MINNESOTA DEPARTMENT OF TRANSPORTATION

ANOKA COUNTY

CONSTRUCTION PLAN FOR: GRADING, AGG. BASE, BIT. PAVING, STORM SEWER, CONCRETE CURB & GUTTER, BIT. PATH, SIGNING AND STRIPING, TRAFFIC CONTROL SIGNALS, NOISE BARRIER, AND APPURTENANT WORK

LOCATED ON CSAH 52 FROM A POINT 1525 FEET SOUTH OF CSAH 14 TO A POINT 2015 FEET NORTH OF CSAH 116 AND CSAH 116 FROM TH 65 TO A POINT 1160 FEET EAST OF CSAH 52, IN BLAINE AND HAM LAKE

S.P. 02-652-05, S.P. 106-020-28
CSAH 52

GROSS LENGTH	7413.23	FEET	1.404 MILES
BRIDGES-LENGTH	0	FEET	0 MILES
EXCEPTIONS-LENGTH	0	FEET	0 MILES
NET LENGTH	7413.23	FEET	1.404 MILES

(LENGTH BASED ON NB STATIONING)

S.P. 02-652-05, S.P. 197-124-001
CSAH 52

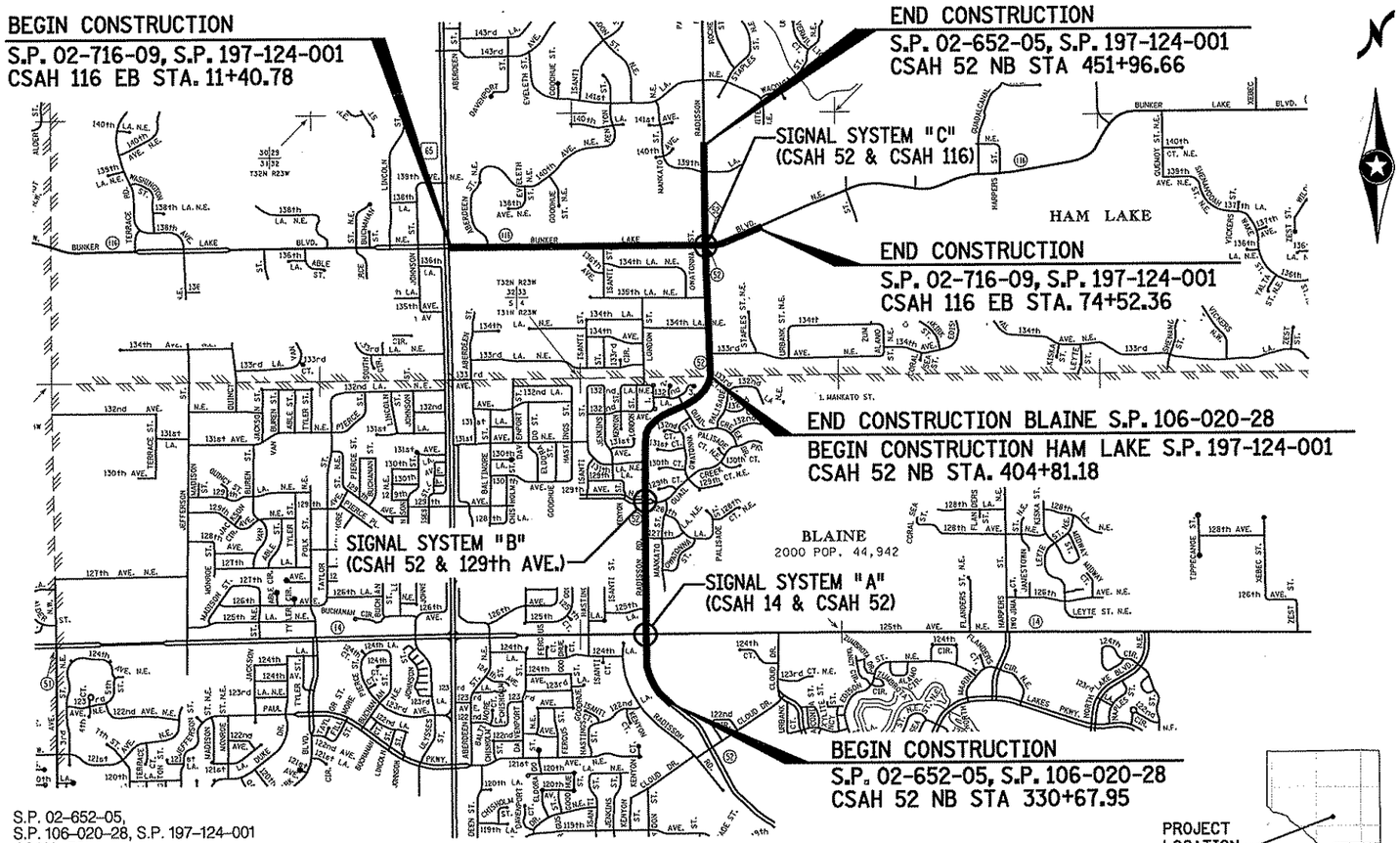
GROSS LENGTH	4715.48	FEET	0.893 MILES
BRIDGES-LENGTH	0	FEET	0 MILES
EXCEPTIONS-LENGTH	0	FEET	0 MILES
NET LENGTH	4715.48	FEET	0.893 MILES

(LENGTH BASED ON NB STATIONING)

S.P. 02-716-09, S.P. 197-124-001
CSAH 116

GROSS LENGTH	6311.58	FEET	1.195 MILES
BRIDGES-LENGTH	0	FEET	0 MILES
EXCEPTIONS-LENGTH	0	FEET	0 MILES
NET LENGTH	6311.58	FEET	1.195 MILES

(LENGTH BASED ON EB STATIONING)



S.P. 02-652-05,
S.P. 106-020-28, S.P. 197-124-001
CSAH 52

DESIGN DESIGNATION

ADT (2009)	12,600
ADT (2029)	24,900
FUNCTIONAL CLASS	MINOR ARTERIAL
NO OF TRAFFIC LANES	4
NO OF PARKING LANES	0
SHOULDER WIDTH	8
R-VALUE	65
TON DESIGN	10
ESALS	2,700,000
DESIGN SPEED (MPH):	
CSAH 52 NB STA. 330+67.95 TO 406+25.05	45
CSAH 52 NB STA. 406+25.05 TO 451+96.48	55
DESIGN SPEED NOT ACHIEVED AT:	
CSAH 52 NB STA. 384+42.03 TO 391+68.86	44
CSAH 52 SB STA. 1398+57.08 TO 1406+27.45	44

BASED ON STOPPING SIGHT DISTANCE.
3.5 FT HEIGHT OF EYE 2.0 FT HEIGHT OF OBJECT

S.P. 02-716-09, S.P. 197-124-001
CSAH 116

DESIGN DESIGNATION

ADT (2009)	5,800
ADT (2029)	10,500
FUNCTIONAL CLASS	MINOR ARTERIAL
NO OF TRAFFIC LANES	4
NO OF PARKING LANES	0
SHOULDER WIDTH	8
R-VALUE	65
TON DESIGN	10
ESALS	1,200,000
DESIGN SPEED (MPH):	
CSAH 116 EB STA. 11+15.15 TO 63+14.02	55
CSAH 116 EB STA. 63+14.02 TO 74+52.36	50

BASED ON STOPPING SIGHT DISTANCE.
3.5 FT HEIGHT OF EYE 2.0 FT HEIGHT OF OBJECT

DESIGN DESIGNATION - BIKE PATH

DESIGN SPEED (MPH) 20
BASED ON:
4.5 FT HEIGHT OF EYE 0.0 FT HEIGHT OF OBJECT

PLAN REVISIONS		
DATE	SHEET NO.	APPROVED BY

PROJECT LOCATION

ANOKA COUNTY

PROJECT LOCATION
COUNTY: ANOKA
DISTRICT: METRO

PLAN SYMBOLS

STATE LINE
COUNTY LINE
TOWNSHIP OR RANGE LINE
SECTION LINE
QUARTER LINE
SIXTEENTH LINE
RIGHT-OF-WAY LINE
TEMPORARY EASEMENT (TE)
PRESENT RIGHT-OF-WAY
CONTROL OF ACCESS LINE
PROPERTY LINES (EXCEPT LAND LINES)
VACATED PLATTED PROPERTY
CORPORATE OR CITY LIMITS
TRUNK HIGHWAY CENTER LINE
RETAINING WALL
RAILROAD
RAILROAD RIGHT-OF-WAY
RIVER OR CREEK (NAME)
DRY RUN
DRAINAGE DITCH
DRAIN TILE
CULVERT
DROP INLET
GUARD RAIL
BARBED WIRE FENCE
WOVEN WIRE FENCE
CHAIN LINK FENCE
RAILROAD SNOW FENCE
STONE WALL OR FENCE
HEDGE
RAILROAD CROSSING SIGN
RAILROAD CROSSING BELL
ELECTRIC WARNING SIGN
CROSSING GATE
MEANDER CORNER
SPRINGS
MARSH
TIMBER / ORCHARD / BRUSH / NURSERY (TIMBER)
CATTLE GUARD
OVERPASS (HIGHWAY OVER) (ROAD)
UNDERPASS (HIGHWAY UNDER)
BRIDGE
BUILDING (ONE STORY FRAME) 1-S-F 35 / 75
F - FRAME C - CONCRETE
S - STONE T - TILE
B - BRICK ST- STUCCO
IRON ROD OR PIPE
MONUMENT (STONE, CONCRETE, OR METAL) MONU.
WOODEN HUB
GRAVEL PIT (G)
SAND PIT (S)
BORROW PIT (B)
ROCK QUARRY (R)

UTILITY SYMBOLS

POWER POLE LINE
TELEPHONE POLE LINE
ANCHOR
STREET LIGHT
STREET LIGHT CONDUIT
PEDESTAL (TELEPHONE CABLE TERMINAL)
GAS MAIN
WATER MAIN
HYDRANT
VALVE
CATCH BASIN CB
TELEPHONE CABLE IN CONDUIT T
ELECTRIC CABLE IN CONDUIT P
TELEVISION CABLE IN CONDUIT TV
TELEPHONE MANHOLE
ELECTRIC MANHOLE
BURIED TELEPHONE CABLE T-BUR
BURIED ELECTRIC CABLE P-BUR
BURIED TELEVISION CABLE TV-BUR
TRAFFIC SIGNAL INTERCONNECT CABLE SIG-INT
SEWER (STORM) MANHOLE
SEWER (SANITARY) MANHOLE
SEWER (STORM)
SEWER (SANITARY)

SCALES

INDEX MAP 0 1500 3000
PLAN 0 50 100
PROFILE HORIZ. 0 50 100
VERT. 0 5 10
CROSS SECTION 0 10 20

DATE: 7/30/2009 TIME: 11:16:39 PM
FILENAME: K:\c-f\Anoka\Cy\U3867000\hwy-brdg\hwy\plr-sht\c0265205_cov.dgn

MINN PROJECT NO. STPX 0209(008)

GOVERNING SPECIFICATIONS

THE 2005 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION." SHALL GOVERN.

ALL TRAFFIC CONTROL DEVICES AND SIGNING SHALL CONFORM TO THE "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MN MUTCD), INCLUDING "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS".

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

INDEX

THIS PLAN CONTAINS 299 SHEETS

ALL APPLICABLE FEDERAL, STATE, AND LOCAL LAWS AND ORDINANCES WILL BE COMPLIED WITH IN THE CONSTRUCTION OF THIS PROJECT.

TKDA
ENGINEERS · ARCHITECTS · PLANNERS

SIGNATURE: Timothy A. Chalupnik TYPED OR PRINTED NAME: TIMOTHY A. CHALUPNIK

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

DATE: 7/30/09 LICENSE NUMBER 15400

APPROVED Thomas P. Collins DATE: 8/5/09
CITY OF HAM LAKE ENGINEER

APPROVED James M. Kelly DATE: 8/5/09
CITY OF BLAINE ENGINEER

APPROVED [signature] DATE: 8/5/09
ANOKA COUNTY ENGINEER

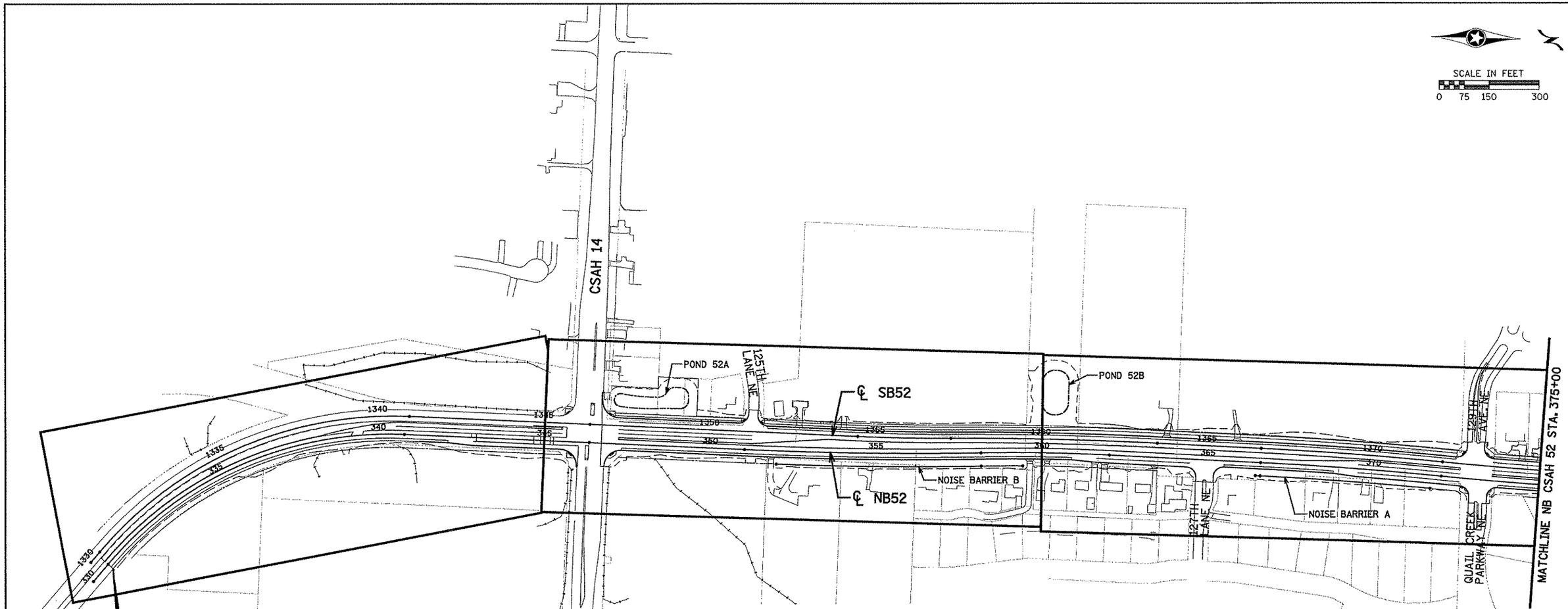
STATE AID APPROVALS:

[signature] DATE: 12/8/09
METRO DISTRICT STATE AID ENGINEER: REVIEWED FOR COMPLIANCE WITH STATE AND FEDERAL AID RULES/POLICY

[signature] DATE: 12/8/09
APPROVED FOR STATE AID AND FEDERAL FUNDING: STATE AID ENGINEER

S.P. 02-652-05, S.P. 02-716-09
S.P. 106-020-28, S.P. 197-124-001

SHEET NO. 1.01 OF 294 SHEETS



SHEET 4.01 ALIGNMENT PLANS
SHEET 5.01 EXISTING CONDITIONS AND REMOVALS PLANS
SHEET 6.01 CONSTRUCTION PLANS AND PROFILES
SHEET 10.01 SUPERELEVATION AND DRAINAGE PLAN PROFILE
SHEET 12.01 EROSION CONTROL AND TURF ESTABLISHMENT PLANS
SHEET 14.01 SIGNING AND STRIPING PLANS AND TABULATIONS

BEGIN CONSTRUCTION
S.P. 02-652-05, S.P. 106-020-28
CSAH 52 NB STA 330+67.95

SHEET 4.01 ALIGNMENT PLANS
SHEET 5.01 EXISTING CONDITIONS AND REMOVALS PLANS
SHEET 6.02 CONSTRUCTION PLANS AND PROFILES
SHEET 10.02 SUPERELEVATION AND DRAINAGE PLAN PROFILE
SHEET 12.01 EROSION CONTROL AND TURF ESTABLISHMENT PLANS
SHEET 14.01 SIGNING AND STRIPING PLANS AND TABULATIONS

SHEET 4.02 ALIGNMENT PLANS
SHEET 5.02 EXISTING CONDITIONS AND REMOVALS PLANS
SHEET 6.03 CONSTRUCTION PLANS AND PROFILES
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SHEET 12.02 EROSION CONTROL AND TURF ESTABLISHMENT PLANS
SHEET 14.02 SIGNING AND STRIPING PLANS AND TABULATIONS

NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\a-f\AnokaCty\13867000\hwy-brdg\hwy\pln-sht\c0265205_gla.dgn 11/3/2009

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:
PRINTED NAME: RYAN P. MALONEY
DATE: 11/3/2009 LIC. NO. 44193

DRAWN BY SFH DATE 11/3/2009
DESIGN BY RPM DATE 11/3/2009
CHECKED BY RPM DATE 11/3/2009

S.P. 02-652-05
S.P. 02-716-09
S.P. 106-020-28
S.P. 197-124-001

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ENGINEERS·ARCHITECTS·PLANNERS

ANOKA COUNTY
GENERAL LAYOUT
CSAH 52/116 RECONSTRUCTION
NB CSAH 52 STA. 330+67.95 TO 375+00

SHEET 1.02 OF 294

SHEET 4.02 ALIGNMENT PLANS
SHEET 5.02 EXISTING CONDITIONS AND REMOVALS PLANS
SHEET 6.04 CONSTRUCTION PLANS AND PROFILES
SHEET 10.04 SUPERELEVATION AND DRAINAGE PLAN PROFILE
SHEET 12.02 EROSION CONTROL AND TURF ESTABLISHMENT PLANS
SHEET 14.02 SIGNING AND STRIPING PLANS AND TABULATIONS

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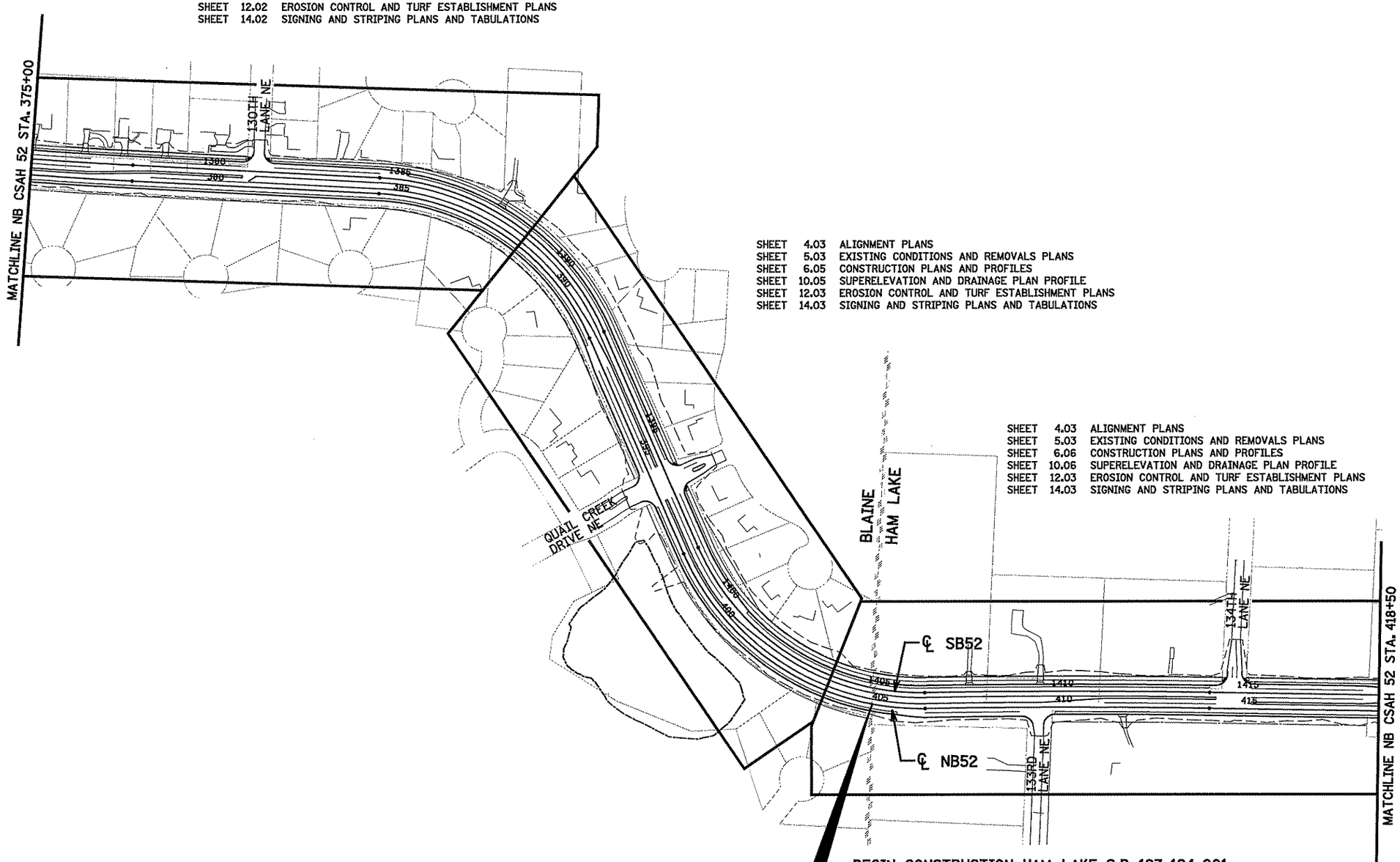

SHEET 4.03 ALIGNMENT PLANS
SHEET 5.03 EXISTING CONDITIONS AND REMOVALS PLANS
SHEET 6.05 CONSTRUCTION PLANS AND PROFILES
SHEET 10.05 SUPERELEVATION AND DRAINAGE PLAN PROFILE
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SHEET 4.03 ALIGNMENT PLANS
SHEET 5.03 EXISTING CONDITIONS AND REMOVALS PLANS
SHEET 6.06 CONSTRUCTION PLANS AND PROFILES
SHEET 10.06 SUPERELEVATION AND DRAINAGE PLAN PROFILE
SHEET 12.03 EROSION CONTROL AND TURF ESTABLISHMENT PLANS
SHEET 14.03 SIGNING AND STRIPING PLANS AND TABULATIONS

BEGIN CONSTRUCTION HAM LAKE S.P. 197-124-001
END CONSTRUCTION BLAINE S.P. 106-020-28
CSAH 52 NB STA. 404+81.18

NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\a-f\AnokaCty\13867000\hwy-brdg\hwy\pln-sht\c0265205_glb.dgn 7/30/2009

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S.P. 02-652-05
S.P. 02-716-09
S.P. 106-020-28
S.P. 197-124-001

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ANOKA COUNTY
GENERAL LAYOUT
CSAH 52/116 RECONSTRUCTION
NB CSAH 52 STA. 375+00 TO 418+50

SHEET 1.03 OF 294

MATCHLINE EB CSAH 116 STA. 50+00

SCALE IN FEET
0 75 150 300

SHEET 4.07 ALIGNMENT PLANS
SHEET 5.07 EXISTING CONDITIONS AND REMOVALS PLANS
SHEET 6.13 CONSTRUCTION PLANS AND PROFILES
SHEET 10.13 SUPERELEVATION AND DRAINAGE PLAN PROFILE
SHEET 12.07 EROSION CONTROL AND TURF ESTABLISHMENT PLANS
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SHEET 6.08 CONSTRUCTION PLANS AND PROFILES
SHEET 10.08 SUPERELEVATION AND DRAINAGE PLAN PROFILE
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SHEET 6.09 CONSTRUCTION PLANS AND PROFILES
SHEET 10.09 SUPERELEVATION AND DRAINAGE PLAN PROFILE
SHEET 12.05 EROSION CONTROL AND TURF ESTABLISHMENT PLANS
SHEET 14.05 SIGNING AND STRIPING PLANS AND TABULATIONS

MATCHLINE NB CSAH 52 STA. 418+50

135TH LANE NE

℄ SB52

℄ NB52

139TH AVE. NE

℄ WB116

℄ EB116

POND 116B

END CONSTRUCTION
S.P. 02-652-05, S.P. 197-124-001
CSAH 52 NB STA 451+96.66

SHEET 4.08 ALIGNMENT PLANS
SHEET 5.08 EXISTING CONDITIONS AND REMOVALS PLANS
SHEET 6.14 CONSTRUCTION PLANS AND PROFILES
SHEET 10.14 SUPERELEVATION AND DRAINAGE PLAN PROFILE
SHEET 12.08 EROSION CONTROL AND TURF ESTABLISHMENT PLANS
SHEET 14.08 SIGNING AND STRIPING PLANS AND TABULATIONS

END CONSTRUCTION
S.P. 02-716-09, S.P. 197-124-001
CSAH 116 EB STA 74+52.36

NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\a-f\AnokaCty\13867000\hwy-brdg\hwy\pln-sht\c0265205_glc.dgn 7/30/2009

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S.P. 106-020-28
S.P. 197-124-001

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ANOKA COUNTY
GENERAL LAYOUT
CSAH 52/116 RECONSTRUCTION
NB CSAH 52 STA. 418+50 TO 451+96.66

SHEET 1.04 OF 294

SHEET 4.06 ALIGNMENT PLANS
SHEET 5.06 EXISTING CONDITIONS AND REMOVALS PLANS
SHEET 6.10 CONSTRUCTION PLANS AND PROFILES
SHEET 10.10 SUPERELEVATION AND DRAINAGE PLAN PROFILE
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SHEET 6.12 CONSTRUCTION PLANS AND PROFILES
SHEET 10.12 SUPERELEVATION AND DRAINAGE PLAN PROFILE
SHEET 12.07 EROSION CONTROL AND TURF ESTABLISHMENT PLANS
SHEET 14.07 SIGNING AND STRIPING PLANS AND TABULATIONS

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SCALE IN FEET
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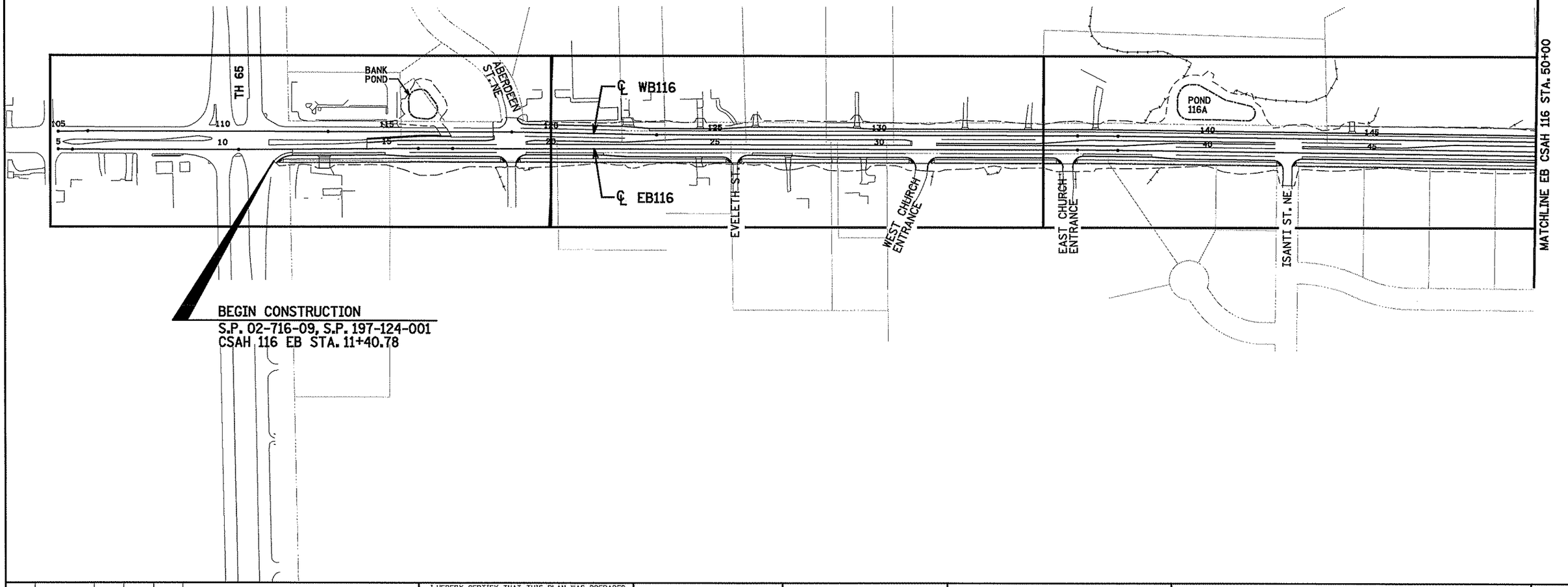

NO	DATE	BY	CKD	APPR	REVISION

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ANOKA COUNTY
GENERAL LAYOUT
CSAH 52/116 RECONSTRUCTION
CSAH 116 EB STA. 11+40.78 TO 50+00

SHEET 1.05 OF 294

ESTIMATED QUANTITIES

TAB LETTER	SHEET NO.	ITEM NUMBER	ITEM	NOTE NO.	UNIT	TOTAL ESTIMATED QUANTITY	CSAH 52						CSAH 116		
							PARTICIPATING			NON-PAR TICIPATING	PARTICIPATING		PARTICIPATING		
							ANOKA COUNTY S.P. 02-652-05	CITY OF BLAINE S.P. 106-020-28	74% ANOKA CO S.P. 02-652-05 26% BLAINE S.P. 106-020-28 STORM SEWER	CITY OF BLAINE LOCAL FUNDS	CITY OF HAM LAKE S.P. 197-124-001	71% ANOKA CO S.P. 02-652-05 29% HAM LAKE S.P. 197-124-001 STORM SEWER	ANOKA COUNTY S.P. 02-716-09	CITY OF HAM LAKE S.P. 197-124-001	52% ANOKA CO S.P. 02-716-09 48% HAM LAKE S.P. 197-124-001 STORM SEWER
		2021.501	MOBILIZATION		LUMP SUM	1	0.488	0.048	0.057	0.028	0.013	0.030	0.253	0.035	0.048
		2031.501	FIELD OFFICE TYPE D		EACH	1	0.488	0.048	0.057	0.028	0.013	0.030	0.253	0.035	0.048
		2041.610	TRAINEES		HOUR	2500	1189	122	146	71	34	77	648	90	123
A	1.12-13	2101.501	CLEARING	(1)	ACRE	8.7	5.2						3.5		
A	1.12-13	2101.502	CLEARING	(1)	TREE	181	126						55		
A	1.12-13	2101.506	GRUBBING	(1)	ACRE	8.7	5.2						3.5		
A	1.12-13	2101.507	GRUBBING	(1)	TREE	185	129						56		
D	1.15	2104.501	REMOVE WATER MAIN	(3)	LIN FT	250				250					
B	1.14	2104.501	REMOVE PIPE SEWERS	(2) (3)	LIN FT	1870	875						995		
B	1.14	2104.501	REMOVE CURB AND GUTTER	(3)	LIN FT	5902	5257						645		
B	1.14	2104.505	REMOVE CONCRETE WALK	(3)	SQ YD	1269	1031						238		
B	1.14	2104.505	REMOVE CONCRETE DRIVEWAY PAVEMENT	(3)	SQ YD	2197	1422						775		
B	1.14	2104.505	REMOVE BITUMINOUS PAVEMENT	(3) (4)	SQ YD	77342	49348						27994		
B	1.14	2104.509	REMOVE PIPE APRON	(3)	EACH	55	13						42		
D	1.15	2104.509	REMOVE EXISTING SERVICE	(3)	EACH	2				2					
B	1.14	2104.509	REMOVE MANHOLE OR CATCH BASIN	(3)	EACH	9	6						3		
D	1.15	2104.509	REMOVE GATE VALVE BOX	(3)	EACH	1				1					
DD	1.16	2104.509	REMOVE CLEANOUT	(3)	EACH	1				1					
R	14.01	2104.509	REMOVE SIGN TYPE SPECIAL		EACH	17	13						4		
		2104.509	REMOVE SIGNAL SYSTEM	(5)	EACH	1	0.5	0.5							
C	1.14	2104.511	SAWING CONCRETE PAVEMENT (FULL DEPTH)		LIN FT	375	214						161		
C	1.14	2104.513	SAWING BIT PAVEMENT (FULL DEPTH)		LIN FT	5595	4613						982		
D	1.15	2104.523	SALVAGE HYDRANT		EACH	5				5					
		2104.523	SALVAGE EMERGENCY VEHICLE PREEMPTION SYS	(6)	EACH	1		1							
T	14.02	2104.523	SALVAGE SIGN TYPE C		EACH	108	70						38		
T	14.02	2104.523	SALVAGE SIGN TYPE D		EACH	2	1						1		
T	14.02	2104.523	SALVAGE SIGN TYPE SPECIAL		EACH	4	2						2		
J	2.07	2104.523	SALVAGE MAILBOX	(7)	EACH	48	32						16		
I	1.20-24	2105.501	COMMON EXCAVATION (P)	(8)	CU YD	105526	76852						28674		
I	1.20-24	2105.505	MUCK EXCAVATION		CU YD	31064	381						28053	2630	
I	1.20-24	2105.507	SUBGRADE EXCAVATION		CU YD	36450	29429						7021		
I	1.20-24	2105.522	SELECT GRANULAR BORROW (LV)		CU YD	57416	23865						30299	3252	
I	1.20-24	2105.523	COMMON BORROW (LV)		CU YD	583	154						429		
K	2.08	2118.501	AGGREGATE SURFACING CLASS 2 (DRIVEWAYS)	(10)	TON	266	169						97		
		2130.501	WATER	(9)	M GALLONS	1000	650						350		
K	2.08	2211.501	AGGREGATE BASE CLASS 5 (DRIVEWAYS)	(10)	TON	572	381						191		
G	1.17	2211.501	AGGREGATE BASE CLASS 5 (TEMPORARY)	(10)	TON	2464	336						2128		
G	1.17	2211.503	AGGREGATE BASE (CV) CLASS 5 (P)		CU YD	28602	19912						8690		
G	1.17	2221.503	AGGREGATE SHOULDERING (LV) CLASS 5		CU YD	102	76						26		

NOTES:

(1) LIMITS OF CLEARING AND GRUBBING SHALL BE STAKED IN THE FIELD.
(2) REMOVAL INCLUDES ALL TYPES OF PIPES.
(3) ALL REMOVAL ITEMS, INCLUDING CONCRETE AND BITUMINOUS MATERIAL, SHALL BE DISPOSED OFF-SITE. NO DISPOSAL SHALL BE ALLOWED WITHIN ROADWAY RIGHT-OF-WAY OR EASEMENTS
(4) AVERAGE PAVEMENT THICKNESS IS 4.5". RANGES FROM 3" TO 6". QUANTITY INCLUDES TEMPORARY BITUMINOUS REMOVAL.
(5) THE EXISTING SIGNAL SYSTEM AT CSAH 52 AND CSAH 14 SHALL REMAIN IN OPERATION DURING CONSTRUCTION. TIMING CHANGES NECSSARY DURING CONSTRUCTION ARE PART OF THIS BID ITEM. THE POLES, MAST ARMS, AND SIGNAL INDICATIONS SHALL BE SALVAGED TO THE COUNTY. EXISTING CONDUIT IN THE ROADWAY MAY BE ABANDONED IN PLACE. SEE SPECIAL PROVISIONS FOR ADDITIONAL INFORMATION.
(6) THE EXISTING EMERGENCY VEHICLE PREEMPTION SYSTEM, EXCEPT CABLES, AT THE CSAH 52 INTERSECTION WITH CSAH 14 SHALL BE SALVAGED AND RE-INSTALLED IN THE NEW SIGNAL SYSTEM AT THIS LOCATION.
(7) REMOVAL AND DISPOSAL OF SUPPORT POST IS INCIDENTAL. SEE SPECIAL PROVISION FOR ADDITIONAL INFORMATION.
(8) INCLUDES INPLACE TOPSOIL. EXCESS MATERIAL SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE DISPOSED OUTSIDE THE RIGHT-OF-WAY.
(9) TO BE USED FOR DUST CONTROL AS DIRECTED BY THE ENGINEER.
(10) AGGREGATE BASE COMPUTED AT 2 TONS / CU YD.

NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\g-f\AnokaCty\13867000\hwy-brdg\hwy\pln-sht\c0265205.eqa.dgn 12/21/2009

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:
PRINTED NAME: RYAN P. MALONEY
DATE: 12/21/2009 LIC. NO. 44193

DRAWN BY SFH DATE 12/21/2009
DESIGN BY RPM DATE 12/21/2009
CHECKED BY TAC DATE 12/21/2009

S.P. 02-652-05
S.P. 02-716-09
S.P. 106-020-28
S.P. 197-124-001

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ANOKA COUNTY
ESTIMATED QUANTITIES
CSAH 52/116 RECONSTRUCTION

SHEET 1.06 OF 294

ESTIMATED QUANTITIES

TAB LETTER	SHEET NO.	ITEM NUMBER	ITEM	NOTE NO.	UNIT	TOTAL ESTIMATED QUANTITY	CSAH 52						CSAH 116		
							PARTICIPATING			NON-PARTICIPATING	PARTICIPATING		PARTICIPATING		
							ANOKA COUNTY S.P. 02-652-05	CITY OF BLAINE S.P. 106-020-28	74% ANOKA CO S.P. 02-652-05 26% BLAINE S.P. 106-020-28 STORM SEWER	CITY OF BLAINE LOCAL FUNDS	CITY OF HAM LAKE S.P. 197-124-001	71% ANOKA CO S.P. 02-652-05 29% HAM LAKE S.P. 197-124-001 STORM SEWER	ANOKA COUNTY S.P. 02-716-09	CITY OF HAM LAKE S.P. 197-124-001	52% ANOKA CO S.P. 02-716-09 48% HAM LAKE S.P. 197-124-001 STORM SEWER
G	1.17	2231.501	BITUMINOUS PATCHING MIXTURE		TON	28	28								
G	1.17	2232.501	MILL BITUMINOUS SURFACE (1.0")		SQ YD	490	490								
G	1.17	2232.501	MILL BITUMINOUS SURFACE (2.0")		SQ YD	6065	4458						1607		
G	1.17	2350.501	TYPE MV 4 WEARING COURSE MIXTURE (B)	(1)	TON	75	75								
G	1.17	2350.501	TYPE LV 4 WEARING COURSE MIXTURE (B) (DRIVEWAYS)	(1)	TON	167	99						68		
G	1.17	2350.501	TYPE LV 4 WEARING COURSE MIXTURE (B) (TEMPORARY)	(1)	TON	1116	126						990		
G	1.17	2350.502	TYPE MV 3 NON WEARING COURSE MIXTURE (B)	(1)	TON	100	100								
G	1.17	2357.502	BITUMINOUS MATERIAL FOR TACK COAT	(2)	GALLON	11675	9267						2408		
G	1.17	2360.501	TYPE SP 12.5 WEARING COURSE MIX (4,F)	(3)	TON	25739	20295						5444		
G	1.17	2360.502	TYPE SP 12.5 NON WEAR COURSE MIX (4,B)	(3)	TON	19964	11413						8551		
		2411.618	MODULAR BLOCK RETAINING WALL		SQ FT	310	310								
		2422.603	CONCRETE POSTS 12" X 18"		LIN FT	3244	3244								
		2422.618	WOOD NOISE BARRIER		SQ FT	13390	13390								
NN,PP	1.19, 11.08	2451.513	FINE FILTER AGGREGATE (LV)		CU YD	451	40		97				117		197
M	11.08	2501.511	12" CS PIPE CULVERT		LIN FT	70	44						26		
M	11.08	2501.511	15" CS PIPE CULVERT		LIN FT	73	30						43		
M	11.08	2501.515	12" GS PIPE APRON		EACH	4	2						2		
M	11.08	2501.515	15" GS PIPE APRON		EACH	4	2						2		
L	11.01-07	2501.515	12" RC PIPE APRON		EACH	2			1						1
L,M	11.01-08	2501.515	15" RC PIPE APRON		EACH	15			8			1	2		4
L,M	11.01-08	2501.515	18" RC PIPE APRON		EACH	9	2		1				2		4
L	11.01-07	2501.515	21" RC PIPE APRON		EACH	1			1						
L	11.01-07	2501.515	24" RC PIPE APRON		EACH	4			3						1
L	11.01-07	2501.515	27" RC PIPE APRON		EACH	3			2						1
L	11.01-07	2501.515	30" RC PIPE APRON		EACH	1									1
L	11.01-07	2501.515	33" RC PIPE APRON		EACH	1									1
L	11.01-07	2501.515	36" RC PIPE APRON		EACH	1									1
L,M	11.01-08	2501.515	42" RC PIPE APRON		EACH	4			1				2		1
M	11.08	2501.561	15" RC PIPE CULVERT DES 3006 CL V		LIN FT	62							62		
M	11.08	2501.561	18" RC PIPE CULVERT DES 3006 CL V		LIN FT	126	66						60		
M	11.08	2501.561	42" RC PIPE CULVERT DES 3006 CL III		LIN FT	122							122		
L,M	11.01-08	2501.602	TRASH GUARD FOR 15" PIPE APRON		EACH	6			2			1	1		2
L,M	11.01-08	2501.602	TRASH GUARD FOR 18" PIPE APRON		EACH	4	1		1				1		1
L	11.01-07	2501.602	TRASH GUARD FOR 27" PIPE APRON		EACH	1									1
L	11.01-07	2501.602	TRASH GUARD FOR 36" PIPE APRON		EACH	1									1
M	11.08	2501.602	TRASH GUARD FOR 42" PIPE APRON		EACH	1							1		
PP	1.19	2502.521	12" TP PIPE DRAIN		LIN FT	156			52						104
NN	11.08	2502.541	3" PERF TP PIPE DRAIN		LIN FT	4812	1232						3580		
PP	1.19	2502.541	12" PERF TP PIPE DRAIN		LIN FT	1370			450						920
DD	1.16	2503.511	8" PVC SDR 35		LIN FT	136				136					
L	11.01-07	2503.541	12" RC PIPE SEWER DES 3006 CL V		LIN FT	109			12						97
L	11.01-07	2503.541	15" RC PIPE SEWER DES 3006 CL V		LIN FT	8536			3651			2482			2403
L	11.01-07	2503.541	18" RC PIPE SEWER DES 3006		LIN FT	3177			1081			542			1554
L	11.01-07	2503.541	21" RC PIPE SEWER DES 3006		LIN FT	2757			1255			394			1108
L	11.01-07	2503.541	24" RC PIPE SEWER DES 3006		LIN FT	1093			339			676			78
L	11.01-07	2503.541	27" RC PIPE SEWER DES 3006		LIN FT	1210			487			506			217

NOTES:

(1) SPEC. 2350 BITUMINOUS MIXTURES COMPUTED AT 110 POUNDS / SQ YD / INCH.

(2) BITUMINOUS MATERIAL FOR TACK COAT COMPUTED AT 0.05 GALLONS / SQ YD.

(3) SPEC. 2360 BITUMINOUS MIXTURES COMPUTED AT 113 POUNDS / SQ YD / INCH.

NO	DATE	BY	CKD	APPR	REVISION

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ANOKA COUNTY
ESTIMATED QUANTITIES
CSAH 52/116 RECONSTRUCTION

SHEET 1.07 OF 294

ESTIMATED QUANTITIES

TAB LETTER	SHEET NO.	ITEM NUMBER	ITEM	NOTE NO.	UNIT	TOTAL ESTIMATED QUANTITY	CSAH 52						CSAH 116		
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							ANOKA COUNTY S.P. 02-652-05	CITY OF BLAINE S.P. 106-020-28	74% ANOKA CO S.P. 02-652-05 26% BLAINE S.P. 106-020-28 STORM SEWER	CITY OF BLAINE LOCAL FUNDS	CITY OF HAM LAKE S.P. 197-124-001	71% ANOKA CO S.P. 02-652-05 29% HAM LAKE S.P. 197-124-001 STORM SEWER	ANOKA COUNTY S.P. 02-716-09	CITY OF HAM LAKE S.P. 197-124-001	52% ANOKA CO S.P. 02-716-09 48% HAM LAKE S.P. 197-124-001 STORM SEWER
L	11.01-07	2503.541	27" RC PIPE SEWER DES 3006 CL III		LIN FT	333			54			279			
L	11.01-07	2503.541	30" RC PIPE SEWER DES 3006		LIN FT	1046			984						62
L	11.01-07	2503.541	30" RC PIPE SEWER DES 3006 CL III		LIN FT	509						509			
L	11.01-07	2503.541	33" RC PIPE SEWER DES 3006		LIN FT	957			679						278
L	11.01-07	2503.541	36" RC PIPE SEWER DES 3006		LIN FT	58									58
L	11.01-07	2503.541	42" RC PIPE SEWER DES 3006		LIN FT	123			93						30
L	11.01-07	2503.541	42" RC PIPE SEWER DES 3006 CL III		LIN FT	863									863
DD	1.16	2503.602	CONNECT TO EXISTING PIPE (SANITARY)	(1)	EACH	2				2					
DD	1.16	2503.602	CONNECT TO EXISTING MANHOLE (SANITARY)	(1)	EACH	1				1					
L	11.01-07	2503.602	CONNECT TO EXISTING STORM SEWER	(1)	EACH	7			5						2
L	11.01-07	2503.602	CONNECT INTO EXISTING DRAINAGE STRUCTURE	(1)	EACH	2									2
D	1.15	2503.608	FITTINGS		POUND	340				340					
D	1.15	2504.601	MODIFY IRRIGATION SYSTEM		EACH	1				1					
D	1.15	2504.602	WATERMAIN OFFSET		EACH	1				1					
D	1.15	2504.602	HYDRANT & GATE VALVE		EACH	5				5					
D	1.15	2504.602	ADJUST HYDRANT		EACH	1				1					
D	1.15	2504.602	ADJUST EXISTING GATE VALVE		EACH	7				7					
D	1.15	2504.602	8" GATE VALVE AND BOX		EACH	5				5					
D	1.15	2504.602	16" X 8" WET TAP		EACH	1				1					
D	1.15	2504.602	ADJUST EXISTING CURB BOX		EACH	1				1					
D	1.15	2504.603	6" WATERMAIN DUCTILE IRON CL 52		LIN FT	132				132					
D	1.15	2504.603	8" PVC C-900		LIN FT	310				310					
DD	1.16	2504.604	INSULATION		SQ FT	800				800					
D	1.15	2505.602	EXTEND WATER SERVICE		EACH	23				23					
DD	1.16	2505.602	EXTEND SANITARY SERVICE		EACH	2				2					
L	11.01-07	2506.501	CONST DRAINAGE STRUCTURE DESIGN G		LIN FT	328.0			147.9			79.6			100.5
PP	1.19	2506.501	CONST DRAINAGE STRUCTURE DESIGN G OR H		LIN FT	72.7			24.0						48.7
L	11.01-07	2506.501	CONST DRAINAGE STRUCTURE DESIGN H		LIN FT	237.0			101.7			64.6			70.7
L	11.01-07	2506.501	CONST DRAINAGE STRUCTURE DES 48-4020		LIN FT	491.7			224.6			137.2			129.9
L	11.01-07	2506.501	CONST DRAINAGE STRUCTURE DES 54-4020		LIN FT	59.5			9.3			28.7			21.5
L	11.01-07	2506.501	CONST DRAINAGE STRUCTURE DES 60-4020		LIN FT	150.9			125.8			25.1			
L	11.01-07	2506.501	CONST DRAINAGE STRUCTURE DES 66-4020		LIN FT	45.0			7.4						37.6
L	11.01-07	2506.501	CONST DRAINAGE STRUCTURE DES 72-4020		LIN FT	19.5			9.5						10.0
L	11.01-07	2506.501	CONST DRAINAGE STRUCTURE DES 78-4020		LIN FT	12.4									12.4
L	11.01-07	2506.501	CONST DRAINAGE STRUCTURE DES 84-4020		LIN FT	21.3									21.3
L	11.01-07	2506.502	CONST DRAINAGE STRUCTURE DESIGN SPEC 1	(2)	EACH	4			1						3
L	11.01-07	2506.502	CONST DRAINAGE STRUCTURE DESIGN SPEC 2	(3)	EACH	1			1						
PP,L	1.19,11.01	2506.516	CASTING ASSEMBLY		EACH	320			141			76			103
B	1.14	2506.522	ADJUST FRAME & RING CASTING		EACH	7	4						3		
DD	1.16	2506.522	ADJUST EXISTING CLEANOUT		EACH	1				1					
DD	1.16	2506.501	48" MANHOLE		LIN FT	24				24					
DD	1.16	2506.602	RECONSTRUCT MANHOLES		EACH	13				13					
B	1.14	2506.602	RECONSTRUCT DRAINAGE STRUCTURE		EACH	1							1		

NOTES:
(1) CONNECT TO EXISTING INCLUDES ALL SIZES AND TYPES.
(2) SEE SHEET 11.09 FOR DETAIL.
(3) SEE SHEET 11.10 FOR DETAIL.

NO	DATE	BY	CKD	APPR	REVISION

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ANOKA COUNTY
ESTIMATED QUANTITIES
CSAH 52/116 RECONSTRUCTION

ESTIMATED QUANTITIES

TAB LETTER	SHEET NO.	ITEM NUMBER	ITEM	NOTE NO.	UNIT	TOTAL ESTIMATED QUANTITY	CSAH 52						CSAH 116		
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L,M,O	11.01-08	2511.501	RANDOM RIPRAP CLASS II	(1)	CU YD	124.2	21.7		35.1				51.2		16.2
L	11.01-07	2511.501	RANDOM RIPRAP CLASS III	(1)	CU YD	95.8			45.6						50.2
H	1.18	2521.501	4" CONCRETE WALK	(2)	SQ FT	167568	113944	2750			1123		48269	1482	
H	1.18	2521.501	6" CONCRETE WALK		SQ FT	663	382						281		
G	1.17	2521.604	2" BITUMINOUS WALK	(3)	SQ YD	15218		5057			4240			5921	
H	1.18	2521.618	SPECIAL SURFACE TREATMENT	(4)	SQ FT	21561				21561					
H	1.18	2531.501	CONCRETE CURB & GUTTER DESIGN B412		LIN FT	766	766								
H	1.18	2531.501	CONCRETE CURB & GUTTER DESIGN B412 (MOD)	(5)	LIN FT	918	918								
H	1.18	2531.501	CONCRETE CURB & GUTTER DESIGN B418		LIN FT	22625	13380						9245		
H	1.18	2531.501	CONCRETE CURB & GUTTER DESIGN B418 (MOD)	(5)	LIN FT	5400	5400								
H	1.18	2531.501	CONCRETE CURB & GUTTER DESIGN B424		LIN FT	31634	10029	6040			3989		6109	5467	
H	1.18	2531.501	CONCRETE CURB & GUTTER DESIGN B612		LIN FT	110	55	55							
H	1.18	2531.501	CONCRETE CURB & GUTTER DESIGN B618		LIN FT	432	216	216							
H	1.18	2531.501	CONCRETE CURB & GUTTER DESIGN D412		LIN FT	400	200	147			53				
H	1.18	2531.501	CONCRETE CURB & GUTTER DESIGN S412		LIN FT	106	5				5		48	48	
H	1.18	2531.501	CONCRETE CURB & GUTTER DESIGN S418		LIN FT	64	32	32							
K	2.08	2531.507	4" CONCRETE DRIVEWAY PAVEMENT		SQ YD	1141	903						238		
K	2.08	2531.507	6" CONCRETE DRIVEWAY PAVEMENT		SQ YD	71							71		
H	1.18	2531.618	TRUNCATED DOMES		SQ FT	628		228			140			260	
G	1.17	2535.501	BITUMINOUS CURB		LIN FT	176	176								
J	2.07	2540.602	MAIL BOX SUPPORT	(6)	EACH	48	32						16		
L,M	11.01-08	2554.509	GUIDE POST TYPE B		EACH	50	6		17			4	10		13
		2563.601	TRAFFIC CONTROL		LUMP SUM	1	0.488	0.048	0.057	0.028	0.013	0.030	0.253	0.035	0.048
Q	14.01	2564.531	SIGN PANELS TYPE C	(7)	SQ FT	1374	876						498		
T	14.02	2564.537	INSTALL SIGN TYPE D	(7)	EACH	1	1								
T	14.02	2564.537	INSTALL SIGN TYPE SPECIAL	(7)	EACH	4	2						2		
R	14.01	2564.537	FURNISH & INSTALL SIGN TYPE SPECIAL	(7)	EACH	14	11						3		
S	14.01	2564.550	DELINEATOR TYPE X4-13		EACH	16	10						6		
S	14.01	2564.552	HAZARD MARKER X4-2		EACH	25	16						9		
S	14.01	2564.553	CLEARANCE MARKER X4-4		EACH	3	2						1		
S	14.01	2564.554	SNOW PLOW MARKER X4-5		EACH	4	1						3		
		2565.511	TRAFFIC CONTROL SIGNAL SYSTEM A	(8)	SIG SYS	1	0.5	0.5							
		2565.511	TRAFFIC CONTROL SIGNAL SYSTEM B	(9)	SIG SYS	1	0.25	0.75							
		2565.511	TRAFFIC CONTROL SIGNAL SYSTEM C	(10)	SIG SYS	1							0.5	0.5	
		2565.601	EMERGENCY VEHICLE PREEMPTION SYS B	(9)	LUMP SUM	1		1							
		2565.601	EMERGENCY VEHICLE PREEMPTION SYS C	(10)	LUMP SUM	1								1	
		2565.601	TRAFFIC CONTROL INTERCONNECTION	(11)	LUMP SUM	1	1								

NOTES:

(1) GRANULAR FILTER BLANKET OR GEOTEXTILE FILTER MATERIAL REQUIRED SHALL BE INCIDENTAL. SEE MN/DOT STANDARD PLATE 3133.
(2) CONCRETE EXPANSION JOINT SPACING IN MEDIAN SHALL BE 20'.
(3) SEE BITUMINOUS PATH INSET ON SHEET 2.01. AGGREGATE REQUIRED IS INCIDENTAL.
(4) COLORED CONCRETE, NO PATTERN.
(5) SEE SHEET 2.01 FOR DETAIL.
(6) THE CONTRACTOR SHALL INSTALL SALVAGED MAIL BOXES ON MAIL BOX SUPPORT, WHICH SHALL BE INCIDENTAL TO MAIL BOX SUPPORT.
(7) F&I SIGN POSTS SHALL BE INCIDENTAL TO INSTALL SIGN AND SIGN PANELS.
(8) SIGNAL SYSTEM AT CSAH 52 AT CSAH 14.
(9) SIGNAL SYSTEM AT CSAH 52 AT 129TH/QUAIL CREEK.
(10) SIGNAL SYSTEM AT CSAH 52 AT CSAH 116.
(11) BETWEEN TRAFFIC SIGNALS AT CSAH 52 AT CSAH 14 AND CSAH 52 AT 129TH/QUAIL CREEK.

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CSAH 52/116 RECONSTRUCTION

SHEET 1.09 OF 294

ESTIMATED QUANTITIES

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		2571.505	DECIDUOUS SHRUB NO 5		EACH	38				38					
		2571.507	PERENNIAL NO 1		EACH	478				478					
P	1.19	2573.502	SILT FENCE, TYPE MACHINE SLICED	(1)	LIN FT	19282	10512						8770		
P	1.19	2573.530	STORM DRAIN INLET PROTECTION	(2)	EACH	332	235						97		
P	1.19	2573.602	CULVERT PROTECTION	(2)	EACH	23	7						16		
P	1.19	2575.501	SEEDING		ACRE	13.6	8.0						5.6		
P	1.19	2575.502	SEED MIXTURE 150 (TEMPORARY)	(3)	POUND	164	97						67		
P	1.19	2575.502	SEED MIXTURE 240		POUND	1117	721						396		
P	1.19	2575.502	SEED MIXTURE 310		POUND	84	32						52		
P	1.19	2575.502	SEED MIXTURE 340		POUND	116	33						83		
P	1.19	2575.505	SODDING TYPE LAWN		SQ YD	2512	2179						333		
P	1.19	2575.505	SODDING TYPE SALT RESISTANT		SQ YD	14120	8882						5238		
P	1.19	2575.511	MULCH MATERIAL TYPE 1 (TEMPORARY)		TON	16.4	9.7						6.7		
P	1.19	2575.511	MULCH MATERIAL TYPE 3		TON	24.2	14.4						9.8		
		2575.513	MULCH MATERIAL TYPE 6		CU YD	100				100					
P	1.19	2575.519	DISK ANCHORING		ACRE	12.1	7.1						5.0		
P	1.19	2575.523	EROSION CONTROL BLANKETS CATEGORY 3	(4)	SQ YD	6917	3839						3078		
P	1.19	2575.532	FERTILIZER TYPE 1	(5)	POUND	815	480						335		
P	1.19	2575.532	FERTILIZER TYPE 3	(6)	POUND	5112	3322						1790		
P	1.19	2575.532	FERTILIZER TYPE 4	(7)	POUND	359	117						242		
		2575.607	SELECT TOPSOIL BORROW (LV)		CU YD	750				750					
E	3.02	2582.501	PAVT MSSG (LT ARROW) PAINT		EACH	1	1								
E	3.02	2582.501	PAVT MSSG (RT ARROW) PAINT		EACH	1	1								
E	3.02	2582.501	PAVT MSSG (LT-THRU ARROW) PAINT		EACH	1	1								
E	3.02	2582.501	PAVT MSSG (RT-THRU ARROW) PAINT		EACH	1	1								
E	3.02	2582.502	4" SOLID LINE WHITE-PAINT		LIN FT	30990	9956						21034		
F	1.16	2582.502	4" SOLID LINE WHITE-EPOXY		LIN FT	49401	32383						17018		
F	1.16	2582.502	4" BROKEN LINE WHITE-EPOXY		LIN FT	6415	4395						2020		
E,F	3.02,1.16	2582.502	4" BROKEN LINE WHITE-PAINT		LIN FT	6555	4395						2160		
F	1.16	2582.502	8" DOTTED LINE WHITE-EPOXY		LIN FT	75							75		
F	1.16	2582.603	24" SOLID LINE WHITE-PREFORMED THERMOPLASTIC		LIN FT	594	485						109		
F	1.16	2582.502	4" SOLID LINE YELLOW-EPOXY		LIN FT	32776	21525						11251		
F	1.16	2582.603	24" SOLID LINE YELLOW-PREFORMED THERMOPLASTIC		LIN FT	360	100						260		
F	1.16	2582.502	4" DOUBLE SOLID LINE YELLOW-EPOXY		LIN FT	2040	1019						1021		
E,F	3.02,1.16	2582.502	4" SOLID LINE YELLOW-PAINT		LIN FT	38574	24554						14020		
E,F	3.02,1.16	2582.502	4" DOUBLE SOLID LINE YELLOW-PAINT		LIN FT	20007	6346						13661		
F	1.16	2582.502	4" BROKEN LINE YELLOW-EPOXY		LIN FT	200	100						100		
F	1.16	2582.618	CROSSWALK MARKING-PREFORMED THERMOPLASTIC		SQ FT	3165	2736						429		
F	1.16	2582.602	PAVEMENT MESSAGE (LT ARROW)-PREFORMED THERMOPLASTIC		EACH	24	20						4		
F	1.16	2582.602	PAVEMENT MESSAGE (RT ARROW)-PREFORMED THERMOPLASTIC		EACH	20	14						6		
F	1.16	2582.602	PAVEMENT MESSAGE (ONLY)-PREFORMED THERMOPLASTIC		EACH	1							1		

NOTES:

(1) INCLUDES REMOVING SEDIMENT BUILD-UP AND REPAIRING, REPLACING, OR SUPPLEMENTING WHEN NON-FUNCTIONAL.
(2) SEE SHEET 2.14 FOR DETAILS.
(3) APPLIED AT A RATE OF 40 POUND/ACRE.
(4) INCLUDES MAINTENANCE.
(5) FERTILIZER ANALYSIS 10-10-20, APPLIED AT A RATE OF 200 POUND/ACRE.
(6) FERTILIZER ANALYSIS 22-5-10, 80% W.I.N. APPLIED AT A RATE OF 350 POUND/ACRE.
(7) FERTILIZER ANALYSIS 18-1-18, APPLIED AT A RATE OF 150 POUND/ACRE.

NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\a-f\AnokaCty\13867000\hwy-brdg\hwy\pln-sht\c0265205_eqq.dgn 12/21/2009

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:
PRINTED NAME: RYAN P. MALONEY
DATE: 12/21/2009 LIC. NO. 44193

DRAWN BY SFH DATE 12/21/2009
DESIGN BY RPM DATE 12/21/2009
CHECKED BY TAC DATE 12/21/2009

S.P. 02-652-05
S.P. 02-716-09
S.P. 106-020-28
S.P. 197-124-001

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ANOKA COUNTY
CSAH 52/116 RECONSTRUCTION

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

STANDARD PLATES

PLATE NO.	DESCRIPTION
1103J	TYPICAL DOWEL BAR ASSEMBLY
1150Q	CONSTRUCTION OF HEADER JOINTS
3000L	REINFORCED CONCRETE PIPE
3006G	GASKET JOINT FOR R.C. PIPE
3007D	SHEAR REINFORCEMENT FOR PRECAST DRAINAGE STRUCTURES
3040F	CORRUGATED METAL PIPE CULVERT (STANDARD 2-2/3" x 1/2" CORRUGATION)
3100G	CONCRETE APRON FOR REINFORCED CONCRETE PIPE
3123J	METAL APRON FOR C.S. PIPE
3124B	METAL APRON CONNECTION
3133C	RIPRAP AT RCP OUTLETS
3134C	RIPRAP AT CMP OUTLETS
3145F	CONCRETE PIPE TIES
3221C	CORRUGATED STEEL PIPE COUPLING BAND
4005L	MANHOLE OR CATCH BASIN TYPE A & B CONE SECTIONS PRECAST - DESIGN F
4006L	MANHOLE OR CATCH BASIN PRECAST - DESIGNS G AND H
4010H	CONCRETE SHORT CONE & ADJUSTING RING (SECTIONAL CONCRETE)
4011E	PRECAST CONCRETE BASE
4020J	MANHOLE OR CATCH BASIN FOR USE WITH OR WITHOUT TRAFFIC LOADS
4026A	CONCRETE ENCASED CONCRETE ADJUSTING RINGS
4101D	RING CASTING FOR MANHOLE OR CATCH BASIN
4108F	ADJUSTING RINGS FOR CATCH BASINS OR MANHOLES
4110F	COVER CASTING FOR MANHOLE (FOR USE IN ALL TRAFFIC AREAS) - CASTING NO. 715 AND 716
4125D	CATCH BASIN FRAME CASTING (FOR SQUARE GRATE) – CASTING NO. 806
4132F	CATCH BASIN FRAME CASTING (FOR SQUARE GRATE) - CASTING NO. 805
4134A	CURB BOX CASTING FOR CATCH BASIN (FOR DESIGN B CURBS)- CASTING NO. 825
4143E	STOOL GRATE & CONCRETE FRAME (MEDIAN DRAINS) - CASTING NO. 731
4154B	CATCH BASIN GRATE CASTING - CASTING NO. 816
4180J	MANHOLE OR CATCH BASIN STEP
7036F	PEDESTRIAN CURB RAMP FOR THE HANDICAPPED
7100H	CONCRETE CURB AND GUTTER
7102I	CONCRETE CURB AND GUTTER
7109C	MEDIAN NOSE AND ISLAND
7111J	INSTALLATION OF CATCH BASIN CASTINGS (CONCRETE CURB AND GUTTER)
7113A	CONCRETE APPROACH NOSE DETAIL
8000I	STANDARD BARRICADES
8110D	TRAFFIC SIGNAL BRACKETING (POLE MOUNTED)
8112E	PEDESTAL FOUNDATION (TRAFFIC CONTROL SIGNALS)
8114A	P.V.C. HANDHOLE/PULLBOX (NO VEHICLE LOAD)
8115D	PEDESTRIAN PUSH BUTTON INSTALLATION
8119C	GROUND MOUNTED CABINET FOUNDATION
8121E	TRANSFORMER BASE AND POLE BASE PLATE (PA85, PA90 AND PA100)
8122D	PEDESTAL AND PEDESTAL BASE (FOR TRAFFIC CONTROL SIGNALS SUPPORT)
8123E	POLE AND MAST ARM - LUMINARIES AND TRAFFIC LIGHTS ASSEMBLY
8124E	MAST ARM SIGNAL HEAD MOUNTS(ONE WAY AND TWO WAY MOUNTS)
8126H	POLE FOUNDATION (PA90 AND PA100)
8150C	INSTALLATION OF CULVERT MARKERS
9102D	TURF ESTABLISHMENT AREAS

INDEX OF TABULATIONS

NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\a-f\AnokaCty\13867000\hwy-brdg\hwy\pln-sht\c0265205_tba.dgn 10/15/2009

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:

PRINTED NAME: RYAN P. MALONEY

DATE: 10/15/2009 LIC. NO. 44193

DRAWN BY SFH DATE 10/15/2009

DESIGN BY RPM DATE 10/15/2009

CHECKED BY TAC DATE 10/15/2009

S.P. 02-652-05
S.P. 02-716-09
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S.P. 197-124-001

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ANOKA COUNTY

STANDARD PLATES AND INDEX OF TABULATIONS
CSAH 52/116 RECONSTRUCTION

CLEARING AND GRUBBING - TAB A

STATION	OFFSET	CLEARING		GRUBBING	
		TREE	ACRE	TREE	ACRE
NB CSAH 52 S.P. 02-652-05					
342+00 TO 345+64	28' TO 62' RT		0.16		0.16
347+14	171' LT	1		1	
347+29	117' LT	1		1	
347+58 TO 349+83	11' TO 40' RT		0.13		0.13
347+84	91' LT	1		1	
348+09	120' LT	1		1	
348+18	97' LT	1		1	
348+61	100' LT	1		1	
349+28	90' LT			1	
349+43	96' LT	1		1	
349+60	94' LT	1		1	
349+66	83' LT			1	
350+07	83' LT	1		1	
350+25	94' LT	1		1	
350+26	82' LT	1		1	
350+46	83' LT	1		1	
350+77	31' RT	1		1	
350+78	93' LT	1		1	
351+68 TO 352+59	19' TO 48' RT		0.04		0.04
351+85	89' LT	1		1	
352+32	79' LT	1		1	
352+55	133' LT	1		1	
352+58	113' LT	1		1	
352+67 TO 359+84	38' TO 178' LT		0.59		0.59
352+72 TO 354+39	19' TO 48' RT		0.08		0.08
355+54	37' RT	1		1	
355+68	39' RT	1		1	
355+81	38' RT	1		1	
355+82	38' RT	1		1	
356+31	37' RT	1		1	
356+59	33' RT	1		1	
356+93	46' RT	1		1	
357+18	47' RT	1		1	
357+74	23' RT	1		1	
358+03	40' RT	1		1	
358+07	35' RT	1		1	
358+17	36' RT	1		1	
358+89	47' RT	1		1	
359+22	46' RT	1		1	
359+35	45' RT	1		1	
360+23 TO 361+37	28' TO 56' RT		0.05		0.05
363+25	62' LT	1		1	
363+25	78' LT	1		1	
363+52 TO 364+05	29' TO 55' RT		0.03		0.03
363+60 TO 363+96	55' TO 89' LT		0.02		0.02
364+25 TO 364+59	41' TO 88' LT		0.03		0.03
364+40	52' RT	1		1	
364+91	67' LT	1		1	
365+34	49' LT	1		1	
365+65	80' LT	1		1	
365+72	42' LT	1		1	
366+13 TO 370+73	21' TO 58' LT		0.29		0.29
366+19	62' LT	1		1	
368+13 TO 368+80	26' TO 40' RT		0.02		0.02
370+37	31' RT	1		1	
370+54	31' RT	1		1	
370+54	46' RT	1		1	
370+85	29' RT	1		1	
370+87	45' RT	1		1	
372+00	41' RT	1		1	
372+91	243' LT	1		1	

CLEARING AND GRUBBING - TAB A

STATION	OFFSET	CLEARING		GRUBBING	
		TREE	ACRE	TREE	ACRE
NB CSAH 52 S.P. 02-652-05					
372+91	224' LT	1		1	
372+93	276' LT	1		1	
372+94	188' LT	1		1	
372+96	201' LT	1		1	
373+07	324' LT	1		1	
373+84	72' LT	1		1	
374+16 TO 378+12	27' TO 40' RT		0.06		0.06
374+27	73' LT	1		1	
374+60	76' LT	1		1	
375+31	67' LT	1		1	
375+59 TO 376+33	64' TO 92' LT		0.03		0.03
377+11	81' & 87' LT	2		2	
377+33	56' LT	1		1	
377+58 TO 377+91	56' TO 83' LT		0.02		0.02
378+10	86' LT	1		1	
378+13	56' LT	1		1	
378+16	80' LT	1		1	
378+42	67' LT	1		1	
378+84	73' LT	1		1	
379+12	73' LT	1		1	
379+35	72' LT	1		1	
379+53	74' LT	1		1	
380+23 TO 380+66	87' TO 120' LT		0.02		0.02
381+35 TO 386+07	5' TO 41' RT		0.24		0.24
381+46 TO 381+91	67' TO 90' LT		0.02		0.02
382+47 TO 383+04	59' TO 87' LT		0.03		0.03
383+32 TO 385+08	44' TO 89' LT		0.13		0.13
385+47	62' LT	1		1	
385+83	69' LT	1		1	
385+90	72' LT			1	
386+28	63' LT	1		1	
386+31	87' LT	1		1	
386+36	61' LT	1		1	
386+45 TO 395+44	8' TO 49' RT		0.30		0.30
386+77	69' LT	1		1	
387+43 TO 387+50	116' TO 139' LT		0.01		0.01
388+49 TO 393+35	74' TO 123' LT		0.24		0.24
395+47	100' LT	1		1	
395+53	87' LT	1		1	
396+37 TO 397+50	68' TO 119' LT		0.07		0.07
396+57 TO 398+04	24' TO 65' RT		0.09		0.09
398+62 TO 399+71	78' TO 112' LT		0.05		0.05
399+52 TO 401+47	34' TO 40' RT		0.07		0.07
402+98	23' RT	1		1	
403+06	23' RT	1		1	
403+31	81' LT	1		1	
403+79	90' LT	1		1	
403+92	23' RT	1		1	
404+15	19' RT	1		1	
404+86	89' LT	1		1	
404+95	86' LT	1		1	
404+97 TO 409+10	10' TO 67' RT		0.17		0.17
405+27	89' LT	1		1	
406+17 TO 407+21	73' TO 88' LT		0.03		0.03
407+67	86' LT	1		1	
407+98	59' LT	1		1	
408+14	85' LT	1		1	
408+77	75' LT	1		1	
408+88	66' LT	1		1	
408+95	68' LT	1		1	
408+98	75' LT	1		1	

CLEARING AND GRUBBING - TAB A

STATION	OFFSET	CLEARING		GRUBBING	
		TREE	ACRE	TREE	ACRE
NB CSAH 52 S.P. 02-652-05					
409+88 TO 411+45	14' TO 43' RT		0.06		0.06
411+37	73' LT	1		1	
411+49	87' LT	1		1	
411+66	75' LT	1		1	
411+65 TO 418+60	5' TO 55' RT		0.35		0.35
412+25	77' LT	1		1	
412+31	81' LT	1		1	
412+41	60' LT	1		1	
412+61	62' LT	1		1	
413+00	66' LT	1		1	
413+60	59' LT	1		1	
414+11	76' LT	1		1	
414+36	118' LT	1		1	
414+38	149' LT	1		1	
414+41	162' LT	1		1	
414+97 TO 419+34	48' TO 91' LT		0.29		0.29
418+84 TO 420+10	8' TO 71' RT		0.12		0.12
421+19 TO 423+17	3' TO 32' RT		0.09		0.09
422+67 TO 425+02	51' TO 116' LT		0.23		0.23
427+11	84' LT	1		1	
433+42 TO 434+94	3' TO 40' RT		0.10		0.10
434+16	88' LT	1		1	
435+04 TO 435+96	15' TO 40' RT		0.04		0.04
436+16	37' RT	1		1	
436+22 TO 437+94	6' LT TO 49' RT		0.14		0.14
436+39 TO 438+44	77' TO 115' LT		0.15		0.15
438+01 TO 440+63	7' LT TO 47' RT		0.21		0.21
439+19 TO 439+95	72' TO 114' LT		0.04		0.04
439+37	63' LT	1		1	
441+66	42' RT	1		1	
442+27	27' RT	1		1	
442+36 TO 442+55	76' TO 109' LT		0.01		0.01
442+71	63' LT	1		1	
442+81 TO 445+81	61' TO 92' LT		0.10		0.10
442+86	33' RT	1		1	
443+14	70' LT	1		1	
443+47	69' LT	1		1	
443+76	45' RT	1		1	
444+01	67' LT	1		1	
444+01	40' RT	1		1	
444+20	40' RT	1		1	
444+39	41' RT	1		1	
445+41	45' RT	1		1	
447+17	30' RT	1		1	
447+27 TO 451+90	48' TO 80' LT		0.13		0.13
447+78	28' RT	1		1	
449+23	49' RT	1		1	
449+63	34' RT	1		1	
449+89	42' RT	1		1	
450+39 TO 451+21	29' TO 55' RT		0.04		0.04
451+29 TO 451+63	14' TO 55' RT		0.03		0.03
451+73 TO 451+96	14' TO 22' RT		0.01		0.01
TOTAL S.P. 02-652-05		126	5.16	129	5.16

NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\c-f\AnokaCty\13867000\hwy-brdg\hwy\pln-sht\c0265205_tba.dgn 11/3/2009

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SIGNATURE:

PRINTED NAME: RYAN P. MALONEY

DATE: 11/3/2009 LIC. NO. 44193

DRAWN BY SFH DATE 11/3/2009

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ANOKA COUNTY
TABULATIONS
CSAH 52/116 RECONSTRUCTION

CLEARING AND GRUBBING - TAB A

STATION	OFFSET	CLEARING		GRUBBING	
		TREE	ACRE	TREE	ACRE
EB CSAH 116 S.P. 02-716-09					
15+07 TO 18+67	28' TO 82' RT		0.28		0.28
19+03	47' RT	1		1	
19+38 TO 23+69	16' TO 58' RT		0.28		0.28
20+72	79' LT	1		1	
21+04	78' LT	1		1	
21+42	80' LT	1		1	
22+19	87' LT	1		1	
22+35 TO 22+66	67' TO 93' LT		0.01		0.01
23+14 TO 23+51	63' TO 86' LT		0.01		0.01
24+05	74' LT	1		1	
24+72	73' LT	1		1	
24+76	26' RT	1		1	
24+93	78' LT	1		1	
25+26	24' RT	1		1	
25+28	26' RT	1		1	
25+42	27' RT	1		1	
25+70 TO 26+02	52' TO 80' LT		0.01		0.01
25+98	26' RT	1		1	
26+27 TO 28+85	43' TO 87' LT		0.20		0.20
26+37	83' LT	1		1	
26+49 TO 26+87	20' TO 58' RT		0.02		0.02
27+03	27' RT	1		1	
27+47	46' RT	1		1	
28+13 TO 29+41	21' TO 61' RT		0.07		0.07
29+62 TO 30+94	20' TO 64' RT		0.08		0.08
29+73 TO 30+40	51' TO 83' LT		0.04		0.04
31+05	57' LT			1	
31+19 TO 32+10	51' TO 82' LT		0.05		0.05
32+30	78' LT	1		1	
32+46	77' LT	1		1	
32+83	78' LT	1		1	
32+92	79' LT	1		1	
34+88	76' LT	1		1	
35+84	80' LT	1		1	
35+92	76' LT	1		1	
36+11	79' LT	1		1	
36+77 TO 37+66	65' TO 91' LT		0.04		0.04
36+79	56' LT	1		1	
38+48 TO 42+07	20' TO 67' RT		0.24		0.24
39+46 TO 41+75	51' TO 82' LT		0.34		0.34
42+35 TO 43+11	78' TO 87' LT		0.01		0.01
42+63 TO 43+27	29' TO 89' RT		0.03		0.03
43+29 TO 44+11	57' TO 83' LT		0.03		0.03
44+39 TO 49+66	4' TO 55' RT		0.37		0.37
44+57 TO 44+82	72' TO 94' LT		0.01		0.01
47+57 TO 50+08	49' TO 86' LT		0.18		0.18
51+41 TO 53+97	44' TO 86' LT		0.18		0.18
53+47	27' RT	1		1	
54+25 TO 55+51	73' TO 96' LT		0.02		0.02
54+72	28' RT	1		1	
55+81 TO 56+75	63' TO 88' LT		0.03		0.03
57+79 TO 58+41	14' TO 68' RT		0.06		0.06
58+04	74' LT	1		1	
58+07	52' LT	1		1	

CLEARING AND GRUBBING - TAB A

STATION	OFFSET	CLEARING		GRUBBING	
		TREE	ACRE	TREE	ACRE
EB CSAH 116 S.P. 02-716-09					
61+20	60' LT	1		1	
61+44	62' LT	1		1	
61+49	53' LT	1		1	
61+63	54' LT	1		1	
65+40 TO 68+55	34' TO 86' LT		0.17		0.17
68+46 TO 69+52	7' TO 35' RT		0.07		0.07
68+78	79' LT	1		1	
68+91	65' LT	1		1	
69+15	71' LT	1		1	
69+46	90' LT	1		1	
69+47	73' LT	1		1	
69+65 TO 71+32	0' LT TO 42' RT		0.14		0.14
69+85	73' LT	1		1	
70+76	79' LT	1		1	
70+77	71' LT	1		1	
71+10 TO 72+37	127' TO 240' RT		0.28		0.28
71+22	118' RT	1		1	
71+24	68' LT	1		1	
71+24	77' LT	1		1	
71+25	123' RT	1		1	
71+29	126' RT	1		1	
71+33	129' RT	1		1	
71+35	66' LT	1		1	
71+39	133' RT	1		1	
71+39	67' LT	1		1	
71+41	135' RT	1		1	
71+44	68' LT	1		1	
71+48 TO 72+79	21' TO 109' RT		0.13		0.13
71+69	67' LT	1		1	
71+84	74' LT	1		1	
71+89	48' LT	1		1	
72+31 TO 73+99	29' TO 61' LT		0.09		0.09
74+23 TO 74+52	33' TO 85' LT		0.04		0.04
TOTAL S.P. 02-716-09		55	3.51	56	3.51

SUMMARY				
ANOKA COUNTY S.P. 02-652-05 (CSAH 52)	126	5.16	129	5.16
ANOKA COUNTY S.P. 02-716-09 (CSAH 116)	55	3.51	56	3.51
PROJECT TOTAL	181	8.67	185	8.67

NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\a-f\AnokaCty\13867000\hwy-brdg\hwy\pln-sht\c0265205_tba.dgn 11/3/2009

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:

PRINTED NAME: RYAN P. MALONEY

DATE: 11/3/2009 LIC. NO. 44193

DRAWN BY SFH DATE 11/3/2009

DESIGN BY RPM DATE 11/3/2009

CHECKED BY TAC DATE 11/3/2009

S.P. 02-652-05
S.P. 02-716-09
S.P. 106-020-28
S.P. 197-124-001

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ANOKA COUNTY
TABULATIONS
CSAH 52/116 RECONSTRUCTION

MISCELLANEOUS REMOVALS - TAB B

LOCATION	REMOVE CURB AND GUTTER		REMOVE PIPE SEWERS		REMOVE CONCRETE WALK		REMOVE BITUMINOUS PAVEMENT (3)		REMOVE CONCRETE DRIVEWAY PAVEMENT		REMOVE MANHOLE OR CATCH BASIN		REMOVE PIPE APRON		ADJUST FRAME AND RING CASTING		RECONSTRUCT DRAINAGE STRUCTURE	
	LIN FT		LIN FT		SQ YD		SQ YD		SQ YD		EACH		EACH		EACH		EACH	
	(A)	(F)	(A)	(F)	(A)	(F)	(A)	(F)	(A)	(F)	(A)	(F)	(A)	(F)	(A)	(F)	(A)	(F)
NB52 330+67.95 TO 345+00	1485		57		854		3828						2					
NB52 345+00 TO 360+00	1319		96		177		7621		120		4		1		2			
NB52 360+00 TO 375+00	625		98				6901		212				1					
NB52 375+00 TO 388+50	91						5684		590									
NB52 388+50 TO 403+50	470		470				6151				2		3		2			
NB52 403+50 TO 404+81.18							428											
NB52 404+81.18 TO 418+50	1267		103				5877						4					
NB52 418+50 TO 433+50							5734											
NB52 433+50 TO 447+50			51				5291		368				2					
NB52 447+50 TO 451+96.66							1833		132									
EB116 11+40.78 TO 20+00		645		212		238		3760				3		9		3		1
EB116 20+00 TO 35+00				302				9054		209				14				
EB116 35+00 TO 50+00				213				7612						9				
EB116 50+00 TO 65+00				119				5001		236				4				
EB116 65+00 TO 74+52.36				149				2567		330				6				
TOTALS	5257	645	875	995	1031	238	49348	27994	1422	775	6	3	13	42	4	3		1

SUMMARY																		
ANOKA COUNTY S.P. 02-652-05 (CSAH 52)	5257		875		1031		49348		1422		6		13		4			
ANOKA COUNTY S.P. 02-716-09 (CSAH 116)	645		995		238		27994		775		3		42		3		1	
PROJECT TOTAL	5902		1870		1269		77342		2197		9		55		7		1	

COST PARTICIPATION NOTES:

(A) 100% ANOKA COUNTY S.P. 02-652-05 (CSAH 52) QUANTITY.

(F) 100% ANOKA COUNTY S.P. 02-716-09 (CSAH 116) QUANTITY.

SAWCUT - TAB C

LOCATION (1) (2)	SAWING BIT PAVEMENT (FULL DEPTH)		SAWING CONCRETE PAVEMENT (FULL DEPTH)	
	LIN FT		LIN FT	
	(A)	(F)	(A)	(F)
NB52 330+67.95 TO 346+03	3198			
SB52 1344+71 TO 1345+87	134			
CSAH 14 MEDIANS	186			
NB52 346+68 TO 346+81	238			
125TH LANE NE	29			
127TH LANE NE	47			
129TH AVE. NE / QUAIL CREEK PKWY NE	415			
130TH LANE NE	32			
132ND LANE NE / QUAIL CREEK DRIVE	68			
133RD LANE NE	24			
134TH LANE NE	24			
135TH LANE NE	29			
139TH AVE. NE	56			
NB52 451+96.66	24			
EB116 11+56 TO 14+40		331		
WB116 114+40 TO 118+24		313		9
ABERDEEN ST. NE/ COPART DRIVEWAY		57		
WEST CHURCH ENTRANCE		38		
EAST CHURCH ENTRANCE		31		
EVELETH ST. NE		13		
ISANTI ST. NE		28		
EB116 74+52.36		23		

SAWCUT - TAB C

LOCATION (1) (2)	SAWING BIT PAVEMENT (FULL DEPTH)		SAWING CONCRETE PAVEMENT (FULL DEPTH)	
	LIN FT		LIN FT	
	(A)	(F)	(A)	(F)
DRIVEWAY NB52 359+64	17			
DRIVEWAY NB52 360+16			12	
DRIVEWAY NB52 361+61	17			
DRIVEWAY NB52 361+90			18	
DRIVEWAY NB52 363+41	12			
DRIVEWAY NB52 363+72			8	
DRIVEWAY NB52 365+86	8			
DRIVEWAY NB52 374+45	25			
DRIVEWAY NB52 375+00			20	
DRIVEWAY NB52 376+44	12			
DRIVEWAY NB52 377+51			27	
DRIVEWAY NB52 378+62			20	
DRIVEWAY NB52 380+05 (130TH LANE NE)			22	
DRIVEWAY NB52 409+37	13			
DRIVEWAY NB52 435+82			12	
DRIVEWAY NB52 436+05	13			
DRIVEWAY NB52 440+76			12	
DRIVEWAY NB52 442+63			32	
DRIVEWAY NB52 443+40			12	
DRIVEWAY NB52 448+13			19	
DRIVEWAY NB52 450+29	10			
DRIVEWAY NB52 451+69	12			

SAWCUT - TAB C

LOCATION (1) (2)	SAWING BIT PAVEMENT (FULL DEPTH)		SAWING CONCRETE PAVEMENT (FULL DEPTH)	
	LIN FT		LIN FT	
	(A)	(F)	(A)	(F)
DRIVEWAY EB116 13+10		32		
DRIVEWAY EB116 15+17		62		
DRIVEWAY EB116 22+35		23		
DRIVEWAY EB116 24+51				21
DRIVEWAY EB116 24+55				16
DRIVEWAY EB116 26+23		10		
DRIVEWAY EB116 27+23		9		
DRIVEWAY EB116 29+53		12		
DRIVEWAY EB116 32+61				12
DRIVEWAY EB116 54+10				24
DRIVEWAY EB116 55+70				12
DRIVEWAY EB116 69+31				21
DRIVEWAY EB116 69+60				36
DRIVEWAY EB116 71+11				10
TOTALS	4643	982	214	161

SUMMARY		
ANOKA COUNTY S.P. 02-652-05 (CSAH 52)	4643	214
ANOKA COUNTY S.P. 02-716-09 (CSAH 116)	982	161
PROJECT TOTAL	5625	375

COST PARTICIPATION NOTES:

(A) 100% ANOKA COUNTY S.P. 02-652-05 (CSAH 52) QUANTITY.

(F) 100% ANOKA COUNTY S.P. 02-716-09 (CSAH 116) QUANTITY.

NOTES:

(1) FOR SPECIFIC LOCATIONS OF SIDE STREET SAWCUTS, SEE INTERSECTION DETAILS.

(2) SAWCUT DRIVEWAYS AT CONSTRUCTIONN LIMITS.

(3) AVERAGE PAVEMENT THICKNESS IS 4.5". RANGES FROM 3" TO 6". QUANTITY INCLUDES TEMPORARY BITUMINOUS PAVEMENT.

NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\a-f\AnokaCty\13867000\hwy-brdg\hwy\pln-sht\c0265205_tba.dgn 11/3/2009

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S.P. 02-716-09
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ANOKA COUNTY
TABULATIONS
CSAH 52/116 RECONSTRUCTION

WATERMAIN - TAB D

STATION	LOCATION	MODIFY IRRIGATION SYSTEM	SALVAGE HYDRANT	ADJUST HYDRANT	HYDRANT & GATE VALVE	REMOVE EXISTING SERVICE	6" DIP CLASS 52	8" PVC C-900	8" GATE VALVE	16"x8" WET TAP	ADJUST EXISTING GATE VALVE	ADJUST EXISTING CURB BOX	WATERMAIN OFFSET	EXTEND WATER SERVICE	REMOVE GATE VALVE	FITTINGS	REMOVE WATERMAIN
		EACH	EACH	EACH	EACH	EACH	LIN FT	LIN FT	EACH	EACH	EACH	EACH	EACH	EACH	EACH	POUND	LIN FT
NB52 338+22	L	1															
NB52 346+88	L					1											
NB52 347+06	L		1		1		40										
NB52 348+63	L					1											
NB52 349+21	L													1			
NB52 351+07	L		1		1		30										
NB52 351+13	L										1						
NB52 352+08	R							30	1	1							
NB52 353+03	R													1			
NB52 355+19	R													1			
NB52 355+79	R													1			
NB52 356+17	R										1						
NB52 356+96	R													1			
NB52 358+92	R							25	1					1			
NB52 359+69	R																
NB52 360+65	R													1			
NB52 360+81				1													
NB52 361+05	R													1			
NB52 362+50	R													1			
NB52 362+81	R							65	1								
NB52 362+91	R													1			
NB52 363+68	L													1			
NB52 363+83	R													1			
NB52 364+94	R										1						
NB52 365+10	L													1			
NB52 365+81	R													1			
NB52 366+45	R										1						
NB52 367+36	R													1			
NB52 368+02	R													1			
NB52 369+31	R													1			
NB52 370+59	R													1			
NB52 370+94	R		1		1		30										
NB52 371+77	R													1			
NB52 373+01	L,R										2						
NB52 374+10	R											1					
NB52 375+56	L													1			
NB52 376+45	R		1		1		15										
NB52 376+76	L													1			
NB52 377+61	L													1			
NB52 378+93	L													1			
NB52 380+95	L		1		1		17										
NB52 381+04	L										1		1			340	
NB52 382+04	L																
NB52 394+93	R								1								
NB52 395+14	L							190	1								
NB52 396+62	R														1		250
TOTALS		1	5	1	5	2	132	310	5	1	7	1	1	23	1	340	250

NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\a-f\AnokaCty\13867000\hwy-brdg\hwy\pln-sht\c0265205_tba.dgn 10/15/2009

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ANOKA COUNTY
TABULATIONS
CSAH 52/116 RECONSTRUCTION

SHEET 1.15 OF 294

SANITARY SEWER - TAB DD

STATION	LOCATION	CONNECT TO EXISTING PIPE	CONNECT TO EXISTING MANHOLE	ADJUST EXISTING CLEANOUT	RECONSTR. MANHOLE	8" PVC SDR 35	EXTEND SANITARY SERVICE	48" MANHOLE	REMOVE CLEANOUT	INSULATION
		EACH	EACH	EACH	EACH	LIN FT	EACH	LIN FT	EACH	SQ FT
NB52 346+88	L									
NB52 348+57	R				1					
NB52 348+63	L									
NB52 351+23	L		1		1	19		16		
NB52 351+23	R				1					
NB52 354+04	R				1					
NB52 355+86	R				1					
NB52 356+32	L				1					
NB52 356+89	R			1						
NB52 359+63	R				1	52				
NB52 362+73	R				1	65				
NB52 363+58	L	1					1			
NB52 364+80	R				1					
NB52 365+02	L	1					1			
NB52 368+79	C				1					
NB52 373+11	L				2					
NB52 375+55	L									160
NB52 375+82	L				1					
NB52 376+71										160
NB52 377+57										160
NB52 378+02										160
NB52 378+96										160
NB52 379+01	L							8	1	
TOTALS		2	1	1	13	136	2	24	1	800

PAVEMENT MARKINGS - TAB F

STATION TO STATION	4" SOLID LINE WHITE (EPOXY)		4" BROKEN LINE WHITE (EPOXY) AND (PAINT) (1)		8" DOTTED LINE WHITE (EPOXY)	24" SOLID LINE WHITE (PREFORMED THERMOPLASTIC)		4" SOLID LINE YELLOW (EPOXY) AND (PAINT) (1)		4" DOUBLE SOLID LINE YELLOW (EPOXY) AND (PAINT) (1)		4" BROKEN LINE YELLOW (EPOXY)		24" SOLID LINE YELLOW (PREFORMED THERMOPLASTIC)		CROSSWALK MARKING (PREFORMED THERMOPLASTIC)		PAVEMENT MESSAGE (LT ARROW) (PREFORMED THERMOPLASTIC)		PAVEMENT MESSAGE (RT ARROW) (PREFORMED THERMOPLASTIC)		PAVEMENT MESSAGE (ONLY) (PREFORMED THERMOPLASTIC)
	LIN FT		LIN FT		LIN FT	LIN FT		LIN FT		LIN FT		LIN FT		LIN FT		SQ FT		EACH		EACH		EACH
	(A)	(F)	(A)	(F)	(F)	(A)	(F)	(A)	(F)	(A)	(F)	(A)	(F)	(A)	(F)	(A)	(F)	(A)	(F)	(A)	(F)	(F)
NB52 330+67.95 TO 345+00	2563		380					1482										4		2		
NB52 345+00 TO 360+00	4810		885			220		3059								1242		6		4		
NB52 360+00 TO 375+00	4106		560			151		2910								846		3		3		
NB52 375+00 TO 388+50	3943		540					2673										1		1		
NB52 388+50 TO 403+50	4017		560					2808														
NB52 403+50 TO 404+81.18	251		50					250														
NB52 404+81.18 TO 418+50	3743		520					2647														
NB52 418+50 TO 433+50	4278		560			114		2726								648		5		3		
NB52 433+50 TO 447+50	3741		300					2470		150								1		1		
NB52 447+50 TO 451+96.66	931		40					500		869		100		100								
EB116 11+40.78 TO 20+00		2866		160	75				1520												2	1
EB116 20+00 TO 35+00		4264		580					2851													
EB116 35+00 TO 50+00		3766		580					2833													
EB116 50+00 TO 65+00		3906		540			109		2707								396		3		3	
EB116 65+00 TO 74+52.36		2216		160					1340		1021		100		260		33		1		1	
TOTALS	32383	17018	4395	2020	75	485	109	21525	11251	1019	1021	100	100	100	260	2736	429	20	4	14	6	1

SUMMARY												
ANOKA COUNTY S.P. 02-652-05 (CSAH 52)	32383	4395		485	21525	1019	100	100	2736	20	14	
ANOKA COUNTY S.P. 02-716-09 (CSAH 116)	17018	2020	75	109	11251	1021	100	260	429	4	6	1
PROJECT TOTAL	49401	6415	75	594	32776	2040	200	360	3165	24	20	1

COST PARTICIPATION NOTES:

(A) 100% ANOKA COUNTY S.P. 02-652-05 (CSAH 52) QUANTITY.

(F) 100% ANOKA COUNTY S.P. 02-716-09 (CSAH 116) QUANTITY.

NOTES:

(1) FOR INTERIM MARKINGS PRIOR TO CONSTRUCTION OF FINAL WEAR COURSE.

NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\a-f\AnokaCty\13867000\hwy-brdg\hwy\pln-sht\c0265205_tba.dgn 10/15/2009

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S.P. 197-124-001

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ANOKA COUNTY
TABULATIONS
CSAH 52/116 RECONSTRUCTION

BITUMINOUS AND AGGREGATE ITEMS - TAB G

STATION TO STATION	BITUMINOUS ITEMS (7)																			AGGREGATE (7)					
	MILL BITUMINOUS SURFACE (1.0")	MILL BITUMINOUS SURFACE (2.0")		INSET A & B				INSET C & D		TEMPORARY		2" BITUMINOUS WALK			TACK COAT (3) (5)		BITUMINOUS CURB	BITUMINOUS PATCHING MIXTURE	INSETS A - D		TEMPORARY		AGGREGATE SHOULDERING CLASS 5 (LV)	
				TYPE SP 12.5 WEAR (SPWEB440F) (1) (5)		TYPE SP 12.5 NON WEAR (SPNWB430B) (1) (5)		TYPE MV4 WEAR (MVWE45035B) (2) (5)	TYPE MV3 NON WEAR (MVNW35035B) (2)	TYPE LV4 WEAR (LVWE45030B) (2)		TYPE LV4 WEAR (LVWE45030B) (4)							AGGREGATE BASE CLASS 5 (4)		AGGREGATE BASE CLASS 5 (4) (6)			
	SQ YD	SQ YD		TON		TON		TON	TON	TON		SQ YD			GALLON		LIN FT	TON	CU YD		TON		CU YD	
	(A)	(A)	(F)	(A)	(F)	(A)	(F)	(A)	(A)	(A)	(F)	(C)	(E)	(H)	(A)	(F)	(A)	(A)	(A)	(F)	(A)	(F)	(A)	(F)
NB52 330+67.95 TO 345+00		2169		1044		586		7	8						574			28	928				34	
NB52 345+00 TO 360+00		2289		2631		1478						1122			1277				2583					
NB52 360+00 TO 375+00	490			2821		1587		49	49			1261			1293				2839					
NB52 375+00 TO 388+50				2436		1370						1177			1078				2420					
NB52 388+50 TO 403+50				2766		1556		19	43			1379			1241				2778					
NB52 403+50 TO 404+81.18				190		107						118			84				193					
NB52 404+81.18 TO 418+50				2443		1374							1438		1081		176		2417					
NB52 418+50 TO 433+50				2988		1681				8			1413		1322				2894		20			
NB52 433+50 TO 447+50				2404		1352				118			1389		1064				2367		316		13	
NB52 447+50 TO 451+96.66				572		322									253				493				29	
EB116 11+40.78 TO 20+00			1607		681		812				30			839		301				814		64		26
EB116 20+00 TO 35+00					1436		2333				264			1528		635				2377		544		
EB116 35+00 TO 50+00					1363		2215				476			1528		603				2274		1010		
EB116 50+00 TO 65+00					1235		2006				220			1561		546				2068		510		
EB116 65+00 TO 74+52.36					729		1185							465		323				1157				
TOTALS	490	4458	1607	20295	5444	11413	8551	75	100	126	990	5057	4240	5921	9267	2408	176	28	19912	8690	336	2128	76	26

SUMMARY											
ANOKA COUNTY S.P. 02-652-05 (CSAH 52)	490	4458	20295	11413	75	100	126		9267	176	28	19912	336	76
CITY OF BLAINE S.P. 106-020-28 (CSAH 52)								5057						
CITY OF HAM LAKE S.P. 197-124-001 (CSAH 52)								4240						
ANOKA COUNTY S.P. 02-716-09 (CSAH 116)		1607	5444	8551			990		2408			8690	2128	26
CITY OF HAM LAKE S.P. 197-124-001 (CSAH 116)								5921						
PROJECT TOTAL	490	6065	25739	19964	75	100	1116	15218	11675	176	28	28602	2464	102

COST PARTICIPATION NOTES:

(A) 100% ANOKA COUNTY S.P. 02-652-05 (CSAH 52) QUANTITY.
(C) 100% CITY OF BLAINE S.P. 106-020-28 (CSAH 52) QUANTITY.
(E) 100% CITY OF HAM LAKE S.P. 197-124-001 (CSAH 52) QUANTITY.
(F) 100% ANOKA COUNTY S.P. 02-716-09 (CSAH 116) QUANTITY.
(H) 100% CITY OF HAM LAKE S.P. 197-124-001 (CSAH 116) QUANTITY.

BASIS OF QUANTITIES:

(1) SPEC. 2360 BITUMINOUS MIXTURES COMPUTED AT 113 POUNDS / SQ YD / INCH.
(2) SPEC. 2350 BITUMINOUS MIXTURES COMPUTED AT 110 POUNDS / SQ YD / INCH.
(3) BITUMINOUS MATERIAL FOR TACK COAT COMPUTED AT 0.05 GALLONS / SQ YD.
(4) AGGREGATE MATERIAL UNDER BITUMINOUS WALK IS INCIDENTAL TO 2" BITUMINOUS WALK, AND IS NOT INCLUDED IN AGGREGATE BASE QUANTITIES.
(5) INCLUDES OVERLAY QUANTITIES.
(6) AGGREGATE BASE COMPUTED AT 2 TONS / CU YD.
(7) SEE TAB K ON SHEET 2.08 FOR ADDITIONAL BITUMINOUS AND AGGREGATE QUANTITIES REQUIRED FOR DRIVEWAYS.

NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\a-f\AnokaCty\13867000\hwy-brdg\hwy\pln-sht\c0265205_tba.dgn 11/3/2009

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:
PRINTED NAME: RYAN P. MALONEY
DATE: 11/3/2009 LIC. NO. 44193

DRAWN BY SFH DATE 11/3/2009
DESIGN BY RPM DATE 11/3/2009
CHECKED BY TAC DATE 11/3/2009

S.P. 02-652-05
S.P. 02-716-09
S.P. 106-020-28
S.P. 197-124-001

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ANOKA COUNTY
TABULATIONS
CSAH 52/116 RECONSTRUCTION

CONCRETE ITEMS - TAB H

STATION TO STATION	4" CONCRETE WALK – MEDIAN SQ FT (A)	4" CONCRETE WALK – MEDIAN SQ FT (F)	4" CONCRETE WALK – PEDESTRIAN RAMP SQ FT (C)	4" CONCRETE WALK – PEDESTRIAN RAMP SQ FT (E)	4" CONCRETE WALK – PEDESTRIAN RAMP SQ FT (H)	6" CONCRETE WALK – MEDIAN NOSE SQ FT (A)	6" CONCRETE WALK – MEDIAN NOSE SQ FT (F)	SPECIAL SURFACE TREATMENT – MEDIAN SQ FT (CC)	CONCRETE CURB AND GUTTER B412 – MEDIAN LIN FT (A)	CONCRETE CURB AND GUTTER B412 (MOD) – MEDIAN LIN FT (A)	CONCRETE CURB AND GUTTER B418 – MEDIAN LIN FT (A)	CONCRETE CURB AND GUTTER B418 – MEDIAN LIN FT (F)
NB52 330+67.95 TO 345+00	6300							1880	666	918		
NB52 345+00 TO 360+00	17180		1085			105		7310	100		946	
NB52 360+00 TO 375+00	14872		1380			46		2880			1072	
NB52 375+00 TO 388+50	13423		146			44		6279			1264	
NB52 388+50 TO 403+50	12754		139			46		3212			2135	
NB52 403+50 TO 404+81.18	1876										251	
NB52 404+81.18 TO 418+50	11127			154		46					2531	
NB52 418+50 TO 433+50	18643			883		72					2717	
NB52 433+50 TO 447+50	17769			86		23					2464	
NB52 447+50 TO 451+96.66												
EB116 11+40.78 TO 20+00		4322			260		65					144
EB116 20+00 TO 35+00		15260			180		69					2838
EB116 35+00 TO 50+00		12139			308		46					2819
EB116 50+00 TO 65+00		13424			734		46					2694
EB116 65+00 TO 74+52.36		3124					55					750
TOTALS	113944	48269	2750	1123	1482	382	281	21561	766	918	13380	9245

STATION TO STATION	CONCRETE CURB AND GUTTER B418 (MOD) – MEDIAN LIN FT (A)	CONCRETE CURB AND GUTTER B424 – MEDIAN LIN FT (F)	CONCRETE CURB AND GUTTER B424 – EXTERIOR LIN FT (B)	CONCRETE CURB AND GUTTER B424 – EXTERIOR LIN FT (D)	CONCRETE CURB AND GUTTER B424 – EXTERIOR LIN FT (G)	CONCRETE CURB AND GUTTER B612 – EXTERIOR LIN FT (B)	CONCRETE CURB AND GUTTER B618 – EXTERIOR LIN FT (B)	CONCRETE CURB AND GUTTER D412 – EXTERIOR LIN FT (B)	CONCRETE CURB AND GUTTER D412 – EXTERIOR LIN FT (D)	CONCRETE CURB AND GUTTER S412 – EXTERIOR LIN FT (D)	CONCRETE CURB AND GUTTER S412 – EXTERIOR LIN FT (G)	CONCRETE CURB AND GUTTER S418 – EXTERIOR LIN FT (B)	TRUNCATED DOMES SQ FT (C)	TRUNCATED DOMES SQ FT (E)	TRUNCATED DOMES SQ FT (H)
NB52 330+67.95 TO 345+00			375												
NB52 345+00 TO 360+00	1600		2834				24					26	96		
NB52 360+00 TO 375+00	1720		2942			110	318					38	64		
NB52 375+00 TO 388+50	1420		2727					64					32		
NB52 388+50 TO 403+50	660		2952				90	230					36		
NB52 403+50 TO 404+81.18			250												
NB52 404+81.18 TO 418+50				2736					58					40	
NB52 418+50 TO 433+50				2676					48					80	
NB52 433+50 TO 447+50				2566						10				20	
NB52 447+50 TO 451+96.66															
EB116 11+40.78 TO 20+00		642			965										60
EB116 20+00 TO 35+00					3012										80
EB116 35+00 TO 50+00					3014						96				80
EB116 50+00 TO 65+00					2868										40
EB116 65+00 TO 74+52.36					1075										
TOTALS	5400	642	12080	7978	10934	110	432	294	106	10	96	64	228	140	260

SUMMARY	4" CONCRETE WALK	6" CONCRETE WALK	SPECIAL SURFACE TREATMENT	B412	B412 (MOD)	B418	B418 (MOD)	B424	B612	B618	D412	S412	S418	TRUNCATED DOMES
ANOKA COUNTY S.P. 02-652-05 (CSAH 52)	113944	382		766	918	13380	5400	10029	55	216	200	5	32	
CITY OF BLAINE S.P. 106-020-28 (CSAH 52)	2750							6040	55	216	147		32	228
CITY OF BLAINE LOCAL FUNDS (CSAH 52)			21561											
CITY OF HAM LAKE S.P. 197-124-001 (CSAH 52)	1123							3989			53	5		140
ANOKA COUNTY S.P. 02-716-09 (CSAH 116)	48269	281				9245		6109				48		
CITY OF HAM LAKE S.P. 197-124-001 (CSAH 116)	1482							5467				48		260
PROJECT TOTAL	167568	663	21561	766	918	22625	5400	31634	110	432	400	106	64	628

COST PARTICIPATION NOTES:

(A) 100% ANOKA COUNTY S.P. 02-652-05 (CSAH 52) QUANTITY.
(B) 50% ANOKA COUNTY S.P. 02-652-05 (CSAH 52), 50% CITY OF BLAINE S.P. 106-020-28 (CSAH 52) QUANTITY.
(C) 100% CITY OF BLAINE S.P. 106-020-28 (CSAH 52) QUANTITY.
(CC) 100% CITY OF BLAINE LOCAL FUNDS (CSAH 52) QUANTITY.
(D) 50% ANOKA COUNTY S.P. 02-652-05 (CSAH 52), 50% CITY OF HAM LAKE S.P. 197-124-001 (CSAH 52) QUANTITY.
(E) 100% CITY OF HAM LAKE S.P. 197-124-001 (CSAH 52) QUANTITY.
(F) 100% ANOKA COUNTY S.P. 02-716-09 (CSAH 116) QUANTITY.
(G) 50% ANOKA COUNTY S.P. 02-716-09 (CSAH 116), 50% CITY OF HAM LAKE S.P. 197-124-001 (CSAH 116) QUANTITY.
(H) 100% CITY OF HAM LAKE S.P. 197-124-001 (CSAH 116) QUANTITY.

TURF ESTABLISHMENT AND EROSION CONTROL - TAB P

STATION TO STATION	SILT FENCE TYPE MACHINE SLICED		STORM DRAIN INLET PROTECTION		CULVERT INLET PROTECTION		SEEDING		SEED MIX 150 (TEMPORARY) (1) (2)		SEED MIX 240 (3)		SEED MIX 310 (4)		SEED MIX 340 (5)		SODDING TYPE SALT RESISTANT		SODDING TYPE LAWN		MULCH MATERIAL TYPE 1 (TEMPORARY) (6) (11)		MULCH MATERIAL TYPE 3 (7)		DISK ANCHORING		EROSION CONTROL BLANKET CAT 3		FERTILIZER TYPE 3 (8)		FERTILIZER TYPE 4 (9)		FERTILIZER TYPE 1 (1) (10)	
	LIN FT		EACH		EACH		ACRE		POUND		POUND		POUND		POUND		SQ YD		SQ YD		TON		TON		ACRE		SQ YD		POUND		POUND		POUND	
	(A)	(F)	(A)	(F)	(A)	(F)	(A)	(F)	(A)	(F)	(A)	(F)	(A)	(F)	(A)	(F)	(A)	(F)	(A)	(F)	(A)	(F)	(A)	(F)	(A)	(F)	(A)	(F)	(A)	(F)	(A)	(F)	(A)	(F)
NB52 330+67.95 TO 345+00	806		19				0.44		5		44										0.5		0.8		0.4		137		155				26	
NB52 345+00 TO 360+00	1748		32			1	1.33		16		88		20		18		739		533		1.6		1.9		0.9		1866		400		68		80	
NB52 360+00 TO 375+00	1204		25			1	1.07		13		75		12		15		1861		632		1.3		1.9		0.9		688		442		49		64	
NB52 375+00 TO 388+50	647		35		1		0.65		8		65						904		829		0.8		1.3		0.6				352				39	
NB52 388+50 TO 403+50	1728		38		2		1.56		19		156						1363				1.9		2.8		1.4		736		644				94	
NB52 403+50 TO 404+81.18			4				0.05		1		5						120				0.1		0.1		0.1				27				3	
NB52 404+81.18 TO 418+50	1667		25		1		0.66		8		66						1208				0.8		1.3		0.7				317				40	
NB52 418+50 TO 433+50	1263		28				0.83		10		83						1419		185		1.0		1.7		0.8				408				50	
NB52 433+50 TO 447+50	1279		26				0.91		11		91						1268				1.1		1.8		0.9				409				55	
NB52 447+50 TO 451+96.66	170		3		3		0.48		6		48										0.6		0.8		0.4		412		168				29	
EB116 11+40.78 TO 20+00		1131		14		3		0.61		7		33		11		13		708				0.7		1.0		0.5		626		167		42		37
EB116 20+00 TO 35+00		1151		24		4		0.91		11		91						1140				1.1		1.8		0.9				402				55
EB116 35+00 TO 50+00		2418		28		5		1.67		20		101		22		33		1308				2.0		2.8		1.4		1304		447		99		100
EB116 50+00 TO 61+00		2174		13				1.17		14		117						995				1.4		2.3		1.2				483				70
EB116 65+00 TO 74+52.36		1896		18		2		1.21		15		54		19		37		1087		333		1.5		1.9		1.0		1148		291		101		73
TOTALS	10512	8770	235	97	7	16	8.0	5.6	97	67	721	396	32	52	33	83	8882	5238	2179	333	9.7	6.7	14.4	9.8	7.1	5.0	3839	3078	3322	1790	117	242	480	335

SUMMARY																						
ANOKA COUNTY S.P. 02-652-05 (CSAH 52)	10512		235		7		8.0		97		721		32		33		8882		2179		9.7		14.4		7.1		3839		3322		117		480	
ANOKA COUNTY S.P. 02-716-09 (CSAH 116)	8770		97		16		5.6		67		396		52		83		5238		333		6.7		9.8		5.0		3078		1790		242		335	
PROJECT TOTAL	19282		332		23		13.6		164		1117		84		116		14120		2512		16.4		24.2		12.1		6917		5112		359		815	

COST PARTICIPATION NOTES:
(A) 100% ANOKA COUNTY S.P. 02-652-05 (CSAH 52) QUANTITY.
(F) 100% ANOKA COUNTY S.P. 02-716-09 (CSAH 116) QUANTITY.

NOTES:
(1) TEMPORARY QUANTITY ESTIMATED AT 30% OF SEEDED AREA.
(2) TEMPORARY SEED MIX 150 APPLIED AT A RATE OF 40 POUND/ACRE.
(3) SEED MIX 240 APPLIED AT A RATE OF 100 POUND/ACRE.
(4) SEED MIX 310 APPLIED AT A RATE OF 82 POUND/ACRE.
(5) SEED MIX 340 APPLIED AT A RATE OF 84.5 POUND/ACRE.
(6) TYPE 1 MULCH APPLIED AT A RATE OF 2 TONS/ACRE.
(7) TYPE 3 MULCH APPLIED AT A RATE OF 2 TONS/ACRE.
(8) FERTILIZER 22-5-10 APPLIED AT A RATE OF 350 POUND/ACRE.
(9) FERTILIZER 18-1-8 NATURAL BASE APPLIED AT A RATE OF 150 POUND/ACRE.
(10) FERTILIZER 10-10-20 (TEMPORARY) APPLIED AT A RATE OF 200 POUND/ACRE.
(11) TEMPORARY QUANTITY ESTIMATED AT 60% OF SEEDED AREA.

COST PARTICIPATION NOTES:
(B) 74% ANOKA COUNTY S.P. 02-652-05,
26% CITY OF BLAINE S.P. 106-020-28 (CSAH 52) QUANTITY.
(C) 52% ANOKA COUNTY S.P. 02-716-09,
48% CITY OF HAM LAKE S.P. 197-124-001 (CSAH 116) QUANTITY.

GENERAL NOTES:
- SEE POND GRADING PLANS, SHEET NOS. 8.01 THRU 8.05 FOR SUBSURFACE DRAINAGE AT PONDS LAYOUT.

NOTES:
(1) STATIONS, OFFSETS, COORDINATES AND ELEVATIONS ARE GIVEN TO CENTER OF CASTING.
(2) MANHOLE STEPS 16" ON CENTER ARE REQUIRED IN MANHOLES WITH PAY HEIGHT EXCEEDING 4.5 FEET. SEE MN/DOT STANDARD PLATE 4180. STEPS ARE INCIDENTAL.

SUBSURFACE DRAINAGE AT PONDS - TAB PP

UPSTREAM STRUCTURE LOCATION (1)									FLOWS TO STRUC. POINT NO.	NEW STRUCTURE CONSTRUCTION			12" TP PIPE DRAIN	12" PERF TP PIPE DRAIN	FINE FILTER AGGREGATE (LV)
STRUCTURE POINT NO.	COST SPLIT	ALIGNMENT	STATION	OFFSET	COORDINATES X	COORDINATES Y	TOP OF CASTING ELEV.	INVERT ELEV.		F & I CASTING ASSEMBLY (2)		PAY HEIGHT DESIGN G OR H			
										TYPE	EACH	LIN FT	LIN FT	LIN FT	CU YD
MH01	(B)	SB52	1348+53.28	110.41 LT	512063.51	159259.65	901.00	897.25	MH02	A-7D	1	3.9	8	140	29
MH02	(B)	SB52	1347+04.22	104.74' LT	512068.03	159110.67	901.25	897.25	MH03	A-7D	1	4.1	8	48	11
MH03	(B)	SB52	1347+03.50	48.75' LT	512124.02	159109.51	900.75	897.25	5025	A-7D	1	3.6	8	32	8
PLUG	(B)	SB52	1347+65.42	19.22' LT	512124.02	159171.43		897.25	5025				4	18	4
MH04	(B)	SB52	1360+19.09	223.69' LT	511941.78	160420.95	902.00	898.00	5069	A-7D	1	4.1	8	37	9
MH05	(B)	SB52	1360+85.63	217.91' LT	511946.67	160488.84	902.00	898.00	MH04	A-7D	1	4.1	8	60	13
MH06	(B)	SB52	1359+88.86	65.80' LT	512100.17	160393.07	902.00	898.00	5069	A-7D	1	4.1	8	115	24
MH07	(C)	WB116	115+48.64	91.82' LT	508769.61	167064.07	897.25	893.50	5528	A-7D	1	3.9	8	42	10
MH08	(C)	WB116	116+45.89	25.50' LT	508866.82	166997.68	896.50	893.50	MH09	A-7D	1	3.1	8	52	12
MH09	(C)	WB116	115+85.95	28.09' LT	508806.88	167000.31	896.50	893.50	5528	A-7D	1	3.1	8	22	6
PLUG	(C)	WB116	138+95.89	74.98' LT	511117.63	167034.30		893.50	MH10				4	45	9
MH10	(C)	WB116	138+94.89	124.31' LT	511117.22	167083.22	896.75	893.50	MH11	A-7D	1	3.4	8	52	12
MH11	(C)	WB116	139+32.64	170.85' LT	511155.53	167129.71	896.50	893.50	MH12	A-7D	1	3.1	8	23	6
MH12	(C)	WB116	139+63.88	173.80' LT	511186.80	167132.28	897.00	893.50	5581	A-7D	1	3.6	8	20	5
MH13	(C)	WB116	140+58.26	128.16' LT	511280.62	167085.51	897.00	893.50	5581	A-7D	1	3.6	8	69	15
MH14	(C)	WB116	141+40.58	107.25' LT	511362.68	167063.60	897.25	893.50	MH13	A-7D	1	3.9	8	77	16
PLUG	(C)	WB116	141+67.51	57.63' LT	511389.01	167013.65		893.50	MH14				4	52	11
MH15	(C)	EB116	72+89.96	58.17 RT	514482.76	167125.36	896.00	891.50	5626	A-7D	1	4.6	8	133	27
MH16	(C)	EB116	71+62.00	265.87 RT	514448.52	166883.83	897.00	891.50	5626	A-7D	1	5.6	8	95	20
MH17	(C)	EB116	70+91.59	201.91 RT	514358.40	166914.30	897.00	891.50	MH16	A-7D	1	5.6	8	87	18
MH18	(C)	EB116	71+56.82	56.92 RT	514360.23	167073.27	896.50	891.50	MH17	A-7D	1	5.1	8	151	31
TOTALS											18	72.6	156	1370	294

SUMMARY					
ANOKA COUNTY S.P. 02-652-05, BLAINE S.P. 106-020-28 (CSAH 52)	6	24.0	52	450	97
ANOKA COUNTY S.P. 02-716-09, HAM LAKE S.P. 197-124-001 (CSAH 116)	12	48.7	104	920	197
PROJECT TOTAL	18	72.6	156	1370	294

NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\a-f\Anoka Cty\13867000\hwy-brdg\hwy\p!n-sht\c0265205_tba.dgn 11/3/2009

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:
PRINTED NAME: RYAN P. MALONEY
DATE: 11/3/2009 LIC. NO. 44193

DRAWN BY SFH DATE 11/3/2009
DESIGN BY RPM DATE 11/3/2009
CHECKED BY TAC DATE 11/3/2009

S.P. 02-652-05
S.P. 02-716-09
S.P. 106-020-28
S.P. 197-124-001

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ANOKA COUNTY
TABULATIONS
CSAH 52/116 RECONSTRUCTION

EARTHWORK TABULATION - CSAH 52 - TAB I

STATION	EXCAVATION - (EV)				EMBANKMENT - (CV)		
	COMMON	SUBGRADE	TOPSOIL	MUCK	SUITABLE GRADING	SELECT GRANULAR	TOPSOIL
	CU YD	CU YD	CU YD	CU YD	CU YD	CU YD	CU YD
NB CSAH 52 331+00.00							
NB CSAH 52 331+50.00	40	46	2	0	3	46	4
NB CSAH 52 332+00.00	40	46	2	0	2	46	3
NB CSAH 52 332+50.00	40	46	2	0	2	46	3
NB CSAH 52 333+00.00	39	46	2	0	2	46	3
NB CSAH 52 333+50.00	38	46	3	0	2	46	2
NB CSAH 52 334+00.00	37	46	3	0	3	46	3
NB CSAH 52 334+50.00	36	46	4	0	3	46	3
NB CSAH 52 335+00.00	36	46	4	0	3	46	4
NB CSAH 52 335+50.00	35	46	6	0	4	46	5
NB CSAH 52 336+00.00	44	46	12	0	7	46	12
NB CSAH 52 336+50.00	58	46	16	0	9	46	18
NB CSAH 52 337+00.00	47	46	14	0	9	46	15
NB CSAH 52 337+50.00	30	45	10	0	7	46	8
NB CSAH 52 338+00.00	27	44	7	0	9	46	5
NB CSAH 52 338+50.00	29	46	10	0	15	49	7
NB CSAH 52 339+00.00	36	52	12	0	24	56	10
NB CSAH 52 339+50.00	61	74	12	0	23	76	10
NB CSAH 52 340+00.00	76	85	9	0	10	85	7
NB CSAH 52 340+50.00	79	84	8	0	4	84	5
NB CSAH 52 341+00.00	98	89	7	0	3	89	3
NB CSAH 52 341+50.00	108	83	8	0	4	83	3
NB CSAH 52 342+00.00	135	76	10	0	5	76	6
NB CSAH 52 342+50.00	176	76	15	0	5	76	11
NB CSAH 52 343+00.00	213	76	17	0	5	76	14
NB CSAH 52 343+50.00	239	76	17	0	5	76	15
NB CSAH 52 344+00.00	259	76	18	0	5	76	16
NB CSAH 52 344+50.00	290	76	19	0	5	76	18
NB CSAH 52 345+00.00	280	81	19	0	5	81	17
NB CSAH 52 345+50.00	213	86	19	0	5	86	17
NB CSAH 52 347+00.00	200	125	30	0	50	150	15
NB CSAH 52 347+50.00	326	195	38	131	82	311	22
NB CSAH 52 348+00.00	387	163	31	191	60	332	17
NB CSAH 52 348+50.00	452	177	29	59	27	231	13
NB CSAH 52 349+00.00	528	192	28	0	8	192	13
NB CSAH 52 349+50.00	585	192	30	0	8	192	15
NB CSAH 52 350+00.00	589	192	33	0	8	192	17
NB CSAH 52 350+50.00	513	192	34	0	8	192	16
NB CSAH 52 351+00.00	437	198	31	0	8	198	11
NB CSAH 52 351+25.70	218	120	11	0	3	120	3
NB CSAH 52 351+50.00	196	111	11	0	4	111	3
NB CSAH 52 352+00.00	317	182	33	0	15	183	11
NB CSAH 52 352+50.00	279	163	42	0	36	164	21
NB CSAH 52 352+75.00	179	78	32	0	19	78	7
NB CSAH 52 353+00.00	179	74	31	0	16	76	5
NB CSAH 52 353+50.00	274	134	40	0	59	145	18
NB CSAH 52 354+00.00	234	123	45	0	116	140	22
NB CSAH 52 354+50.00	226	129	44	0	122	140	22
NB CSAH 52 354+88.30	202	101	35	0	80	107	11
NB CSAH 52 355+00.00	61	29	11	0	27	33	3
NB CSAH 52 355+50.00	204	124	41	0	122	140	17
NB CSAH 52 356+00.00	175	121	43	0	143	140	20
NB CSAH 52 356+50.00	188	117	40	0	149	140	17
NB CSAH 52 357+00.00	182	114	39	0	129	140	14
NB CSAH 52 357+50.00	156	108	40	0	144	140	15
NB CSAH 52 358+00.00	142	100	43	0	203	140	19
NB CSAH 52 358+50.00	141	95	46	0	244	140	22
NB CSAH 52 359+00.00	133	93	48	0	243	140	26
NB CSAH 52 359+50.00	126	111	45	0	154	140	24
NB CSAH 52 359+64.00	41	37	12	0	16	39	5
NB CSAH 52 360+00.00	100	98	32	0	47	101	15

EARTHWORK TABULATION - CSAH 52 - TAB I

STATION	EXCAVATION - (EV)				EMBANKMENT - (CV)		
	COMMON	SUBGRADE	TOPSOIL	MUCK	SUITABLE GRADING	SELECT GRANULAR	TOPSOIL
	CU YD	CU YD	CU YD	CU YD	CU YD	CU YD	CU YD
NB CSAH 52 360+16.00	39	45	15	0	22	45	7
NB CSAH 52 360+50.00	79	93	33	0	52	95	16
NB CSAH 52 361+00.00	101	132	52	0	116	140	33
NB CSAH 52 361+50.00	106	119	49	0	110	144	27
NB CSAH 52 361+60.00	24	21	10	0	20	30	4
NB CSAH 52 361+90.00	77	63	29	0	60	89	8
NB CSAH 52 362+00.00	25	21	9	0	20	30	3
NB CSAH 52 362+50.00	116	123	45	0	82	149	19
NB CSAH 52 363+00.00	178	144	44	0	39	149	19
NB CSAH 52 363+41.00	197	122	34	0	13	122	10
NB CSAH 52 363+50.00	41	26	7	0	3	27	2
NB CSAH 52 363+80.00	131	82	27	0	14	89	5
NB CSAH 52 364+00.00	92	51	20	0	11	60	6
NB CSAH 52 364+50.00	257	129	45	0	29	152	20
NB CSAH 52 364+92.90	328	144	34	0	20	160	14
NB CSAH 52 365+00.00	70	29	5	0	2	31	2
NB CSAH 52 365+50.00	497	174	45	0	19	180	22
NB CSAH 52 365+85.00	362	98	36	0	11	98	13
NB CSAH 52 366+00.00	144	42	14	0	2	42	4
NB CSAH 52 366+50.00	414	140	41	0	9	140	17
NB CSAH 52 367+00.00	489	140	43	0	9	140	19
NB CSAH 52 367+50.00	637	140	45	0	9	140	22
NB CSAH 52 368+00.00	726	140	47	0	9	140	25
NB CSAH 52 368+50.00	714	144	48	0	9	144	26
NB CSAH 52 369+00.00	626	151	46	0	9	151	24
NB CSAH 52 369+50.00	488	162	45	0	9	162	20
NB CSAH 52 370+00.00	340	168	43	0	8	170	17
NB CSAH 52 370+50.00	215	165	45	0	33	170	20
NB CSAH 52 371+00.00	130	140	49	0	98	170	25
NB CSAH 52 371+50.00	126	118	48	0	179	170	24
NB CSAH 52 372+00.00	126	114	49	0	261	170	25
NB CSAH 52 372+50.00	106	113	51	0	279	170	28
NB CSAH 52 373+00.00	298	289	42	0	130	317	14
NB CSAH 52 373+20.70	229	175	17	0	1	175	7
NB CSAH 52 373+50.00	253	168	30	0	16	171	18
NB CSAH 52 374+00.00	179	156	48	0	51	186	21
NB CSAH 52 374+50.00	148	133	48	0	39	170	10
NB CSAH 52 375+00.00	257	150	52	0	18	170	6
NB CSAH 52 375+50.00	310	159	46	0	9	170	10
NB CSAH 52 376+00.00	286	164	41	0	8	170	14
NB CSAH 52 376+50.00	290	162	44	0	10	170	11
NB CSAH 52 377+00.00	324	159	45	0	10	170	12
NB CSAH 52 377+50.00	439	162	49	0	8	170	12
NB CSAH 52 378+00.00	499	164	49	0	7	170	13
NB CSAH 52 378+50.00	442	165	45	0	15	170	18
NB CSAH 52 378+61.00	102	37	11	0	5	37	3
NB CSAH 52 379+00.00	340	128	38	0	21	132	10
NB CSAH 52 379+50.00	320	154	43	0	33	170	16
NB CSAH 52 380+00.00	309	140	47	0	43	170	18
NB CSAH 52 380+50.00	317	134	55	0	61	170	23
NB CSAH 52 381+00.00	350	169	38	0	70	203	19
NB CSAH 52 381+11.40	89	49	4	0	16	56	3
NB CSAH 52 381+50.00	266	132	24	0	44	157	10
NB CSAH 52 382+00.00	244	112	42	0	45	150	14
NB CSAH 52 382+50.00	187	116	40	0	31	149	11
NB CSAH 52 383+00.00	214	132	39	0	13	149	11
NB CSAH 52 383+50.00	276	142	43	0	9	149	16
NB CSAH 52 384+00.00	343	148	46	0	9	149	20
NB CSAH 52 384+50.00	363	148	46	0	9	148	20
NB CSAH 52 385+00.00	335	132	44	0	12	145	19
NB CSAH 52 385+50.00	293	120	42	0	13	141	18

NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\a-f\AnokaCty\13867000\hwy-brdg\hwy\pln-sht\c0265205_tba.dgn 10/15/2009

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:

PRINTED NAME: RYAN P. MALONEY

DATE: 10/15/2009 LIC. NO. 44193

DRAWN BY SFH DATE 10/15/2009

DESIGN BY RPM DATE 10/15/2009

CHECKED BY TAC DATE 10/15/2009

S.P. 02-652-05
S.P. 02-716-09
S.P. 106-020-28
S.P. 197-124-001

TKDA
ENGINEERS • ARCHITECTS • PLANNERS

ANOKA COUNTY
EARTHWORK TABULATIONS
CSAH 52/116 RECONSTRUCTION

SHEET 1.20 OF 294

EARTHWORK TABULATION - CSAH 52 - TAB I

STATION	EXCAVATION - (EV)				EMBANKMENT - (CV)		
	COMMON	SUBGRADE	TOPSOIL	MUCK	SUITABLE GRADING	SELECT GRANULAR	TOPSOIL
	CU YD	CU YD	CU YD	CU YD	CU YD	CU YD	CU YD
NB CSAH 52 386+00.00	249	132	42	0	12	140	18
NB CSAH 52 386+50.00	132	112	43	0	66	140	20
NB CSAH 52 387+00.00	43	74	46	0	179	140	23
NB CSAH 52 387+50.00	46	54	58	0	300	140	18
NB CSAH 52 388+00.00	55	35	59	0	469	140	20
NB CSAH 52 388+50.00	67	23	50	0	588	140	29
NB CSAH 52 389+00.00	56	22	52	0	597	140	31
NB CSAH 52 389+50.00	27	25	52	0	549	140	31
NB CSAH 52 390+00.00	10	29	53	0	490	140	32
NB CSAH 52 390+50.00	14	33	54	0	488	140	33
NB CSAH 52 391+00.00	18	35	54	0	485	140	33
NB CSAH 52 391+50.00	22	35	53	0	460	143	33
NB CSAH 52 392+00.00	35	40	55	0	469	150	33
NB CSAH 52 392+50.00	61	58	54	0	478	162	32
NB CSAH 52 393+00.00	132	79	58	0	431	169	37
NB CSAH 52 393+50.00	196	93	63	0	389	170	42
NB CSAH 52 394+00.00	218	103	59	0	354	170	37
NB CSAH 52 394+50.00	218	115	56	0	286	170	32
NB CSAH 52 395+00.00	264	137	55	0	259	170	31
NB CSAH 52 395+50.00	420	161	52	0	137	170	29
NB CSAH 52 396+00.00	753	322	25	0	4	322	14
NB CSAH 52 396+50.00	865	327	27	0	2	327	15
NB CSAH 52 397+00.00	642	174	51	0	35	174	26
NB CSAH 52 397+50.00	549	170	49	0	85	170	22
NB CSAH 52 398+00.00	569	170	52	0	109	170	26
NB CSAH 52 398+50.00	611	170	66	0	93	170	45
NB CSAH 52 399+00.00	627	170	65	0	60	170	44
NB CSAH 52 399+50.00	568	165	53	0	52	170	28
NB CSAH 52 400+00.00	491	153	51	0	75	168	27
NB CSAH 52 400+50.00	440	141	52	0	96	158	28
NB CSAH 52 401+00.00	381	130	49	0	113	147	27
NB CSAH 52 401+50.00	327	118	48	0	140	142	24
NB CSAH 52 402+00.00	306	113	49	0	160	140	25
NB CSAH 52 402+50.00	283	114	49	0	165	140	25
NB CSAH 52 403+00.00	240	109	49	0	190	140	26
NB CSAH 52 403+50.00	213	106	51	0	177	140	29
NB CSAH 52 404+00.00	221	104	46	0	89	140	22
NB CSAH 52 404+50.00	268	105	40	0	35	140	14
NB CSAH 52 404+81.18	183	67	23	0	22	87	9
NB CSAH 52 405+00.00	111	41	14	0	14	53	5
NB CSAH 52 405+50.00	254	106	39	0	66	140	18
NB CSAH 52 406+00.00	210	102	41	0	88	143	19
NB CSAH 52 406+50.00	171	106	39	0	65	147	16
NB CSAH 52 407+00.00	146	110	38	0	35	149	12
NB CSAH 52 407+44.00	165	103	35	0	16	131	7
NB CSAH 52 407+50.00	28	15	5	0	1	18	0
NB CSAH 52 408+00.00	177	121	40	0	11	149	8
NB CSAH 52 408+50.00	99	113	36	0	17	149	11
NB CSAH 52 409+00.00	75	115	38	0	67	152	14
NB CSAH 52 409+35.00	92	127	20	0	60	139	6
NB CSAH 52 409+50.00	46	62	12	0	20	62	6
NB CSAH 52 410+00.00	75	116	54	0	196	157	32
NB CSAH 52 410+50.00	42	67	49	0	283	149	25
NB CSAH 52 411+00.00	62	78	45	0	210	156	22
NB CSAH 52 411+50.00	147	102	46	0	127	161	22
NB CSAH 52 411+62.00	57	29	12	0	17	39	4
NB CSAH 52 412+00.00	161	97	36	0	32	122	10
NB CSAH 52 412+50.00	171	137	40	0	17	161	14
NB CSAH 52 413+00.00	232	144	40	0	16	161	14
NB CSAH 52 413+50.00	272	141	42	0	26	161	16
NB CSAH 52 414+00.00	231	138	41	0	41	161	16

EARTHWORK TABULATION - CSAH 52 - TAB I

STATION	EXCAVATION - (EV)				EMBANKMENT - (CV)		
	COMMON	SUBGRADE	TOPSOIL	MUCK	SUITABLE GRADING	SELECT GRANULAR	TOPSOIL
	CU YD	CU YD	CU YD	CU YD	CU YD	CU YD	CU YD
NB CSAH 52 414+50.00	329	220	30	0	46	241	13
NB CSAH 52 414+60.00	93	60	3	0	8	64	2
NB CSAH 52 415+00.00	295	181	23	0	23	198	9
NB CSAH 52 415+50.00	291	156	44	0	22	171	16
NB CSAH 52 416+00.00	312	163	44	0	20	170	15
NB CSAH 52 416+50.00	265	168	41	0	15	170	12
NB CSAH 52 417+00.00	247	168	39	0	10	170	9
NB CSAH 52 417+50.00	295	169	40	0	8	170	12
NB CSAH 52 418+00.00	376	170	45	0	8	170	17
NB CSAH 52 418+50.00	398	167	43	0	10	167	15
NB CSAH 52 418+72.00	184	70	19	0	4	70	4
NB CSAH 52 419+00.00	217	84	25	0	5	84	6
NB CSAH 52 419+50.00	271	145	40	0	15	145	13
NB CSAH 52 420+00.00	232	139	41	0	30	141	15
NB CSAH 52 420+50.00	281	142	41	0	33	146	14
NB CSAH 52 420+75.00	204	95	14	0	13	97	5
NB CSAH 52 421+00.00	216	98	15	0	10	99	5
NB CSAH 52 421+50.00	445	154	43	0	13	155	12
NB CSAH 52 422+00.00	595	149	47	0	9	149	17
NB CSAH 52 422+50.00	712	149	51	0	9	149	22
NB CSAH 52 423+00.00	687	149	51	0	9	149	21
NB CSAH 52 423+50.00	679	149	51	0	9	149	20
NB CSAH 52 423+68.00	265	54	20	0	3	54	7
NB CSAH 52 424+00.00	433	95	36	0	5	95	12
NB CSAH 52 424+50.00	578	145	51	0	9	145	21
NB CSAH 52 425+00.00	546	142	52	0	10	143	22
NB CSAH 52 425+50.00	489	148	50	0	13	149	19
NB CSAH 52 426+00.00	352	154	47	0	17	158	15
NB CSAH 52 426+50.00	250	154	46	0	15	169	13
NB CSAH 52 427+00.00	248	159	45	0	11	183	12
NB CSAH 52 427+50.00	258	153	48	0	9	192	13
NB CSAH 52 428+00.00	220	134	47	0	21	192	13
NB CSAH 52 428+50.00	135	116	48	0	92	192	14
NB CSAH 52 429+00.00	66	91	52	0	266	192	20
NB CSAH 52 429+50.00	44	75	58	0	481	192	28
NB CSAH 52 430+00.00	42	75	60	0	556	192	31
NB CSAH 52 430+50.00	50	81	61	0	416	192	32
NB CSAH 52 431+00.00	70	102	63	0	265	202	29
NB CSAH 52 432+50.00	519	420	192	0	385	595	81
NB CSAH 52 433+00.00	228	153	58	0	37	177	21
NB CSAH 52 433+36.00	158	102	39	0	41	122	9
NB CSAH 52 433+50.00	62	38	16	0	20	47	4
NB CSAH 52 434+00.00	170	129	56	0	71	169	19
NB CSAH 52 434+50.00	119	122	52	0	64	169	15
NB CSAH 52 435+00.00	147	124	50	0	59	169	12
NB CSAH 52 435+50.00	176	131	52	0	37	169	15
NB CSAH 52 435+85.00	157	105	38	0	10	117	9
NB CSAH 52 436+00.00	78	41	17	0	10	49	3
NB CSAH 52 436+50.00	144	80	56	0	150	156	15
NB CSAH 52 437+00.00	60	47	57	0	431	147	26
NB CSAH 52 437+50.00	64	41	62	0	583	142	31
NB CSAH 52 438+00.00	100	64	60	0	471	140	24
NB CSAH 52 438+50.00	121	71	59	0	483	140	24
NB CSAH 52 439+00.00	112	52	61	0	667	140	33
NB CSAH 52 439+50.00	110	54	61	0	692	140	35
NB CSAH 52 440+00.00	111	61	56	0	461	140	29
NB CSAH 52 440+50.00	124	81	48	0	167	140	19
NB CSAH 52 440+78.00	117	59	22	0	14	78	6
NB CSAH 52 441+00.00	109	52	18	0	6	61	7
NB CSAH 52 441+50.00	253	127	51	0	10	142	25
NB CSAH 52 442+00.00	298	140	54	0	9	147	28

NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\a-f\AnokaCty\13867000\hwy-brdg\hwy\pln-sht\c0265205_tba.dgn 10/15/2009

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:

PRINTED NAME: RYAN P. MALONEY

DATE: 10/15/2009 LIC. NO. 44193

DRAWN BY SFH DATE 10/15/2009

DESIGN BY RPM DATE 10/15/2009

CHECKED BY TAC DATE 10/15/2009

S.P. 02-652-05
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ANOKA COUNTY
EARTHWORK TABULATIONS
CSAH 52/116 RECONSTRUCTION

SHEET 1.21 OF 294

EARTHWORK TABULATION - CSAH 52 - TAB I

STATION	EXCAVATION - (EV)				EMBANKMENT - (CV)		
	COMMON	SUBGRADE	TOPSOIL	MUCK	SUITABLE GRADING	SELECT GRANULAR	TOPSOIL
	CU YD	CU YD	CU YD	CU YD	CU YD	CU YD	CU YD
NB CSAH 52 442+50.00	300	151	50	0	10	153	24
NB CSAH 52 442+62.00	75	37	12	0	2	37	3
NB CSAH 52 443+00.00	186	109	36	0	6	115	8
NB CSAH 52 443+38.00	137	97	33	0	7	114	10
NB CSAH 52 443+50.00	44	29	10	0	3	36	3
NB CSAH 52 444+00.00	132	112	40	0	21	149	14
NB CSAH 52 444+50.00	74	101	40	0	31	149	13
NB CSAH 52 445+00.00	55	95	41	0	41	149	13
NB CSAH 52 445+50.00	76	103	41	0	50	149	17
NB CSAH 52 446+00.00	66	128	35	0	47	157	16
NB CSAH 52 446+26.00	41	110	9	0	11	116	3
NB CSAH 52 446+50.00	49	103	8	0	9	107	8
NB CSAH 52 447+00.00	47	116	34	0	52	142	30
NB CSAH 52 447+50.00	15	84	30	0	59	117	25
NB CSAH 52 448+00.00	42	97	30	0	34	114	23
NB CSAH 52 448+22.00	31	47	15	0	6	49	9
NB CSAH 52 448+50.00	50	53	19	0	10	62	14
NB CSAH 52 449+00.00	97	82	34	0	27	108	34
NB CSAH 52 449+50.00	65	81	32	0	33	104	32
NB CSAH 52 450+00.00	63	88	31	0	32	101	32
NB CSAH 52 450+30.00	34	57	14	0	13	59	15
NB CSAH 52 450+50.00	27	38	8	0	5	39	10
NB CSAH 52 451+00.00	75	90	28	0	22	95	30
NB CSAH 52 451+50.00	42	84	27	0	45	91	26
NB CSAH 52 451+68.00	13	28	8	0	23	32	7
NB CSAH 52 451+96.00	23	42	11	0	40	50	8
TOTALS	58022	29429	9856	381	23508	36044	4488

EARTHWORK TABULATION - CSAH 116 - TAB I

STATION	EXCAVATION - (EV)					EMBANKMENT - (CV)			
	COMMON	SUBGRADE	TOPSOIL	MUCK		SUITABLE GRADING	SELECT GRANULAR		TOPSOIL
	CU YD	CU YD	CU YD	CU YD		CU YD	CU YD		CU YD
	(F)	(F)	(F)	(F)	(H)	(F)	(F)	(H)	(F)
EB CSAH 116 12+00.00									
EB CSAH 116 12+50.00	13	33	15	0	0	59	33	0	10
EB CSAH 116 13+00.00	20	43	9	0	0	42	43	0	5
EB CSAH 116 13+50.00	21	43	11	0	0	48	43	0	5
EB CSAH 116 14+00.00	19	43	17	0	0	74	43	0	11
EB CSAH 116 14+50.00	34	71	18	0	0	80	72	0	11
EB CSAH 116 15+00.00	55	102	18	0	0	79	103	0	11
EB CSAH 116 15+50.00	74	97	22	34	24	55	145	64	15
EB CSAH 116 16+00.00	146	92	29	93	52	54	205	132	23
EB CSAH 116 16+50.00	168	94	34	111	66	55	208	120	28
EB CSAH 116 17+00.00	124	81	31	93	56	33	174	97	24
EB CSAH 116 17+50.00	86	68	24	80	30	39	158	92	16
EB CSAH 116 18+00.00	48	66	22	86	32	48	178	101	12
EB CSAH 116 18+50.00	65	104	28	111	36	48	245	100	17
EB CSAH 116 18+79.46	76	123	9	37	9	14	168	27	6
EB CSAH 116 19+00.00	60	103	6	0	0	18	104	0	3
EB CSAH 116 19+50.00	94	171	33	73	31	75	268	93	17
EB CSAH 116 20+00.00	67	124	33	112	57	56	278	173	20
EB CSAH 116 20+50.00	62	130	32	62	51	42	241	146	19
EB CSAH 116 21+00.00	56	136	32	23	25	65	203	66	17
EB CSAH 116 21+50.00	52	140	33	0	0	69	176	0	14
EB CSAH 116 22+00.00	65	135	37	0	0	53	177	0	13
EB CSAH 116 22+28.00	70	77	17	0	0	27	101	0	6
EB CSAH 116 22+50.00	90	61	16	0	0	17	79	0	5
EB CSAH 116 23+00.00	185	122	47	0	0	50	169	0	19
EB CSAH 116 23+50.00	137	107	44	0	0	50	156	0	19
EB CSAH 116 24+00.00	132	102	42	0	0	35	151	0	17
EB CSAH 116 24+50.00	179	124	36	0	0	21	149	0	8
EB CSAH 116 24+56.00	27	18	4	0	0	2	18	0	0
EB CSAH 116 25+00.00	99	98	31	0	0	36	131	0	4
EB CSAH 116 25+50.00	24	78	36	0	0	68	164	0	8
EB CSAH 116 25+63.47	5	23	6	0	0	16	50	0	2
EB CSAH 116 26+00.00	4	33	17	0	0	103	123	0	9
EB CSAH 116 26+18.50	0	0	14	0	0	87	55	0	5
EB CSAH 116 26+50.00	0	0	23	0	0	186	94	0	10
EB CSAH 116 27+00.00	0	0	47	0	0	362	149	0	25
EB CSAH 116 27+22.00	0	0	16	0	0	166	66	0	9
EB CSAH 116 27+50.00	0	0	21	0	0	225	84	0	11
EB CSAH 116 28+00.00	0	0	48	0	0	399	154	0	23
EB CSAH 116 28+50.00	15	0	48	0	0	336	158	0	22
EB CSAH 116 29+00.00	24	0	48	0	0	307	158	0	26
EB CSAH 116 29+30.50	10	0	30	0	0	181	95	0	13
EB CSAH 116 29+50.00	3	1	14	0	0	109	60	0	5
EB CSAH 116 30+00.00	0	3	29	0	0	278	151	0	15
EB CSAH 116 30+50.00	0	4	37	0	0	256	149	0	19
EB CSAH 116 31+00.00	3	22	40	0	0	193	166	0	21
EB CSAH 116 31+28.01	5	46	16	0	0	57	118	0	9
EB CSAH 116 31+50.00	7	52	10	0	0	21	98	0	7
EB CSAH 116 31+87.00	8	57	30	70	20	54	232	52	18
EB CSAH 116 32+00.00	0	12	13	52	13	28	113	38	7
EB CSAH 116 32+50.00	19	64	51	237	52	101	496	169	28
EB CSAH 116 32+61.00	6	18	11	57	13	18	118	40	5
EB CSAH 116 33+00.00	10	55	40	226	51	68	444	140	16
EB CSAH 116 33+50.00	53	77	48	192	36	71	420	89	25
EB CSAH 116 34+00.00	65	84	47	187	31	64	390	81	24

COST PARTICIPATION NOTES:

(F) 100% ANOKA COUNTY S.P. 02-716-09 (CSAH 116) QUANTITY.

(H) 100% CITY OF HAM LAKE S.P. 197-124-001 (CSAH 116) QUANTITY.

NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\a-f\AnokaCty\13867000\hwy-brdg\hwy\pln-sht\c0265205_tba.dgn 10/15/2009

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:

PRINTED NAME: RYAN P. MALONEY

DATE: 10/15/2009 LIC. NO. 44193

DRAWN BY SFH DATE 10/15/2009

DESIGN BY RPM DATE 10/15/2009

CHECKED BY TAC DATE 10/15/2009

S.P. 02-652-05
S.P. 02-716-09
S.P. 106-020-28
S.P. 197-124-001

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ANOKA COUNTY
EARTHWORK TABULATIONS
CSAH 52/116 RECONSTRUCTION

EARTHWORK TABULATION - CSAH 116 - TAB I

STATION	EXCAVATION - (EV)					EMBANKMENT - (CV)			
	COMMON	SUBGRADE	TOPSOIL	MUCK		SUITABLE GRADING	SELECT GRANULAR		TOPSOIL
	CU YD	CU YD	CU YD	CU YD		CU YD	CU YD		CU YD
	(F)	(F)	(F)	(F)	(H)	(F)	(F)	(H)	(F)
EB CSAH 116 34+50.00	46	88	47	312	77	72	534	173	19
EB CSAH 116 34+55.00	6	10	4	31	9	6	53	18	1
EB CSAH 116 35+00.00	26	47	41	562	94	67	685	170	15
EB CSAH 116 35+50.00	1	0	44	1384	103	123	1359	140	25
EB CSAH 116 35+75.00	1	1	15	1201	22	84	1129	19	11
EB CSAH 116 36+00.00	0	1	17	1528	64	139	1430	61	11
EB CSAH 116 36+50.00	2	0	51	2897	331	344	2688	371	31
EB CSAH 116 36+60.00	0	0	10	519	75	60	479	95	5
EB CSAH 116 37+00.00	0	0	44	1768	226	248	1704	318	19
EB CSAH 116 37+50.00	0	0	56	1890	202	317	1936	323	32
EB CSAH 116 38+00.00	0	0	55	1697	173	248	1789	296	29
EB CSAH 116 38+50.00	0	0	49	1365	118	126	1533	227	21
EB CSAH 116 39+00.00	0	0	44	1233	61	47	1438	129	13
EB CSAH 116 39+50.00	0	0	42	1017	24	37	1187	44	11
EB CSAH 116 40+00.00	7	0	42	662	0	34	784	0	9
EB CSAH 116 40+50.00	85	46	45	262	0	47	401	0	13
EB CSAH 116 41+00.00	194	94	50	0	0	60	170	0	20
EB CSAH 116 41+50.00	223	100	50	0	0	47	170	0	21
EB CSAH 116 42+00.00	191	113	47	0	0	28	170	0	17
EB CSAH 116 42+50.00	279	198	34	0	0	17	236	0	14
EB CSAH 116 43+00.00	258	181	37	81	38	25	292	72	20
EB CSAH 116 43+50.00	92	83	48	145	70	42	287	146	22
EB CSAH 116 44+00.00	30	40	47	455	69	64	578	151	19
EB CSAH 116 44+50.00	0	0	52	777	70	110	863	149	17
EB CSAH 116 45+00.00	0	0	51	712	76	112	838	131	16
EB CSAH 116 45+50.00	0	0	48	711	43	99	882	59	19
EB CSAH 116 46+00.00	4	0	48	831	0	114	1019	0	20
EB CSAH 116 46+50.00	19	0	50	946	0	124	1155	0	23
EB CSAH 116 47+00.00	30	0	51	974	0	146	1209	0	25
EB CSAH 116 47+50.00	29	0	52	867	0	166	1122	0	25
EB CSAH 116 48+00.00	40	0	52	686	0	171	967	0	26
EB CSAH 116 48+50.00	60	3	53	395	0	191	674	0	27
EB CSAH 116 49+00.00	85	4	53	156	0	201	415	0	27
EB CSAH 116 49+50.00	89	1	53	53	0	245	252	0	26
EB CSAH 116 50+00.00	69	0	49	0	0	294	140	0	23
EB CSAH 116 50+50.00	37	0	46	0	0	318	140	0	18
EB CSAH 116 51+00.00	7	0	48	0	0	402	140	0	20
EB CSAH 116 51+50.00	0	0	54	0	0	516	140	0	28
EB CSAH 116 52+00.00	0	0	59	0	0	620	140	0	35
EB CSAH 116 52+50.00	0	0	64	0	0	658	140	0	41
EB CSAH 116 53+00.00	0	0	64	0	0	634	140	0	41
EB CSAH 116 53+50.00	3	0	61	0	0	535	140	0	38
EB CSAH 116 54+00.00	8	0	60	0	0	363	140	0	37
EB CSAH 116 54+50.00	6	4	60	0	0	331	140	0	38
EB CSAH 116 55+00.00	0	9	60	0	0	418	140	0	37
EB CSAH 116 55+17.00	0	4	20	0	0	152	48	0	10
EB CSAH 116 55+50.00	0	6	38	0	0	256	92	0	17
EB CSAH 116 55+70.00	6	8	23	0	0	128	56	0	13
EB CSAH 116 56+00.00	9	11	34	0	0	228	84	0	19
EB CSAH 116 56+50.00	16	2	57	0	0	531	140	0	32
EB CSAH 116 57+00.00	30	0	62	0	0	675	143	0	40
EB CSAH 116 57+50.00	16	0	65	0	0	754	149	0	43
EB CSAH 116 58+00.00	2	0	62	0	0	720	160	0	38
EB CSAH 116 58+50.00	0	0	59	0	0	709	169	0	33
EB CSAH 116 59+00.00	0	1	60	0	0	769	170	0	33

EARTHWORK TABULATION - CSAH 116 - TAB I

STATION	EXCAVATION - (EV)					EMBANKMENT - (CV)			
	COMMON	SUBGRADE	TOPSOIL	MUCK		SUITABLE GRADING	SELECT GRANULAR		TOPSOIL
	CU YD	CU YD	CU YD	CU YD		CU YD	CU YD		CU YD
	(F)	(F)	(F)	(F)	(H)	(F)	(F)	(H)	(F)
EB CSAH 116 59+50.00	0	3	60	0	0	765	170	0	33
EB CSAH 116 60+00.00	0	7	59	0	0	626	170	0	25
EB CSAH 116 60+50.00	0	18	56	0	0	508	170	0	21
EB CSAH 116 61+00.00	0	34	52	0	0	449	170	0	23
EB CSAH 116 61+50.00	3	54	49	0	0	344	170	0	20
EB CSAH 116 62+00.00	16	76	51	0	0	267	173	0	21
EB CSAH 116 63+50.00	0	0	0	0	0	0	0	0	0
EB CSAH 116 64+00.00	272	174	55	0	0	85	202	0	17
EB CSAH 116 64+50.00	239	150	52	0	0	134	170	0	24
EB CSAH 116 65+00.00	227	147	52	0	0	157	170	0	23
EB CSAH 116 65+50.00	176	146	52	0	0	181	170	0	23
EB CSAH 116 65+74.00	74	63	27	0	0	100	82	0	10
EB CSAH 116 66+00.00	83	62	29	0	0	119	88	0	11
EB CSAH 116 66+50.00	187	123	54	0	0	241	170	0	25
EB CSAH 116 67+00.00	235	128	55	0	0	236	169	0	28
EB CSAH 116 67+50.00	191	120	51	0	0	193	159	0	23
EB CSAH 116 68+00.00	120	112	46	0	0	111	148	0	17
EB CSAH 116 68+50.00	117	111	46	0	0	51	142	0	18
EB CSAH 116 69+00.00	145	114	44	0	0	26	143	0	15
EB CSAH 116 69+31.48	165	80	30	0	0	6	95	0	6
EB CSAH 116 69+50.00	121	54	18	0	0	2	57	0	7
EB CSAH 116 69+60.00	56	30	9	0	0	1	30	0	4
EB CSAH 116 70+00.00	148	107	32	0	0	3	116	0	11
EB CSAH 116 70+50.00	120	118	35	0	0	6	134	0	18
EB CSAH 116 71+00.00	144	107	35	0	0	6	124	0	22
EB CSAH 116 71+13.89	39	27	9	0	0	3	33	0	5
EB CSAH 116 71+50.00	62	65	21	0	0	25	83	0	10
EB CSAH 116 72+00.00	30	82	27	0	0	64	111	0	16
EB CSAH 116 72+50.00	17	74	27	0	0	92	106	0	17
EB CSAH 116 73+00.00	8	64	27	0	0	149	101	0	20
EB CSAH 116 73+50.00	4	60	27	0	0	181	92	0	23
EB CSAH 116 74+00.00	2	61	23	0	0	120	78	0	22
EB CSAH 116 74+50.00	8	58	18	0	0	55	62	0	21
TOTALS	7600	7021	5285	28053	2630	24376	45761	4912	2599
				30683			50673		

COST PARTICIPATION NOTES:

(F) 100% ANOKA COUNTY S.P. 02-716-09 (CSAH 116) QUANTITY.

(H) 100% CITY OF HAM LAKE S.P. 197-124-001 (CSAH 116) QUANTITY.

NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\a-f\AnokaCty\13867000\hwy-brdg\hwy\pln-sht\c0265205_tba.dgn 10/15/2009

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:

PRINTED NAME: RYAN P. MALONEY

DATE: 10/15/2009 LIC. NO. 44193

DRAWN BY SFH DATE 10/15/2009

DESIGN BY RPM DATE 10/15/2009

CHECKED BY TAC DATE 10/15/2009

S.P. 02-652-05
S.P. 02-716-09
S.P. 106-020-28
S.P. 197-124-001

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ANOKA COUNTY
EARTHWORK TABULATIONS
CSAH 52/116 RECONSTRUCTION

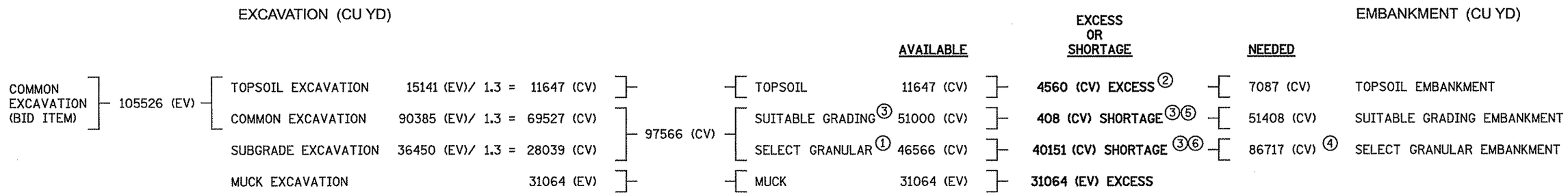
EARTHWORK SUMMARY - TAB I

	EXCAVATION - (EV)				EMBANKMENT - (CV)		
	COMMON	SUBGRADE	TOPSOIL	MUCK	SUITABLE GRADING	SELECT GRANULAR	TOPSOIL
	CU YD	CU YD	CU YD	CU YD	CU YD	CU YD	CU YD
CSAH 52 (ROADWAY)	58022	29429	9856	381	23508	36044	4488
POND 52A	5329						
POND 52B	3113				218		
CSAH 52 (STAGING ADJUSTMENT*)	532				364		
CSAH 116 (ROADWAY)	7600	7021	5285	30683	24376	50673	2599
BANK POND	1650				17		
POND 116A	5374				446		
POND 116B	5668				414		
CSAH 116 (STAGING ADJUSTMENT*)	3097				2065		
PROJECT TOTAL	90385	36450	15141	31064	51408	86717	7087

SUMMARY							
ANOKA COUNTY S.P. 02-652-05 (CSAH 52)	66996	29429	9856	381	24090	36044	4488
ANOKA COUNTY S.P. 02-716-09 (CSAH 116)	23389	7021	5285	28053	27318	45761	2599
CITY OF HAM LAKE S.P. 197-124-001 (CSAH 116)				2630		4912	
PROJECT TOTAL	90385	36450	15141	31064	51408	86717	7087

* STAGING ADJUSTMENTS REFLECT ADDITIONAL EXCAVATION AND EMBANKMENT NEEDED TO CONSTRUCT TEMPORARY WIDENING IN STAGE 1.

EARTHWORK BALANCE



① IT IS ASSUMED FROM SOIL REPORTS THAT 46,566 C.Y. (CV) OF THE COMMON AND SUBGRADE EXCAVATION WILL MEET THE REQUIREMENTS OF SELECT GRANULAR. (SPEC. 3149.2B2)

② EXCESS TOPSOIL SHALL BE PLACED AS ADDITIONAL SLOPE DRESSING THICKNESS, OR SHALL BE HAULED OFF THE PROJECT AT CONTRACTORS EXPENSE, AT THE DISCRETION OF THE ENGINEER. THE QUANTITY FOR SELECT TOPSOIL BORROW NEEDED FOR LANDSCAPED MEDIANS HAS NOT BEEN INCLUDED IN THIS BALANCE.

③ TO THE EXTENT POSSIBLE OR AT THE DIRECTION OF THE ENGINEER, WHERE THE ENGINEER DEEMS THE MATERIAL ACCEPTABLE, THE CONTRACTOR SHALL BE REQUIRED TO USE THE ON-SITE EXCAVATED MATERIAL TO OFFSET THE SHORTAGE OF SELECT GRANULAR MATERIAL.

④ INCLUDES 54,000 C.Y. (CV) FOR THE 1' ROADWAY SUB-BASE, AND 32,717 C.Y. (CV) FOR BACKFILLING THE MUCK EXCAVATION.

⑤ 408 C.Y. (CV) SHORTAGE x 1.3 x 1.1 = 583 C.Y. (LV) SHORTAGE.

⑥ 40,151 C.Y. (CV) SHORTAGE x 1.3 x 1.1 = 57,416 C.Y. (LV) SHORTAGE.

CONSTRUCTION NOTES

1. SUITABLE GRADING MATERIAL ON THIS PROJECT SHALL CONSIST OF ALL SOILS ENCOUNTERED WITH THE EXCEPTION OF SLOPE DRESSING, DEBRIS, ORGANIC MATERIAL, MUCK AND OTHER UNSUITABLE MATERIAL.
2. ITEMS REFERRED TO AS INCIDENTAL ON THIS PROJECT SHALL BE CONSIDERED INCIDENTAL WITH NO DIRECT COMPENSATION MADE THEREFORE.
3. SELECT GRANULAR MATERIAL SHALL MEET THE REQUIREMENTS OF SPEC. 3149.2B2, OR AS DIRECTED BY THE ENGINEER.
4. BITUMINOUS AND CONCRETE ITEMS REMOVED BY CONSTRUCTION SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL EITHER BE RECYCLED OR DISPOSED OF OFF THE PROJECT, IN ACCORDANCE WITH THE PROVISIONS OF SPEC. 2104.3C3 WITH NO DIRECT COMPENSATION MADE THEREFORE.
5. COMPACTION OF THE GRADING ITEMS OF THIS PROJECT, BOTH PERMANENT AND TEMPORARY, SHALL BE BY THE 'SPECIFIED DENSITY METHOD', EXCEPT WHEN WITHIN 3 FEET OF THE WATER TABLE, THEN BY THE 'QUALITY COMPACTION METHOD'.
6. COMPACTION OF THE AGGREGATE BASE ITEMS OF THIS PROJECT, BOTH PERMANENT AND TEMPORARY, SHALL BE BY THE 'SPECIFIED DENSITY METHOD' EXCEPT WHEN THE CONTRACTOR ELECTS TO USE RECYCLED MATERIALS FOR THE AGGREGATE BASE ITEMS, THEN THE 'QUALITY COMPACTION METHOD' SHALL BE UTILIZED.
7. WHERE WIDENING ADJACENT TO EXISTING PAVEMENT, CUT VERTICALLY TO THE BOTTOM OF THE CLASS 5 AGGREGATE BASE AND THEN AT A 1V:1/2H SLOPE TO THE BOTTOM OF THE BOTTOM OF THE RECOMMENDED SUBGRADE EXCAVATION (AS SHOWN ON THE TYPICAL SECTIONS AND THE CROSS SECTIONS). BACKFILL PROMPTLY TO AVOID UNDERMINING THE EXISTING PAVEMENT.
10. PROVIDE 1:20 LONGITUDINAL TAPERS BETWEEN CHANGES IN SUBGRADE AND SUBCUT DEPTHS.
11. USE TACK COAT BETWEEN ALL BITUMINOUS MIXTURES AND WHERE CONCRETE CURBING ABUTS BITUMINOUS MIXTURES. THE BITUMINOUS TACK COAT MATERIAL SHALL BE APPLIED AT A UNIFORM RATE OF 0.05 GAL./SQ. YD. BETWEEN BITUMINOUS LAYERS. APPLICATON RATES ARE APPLICABLE FOR UNDILUTED EMULSIONS (AS SUPPLIED FROM THE REFINERY). ASPHALT EMULSIONS MAY BE FURTHER DILUTED IN THE FIELD IN ACCORDANCE WITH SPEC. 2357.
12. STRIP AND REUSE AS SLOPE DRESSING ALL EXISTING TOPSOIL, WHERE PRESENT, IN AREAS TO BE DISTURBED BY CONSTRUCTION. APPROXIMATE DIMENSIONS ENCOUNTERED ARE 0 INCHES MINIMUM TO 24 INCHES MAXIMUM, AND AVERAGE IS 3 INCHES.
13. PLACE A MINIMUM OF 4 INCHES OF SLOPE DRESSING ON ALL AREAS SCHEDULED FOR PERMANENT TURF ESTABLISHMENT. ALL EXCESS TOPSOIL SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE DISPOSED OF OUTSIDE THE RIGHT-OF-WAY.
14. DITCH GRADE ELEVATIONS ON THE CROSS SECTIONS AND PROFILE DRAWINGS ARE AT THE BOTTOM OF TOPSOIL. ON ALL DRAWINGS WITH CONTOURS, THE ELEVATIONS ARE AT THE TOP OF TOPSOIL.
15. 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.
16. SOIL BORINGS ALONG THE PROJECT INDICATE THE EXISTING CSAH 52 AND CSAH 116 BITUMINOUS PAVEMENT AVERAGES 6 INCHES THICK.
17. ALL SILT FENCING AS SHOWN IN THE PLANS SHALL BE IN PLACE PRIOR TO THE COMMENCEMENT OF GRADING OPERATIONS.

NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\a-f\AnokaCty\13867000\hwy-brdg\hwy\pln-sht\c0265205_tba.dgn 11/3/2009

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SIGNATURE:

PRINTED NAME: RYAN P. MALONEY

DATE: 11/3/2009 LIC. NO. 44193

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DESIGN BY RPM DATE 11/3/2009

CHECKED BY TAC DATE 11/3/2009

S.P. 02-652-05
S.P. 02-716-09
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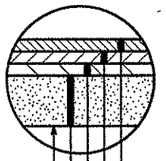
ANOKA COUNTY
EARTHWORK SUMMARY/ CONSTRUCTION NOTES
CSAH 52/116 RECONSTRUCTION

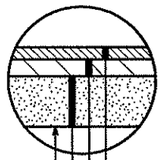
SHEET 1.24 OF 294



INSET A

CSAH 52

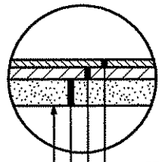
- SPEC 2360 2" TYPE SP 12.5 WEARING COURSE MIXTURE SPWEB440F
- SPEC 2360 2" TYPE SP 12.5 WEARING COURSE MIXTURE SPWEB440F
- SPEC 2360 2" TYPE SP 12.5 NON-WEARING COURSE MIXTURE SPNWB430B
- SPEC 2211 7" AGGREGATE BASE CLASS 5
- GRADING GRADE



INSET B

CSAH 116

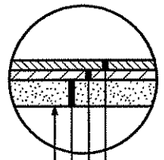
- SPEC 2360 2" TYPE SP 12.5 WEARING COURSE MIXTURE SPWEB440F
- SPEC 2360 3" TYPE SP 12.5 NON-WEARING COURSE MIXTURE SPNWB430B
- SPEC 2211 6" AGGREGATE BASE CLASS 5
- GRADING GRADE



INSET C

132ND LANE NE, 129TH AVE NE WIDENING

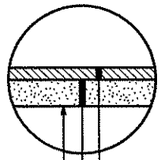
- SPEC 2350 1" TYPE MV4 BITUMINOUS WEARING MIXTURE COURSE, MVWE45035B
- SPEC 2350 2" TYPE MV3 BITUMINOUS NON-WEARING COURSE MIXTURE, MVNW35035B
- SPEC 2211 4" AGGREGATE BASE CLASS 5
- GRADING GRADE



INSET D

134TH LANE NE

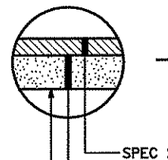
- SPEC 2350 1½" TYPE MV4 BITUMINOUS WEARING MIXTURE COURSE, MVWE45035B
- SPEC 2350 1½" TYPE MV3 BITUMINOUS NON-WEARING COURSE MIXTURE, MVNW35035B
- SPEC 2211 4" AGGREGATE BASE CLASS 5
- GRADING GRADE



INSET E

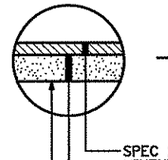
BITUMINOUS PATH

- SPEC 2350 2" TYPE LV4 WEARING COURSE MIXTURE LVWE45030B
- SPEC 2211 4" AGGREGATE BASE CLASS 5 (INCIDENTAL TO 2" BITUMINOUS WALK)
- GRADING GRADE



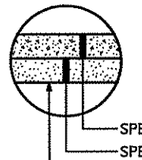
TEMPORARY PAVEMENT FOR STAGING

- SPEC 2350 3" TYPE LV4 WEARING COURSE MIXTURE LVWE45030B
- SPEC 2211 6" AGGREGATE BASE CLASS 5
- GRADING GRADE



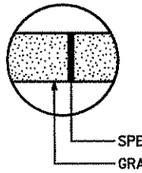
BITUMINOUS DRIVEWAY

- SPEC 2350 2" TYPE LV4 WEARING COURSE MIXTURE LVWE45030B
- SPEC 2211 4" AGGREGATE BASE CLASS 5
- GRADING GRADE



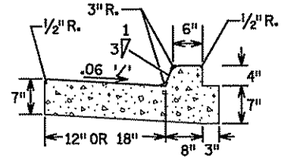
CONCRETE DRIVEWAY

- SPEC 2521 4" OR 6" CONCRETE PAVEMENT
- SPEC 2211 4" AGGREGATE BASE CLASS 5
- GRADING GRADE



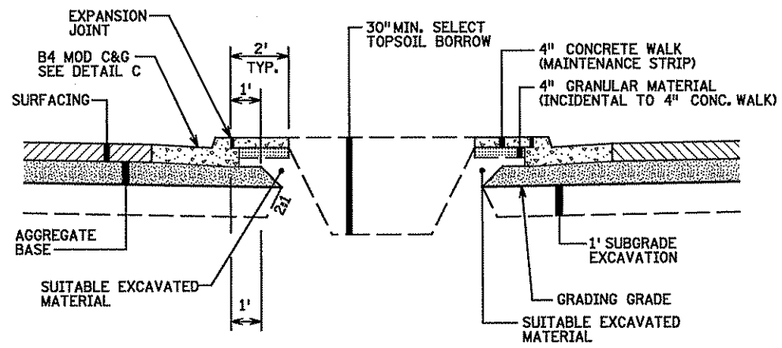
GRAVEL DRIVEWAY

- SPEC 2118 8" AGGREGATE SURFACING CLASS 2
- GRADING GRADE



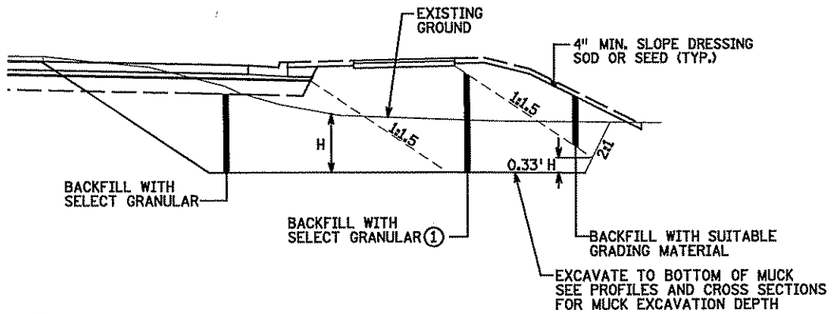
DETAIL C

B4 MOD C&G



DETAIL B

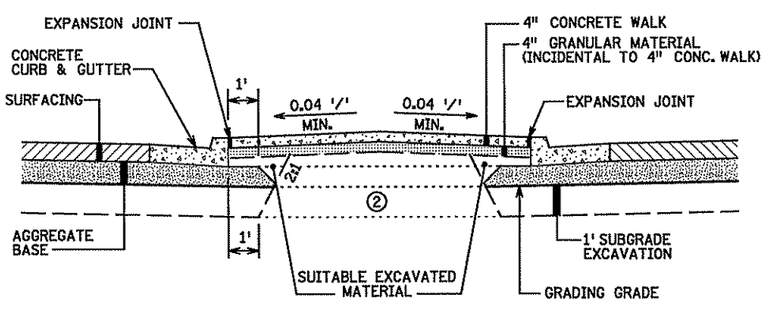
LANDSCAPED MEDIAN



① MUCK EXCAVATION AND BACKFILL UNDER TRAILS ARE PAID FOR UNDER S.P. 106-020-28 OR S.P. 197-124-001

TYPICAL MUCK EXCAVATION DETAIL

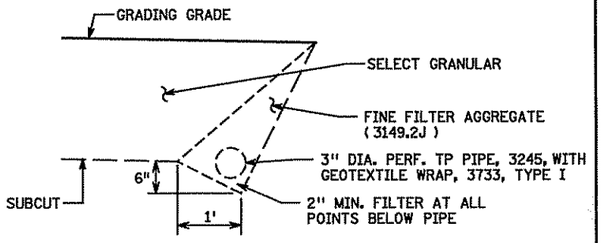
SEE CROSS SECTIONS FOR LOCATIONS



② SUBGRADE EXCAVATION, SELECT GRANULAR BORROW AND AGGREGATE BASE TO BE CARRIED THROUGH ENTIRE WIDTH OF MEDIAN WHEN MEDIAN WIDTH IS LESS THAN 8', MEASURED FROM FACE OF CURB TO FACE OF CURB.

DETAIL A

CONCRETE MEDIAN



SUBSURFACE DRAIN DETAIL

SEE DRAINAGE PLANS FOR LOCATIONS

NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\a-f\AnokaCty\13867000\hwy-brdg\hwy\pln-sht\c0265205_typ.dgn 7/30/2009

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:

PRINTED NAME: RYAN P. MALONEY

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CHECKED BY TAC DATE 7/30/2009

S.P. 02-652-05
S.P. 02-716-09
S.P. 106-020-28
S.P. 197-124-001

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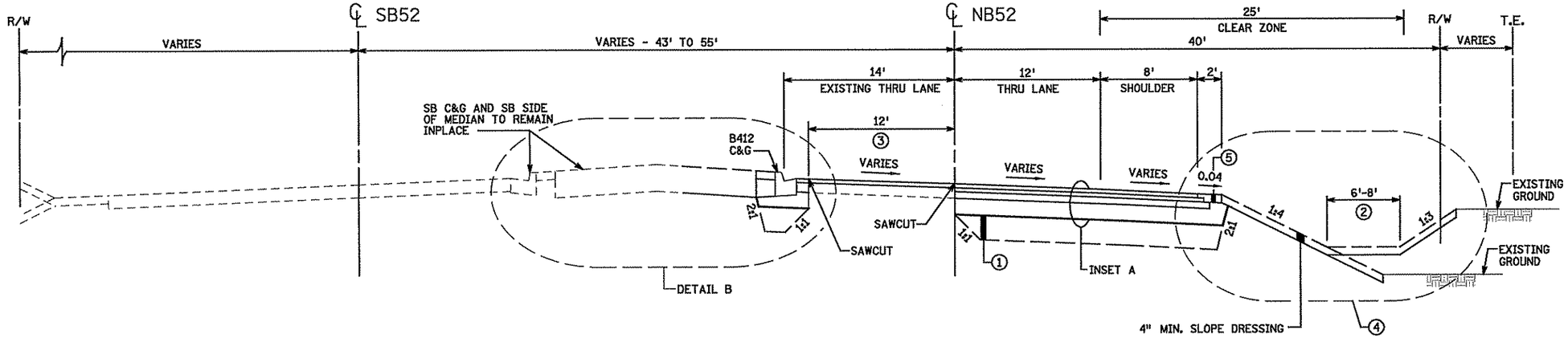
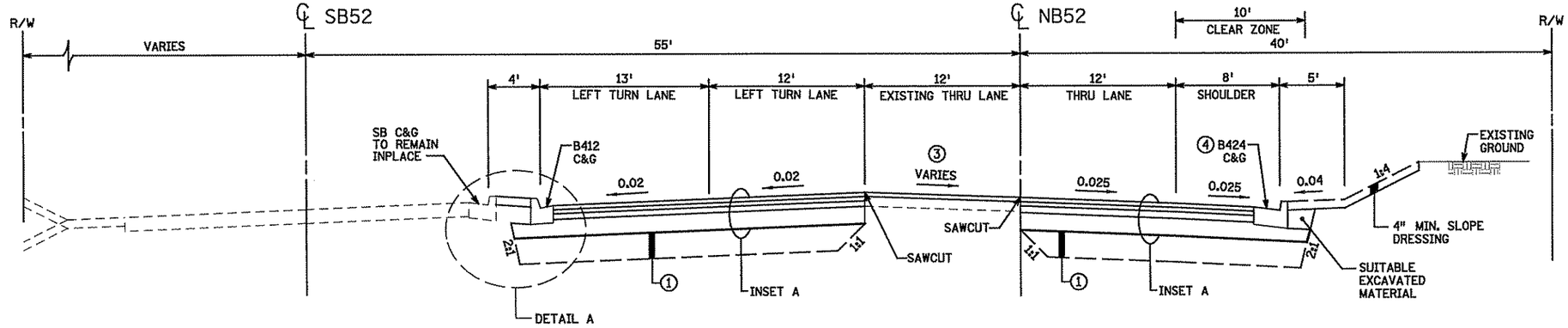
ANOKA COUNTY
TYPICAL SECTIONS
CSAH 52/116 RECONSTRUCTION

SHEET 2.01 OF 294

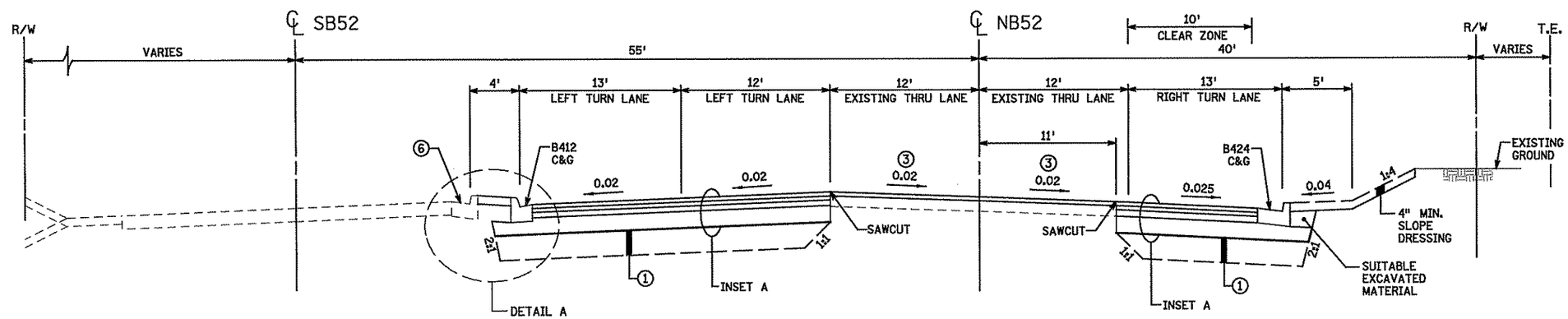
CSAH 52 NB STA. 330+67.95 - NB STA. 340+53.50



CSAH 52 NB STA. 340+53.50 - NB STA. 342+85.00



CSAH 52 NB STA. 342+85.00 - NB STA. 346+72.00



GENERAL NOTES:

- SEE CONSTRUCTION PLANS FOR TURN LANE LOCATIONS.
- ALL CROSS SLOPES EXPRESSED IN FT./FT.
- NORMAL CROSS SLOPES ARE SHOWN. FOR SUPERELEVATION TRANSITIONS, SEE SHEETS 10.01-10.14.
- MAXIMUM SHOULDER SUPERELEVATION ROLLOVER SHALL BE 0.07 FT/FT.
- UNLESS OTHERWISE SPECIFIED, THE GRADING GRADE CROSS SLOPES SHALL BE THE SAME AS THE FINISHED SURFACE OF THE MAINLINE.
- UNLESS OTHERWISE SPECIFIED, CLASS 5 AGGREGATE WILL EXTEND 1' BEYOND BACK OF CURB, AND 2' BEYOND RURAL SHOULDER EDGE.
- UNLESS OTHERWISE SPECIFIED, SUBGRADE EXCAVATION WILL EXTEND 1' BEYOND BACK OF CURB, AND 2' BEYOND RURAL SHOULDER EDGE.
- SEE LANDSCAPING/IRRIGATION PLANS FOR LANDSCAPED MEDIAN LOCATIONS.

SPECIFIC NOTES:

① 1' SUBGRADE EXCAVATION. BACKFILL WITH 1' SELECT GRANULAR MATERIAL.

② FOR DITCH LOCATIONS, WIDTH, AND SLOPE INFORMATION, SEE CROSS SECTIONS AND SPECIAL DITCH GRADE PROFILES. (SHEETS 18.01-18.89 AND 6.01-6.21)

③ MILL 2" AND OVERLAY WITH TOP LIFT OF INSET A.

④ RURAL SECTION NB52 STA. 330+67.95 TO STA. 341+25.00.

⑤ SPEC. 2221 4" AGGREGATE SHOULDERING, CLASS 5.

⑥ REPLACE B412 C&G AND 2' OF ADJACENT PAVEMENT FROM NB52 STA. 344+66 TO STA. 345+66.

NO	DATE	BY	CKD	APPR	REVISION

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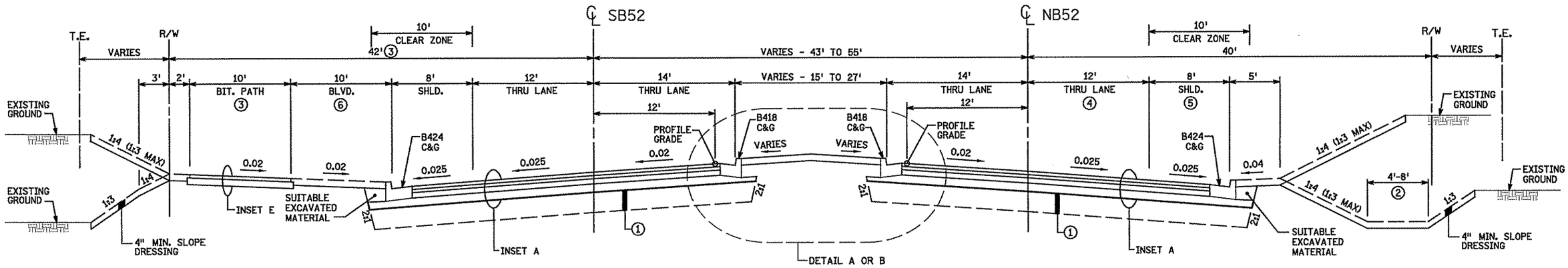
ANOKA COUNTY
TYPICAL SECTIONS
CSAH 52/116 RECONSTRUCTION

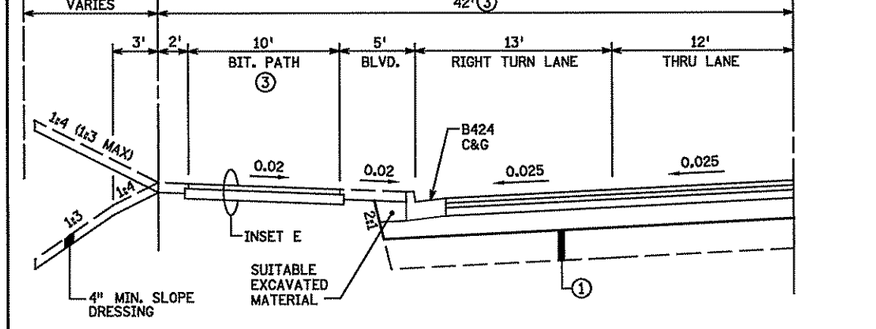
SHEET 2.02 OF 294

CSAH 52 NB STA. 346+72 - STA. 446+28



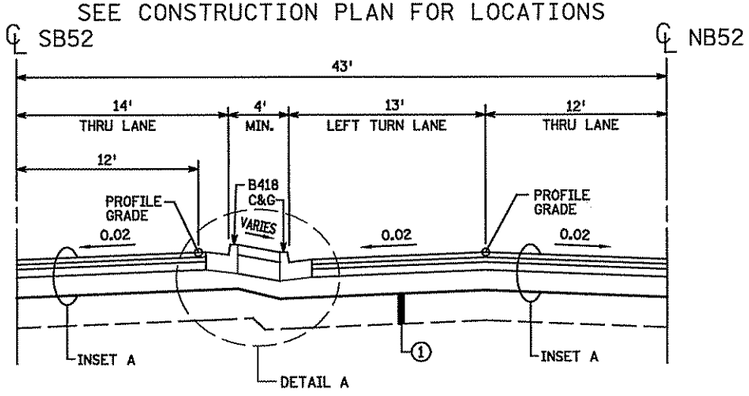
RIGHT TURN/BOULEVARD LANE DETAIL

SEE CONSTRUCTION PLAN FOR LOCATIONS



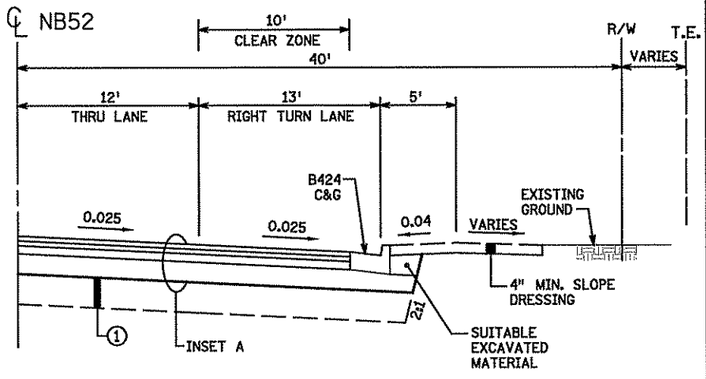
LEFT TURN LANE DETAIL

SEE CONSTRUCTION PLAN FOR LOCATIONS



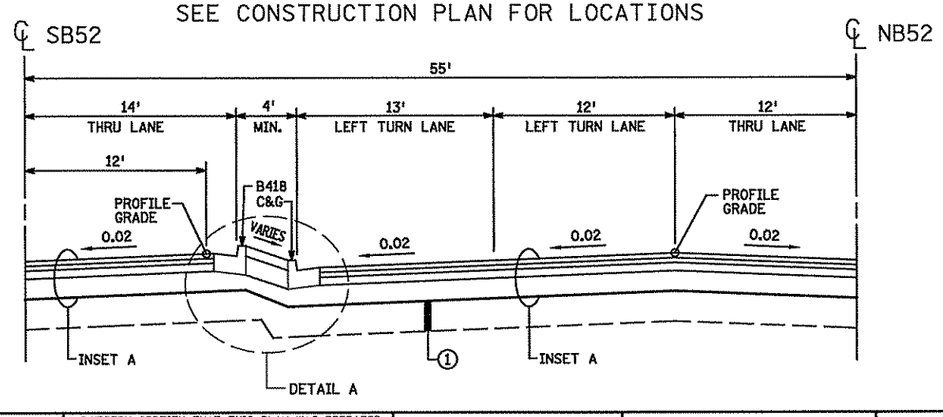
RIGHT TURN LANE/BOULEVARD DETAIL

SEE CONSTRUCTION PLAN FOR LOCATIONS



DUAL LEFT TURN LANE DETAIL

SEE CONSTRUCTION PLAN FOR LOCATIONS



GENERAL NOTES:

- SEE CONSTRUCTION PLANS FOR TURN LANE LOCATIONS.
- ALL CROSS SLOPES EXPRESSED IN FT./FT.
- NORMAL CROSS SLOPES ARE SHOWN. FOR SUPERELEVATION TRANSITIONS, SEE SHEETS 10.01-10.14.
- MAXIMUM SHOULDER SUPERELEVATION ROLLOVER SHALL BE 0.07 FT/FT.
- UNLESS OTHERWISE SPECIFIED, THE GRADING GRADE CROSS SLOPES SHALL BE THE SAME AS THE FINISHED SURFACE OF THE MAINLINE.
- UNLESS OTHERWISE SPECIFIED, CLASS 5 AGGREGATE WILL EXTEND 1' BEYOND BACK OF CURB, AND 2' BEYOND RURAL SHOULDER EDGE.
- UNLESS OTHERWISE SPECIFIED, SUBGRADE EXCAVATION WILL EXTEND 1' BEYOND BACK OF CURB, AND 2' BEYOND RURAL SHOULDER EDGE.
- SEE LANDSCAPING/IRRIGATION PLANS FOR LANDSCAPED MEDIAN LOCATIONS.

SPECIFIC NOTES:

① 1' SUBGRADE EXCAVATION. BACKFILL WITH 1' SELECT GRANULAR MATERIAL.

② FOR DITCH LOCATIONS, WIDTH, AND SLOPE INFORMATION, SEE CROSS SECTIONS AND SPECIAL DITCH GRADE PROFILES. (SHEETS 18.01-18.89 AND 6.01-6.21)

③ 8' TRAIL AND 40' R/W FROM NB52 STA. 346+72 TO STA. 396+00.

④ RIGHT TURN LANE FROM NB52 STA. 443+00 TO STA. 446+15.

⑤ WIDTH VARIES FROM 8' TO 2' FROM NB52 STA. 442+10 TO STA. 443+00.

⑥ 5.62' BLVD. FROM SB52 STA. 1351+75 TO STA. 1359+74 AND FROM STA. 1445+15 TO STA. 1446+10.

NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\G-f\AnokaCty\13867000\hwy-brdg\hwy\pln-sht\c0265205_typ.dgn 7/30/2009

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S.P. 02-652-05
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S.P. 197-124-001

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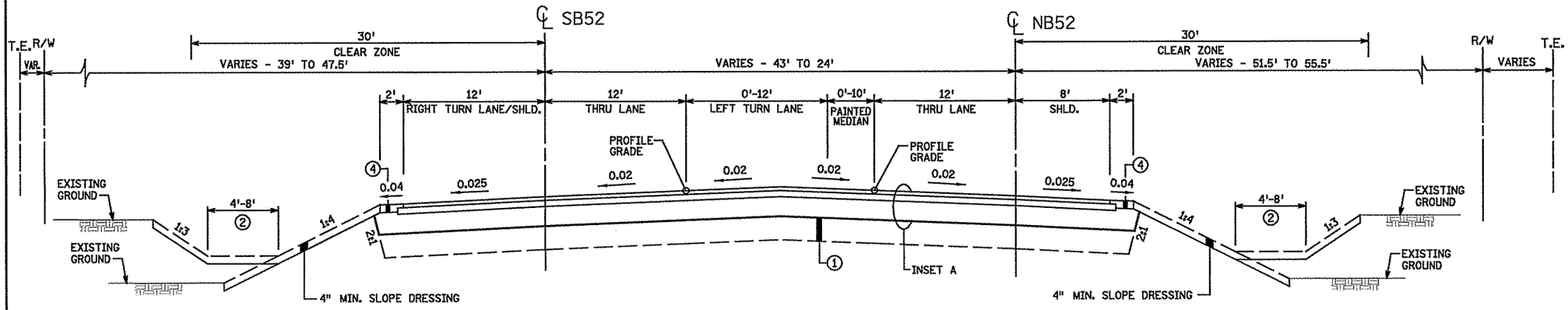
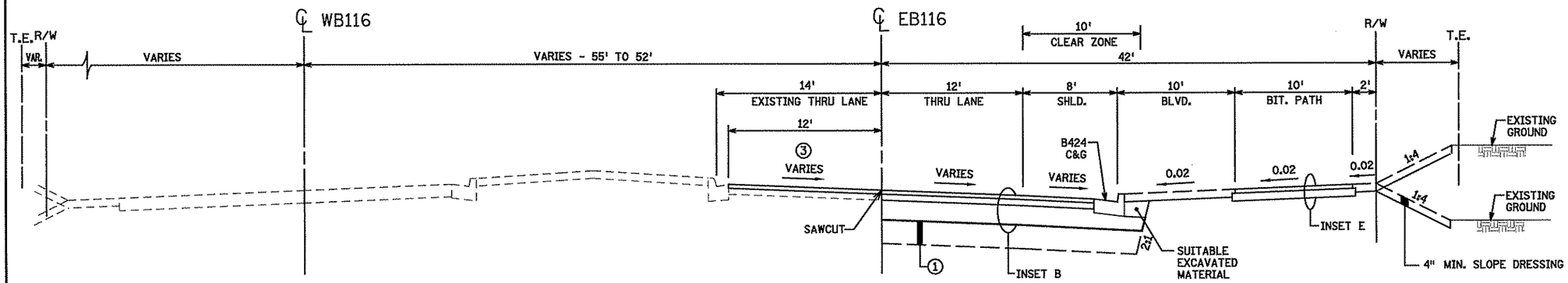
TYPICAL SECTIONS
CSAH 52/116 RECONSTRUCTION

SHEET 2.03 OF 294

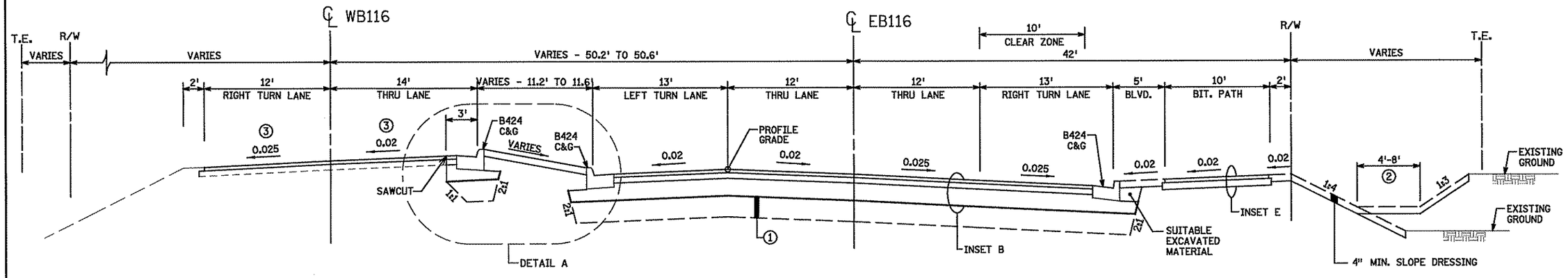
CSAH 52NB STA. 446+28 – EB STA. 451+96.66



CSAH 116 EB STA. 11+40.78 – EB STA. 14+40



CSAH 116 EB STA. 14+40.00 – EB STA. 18+24



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SPECIFIC NOTES:

(1) 1' SUBGRADE EXCAVATION. BACKFILL WITH 1' SELECT GRANULAR MATERIAL.

(2) FOR DITCH LOCATIONS, WIDTH, AND SLOPE INFORMATION, SEE CROSS SECTIONS AND SPECIAL DITCH GRADE PROFILES. (SHEETS 18.01-18.89 AND 6.01-6.21)

(3) MILL 2" AND OVERLAY WITH TOP LIFT OF INSET B.

(4) SPEC. 2221 4" AGGREGATE SHOULDERING, CLASS 5.

NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\a-f\AnokaCty\13867000\hwy-brdg\hwy\pln-sht\c0265205_typ.dgn 7/30/2009

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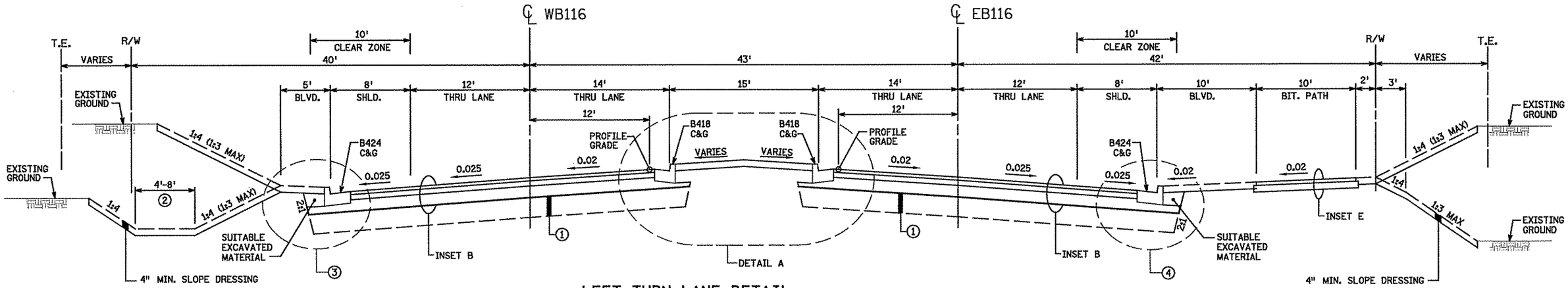
ANOKA COUNTY
TYPICAL SECTIONS
CSAH 52/116 RECONSTRUCTION

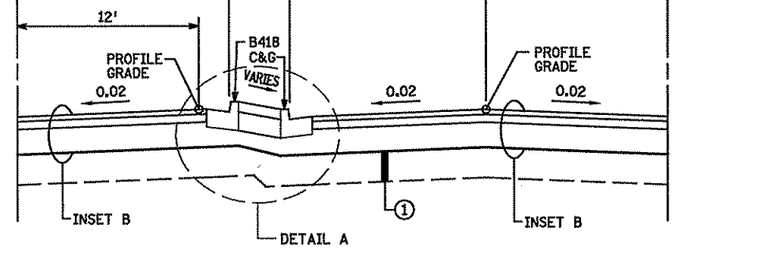
SHEET 2.04 OF 294

CSAH 116 EB STA. 18+24 - EB STA. 69+12.49



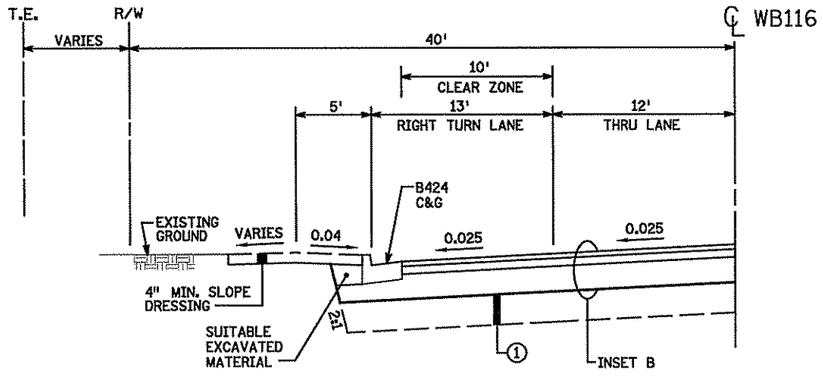
LEFT TURN LANE DETAIL

SEE CONSTRUCTION PLAN FOR LOCATIONS



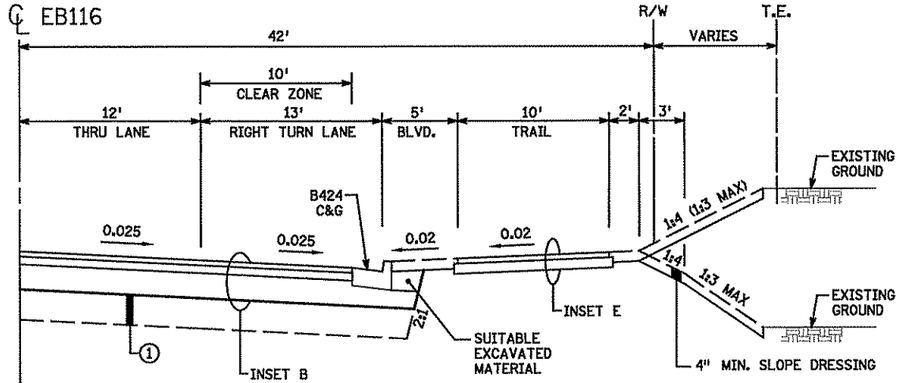
RIGHT TURN LANE DETAIL

SEE CONSTRUCTION PLAN FOR LOCATIONS



RIGHT TURN LANE DETAIL

SEE CONSTRUCTION PLAN FOR LOCATIONS



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SPECIFIC NOTES:

① 1' SUBGRADE EXCAVATION. BACKFILL WITH 1' SELECT GRANULAR MATERIAL.

② FOR DITCH LOCATIONS, WIDTH, AND SLOPE INFORMATION, SEE CROSS SECTIONS AND SPECIAL DITCH GRADE PROFILES. (SHEETS 18.01-18.89 AND 6.01-6.21)

③ URBAN SECTION CONTINUES TO WB116 STA. 170+70.30

④ URBAN SECTION CONTINUES TO EB116 STA. 70+00.00.

NO	DATE	BY	CKD	APPR	REVISION

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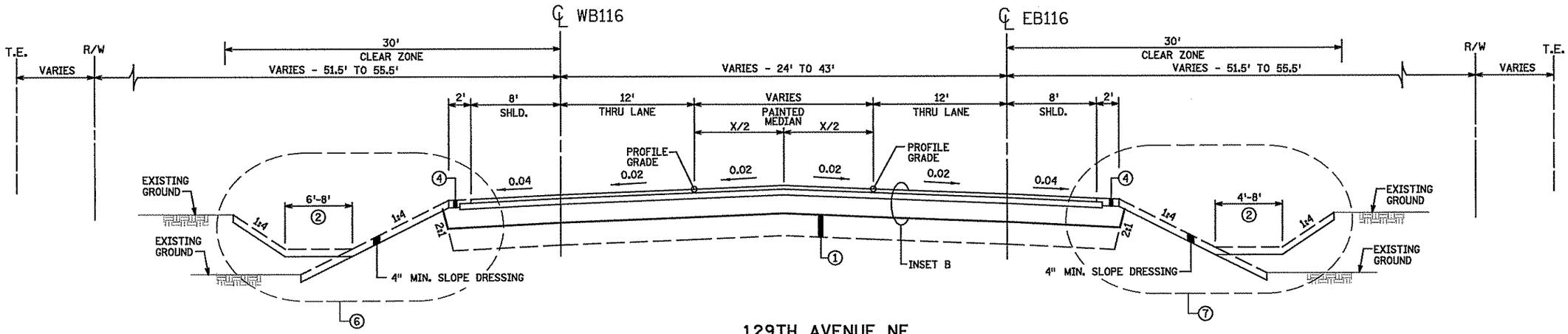
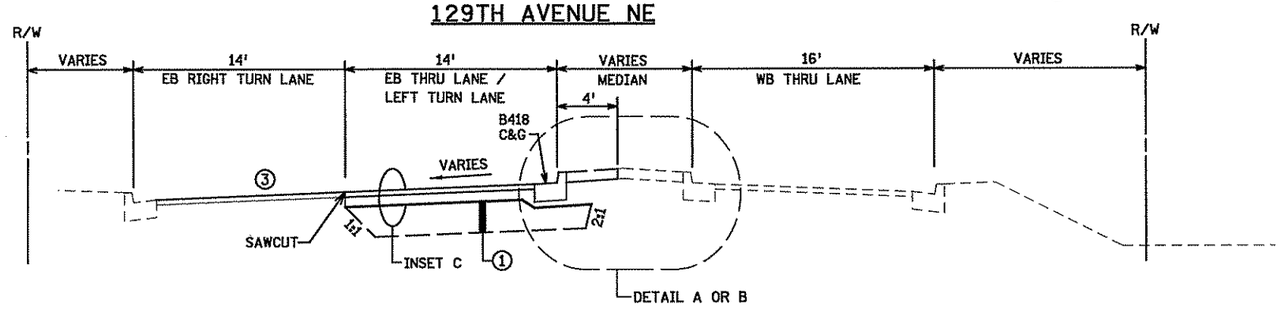
TYPICAL SECTIONS
CSAH 52/116 RECONSTRUCTION

SHEET 2.05 OF 294

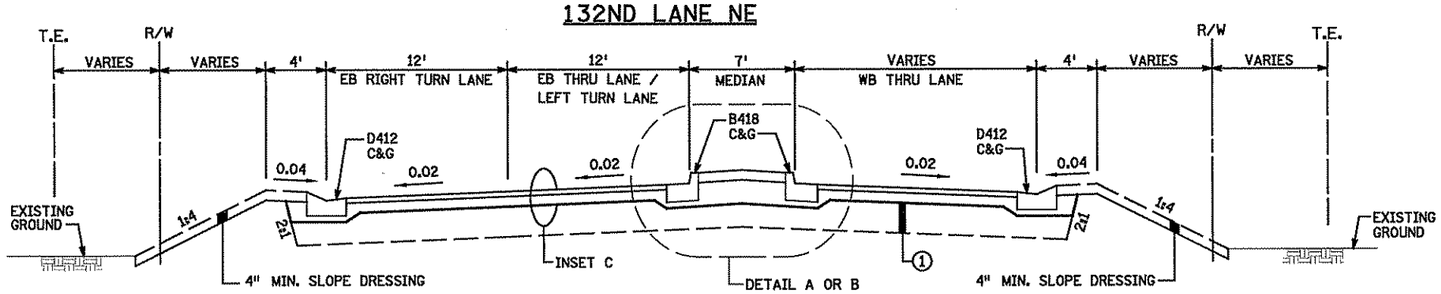
CSAH 116 EB STA. 69+12.49 - EB STA. 74+52.36



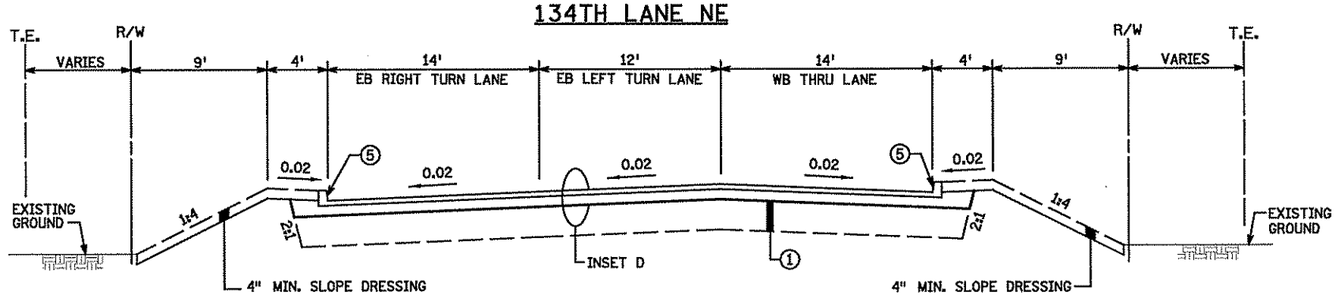
129TH AVENUE NE



132ND LANE NE



134TH LANE NE



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SPECIFIC NOTES:

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(2) FOR DITCH LOCATIONS, WIDTH, AND SLOPE INFORMATION, SEE CROSS SECTIONS AND SPECIAL DITCH GRADE PROFILES. (SHEETS 18.01-18.89 AND 6.01-6.21)

(3) MILL 1" AND OVERLAY WITH TOP LIFT OF INSET C.

(4) SPEC. 2221 4" AGGREGATE SHOULDERING, CLASS 5.

(5) BITUMINOUS CURB - MATCH INPLACE DESIGN.

(6) RURAL SECTION BEGINS AT WB116 STA. 170+70.30.

(7) RURAL SECTION BEGINS AT EB116 STA. 70+00.00.

NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\a-f\AnokaCty\13867000\hwy-brdg\hwy\pln-sht\c0265205_typ.dgn 7/30/2009

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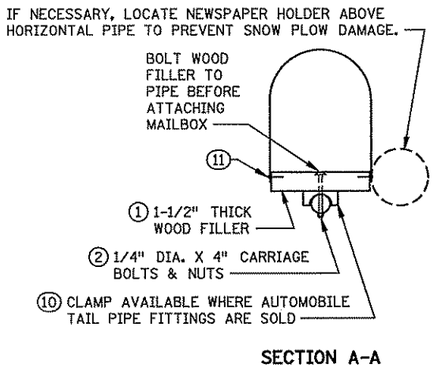
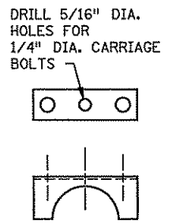
TYPICAL SECTIONS
CSAH 52/116 RECONSTRUCTION

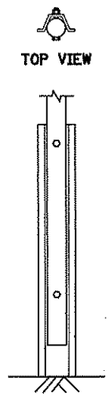
SHEET 2.06 OF 294



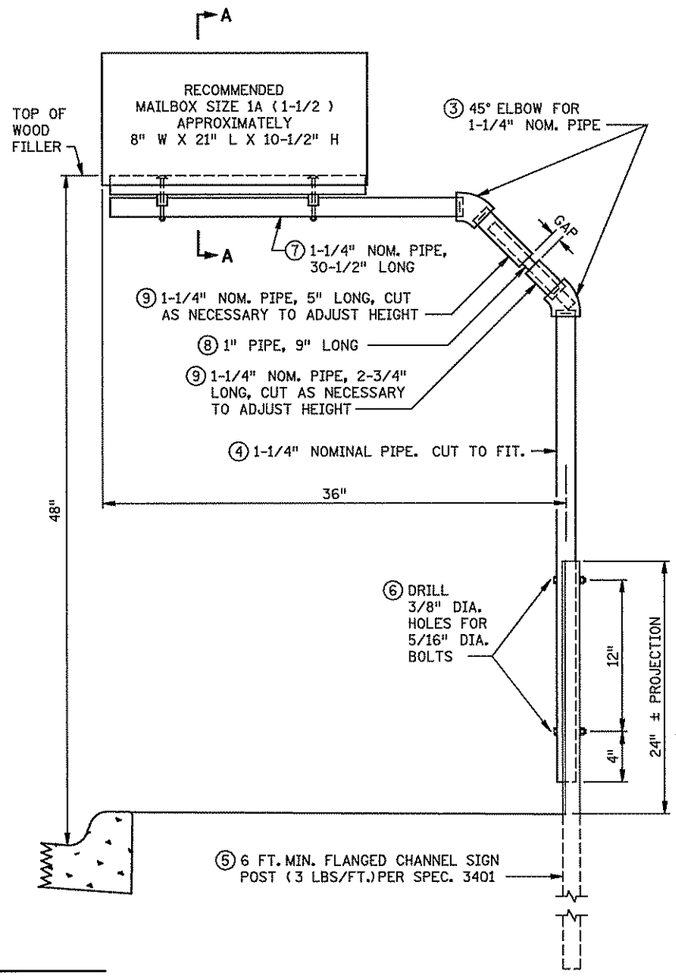
SECTION A-A



TAIL PIPE CLAMP DETAIL



PIPE/POST CONNECTION



URBAN MAILBOX SUPPORT

STEEL PIPE WITH FITTINGS AND STEEL FENCE POST

GENERAL NOTES

- ALL PIPE AND PIPE FITTINGS SHALL CONFORM TO SPEC 3362.
- ALL FASTENERS SHALL CONFORM TO SPEC 3391.
- ALL MATERIALS SHALL BE GALVANIZED PER SPEC 3392.
- 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 POSTMASTER/MAILCARRIER WILL BE ALLOWED 48 HOURS TO REVIEW AND MODIFY THE STAKED LOCATIONS PRIOR TO FINAL INSTALLATION.
- OTHER MN/DOT APPROVED MAILBOX SUPPORTS MAY BE USED. THESE INCLUDE THE DESIGNS DEVELOPED BY ANOKA COUNTY, THE METRO MN/DOT DISTRICT, FRIEND INNOVATIONS AND MINNCOR INDUSTRIES.
- DESIGN MODIFICATIONS TO PREVIOUSLY APPROVED SUPPORTS SHALL BE DOCUMENTED AND SENT TO THE DESIGN STANDARDS ENGINEER, OFFICE OF TECHNICAL SUPPORT.
- THE MAILBOX TO BE 8 INCHES TO 12 INCHES OUTSIDE THE EDGE OF SHOULDER OR 6 INCHES TO 12 INCHES FROM FACE OF CURB.
- NO MORE THAN THREE MAILBOXES SPACED 30 INCHES CENTER TO CENTER ARE TO BE USED IN ONE LOCATION.
- BOX MUST BE LOCATED SO CARRIER CAN SERVE WITHOUT LEAVING VEHICLE.
- THE CONTRACTOR SHALL INSTALL SALVAGED MAILBOXES ON MAILBOX SUPPORTS, WHICH SHALL BE INCIDENTAL TO MAILBOX SUPPORTS.
- REMOVAL AND DISPOSAL OF SUPPORT POST IS INCIDENTAL TO SALVAGE MAILBOX.

LIST OF MATERIALS FOR CONTRACTORS

ITEM NO.	NUMBER REQUIRED	DESCRIPTION
1	1	1-1/2" THICK WOOD FILLER CUT TO FIT SNUG UNDER MAIL BOX
2	2	1/4" DIA. X 4" LONG CARRIAGE BOLTS & NUTS
3	2	45° ELBOW FOR 1-1/4" NOMINAL PIPE
4	1	1-1/4" NOMINAL PIPE, CUT TO FIT
5	1	6 FT. MIN. SIGN POST (3 LBS./FT.)
6	2	5/16" DIA. BOLT, NUT & LOCKWASHER
7	1	1-1/4" NOMINAL PIPE, 30-1/2" LONG
8	1	1" PIPE, 9" LONG
9	1	1-1/4" NOMINAL PIPE, 5" LONG
	1	1-1/4" NOMINAL PIPE, 2-3/4" LONG
10	2	1-1/2" TAIL PIPE CLAMP
11	9	NO. 10 X 1" SHEET METAL SCREWS

MAILBOXES - TAB J

STATION	OFFSET	SALVAGE MAIL BOX		MAIL BOX SUPPORT	
		EACH		EACH	
		(A)	(F)	(A)	(F)
125TH LANE NE	LT	1		1	
NB52 352+45	LT	1		1	
NB52 352+87	RT	1		1	
NB52 355+04	RT	1		1	
NB52 360+28	RT	1		1	
NB52 361+72	RT	1		1	
NB52 362+04	RT	1		1	
NB52 363+54	RT	1		1	
NB52 363+59	LT	1		1	
NB52 365+73	LT	1		1	
NB52 374+33	LT	1		1	
NB52 374+88	LT	1		1	
NB52 376+30	LT	1		1	
NB52 377+38	LT	1		1	
NB52 378+48	LT	1		1	
130TH LANE NE	LT	1		1	
NB52 387+45	LT	1		1	
NB52 407+32	LT	1		1	
NB52 409+24	LT	1		1	
NB52 411+74	RT	1		1	
NB52 418+85	RT	1		1	
NB52 423+86	RT	1		1	
NB52 433+51	RT	1		1	
NB52 435+69	LT	1		1	
NB52 436+19	RT	1		1	
NB52 438+12	RT	1		1	
NB52 440+90	RT	1		1	
NB52 442+46	LT	1		1	
NB52 443+50	RT	1		1	
NB52 448+39	RT	1		1	
NB52 450+53	RT	1		1	
NB52 451+92	RT	1		1	
EB116 13+31	RT		1		1
EB116 22+16	LT		1		1
EB116 24+42	LT		1		1
EB116 24+64	RT		1		1
EB116 26+10	LT		1		1
EB116 27+36	RT		1		1
EB116 29+19	LT		1		1
EB116 29+66	RT		1		1
EB116 32+47	LT		1		1
EB116 34+40	LT		1		1
EB116 36+45	LT		1		1
EB116 54+96	LT		1		1
EB116 65+56	LT		1		1
EB116 69+16	LT		1		1
EB116 69+73	RT		1		1
EB116 70+96	LT		1		1
TOTALS		32	16	32	16

SUMMARY		
ANOKA COUNTY S.P. 02-652-05 (CSAH 52)	32	32
ANOKA COUNTY S.P. 02-716-09 (CSAH 116)	16	16
PROJECT TOTAL	48	48

COST PARTICIPATION NOTES:

(A) 100% ANOKA COUNTY S.P. 02-652-05 (CSAH 52) QUANTITY.

(F) 100% ANOKA COUNTY S.P. 02-716-09 (CSAH 116) QUANTITY.

NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\q-f\AnokaCty\13867000\hwy-brdg\hwy\pln-sht\cD265205_dd2.dgn 7/30/2009

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: Ryan P. Maloney

PRINTED NAME: RYAN P. MALONEY

DATE: 7/30/2009 LIC. NO. 44193

DRAWN BY SFH DATE 7/30/2009

DESIGN BY RPM DATE 7/30/2009

CHECKED BY TAC DATE 7/30/2009

S.P. 02-652-05
S.P. 02-716-09
S.P. 106-020-28
S.P. 197-124-001

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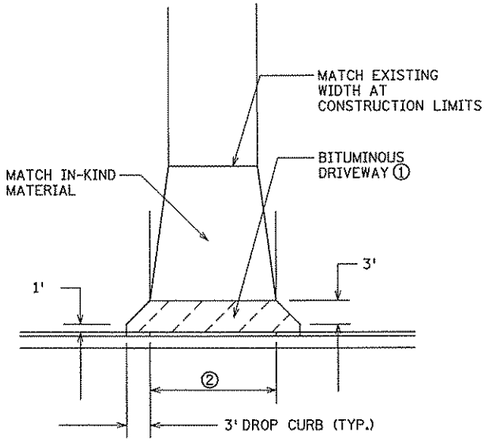
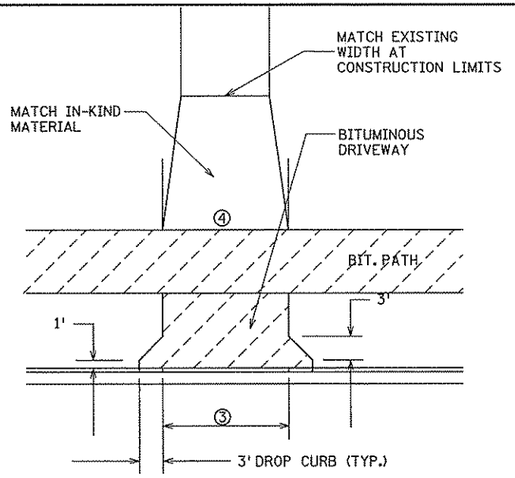
ANOKA COUNTY

MAILBOX SUPPORT DETAILS
CSAH 52/116 RECONSTRUCTION

SHEET 2.07 OF 294



URBAN DRIVEWAY
WITHOUT BITUMINOUS PATH



EXISTING BITUMINOUS OR GRAVEL
URBAN DRIVEWAY
WITH BITUMINOUS PATH

GENERAL NOTES:

- EXACT WIDTH OF ENTRANCE SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER.
- SEE TYPICAL SECTIONS INSETS FOR SURFACING.
- SEE CROSS SECTIONS FOR SLOPE INFORMATION. SLOPES MAY VARY TO MATCH EXISTING CONDITIONS.

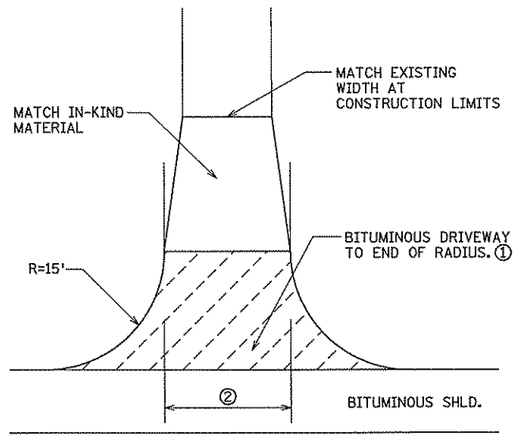
SPECIFIC NOTES:

① FOR EXISTING CONCRETE DRIVEWAYS, REPLACE IN KIND.

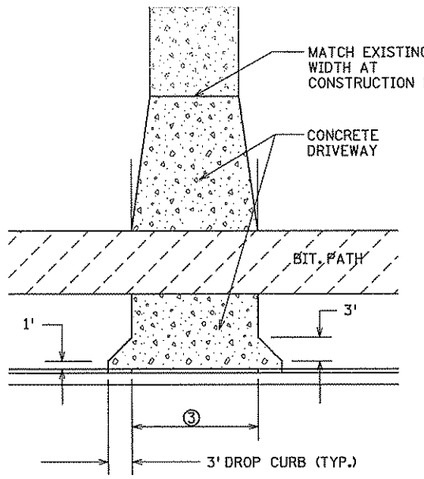
② APRON WIDTH

③ APRON WIDTH TO EDGE OF PATH.

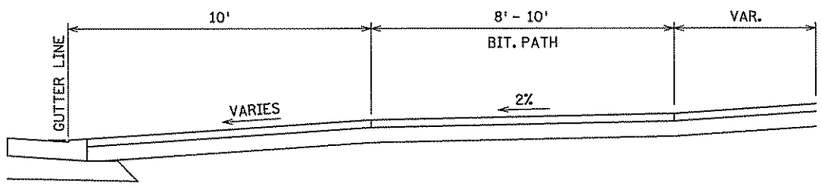
④ FOR AGGREGATE DRIVEWAYS, EXTEND BIT. 5' BEHIND PATH.



RURAL DRIVEWAY



EXISTING CONCRETE URBAN DRIVEWAY
WITH BITUMINOUS PATH



TYPICAL DRIVEWAY PROFILE

DRIVEWAYS - TAB K

APRON CENTERLINE STATION	OFFSET	DRIVEWAY TYPE	APRON WIDTH	AGGREGATE SURFACING CLASS 2 (1) (3)		AGGREGATE BASE CLASS 5 (1) (3)		4" CONCRETE DRIVEWAY PAVEMENT (1)		6" CONCRETE DRIVEWAY PAVEMENT (1)		TYPE LV4 WEAR (LVWE45030B)	
			FT	TON		TON		SQ YD		SQ YD		TON	
				(A)	(F)	(A)	(F)	(A)	(F)	(A)	(F)	(A)	(F)
NB52 351+86	RT	CONC	16			8		35					
NB52 352+66	LT	BIT	16			41						23	
NB52 354+01	LT	AGG	16	16		4						2	
NB52 359+64	RT	BIT	16			6						3	
NB52 360+16	RT	CONC	16			5		22					
NB52 361+61	RT	BIT	16			6						4	
NB52 361+90	RT	CONC	16			8		38					
NB52 363+41	RT	BIT	16			4						2	
NB52 363+72	LT	CONC	16			12		53					
NB52 365+86	LT	BIT	16			13						7	
NB52 374+45	LT	BIT	16			26						14	
NB52 375+00	LT	CONC	16			20		91					
NB52 376+44	LT	BIT	16			7						4	
NB52 377+51	LT	CONC	16			24		106					
NB52 378+62	LT	CONC	16			13		60					
130TH LANE NE	LT	CONC	16			42		187					
NB52 387+58	LT	AGG	16	66		6						3	
NB52 407+45	LT	AGG	16	6		6						3	
NB52 409+37	LT	BIT	16			15						8	
NB52 411+59	RT	AGG	16	21		2						1	
NB52 418+72	RT	AGG	16	16		2						1	
NB52 423+68	RT	AGG	24	30		3						2	
NB52 433+36	RT	AGG	20	3		10						6	
NB52 435+82	LT	CONC	16			6		28					
NB52 436+05	RT	BIT	16			11						6	
NB52 437+98	RT	AGG	16	11		2						1	
NB52 440+76	RT	CONC	16			11		50					
NB52 442+63	LT	CONC	24			25		113					
NB52 443+40	RT	CONC	16			7		32					
NB52 448+13	RT	CONC	24			20		88					
NB52 450+29	RT	BIT	10			10						5	
NB52 451+69	RT	BIT	12			6						4	
EB116 13+10	RT	BIT	32				22						13
EB116 22+35	LT	BIT	32				20						11
EB116 24+51	RT	CONC	16				9		39				
EB116 24+55	LT	CONC	16				12		56				
EB116 26+23	LT	BIT	16				12						7
EB116 27+23	RT	BIT	16				11						6
(4) EB116 28+64	RT	BIT	16				2						1
EB116 29+32	LT	AGG	16		22		2						1
EB116 29+53	RT	BIT	16				10						5
EB116 32+61	LT	CONC	16				10		44				
EB116 34+54	LT	AGG	16		10		2						1
EB116 36+58	LT	AGG	16		9		2						1
EB116 44+39	LT	AGG	16		22		2						1
EB116 55+17	LT	CONC	32				16				71		
EB116 60+17	LT	AGG	16		18		2						1
EB116 65+74	LT	AGG	24		16		9						5
EB116 69+31	LT	BIT	20				26						15
EB116 69+60	RT	CONC	16				16		72				
EB116 71+11	LT	CONC	10				6		27				
TOTALS				169	97	381	191	903	238		71	99	68

SUMMARY					
ANOKA COUNTY S.P. 02-652-05 (CSAH 52)	169	381	903		99
ANOKA COUNTY S.P. 02-716-09 (CSAH 116)	97	191	238	71	68
PROJECT TOTAL	266	572	1141	71	167

BASIS OF QUANTITIES:

(1) BITUMINOUS WALK AREA EXCLUDED FROM MATERIAL QUANTITY.
(2) SPEC. 2350 BITUMINOUS MIXTURES COMPUTED AT 110 POUNDS / SQ YD / INCH
(3) AGGREGATE COMPUTED AT 2 TONS / CU YD.
(4) CONSTRUCT BIT. APRON TO TRAIL ONLY.

COST PARTICIPATION NOTES:

(A) 100% ANOKA COUNTY S.P. 02-652-05 (CSAH 52) QUANTITY.
(F) 100% ANOKA COUNTY S.P. 02-716-09 (CSAH 116) QUANTITY.

NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\a-f\AnokaCity\13867000\hwy-brdg\hwy\pln-sht\c0265205_ddl.dgn 11/3/2009

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:
PRINTED NAME: RYAN P. MALONEY
DATE: 11/3/2009 LIC. NO. 44193

DRAWN BY SFH DATE 11/3/2009
DESIGN BY RPM DATE 11/3/2009
CHECKED BY TAC DATE 11/3/2009

S.P. 02-652-05
S.P. 02-716-09
S.P. 106-020-28
S.P. 197-124-001

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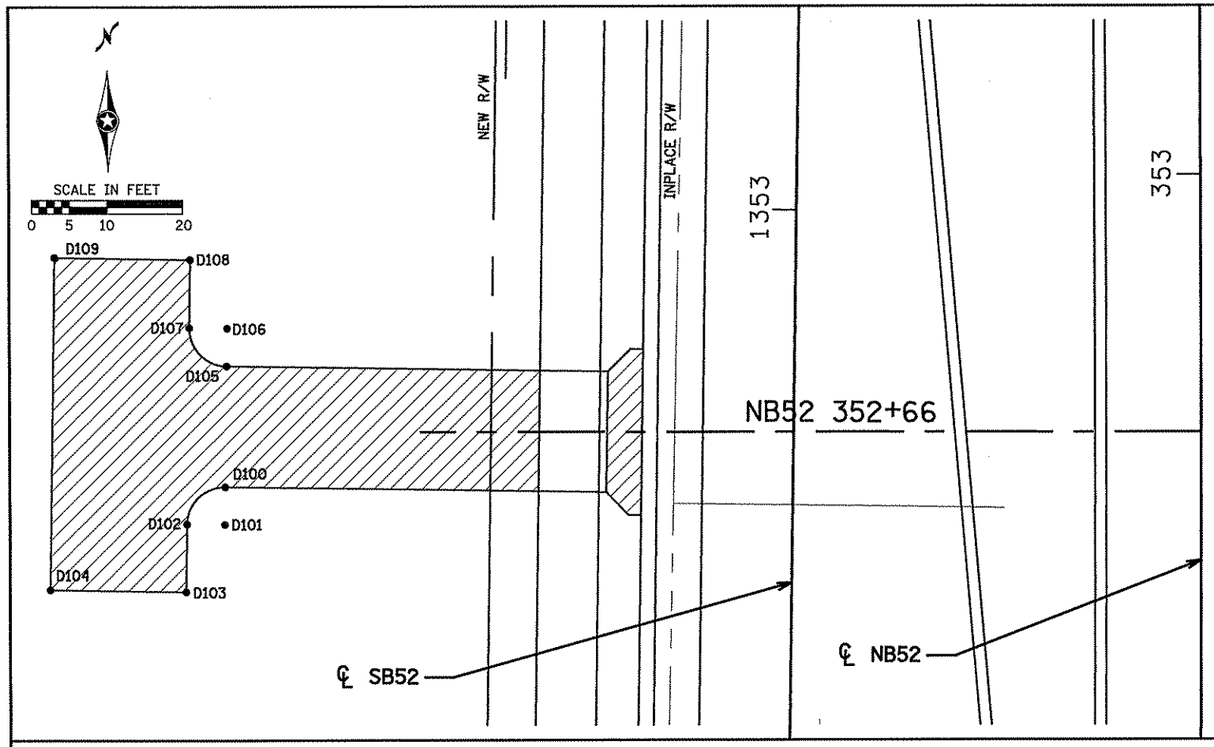
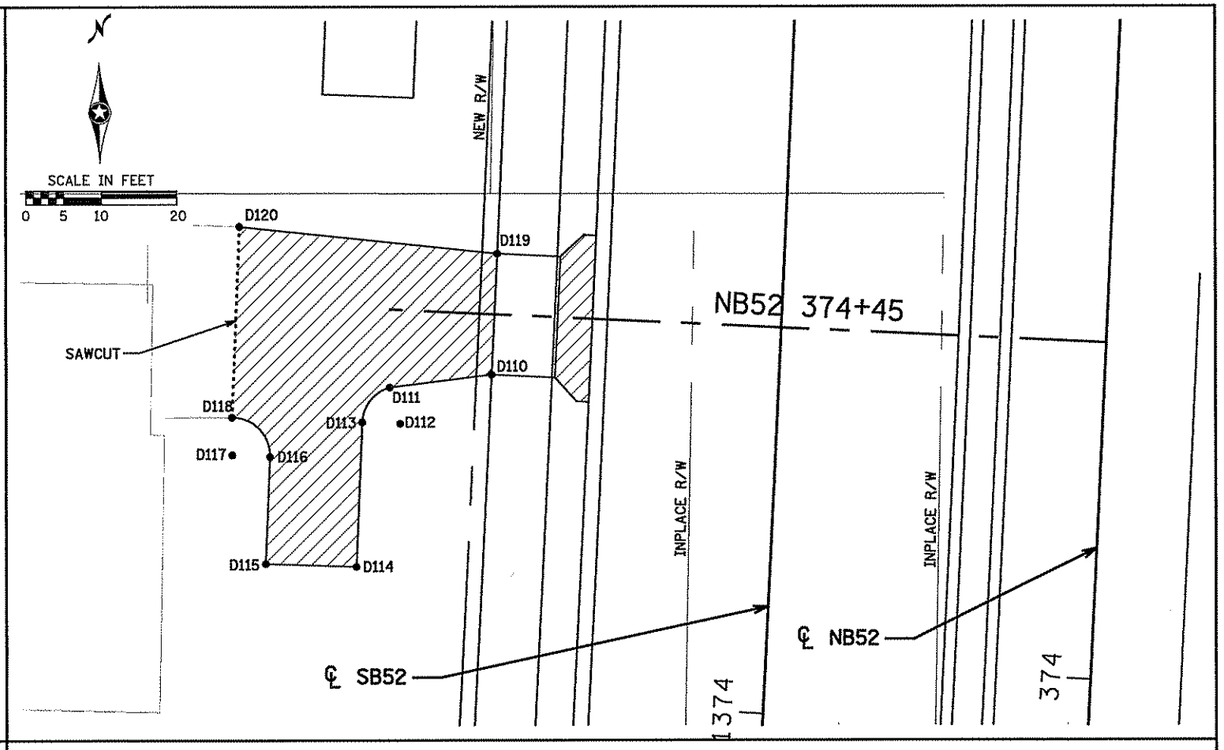
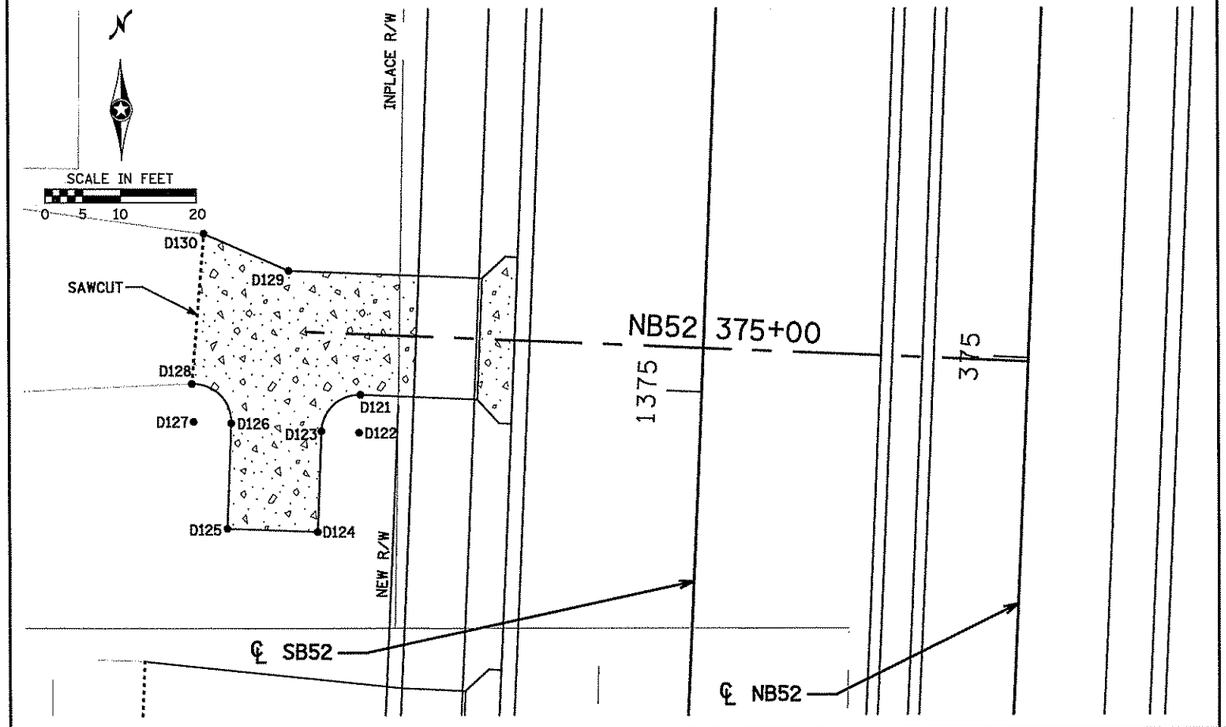
ANOKA COUNTY
DRIVEWAY DETAILS
CSAH 52/116 RECONSTRUCTION

SHEET 2.08 OF 294







DRIVEWAY POINTS		
POINT	X	Y
NB52 352+66		
D100	512102.05	159668.56
D101	512102.01	159663.56
D102	512097.01	159663.60
D103	512096.94	159654.60
D104	512078.94	159654.74
D105	512102.17	159684.56
D106	512102.21	159689.56
D107	512097.21	159689.60
D108	512097.28	159698.59
D109	512079.28	159698.72

DRIVEWAY POINTS		
POINT	X	Y
NB52 374+45		
D110	512162.89	161849.35
D111	512149.43	161847.59
D112	512150.83	161842.79
D113	512145.83	161842.96
D114	512145.18	161823.77
D115	512133.19	161824.10
D116	512133.66	161838.31
D117	512128.67	161838.47
D118	512128.61	161843.47
D119	512163.53	161865.33
D120	512129.43	161868.68

DRIVEWAY POINTS		
POINT	X	Y
NB52 375+00		
D121	512137.95	161903.99
D122	512157.78	161898.99
D123	512152.78	161899.16
D124	512152.33	161885.89
D125	512140.34	161886.27
D126	512140.81	161900.17
D127	512135.81	161900.34
D128	512135.56	161905.34
D129	512148.38	161920.33
D130	512137.07	161925.20

LEGEND

- BITUMINOUS PAVEMENT
- CONCRETE PAVEMENT
- GRAVEL DRIVEWAY

NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\a-f\AnokaCty\13867000\hwy-brdg\hwy\pln-sht\c0265205_cdm.dgn 7/30/2009

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PRINTED NAME: RYAN P. MALONEY

DATE: 7/30/2009 LIC. NO. 44193

DRAWN BY SFH DATE 7/30/2009

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CHECKED BY TAC DATE 7/30/2009

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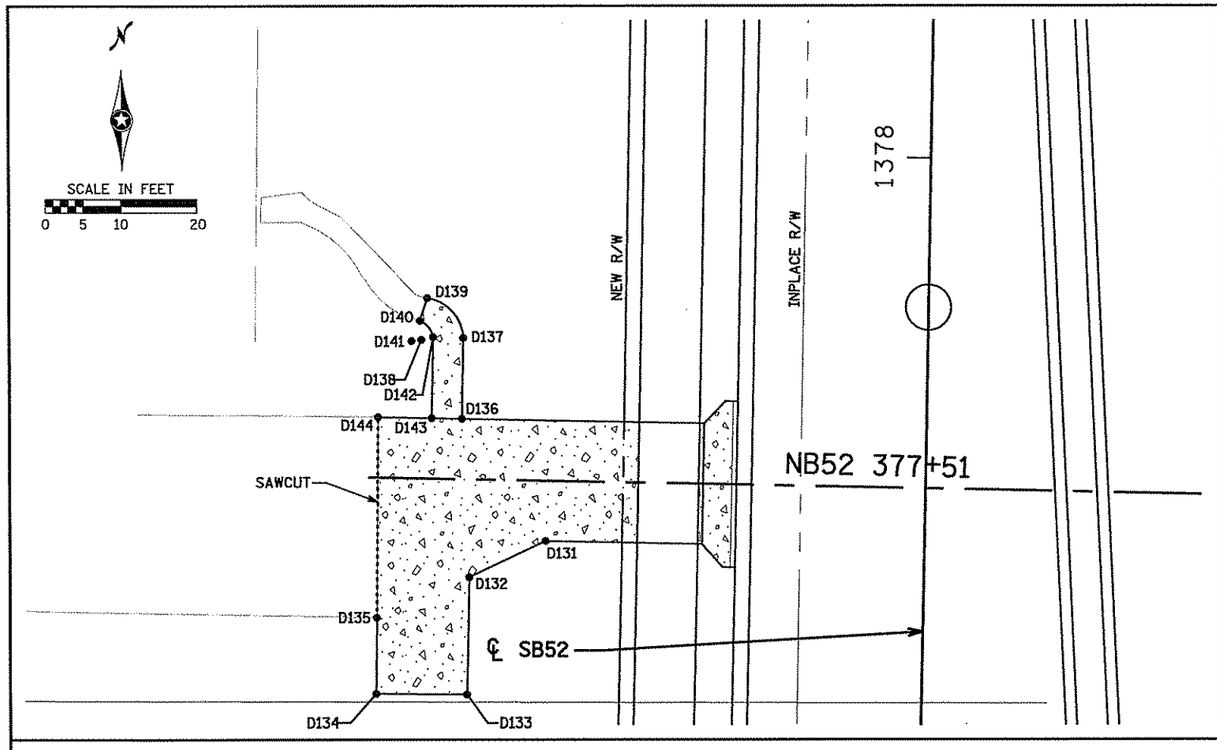
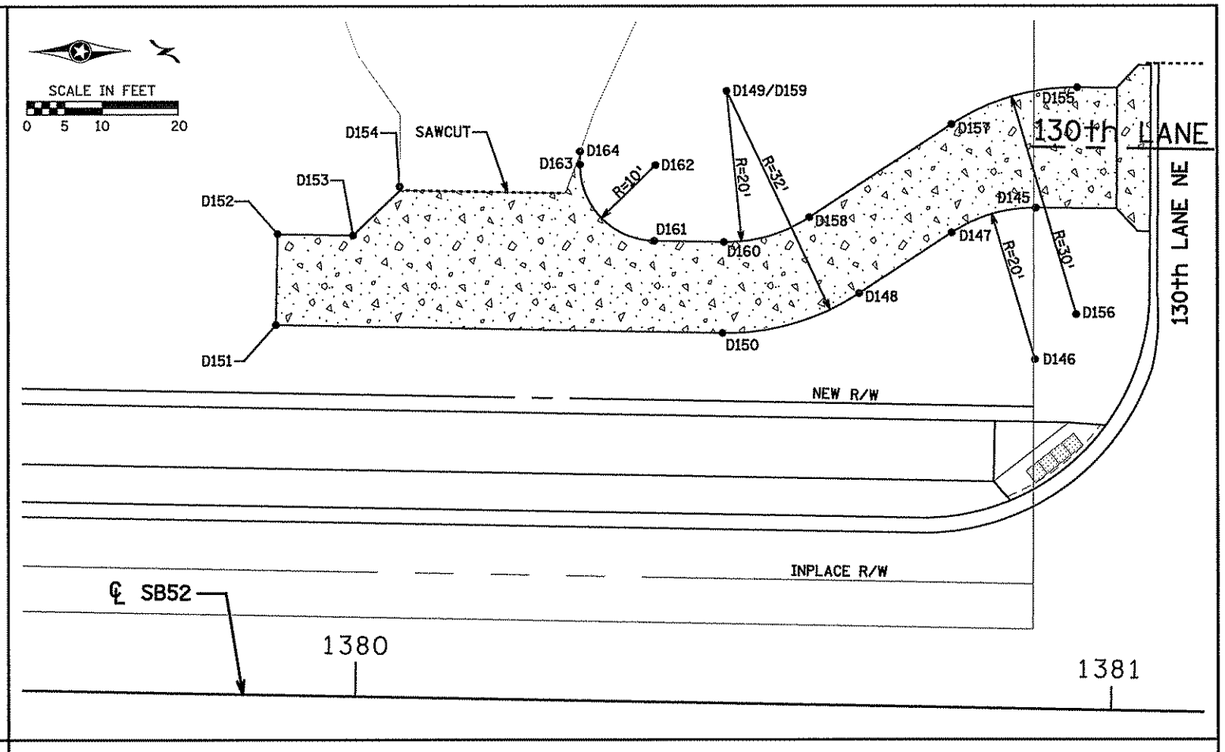
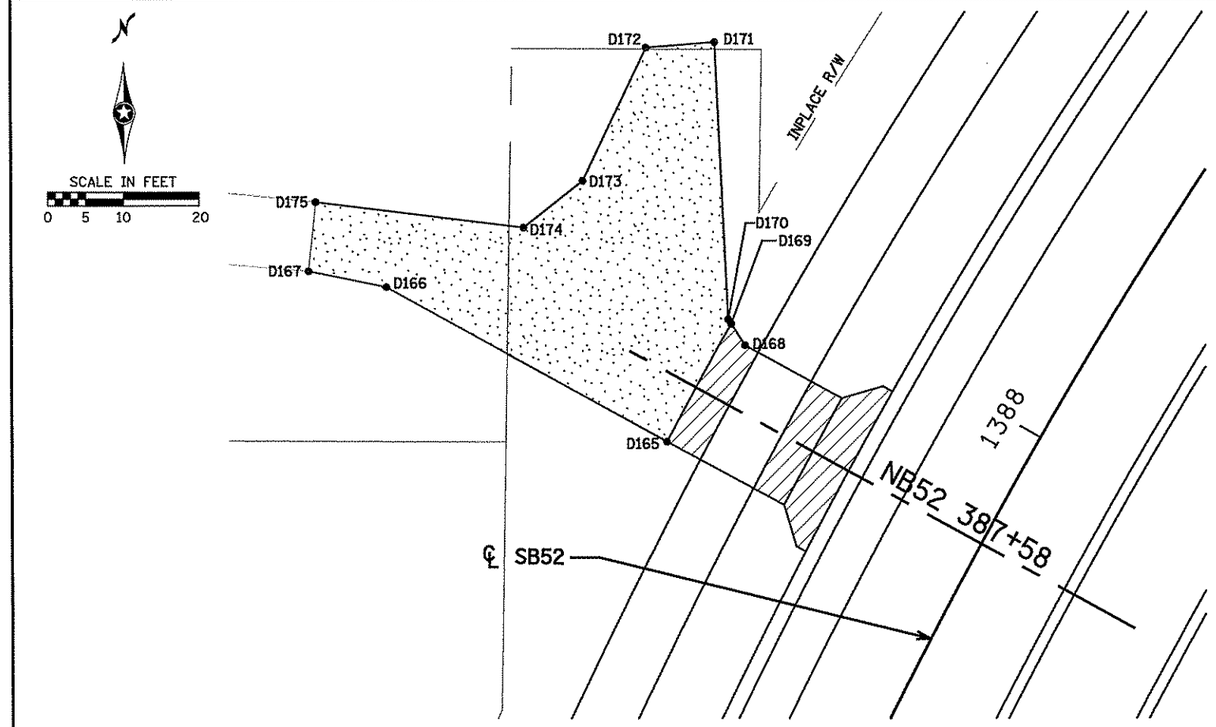
DRIVEWAY DETAILS
CSAH 52/116 RECONSTRUCTION

SHEET 2.09 OF 294







DRIVEWAY POINTS		
POINT	X	Y
NB52 377+51		
D131	512159.14	162153.57
D132	512149.08	162148.71
D133	512148.86	162133.19
D134	512136.86	162133.19
D135	512136.89	162143.25
D136	512148.02	162169.70
D137	512148.15	162180.41
D138	512142.61	162180.10
D139	512143.38	162185.61
D140	512142.41	162182.61
D141	512141.31	162179.93
D142	512144.16	162180.46
D143	512144.02	162169.75
D144	512136.93	162169.84

DRIVEWAY POINTS		
POINT	X	Y
130th LANE NE		
D145	512146.77	162494.15
D146	512166.77	162494.17
D147	512150.12	162483.09
D148	512158.22	162470.93
D149	512131.58	162453.19
D150	512163.58	162452.84
D151	512162.92	162393.74
D152	512150.92	162393.87
D153	512151.03	162403.91
D154	512145.10	162409.98
D155	512130.77	162499.56
D156	512160.77	162499.58
D157	512135.79	162482.95
D158	512148..23	162464.28
D159	512131.58	162453.19
D160	512151.58	162452.97
D161	512151.47	162443.70
D162	512141.48	162443.81
D163	512141.46	162433.81
D164	512139.74	162433.81

DRIVEWAY POINTS		
POINT	X	Y
NB52 387+58		
D165	512258.57	163187.80
D166	512221.39	163207.96
D167	512211.09	163210.00
D168	512268.86	163200.59
D169	512267.00	163203.42
D170	512266.62	163204.00
D171	512264.63	163240.62
D172	512255.55	163239.82
D173	512247.30	163222.22
D174	512239.55	163215.98
D175	512211.97	163219.16

LEGEND

- BITUMINOUS PAVEMENT
- CONCRETE PAVEMENT
- GRAVEL DRIVEWAY

NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\o-f\AnokaCty\13867000\hwy-brdg\hwy\pln-sht\c0265205_cdn.dgn 7/30/2009

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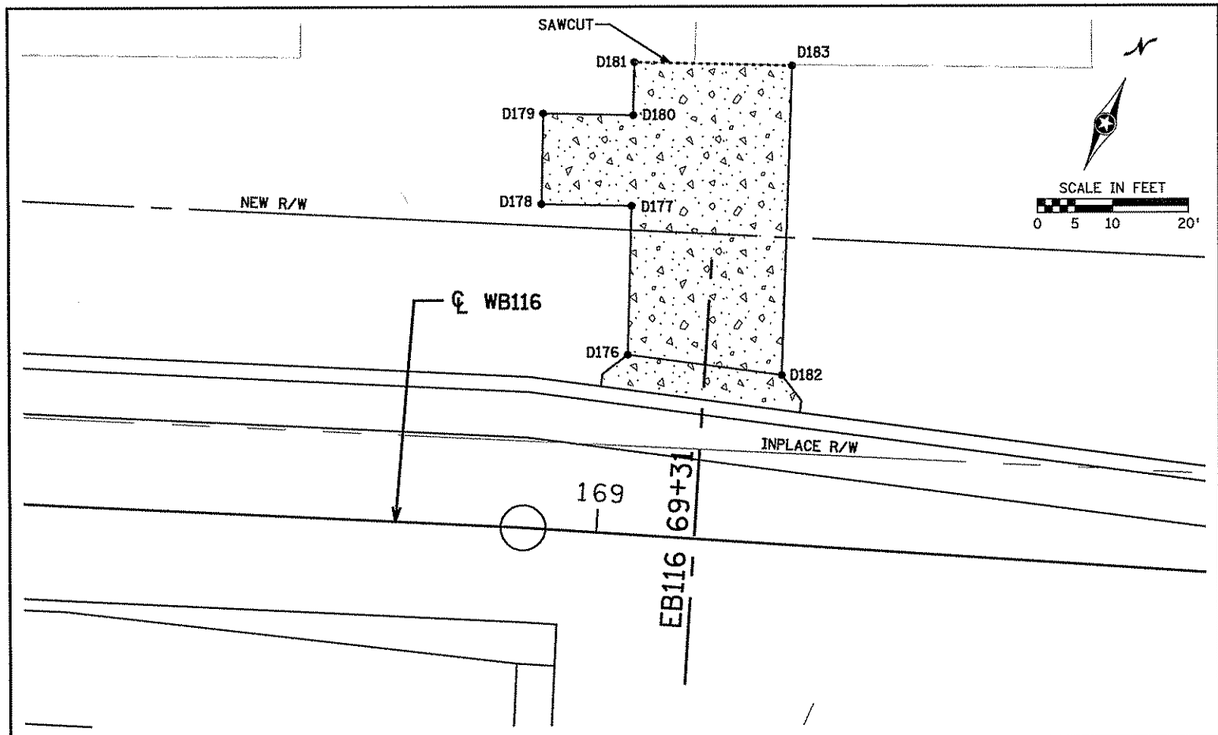
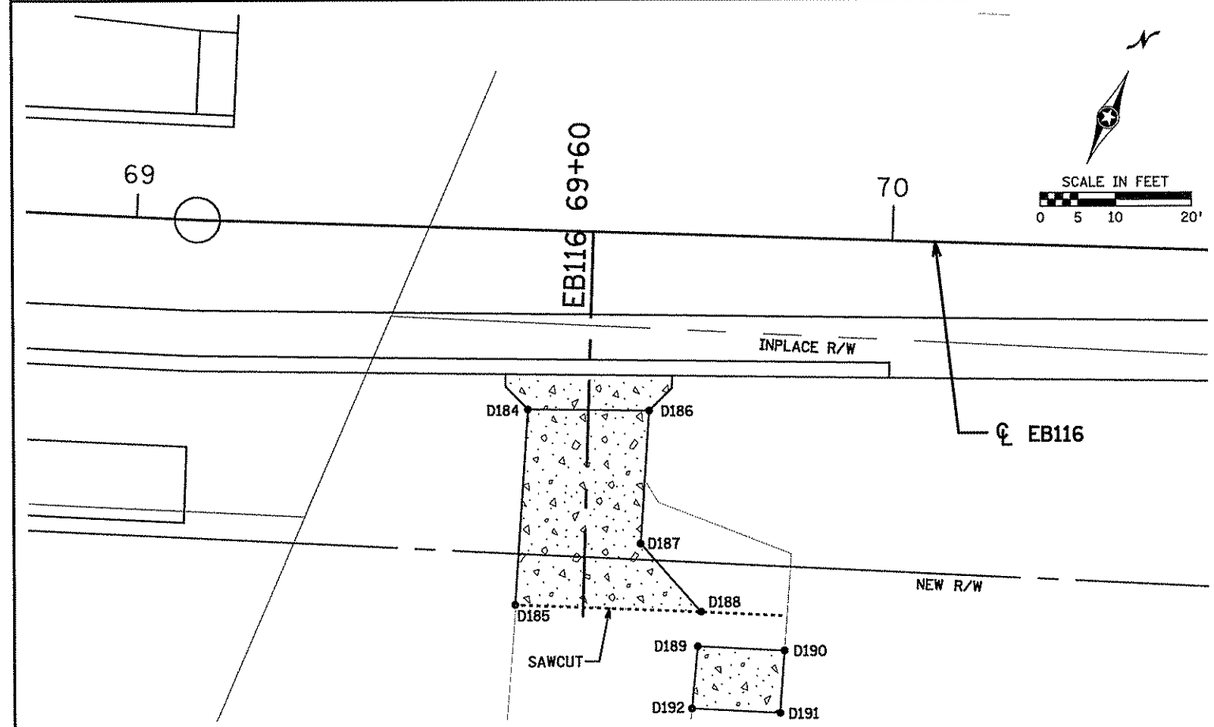
ANOKA COUNTY
DRIVEWAY DETAILS
CSAH 52/116 RECONSTRUCTION

SHEET 2.10 OF 294





DRIVEWAY POINTS		
POINT	X	Y
EB116 69+31		
D176	514094.99	167092.05
D177	514087.05	167110.02
D178	514076.21	167105.16
D179	514071.30	167116.11
D180	514082.14	167120.97
D181	514079.25	167127.41
D182	514114.53	167098.31
D183	514098.30	167135.91

DRIVEWAY POINTS		
POINT	X	Y
EB116 69+60		
D184	514159.60	167021.98
D185	514169.02	166997.95
D186	514174.13	167028.67
D187	514180.56	167012.32
D188	514191.61	167007.61
D189	514193.17	167003.29
D190	514203.82	167007.72
D191	514206.82	167000.01
D192	514195.98	166995.50

LEGEND

- BITUMINOUS PAVEMENT
- CONCRETE PAVEMENT
- GRAVEL DRIVEWAY

NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\a-f\AnokaCty\13867000\hwy-brdg\hwy\pln-sht\c0265205_cdo.dgn 7/30/2009

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:

PRINTED NAME: RYAN P. MALONEY

DATE: 7/30/2009 LIC. NO. 44193

DRAWN BY SFH DATE 7/30/2009

DESIGN BY RPM DATE 7/30/2009

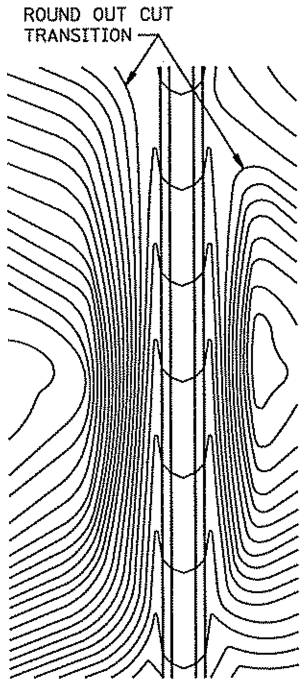
CHECKED BY TAC DATE 7/30/2009

S.P. 02-652-05
S.P. 02-716-09
S.P. 106-020-28
S.P. 197-124-001

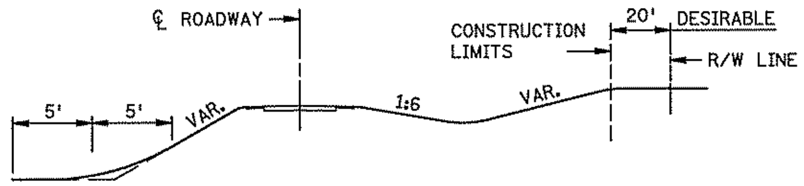
TKDA
ENGINEERS·ARCHITECTS·PLANNERS

ANOKA COUNTY
DRIVEWAY DETAILS
CSAH 52/116 RECONSTRUCTION

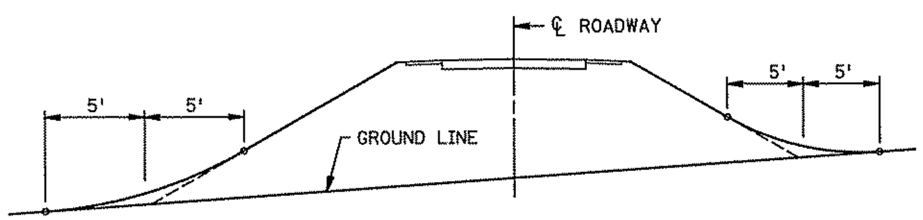
SHEET 2.11 OF 294



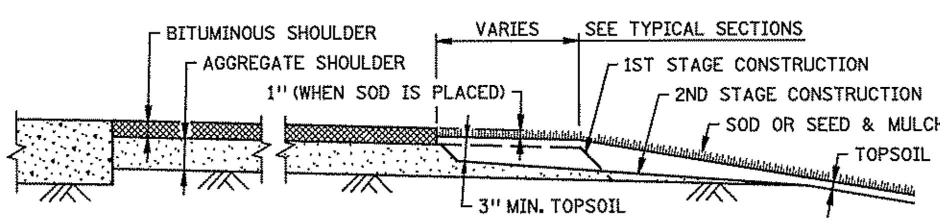
CONTOURING ROAD CUTS



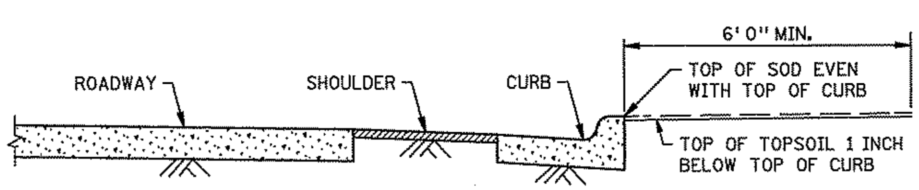
ROUNDING SHOULDERS AND BACKSLOPES



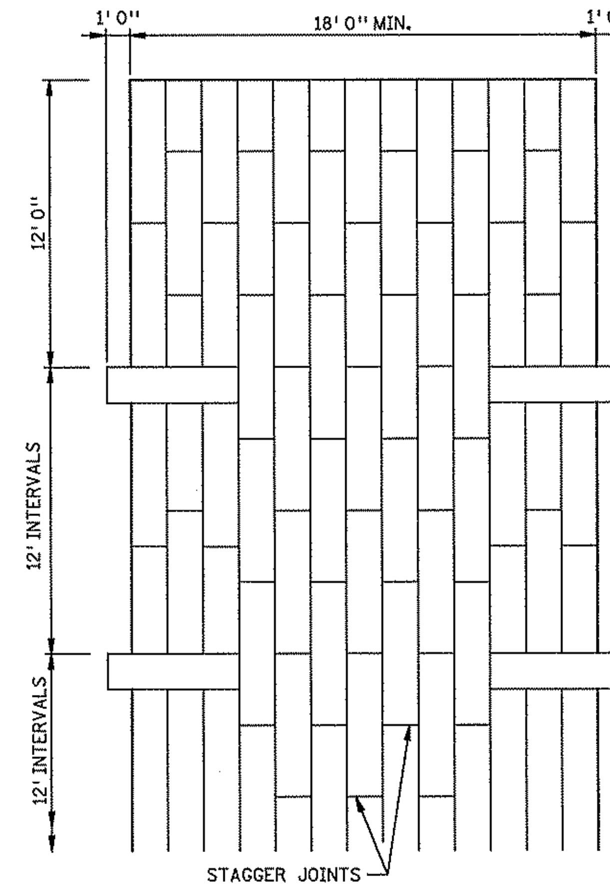
SHAPING FOR DRAINAGE ALONG THE TOE OF FILL SLOPES



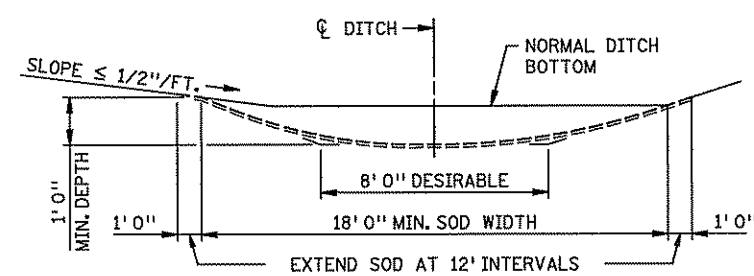
SHAPING AND TOPSOILING INSLOPES



SHAPING ADJACENT TO CURBS WHEN SOD IS PLACED

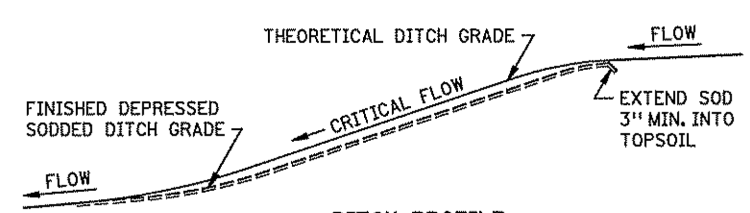


PLAN VIEW



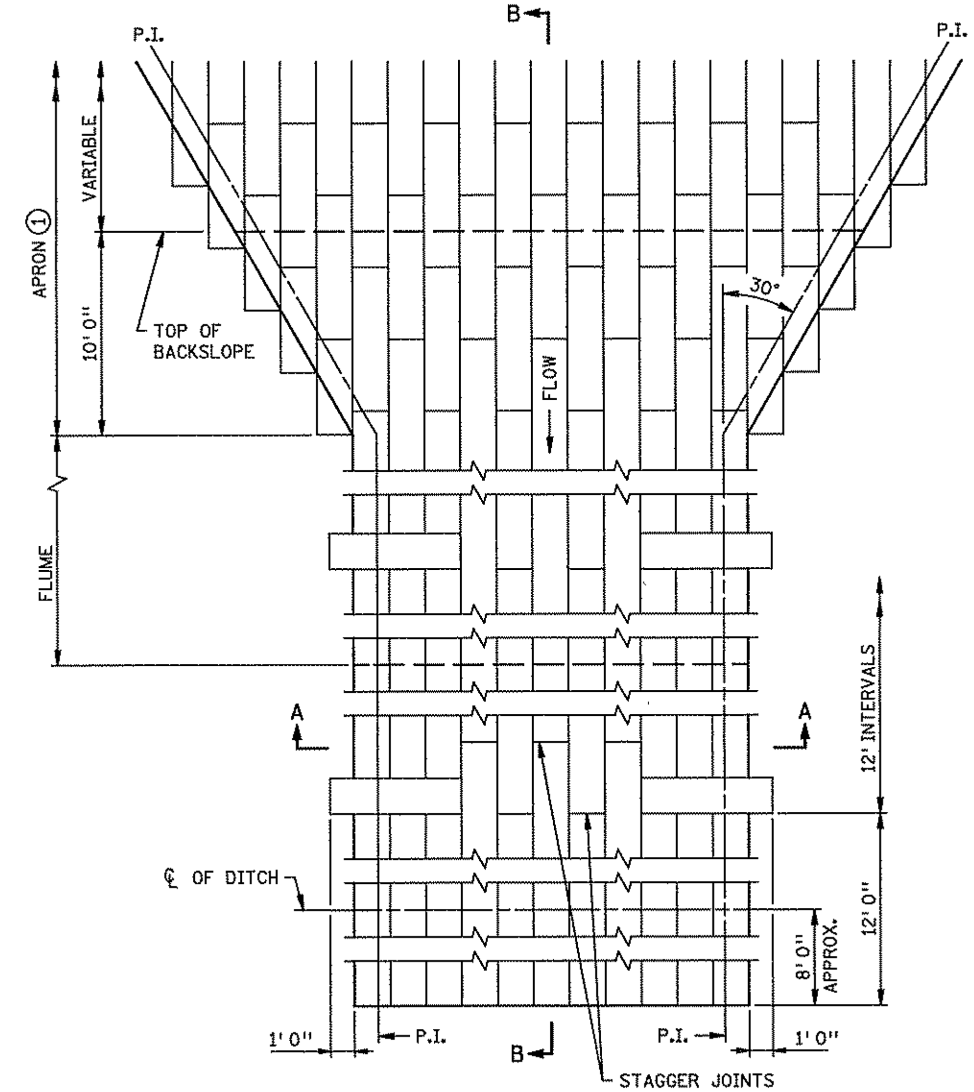
SODDED DITCH CROSS SECTION

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

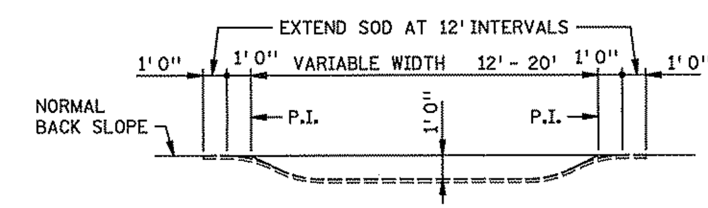


DITCH PROFILE

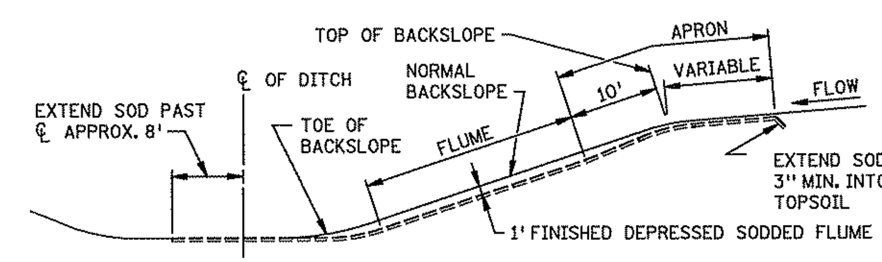
SODDED DITCH DETAILS



PLAN VIEW



SECTION A-A



SECTION B-B

SODDED FLUME DETAILS

NOTES:

SEE SPEC. 2575.3 FOR ADDITIONAL INFORMATION.

① CONSTRUCT TAPER AS DIRECTED BY THE ENGINEER.

STANDARD SHEET NO. 5-297.404	TITLE: PERMANENT EROSION CONTROL ALONG ROADWAYS, DITCHES AND FLUMES
STANDARD APPROVED: NOVEMBER 20, 2002	
S.P. 02-652-05, S.P. 02-716-09, S.P. 106-020-28, S.P. 197-124-001	SHEET NO. 2.12 OF 294 SHEETS

DATE: 7/30/2009 TIME: 11:31:47 AM
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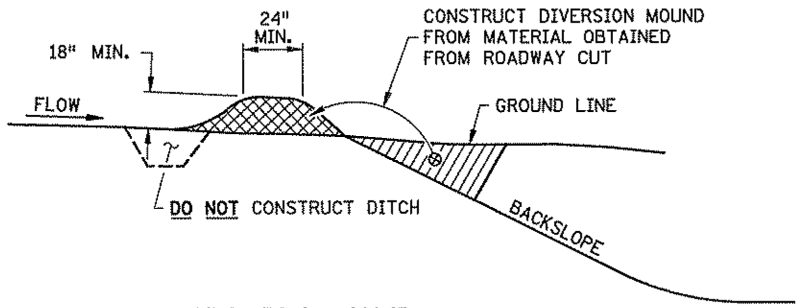
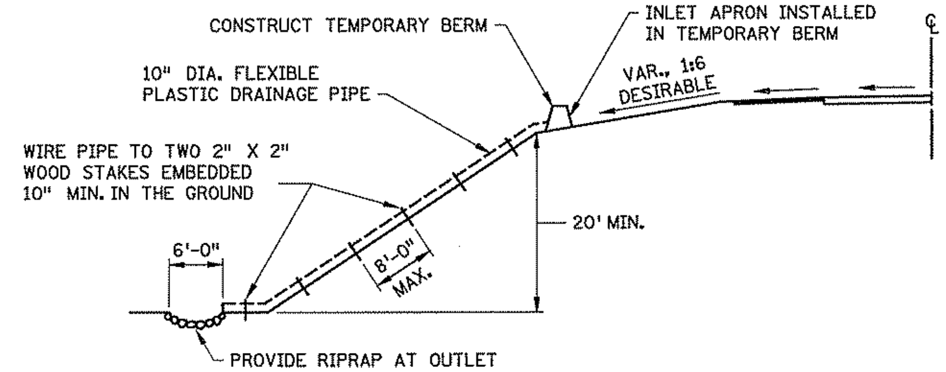


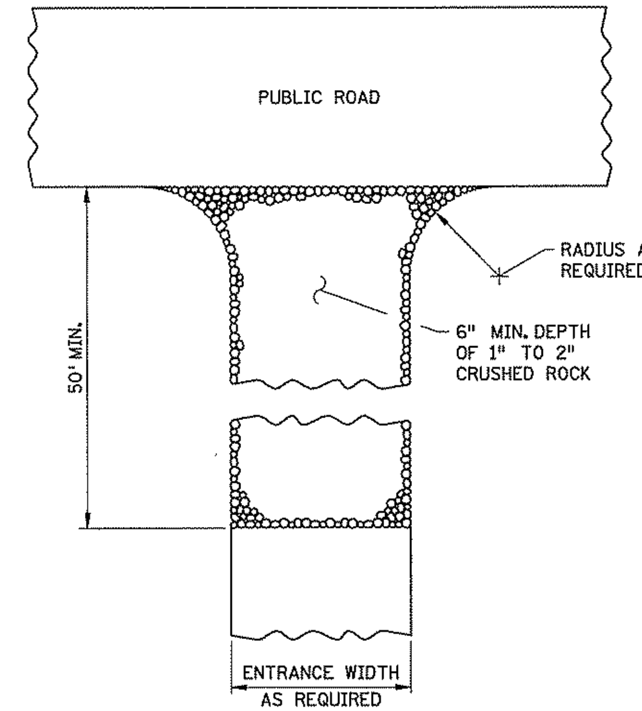
DIVERSION MOUND

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

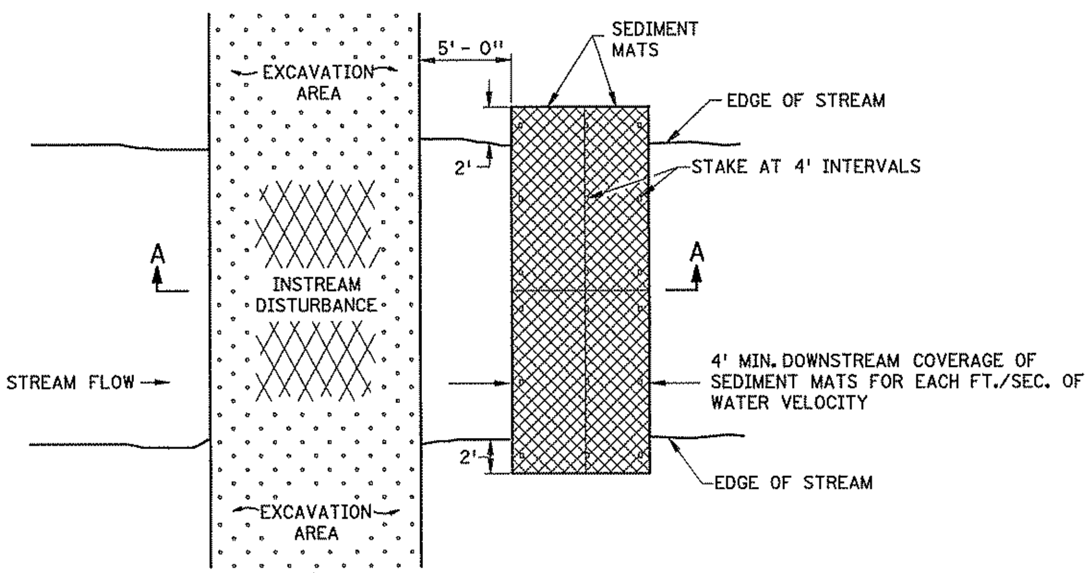


TEMPORARY DOWN DRAIN ON FILL SLOPE

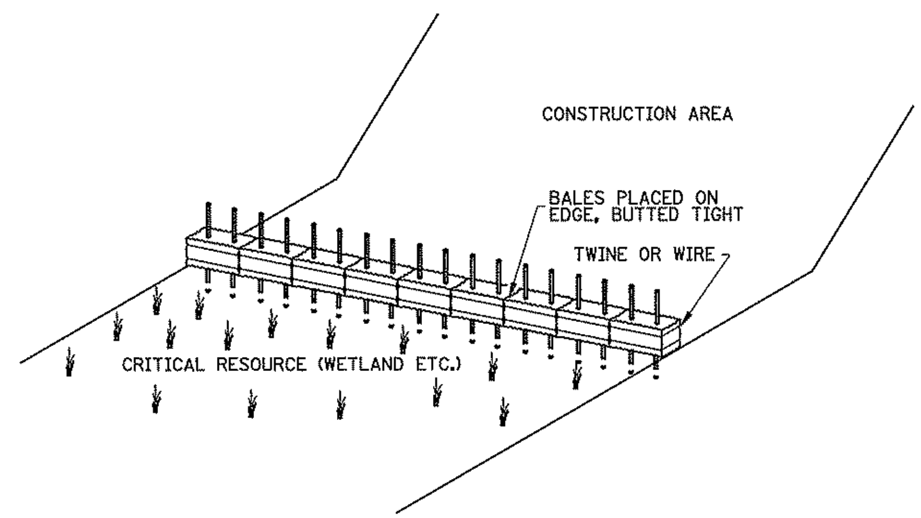
DESIGN GUIDELINES:
STORM FREQUENCY: 2 YEAR - 24 HOUR
MAXIMUM DRAINAGE AREA: 3 ACRES



ROCK CONSTRUCTION ENTRANCE ①

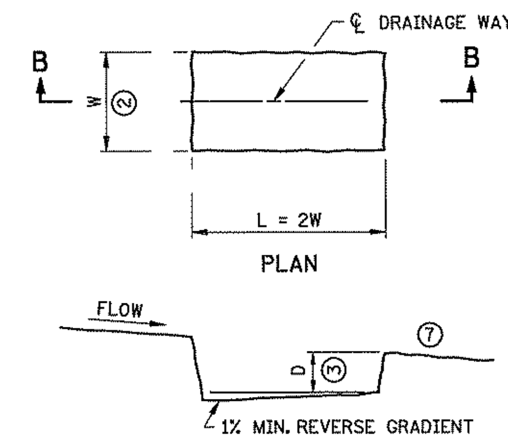


PLAN VIEW

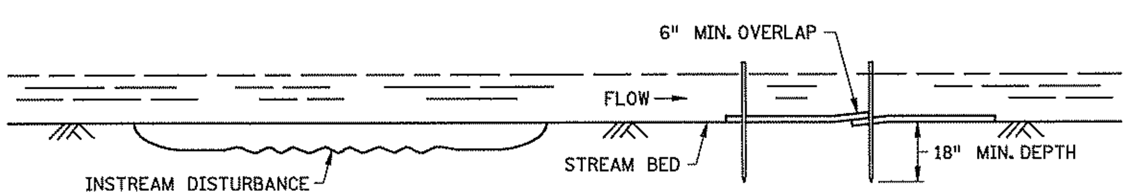


BALE BARRIERS

TO BE USED FOR CRITICAL PERIMETER CONTROL AREAS



SEDIMENT TRAP DETAIL

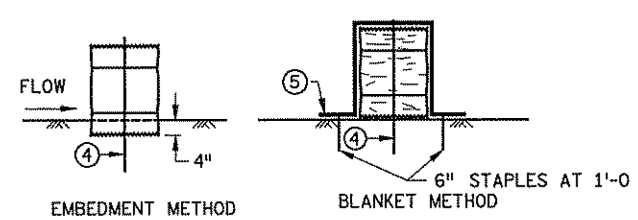


SECTION A-A

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.

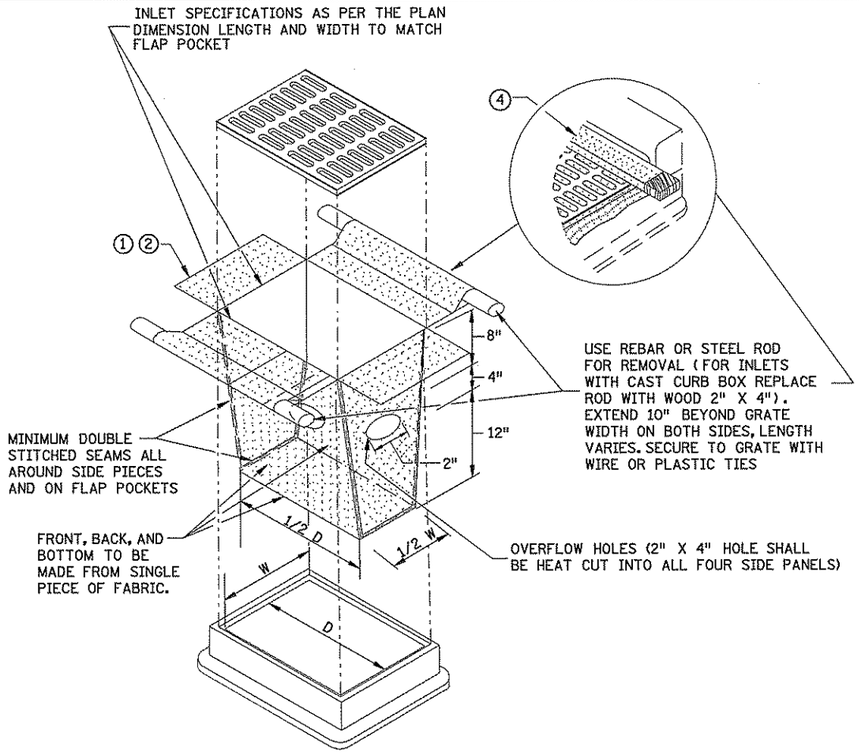
④ TWO 2 IN. X 2 IN. WOOD STAKES OR REINFORCING BARS IN EACH BALE EMBEDDED 10 INCHES MINIMUM IN THE GROUND.

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.

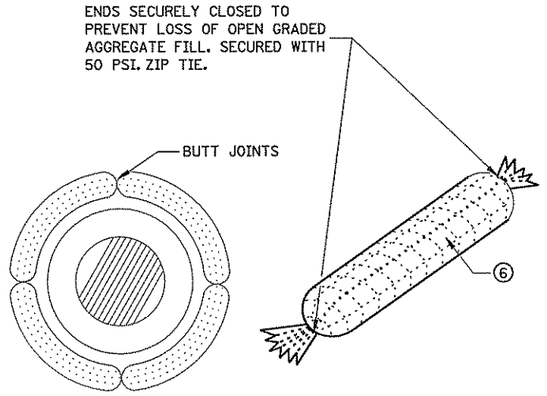
⑦ LOCATION OF DOWNSTREAM TEMPORARY SEDIMENT CONTROL DEVICE.

STANDARD SHEET NO. 5-297.405 (2 of 4)	TITLE: TEMPORARY SEDIMENT CONTROL MISCELLANEOUS DETAILS
STANDARD APPROVED: SEPTEMBER 27, 2006	
S.P. 02-652-05, S.P. 02-716-09, S.P. 106-020-28, S.P. 197-124-001	SHEET NO. 2.13 OF 294 SHEETS

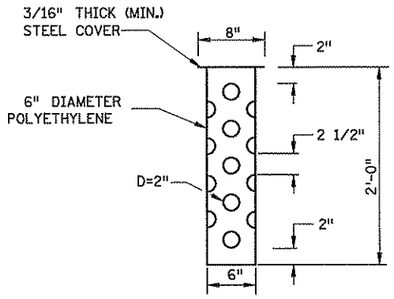


FILTER BAG INSERT ③

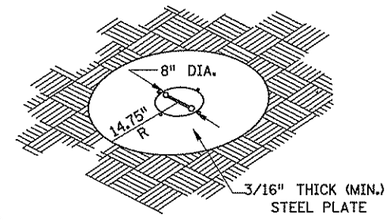
(CAN BE INSTALLED IN ANY INLET TYPE
WITH OR WITHOUT A CURB BOX)



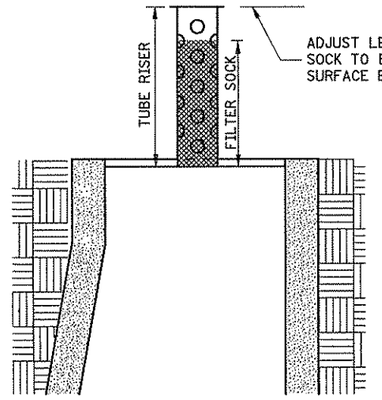
ROCK LOG/COMPOST LOG



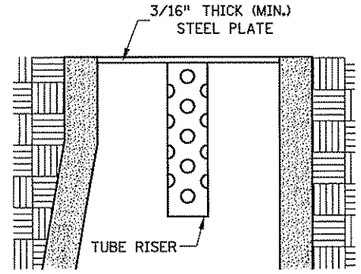
TUBE RISER



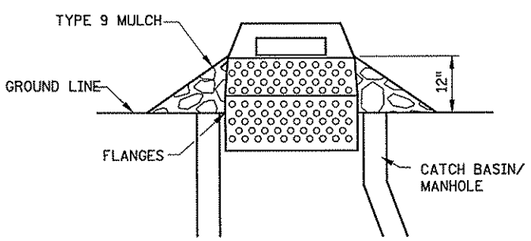
PERSPECTIVE VIEW



SECTION
(UP POSITION)

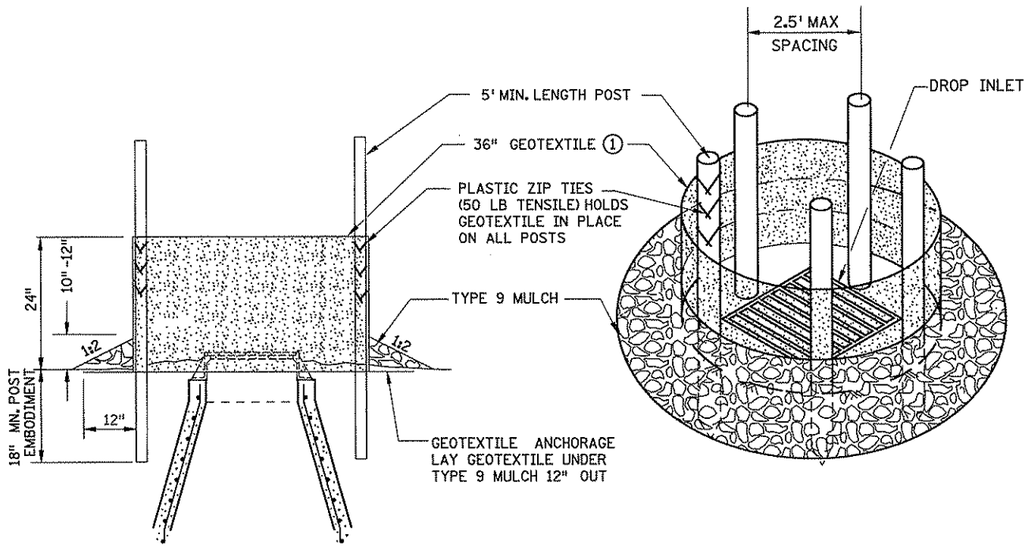


SECTION
(DOWN POSITION)



SEDIMENT CONTROL INLET HAT

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



SILT FENCE RING AND ROCK FILTER BERM

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

POP-UP HEAD

NOTES:

SEE SPECS. 2573, 3137, 3886 & 3891.

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

① ALL GEOTEXTILE USED FOR INLET PROTECTION SHALL BE MONOFILAMENT IN BOTH DIRECTIONS, MEETING SPEC. 3886.

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

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

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

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

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

STANDARD SHEET NO. 297.405 (4 OF 4)	TITLE: TEMPORARY SEDIMENT CONTROL STORM DRAIN INLET PROTECTION
STANDARD APPROVED: SEPTEMBER 27, 2006	
S.P. 02-652-05, S.P. 02-716-09, S.P. 106-020-28, S.P. 197-124-001	SHEET NO. 2.14 OF 294 SHEETS

DATE: 7/30/2009 TIME: 11:31:59 AM
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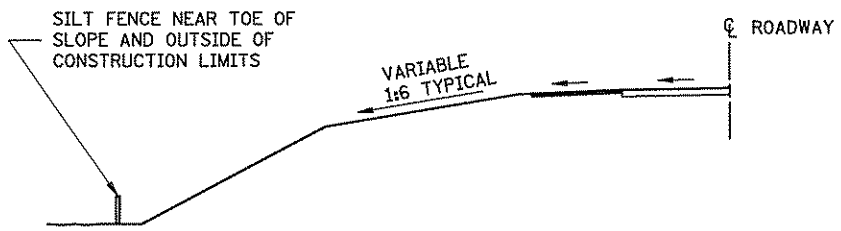
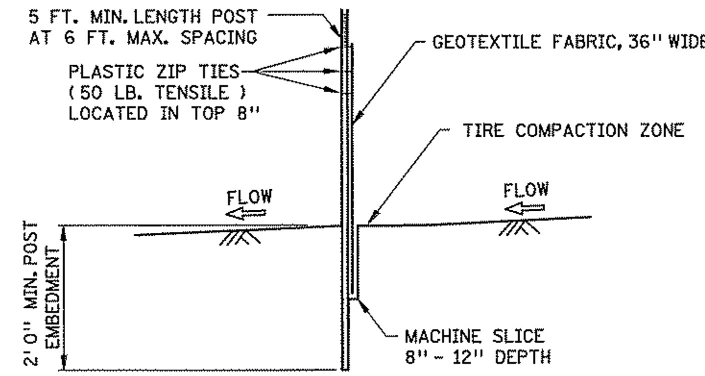
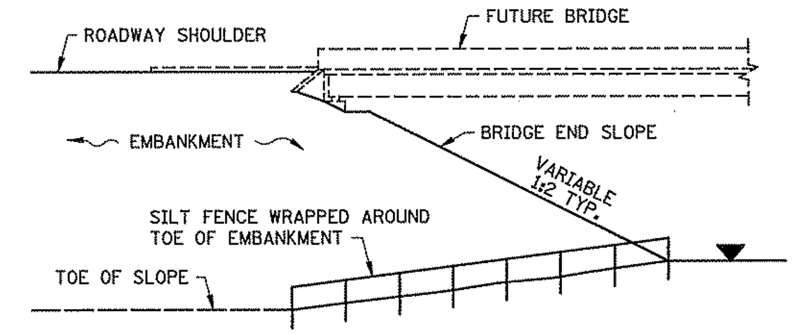


LOCATION OF SILT FENCE
AT TOE OF ROADWAY EMBANKMENT



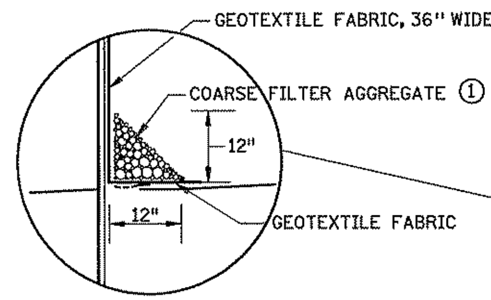
SILT FENCE, MACHINE SLICED

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

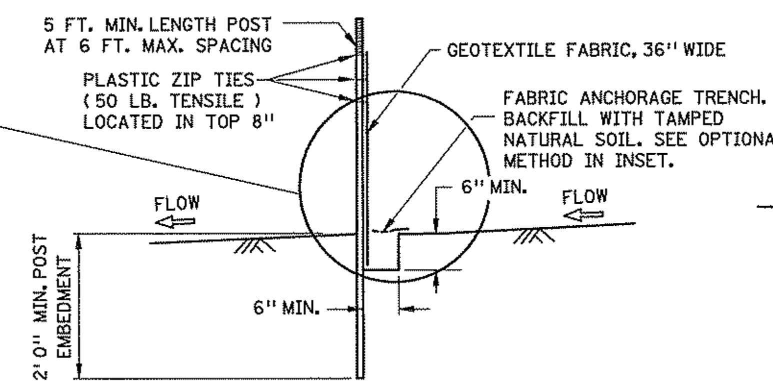


BRIDGE FILL

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

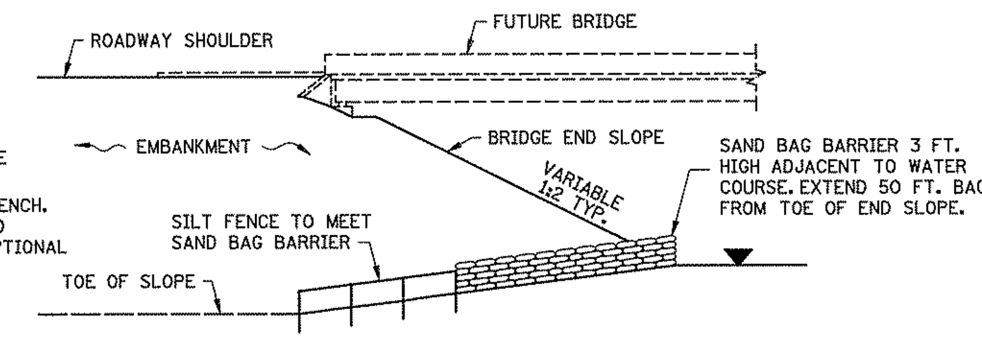


OPTIONAL METHOD
FOR SILT FENCE, HEAVY DUTY



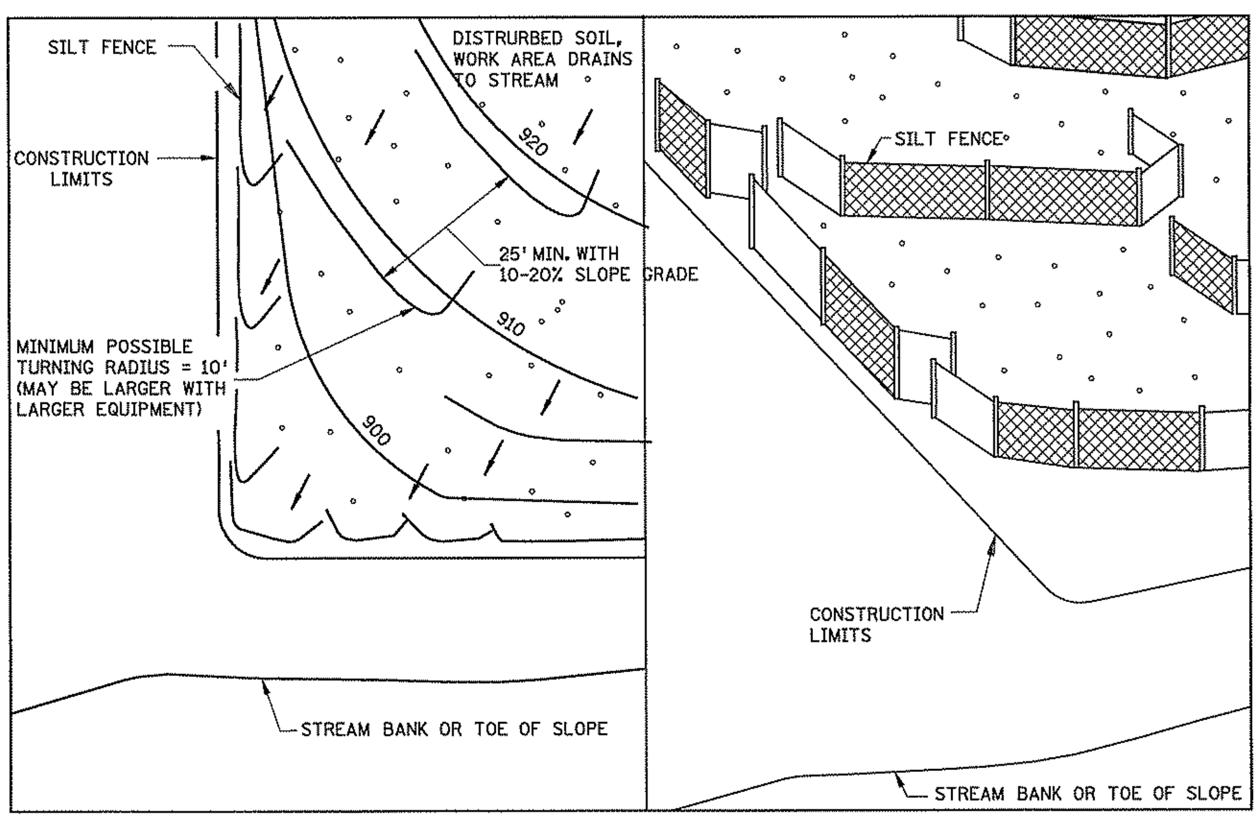
SILT FENCE, HEAVY DUTY
(HAND INSTALLED)

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



BRIDGE FILL

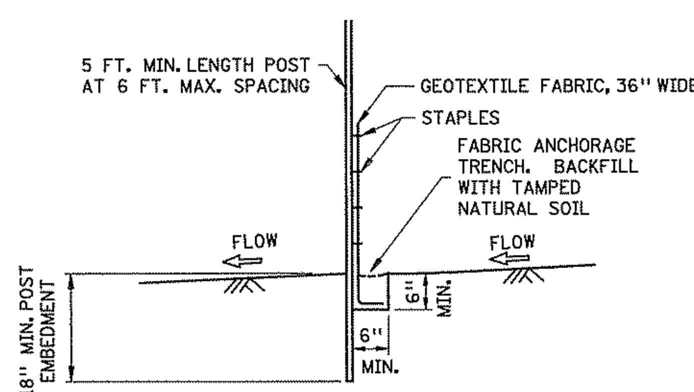
DESIGN GUIDELINES:
WATER COURSE FLOW VELOCITY: 1 TO 7 FT./SEC.
CONTRIBUTING SLOPE AREA: 1 ACRE



PLAN VIEW

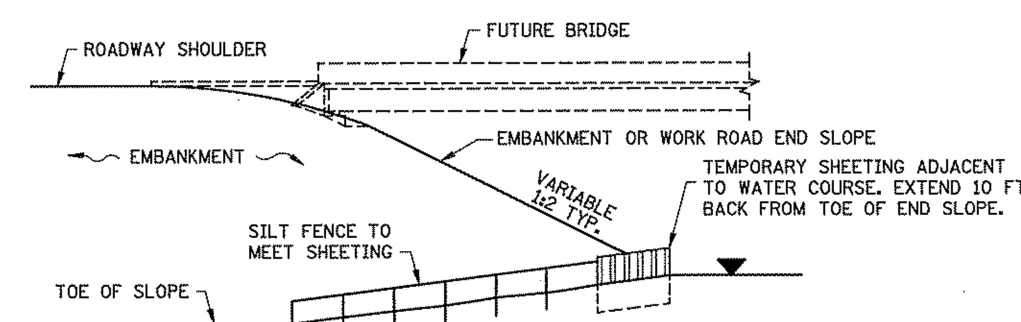
SIDE VIEW

SILT FENCE, J-HOOK INSTALLATION



SILT FENCE, PREASSEMBLED

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



EMBANKMENT OR WORK ROAD FILL

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

SILT FENCE AT BRIDGE EMBANKMENT ADJACENT TO WATER

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

STANDARD SHEET NO. 5-297.408 (1 OF 2)	TITLE: TEMPORARY SEDIMENT CONTROL SILT FENCE
STANDARD APPROVED: SEPTEMBER 27, 2006	
S.P. 02-652-05, S.P. 02-716-09, S.P. 106-020-28, S.P. 197-124-001	SHEET NO. 2.15 OF 294 SHEETS

DATE: 7/30/2009 TIME: 11:32:05 AM
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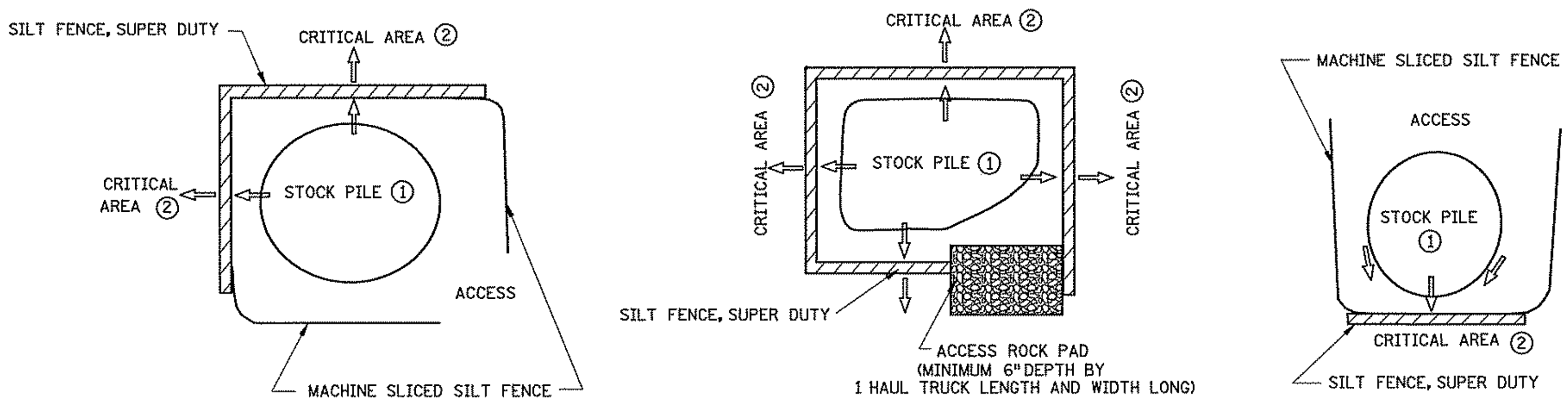
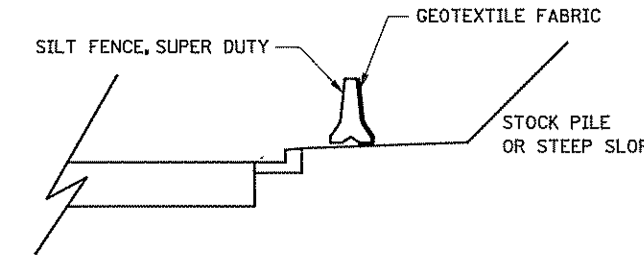
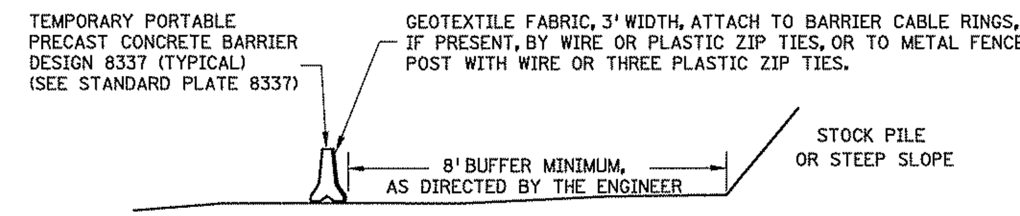


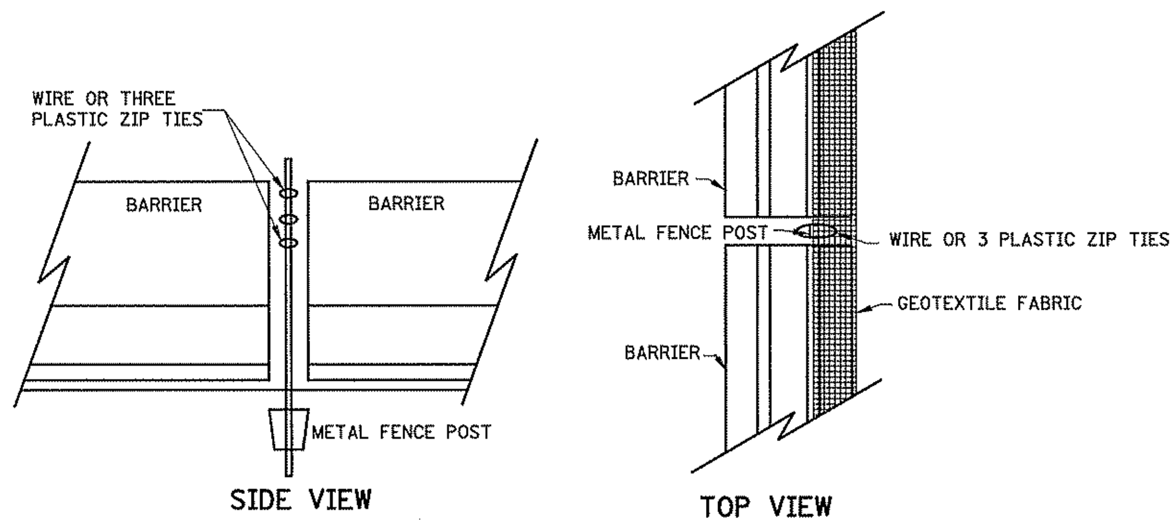
SILT FENCE, SUPER DUTY
STOCK PILE CONTAINMENT



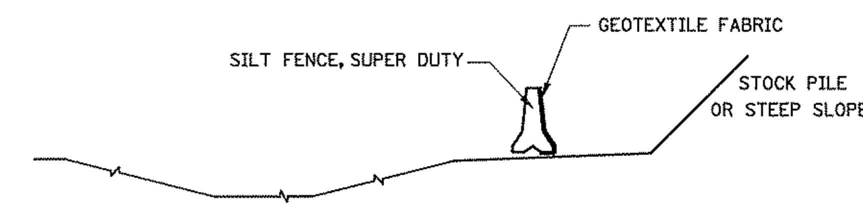
SILT FENCE, SUPER DUTY
CURB AND GUTTER PROTECTION SYSTEM



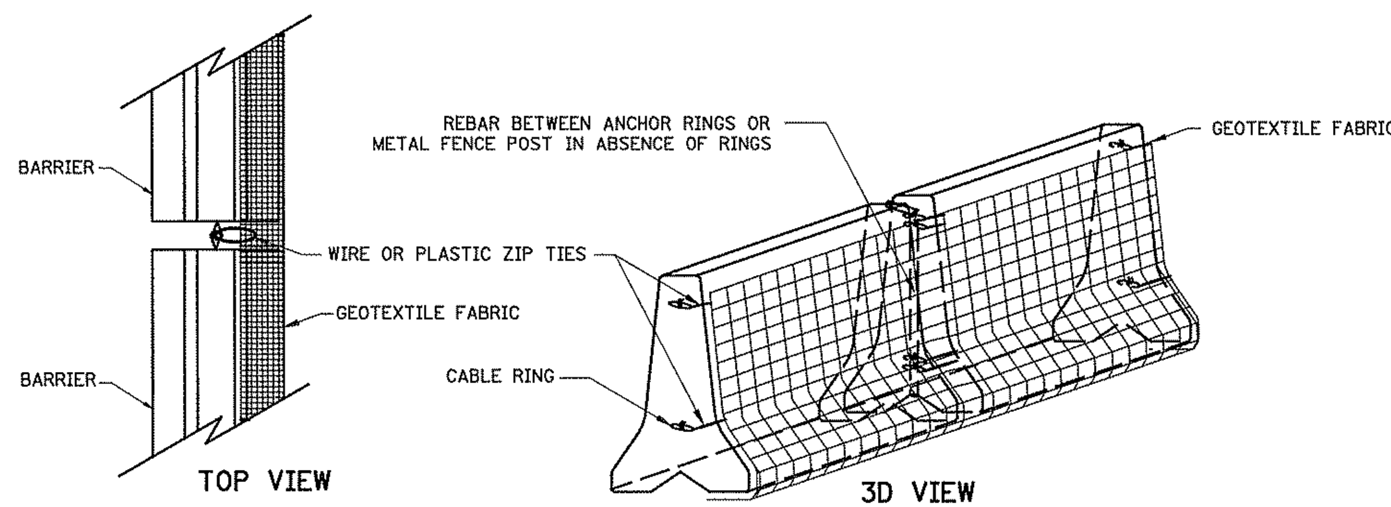
SILT FENCE, SUPER DUTY
STOCKPILE SEDIMENT CONTROL



BARRIER WITHOUT CABLE RINGS



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	
S.P. 02-652-05, S.P. 02-716-09, S.P. 106-020-28, S.P. 197-124-001	SHEET NO. 2.16 OF 294 SHEETS

DATE: 7/30/2009 TIME: 11:32:10 AM
FILENAME: K:\a-f\AnokaCty\3867000\hwy-brdg\hwy\pln-silt\s408_2106_spn.dgn

TRAFFIC CONTROL DEVICES

SIGN OR DEVICE	SIGN NO.	COLOR	SIZE	STAGE 1 EACH	STAGE 2 EACH	STAGE 3 EACH	STAGE 4 EACH
END ROAD WORK	G20-2a	BLACK ON ORANGE	48"x24"	3	5	6	
ROAD CLOSED BEGINNING MON DY	G20-X1	BLACK ON ORANGE	72"x60"		2	2	1
ROAD CLOSED BEGINNING @ATE TO @ATE	G20-X1	BLACK ON ORANGE	72"x60"	2			
52 ROAD CLOSED 125th Ave TO Bunker Lake Blvd BEGINS MON DY	G20-X2	BLACK ON ORANGE	132"x108"		6	6	
52 ROAD CLOSED Bunker Lake Blvd TO 125th Ave BEGINS MON DY	G20-X2	BLACK ON ORANGE	132"x108"		5	5	
116 ROAD CLOSED 1000 Feet East of Radisson Rd BEGINS MON DY	G20-X2	BLACK ON ORANGE	132"x108"	3			
116 ROAD CLOSED Radisson Rd of 1000 Feet East BEGINS MON DY	G20-X2	BLACK ON ORANGE	132"x108"	4			
52	M1-6	WHITE & YELLOW ON BLUE	24"x24"		32	32	
116	M1-6	WHITE & YELLOW ON BLUE	24"x24"	24			
NORTH	M3-1m	BLACK ON WHITE	24"x12"		14	14	
EAST	M3-2m	BLACK ON WHITE	24"x12"	15			
SOUTH	M3-3m	BLACK ON WHITE	24"x12"		16	16	
WEST	M3-4m	BLACK ON WHITE	24"x12"	8			
END	M4-6	BLACK ON WHITE	24"x12"	2	2	2	
DETOUR	M4-8	BLACK ON ORANGE	24"x12"	24	32	32	
DETOUR	M4-10L	BLACK ON ORANGE	48"x18"	1	1	1	
DETOUR	M4-10R	BLACK ON ORANGE	48"x18"	1	1	1	

TRAFFIC CONTROL DEVICES

SIGN OR DEVICE	SIGN NO.	COLOR	SIZE	STAGE 1 EACH	STAGE 2 EACH	STAGE 3 EACH	STAGE 4 EACH
	M5-1L	BLACK ON WHITE	21"x15"	2	3	3	
	M5-1R	BLACK ON WHITE	21"x15"	4	4	4	
	M5-2L	BLACK ON WHITE	21"x15"		1	1	
	M5-2R	BLACK ON WHITE	21"x15"		1	1	
	M6-1	BLACK ON WHITE	21"x15"	6	7	7	
	M6-2L	BLACK ON WHITE	21"x15"		1	1	
	M6-2R	BLACK ON WHITE	21"x15"		1	1	
	M6-3	BLACK ON WHITE	21"x15"	10	12	12	
SPEED LIMIT 40	R2-1	BLACK ON WHITE	24"x30"	4	3	1	
ONLY ONLY	R3-30ACD	BLACK ON WHITE	48"x30"		1		
ONLY	R3-30AD	BLACK ON WHITE	36"x30"			1	
ONLY	R3-30DA	BLACK ON WHITE	36"x30"		1		
	R4-7	BLACK ON WHITE	24"x30"		1	2	
ROAD CLOSED	R11-2	BLACK ON WHITE	48"x30"	2	4	9	
ROAD CLOSED 2 MILES AHEAD LOCAL TRAFFIC ONLY	R11-3a	BLACK ON WHITE	60"x30"	1			
ROAD CLOSED TO THRU TRAFFIC	R11-4	BLACK ON WHITE	60"x30"	1	9	10	
	W1-5R	BLACK ON ORANGE	30"x30"		2		
	W1-5L	BLACK ON ORANGE	30"x30"		2		
	W1-6	BLACK ON YELLOW	48"x24"	3	2	2	4

TRAFFIC CONTROL DEVICES

SIGN OR DEVICE	SIGN NO.	COLOR	SIZE	STAGE 1 EACH	STAGE 2 EACH	STAGE 3 EACH	STAGE 4 EACH
	W4-2L	BLACK ON ORANGE	36"x36"	1	2		1
	W4-2R	BLACK ON ORANGE	36"x36"			1	
	W6-3	BLACK ON YELLOW	30"x30"	4	3	1	
	W6-4	BLACK ON ORANGE	12"x18"	10	11	3	
ROAD WORK AHEAD	W20-1	BLACK ON ORANGE	48"x48"	9	23	20	4
ROAD CLOSED AHEAD	W20-3	BLACK ON ORANGE	48"x48"	4			
500 FEET	W20-100p	BLACK ON ORANGE	42"x24"	1			
1000 FEET	W20-100p	BLACK ON ORANGE	42"x24"	2			
1500 FEET	W20-100p	BLACK ON ORANGE	42"x24"	1			
MERGE	W20-X3R	BLACK ON ORANGE	48"x48"	1	1		1
MERGE	W20-X3L	BLACK ON ORANGE	48"x48"			1	
BYPASS AHEAD	W20-X6	BLACK ON ORANGE	48"x48"	1			
TURN LANE CLOSED	W20-X18	BLACK ON ORANGE	48"x48"		1		
NO SHOULDER	W21-X1	BLACK ON YELLOW	48"x48"		1		
LEFT LANE CLOSED	W21-X5L	BLACK ON ORANGE	48"x48"	2	2		1
RIGHT LANE CLOSED	W21-X5R	BLACK ON ORANGE	48"x48"			1	
FOLLOW DETOUR	SPECIAL	BLACK ON ORANGE	132"x18"	5	6	6	
USE ALT ROUTE	SPECIAL	BLACK ON ORANGE	132"x18"	2	5	5	
	TYPE III BARRICADE	ORANGE ON WHITE	8 FOOT	21	57	74	4

TRAFFIC CONTROL DEVICES

SIGN OR DEVICE	SIGN NO.	COLOR	SIZE	STAGE 1 EACH	STAGE 2 EACH	STAGE 3 EACH	STAGE 4 EACH
	REFLECTOR DRUM	ORANGE ON WHITE		162	346	242	62
	TUBE DELINEATOR			99	114	28	

GENERAL NOTES:

1. ALL TRAFFIC CONTROL DEVICES AND SIGNING SHALL CONFORM TO THE "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MN MUTCD), INCLUDING "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS".
2. FIELD CONDITIONS MAY REQUIRE MODIFICATIONS OF LAYOUTS AS DEEMED NECESSARY BY THE ENGINEER.
3. ALL DISTANCES ARE APPROXIMATE.
4. BARRICADES ARE 8 FOOT TYPE III AND SHALL BE REFLECTORIZED ON BOTH SIDES.
5. OBLITERATING ANY CONFLICTING PAVEMENT MARKINGS SHALL BE INCIDENTAL TO TEMPORARY STRIPING.
6. ALL TRAFFIC CONTROL DEVICES ON ROADS OPEN TO TRAFFIC THAT ARE NOT CONSISTENT WITH TRAFFIC OPERATIONS SHALL BE COVERED, REMOVED, OR REVISED (INCIDENTAL TO TRAFFIC CONTROL).
7. THE CONTRACTOR IS RESPONSIBLE FOR EXTRA SIGNING NEEDED TO FACILITATE TRAFFIC SWITCHES OR FOR TRANSITIONING TRAFFIC FROM ONE STAGE TO ANOTHER.
8. THE CONTRACTOR IS RESPONSIBLE FOR PROTECTING ANY WORK AREAS NEAR TRAFFIC IN ACCORDANCE WITH THE MN MUTCD INCLUDING THE "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS".
9. THE CONTRACTOR SHALL COORDINATE THE PERMANENT SIGNING SO THAT THE INSTALLATION OF THE PERMANENT SIGNS IS COMPLETED BEFORE THE ROADWAYS ARE OPEN TO TRAFFIC.
10. IF THE CONTRACTOR DESIRES TO PERFORM WORK IN A SEQUENCE OTHER THAN SHOWN IN THE PLANS, THE CONTRACTOR SHALL SUBMIT THE PROPOSED CHANGES, IN WRITING, TO THE ENGINEER FOR APPROVAL AT LEAST 10 WORKING DAYS PRIOR TO THE COMMENCEMENT OF THE WORK. IF THE SEQUENCE OF CONSTRUCTION CHANGES ARE APPROVED AND THE CHANGES RESULT IN CHANGES TO THE TRAFFIC CONTROL, THE CONTRACTOR SHALL SUBMIT, IN WRITING, REVISED TRAFFIC CONTROL PLANS TO THE ENGINEER FOR APPROVAL AT LEAST 14 DAYS PRIOR TO IMPLEMENTING THE TRAFFIC CONTROL.
11. SEE SIGNING DETAIL SHEETS FOR TYPICAL ERECTION DETAILS (FOR SIGNS TYPES "C & D").
12. ALL DRUMS, BARRICADES, AND SIGNS SHALL BE RETRO-REFLECTIVE.
13. THE DEVICES IN THIS TRAFFIC CONTROL PLAN SHALL BE FURNISHED, INSTALLED AND MAINTAINED UNLESS OTHERWISE NOTED.

SIGNING:

1. WHEN SIGNS ARE INSTALLED, THEY SHALL BE MOUNTED AT THE PROPER HEIGHT AND LATERAL OFFSET AS DETAILED IN THE MNMUTCD.
2. ALL ORANGE SIGNS SHALL BE MADE OF DIAMOND GRADE ORANGE REFLECTIVE SHEETING OR AN APPROVED SUBSTITUTE.
3. LONGITUDINAL DROP OFFS SHALL BE SIGNED AS SHOWN ON PAGES 6K-100 THROUGH 6K-102 OF THE "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS" UNLESS OTHERWISE SPECIFIED IN THESE PLANS.
4. REMOVAL OF EXISTING SIGNS SHALL BE COORDINATED WITH THE REMOVAL PLANS. ANY CONFLICTING SIGNS SHALL BE REMOVED.
5. THE REMOVAL OF THE TEMPORARY SIGNS WILL BE COORDINATED TO ASSURE THAT THE FINAL SIGNS ARE INSTALLED AS NEEDED, OR TEMPORARY SIGNING WILL BE PROVIDED UNTIL THE FINAL SIGNING IS INSTALLED.
6. EXISTING SIGNS MAY BE RE-USED FOR CONSTRUCTION SIGNING.

NOTES:

- QUANTITIES SHOWN ON THIS SHEET ARE FOR INFORMATIONAL PURPOSES ONLY AND SHALL BE INCLUDED IN THE LUMP SUM BID FOR TRAFFIC CONTROL.

NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\a-f\AnokaCty\13867000\hwy-brdg\hwy\pln-sht\c0265205_cs0a.dgn 11/3/2009

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: Timothy A. Chalupnik

PRINTED NAME: TIMOTHY A. CHALUPNIK

DATE: 11/3/2009 LIC. NO. 15400

DRAWN BY SFH DATE 11/3/2009

DESIGN BY SJS DATE 11/3/2009

CHECKED BY TAC DATE 11/3/2009

S.P. 02-652-05
S.P. 02-716-09
S.P. 106-020-28
S.P. 197-124-001

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ANOKA COUNTY
CONSTRUCTION STAGING AND TRAFFIC CONTROL
CSAH 52/116 RECONSTRUCTION
TRAFFIC CONTROL TABULATION AND NOTES

SHEET 3.01 OF 294

TEMPORARY PAVEMENT MARKINGS - TAB E

LOCATION	4" SOLID LINE WHITE (PAINT)		4" BROKEN LINE WHITE (PAINT)		4" SOLID LINE YELLOW (PAINT)		4" DOUBLE SOLID LINE YELLOW (PAINT)		PAVEMENT MESSAGE LEFT/THRU ARROW (PAINT)		PAVEMENT MESSAGE RIGHT ARROW (PAINT)		PAVEMENT MESSAGE LEFT ARROW (PAINT)		PAVEMENT MESSAGE RIGHT/THRU ARROW (PAINT)	
	LIN FT		LIN FT		LIN FT		LIN FT		EACH		EACH		EACH		EACH	
	(A)	(F)	(A)	(F)	(A)	(F)	(A)	(F)	(A)	(F)	(A)	(F)	(A)	(F)	(A)	(F)
STAGE 1	352	280		40	1226		1412	3503								
STAGE 2	3889	11050		50	1803	1835	1949	4551	1		1					
STAGE 3	5715	9704		50		609	1966	4586					1		1	
STAGE 4						325										
TOTALS	9956	21034		140	3029	2769	5327	12640	1		1		1		1	

SUMMARY								
ANOKA COUNTY S.P. 02-652-05 (CSAH 52)	9956		3029	5327	1		1		1		1	
ANOKA COUNTY S.P. 02-716-09 (CSAH 116)	21034	140	2769	12640								
PROJECT TOTAL	30990	140	5798	17967	1		1		1		1	

COST PARTICIPATION NOTES:

(A) 100% ANOKA COUNTY S.P. 02-652-05 (CSAH 52) QUANTITY.

(F) 100% ANOKA COUNTY S.P. 02-716-09 (CSAH 116) QUANTITY.

ALL TRAFFIC CONTROL DEVICES AND SIGNING SHALL CONFORM TO THE "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MN MUTCD), INCLUDING "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS".

NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\a-f\AnokaCty\13867000\hwy-brdg\hwy\pln-sht\c0265205_cs0b.dgn 7/30/2009

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: Timothy A. Chalupnik

PRINTED NAME: TIMOTHY A. CHALUPNIK

DATE: 7/30/2009 LIC. NO. 15400

DRAWN BY SFH DATE 7/30/2009

DESIGN BY SJS DATE 7/30/2009

CHECKED BY TAC DATE 7/30/2009

S.P. 02-652-05
S.P. 02-716-09
S.P. 106-020-28
S.P. 197-124-001

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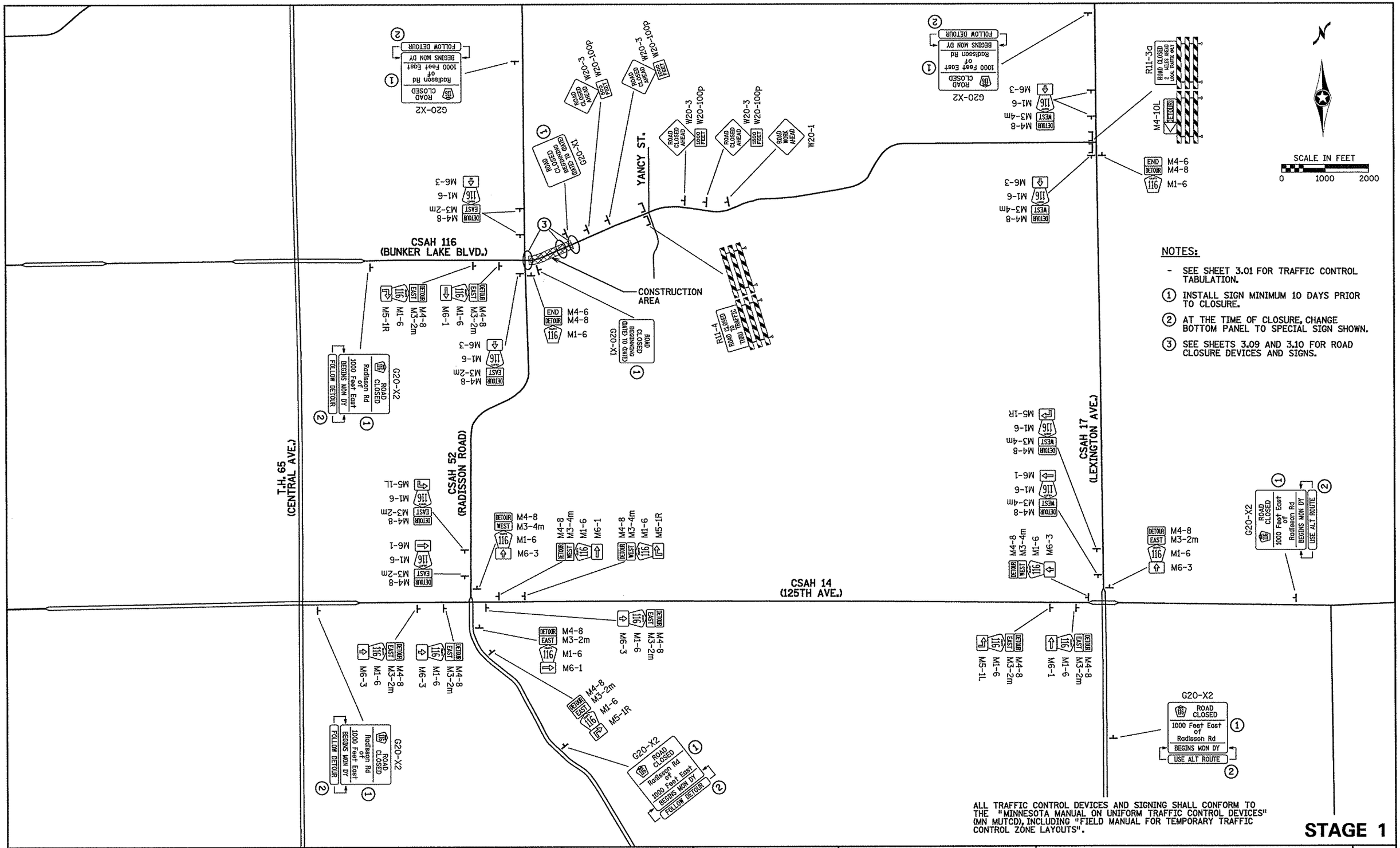
CONSTRUCTION STAGING AND TRAFFIC CONTROL
CSAH 52/116 RECONSTRUCTION
TEMPORARY STRIPING TABULATION

SHEET 3.02 OF 294



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NAME: K:\a-f\AnokaCty\13867000\hwy-brdg\hwy\pln-sht\c0265205_csla.dgn 7/30/2009

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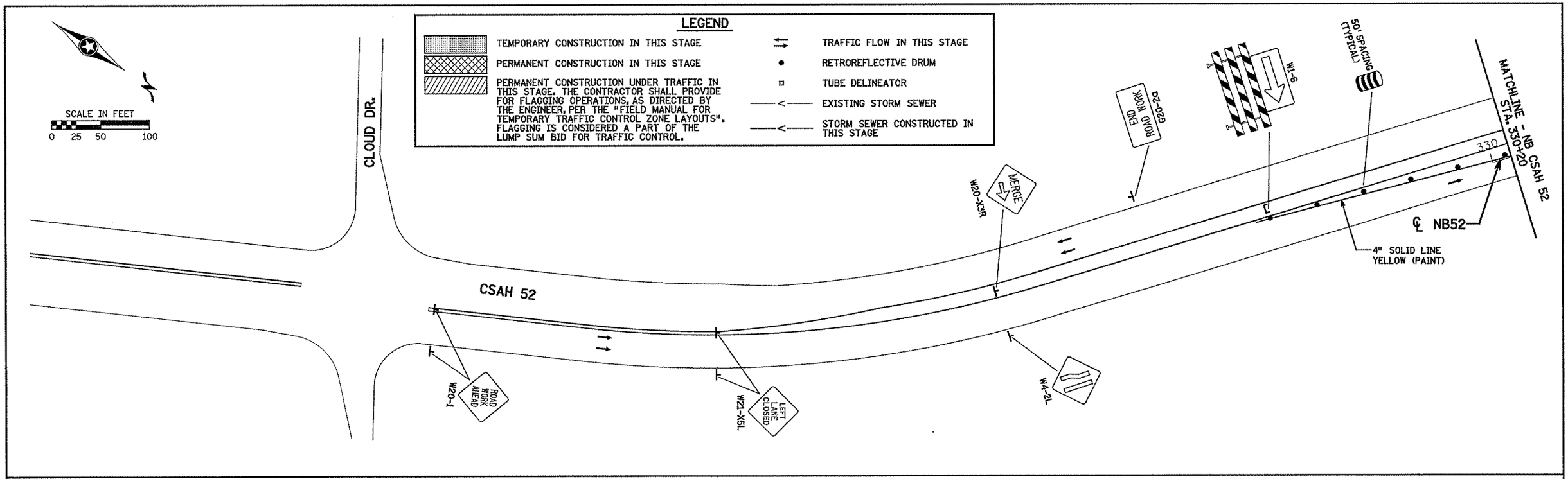
CONSTRUCTION STAGING AND TRAFFIC CONTROL
CSAH 52/116 RECONSTRUCTION
CSAH 116 DETOUR PLAN

SHEET 3.03 OF 294



STAGE 1 TRAFFIC

REDUCE CSAH 52 NB TRAFFIC TO ONE LANE NORTH OF CLOUD DRIVE. MAINTAIN ALL EXISTING TRAFFIC MOVEMENTS APPROACHING CSAH 14.

MAINTAIN TWO-WAY TRAFFIC ON CSAH 52 NORTH OF CSAH 116 WITH TWO 11' LANES SHIFTED TO THE EAST EDGE OF EXISTING PAVEMENT.

MAINTAIN TWO-WAY TRAFFIC ON CSAH 116 WEST OF CSAH 52 WITH TWO 11' LANES SHIFTED TO THE NORTH EDGE OF EXISTING PAVEMENT.

CLOSE CSAH 116 FROM CSAH 52 TO YANCY STREET (PROVIDE FOR LOCAL ACCESS). DETOUR TRAFFIC TO CSAH 52, CSAH 14, AND CSAH 17.

MAINTAIN TRAFFIC ON OTHER INPLACE ROADWAYS.

STAGE 1 CONSTRUCTION

CONSTRUCT STORM SEWER OUTLET AND ASSOCIATED PAVEMENT ALONG CSAH 52 NEAR NB52 STA. 339+00.

CONSTRUCT TEMPORARY WIDENING FOR BYPASS D ALONG CSAH 52 NORTH OF CSAH 116.

REMOVE EXISTING MEDIAN ALONG CSAH 116 NEAR WB116 STA. 115+00 AND CONSTRUCT TEMPORARY PAVEMENT FOR BYPASS A AND BYPASS B.

CONSTRUCT TEMPORARY WIDENING FOR BYPASS C ALONG CSAH 116 WEST OF CSAH 52.

CONSTRUCT CSAH 116 EAST OF CSAH 52.

ALL TRAFFIC CONTROL DEVICES AND SIGNING SHALL CONFORM TO THE "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MN MUTCD), INCLUDING "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS".

STAGE 1

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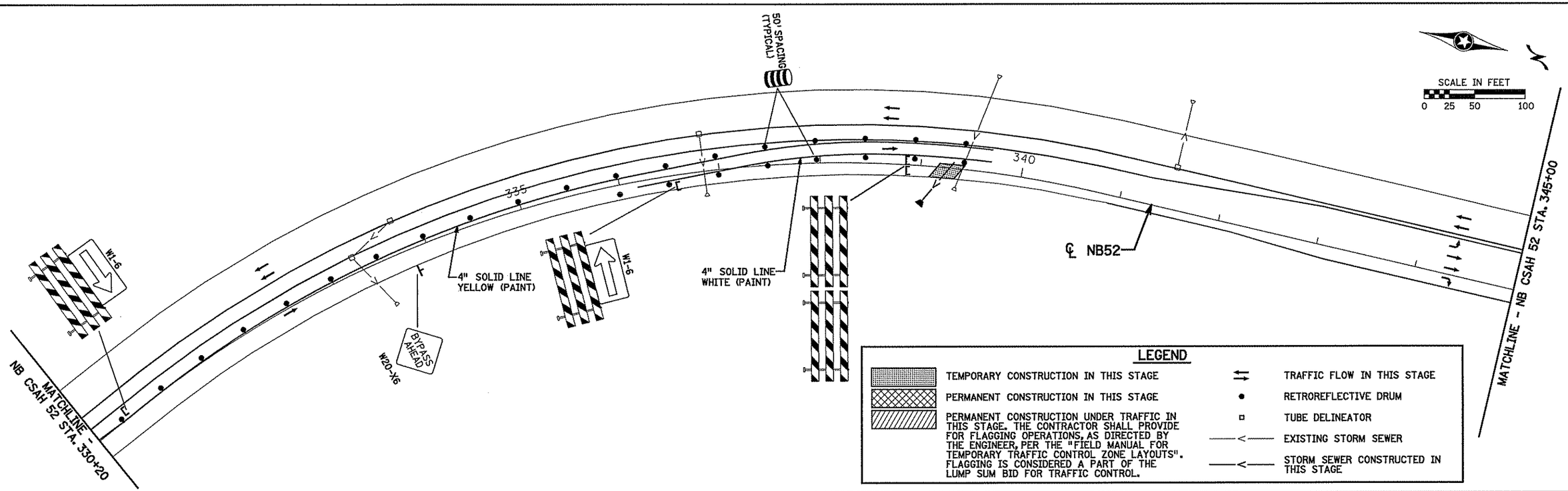
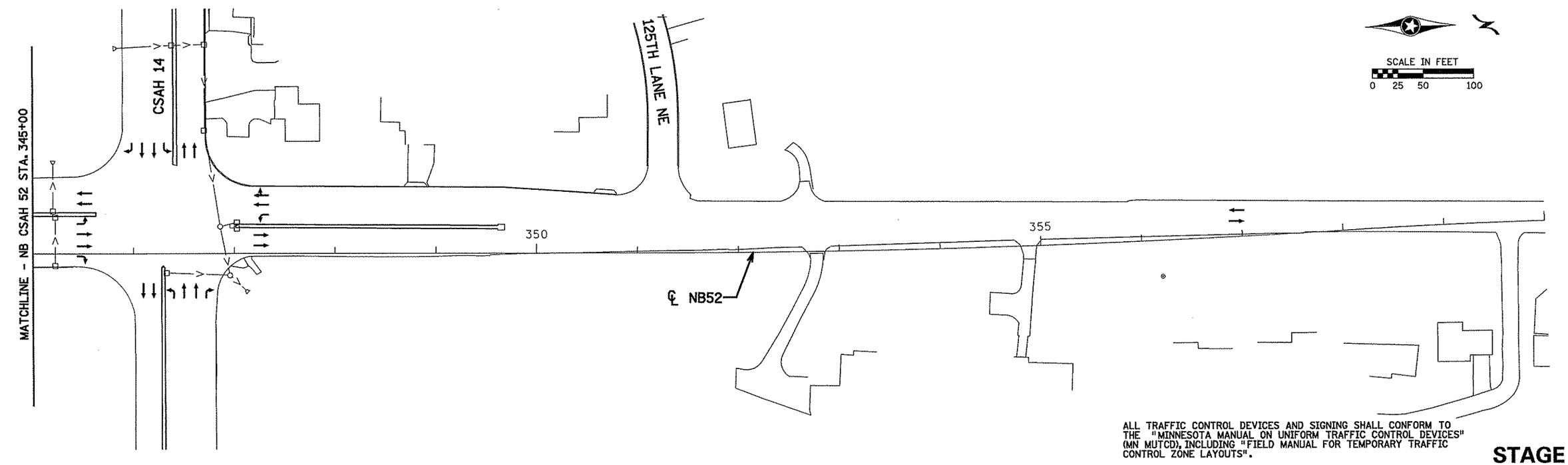
CONSTRUCTION STAGING AND TRAFFIC CONTROL
CSAH 52/116 RECONSTRUCTION
NB CSAH 52 STA. 315+00 TO 330+20

SHEET 3.04 OF 294





ALL TRAFFIC CONTROL DEVICES AND SIGNING SHALL CONFORM TO THE "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MN MUTCD), INCLUDING "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS".

