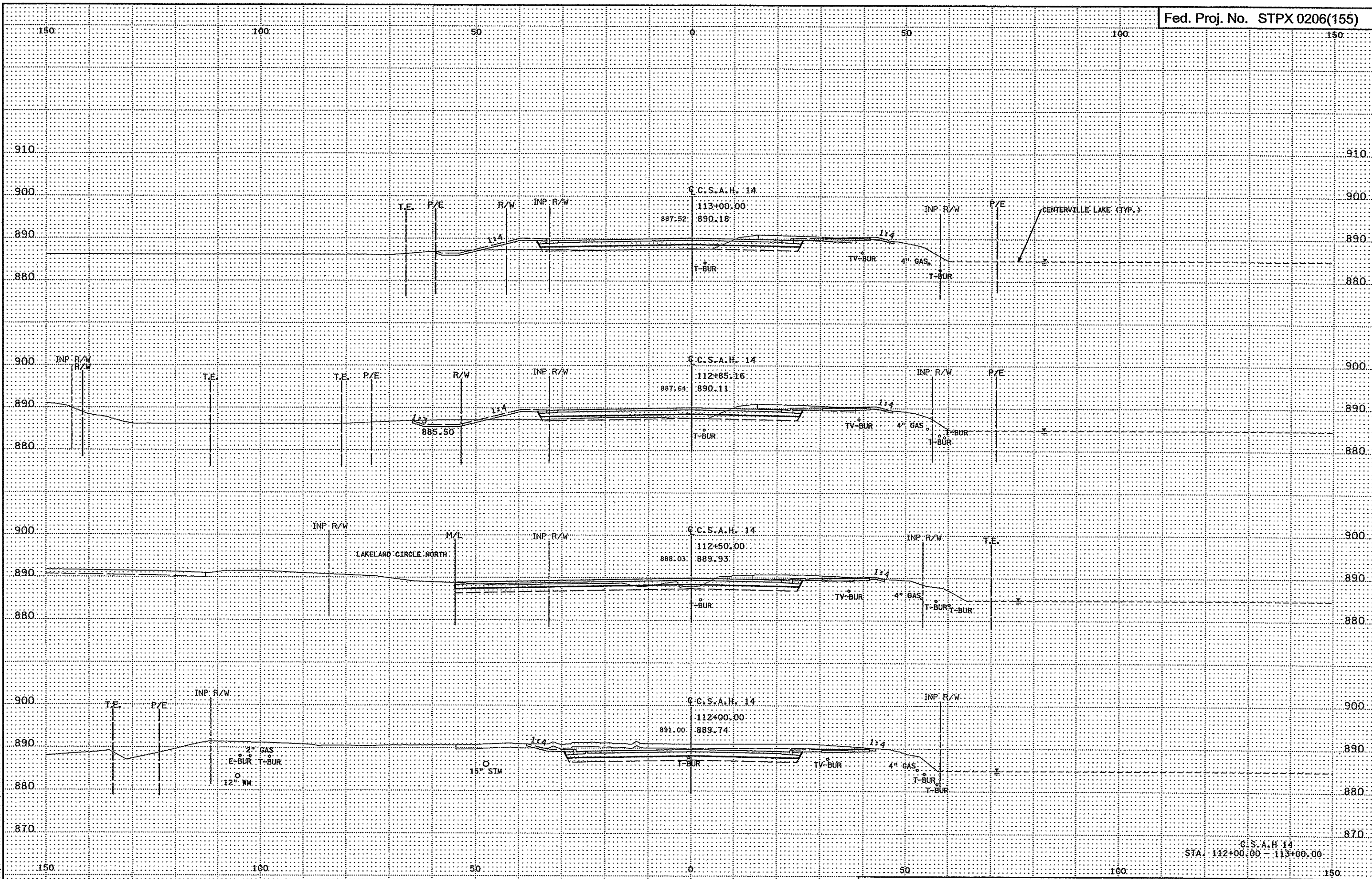


3/23/15 PM  
3/23/2006  
N:\SP\Projects\4994-F\N\I-m\AD\cn\4994-F.XSA

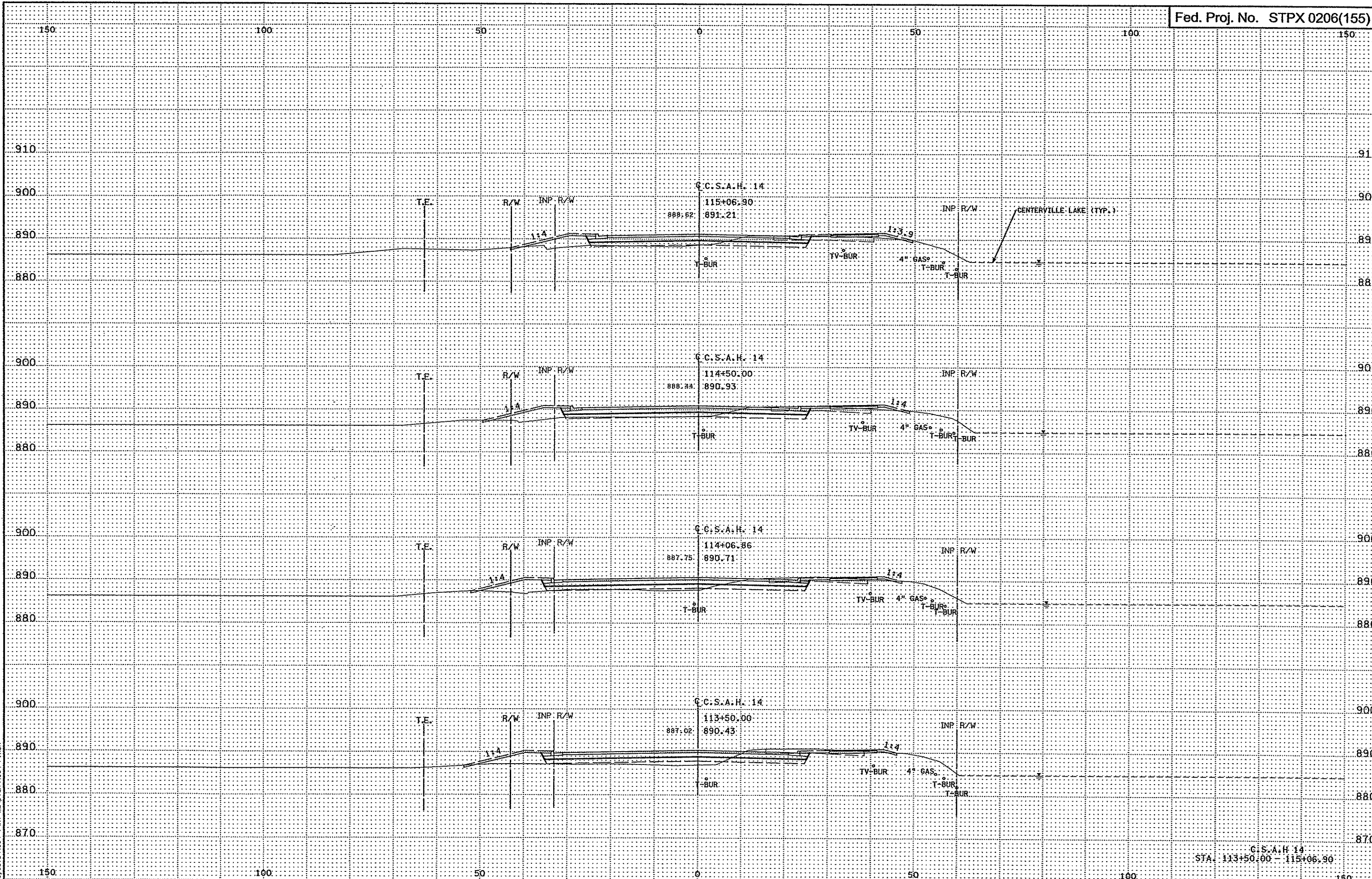


3/21/2007  
3:28:17 PM  
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C.C.S.A.H. 14  
STA. 110+50.00 - 111+86.14



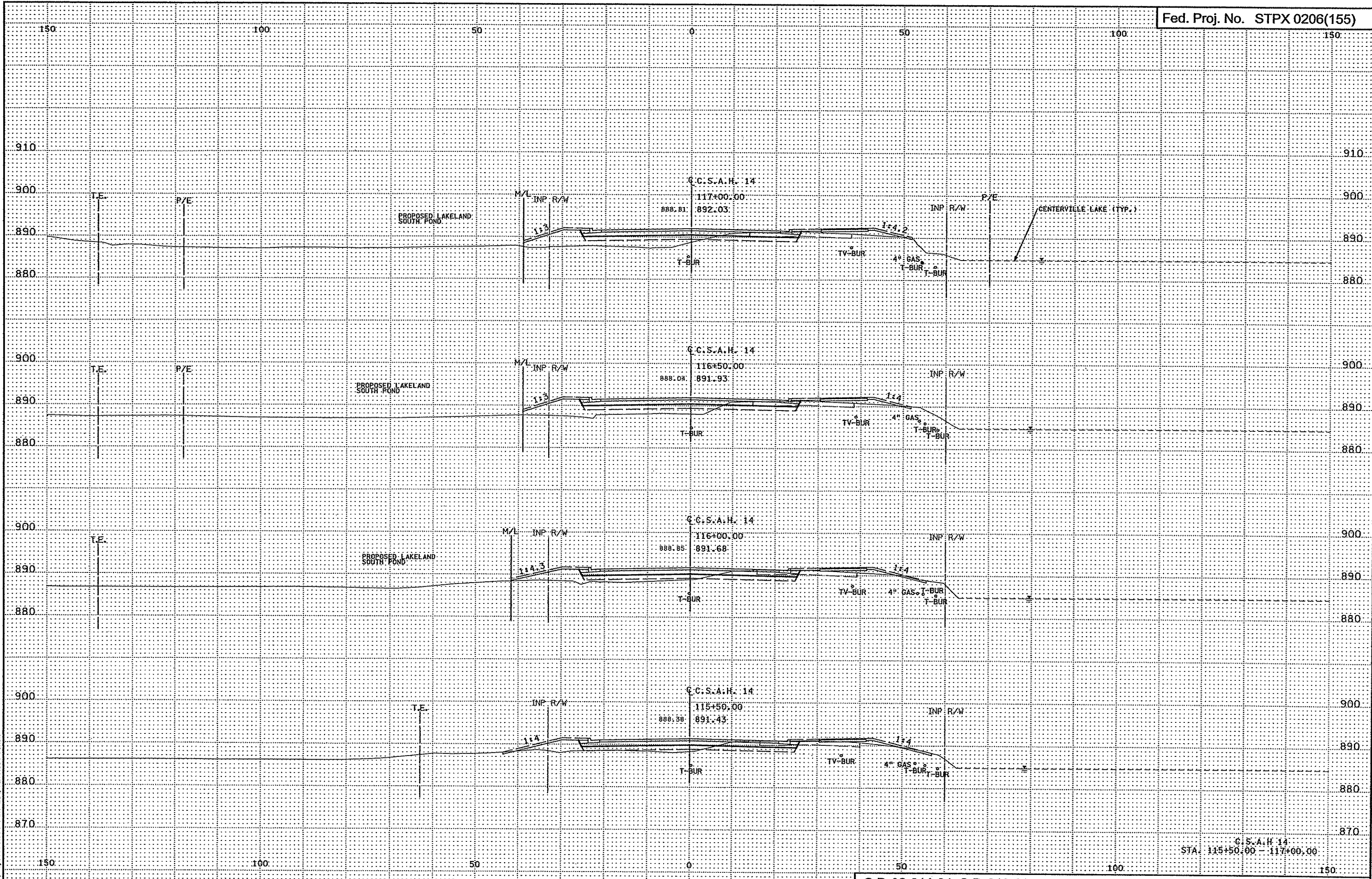
3:29:18 PM  
3/21/2007  
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3:28:19 PM  
3/21/2007  
h:\projects\4994-FNH1-MDAP\on\4994-F\_XSA

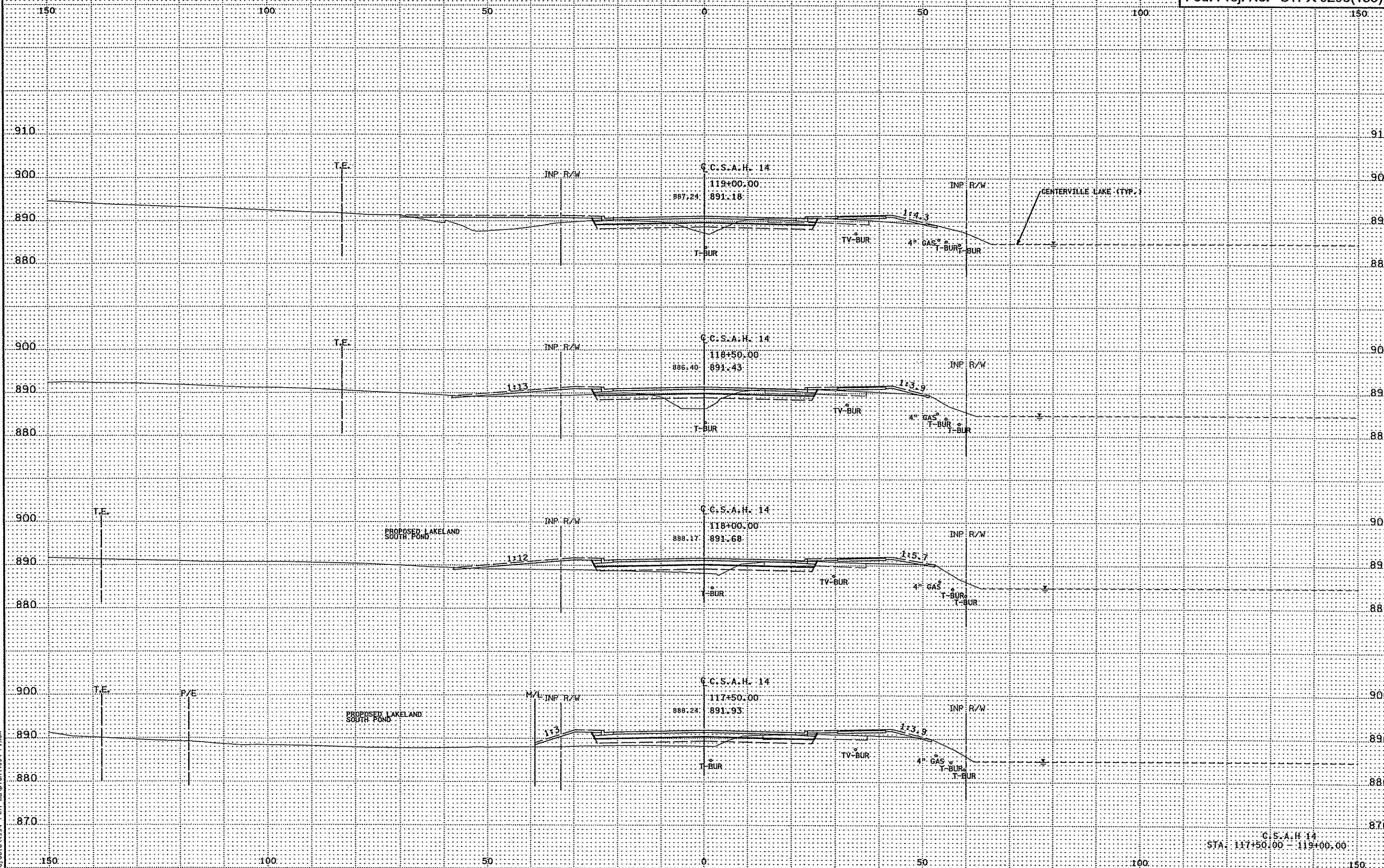
C.S.A.H. 14  
STA. 113+50.00 - 115+06.90





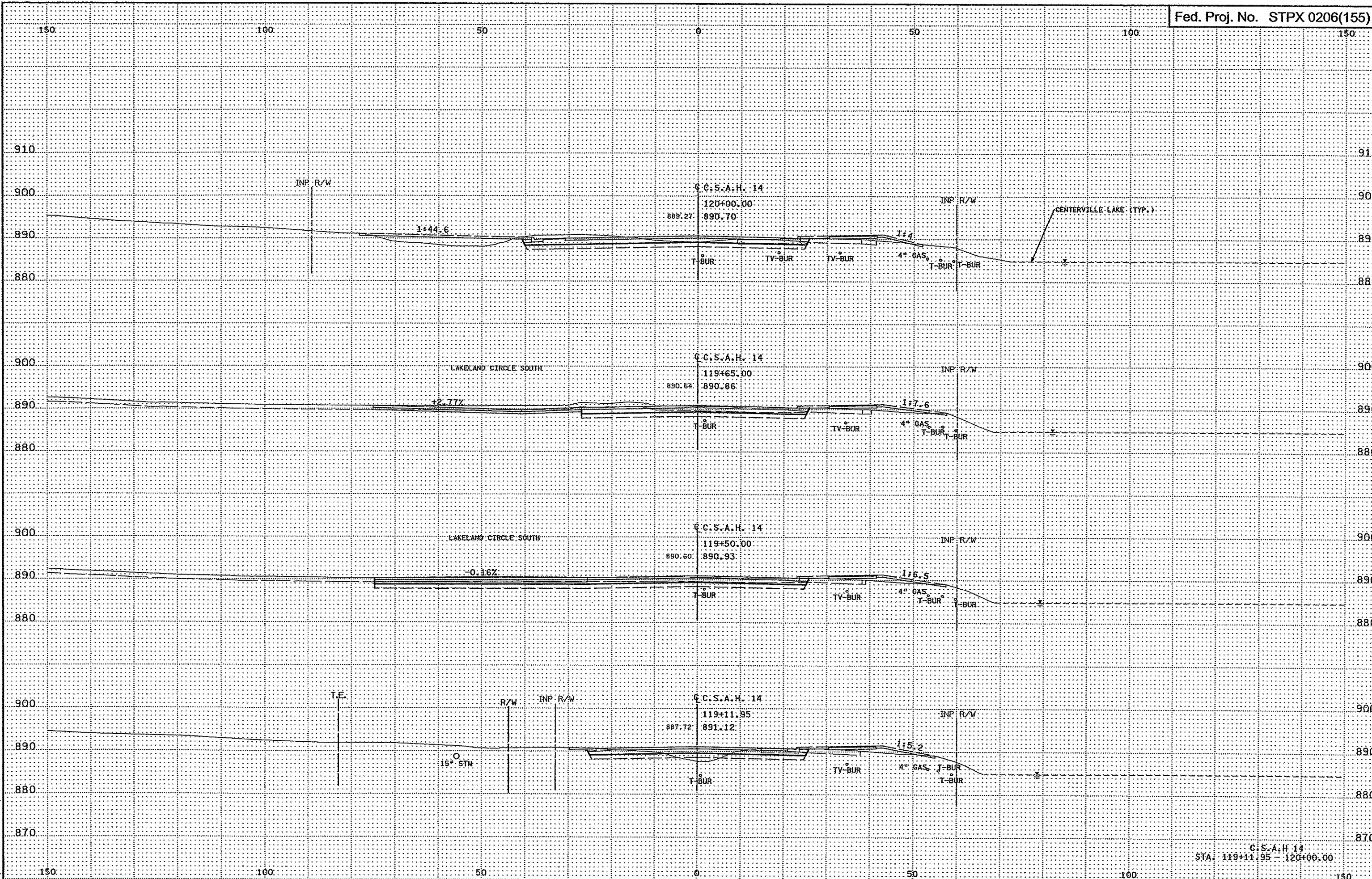
3:29:20 PM  
3/21/2007  
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C.C.S.A.H. 14  
STA. 115+50.00 - 117+00.00



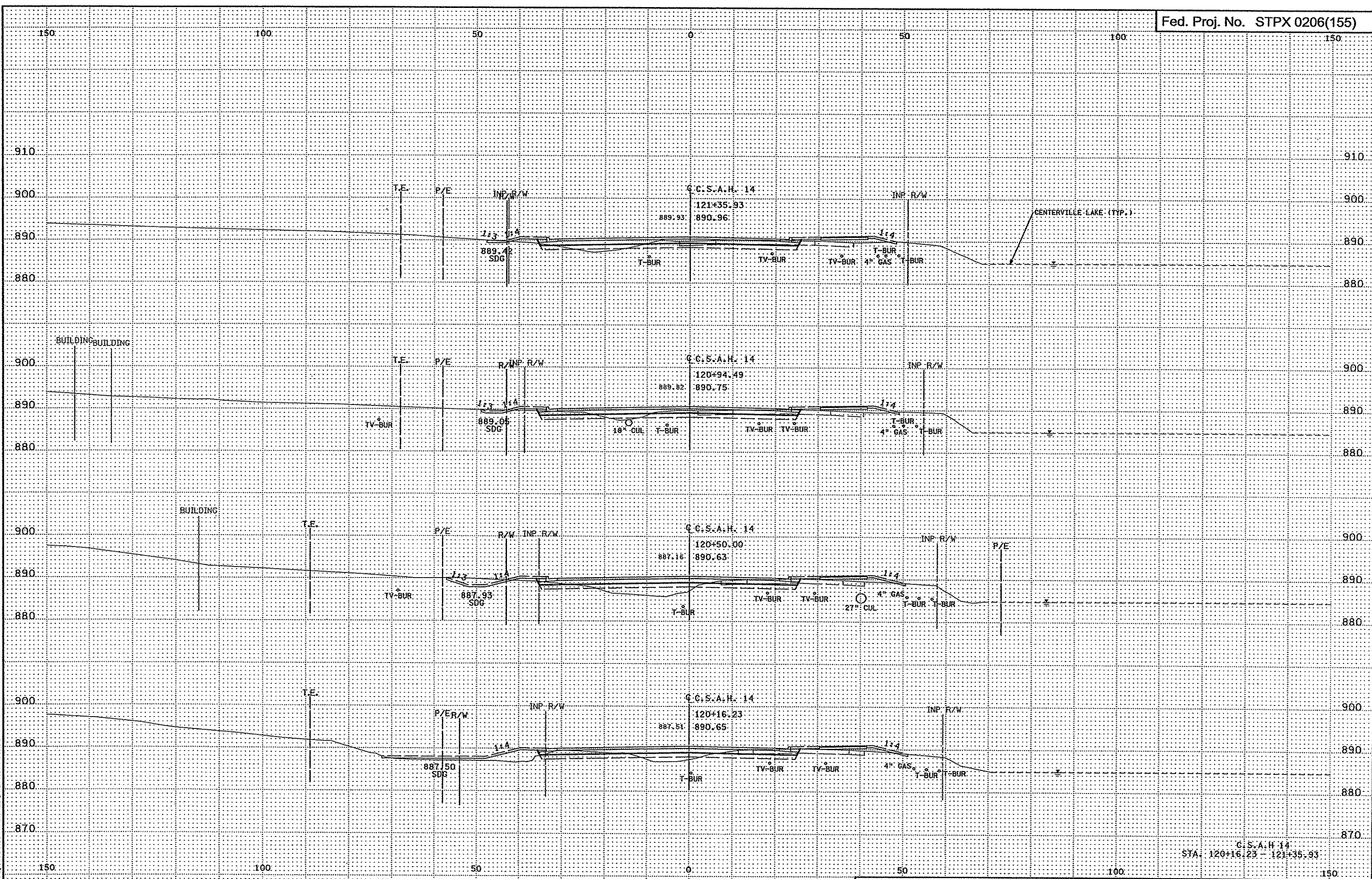
3:29:21 PM  
3/21/2007  
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C.C.S.A.H. 14  
STA. 117+50.00 - 119+00.00



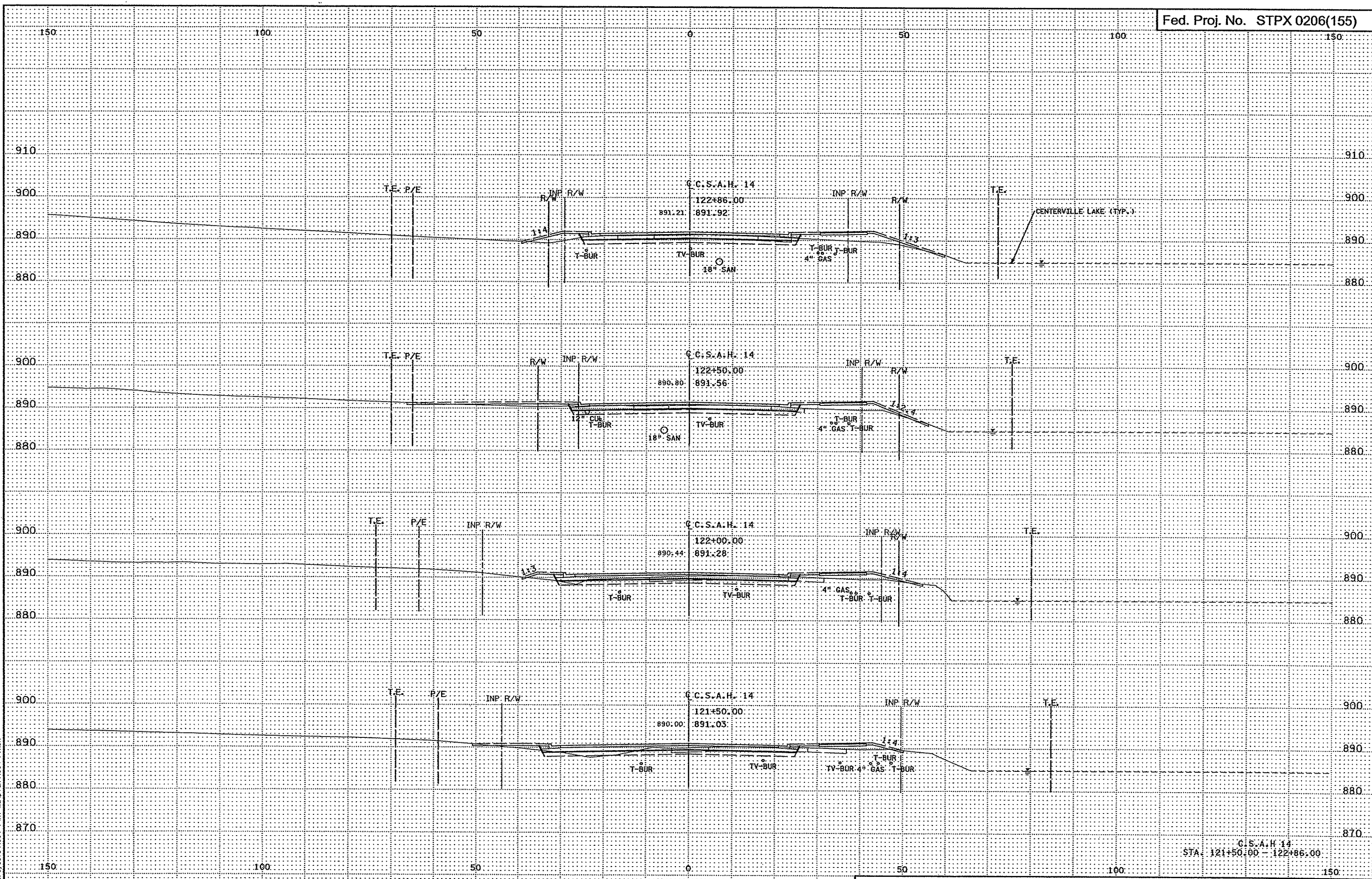
3/21/2007  
3:29:22 PM  
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C.S.A.H. 14  
STA. 119+11.95 - 120+00.00



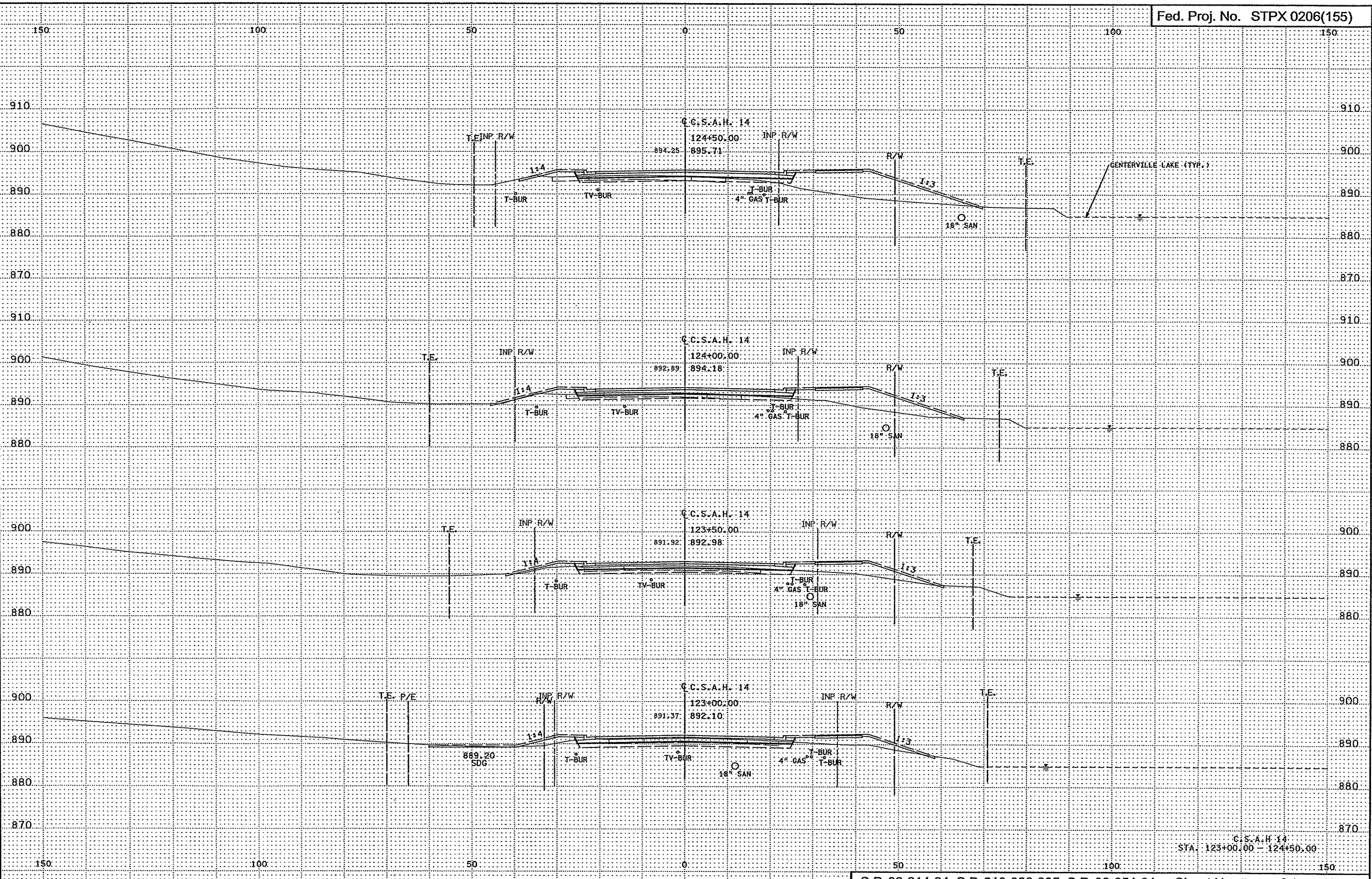
3:29:24 PM  
3/21/2007  
H:\Projects\4994-FAH1-ROAD\IGN\4994-F.XSA

C.C.S.A.H. 14  
STA. 120+16.23 - 121+35.93



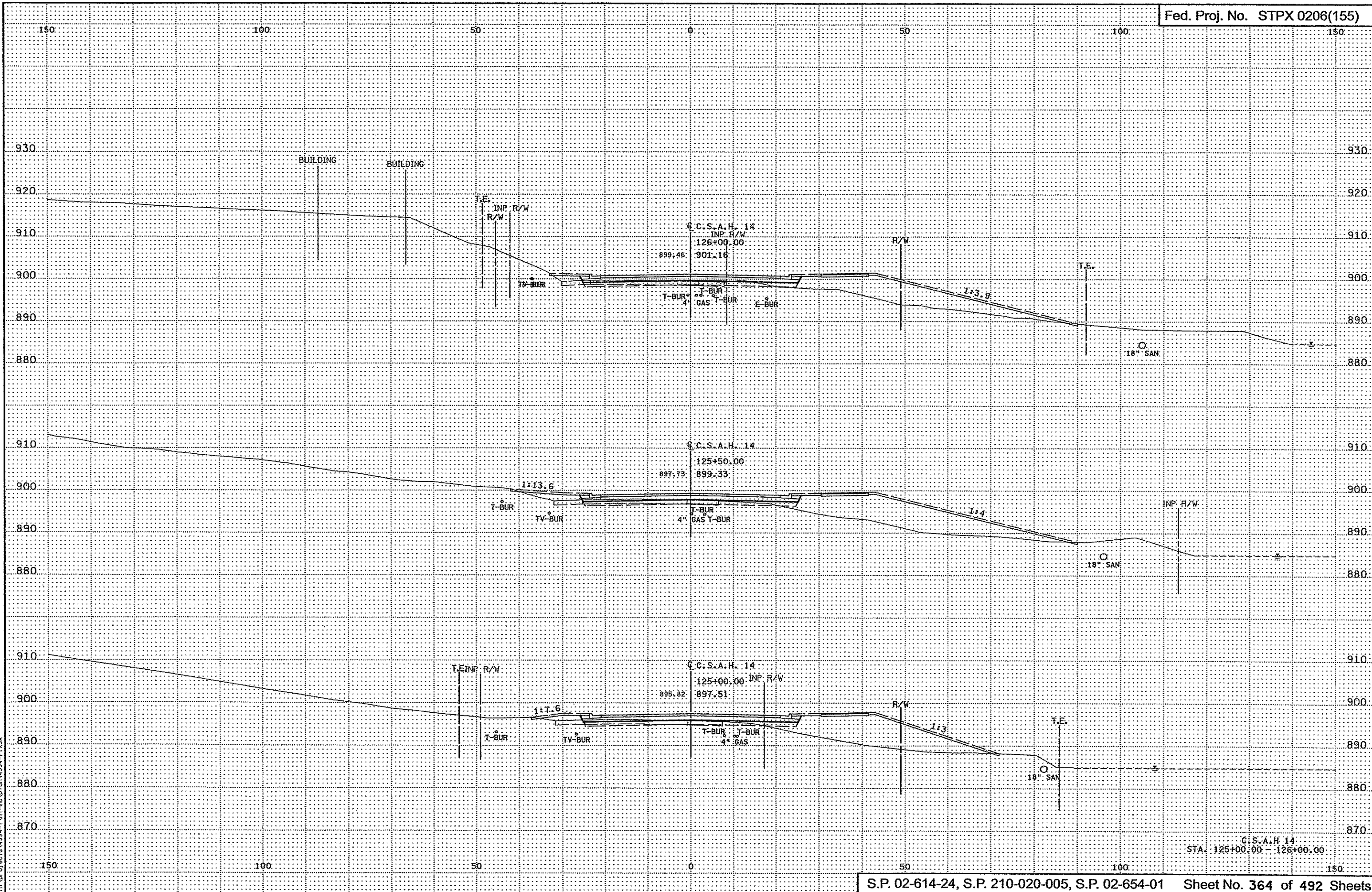
3/29/25 PM  
3/21/2007  
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C.S.A.H. 14  
STA. 121+50.00 - 122+86.00

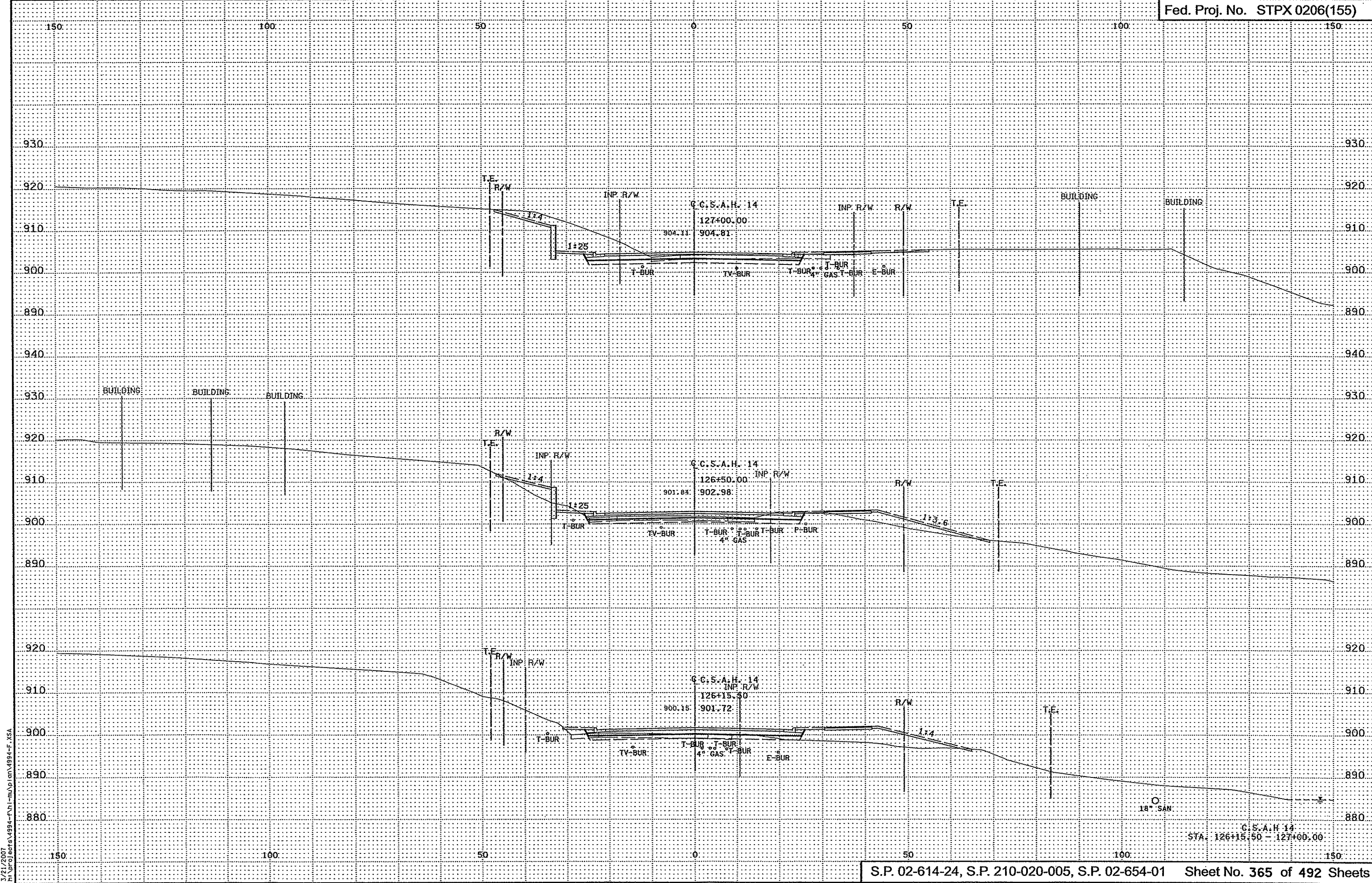


3/29/26 PM  
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C.C.S.A.H. 14  
STA. 123+00.00 - 124+50.00

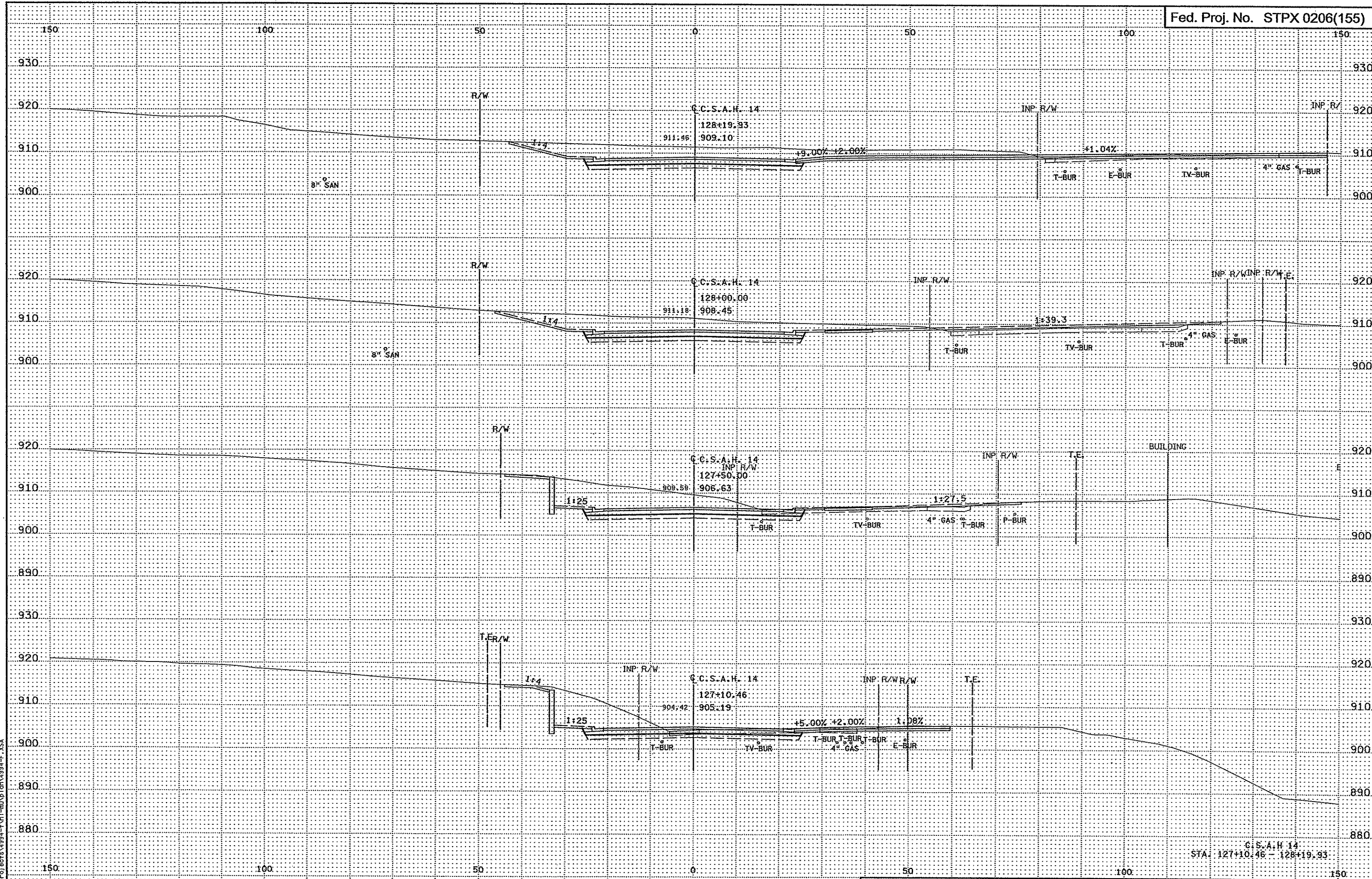


3:29:27 PM  
7/17/2007  
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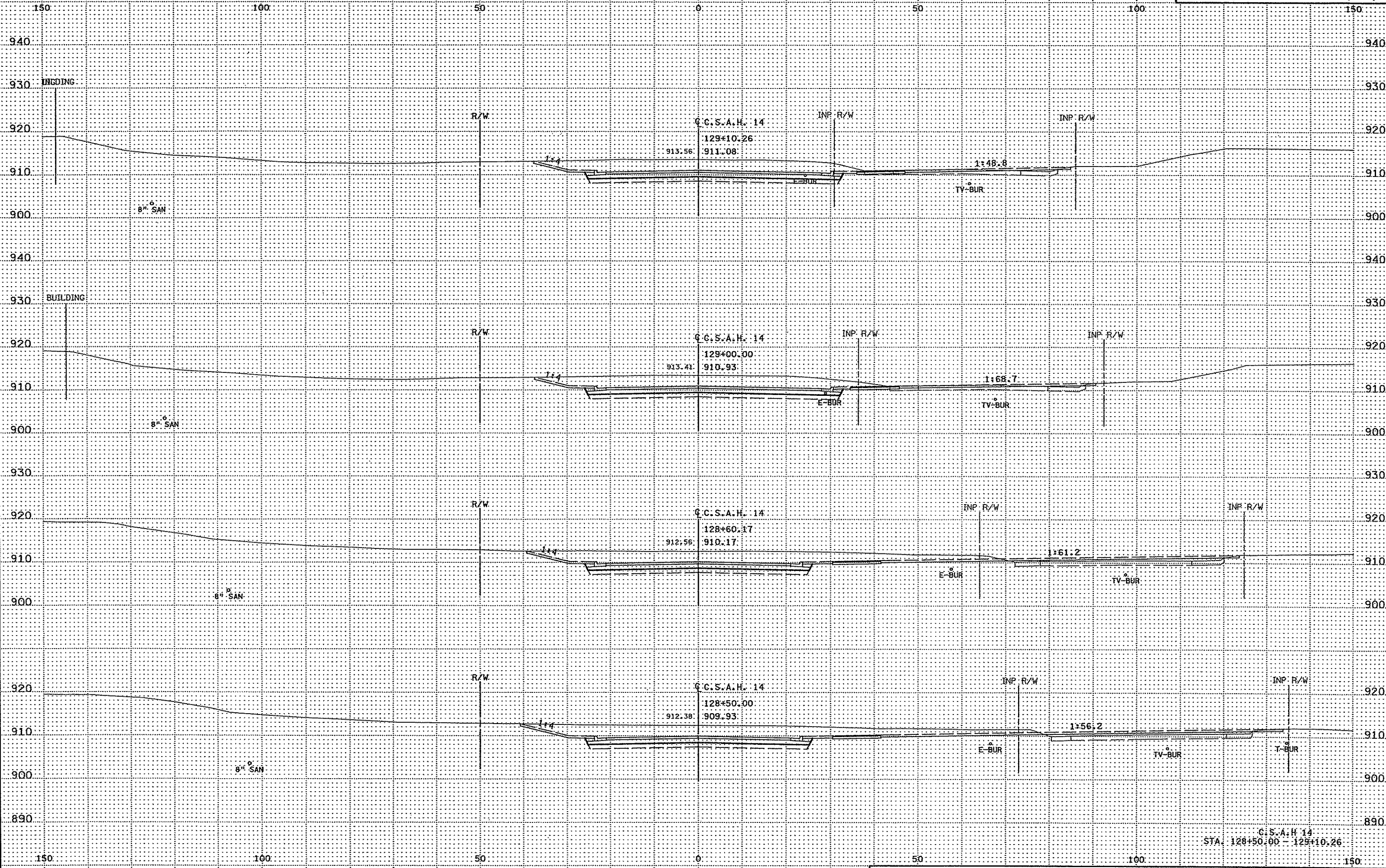


3/29/2007 3:29:28 PM  
D:\p\o\6c\14994-F\11-TM\10\14994-F.XSA



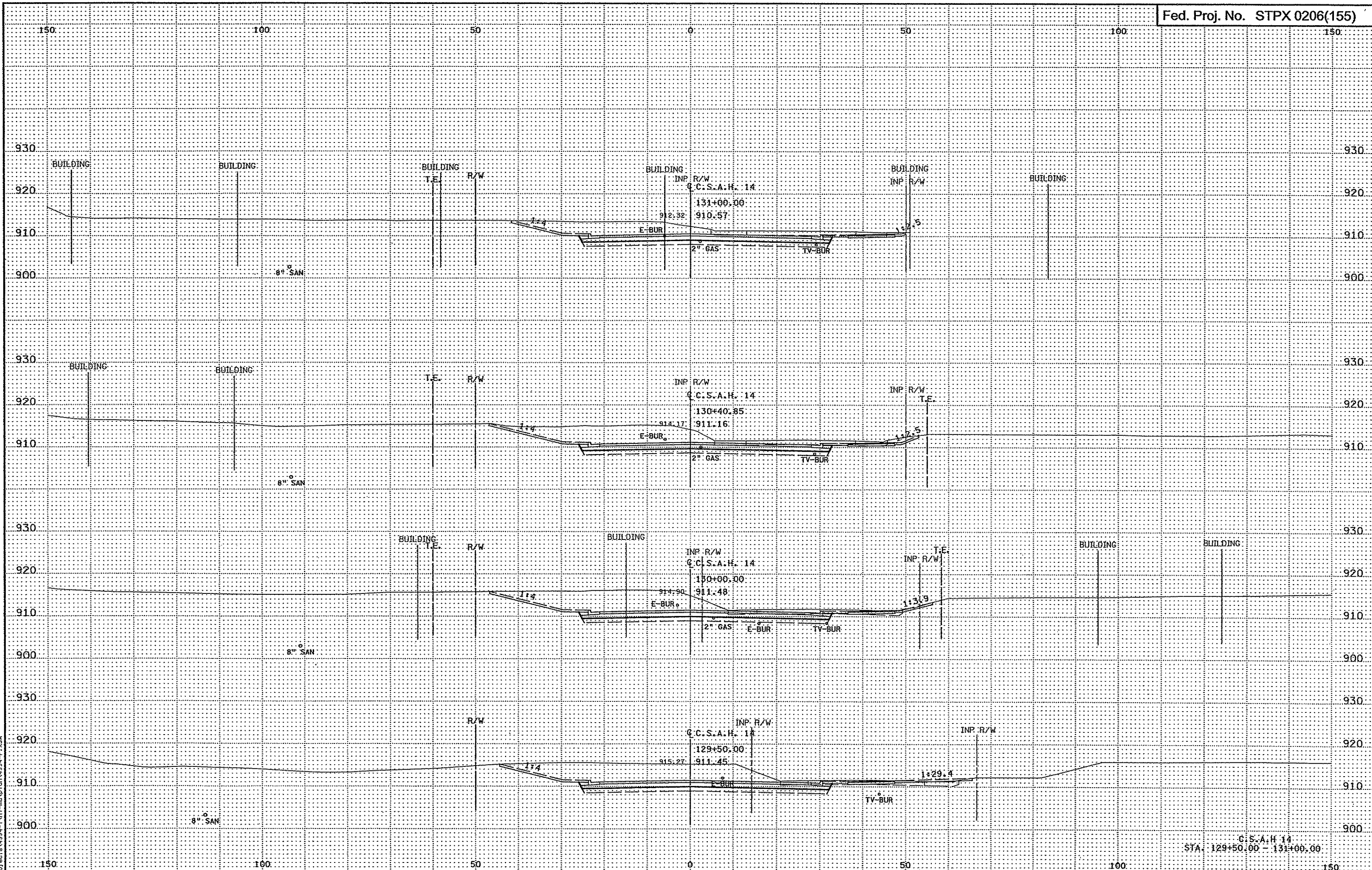


3/29/20 PM  
11:12:20  
H:\Projects\4994-F\11-m\AD\cm\4994-F.dwg



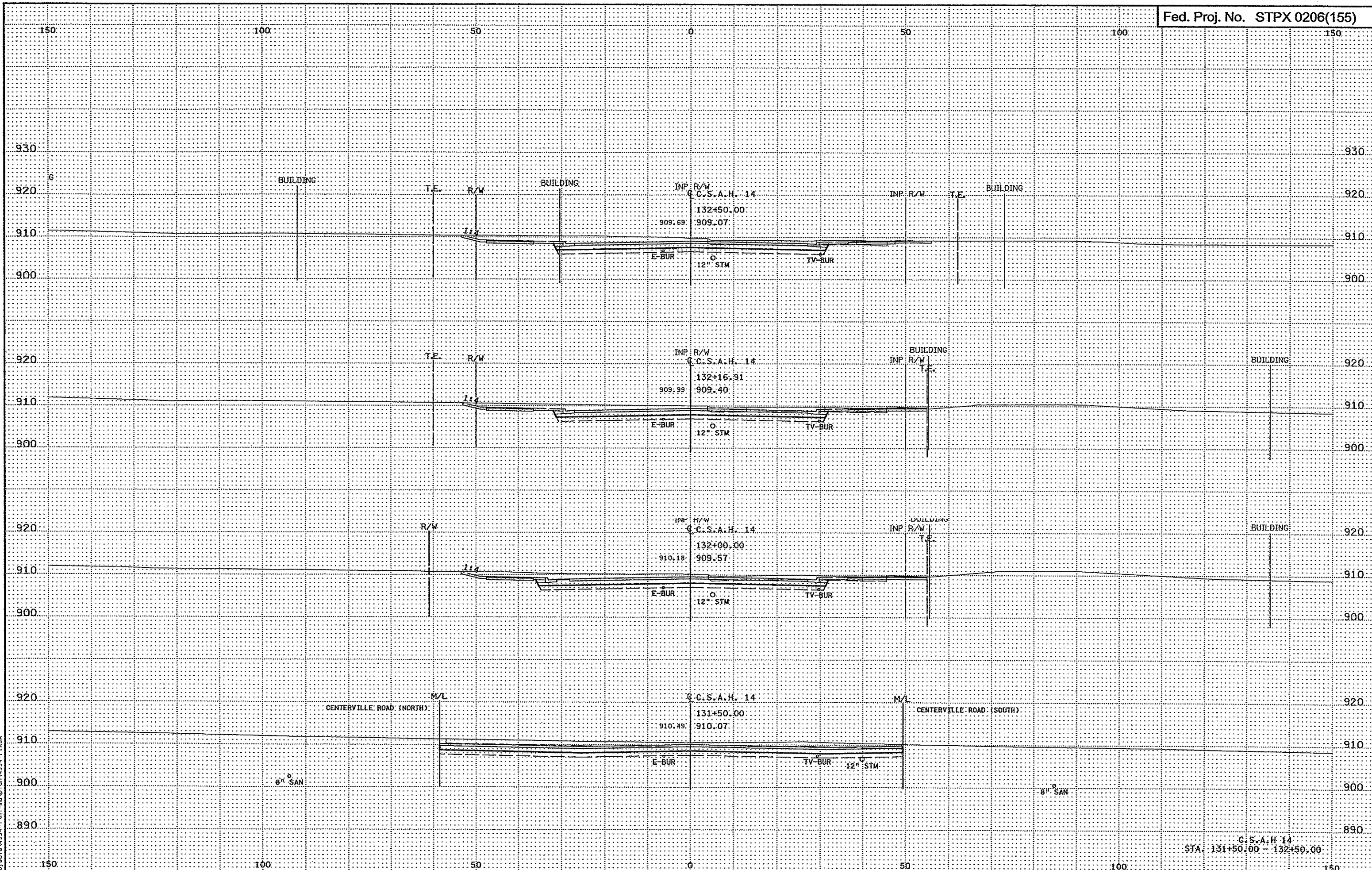
3/29/10 3:30 PM  
R:\proj\stpx\0206\155\1-200\1-200.dwg  
R:\proj\stpx\0206\155\1-200\1-200.dwg

C.C.S.A.H. 14  
STA. 128+50.00 - 129+10.26

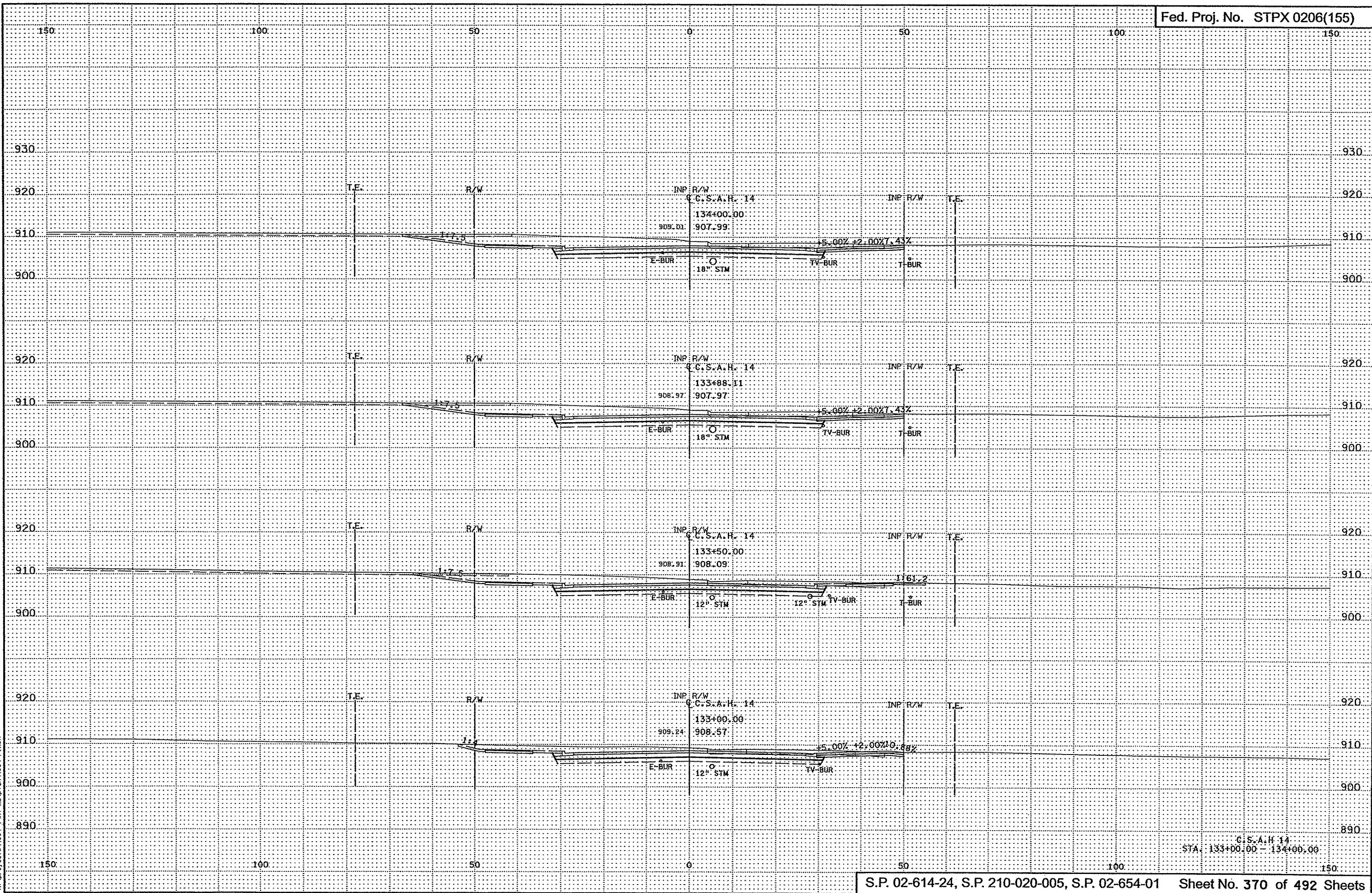


3/29/07 PM  
3/21/2007  
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C.S.A.H. 14  
STA. 129+50.00 - 131+00.00

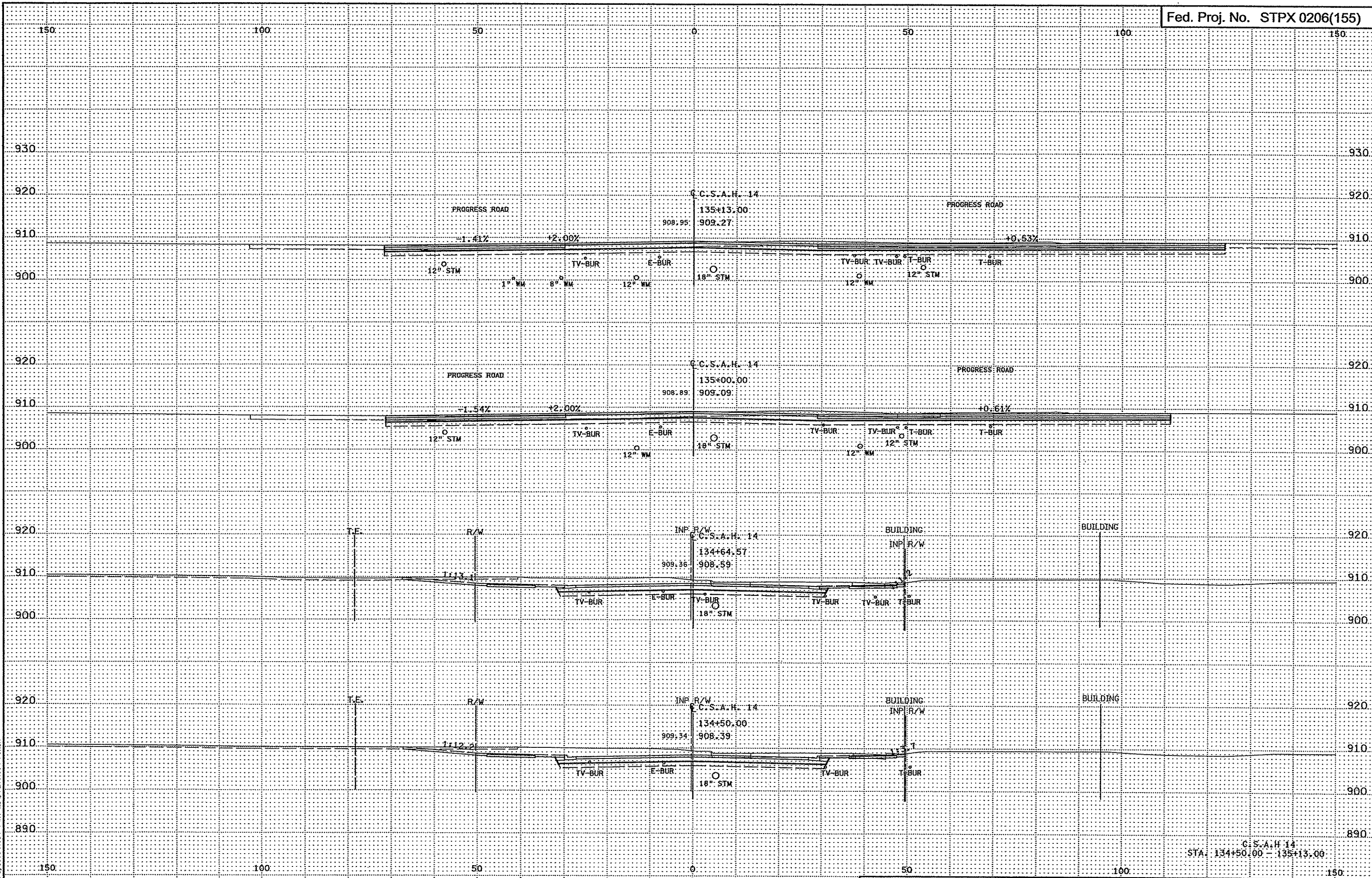


3/29/03 PK  
3/21/2007  
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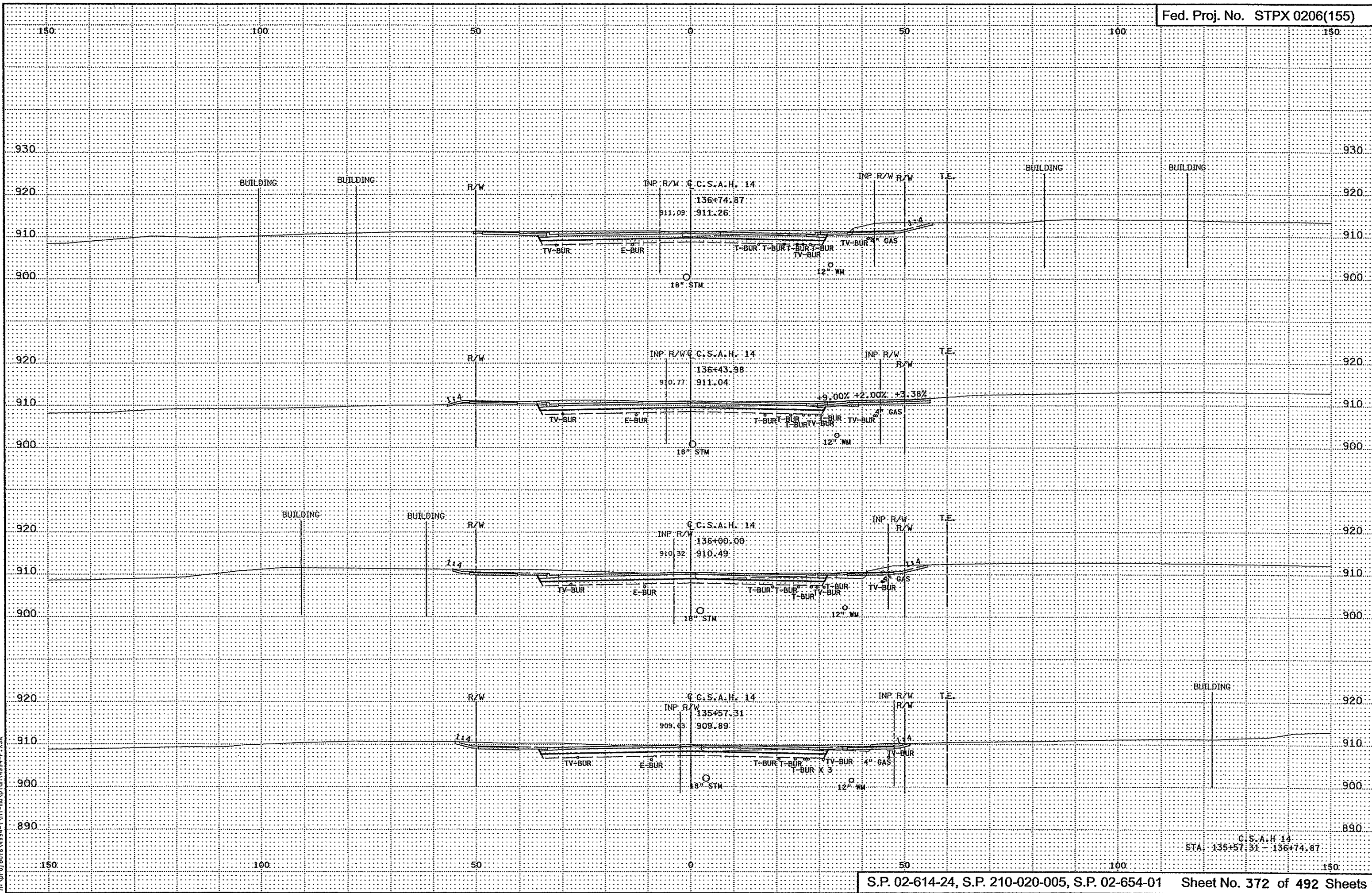


3/21/2007  
3:29:34 PM  
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C.S.A.H. 14  
STA. 133+00.00 - 134+00.00

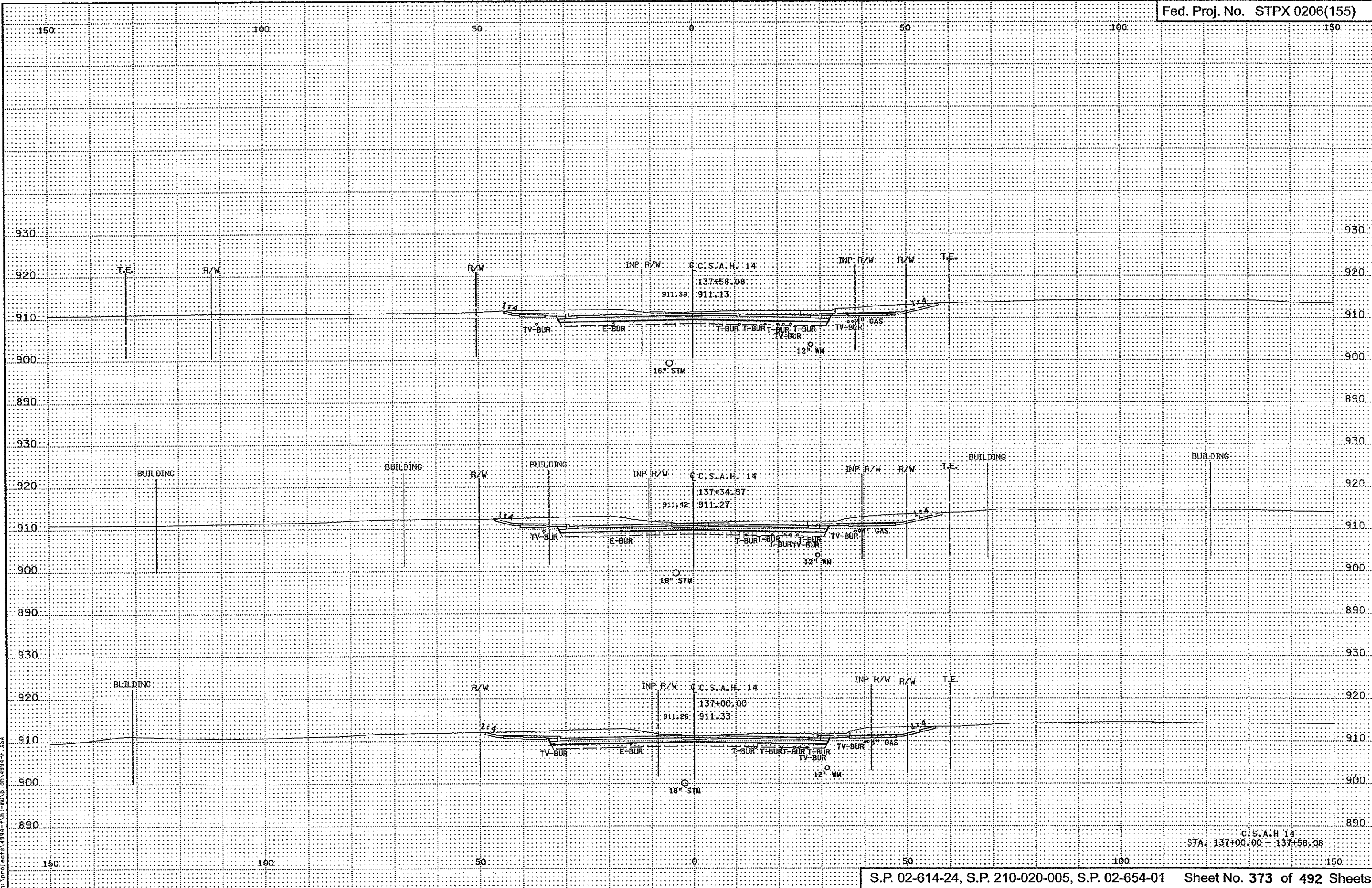


3/29/05 PM  
3/21/2007  
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3:29:36 PM  
3/21/2007  
h:\projects\4994-f\h1-m\ad\gn\4994-f.XSA

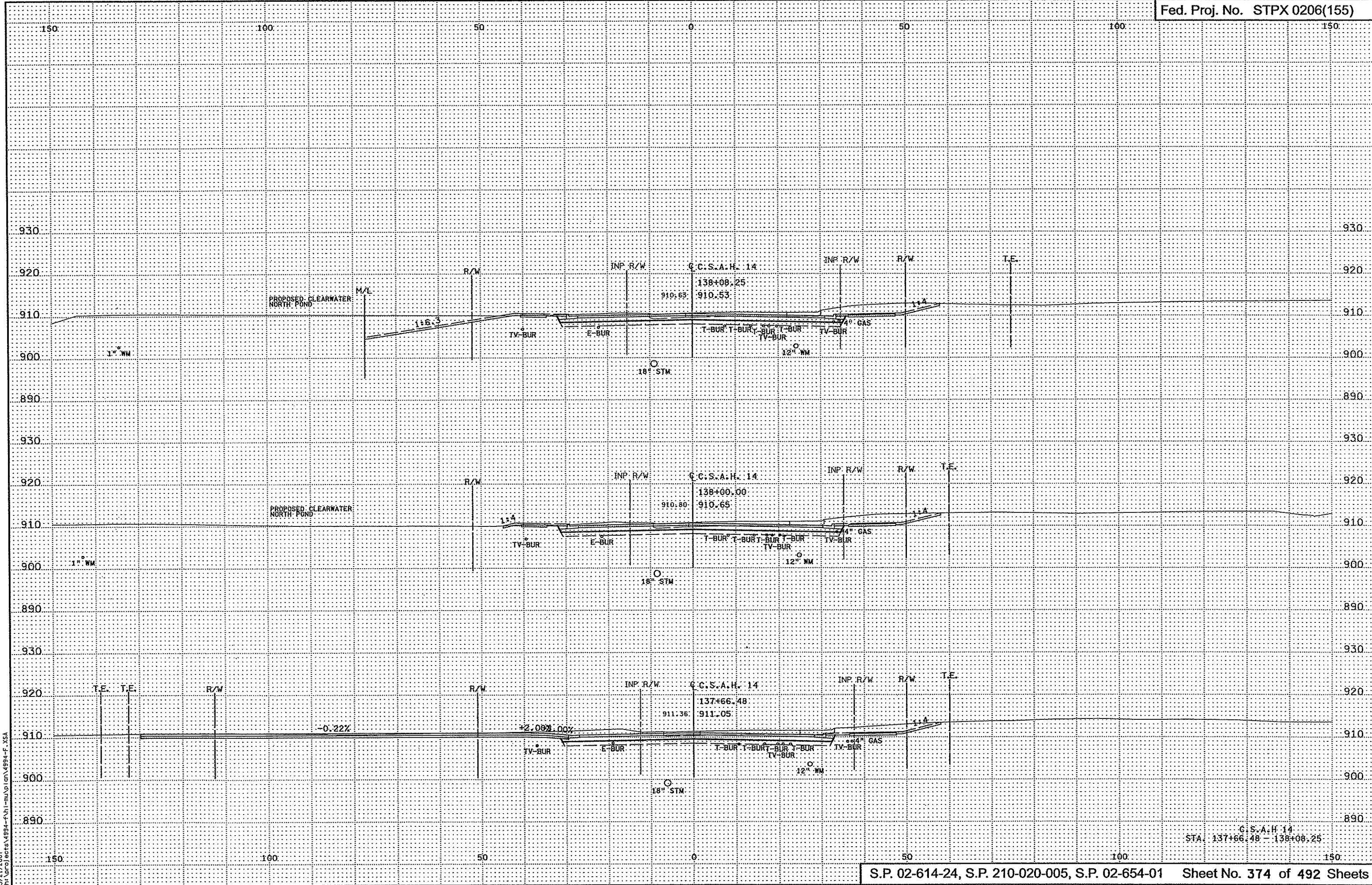
C.S.A.H. 14  
STA. 135+57.31 - 136+74.87



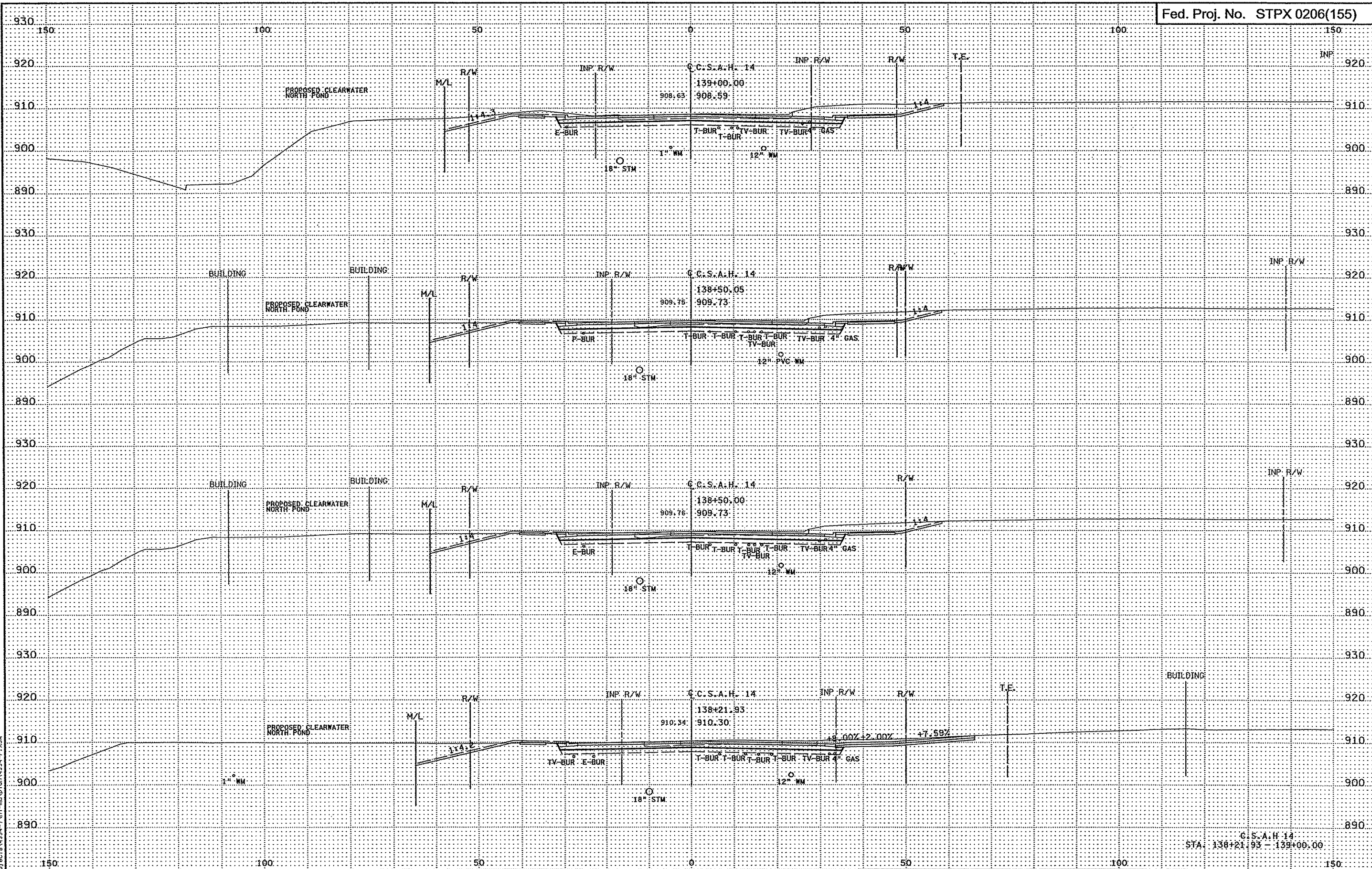
3:29:37 PM  
3/21/2007  
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C.C.S.A.H. 14  
STA. 137+00.00 - 137+58.08

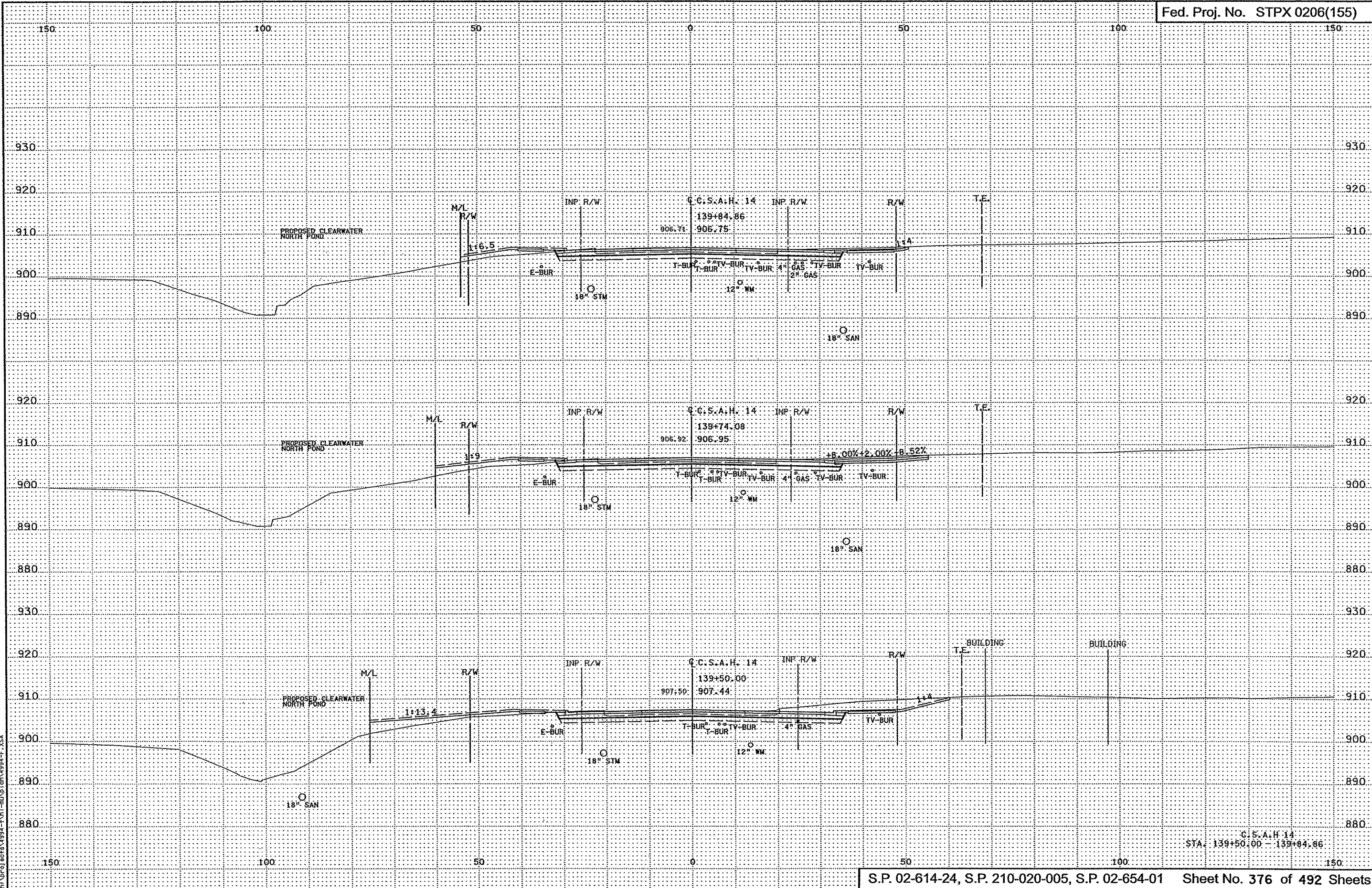




3/29/07 3:29:38 PM  
3/21/2007  
D:\proj\ecrs\4994\1-1-mu\sp\dw\4994-f.XSA

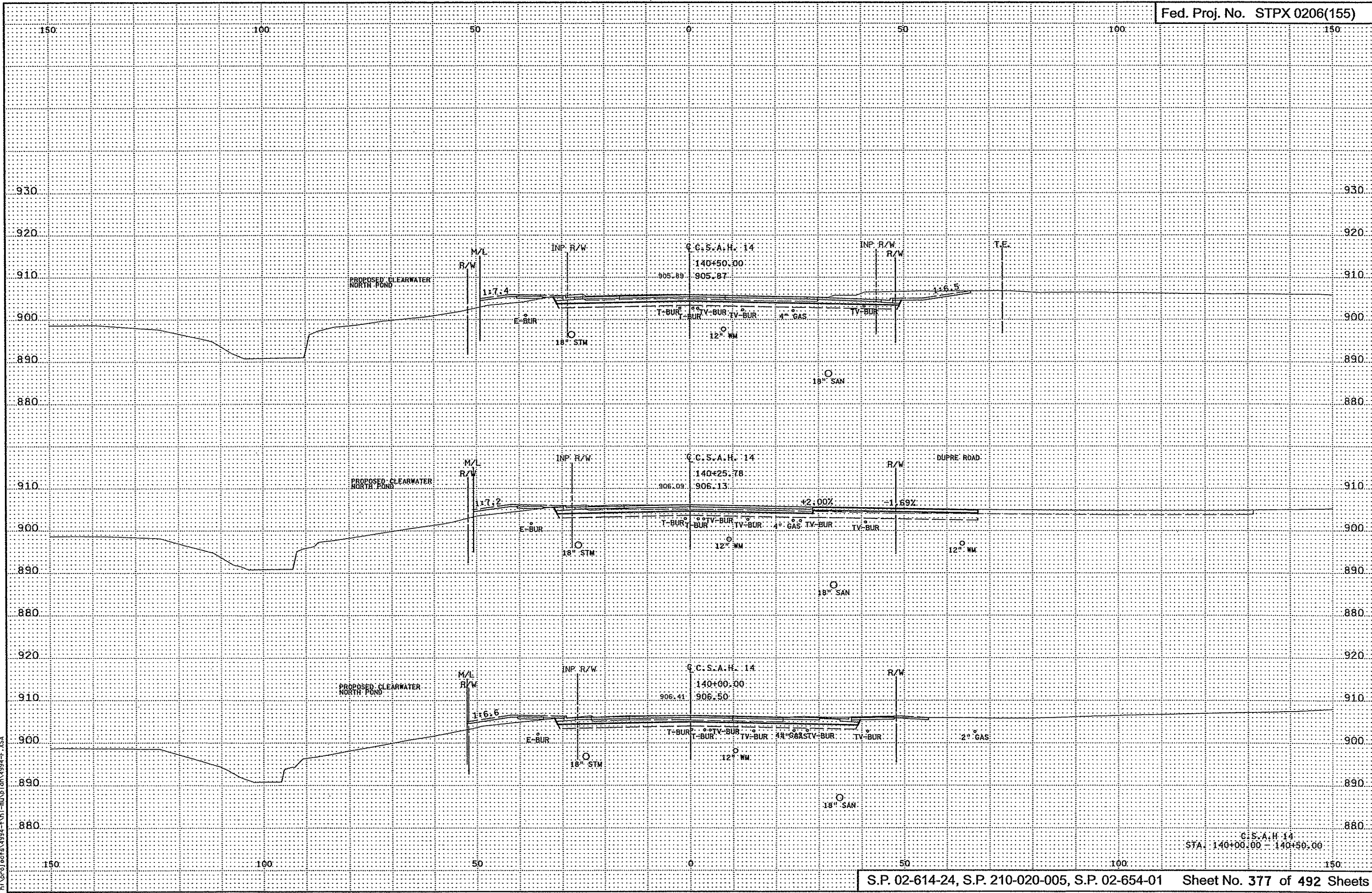


1:39:40 RW  
3/21/2007  
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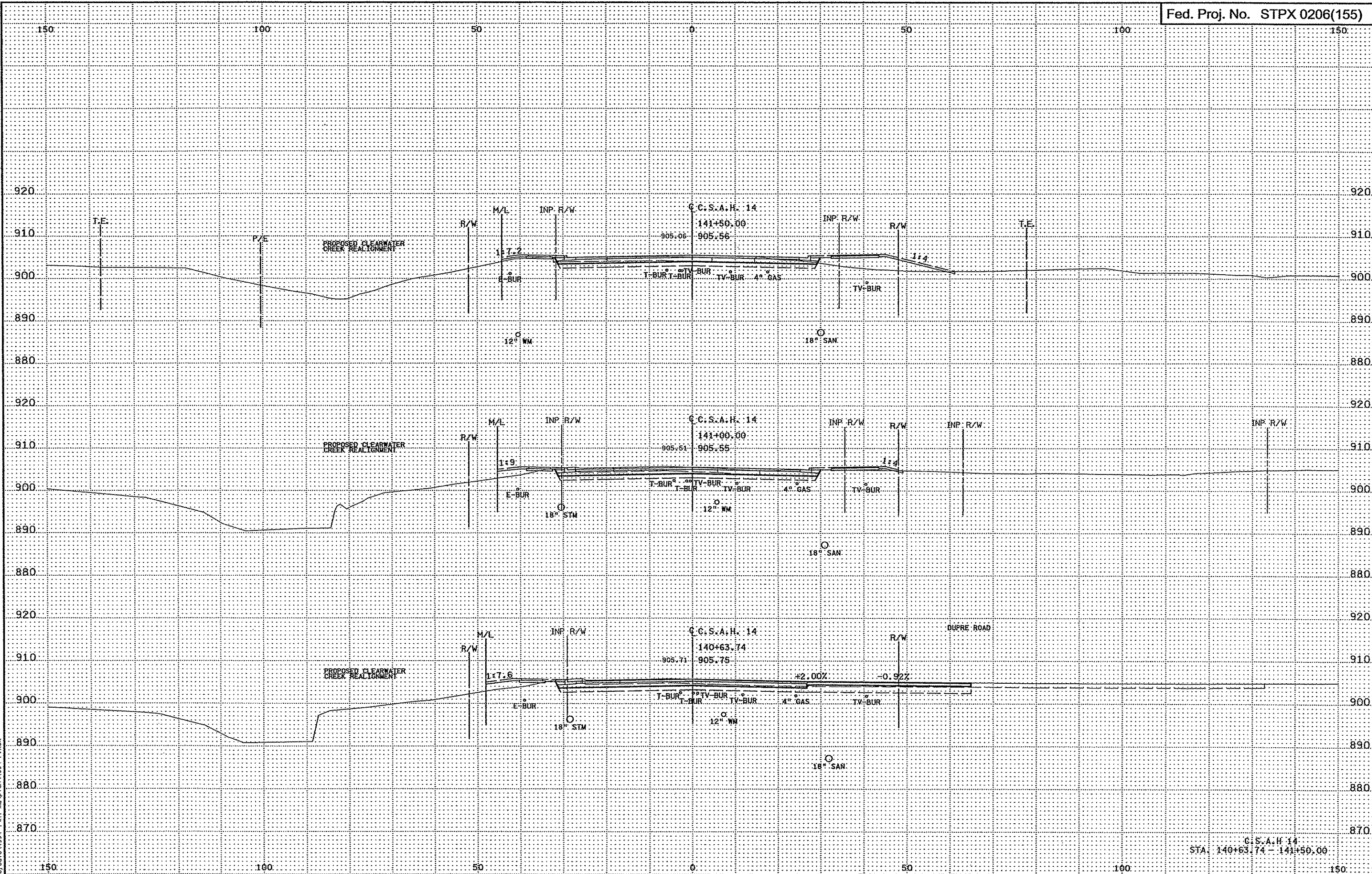


3/29/11 PM  
3/7/12/2011  
in:\proj\2010\STPX0206\155\994-F\A1-m\A1-001.dwg 994-F\_XSA

C.S.A.H. 14  
STA. 139+50.00 - 139+84.86

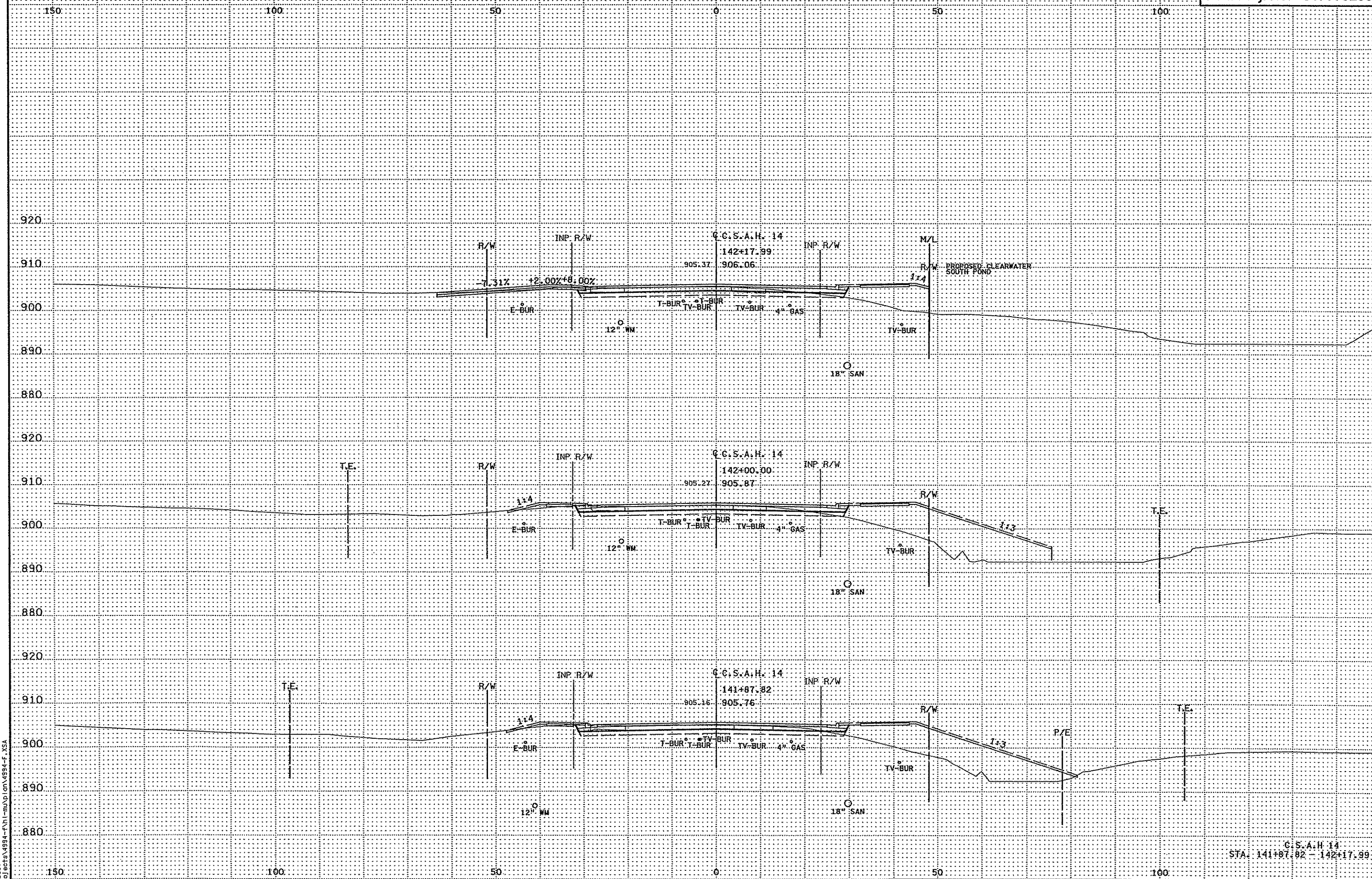


3/29/05 PM  
 2/21/2005  
 P:\Projects\4994-FNH-IND\Drawings\4994-F.XSA



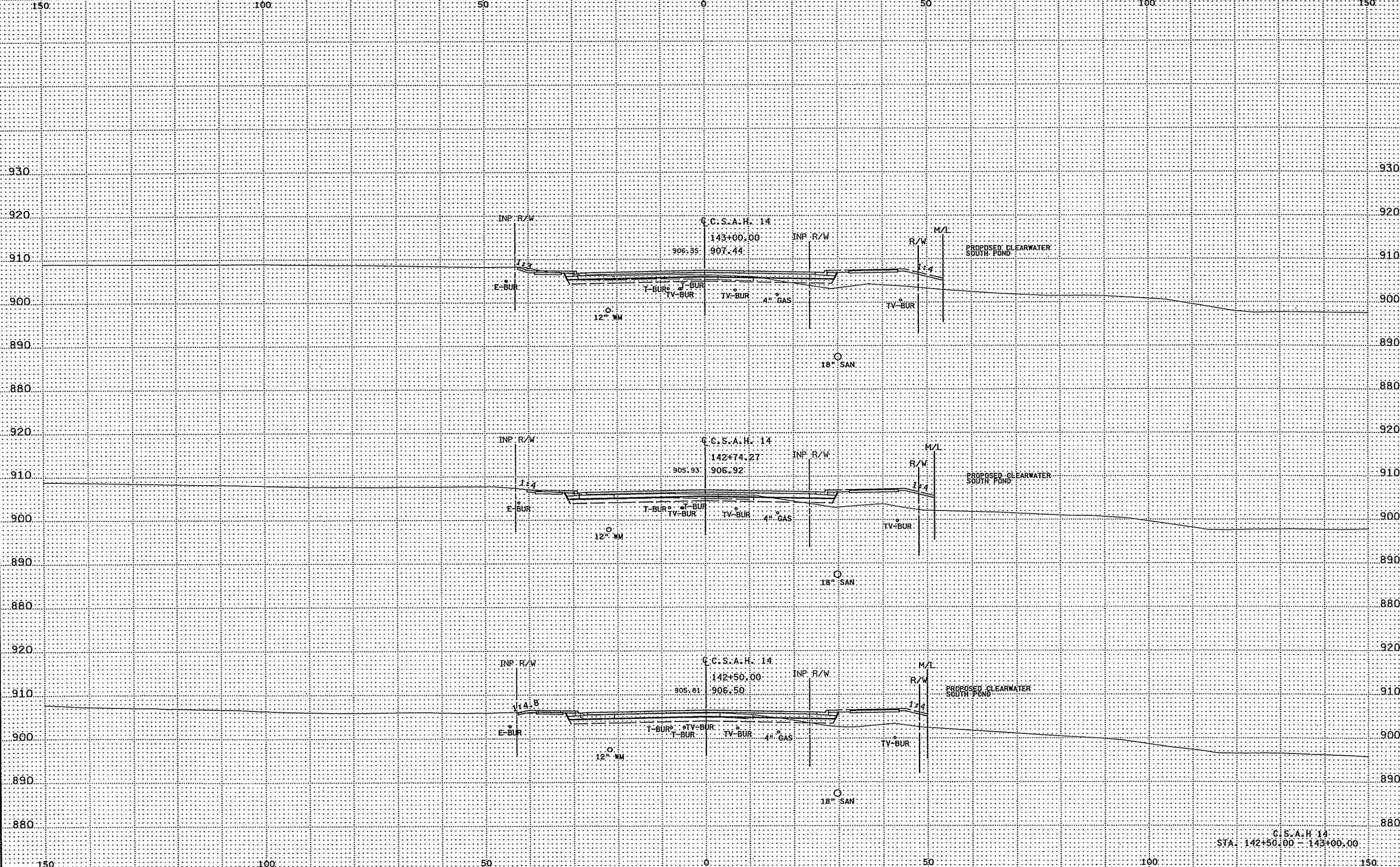
3/29/03 PH  
3/21/2007  
h:\projects\4994-f\h1-m\p1on\4994-f\_xsa

C.S.A.H. 14  
STA. 140+63.74 - 141+50.00



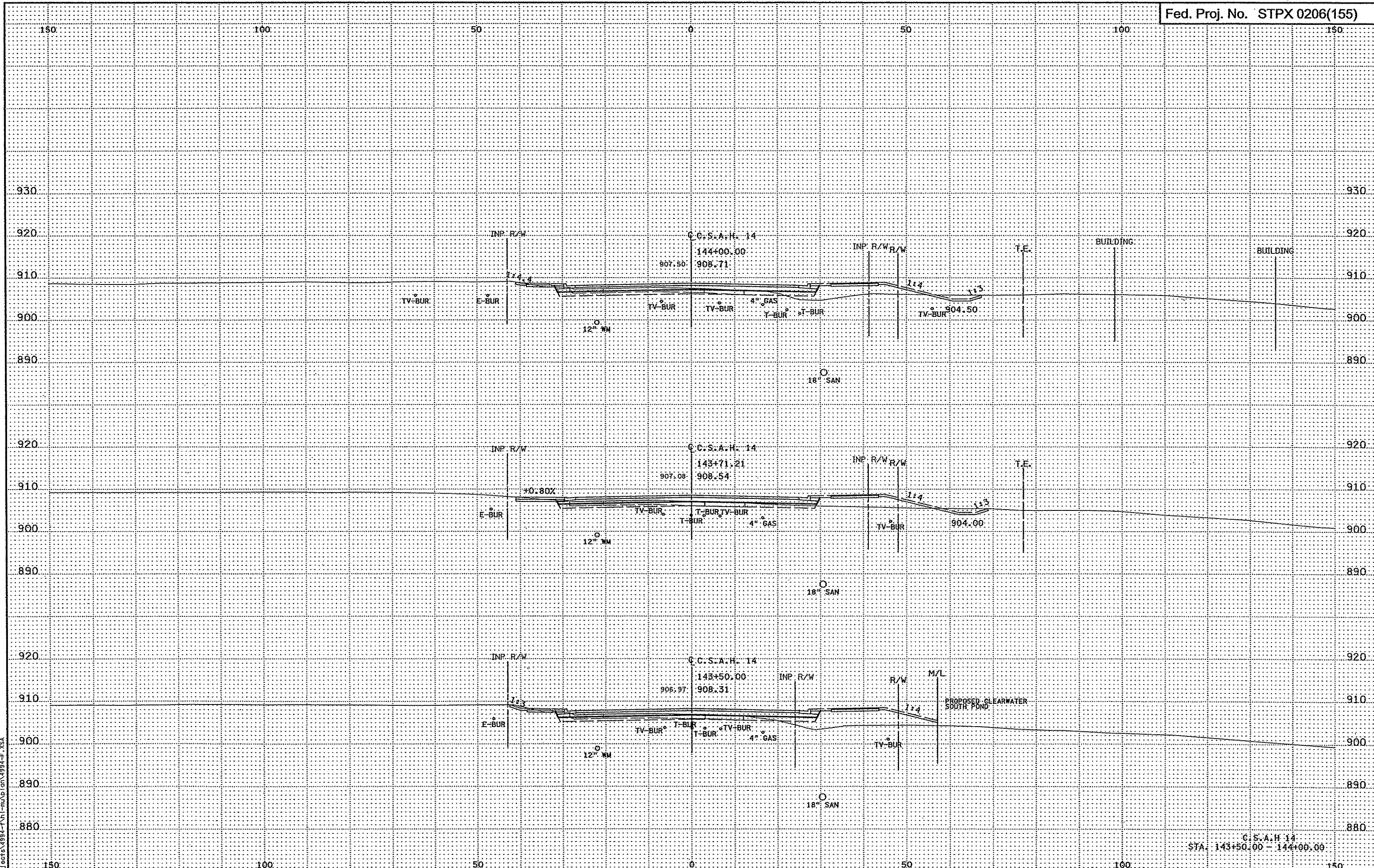
3:23:44 PM  
3/21/2007  
ht:\projects\4984-FH1-m\p1on\4984-F\_XSA

C.S.A.H. 14  
STA. 141+87.82 - 142+17.99



G.S.A.H. 14  
STA. 142+50.00 - 143+00.00

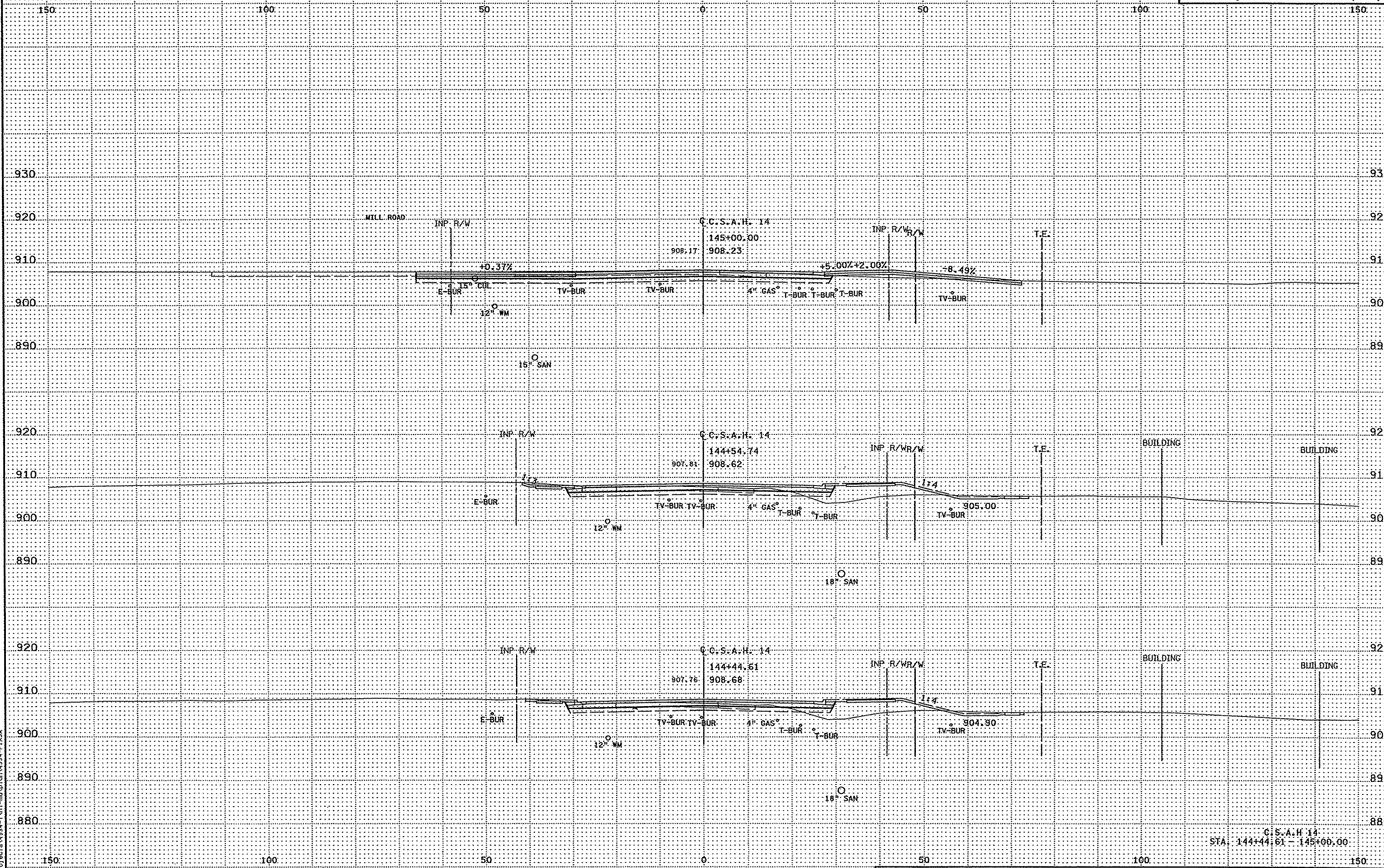
3:29:45 PM  
3/21/2007  
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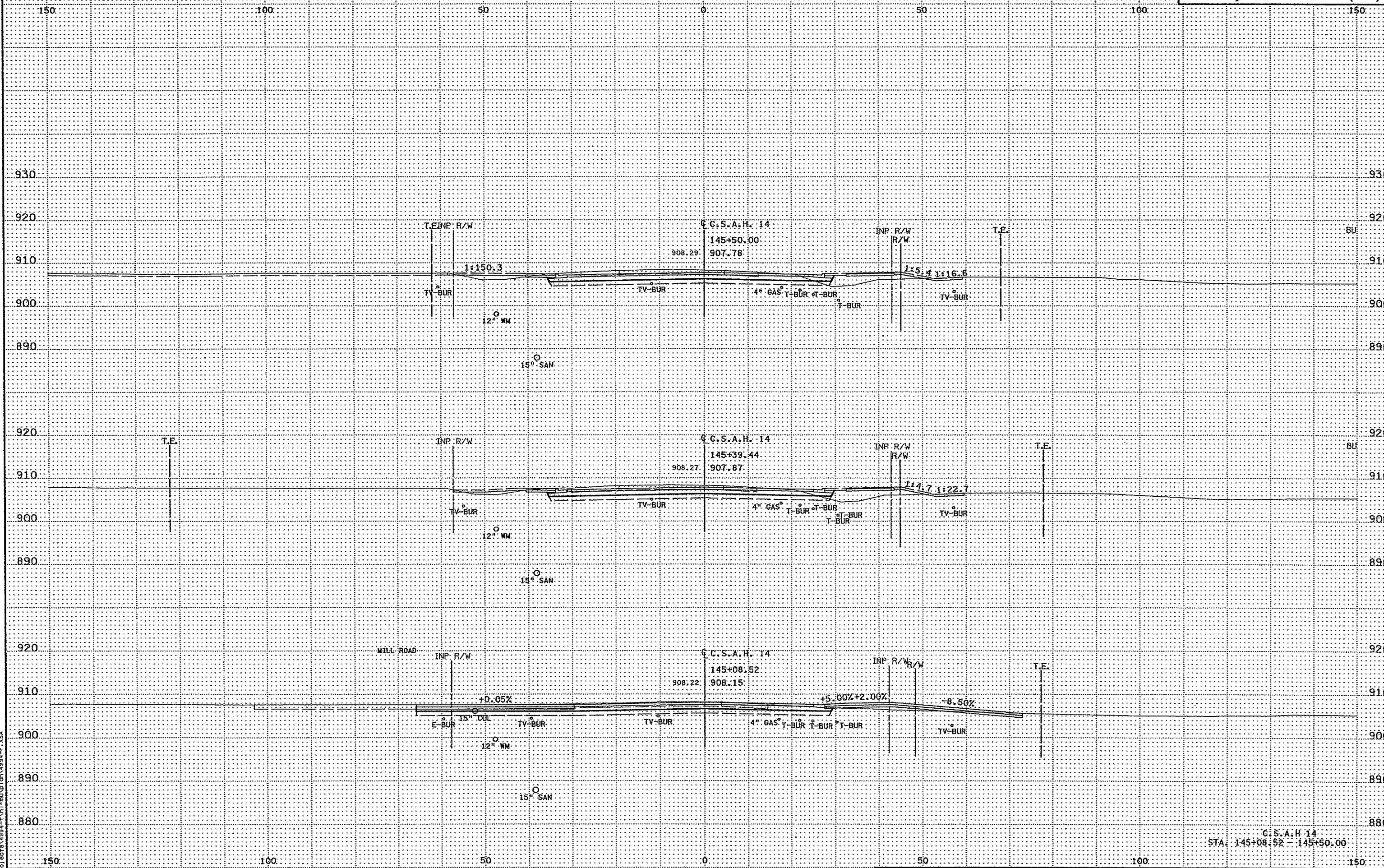
3/21/2007 3:29:46 PM  
n:\proj\sect\4994-f\11-mm\01\01\4994-f.dwg

C.S.A.H. 14  
STA. 143+50.00 - 144+00.00

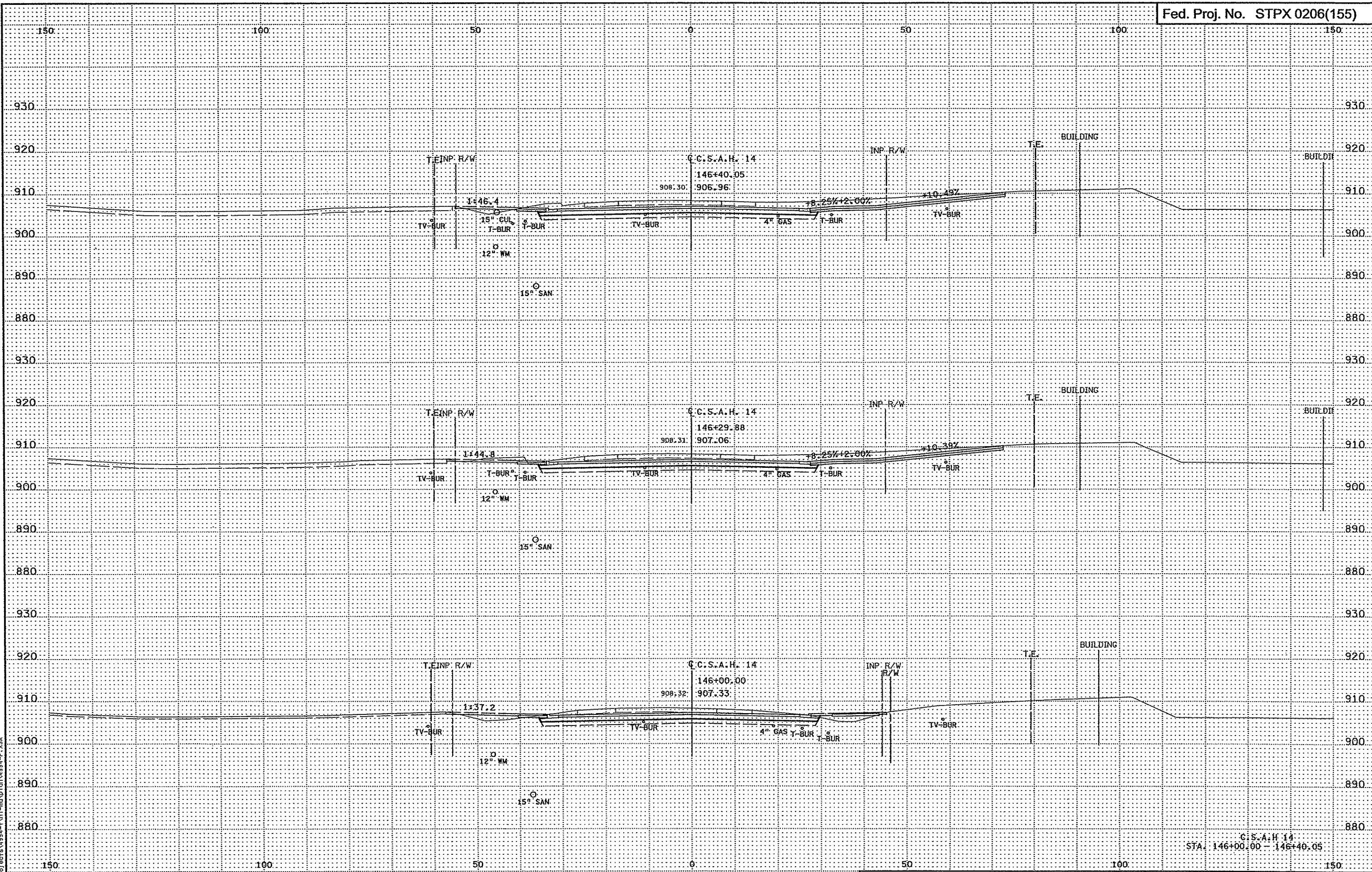




3:59:47 PM  
3/31/2007  
D:\proj\lectra\4994-FN1-m\A\1-on\4994-F.XSA

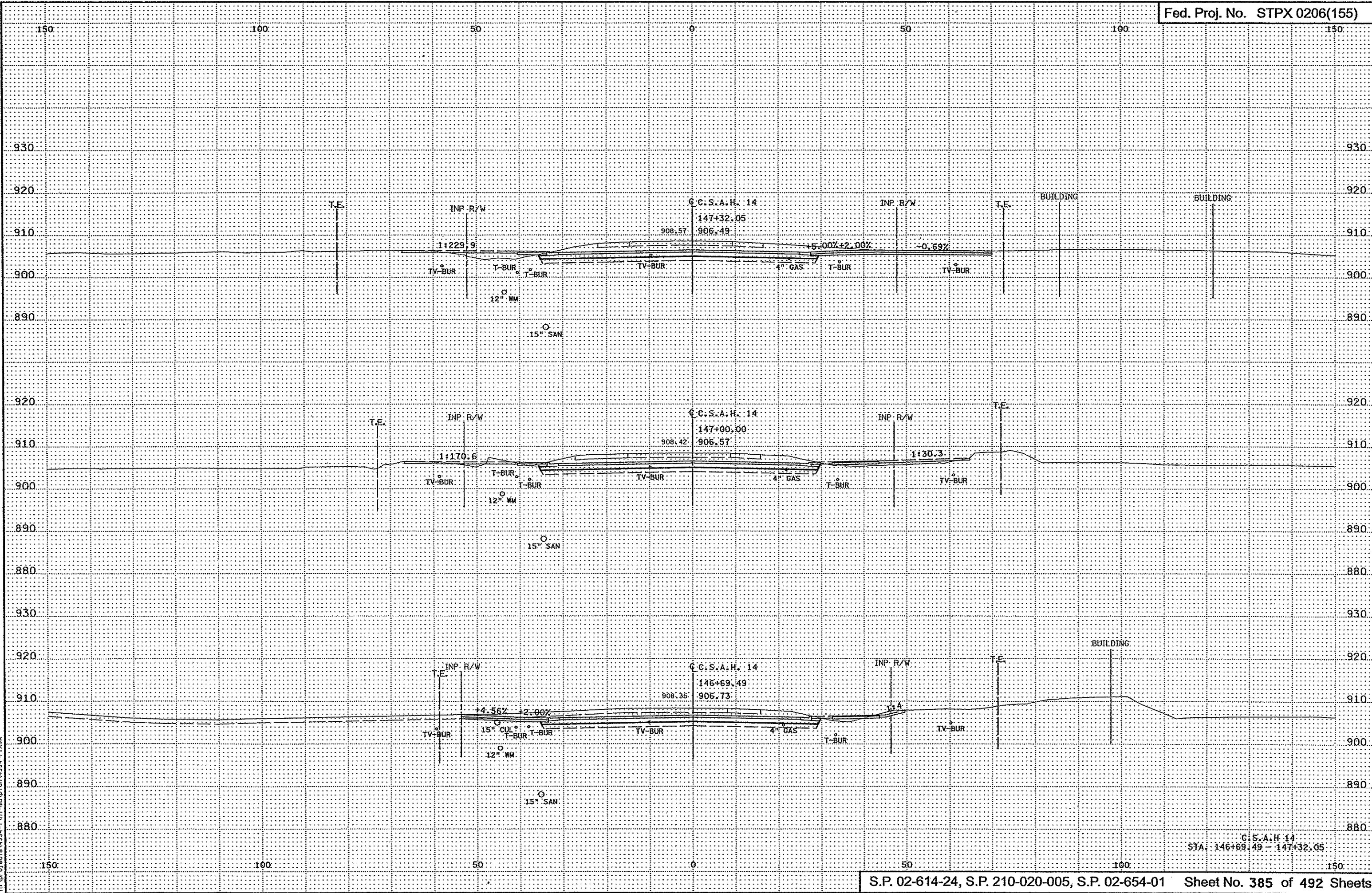


3:29:49 PM  
7/21/2009  
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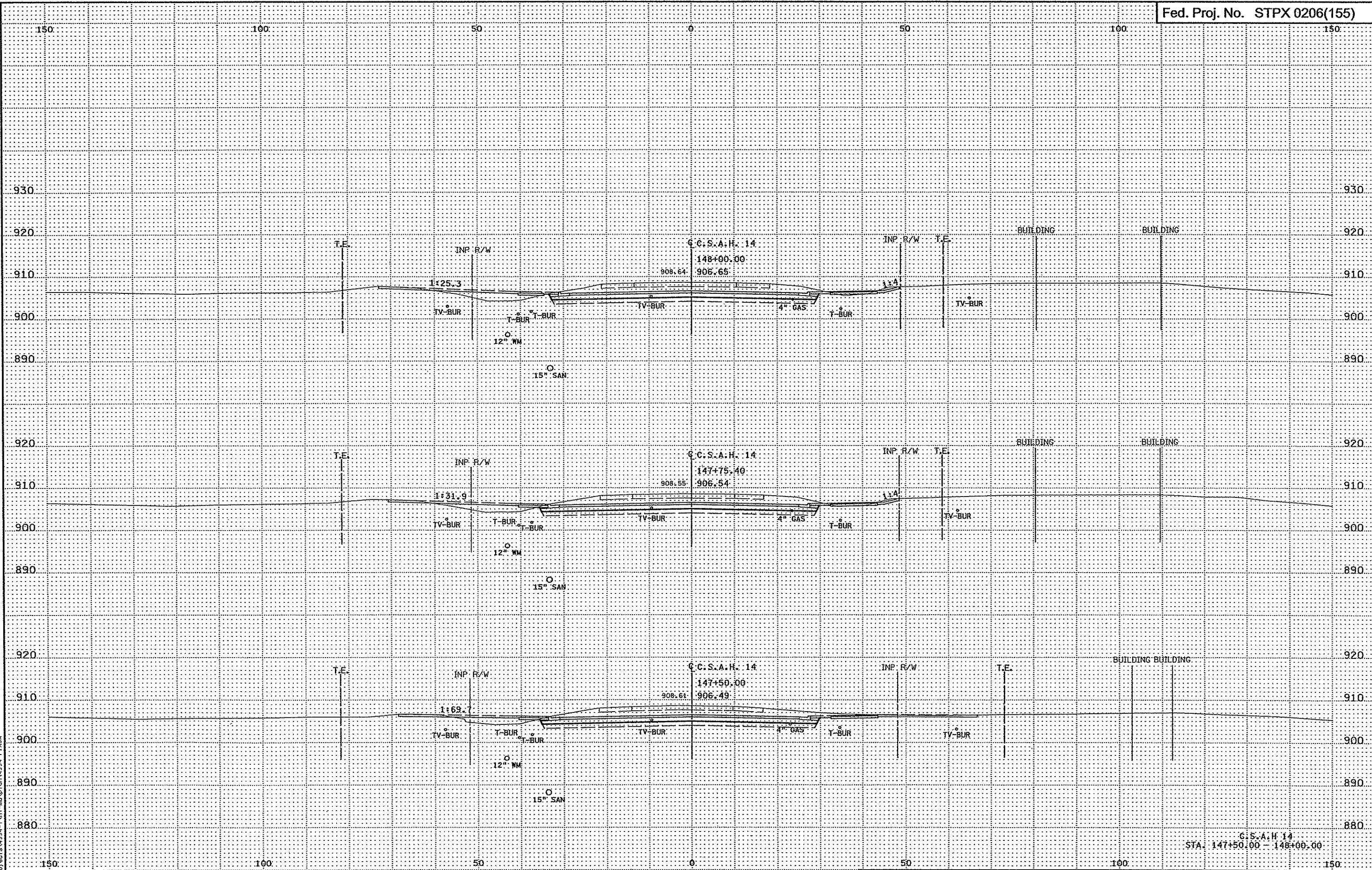


3/29/00 PM  
3/29/2000  
H:\S\Projects\4994-F\AD\1-m\AD\00\4994-F.XSA

C.S.A.H. 14  
STA. 146+00.00 - 146+40.05

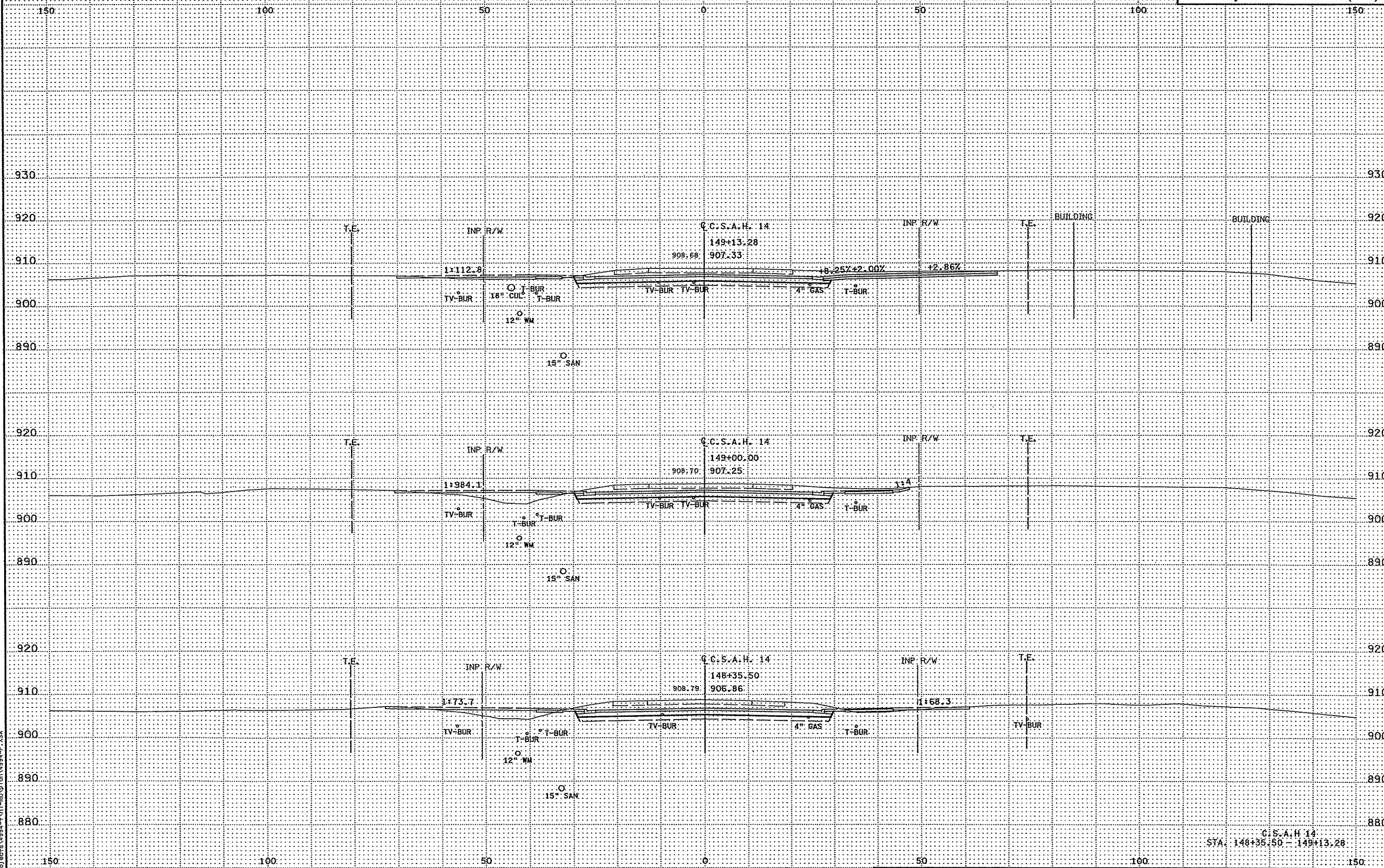


3/29/15 PM  
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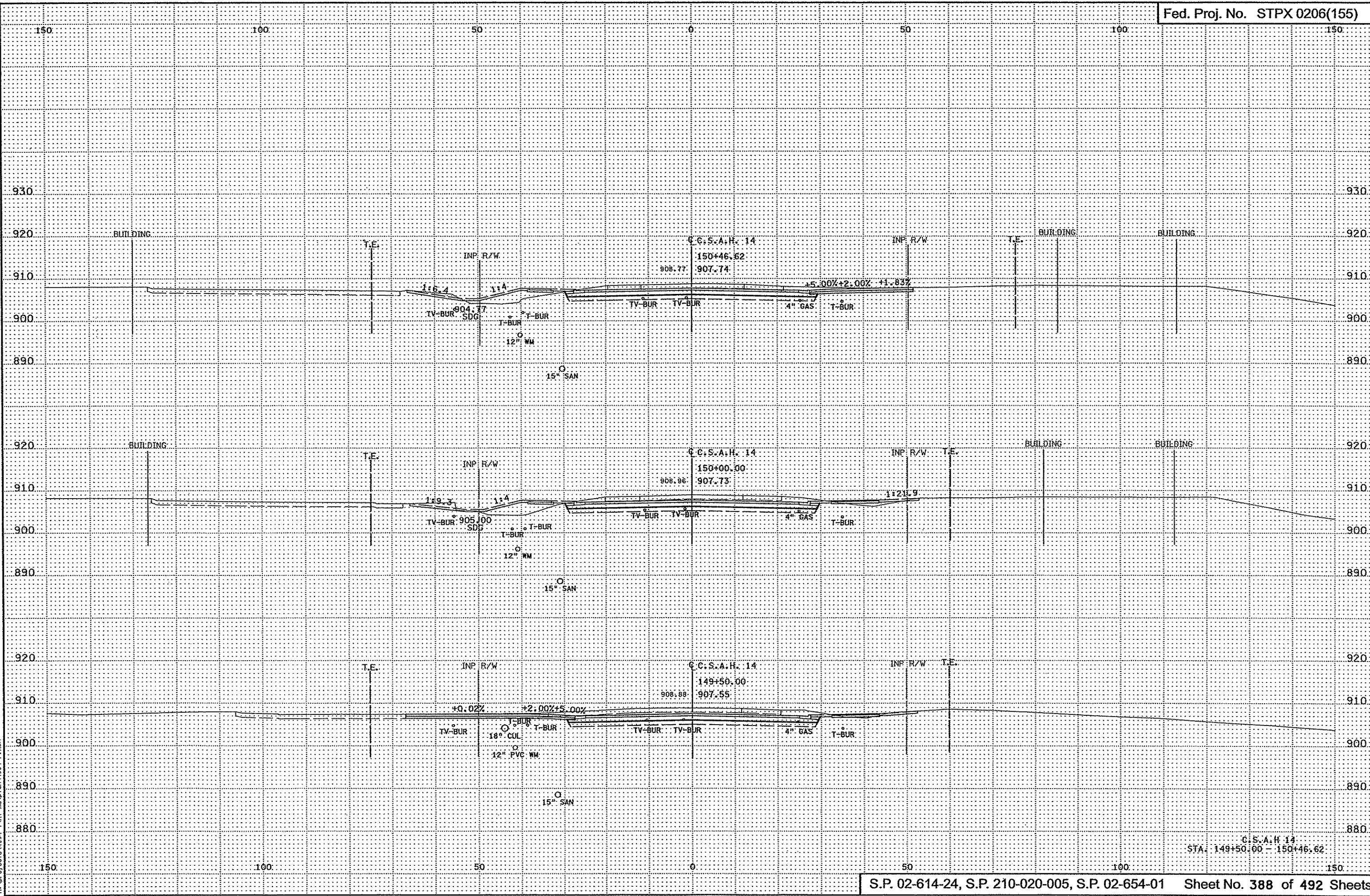
3/29/07 PM  
3/21/2007  
h:\proj\eccts\4994-f\h1-m\p1\on\4994-f.XSA

G.S.A.H. 14  
STA. 147+50.00 - 148+00.00

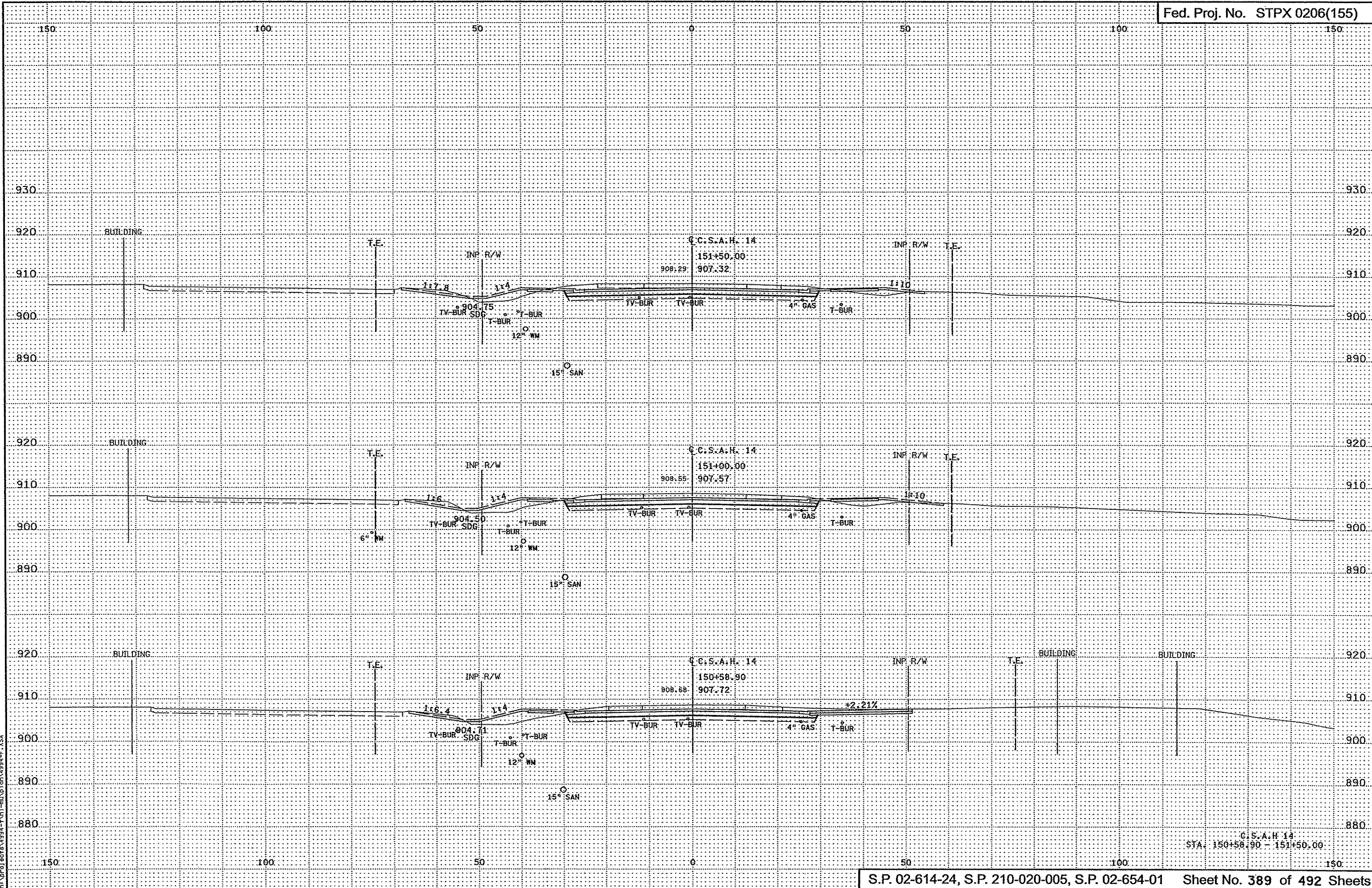


3:59:55 PM  
3/17/2009  
H:\projects\4994-f\h1-m\p10\4994-f.XSA

C.C.S.A.H. 14  
STA. 148+35.50 - 149+13.28



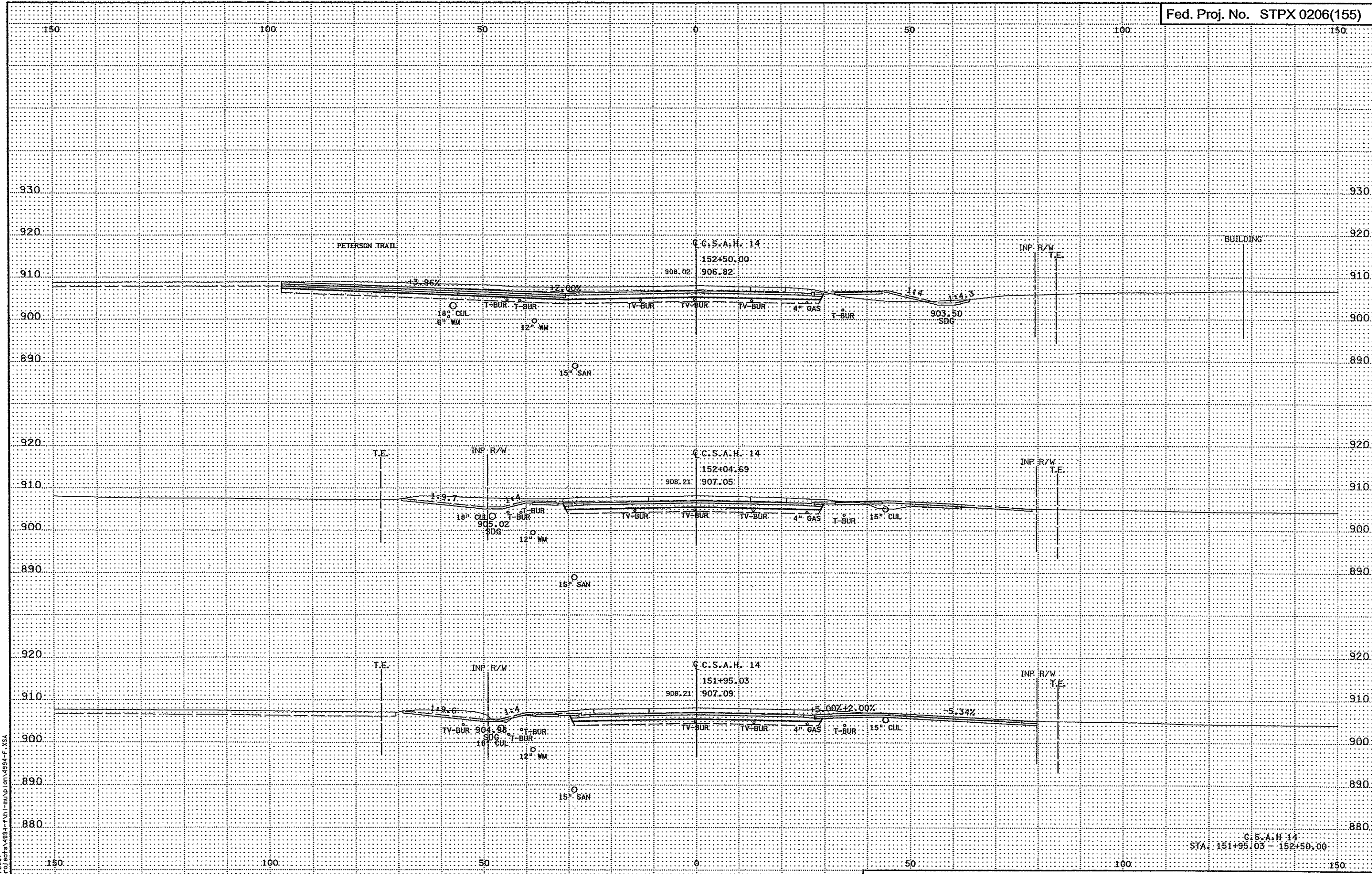
3/29/14 PM  
3/21/2007  
h:\proj\ecots\1994-f\h1-m\plan\4994-f.XSA



3/1/21 1:55 PM  
H:\projects\stpx\994-f\h1-m\p1\cr\994-f.dwg

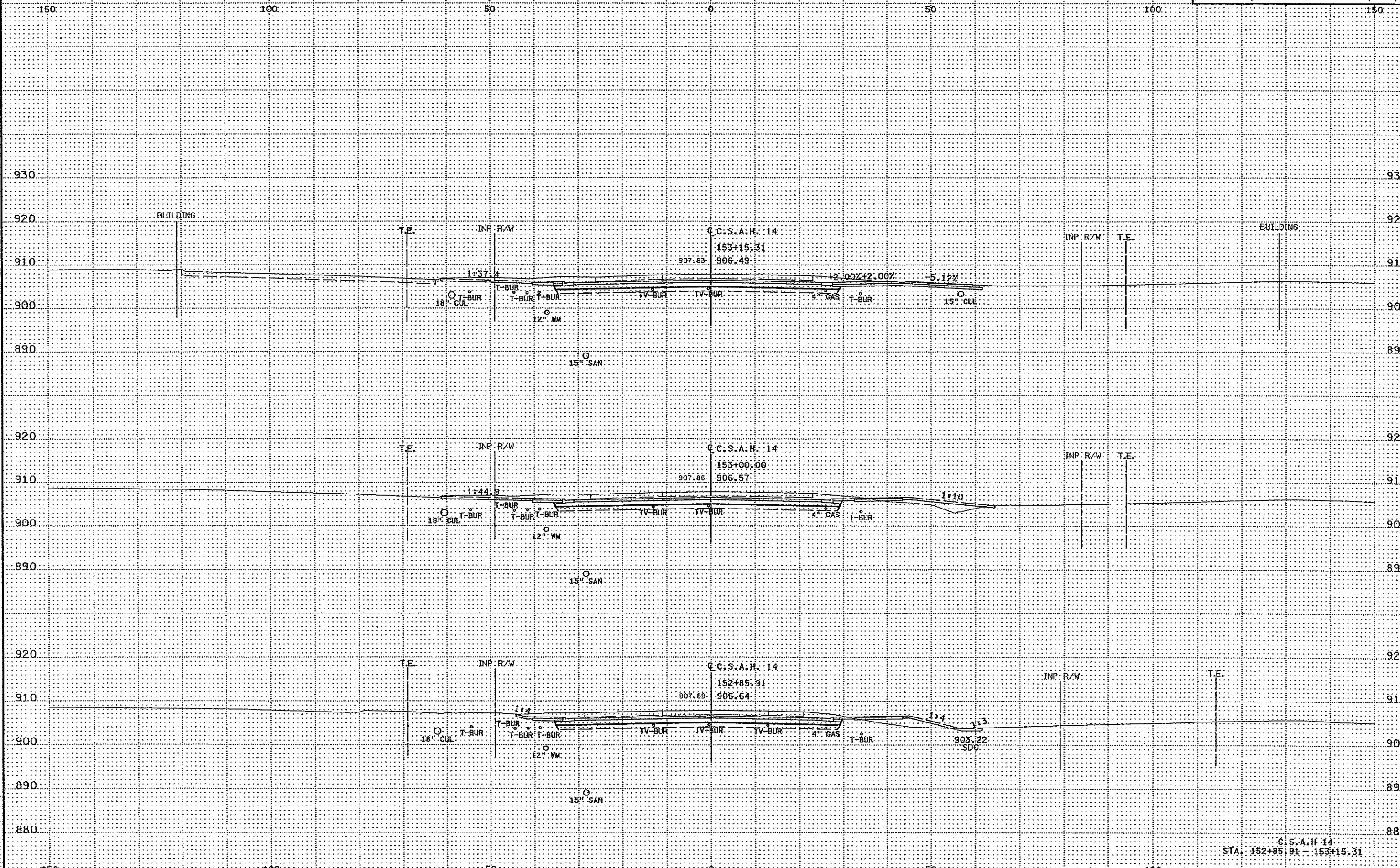
C.C.S.A.H. 14  
STA. 150+58.90 - 151+50.00





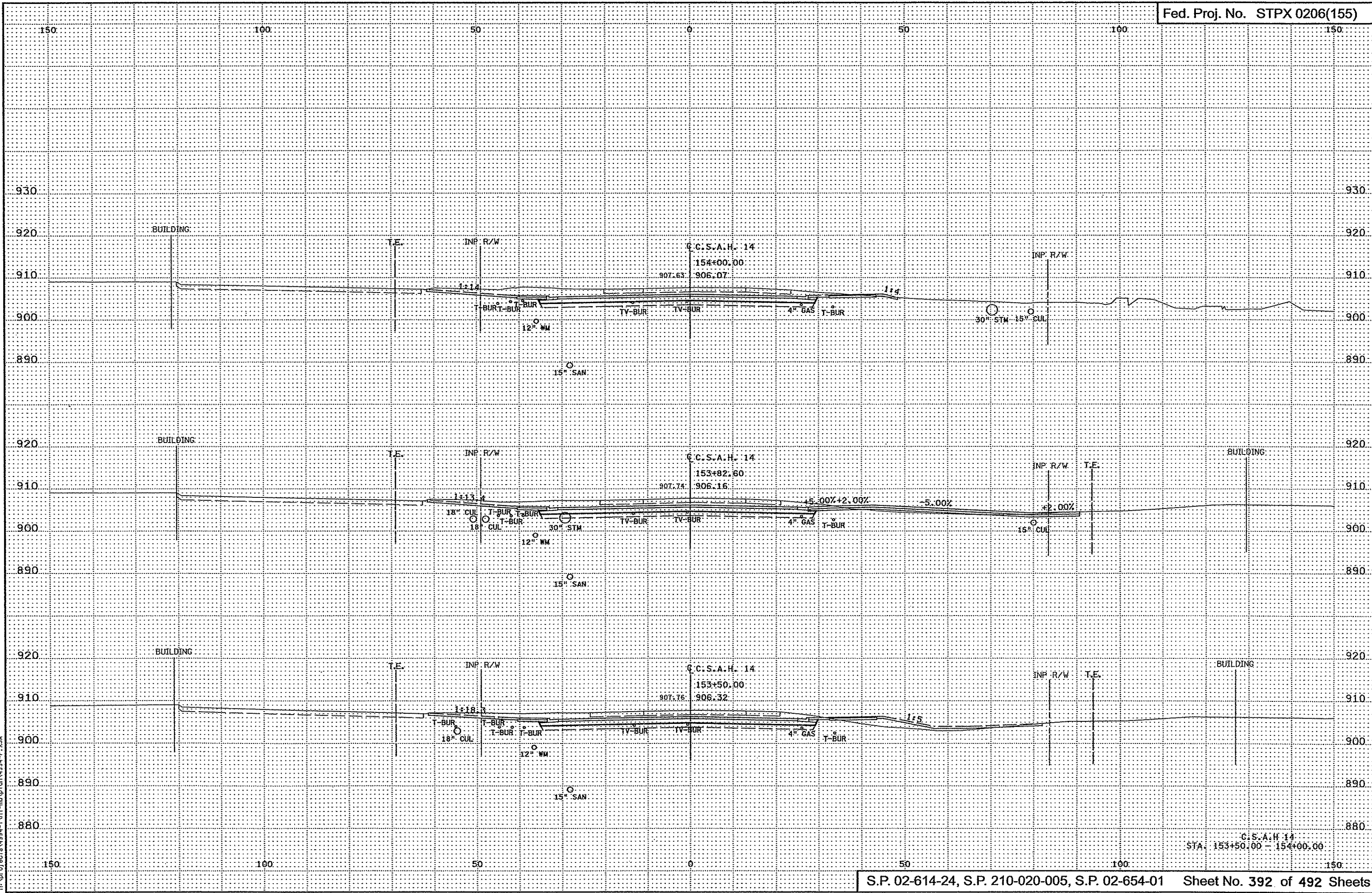
3:29:56 PM  
3/21/2007  
ht:\proj\elects\4894-F\H1-m\MAP (on\4894-F.XSA

C.S.A.H. 14  
STA. 151+95.03 - 152+50.00

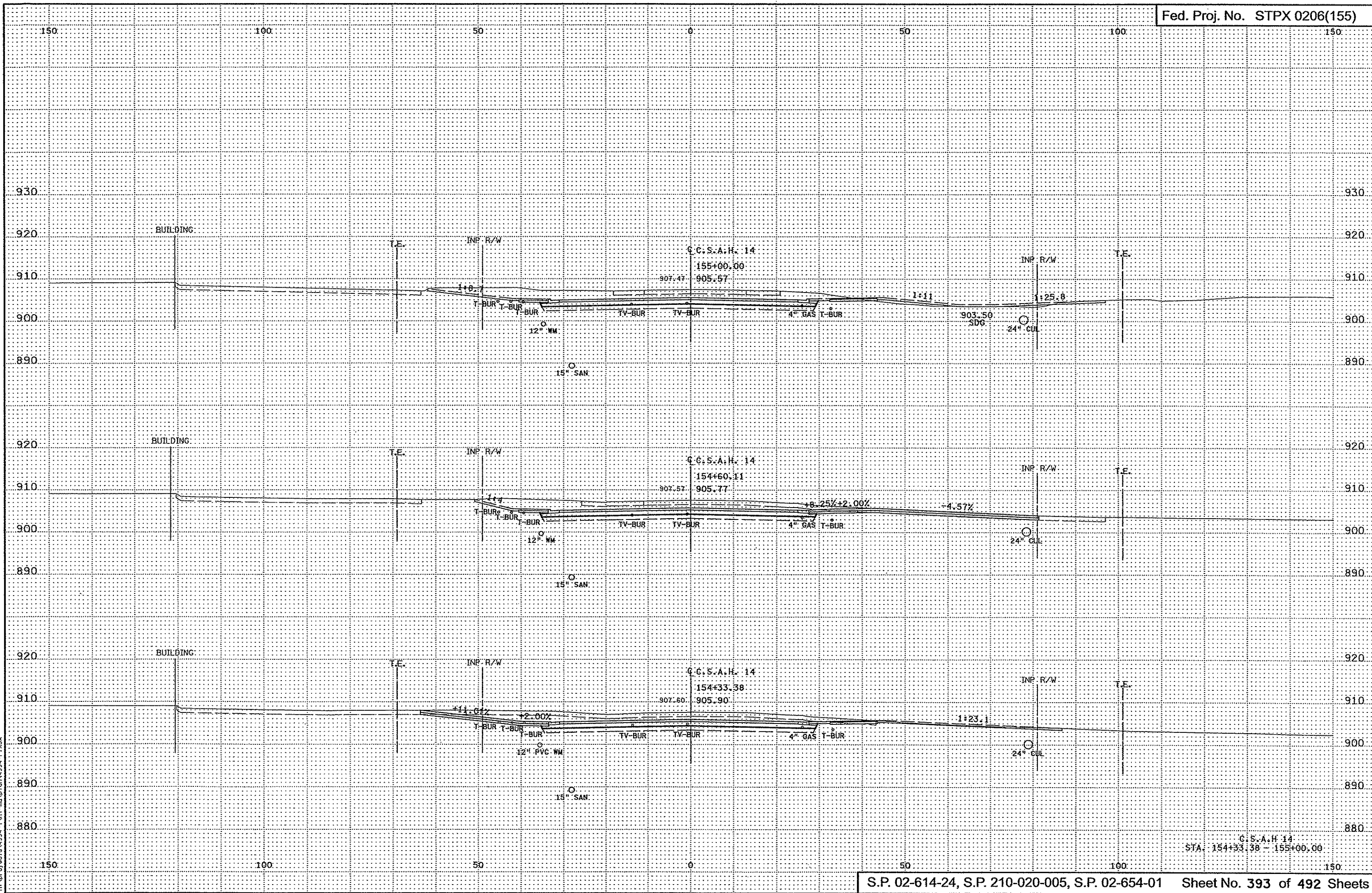


3:29:57 PM  
3/21/2007  
h:\projects\4994-F\1-m\vd\gn\4994-F.XSA

C.C.S.A.H. 14  
STA: 152+85.91 - 153+15.31

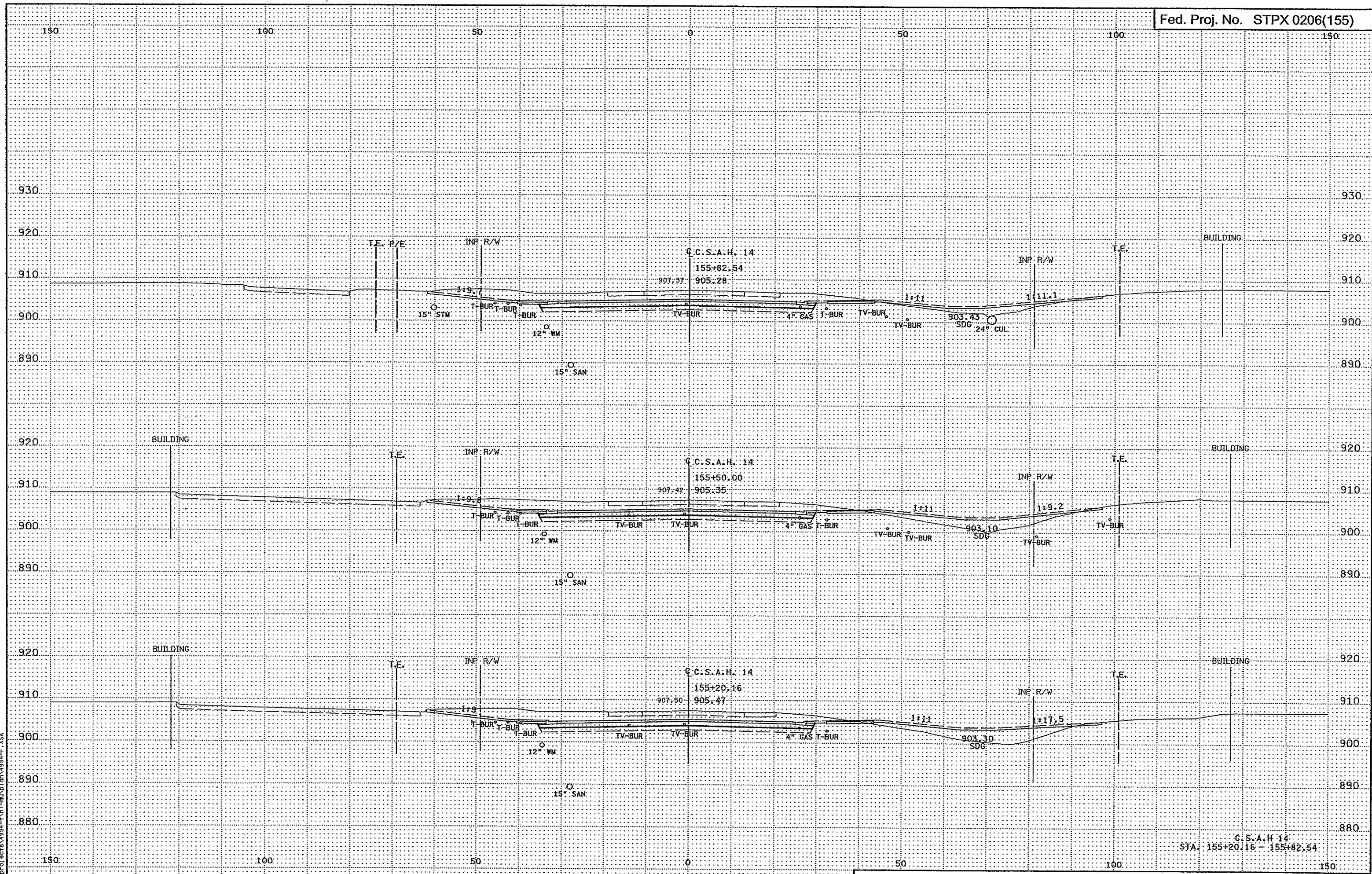


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3/21/2007  
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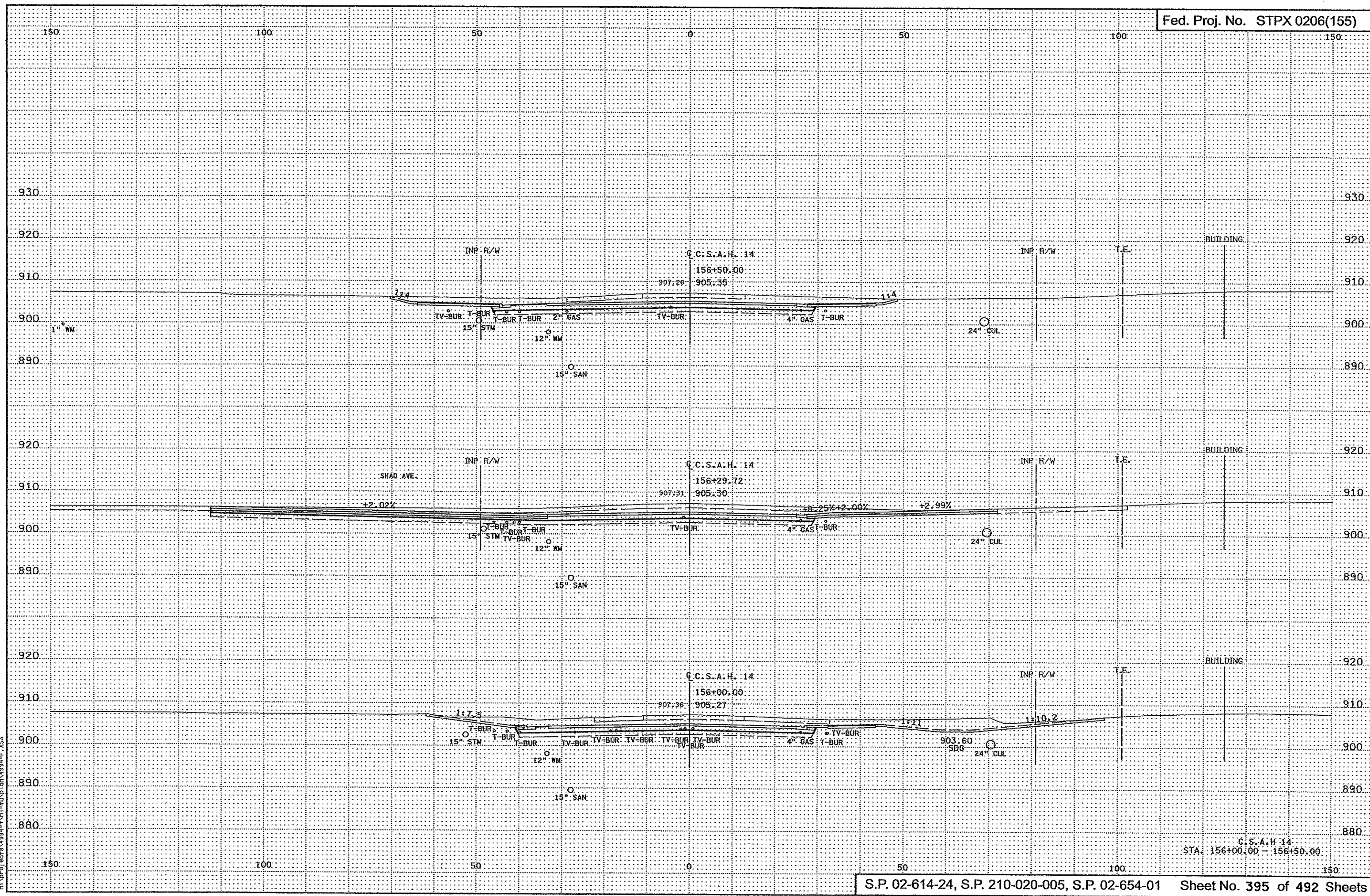
3/30/00 PM  
3/21/2007  
h:\proj\ecrs\1994-f\h1-mu\p1on\4994-f.XSA

C.C.S.A.H. 14  
STA. 154+33.38 - 155+00.00

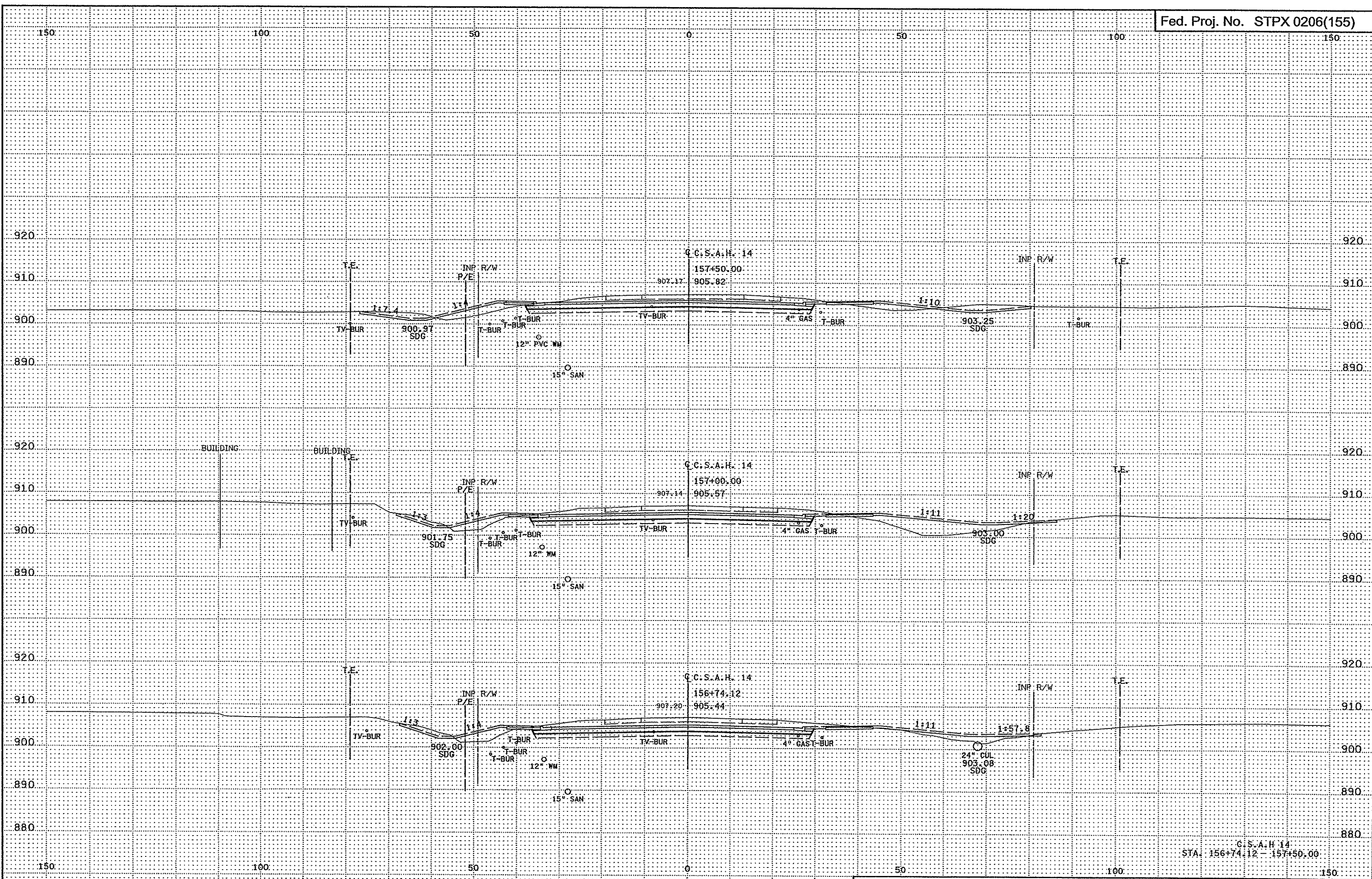


3:30:01 PM  
 P:\PROJECTS\1994-F\11-M\10-D\10-A\1994-F.XSA  
 P:\PROJECTS\1994-F\11-M\10-D\10-A\1994-F.XSA

C.C.S.A.H. 14  
 STA: 155+20.16 - 155+82.54

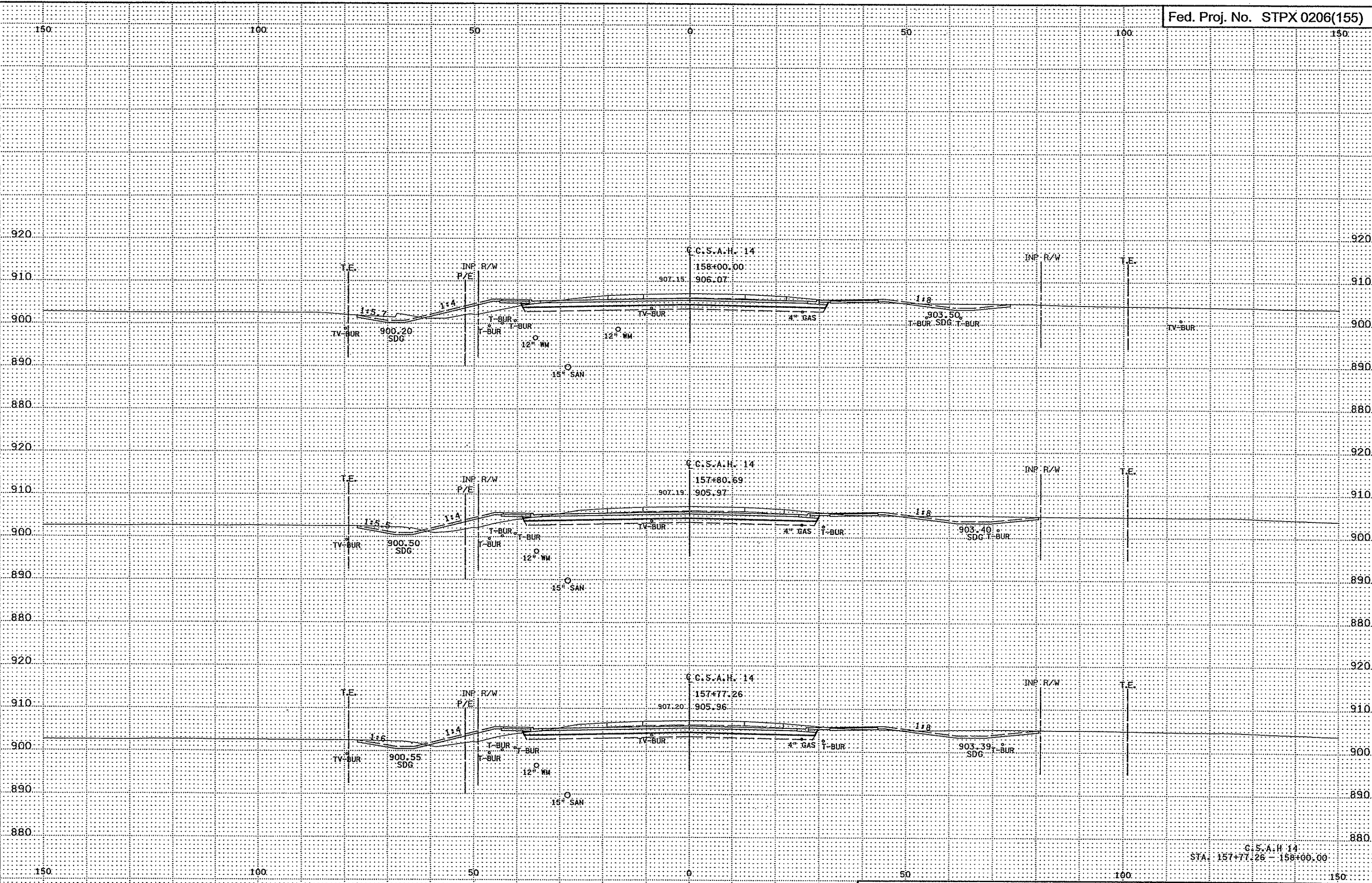


3:30:02 PM  
3/20/2017  
D:\proj\scots\4994-T\VI-mu\p\m\4994-F\_XSA



3:30:03 PM  
3/21/2007  
I:\Projects\4994-F\11-m\11-10\4994-F.XSA

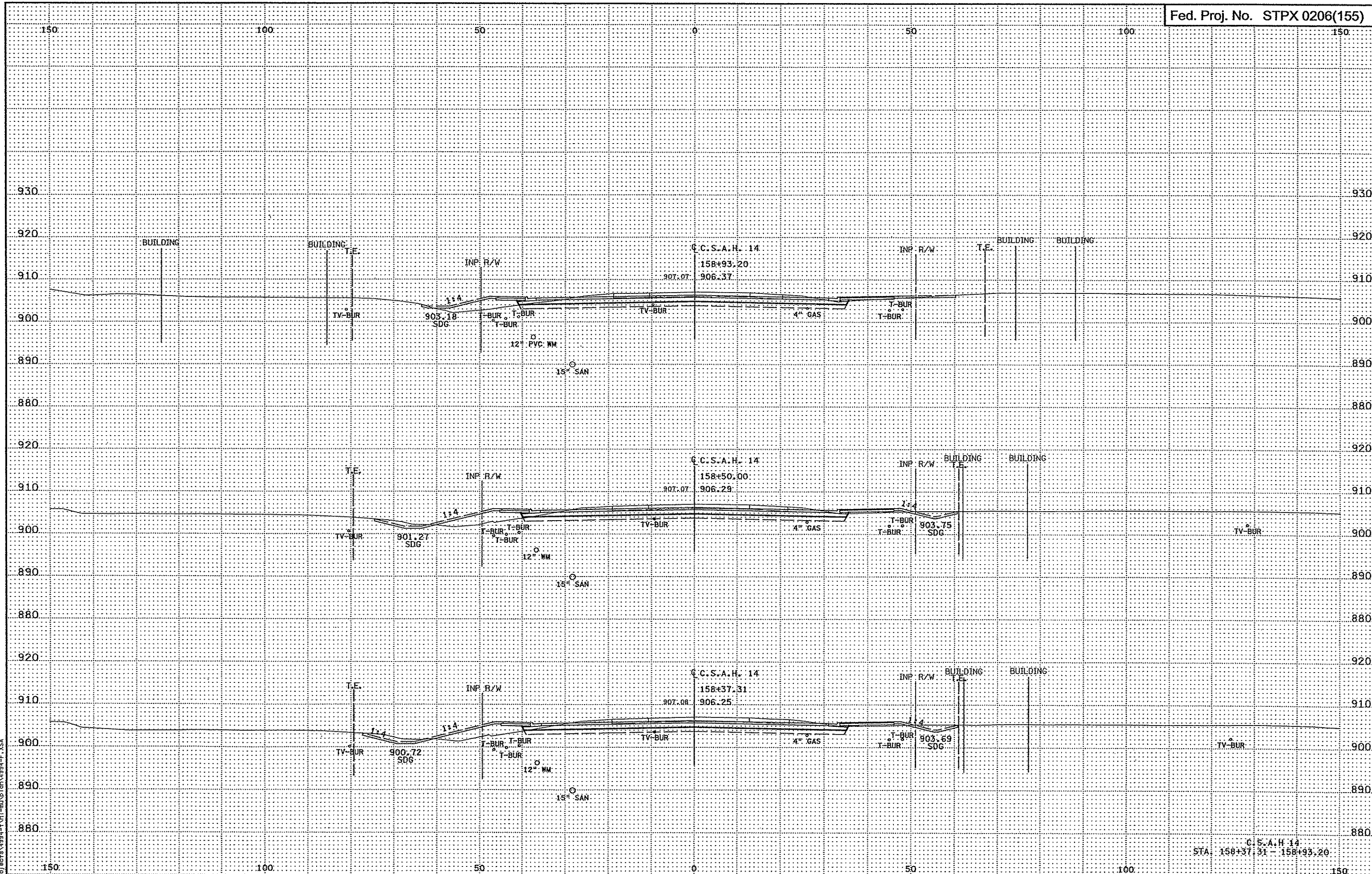
C.S.A.H. 14  
STA. 156+74.12 - 157+50.00



3:30:04 PM  
3/7/2007  
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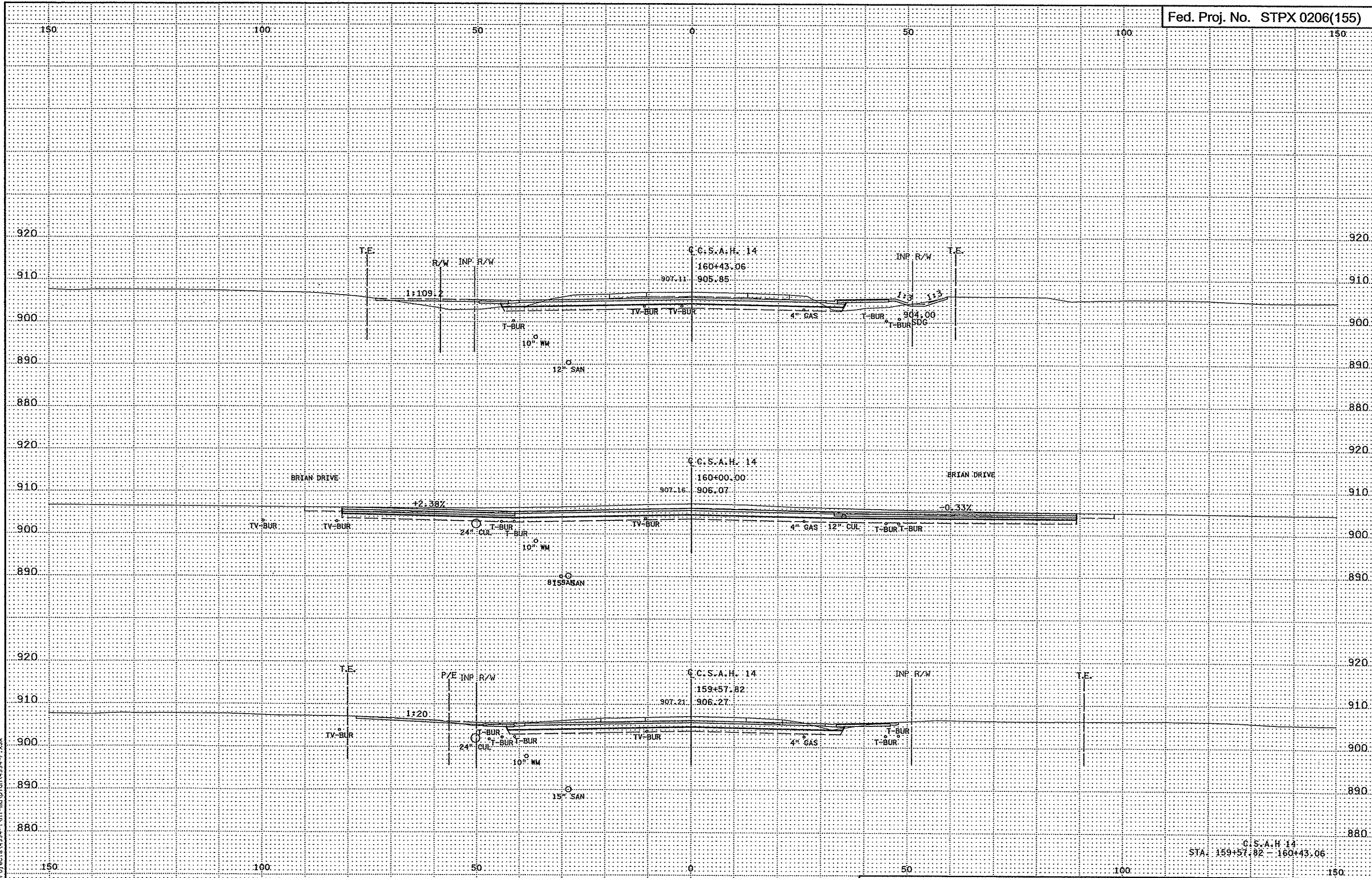
C.S.A.H. 14  
STA. 157+77.26 - 158+00.00





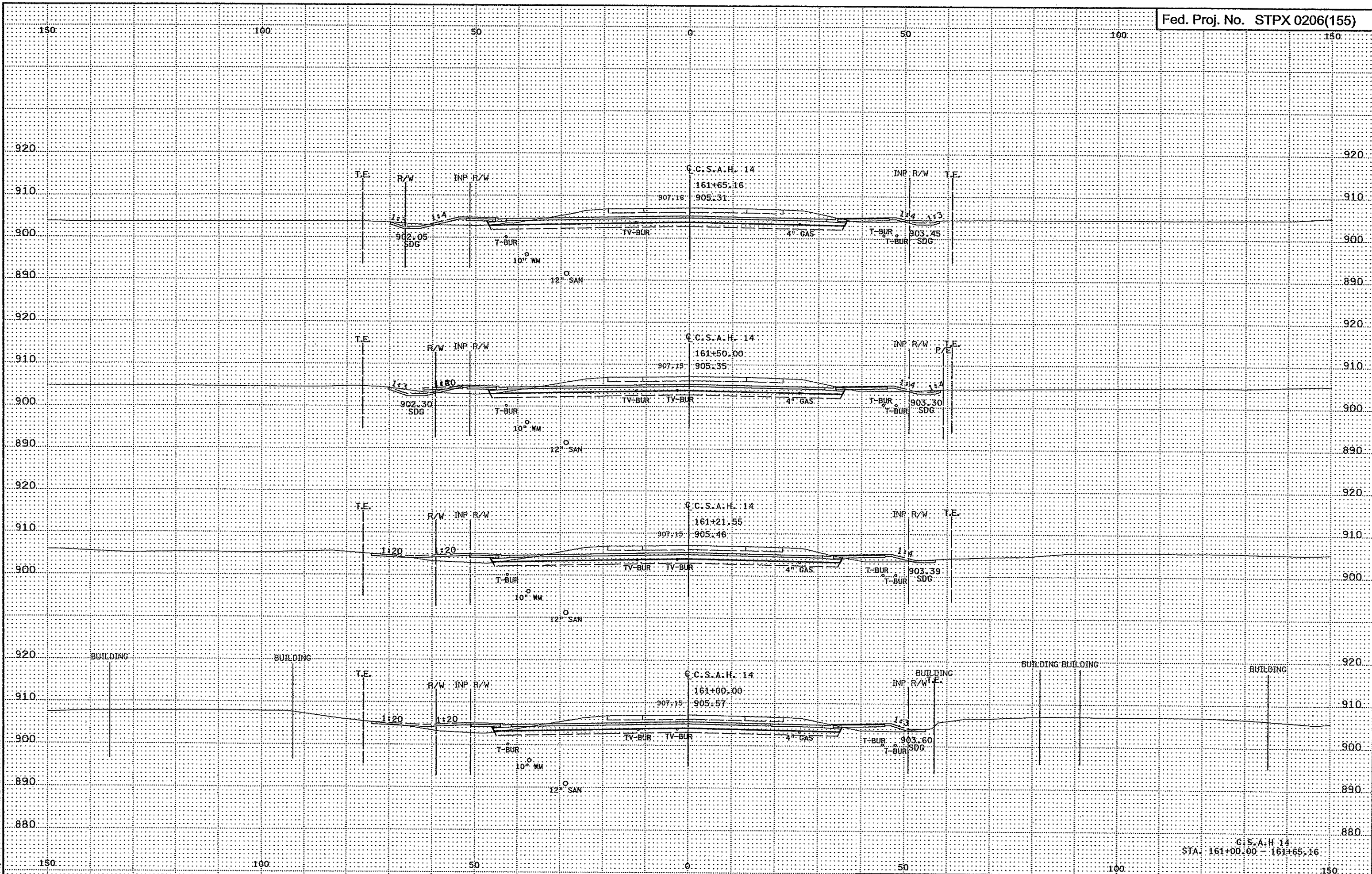
3:30:05 PM  
3/7/2007  
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C.C.S.A.H. 14  
STA: 158+37.31 - 158+93.20



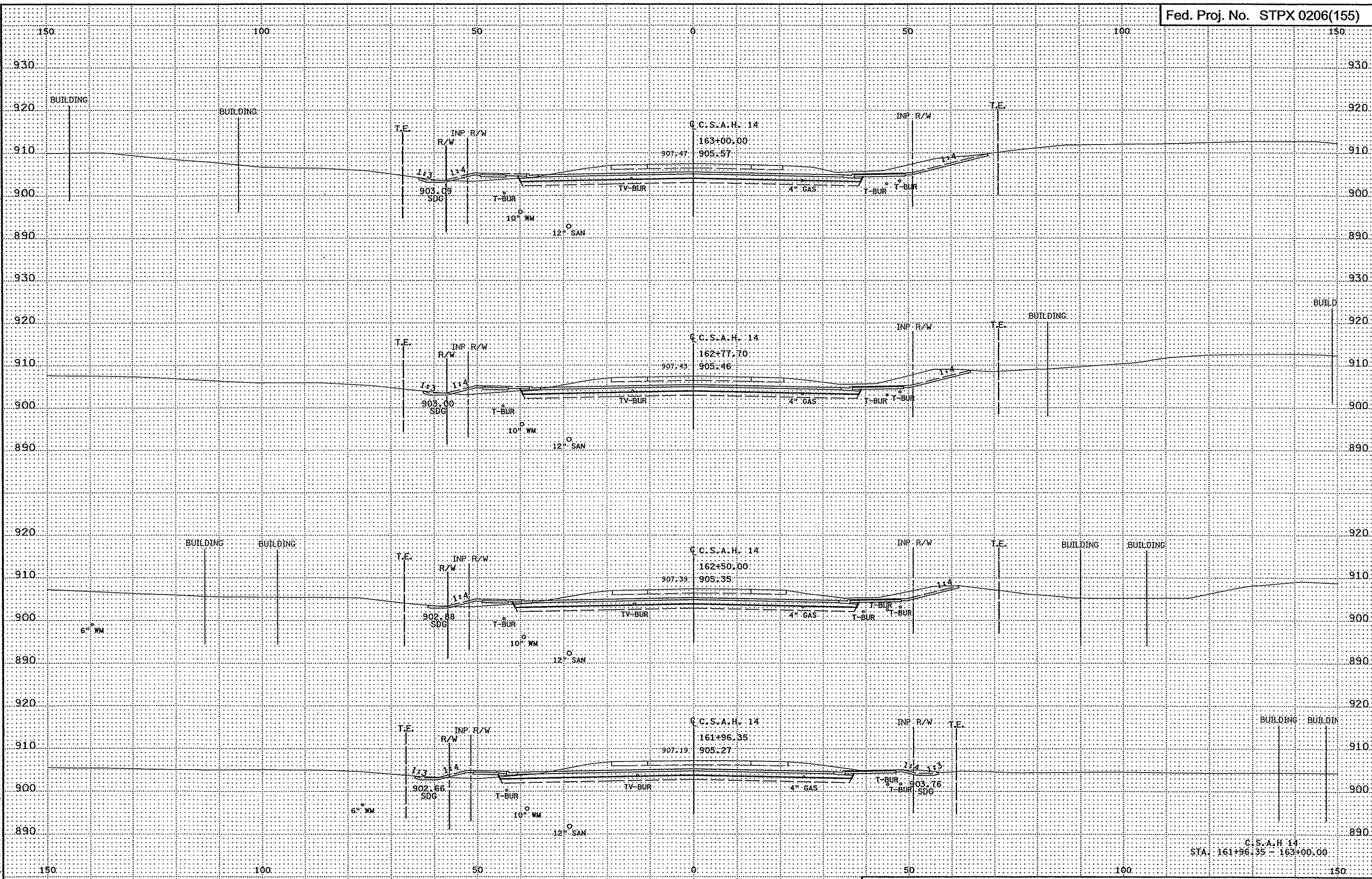
3:30:06 PM  
3/21/2007  
m:\spj\elects\4994-F\11-m\01.dwg\4994-F.dwg

C.S.A.H. 14  
STA: 159+57.82 - 160+43.06

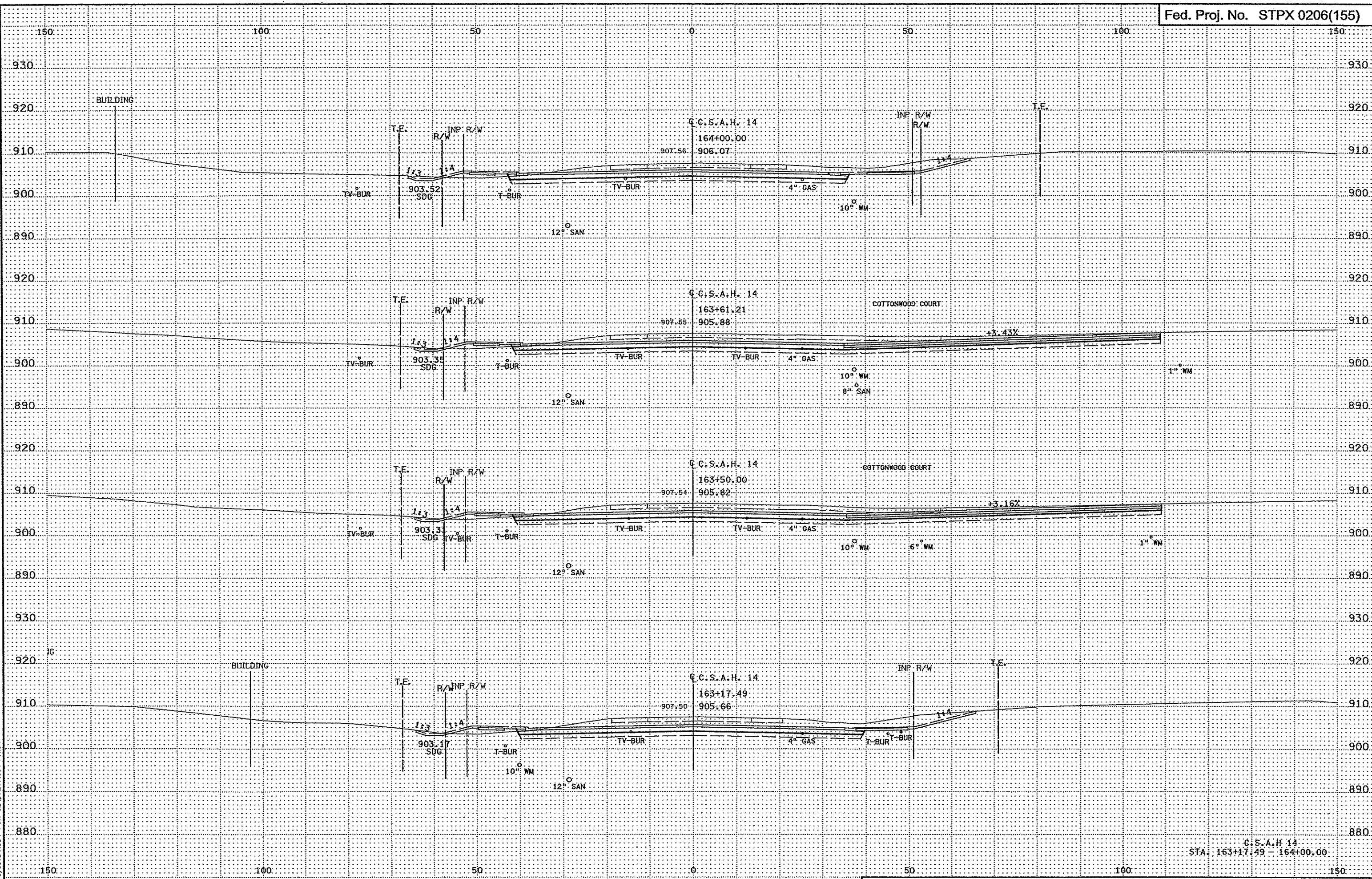


3:30:07 PM  
3/21/2007  
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C.C.S.A.H. 14  
STA. 161+00.00 - 161+65.16

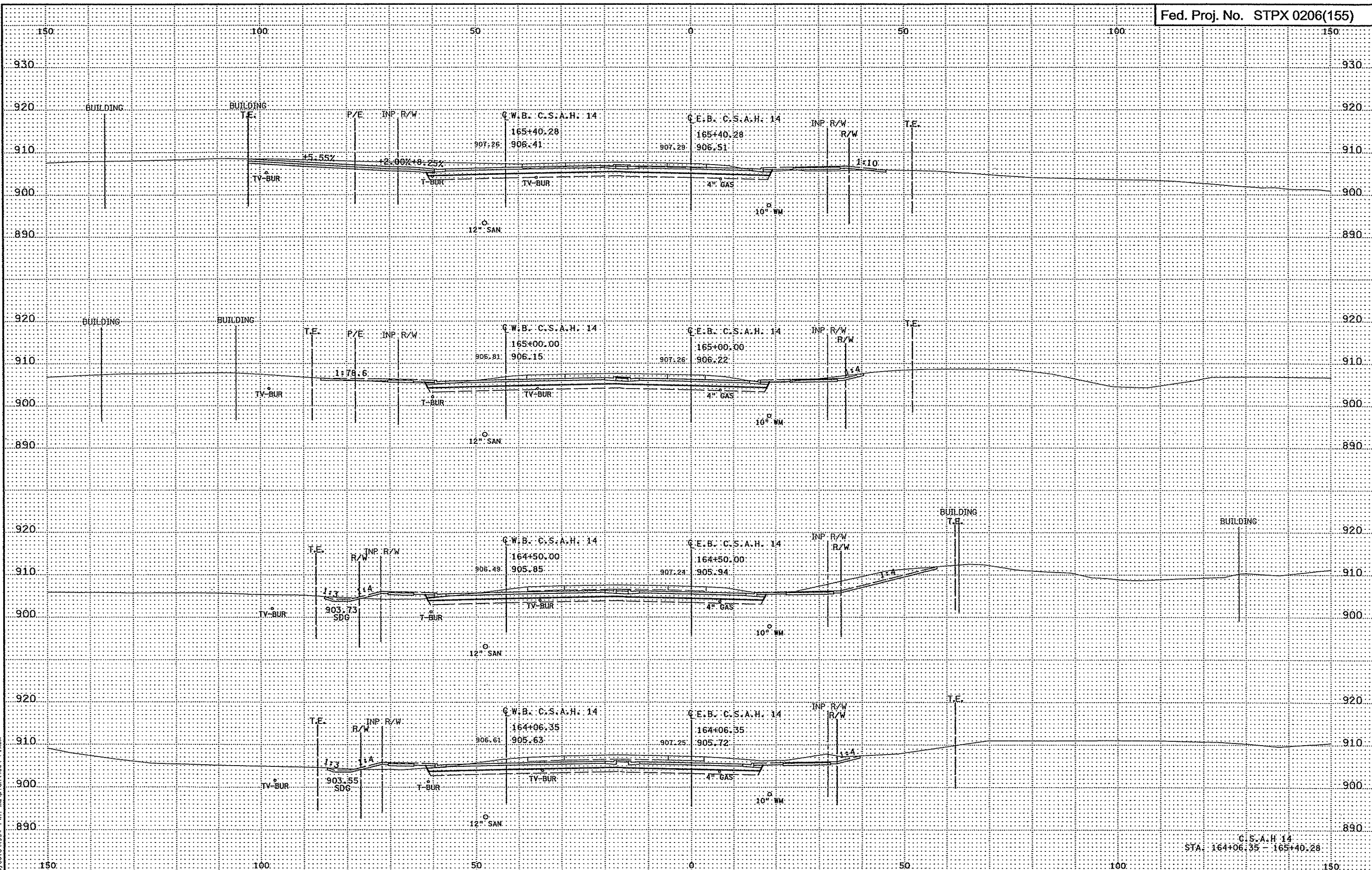


3/30/09 PM 3/21/2007  
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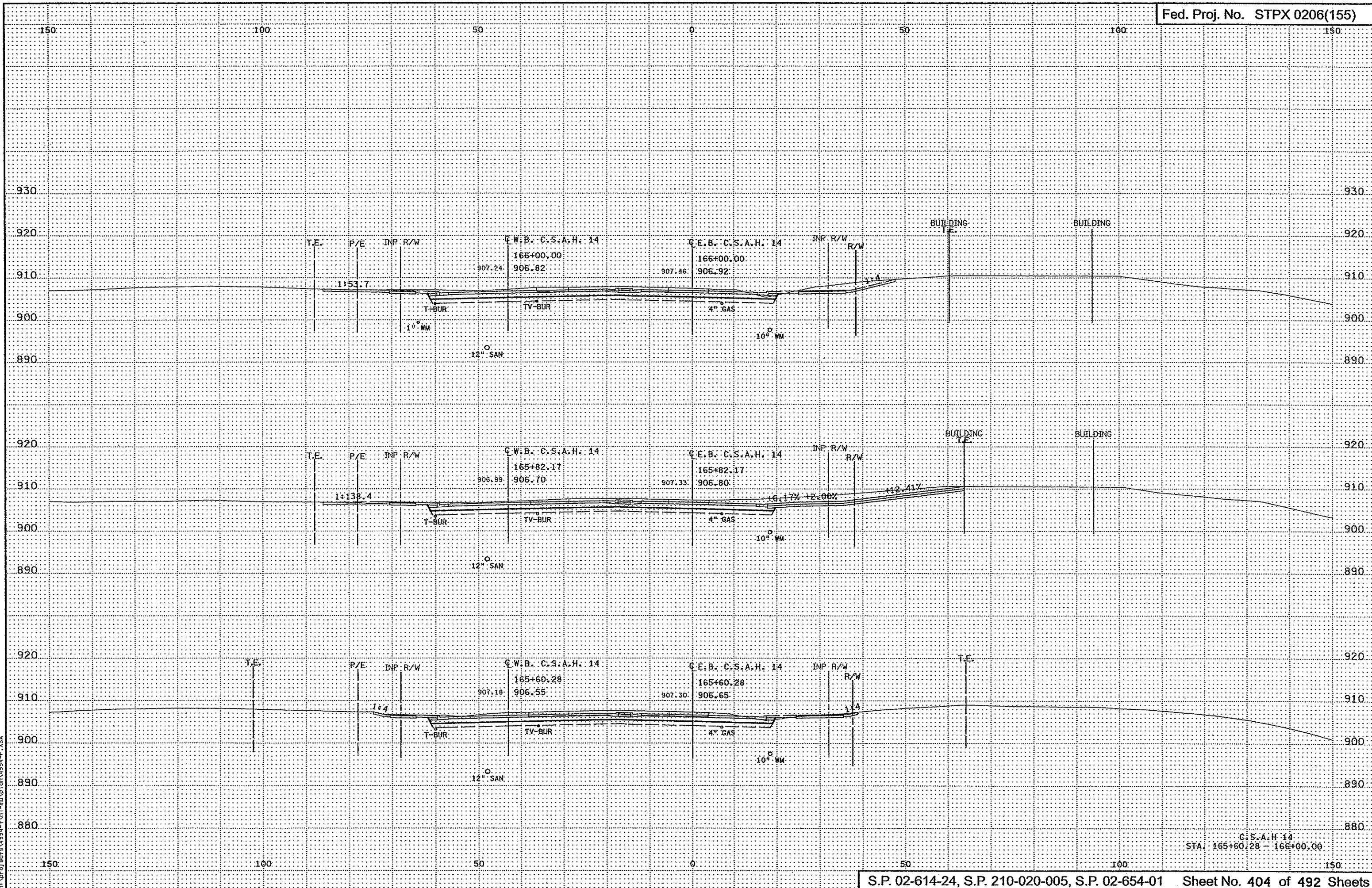
3:30:10 PM  
3/21/2007  
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C.C.S.A.H. 14  
STA. 163+17.49 - 164+00.00



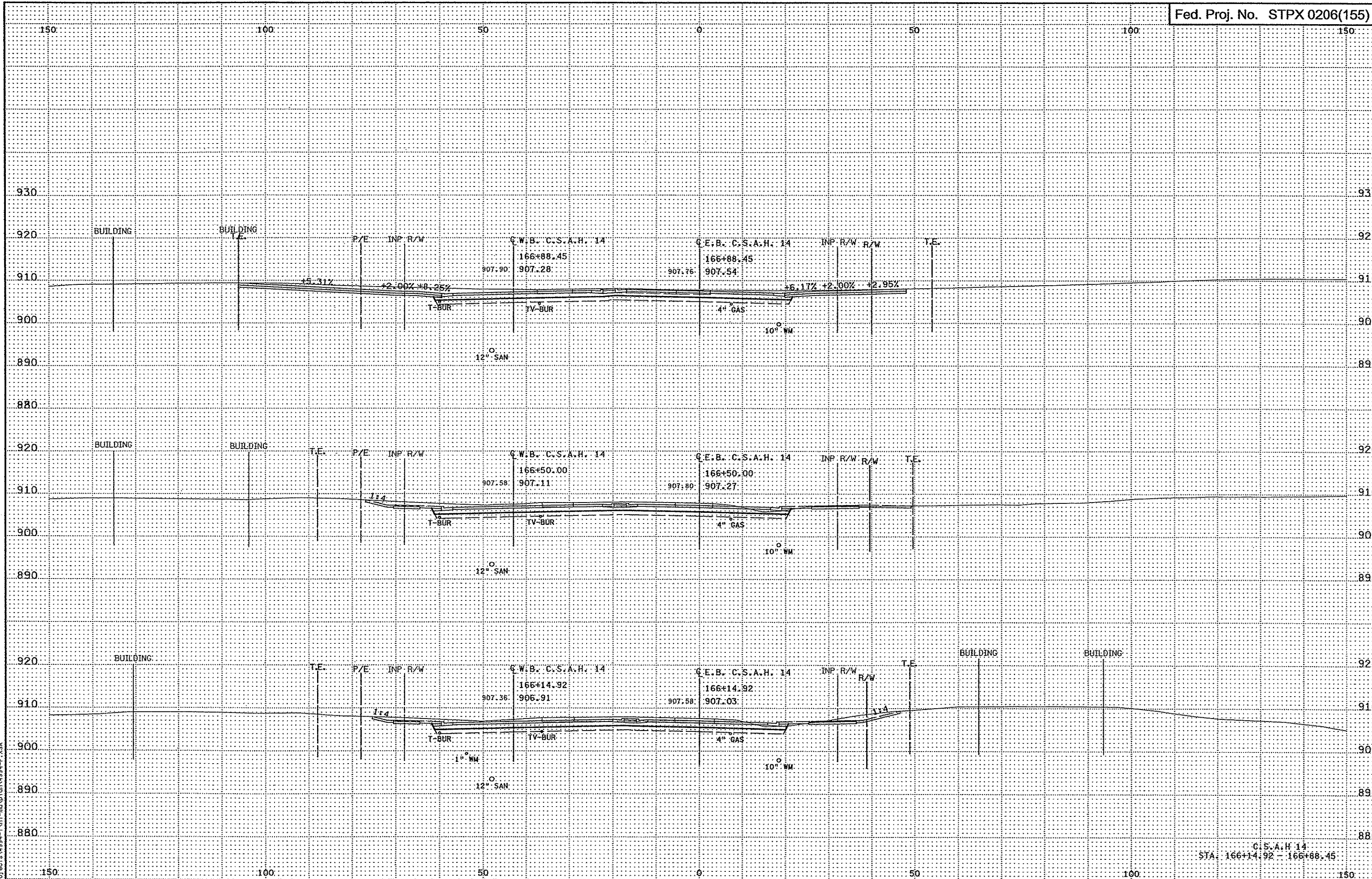
3:30:11 PM  
3/21/2007  
H:\projects\4994-FNH1-m\plan\4994-F.XSA

C.S.A.H. 14  
STA. 164+06.35 - 165+40.28



3:30:12 PM  
3/2/2007  
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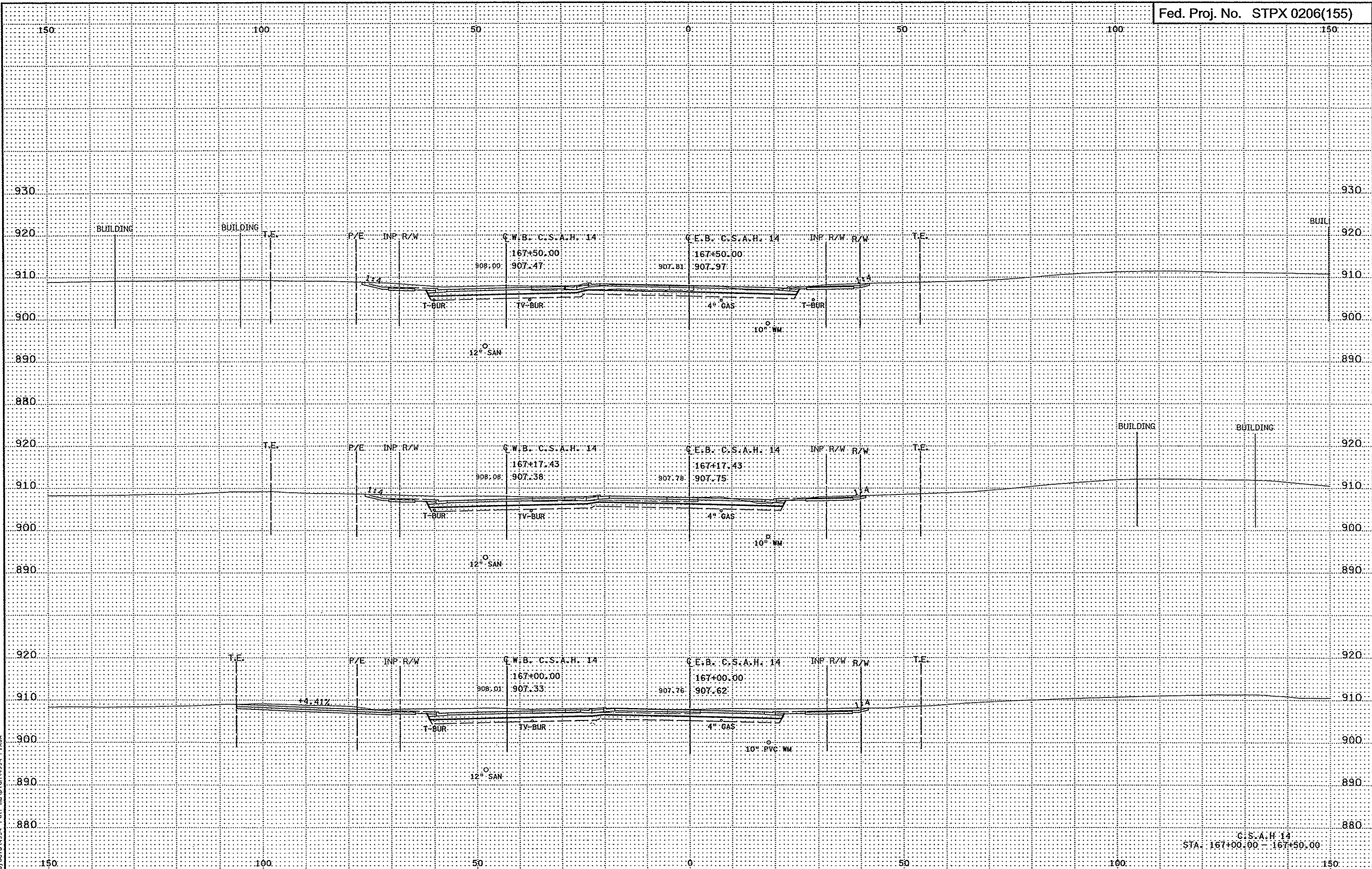
C.S.A.H. 14  
STA: 165+60.28 - 166+00.00



1:30:13 PM  
3/21/2007  
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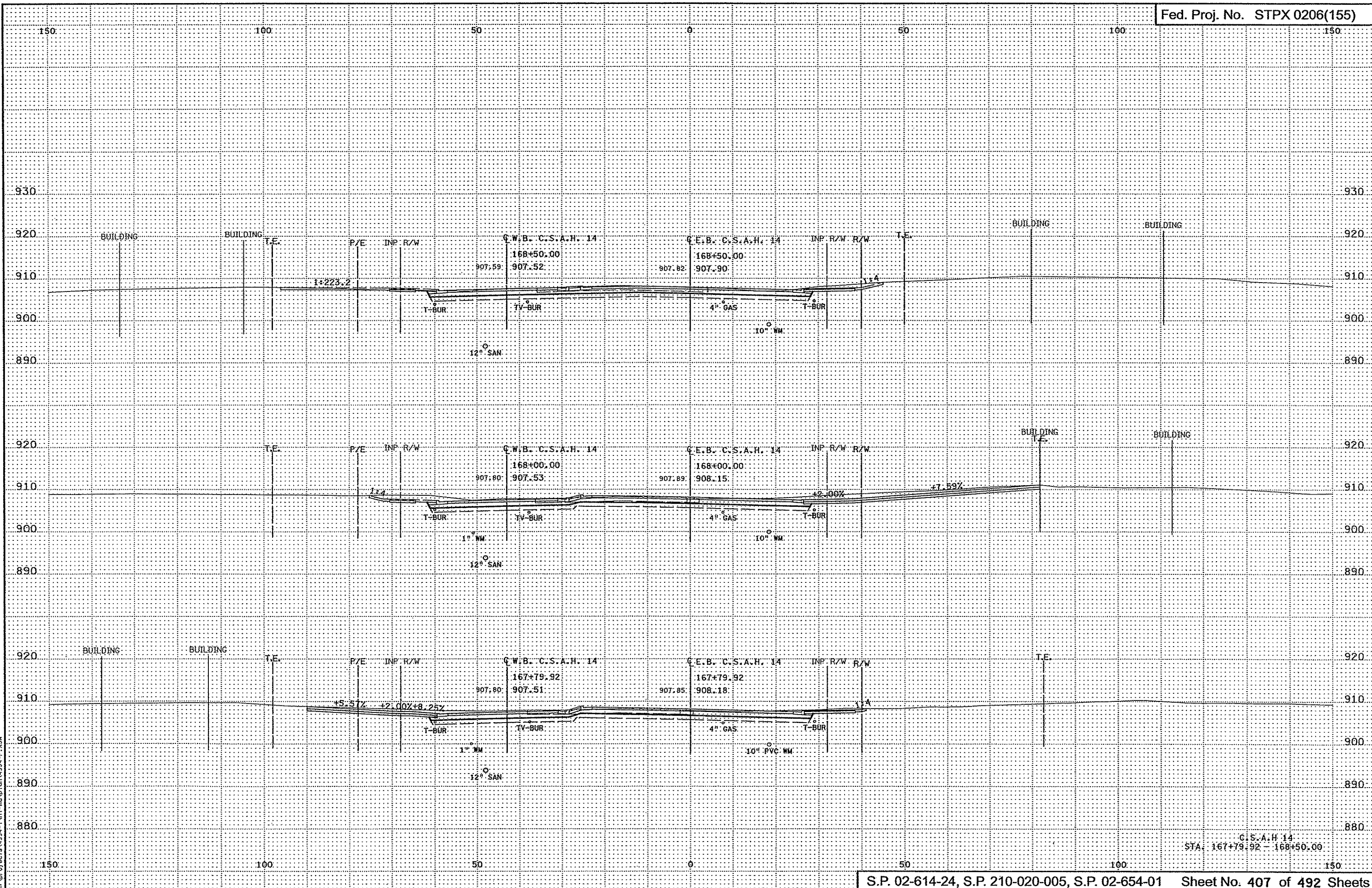
C.S.A.H. 14  
STA: 166+14.92 - 166+88.45





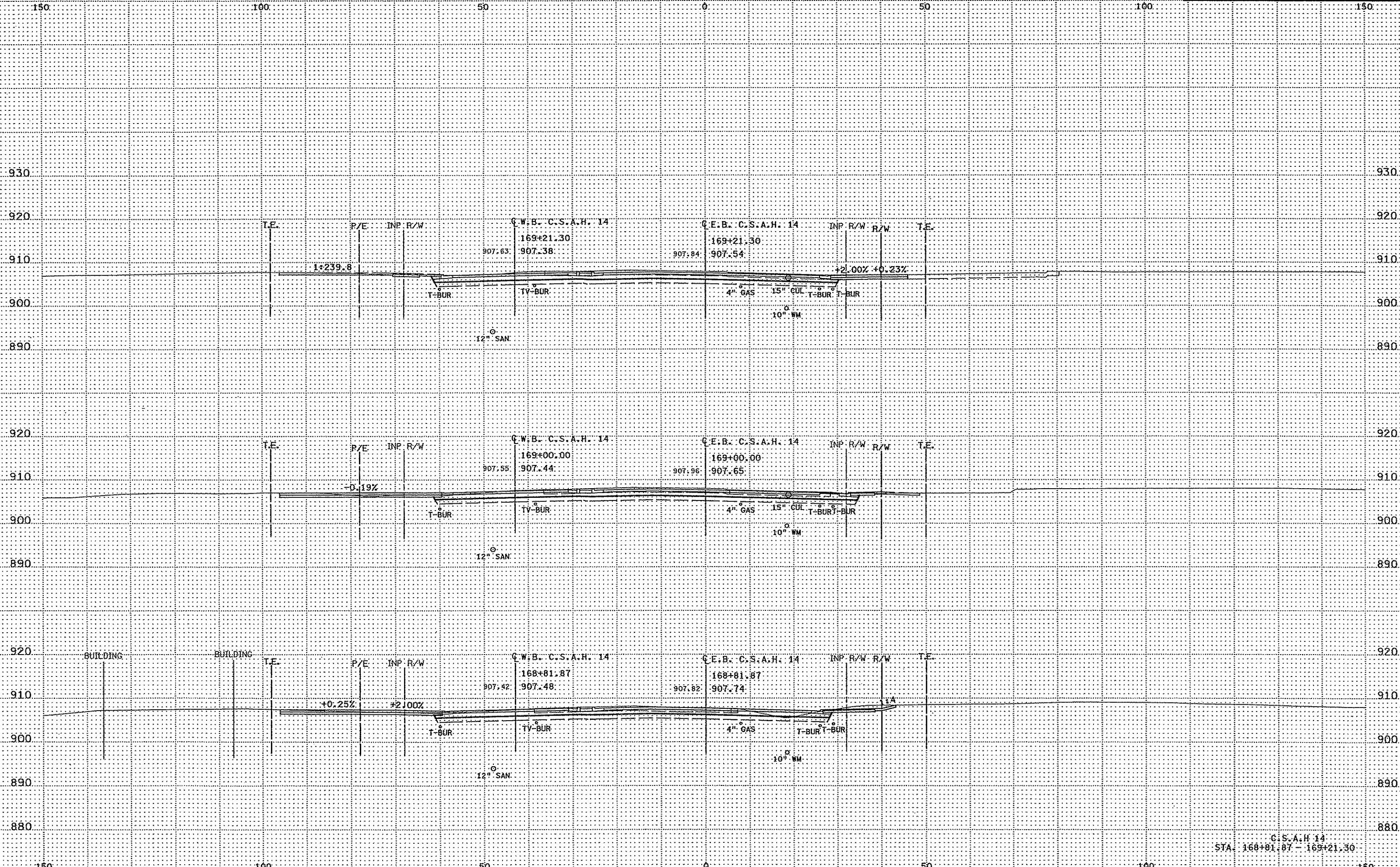
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3/21/2007  
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C.S.A.H. 14  
STA: 167+00.00 - 167+50.00



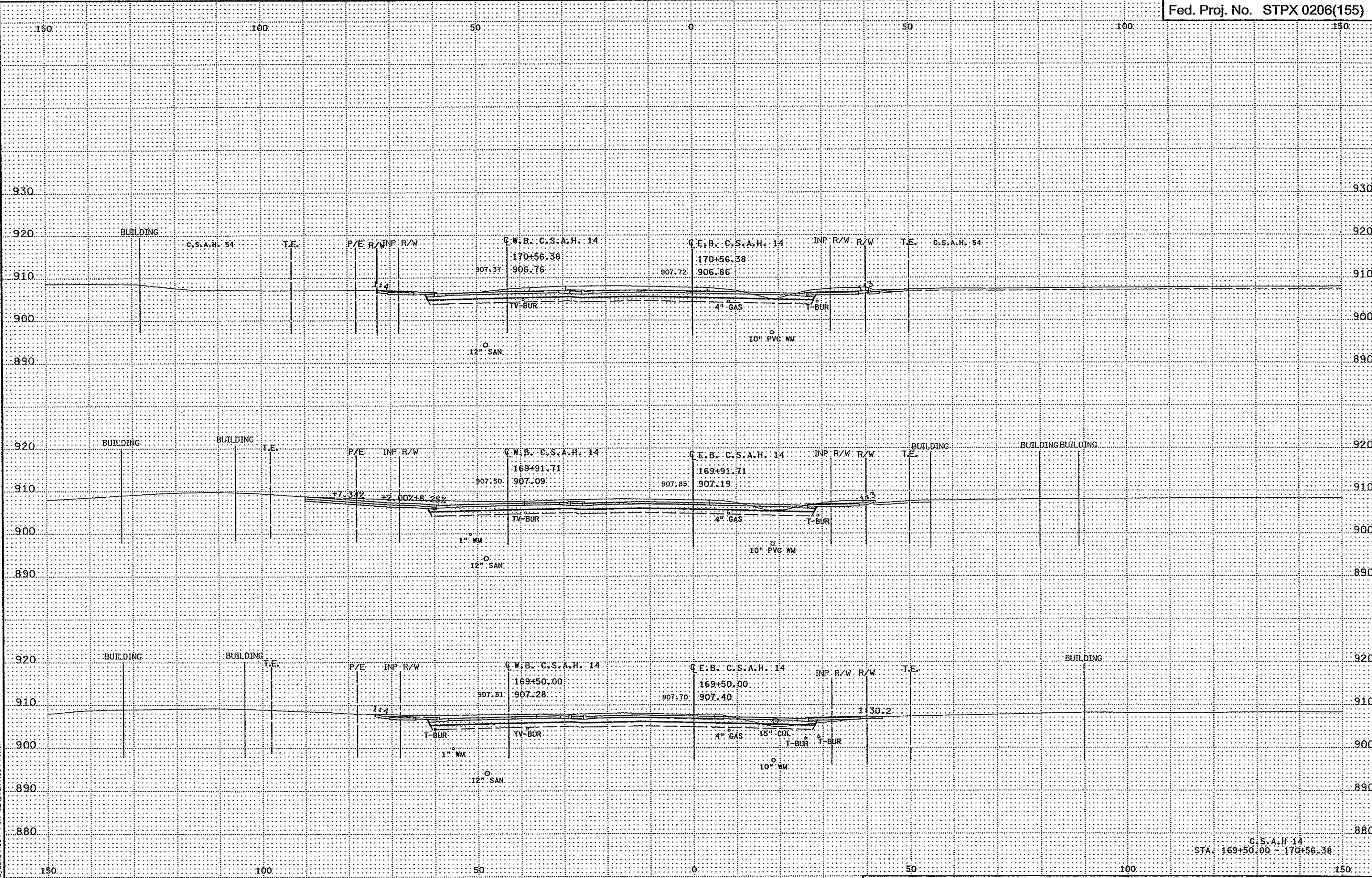
3/30/16 PM  
3/21/2007  
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C.S.A.H. 14  
STA. 167+79.92 - 168+50.00



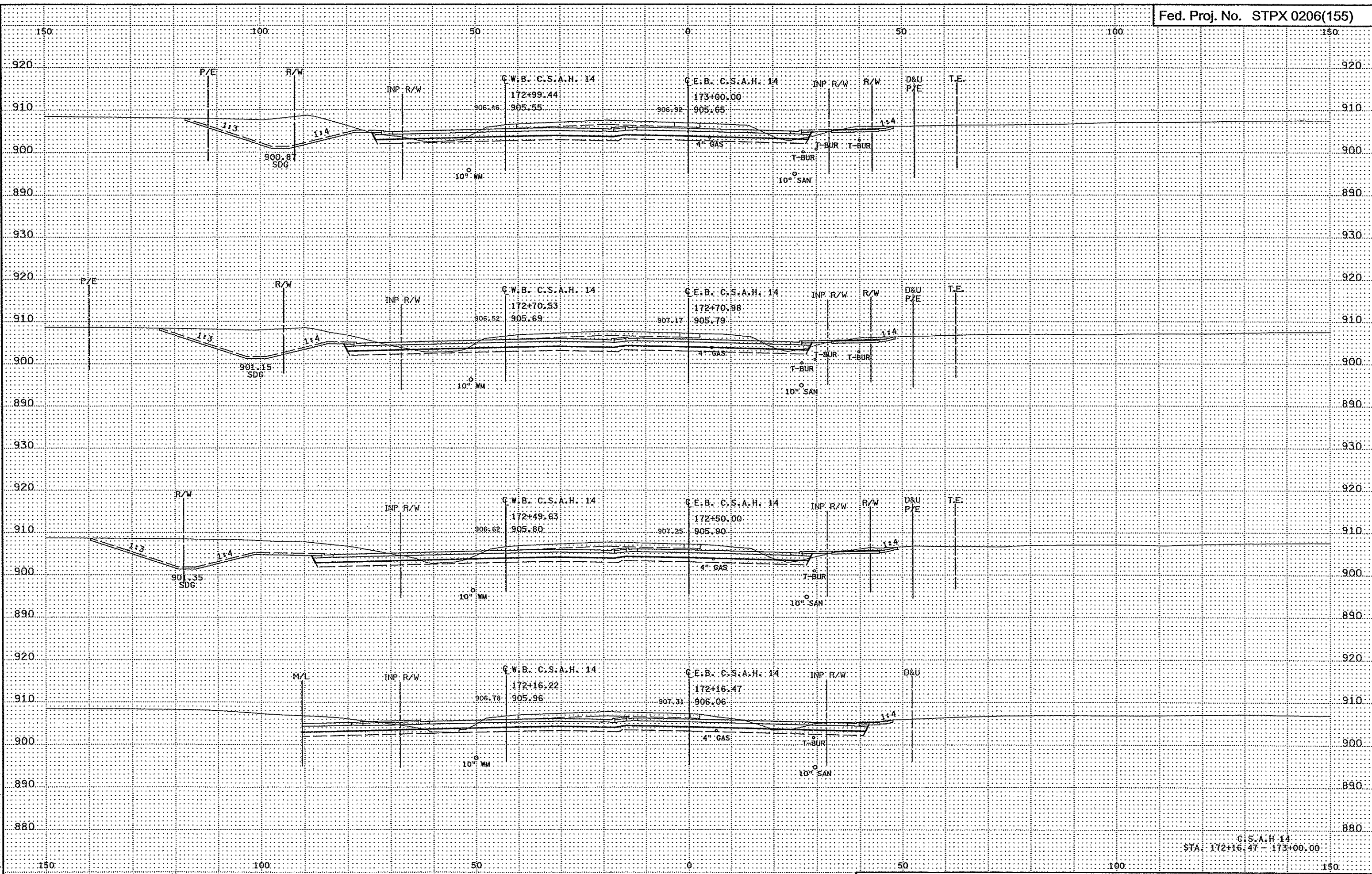
3/10/17 PM  
3/21/2007  
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C.S.A.H. 14  
STA. 168+81.87 - 169+21.30

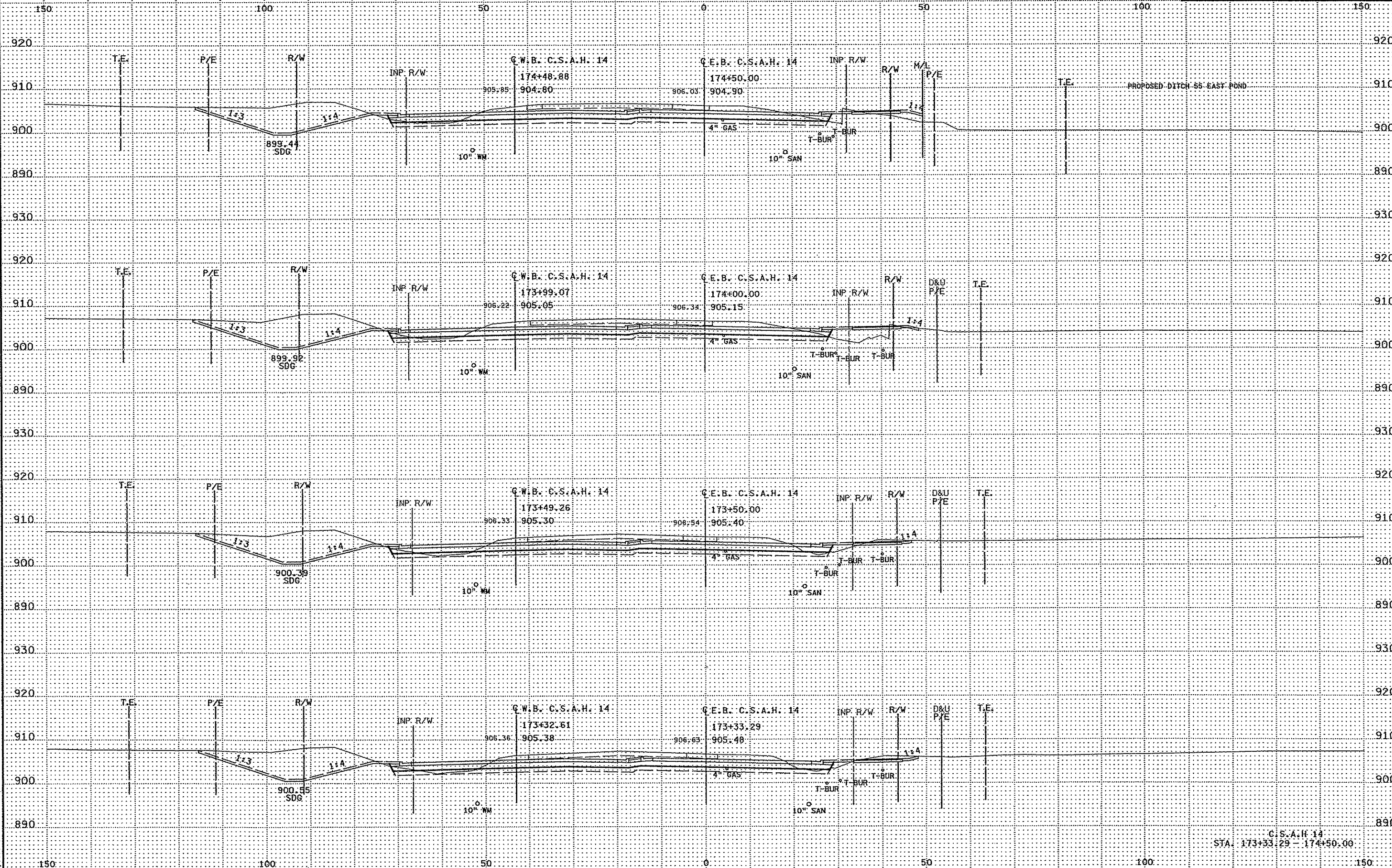


3:30:18 PM  
3/21/2007  
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C.S.A.H. 14  
STA. 169+50.00 - 170+56.38

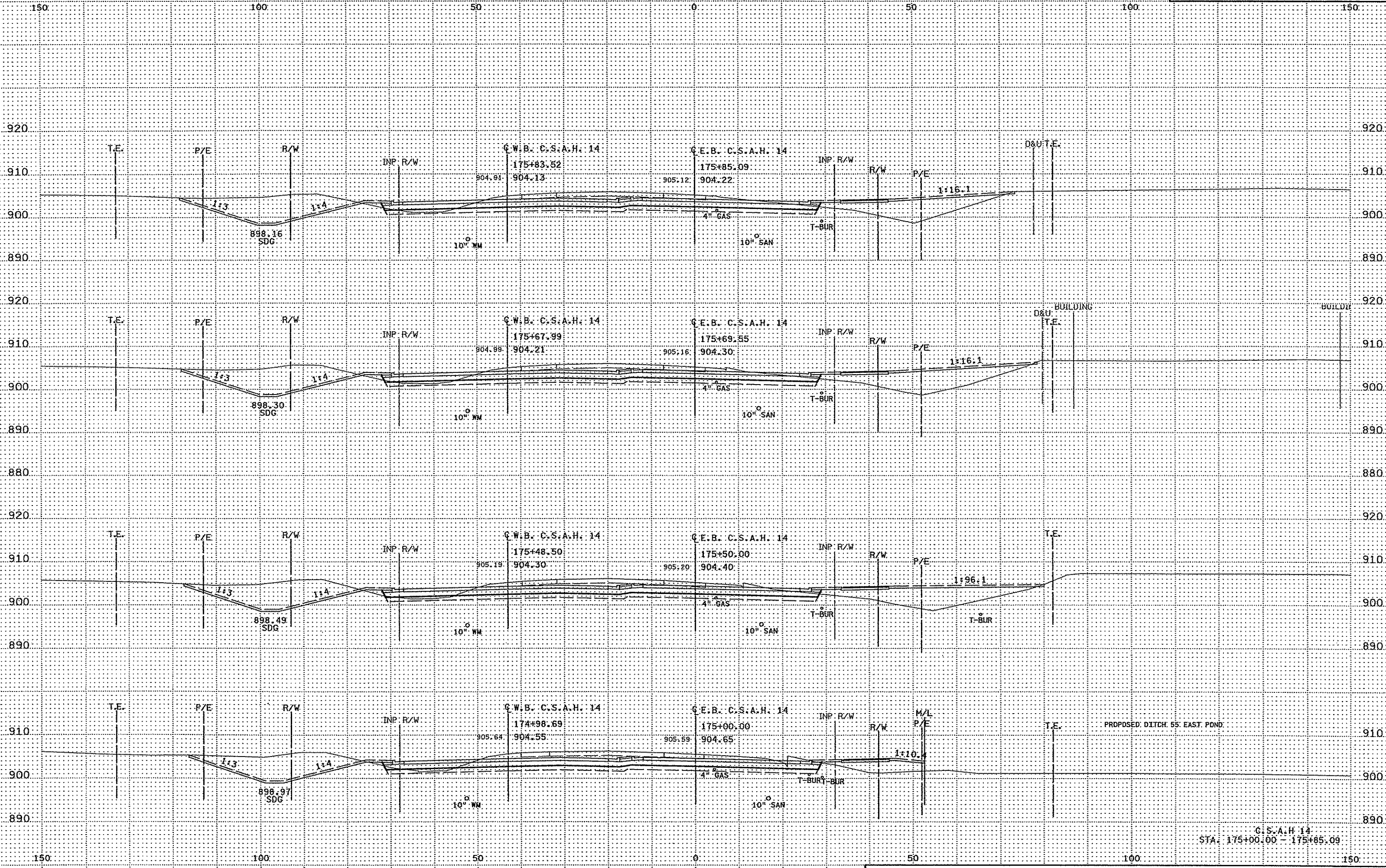


3/30/19 PM 3/21/2007 h:\proj\acts\4994-f\h1-mu\p1\m\4994-f.XSA



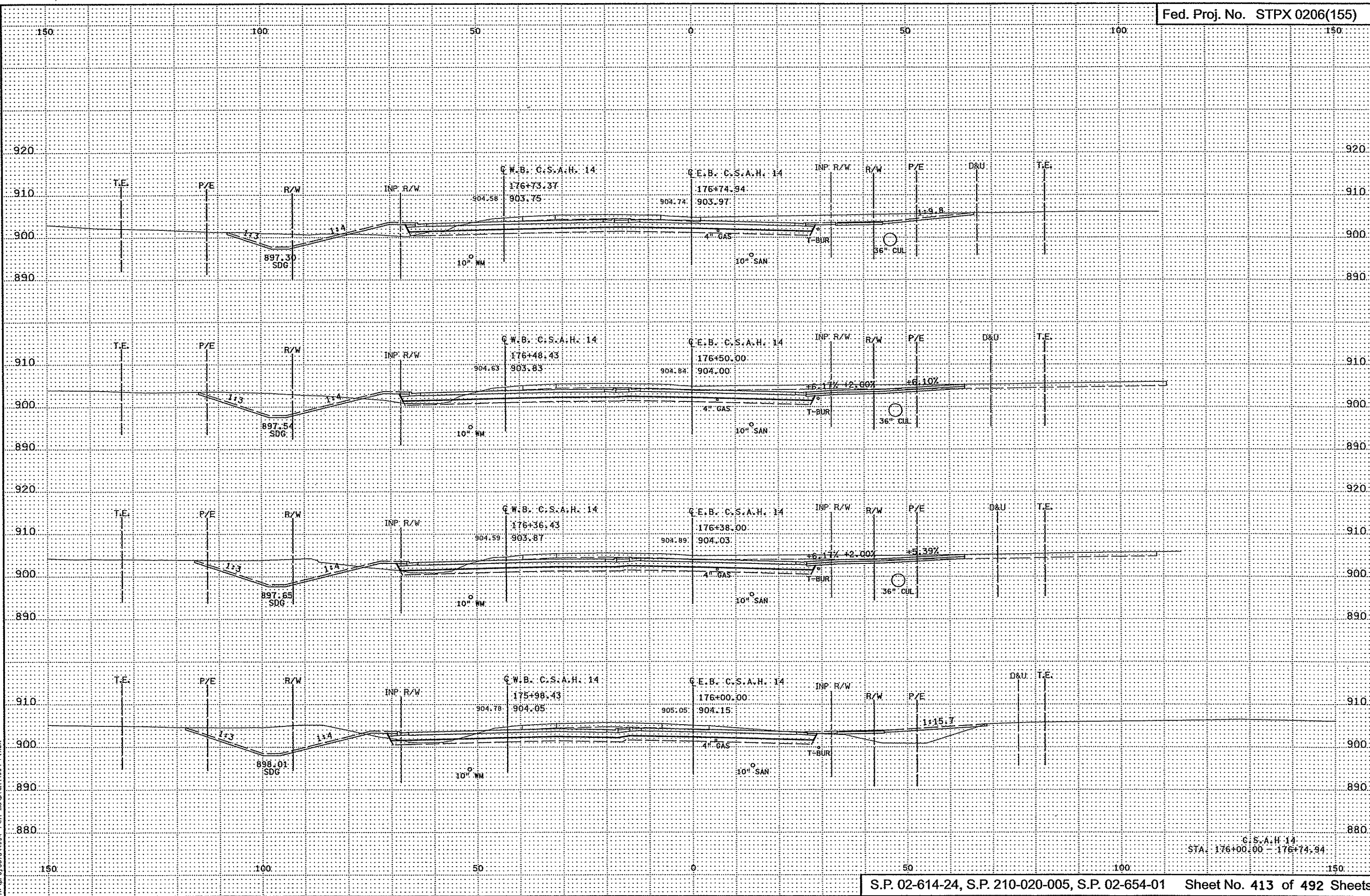
C.S.A.H. 14  
STA. 173+33.29 - 174+50.00

3/30/21 PM  
3/21/2007  
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3:30:22 PM  
3/21/2007  
h:\projects\4934-FNH-mu\plan\4994-F\_XSA

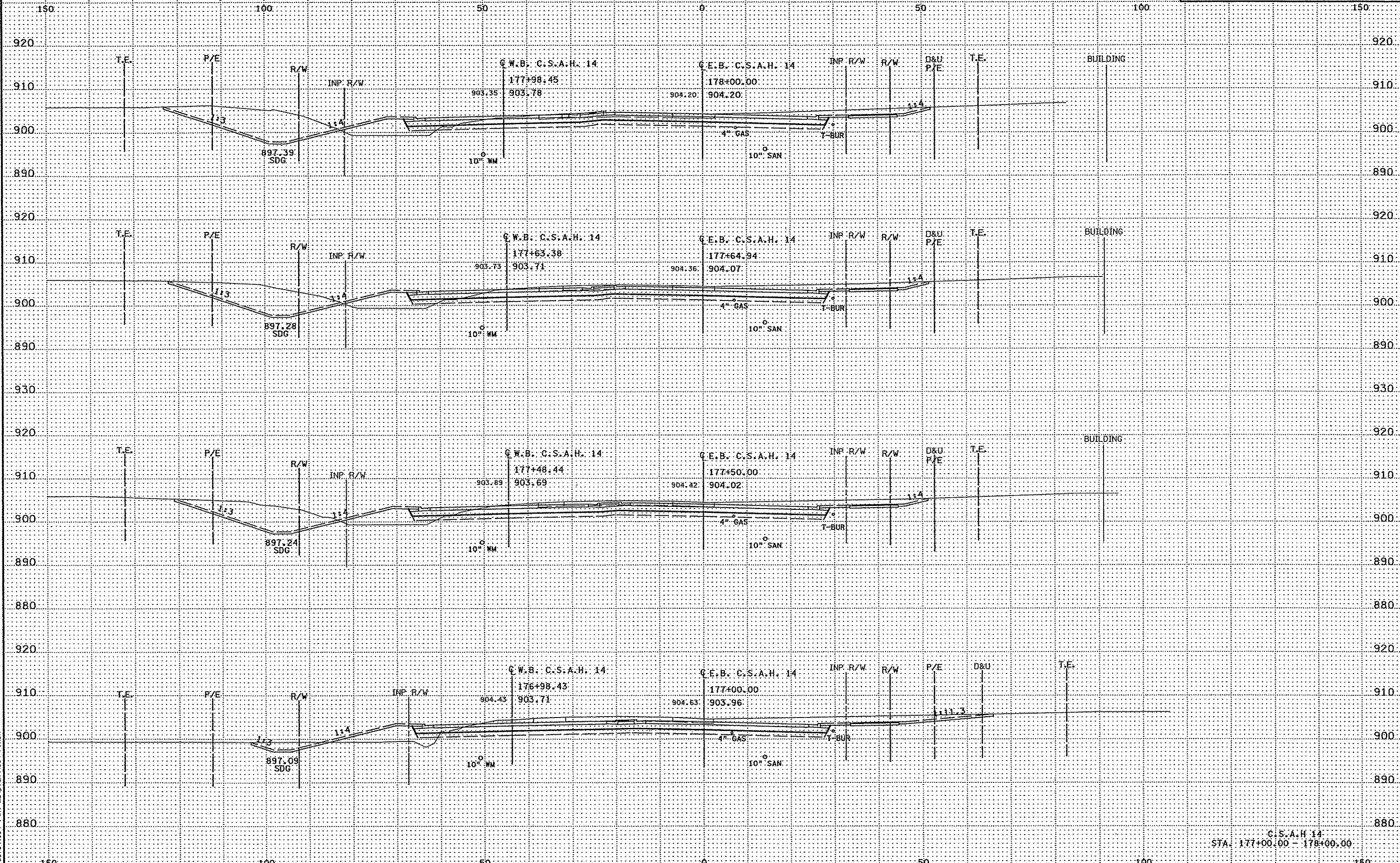
C.S.A.H. 14  
STA. 175+00.00 - 175+85.09