STAGE 1

NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\a-f\AnokaCty\13867000\hwy-brdg\hwy\pln-sht\c0265205.csic.dgn 7/30/2009

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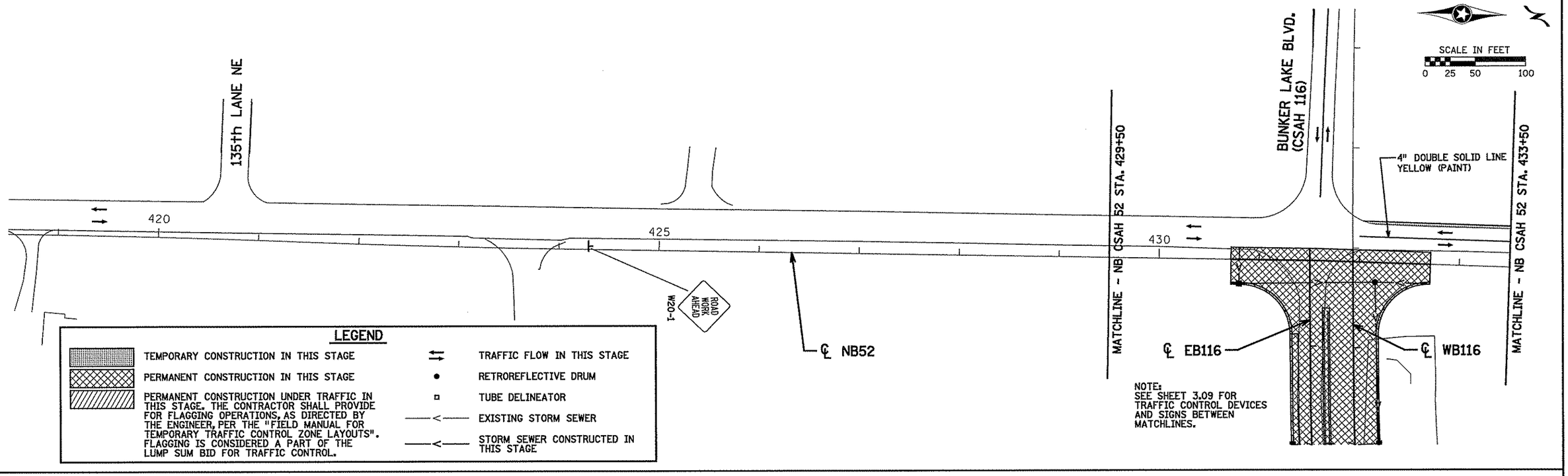
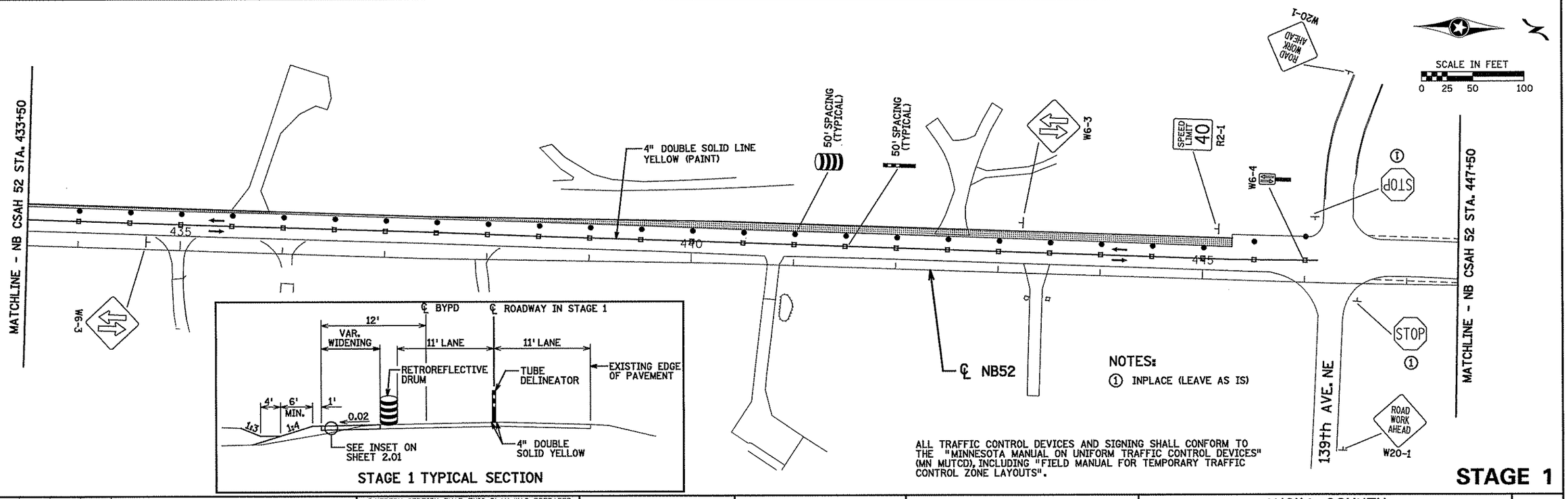
CONSTRUCTION STAGING AND TRAFFIC CONTROL
CSAH 52/116 RECONSTRUCTION
NB CSAH 52 STA. 330+20 TO 360+00

SHEET 3.05 OF 294



LEGEND

- TEMPORARY CONSTRUCTION IN THIS STAGE
- PERMANENT CONSTRUCTION IN THIS STAGE
- PERMANENT CONSTRUCTION UNDER TRAFFIC IN THIS STAGE. THE CONTRACTOR SHALL PROVIDE FOR FLAGGING OPERATIONS, AS DIRECTED BY THE ENGINEER, PER THE "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS". FLAGGING IS CONSIDERED A PART OF THE LUMP SUM BID FOR TRAFFIC CONTROL.
- TRAFFIC FLOW IN THIS STAGE
- RETROREFLECTIVE DRUM
- TUBE DELINEATOR
- EXISTING STORM SEWER
- STORM SEWER CONSTRUCTED IN THIS STAGE



STAGE 1

NO	DATE	BY	CKD	APPR	REVISION

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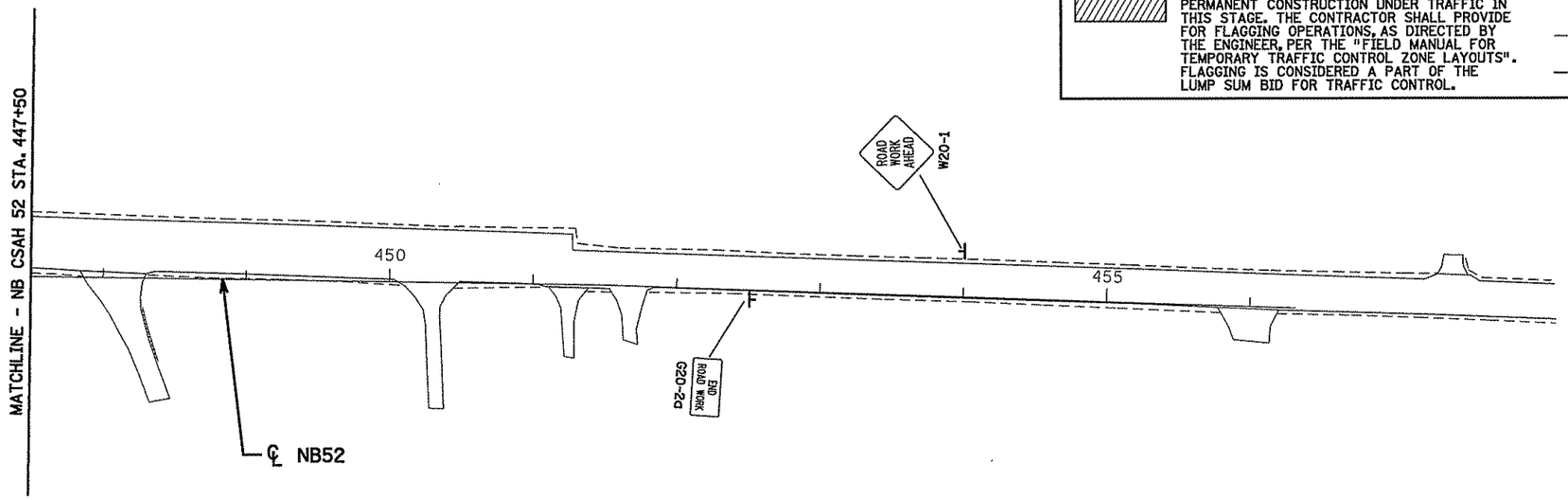
ANOKA COUNTY
CONSTRUCTION STAGING AND TRAFFIC CONTROL
CSAH 52/116 RECONSTRUCTION
NB CSAH 52 STA. 418+50 TO 447+50

SHEET 3.06 OF 294

LEGEND

TEMPORARY CONSTRUCTION IN THIS STAGE	TRAFFIC FLOW IN THIS STAGE
PERMANENT CONSTRUCTION IN THIS STAGE	RETROREFLECTIVE DRUM
PERMANENT CONSTRUCTION UNDER TRAFFIC IN THIS STAGE. THE CONTRACTOR SHALL PROVIDE FOR FLAGGING OPERATIONS, AS DIRECTED BY THE ENGINEER, PER THE "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS". FLAGGING IS CONSIDERED A PART OF THE LUMP SUM BID FOR TRAFFIC CONTROL.	TUBE DELINEATOR
	EXISTING STORM SEWER
	STORM SEWER CONSTRUCTED IN THIS STAGE

SCALE IN FEET
0 25 50 100



ALL TRAFFIC CONTROL DEVICES AND SIGNING SHALL CONFORM TO THE "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MN MUTCD), INCLUDING "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS".

STAGE 1

NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\a-f\AnokaCty\13867000\hwy-brdg\hwy\pln-sht\c0265205_csle.dgn 7/30/2009

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SIGNATURE: Timothy A. Chalupnik

PRINTED NAME: TIMOTHY A. CHALUPNIK

DATE: 7/30/2009 LIC. NO. 15400

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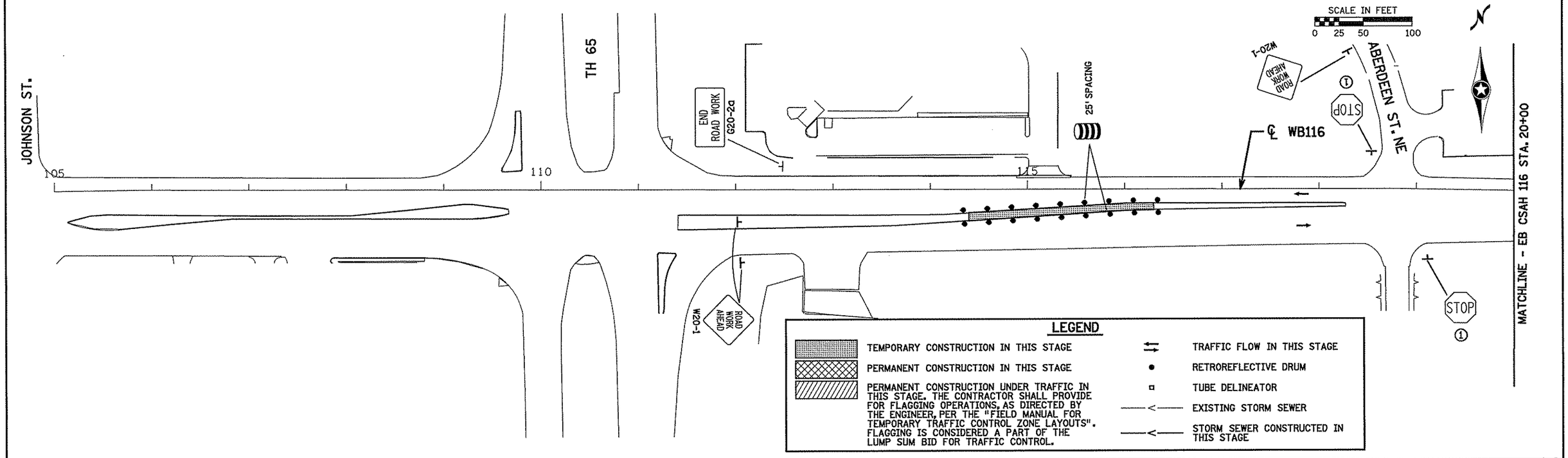
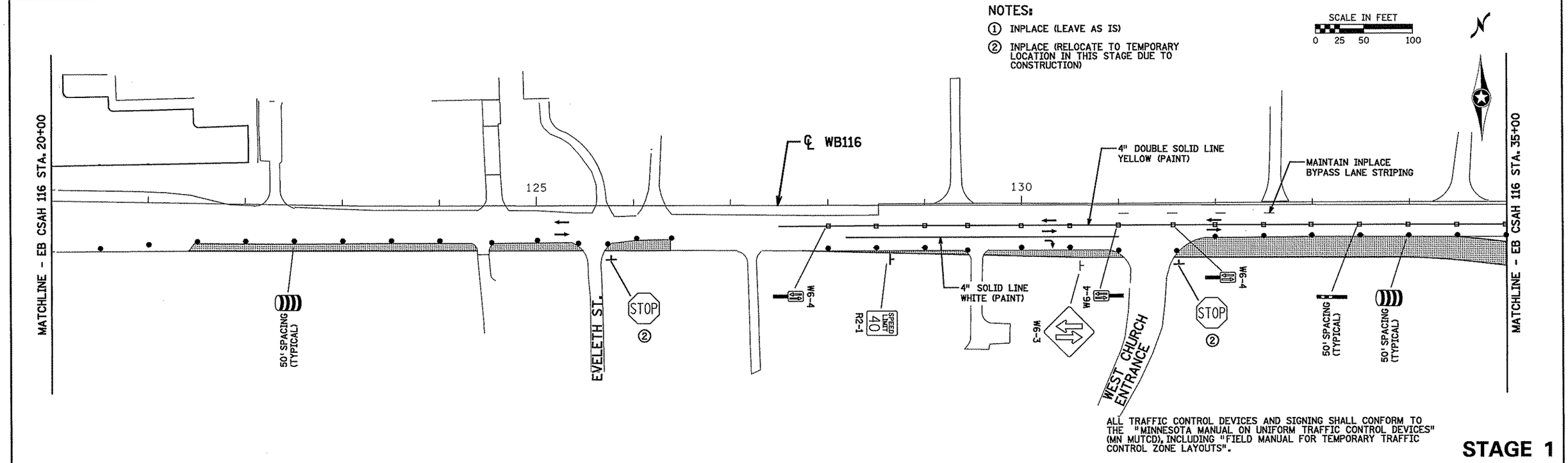
ANOKA COUNTY
CONSTRUCTION STAGING AND TRAFFIC CONTROL
CSAH 52/116 RECONSTRUCTION
NB CSAH 52 STA. 447+50 TO 452+00

SHEET 3.07 OF 294





NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\a-f\AnokaCty\13867000\hwy-brdg\hwy\pln-sht\c0265205_cslf.dgn 7/30/2009

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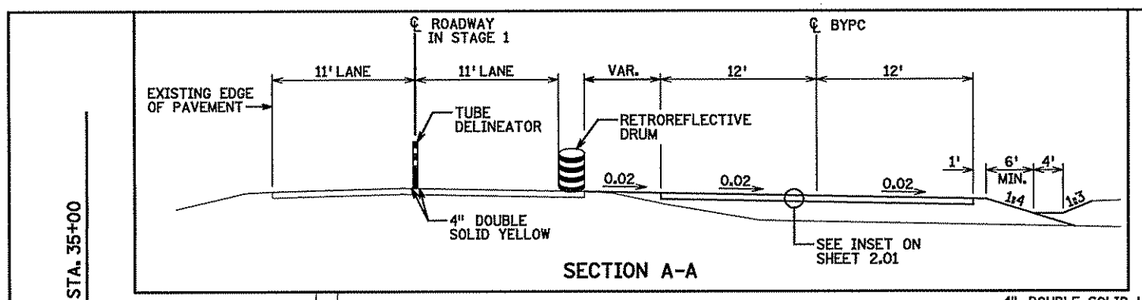
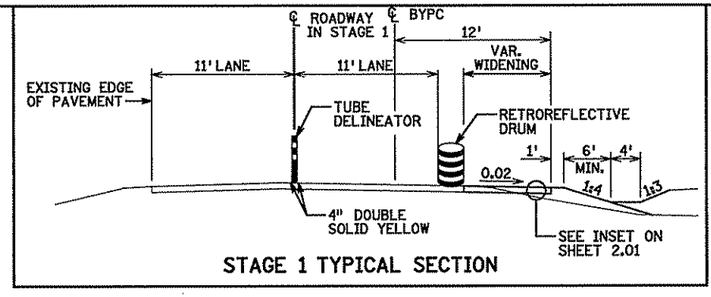
ANOKA COUNTY
CONSTRUCTION STAGING AND TRAFFIC CONTROL
CSAH 52/116 RECONSTRUCTION
EB CSAH 116 STA. 5+00 TO 35+00

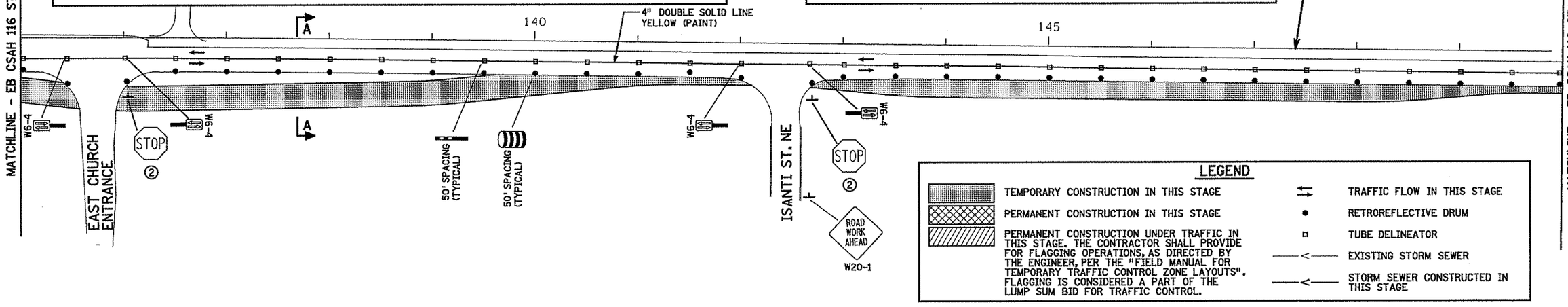
SHEET 3.08 OF 294

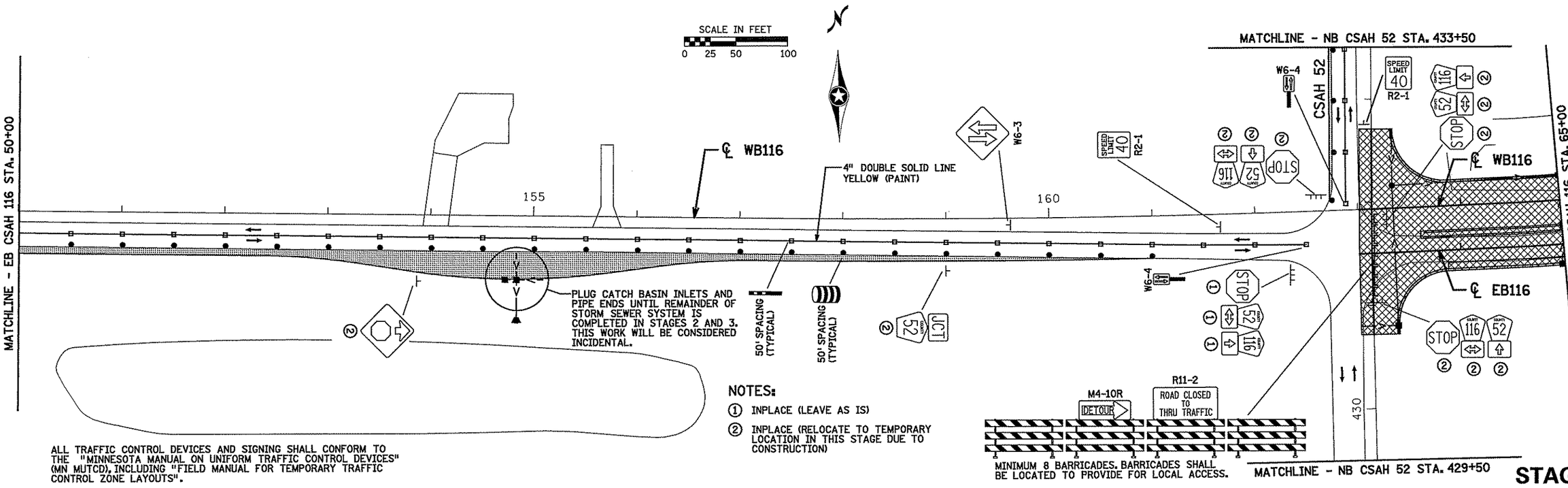


SECTION A-A



STAGE 1 TYPICAL SECTION





NOTES:

① INPLACE (LEAVE AS IS)

② INPLACE (RELOCATE TO TEMPORARY LOCATION IN THIS STAGE DUE TO CONSTRUCTION)

ALL TRAFFIC CONTROL DEVICES AND SIGNING SHALL CONFORM TO THE "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MN MUTCD), INCLUDING "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS".

STAGE 1

NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\a-f\AnokaCty\13867000\hwy-brdg\hwy\pln-sht\c0265205.csig.dgn 7/30/2009

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: Timothy A. Chalupnik

PRINTED NAME: TIMOTHY A. CHALUPNIK

DATE: 7/30/2009 LIC. NO. 15400

DRAWN BY SFH DATE 7/30/2009

DESIGN BY SJS DATE 7/30/2009

CHECKED BY TAC DATE 7/30/2009

S.P. 02-652-05
S.P. 02-716-09
S.P. 106-020-28
S.P. 197-124-001

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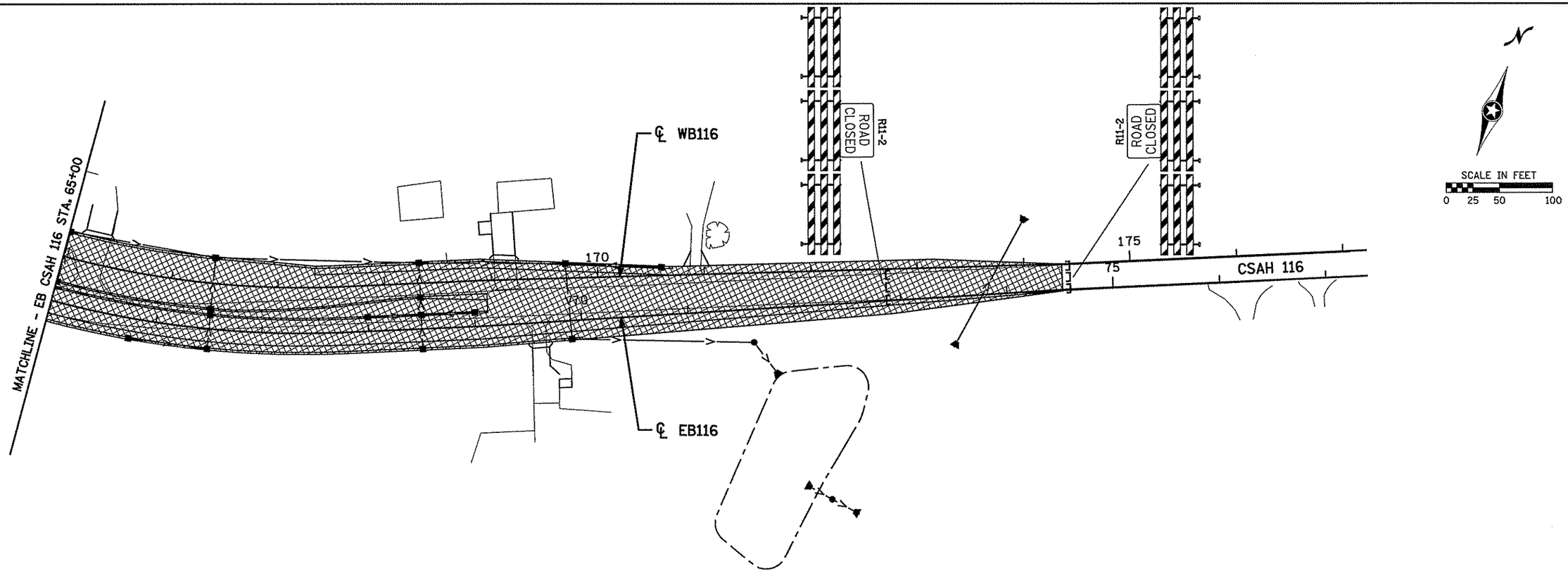
ANOKA COUNTY
CONSTRUCTION STAGING AND TRAFFIC CONTROL
CSAH 52/116 RECONSTRUCTION
EB CSAH 116 STA. 35+00 TO 65+00

SHEET 3.09 OF 294



LEGEND

- TEMPORARY CONSTRUCTION IN THIS STAGE
- PERMANENT CONSTRUCTION IN THIS STAGE
- PERMANENT CONSTRUCTION UNDER TRAFFIC IN THIS STAGE. THE CONTRACTOR SHALL PROVIDE FOR FLAGGING OPERATIONS, AS DIRECTED BY THE ENGINEER, PER THE "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS". FLAGGING IS CONSIDERED A PART OF THE LUMP SUM BID FOR TRAFFIC CONTROL.
- TRAFFIC FLOW IN THIS STAGE
- RETROREFLECTIVE DRUM
- TUBE DELINEATOR
- EXISTING STORM SEWER
- STORM SEWER CONSTRUCTED IN THIS STAGE

ALL TRAFFIC CONTROL DEVICES AND SIGNING SHALL CONFORM TO THE "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MN MUTCD), INCLUDING "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS".

STAGE 1

NO	DATE	BY	CKD	APPR	REVISION

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ANOKA COUNTY
CONSTRUCTION STAGING AND TRAFFIC CONTROL
CSAH 52/116 RECONSTRUCTION
EB CSAH 116 STA. 65+00 TO 75+00

SHEET 3.10 OF 294

CSAH 116
(BUNKER LAKE BLVD.)

CSAH 14
(125TH AVE.)

T.H. 65
(CENTRAL AVE.)

CSAH 52
(RADISSON ROAD)

CSAH 17
(LEXINGTON AVE.)

CONSTRUCTION AREA

SCALE IN FEET
0 1000 2000

NOTES:

1. INSTALL SIGN MINIMUM 10 DAYS PRIOR TO CLOSURE.
2. AT THE TIME OF CLOSURE, CHANGE BOTTOM PANEL TO SPECIAL SIGN SHOWN.
3. SEE SHEETS 3.13 AND 3.23 FOR ROAD CLOSURE DEVICES AND SIGNS.
4. SEE SHEETS 3.20 AND 3.27 FOR ROAD CLOSURE DEVICES AND SIGNS.

ALL TRAFFIC CONTROL DEVICES AND SIGNING SHALL CONFORM TO THE "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MN MUTCD), INCLUDING "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS".

STAGES 2 & 3

NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\a-f\AnokaCty\13867000\hwy-brdg\hwy\pln-sht\c0265205_cs2a.dgn 7/30/2009

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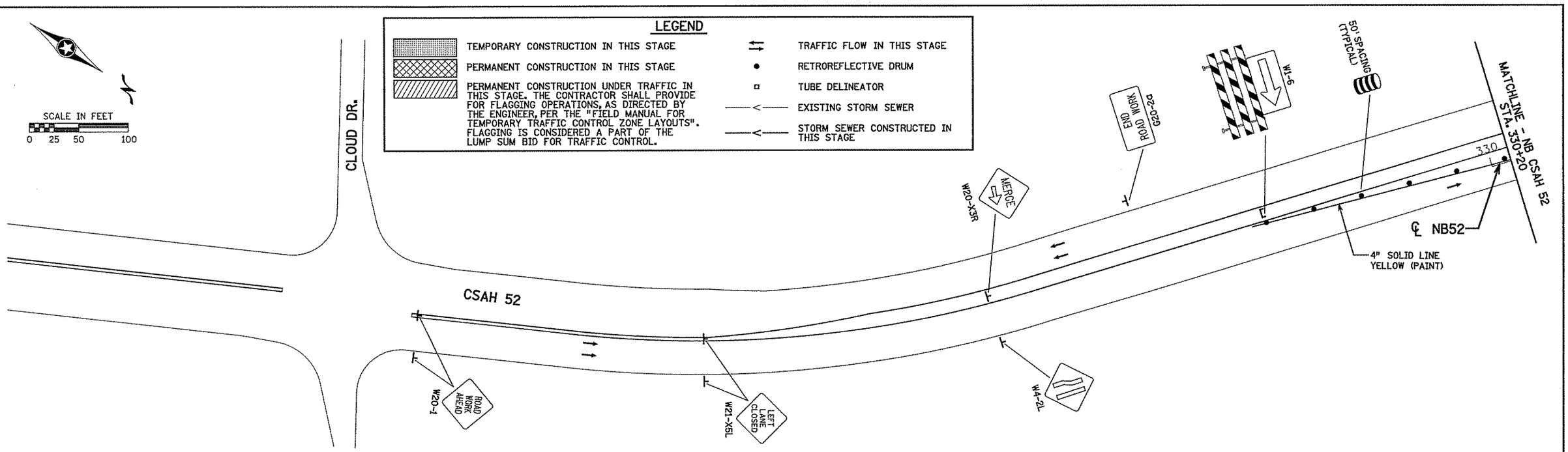
ANOKA COUNTY
CONSTRUCTION STAGING AND TRAFFIC CONTROL
CSAH 52/116 RECONSTRUCTION
CSAH 52 DETOUR PLAN

SHEET 3.11 OF 294



STAGE 2 TRAFFIC

MAINTAIN ONE LANE OF TRAFFIC ON CSAH 52 NB NORTH OF CLOUD DRIVE. ALLOW ONLY LEFT/THRU AND RIGHT TURN TRAFFIC MOVEMENTS APPROACHING CSAH 14.

MAINTAIN TRAFFIC ON CSAH 14.

CLOSE CSAH 52 FROM CSAH 14 TO CSAH 116 (PROVIDE FOR LOCAL ACCESS). DETOUR TRAFFIC TO CSAH 14, TH 65, AND CSAH 116.

SHIFT CSAH 52 TRAFFIC NORTH OF CSAH 116 ONTO BYPASS D.

OPEN BYPASS A TO CSAH 116 WB TRAFFIC.

SHIFT CSAH 116 TRAFFIC WEST OF CSAH 52 ONTO BYPASS C.

OPEN CSAH 116 EAST OF CSAH 52 TO ONE LANE OF TRAFFIC IN EACH DIRECTION.

STAGE 2 CONSTRUCTION

CONSTRUCT CSAH 52 NB MEDIAN AND LEFT TURN LANES SOUTH OF CSAH 14.

BEGIN CONSTRUCTION OF CSAH 52 FROM CSAH 14 TO CSAH 116. SEE SECTION 1404 OF THE SPECIAL PROVISIONS FOR PHASING REQUIREMENTS.

CONSTRUCT CSAH 52 NB LANES NORTH OF CSAH 116.

CONSTRUCT CSAH 116 WB LANES WEST OF CSAH 52.

ALL TRAFFIC CONTROL DEVICES AND SIGNING SHALL CONFORM TO THE "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MN MUTCD), INCLUDING "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS".

STAGE 2

NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\a-f\AnokaCty\13867000\hwy-brdg\hwy\pln-sht\c0265205_cs2b.dgn 10/23/2009

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PRINTED NAME: TIMOTHY A. CHALUPNIK

DATE: 10/23/2009 LIC. NO. 15400

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DESIGN BY SJS DATE 10/23/2009

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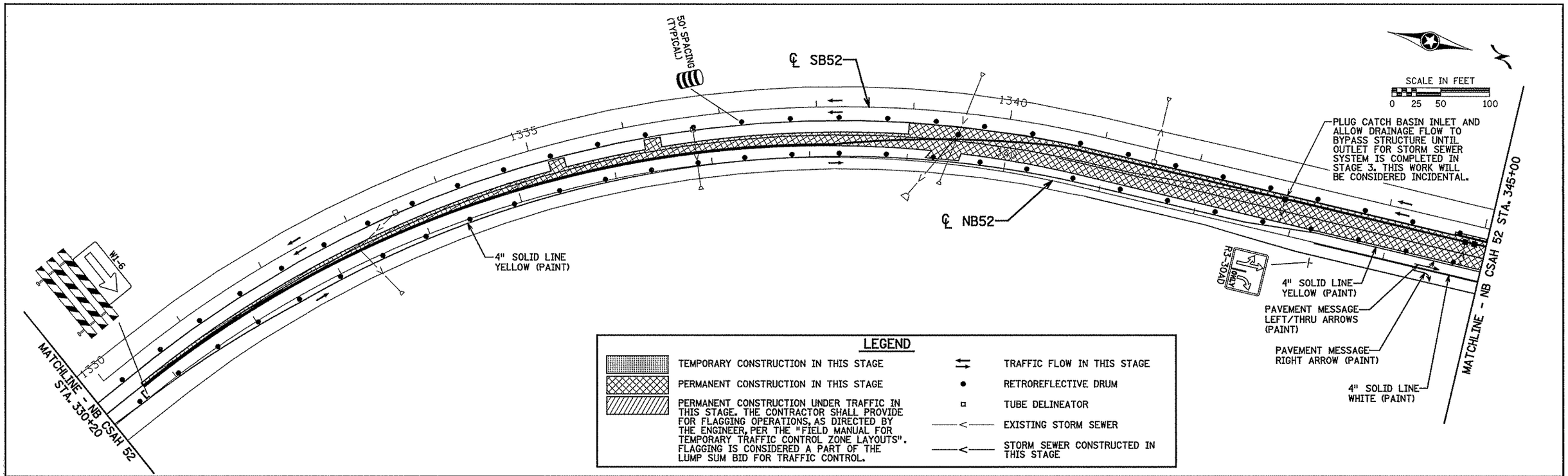
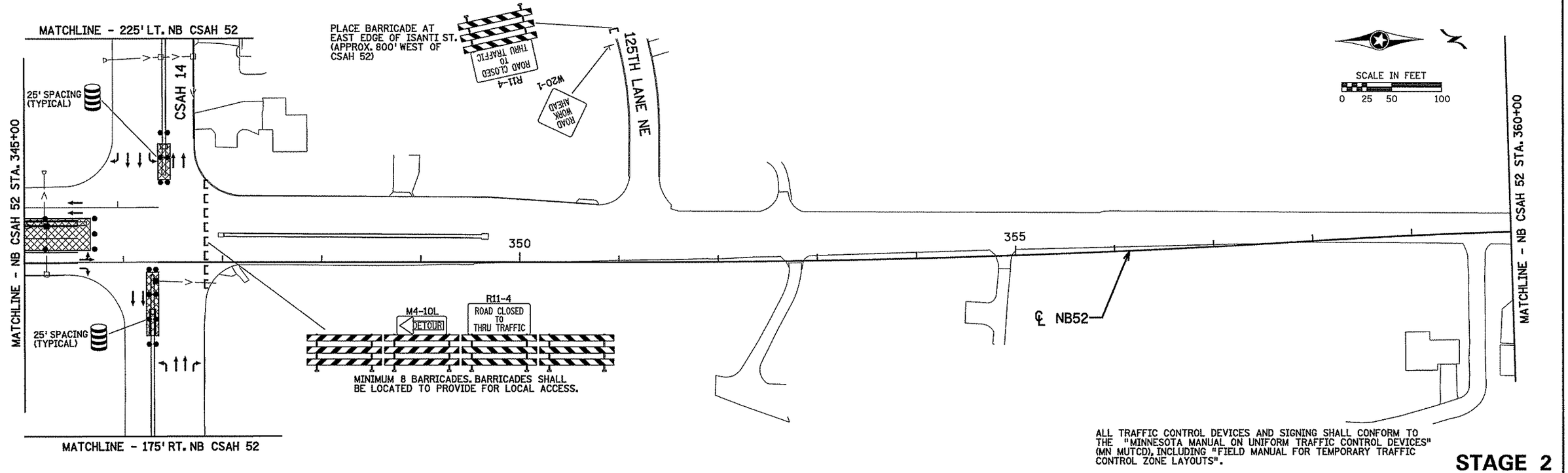
ANOKA COUNTY

CONSTRUCTION STAGING AND TRAFFIC CONTROL
CSAH 52/116 RECONSTRUCTION
NB CSAH 52 STA. 315+00 TO 330+20





STAGE 2

NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\a-f\Anokacty\13867000\hwy-brdg\hwy\pln-sht\c0265205_cs2c.dgn 11/3/2009

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S.P. 197-124-001

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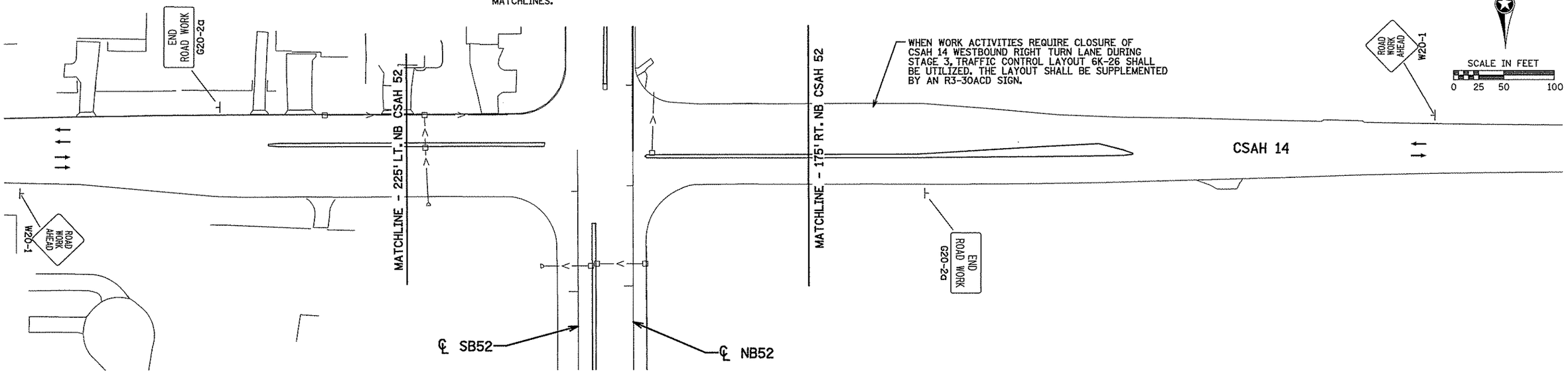
ANOKA COUNTY
CONSTRUCTION STAGING AND TRAFFIC CONTROL
CSAH 52/116 RECONSTRUCTION
NB CSAH 52 STA. 330+20 TO 360+00

SHEET 3.13 OF 294

NOTE:
SEE SHEET 3.13 FOR STAGE 2 TRAFFIC CONTROL DEVICES AND SIGNS BETWEEN MATCHLINES. SEE SHEET 3.23 FOR STAGE 3 CONSTRUCTION AND TRAFFIC CONTROL DEVICES AND SIGNS BETWEEN MATCHLINES.



LEGEND

TEMPORARY CONSTRUCTION IN THIS STAGE	TRAFFIC FLOW IN THIS STAGE
PERMANENT CONSTRUCTION IN THIS STAGE	RETROREFLECTIVE DRUM
PERMANENT CONSTRUCTION UNDER TRAFFIC IN THIS STAGE. THE CONTRACTOR SHALL PROVIDE FOR FLAGGING OPERATIONS, AS DIRECTED BY THE ENGINEER, PER THE "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS". FLAGGING IS CONSIDERED A PART OF THE LUMP SUM BID FOR TRAFFIC CONTROL.	TUBE DELINEATOR
	EXISTING STORM SEWER
	STORM SEWER CONSTRUCTED IN THIS STAGE

ALL TRAFFIC CONTROL DEVICES AND SIGNING SHALL CONFORM TO THE "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MN MUTCD), INCLUDING "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS".

STAGES 2 & 3

NO	DATE	BY	CKD	APPR	REVISION

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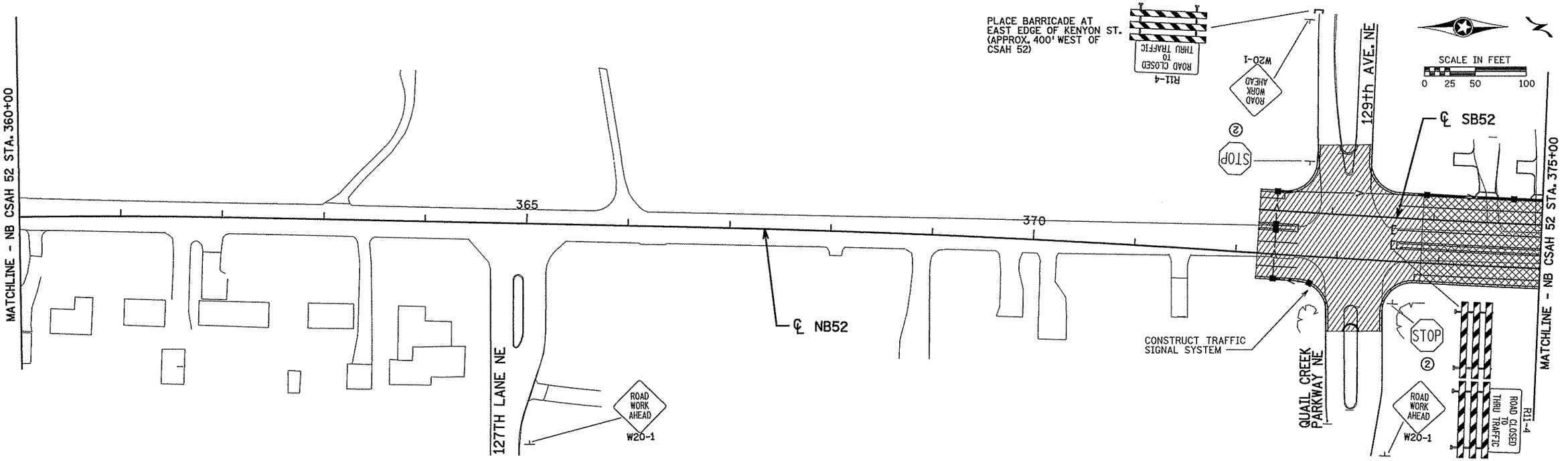
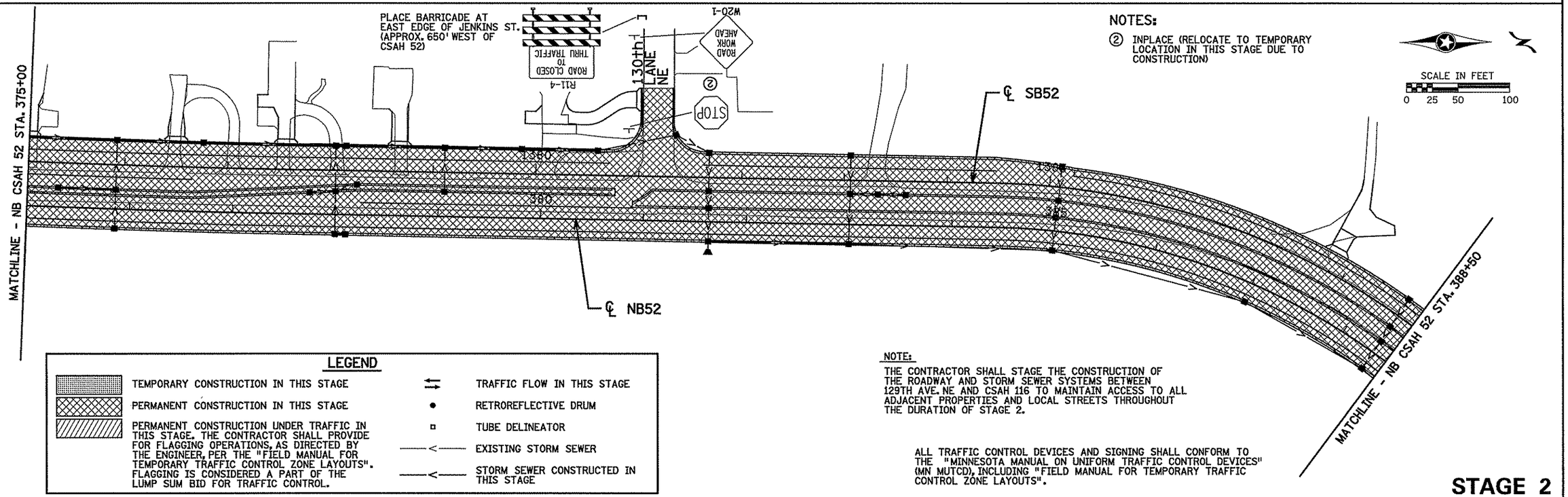
ANOKA COUNTY
CONSTRUCTION STAGING AND TRAFFIC CONTROL
CSAH 52/116 RECONSTRUCTION
CSAH 14 700' WEST TO 1000' EAST OF CSAH 52

SHEET 3.14 OF 294





LEGEND

- TEMPORARY CONSTRUCTION IN THIS STAGE
- PERMANENT CONSTRUCTION IN THIS STAGE
- PERMANENT CONSTRUCTION UNDER TRAFFIC IN THIS STAGE. THE CONTRACTOR SHALL PROVIDE FOR FLAGGING OPERATIONS, AS DIRECTED BY THE ENGINEER, PER THE "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS". FLAGGING IS CONSIDERED A PART OF THE LUMP SUM BID FOR TRAFFIC CONTROL.
- TRAFFIC FLOW IN THIS STAGE
- RETROREFLECTIVE DRUM
- TUBE DELINEATOR
- EXISTING STORM SEWER
- STORM SEWER CONSTRUCTED IN THIS STAGE

NOTE:
THE CONTRACTOR SHALL STAGE THE CONSTRUCTION OF THE ROADWAY AND STORM SEWER SYSTEMS BETWEEN 129TH AVE. NE AND CSAH 116 TO MAINTAIN ACCESS TO ALL ADJACENT PROPERTIES AND LOCAL STREETS THROUGHOUT THE DURATION OF STAGE 2.

ALL TRAFFIC CONTROL DEVICES AND SIGNING SHALL CONFORM TO THE "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MN MUTCD), INCLUDING "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS".

STAGE 2

NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\a-f\AnokaCty\13867000\hwy-brdg\hwy\pln-sht\c0265205_cs2e.dgn 11/3/2009

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S.P. 197-124-001

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ANOKA COUNTY
CONSTRUCTION STAGING AND TRAFFIC CONTROL
CSAH 52/116 RECONSTRUCTION
NB CSAH 52 STA. 360+00 TO 388+50

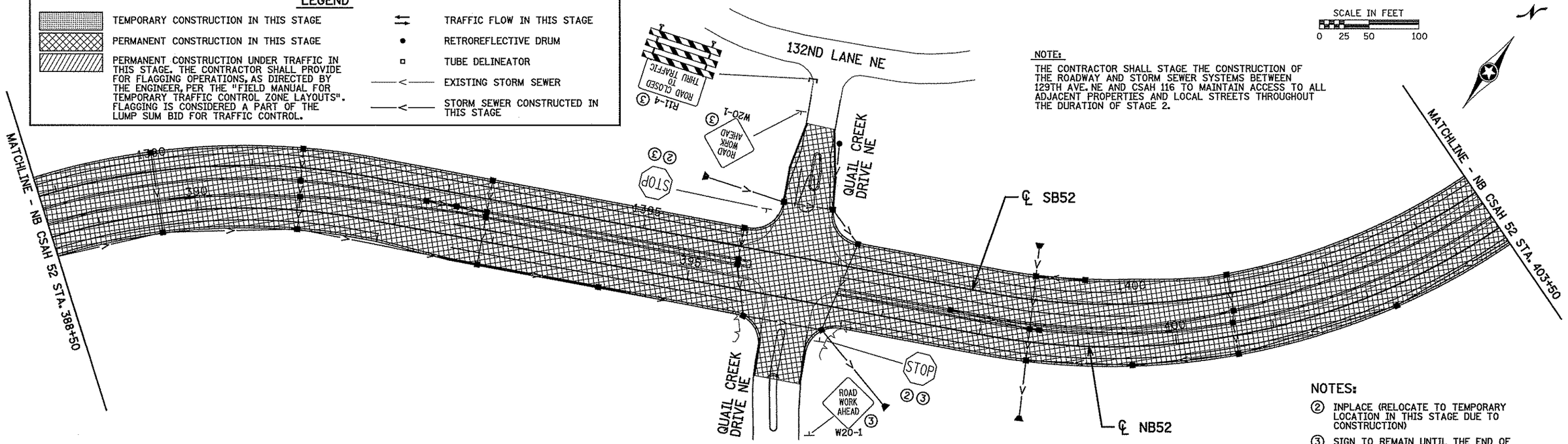
SHEET 3.15 OF 294

LEGEND

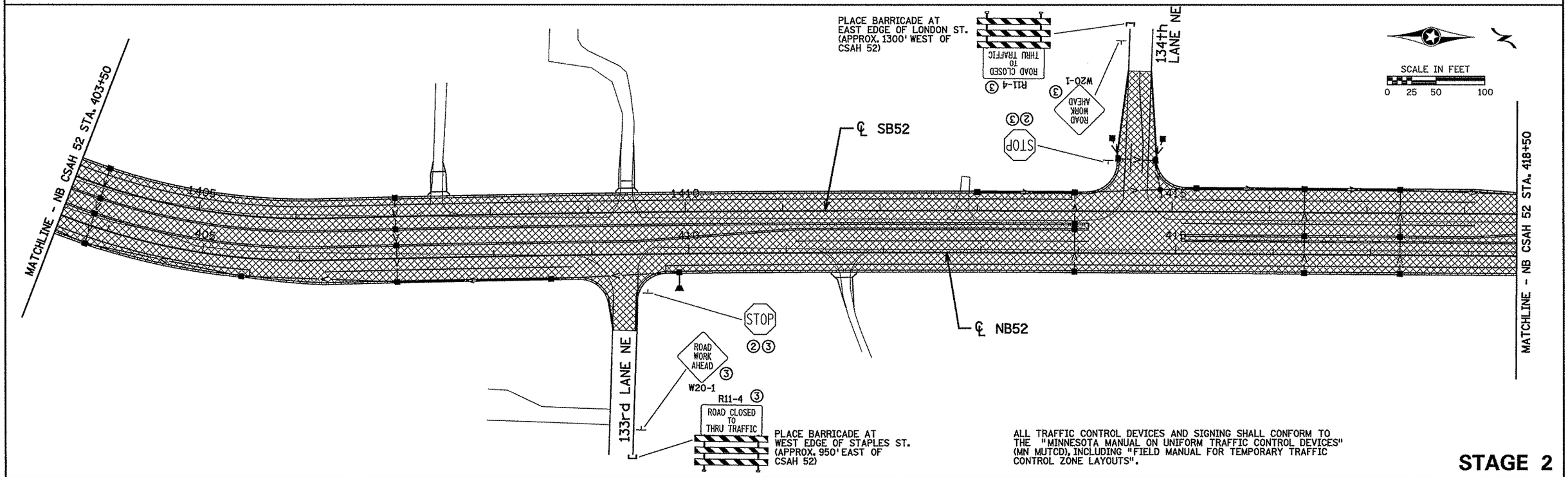
- TEMPORARY CONSTRUCTION IN THIS STAGE
- PERMANENT CONSTRUCTION IN THIS STAGE
- PERMANENT CONSTRUCTION UNDER TRAFFIC IN THIS STAGE. THE CONTRACTOR SHALL PROVIDE FOR FLAGGING OPERATIONS, AS DIRECTED BY THE ENGINEER, PER THE "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS". FLAGGING IS CONSIDERED A PART OF THE LUMP SUM BID FOR TRAFFIC CONTROL.
- TRAFFIC FLOW IN THIS STAGE
- RETROREFLECTIVE DRUM
- TUBE DELINEATOR
- EXISTING STORM SEWER
- STORM SEWER CONSTRUCTED IN THIS STAGE

SCALE IN FEET
0 25 50 100

NOTE:
THE CONTRACTOR SHALL STAGE THE CONSTRUCTION OF THE ROADWAY AND STORM SEWER SYSTEMS BETWEEN 129TH AVE. NE AND CSAH 116 TO MAINTAIN ACCESS TO ALL ADJACENT PROPERTIES AND LOCAL STREETS THROUGHOUT THE DURATION OF STAGE 2.



NOTES:
② INPLACE (RELOCATE TO TEMPORARY LOCATION IN THIS STAGE DUE TO CONSTRUCTION)
③ SIGN TO REMAIN UNTIL THE END OF STAGE 3 CONSTRUCTION.



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STAGE 2

NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\a-f\AnokaCty\13867000\hwy-brdg\hwy\pln-sht\c0265205_cs2f.dgn 11/3/2009

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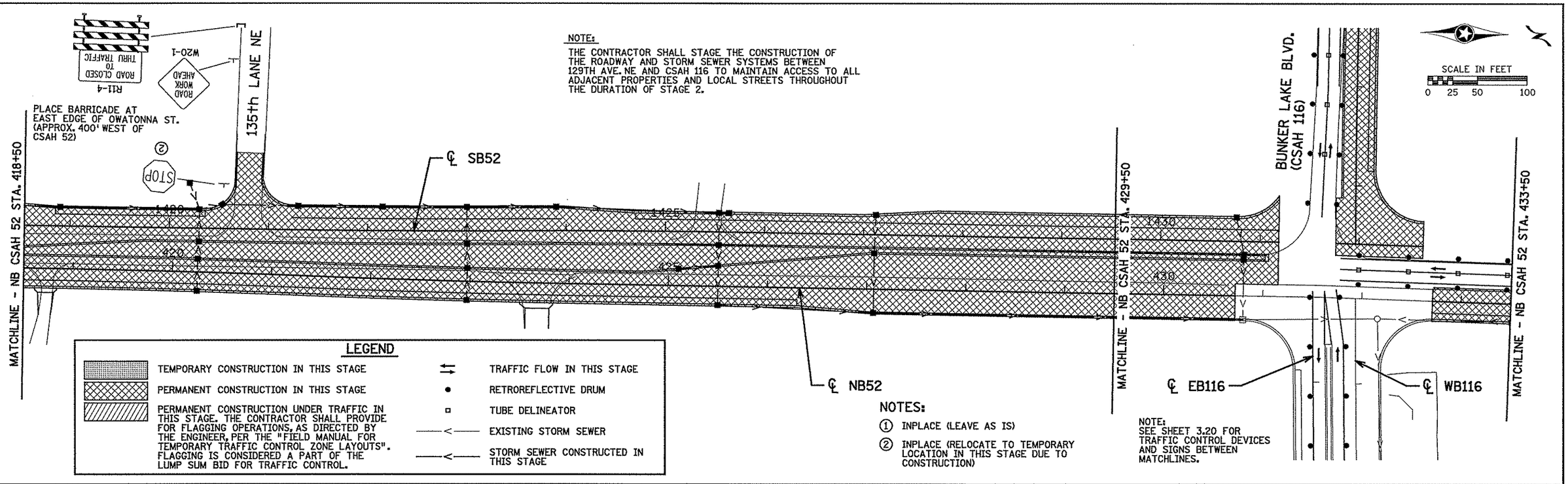
ANOKA COUNTY
CONSTRUCTION STAGING AND TRAFFIC CONTROL
CSAH 52/116 RECONSTRUCTION
NB CSAH 52 STA. 388+50 TO 418+50

SHEET 3.16 OF 294



NO	DATE	BY	CKD	APPR	REVISION

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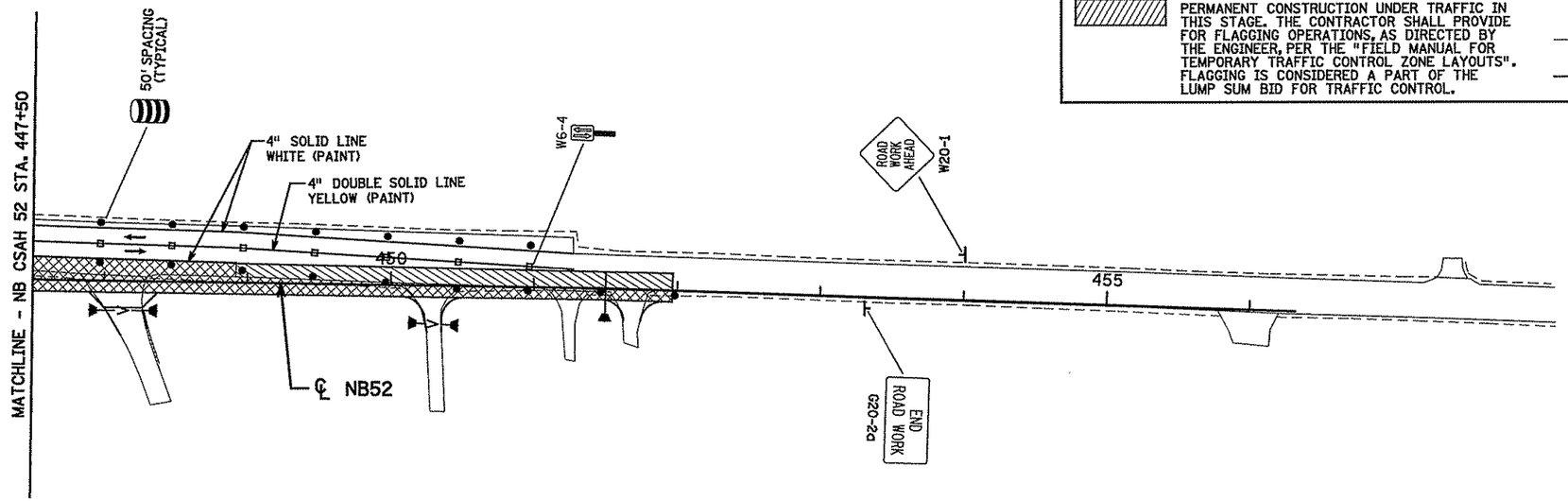
ANOKA COUNTY
CONSTRUCTION STAGING AND TRAFFIC CONTROL
CSAH 52/116 RECONSTRUCTION
NB CSAH 52 STA. 418+50 TO 447+50

SHEET 3.17 OF 294



LEGEND

- TEMPORARY CONSTRUCTION IN THIS STAGE
- PERMANENT CONSTRUCTION IN THIS STAGE
- PERMANENT CONSTRUCTION UNDER TRAFFIC IN THIS STAGE. THE CONTRACTOR SHALL PROVIDE FOR FLAGGING OPERATIONS, AS DIRECTED BY THE ENGINEER, PER THE "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS". FLAGGING IS CONSIDERED A PART OF THE LUMP SUM BID FOR TRAFFIC CONTROL.
- TRAFFIC FLOW IN THIS STAGE
- RETROREFLECTIVE DRUM
- TUBE DELINEATOR
- EXISTING STORM SEWER
- STORM SEWER CONSTRUCTED IN THIS STAGE

SCALE IN FEET
0 25 50 100

ALL TRAFFIC CONTROL DEVICES AND SIGNING SHALL CONFORM TO THE "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MN MUTCD), INCLUDING "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS".

STAGE 2

NO	DATE	BY	CKD	APPR	REVISION

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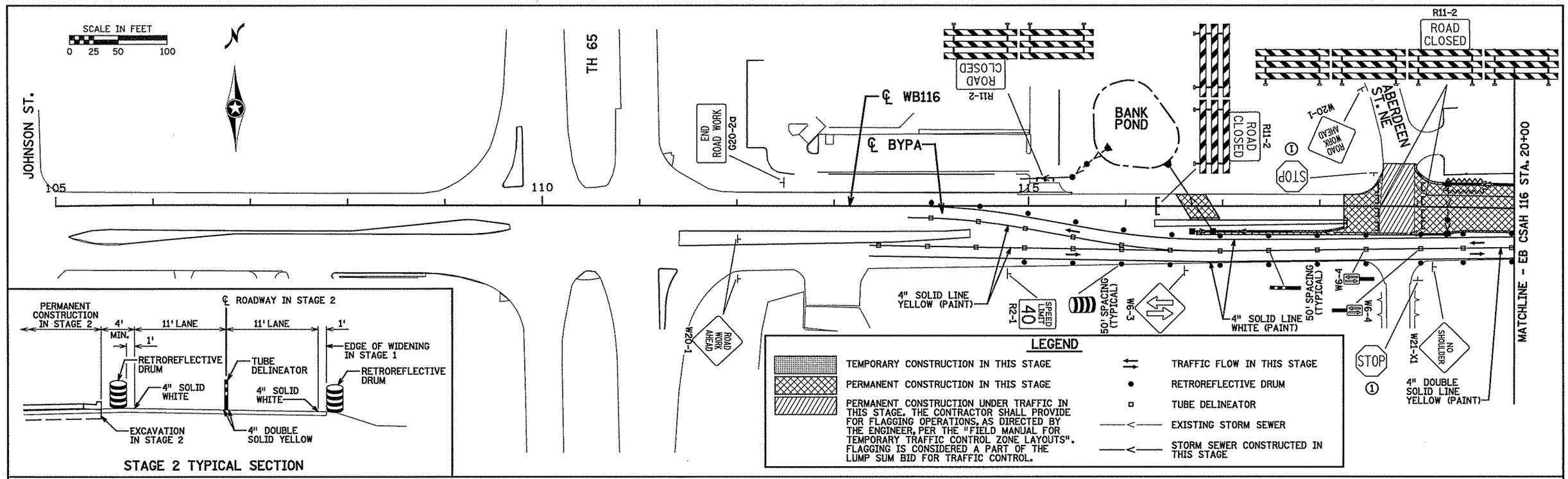
ANOKA COUNTY

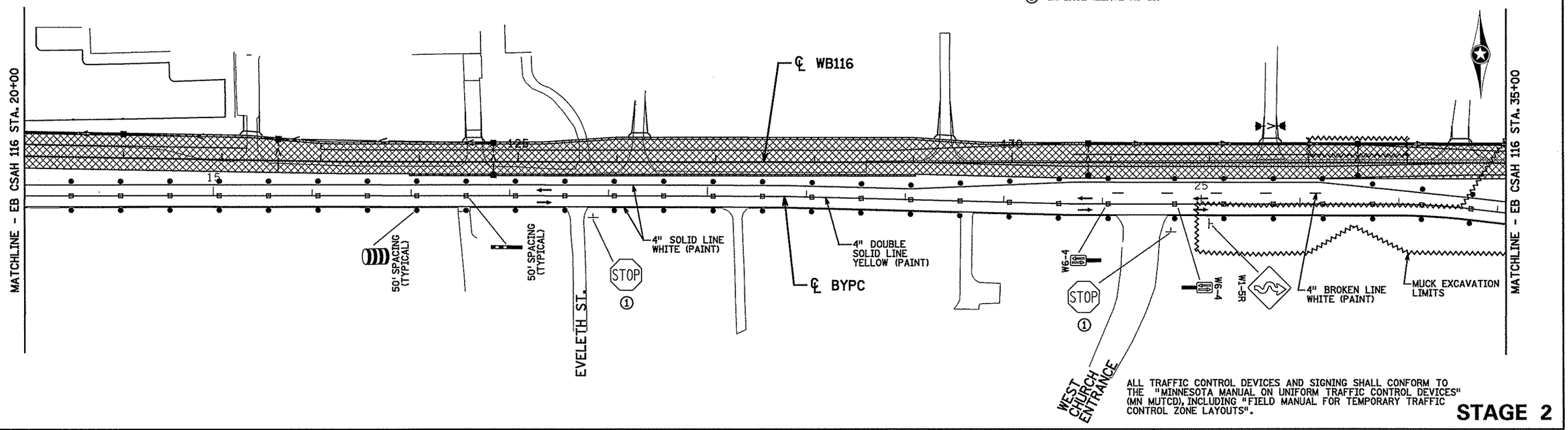
CONSTRUCTION STAGING AND TRAFFIC CONTROL
CSAH 52/116 RECONSTRUCTION
NB CSAH 52 STA. 447+50 TO 452+00

SHEET 3.18 OF 294



NOTES:

① INPLACE (LEAVE AS IS)



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STAGE 2

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CHECKED BY TAC DATE 7/30/2009

S.P. 02-652-05
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S.P. 106-020-28
S.P. 197-124-001

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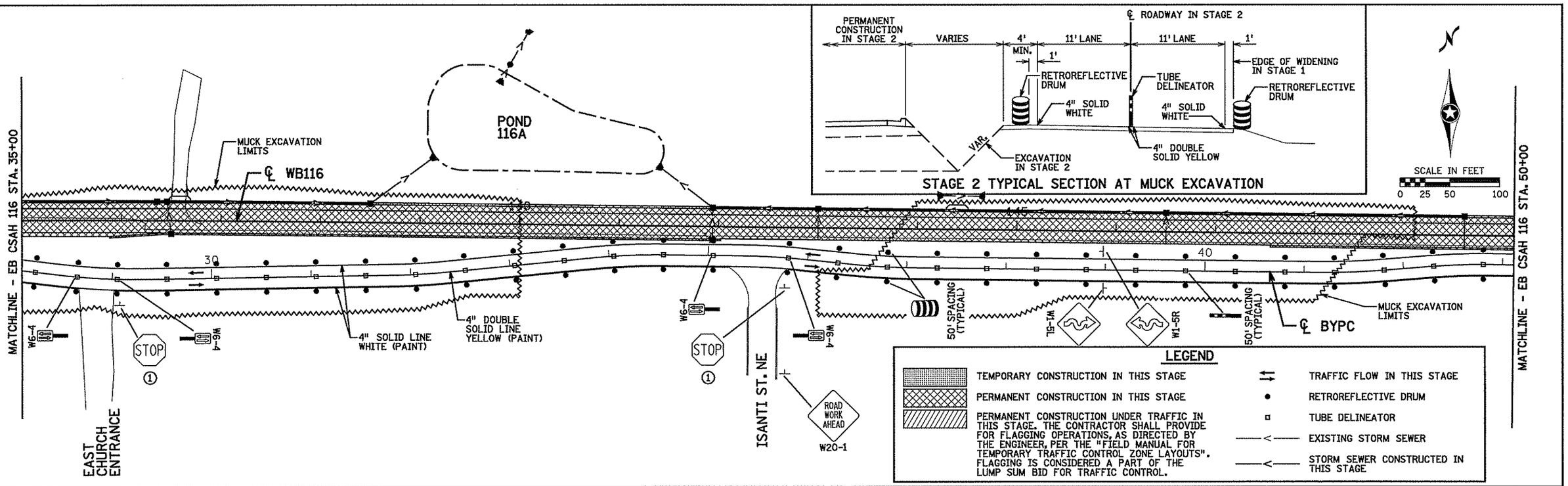
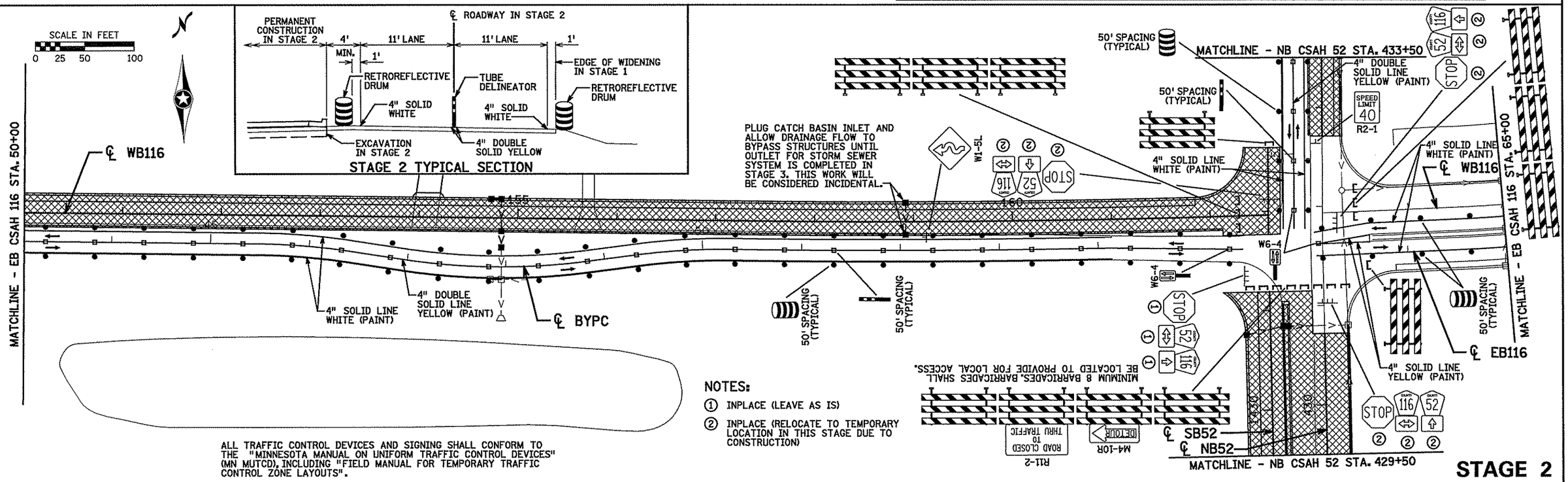
ANOKA COUNTY

CONSTRUCTION STAGING AND TRAFFIC CONTROL
CSAH 52/116 RECONSTRUCTION
EB CSAH 116 STA. 5+00 TO 35+00

SHEET 3.19 OF 294





NOTES:

① INPLACE (LEAVE AS IS)

② INPLACE (RELOCATE TO TEMPORARY LOCATION IN THIS STAGE DUE TO CONSTRUCTION)

ALL TRAFFIC CONTROL DEVICES AND SIGNING SHALL CONFORM TO THE "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MN MUTCD), INCLUDING "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS".

NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\a-f\AnokaCty\13867000\hwy-brdg\hwy\pln-sht\c0265205_cs2j.dgn 7/30/2009

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: Timothy A. Chalupnik

PRINTED NAME: TIMOTHY A. CHALUPNIK

DATE: 7/30/2009 LIC. NO. 15400

DRAWN BY SFH DATE 7/30/2009

DESIGN BY SJS DATE 7/30/2009

CHECKED BY TAC DATE 7/30/2009

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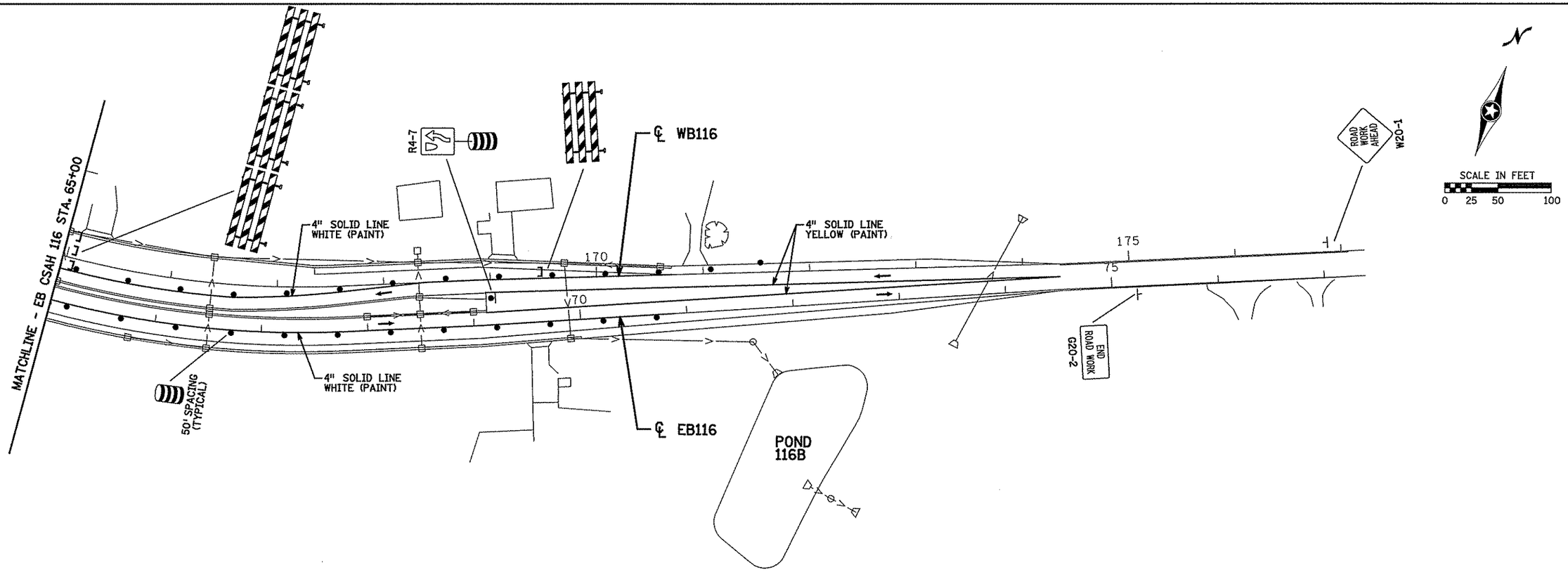
CONSTRUCTION STAGING AND TRAFFIC CONTROL
CSAH 52/116 RECONSTRUCTION
EB CSAH 116 STA. 35+00 TO 65+00

SHEET 3.20 OF 294



LEGEND

TEMPORARY CONSTRUCTION IN THIS STAGE	TRAFFIC FLOW IN THIS STAGE
PERMANENT CONSTRUCTION IN THIS STAGE	RETROREFLECTIVE DRUM
PERMANENT CONSTRUCTION UNDER TRAFFIC IN THIS STAGE. THE CONTRACTOR SHALL PROVIDE FOR FLAGGING OPERATIONS, AS DIRECTED BY THE ENGINEER, PER THE "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS". FLAGGING IS CONSIDERED A PART OF THE LUMP SUM BID FOR TRAFFIC CONTROL.	TUBE DELINEATOR
	EXISTING STORM SEWER
	STORM SEWER CONSTRUCTED IN THIS STAGE

ALL TRAFFIC CONTROL DEVICES AND SIGNING SHALL CONFORM TO THE "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MN MUTCD), INCLUDING "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS".

STAGE 2

NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\a-f\AnokaCty\13867000\hwy-brdg\hwy\pln-sht\c0265205_cs2k.dgn 7/30/2009

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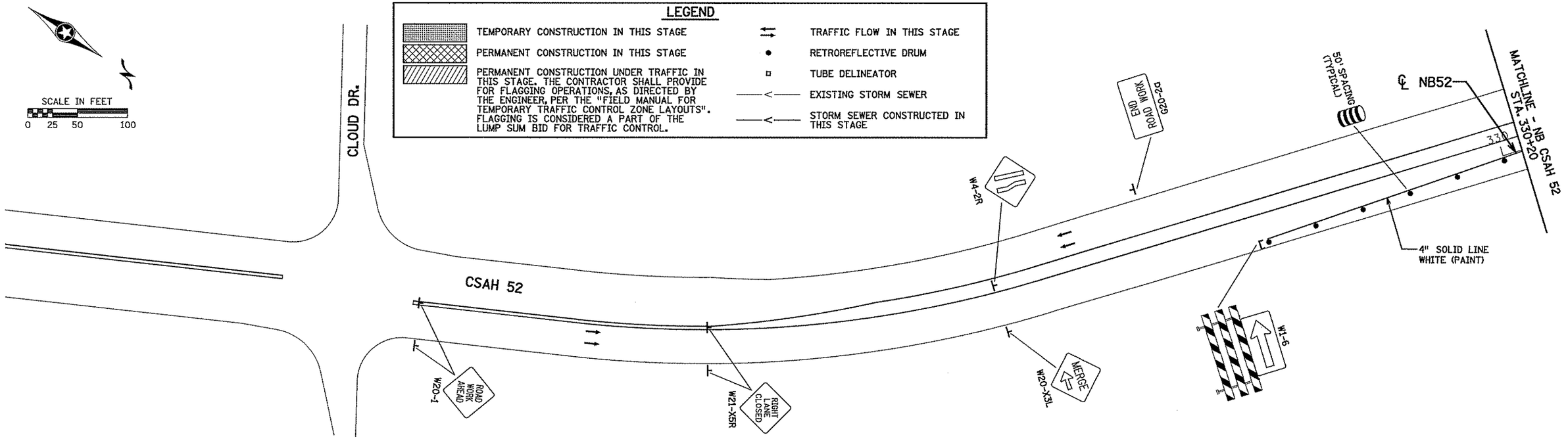
CONSTRUCTION STAGING AND TRAFFIC CONTROL
CSAH 52/116 RECONSTRUCTION
EB CSAH 116 STA. 65+00 TO 75+00

SHEET 3.21 OF 294



STAGE 3 TRAFFIC

MAINTAIN ONE LANE OF TRAFFIC ON CSAH 52 NB NORTH OF CLOUD DRIVE. ALLOW ONLY LEFT TURN AND THRU/RIGHT TRAFFIC MOVEMENTS APPROACHING CSAH 14.

MAINTAIN TRAFFIC ON CSAH 14.

MAINTAIN CLOSURE OF CSAH 52 FROM CSAH 14 TO CSAH 116 (PROVIDE FOR LOCAL ACCESS). DETOUR TRAFFIC TO CSAH 14, TH 65, AND CSAH 116.

SHIFT CSAH 52 TRAFFIC NORTH OF CSAH 116 ONTO NEWLY CONSTRUCTED NORTHBOUND LANES.

OPEN BYPASS B TO CSAH 116 EB TRAFFIC.

SHIFT CSAH 116 TRAFFIC WEST OF CSAH 52 ONTO NEWLY CONSTRUCTED WESTBOUND LANES.

MAINTAIN ONE LANE OF TRAFFIC IN EACH DIRECTION ON CSAH 116 EAST OF CSAH 52.

STAGE 3 CONSTRUCTION

CONSTRUCT CSAH 52 NB WIDENING AND RIGHT TURN LANES SOUTH OF CSAH 14.

CONTINUE CONSTRUCTION OF CSAH 52 FROM CSAH 14 TO CSAH 116. SEE SECTION 1404 OF THE SPECIAL PROVISIONS FOR PHASING REQUIREMENTS.

CONSTRUCT CSAH 52 SB LANES NORTH OF CSAH 116.

CONSTRUCT CSAH 116 EB LANES WEST OF CSAH 52.

ALL TRAFFIC CONTROL DEVICES AND SIGNING SHALL CONFORM TO THE "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MN MUTCD), INCLUDING "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS".

STAGE 3

NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\a-f\AnokaCty\13867000\hwy-brdg\hwy\pln-sht\c0265205_cs3a.dgn 10/23/2009

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SIGNATURE: Timothy A. Chalupnik

PRINTED NAME: TIMOTHY A. CHALUPNIK

DATE: 10/23/2009 LIC. NO. 15400

DRAWN BY SFH DATE 10/23/2009

DESIGN BY SJS DATE 10/23/2009

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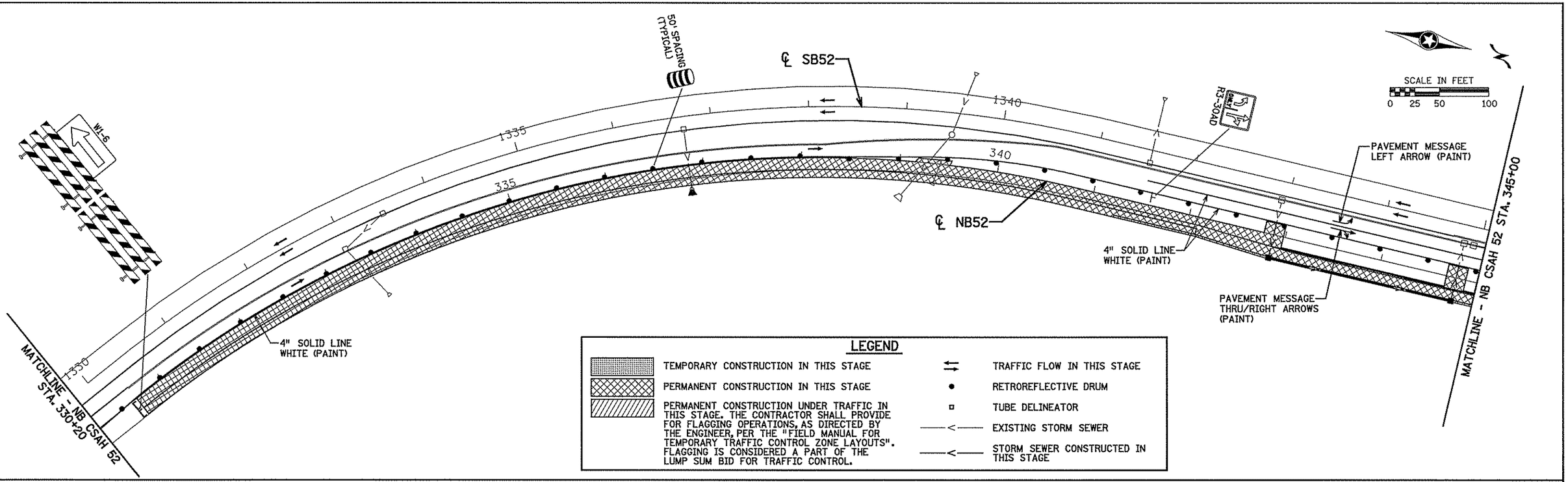
ANOKA COUNTY
CONSTRUCTION STAGING AND TRAFFIC CONTROL
CSAH 52/116 RECONSTRUCTION
NB CSAH 52 STA. 315+00 TO 330+20

SHEET 3.22 OF 294



STAGE 3

NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\a-f\AnokaCty\13867000\hwy-brdg\hwy\pln-sht\c0265205_cs3b.dgn 11/3/2009

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PRINTED NAME: TIMOTHY A. CHALUPNIK

DATE: 11/3/2009 LIC. NO. 15400

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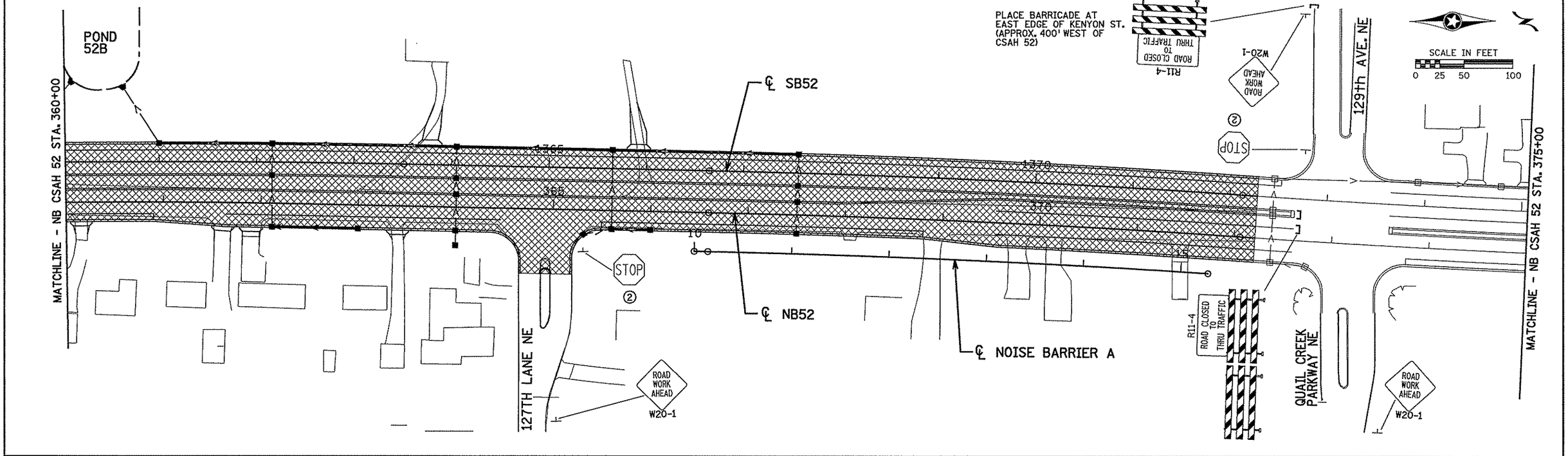
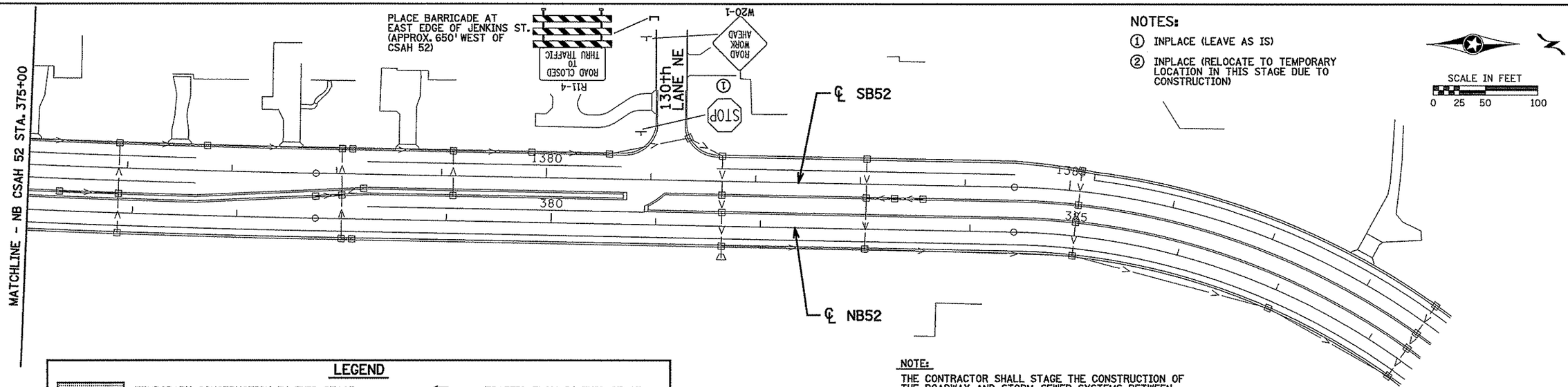
CONSTRUCTION STAGING AND TRAFFIC CONTROL
CSAH 52/116 RECONSTRUCTION
NB CSAH 52 STA. 330+20 TO 360+00

SHEET 3.23 OF 294





LEGEND

- TEMPORARY CONSTRUCTION IN THIS STAGE
- PERMANENT CONSTRUCTION IN THIS STAGE
- PERMANENT CONSTRUCTION UNDER TRAFFIC IN THIS STAGE. THE CONTRACTOR SHALL PROVIDE FOR FLAGGING OPERATIONS, AS DIRECTED BY THE ENGINEER, PER THE "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS". FLAGGING IS CONSIDERED A PART OF THE LUMP SUM BID FOR TRAFFIC CONTROL.
- TRAFFIC FLOW IN THIS STAGE
- RETROREFLECTIVE DRUM
- TUBE DELINEATOR
- EXISTING STORM SEWER
- STORM SEWER CONSTRUCTED IN THIS STAGE

NOTE:
THE CONTRACTOR SHALL STAGE THE CONSTRUCTION OF THE ROADWAY AND STORM SEWER SYSTEMS BETWEEN CSAH 14 AND 129TH AVE. NE TO MAINTAIN ACCESS TO ALL ADJACENT PROPERTIES AND LOCAL STREETS THROUGHOUT THE DURATION OF STAGE 3.

ALL TRAFFIC CONTROL DEVICES AND SIGNING SHALL CONFORM TO THE "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MN MUTCD), INCLUDING "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS".

STAGE 3

NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\a-f\AnokaCty\13867000\hwy-brdg\hwy\pln-sht\c0265205_cs2ea.dgn 11/3/2009

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SIGNATURE: Timothy A. Chalupnik
PRINTED NAME: TIMOTHY A. CHALUPNIK
DATE: 11/3/2009 LIC. NO. 15400

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S.P. 197-124-001

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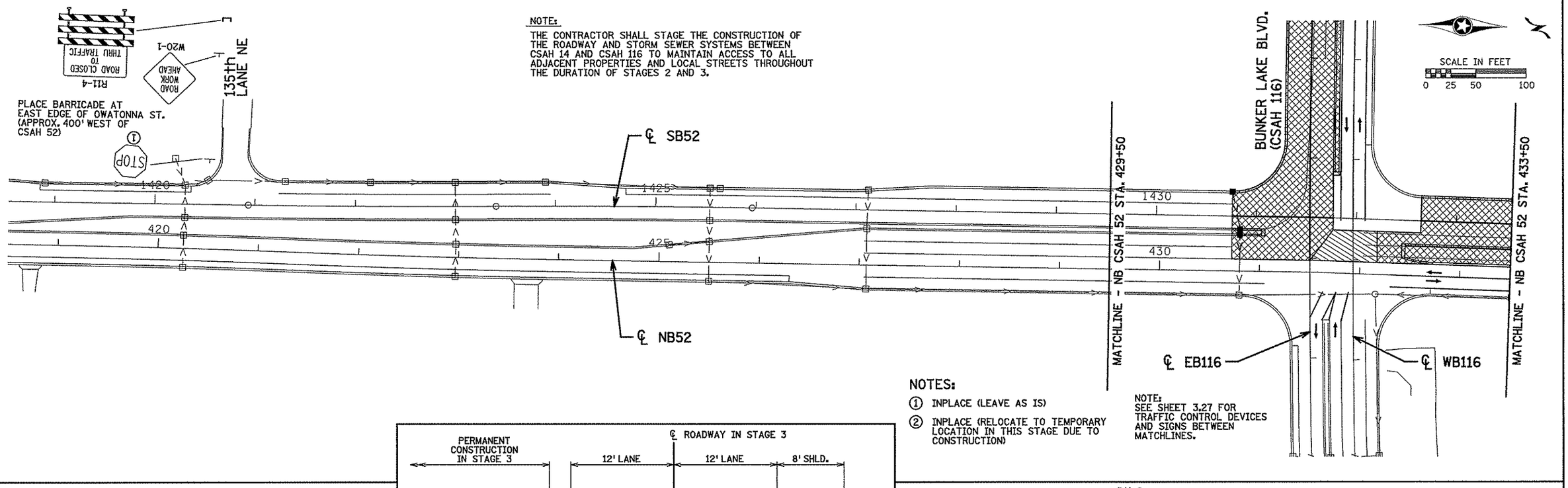
CONSTRUCTION STAGING AND TRAFFIC CONTROL
CSAH 52/116 RECONSTRUCTION
NB CSAH 52 STA. 360+00 TO 388+50

SHEET 3.24 OF 294



NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\a-f\AnokaCty\13867000\hwy-brdg\hwy\pln-sht\c0265205_cs3c.dgn 11/3/2009

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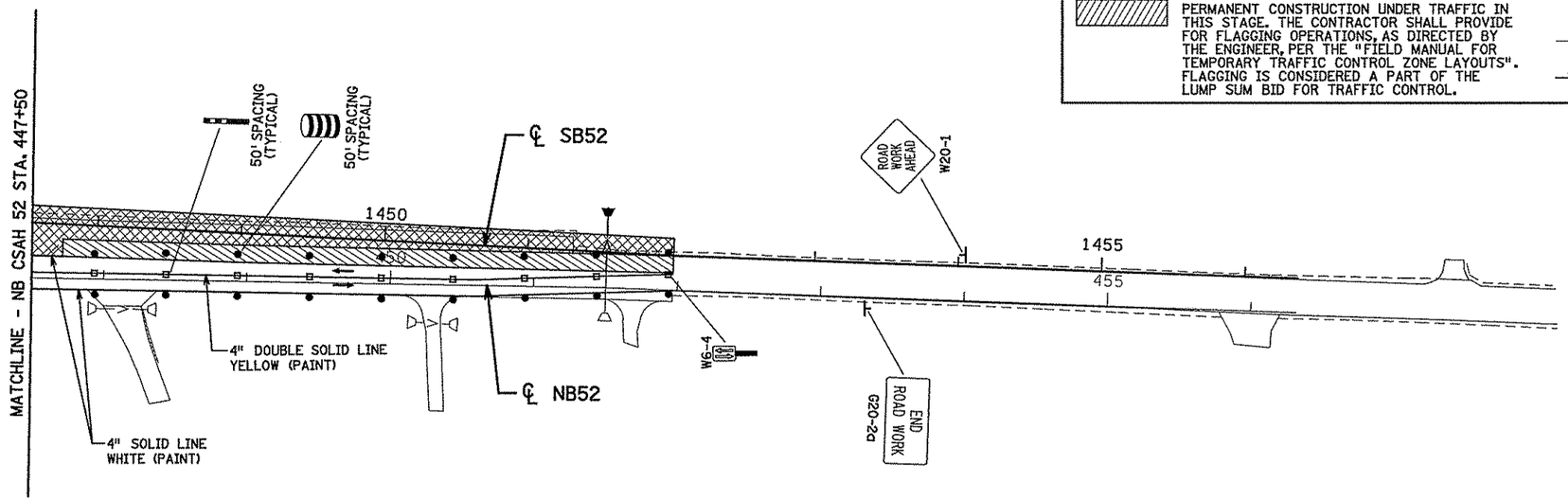
ANOKA COUNTY
CONSTRUCTION STAGING AND TRAFFIC CONTROL
CSAH 52/116 RECONSTRUCTION
NB CSAH 52 STA. 418+50 TO 447+50

SHEET 3.25 OF 294



LEGEND

- TEMPORARY CONSTRUCTION IN THIS STAGE
- PERMANENT CONSTRUCTION IN THIS STAGE
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- TRAFFIC FLOW IN THIS STAGE
- RETROREFLECTIVE DRUM
- TUBE DELINEATOR
- EXISTING STORM SEWER
- STORM SEWER CONSTRUCTED IN THIS STAGE

SCALE IN FEET
0 25 50 100

ALL TRAFFIC CONTROL DEVICES AND SIGNING SHALL CONFORM TO THE "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MN MUTCD), INCLUDING "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS".

STAGE 3

NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\a-f\AnokaCty\13867000\hwy-brdg\hwy\pln-sht\c0265205_cs3d.dgn 11/3/2009

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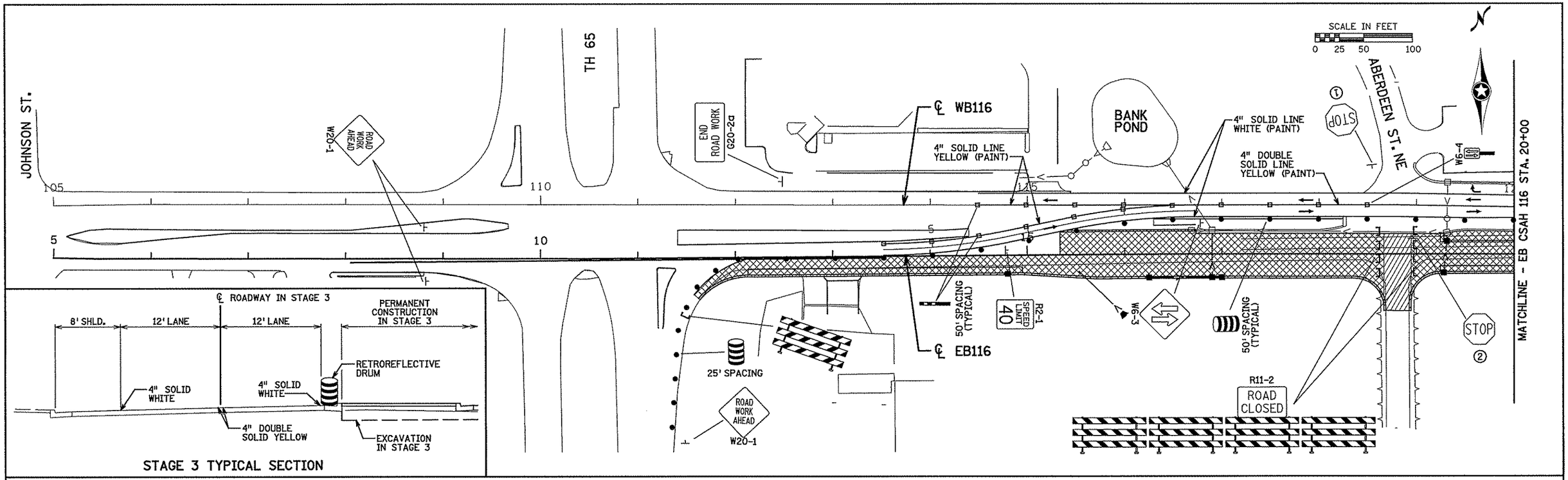
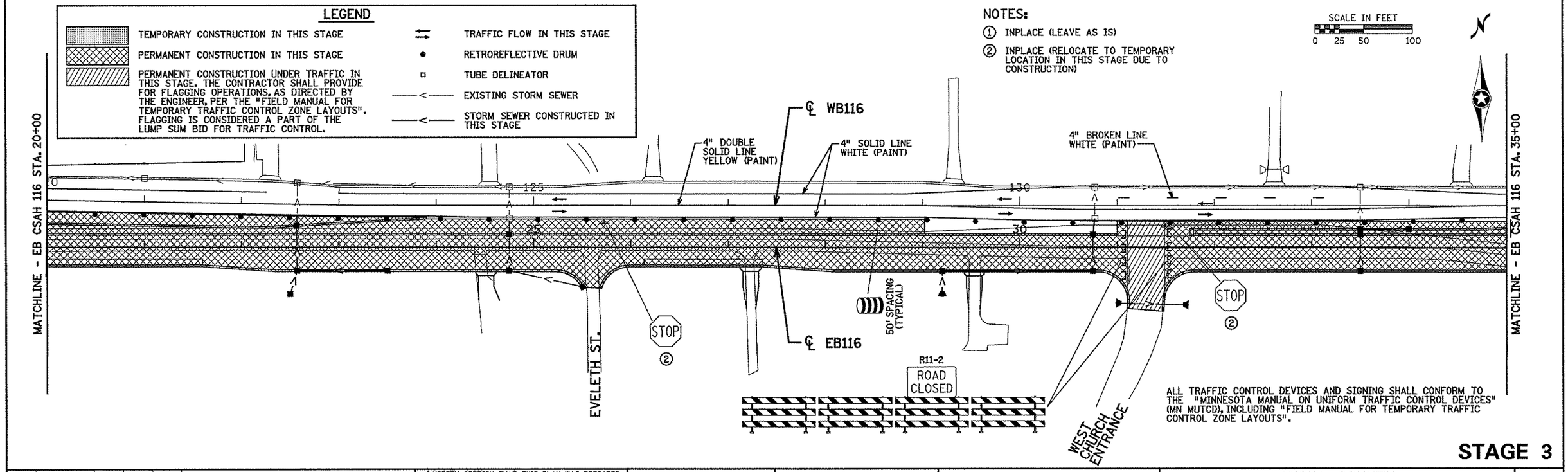
ANOKA COUNTY
CONSTRUCTION STAGING AND TRAFFIC CONTROL
CSAH 52/116 RECONSTRUCTION
NB CSAH 52 STA. 447+50 TO 452+00

SHEET 3.26 OF 294





STAGE 3

NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\a-f\AnokaCty\13867000\hwy-brdg\hwy\pln-sht\c0265205_cs3e.dgn 11/3/2009

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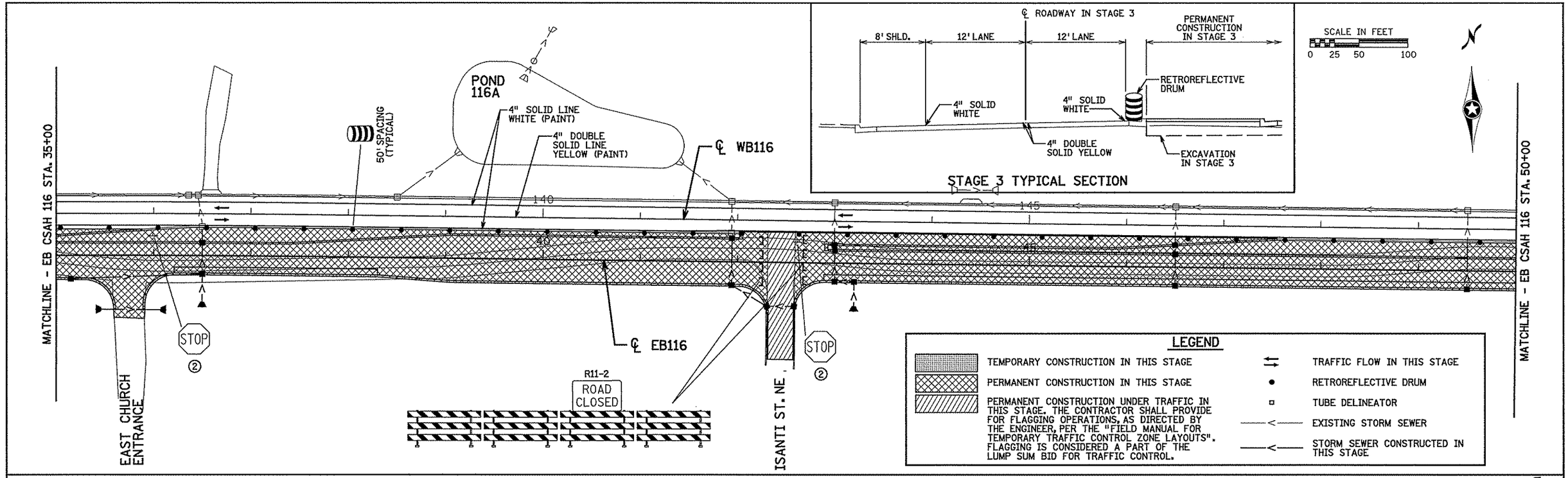
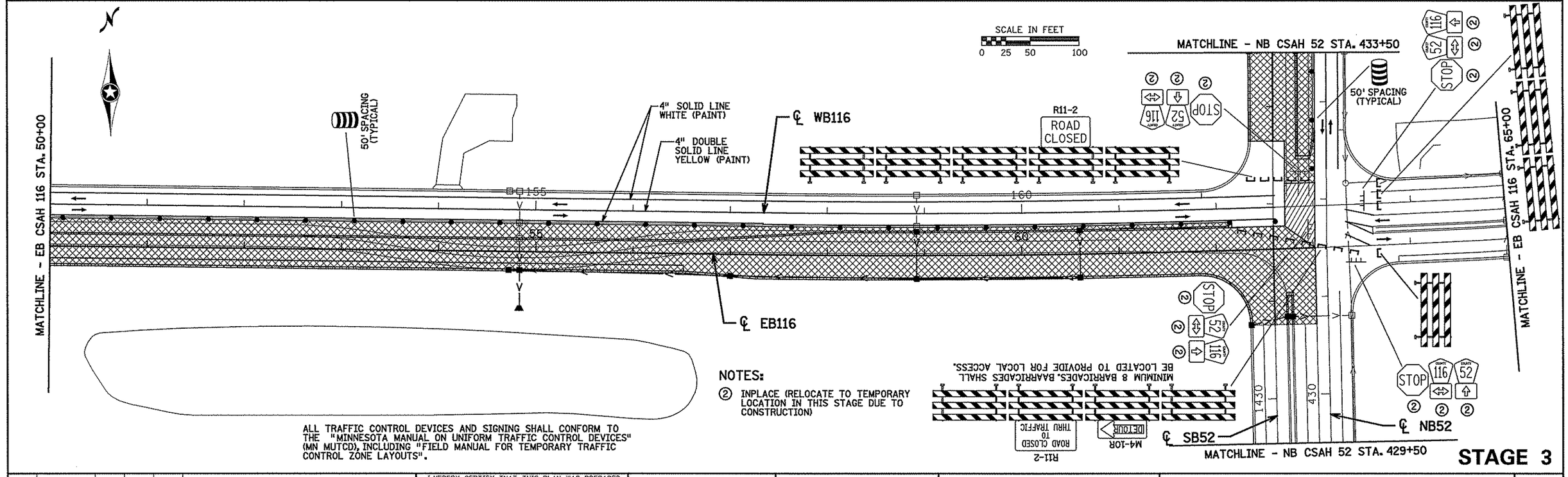
ANOKA COUNTY
CONSTRUCTION STAGING AND TRAFFIC CONTROL
CSAH 52/116 RECONSTRUCTION
EB CSAH 116 STA. 5+00 TO 35+00

SHEET 3.27 OF 294





STAGE 3

NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\a-f\AnokaCty\13867000\hwy-brdg\hwy\pln-sht\c0265205_cs3f.dgn 11/3/2009

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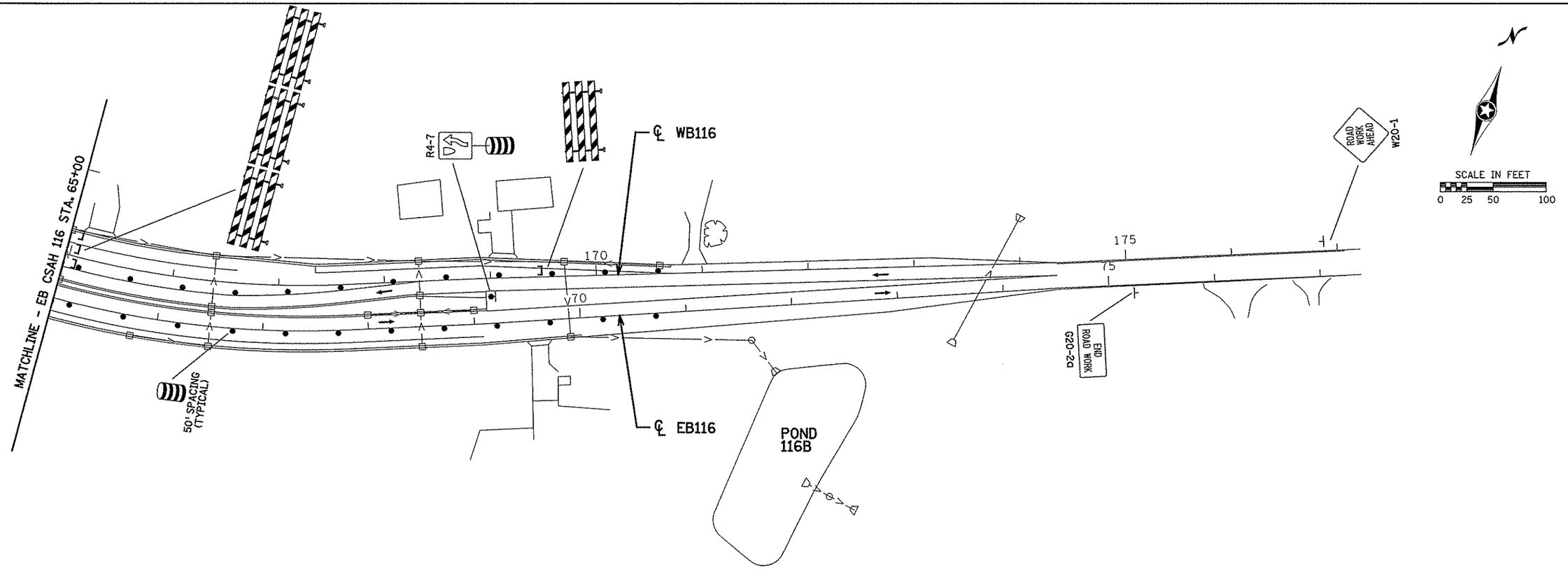
ANOKA COUNTY
CONSTRUCTION STAGING AND TRAFFIC CONTROL
CSAH 52/116 RECONSTRUCTION
EB CSAH 116 STA. 35+00 TO 65+00

SHEET 3.28 OF 294



LEGEND

- TEMPORARY CONSTRUCTION IN THIS STAGE
- PERMANENT CONSTRUCTION IN THIS STAGE
- PERMANENT CONSTRUCTION UNDER TRAFFIC IN THIS STAGE. THE CONTRACTOR SHALL PROVIDE FOR FLAGGING OPERATIONS, AS DIRECTED BY THE ENGINEER, PER THE "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS". FLAGGING IS CONSIDERED A PART OF THE LUMP SUM BID FOR TRAFFIC CONTROL.
- TRAFFIC FLOW IN THIS STAGE
- RETROREFLECTIVE DRUM
- TUBE DELINEATOR
- EXISTING STORM SEWER
- STORM SEWER CONSTRUCTED IN THIS STAGE

ALL TRAFFIC CONTROL DEVICES AND SIGNING SHALL CONFORM TO THE "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MN MUTCD), INCLUDING "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS".

STAGE 3

NO	DATE	BY	CKD	APPR	REVISION

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ANOKA COUNTY

CONSTRUCTION STAGING AND TRAFFIC CONTROL
CSAH 52/116 RECONSTRUCTION
EB CSAH 116 STA. 65+00 TO 75+00

SHEET 3.29 OF 294

STAGE 4 TRAFFIC

OPEN ALL LANES OF CSAH 52 NB AND SB TO TRAFFIC.

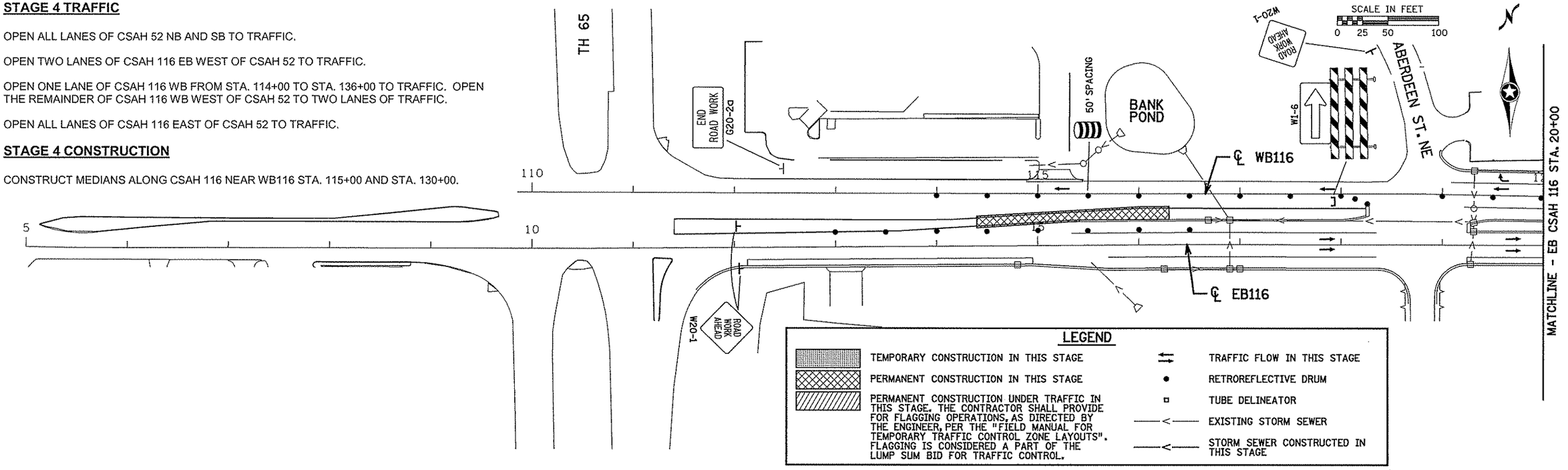
OPEN TWO LANES OF CSAH 116 EB WEST OF CSAH 52 TO TRAFFIC.

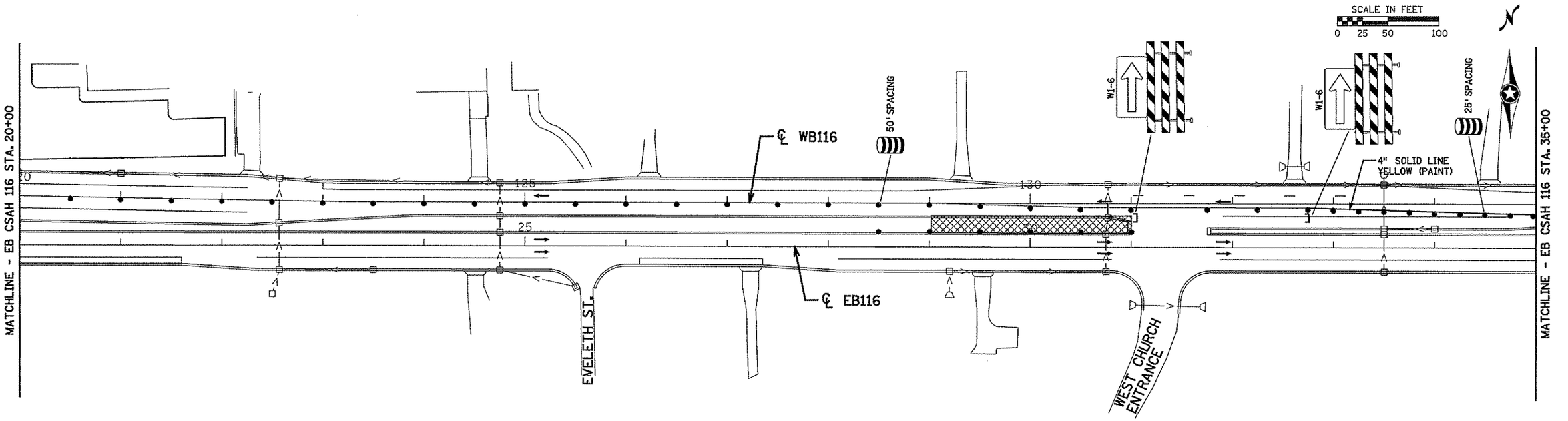
OPEN ONE LANE OF CSAH 116 WB FROM STA. 114+00 TO STA. 136+00 TO TRAFFIC. OPEN THE REMAINDER OF CSAH 116 WB WEST OF CSAH 52 TO TWO LANES OF TRAFFIC.

OPEN ALL LANES OF CSAH 116 EAST OF CSAH 52 TO TRAFFIC.

STAGE 4 CONSTRUCTION

CONSTRUCT MEDIANS ALONG CSAH 116 NEAR WB116 STA. 115+00 AND STA. 130+00.





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STAGE 4

NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\a-f\AnokaCty\13867000\hwy-brdg\hwy\pln-sht\c0265205_cs4a.dgn 11/3/2009

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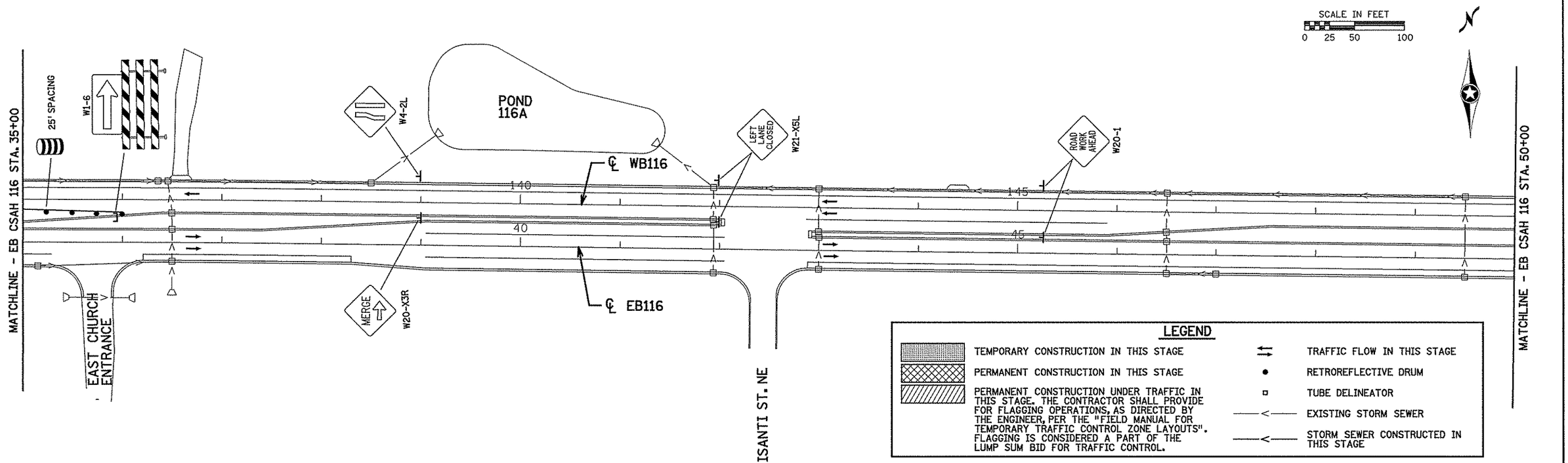
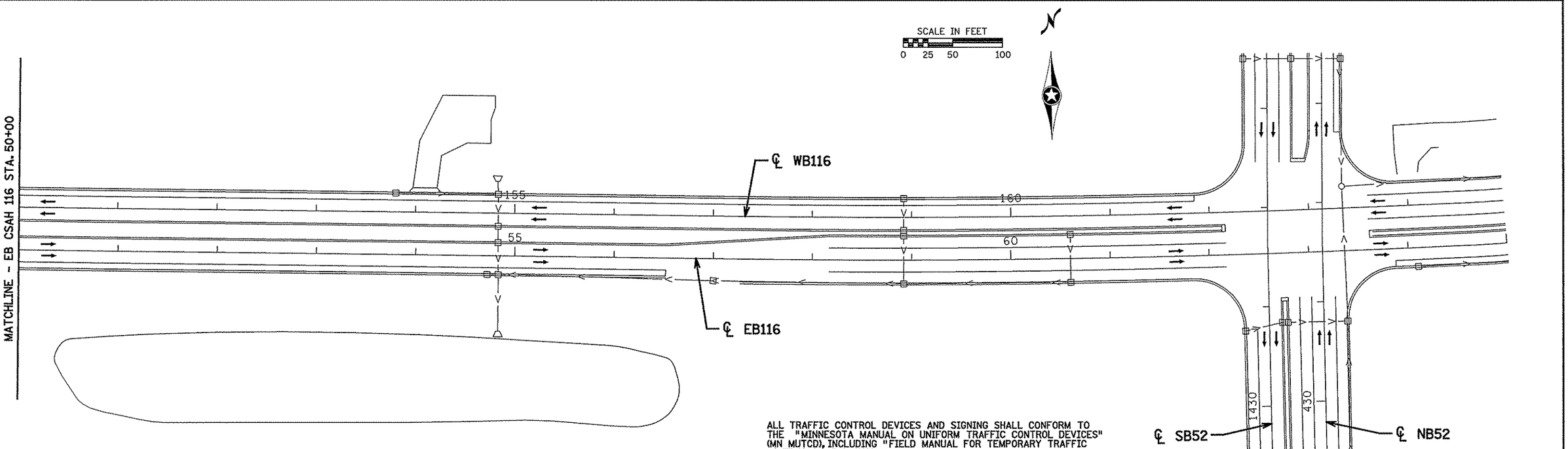
ANOKA COUNTY

CONSTRUCTION STAGING AND TRAFFIC CONTROL
CSAH 52/116 RECONSTRUCTION
EB CSAH 116 STA. 5+00 TO 35+00

SHEET 3.30 OF 294





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STAGE 4

NO	DATE	BY	CKD	APPR	REVISION

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

SIGNATURE: Timothy A. Chalupnik

PRINTED NAME: TIMOTHY A. CHALUPNIK

DATE: 11/3/2009 LIC. NO. 15400

DRAWN BY SFH DATE 11/3/2009

DESIGN BY SJS DATE 11/3/2009

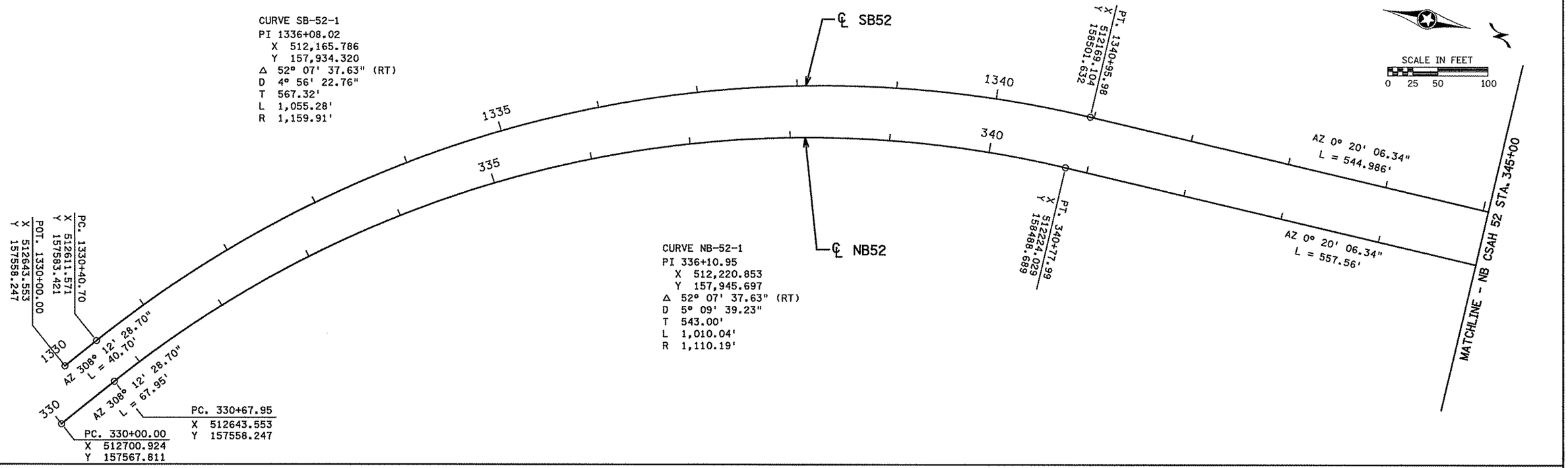
CHECKED BY TAC DATE 11/3/2009

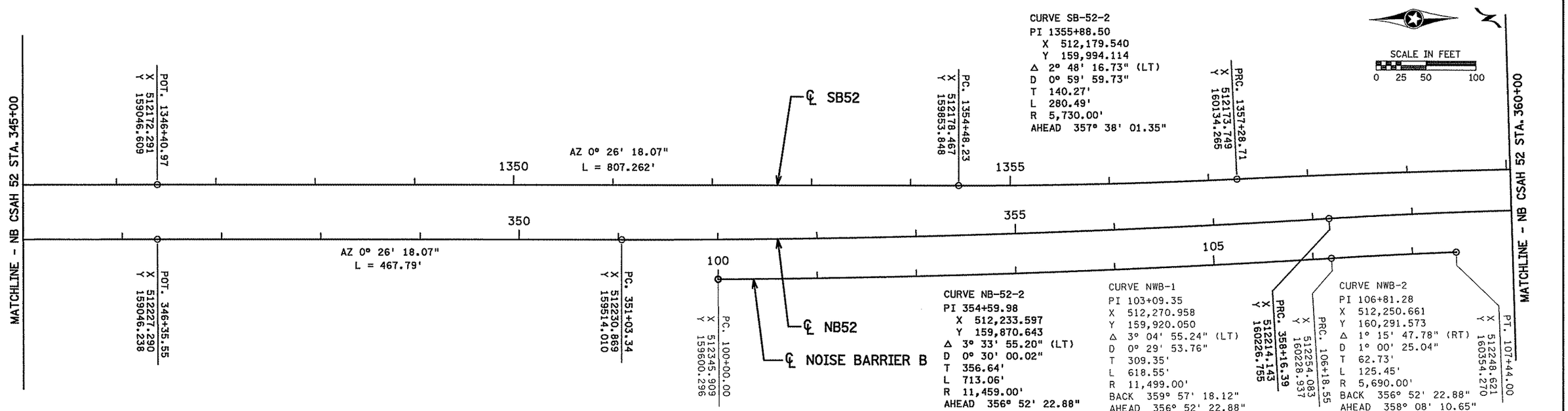
S.P. 02-652-05
S.P. 02-716-09
S.P. 106-020-28
S.P. 197-124-001

TKDA
ENGINEERS • ARCHITECTS • PLANNERS

ANOKA COUNTY
CONSTRUCTION STAGING AND TRAFFIC CONTROL
CSAH 52/116 RECONSTRUCTION
EB CSAH 116 STA. 35+00 TO 65+00

SHEET 3.31 OF 294





NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\a-f\AnokaCty\13867000\hwy-brdg\hwy\pln-sht\c0265205_ala.dgn 11/3/2009

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:

PRINTED NAME: RYAN P. MALONEY

DATE: 11/3/2009 LIC. NO. 44193

DRAWN BY SFH DATE 11/3/2009

DESIGN BY RPM DATE 11/3/2009

CHECKED BY TAC DATE 11/3/2009

S.P. 02-652-05
S.P. 02-716-09
S.P. 106-020-28
S.P. 197-124-001

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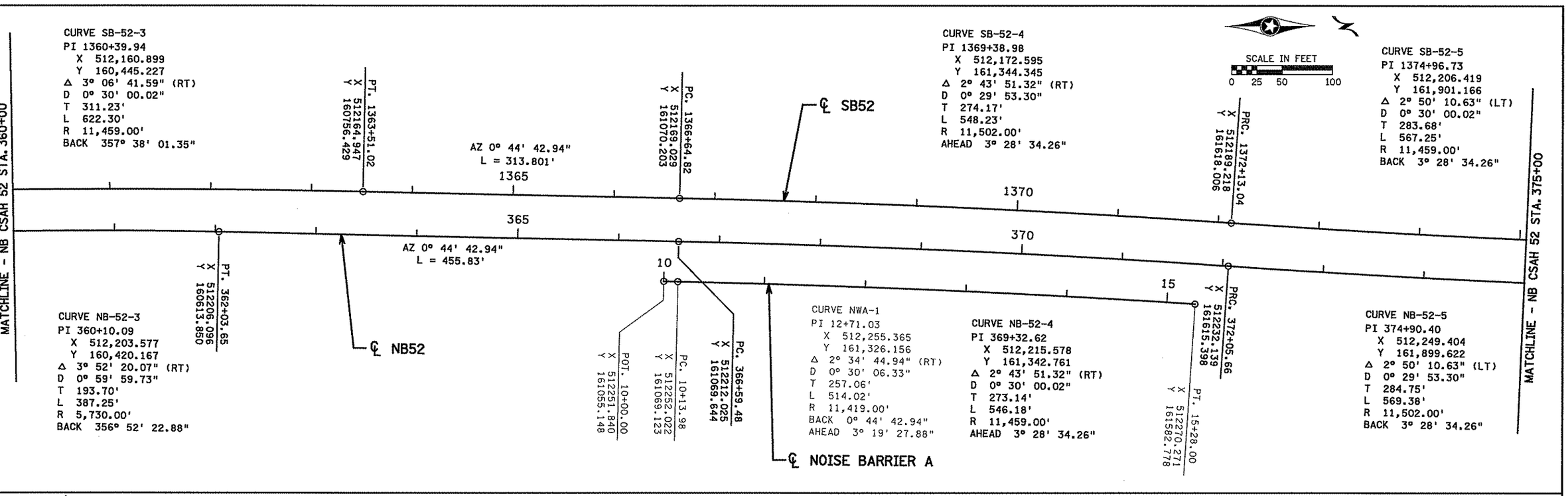
ANOKA COUNTY
ALIGNMENT PLAN
CSAH 52/116 RECONSTRUCTION
NB CSAH 52 STA. 330+00 TO 360+00

SHEET 4.01 OF 294



NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\a-f\AnokaCty\13867000\hwy-brdg\hwy\pln-sht\c0265205_alb.dgn 7/30/2009

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DATE: 7/30/2009 LIC. NO. 44193

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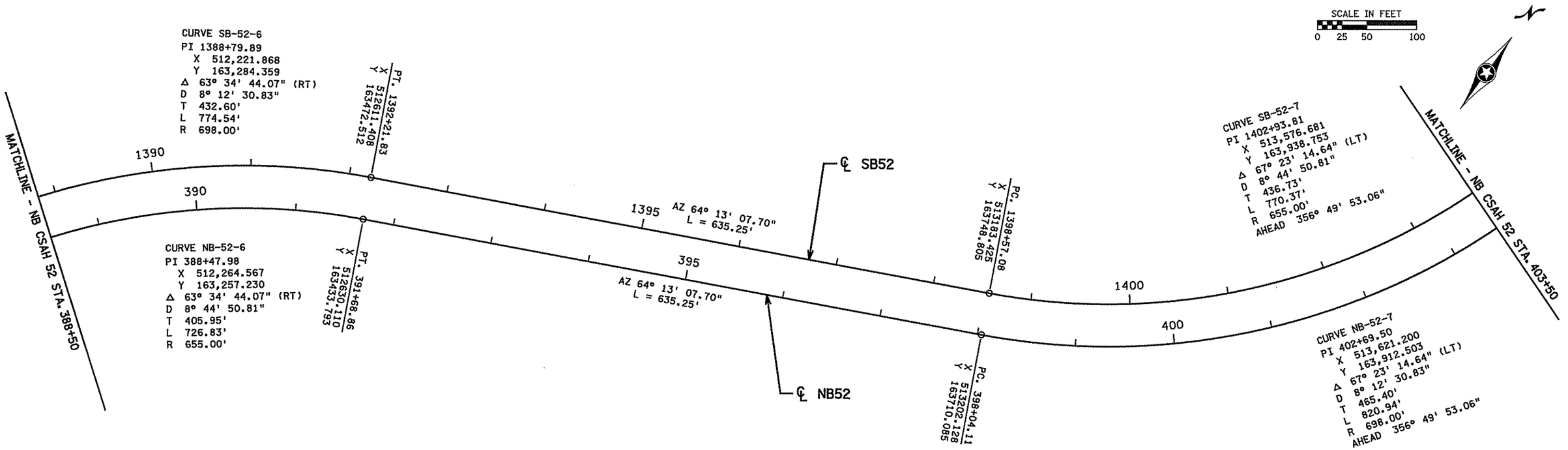
ANOKA COUNTY
ALIGNMENT PLAN
CSAH 52/116 RECONSTRUCTION
NB CSAH 52 STA. 360+00 TO 388+50

SHEET 4.02 OF 294



NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\a-f\AnokaCty\13867000\hwy-brdg\hwy\pln-sht\c0265205_alc.dgn 7/30/2009

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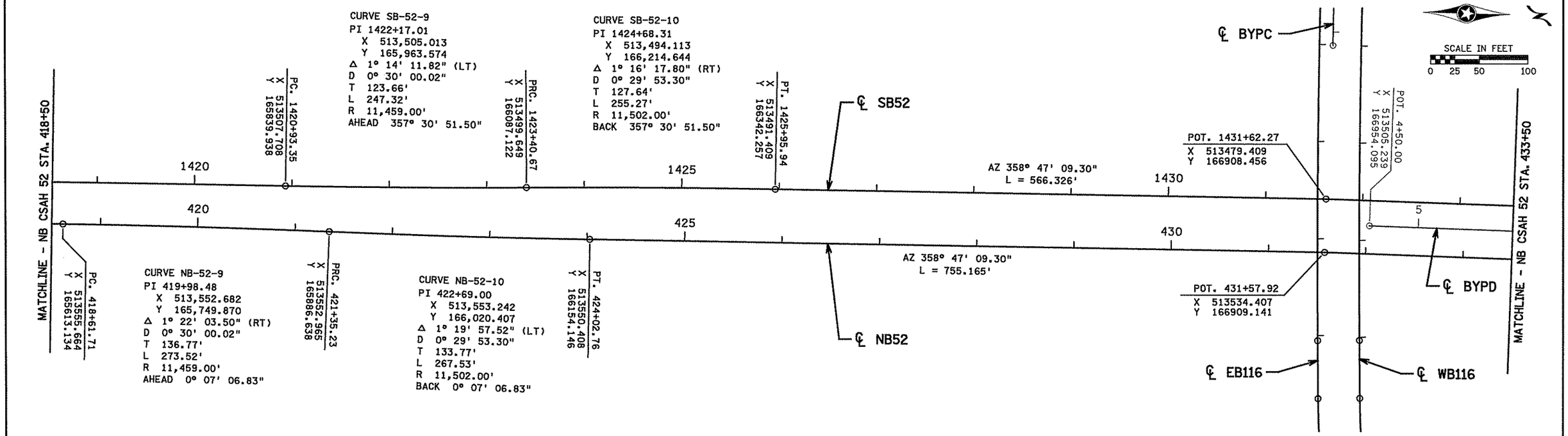
ANOKA COUNTY
ALIGNMENT PLAN
CSAH 52/116 RECONSTRUCTION
NB CSAH 52 STA. 388+50 TO 418+50

SHEET 4.03 OF 294



NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\a-f\AnokaCty\13867000\hwy-brdg\hwy\pln-sht\c0265205_ald.dgn 7/30/2009

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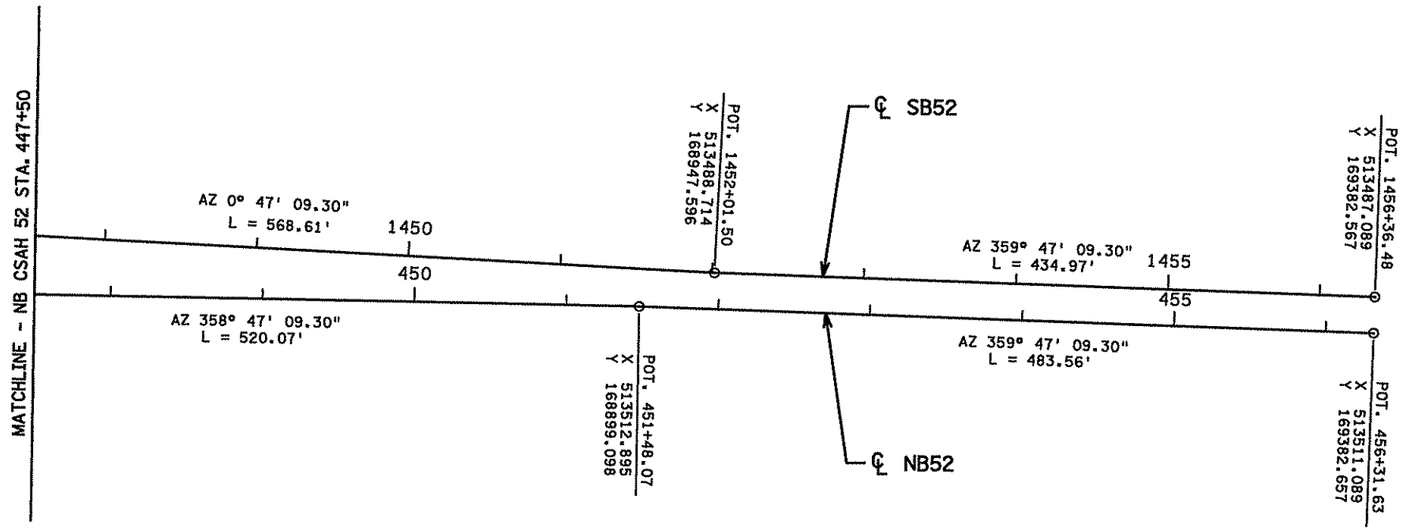
ANOKA COUNTY
ALIGNMENT PLAN
CSAH 52/116 RECONSTRUCTION
NB CSAH 52 STA. 418+50 TO 447+50

SHEET 4.04 OF 294



SCALE IN FEET
0 25 50 100

NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\a-f\AnokaCty\13867000\hwy-brdg\hwy\pln-sht\c0265205_ale.dgn 7/30/2009

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CHECKED BY TAC DATE 7/30/2009

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S.P. 197-124-001

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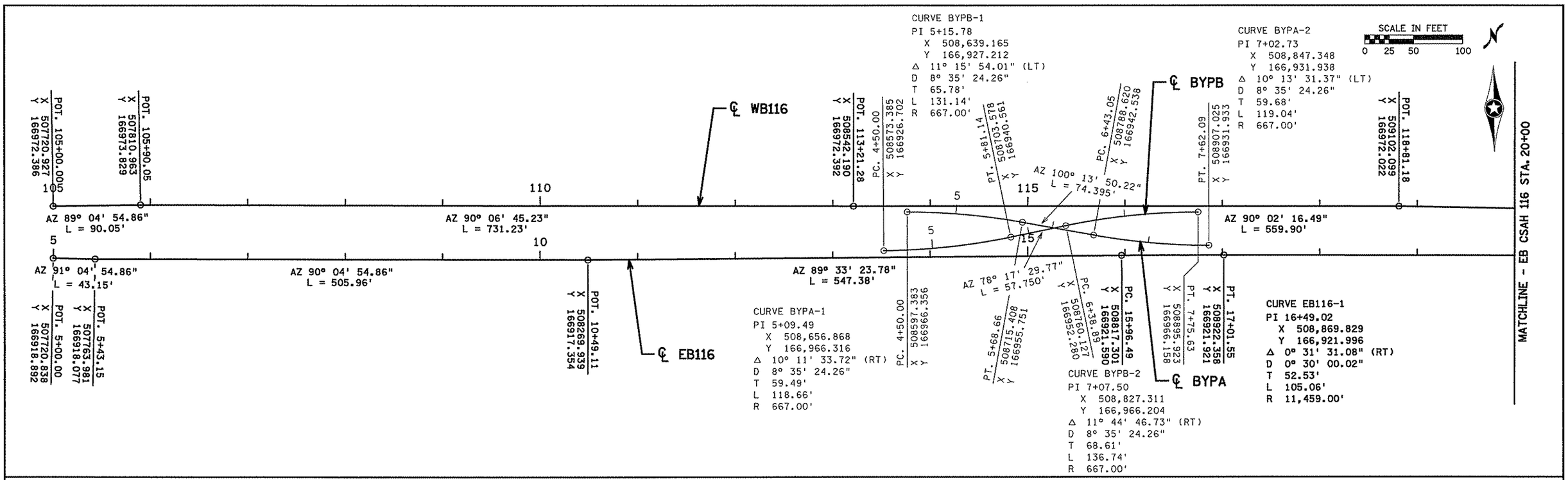
ANOKA COUNTY
ALIGNMENT PLAN
CSAH 52/116 RECONSTRUCTION
NB CSAH 52 STA. 447+50 TO 456+31.63

SHEET 4.05 OF 294



NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\a-f\AnokaCty\13867000\hwy-brdg\hwy\pln-sht\c0265205_alf.dgn 7/30/2009

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DRAWN BY SFH DATE 7/30/2009

DESIGN BY RPM DATE 7/30/2009

CHECKED BY TAC DATE 7/30/2009

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S.P. 197-124-001

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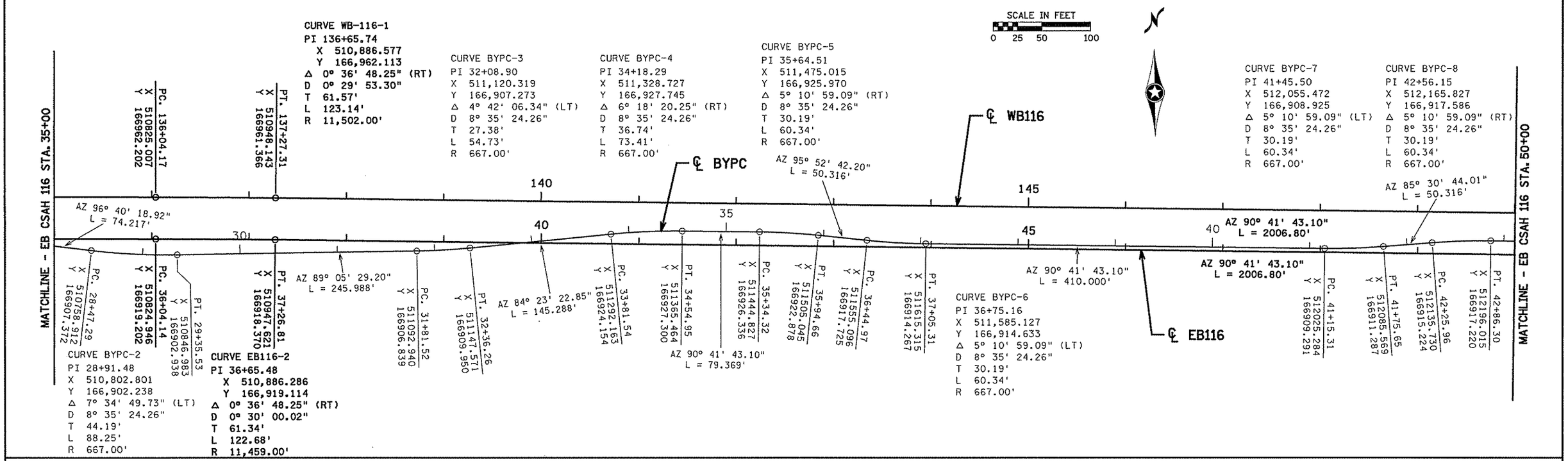
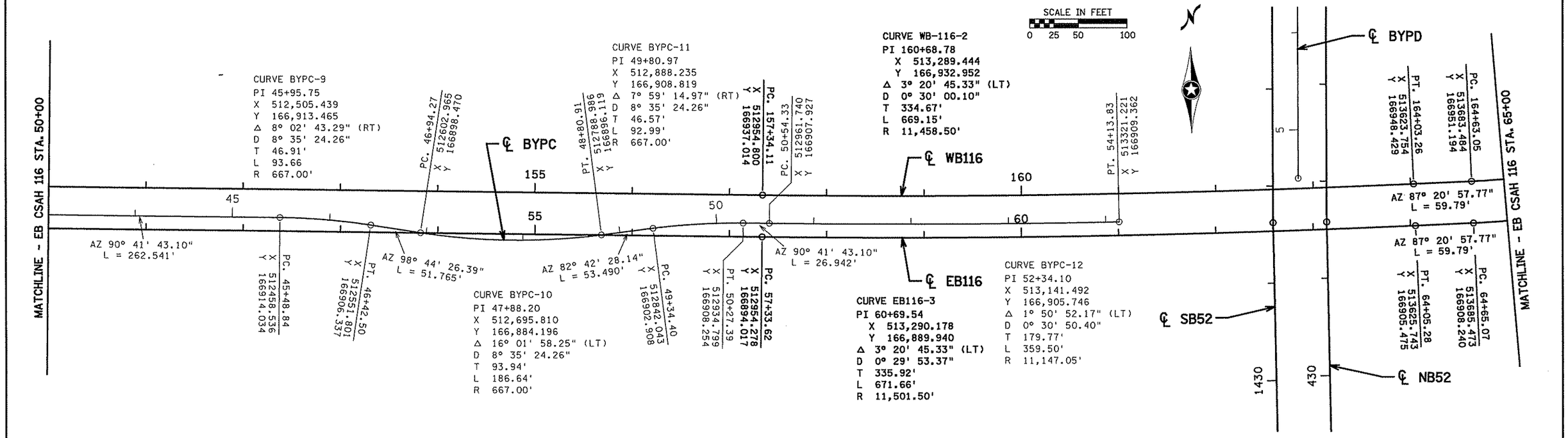
ANOKA COUNTY
ALIGNMENT PLAN
CSAH 52/116 RECONSTRUCTION
EB CSAH 116 STA. 5+00 TO 35+00

SHEET 4.06 OF 294





NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\a-f\AnokaCty\13867000\hwy-brdg\hwy\pln-sht\c0265205_alg.dgn 7/30/2009

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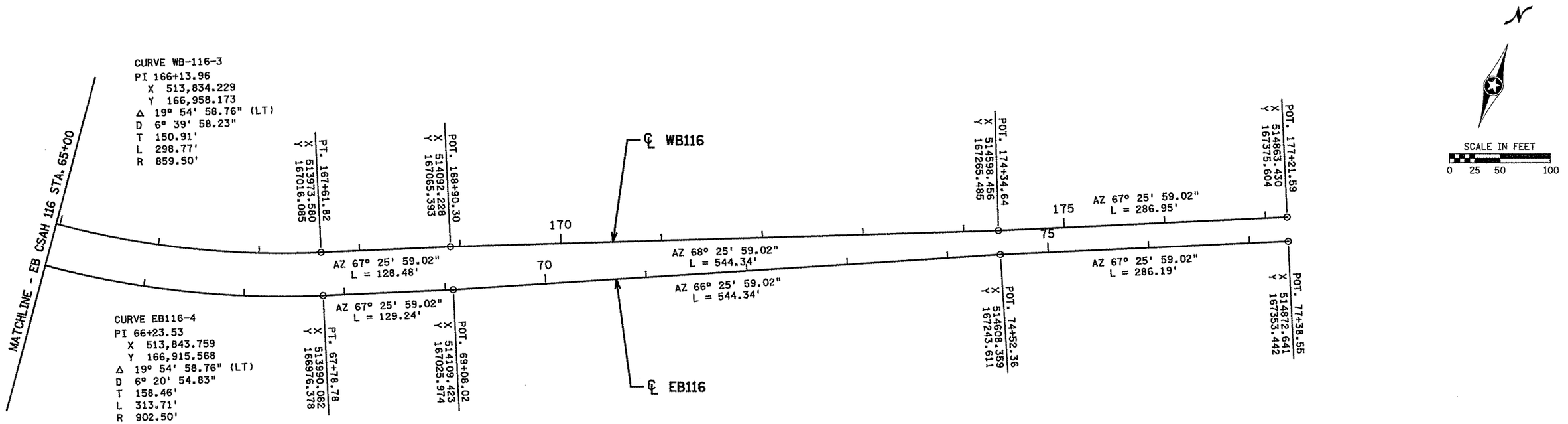
ANOKA COUNTY
ALIGNMENT PLAN
CSAH 52/116 RECONSTRUCTION
EB CSAH 116 STA. 35+00 TO 65+00

SHEET 4.07 OF 294



NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\a-f\AnokaCty\13867000\hwy-brdg\hwy\pln-sht\c0265205_alh.dgn 7/30/2009

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PRINTED NAME: RYAN P. MALONEY

DATE: 7/30/2009 LIC. NO. 44193

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S.P. 02-652-05
S.P. 02-716-09
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S.P. 197-124-001

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ENGINEERS • ARCHITECTS • PLANNERS

ANOKA COUNTY

ALIGNMENT PLAN
CSAH 52/116 RECONSTRUCTION
EB CSAH 116 STA. 65+00 TO 77+38.55

SHEET 4.08 OF 294

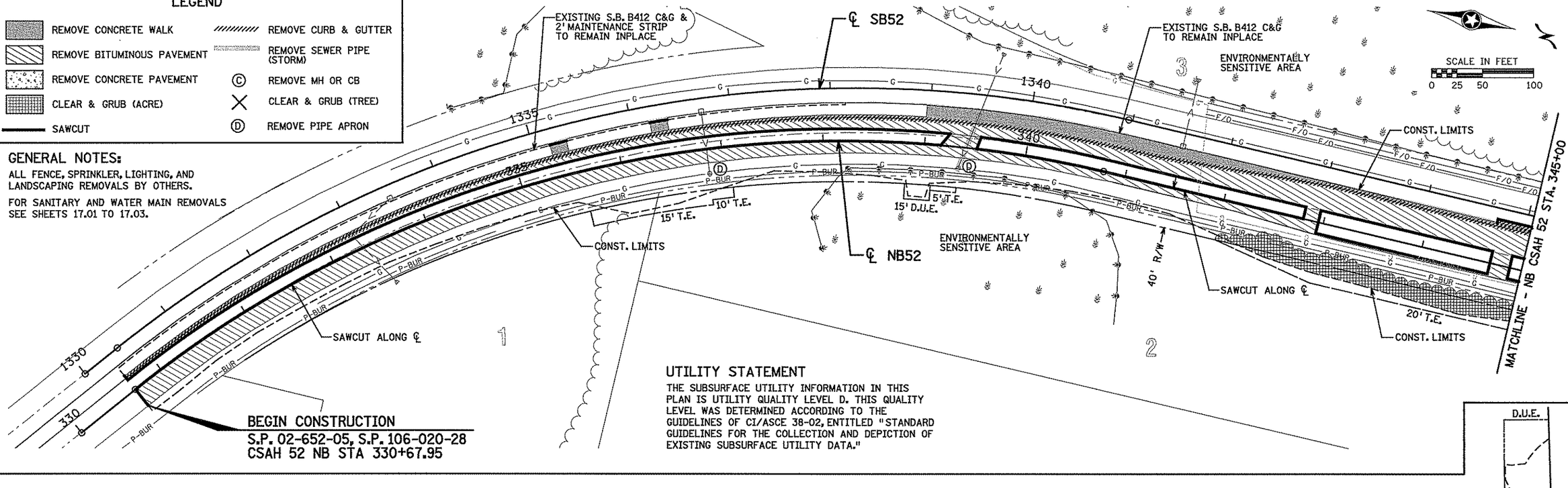
LEGEND

- REMOVE CONCRETE WALK
- REMOVE BITUMINOUS PAVEMENT
- REMOVE CONCRETE PAVEMENT
- CLEAR & GRUB (ACRE)
- SAWCUT
- REMOVE CURB & GUTTER
- REMOVE SEWER PIPE (STORM)
- Ⓒ REMOVE MH OR CB
- X CLEAR & GRUB (TREE)
- Ⓓ REMOVE PIPE APRON

GENERAL NOTES:

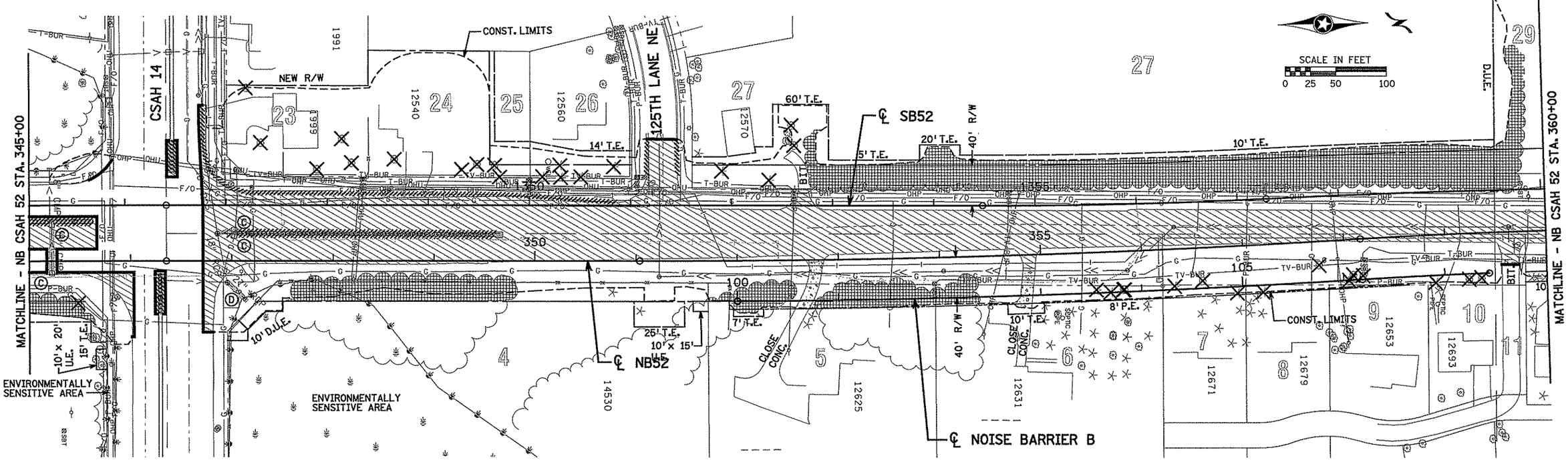
ALL FENCE, SPRINKLER, LIGHTING, AND LANDSCAPING REMOVALS BY OTHERS.

FOR SANITARY AND WATER MAIN REMOVALS SEE SHEETS 17.01 TO 17.03.



UTILITY STATEMENT

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



NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\a-f\AnokaCty\13867000\hwy-brdg\hwy\pln-sht\c0265205_rma.dgn 11/3/2009

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:

PRINTED NAME: RYAN P. MALONEY

DATE: 11/3/2009 LIC. NO. 44193

DRAWN BY SFH DATE 11/3/2009

DESIGN BY RPM DATE 11/3/2009

CHECKED BY TAC DATE 11/3/2009

S.P. 02-652-05
S.P. 02-716-09
S.P. 106-020-28
S.P. 197-124-001

TKDA
ENGINEERS • ARCHITECTS • PLANNERS

ANOKA COUNTY
EXISTING CONDITIONS AND REMOVALS PLAN
CSAH 52/116 RECONSTRUCTION
NB CSAH 52 STA. 330+00 TO 360+00

SHEET 5.01 OF 294

GENERAL NOTES:

ALL FENCE, SPRINKLER, LIGHTING, AND LANDSCAPING REMOVALS BY OTHERS.

FOR SANITARY AND WATER MAIN REMOVALS SEE SHEETS 17.01 TO 17.03.

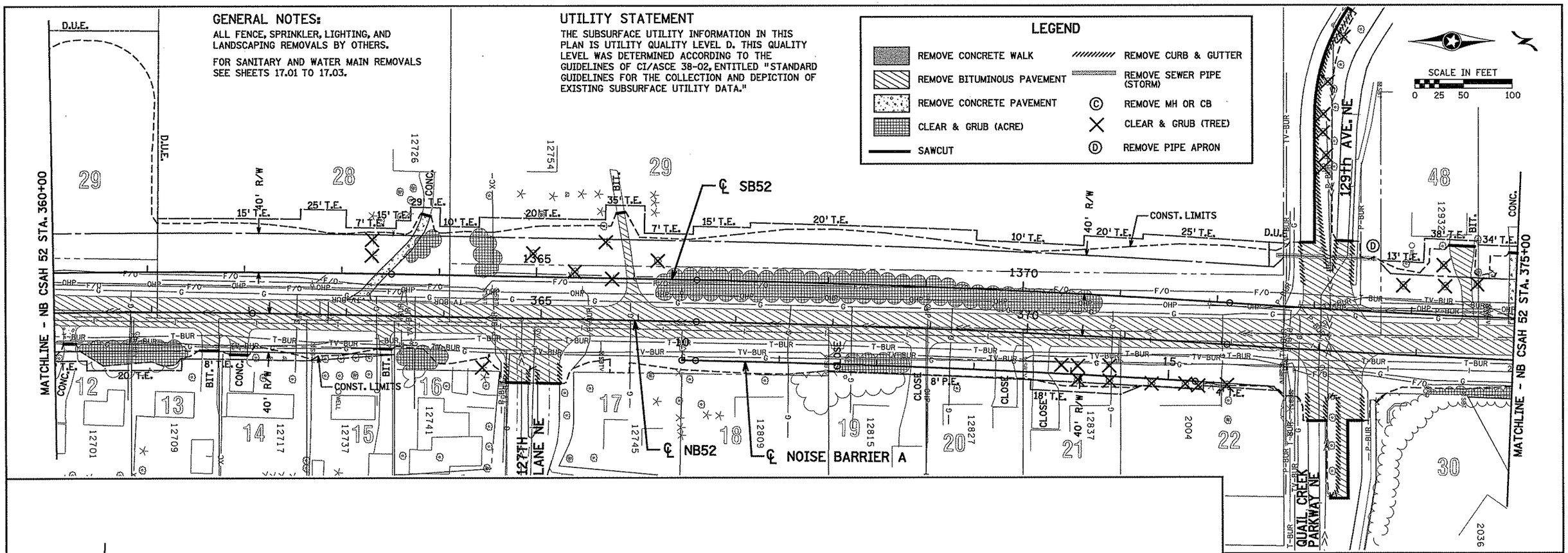
UTILITY STATEMENT

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

LEGEND

- REMOVE CONCRETE WALK
- REMOVE BITUMINOUS PAVEMENT
- REMOVE CONCRETE PAVEMENT
- CLEAR & GRUB (ACRE)
- SAWCUT
- REMOVE CURB & GUTTER
- REMOVE SEWER PIPE (STORM)
- Ⓒ REMOVE MH OR CB
- CLEAR & GRUB (TREE)
- Ⓓ REMOVE PIPE APRON

SCALE IN FEET 0 25 50 100



NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\a-f\AnokaCty\13867000\hwy-brdg\hwy\pln-sht\c0265205_rmb.dgn 7/30/2009

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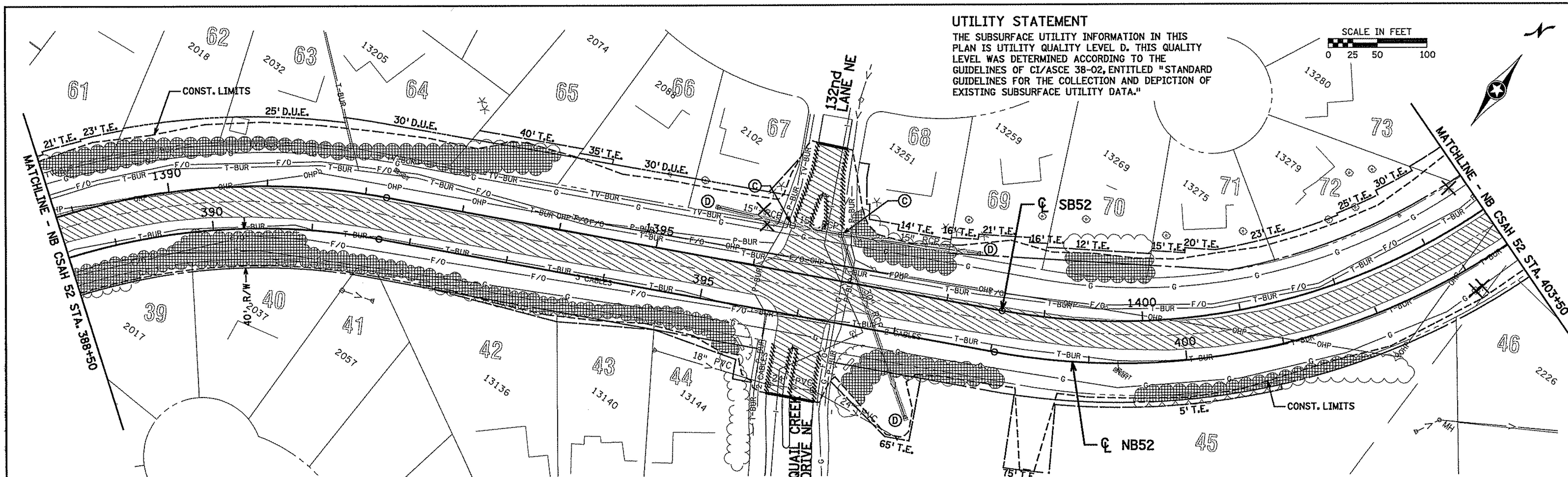
ANOKA COUNTY

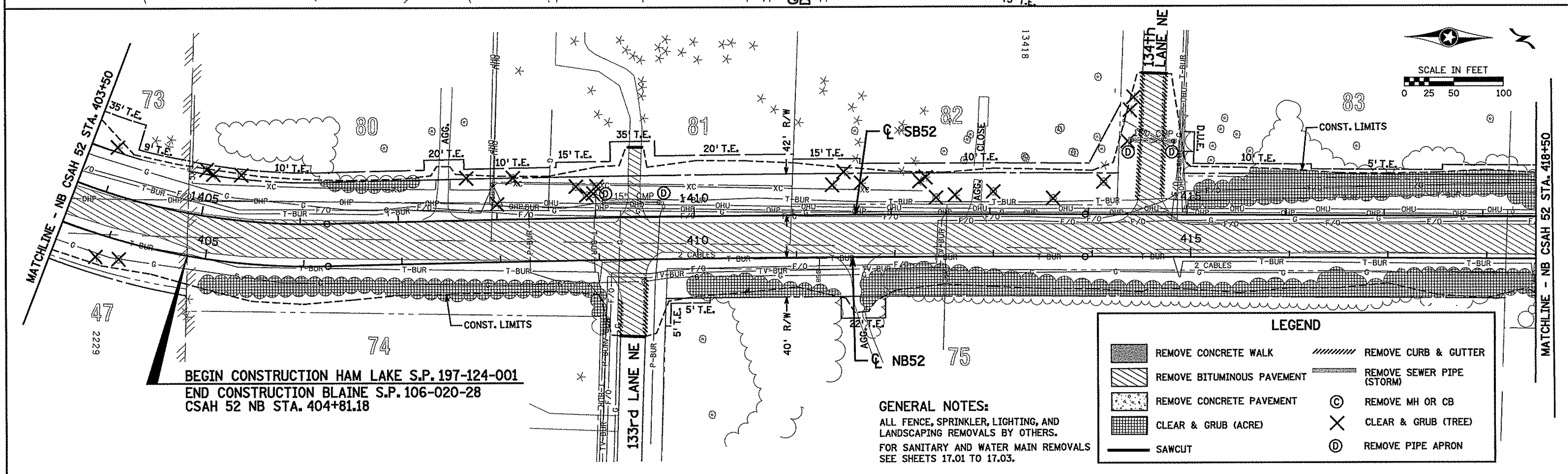
EXISTING CONDITIONS AND REMOVALS PLAN
CSAH 52/116 RECONSTRUCTION
NB CSAH 52 STA. 360+00 TO 388+50

SHEET 5.02 OF 294



UTILITY STATEMENT

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



GENERAL NOTES:

ALL FENCE, SPRINKLER, LIGHTING, AND LANDSCAPING REMOVALS BY OTHERS.

FOR SANITARY AND WATER MAIN REMOVALS SEE SHEETS 17.01 TO 17.03.

LEGEND

REMOVE CONCRETE WALK	REMOVE CURB & GUTTER
REMOVE BITUMINOUS PAVEMENT	REMOVE SEWER PIPE (STORM)
REMOVE CONCRETE PAVEMENT	REMOVE MH OR CB
CLEAR & GRUB (ACRE)	CLEAR & GRUB (TREE)
SAWCUT	REMOVE PIPE APRON

NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\a-f\AnokaCty\13867000\hwy-brdg\hwy\pin-sht\c0265205_rmc.dgn 7/30/2009

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SIGNATURE: [signature]
PRINTED NAME: RYAN P. MALONEY
DATE: 7/30/2009 LIC. NO. 44193

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CHECKED BY TAC DATE 7/30/2009

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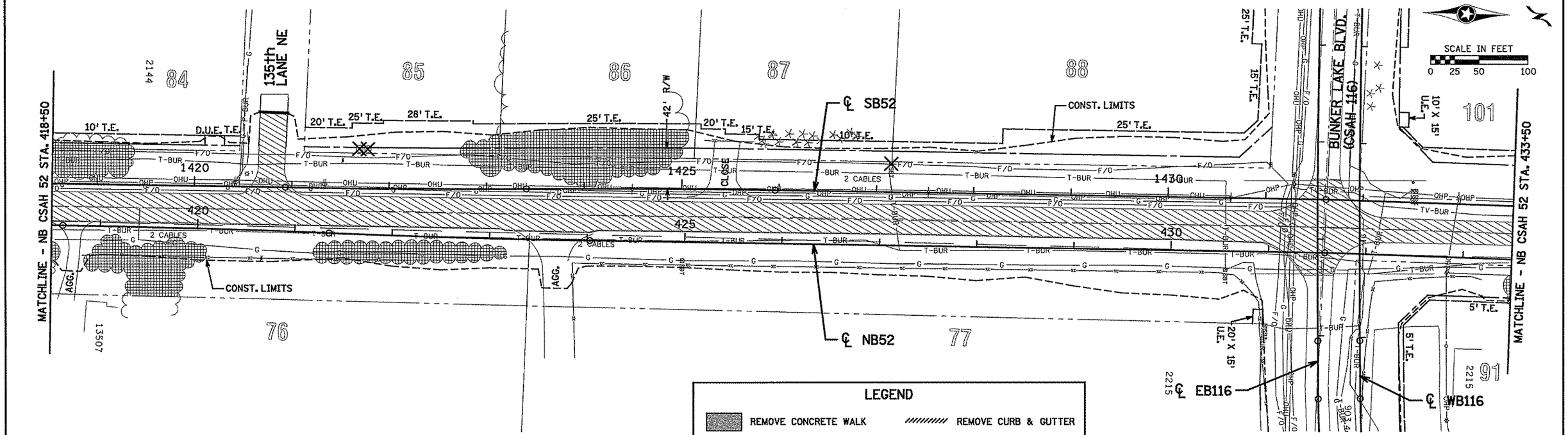
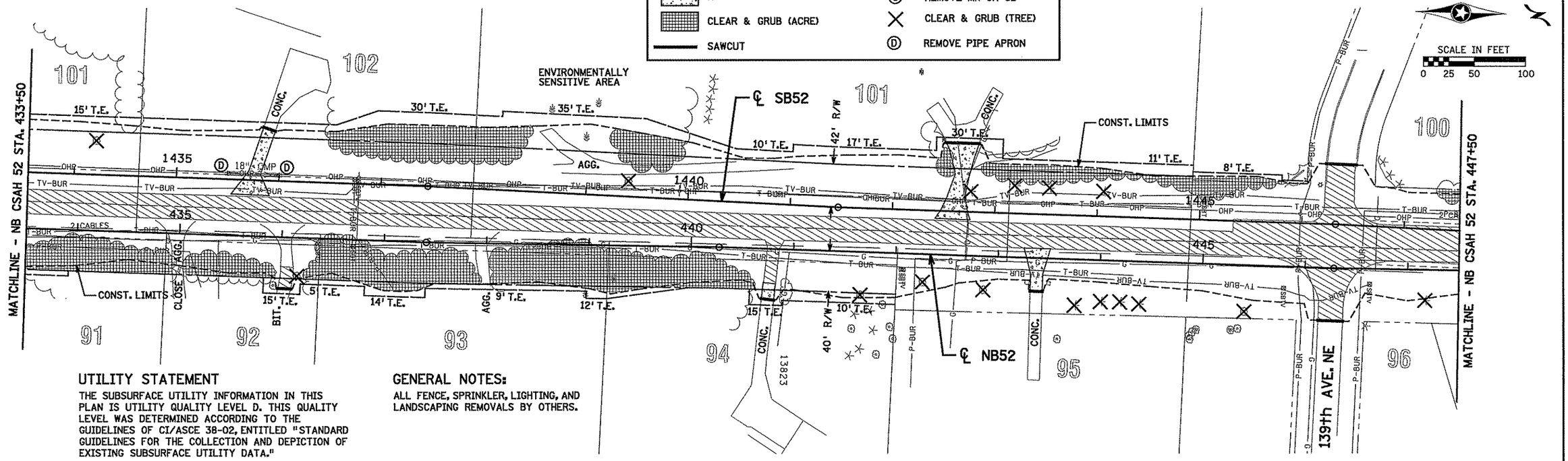
ANOKA COUNTY
EXISTING CONDITIONS AND REMOVALS PLAN
CSAH 52/116 RECONSTRUCTION
NB CSAH 52 STA. 388+50 TO 418+50

SHEET 5.03 OF 294





UTILITY STATEMENT

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GENERAL NOTES:

ALL FENCE, SPRINKLER, LIGHTING, AND LANDSCAPING REMOVALS BY OTHERS.

NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\a-f\AnokaCty\13867000\hwy-brdg\hwy\pln-sht\c0265205_rmd.dgn 7/30/2009

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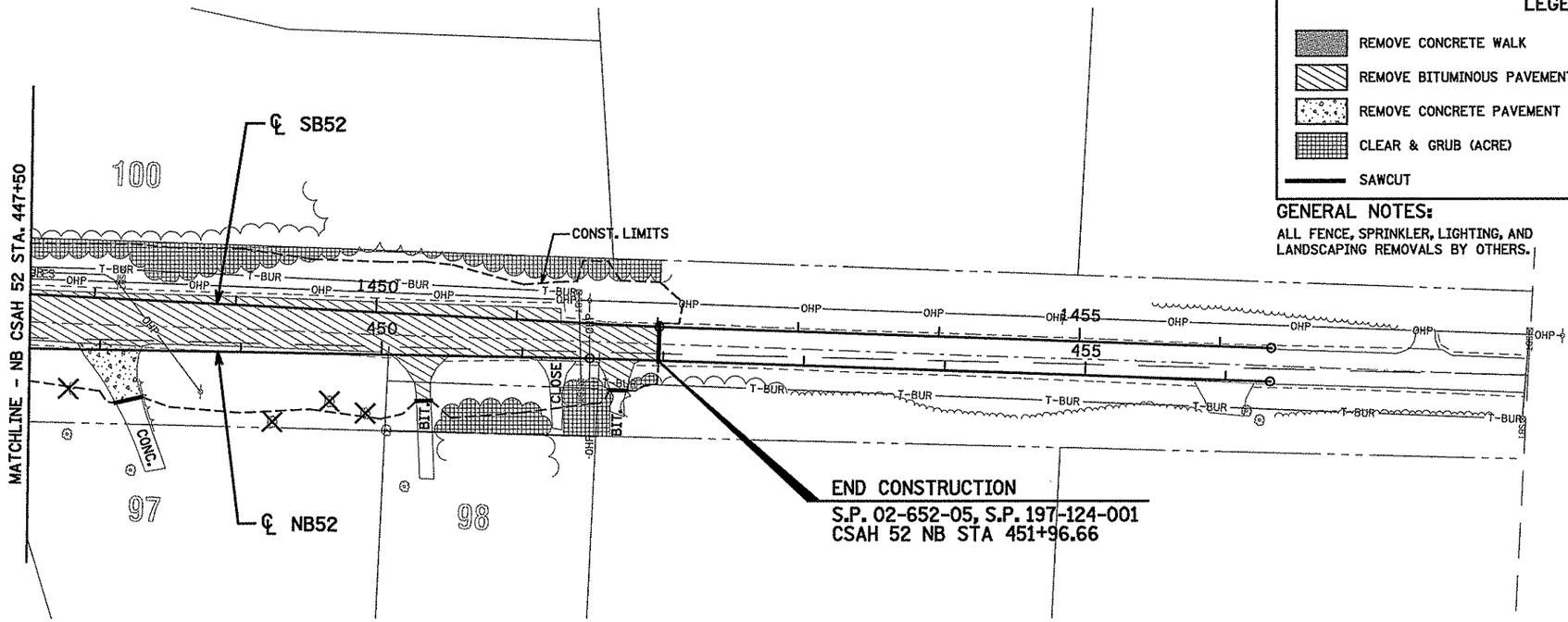
ANOKA COUNTY
EXISTING CONDITIONS AND REMOVALS PLAN
CSAH 52/116 RECONSTRUCTION
NB CSAH 52 STA. 418+50 TO 447+50

SHEET 5.04 OF 294



LEGEND

- REMOVE CONCRETE WALK
- REMOVE BITUMINOUS PAVEMENT
- REMOVE CONCRETE PAVEMENT
- CLEAR & GRUB (ACRE)
- SAWCUT
- REMOVE CURB & GUTTER
- REMOVE SEWER PIPE (STORM)
- Ⓒ REMOVE MH OR CB
- CLEAR & GRUB (TREE)
- Ⓓ REMOVE PIPE APRON

SCALE IN FEET
0 25 50 100

GENERAL NOTES:

ALL FENCE, SPRINKLER, LIGHTING, AND LANDSCAPING REMOVALS BY OTHERS.