3:50:23 PM  
3/21/2007  
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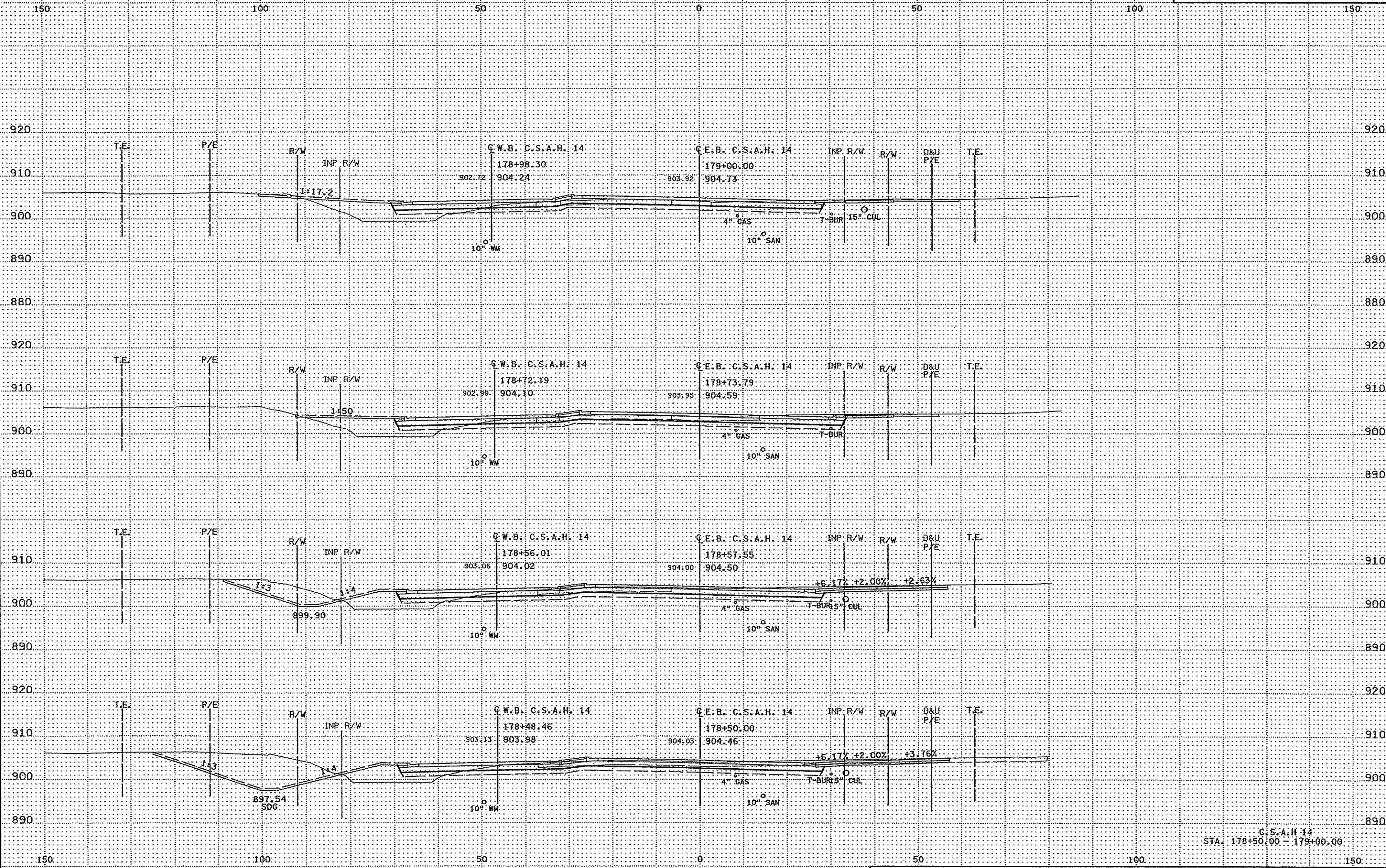
C.S.A.H. 14  
STA. 176+00.00 - 176+74.94





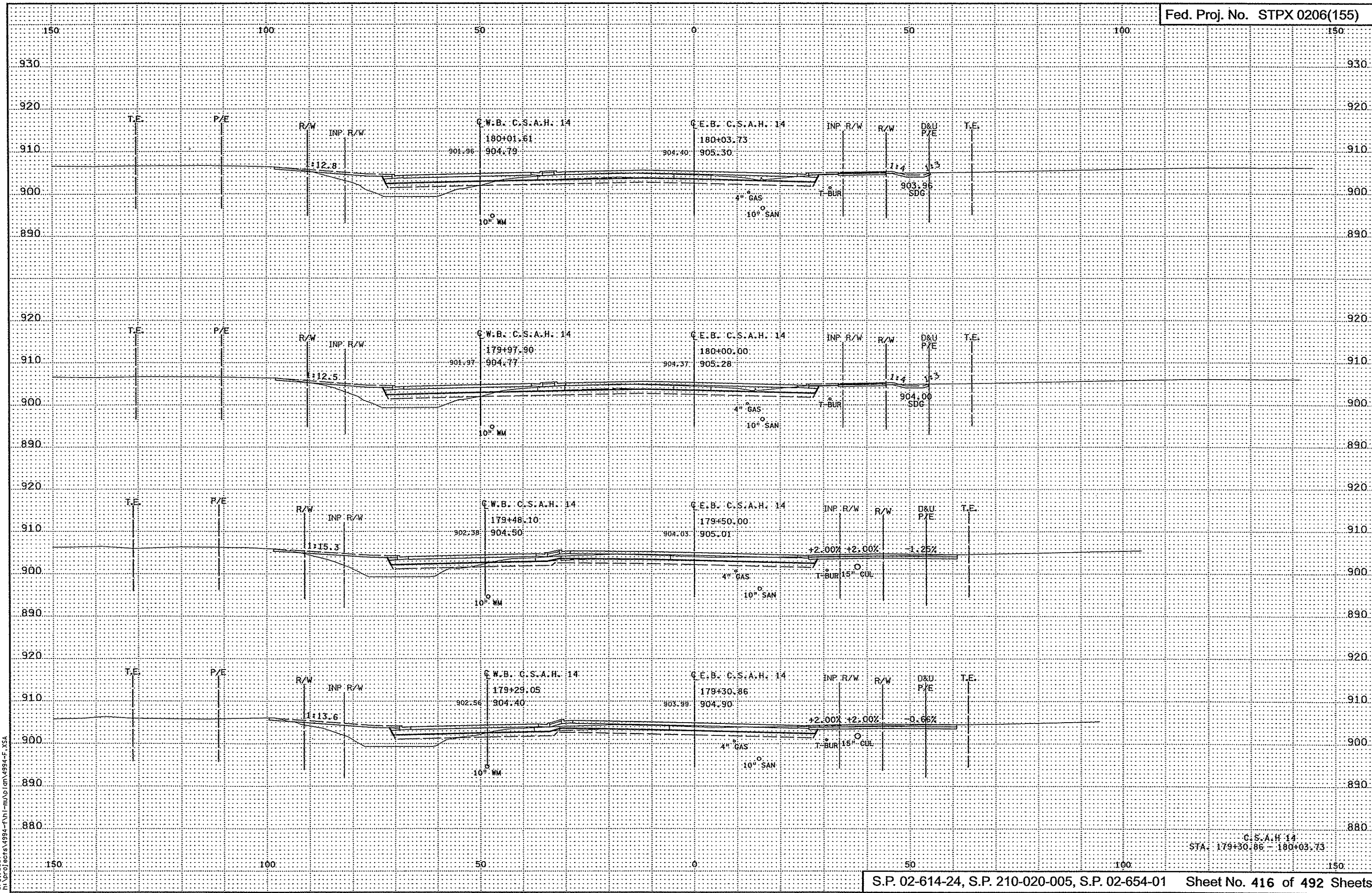
3/30/24 PM  
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C.S.A.H. 14  
STA: 177+00.00 - 178+00.00



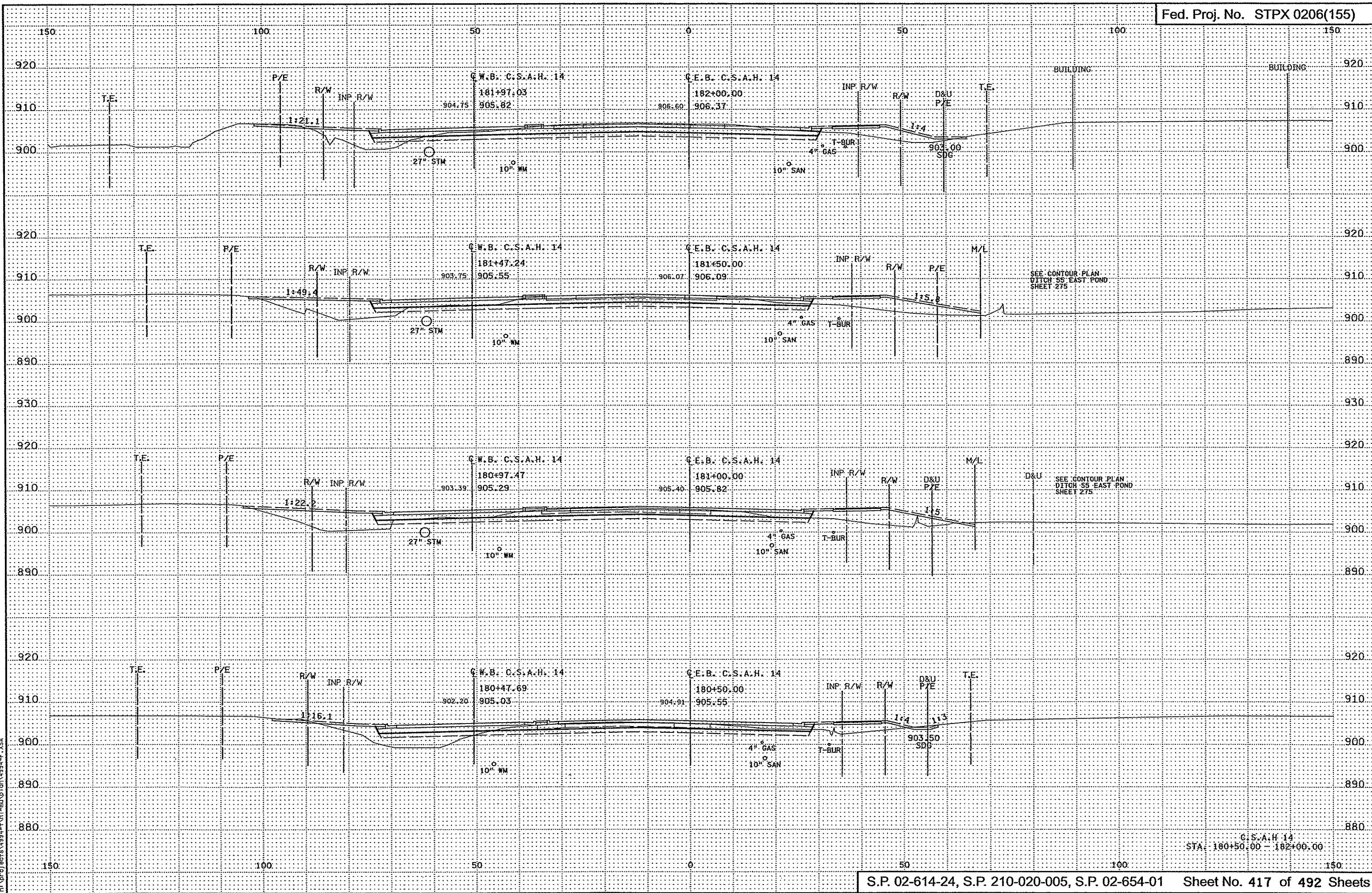
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1/21/2007  
P:\proj\stpx\155\FVT-MND\mnd\4994-F.XSA

C.S.A.H. 14  
STA: 178+50.00 - 179+00.00



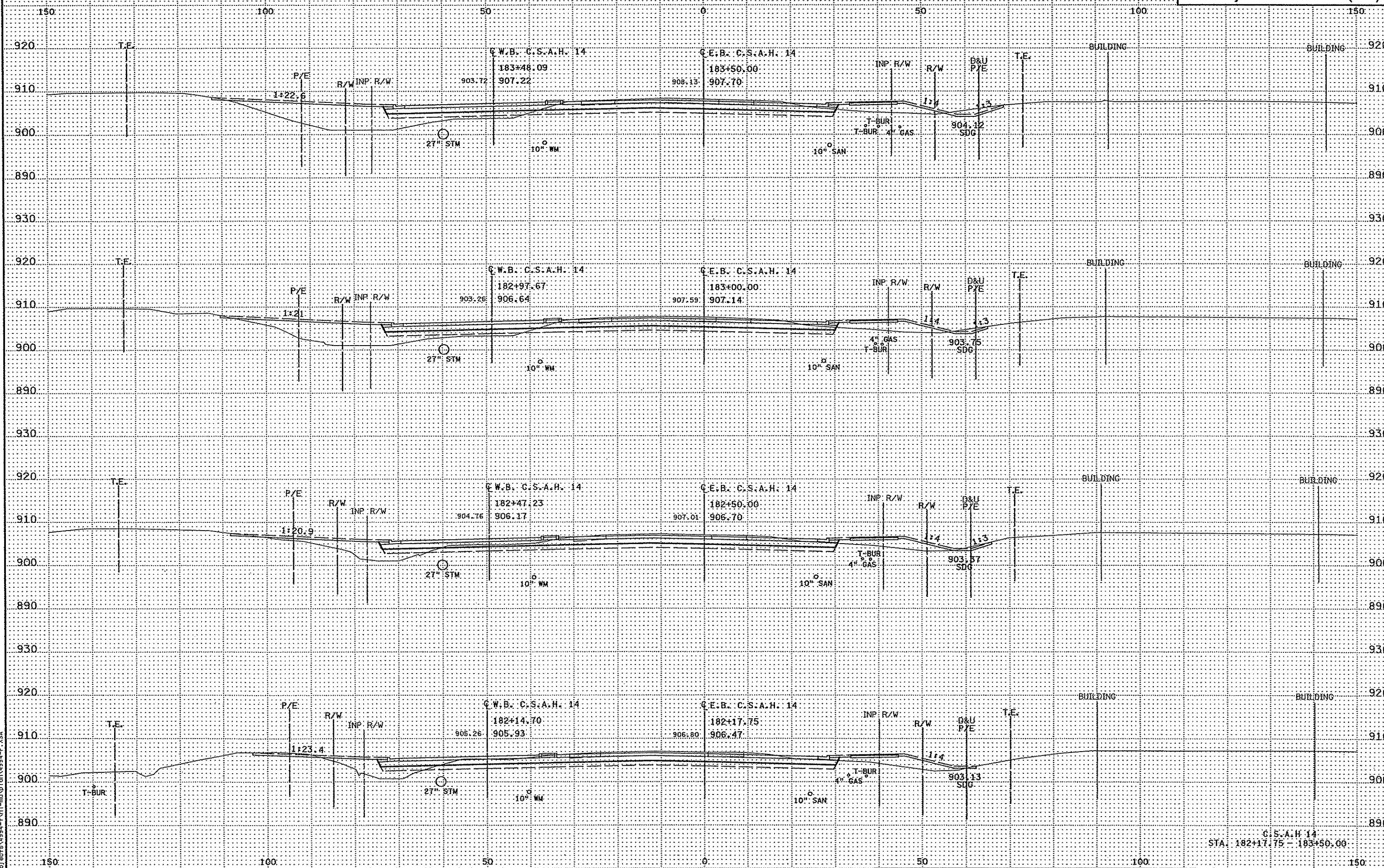
C.S.A.H. 14  
STA. 179+30.86 - 180+03.73

3/30/26 PM  
3/21/2007  
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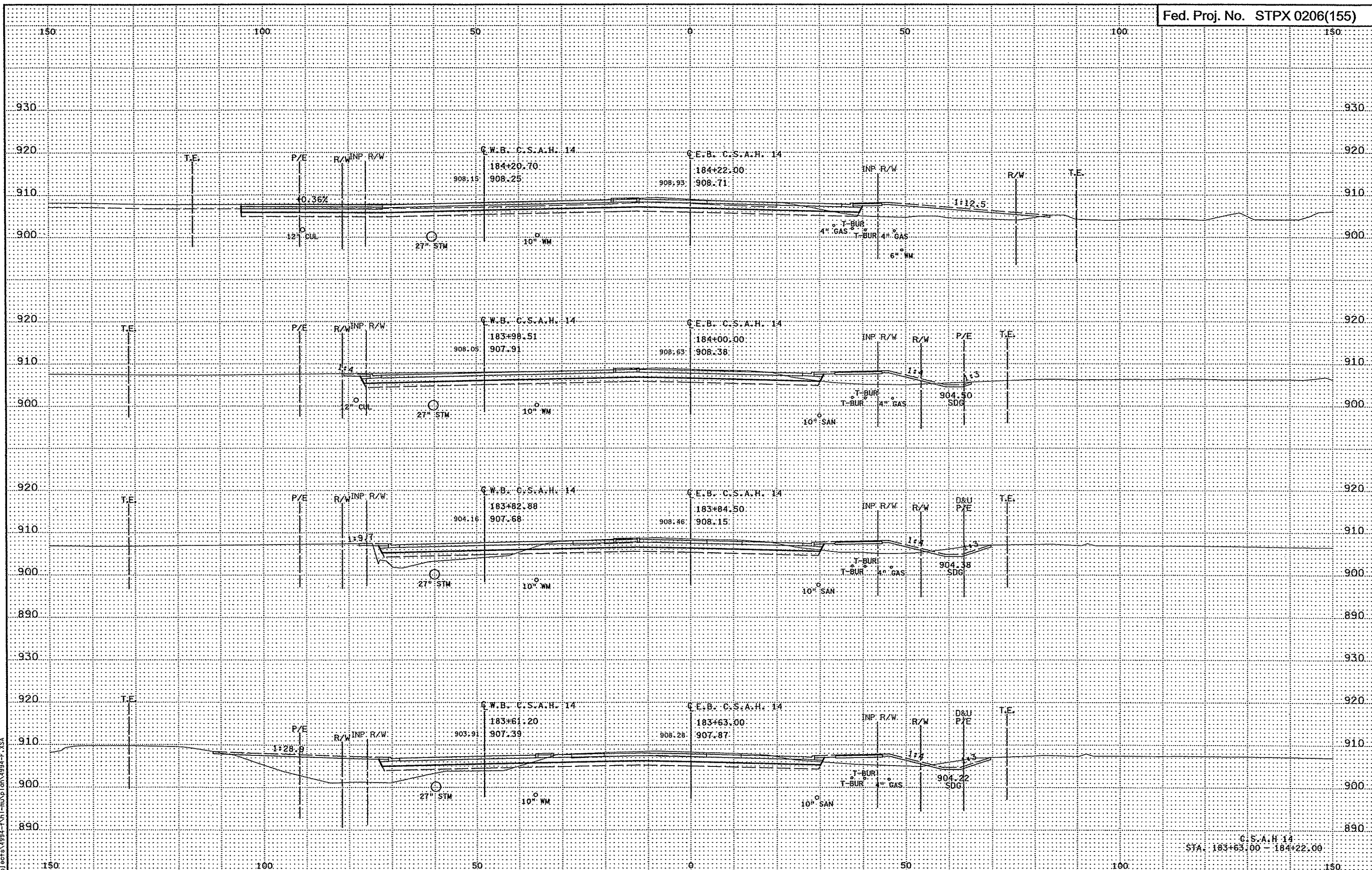
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3/15/07  
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C.S.A.H. 14  
STA: 180+50.00 - 182+00.00



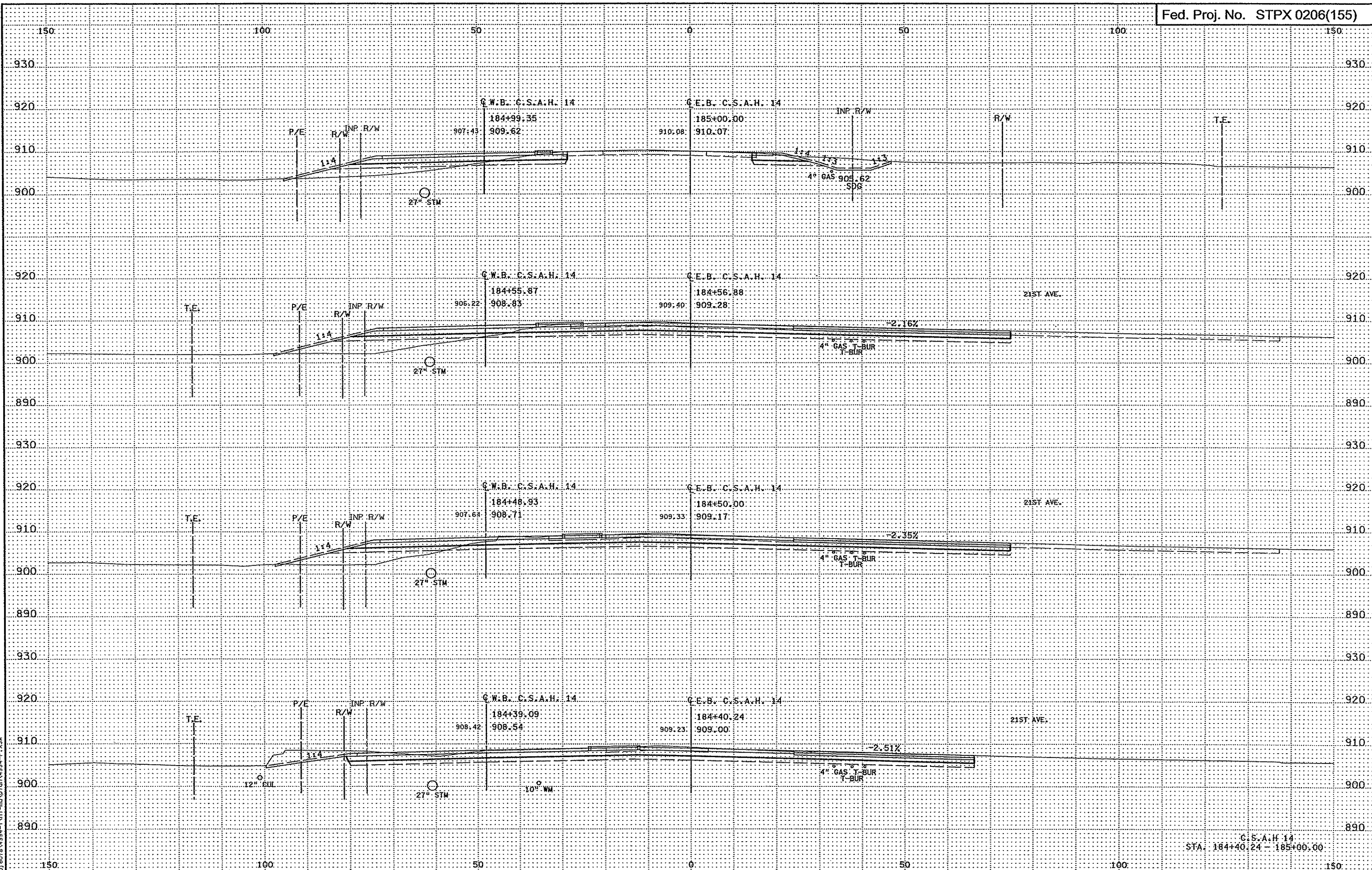
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3/2/2007  
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C.S.A.H. 14  
STA. 182+17.75 - 183+50.00



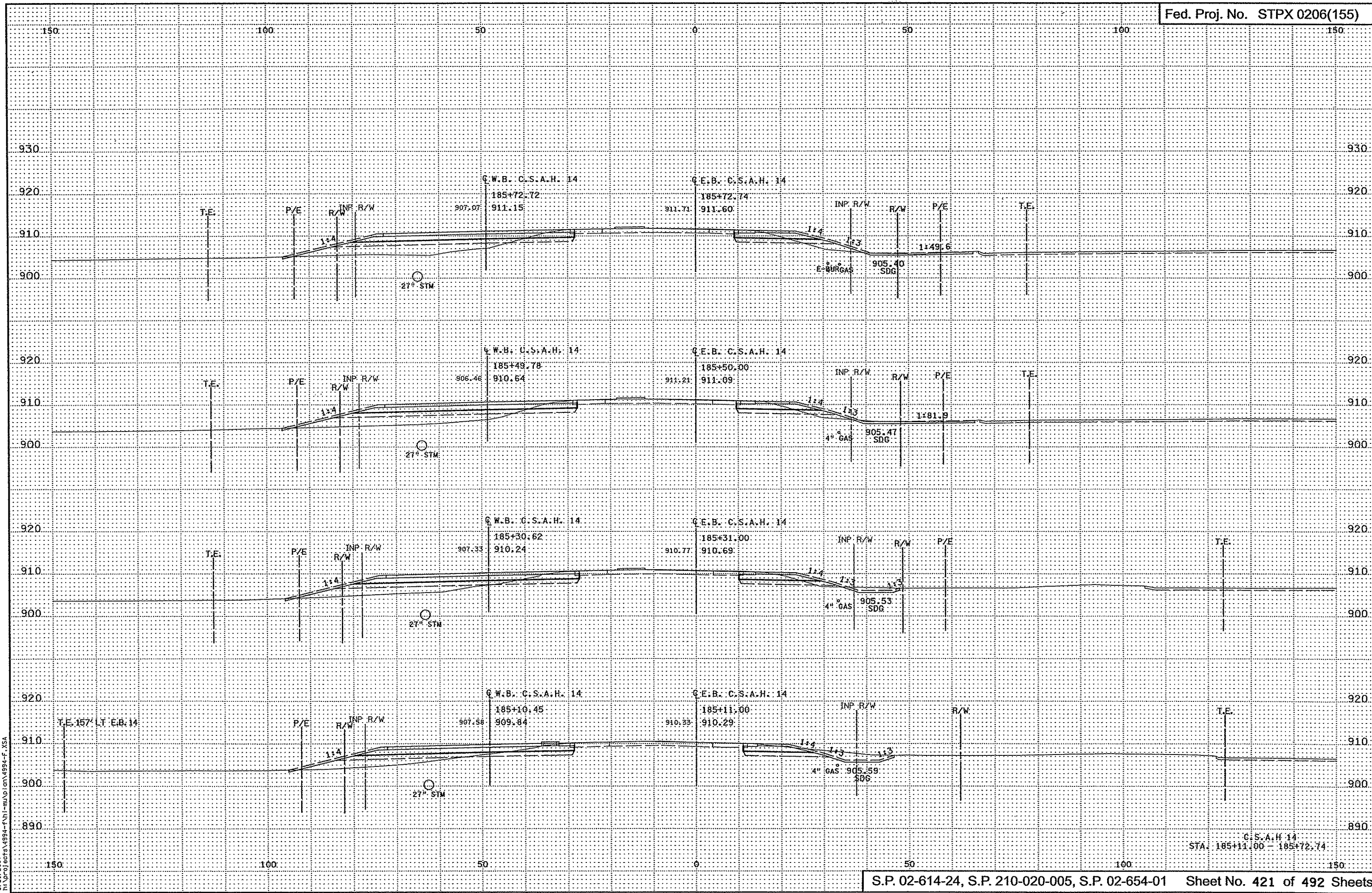
3/30/2007 3:21:20 PM  
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C.S.A.H. 14  
STA. 183+63.00 - 184+22.00



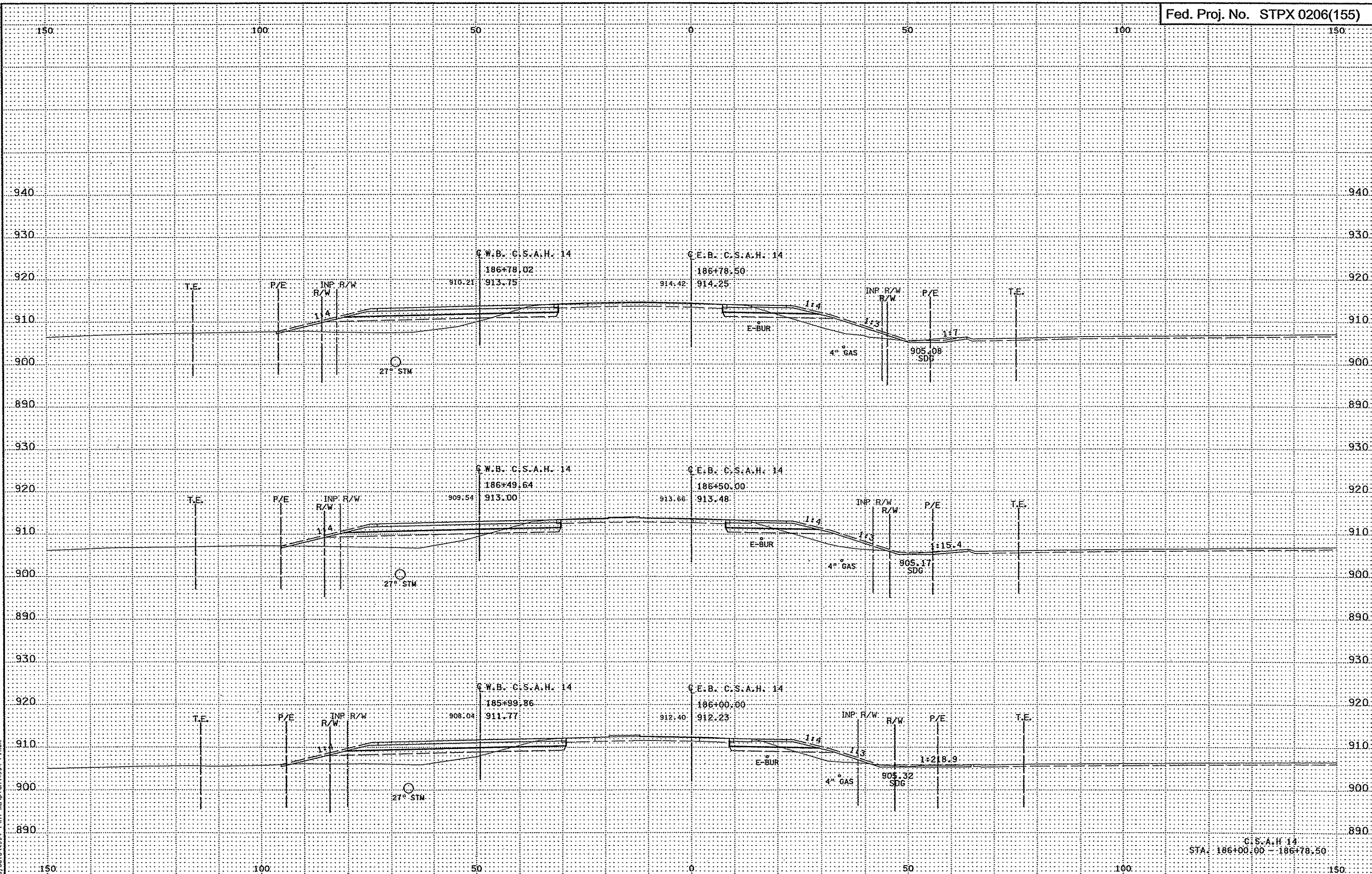
1:30:31 PM  
3/21/2007  
H:\proj\ecrs\1994-r\h1-m\apl\m\4994-f.XSA

C.S.A.H. 14  
STA: 184+40.24 - 185+00.00



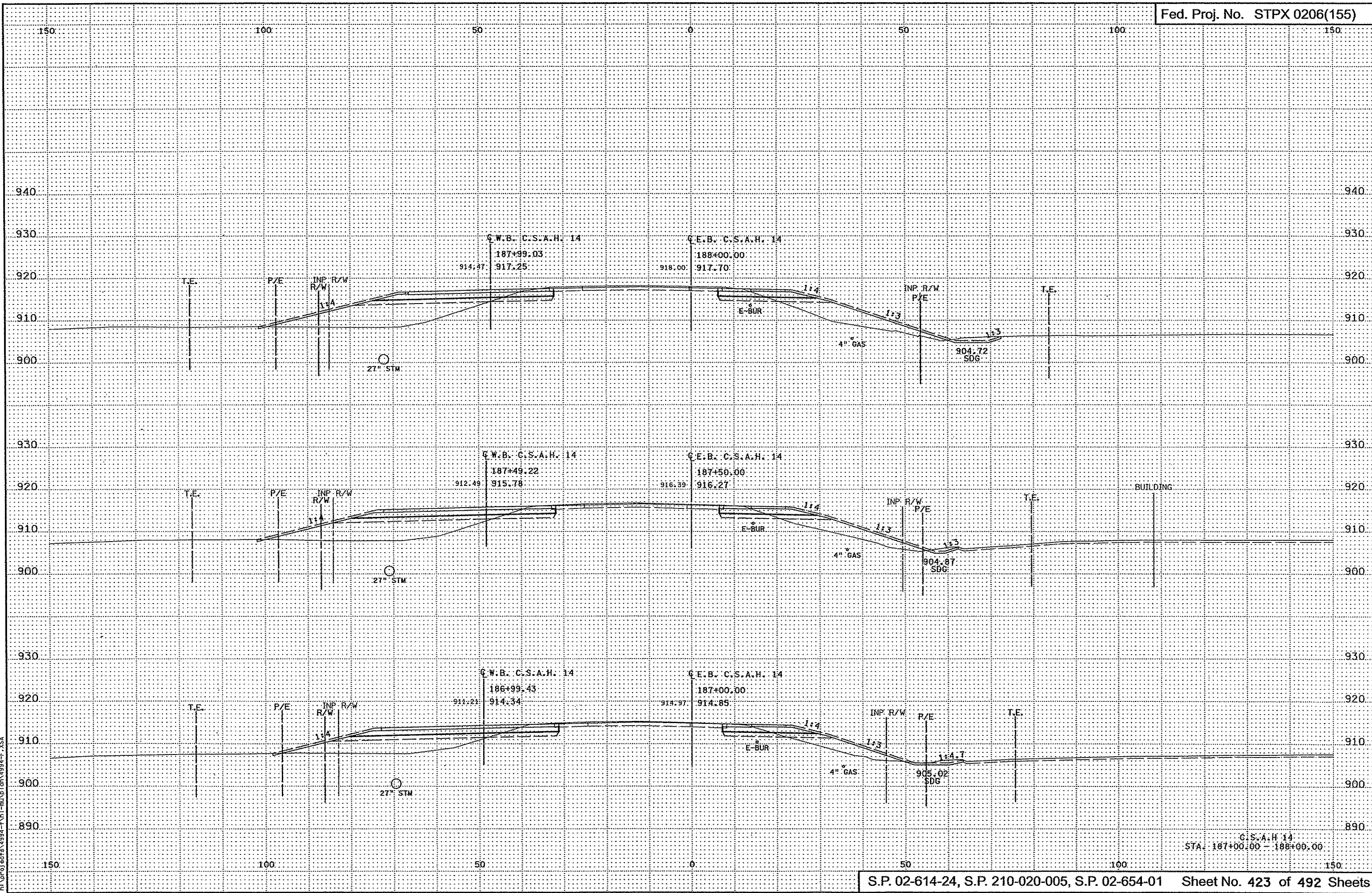
3/30/02 PM  
3/21/2007  
h:\proj\ecrs\4994-f\h1-m\ad\an\4994-f\_XSA





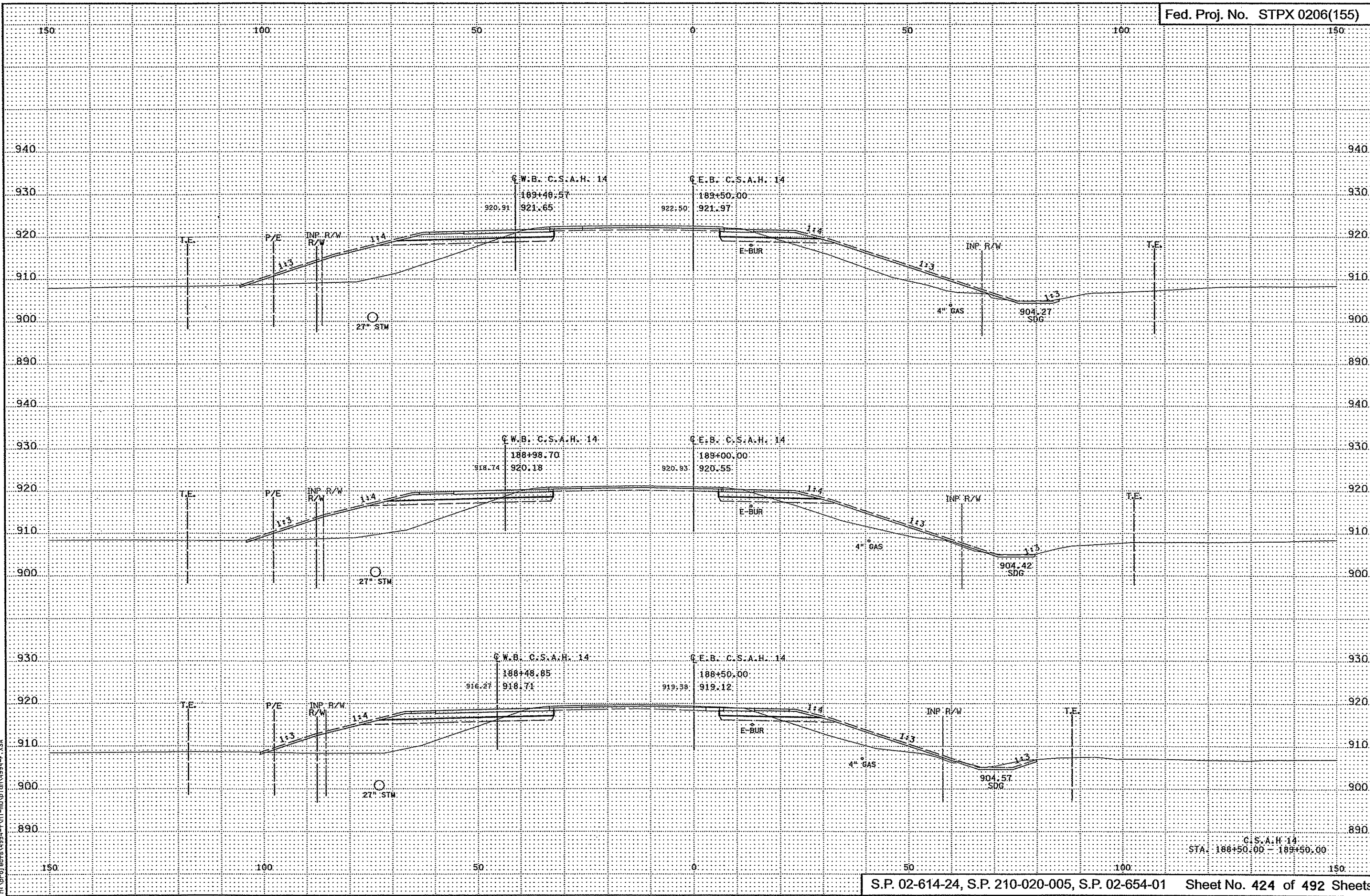
3/30/13 PM  
3/21/2007  
H:\proj\ccts\1994-f\h1-m\Map\on\4994-f.XSA

C.S.A.H. 14  
STA: 186+00.00 - 186+78.50



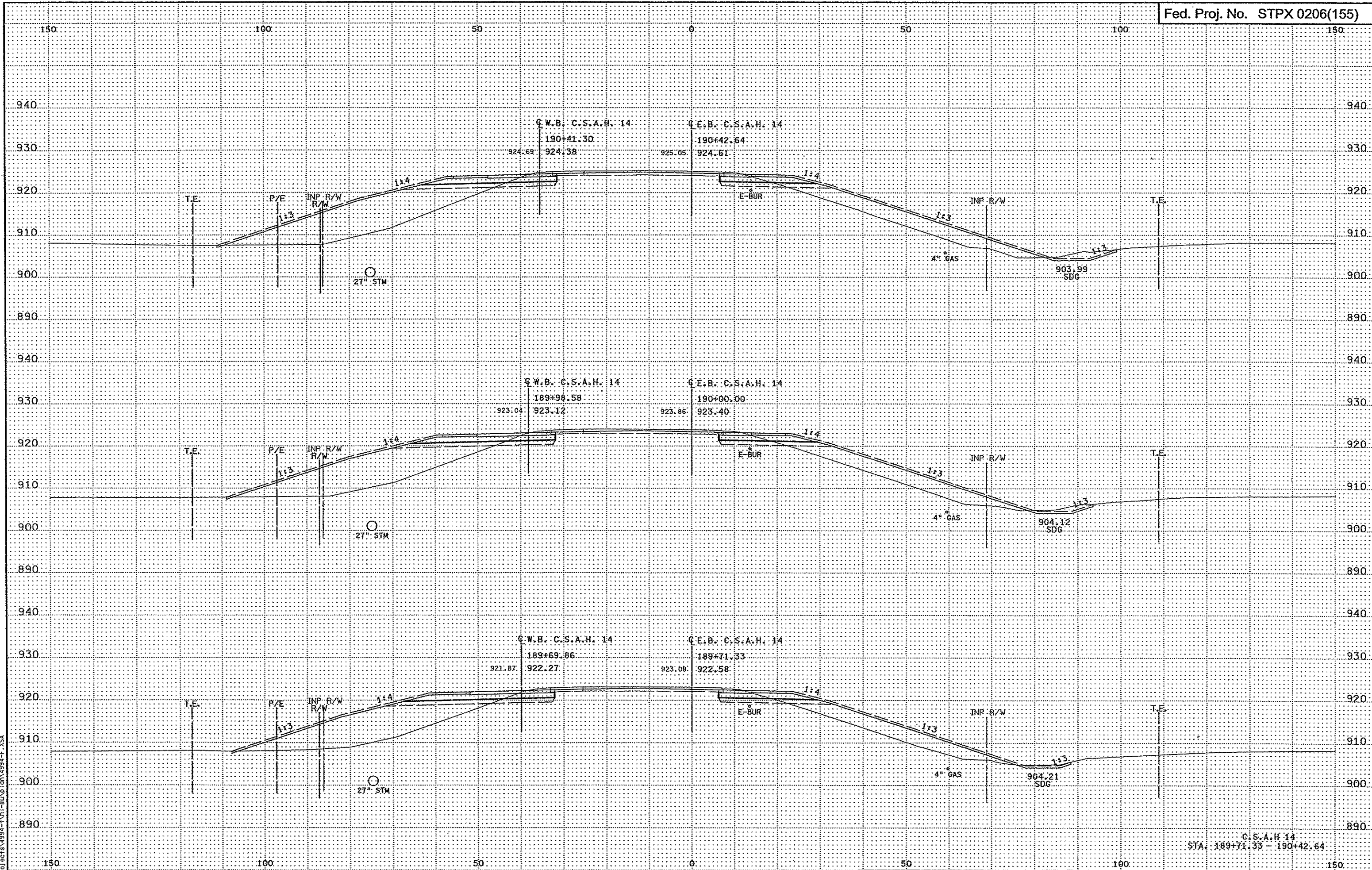
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2/27/2007  
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C.S.A.H. 14  
STA: 187+00.00 - 188+00.00



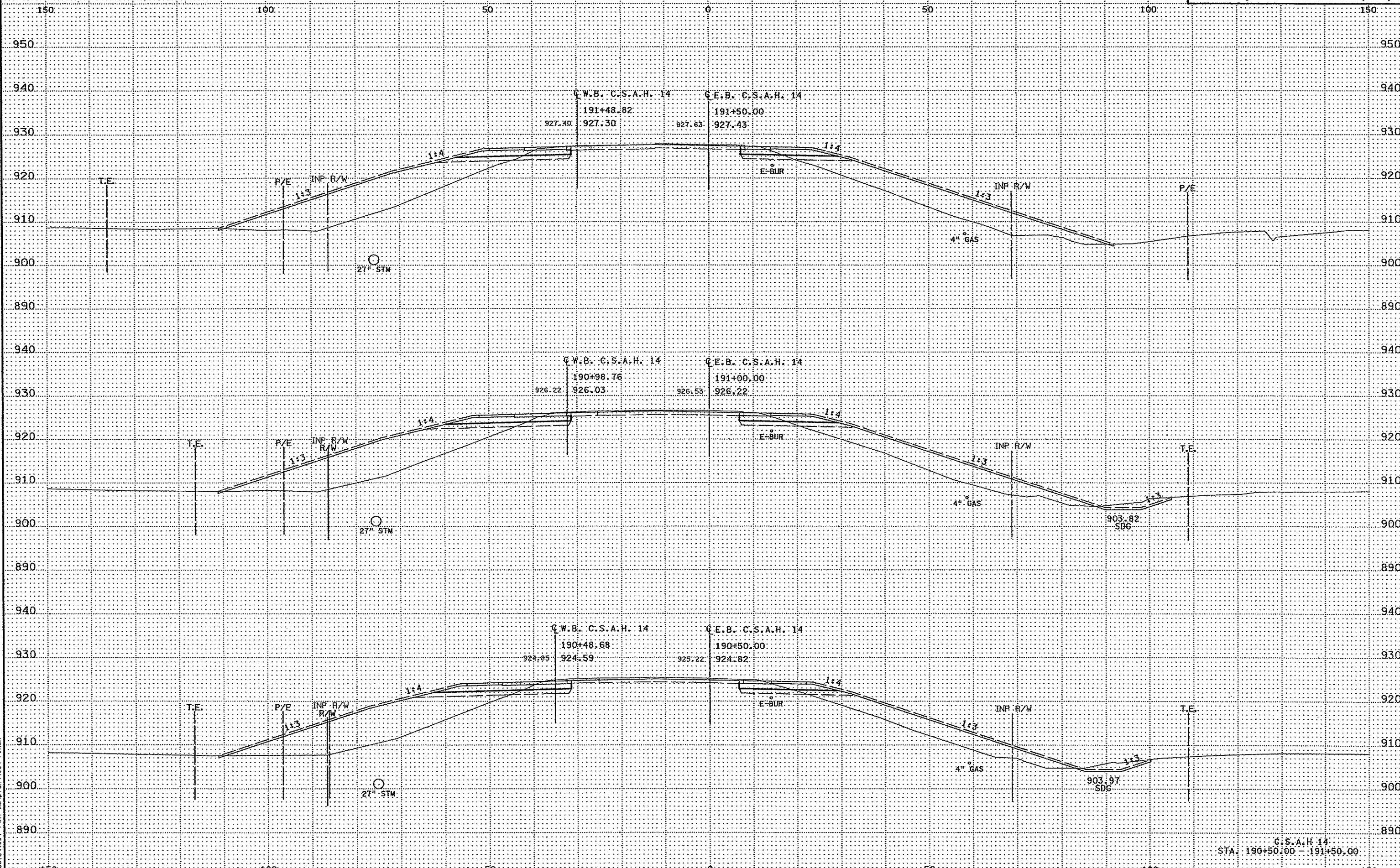
1:10 PM  
 3/2/2007  
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C.S.A.H. 14  
 STA. 188+50.00 - 189+50.00

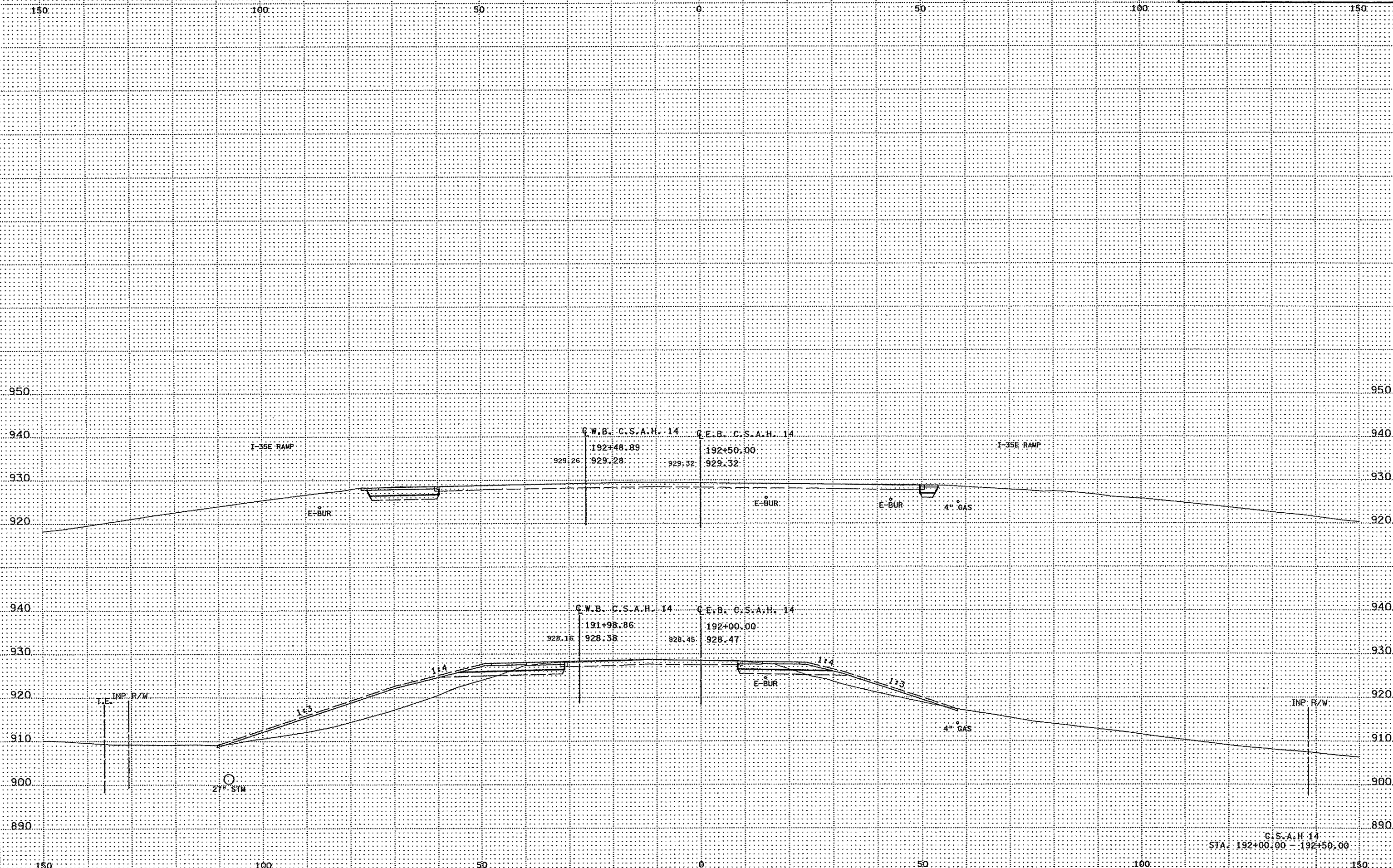


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2/21/2007  
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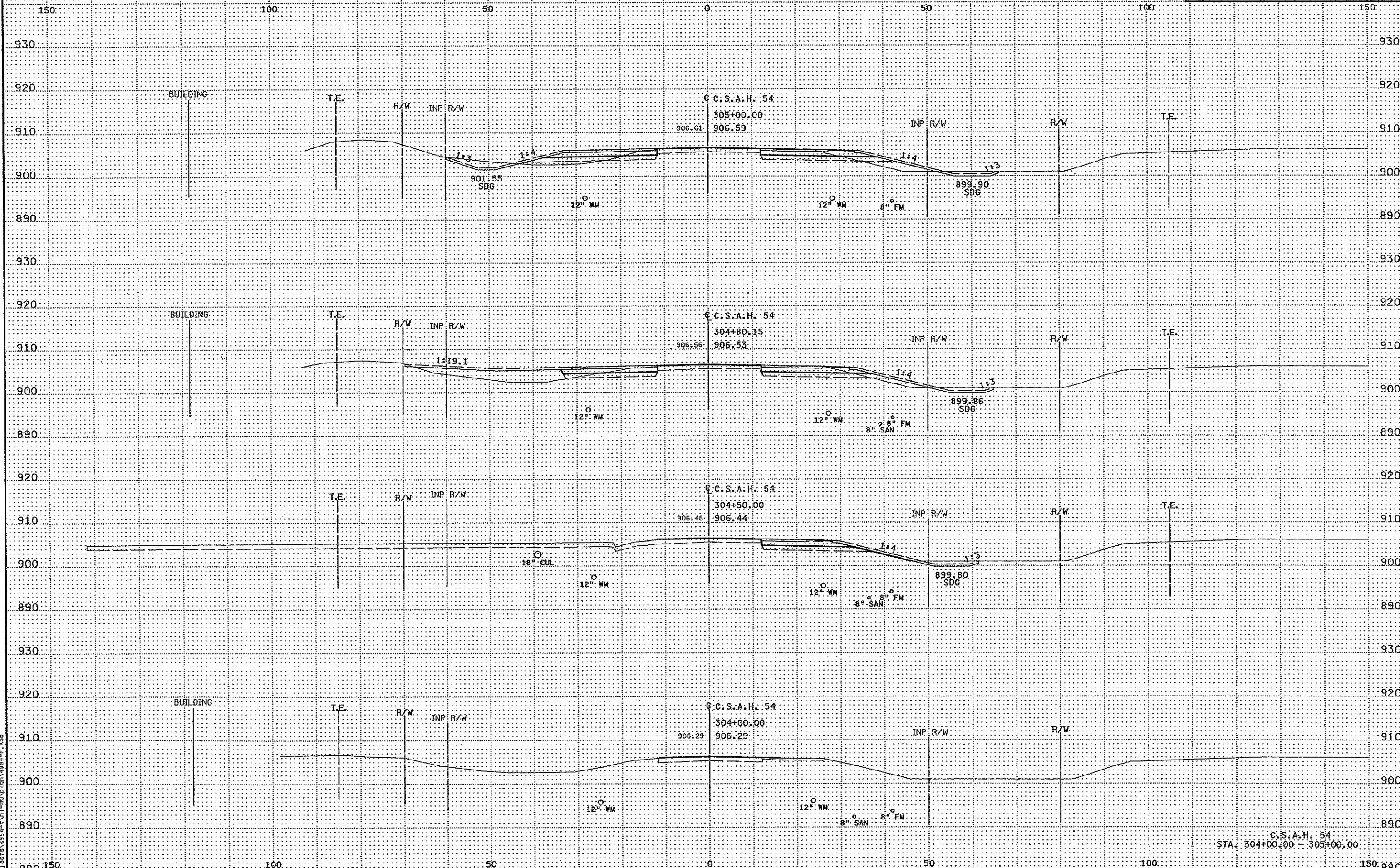
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STA: 189+71.33 - 190+42.64



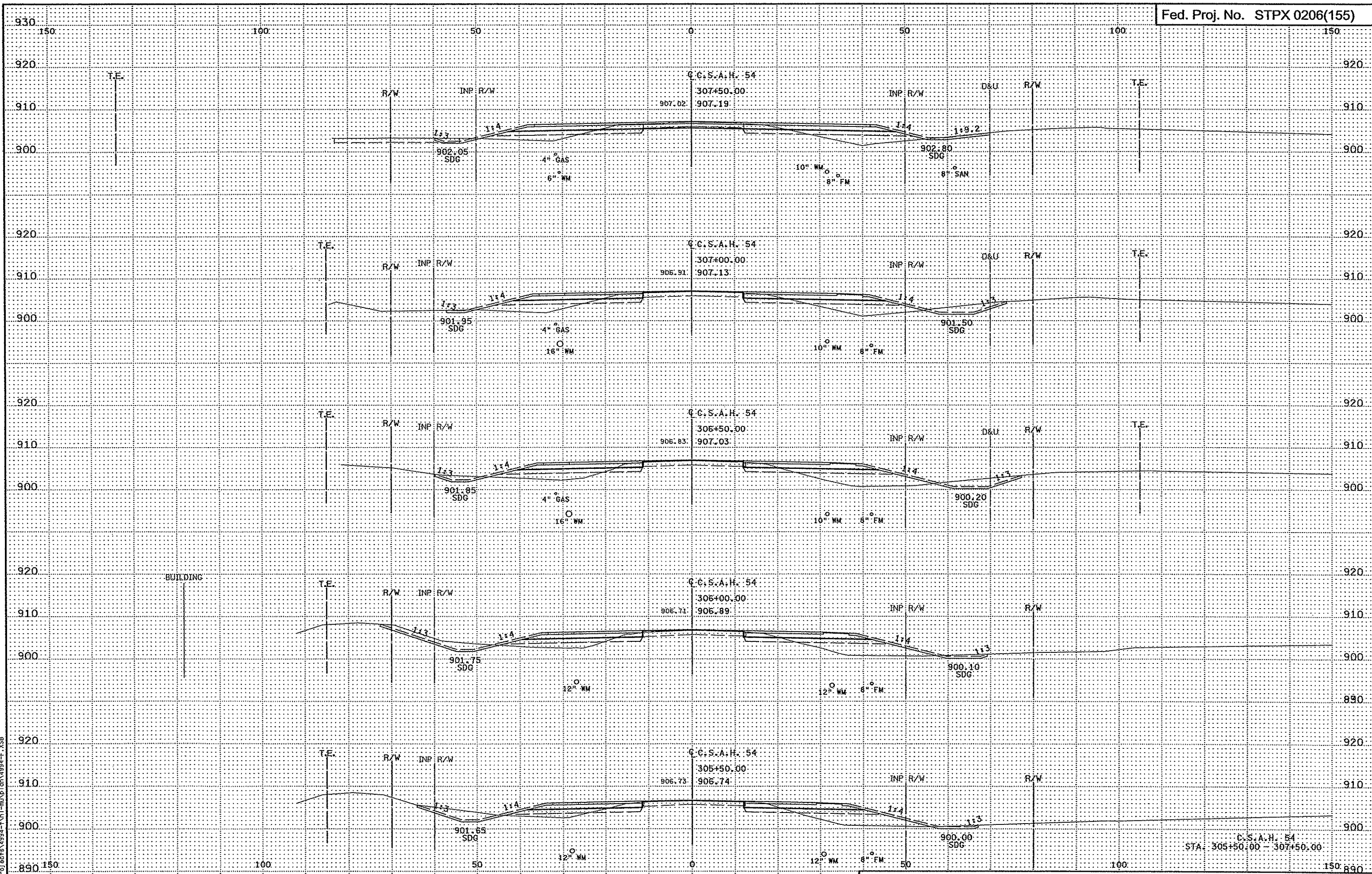
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3/21/2007  
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31-30-38 BH  
3/20/2007  
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3:47:36 PM  
7/21/2009  
P:\proj\9154994\FIN\ROAD\GEN\4994-F.dwg

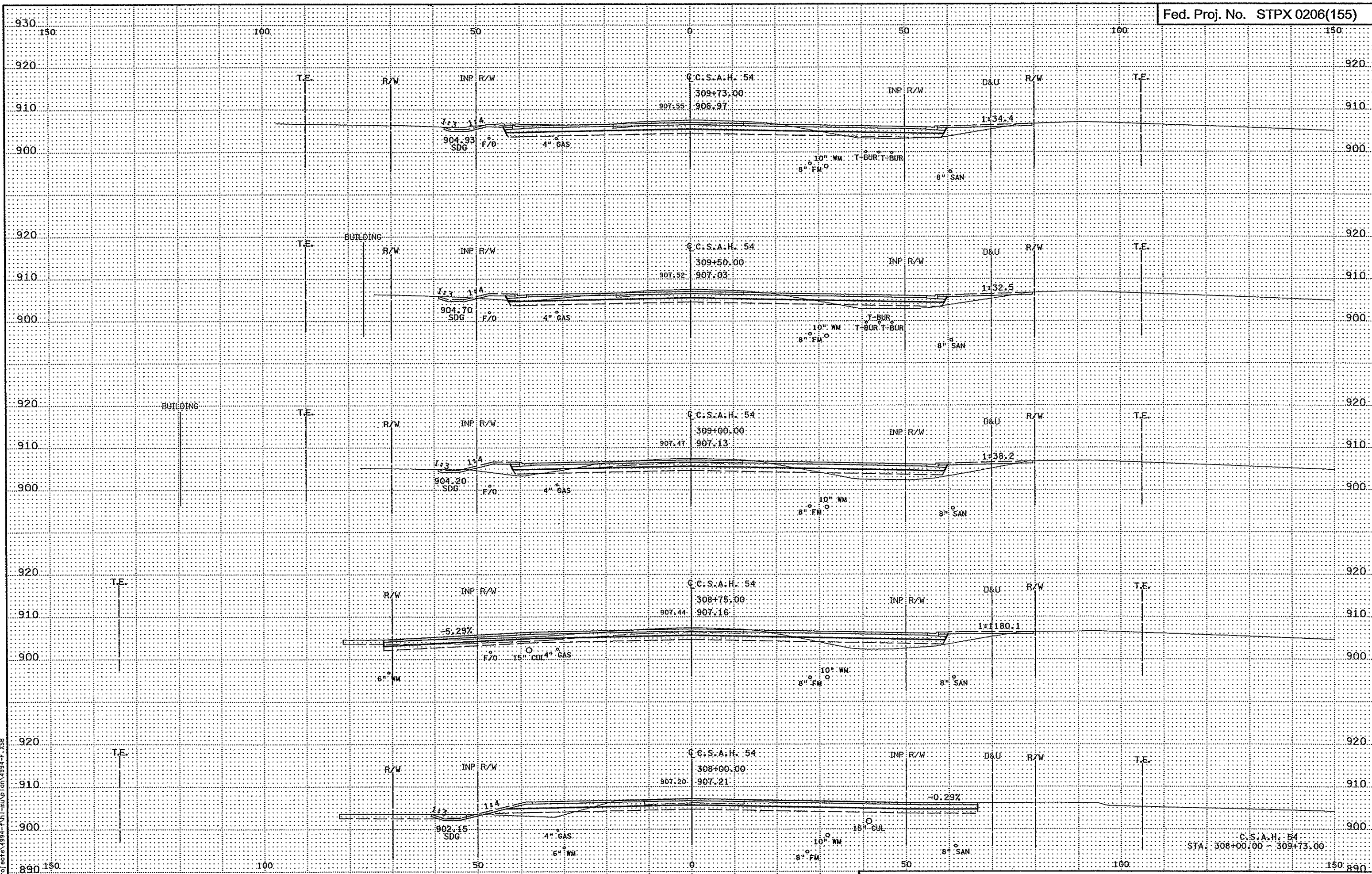


BUILDING

C.S.A.H. 54  
STA. 305+50.00 - 307+50.00

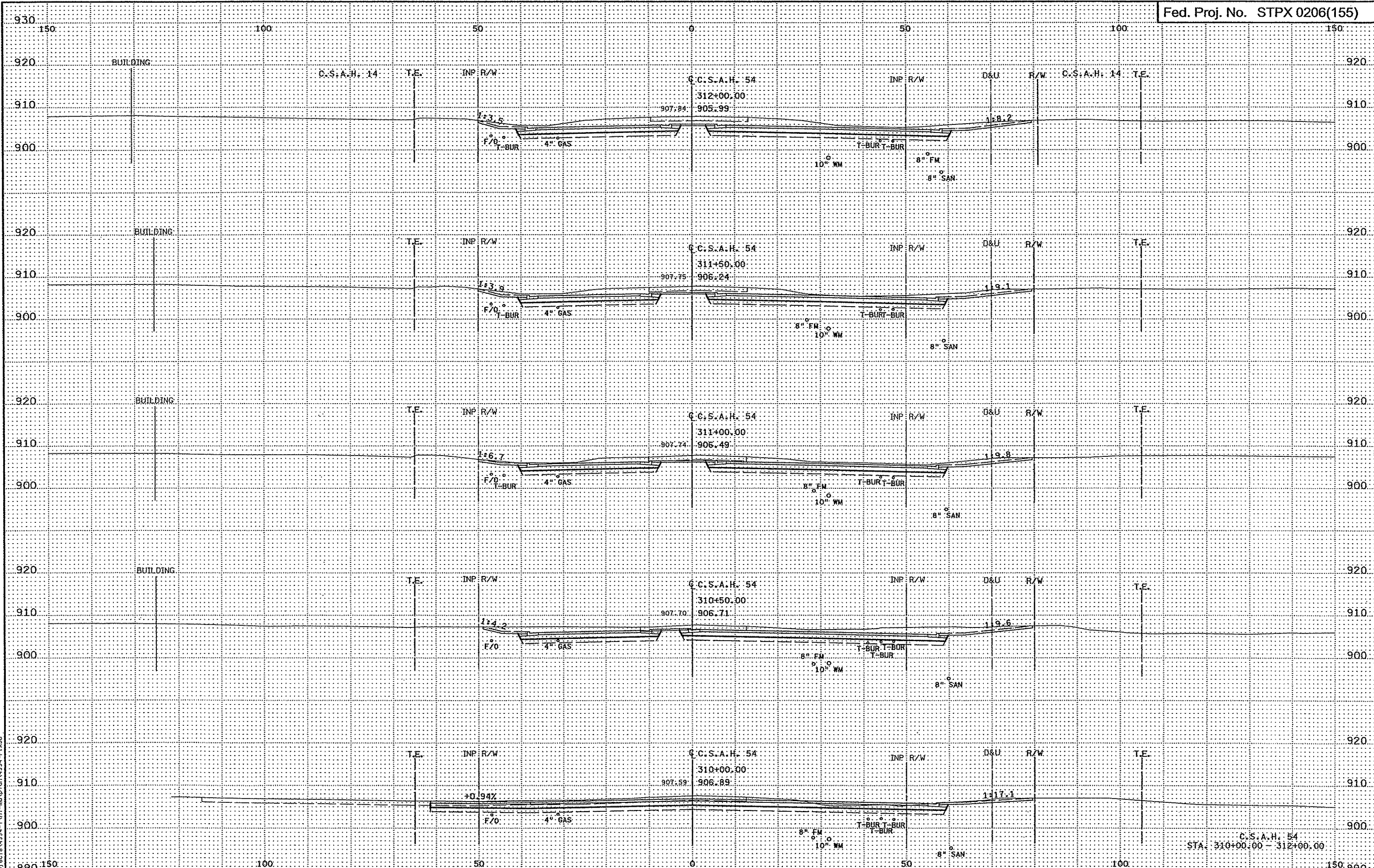
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3/21/2007  
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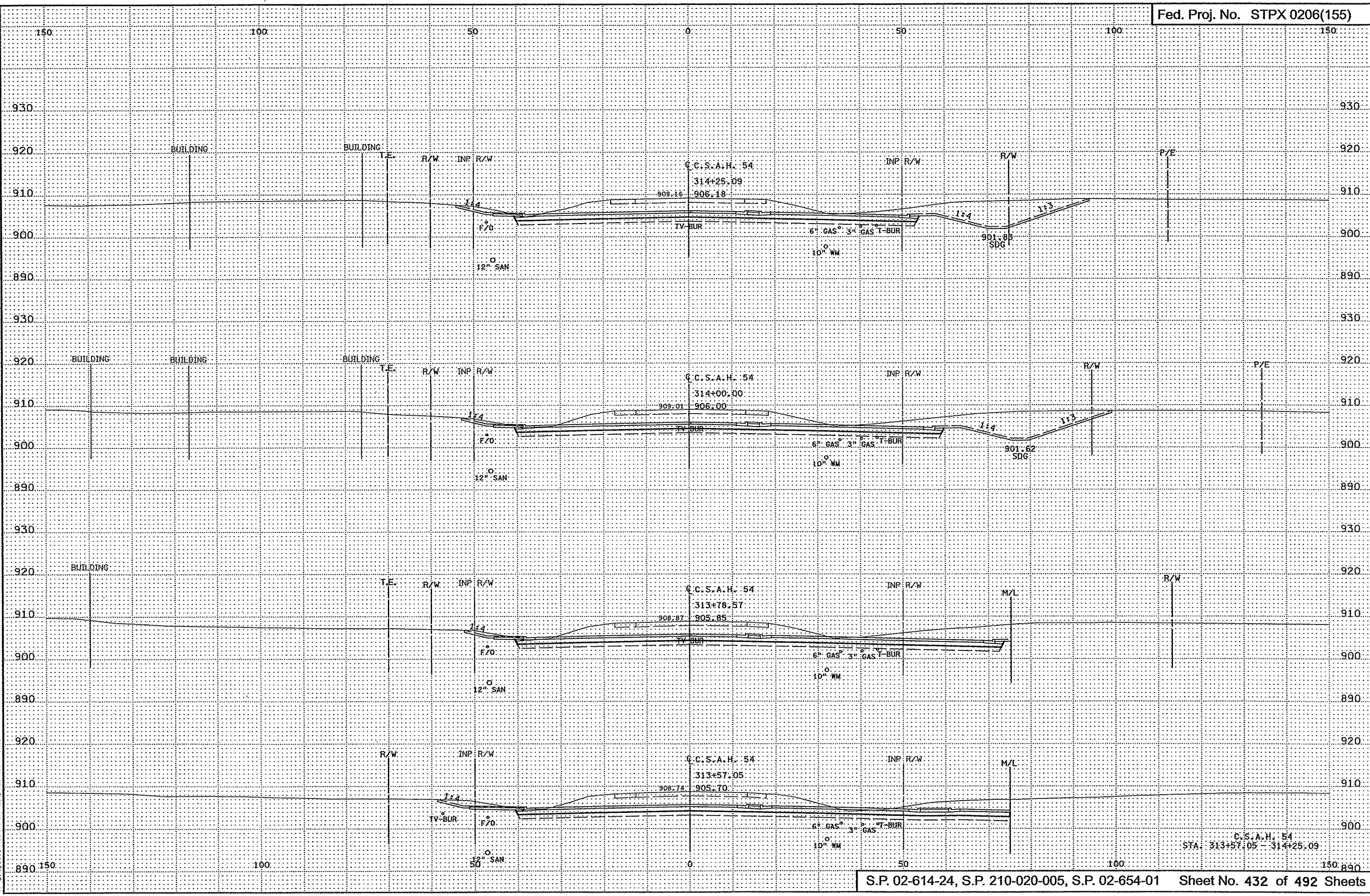
31.47.38 PM  
3/21/2007  
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C.S.A.H. 54  
STA. 308+00.00 - 309+73.00



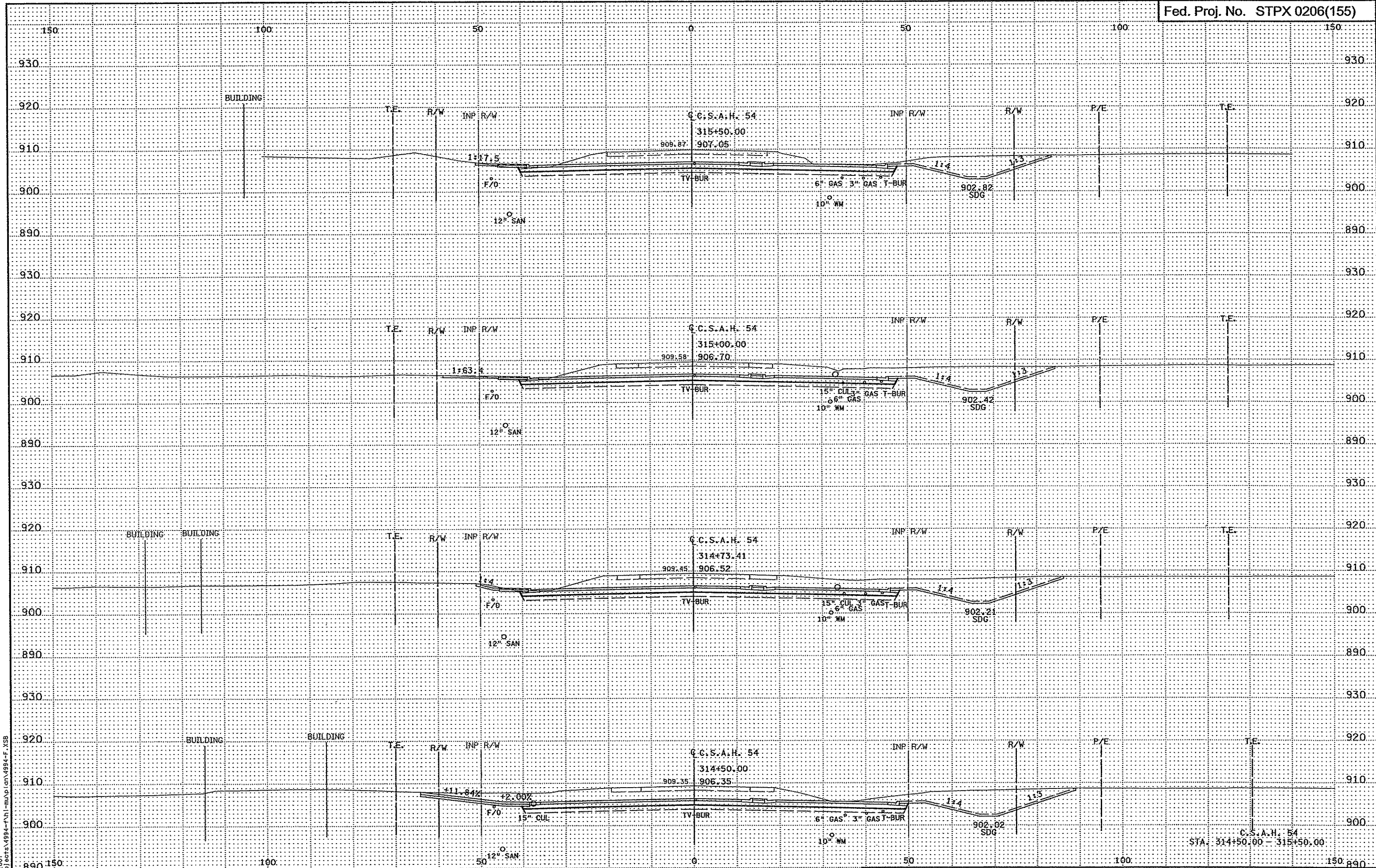
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3/21/2007  
D:\proj\sects\4994-F\VI-m\vd\on\4994-F.XSB

C.S.A.H. 54  
STA. 310+00.00 - 312+00.00

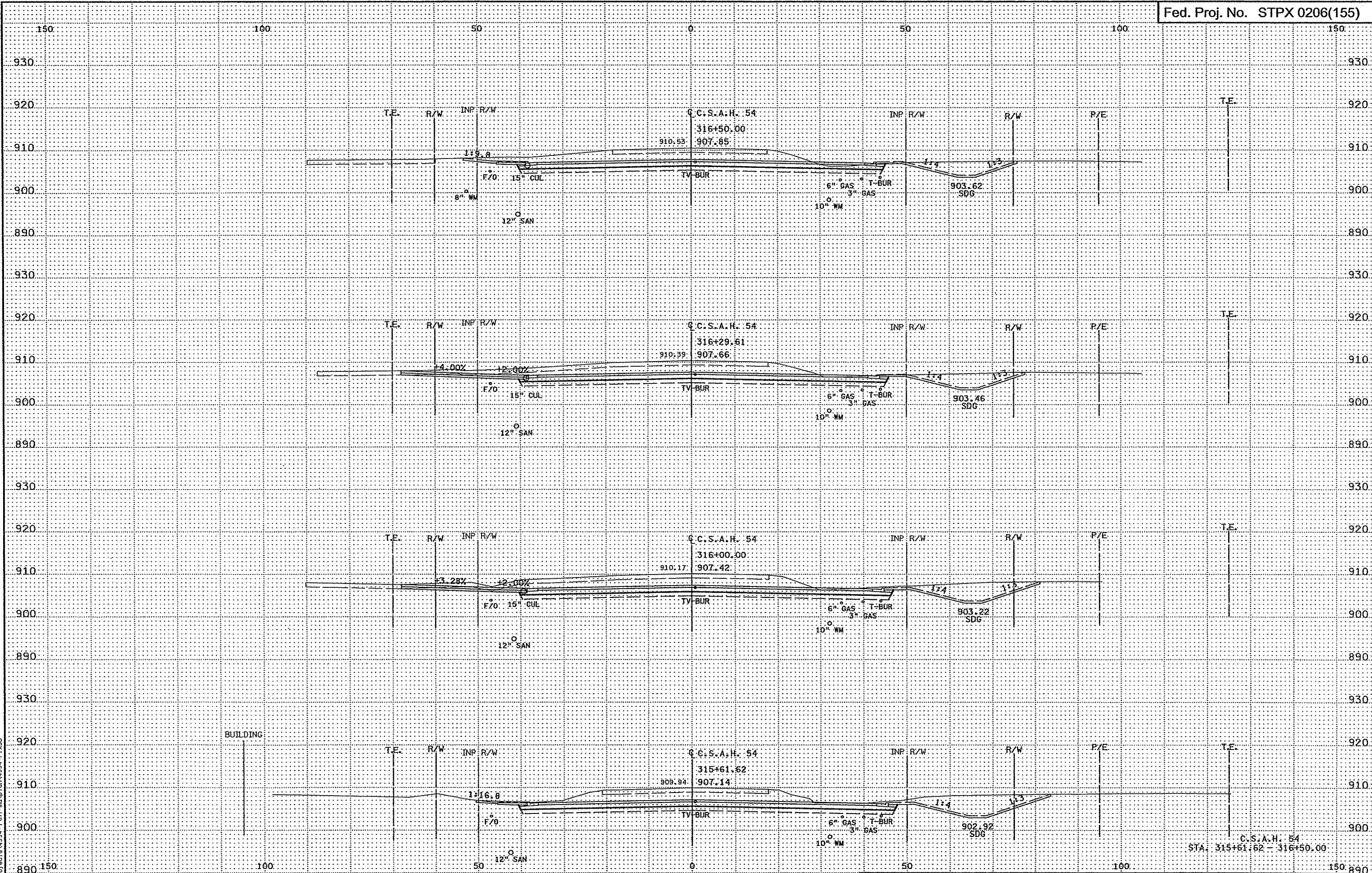


3:47:40 PM  
3/21/2007  
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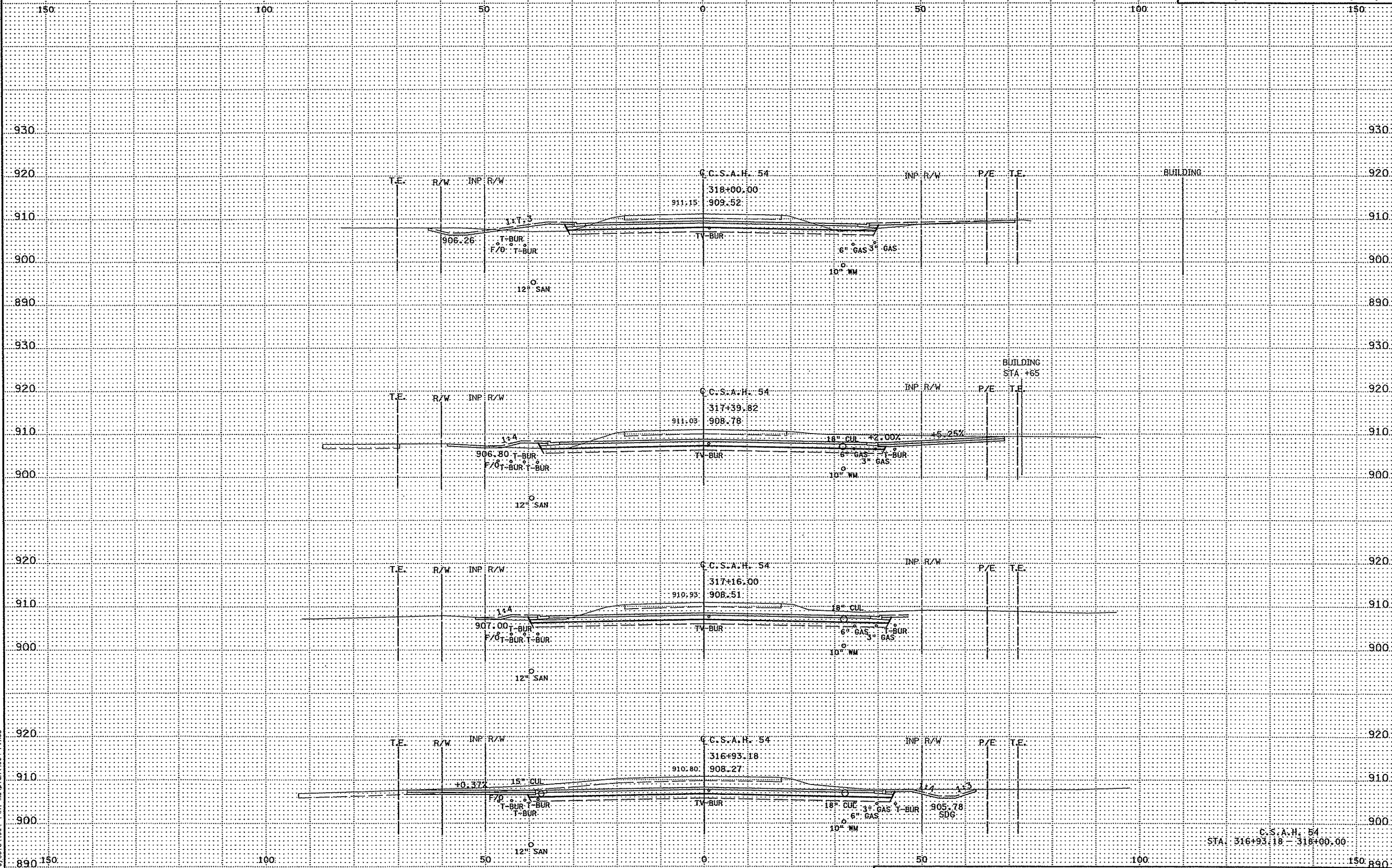
C.S.A.H. 54  
STA. 313+57.05 - 314+25.09



3:47:41 PM  
3/21/2007  
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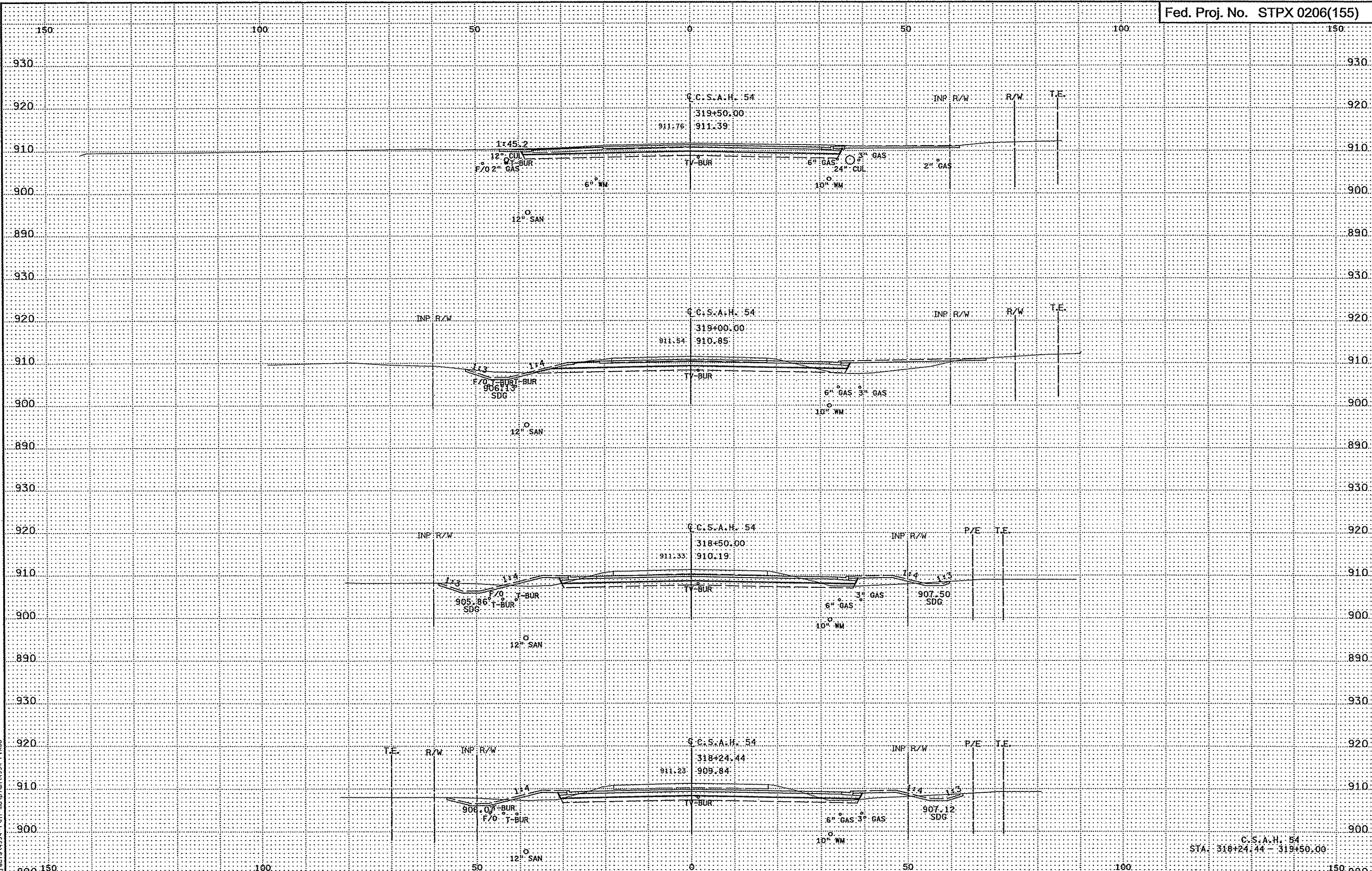


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3/21/2007  
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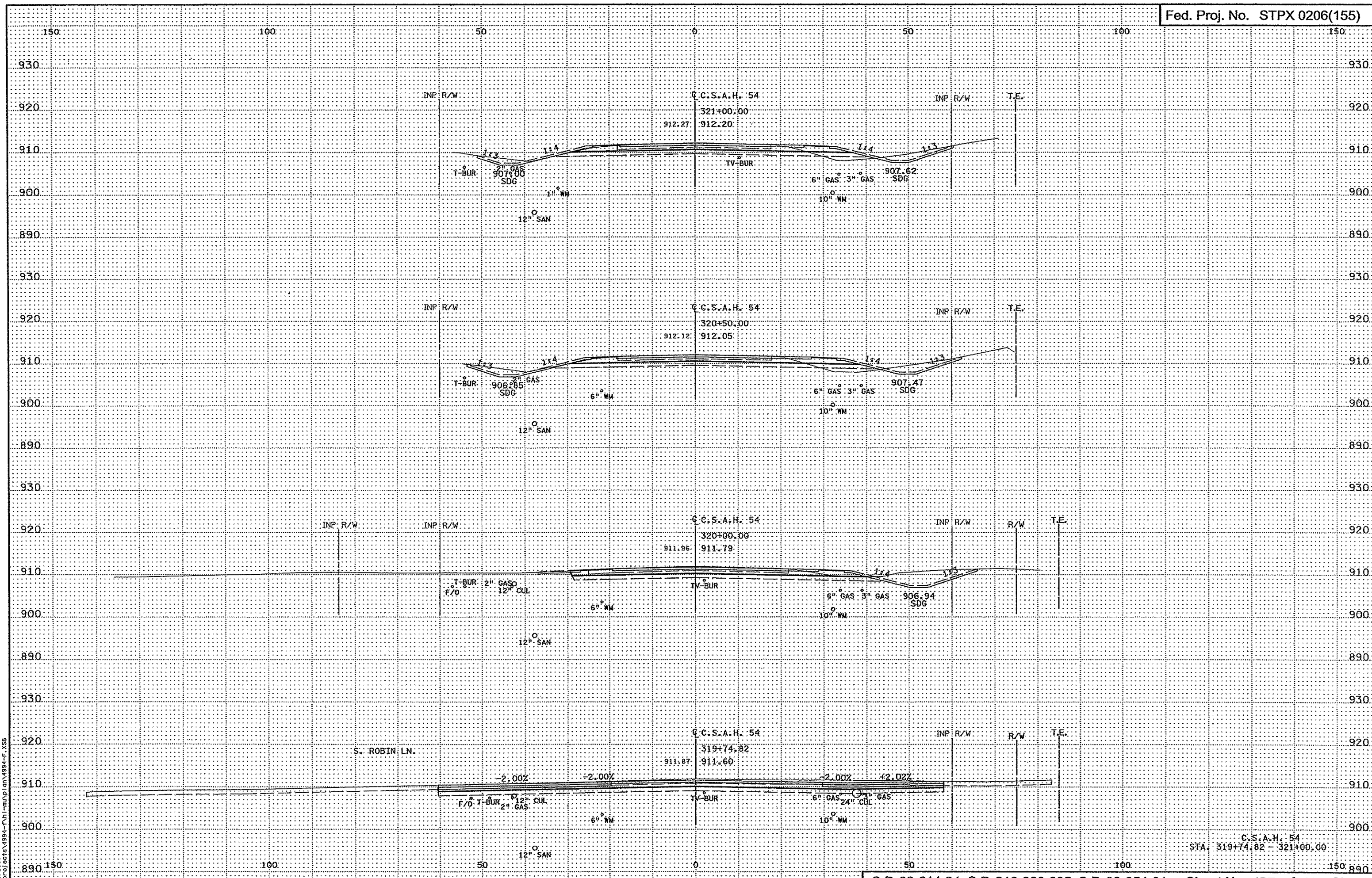
3:47:44 PM  
3/21/2007  
h:\projects\4994-f\11-m\vd\gn\4994-f\_xsb

C.S.A.H. 54  
STA. 316+93.18 - 318+00.00



3:47:45 PM  
3/21/2007  
H:\projects\4994-F\1-m\vd\ent\4994-F.XSB

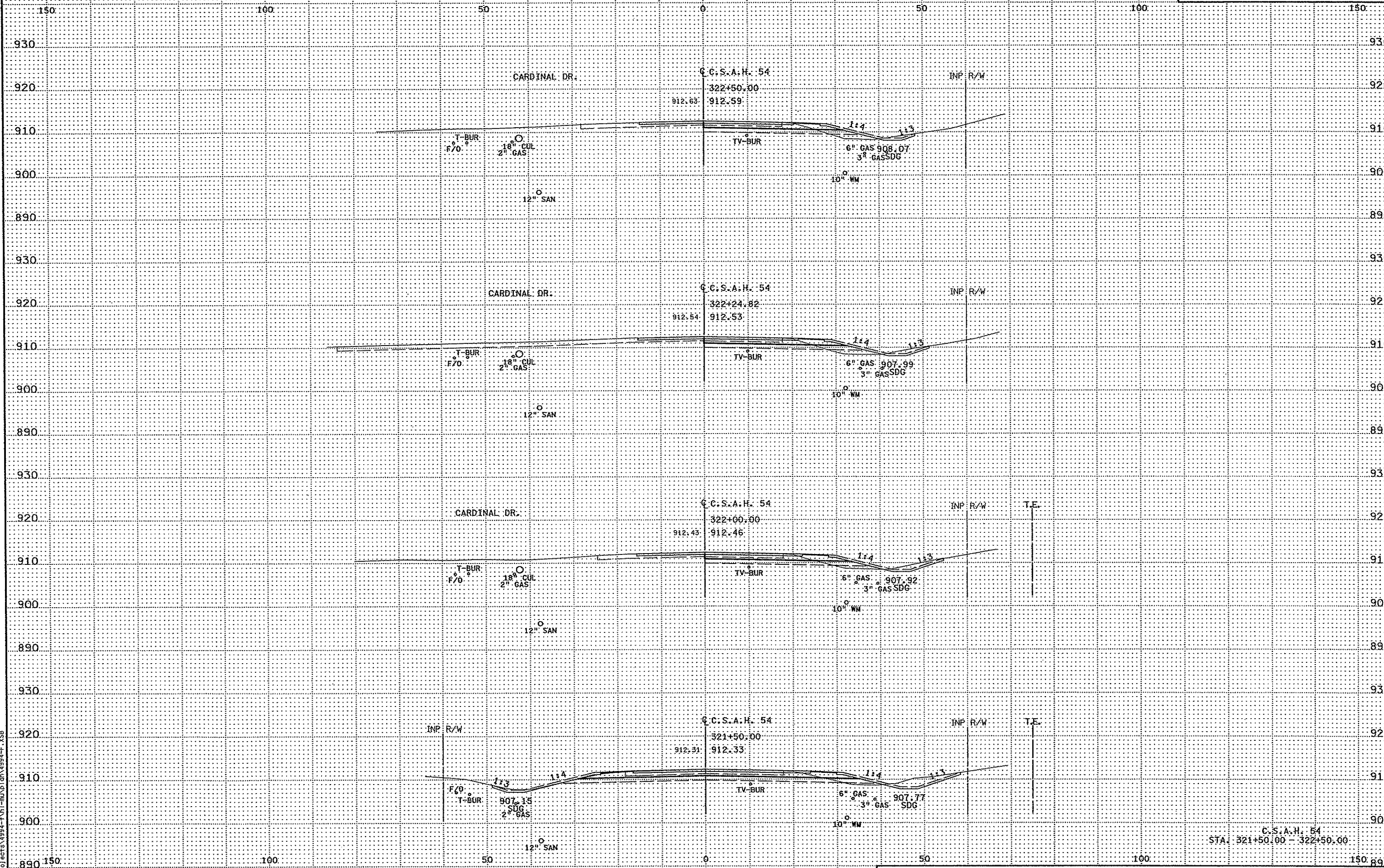
C.S.A.H. 54  
STA. 318+24.44 - 319+50.00



3:47:14 PM  
3/21/2007  
H:\proj\sects\494-F\1-1\m\p\gn\494-F.XSB

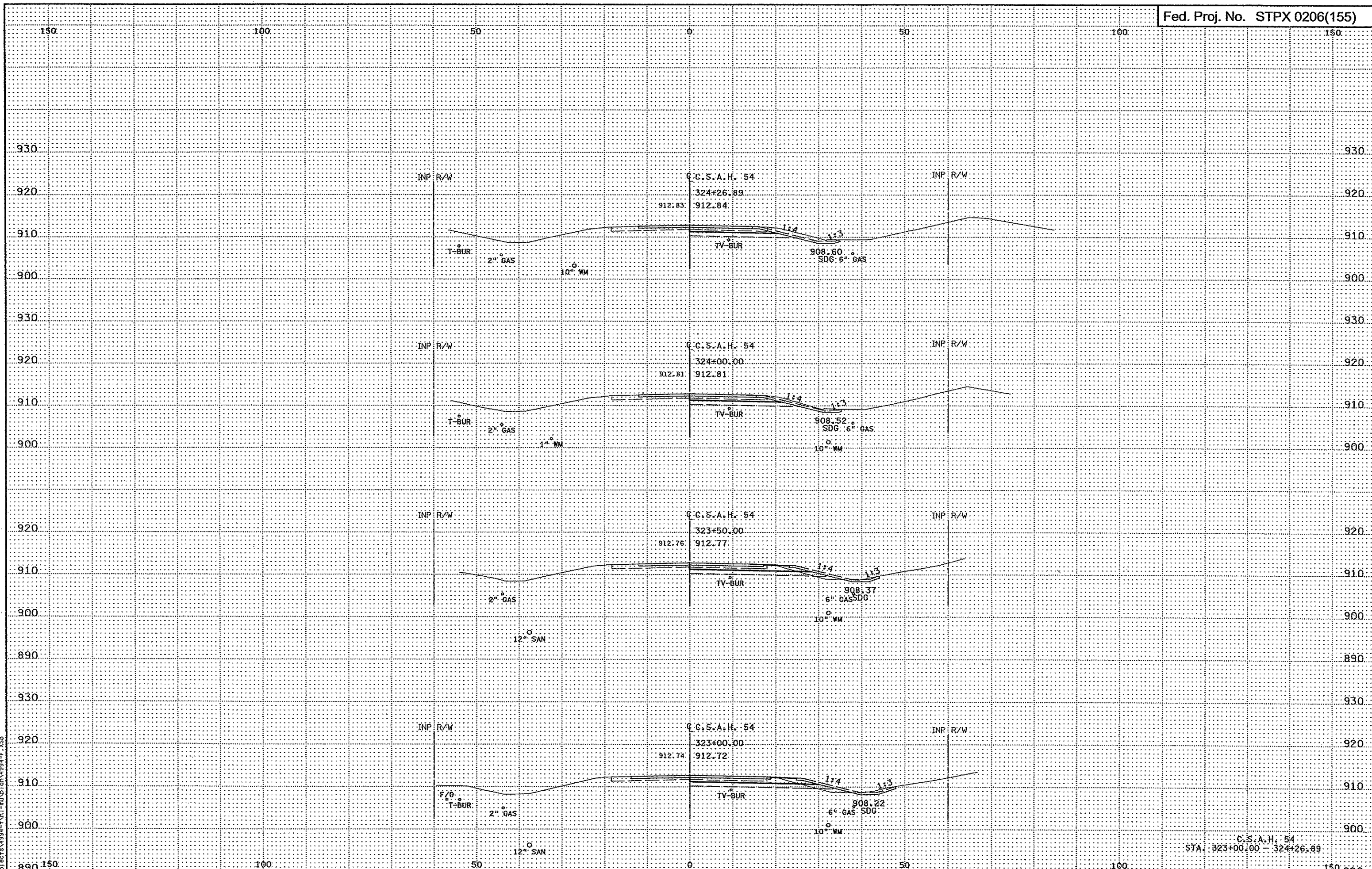
C.S.A.H. 54  
STA. 319+74.82 - 321+00.00



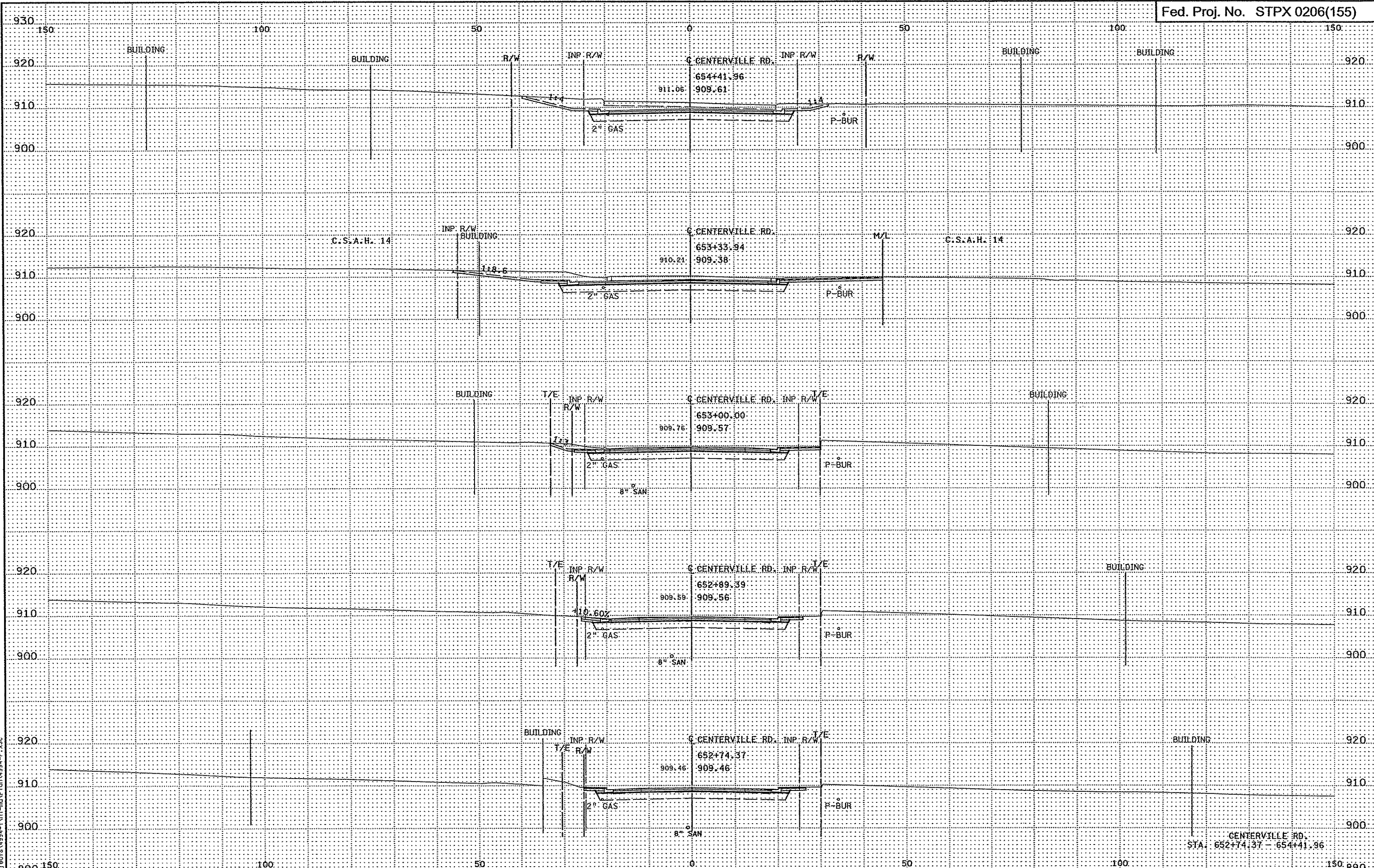


3:47:47 PM  
3/21/2007  
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C.C.S.A.H. 54  
STA. 321+50.00 - 322+50.00

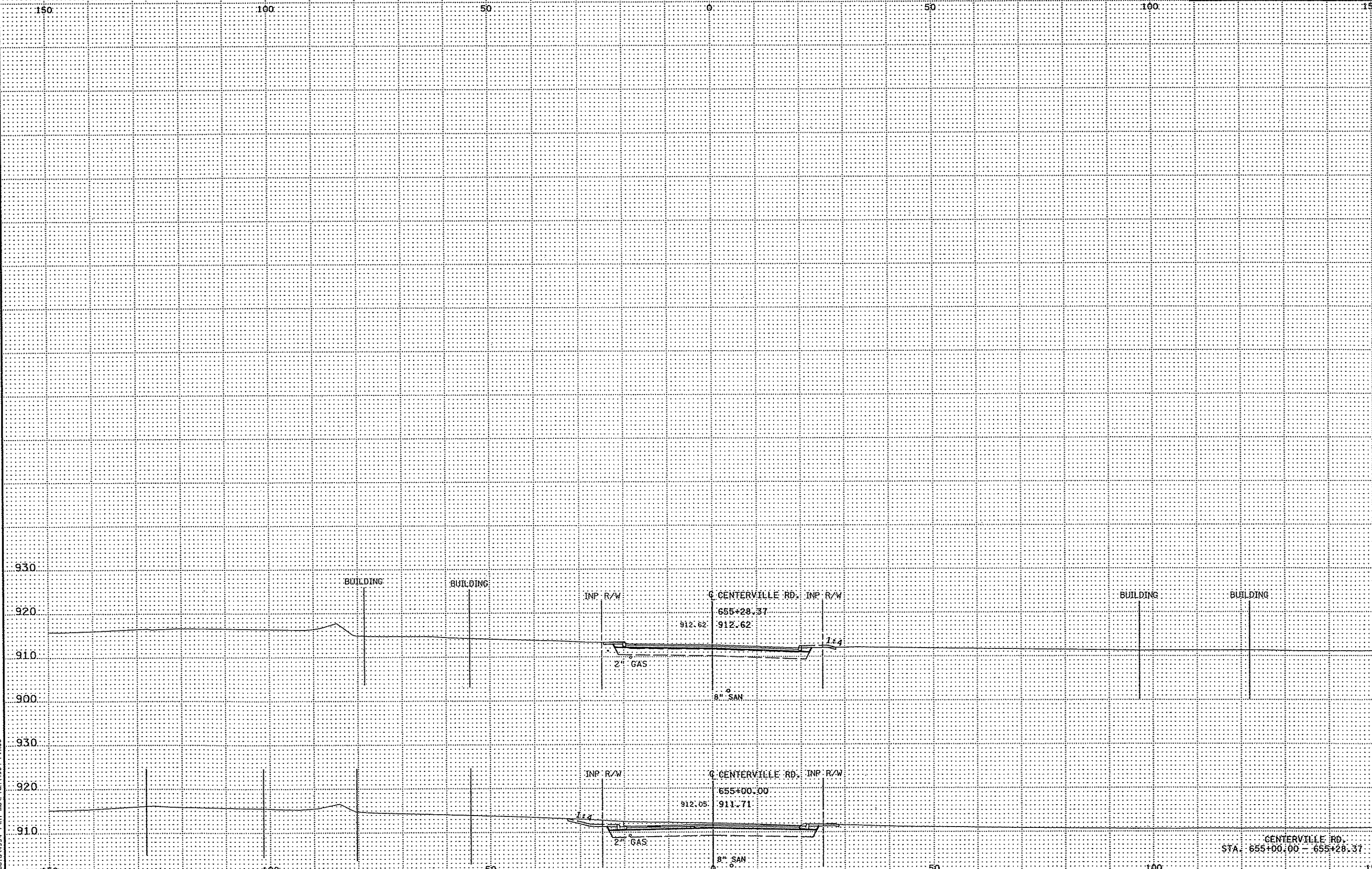


3/4/18 PM  
14/2/2007  
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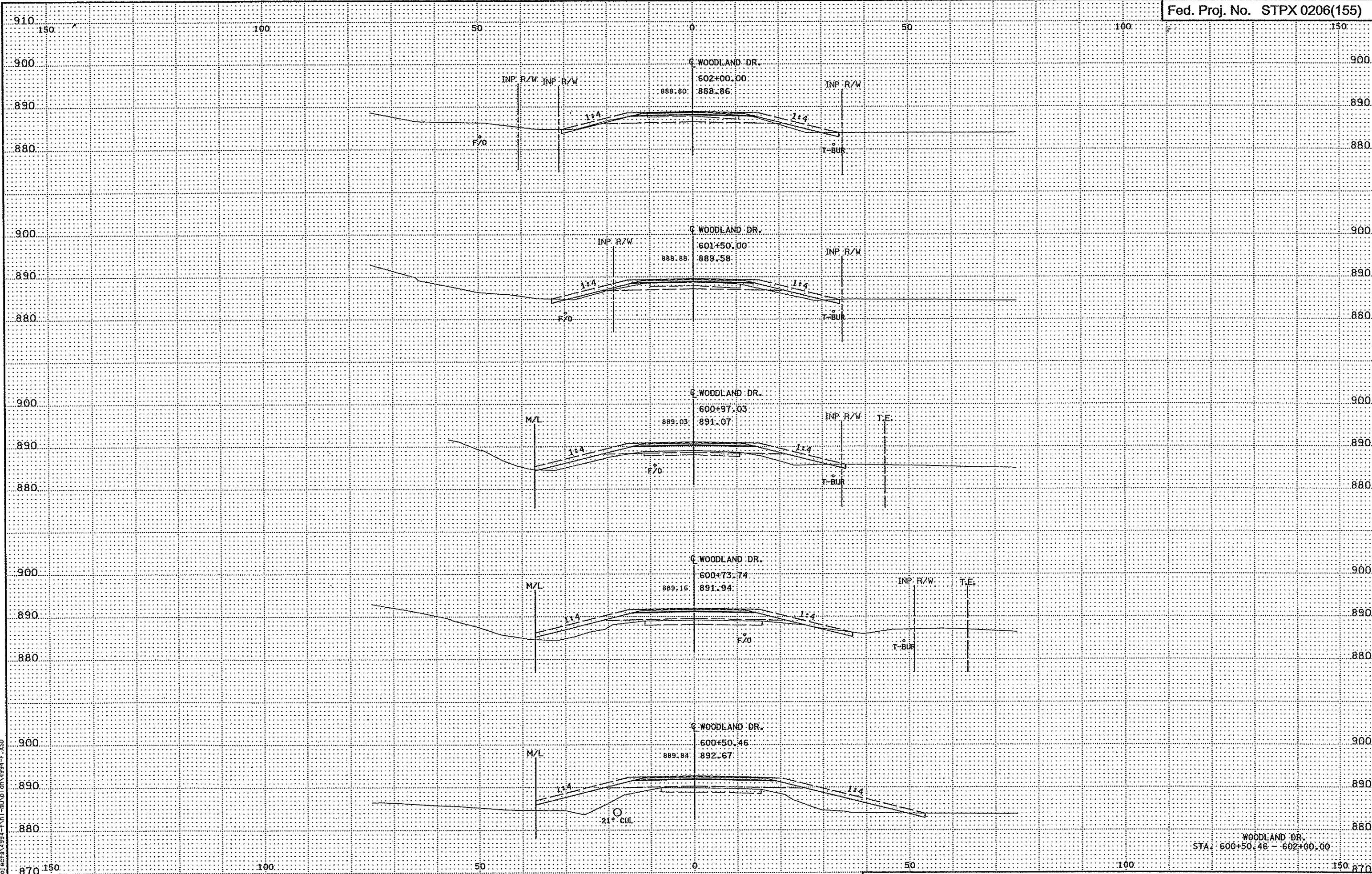


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3/21/2007  
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CENTERVILLE RD.  
STA. 652+74.37 - 654+41.96



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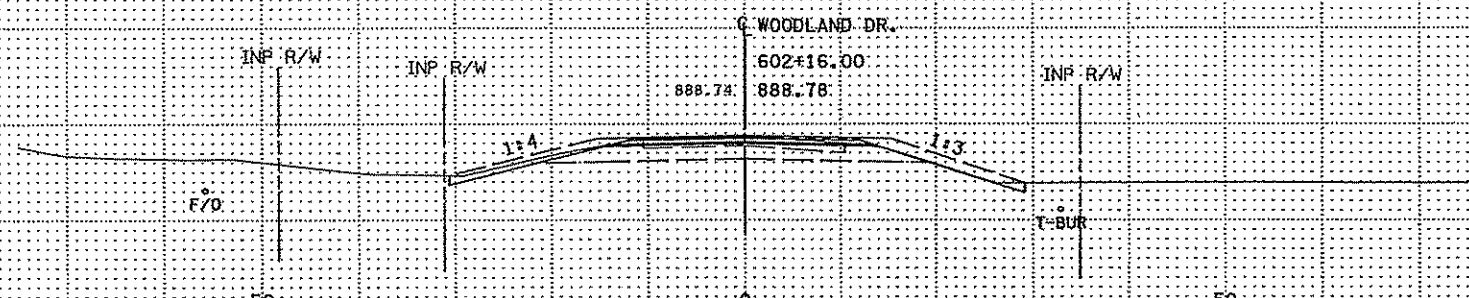