UTILITY STATEMENT

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NO	DATE	BY	CKD	APPR	REVISION

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DATE: 7/30/2009 LIC. NO. 44193

DRAWN BY SFH DATE 7/30/2009
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S.P. 197-124-001

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ANOKA COUNTY
EXISTING CONDITIONS AND REMOVALS PLAN
CSAH 52/116 RECONSTRUCTION
NB CSAH 52 STA. 447+50 TO 452+00

SHEET 5.05 OF 294

LEGEND

- REMOVE CONCRETE WALK
- REMOVE BITUMINOUS PAVEMENT
- REMOVE CONCRETE PAVEMENT
- CLEAR & GRUB (ACRE)
- SAWCUT
- REMOVE CURB & GUTTER
- REMOVE SEWER PIPE (STORM)
- Ⓒ REMOVE MH OR CB
- X CLEAR & GRUB (TREE)
- Ⓓ REMOVE PIPE APRON

JOHNSON ST.

TH 65

℄ WB116

℄ EB116

140' D.U.E.

CONST. LIMITS

SCALE IN FEET
0 25 50 100

REMOVE TIMBER WEIR, (PAID FOR AS REMOVE DRAINAGE STRUCTURE)

WB116 C&G LEAVE INPLACE

ABERDEEN ST. NE

MATCHLINE - EB CSAH 116 STA. 20+00

BEGIN CONSTRUCTION
S.P. 02-716-09, S.P. 197-124-001
CSAH 116 EB STA. 11+40.78

CONST. LIMITS

ENVIRONMENTALLY SENSITIVE AREA

ENVIRONMENTALLY SENSITIVE AREA

GENERAL NOTES:

ALL FENCE, SPRINKLER, LIGHTING, AND LANDSCAPING REMOVALS BY OTHERS.

MATCHLINE - EB CSAH 116 STA. 20+00

MATCHLINE - EB CSAH 116 STA. 35+00

℄ WB116

℄ EB116

EVELETH ST.

WEST CHURCH ENTRANCE

CONST. LIMITS

ENVIRONMENTALLY SENSITIVE AREA

UTILITY STATEMENT

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

NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\a-f\AnokaCty\13867000\hwy-brdg\hwy\pln-sht\c0265205_rmf.dgn 7/30/2009

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:

PRINTED NAME: RYAN P. MALONEY

DATE: 7/30/2009 LIC. NO. 44193

DRAWN BY SFH DATE 7/30/2009

DESIGN BY RPM DATE 7/30/2009

CHECKED BY TAC DATE 7/30/2009

S.P. 02-652-05
S.P. 02-716-09
S.P. 106-020-28
S.P. 197-124-001

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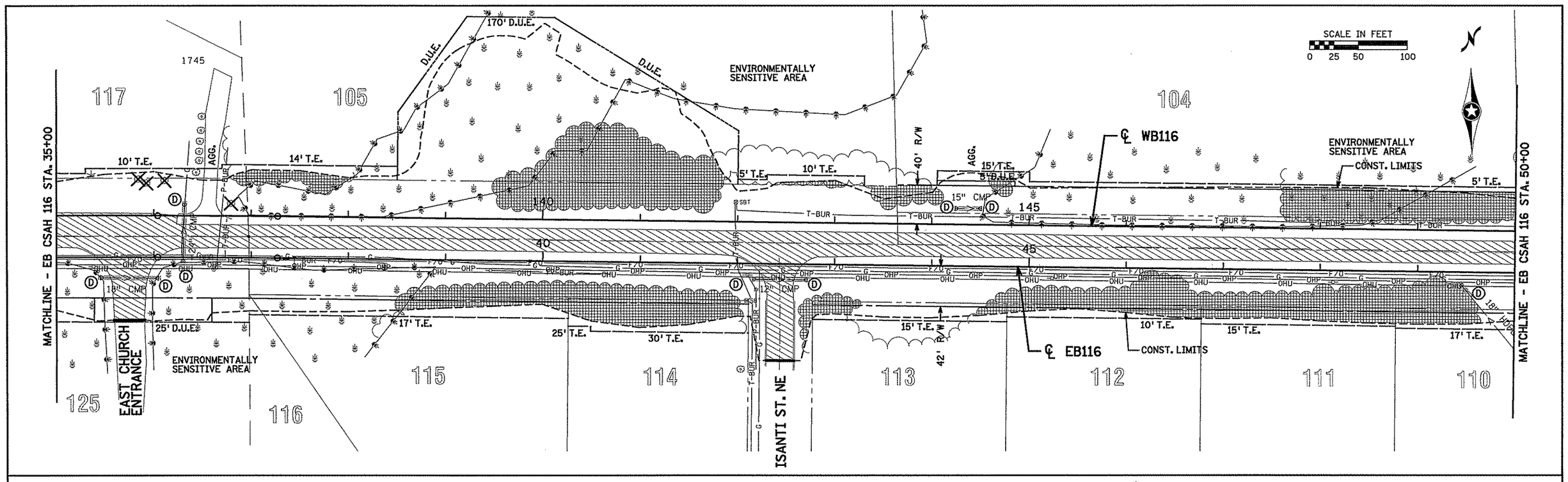
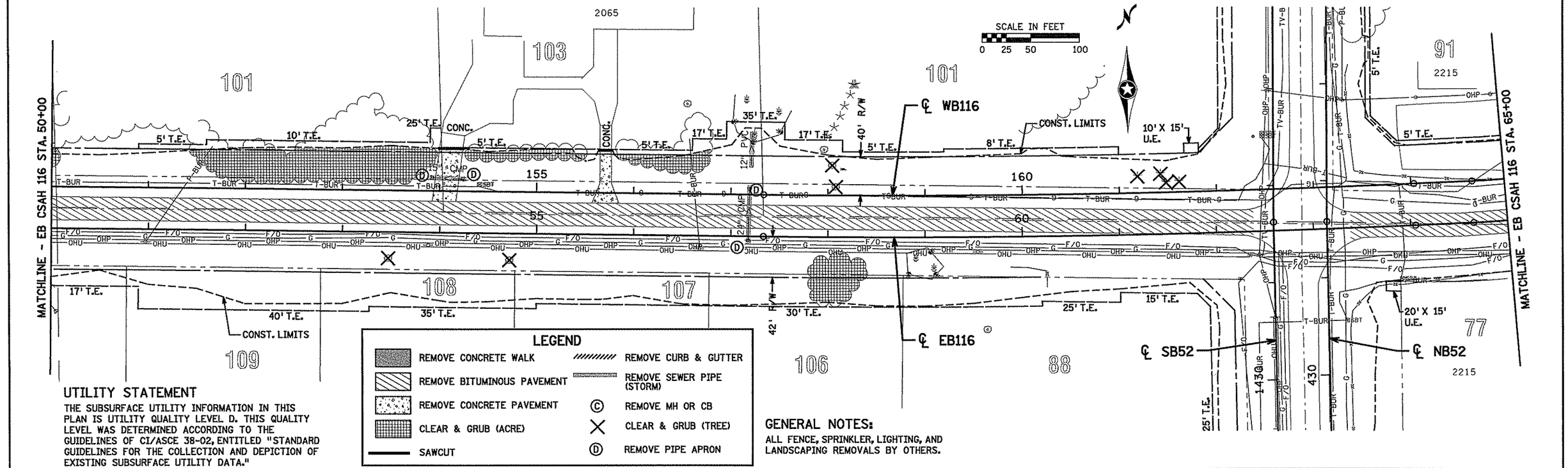
ANOKA COUNTY

EXISTING CONDITIONS AND REMOVALS PLAN
CSAH 52/116 RECONSTRUCTION
EB CSAH 116 STA. 5+00 TO 35+00

SHEET 5.06 OF 294





LEGEND

REMOVE CONCRETE WALK	REMOVE CURB & GUTTER
REMOVE BITUMINOUS PAVEMENT	REMOVE SEWER PIPE (STORM)
REMOVE CONCRETE PAVEMENT	Ⓒ REMOVE MH OR CB
CLEAR & GRUB (ACRE)	X CLEAR & GRUB (TREE)
SAWCUT	Ⓓ REMOVE PIPE APRON

UTILITY STATEMENT

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

GENERAL NOTES:

ALL FENCE, SPRINKLER, LIGHTING, AND LANDSCAPING REMOVALS BY OTHERS.

NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\a-f\AnokaCty\13867000\hwy-brdg\hwy\pln-shf\c0265205_rmg.dgn 7/30/2009

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ANOKA COUNTY

EXISTING CONDITIONS AND REMOVALS PLAN
CSAH 52/116 RECONSTRUCTION
EB CSAH 116 STA. 35+00 TO 65+00

SHEET 5.07 OF 294

UTILITY STATEMENT

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

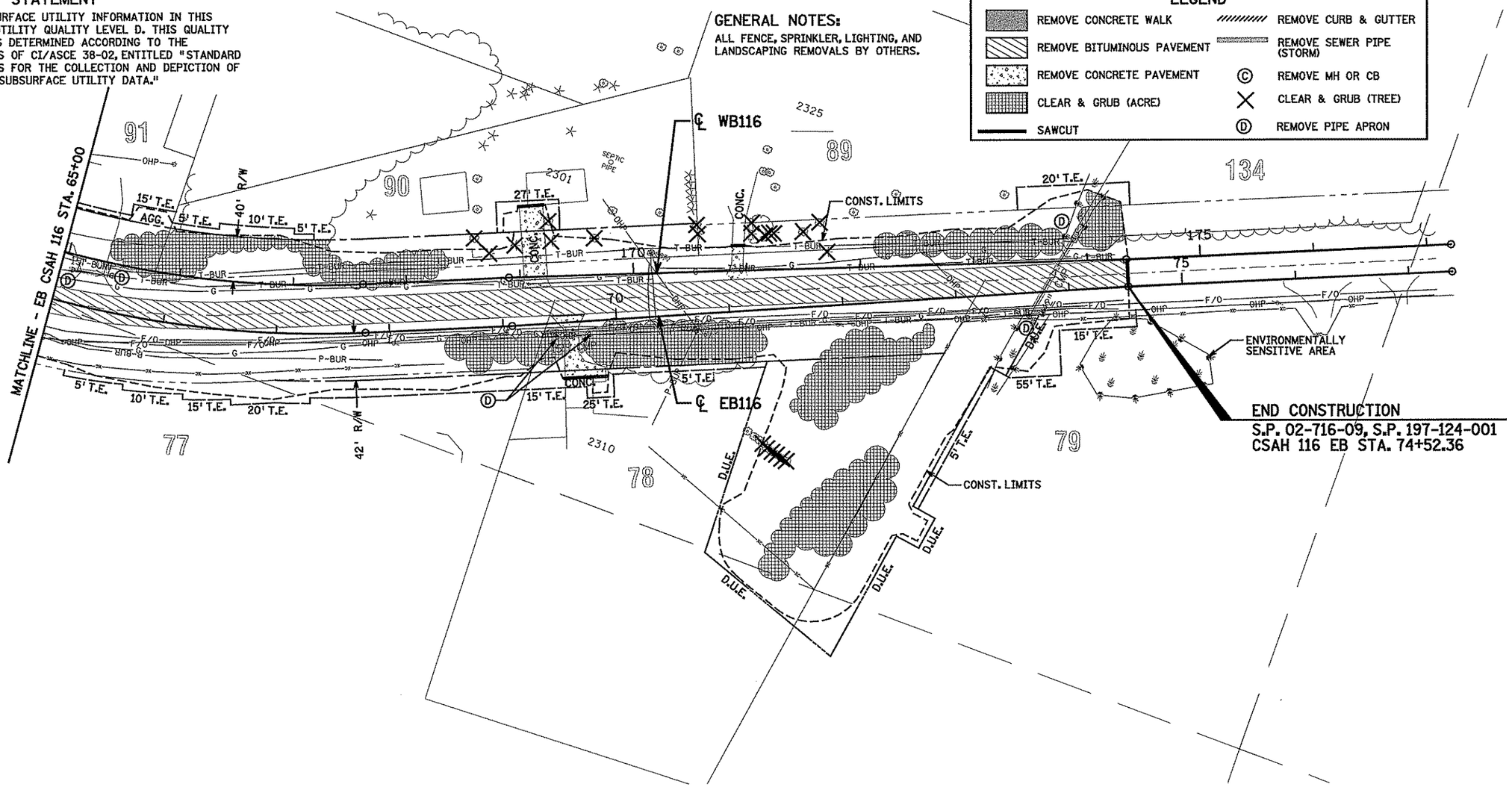
GENERAL NOTES:

ALL FENCE, SPRINKLER, LIGHTING, AND LANDSCAPING REMOVALS BY OTHERS.

LEGEND

- REMOVE CONCRETE WALK
- REMOVE BITUMINOUS PAVEMENT
- REMOVE CONCRETE PAVEMENT
- CLEAR & GRUB (ACRE)
- SAWCUT
- REMOVE CURB & GUTTER
- REMOVE SEWER PIPE (STORM)
- Ⓒ REMOVE MH OR CB
- CLEAR & GRUB (TREE)
- Ⓓ REMOVE PIPE APRON

SCALE IN FEET
0 25 50 100



NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\a-f\AnokaCty\13867000\hwy-brdg\hwy\pln-sht\c0265205_rmh.dgn 7/30/2009

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SIGNATURE:

PRINTED NAME: RYAN P. MALONEY

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S.P. 02-652-05
S.P. 02-716-09
S.P. 106-020-28
S.P. 197-124-001

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ANOKA COUNTY

EXISTING CONDITIONS AND REMOVALS PLAN
CSAH 52/116 RECONSTRUCTION
EB CSAH 116 STA. 65+00 TO 75+00

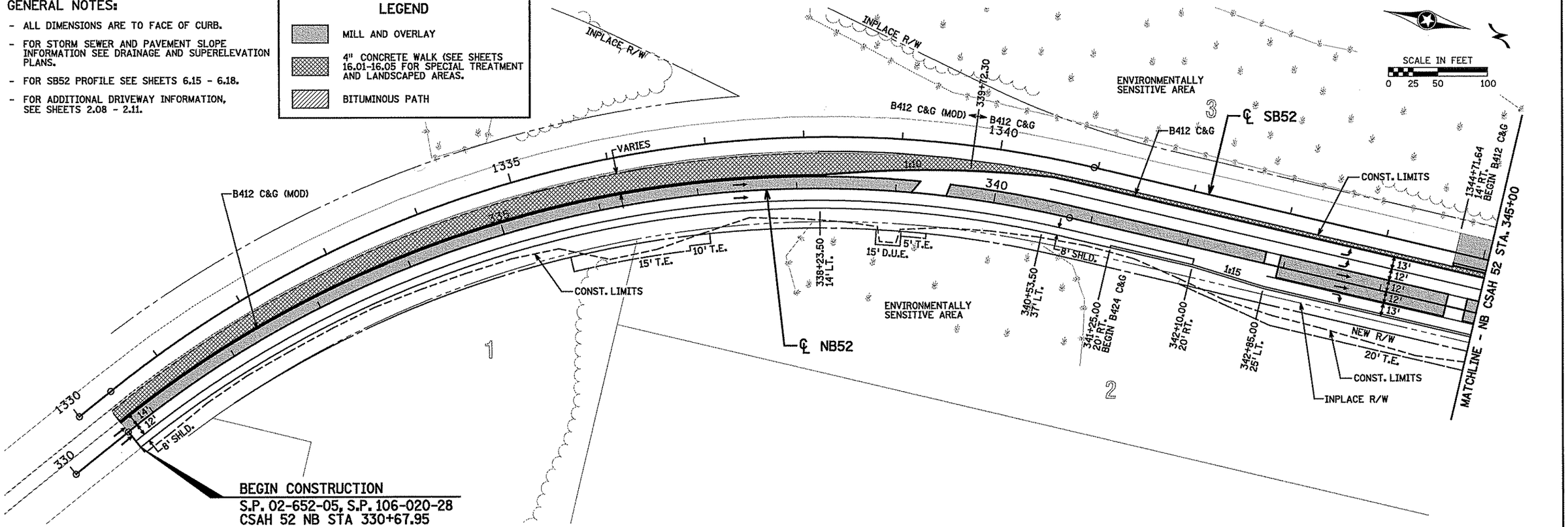
SHEET 5.08 OF 294

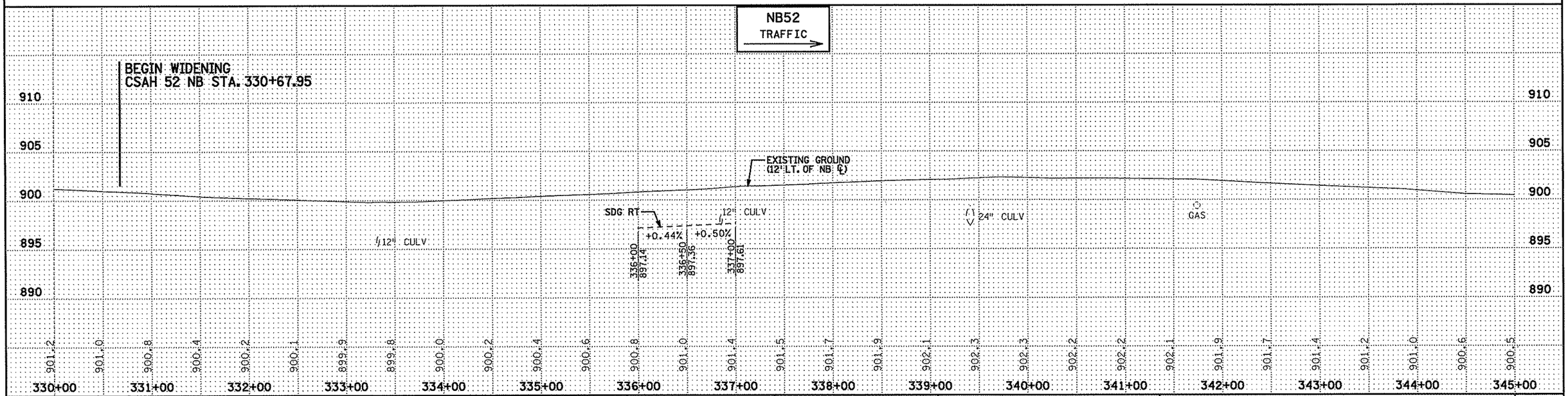
GENERAL NOTES:

- ALL DIMENSIONS ARE TO FACE OF CURB.
- FOR STORM SEWER AND PAVEMENT SLOPE INFORMATION SEE DRAINAGE AND SUPERELEVATION PLANS.
- FOR SB52 PROFILE SEE SHEETS 6.15 - 6.18.
- FOR ADDITIONAL DRIVEWAY INFORMATION, SEE SHEETS 2.08 - 2.11.

LEGEND

- MILL AND OVERLAY
- 4" CONCRETE WALK (SEE SHEETS 16.01-16.05 FOR SPECIAL TREATMENT AND LANDSCAPED AREAS.
- BITUMINOUS PATH





NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\a-f\AnokaCty\13867000\hwy-brdg\hwy\pln-sht\c0265205_cpo.dgn 7/30/2009

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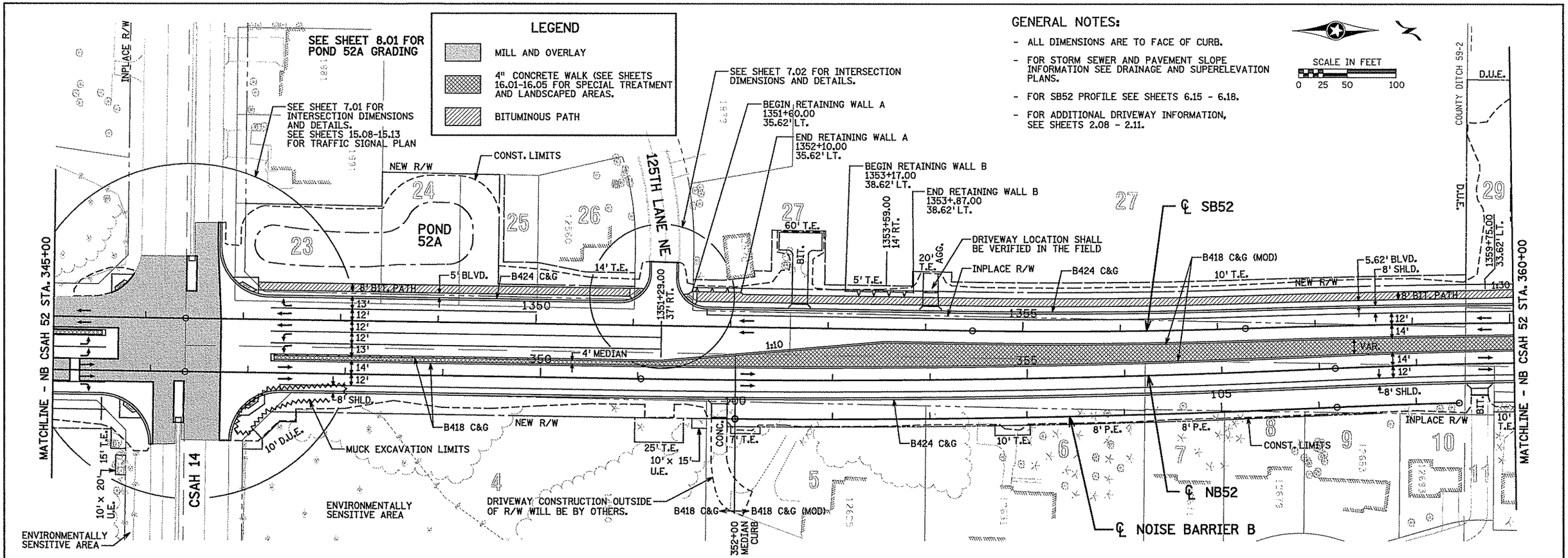
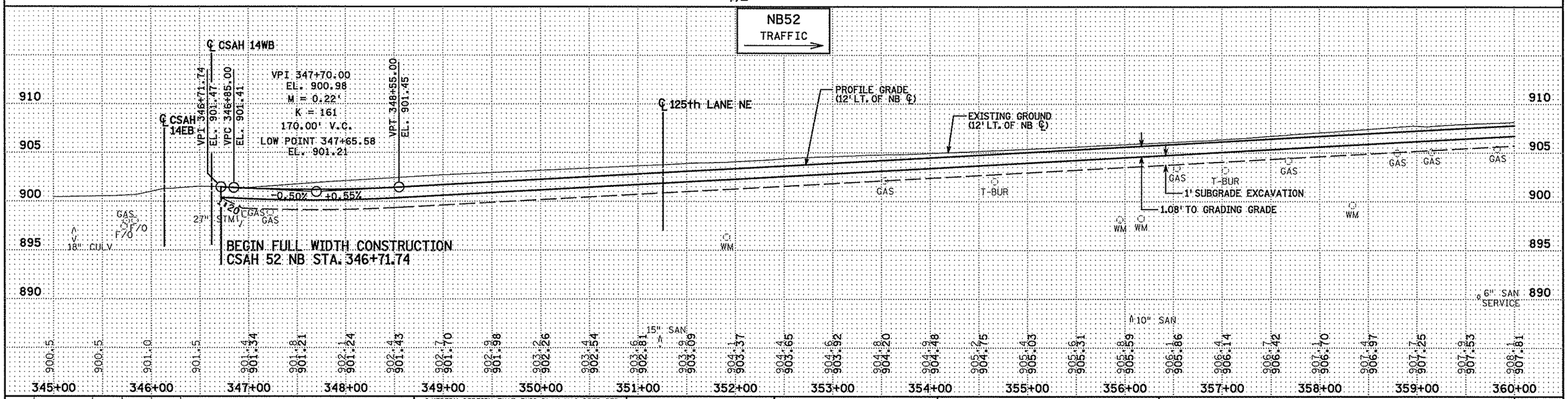
ANOKA COUNTY

CONSTRUCTION PLAN AND PROFILE
CSAH 52/116 RECONSTRUCTION
NB CSAH 52 STA. 330+00 TO 345+00

SHEET 6.01 OF 294





NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\a-f\AnokaCty\13867000\hwy-brdg\hwy\pln-sht\c0265205_cpb.dgn 11/3/2009

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:

PRINTED NAME: RYAN P. MALONEY

DATE: 11/3/2009 LIC. NO. 44193

DRAWN BY SFH DATE 11/3/2009

DESIGN BY RPM DATE 11/3/2009

CHECKED BY TAC DATE 11/3/2009

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S.P. 106-020-28
S.P. 197-124-001

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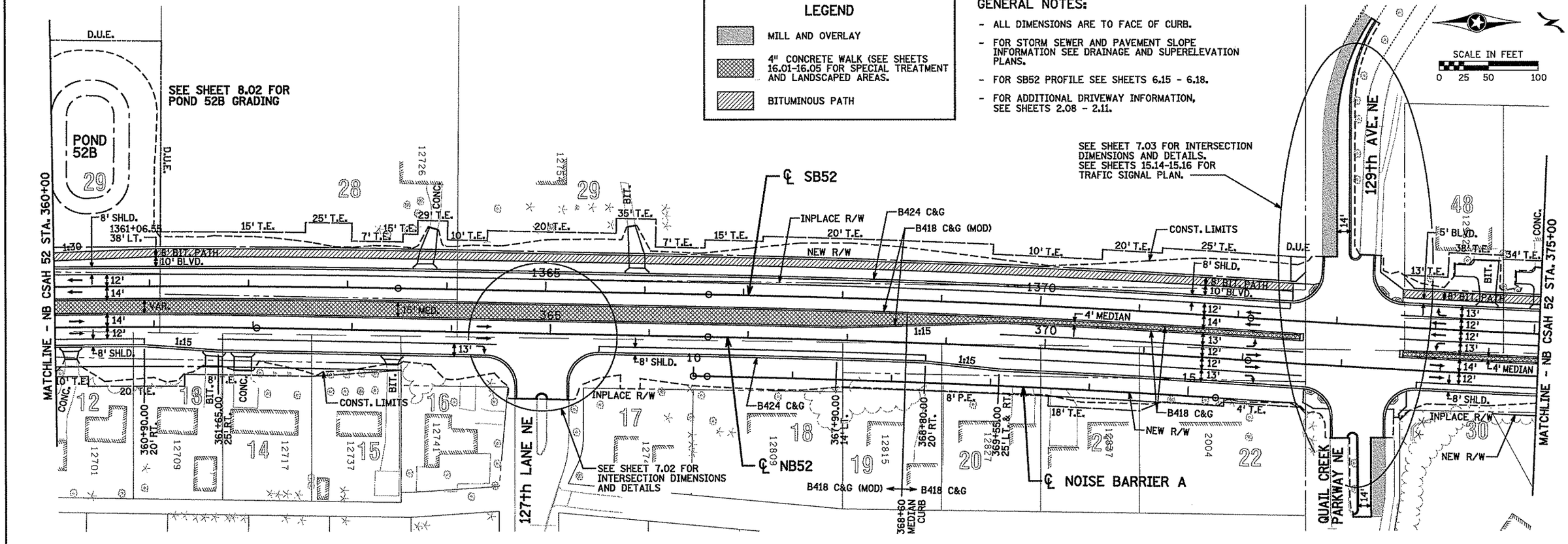
ANOKA COUNTY
CONSTRUCTION PLAN AND PROFILE
CSAH 52/116 RECONSTRUCTION
NB CSAH 52 STA. 345+00 TO 360+00

SHEET 6.02 OF 294



NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\a-f\AnokaCty\13867000\hwy-brdg\hwy\pln-sht\c0265205_cpc.dgn 7/30/2009

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S.P. 197-124-001

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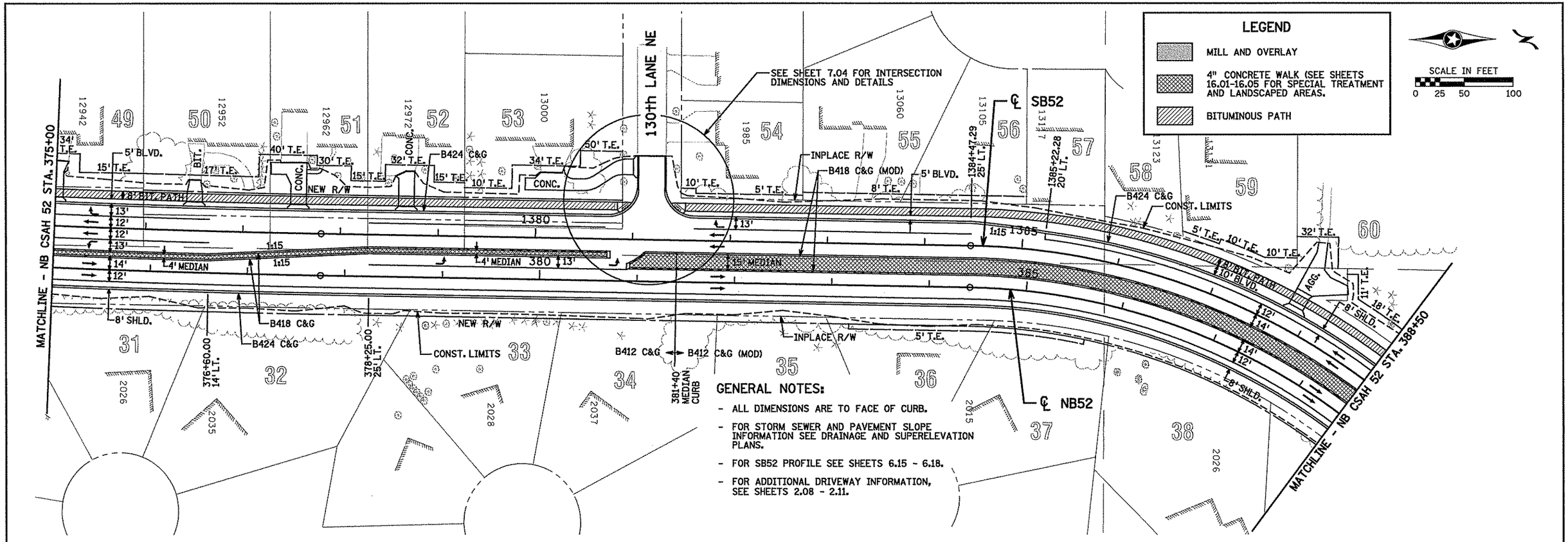
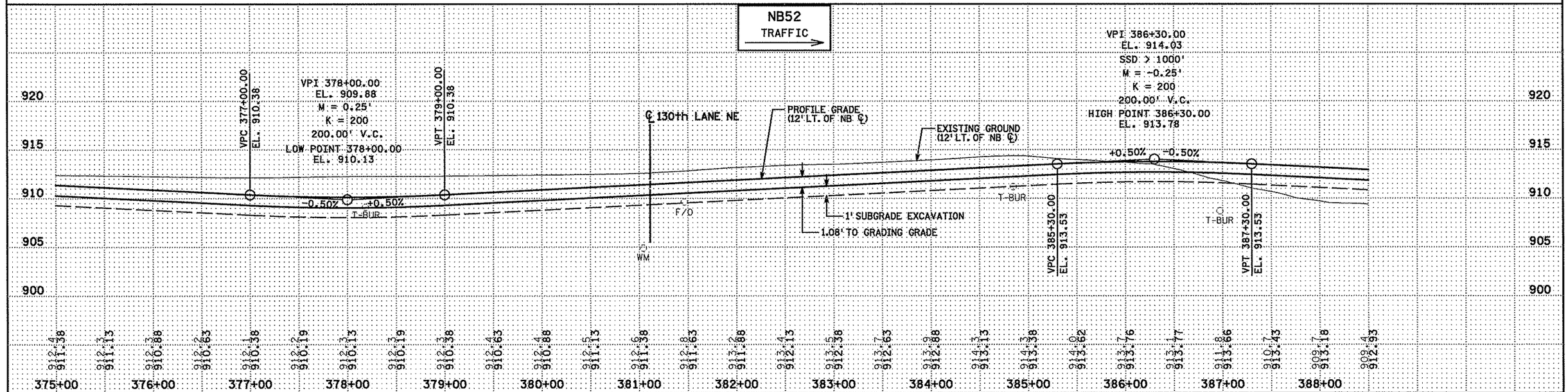
ANOKA COUNTY
CONSTRUCTION PLAN AND PROFILE
CSAH 52/116 RECONSTRUCTION
NB CSAH 52 STA. 360+00 TO 375+00

SHEET 6.03 OF 294





NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\a-f\AnokaCty\13867000\hwy-brdg\hwy\pln-shf\c0265205_cpd.dgn 7/30/2009

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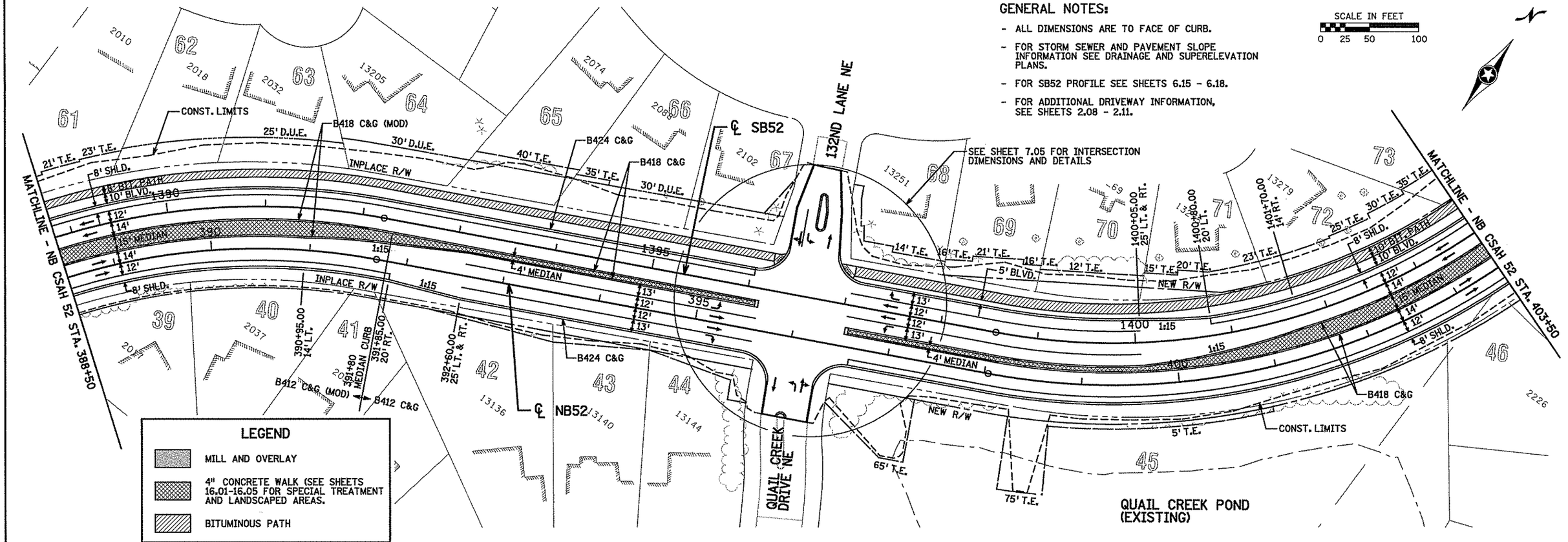
ANOKA COUNTY
CONSTRUCTION PLAN AND PROFILE
CSAH 52/116 RECONSTRUCTION
NB CSAH 52 STA. 375+00 TO 388+50

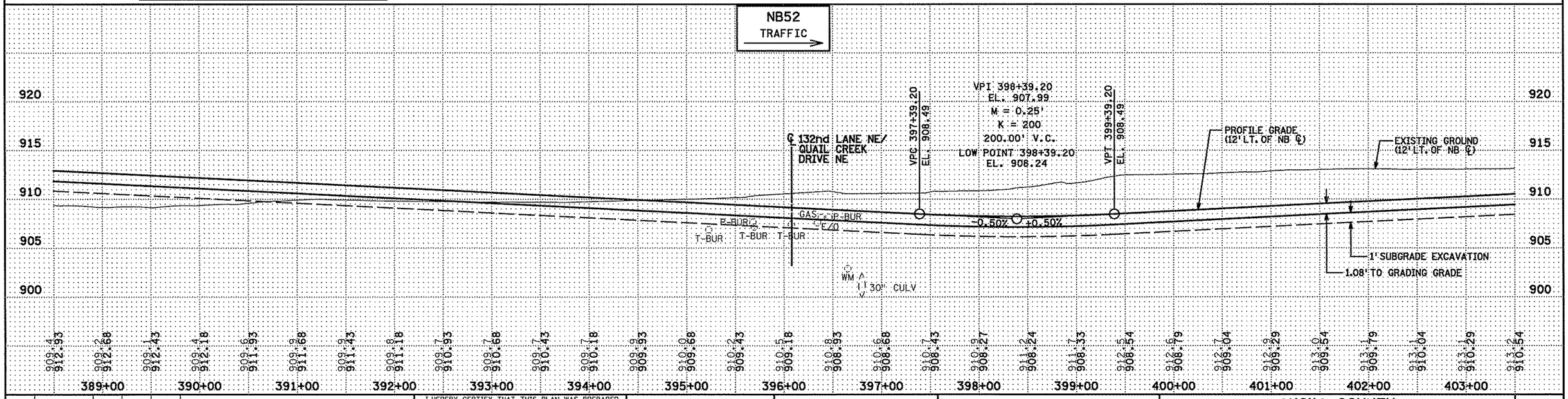
SHEET 6.04 OF 294

GENERAL NOTES:

- ALL DIMENSIONS ARE TO FACE OF CURB.
- FOR STORM SEWER AND PAVEMENT SLOPE INFORMATION SEE DRAINAGE AND SUPERELEVATION PLANS.
- FOR SB52 PROFILE SEE SHEETS 6.15 - 6.18.
- FOR ADDITIONAL DRIVEWAY INFORMATION, SEE SHEETS 2.08 - 2.11.

SCALE IN FEET
0 25 50 100





NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\a-f\AnokaCty\i3867000\hwy-brdg\hwy\pln-sht\c0265205_cpe.dgn 7/30/2009

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

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PRINTED NAME: RYAN P. MALONEY
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S.P. 02-652-05
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S.P. 197-124-001

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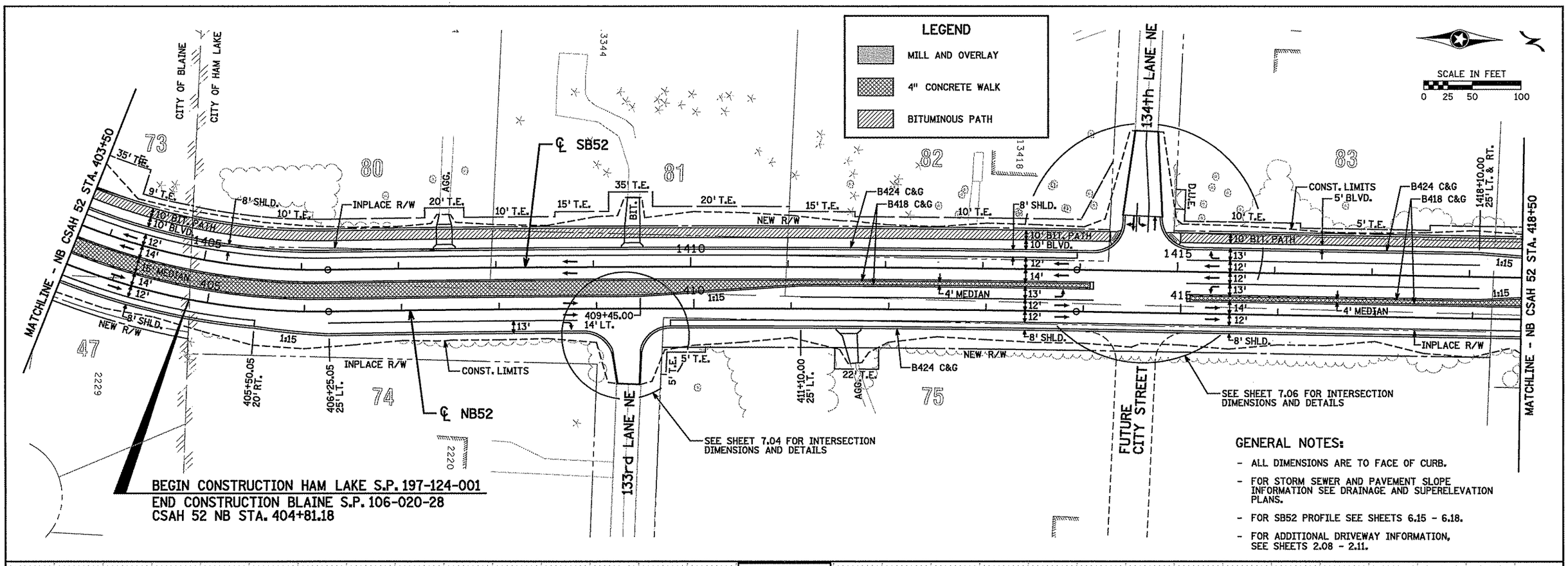
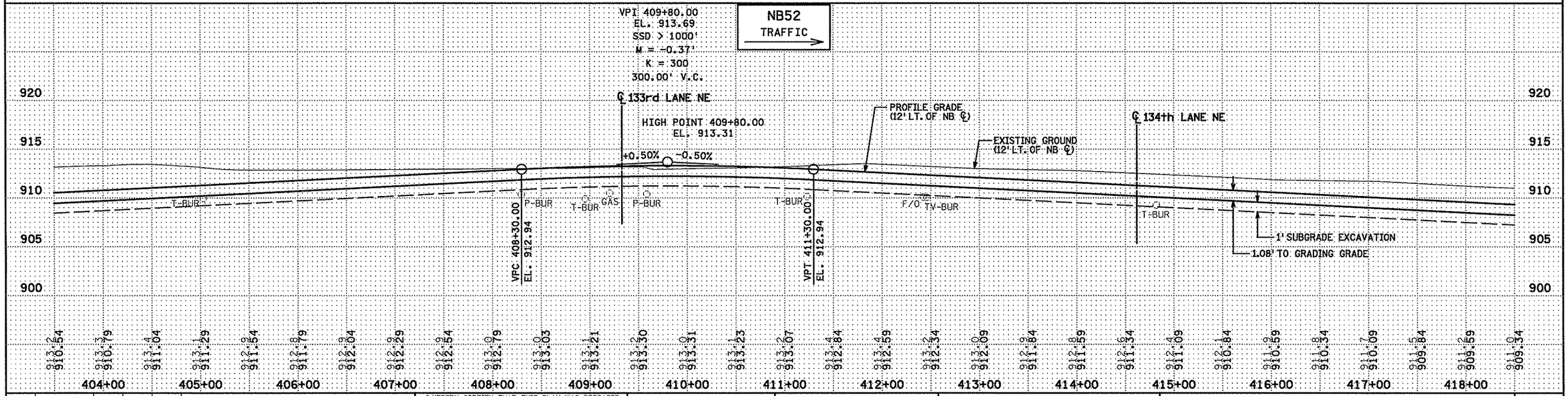
ANOKA COUNTY
CONSTRUCTION PLAN AND PROFILE
CSAH 52/116 RECONSTRUCTION
NB CSAH 52 STA. 388+50 TO 403+50

SHEET 6.05 OF 294





NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\a-f\AnokaCty\13867000\hwy-brdg\hwy\pln-sht\c0265205_cpf.dgn 7/30/2009

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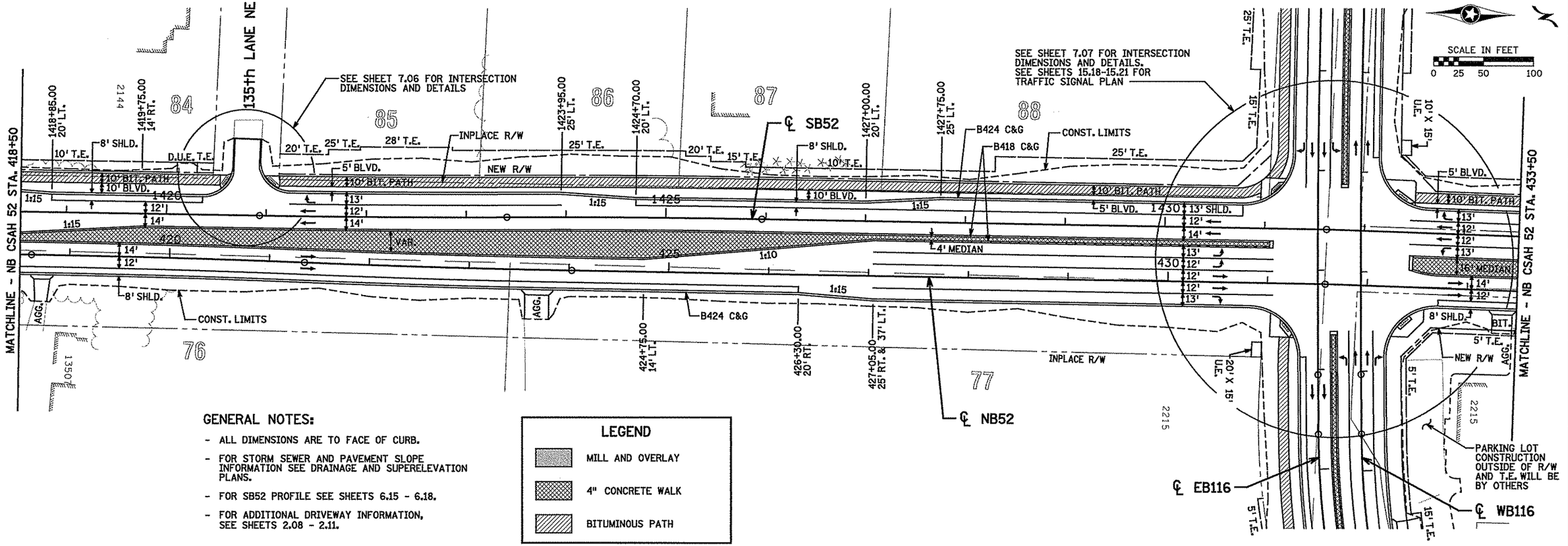
ANOKA COUNTY
CONSTRUCTION PLAN AND PROFILE
CSAH 52/116 RECONSTRUCTION
NB CSAH 52 STA. 403+50 TO 418+50

SHEET 6.06 OF 294

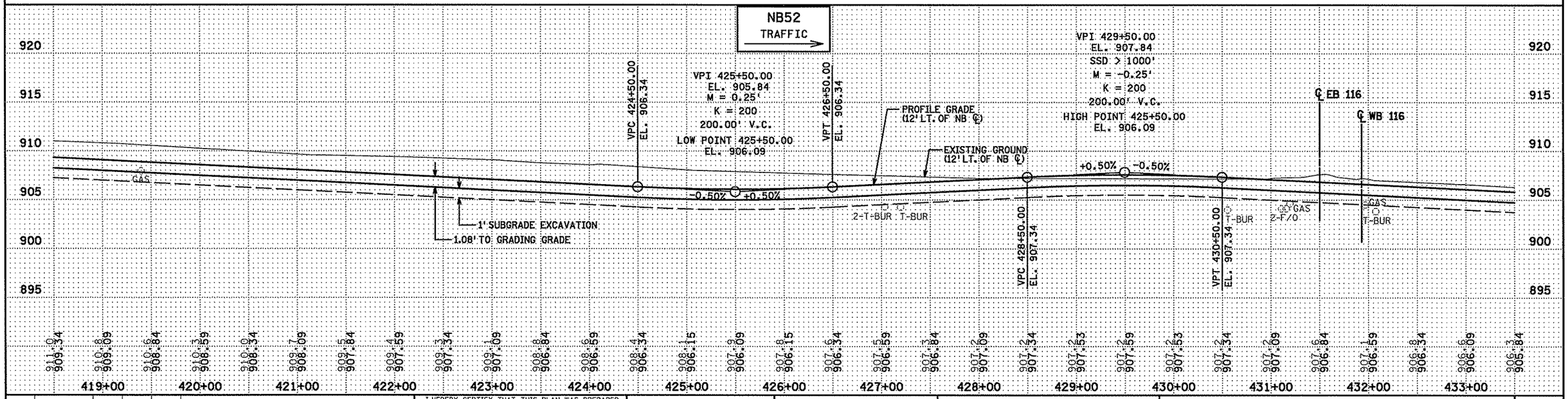


GENERAL NOTES:

- ALL DIMENSIONS ARE TO FACE OF CURB.
- FOR STORM SEWER AND PAVEMENT SLOPE INFORMATION SEE DRAINAGE AND SUPERELEVATION PLANS.
- FOR SB52 PROFILE SEE SHEETS 6.15 - 6.18.
- FOR ADDITIONAL DRIVEWAY INFORMATION, SEE SHEETS 2.08 - 2.11.

LEGEND

- MILL AND OVERLAY
- 4" CONCRETE WALK
- BITUMINOUS PATH



NO	DATE	BY	CKD	APPR	REVISION

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ANOKA COUNTY
CONSTRUCTION PLAN AND PROFILE
CSAH 52/116 RECONSTRUCTION
NB CSAH 52 STA. 418+50 TO 433+50

SHEET 6.07 OF 294

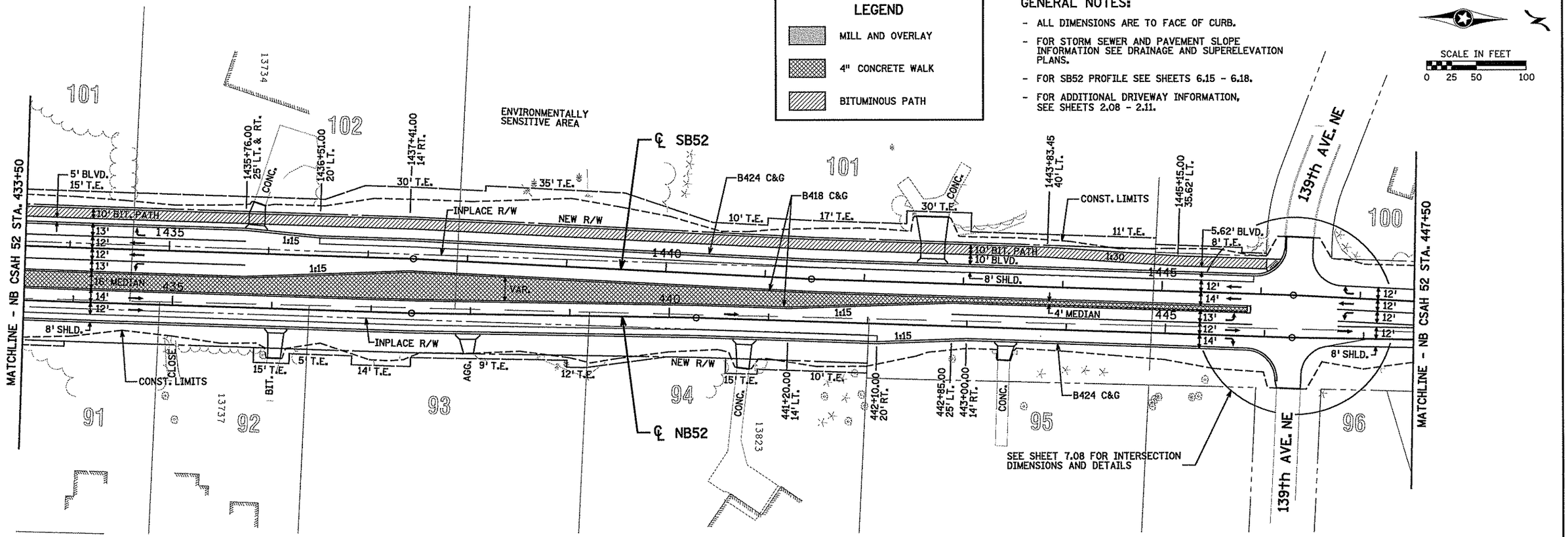
LEGEND

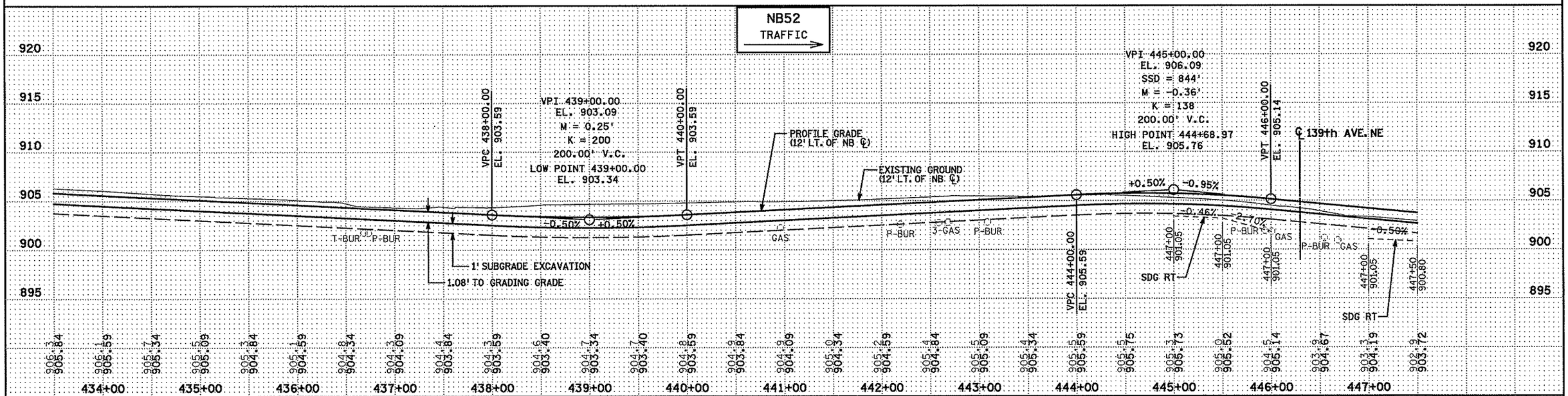
- MILL AND OVERLAY
- 4" CONCRETE WALK
- BITUMINOUS PATH

GENERAL NOTES:

- ALL DIMENSIONS ARE TO FACE OF CURB.
- FOR STORM SEWER AND PAVEMENT SLOPE INFORMATION SEE DRAINAGE AND SUPERELEVATION PLANS.
- FOR SB52 PROFILE SEE SHEETS 6.15 - 6.18.
- FOR ADDITIONAL DRIVEWAY INFORMATION, SEE SHEETS 2.08 - 2.11.

SCALE IN FEET
0 25 50 100





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NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\a-f\AnokaCty\13867000\hwy-brdg\hwy\pln-sht\c0265205_cph.dgn 7/30/2009

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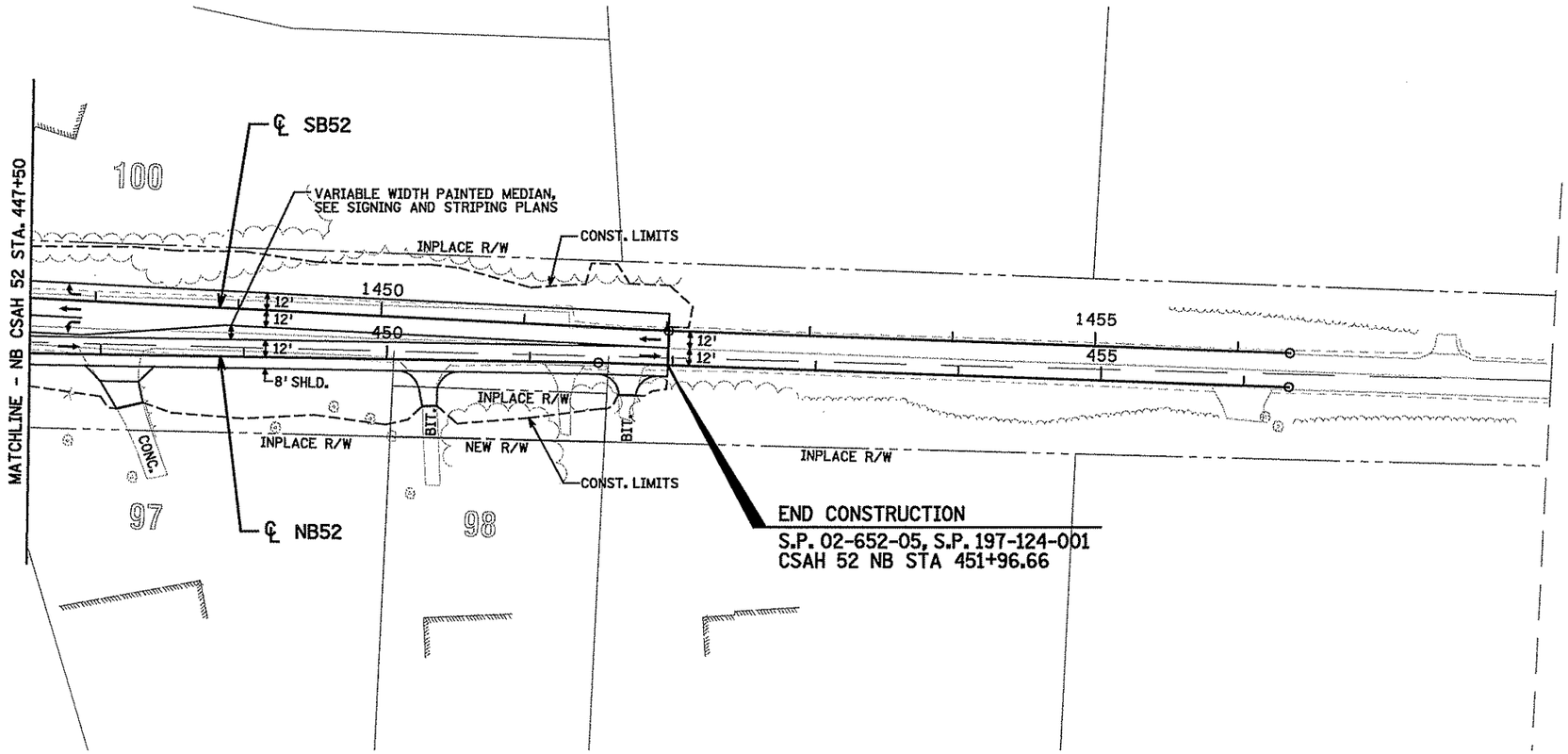
ANOKA COUNTY
CONSTRUCTION PLAN AND PROFILE
CSAH 52/116 RECONSTRUCTION
NB CSAH 52 STA. 433+50 TO 447+50

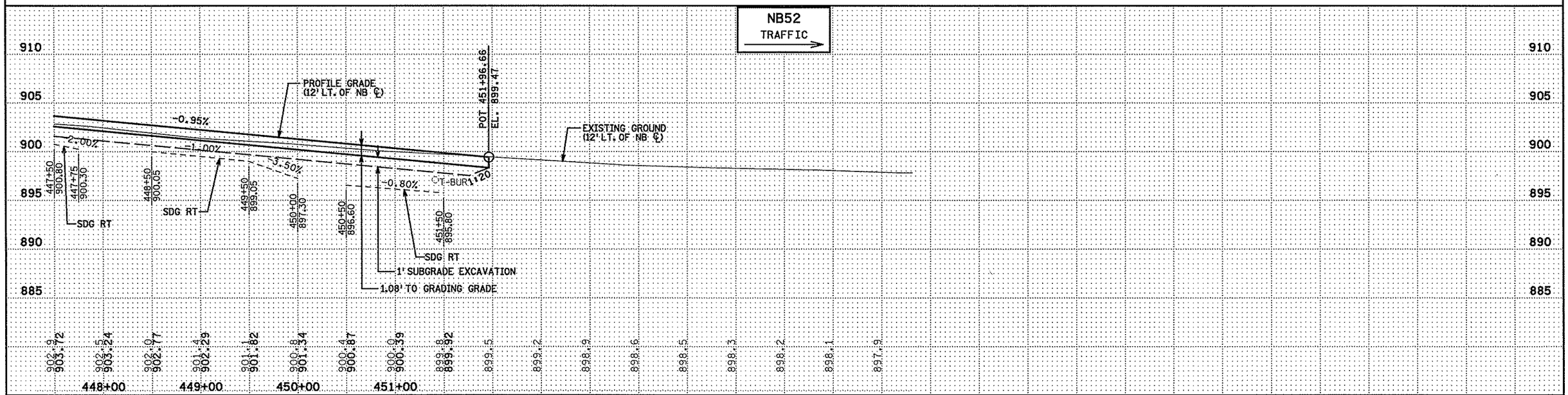
SHEET 6.08 OF 294



SCALE IN FEET
0 25 50 100

LEGEND
- MILL AND OVERLAY
- 4" CONCRETE WALK
- BITUMINOUS PATH

GENERAL NOTES:
- ALL DIMENSIONS ARE TO FACE OF CURB.
- FOR STORM SEWER AND PAVEMENT SLOPE INFORMATION SEE DRAINAGE AND SUPERELEVATION PLANS.
- FOR SB52 PROFILE SEE SHEETS 6.15 - 6.18.
- FOR ADDITIONAL DRIVEWAY INFORMATION, SEE SHEETS 2.08 - 2.11.



NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\a-f\AnokaCty\13867000\hwy-brdg\hwy\pln-sht\c0265205_cpl.dgn 7/30/2009

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: Ryan M

PRINTED NAME: RYAN P. MALONEY

DATE: 7/30/2009 LIC. NO. 44193

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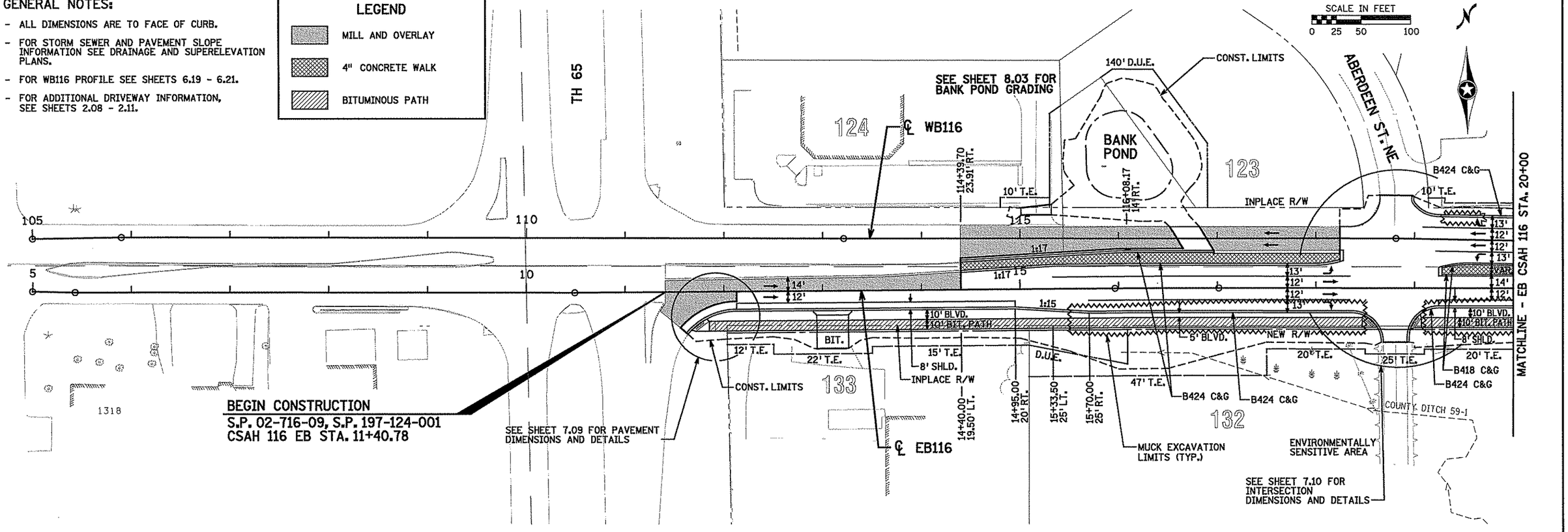
ANOKA COUNTY
CONSTRUCTION PLAN AND PROFILE
CSAH 52/116 RECONSTRUCTION
NB CSAH 52 STA. 447+50 TO 452+00

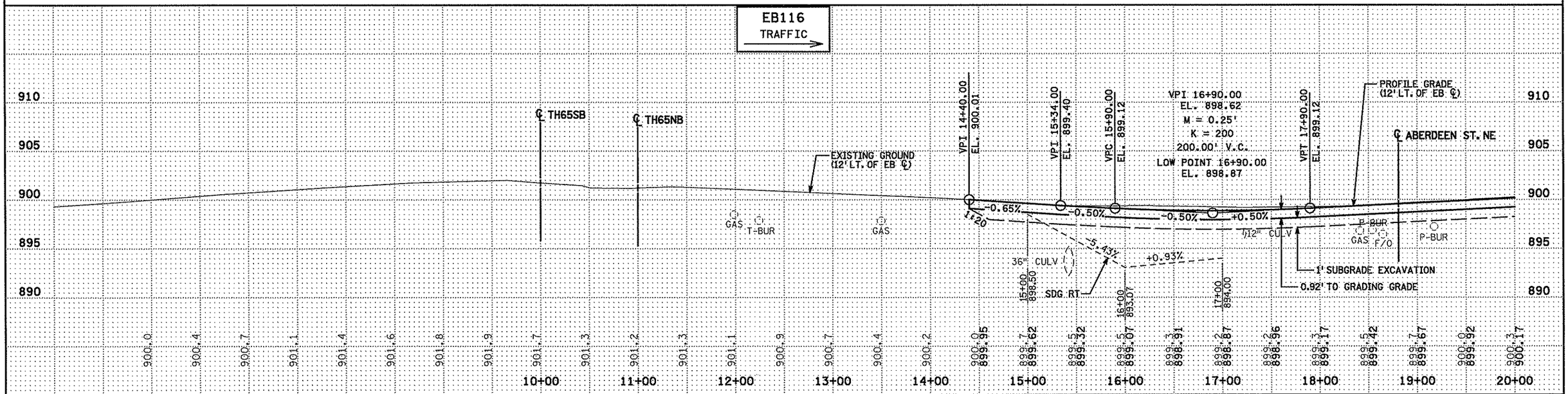
SHEET 6.09 OF 294

GENERAL NOTES:

- ALL DIMENSIONS ARE TO FACE OF CURB.
- FOR STORM SEWER AND PAVEMENT SLOPE INFORMATION SEE DRAINAGE AND SUPERELEVATION PLANS.
- FOR WB116 PROFILE SEE SHEETS 6.19 - 6.21.
- FOR ADDITIONAL DRIVEWAY INFORMATION, SEE SHEETS 2.08 - 2.11.

LEGEND
- MILL AND OVERLAY
- 4" CONCRETE WALK
- BITUMINOUS PATH





NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\a-f\AnokaCty\13867000\hwy-brdg\hwy\pln-sht\c0265205_cpj.dgn 7/30/2009

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:

PRINTED NAME: RYAN P. MALONEY

DATE: 7/30/2009 LIC. NO. 44193

DRAWN BY SFH DATE 7/30/2009

DESIGN BY RPM DATE 7/30/2009

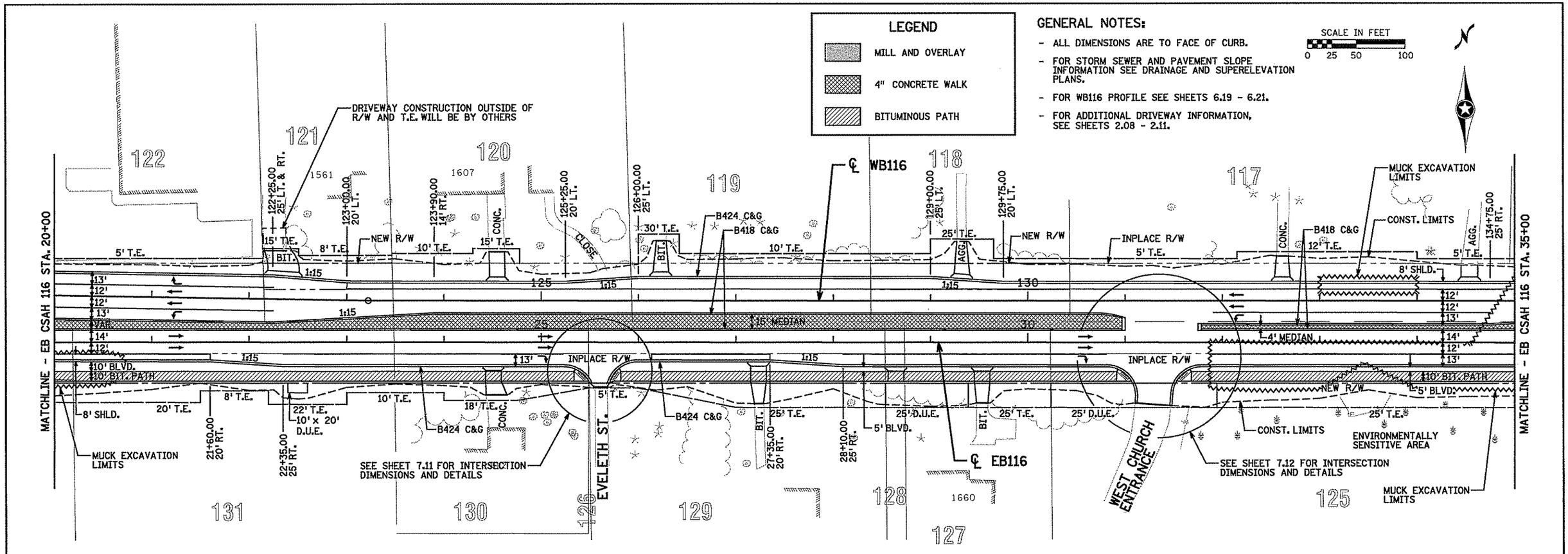
CHECKED BY TAC DATE 7/30/2009

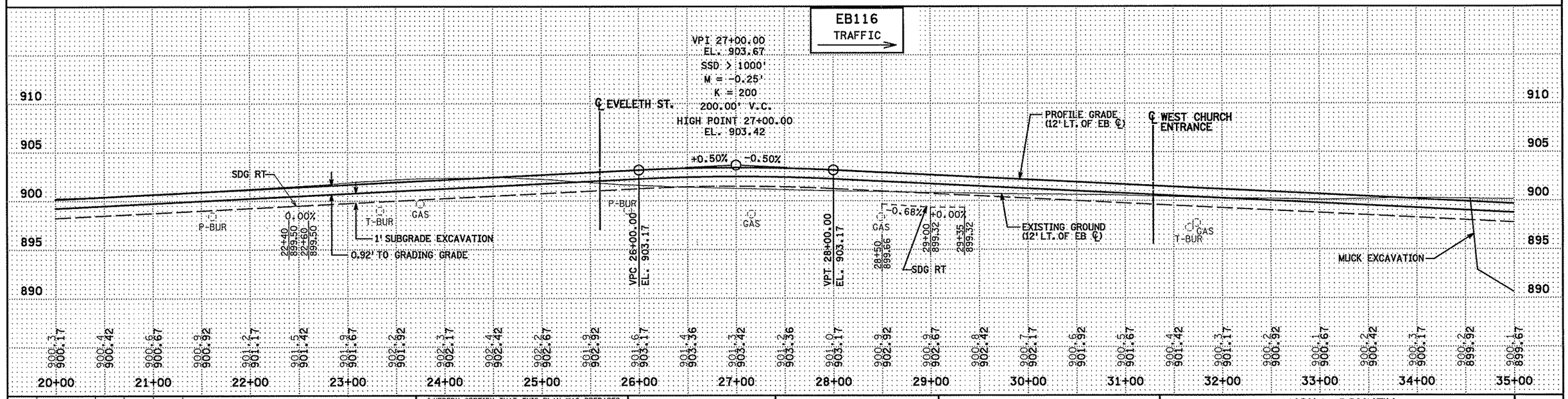
S.P. 02-652-05
S.P. 02-716-09
S.P. 106-020-28
S.P. 197-124-001

TKDA
ENGINEERS • ARCHITECTS • PLANNERS

ANOKA COUNTY
CONSTRUCTION PLAN AND PROFILE
CSAH 52/116 RECONSTRUCTION
EB CSAH 116 STA. 5+00 TO 20+00

SHEET 6.10 OF 294





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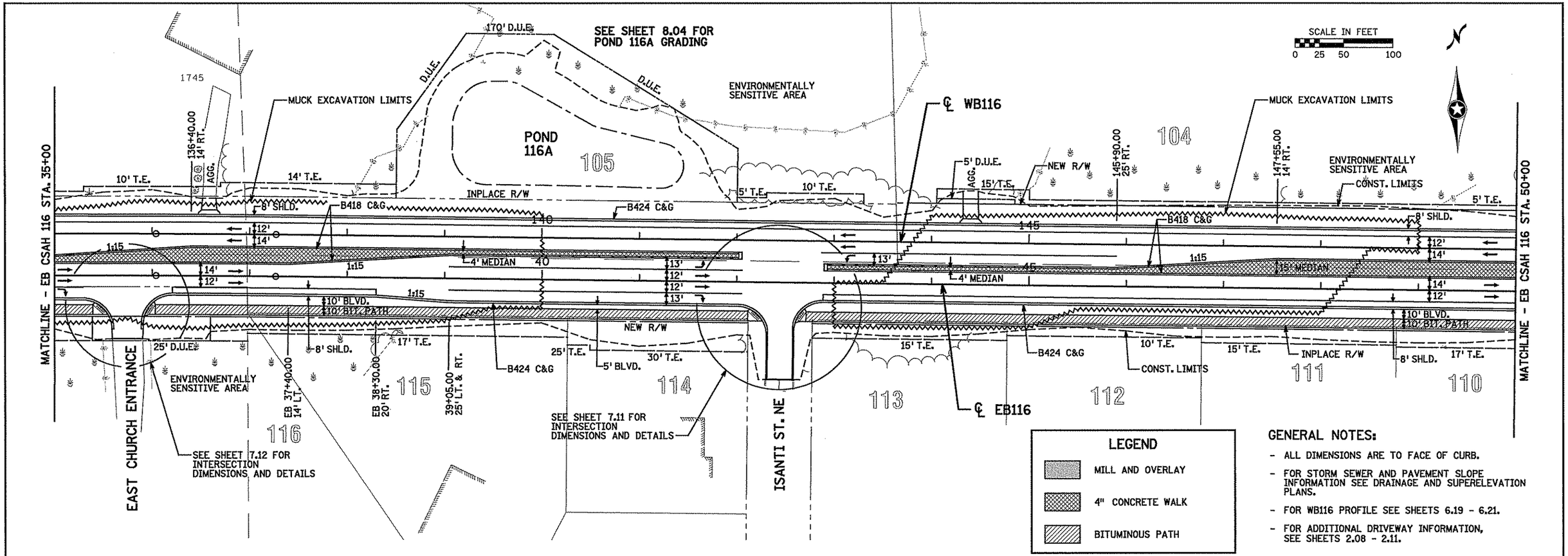
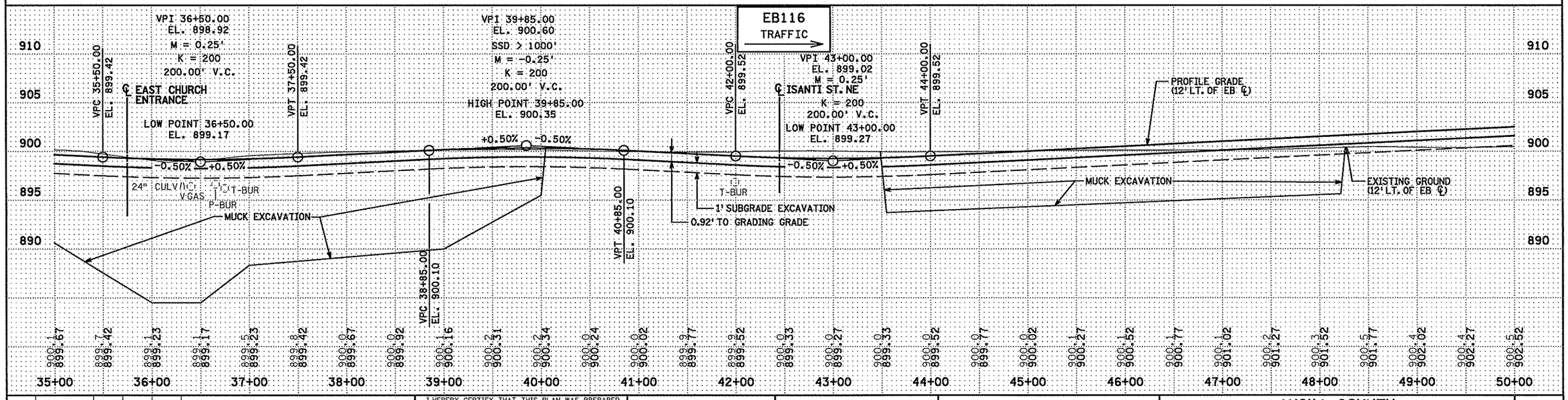
ANOKA COUNTY

CONSTRUCTION PLAN AND PROFILE
CSAH 52/116 RECONSTRUCTION
EB CSAH 116 STA. 20+00 TO 35+00

SHEET 6.11 OF 294





NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\a-f\Anokacty\13867000\hwy-brdg\hwy\pln-sht\c0265205_cpl.dgn 7/30/2009

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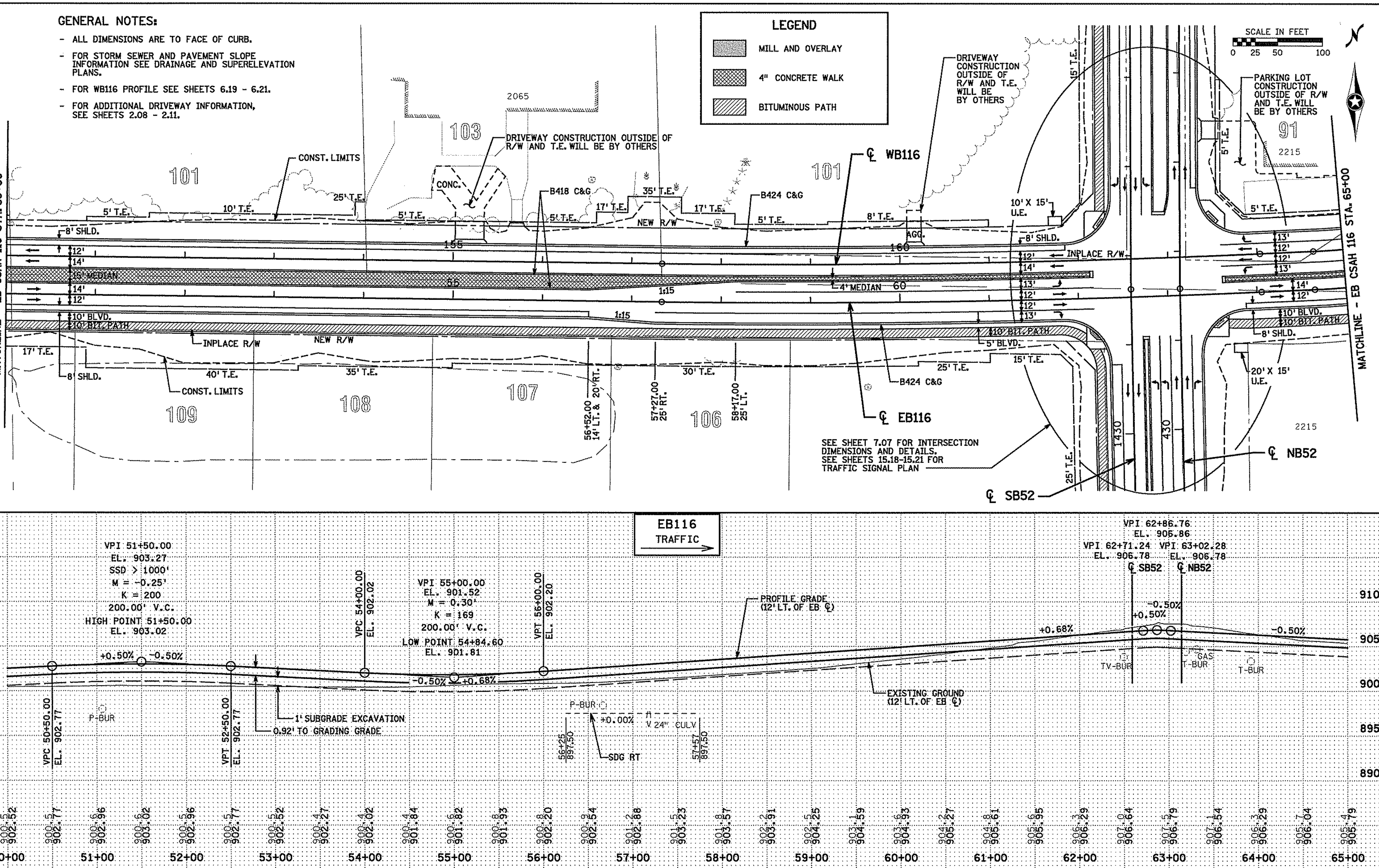
ANOKA COUNTY
CONSTRUCTION PLAN AND PROFILE
CSAH 52/116 RECONSTRUCTION
EB CSAH 116 STA. 35+00 TO 50+00

SHEET 6.12 OF 294

GENERAL NOTES:

- ALL DIMENSIONS ARE TO FACE OF CURB.
- FOR STORM SEWER AND PAVEMENT SLOPE INFORMATION SEE DRAINAGE AND SUPERELEVATION PLANS.
- FOR WB116 PROFILE SEE SHEETS 6.19 - 6.21.
- FOR ADDITIONAL DRIVEWAY INFORMATION, SEE SHEETS 2.08 - 2.11.



LEGEND
MILL AND OVERLAY
4" CONCRETE WALK
BITUMINOUS PATH
SCALE IN FEET
0 25 50 100
MATCHLINE - EB CSAH 116 STA. 50+00
MATCHLINE - EB CSAH 116 STA. 65+00
DRIVEWAY CONSTRUCTION OUTSIDE OF R/W AND T.E. WILL BE BY OTHERS
DRIVEWAY CONSTRUCTION OUTSIDE OF R/W AND T.E. WILL BE BY OTHERS
PARKING LOT CONSTRUCTION OUTSIDE OF R/W AND T.E. WILL BE BY OTHERS
CONST. LIMITS
℄ WB116
℄ EB116
℄ NB52
℄ SB52
B418 C&G
B424 C&G
INPLACE R/W
NEW R/W
15' MEDIAN
4' MEDIAN
10' BLVD.
10' BIT. PATH
8' SHLD.
10' X 15' U.E.
20' X 15' U.E.
SEE SHEET 7.07 FOR INTERSECTION DIMENSIONS AND DETAILS.
SEE SHEETS 15.18-15.21 FOR TRAFFIC SIGNAL PLAN
EB116 TRAFFIC
VPI 51+50.00
EL. 903.27
SSD > 1000'
M = -0.25'
K = 200
200.00' V.C.
HIGH POINT 51+50.00
EL. 903.02
VPI 55+00.00
EL. 901.52
M = 0.30'
K = 169
200.00' V.C.
LOW POINT 54+84.60
EL. 901.81
VPI 62+86.76
EL. 906.86
VPI 62+71.24
EL. 906.78
VPI 63+02.28
EL. 906.78
PROFILE GRADE (12' LT. OF EB ℄)
EXISTING GROUND (12' LT. OF EB ℄)
1' SUBGRADE EXCAVATION
0.92' TO GRADING GRADE
SDG RT
24" CULV

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.	
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S.P. 197-124-001

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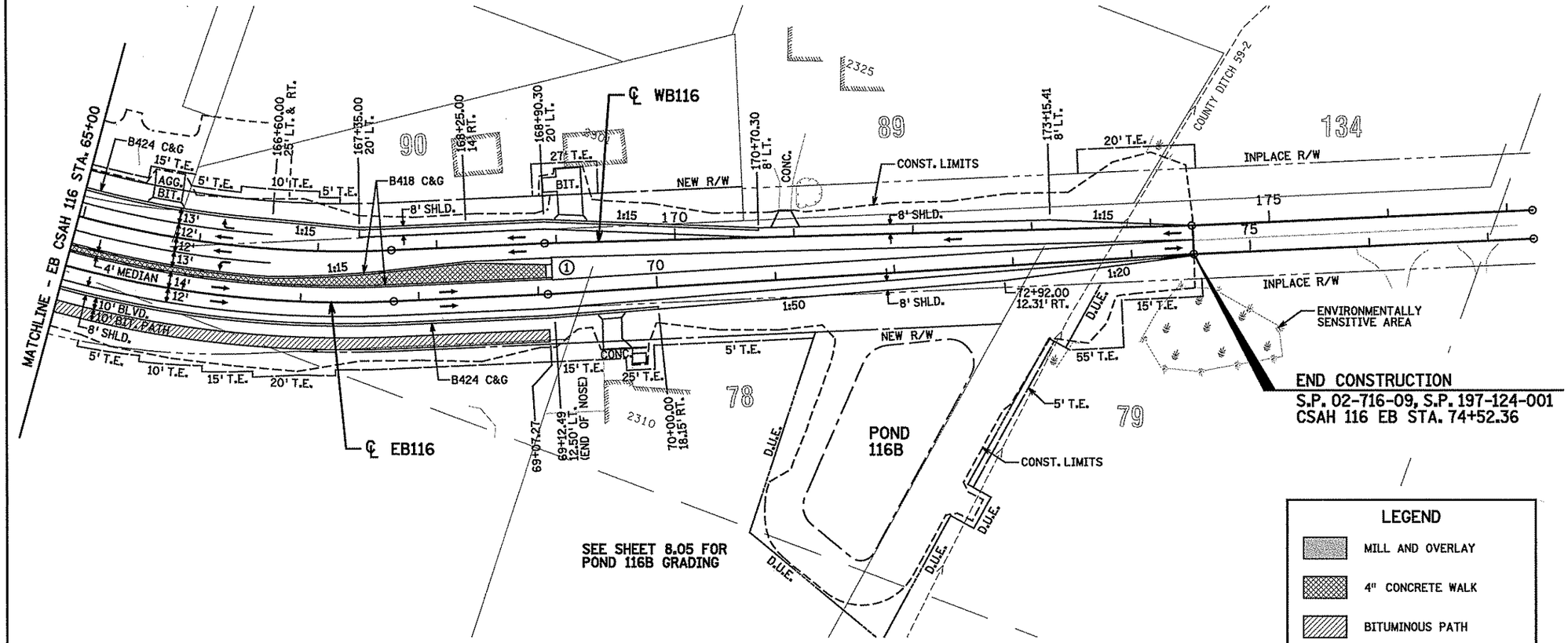
ANOKA COUNTY
CONSTRUCTION PLAN AND PROFILE
CSAH 52/116 RECONSTRUCTION
EB CSAH 116 STA. 50+00 TO 65+00

SHEET 6.13 OF 294

NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\a-f\AnokaCty\13867000\hwy-brdg\hwy\pln-sht\c0265205.cpm.dgn 7/30/2009



LEGEND

- MILL AND OVERLAY
- 4" CONCRETE WALK
- BITUMINOUS PATH

GENERAL NOTES:

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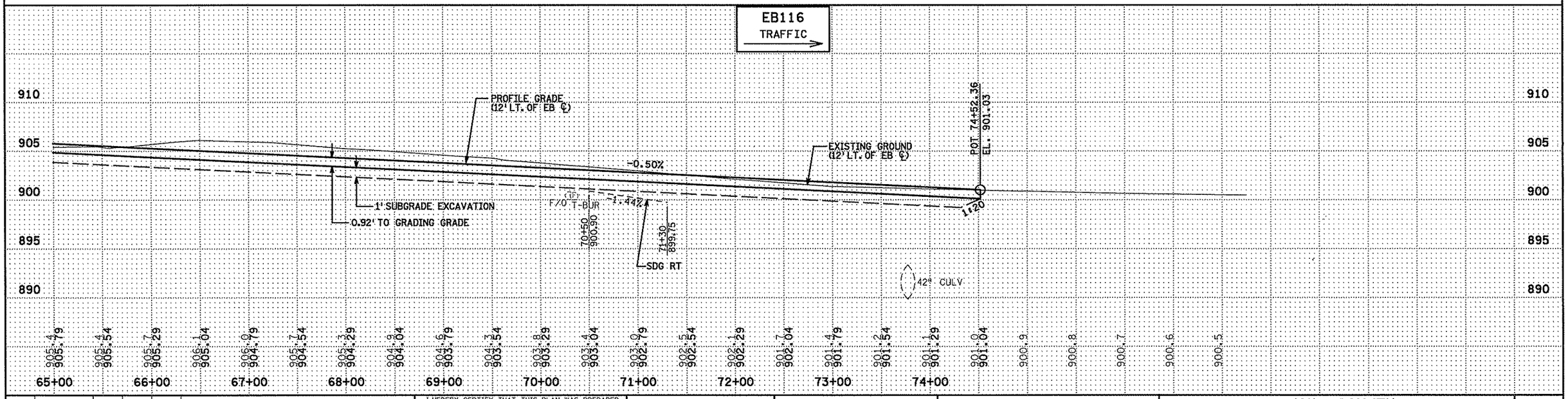
- FOR WB116 PROFILE SEE SHEETS 6.19 - 6.21.
- FOR ADDITIONAL DRIVEWAY INFORMATION, SEE SHEETS 2.08 - 2.11.

① MEDIAN NOSE 7109.



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NAME: K:\a-f\AnokaCty\13867000\hwy-brdg\hwy\pln-sht\c0265205_cpn.dgn 7/30/2009

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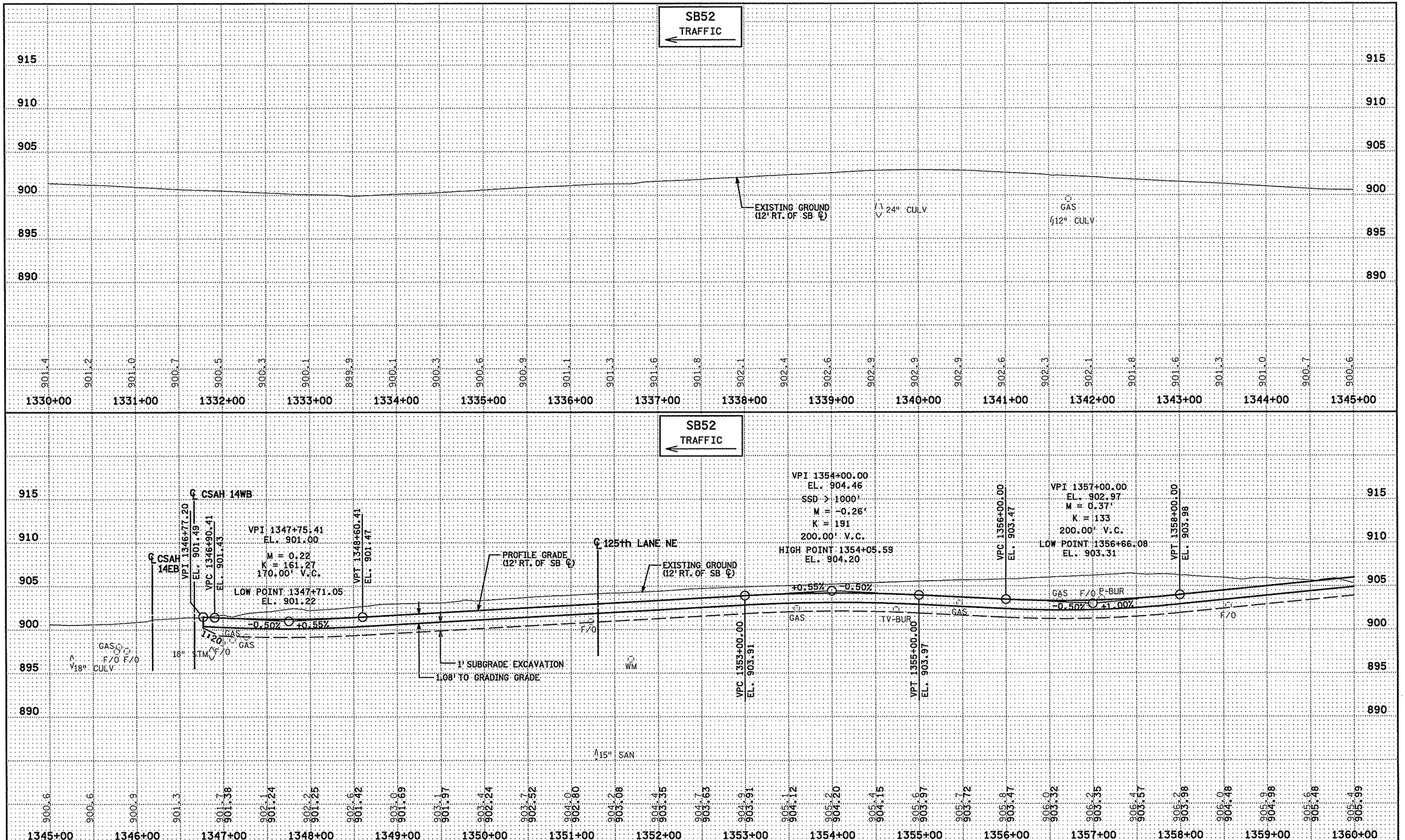
ANOKA COUNTY
CONSTRUCTION PLAN AND PROFILE
CSAH 52/116 RECONSTRUCTION
EB CSAH 116 STA. 65+00 TO 75+00

SHEET 6.14 OF 294



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ANOKA COUNTY
PROFILES
CSAH 52/116 RECONSTRUCTION
SB CSAH 52 STA. 1330+00 TO STA. 1360+00

SHEET 6.15 OF 294

SB52
TRAFFIC

VPI 1364+00.00
EL. 910.00
SSD > 1000'
M = -0.11'
K = 445
200.00' V.C.

℄ 127th LANE NE

EXISTING GROUND
(12' RT. OF SB ℄)

PROFILE GRADE
(12' RT. OF SB ℄)

+1.00% +0.55%

VPC 1363+00.00
EL. 909.00

VPT 1365+00.00
EL. 910.56

1' SUBGRADE EXCAVATION
1.08' TO GRADING GRADE

VPI 1370+57.00
EL. 913.64
SSD >1000'
M = -0.26'
K = 190
200.00' V.C.
HIGH POINT 1370+62.13
EL. 913.38

+0.55% -0.50%

VPC 1369+57.00
EL. 913.09

VPT 1371+57.00
EL. 913.14

℄ 129th AVE. NE/
QUAIL CREEK PARKWAY NE

GAS P-BUR
P-BUR
TV-BUR TV-BUR

WM

10" SAN

F/O

1360+00	1361+00	1362+00	1363+00	1364+00	1365+00	1366+00	1367+00	1368+00	1369+00	1370+00	1371+00	1372+00	1373+00	1374+00	1375+00
905.4 905.99	905.5 906.49	905.9 906.99	906.1 907.49	906.3 907.99	907.3 908.50	908.47 909.00	907.8 909.89	908.25 910.25	909.0 910.56	910.63 910.83	912.51 911.11	911.39 911.39	911.66 911.66	911.94 911.94	912.3 912.22	912.7 912.50	912.67 912.77	913.2 913.05	913.3 913.28	913.6 913.38	913.44 913.34	913.48 913.18	912.83 912.93	912.68 912.68	912.8 912.43	912.58 912.18	911.93 911.93	912.68 911.68	913.43 911.43

SB52
TRAFFIC

VPI 1378+05.00
EL. 909.90
M = 0.25'
K = 200
200.00' V.C.
LOW POINT 1378+05.00
EL. 910.15

VPC 1377+05.00
EL. 910.40

VPT 1379+05.00
EL. 910.40

-0.50% +0.50%

T-BUR

℄ 130th LANE NE

EXISTING GROUND
(12' RT. OF SB ℄)

GAS

F/O

WM

PROFILE GRADE
(12' RT. OF SB ℄)

1' SUBGRADE EXCAVATION
1.08' TO GRADING GRADE

VPI 1386+62.39
EL. 914.19
SSD > 1000'
M = -0.25'
K = 200
200.00' V.C.
HIGH POINT 1386+62.39
EL. 913.94

+0.50% -0.50%

TV-BUR

T-BUR

VPC 1385+62.39
EL. 913.69

VPT 1387+62.39
EL. 913.69

1375+00	1376+00	1377+00	1378+00	1379+00	1380+00	1381+00	1382+00	1383+00	1384+00	1385+00	1386+00	1387+00	1388+00	1389+00	1390+00
912.43 911.43	912.3 911.18	912.93 910.93	912.3 910.68	912.43 910.43	912.23 910.23	912.4 910.15	912.20 910.20	912.5 910.38	912.5 910.63	912.88 910.88	912.7 911.13	912.9 911.38	913.03 911.63	913.2 911.88	913.4 912.13	913.7 912.38	913.9 912.63	914.2 912.88	914.6 913.13	914.9 913.38	915.0 913.63	914.9 913.84	914.5 913.94	913.9 913.90	913.75 913.75	912.40 913.50	911.85 913.25	911.5 913.00	911.45 912.75	911.30 912.50

NO	DATE	BY	CKD	APPR	REVISION

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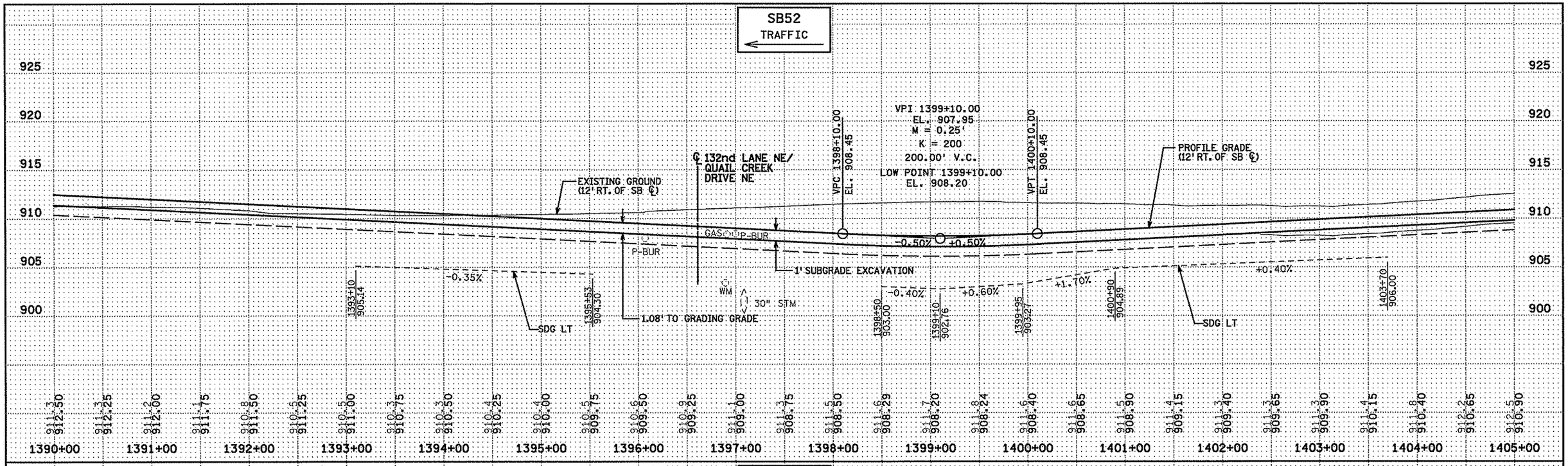
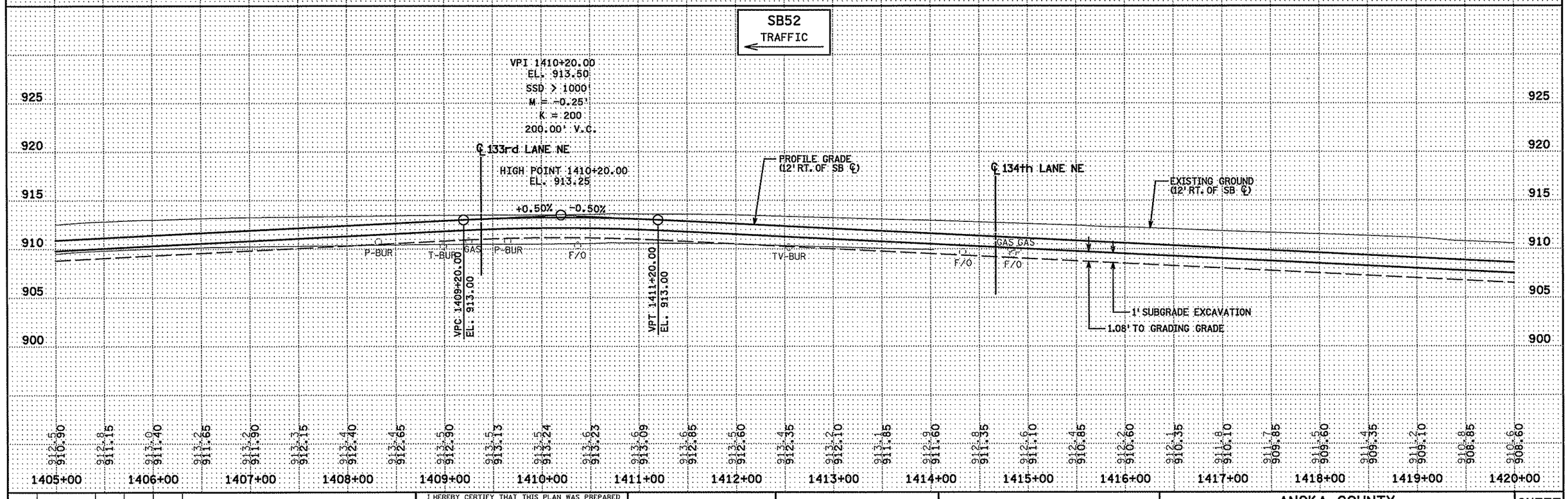
ANOKA COUNTY
PROFILES
CSAH 52/116 RECONSTRUCTION
SB CSAH 52 STA. 1360+00 TO STA. 1390+00

SHEET 6.16 OF 294





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ANOKA COUNTY
PROFILES
CSAH 52/116 RECONSTRUCTION
SB CSAH 52 STA. 1390+00 TO STA. 1420+00

SHEET 6.17 OF 294

SB52
TRAFFIC

℄ 135th LANE NE

VPC 1424+54.00
EL. 906.33

VPI 1425+54.00
EL. 905.83
M = 0.25'
K = 200
200.00' V.C.
LOW POINT 1425+54.00
EL. 906.08

VPT 1426+54.00
EL. 906.33

PROFILE GRADE
(12' RT. OF SB ℄)

VPC 1428+54.00
EL. 907.33

VPI 1429+54.00
EL. 907.83
SSD > 1000'
M = -0.25'
K = 200
200.00' V.C.
HIGH POINT 1429+54.00
EL. 907.58

VPT 1430+54.00
EL. 907.33

℄ EB 116

℄ WB 116

EXISTING GROUND
(12' RT. OF SB ℄)

+0.50% -0.50% -0.50% +0.50%

1' SUBGRADE EXCAVATION
1.08' TO GRADING GRADE

GAS T-BUR GAS 2-F/O GAS TV-BUR T-BUR

1420+00	1421+00	1422+00	1423+00	1424+00	1425+00	1426+00	1427+00	1428+00	1429+00	1430+00	1431+00	1432+00	1433+00	1434+00	1435+00
910.60	910.35	910.10	909.85	909.60	909.35	909.10	908.85	908.60	908.35	908.10	907.85	907.60	907.35	907.10	906.85
908.60	908.35	908.10	907.85	907.60	907.35	907.10	906.85	906.60	906.35	906.15	906.08	906.13	906.31	906.56	906.81

1435+00	1436+00	1437+00	1438+00	1439+00	1440+00	1441+00	1442+00	1443+00	1444+00	1445+00	1446+00	1447+00	1448+00	1449+00	1450+00
905.10	904.85	904.60	904.35	904.10	903.85	903.60	903.40	903.33	903.38	903.55	903.80	904.05	904.30	904.55	904.80
905.10	904.85	904.60	904.35	904.10	903.85	903.60	903.40	903.33	903.38	903.55	903.80	904.05	904.30	904.55	905.05

SB52
TRAFFIC

VPC 1438+05.00
EL. 903.58

VPI 1439+05.00
EL. 903.08
M = 0.25'
K = 200
200.00' V.C.
LOW POINT 1439+05.00
EL. 903.33

VPT 1440+05.00
EL. 903.58

PROFILE GRADE
(12' RT. OF SB ℄)

EXISTING GROUND
(12' RT. OF SB ℄)

VPC 1444+05.00
EL. 905.58

VPI 1445+05.00
EL. 906.08
SSD = 844'
M = -0.36'
K = 138
200.00' V.C.
HIGH POINT 1444+73.97
EL. 905.75

VPT 1446+05.00
EL. 905.13

℄ 139th AVE. NE

-0.50% +0.50% +0.50% -0.95% -0.95%

TV-BUR P-BUR T-BUR 2-GAS P-BUR P-BUR P-BUR GAS

1' SUBGRADE EXCAVATION
1.08' TO GRADING GRADE

SDG LT

1435+00	1436+00	1437+00	1438+00	1439+00	1440+00	1441+00	1442+00	1443+00	1444+00	1445+00	1446+00	1447+00	1448+00	1449+00	1450+00
905.10	904.85	904.60	904.35	904.10	903.85	903.60	903.40	903.33	903.38	903.55	903.80	904.05	904.30	904.55	904.80
905.10	904.85	904.60	904.35	904.10	903.85	903.60	903.40	903.33	903.38	903.55	903.80	904.05	904.30	904.55	905.05

PROFILE GRADE
(12' RT. OF SB ℄)

EXISTING GROUND
(12' RT. OF SB ℄)

POT 1452+01.50
EL. 899.46

-0.95% -0.95% 1:20

T-BUR
1' SUBGRADE EXCAVATION
1.08' TO GRADING GRADE

SDG LT

1450+00	1451+00	1452+00
901.37	900.90	900.42
901.37	900.90	900.42

1460+60
896.71

NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\a-f\AnokaCty\l3867000\hwy-brdg\hwy\pln-sht\c0265205_cpr.dgn 7/30/2009

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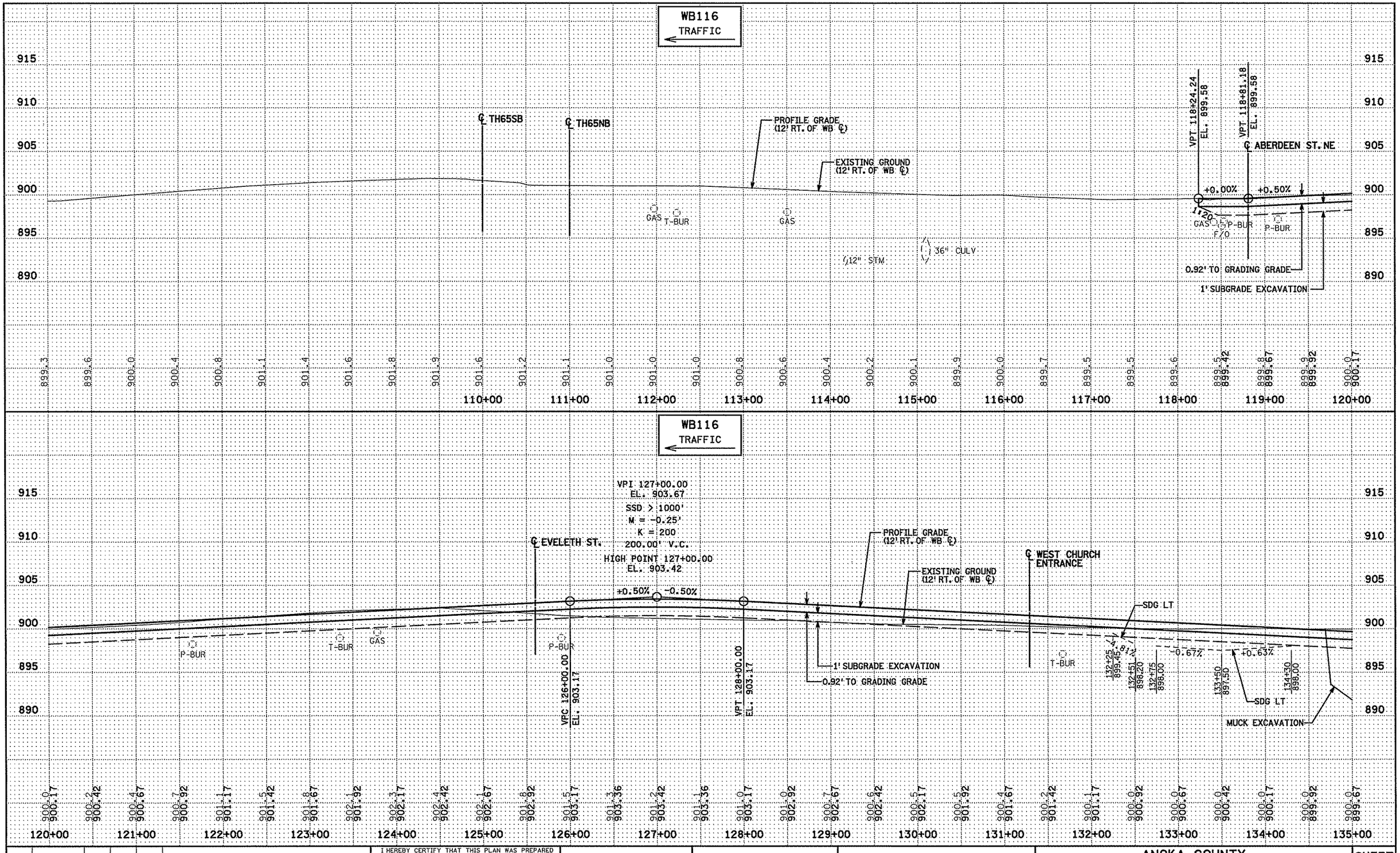
ANOKA COUNTY
PROFILES
CSAH 52/116 RECONSTRUCTION
SB CSAH 52 STA. 1420+00 TO STA. 1452+01.63

SHEET 6.18 OF 294



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DRAWN BY SFH DATE 7/30/2009

DESIGN BY RPM DATE 7/30/2009

CHECKED BY TAC DATE 7/30/2009

S.P. 02-652-05
S.P. 02-716-09
S.P. 106-020-28
S.P. 197-124-001

TKDA
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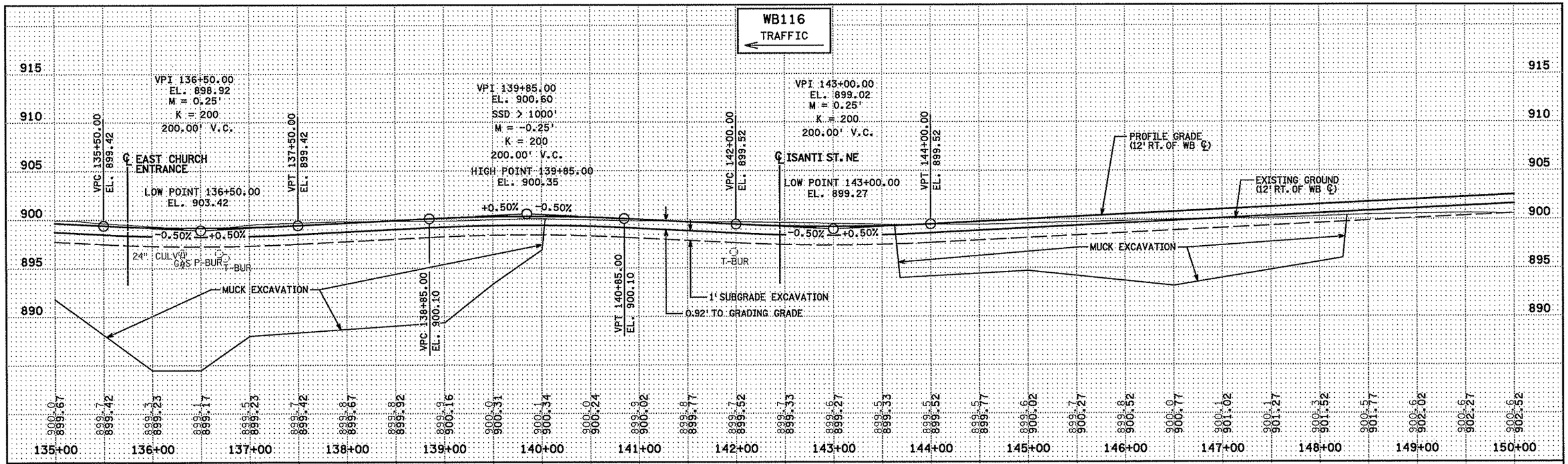
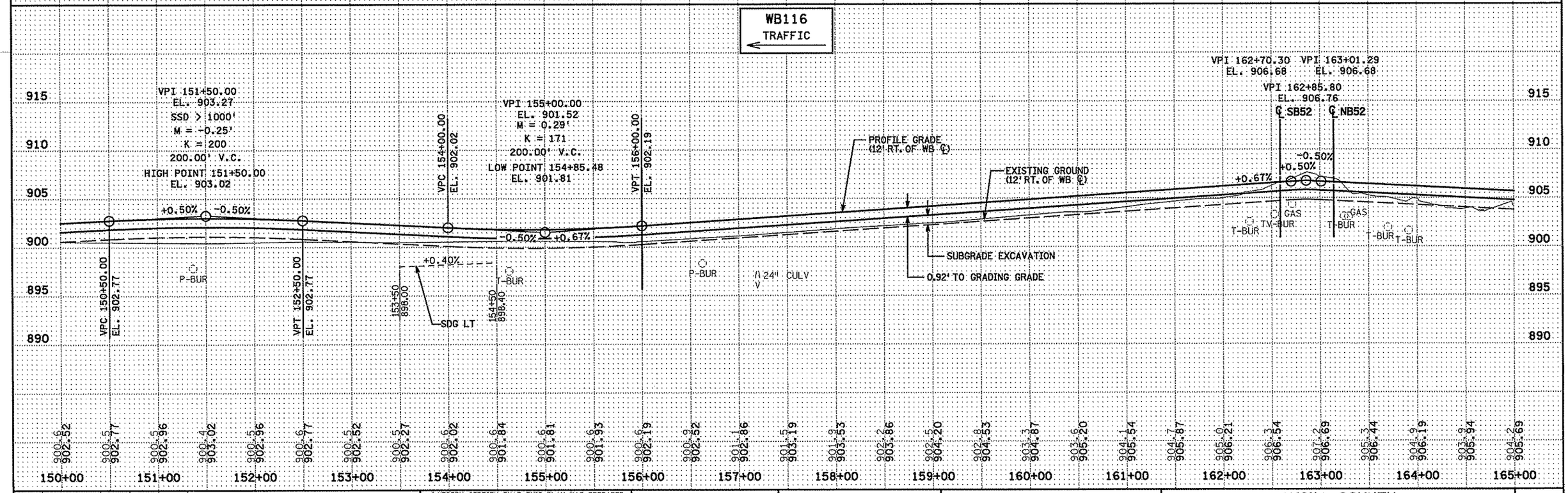
ANOKA COUNTY
PROFILES
CSAH 52/116 RECONSTRUCTION
WB CSAH 116 STA. 110+00 TO STA. 135+00

SHEET 6.19 OF 294





NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\a-f\AnokaCty\13867000\hwy-brdg\hwy\pln-shf\c0265205_cpt.dgn 7/30/2009

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:

PRINTED NAME: RYAN P. MALONEY

DATE: 7/30/2009 LIC. NO. 44193

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CHECKED BY TAC DATE 7/30/2009

S.P. 02-652-05
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S.P. 197-124-001

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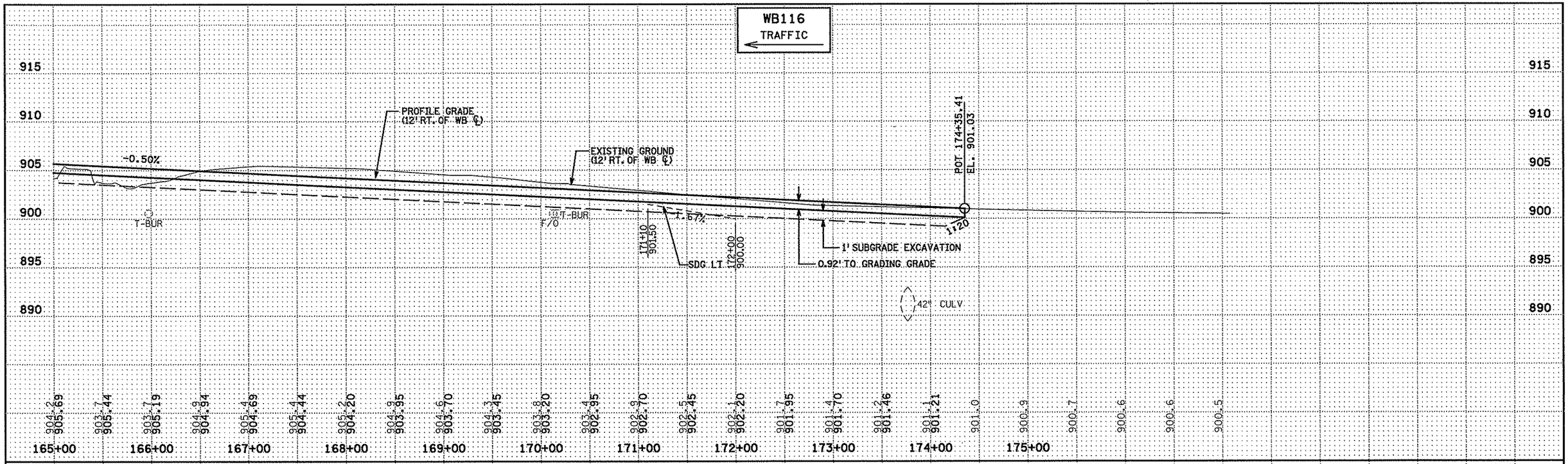
ANOKA COUNTY
PROFILES
CSAH 52/116 RECONSTRUCTION
WB CSAH 116 STA. 135+00 TO STA. 165+00

SHEET 6.20 OF 294



NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\a-f\AnokaCty\13867000\hwy-brdg\hwy\pln-sht\cp265205_cpu.dgn 7/30/2009

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SIGNATURE:

PRINTED NAME: RYAN P. MALONEY

DATE: 7/30/2009 LIC. NO. 44193

DRAWN BY SFH DATE 7/30/2009

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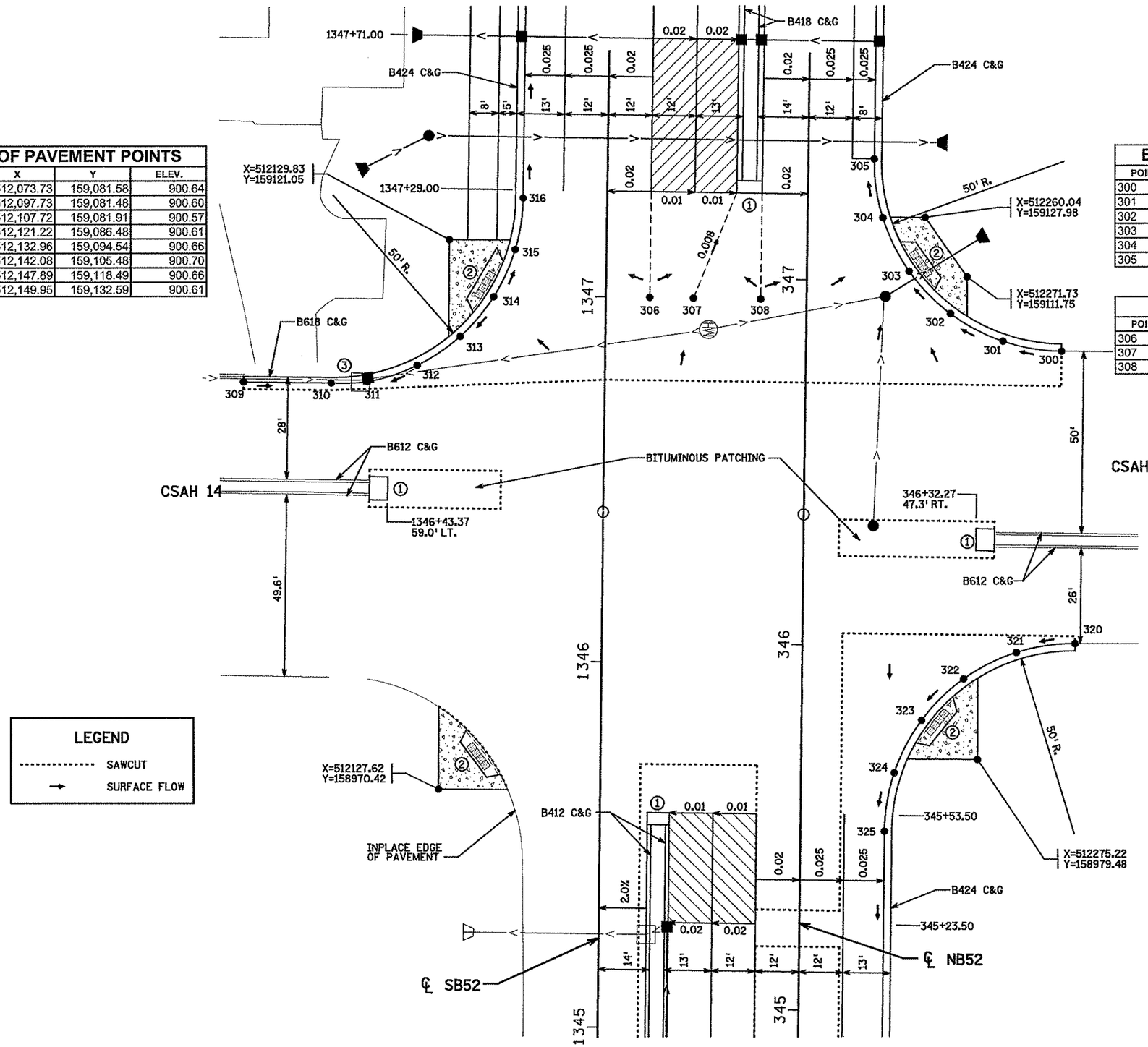
ANOKA COUNTY
PROFILES
CSAH 52/116 RECONSTRUCTION
WB CSAH 116 STA. 165+00 TO STA. 175+00

SHEET 6.21 OF 294

EDGE OF PAVEMENT POINTS			
POINT	X	Y	ELEV.
309	512,073.73	159,081.58	900.64
310	512,097.73	159,081.48	900.60
311	512,107.72	159,081.91	900.57
312	512,121.22	159,086.48	900.61
313	512,132.96	159,094.54	900.66
314	512,142.08	159,105.48	900.70
315	512,147.89	159,118.49	900.66
316	512,149.95	159,132.59	900.61



EDGE OF PAVEMENT POINTS			
POINT	X	Y	ELEV.
300	512,297.71	159,091.49	901.42
301	512,281.64	159,094.14	901.33
302	512,267.18	159,101.63	901.06
303	512,255.75	159,113.22	900.80
304	512,248.46	159,127.78	900.62
305	512,246.04	159,143.89	900.55

MID PAVEMENT POINTS			
POINT	X	Y	ELEV.
306	512,184.74	159,105.55	901.38
307	512,196.74	159,105.46	901.30
308	512,215.24	159,105.32	901.36

SCALE IN FEET
0 15 30

EDGE OF PAVEMENT POINTS			
POINT	X	Y	ELEV.
320	512,301.82	159,011.42	901.55
321	512,285.80	159,008.90	901.24
322	512,271.33	159,001.57	900.94
323	512,259.83	158,990.14	900.63
324	512,252.41	158,975.73	900.32
325	512,249.78	158,959.73	900.01

LEGEND
SAWCUT
SURFACE FLOW

EDGE OF PAVEMENT POINT LOCATION

SPECIFIC NOTES:

① CONCRETE APPROACH NOSE SEE Mn/DOT STD. PLATE 7113A.

② CONSTRUCT PEDESTRIAN CURB RAMP (DESIGN 7036)

③ 10' TRANSITION CURB FROM B424 C&G TO B618 C&G. PAID FOR AS B424 C&G.

NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\a-f\AnokaCty\13867000\hwy-brdg\hwy\pln-sht\c0265205_cdo.dgn 7/30/2009

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SIGNATURE:
PRINTED NAME: RYAN P. MALONEY
DATE: 7/30/2009 LIC. NO. 44193

DRAWN BY RRC DATE 7/30/2009
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CHECKED BY TAC DATE 7/30/2009

S.P. 02-652-05
S.P. 02-716-09
S.P. 106-020-28
S.P. 197-124-001

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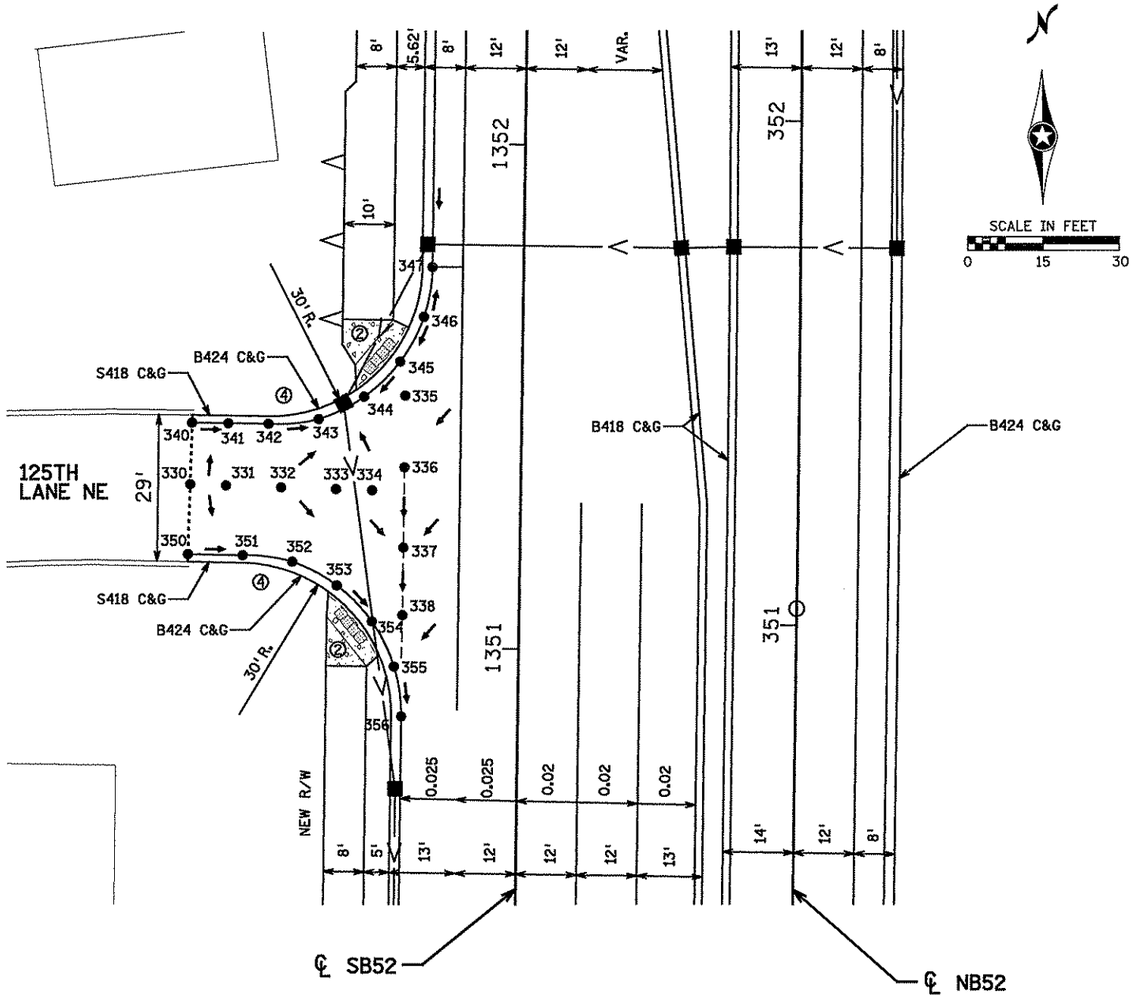
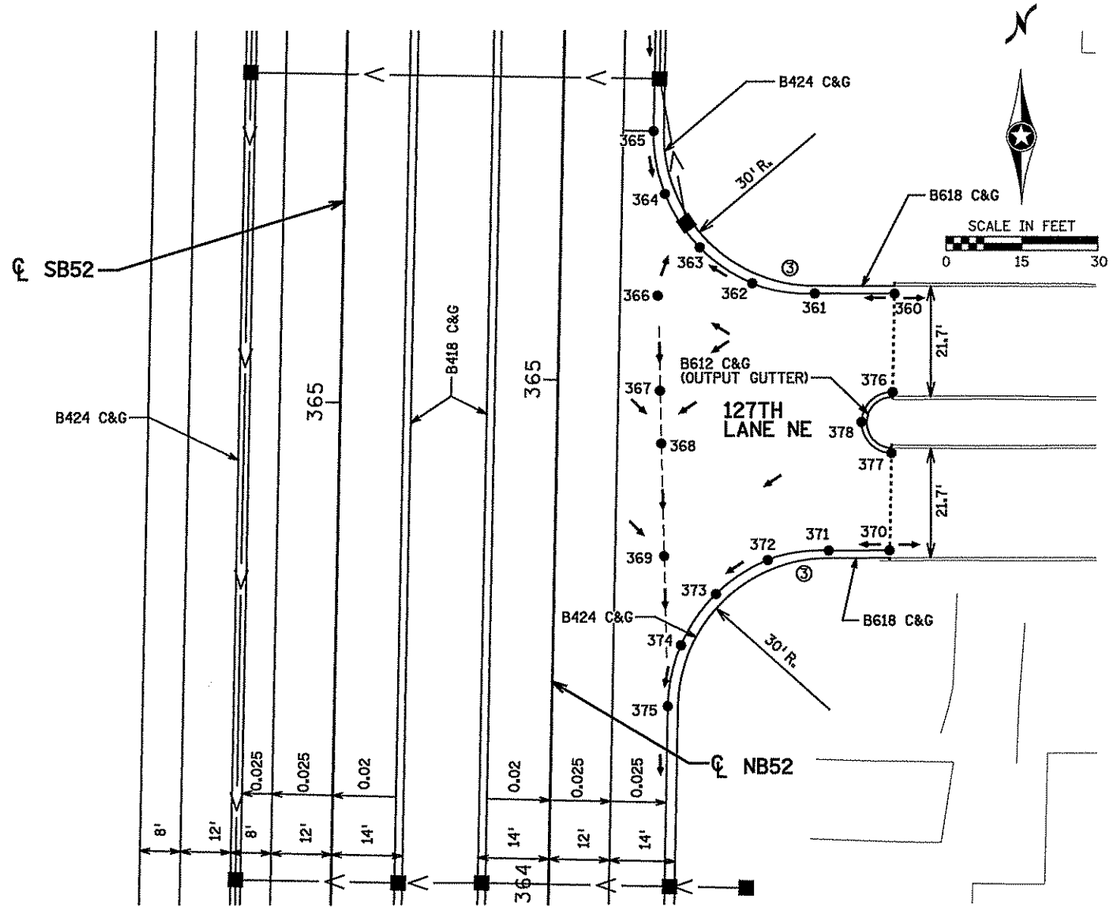
ANOKA COUNTY
INTERSECTION DETAILS
CSAH 52/116 RECONSTRUCTION
CSAH 52 AND CSAH 14

SHEET 7.01 OF 294





EDGE OF PAVEMENT POINTS			
POINT	X	Y	ELEV.
340	512,110.96	159,550.15	902.77
341	512,118.15	159,550.09	902.72
342	512,126.15	159,550.03	902.66
343	512,136.07	159,551.03	902.35
344	512,145.01	159,555.52	902.33
345	512,152.14	159,562.54	902.54
346	512,156.74	159,571.42	902.56
347	512,158.38	159,581.29	902.53

EDGE OF PAVEMENT POINTS			
POINT	X	Y	ELEV.
350	512,110.28	159,524.02	902.74
351	512,121.14	159,523.87	902.71
352	512,131.04	159,522.65	902.47
353	512,139.85	159,518.01	902.33
354	512,146.80	159,510.89	902.19
355	512,151.23	159,501.97	902.05
356	512,152.70	159,492.13	901.91

MID PAVEMENT POINTS			
POINT	X	Y	ELEV.
330	512,110.64	159,537.90	903.02
331	512,117.78	159,537.71	903.02
332	512,128.71	159,537.42	902.84
333	512,139.59	159,537.12	902.52
334	512,146.72	159,536.93	902.38
335	512,153.19	159,555.81	902.50
336	512,153.08	159,541.55	902.37
337	512,152.96	159,525.59	902.22
338	512,152.85	159,512.18	902.09

LEGEND

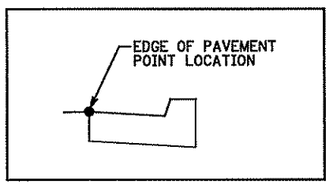
SAWCUT

SURFACE FLOW

EDGE OF PAVEMENT POINTS			
POINT	X	Y	ELEV.
360	512,276.57	160,927.69	910.64
361	512,260.75	160,927.61	910.44
362	512,248.36	160,929.54	910.24
363	512,237.87	160,936.57	910.00
364	512,230.92	160,947.12	909.99
365	512,228.59	160,959.52	910.15

MID PAVEMENT POINTS			
POINT	X	Y	ELEV.
366	512,229.60	160,926.93	910.09
367	512,230.18	160,908.14	909.94
368	512,230.50	160,897.64	909.85
369	512,231.19	160,875.27	909.66

EDGE OF PAVEMENT POINTS			
POINT	X	Y	ELEV.
370	512,275.85	160,876.72	910.50
371	512,263.81	160,876.60	910.30
372	512,251.75	160,874.62	909.95
373	512,241.52	160,867.77	909.70
374	512,234.64	160,857.57	909.53
375	512,232.11	160,845.52	909.41
376	512,276.29	160,908.19	910.93
377	512,270.17	160,902.39	910.73
378	512,276.14	160,896.10	910.91



SPECIFIC NOTES:

② CONSTRUCT PEDESTRIAN CURB RAMP (DESIGN 7036)

③ 10' TRANSITION CURB FROM B424 C&G TO B618 C&G. PAID FOR AS B424 C&G.

④ 10' TRANSITION CURB FROM B424 C&G TO S418 C&G. PAID FOR AS B424 C&G.

NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\a-f\AnokaCty\13867000\hwy-brdg\hwy\pln-sht\c0265205_cdb.dgn 7/30/2009

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S.P. 02-652-05
S.P. 02-716-09
S.P. 106-020-28
S.P. 197-124-001

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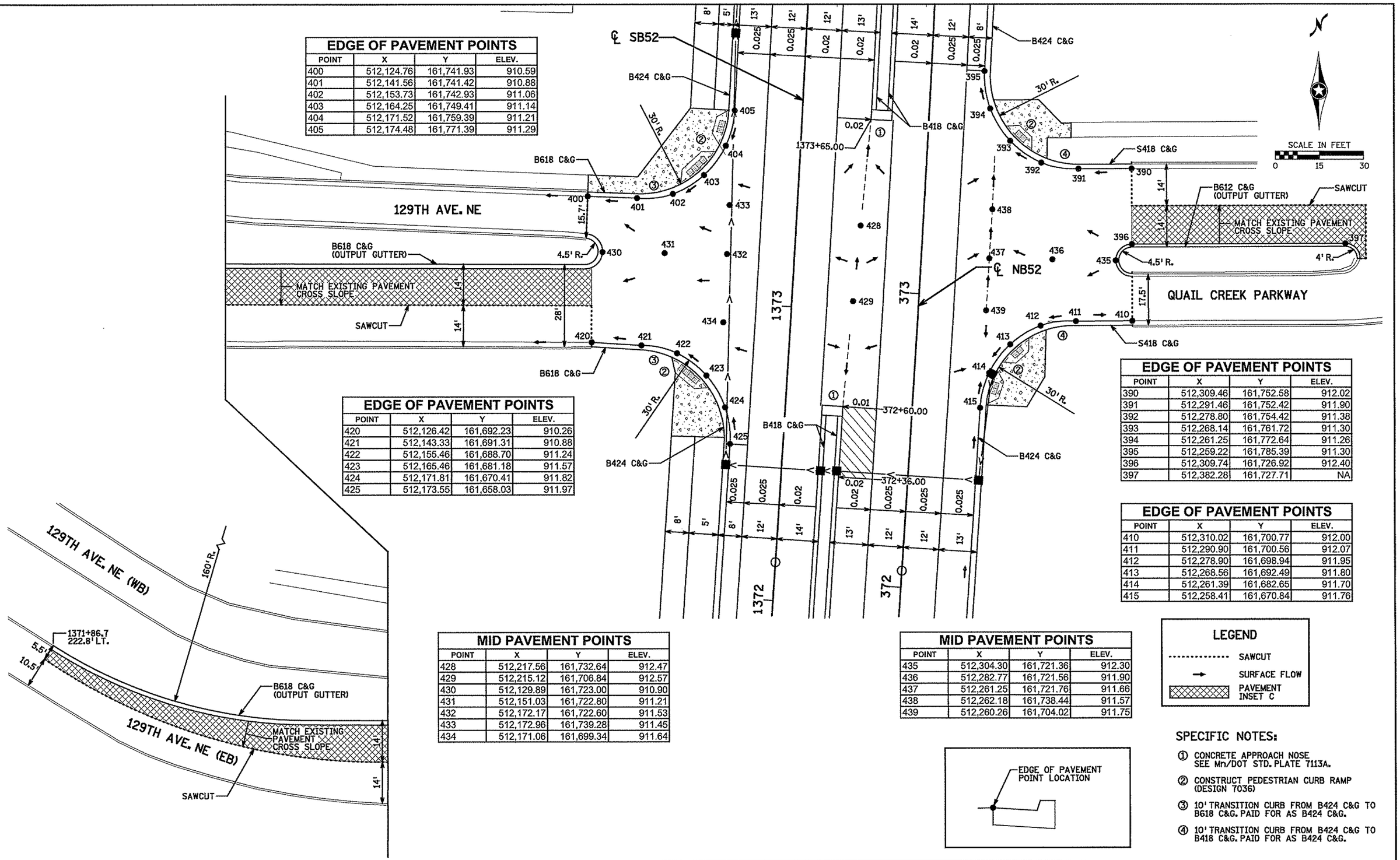
ANOKA COUNTY
INTERSECTION DETAILS
CSAH 52/116 RECONSTRUCTION
CSAH 52 AND 125TH LANE NE & 127TH LANE NE

SHEET 7.02 OF 294



EDGE OF PAVEMENT POINTS

POINT	X	Y	ELEV.
400	512,124.76	161,741.93	910.59
401	512,141.56	161,741.42	910.88
402	512,153.73	161,742.93	911.06
403	512,164.25	161,749.41	911.14
404	512,171.52	161,759.39	911.21
405	512,174.48	161,771.39	911.29

EDGE OF PAVEMENT POINTS

POINT	X	Y	ELEV.
420	512,126.42	161,692.23	910.26
421	512,143.33	161,691.31	910.88
422	512,155.46	161,688.70	911.24
423	512,165.46	161,681.18	911.57
424	512,171.81	161,670.41	911.82
425	512,173.55	161,658.03	911.97

EDGE OF PAVEMENT POINTS

POINT	X	Y	ELEV.
390	512,309.46	161,752.58	912.02
391	512,291.46	161,752.42	911.90
392	512,278.80	161,754.42	911.38
393	512,268.14	161,761.72	911.30
394	512,261.25	161,772.64	911.26
395	512,259.22	161,785.39	911.30
396	512,309.74	161,726.92	912.40
397	512,382.28	161,727.71	NA

EDGE OF PAVEMENT POINTS

POINT	X	Y	ELEV.
410	512,310.02	161,700.77	912.00
411	512,290.90	161,700.56	912.07
412	512,278.90	161,698.94	911.95
413	512,268.56	161,692.49	911.80
414	512,261.39	161,682.65	911.70
415	512,258.41	161,670.84	911.76

MID PAVEMENT POINTS

POINT	X	Y	ELEV.
428	512,217.56	161,732.64	912.47
429	512,215.12	161,706.84	912.57
430	512,129.89	161,723.00	910.90
431	512,151.03	161,722.80	911.21
432	512,172.17	161,722.60	911.53
433	512,172.96	161,739.28	911.45
434	512,171.06	161,699.34	911.64

MID PAVEMENT POINTS

POINT	X	Y	ELEV.
435	512,304.30	161,721.36	912.30
436	512,282.77	161,721.56	911.90
437	512,261.25	161,721.76	911.66
438	512,262.18	161,738.44	911.57
439	512,260.26	161,704.02	911.75

LEGEND

- SAWCUT
- SURFACE FLOW
- PAVEMENT INSET C

SPECIFIC NOTES:

1. CONCRETE APPROACH NOSE SEE Mn/DOT STD. PLATE 7113A.
2. CONSTRUCT PEDESTRIAN CURB RAMP (DESIGN 7036)
3. 10' TRANSITION CURB FROM B424 C&G TO B618 C&G. PAID FOR AS B424 C&G.
4. 10' TRANSITION CURB FROM B424 C&G TO B418 C&G. PAID FOR AS B424 C&G.

NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\a-f\AnokaCty\13867000\hwy-brdg\hwy\pln-sht\c0265205_cdc.dgn 7/30/2009

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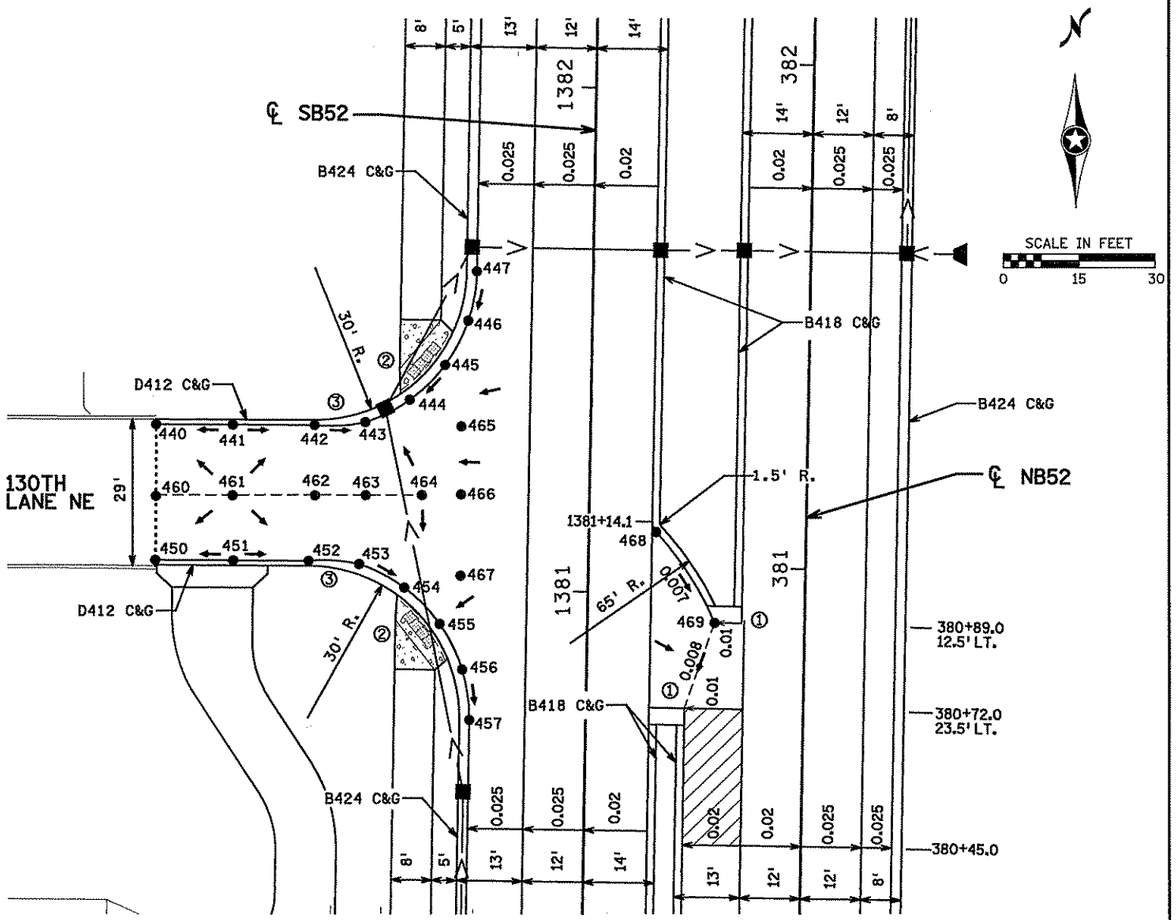
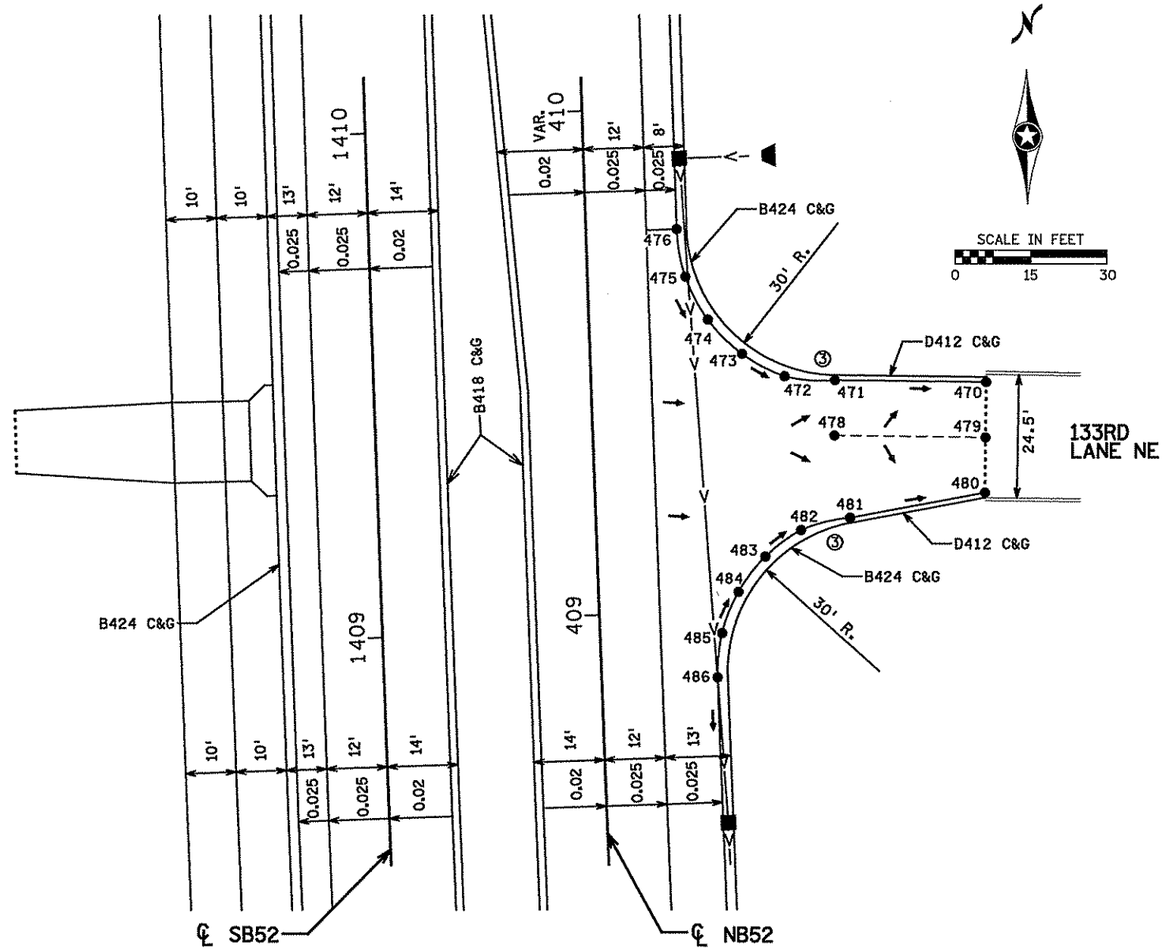
ANOKA COUNTY
INTERSECTION DETAILS
CSAH 52/116 RECONSTRUCTION
CSAH 52 AND QUAIL CREEK DRIVE

SHEET 7.03 OF 294





EDGE OF PAVEMENT POINTS			
POINT	X	Y	ELEV.
440	512,127.47	162,537.29	910.89
441	512,142.67	162,537.30	911.07
442	512,158.89	162,537.31	910.85
443	512,168.89	162,537.92	910.63
444	512,177.69	162,542.43	910.67
445	512,184.69	162,549.42	910.72
446	512,189.23	162,558.20	910.79
447	512,190.86	162,567.95	910.88

EDGE OF PAVEMENT POINTS			
POINT	X	Y	ELEV.
450	512,127.49	162,510.29	910.91
451	512,142.91	162,510.30	911.10
452	512,157.85	162,510.31	910.88
453	512,167.86	162,509.71	910.69
454	512,176.82	162,505.10	910.61
455	512,183.90	162,497.93	910.56
456	512,188.40	162,488.92	910.50
457	512,189.87	162,478.95	910.45

MID PAVEMENT POINTS			
POINT	X	Y	ELEV.
460	512,127.52	162,523.03	911.18
461	512,142.69	162,523.21	911.33
462	512,159.02	162,523.32	911.13
463	512,169.03	162,523.41	910.92
464	512,180.21	162,523.51	910.81
465	512,187.98	162,537.22	910.80
466	512,187.98	162,523.68	910.81
467	512,187.98	162,507.55	910.67
468	512,226.61	162,516.45	911.44
469	512,238.27	162,498.50	911.28

EDGE OF PAVEMENT POINTS			
POINT	X	Y	ELEV.
470	513,658.28	164,698.64	911.51
471	513,628.36	164,698.77	911.82
472	513,618.40	164,699.47	912.08
473	513,609.90	164,703.89	912.27
474	513,603.08	164,710.62	912.45
475	513,598.56	164,719.07	912.54
476	513,596.75	164,728.49	912.62

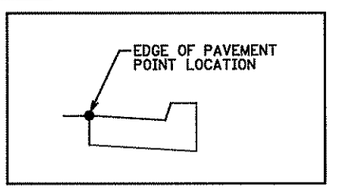
MID PAVEMENT POINTS			
POINT	X	Y	ELEV.
478	513,630.19	164,687.73	912.02
479	513,658.24	164,687.64	911.72

EDGE OF PAVEMENT POINTS			
POINT	X	Y	ELEV.
480	513,658.19	164,676.66	911.51
481	513,631.50	164,671.44	911.67
482	513,621.82	164,668.94	911.95
483	513,614.80	164,663.62	912.11
484	513,609.49	164,656.59	912.26
485	513,606.31	164,648.38	912.32
486	513,605.48	164,639.61	912.35

LEGEND

SAWCUT

SURFACE FLOW



SPECIFIC NOTES:

① CONCRETE APPROACH NOSE SEE Mn/DOT STD. PLATE 7113A.

② CONSTRUCT PEDESTRIAN CURB RAMP (DESIGN 7036)

③ 10' TRANSITION CURB FROM B424 C&G TO D412 C&G. PAID FOR AS B424 C&G.

NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\a-f\AnokaCty\13867000\hwy-brdg\hwy\pln-sht\c0265205_cdd.dgn 7/30/2009

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ANOKA COUNTY
INTERSECTION DETAILS
CSAH 52/116 RECONSTRUCTION
CSAH 52 AND 130TH LANE NE & 133RD LANE NE

SHEET 7.04 OF 294

EDGE OF PAVEMENT POINTS

POINT	X	Y	ELEV.
250	512,958.60	163,759.21	911.98
251	512,963.22	163,758.37	911.77
252	512,972.81	163,745.83	910.93
253	512,979.47	163,732.29	910.18
254	512,977.20	163,725.60	910.07
255	512,970.50	163,727.88	910.32
256	512,966.10	163,736.82	910.82
257	512,961.70	163,745.76	911.32
258	512,957.31	163,754.70	911.81

EDGE OF PAVEMENT POINTS

POINT	X	Y	ELEV.
211	512,947.64	163,654.90	908.79
212	512,955.88	163,660.64	908.83
213	512,961.95	163,668.65	908.89
214	512,965.23	163,678.15	908.94
215	512,965.40	163,688.19	909.03
216	512,961.53	163,697.41	909.17
217	512,957.37	163,705.86	909.45
218	512,953.21	163,714.31	909.85
219	512,949.05	163,722.77	910.25
220	512,944.89	163,731.22	910.70
221	512,941.86	163,742.64	911.15
222	512,938.82	163,754.05	911.65
223	512,935.79	163,765.46	912.10
224	512,932.76	163,776.88	912.40

SPECIFIC NOTES:

① CONCRETE APPROACH NOSE SEE Mn/DOT STD. PLATE 7113A.

② CONSTRUCT PEDESTRIAN CURB RAMP (DESIGN 7036)

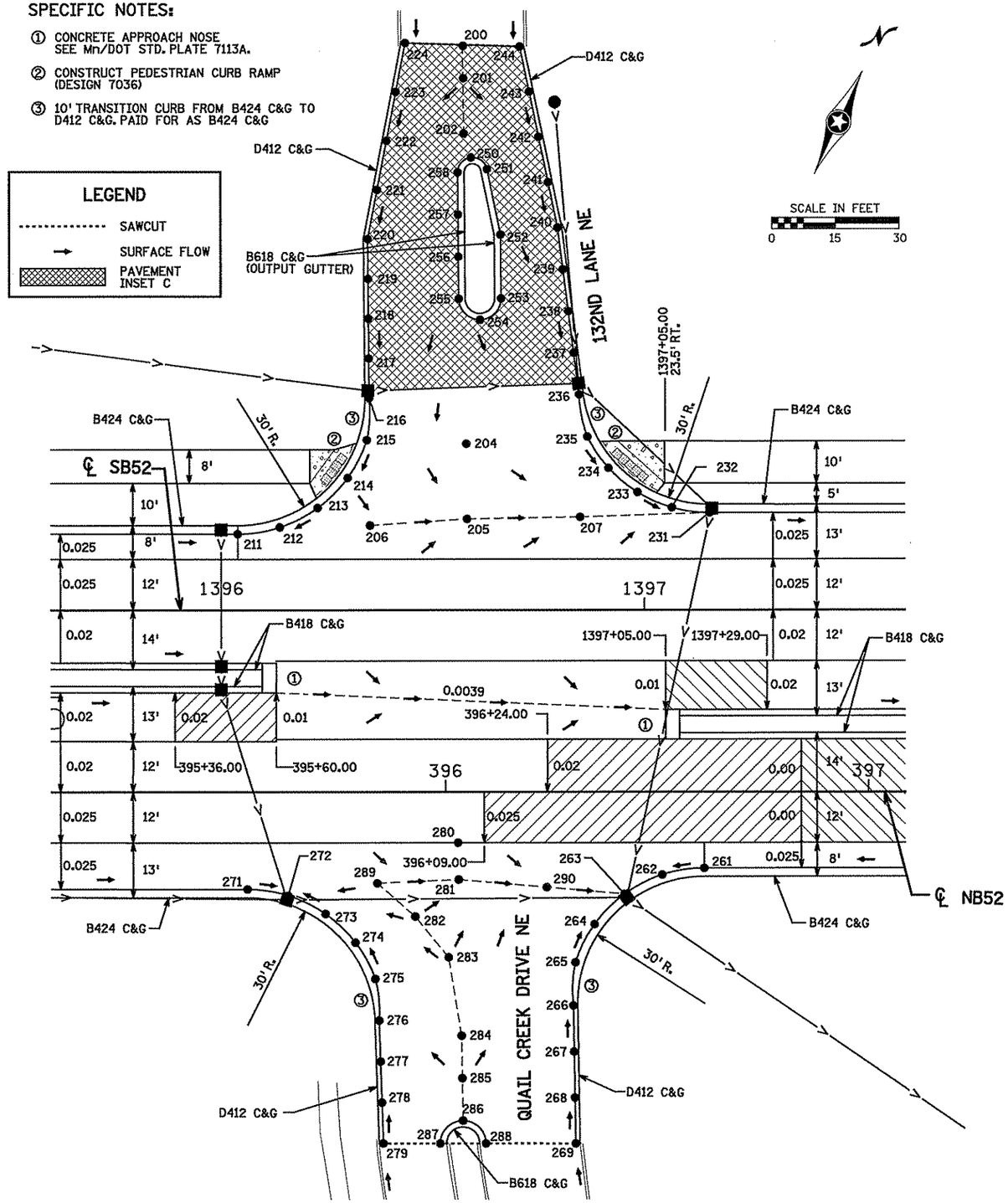
③ 10' TRANSITION CURB FROM B424 C&G TO D412 C&G. PAID FOR AS B424 C&G

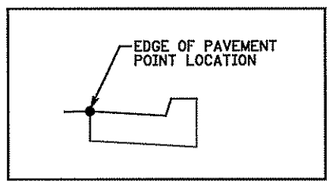
LEGEND

SAWCUT

SURFACE FLOW

PAVEMENT INSET C





EDGE OF PAVEMENT POINTS

POINT	X	Y	ELEV.
271	512,986.10	163,580.20	908.60
272	512,995.44	163,583.05	908.56
273	513,005.20	163,582.96	908.60
274	513,014.48	163,579.93	908.68
275	513,022.42	163,574.23	908.80
276	513,027.49	163,565.75	909.00
277	513,031.96	163,557.19	909.20
278	513,036.44	163,548.63	909.38
279	513,040.91	163,540.08	909.51

MID PAVEMENT POINTS

POINT	X	Y	ELEV.
200	512,945.42	163,782.26	912.90
201	512,948.82	163,775.34	912.75
202	512,954.62	163,763.56	912.30
204	512,987.04	163,697.67	908.90
205	512,994.91	163,681.67	908.60
206	512,974.88	163,670.28	908.77
207	513,018.79	163,693.72	908.43

EDGE OF PAVEMENT POINTS

POINT	X	Y	ELEV.
231	513,045.86	163,707.90	908.11
232	513,037.35	163,705.18	908.17
233	513,028.43	163,704.91	908.25
234	513,019.78	163,707.11	908.37
235	513,012.08	163,711.63	908.56
236	513,005.95	163,719.81	908.89
237	513,000.52	163,728.16	909.29
238	512,995.09	163,736.51	909.76
239	512,989.66	163,744.86	910.26
240	512,984.23	163,753.21	910.76
241	512,977.56	163,761.89	911.26
242	512,970.90	163,770.57	911.72
243	512,964.24	163,779.25	912.12
244	512,957.58	163,787.93	912.40

EDGE OF PAVEMENT POINTS

POINT	X	Y	ELEV.
261	513,081.17	163,631.67	908.53
262	513,072.92	163,625.93	908.49
263	513,066.85	163,617.92	908.45
264	513,063.57	163,608.41	908.51
265	513,063.40	163,598.36	908.65
266	513,067.38	163,588.95	908.85
267	513,072.25	163,579.25	909.07
268	513,077.12	163,569.56	909.28
269	513,081.98	163,559.86	909.44

MID PAVEMENT POINTS

POINT	X	Y	ELEV.
280	513,026.17	163,611.77	908.63
281	513,030.08	163,603.99	908.59
282	513,024.57	163,591.62	908.75
283	513,035.84	163,586.38	908.90
284	513,046.62	163,571.04	909.50
285	513,051.11	163,562.10	909.75
286	513,055.59	163,553.16	909.90
287	513,053.07	163,545.91	910.02
288	513,062.84	163,550.63	910.03
289	513,013.09	163,594.81	908.72
290	513,049.64	163,611.42	908.50

NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\a-f\AnokaCty\13867000\hwy-brdg\hwy\pln-sht\c0265205_cde.dgn 7/30/2009

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:

PRINTED NAME: RYAN P. MALONEY

DATE: 7/30/2009 LIC. NO. 44193

DRAWN BY RRC DATE 7/30/2009

DESIGN BY RPM DATE 7/30/2009

CHECKED BY TAC DATE 7/30/2009

S.P. 02-652-05
S.P. 02-716-09
S.P. 106-020-28
S.P. 197-124-001

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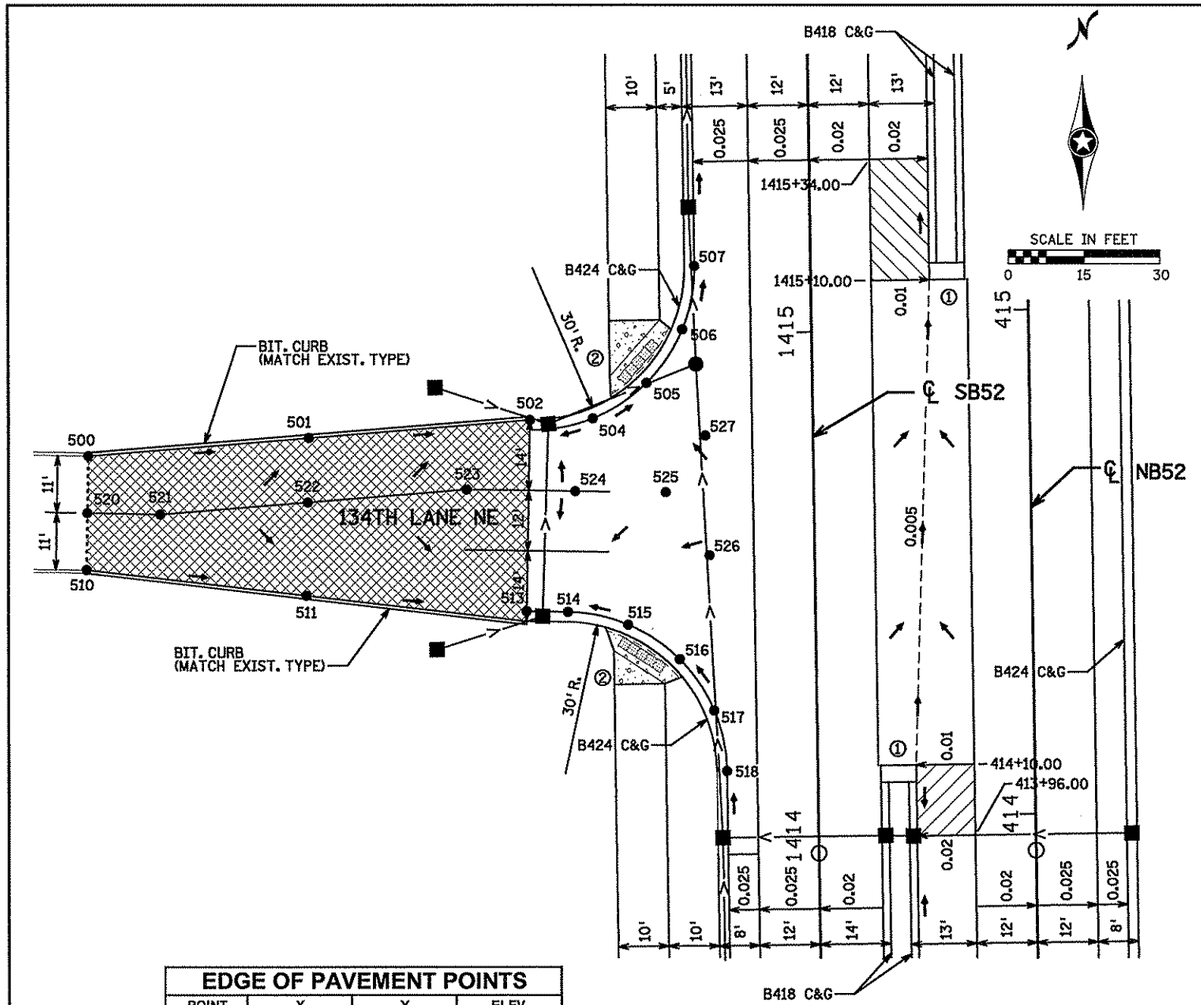
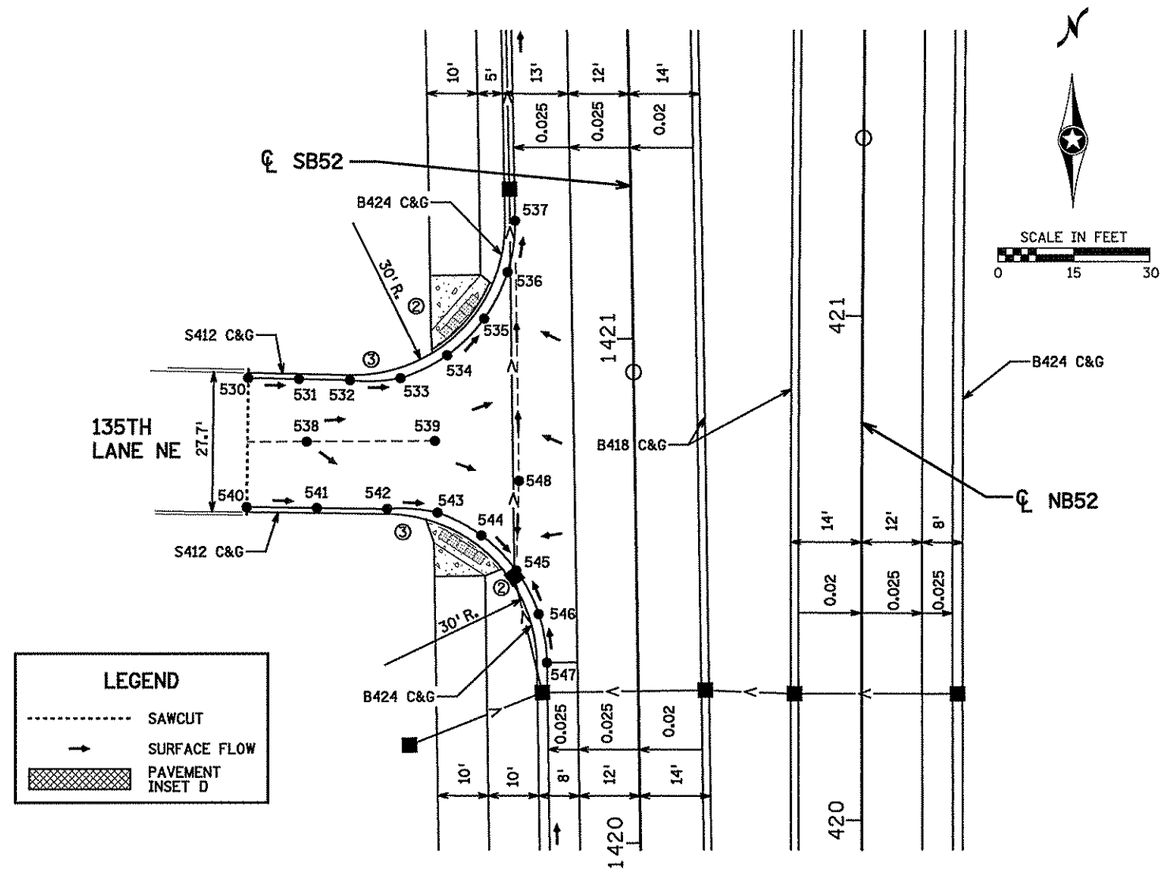
ANOKA COUNTY
INTERSECTION DETAILS
CSAH 52/116 RECONSTRUCTION
CSAH 52 AND QUAIL CREEK DRIVE

SHEET 7.05 OF 294





EDGE OF PAVEMENT POINTS			
POINT	X	Y	ELEV.
500	513,377.74	165,221.08	911.70
501	513,421.41	165,224.99	911.03
502	513,465.07	165,228.89	910.18
504	513,477.56	165,229.30	910.34
505	513,488.13	165,236.40	910.30
506	513,495.10	165,247.06	910.26
507	513,497.36	165,259.59	910.22

EDGE OF PAVEMENT POINTS			
POINT	X	Y	ELEV.
510	513,377.56	165,198.40	911.70
511	513,421.12	165,193.65	910.98
513	513,464.71	165,190.89	909.98
514	513,472.86	165,190.82	910.14
515	513,484.85	165,188.36	910.34
516	513,495.04	165,181.58	910.53
517	513,501.94	165,171.47	910.72
518	513,504.54	165,159.51	910.85

MID PAVEMENT POINTS			
POINT	X	Y	ELEV.
520	513,377.65	165,209.74	911.93
521	513,392.07	165,209.60	911.78
522	513,421.29	165,212.21	911.31
523	513,452.64	165,215.01	910.65
524	513,474.19	165,214.80	910.51
525	513,492.09	165,214.73	910.59
526	513,500.80	165,202.27	910.66
527	513,499.77	165,226.04	910.53

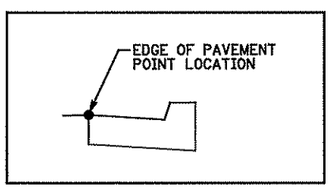
LEGEND

- SAWCUT
- SURFACE FLOW
- PAVEMENT INSET D

EDGE OF PAVEMENT POINTS			
POINT	X	Y	ELEV.
530	513,431.48	165,838.23	909.01
531	513,441.54	165,838.10	908.97
532	513,451.61	165,837.96	908.74
533	513,461.58	165,838.42	908.27
534	513,470.78	165,843.04	908.00
535	513,478.04	165,850.33	907.74
536	513,482.61	165,859.55	907.45
537	513,484.01	165,869.74	907.17

EDGE OF PAVEMENT POINTS			
POINT	X	Y	ELEV.
540	513,431.36	165,812.57	909.01
541	513,445.25	165,812.49	908.61
542	513,459.14	165,812.42	908.21
543	513,469.12	165,811.77	907.70
544	513,477.80	165,807.29	907.62
545	513,484.73	165,800.40	907.53
546	513,489.26	165,791.74	907.62
547	513,490.96	165,782.12	907.73

MID PAVEMENT POINTS			
POINT	X	Y	ELEV.
538	513,443.11	165,825.65	909.00
539	513,468.47	165,826.01	908.00
548	513,485.13	165,818.18	907.60



SPECIFIC NOTES:

① CONCRETE APPROACH NOSE SEE Mn/DOT STD. PLATE 7113A.

② CONSTRUCT PEDESTRIAN CURB RAMP (DESIGN 7036)

③ 10' TRANSITION CURB FROM B424 C&G TO S412 C&G. PAID FOR AS B424 C&G.

NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\a-f\AnokaCty\13867000\hwy-brdg\hwy\p1n-sht\c0265205_cdf.dgn 7/30/2009

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:

PRINTED NAME: RYAN P. MALONEY

DATE: 7/30/2009 LIC. NO. 44193

DRAWN BY RRC DATE 7/30/2009

DESIGN BY RPM DATE 7/30/2009

CHECKED BY TAC DATE 7/30/2009

S.P. 02-652-05
S.P. 02-716-09
S.P. 106-020-28
S.P. 197-124-001

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ANOKA COUNTY
INTERSECTION DETAILS
CSAH 52/116 RECONSTRUCTION
CSAH 52 AND 134TH LANE NE & 135TH LANE NE

SHEET 7.06 OF 294

EDGE OF PAVEMENT POINTS

POINT	X	Y	ELEV.
130	513,405.44	166,958.41	905.41
131	513,424.95	166,962.79	905.58
132	513,441.36	166,974.20	905.75
133	513,452.26	166,990.96	905.62
134	513,456.03	167,010.59	905.46

MID PAVEMENT POINTS

POINT	X	Y	ELEV.
144	513,506.73	166,957.31	906.63
145	513,507.35	166,888.01	906.98

EDGE OF PAVEMENT POINTS

POINT	X	Y	ELEV.
135	513,606.39	166,970.65	905.96
136	513,585.81	166,973.87	906.10
137	513,568.14	166,984.92	905.85
138	513,556.23	167,002.01	905.65
139	513,551.98	167,022.40	905.54

EDGE OF PAVEMENT POINTS

POINT	X	Y	ELEV.
120	513,404.81	166,874.37	905.46
121	513,424.88	166,870.92	905.73
122	513,442.09	166,860.03	905.95
123	513,453.80	166,843.37	906.18
124	513,458.21	166,823.49	906.40

EDGE OF PAVEMENT POINTS

POINT	X	Y	ELEV.
125	513,608.68	166,886.68	906.39
126	513,589.25	166,881.96	906.45
127	513,573.04	166,870.27	906.51
128	513,562.44	166,853.32	906.44
129	513,559.01	166,833.63	906.37

TRAIL POINTS

POINT	X	Y	ELEV.
141	513,592.40	166,875.00	906.88
142	513,621.89	166,875.27	907.04

EDGE OF PAVEMENT POINT LOCATION

LEGEND
- SAWCUT
- SURFACE FLOW

SPECIFIC NOTES:
1. CONCRETE APPROACH NOSE SEE Mn/DOT STD. PLATE 7113A.
2. CONSTRUCT PEDESTRIAN CURB RAMP (DESIGN 7036)

SCALE IN FEET 0 15 30

NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\a-f\AnokaCty\13867000\hwy-brdg\hwy\pln-shf\c0265205_cdg.dgn 7/30/2009

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SIGNATURE:
PRINTED NAME: RYAN P. MALONEY
DATE: 7/30/2009 LIC. NO. 44193

DRAWN BY RRC DATE 7/30/2009
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CHECKED BY TAC DATE 7/30/2009

S.P. 02-652-05
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S.P. 197-124-001

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ANOKA COUNTY
INTERSECTION DETAILS
CSAH 52/116 RECONSTRUCTION
CSAH 52 AND CSAH 116

SHEET 7.07 OF 294

SPECIFIC NOTES:

① CONCRETE APPROACH NOSE SEE Mn/DOT STD. PLATE 7113A.

② CONSTRUCT PEDESTRIAN CURB RAMP (DESIGN 7036)

③ 10' TRANSITION CURB FROM B424 C&G TO S412 C&G. PAID FOR AS B424 C&G.

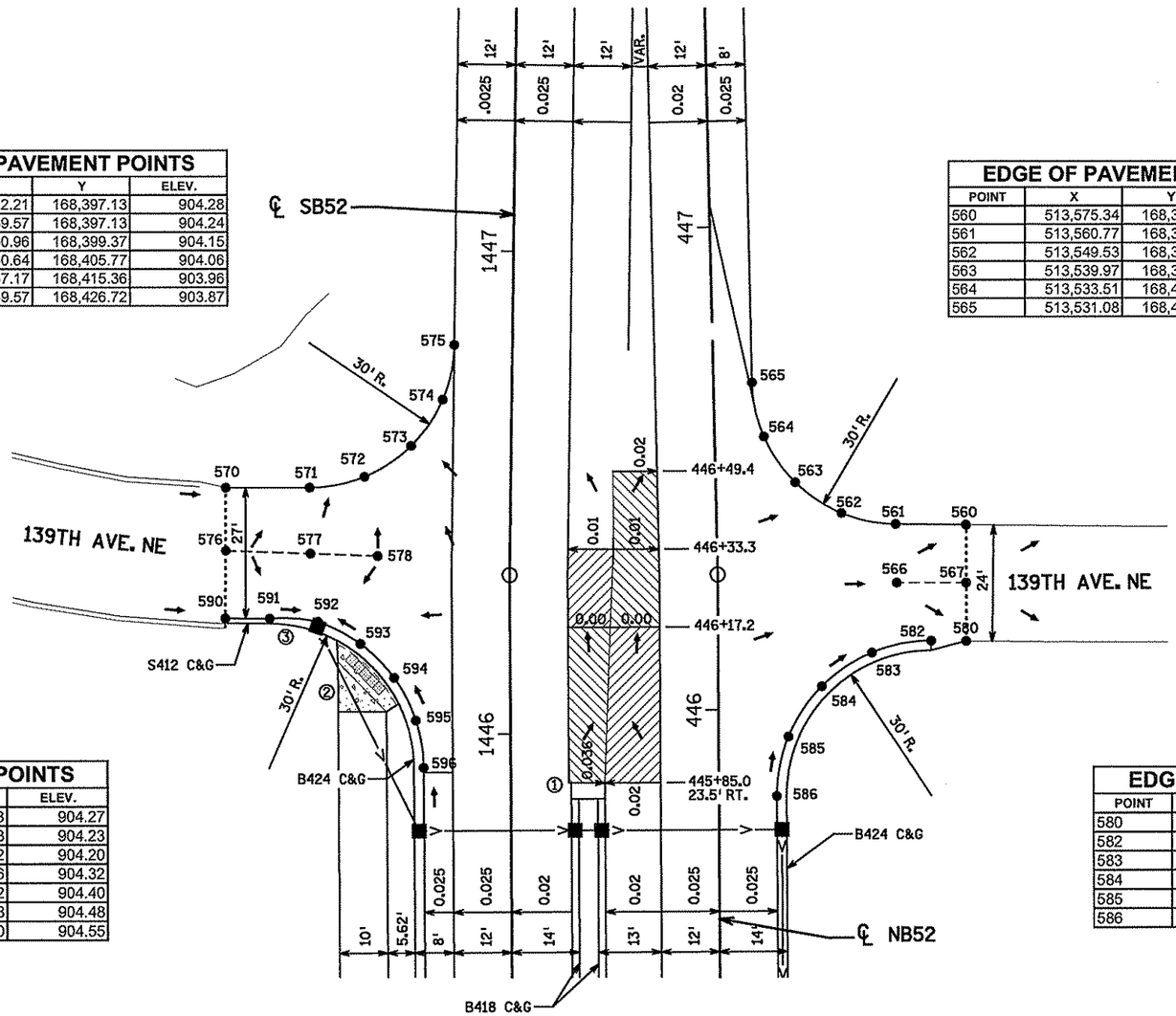
SCALE IN FEET
0 10 20 40

EDGE OF PAVEMENT POINTS			
POINT	X	Y	ELEV.
570	513,422.21	168,397.13	904.28
571	513,439.57	168,397.13	904.24
572	513,450.96	168,399.37	904.15
573	513,460.64	168,405.77	904.06
574	513,467.17	168,415.36	903.96
575	513,469.57	168,426.72	903.87

EDGE OF PAVEMENT POINTS			
POINT	X	Y	ELEV.
560	513,575.34	168,389.34	903.13
561	513,560.77	168,389.49	903.63
562	513,549.53	168,391.80	903.87
563	513,539.97	168,398.16	904.04
564	513,533.51	168,407.64	904.08
565	513,531.08	168,418.85	904.06

MID PAVEMENT POINTS			
POINT	X	Y	ELEV.
576	513,422.21	168,384.13	904.65
577	513,439.72	168,383.49	904.50
578	513,453.66	168,382.99	904.45

MID PAVEMENT POINTS			
POINT	X	Y	ELEV.
566	513,560.98	168,377.38	903.80
567	513,575.34	168,377.38	903.49



EDGE OF PAVEMENT POINTS			
POINT	X	Y	ELEV.
590	513,422.07	168,370.13	904.27
591	513,431.24	168,370.08	904.23
592	513,441.23	168,369.42	904.20
593	513,450.03	168,364.86	904.32
594	513,457.00	168,357.82	904.40
595	513,461.49	168,348.98	904.48
596	513,463.06	168,339.20	904.55

EDGE OF PAVEMENT POINTS			
POINT	X	Y	ELEV.
580	513,575.34	168,365.34	903.20
582	513,568.09	168,365.42	903.44
583	513,555.81	168,362.97	903.84
584	513,545.42	168,356.00	904.24
585	513,538.49	168,345.58	904.53
586	513,536.09	168,333.30	904.70

LEGEND
SAWCUT
SURFACE FLOW

EDGE OF PAVEMENT POINT LOCATION

NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\a-f\AnokaCty\l3867000\hwy-brdg\hwy\pln-sht\c0265205_cdh.dgn 7/30/2009

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CHECKED BY TAC DATE 7/30/2009

S.P. 02-652-05
S.P. 02-716-09
S.P. 106-020-28
S.P. 197-124-001

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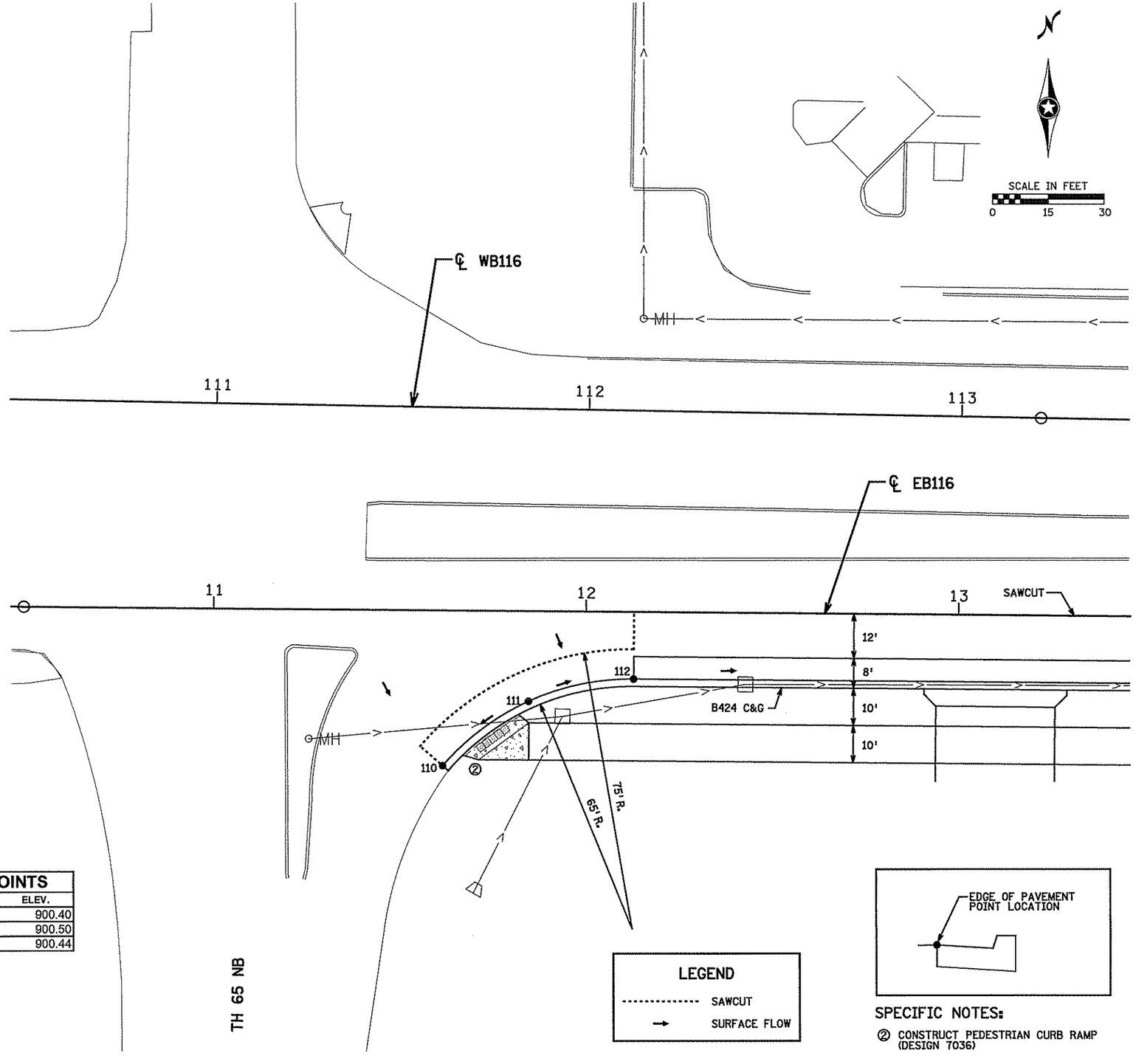
ANOKA COUNTY
INTERSECTION DETAILS
CSAH 52/116 RECONSTRUCTION
CSAH 52 AND 139TH AVE. NE

SHEET 7.08 OF 294



EDGE OF PAVEMENT POINTS			
POINT	X	Y	ELEV.
110	508,382.93	166,876.55	900.40
111	508,405.74	166,894.20	900.50
112	508,433.85	166,900.62	900.44

LEGEND

SAWCUT

SURFACE FLOW

SPECIFIC NOTES:

② CONSTRUCT PEDESTRIAN CURB RAMP (DESIGN 7036)

NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\a-f\AnokaCty\13867000\hwy-brdg\hwy\pln-sht\c0265205_cd1.dgn 7/30/2009

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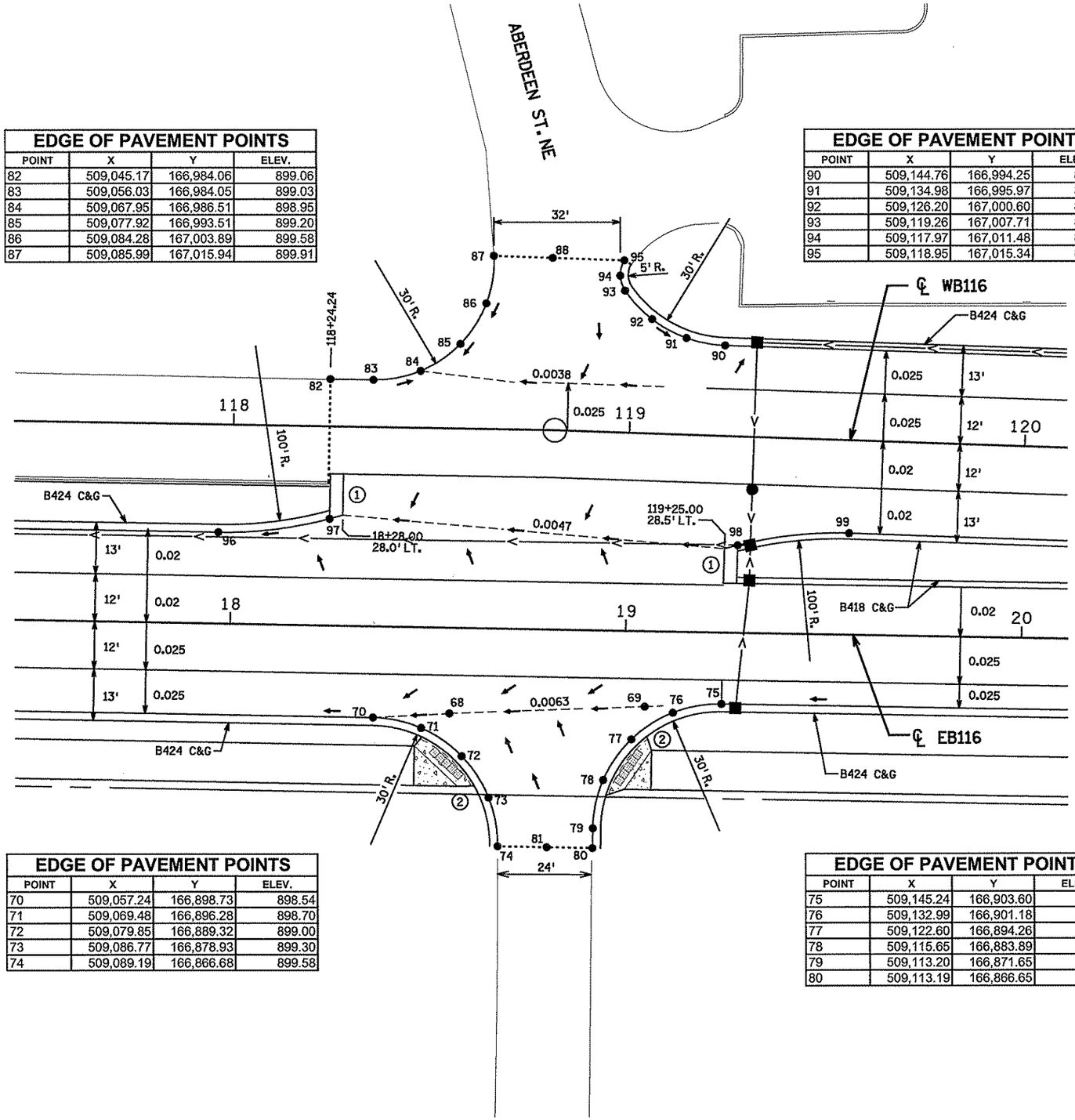
ANOKA COUNTY
INTERSECTION DETAILS
CSAH 52/116 RECONSTRUCTION
CSAH 116 AND TH 65

SHEET 7.09 OF 294

EDGE OF PAVEMENT POINTS			
POINT	X	Y	ELEV.
82	509,045.17	166,984.06	899.06
83	509,056.03	166,984.05	899.03
84	509,067.95	166,986.51	898.95
85	509,077.92	166,993.51	899.20
86	509,084.28	167,003.89	899.58
87	509,085.99	167,015.94	899.91

EDGE OF PAVEMENT POINTS			
POINT	X	Y	ELEV.
90	509,144.76	166,994.25	899.17
91	509,134.98	166,995.97	899.23
92	509,126.20	167,000.60	899.50
93	509,119.26	167,007.71	899.83
94	509,117.97	167,011.48	899.93
95	509,118.95	167,015.34	899.96

PAVEMENT POINTS			
POINT	X	Y	ELEV.
68	509,076.55	166,900.07	898.67
69	509,125.90	166,902.61	898.98
81	509,101.64	166,866.67	899.80
88	509,100.88	167,015.67	900.15
96	509,017.51	166,944.79	898.95
97	509,045.52	166,948.66	899.01
98	509,148.74	166,943.67	899.50
99	509,176.81	166,947.16	899.72



EDGE OF PAVEMENT POINTS			
POINT	X	Y	ELEV.
70	509,057.24	166,898.73	898.54
71	509,069.48	166,896.28	898.70
72	509,079.85	166,889.32	899.00
73	509,086.77	166,878.93	899.30
74	509,089.19	166,866.68	899.58

EDGE OF PAVEMENT POINTS			
POINT	X	Y	ELEV.
75	509,145.24	166,903.60	899.10
76	509,132.99	166,901.18	899.13
77	509,122.60	166,894.26	899.25
78	509,115.65	166,883.89	899.42
79	509,113.20	166,871.65	899.61
80	509,113.19	166,866.65	899.68

N

SCALE IN FEET
0 15 30

EDGE OF PAVEMENT POINT LOCATION

LEGEND
SAWCUT
SURFACE FLOW

SPECIFIC NOTES:

① CONCRETE APPROACH NOSE SEE Mn/DOT STD. PLATE 7113A.

② CONSTRUCT PEDESTRIAN CURB RAMP (DESIGN 7036)

NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\a-f\AnokaCty\13867000\hwy-brdg\hwy\pln-sht\c0265205_cdj.dgn 7/30/2009

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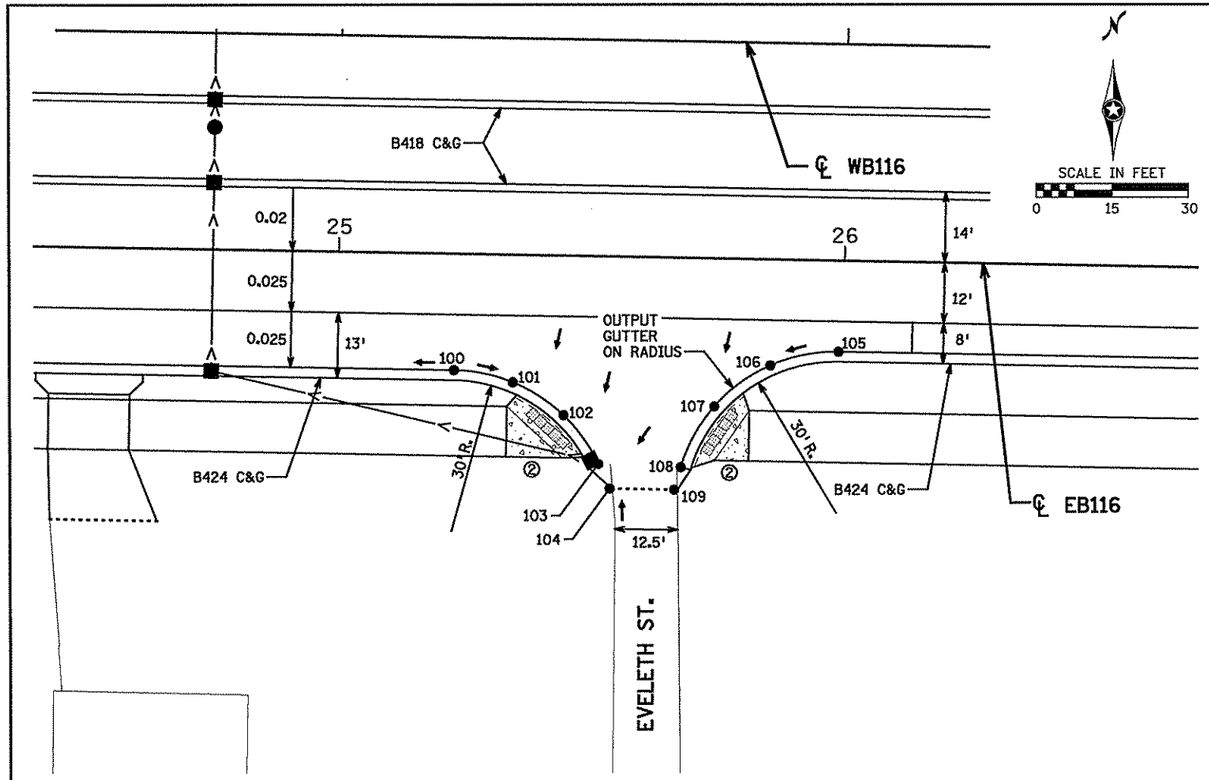
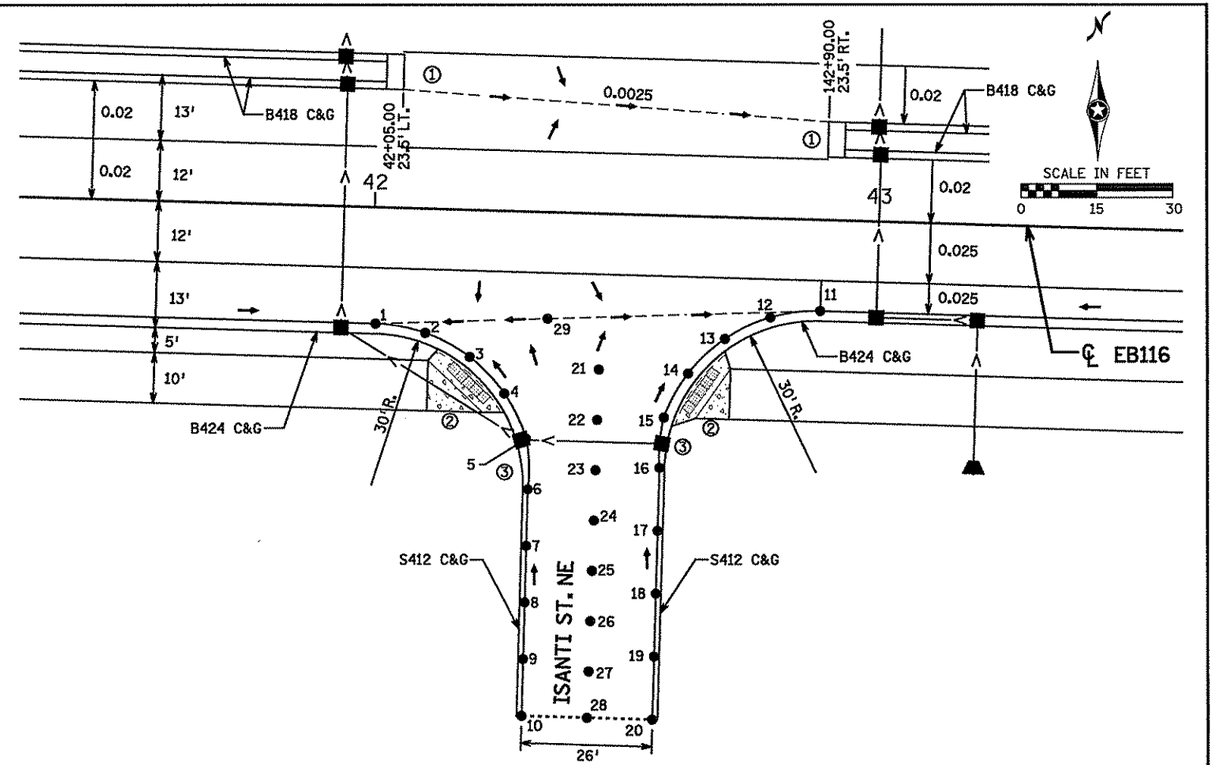
ANOKA COUNTY
INTERSECTION DETAILS
CSAH 52/116 RECONSTRUCTION
CSAH 116 AND ABERDEEN ST. NE

SHEET 7.10 OF 294





EDGE OF PAVEMENT POINTS			
POINT	X	Y	ELEV.
100	509,743.80	166,897.75	901.97
101	509,755.49	166,895.52	901.92
102	509,765.56	166,889.16	901.83
103	509,772.61	166,879.57	901.72
104	509,774.94	166,874.71	901.76

EDGE OF PAVEMENT POINTS			
POINT	X	Y	ELEV.
105	509,819.80	166,902.64	902.48
106	509,806.35	166,899.70	902.32
107	509,795.38	166,891.38	902.13
108	509,788.92	166,879.22	901.94
109	509,787.67	166,874.71	901.90

LEGEND

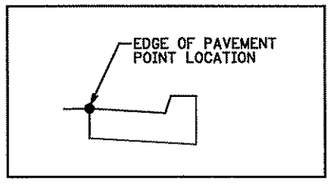
---------- SAWCUT

→ SURFACE FLOW

EDGE OF PAVEMENT POINTS			
POINT	X	Y	ELEV.
1	511,421.30	166,889.62	898.70
2	511,431.14	166,887.94	898.76
3	511,439.98	166,883.32	898.90
4	511,446.97	166,876.20	899.07
5	511,451.43	166,867.27	899.29
6	511,451.91	166,857.25	899.56
7	511,451.78	166,846.00	899.90
8	511,451.64	166,834.75	900.30
9	511,451.50	166,823.50	900.60
10	511,451.37	166,812.25	900.80

EDGE OF PAVEMENT POINTS			
POINT	X	Y	ELEV.
11	511,509.36	166,893.55	898.58
12	511,499.48	166,892.11	898.62
13	511,490.52	166,887.70	898.70
14	511,483.36	166,880.75	898.82
15	511,478.70	166,871.92	899.00
16	511,477.97	166,861.93	899.30
17	511,477.82	166,849.43	899.75
18	511,477.67	166,836.93	900.17
19	511,477.52	166,824.43	900.54
20	511,477.36	166,811.93	900.80

MID PAVEMENT POINTS			
POINT	X	Y	ELEV.
21	511,465.66	166,881.24	898.89
22	511,465.47	166,871.24	899.05
23	511,465.29	166,861.25	899.45
24	511,465.10	166,851.25	899.85
25	511,464.91	166,841.25	900.25
26	511,464.72	166,831.25	900.60
27	511,464.54	166,821.25	900.90
28	511,464.37	166,812.09	901.06
29	511,455.30	166,891.14	898.80



SPECIFIC NOTES:

① CONCRETE APPROACH NOSE SEE Mn/DOT STD. PLATE 7113A.

② CONSTRUCT PEDESTRIAN CURB RAMP (DESIGN 7036)

③ 10' TRANSITION CURB FROM B424 C&G TO S412 C&G. PAID FOR AS B424 C&G.

NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\g-f\AnokaCty\13867000\hwy-brdg\hwy\pln-sht\c0265205_odk.dgn 7/30/2009

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:

PRINTED NAME: RYAN P. MALONEY

DATE: 7/30/2009 LIC. NO. 44193

DRAWN BY RRC DATE 7/30/2009

DESIGN BY RPM DATE 7/30/2009

CHECKED BY TAC DATE 7/30/2009

S.P. 02-652-05
S.P. 02-716-09
S.P. 106-020-28
S.P. 197-124-001

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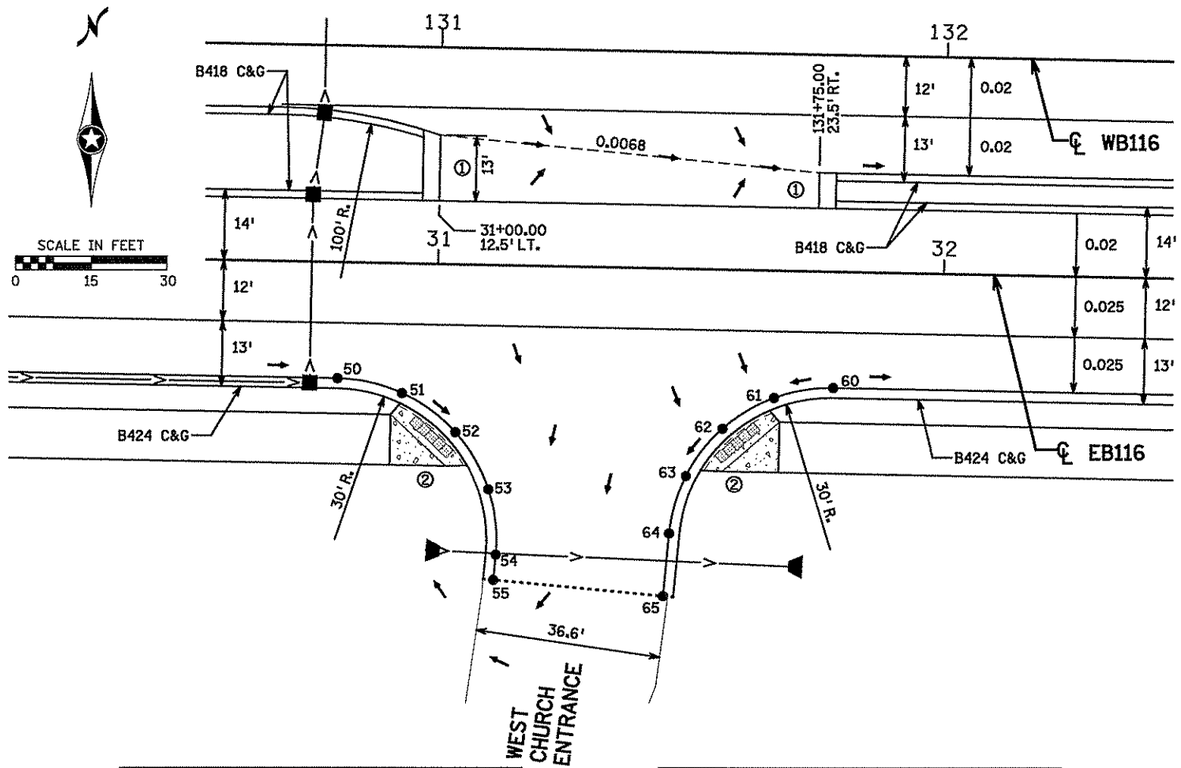
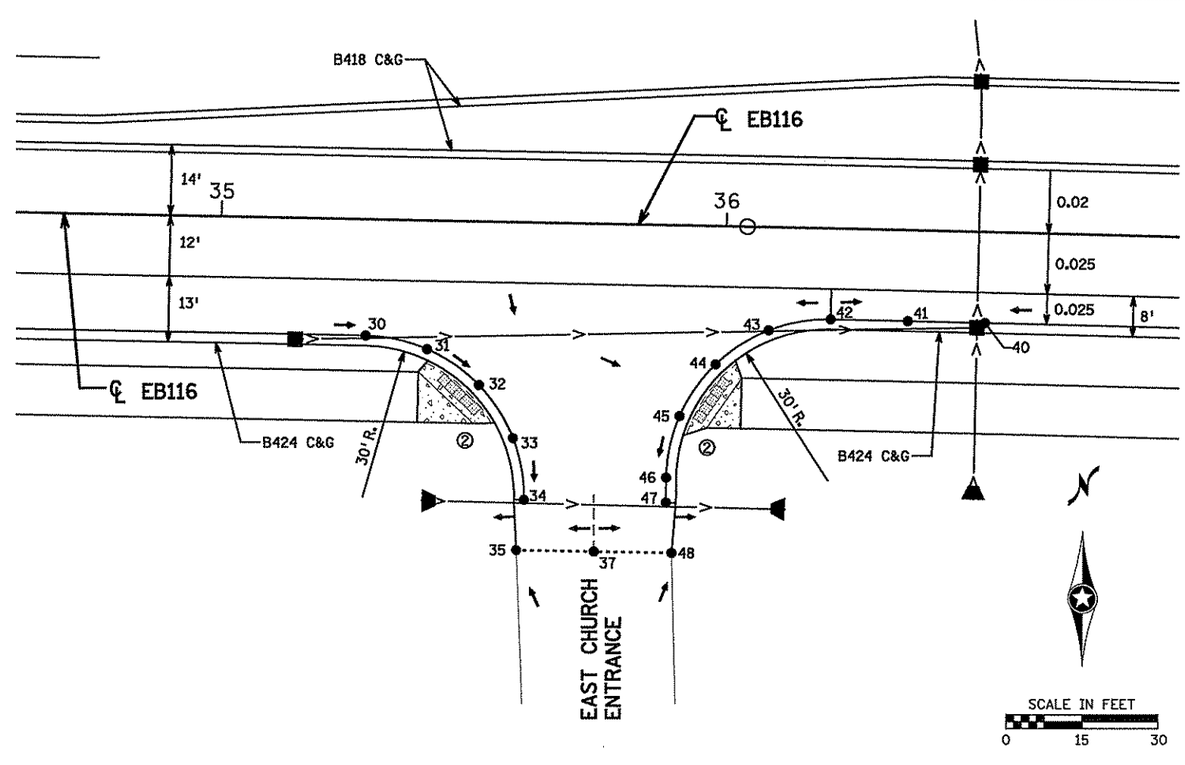
ANOKA COUNTY

INTERSECTION DETAILS
CSAH 52/116 RECONSTRUCTION
CSAH 116 AND EVELETH ST. & ISANTI ST. NE

SHEET 7.11 OF 294





EDGE OF PAVEMENT POINTS

POINT	X	Y	ELEV.
50	510,301.30	166,896.95	900.95
51	510,314.11	166,894.26	900.75
52	510,324.77	166,886.66	900.42
53	510,331.49	166,875.43	900.10
54	510,333.16	166,862.45	899.80
55	510,332.77	166,857.46	899.74

EDGE OF PAVEMENT POINTS

POINT	X	Y	ELEV.
60	510,399.31	166,896.81	900.46
61	510,387.63	166,894.62	900.42
62	510,377.56	166,888.32	900.36
63	510,370.48	166,878.78	900.27
64	510,367.36	166,867.31	900.18
65	510,366.38	166,854.82	900.07

EDGE OF PAVEMENT POINTS

POINT	X	Y	ELEV.
30	510,749.72	166,896.31	898.71
31	510,761.96	166,893.86	898.66
32	510,772.33	166,886.90	898.61
33	510,779.26	166,876.51	898.55
34	510,781.67	166,864.26	898.50
35	510,780.29	166,854.27	898.45
37	510,795.64	166,854.24	898.60

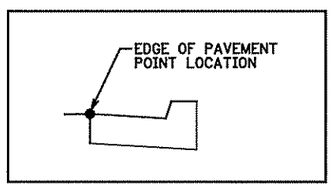
EDGE OF PAVEMENT POINTS

POINT	X	Y	ELEV.
40	510,872.32	166,901.04	898.48
41	510,857.05	166,901.11	898.50
42	510,841.77	166,901.17	898.52
43	510,829.51	166,898.76	898.48
44	510,819.10	166,891.84	898.45
45	510,812.14	166,881.46	898.42
46	510,809.68	166,869.21	898.40
47	510,809.67	166,864.22	898.37
48	510,810.99	166,854.22	898.33

LEGEND

SAWCUT

SURFACE FLOW



SPECIFIC NOTES:

① CONCRETE APPROACH NOSE SEE Mn/DOT STD. PLATE 7113A.

② CONSTRUCT PEDESTRIAN CURB RAMP (DESIGN 7036)

NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\a-f\AnokaCty\13867000\hwy-brdg\hwy\pln-sht\c0265205_cdl.dgn 7/30/2009

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:

PRINTED NAME: RYAN P. MALONEY

DATE: 7/30/2009 LIC. NO. 44193

DRAWN BY RRC DATE 7/30/2009

DESIGN BY RPM DATE 7/30/2009

CHECKED BY TAC DATE 7/30/2009

S.P. 02-652-05
S.P. 02-716-09
S.P. 106-020-28
S.P. 197-124-001

TKDA
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ANOKA COUNTY
INTERSECTION DETAILS
CSAH 52/116 RECONSTRUCTION
CSAH 116 WEST & EAST CHURCH ENTRANCE

SHEET 7.12 OF 294

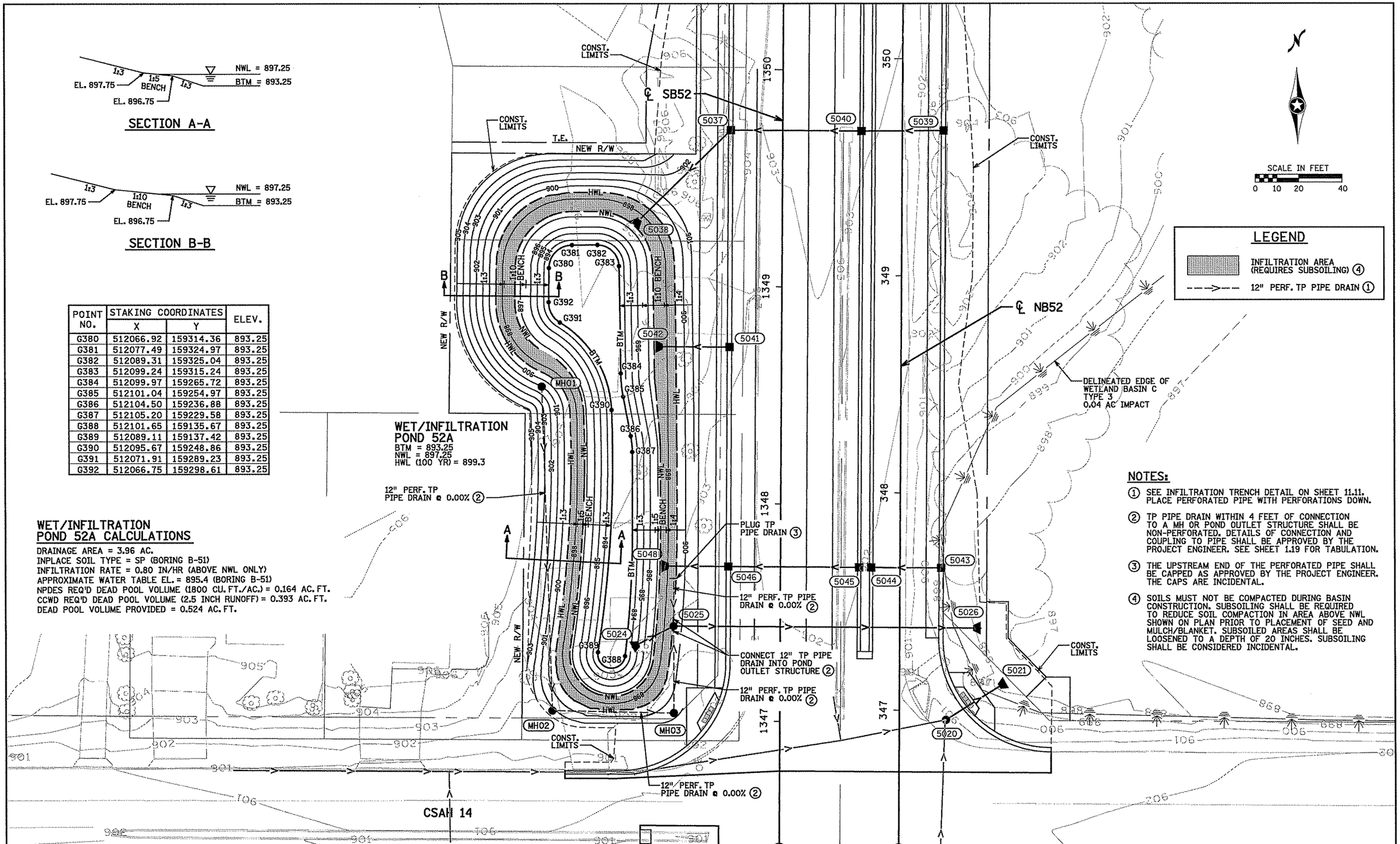
SECTION A-A

SECTION B-B

POINT NO.	STAKING COORDINATES X	STAKING COORDINATES Y	ELEV.
G380	512066.92	159314.36	893.25
G381	512077.49	159324.97	893.25
G382	512089.31	159325.04	893.25
G383	512099.24	159315.24	893.25
G384	512099.97	159265.72	893.25
G385	512101.04	159254.97	893.25
G386	512104.50	159236.88	893.25
G387	512105.20	159229.58	893.25
G388	512101.65	159135.67	893.25
G389	512089.11	159137.42	893.25
G390	512095.67	159248.86	893.25
G391	512071.91	159289.23	893.25
G392	512066.75	159298.61	893.25

WET/INFILTRATION POND 52A CALCULATIONS

DRAINAGE AREA = 3.96 AC.
INPLACE SOIL TYPE = SP (BORING B-51)
INFILTRATION RATE = 0.80 IN/HR (ABOVE NWL ONLY)
APPROXIMATE WATER TABLE EL. = 895.4 (BORING B-51)
NPDES REQ'D DEAD POOL VOLUME (1800 CU. FT./AC.) = 0.164 AC. FT.
CCWD REQ'D DEAD POOL VOLUME (2.5 INCH RUNOFF) = 0.393 AC. FT.
DEAD POOL VOLUME PROVIDED = 0.524 AC. FT.



NOTES:

1. SEE INFILTRATION TRENCH DETAIL ON SHEET 11.11. PLACE PERFORATED PIPE WITH PERFORATIONS DOWN.
2. TP PIPE DRAIN WITHIN 4 FEET OF CONNECTION TO A MH OR POND OUTLET STRUCTURE SHALL BE NON-PERFORATED. DETAILS OF CONNECTION AND COUPLING TO PIPE SHALL BE APPROVED BY THE PROJECT ENGINEER. SEE SHEET 1.19 FOR TABULATION.
3. THE UPSTREAM END OF THE PERFORATED PIPE SHALL BE CAPPED AS APPROVED BY THE PROJECT ENGINEER. THE CAPS ARE INCIDENTAL.
4. SOILS MUST NOT BE COMPACTED DURING BASIN CONSTRUCTION. SUBSOILING SHALL BE REQUIRED TO REDUCE SOIL COMPACTION IN AREA ABOVE NWL SHOWN ON PLAN PRIOR TO PLACEMENT OF SEED AND MULCH/BLANKET. SUBSOILED AREAS SHALL BE LOOSENED TO A DEPTH OF 20 INCHES. SUBSOILING SHALL BE CONSIDERED INCIDENTAL.

NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\a-f\AnokaCty\13867000\hwy-brdg\hwy\pln-sht\c0265205_pgo.dgn 7/29/2009

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: Matthew A. Wassman
PRINTED NAME: MATTHEW A. WASSMAN
DATE: 7/29/2009 LIC. NO. 26883

DRAWN BY RRC DATE 7/29/2009
DESIGN BY MAW DATE 7/29/2009
CHECKED BY RPM DATE 7/29/2009

S.P. 02-652-05
S.P. 02-716-09
S.P. 106-020-28
S.P. 197-124-001

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ANOKA COUNTY
POND GRADING PLANS
CSAH 52/116 RECONSTRUCTION
POND 52A

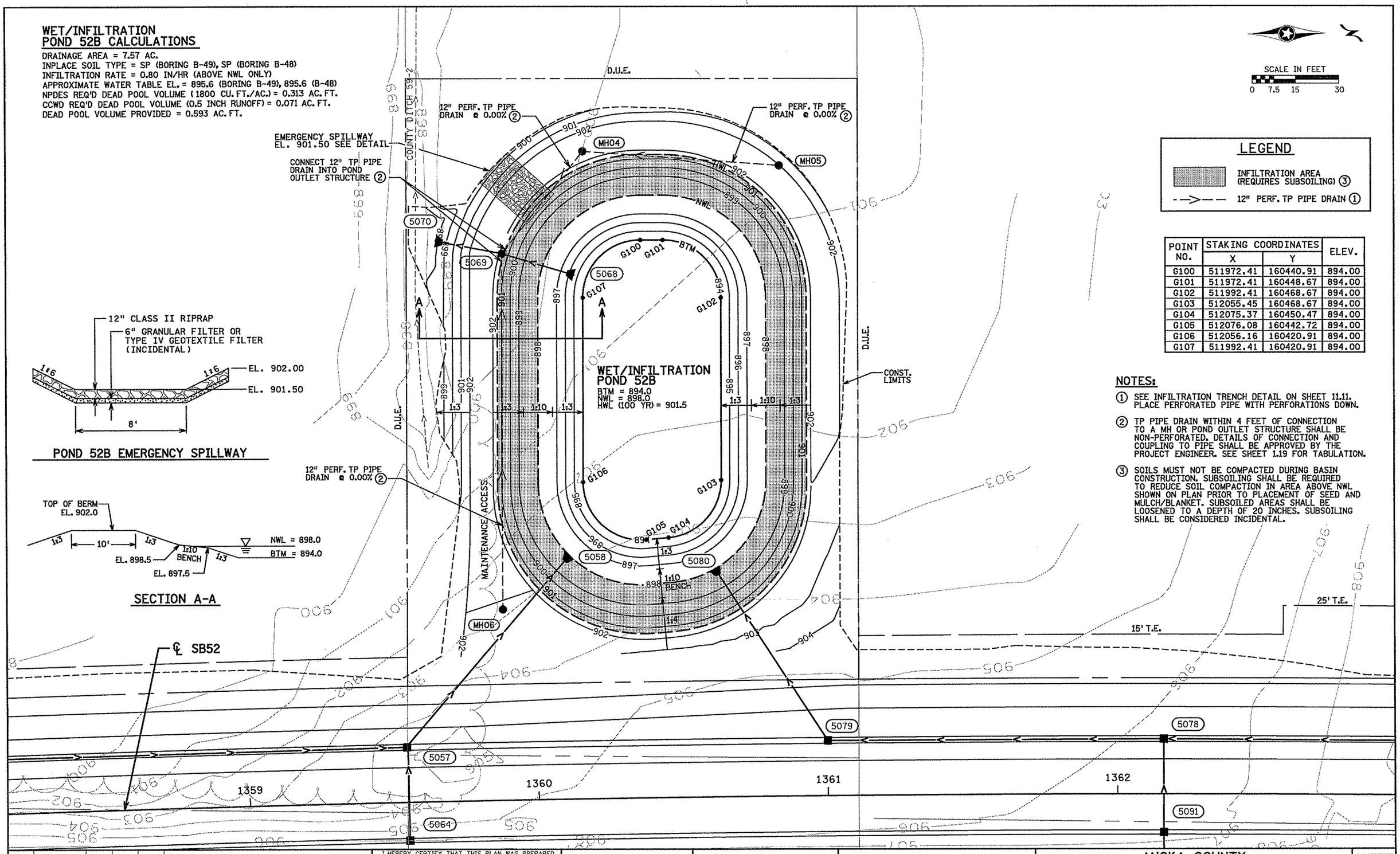
SHEET 8.01 OF 294

WET/INFILTRATION POND 52B CALCULATIONS

DRAINAGE AREA = 7.57 AC.
INPLACE SOIL TYPE = SP (BORING B-49), SP (BORING B-48)
INFILTRATION RATE = 0.80 IN/HR (ABOVE NWL ONLY)
APPROXIMATE WATER TABLE EL. = 895.6 (BORING B-49), 895.6 (B-48)
NPDES REQ'D DEAD POOL VOLUME (1800 CU. FT./AC.) = 0.313 AC. FT.
CCWD REQ'D DEAD POOL VOLUME (0.5 INCH RUNOFF) = 0.071 AC. FT.
DEAD POOL VOLUME PROVIDED = 0.593 AC. FT.

POND 52B EMERGENCY SPILLWAY

SECTION A-A



SCALE IN FEET
0 7.5 15 30

LEGEND

INFILTRATION AREA (REQUIRES SUBSOILING) (3)
12" PERF. TP PIPE DRAIN (1)

POINT NO.	STAKING COORDINATES X	STAKING COORDINATES Y	ELEV.
G100	511972.41	160440.91	894.00
G101	511972.41	160448.67	894.00
G102	511992.41	160468.67	894.00
G103	512055.45	160468.67	894.00
G104	512075.37	160450.47	894.00
G105	512076.08	160442.72	894.00
G106	512056.16	160420.91	894.00
G107	511992.41	160420.91	894.00

NOTES:

1. SEE INFILTRATION TRENCH DETAIL ON SHEET 11.11. PLACE PERFORATED PIPE WITH PERFORATIONS DOWN.
2. TP PIPE DRAIN WITHIN 4 FEET OF CONNECTION TO A MH OR POND OUTLET STRUCTURE SHALL BE NON-PERFORATED. DETAILS OF CONNECTION AND COUPLING TO PIPE SHALL BE APPROVED BY THE PROJECT ENGINEER. SEE SHEET 1.19 FOR TABULATION.
3. SOILS MUST NOT BE COMPACTED DURING BASIN CONSTRUCTION. SUBSOILING SHALL BE REQUIRED TO REDUCE SOIL COMPACTION IN AREA ABOVE NWL SHOWN ON PLAN PRIOR TO PLACEMENT OF SEED AND MULCH/BLANKET. SUBSOILED AREAS SHALL BE LOOSENED TO A DEPTH OF 20 INCHES. SUBSOILING SHALL BE CONSIDERED INCIDENTAL.

NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\a-f\AnokaCty\13867000\hwy-brdg\hwy\pln-sht\c0265205_pgb.dgn 7/29/2009

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: Matthew A. Wassman
PRINTED NAME: MATTHEW A. WASSMAN
DATE: 7/29/2009 LIC. NO. 26883

DRAWN BY RRC DATE 7/29/2009
DESIGN BY MAW DATE 7/29/2009
CHECKED BY RPM DATE 7/29/2009

S.P. 02-652-05
S.P. 02-716-09
S.P. 106-020-28
S.P. 197-124-001

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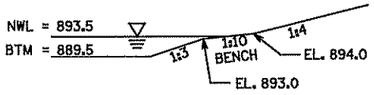
ANOKA COUNTY
POND GRADING PLANS
CSAH 52/116 RECONSTRUCTION
POND 52B

SHEET 8.02 OF 294



SECTION A-A

POINT NO.	STAKING COORDINATES		ELEV.
	X	Y	
G115	508836.04	167079.91	889.50
G116	508857.36	167050.66	889.50
G117	508843.90	167026.88	889.50
G118	508817.56	167029.23	889.50
G119	508803.90	167043.76	889.50
G120	508803.22	167068.96	889.50
G121	508813.89	167083.73	889.50
G122	508820.54	167085.69	889.50

LEGEND

- INFILTRATION AREA (REQUIRES SUBSOILING) (3)
- 12" PERF. TP PIPE DRAIN (1)

N

SCALE IN FEET
0 7.5 15 30

WET/INFILTRATION BANK POND CALCULATIONS

DRAINAGE AREA = 6.5 AC.
INPLACE SOIL TYPE = SP (BORING B-29)
INFILTRATION RATE = 0.80 IN/HR (ABOVE NWL ONLY)
APPROXIMATE WATER TABLE EL. = 891.6 (BORING B-29)
NPDES REQ'D DEAD POOL VOLUME (1800 CU. FT./AC.) = 0.269 AC. FT.
CCWD REQ'D DEAD POOL VOLUME (0.5 INCH RUNOFF) = 0.088 AC. FT.
DEAD POOL VOLUME PROVIDED = 0.360 AC. FT.

NOTES:

1. SEE INFILTRATION TRENCH DETAIL ON SHEET 11.11. PLACE PERFORATED PIPE WITH PERFORATIONS DOWN.
2. TP PIPE DRAIN WITHIN 4 FEET OF CONNECTION TO A MH OR POND OUTLET STRUCTURE SHALL BE NON-PERFORATED. DETAILS OF CONNECTION AND COUPLING TO PIPE SHALL BE APPROVED BY THE PROJECT ENGINEER. SEE SHEET 1.19 FOR TABULATION.
3. SOILS MUST NOT BE COMPACTED DURING BASIN CONSTRUCTION. SUBSOILING SHALL BE REQUIRED TO REDUCE SOIL COMPACTION IN AREA ABOVE NWL SHOWN ON PLAN PRIOR TO PLACEMENT OF SEED AND MULCH/BLANKET. SUBSOILED AREAS SHALL BE LOOSENED TO A DEPTH OF 20 INCHES. SUBSOILING SHALL BE CONSIDERED INCIDENTAL.

140' D.U.E.
CONST. LIMITS
ABERDEEN ST. NE
WET/INFILTRATION BANK POND
BTM = 889.5
NWL = 893.5
HWL (100 YR) = 897.5
12" PERF. TP PIPE DRAIN @ 0.00% (2)
CONNECT 12" TP PIPE DRAIN INTO POND OUTLET STRUCTURE (2)
10' T.E.
MH01
MH09
MH08
6001
5527
5528
5529
5516
5517
5515
G115
G116
G117
G118
G119
G120
G121
G122
1:3 BENCH
℄ WB116
℄ EB116
115
116
117
118
15
16
17
18

NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\a-f\AnokaCty\13867000\hwy-brdg\hwy\pln-sht\c0265205.pgc.dgn 7/29/2009

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: Matthew A Wassman
PRINTED NAME: MATTHEW A. WASSMAN
DATE: 7/29/2009 LIC. NO. 26883

DRAWN BY RRC DATE 7/29/2009
DESIGN BY MAW DATE 7/29/2009
CHECKED BY RPM DATE 7/29/2009

S.P. 02-652-05
S.P. 02-716-09
S.P. 106-020-28
S.P. 197-124-001

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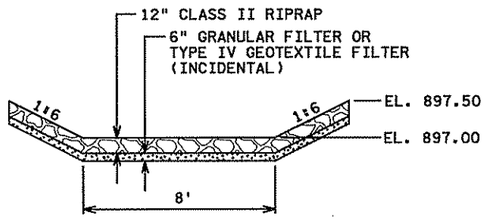
ANOKA COUNTY
POND GRADING PLANS
CSAH 52/116 RECONSTRUCTION
BANK POND

SHEET 8.03 OF 294



POND 116A EMERGENCY SPILLWAY

SECTION A-A

POINT NO.	STAKING COORDINATES X	STAKING COORDINATES Y	ELEV.
G125	511193.24	167100.34	889.50
G126	511265.10	167059.94	889.50
G127	511273.33	167056.48	889.50
G128	511281.39	167053.09	889.50
G129	511273.46	167026.44	889.50
G130	511163.95	167027.96	889.50
G131	511144.17	167047.55	889.50
G132	511144.37	167071.69	889.50
G133	511147.41	167084.60	889.50
G134	511150.92	167091.78	889.50
G135	511168.89	167102.99	889.50
G136	511183.14	167102.99	889.50
G137	511348.19	167059.25	894.00
G138	511342.29	167003.70	894.00

WET/INFILTRATION POND 116A CALCULATIONS

DRAINAGE AREA = 15.51 AC.
INPLACE SOIL TYPE = SP (BORING B-56), SP (B-33)
INFILTRATION RATE = 0.80 IN/HR (ABOVE NWL ONLY)
APPROXIMATE WATER TABLE EL. = 884.9 (BORING B-56), 884.4 (B-33)
NPDES REQ'D DEAD POOL VOLUME (1800 CU. FT./AC.) = 0.641 AC. FT.
CCWD REQ'D DEAD POOL VOLUME (2.5 INCH RUNOFF) = 1.047 AC. FT.
DEAD POOL VOLUME PROVIDED = 1.555 AC. FT.

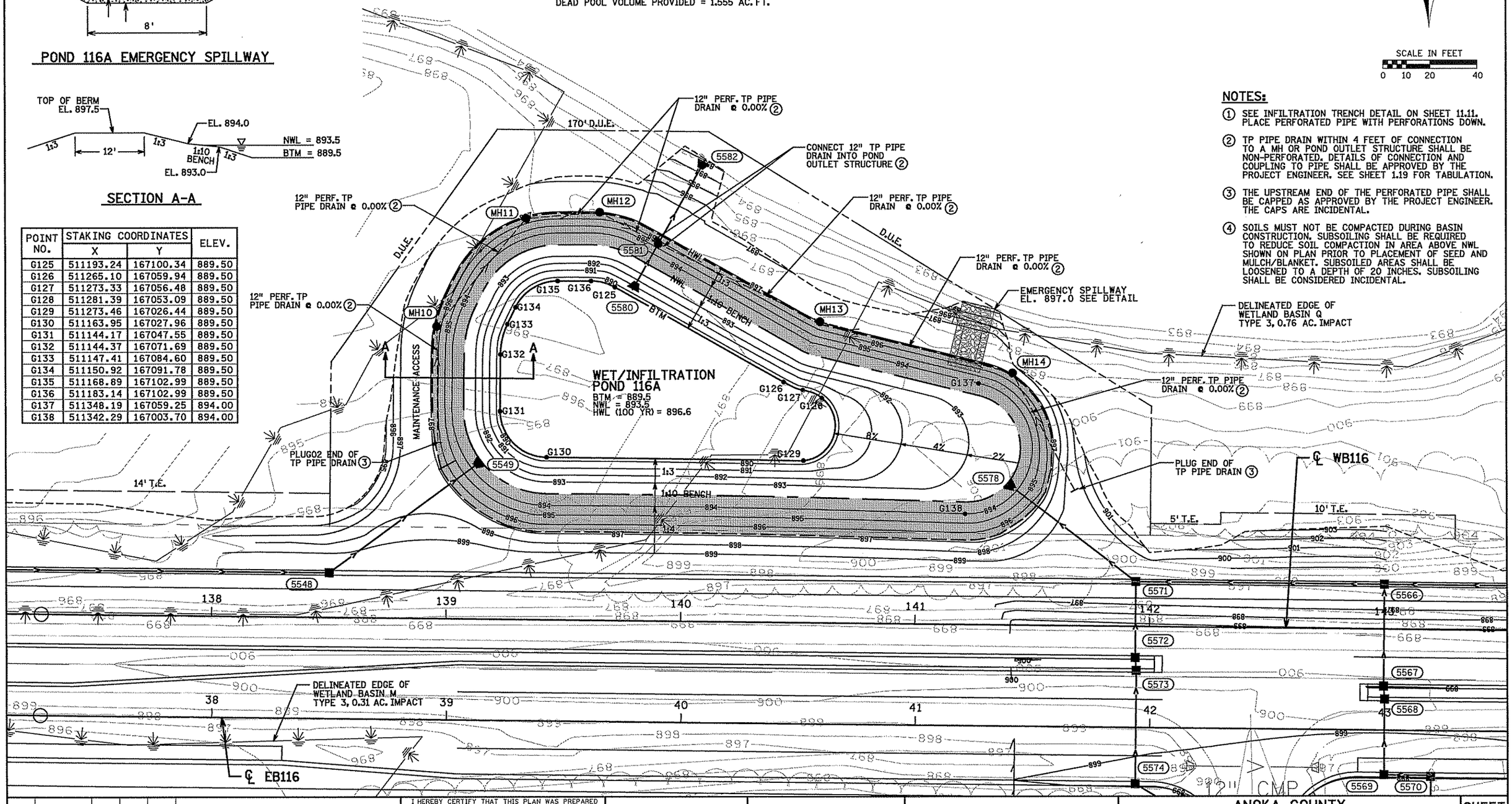
LEGEND

- INFILTRATION AREA (REQUIRES SUBSOILING) (4)
- 12" PERF. TP PIPE DRAIN (1)

SCALE IN FEET
0 10 20 40

NOTES:

1. SEE INFILTRATION TRENCH DETAIL ON SHEET 11.11. PLACE PERFORATED PIPE WITH PERFORATIONS DOWN.
2. TP PIPE DRAIN WITHIN 4 FEET OF CONNECTION TO A MH OR POND OUTLET STRUCTURE SHALL BE NON-PERFORATED. DETAILS OF CONNECTION AND COUPLING TO PIPE SHALL BE APPROVED BY THE PROJECT ENGINEER. SEE SHEET 1.19 FOR TABULATION.
3. THE UPSTREAM END OF THE PERFORATED PIPE SHALL BE CAPPED AS APPROVED BY THE PROJECT ENGINEER. THE CAPS ARE INCIDENTAL.
4. SOILS MUST NOT BE COMPACTED DURING BASIN CONSTRUCTION. SUBSOILING SHALL BE REQUIRED TO REDUCE SOIL COMPACTION IN AREA ABOVE NWL SHOWN ON PLAN PRIOR TO PLACEMENT OF SEED AND MULCH/BLANKET. SUBSOILED AREAS SHALL BE LOOSENED TO A DEPTH OF 20 INCHES. SUBSOILING SHALL BE CONSIDERED INCIDENTAL.



NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\a-f\AnokaCty\13867000\hwy-brdg\hwy\pln-sht\c0265205_pgd.dgn 7/29/2009

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: Matthew A. Wassman
PRINTED NAME: MATTHEW A. WASSMAN
DATE: 7/29/2009 LIC. NO. 26883

DRAWN BY RRC DATE 7/29/2009
DESIGN BY MAW DATE 7/29/2009
CHECKED BY RPM DATE 7/29/2009

S.P. 02-652-05
S.P. 02-716-09
S.P. 106-020-28
S.P. 197-124-001

TKDA
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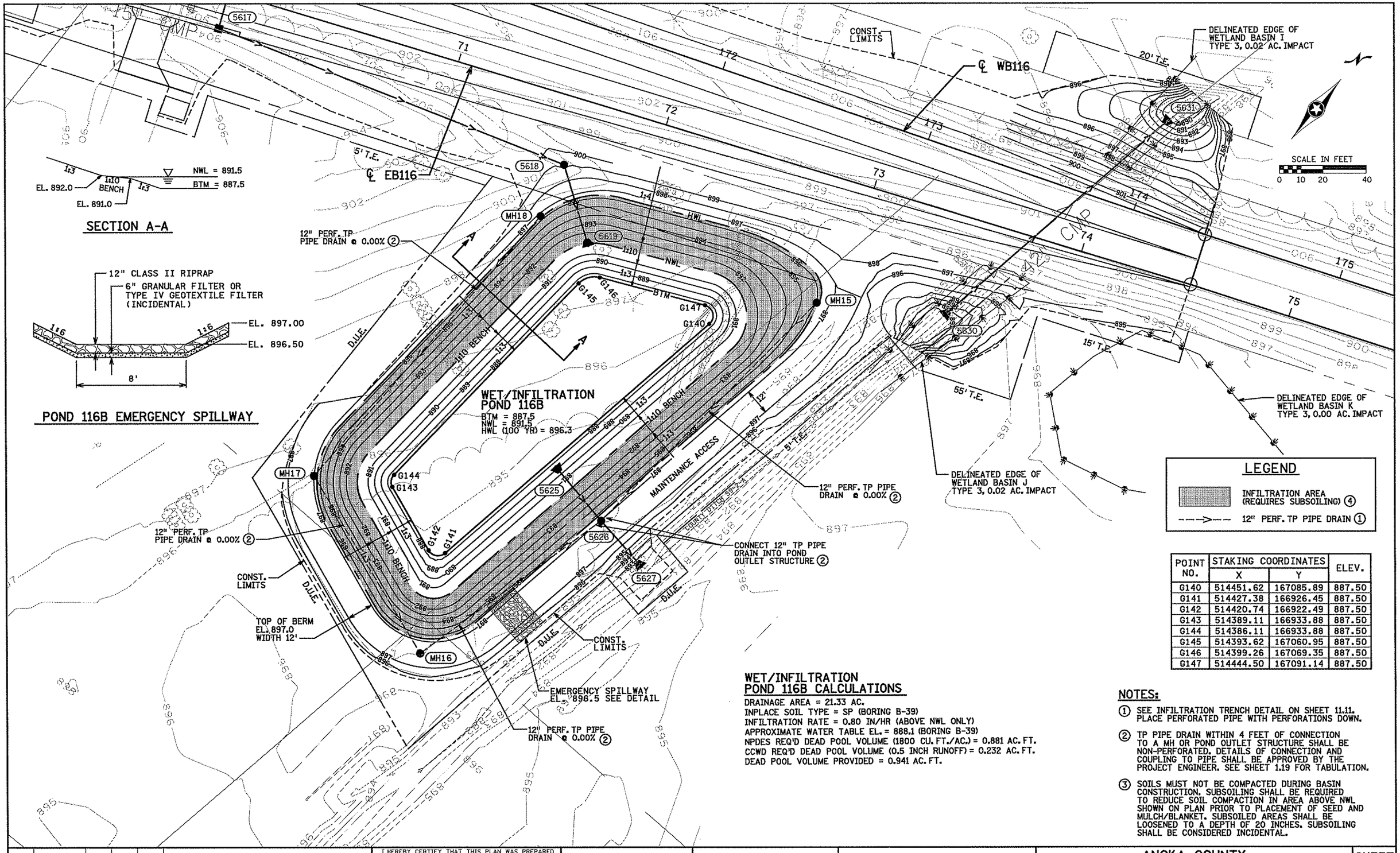
ANOKA COUNTY
POND GRADING PLANS
CSAH 52/116 RECONSTRUCTION
POND 116A

SHEET 8.04 OF 294



POINT NO.	STAKING COORDINATES		ELEV.
	X	Y	
G140	514451.62	167085.89	887.50
G141	514427.38	166926.45	887.50
G142	514420.74	166922.49	887.50
G143	514389.11	166933.88	887.50
G144	514386.11	166933.88	887.50
G145	514393.62	167060.95	887.50
G146	514399.26	167069.35	887.50
G147	514444.50	167091.14	887.50

WET/INFILTRATION POND 116B CALCULATIONS

DRAINAGE AREA = 21.33 AC.
INPLACE SOIL TYPE = SP (BORING B-39)
INFILTRATION RATE = 0.80 IN/HR (ABOVE NWL ONLY)
APPROXIMATE WATER TABLE EL. = 888.1 (BORING B-39)
NPDES REQ'D DEAD POOL VOLUME (1800 CU. FT./AC.) = 0.881 AC. FT.
CCWD REQ'D DEAD POOL VOLUME (0.5 INCH RUNOFF) = 0.232 AC. FT.
DEAD POOL VOLUME PROVIDED = 0.941 AC. FT.

NOTES:

1. SEE INFILTRATION TRENCH DETAIL ON SHEET 11.11. PLACE PERFORATED PIPE WITH PERFORATIONS DOWN.
2. TP PIPE DRAIN WITHIN 4 FEET OF CONNECTION TO A MH OR POND OUTLET STRUCTURE SHALL BE NON-PERFORATED. DETAILS OF CONNECTION AND COUPLING TO PIPE SHALL BE APPROVED BY THE PROJECT ENGINEER. SEE SHEET 1.19 FOR TABULATION.
3. SOILS MUST NOT BE COMPACTED DURING BASIN CONSTRUCTION. SUBSOILING SHALL BE REQUIRED TO REDUCE SOIL COMPACTION IN AREA ABOVE NWL SHOWN ON PLAN PRIOR TO PLACEMENT OF SEED AND MULCH/BLANKET. SUBSOILED AREAS SHALL BE LOOSENED TO A DEPTH OF 20 INCHES. SUBSOILING SHALL BE CONSIDERED INCIDENTAL.

NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\a-f\AnokaCty\13867000\hwy-brdg\hwy\pln-sht\c0265205_pge.dgn 9/18/2009

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:
PRINTED NAME: MATTHEW A. WASSMAN
DATE: 9/18/2009 LIC. NO. 26883

DRAWN BY RRC DATE 9/18/2009
DESIGN BY MAW DATE 9/18/2009
CHECKED BY RPM DATE 9/18/2009

S.P. 02-652-05
S.P. 02-716-09
S.P. 106-020-28
S.P. 197-124-001

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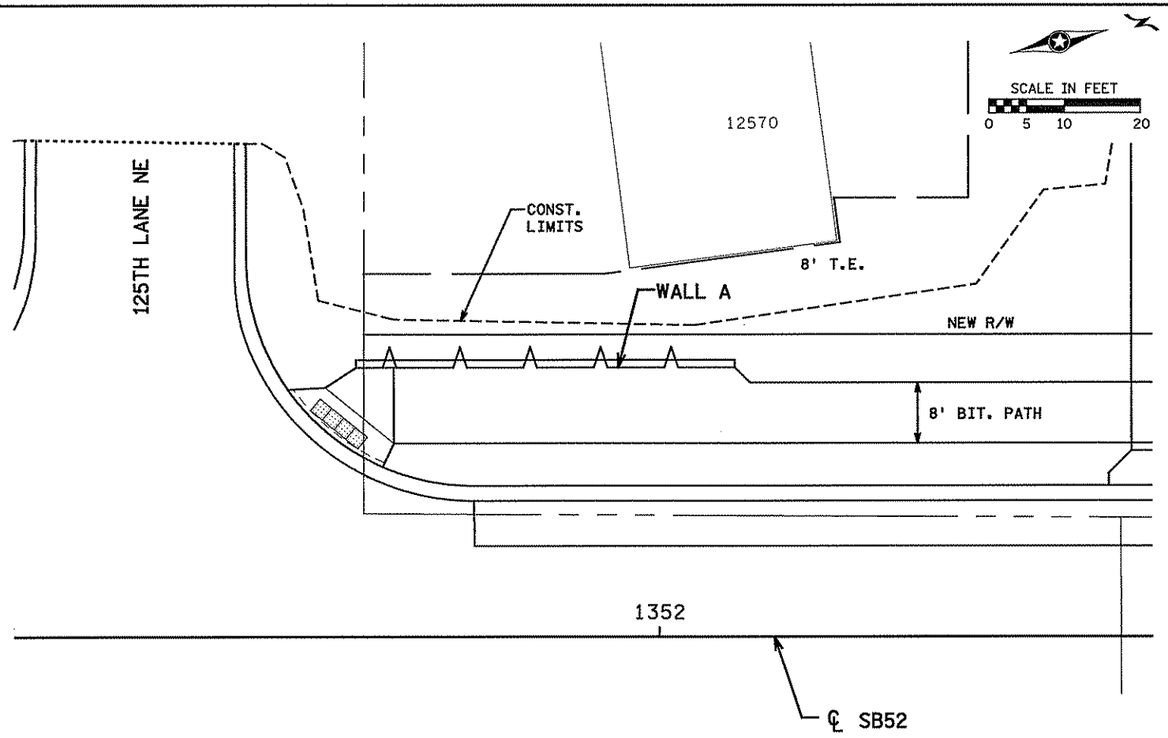
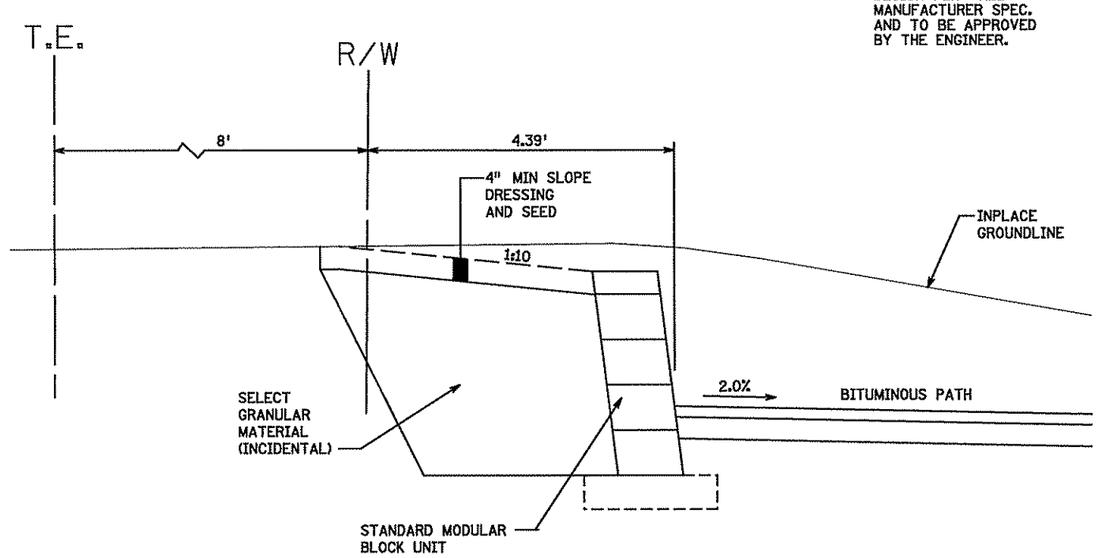
ANOKA COUNTY
POND GRADING PLANS
CSAH 52/116 RECONSTRUCTION
POND 116B

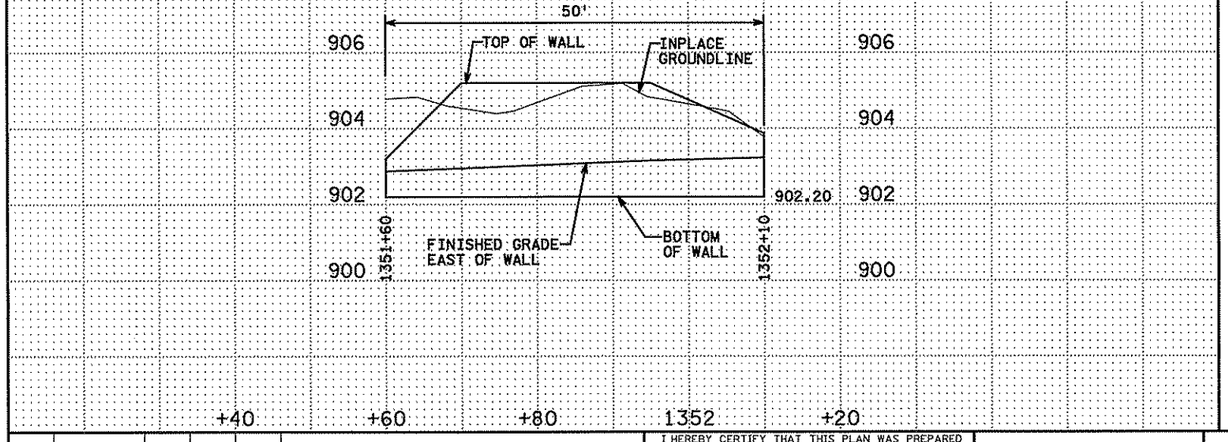
SHEET 8.05 OF 294





NOTE:
DESIGN PER WALL MANUFACTURER SPEC. AND TO BE APPROVED BY THE ENGINEER.

MODULAR BLOCK WALL SECTION



MODULAR BLOCK WALL DATA - WALL A

STATION	OFFSET	FINISHED GRADE (FRONT FACE)	TOP OF WALL	BOTTOM OF WALL	HEIGHT
SB52 1351+60	35.62 LT	902.87	903.20	902.20	1.00'
SB52 1351+70	35.62 LT	902.97	905.20	902.20	3.00'
SB52 1351+95	35.62 LT	903.15	905.20	902.20	3.00'
SB52 1352+10	35.62 LT	903.23	903.87	902.20	1.67'

NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\a-f\AnokaCity\i3867000\hwy-brdg\hwy\pln-sht\c0265205_wra.dgn 7/30/2009

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:

PRINTED NAME: RYAN P. MALONEY

DATE: 7/30/2009 LIC. NO. 44193

DRAWN BY RRC DATE 7/30/2009

DESIGN BY RPM DATE 7/30/2009

CHECKED BY TAC DATE 7/30/2009

S.P. 02-652-05
S.P. 02-716-09
S.P. 106-020-28
S.P. 197-124-001

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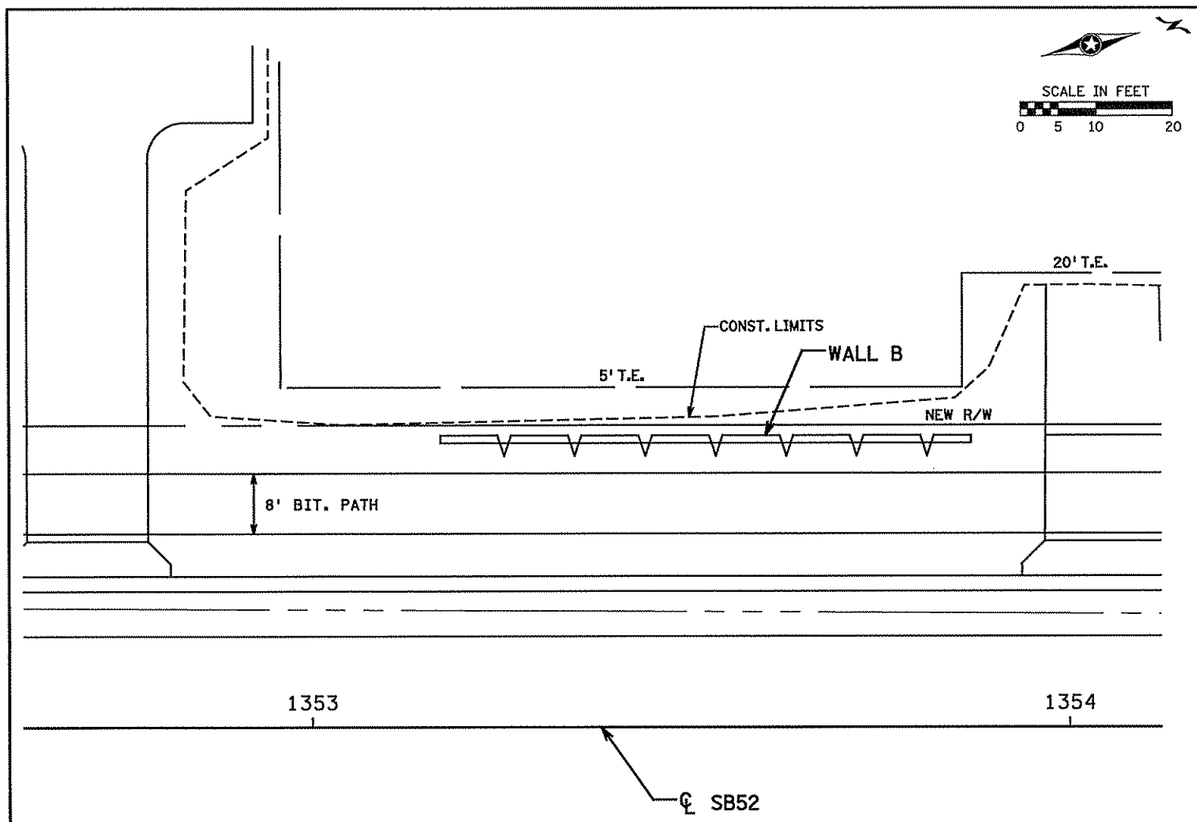
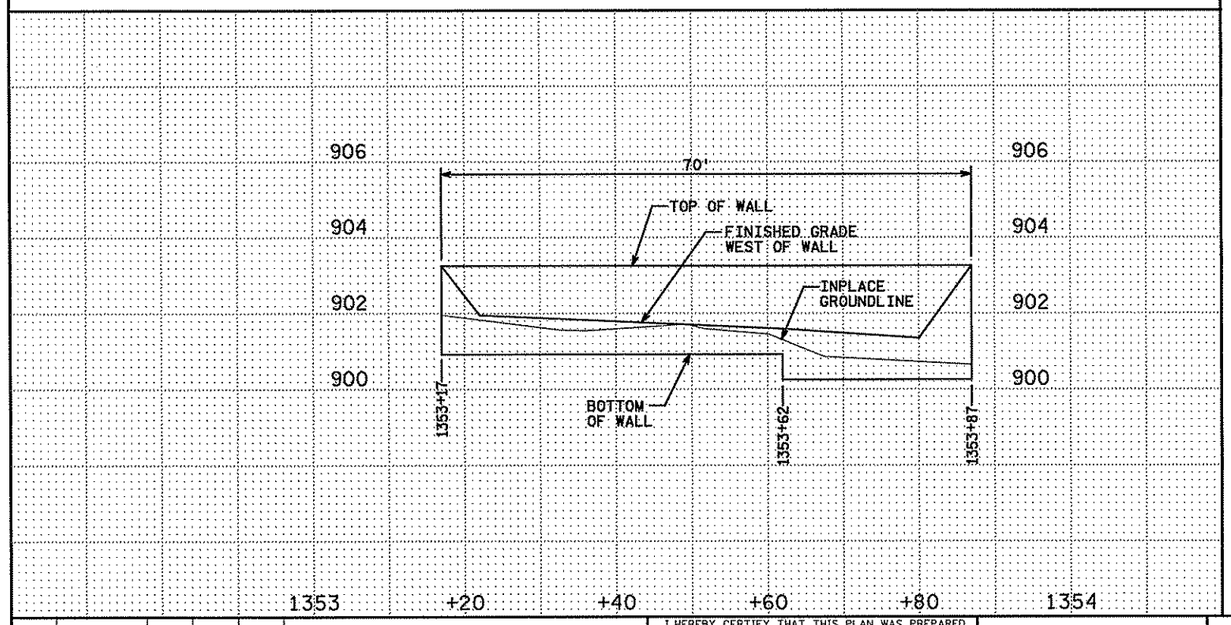
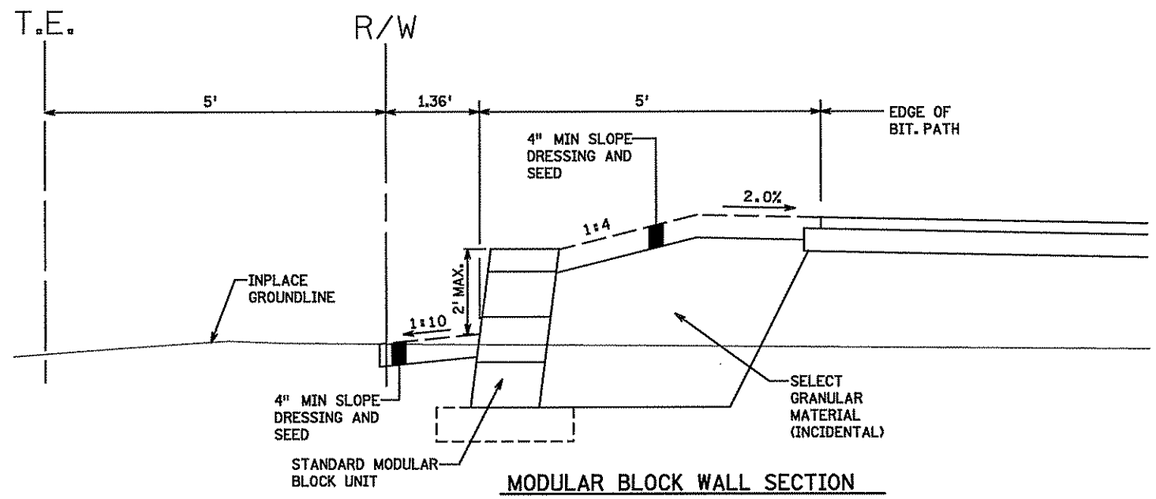
ANOKA COUNTY
RETAINING WALL A DETAILS
CSAH 52/116 RECONSTRUCTION

SHEET 9.01 OF 294





NOTE:
DESIGN PER WALL MANUFACTURER SPEC. AND TO BE APPROVED BY THE ENGINEER.



MODULAR BLOCK WALL SECTION

MODULAR BLOCK WALL DATA - WALL B

STATION	OFFSET	FINISHED GRADE (FRONT FACE)	TOP OF WALL	BOTTOM OF WALL	HEIGHT
SB52 1353+17	38.62' LT	903.25	903.25	900.92	2.33'
SB52 1353+62	38.62' LT	901.59	903.25	900.92	2.33'
				900.25	3.00'
SB52 1353+87	38.62' LT	903.25	903.25	900.25	3.00'

NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\a-f\AnokaCty\13867000\hwy-brdg\hwy\pln-sht\c0265205_wrb.dgn 7/30/2009

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SIGNATURE:

PRINTED NAME: RYAN P. MALONEY

DATE: 7/30/2009 LIC. NO. 44193

DRAWN BY RRC DATE 7/30/2009

DESIGN BY RPM DATE 7/30/2009

CHECKED BY TAC DATE 7/30/2009

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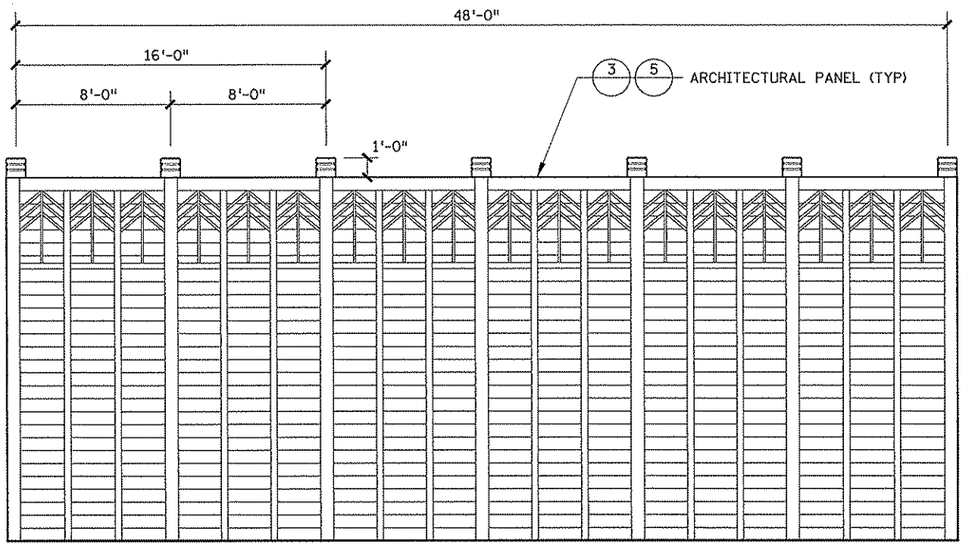
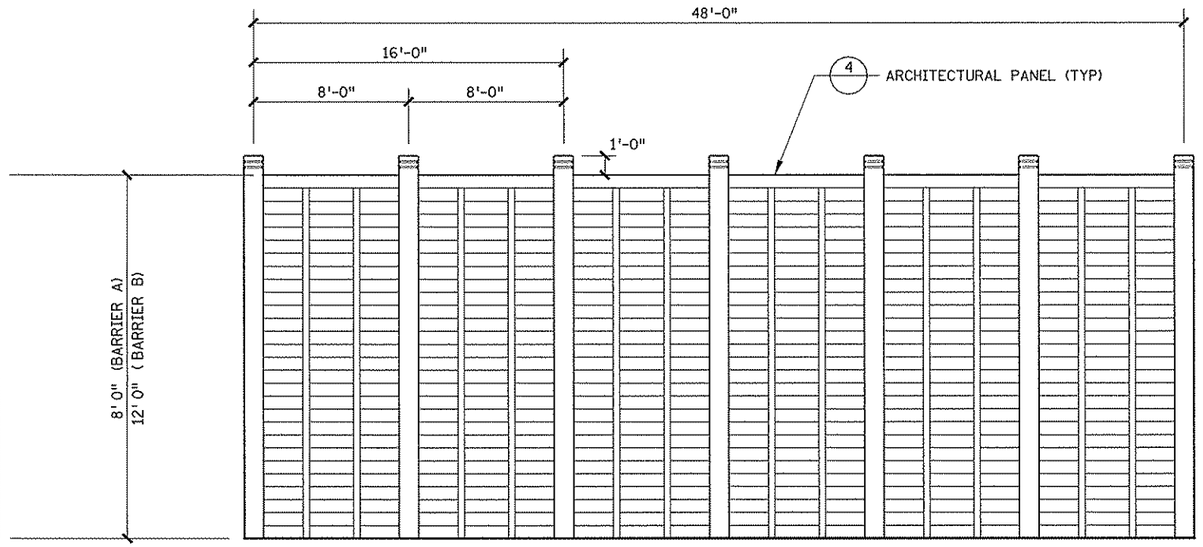
ANOKA COUNTY
RETAINING WALL B DETAILS
CSAH 52/116 RECONSTRUCTION

SHEET 9.02 OF 294

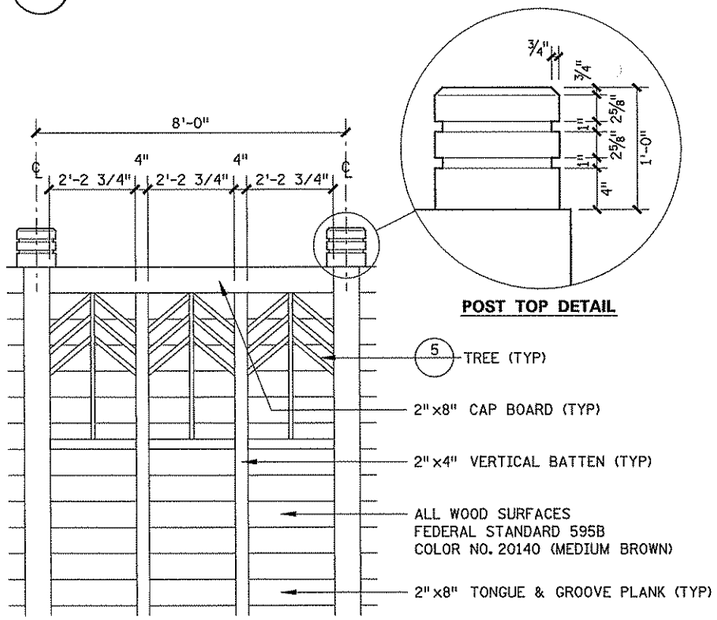




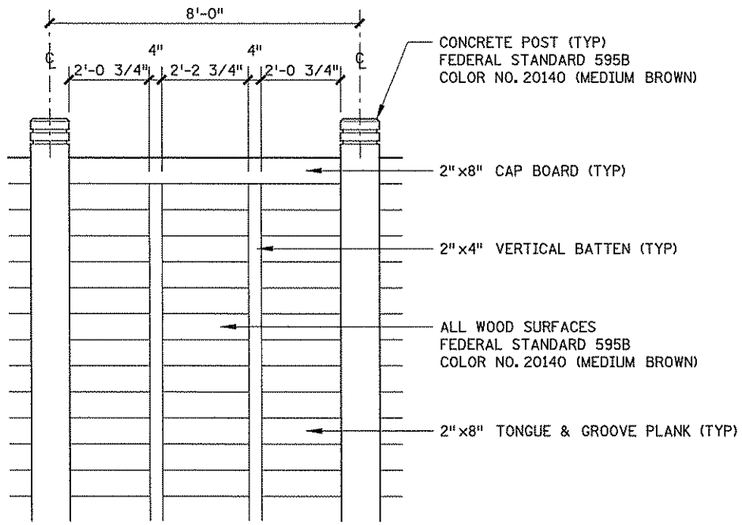
8' 0" (BARRIER A)
12' 0" (BARRIER B)

1 ARCHITECTURAL PANEL – ELEVATION (RESIDENT AND/OR HIGHWAY SIDE)

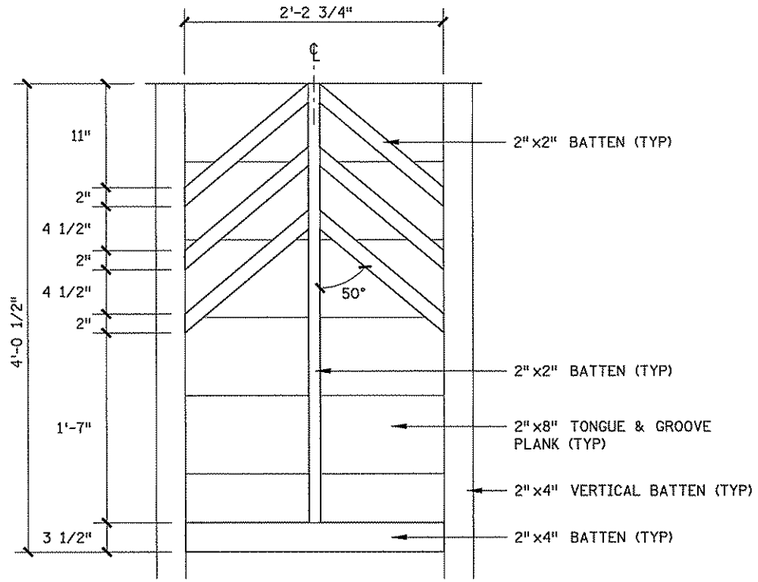
2 ARCHITECTURAL PANEL – ELEVATION (RESIDENT AND/OR HIGHWAY SIDE)



3 DETAIL



4 DETAIL



5 TREE – DETAIL

CONSTRUCT WALL WITH 48' BETWEEN PLANK-SIDE REVERSALS. SEE DETAILS ON SHEETS 9.04 – 9.08

NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\a-f\AnokaCty\13867000\hwy-brdg\hwy\pln-sht\c0265205_wrc.dgn 11/3/2009

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:

PRINTED NAME: RYAN P. MALONEY

DATE: 11/3/2009 LIC. NO. 44193

DRAWN BY _____ DATE 11/3/2009

DESIGN BY _____ DATE 11/3/2009

CHECKED BY RPM DATE 11/3/2009

S.P. 02-652-05
S.P. 02-716-09
S.P. 106-020-28
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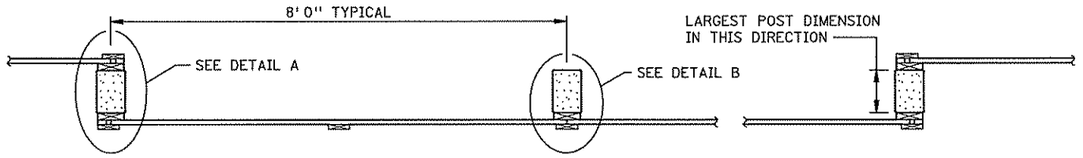
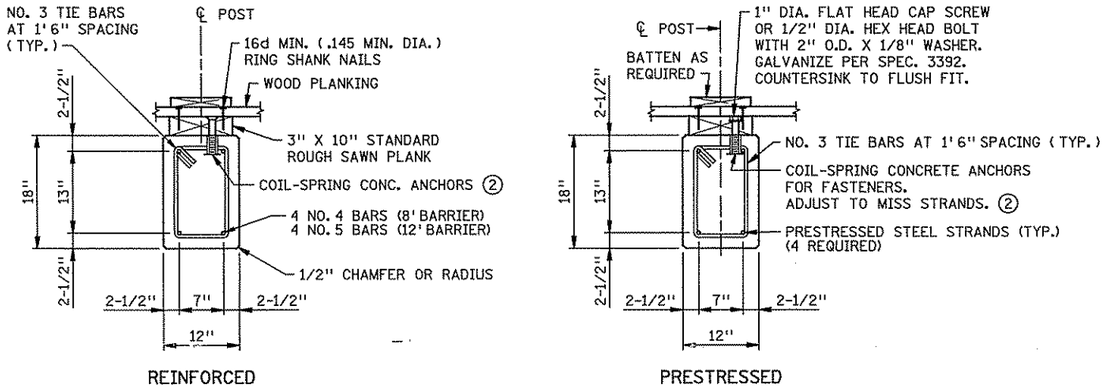
ANOKA COUNTY

RETAINING WALL AND NOISE BARRIER PLANS
CSAH 52/116 RECONSTRUCTION
NOISE BARRIER DETAILS

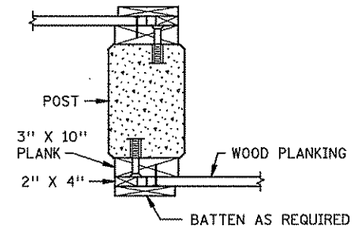
SHEET 9.03 OF 294



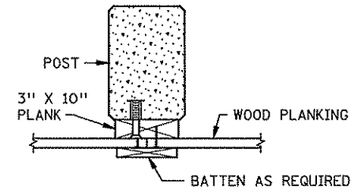
TOP VIEW ①



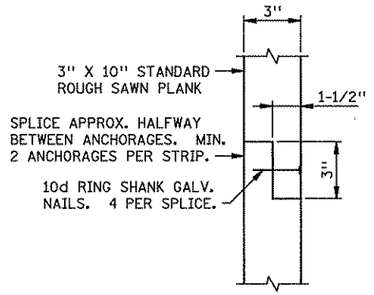
POST DETAILS



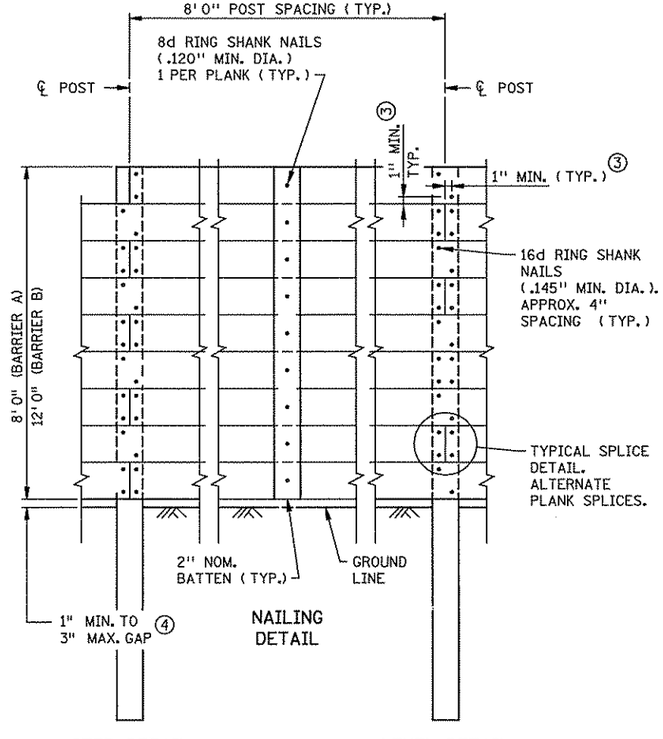
DETAIL A



DETAIL B

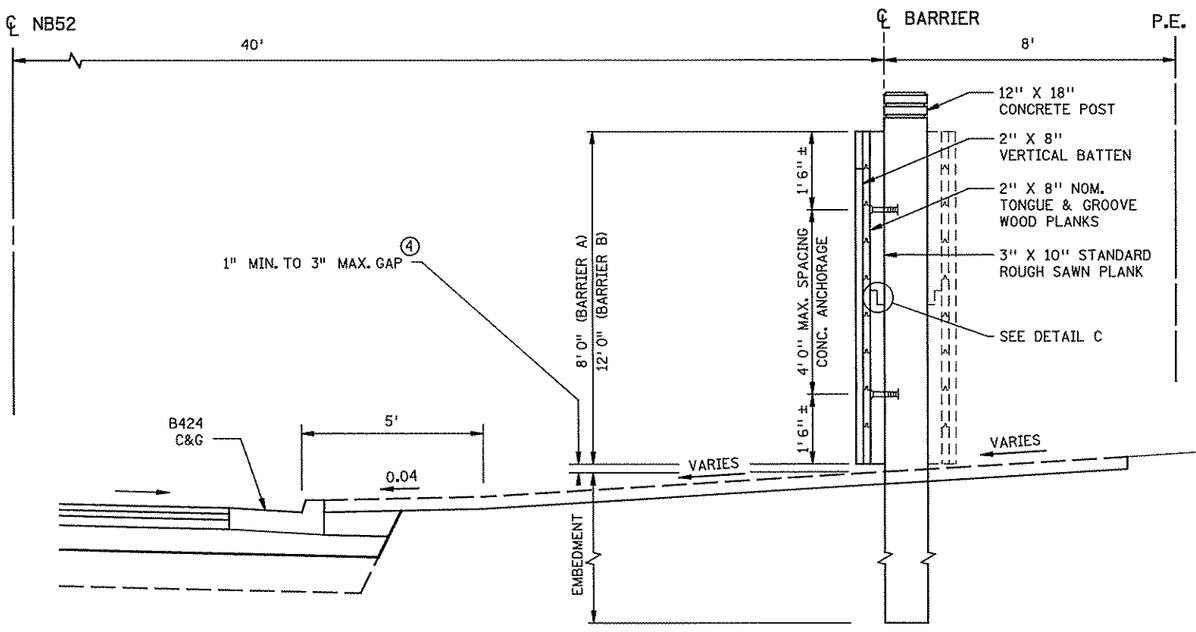


DETAIL C



FRONT ELEVATION

POST BATTENS NOT SHOWN



TYPICAL SECTION AT POST

DESIGN CRITERIA:

$\phi = 30°$ (GRANULAR)
WIND LOAD = 23 P.S.F.
f_b = 4000 P.S.I. CONCRETE POSTS.
f_b = 1400 P.S.I. WOOD PLANKING.
f_b = 1200 P.S.I. ALL OTHER WOOD MEMBERS.

STRESS LEVEL SYMBOL
PER AITC-117-(LATEST ADDITION):
24F = 2400 PSI ALLOWABLE BENDING STRESS
20F = 2000 PSI ALLOWABLE BENDING STRESS

POST DESIGN CRITERIA

NO. OF STRANDS	f'cl ⑥	f'c ⑤
6 OR LESS	4000 PSI	5500 PSI
7 OR MORE	4000 PSI	6000 PSI

NOTES:

- EMBEDMENT LENGTH IS BASED ON THE WATER TABLE BEING BELOW THE EMBEDMENT DEPTH. OTHER CONDITIONS REQUIRE A SPECIAL DESIGN.
- SOIL TREATMENT AND BACKFILL SHALL CONFORM TO SPEC. 2451.
- GALVANIZE NAILS PER SPEC. 3392. NAILING REQUIREMENTS SHOWN ARE BASED ON FULL HEAD NAILS AND ENTIRE LENGTH OF SHANK BEING DEFORMED. SEE SPECIAL PROVISIONS FOR POWER NAIL ALTERNATE.
- SEE SPEC. 2554 FOR ADDITIONAL CONST. INFORMATION, UNLESS OTHERWISE NOTED.
- THE FINISHED WIDE FACE DIMENSION FOR THE ROUGH SAWN 3" PLANKS SHALL BE THE SAME AS THE FINISHED WIDE FACE DIMENSION FOR THE 2" PLANKS.
- PRESTRESSED STEEL STRANDS ARE 1/2" DIA. (AREA = 0.153 SQ. IN.), MIN. OF 2 SPACES, 270 KIP ULTIMATE STRENGTH. INITIAL PRESTRESS EQUALS 28,900 LBS./STRAND.
- STEEL STRANDS PER SPEC. 3348 AND PAINT THE EXPOSED ENDS OF THE STRANDS WITH AN APPROVED GRAY EPOXY.
- ALL REINF. BARS SHALL BE EPOXY COATED GRADE 60 PER SPEC. 3301 AND HAVE A MIN. 2" CLEAR UNLESS OTHERWISE NOTED.

① 48' BETWEEN PLANKING SIDE REVERSALS.
② SPACE AT 4'0" ON ALTERNATE SIDES OF POST ℄. ULTIMATE PULL-OUT 2.25K PER ANCHOR.
③ 1" MIN. DISTANCE FROM EDGE OR END OF PLANK.
④ ALLOW DRAINAGE TO FLOW UNDER BARRIER.
⑤ MINIMUM CONCRETE STRENGTH AT THE TIME OF PRESTRESS TRANSFER.
⑥ MIN. CONCRETE STRENGTH THE POST CAN BE TRANSPORTED AND INSTALLED. THE CONCRETE SHALL BE PER SPEC. 2461.4A4b.

NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\a-f\AnokaCty\13867000\hwy-brdg\hwy\pln-sht\c0265205_wrd.dgn 12/11/2009

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:
PRINTED NAME: RYAN P. MALONEY
DATE: 12/11/2009 LIC. NO. 44193

DRAWN BY RRC DATE 12/11/2009
DESIGN BY RPM DATE 12/11/2009
CHECKED BY TAC DATE 12/11/2009

S.P. 02-652-05
S.P. 02-716-09
S.P. 106-020-28
S.P. 197-124-001

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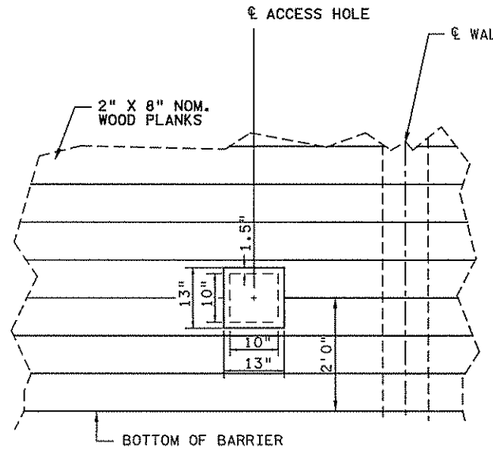
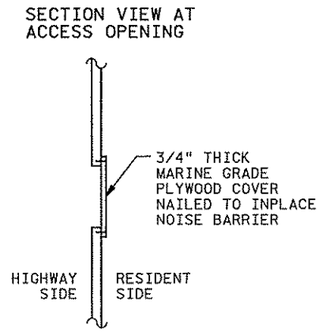
ANOKA COUNTY
RETAINING WALL AND NOISE BARRIER PLANS
CSAH 52/116 RECONSTRUCTION
NOISE BARRIER DETAILS

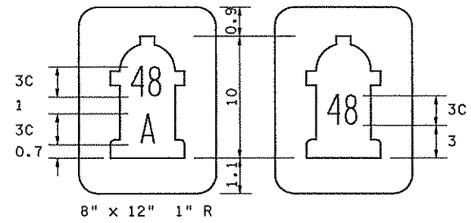
SHEET 9.04 OF 294



ELEVATION FROM RESIDENT SIDE



ACCESS HOLE COVER



WHITE LETTERS, RED HYDRANT ON WHITE
BACKGROUND FULLY REFLECTORIZED.
THE ENGINEER WILL PROVIDE THE NUMBER
AND LETTER DESIGNATION FOR EACH LOCATION.

IDENTIFICATION SIGN
(EACH SIDE OF NOISE WALL)

DIMENSIONS IN INCHES

FIRE HOSE ACCESS HOLE DETAILS

FIRE HOSE ACCESS, INCLUDING SIGNS, IS INCIDENTAL.

NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\a-f\AnokaCty\13867000\hwy-brdg\hwy\pln-sht\c0265205_wre.dgn 11/3/2009

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DATE: 11/3/2009 LIC. NO. 44193

DRAWN BY RRC DATE 11/3/2009

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ANOKA COUNTY

RETAINING WALL AND NOISE BARRIER PLANS
CSAH 52/116 RECONSTRUCTION
NOISE BARRIER DETAILS

SHEET 9.05 OF 294

NOISE BARRIER A

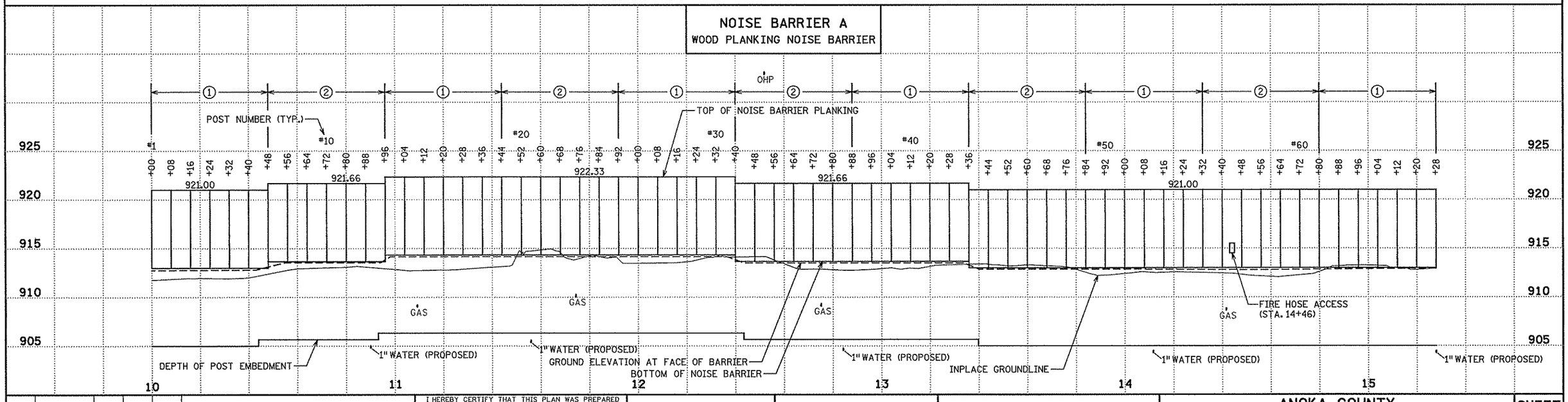
POST NO.	WALL STATION	GROUND ELEV.	TOP OF PLANKING ELEV.	PLANKING AREA (SQ FT)	POST LENGTH ③ (LIN FT)	ACTUAL POST EMBED. (LIN FT)	BOTTOM OF EMBED. ELEV.
1	10+00	912.75			17	7.75	905.00
2	10+08	912.80	921.00	64	17	7.80	905.00
3	10+16	912.85	921.00	64	17	7.85	905.00
4	10+24	912.85	921.00	64	17	7.85	905.00
5	10+32	912.90	921.00	64	17	7.90	905.00
6	10+40	912.90	921.00	64	17	7.90	905.00
7	10+48	913.15	921.00	64	17	7.49	905.66
8	10+56	913.50	921.66	64	17	7.84	905.66
9	10+64	913.50	921.66	64	17	7.84	905.66
10	10+72	913.50	921.66	64	17	7.84	905.66
11	10+80	913.50	921.66	64	17	7.84	905.66
12	10+88	913.50	921.66	64	17	7.84	905.66
13	10+96	913.85	921.66	64	17	7.52	906.33
14	11+04	914.20	922.33	64	17	7.87	906.33
15	11+12	914.20	922.33	64	17	7.87	906.33
16	11+20	914.20	922.33	64	17	7.87	906.33
17	11+28	914.20	922.33	64	17	7.87	906.33
18	11+36	914.20	922.33	64	17	7.87	906.33
19	11+44	914.20	922.33	64	17	7.87	906.33
20	11+52	914.20	922.33	64	17	7.87	906.33
21	11+60	914.20	922.33	64	17	7.87	906.33
22	11+68	914.20	922.33	64	17	7.87	906.33
23	11+76	914.20	922.33	64	17	7.87	906.33
24	11+84	914.20	922.33	64	17	7.87	906.33
25	11+92	914.20	922.33	64	17	7.87	906.33
26	12+00	914.20	922.33	64	17	7.87	906.33
27	12+08	914.20	922.33	64	17	7.87	906.33
28	12+16	914.20	922.33	64	17	7.87	906.33
29	12+24	914.20	922.33	64	17	7.87	906.33
30	12+32	914.20	922.33	64	17	7.87	906.33
31	12+40	913.75	922.33	64	17	7.42	906.33
32	12+48	913.50	921.66	64	17	7.84	905.66
33	12+56	913.50	921.66	64	17	7.84	905.66
34	12+64	913.50	921.66	64	17	7.84	905.66

NOISE BARRIER A

POST NO.	WALL STATION	GROUND ELEV.	TOP OF PLANKING ELEV.	PLANKING AREA (SQ FT)	POST LENGTH ③ (LIN FT)	ACTUAL POST EMBED. (LIN FT)	BOTTOM OF EMBED. ELEV.
35	12+72	913.50	921.66	64	17	7.84	905.66
36	12+80	913.50	921.66	64	17	7.84	905.66
37	12+88	913.50	921.66	64	17	7.84	905.66
38	12+96	913.50	921.66	64	17	7.84	905.66
39	13+04	913.50	921.66	64	17	7.84	905.66
40	13+12	913.50	921.66	64	17	7.84	905.66
41	13+20	913.50	921.66	64	17	7.84	905.66
42	13+28	913.50	921.66	64	17	7.84	905.66
43	13+36	913.25	921.66	64	17	7.59	905.66
44	13+44	912.85	921.00	64	17	7.85	905.00
45	13+52	912.85	921.00	64	17	7.85	905.00
46	13+60	912.85	921.00	64	17	7.85	905.00
47	13+68	912.85	921.00	64	17	7.85	905.00
48	13+76	912.85	921.00	64	17	7.85	905.00
49	13+84	912.85	921.00	64	17	7.85	905.00
50	13+92	912.85	921.00	64	17	7.85	905.00
51	14+00	912.85	921.00	64	17	7.85	905.00
52	14+08	912.85	921.00	64	17	7.85	905.00
53	14+16	912.85	921.00	64	17	7.85	905.00
54	14+24	912.85	921.00	64	17	7.85	905.00
55	14+32	912.85	921.00	64	17	7.85	905.00
56	14+40	912.85	921.00	64	17	7.85	905.00
57	14+48	912.85	921.00	64	17	7.85	905.00
58	14+56	912.85	921.00	64	17	7.85	905.00
59	14+64	912.85	921.00	64	17	7.85	905.00
60	14+72	912.85	921.00	64	17	7.85	905.00
61	14+80	912.85	921.00	64	17	7.85	905.00
62	14+88	912.85	921.00	64	17	7.85	905.00
63	14+96	912.85	921.00	64	17	7.85	905.00
64	15+04	912.85	921.00	64	17	7.85	905.00
65	15+12	912.85	921.00	64	17	7.85	905.00
66	15+20	912.85	921.00	64	17	7.85	905.00
67	15+28	912.85			17	7.85	905.00
BARRIER A TOTALS				**4224**	**1139**		

① PLANKING ON HIGHWAY SIDE.
② PLANKING ON RESIDENTIAL SIDE.
③ INCLUDES 1' 0" ABOVE TOP OF PLANKING.

NOISE BARRIER A
WOOD PLANKING NOISE BARRIER



NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\a-f\AnokaCty\13867000\hwy-brdg\hwy\pln-sht\c0265205_wrf.dgn 11/3/2009

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:
PRINTED NAME: RYAN P. MALONEY
DATE: 11/3/2009 LIC. NO. 44193

DRAWN BY RRC DATE 11/3/2009
DESIGN BY RPM DATE 11/3/2009
CHECKED BY TAC DATE 11/3/2009

S.P. 02-652-05
S.P. 02-716-09
S.P. 106-020-28
S.P. 197-124-001

TKDA
ENGINEERS • ARCHITECTS • PLANNERS

ANOKA COUNTY
RETAINING WALL AND NOISE BARRIER PLANS
CSAH 52/116 RECONSTRUCTION
NOISE BARRIER PROFILE AND TABULATIONS

SHEET 9.06 OF 294

NOISE BARRIER B

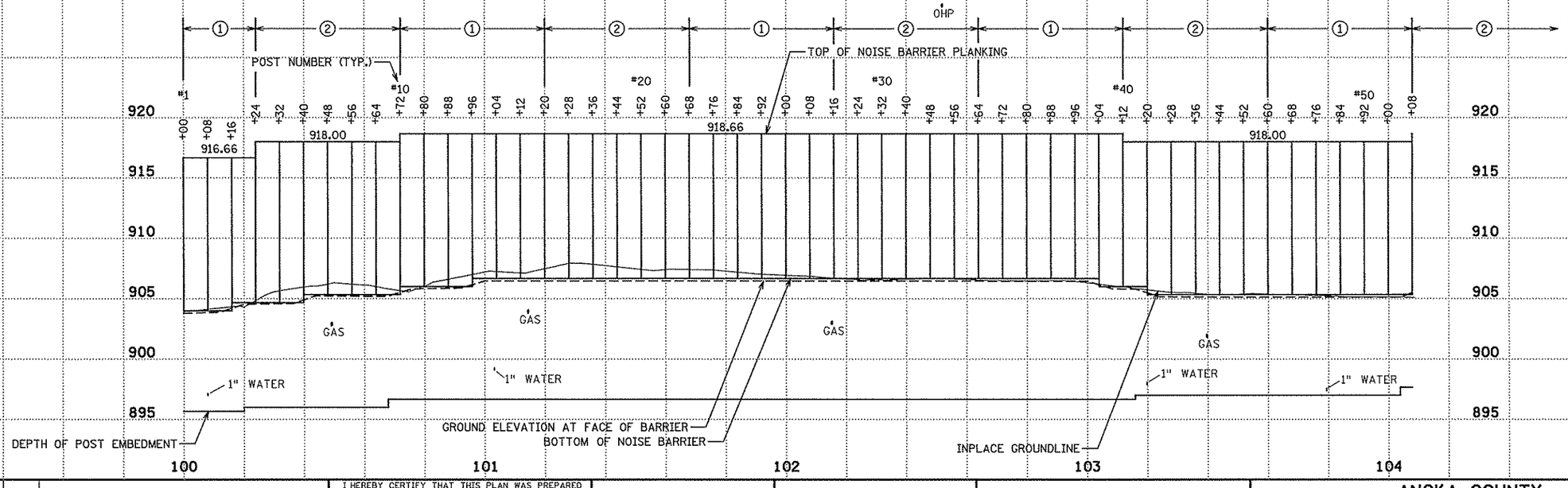
POST NO.	WALL STATION	GROUND ELEV.	TOP OF PLANKING ELEV.	PLANKING AREA (SQ FT)	POST LENGTH ③ (LIN FT)	ACTUAL POST EMBED. (LIN FT)	BOTTOM OF EMBED. ELEV.
1	100+00	903.85	916.66	101	22	8.19	895.66
2	100+08	903.85	916.66	101	22	8.19	895.66
3	100+16	904.15	916.66	96	22	8.49	895.66
4	100+24	904.50	918.00	107	23	8.50	896.00
5	100+32	904.50	918.00	107	23	8.50	896.00
6	100+40	905.00	918.00	101	23	9.00	896.00
7	100+48	905.25	918.00	101	23	9.25	896.00
8	100+56	905.25	918.00	101	23	9.25	896.00
9	100+64	905.25	918.00	101	23	9.25	896.00
10	100+72	905.50	918.00	101	23	8.84	896.66
11	100+80	905.85	918.66	101	23	9.19	896.66
12	100+88	905.85	918.66	101	23	9.19	896.66
13	100+96	906.20	918.66	101	23	9.54	896.66
14	101+04	906.50	918.66	96	23	9.84	896.66
15	101+12	906.50	918.66	96	23	9.84	896.66
16	101+20	906.50	918.66	96	23	9.84	896.66
17	101+28	906.50	918.66	96	23	9.84	896.66
18	101+36	906.50	918.66	96	23	9.84	896.66
19	101+44	906.50	918.66	96	23	9.84	896.66
20	101+52	906.50	918.66	96	23	9.84	896.66
21	101+60	906.50	918.66	96	23	9.84	896.66
22	101+68	906.50	918.66	96	23	9.84	896.66
23	101+76	906.50	918.66	96	23	9.84	896.66
24	101+84	906.50	918.66	96	23	9.84	896.66
25	101+92	906.50	918.66	96	23	9.84	896.66
26	102+00	906.50	918.66	96	23	9.84	896.66

NOISE BARRIER B

POST NO.	WALL STATION	GROUND ELEV.	TOP OF PLANKING ELEV.	PLANKING AREA (SQ FT)	POST LENGTH ③ (LIN FT)	ACTUAL POST EMBED. (LIN FT)	BOTTOM OF EMBED. ELEV.
27	102+08	906.50	918.66	96	23	9.84	896.66
28	102+16	906.50	918.66	96	23	9.84	896.66
29	102+24	906.50	918.66	96	23	9.84	896.66
30	102+32	906.50	918.66	96	23	9.84	896.66
31	102+40	906.50	918.66	96	23	9.84	896.66
32	102+48	906.50	918.66	96	23	9.84	896.66
33	102+56	906.50	918.66	96	23	9.84	896.66
34	102+64	906.50	918.66	96	23	9.84	896.66
35	102+72	906.50	918.66	96	23	9.84	896.66
36	102+80	906.50	918.66	96	23	9.84	896.66
37	102+88	906.50	918.66	96	23	9.84	896.66
38	102+96	906.50	918.66	96	23	9.84	896.66
39	103+04	906.20	918.66	101	23	9.54	896.66
40	103+12	905.80	918.00	96	23	9.80	896.00
41	103+20	905.50	918.00	101	22	8.50	897.00
42	103+28	905.20	918.00	101	22	8.20	897.00
43	103+36	905.20	918.00	101	22	8.20	897.00
44	103+44	905.20	918.00	101	22	8.20	897.00
45	103+52	905.20	918.00	101	22	8.20	897.00
46	103+60	905.20	918.00	101	22	8.20	897.00
47	103+68	905.20	918.00	101	22	8.20	897.00
48	103+76	905.20	918.00	101	22	8.20	897.00
49	103+84	905.20	918.00	101	22	8.20	897.00
50	103+92	905.20	918.00	101	22	8.20	897.00
51	104+00	905.20	918.00	101	22	8.20	897.00
52	104+08	905.70	918.66	101	22	8.04	897.66

① PLANKING ON HIGHWAY SIDE.
② PLANKING ON RESIDENTIAL SIDE.
③ INCLUDES 1'0" ABOVE TOP OF PLANKING.

NOISE BARRIER B
WOOD PLANKING NOISE BARRIER



NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\o-f\AnokaCty\13867000\hwy-brdg\hwy\pln-sht\c0265205_wrg.dgn 11/3/2009

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SIGNATURE:
PRINTED NAME: RYAN P. MALONEY
DATE: 11/3/2009 LIC. NO. 44193

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DESIGN BY RPM DATE 11/3/2009
CHECKED BY TAC DATE 11/3/2009

S.P. 02-652-05
S.P. 02-716-09
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ANOKA COUNTY
RETAINING WALL AND NOISE BARRIER PLANS
CSAH 52/116 RECONSTRUCTION
NOISE BARRIER PROFILE AND TABULATIONS

SHEET 9.07 OF 294

NOISE BARRIER B

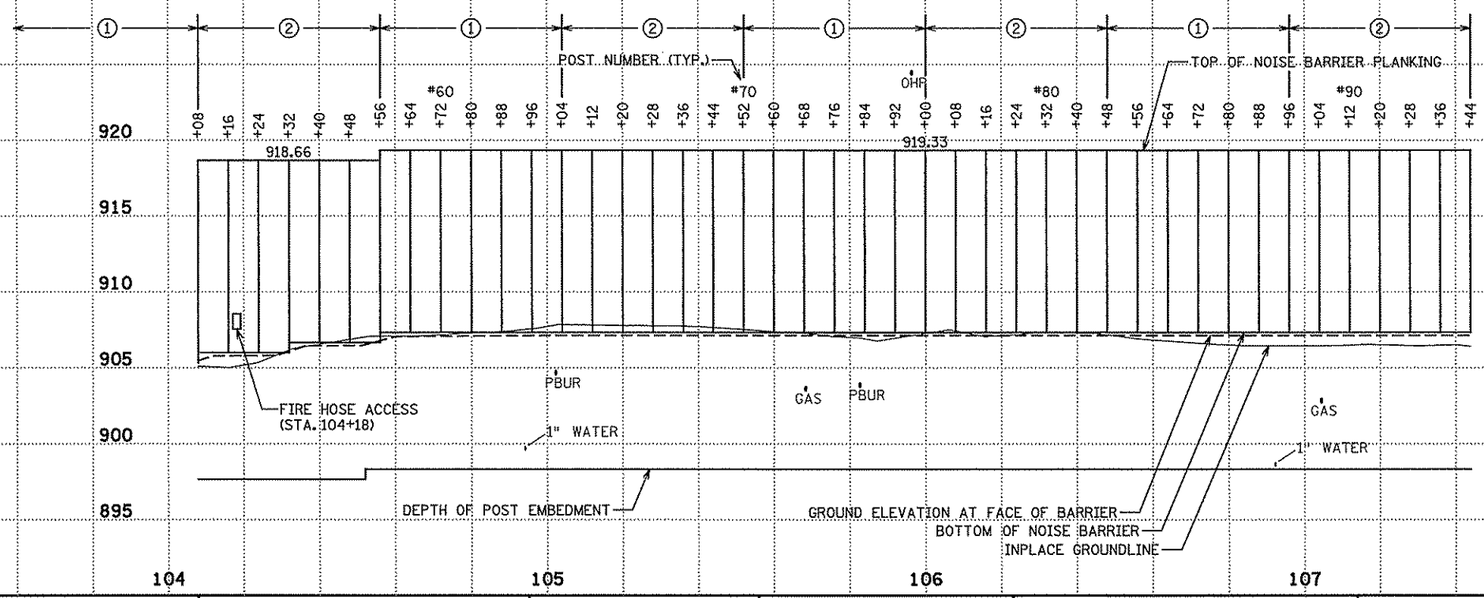
POST NO.	WALL STATION	GROUND ELEV.	TOP OF PLANKING ELEV.	PLANKING AREA (SQ FT)	POST LENGTH ③ (LIN FT)	ACTUAL POST EMBED. (LIN FT)	BOTTOM OF EMBED. ELEV.
53	104+16	905.80	918.66	101	22	8.14	897.66
54	104+24	905.80	918.66	101	22	8.14	897.66
55	104+32	906.20	918.66	96	22	8.54	897.66
56	104+40	906.50	918.66	96	22	8.84	897.66
57	104+48	906.50	918.66	96	22	8.84	897.66
58	104+56	906.75	919.33	96	22	8.42	898.33
59	104+64	907.10	919.33	96	22	8.77	898.33
60	104+72	907.10	919.33	96	22	8.77	898.33
61	104+80	907.10	919.33	96	22	8.77	898.33
62	104+88	907.10	919.33	96	22	8.77	898.33
63	104+96	907.10	919.33	96	22	8.77	898.33
64	105+04	907.10	919.33	96	22	8.77	898.33
65	105+12	907.10	919.33	96	22	8.77	898.33
66	105+20	907.10	919.33	96	22	8.77	898.33
67	105+28	907.10	919.33	96	22	8.77	898.33
68	105+36	907.10	919.33	96	22	8.77	898.33
69	105+44	907.10	919.33	96	22	8.77	898.33
70	105+52	907.10	919.33	96	22	8.77	898.33
71	105+60	907.10	919.33	96	22	8.77	898.33
72	105+68	907.10	919.33	96	22	8.77	898.33
73	105+76	907.10	919.33	96	22	8.77	898.33
74	105+84	907.10	919.33	96	22	8.77	898.33
75	105+92	907.10	919.33	96	22	8.77	898.33

NOISE BARRIER B

POST NO.	WALL STATION	GROUND ELEV.	TOP OF PLANKING ELEV.	PLANKING AREA (SQ FT)	POST LENGTH ③ (LIN FT)	ACTUAL POST EMBED. (LIN FT)	BOTTOM OF EMBED. ELEV.
76	106+00	907.10	919.33	96	22	8.77	898.33
77	106+08	907.10	919.33	96	22	8.77	898.33
78	106+16	907.10	919.33	96	22	8.77	898.33
79	106+24	907.10	919.33	96	22	8.77	898.33
80	106+32	907.10	919.33	96	22	8.77	898.33
81	106+40	907.10	919.33	96	22	8.77	898.33
82	106+48	907.10	919.33	96	22	8.77	898.33
83	106+56	907.10	919.33	96	22	8.77	898.33
84	106+64	907.10	919.33	96	22	8.77	898.33
85	106+72	907.10	919.33	96	22	8.77	898.33
86	106+80	907.10	919.33	96	22	8.77	898.33
87	106+88	907.10	919.33	96	22	8.77	898.33
88	106+96	907.10	919.33	96	22	8.77	898.33
89	107+04	907.10	919.33	96	22	8.77	898.33
90	107+12	907.10	919.33	96	22	8.77	898.33
91	107+20	907.10	919.33	96	22	8.77	898.33
92	107+28	907.10	919.33	96	22	8.77	898.33
93	107+36	907.10	919.33	96	22	8.77	898.33
94	107+44	907.10	919.33	96	22	8.77	898.33
BARRIER B TOTALS				9166	2105		

① PLANKING ON HIGHWAY SIDE.
② PLANKING ON RESIDENTIAL SIDE.
③ INCLUDES 1'0" ABOVE TOP OF PLANKING.

NOISE BARRIER B
WOOD PLANKING NOISE BARRIER



NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\a-f\AnokaCty\13867000\hwy-brdg\hwy\pln-sht\c0265205_wrg.dgn 11/3/2009

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:

PRINTED NAME: RYAN P. MALONEY

DATE: 11/3/2009 LIC. NO. 44193

DRAWN BY RRC DATE 11/3/2009

DESIGN BY RPM DATE 11/3/2009

CHECKED BY TAC DATE 11/3/2009

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S.P. 02-716-09
S.P. 106-020-28
S.P. 197-124-001

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ANOKA COUNTY
RETAINING WALL AND NOISE BARRIER PLANS
CSAH 52/116 RECONSTRUCTION
NOISE BARRIER PROFILE AND TABULATIONS

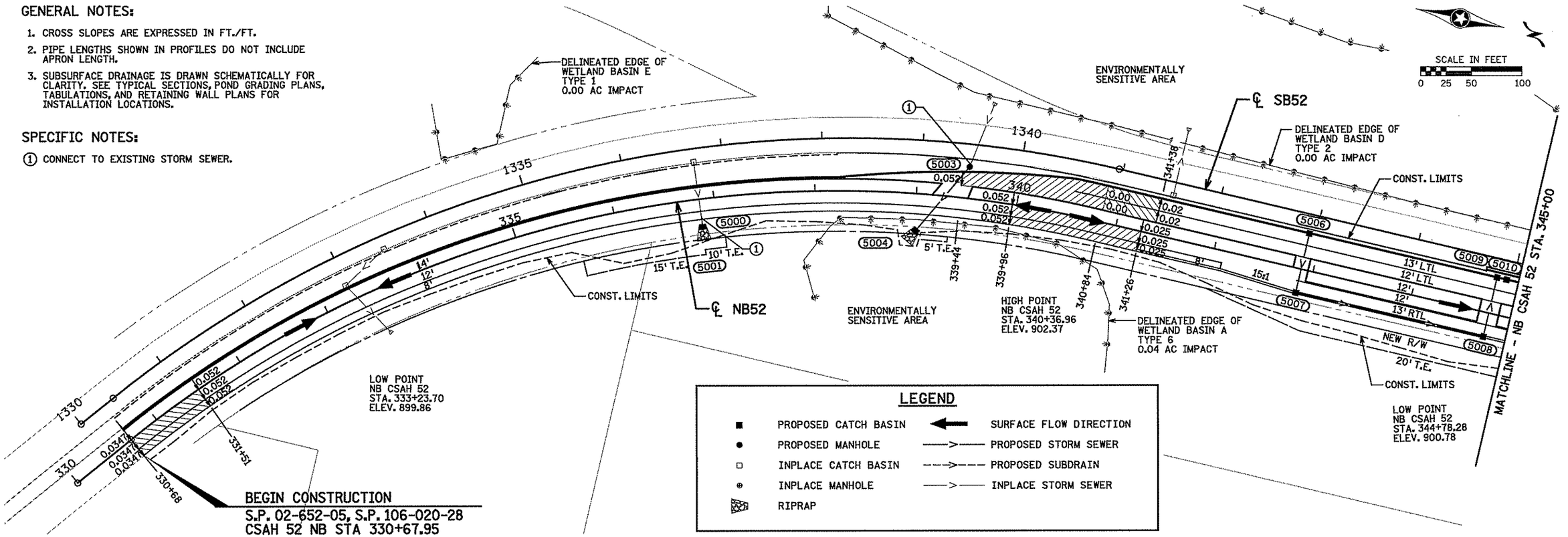
SHEET 9.08 OF 294

GENERAL NOTES:

1. CROSS SLOPES ARE EXPRESSED IN FT./FT.
2. PIPE LENGTHS SHOWN IN PROFILES DO NOT INCLUDE APRON LENGTH.
3. SUBSURFACE DRAINAGE IS DRAWN SCHEMATICALLY FOR CLARITY. SEE TYPICAL SECTIONS, POND GRADING PLANS, TABULATIONS, AND RETAINING WALL PLANS FOR INSTALLATION LOCATIONS.

SPECIFIC NOTES:

(1) CONNECT TO EXISTING STORM SEWER.



5000
CONN. TO EX. STORM SEWER
NB-52
STA. 336+85.36
18.78' RT
I.E. 897.37 E

AP-5001
NB-52
STA. 336+85.42
30.35' RT
I.E. 897.32

MH-5003
NB-52
STA. 339+49.58
31.15' LT
T.C. 903.00
I.E. 896.78 W (EX.)
I.E. 896.78 SE

AP-5004
NB-52
STA. 339+00.00
38.96' RT
I.E. 896.10

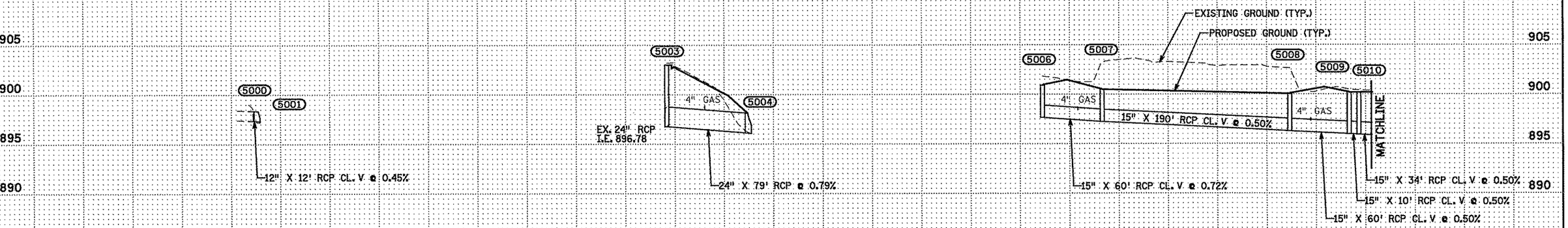
CB-5006
NB-52
STA. 342+88.00
36.25' LT
T.C. 900.92
I.E. 897.67 E

CB-5007
NB-52
STA. 342+88.00
24.00' RT
T.C. 900.49
I.E. 897.23 W
I.E. 897.23 N

CB-5008
NB-52
STA. 342.78.28
24.00' RT
T.C. 900.05
I.E. 896.28 S
I.E. 896.28 W

CB-5009
NB-52
STA. 342+78.28
36.25' LT
T.C. 900.17
I.E. 895.98 E
I.E. 895.98 N

CB-5010
NB-52
STA. 344+00.00
36.25' LT
T.C. 900.18
I.E. 895.93 S
I.E. 895.93 N



NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\a-f\AnokaCty\13867000\hwy-brdg\hwy\pln-sht\c0265205_seo.dgn 7/29/2009

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: Matthew A. Wassman

PRINTED NAME: MATTHEW A. WASSMAN

DATE: 7/29/2009 LIC. NO. 26883

DRAWN BY SFH DATE 7/29/2009

DESIGN BY CEH DATE 7/29/2009

CHECKED BY MAW DATE 7/29/2009

S.P. 02-652-05
S.P. 02-716-09
S.P. 106-020-28
S.P. 197-124-001

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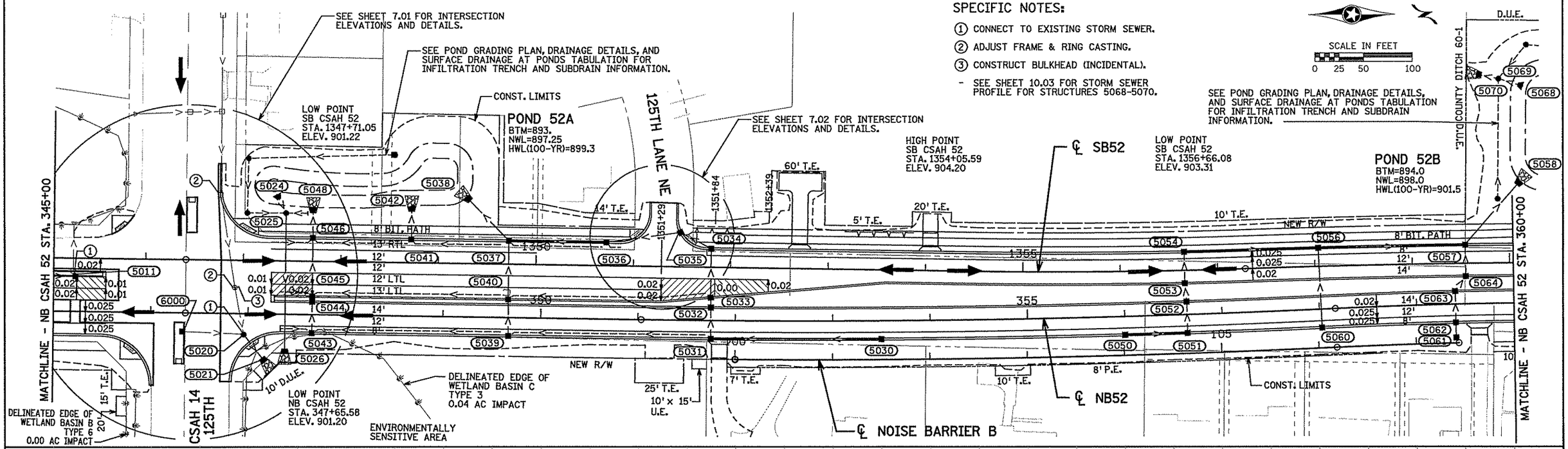
ANOKA COUNTY
SUPERELEVATION AND DRAINAGE PLAN PROFILE
CSAH 52/116 RECONSTRUCTION
NB CSAH 52 STA. 330+00 TO 345+00

SHEET 10.01 OF 294



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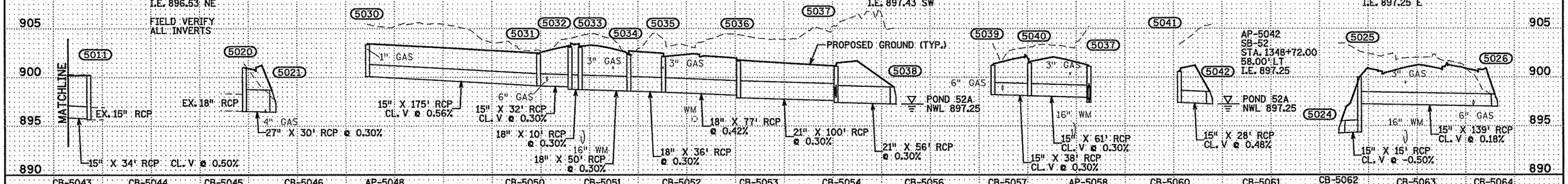
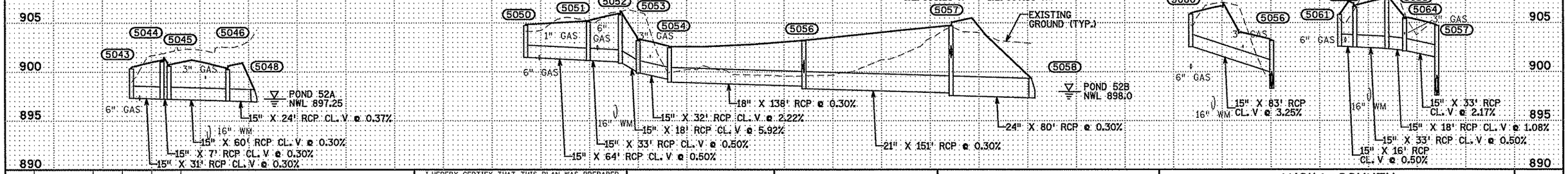
NB-52	NB-52	NB-52	NB-52	NB-52	NB-52	SB-52	SB-52	SB-52	SB-52	SB-52	SB-52	NB-52	SB-52	SB-52	SB-52	DESIGN SPECIAL 1	NB-52
STA. 345+22.34	STA. 346+95.75	STA. 347+18.00	STA. 353+50.00	STA. 351+75.00	STA. 351+75.00	STA. 1351+80.00	STA. 1351+80.00	STA. 1351+48.30	STA. 1350+72.00	STA. 1349+72.00	STA. 1349+28.00	STA. 349+67.00	STA. 1349+72.00	STA. 1348+72.00	STA. 1347+33.60	SEE DRAINAGE DETAILS	STA. 347+38.00
36.25' LT	21.55' RT	49.50' RT	19.00' RT	19.00' LT	13.25' LT	31.15' LT	19.00' LT	35.20' LT	24.00' LT	24.00' LT	68.00' LT	19.00' RT	36.25' RT	24.00' LT	68.00' LT	SB-52	41.00' RT
T.C. 900.23	T.C. 900.90	T.E. 896.43	T.C. 903.35	T.C. 902.38	T.C. 903.10	T.C. 903.07	T.C. 902.39	T.C. 902.14	T.C. 901.67	T.C. 901.11	I.E. 897.25	T.C. 901.22	T.C. 901.47	T.C. 900.56	I.E. 894.25	STA. 1347+43.50	I.E. 897.00
I.E. 895.76 S	I.E. 897.00 S (EX.)		I.E. 900.10 S	I.E. 899.02 E	I.E. 898.74 E	I.E. 898.59 E	I.E. 898.59 S	I.E. 898.16 N	I.E. 897.93 E	I.E. 898.22 W	I.E. 898.11 E	I.E. 898.11 W			49.00' LT	I.E. 894.36 W	
I.E. 895.69 W (EX.)	I.E. 896.53 SW (EX.)			I.E. 899.12 W	I.E. 898.77 W	I.E. 898.74 W	I.E. 898.59 S	I.E. 898.48 S	I.E. 897.91 S		I.E. 897.61 N					I.E. 897.25 E	
	I.E. 896.53 NE										I.E. 897.43 SW						



CB-5043	CB-5044	CB-5045	CB-5046	AP-5048	CB-5050	CB-5051	CB-5052	CB-5053	CB-5054	CB-5056	CB-5057	AP-5058	CB-5060	CB-5061	CB-5062	CB-5063	CB-5064
NB-52	NB-52	SB-52	SB-52	SB-52	NB-52	NB-52	NB-52	SB-52	SB-52	SB-52	SB-52	SB-52	NB-52	NB-52	NB-52	NB-52	SB-52
STA. 347+65.58	STA. 347+65.58	STA. 1347+71.05	STA. 1347+71.05	STA. 1347+71.05	STA. 356+00.00	STA. 356+64.00	STA. 356+64.00	STA. 1356+66.00	STA. 1356+66.00	STA. 1358+04.00	STA. 1359+55.00	STA. 1360+12.00	STA. 358+02.00	STA. 359+40.00	STA. 359+40.00	STA. 359+40.00	STA. 1359+55.00
19.00' RT	13.25' LT	36.25' RT	24.00' LT	55.00' LT	19.00' RT	19.00' RT	13.25' LT	13.25' RT	19.00' LT	19.00' LT	19.00' LT	84.00' LT	19.00' RT	34.50' RT	19.00' RT	13.25' LT	13.25' RT
T.C. 900.36	T.C. 901.07	T.C. 900.61	T.C. 900.25	I.E. 896.95	T.C. 904.74	T.C. 905.09	T.C. 905.81	I.E. 899.92 E	I.E. 899.20 E	I.E. 903.17	I.E. 899.91 E	I.E. 897.33	T.C. 905.86	T.C. 905.84	T.C. 906.62	T.C. 907.34	T.C. 905.40
I.E. 897.35 W	I.E. 897.26 E	I.E. 897.24 E	I.E. 897.06 E		I.E. 901.49 N	I.E. 901.17 S	I.E. 901.00 E	I.E. 899.92 W	I.E. 898.95 N	I.E. 898.54 S	I.E. 901.43 E		I.E. 902.61 W	I.E. 902.59 W	I.E. 902.51 E	I.E. 902.35 E	I.E. 902.15 E
	I.E. 897.26 W	I.E. 897.24 W	I.E. 897.06 W			I.E. 901.17 W				I.E. 898.29 N	I.E. 897.84 S				I.E. 902.51 W	I.E. 902.35 NW	I.E. 902.15 W
											I.E. 897.59 NW						



NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\a-f\AnokaCty\13867000\hwy-brdg\hwy\pln-shf\c0265205_seb.dgn 11/3/2009

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SIGNATURE: Matthew A. Wassman

PRINTED NAME: MATTHEW A. WASSMAN

DATE: 11/3/2009 LIC. NO. 26883

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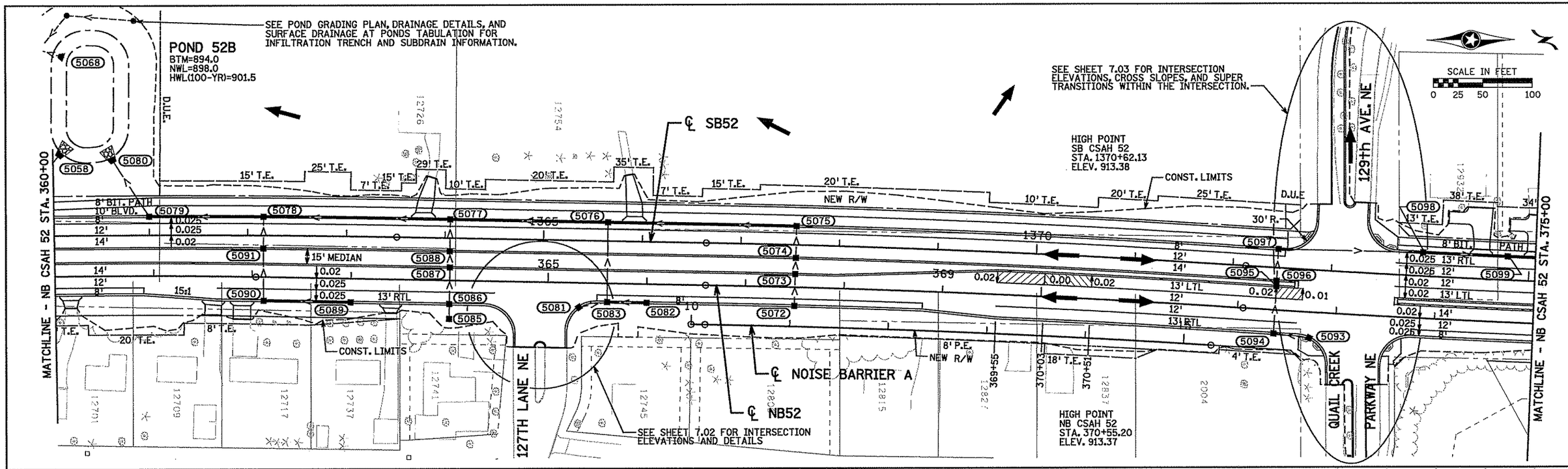
ANOKA COUNTY
SUPERELEVATION AND DRAINAGE PLAN PROFILE
CSAH 52/116 RECONSTRUCTION
NB CSAH 52 STA. 345+00 TO 360+00

SHEET 10.02 OF 294



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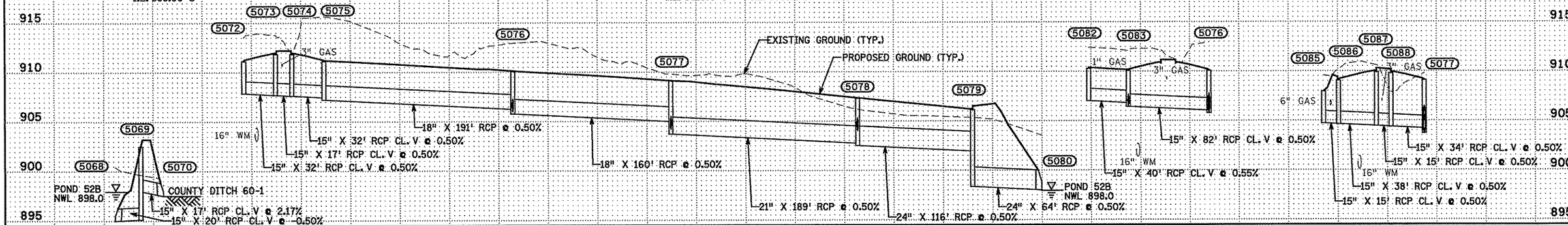
SB-52	DESIGN: SPECIAL 2	SB-52	NB-52	NB-52	SB-52	SB-52	SB-52	SB-52	SB-52	SB-52	SB-52	NB-52	NB-52	NB-52	NB-52	NB-52	SB-52
STA. 1360+15.40	SEE DRAINAGE DETAILS SB-52	STA. 1359+69.00	STA. 367+50.00	STA. 367+50.00	STA. 1367+56.00	STA. 1367+56.00	STA. 1365+65.00	STA. 1364+05.00	STA. 1362+16.00	STA. 1361+00.00	STA. 1360+62.00	STA. 366+00.00	STA. 365+60.00	STA. 364+00.00	STA. 364+00.00	STA. 364+00.00	STA. 1364+05.00
181.00' LT	STA. 1359+91.00	193.60' LT	19.00' RT	13.25' LT	13.25' RT	19.00' LT	19.00' LT	19.00' LT	19.00' LT	19.00' LT	78.60' LT	19.00' RT	19.00' RT	39.20' RT	24.00' RT	13.25' LT	13.25' RT
I.E. 895.00	189.00' LT	I.E. 897.50	T.C. 911.12	T.C. 911.84	T.C. 911.84	T.C. 911.13	T.C. 910.07	T.C. 909.08	T.C. 907.31	T.C. 906.14	I.E. 898.00	I.E. 907.04 S	T.C. 910.06	T.C. 907.97	T.C. 909.05	T.C. 909.88	T.C. 909.79
	I.E. 895.13 N		I.E. 907.87 W	I.E. 907.71 E	I.E. 907.62 E	I.E. 907.46 E	I.E. 906.26 N	I.E. 904.99 N	I.E. 904.06 E	I.E. 901.93 N			I.E. 906.81 N	I.E. 904.72 W	I.E. 904.64 E	I.E. 904.45 E	I.E. 904.38 E
	I.E. 898.00 S			I.E. 907.71 W	I.E. 907.62 W	I.E. 907.21 S	I.E. 906.04 E	I.E. 904.21 E	I.E. 902.76 N	I.E. 898.35 SW			I.E. 906.44 S		I.E. 904.64 W	I.E. 904.45 W	I.E. 904.38 W
							I.E. 905.79 S	I.E. 903.71 S	I.E. 902.51 S				I.E. 906.44 W				



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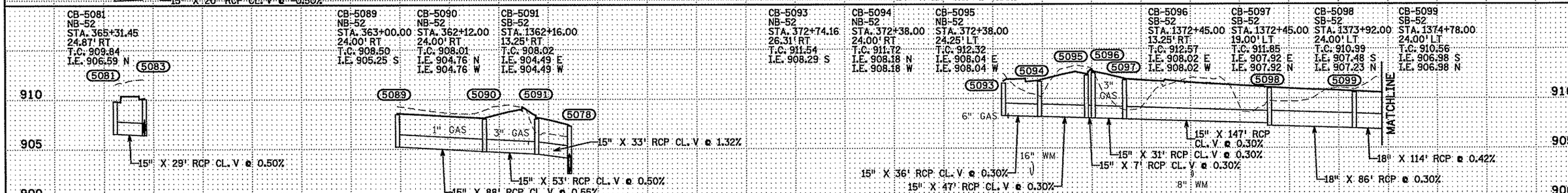
NB-52	NB-52	NB-52	SB-52	NB-52	NB-52	NB-52	SB-52	SB-52	SB-52	SB-52
STA. 365+31.45	STA. 363+00.00	STA. 362+12.00	STA. 1362+16.00	STA. 372+74.16	STA. 372+38.00	STA. 372+38.00	STA. 1372+45.00	STA. 1372+45.00	STA. 1373+92.00	STA. 1374+78.00
24.87' RT	24.00' RT	24.00' RT	13.25' RT	26.31' RT	24.00' RT	24.25' LT	13.25' RT	19.00' LT	24.00' LT	24.00' LT
T.C. 909.84	T.C. 908.50	T.C. 908.01	T.C. 908.02	T.C. 911.54	T.C. 911.72	T.C. 912.32	T.C. 912.57	T.C. 911.85	T.C. 910.99	T.C. 910.56
I.E. 906.59 N	I.E. 905.25 S	I.E. 904.76 N	I.E. 904.49 E	I.E. 908.29 S	I.E. 908.18 N	I.E. 908.04 E	I.E. 908.02 E	I.E. 907.92 E	I.E. 907.48 S	I.E. 906.98 S
		I.E. 904.76 W	I.E. 904.49 W		I.E. 908.18 W	I.E. 908.04 W	I.E. 908.02 W	I.E. 907.92 N	I.E. 907.23 N	I.E. 906.98 N



NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\a-f\AnokaCty\l3867000\hwy-brdg\hwy\pln-sht\c0265205_sec.dgn 7/29/2009

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: Matthew A Wassman

PRINTED NAME: MATTHEW A. WASSMAN

DATE: 7/29/2009 LIC. NO. 26883

DRAWN BY SFH DATE 7/29/2009

DESIGN BY CEH DATE 7/29/2009

CHECKED BY MAW DATE 7/29/2009

S.P. 02-652-05
S.P. 02-716-09
S.P. 106-020-28
S.P. 197-124-001

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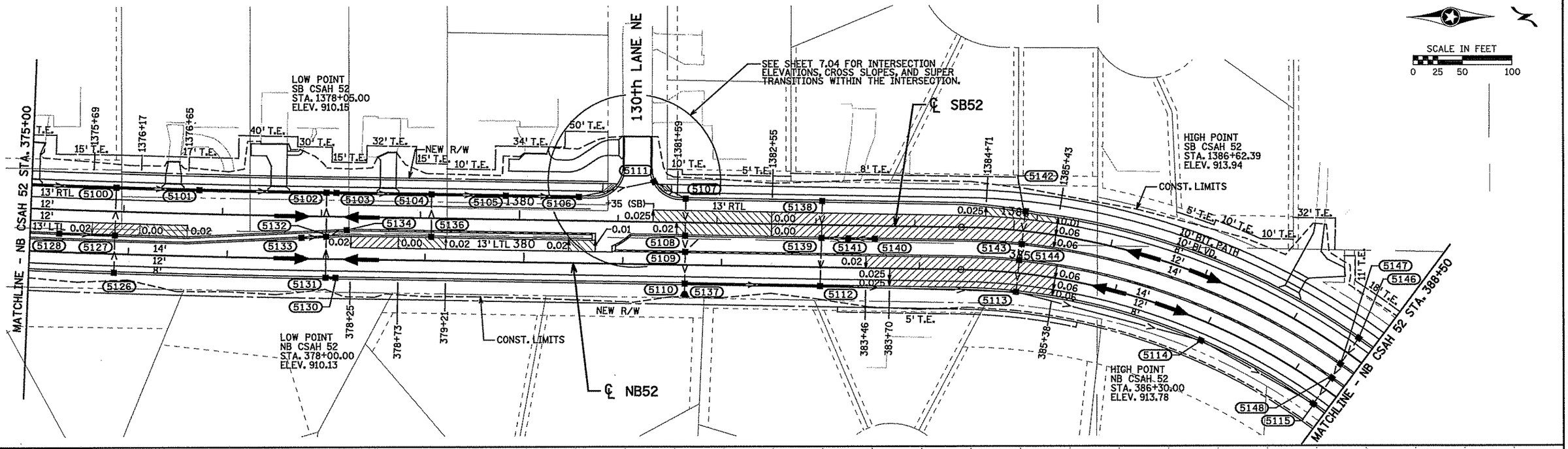
SUPERELEVATION AND DRAINAGE PLAN PROFILE
CSAH 52/116 RECONSTRUCTION
NB CSAH 52 STA. 360+00 TO 375+00

SHEET 10.03 OF 294



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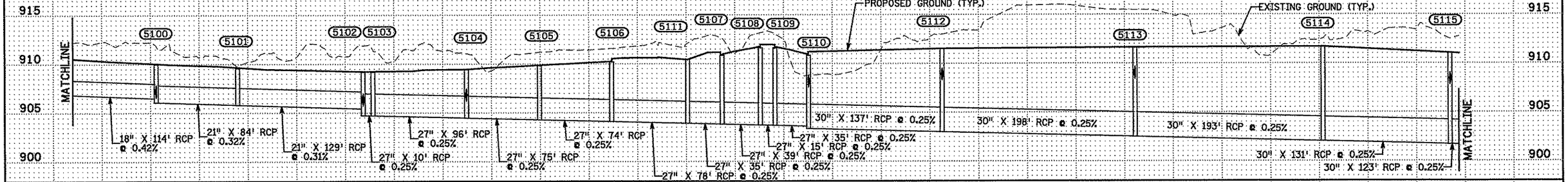
SB-52	SB-52	SB-52	SB-52	SB-52	SB-52	SB-52	SB-52	SB-52	SB-52	NB-52	NB-52	NB-52	NB-52	NB-52	NB-52
STA. 1375+92.00	STA. 1376+76.00	STA. 1378+05.00	STA. 1378+15.00	STA. 1379+11.00	STA. 1379+86.00	STA. 1380+60.00	STA. 1381+35.70	STA. 1381+68.00	STA. 1381+68.00	STA. 381+63.00	STA. 381+63.00	STA. 383+00.00	STA. 385+00.00	STA. 387+00.00	STA. 388+35.00
24.00' LT	24.00' LT	24.00' LT	24.00' LT	24.00' LT	24.00' LT	24.00' LT	40.70' LT	24.00' LT	13.25' RT	13.25' LT	19.00' RT	19.00' RT	19.00' RT	19.00' RT	19.00' RT
T.C. 909.99	T.C. 909.57	T.C. 909.18	T.C. 909.18	T.C. 909.46	T.C. 909.83	T.C. 910.20	T.C. 910.44	T.C. 910.87	T.C. 911.59	T.C. 911.57	T.C. 910.85	T.C. 911.53	T.C. 911.66	T.C. 911.70	T.C. 911.05
I.E. 906.49 S	I.E. 905.82 S	I.E. 905.74 E	I.E. 904.72 S	I.E. 906.21 E	I.E. 904.29 S	I.E. 904.11 S	I.E. 903.91 S	I.E. 903.82 SW	I.E. 903.72 W	I.E. 903.69 W	I.E. 907.60 W	I.E. 908.28 W	I.E. 908.41 W	I.E. 902.03 S	I.E. 907.80 W
I.E. 906.59 E	I.E. 905.82 N	I.E. 905.43 S	I.E. 904.72 N	I.E. 904.48 S	I.E. 904.29 N	I.E. 904.11 N	I.E. 903.91 NE	I.E. 903.82 E	I.E. 903.72 E	I.E. 903.69 E	I.E. 903.60 E	I.E. 903.01 S	I.E. 902.51 S	I.E. 902.03 N	I.E. 901.70 S
I.E. 906.09 N		I.E. 904.74 N		I.E. 904.48 N							I.E. 903.35 N	I.E. 903.01 N	I.E. 902.51 N		I.E. 901.70 N