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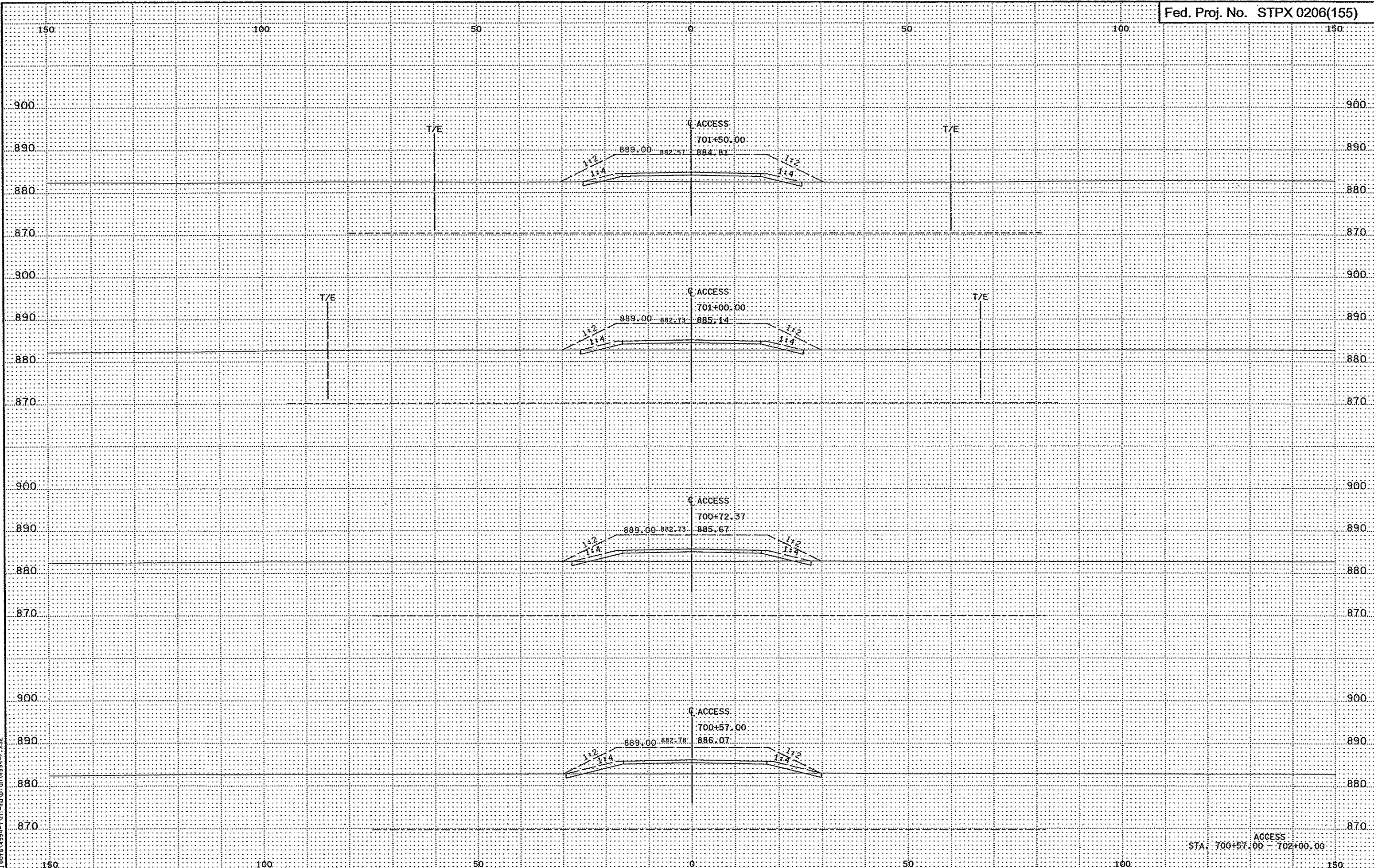
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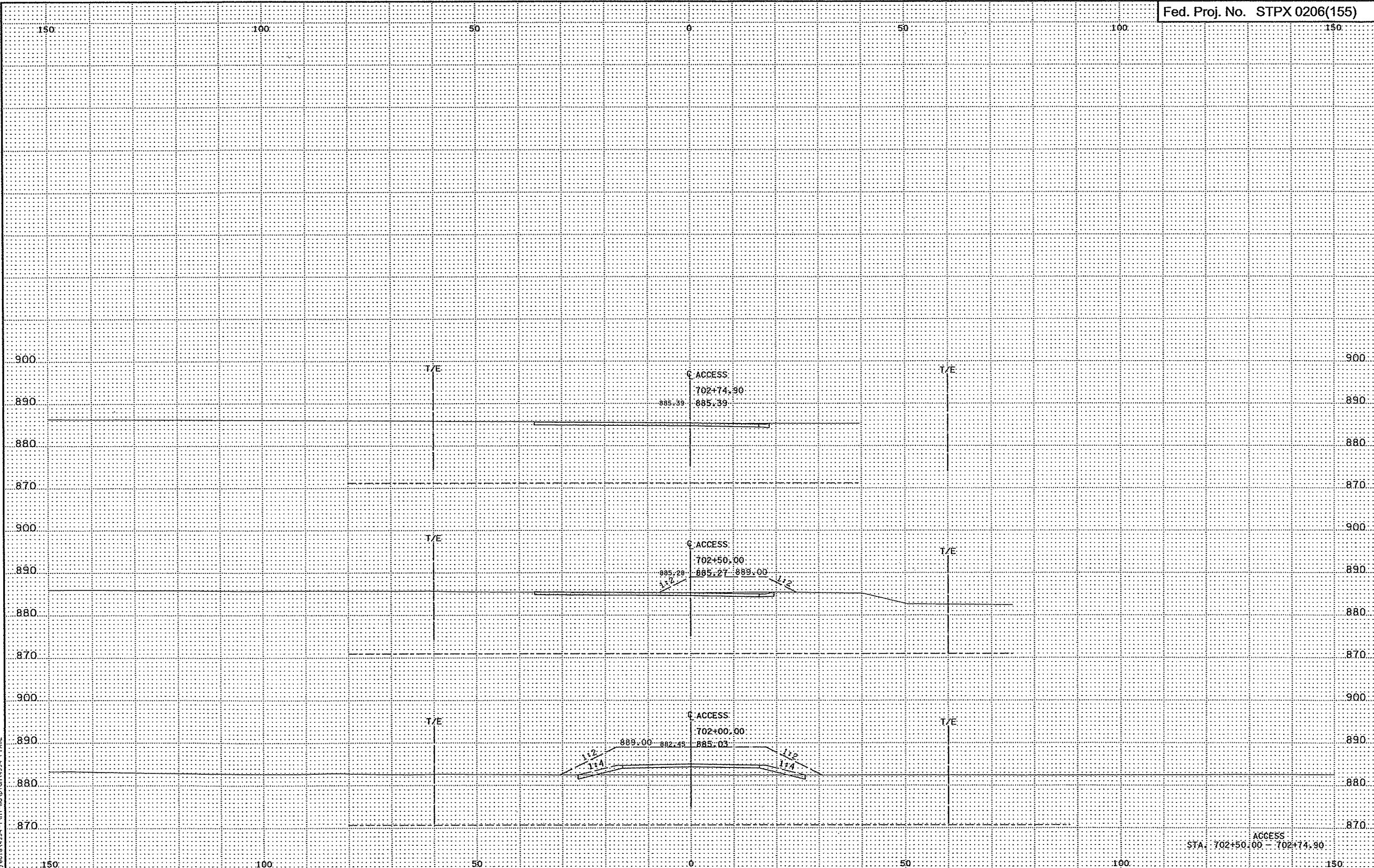
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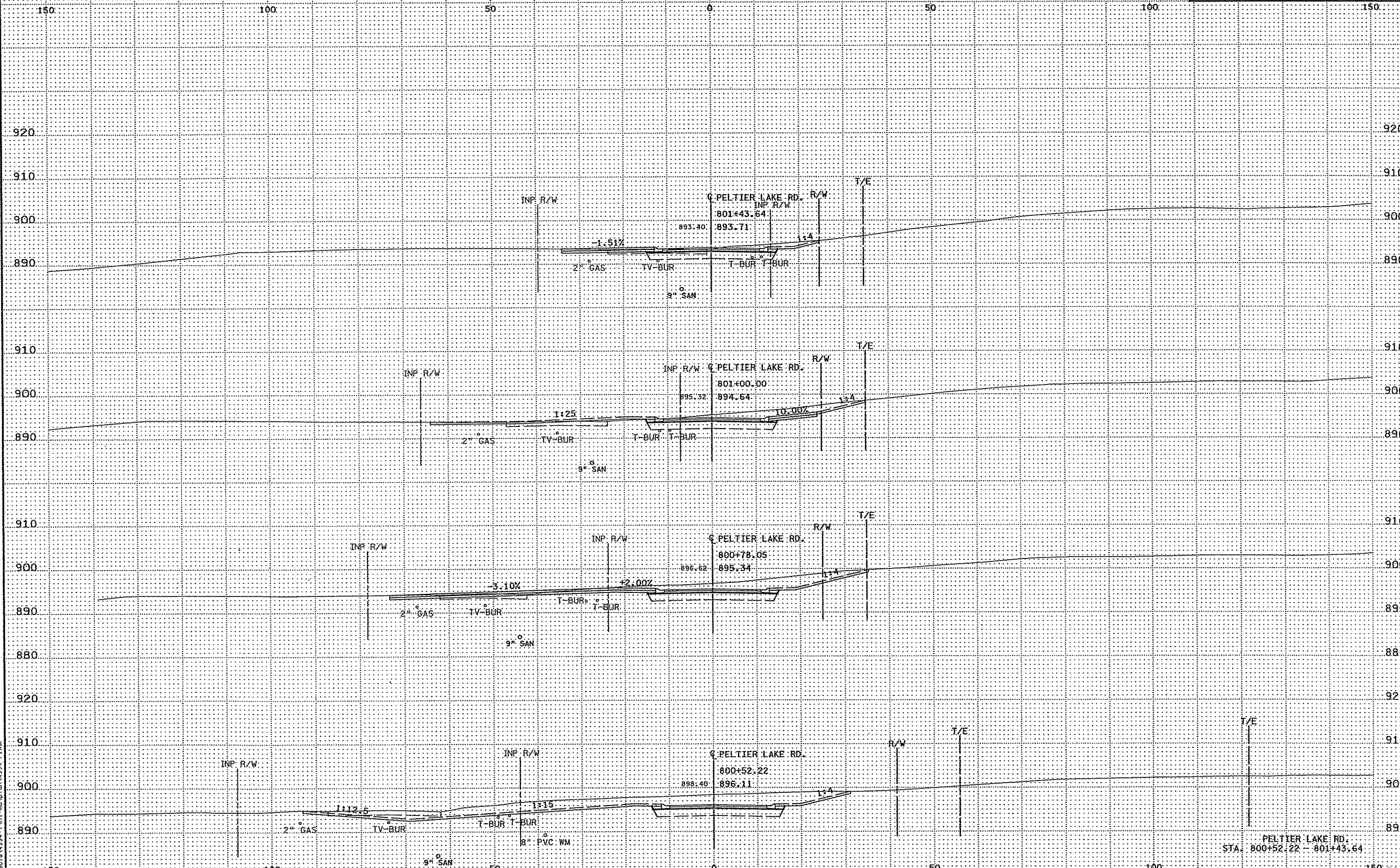
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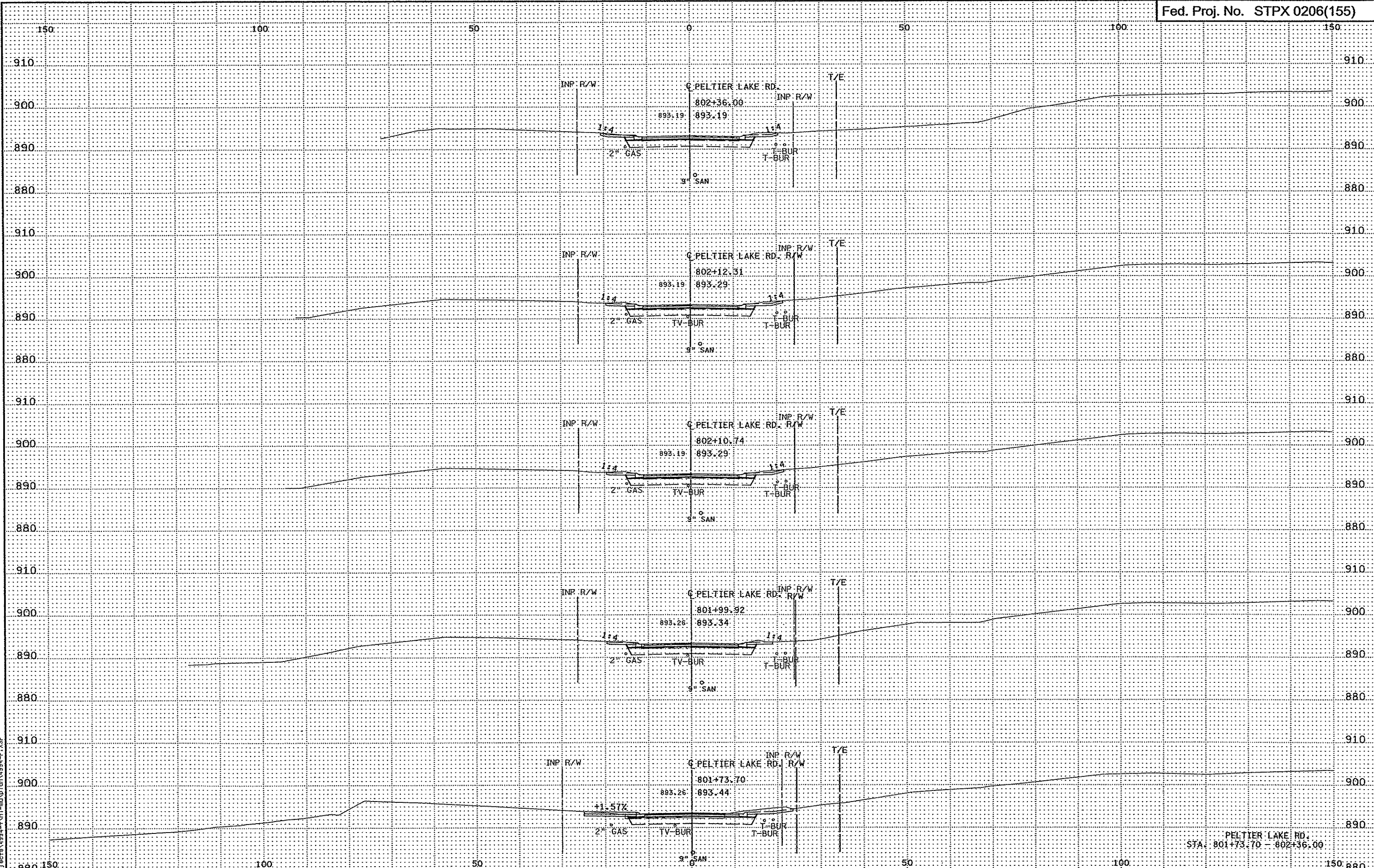
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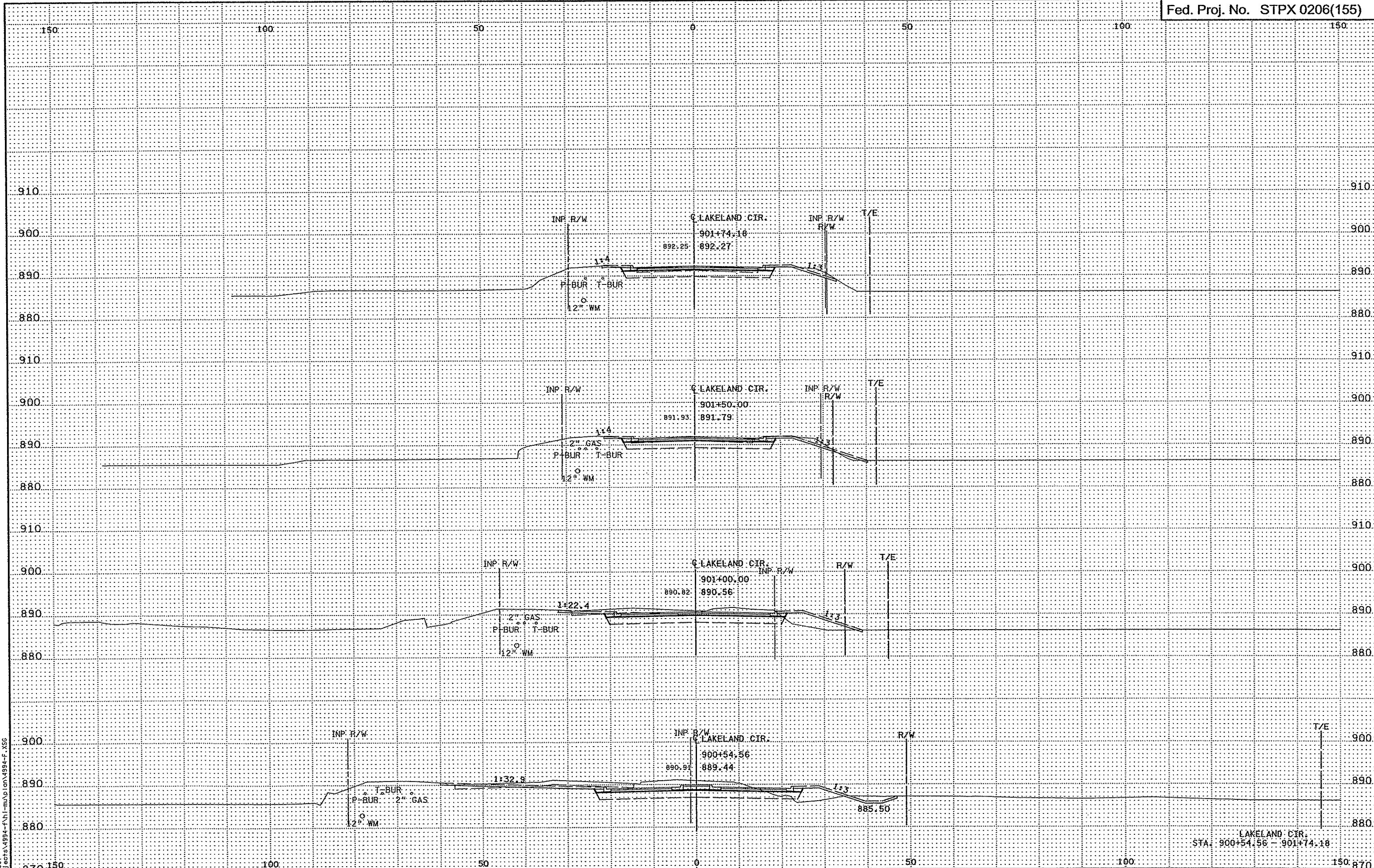
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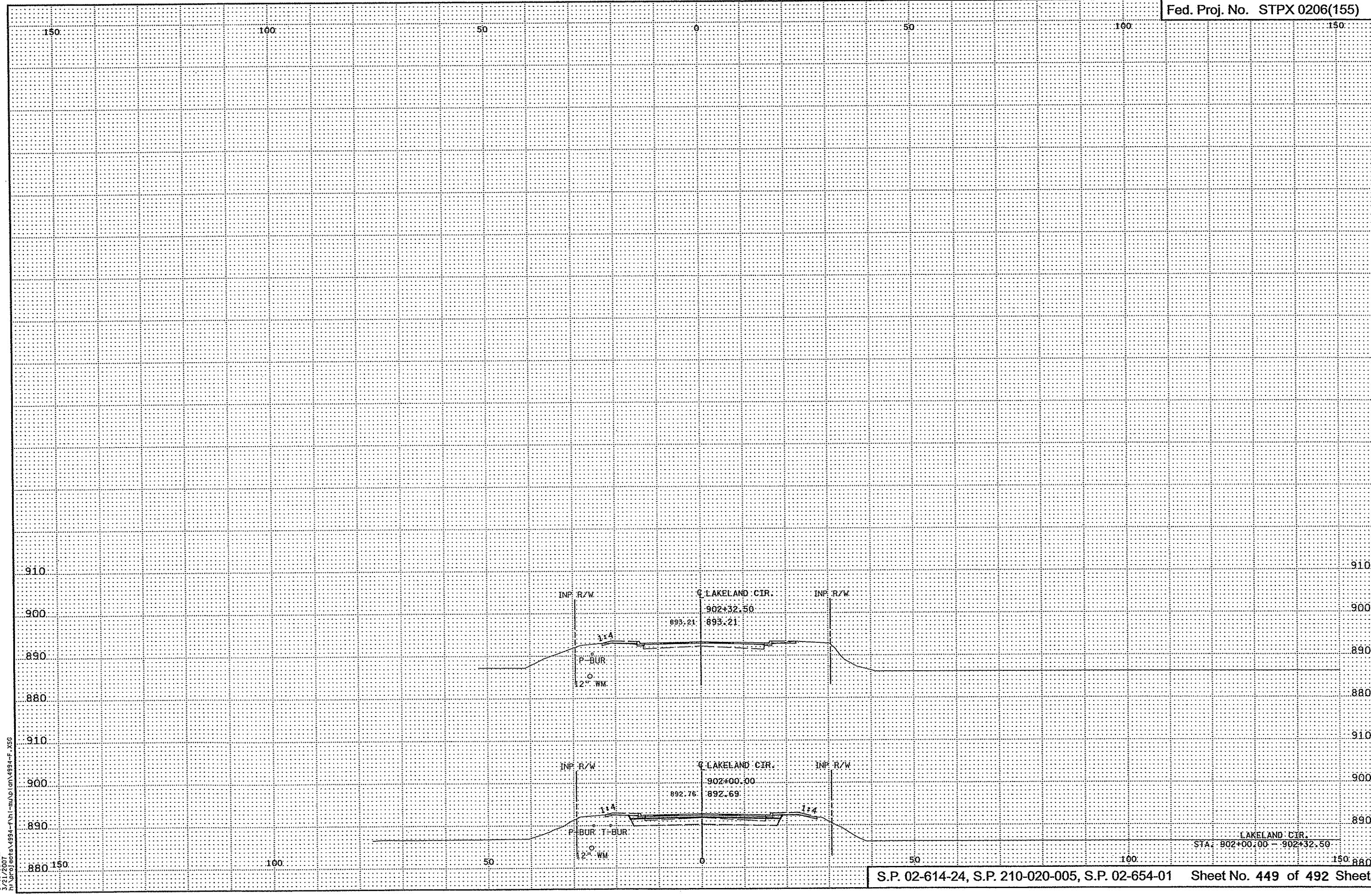
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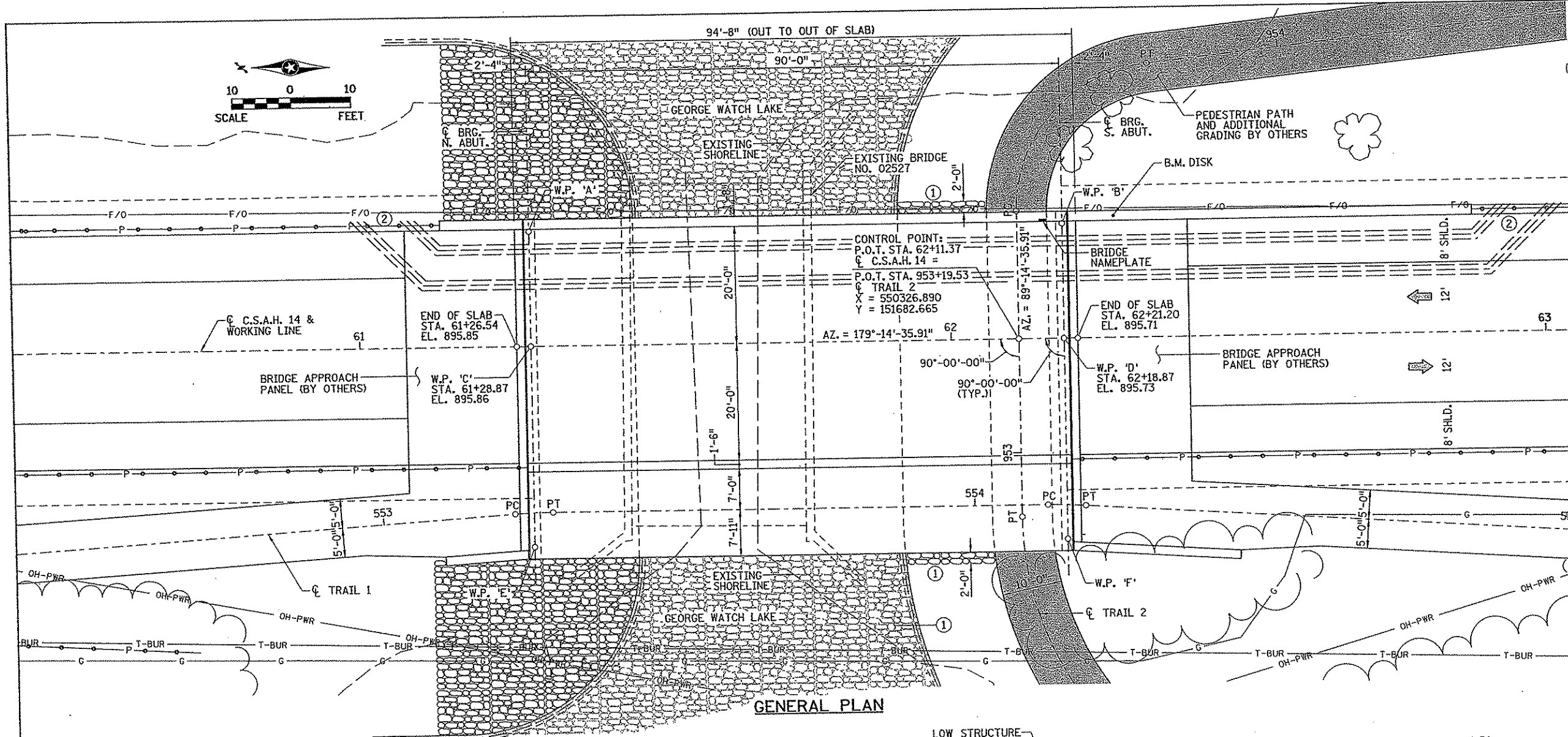


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### DESIGN DATA

2004 (AND CURRENT INTERIM) A.A.S.H.T.O. LRFD BRIDGE DESIGN SPECIFICATIONS  
 LOAD & RESISTANCE FACTOR DESIGN METHOD  
 DESIGN LOADING HL-93 LIVE LOAD  
 DEAD LOAD INCLUDES 20 psf ALLOWANCE FOR FUTURE WEARING COURSE MODIFICATIONS.  
 MAXIMUM ALLOWABLE DESIGN STRESSES:  
 REINFORCED CONCRETE:  
 $f'_c = 4000 \text{ psi}$   $n = 8$   
 $f_y = 60000 \text{ psi}$  REINFORCEMENT  
 PRESTRESSED CONCRETE:  
 $f'_c = 8000 \text{ psi}$   $n = 1$   
 $f'_s = 270000 \text{ psi}$  LOW RELAXATION STRANDS  
 DESIGN SPEED:  
 OVER = 50 mph  
 APPROXIMATE DECK AREA 5499 ft<sup>2</sup>.  
 OPERATING RATING HS58

### 2027 PROJECTED TRAFFIC VOLUMES

ROADWAY OVER	A.D.T.
11,834	

### LIST OF SHEETS

Sheet No.	Description
B1	GENERAL PLAN AND ELEVATION
B2	BRIDGE LAYOUT
B3 - B7	NORTH ABUTMENT DETAILS
B8 - B15	SOUTH ABUTMENT DETAILS
B16	FRAMING PLAN
B17	36" PRESTRESSED BEAMS
B18 & B19	BRIDGE DECK DETAILS
B20 & B21	CONCRETE RAILING (TYPE F)
B22	RAILING DETAILS
B23	CONDUIT SYSTEM
B24 & B25	WATERPROOF EXPANSION DEVICE
B26 - B29	B-DETAILS
B30	BRIDGE SURVEY
B31	BRIDGE SURVEY PLAN AND PROFILE
B32	SOIL BORINGS
B33	AS-BUILT BRIDGE DATA

### CONSTRUCTION NOTES

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

THE 2005 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" SHALL GOVERN.

BRIDGE SEAT REINFORCEMENT SHALL BE CAREFULLY PLACED TO AVOID INTERFERENCE WITH DRILLING HOLES FOR ANCHOR RODS. THE SUPERSTRUCTURE BEAMS SHALL BE ERECTED IN FINAL POSITION PRIOR TO DRILLING HOLES FOR AND PLACING ANCHOR RODS.

THE FIRST TWO DIGITS OF EACH BAR MARK INDICATE THE BAR NUMBER WHICH APPROXIMATES THE NOMINAL DIAMETER OF THE BAR IN MILLIMETERS (mm).

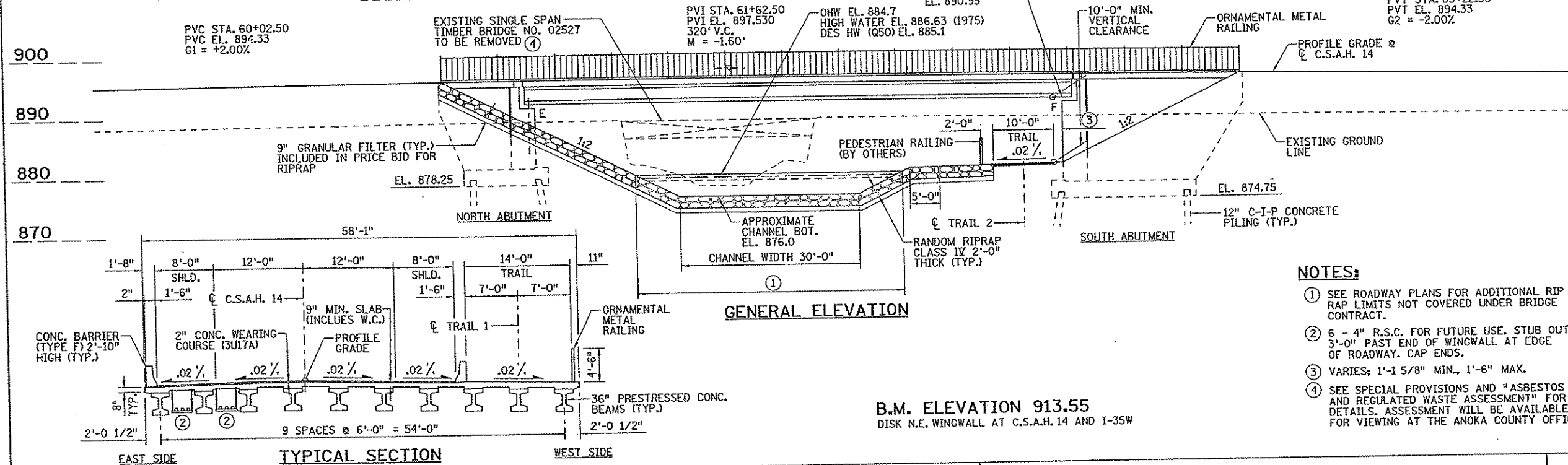
BARS MARKED WITH THE SUFFIX "E" SHALL BE EPOXY COATED.

ALL REINFORCEMENT SHALL BE 2 in. CLEAR, UNLESS SHOWN OR NOTED OTHERWISE.

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: LARRY A. PRICKSON  
 Signature: *Larry A. Prickson*  
 Date: 3/15/07 License: 14546

**SRE** CONSULTING GROUP, INC.



- ### NOTES:
- SEE ROADWAY PLANS FOR ADDITIONAL RIP RAP LIMITS NOT COVERED UNDER BRIDGE CONTRACT.
  - 6 - 4" R.S.C. FOR FUTURE USE. STUB OUT 3'-0" PAST END OF WINGWALL AT EDGE OF ROADWAY. CAP ENDS.
  - VARIES; 1'-1 5/8" MIN., 1'-6" MAX.
  - SEE SPECIAL PROVISIONS AND "ASBESTOS AND REGULATED WASTE ASSESSMENT" FOR DETAILS. ASSESSMENT WILL BE AVAILABLE FOR VIEWING AT THE ANOKA COUNTY OFFICES.

### ANOKA COUNTY

MINNESOTA DEPARTMENT OF TRANSPORTATION  
 BRIDGE NO. 02572

C.S.A.H. 14 OVER GEORGE WATCH LAKE WATERWAY  
 90' PRESTRESSED CONCRETE BEAM SPAN  
 40'-0" ROADWAY INCLUDING 14'-0" TRAIL,  
 0° SKEW, 2-TYPE F RAILS

BRIDGE I.D. NO. 501  
 SEC. 15, T31N, R22W,  
 ANOKA COUNTY

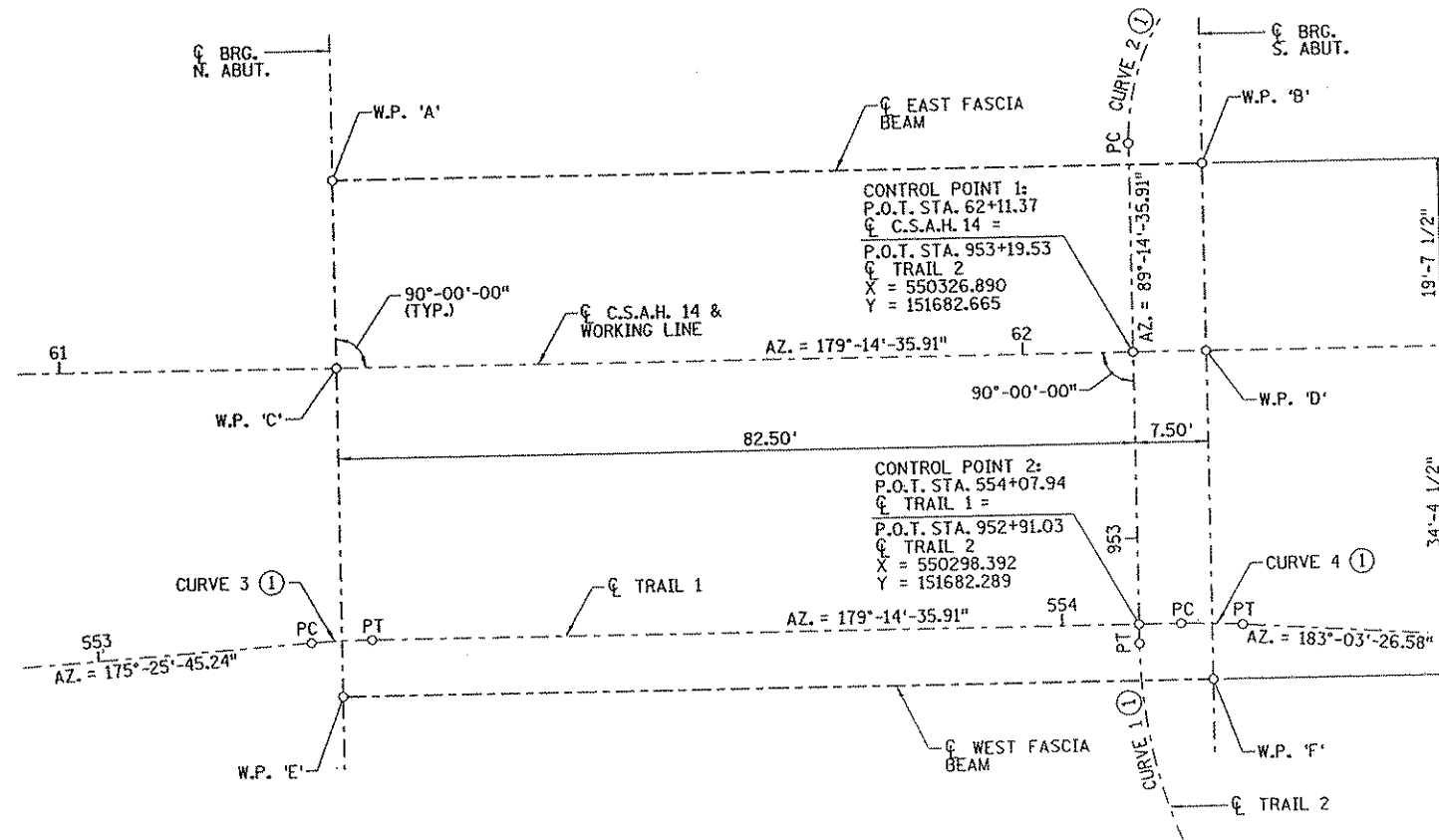
APPROVED: \_\_\_\_\_ DATE \_\_\_\_\_  
 STATE BRIDGE ENGINEER

**CURVE 1 DATA:** ①  
 P.I. STA. 952+57.63  
 $\Delta = 89^{\circ}-20'-39.11''$   
 $D = 104^{\circ}-10'-26.92''$   
 $R = 55.00'$   
 $T = 54.374'$   
 $L = 85.764'$   
 P.C. STA. 952+03.25  
 P.T. STA. 952+89.02

**CURVE 2 DATA:** ①  
 P.I. STA. 953+63.76  
 $\Delta = 83^{\circ}-40'-20.92''$   
 $D = 229^{\circ}-10'-59.22''$   
 $R = 25.00'$   
 $T = 22.381'$   
 $L = 36.509'$   
 P.C. STA. 953+41.38  
 P.T. STA. 953+77.89

**CURVE 3 DATA:** ①  
 P.I. STA. 553+25.44  
 $\Delta = 3^{\circ}-48'-50.67''$   
 $D = 60^{\circ}-18'-40.85''$   
 $R = 95.00'$   
 $T = 3.163'$   
 $L = 6.324'$   
 P.C. STA. 553+22.28  
 P.T. STA. 553+28.60

**CURVE 4 DATA:** ①  
 P.I. STA. 554+15.44  
 $\Delta = 3^{\circ}-48'-50.67''$   
 $D = 60^{\circ}-18'-40.85''$   
 $R = 95.00'$   
 $T = 3.163'$   
 $L = 6.324'$   
 P.C. STA. 554+12.28  
 P.T. STA. 554+18.60



**WORKING POINT LAYOUT**

TOP OF ROADWAY TO BRIDGE SEAT		
	N. ABUT.	S. ABUT.
SLAB THICKNESS	9"	9"
STOOL HEIGHT	4"	4"
BEAM HEIGHT	36"	36"
BEARING HEIGHT	4 5/8"	3 1/4"
TOTAL	4'-5 5/8"	4'-4 1/4"

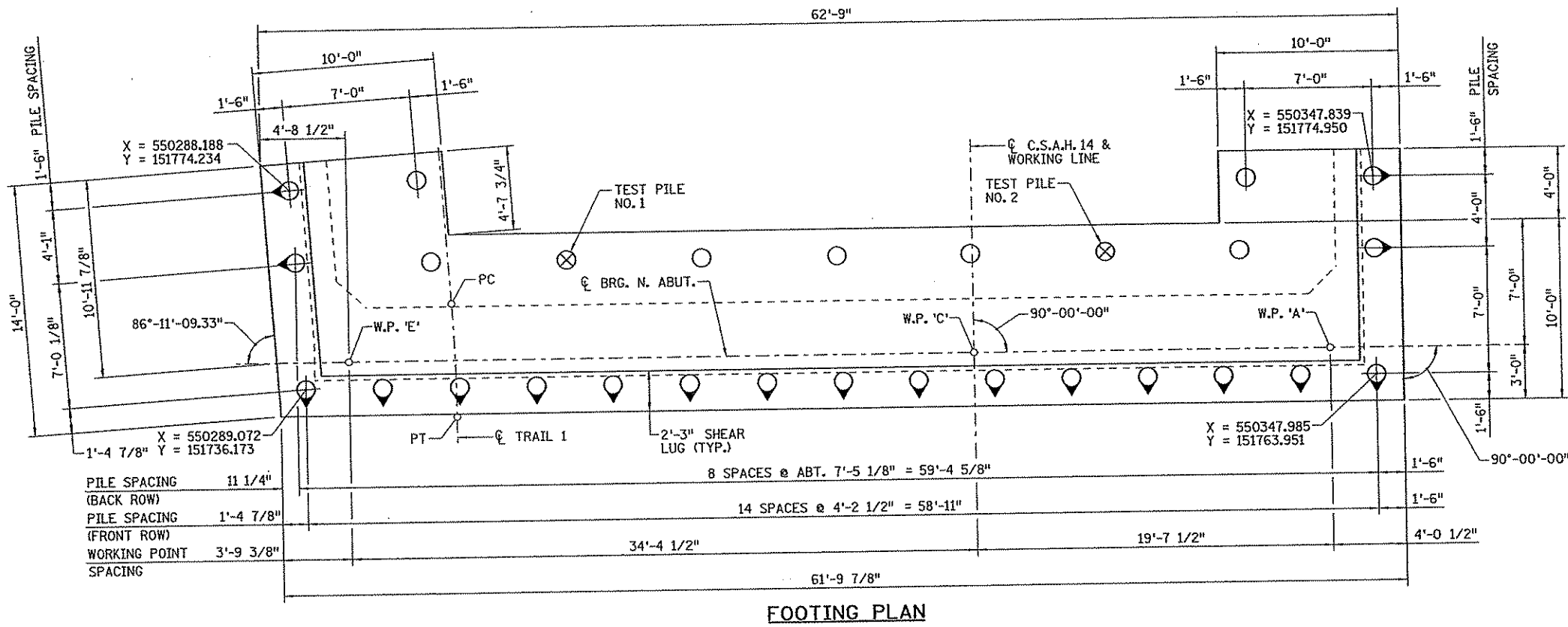
POINT	STATION	DIMENSIONS BETWEEN WORKING POINTS						COORDINATES		ELEVATION			POINT
		A	B	C	D	E	F	X	Y	TOP OF FIN. DECK	FIN. DECK TO BR. SEAT	BRIDGE SEAT	
A	61+28.87							550345.423	151765.417	895.47	4.47	891.00	A
B	62+18.87	90.00						550346.612	151675.425	895.34	4.35	890.99	B
C	61+28.87	19.62						550325.800	151765.158	895.86	-	-	C
D	62+18.87	92.11	19.62	90.00				550326.989	151675.166	895.73	-	-	D
E	61+28.87			34.38				550291.428	151764.704	895.17	4.47	890.70	E
F	62+18.87	104.96		96.34	34.36	90.00		550292.617	151674.712	895.04	4.35	890.69	F

SCHEDULE OF QUANTITIES FOR ENTIRE BRIDGE			
ITEM NO.	ITEM	UNIT	QUANTITY
2401.501	STRUCTURAL CONCRETE (1A43)	CU. YD.	205 (P)
2401.501	STRUCTURAL CONCRETE (3Y43)	CU. YD.	331 (P)
2401.512	BRIDGE SLAB CONCRETE (3Y36)	SQ. FT.	5490 (P)
2401.513	TYPE F (TL-4) RAILING CONCRETE (3Y46)	LIN. FT.	266 (P)
2401.541	REINFORCEMENT BARS	POUND	20270 (P)
2401.541	REINFORCEMENT BARS (EPOXY COATED)	POUND	60050 (P)
2401.601	STRUCTURE EXCAVATION	LUMP SUM	1
2401.601	FOUNDATION PREPARATION NORTH ABUTMENT	LUMP SUM	1
2401.601	FOUNDATION PREPARATION SOUTH ABUTMENT	LUMP SUM	1
2402.583	ORNAMENTAL METAL RAILING	LIN. FT.	132 (P)
2402.591	EXPANSION JOINT DEVICES TYPE 4	LIN. FT.	116 (P)
2402.595	BEARING ASSEMBLY	EACH	20
2404.501	CONCRETE WEARING COURSE (3U17A)	SQ. FT.	5380 (P)
2405.502	PRESTRESSED CONCRETE BEAMS 36M	LIN. FT.	913 (P)
2405.511	DIAPHRAGMS FOR TYPE 36M PREST BEAMS	LIN. FT.	108 (P)
2442.501	REMOVE OLD BRIDGE	LUMP SUM	1
2452.507	C-I-P CONCRETE PILING DELIVERED 12"	LIN. FT.	6840
2452.508	C-I-P CONCRETE PILING DRIVEN 12"	LIN. FT.	6840
2452.519	C-I-P CONC TEST PILE 100' LONG 12"	EACH	5
2502.502	DRAINAGE SYSTEM TYPE (B910)	LUMP SUM	1
2511.501	RANDOM RIPRAP CLASS IV	CU. YD.	311
2545.509	CONDUIT SYSTEM	LUMP SUM	1

**NOTES:**

- ① CURVE NUMBERS ON THIS SHEET DO NOT CORRESPOND WITH CURVE NUMBERS IN ROADWAY PLANS.
- ② INCLUDES APPROACH PANELS.
- ③ DOES NOT INCLUDE TEST PILES.
- ④ SPECIFIC AREAS MAY REQUIRE SHEETING OR SHORING. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE LOCATIONS OF SHEET PILING AND/OR SHORING BASED ON THE CONTRACTOR'S CONSTRUCTION OPERATION. THIS SHALL BE INCIDENTAL TO ITEM 2401.601 "STRUCTURE EXCAVATION".
- ⑤ 9" GRANULAR FILTER UNDER RIPRAP INCLUDED IN PRICE BID FOR "RANDOM RIPRAP CLASS IV".
- ⑥ NON-PARTICIPATING
- ⑦ THE ASSESSMENT SUMMARY IDENTIFIED THE EXISTING BRIDGE AS HAVING BEEN CONSTRUCTED OF TREATED TIMBER. ALL SUCH MATERIALS SHALL BE REMOVED AND PROPERLY DISPOSED. SEE SPECIAL PROVISIONS AND "ASBESTOS AND REGULATED WASTE ASSESSMENT" FOR FURTHER DETAILS. ASSESSMENT WILL BE AVAILABLE FOR VIEWING AT THE ANOKA COUNTY OFFICES.

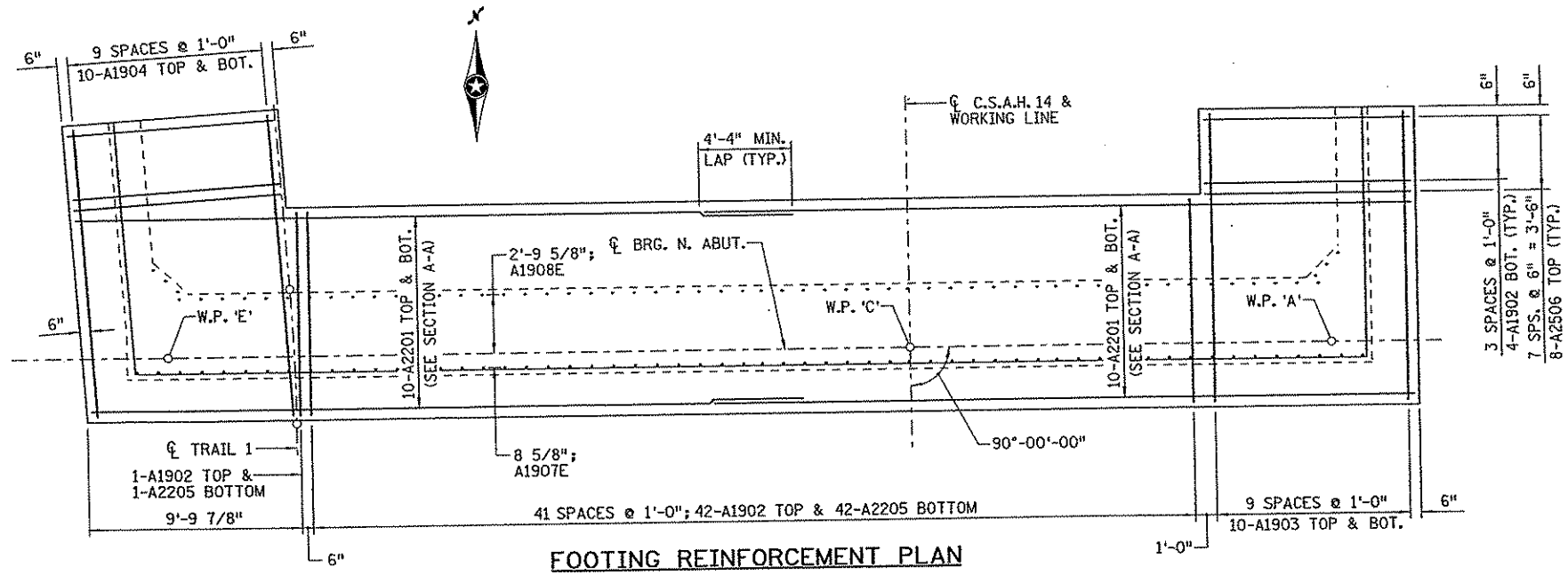
<table border="1"> <thead> <tr> <th>NO</th> <th>DATE</th> <th>BY</th> <th>CHK</th> <th>APPR</th> <th>REVISION</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>5/1/07</td> <td>JEH</td> <td>JAW</td> <td>LAE</td> <td>REVISED NOTE</td> </tr> </tbody> </table>	NO	DATE	BY	CHK	APPR	REVISION	1	5/1/07	JEH	JAW	LAE	REVISED NOTE	STATE PROJ. NO. 02-614-24  BRIDGE NO. 02572	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. Print Name: JEREMY A. WEST Date: 5/1/07 License: 42039	DRAWN BY: J. HOFFMAN DATE: 6/06 DESIGNED BY: C. BLACK DATE: 6/06 CHECKED BY: J. WEST DATE: 6/06 COMM. NO.: 0054994	<b>SRF CONSULTING GROUP, INC.</b>	ANOKA COUNTY C.S.A.H. 14 OVER GEORGE WATCH LAKE WATERWAY BRIDGE LAYOUT	SHEET B2 OF B33
NO	DATE	BY	CHK	APPR	REVISION													
1	5/1/07	JEH	JAW	LAE	REVISED NOTE													



NORTH ABUTMENT	
COMPUTED PILE LOADS	TONS/PILE
FACTORED DEAD LOAD + EARTH PRESSURE	64.9
FACTORED LIVE LOAD	7.7
FACTORED TOTAL LOAD	72.6
* DESIGN LOAD	49.6

\*  $\frac{72.6}{1.463} = 49.6$  TONS/PILE  
 1.463 IS AVERAGE LOAD FACTOR FOR STRENGTH I LOAD COMBINATION

- PILE NOTES:**
- 2 - 12" C-I-P TEST PILES, 100 FEET LONG.
  - 26 - 12" C-I-P, ESTIMATED LENGTH 90 FEET LONG.
  - 28 - 12" C-I-P REQUIRED FOR NORTH ABUTMENT.
  - PILE SPACING SHOWN IS AT BOTTOM OF FOOTING.
  - PILES MARKED THUS SHALL BE BATTERED 3" PER FOOT IN THE DIRECTION SHOWN.
  - FOR PILE SPLICE, SEE DETAIL B201.
  - PILES TO HAVE A NOMINAL DIAMETER OF 12".



NO	DATE	BY	CKD	APPR	REVISION

8:46:50 AM 3/12/2007

STATE PROJ. NO.  
02-614-24

BRIDGE NO.  
02572

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.

Print Name: JEREMY A. WEST  
 Date: 3/15/07 License # 42039

DRAWN BY  
J. HOFFMAN

DESIGNED BY  
C. BLACK

CHECKED BY  
J. WEST

DATE  
6/06

DATE  
6/06

COMM. NO.  
0054994



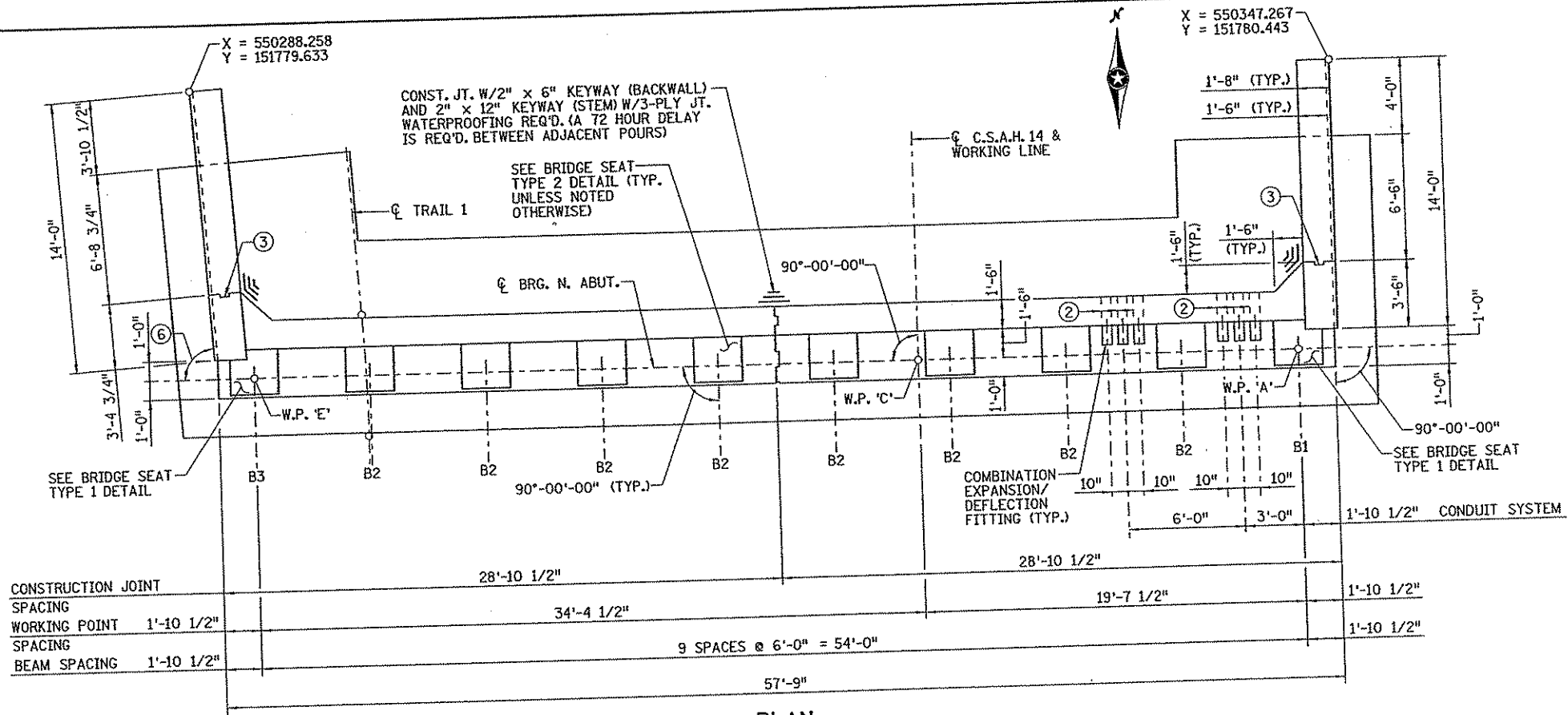
ANOKA COUNTY

C.S.A.H. 14 OVER GEORGE WATCH LAKE WATERWAY

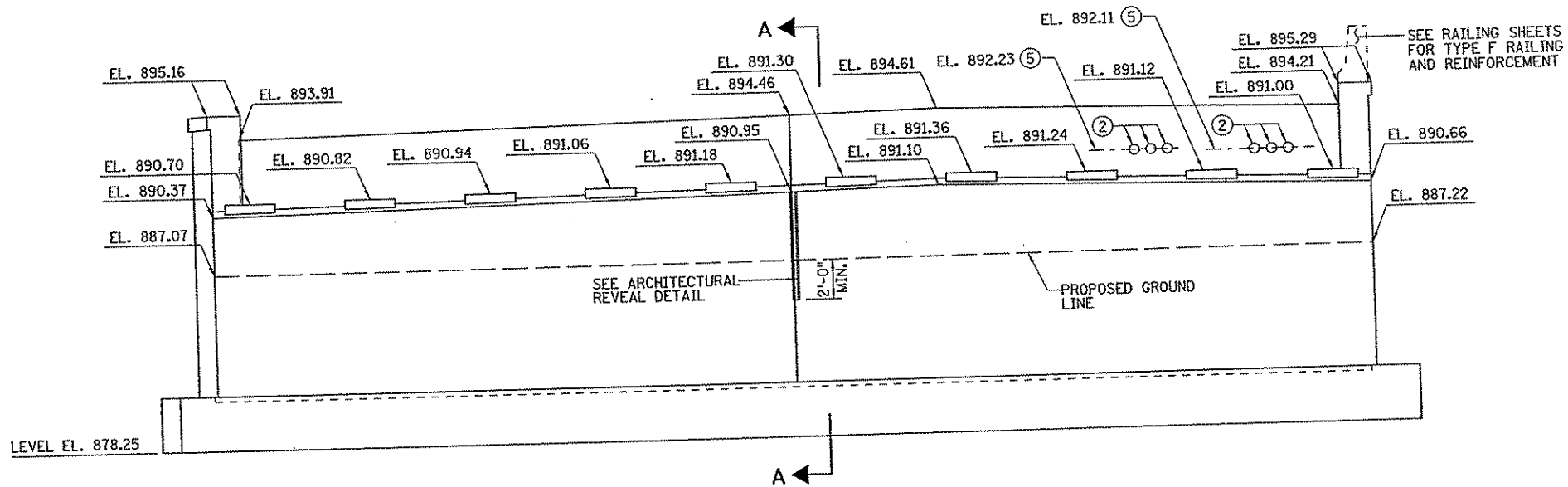
NORTH ABUTMENT DETAILS

(SHEET 1 OF 5)

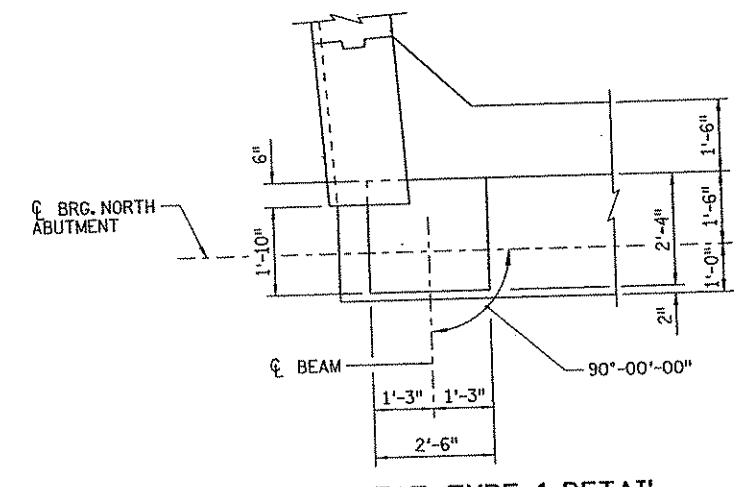
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B3  
OF  
B33



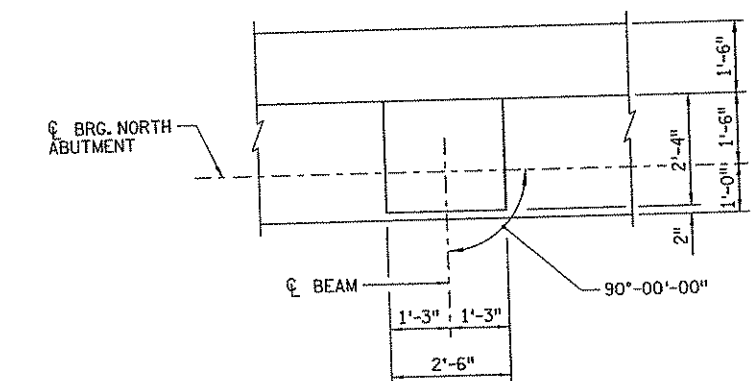
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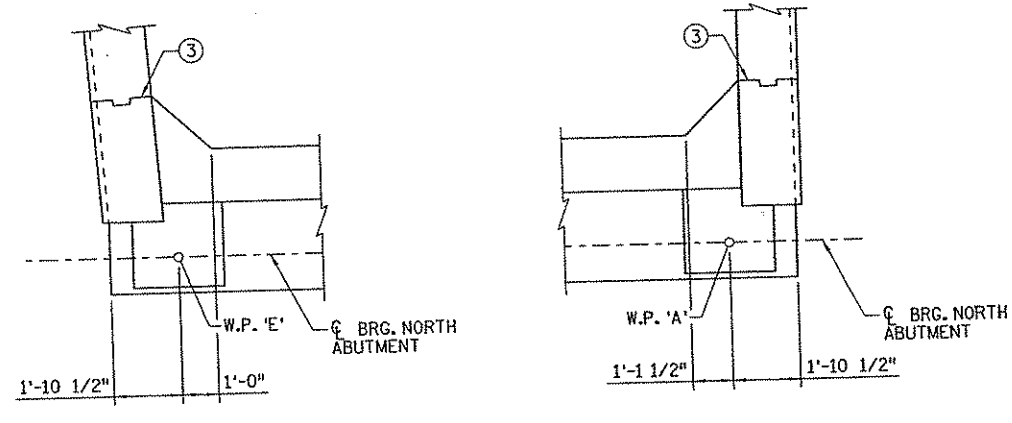
ELEVATION



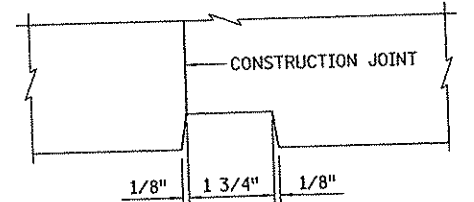
BRIDGE SEAT TYPE 1 DETAIL



BRIDGE SEAT TYPE 2 DETAIL



CORNER DETAIL



ARCHITECTURAL REVEAL DETAIL (SHOWN AT CONSTRUCTION JOINT)

- NOTES:
- N.W. DENOTES NORTHWEST  
N.E. DENOTES NORTHEAST
  - 6" SLEEVE FOR 4" R.S.C. CONDUIT.
  - PERMISSIBLE CONSTRUCTION JOINT WITH 2" x 6" KEYWAY, 3-PLY JOINT WATERPROOFING REQUIRED IF JOINT IS USED..
  - ELEVATIONS SHOWN ARE AT FRONT FACE.
  - ELEVATION AT C CONDUIT GROUP.  
3 - 4" PIPE SLEEVES.
  - 86°-11'-09"

NO	DATE	BY	CHKD	APPR	REVISION

STATE PROJ. NO. 02-614-24  
BRIDGE NO. 02572

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.  
Print Name: JEREMY A. WEST  
Date: 3/15/07 License: 42039

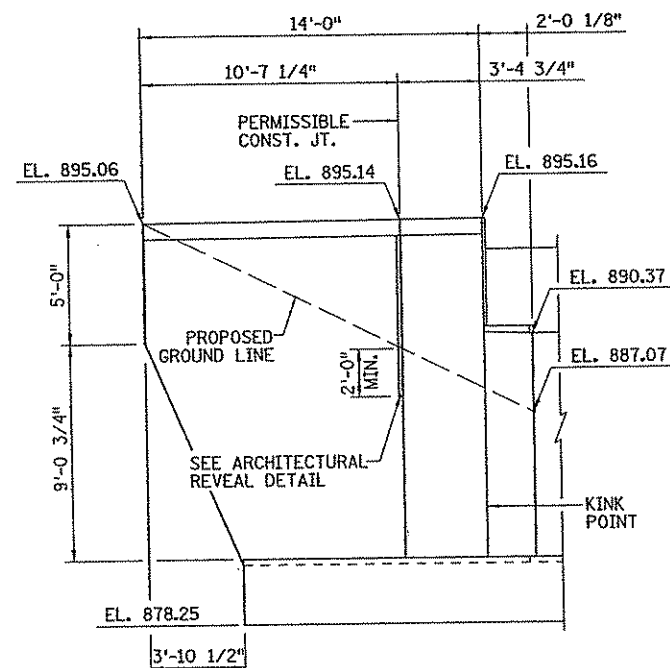
DRAWN BY J. HOFFMAN 6/06  
DESIGNED BY C. BLACK 6/06  
CHECKED BY J. WEST 6/06  
COMM. NO. 0054994

**SRF** CONSULTING GROUP, INC.

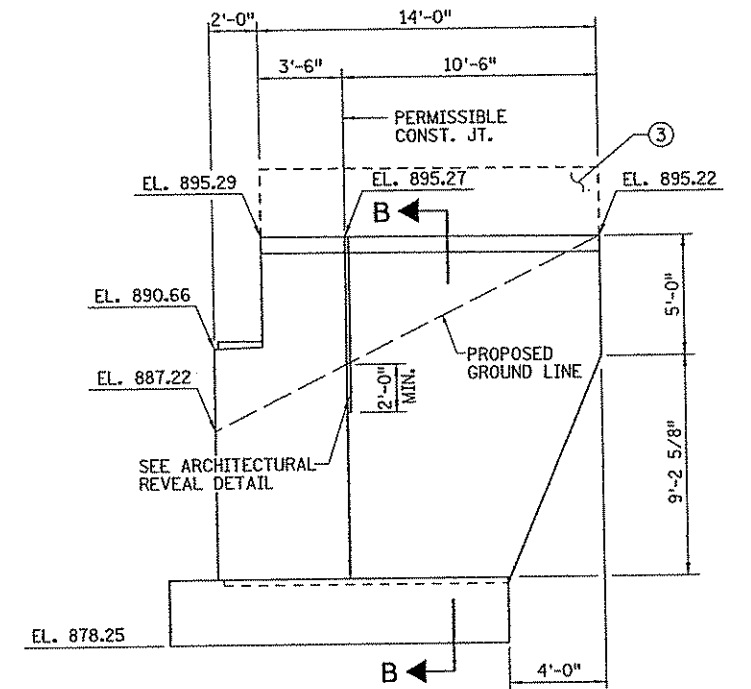
ANOKA COUNTY  
C.S.A.H. 14 OVER GEORGE WATCH LAKE WATERWAY  
NORTH ABUTMENT DETAILS  
(SHEET 2 OF 5)

SHEET B4 OF B33

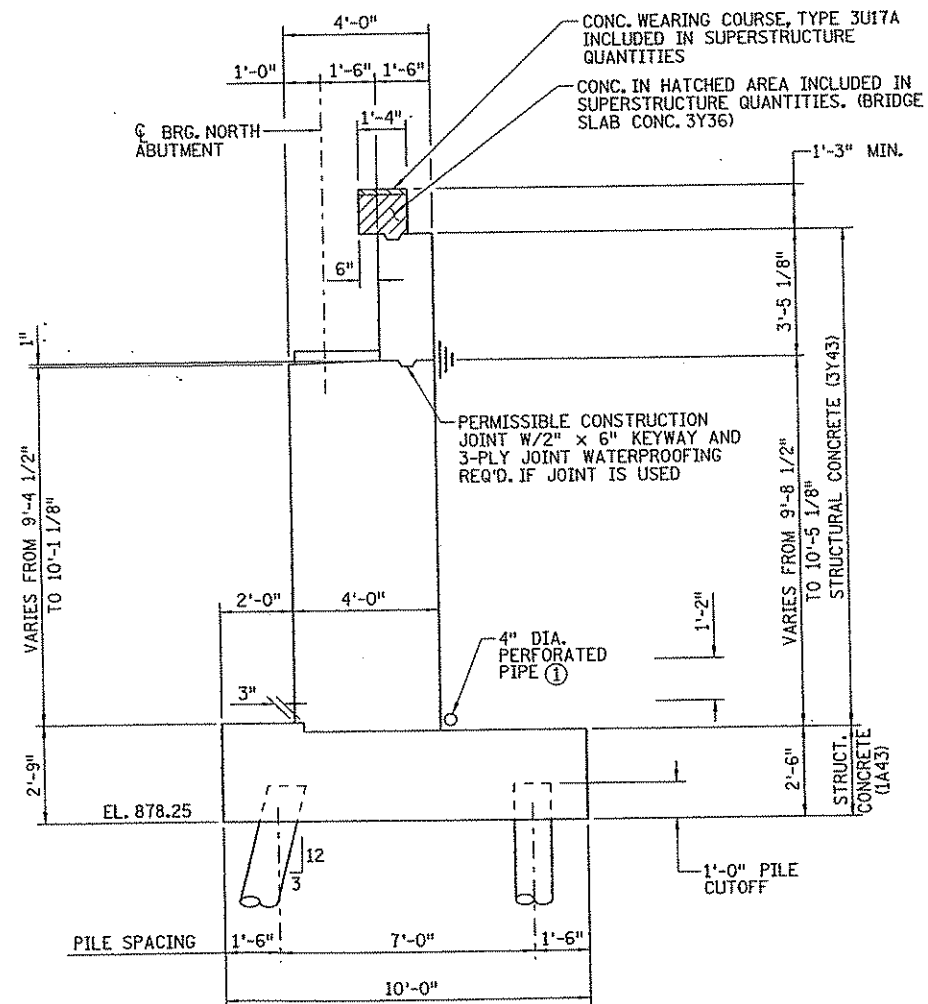




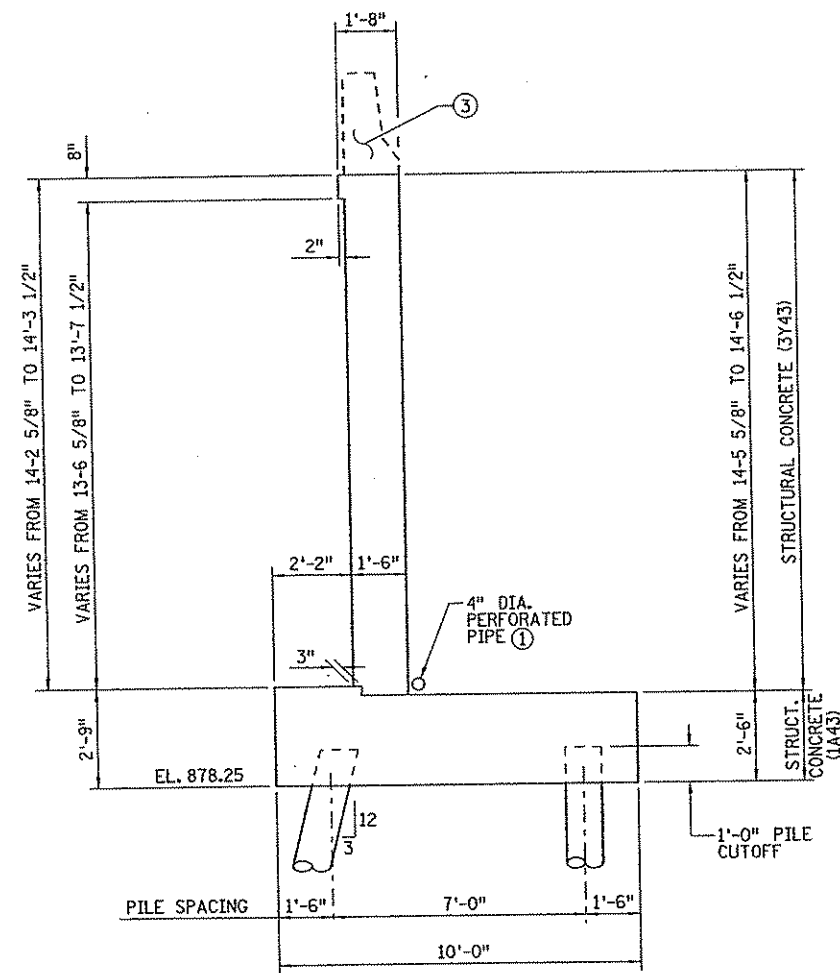
N.W. WINGWALL ELEVATION



N.E. WINGWALL ELEVATION



SECTION A-A



SECTION B-B

NOTE:

- ① SEE DETAIL B910 (DRAINAGE SYSTEM).
- 2. N.W. DENOTES NORTHWEST  
N.E. DENOTES NORTHEAST.
- ③ SEE RAILING SHEETS FOR TYPE F RAILING AND REINFORCEMENT.

NO	DATE	BY	CKD	APPR	REVISION
STATE PROJ. NO. 02-614-24 BRIDGE NO. 02572 DATE 3/12/2007 8:46:52 AM					

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.

Print Name: JEREMY A. WEST  
 Date: 3/15/07 License # 42039

DRAWN BY J. HOFFMAN DATE 6/06  
 DESIGNED BY C. BLACK 6/06  
 CHECKED BY J. WEST 6/06  
 COMM. NO. 0054994

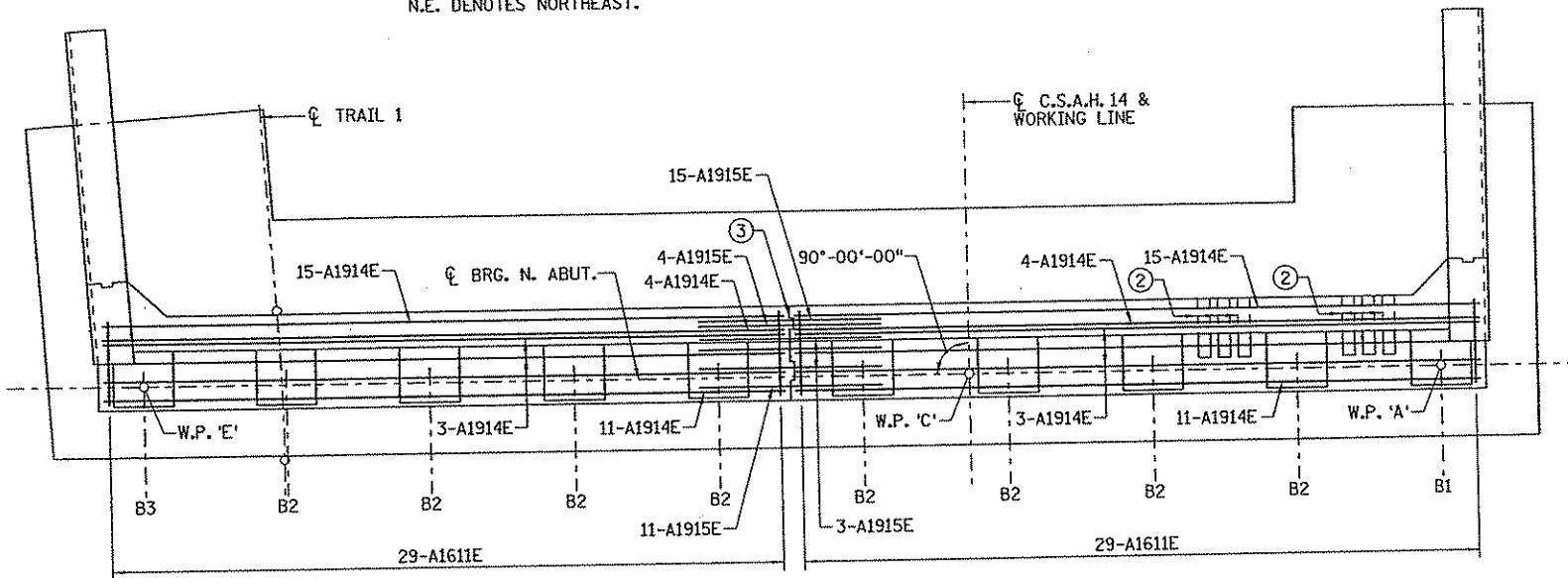


ANOKA COUNTY  
 C.S.A.H. 14 OVER GEORGE WATCH LAKE WATERWAY  
 NORTH ABUTMENT DETAILS  
 (SHEET 3 OF 5)

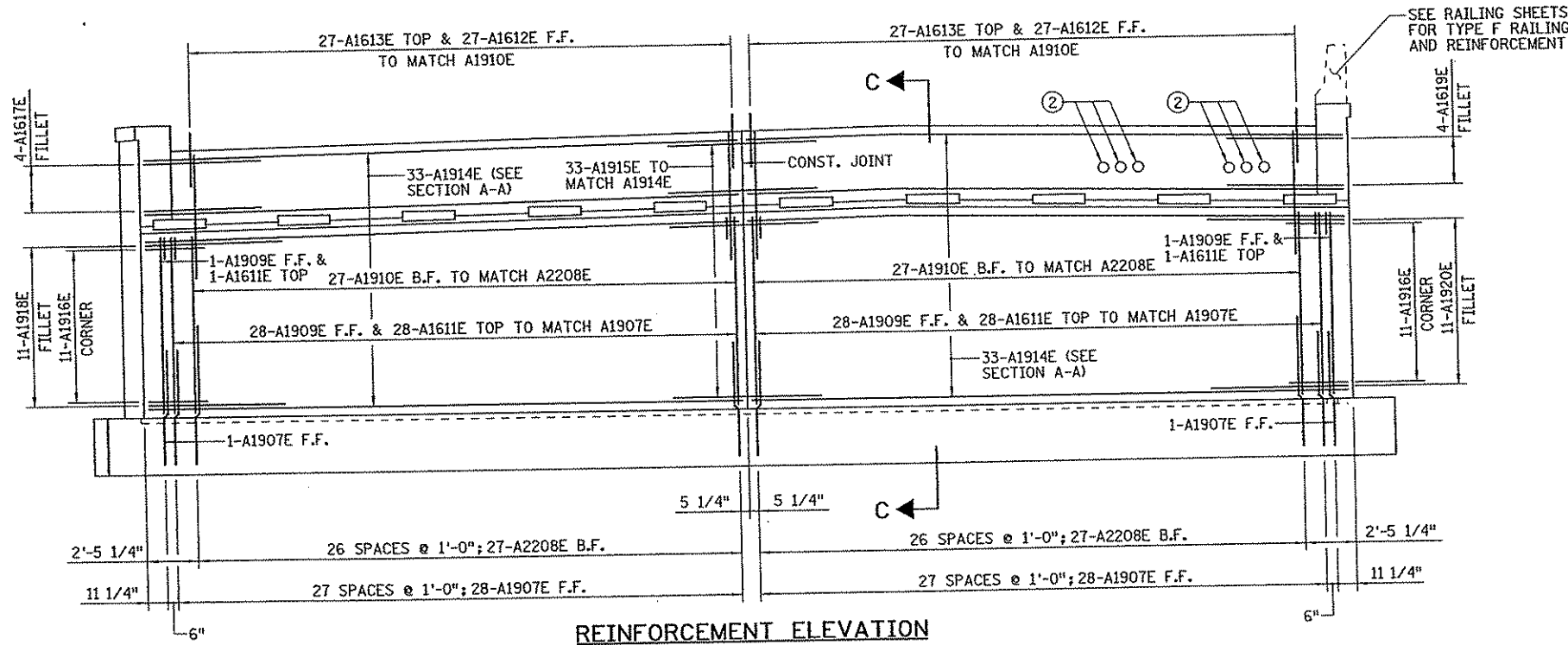
SHEET B5 OF B33

**NOTE:**

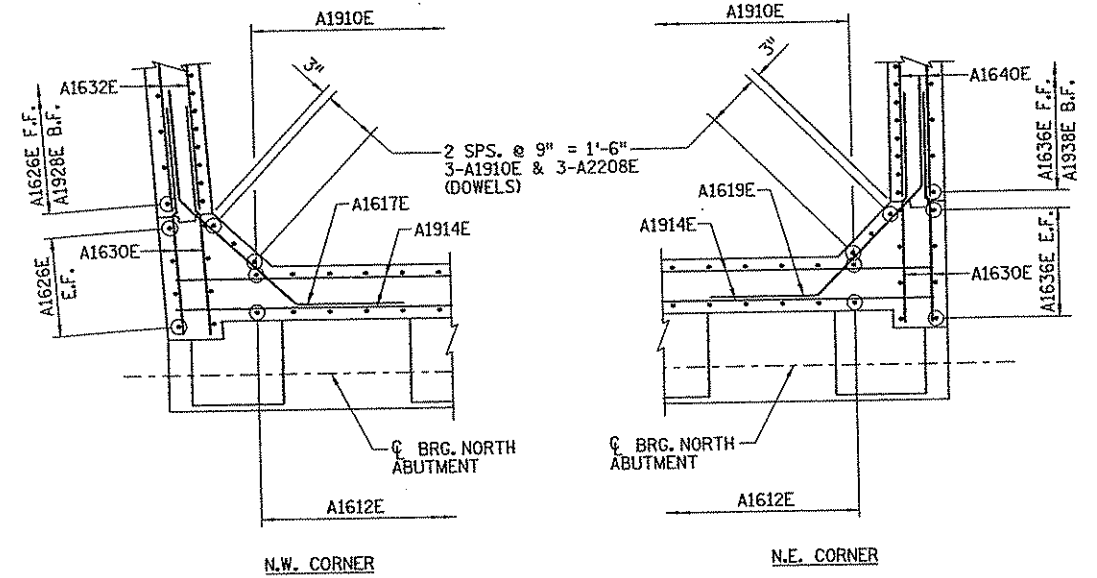
1. F.F. DENOTES FRONT FACE  
B.F. DENOTES BACK FACE  
E.F. DENOTES EACH FACE.
- ② 4" SLEEVE FOR FUTURE 4" R.S.C. CONDUIT.
3. N.W. DENOTES NORTHWEST  
N.E. DENOTES NORTHEAST.



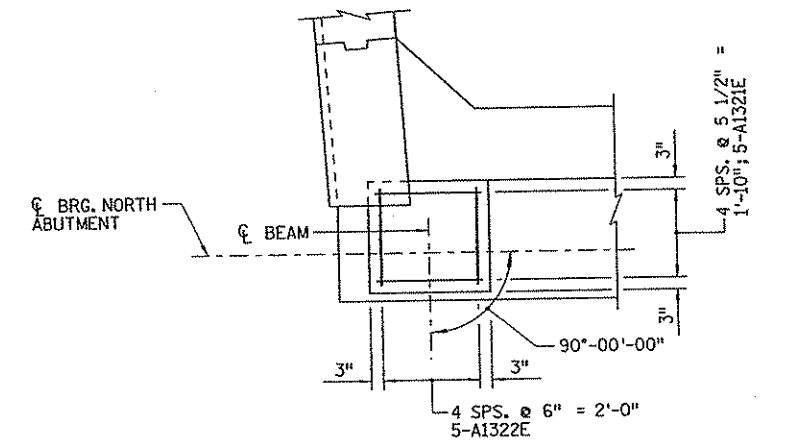
**REINFORCEMENT PLAN**



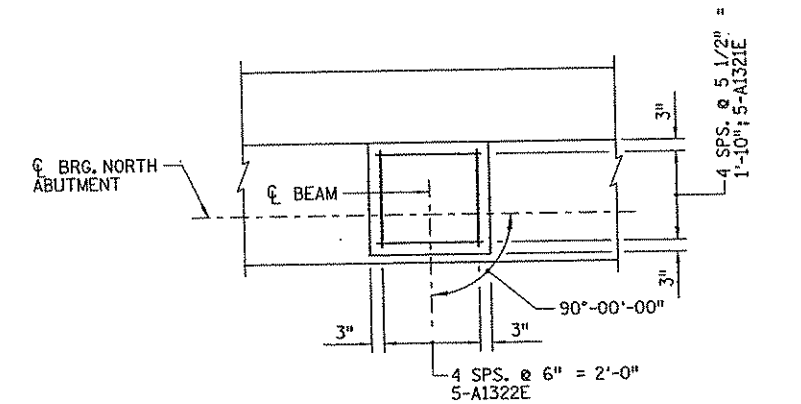
**REINFORCEMENT ELEVATION**



**CORNER REINFORCEMENT DETAIL**



**BRIDGE SEAT TYPE 1 REINFORCEMENT DETAIL**



**BRIDGE SEAT TYPE 2 REINFORCEMENT DETAIL**

NO	DATE	BY	CHKD	APPR	REVISION

8:46:53 AM 3/12/2007

STATE PROJ. NO.  
02-614-24

BRIDGE NO.  
02572

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.  
Print Name: JEREMY A. WEST  
Date: 3/15/07 License # 42039

DRAWN BY  
J. HOFFMAN  
DESIGNED BY  
C. BLACK  
CHECKED BY  
J. WEST  
COMM. NO.  
0054994

DATE  
6/06  
6/06  
6/06



ANOKA COUNTY  
C.S.A.H. 14 OVER GEORGE WATCH LAKE WATERWAY  
NORTH ABUTMENT DETAILS  
(SHEET 4 OF 5)

SHEET  
B6  
OF  
B33

**BILL OF REINFORCEMENT: NORTH ABUTMENT**

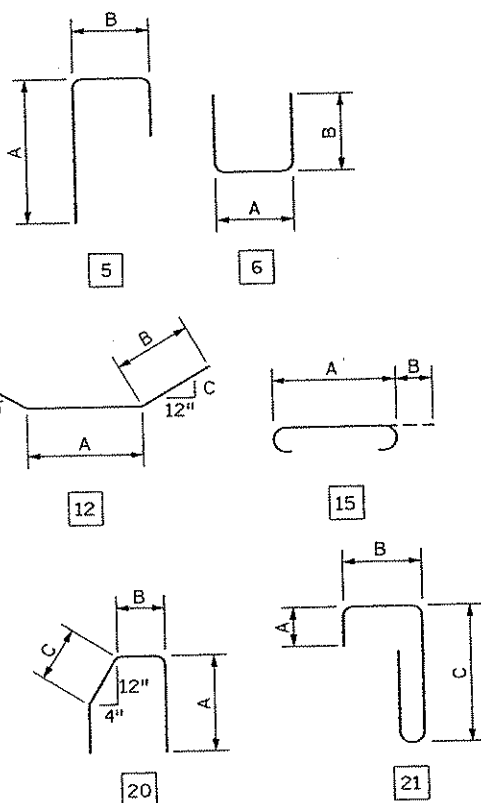
MARK	NO	SIZE	LENGTH [FT-IN]	SHAPE	DIMENSION [FT-IN]			LOCATION
					A	B	C	
A2201	40	22	33 - 2	STR	-	-	-	FTG. LONG.
A1902	51	19	10 - 10	15	9 - 6	0 - 8	-	FTG. TRANS.
A1903	20	19	14 - 2	16	13 - 6	0 - 8	-	FTG. LONG.
A1904	2 SERIES OF 10	19	14 - 2	16	13 - 6	0 - 8	-	FTG. LONG.
A2205	43	22	11 - 2	16	9 - 6	0 - 10	-	FTG. TRANS.
A2506	16	25	11 - 4	15	9 - 6	0 - 11	-	FTG. TRANS.
A1907E	58	19	6 - 7	7	5 - 7	-	-	STEM DOWEL
A2208E	60	22	6 - 6	7	5 - 4	-	-	STEM DOWEL
A1909E	58	19	9 - 2	STR	-	-	-	STEM VERT
A1910E	60	19	12 - 11	STR	-	-	-	STEM VERT
A1611E	58	16	6 - 7	6	3 - 7	1 - 6	-	STEM TIE
A1612E	54	16	7 - 0	5	5 - 0	1 - 2	-	BACKWALL VERT
A1613E	54	16	9 - 0	21	0 - 11	1 - 0	3 - 6	PAVING BLOCK
A1914E	66	19	28 - 5	STR	-	-	-	STEM HORIZ
A1915E	33	19	7 - 6	STR	-	-	-	HORIZ DOWEL
A1916E	22	19	7 - 0	7	3 - 6	-	-	STEM CORNER
A1617E	4	16	12 - 1	12	5 - 1	3 - 6	1 - 0	TOP FILLET
A1918E	11	19	15 - 8	12	8 - 8	3 - 6	1 - 0	STEM FILLET
A1619E	4	16	11 - 11	12	4 - 4	3 - 6	1 - 0	TOP FILLET
A1920E	11	19	15 - 4	12	8 - 4	3 - 6	1 - 0	STEM FILLET
A1321E	50	13	5 - 2	6	2 - 2	1 - 6	-	SEAT
A1322E	50	13	5 - 0	6	2 - 0	1 - 6	-	SEAT
A1623E	36	16	5 - 2	7	4 - 4	-	-	W & E WING DOWEL
A224E	26	22	10 - 8	7	9 - 6	-	-	W. WING DOWEL
A1625E	3	16	9 - 2	STR	-	-	-	W. WING VERT
A1626E	15	16	13 - 11	STR	-	-	-	W. WING VERT
A1627E	2 SERIES OF 4	16	12 - 5	STR	-	-	-	W. WING VERT
A1928E	13	19	9 - 4	STR	-	-	-	W. WING VERT
A1629E	40	16	8 - 3	STR	-	-	-	W & E WING HORIZ
A1630E	20	16	6 - 3	STR	-	-	-	W & E WING HORIZ
A1631E	2 SERIES OF 9	16	9 - 11	STR	-	-	-	W. WING HORIZ
A1632E	12	16	10 - 3	STR	-	-	-	W. WING HORIZ
A1633E	2	16	9 - 10	STR	-	-	-	W. WING DIAG.
A1334E	30	13	3 - 1	6	1 - 1	1 - 0	-	WING TOP
A1635E	3	16	9 - 6	STR	-	-	-	E. WING VERT
A1636E	15	16	14 - 1	STR	-	-	-	E. WING VERT
A1637E	2 SERIES OF 4	16	12 - 1	STR	-	-	-	E. WING VERT
A1938E	13	19	9 - 6	STR	-	-	-	E. WING VERT
A1639E	2 SERIES OF 9	16	9 - 9	STR	-	-	-	E. WING HORIZ
A1640E	12	16	10 - 2	STR	-	-	-	E. WING HORIZ
A1641E	2	16	10 - 1	STR	-	-	-	E. WING DIAG.
A1642E	20	16	5 - 7	20	2 - 4	0 - 10	0 - 10	E. RAILING

**SUMMARY OF QUANTITIES : N. ABUTMENT**

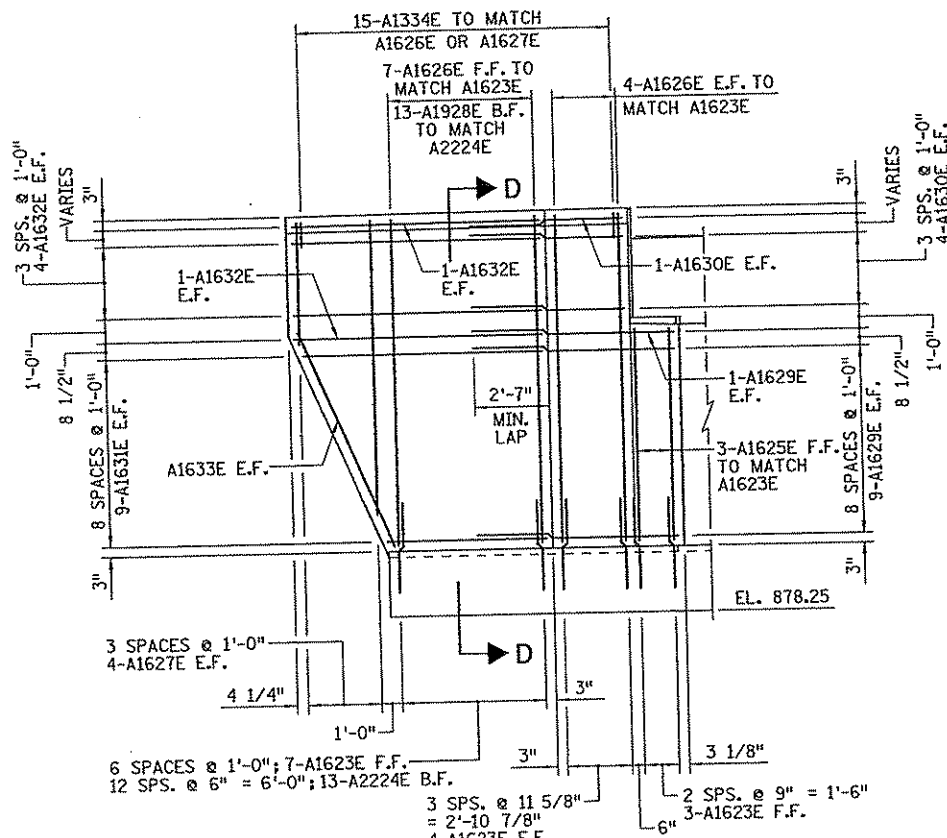
ITEM	UNIT	QUANTITY
STRUCTURAL CONCRETE (1A43)	CU. YD.	68
STRUCTURAL CONCRETE (3Y43)	CU. YD.	119
REINFORCEMENT BARS	POUND	5830
REINFORCEMENT BARS (EPOXY COATED)	POUND	12140
C-I-P CONCRETE PILING DELIVERED 12"	LIN. FT.	2340
C-I-P CONCRETE PILING DRIVEN 12"	LIN. FT.	2340
C-I-P CONC TEST PILE 100' LONG 12"	EACH	2
3-PLY JOINT WATERPROOFING	LIN. FT.	100

- NOTES:**
1. F.F. DENOTES FRONT FACE  
B.F. DENOTES BACK FACE  
E.F. DENOTES EACH FACE.
  2. N.W. DENOTES NORTHWEST  
N.E. DENOTES NORTHEAST.
  3. DOES NOT INCLUDE TEST PILES.
  4. TO BE INCLUDED IN PRICE BID  
FOR OTHER ITEMS.
  5. SEE RAILING SHEETS FOR  
TYPE F RAILING AND  
REINFORCEMENT.

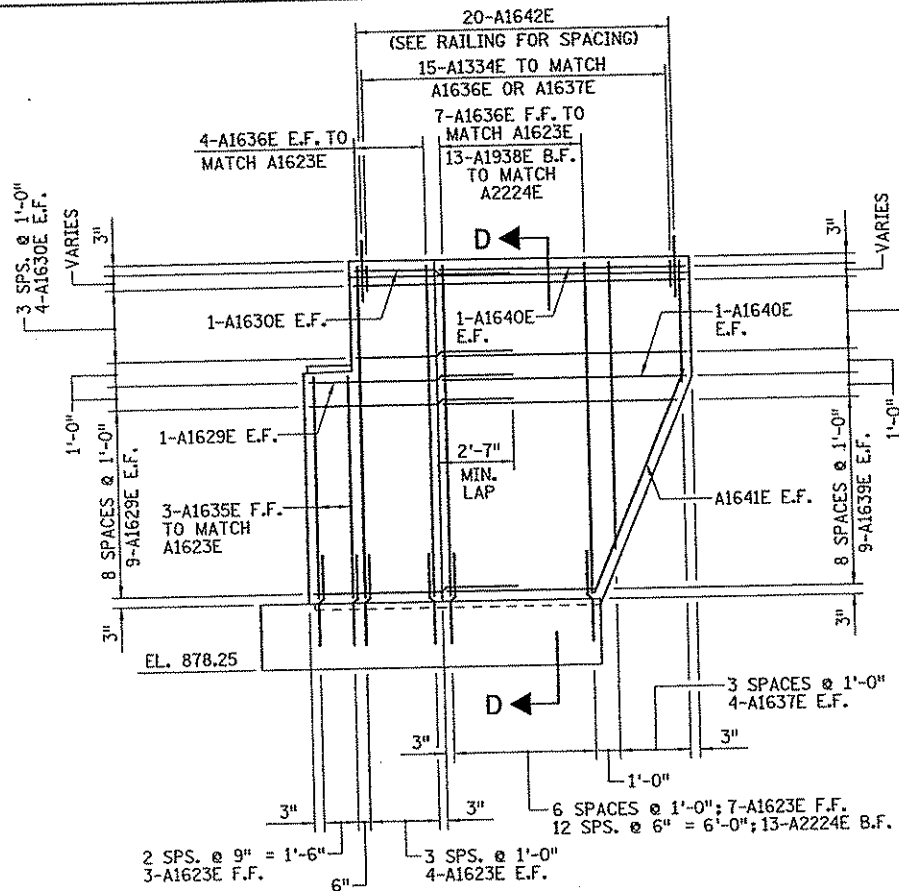
**BAR SHAPES:**



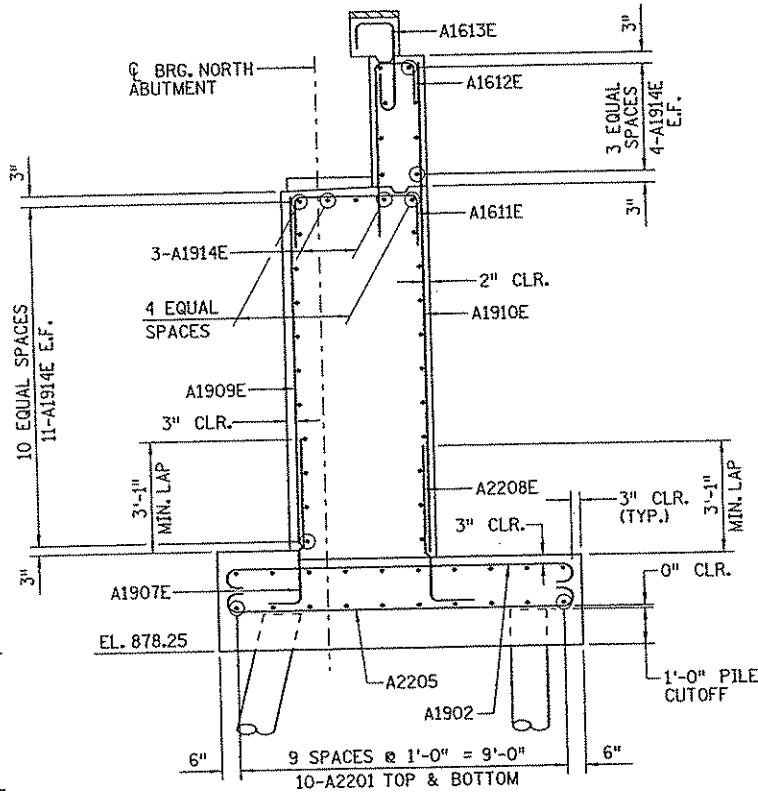
**N.W. WINGWALL REINFORCEMENT ELEVATION**



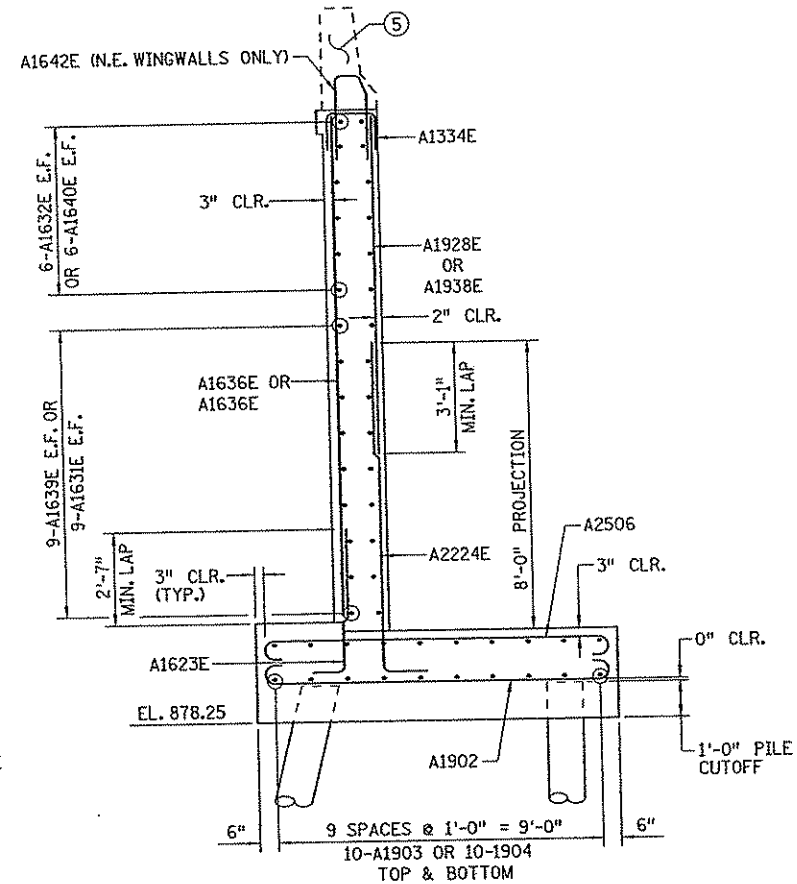
**N.E. WINGWALL REINFORCEMENT ELEVATION**



**SECTION C-C REINFORCEMENT**



**SECTION D-D REINFORCEMENT**



NO	DATE	BY	CHKD	APPR	REVISION

STATE PROJ. NO.  
02-614-24  
BRIDGE NO.  
02512

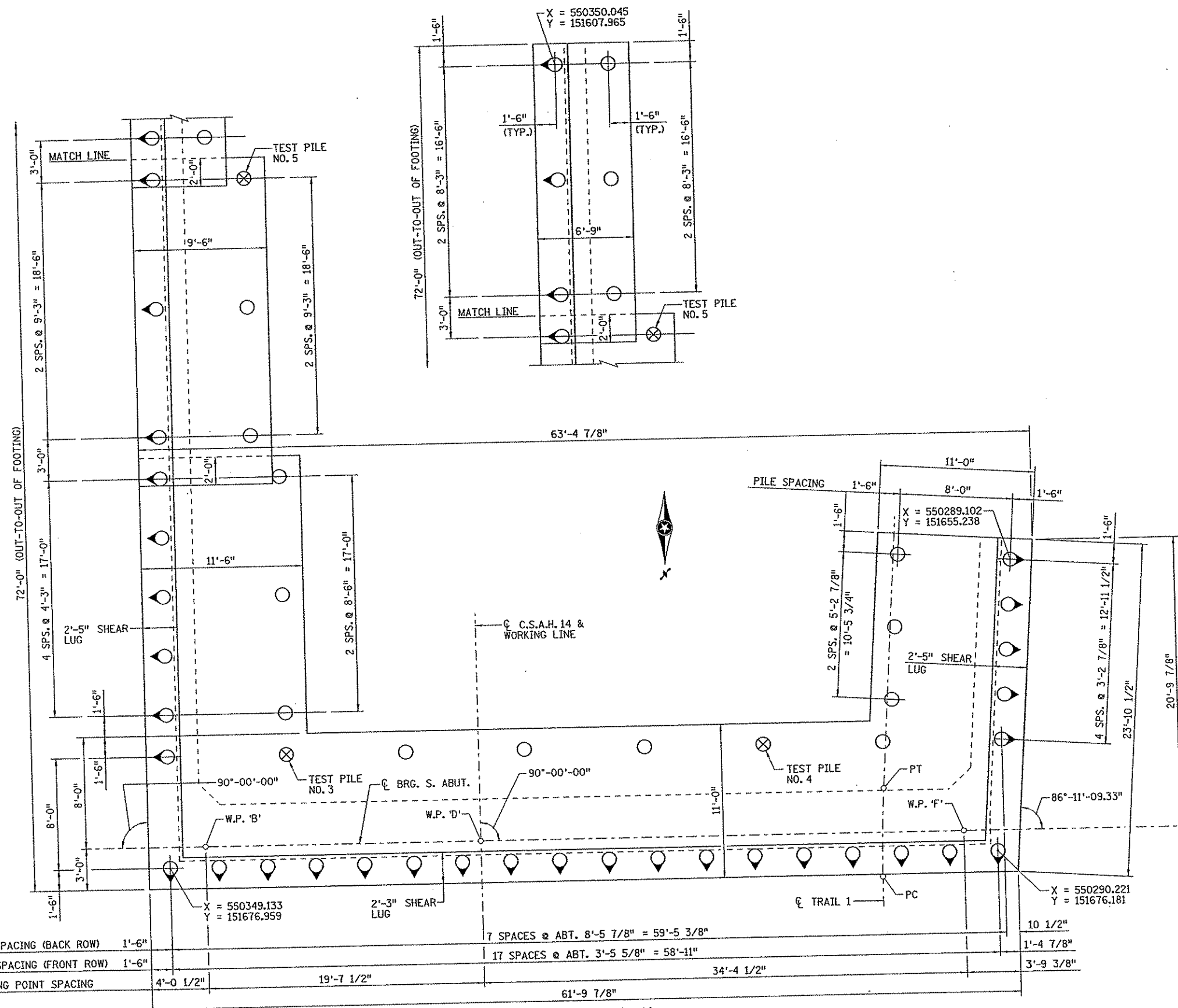
I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.  
Print Name: JEREMY A. WEST  
Date: 3/15/07 License: 42039

DRAWN BY  
J. HOFFMAN  
DESIGNED BY  
C. BLACK  
CHECKED BY  
J. WEST  
DATE  
6/06  
6/06  
6/06  
COMM. NO.  
0054994



ANOKA COUNTY  
C.S.A.H. 14 OVER GEORGE WATCH LAKE WATERWAY  
NORTH ABUTMENT DETAILS  
(SHEET 5 OF 5)

SHEET  
B7  
OF  
B33



SOUTH ABUTMENT	
COMPUTED PILE LOADS	TONS/PILE
FACTORED DEAD LOAD + EARTH PRESSURE	74.2
FACTORED LIVE LOAD	6.7
FACTORED TOTAL LOAD	80.9
* DESIGN LOAD	53.1

\* 80.9 / 1.524 = 53.1 TONS/PILE  
 1.524 IS AVERAGE LOAD FACTOR FOR STRENGTH I LOAD COMBINATION

**PILE NOTES:**  
 3 - 12" C-I-P TEST PILES, 100 FEET LONG.  
 50 - 12" C-I-P PILES, ESTIMATED LENGTH 90 FEET LONG.  
 53 - 12" C-I-P PILES REQUIRED FOR SOUTH ABUTMENT.  
 PILE SPACING SHOWN IS AT BOTTOM OF FOOTING.  
 PILES MARKED THIS SHALL BE BATTERED 3" PER FOOT IN THE DIRECTION SHOWN.  
 FOR PILE SPLICE, SEE DETAIL B201.  
 PILES TO HAVE A NOMINAL DIAMETER OF 12".

**FOOTING PLAN**

NO	DATE	BY	CHKD	APPR	REVISION

8:46:54 AM 3/12/2007

STATE PROJ. NO. 02-614-24  
 BRIDGE NO. 02572  
 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.  
 Print Name: JEREMY A. WEST  
 Date: 3/15/07 License #: 42039

DRAWN BY J. HOFFMAN DATE 6/06  
 DESIGNED BY C. BLACK 6/06  
 CHECKED BY J. WEST 6/06  
 COMM. NO. 0054994

**SRF CONSULTING GROUP, INC.**

ANOKA COUNTY  
 C.S.A.H. 14 OVER GEORGE WATCH LAKE WATERWAY  
 SOUTH ABUTMENT DETAILS  
 (SHEET 1 OF 8)

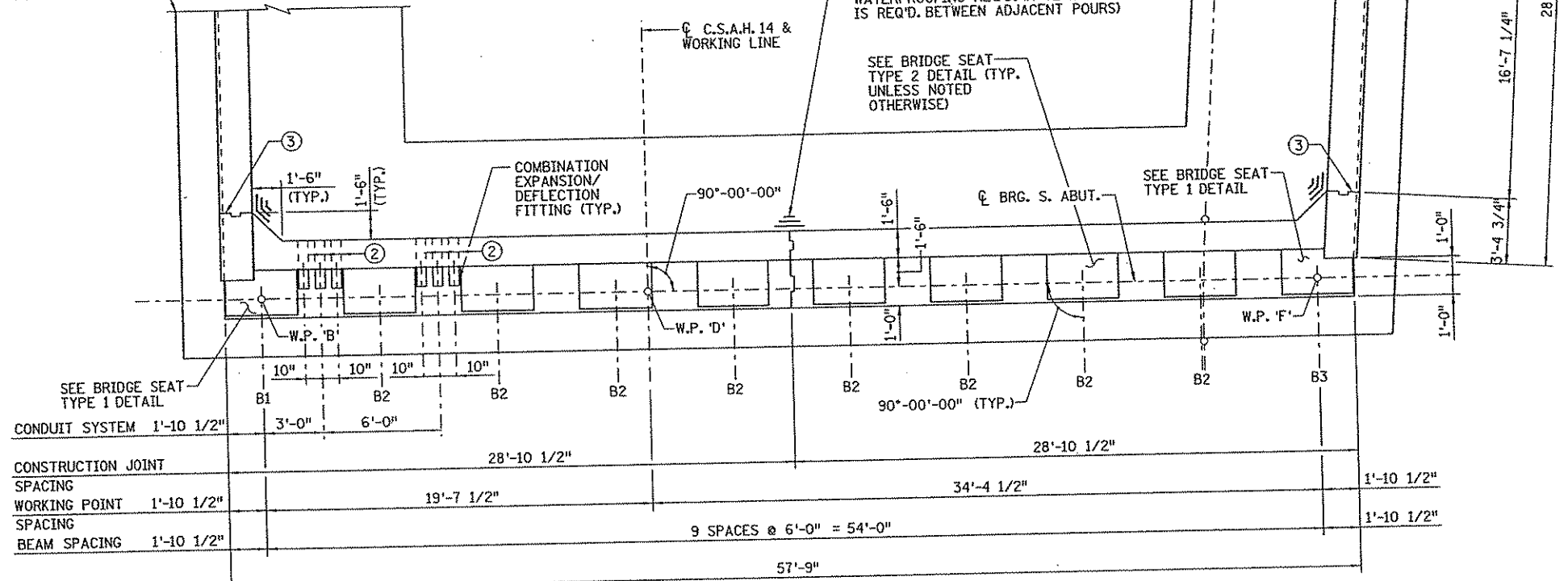
SHEET B8 OF B33

**NOTES:**

1. S.W. DENOTES SOUTHWEST  
S.E. DENOTES SOUTHEAST
2. 6" SLEEVE FOR 4" R.S.C. CONDUIT.
3. PERMISSIBLE CONSTRUCTION JT. W/2" x 6" KEYWAY. 3-PLY JT. WATERPROOFING REQ'D. IF JOINT IS USED..
4. ELEVATIONS SHOWN ARE AT FRONT FACE.
5. ELEVATION AT C CONDUIT GROUP.  
3 - 4" PIPE SLEEVES.
6. CONST. JT. W/2" x 6" KEYWAY W/3-PLY JT. WATERPROOFING REQ'D. (A 72 HOUR DELAY IS REQ'D. BETWEEN ADJACENT POURS)



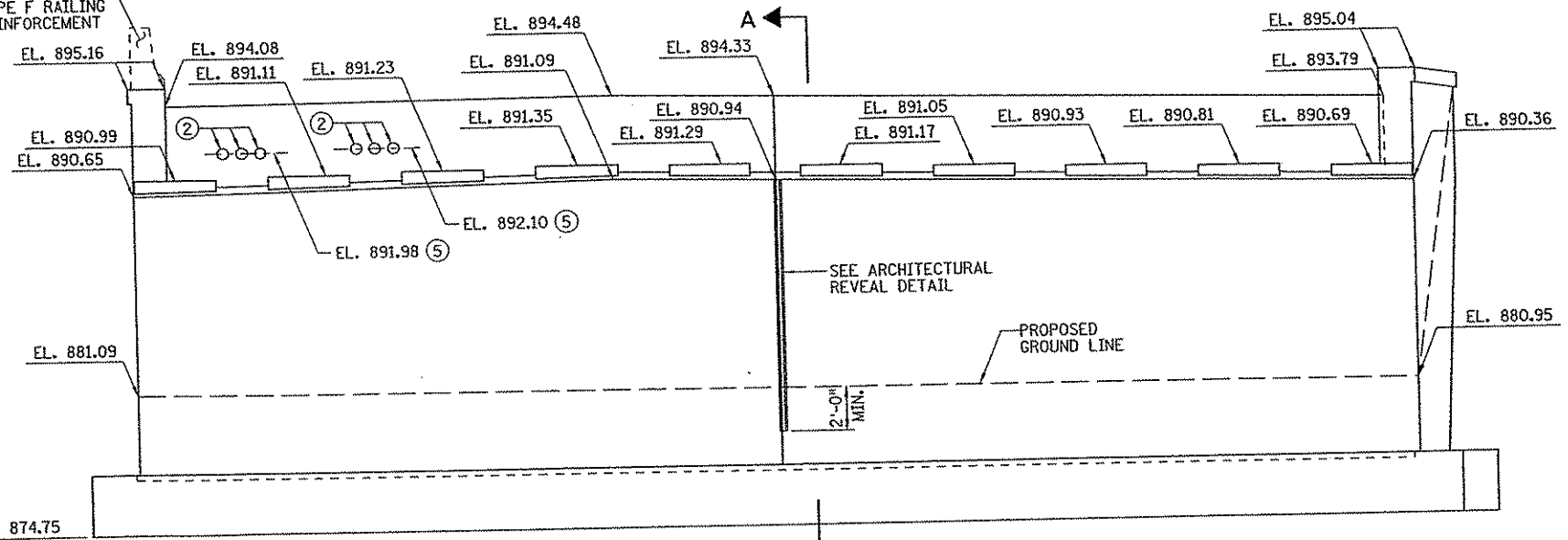
SEE S.E. WINGWALL PLAN



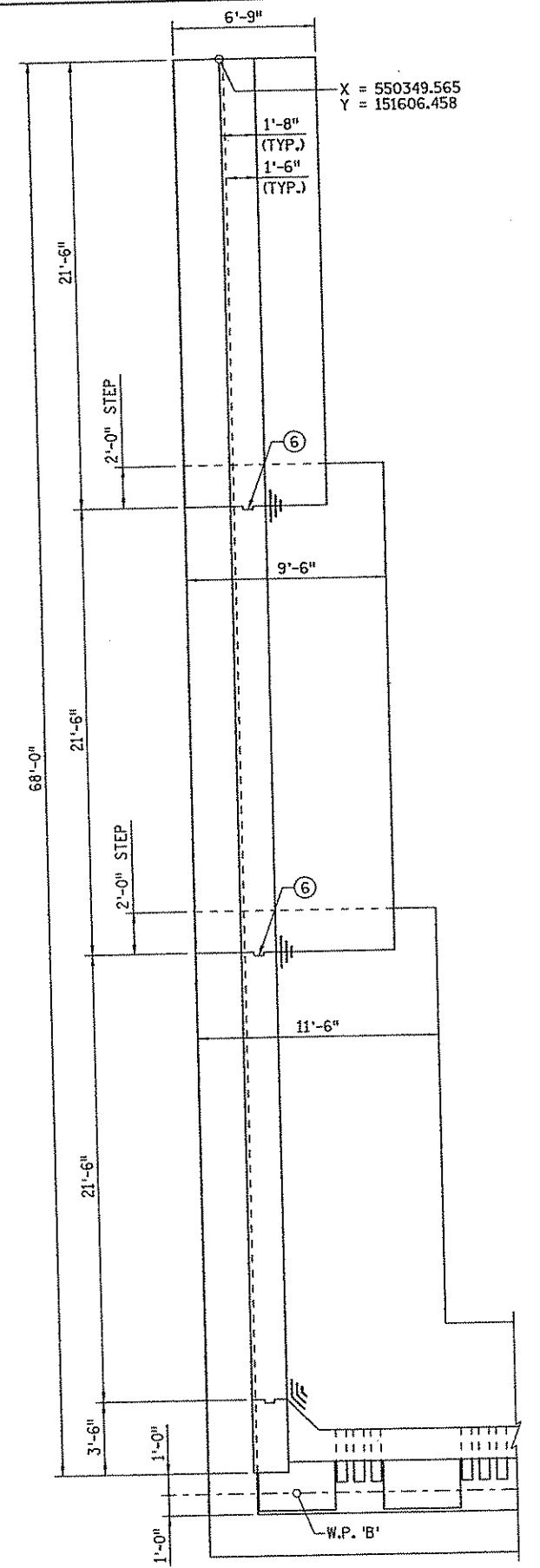
CONDUIT SYSTEM	1'-10 1/2"	3'-0"	6'-0"	28'-10 1/2"	28'-10 1/2"	1'-10 1/2"
CONSTRUCTION JOINT SPACING						
WORKING POINT SPACING	1'-10 1/2"		19'-7 1/2"		34'-4 1/2"	1'-10 1/2"
BEAM SPACING	1'-10 1/2"		9 SPACES @ 6'-0" = 54'-0"			1'-10 1/2"
			57'-9"			

**PLAN**

SEE RAILING SHEETS FOR TYPE F RAILING AND REINFORCEMENT



**ELEVATION**



**S.E. WINGWALL PLAN**

NO	DATE	BY	CKD	APPR	REVISION

8:46:55 AM 3/12/2007

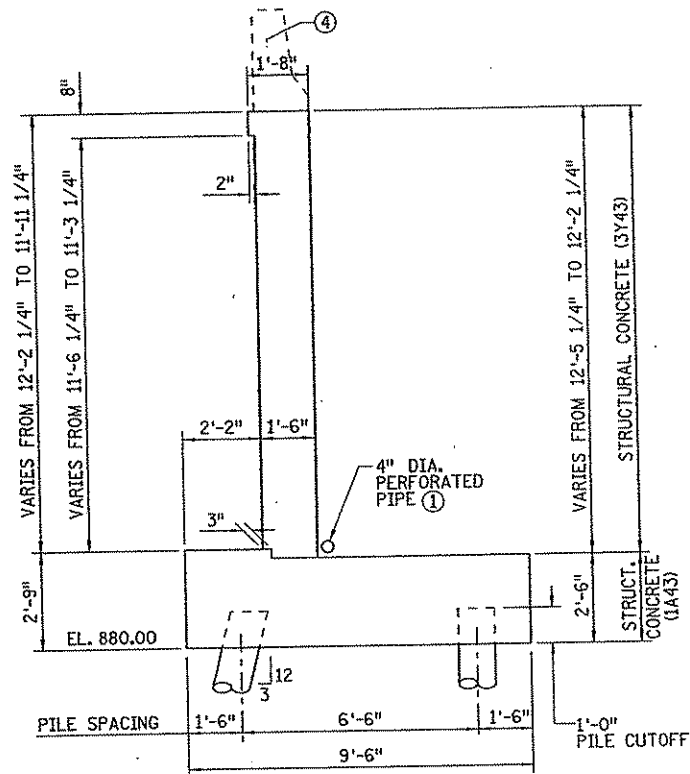
STATE PROJ. NO. 02-614-24	I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota. Print Name: JEREMY A. WEST Date: 3/15/07 License # 42039
BRIDGE NO. 02572	

DRAWN BY J. HOFFMAN	DATE 6/06
DESIGNED BY C. BLACK	6/06
CHECKED BY J. WEST	6/06
COMM. NO. 0054994	



ANOKA COUNTY  
C.S.A.H. 14 OVER GEORGE WATCH LAKE WATERWAY  
SOUTH ABUTMENT DETAILS  
(SHEET 2 OF 8)

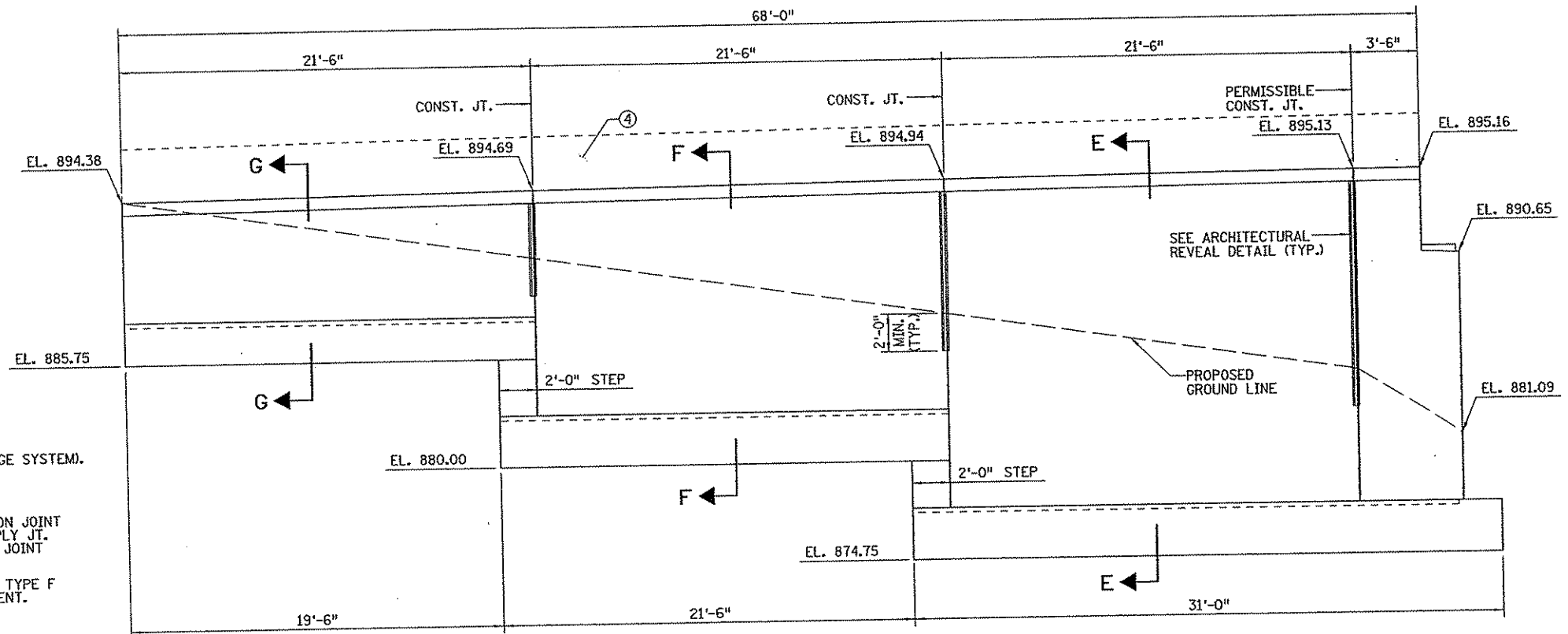
SHEET  
B9  
OF  
B33



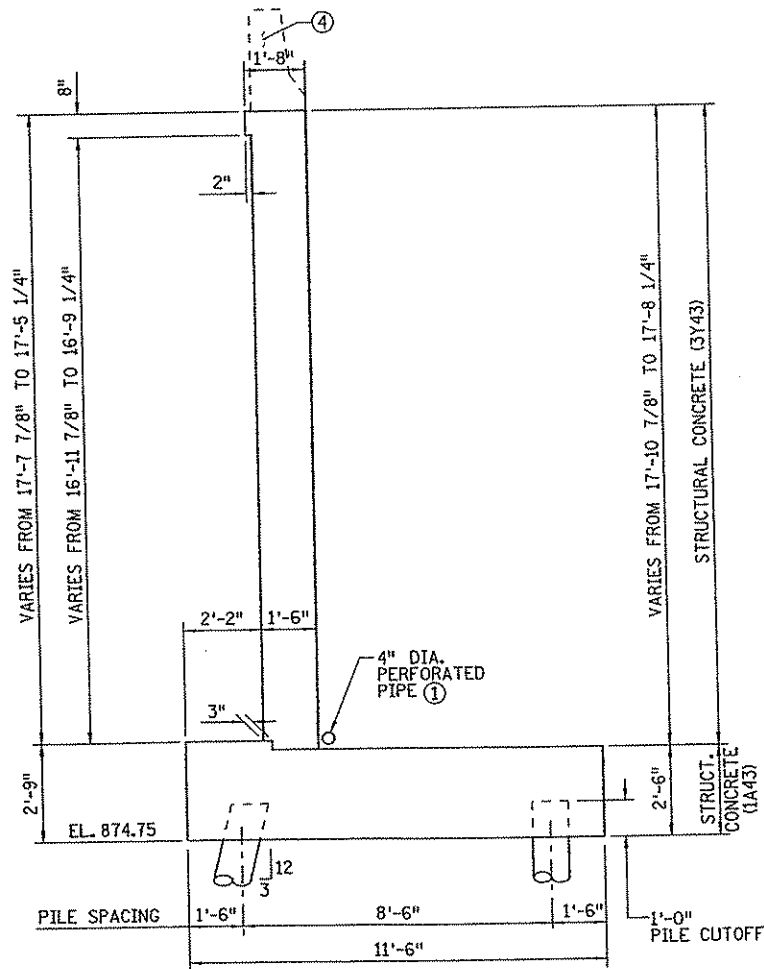
SECTION F-F

**NOTES:**

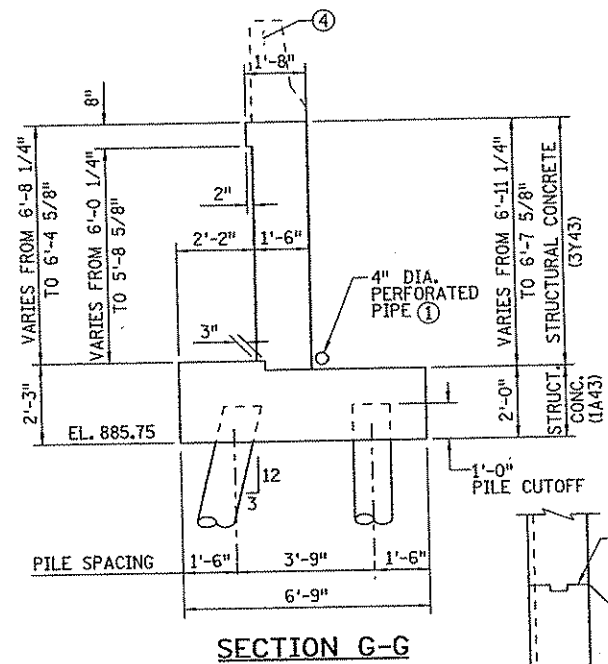
- ① SEE DETAIL B910 (DRAINAGE SYSTEM).
- 2. S.W. DENOTES SOUTHWEST  
S.E. DENOTES SOUTHEAST.
- ③ PERMISSIBLE CONSTRUCTION JOINT  
W/ 2" x 6" KEYWAY, 3-PLY JT.  
WATERPROOFING REQ'D. IF JOINT  
IS USED.
- ④ SEE RAILING SHEETS FOR TYPE F  
RAILING AND REINFORCEMENT.



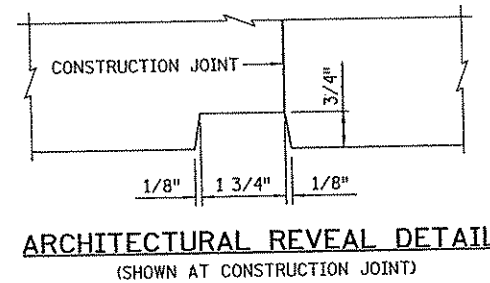
S.E. WINGWALL ELEVATION



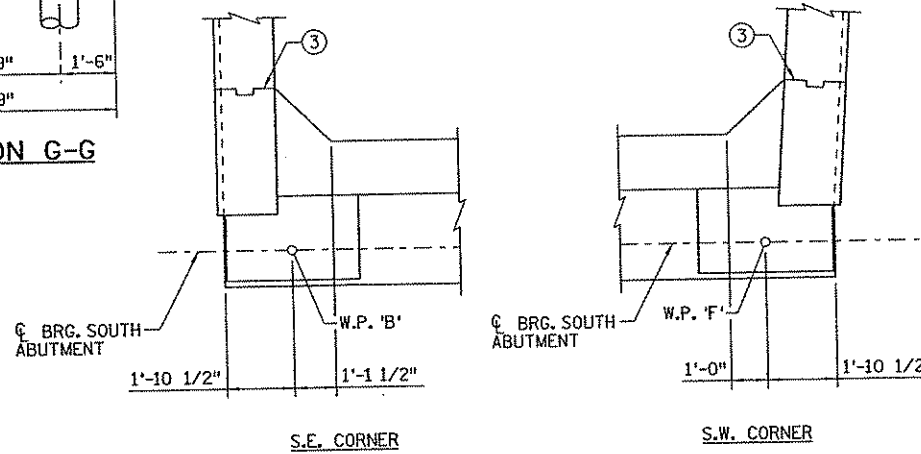
SECTION E-E



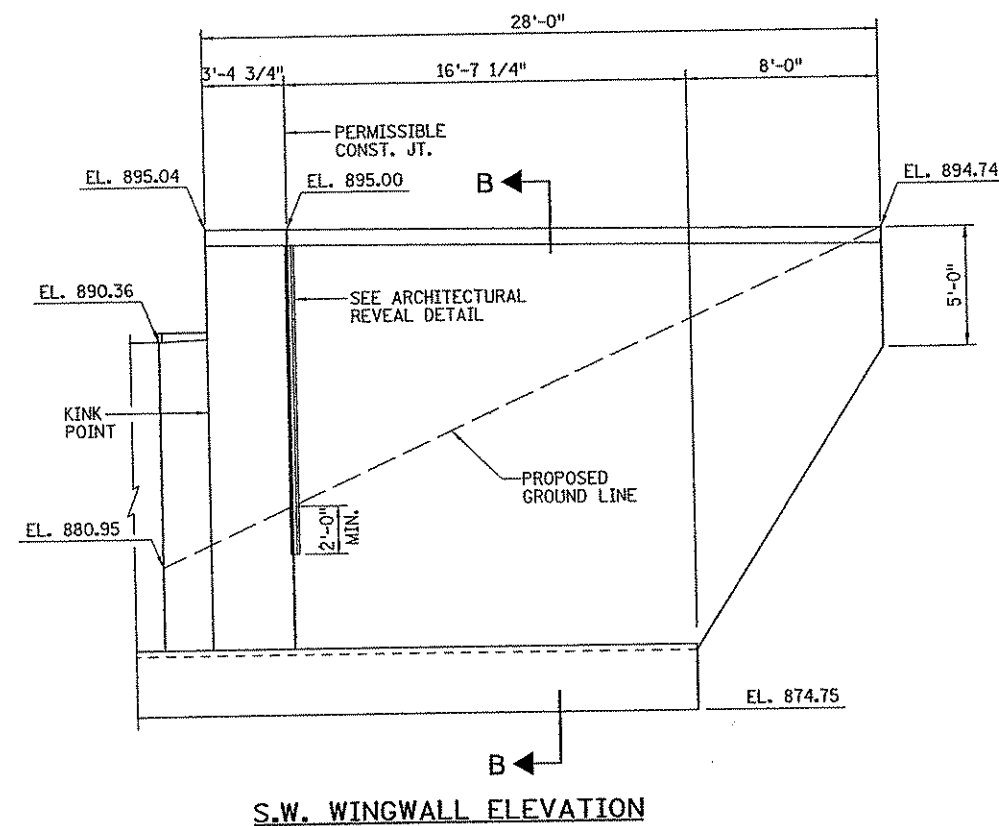
SECTION G-G



ARCHITECTURAL REVEAL DETAIL  
(SHOWN AT CONSTRUCTION JOINT)



CORNER DETAIL



S.W. WINGWALL ELEVATION

NO	DATE	BY	CHKD	APPR	REVISION

hr:\projects\4994-F\br\Final\plan\4994 SA03.dgn 8:46:56 AM 3/12/2007

STATE PROJ. NO.  
02-614-24  
BRIDGE NO.  
02572

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.  
Print Name: JEREMY A. WEST  
Date: 3/15/07 License: 42039

DRAWN BY  
J. HOFFMAN  
DESIGNED BY  
C. BLACK  
CHECKED BY  
J. WEST  
DATE  
6/06  
6/06  
6/06  
COMM. NO.  
0054994

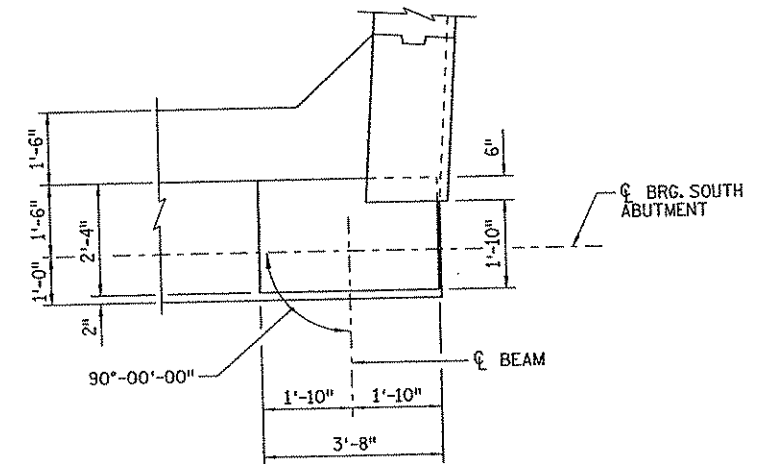


ANOKA COUNTY  
C.S.A.H. 14 OVER GEORGE WATCH LAKE WATERWAY  
SOUTH ABUTMENT DETAILS  
(SHEET 3 OF 8)

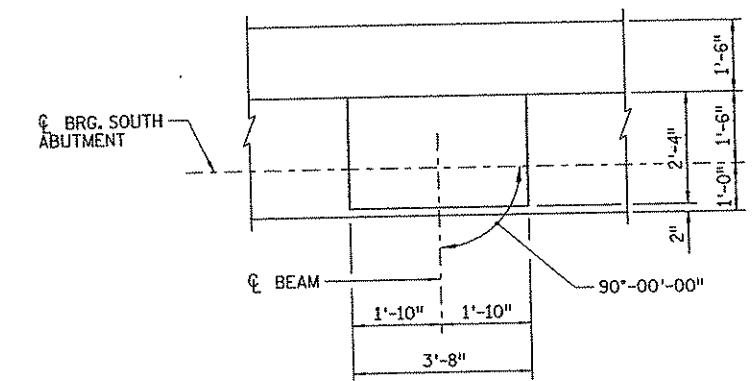
SHEET  
B10  
OF  
B33

**NOTES:**

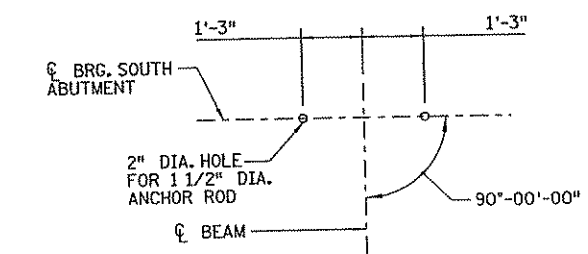
- ① SEE DETAIL B910 (DRAINAGE SYSTEM).
- 2. S.W. DENOTES SOUTHWEST  
S.E. DENOTES SOUTHEAST.



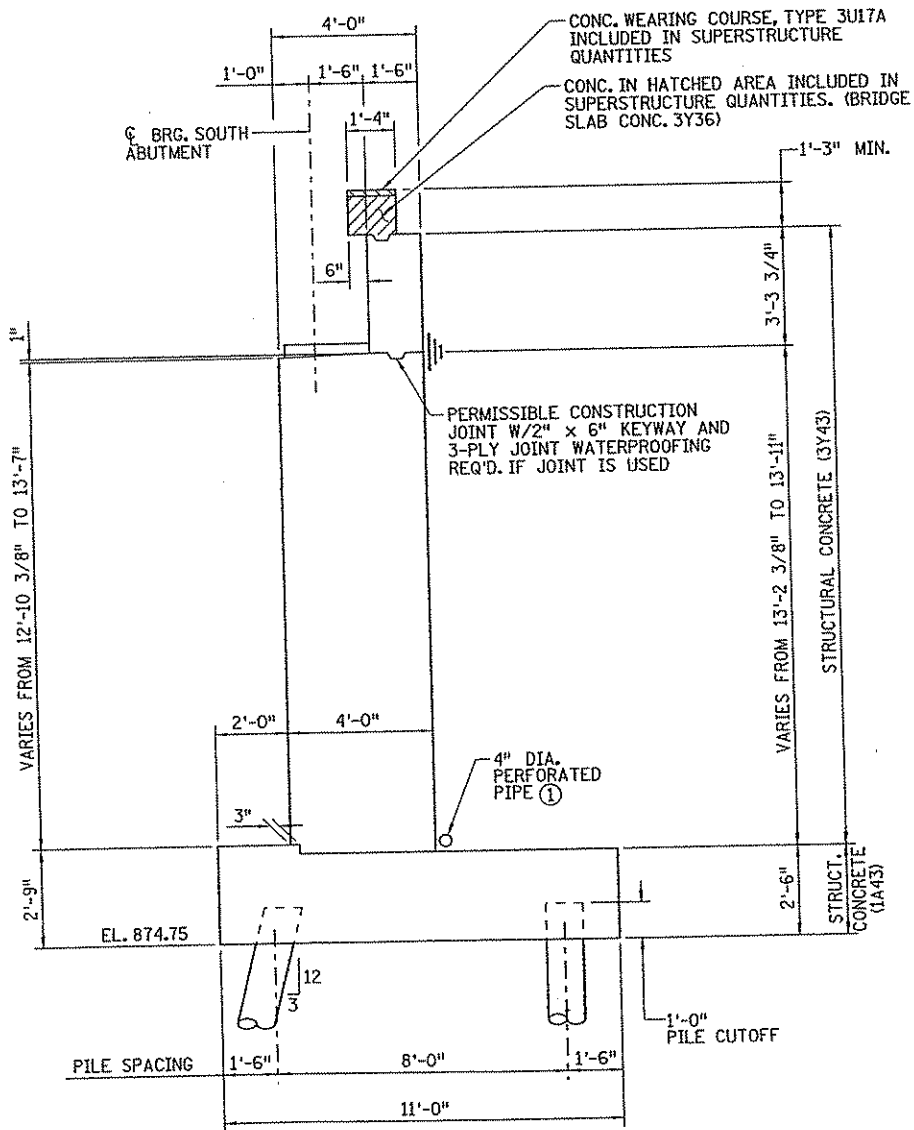
**BRIDGE SEAT TYPE 1 DETAIL**



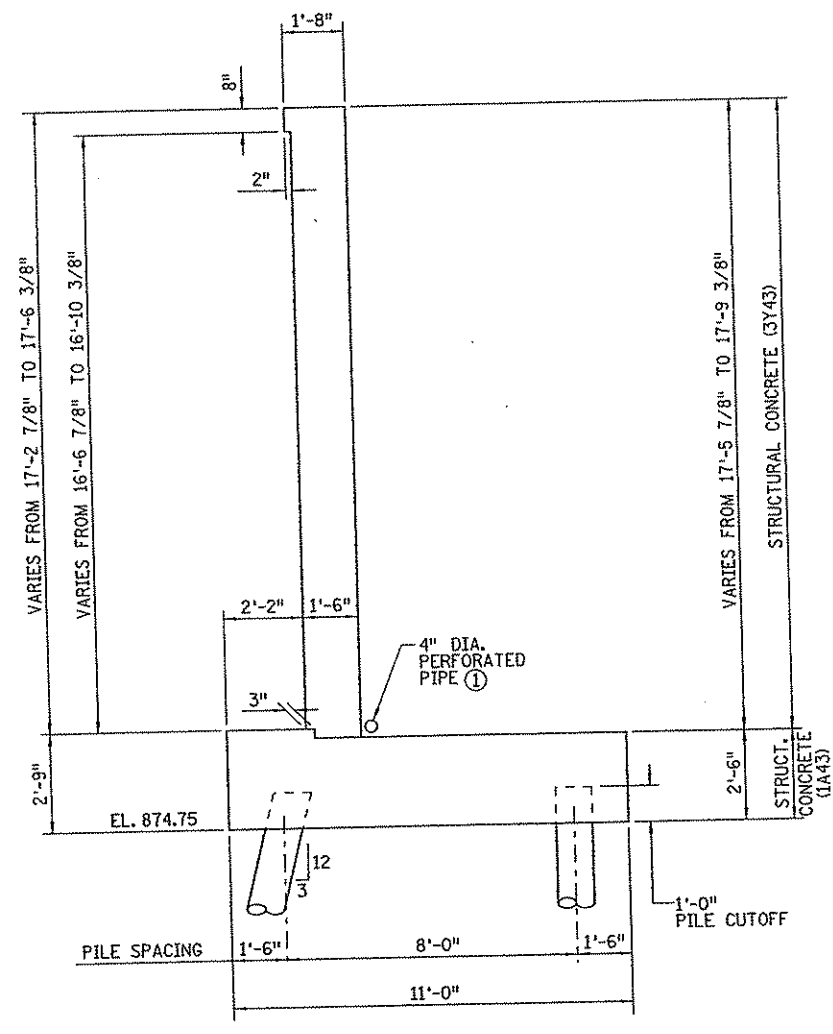
**BRIDGE SEAT TYPE 2 DETAIL**



**ANCHOR ROD LAYOUT**



**SECTION A-A**



**SECTION B-B**

NO	DATE	BY	CHKD	APPR	REVISION

8:46:56 AM 3/12/2007

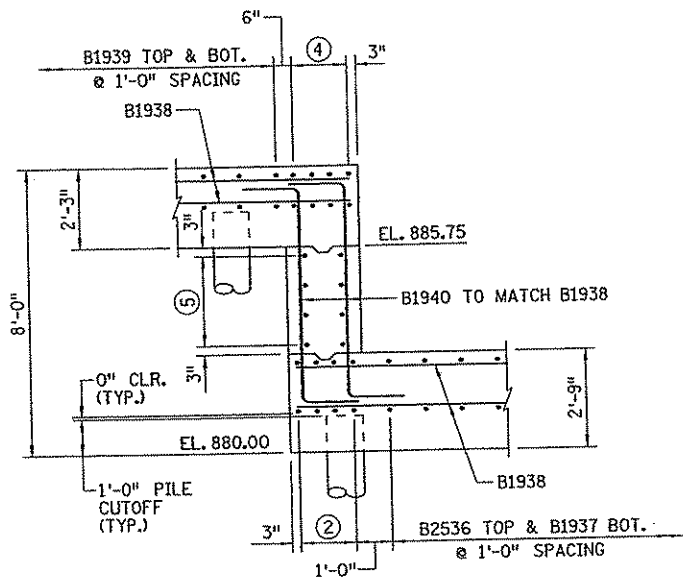
STATE PROJ. NO. 02-614-24	I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota. Print Name: JEREMY A. WEST Date: 3/15/07 License: 42039
BRIDGE NO. 02572	

DRAWN BY J. HOFFMAN	DATE 6/06
DESIGNED BY C. BLACK	DATE 6/06
CHECKED BY J. WEST	DATE 6/06
COMM. NO. 0054994	

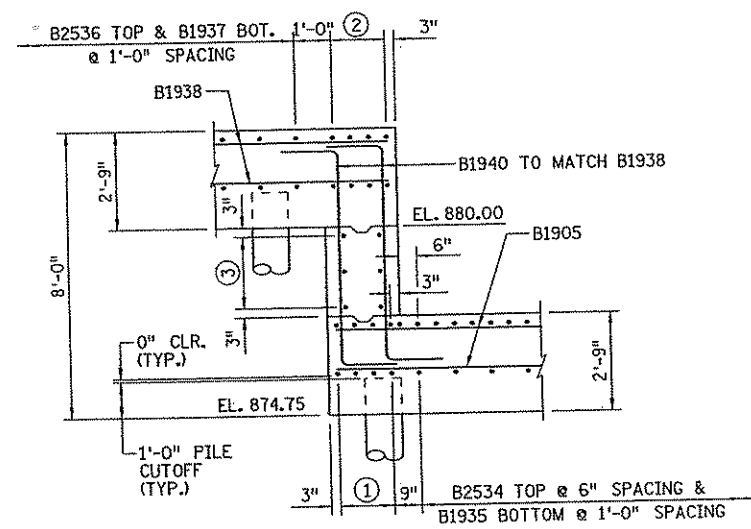


ANOKA COUNTY  
C.S.A.H. 14 OVER GEORGE WATCH LAKE WATERWAY  
SOUTH ABUTMENT DETAILS  
(SHEET 4 OF 8)

SHEET  
B11  
OF  
B33



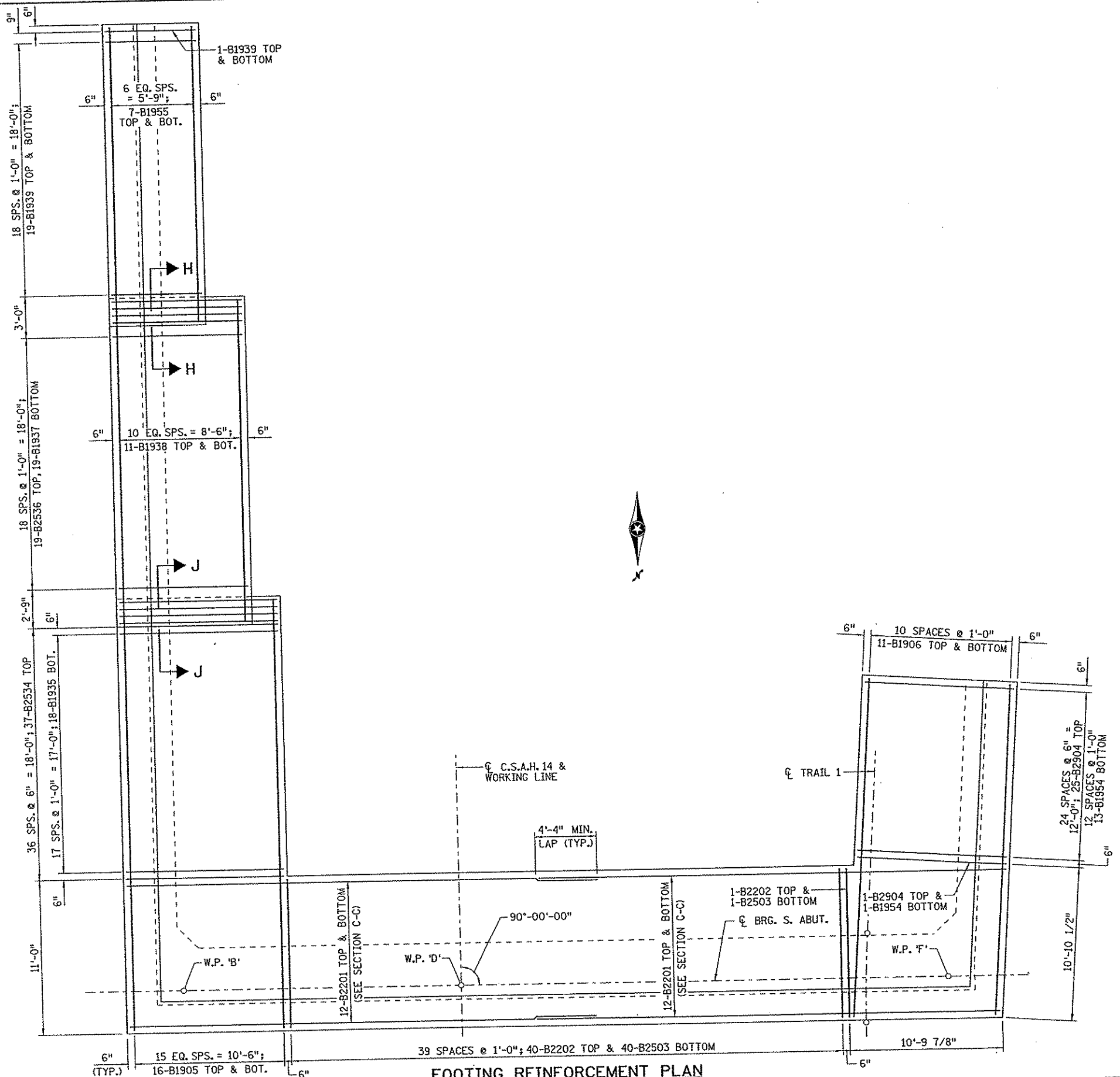
SECTION H-H



SECTION J-J

**NOTES:**

- ① 3 SPACES @ 6" = 1'-6"; 4-B2534 TOP, 4-B1935 BOTTOM.
- ② 3 SPACES @ 6" = 1'-6"; 4-B2536 TOP, 4-B1937 BOTTOM.
- ③ 2 SPACES @ 1'-0" = 2'-0"; 3-B1937 E.F.
- ④ 3 SPACES @ 6" = 1'-6"; 4-B1939 TOP & BOTTOM.
- ⑤ 3 SPACES @ 10" = 2'-6"; 4-B1939 E.F.
- 6. E.F. DENOTES EACH FACE



FOOTING REINFORCEMENT PLAN

NO	DATE	BY	CHKD	APPR	REVISION

8:46:57 AM 3/12/2007

STATE PROJ. NO.	02-614-24
BRIDGE NO.	02572

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Print Name: JEREMY A. WEST

Date: 3/15/07 License: 42039

DRAWN BY J. HOFFMAN DATE 6/06  
 DESIGNED BY C. BLACK DATE 6/06  
 CHECKED BY J. WEST DATE 6/06  
 COMM. NO. 0054994

**SRF CONSULTING GROUP, INC.**

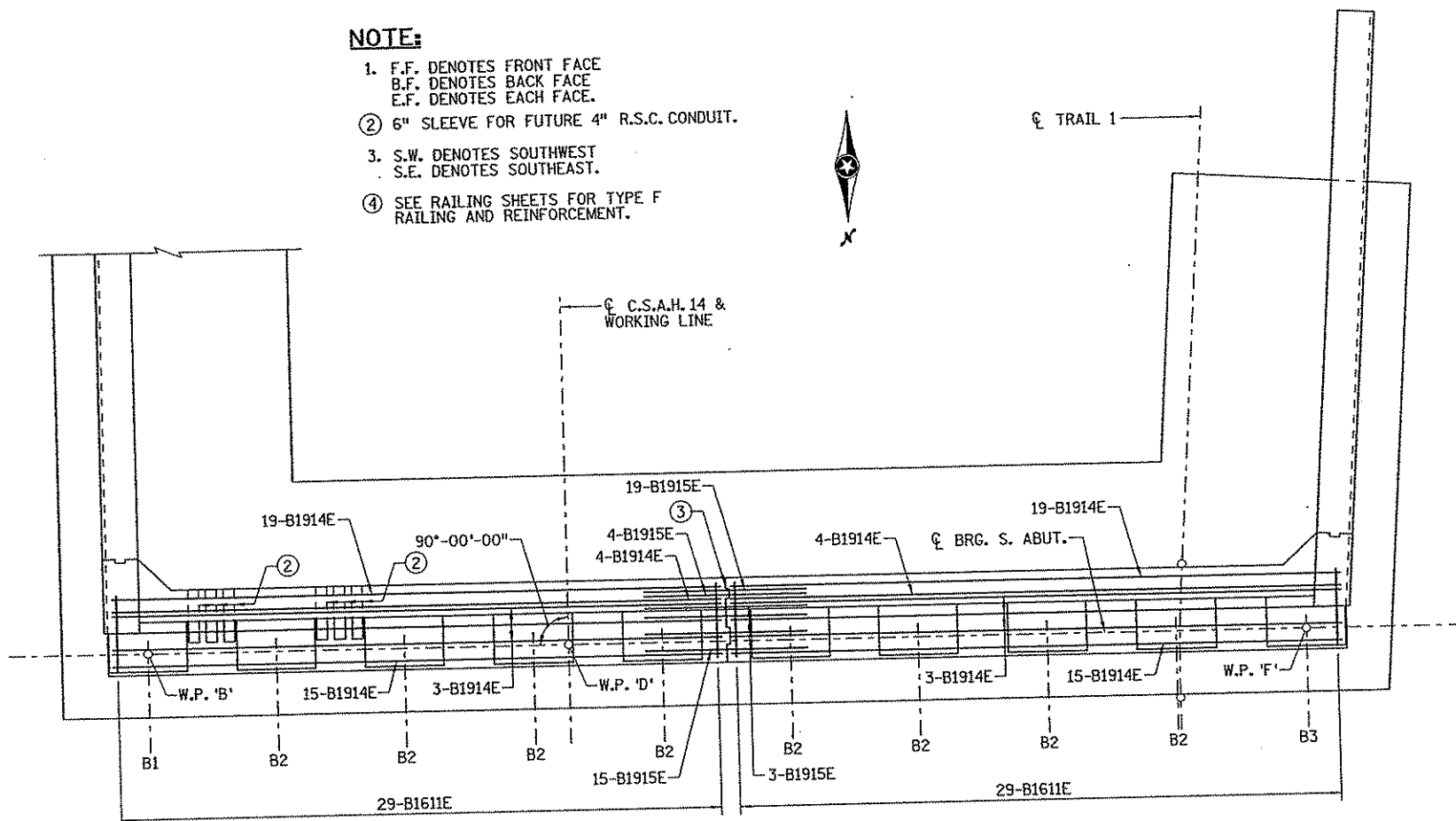
ANOKA COUNTY  
 C.S.A.H. 14 OVER GEORGE WATCH LAKE WATERWAY  
 SOUTH ABUTMENT DETAILS  
 (SHEET 5 OF 8)

SHEET B12 OF B33

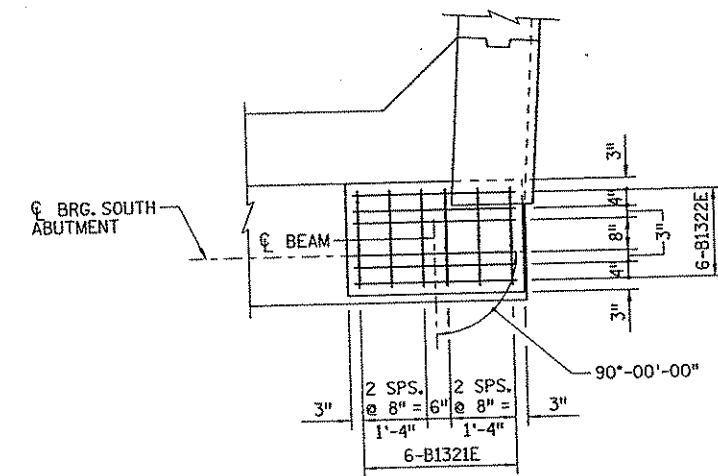


**NOTE:**

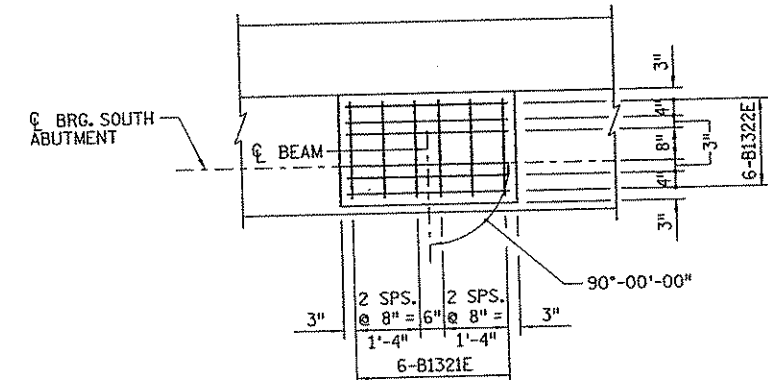
1. F.F. DENOTES FRONT FACE  
B.F. DENOTES BACK FACE  
E.F. DENOTES EACH FACE.
- ② 6" SLEEVE FOR FUTURE 4" R.S.C. CONDUIT.
3. S.W. DENOTES SOUTHWEST  
S.E. DENOTES SOUTHEAST.
- ④ SEE RAILING SHEETS FOR TYPE F  
RAILING AND REINFORCEMENT.



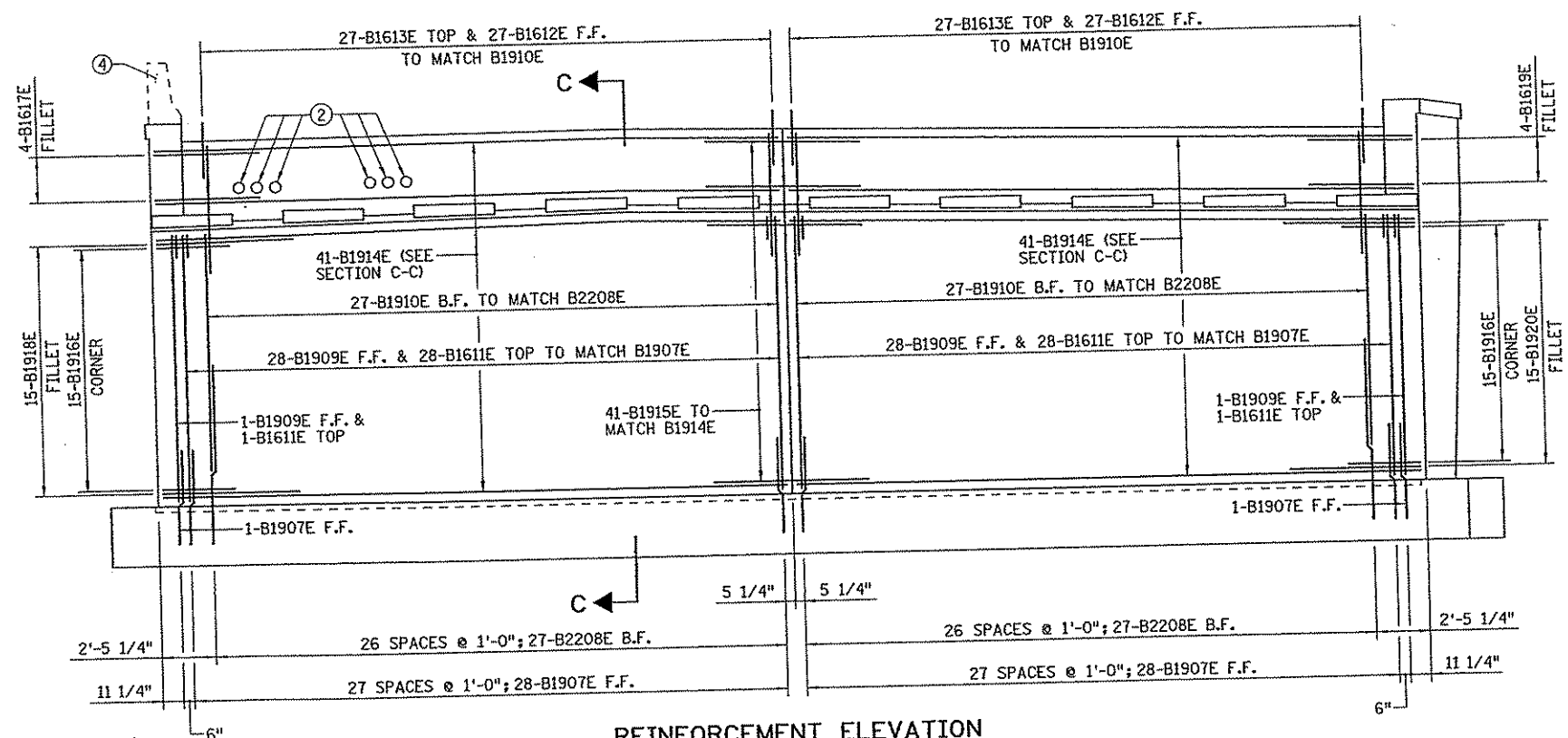
**REINFORCEMENT PLAN**



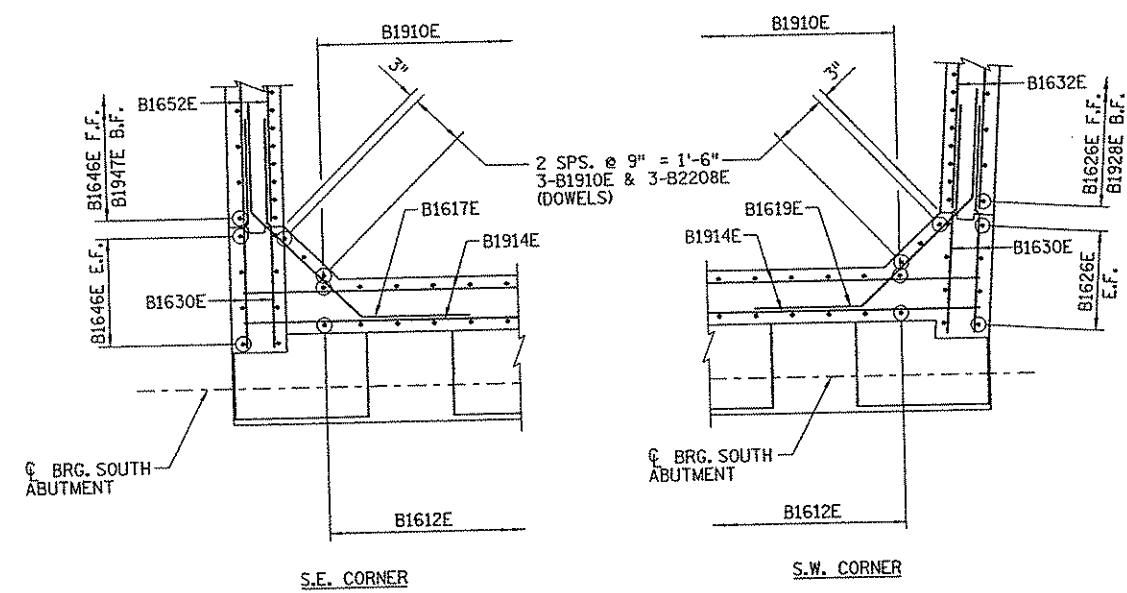
**BRIDGE SEAT TYPE 1 REINFORCEMENT DETAIL**



**BRIDGE SEAT TYPE 2 REINFORCEMENT DETAIL**



**REINFORCEMENT ELEVATION**



**CORNER REINFORCEMENT DETAIL**

NO	DATE	BY	CHKD	APPR	REVISION

STATE PROJ. NO.  
02-614-24

BRIDGE NO.  
02572

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Print Name: JEREMY A. WEST

*Jeremy A. West*

Date: 3/5/07 License: 42039

DRAWN BY J. HOFFMAN DATE 6/06

DESIGNED BY C. BLACK DATE 6/06

CHECKED BY J. WEST DATE 6/06

COMM. NO. 0054994



ANOKA COUNTY

C.S.A.H. 14 OVER GEORGE WATCH LAKE WATERWAY

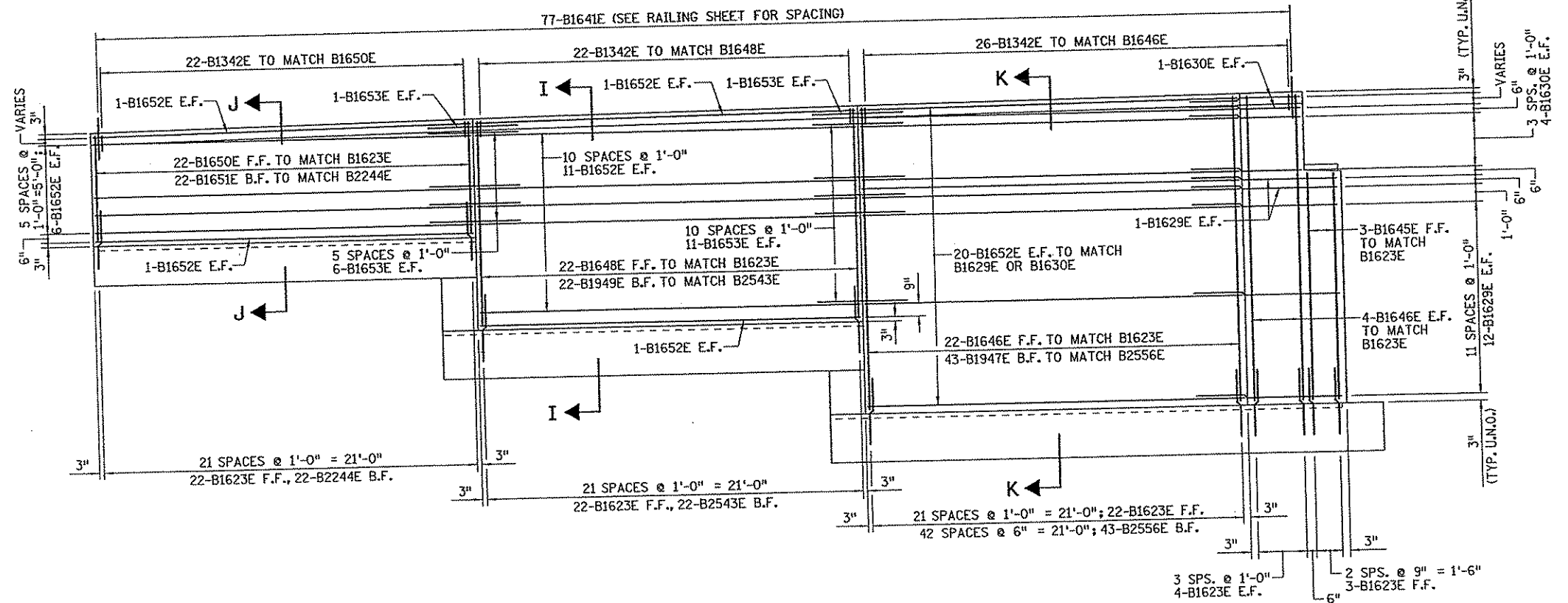
SOUTH ABUTMENT DETAILS

(SHEET 6 OF 8)

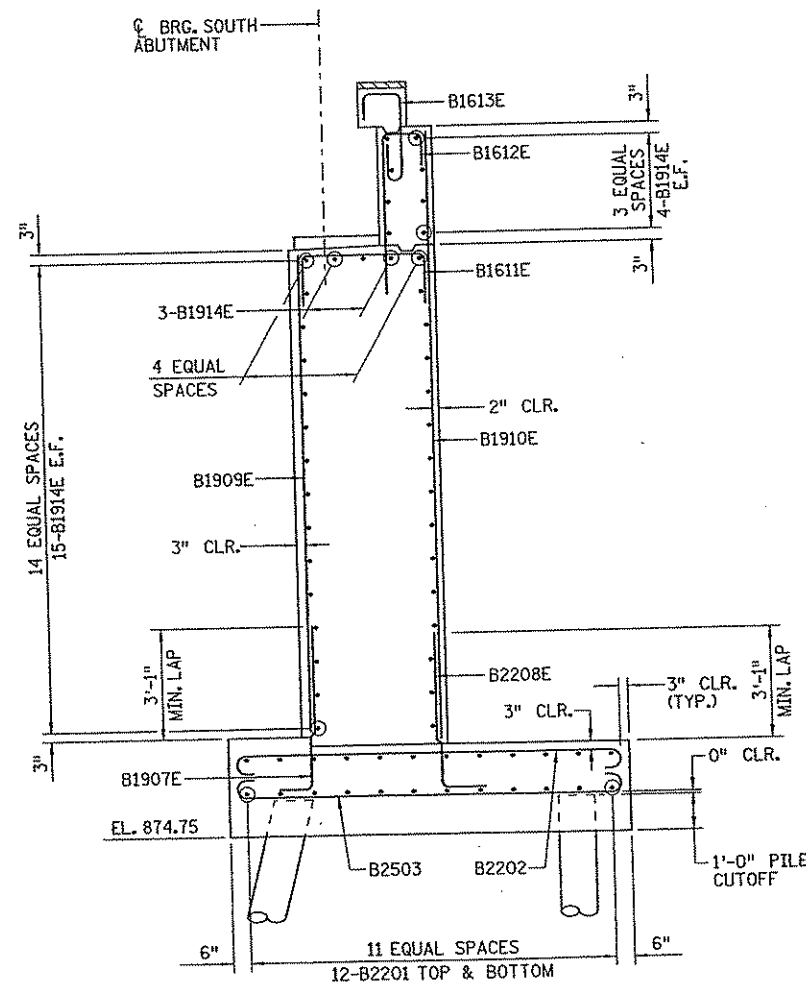
SHEET B13 OF B33

**NOTES:**

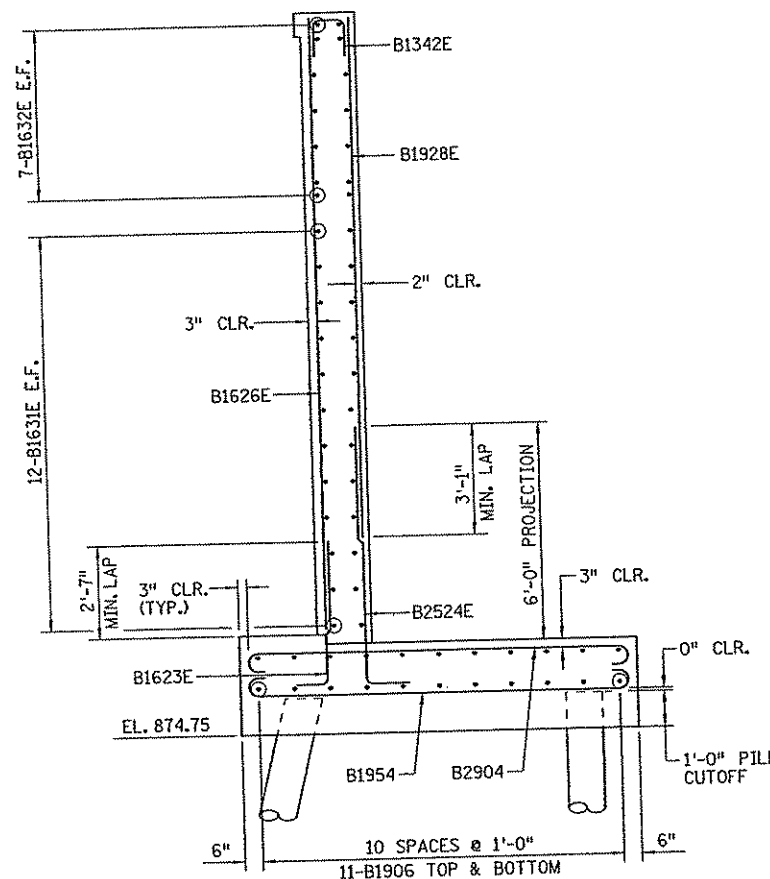
1. F.F. DENOTES FRONT FACE  
B.F. DENOTES BACK FACE  
E.F. DENOTES EACH FACE  
U.N.O. DENOTES UNLESS NOTED OTHERWISE
2. S.W. DENOTES SOUTHWEST  
S.E. DENOTES SOUTHEAST.



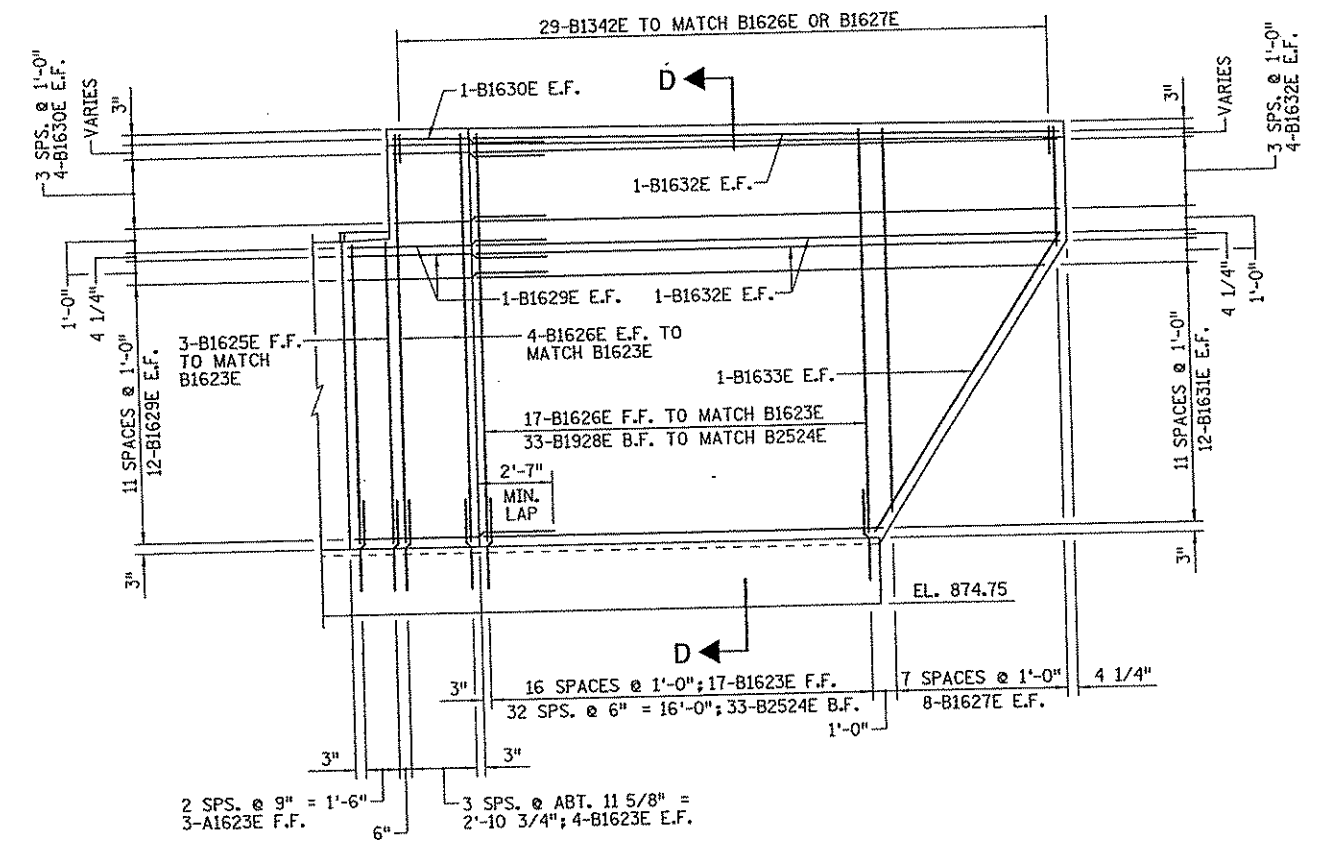
**S.E. WINGWALL REINFORCEMENT ELEVATION**



**SECTION C-C REINFORCEMENT**



**SECTION D-D REINFORCEMENT**



**S.W. WINGWALL REINFORCEMENT ELEVATION**

NO	DATE	BY	CHKD	APPR	REVISION

8:46:58 AM 3/12/2007

STATE PROJ. NO. 02-614-24	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. Print Name: <b>JEREMY A. WEST</b> <i>Jeremy A. West</i> Date: <b>3/15/07</b> License # <b>42039</b>
BRIDGE NO. 02572	

DRAWN BY J. HOFFMAN	DATE 6/06
DESIGNED BY C. BLACK	6/06
CHECKED BY J. WEST	6/06
COMM. NO. 0054994	



<b>ANOKA COUNTY</b> C.S.A.H. 14 OVER GEORGE WATCH LAKE WATERWAY <b>SOUTH ABUTMENT DETAILS</b> (SHEET 7 OF 8)	<b>SHEET</b> <b>B14</b> <b>OF</b> <b>B33</b>
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### BILL OF REINFORCEMENT: SOUTH ABUTMENT

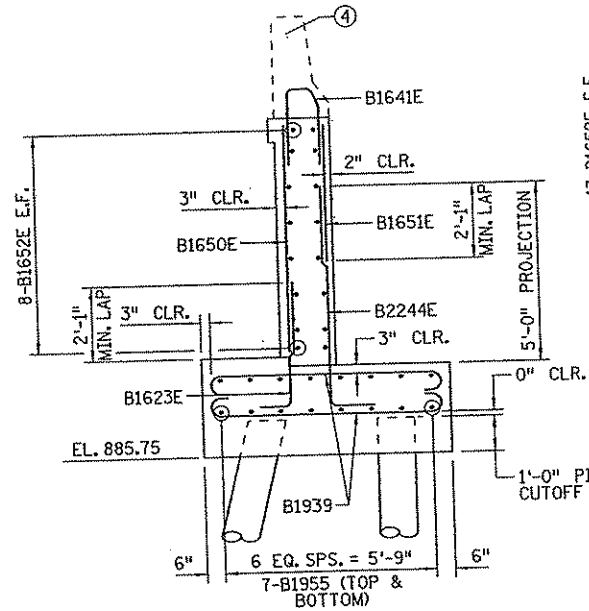
MARK	NO	SIZE	LENGTH [FT - IN]	SHAPE	DIMENSION [FT - IN]			LOCATION
					A	B	C	
B2201	48	22	33 - 2	STR	-	-	-	FTG. LONG.
B2202	41	22	12 - 2	15	10 - 6	0 - 10	-	FTG. TRANS.
B2503	41	25	12 - 4	15	10 - 6	0 - 11	-	FTG. TRANS.
B2904	26	29	13 - 0	15	10 - 6	1 - 3	-	FTG. TRANS.
B1905	32	19	31 - 2	16	30 - 6	-	-	FTG. LONG.
B1906	2 SERIES		24 - 0		23 - 4	-	-	
	OF 11	19	24 - 8	16	24 - 0	-	-	FTG. LONG.
B1907E	58	19	6 - 7	7	5 - 7	-	-	STEM DOWEL
B2208E	60	22	7 - 3	7	6 - 1	-	-	STEM DOWEL
B1909E	58	19	12 - 8	STR	-	-	-	STEM VERT
B1910E	60	19	16 - 4	STR	-	-	-	STEM VERT
B1611E	58	16	6 - 7	6	3 - 7	1 - 6	-	STEM TIE
B1612E	54	16	7 - 0	5	5 - 0	1 - 2	-	BACKWALL VERT
B1613E	54	16	9 - 0	21	0 - 11	1 - 0	3 - 6	PAVING BLOCK
B1914E	82	19	28 - 5	STR	-	-	-	STEM HORIZ
B1915E	41	19	7 - 6	STR	-	-	-	HORIZ DOWEL
B1916E	30	19	7 - 0	7	3 - 6	-	-	STEM CORNER
B1617E	4	16	11 - 11	12	4 - 11	3 - 6	1 - 0	TOP FILLET
B1918E	15	19	15 - 4	12	8 - 4	3 - 6	1 - 0	STEM FILLET
B1619E	4	16	12 - 1	12	5 - 1	3 - 6	1 - 0	TOP FILLET
B1920E	15	19	15 - 8	12	8 - 8	3 - 6	1 - 0	STEM FILLET
B1321E	60	13	5 - 0	6	2 - 0	1 - 6	-	SEAT
B1322E	60	13	6 - 4	6	3 - 4	1 - 6	-	SEAT
B1623E	105	16	5 - 6	7	4 - 8	-	-	WING DOWEL
B2524E	33	25	8 - 10	7	7 - 6	-	-	W. WING VERT
B1625E	3	16	12 - 8	STR	-	-	-	W. WING VERT
B1626E	25	16	17 - 0	STR	-	-	-	W. WING VERT
B1627E	2 SERIES		5 - 1		-	-	-	
	OF 8	16	16 - 1	STR	-	-	-	W. WING VERT
B1928E	33	19	14 - 9	STR	-	-	-	W. WING VERT
B1629E	56	16	8 - 2	STR	-	-	-	W. WING HORIZ
B1630E	22	16	6 - 3	STR	-	-	-	W. WING HORIZ
B1631E	2 SERIES		16 - 6		-	-	-	
	OF 12	16	23 - 7	STR	-	-	-	W. WING HORIZ
B1632E	14	16	24 - 3	STR	-	-	-	W. WING HORIZ
B1633E	2	16	14 - 7	STR	-	-	-	W. WING DIAG.
B2534	41	25	12 - 10	15	11 - 0	0 - 11	-	FTG TRANS
B1935	22	19	12 - 4	15	11 - 0	0 - 8	-	FTG TRANS
B2536	27	25	10 - 10	15	9 - 0	0 - 11	-	FTG TRANS
B1937	33	19	10 - 4	15	9 - 0	0 - 8	-	FTG TRANS
B1938	22	19	23 - 0	STR	-	-	-	FTG LONG.
B1939	56	19	7 - 7	15	6 - 3	0 - 8	-	FTG TRANS
B1940	36	19	8 - 4	32	6 - 4	1 - 0	-	FTG TIE
B1641E	77	16	5 - 7	20	2 - 4	0 - 10	0 - 10	RAILING
B1342E	99	13	3 - 1	6	1 - 1	1 - 0	-	WING TOP
B2543E	22	25	13 - 10	7	12 - 6	1 - 4	-	DOWEL
B2244E	22	22	7 - 2	7	6 - 0	1 - 2	-	DOWEL
B1645E	3	16	12 - 11	STR	-	-	-	WING VERT
B1646E	30	16	17 - 3	STR	-	-	-	WING VERT
B1947E	43	19	12 - 10	STR	-	-	-	WING VERT
B1648E	22	16	11 - 9	STR	-	-	-	WING VERT
B1949E	22	19	4 - 5	STR	-	-	-	WING VERT
B1650E	22	16	5 - 10	STR	-	-	-	WING VERT
B1651E	22	16	3 - 11	STR	-	-	-	WING VERT
B1652E	82	16	21 - 2	STR	-	-	-	WING HORIZ
B1653E	38	16	6 - 2	STR	-	-	-	HORIZ DOWEL
B1954	14	19	11 - 10	15	10 - 6	0 - 8	-	FTG TRANS
B1955	14	19	21 - 0	STR	-	-	-	FTG LONG
B2556E	43	25	10 - 10	7	9 - 6	1 - 4	-	DOWEL

### SUMMARY OF QUANTITIES : S. ABUTMENT

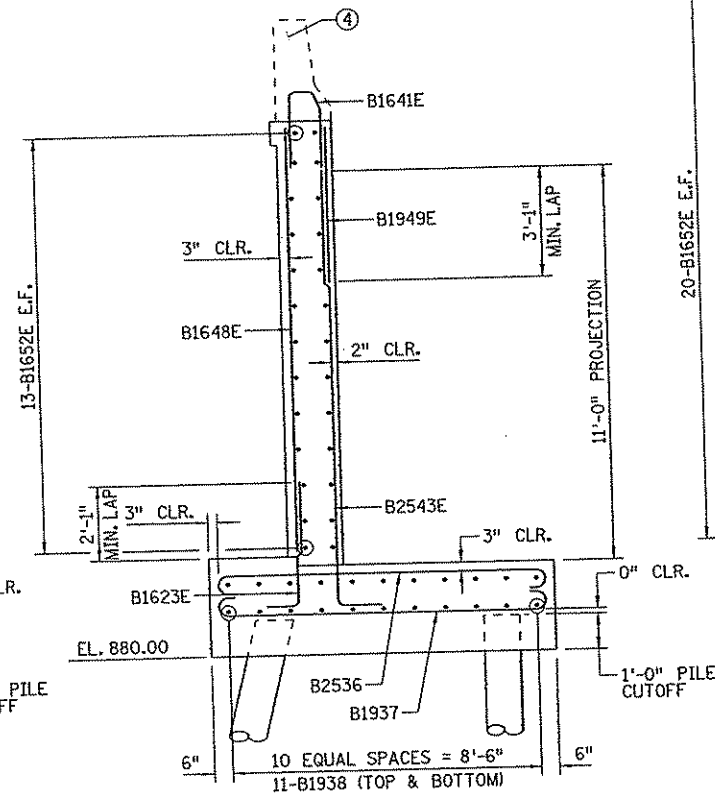
ITEM	UNIT	QUANTITY
STRUCTURAL CONCRETE (1A43)	CU. YD.	137
STRUCTURAL CONCRETE (3Y43)	CU. YD.	201
REINFORCEMENT BARS	POUND	14440
REINFORCEMENT BARS (EPOXY COATED)	POUND	22460
C-I-P CONCRETE PILING DELIVERED 12"	LIN. FT.	4500
C-I-P CONCRETE PILING DRIVEN 12"	LIN. FT.	4500
C-I-P CONC TEST PILE 100' LONG 12"	EACH	3
3-PLY JOINT WATERPROOFING	LIN. FT.	140

### NOTES:

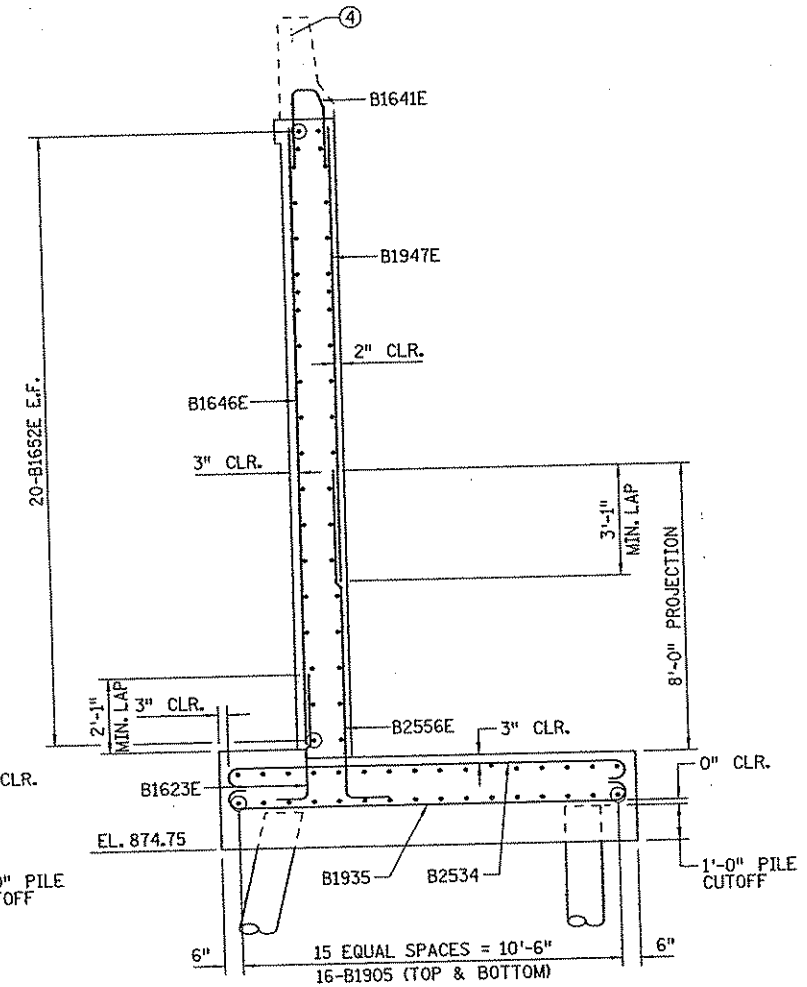
- ① DOES NOT INCLUDE TEST PILES.
- ② TO BE INCLUDED IN PRICE BID FOR OTHER ITEMS.
3. E.F. DENOTES EACH FACE  
F.F. DENOTES FRONT FACE  
B.F. DENOTES BACK FACE
- ④ SEE RAILING SHEETS FOR TYPE F RAILING AND REINFORCEMENT.



SECTION J-J REINFORCEMENT

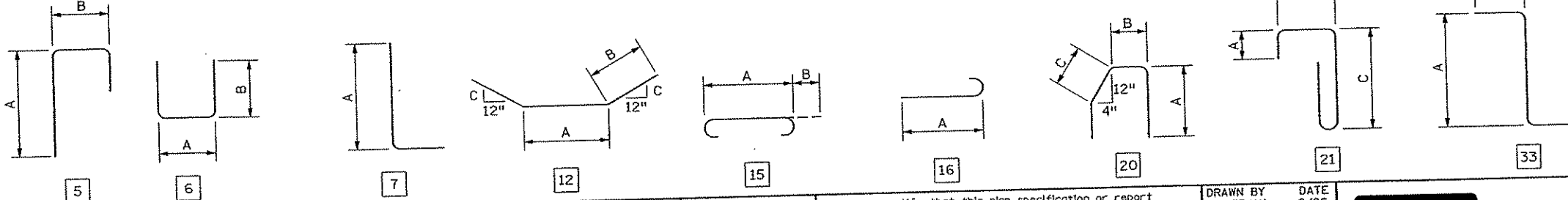


SECTION I-I REINFORCEMENT



SECTION K-K REINFORCEMENT

### BAR SHAPES:



NO	DATE	BY	CHK	APPR	REVISION

8:46:59 AM 3/12/2007

STATE PROJ. NO. 02-614-24	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. Print Name: JEREMY A. WEST <i>Jeremy A. West</i> Date: 3/15/07 License: 42039
BRIDGE NO. 02572	

DRAWN BY  
J. HOFFMAN  
DATE  
6/06

DESIGNED BY  
C. BLACK  
DATE  
6/06

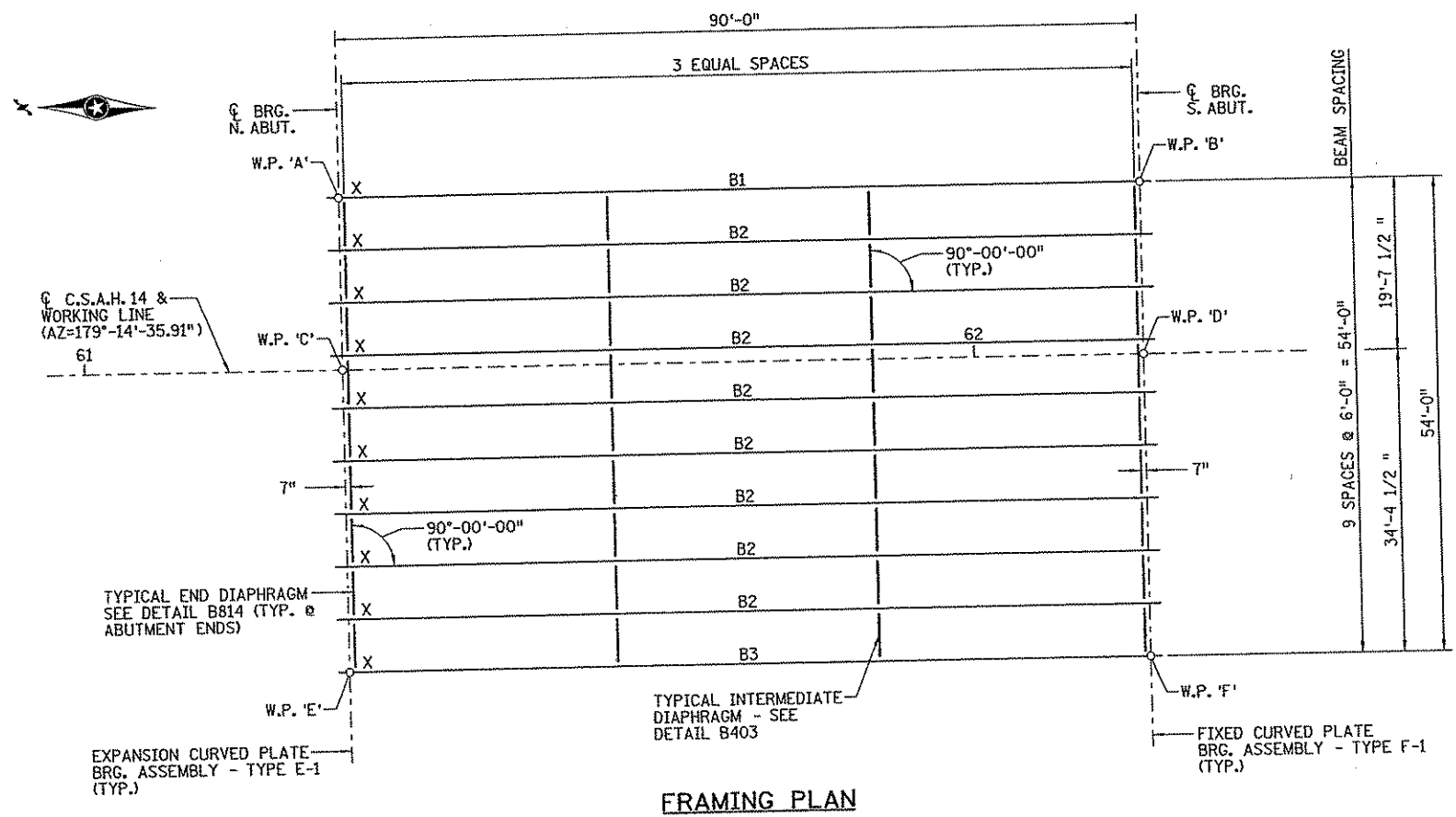
CHECKED BY  
J. WEST  
DATE  
6/06

COMM. NO.  
0054994



ANOKA COUNTY  
C.S.A.H. 14 OVER GEORGE WATCH LAKE WATERWAY  
SOUTH ABUTMENT DETAILS  
(SHEET 8 OF 8)

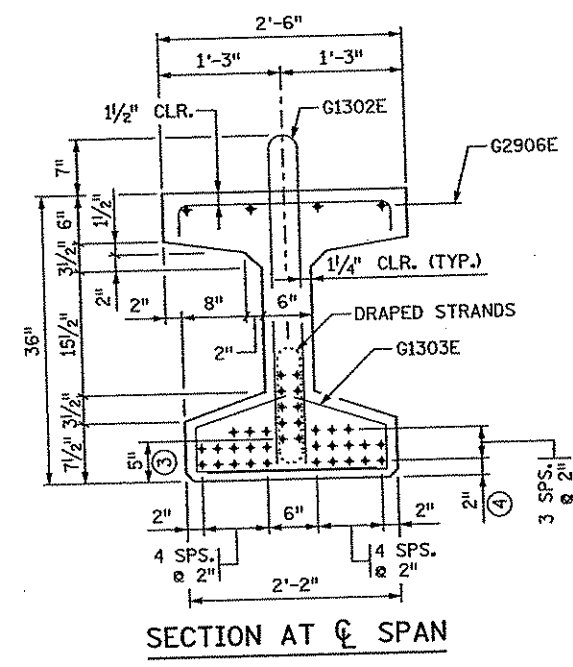
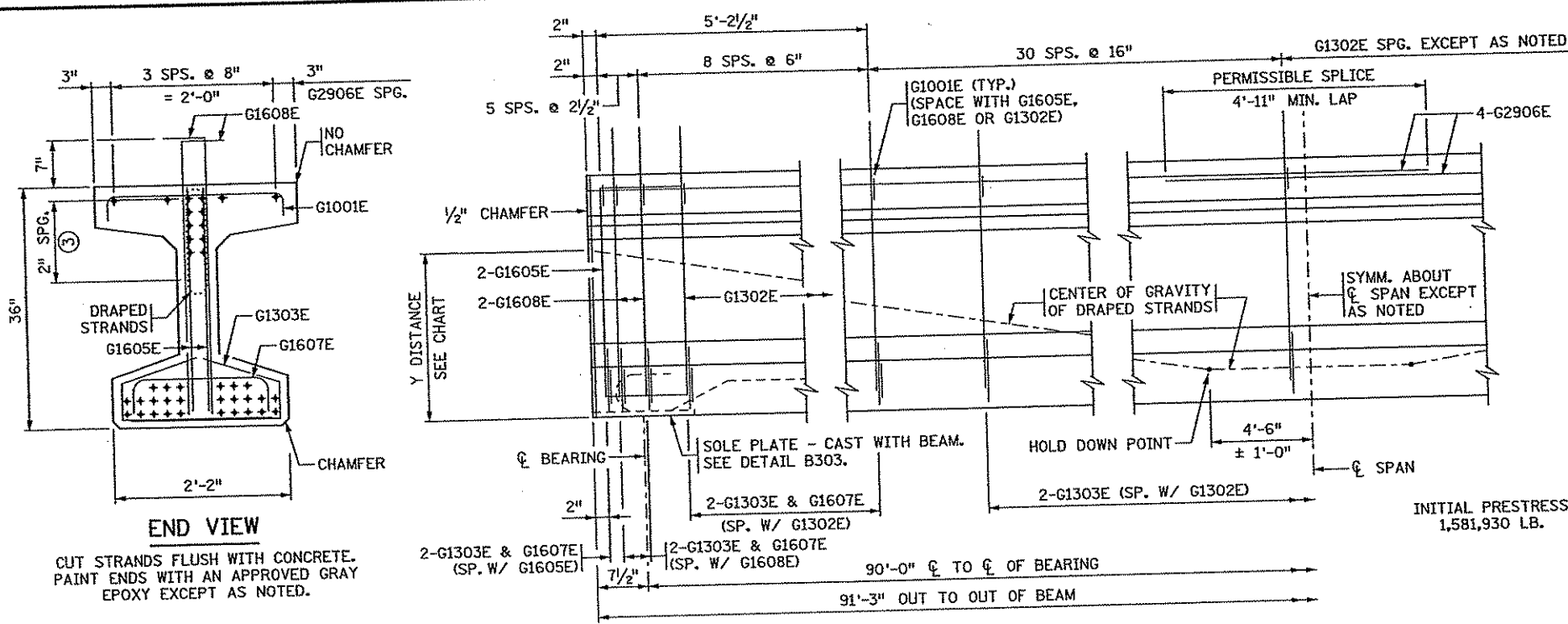
SHEET  
B15  
OF  
B33



**NOTES:**  
 1. X DENOTES WHICH END OF BEAM TO BE MARKED WITH AN "X".

STATE PROJ. NO. 02-614-24					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. Print Name: <u>JEREMY A. WEST</u> <i>Jeremy A. West</i> Date: <u>3/15/07</u> License: <u>42039</u>	DRAWN BY J. HOFFMAN DATE 6/06		<b>SRF</b> CONSULTING GROUP, INC.	ANOKA COUNTY		SHEET B16 OF B33
BRIDGE NO. 02572						DESIGNED BY C. BLACK DATE 6/06			C.S.A.H. 14 OVER GEORGE WATCH LAKE WATERWAY		
NO	DATE	BY	CKD	APPR	REVISION	8:47:00 AM	3/12/2007				

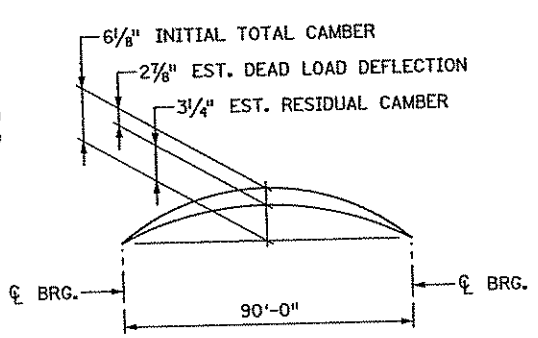
h:\projects\4994-f\br\final\Plan\4994 FP01.dgn



Y DISTANCES (IN INCHES)			
	NO.	Q SPAN	END
STRAIGHT STRANDS	26	3.69	
DRAPED STRANDS	10	9.00	28.00
TOTAL STRANDS	36	5.17	

Y = DISTANCE TO CENTER OF GRAVITY OF STRANDS FROM BOTTOM OF BEAM. ALL STRANDS SPACED 2" CENTER TO CENTER, HORIZONTALLY AND VERTICALLY, EXCEPT AS NOTED.

A TOLERANCE OF ± 1" WILL BE PERMITTED IN THIS DIMENSION.



INITIAL CAMBER IS GIVEN AFTER DIAPHRAGMS ARE IN PLACE.

DEAD LOAD DEFLECTION SHOWN IS FOR WEIGHT OF SLAB, WEARING COURSE, RAILING, SIDEWALK AND MEDIAN WHERE APPLICABLE.

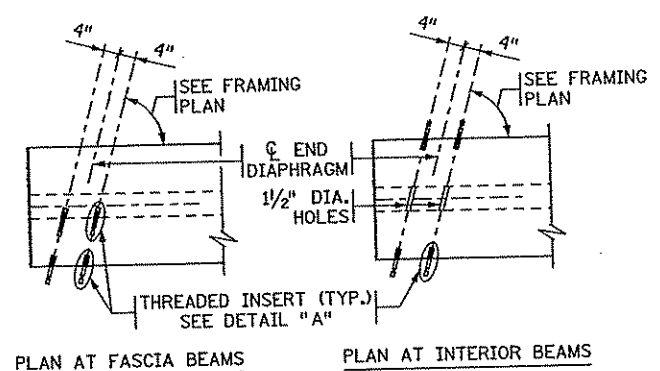
ENGINEER WILL TAKE ELEVATIONS AT TOP OF BEAMS AFTER ERECTION AND WILL ALLOW FOR DEFLECTION SHOWN TO ENABLE CONTRACTOR TO BUILD FORMS TO CORRECT GRADE AND SPECIFIED SLAB THICKNESS.

**END VIEW**  
CUT STRANDS FLUSH WITH CONCRETE. PAINT ENDS WITH AN APPROVED GRAY EPOXY EXCEPT AS NOTED.

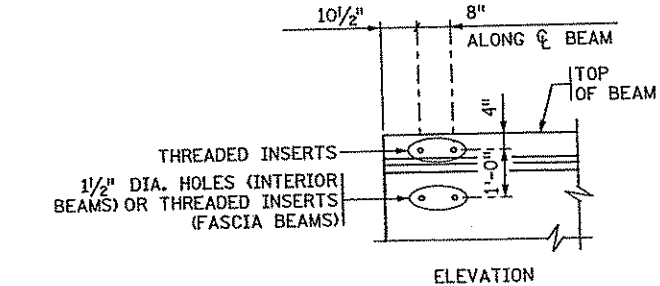
**BEAM ELEVATION**

**SECTION AT Q SPAN**

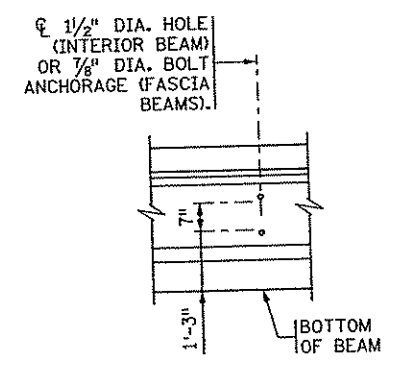
**CAMBER DIAGRAM**



**PLAN AT FASCIA BEAMS**      **PLAN AT INTERIOR BEAMS**



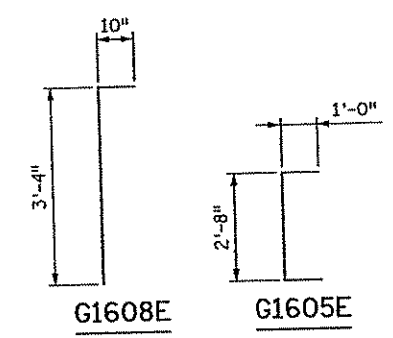
**CONCRETE END DIAPHRAGM**  
PARAPET ABUTMENT  
(SEE DETAIL B814 FOR DIAPHRAGM DETAILS)



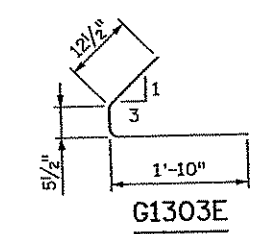
**STEEL INTERMEDIATE DIAPHRAGM**  
(SEE DETAIL B403 FOR DIAPHRAGM DETAILS)

MINIMUM CONCRETE STRENGTH - P.S.I.	
① f'ci	② f'c
7500	8000

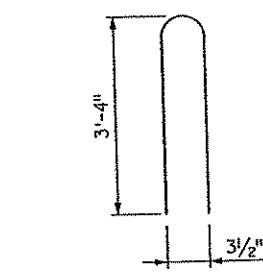
PRESTRESSING STRAND DIAMETER	
⑤ 1/2" □	
⑤ 0.60" ☒	



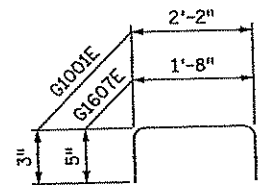
**G1608E**      **G1605E**



**G1303E**



**G1302E**



**G1001E & G1607E**

**GENERAL NOTES**

- TOPS OF BEAMS SHALL BE ROUGH FLOATED AND BROOMED TRANSVERSELY FOR BOND. PROVIDE HANDLING HOOKS OR DEVICES AS REQUIRED BY CONTRACTOR.
- EACH BEAM SHALL BE MARKED, SHOWING BRIDGE NUMBER, CASTING DATE, AND INDIVIDUAL IDENTIFICATION LETTERS AND NUMBERS. MARKINGS SHALL BE MADE ON THE FACE OF THE BEAM, NEAR THE END, SO LOCATED THAT THEY WILL BE EXPOSED AFTER THE END DIAPHRAGMS HAVE BEEN CAST. FASCIA BEAMS SHALL BE MARKED ON THE INSIDE FACE. ALL MARKINGS SHALL BE STENCILED AND BE CLEARLY LEGIBLE. FOR LOCATION OF BEAMS, SEE FRAMING PLAN.
- ALL MATERIAL AND WORK SHOWN OR NOTED ON THIS SHEET SHALL BE INCLUDED IN UNIT PRICE BID FOR PRESTRESSED CONCRETE BEAMS. SEE MFD/DOT SPEC. 2405.
- SEE FRAMING PLAN FOR BEAM END MARKED "X" AND DIAPHRAGM SPACING.
- APPROXIMATE WEIGHT OF BEAM IS 28 TONS.

AS AN ALTERNATE TO THE DIAPHRAGM ANCHORAGES SHOWN, THE CONTRACTOR MAY SUBMIT DETAILS OF A CAST-IN-PLACE ANCHORAGE TO THE ENGINEER FOR APPROVAL. ANCHORAGE MUST PROVIDE AN ULTIMATE PULL OUT STRENGTH OF 15 KIPS PER ANCHORAGE.

- ① MINIMUM CONCRETE STRENGTH AT TIME OF PRESTRESS TRANSFER.
- ② MINIMUM CONCRETE STRENGTH WHEN BEAM CAN BE TRANSPORTED AND INSTALLED.
- ③ DRAPED STRANDS.
- ④ STRAIGHT STRANDS.
- ⑤ PRESTRESSING STRANDS SHALL BE 7-WIRE LOW RELAXATION STRAND, CONFORMING TO ASTM A416, GRADE 270.

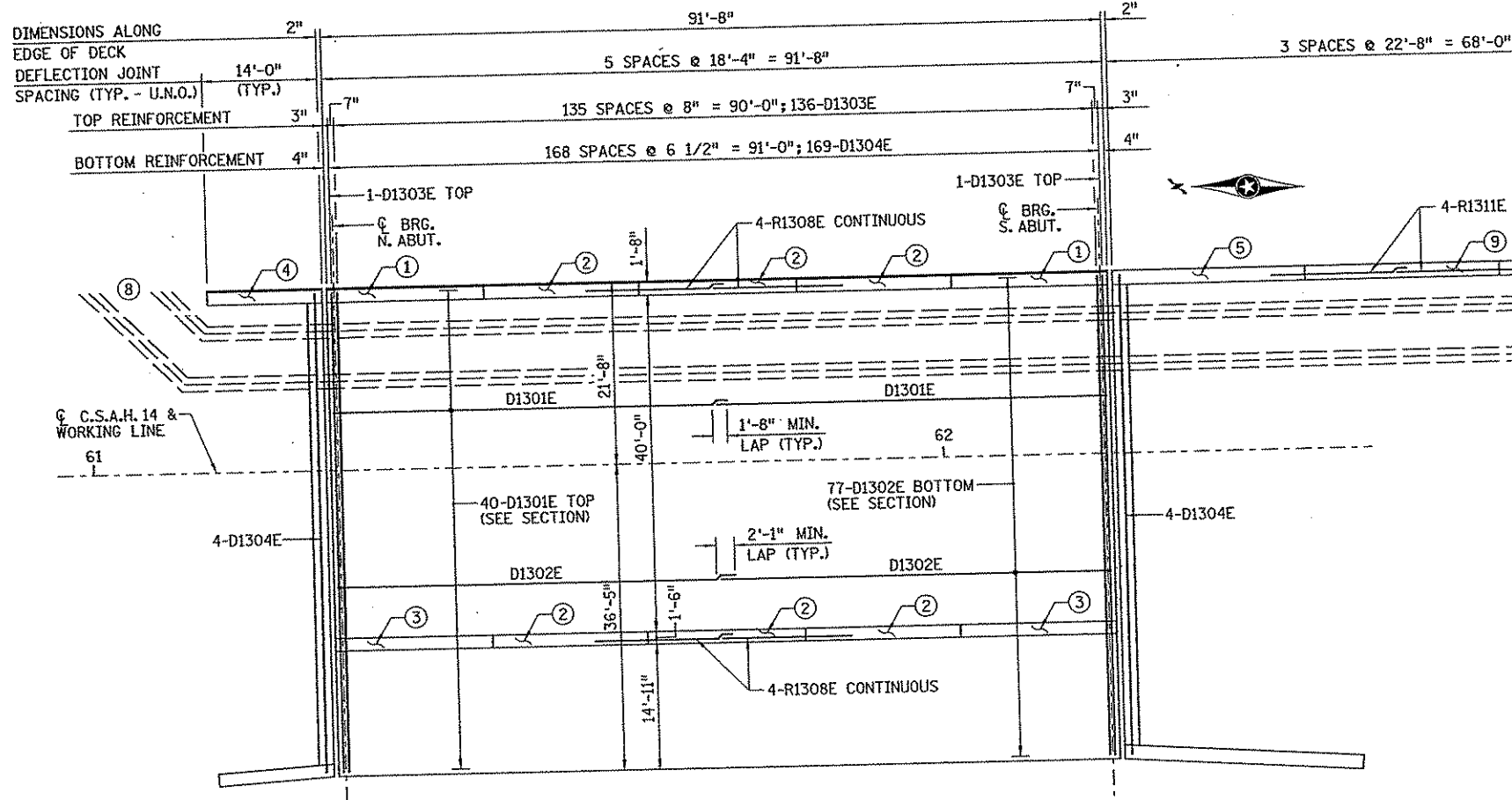
REVISED:  
APPROVED: OCTOBER 26, 2005  
David A. Johnson  
STATE BRIDGE ENGINEER

CERTIFIED BY: *Jeremy West* 3/15/07  
LICENSED PROFESSIONAL ENGINEER  
NAME: JEREMY A. WEST      LIC. NO. 42039

TITLE: 36" PRESTRESSED CONCRETE BEAM (PRETENSIONED) 36M-91

DES: CLB	DR: MM	APPROVED:	BRIDGE NO. 02572
CHK: JAW	CHK: JAW		

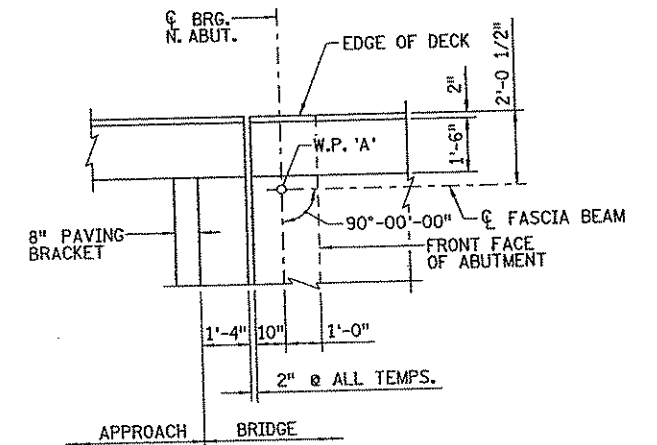
BEAMS B1-B3      MODIFIED      FIG. 5-397.505  
SHEET NO. B17 OF B33 SHEETS



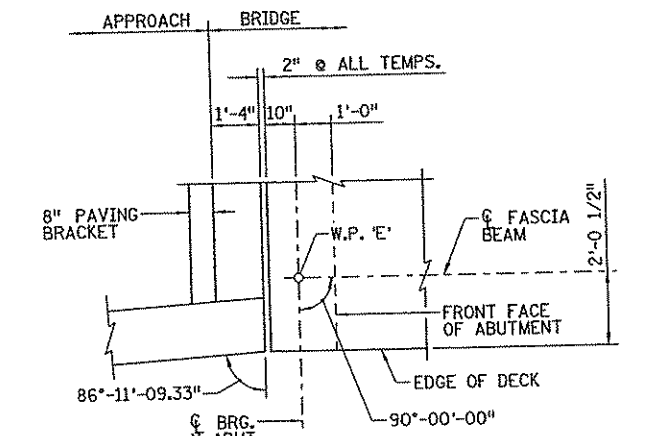
**DECK PLAN**

**NOTES:**

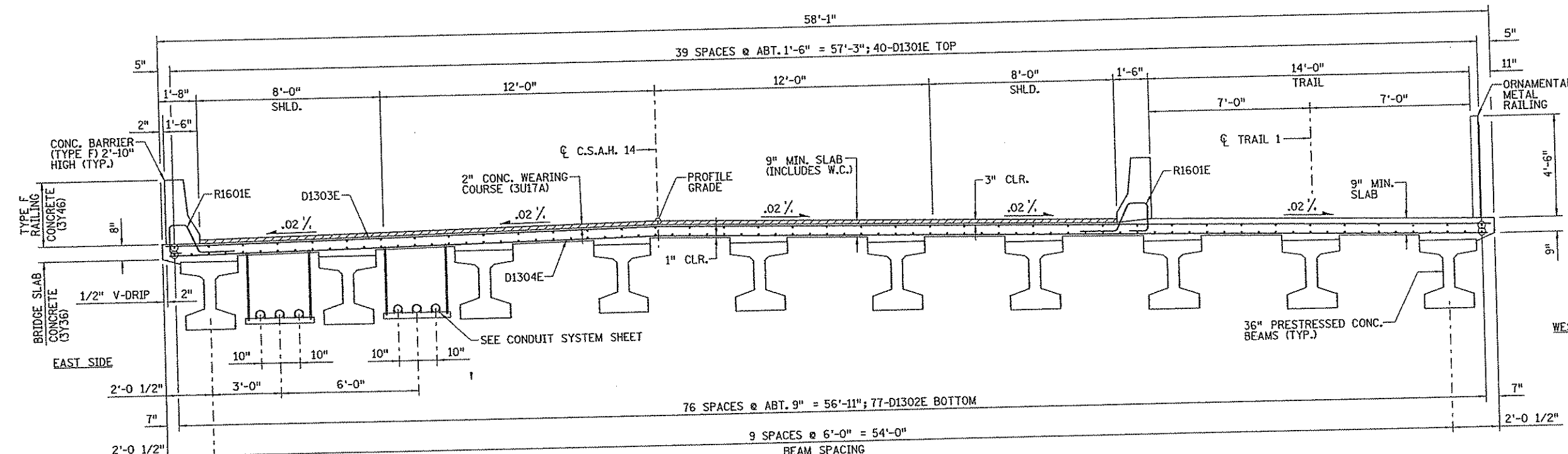
- ① 20-R1601E, 20-R1602E, 1-R1603E & 4-R1307E
- ② 21-R1601E, 21-R1602E & 4-R1307E
- ③ 23-R1601E, 23-R1602E, 1-R1604E, 1-R1605E, 1-R2206E, 2-R1307E & 2-R1313E
- ④ 18-R1602E, 1-R1603E, 1-R1604E, 1-R1605E, 1-R2206E, 6-R1309E & 2-R1310E
- ⑤ 25-R1602E, 1-R1603E & 4-R1312E
- 6. U.N.O. DENOTES UNLESS NOTED OTHERWISE.
- 7. N.E. DENOTES NORTHEAST  
N.W. DENOTES NORTHWEST  
S.E. DENOTES SOUTHEAST  
S.W. DENOTES SOUTHWEST
- ⑧ 6 - 4" R.S.C. FOR FUTURE USE. STUB OUT 3'-0" PAST END OF WINGWALL AND TO SIDE OF ROADWAY. CAP ENDS.
- ⑨ 25-R1602E & 4-R1312E
- ⑩ 27-R1602E, 1-R1604E, 1-R1605E, 1-R2206E, 2-R1312E & 2-R1314E



**N.E. CORNER DETAIL**  
S.E. CORNER SIMILAR



**N.W. CORNER DETAIL**  
S.W. CORNER SIMILAR



**TYPICAL SECTION**

**EDGE OF SLAB DETAIL**

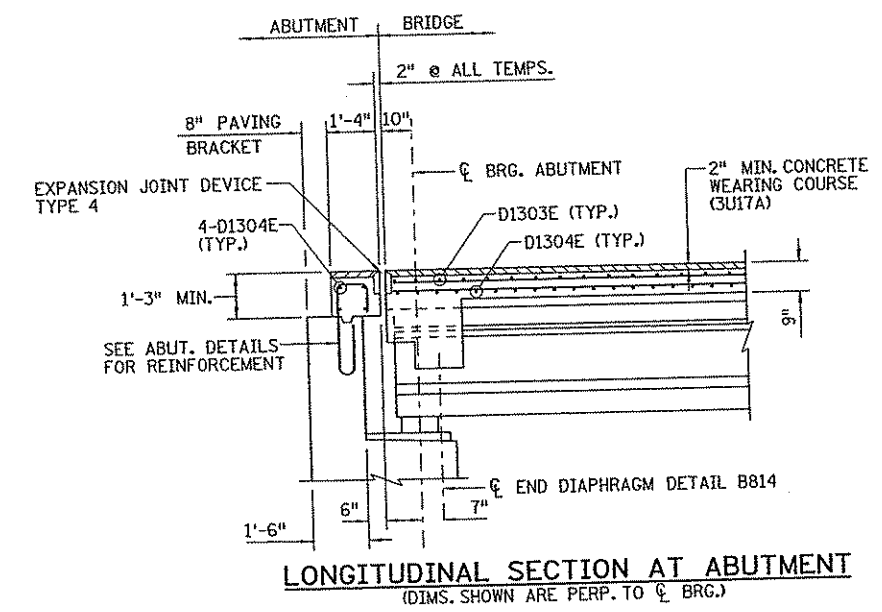
NO DATE BY CKD APPR REVISION 8:47:01 AM 3/12/2007			STATE PROJ. NO. 02-614-24 BRIDGE NO. 02572	I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota. Print Name: JEREMY A. WEST  Date: 3/13/07 License: 42039	DRAWN BY: J. HOFFMAN DESIGNED BY: C. BLACK CHECKED BY: J. WEST DATE: 6/06 6/06 6/06 COMM. NO. 0054994	<b>SRF CONSULTING GROUP, INC.</b>	ANOKA COUNTY C.S.A.H. 14 OVER GEORGE WATCH LAKE WATERWAY BRIDGE DECK DETAILS (SHEET 1 OF 2)	SHEET B18 OF B33
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BILL OF REINFORCEMENT: SUPERSTRUCTURE								
MARK	NO	SIZE	LENGTH [FT - IN]	SHAPE	DIMENSION [FT-IN]			LOCATION
					A	B	C	
D1301E	80	13	46 - 6	STR	-	-	-	TOP LONG.
D1302E	154	13	46 - 9	STR	-	-	-	BOTTOM LONG.
D1303E	138	13	57 - 9	STR	-	-	-	TOP TRANS.
D1304E	177	13	57 - 5	STR	-	-	-	BOTTOM TRANS.

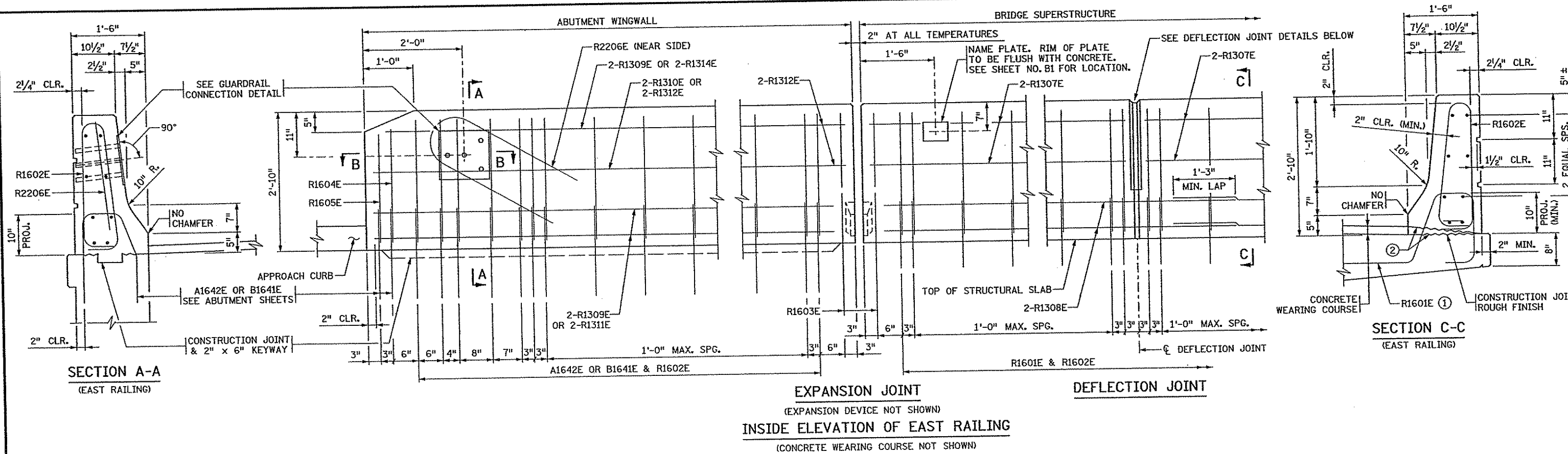
SUMMARY OF QUANTITIES : SUPERSTRUCTURE			
	ITEM	UNIT	QUANTITY
6	STRUCTURAL CONCRETE (3Y43)	CU. YD.	11
5	BRIDGE SLAB CONCRETE (3Y36)	SQ. FT.	5490
4	TYPE F (TL-4) RAILING CONCRETE (3Y46)	LIN. FT.	266
3	REINFORCEMENT BARS (EPOXY COATED)	POUND	25450
	EXPANSION JOINT DEVICES TYPE 4	LIN. FT.	116
	BEARING ASSEMBLY	EACH	20
	ORNAMENTAL METAL RAILING	LIN. FT.	132
10	CONCRETE WEARING COURSE (3U17A)	SQ. FT.	3780
7	PRESTRESSED CONCRETE BEAMS 36M	LIN. FT.	913
	DIAPHRAGMS FOR TYPE 36M PREST. CONCRETE BEAMS	LIN. FT.	108
8	FIXED CURVED PLATE BEARING ASSY., TYPE F-1	EACH	10
8	EXP. CURVED PLATE BEARING ASSY., TYPE E-1	EACH	10
1	B.M. DISK	EACH	1
2	BRIDGE NAMEPLATE	EACH	1
9	JOINT FILLER 1" x 1'-0" x 1'-10" F RAIL DEFL. JT.	EACH	10
7	PRESTRESSED CONCRETE BEAMS, TYPE 36M-91	EACH	10
11	CONDUIT SYSTEM	LUMP SUM	1

**SUMMARY OF QUANTITIES NOTES:**

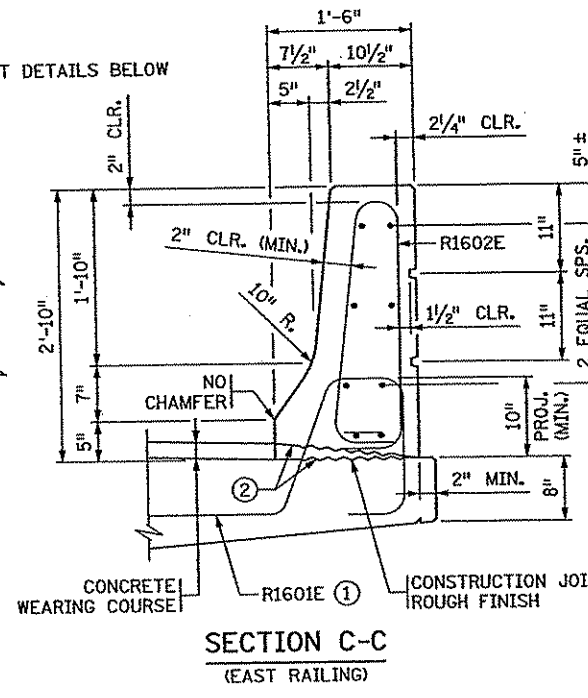
- ① COUNTY WILL FURNISH DISK. BEND PRONGS OUTWARD TO ANCHOR DISK IN CONCRETE. BOTTOM OF DISK TOP TO BE PLACED FLUSH WITH CONCRETE. PAYMENT FOR PLACING DISK TO BE INCLUDED IN PRICE BID FOR OTHER ITEMS.
- ② TO BE INCLUDED IN PRICE BID FOR OTHER ITEMS.
- ③ INCLUDES DECK, RAILING AND END DIAPHRAGM REINFORCEMENT.
- ④ TYPE F RAILING CONCRETE MIX NO. (3Y46) VOLUME IS APPROXIMATELY 27 CU. YDS.
- ⑤ BRIDGE SLAB CONCRETE (3Y36) VOLUME IS APPROXIMATELY 150 CU. YDS. USING AN AVERAGE STUOL HEIGHT OF 3 INCHES.
- ⑥ END DIAPHRAGM CONCRETE.
- ⑦ PAYMENT FOR BEAMS INCLUDED IN ITEM "PRESTRESSED CONCRETE BEAMS TYPE 36M" PER LIN. FT.
- ⑧ PAYMENT FOR BEARINGS INCLUDED IN ITEM "BEARING ASSEMBLY" PER EACH.
- ⑨ QUANTITIES LISTED ARE FOR INFORMATIONAL PURPOSES. ANY ADDITIONAL MINOR ITEMS OR SLIGHT CHANGES IN QUANTITIES REQUIRED SHALL BE FURNISHED BY THE CONTRACTOR WITH NO ADDITIONAL COMPENSATION.
- ⑩ CONCRETE WEARING COURSE TYPE (3U17A) VOLUME IS APPROXIMATELY 24 CU. YDS. INCLUDES APPROXIMATELY 1600 SQ. FT. WITH A VOLUME OF 10 CU. YDS. FOR APPROACH PANELS.
- ⑪ SEE SUMMARY ON CONDUIT SHEET.



NO DATE BY CKD APPR REVISION 8:47:02 AM 3/12/2007				STATE PROJ. NO. 02-614-24 BRIDGE NO. 02572	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. Print Name: JEREMY A. WEST <i>Jeremy A. West</i> Date: 3/15/07 License: 42039	DRAWN BY: J. HOFFMAN DATE: 6/06 DESIGNED BY: C. BLACK DATE: 6/06 CHECKED BY: J. WEST DATE: 6/06 COMM. NO. 0054994	<b>SRF CONSULTING GROUP, INC.</b>	ANOKA COUNTY C.S.A.H. 14 OVER GEORGE WATCH LAKE WATERWAY BRIDGE DECK DETAILS (SHEET 2 OF 2)	SHEET B19 OF B33
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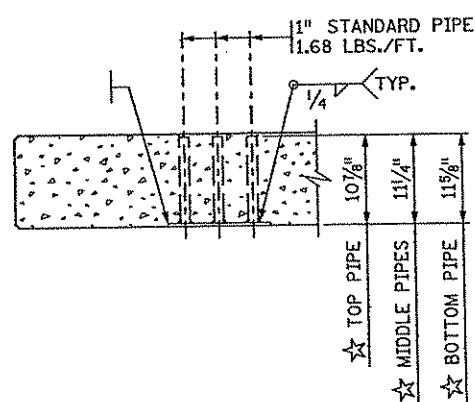
**INSIDE ELEVATION OF EAST RAILING**  
(CONCRETE WEARING COURSE NOT SHOWN)



**SECTION C-C**  
(EAST RAILING)

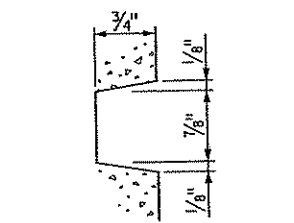
FOR PARAPET BILL OF REINFORCEMENT SEE SHEET B21

- GENERAL NOTES**
- LENGTH OF "TYPE F RAILING CONCRETE (3Y46)" FOR PAYMENT SHALL BE MEASURED BETWEEN THE OUTSIDE FACES OF THE CONCRETE RAIL.
  - CONCRETE RAILING = 477 LBS./FT. (0.117 CU. YDS./FT.)
  - FINISH ALL EDGES OF RAIL WITH 1/2" VEE, EXCEPT WHERE OTHERWISE NOTED.
  - MAXIMUM SPACING OF CONCRETE DEFLECTION JOINTS SHALL BE 20 FT.
  - SEE DECK DETAILS SHEET FOR JOINT SPACING.
  - GUARDRAIL CONNECTION TO BE STRUCTURAL STEEL, Mn/DOT SPEC. 3306.
  - GUARDRAIL CONNECTION TO BE INCLUDED IN PRICE BID FOR OTHER ITEMS.
  - RAIL QUANTITIES ARE INCLUDED IN SUMMARY OF QUANTITIES FOR SUPERSTRUCTURE.
  - ① PLACE BAR ON TOP OF BOTTOM REINFORCEMENT MAT.
  - ② SLOPE DECK AT 10% GRADE BELOW CONCRETE RAILING IF DECK IS POURED TO FULL DEPTH. DECK SHALL BE LEVEL BELOW CONCRETE RAILING WHEN WEARING COURSE IS USED.