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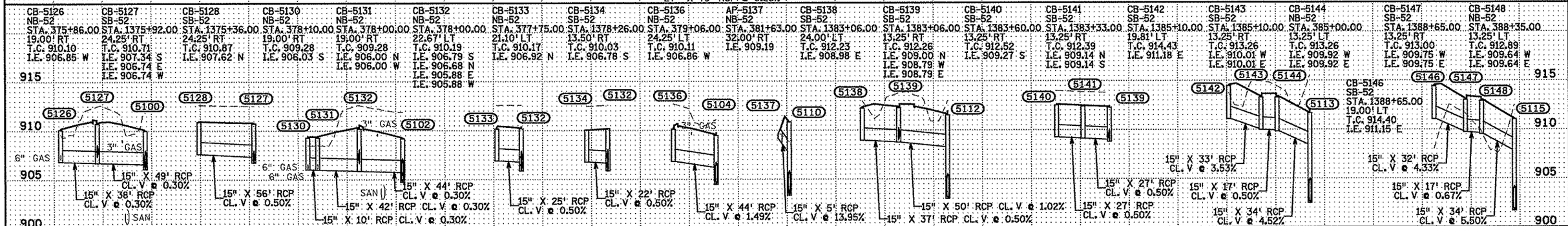
NB-52	SB-52	SB-52	NB-52	NB-52	NB-52	SB-52	SB-52	NB-52	NB-52	SB-52	SB-52	SB-52	SB-52	NB-52	SB-52	NB-52	SB-52	NB-52
STA. 375+86.00	STA. 1375+92.00	STA. 1375+36.00	STA. 378+10.00	STA. 378+00.00	STA. 378+00.00	STA. 377+75.00	STA. 1378+26.00	STA. 379+06.00	STA. 381+63.00	STA. 1383+06.00	STA. 1383+06.00	STA. 1383+60.00	STA. 1383+33.00	STA. 1385+10.00	STA. 1385+10.00	STA. 385+00.00	STA. 1388+65.00	STA. 388+35.00
19.00' RT	24.25' RT	24.25' RT	19.00' RT	19.00' RT	22.67' LT	21.10' LT	13.50' RT	24.25' LT	32.00' RT	24.00' LT	13.25' RT	13.25' RT	13.25' RT	19.81' LT	13.25' RT	13.25' LT	13.25' RT	13.25' LT
T.C. 910.10	T.C. 910.71	T.C. 910.87	T.C. 909.28	T.C. 909.28	T.C. 910.19	T.C. 910.17	T.C. 910.03	T.C. 910.11	I.E. 909.19	T.C. 912.23	T.C. 912.26	T.C. 912.52	T.C. 912.39	T.C. 914.43	T.C. 913.26	T.C. 913.26	T.C. 913.00	T.C. 912.89
I.E. 906.85 W	I.E. 907.34 S	I.E. 907.62 N	I.E. 906.03 S	I.E. 906.00 N	I.E. 906.79 S	I.E. 906.92 N	I.E. 906.78 S	I.E. 906.86 W		I.E. 908.98 E	I.E. 909.00 N	I.E. 909.27 S	I.E. 909.14 N	I.E. 911.18 E	I.E. 910.01 W	I.E. 909.92 W	I.E. 909.75 W	I.E. 909.64 W
	I.E. 906.74 E			I.E. 906.00 W	I.E. 906.68 N						I.E. 908.79 W		I.E. 909.14 S		I.E. 910.01 E	I.E. 909.92 E	I.E. 909.75 E	I.E. 909.64 E
	I.E. 906.74 W				I.E. 905.88 E						I.E. 908.79 E							
					I.E. 905.88 W													



CB-5146
SB-52
STA. 1388+65.00
19.00' LT
T.C. 914.40
I.E. 911.15 E

NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\a-f\AnokaCty\13867000\hwy-brdg\hwy\pln-sht\c0265205_sed.dgn 7/29/2009

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: Matthew A. Wassman

PRINTED NAME: MATTHEW A. WASSMAN

DATE: 7/29/2009 LIC. NO. 26883

DRAWN BY SFH DATE 7/29/2009

DESIGN BY CEH DATE 7/29/2009

CHECKED BY MAW DATE 7/29/2009

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S.P. 02-716-09
S.P. 106-020-28
S.P. 197-124-001

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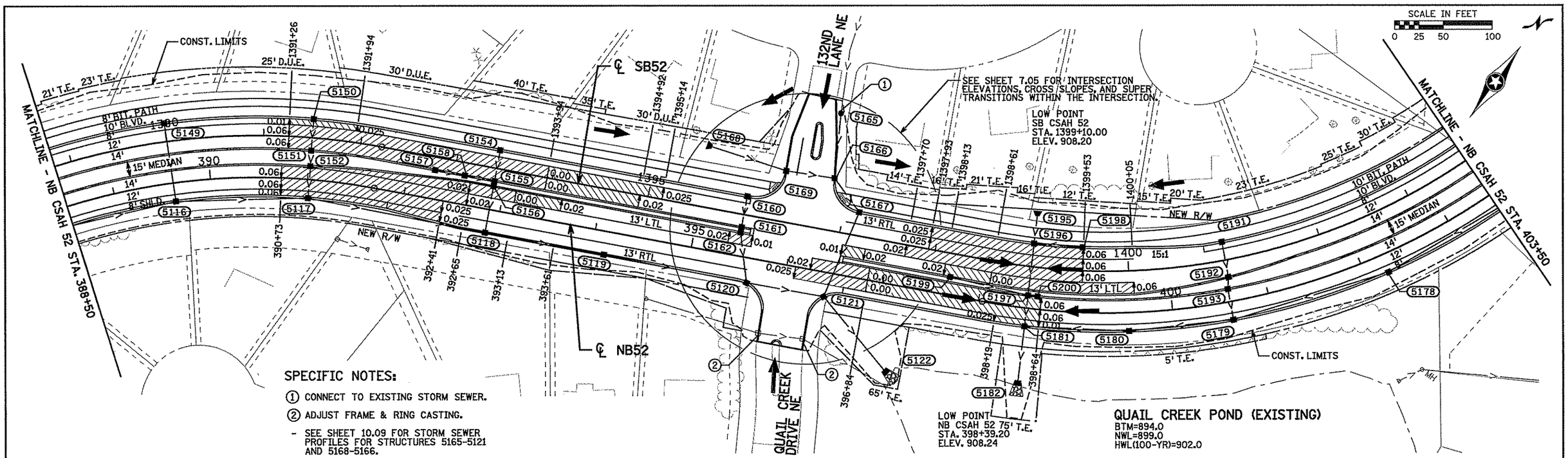
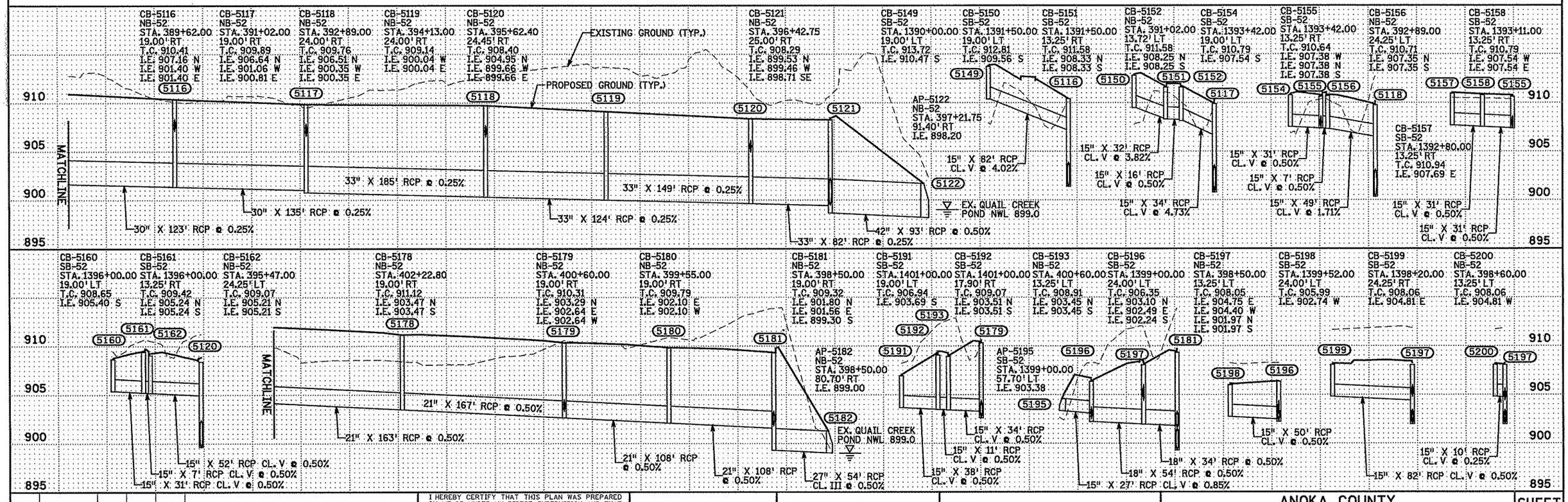
ANOKA COUNTY
SUPERELEVATION AND DRAINAGE PLAN PROFILE
CSAH 52/116 RECONSTRUCTION
NB CSAH 52 STA. 375+00 TO 388+50

SHEET 10.04 OF 294





NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\o-f\AnokaCty\13867000\hwy-brdg\hwy\pln-sht\c0265205.see.dgn 7/29/2009

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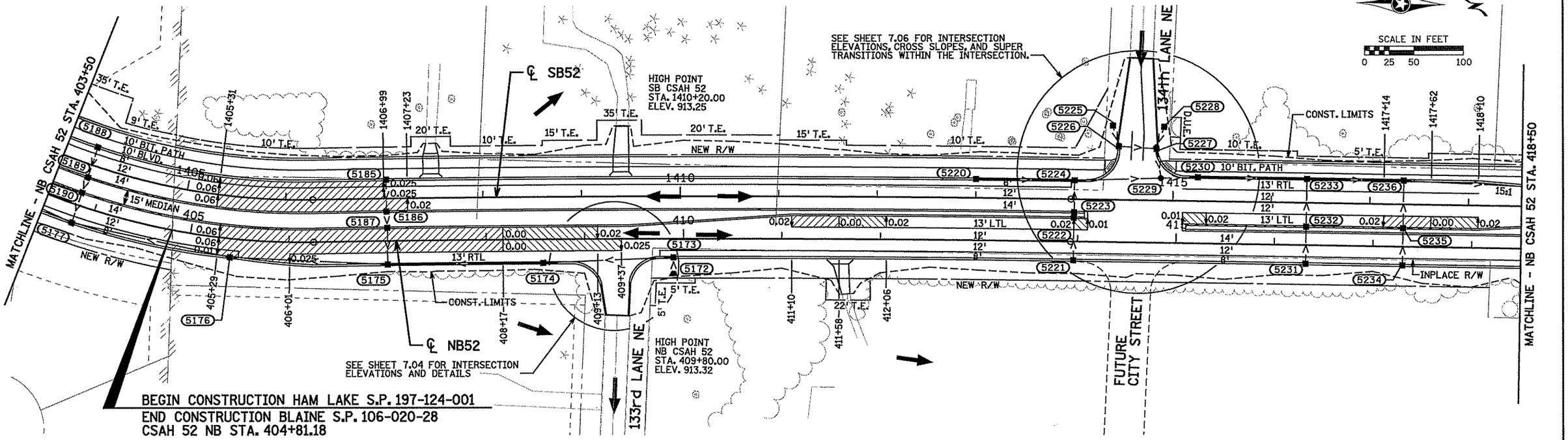
SUPERELEVATION AND DRAINAGE PLAN PROFILE
CSAH 52/116 RECONSTRUCTION
NB CSAH 52 STA. 388+50 TO 403+50

SHEET 10.05 OF 294



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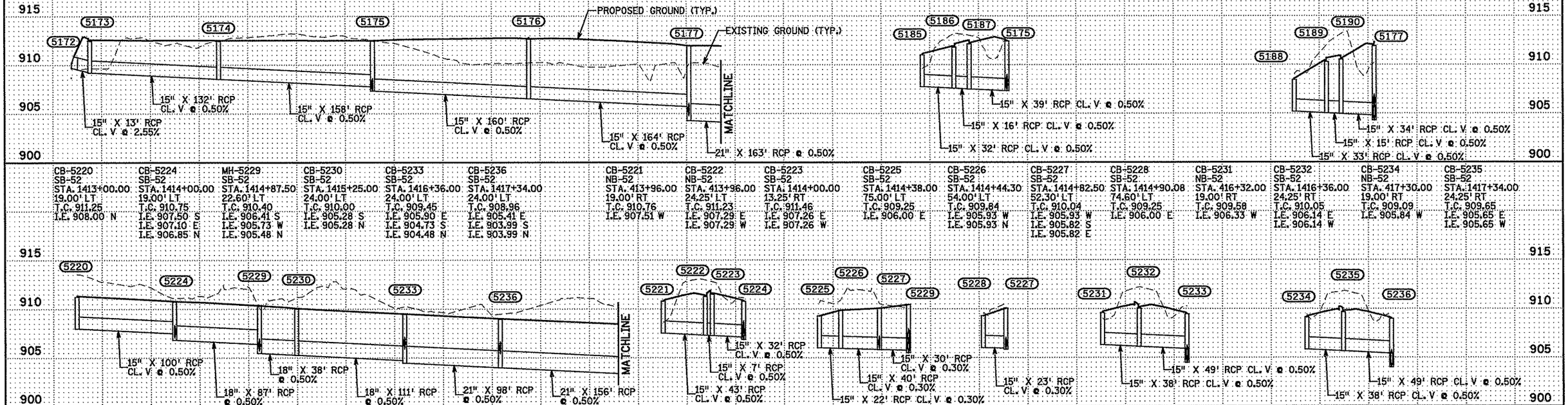
NB-52	NB-52	NB-52	NB-52	NB-52	NB-52	SB-52	SB-52	NB-52	SB-52	SB-52	NB-52
STA. 409+90.00	STA. 409+90.00	STA. 408+58.00	STA. 407+00.00	STA. 405+42.00	STA. 403+82.00	STA. 1407+02.00	STA. 1407+02.00	STA. 407+00.00	STA. 1404+00.00	STA. 1404+00.00	STA. 403+82.00
38.10' RT	19.00' RT	24.00' RT	24.00' RT	19.00' RT	19.00' RT	19.00' LT	13.25' RT	13.25' LT	19.00' LT	13.25' RT	13.25' LT
I.E. 909.70	T.C. 912.46	T.C. 912.44	T.C. 912.44	T.C. 912.66	T.C. 911.92	T.C. 911.01	T.C. 911.78	T.C. 912.13	T.C. 908.44	T.C. 910.29	T.C. 910.52
	I.E. 909.21 E	I.E. 908.55 N	I.E. 907.76 N	I.E. 906.53 N	I.E. 905.71 N	I.E. 907.76 E	I.E. 907.60 W	I.E. 907.51 W	I.E. 905.19 E	I.E. 905.03 W	I.E. 904.95 W
	I.E. 909.21 S	I.E. 908.55 S	I.E. 907.33 W	I.E. 906.53 S	I.E. 904.79 W		I.E. 907.60 E	I.E. 907.51 E		I.E. 905.03 E	I.E. 904.95 E
			I.E. 907.33 S		I.E. 904.29 S						



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SB-52	SB-52	SB-52	SB-52	SB-52	SB-52	NB-52	NB-52	SB-52	SB-52	SB-52	SB-52	SB-52	NB-52	SB-52	NB-52	SB-52
STA. 1413+00.00	STA. 1414+00.00	STA. 1414+87.50	STA. 1415+25.00	STA. 1416+36.00	STA. 1417+34.00	STA. 413+96.00	STA. 413+96.00	STA. 1414+00.00	STA. 1414+38.00	STA. 1414+44.30	STA. 1414+82.50	STA. 1414+90.08	STA. 416+32.00	STA. 1416+36.00	STA. 417+30.00	STA. 1417+34.00
19.00' LT	19.00' LT	22.60' LT	24.00' LT	24.00' LT	24.00' LT	19.00' RT	24.25' LT	13.25' RT	75.00' LT	54.00' LT	52.30' LT	74.60' LT	19.00' RT	24.25' RT	19.00' RT	24.25' RT
T.C. 911.25	T.C. 910.75	T.C. 910.40	T.C. 910.00	T.C. 909.45	T.C. 908.96	T.C. 910.76	T.C. 911.23	T.C. 911.46	T.C. 909.25	T.C. 909.84	T.C. 910.04	T.C. 909.25	T.C. 909.58	T.C. 910.05	T.C. 909.09	T.C. 909.65
I.E. 908.00 N	I.E. 907.50 S	I.E. 906.41 S	I.E. 905.28 S	I.E. 905.90 E	I.E. 905.41 E	I.E. 907.51 W	I.E. 907.29 E	I.E. 907.26 E	I.E. 906.00 E	I.E. 905.93 W	I.E. 905.93 W	I.E. 906.00 E	I.E. 906.33 W	I.E. 906.14 E	I.E. 905.84 W	I.E. 905.65 E
	I.E. 907.10 E	I.E. 905.73 W	I.E. 905.28 N	I.E. 904.73 S	I.E. 903.99 S		I.E. 907.29 W	I.E. 907.26 W		I.E. 905.93 N	I.E. 905.82 S			I.E. 906.14 W		I.E. 905.65 W
	I.E. 906.85 N	I.E. 905.48 N		I.E. 904.48 N	I.E. 903.99 N						I.E. 905.82 E					

NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\a-f\AnokaCty\13867000\hwy-brdg\hwy\pln-sht\c0265205_sef.dgn 7/29/2009

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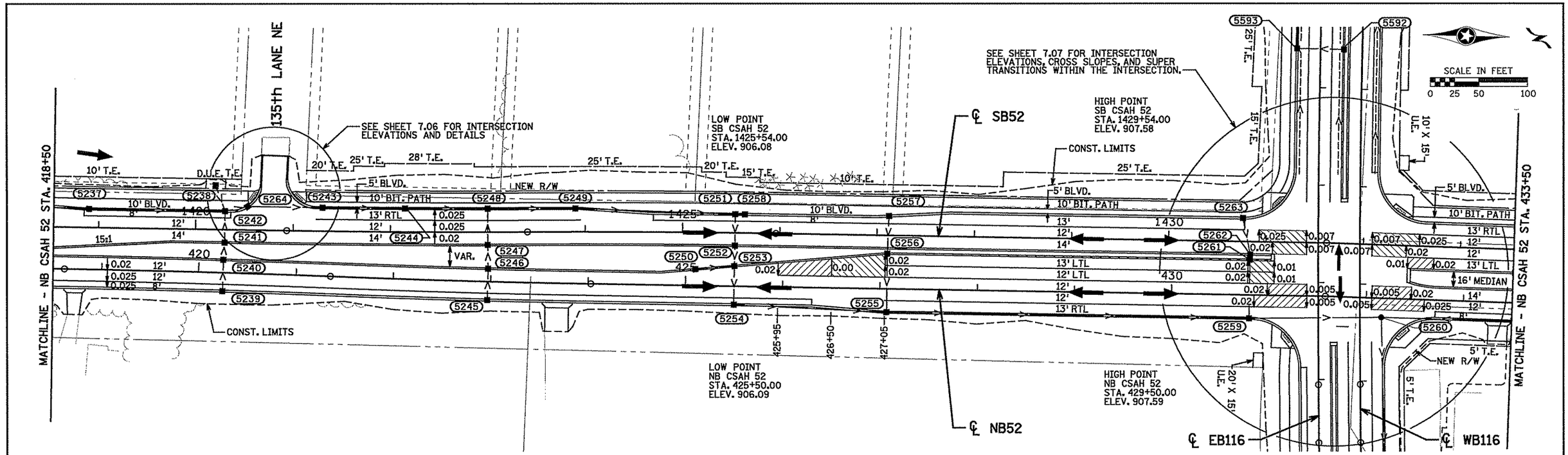
SUPERELEVATION AND DRAINAGE PLAN PROFILE
CSAH 52/116 RECONSTRUCTION
NB CSAH 52 STA. 403+50 TO 418+50

SHEET 10.06 OF 294



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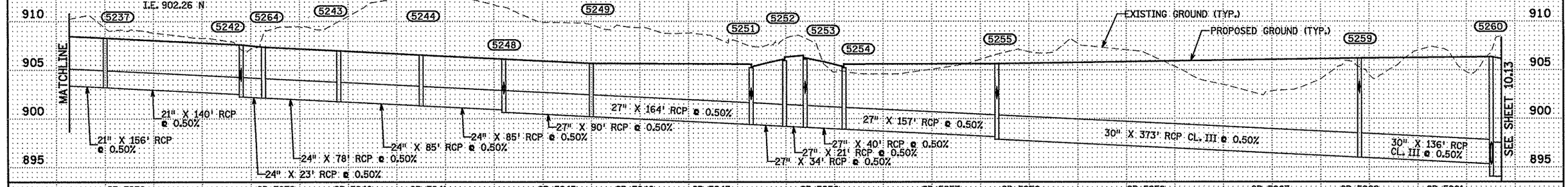
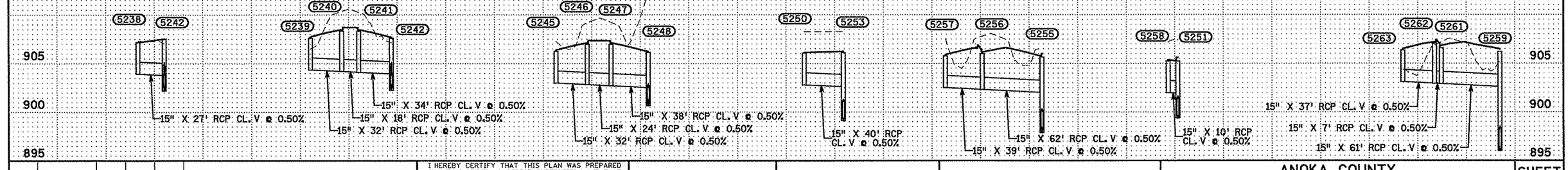
STA. 1418+90.00	STA. 1420+30.00	STA. 1421+53.10	STA. 1421+30.00	STA. 1422+15.00	STA. 1423+00.00	STA. 1423+90.00	STA. 1425+54.00	STA. 1425+54.00	STA. 425+50.00	STA. 425+50.00	STA. 427+07.00	STA. 430+80.00	STA. 63+36.00
19.00' LT	19.00' LT	24.20' LT	24.00' LT	24.00' LT	24.00' LT	24.00' LT	19.00' LT	13.25' RT	20.75' LT	19.00' RT	24.00' RT	24.00' RT	65.00' LT
T.C. 908.30	T.C. 907.60	T.C. 907.36	T.C. 906.98	T.C. 906.55	T.C. 906.13	T.C. 905.68	T.C. 905.23	T.C. 905.95	T.C. 906.11	T.C. 905.24	T.C. 905.65	T.C. 906.21	T.C. 906.35
I.E. 903.21 S	I.E. 903.95 E	I.E. 902.14 S	I.E. 901.76 S	I.E. 901.33 S	I.E. 902.53 E	I.E. 900.21 S	I.E. 901.93 N	I.E. 899.22 W	I.E. 902.61 S	I.E. 898.91 W	I.E. 902.03 W	I.E. 902.62 W	I.E. 895.31 N
I.E. 903.21 N	I.E. 903.87 W	I.E. 902.14 N	I.E. 901.76 N	I.E. 901.33 N	I.E. 900.91 S	I.E. 900.21 N	I.E. 899.39 S	I.E. 899.22 E	I.E. 899.11 W	I.E. 898.91 N	I.E. 898.12 S	I.E. 896.01 S	I.E. 895.33 S
	I.E. 902.51 S				I.E. 900.66 N		I.E. 899.39 E		I.E. 899.11 E		I.E. 897.87 N	I.E. 896.01 N	I.E. 894.06 E
	I.E. 902.26 N												



CB-5238 SB-52	CB-5239 NB-52	CB-5240 NB-52	CB-5241 SB-52	CB-5245 NB-52	CB-5246 NB-52	CB-5247 SB-52	CB-5250 NB-52	CB-5257 SB-52	CB-5256 NB-52	CB-5258 SB-52	CB-5263 SB-52	CB-5262 SB-52	CB-5261 NB-52
STA. 1420+20.00	STA. 420+25.00	STA. 420+25.00	STA. 1420+30.00	STA. 422+97.00	STA. 422+97.00	STA. 1423+00.00	STA. 425+10.00	STA. 1427+12.00	STA. 427+07.00	STA. 1425+64.00	STA. 1430+76.00	STA. 1430+84.00	STA. 430+80.00
45.42' LT	19.00' RT	13.25' LT	13.25' RT	19.00' RT	13.25' LT	13.25' RT	16.75' LT	19.80' LT	36.25' LT	19.00' LT	24.00' LT	13.25' RT	36.25' LT
T.C. 907.25	T.C. 907.61	T.C. 908.33	T.C. 908.31	T.C. 906.25	T.C. 906.97	T.C. 906.96	T.C. 906.07	T.C. 905.73	T.C. 906.01	T.C. 905.23	T.C. 906.25	T.C. 907.04	T.C. 906.58
I.E. 904.00 E	I.E. 904.36 W	I.E. 904.20 E	I.E. 904.12 E	I.E. 903.00 W	I.E. 902.84 E	I.E. 902.72 E	I.E. 902.82 N	I.E. 902.53 E	I.E. 902.33 W	I.E. 901.98 S	I.E. 903.15 E	I.E. 902.96 W	I.E. 902.92 W
		I.E. 904.20 W	I.E. 904.12 W		I.E. 902.84 W	I.E. 902.72 W			I.E. 902.33 E			I.E. 902.96 E	I.E. 902.92 E



NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\a-f\AnokaCty\13867000\hwy-brdg\hwy\pln-shf\c0265205_seg.dgn 7/29/2009

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: Matthew A. Wassman

PRINTED NAME: MATTHEW A. WASSMAN

DATE: 7/29/2009 LIC. NO. 26883

DRAWN BY SFH DATE 7/29/2009

DESIGN BY CEH DATE 7/29/2009

CHECKED BY MAW DATE 7/29/2009

S.P. 02-652-05
S.P. 02-716-09
S.P. 106-020-28
S.P. 197-124-001

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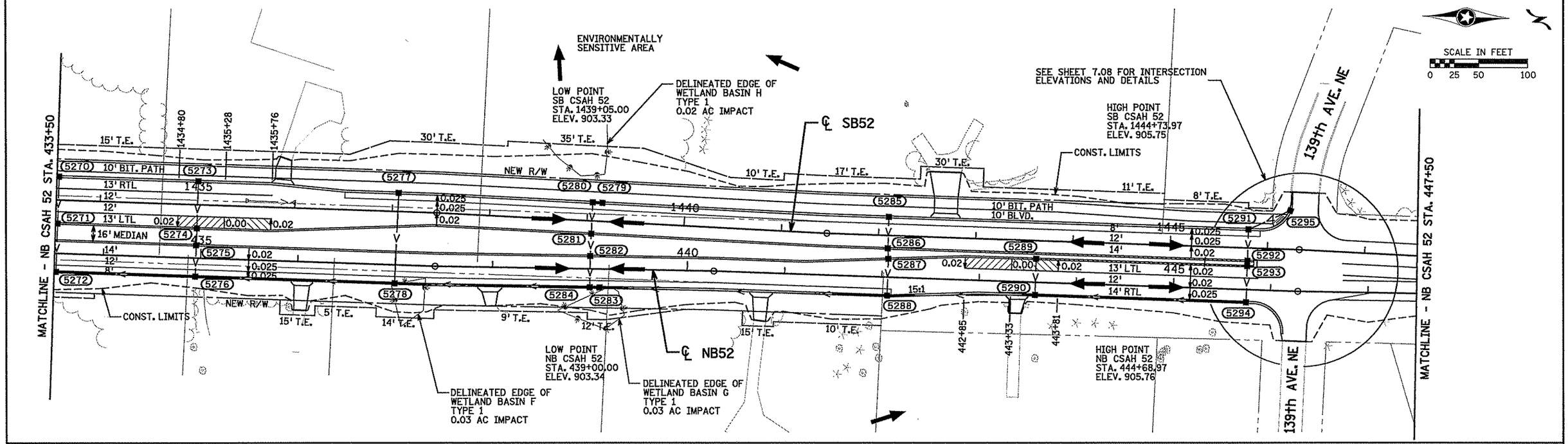
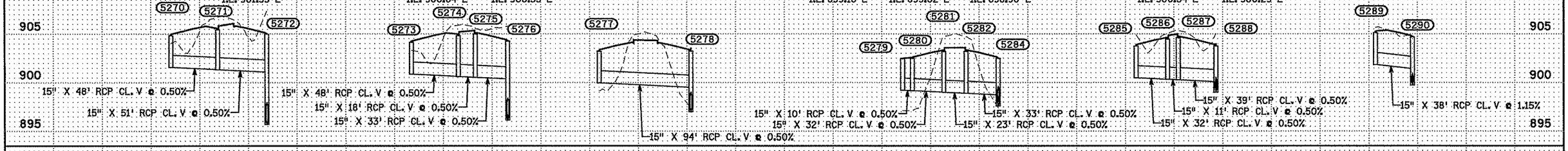
ANOKA COUNTY
SUPERELEVATION AND DRAINAGE PLAN PROFILE
CSAH 52/116 RECONSTRUCTION
NB CSAH 52 STA. 418+50 TO 433+50

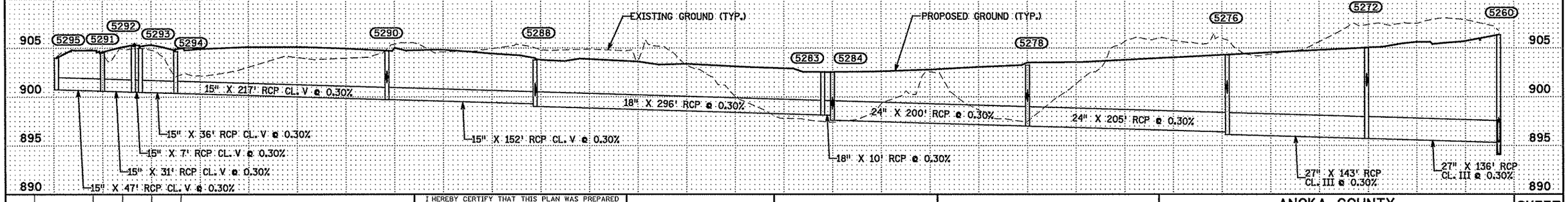
SHEET 10.07 OF 294



CB-5270	CB-5271	CB-5273	CB-5274	CB-5275	CB-5277	CB-5279	CB-5280	CB-5281	CB-5282	CB-5285	CB-5286	CB-5287	CB-5289
SB-52	SB-52	SB-52	SB-52	NB-52	SB-52	SB-52	SB-52	SB-52	NB-52	SB-52	SB-52	NB-52	NB-52
STA. 1433+57.00	STA. 1433+57.00	STA. 1435+00.00	STA. 1435+00.00	STA. 434+95.00	STA. 1437+06.00	STA. 1439+15.00	STA. 1439+05.00	STA. 1439+05.00	STA. 439+00.00	STA. 1442+10.00	STA. 1442+10.00	STA. 442+06.00	STA. 443+58.00
24.00' LT	24.25' RT	24.00' LT	24.25' RT	13.25' LT	19.00' LT	19.00' LT	19.00' LT	13.25' RT	13.25' LT	19.00' LT	13.25' RT	18.98' LT	24.25' LT
T.C. 904.84	T.C. 905.44	T.C. 904.13	T.C. 904.82	T.C. 904.98	T.C. 903.22	T.C. 902.48	T.C. 902.48	T.C. 903.19	T.C. 903.20	T.C. 903.75	T.C. 904.46	T.C. 904.60	T.C. 905.12
I.E. 901.59 E	I.E. 901.35 W	I.E. 900.88 E	I.E. 900.64 W	I.E. 900.55 W	I.E. 899.97 E	I.E. 899.23 S	I.E. 899.18 N	I.E. 899.02 W	I.E. 898.90 W	I.E. 900.50 E	I.E. 900.34 W	I.E. 900.29 W	I.E. 901.87 E
	I.E. 901.35 E		I.E. 900.64 E	I.E. 900.55 E			I.E. 899.18 E	I.E. 899.02 E	I.E. 898.90 E		I.E. 900.34 E	I.E. 900.29 E	



CB-5295	CB-5291	CB-5292	CB-5293	CB-5294	CB-5290	CB-5288	CB-5283	CB-5284	CB-5278	CB-5276	CB-5272
SB-52	SB-52	SB-52	NB-52	NB-52	NB-52	NB-52	NB-52	NB-52	NB-52	NB-52	NB-52
STA. 1446+22.40	STA. 1445+80.00	STA. 1445+80.00	STA. 445+75.15	STA. 445+75.15	STA. 443+58.00	STA. 442+06.00	STA. 439+10.00	STA. 439+00.00	STA. 437+00.00	STA. 434+95.00	STA. 433+52.00
39.80' LT	19.00' LT	13.25' RT	24.25' LT	13.00' RT	13.00' RT	19.00' RT	19.00' RT	19.00' RT	19.00' RT	19.00' RT	19.00' RT
T.C. 904.00	T.C. 904.49	T.C. 905.20	T.C. 904.98	T.C. 904.65	T.C. 904.68	T.C. 903.77	T.C. 902.49	T.C. 902.49	T.C. 903.24	T.C. 904.27	T.C. 904.98
I.E. 900.75 SE	I.E. 900.61 NW	I.E. 900.51 W	I.E. 900.49 W	I.E. 900.38 W	I.E. 901.43 W	I.E. 900.09 W	I.E. 898.14 N	I.E. 898.74 W	I.E. 899.50 W	I.E. 900.38 W	I.E. 901.10 W
	I.E. 900.61 E	I.E. 900.51 E	I.E. 900.49 E	I.E. 900.38 S	I.E. 899.73 N	I.E. 899.28 N	I.E. 898.14 S	I.E. 898.11 N	I.E. 897.01 N	I.E. 896.39 N	I.E. 895.71 N
					I.E. 899.73 S	I.E. 899.03 S		I.E. 897.61 S	I.E. 897.01 S	I.E. 896.14 S	I.E. 895.71 S



NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\o-f\AnokaCty\13867000\hwy-brdg\hwy\pln-sht\c0265205_seh.dgn 7/29/2009

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: Matthew A. Wassman

PRINTED NAME: MATTHEW A. WASSMAN

DATE: 7/29/2009 LIC. NO. 26883

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CHECKED BY MAW DATE 7/29/2009

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S.P. 02-716-09
S.P. 106-020-28
S.P. 197-124-001

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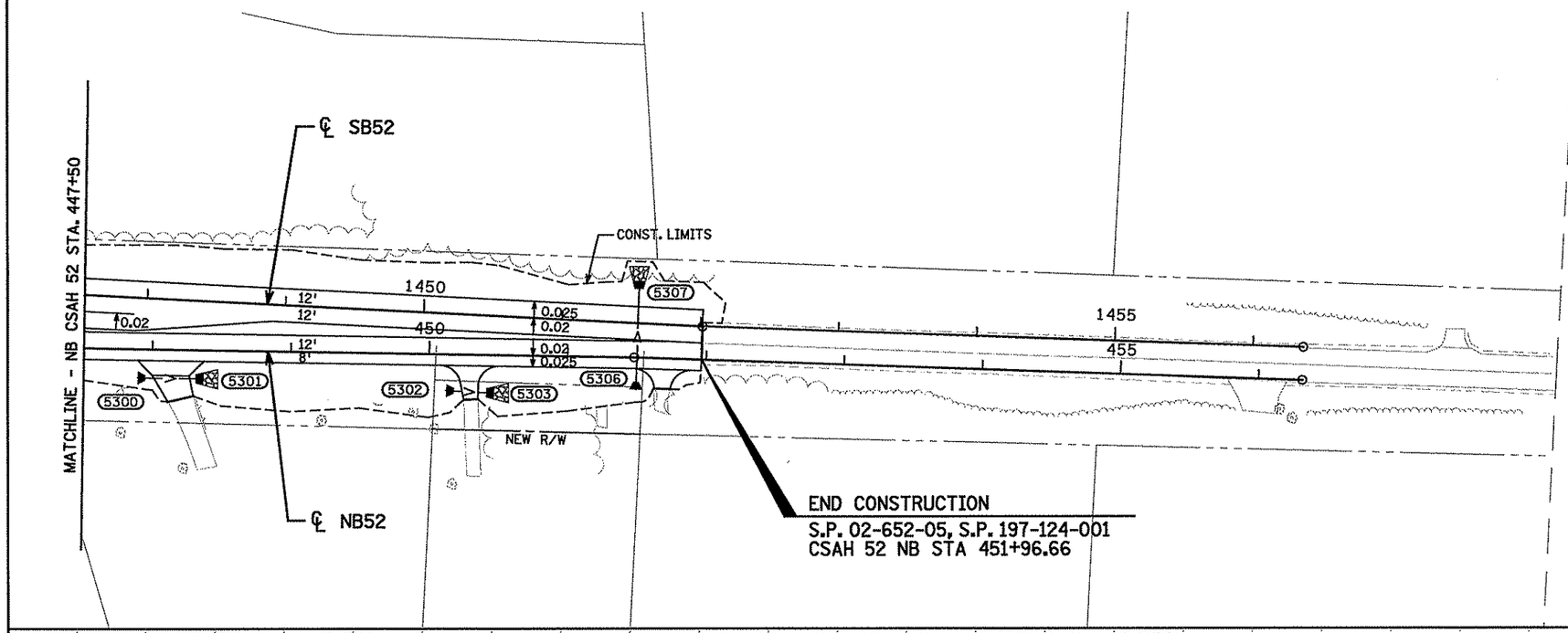
ANOKA COUNTY
SUPERELEVATION AND DRAINAGE PLAN PROFILE
CSAH 52/116 RECONSTRUCTION
NB CSAH 52 STA. 433+50 TO 447+50

SHEET 10.08 OF 294



SCALE IN FEET
0 25 50 100

AP-5300
NB-52
STA. 447+89.50
20.70' RT
I.E. 900.83

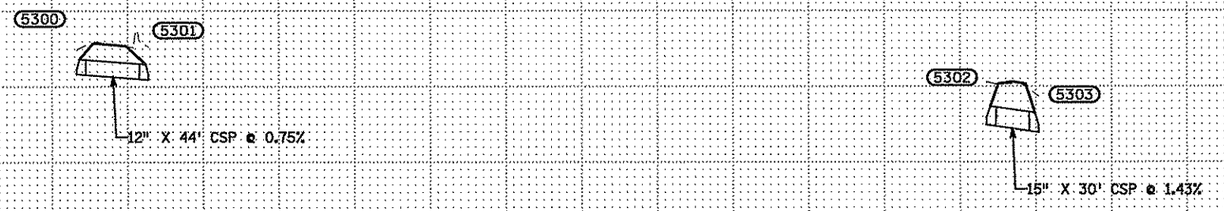
AP-5301
NB-52
STA. 448+36.95
20.60' RT
I.E. 900.47

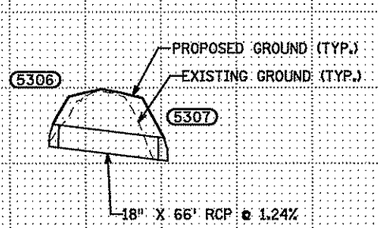
AP-5302
NB-52
STA. 450+12.65
26.50' RT
I.E. 897.45

AP-5303
NB-52
STA. 450+47.15
27.60' RT
I.E. 896.96

AP-5306
NB-52
STA. 451+50.00
23.00' RT
I.E. 896.13

AP-5307
SB-52
STA. 1451+54.30
30.50' LT
I.E. 895.16





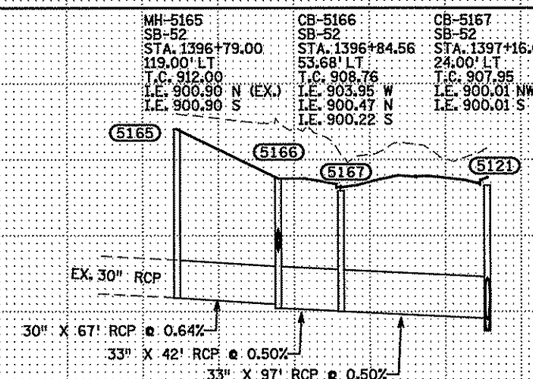
MH-5165
SB-52
STA. 1396+79.00
119.00' LT
T.C. 912.00
I.E. 900.90 N (EX.)
I.E. 900.90 S

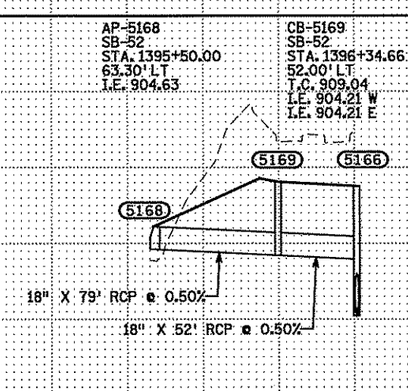
CB-5166
SB-52
STA. 1396+84.56
53.68' LT
T.C. 908.76
I.E. 903.95 W
I.E. 900.47 N
I.E. 900.22 S

CB-5167
SB-52
STA. 1397+16.00
24.00' LT
T.C. 907.95
I.E. 900.01 NW
I.E. 900.01 S

AP-5168
SB-52
STA. 1395+50.00
63.30' LT
I.E. 904.63

CB-5169
SB-52
STA. 1396+34.66
52.00' LT
T.C. 909.04
I.E. 904.21 W
I.E. 904.21 E





NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\a-f\AnokaCty\13867000\hwy-brdg\hwy\pln-shf\c0265205_sel.dgn 7/29/2009

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: Matthew A Wassman

PRINTED NAME: MATTHEW A. WASSMAN

DATE: 7/29/2009 LIC. NO. 26883

DRAWN BY SFH DATE 7/29/2009

DESIGN BY CEH DATE 7/29/2009

CHECKED BY MAW DATE 7/29/2009

S.P. 02-652-05
S.P. 02-716-09
S.P. 106-020-28
S.P. 197-124-001

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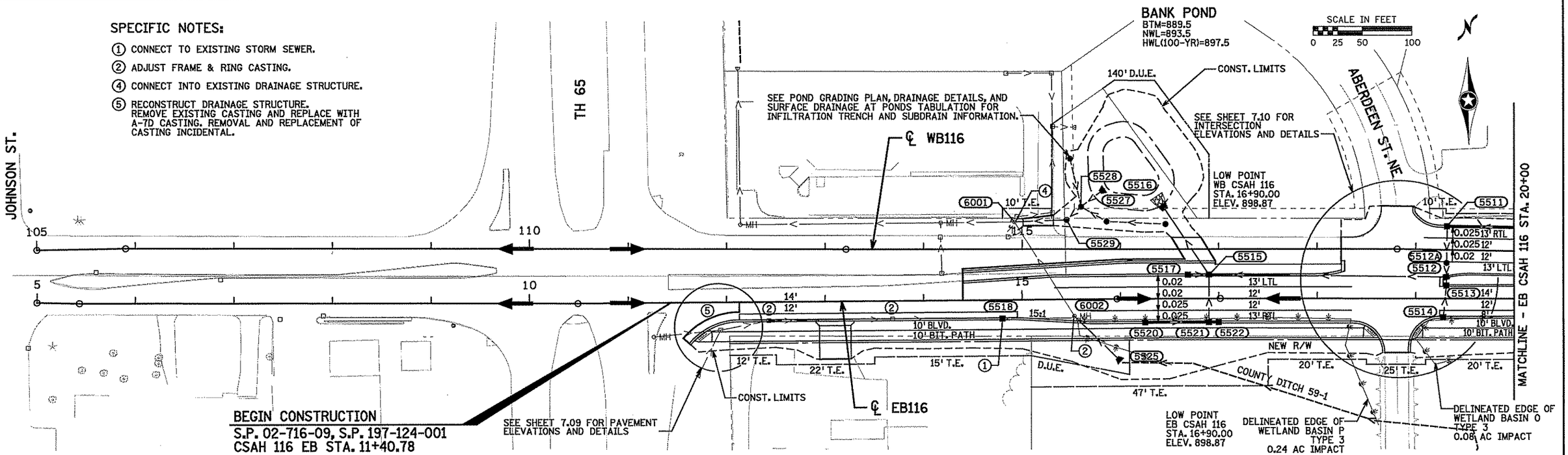
ANOKA COUNTY
SUPERELEVATION AND DRAINAGE PLAN PROFILE
CSAH 52/116 RECONSTRUCTION
NB CSAH 52 STA. 447+50 TO 452+00

SHEET 10.09 OF 294

SPECIFIC NOTES:

1. CONNECT TO EXISTING STORM SEWER.
2. ADJUST FRAME & RING CASTING.
4. CONNECT INTO EXISTING DRAINAGE STRUCTURE.
5. RECONSTRUCT DRAINAGE STRUCTURE. REMOVE EXISTING CASTING AND REPLACE WITH A-7D CASTING. REMOVAL AND REPLACEMENT OF CASTING INCIDENTAL.



CB-5511
WB-116
STA. 119+31.50
24.00' LT
T.C. 898.85
I.E. 894.68 E
I.E. 894.68 S

MH-5512A
WB-116
STA. 119+31.50
13.25' RT
T.C. 899.80
I.E. 894.49 N
I.E. 894.49 S

CB-5512
WB-116
STA. 119+31.50
27.38' RT
T.C. 899.38
I.E. 895.50 S
I.E. 894.42 N
I.E. 894.42 W

CB-5515
EB-116
STA. 16+90.00
24.25' LT
T.C. 898.50
I.E. 895.16 W
I.E. 894.18 S
I.E. 893.67 E
I.E. 893.42 NW

AP-5516
EB-116
STA. 16+42.85
95.10' LT
I.E. 893.00

CB-5514
EB-116
STA. 19+28.00
19.00' RT
T.C. 898.96
I.E. 895.71 N

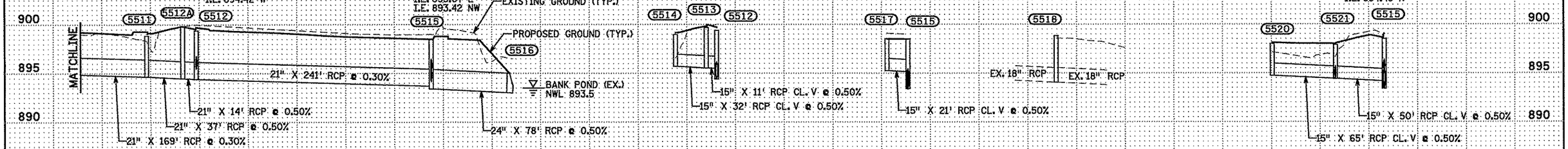
CB-5513
EB-116
STA. 19+31.00
13.25' LT
T.C. 899.69
I.E. 895.55 S
I.E. 895.55 N

CB-5517
WB-116
STA. 116+68.60
26.00' RT
T.C. 898.52
I.E. 895.27 E

CB-5518
EB-116
STA. 14+80.00
19.00' RT
T.C. 898.82
I.E. 894.00 W (EX.)
I.E. 894.00 E (EX.)

CB-5520
EB-116
STA. 16+25.00
24.00' RT
T.C. 898.00
I.E. 894.75 E

CB-5521
EB-116
STA. 16+90.00
24.00' RT
T.C. 897.90
I.E. 894.43 W
I.E. 894.43 E
I.E. 894.43 N



CB-5522
EB-116
STA. 17+00.00
24.00' RT
T.C. 897.90
I.E. 894.65 W

AP-5525
EB-116
STA. 16+00.00
63.50' RT
I.E. 893.40

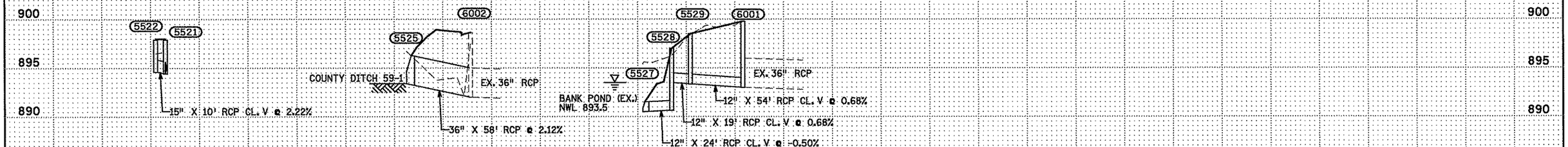
MH-6002 (EX.)
EB-116
STA. 15+53.00
17.12' RT
T.C. 898.64
I.E. 893.89 W (EX.)
I.E. 892.00 SE
I.E. 892.00 NW (EX.)

AP-5527
WB-116
STA. 115+83.44
61.21' LT
I.E. 890.50

STRUC.-5528
DESIGN SPECIAL 1
SEE DRAIANGE DETAILS
WB-116
STA. 115+60.00
43.13' LT
I.E. 890.65 NE
I.E. 893.50 SW

MH-5529
WB-116
STA. 115+45.16
29.73' LT
T.C. 898.50
I.E. 893.37 NE
I.E. 893.37 W

MH-6001 (EX.)
WB-116
STA. 114+92.05
27.77' LT
T.C. 899.78
I.E. 893.00 E
I.E. 893.00 W (EX.)



NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\a-f\AnokaCty\13867000\hwy-brdg\hwy\pln-sht\c0265205_sej.dgn 7/29/2009

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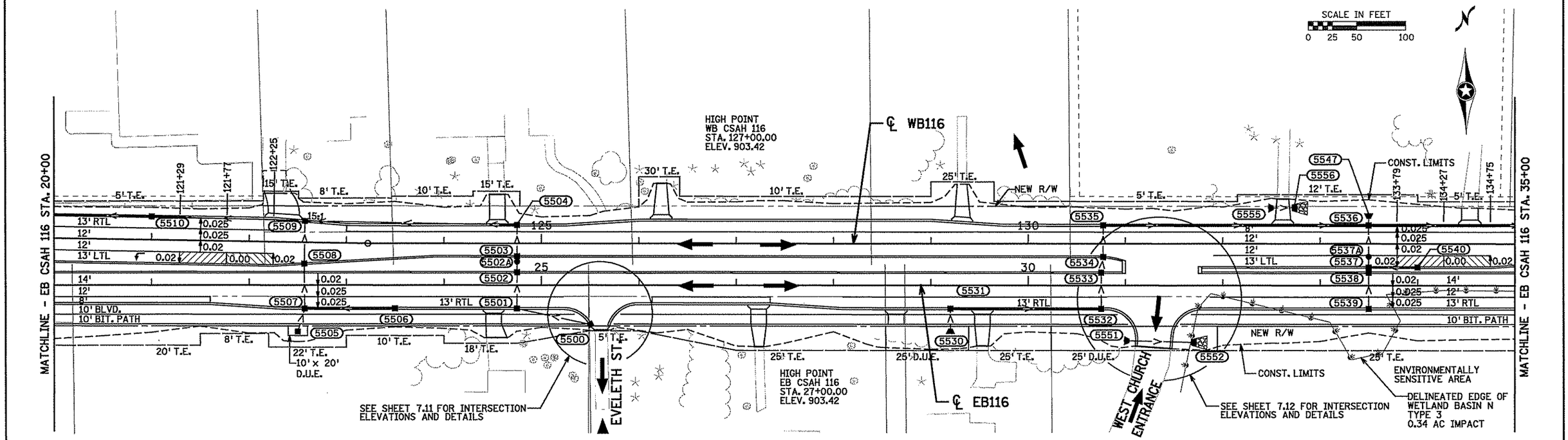
ANOKA COUNTY

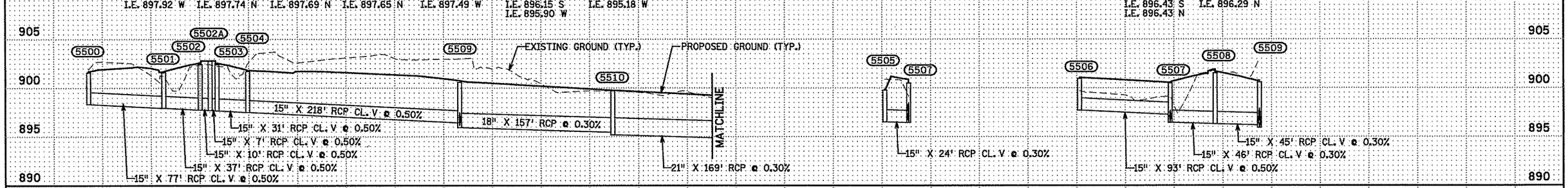
SUPERELEVATION AND DRAINAGE PLAN PROFILE
CSAH 52/116 RECONSTRUCTION
EB CSAH 116 STA. 5+00 TO 20+00

SHEET 10.10 OF 294



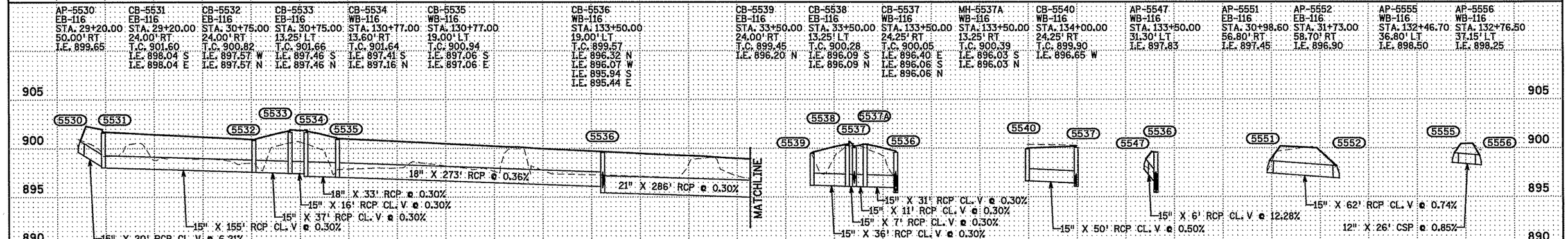
CB-5500	CB-5501	CB-5502	MH-5502A	CB-5503	CB-5504	CB-5509	CB-5510
EB-116	EB-116	EB-116	EB-116	WB-116	WB-116	WB-116	WB-116
STA. 25+50.38	STA. 24+75.00	STA. 24+75.00	STA. 24+75.00	STA. 124+75.00	STA. 124+75.00	STA. 122+57.00	STA. 121+00.00
40.44' RT	24.00' RT	13.25' LT	24.25' LT	13.25' RT	19.00' LT	21.87' LT	24.00' LT
T.C. 901.56	T.C. 901.57	T.C. 902.41	T.C. 902.80	T.C. 902.39	T.C. 901.68	T.C. 900.56	T.C. 899.70
I.E. 898.31 W	I.E. 897.92 E	I.E. 897.74 S	I.E. 897.69 S	I.E. 897.65 S	I.E. 897.49 S	I.E. 896.41 E	I.E. 895.43 E
	I.E. 897.92 W	I.E. 897.74 N	I.E. 897.69 N	I.E. 897.65 N	I.E. 897.49 W	I.E. 896.15 S	I.E. 895.18 W
						I.E. 895.90 W	

CB-5505	CB-5506	CB-5507	CB-5508
EB-116	EB-116	EB-116	WB-116
STA. 22+50.00	STA. 23+50.00	STA. 22+57.00	STA. 122+57.00
48.00' RT	24.00' RT	24.00' RT	21.90' RT
T.C. 899.75	T.C. 900.95	T.C. 900.48	T.C. 901.49
I.E. 896.50 N	I.E. 897.70 W	I.E. 897.23 E	I.E. 896.29 S
		I.E. 896.43 S	I.E. 896.29 N
		I.E. 896.43 N	



AP-5530	CB-5531	CB-5532	CB-5533	CB-5534	CB-5535	CB-5536
EB-116	EB-116	EB-116	EB-116	WB-116	WB-116	WB-116
STA. 29+20.00	STA. 29+20.00	STA. 30+75.00	STA. 30+75.00	STA. 130+77.00	STA. 130+77.00	STA. 133+50.00
50.00' RT	24.00' RT	24.00' RT	13.25' LT	13.60' RT	19.00' LT	19.00' LT
I.E. 899.65	T.C. 901.60	T.C. 900.82	T.C. 901.66	T.C. 901.64	T.C. 900.94	T.C. 899.57
	I.E. 898.04 S	I.E. 897.57 W	I.E. 897.46 S	I.E. 897.41 S	I.E. 897.06 S	I.E. 896.32 N
	I.E. 898.04 E	I.E. 897.57 N	I.E. 897.46 N	I.E. 897.16 N	I.E. 897.06 E	I.E. 896.07 W
						I.E. 895.94 S
						I.E. 895.44 E

CB-5539	CB-5538	CB-5537	MH-5537A	CB-5540	AP-5547	AP-5551	AP-5552	AP-5555	AP-5556
EB-116	EB-116	WB-116	WB-116	WB-116	WB-116	EB-116	EB-116	WB-116	WB-116
STA. 33+50.00	STA. 33+50.00	STA. 133+50.00	STA. 133+50.00	STA. 134+00.00	STA. 133+50.00	STA. 30+98.60	STA. 31+73.00	STA. 132+46.70	STA. 132+76.50
24.00' RT	13.25' LT	24.25' RT	13.25' RT	24.25' RT	31.30' LT	56.80' RT	58.70' RT	36.80' LT	37.15' LT
T.C. 899.45	T.C. 900.28	T.C. 900.05	T.C. 900.39	T.C. 899.90	I.E. 897.83	I.E. 897.45	I.E. 896.90	I.E. 898.50	I.E. 898.25
I.E. 896.20 N	I.E. 896.09 S	I.E. 896.40 E	I.E. 896.03 S	I.E. 896.65 W					
	I.E. 896.09 N	I.E. 896.06 S	I.E. 896.03 N						
		I.E. 896.06 N							



NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\c-f\AnokaCty\13867000\hwy-brdg\hwy\pln-sht\c0265205_sek.dgn 7/29/2009

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: Matthew A. Wassman

PRINTED NAME: MATTHEW A. WASSMAN

DATE: 7/29/2009 LIC. NO. 26883

DRAWN BY SFH DATE 7/29/2009

DESIGN BY CEH DATE 7/29/2009

CHECKED BY MAW DATE 7/29/2009

S.P. 02-652-05
S.P. 02-716-09
S.P. 106-020-28
S.P. 197-124-001

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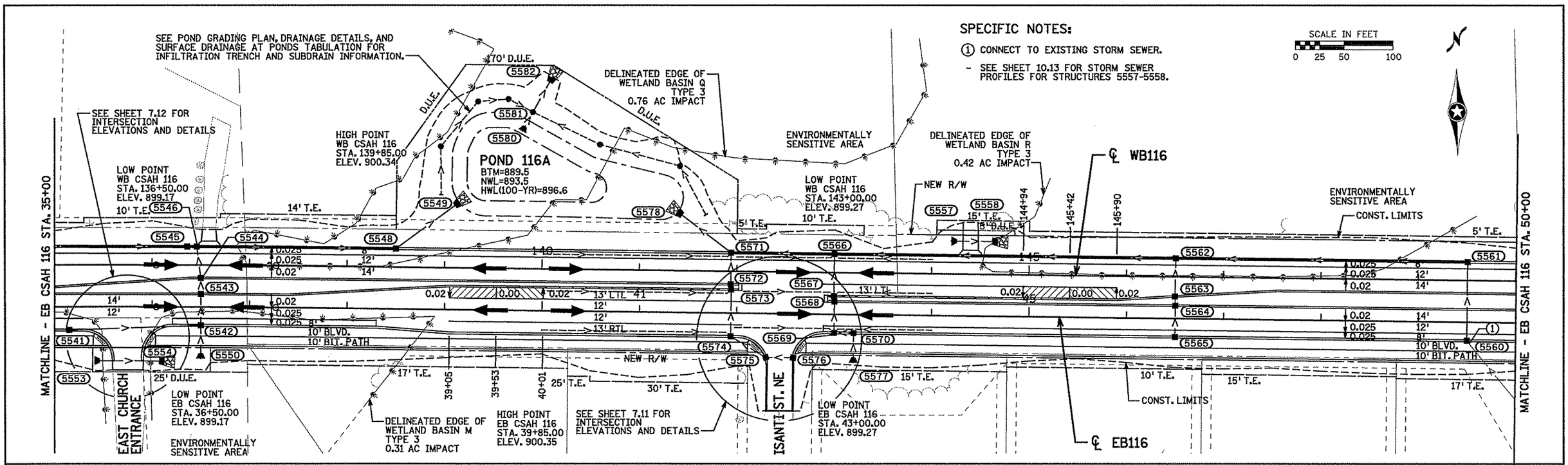
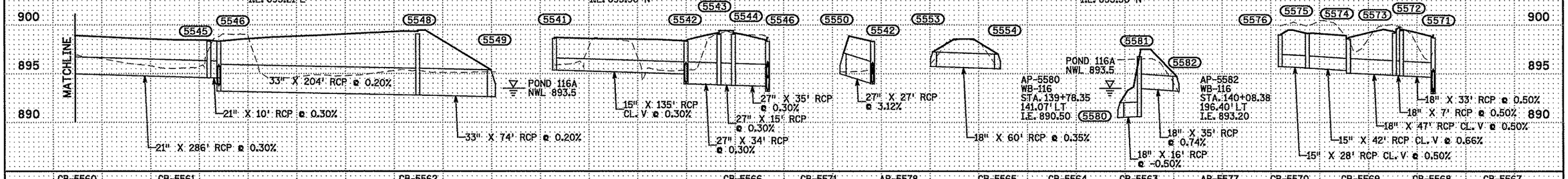
CSAH 52/116 RECONSTRUCTION
EB CSAH 116 STA. 20+00 TO 35+00

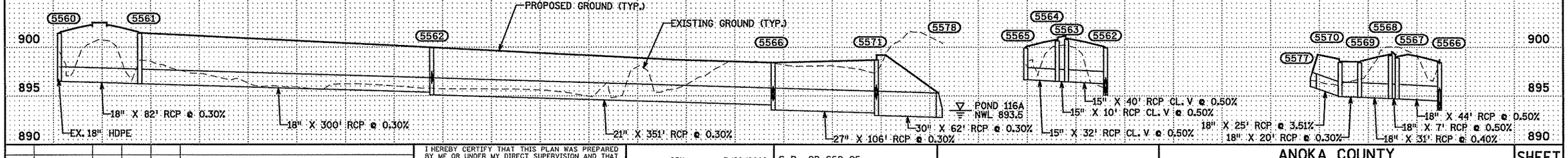
SHEET 10.11 OF 294



CB-5545	CB-5546	CB-5548	AP-5549	CB-5541	CB-5542	CB-5543	CB-5544	AP-5550	AP-5553	AP-5554	STRUC.-5581	CB-5576	CB-5575	CB-5574	CB-5573	CB-5572
WB-116	WB-116	WB-116	WB-116	EB-116	EB-116	EB-116	WB-116	EB-116	EB-116	EB-116	DESIGN SPECIAL 1	EB-116	EB-116	EB-116	EB-116	WB-116
STA. 136+36.00	STA. 136+46.00	STA. 138+50.00	STA. 139+14.34	STA. 35+15.00	STA. 36+50.00	STA. 36+50.00	STA. 136+50.00	STA. 36+50.00	STA. 35+40.67	STA. 36+12.59	SEE DRAINAGE DETAILS	STA. 42+58.20	STA. 42+30.24	STA. 41+94.00	STA. 41+94.00	STA. 141+94.00
19.00' LT	19.00' LT	19.00' LT	67.15' LT	24.00' RT	19.00' RT	13.25' LT	13.25' RT	53.10' RT	55.54' RT	55.90' RT	WB-116	45.20' RT	45.22' RT	24.00' RT	24.25' LT	13.25' RT
T.C. 898.32	T.C. 898.32	T.C. 899.07	I.E. 892.64	T.C. 898.62	T.C. 898.32	T.C. 899.03	T.C. 899.03	I.E. 895.00	I.E. 895.75	I.E. 895.50	STA. 139+88.97	T.C. 898.99	T.C. 899.13	T.C. 898.58	T.C. 899.18	T.C. 899.41
I.E. 894.57 W	I.E. 894.54 W	I.E. 892.80 W	I.E. 892.80 NE	I.E. 895.37 E	I.E. 894.97 W	I.E. 893.86 S	I.E. 893.81 S				160.68' LT	I.E. 895.74 W	I.E. 895.60 E	I.E. 895.32 SE	I.E. 894.84 S	I.E. 894.80 S
I.E. 894.57 E	I.E. 893.71 S				I.E. 893.96 S	I.E. 893.86 N	I.E. 893.81 N				I.E. 890.61 S		I.E. 895.60 NW	I.E. 895.08 N	I.E. 894.84 N	I.E. 894.80 N
	I.E. 893.21 E				I.E. 893.96 N						I.E. 893.50 N					



CB-5560	CB-5561	CB-5562	CB-5566	CB-5571	AP-5578	CB-5565	CB-5564	CB-5563	AP-5577	CB-5570	CB-5569	CB-5568	CB-5567
EB-116	WB-116	WB-116	WB-116	WB-116	WB-116	EB-116	EB-116	WB-116	EB-116	EB-116	EB-116	EB-116	WB-116
STA. 49+50.00	STA. 149+50.50	STA. 146+50.50	STA. 143+00.00	STA. 141+94.00	STA. 141+38.90	STA. 46+50.00	STA. 46+50.00	STA. 146+50.00	STA. 43+20.00	STA. 43+20.00	STA. 43+00.00	STA. 43+00.00	STA. 143+00.00
19.00' RT	19.00' LT	19.00' LT	19.00' LT	19.00' LT	60.25' LT	19.00' RT	13.25' LT	20.25' RT	49.50' RT	19.00' RT	19.00' RT	13.25' LT	24.25' RT
T.C. 901.42	T.C. 901.42	T.C. 899.92	T.C. 898.42	T.C. 898.69	I.E. 892.78	T.C. 899.92	T.C. 900.63	T.C. 900.77	I.E. 896.00	I.E. 898.43	T.C. 898.42	T.C. 899.14	T.C. 898.90
I.E. 896.50 SE (EX.)	I.E. 896.25 S	I.E. 896.26 S	I.E. 894.49 S	I.E. 894.64 S		I.E. 896.67 N	I.E. 896.51 S	I.E. 896.46 S		I.E. 894.93 S	I.E. 894.87 E	I.E. 894.74 S	I.E. 894.71 S
I.E. 896.50 N	I.E. 896.25 W	I.E. 895.35 E	I.E. 894.05 E	I.E. 893.24 E			I.E. 896.51 N	I.E. 896.46 N		I.E. 894.93 W	I.E. 894.87 N	I.E. 894.74 N	I.E. 894.71 N
		I.E. 895.10 W	I.E. 893.55 W	I.E. 892.99 NW									



NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\o-f\AnokaCty\13867000\hwy-brdg\hwy\pln-sht\c0265205_sel.dgn 7/29/2009

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: Matthew A. Wassman

PRINTED NAME: MATTHEW A. WASSMAN

DATE: 7/29/2009 LIC. NO. 26883

DRAWN BY SFH DATE 7/29/2009

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CHECKED BY MAW DATE 7/29/2009

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S.P. 106-020-28
S.P. 197-124-001

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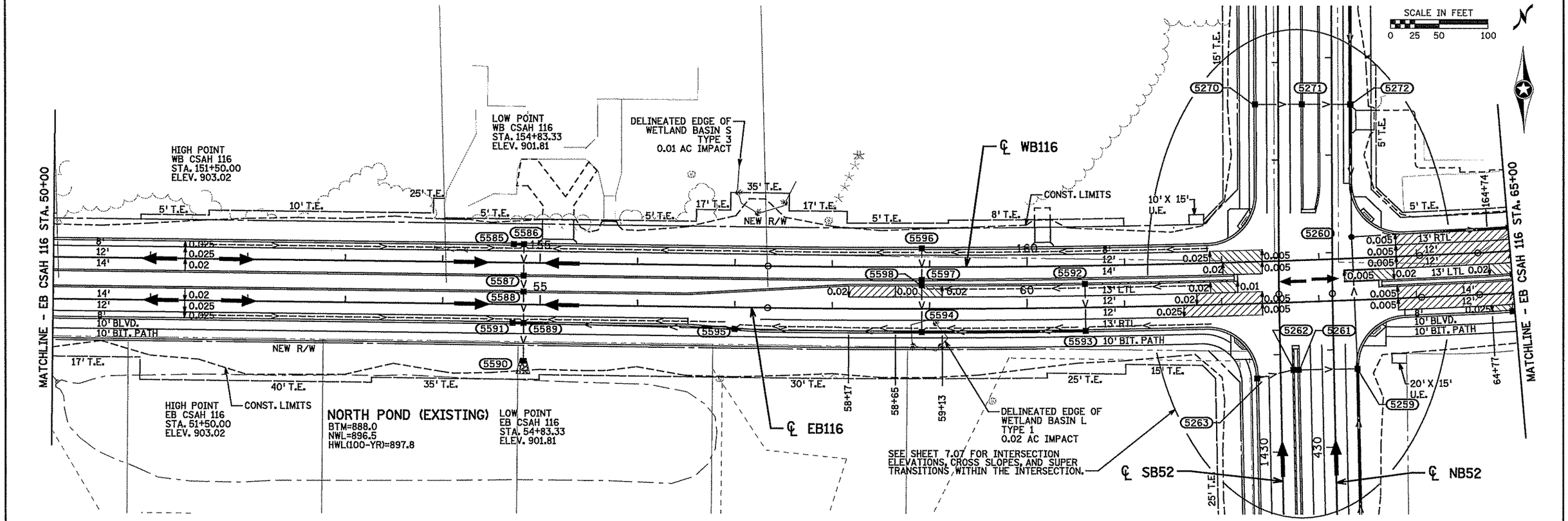
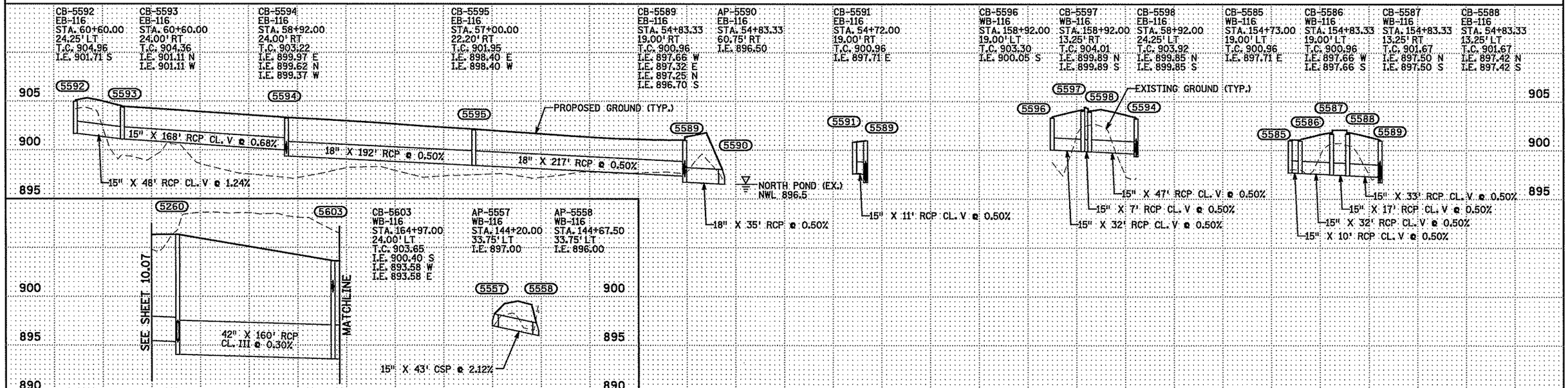
SHEET 10.12 OF 294





NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\a-f\AnokaCty\13867000\hwy-brdg\hwy\pln-sht\c0265205_sea.dgn 7/29/2009

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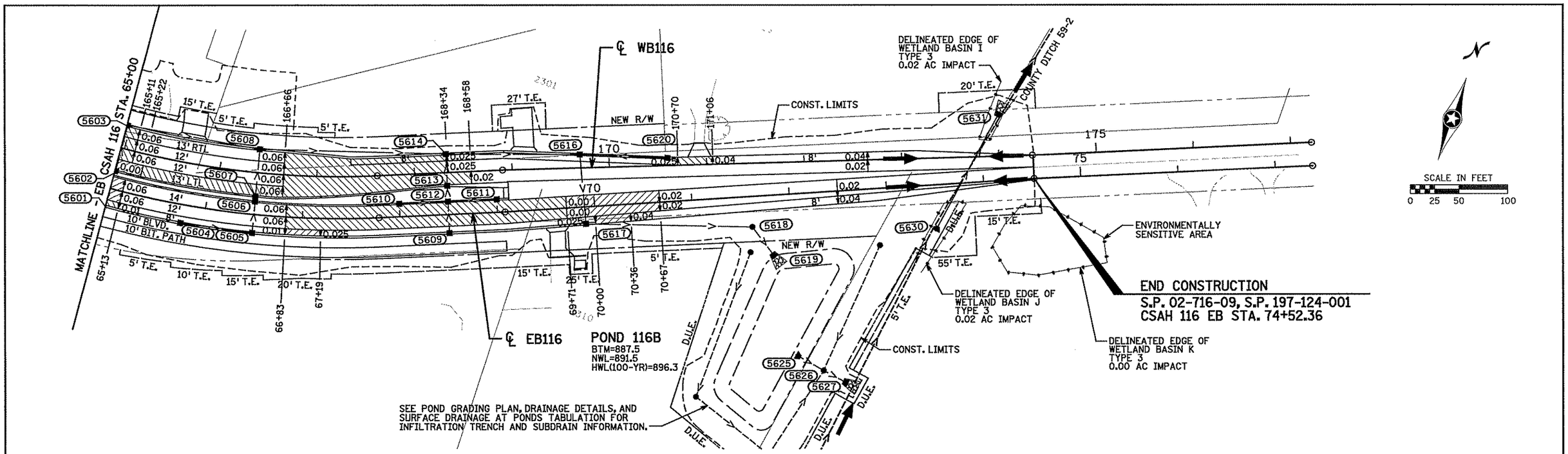
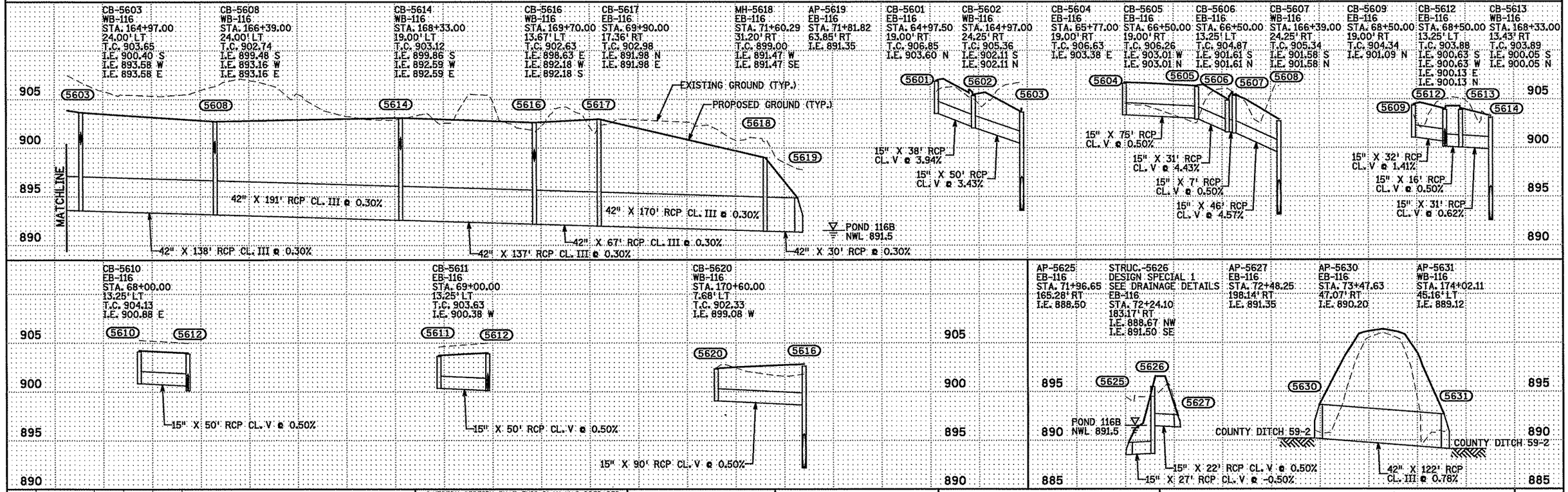
SHEET 10.13 OF 294





NO	DATE	BY	CKD	APPR	REVISION

NAME: X:\a-f\AnokaCty\13867000\hwy-brdg\hwy\pln-sht\c0265205_sen.dgn 9/18/2009

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: Matthew A. Wassman

PRINTED NAME: MATTHEW A. WASSMAN

DATE: 9/18/2009 LIC. NO. 26883

DRAWN BY SFH DATE 9/18/2009

DESIGN BY CEH DATE 9/18/2009

CHECKED BY MAW DATE 9/18/2009

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CSAH 52/116 RECONSTRUCTION
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SHEET 10.14 OF 294

STORM SEWER - TAB L

UPSTREAM STRUCTURE LOCATION (1)									NEW STRUCTURE CONSTRUCTION														PIPE SEWER DESIGN 3006 (5),(6)													APRON										TRASH GUARD (9)				RIPRAP (7)			DRAINS TO					
STRUC. OR APRON INLET POINT NO.	COST SPLIT	ALIGN.	STATION	OFFSET		TOP OF CASTING ELEV.	OUTLET ELEV.	F & I CASTING ASSEM.		PAY HEIGHT DESIGN									STEPS REQ'D (2)	DESIGN SPEC. 1 (3)	DESIGN SPEC. 2 (4)	12" RC CL V	15" RC CL V	18" RC	21" RC	24" RC	27" RC	27" RC CL III	30" RC	30" RC CL III	33" RC	36" RC	42" RC	42" RC CL III	12" RC	15" RC	18" RC	21" RC	24" RC	27" RC	30" RC	33" RC	36" RC	42" RC	15"	18"	27"	36"	CL II	CL III	GUIDE POST TYPE B	STRUC. OR APRON OUTLET POINT NO.	SLOPE OF PIPE %	INLET ELEV.	CONN. INTO EX. DRAINAGE STRUCTURE	CONN. TO EX. STORM SEWER	NOTES
										H	G	48-4020	54-4020	60-4020	66-4020	72-4020	78-4020	84-4020																																													
								TYPE	EA	LF	LF	LF	LF	LF	LF	LF	LF	LF		EA	EA	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	CY	CY	EA				EACH	EACH	
5000	(A)	NB-52	336+85.36	18.78	RT		897.37															12																														5001	0.45	897.32		1	(8)
5001	(A)	NB-52	336+85.42	30.35	RT		897.32																												1														2.8		1						
5003	(A)	NB-52	339+49.58	31.15	LT	903.00	896.78	A - 7D	1			6.3							YES							79																										5004	0.79	896.10		1	(8)
		NB-52	339+49.58	30.36	LT																																																									
5004	(A)	NB-52	339+00.00	38.96	RT		896.10																																	1										5.5		1						
5006	(A)	NB-52	342+88.00	36.25	LT	900.92	897.67	C - 1	1	3.2													60																													5007	0.72	897.23			
5007	(A)	NB-52	342+88.00	24.00	RT	900.49	897.23	B - 9	1		3.2												190																													5008	0.50	896.28			
5008	(A)	NB-52	344+78.28	24.00	RT	900.05	896.28	B - 17	1		3.7												60																													5009	0.50	895.98			
5009	(A)	NB-52	344+78.28	36.25	LT	900.17	895.98	C - 1	1		4.1												10																													5010	0.50	895.93			
5010	(A)	NB-52	344+88.00	36.25	LT	900.18	895.93	C - 1	1		4.2												34																													5011	0.50	895.76			
5011	(A)	NB-52	345+22.34	36.25	LT	900.23	895.69	C - 1	1		4.5																																																		1	
5020	(A)	NB-52	346+95.75	21.55	RT	900.90	896.53	A - 7D	1			4.5															30																									5021	0.30	896.43		1	(8)
		NB-52	346+95.07	21.16	RT																																																									
5021	(A)	NB-52	347+18.00	49.50	RT		896.43																																		1										8.7	1						
5024	(A)	SB-52	1347+33.60	68.00	LT		894.25																15													1																5025	-0.50	894.36			(8)
5025	(A)	SB-52	1347+43.50	49.00	LT	(3)	897.25													1			139																											5.6		5026	0.18	897.00			(8)
5026	(A)	NB-52	347+38.00	41.00	RT		897.00																								1													2.9		1						
5030	(A)	NB-52	353+50.00	19.00	RT	903.35	900.10	B - 9	1	3.2													175																													5031	0.56	899.12			
5031	(A)	NB-52	351+75.00	19.00	RT	902.38	899.12	B - 9	1		3.2												32																													5032	0.30	899.02			
5032	(A)	NB-52	351+75.00	13.25	LT	903.10	898.77	C - 1	1		4.3													10																												5033	0.30	898.74			
5033	(A)	SB-52	1351+80.00	31.15	RT	903.07	898.74	C - 1	1		4.3													50																												5034	0.30	898.59			
5034	(A)	SB-52	1351+80.00	19.00	LT	902.39	898.59	B - 9	1		3.7													36																												5035	0.30	898.48			
5035	(A)	SB-52	1351+48.30	35.20	LT	902.14	898.48	B - 17	1		3.6													77																												5036	0.42	898.16			
5036	(A)	SB-52	1350+72.00	24.00	LT	901.67	897.91	B - 9	1		3.7														100																											5037	0.30	897.61			
5037	(A)	SB-52	1349+72.00	24.00	LT	901.11	897.43	B - 9	1			3.6													56																											5038	0.30	897.25			(8)
		SB-52	1349+72.00	24.79	LT																																																									
5038	(A)	SB-52	1349+28.00	66.00	LT		897.25																																				1											4.2		1						
5039	(A)	NB-52	349+67.00	19.00	RT	901.22	898.22	B - 9	1	2.9													38																													5040	0.30	898.11			
5040	(A)	SB-52	1349+72.00	36.25	RT	901.47	898.11	C - 1	1		3.3												61																													5037	0.30	897.93			
5041	(A)	SB-52	1348+72.00	24.00	LT	900.56	897.41	B - 9	1	3.1													28																													5042	0.48	897.25			(8)
5042	(A)	SB-52	1348+72.00	58.00	LT		897.25																								1													2.9		1						
5043	(A)	NB-52	347+65.58	19.00	RT	900.36	897.36	B - 17	1	2.9													31																													5044	0.30	897.26			
5044	(A)	NB-52	347+65.58	13.25	LT	901.07	897.26	C - 1	1			3.8											7																													5045	0.30	897.24			
		NB-52	347+65.58	12.46	LT																																																									
5045	(A)	SB-52	1347+71.05	36.25	RT	900.61	897.24	C - 1	1			3.3											60																													5046	0.30	897.06			
		SB-52	1347+71.05	35.46	RT																																																									
5046	(A)	SB-52	1347+71.05	24.00	LT	900.25	897.06	B - 17	1			3.1											24																													5048	0.37	896.95			(8)
		SB-52	1347+71.05	24.79	LT																																																									
5048	(A)	SB-52	1347+71.05	55.00	LT		896.95																								1													2.9		1						
5050	(A)	NB-52	356+00.00	19.00	RT	904.74	901.49	B - 9	1	3.2													64																													5051	0.50	901.17			
5051	(A)	NB-52	356+64.00	19.00	RT	905.09	901.17	B - 9	1		3.8												33																													5052	0.50	901.00			
5052	(A)	NB-52	356+64.00	13.25	LT	905.81	901.00	C - 1	1			4.8							YES				18																													5053	5.92	899.92			
		NB-52	356+64.00	14.04	LT																																																									
5053	(A)	SB-52	1356+66.00	13.25	RT	903.17	899.92	C - 1	1		3.2												32																													5054	2.22	899.20			
5054	(A)	SB-52	1356+66.00	19.00	LT	902.46	898.95	B - 17	1		3.4													138																												5056	0.30	898.54			
5056	(A)	SB-52	1358+04.00	19.00	LT	903.17	898.29	B - 9	1			4.8							YES						151																											5057	0.30	897.84			
		SB-52	1358+04.00	19.79	LT																																																									
5057	(A)	SB-52	1359+55.00	19.00	LT	904.68	897.59	B - 9	1			7.0							YES							80																										5058	0.30	897.33			(8)
		SB-52	1359+55.00	19.79	LT																																																									
5058	(A)	SB-52	1360+12.00	84.00	LT		897.33																																	1										5.5		1						
5060	(A)	NB-52	358+02.00	19.00	RT	905.86	902.61	B - 9	1	3.2													83																													5056	3.25	899.91			
5061	(A)	NB-52	359+40.00	34.50	RT	905.84	902.59	M - 11	1		3.5												16																												1	5062	0.50	902.51			
5062	(A)	NB-52	359+40.00	19.00	RT	906.62	902.51	B - 9	1		4.0												33																													5063	0.50	902.35			
5063	(A)	NB-52	359+40.00	13.25	LT	907.34	902.35	C - 1	1			4.9							YES				18																													5064	1.08	902.15			
5064	(A)	SB-52	1359+55.00	13.25	RT	905.40	902.15	C - 1	1		3.2												33																													5057	2.17	901.43			
5068	(A)	SB-52	1360+15.40	181.00	LT		895.00																20													1																5069	-0.50	895.13			(8)
5069	(A)	SB-52	1359+91.00	189.00	LT	(4)	898.00														1		17																											6.3		5070	2.17	897.50			(8)
5070	(A)	SB-52	1359+69.00	193.60	LT		897.50																								1													2.9		1						
5072	(A)	NB-52	367+50.00	19.00	RT	911.12	907.87	B - 9	1	3.2													32																													5073	0.50	907.71			
5073	(A)	NB-52	367+50.00	13.25	LT	911.84	907.71	C - 1	1		4.1												17																													5074	0.50	907.62			
5074	(A)	SB-52	1367+56.00	13.25	RT	911.84	907.62	C - 1	1		4.2												32																													5075	0.50	907.46			
5075	(A)	SB-52	1367+56.00	19.00	LT	911.13	907.21	B - 9	1		3.8													191																												5076	0.50	906.26			
5076	(A)	SB-52	1365+65.00	19.00	LT	910.07	905.79	B - 9	1			4.2												160																												5077	0.50	904.99			
		SB-52	1365+65.00	19.79	LT																																																									
5077	(A)	SB-52	1364+05.00	19.00	LT	909.08	903.71	B - 9	1			5.3							YES						189																											5078	0.50	902.76			
		SB-52	1364+05.00	19.79	LT																																																									
5078	(A)	SB-52	1362+16.00	19.00	LT	907.31	902.51	B - 9	1			4.7							YES							116																										5079	0.50	901.93			
		SB-52	1362+16.00	19.79	LT																																																									
5079	(A)	SB-52	1361+00.00	19.00	LT	906.14	898.35	B - 9	1			7.7							YES							64																										5080	0.50	898.00			(8)
		SB-52	1361+00.00	19.79	LT																																																									

NOTES:

(1) STATION, OFFSET, AND COORDINATES FOR EACH POINT NUMBER ARE GIVEN AT CENTER OF GRATE. ADDITIONAL STATION, OFFSET, AND COORDINATES ARE GIVEN AT CENTER OF STRUCTURE FOR 4020 AND DESIGN F STRUCTURES. INVERT ELEVATIONS ARE GIVEN AT CENTER OF STRUCTURE. STATION, OFFSET, COORDINATES, AND ELEVATIONS ARE GIVEN AT END OF APRON FOR APRON STRUCTURES.
(2) IF STEPS REQUIRED, STRUCTURE TO INCLUDE MANHOLE STEPS 16" ON CENTER. SEE MN/DOT STANDARD PLATE 4180.
(3) POND OUTLET STRUCTURE. SEE DETAIL ON SHEET 11.09.
(4) POND OUTLET STRUCTURE. SEE DETAIL ON SHEET 11.10.
(5) CLASS C BEDDING FOR RC PIPE UNLESS OTHERWISE SPECIFIED.
(6) LENGTH GIVEN TO CENTER OF STRUCTURE OR END OF BARREL (DOES NOT INCLUDE APRON LENGTH).
(7) GRANULAR FILTER BLANKET OR GEOTEXTILE FILTER MATERIAL REQUIRED SHALL BE INCIDENTAL. SEE MN/DOT STANDARD PLATE 3133.
(8) TIE LAST THREE JOINTS AT APRON END. FURNISHING AND INSTALLING PIPE TIES SHALL BE CONSIDERED INCIDENTAL. SEE MN/DOT STANDARD PLATE 3145.
(9) SEE DETAIL ON SHEET 11.11.

COST PARTICIPATION NOTES:

(A) 74% ANOKA COUNTY S.P. 02-652-05, 26% CITY OF BLAINE S.P. 106-020-28 (CSAH 52) QUANTITY.
(B) 71% ANOKA COUNTY S.P. 02-652-05, 29% CITY OF HAM LAKE S.P. 197-124-001 (CSAH 52) QUANTITY.
(C) 52% ANOKA COUNTY S.P. 02-716-09, 48% CITY OF HAM LAKE S.P. 197-124-001 (CSAH 116) QUANTITY.

NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\a-f\AnokaCty\13867000\hwy-brdg\hwy\pln-sht\c0265205_dta.dgn 7/29/2009

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: Matthew A. Wassman
PRINTED NAME: MATTHEW A. WASSMAN
DATE: 7/29/2009 LIC. NO. 26883

DRAWN BY CEH DATE 7/29/2009
DESIGN BY CEH DATE 7/29/2009
CHECKED BY MAW DATE 7/29/2009

S.P. 02-652-05
S.P. 02-716-09
S.P. 106-020-28
S.P. 197-124-001

TKDA
ENGINEERS•ARCHITECTS•PLANNERS

ANOKA COUNTY
DRAINAGE TABULATION
CSAH 52/116 RECONSTRUCTION

SHEET 11.01 OF 294

STORM SEWER - TAB L

UPSTREAM STRUCTURE LOCATION (1)								NEW STRUCTURE CONSTRUCTION														PIPE SEWER DESIGN 3006 (5),(6)													APRON										TRASH GUARD (9)				RIPRAP (7)			DRAINS TO					
										PAY HEIGHT DESIGN																																															
STRUC. OR APRON INLET POINT NO.	COST SPLIT	ALIGN.	STATION	OFFSET		TOP OF CASTING ELEV.	OUTLET ELEV.	F & I CASTING ASSEM. TYPE	EA	H LF	G LF	48-4020 LF	54-4020 LF	60-4020 LF	66-4020 LF	72-4020 LF	78-4020 LF	84-4020 LF	STEPS REQ'D (2)	DESIGN SPEC. 1 (3) EA	DESIGN SPEC. 2 (4) EA	12" RC CL V LF	15" RC CL V LF	18" RC LF	21" RC LF	24" RC LF	27" RC LF	27" RC CL III LF	30" RC LF	30" RC CL III LF	33" RC LF	36" RC LF	42" RC LF	42" RC CL III LF	12" RC EA	15" RC EA	18" RC EA	21" RC EA	24" RC EA	27" RC EA	30" RC EA	33" RC EA	36" RC EA	42" RC EA	15" EA	18" EA	27" EA	36" EA	CL II CY	CL III CY	GUIDE POST TYPE B EA	STRUC. OR APRON OUTLET POINT NO.	SLOPE OF PIPE %	INLET ELEV.	CONN. INTO EX. DRAINAGE STRUCTURE EACH	CONN. TO EX. STORM SEWER EACH	NOTES
5080	(A)	SB-52	1360+62.00	78.60	LT		898.00																																1										5.5		1						
5081	(A)	NB-52	365+31.45	24.87	RT	909.84	906.59	B - 17	1	3.2													29																													5083	0.50	906.44			
5082	(A)	NB-52	366+00.00	19.00	RT	910.29	907.04	B - 9	1	3.2													40																													5083	0.55	906.81			
5083	(A)	NB-52	365+60.00	19.00	RT	910.06	906.44	B - 9	1		3.5												82																													5076	0.50	906.04			
5085	(A)	NB-52	364+00.00	39.20	RT	907.97	904.72	M - 11	1		3.5												15																												1	5086	0.50	904.64			
5086	(A)	NB-52	364+00.00	24.00	RT	909.05	904.64	B - 9	1		4.3												38																													5087	0.50	904.45			
5087	(A)	NB-52	364+00.00	13.25	LT	909.88	904.45	C - 1	1			5.4							YES				15																													5088	0.50	904.38			
5088	(A)	SB-52	1364+05.00	13.25	RT	909.79	904.38	C - 1	1			5.4							YES				34																													5077	0.50	904.21			
5089	(A)	NB-52	363+00.00	24.00	RT	908.50	905.25	B - 9	1	3.2													88																													5090	0.55	904.76			
5090	(A)	NB-52	362+12.00	24.00	RT	908.01	904.76	B - 9	1		3.2												53																													5091	0.50	904.49			
5091	(A)	SB-52	1362+16.00	13.25	RT	908.02	904.49	C - 1	1		3.5												33																													5078	1.32	904.06			
5093	(A)	NB-52	372+74.16	26.31	RT	911.54	908.29	B - 17	1	3.2													36																													5094	0.30	908.18			
5094	(A)	NB-52	372+38.00	24.00	RT	911.72	908.18	B - 9	1		3.5												47																													5095	0.30	908.04			
5095	(A)	NB-52	372+38.00	24.25	LT	912.32	908.04	C - 1	1			4.2											7																													5096	0.30	908.02			
		NB-52	372+38.00	23.46	LT																																																				
5096	(A)	SB-52	1372+45.00	13.25	RT	912.57	908.02	C - 1	1			4.5											31																													5097	0.30	907.92			
		SB-52	1372+45.00	12.46	RT																																																				
5097	(A)	SB-52	1372+45.00	19.00	LT	911.85	907.92	B - 9	1		3.9												147																													5098	0.30	907.48			
5098	(A)	SB-52	1373+92.00	24.00	LT	910.99	907.23	B - 9	1		3.7													86																												5099	0.30	906.98			
5099	(A)	SB-52	1374+78.00	24.00	LT	910.56	906.98	B - 9	1		3.5													114																												5100	0.42	906.49			
5100	(A)	SB-52	1375+92.00	24.00	LT	909.99	906.09	B - 9	1			3.8													84																											5101	0.32	905.82			
		SB-52	1375+92.00	24.79	LT																																																				
5101	(A)	SB-52	1376+76.00	24.00	LT	909.57	905.82	B - 9	1			3.7													129																											5102	0.31	905.43			
		SB-52	1376+76.00	24.79	LT																																																					
5102	(A)	SB-52	1378+05.00	24.00	LT	909.18	904.74	B - 17	1				4.4														10																									5103	0.25	904.72			
		SB-52	1378+05.00	24.79	LT																																																					
5103	(A)	SB-52	1378+15.00	24.00	LT	909.18	904.72	B - 17	1			4.4															96																									5104	0.25	904.48			
		SB-52	1378+15.00	24.79	LT																																																					
5104	(A)	SB-52	1379+11.00	24.00	LT	909.46	904.48	B - 9	1				4.9						YES								75																									5105	0.25	904.29			
		SB-52	1379+11.00	25.08	LT																																																					
5105	(A)	SB-52	1379+86.00	24.00	LT	909.83	904.29	B - 9	1			5.5							YES								74																									5106	0.25	904.11			
		SB-52	1379+86.00	24.79	LT																																																					
5106	(A)	SB-52	1380+60.00	24.00	LT	910.20	904.11	B - 9	1			6.0							YES								78																									5111	0.25	903.91			
		SB-52	1380+60.00	24.79	LT																																																					
5107	(A)	SB-52	1381+68.00	24.00	LT	910.87	903.82	B - 9	1					7.0					YES								39																									5108	0.25	903.72			
		SB-52	1381+68.00	25.29	LT																																																					
5108	(A)	SB-52	1381+68.00	13.25	RT	911.59	903.72	C - 1	1			7.8							YES								15																									5109	0.25	903.69			
		SB-52	1381+68.00	14.04	RT																																																					
5109	(A)	NB-52	381+63.00	13.25	LT	911.57	903.69	C - 1	1			7.8							YES								35																									5110	0.25	903.60			
		NB-52	381+63.00	14.04	LT																																																					
5110	(A)	NB-52	381+63.00	19.00	RT	910.85	903.35	B - 9	1						7.4				YES										137																							5112	0.25	903.01			
		NB-52	381+63.00	20.58	RT																																																					
5111	(A)	SB-52	1381+35.70	40.70	LT	910.44	903.91	B - 17	1			6.5							YES								35																									5107	0.25	903.82			
		SB-52	1381+36.40	41.06	LT																																																					
5112	(A)	NB-52	383+00.00	19.00	RT	911.53	903.01	B - 9	1					8.4					YES										198																							5113	0.25	902.51			
		NB-52	383+00.00	20.29	RT																																																					
5113	(A)	NB-52	385+00.00	19.00	RT	911.66	902.51	B - 9	1					9.1					YES										193																							5114	0.25	902.03			
		NB-52	385+00.00	20.29	RT																																																					
5114	(A)	NB-52	387+00.00	19.00	RT	911.70	902.03	B - 9	1					9.6					YES										131																							5115	0.25	901.70			
		NB-52	387+00.00	20.29	RT																																																					
5115	(A)	NB-52	388+35.00	19.00	RT	911.05	901.70	B - 9	1					9.3					YES										123																							5116	0.25	901.40			
		NB-52	388+35.00	20.29	RT																																																					
5116	(A)	NB-52	389+62.00	19.00	RT	910.41	901.40	B - 9	1					8.9					YES										135																							5117	0.25	901.06			
		NB-52	389+62.00	20.29	RT																																																					
5117	(A)	NB-52	391+02.00	19.00	RT	909.89	900.81	B - 9	1					9.0					YES												185																					5118	0.25	900.35			
		NB-52	391+02.00	20.29	RT																																																					
5118	(A)	NB-52	392+89.00	24.00	RT	909.76	900.35	B - 9	1					9.3					YES												124																					5119	0.25	900.04			
		NB-52	392+89.00	25.29	RT																																																					
5119	(A)	NB-52	394+13.00	24.00	RT	909.14	900.04	B - 9	1					9.0					YES												149																					5120	0.25	899.66			
		NB-52	394+13.00	25.29	RT																																																					
5120	(A)	NB-52	395+62.40	25.45	RT	908.40	899.66	B - 17	1					8.7					YES												82																					5121	0.25	899.46			
		NB-52	395+62.01	26.68	RT																																																					
5121	(A)	NB-52	396+42.75	25.00	RT	908.29	898.71	B - 17	1							9.5			YES														93																			5122	0.50	898.20			(8)
		NB-52	396+43.81	26.44	RT																																																					
5122	(A)	NB-52	397+21.75	91.40	RT		898.20																																					1						16.3	1						
5126	(A)	NB-52	375+86.00	19.00	RT	910.10	906.85	B - 9	1	3.2													38																													5127	0.30	906.74			
5127	(A)	SB-52	1375+92.00	24.25	RT	910.71	906.74	C - 1	1		3.9												49																													5100	0.30	906.59			
5128	(A)	SB-52	1375+36.00	24.25	RT	910.87	907.62	C - 1	1	3.2													56																													5127	0.50	907.34			
5130	(A)	NB-52	378+10.00	19.00	RT	909.28	906.03	B - 17	1	3.2													10																													5131	0.30	906.00			
5131	(A)	NB-52	378+00.00	19.00	RT	909.28	906.00	B - 17	1		3.2												42																													5132	0.30	905.88			

NOTES:

(1) STATION, OFFSET, AND COORDINATES FOR EACH POINT NUMBER ARE GIVEN AT CENTER OF GRATE. ADDITIONAL STATION, OFFSET, AND COORDINATES ARE GIVEN AT CENTER OF STRUCTURE FOR 4020 AND DESIGN F STRUCTURES. INVERT ELEVATIONS ARE GIVEN AT CENTER OF STRUCTURE. STATION, OFFSET, COORDINATES, AND ELEVATIONS ARE GIVEN AT END OF APRON FOR APRON STRUCTURES.
(2) IF STEPS REQUIRED, STRUCTURE TO INCLUDE MANHOLE STEPS 16" ON CENTER. SEE MN/DOT STANDARD PLATE 4180.
(3) POND OUTLET STRUCTURE. SEE DETAIL ON SHEET 11.09.
(4) POND OUTLET STRUCTURE. SEE DETAIL ON SHEET 11.10.
(5) CLASS C BEDDING FOR RC PIPE UNLESS OTHERWISE SPECIFIED.
(6) LENGTH GIVEN TO CENTER OF STRUCTURE OR END OF BARREL (DOES NOT INCLUDE APRON LENGTH).
(7) GRANULAR FILTER BLANKET OR GEOTEXTILE FILTER MATERIAL REQUIRED SHALL BE INCIDENTAL. SEE MN/DOT STANDARD PLATE 3133.
(8) TIE LAST THREE JOINTS AT APRON END. FURNISHING AND INSTALLING PIPE TIES SHALL BE CONSIDERED INCIDENTAL. SEE MN/DOT STANDARD PLATE 3145.
(9) SEE DETAIL ON SHEET 11.11.

COST PARTICIPATION NOTES:

(A) 74% ANOKA COUNTY S.P. 02-652-05, 26% CITY OF BLAINE S.P. 106-020-28 (CSAH 52) QUANTITY.
(B) 71% ANOKA COUNTY S.P. 02-652-05, 29% CITY OF HAM LAKE S.P. 197-124-001 (CSAH 52) QUANTITY.
(C) 52% ANOKA COUNTY S.P. 02-716-09, 48% CITY OF HAM LAKE S.P. 197-124-001 (CSAH 116) QUANTITY.

NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\a-f\AnokaCty\13867000\hwy-brdg\hwy\pln-sht\c0265205.dtb.dgn 7/29/2009

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: Matthew A. Wassman
PRINTED NAME: MATTHEW A. WASSMAN
DATE: 7/29/2009 LIC. NO. 26883

DRAWN BY CEH DATE 7/29/2009
DESIGN BY CEH DATE 7/29/2009
CHECKED BY MAW DATE 7/29/2009

S.P. 02-652-05
S.P. 02-716-09
S.P. 106-020-28
S.P. 197-124-001

TKDA
ENGINEERS • ARCHITECTS • PLANNERS

ANOKA COUNTY
DRAINAGE TABULATION
CSAH 52/116 RECONSTRUCTION

SHEET 11.02 OF 294

STORM SEWER - TAB L

UPSTREAM STRUCTURE LOCATION (1)								NEW STRUCTURE CONSTRUCTION														PIPE SEWER DESIGN 3006 (5),(6)													APRON										TRASH GUARD (9)				RIPRAP (7)			DRAINS TO					
										PAY HEIGHT DESIGN																																															
STRUC. OR APRON INLET POINT NO.	COST SPLIT	ALIGN.	STATION	OFFSET		TOP OF CASTING ELEV.	OUTLET ELEV.	F & I CASTING ASSEM.		H	G	48-4020	54-4020	60-4020	66-4020	72-4020	78-4020	84-4020	STEPS REQ'D (2)	DESIGN SPEC. 1 (3)	DESIGN SPEC. 2 (4)	12" RC CL V	15" RC CL V	18" RC	21" RC	24" RC	27" RC	27" RC CL III	30" RC	30" RC CL III	33" RC	36" RC	42" RC	42" RC CL III	12" RC	15" RC	18" RC	21" RC	24" RC	27" RC	30" RC	33" RC	36" RC	42" RC	15"	18"	27"	36"	CL II	CL III	GUIDE POST TYPE B	STRUC. OR APRON OUTLET POINT NO.	SLOPE OF PIPE %	INLET ELEV.	CONN. INTO EX. DRAINAGE STRUCTURE	CONN. TO EX. STORM SEWER	NOTES
								TYPE	EA	LF	LF	LF	LF	LF	LF	LF	LF	LF		EA	EA	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	CY	CY	EA				EACH	EACH	
5132	(A)	NB-52	378+00.00	22.67	LT	910.19	905.88	C - 1	1			4.3											44																													5102	0.30	905.74			
5133	(A)	NB-52	377+75.00	21.10	LT	910.17	906.92	C - 1	1	3.2													25																													5132	0.50	906.79			
5134	(A)	SB-52	1378+26.00	13.50	RT	910.03	906.78	C - 1	1	3.2													22																													5132	0.50	906.68			
5136	(A)	NB-52	379+06.00	24.25	LT	910.11	906.86	C - 1	1	3.2													44																													5104	1.49	906.21			
5137	(A)	NB-52	381+63.00	32.00	RT		909.19																5													1									1						1	5110	13.95	907.60			(8)
5138	(A)	SB-52	1383+06.00	24.00	LT	912.23	908.98	B - 9	1	3.2													37																													5139	0.50	908.79			
5139	(A)	SB-52	1383+06.00	13.25	RT	912.26	908.79	C - 1	1		3.4												50																													5112	1.02	908.28			
5140	(A)	SB-52	1383+60.00	13.25	RT	912.52	909.27	C - 1	1	3.2													27																													5141	0.50	909.14			
5141	(A)	SB-52	1383+33.00	13.25	RT	912.39	909.14	C - 1	1		3.2												27																													5139	0.50	909.00			
5142	(A)	SB-52	1385+10.00	19.81	LT	914.43	911.18	B - 9	1	3.2													33																													5143	3.53	910.01			
5143	(A)	SB-52	1385+10.00	13.25	RT	913.26	910.01	C - 1	1		3.2												17																													5144	0.50	909.92			
5144	(A)	NB-52	385+00.00	13.25	LT	913.26	909.92	C - 1	1		3.3												34																													5113	4.52	908.41			
5146	(A)	SB-52	1388+65.00	19.00	LT	914.40	911.15	B - 9	1	3.2													32																													5147	4.33	909.75			
5147	(A)	SB-52	1388+65.00	13.25	RT	913.00	909.75	C - 1	1		3.2												17																													5148	0.67	909.64			
5148	(A)	NB-52	388+35.00	13.25	LT	912.89	909.64	C - 1	1		3.2												34																													5115	5.50	907.80			
5149	(A)	SB-52	1390+00.00	19.00	LT	913.72	910.47	B - 9	1	3.2													82																													5116	4.02	907.16			
5150	(A)	SB-52	1391+50.00	19.00	LT	912.81	909.56	B - 9	1	3.2													32																													5151	3.82	908.33			
5151	(A)	SB-52	1391+50.00	13.25	RT	911.58	908.33	C - 1	1		3.2												16																													5152	0.50	908.25			
5152	(A)	NB-52	391+02.00	13.72	LT	911.58	908.25	C - 1	1		3.3												34																													5117	4.73	906.64			
5154	(A)	SB-52	1393+42.00	19.00	LT	910.79	907.54	B - 9	1	3.2													31																													5155	0.50	907.38			
5155	(A)	SB-52	1393+42.00	13.25	RT	910.64	907.38	C - 1	1			3.2											7																													5156	0.50	907.35			
		SB-52	1393+42.00	12.46	RT																																																				
5156	(A)	NB-52	392+89.00	24.25	LT	910.71	907.35	C - 1	1			3.3											49																													5118	1.71	906.51			
		NB-52	392+89.00	23.46	LT																																																				
5157	(A)	SB-52	1392+80.00	13.25	RT	910.94	907.69	C - 1	1	3.2													31																													5158	0.50	907.54			
5158	(A)	SB-52	1393+11.00	13.25	RT	910.79	907.54	C - 1	1		3.2												31																													5155	0.50	907.38			
5160	(A)	SB-52	1396+00.00	19.00	LT	908.65	905.40	B - 9	1	3.2													31																													5161	0.50	905.24			
5161	(A)	SB-52	1396+00.00	13.25	RT	909.42	905.24	C - 1	1			4.1											7																													5162	0.50	905.21			
		SB-52	1396+00.00	12.46	RT																																																				
5162	(A)	NB-52	395+47.00	24.25	LT	909.07	905.21	C - 1	1			3.8											52																													5120	0.50	904.95			
		NB-52	395+47.00	23.46	LT																																																				
5165	(A)	SB-52	1396+79.00	119.00	LT	912.00	900.90	A - 7D	1					11.2					YES										67																							5166	0.64	900.47		1	
		SB-52	1396+78.99	120.29	LT																																																			
5166	(A)	SB-52	1396+84.56	53.68	LT	908.76	900.22	C - 1	1					8.5					YES												42																					5167	0.50	900.01			
		SB-52	1396+85.84	53.84	LT																																																			
5167	(A)	SB-52	1397+16.00	24.00	LT	907.95	900.01	B - 9	1					7.9					YES												97																					5121	0.50	899.53			
		SB-52	1397+16.00	25.29	LT																																																			
5168	(A)	SB-52	1395+50.00	63.30	LT		904.63																	79													1									1					1	5169	0.50	904.21			(8)
5169	(A)	SB-52	1396+34.66	52.00	LT	909.04	904.21	C - 1	1			4.8							YES					52																												5166	0.50	903.95			
		SB-52	1396+33.87	52.00	LT																																																			
5172	(B)	NB-52	409+90.00	38.10	RT		909.70																13													1									1						1	5173	2.55	909.21			(8)
5173	(B)	NB-52	409+90.00	19.00	RT	912.46	909.21	B - 9	1		3.2												132																													5174	0.50	908.55			
5174	(B)	NB-52	408+58.00	24.00	RT	912.44	908.55	B - 9	1		3.8												158																													5175	0.50	907.76			
5175	(B)	NB-52	407+00.00	24.00	RT	912.44	907.33	B - 9	1			5.0							YES				160																													5176	0.50	906.53			
		NB-52	407+00.00	24.79	RT																																																			
5176	(A)	NB-52	405+42.00	19.00	RT	912.66	906.53	B - 9	1			6.1							YES				164																													5177	0.50	905.71			
		NB-52	405+42.00	19.79	RT																																																			
5177	(A)	NB-52	403+82.00	19.00	RT	911.92	904.29	B - 9	1			7.5							YES						163																											5178	0.50	903.47			
		NB-52	403+82.00	19.79	RT																																																			
5178	(A)	NB-52	402+22.80	19.00	RT	911.12	903.47	B - 9	1			7.6							YES						167																											5179	0.50	902.64			
		NB-52	402+22.80	19.79	RT																																																			
5179	(A)	NB-52	400+60.00	19.00	RT	910.31	902.64	B - 9	1			7.6							YES						108																											5180	0.50	902.10			
		NB-52	400+60.00	19.79	RT																																																			
5180	(A)	NB-52	399+55.00	19.00	RT	909.79	902.10	B - 9	1			7.6							YES						108																											5181	0.50	901.56			
		NB-52	399+55.00	19.79	RT																																																			
5181	(A)	NB-52	398+50.00	19.00	RT	909.32	899.30	B - 9	1					9.9					YES									54																									5182	0.50	899.00			(8)
		NB-52	398+50.00	20.29	RT																																																			
5182	(A)	NB-52	398+50.00	80.70	RT		899.00																																	1										8.7	1						
5185	(B)	SB-52	1407+02.00	19.00	LT	911.01	907.76	B - 9	1	3.2													32																													5186	0.50	907.60			
5186	(B)	SB-52	1407+02.00	13.25	RT	911.78	907.60	C - 1	1		4.1												16																													5187	0.50	907.51			
5187	(B)	NB-52	407+00.00	13.25	LT	912.13	907.51	C - 1	1			4.6							YES				39																													5175	0.50	907.33			
5188	(A)	SB-52	1404+00.00	19.00	LT	908.44	905.19	B - 9	1	3.2													33																													5189	0.50	905.03			
5189	(A)	SB-52	1404+00.00	13.25	RT	910.29	905.03	C - 1	1			5.2							YES				15																													5190	0.50	904.95			
5190	(A)	NB-52	403+82.00	13.25	LT	910.52	904.95	C - 1	1			5.5							YES				34																													5177	0.50	904.79			
5191	(A)	SB-52	1401+00.00	19.00	LT	906.94	903.69	B - 9	1	3.2													38																													5192	0.50	903.51			
5192	(A)	SB-52	1401+00.00	17.90	RT	909.07	903.51	C - 1	1			5.5							YES				11																													5193	0.50	903.45			
5193	(A)	NB-52	400+60.00	13.25	LT	908.91	903.45	C - 1	1			5.4							YES				34																													5179	0.50	903.29			
5195	(A)	SB-52	1399+00.00	57.70	LT		903.38																27													1									1						1	5196	0.85	903.10			(8)
5196	(A)	SB-52	1399+00.00	24.00	LT	906.35	902.24	B - 17	1			4.1												54																												5197	0.50	901.97			
		SB-52	1399+00.00	24.79	LT																																																			

NOTES:

(1) STATION, OFFSET, AND COORDINATES FOR EACH POINT NUMBER ARE GIVEN AT CENTER OF GRATE. ADDITIONAL STATION, OFFSET, AND COORDINATES ARE GIVEN AT CENTER OF STRUCTURE FOR 4020 AND DESIGN F STRUCTURES. INVERT ELEVATIONS ARE GIVEN AT CENTER OF STRUCTURE. STATION, OFFSET, COORDINATES, AND ELEVATIONS ARE GIVEN AT END OF APRON FOR APRON STRUCTURES.
(2) IF STEPS REQUIRED, STRUCTURE TO INCLUDE MANHOLE STEPS 16" ON CENTER. SEE MN/DOT STANDARD PLATE 4180.
(3) POND OUTLET STRUCTURE. SEE DETAIL ON SHEET 11.09.
(4) POND OUTLET STRUCTURE. SEE DETAIL ON SHEET 11.10.
(5) CLASS C BEDDING FOR RC PIPE UNLESS OTHERWISE SPECIFIED.
(6) LENGTH GIVEN TO CENTER OF STRUCTURE OR END OF BARREL (DOES NOT INCLUDE APRON LENGTH).
(7) GRANULAR FILTER BLANKET OR GEOTEXTILE FILTER MATERIAL REQUIRED SHALL BE INCIDENTAL. SEE MN/DOT STANDARD PLATE 3133.
(8) TIE LAST THREE JOINTS AT APRON END. FURNISHING AND INSTALLING PIPE TIES SHALL BE CONSIDERED INCIDENTAL. SEE MN/DOT STANDARD PLATE 3145.
(9) SEE DETAIL ON SHEET 11.11.

COST PARTICIPATION NOTES:

(A) 74% ANOKA COUNTY S.P. 02-652-05, 26% CITY OF BLAINE S.P. 106-020-28 (CSAH 52) QUANTITY.
(B) 71% ANOKA COUNTY S.P. 02-652-05, 29% CITY OF HAM LAKE S.P. 197-124-001 (CSAH 52) QUANTITY.
(C) 52% ANOKA COUNTY S.P. 02-716-09, 48% CITY OF HAM LAKE S.P. 197-124-001 (CSAH 116) QUANTITY.

NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\a-f\AnokaCty\13867000\hwy-brdg\hwy\pln-sht\c0265205_dtc.dgn 7/29/2009

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:
PRINTED NAME: MATTHEW A. WASSMAN
DATE: 7/29/2009 LIC. NO. 26883

DRAWN BY CEH DATE 7/29/2009
DESIGN BY CEH DATE 7/29/2009
CHECKED BY MAW DATE 7/29/2009

S.P. 02-652-05
S.P. 02-716-09
S.P. 106-020-28
S.P. 197-124-001

TKDA
ENGINEERS•ARCHITECTS•PLANNERS

ANOKA COUNTY
DRAINAGE TABULATION
CSAH 52/116 RECONSTRUCTION

SHEET 11.03 OF 294

STORM SEWER - TAB L

UPSTREAM STRUCTURE LOCATION (1)								NEW STRUCTURE CONSTRUCTION														PIPE SEWER DESIGN 3006 (5),(6)													APRON										TRASH GUARD (9)				RIPRAP (7)			DRAINS TO					
STRUC. OR APRON INLET POINT NO.	COST SPLIT	ALIGN.	STATION	OFFSET		TOP OF CASTING ELEV.	OUTLET ELEV.	F & I CASTING ASSEM.		PAY HEIGHT DESIGN									STEPS REQ'D (2)	DESIGN SPEC. 1 (3)	DESIGN SPEC. 2 (4)	12" RC CL V	15" RC CL V	18" RC	21" RC	24" RC	27" RC	27" RC CL III	30" RC	30" RC CL III	33" RC	36" RC	42" RC	42" RC CL III	12" RC	15" RC	18" RC	21" RC	24" RC	27" RC	30" RC	33" RC	36" RC	42" RC	15"	18"	27"	36"	CL II	CL III	GUIDE POST TYPE B	STRUC. OR APRON OUTLET POINT NO.	SLOPE OF PIPE %	INLET ELEV.	CONN. INTO EX. DRAINAGE STRUCTURE	CONN. TO EX. STORM SEWER	NOTES
										H	G	48-4020	54-4020	60-4020	66-4020	72-4020	78-4020	84-4020																																						
								TYPE	EA	LF	LF	LF	LF	LF	LF	LF	LF	LF		EA	EA	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	CY	CY	EA				EACH	EACH	
5197	(A)	NB-52	398+50.00	13.25	LT	908.05	901.97	C - 1	1			6.0							YES					34																												5181	0.50	901.80			
		NB-52	398+50.00	14.04	LT																																																				
5198	(A)	SB-52	1399+52.00	24.00	LT	905.99	902.74	B - 17	1	3.2													50																													5196	0.50	902.49			
5199	(A)	SB-52	1398+20.00	24.25	RT	908.06	904.81	C - 1	1	3.2													82																													5197	0.50	904.40			
5200	(A)	NB-52	398+60.00	13.25	LT	908.06	904.81	C - 1	1	3.2													10																													5197	0.50	904.76			
5220	(B)	SB-52	1413+00.00	19.00	LT	911.25	908.00	B - 9	1	3.2													100																													5224	0.50	907.50			
5221	(B)	NB-52	413+96.00	19.00	RT	910.76	907.51	B - 9	1			3.2											43																													5222	0.50	907.29			
		NB-52	413+96.00	19.79	RT																																																				
5222	(B)	NB-52	413+96.00	24.25	LT	911.23	907.29	C - 1	1			3.9											7																													5223	0.50	907.26			
		NB-52	413+96.00	23.46	LT																																																				
5223	(B)	SB-52	1414+00.00	13.25	RT	911.46	907.26	C - 1	1			4.2											32																													5224	0.50	907.10			
		SB-52	1414+00.00	12.46	RT																																																				
5224	(B)	SB-52	1414+00.00	19.00	LT	910.75	906.85	B - 9	1			3.8												87																												5229	0.50	906.41			
		SB-52	1414+00.00	19.79	LT																																																					
5225	(B)	SB-52	1414+38.00	75.00	LT	909.25	906.00	M - 11	1	3.5													22																												1	5226	0.30	905.93			
5226	(B)	SB-52	1414+44.30	54.00	LT	909.84	905.93	B - 17	1			3.9											40																													5227	0.30	905.82			
		SB-52	1414+43.51	54.02	LT																																																				
5227	(B)	SB-52	1414+82.50	52.30	LT	910.04	905.82	B - 9	1			4.1											30																													5229	0.30	905.73			
		SB-52	1414+83.29	52.37	LT																																																					
5228	(B)	SB-52	1414+90.08	74.60	LT	909.25	906.00	M - 11	1	3.5													23																												1	5227	0.30	905.93			
5229	(B)	SB-52	1414+87.50	22.60	LT	910.40	905.48	A - 7D	1			5.0							YES					38																												5230	0.50	905.28			
		SB-52	1414+86.71	22.60	LT																																																					
5230	(B)	SB-52	1415+25.00	24.00	LT	910.00	905.28	B - 9	1			4.6							YES					111																												5233	0.50	904.73			
		SB-52	1415+25.00	24.79	LT																																																					
5231	(B)	NB-52	416+32.00	19.00	RT	909.58	906.33	B - 9	1	3.2													38																													5232	0.50	906.14			
5232	(B)	SB-52	1416+36.00	24.25	RT	910.05	906.14	C - 1	1		3.9												49																													5233	0.50	905.90			
5233	(B)	SB-52	1416+36.00	24.00	LT	909.45	904.48	B - 9	1			4.9							YES						98																											5236	0.50	903.99			
		SB-52	1416+36.00	24.79	LT																																																					
5234	(B)	NB-52	417+30.00	19.00	RT	909.09	905.84	B - 9	1	3.2													38																													5235	0.50	905.65			
5235	(B)	SB-52	1417+34.00	24.25	RT	909.65	905.65	C - 1	1		4.0												49																													5236	0.50	905.41			
5236	(B)	SB-52	1417+34.00	24.00	LT	908.96	903.99	B - 9	1			4.9							YES						156																											5237	0.50	903.21			
		SB-52	1417+34.00	24.79	LT																																																					
5237	(B)	SB-52	1418+90.00	19.00	LT	908.30	903.21	B - 9	1			5.0							YES						140																											5242	0.50	902.51			
		SB-52	1418+90.00	19.79	LT																																																						
5238	(B)	SB-52	1420+20.00	45.42	LT	907.25	904.00	M - 11	1	3.5													27																												1	5242	0.50	903.86			
5239	(B)	NB-52	420+25.00	19.00	RT	907.61	904.36	B - 9	1	3.2													32																													5240	0.50	904.20			
5240	(B)	NB-52	420+25.00	13.25	LT	908.33	904.20	C - 1	1		4.1												18																													5241	0.50	904.12			
5241	(B)	SB-52	1420+30.00	13.25	RT	908.31	904.12	C - 1	1		4.1												34																													5242	0.50	903.95			
5242	(B)	SB-52	1420+30.00	19.00	LT	907.60	902.26	B - 9	1					5.3					YES							23																										5264	0.50	902.14			
		SB-52	1420+30.00	20.29	LT																																																						
5243	(B)	SB-52	1421+30.00	24.00	LT	906.98	901.76	B - 9	1			5.1							YES							85																										5244	0.50	901.33			
		SB-52	1421+30.00	24.79	LT																																																					
5244	(B)	SB-52	1422+15.00	24.00	LT	906.55	901.33	B - 9	1			5.1							YES							85																										5248	0.50	900.91			
		SB-52	1422+15.00	24.79	LT																																																						
5245	(B)	NB-52	422+97.00	19.00	RT	906.25	903.00	B - 9	1	3.2													32																													5246	0.50	902.84			
5246	(B)	NB-52	422+97.00	13.25	LT	906.97	902.84	C - 1	1		4.1												24																													5247	0.50	902.72			
5247	(B)	SB-52	1423+00.00	13.25	RT	906.96	902.72	C - 1	1		4.2												38																													5248	0.50	902.53			
5248	(B)	SB-52	1423+00.00	24.00	LT	906.13	900.66	B - 9	1				5.4						YES								90																									5249	0.50	900.21			
		SB-52	1423+00.00	25.08	LT																																																						
5249	(B)	SB-52	1423+90.00	24.00	LT	905.68	900.21	B - 9	1			5.4							YES								164																									5251	0.50	899.39			
		SB-52	1423+90.00	24.79	LT																																																						
5250	(B)	NB-52	425+10.00	16.75	LT	906.07	902.82	C - 1	1	3.2													40																													5253	0.50	902.61			
5251	(B)	SB-52	1425+54.00	19.00	LT	905.23	899.39	B - 17	1					5.8					YES								34																									5252	0.50	899.22			
		SB-52	1425+54.00	20.29	LT																																																						
5252	(B)	SB-52	1425+54.00	13.25	RT	905.95	899.22	C - 1	1			6.7							YES								21																									5253	0.50	899.11			
		SB-52	1425+54.00	14.04	RT																																																						
5253	(B)	NB-52	425+50.00	20.75	LT	906.11	899.11	C - 1	1				7.0						YES								40																									5254	0.50	898.91			
		NB-52	425+50.11	19.68	LT																																																						
5254	(B)	NB-52	425+50.00	19.00	RT	905.24	898.91	B - 17	1					6.3					YES								157																									5255	0.50	898.12			
		NB-52	425+50.00	20.29	RT																																																						
5255	(B)	NB-52	427+07.00	24.00	RT	905.65	897.87	B - 9	1					7.7					YES											373																							5259	0.50	896.01			
		NB-52	427+07.00	25.29	RT																																																						
5256	(B)	NB-52	427+07.00	36.25	LT	906.01	902.33	C - 1	1		3.6												62																													5255	0.50	902.03			
5257	(B)	SB-52	1427+12.00	19.80	LT	905.73	902.53	B - 9	1	3.1													39																													5256	0.50	902.33			
5258	(B)	SB-52	1425+64.00	19.00	LT	905.23	901.98	B - 17	1	3.2													10																													5251	0.50	901.93			
5259	(B)	NB-52	430+80.00	24.00	RT	906.21	896.01	B - 9	1				10.1						YES											136																							5260	0.50	895.33			
		NB-52	430+80.00	25.08	RT																																																						
5260	(C)	NB-52	432+16.00	19.70	RT	906.35	894.06	A - 7D	1								12.4		YES															160																			5603	0.30	893.58			
		NB-52	432+16.00	21.78	RT																																																						

NOTES:

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(2) IF STEPS REQUIRED, STRUCTURE TO INCLUDE MANHOLE STEPS 16" ON CENTER. SEE MN/DOT STANDARD PLATE 4180.
(3) POND OUTLET STRUCTURE. SEE DETAIL ON SHEET 11.09.
(4) POND OUTLET STRUCTURE. SEE DETAIL ON SHEET 11.10.
(5) CLASS C BEDDING FOR RC PIPE UNLESS OTHERWISE SPECIFIED.
(6) LENGTH GIVEN TO CENTER OF STRUCTURE OR END OF BARREL (DOES NOT INCLUDE APRON LENGTH).
(7) GRANULAR FILTER BLANKET OR GEOTEXTILE FILTER MATERIAL REQUIRED SHALL BE INCIDENTAL. SEE MN/DOT STANDARD PLATE 3133.
(8) TIE LAST THREE JOINTS AT APRON END. FURNISHING AND INSTALLING PIPE TIES SHALL BE CONSIDERED INCIDENTAL. SEE MN/DOT STANDARD PLATE 3145.
(9) SEE DETAIL ON SHEET 11.11.

COST PARTICIPATION NOTES:

(A) 74% ANOKA COUNTY S.P. 02-652-05, 26% CITY OF BLAINE S.P. 106-020-28 (CSAH 52) QUANTITY.
(B) 71% ANOKA COUNTY S.P. 02-652-05, 29% CITY OF HAM LAKE S.P. 197-124-001 (CSAH 52) QUANTITY.
(C) 52% ANOKA COUNTY S.P. 02-716-09, 48% CITY OF HAM LAKE S.P. 197-124-001 (CSAH 116) QUANTITY.

NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\a-f\AnokaCty\13867000\hwy-brdg\hwy\pln-sht\c0265205_dtd.dgn 7/29/2009

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: Matthew A. Wassman
PRINTED NAME: MATTHEW A. WASSMAN
DATE: 7/29/2009 LIC. NO. 26883

DRAWN BY CEH DATE 7/29/2009
DESIGN BY CEH DATE 7/29/2009
CHECKED BY MAW DATE 7/29/2009

S.P. 02-652-05
S.P. 02-716-09
S.P. 106-020-28
S.P. 197-124-001

TKDA
ENGINEERS·ARCHITECTS·PLANNERS

ANOKA COUNTY
DRAINAGE TABULATION
CSAH 52/116 RECONSTRUCTION

SHEET 11.04 OF 294

STORM SEWER - TAB L

UPSTREAM STRUCTURE LOCATION (1)								NEW STRUCTURE CONSTRUCTION														PIPE SEWER DESIGN 3006 (5),(6)													APRON										TRASH GUARD (9)				RIPRAP (7)			DRAINS TO					
										PAY HEIGHT DESIGN																																															
STRUC. OR APRON INLET POINT NO.	COST SPLIT	ALIGN.	STATION	OFFSET		TOP OF CASTING ELEV.	OUTLET ELEV.	F & I CASTING ASSEM.		H	G	48-4020	54-4020	60-4020	66-4020	72-4020	78-4020	84-4020	STEPS REQ'D (2)	DESIGN SPEC. 1 (3)	DESIGN SPEC. 2 (4)	12" RC CL V	15" RC CL V	18" RC	21" RC	24" RC	27" RC	27" RC CL III	30" RC	30" RC CL III	33" RC	36" RC	42" RC	42" RC CL III	12" RC	15" RC	18" RC	21" RC	24" RC	27" RC	30" RC	33" RC	36" RC	42" RC	15"	18"	27"	36"	CL II	CL III	GUIDE POST TYPE B	STRUC. OR APRON OUTLET POINT NO.	SLOPE OF PIPE %	INLET ELEV.	CONN. INTO EX. DRAINAGE STRUCTURE	CONN. TO EX. STORM SEWER	NOTES
								TYPE	EA	LF	LF	LF	LF	LF	LF	LF	LF	LF		EA	EA	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	CY	CY	EA				EACH	EACH	
5261	(B)	NB-52	430+80.00	36.25	LT	906.58	902.92	C - 1	1			3.6											61																													5259	0.50	902.62			
		NB-52	430+80.00	35.46	LT																																																				
5262	(B)	SB-52	1430+84.00	13.25	RT	907.04	902.96	C - 1	1			4.0											7																													5261	0.50	902.92			
		SB-52	1430+84.00	12.46	RT																																																				
5263	(B)	SB-52	1430+76.00	24.00	LT	906.25	903.15	B - 9	1	3.0													37																													5262	0.50	902.96			
5264	(B)	SB-52	1420+53.10	24.20	LT	907.36	902.14	B - 17	1			5.2							YES							78																										5243	0.50	901.76			
		SB-52	1420+52.39	24.55	LT																																																			
5270	(B)	SB-52	1433+57.00	24.00	LT	904.84	901.59	B - 9	1	3.2													48																													5271	0.50	901.35			
5271	(B)	SB-52	1433+57.00	24.25	RT	905.44	901.35	C - 1	1		4.0												51																													5272	0.50	901.10			
5272	(B)	NB-52	433+52.00	19.00	RT	904.98	896.71	B - 9	1			9.2							YES									136																								5260	0.30	895.31			
		NB-52	433+52.00	19.79	RT																																																				
5273	(B)	SB-52	1435+00.00	24.00	LT	904.13	900.88	B - 9	1	3.2													48																													5274	0.50	900.64			
5274	(B)	SB-52	1435+00.00	24.25	RT	904.82	900.64	C - 1	1		4.1												18																													5275	0.50	900.55			
5275	(B)	NB-52	434+95.00	13.25	LT	904.98	900.55	C - 1	1		4.4												33																													5276	0.50	900.38			
5276	(B)	NB-52	434+95.00	19.00	RT	904.27	896.14	B - 9	1			8.1							YES									143																								5272	0.30	895.71			
		NB-52	434+95.00	19.79	RT																																																				
5277	(B)	SB-52	1437+06.00	19.00	LT	903.22	899.97	B - 9	1	3.2													94																													5278	0.50	899.50			
5278	(B)	NB-52	437+00.00	19.00	RT	903.24	897.01	B - 9	1				6.2						YES							205																										5276	0.30	896.39			
		NB-52	437+00.00	20.08	RT																																																				
5279	(B)	SB-52	1439+15.00	19.00	LT	902.48	899.23	B - 17	1	3.2													10																													5280	0.50	899.18			
5280	(B)	SB-52	1439+05.00	19.00	LT	902.48	899.18	B - 17	1		3.2												32																													5281	0.50	899.02			
5281	(B)	SB-52	1439+05.00	13.25	RT	903.19	899.02	C - 1	1		4.1												23																													5282	0.50	898.90			
5282	(B)	NB-52	439+00.00	13.25	LT	903.20	898.90	C - 1	1		4.3												33																													5284	0.50	898.74			
5283	(B)	NB-52	439+10.00	19.00	RT	902.49	898.14	B - 17	1			4.3												10																												5284	0.30	898.11			
		NB-52	439+10.00	19.79	RT																																																				
5284	(B)	NB-52	439+00.00	19.00	RT	902.49	897.61	B - 17	1			4.8							YES							200																										5278	0.30	897.01			
		NB-52	439+00.00	19.79	RT																																																				
5285	(B)	SB-52	1442+10.00	19.00	LT	903.75	900.50	B - 9	1	3.2													32																													5286	0.50	900.34			
5286	(B)	SB-52	1442+10.00	13.25	RT	904.46	900.34	C - 1	1		4.1												11																													5287	0.50	900.29			
5287	(B)	NB-52	442+06.00	18.98	LT	904.60	900.29	C - 1	1		4.3												39																													5288	0.50	900.09			
5288	(B)	NB-52	442+06.00	19.00	RT	903.77	899.03	B - 9	1			4.7							YES					296																												5283	0.30	898.14			
		NB-52	442+06.00	19.79	RT																																																				
5289	(B)	NB-52	443+58.00	24.25	LT	905.12	901.87	C - 1	1	3.2													38																													5290	1.15	901.43			
5290	(B)	NB-52	443+58.00	13.00	RT	904.68	899.73	B - 9	1			4.9							YES				152																													5288	0.30	899.28			
		NB-52	443+58.00	13.79	RT																																																				
5291	(B)	SB-52	1445+80.00	19.00	LT	904.49	900.61	B - 9	1		3.8												31																													5292	0.30	900.51			
5292	(B)	SB-52	1445+80.00	13.25	RT	905.20	900.51	C - 1	1			4.6							YES				7																													5293	0.30	900.49			
		SB-52	1445+80.00	12.46	RT																																																				
5293	(B)	NB-52	445+75.15	24.25	LT	904.98	900.49	C - 1	1			4.4											36																													5294	0.30	900.38			
		NB-52	445+75.15	23.46	LT																																																				
5294	(B)	NB-52	445+75.15	13.00	RT	904.65	900.38	B - 9	1		4.2												217																													5290	0.30	899.73			
5295	(B)	SB-52	1446+22.40	39.80	LT	904.00	900.75	B - 17	1	3.2													47																													5291	0.30	900.61			
5500	(C)	EB-116	25+50.38	40.44	RT	901.56	898.31	B - 9	1	3.2													77																													5501	0.50	897.92			
5501	(C)	EB-116	24+75.00	24.00	RT	901.57	897.92	B - 9	1		3.6												37																													5502	0.50	897.74			
5502	(C)	EB-116	24+75.00	13.25	LT	902.41	897.74	C - 1	1		4.6								YES				10																													5502A	0.50	897.69			
5502A	(C)	EB-116	24+75.00	24.25	LT	902.80	897.69	A - 7D	1			5.2							YES				7																													5503	0.50	897.65			
		EB-116	24+75.00	23.46	LT																																																				
5503	(C)	WB-116	124+75.00	13.25	RT	902.39	897.65	C - 1	1			4.7							YES				31																													5504	0.50	897.49			
		WB-116	124+75.00	12.46	RT																																																				
5504	(C)	WB-116	124+75.00	19.00	LT	901.68	897.49	B - 9	1		4.1												218																													5509	0.50	896.41			
5505	(C)	EB-116	22+50.00	48.00	RT	899.75	896.50	M - 11	1	3.5													24																												1	5507	0.30	896.43			
5506	(C)	EB-116	23+50.00	24.00	RT	900.95	897.70	B - 9	1	3.2													93																													5507	0.50	897.23			
5507	(C)	EB-116	22+57.00	24.00	RT	900.48	896.43	B - 9	1			4.0											46																													5508	0.30	896.29			
		EB-116	22+57.00	24.79	RT																																																				
5508	(C)	WB-116	122+57.00	21.90	RT	901.49	896.29	C - 1	1			5.2							YES				45																													5509	0.30	896.15			
		WB-116	122+57.06	22.69	RT																																																				
5509	(C)	WB-116	122+57.00	21.87	LT	900.56	895.90	B - 9	1			4.6							YES					157																												5510	0.30	895.43			
		WB-116	122+57.05	22.65	LT																																																				
5510	(C)	WB-116	121+00.00	24.00	LT	899.70	895.18	B - 9	1			4.4													169																											5511	0.30	894.68			
		WB-116	121+00.00	24.79	LT																																																				
5511	(C)	WB-116	119+31.50	24.00	LT	898.85	894.68	B - 17	1			4.1													37																											5512A	0.50	894.49			
		WB-116	119+31.50	24.79	LT																																																				
5512	(C)	WB-116	119+31.50	27.38	RT	899.38	894.42	C - 1	1				4.9						YES						241																											5515	0.30	893.67			
		WB-116	119+31.23	26.33	RT																																																				
5512A	(C)	WB-116	119+31.50	13.25	RT	899.80	894.49	A - 7D	1			5.4							YES						14																											5512	0.50	894.42			
		WB-116	119+31.50	12.46	RT																																																				
5513	(C)	EB-116	19+31.00	13.25	LT	899.69	895.55	C - 1	1			4.1											11																													5512	0.50	895.50			
		EB-116	19+31.00	12.46	LT																																																				
5514	(C)	EB-116	19+28.00	19.00	RT	898.96	895.71	B - 9	1	3.2													32																													5513	0.50	895.55			

NOTES:

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(4) POND OUTLET STRUCTURE. SEE DETAIL ON SHEET 11.10.
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(8) TIE LAST THREE JOINTS AT APRON END. FURNISHING AND INSTALLING PIPE TIES SHALL BE CONSIDERED INCIDENTAL. SEE MN/DOT STANDARD PLATE 3145.
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NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\a-f\AnokaCty\13867000\hwy-brdg\hwy\pln-sht\c0265205_dta.dgn 7/29/2009

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: Matthew A. Wassman

PRINTED NAME: MATTHEW A. WASSMAN

DATE: 7/29/2009 LIC. NO. 26883

DRAWN BY CEH DATE 7/29/2009
DESIGN BY CEH DATE 7/29/2009
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S.P. 02-652-05
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TKDA
ENGINEERS·ARCHITECTS·PLANNERS

ANOKA COUNTY
DRAINAGE TABULATION
CSAH 52/116 RECONSTRUCTION

SHEET 11.05 OF 294

STORM SEWER - TAB L

Upstream structure location (1) and new structure construction

STRUC. OR APRON INLET POINT NO.	COST SPLIT	ALIGN.	STATION	OFFSET		TOP OF CASTING ELEV.	OUTLET ELEV.	F & I CASTING ASSEM. TYPE	F & I CASTING ASSEM. EA	PAY HEIGHT DESIGN H (LF)	G (LF)	48-4020 (LF)	54-4020 (LF)	60-4020 (LF)	66-4020 (LF)	72-4020 (LF)	78-4020 (LF)	84-4020 (LF)	STEPS REQ'D (2)	DESIGN SPEC. 1 (3) (EA)	DESIGN SPEC. 2 (4) (EA)
5515	(C)	EB-116	16+90.00	24.25	LT	898.50	893.42	C - 1	1							5.0			YES		
		EB-116	16+90.00	26.04	LT																
5516	(C)	EB-116	16+42.85	95.10	LT		893.00														
5517	(C)	WB-116	116+68.60	26.00	RT	898.52	895.27	C - 1	1	3.2											
5518	(C)	EB-116	14+80.00	19.00	RT	898.82	894.00	B - 9	1			4.7							YES		
		EB-116	14+80.00	19.79	RT																
5520	(C)	EB-116	16+25.00	24.00	RT	898.00	894.75	B - 9	1	3.2											
5521	(C)	EB-116	16+90.00	24.00	RT	897.90	894.43	B - 17	1		3.4										
5522	(C)	EB-116	17+00.00	24.00	RT	897.90	894.65	B - 17	1	3.2											
5525	(C)	EB-116	16+00.00	63.50	RT		893.40														
5527	(C)	WB-116	115+83.44	61.21	LT		890.50														
5528	(C)	WB-116	115+60.00	43.13	LT	(3)	893.50													1	
5529	(C)	WB-116	115+45.16	29.73	LT	898.50	893.37	A - 7D	1			5.3							YES		
		WB-116	115+45.95	29.73	LT																
5530	(C)	EB-116	29+20.00	50.00	RT		899.65														
5531	(C)	EB-116	29+20.00	24.00	RT	901.60	898.04	B - 9	1		3.5										
5532	(C)	EB-116	30+75.00	24.00	RT	900.82	897.57	B - 9	1		3.2										
5533	(C)	EB-116	30+75.00	13.25	LT	901.66	897.46	C - 1	1		4.1										
5534	(C)	WB-116	130+77.00	13.60	RT	901.64	897.16	C - 1	1		4.4										
5535	(C)	WB-116	130+77.00	19.00	LT	900.94	897.06	B - 9	1		3.8										
5536	(C)	WB-116	133+50.00	19.00	LT	899.57	895.44	B - 9	1		4.1										
5537	(C)	WB-116	133+50.00	24.25	RT	900.05	896.06	C - 1	1			3.9									
		WB-116	133+50.00	23.46	RT																
5537A	(C)	WB-116	133+50.00	13.25	RT	900.39	896.03	A - 7D	1			4.5									
		WB-116	133+50.00	12.46	RT																
5538	(C)	EB-116	33+50.00	13.25	LT	900.28	896.09	C - 1	1			4.1									
		EB-116	33+50.00	12.46	LT																
5539	(C)	EB-116	33+50.00	24.00	RT	899.45	896.20	B - 9	1	3.2											
5540	(C)	WB-116	134+00.00	24.25	RT	899.90	896.65	C - 1	1	3.2											
5541	(C)	EB-116	35+15.00	24.00	RT	898.62	895.37	B - 9	1	3.2											
5542	(C)	EB-116	36+50.00	19.00	RT	898.32	893.96	B - 17	1			4.3									
		EB-116	36+50.00	19.79	RT																
5543	(C)	EB-116	36+50.00	13.25	LT	899.03	893.86	C - 1	1			5.1							YES		
		EB-116	36+50.00	14.04	LT																
5544	(C)	WB-116	136+50.00	13.25	RT	899.03	893.81	C - 1	1			5.2							YES		
		WB-116	136+50.00	14.04	RT																
5545	(C)	WB-116	136+36.00	19.00	LT	898.32	894.57	B - 17	1		3.7										
5546	(C)	WB-116	136+46.00	19.00	LT	898.32	893.21	B - 17	1							5.1			YES		
		WB-116	136+46.00	20.79	LT																
5547	(C)	WB-116	133+50.00	31.30	LT		897.83														
5548	(C)	WB-116	138+50.00	19.00	LT	899.07	892.80	B - 9	1				6.2						YES		
		WB-116	138+50.00	20.08	LT																
5549	(C)	WB-116	139+14.34	67.15	LT		892.64														
5550	(C)	EB-116	36+50.00	53.10	RT		895.00														
5560	(C)	EB-116	49+50.00	19.00	RT	901.42	896.50	B - 9	1			4.8							YES		
		EB-116	49+50.39	19.68	RT																
5561	(C)	WB-116	149+50.50	19.00	LT	901.42	896.25	B - 9	1			5.1							YES		
		WB-116	149+50.50	19.79	LT																
5562	(C)	WB-116	146+50.50	19.00	LT	899.92	895.10	B - 9	1			4.7							YES		
		WB-116	146+50.50	19.79	LT																
5563	(C)	WB-116	146+50.00	20.25	RT	900.77	896.46	C - 1	1		4.3										
5564	(C)	EB-116	46+50.00	13.25	LT	900.63	896.51	C - 1	1		4.1										
5565	(C)	EB-116	46+50.00	19.00	RT	899.92	896.67	B - 9	1	3.2											
5566	(C)	WB-116	143+00.00	19.00	LT	898.42	893.55	B - 17	1				4.8						YES		
		WB-116	143+00.00	20.08	LT																
5567	(C)	WB-116	143+00.00	24.25	RT	898.90	894.71	C - 1	1			4.1									
		WB-116	143+00.00	23.46	RT																
5568	(C)	EB-116	43+00.00	13.25	LT	899.14	894.74	C - 1	1			4.3									
		EB-116	43+00.00	12.46	LT																
5569	(C)	EB-116	43+00.00	19.00	RT	898.42	894.87	B - 17	1		3.5										
5570	(C)	EB-116	43+20.00	19.00	RT	898.43	894.93	B - 17	1		3.4										
5571	(C)	WB-116	141+94.00	19.00	LT	898.69	892.99	B - 9	1				5.6						YES		
		WB-116	141+94.00	20.08	LT																
5572	(C)	WB-116	141+94.00	13.25	RT	899.41	894.80	C - 1	1			4.6							YES		
		WB-116	141+94.00	12.46	RT																
5573	(C)	EB-116	41+94.00	24.25	LT	899.18	894.84	C - 1	1			4.3									
		EB-116	41+94.00	23.46	LT																
5574	(C)	EB-116	41+94.00	24.00	RT	898.58	895.08	B - 17	1		3.4										
5575	(C)	EB-116	42+30.24	45.22	RT	899.13	895.60	B - 9	1		3.4										
5576	(C)	EB-116	42+58.20	45.20	RT	898.99	895.74	B - 9	1	3.2											

Pipe sewer design 3006 (5),(6), apron, trash guard (9), riprap (7), drains to

STRUC. NO.	12" RC CL V (LF)	15" RC CL V (LF)	18" RC (LF)	21" RC (LF)	24" RC (LF)	27" RC (LF)	27" RC CL III (LF)	30" RC (LF)	30" RC CL III (LF)	33" RC (LF)	36" RC (LF)	42" RC (LF)	42" RC CL III (LF)	APRON 12" RC (EA)	APRON 15" RC (EA)	APRON 18" RC (EA)	APRON 21" RC (EA)	APRON 24" RC (EA)	APRON 27" RC (EA)	APRON 30" RC (EA)	APRON 33" RC (EA)	APRON 36" RC (EA)	APRON 42" RC (EA)	TRASH GUARD 15" (EA)	TRASH GUARD 18" (EA)	TRASH GUARD 27" (EA)	TRASH GUARD 36" (EA)	RIPRAP CL II (CY)	RIPRAP CL III (CY)	GUIDE POST TYPE B (EA)	DRAINS TO STRUC. OR APRON OUTLET POINT NO.	SLOPE OF PIPE %	INLET ELEV.	CONN. INTO EX. DRAINAGE STRUCTURE (EACH)	CONN. TO EX. STORM SEWER (EACH)	NOTES
5515					78																										5516	0.50	893.00			(8)
5516																	1										5.5		1						
5517		21																													5515	0.50	895.16			
5518																																			1	
5520		65																													5521	0.50	894.43			
5521		50																													5515	0.50	894.18			
5522		10																													5521	2.22	894.43			
5525											58											1					1			1	6002	2.12	892.00			(8)
5527	24													1																	5528	-0.50	890.65			(8)
5528	19																												5.6		5529	0.68	893.37			
5529	54																														6001	0.68	893.00			
5530		20													1									1						1	5531	6.21	898.04			(8)
5531		155																													5532	0.30	897.57			
5532		37																													5533	0.30	897.46			
5533		16																													5534	0.30	897.41			
5534			33																												5535	0.30	897.06			
5535			273																												5536	0.36	896.07			
5536				286																											5545	0.30	894.57			
5537		11																													5537A	0.30	896.03			
5537A		31																													5536	0.30	895.94			
5538		7																													5537	0.30	896.06			
5539		36																													5538	0.30	896.09			
5540		50																													5537	0.50	896.40			
5541		135																													5542	0.30	894.97			
5542						34																									5543	0.30	893.86			
5543						15																									5544	0.30	893.81			
5544						35																									5546	0.30	893.71			
5545				10																											5546	0.30	894.54			
5546										204																					5548	0.20	892.80			
5547		6													1									1						1	5536	12.28	896.32			(8)
5548										74																					5549	0.20	892.64			
5549																					1								6.2	1						
5550						27													1							1				1	5542	3.12	893.96			(8)
5560			82																												5561	0.30	896.25		1	
5561			300																												5562	0.30	895.35			
5562				351																											5566	0.30	894.05			
5563		40																													5562	0.50	896.26			
5564		10																													5563	0.50	896.46			
5565		32																													5564	0.50	896.51			
5566						106																									5571	0.30	893.24			
5567			44																												5566	0.50	894.49			
5568			7																												5567	0.50	894.71			
5569			31																												5568	0.40	894.74			
5570			20																												5569	0.30	894.87			
5571								62																							5578	0.30	892.78			(8)
5572			33																												5571	0.50	894.64			
5573			7																												5572	0.50	894.80			
5574			47																												5573	0.50	894.84			
5575		42																													5574	0.66	895.33			
5576		28																													5575	0.50	895.60			

NOTES:

(1) STATION, OFFSET, AND COORDINATES FOR EACH POINT NUMBER ARE GIVEN AT CENTER OF GRATE. ADDITIONAL STATION, OFFSET, AND COORDINATES ARE GIVEN AT CENTER OF STRUCTURE FOR 4020 AND DESIGN F STRUCTURES. INVERT ELEVATIONS ARE GIVEN AT CENTER OF STRUCTURE. STATION, OFFSET, COORDINATES, AND ELEVATIONS ARE GIVEN AT END OF APRON FOR APRON STRUCTURES.
(2) IF STEPS REQUIRED, STRUCTURE TO INCLUDE MANHOLE STEPS 16" ON CENTER. SEE MN/DOT STANDARD PLATE 4180.
(3) POND OUTLET STRUCTURE. SEE DETAIL ON SHEET 11.09.
(4) POND OUTLET STRUCTURE. SEE DETAIL ON SHEET 11.10.
(5) CLASS C BEDDING FOR RC PIPE UNLESS OTHERWISE SPECIFIED.
(6) LENGTH GIVEN TO CENTER OF STRUCTURE OR END OF BARREL (DOES NOT INCLUDE APRON LENGTH).
(7) GRANULAR FILTER BLANKET OR GEOTEXTILE FILTER MATERIAL REQUIRED SHALL BE INCIDENTAL. SEE MN/DOT STANDARD PLATE 3133.
(8) TIE LAST THREE JOINTS AT APRON END. FURNISHING AND INSTALLING PIPE TIES SHALL BE CONSIDERED INCIDENTAL. SEE MN/DOT STANDARD PLATE 3145.
(9) SEE DETAIL ON SHEET 11.11.

COST PARTICIPATION NOTES:

(A) 74% ANOKA COUNTY S.P. 02-652-05, 26% CITY OF BLAINE S.P. 106-020-28 (CSAH 52) QUANTITY.
(B) 71% ANOKA COUNTY S.P. 02-652-05, 29% CITY OF HAM LAKE S.P. 197-124-001 (CSAH 52) QUANTITY.
(C) 52% ANOKA COUNTY S.P. 02-716-09, 48% CITY OF HAM LAKE S.P. 197-124-001 (CSAH 116) QUANTITY.

NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\a-f\AnokaCty\13867000\hwy-brdg\hwy\pln-sht\c0265205.dtf.dgn 7/29/2009

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: Matthew A. Wassman

PRINTED NAME: MATTHEW A. WASSMAN

DATE: 7/29/2009 LIC. NO. 26883

DRAWN BY CEH DATE 7/29/2009
DESIGN BY CEH DATE 7/29/2009
CHECKED BY MAW DATE 7/29/2009

S.P. 02-652-05
S.P. 02-716-09
S.P. 106-020-28
S.P. 197-124-001

TKDA
ENGINEERS·ARCHITECTS·PLANNERS

ANOKA COUNTY
DRAINAGE TABULATION
CSAH 52/116 RECONSTRUCTION

SHEET 11.06 OF 294

STORM SEWER - TAB L

UPSTREAM STRUCTURE LOCATION (1)								NEW STRUCTURE CONSTRUCTION													
STRUC. OR APRON INLET POINT NO.	COST SPLIT	ALIGN.	STATION	OFFSET		TOP OF CASTING ELEV.	OUTLET ELEV.	F & I CASTING ASSEM.		PAY HEIGHT DESIGN									STEPS REQ'D (2)	DESIGN SPEC. 1 (3)	DESIGN SPEC. 2 (4)
										H	G	48-4020	54-4020	60-4020	66-4020	72-4020	78-4020	84-4020			
								TYPE	EA	LF	LF	LF	LF	LF	LF	LF	LF	LF		EA	EA
5577	(C)	EB-116	43+20.00	49.50	RT		896.00														
5578	(C)	WB-116	141+38.90	60.25	LT		892.78														
5580	(C)	WB-116	139+78.35	141.07	LT		890.50														
5581	(C)	WB-116	139+88.97	160.68	LT	(3)	893.50													1	
5582	(C)	WB-116	140+08.38	196.40	LT		893.20														
5585	(C)	WB-116	154+73.00	19.00	LT	900.96	897.71	B - 17	1	3.2											
5586	(C)	WB-116	154+83.33	19.00	LT	900.96	897.66	B - 17	1		3.2										
5587	(C)	WB-116	154+83.33	13.25	RT	901.67	897.50	C - 1	1		4.1										
5588	(C)	EB-116	54+83.33	13.25	LT	901.67	897.42	C - 1	1		4.2										
5589	(C)	EB-116	54+83.33	19.00	RT	900.96	896.70	B - 17	1			4.2									
		EB-116	54+83.33	19.79	RT																
5590	(C)	EB-116	54+83.33	60.75	RT		896.50														
5591	(C)	EB-116	54+72.00	19.00	RT	900.96	897.71	B - 17	1	3.2											
5592	(C)	EB-116	60+60.00	24.25	LT	904.96	901.71	C - 1	1	3.2											
5593	(C)	EB-116	60+60.00	24.00	RT	904.36	901.11	B - 9	1		3.2										
5594	(C)	EB-116	58+92.00	24.00	RT	903.22	899.37	B - 9	1		3.8										
5595	(C)	EB-116	57+00.00	22.20	RT	901.95	898.40	B - 9	1		3.5										
5596	(C)	WB-116	158+92.00	19.00	LT	903.30	900.05	B - 9	1	3.2											
5597	(C)	WB-116	158+92.00	13.25	RT	904.01	899.89	C - 1	1			4.1									
		WB-116	158+92.00	12.46	RT																
5598	(C)	EB-116	58+92.00	24.25	LT	903.92	899.85	C - 1	1			4.0									
		EB-116	58+92.00	23.46	LT																
5601	(C)	EB-116	64+97.50	19.00	RT	906.85	903.60	B - 9	1	3.2											
5602	(C)	WB-116	164+97.00	24.25	RT	905.36	902.11	C - 1	1		3.2										
5603	(C)	WB-116	164+97.00	24.00	LT	903.65	893.58	B - 9	1						10.0				YES		
		WB-116	164+97.00	25.58	LT																
5604	(C)	EB-116	65+77.00	19.00	RT	906.63	903.38	B - 9	1	3.2											
5605	(C)	EB-116	66+50.00	19.00	RT	906.26	903.01	B - 9	1		3.2										
5606	(C)	EB-116	66+50.00	13.25	LT	904.87	901.61	C - 1	1			3.2									
		EB-116	66+50.00	12.46	LT																
5607	(C)	WB-116	166+39.00	24.25	RT	905.34	901.58	C - 1	1			3.7									
		WB-116	166+39.00	23.46	RT																
5608	(C)	WB-116	166+39.00	24.00	LT	902.74	893.16	B - 9	1						9.5				YES		
		WB-116	166+39.00	22.42	LT																
5609	(C)	EB-116	68+50.00	19.00	RT	904.34	901.09	B - 9	1	3.2											
5610	(C)	EB-116	68+00.00	13.25	LT	904.13	900.88	C - 1	1	3.2											
5611	(C)	EB-116	69+00.00	13.25	LT	903.63	900.38	C - 1	1	3.2											
5612	(C)	EB-116	68+50.00	13.25	LT	903.88	900.13	C - 1	1		3.7										
5613	(C)	WB-116	168+33.00	13.43	RT	903.89	900.05	C - 1	1		3.8										
5614	(C)	WB-116	168+33.00	19.00	LT	903.12	892.59	B - 9	1						10.5				YES		
		WB-116	168+33.00	17.42	LT																
5616	(C)	WB-116	169+70.00	13.67	LT	902.63	892.18	B - 9	1									10.4	YES		
		WB-116	169+69.85	11.39	LT																
5617	(C)	EB-116	69+90.00	17.36	RT	902.98	891.98	B - 9	1									10.9	YES		
		EB-116	69+89.95	15.07	RT																
5618	(C)	EB-116	71+60.29	31.20	RT	899.00	891.47	A - 7D	1						7.6				YES		
		EB-116	71+59.50	32.57	RT																
5619	(C)	EB-116	71+81.82	63.85	RT		891.35														
5620	(C)	WB-116	170+60.00	7.68	LT	902.33	899.08	B - 9	1	3.2											
5625	(C)	EB-116	71+96.65	165.28	RT		888.50														
5626	(C)	EB-116	72+24.10	183.17	RT	(3)	891.50													1	
5627	(C)	EB-116	72+48.25	198.14	RT		891.35														
6000	(A)	NB-52	346+32.71	19.11	RT	901.50		M - 7	1												
6001	(C)	WB-116	114+92.05	27.77	LT	899.78	893.00														
6002	(C)	EB-116	15+53.00	17.12	RT	898.64	892.00														
SUMMARY																					
ANOKA COUNTY S.P. 02-652-05, BLAINE S.P. 106-020-28 (CSAH 52)									135	101.7	147.9	224.6	9.3	125.8	7.4	9.5				1	1
ANOKA COUNTY S.P. 02-652-05, HAM LAKE S.P. 197-124-001 (CSAH 52)									76	64.6	79.6	137.2	28.7	25.1							
ANOKA COUNTY S.P. 02-716-09, HAM LAKE S.P. 197-124-001 (CSAH 116)									91	70.7	100.5	129.9	21.5		37.6	10.1	12.4	21.3		3	
PROJECT TOTAL									302	237.0	328.0	491.7	59.5	150.9	45.0	19.6	12.4	21.3		4	1

STRUC. OR APRON INLET POINT NO.	PIPE SEWER DESIGN 3006 (5),(6)													APRON									
	12" RC CL V	15" RC CL V	18" RC	21" RC	24" RC	27" RC	27" RC CL III	30" RC	30" RC CL III	33" RC	36" RC	42" RC	42" RC CL III	12" RC	15" RC	18" RC	21" RC	24" RC	27" RC	30" RC	33" RC	36" RC	42" RC
	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
5577			25													1							
5578																				1			
5580			16													1							
5581			35																				
5582																1							
5585		10																					
5586		32																					
5587		17																					
5588		33																					
5589			35																				
5590																1							
5591		11																					
5592		48																					
5593		168																					
5594			192																				
5595			217																				
5596		32																					
5597		7																					
5598		47																					
5601		38																					
5602		50																					
5603													138										
5604		75																					
5605		31																					
5606		7																					
5607		46																					
5608													191										
5609		32																					
5610		50																					
5611		50																					
5612		16																					
5613		31																					
5614													137										
5616													67										
5617													170										
5618												30											
5619																							1
5620		90																					
5625		27													1								
5626		22																					
5627															1								
6000																							
6001																							
6002																							
SUMMARY																							
ANOKA COUNTY S.P. 02-652-05, BLAINE S.P. 106-020-28 (CSAH 52)	12	3651	1081	1255	339	487	54	984		679		93		1	8	1	1	3	2				1
ANOKA COUNTY S.P. 02-652-05, HAM LAKE S.P. 197-124-001 (CSAH 52)		2482	542	394	676	506	279		509						1								
ANOKA COUNTY S.P. 02-716-09, HAM LAKE S.P. 197-124-001 (CSAH 116)	97	2403	1554	1108	78	217		62		278	58	30	863	1	4	4		1	1	1	1	1	1
PROJECT TOTAL	109	8536	3177	2757	1093	1210	333	1046	509	957	58	123	863	2	13	5	1	4	3	1	1	1	2

STRUC. OR APRON INLET POINT NO.	TRASH GUARD (9)				RIPRAP (7)		GUIDE POST TYPE B	DRAINS TO			CONN. INTO EX. DRAINAGE STRUCTURE	CONN. TO EX. STORM SEWER	NOTES
	15"	18"	27"	36"	CL II	CL III		STRUC. OR APRON OUTLET POINT NO.	SLOPE OF PIPE %	INLET ELEV.			
	EA	EA	EA	EA	CY	CY	EA				EACH	EACH	
5577		1					1	5570	3.51	894.93			(8)
5578						10.9	1						
5580								5581	-0.50	890.61			(8)
5581						5.6		5582	0.74	893.20			
5582					3.9		1						
5585								5586	0.50	897.66			
5586								5587	0.50	897.50			
5587								5588	0.50	897.42			
5588								5589	0.50	897.25			
5589								5590	0.50	896.50			(8)
5590					3.9		1						
5591								5589	0.50	897.66			
5592								5593	1.24	901.11			
5593								5594	0.68	899.97			
5594								5595	0.50	898.40			
5595								5589	0.50	897.32			
5596								5597	0.50	899.89			
5597								5598	0.50	899.85			
5598								5594	0.50	899.62			
5601								5602	3.94	902.11			
5602								5603	3.43	900.40			
5603								5608	0.30	893.16			
5604								5605	0.50	903.01			
5605								5606	4.43	901.61			
5606								5607	0.50	901.58			
5607								5608	4.57	899.48			
5608								5614	0.30	892.59			
5609								5612	1.41	900.63			
5610								5612	0.50	900.62			
5611								5612	0.50	900.13			
5612								5613	0.50	900.05			
5613								5614	0.62	899.86			
5614								5616	0.30	892.18			
5616								5617	0.30	891.98			
5617								5618	0.30	891.47			
5618								5619	0.30	891.35			(8)
5619						16.3	1						
5620								5616	0.50	898.63			
5625								5626	-0.50	888.67			(8)
5626						5.6		5627	0.53	891.35			(8)
5627					2.9		1						
6000													
6001											1		
6002											1		
SUMMARY													
ANOKA COUNTY S.P. 02-652-05, BLAINE S.P. 106-020-28 (CSAH 52)	2	1			35.1	45.6	17					5	
ANOKA COUNTY S.P. 02-652-05, HAM LAKE S.P. 197-124-001 (CSAH 52)	1						4						
ANOKA COUNTY S.P. 02-716-09, HAM LAKE S.P. 197-124-001 (CSAH 116)	2	1	1	1	16.2	50.2	13				2	2	
PROJECT TOTAL	5	2	1	1	51.3	95.8	34				2	7	

NOTES:

(1) STATION, OFFSET, AND COORDINATES FOR EACH POINT NUMBER ARE GIVEN AT CENTER OF GRATE. ADDITIONAL STATION, OFFSET, AND COORDINATES ARE GIVEN AT CENTER OF STRUCTURE FOR 4020 AND DESIGN F STRUCTURES. INVERT ELEVATIONS ARE GIVEN AT CENTER OF STRUCTURE. STATION, OFFSET, COORDINATES, AND ELEVATIONS ARE GIVEN AT END OF APRON FOR APRON STRUCTURES.
(2) IF STEPS REQUIRED, STRUCTURE TO INCLUDE MANHOLE STEPS 16" ON CENTER. SEE MN/DOT STANDARD PLATE 4180.
(3) POND OUTLET STRUCTURE. SEE DETAIL ON SHEET 11.09.
(4) POND OUTLET STRUCTURE. SEE DETAIL ON SHEET 11.10.
(5) CLASS C BEDDING FOR RC PIPE UNLESS OTHERWISE SPECIFIED.
(6) LENGTH GIVEN TO CENTER OF STRUCTURE OR END OF BARREL (DOES NOT INCLUDE APRON LENGTH).
(7) GRANULAR FILTER BLANKET OR GEOTEXTILE FILTER MATERIAL REQUIRED SHALL BE INCIDENTAL. SEE MN/DOT STANDARD PLATE 3133.
(8) TIE LAST THREE JOINTS AT APRON END. FURNISHING AND INSTALLING PIPE TIES SHALL BE CONSIDERED INCIDENTAL. SEE MN/DOT STANDARD PLATE 3145.
(9) SEE DETAIL ON SHEET 11.11.

COST PARTICIPATION NOTES:

(A) 74% ANOKA COUNTY S.P. 02-652-05, 26% CITY OF BLAINE S.P. 106-020-28 (CSAH 52) QUANTITY.
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(C) 52% ANOKA COUNTY S.P. 02-716-09, 48% CITY OF HAM LAKE S.P. 197-124-001 (CSAH 116) QUANTITY.

NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\a-f\AnokaCty\13867000\hwy-brdg\hwy\pln-sht\c0265205_dtg.dgn 9/17/2009

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: Matthew A. Wassman
PRINTED NAME: MATTHEW A. WASSMAN
DATE: 9/17/2009 LIC. NO. 26883

DRAWN BY CEH DATE 9/17/2009
DESIGN BY CEH DATE 9/17/2009
CHECKED BY MAW DATE 9/17/2009

S.P. 02-652-05
S.P. 02-716-09
S.P. 106-020-28
S.P. 197-124-001

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ANOKA COUNTY
DRAINAGE TABULATION
CSAH 52/116 RECONSTRUCTION

SHEET
11.07
OF
294

CULVERTS - TAB M

UPSTREAM APRON LOCATION (1)						PIPE CULVERT (2),(3)					APRON					TRASH GUARD			RIPRAP (4)	GUIDE POST TYPE B	DRAINS TO			NOTES
APRON INLET POINT NO.	ALIGNMENT	STATION	OFFSET		OUTLET ELEV.	15" RC DES 3006 CL V	18" RC DES 3006 CL V	42" RC DES 3006 CL III	12" CS	15" CS	15" RC	18" RC	42" RC	12" GS	15" GS	15"	18"	42"	CL II		APRON OUTLET POINT NO.	SLOPE OF PIPE %	INLET ELEV.	
						LF	LF	LF	LF	LF	EA	EA	EA	EA	EA	EA	EA	EA	CY	EA				
5300	NB-52	447+89.50	20.70	RT	900.83				44					1						1	5301	0.75	900.47	(6)
5301	NB-52	448+36.95	20.60	RT	900.47									1					3.2	1				
5302	NB-52	450+12.65	26.50	RT	897.45					30					1					1	5303	1.43	896.96	(6)
5303	NB-52	450+47.15	27.60	RT	896.96										1				3.5	1				
5306	NB-52	451+50.00	23.00	RT	896.13		66					1					1			1	5307	1.24	895.16	(5)
5307	SB-52	1451+54.30	30.50	LT	895.16							1							3.9	1				
5551	EB-116	30+98.60	56.80	RT	897.45	62					1					1				1	5552	0.74	896.90	(5)
5552	EB-116	31+73.00	58.70	RT	896.90						1								2.9	1				
5553	EB-116	35+40.67	55.54	RT	895.75		60					1					1			1	5554	0.35	895.50	(5)
5554	EB-116	36+12.59	55.90	RT	895.50							1							3.9	1				
5555	WB-116	132+46.70	36.80	LT	898.50				26					1						1	5556	0.85	898.25	(6)
5556	WB-116	132+76.50	37.15	LT	898.25									1					3.2	1				
5557	WB-116	144+20.00	33.75	LT	897.00					43					1					1	5558	2.12	896.00	(6)
5558	WB-116	144+67.50	33.75	LT	896.00										1				3.5	1				
5630	EB-116	73+47.63	47.07	RT	890.20			122					1					1		1	5631	0.78	889.12	(5)
5631	WB-116	174+02.11	45.17	LT	889.12								1						10.9	1				
SUMMARY																								
ANOKA COUNTY S.P. 02-652-05 (CSAH 52)							66		44	30		2		2	2		1		10.6	6				
ANOKA COUNTY S.P. 02-716-09 (CSAH 116)						62	60	122	26	43	2	2	2	2	2	1	1	1	24.4	10				
PROJECT TOTAL						62	126	122	70	73	2	4	2	4	4	1	2	1	35.0	16				

NOTES:
(1) STATION, OFFSET, COORDINATES, AND ELEVATIONS ARE GIVEN AT END OF APRON FOR APRON STRUCTURES.
(2) LENGTH GIVEN TO END OF BARREL (DOES NOT INCLUDE APRON LENGTH).
(3) CLASS "C" BEDDING REQUIRED UNLESS OTHERWISE SPECIFIED.
(4) GRANULAR FILTER BLANKET OR GEOTEXTILE FILTER MATERIAL REQUIRED SHALL BE INCIDENTAL. SEE MN/DOT STANDARD PLATES 3133 AND 3134.
(5) TIE ALL JOINTS. FURNISHING AND INSTALLING PIPE TIES SHALL BE CONSIDERED INCIDENTAL. SEE MN/DOT STANDARD PLATE 3145.
(6) USE POSITIVE JOINTS ON ALL CORRUGATED STEEL PIPE. USE 12" MINIMUM CSP COUPLING BAND. CSP COUPLING BANDS SHALL BE CONSIDERED INCIDENTAL. SEE MN/DOT STANDARD PLATE 3221.