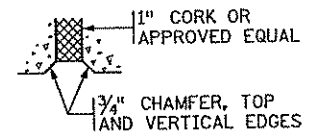


**SECTION B-B**

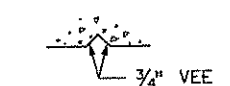
(REINFORCEMENT NOT SHOWN)  
★ DIMENSIONS INCLUDE 3/8" PLATE



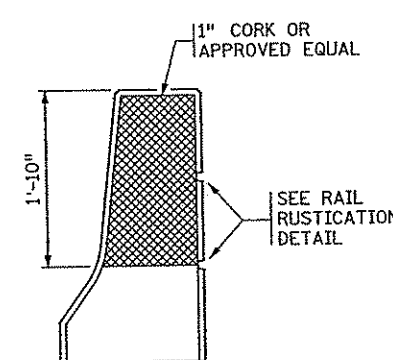
**RAIL RUSTICATION**



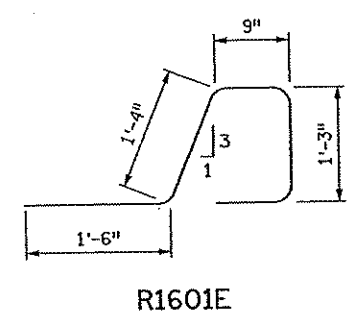
**SECTION E-E**



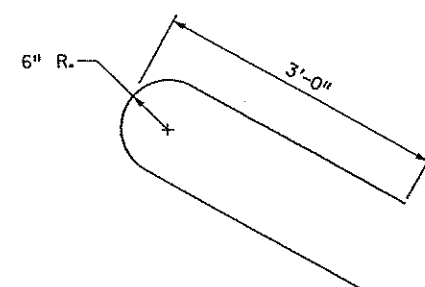
**SECTION F-F**



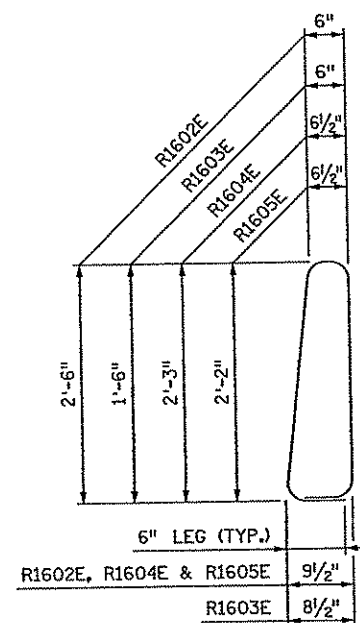
**SECTION G-G**



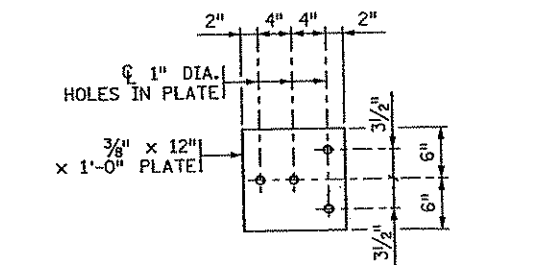
**R1601E**



**R2206E**

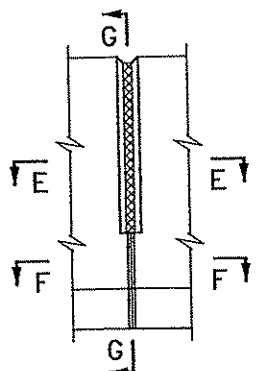


**R1602E, R1603E, R1604E & R1605E**



**GUARDRAIL CONNECTION DETAIL**

GALVANIZE AFTER FABRICATION PER Mn/DOT SPEC. 3394  
ESTIMATED WEIGHT = 22 LBS



**ELEVATION**

**DEFLECTION JOINT DETAILS**

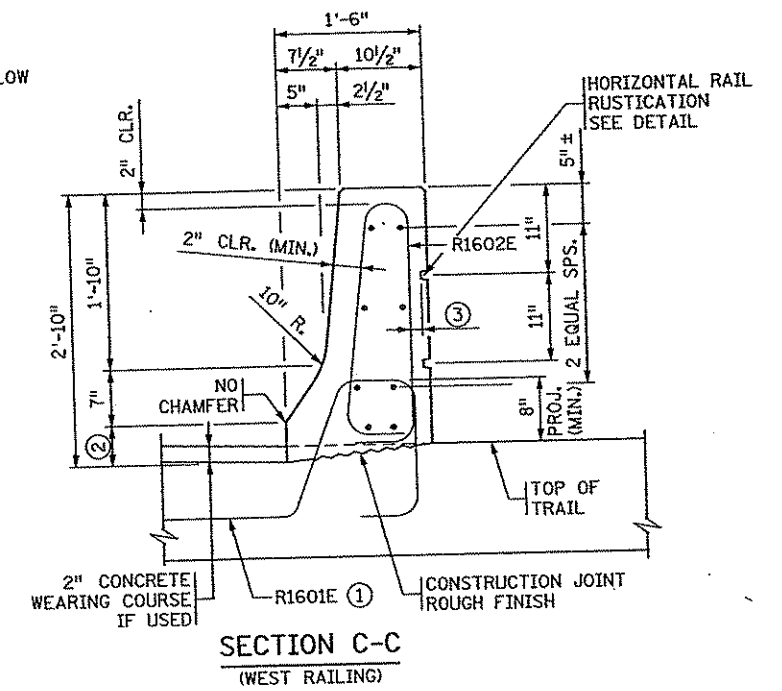
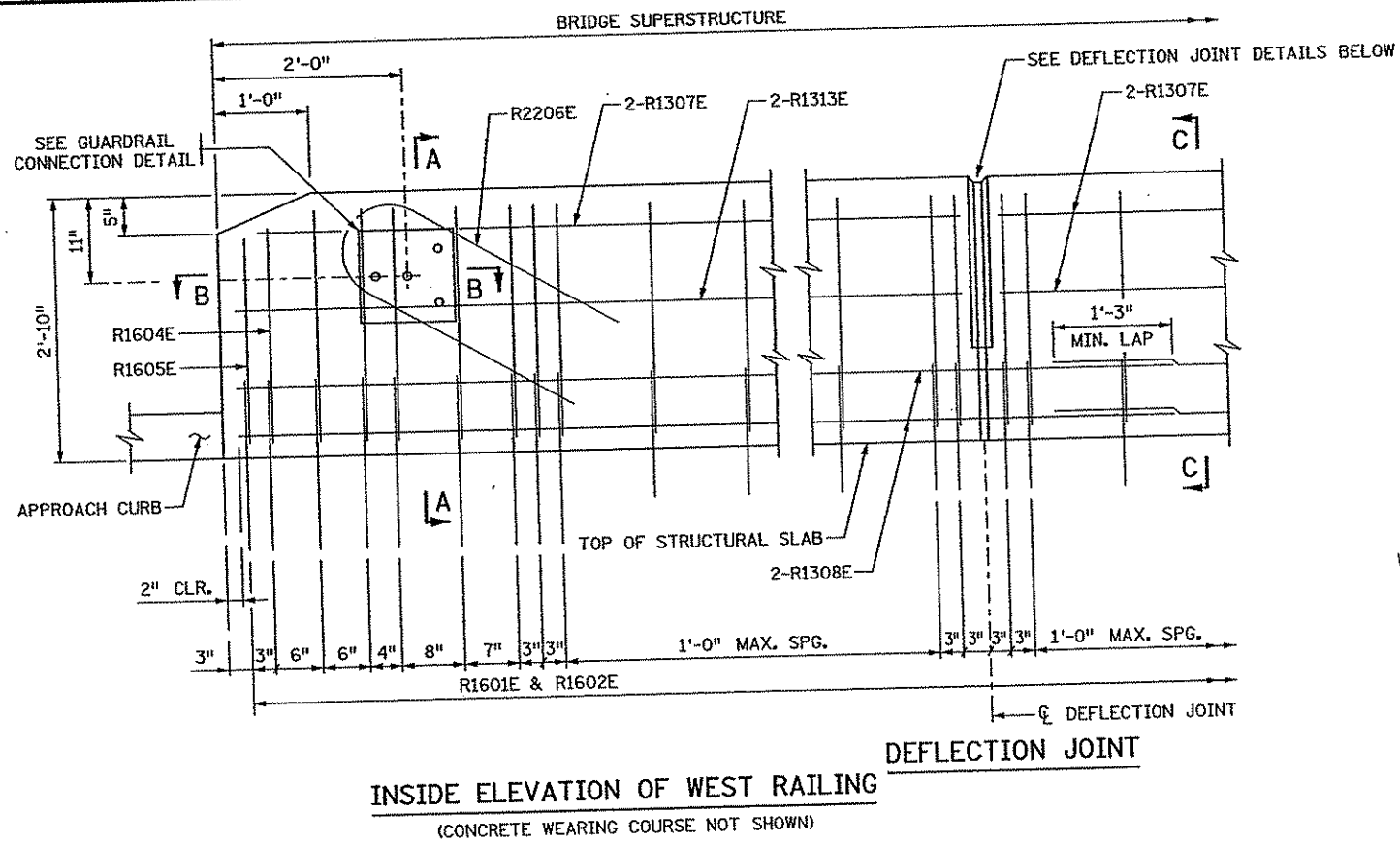
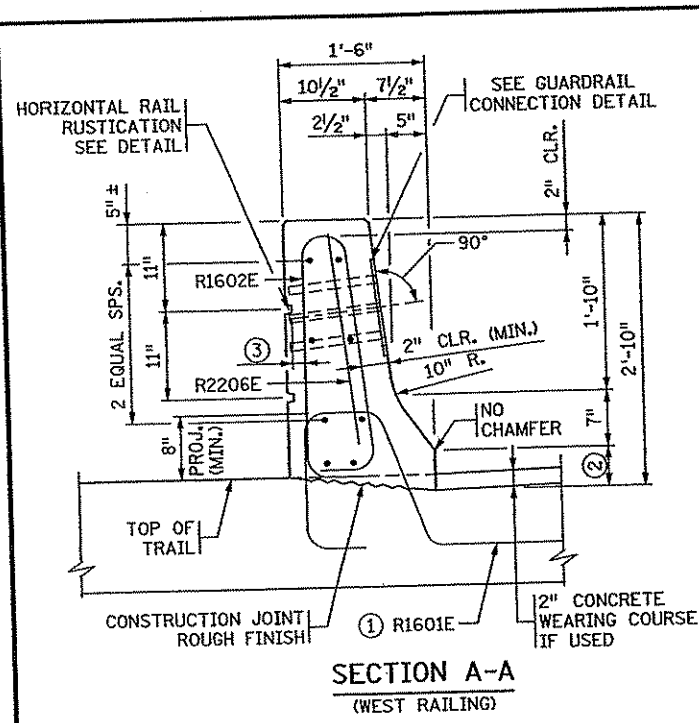
CERTIFIED BY *Jeremy A. West* 3/15/07  
LICENSED PROFESSIONAL ENGINEER  
NAME: JEREMY A. WEST DATE: 3/15/07 LIC. NO. 42039

CONCRETE RAILING (TYPE F)  
WITH INTEGRAL END POST  
(WITH CONCRETE WEARING COURSE)

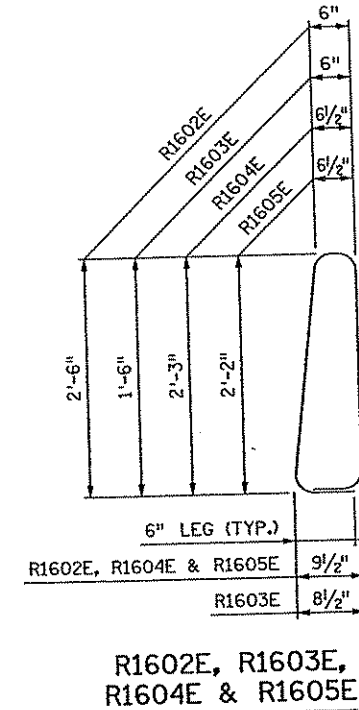
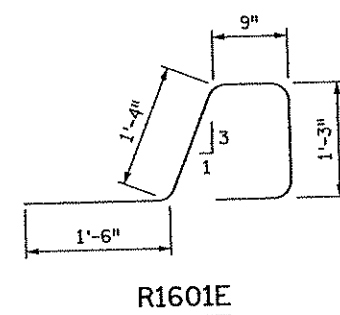
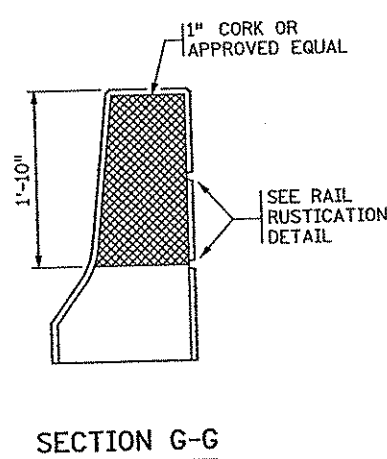
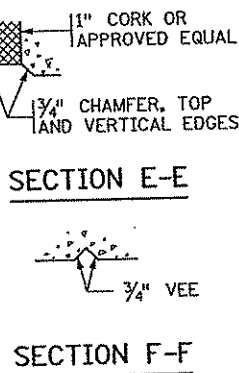
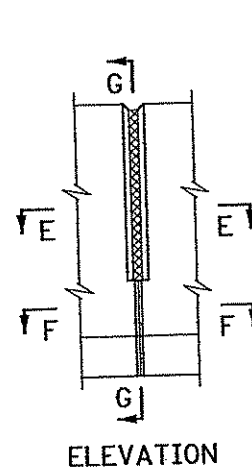
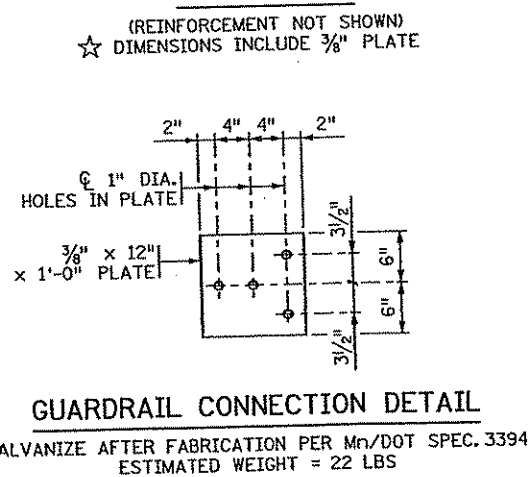
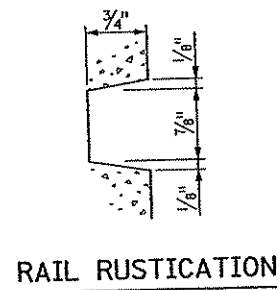
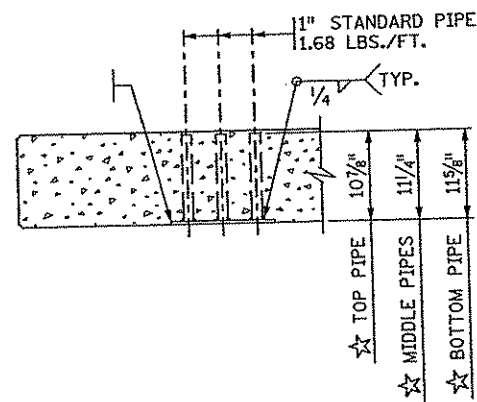
MODIFIED		FIG. 5-397.117	
DES: CB	DR: JEH	APPROVED:	BRIDGE NO. 02572
CHK: JAW	CHK: CB	SHEET NO. B20 OF B33 SHEETS	

REVISED:  
APPROVED: DECEMBER 18, 2003  
*Daniel A. Johnson*  
STATE BRIDGE ENGINEER





BILL OF REINFORCEMENT FOR RAILING				
BAR	NO.	LENGTH	SHAPE	LOCATION
R1601E	212	5'-5"		RAIL DOWEL
R1602E	307	6'-7"		RAIL VERTICAL
R1603E	4	4'-7"		RAIL VERTICAL
R1604E	4	6'-1"		RAIL VERTICAL
R1605E	4	5'-11"		RAIL VERTICAL
R2206E	4	6'-6"		RAIL VERTICAL
R1307E	36	17'-10"		RAIL LONGITUDINAL
R1308E	16	46'-3"		RAIL LONGITUDINAL
R1309E	6	13'-6"		RAIL LONGITUDINAL
R1310E	2	13'-8"		RAIL LONGITUDINAL
R1311E	8	34'-6"		RAIL LONGITUDINAL
R1312E	10	22'-4"		RAIL LONGITUDINAL
R1313E	4	18'-0"		RAIL LONGITUDINAL
R1314E	2	22'-0"		RAIL LONGITUDINAL



**GENERAL NOTES**

- LENGTH OF "TYPE F RAILING CONCRETE (3Y46)" FOR PAYMENT SHALL BE MEASURED BETWEEN THE OUTSIDE FACES OF THE CONCRETE RAIL.
- CONCRETE RAILING = 477 LBS./FT. (0.117 CU. YDS./FT.)
- FINISH ALL EDGES OF RAIL WITH 1/2" VEE, EXCEPT WHERE OTHERWISE NOTED.
- MAXIMUM SPACING OF CONCRETE DEFLECTION JOINTS SHALL BE 20 FT.
- SEE DECK DETAILS FOR JOINT SPACING.
- GUARDRAIL CONNECTION TO BE STRUCTURAL STEEL, Mn/DOT SPEC. 3306.
- GUARDRAIL CONNECTION TO BE INCLUDED IN PRICE BID FOR OTHER ITEMS.
- RAIL QUANTITIES ARE INCLUDED IN SUMMARY OF QUANTITIES FOR SUPERSTRUCTURE.
- ① PLACE BAR ON TOP OF BOTTOM REINFORCEMENT MAT.
- ② 3" MEASURED FROM TOP OF FINISHED ROADWAY SURFACE.
- ③ 2 1/4" CLEAR

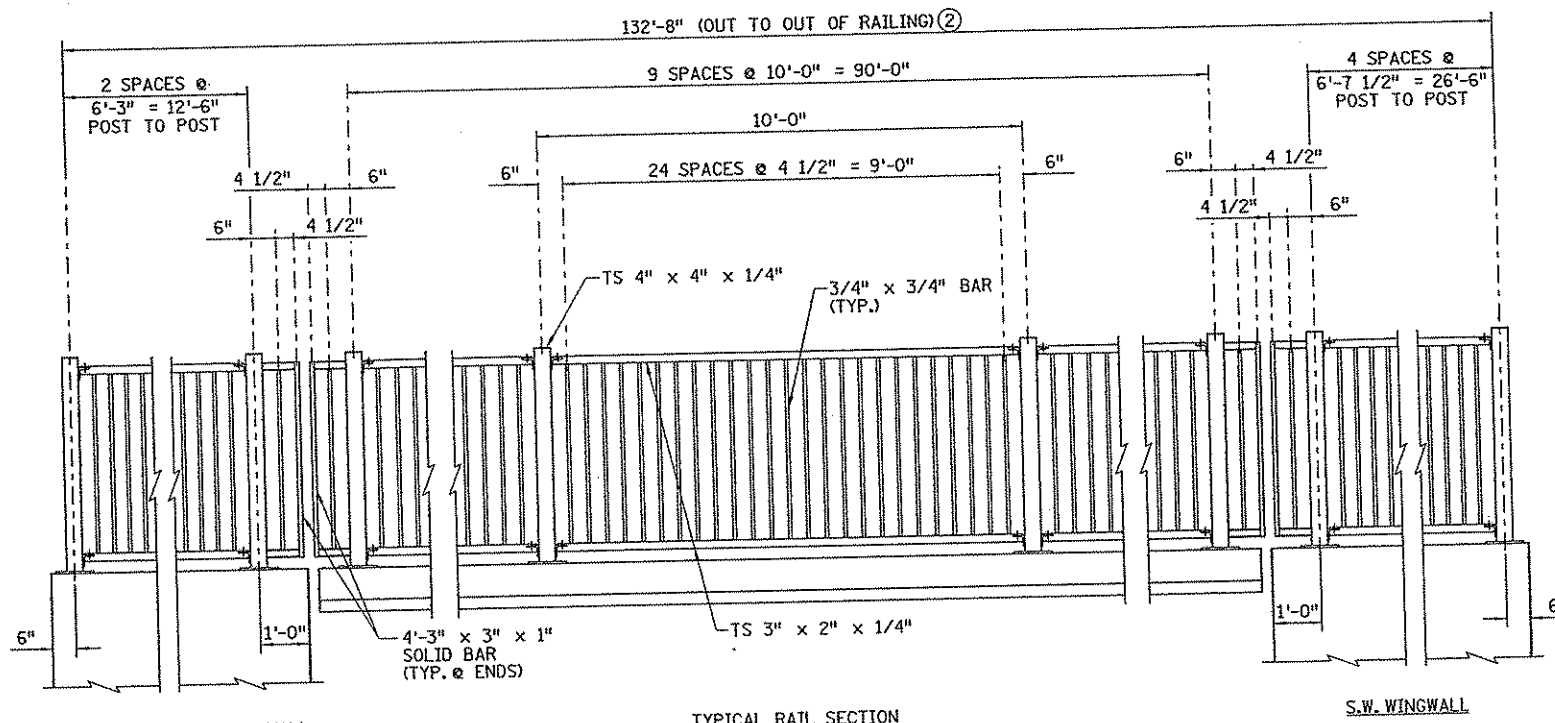
REVISED:  
APPROVED: DECEMBER 18, 2003  
*Samuel A. Hanson*  
STATE BRIDGE ENGINEER

DEFLECTION JOINT DETAILS

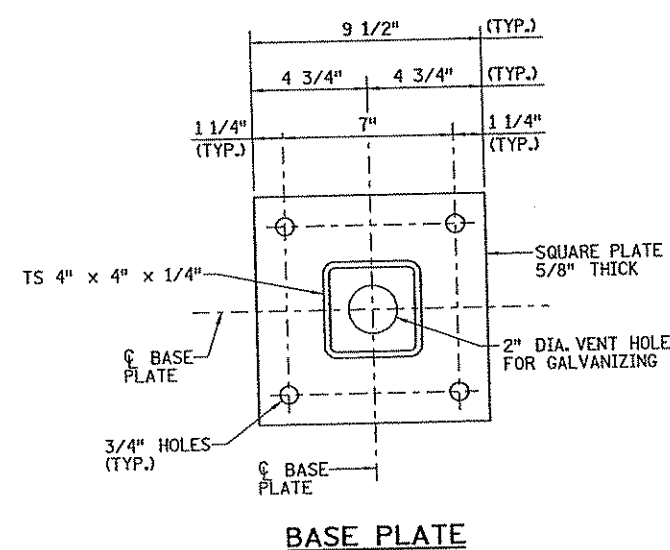
CERTIFIED BY *Jeremy A. West* 3/15/07  
DATE  
LICENSED PROFESSIONAL ENGINEER  
NAME: JEREMY A. WEST LIC. NO. 42039

CONCRETE RAILING (TYPE F)  
WITH INTEGRAL END POST  
(WITH CONCRETE WEARING COURSE)

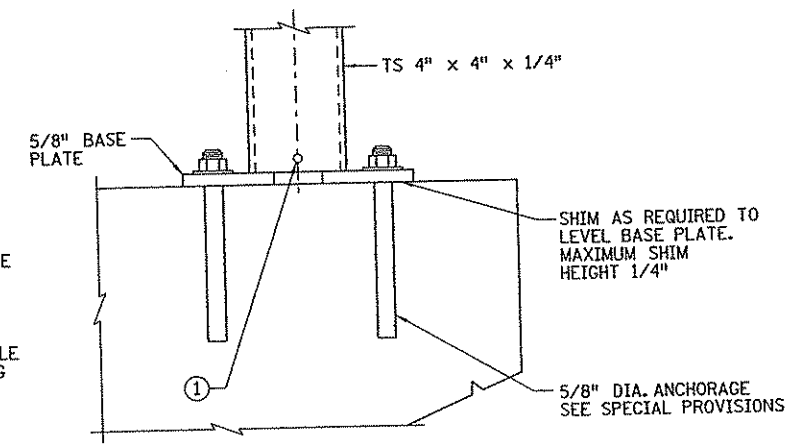
MODIFIED		FIG. 5-397.117	
DES: CB	DR: JEH	APPROVED:	BRIDGE NO. 02572
CHK: JAW	CHK: CB	SHEET NO. B21 OF B33 SHEETS	



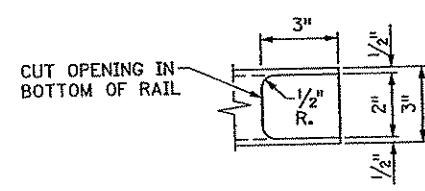
TYPICAL RAIL SECTION  
**RAILING ELEVATION**



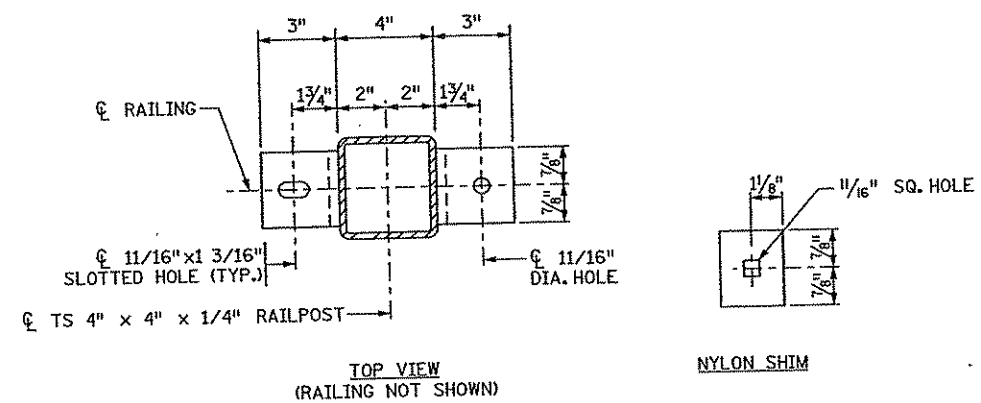
**BASE PLATE**



**ANCHOR DETAIL**

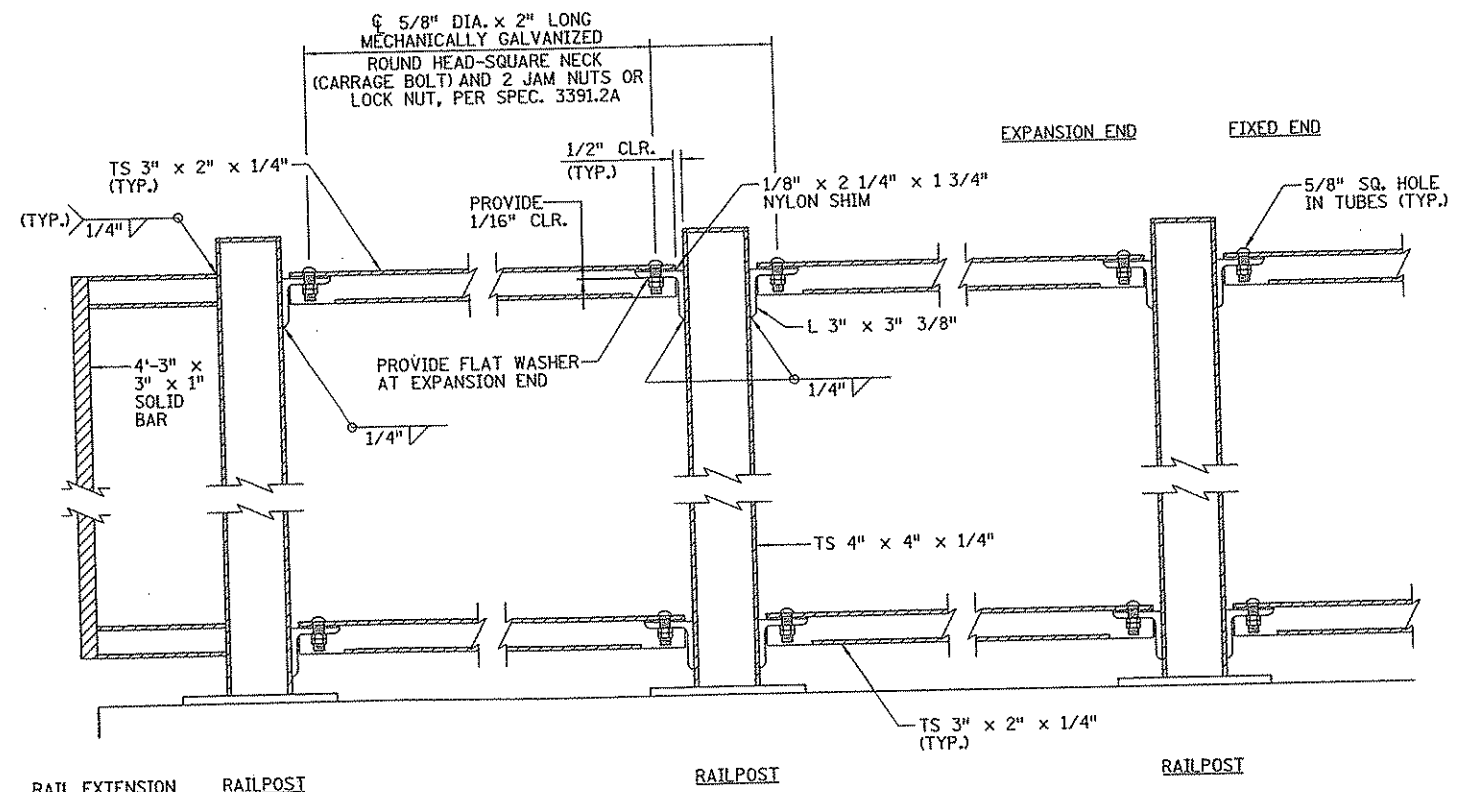


**BOTTOM VIEW RAIL NOTCH**

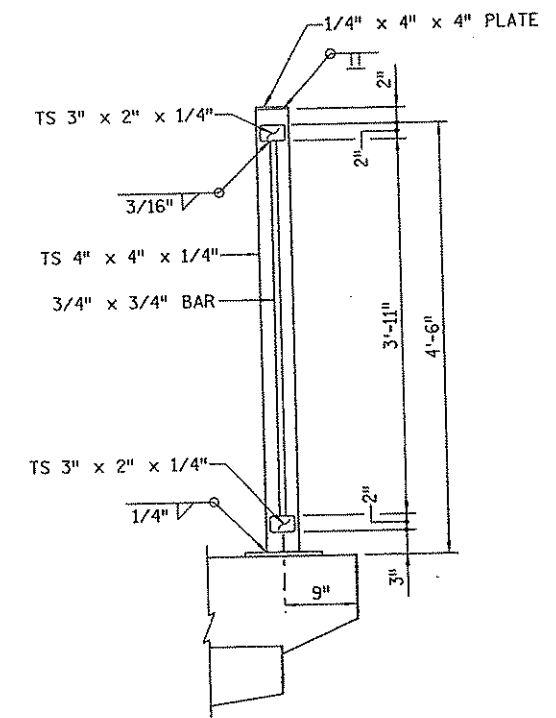


TOP VIEW  
(RAILING NOT SHOWN)

NYLON SHIM



**SECTION ON C OF RAIL**



**RAILING SECTION**

**GENERAL NOTES**

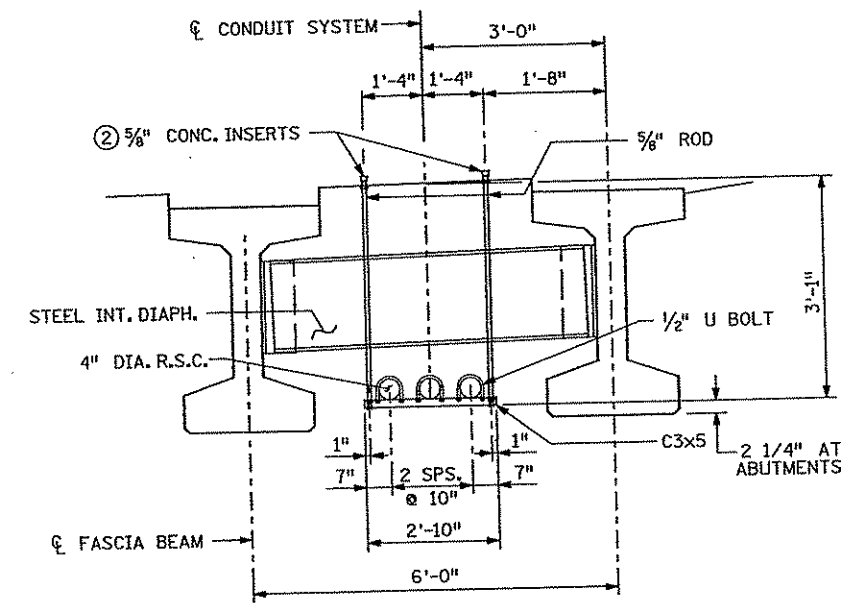
- LENGTH OF "ORNAMENTAL METAL RAILING" FOR PAYMENT SHALL BE MEASURED BETWEEN THE CENTERS OF THE END RAILPOSTS.
- ALL STRUCTURAL STEEL TUBING IN THE RAIL SHALL BE A500, GRADE B PER Mn/DOT SPEC. 3362.
- MATERIAL FOR CLOSURE PLATES AND BASE PLATES SHALL CONFORM TO Mn/DOT SPEC. 3306.
- FOR RAIL ANCHORAGE REQUIREMENTS SEE SPECIAL PROVISIONS.
- RAIL POSTS AND PICKETS SHALL BE NORMAL TO GRADE. HORIZONTAL RAILS SHALL BE CAMBERED/CURVED WHERE APPLICABLE AND PARALLEL TO THE EDGE OF SIDEWALK PROFILE.
- GALVANIZE BOLTS, NUTS, AND WASHERS PER Mn/DOT SPEC. 3392.
- GALVANIZE ALL OTHER STRUCTURAL STEEL PER Mn/DOT SPEC. 3394 AFTER FABRICATION.
- RAILING EXPANSION JOINTS SHALL BE PLACED IN BOTH RAILS AND IN EACH PANEL.
- THE RAILING, BASE PLATES, AND PROTRUDING PORTIONS OF BOLTS, NUTS AND WASHERS SHALL BE PAINTED IN ACCORDANCE WITH THE SPECIAL PROVISIONS.
- RAILING SHALL BE GROUNDED WITH 5/8" DIA. COPPER ROD AS PER Mn/DOT SPEC. 2557.
- ① VENT HOLES SHALL BE DRILLED IN THE RAIL POST BASE AND THE RAIL TUBES AS NECESSARY TO FACILITATE GALVANIZING.
- ② MEASURED TO CENTER OF END POST.

NO. DATE BY CKD APPR				REVISION	8:47:05 AM 3/12/2007	STATE PROJ. NO. 02-614-24	BRIDGE NO. 02572	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. Print Name: JEREMY A. WEST Date: 3/5/07 License: 42039	DRAWN BY J. HOFFMAN DESIGNED BY C. BLACK CHECKED BY J. WEST COMM. NO. 0054994	DATE 6/06 6/06 6/06		ANOKA COUNTY	SHEET
												C.S.A.H. 14 OVER GEORGE WATCH LAKE WATERWAY	B22
												RAILING DETAILS	OF
													B33

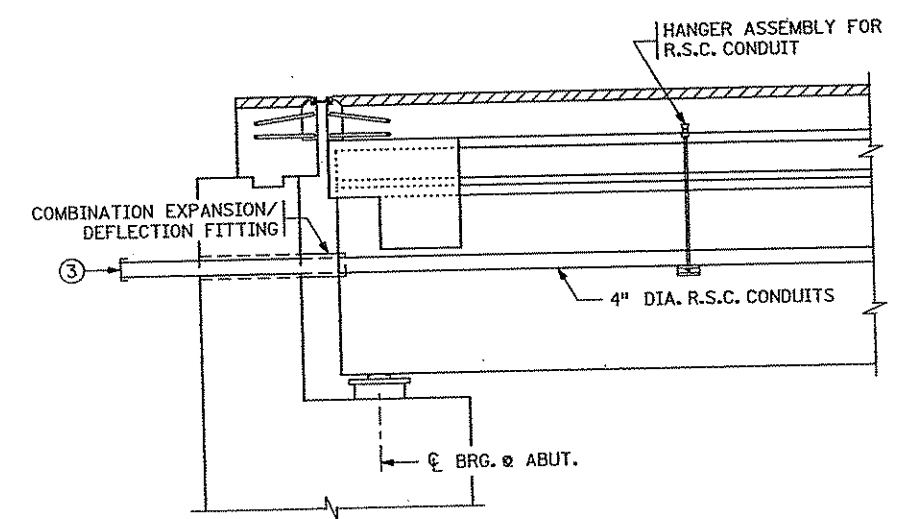
**SUMMARY OF QUANTITIES FOR CONDUIT SYSTEM**

HANGER ASSEMBLY	18 UNITS
CONDUIT CAP	12 UNITS
COMBINATION EXPANSION/DEFLECTION FITTING	12 UNITS
4" RIGID STEEL CONDUIT	1200 LIN. FT.
① 6" PIPE SLEEVE	12 UNITS

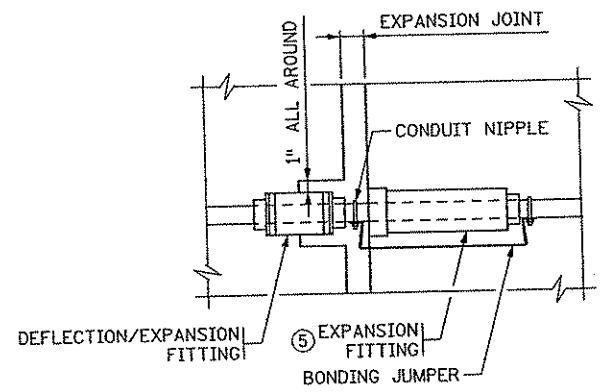
ALL MATERIAL LISTED ABOVE IS INCLUDED IN PRICE BID FOR "CONDUIT SYSTEM".



**TRANSVERSE SECTION**  
SEE TYPICAL DECK SECTION FOR LOCATIONS



**LONGITUDINAL SECTION**



**COMBINATION DEFLECTION/EXPANSION FITTING**

**GENERAL NOTES**

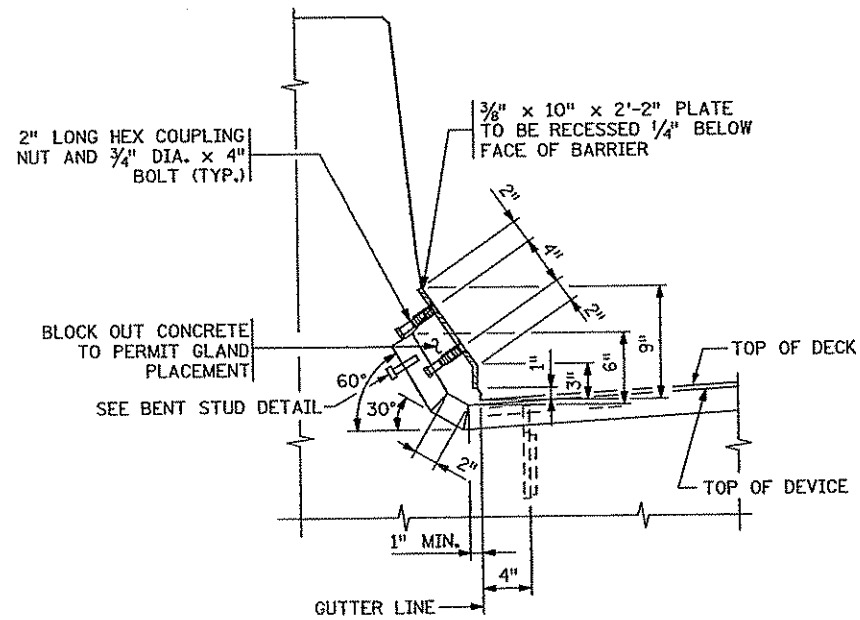
- RODS, EYE BOLTS AND PIPE CLAMPS SHALL COMPLY WITH Mn/DOT SPEC. 3313, TYPE I.
- TURNBUCKLES AND EYE BOLTS SHALL COMPLY WITH A.S.T.M. A235 CLASS A MINIMUM REQUIREMENTS.
- FLAT BARS AND ANCHORAGES SHALL COMPLY WITH Mn/DOT SPEC. 3306.
- CONCRETE INSERTS SHALL BE APPROVED TYPE MALLEABLE IRON. MATERIAL AS PER Mn/DOT SPEC. 3324, GRADE 35018. TAP AFTER GALVANIZING.
- GALVANIZE BOLTS, NUTS, WASHERS, TURNBUCKLES, RODS, EYE BOLTS, AND INSERTS AS PER Mn/DOT SPEC. 3392. GALVANIZE OTHER MATERIAL AS PER Mn/DOT SPEC. 3394 AFTER FABRICATION.
- PIPE SLEEVES SHALL COMPLY WITH Mn/DOT SPEC. 3362.
- ① SEE ABUTMENT SHEETS FOR LOCATION AND DETAILS.
- ② SPACE INSERTS AT 10'-0" MAXIMUM CENTERS.
- ③ CAP ENDS.

REVISION: 03-02-2005  
APPROVED: SEPTEMBER 26, 2003  
*David A. Haggren*  
STATE BRIDGE ENGINEER

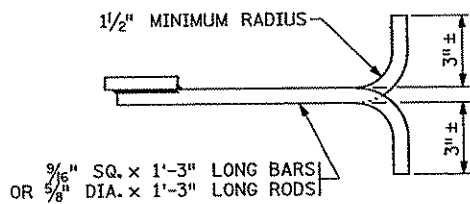
CERTIFIED BY *Jeremy A. West* 3/15/07  
LICENSED PROFESSIONAL ENGINEER DATE  
NAME: JEREMY A. WEST LIC. NO. 42039

CONDUIT SYSTEM

DES: CEB	DR: MM	APPROVED:	BRIDGE NO. 02572
CHK: JAW	CHK: JAW		
MODIFIED			FIG. 5-397.402
SHEET NO. B23 OF B33 SHEETS			

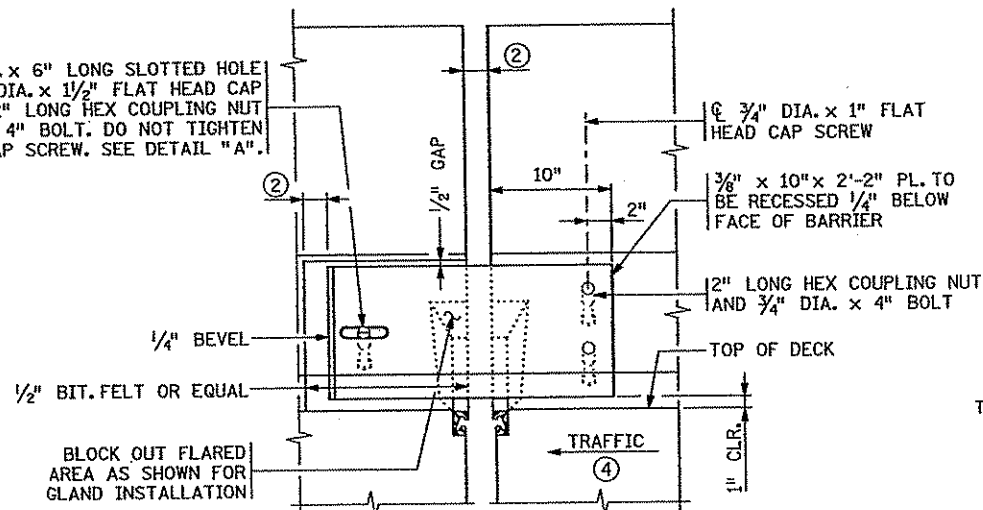


SECTION THROUGH RAILING  
TYPE F RAILING

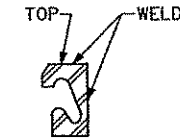


BAR-ROD DETAIL

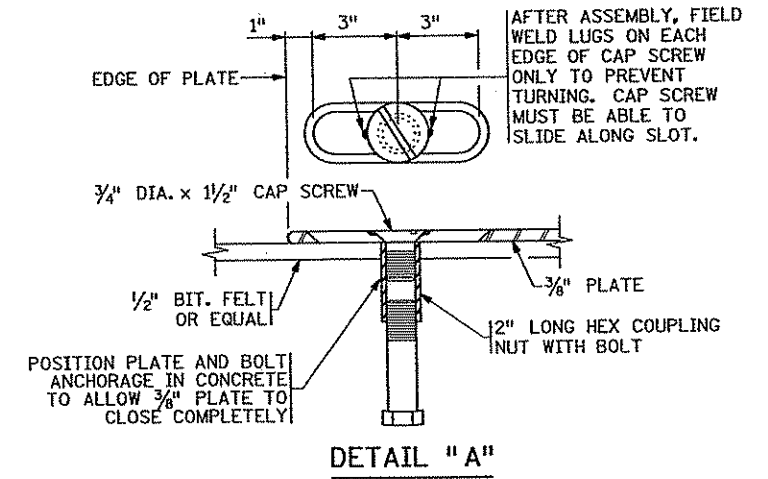
1" DIA. x 6" LONG SLOTTED HOLE FOR 3/4" DIA. x 1/2" FLAT HEAD CAP SCREW WITH 2" LONG HEX COUPLING NUT AND 3/4" DIA. x 4" BOLT. DO NOT TIGHTEN DOWN CAP SCREW. SEE DETAIL "A".



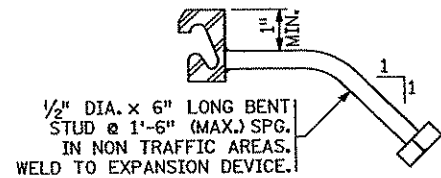
RAILING ELEVATION



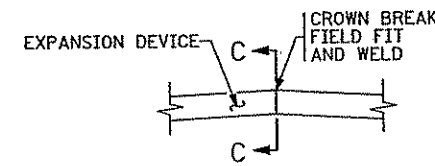
SECTION C-C



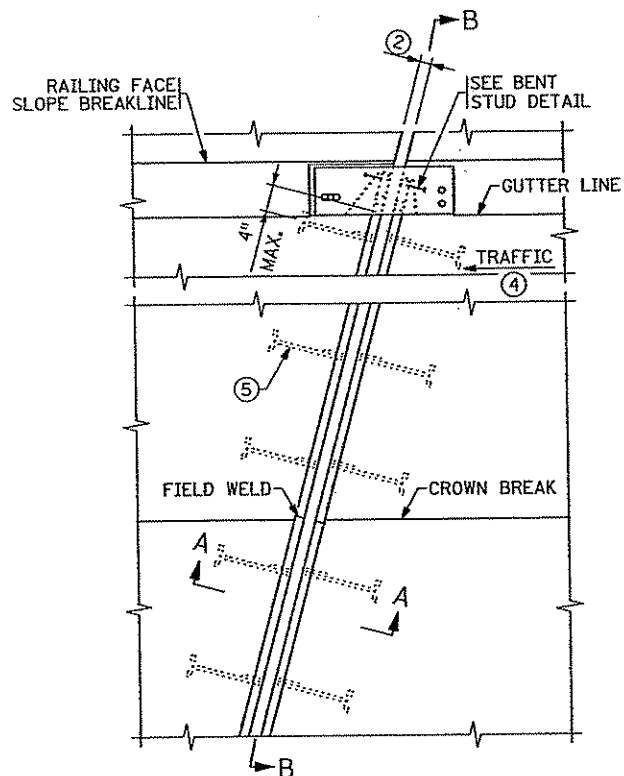
DETAIL "A"



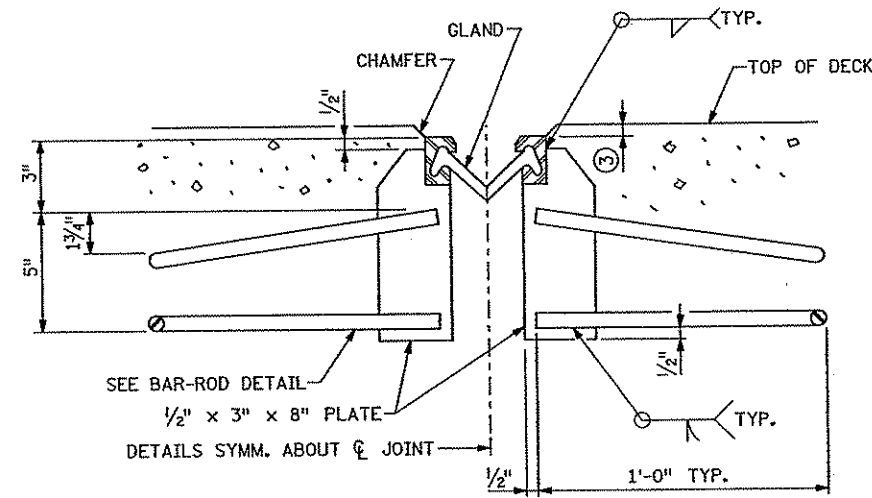
BENT STUD DETAIL



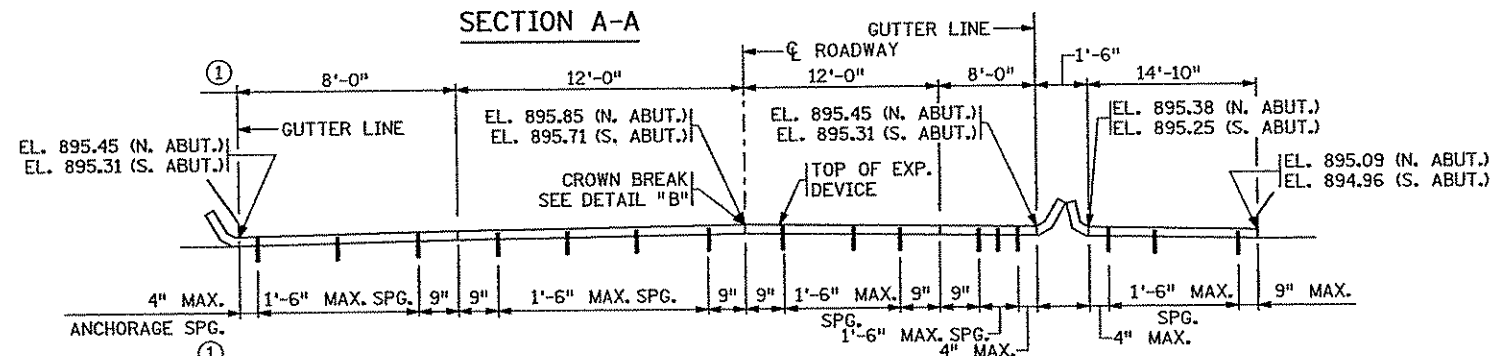
DETAIL "B"



PLAN VIEW @ EXPANSION DEVICE  
WITH STRAIGHT DEVICE



SECTION A-A



SECTION B-B ~ ALONG Q JOINT

- GENERAL NOTES**
- GALVANIZE STRUCTURAL STEEL AFTER FABRICATION AS PER Mn/DOT SPEC. 3394. GALVANIZE FASTENERS AS PER Mn/DOT SPEC. 3392.
  - JOINTS IN EXTRUSION SHALL BE LOCATED AT BREAKS IN TRANSVERSE PROFILE AND AS OTHERWISE REQUIRED. JOINTS SHALL BE CLOSE FIT AND WELDED. REPAIR AFTER WELDING AS PER Mn/DOT SPEC. 2471.3L.
  - STRUCTURAL STEEL SHALL COMPLY WITH Mn/DOT SPEC. 3306 OR Mn/DOT SPEC. 3309.
  - EXPANSION DEVICE SHALL BE STRAIGHTENED TO A TOLERANCE OF 1/8" IN 10 FT.
  - CAP SCREWS SHALL BE COUNTERSUNK 1/16" BELOW TOP OF PLATE.
  - LENGTH OF PAYMENT FOR DEVICE IS FROM OUT TO OUT OF EXTRUSION ALONG CENTERLINE OF JOINT.
- DIMENSIONS ARE ALONG CENTERLINE OF JOINT.
  - 2" AT ALL TEMPS
  - 1/8" (1/4" MAX.)
  - SEE SHEET NO. B1 FOR DIRECTION OF TRAFFIC.
  - PLACE BAR-ROD NORMAL TO JOINT.

REVISION:  
APPROVED: SEPTEMBER 26, 2003  
Daniel A. Morrison  
STATE BRIDGE ENGINEER

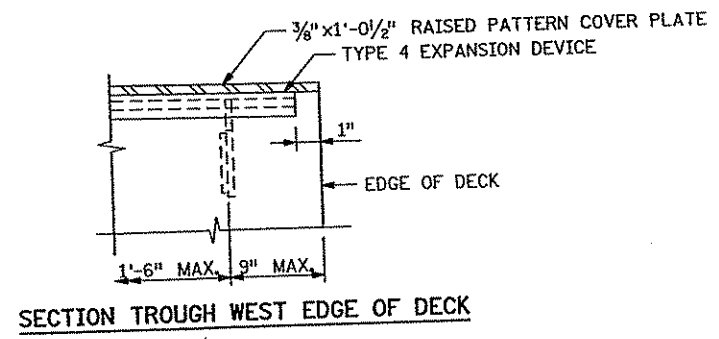
CERTIFIED BY: *Jeremy A. West* 3/15/07  
LICENSED PROFESSIONAL ENGINEER  
NAME: JEREMY A. WEST  
DATE: 3/15/07  
LIC. NO. 42039

WATERPROOF  
EXPANSION DEVICE  
(WITH TYPE F BARRIER)

DES: CEB DR: MM  
CHK: PLR CHK: JAW  
APPROVED:  
SHEET NO. B24 OF B33 SHEETS

MODIFIED FIG. 5-397.627

BRIDGE NO.  
02572



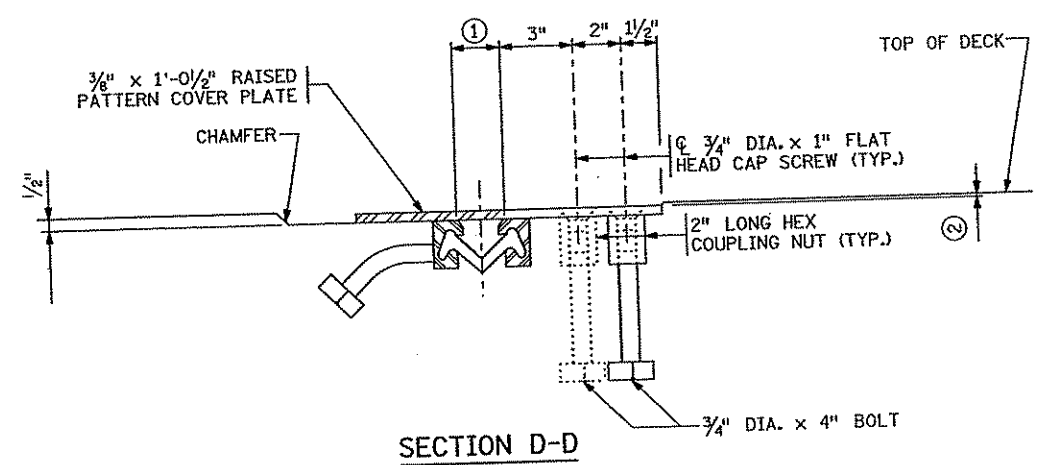
**GENERAL NOTES**  
 GALVANIZE STRUCTURAL STEEL AFTER FABRICATION AS PER Mn/DOT SPEC. 3394. GALVANIZE FASTENERS AS PER Mn/DOT SPEC. 3392.

JOINTS IN EXTRUSION SHALL BE LOCATED AT BREAKS IN TRANSVERSE PROFILE AND AS OTHERWISE REQUIRED. JOINTS SHALL BE CLOSE FIT AND WELDED. REPAIR AFTER WELDING AS PER Mn/DOT SPEC. 2471.3L.

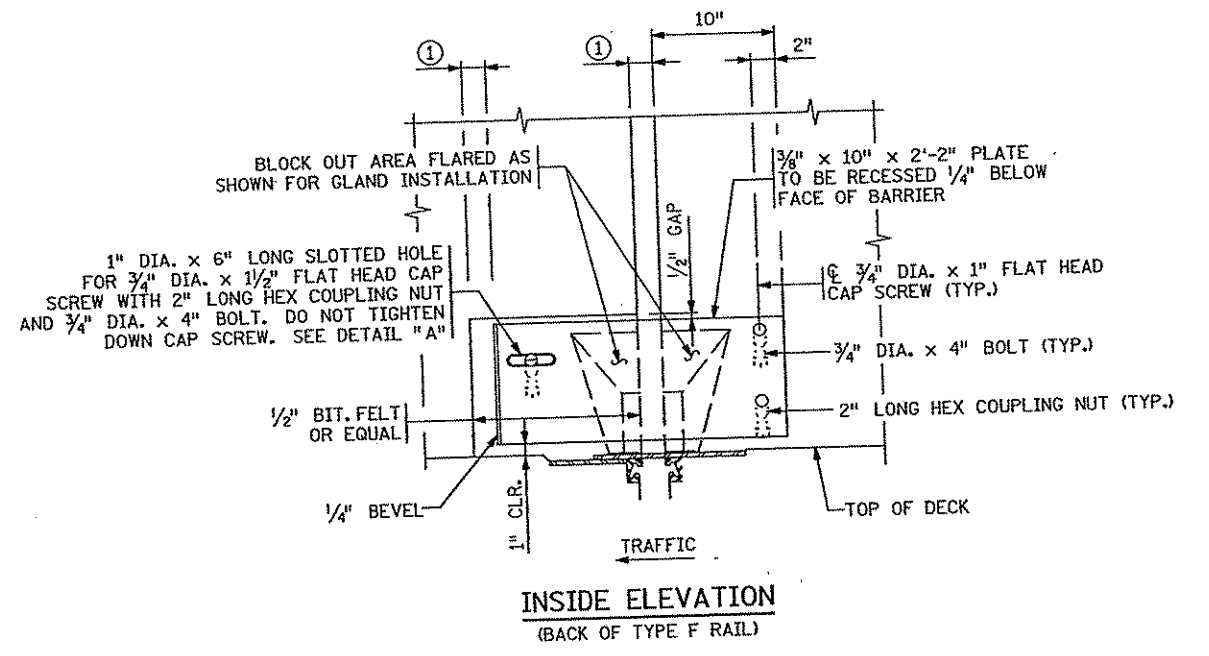
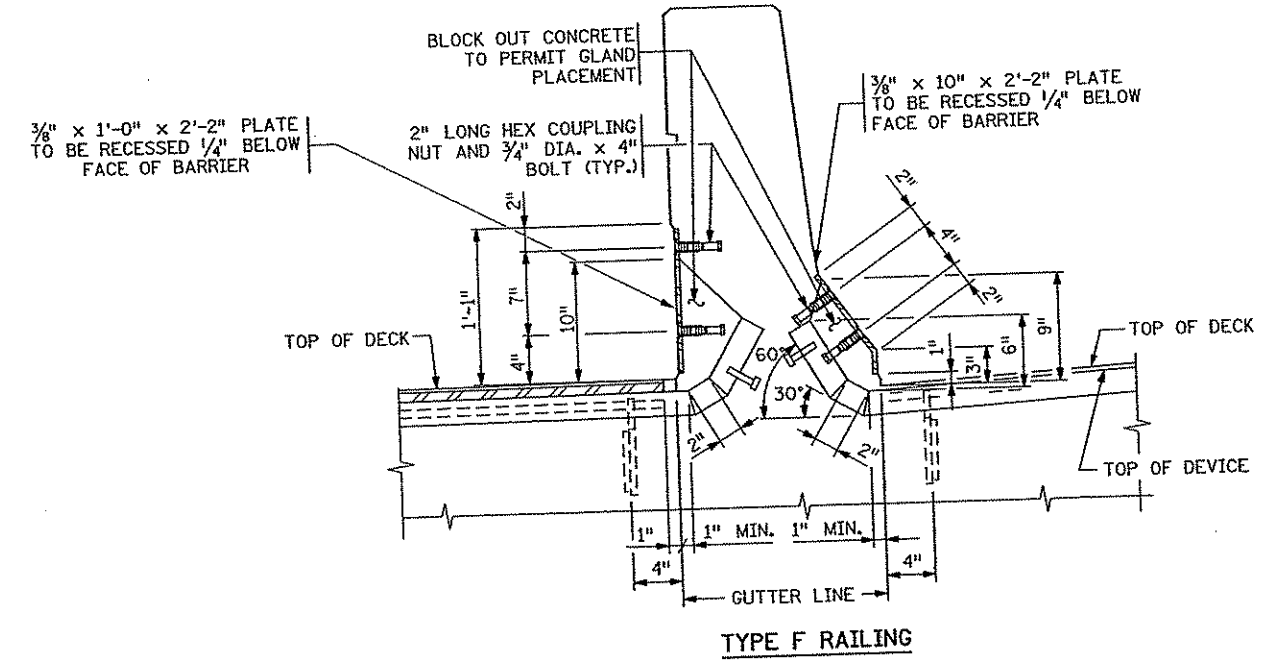
STRUCTURAL STEEL SHALL COMPLY WITH Mn/DOT SPEC. 3306 OR Mn/DOT SPEC. 3309.  
 EXPANSION DEVICE SHALL BE STRAIGHTENED TO A TOLERANCE OF 1/8" IN 10 FT.

CAP SCREWS SHALL BE COUNTERSUNK 1/16" BELOW TOP OF PLATE.  
 LENGTH OF PAYMENT FOR DEVICE IS FROM OUT TO OUT OF EXTRUSION ALONG CENTERLINE OF JOINT.

- ① 2" AT ALL TEMPS
- ② 1/8" (1/4" MAX.).



NOTE:  
 TRANSVERSE DECK REINFORCEMENT MAY BE SHIFTED THE MINIMUM DISTANCE REQUIRED FOR EXPANSION DEVICE PLACEMENT

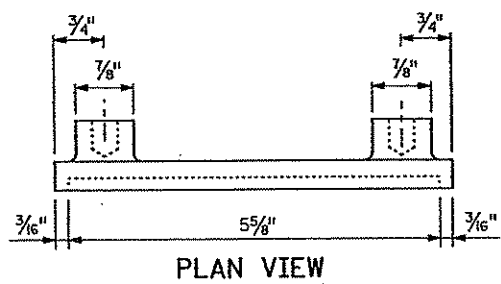


REVISIONS:  
 APPROVED: SEPTEMBER 26, 2003  
 State Bridge Engineer

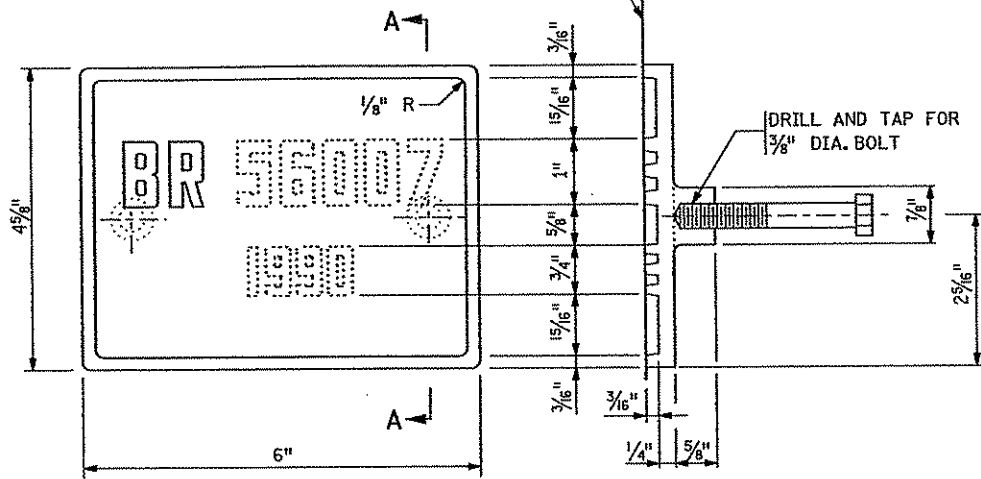
CERTIFIED BY *Jeremy A. West* 3/15/07  
 LICENSED PROFESSIONAL ENGINEER DATE  
 NAME: JEREMY A. WEST LIC. NO. 42039

**WATERPROOF EXPANSION DEVICE**  
 (WITH RAISED MEDIAN OR SIDEWALK)

MODIFIED		FIG. 5-397.630	
DES: CEB	DR: MM	APPROVED:	
CHK: JAW	CHK: JAW	BRIDGE NO. 02572	
SHEET NO. B25 OF B33 SHEETS			



PLAN VIEW



ELEVATION

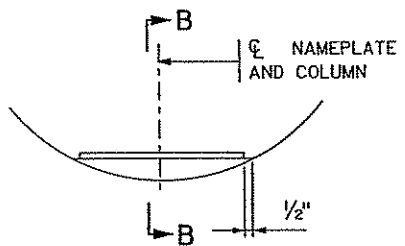
SECTION A-A

SET NAMEPLATE FLUSH WITH SURFACE OF CONCRETE EXCEPT AT ROUND COLUMNS FOR PIERS.

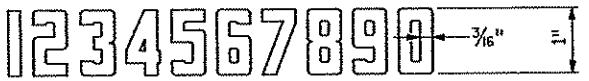
DRILL AND TAP FOR 3/8" DIA. BOLT

THE DASHED NUMBERS SHOWN ABOVE ARE FOR ILLUSTRATION. DATA TO BE SHOWN ON NAMEPLATE IS AS FOLLOWS:

BRIDGE 02572  
YEAR 2007



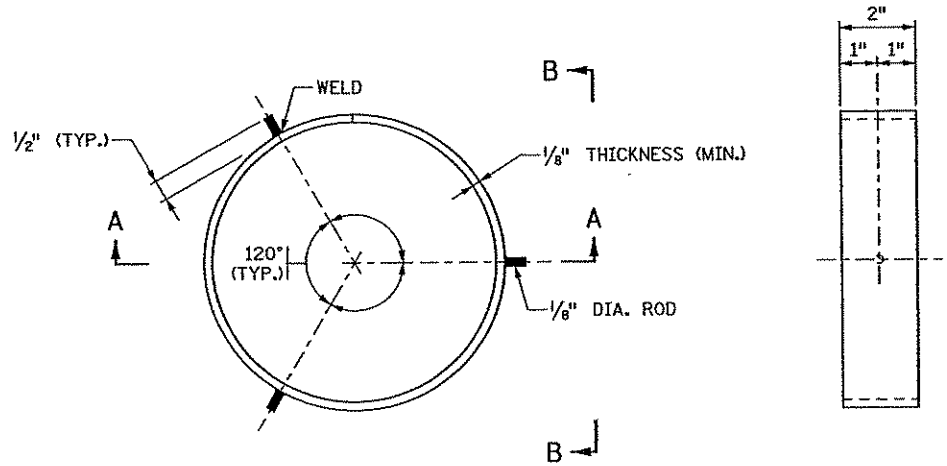
NAMEPLATE PLACEMENT  
(ROUND CONCRETE PIER COLUMNS)



NUMBERS FOR NAMEPLATE

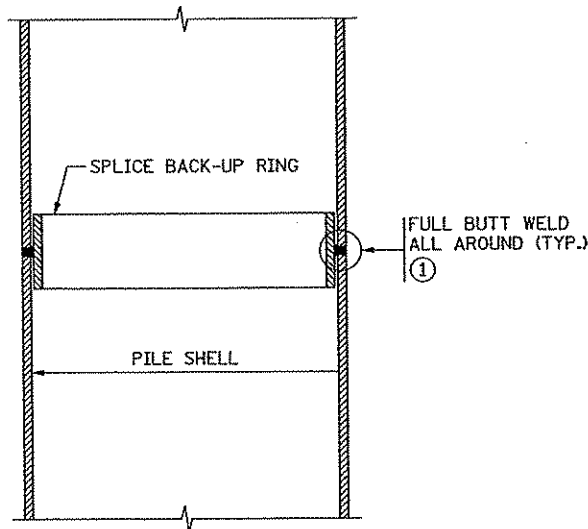
NOTES:

- NO SHOP DRAWING REQUIRED.
- MATERIAL SHALL COMPLY WITH Mn/DOT SPEC. 3327.
- LETTERS AND NUMBERS SHALL CONFORM TO THOSE SHOWN.
- DRAFT ON LETTERS AND NUMBERS SHALL NOT BE MORE THAN 3" IN 12".
- HORIZONTAL SPACING OF LETTERS AND NUMBERS SHALL PRODUCE A BALANCED LAYOUT IN PROPORTION TO SPACING SHOWN.
- TOP SURFACE OF LETTERS, NUMBERS AND FRAMES SHALL BE BURNISHED.
- FURNISH 2 STEEL BOLTS 3/8" DIA. x 3" LONG WITH EACH PLATE.
- ALL DIMENSIONS FOR 3/4" HIGH LETTERS AND NUMBERS SHALL BE IN DIRECT PROPORTION TO THOSE SHOWN FOR THE 1" HIGH LETTERS AND NUMBERS.



PLAN VIEW SPLICE  
PILE NOT SHOWN

SECTION B-B  
PILE NOT SHOWN



SECTION A-A

NOTES:

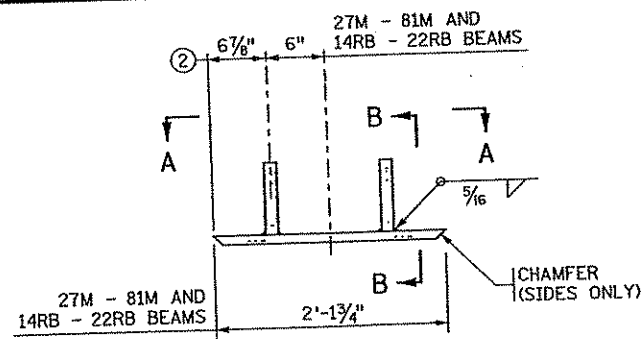
- APPROVED COMMERCIAL PILE SPLICE BACK-UP RING MAY BE USED IN LIEU OF THE TYPE DETAILED. BACK-UP RING SHALL HAVE A TIGHT FIT.
- WELDING ELECTRODES SHALL BE CELLULOSIC TYPE ELECTRODES E-6010 OR E-6011.
- ELECTRODES WHICH HAVE BECOME WET, SOILED OR DAMAGED SHALL NOT BE USED.
- WELDING SHALL NOT BE DONE WHEN THE AMBIENT TEMPERATURE IS LOWER THAN 0° F. OR WHEN THE PILE IS WET OR EXPOSED TO FALLING RAIN OR SNOW. WHEN THE PILE METAL TEMPERATURE IS BELOW 32° F., THE PILE METAL IN THE AREA OF THE WELD SHALL BE HEATED TO A MINIMUM TEMPERATURE OF 70° F. AND MAINTAINED AT THIS TEMPERATURE DURING WELDING.
- ① FOR PILE SHELL THICKNESSES GREATER THAN 1/2", USE A B-U4d WELD CONFIGURATION.

APPROVED: NOVEMBER 22, 2002	STATE OF MINNESOTA DEPARTMENT OF TRANSPORTATION	REVISION	DETAIL NO.
<i>Daniel J. Morgan</i> STATE BRIDGE ENGINEER	BRIDGE NAMEPLATE (FOR NEW BRIDGES)		B101

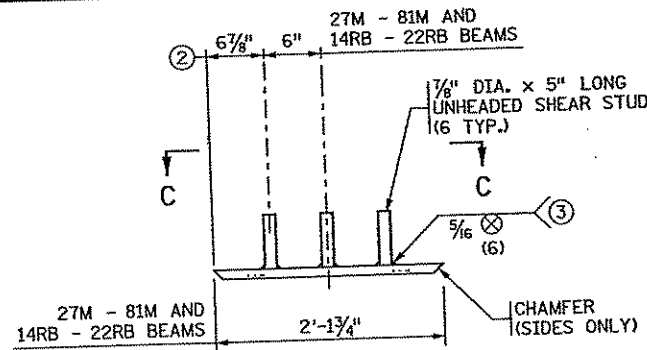
APPROVED: NOVEMBER 22, 2002	STATE OF MINNESOTA DEPARTMENT OF TRANSPORTATION	REVISION	DETAIL NO.
<i>Daniel J. Morgan</i> STATE BRIDGE ENGINEER	PILE SPLICE (CAST-IN-PLACE CONCRETE PILES)		B201

CERTIFIED BY <i>Jeremy A. West</i> LICENSED PROFESSIONAL ENGINEER DATE 3/16/07	TITLE: DETAILS	DES: JAW CHK: PLR	DR: JEH CHK: JAW	APPROVED:	Bridge No. 02572
NAME: JEREMY A. WEST LIC. NO. 42039		Sheet No. B26 of B33 Sheets			

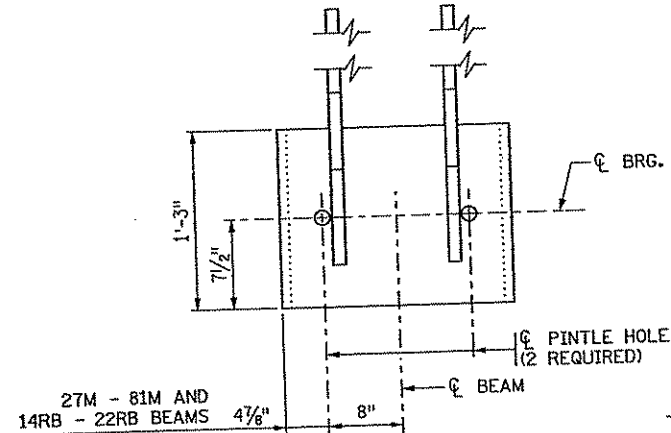
S.P. 02-614-24



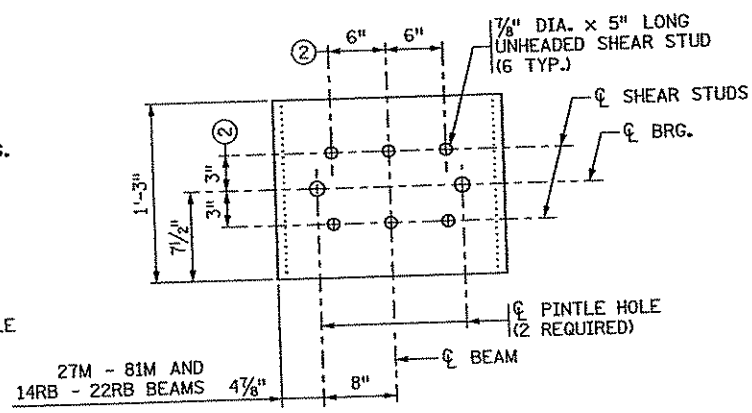
FRONT ELEVATION - OPTION 1



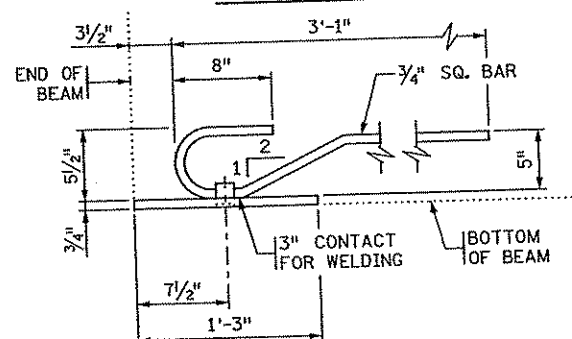
FRONT ELEVATION - OPTION 2



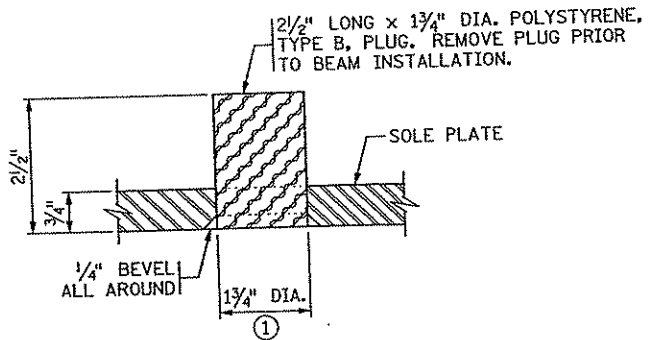
SECTION A-A



SECTION C-C



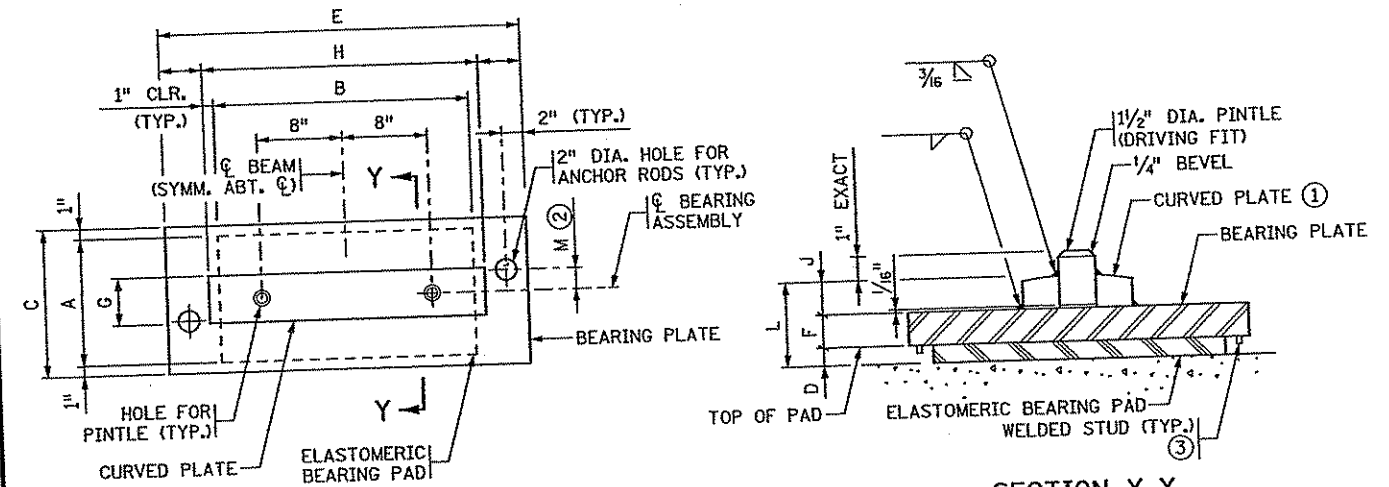
SECTION B-B



PINTLE HOLE DETAIL

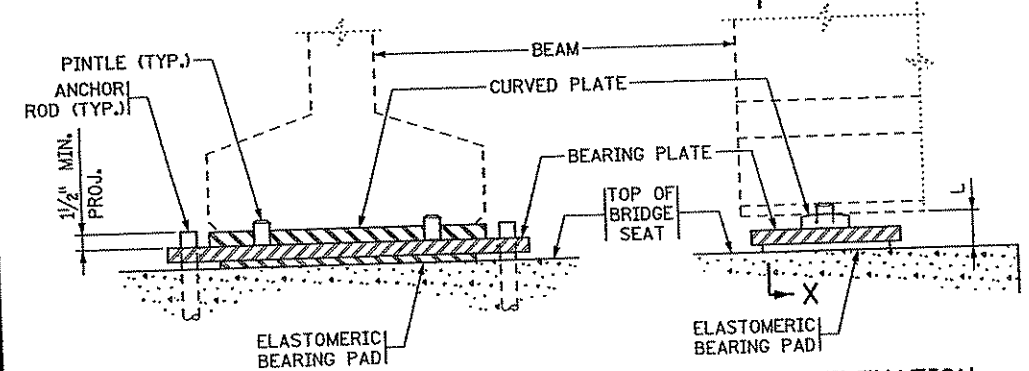
**NOTES:**

- MATERIAL TO BE STRUCTURAL STEEL PER Mn/DOT SPEC. 3306.
- WELDED STUDS TO BE WELDABLE CARBON STEEL PER Mn/DOT SPEC. 3391.2D.
- SOLE PLATE FOR BEARING ASSEMBLY TO BE GALVANIZED PER Mn/DOT SPEC. 3394 AFTER FABRICATION.
- PINTLE HOLES SHALL BE FREE OF ZINC BUILD UP FROM GALVANIZING.
- SOLE PLATES ARE INCIDENTAL TO PRESTRESSED CONCRETE BEAMS.
- ① FOR 1/2" DIA. PINTLES.
- ② THESE DIMENSIONS MAY BE MODIFIED TO CLEAR PRESTRESSED STRANDS. HOWEVER, CHANGES MUST BE APPROVED BY THE ENGINEER.
- ③ THE REQUIREMENTS FOR WELDING STUDS SHALL COMPLY WITH AASHTO/AWS D1.5.



PLAN

SECTION Y-Y



SECTION X-X

SIDE ELEVATION

ANCHOR ROD DETAIL

ASSEMBLY TYPE	LOCATION	BEAM SIZE	BEARING PAD SIZE			SHAPE FACTOR	BEARING PLATE SIZE			CURVED PLATE SIZE			ANCHOR ROD OFFSET	ASSY. HEIGHT	CURVED PLATE	
			A	B	D		C	E	F	G	H	J				
			+ ②    - ②    M    L    R ①													
F1	S. ABUT.	36M	12"	24"	1/2"	8.0	14"	34"	1 1/2"	4 1/2"	26"	1 1/4"	+	0"	3 3/4"	18"

**NOTES:**

- ELASTOMERIC MATERIALS AND PAD CONSTRUCTION SHALL COMPLY WITH Mn/DOT SPEC. 3741.
- ALL STEEL PLATES SHALL COMPLY WITH Mn/DOT SPEC. 3306.
- ANCHOR RODS SHALL COMPLY WITH Mn/DOT SPEC. 3306. GALVANIZE PER Mn/DOT SPEC. 3394.
- PINTLES SHALL COMPLY WITH Mn/DOT SPEC. 3309.
- GALVANIZE STRUCTURAL STEEL BEARING ASSEMBLY AFTER FABRICATION PER Mn/DOT SPEC. 3394, EXCEPT AS NOTED.
- PAYMENT FOR BEARING ASSEMBLY SHALL INCLUDE ALL MATERIAL ON THIS DETAIL.

- ① THE MIN. RADIUS OF THE CURVED PLATE IS SHOWN. THE MAX. RADIUS IS 30". FINISH TO 250 MICRO. THE FINISHED THICKNESS OF THE PLATE MAY BE 1/16" LESS THAN SHOWN.
- ② "+" DENOTES OFFSET AS SHOWN. "-" DENOTES OFFSET OPPOSITE OF SHOWN.
- ③ 5/16" DIA. x 3/8" KNOCK-OFF WELD STUDS INSTALLED ON BEARING PLATE AROUND PERIMETER OF BEARING PAD. CENTERLINE STUD TO EDGE OF PAD DIMENSION = 1/2". MAX. STUD SPACING = 4", AND MAX. SPACING TO PAD CORNER = 2".

**DESIGN DATA:**

MAXIMUM HORIZONTAL LOAD IS TO KIPS FOR 1/2" PINTLES.

APPROVED: OCTOBER 26, 2005

STATE OF MINNESOTA  
DEPARTMENT OF TRANSPORTATION

REVISOR: 06-14-2006

DETAIL NO. B303

SOLE PLATE (PRESTRESSED CONCRETE BEAMS) (FOR BEARINGS WITH PINTLES)

APPROVED: OCTOBER 26, 2005

STATE OF MINNESOTA  
DEPARTMENT OF TRANSPORTATION

CURVED PLATE BEARING ASSEMBLY (PRESTRESSED CONCRETE BEAMS) (FIXED)

DETAILS

DESIGNED BY: JAW, DRAWN BY: JEH, CHECKED BY: PLR, CHECKED BY: JAW

APPROVED BY: [Signature]

BRIDGE NO. B310

SHEET NO. B27 OF B33 SHEETS

DATE: 3/15/07

NAME: JEREMY A. WEST, LIC. NO. 42039

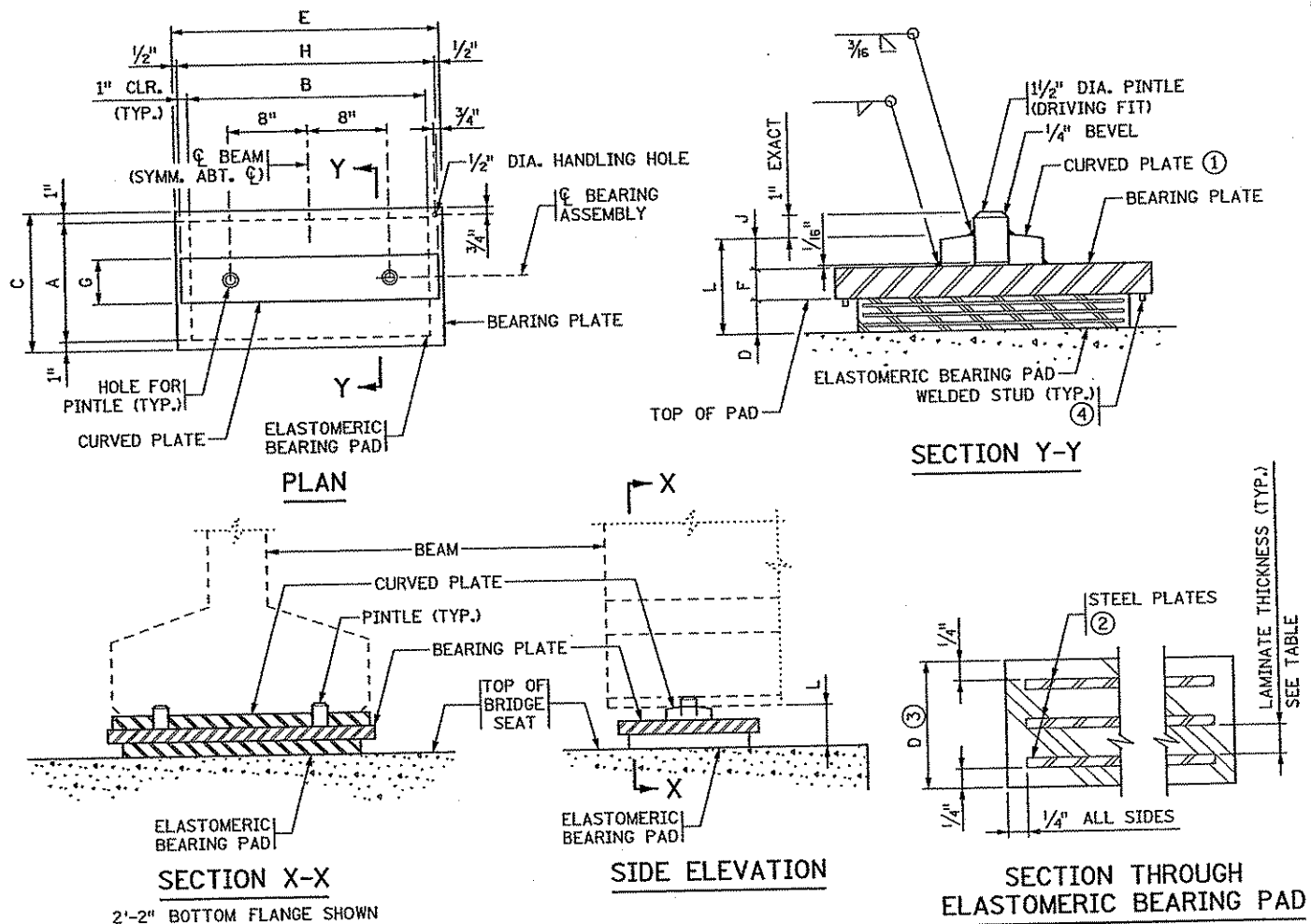


TABLE																		
ASSEMBLY TYPE	LOCATION	BEAM SIZE	BEARING PAD SIZE			STEEL PLATES		LAMINATES	SHAPE FACTOR	BEARING PLATE SIZE			CURVED PLATE SIZE		ASSY. HEIGHT	CURVED PLATE		
			A	B	D	NO.	THICK.			C	E	F	G	H			J	L
E1	N. ABUT.	36M	12"	24"	1 7/8"	3	1/8"	2	1/2"	8.0	14"	27"	1 1/2"	4 1/2"	26"	1 1/4"	4 5/8"	19"

**NOTES:**

ELASTOMERIC MATERIALS AND PAD CONSTRUCTION SHALL COMPLY WITH Mn/DOT SPEC. 3741.

ALL STEEL PLATES SHALL COMPLY WITH Mn/DOT SPEC. 3306.

PINTLES SHALL COMPLY WITH Mn/DOT SPEC. 3309.

GALVANIZE STRUCTURAL STEEL BEARING ASSEMBLY AFTER FABRICATION PER Mn/DOT SPEC. 3394, EXCEPT AS NOTED.

PAYMENT FOR BEARING ASSEMBLY SHALL INCLUDE ALL MATERIAL ON THIS DETAIL.

- THE MIN. RADIUS OF THE CURVED PLATE IS SHOWN. THE MAX. RADIUS IS 30". FINISH TO 250 MICRO. THE FINISHED THICKNESS OF THE PLATE MAY BE 1/16" LESS THAN SHOWN.
- DO NOT GALVANIZE THESE PLATES.
- THE TOTAL THICKNESS SHOWN INCLUDES THE STEEL PLATES.
- 5/16" DIA. x 3/8" KNOCK-OFF WELD STUDS INSTALLED ON BEARING PLATE AROUND PERIMETER OF BEARING PAD. CENTERLINE STUD TO EDGE OF PAD DIMENSION = 1/2", MAX. STUD SPACING = 4", AND MAX. SPACING TO PAD CORNER = 2".

**DESIGN DATA:**

MAXIMUM HORIZONTAL LOAD IS 70 KIPS FOR 1/2" PINTLES.

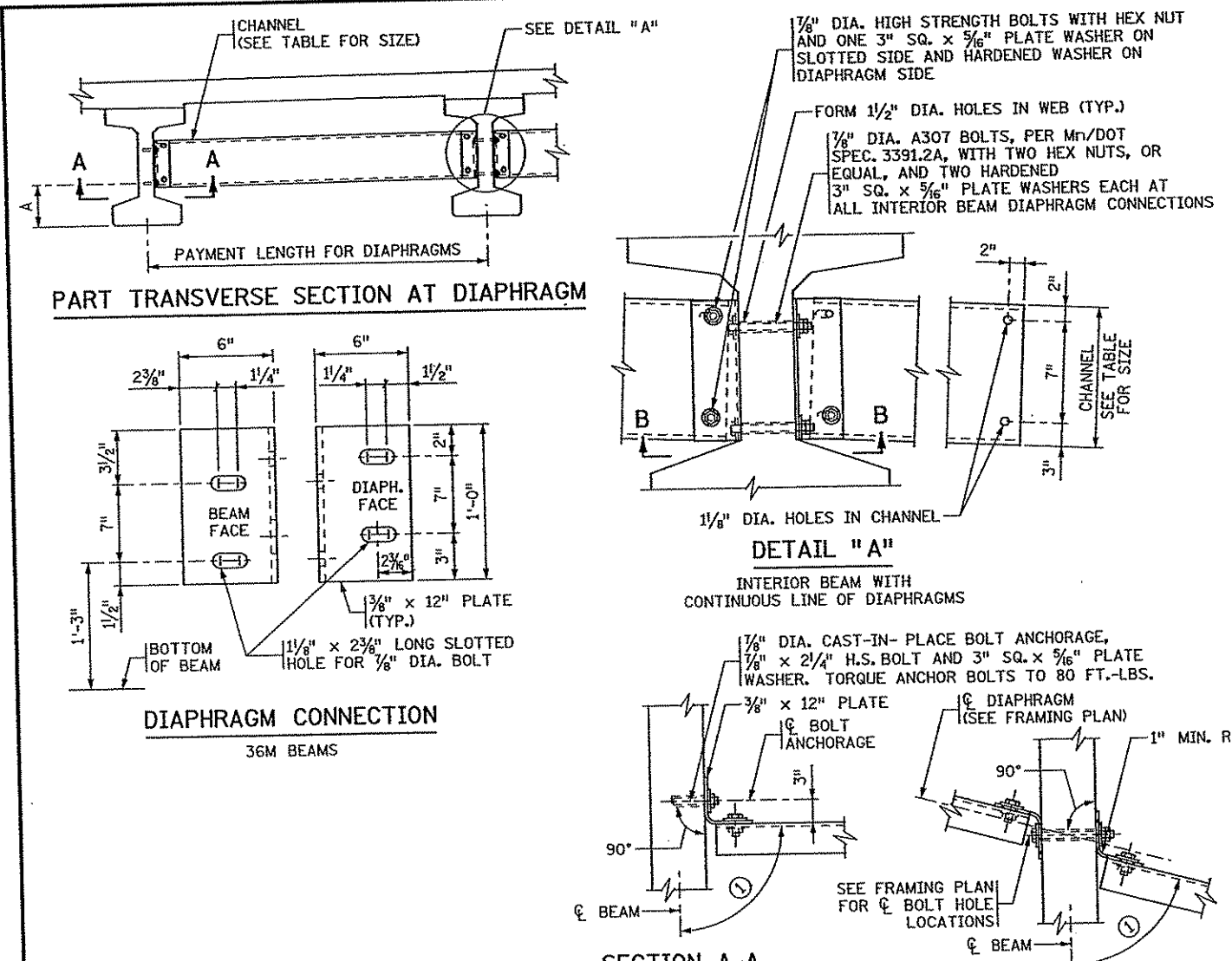


TABLE				
BEAM HEIGHT	DISTANCE			CHANNEL SIZE
	A	B	C	
36M	1'-3"	7"	1'-0"	C12x20.7

**NOTES:**

ALL STEEL SHALL CONFORM TO Mn/DOT SPEC. 3306.

SEE Mn/DOT SPEC. 2405.3M FOR INSTALLATION.

THE LEG OF THE 12" PLATE SHALL BE SHOP BENT TO CONFORM TO THE DIAPHRAGM. A 3/8" x 6" x 6" ANGLE MAY BE USED FOR DIAPHRAGMS PERPENDICULAR TO BEAMS.

ALL STRUCTURAL STEEL SHOWN ON THIS DETAIL, INCLUDING BOLTS AND WASHERS, SHALL BE INCLUDED IN THE PAYMENT FOR DIAPHRAGMS FOR PRESTRESSED BEAMS.

BENT PLATES MAY BE USED IN PLACE OF CHANNELS. THE BENT PLATES MUST BE THE SAME HEIGHT AS THE CHANNELS THEY REPLACE, BE 5/16" IN THICKNESS, AND HAVE LEGS 5" LONG.

① 90°-00°-00"

APPROVED: OCTOBER 26, 2005

*David J. Morgan*  
STATE BRIDGE ENGINEER

STATE OF MINNESOTA  
DEPARTMENT OF TRANSPORTATION  
**CURVED PLATE BEARING ASSEMBLY**  
(PRESTRESSED CONCRETE BEAMS)  
(EXPANSION)

REVISED

DETAIL NO.

B311

APPROVED: OCTOBER 26, 2005

*David J. Morgan*  
STATE BRIDGE ENGINEER

STATE OF MINNESOTA  
DEPARTMENT OF TRANSPORTATION

**STEEL INTERMEDIATE DIAPHRAGM**  
(FOR 36M - 54M, MN45 AND MN54 PRESTRESSED CONCRETE BEAMS)

REVISED

MODIFIED

DETAIL NO.

B403

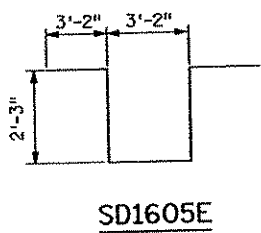
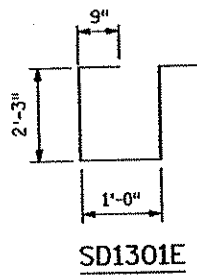
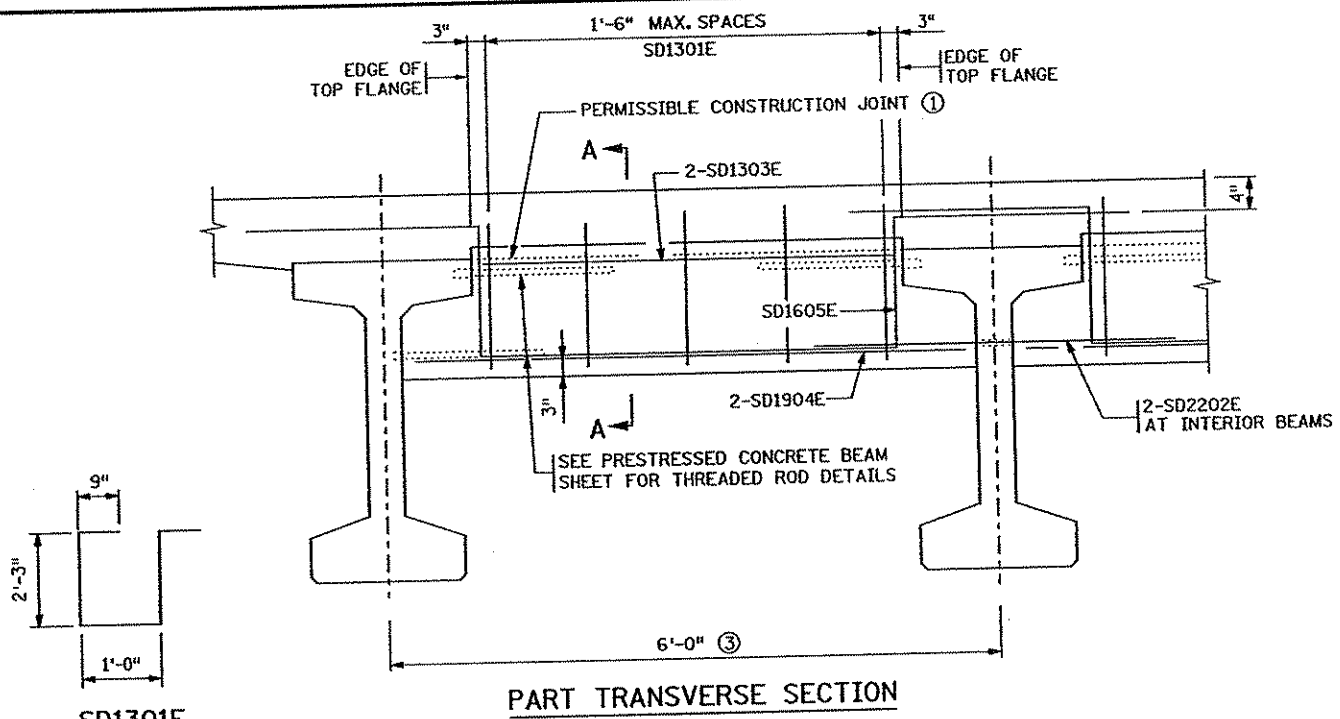
CERTIFIED BY *Jerome A. West* 3/15/07  
LICENSED PROFESSIONAL ENGINEER DATE  
NAME: JEROME A. WEST LIC. NO. 42039

DETAILS

DES: JAW DR: JEH APPROVED:  
CHK: PLR CHK: JAW  
Sheet No. B28 of B33 Sheets

Bridge No.  
02572





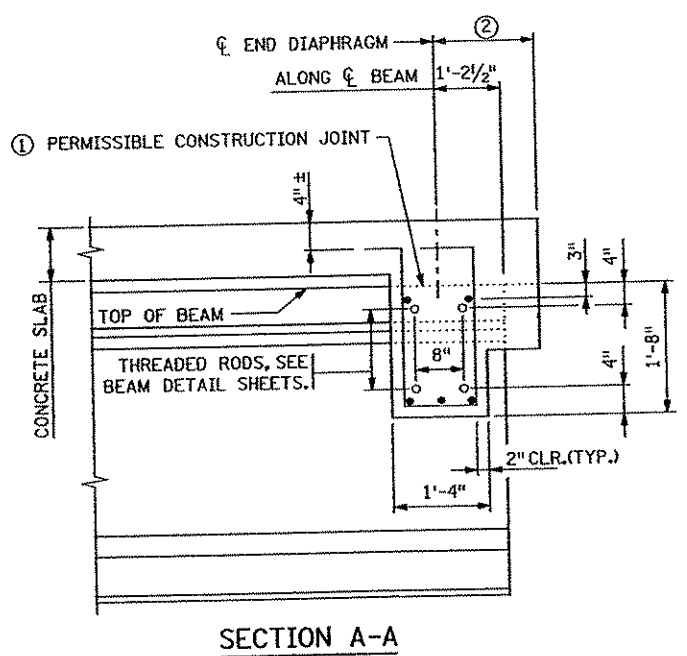
**LONGITUDINAL REINFORCEMENT IN BOTTOM OF DIAPHRAGM**

DISTANCE "L" ALONG $\phi$ OF DIAPHRAGM	BARS REQUIRED	
	STRAIGHT	BENT
UP TO 8'	2 19E	1 16E

**BILL OF REINFORCEMENT FOR END DIAPHRAGM**

BAR	NO.	LENGTH	SHAPE	LOCATION
SD1301E	54	7'-0"	┘	VERTICAL TIE
SD2202E	32	5'-0"	—	LONG. THRU BEAM
SD1303E	36	3'-2"	—	LONG. TOP
SD1904E	36	5'-2"	—	LONG. BOTTOM
SD1605E	18	14'-0"	┘	LONGITUDINAL

- NOTES:**
- DIAPHRAGM CONCRETE TO BE MIX NO. 3Y43.
  - ALL DIAPHRAGM CONCRETE AND REINFORCEMENT BARS SHOWN ON THIS DETAIL TO BE INCLUDED IN PAYMENT FOR SUPERSTRUCTURE QUANTITIES.
  - THREADED RODS ARE INCLUDED IN PAYMENT FOR PRESTRESSED CONCRETE BEAMS.
  - ① USE OF CONSTRUCTION JOINT REQUIRES CLEARANCE FOR EXPANSION DEVICE. WHEN CONSTRUCTION JOINT IS USED AT THIS LOCATION, DIAPHRAGM FALSEWORK SHALL REMAIN INPLACE UNTIL COMPLETION OF SLAB CURING PERIOD.
  - ② PERPENDICULAR TO CENTERLINE OF DIAPHRAGM. SEE PLANS FOR DIMENSION.
  - ③ DISTANCE ALONG  $\phi$  OF DIAPHRAGM

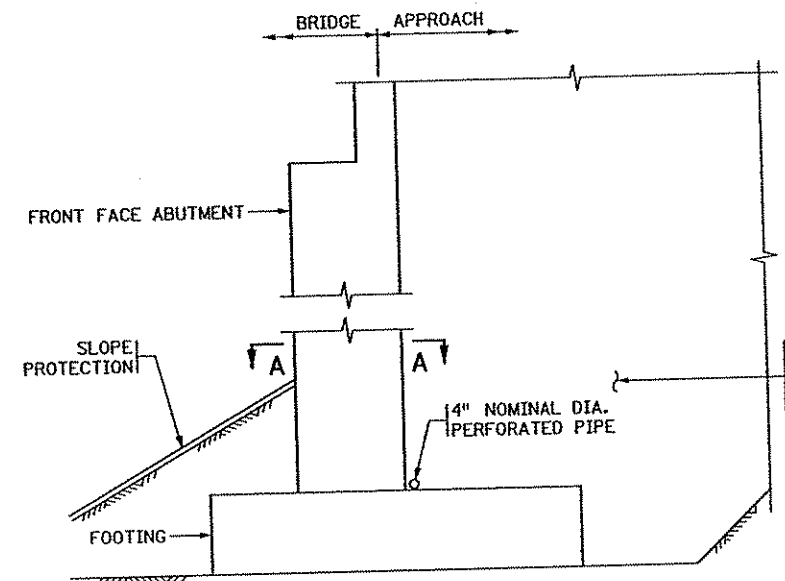


APPROVED: OCTOBER 26, 2005  
*Daniel J. Morgan*  
 STATE BRIDGE ENGINEER

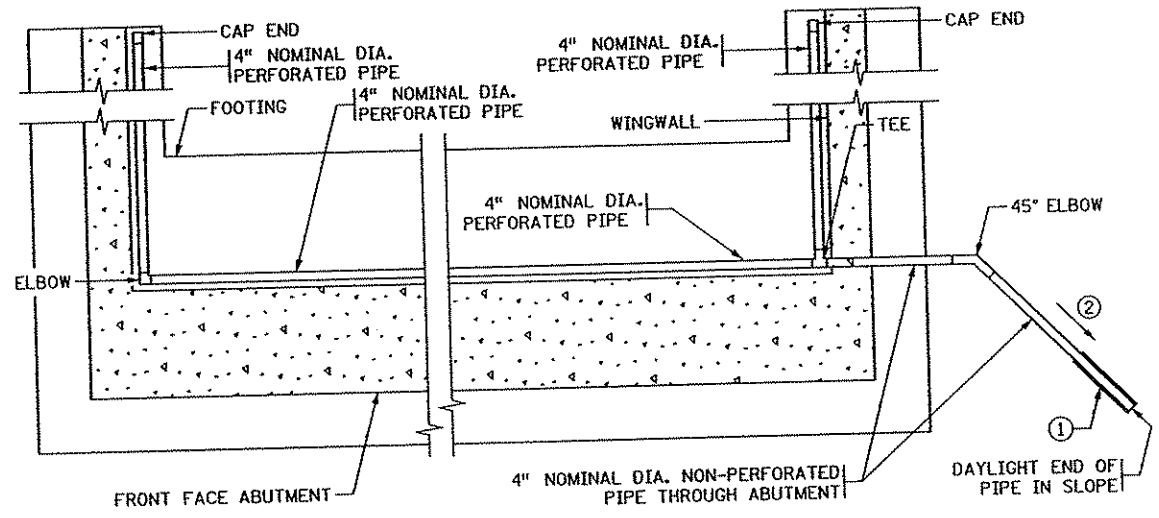
STATE OF MINNESOTA  
 DEPARTMENT OF TRANSPORTATION  
**CONCRETE END DIAPHRAGM**  
 (27M - 54M, MN45 AND MN54 PRESTRESSED CONCRETE BEAMS)  
 (PARAPET ABUTMENT)

REVISION	DETAIL NO.
	B814

S.P. 02-614-24



SECTION THROUGH ABUTMENT



SECTION A-A

**SUMMARY OF QUANTITIES FOR DRAINAGE SYSTEM**

4" DIA. PERFORATED PIPE	212 LIN. FT.
4" DIA. NON-PERFORATED PIPE	24 LIN. FT.
45° ELBOW	2 EACH
4" DIA. END CAP	4 EACH
4" DIA. TEE	2 EACH
PIPE SLEEVE	2 EACH
① PRECAST CONCRETE HEADWALL	2 EACH

THE SUMMARY OF QUANTITIES FOR DRAINAGE SYSTEM IS AS SHOWN ABOVE. ANY ADDITIONAL MINOR ITEMS OR SLIGHT CHANGES OF QUANTITIES REQUIRED SHALL BE FURNISHED BY THE CONTRACTOR WITH NO ADDITIONAL COMPENSATION.

PAYMENT WILL BE INCLUDED IN THE SINGLE LUMP SUM PRICE FOR ITEM 2502.502 "DRAINAGE SYSTEM TYPE (B910)".

MATERIAL SHALL COMPLY WITH Mn/DOT SPEC. 3149.2B SELECT GRANULAR BORROW, MODIFIED SO THAT NO MORE THAN 10% PASSES A NO. 200 SIEVE. (UNDER GRADING PORTION OF CONTRACT)

- NOTES:**
- ALL PIPE SHALL BE AS PER Mn/DOT SPEC. 3245.
  - WRAP PERFORATED PIPE WITH GEOTEXTILE AS PER Mn/DOT SPEC. 3733, TYPE 1. ATTACH TO PIPE AS PER Mn/DOT SPEC. 2502.
  - ① PRECAST CONCRETE HEADWALL WITH RODENT SCREEN. SEE STANDARD PLATE 3131 FOR DETAILS.
  - ② 1/8" PER FT. MINIMUM SLOPE.

APPROVED: NOVEMBER 22, 2002  
*Daniel J. Morgan*  
 STATE BRIDGE ENGINEER

STATE OF MINNESOTA  
 DEPARTMENT OF TRANSPORTATION  
**DRAINAGE SYSTEM**  
 (FOR HIGH ABUTMENTS)

REVISED	DETAIL NO.
04-20-2004	B910

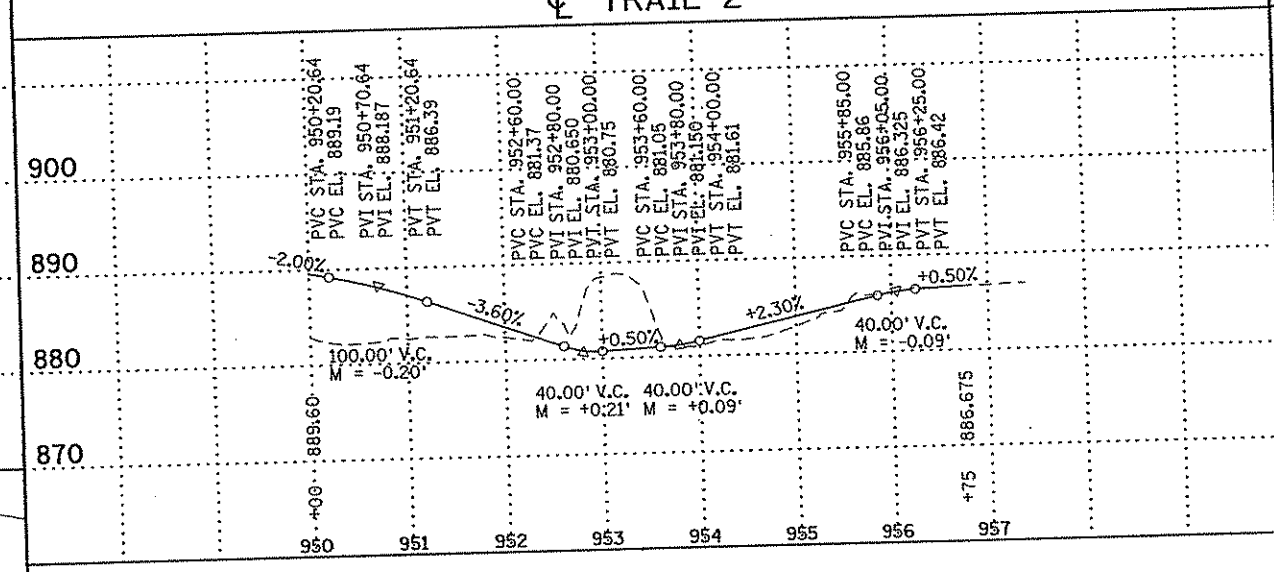
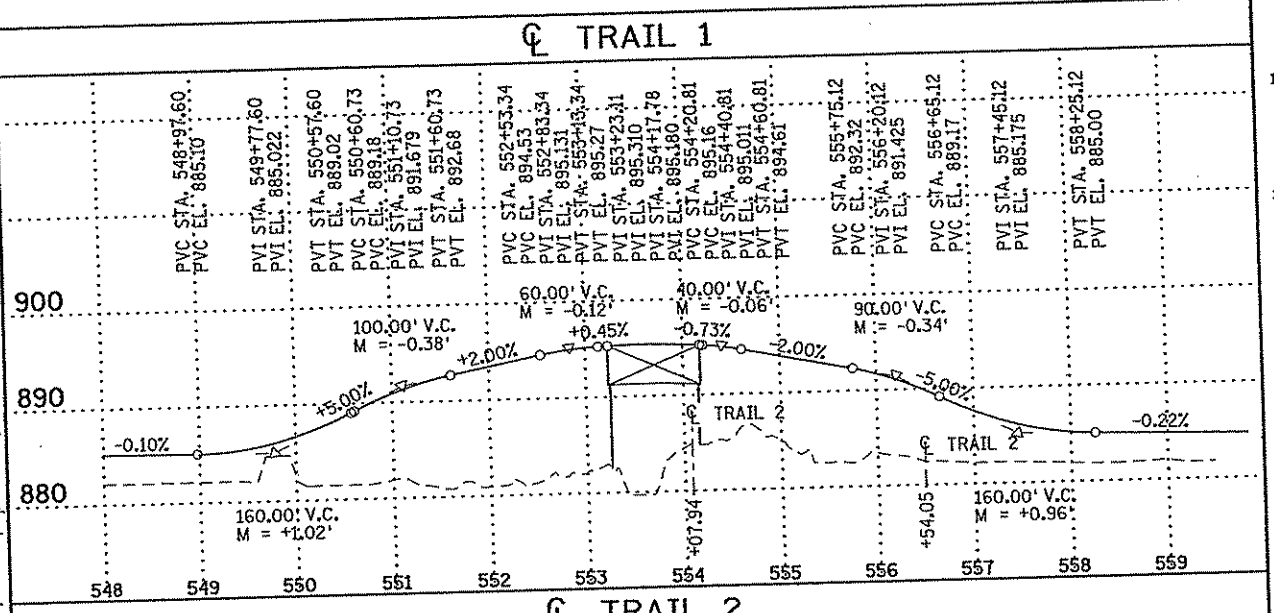
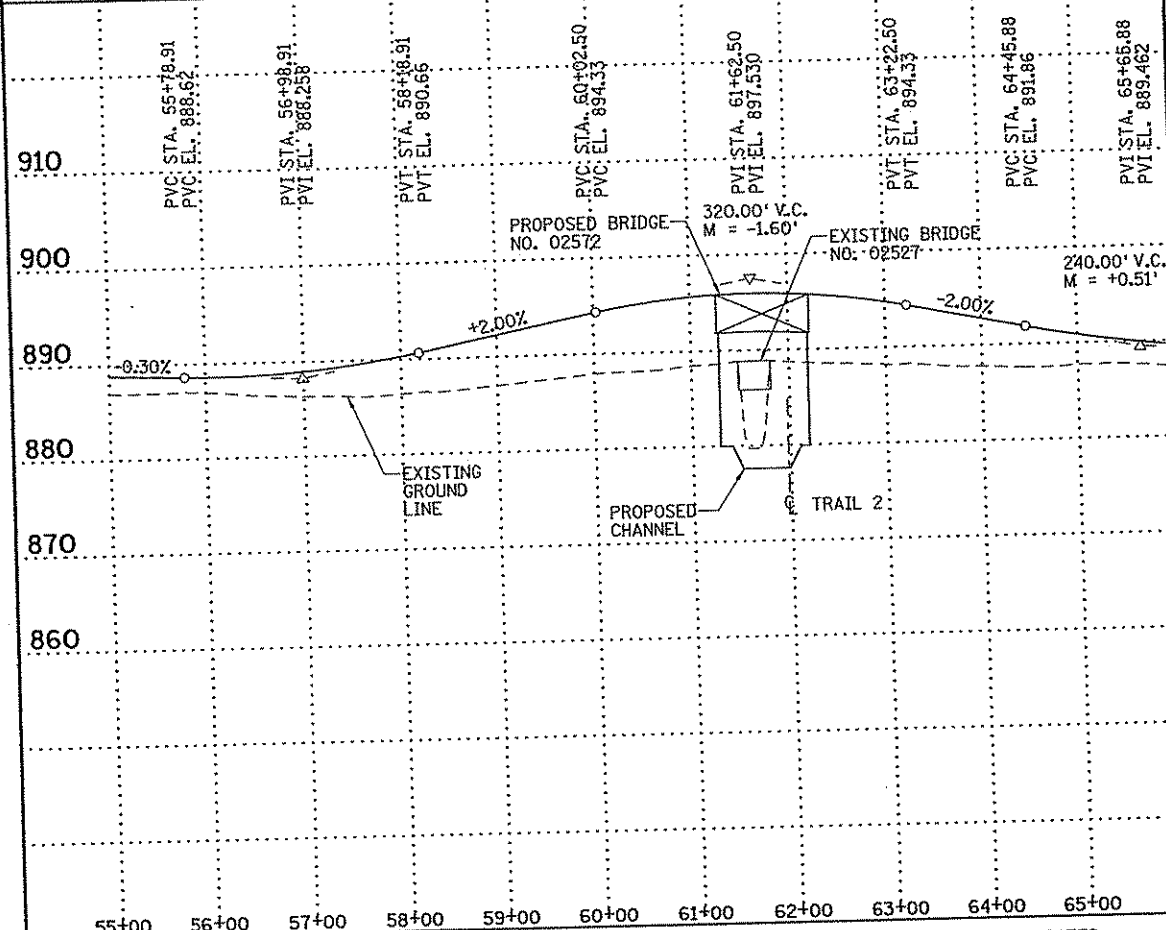
CERTIFIED BY *Jeremy A. West* 5/20/07  
 LICENSED PROFESSIONAL ENGINEER DATE  
 NAME: JEREMY A. WEST LIC. NO. 42039

DETAILS

DES: CEB DR: JEH APPROVED:  
 CHK: PLR CHK: JAW  
 Sheet No. B29 of B33 Sheets

Bridge No. 02572

**CONTRACTED PROFILE**  
 SCALE : 0 50' 100' 0 5' 10'  
 HORIZONTAL VERTICAL



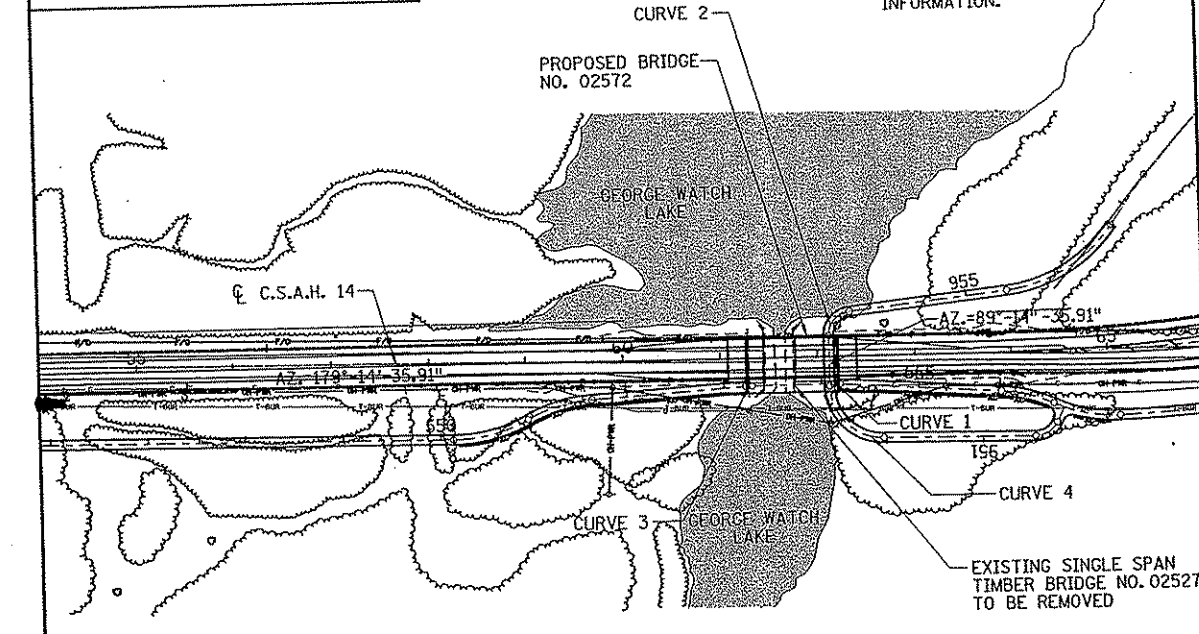
**LOCATION ENGINEER'S OBSERVATIONS AT BRIDGE SITE**

- SPECIAL FEATURES: WATERFALLS, DAMS, FLOODS, ICE, DEBRIS, SLIDING BANKS, RECREATIONAL BOATING.
- OTHER BRIDGES OR CULVERTS OVER THE SAME STREAM (PARTICULARLY STRUCTURES WHICH CARRY HIGH WATER WITHOUT OVERFLOW OF ROADWAY): GIVEN LOCATION, TYPE, LENGTH, HEIGHT ABOVE HIGH WATER, CROSS-SECTIONAL AREA ETC.
- APPARENT HIGHWATER ELEVATION OBTAINED FROM:
- OTHER DATA: APPROX. VELOCITY OF WATER AT TIME OF SURVEY.

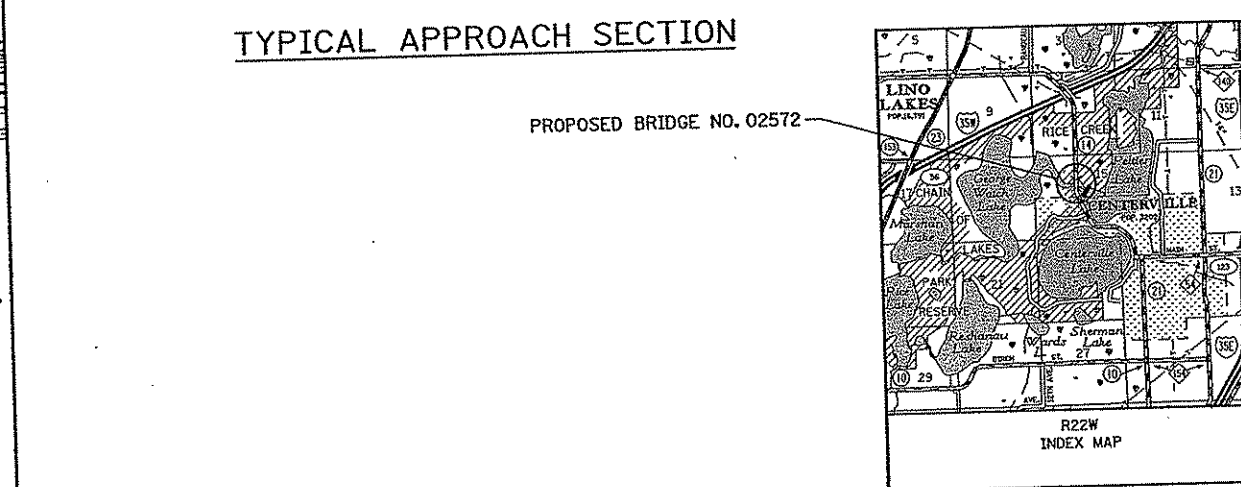
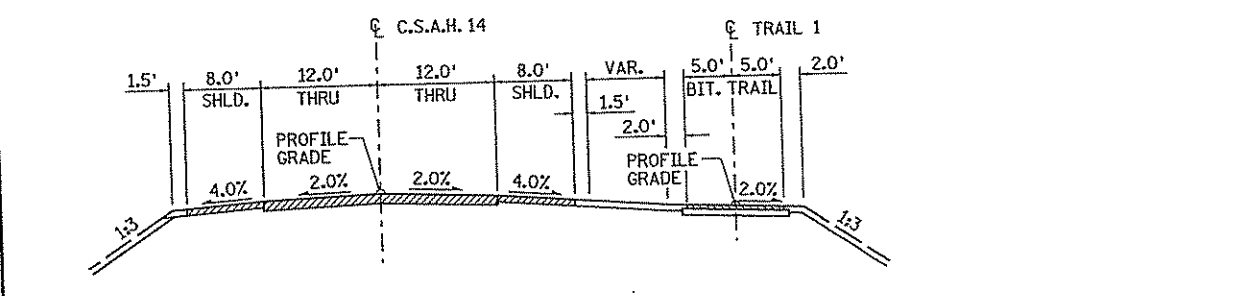
**HYDRAULIC ENGINEERS RECOMMENDATION**  
 DATE 4/14/06

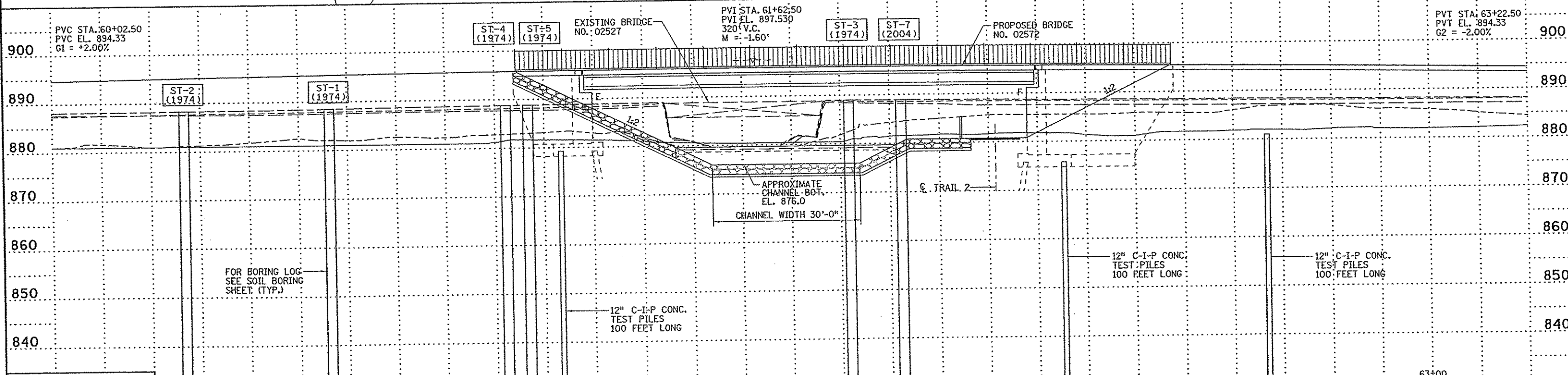
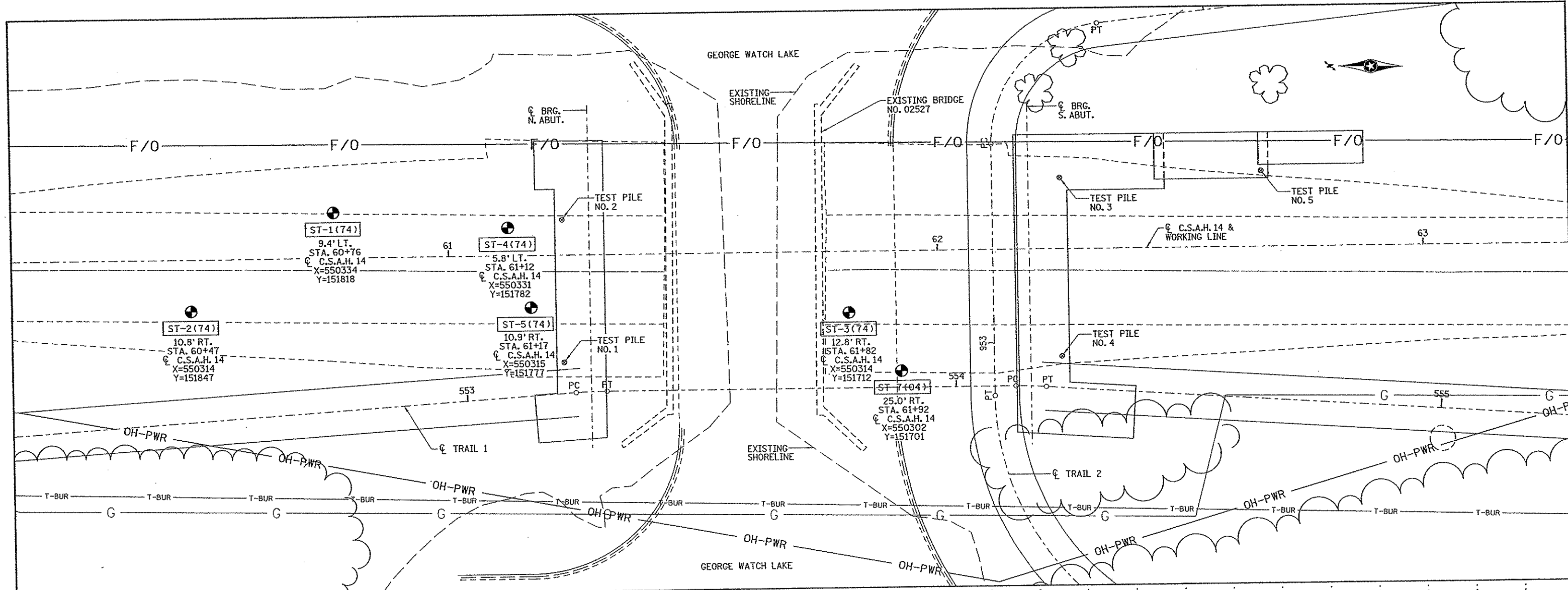
STREAM OR DITCH DESIGNATION RICE CREEK  
 DRAINAGE AREA 110 SQ. MI.  
 MAX. FLOOD ON RECORD NOT PROVIDED  
 MAXIMUM OBSERVED HIGHWATER ELEVATION 886.6  
 DESIGN FLOOD (50 YR. FREQ.) 1235 C.F.S.  
 DESIGN STAGE ELEVATION 885.1  
 DESIGN MEAN VELOCITY THROUGH STRUCTURE 8.7 F.P.S.  
 TOTAL STAGE INCREASE -3.5 FT.  
 LOW MEMBER AT OR ABOVE ELEVATION 891.0  
 FLOWLINE ELEVATION 876.0 SKEW ANGLE 0  
 WATERWAY AREA REQUIRED BELOW ELEVATION 881.1 = 145 SQ.FT. AT RIGHT ANGLES TO CHANNEL  
 BASIC FLOOD (100 YR. FREQ.) 1300 C.F.S.  
 STAGE ELEVATION 885.3 FT.  
 TOTAL STAGE INCREASE -3.5 FT.  
 MEAN VELOCITY THROUGH STRUCTURE 9.0 F.P.S.  
 ESTIMATED DEPTH OF PIER SCOUR = 8.6 FT.  
 SCOUR CODE = L

**PLAT**  
 SCALE : 0 50' 100'



CURVE 1 DATA:	CURVE 2 DATA:	CURVE 3 DATA:	CURVE 4 DATA:
P.I. STA. 952+57.63	P.I. STA. 953+63.76	P.I. STA. 553+25.44	P.I. STA. 554+15.44
Δ = 89°-20'-39.11"	Δ = 83°-40'-20.92"	Δ = 3°-48'-50.67"	Δ = 3°-48'-50.67"
D = 104°-10'-26.92"	D = 229°-10'-59.23"	D = 60°-18'-40.85"	D = 60°-18'-40.85"
R = 55.00'	R = 25.00'	R = 95.00'	R = 95.00'
T = 54.375'	T = 22.381'	T = 3.163'	T = 3.163'
L = 85.765'	L = 36.509'	L = 6.324'	L = 6.324'
P.C. STA. 952+03.25	P.C. STA. 953+41.38	P.C. STA. 553+22.28	P.C. STA. 554+12.28
P.T. STA. 952+89.02	P.T. STA. 953+77.89	P.T. STA. 553+28.60	P.T. STA. 554+18.60

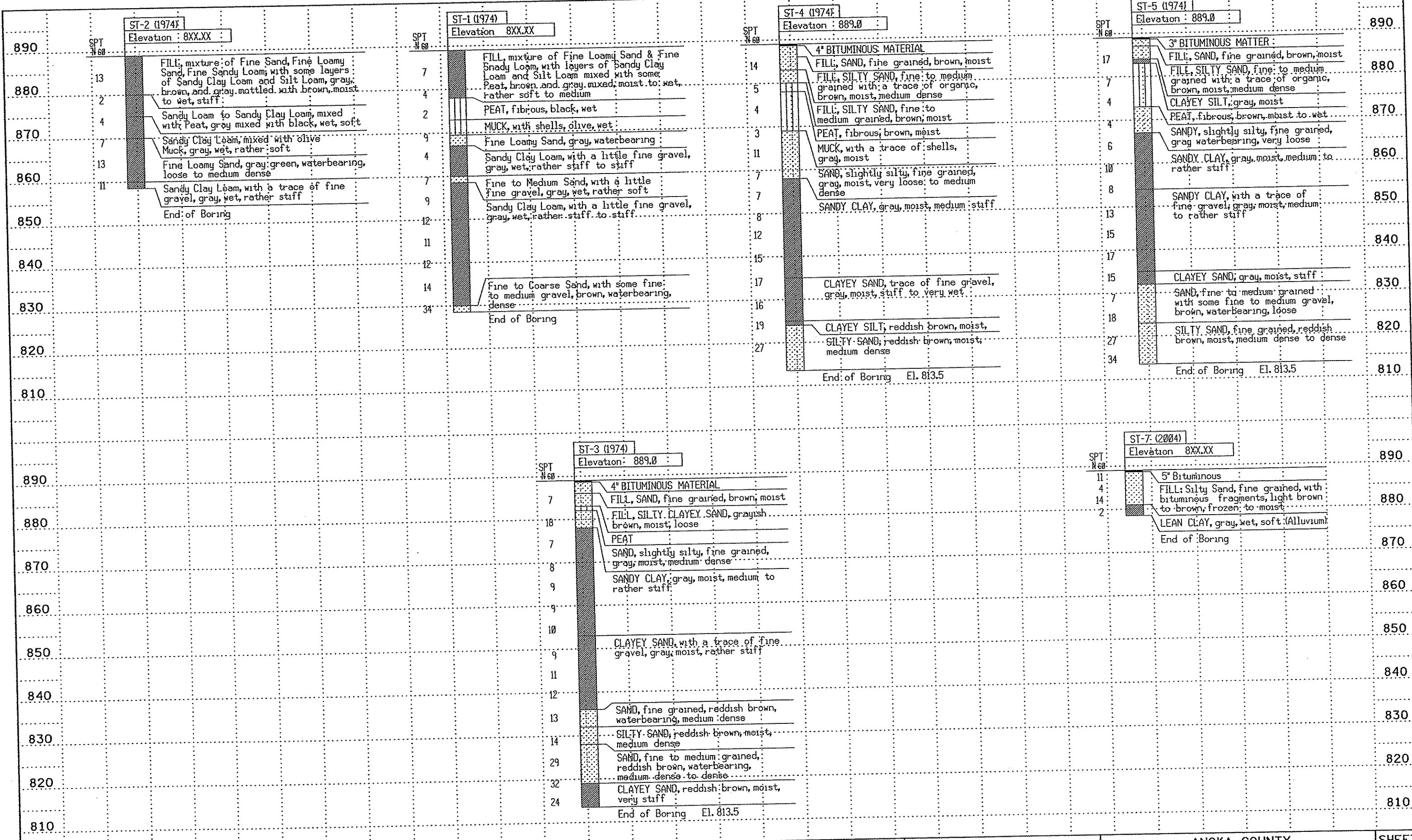




40' LT.
20' LT.
C/L
20' RT.
40' RT.

BRIDGE SURVEY PLAN & PROFILE		DR: JEH	CHK: JAW	Bridge No. 02572
State Proj. No. S.P. 02-614-24		Sheet No. B31 of B33 Sheets		

H:\projects\4894\Final\plan\4894\_B502.dgn  
 7/17/2007  
 8:47:13 AM



NO	DATE	BY	CHKD	APPR	REVISION

8:47:14 AM 3/12/2007

STATE PROJ. NO. 02-614-24  
BRIDGE NO. 02572

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.  
Print Name: JEREMY A. WEST  
Date: 3/15/07 License: 42039

DRAWN BY J. HOFFMAN DATE 6/06  
DESIGNED BY C. BLACK 6/06  
CHECKED BY J. WEST 6/06  
COMM. NO. 0054994



CONCRETE WEARING COURSE

LOW SLUMP  
 OTHER \_\_\_\_\_ TYPE OR MANUFACTURER \_\_\_\_\_

EXPANSION JOINTS

JOINT MANUFACTURER \_\_\_\_\_ NAME AND ADDRESS (CITY, STATE) \_\_\_\_\_  
MANUFACTURER'S IDENTIFICATION \_\_\_\_\_ MFR'S No. AND/OR LETTER DESIGNATION FOR JOINT USED \_\_\_\_\_  
GLAND MANUFACTURER \_\_\_\_\_ NAME AND ADDRESS (CITY, STATE) \_\_\_\_\_  
SIZE OF GLAND \_\_\_\_\_  
MANUFACTURER'S IDENTIFICATION \_\_\_\_\_ MFR'S No. AND/OR LETTER DESIGNATION FOR GLAND USED \_\_\_\_\_

ELASTOMERIC BEARING PADS

PAD MANUFACTURER \_\_\_\_\_ NAME AND ADDRESS (CITY, STATE) \_\_\_\_\_

SPECIAL SURFACE FINISH

SYSTEM: \_\_\_\_\_ COLOR: \_\_\_\_\_

FINISHING ROADWAY FACES OF BARRIER RAILING

TYPE: \_\_\_\_\_ COLOR: \_\_\_\_\_

ANTI-GRAFFITI COATING

MANUFACTURER \_\_\_\_\_ NAME AND ADDRESS (CITY, STATE) \_\_\_\_\_  
PRODUCT NAME: \_\_\_\_\_ LOCATION: \_\_\_\_\_

PAINT SYSTEM

Mn/DOT SPECIFICATION NUMBER \_\_\_\_\_ 2478 OR 2479 OR OTHER \_\_\_\_\_  
MANUFACTURER \_\_\_\_\_ NAME AND ADDRESS (CITY, STATE) \_\_\_\_\_  
PRIME COAT \_\_\_\_\_ Mn/DOT MATERIAL SPECIFICATION NUMBER \_\_\_\_\_  
INTERMEDIATE COAT \_\_\_\_\_ Mn/DOT MATERIAL SPECIFICATION NUMBER \_\_\_\_\_  
FINISH COAT \_\_\_\_\_ Mn/DOT MATERIAL SPECIFICATION NUMBER \_\_\_\_\_ COLOR \_\_\_\_\_

PLAN QUALITY

RATE 1 (AGREE), 2 (NEUTRAL), OR 3 (DISAGREE, PLEASE COMMENT BELOW)  
DIMENSIONING AND DETAILING ADEQUATELY DESCRIBED REQUIRED CONSTRUCTION. \_\_\_\_\_  
BAR LISTS AND QUANTITIES WERE TYPICALLY COMPLETE AND FREE OF ERRORS. \_\_\_\_\_  
SCALE OF DRAWINGS AND OVERALL LEGIBILITY OF LINES AND TEXT WAS GOOD. \_\_\_\_\_  
(SB) SPECIAL PROVISIONS ADEQUATELY DESCRIBED SPECIAL WORK AND PAYMENT. \_\_\_\_\_

COMMENTS: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

NUMBER OF BRIDGE SUPPLEMENTAL AGREEMENTS: \_\_\_\_\_ COST: \$ \_\_\_\_\_

LIST SIGNIFICANT ERRORS OR OMISSIONS IN PLAN DETAILS OR PAY QUANTITIES IN THE SPACE PROVIDED AT RIGHT.

OTHER ITEMS ①

① UTILITIES ADDED DURING CONSTRUCTION AND SPECIALTY ITEMS.

FINAL QUANTITIES ENTERED ON SCHEDULE OF QUANTITIES: YES  NO

\_\_\_\_\_  
\_\_\_\_\_  
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SUMMARY OF SIGNIFICANT AS-BUILT CHANGES

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THE AS-BUILT INFORMATION WAS ADDED TO THE PLAN BY:

INSPECTOR(S) SIGNATURE \_\_\_\_\_ DATE \_\_\_\_\_

CHECKED BY: \_\_\_\_\_ PROJECT ENGINEER/SUPERVISOR SIGNATURE \_\_\_\_\_ DATE \_\_\_\_\_

AT THE TIME OF THE FINAL, THIS COMPLETED AS-BUILT BRIDGE DATA SHEET MUST BE SUBMITTED TO THE BRIDGE OFFICE - ATTN: REGIONAL CONSTRUCTION ENGINEER (MS610).

REVISION: 05-27-2005

APPROVED: SEPTEMBER 26, 2003

*David A. Hagan*  
STATE BRIDGE ENGINEER

AS-BUILT DETAILS  
(AS NEEDED)

FIG. 5-397.900

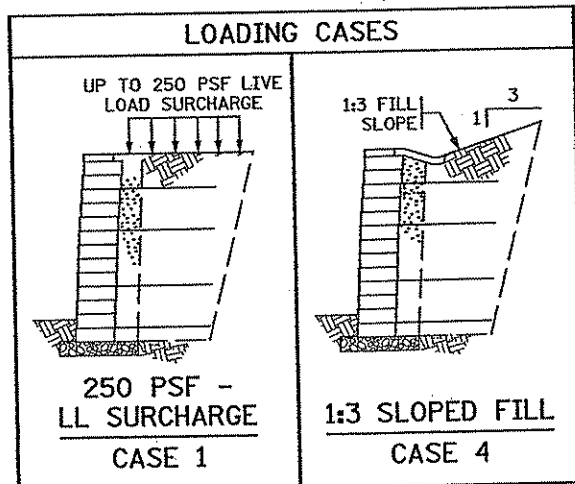
TITLE: AS-BUILT BRIDGE DATA

DES: CAB DR: JEH  
CHK: JAW CHK: CAB

APPROVED:

SHEET NO. B33 OF B33 SHEETS

BRIDGE NO. 02572



### DESIGN CRITERIA

DESIGN CRITERIA FOLLOWS THE AASHTO SPECIFICATION FOR HIGHWAY BRIDGES (16TH EDITION WITH 1998 INTERIMS) EXCEPT FOR THE DEVIATIONS NOTED BELOW. DESIGN CRITERIA ARE IN ACCORDANCE WITH Mn/DOT POLICY, AS RECORDED IN THE Mn/DOT ROAD DESIGN MANUAL.

- THE MINIMUM REINFORCEMENT LENGTH IS 4 FT. OR 0.7H, WHICHEVER IS GREATER.
- THE REINFORCEMENT FILL FRICTION ANGLE IS 35°.
- THE ALLOWABLE CONNECTION LOAD, AT A GIVEN NORMAL LOAD, IS COMPUTED AS THE ULTIMATE CONNECTION STRENGTH REDUCED BY A SAFETY FACTOR EQUAL TO 2.0.
- THE LATERAL EARTH PRESSURE COMPUTATION FOR EXTERNAL STABILITY CALCULATIONS USES AN INTERFACE ANGLE SET EQUAL TO THE RETAINED BACKFILL ANGLE.
- THE LATERAL EARTH PRESSURE COMPUTATION FOR INTERNAL STABILITY CALCULATIONS INCORPORATES THE EFFECTS OF WALL FACE BATTER.

MINIMUM FACTORS OF SAFETY:  
 OVERTURNING: 2.0  
 SLIDING: 1.5  
 ECCENTRICITY:  $e < L/6$   
 BEARING CAPACITY: 2.5  
 DEEP SEATED STABILITY: 1.3

### GENERAL NOTES:

**UTILITIES:**  
 EXISTING AND PROPOSED UTILITIES ARE SHOWN IN THE GRADING PLANS. THE CONTRACTOR SHALL VERIFY THE LOCATION OF EXISTING FACILITIES AND SHALL EXERCISE CARE IN ADJACENT CONSTRUCTION.

**EXCAVATION AND EARTHWORK:**  
 ALL EXCAVATION AND EMBANKMENT WORK SHALL CONFORM TO Mn/DOT 2451.

**CAST-IN-PLACE CONCRETE:**  
 ALL CONCRETE SHALL CONFORM TO Mn/DOT 2461, EXCEPT AS NOTED.

**CONSTRUCTION:**  
 CONSTRUCTION SHALL BE IN ACCORDANCE WITH Mn/DOT 2411, EXCEPT AS NOTED.

**GEOMETRICS AND GRADES:**  
 DATA FOR BASELINE GEOMETRY IS TABULATED FOR WALL ALIGNMENT, SEE LAYOUT SHEETS. WALL ALIGNMENT REFERENCE IS ALONG BACK FACE OF WALL AT TOP FOR RW2 AND ALONG FRONT FACE OF WALL AT TOP FOR RW3.

**COMPACTION REQUIREMENTS:**  
 COMPACT REINFORCED WALL FILL IN ACCORDANCE WITH Mn/DOT SPEC. 2105.3F1 UNLESS RECOMMENDED OTHERWISE BY THE SOILS ENGINEER.

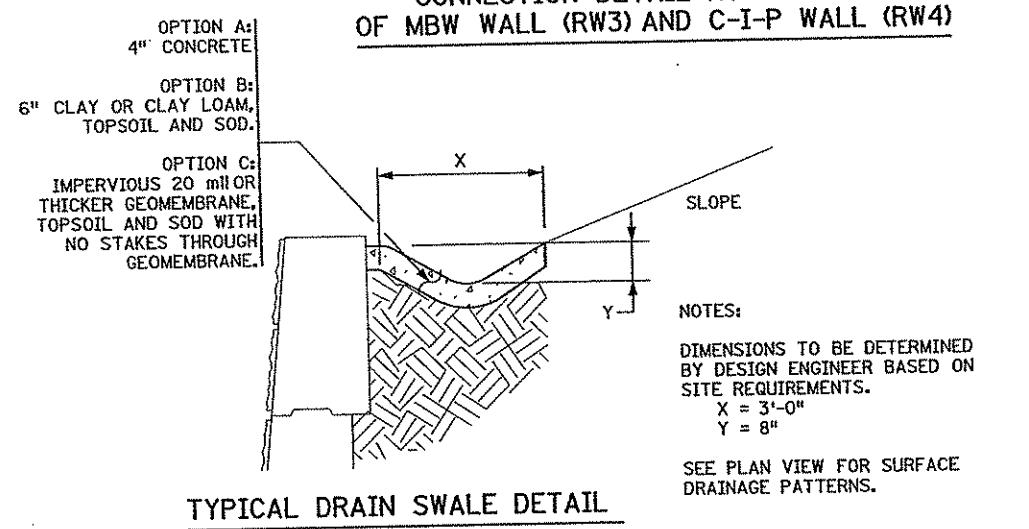
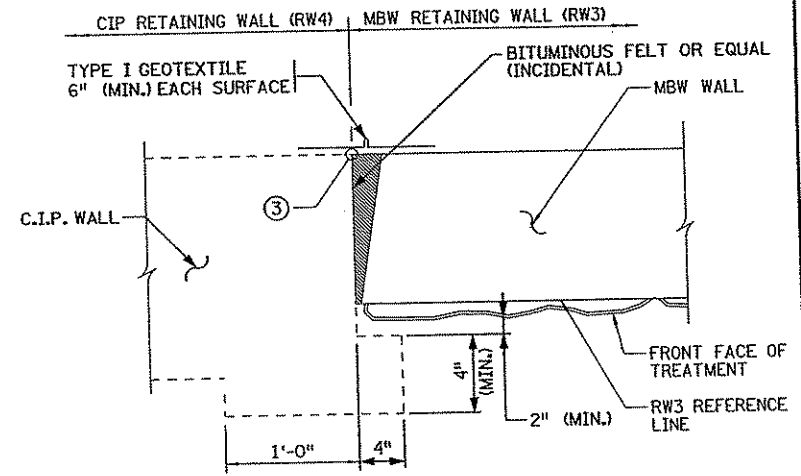
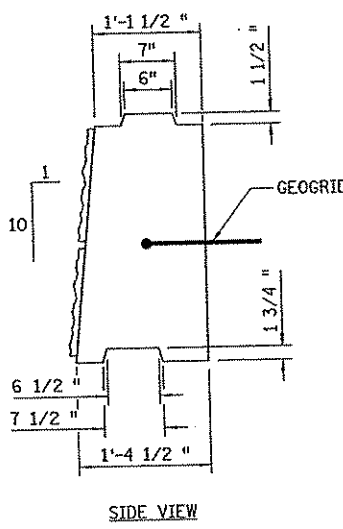
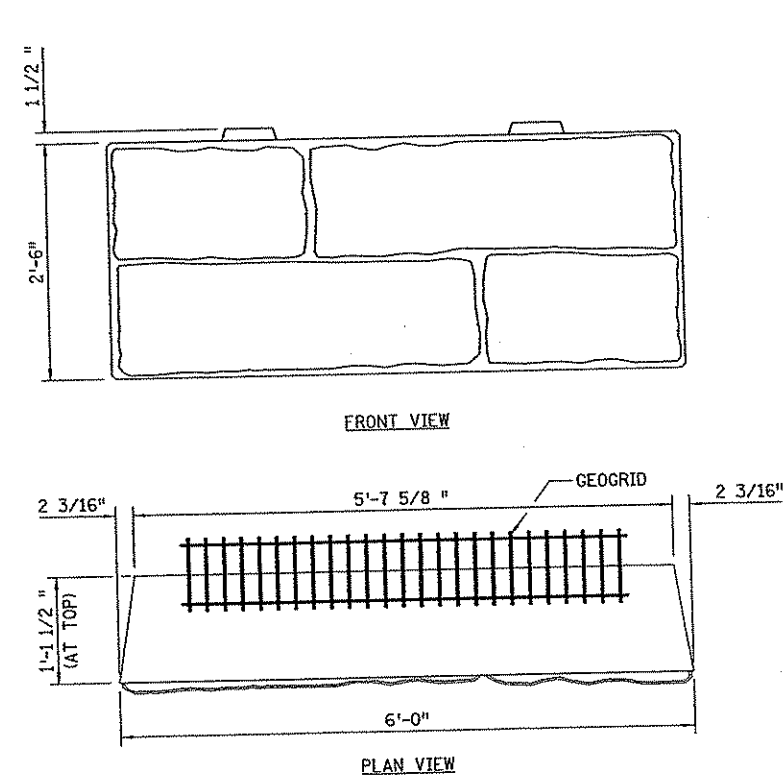
**COMPACT GRANULAR BEDDING IN ACCORDANCE WITH Mn/DOT SPEC. 2105.3F1 UNLESS RECOMMENDED OTHERWISE BY THE SOILS ENGINEER.**

### SUMMARY OF QUANTITIES : MBW WALLS

ITEM	UNIT	QUANTITY	
		RW2	RW3
STRUCTURAL CONCRETE (1A43)	CU. YD.	-	65
MODULAR BLOCK RETAINING WALL SPECIAL	SQ. YD.	130	193
ARCH SURFACE FINISH (SINGLE COLOR)	SQ. FT.	1672	2886
GEOTEXTILE FABRIC TYPE 1	SQ. YD.	428	420
WIRE FENCE DESIGN SPECIAL VINYL COATED	LIN. FT.	120	-
ORNAMENTAL METAL RAILING	LIN. FT.	-	252
4" TP PIPE DRAIN	LIN. FT.	20	-
4" PERF TP PIPE DRAIN	LIN. FT.	276	258

### NOTES TO CONTRACTOR:

- PROVIDE DETAILED DRAWINGS FOR CONSTRUCTION CONTAINING:
- ELEVATION VIEW WITH REINFORCEMENT PLACEMENT REQUIREMENTS, WALL FACING LAYOUT, AND GEOMETRIC INFORMATION.
  - PLAN VIEW WITH BOTTOM AND TOP OF WALL ALIGNMENT, AND PLAN LIMITS OF WALL ALIGNMENT.
  - CROSS SECTIONS DETAILING BATTER, REINFORCEMENT, VERTICAL SPACING, REINFORCEMENT LENGTHS, SUBSURFACE DRAINAGE, SURFACE DRAINAGE, AND WATER RUNOFF COLLECTION ABOVE WALL.
  - REINFORCEMENT LAYOUT: REINFORCEMENT SHALL BE PLACED AT 100% COVERAGE RATIO. REINFORCEMENT ELEVATIONS SHALL BE CONSISTENT ACROSS LENGTH OF WALL STRUCTURE.
  - NOTE BLOCK, REINFORCEMENT, AND FILL PLACEMENT METHODS AND REQUIREMENTS.
  - DETAIL ALL WALL FILL PENETRATIONS AND WALL FACE PENETRATIONS. DETAIL REINFORCEMENT AND/OR WALL FACING UNIT PLACEMENT AROUND PENETRATIONS.
  - DETAILS THAT ARE SPECIFIC TO VENDOR PRODUCTS AND THEIR INTERACTION WITH OTHER PROJECT COMPONENTS.
  - DETAILS OF CAP UNITS AND INSTALLATION/FASTENING INSTRUCTIONS FOR THE CAPS. CAP UNITS SHALL BE SET IN A BED OF ADHESIVE DESIGNED TO WITHSTAND MOISTURE AND TEMPERATURE EXTREMES, REMAIN FLEXIBLE, AND SHALL BE SPECIFICALLY FORMULATED FOR BONDING MASONRY TO MASONRY.
  - CERTIFICATION BY PROFESSIONAL ENGINEER THAT THE CONSTRUCTION LAYOUT MEETS THE REQUIREMENTS OF PLANS.



### DEFINITION OF TERMS

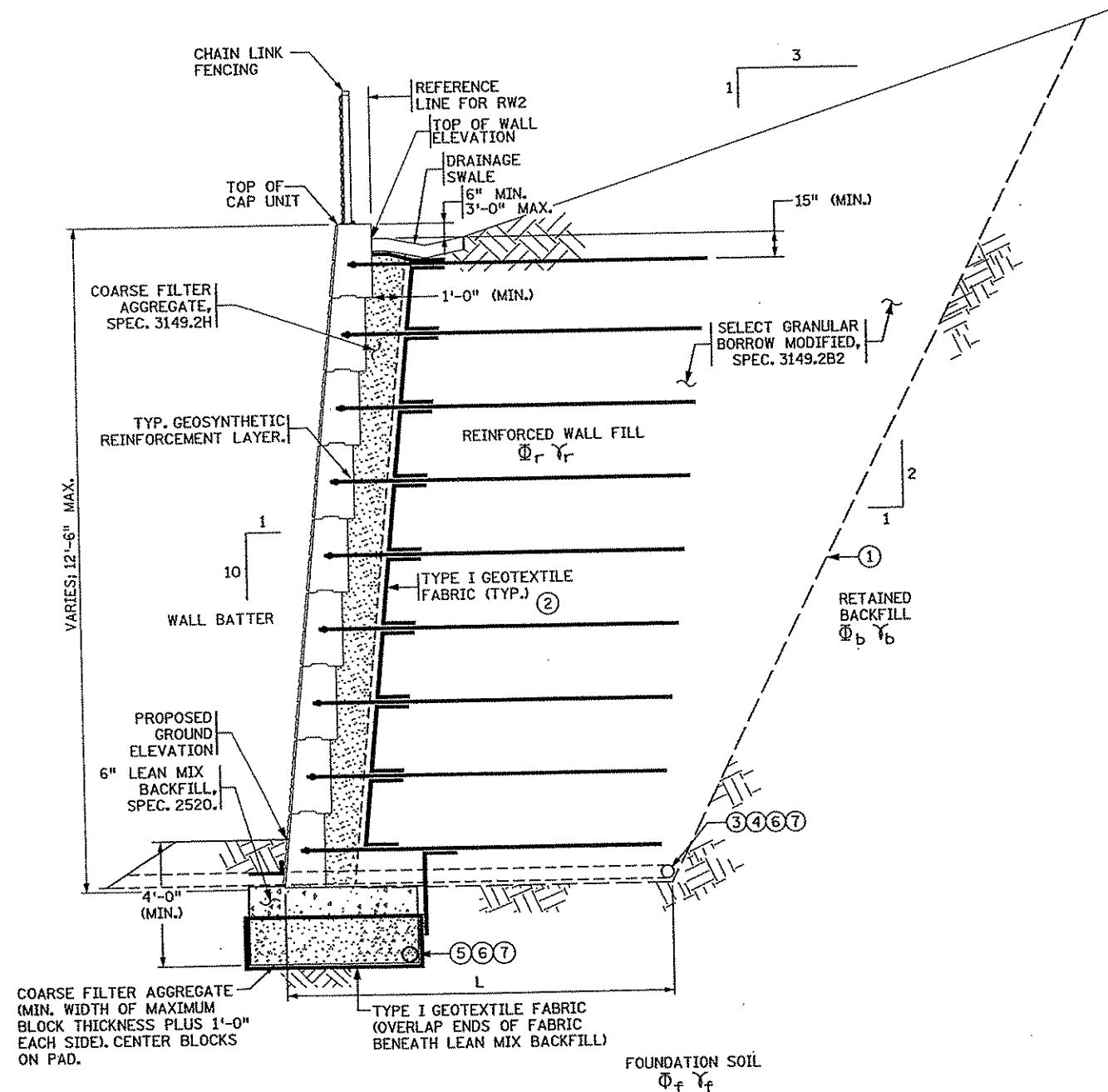
MBW	=	MODULAR BLOCK WALL
LL	=	LIVE LOAD
C.I.P.	=	CAST-IN-PLACE
H	=	WALL HEIGHT

WALL 1 DELETED FROM PROJECT

NO. DATE BY CKD APPR REVISION 5:13:25 PM 3/9/2007	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. Print Name: <u>JEREMY A. WEST</u>  Date: <u>3/19/07</u> License: <u>42039</u>	STATE AID PROJECT NO. 02-614-02T STATE PROJECT NO. 02-614-24 COUNTY PROJECT NO. X CITY PROJECT NO.	DRAWN BY J. MAXWELL DATE 10/06 DESIGNED BY J. WEST DATE 10/06 CHECKED BY L. ERICKSON DATE 10/06 COMM. NO. 0044994		ANOKA COUNTY RETAINING WALL PLANS C.S.A.H. 14 GENERAL NOTES AND QUANTITIES	MBW SHEET W1 OF W10
--	--	---	--	--	---	---------------------------------

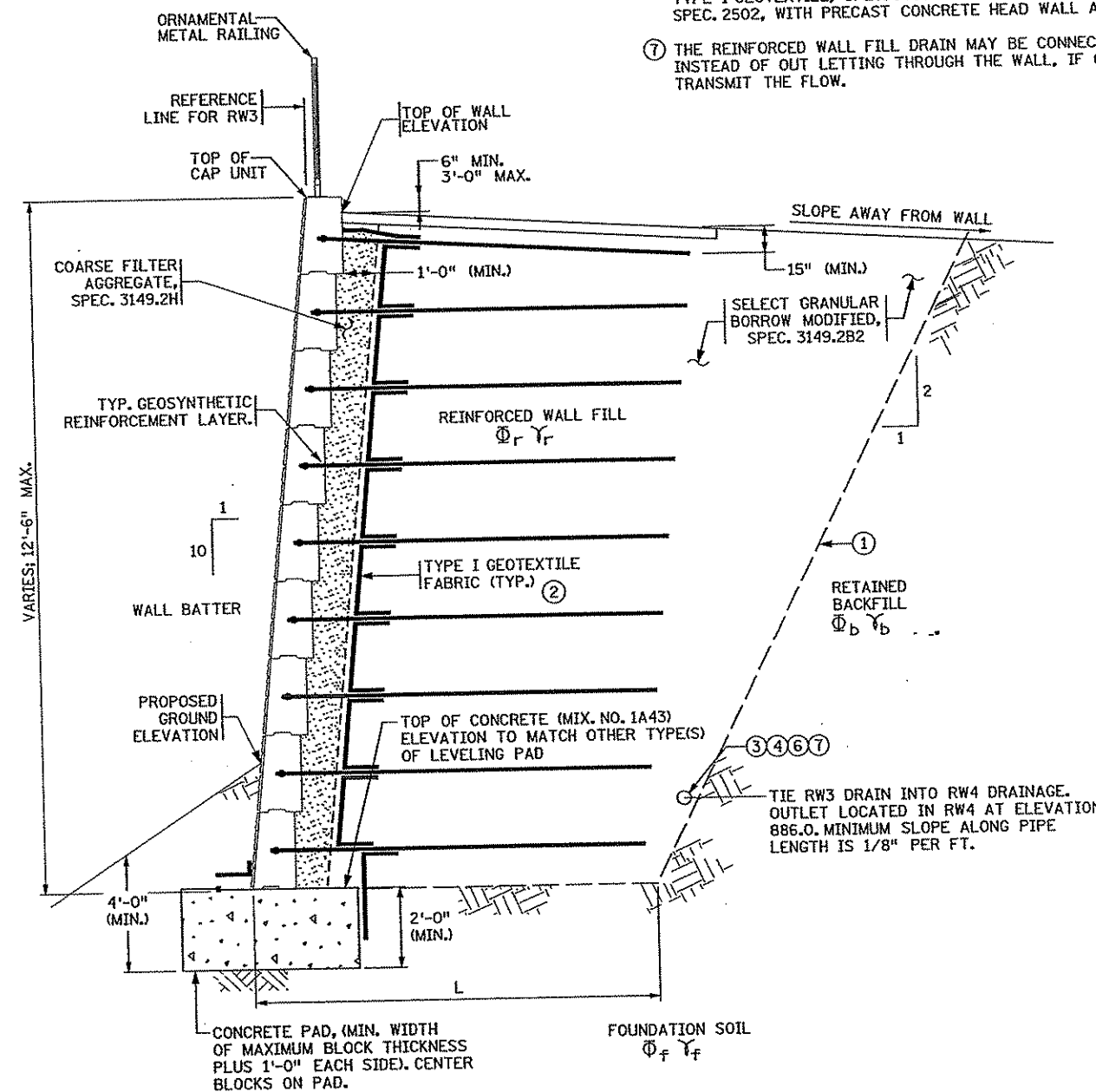
**WALL NOTES TO CONTRACTOR:**

- ① PAY LIMITS OF STRUCTURE EXCAVATION. ACTUAL EXCAVATION SLOPE IS DETERMINED BY OSHA REGULATIONS AND IN-SITU SOILS; EXCAVATION BEYOND "LIMITS OF STRUCTURE EXCAVATION" AT CONTRACTOR'S EXPENSE.
- ② THE WRAP LENGTH FOR GEOTEXTILE FABRIC SHALL NOT BE MORE THAN 6".
- ③ INSPECT EXCAVATION SLOPES FOR ACTIVE SEEPAGE AND PLACE ADDITIONAL DRAINS WHERE SEEPAGE OCCURS AS DIRECTED BY THE ENGINEER.
- ④ PLACE DRAIN AT BOTTOM OF REINFORCED SOIL IF PIPE CAN BE SLOPED TO OUTLET. DO NOT OUTLET ONTO A SIDEWALK.
- ⑤ IF PIPE AT THIS ELEVATION CANNOT BE SLOPED TO DRAIN, OMIT DRAIN AND USE "CONCRETE PAD WITHOUT DRAIN" DETAIL.
- ⑥ 4" THERMOPLASTIC PERFORATED PIPE, SPEC. 3245, WRAP WITH TYPE I GEOTEXTILE, SPEC. 3733 (TYP.) INSTALLATION AS PER SPEC. 2502, WITH PRECAST CONCRETE HEAD WALL AT OUTLET.
- ⑦ THE REINFORCED WALL FILL DRAIN MAY BE CONNECTED INTO FOOTING DRAIN, INSTEAD OF OUT LETTING THROUGH THE WALL, IF CAPACITY IS ADEQUATE TO TRANSMIT THE FLOW.



**TYPICAL WALL SECTION - RW2**

NOT TO SCALE  
SLOPED FILL



**TYPICAL WALL SECTION - RW3**

NOT TO SCALE  
LEVEL FILL

TIE RW3 DRAIN INTO RW4 DRAINAGE. OUTLET LOCATED IN RW4 AT ELEVATION 886.0. MINIMUM SLOPE ALONG PIPE LENGTH IS 1/8" PER FT.

NO	DATE	BY	CHKD	APPR	REVISION

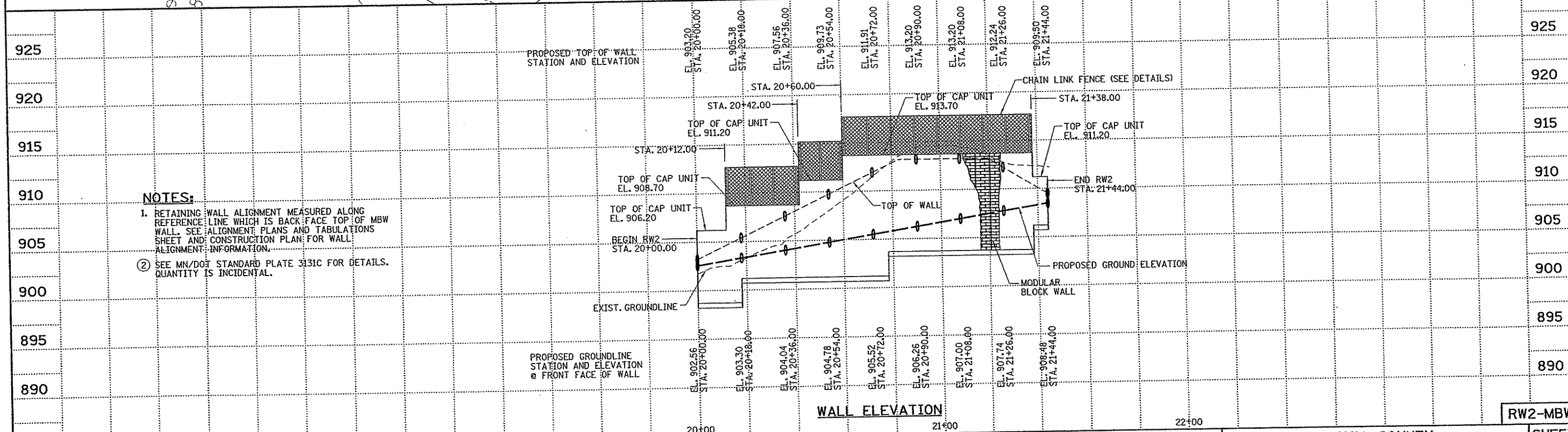
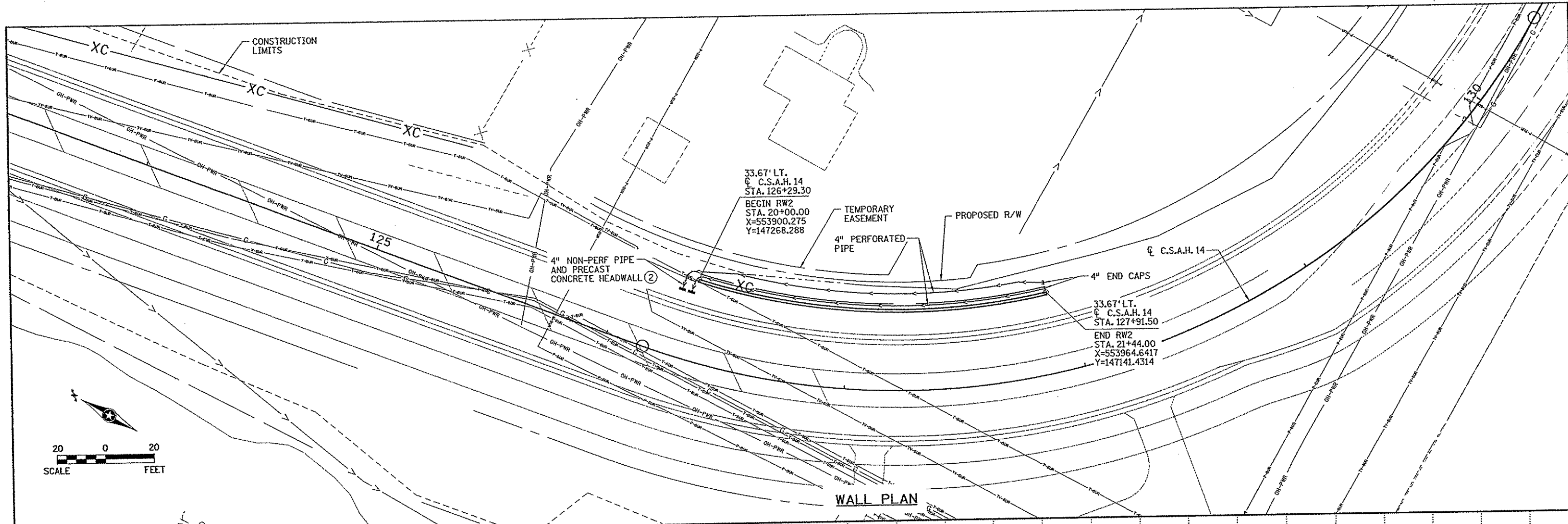
I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.  
 Print Name: JEREMY A. WEST  
 Date: 3/15/07 License # 42039

STATE AID PROJECT NO. 02-614-02T  
 STATE PROJECT NO. 02-614-24  
 COUNTY PROJECT NO. X  
 CITY PROJECT NO.   
 DRAWN BY J. MAXWELL DATE 10/06  
 DESIGNED BY J. WEST DATE 10/06  
 CHECKED BY L. ERICKSON DATE 10/06  
 COMM. NO. 0044994



ANOKA COUNTY  
 RETAINING WALL PLANS  
 C.S.A.H. 14  
 TYPICAL SECTIONS

MBW  
 SHEET  
 W2  
 OF  
 W10



- NOTES:**
- RETAINING WALL ALIGNMENT MEASURED ALONG REFERENCE LINE WHICH IS BACK FACE TOP OF MBW WALL. SEE ALIGNMENT PLANS AND TABULATIONS SHEET AND CONSTRUCTION PLAN FOR WALL ALIGNMENT INFORMATION.
  - SEE MN/DOT STANDARD PLATE 3131C FOR DETAILS. QUANTITY IS INCIDENTAL.

NO	DATE	BY	CHKD	APPR	REVISION

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.  
 Print Name: JEREMY A. WEST  
 Date: 3/15/07 License: 42039

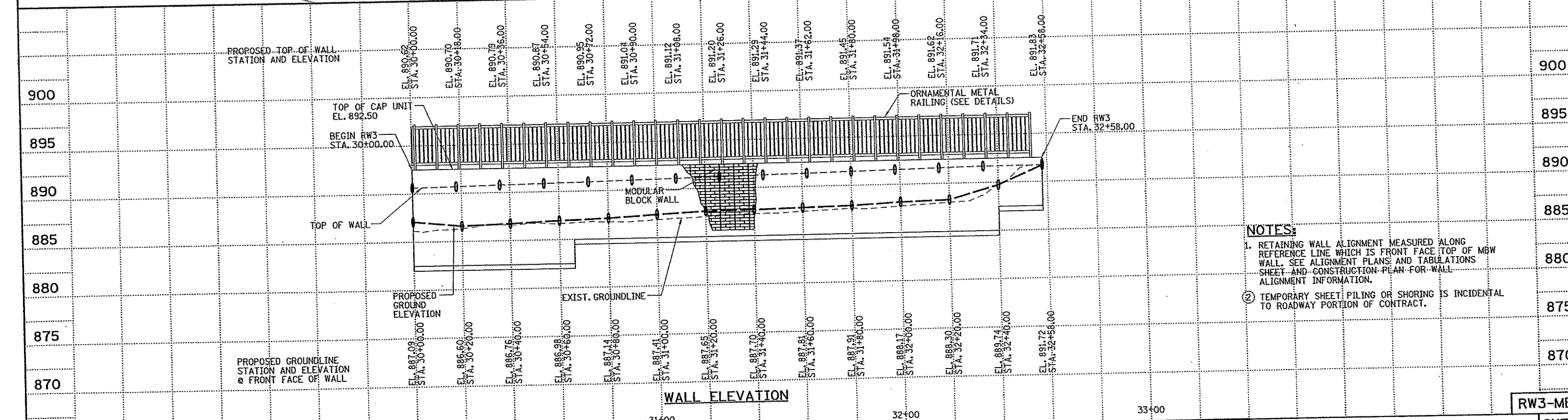
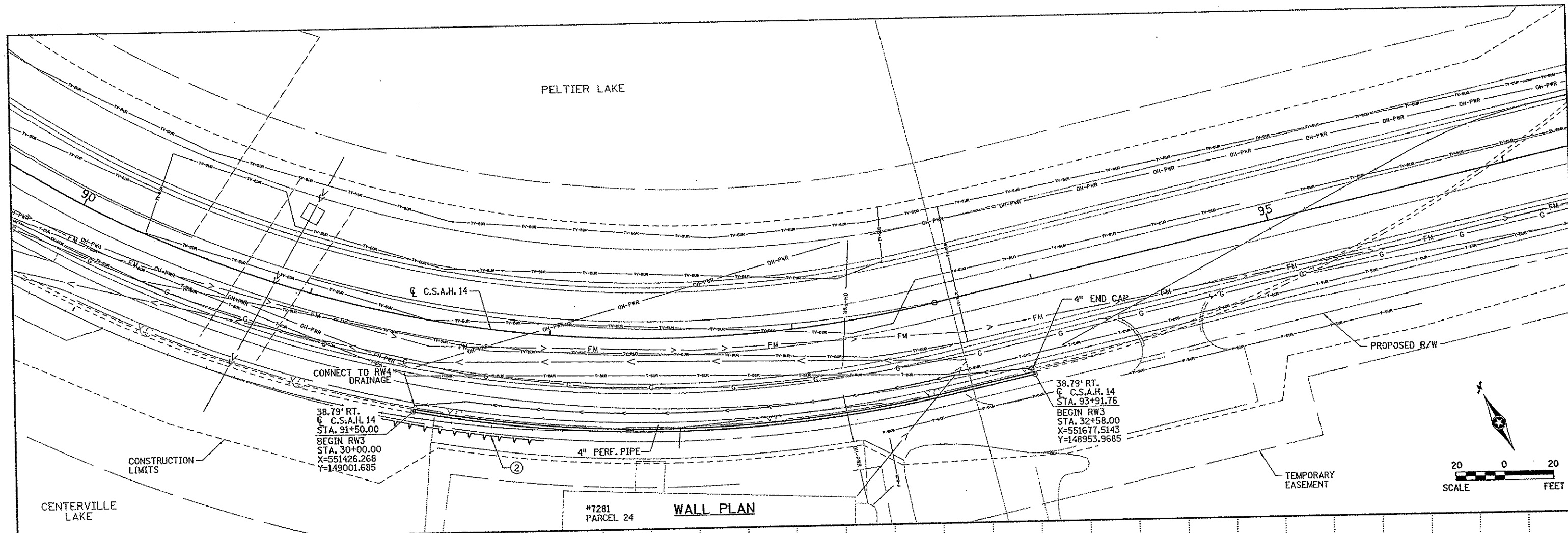
STATE AID PROJECT NO. 02-614-027  
 STATE PROJECT NO. 02-614-24  
 COUNTY PROJECT NO. X  
 CITY PROJECT NO.  
 DRAWN BY J. MAXWELL DATE 10/06  
 DESIGNED BY J. WEST DATE 10/06  
 CHECKED BY L. ERICKSON DATE 10/06  
 COMM. NO. 0044994

**SRF CONSULTING GROUP, INC.**

ANOKA COUNTY  
 RETAINING WALL PLANS  
 C.S.A.H. 14  
 PLAN AND PROFILE

SHEET W3 OF W10





- NOTES:**
- RETAINING WALL ALIGNMENT MEASURED ALONG REFERENCE LINE WHICH IS FRONT FACE TOP OF MBW WALL. SEE ALIGNMENT PLANS AND TABULATIONS SHEET AND CONSTRUCTION PLAN FOR WALL ALIGNMENT INFORMATION.
  - TEMPORARY SHEET PILING OR SHORING IS INCIDENTAL TO ROADWAY PORTION OF CONTRACT.

NO	DATE	BY	CHK	APPR	REVISION

5:13:45 PM 3/9/2007

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.

Print Name: JEREMY A. WEST  
*Jeremy A. West*  
 Date: 3/16/07 License: 42039

STATE AID PROJECT NO. 02-614-027  
 STATE PROJECT NO. 02-614-24  
 COUNTY PROJECT NO. X  
 CITY PROJECT NO.      

DRAWN BY J. MAXWELL DATE 10/06  
 DESIGNED BY J. WEST 10/06  
 CHECKED BY L. ERICKSON 10/06  
 COMM. NO. 0044994



ANOKA COUNTY  
 RETAINING WALL PLANS  
 C.S.A.H. 14  
 PLAN AND PROFILE

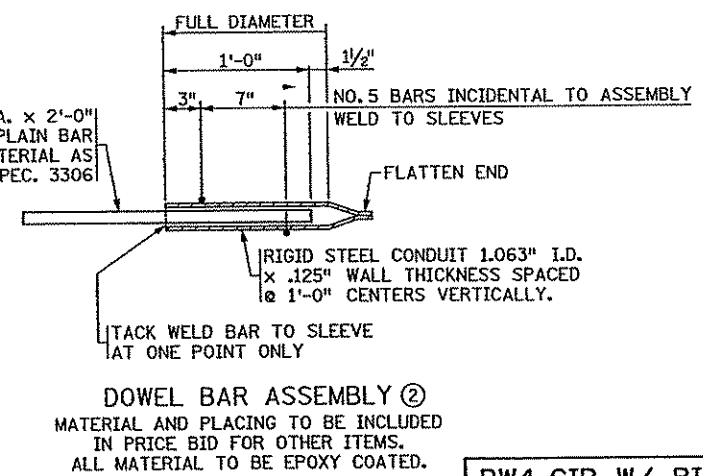
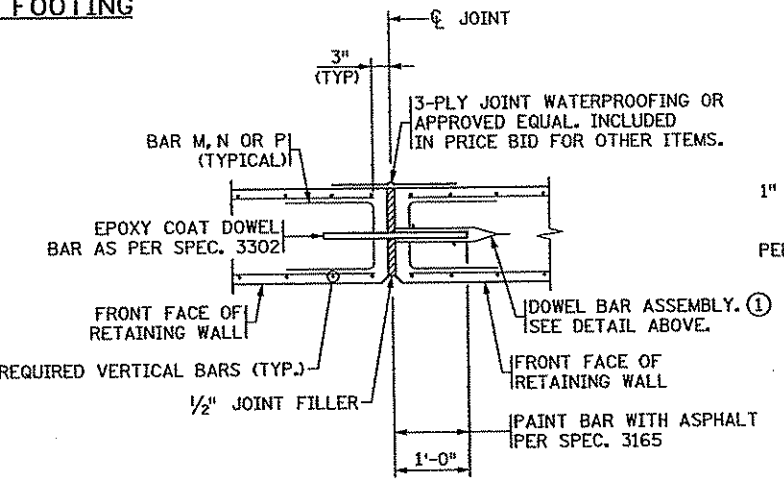
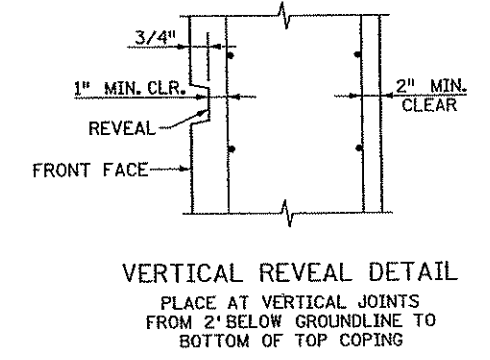
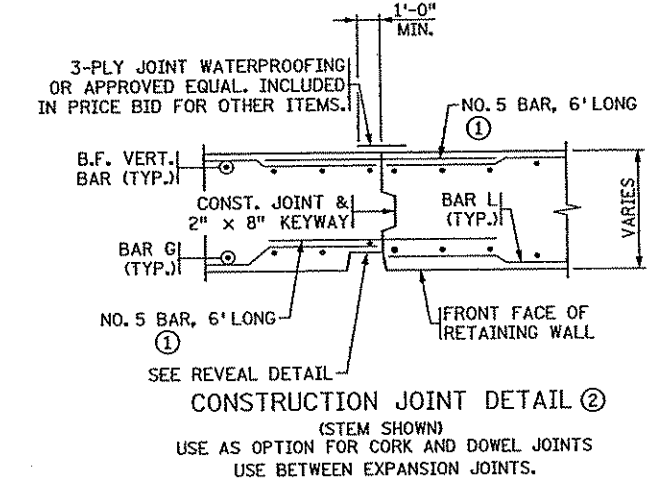
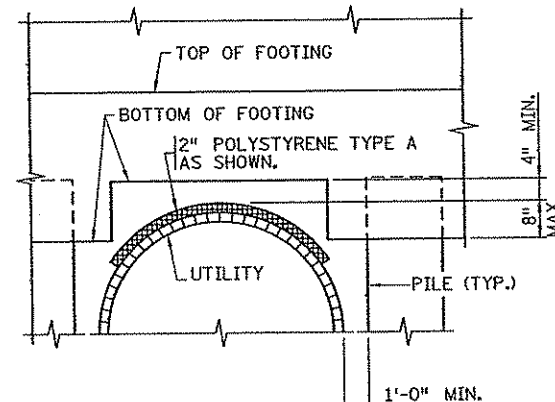
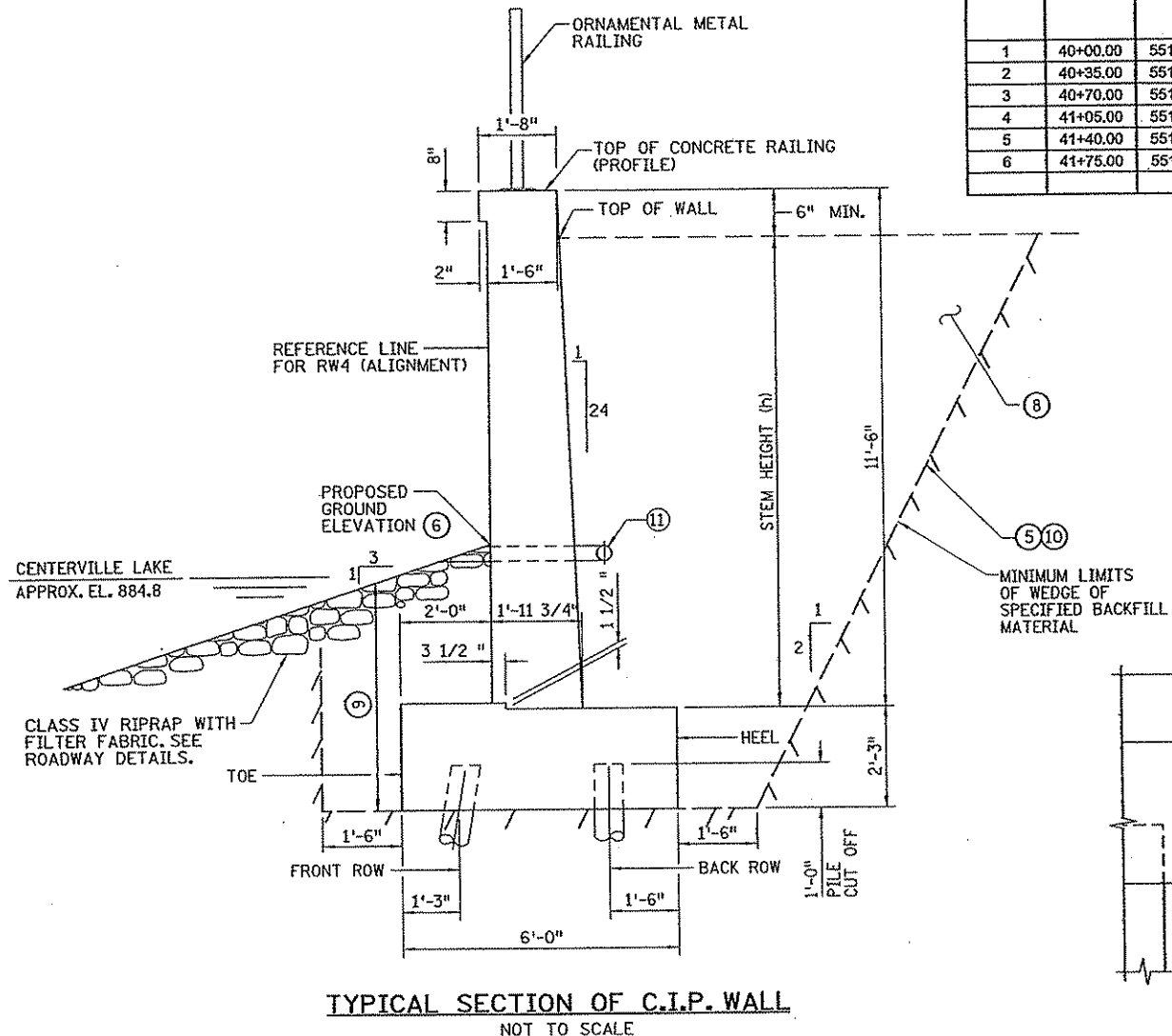
SHEET W4 OF W10

**GEOMETRICS FOR RETAINING WALL RW4 ⑦**

JOINT NUMBER	WALL STATION	COORDINATES		GROUND ELEVATION	TOP OF WALL ELEVATION	TOP OF CONCRETE RAILING ELEVATION DOWNSTATION	TOP OF CONCRETE RAILING ELEVATION UPSTATION	STEM HEIGHT (h) DOWNSTATION (FT)	STEM HEIGHT (h) UPSTATION (FT)	TOP OF FOOTING HEEL ELEVATION DOWNSTATION	TOP OF FOOTING HEEL ELEVATION UPSTATION	BOTTOM OF FOOTING ELEVATION DOWNSTATION	BOTTOM OF FOOTING ELEVATION UPSTATION	PANEL LENGTH (FT)	PANEL NUMBER	REMARKS
		X	Y													
1	40+00.00	551276.905	149091.634	890.300	890.818	-	892.500	-	9' - 9 7/8"	-	881.000	-	878.750	35' - 0"	1	
2	40+35.00	551307.329	149074.694	887.000	890.663	892.500	892.500	9' - 8"	9' - 8"	881.000	881.000	878.750	878.750	35' - 0"	2	
3	40+70.00	551335.175	149053.501	887.000	890.523	892.500	892.500	9' - 6 1/4"	9' - 6 1/4"	881.000	881.000	878.750	878.750	35' - 0"	3	
4	41+05.00	551364.337	149034.158	887.000	890.466	892.500	892.500	9' - 5 5/8"	9' - 5 5/8"	881.000	881.000	878.750	878.750	35' - 0"	4	
5	41+40.00	551394.693	149016.748	887.000	890.495	892.500	892.500	9' - 6"	9' - 6"	881.000	881.000	878.750	878.750	35' - 0"	5	
6	41+75.00	551426.114	149001.343	887.000	890.610	892.500	-	9' - 7 3/8"	-	881.000	-	878.750	-	-	-	

**SUMMARY OF QUANTITIES: RW4 C-I-P RETAINING WALL**

PANEL	STRUCTURAL CONCRETE		REINFORCEMENT BARS		ORNAMENTAL METAL RAILING	C-I-P CONCRETE PILING DELIVERED 12"	C-I-P CONCRETE PILING DRIVEN 12"	C-I-P CONC TEST PILE 85 FT LONG 12"	PREBORING (EARTH)	DRAINAGE				MISCELLANEOUS ITEMS ①		
	1A43 (FOOTING)	3Y43 (STEM)	PLAIN	EPOXY ④						4" PERF TP PIPE	END CAP ①	4" DIA. TEE ①	4" TP PIPE ①	DOWEL BAR ASSEMBLY ② ④	3-PLY JT. WATER-PROOFING	JOINT FILLER ②
	CU. YD.	CU. YD.	POUND	POUND	LIN. FT.	LIN. FT.	LIN. FT.	EACH	LIN. FT.	LIN. FT.	EACH	EACH	LIN. FT.	EACH	LIN. FT.	LIN. FT.
1	18	26	1613	1778	35	375	325	1	60	35	1	-	-	-	12	-
2	18	26	1613	1778	35	375	345	1	40	35	-	-	-	-	12	-
3	18	26	1613	1778	35	525	525	1	-	35	-	-	-	12	12	12
4	18	26	1613	1778	35	375	375	1	-	35	-	-	-	12	-	-
5	18	27	1613	1860	35	375	375	1	-	35	-	1	20	-	12	-
<b>TOTAL</b>	<b>90</b>	<b>131</b>	<b>8065</b>	<b>8972</b>	<b>175</b>	<b>2025</b>	<b>1945</b>	<b>5</b>	<b>100</b>	<b>175</b>	<b>1</b>	<b>1</b>	<b>20</b>	<b>12</b>	<b>60</b>	<b>12</b>



- NOTES:**
- ① INCIDENTAL.
  - ② DOWEL BAR ASSEMBLY AND JOINT FILLER QUANTITY BASED ON PLANS. IT IS AT THE CONTRACTOR'S OPTION TO SUBSTITUTE A CONSTRUCTION JOINT WHERE A CORK AND DOWEL JOINT IS LOCATED SUCH THAT CORK AND DOWEL JOINTS DO NOT EXCEED 105'-0".
  - 3. SEE EARTHWORK SUMMARY FOR STRUCTURE EXCAVATION AND BACKFILL QUANTITIES.
  - ④ REBAR FOR CONSTRUCTION JOINTS SHALL BE INCIDENTAL TO REINFORCEMENT BARS (EPOXY COATED). SEE MISCELLANEOUS DETAILS FOR FURTHER INFORMATION.
  - ⑤ ACTUAL EXCAVATION SLOPE IS DETERMINED BY OSHA REGULATIONS AND IN-SITU SOILS.
  - ⑥ FINISHED GROUND LINE AT FRONT FACE OF WALL.
  - ⑦ COORDINATES ARE LOCATED AT REFERENCE LINE WHICH IS FRONT FACE OF RETAINING WALL.
  - ⑧ MN/DOT SPEC. 3149.2B2, MODIFIED TO LESS THAN 10% PASSING A NO. 200 SIEVE. COMPACTION EQUAL TO MN/DOT SPEC. 2105.3F1.
  - ⑨ MINIMUM EMBEDMENT IS 4'-6".
  - ⑩ PAY LIMITS FOR STRUCTURAL EXCAVATION.
  - ⑪ 4" T.P. TYPE II DRAIN PIPE MN/DOT SPEC. 3245, WRAP WITH TYPE 1 GEOTEXTILE. OUTLET ELEVATION 886.0 AT LOCATION SHOWN IN PLAN. MIN. SLOPE ALONG PIPE LENGTH IS 1/8" PER FT. CONNECT TO RW3 DRAINAGE.
  - 12. RETAINING WALL ALIGNMENT MEASURED ALONG REFERENCE LINE WHICH IS FRONT FACE OF RETAINING WALL.
  - 13. JOINT FILLER SHALL BE CORK (SPEC. 2401.3E3) OR OTHER APPROVED EQUAL. CORK AND NAILS INCLUDED IN PRICE BID FOR OTHER ITEMS.

NO.	DATE	BY	CHKD	APPR	REVISION

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

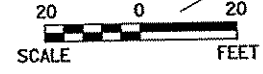
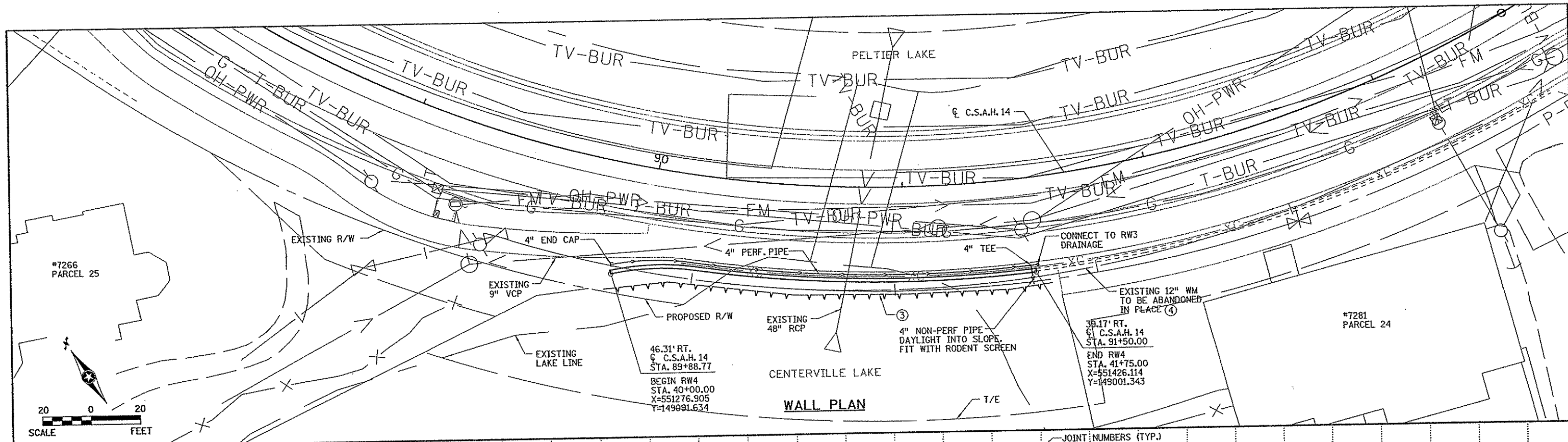
Print Name: JEREMY A. WEST

*Jeremy A. West*

Date: 3/15/07 License: 42039

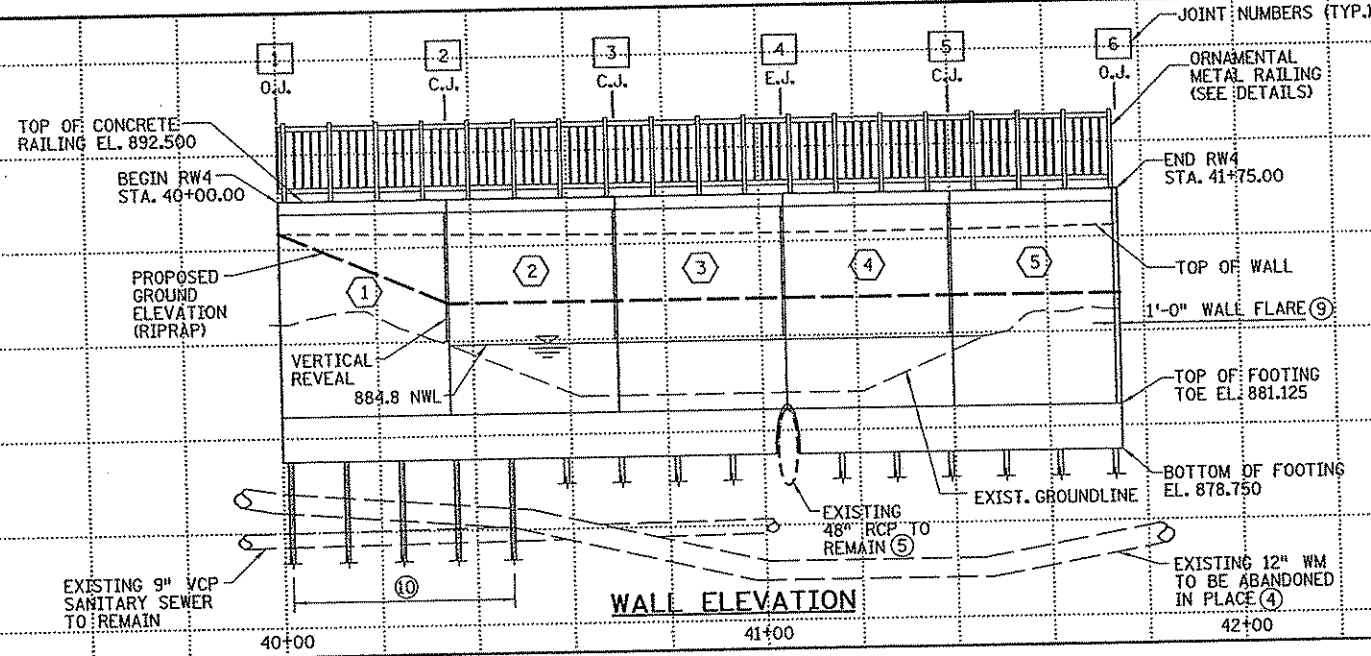
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 COUNTY PROJECT NO. X  
 CITY PROJECT NO.

**SRF CONSULTING GROUP, INC.**



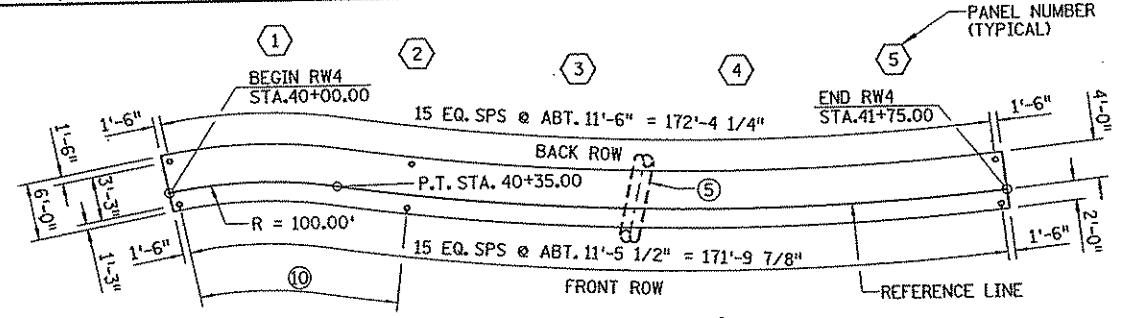
**NOTES:**

1. C.J. = CONSTRUCTION JOINT  
E.J. = EXPANSION JOINT (CORK & DOWEL JOINT)  
O.J. = OPEN JOINT
2. REVEALS TO EXTEND 2' BELOW PROPOSED GROUNDLINE AT FRONT FACE OF WALL.
3. TEMPORARY SHEET PILING OR SHORING IS INCIDENTAL TO ROADWAY PORTION OF CONTRACT.
4. CONTRACTOR IS ALLOWED TO DRIVE PILING THROUGH EXISTING 12" WM.
5. USE "PIPE THROUGH PILE FOOTING" DETAIL FOR EXISTING 48" RCP. ADJUST PILE SPACING AS NECESSARY TO AVOID RCP.
6. ALL PANELS ON PILE FOOTINGS.
7. REQUIRED PILE CAPACITY = 50 TONS.
8. RETAINING WALL ALIGNMENT MEASURED ALONG REFERENCE LINE WHICH IS FRONT FACE OF RETAINING WALL. SEE ALIGNMENT PLANS AND TABULATIONS SHEET AND CONSTRUCTION PLAN FOR WALL ALIGNMENT INFORMATION.
9. SEE DETAILS ON MBW SHEETS AND WALL REINFORCEMENT SHEET.
10. PREBORE PILES WITHIN THE FIRST 50' OF WALL LENGTH DOWN TO ELEVATION 868.75' TO AVOID EXISTING 9" VCP.



**PILE NOTES:**

- 5 - 12" C-I-P TEST PILES, 85 FEET LONG. 895
- 27 - 12" C-I-P, ESTIMATED LENGTH 75 FEET LONG. 890
- 32 - 12" C-I-P REQUIRED. 890
- 10' PREBORED 12" C-I-P CONCRETE PILES ESTIMATED LENGTH 10 FEET. SEE SPECIAL PROVISIONS FOR PREBORED PILING. 885
- PILE SPACING SHOWN IS AT BOTTOM OF FOOTING. 885
- PILES UNDER FOOTING TOE SHALL BE BATTERED 3" PER FOOT IN THE DIRECTION SHOWN ON WALL REINFORCEMENT SHEET. 880
- FOR PILE SPLICE, SEE DETAIL B201. 880
- PILES TO HAVE A NOMINAL DIAMETER OF 12". 875
- ONE TEST PILE TO BE USED PER PANEL. TEST PILES SHALL HAVE A 40' MAXIMUM SPACING. 875



NO	DATE	BY	CKD	APPR	REVISION

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

Print Name: **JEREMY A. WEST**  
*Jeremy A. West*  
 License # 42039  
 Date: 3/15/07

STATE AID PROJECT NO. 02-614-027  
 STATE PROJECT NO. 02-614-24  
 COUNTY PROJECT NO. X  
 CITY PROJECT NO.      

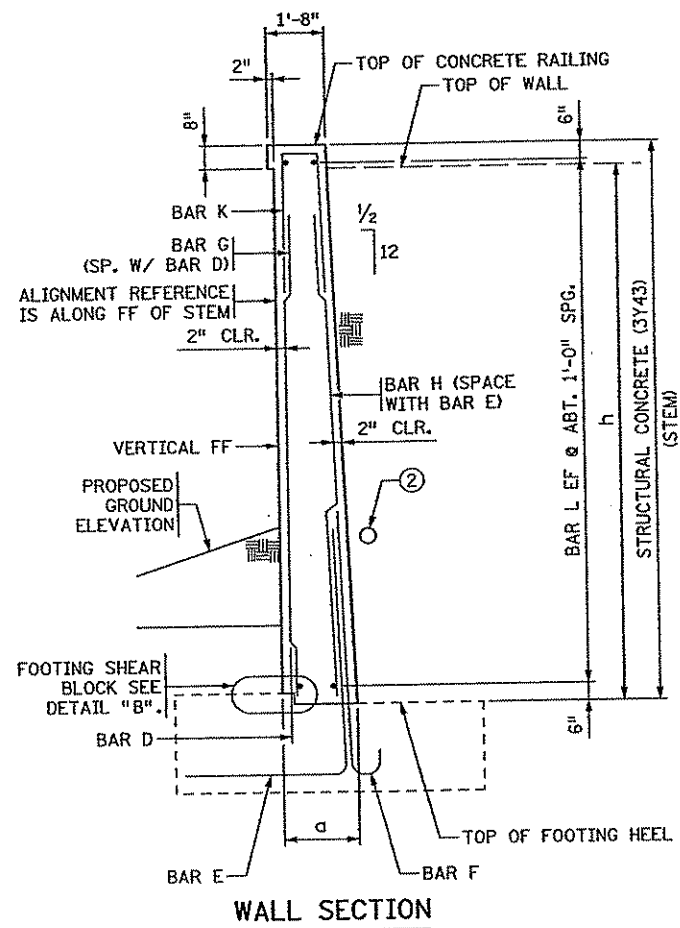
DRAWN BY P. OLSTAD 10/06  
 DESIGNED BY J. WEST 10/06  
 CHECKED BY L. ERICKSON 10/06  
 COMM. NO. 0044994



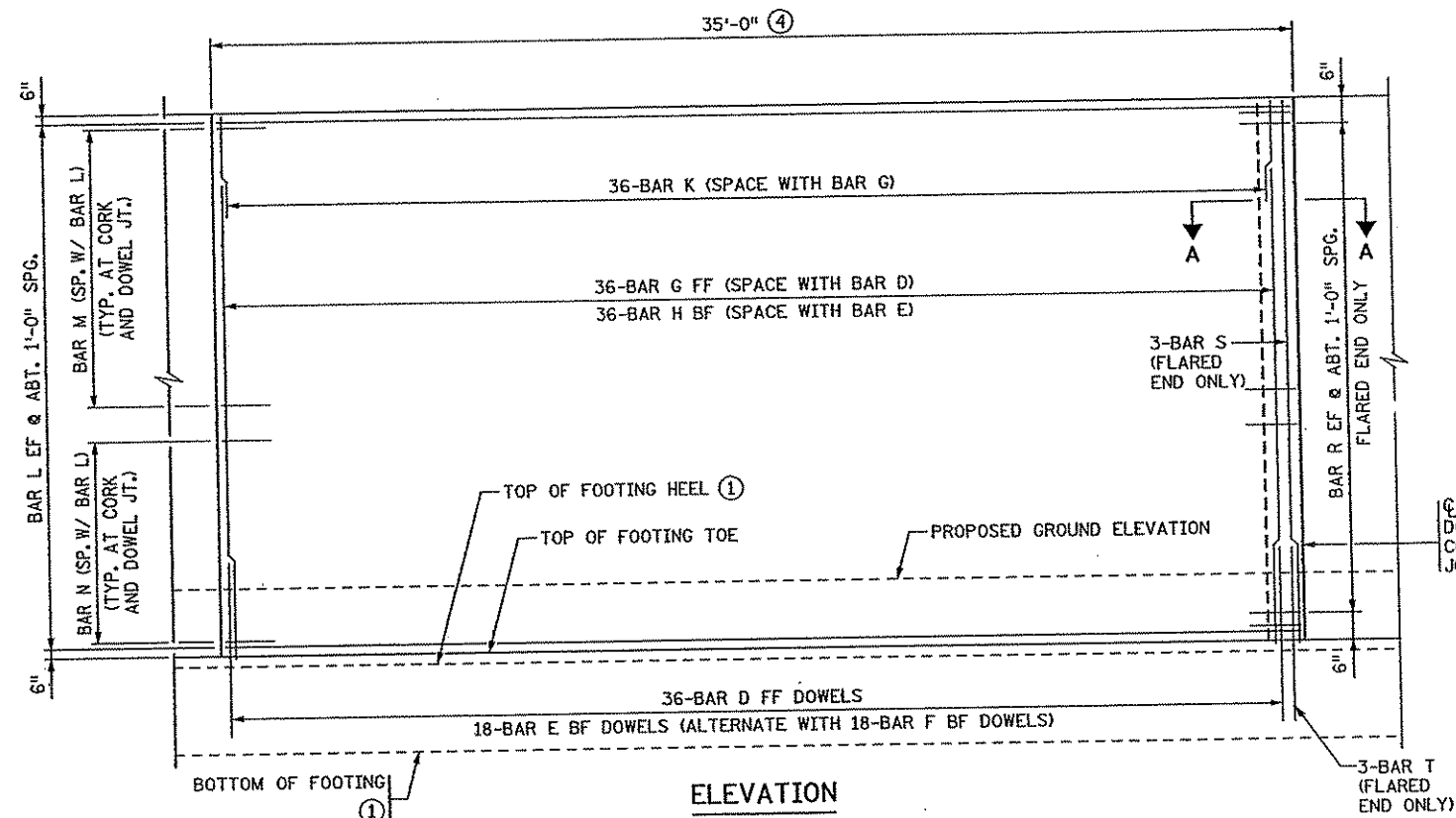
**RW4-CIP W/ PILING**

**ANOKA COUNTY**  
 RETAINING WALL PLANS  
 C.S.A.H. 14  
 PLAN AND PROFILE

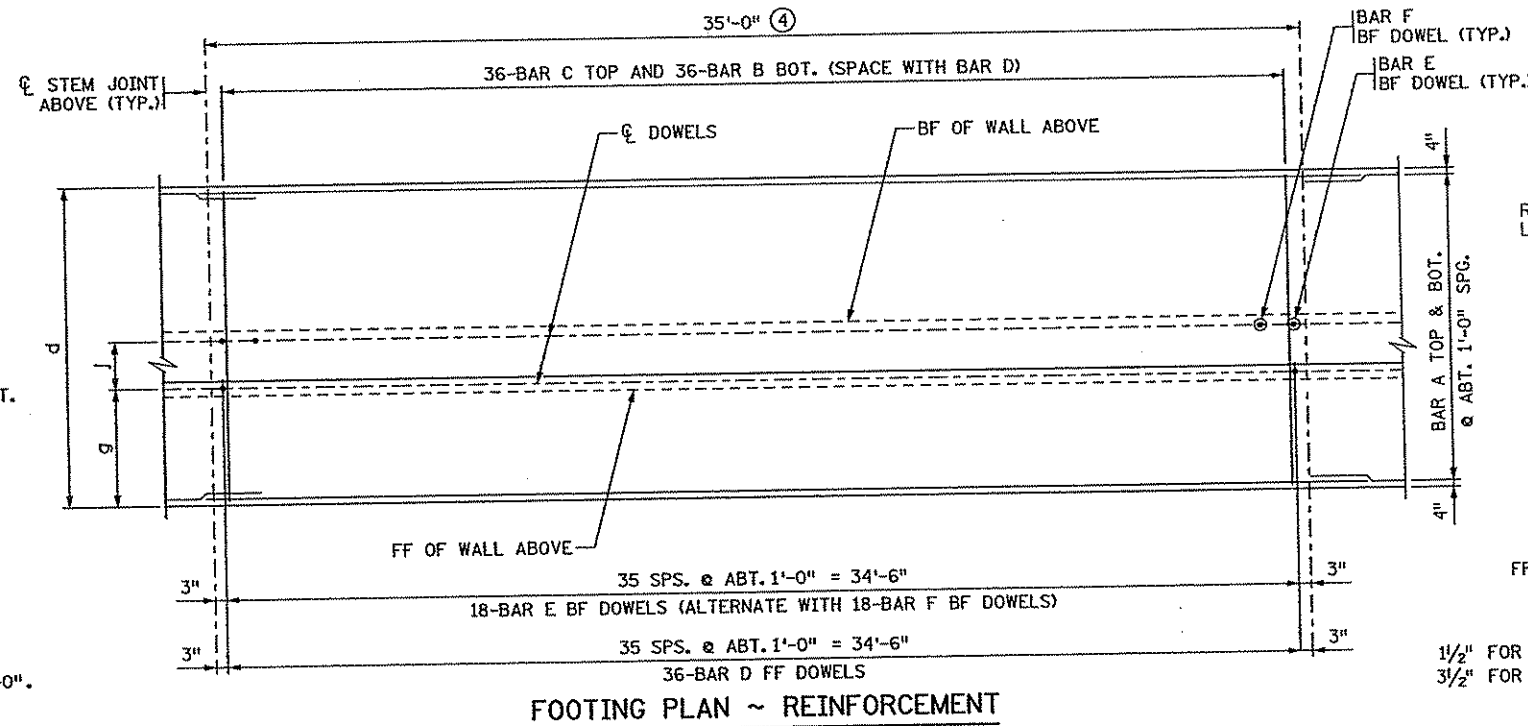
**SHEET**  
 W6  
 OF  
 W10



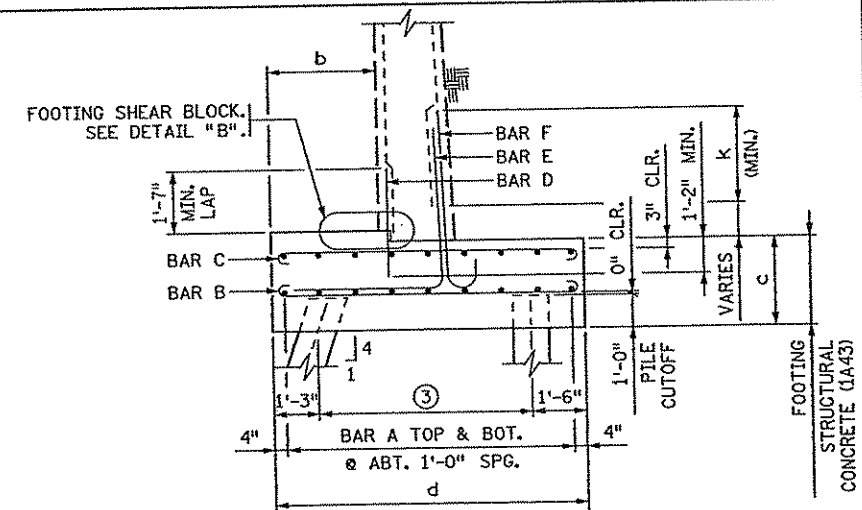
WALL SECTION



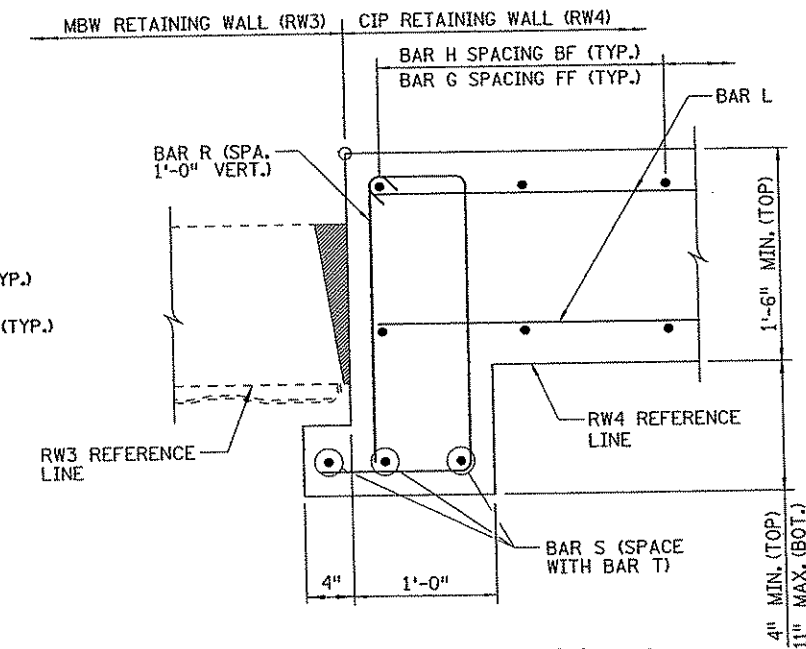
ELEVATION



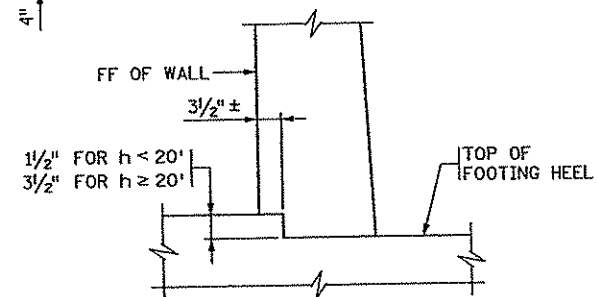
FOOTING PLAN ~ REINFORCEMENT



TYPICAL SECTION THROUGH PILE FOOTING



SECTION A-A  
END OF WALL FLARE - PANEL 5 ONLY



DETAIL "B"

GENERAL NOTES

STEM REINFORCEMENT IS TO BE SYMMETRICALLY/EQUALLY SPACED BETWEEN STEM JOINTS.

FOOTING REINFORCEMENT SYMMETRICAL ABOUT STEM JOINT ABOVE UNLESS OTHERWISE NOTED. SEE PLAN AND PROFILE FOR PILE SPACING AND LAYOUT.

BF DENOTES BACK FACE.  
FF DENOTES FRONT FACE.  
EF DENOTES EACH FACE.

- ① STRAIGHT LINE BETWEEN ELEVATIONS SHOWN ON WALL ELEVATION (EXCEPT FOR STEPPED CONDITIONS). IF A BARRIER IS NOT USED, TOPS OF RETAINING WALL COULD BE USED.
- ② SEE GEOMETRICS AND SUMMARY OF QUANTITIES SHEET FOR DETAILS.
- ③ SEE PLAN AND PROFILE SHEETS FOR PILE SPACING.
- ④ AT THE CONTRACTOR'S OPTION, PANEL LENGTHS MAY VARY UP TO ±1'-0". BAR CUTTING LISTS SHALL BE REVISED ACCORDINGLY BY THE CONTRACTOR.

1/2" CORK AND DOWEL JOINT OR CONSTRUCTION JOINT (TYP.)

RW4-CIP W/ PILING

MODIFIED STANDARD SHEET NO. 5-395.202

ANOKA COUNTY  
RETAINING WALL PLANS  
C.S.A.H. 14  
WALL REINFORCEMENT

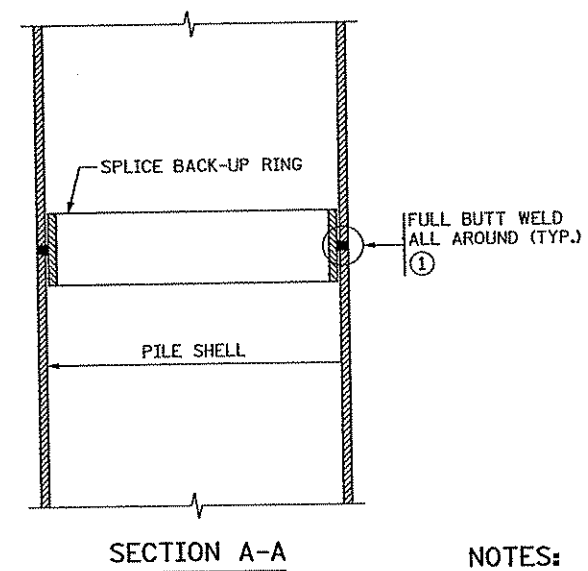
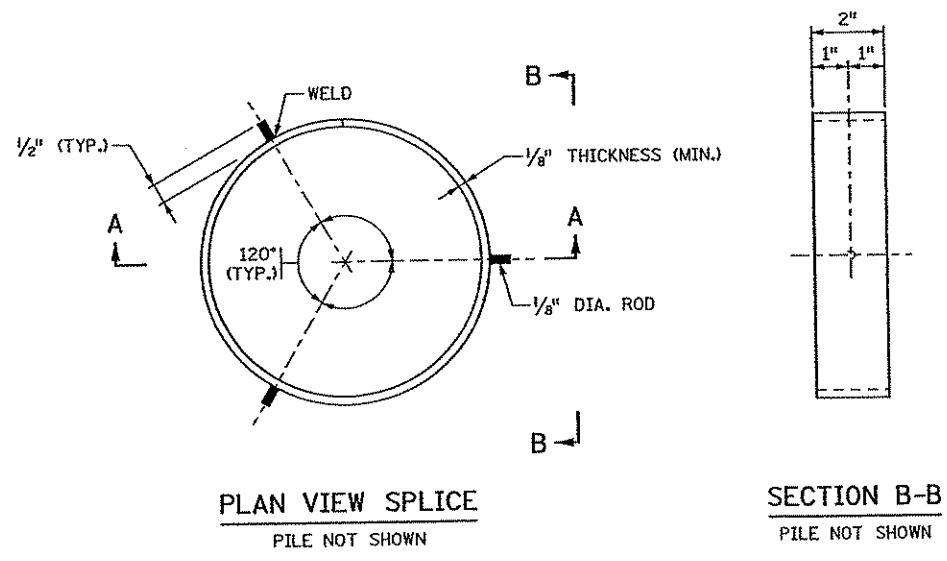
SHEET  
W7  
OF  
W10

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.

Print Name: JEREMY A. WEST  
Date: 3/15/07 License #: 42039

STATE AID PROJECT NO. 02-614-027  
DESIGNED BY J. WEST  
CHECKED BY L. ERICKSON  
CITY PROJECT NO. X

DRAWN BY J. MAXWELL  
DATE 10/06  
COMM. NO. 0044994  
SRF CONSULTING GROUP, INC.



**NOTES:**

APPROVED COMMERCIAL PILE SPLICE BACK-UP RING MAY BE USED IN LIEU OF THE TYPE DETAILED. BACK-UP RING SHALL HAVE A TIGHT FIT.

WELDING ELECTRODES SHALL BE CELLULOSIC TYPE ELECTRODES E-6010 OR E-6011.

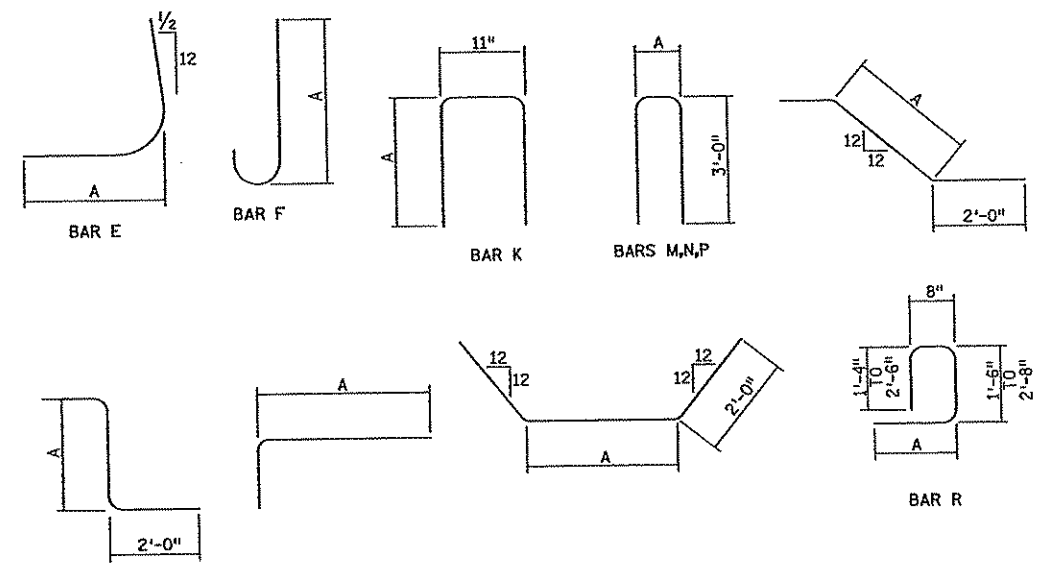
ELECTRODES WHICH HAVE BECOME WET, SOILED OR DAMAGED SHALL NOT BE USED.

WELDING SHALL NOT BE DONE WHEN THE AMBIENT TEMPERATURE IS LOWER THAN 0° F. OR WHEN THE PILE IS WET OR EXPOSED TO FALLING RAIN OR SNOW. WHEN THE PILE METAL TEMPERATURE IS BELOW 32° F., THE PILE METAL IN THE AREA OF THE WELD SHALL BE HEATED TO A MINIMUM TEMPERATURE OF 70° F. AND MAINTAINED AT THIS TEMPERATURE DURING WELDING.

① FOR PILE SHELL THICKNESSES GREATER THAN 1/2", USE A B-U4c WELD CONFIGURATION.

BAR	MARK	NO.	LENGTH	A	LOCATION	WT.	DIMENSIONS & QUANTITIES			
h = 11' PANELS: 1 - 5							L=35'-0"			
PILE FOUNDATION REINFORCEMENT							PILE FOUNDATION			
A	F801	12	37'-5"	STR.	LONG T & B	1199	b	2'-0"	d	6'-0"
B	F502	36	5'-6"	STR.	TRANS BOT	207	c	2'-3"	g	2'-2 5/16"
C	F503	36	5'-6"	STR.	TRANS TOP	207				
STEM REINFORCEMENT							STEM			
							a	1'-11 3/4"	k	2'-0"
							j	1'-7 1/8"		
FOOTING DOWELS & STEM REINFORCEMENT										
D	F504E	36	3'-0"	STR.	DOWEL FF	113				
E	F505E	18	4'-1"	0'-10"	DOWEL BF	77				
F	F506E	18	4'-3"	3'-3"	DOWEL BF	80				
G	S401E	36	8'-1"	STR.	VERT FF	195				
H	S502E	36	8'-1"	STR.	VERT BF	304				
K	S504E	36	10'-7"	4'-9"	TIE	398				
L	S405E	22	30'-0"	STR.	HORIZ EF	441				
M	S506E	20	7'-4"	1'-4"	EXP JT TIE	153				
N	S507E	2	7'-9"	1'-9"	EXP JT TIE	17				
R	S410E	12	4'-6"	1'-0"	FLARE TIE	46				
S	S411E	3	11'-2"	STR.	FLARE VERT FF	23				
T	S512E	3	4'-0"	STR.	FLARE DOWEL FF	13				

PANEL 5 ONLY



**NOTES:**

L = PANEL LENGTH  
 F.F. = FRONT FACE  
 B.F. = BACK FACE  
 E.F. = EACH FACE  
 BARS MARKED WITH THE SUFFIX "E" ARE EPOXY COATED.

APPROVED: NOVEMBER 22, 2002	STATE OF MINNESOTA DEPARTMENT OF TRANSPORTATION	REVISION	DETAIL NO.
<i>Daniel J. Hanson</i> STATE BRIDGE ENGINEER	<b>PILE SPLICE</b> (CAST-IN-PLACE CONCRETE PILES)		<b>B201</b>

NO.	DATE	BY	CKD	APPR	REVISION

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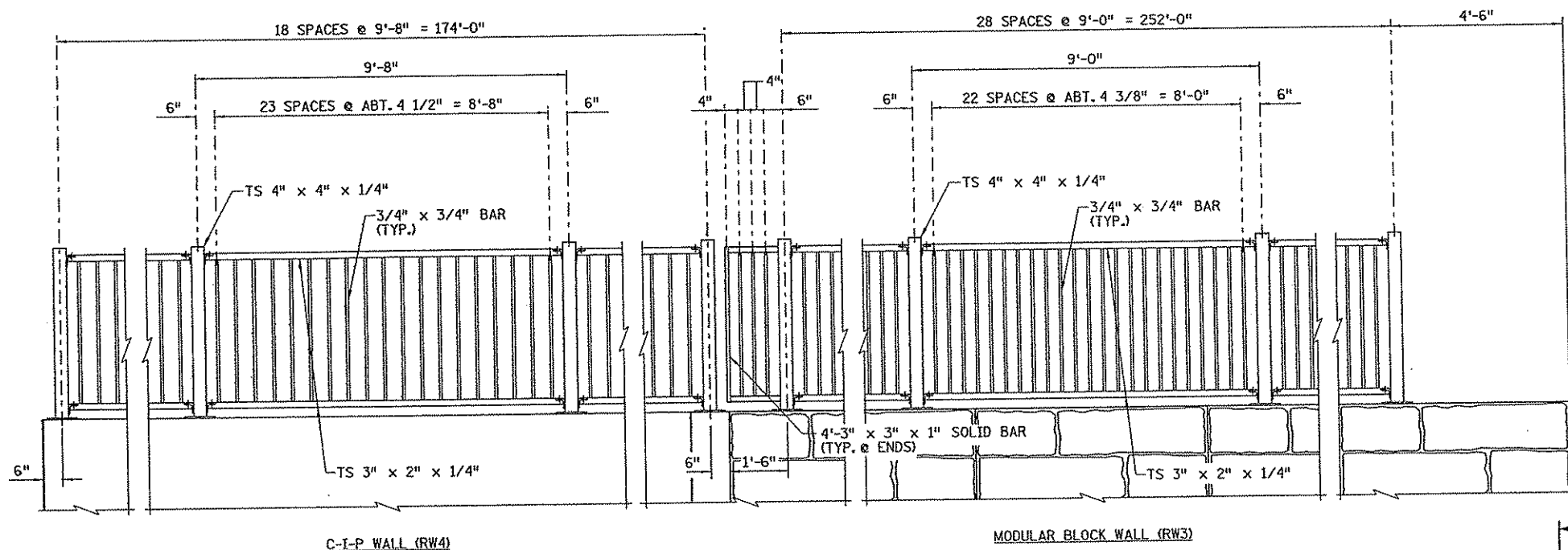
Print Name: JEREMY A. WEST

Date: 3/15/07 License: 42039

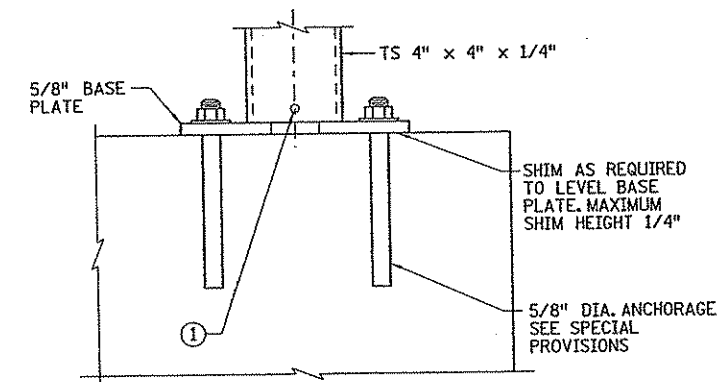
STATE AID PROJECT NO. 02-614-027	DRAWN BY J. MAXWELL	DATE 10/06
STATE PROJECT NO. 02-614-24	DESIGNED BY J. WEST	10/06
COUNTY PROJECT NO. X	CHECKED BY L. ERICKSON	10/06
CITY PROJECT NO.	COMM. NO. 0044994	



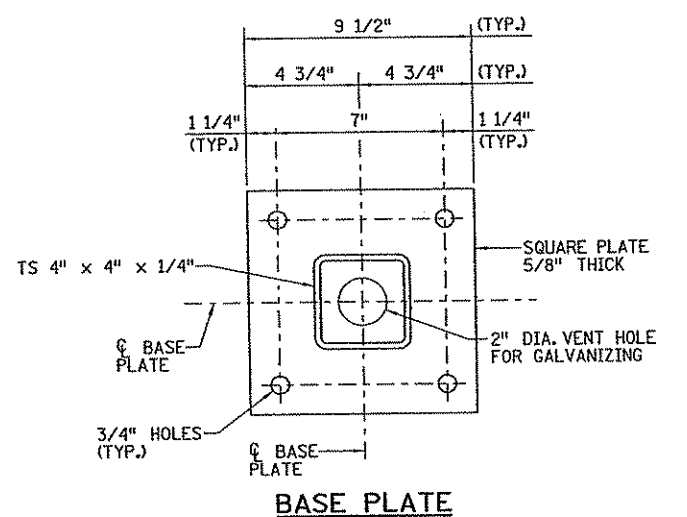
ANOKA COUNTY RETAINING WALL PLANS C.S.A.H. 14 PANEL TABULATION AND B-DETAILS	RW4-CIP W/ PILING	SHEET W8 OF W10
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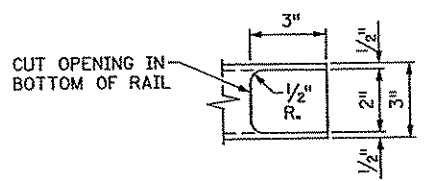
RAILING ELEVATION



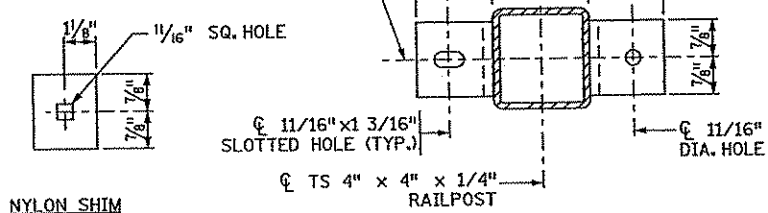
ANCHOR DETAIL



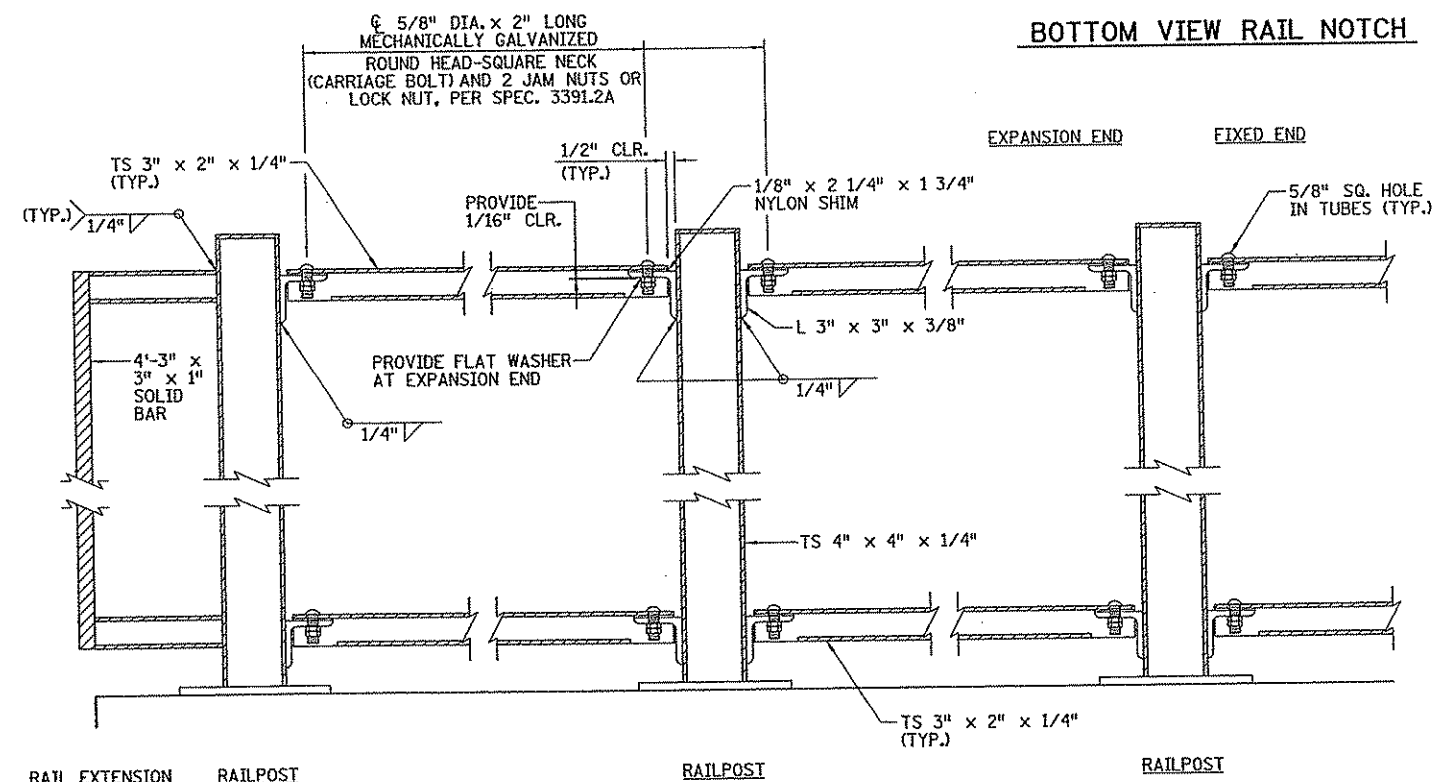
BASE PLATE



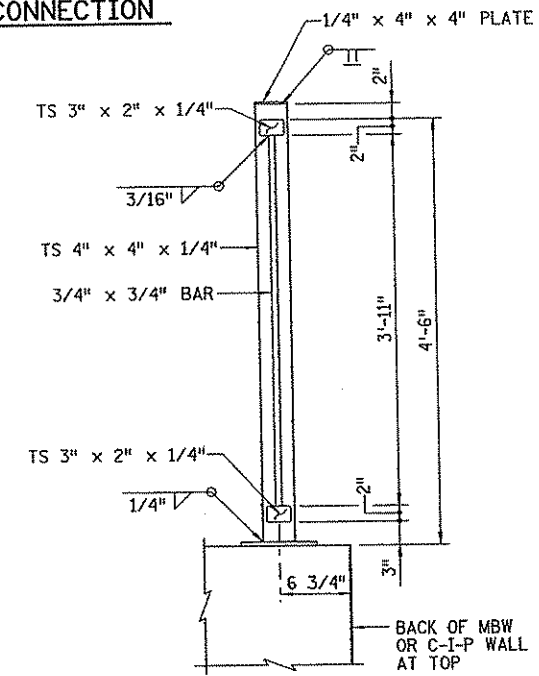
BOTTOM VIEW RAIL NOTCH



RAILPOST CONNECTION



SECTION ON &#216; OF RAIL



RAILING SECTION

GENERAL NOTES

- LENGTH OF "ORNAMENTAL METAL RAILING" FOR PAYMENT SHALL BE MEASURED BETWEEN THE CENTERS OF THE END RAILPOSTS.
- ALL STRUCTURAL STEEL TUBING IN THE RAIL SHALL BE A500, GRADE B PER MN/DOT SPEC. 3362.
- MATERIAL FOR CLOSURE PLATES AND BASE PLATES SHALL CONFORM TO MN/DOT SPEC. 3306.
- FOR RAIL ANCHORAGE REQUIREMENTS SEE SPECIAL PROVISIONS.
- RAIL POSTS AND PICKETS SHALL BE NORMAL TO GRADE. HORIZONTAL RAILS SHALL BE CAMBERED/CURVED WHERE APPLICABLE AND PARALLEL TO THE EDGE OF SIDEWALK PROFILE.
- GALVANIZE BOLTS, NUTS, AND WASHERS PER MN/DOT SPEC. 3392.
- GALVANIZE ALL OTHER STRUCTURAL STEEL PER MN/DOT SPEC. 3394 AFTER FABRICATION.
- RAILING EXPANSION JOINTS SHALL BE PLACED IN BOTH RAILS AND IN EACH PANEL.
- THE RAILING, BASE PLATES, AND PROTRUDING PORTIONS OF BOLTS, NUTS AND WASHERS SHALL BE PAINTED IN ACCORDANCE WITH THE SPECIAL PROVISIONS.
- RAILING SHALL BE GROUNDED WITH 5/8" DIA. COPPER ROD AS PER MN/DOT SPEC. 2557.
- VENT HOLES SHALL BE DRILLED IN THE RAIL POST BASE AND THE RAIL TUBES AS NECESSARY TO FACILITATE GALVANIZING.

NO	DATE	BY	CHKD	APPR	REVISION

2:55:43 PM 3/15/2007

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.

Print Name: JEREMY A. WEST

*Jeremy A. West*

Date: 3/15/07 License: 42039

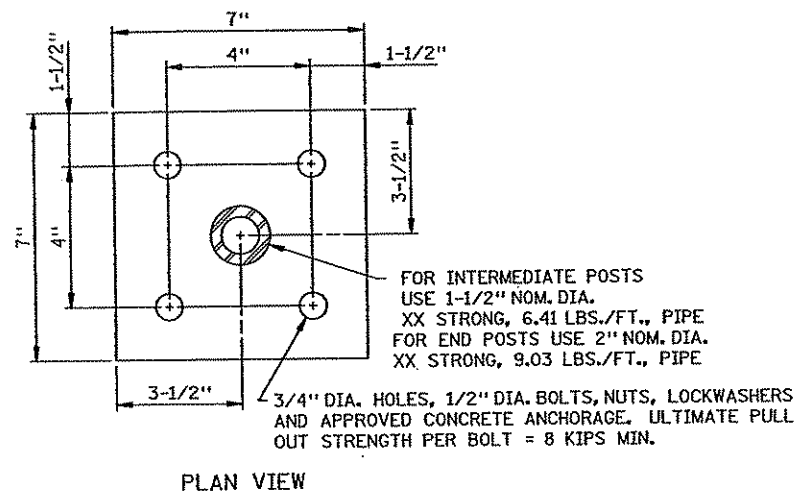
STATE AID PROJECT NO. 02-614-027  
 COUNTY PROJECT NO. 02-614-24  
 COUNTY PROJECT NO. X  
 CITY PROJECT NO.