COST PARTICIPATION NOTES:
STRUCTURES LOCATED ON ALIGNMENTS NB-52 & SB-52 ARE 100% ANOKA COUNTY S.P. 02-652-05 (CSAH 52) QUANTITY.
STRUCTURES LOCATED ON ALIGNMENTS EB-116 & WB-116 ARE 100% ANOKA COUNTY S.P. 02-716-09 (CSAH 116) QUANTITY.

CASTING ASSEMBLIES - TAB N

ASSEMBLY	RING OR FRAME CASTING	COVER OR GRATE CASTING (1)	CURB BOX	STANDARD PLATE NO.	QUANTITY	REMARKS
A - 7D	700-7			4101	10	MANHOLE
		715		4110		
B - 9	805			4132	135	CATCH BASIN
		816		4154		
B - 17	806			4125	40	CATCH BASIN
		816		4154		
			825	4134		
C - 1	R-3448-C (2)				110	CATCH BASIN
		R-3448-C (2)				
M - 7	700-7			4101	1	CATCH BASIN
		721		4140		
M - 11 (3)	ROUND CONCRETE			4143	6	CATCH BASIN
		731		4143		

NOTES:
(1) USE BENT BOLT WITH 816 GRATE
(2) NEENAH MODEL R-3448-C OR APPROVED EQUAL.
(3) SEE STAKING DETAIL ON SHEET 11.11.

SUBSURFACE DRAINAGE - TAB NN

STATION TO STATION	3" PERF TP PIPE DRAIN LIN FT (A)	3" PERF TP PIPE DRAIN LIN FT (F)	FINE FILTER AGGREGATE (LV) CU YD (A)	FINE FILTER AGGREGATE (LV) CU YD (F)
NB52 347+33 TO 351+70	436		14	
SB52 1347+27 TO 1351+75	796		26	
EB116 40+00 TO 44+00		800		26
WB116 140+00 TO 144+00		400		13
EB116 51+50 TO 61+90		1340		44
WB116 151+50 TO 161+86		1040		34
TOTALS	1232	3580	40	117

SUMMARY		
ANOKA COUNTY S.P. 02-652-05 (CSAH 52)	1232	40
ANOKA COUNTY S.P. 02-716-09 (CSAH 116)	3580	117
PROJECT TOTAL	4812	157

COST PARTICIPATION NOTES:
(A) 100% ANOKA COUNTY S.P. 02-652-05 (CSAH 52) QUANTITY.
(F) 100% ANOKA COUNTY S.P. 02-716-09 (CSAH 116) QUANTITY.

MISCELLANEOUS RIPRAP - TAB O

LOCATION	RIPRAP CLASS II (CU YD) (1)
POND 52B EMERGENCY SPILLWAY (A)	11.1
POND 116A EMERGENCY SPILLWAY (B)	14.5
POND 116B EMERGENCY SPILLWAY (B)	12.3

SUMMARY	
ANOKA COUNTY S.P. 02-652-05 (CSAH 52)	11.1
ANOKA COUNTY S.P. 02-716-09 (CSAH 116)	26.8
PROJECT TOTAL	37.9

NOTES:
(1) GRANULAR FILTER BLANKET OR GEOTEXTILE FILTER MATERIAL REQUIRED SHALL BE INCIDENTAL. SEE MN/DOT STANDARD PLATE 3133.

COST PARTICIPATION NOTES:
(A) 100% ANOKA COUNTY S.P. 02-652-05 (CSAH 52) QUANTITY.
(B) 100% ANOKA COUNTY S.P. 02-716-09 (CSAH 116) QUANTITY.

NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\a-f\AnokaCty\13867000\hwy-brdg\hwy\pln-sht\c0265205_dth.dgn 11/3/2009

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DATE: 11/3/2009 LIC. NO. 26883

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ANOKA COUNTY
DRAINAGE TABULATION
CSAH 52/116 RECONSTRUCTION

POND OUTLET STRUCTURE INFORMATION																	
			ELEVATION AT POINT									PIPE AND STRUCTURE INFORMATION				
POND	NWL	STRUCTURE NO.	A	B	C	D	E	F	G	H	I	J	K	L	M	N
POND 52A	897.25	5025	894.25	894.36	897.25	897.00	893.25	899.30	900.60	(C)	898.25	-0.50%	15"	0.18%	15"	48"
BANK POND	893.50	5528	890.50	890.65	893.50	(A)	889.50	897.50	898.60	(B)	894.50	-0.50%	12"	0.68%	12"	48"
POND 116A	893.50	5581	890.50	890.61	893.50	893.20	889.50	896.60	898.00	897.50	894.50	-0.50%	18"	0.74%	18"	48"
POND 116B	891.50	5626	888.50	888.67	891.50	891.35	887.50	896.30	898.00	897.00	892.75	-0.50%	15"	0.53%	15"	48"

NOTES:

(A) POND DISCHARGES TO STORM SEWER SYSTEM. SEE STORM SEWER PROFILES FOR PIPE INFORMATION.

(B) POND CONFINED BY CSAH 116 AND SURROUNDING DEVELOPMENT. NO BERM ELEVATION DEFINED.

(C) POND CONFINED BY CSAH 52 AND SURROUNDING DEVELOPMENT. NO BERM ELEVATION DEFINED.

NOTES:

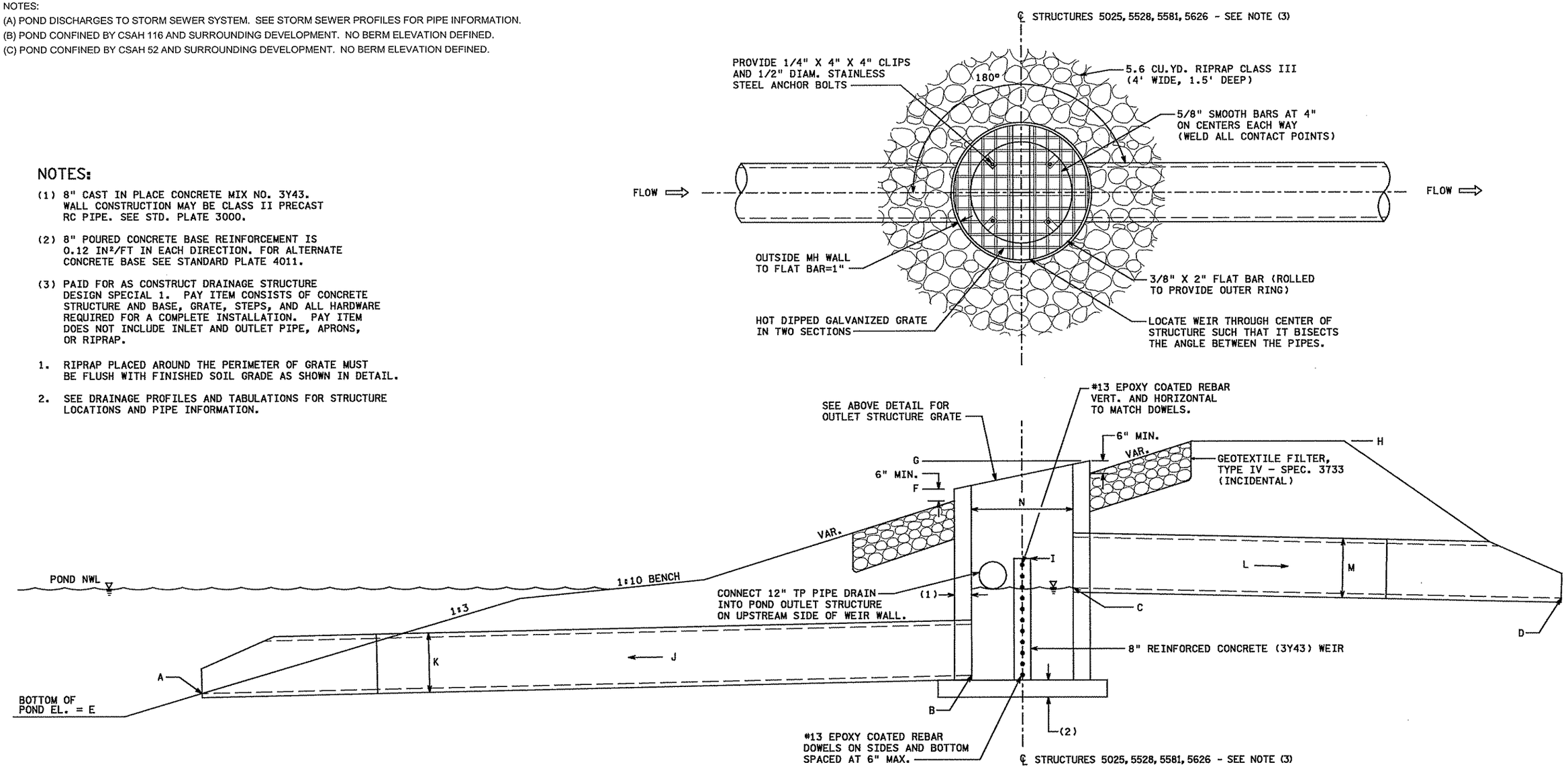
(1) 8" CAST IN PLACE CONCRETE MIX NO. 3Y43. WALL CONSTRUCTION MAY BE CLASS II PRECAST RC PIPE. SEE STD. PLATE 3000.

(2) 8" POURED CONCRETE BASE REINFORCEMENT IS 0.12 IN^2/FT IN EACH DIRECTION. FOR ALTERNATE CONCRETE BASE SEE STANDARD PLATE 4011.

(3) PAID FOR AS CONSTRUCT DRAINAGE STRUCTURE DESIGN SPECIAL 1. PAY ITEM CONSISTS OF CONCRETE STRUCTURE AND BASE, GRATE, STEPS, AND ALL HARDWARE REQUIRED FOR A COMPLETE INSTALLATION. PAY ITEM DOES NOT INCLUDE INLET AND OUTLET PIPE, APRONS, OR RIPRAP.

1. RIPRAP PLACED AROUND THE PERIMETER OF GRATE MUST BE FLUSH WITH FINISHED SOIL GRADE AS SHOWN IN DETAIL.

2. SEE DRAINAGE PROFILES AND TABULATIONS FOR STRUCTURE LOCATIONS AND PIPE INFORMATION.



DRAINAGE STRUCTURE DESIGN SPECIAL 1 - OUTLET STRUCTURE

NO SCALE

NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\c-f\AnokaCty\13867000\hwy-brdg\hwy\pln-sht\c0265205_dda.dgn 9/18/2009

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ANOKA COUNTY
DRAINAGE DETAILS
CSAH 52/116 RECONSTRUCTION
DRAINAGE STRUCTURE DESIGN SPECIAL 1

SHEET 11.09 OF 294

NOTES:

(1) 8" CAST IN PLACE CONCRETE MIX NO. 3Y43. WALL CONSTRUCTION MAY BE CLASS II PRECAST RC PIPE. SEE STD. PLATE 3000.

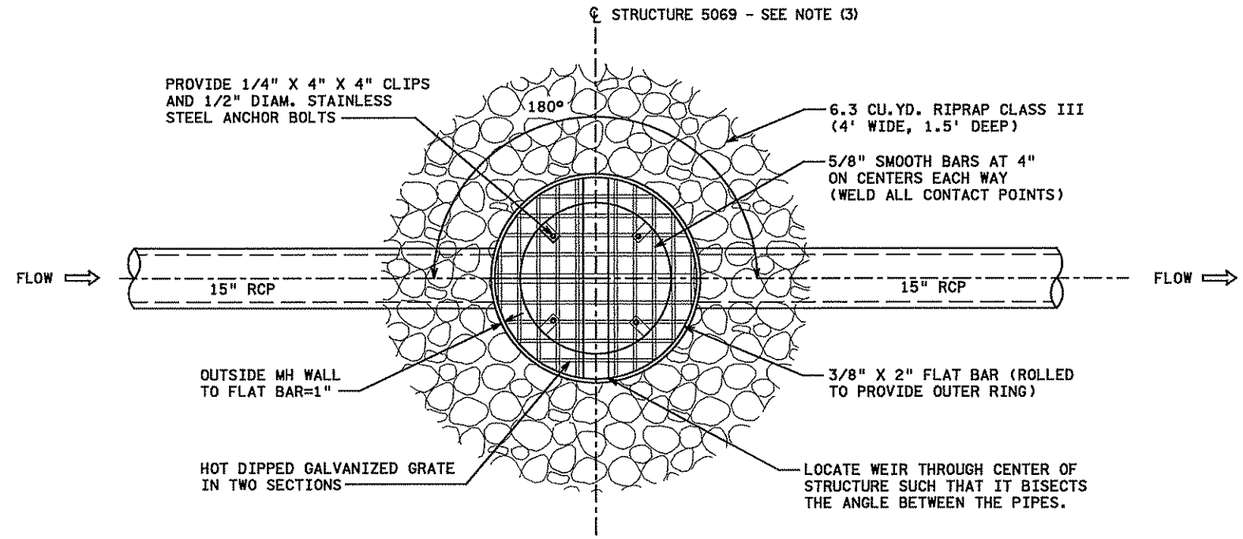
(2) 8" POURED CONCRETE BASE REINFORCEMENT IS 0.12 IN²/FT IN EACH DIRECTION. FOR ALTERNATE CONCRETE BASE SEE STANDARD PLATE 4011.

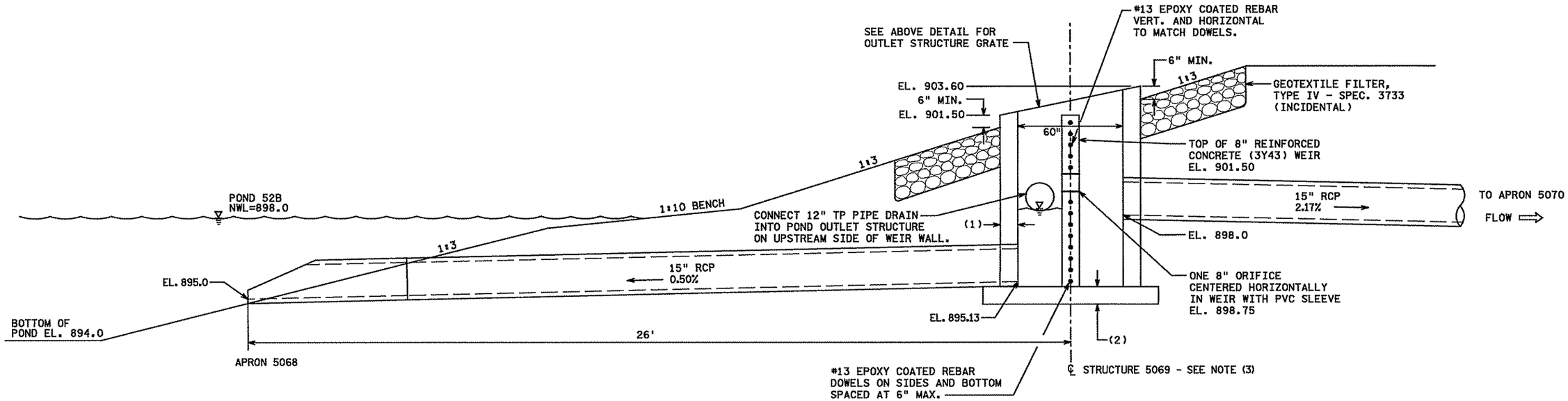
(3) PAID FOR AS CONSTRUCT DRAINAGE STRUCTURE DESIGN SPECIAL 2. PAY ITEM CONSISTS OF CONCRETE STRUCTURE AND BASE, GRATE, STEPS, AND ALL HARDWARE REQUIRED FOR A COMPLETE INSTALLATION. PAY ITEM DOES NOT INCLUDE INLET AND OUTLET PIPE, APRONS, OR RIPRAP.

1. CONCRETE WEIR MUST BE CONSTRUCTED CONCURRENT WITH THE CONSTRUCTION OF THE OUTLET STRUCTURE.

2. RIPRAP PLACED AROUND THE PERIMETER OF GRATE MUST BE FLUSH WITH FINISHED SOIL GRADE AS SHOWN IN DETAIL.

3. SEE DRAINAGE PROFILES AND TABULATIONS FOR STRUCTURE LOCATIONS AND PIPE INFORMATION.





DRAINAGE STRUCTURE DESIGN SPECIAL 2 - POND 52B OUTLET CONTROL STRUCTURE

NO SCALE

NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\a-f\AnokaCty\13867000\hwy-brdg\hwy\pln-sht\c0265205_ddb.dgn 7/29/2009

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DATE: 7/29/2009 LIC. NO. 26883

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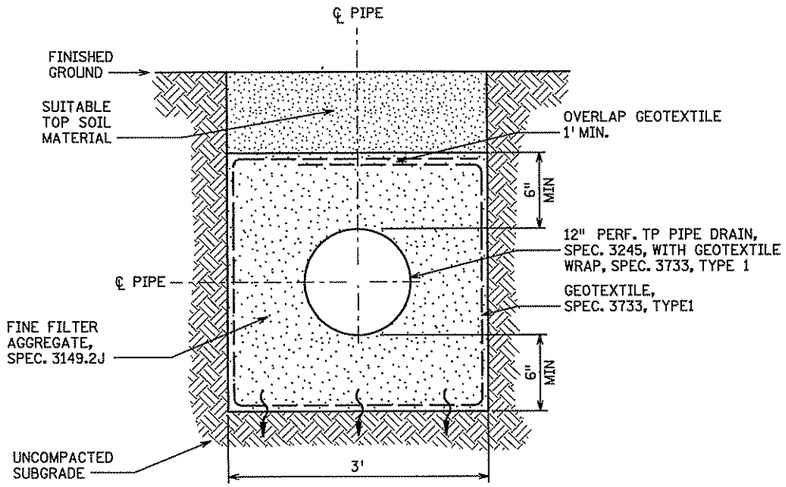
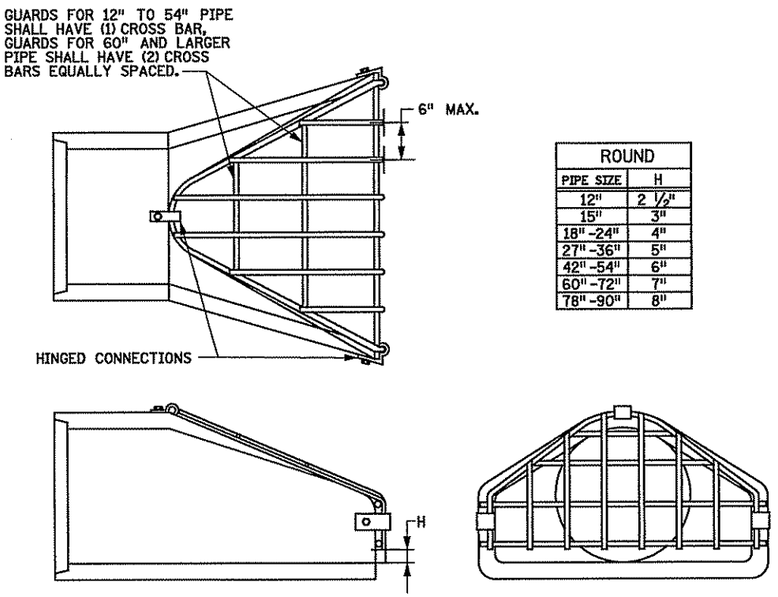
DRAINAGE DETAILS
CSAH 52/116 RECONSTRUCTION
DRAINAGE STRUCTURE DESIGN SPECIAL 2

SHEET 11.10 OF 294



INFILTRATION TRENCH



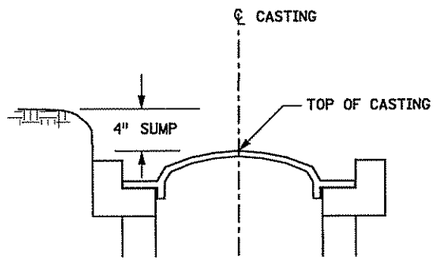
ROUND	
PIPE SIZE	H
12"	2 ½"
15"	3"
18"-24"	4"
27"-36"	5"
42"-54"	6"
60"-72"	7"
78"-90"	8"

BAR SIZES							
STANDARD DESIGN				HEAVY DESIGN			
PIPE SIZE	HOLE DIA. REQ'D	BOLT DIA.	BAR SIZE	PIPE SIZE	HOLE DIA. REQ'D	BOLT DIA.	BAR SIZE
12"-24"	¾"	⅝"	⅝"	12"-18"	¾"	⅝"	¾"
27"-48"	⅞"	¾"	¾"	21"-42"	⅞"	¾"	1"
54"-90"	1 ⅛"	1"	1"	48"-90"	1 ⅛"	1"	1 ¼"
BOLT LENGTH = PIPE WALL THICKNESS + 2 ½"							

NOTE:
HOT DIP GALVANIZED PER MNDOT 3392 OR ASTM A153.

TRASH GUARDS FOR RCP FLARED END SECTIONS

NOT TO SCALE



CASTING ASSEMBLY M-11

STAKING DETAIL

NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\a-f\AnokaCty\13867000\hwy-brdg\hwy\pln-sht\c0265205_ddc.dgn 7/29/2009

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S.P. 197-124-001

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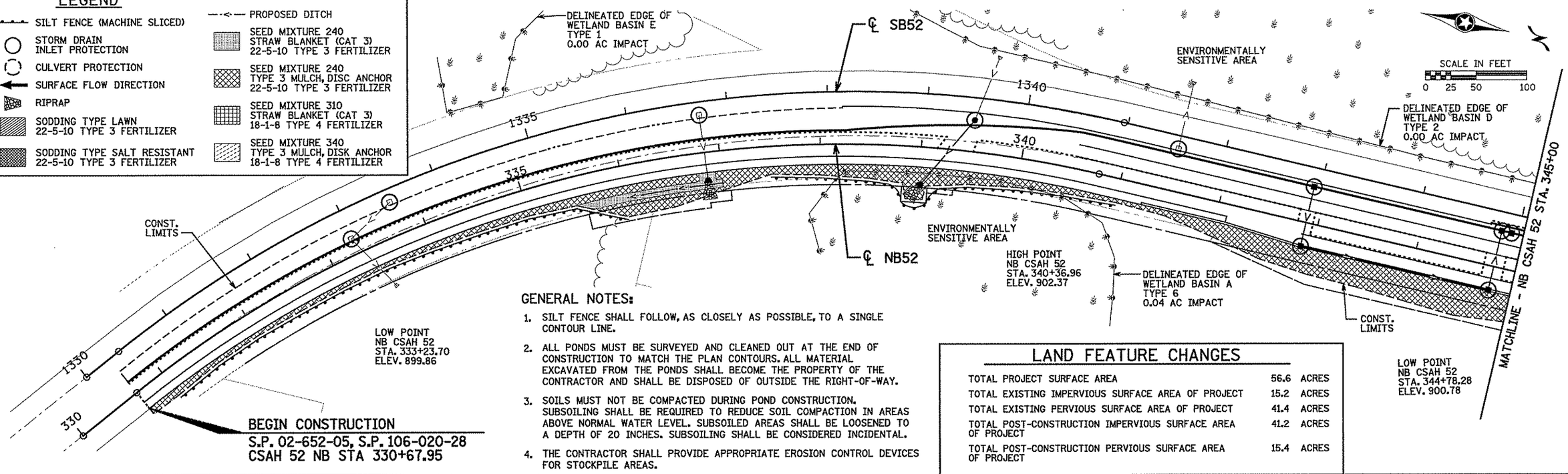
ANOKA COUNTY
DRAINAGE DETAILS
CSAH 52/116 RECONSTRUCTION

SHEET 11.11 OF 294

LEGEND

- SILT FENCE (MACHINE SLICED)
- STORM DRAIN INLET PROTECTION
- CULVERT PROTECTION
- SURFACE FLOW DIRECTION
- RIPRAP
- SODDING TYPE LAWN 22-5-10 TYPE 3 FERTILIZER
- SODDING TYPE SALT RESISTANT 22-5-10 TYPE 3 FERTILIZER
- PROPOSED DITCH
- SEED MIXTURE 240 STRAW BLANKET (CAT 3) 22-5-10 TYPE 3 FERTILIZER
- SEED MIXTURE 240 TYPE 3 MULCH, DISC ANCHOR 22-5-10 TYPE 3 FERTILIZER
- SEED MIXTURE 310 STRAW BLANKET (CAT 3) 18-1-8 TYPE 4 FERTILIZER
- SEED MIXTURE 340 TYPE 3 MULCH, DISK ANCHOR 18-1-8 TYPE 4 FERTILIZER

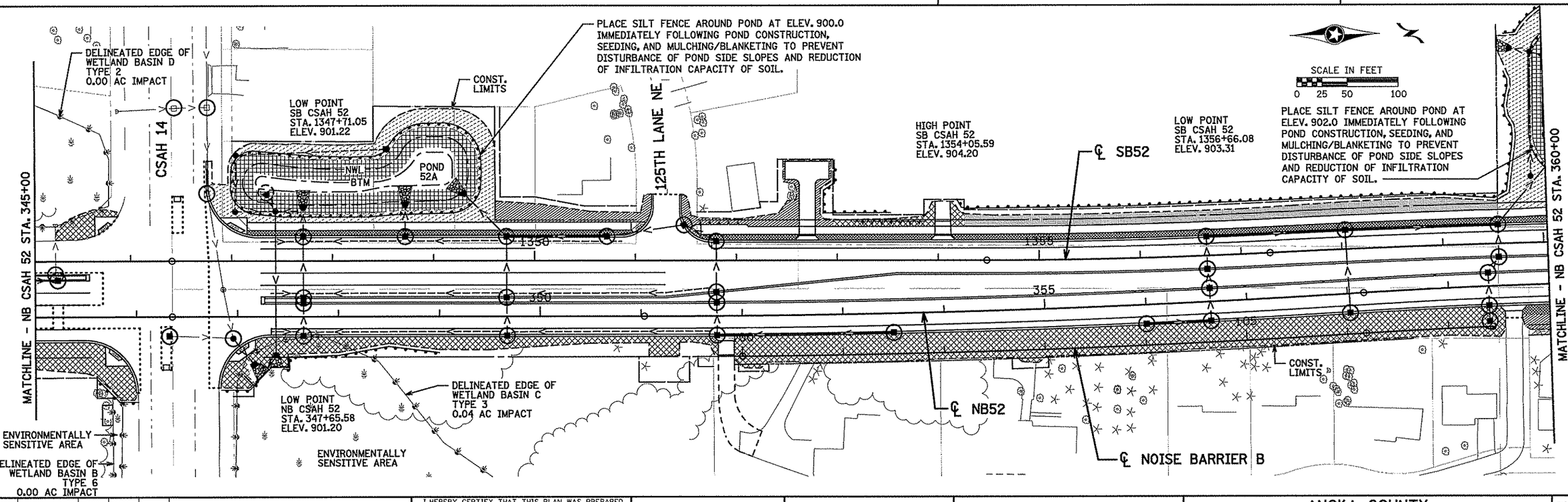


GENERAL NOTES:

1. SILT FENCE SHALL FOLLOW, AS CLOSELY AS POSSIBLE, TO A SINGLE CONTOUR LINE.
2. ALL PONDS MUST BE SURVEYED AND CLEANED OUT AT THE END OF CONSTRUCTION TO MATCH THE PLAN CONTOURS. ALL MATERIAL EXCAVATED FROM THE PONDS SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE DISPOSED OF OUTSIDE THE RIGHT-OF-WAY.
3. SOILS MUST NOT BE COMPACTED DURING POND CONSTRUCTION. SUBSOILING SHALL BE REQUIRED TO REDUCE SOIL COMPACTION IN AREAS ABOVE NORMAL WATER LEVEL. SUBSOILED AREAS SHALL BE LOOSENED TO A DEPTH OF 20 INCHES. SUBSOILING SHALL BE CONSIDERED INCIDENTAL.
4. THE CONTRACTOR SHALL PROVIDE APPROPRIATE EROSION CONTROL DEVICES FOR STOCKPILE AREAS.

LAND FEATURE CHANGES

TOTAL PROJECT SURFACE AREA	56.6	ACRES
TOTAL EXISTING IMPERVIOUS SURFACE AREA OF PROJECT	15.2	ACRES
TOTAL EXISTING PERVIOUS SURFACE AREA OF PROJECT	41.4	ACRES
TOTAL POST-CONSTRUCTION IMPERVIOUS SURFACE AREA OF PROJECT	41.2	ACRES
TOTAL POST-CONSTRUCTION PERVIOUS SURFACE AREA OF PROJECT	15.4	ACRES



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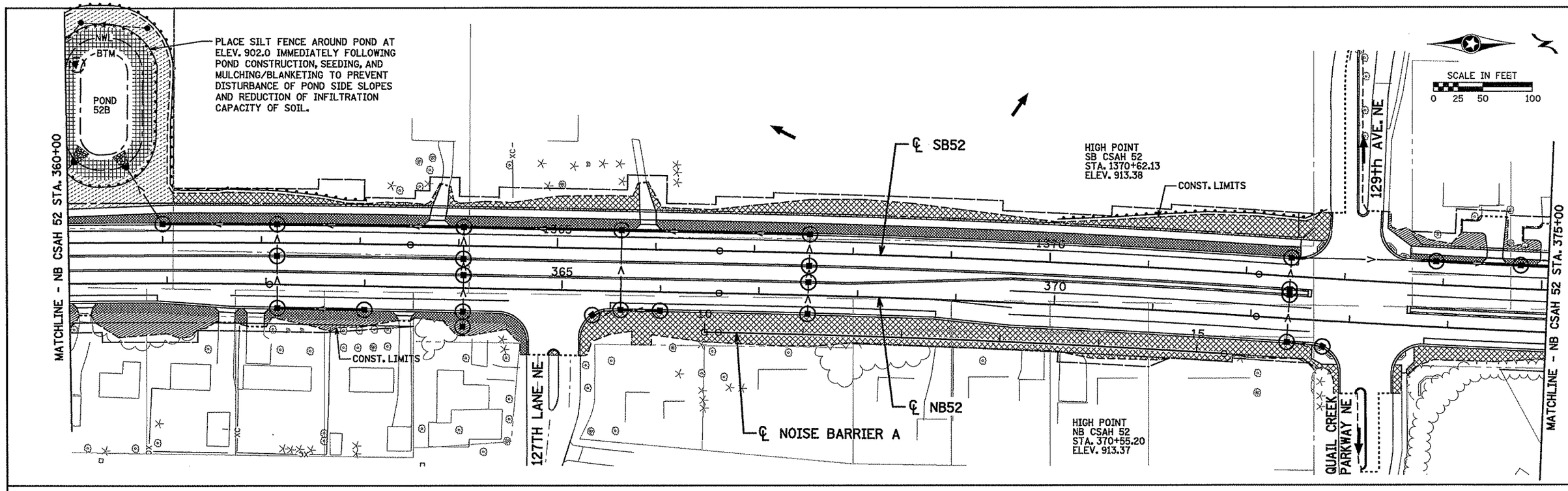
ANOKA COUNTY

EROSION CONTROL & TURF ESTABLISHMENT PLAN
CSAH 52/116 RECONSTRUCTION
NB CSAH 52 STA. 330+00 TO 360+00

SHEET 12.01 OF 294



NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\o-f\AnokaCty\i1867000\hwy-brdg\hwy\pln-sht\c0265205_ecb.dgn 7/30/2009

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SIGNATURE: Matthew A. Wassman

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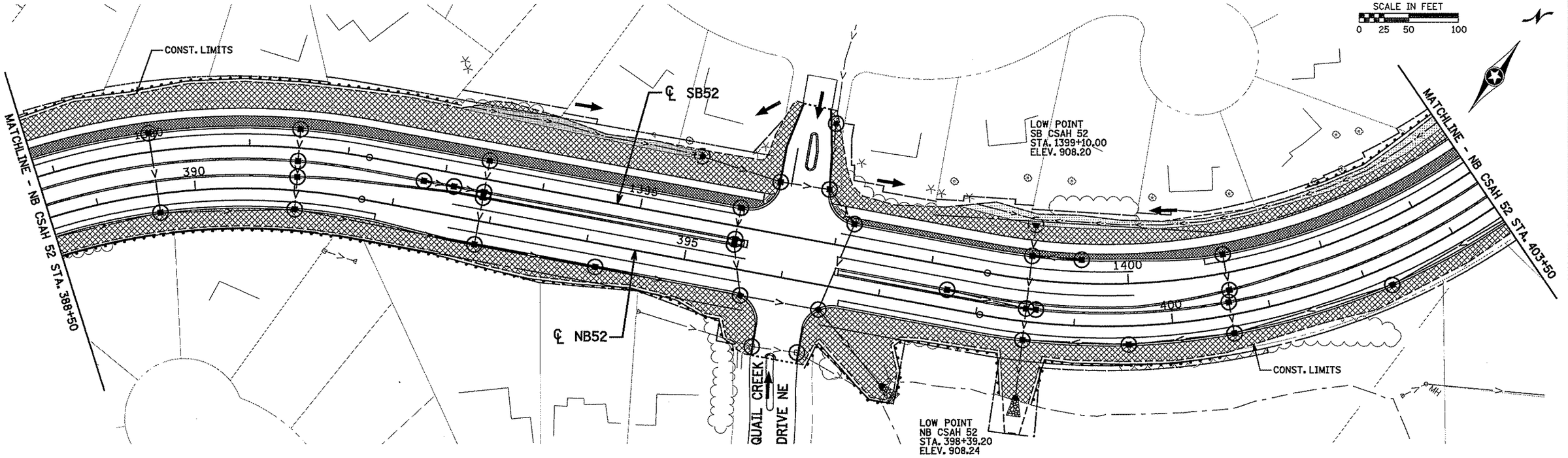
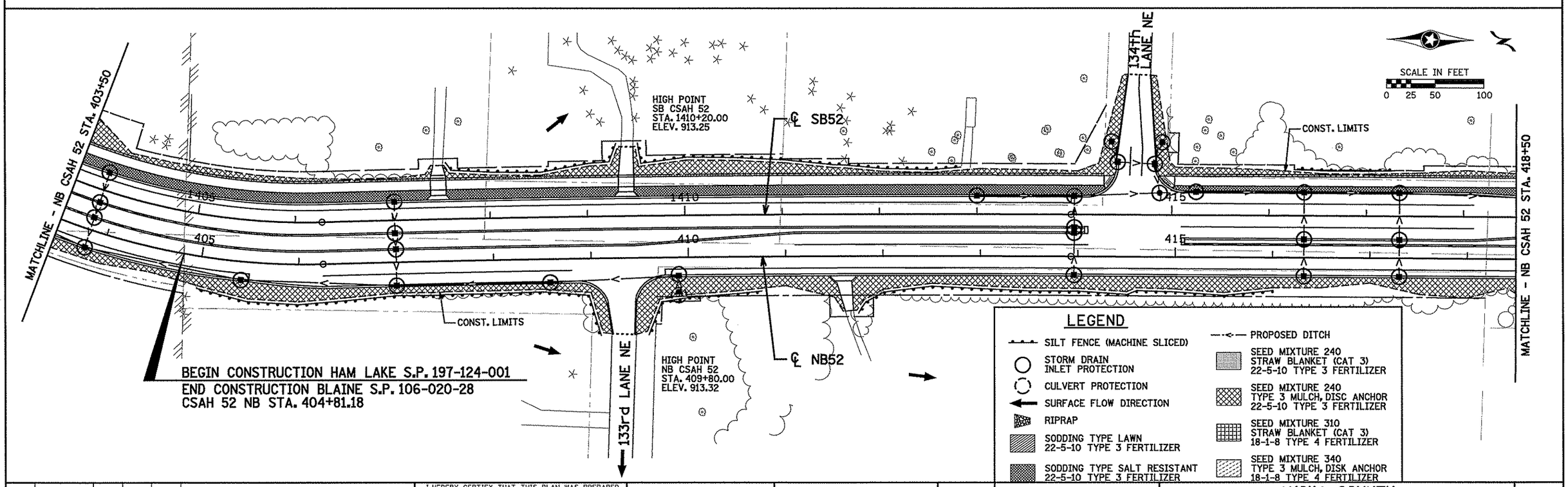
ANOKA COUNTY
EROSION CONTROL & TURF ESTABLISHMENT PLAN
CSAH 52/116 RECONSTRUCTION
NB CSAH 52 STA. 360+00 TO 388+50

SHEET 12.02 OF 294





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DESIGN BY MAW DATE 7/29/2009

CHECKED BY EN DATE 7/29/2009

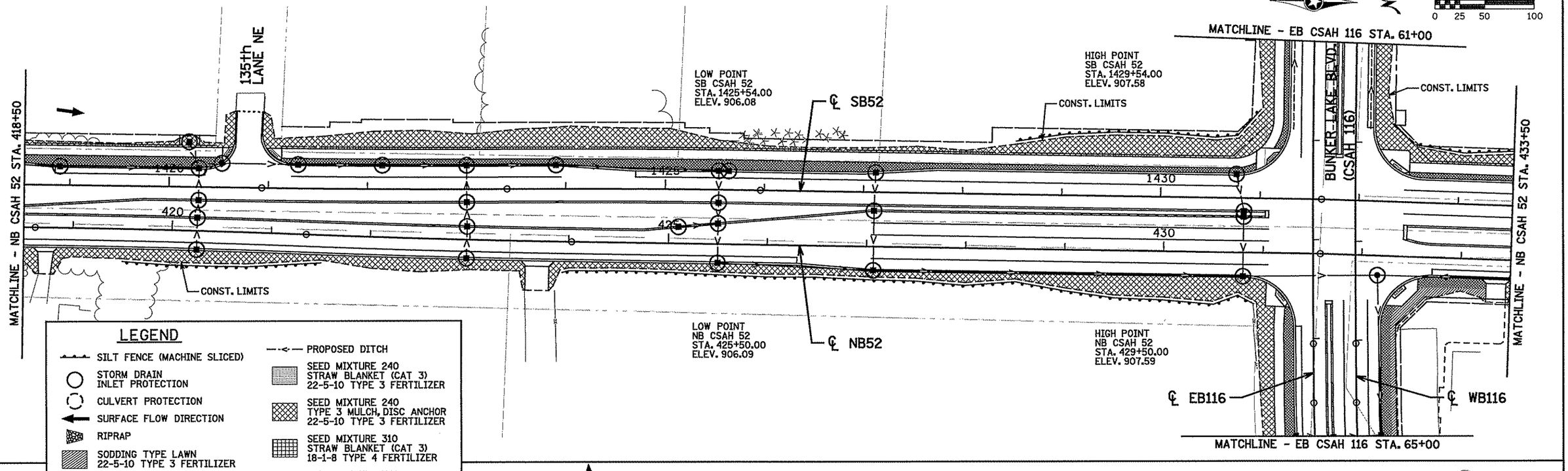
S.P. 02-652-05
S.P. 02-716-09
S.P. 106-020-28
S.P. 197-124-001

TKDA
ENGINEERS • ARCHITECTS • PLANNERS

ANOKA COUNTY

EROSION CONTROL & TURF ESTABLISHMENT PLAN
CSAH 52/116 RECONSTRUCTION
NB CSAH 52 STA. 388+50 TO 418+50

SHEET 12.03 OF 294



NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\a-f\AnokaCty\13867000\hwy-brdg\hwy\pln-sht\c0265205_ecd.dgn 7/29/2009

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: Matthew A. Wassman

PRINTED NAME: MATTHEW A. WASSMAN

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EROSION CONTROL & TURF ESTABLISHMENT PLAN
CSAH 52/116 RECONSTRUCTION
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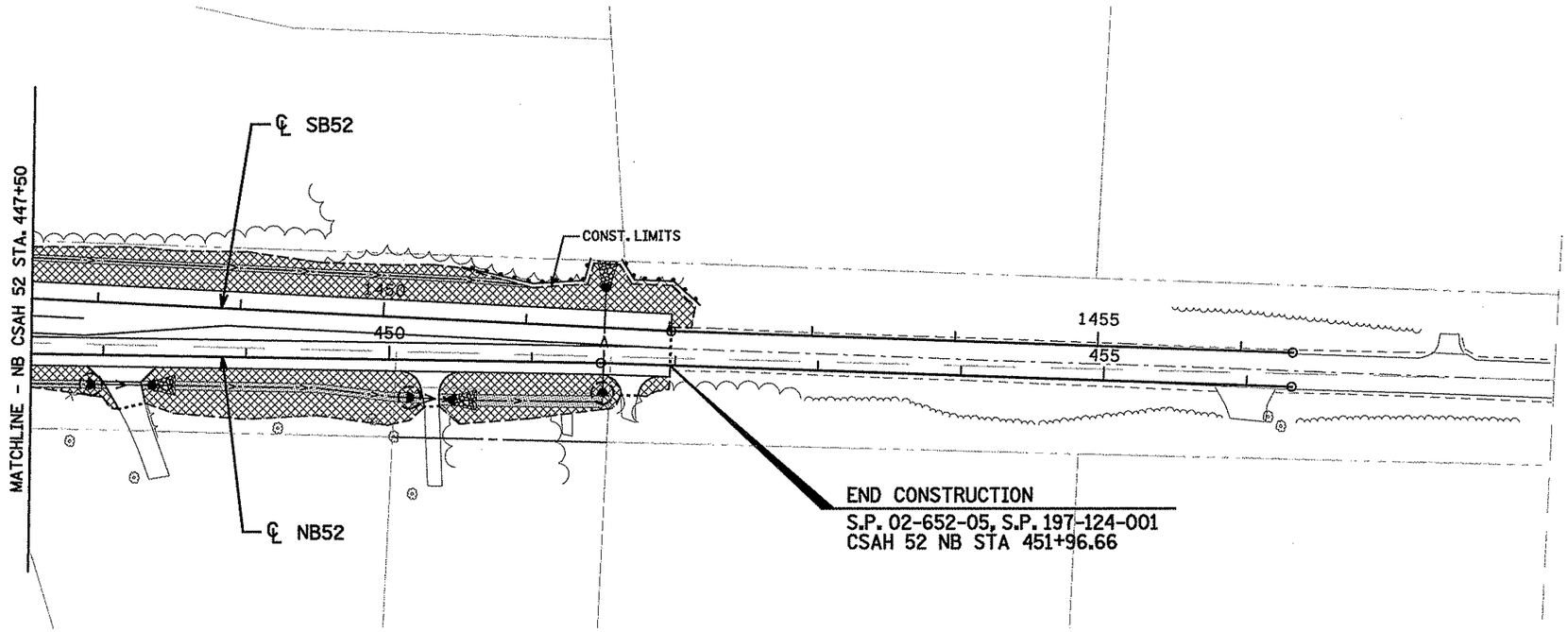
SHEET 12.04 OF 294



SCALE IN FEET
0 25 50 100

LEGEND

- SILT FENCE (MACHINE SLICED)
- STORM DRAIN INLET PROTECTION
- CULVERT PROTECTION
- SURFACE FLOW DIRECTION
- RIPRAP
- SODDING TYPE LAWN 22-5-10 TYPE 3 FERTILIZER
- SODDING TYPE SALT RESISTANT 22-5-10 TYPE 3 FERTILIZER
- PROPOSED DITCH
- SEED MIXTURE 240 STRAW BLANKET (CAT 3) 22-5-10 TYPE 3 FERTILIZER
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EROSION CONTROL & TURF ESTABLISHMENT PLAN
CSAH 52/116 RECONSTRUCTION
NB CSAH 52 STA. 447+50 TO 452+00

SHEET 12.05 OF 294

LEGEND

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JOHNSON ST.

TH 65

PLACE SILT FENCE AROUND POND AT ELEV. 898.0 IMMEDIATELY FOLLOWING POND CONSTRUCTION, SEEDING, AND MULCHING/BLANKETING TO PREVENT DISTURBANCE OF POND SIDE SLOPES AND REDUCTION OF INFILTRATION CAPACITY OF SOIL.

℄ WB116

CONST. LIMITS

SCALE IN FEET
0 25 50 100

BANK POND
BTM
NWL

LOW POINT
WB CSAH 116
STA. 16+90.00
ELEV. 898.87

ABERDEEN ST. NE

MATCHLINE - EB CSAH 116 STA. 20+00

105 110 115

5 10 15

BEGIN CONSTRUCTION
S.P. 02-716-09, S.P. 197-124-001
CSAH 116 EB STA. 11+40.78

CONST. LIMITS

℄ EB116

DELINEATED EDGE OF WETLAND BASIN P TYPE 3 0.24 AC IMPACT

LOW POINT
EB CSAH 116
STA. 16+90.00
ELEV. 898.87

ENVIRONMENTALLY SENSITIVE AREA

DELINEATED EDGE OF WETLAND BASIN O TYPE 3 0.08 AC IMPACT

ENVIRONMENTALLY SENSITIVE AREA

SCALE IN FEET
0 25 50 100

MATCHLINE - EB CSAH 116 STA. 20+00

HIGH POINT
WB CSAH 116
STA. 127+00.00
ELEV. 903.42

℄ WB116

CONST. LIMITS

MATCHLINE - EB CSAH 116 STA. 35+00

125 130

25 30

EVELETH ST.

℄ EB116

CONST. LIMITS

ENVIRONMENTALLY SENSITIVE AREA

HIGH POINT
EB CSAH 116
STA. 27+00.00
ELEV. 903.42

WEST CHURCH ENTRANCE

DELINEATED EDGE OF WETLAND BASIN N TYPE 3 0.34 AC IMPACT

NO	DATE	BY	CKD	APPR	REVISION

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ANOKA COUNTY
EROSION CONTROL & TURF ESTABLISHMENT PLAN
CSAH 52/116 RECONSTRUCTION
EB CSAH 116 STA. 5+00 TO 35+00

SHEET 12.06 OF 294

PLACE SILT FENCE AROUND POND AT ELEV. 897.0 IMMEDIATELY FOLLOWING POND CONSTRUCTION, SEEDING, AND MULCHING/BLANKETING TO PREVENT DISTURBANCE OF POND SIDE SLOPES AND REDUCTION OF INFILTRATION CAPACITY OF SOIL.

DELINEATED EDGE OF WETLAND BASIN Q TYPE 3 0.76 AC IMPACT

HIGH POINT WB CSAH 116 STA. 139+85.00 ELEV. 900.34

LOW POINT WB CSAH 116 STA. 136+50.00 ELEV. 899.17

POND 116A NWL = 893.5

BTM

NWL

MATCHLINE - EB CSAH 116 STA. 35+00

EAST CHURCH ENTRANCE

ENVIRONMENTALLY SENSITIVE AREA

LOW POINT EB CSAH 116 STA. 36+50.00 ELEV. 899.17

HIGH POINT EB CSAH 116 STA. 39+85.00 ELEV. 900.35

DELINEATED EDGE OF WETLAND BASIN M TYPE 3 0.31 AC IMPACT

ISANTI ST. NE

LOW POINT WB CSAH 116 STA. 143+00.00 ELEV. 899.27

DELINEATED EDGE OF WETLAND BASIN R TYPE 3 0.42 AC IMPACT

℄ WB116

ENVIRONMENTALLY SENSITIVE AREA

CONST. LIMITS

℄ EB116

CONST. LIMITS

LOW POINT EB CSAH 116 STA. 43+00.00 ELEV. 899.27

MATCHLINE - EB CSAH 116 STA. 50+00

LEGEND

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SCALE IN FEET 0 25 50 100

N

MATCHLINE - EB CSAH 116 STA. 50+00

HIGH POINT WB CSAH 116 STA. 151+50.00 ELEV. 903.02

LOW POINT WB CSAH 116 STA. 154+83.33 ELEV. 901.81

DELINEATED EDGE OF WETLAND BASIN S TYPE 3 0.01 AC IMPACT

℄ WB116

CONST. LIMITS

MATCHLINE - EB CSAH 116 STA. 61+00

HIGH POINT EB CSAH 116 STA. 51+50.00 ELEV. 903.02

CONST. LIMITS

NORTH POND (EXISTING) NWL = 888.0

LOW POINT EB CSAH 116 STA. 54+83.33 ELEV. 901.81

℄ EB116

DELINEATED EDGE OF WETLAND BASIN L TYPE 1 0.02 AC IMPACT

℄ SB52

℄ NB52

1430

430

MATCHLINE - EB CSAH 116 STA. 65+00

SCALE IN FEET 0 25 50 100

N

NO	DATE	BY	CKD	APPR	REVISION

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ANOKA COUNTY

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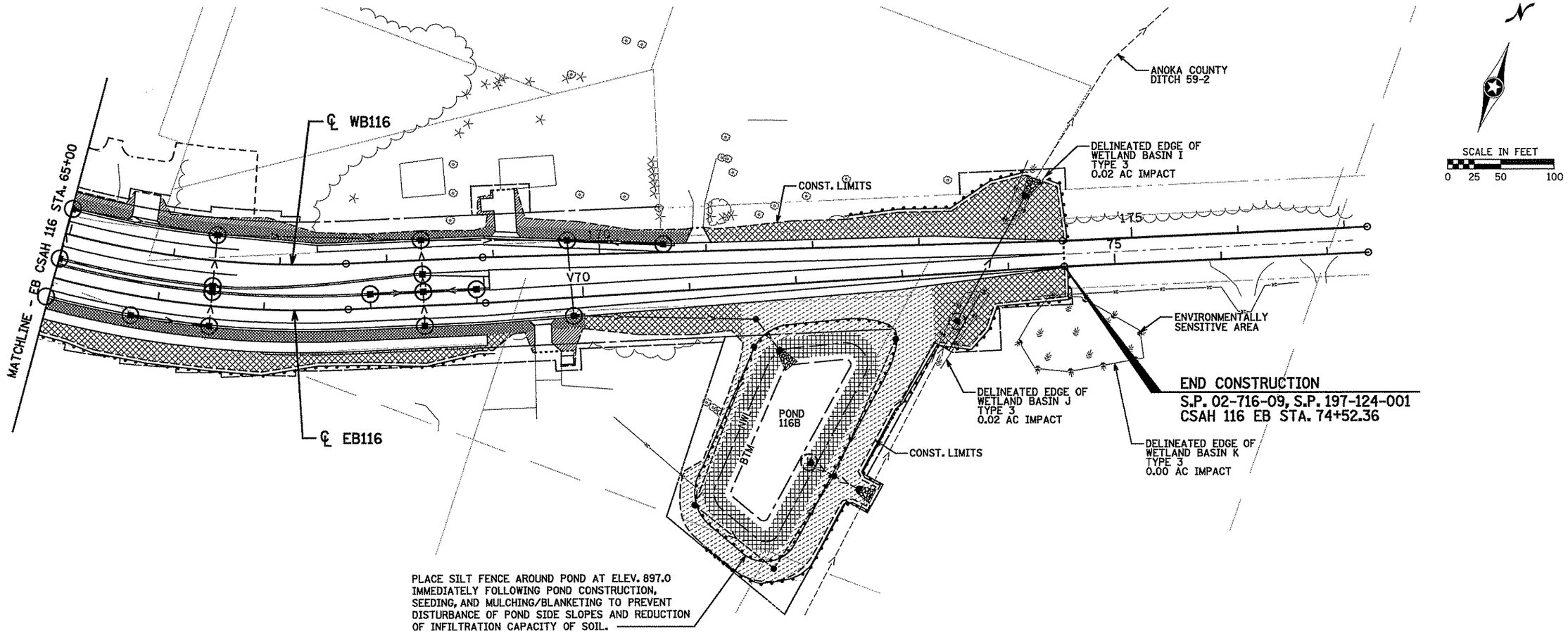
CSAH 52/116 RECONSTRUCTION
EB CSAH 116 STA. 35+00 TO 65+00

SHEET 12.07 OF 294



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EROSION CONTROL & TURF ESTABLISHMENT PLAN
CSAH 52/116 RECONSTRUCTION
EB CSAH 116 STA. 65+00 TO 75+00

SHEET 12.08 OF 294

STORM WATER POLLUTION PREVENTION PLAN NOTES (1 OF 2)

PROJECT LOCATION AND DESCRIPTION
THE PROJECT IS LOCATED ALONG CSAH 52 (RADISSON ROAD) FROM CSAH 14 (MAIN STREET) TO CSAH 116 (BUNKER LAKE BOULEVARD), AND ALONG CSAH 116 FROM TH 65 TO 1,150 FEET EAST OF CSAH 52, IN THE CITIES OF BLAINE AND HAM LAKE, IN ANOKA COUNTY. THE PROJECT INCLUDES:

- GRADING AND BITUMINOUS SURFACING
- CONCRETE CURB AND GUTTER
- TRAFFIC CONTROL SIGNALS
- POND CONSTRUCTION
- STORM SEWER INSTALLATION
- BITUMINOUS PATH
- NOISE BARRIER

PROJECT CONTACTS / RESPONSIBLE PARTIES
THE CONTRACTOR MUST IDENTIFY AN EROSION CONTROL SUPERVISOR KNOWLEDGEABLE AND EXPERIENCED IN THE APPLICATION OF EROSION PREVENTION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICES (BMPS). THE COST OF PROVIDING THE EROSION CONTROL SUPERVISOR SHALL BE CONSIDERED INCIDENTAL FOR WHICH NO DIRECT PAYMENT WILL BE MADE.

THE ANOKA COUNTY PROJECT ENGINEER AND EROSION CONTROL SUPERVISOR ARE RESPONSIBLE FOR IMPLEMENTATION OF THE SWPPP AND INSTALLATION, INSPECTION, AND MAINTENANCE OF THE EROSION PREVENTION AND SEDIMENT CONTROL BMPS BEFORE AND DURING CONSTRUCTION.

THE ANOKA COUNTY HIGHWAY DEPARTMENT WILL BE RESPONSIBLE FOR THE LONG-TERM OPERATION AND MAINTENANCE OF THE PERMANENT STORM WATER MANAGEMENT SYSTEM.

ANOKA COUNTY PROJECT ENGINEER
CURT KOBILARCSIK
1440 BUNKER LAKE BLVD.
ANDOVER, MN 55304
(651) 862-4223

ANOKA COUNTY MAINTENANCE CONTACT
CURT KOBILARCSIK
1440 BUNKER LAKE BLVD.
ANDOVER, MN 55304
(651) 862-4223

MPCA CONTACT
PAUL ESTUESTA
ANOKA COUNTY STAFF CONTACT
(651) 757-2345

SWPPP DESIGN
MATT WASSMAN, P.E., CPESC, CPSWQ
TKDA
DESIGN OF SWPPP CERTIFICATION
EXPIRES JANUARY 2012
(651) 292-4631

CONTRACTOR EROSION CONTROL SUPERVISOR
TO BE DETERMINED

MPCA 24-HR EMERGENCY NOTIFICATION (STATE DUTY OFFICER)
(651) 649-5451
(800) 422-0798

TRAINING REQUIREMENTS
THE CONTRACTOR WILL ENSURE THAT THE CERTIFICATION REQUIREMENTS OF MN/DOT SPEC. 2573.3A1 ARE COMPLIED WITH. THE INDIVIDUALS TRAINED AND THE TRAINING RECEIVED WILL BE RECORDED IN THE SWPPP BEFORE THE START OF CONSTRUCTION OR AS SOON AS PERSONNEL FOR THE PROJECT HAVE BEEN DETERMINED.

SITE MAPS
IN ADDITION TO WHAT IS LOCATED WITHIN THIS PLAN, EXISTING AND PROPOSED SITE MAPS HAVE BEEN CREATED AND ARE KEPT ON FILE WITH THE ANOKA COUNTY HIGHWAY DEPARTMENT. THE SITE MAPS SHOW THE PROJECT LIMITS, ALIGNMENT, SOIL TYPES, EXISTING CONTOURS, DRAINAGE AREAS, STORM SEWER LOCATIONS, FLOW ARROWS, AND IMPERVIOUS SURFACE.

RECEIVING SURFACE WATERS AND ENVIRONMENTALLY SENSITIVE AREAS
THE RECEIVING WATERS FOR STORM WATER RUNOFF FROM THIS PROJECT ARE COUNTY DITCHES 60-1, 59-1, 59-9-C, 59-4, AND 59-2-A, COON CREEK, AND LAKE DIANE. COON CREEK IS LISTED AS IMPAIRED. THERE ARE WETLANDS WITHIN THE PROJECT LIMITS. THESE WETLANDS ARE SHOWN ON THE EROSION CONTROL AND TURF ESTABLISHMENT PLANS. THERE ARE NO SPECIAL WATERS WITHIN 1 MILE OF THE PROJECT LIMITS.

OUTSTANDING RESOURCE VALUE WATERS (SPECIAL WATERS)
THERE ARE NO OUTSTANDING RESOURCE VALUE WATERS WITHIN THE PROJECT LIMITS.

CALCAREOUS FENS
THERE ARE NO CALCAREOUS FENS WITHIN THE PROJECT LIMITS.

KARST REGION
THIS PROJECT IS NOT LOCATED IN AN AREA THAT IS CONSIDERED ACTIVE KARST.

TOTAL MAXIMUM DAILY LOAD (TMDL) WATERS
THE RECEIVING WATERS FOR STORM WATER RUNOFF FROM THIS PROJECT DO NOT HAVE AN APPROVED TMDL WITH AN APPROVED WASTE LOAD ALLOCATION FOR CONSTRUCTION ACTIVITY.

LAND FEATURE CHANGES

TOTAL PROJECT AREA DISTURBED:	56.6 ACRES
TOTAL EXISTING IMPERVIOUS SURFACE AREA:	15.2 ACRES
TOTAL EXISTING PERVIOUS SURFACE AREA:	41.4 ACRES
TOTAL PROPOSED IMPERVIOUS SURFACE AREA:	41.2 ACRES
TOTAL PROPOSED PERVIOUS SURFACE AREA:	15.4 ACRES

DRAINAGE COMPUTATIONS
COMPUTATIONS ARE KEPT ON FILE WITH ANOKA COUNTY HIGHWAY DEPARTMENT. CHANGES MADE IN THE FIELD MUST BE DISCUSSED WITH THE PROJECT ENGINEER, APPROVED BY THE WATER RESOURCES DESIGN ENGINEER, AND NOTED IN THE CONTRACTOR'S CONSTRUCTION LOG.

CONSTRUCTION NOTES
CONSTRUCTION SHALL BE GOVERNED BY THE MN/DOT 2005 SPEC. BOOK AND THE SPECIAL PROVISIONS. THE CONTRACTOR MUST KEEP THE SWPPP, ALL CHANGES TO IT, AND INSPECTION AND MAINTENANCE RECORDS AT THE SITE DURING CONSTRUCTION.

TEMPORARY SEDIMENT BASINS
WHERE 10 OR MORE ACRES OF DISTURBED SOIL DRAIN TO A COMMON LOCATION, A TEMPORARY SEDIMENT BASIN MUST BE PROVIDED PRIOR TO RUNOFF LEAVING THE CONSTRUCTION SITE OR ENTERING SURFACE WATERS.

PURSUANT TO APPENDIX A, SECTION C.1.B OF THE NPDES PERMIT, WHERE 5 OR MORE ACRES OF DISTURBED SOIL DRAIN TO A DISCHARGE POINT WITHIN ONE MILE OF A IMPAIRED WATER, A TEMPORARY SEDIMENT BASIN MUST BE PROVIDED PRIOR TO RUNOFF LEAVING THE CONSTRUCTION SITE OR ENTERING SURFACE WATERS.

PERMANENT STORM WATER MANAGEMENT SYSTEM
WHEN A PROJECT REPLACES VEGETATION OR OTHER PERVIOUS SURFACES WITH 1 OR MORE ACRES OF CUMULATIVE IMPERVIOUS SURFACE, 0.5 INCHES OF RUNOFF FROM THE NEW IMPERVIOUS SURFACE MUST BE TREATED BY ONE OF THE METHODS OUTLINED IN THE NPDES PERMIT, PART III.C.

FOR AREAS OF A PROJECT THAT CONTRIBUTE RUNOFF TO AN IMPAIRED WATER, APPENDIX A, C.2 OF THE PERMIT REQUIRES THE TREATMENT OF A WATER QUALITY VOLUME EQUAL TO 1 INCH OF RUNOFF FROM THE NEW IMPERVIOUS SURFACES CREATED BY THE PROJECT. IN ADDITION, WHERE SITE CONDITIONS ALLOW, AT LEAST 0.5 INCHES OF THE WATER QUALITY VOLUME MUST BE INFILTRATED.

THIS CONSTRUCTION PROJECT AS DESIGNED INCREASES IMPERVIOUS SURFACE BY 26 ACRES. A PERMANENT STORM WATER MANAGEMENT SYSTEM HAS BEEN INCORPORATED INTO THE DESIGN. WET SEDIMENTATION BASINS HAVE BEEN DESIGNED WITH PERMANENT POOLS GREATER THAN OR EQUAL TO THE RUNOFF FROM A 0.5-INCH OR 2.5-INCH RAINFALL EVENT, PER COON CREEK WATERSHED DISTRICT RULES, OR THE NPDES REQUIREMENT OF 1,800 CUBIC FEET PER ACRE OF DRAINAGE AREA, WHICHEVER IS MORE STRINGENT.

VOLUME MANAGEMENT PRACTICES HAVE BEEN INCORPORATED INTO THE DESIGN. ALL FIVE WET PONDS BEING CONSTRUCTED WITH THIS PROJECT HAVE BEEN MODIFIED TO INFILTRATE, AT A MINIMUM, THE RUNOFF FROM A 1-INCH RAINFALL.

TIMING OF BMP INSTALLATION
THE EROSION PREVENTION AND SEDIMENT CONTROL BMPS SHALL BE INSTALLED AS NECESSARY TO MINIMIZE EROSION FROM DISTURBED SURFACES AND TO CAPTURE SEDIMENT ON SITE, AND SHALL MEET THE NPDES PERMIT PART IV CONSTRUCTION ACTIVITY REQUIREMENTS. PERIMETER BMPS SHALL BE INSTALLED PRIOR TO THE START OF ANY LAND DISTURBING ACTIVITIES WHERE POSSIBLE.

ALL EXPOSED SOIL AREAS MUST BE STABILIZED AS SOON AS POSSIBLE TO LIMIT SOIL EROSION BUT IN NO CASE LATER THAN 14 DAYS AFTER THE CONSTRUCTION ACTIVITY IN THAT PORTION OF THE SITE HAS TEMPORARILY OR PERMANENTLY CEASED.

ALL DISTURBED SOILS WITHIN 1 MILE OF AN IMPAIRED WATER THAT ULTIMATELY DRAIN TO THAT IMPAIRED WATER MUST BE STABILIZED NO LATER THAN 7 DAYS AFTER THE CONSTRUCTION ACTIVITY IN THAT PORTION OF THE PROJECT HAS TEMPORARILY OR PERMANENTLY CEASED. THIS APPLIES TO ALL AREAS OF THE PROJECT DRAINING TO BANK POND, POND 116A, NORTH POND, AND POND 116B.

EROSION PREVENTION PRACTICES
THE CONTRACTOR MUST PLAN FOR AND IMPLEMENT CONSTRUCTION PRACTICES THAT MINIMIZE EROSION SO THAT THE INSPECTION AND MAINTENANCE REQUIREMENTS OF THE NPDES PERMIT, PART IV.E. ARE COMPLIED WITH.

THE NORMAL WETTED PERIMETER OF ANY TEMPORARY OR PERMANENT DRAINAGE DITCH OR SWALE THAT DRAINS WATER FROM OR AROUND THE SITE MUST BE STABILIZED WITHIN 200 FEET FROM THE PROPERTY EDGE OR POINT OF DISCHARGE INTO ANY SURFACE WATER. STABILIZATION MUST BE COMPLETED WITHIN 24 HOURS AFTER CONNECTION TO A SURFACE WATER. STABILIZATION OF THE REMAINING PORTIONS OF THE DITCH OR SWALE MUST BE COMPLETED WITHIN 14 DAYS, (7 DAYS IF WITHIN 1 MILE OF AND DRAINING TO AN IMPAIRED WATER).

PIPE OUTLETS MUST BE PROVIDED WITH TEMPORARY OR PERMANENT ENERGY DISSIPATION WITHIN 24 HOURS AFTER CONNECTION TO A SURFACE WATER.

SEDIMENT CONTROL PRACTICES
SEDIMENT CONTROL PRACTICES MUST MINIMIZE SEDIMENT ENTERING SURFACE WATERS, INCLUDING CURB AND GUTTER SYSTEMS AND STORM SEWER INLETS. ALL STORM DRAIN INLETS MUST BE PROTECTED BY APPROPRIATE BMPS DURING CONSTRUCTION UNTIL ALL SOURCES WITH POTENTIAL DISCHARGE TO THE INLET HAVE BEEN STABILIZED.

SEDIMENT CONTROL PRACTICES MUST BE ESTABLISHED ON ALL DOWN-GRADIENT PERIMETERS BEFORE ANY UP-GRADIENT LAND DISTURBING ACTIVITIES BEGIN. THESE PRACTICES SHALL REMAIN IN PLACE UNTIL FINAL STABILIZATION HAS BEEN ESTABLISHED.

VEHICLE TRACKING OF SEDIMENT FROM THE CONSTRUCTION SITE MUST BE MINIMIZED BY BMPS SUCH AS SLASH MULCH PAD, CONCRETE OR STEEL WASH RACKS, OR EQUIVALENT SYSTEM. STREET SWEEPING MUST BE USED IF SEDIMENT IS BEING TRACKED OFF THE CONSTRUCTION SITE. BMPS TO PROTECT VEHICLE EXIT SITES AND STREET SWEEPING, IF REQUIRED, SHALL BE FURNISHED BY THE CONTRACTOR AND SHALL BE INCIDENTAL FOR WHICH NO DIRECT PAYMENT WILL BE MADE.

ALL SILT FENCE MUST BE REPAIRED OR REPLACED WHEN IT BECOMES NONFUNCTIONAL OR THE SEDIMENT REACHES 1/3 OF THE HEIGHT OF THE FENCE. THESE REPAIRS MUST BE MADE WITHIN 24 HOURS OF DISCOVERY OR AS SOON AS FIELD CONDITIONS ALLOW ACCESS. REPAIRING, REPLACING, AND SEDIMENT REMOVAL SHALL BE CONSIDERED INCIDENTAL FOR WHICH NO DIRECT PAYMENT WILL BE MADE.

POLLUTION PREVENTION MEASURES
THE CONTRACTOR WILL IMPLEMENT THE POLLUTION PREVENTION MANAGEMENT MEASURES AS DIRECTED IN THE NPDES PERMIT PART IV.F. AS PERTAINING TO SOLID WASTE, HAZARDOUS MATERIALS, EXTERNAL TRUCK WASHING, AND CONCRETE WASHOUT. THESE MANAGEMENT MEASURES FOR POLLUTION PREVENTION WILL BE STRICTLY ENFORCED. THE EROSION CONTROL SUPERVISOR SHALL MAKE A SPILL RESPONSE PLAN BEFORE THE APPLICATION OF ANY CHEMICAL THAT MAY BE HARMFUL TO THE ENVIRONMENT. ALL SPILLS WILL BE CLEANED UP IMMEDIATELY UPON DISCOVERY. SPILLS LARGE ENOUGH TO REACH THE STORM CONVEYANCE SYSTEM MUST BE REPORTED TO THE MPCA STATE DUTY OFFICER.

SOLID WASTE SUCH AS COLLECTED SEDIMENT, ASPHALT AND CONCRETE MILLINGS, FLOATING DEBRIS, PAPER, PLASTIC, FABRIC, CONSTRUCTION AND DEMOLITION DEBRIS, AND OTHER WASTES MUST BE DISPOSED OF PROPERLY AND MUST COMPLY WITH MPCA DISPOSAL REQUIREMENTS.

HAZARDOUS MATERIALS SUCH AS OIL, FUEL, AND PAINT MUST BE PROPERLY STORED, INCLUDING SECONDARY CONTAINMENT, TO PREVENT SPILLS, LEAKS OR OTHER DISCHARGE. RESTRICTED ACCESS TO STORAGE AREAS MUST BE PROVIDED TO PREVENT VANDALISM. STORAGE AND DISPOSAL OF HAZARDOUS WASTE MUST BE IN COMPLIANCE WITH MPCA REGULATIONS. THE CONTRACTOR WILL BE REQUIRED TO UPDATE THE SWPPP FOR PORTA POTTY PLACEMENT, REFUELING METHODS (INCLUDING SPILL KITS), AND SECONDARY CONTAINMENT OF STATIONARY MACHINES WITH FLUIDS.

CONCRETE CRUSHING, PECKING, SAWING, AND GRINDING WILL REQUIRE DUST CONTROL USING WATER MISTS (INCIDENTAL), AND ALL CONCRETE PUMPING, WASHOFF AND WASHOUT WILL NEED TO BE DESIGNATED AND KEPT FUNCTIONAL SOMEPLACE INSIDE THE PROJECT LIMITS. LEAD PAINT CHIPS MUST NOT COME INTO CONTACT WITH SOILS UNLESS IT IS THE INTENT OF THE CONTRACTOR TO HAUL OFF ALL CONTAMINATED SOILS.

TRUCK WASHING AND CONCRETE WASHOUT SHALL TAKE PLACE IN A FIELD OR COMMERCIAL ENGINEERED CONTAINMENT SYSTEM SHOWN ON AN ENGINEER APPROVED SITE PLAN. IF DEEMED NECESSARY BY THE PROJECT ENGINEER, THE CONTENTS SHALL BE DISPOSED OF AT AN APPROPRIATE FACILITY OFF SITE.

NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\a-f\AnokaCty\13867000\hwy-brdg\hwy\pln-sht\c0265205_swp1.dgn 7/29/2009

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: Matthew A. Wassman
PRINTED NAME: MATTHEW A. WASSMAN
DATE: 7/29/2009 LIC. NO. 26883

DRAWN BY SFH DATE 7/29/2009
DESIGN BY CEH DATE 7/29/2009
CHECKED BY MAW DATE 7/29/2009

S.P. 02-652-05
S.P. 02-716-09
S.P. 106-020-28
S.P. 197-124-001

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ANOKA COUNTY
SWPPP NOTES (1 OF 2)
CSAH 52/116 RECONSTRUCTION

SHEET 13.01 OF 294

STORM WATER POLLUTION PREVENTION PLAN NOTES (2 OF 2)

DEWATERING

DEWATERING OR BASIN DRAINING RELATED TO THE CONSTRUCTION ACTIVITY THAT MAY HAVE TURBID OR SEDIMENT LADEN DISCHARGE WATER MUST BE DISCHARGED TO A TEMPORARY SEDIMENT BASIN ON THE PROJECT SITE WHENEVER POSSIBLE. IF THE WATER CANNOT BE DISCHARGED TO A SEDIMENT BASIN PRIOR TO ENTERING A SURFACE WATER, IT MUST BE TREATED WITH THE APPROPRIATE BMPS SUCH THAT THE DISCHARGE DOES NOT ADVERSELY AFFECT THE RECEIVING WATER OR DOWNSTREAM LANDOWNERS. THE CONTRACTOR MUST ENSURE THAT DISCHARGE POINTS ARE ADEQUATELY PROTECTED FROM EROSION AND SCOUR. THE DISCHARGE MUST BE DISPERSED OVER NATURAL ROCK RIPRAP, SAND BAGS, PLASTIC SHEETING, OR OTHER ACCEPTED ENERGY DISSIPATION MEASURES. ADEQUATE SEDIMENTATION CONTROL MEASURES ARE REQUIRED FOR DISCHARGE WATER THAT CONTAINS SUSPENDED SOLIDS. ALL DEWATERING OR BASIN DRAINING SHALL REQUIRE A SITE PLAN.

A WATER APPROPRIATIONS PERMIT WILL BE REQUIRED FROM THE MN DNR FOR CONSTRUCTION DEWATERING EXCEEDING 10,000 GALLONS PER DAY.

INSPECTIONS AND MAINTENANCE

THE EROSION CONTROL SUPERVISOR MUST ROUTINELY INSPECT THE ENTIRE CONSTRUCTION SITE ONCE EVERY 7 DAYS DURING ACTIVE CONSTRUCTION AND WITHIN 24 HOURS AFTER A RAINFALL EVENT GREATER THAN 0.5 INCHES IN 24 HOURS. THE EROSION CONTROL SUPERVISOR SHALL BE AVAILABLE TO BE ON SITE WITHIN 24 HOURS AT ALL TIMES FROM INITIAL DISTURBANCE TO FINAL STABILIZATION, AS WELL AS PERFORMING THE DUTIES LISTED IN MN/DOT SPEC. 2573.

ALL EROSION AND SEDIMENT CONTROL BMPS MUST BE INSPECTED BY THE CONTRACTOR TO ENSURE INTEGRITY AND EFFECTIVENESS. ALL NONFUNCTIONAL BMPS MUST BE REPAIRED, REPLACED, OR SUPPLEMENTED WITH FUNCTIONAL BMPS AS DIRECTED BY THE EROSION CONTROL SUPERVISOR OR THE PROJECT ENGINEER.

ALL INSPECTIONS AND MAINTENANCE CONDUCTED DURING CONSTRUCTION MUST BE RECORDED IN WRITING, AND THESE RECORDS MUST BE RETAINED WITH THE SWPPP IN ACCORDANCE WITH PART III.D OF THE NPDES PERMIT AND KEPT ON SITE DURING CONSTRUCTION.

FINAL STABILIZATION

THE CONTRACTOR MUST ENSURE FINAL STABILIZATION OF THE SITE. FINAL STABILIZATION SHALL INCLUDE A MINIMUM OF 70% VEGETATION ESTABLISHMENT (100% STABILIZED) ON ALL PERVIOUS AREAS.

ALL TEMPORARY EROSION CONTROL MEASURES AND BMPS MUST BE REMOVED AS PART OF THE FINAL STABILIZATION, UNLESS DIRECTED OTHERWISE BY THE OWNER OR ENGINEER.

THE PERMITEES MUST SUBMIT A NOTICE OF TERMINATION TO THE MPCA WITHIN 30 DAYS OF FINAL STABILIZATION OR OF TRANSFERRING PERMIT RESPONSIBILITY TO ANOTHER OWNER OR OPERATOR.

LOCATION OF SWPPP REQUIREMENTS

NPDES PERMIT REQUIREMENT	TITLE	LOCATION
OBTAIN NPDES PERMIT, PERMIT COMPLIANCE, AND NOTICE OF TERMINATION	LAWS TO BE OBSERVED	MN/DOT SPEC. 1701
	PERMITS, LICENSES, AND TAXES	MN/DOT SPEC. 1702
	AIR, LAND, AND WATER POLLUTION	MN/DOT SPEC. 1717
	SWPPP NOTES	SHEET NOS. 13.01 - 13.02
CERTIFIED PERSONNEL IN EROSION AND SEDIMENT CONTROL AND CHAIN OF RESPONSIBILITY	SUPERVISION BY CONTRACTOR	MN/DOT SPEC. 1506
	AIR, LAND, AND WATER POLLUTION	MN/DOT SPEC. 1717
	STORM WATER MANAGEMENT	MN/DOT SPEC. 2573
	SWPPP NOTES	SHEET NOS. 13.01 - 13.02
PROJECT SCHEDULE / WEEKLY EROSION & SEDIMENT CONTROL SCHEDULE / COMPLETING INSPECTION / MAINTENANCE LOG	AIR, LAND, AND WATER POLLUTION	MN/DOT SPEC. 1717
	STORM WATER MANAGEMENT	MN/DOT SPEC. 2573
	SWPPP NOTES	SHEET NOS. 13.01 - 13.02
SITE MAP / RECEIVING WATERS / DIRECTION OF FLOW	AIR, LAND, AND WATER POLLUTION	MN/DOT SPEC. 1717
	GENERAL LAYOUT	SHEET NOS. 1.02 - 1.05
	SUPERELEVATION AND DRAINAGE PLAN PROFILE	SHEET NOS. 10.01-10.14
	EROSION CONTROL AND TURF ESTABLISHMENT PLANS	SHEET NOS. 12.01 - 12.08
	SWPPP NOTES	SHEET NOS. 13.01 - 13.02
PROJECT SPECIFIC CONSTRUCTION STAGING	AIR, LAND, AND WATER POLLUTION	MN/DOT SPEC. 1717
	DETERMINATION AND EXTENSION OF CONTRACT TIME	MN/DOT SPEC. 1806
	CONSTRUCTION STAGING PLANS	SHEET NOS. 3.01 - 3.30
TEMPORARY AND PERMANENT EROSION AND SEDIMENT CONTROL BMP DETAILS, LOCATIONS, INSTALLATION, TIMING, AND TYPE OF BMP.	STORM WATER MANAGEMENT	MN/DOT SPEC. 2573
	CONTROLLING EROSION AND ESTABLISHING VEGETATION	MN/DOT SPEC. 2575
	STANDARD PLANS	SHEET NOS. 2.12 - 2.16
	EROSION CONTROL AND TURF ESTABLISHMENT PLANS	SHEET NOS. 12.01 - 12.08
	SWPPP NOTES	SHEET NOS. 13.01 - 13.02
ADDITIONAL TEMPORARY AND/OR PERMANENT EROSION AND SEDIMENT CONTROL BMPS NOT SHOWN ON PLAN	AIR, LAND, AND WATER POLLUTION	MN/DOT SPEC. 1717
	STORM WATER MANAGEMENT	MN/DOT SPEC. 2573
	CONTROLLING EROSION AND ESTABLISHING VEGETATION	MN/DOT SPEC. 2575
MAINTENANCE OF EROSION AND SEDIMENT CONTROL DEVICES, REMOVAL OF SEDIMENT, REMOVAL OF DEVICES	MAINTENANCE DURING CONSTRUCTION	MN/DOT SPEC. 1514
	AIR, LAND, AND WATER POLLUTION	MN/DOT SPEC. 1717
	STORM WATER MANAGEMENT	MN/DOT SPEC. 2573
	SWPPP NOTES	SHEET NOS. 13.01 - 13.02
DEWATERING	PREPARATION OF EMBANKMENT FOUNDATION	MN/DOT SPEC. 2105.3B
	FOUNDATION PREPARATION	MN/DOT SPEC. 2451.3C
	SWPPP NOTES	SHEET NOS. 13.01 - 13.02
FINAL STABILIZATION	AIR, LAND, AND WATER POLLUTION	MN/DOT SPEC. 1717
	STORM WATER MANAGEMENT	MN/DOT SPEC. 2573
	CONTROLLING EROSION AND ESTABLISHING VEGETATION	MN/DOT SPEC. 2575
	EROSION CONTROL AND TURF ESTABLISHMENT TABULATIONS	SHEET NO. 1.19
	SWPPP NOTES	SHEET NOS. 13.01 - 13.02

NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\a-f\AnokaCty\13867000\hwy-brdg\hwy\pln-sht\c0265205_swp2.dgn 7/29/2009

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: Matthew A. Wassman

PRINTED NAME: MATTHEW A. WASSMAN

DATE: 7/29/2009 LIC. NO. 26883

DRAWN BY SFH DATE 7/29/2009

DESIGN BY CEH DATE 7/29/2009

CHECKED BY MAW DATE 7/29/2009

S.P. 02-652-05
S.P. 02-716-09
S.P. 106-020-28
S.P. 197-124-001

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ANOKA COUNTY
SWPPP NOTES (2 OF 2)
CSAH 52/116 RECONSTRUCTION

SHEET 13.02 OF 294

SIGN PANELS TYPE C - TAB Q

SIGN NO.	QUANT. (A)	QUANT. (F)	POSTS NO. & TYPE	POSTS LEN. (FT.)	MTG HT. (FT.) (1)	PANEL SIZE (IN.)	PANEL AREA (SQ. FT.)	TOTAL AREA (SQ. FT.) (A)	TOTAL AREA (SQ. FT.) (F)	CODE NO.	PANEL LEGEND	
C-1	15	9	1-U	10	7	30 x 30	6.25	93.75	56.25	R5-1	DO NOT ENTER	(3)
C-2	6	2	2-U	13	7	36 x 36	9.00	54.00	18.00	W3-3	SIGNAL AHEAD	
C-3	6		2-U	10	7	36 x 30	7.50	45.00	0.00	R3-30AB	DUAL LEFT ARROWS	(3)
C-4	14	8	1-U	13	7	30 x 30	6.25	87.50	50.00	R3-X1	RIGHT TURN LANE	
C-5	9	7	1-U	10	7	30 x 30	6.25	56.25	43.75	R3-X2	LEFT TURN LANE	(3)
C-6		2	1-U	10	7	24 x 24	4.00		8.00	R3-4	NO U TURN	
						24 x 30	5.00		10.00	R4-7	KEEP RIGHT	(2) (3)
						18 x 18	2.25			X4-2	HAZARD MARKER	
C-7	14	7	1-U	10	7	24 x 30	5.00	70.00	35.00	R4-7	KEEP RIGHT	
						18 x 18	2.25			X4-2	HAZARD MARKER	(3)
C-8	2		1-U	14	7	24 x 24	4.00	8.00		M1-6A	COUNTY ROAD MARKER (14)	
						21 x 15	2.19	4.38		M6-4A	DUAL ARROW	
C-9		2	1-U	14	7	24 x 24	4.00		8.00	M1-6A	COUNTY ROAD MARKER (52)	
						21 x 15	2.19		4.38	M6-4A	DUAL ARROW	
C-10	2		1-U	14	7	24 x 24	4.00	8.00		M1-6A	COUNTY ROAD MARKER (116)	
						21 x 15	2.19	4.38		M6-4A	DUAL ARROW	
C-11	2		1-U	14	7	24 x 24	4.00	8.00		M1-6A	COUNTY ROAD MARKER (14)	
						21 x 15	2.19	4.38		M2-1A	JUNCTION	
C-12	2		1-U	14	7	24 x 24	4.00	8.00		M1-6A	COUNTY ROAD MARKER (116)	
						21 x 15	2.19	4.38		M2-1A	JUNCTION	
C-13	2		1-U	13	7	24 x 24	4.00	8.00		M1-6A	COUNTY ROAD MARKER (52)	
						24 x 12	2.00	4.00		M3-1mA	NORTH	
C-14	1		1-U	13	7	24 x 24	4.00	4.00		M1-6A	COUNTY ROAD MARKER (52)	
						24 x 12	2.00	2.00		M3-3mA	SOUTH	
C-15		2	1-U	13	7	24 x 24	4.00		8.00	M1-6A	COUNTY ROAD MARKER (116)	
						24 x 12	2.00		4.00	M3-3mA	EAST	
C-16		1	1-U	13	7	24 x 24	4.00		4.00	M1-6A	COUNTY ROAD MARKER (116)	
						24 x 12	2.00		2.00	M3-3mA	WEST	
C-17	2		1-U	13	7	24 x 30	5.00	10.00		R2-1	SPEED LIMIT 45	
C-18		1	1-U	13	7	24 x 30	5.00		5.00	R2-1	SPEED LIMIT 50	
C-19	3	2	1-U	13	7	24 x 30	5.00	15.00	10.00	R2-1	SPEED LIMIT 55	
C-20	6	4	1-U	14	7	30 x 30	6.25	37.50	25.00	R1-1	STOP	
						36 x 12	3.00	18.00	12.00	R6-1R	ONE WAY RIGHT	
						8 x 12	0.67			X4-13	CYLINDER STYLE DELINEATOR	
C-21	4	2	1-U	14	7	30 x 30	6.25	25.00	12.50	R1-1	STOP	
						36 x 12	3.00	12.00	6.00	R6-1R	ONE WAY RIGHT	
						36 x 12	3.00	12.00	6.00	R6-1L	ONE WAY LEFT	(2)
						8 x 12	0.67			X4-13	CYLINDER STYLE DELINEATOR	
C-22		2	1-U	14	7	24 x 24	4.00		8.00	M1-6A	COUNTY ROAD MARKER (52)	
						21 x 15	2.19		4.38	M2-1A	JUNCTION	
C-23	4	3	2-U	9	7	48 x 18	6.00	24.00	18.00	R6-1R	ONE WAY RIGHT	(3)
C-24	1	2	2-U	12	7	48 x 18	6.00	6.00	12.00	R6-1L	ONE WAY LEFT	
C-25	2		2-U	15	7	36 x 36	9.00	18.00		W1-2R	CURVE RIGHT	
						24 x 24	4.00	8.00		W13-1	ADVISORY SPEED 40 MPH	
C-26	2		2-U	15	7	36 x 36	9.00	18.00		W1-2L	CURVE LEFT	
						24 x 24	4.00	8.00		W13-1	ADVISORY SPEED 40 MPH	
C-27	2		1-U	12	7	24 x 24	4.00	8.00		R3-2	NO LEFT TURN	
C-28	1	1	2-U	13	10	36 x 36	9.00	9.00	9.00	W4-2R	LANE ENDS	(3)
C-29		1	2-U	13	7	36 x 36	9.00		9.00	W4-2R	LANE ENDS	
C-30	1	1	2-U	13	7	30 x 30	6.25	6.25	6.25	W6-3	TWO WAY TRAFFIC	
C-31	1	1	2-U	13	7	36 x 36	9.00	9.00	9.00	W6-1	DIVIDED HIGHWAY	
C-32	1	1	2-U	13	7	36 x 48	12.00	12.00	12.00	W14-1	NO PASSING ZONE	
C-33		2	1-U	13	7	30 x 30	6.25		12.50	R3-7	RIGHT LANE MUST TURN RIGHT	
C-34	2	2	2-U	15	7	36 x 36	9.00	18.00	18.00	W9-1R	RIGHT LANE ENDS	
						30 x 24	5.00	10.00	10.00	W20-100p	DISTANCE LEGEND	(5)
C-35		1	1-U	13	7	24 x 24	4.00		4.00	M1-5A	TRUNK HIGHWAY MARKER (65)	
						24 x 12	2.00		2.00	M2-1A	JUNCTION	
C-36	12	5	1-U	12	7	24 x 24	4.00	48.00	20.00	R8-3a	NO PARKING	
C-37	1		2-U	13	7	54 x 30	11.25	11.25		R3-30ACA	LEFT, THRU AND RIGHT ONLY	

SIGN PANELS TYPE C - TAB Q

SIGN NO.	QUANT. (A)	QUANT. (F)	POSTS NO. & TYPE	POSTS LEN. (FT.)	MTG HT. (FT.) (1)	PANEL SIZE (IN.)	PANEL AREA (SQ. FT.)	TOTAL AREA (SQ. FT.) (A)	TOTAL AREA (SQ. FT.) (F)	CODE NO.	PANEL LEGEND	
C-38	2		1-U	10	7	30 x 30	6.25	12.50		R5-1	DO NOT ENTER	(3) (4)
C-39	2		1-U	10	7	24 x 30	5.00	10.00		R4-7	KEEP RIGHT	(3) (4)
						18 x 18	2.25			X4-2	HAZARD MARKER	
C-40	1		1-U	10	7	24 x 30	5.00	5.00		R4-7	KEEP RIGHT	
						18 x 18	2.25			X4-2	HAZARD MARKER	(2) (3)
						24 x 24	4.00	4.00		R3-4	NO U TURN	
						24 x 24	4.00	4.00		R3-2	NO LEFT TURN	
C-41	1		2-U	13	7	36 x 30	7.50	7.50		R3-30AA	LEFT AND RIGHT ONLY	
C42	1	1	2-U	12	7	48 x 48	16.00	16.00	16.00	W20-X3L	MERGE	
TOTAL								876.02	498.01			

SUMMARY		
ANOKA COUNTY S.P. 02-652-05 (CSAH 52)	876.02	
ANOKA COUNTY S.P. 02-716-09 (CSAH 116)	498.01	
PROJECT TOTAL	**1374.03**	

DELINEATORS AND MARKERS - TAB S

TYPE	QUANTITY (A)	QUANTITY (F)	LOCATION
X4-2	16	9	MOUNTED WITH TYPE 'C'
X4-4L	2	1	MOUNTED IN MEDIAN
X4-5	1	3	GROUND MOUNTED
X4-13	10	6	MOUNTED WITH STOP SIGN

SIGN TYPE SPECIAL - TAB R

STATION	OFF SET	SIGN DESCRIPTION	REMOVE SIGN TYPE SPECIAL EACH	FURNISH AND INSTALL SIGN TYPE SPECIAL EACH
NB CSAH 52 S.P. 02-652-05				
351+40	LT	125th LANE NE	1	1
359+80	RT	RADISSON RD	1	1
364+50	RT	127th LANE NE	1	1
372+75	LT	129th AVE NE	1	
373+75	RT	QUAIL CREEK PKWY	1	
381+40	LT	130th LANE NE	1	1
395+70	RT	QUAIL CREEK DRIVE	1	1
396+70	LT	132nd LANE NE	1	1
409+00	RT	133rd LANE NE	1	1
414+75	LT	134th LANE NE	1	1
421+00	LT	135th LANE NE	1	1
446+00	RT	139th LANE NE	1	1
446+50	LT	139th LANE NE	1	1
TOTAL S.P. 02-652-05			13	11
EB CSAH116 S.P. 02-716-09				
19+40	LT	ABERDEEN ST. NE	1	1
25+00	RT	EVELETH ST. NE	1	1
42+20	RT	ISANTI ST. NE	1	1
63+20	RT	RADISSON ROAD	1	
TOTAL S.P. 02-716-09			4	3

SUMMARY		
ANOKA COUNTY S.P. 02-652-05 (CSAH 52)	13	11
ANOKA COUNTY S.P. 02-716-09 (CSAH 116)	4	3
PROJECT TOTAL	17	14

COST PARTICIPATION NOTES:

(A) 100% ANOKA COUNTY S.P. 02-652-05 (CSAH 52) QUANTITY.
(F) 100% ANOKA COUNTY S.P. 02-716-09 (CSAH 116) QUANTITY.

SPECIFIC NOTES:

(1) MOUNTING HEIGHT IS MINIMUM. SEE SHEET 14.13 FOR TYPICAL MOUNTING.
(2) MOUNTED BACK TO BACK.
(3) MOUNTED IN CONCRETE, SEE SHEET 14.13
(4) MOUNTED IN EXISTING CONCRETE MEDIAN. MEDIAN MODIFICATIONS ARE INCIDENTAL.
(5) 300 FEET (QTY. 1), 400 FEET (QTY. 1), 900 FEET (QTY. 1), 1200 FEET (QTY. 1).

GENERAL NOTES:

1. POST LENGTHS ARE APPROXIMATE AND INCLUDE EMBEDMENT BUT DO NOT INCLUDE ADDITIONAL LENGTH REQUIRED FOR SPLICE.
2. SEE STANDARD SIGNS MANUAL FOR PUNCHING CODE AND DETAILED DRAWINGS OF TYPE "C" SIGN PANELS.
3. SHEETING FOR ALL SIGNS SHALL BE WIDE ANGLE PRISMATIC RETROREFLECTIVE SHEETING FOR VISUAL IMPACT PERFORMANCE (DG3).

NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\a-f\AnokaCty\13867000\hwy-brdg\hwy\pln-sht\c0265205_ssa.dgn 12/11/2009

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:
PRINTED NAME: RYAN P. MALONEY
DATE: 12/11/2009 LIC. NO. 44193

DRAWN BY SFH DATE 12/11/2009
DESIGN BY RPM DATE 12/11/2009
CHECKED BY TAC DATE 12/11/2009

S.P. 02-652-05
S.P. 02-716-09
S.P. 106-020-28
S.P. 197-124-001

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ANOKA COUNTY
SIGNING TABULATIONS
CSAH 52/116 RECONSTRUCTION

SALVAGE AND INSTALL SIGNS - TAB T

STATION	OFF SET	SIGN DESCRIPTION	SALVAGE SIGN TYPE C	SALVAGE SIGN TYPE D	SALVAGE SIGN TYPE SPECIAL	INSTALL SIGN TYPE D	INSTALL SIGN TYPE SPECIAL
			EACH	EACH	EACH	EACH	EACH
NB CSAH 52 S.P. 02-652-05							
333+00	RT	R8-3A	1				
338+00	RT	W3-3	1				
341+00	RT	M1-6	1				
343+20	LT	R3-X2	1				
343+20	RT	R3-X1	1				
345+60	LT	R5-1	1				
345+60	RT	M1-6	1				
345+70	LT	R4-7	1				
347+00	LT	R4-7	1				
347+40	LT	R5-1	1				
348+00	RT	M1-6	1				
349+00	RT	W9-1R	1				
349+80	LT	R3-X2	1				
350+20	RT	R2-1	1				
350+30	LT	R4-7	1				
350+80	RT	Adopt			1		1
351+00	LT	R1-1	1				
351+90	RT	W4-2R	1				
354+80	LT	R3-30ACD	1				
355+80	LT	W3-3	1				
365+20	RT	R1-1	1				
372+75	LT	R1-1	1				
373+75	RT	R1-1	1				
374+90	RT	R2-1	1				
378+40	RT	W1-2R	1				
378+40	LT	R2-1 / W14-3	1				
380+70	LT	R1-1	1				
386+20	LT	W1-8	1				
387+70	LT	W1-8	1				
388+70	LT	W1-8	1				
389+70	LT	W1-8 / R2-1	1				
389+70	RT	R2-1	1				
390+70	LT	W1-8	1				
391+70	LT	W1-8	1				
392+70	LT	W1-8	1				
393+70	RT	W1-2L	1				
394+70	LT	R8-3A	1				
395+70	LT	R1-1	1				
396+70	RT	R1-1	1				
398+70	RT	W1-8	1				
398+70	LT	W1-2L	1				
399+70	RT	W1-8	1				
400+70	RT	W1-8	1				
401+70	RT	W1-8	1				
402+70	RT	W1-8	1				
403+70	RT	W1-8	1				
404+70	RT	I2-3 Ham Lake/NP		1		1	
405+70	RT	R3-X1	1				
409+50	RT	R1-1	1				
411+50	LT	W1-2R	1				
412+50	RT	W14-3	1				

SALVAGE AND INSTALL SIGNS - TAB T

STATION	OFF SET	SIGN DESCRIPTION	SALVAGE SIGN TYPE C	SALVAGE SIGN TYPE D	SALVAGE SIGN TYPE SPECIAL	INSTALL SIGN TYPE D	INSTALL SIGN TYPE SPECIAL
			EACH	EACH	EACH	EACH	EACH
NB CSAH 52 S.P. 02-652-05							
414+25	LT	R1-1	1				
420+50	LT	R1-1	1				
426+30	RT	W3-1	1				
426+30	LT	W14-3	1				
427+80	RT	M1-6	1				
428+50	LT	Adopt			1		1
429+50	LT	R2-1	1				
430+50	LT	M1-6	1				
431+50	RT	R1-1	1				
431+50	RT	M1-6	1				
431+50	RT	M1-6	1				
432+50	LT	R1-1	1				
432+50	LT	M1-6	1				
432+50	LT	M1-6	1				
433+00	RT	M1-6	1				
434+50	RT	R2-1	1				
436+50	LT	M1-6	1				
437+50	LT	W3-1	1				
437+50	RT	W14-3	1				
445+90	LT	R1-1	1				
446+50	RT	R1-1	1				
449+60	LT	R3-X1	1				
TOTAL S.P. 02-652-05			70	1	2	1	2

SALVAGE AND INSTALL SIGNS - TAB T

STATION	OFF SET	SIGN DESCRIPTION	SALVAGE SIGN TYPE C	SALVAGE SIGN TYPE D	SALVAGE SIGN TYPE SPECIAL	INSTALL SIGN TYPE D	INSTALL SIGN TYPE SPECIAL
			EACH	EACH	EACH	EACH	EACH
EB CSAH 116 S.P. 02-716-09							
12+25	RT	M1-6	1				
13+25	RT	R1-1 / R6-1R	1				
16+25	LT	R6-1R	1				
17+50	LT	R5-1	1				
17+75	LT	R3-X2	1				
18+00	RT	R2-1	1				
18+00	LT	M1-6	1				
18+40	LT	R5-1	1				
18+80	LT	R4-7	1				
19+00	LT	R1-1 / R6-1R	1				
19+40	RT	R1-1 / R6-1R	1				
21+20	LT	R3-X1	1				
23+20	LT	W3-3	1				
24+00	RT	HANDICAPPED CHILD	1		1		1
25+40	RT	R1-1	1				
27+80	RT	R3-X1	1				
28+00	LT	X4-4L	1				
32+00	RT	R1-1	1				
35+00	RT	HANDICAPPED CHILD	1		1		1
35+70	RT	R1-1	1				
36+70	RT	W14-3	1				
42+50	RT	R1-1	1				
57+00	LT	W14-3	1				
57+00	RT	W3-1	1				
60+20	LT	R2-1	1				
60+20	RT	M1-6	1				
62+20	LT	M1-6	1				
62+70	RT	R1-1	1				
62+70	RT	M1-6	1				
62+70	RT	M1-6	1				
63+20	LT	R1-1	1				
63+20	LT	M1-6	1				
63+20	LT	M1-6	1				
63+70	RT	M1-6	1				
64+00	RT	TP	1				
64+70	RT	R2-1	1				
73+40	LT	W3-1	1				
73+40	RT	W14-3	1				
73+80	RT	"DEEP DITCH"		1			
TOTAL S.P. 02-716-09			38	1	2	0	2

SUMMARY					
ANOKA COUNTY S.P. 02-652-05 (CSAH 52)	70	1	2	1	2
ANOKA COUNTY S.P. 02-716-09 (CSAH 116)	38	1	2	0	2
PROJECT TOTAL	108	2	4	1	4

NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\a-f\AnokaCty\13867000\hwy-brdg\hwy\pln-sht\c0265205_ssa.dgn 7/29/2009

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:

PRINTED NAME: RYAN P. MALONEY

DATE: 7/29/2009 LIC. NO. 44193

DRAWN BY SFH DATE 7/29/2009

DESIGN BY RPM DATE 7/29/2009

CHECKED BY TAC DATE 7/29/2009

S.P. 02-652-05
S.P. 02-716-09
S.P. 106-020-28
S.P. 197-124-001

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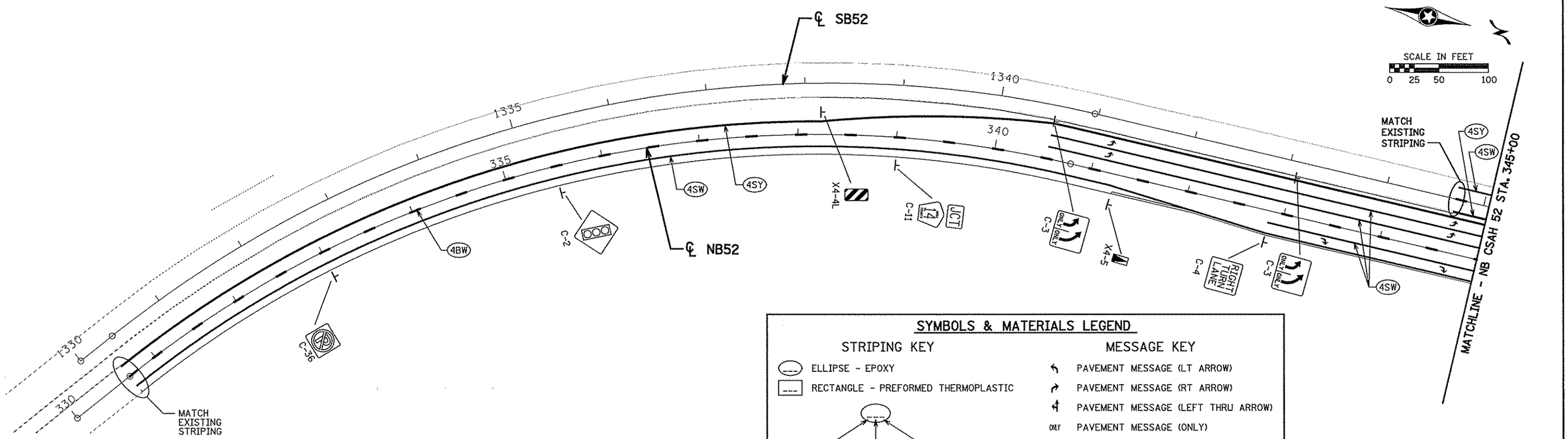
ANOKA COUNTY
SIGNING TABULATIONS
CSAH 52/116 RECONSTRUCTION

SHEET 14.02 OF 294



SYMBOLS & MATERIALS LEGEND

STRIPING KEY

- ELLIPSE - EPOXY
- RECTANGLE - PREFORMED THERMOPLASTIC

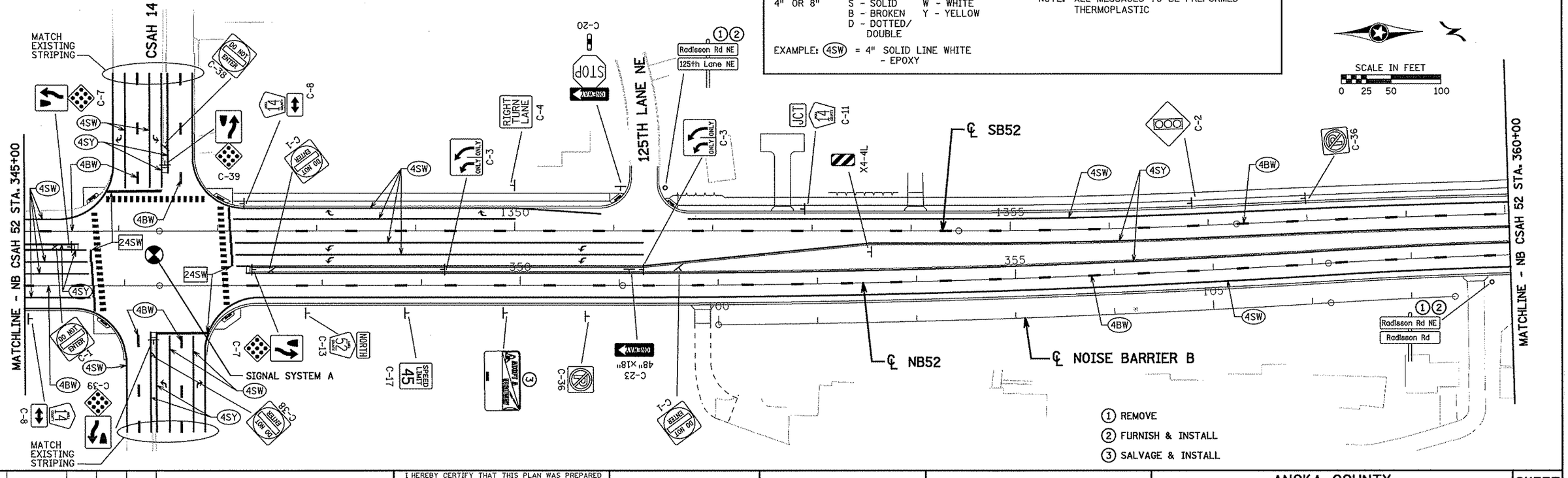
1ST DIGIT WIDTH	2ND DIGIT PATTERN	3RD DIGIT COLORS
4" OR 8"	S - SOLID	W - WHITE
	B - BROKEN	Y - YELLOW
	D - DOTTED/ DOUBLE	

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

MESSAGE KEY

- PAVEMENT MESSAGE (LT ARROW)
- PAVEMENT MESSAGE (RT ARROW)
- PAVEMENT MESSAGE (LEFT THRU ARROW)
- ONLY PAVEMENT MESSAGE (ONLY)
- CROSSWALK MARKING

NOTE: ALL MESSAGES TO BE PREFORMED THERMOPLASTIC



① REMOVE
② FURNISH & INSTALL
③ SALVAGE & INSTALL

NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\a-f\AnokaCty\13867000\hwy-brdg\hwy\pln-sht\c0265205_ssb.dgn 12/11/2009

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SIGNATURE:
PRINTED NAME: RYAN P. MALONEY
DATE: 12/11/2009 LIC. NO. 44193

DRAWN BY SFH DATE 12/11/2009
DESIGN BY RPM DATE 12/11/2009
CHECKED BY TAC DATE 12/11/2009

S.P. 02-652-05
S.P. 02-716-09
S.P. 106-020-28
S.P. 197-124-001

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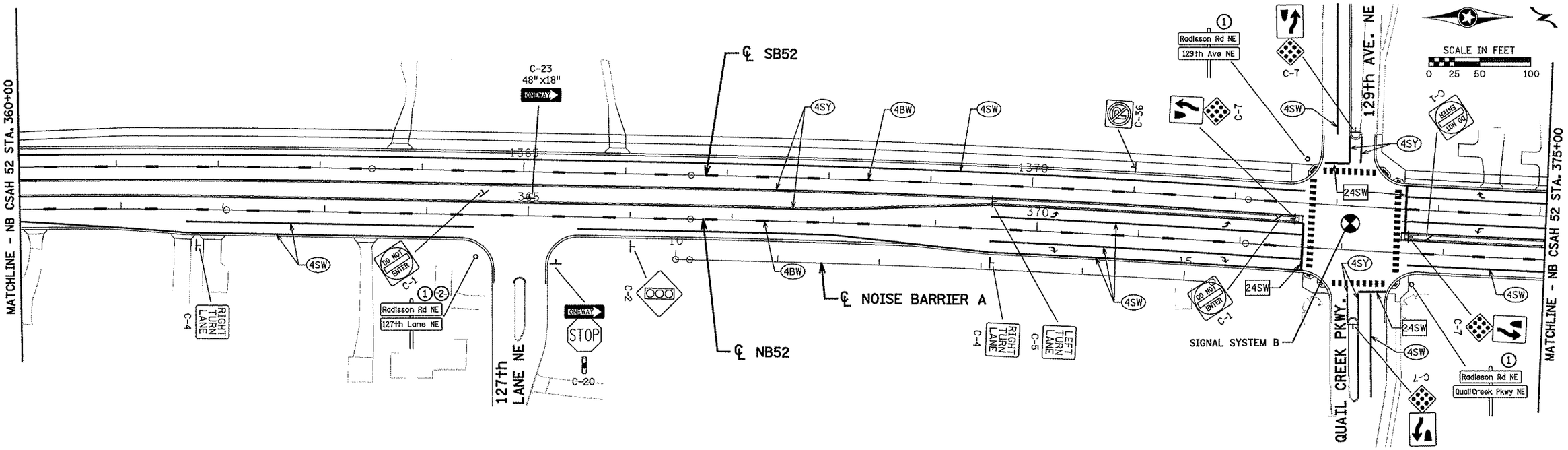
ANOKA COUNTY
SIGNING AND STRIPING PLAN
CSAH 52/116 RECONSTRUCTION
NB CSAH 52 STA. 330+00 TO 360+00

SHEET 14.03 OF 294



NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\o-r\AnokaCty\13867000\hwy-brdg\hwy\pln-sht\c0265205.ssc.dgn 9/16/2009

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:

PRINTED NAME: RYAN P. MALONEY

DATE: 9/16/2009 LIC. NO. 44193

DRAWN BY SFH DATE 9/16/2009

DESIGN BY RPM DATE 9/16/2009

CHECKED BY TAC DATE 9/16/2009

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S.P. 106-020-28
S.P. 197-124-001

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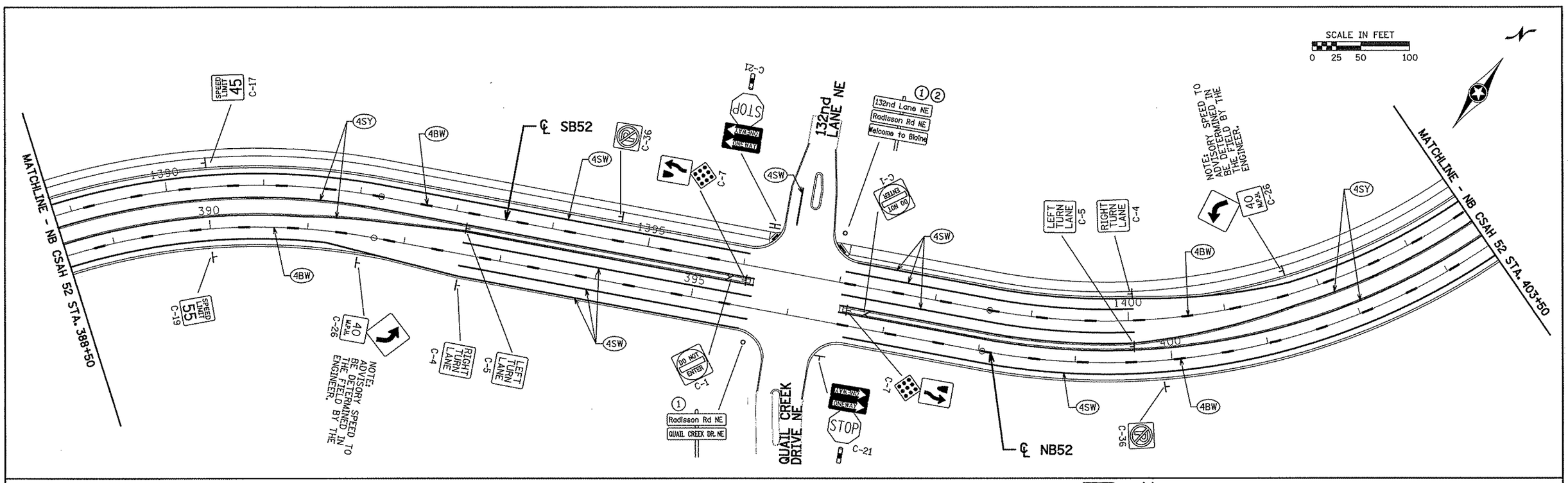
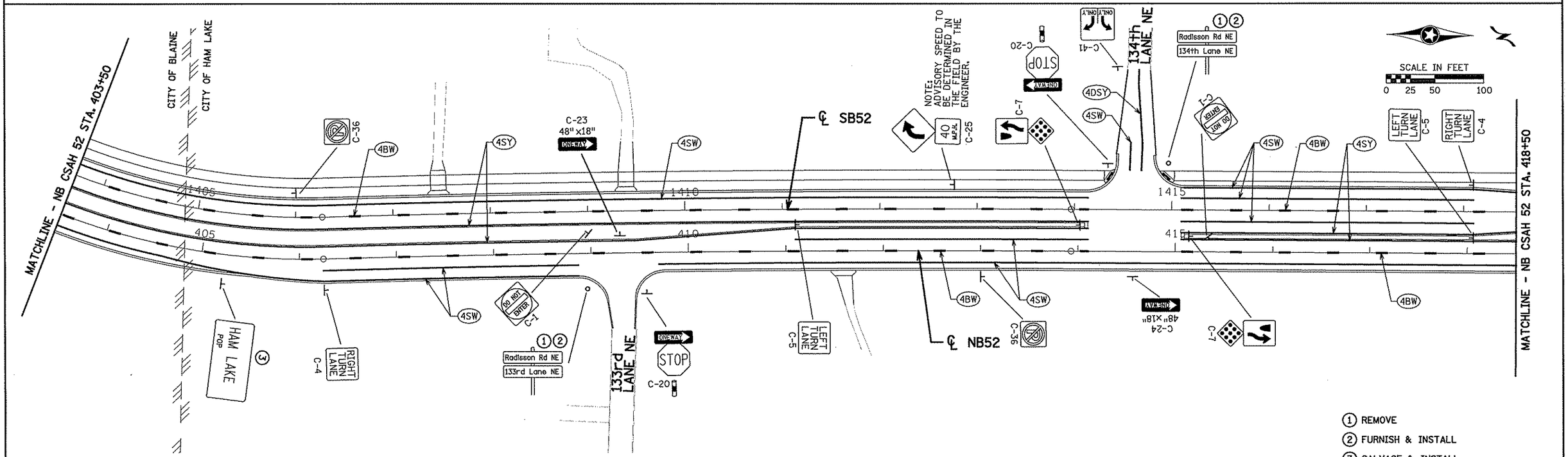
ANOKA COUNTY
SIGNING AND STRIPING PLAN
CSAH 52/116 RECONSTRUCTION
NB CSAH 52 STA. 360+00 TO 388+50

SHEET 14.04 OF 294





(1) REMOVE
(2) FURNISH & INSTALL
(3) SALVAGE & INSTALL

NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\a-f\AnokaCty\13867000\hwy-brdg\hwy\pln-sht\c0265205_ssd.dgn 12/11/2009

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SIGNATURE: [signature]

PRINTED NAME: RYAN P. MALONEY

DATE: 12/11/2009 LIC. NO. 44193

DRAWN BY SFH DATE 12/11/2009

DESIGN BY RPM DATE 12/11/2009

CHECKED BY TAC DATE 12/11/2009

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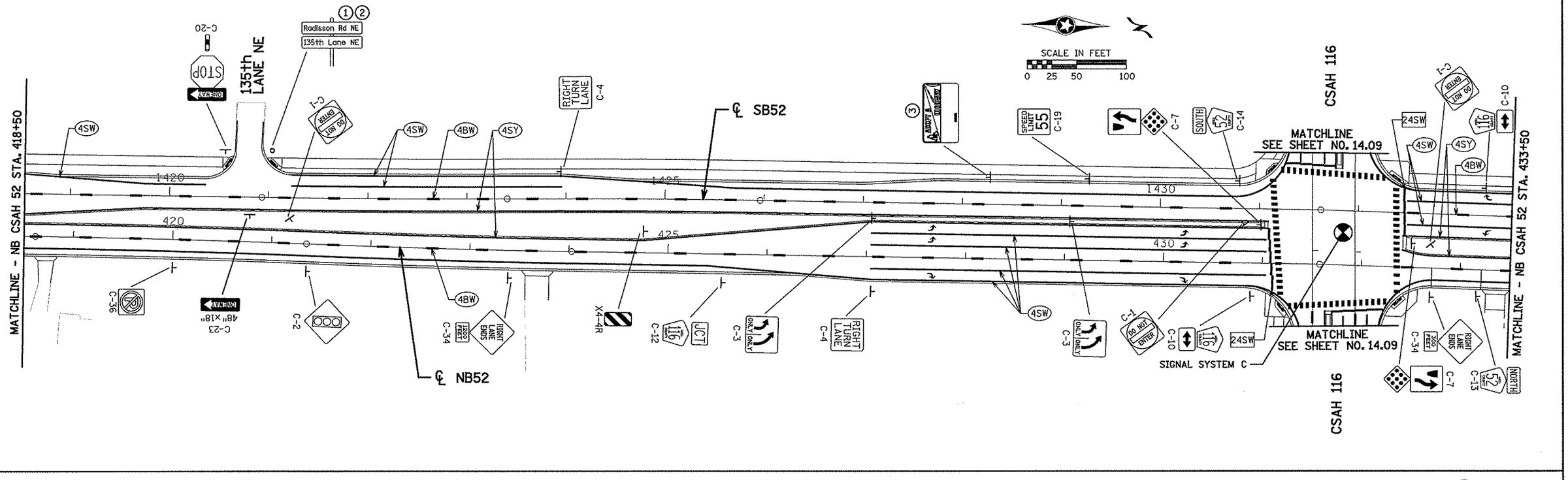
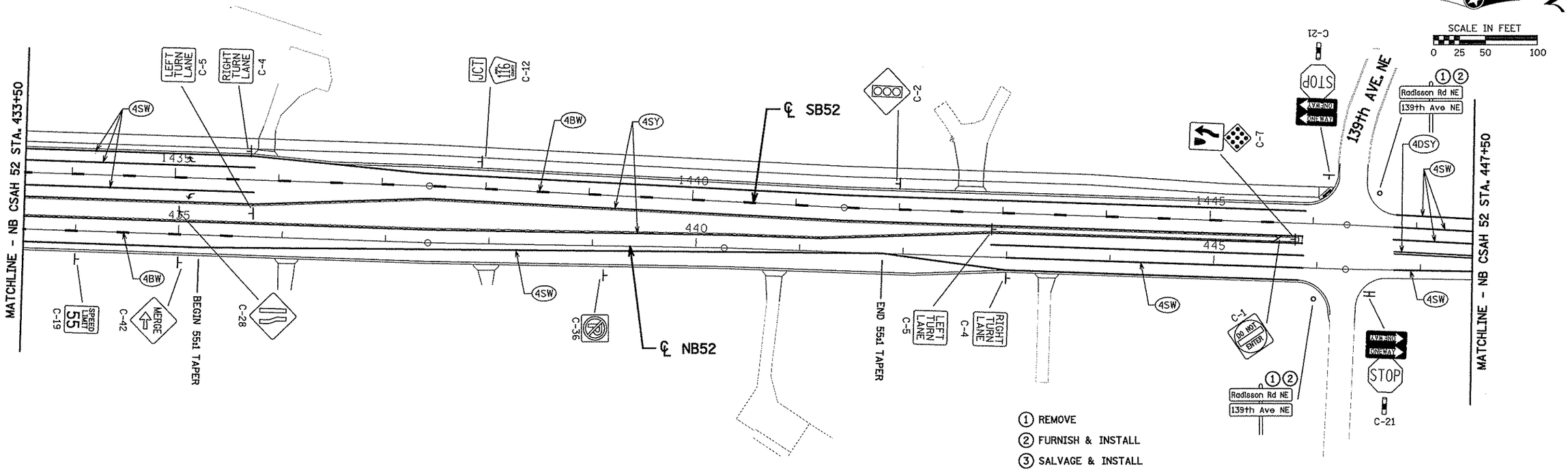
ANOKA COUNTY
SIGNING AND STRIPING PLAN
CSAH 52/116 RECONSTRUCTION
NB CSAH 52 STA. 388+50 TO 418+50

SHEET 14.05 OF 294





NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\a-f\AnokaCty\13867000\hwy-brdg\hwy\pln-sht\c0265205_sse.dgn 12/11/2009

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CHECKED BY TAC DATE 12/11/2009

S.P. 02-652-05
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S.P. 106-020-28
S.P. 197-124-001

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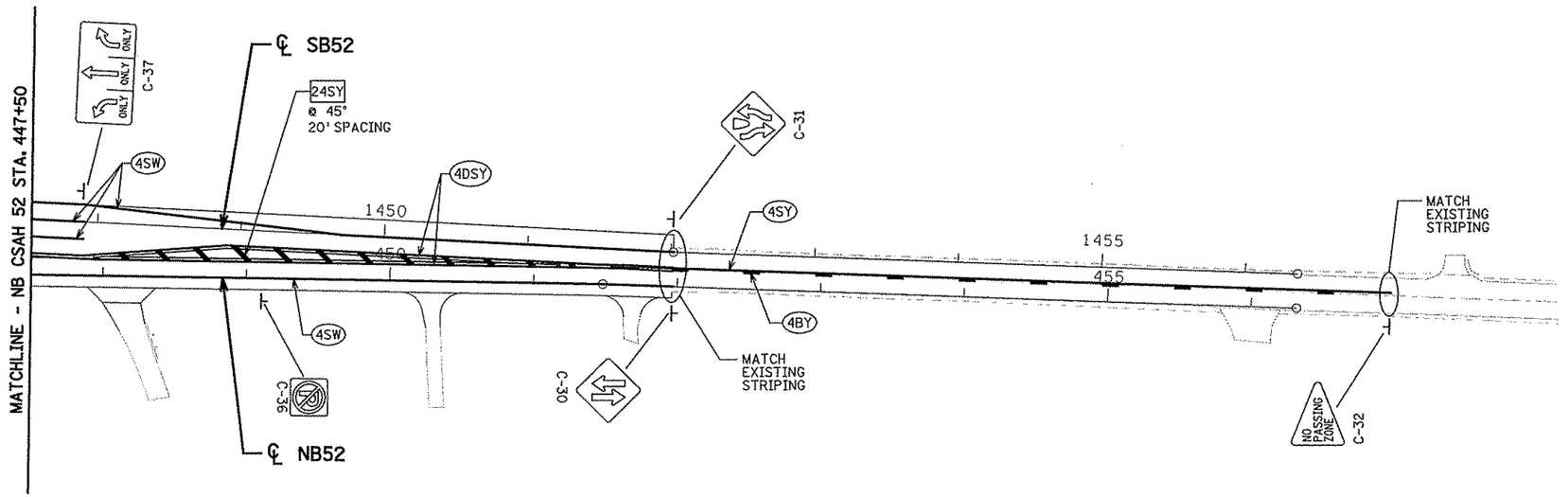
ANOKA COUNTY
SIGNING AND STRIPING PLAN
CSAH 52/116 RECONSTRUCTION
NB CSAH 52 STA. 418+50 TO 447+50

SHEET 14.06 OF 294



SCALE IN FEET
0 25 50 100

NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\a-f\AnokaCty\13867000\hwy-brdg\hwy\pln-sht\c0265205_ssf.dgn 12/11/2009

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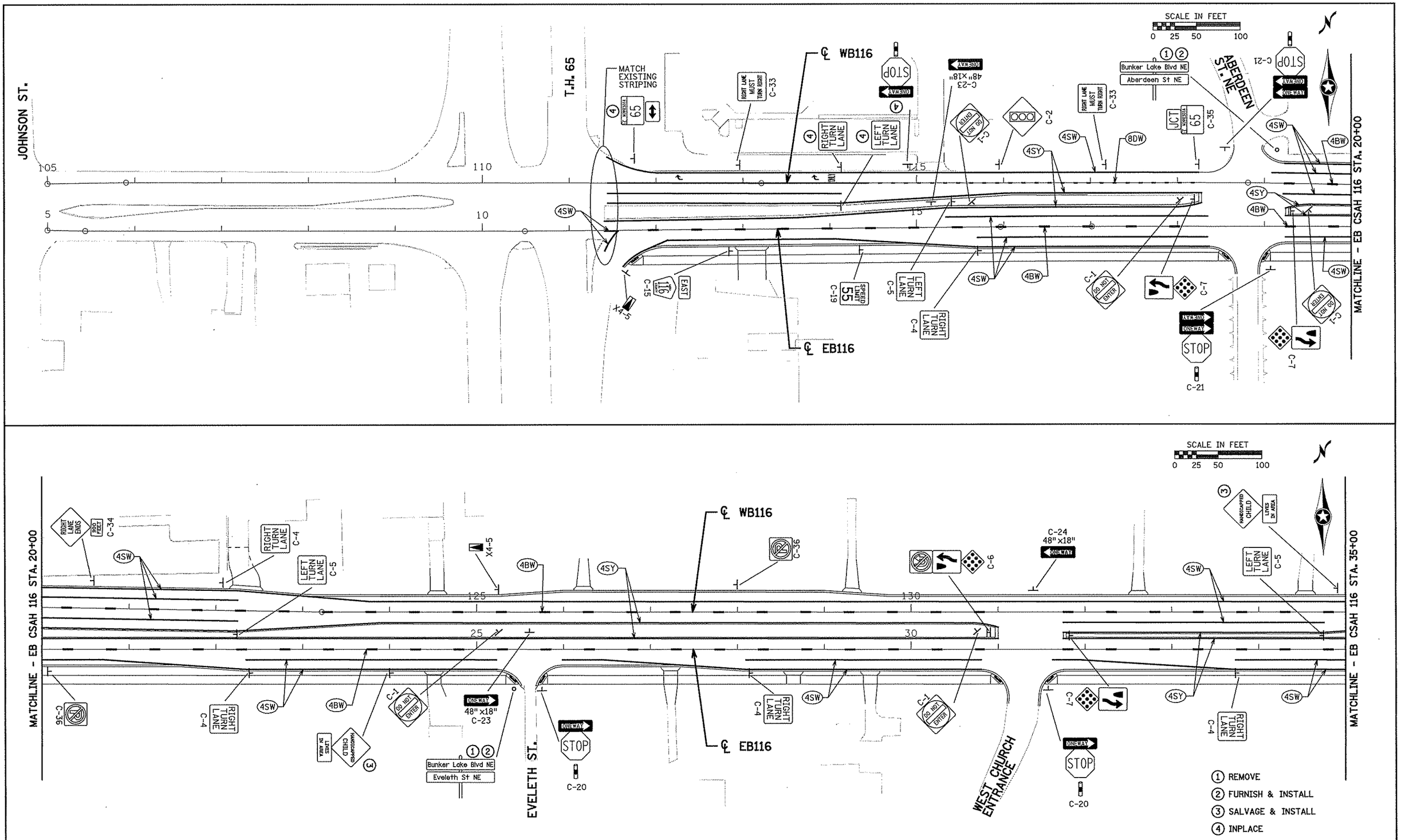
ANOKA COUNTY
SIGNING AND STRIPING PLAN
CSAH 52/116 RECONSTRUCTION
NB CSAH 52 STA. 447+50 TO 452+00

SHEET 14.07 OF 294



NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\a-f\AnokaCty\13867000\hwy-brdg\hwy\pln-sht\c0265205_ssg.dgn 12/11/2009

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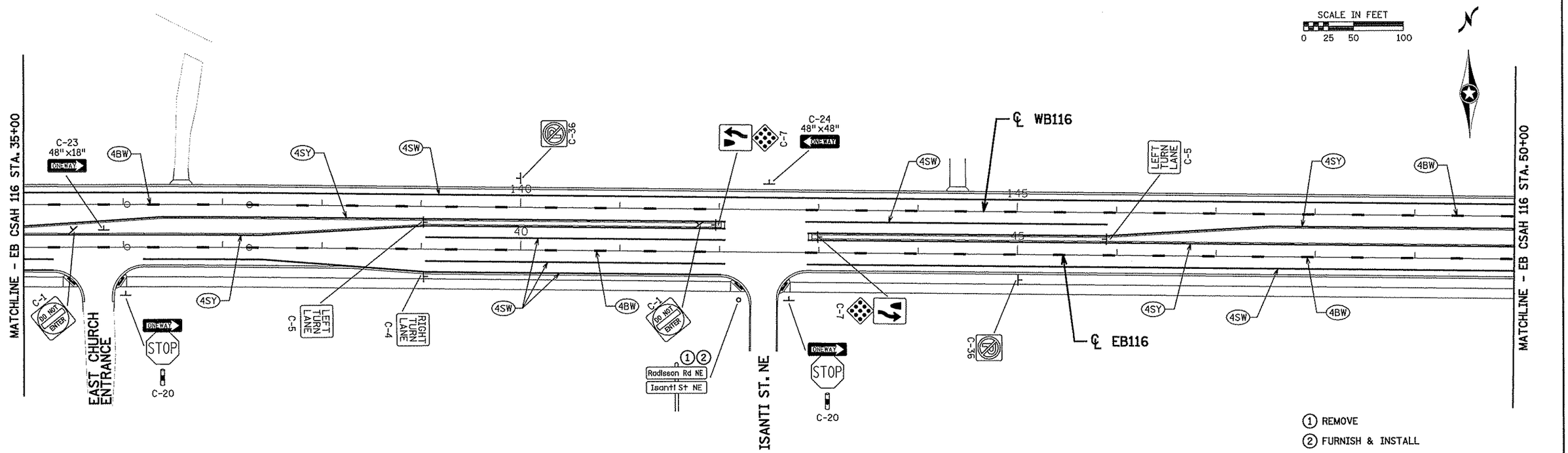
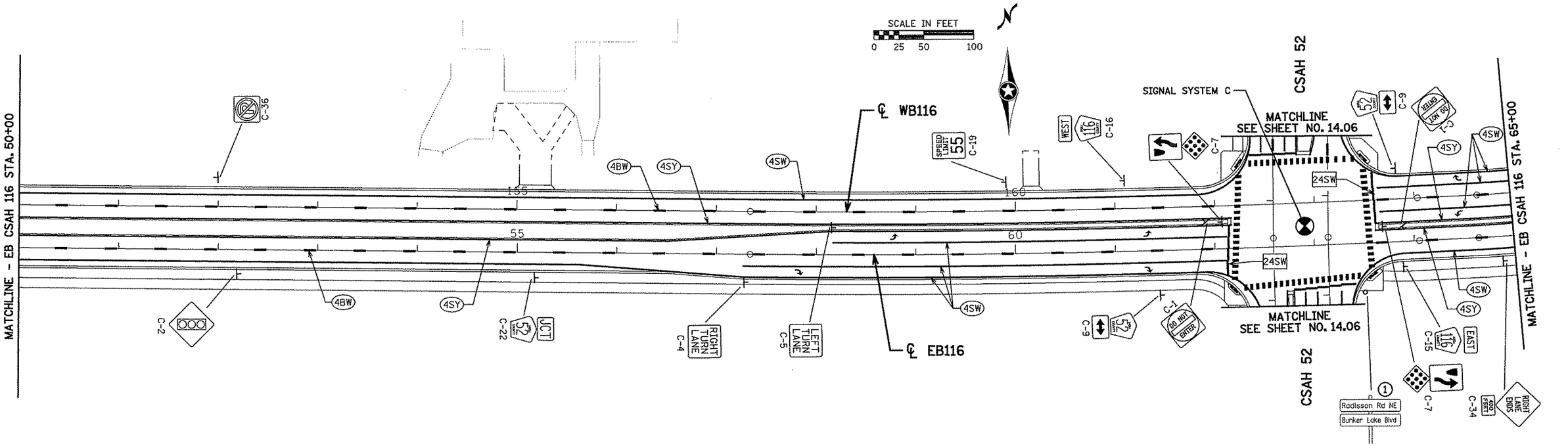
ANOKA COUNTY
SIGNING AND STRIPING PLAN
CSAH 52/116 RECONSTRUCTION
EB CSAH 116 STA. 5+00 TO 35+00

SHEET 14.08 OF 294





NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\a-f\Anokacty\13867000\hwy-brdg\hwy\pln-sht\c0265205_ssh.dgn 12/11/2009

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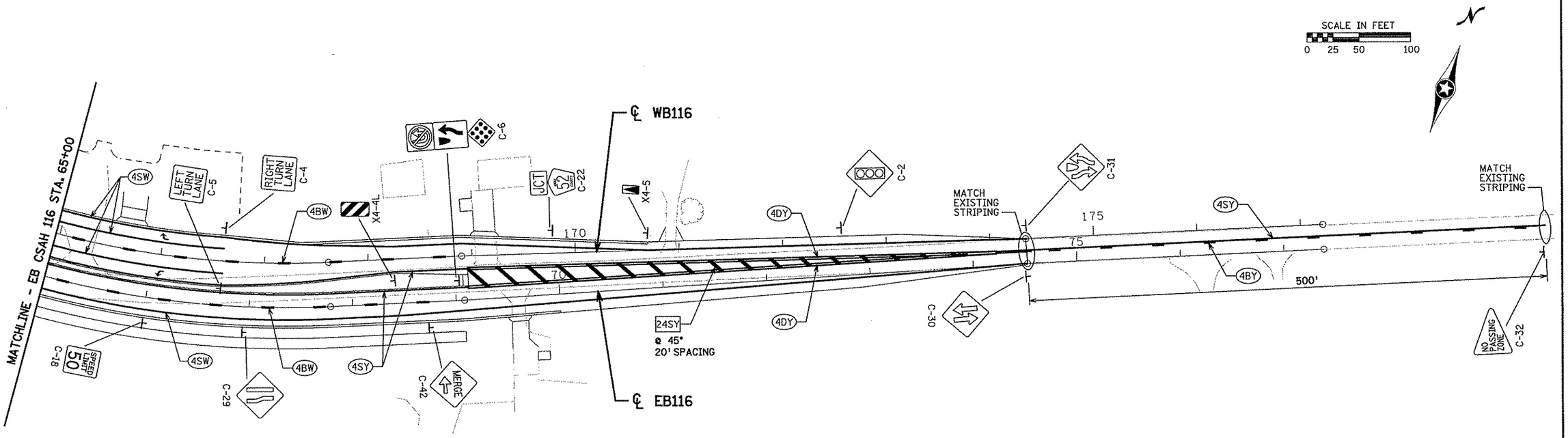
SIGNING AND STRIPING PLAN
CSAH 52/116 RECONSTRUCTION
EB CSAH 116 STA. 35+00 TO 65+00

SHEET 14.09 OF 294



NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\a-f\AnokaCty\13867000\hwy-brdg\hwy\pln-sht\c0265205_ss1.dgn 12/11/2009

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

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DATE: 12/11/2009 LIC. NO. 44193

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S.P. 02-716-09
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S.P. 197-124-001

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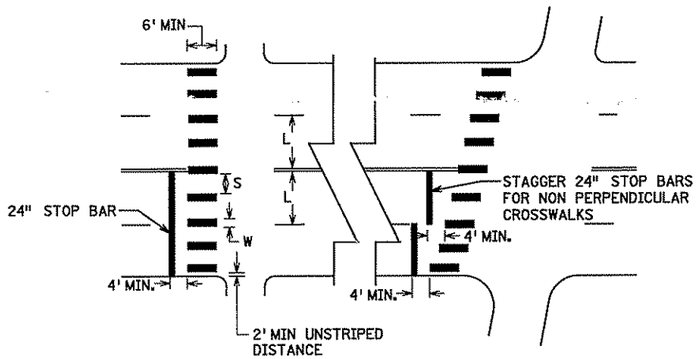
ANOKA COUNTY

SIGNING AND STRIPING PLAN
CSAH 52/116 RECONSTRUCTION
EB CSAH 116 STA. 65+00 TO 75+00

SHEET 14.10 OF 294

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

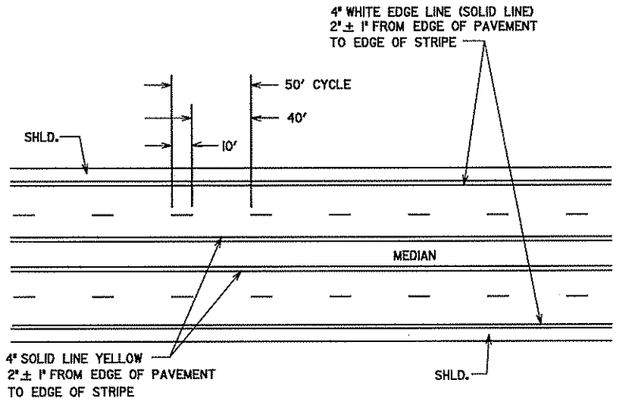


NOTES:

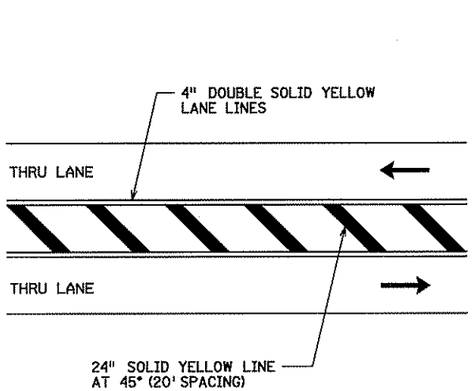
1. PAINTED AREAS TO BE CENTERED ON CENTERLINE AND LANE LINES.
2. A MINIMUM OF 2' CLEAR DISTANCE SHALL BE LEFT ADJACENT TO THE CURB. IF LAST PAINTED AREA FALLS INTO THIS DISTANCE IT MUST BE OMITTED.
3. FOR DIVIDED ROADWAYS, ADJUSTMENTS IN SPACING OF THE BLOCKS SHOULD BE MADE IN THE MEDIAN SO THAT THE BLOCKS ARE MAINTAINED IN THEIR PROPER LOCATION ACROSS THE TRAVELED PORTION OF THE ROADWAY.
4. AT SKEWED CROSSWALKS, THE BLOCKS ARE TO REMAIN PARALLEL TO THE LANE LINES AS SHOWN.

MARKINGS FOR PEDESTRIAN CROSSINGS

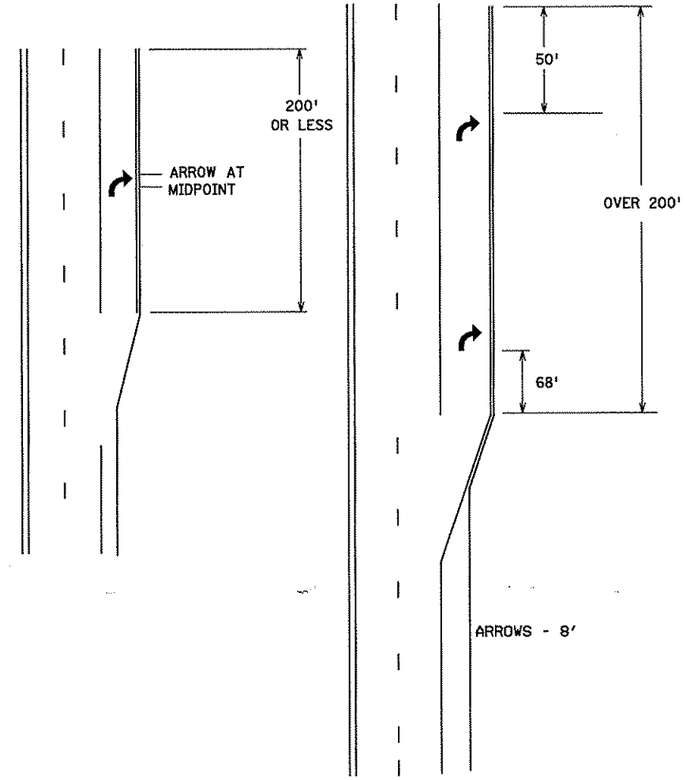
(PREFORMED THERMOPLASTIC)



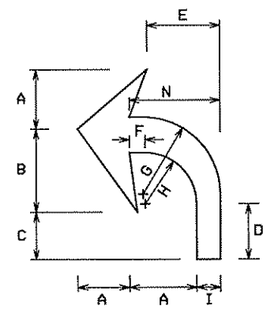
TYPICAL FOUR-LANE DIVIDED LANE MARKINGS



STRIPED MEDIAN DETAIL



TYPICAL MESSAGE PLACEMENT FOR TURN LANES



SIZE 6' X 8'

DIMENSION TABLE	
A	2'- 6"
B	3'- 6"
C	2'- 0"
D	2'- 6"
E	3'- 1"
F	0'- 8"
G	3'- 3"
H	2'- 2"
I	1'- 0"
J	1'- 0"
K	1'- 3"
L	5'- 0"
M	7'- 8"
N	3'- 10"
P	4'- 6"

PAVEMENT MARKING DETAILS

(PREFORMED THERMOPLASTIC)

NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\a-f\AnokaCty\13867000\hwy-brdg\hwy\pln-sht\c0265205_ssj.dgn 12/11/2009

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:

PRINTED NAME: RYAN P. MALONEY

DATE: 12/11/2009 LIC. NO. 44193

DRAWN BY SFH DATE 12/11/2009

DESIGN BY RPM DATE 12/11/2009

CHECKED BY TAC DATE 12/11/2009

S.P. 02-652-05
S.P. 02-716-09
S.P. 106-020-28
S.P. 197-124-001

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ANOKA COUNTY
STRIPING DETAILS
CSAH 52/116 RECONSTRUCTION

SHEET 14.11 OF 294

GENERAL REQUIREMENTS

THE ENGINEER'S INVOLVEMENT IN THE APPLICATION OF THE MATERIAL SHALL BE LIMITED TO FIELD SPOTTING, LOCATION AND INSPECTION. THE ENGINEER WILL PLACE NECESSARY "SPOTTING" AT APPROPRIATE POINTS TO PROVIDE HORIZONTAL CONTROL FOR STRIPING AND TO DETERMINE NECESSARY STARTING AND CUTOFF POINTS. BROKEN LINE INTERVALS WILL NOT BE MARKED. LONGITUDINAL JOINTS. PAVEMENT EDGES, AND EXISTING MARKINGS SHALL SERVE AS HORIZONTAL CONTROL WHEN SO DIRECTED.

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

A TOLERANCE OF ¼" OVER OR UNDER THE SPECIFIED WIDTH WILL BE ALLOWED FOR STRIPING PROVIDED THE VARIATION IS GRADUAL AND DOES NOT DETRACT FROM THE GENERAL APPEARANCE. BROKEN LINE SEGMENTS MAY VARY UP TO 6" FROM THE SPECIFIED LENGTHS PROVIDED THE OVER AND UNDER VARIATIONS ARE REASONABLY COMPENSATORY. ALIGNMENT DEVIATIONS FROM THE CONTROL GUIDE SHALL NOT EXCEED 2". MATERIAL SHALL NOT BE APPLIED OVER LONGITUDINAL JOINT. ESTABLISHMENT OF APPLICATION TOLERANCES SHALL NOT RELIEVE THE CONTRACTOR OF THEIR RESPONSIBILITY TO COMPLY AS CLOSELY AS PRACTICABLE WITH THE PLANNED DIMENSIONS.

IF OVERLAY APPLICATION FOR POLY PREFORM MARKINGS ARE SPECIFIED OR AUTHORIZED BY THE ENGINEER

1. TEMPERATURE REQUIREMENTS
   - MINIMUM AIR TEMPERATURE 60°F (16°C) AND RISING
   - MINIMUM PAVEMENT TEMPERATURE 70°F (21°C) AND RISING
   - MINIMUM OVERNIGHT TEMPERATURE 60°F (16°C) AND RISING
2. SURFACE PREPARATION
   - A. ASPHALT-LESS THAN 11 DAYS OLD
     1. ALL - SWEEP OR BLOW CLEAN
     2. 0 - 3 DAYS OLD - NO PRIMER
     3. 4 - 10 DAYS OLD - STAMARK™ SP44 ONLY
     4. 11+ DAYS - STAMARK™ E44 OR SP44 DEPENDING ON APPLICATION. SEE MANUFACTURERS SPECIFICATION
3. OLD MARKINGS
   - A. DO NOT APPLY OVER PAINT, EPOXY, OR THERMOPLASTIC UNLESS VERY WELL WORN AND WELL ADHERED TO THE ROAD. OLD MARKINGS MUST BE AT LEAST 75%-80% WORN AWAY
   - B. GRIND OR SANDBLAST OLD MARKINGS AND SWEEP OR BLOW SURFACE CLEAN
   - C. APPLY REQUIRED PRIMER
3. WORN STAMARK™ MARKINGS
   - A. OK TO APPLY NEW MATERIAL OVER WORN STAMARK™. REMOVE ALL LOOSE MATERIAL WITH SCRAPER OR KNIFE.
   - B. SWEEP OR BLOW SURFACE CLEAN.
   - C. APPLY REQUIRED PRIMER

PAINT

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

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

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

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

EPOXY

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

THE EPOXY MARKING APPLICATION SHALL IMMEDIATELY FOLLOW THE PAVEMENT CLEANING. GLASS BEADS SHALL BE APPLIED IMMEDIATELY AFTER APPLICATION OF THE EPOXY RESIN LINE TO PROVIDE AN IMMEDIATE NO-TRACK SYSTEM.

AN EPOXY RESIN LINE 4 INCHES WIDE AND 15 MIL THICKNESS (WET), REQUIRES AN APPLICATION RATE OF (1) GAL OF COMPONENTS FOR 320 FT OF LINE. GLASS BEADS SHALL BE APPLIED AT A POUND PER GALLON RATE SUFFICIENT TO ACHIEVE AN ACCEPTABLE NO-TRACK SYSTEM.

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

PERMANENT PAVEMENT MARKINGS SHALL NOT BE PLACED OVER TEMPORARY MARKINGS.

POLY PREFORM

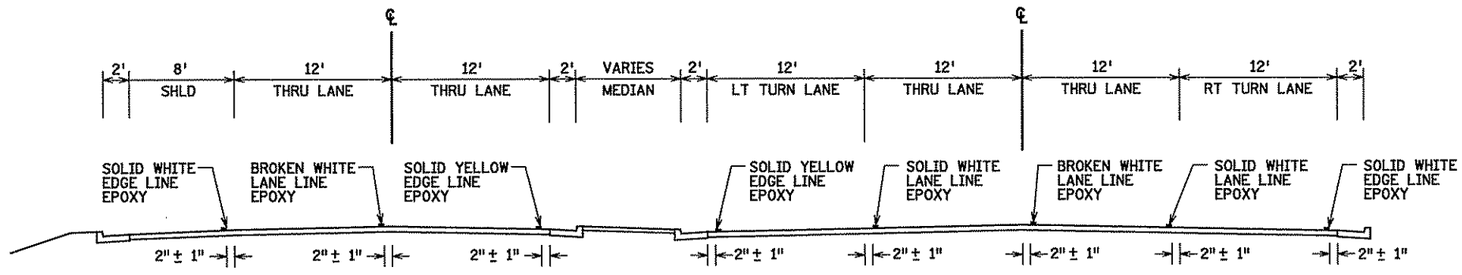
1. THE INSTALLERS OF THIS MATERIAL MUST CARRY A CARD CERTIFYING THAT THEY HAVE ATTENDED A TRAINING SESSION THAT ADDRESSES SURFACE PREPARATIONS AND ALL APPLICATION REQUIREMENTS AND TECHNIQUES NECESSARY FOR SUCCESSFUL APPLICATION.
2. ALL MARKINGS SHALL BE OF THE "INLAY" METHOD UNLESS THE "OVERLAY" PROCEDURE IS SPECIFIED.

INLAY APPLICATION

MAT TEMPERATURE SHALL BE CHECKED USING A THERMOMETER TO MAKE SURE THE INLAY IS BEING DONE IN THE PROPER TEMPERATURE RANGE. THE TEMPERATURE SHOULD MEASURE BETWEEN 150° F (ASPHALT FIRM ENOUGH TO WALK ON) AND 118°F. APPLICATION BELOW 118° F MAY NOT GET A PROPER INLAY. INLAYS ARE NOT RECOMMENDED AFTER SEPTEMBER 15 AS THE ASPHALT COOLS TOO FAST AT THIS TIME OF THE YEAR.

1. NO PRIMERS ARE USED FOR INLAY APPLICATION.
2. DO NOT INSTALL LANE LINES ON AN ASPHALT SEAM.
3. ROLLING OF ALL THE MARKINGS SHOULD BE LENGTHWISE IN THE DIRECTION THEY WERE LAID.
4. FOR CROSSWALKS AND STOP BARS, INITIAL TAMPING WITH THE TAMPING CART IS RECOMMENDED USING ONLY 45.4 kg OF MASS

USE COMPACTION ROLLER TO EMBED (INLAY) MARKINGS INTO PAVEMENT SURFACE. USE MINIMUM SPEED AND WATER ON ROLLER. DO NOT USE VIBRATOR. IF MARKING BUCKLES OR DISTORTS SEVERELY IN FRONT OF ROLLER, MAT TEMPERATURE OR ROLLER SPEED MAY BE TOO HIGH.



TYPICAL STRIPING DETAILS

NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\c-f\AnokaCty\13867000\hwy-brdg\hwy\pln-sht\c0265205_ssk.dgn 7/29/2009

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:

PRINTED NAME: RYAN P. MALONEY

DATE: 7/29/2009 LIC. NO. 44193

DRAWN BY SFH DATE 7/29/2009

DESIGN BY RPM DATE 7/29/2009

CHECKED BY TAC DATE 7/29/2009

S.P. 02-652-05
S.P. 02-716-09
S.P. 106-020-28
S.P. 197-124-001

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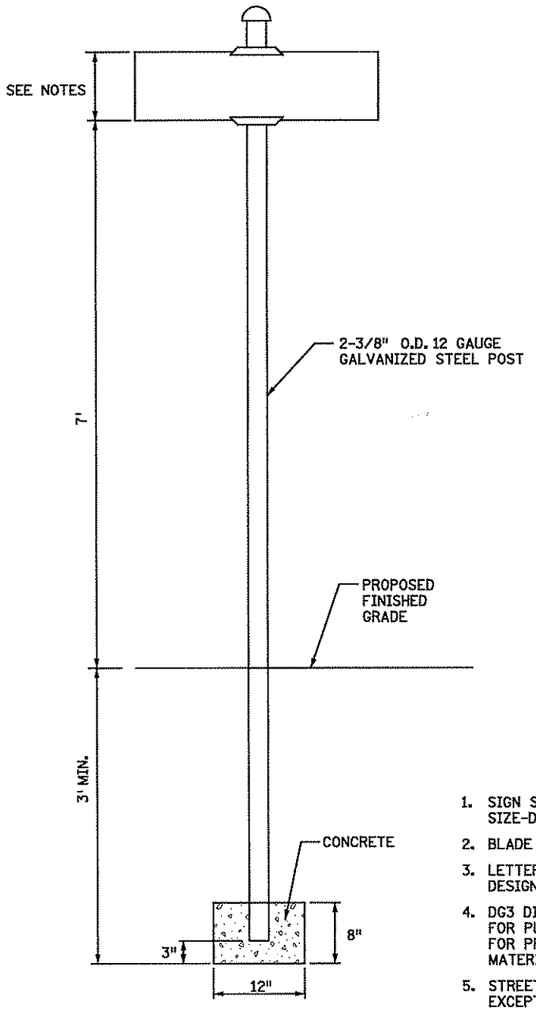
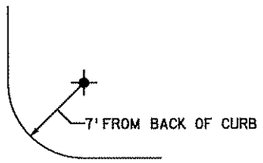
ANOKA COUNTY
STRIPING DETAILS
CSAH 52/116 RECONSTRUCTION

SHEET 14.12 OF 294

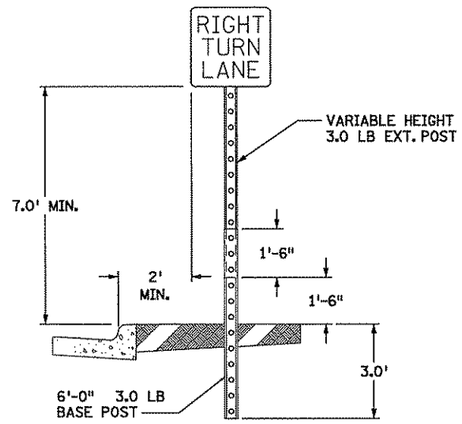




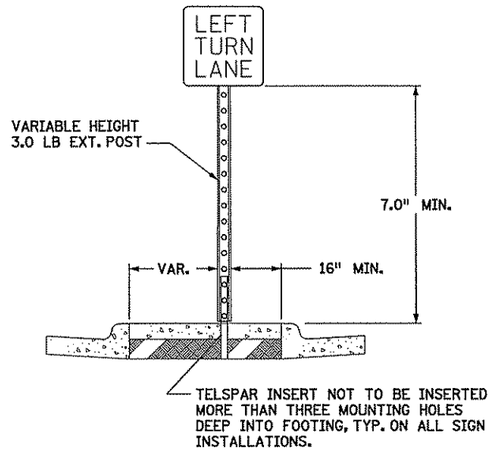
LOCATION PLAN
(VERIFY IN FIELD)

1. SIGN SIZE-DESIGN A: 9" (40 MPH AND LESS) AND SIGN SIZE-DESIGN B: 12" (45 MPH AND GREATER).
2. BLADE LENGTH SHALL BE AS NECESSARY.
3. LETTER SIZE (ALL UPPER CASE) - DESIGN A: 6" AND DESIGN B: 8".
4. DG3 DIAMOND GRADE, WHITE ON MNDOT GREEN BACKGROUND FOR PUBLIC STREETS. WHITE ON MNDOT BROWN BACKGROUND FOR PRIVATE STREETS, SEE CITY SPECIFICATIONS FOR MATERIALS.
5. STREET NAMES AND SUFFIXES SHALL BE SPELLED COMPLETELY EXCEPT FOR "NORTHEAST" WHICH SHALL BE NE.
6. SIGNS SHALL NOT HAVE BORDERS.
7. SIGN BRACKETS SHALL BE "LYLE SIGNS" NO. E-450 OR APPROVED EQUAL.
8. A SIGN SHOWING SIGN COLORS, SIZES AND LETTERING MUST BE SUBMITTED TO THE CITY FOR REVIEW AND APPROVAL PRIOR TO SIGN INSTALLATION.
9. ALL LETTERING TO BE "CAPITAL" LETTERS.

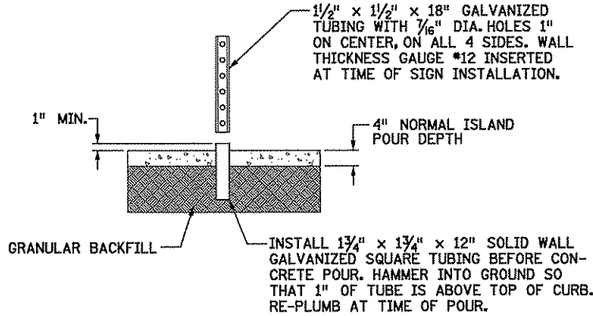
STREET SIGN INSTALLATION



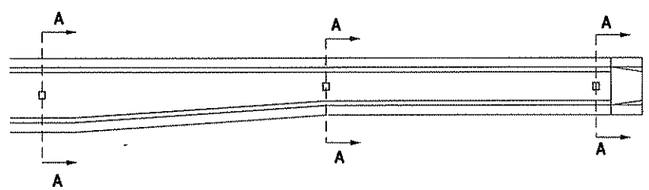
GROUND POST MOUNT SIGN
INSTALLATION TYPICAL



ISLAND MOUNT BREAK-AWAY SIGN
INSTALLATION TYPICAL



SECTION A-A



NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\a-f\AnokaCty\13867000\hwy-brdg\hwy\pln-sht\c0265205_ssi.dgn 12/11/2009

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:
PRINTED NAME: RYAN P. MALONEY
DATE: 12/11/2009 LIC. NO. 44193

DRAWN BY SFH DATE 12/11/2009
DESIGN BY RPM DATE 12/11/2009
CHECKED BY TAC DATE 12/11/2009

S.P. 02-652-05
S.P. 02-716-09
S.P. 106-020-28
S.P. 197-124-001

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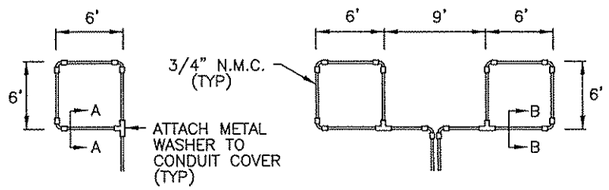
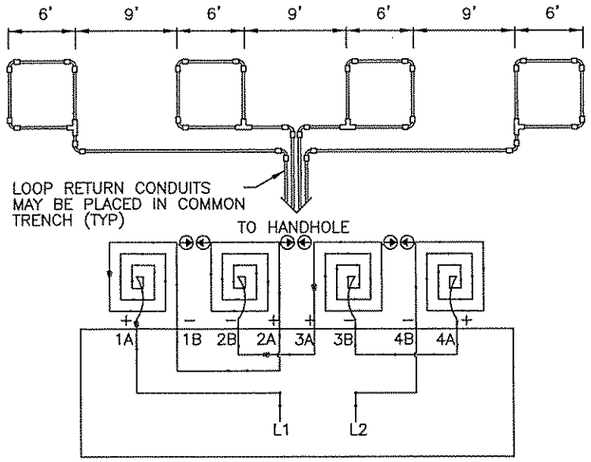
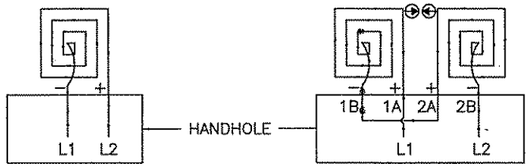
ANOKA COUNTY
SIGNING DETAILS
CSAH 52/116 RECONSTRUCTION

SHEET 14.13 OF 294







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

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

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

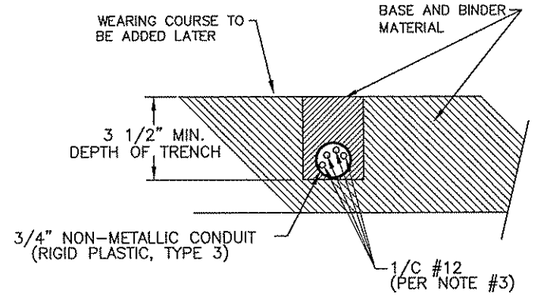
LOOP DETECTOR DETAIL 'B'
(LOOP PHASING FOR SERIES CONNECTION)

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

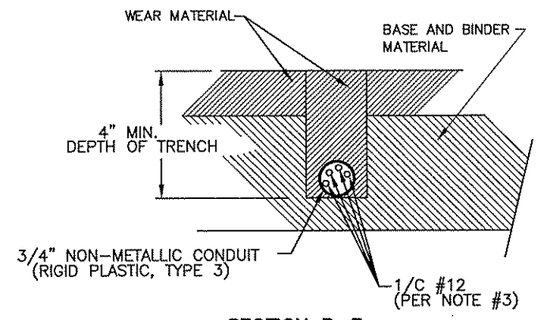
L1 TO 1A
1B TO 2A
2B TO 3A
3B TO 4A
4B TO L2

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

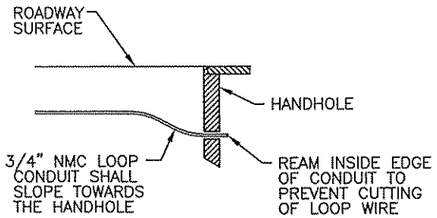
LOOP DETECTOR DETAIL 'C'
(LOOP PHASING FOR SERIES CONNECTION)



SECTION A–A
DETAIL FOR LOOP INSTALLATION IN NEW ROADWAY



SECTION B–B
DETAIL FOR LOOP INSTALLATION IN EXISTING ROADWAY



DRAINAGE DETAIL

LOOP DETECTOR WIRING

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

TRAFFIC SIGNAL STANDARD PLATES

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

	PLATE NO.	DESCRIPTION
	8110 E	TRAFFIC SIGNAL BRACKETING – POLE MOUNTED
*	8111 E	TRAFFIC SIGNAL BRACKETING – PEDESTAL MOUNTED
*	8112 F	PEDESTAL FOUNDATION
*	8114 A	PVC HANDHOLE/PULLBOX
*	8115 D	PEDESTRIAN PUSH BUTTON INSTALLATION
*	8118 D	SERVICE EQUIPMENT AND POLE–TRAFFIC CONTROL SIGNALS
*	8119 C	GROUND MOUNTED CABINET FOUNDATION
	8120 N	PA85 POLE FOUNDATION
*	8121 F	TRANSFORMER BASE AND POLE BASE PLATE
*	8122 E	PEDESTAL AND PEDESTAL BASE
*	8123 F	POLE AND MAST ARM
*	8124 E	MAST ARM SIGNAL HEAD MOUNTS
*	8126 I	PA90 AND PA100 POLE FOUNDATION

* – APPLIES TO 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

LEGEND OF SYMBOLS

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

ABBREVIATIONS

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

NO.	BY	DATE	REVISIONS

S:\AE\A1\ANOKC\COMMON\SIGNALS\52-129TH\52129-DETAILS.DWG 10/13/2009

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

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
Name: John M. Gray, PE
Date: June 8, 2009 Lic. No. 22457

S.P. 02-652-05
S.P. 02-716-09
S.P. 106-020-28
S.P. 197-124-001

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

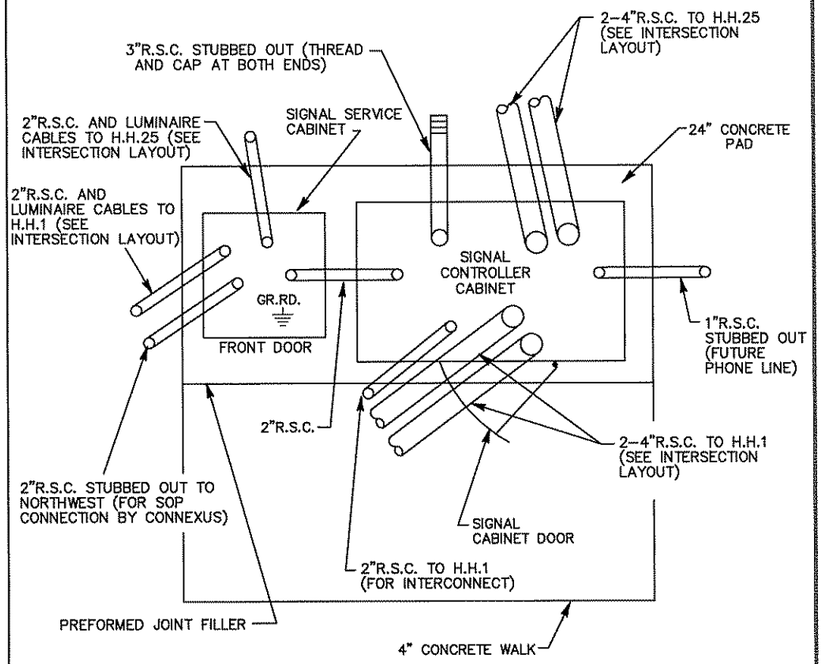
ANOKA COUNTY
DETAILS AND STANDARD PLATES
CSAH 52/116 RECONSTRUCTION
TRAFFIC SIGNAL SYSTEMS 'A-C'

TYPICAL PAD WITH CONTROLLER CABINET AND SERVICE CABINET

SEE INTERSECTION LAYOUT FOR CABLE INFORMATION (NOT TO SCALE)

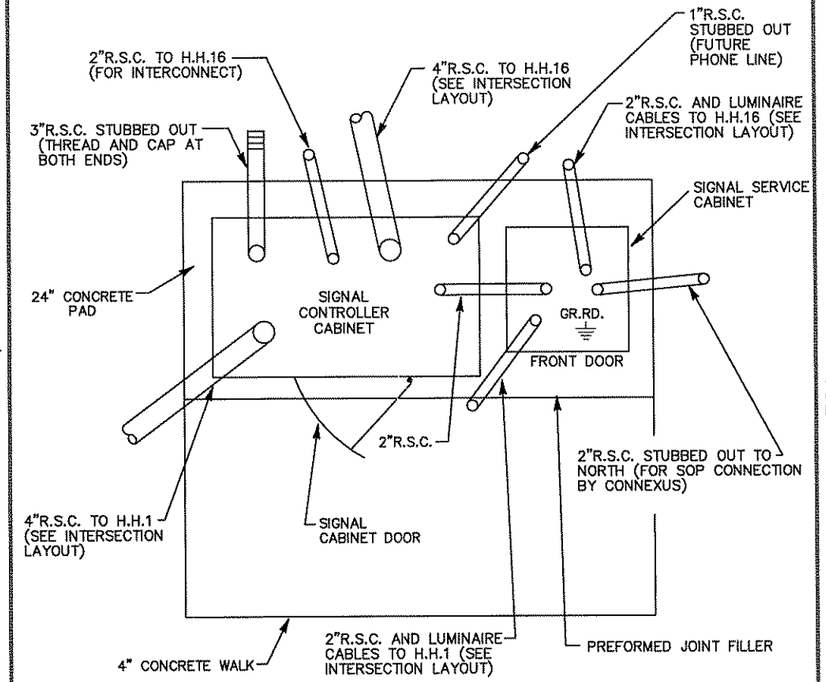
PLAN VIEW – SYSTEM "A"

CSAH 52 AT CSAH 14



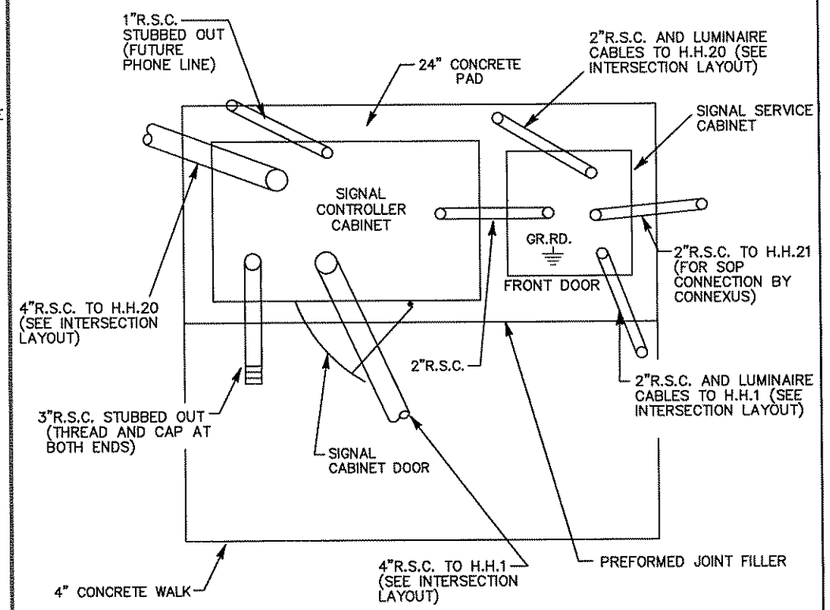
PLAN VIEW – SYSTEM "B"

CSAH 52 AT 129TH AVENUE/QUAIL CREEK PKWY



PLAN VIEW – SYSTEM "C"

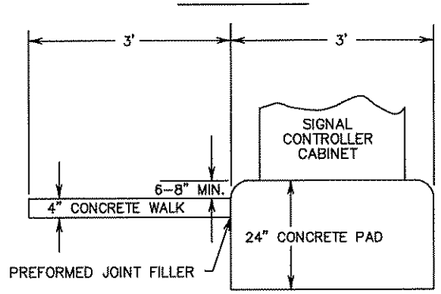
CSAH 52 AT CSAH 116



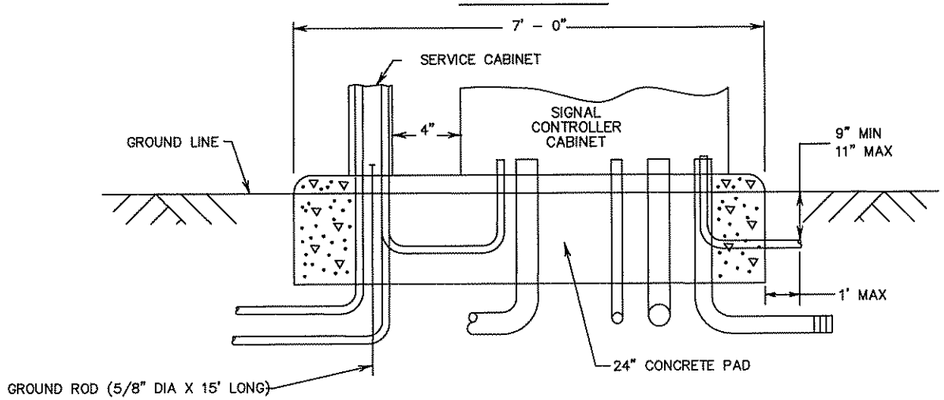
NOTES:

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

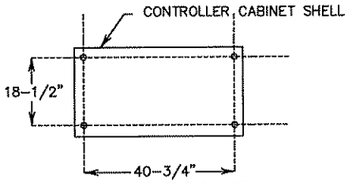
SIDE VIEW



FRONT VIEW



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



DIMENSION SHOWN ARE CENTER ROD TO CENTER ROD

NO.	BY	DATE	REVISIONS

S:\AE\A\ANOKC\COMMON\SIGNALS\52-129TH\52129-DETAILS.DWG 06/08/2009

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

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

Name: John M. Gray, PE
Date: June 8, 2009 Lic. No. 22457

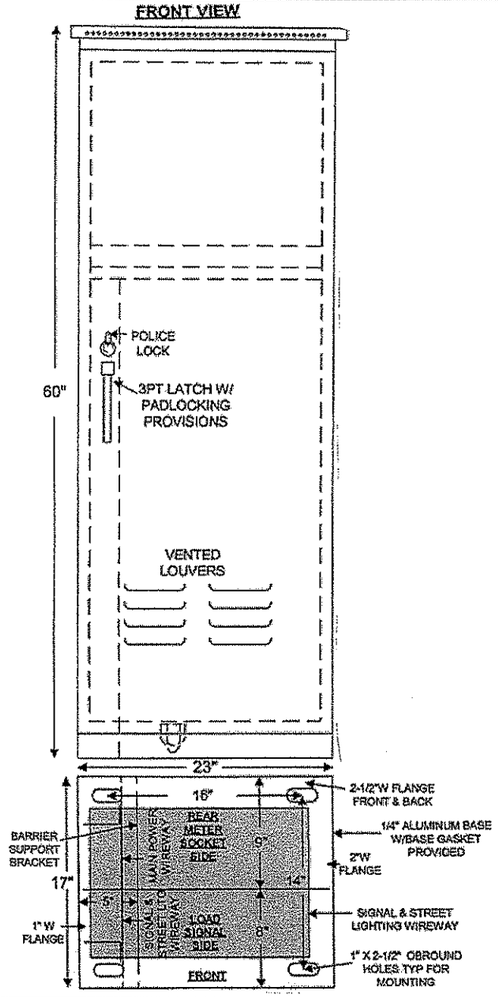
S.P. 02–652–05
S.P. 02–716–09
S.P. 106–020–28
S.P. 197–124–001

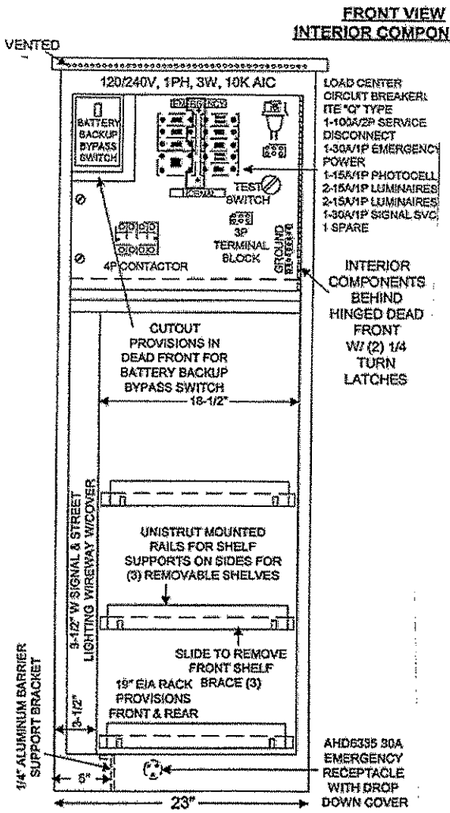
SEH
PHONE: (651) 490–2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

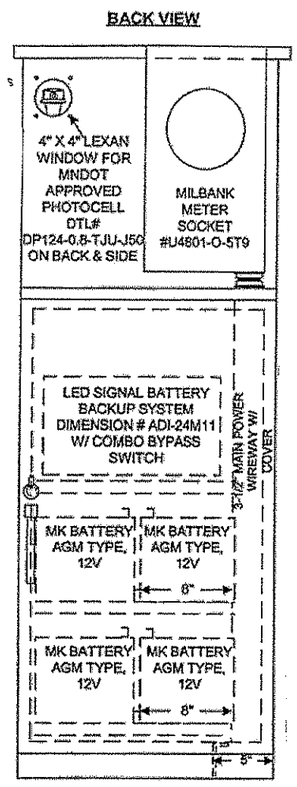
ANOKA COUNTY
EQUIPMENT PAD DETAILS
CSAH 52/116 RECONSTRUCTION
TRAFFIC SIGNAL SYSTEMS "A-C"

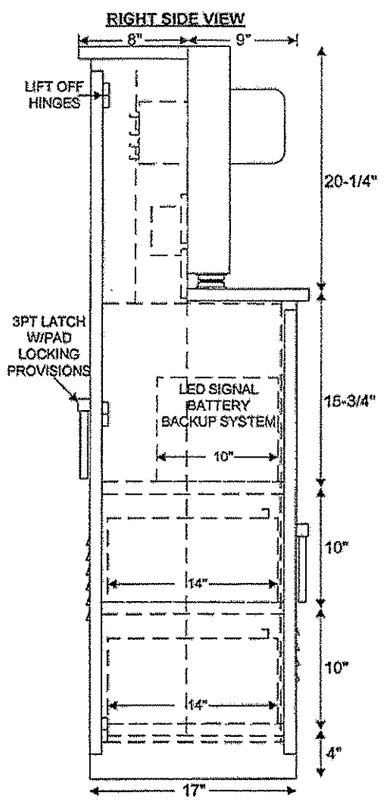
SHEET 15.02 OF 294

SERVICE CABINET DETAILS





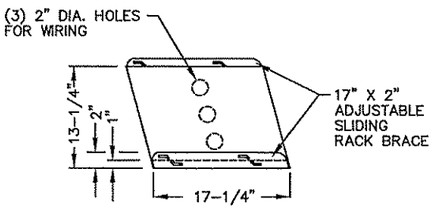




CABINET CONSTRUCTION:

-NEMA3R
-1/8" ALUMINUM 5052-H32
-ANODIZED 30 MINUTE CLEAR
-NEOPRENE GASKETED DOORS
-NON-CORRODING HARDWARE
-ETL LISTED IN ACCORDANCE W/UL508A

CABINET SHELF DETAILS



CONSTRUCTION NOTES

1. EACH SERVICE CABINET SHALL BE FABRICATED FROM 0.125" ALUMINUM FOR OUTDOOR WEATHERPROOF SERVICE. AFTER FABRICATION, EACH SERVICE CABINET, BOTH INSIDE AND OUTSIDE, SHALL BE PROTECTED WITH AN EXTERNAL THIRTY MINUTE CLEAR ANODIZED FINISH.
2. ALL HINGES, HINGE PINS AND LOCKS SHALL BE OF NON-CORRODING CONSTRUCTION.
3. THE SERVICE PEDESTAL DOORS SHALL BE ATTACHED TO THE ENCLOSURE WITH LIFT-OFF PHENOLIC HINGES AND SECURED WITH A STANDARD POLICE LOCK (PROVIDE ONE (1) KEY) FOR THE SERVICE DOORS.
4. BOTH DOOR OPENINGS SHALL BE PROVIDED WITH A NEOPRENE GASKET TO FORM A COMPLETE SEAL WITH THE ENCLOSURE.
5. THE PHOTOELECTRIC CONTROL WINDOWS SHALL BE CLEAR VANDAL RESISTANT MATERIAL (FOUR INCH X FOUR INCH).
6. THE CIRCUIT BREAKERS SHALL BE 120/240 VOLT AC, 60 HZ, AND SHALL BE CLEARLY MARKED WITH THE "ON" AND "OFF" POSITIONS AND IDENTIFIED WITH THE LOAD WHICH IT IS CARRYING (E.G. "SIGNALS OR "LUMINAIRE NUMBERS"). ALL CIRCUIT BREAKERS SHALL BE CLEARLY MARKED IN A MANNER THAT WILL NOT DETERIORATE WITH MOISTURE OR AGE.
7. SHORT CIRCUIT RATING – 10,000 AIC SYMMETRICAL.
8. PROVIDE CLEARANCE TO INSTALL OR REMOVE THE PHOTOELECTRIC CONTROL CELL.
9. THE PHOTOELECTRIC CONTROL LENS SHALL BE ORIENTED TO ELIMINATE INTERFERENCE BY MANMADE LIGHT SOURCES. THE PHOTOELECTRIC CONTROL LENSES SHALL NORMALLY FACE NORTH AND EAST.
10. ALL CONDUIT ENTERING THE FOUNDATION SHALL BE SEALED WITH AN APPROVED DUCT SEALER.
11. EACH SERVICE CABINET SHALL BE U.L. LISTED AND LABELED AS "SUITABLE FOR USE AS SERVICE ENTRANCE EQUIPMENT" AND APPROVED FOR OUTDOOR USE.
12. EACH SERVICE CABINET SHALL BE WELDED TO THE BASE IN ACCORDANCE WITH U.L. STANDARDS.
13. SEE THE INTERSECTION LAYOUTS FOR THE REQUIRED NUMBER OF LUMINAIRES AT EACH INTERSECTION.
14. THE BASE GASKET SHALL CONSIST OF:
    - FOUR (4) STRIPS, SIZED TO FIT BASE
    - INCLUDE CORNER HOLE/SLOTS TO ACCOMMODATE THE 0.75 INCH ANCHOR RODS
    - GASKET MATERIAL 0.5 INCH THICK SOLID BUTYL RUBBER
    - PROVIDE 0.5 INCH GAP FOR WATER DRAINAGE
15. UNISTRUT RAILS (#A400EA OR EQUIVALENT) USED FOR SHELF SUPPORTS FOR (3) ADJUSTABLE REMOVABLE SHELVES SHALL BE MOUNTED TO THE SIDES OF THE CABINET.
16. THE 19" RACK IN THE BASE OF THE CABINET SHALL BE CONSTRUCTED TO TIA/EIA 310D STANDARDS.
17. CONTRACTOR SHALL CONTACT MANUFACTURER FOR TYPICAL FEED POINT WIRING DIAGRAM FOR EACH SERVICE CABINET.