DRAWN BY E. JOHNSON DATE 10/06  
 DESIGNED BY J. WEST DATE 10/06  
 CHECKED BY L. ERICKSON DATE 10/06  
 COMM. NO. 0044994

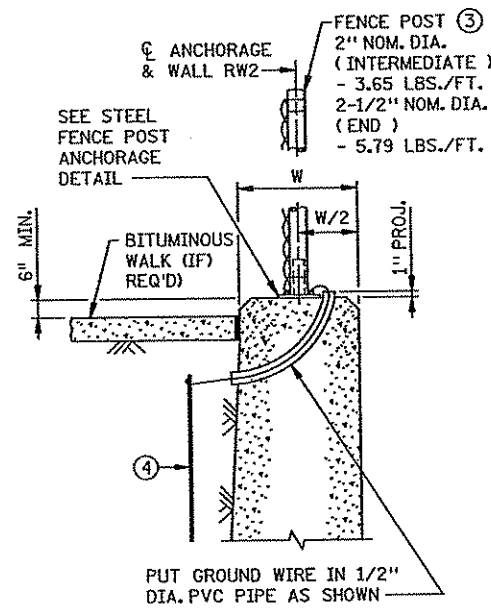


ANOKA COUNTY  
 RETAINING WALL PLANS  
 C.S.A.H. 14  
 ORNAMENTAL RAILING (RW3 AND RW4)

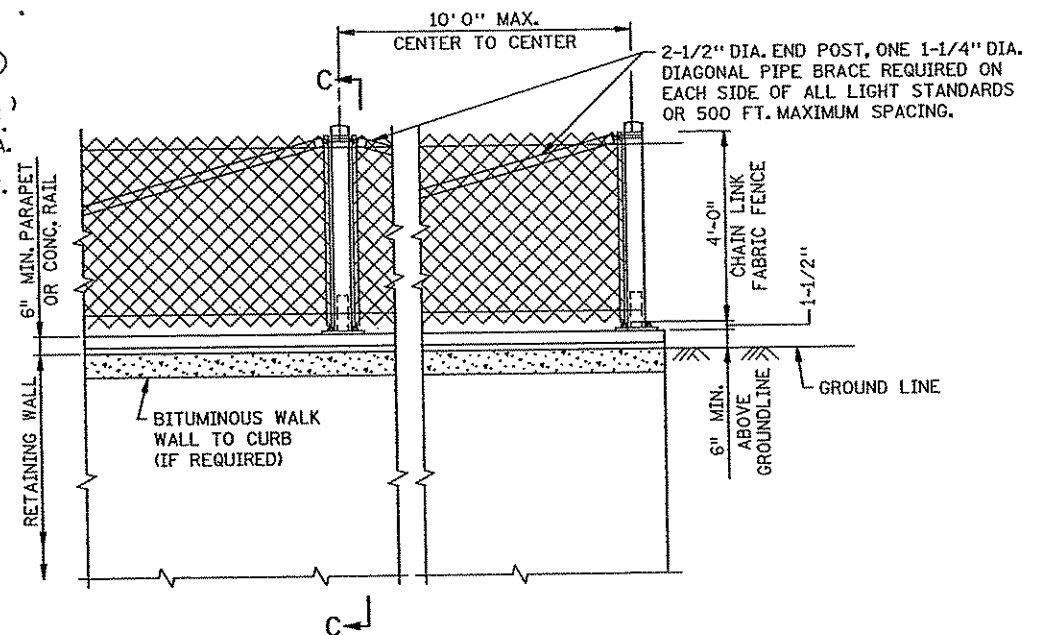
SHEET  
 W9  
 OF  
 W10



PLAN VIEW

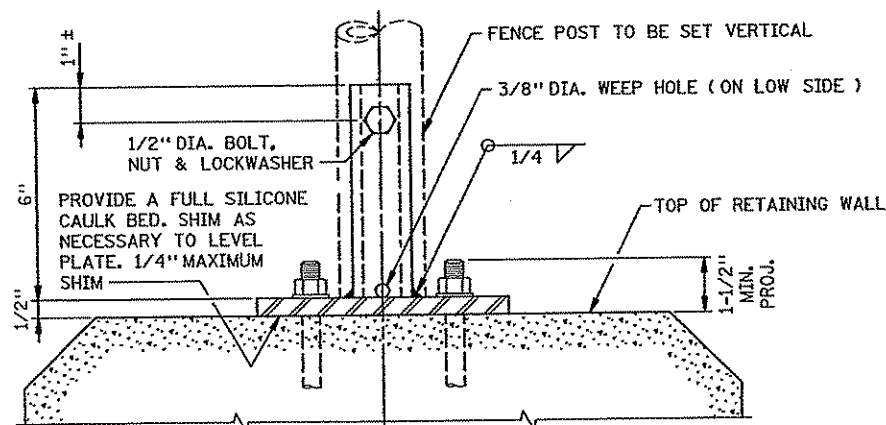


SECTION C-C



ELEVATION

CHAIN LINK FENCE ON RETAINING WALL WITH PARAPET



TYPICAL SECTION

STEEL FENCE POST ANCHORAGE DETAIL ① ②

NOTES:

- ①  $\phi$  OF ANCHORAGE SHALL BE 6" MIN. FROM DEFLECTION JOINTS.
- ② ESTIMATED WEIGHT = 10 OR 12 LBS. STRUCT. STEEL PER SPEC. 3306 - STRUCT. PIPE PER SPEC. 3362. GALVANIZE THE FENCE POST ANCHORAGE AFTER FABRICATION PER SPEC. 3394. GALVANIZE THE FASTENERS PER SPEC. 3392.
- ③ INSTALL FENCE PER SPEC. 2557.
- ④ PROVIDE ELECTRICAL GROUNDS FOR FENCING PER SPEC. 2557 AND AS MODIFIED BELOW:
  - a. WALLS WITHOUT SIDEWALKS ADJACENT TO WALL; INSTALL PER SPEC. 2557.
  - b. WALLS WITH SIDEWALKS ADJACENT TO WALL; PLACE GROUNDING RODS BELOW SIDEWALK ELEVATION. LOCATE CONNECTING WIRE (FROM FENCE TO GROUND ROD) DOWN THRU WALL TO BELOW SIDEWALK ELEVATION AND THEN OUT TO ROD.
  - c. GROUNDING SHALL NOT BE CONNECTED TO THE LIGHTING SYSTEM WHEN LIGHTING IS REQUIRED ON THE WALL. USE EITHER "a" OR "b" ABOVE.

NO	DATE	BY	CKD	APPR	REVISION

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

Print Name: JEREMY A. WEST

Date: 3/13/07 License: 42039

STATE AID PROJECT NO. 02-614-027  
 STATE PROJECT NO. 02-614-24  
 COUNTY PROJECT NO. X  
 CITY PROJECT NO.

DRAWN BY J. MAXWELL DATE 10/06  
 DESIGNED BY J. WEST DATE 10/06  
 CHECKED BY L. ERICKSON DATE 10/06  
 COMM. NO. 0044994



ANOKA COUNTY  
 RETAINING WALL PLANS  
 C.S.A.H. 14  
 ANCHORAGE & CHAIN LINK FENCE FOR RETAINING WALLS (RW2)

SHEET  
 W10  
 OF  
 W10

MODIFIED	STANDARD SHEET NO. 5-297.636
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LIGHTING TABULATION								
ALIGNMENT	STATION	OFFSET		OWNER	CONDUIT EACH	ELECTRICAL SERVICE CABINET EACH	ELECTRICAL PULL BOX EACH	CONCRETE POLE BASE EACH
		LT	RT					
CSAH 14	128+03.54 to 139+74.40	38.93	61.95	CENTERVILLE	2377			
CSAH 14	128+03.54		29.69	CENTERVILLE				1
CSAH 14	128+58.22		31.98	CENTERVILLE				1
CSAH 14	128+65.15	30.75		CENTERVILLE				1
CSAH 14	128+98.21		61.95	CENTERVILLE		1		
CSAH 14	129+02.22		37.24	CENTERVILLE				1
CSAH 14	129+21.88	29.91		CENTERVILLE				1
CSAH 14	129+44.77		38.16	CENTERVILLE				1
CSAH 14	129+84.01	29		CENTERVILLE				1
CSAH 14	129+84.37		35.97	CENTERVILLE				1
CSAH 14	130+27.74	29		CENTERVILLE				1
CSAH 14	130+30.54		35.01	CENTERVILLE				1
CSAH 14	130+73.32		35.02	CENTERVILLE				1
CSAH 14	130+73.33	29		CENTERVILLE				1
CSAH 14	132+19.72		35.17	CENTERVILLE			1	
CSAH 14	132+19.74	34.43		CENTERVILLE			1	
CSAH 14	132+35.15		35	CENTERVILLE				1
CSAH 14	132+35.16	35		CENTERVILLE				1
CSAH 14	132+79.15	35		CENTERVILLE				1
CSAH 14	132+76.15		35	CENTERVILLE				1
CSAH 14	133+23.15	35		CENTERVILLE				1
CSAH 14	133+23.15		35	CENTERVILLE				1
CSAH 14	133+63.15		35	CENTERVILLE				1
CSAH 14	133+67.15	35		CENTERVILLE				1
CSAH 14	134+11.01	35		CENTERVILLE				1
CSAH 14	134+11.29		35	CENTERVILLE				1
CSAH 14	134+54.75	35		CENTERVILLE				1
CSAH 14	134+55.56		35	CENTERVILLE				1
CSAH 14	135+55.63	38.66		CENTERVILLE			1	
CSAH 14	135+57.82		34.95	CENTERVILLE			1	
CSAH 14	135+63.57	39		CENTERVILLE				1
CSAH 14	135+65.50		35	CENTERVILLE				1
CSAH 14	136+11.26	39		CENTERVILLE				1
CSAH 14	136+13.80		35	CENTERVILLE				1
CSAH 14	136+58.94	39		CENTERVILLE				1
CSAH 14	136+62.16		35	CENTERVILLE				1
CSAH 14	137+18.50	36.15		CENTERVILLE				1
CSAH 14	137+21.05		35.97	CENTERVILLE				1
CSAH 14	137+65.01	33.97		CENTERVILLE				1
CSAH 14	137+76.29		36.42	CENTERVILLE				1
CSAH 14	138+14.75	33.19		CENTERVILLE				1
CSAH 14	138+22.26		47.88	CENTERVILLE				1
CSAH 14	138+64.35	33.98		CENTERVILLE				1
CSAH 14	138+73.26		47.91	CENTERVILLE				1
CSAH 14	139+14.68	33.96		CENTERVILLE				1
CSAH 14	139+23.02		48.05	CENTERVILLE				1
CSAH 14	139+65.00	33.98		CENTERVILLE				1
CSAH 14	139+74.40		48.08	CENTERVILLE				1


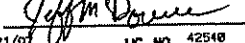
IRRIGATION TABULATION												
ALIGNMENT	STATION	OFFSET		OWNER	TORO 474-04 Q.C.V. EACH	MAIN LINE PIPING LF	POLY LATERAL PIPING EACH	CONTROLLE R WITH CABINET EACH	PVC PIPING SLEEVE LF	VOLUME CONTROL ZONE KIT EACH	SUBSURFACE DRIPPER LINE EACH	
		LT	RT									
CSAH 14	129+93 - 136+36		36'-35'	CENTERVILLE		643						
CSAH 14	129+93 - 132+55		37'-36'	CENTERVILLE					262		1	
CSAH 14	129+93		36'	CENTERVILLE								
CSAH 14	130+03 - 136+33	29'-40'		CENTERVILLE		630					1	
CSAH 14	130+03	29'		CENTERVILLE					202			
CSAH 14	130+53 - 132+55	32'-37'		CENTERVILLE							1	
CSAH 14	130+51	31'		CENTERVILLE							1	
CSAH 14	132+57	37'		CENTERVILLE							1	
CSAH 14	132+57		37'	CENTERVILLE							1	
CSAH 14	133+01	37'		CENTERVILLE							1	
CSAH 14	133+45	37'		CENTERVILLE							1	
CSAH 14	133+45		37'	CENTERVILLE							1	
CSAH 14	133+89	37'		CENTERVILLE							1	
CSAH 14	133+47 - 136+36		38'-36'	CENTERVILLE					289			
CSAH 14	134+28	47'		CENTERVILLE				1				
CSAH 14	134+32		31'	CENTERVILLE						1		
CSAH 14	134+32	39'		CENTERVILLE						1		
CSAH 14	134+34	33'	33'	CENTERVILLE		66						
CSAH 14	134+34	33'	33'	CENTERVILLE				66			1	
CSAH 14	134+34	37'		CENTERVILLE							1	
CSAH 14	134+34		37'	CENTERVILLE					156			
CSAH 14	134+34-135+90	37'-41'		CENTERVILLE							1	
CSAH 14	135+89	41'		CENTERVILLE							1	
CSAH 14	135+92		37'	CENTERVILLE							1	
CSAH 14	136+33	41'		CENTERVILLE							1	
CSAH 14	136+36		37'	CENTERVILLE							1	

CONCRETE PAVEMENT											
ALIGNMENT	STATION TO STATION	OFFSET		DEPTH INCHES	CONCRETE PAVEMENT SPECIAL (SY)						
		LT	RT		TYPE						
					1	2	3	4	5	6	
CSAH 14	129+76 - 131+12		34' - 34'	4"						63	
CSAH 14	129+76 - 131+36		30' - 52'	4"						92	
CSAH 14	129+76 - 131+17	27' - 27'		4"						60	
CSAH 14	129+76 - 131+39	23' - 48'		4"						89	
CSAH 14	131+18 - 132+08		47'	8"							88
CSAH 14	131+20 - 132+06		45'	8"				254			
CSAH 14	131+32 - 131+94		33'	8"		247					
CSAH 14	131+41 - 131+86		21'	8"	100						
CSAH 14	131+47 - 131+80		15'	8"			74				
CSAH 14	131+53 - 131+74		8'	8"				28			
CSAH 14	131+60 - 131+68		4'	8"			7				
CSAH 14	131+84 - 132+80		47' - 33'	4"						60	
CSAH 14	131+86 - 134+79	48' - 33'		4"						141	
CSAH 14	132+08 - 132+79		37' - 37'	4"						32	
CSAH 14	132+08 - 134+84	37' - 37'		4"						121	
CSAH 14	133+12 - 133+71		37' - 37'	4"						25	
CSAH 14	133+15 - 133+71		33' - 33'	4"						20	
CSAH 14	134+01 - 134+85		37' - 37'	4"						35	
CSAH 14	134+04 - 134+79		33' - 33'	4"						30	
CSAH 14	134+76 - 135+51	50'	48'	8"							97
CSAH 14	134+78 - 135+49	48'	47'	8"				247			
CSAH 14	134+90 - 135+37	36'	35'	8"		195					
CSAH 14	134+94 - 135+31	22'	20'	8"	83						
CSAH 14	134+99 - 135+27	16'	14'	8"			60				
CSAH 14	135+05 - 135+21	9'	7'	8"				29			
CSAH 14	135+38 - 136+75	41' - 41'		4"						60	
CSAH 14	135+42 - 136+78		37' - 37'	4"						59	
CSAH 14	135+43 - 136+75	37' - 37'		4"						57	
CSAH 14	135+47 - 136+78		33' - 33'	4"						56	

PLOT DATE: 3/22/2007

MODEL NAME: Default

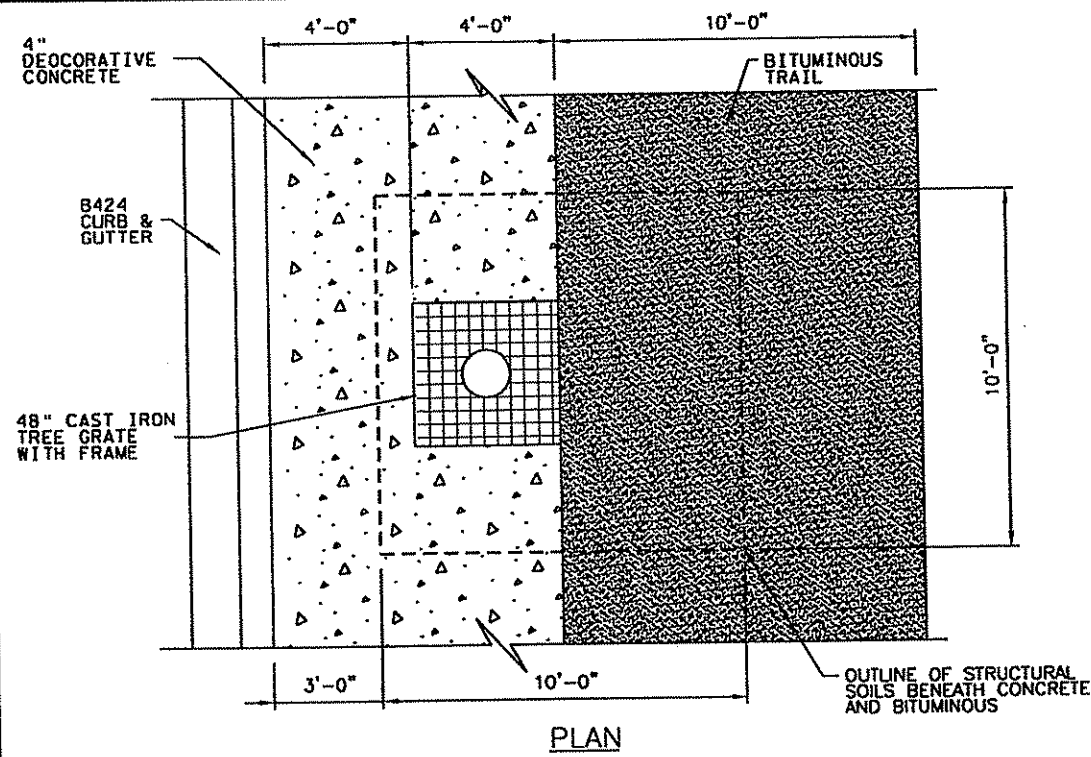
NO	DATE	APPR	REVISION

 Bonestree Rosene Anderlik & Associates Engineers & Architects www.bonestree.com	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 LANDSCAPE ARCHITECT UNDER THE LAWS OF THE STATE OF MINNESOTA. PRINT NAME: JEFF MADONWELL SIGNATURE:  DATE: JULY 08 PROJ. NO. 616-06144 DATE: 03/21/07 LIC. NO. 42548	<b>St. Paul Office</b> 2335 West Highway 36 St. Paul, MN 55113 Phone: 651-636-4600 Fax: 651-636-1311 <small>© BONESTREE, ROSENE, ANDERLIK &amp; ASSOCIATES, INC. 2006</small>
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STATE PROJECT NO. S.P. 02-614-24, ETAL

**ANOKA COUNTY**  
**PROPOSED STREETSCAPING**  
 C.S.A.H. 14  
 TABULATIONS

SHEET  
**S2**  
 OF  
**S15**



NOTES:  
1. PROVIDE TREE GRATE ANCHOR BOLTS ON THE THREE SIDES WITH CONCRETE.

TYPICAL B & B TREE, SET LEVEL AND FACED TO PRIMARY VIEW

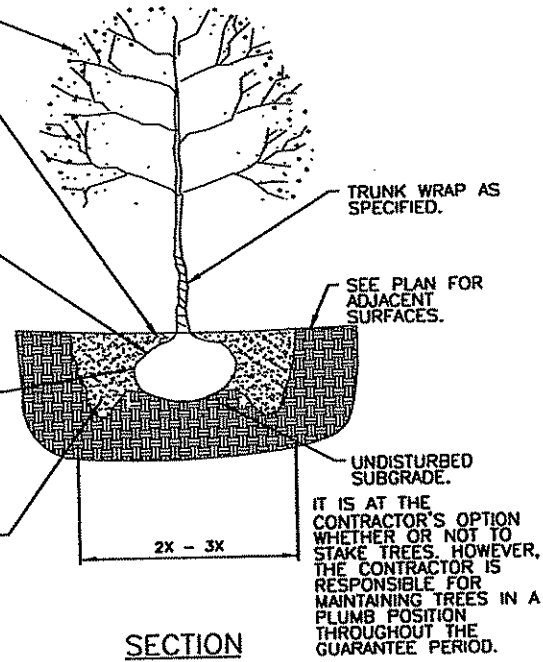
DOUBLE SHREDDED HARDWOOD BARK MULCH RING, 72" MINIMUM DIAMETER, 4" MIN. DEPTH FORM DISH AROUND TRUNK WITH NO MULCH IN CONTACT WITH TRUNK.

LOOSEN, UNWRAP AND REMOVE BALLING MATERIALS FROM TRUNK AND TOP OF BALL. SLASH SIDES OF BURLAP AND BEND WIRE LOOPS INTO HOLE.

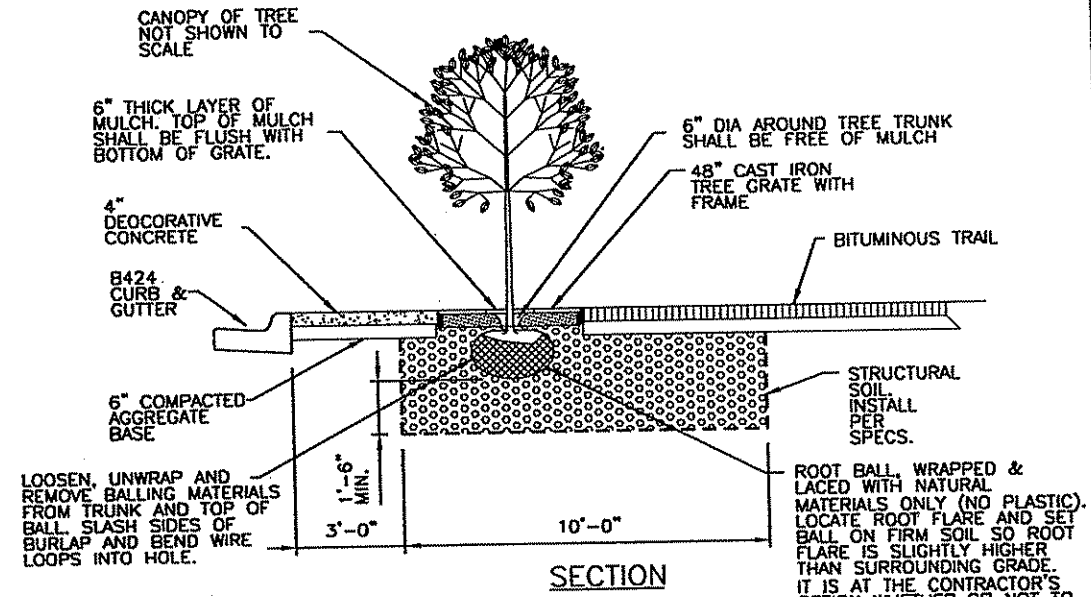
ROOT BALL, WRAPPED & LACED WITH NATURAL MATERIALS ONLY (NO PLASTIC). LOCATE ROOT FLARE AND SET BALL ON FIRM SOIL SO ROOT FLARE IS SLIGHTLY HIGHER THAN SURROUNDING GRADE IN A HOLE 2-3 TIMES BALL WIDTH WITH ROUGH, SLOPED SIDES.

BACKFILL WITH SOIL MIX AND FERTILIZER AS SPECIFIED. FIRMLY TAMP LOWER HALF TO STABILIZE BALL. WATER IN AS SPECIFIED.

NOTES:  
1. SET ROOTBALL ON FIRM SOIL.  
2. SET ROOT FLARE SLIGHTLY HIGHER THAN ADJACENT ELEVATION.  
3. SCARIFY BOTTOM & SIDES OF HOLE PRIOR TO PLANTING.



SECTION



SECTION

NOTES:  
1. TREE GRATE PLANTING AREAS TO BE IRRIGATED WITH DRIP IRRIGATION SYSTEM. SEE DETAIL H SHEET 11.

**A** TREE PLANTING DETAIL - DOWNTOWN AREAS

**B** TREE PLANTING DETAIL - TURF AREAS

**C** TREE PLANTING DETAIL - DOWNTOWN AREAS

MODELNAME: DEFAULT.T

PLTDATE: 3/22/2007

NO	DATE	APPR	REVISION

SURVEY	SRF
DRAWN	TAB
DESIGNED	HCR
APPROVED	JJM
DATE	JULY 06
PROJ. NO.	616-08144

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PRINT NAME: JEFF McDONNELL  
SIGNATURE: *Jeff McDowell*  
DATE: 05/21/07 UC. NO. 42548

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STATE PROJECT NO. S.P. 02-614-24, ETAL

**ANOKA COUNTY**  
PROPOSED STREETSCAPING  
CSAH 14  
TREE DETAILS & PAVEMENT DETAILS

SHEET	S3
OF	15

FILENAME: I:\616\61604139\CAD\00N\061604139\_TR1.DGN

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MODELNAME: DEFAULT

PLOTDATE: 3/22/2007

NO	DATE	APPR	REVISION

SURVEY	SRF
DRAWN	TAB
DESIGNED	HCR
APPROVED	JUN
DATE	JULY 06
PROJ. NO.	516-05144

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 SIGNATURE: *Jeff McDowell*  
 DATE: 03/21/07  
 LIC. NO. 42648

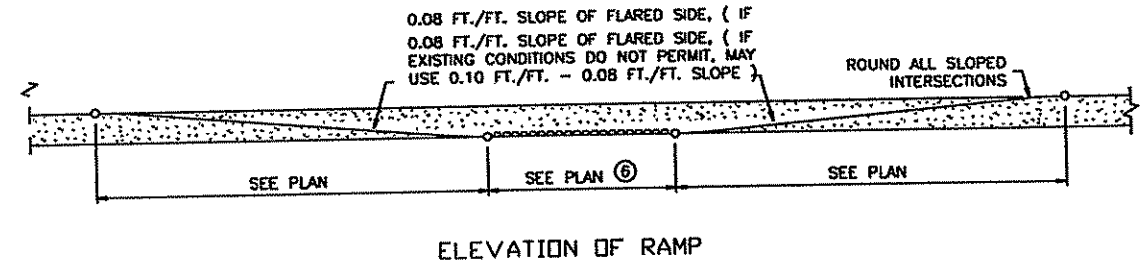
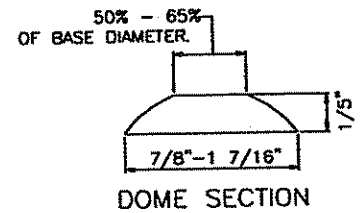
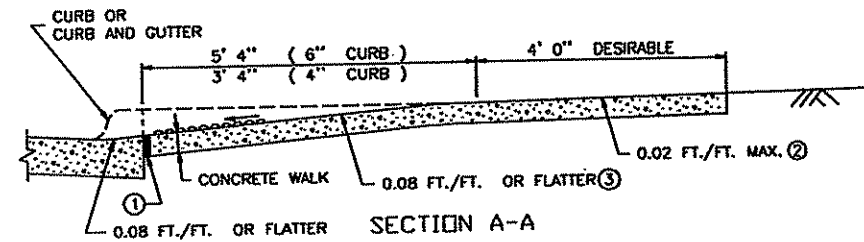
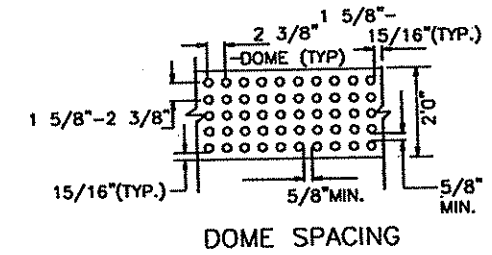
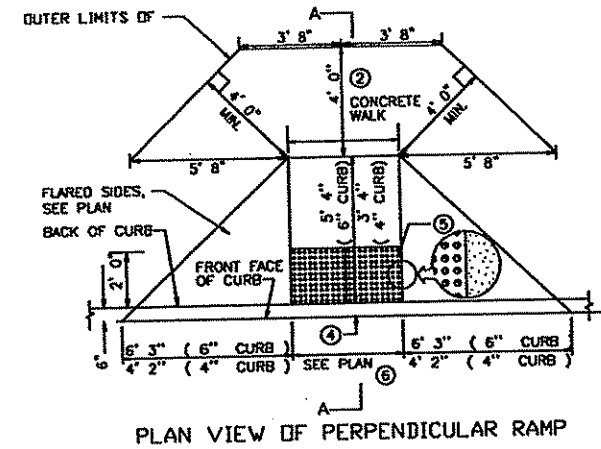
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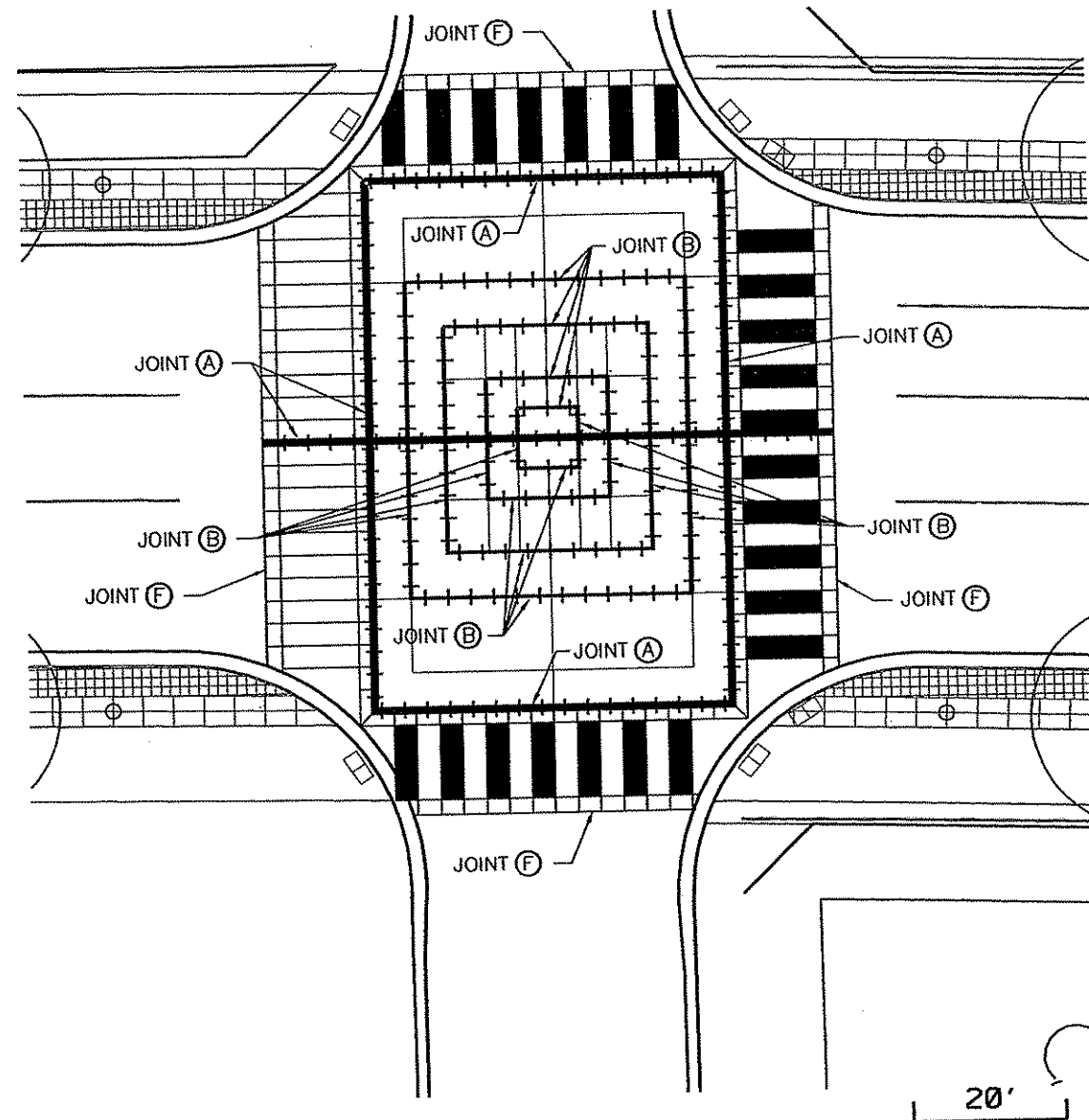
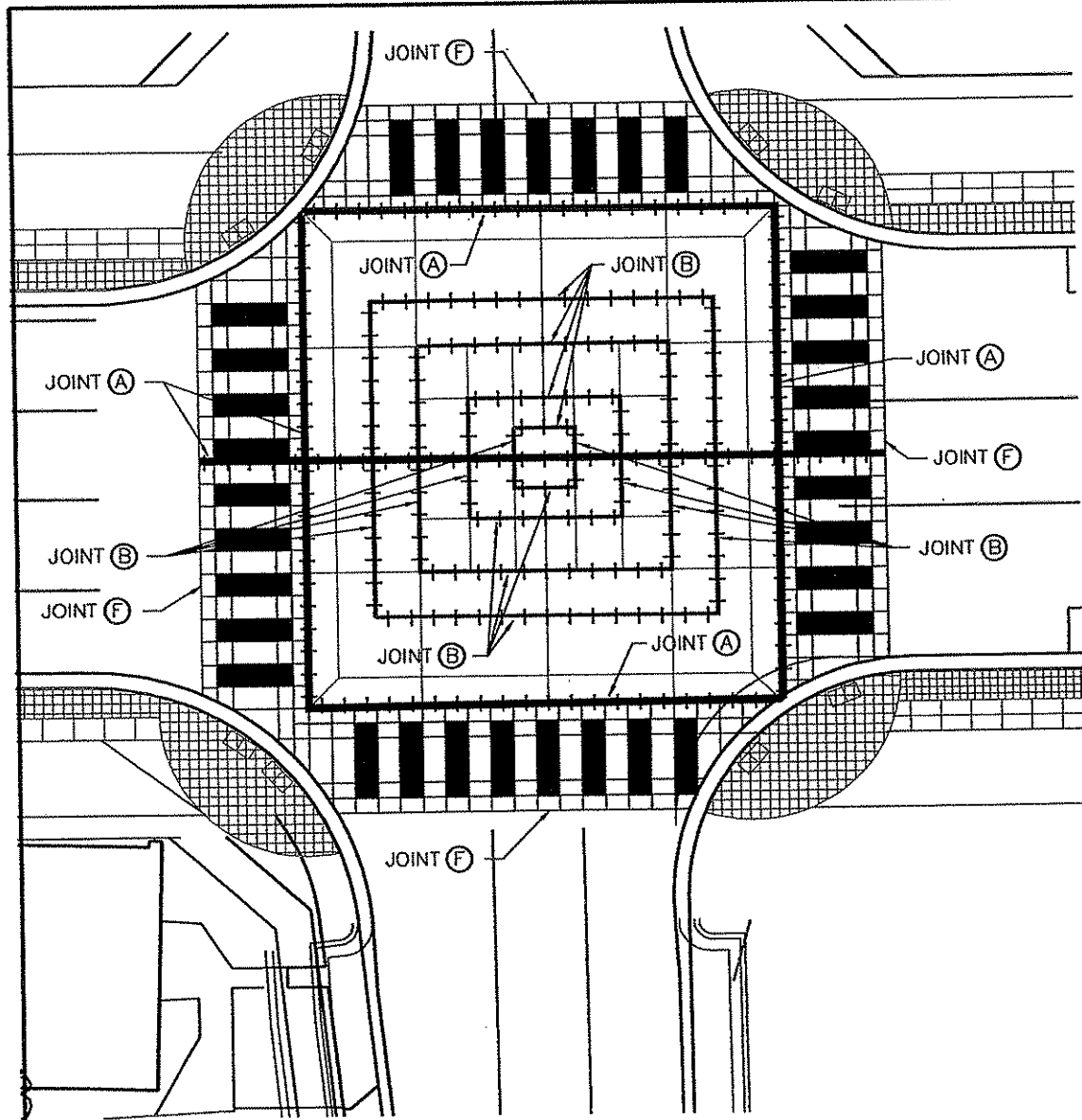
**ANOKA COUNTY**  
 PROPOSED STREETSCAPING  
 CSAH 14  
 PEDESTRIAN RAMP DETAIL

SHEET	S4
OF	15



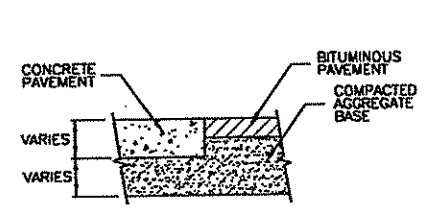
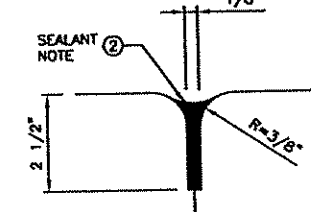
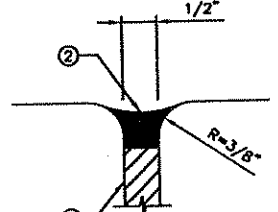
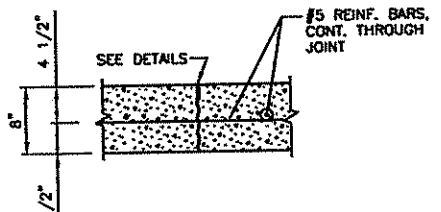
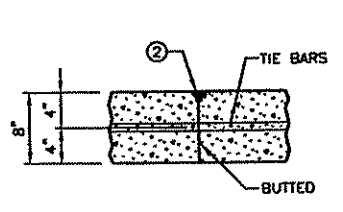
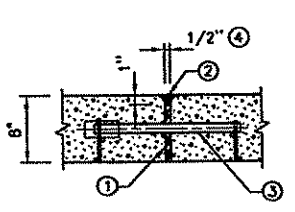
- NOTES:
- 1/2 INCH PREFORMED JOINT FILLER MATERIAL, AASHTO M 213.
  - WHEN POSSIBLE, PROVIDE A PATH OF TRAVEL 4'0" WIDE BEHIND THE PEDESTRIAN RAMP. A RELATIVELY FLAT 48" X 48" LANDING WILL ALLOW WHEELCHAIRS TO NAVIGATE AROUND THE PEDESTRIAN RAMP.
  - 6" TO 8" IS THE REQUIRED OFFSET OF THE DETECTABLE WARNING AREA FROM THE CURB LINE.
  - ADA REQUIRED TRUNCATED DOME AREA SHALL BE 2'0" MIN. IN DIRECTION OF TRAVEL AND SHALL EXTEND THE FULL WIDTH OF THE CURB RAMP. THE TRUNCATED DOME AREA SHALL CONTRAST WITH ADJACENT WALKING SURFACE, EITHER LIGHT ON DARK, OR DARK ON LIGHT. TRUNCATED DOMES SHALL CONSIST OF A PRE-FABRICATED METAL INSET PANEL.

**PEDESTRIAN RAMP DETAIL**



- NOTES:**
- ① PREFORMED JOINT FILLER MATERIAL, SPEC. 3702.
  - ② JOINT SEALER SPEC. 3723. TOP OF SEALER, FLUSH TO 1/8" BELOW TOP OF PAVEMENT SURFACE. MAKE TOP OF SEALER FOR CURB SECTION E JOINTS FLUSH WITH SURFACE ± 1/8".
  - ③ DOWEL BAR ASSEMBLY. SEE STANDARD PLATE 1103.
  - ④ DESIGN C2B OR C2B-D -PRIOR TO SEALING JOINT (DETAIL B) WITH HOT POUR JOINT SEALER, A 5/8" DIA. CLOSED CELL BACKER ROD SHALL BE PLACED SUCH THAT THE TOP OF THE BACKER ROD IS 5/8" BELOW THE SURFACE OF THE PAVEMENT.
  - ⑤ WHEN USING PREFORMED JOINT SEALER, THE DEPTH SHALL BE 1/4" MORE THAN THE PREFORMED SEALER, WHEN COMPRESSED, TO FIT THE JOINT DESIGN WIDTH.
  - ⑥ THE JOINT FACES SHALL BE CLEANED AND DRIED BY SANDBLASTING AND AIR BLASTING. PRIOR TO SEALING THE JOINT, A 1/2" DIA. CLOSED CELL BACKER ROD SHALL BE PLACED SUCH THAT THE TOP OF THE BACKER ROD IS 1/2" BELOW THE SURFACE OF THE PAVEMENT. NON SELF-LEVELING SILICONE SHALL BE TOOLED INTO THE JOINT MAINTAINING A SEALANT BEAD THICKNESS OF 1/4".
  - ⑦ FOR CONCRETE PAVEMENT THE JOINT DEPTH "g" SHALL BE 1/3 INCHES.
  - ⑧ ALL TIE BARS SHALL MEET THE REQUIREMENTS OF GRADE 60 FOR AASHTO M-31 OR M-53.
  - ⑨ SPEC. 3723 SEALER - TOP OF SEALER FLUSH TO - 3/16 IN. BELOW TOP OF PAVEMENT SURFACE.
  - ⑩ SEE TYPICAL SECTIONS AND PLAN SHEETS FOR CROSS SLOPES AND PAVEMENT THICKNESS, T.
  - ⑪ ALL REINFORCING BARS SHALL BE EPOXY COATED IN ACCORDANCE WITH SPEC. 3301 AND SHALL MEET THE REQUIREMENTS OF GRADE 60 FOR AASHTO M-31 OR M-53.
  - ⑫ TIE BARS: USE NO. 4 BARS 2'-6" LONG, AT 2'-6" SPACING.

**CONTRACTION NOTES:**  
 JOINT WIDTH TOLERANCES: +1/16 IN. AND -1/32 IN.



**A CONSTRUCTION JOINT**  
NO SCALE

**B CONTROL JOINT**  
NO SCALE

**C CONTROL JOINT**  
NO SCALE

**D DETAIL**  
NO SCALE

**E DETAIL**  
NO SCALE

**F CONSTRUCTION JOINT**  
NO SCALE

MODELNAME: Renorme\_to\_sheet\_number  
 FILEDATE: 3/22/2007  
 FILENAME: t:\616\61604139\cad\dgn\61606150s101.dgn

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 PRINT NAME: PHIL BASKWELL  
 SIGNATURE: *Phil Baskwell*  
 DATE: 03/21/07  
 PROJ. NO. 616-06144  
 D.C. NO. 17204

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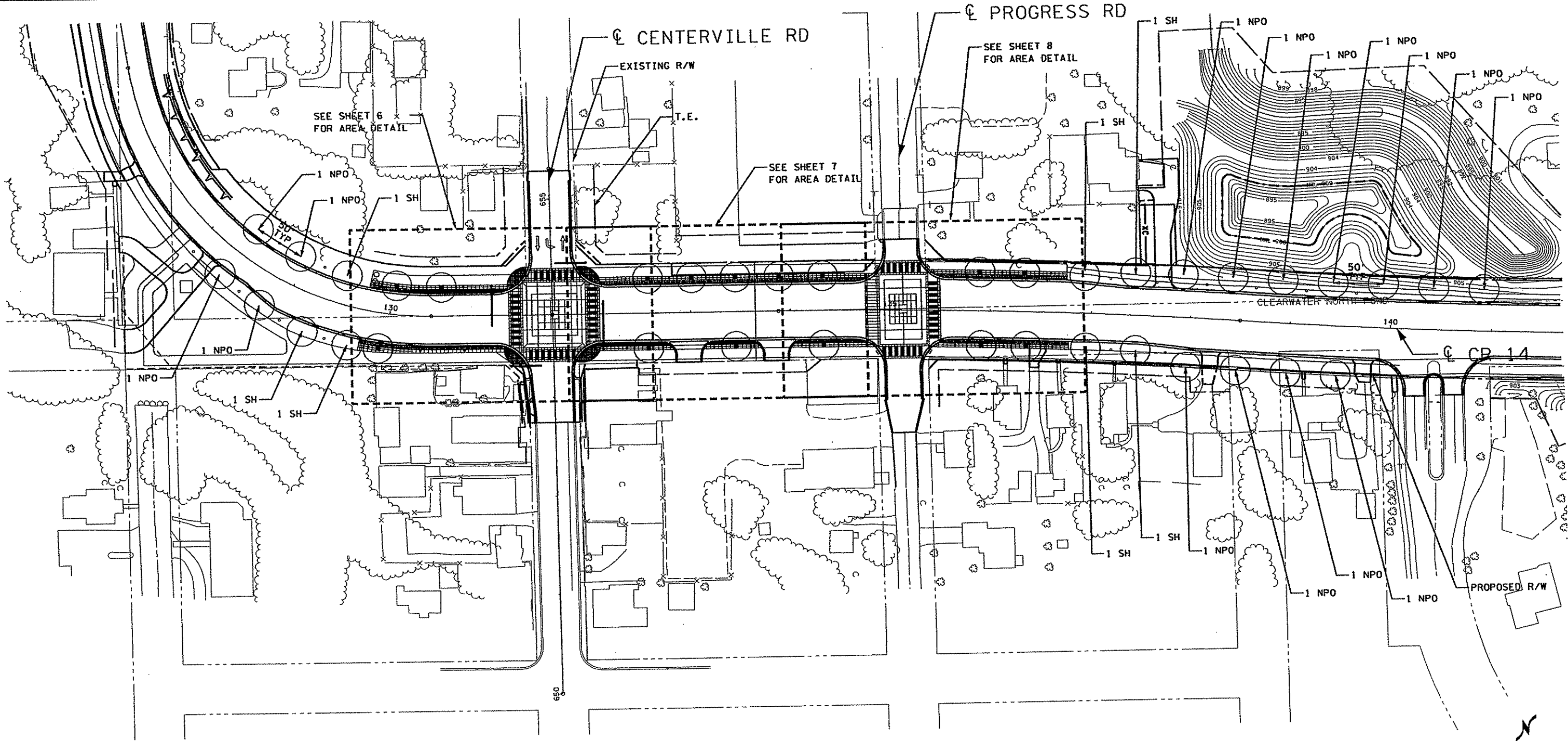
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STATE PROJECT NO. S.P. 02-614-24, ETAL

**ANOKA COUNTY**  
 PROPOSED STREETSCAPING  
 CSAH 14  
 PAVEMENT DETAILS

SHEET
S5
OF
S15



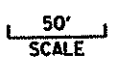
**LEGEND**

- TREES
- LIGHTS
- TREE GRATE
- SIGNALS
- SCORED COLOR CONCRETE
- STAMPED COLORED CONCRETE

**TREE TYPE KEY AND TABULATION - THIS SHEET ONLY**

KEY	QTY	COMMON NAME	ROOT	SIZE	STRUCTURAL SOIL (CV) (CY) ①	TREE GRATE & FRAMES (EA)	MULCH MATERIAL TYPE 6 (SY)
SH	7	SKYLINE HONEYLOCUST	B&B	2.5" CAL.	0	0	14.14
NPO	15	NORTHERN PIN OAK	B&B	2.5" CAL.	0	0	30.3

① STRUCTURAL SOIL IS ONLY ASSOCIATED WITH TREES LOCATED IN TREE GRATES



MODELNAME: Default  
PLOTDATE: 3/22/2007

NO	DATE	APPR	REVISION

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DRAWN TAB	
DESIGNED HCR	
APPROVED JJM	
DATE JULY 06	
PROJ. NO. 616-06144	

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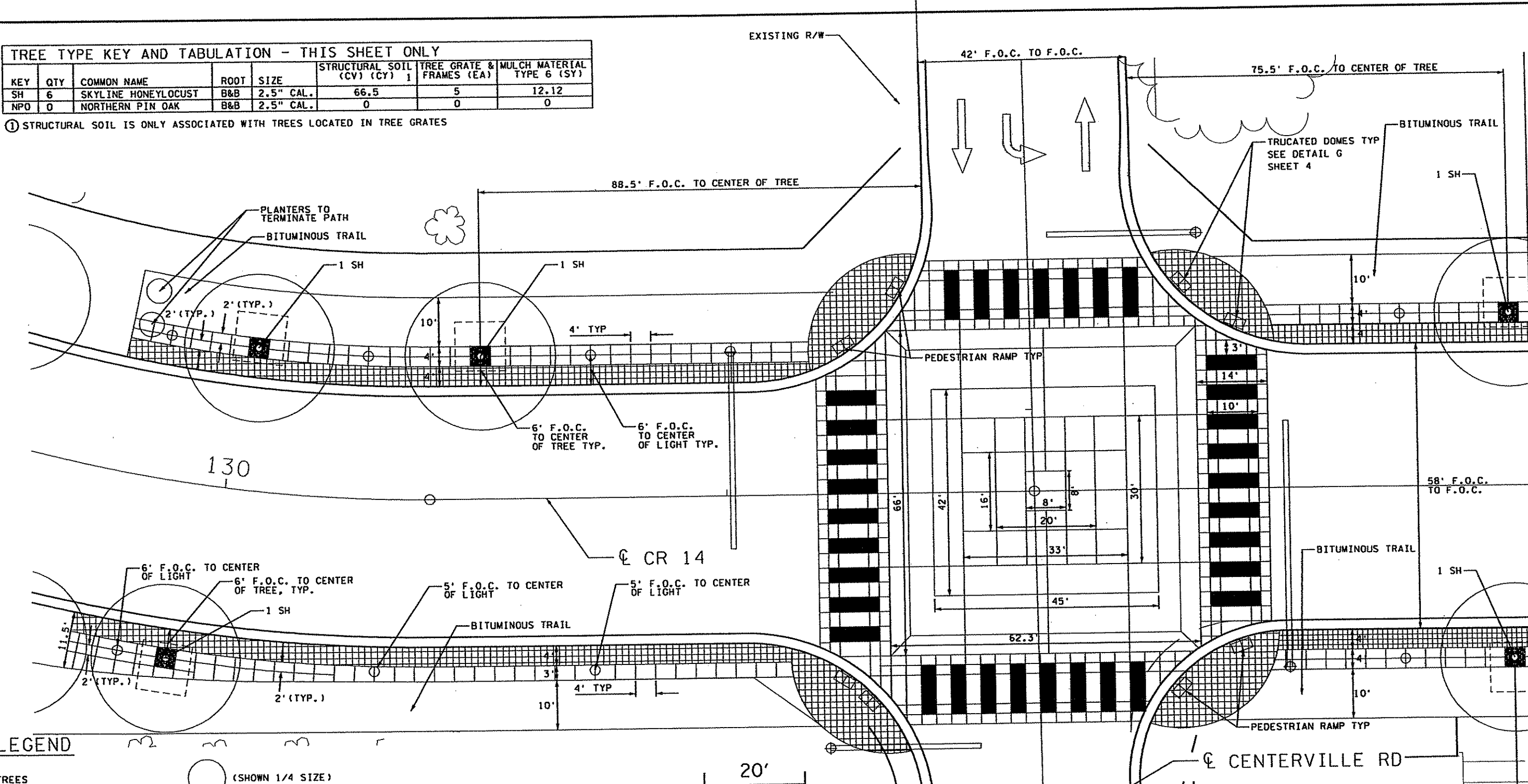
**ANOKA COUNTY**  
**PROPOSED STREETSCAPING**  
CSAH 14  
GENERAL LAYOUT & PLANTINGS

SHEET	S6
OF	S15

**TREE TYPE KEY AND TABULATION - THIS SHEET ONLY**

KEY	QTY	COMMON NAME	ROOT	SIZE	STRUCTURAL SOIL (CV) (CY) 1	TREE GRATE & MULCH MATERIAL FRAMES (EA) 1	MULCH MATERIAL TYPE 6 (SY)
SH	6	SKYLINE HONEYLOCUST	B&B	2.5" CAL.	66.5	5	12.12
NPO	0	NORTHERN PIN OAK	B&B	2.5" CAL.	0	0	0

① STRUCTURAL SOIL IS ONLY ASSOCIATED WITH TREES LOCATED IN TREE GRATES



**LEGEND**

- TREES
  - (SHOWN 1/4 SIZE)
- STRUCTURAL SOIL SEE DETAIL SHEET S3
  - (SHOWN 1/4 SIZE)
- LIGHTS
  -
- SIGNALS
  - ⊕
- 4" CHICORY SPICE INTEGRAL COLORED CONCRETE SCORED IN 4"x2" SECTIONS
  - ▬
- 4" CHICORY SPICE INTEGRAL COLORED CONCRETE STAMPED STONE TILE PATTERN
  - ▬

**NOTES:**

1. CONTROL JOINTS WHERE SIDEWALK ABUTS CURB ALL JOINT DETAILS SEE SHEET S5
2. ADJACENT CONCRETE POURED SEPERATELY SHALL BE DOWELED PER DETAIL SHEET S5.
3. CONCRETE PAVEMENT SPECIAL 1 SHALL BE 8" INTEGRAL CONCRETE COLORED CUSTOM RUSSET
4. CONCRETE PAVEMENT SPECIAL 2 SHALL BE 8" INTEGRAL CONCRETE COLORED ELDORADO TAN
5. CONCRETE PAVEMENT SPECIAL 3 SHALL BE 8" INTEGRAL CONCRETE COLORED CHICORY SPICE
6. CONCRETE PAVEMENT SPECIAL 4 SHALL BE 8" INTEGRAL CONCRETE COLORED ETRSIAN TILE
7. CONCRETE PAVEMENT SPECIAL 5 SHALL BE 4" INTEGRAL CONCRETE COLORED CHICORY SPICE
8. CONCRETE PAVEMENT SPECIAL 6 SHALL BE RUSSET COLOR HARDENER
9. SEQUENCING OF CONCRETE PAVING IN INTERSECTION SHALL BE REVIEWED W/ ENGINEER AND SHALL ACCOMODATE OVERALL PROJECT PHASING AND TRAFFIC CONTROL. ONE INTERSECTION SHALL BE COMPLETED AT A TIME. REFER TO GENERAL STAGING NOTES. PLACE NORTH HALF OF INTERSECTION AT ONE TIME INSURING ACCESS TO HOMES AND FACILITIES NORTH AND SOUTH OF CSAH 14 WHEN APPROPRIATE INTERERSECTION HALF IS CLOSED. PLACE SOUTH HALF AT A SEPARATE TIME AFTER THE NORTH HALF HAS COMPLETED CURING TIME.

MODELNAME: Defout  
PLOTDATE: 3/22/2007  
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NO	DATE	APPR	REVISION

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DRAWN	TAB	
DESIGNED	HGR	
APPROVED	JJM	
DATE	JULY 06	
PROJ. NO.	616-06144	

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**ANOKA COUNTY**  
PROPOSED STREETSCAPING  
CSAH 14  
PLANTINGS & SPECIAL PAVING

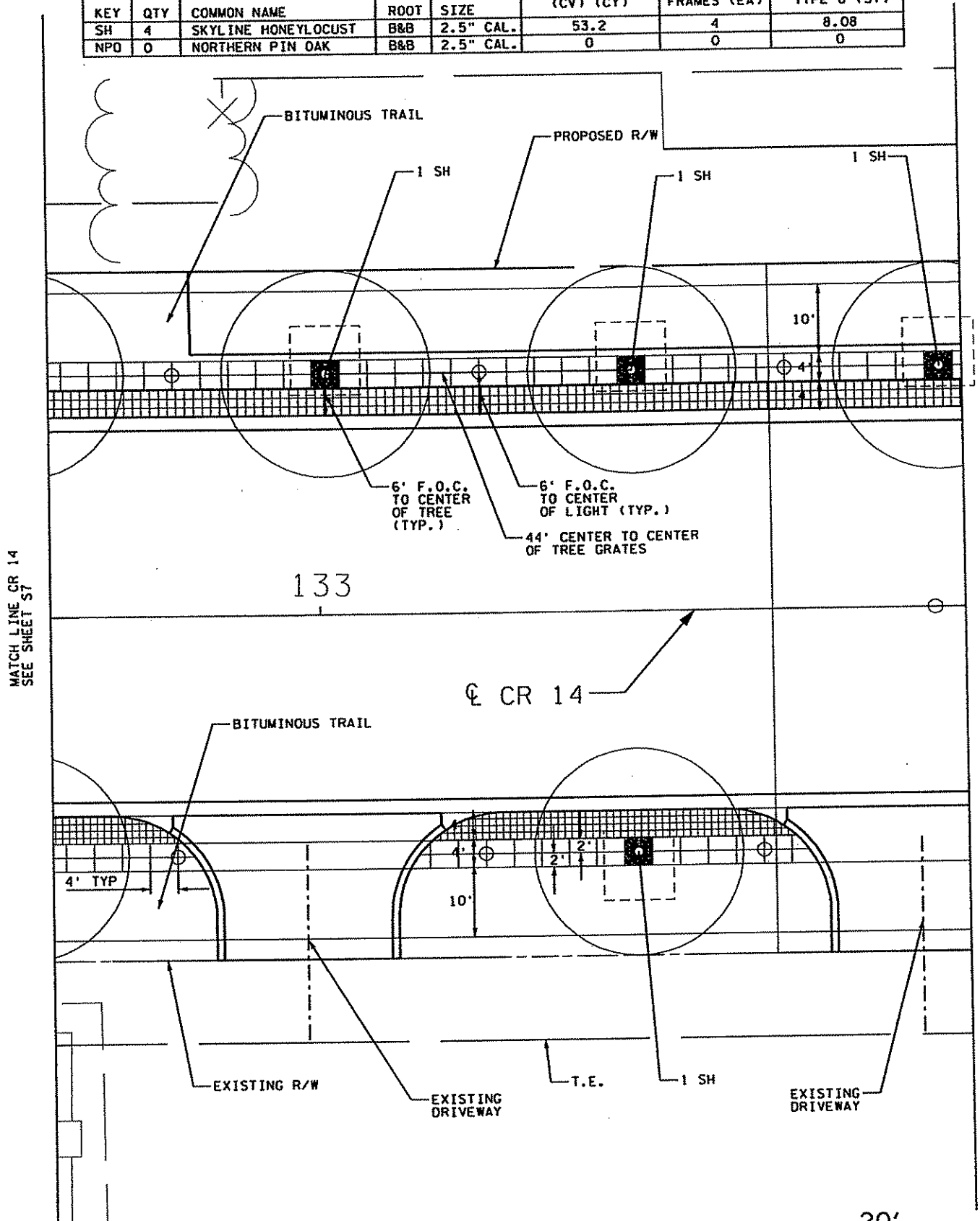
SHEET  
S7  
OF  
S15

MATCH LINE  
SEE SHEET S8

TREE TYPE KEY AND TABULATION - THIS SHEET ONLY							
KEY	QTY	COMMON NAME	ROOT	SIZE	STRUCTURAL SOIL (CV) (CY)	TREE GRATE & FRAMES (EA)	MULCH MATERIAL TYPE 6 (SY)
SH	4	SKYLINE HONEYLOCUST	B&B	2.5" CAL.	53.2	4	8.08
NPO	0	NORTHERN PIN OAK	B&B	2.5" CAL.	0	0	0



NOTES:  
 1. CONTROL JOINTS WHERE SIDEWALK ABUTS CURB  
 ALL JOINT DETAILS SEE SHEET S5



**LEGEND**

- TREES
  - (SHOWN 1/4 SIZE)
- STRUCTURAL SOIL SEE DETAIL SHEET S3
  - (SHOWN 1/4 SIZE)
- LIGHTS
  -
- 4'x4' TREE GRATE. SEE SPECIFICATIONS AND DETAILS SHEET S3, TYP.
  -
- SIGNALS
  -
- 4" CHICORY SPICE INTEGRAL COLORED CONCRETE, SCORED IN 4'x2' SECTIONS
  -
- 4" CHICORY SPICE INTEGRAL COLORED CONCRETE STAMPED STONE TILE PATTERN
  -

MODELNAME: Default  
 PLOTDATE: 3/22/2007  
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NO	DATE	APPR	REVISION

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 PRINT NAME: JEFF McDOWELL  
 SIGNATURE: *Jeff McDowell*  
 DATE: JULY 05  
 DATE 03/21/07  
 LIC. NO. 42548

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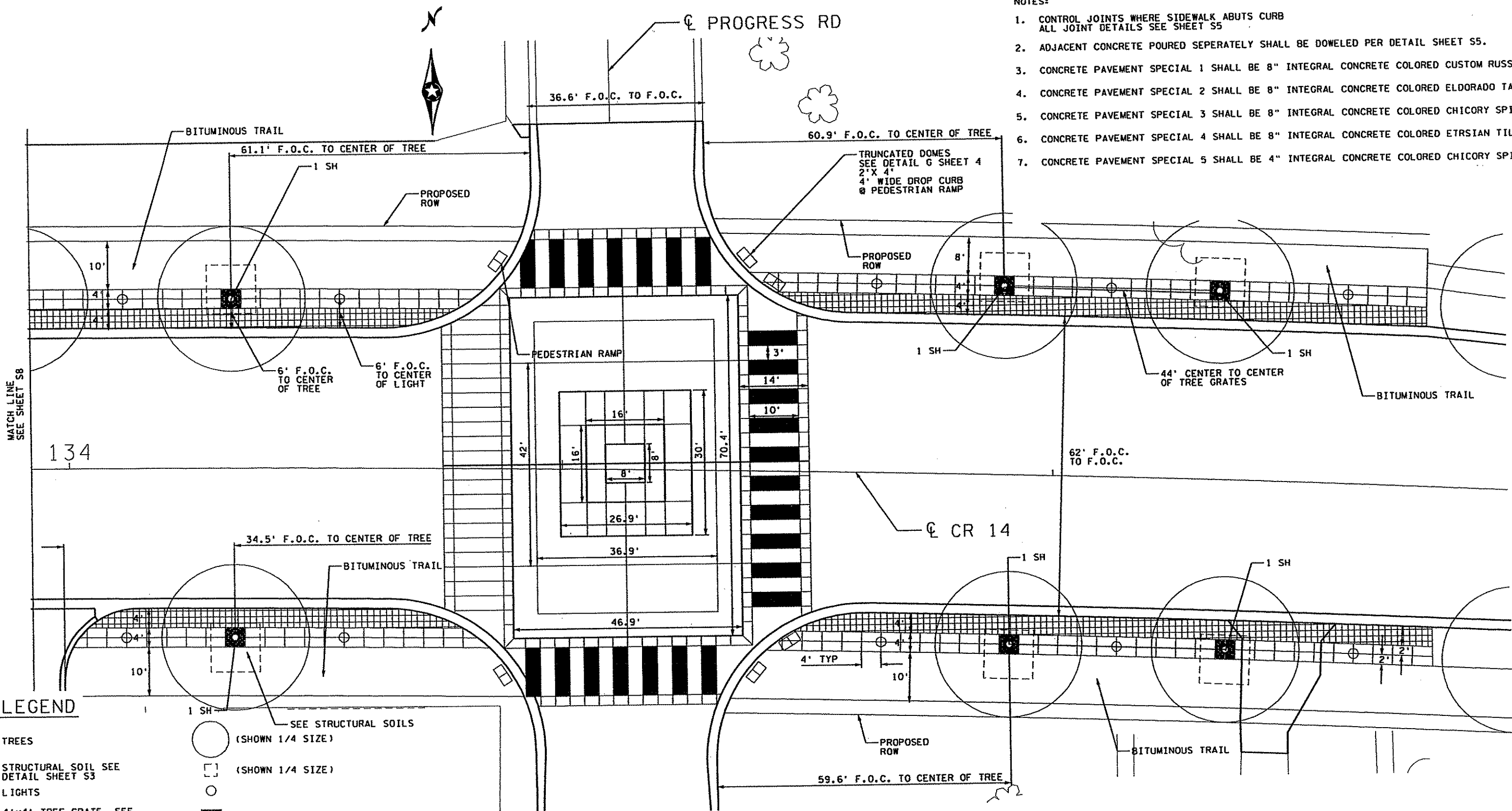
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**ANOKA COUNTY**  
**PROPOSED STREETSCAPING**  
 CSAH 14  
 PLANTINGS & SPECIAL PAVING

SHEET
S8
OF
S15

NOTES:

- CONTROL JOINTS WHERE SIDEWALK ABUTS CURB ALL JOINT DETAILS SEE SHEET S5.
- ADJACENT CONCRETE POURED SEPARATELY SHALL BE DOWELED PER DETAIL SHEET S5.
- CONCRETE PAVEMENT SPECIAL 1 SHALL BE 8" INTEGRAL CONCRETE COLORED CUSTOM RUSSET
- CONCRETE PAVEMENT SPECIAL 2 SHALL BE 8" INTEGRAL CONCRETE COLORED ELDORADO TAN
- CONCRETE PAVEMENT SPECIAL 3 SHALL BE 8" INTEGRAL CONCRETE COLORED CHICORY SPICE
- CONCRETE PAVEMENT SPECIAL 4 SHALL BE 8" INTEGRAL CONCRETE COLORED ETRSIAN TILE
- CONCRETE PAVEMENT SPECIAL 5 SHALL BE 4" INTEGRAL CONCRETE COLORED CHICORY SPICE



LEGEND

- TREES: (Symbol) (SHOWN 1/4 SIZE)
- STRUCTURAL SOIL: (Symbol) (SHOWN 1/4 SIZE)
- LIGHTS: (Symbol)
- SIGNALS: (Symbol)
- 4" CHICORY SPICE INTEGRAL COLORED CONCRETE, SCORED IN 4'x2' SECTIONS: (Symbol)
- 4" CHICORY SPICE INTEGRAL COLORED CONCRETE STAMPED STONE TILE PATTERN: (Symbol)

20' SCALE

NOTES CONTINUED...

- CONCRETE PAVEMENT SPECIAL 6 SHALL BE RUSSET COLOR HARDENER
- SEQUENCING OF CONCRETE PAVING IN INTERSECTION SHALL BE REVIEWED W/ ENGINEER AND SHALL ACCOMMODATE OVERALL PROJECT PHASING AND TRAFFIC CONTROL. ONE INTERSECTION SHALL BE COMPLETED AT A TIME. REFER TO GENERAL STAGING NOTES. PLACE NORTH HALF OF INTERSECTION AT ONE TIME INSURING ACCESS TO HOMES AND FACILITIES NORTH AND SOUTH OF CSAH 14 WHEN APPROPRIATE INTERSECTION HALF IS CLOSED. PLACE SOUTH HALF AT A SEPARATE TIME AFTER THE NORTH HALF HAS COMPLETED CURING TIME.

TREE TYPE KEY AND TABULATION - THIS SHEET ONLY

KEY	QTY	COMMON NAME	ROOT	SIZE	STRUCTURAL SOIL (CY)	TREE GRATE & MULCH MATERIAL (CY)	MULCH MATERIAL TYPE 6 (SY)
SH	6	SKYLINE HONEYLOCUST	B&B	2.5" CAL.	79.8	6	12.12
NPO	0	NORTHERN PIN OAK	B&B	2.5" CAL.	0	0	0

MODELNAME: Default  
PLOTDATE: 3/22/2007  
FILENAME: i:\616\61604139\cad\dgn\CD61604139\_cpd.dgn

NO	DATE	APPR	REVISION

SURVEY	SRF	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 LANDSCAPE ARCHITECT UNDER THE LAWS OF THE STATE OF MINNESOTA PRINT NAME: JEFF McDOWELL SIGNATURE: <i>Jeff McDowell</i> DATE: 03/21/07 LIC. NO. 42548
DRAWN	TAB	
DESIGNED	HCR	
APPROVED	JJM	
DATE	JULY 06	
PROJ. NO.	616-06144	

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STATE PROJECT NO. S.P. 02-614-24, ETAL

**ANOKA COUNTY**  
PROPOSED STREETSCAPING  
CSAH 14  
PLANTINGS & SPECIAL PAVING

SHEET  
S9  
OF  
S15



**TREE TYPE KEY AND TABULATION - THIS SHEET ONLY**

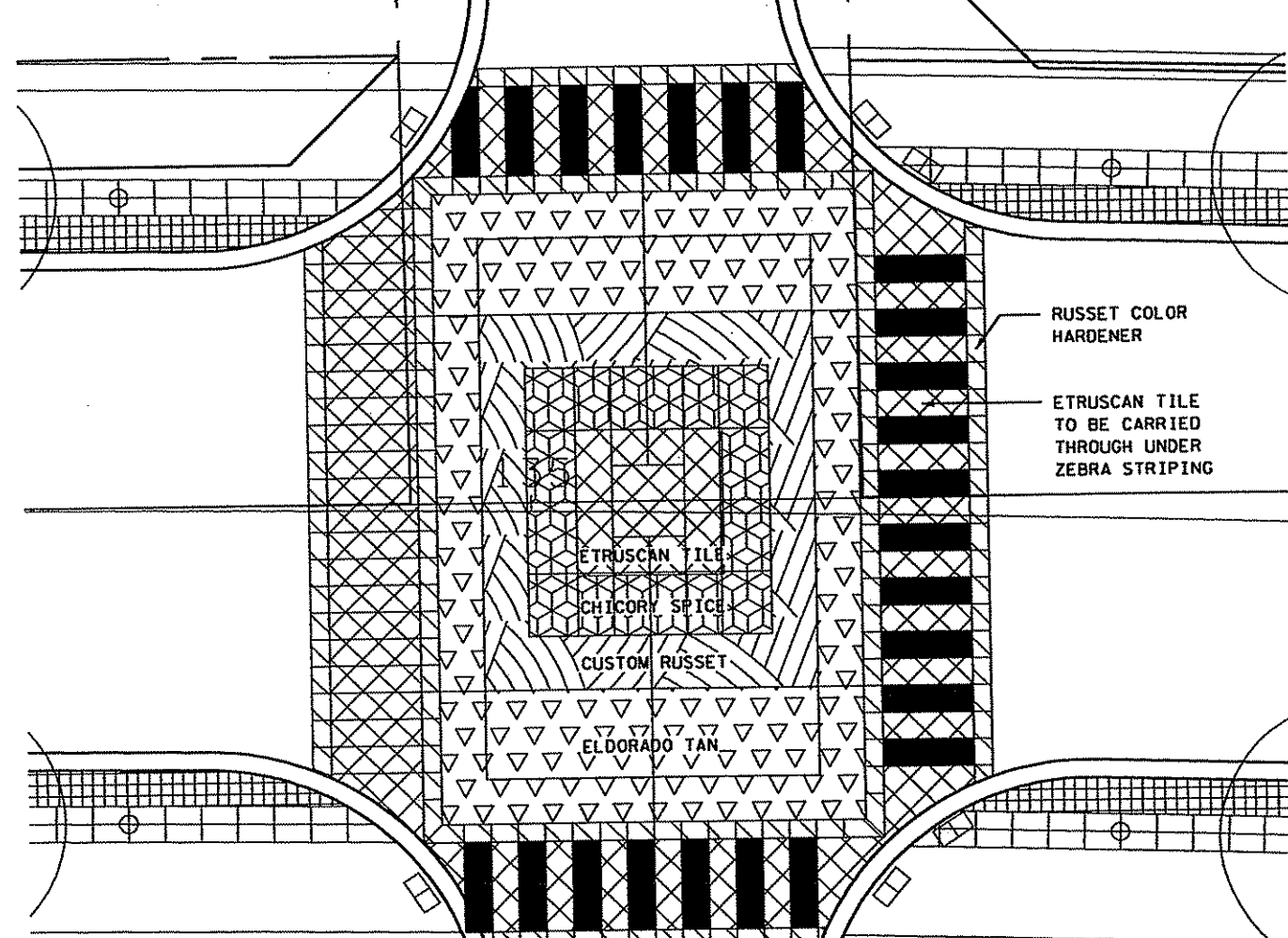
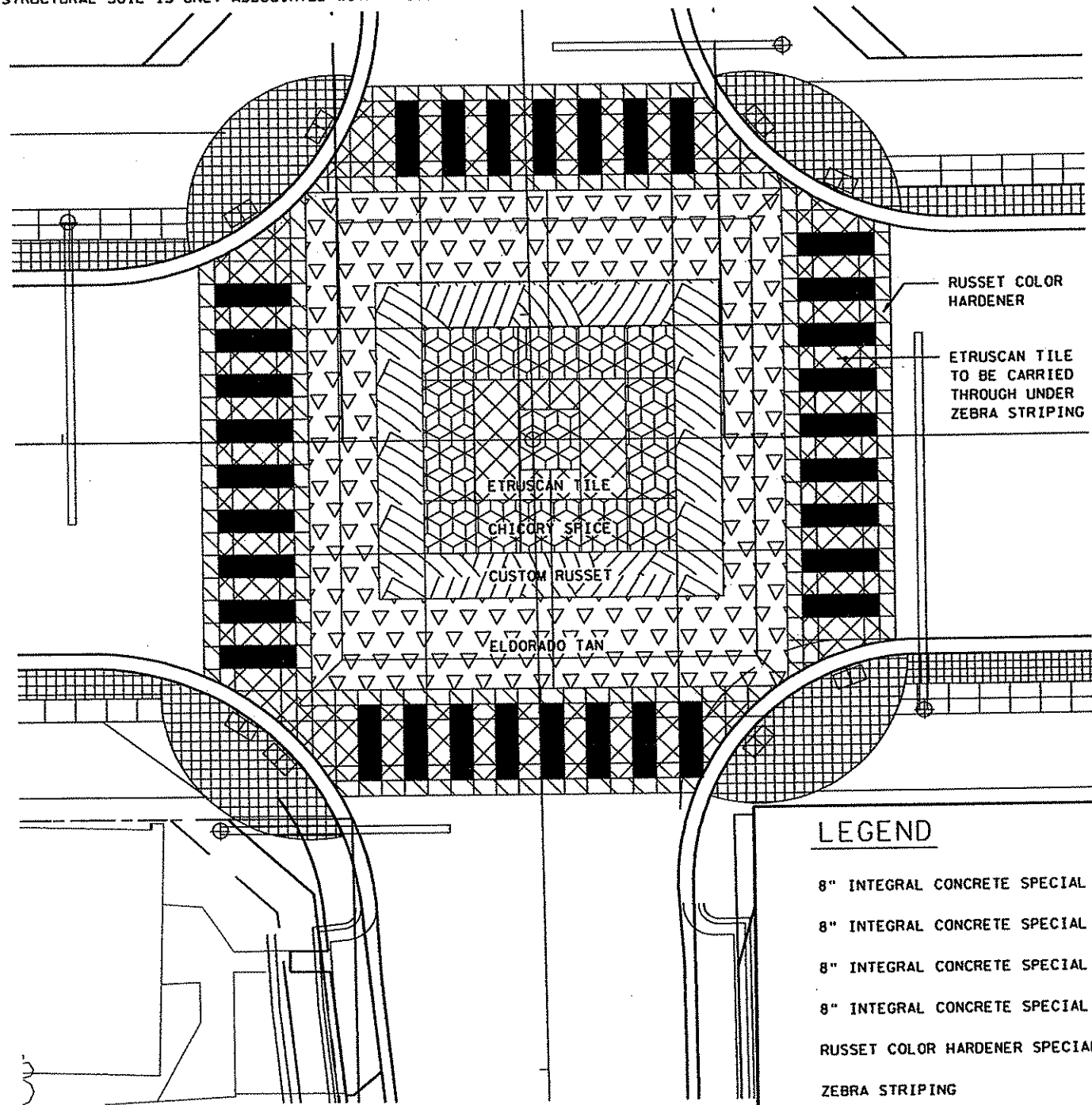
KEY	QTY	COMMON NAME	SIZE	INTEGRAL CONCRETE (SY)
		CONCRETE PAVEMENT SPECIAL 1		100
		CONCRETE PAVEMENT SPECIAL 2		246.4
		CONCRETE PAVEMENT SPECIAL 3		103
		CONCRETE PAVEMENT SPECIAL 4		363.3
		CONCRETE PAVEMENT SPECIAL 5		NONE
		CONCRETE PAVEMENT SPECIAL 6		101.7
		ZEBRA CROSSWALK WHITE-EPOXY		110

① STRUCTURAL SOIL IS ONLY ASSOCIATED WITH TREES LOCATED IN TREE GRATES

**TREE TYPE KEY AND TABULATION - THIS SHEET ONLY**

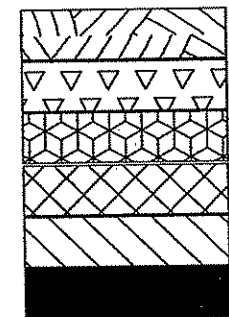
KEY	QTY	COMMON NAME	SIZE	INTEGRAL CONCRETE (SY)
		CONCRETE PAVEMENT SPECIAL 1		82.4
		CONCRETE PAVEMENT SPECIAL 2		194.4
		CONCRETE PAVEMENT SPECIAL 3		82.4
		CONCRETE PAVEMENT SPECIAL 4		352.2
		CONCRETE PAVEMENT SPECIAL 5		NONE
		CONCRETE PAVEMENT SPECIAL 6		97.3
		ZEBRA CROSSWALK WHITE-EPOXY		80

① STRUCTURAL SOIL IS ONLY ASSOCIATED WITH TREES LOCATED IN TREE GRATES



**LEGEND**

- 8" INTEGRAL CONCRETE SPECIAL 1 COLORED CUSTOM RUSSET
- 8" INTEGRAL CONCRETE SPECIAL 2 COLORED ELDORADO TAN
- 8" INTEGRAL CONCRETE SPECIAL 3 COLORED CHICORY SPICE
- 8" INTEGRAL CONCRETE SPECIAL 4 COLORED ETRUSCAN TILE
- RUSSET COLOR HARDENER SPECIAL 6
- ZEBRA STRIPING



20'  
SCALE

MODELNAME: Default  
FILEDATE: 3/22/2007  
FILENAME: I:\616\61804139\cod\dgn\CD61604139\_cpe.dgn

NO	DATE	APPR	REVISION

SURVEY	SRF
DRAWN	TAB
DESIGNED	HCR
APPROVED	JUN
DATE	JULY 06
PRJ. NO.	616-06144

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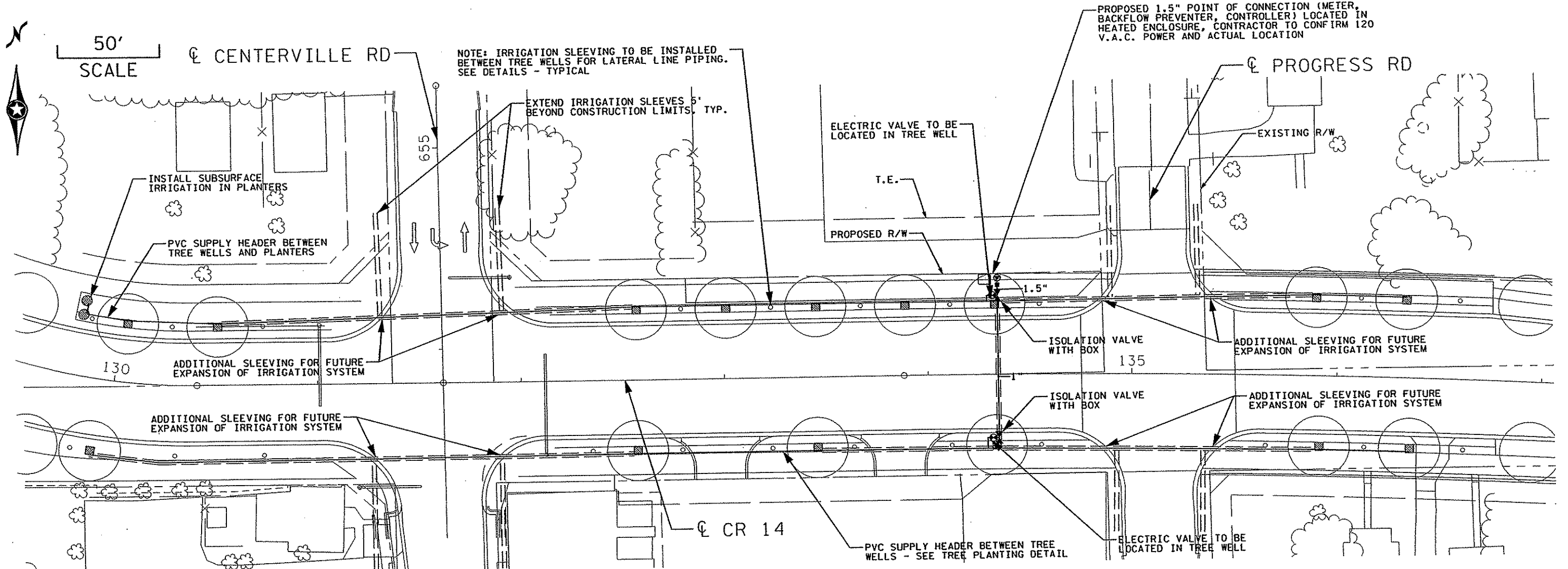
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**ANOKA COUNTY**  
 PROPOSED STREETSCAPING  
 CSAH 14  
 INTEGRAL CONCRETE COLOR LAYOUT

SHEET	S10
OF	S15



**DESIGN NOTES**

1. ALL PRODUCT APPLICATIONS AND INSTALLATIONS MUST MEET MANUFACTURER'S REQUIREMENTS.
2. FLOW RATES THROUGH PVC AND POLY PIPING NOT TO EXCEED MANUFACTURER'S RECOMMENDATIONS.
3. PIPING AS SHOWN IS DIAGRAMMATIC IN NATURE. ALL PIPING TO BE LOCATED WITHIN OWNER'S PROPERTY LINES.
4. CONTRACTOR IS RESPONSIBLE FOR PROPER OPERATION OF IRRIGATION SYSTEM. SYSTEM SHALL NOT EXCEED MANUFACTURER'S RECOMMENDATIONS AND SHALL WATER ALL TREE AREAS NOTED. IRRIGATION PLAN IS INTENDED TO INCLUDE EVERYTHING NECESSARY TO THE PROPER OPERATION OF SAID IRRIGATION SYSTEM. IF ADJUSTMENTS ARE REQUIRED, CONTRACTOR SHALL MAKE ADJUSTMENTS FOR SAME.
5. IRRIGATION PLANS SHALL HAVE PRECEDENCE OVER IRRIGATION SPECIFICATIONS. ANY DISCREPANCIES BETWEEN THESE TWO DOCUMENTS MUST BE BROUGHT TO THE ATTENTION OF THE OWNERS REPRESENTATIVE BEFORE BID DUE DATE.
6. IRRIGATION CONTRACTOR SHALL PROVIDE OWNERS REPRESENTATIVE WITH ALL SHOP DRAWINGS OF PROPOSED IRRIGATION SYSTEM BEFORE INSTALLATION FOR STAMPED APPROVAL.
7. CONTRACTOR IS RESPONSIBLE FOR SETTING INTERVAL OF TORO 474-04 G.V.C.; CONTRACTOR SHALL VERIFY WITH OWNER PRIOR TO INSTALLATION.
8. EXTEND IRRIGATION SLEEVES 5' BEYOND CONSTRUCTION LIMITS. CONTRACTOR SHALL VERIFY CONSTRUCTION LIMITS WITH ENGINEER BEFORE INSTALLATION.

**ELECTRICAL NOTES**

1. 24" LOOP OF WIRE LOCATED AT EACH VALVE.
2. ALL 24 V.A.C. SECONDARY WIRING SHALL BE (RED) #14 HOT AND (WHITE) #12 COMMON. (ONE HOT WIRE PER VALVE) 5. ALL WIRE SHALL HAVE ENOUGH SLACK AS TO ACCOMMODATE FOR EXPANSION AND/ OR CONTRACTION.
3. ALL WIRE TO BE UL APPROVED FOR DIRECT BURIAL.
4. ALL 120 V.A.C. PRIMARY, AND 24 V.A.C. SECONDARY POWER TO BE INSTALLED AS PER STATE AND LOCAL CODES. SIZED AS PER PLAN WITH GROUND WIRE; MEETING N.E.C. REQUIREMENTS.
5. ALL 24 V.A.C. FIELD SPLICES SHALL BE NOTED ON "AS-BUILT" DRAWINGS AND LOCATED IN ECONO VALVE BOX AND MARKED.

**PLUMBING NOTES**

1. ALL MAIN LINE PIPING FITTINGS SHALL BE THRUST BLOCKED AT ALL CHANGE OF DIRECTIONS - SEE DETAILS AND THRUST BLOCK/JOINT RESTRAINT NOTES.

**CONTROLLER NOTES**

1. CONTROLLER LOCATION ON PLAN ARE DIAGRAMMATIC IN NATURE AND FINAL LOCATION WILL BE COORDINATED WITH OWNERS REPRESENTATIVE AND GENERAL CONTRACTOR. ALL CONTROLLER EQUIPMENT SHALL BE INSTALLED AS PER MANUFACTURER'S RECOMMENDATIONS FOR THE PROPER OPERATION OF SAID CONTROL SYSTEM WHETHER MENTIONED OR NOT AT NO ADDITIONAL COST TO OWNER.

**PROGRAMMING NOTES**

1. ALL VALVES SHALL HAVE SINGLE #14 HOT WIRE RUNNING BACK TO RESPECTIVE SATELLITE WITH #12 COMMON WIRES. CONTRACTOR SHALL SUPPLY IRRIGATION DESIGN CONSULTANT WITH AS-STAKED DRAWINGS AND ILLUSTRATE ALL 120 V.A.C. AND 24 V.A.C. WIRE ROUTING AS INSTALLED FOR STAMPED APPROVAL.

**LEGEND**

- TORO 474-04 G.C.V.
- ▶ NIBCO T113-IRR ISOLATION VALVE WITH VALVE BOX (OR APPROVED EQUAL) - SEE DETAIL
- ⊙ POINT OF CONNECTION - COORDINATE LOCATION WITH OWNER
- MAIN LINE PIPING CLASS 200 PVC 1.5" OR #100 POLY PIPING DOUBLE STAINLESS STEEL CLAMPED MAIN
- LATERAL PIPING #100 POLY PIPING OR TECHLINE BLANK TUBING. ALL 1.5" UNLESS NOTED
- MIRACLE FIELD SATELLITE 25-MRAAC-06 (AC POWER) WITH 25-MRP-PROF-CAB WALL MOUNT CONTROLLER WITH LOCKABLE CABINET. COORDINATE LOCATION AND 120 VAC POWER WITH OWNER.
- 4" CLASS 200 PVC PIPING SLEEVE WITH 2" CLASS 200 WIRE SLEEVE. COORDINATE WITH GENERAL CONTRACTOR FOR ACTUAL LOCATIONS. - AS PER LOCAL CODES
- NETAFIM LOW VOLUME CONTROL ZONE KIT - VALVE, FILTER AND PRESSURE REGULATOR - AS PER MANUFACTURERS RECOMMENDATIONS LVCZ10075-LF OPERATING RANGE .25 - 4.4 GPM LVCZ10075-HF OPERATING RANGE 3.5 - 17.6 GPM
- NETAFIM TECHLINE CV SUBSURFACE TUBING TLV4-12XX SUBSURFACE DRIPPER LINE - AS PER MANUFACTURERS RECOMMENDATIONS - SEE DETAILS AND DESIGN NOTES

ALL PIPING AND EQUIPMENT LOCATIONS ARE DIAGRAMMATIC IN NATURE. ALL EQUIPMENT SHALL BE LOCATED WITHIN OWNER'S PROPERTY AND IN NOTED AREAS. IT IS THE INTENT TO HIDE ALL ELECTRIC REMOTE VALVE BOXES FROM VIEW. OWNER SHALL ULTIMATELY APPROVE ALL SUB-SURFACE IRRIGATION, VALVE AND CONTROLLER LOCATIONS BEFORE INSTALLATION.

MODELNAME: DEFAULT  
PLOTDATE: 3/22/2007

NO	DATE	APPR	REVISION

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 PRINT NAME: JEFF McDOWELL  
 SIGNATURE: *Jeff McDowell*  
 DATE: 7/11/06  
 PROJ. NO. 616-06144 DATE: 03/21/07 UC. NO. 42540

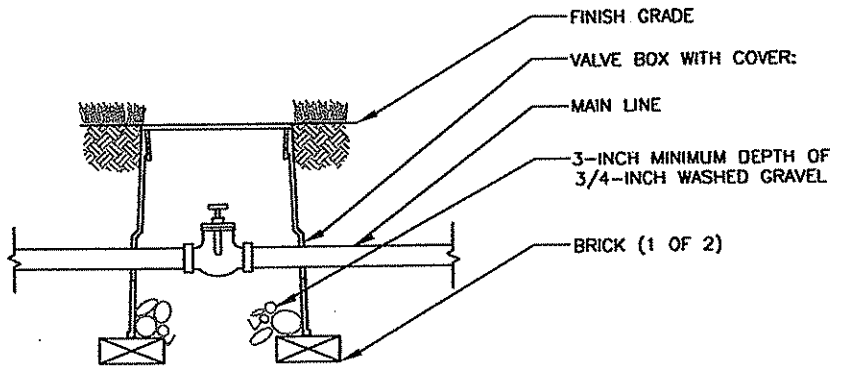
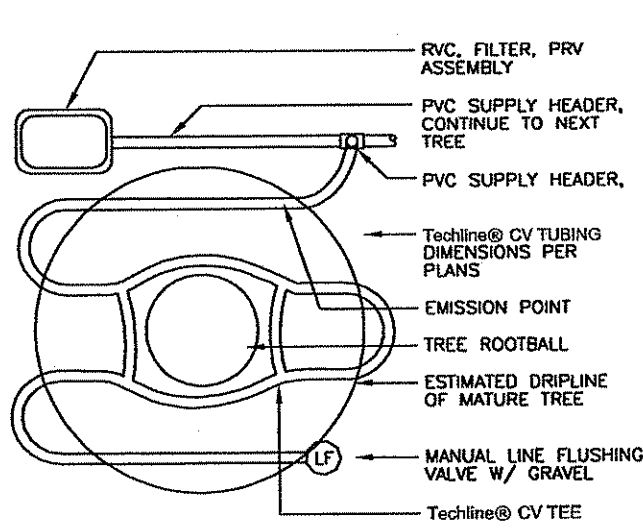
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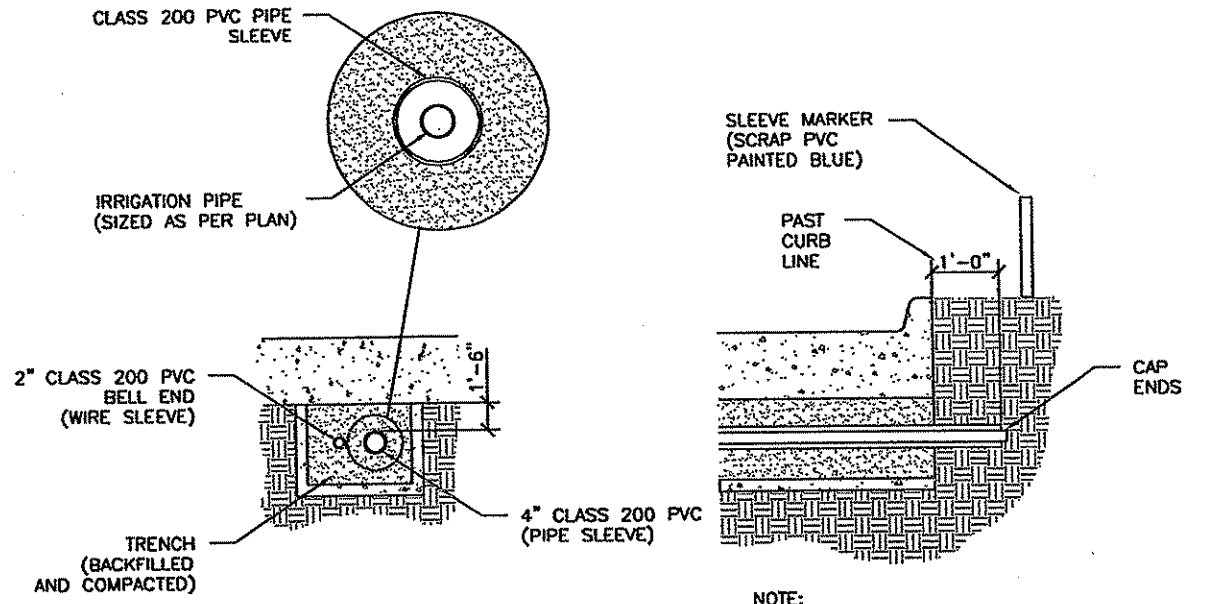
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**ANOKA COUNTY**  
 PROPOSED STREETSCAPING  
 CSAH 14  
 IRRIGATION PLAN



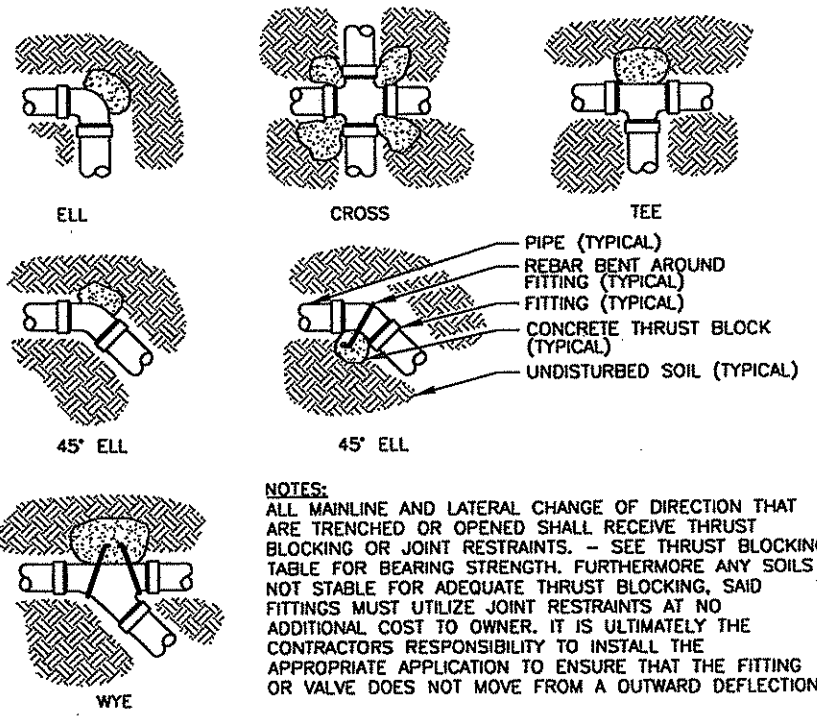
**I NIBCO T-113 IRR ISOLATION VALVE W/ BOX**  
SECTION - NO SCALE



NOTE: MARK ALL SLEEVES AT BOTH ENDS WITH VERTICAL SCRAP PVC PAINTED BLUE

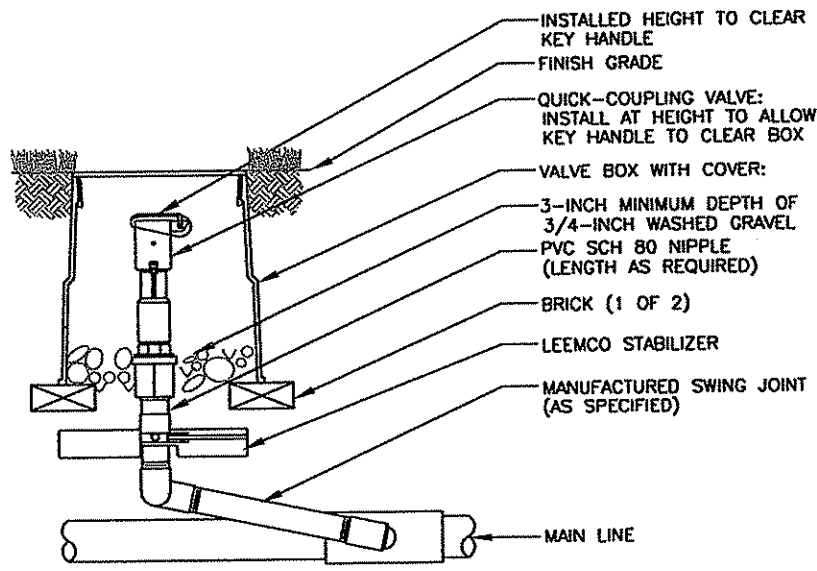
**J SLEEVING DETAIL**  
SECTION - NO SCALE

**H Techline® CV TUBING & ACCESORIES FOR TREE PLANTING**  
SECTION - NO SCALE



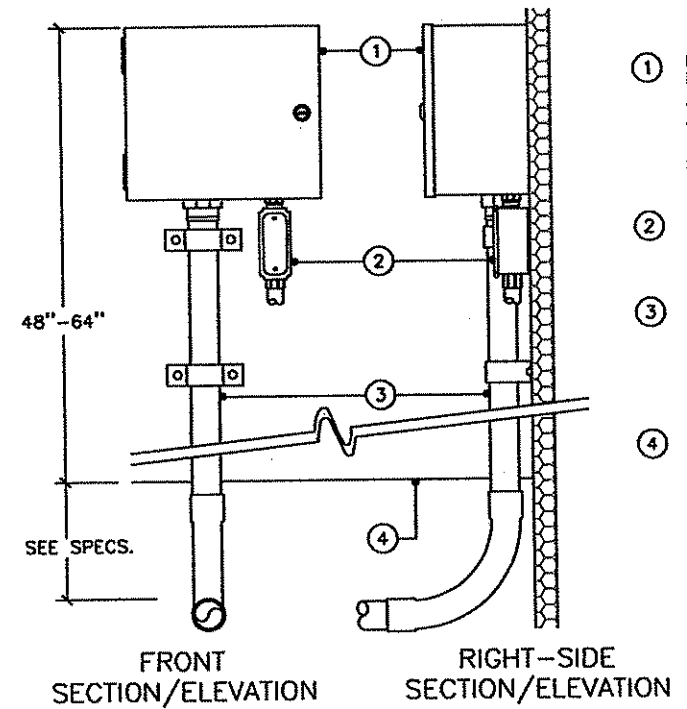
NOTES:  
ALL MAINLINE AND LATERAL CHANGE OF DIRECTION THAT ARE TRENCHED OR OPENED SHALL RECEIVE THRUST BLOCKING OR JOINT RESTRAINTS. - SEE THRUST BLOCKING TABLE FOR BEARING STRENGTH. FURTHERMORE ANY SOILS NOT STABLE FOR ADEQUATE THRUST BLOCKING, SAID FITTINGS MUST UTILIZE JOINT RESTRAINTS AT NO ADDITIONAL COST TO OWNER. IT IS ULTIMATELY THE CONTRACTORS RESPONSIBILITY TO INSTALL THE APPROPRIATE APPLICATION TO ENSURE THAT THE FITTING OR VALVE DOES NOT MOVE FROM A OUTWARD DEFLECTION.

**K THRUST BLOCK**  
SECTION - NO SCALE



NOTE:  
1. FURNISH FITTINGS AND PIPING NOMINALLY SIZED IDENTICAL TO NOMINAL QUICK COUPLING VALVE INLET SIZE.

**L QUICK-COUPLING VALVE W/ STABILIZER**  
SECTION - NO SCALE



- ① IRRIGATION CONTROLLER MODEL NO. 25-MRAAC-06  
SEE PLAN FOR NUMBER OF STATIONS  
ANCHOR SECURELY TO WALL
- ② 1/2" CONDUIT FOR ELECTRICAL POWER CONDUCTORS PER LOCAL AND NATIONAL CODES
- ③ 2" CONDUIT FOR REMOTE CONTROL VALVES AND SENSOR WIRES  
SECURE TO WALL WITH APPROPRIATE PIPE CLAMPS
- ④ FINISHED SURFACE

**M MIRACLE WALL MOUNT CONTROLLER**  
SECTION - NO SCALE

PLOTDATE: 3/22/2007 MODELNAME: DEFAULT

NO	DATE	APPR	REVISION

SURVEY	----
DRAWN	ECG
DESIGNED	ECG
APPROVED	----
DATE	7/11/06
PRJL NO.	516-06144

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SIGNATURE: *Jeff McDowell*  
DATE: 03/21/07 UC. NO. 42940

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**ANOKA COUNTY**  
PROPOSED STREETSCAPING  
CSAH 14  
IRRIGATION DETAILS

SHEET	S12
OF	S15

**THRUST BLOCKING**

STEP 1. MULTIPLY THE PRESSURE LEVEL DESIRED FOR TESTING BY THE APPROPRIATE VALUE SHOWN IN THE FOLLOWING TABLE:

PIPE SIZE	DEAD END OR TEE	90° ELBOW	45° ELBOW	22.5° ELBOW
1.5"	2.94	4.16	2.25	1.15
2"	4.56	6.45	3.50	1.78
2.5"	6.65	9.40	5.10	2.60
3"	9.80	13.9	7.51	3.82
3.5"	12.8	18.1	9.81	4.99
4"	16.2	23.0	12.4	6.31
5"	24.7	35.0	18.9	9.63
6"	34.8	49.2	26.7	13.6
8"	59.0	83.5	45.2	23.0
10"	91.5	130.0	70.0	35.8
12"	129.0	182.0	98.5	50.3

BASED ON POUNDS PER PSI WORKING PRESSURE.

STEP 2. DETERMINE THE BEARING STRENGTH OF THE SOIL FROM THE TABLE BELOW:

BEARING STRENGTH OF SOILS	SOILS AND SAFE BEARING LOADS LBS. SQ. FT.
SOUND SHALE	10,000
CEMENTED GRAVEL AND SAND-DIFFICULT TO PICK	4,000
COARSE AND FINE COMPACT SAND	3,000
MEDIUM CLAY - CAN BE SPADED	2,000
SOFT CLAY	1,000
MUCK	0

STEP 3. DIVIDE THE TOTAL THRUST OBTAINED IN STEP 1 BY THE BEARING STRENGTH OF THE SOIL: THIS GIVES THE SQUARE FEET OF AREA NEEDED.

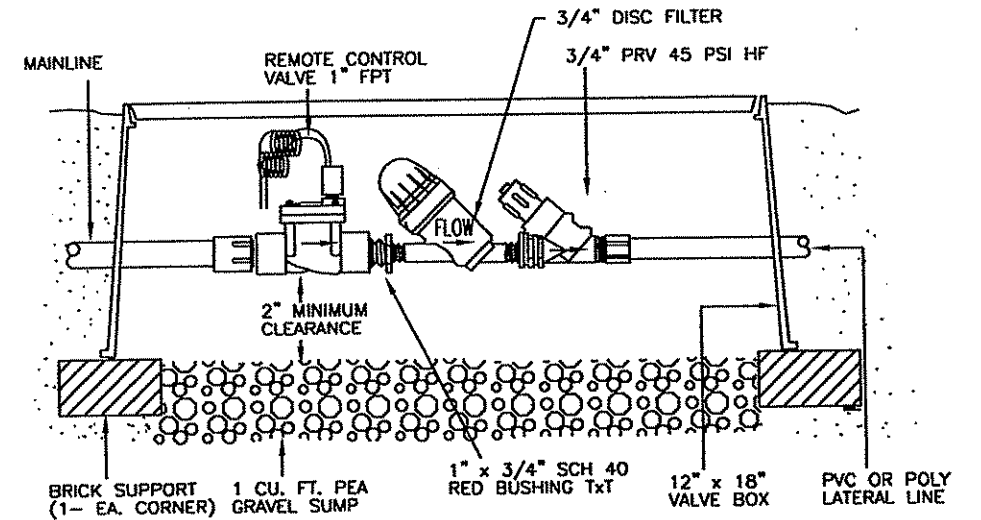
**SIDE THRUST ON CURVES**

AN OUTWARD PRESSURE EXISTS ON ALL DEFLECTIONS FROM A STRAIGHT LINE. GOOD SOIL, PROPERLY TAMPED, IS SUFFICIENT TO HOLD SIDE THRUST - UNLESS SOIL CONDITIONS ARE UNSTABLE. IN THAT CASE, TO ANCHOR AGAINST THIS SIDE THRUST, THE BLOCKING SHOULD BE PLACED AGAINST THE PIPE ON EACH SIDE OF THE COUPLING. DO NOT THRUST BLOCK THE COUPLING ITSELF.

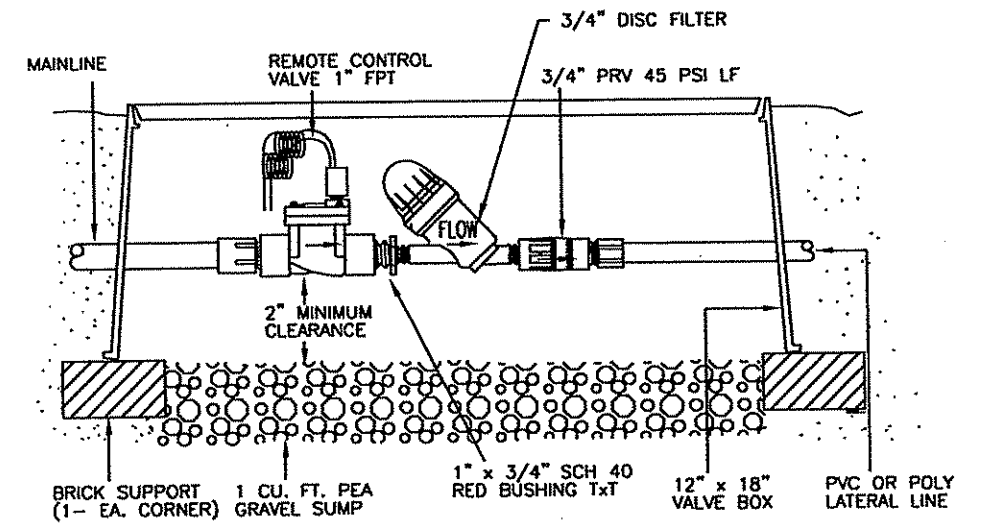
PIPE SIZE INCHES	SIDE THRUST POUNDS PER DEGREE
1.5"	5.1
2"	7.9
2.5"	11.6
3"	17.1
3.5"	22.4
4"	28.3
5"	43.1
6"	60.8
8"	103.0
10"	160.0
12"	225.0

BASED ON SIDE THRUST PER 100 LBS/SQUARE INCH PRESSURE PER DEGREE OF DEFLECTION

NOTE: MULTIPLY SIDE THRUST POUNDS BY DEGREES OF DEFLECTION TIMES POUNDS OF PRESSURE DIVIDED BY 100 TO OBTAIN TOTAL SIDE THRUST IN POUNDS.



**N** LOW VOLUME CONTROL ZONE ASSEMBLY  
P/N LVCZ10075-HF SECTION - NO SCALE  
3.5 - 17.6 GPM



**O** LOW-VOLUME CONTROL SYSTEM  
P/N LVCZ-10075 SECTION - NO SCALE  
.25 - 4.4 GPM

MODEL NAME: DEFAULT  
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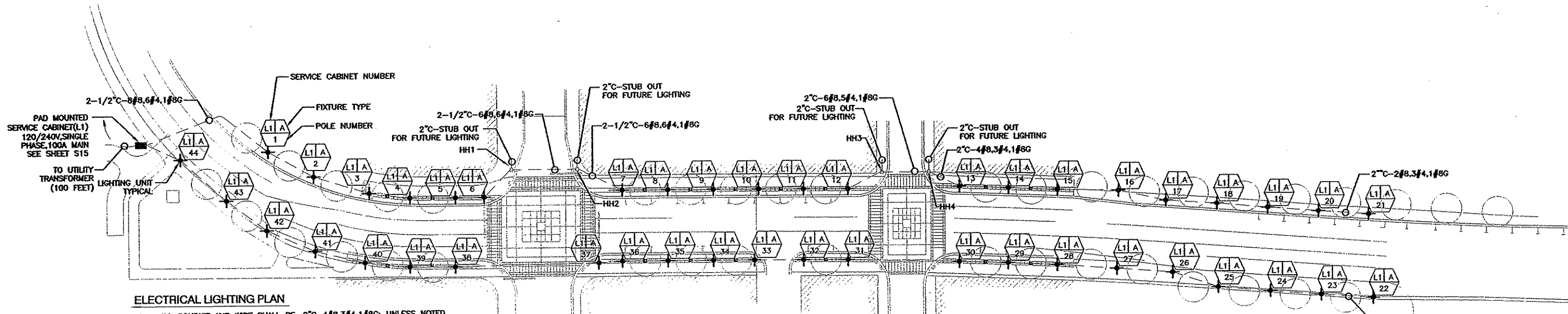
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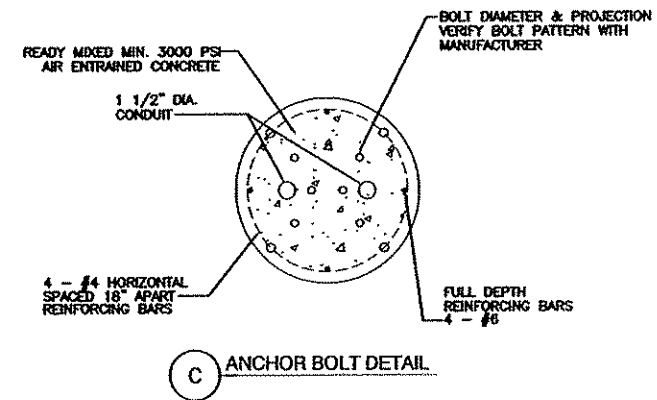
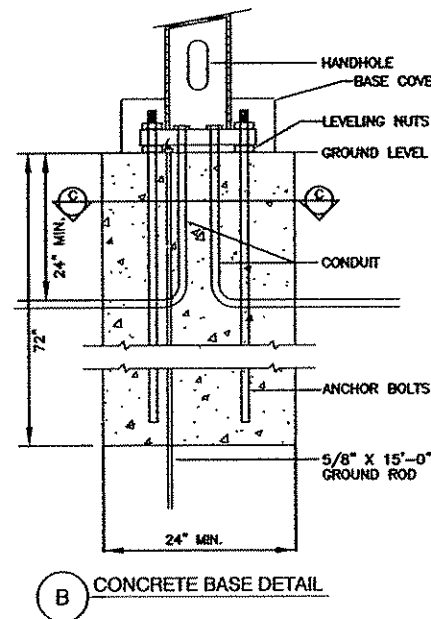
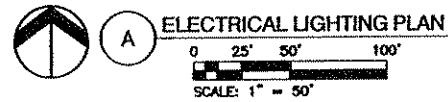
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PROPOSED STREETSCAPING  
CSAH 14  
IRRIGATION DETAILS

SHEET  
S13  
OF  
S15



**ELECTRICAL LIGHTING PLAN**

1. ALL CONDUIT AND WIRE SHALL BE 2" C-4#8,3#4,1#8G; UNLESS NOTED OTHERWISE.
2. ALL CONDUIT SHALL BE RIGID NON-METALLIC PVC SCHEDULE 40. ALL CONDUIT BENDS SHALL BE RMC TO PREVENT DAMAGE DURING WIRE PULLING.



MODELNAME: \$MODELNAME\$

PLOTDATE: \$DATE\$

NO	DATE	APPR	REVISION

SURVEY	
DRAWN	SAO
DESIGNED	SAO
APPROVED	JPC
DATE	03/21/07
PROJ. NO.	616-06144

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 PRINT NAME: JOHN P. CARLSON  
 SIGNATURE: *John P. Carlson*  
 DATE: 03/21/07  
 LIC. NO.: 24001

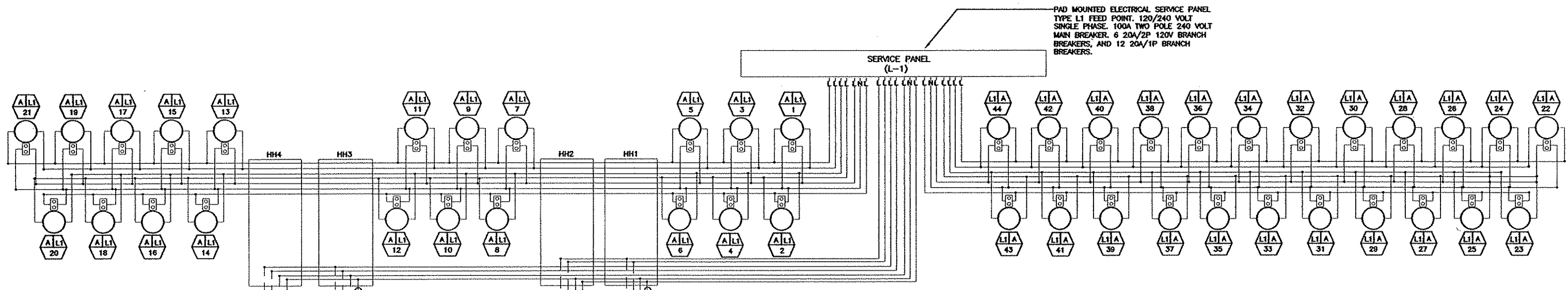
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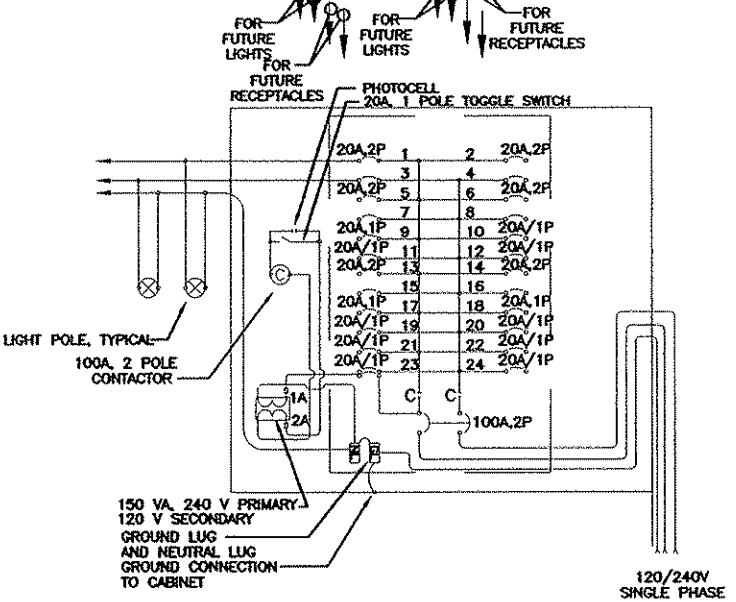
**ANOKA COUNTY**  
 PROPOSED STREETSCAPING  
 CSAH 14  
 LIGHTING PLAN & DETAIL

SHEET	S14
OF	S15



PAD MOUNTED ELECTRICAL SERVICE PANEL  
 TYPE L1 FEED POINT. 120/240 VOLT  
 SINGLE PHASE. 100A TWO POLE 240 VOLT  
 MAIN BREAKER. 6 20A/2P 120V BRANCH  
 BREAKERS, AND 12 20A/1P BRANCH  
 BREAKERS.

A WIRE DIAGRAM



GENERAL NOTES:  
 1. CONTRACTOR SHALL PROVIDE CIRCUIT AND POLE NUMBER ON EACH POLE.

B TYPICAL SERVICE CABINET(L-1) WIRE DIAGRAM

PANEL NO.	MAIN AMPS	CIRCUIT BREAKER	LOCATION: SERVICE CABINET(L1)	
100	100	MAIN LUGS ONLY	FED FROM: UTILITY	
LP1	PHASE 1	WIRE	VOLTS 120/240V	
CIRCUIT DESCRIPTION	CKT. NO.	BREAKERS	BUS BREAKERS	CKT. DESCRIPTION
STREET LIGHTS	1	20A,2P	X	2 STREET LIGHTS
STREET LIGHTS	3	20A,2P	X	4 STREET LIGHTS
STREET LIGHTS	5	20A,2P	X	8 STREET LIGHTS
RECEPTACLES	9	20A,1P	X	10 RECEPTACLE
RECEPTACLES	11	20A,1P	X	12 RECEPTACLES
LIGHTS(FUTURE)	13	20A,2P	X	14 LIGHTS(FUTURE)
RECEPTACLES(FUTURE)	17	20A,1P	X	18 RECEPTACLES(FUTURE)
SPARE	19	20A,1P	X	20 SPARE
SPARE	21	20A,1P	X	22 SPARE
SPARE	23	20A,1P	X	24 SPARE

C PANELBOARD SCHEDULE

SCHEDULE OF ESTIMATED QUANTITIES		
ITEM	UNIT	ESTIMATED
		QUANTITIES
LIGHTING UNIT-A	EACH	44
CONCRETE BASE	EACH	44
2" NMC	LF	1400
2" RSC	LF	280
2-1/2" NMC	LF	65
2-1/2" RSC	LF	240
EQUIPMENT PAD	EACH	1
#8 AWG WIRE	LF	14800
#4 AWG WIRE	LF	9400
SERVICE CABINET	EACH	1

D QUANTITY SCHEDULE

MODELNAME: \$MODELNAME\$  
 PLOTDATE: \$DATE\$  
 FILENAME: \$FILE\$

NO.	DATE	APPR.	REVISION	SURVEY	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. PRINT NAME: JOHN P. CARLSON SIGNATURE: <i>John P. Carlson</i> DATE: 03/21/07 PROJ. NO. 616-06144 UC. NO. 24001	 <b>Bonestroo Rosene Anderlik &amp; Associates</b> Engineers & Architects www.bonestroo.com	<b>St. Paul Office</b> 2335 West Highway 36 St. Paul, MN 55113 Phone: 651-636-4600 Fax: 651-636-1311	STATE PROJECT NO. S.P. 02-614-24, ETAL	<b>ANOKA COUNTY</b> PROPOSED STREETSCAPING CSAH 14 LIGHTING DETAILS	SHEET
										S15
										OF
										S15