NO.	BY	DATE	REVISIONS

S:\AE\A\ANOKC\COMMON\SIGNALS\52-129TH\52129-DETAILS.DWG 10/13/2009

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

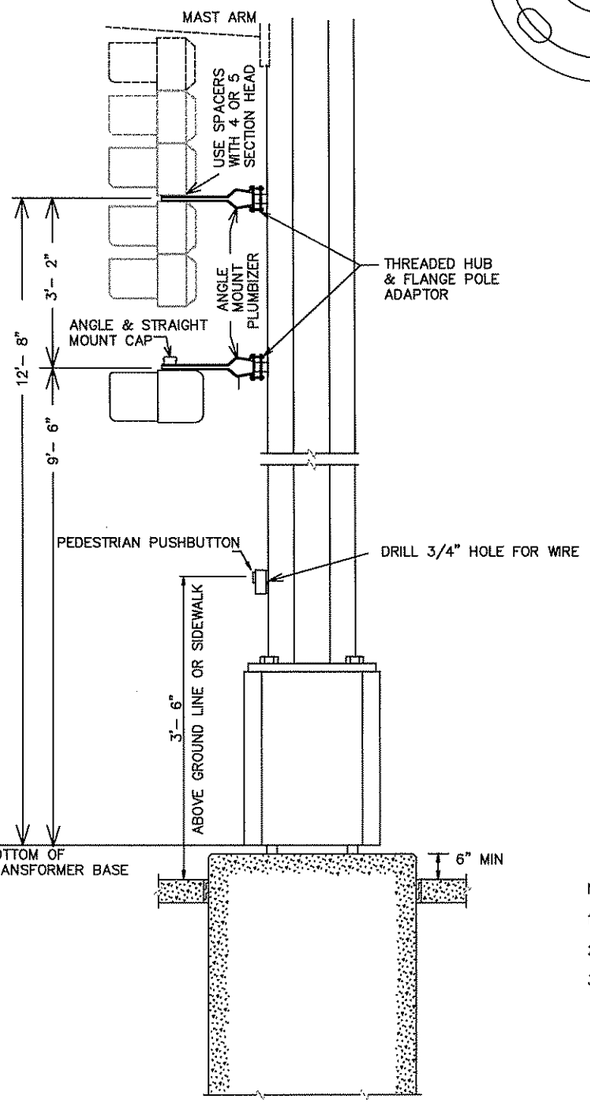
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
Date: June 8, 2009
Name: John M. Gray, PE
Lic. No. 22457

S.P. 02-652-05
S.P. 02-716-09
S.P. 106-020-28
S.P. 197-124-001

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

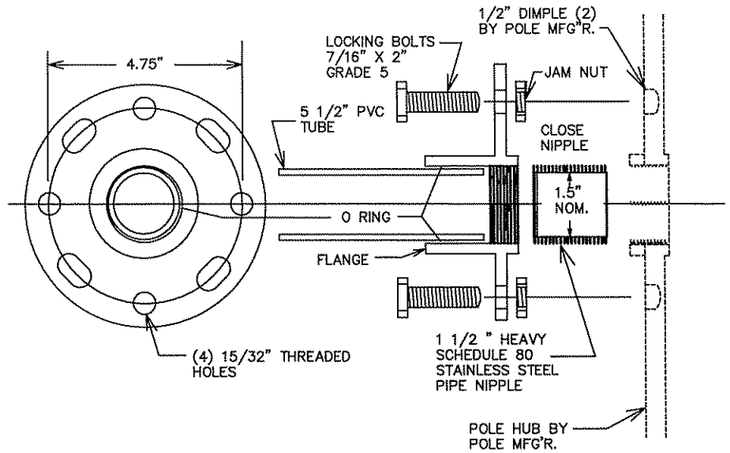
ANOKA COUNTY
BATTERY BACK-UP SERVICE CABINET DETAILS
CSAH 52/116 RECONSTRUCTION
TRAFFIC SIGNAL SYSTEMS "A-C"

SHEET 15.03 OF 294

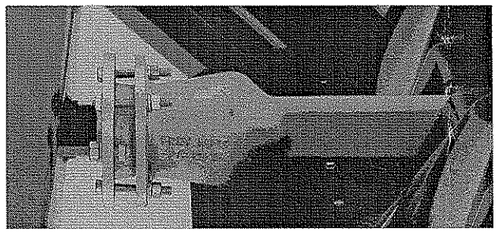


TYPICAL SIGNAL POLE MOUNTING

NOT TO SCALE

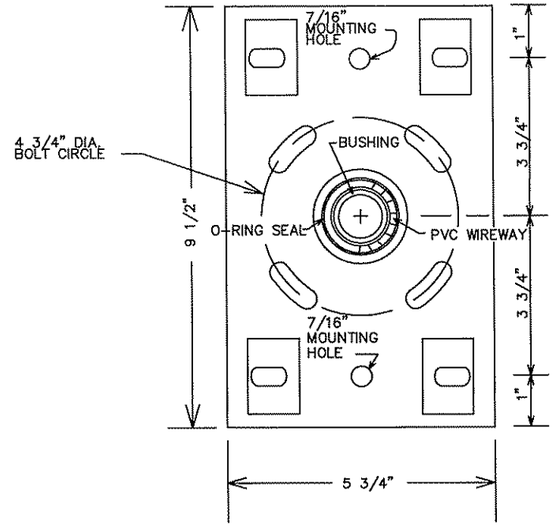


THREADED HUB AND FLANGE POLE ADAPTOR

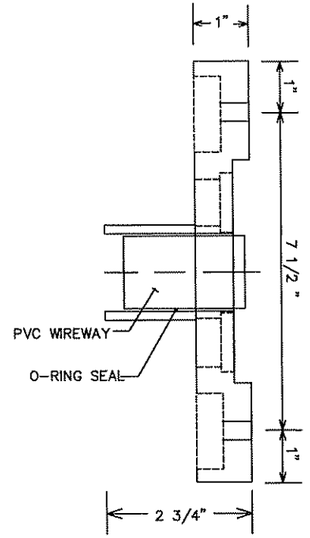


NOTE:

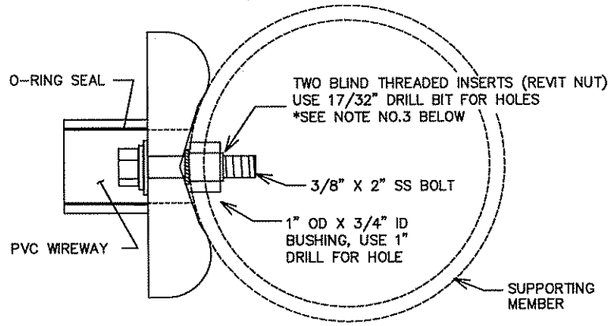
1. ALL THREADED SURFACES TO BE COATED WITH ANTI-SEIZE COMPOUND.
2. USE SIGNAL HEAD MOUNTED SPACERS FOR 4 & 5 SECTION POLY HEADS.
3. SEE STANDARD PLATE NUMBER 8123 FOR ADDITIONAL SIGNAL POLE DETAILS.



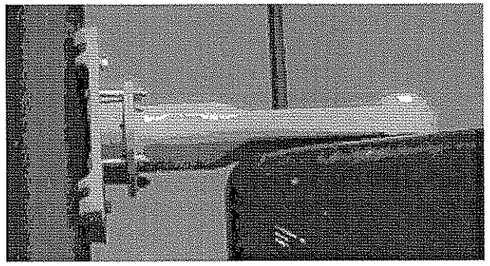
BOLT ON HUB & FLANGE



SIDE VIEW

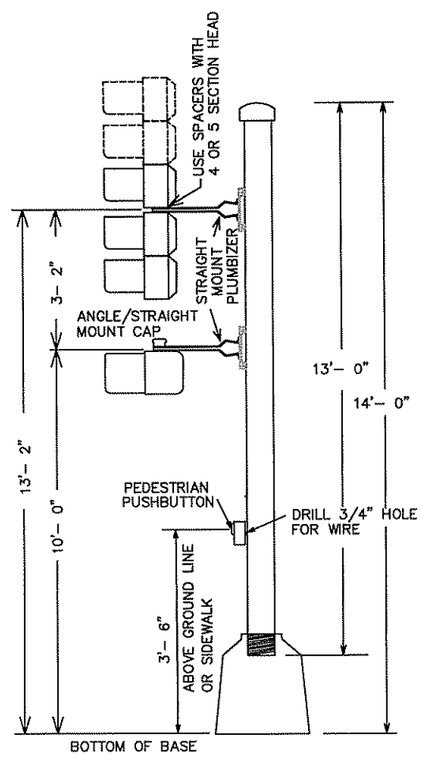


TOP VIEW



NOTE:

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



TYPICAL PEDESTAL MOUNTING

NOT TO SCALE

NO.	BY	DATE	REVISIONS

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CHECKED BY: JMG
DESIGN TEAM

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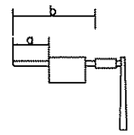
ANOKA COUNTY
POLE MOUNT DETAILS
CSAH 52/116 RECONSTRUCTION
TRAFFIC SIGNAL SYSTEMS 'A-C'

SHEET 15.04 OF 294

MAST ARM MOUNTED SIGNS								
SIGN PANELS – TYPE D (INPLACE – SALVAGE & INSTALL)								
SIGNAL SYSTEM	SIZE (in.)	NO. REQ.	NO. POSTS/ STIFFENERS PER SIGN	BAND SPACING (**)	POLE NO.	a	b	PANEL LEGEND
A	102x24	1	4	–	1	35'	–	125th AVE NE
A	108x18	1	4	–	3	28'	–	RADISSON ROAD
A	102x24	1	4	–	5	35'	–	125th AVE NE
A	108x18	1	4	–	7	28'	–	RADISSON ROAD
TOTAL QUANTITIES		4						

NOTE: CONTRACTOR SHALL FURNISH AND INSTALL ALL NEW POSTS, STIFFENERS, MOUNTING HARDWARE, ETC. FOR EACH INPLACE SIGN PANEL TO BE SALVAGED AND INSTALLED BY THE CONTRACTOR AS PART OF THIS PROJECT (INCIDENTAL).



MAST ARM MOUNTED SIGNS										
SIGN PANELS – TYPE D (FURNISH & INSTALL)										
SIGNAL SYSTEM	SIGN PANEL	SIZE (in.)	NO. REQ.	NO. POSTS/ STIFFENERS PER SIGN	BAND SPACING (**)	SQ. FT. PER SIGN	POLE NO.	a	b	
B	D–1	150x36	1	5	–	37.50	1	28'	–	
B	D–2	108x24	1	4	–	18.00	2	18'	–	
B	D–3	150x36	1	5	–	37.50	3	28'	–	
B	D–4	108x24	1	4	–	18.00	4	18'	–	
C	D–5	108x24	1	4	–	18.00	1	28'	–	
C	D–6	126x24	1	5	–	21.00	2	35'	–	
C	D–7	108x24	1	4	–	18.00	3	28'	–	
C	D–8	126x24	1	5	–	21.00	4	28'	–	
TOTAL QUANTITIES			8			189.00				

(**)= SPACING BETWEEN STIFFENERS SHALL NOT EXCEED 36 INCHES AND SHALL BE UNIFORMLY SPACED. SEE SPECIAL PROVISIONS AND STANDARD SIGNS MANUAL, PAGE 105A (REVISION DATE: 7/06/07) FOR BRACKET SPACING REQUIREMENTS.

SIGNS FOR TRAFFIC SIGNAL SYSTEM									
SIGN PANELS – TYPE C (INPLACE – SALVAGE & INSTALL)									
SIGNAL SYSTEM	SIGN PANEL	SIZE (in.)	NO. REQ.	NO. POSTS/ STIFFENERS PER SIGN	BAND SPACING (**)	POLE NO.	a	b	PANEL LEGEND
A	R6–1L	36x12	4	1	–	1,3,5,7	–	–	ONE WAY (LEFT)
A	R6–1R	36x12	4	①	–	1,3,5,7	–	–	ONE WAY (RIGHT)
A	R9–3a	18x18	2	①	–	5,7	–	–	NO PEDESTRIAN CROSSING
TOTAL QUANTITIES			10						

NOTE: CONTRACTOR SHALL FURNISH AND INSTALL ALL NEW BANDING, MOUNTING HARDWARE, ETC. FOR EACH INPLACE SIGN PANEL TO BE SALVAGED AND INSTALLED BY THE CONTRACTOR AS PART OF THIS PROJECT (INCIDENTAL).

SIGNS FOR TRAFFIC SIGNAL SYSTEM										
SIGN PANELS – TYPE C (FURNISH & INSTALL)										
SIGNAL SYSTEM	SIGN PANEL	SIZE (in.)	NO. REQ.	NO. POSTS/ STIFFENERS PER SIGN	BAND SPACING (**)	SQ. FT. PER SIGN	TOTAL AREA (SQ.FT.)	POLE NO.	a	b	PANEL LEGEND
B	R6–1L	36x12	4	①	–	3.00	12.00	1,2,3,4	–	–	ONE WAY (LEFT)
B	R6–1R	36x12	4	①	–	3.00	12.00	1,2,3,4	–	–	ONE WAY (RIGHT)
C	R6–1L	36x12	4	①	–	3.00	12.00	1,2,3,4	–	–	ONE WAY (LEFT)
C	R6–1R	36x12	4	①	–	3.00	12.00	1,2,3,4	–	–	ONE WAY (RIGHT)
TOTAL QUANTITIES			16				48.00				

NOTES:

1) COLOR FOR ALL NEW TYPE D SIGNS SHALL BE WHITE LEGEND AND BORDER ON GREEN BACKGROUND, FULLY REFLECTORIZED.
2) CORNERS EXTENDING BEYOND THE BORDER SHALL NOT BE TRIMMED.
3) FOR STRUCTURAL DETAILS OF MAST ARM MOUNTED SIGNS, SEE STANDARD SIGNS MANUAL, PAGE 105A (REVISION DATE: 7/06/07), AND SPECIAL PROVISIONS.
4) SEE STANDARD SIGNS MANUAL FOR DETAILED DRAWINGS OF TYPE C SIGN PANELS.
5) FURNISHING AND INSTALLING TYPE C AND D SIGNS SHALL BE CONSIDERED INCIDENTAL TO ITEM NO. 2565 FOR EACH TRAFFIC CONTROL SIGNAL SYSTEM). SEE SPECIAL PROVISIONS.
6) SALVAGING AND INSTALLING IN–PLACE TYPE C AND D SIGNS SHALL BE CONSIDERED INCIDENTAL TO ITEM NO. 2565 FOR TRAFFIC CONTROL SIGNAL SYSTEM "A". SEE SPECIAL PROVISIONS.
7) ALL NEW TYPE C AND D SIGN PANELS SHALL BE FABRICATED USING HP SHEETING. SEE SPECIAL PROVISIONS.
8) ① = INSTALL SIGN PANEL ON TRAFFIC SIGNAL MAST ARM POLE.

NO.	BY	DATE	REVISIONS

S:\AE\A\ANOKC\COMMON\SIGNALS\52-129TH\52129-DETAILS.DWG 06/08/2009

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S.P. 106–020–28
S.P. 197–124–001

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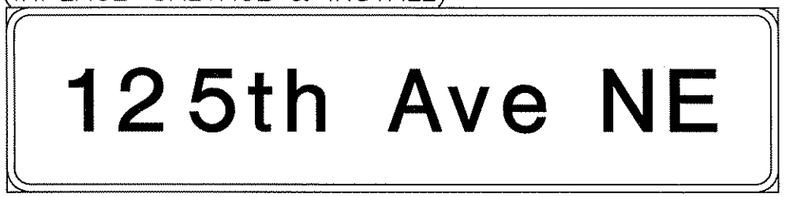
PHONE: (651) 490–2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

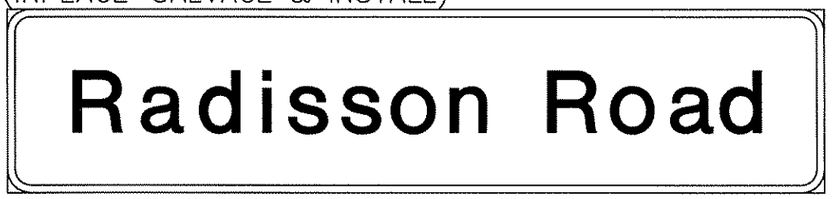
ANOKA COUNTY
SIGNAL SIGNING DETAILS
CSAH 52/116 RECONSTRUCTION
TRAFFIC SIGNAL SYSTEMS 'A-C'

SHEET 15.05 OF 294

(INPLACE–SALVAGE & INSTALL)



(INPLACE–SALVAGE & INSTALL)



D–1

3.0" Radius, 1.0" Border, White on Green
Arrow 5 – 13.0" 180°, (129th Ave NE) E Mod.
(Quail Creek Pkwy) E Mod., Arrow 5 – 13.0" 0°

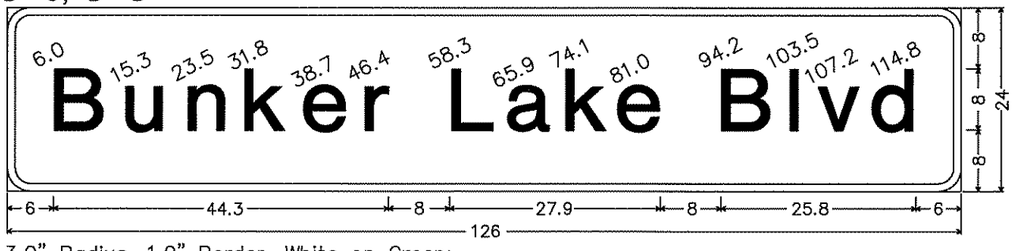
D–2, D–4, D–5, D–7

3.0" Radius, 1.0" Border, White on Green;
[Radisson Road] E Mod;

D–3

3.0" Radius, 1.0" Border, White on Green
Arrow 5 – 13.0" 180°, (Quail Creek Pkwy) E Mod.
(129th Ave NE) E Mod., Arrow 5 – 13.0" 0°

D–6, D–8



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

NO.	BY	DATE	REVISIONS

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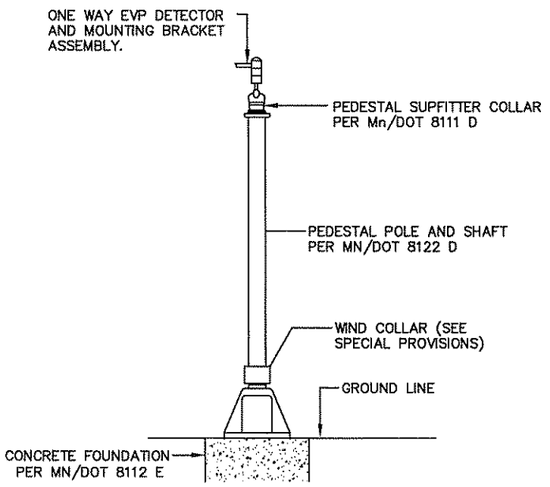
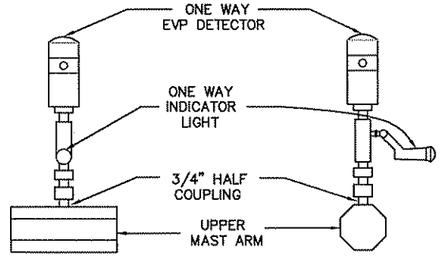
ANOKA COUNTY
SIGNAL SIGNING DETAILS
CSAH 52/116 RECONSTRUCTION
TRAFFIC SIGNAL SYSTEMS 'A-C'

SHEET 15.06 OF 294

PEDESTAL POLE MOUNTED EVP DETECTOR DETAIL



EVP DETECTOR AND LIGHT MOUNTING DETAIL ON MAST ARM



FRONT VIEW SIDE VIEW

NO.	BY	DATE	REVISIONS

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ANOKA COUNTY
EVP DETAILS
CSAH 52/116 RECONSTRUCTION
TRAFFIC SIGNAL SYSTEMS 'A-C'

LOOP DETECTORS

NUMBER	SIZE (FEET)	LOCATION	FUNCTION
*D1-1	6'X6'	40'	1
D1-2	6'X6'	10'	1
*D2-1,*D2-2	6'X6'	475'	1
D3-1,D3-2	6'X6'	30'	1
D3-3,D3-4	6'X6'	0'	1
D4-1,D4-2	6'X6'	300'	3,8
D4-3	2-6'X6'	-10' & 5'	7
D4-4,D4-5	2-6'X6'	5' & 20'	1
*D5-1	6'X6'	40'	1
D5-2	6'X6'	10'	1
*D6-1	6'X10'	475'	1
D7-1,D7-2	6'X6'	40'	1
D7-3,D7-4	6'X6'	10'	1
*D8-1,*D8-2	6'X6'	475'	3,8
D8-3	2-6'X6'	-10' & 5'	7
*D8-4,*D8-5	2-6'X6'	5' & 20'	1

* DETECTOR TO BE INSTALLED IN EXISTING PAVEMENT.
- ALL LOOP DETECTORS SHALL BE NMC UNLESS NOTED OTHERWISE.
- LOCATION = DISTANCE FROM STOP BAR TO FRONT OF DETECTOR IN FEET.
- LOOP DETECTOR FUNCTIONS:
  1 - CALL AND EXTEND.
  3 - EXTEND ONLY.
  7 - DELAY CALL, IMMEDIATE EXTEND.
  8 - CARRY OVER (STRETCH).

SIGNAL INDICATIONS

FACE	R	Y	G	RLTA	YLTA	GLTA
1-1,1-2,1-3				←	←	←
2-1,2-2,2-3,3,2-4	●	●	●			
3-1,3-2,3-3				←	←	←
4-1,4-2,4-3,4-4	●	●	●			
5-1,5-2,5-3				←	←	←
6-1,6-2,6-3,6-4	●	●	●			
7-1,7-2,7-3				←	←	←
8-1,8-2,8-3,8-4	●	●	●			

- ALL SIGNAL INDICATIONS SHALL BE 12".
- ALL SIGNAL INDICATIONS SHALL BE LED.
- ALL SIGNAL FACES SHALL HAVE A BACKGROUND SHIELD.

** LANE DESIGNATION ARROWS SHOWN FOR INFORMATION ONLY **

(A) INSTALL CONTROLLER AND CABINET (FURNISHED BY COUNTY)
EQUIPMENT PAD FOUNDATION
BATTERY BACK-UP SIGNAL SERVICE CABINET (ON SAME FOUNDATION AS CONTROLLER CABINET)
BETWEEN CONTROLLER AND CABINET AND SERVICE CABINET:
2" R.S.C.
METERED SIGNAL SERVICE
3-1/C #6
SERVICE CABINET INTO INP. H.H. 25:
2" RSC
UNMETERED STREET LIGHT SERVICE
2-3/C #14 (LUM)
STUB OUT 2" RSC FROM SERVICE CABINET TO NORTHWEST (FOR POWER BY CONNEXUS)
CONTROLLER CABINET INTO H.H. 1:
4" RSC
3-12/C #14
1-3/C #14 (EVP)
15-2/C #14
1-3/C #20 (EVP)
4" RSC
3-12/C #14
1-3/C #14 (EVP)
2-2/C #14
1-3/C #20 (EVP)
2" RSC (INTERCONNECT)
1-6 MM/6 SM FIBER OPTIC CABLE (INTERCONNECT)

SERVICE CABINET INTO H.H. 1:
2" R.S.C.
UNMETERED STREET LIGHT SERVICE
2-3/C #14 (LUM)
CONTROLLER CABINET INTO H.H. 25:
4" RSC
3-12/C #14
1-3/C #14 (EVP)
10-2/C #14
1-3/C #20 (EVP)
4" RSC
3-12/C #14
1-3/C #14 (EVP)
4-2/C #14
1-3/C #20 (EVP)
3" RSC STUBBED OUT (CAPPED BOTH ENDS)
1" RSC STUBBED OUT (CAPPED FOR FUTURE TELEPHONE LINE)

SCALE IN FEET
0 10 20 40

MATCHLINE - NB 52 STA. 348+00

CSAH 52 (RADISSON RD.) 45 MPH

NEW R/W

INPLACE R/W

2" RSC
2-2/C #14
2" RSC (INTERCONNECT)
1-6 MM/6 SM FIBER OPTIC CABLE (INTERCONNECT)

3" RSC
4-2/C #14

3" RSC
9-2/C #14
2" RSC (INTERCONNECT)
1-6 MM/6 SM FIBER OPTIC CABLE (INTERCONNECT)

3" RSC
3-12/C #14
1-3/C #14 (EVP)
1-3/C #14 (LUM)
1-3/C #20 (EVP)

2" RSC
1-2/C #14

2" RSC (INP.)
1-2/C #14

4" RSC (DIRECTIONAL BORE)
3-12/C #14
1-3/C #14 (EVP)
1-3/C #14 (LUM)
11-2/C #14
1-3/C #20 (EVP)
2" RSC (INTERCONNECT)
1-6 MM/6 SM FIBER OPTIC CABLE (INTERCONNECT)

4" RSC (DIRECTIONAL BORE)
3-12/C #14
1-3/C #14 (EVP)
1-3/C #14 (LUM)
2-2/C #14
1-3/C #20 (EVP)

4" RSC (DIRECTIONAL BORE)
3-12/C #14
1-3/C #14 (EVP)
1-3/C #14 (LUM)
13-2/C #14
1-3/C #20 (EVP)
2" RSC (INTERCONNECT)
1-6 MM/6 SM FIBER OPTIC CABLE (INTERCONNECT)

4" RSC (DIRECTIONAL BORE)
3-12/C #14
1-3/C #14 (EVP)
1-3/C #14 (LUM)
4-2/C #14
1-3/C #20 (EVP)

2-4" RSC
6-12/C #14
2-3/C #14 (EVP)
2-3/C #14 (LUM)
5-2/C #14
2-3/C #20 (EVP)

2-4" RSC (DIRECTIONAL BORE)
6-12/C #14
2-3/C #14 (EVP)
2-3/C #14 (LUM)
10-2/C #14
2-3/C #20 (EVP)

2-4" RSC (DIRECTIONAL BORE)
6-12/C #14
2-3/C #14 (EVP)
2-3/C #14 (LUM)
14-2/C #14
2-3/C #20 (EVP)

4" RSC
3-12/C #14
1-3/C #14 (EVP)
1-3/C #14 (LUM)
15-2/C #14
1-3/C #20 (EVP)
2" RSC (INTERCONNECT)
1-6 MM/6 SM FIBER OPTIC CABLE (INTERCONNECT)

2" RSC
2-2/C #14

2" RSC (INP.)
2-2/C #14

2" RSC (INP.)
2-2/C #14

(B) SOP (TO BE F&I BY CONNEXUS)

Ø8 & Ø3 EVP
Ø6 & Ø1 EVP
Ø2 & Ø5 EVP
Ø4 & Ø7 EVP

D1-1 D1-2 D3-1 D3-2 D3-3 D3-4 D4-3 D4-4 D4-5 D5-1 D5-2 D7-1 D7-2 D7-3 D7-4 D8-3 D8-4 D8-5

CSAH 14 (125TH AVE.) 55 MPH

MATCHLINE - CSAH 14 A

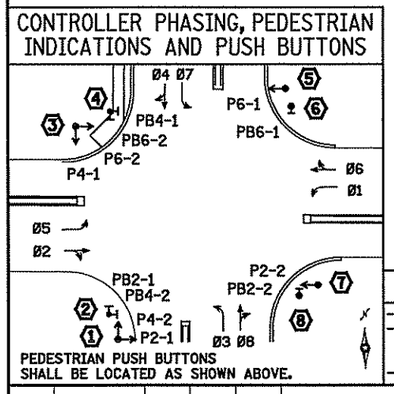
MATCHLINE - CSAH 14 B

1345

345

MATCHLINE - NB 52 STA. 344+50

CONTROLLER PHASING, PEDESTRIAN INDICATIONS AND PUSH BUTTONS



PEDESTRIAN PUSH BUTTONS SHALL BE LOCATED AS SHOWN ABOVE.

SIGNAL SYSTEM OPERATION

- THE SIGNAL SYSTEM FLASH MODE IS ALL RED
- NORMAL OPERATION IS 8 PHASE WITH PHASES 1, 3, 5 AND 7 BEING PROTECTED LEFT TURN PHASES
- PHASES 2 AND 6 SHALL BE ON VEHICLE RECALL

SEE MATCHLINE SHEET FOR GENERAL NOTES

NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\a-f\AnokaCty\13867000\hwy-brdg\hwy\pln-sht\c02652O5_sga.dgn 10/15/2009

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: Bryant J. Ficek
PRINTED NAME: BRYANT J. FICEK
DATE: 10/15/2009 LIC. NO. 42802

DRAWN BY SFH DATE 10/15/2009
DESIGN BY BJF DATE 10/15/2009
CHECKED BY TAC DATE 10/15/2009

S.P. 02-652-05
S.P. 02-716-09
S.P. 106-020-28
S.P. 197-124-001

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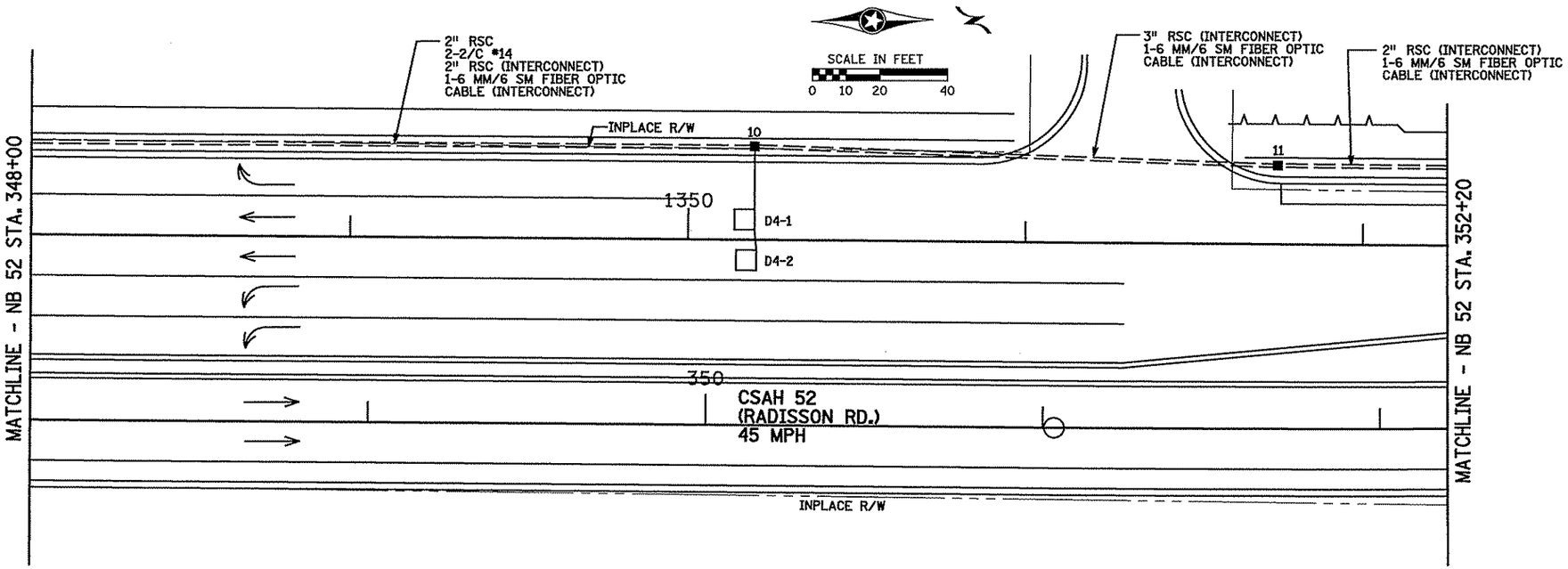
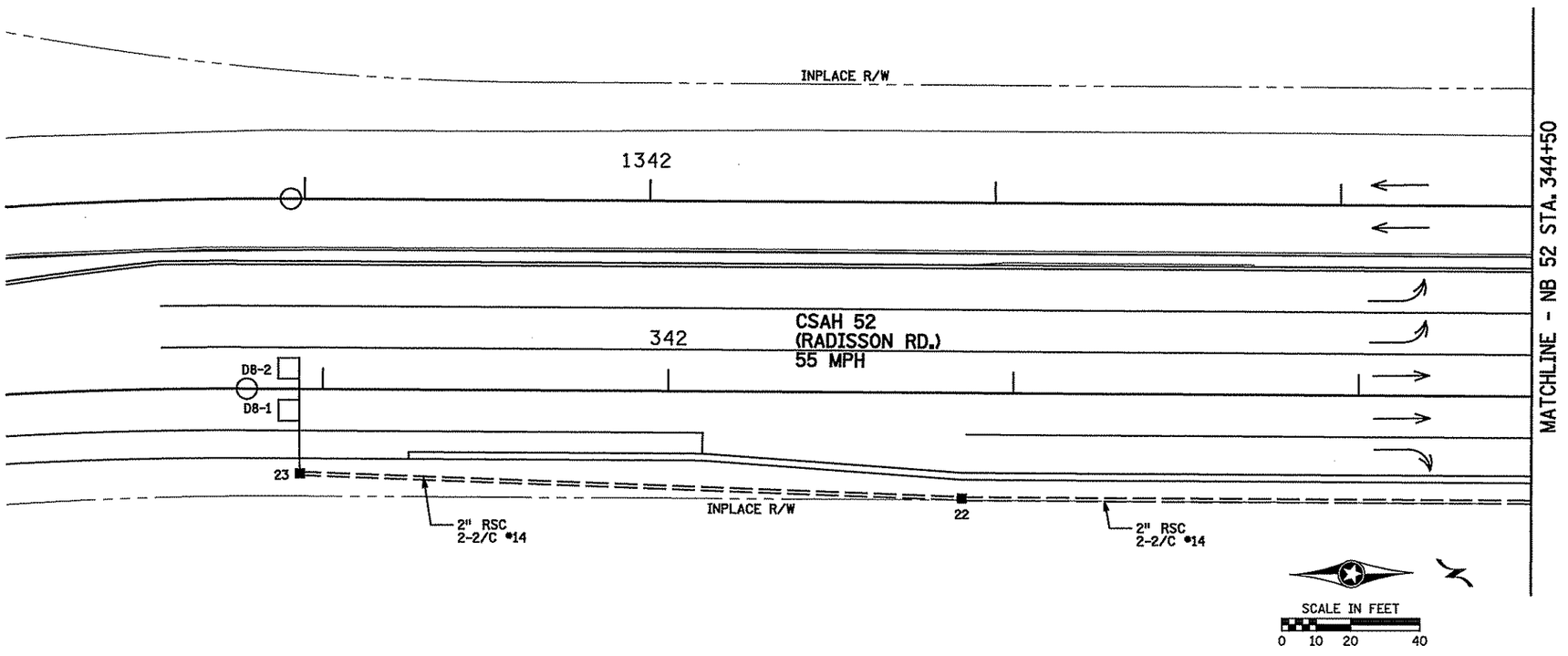
ANOKA COUNTY
SIGNAL SYSTEM "A" INTERSECTION LAYOUT
CSAH 52/116 RECONSTRUCTION
CSAH 52 AND CSAH 14

SHEET 15.08 OF 294





NOTES:

1) SEE SPECIAL PROVISIONS FOR COUNTY FURNISHED MATERIALS, LED INDICATIONS, AND PAINTING OF SIGNAL SYSTEM.
2) THE EXACT LOCATION OF HANDHOLES, POLES, LOOP DETECTORS AND EQUIPMENT PAD SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER.
3) NEW HANDHOLES SHALL BE PVC HANDHOLES WITH METAL FRAMES AND COVERS.
4) A 3/4" HALF COUPLING, 3/4" PIPE NIPPLE AND CONDUIT OUTLET BODY FOR EMERGENCY VEHICLE PREEMPTION EQUIPMENT SHALL BE F&I 6' FROM THE END OF MAST ARM.
5) THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING THE POWER COMPANY TO ARRANGE FOR THE POWER CONNECTION.
6) THE CONTRACTOR SHALL LOCATE AND VERIFY INPLACE UTILITIES PRIOR TO COMMENCING WORK.
7) SEE SPECIAL PROVISIONS AND DETAILS REGARDING SIGNS TO BE FURNISHED AND INSTALLED BY CONTRACTOR (INCIDENTAL).
8) EACH PEDESTRIAN INDICATION SHALL BE LED, ONE SECTION "FILLED" COUNTDOWN TIMER HAND/WALKING PERSON INDICATION.
9) ALL MAST ARM AND POLE MOUNTED VEHICLE AND PEDESTRIAN SIGNAL INDICATIONS SHALL BE MOUNTED USING ONE-WAY SIGNAL HEAD MOUNTS. SEE DETAILS AND SPECIAL PROVISIONS.
10) LOOP DETECTOR WIRES SHALL CROSS-LINKED POLYETHYLENE (XLP) IN 3/4" NMC. SEE SPECIAL PROVISIONS.
11) ALL VEHICLE AND PEDESTRIAN SIGNAL HOUSINGS, BACKGROUND SHIELDS, AND VISORS SHALL BE FABRICATED USING BLACK POLYCARBONATE MATERIALS. SEE SPECIAL PROVISIONS.
12) (EVP) DENOTES ITEMS TO BE FURNISHED AND INSTALLED BY CONTRACTOR UNDER ITEM NO. 2565 (EMERGENCY VEHICLE PREEMPTION). SEE ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.
13) EXISTING TRAFFIC SIGNAL TO REMAIN IN OPERATION DURING CONSTRUCTION. SEE CONSTRUCTION STAGING PLAN FOR MORE DETAILS.
14) UNLESS OTHERWISE NOTED, ALL SIGNAL COMPONENTS SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR. SEE SPECIAL PROVISIONS.
15) EXISTING ABOVE GROUND SIGNAL COMPONENTS NOT RE-USED IN NEW SIGNAL SHALL BE SALVAGED TO THE COUNTY. UNDERGROUND SIGNAL COMPONENTS SHALL BE PROPERLY DISPOSED OR ABANDONED IN PLACE AS DETERMINED BY THE ENGINEER. SEE SPECIAL PROVISIONS.
16) (INTERCONNECT) DENOTES ITEMS TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR SEPARATE FROM INTEM NO. 2565 (TRAFFIC CONTROL SIGNAL SYSTEM "A"). SEE ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.

NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\a-f\AnokaCty\13667000\hwy-brdg\hwy\pln-sht\c0265205_sgb.dgn 10/15/2009

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SIGNATURE: Bryant J. Ficek

PRINTED NAME: BRYANT J. FICEK

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DESIGN BY BJF DATE 10/15/2009

CHECKED BY TAC DATE 10/15/2009

S.P. 02-652-05
S.P. 02-716-09
S.P. 106-020-28
S.P. 197-124-001

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ANOKA COUNTY
SIGNAL SYSTEM "A" MATCHLINE
CSAH 52/116 RECONSTRUCTION
CSAH 52 AND CSAH 14

SHEET 15.09 OF 294

(1) PA100 POLE FOUNDATION
TYPE PA100-A-55
4-ONE WAY SIGNALS-OVERHEAD (0', 0', 17', AND 29' FROM END OF MAST ARM)
3-ONE WAY SIGNALS MOUNTED AT 45°, 135°, AND 225°
2-ONE WAY PED INDICATIONS MOUNTED AT 45° AND 225°
3" RSC INTO HH 1:
3-12/C #14
1-3/C #14 (EVP)
1-3/C #14 (LUM)
1-3/C #20 (EVP)
SALVAGE AND RE-INSTALL FROM EXISTING POLE 1:
LUMINAIRE EXTENSION POLE AND DAVIT ARM
(D40-9 (DAVIT @ 350°)
1-ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT (PHASES 4 & 7) (EVP)
LUMINAIRE - 250 WATT HPS
TYPE D SIGN PANEL-OVERHEAD (125TH AVE. NE)
2-R6-1 SIGN PANELS MOUNTED AT 0° AND 180°

(2) 4" RSC
PEDESTRIAN PUSH BUTTON STATION
2-PED PUSH BUTTONS AND SIGNS
1 1/4" RSC INTO HH 1:
2-2/C #14

(3) PA100 POLE FOUNDATION
TYPE PA100-A-55-D40-9 (DAVIT@350°)
4-ONE WAY SIGNALS-OVERHEAD (0', 0', 11', AND 23' FROM END OF MAST ARM)
3-ONE WAY SIGNALS MOUNTED AT 45°, 135°, AND 225°
2-ONE WAY PED INDICATIONS MOUNTED AT 45° AND 225°
LUMINAIRE - 250 WATT HPS
3" RSC INTO HH 8:
3-12/C #14
1-3/C #14 (EVP)
1-3/C #14 (LUM)
1-3/C #20 (EVP)
SALVAGE AND RE-INSTALL FROM EXISTING POLE 2:
1-ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT (PHASES 6 & 1) (EVP)
TYPE D SIGN PANEL-OVERHEAD (RADISSON ROAD)
2-R6-1 SIGN PANELS MOUNTED AT 0° AND 180°

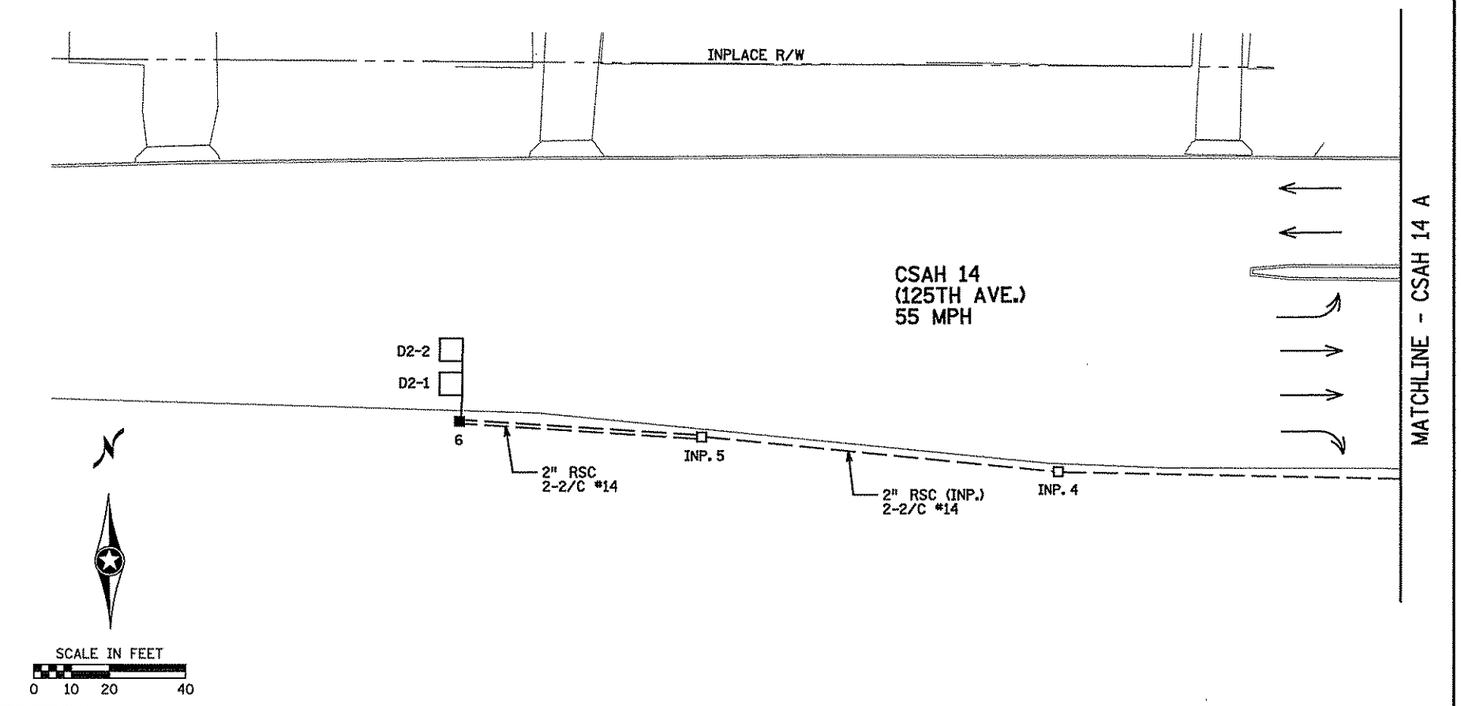
(4) 4" RSC
PEDESTRIAN PUSH BUTTON STATION
2-PED PUSH BUTTONS AND SIGNS
1 1/4" RSC INTO HH 8:
2-2/C #14

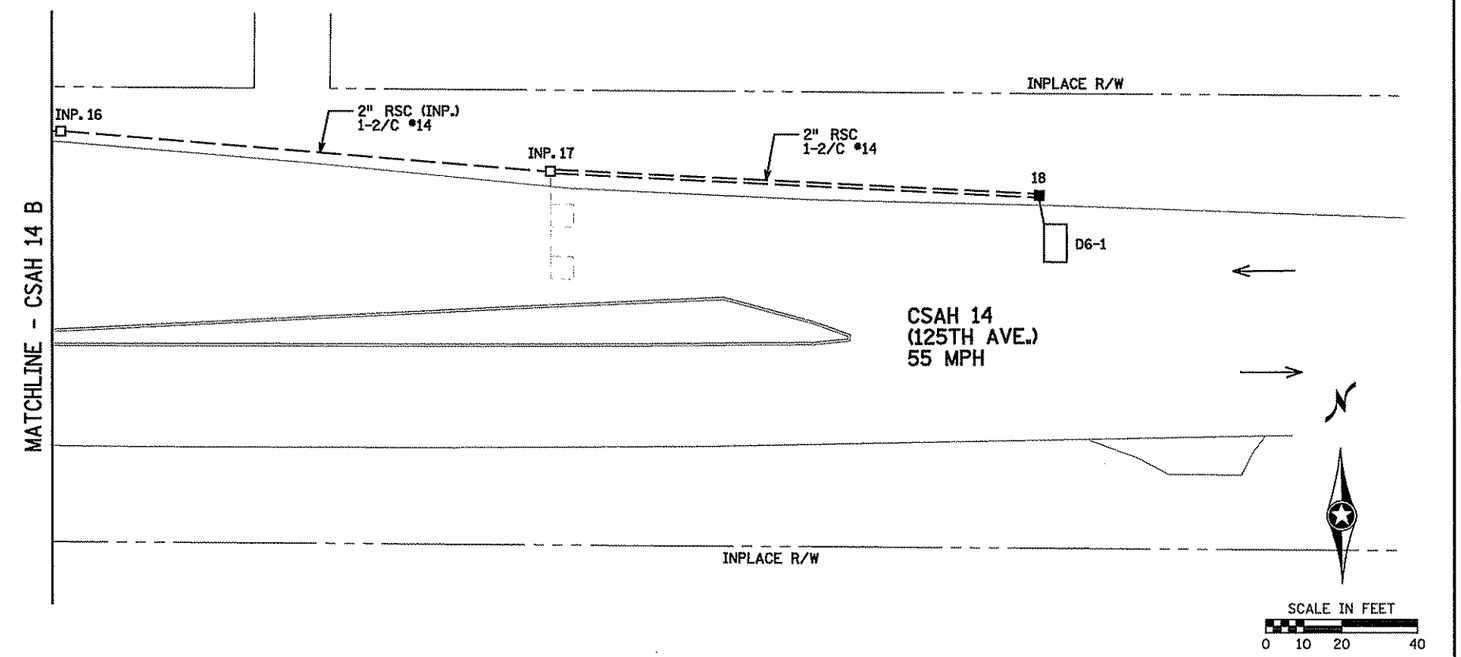
(5) PA100 POLE FOUNDATION
TYPE PA100-A-55
4-ONE WAY SIGNALS-OVERHEAD (0', 0', 17', AND 29' FROM END OF MAST ARM)
3-ONE WAY SIGNALS MOUNTED AT 45°, 135°, AND 225°
1-ONE WAY PED INDICATION MOUNTED AT 45°
3" RSC INTO HH 13:
3-12/C #14
1-3/C #14 (EVP)
1-3/C #14 (LUM)
1-3/C #20 (EVP)
SALVAGE AND RE-INSTALL FROM EXISTING POLE 3:
LUMINAIRE EXTENSION POLE AND DAVIT ARM
(D40-9 (DAVIT @ 350°)
1-ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT (PHASES 8 & 3) (EVP)
LUMINAIRE - 250 WATT HPS
1-SIGN R9-3a (NO PED) FACING POLE 7
TYPE D SIGN PANEL-OVERHEAD (125TH AVE. NE)
2-R6-1 SIGN PANELS MOUNTED AT 0° AND 180°

(6) 4" RSC
PEDESTRIAN PUSH BUTTON STATION
1-PED PUSH BUTTON AND SIGN
1 1/4" RSC INTO HH 14:
1-2/C #14

(7) PA100 POLE FOUNDATION
TYPE PA100-A-55-D40-9 (DAVIT@350°)
4-ONE WAY SIGNALS-OVERHEAD (0', 0', 11', AND 23' FROM END OF MAST ARM)
3-ONE WAY SIGNALS MOUNTED AT 45°, 135°, AND 225°
1-ONE WAY PED INDICATION MOUNTED AT 225°
LUMINAIRE - 250 WATT HPS
3" RSC INTO HH 20:
3-12/C #14
1-3/C #14 (EVP)
1-3/C #14 (LUM)
1-3/C #20 (EVP)
SALVAGE AND RE-INSTALL FROM EXISTING POLE 4:
1-ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT (PHASES 2 & 5) (EVP)
1-SIGN R9-3a (NO PED) FACING POLE 5
TYPE D SIGN PANEL-OVERHEAD (RADISSON ROAD)
2-R6-1 SIGN PANELS MOUNTED AT 0° AND 180°

(8) 4" RSC
PEDESTRIAN PUSH BUTTON STATION
1-PED PUSH BUTTON AND SIGN
1 1/4" RSC INTO HH 20:
1-2/C #14





NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\g-f\AnokaCity\13867000\hwy-brdg\hwy\pln-sht\c0265205.sgo.dgn 6/5/2009

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SIGNATURE: -Bryant J Ficek
PRINTED NAME: BRYANT J. FICEK
DATE: 6/5/2009 LIC. NO. 42802

DRAWN BY SFH DATE 6/5/2009
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CHECKED BY TAC DATE 6/5/2009

S.P. 02-652-05
S.P. 02-716-09
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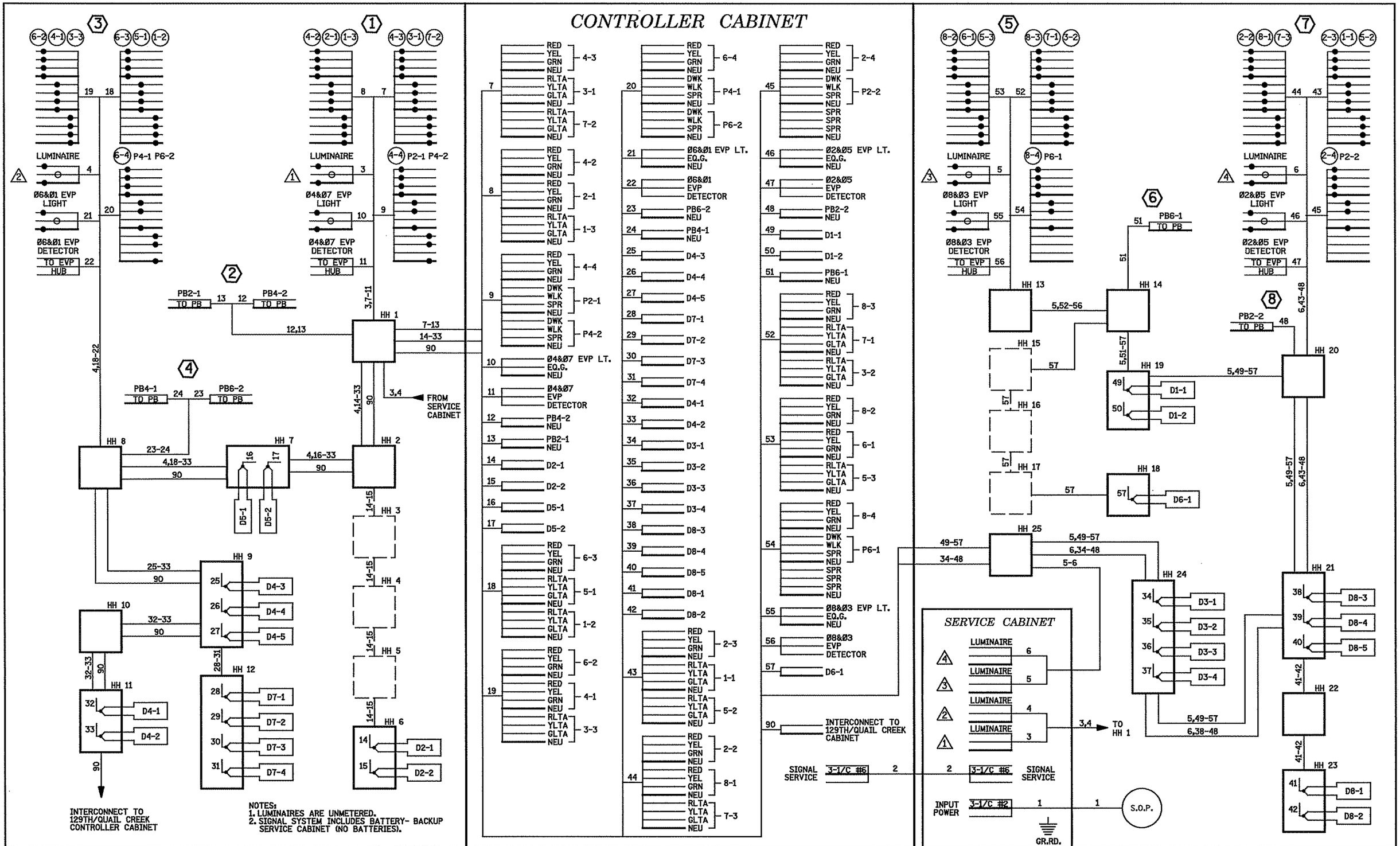
ANOKA COUNTY
SIGNAL SYSTEM "A" MATCHLINE
CSAH 52/116 RECONSTRUCTION
CSAH 52 AND CSAH 14

SHEET 15.10 OF 294



NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\a-f\AnokaCty\13867000\hwy-brdg\hwy\pln-sht\c0265205_sgd.dgn 10/15/2009

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ANOKA COUNTY
SIGNAL SYSTEM "A" WIRING DIAGRAM
CSAH 52/116 RECONSTRUCTION
CSAH 52 AND CSAH 14

SHEET 15.11 OF 294

LOOP DETECTORS

NUMBER	SIZE (FEET)	FUNCTION	LOCATION	ACTION
D1-1	4-6 x 6	1	EXISTING	1
D2-1	6 x 6	1	EXISTING	1
D3-1	2-6 x 6	1	5'& 50'	2
D4-1	6 x 6	3,8	EXISTING	1
D4-2	2-6 x 6	7	EXISTING	1
D4-3	2-6 x 6	1	EXISTING	1
D4-3	6 x 6	1	AS SHOWN	2
D5-1	4-6 x 6	1	EXISTING	1
D6-1	2-6 x 6	1	EXISTING	1
D7-1	2-6 x 6	1	5'& 50'	2
D8-1	6 x 6	3,8	475'	2
D8-2	6 x 6	3,8	475'	3
D8-3	6 x 10, 6 x 6	7	AS SHOWN	3
D8-4	2-6 x 6	7	5'	2
D8-5	2-6 x 6	1	5'	2

LOOP DETECTORS FUNCTIONS

1) CALL AND EXTEND
3) EXTEND ONLY
7) DELAY CALL - IMMEDIATE EXTEND
8) CARRY OVER (STRETCH)

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

LOOP DETECTORS ACTION

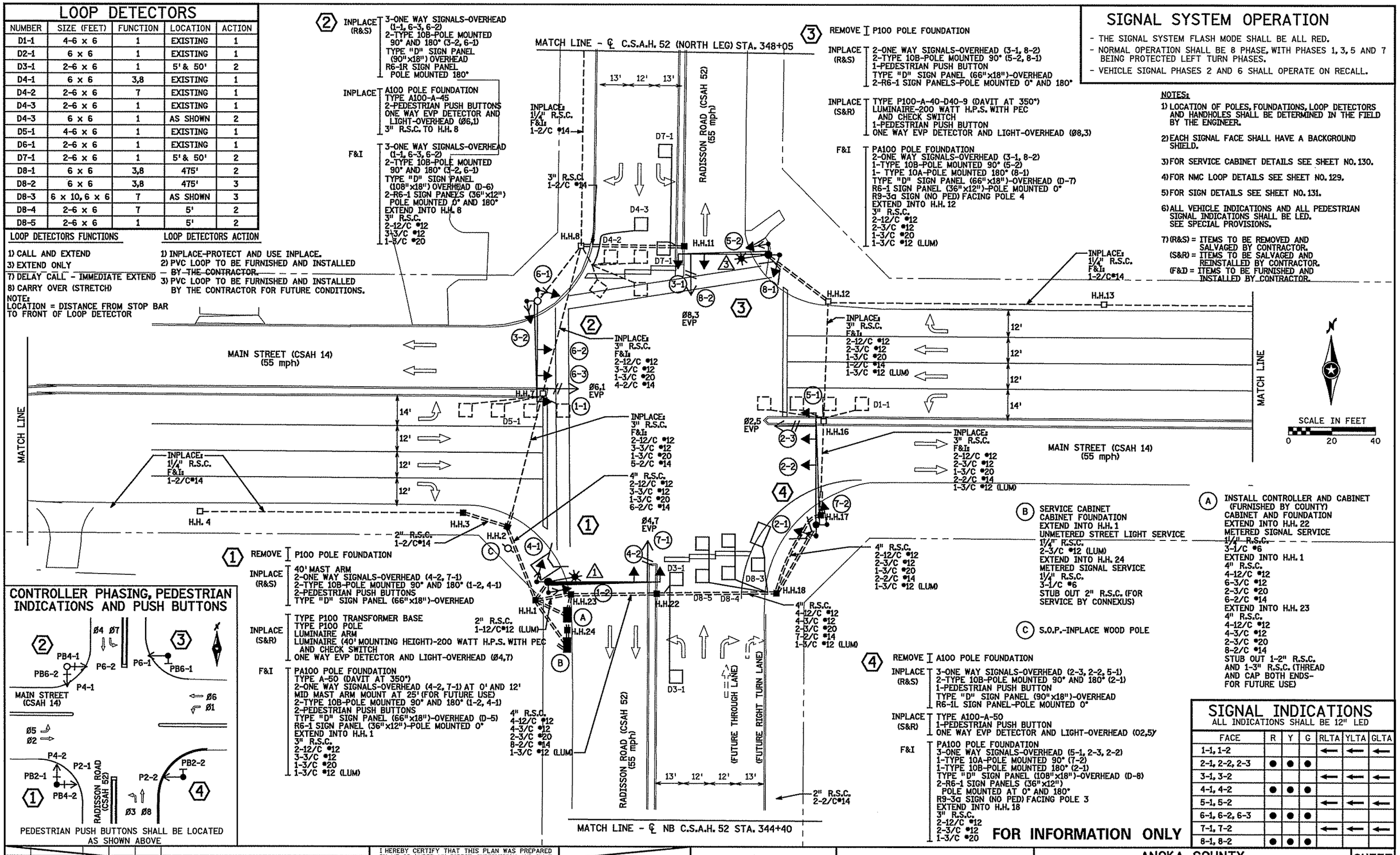
1) INPLACE-PROTECT AND USE INPLACE.
2) PVC LOOP TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR.
3) PVC LOOP TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR FOR FUTURE CONDITIONS.

SIGNAL SYSTEM OPERATION

- THE SIGNAL SYSTEM FLASH MODE SHALL BE ALL RED.
- NORMAL OPERATION SHALL BE 8 PHASE, WITH PHASES 1, 3, 5 AND 7 BEING PROTECTED LEFT TURN PHASES.
- VEHICLE SIGNAL PHASES 2 AND 6 SHALL OPERATE ON RECALL.

NOTES:

1) LOCATION OF POLES, FOUNDATIONS, LOOP DETECTORS AND HANDHOLES SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER.
2) EACH SIGNAL FACE SHALL HAVE A BACKGROUND SHIELD.
3) FOR SERVICE CABINET DETAILS SEE SHEET NO. 130.
4) FOR NMC LOOP DETAILS SEE SHEET NO. 129.
5) FOR SIGN DETAILS SEE SHEET NO. 131.
6) ALL VEHICLE INDICATIONS AND ALL PEDESTRIAN SIGNAL INDICATIONS SHALL BE LED. SEE SPECIAL PROVISIONS.
7) (R&S) = ITEMS TO BE REMOVED AND SALVAGED BY CONTRACTOR.
(S&R) = ITEMS TO BE SALVAGED AND REINSTALLED BY CONTRACTOR.
(F&I) = ITEMS TO BE FURNISHED AND INSTALLED BY CONTRACTOR.



① REMOVE | P100 POLE FOUNDATION

INPLACE (R&S) | 40' MAST ARM
2-ONE WAY SIGNALS-OVERHEAD (4-2, 7-1)
2-TYPE 10B-POLE MOUNTED 90° AND 180° (1-2, 4-1)
2-PEDESTRIAN PUSH BUTTONS
TYPE "D" SIGN PANEL (66"x18")-OVERHEAD

INPLACE (S&R) | TYPE P100 TRANSFORMER BASE
TYPE P100 POLE
LUMINAIRE ARM
LUMINAIRE (40' MOUNTING HEIGHT)-200 WATT H.P.S. WITH PEC AND CHECK SWITCH
ONE WAY EVP DETECTOR AND LIGHT-OVERHEAD (Ø4,7)

F&I | PA100 POLE FOUNDATION
TYPE A-50 (DAVIT AT 350°)
2-ONE WAY SIGNALS-OVERHEAD (4-2, 7-1) AT 0' AND 12'
MID MAST ARM MOUNT AT 25' (FOR FUTURE USE)
2-TYPE 10B-POLE MOUNTED 90° AND 180° (1-2, 4-1)
2-PEDESTRIAN PUSH BUTTONS
TYPE "D" SIGN PANEL (66"x18")-OVERHEAD (D-5)
R6-1 SIGN PANEL (36"x12")-POLE MOUNTED 0°
EXTEND INTO H.H. 1
3" R.S.C.
2-12/C *12
3-3/C *12
1-3/C *20
1-3/C *12 (LUM)

② INPLACE (R&S) | 3-ONE WAY SIGNALS-OVERHEAD (1-1, 6-3, 6-2)
2-TYPE 10B-POLE MOUNTED 90° AND 180° (3-2, 6-1)
TYPE "D" SIGN PANEL (90"x18") OVERHEAD
R6-1R SIGN PANEL
POLE MOUNTED 180°

INPLACE | A100 POLE FOUNDATION
TYPE A100-A-45
2-PEDESTRIAN PUSH BUTTONS
ONE WAY EVP DETECTOR AND LIGHT-OVERHEAD (Ø6,1)
3" R.S.C. TO H.H. 8

F&I | 3-ONE WAY SIGNALS-OVERHEAD (1-1, 6-3, 6-2)
2-TYPE 10B-POLE MOUNTED 90° AND 180° (3-2, 6-1)
TYPE "D" SIGN PANEL (108"x18") OVERHEAD (D-6)
2-R6-1 SIGN PANELS (36"x12") POLE MOUNTED 0° AND 180°
EXTEND INTO H.H. 8
3" R.S.C.
2-12/C *12
3-3/C *12
1-3/C *20

③ REMOVE | P100 POLE FOUNDATION

INPLACE (R&S) | 2-ONE WAY SIGNALS-OVERHEAD (3-1, 8-2)
2-TYPE 10B-POLE MOUNTED 90° (5-2, 8-1)
1-PEDESTRIAN PUSH BUTTON
TYPE "D" SIGN PANEL (66"x18")-OVERHEAD
2-R6-1 SIGN PANELS-POLE MOUNTED 0° AND 180°

INPLACE (S&R) | TYPE P100-A-40-D40-9 (DAVIT AT 350°)
LUMINAIRE-200 WATT H.P.S. WITH PEC AND CHECK SWITCH
1-PEDESTRIAN PUSH BUTTON
ONE WAY EVP DETECTOR AND LIGHT-OVERHEAD (Ø8,3)

F&I | PA100 POLE FOUNDATION
2-ONE WAY SIGNALS-OVERHEAD (3-1, 8-2)
1-TYPE 10B-POLE MOUNTED 90° (5-2)
1- TYPE 10A-POLE MOUNTED 180° (8-1)
TYPE "D" SIGN PANEL (66"x18")-OVERHEAD (D-7)
R6-1 SIGN PANEL (36"x12")-POLE MOUNTED 0°
R9-3a SIGN (NO PED) FACING POLE 4
EXTEND INTO H.H. 12
3" R.S.C.
2-12/C *12
2-3/C *12
1-3/C *20
1-3/C *12 (LUM)

④ REMOVE | A100 POLE FOUNDATION

INPLACE (R&S) | 3-ONE WAY SIGNALS-OVERHEAD (2-3, 2-2, 5-1)
2-TYPE 10B-POLE MOUNTED 90° AND 180° (2-1)
1-PEDESTRIAN PUSH BUTTON
TYPE "D" SIGN PANEL (90"x18")-OVERHEAD
R6-1L SIGN PANEL-POLE MOUNTED 0°

INPLACE (S&R) | TYPE A100-A-50
1-PEDESTRIAN PUSH BUTTON
ONE WAY EVP DETECTOR AND LIGHT-OVERHEAD (02,5Y

F&I | PA100 POLE FOUNDATION
3-ONE WAY SIGNALS-OVERHEAD (5-1, 2-3, 2-2)
1-TYPE 10A-POLE MOUNTED 90° (7-2)
1-TYPE 10B-POLE MOUNTED 180° (2-1)
TYPE "D" SIGN PANEL (108"x18")-OVERHEAD (D-8)
2-R6-1 SIGN PANELS (36"x12") POLE MOUNTED AT 0° AND 180°
R9-3a SIGN (NO PED) FACING POLE 3
EXTEND INTO H.H. 18
3" R.S.C.
2-12/C *12
2-3/C *12
1-3/C *20

FOR INFORMATION ONLY

Ⓐ INSTALL CONTROLLER AND CABINET (FURNISHED BY COUNTY)
CABINET AND FOUNDATION
EXTEND INTO H.H. 22
METERED SIGNAL SERVICE
1¼" R.S.C.
3-1/C *6
EXTEND INTO H.H. 1
4" R.S.C.
4-12/C *12
6-3/C *12
2-3/C *20
6-2/C *14
EXTEND INTO H.H. 23
4" R.S.C.
4-12/C *12
4-3/C *12
2-3/C *20
8-2/C *14
STUB OUT 1-2" R.S.C. AND 1-3" R.S.C. (THREAD AND CAP BOTH ENDS- FOR FUTURE USE)

Ⓑ SERVICE CABINET
CABINET FOUNDATION
EXTEND INTO H.H. 1
UNMETERED STREET LIGHT SERVICE
1¼" R.S.C.
2-3/C *12 (LUM)
EXTEND INTO H.H. 24
METERED SIGNAL SERVICE
1¼" R.S.C.
3-1/C *6
STUB OUT 2" R.S.C. (FOR SERVICE BY CONNEXUS)

Ⓒ S.O.P.-INPLACE WOOD POLE

CONTROLLER PHASING, PEDESTRIAN INDICATIONS AND PUSH BUTTONS

PEDESTRIAN PUSH BUTTONS SHALL BE LOCATED AS SHOWN ABOVE

SIGNAL INDICATIONS

ALL INDICATIONS SHALL BE 12" LED

FACE	R	Y	G	RLTA	YLTA	GLTA
1-1, 1-2				←	←	←
2-1, 2-2, 2-3	●	●	●			
3-1, 3-2				←	←	←
4-1, 4-2	●	●	●			
5-1, 5-2				←	←	←
6-1, 6-2, 6-3	●	●	●			
7-1, 7-2				←	←	←
8-1, 8-2	●	●	●			

SCALE IN FEET
0 20 40

NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\e-Pond\City\13867000\hwy-brdg\hwy\pln-sht\c0265205_sga.dgn 6/5/2009

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:
PRINTED NAME: BRENT PAULSEN
DATE: LIC. NO.

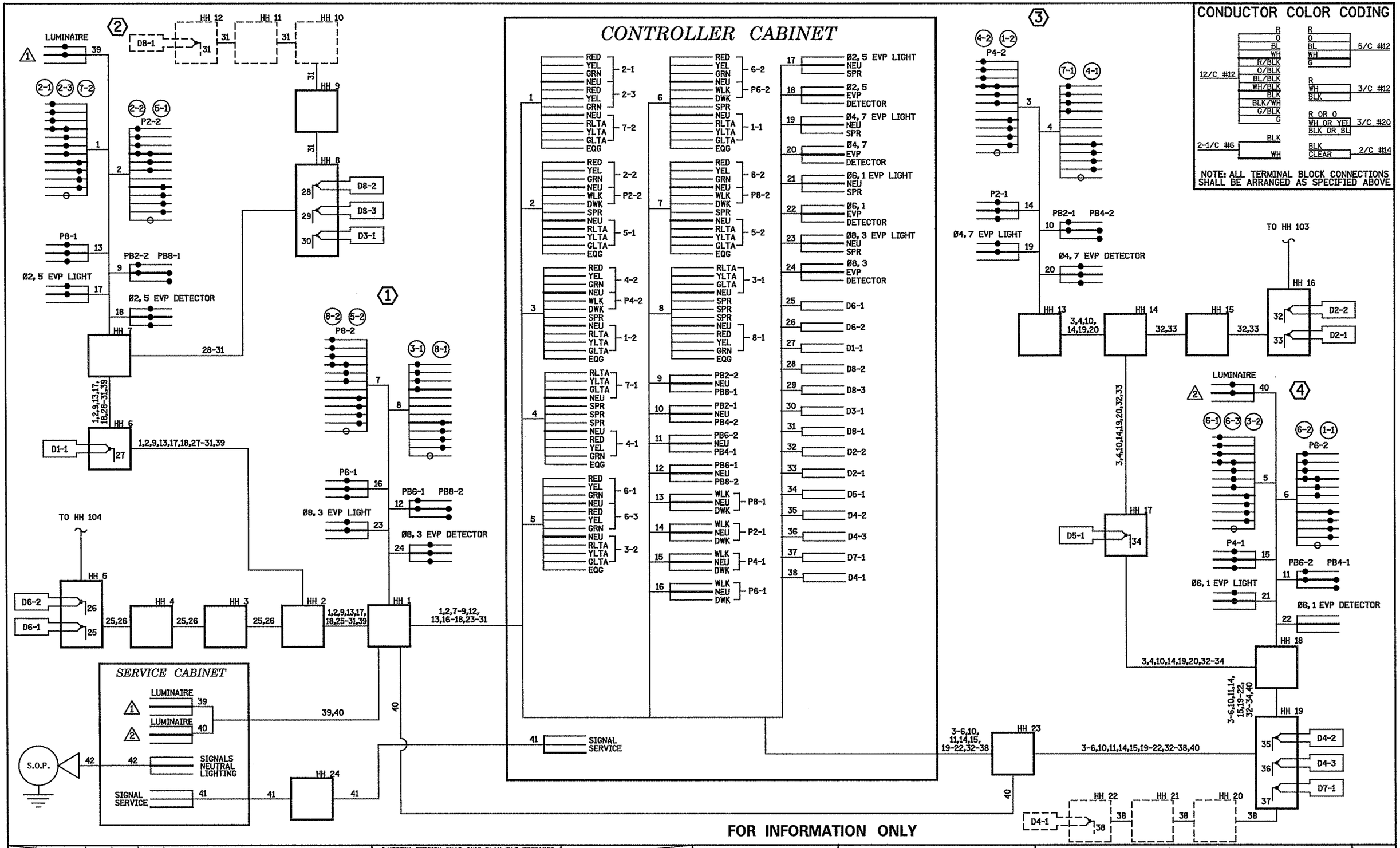
DRAWN BY SFH DATE 11-8-00
DESIGN BY BDP DATE 11-8-00
CHECKED BY TAC DATE 11-8-00

S.P. 02-652-05
S.P. 02-716-09
S.P. 106-020-28
S.P. 197-124-001

TKDA
ENGINEERS·ARCHITECTS·PLANNERS

ANOKA COUNTY
EXISTING INTERSECTION LAYOUT - SYSTEM "A"
CSAH 52/116 RECONSTRUCTION
RADISSON RD. (C.S.A.H. 52) AT MAIN ST. (C.S.A.H. 14)

SHEET 15.12 OF 294



NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\c-Anokacty\13867000\hwy-brdg\hwy\pln-sht\c0265205_sgf.dgn 6/5/2009

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PRINTED NAME: BRENT PAULSEN

DATE: LIC. NO.

DRAWN BY SFH DATE 11-8-00

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CHECKED BY TAC DATE 11-8-00

S.P. 02-652-05
S.P. 02-716-09
S.P. 106-020-28
S.P. 197-124-001

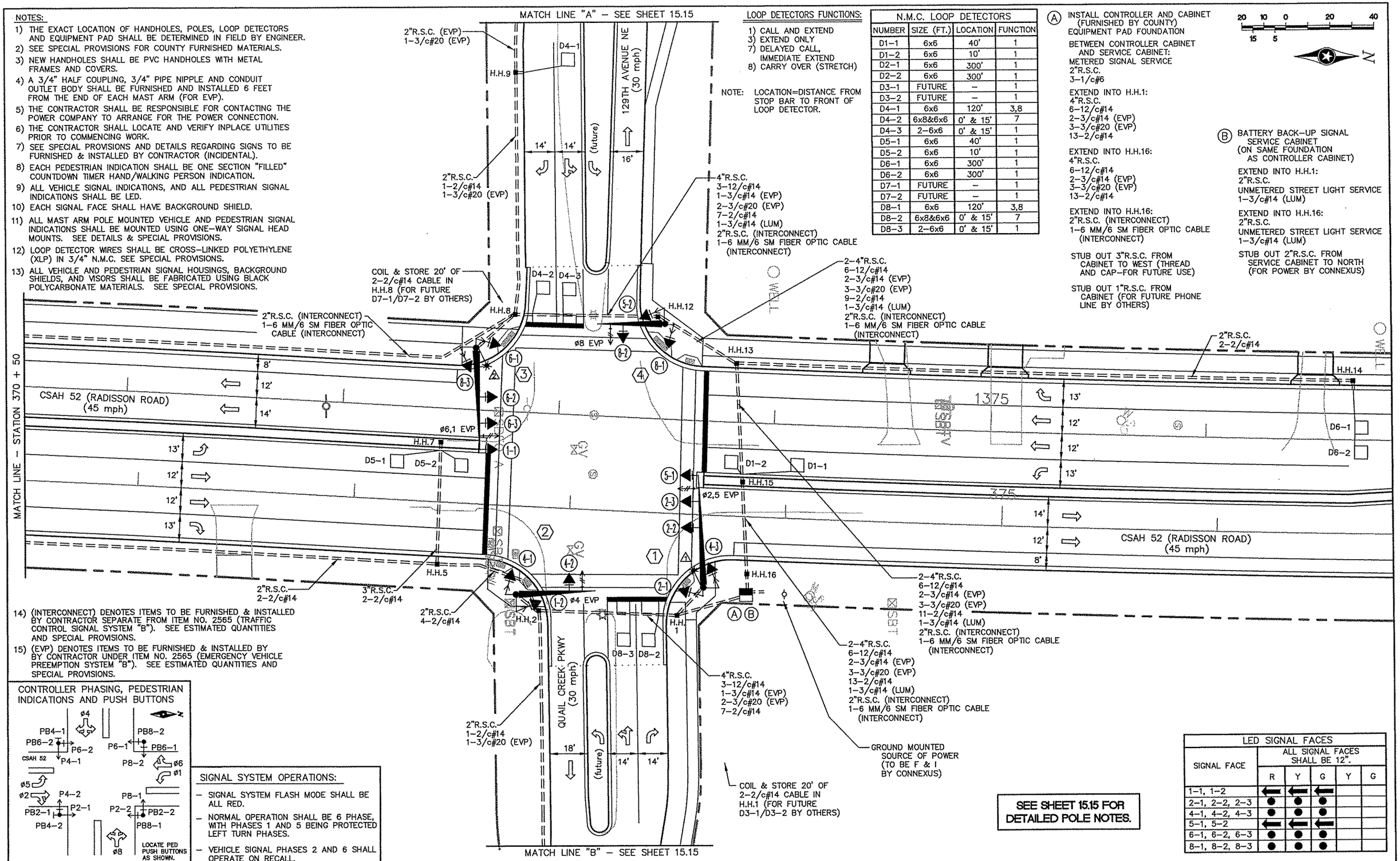
TKDA
ENGINEERS • ARCHITECTS • PLANNERS

ANOKA COUNTY
EXISTING WIRING DIAGRAM - SYSTEM "A"
CSAH 52/116 RECONSTRUCTION
RADISSON RD. (C.S.A.H. 52) AT MAIN ST. (C.S.A.H. 14)

SHEET 15.13 OF 294

NOTES:

1) THE EXACT LOCATION OF HANDHOLES, POLES, LOOP DETECTORS AND EQUIPMENT PAD SHALL BE DETERMINED IN FIELD BY ENGINEER.
2) SEE SPECIAL PROVISIONS FOR COUNTY FURNISHED MATERIALS.
3) NEW HANDHOLES SHALL BE PVC HANDHOLES WITH METAL FRAMES AND COVERS.
4) A 3/4" HALF COUPLING, 3/4" PIPE NIPPLE AND CONDUIT OUTLET BODY SHALL BE FURNISHED AND INSTALLED 6 FEET FROM THE END OF EACH MAST ARM (FOR EVP).
5) THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING THE POWER COMPANY TO ARRANGE FOR THE POWER CONNECTION.
6) THE CONTRACTOR SHALL LOCATE AND VERIFY INPLACE UTILITIES PRIOR TO COMMENCING WORK.
7) SEE SPECIAL PROVISIONS AND DETAILS REGARDING SIGNS TO BE FURNISHED & INSTALLED BY CONTRACTOR (INCIDENTAL).
8) EACH PEDESTRIAN INDICATION SHALL BE ONE SECTION "FILLED" COUNTDOWN TIMER HAND/WALKING PERSON INDICATION.
9) ALL VEHICLE SIGNAL INDICATIONS, AND ALL PEDESTRIAN SIGNAL INDICATIONS SHALL BE LED.
10) EACH SIGNAL FACE SHALL HAVE BACKGROUND SHIELD.
11) ALL MAST ARM POLE MOUNTED VEHICLE AND PEDESTRIAN SIGNAL INDICATIONS SHALL BE MOUNTED USING ONE-WAY SIGNAL HEAD MOUNTS. SEE DETAILS & SPECIAL PROVISIONS.
12) LOOP DETECTOR WIRES SHALL BE CROSS-LINKED POLYETHYLENE (XLP) IN 3/4" N.M.C. SEE SPECIAL PROVISIONS.
13) ALL VEHICLE AND PEDESTRIAN SIGNAL HOUSINGS, BACKGROUND SHIELDS, AND VISORS SHALL BE FABRICATED USING BLACK POLYCARBONATE MATERIALS. SEE SPECIAL PROVISIONS.



LOOP DETECTORS FUNCTIONS:

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

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

N.M.C. LOOP DETECTORS			
NUMBER	SIZE (FT.)	LOCATION	FUNCTION
D1-1	6x6	40'	1
D1-2	6x6	10'	1
D2-1	6x6	300'	1
D2-2	6x6	300'	1
D3-1	FUTURE	–	1
D3-2	FUTURE	–	1
D4-1	6x6	120'	3,8
D4-2	6x8&6x6	0' & 15'	7
D4-3	2-6x6	0' & 15'	1
D5-1	6x6	40'	1
D5-2	6x6	10'	1
D6-1	6x6	300'	1
D6-2	6x6	300'	1
D7-1	FUTURE	–	1
D7-2	FUTURE	–	1
D8-1	6x6	120'	3,8
D8-2	6x8&6x6	0' & 15'	7
D8-3	2-6x6	0' & 15'	1

(A) INSTALL CONTROLLER AND CABINET (FURNISHED BY COUNTY) EQUIPMENT PAD FOUNDATION

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

EXTEND INTO H.H.1:
4"R.S.C.
6-12/c#14
2-3/c#14 (EVP)
3-3/c#20 (EVP)
13-2/c#14

EXTEND INTO H.H.16:
4"R.S.C.
6-12/c#14
2-3/c#14 (EVP)
3-3/c#20 (EVP)
13-2/c#14

EXTEND INTO H.H.16:
2"R.S.C. (INTERCONNECT)
1-6 MM/6 SM FIBER OPTIC CABLE (INTERCONNECT)

STUB OUT 3"R.S.C. FROM CABINET TO WEST (THREAD AND CAP-FOR FUTURE USE)

STUB OUT 1"R.S.C. FROM CABINET (FOR FUTURE PHONE LINE BY OTHERS)

(B) BATTERY BACK-UP SIGNAL SERVICE CABINET (ON SAME FOUNDATION AS CONTROLLER CABINET)

EXTEND INTO H.H.1:
2"R.S.C.
UNMETERED STREET LIGHT SERVICE
1-3/c#14 (LUM)

EXTEND INTO H.H.16:
2"R.S.C.
UNMETERED STREET LIGHT SERVICE
1-3/c#14 (LUM)

STUB OUT 2"R.S.C. FROM SERVICE CABINET TO NORTH (FOR POWER BY CONNEXUS)

20 10 0 20 40
15 5
N

14) (INTERCONNECT) DENOTES ITEMS TO BE FURNISHED & INSTALLED BY CONTRACTOR SEPARATE FROM ITEM NO. 2565 (TRAFFIC CONTROL SIGNAL SYSTEM "B"). SEE ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.
15) (EVP) DENOTES ITEMS TO BE FURNISHED & INSTALLED BY BY CONTRACTOR UNDER ITEM NO. 2565 (EMERGENCY VEHICLE PREEMPTION SYSTEM "B"). SEE ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.

CONTROLLER PHASING, PEDESTRIAN INDICATIONS AND PUSH BUTTONS

SIGNAL SYSTEM OPERATIONS:

- SIGNAL SYSTEM FLASH MODE SHALL BE ALL RED.
- NORMAL OPERATION SHALL BE 6 PHASE, WITH PHASES 1 AND 5 BEING PROTECTED LEFT TURN PHASES.
- VEHICLE SIGNAL PHASES 2 AND 6 SHALL OPERATE ON RECALL.

LED SIGNAL FACES					
SIGNAL FACE	ALL SIGNAL FACES SHALL BE 12".				
	R	Y	G	Y	G
1-1, 1-2	←	←	←		
2-1, 2-2, 2-3	●	●	●		
4-1, 4-2, 4-3	●	●	●		
5-1, 5-2	←	←	←		
6-1, 6-2, 6-3	●	●	●		
8-1, 8-2, 8-3	●	●	●		

SEE SHEET 15.15 FOR DETAILED POLE NOTES.

NO.	BY	DATE	REVISIONS

S:\AE\A\ANOKC\COMMON\SIGNALS\52-129TH\52129SIGBASE-CURRENT.DWG 10/13/2009

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

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
Name: John M. Gray, PE
Date: June 8, 2009 Lic. No. 22457

S.P. 02-652-05
S.P. 106-020-28

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

ANOKA COUNTY
SIGNAL SYSTEM "B" INTERSECTION LAYOUT
CSAH 52/116 RECONSTRUCTION
CSAH 52 AND 129TH AVE NE/QUAIL CREEK PKWY

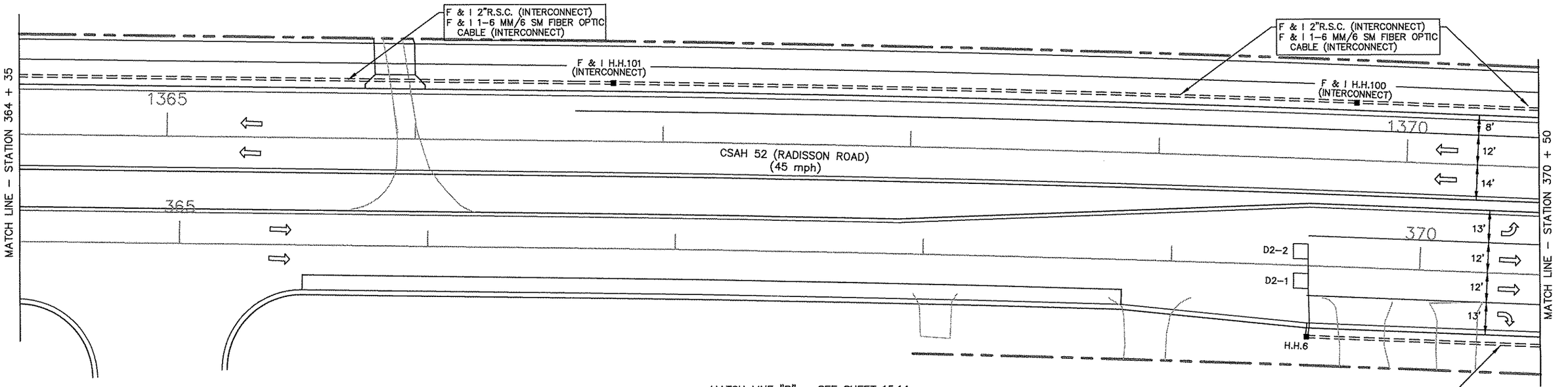
SHEET 15.14 OF 294

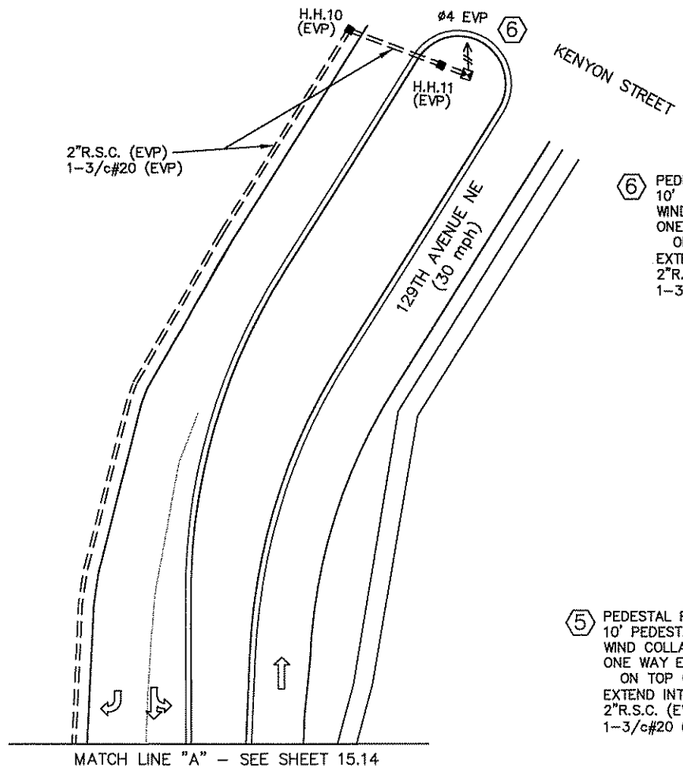
NOTES:

1) IT SHALL BE CONTRACTOR'S RESPONSIBILITY TO UTILIZE THE "ONE CALL EXCAVATION NOTICE SYSTEM" (TELEPHONE NUMBER 651-454-0002), AS REQUIRED BY MINNESOTA STATUTE 216D.
2) DISTANCE OFF SHOULDER OR CURB FOR INTERCONNECT CONDUIT SHALL BE 1-2 FEET.
3) (INTERCONNECT) DENOTES ITEMS TO BE FURNISHED AND INSTALLED BY CONTRACTOR, AND TO BE MEASURED AND PAID FOR AS NOTED IN SPECIAL PROVISIONS AND ESTIMATED QUANTITIES.

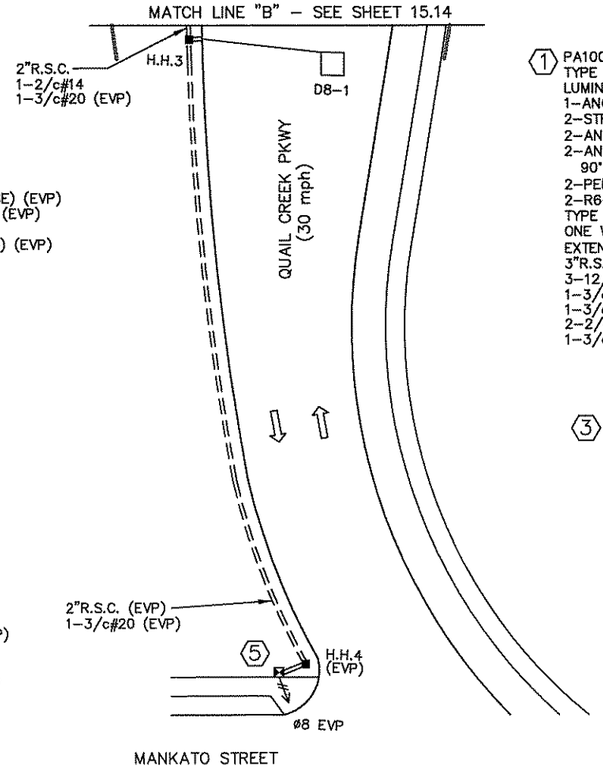
20 10 0 20 40
15 5

N





6 PEDESTAL FOUNDATION (EVP)
10' PEDESTAL POLE (INCLUDES BASE) (EVP)
WIND COLLAR FOR PEDESTAL POLE (EVP)
ONE WAY EVP DETECTOR-MOUNT ON TOP OF PEDESTAL POLE) (ø4) (EVP)
EXTEND INTO H.H.11:
2"R.S.C. (EVP)
1-3/c#20 (EVP)



5 PEDESTAL FOUNDATION (EVP)
10' PEDESTAL POLE (INCLUDES BASE) (EVP)
WIND COLLAR FOR PEDESTAL POLE (EVP)
ONE WAY EVP DETECTOR-MOUNT ON TOP OF PEDESTAL POLE) (ø8) (EVP)
EXTEND INTO H.H.4:
2"R.S.C. (EVP)
1-3/c#20 (EVP)

1 PA100 POLE FOUNDATION
TYPE PA100-A-50-D40-9 (DAVIT AT 350')
LUMINAIRE-250 W HPS
1-ANGLE MOUNT SIGNAL-OVERHEAD AT 0'
2-STRAIGHT MOUNT SIGNALS-OVERHEAD AT 11' & 23'
2-ANGLE MOUNT SIGNALS-POLE MOUNTED 90° & 180°
2-ANGLE MOUNT C.D. PED INDICATIONS-POLE MOUNTED 90° & 180°
2-PEDESTRIAN PUSH BUTTONS
2-R6-1 SIGN PANELS-POLE MOUNTED 0° & 180°
TYPE D SIGN PANEL-OVERHEAD (D-1)
ONE WAY EVP DETECTOR AND LIGHT (ø2,5) (EVP)
EXTEND INTO H.H.1:
3"R.S.C.
3-12/c#14
1-3/c#14 (EVP)
1-3/c#20 (EVP)
2-2/c#14
1-3/c#14 (LUM)

2 PA90 POLE FOUNDATION
TYPE PA90-A-35
1-STRAIGHT MOUNT SIGNAL-OVERHEAD AT 11'
MAST ARM HUB AT 0' FROM END OF MAST ARM
CAP END MOUNT (FOR FUTURE USE BY OTHERS)
2-ANGLE MOUNT SIGNALS-POLE MOUNTED 90° & 180°
2-ANGLE MOUNT C.D. PED INDICATIONS-POLE MOUNTED 90° & 180°
2-PEDESTRIAN PUSH BUTTONS
2-R6-1 SIGN PANELS-POLE MOUNTED 0° & 180°
TYPE D SIGN PANEL-OVERHEAD (D-2)
ONE WAY EVP DETECTOR AND LIGHT (ø4) (EVP)
EXTEND INTO H.H.2:
3"R.S.C.
3-12/c#14
1-3/c#14 (EVP)
1-3/c#20 (EVP)
2-2/c#14

3 PA100 POLE FOUNDATION
TYPE PA100-A-45-D40-9 (DAVIT AT 350')
LUMINAIRE-250 W HPS
1-ANGLE MOUNT SIGNAL-OVERHEAD AT 0'
2-STRAIGHT MOUNT SIGNALS-OVERHEAD AT 11' & 23'
2-ANGLE MOUNT SIGNALS-POLE MOUNTED 90° & 180°
2-ANGLE MOUNT C.D. PED INDICATIONS-POLE MOUNTED 90° & 180°
2-PEDESTRIAN PUSH BUTTONS
2-R6-1 SIGN PANELS-POLE MOUNTED 0° & 180°
TYPE D SIGN PANEL-OVERHEAD (D-3)
ONE WAY EVP DETECTOR AND LIGHT (ø6,1) (EVP)
EXTEND INTO H.H.8:
3"R.S.C.
3-12/c#14
1-3/c#14 (EVP)
1-3/c#20 (EVP)
2-2/c#14
1-3/c#14 (LUM)

4 PA90 POLE FOUNDATION
TYPE PA90-A-30
1-STRAIGHT MOUNT SIGNAL-OVERHEAD AT 11'
CAP END MOUNT (FOR FUTURE USE BY OTHERS)
MAST ARM HUB AT 0' FROM END OF MAST ARM
2-ANGLE MOUNT SIGNALS-POLE MOUNTED 90° & 180°
2-ANGLE MOUNT C.D. PED INDICATIONS-POLE MOUNTED 90° & 180°
2-PEDESTRIAN PUSH BUTTONS
2-R6-1 SIGN PANELS-POLE MOUNTED 0° & 180°
TYPE D SIGN PANEL-OVERHEAD (D-4)
ONE WAY EVP DETECTOR AND LIGHT (ø8) (EVP)
EXTEND INTO H.H.12:
3"R.S.C.
3-12/c#14
1-3/c#14 (EVP)
1-3/c#20 (EVP)
2-2/c#14

CSAH 52 (RADISSON ROAD)
(CSAH 14 TO 129TH/QUAIL)

NO.	BY	DATE	REVISIONS

S:\AE\A\ANOKC\COMMON\SIGNALS\52-129TH\52129SIGBASE-CURRENT.DWG 06/08/2009

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

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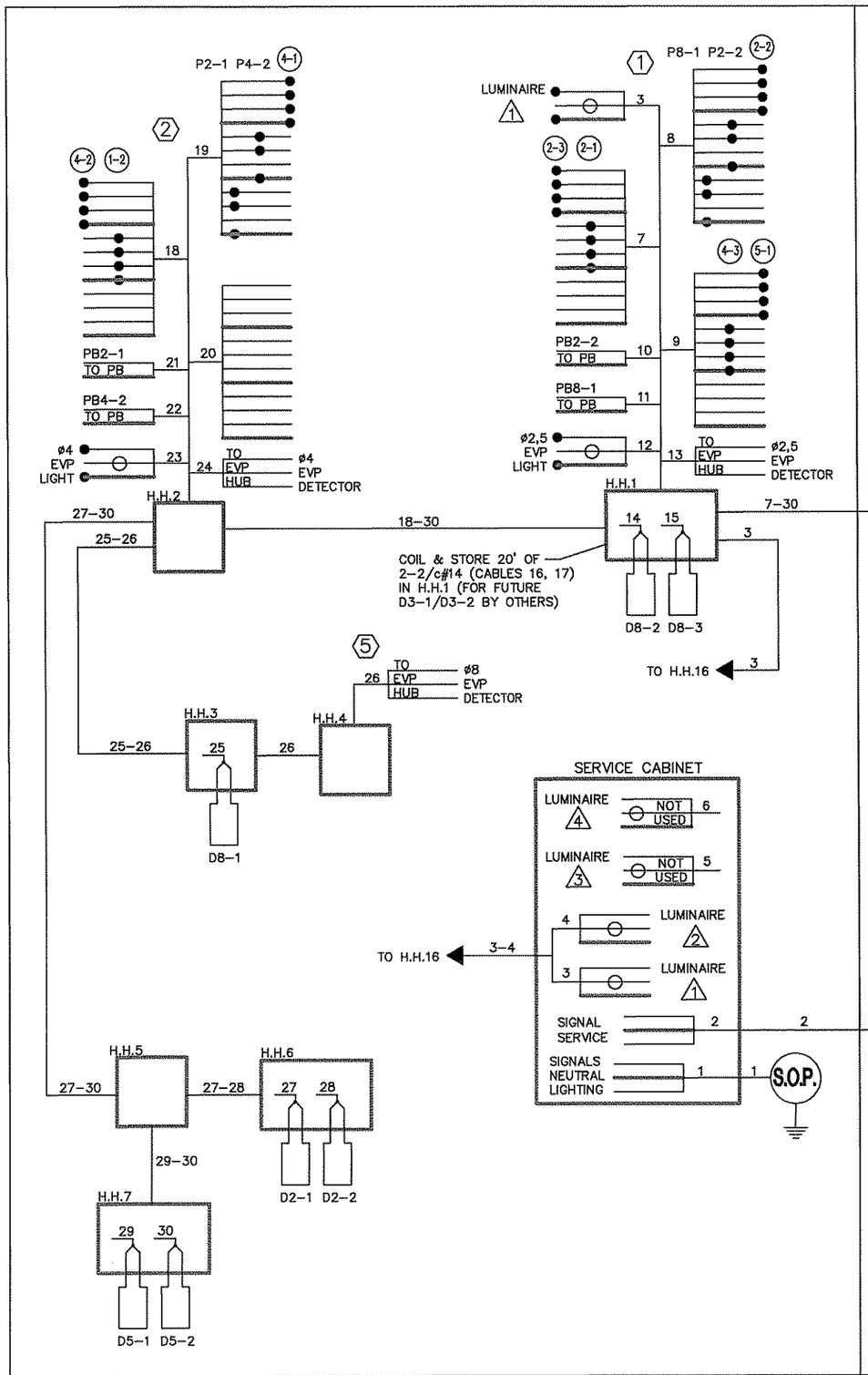
Name: John M. Gray, PE
Date: June 8, 2009 Lic. No. 22457

S.P. 02-652-05
S.P. 106-020-28

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

ANOKA COUNTY
SIGNAL SYSTEM 'B' MATCHLINE
CSAH 52/116 RECONSTRUCTION
CSAH 52 AND 129TH AVE NE/QUAIL CREEK PKWY



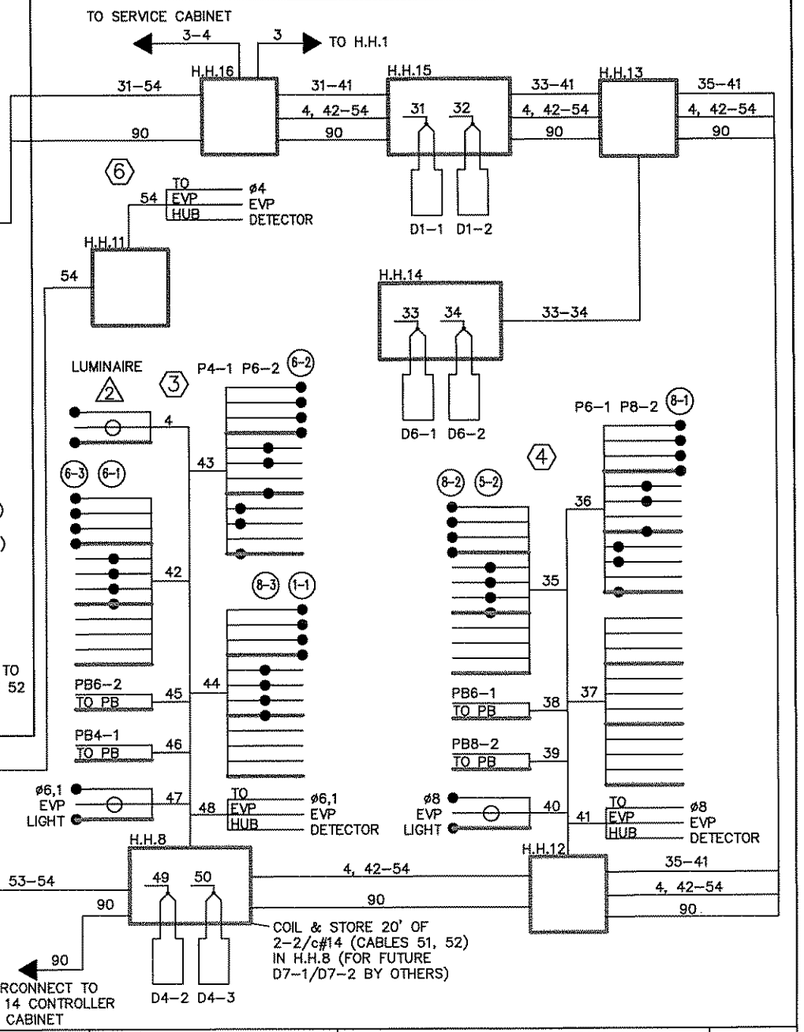
CONTROLLER AND CABINET

2	SIGNAL SERVICE		ø8 EVP DETECTOR
7	RED 2-3 YEL 2-3 GRN 2-3 NEU 2-3 RED 2-1 YEL 2-1 GRN 2-1 NEU 2-1 SPR SPR SPR NEU	20	SPR SPR SPR NEU SPR SPR SPR NEU SPR SPR SPR NEU	42	RED 6-3 YEL 6-3 GRN 6-3 NEU 6-3 RED 6-1 YEL 6-1 GRN 6-1 NEU 6-1 SPR SPR SPR NEU
8	RED 2-2 YEL 2-2 GRN 2-2 NEU 2-2 DWK P2-2 WLK P2-2 SPR NEU P2-2 DWK P8-1 WLK P8-1 SPR NEU P8-1	21	PB2-1 NEU	43	RED 6-2 YEL 6-2 GRN 6-2 NEU 6-2 DWK P6-2 WLK P6-2 SPR NEU P6-2 DWK P4-1 WLK P4-1 SPR NEU P4-1
9	RLTA 5-1 YLTA 5-1 GLTA 5-1 NEU 5-1 RED 4-3 YEL 4-3 GRN 4-3 NEU 4-3 SPR SPR SPR NEU	22	PB4-2 NEU	44	RLTA 1-1 YLTA 1-1 GLTA 1-1 NEU 1-1 RED 8-3 YEL 8-3 GRN 8-3 NEU 8-3 SPR SPR SPR NEU
10	PB2-2 NEU	23	ø4 EVP LT EQ.G. NEU	45	PB6-2 NEU
11	PB8-1 NEU	24	ø4 EVP DETECTOR	46	PB4-1 NEU
12	ø2,5 EVP LT EQ.G. NEU	25	D8-1	47	ø6,1 EVP LT EQ.G. NEU
13	ø2,5 EVP DETECTOR	26	ø8 EVP DETECTOR	48	ø6,1 EVP DETECTOR
14	D8-2	27	D2-1	49	D4-2
15	D8-3	28	D2-2	50	D4-3
16	D3-1 (FUTURE)	29	D5-1	51	D7-1 (FUTURE)
17	D3-2 (FUTURE)	30	D5-2	52	D7-2 (FUTURE)
18	RED 4-2 YEL 4-2 GRN 4-2 NEU 4-2 RLTA 1-2 YLTA 1-2 GLTA 1-2 NEU 1-2 SPR SPR SPR NEU	31	D1-1	53	D4-1
19	RED 4-1 YEL 4-1 GRN 4-1 NEU 4-1 DWK P4-2 WLK P4-2 SPR NEU P4-2 DWK P2-1 WLK P2-1 SPR NEU P2-1	32	D1-2	54	ø4 EVP DETECTOR
		33	D6-1	90	INTERCONNECT TO CSAH 14/CSAH 52 CABINET
		34	D6-2		
		35	RED 8-2 YEL 8-2 GRN 8-2 NEU 8-2 RLTA 5-2 YLTA 5-2 GLTA 5-2 NEU 5-2 SPR SPR SPR NEU		
		36	RED 8-1 YEL 8-1 GRN 8-1 NEU 8-1 DWK P8-2 WLK P8-2 SPR NEU P8-2 DWK P6-1 WLK P6-1 SPR NEU P6-1		
		37	SPR SPR SPR NEU SPR SPR SPR NEU SPR SPR SPR NEU		
		38	PB6-1 NEU		
		39	PB8-2 NEU		
		40	ø8 EVP LT EQ.G. NEU		

CONDUCTOR COLOR CODE (14 GAUGE)

TO SIGNAL CABINET				TO DEVICE		
1/C#6 G						
6PR#19	R 3-1/C#2 WH BLK	INPUT POWER	6/C#14 R O BL WH BLK/R BLK	6/C#14 CABLE	R RED O YEL BL GRN WH NEU BLK/R YLTA BLK GLTA	4 & 5 SECTION SIGNAL INDICATION
	BLK 3-1/C#6 WH G	SIGNAL SERVICE				
12/C#14	R O BL WH R/BLK O/BLK BL/BLK WH/BLK BLK BLK/WH BLK/R WH/R		4/C#14 R BLK/R BLK WH 3/C#14 BLK G WH 2/C#14 BLK WH or CL 3/C#20 R or O WH or YEL BLK or BL	BASE OF POLE OR PEDESTAL 4/C#14 CABLE	R RED/DWK BLK/R YEL/WLK BLK GRN/SPR WH NEU	3 SECTION AND PED INDICATION
				3/C#14 CABLE	BLK G WH	EVP LIGHT LUM/FLASHER
				2/C#14 CABLE	BLK WH or CL	PED PUSH BUTTON (If required)

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



NO.	BY	DATE	REVISIONS

S:\AE\A\ANOKC\COMMON\SIGNALS\52-129TH\52129SIGBASE-CURRENT.DWG 06/08/2009

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

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
Date: June 8, 2009
Name: John M. Gray, PE
Lic. No. 22457

S.P. 02-652-05
S.P. 106-020-28

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

ANOKA COUNTY
SIGNAL SYSTEM "B" WIRING DIAGRAM
CSAH 52/116 RECONSTRUCTION
CSAH 52 AND 129TH AVE NE/QUAIL CREEK PKWY

SHEET 15,16 OF 294

NOTES:

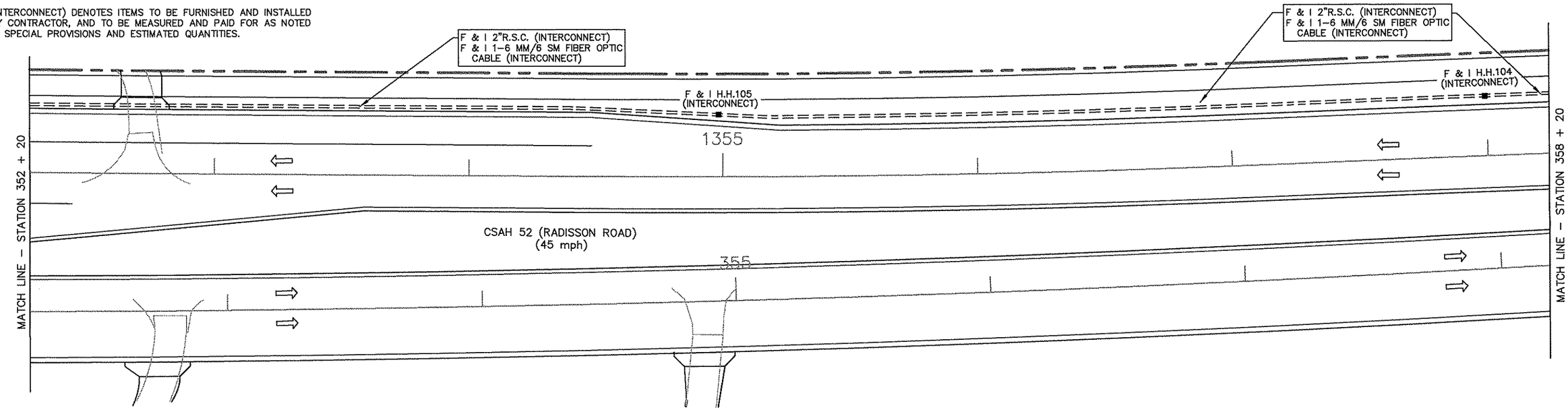
1) IT SHALL BE CONTRACTOR'S RESPONSIBILITY TO UTILIZE THE "ONE CALL EXCAVATION NOTICE SYSTEM" (TELEPHONE NUMBER 651-454-0002), AS REQUIRED BY MINNESOTA STATUTE 2160.

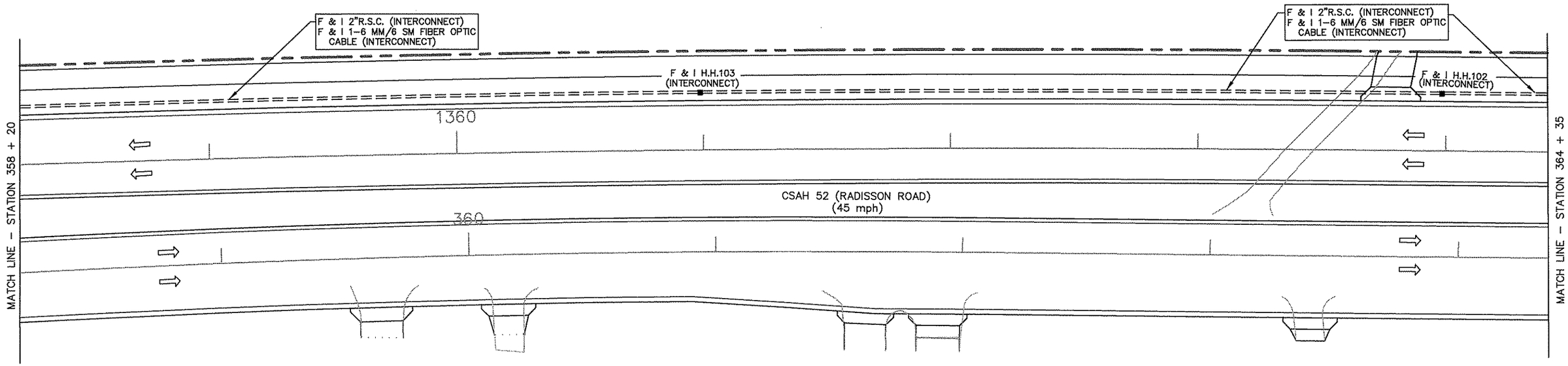
2) DISTANCE OFF SHOULDER OR CURB FOR INTERCONNECT CONDUIT SHALL BE 1-2 FEET.

3) (INTERCONNECT) DENOTES ITEMS TO BE FURNISHED AND INSTALLED BY CONTRACTOR, AND TO BE MEASURED AND PAID FOR AS NOTED IN SPECIAL PROVISIONS AND ESTIMATED QUANTITIES.

20 10 0 20 40
15 5

N





CSAH 52 (RADISSON ROAD)
(CSAH 14 TO 129TH/QUAIL)

NO.	BY	DATE	REVISIONS

S:\AE\A\ANOKC\COMMON\SIGNALS\52-129TH\52129SIGBASE-CURRENT.DWG 06/08/2009

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

ANOKA COUNTY
TRAFFIC CONTROL INTERCONNECTION
CSAH 52/116 RECONSTRUCTION
TRAFFIC SIGNAL SYSTEMS "A-B"

SHEET 15.17 OF 294

LOOP DETECTORS

NUMBER	SIZE (FEET)	LOCATION	FUNCTION
D1-1	6'X6'	40'	1
D1-2	6'X6'	10'	1
D2-1,D2-2	6'X6'	475'	1
D3-1,D3-2	6'X6'	10' & 40'	1
D4-1,D4-2	6'X6'	475'	3,8
D4-3	2-6'X6'	-10' & 5'	7
D4-4,D4-5	2-6'X6'	5' & 20'	1
D5-1,D5-2	6'X6'	40'	1
D5-3,D5-4	6'X6'	10'	1
D6-1,D6-2	6'X6'	475'	1
D7-1,D7-2	6'X6'	10' & 40'	1
D8-1,D8-2	6'X6'	400'	3,8
D8-3	2-6'X6'	-10' & 5'	7
D8-4,D8-5	2-6'X6'	5' & 20'	1

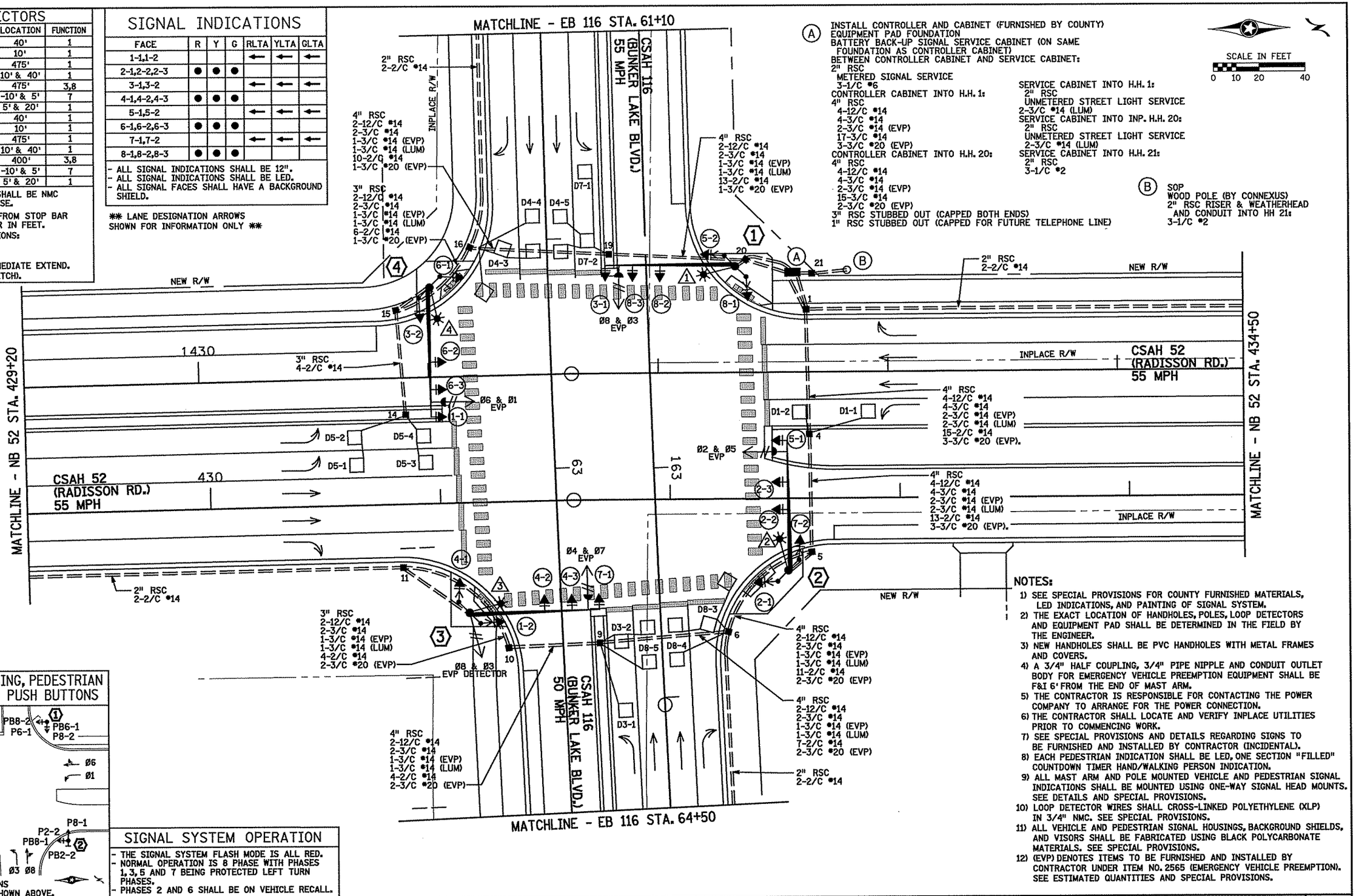
- ALL LOOP DETECTORS SHALL BE NMC UNLESS NOTED OTHERWISE.
- LOCATION = DISTANCE FROM STOP BAR TO FRONT OF DETECTOR IN FEET.
- LOOP DETECTOR FUNCTIONS:
  1 - CALL AND EXTEND.
  3 - EXTEND ONLY.
  7 - DELAYED CALL, IMMEDIATE EXTEND.
  8 - CARRY OVER (STRETCH).

SIGNAL INDICATIONS

FACE	R	Y	G	RLTA	YLTA	GLTA
1-1,1-2				←	←	←
2-1,2-2,2-3	●	●	●			
3-1,3-2				←	←	←
4-1,4-2,4-3	●	●	●			
5-1,5-2				←	←	←
6-1,6-2,6-3	●	●	●			
7-1,7-2				←	←	←
8-1,8-2,8-3	●	●	●			

- ALL SIGNAL INDICATIONS SHALL BE 12".
- ALL SIGNAL INDICATIONS SHALL BE LED.
- ALL SIGNAL FACES SHALL HAVE A BACKGROUND SHIELD.

** LANE DESIGNATION ARROWS SHOWN FOR INFORMATION ONLY **



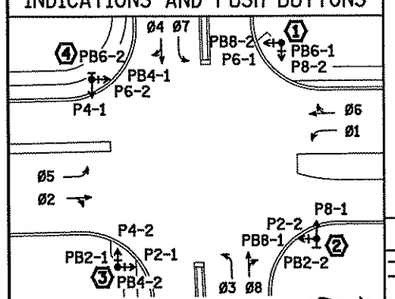
(A) INSTALL CONTROLLER AND CABINET (FURNISHED BY COUNTY)
EQUIPMENT PAD FOUNDATION
BATTERY BACK-UP SIGNAL SERVICE CABINET (ON SAME FOUNDATION AS CONTROLLER CABINET)
BETWEEN CONTROLLER CABINET AND SERVICE CABINET:
2" RSC
METERED SIGNAL SERVICE
3-1/C #6
CONTROLLER CABINET INTO H.H. 1:
4" RSC
4-12/C #14
4-3/C #14
2-3/C #14 (EVP)
17-3/C #14
3-3/C #20 (EVP)
CONTROLLER CABINET INTO H.H. 20:
4" RSC
4-12/C #14
4-3/C #14
2-3/C #14 (EVP)
15-3/C #14
2-3/C #20 (EVP)
3" RSC STUBBED OUT (CAPPED BOTH ENDS)
1" RSC STUBBED OUT (CAPPED FOR FUTURE TELEPHONE LINE)

SERVICE CABINET INTO H.H. 1:
2" RSC
UNMETERED STREET LIGHT SERVICE
2-3/C #14 (LUM)
SERVICE CABINET INTO INP. H.H. 20:
2" RSC
UNMETERED STREET LIGHT SERVICE
2-3/C #14 (LUM)
SERVICE CABINET INTO H.H. 21:
2" RSC
3-1/C #2

(B) SOP
WOOD POLE (BY CONNEXUS)
2" RSC RISER & WEATHERHEAD AND CONDUIT INTO HH 21:
3-1/C #2

SCALE IN FEET
0 10 20 40

CONTROLLER PHASING, PEDESTRIAN INDICATIONS AND PUSH BUTTONS



PEDESTRIAN PUSH BUTTONS SHALL BE LOCATED AS SHOWN ABOVE.

SIGNAL SYSTEM OPERATION

- THE SIGNAL SYSTEM FLASH MODE IS ALL RED.
- NORMAL OPERATION IS 8 PHASE WITH PHASES 1, 3, 5 AND 7 BEING PROTECTED LEFT TURN PHASES.
- PHASES 2 AND 6 SHALL BE ON VEHICLE RECALL.

NOTES:

1) SEE SPECIAL PROVISIONS FOR COUNTY FURNISHED MATERIALS, LED INDICATIONS, AND PAINTING OF SIGNAL SYSTEM.
2) THE EXACT LOCATION OF HANDHOLES, POLES, LOOP DETECTORS AND EQUIPMENT PAD SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER.
3) NEW HANDHOLES SHALL BE PVC HANDHOLES WITH METAL FRAMES AND COVERS.
4) A 3/4" HALF COUPLING, 3/4" PIPE NIPPLE AND CONDUIT OUTLET BODY FOR EMERGENCY VEHICLE PREEMPTION EQUIPMENT SHALL BE F&I 6' FROM THE END OF MAST ARM.
5) THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING THE POWER COMPANY TO ARRANGE FOR THE POWER CONNECTION.
6) THE CONTRACTOR SHALL LOCATE AND VERIFY INPLACE UTILITIES PRIOR TO COMMENCING WORK.
7) SEE SPECIAL PROVISIONS AND DETAILS REGARDING SIGNS TO BE FURNISHED AND INSTALLED BY CONTRACTOR (INCIDENTAL).
8) EACH PEDESTRIAN INDICATION SHALL BE LED, ONE SECTION "FILLED" COUNTDOWN TIMER HAND/WALKING PERSON INDICATION.
9) ALL MAST ARM AND POLE MOUNTED VEHICLE AND PEDESTRIAN SIGNAL INDICATIONS SHALL BE MOUNTED USING ONE-WAY SIGNAL HEAD MOUNTS. SEE DETAILS AND SPECIAL PROVISIONS.
10) LOOP DETECTOR WIRES SHALL CROSS-LINKED POLYETHYLENE (XLP) IN 3/4" NMC. SEE SPECIAL PROVISIONS.
11) ALL VEHICLE AND PEDESTRIAN SIGNAL HOUSINGS, BACKGROUND SHIELDS, AND VISORS SHALL BE FABRICATED USING BLACK POLYCARBONATE MATERIALS. SEE SPECIAL PROVISIONS.
12) (EVP) DENOTES ITEMS TO BE FURNISHED AND INSTALLED BY CONTRACTOR UNDER ITEM NO. 2565 (EMERGENCY VEHICLE PREEMPTION). SEE ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.

NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\a-f\AnokaCty\13867000\hwy-brdg\hwy\pln-shf\c0265205_egg.dgn 10/15/2009

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: Bryant J. Ficek
PRINTED NAME: BRYANT J. FICEK
DATE: 10/15/2009 LIC. NO. 42802

DRAWN BY SFH DATE 10/15/2009
DESIGN BY BJF DATE 10/15/2009
CHECKED BY TAC DATE 10/15/2009

S.P. 02-652-05
S.P. 02-716-09
S.P. 106-020-28
S.P. 197-124-001

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ANOKA COUNTY
SIGNAL SYSTEM "C" INTERSECTION LAYOUT
CSAH 52/116 RECONSTRUCTION
CSAH 52 AND CSAH 116

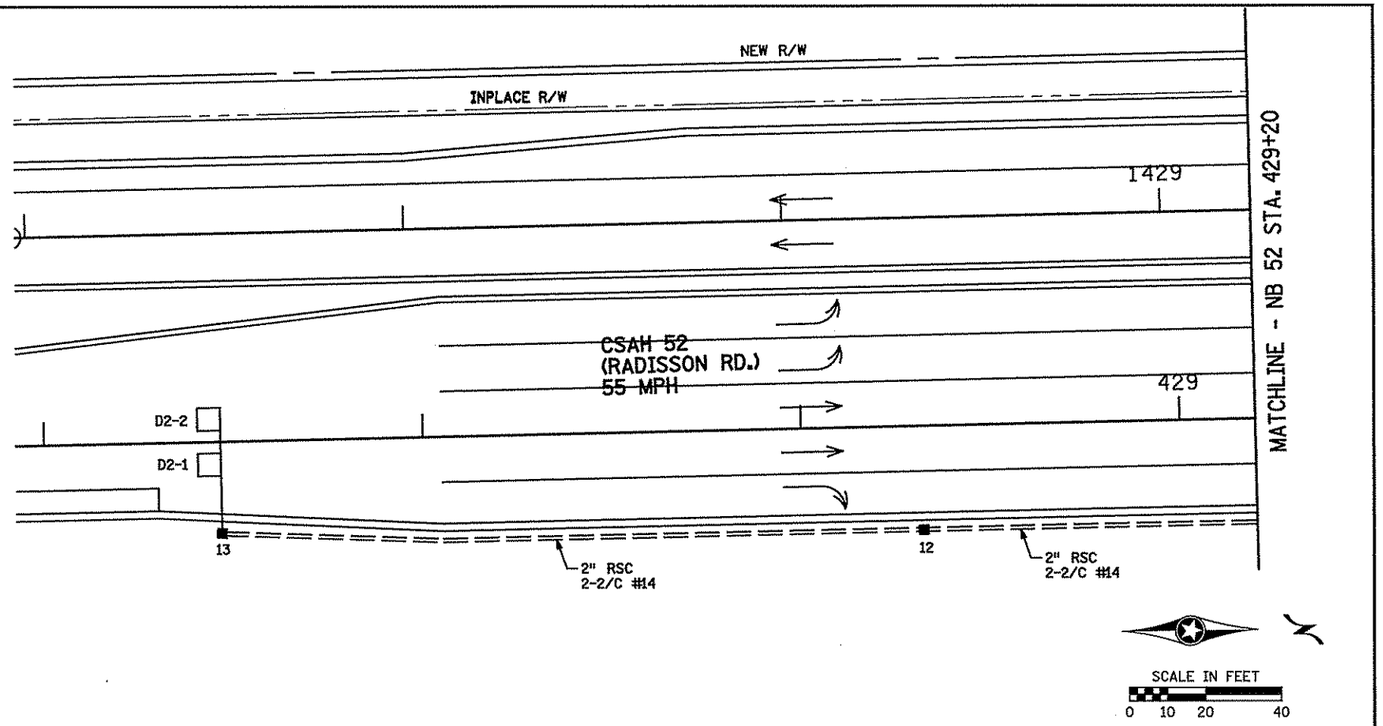
SHEET 15.18 OF 294

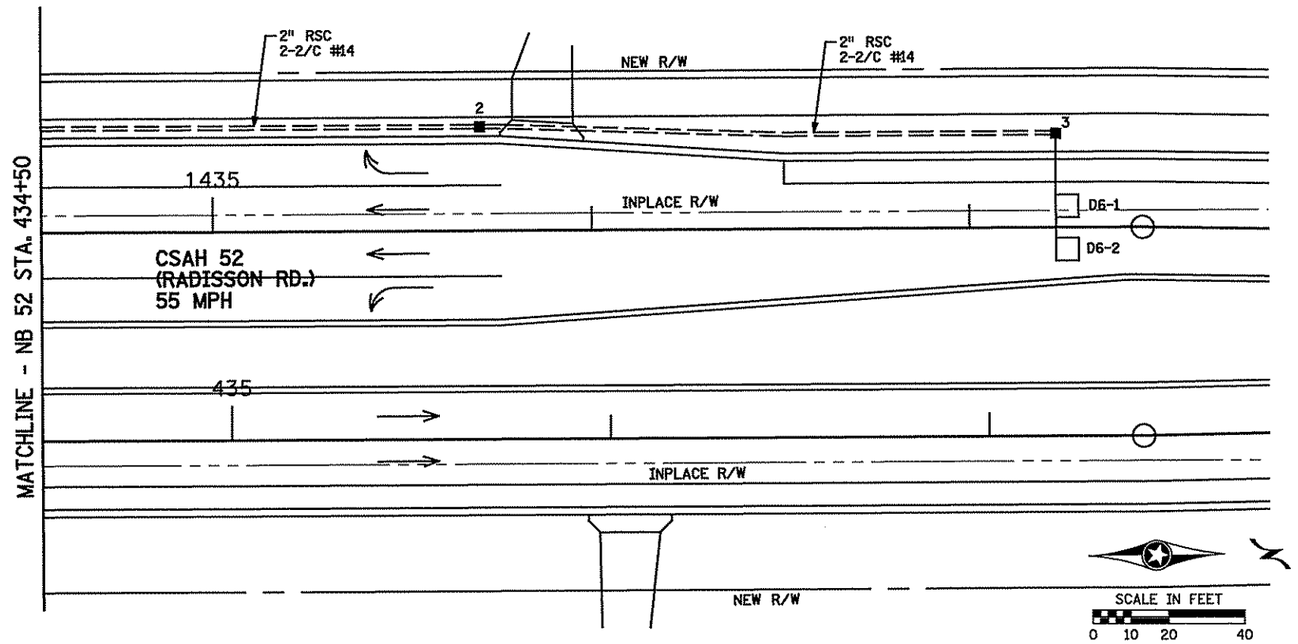
(1) PA100 POLE FOUNDATION
TYPE PA100-A-55-D40-9 (DAVIT @ 350°)
3-ONE WAY SIGNALS-OVERHEAD (0', 11', AND 23' FROM END OF MAST ARM)
2-ONE WAY SIGNALS MOUNTED AT 45° AND 225°
2-ONE WAY PED INDICATIONS MOUNTED AT 45° AND 225°
1-ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT (PHASES 08 & 03) (EVP)
LUMINAIRE - 250 WATT HPS
2-PED PUSH BUTTONS AND SIGNS
TYPE D SIGN PANEL-OVERHEAD (D-5)
2-R6-1 SIGN PANELS MOUNTED AT 0° AND 180°
3" RSC INTO HH 20:
2-12/C #14
2-3/C #14
1-3/C #14 (EVP)
1-3/C #14 (LUM)
2-2/C #14
1-3/C #20 (EVP)

(2) PA100 POLE FOUNDATION
TYPE PA100-A-55-D40-9 (DAVIT @ 350°)
3-ONE WAY SIGNALS-OVERHEAD (0', 17', AND 29' FROM END OF MAST ARM)
2-ONE WAY SIGNALS MOUNTED AT 45° AND 225°
2-ONE WAY PED INDICATIONS MOUNTED AT 45° AND 225°
1-ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT (PHASES Ø2 & Ø5) (EVP)
LUMINAIRE - 250 WATT HPS
2-PED PUSH BUTTONS AND SIGNS
TYPE D SIGN PANEL-OVERHEAD (D-6)
2-R6-1 SIGN PANELS MOUNTED AT 0° AND 180°
3" RSC INTO HH 5:
2-12/C #14
2-3/C #14
1-3/C #14 (EVP)
1-3/C #14 (LUM)
2-2/C #14
1-3/C #20 (EVP)

(3) PA100 POLE FOUNDATION
TYPE PA100-A-55-D40-9 (DAVIT @ 350°)
3-ONE WAY SIGNALS-OVERHEAD (0', 11', AND 23' FROM END OF MAST ARM)
2-ONE WAY SIGNALS MOUNTED AT 45° AND 225°
2-ONE WAY PED INDICATIONS MOUNTED AT 45° AND 225°
1-ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT (PHASES Ø4 & Ø7) (EVP)
1-ONE WAY EVP DETECTOR (PHASES Ø8 & Ø3) (EVP)
LUMINAIRE - 250 WATT HPS
2-PED PUSH BUTTONS AND SIGNS
TYPE D SIGN PANEL-OVERHEAD (D-7)
2-R6-1 SIGN PANELS MOUNTED AT 0° AND 180°
3" RSC INTO HH 11:
2-12/C #14
2-3/C #14
1-3/C #14 (EVP)
1-3/C #14 (LUM)
2-2/C #14
2-3/C #20 (EVP)

(4) PA100 POLE FOUNDATION
TYPE PA100-A-55-D40-9 (DAVIT @ 350°)
3-ONE WAY SIGNALS-OVERHEAD (0', 11', AND 23' FROM END OF MAST ARM)
2-ONE WAY SIGNALS MOUNTED AT 45° AND 225°
2-ONE WAY PED INDICATIONS MOUNTED AT 45° AND 225°
1-ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT (PHASES Ø6 & Ø1) (EVP)
LUMINAIRE - 250 WATT HPS
2-PED PUSH BUTTONS AND SIGNS
TYPE D SIGN PANEL-OVERHEAD (D-8)
2-R6-1 SIGN PANELS MOUNTED AT 0° AND 180°
3" RSC INTO HH 15:
2-12/C #14
2-3/C #14
1-3/C #14 (EVP)
1-3/C #14 (LUM)
2-2/C #14
1-3/C #20 (EVP)





NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\a-f\AnokaCty\13867000\hwy-brdg\hwy\pln-sht\s0265205_sgh.dgn 10/15/2009

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S.P. 02-716-09
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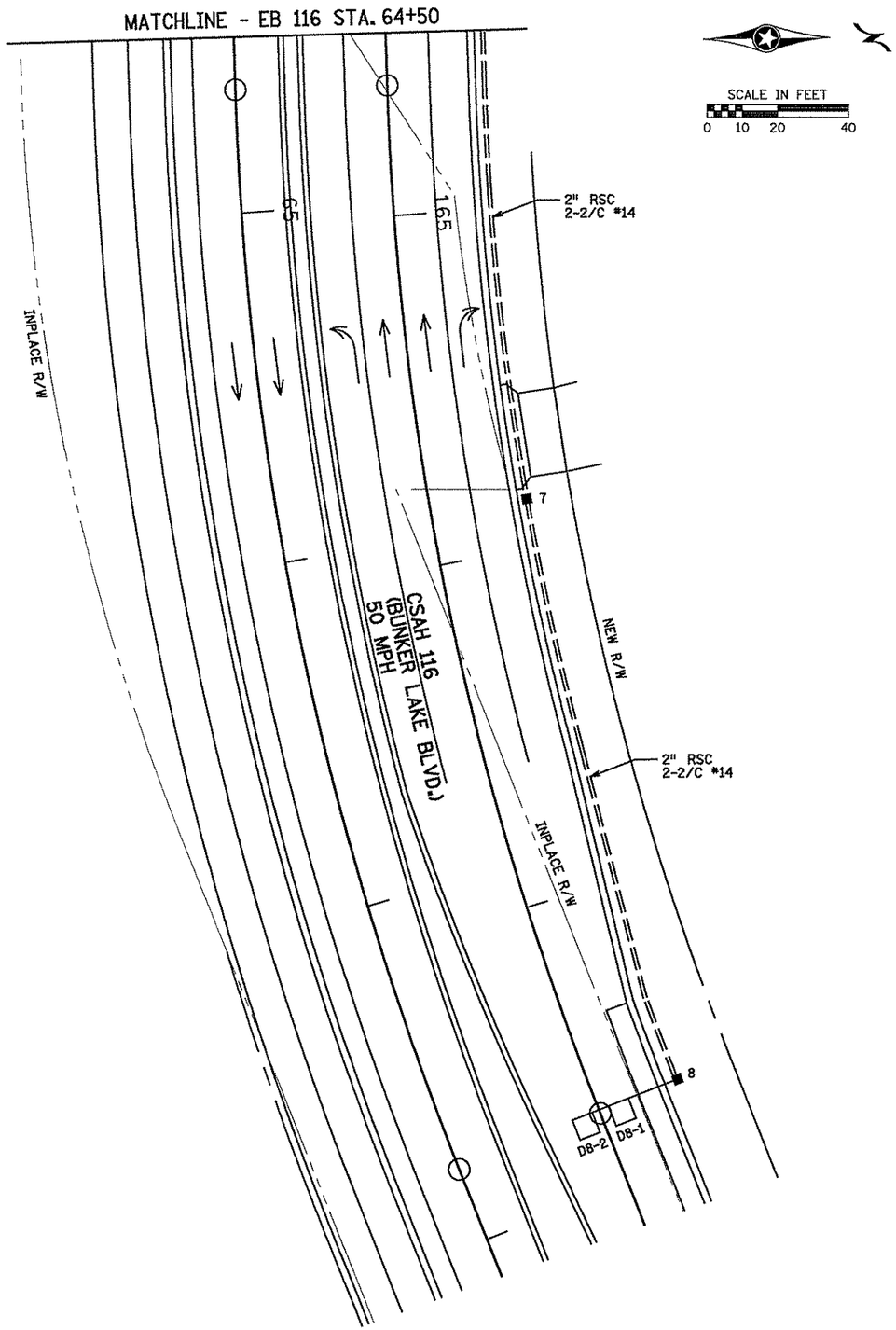
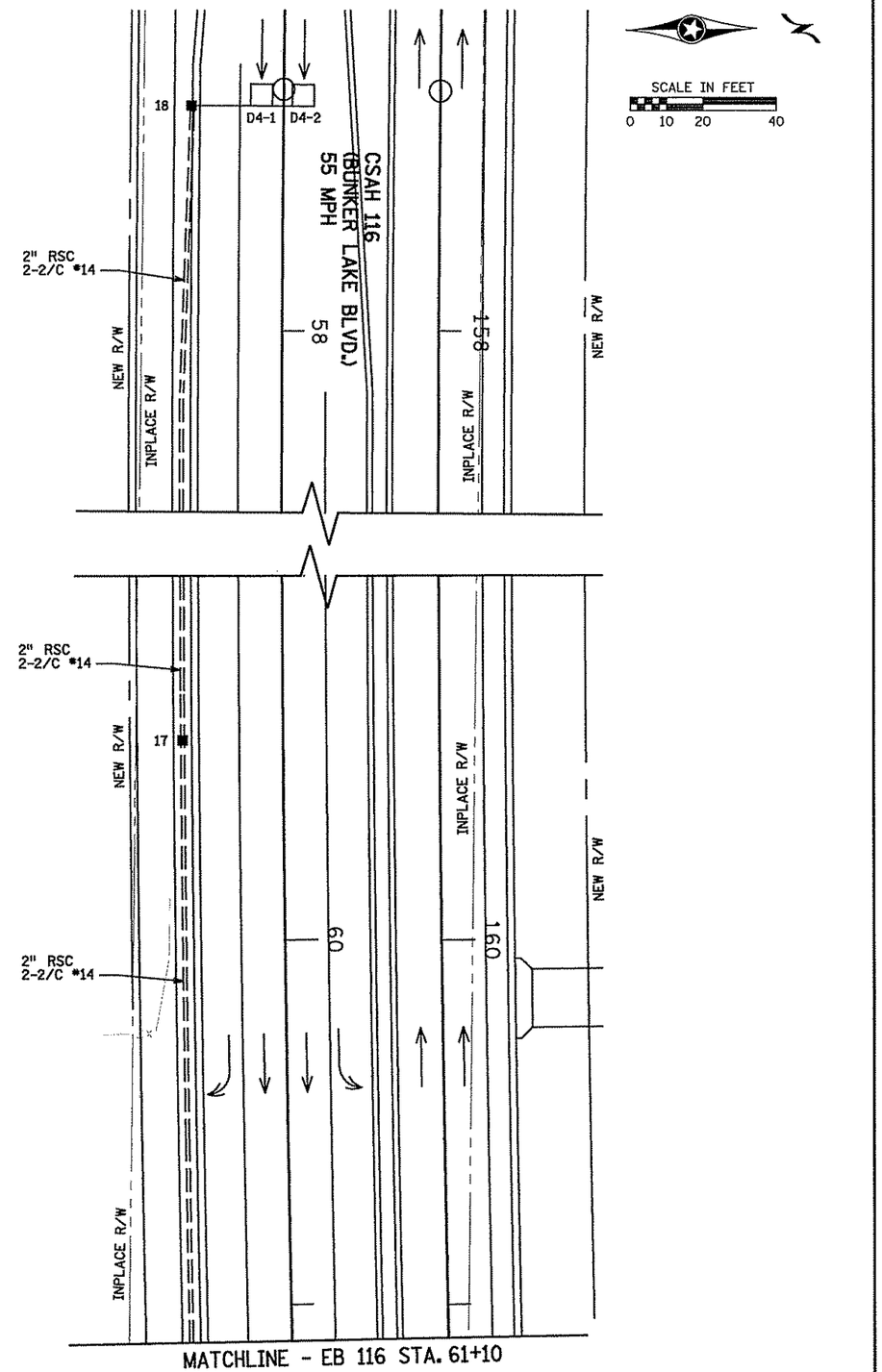
ANOKA COUNTY
SIGNAL SYSTEM "C" MATCHLINE
CSAH 52/116 RECONSTRUCTION
CSAH 52 AND CSAH 116

SHEET 15.19 OF 294





NO	DATE	BY	CKD	APPR	REVISION

NAME: K:\a-f\AnokaCty\i3867000\hwy-brdg\hwy\pln-sht\c0265205_sgl.dgn 6/5/2009

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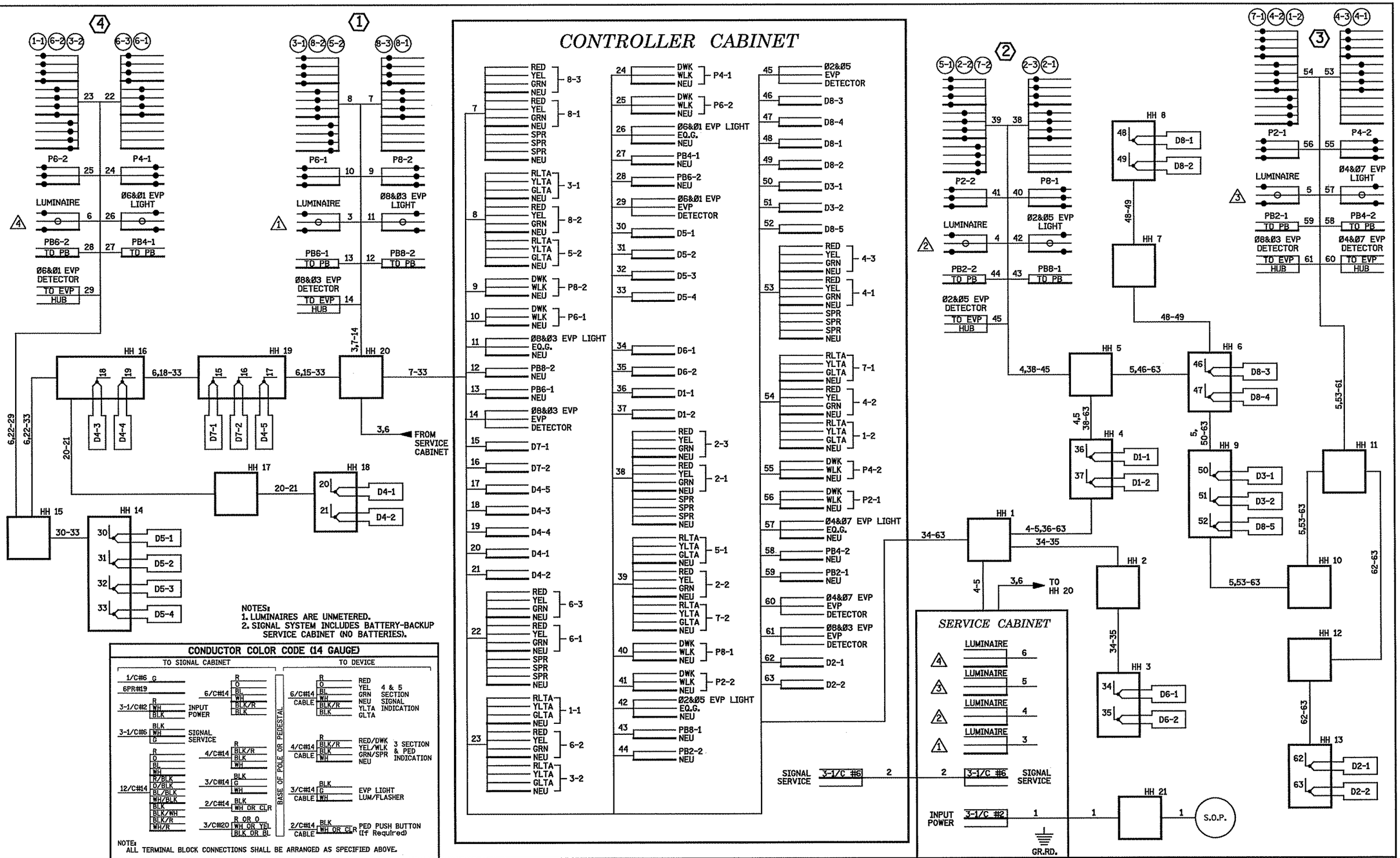
ANOKA COUNTY
SIGNAL SYSTEM "C" MATCHLINE
CSAH 52/116 RECONSTRUCTION
CSAH 52 AND CSAH 116

SHEET 15.20 OF 294



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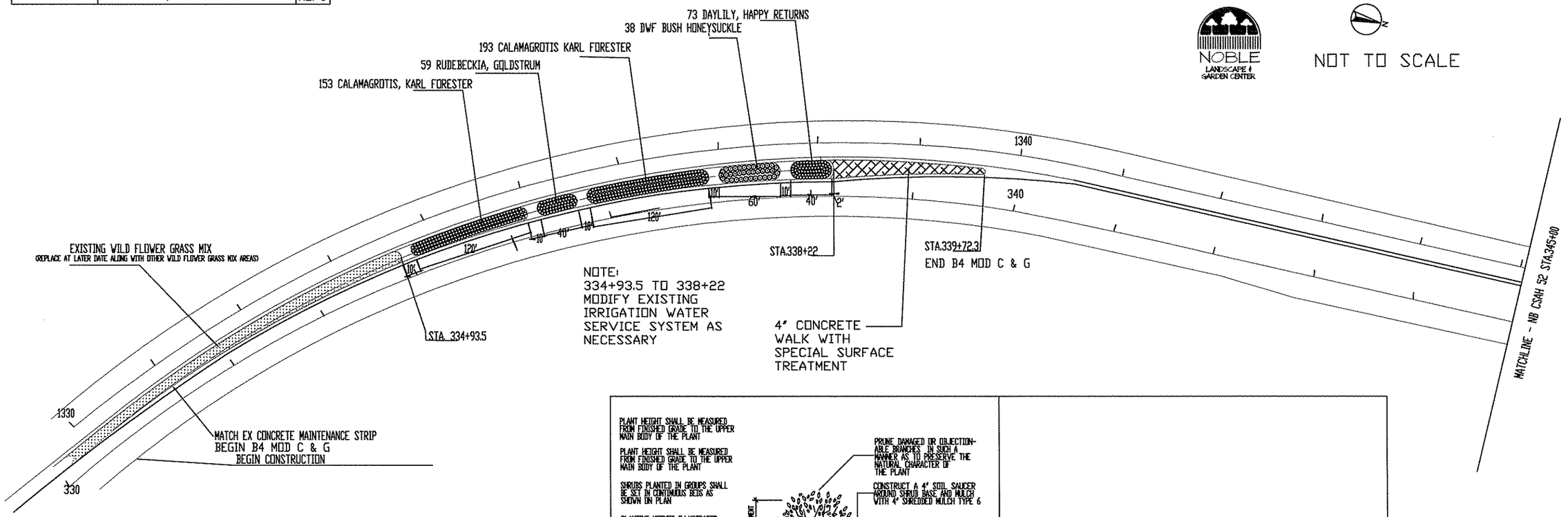
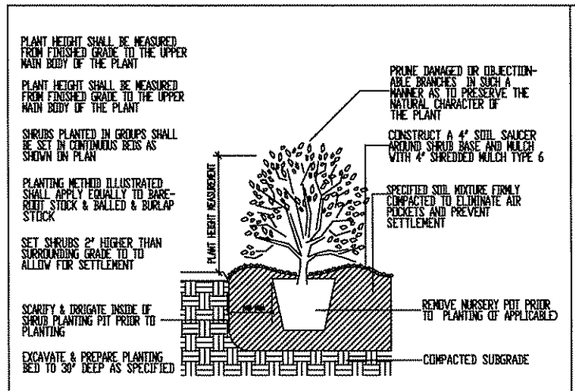
ANOKA COUNTY
SIGNAL SYSTEM "C" WIRING DIAGRAM
CSAH 52/116 RECONSTRUCTION
CSAH 52 AND CSAH 116

SHEET 15.21 OF 294

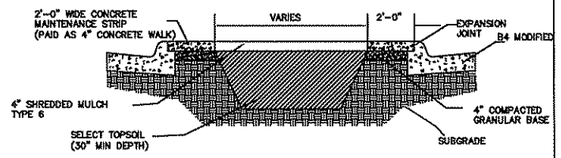
QUANTITY	PLANT TYPE	SIZE
346	CALAMAGROTIS, KARL FORESTER	NO. 1
73	DAYLILY, HAPPY RETURNS	NO. 1
38	DWF BUSH HONEYSUCKLE	NO. 5
59	RUDEBECKIA, GOLDSTRUM	NO. 1



NOTES:
1. STATIONING REFERENCES ARE NORTH BOUND UNLESS OTHERWISE NOTED
2. CONNECT ALL PLANTING AREAS IN MEDIAN WITH 6" SLEEVE FOR IRRIGATION
3. MODIFY EXISTING IRRIGATION SYSTEM
4. PLANT LOCATIONS MAY REQUIRE SLIGHT ADJUSTMENTS DUE TO EXISTING UTILITY LOCATIONS. ENGINEER TO FIELD LOCATE.
5. ALL PLANTING BEDS TO BE 30" MIN. DEPTH AND BACKFILLED WITH SELECT TOPSOIL BARROW (PLANTING SOIL)
6. 4" SHREDDED HARDWOOD MULCH TO COVER ENTIRE PLANTING BED
7. IRRIGATION TO INCLUDE: DROP LINE IRRIGATION TO RUN THOUGHOUT ENTIRE PLANTING AREA, MINIMUM OF 4 LINES RUN PARALLEL TO CURBS, JOINER LINES TO CONNECT PARALLEL LINES EVERY 10'.



SHRUB PLANTING DETAIL
TYPICAL INSTALLATION



TYPICAL MEDIAN PLANTING BED SECTION
NOT TO SCALE

S.P. 02-652-05 S.P. 106-020-28

ENGINEERING DEPARTMENT
9150 Central Ave., N.E. Blaine, Minnesota 55434
Phone (612) 784-6700

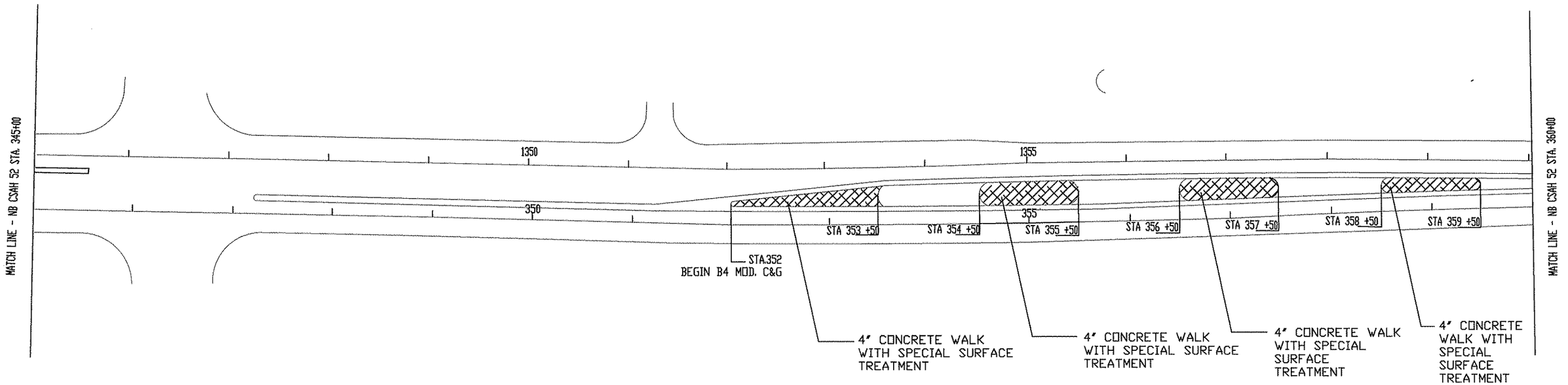
I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly registered professional engineer under the laws of the State of Minnesota.
DANIEL SCHLUENDER
Date 8-11-2008 Reg. No. 26771

DATE	REVISION

PROJECT NO.	04-16
DESIGN BY: CAN	DRAWN BY: CAN
CHECKED BY: DSS	APPROVED BY: DSS
AS BUILT BY:	

RADISSON ROAD
LANDSCAPE/IRRIGATION
SHEET NO. 16.01 OF 294 SHEETS

NOT TO SCALE



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S.P. 02-652-05 S.P. 106-020-28

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DATE	REVISION

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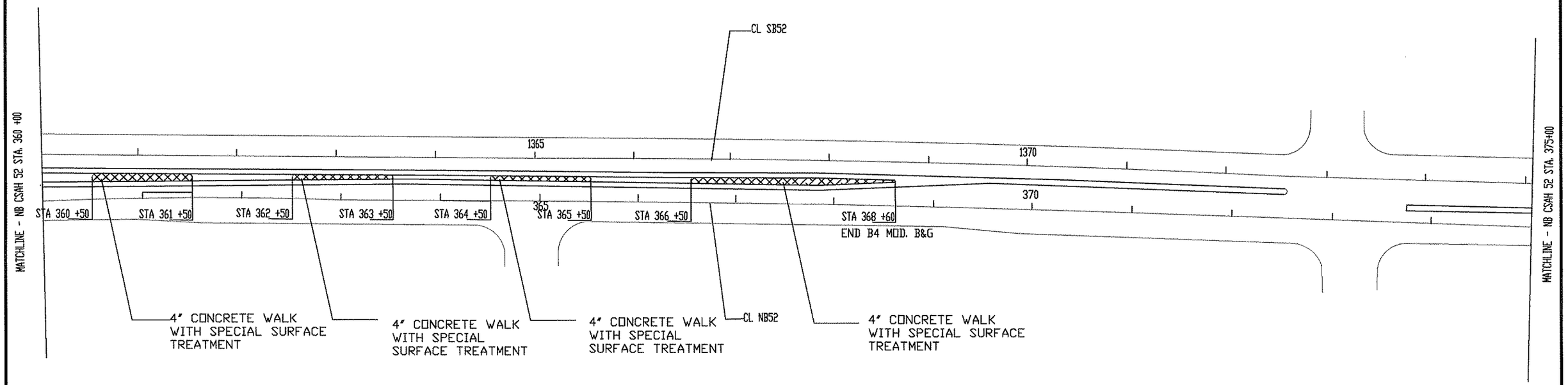
RADISSON ROAD LANDSCAPE/IRRIGATION

NOT TO SCALE



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DATE	REVISION

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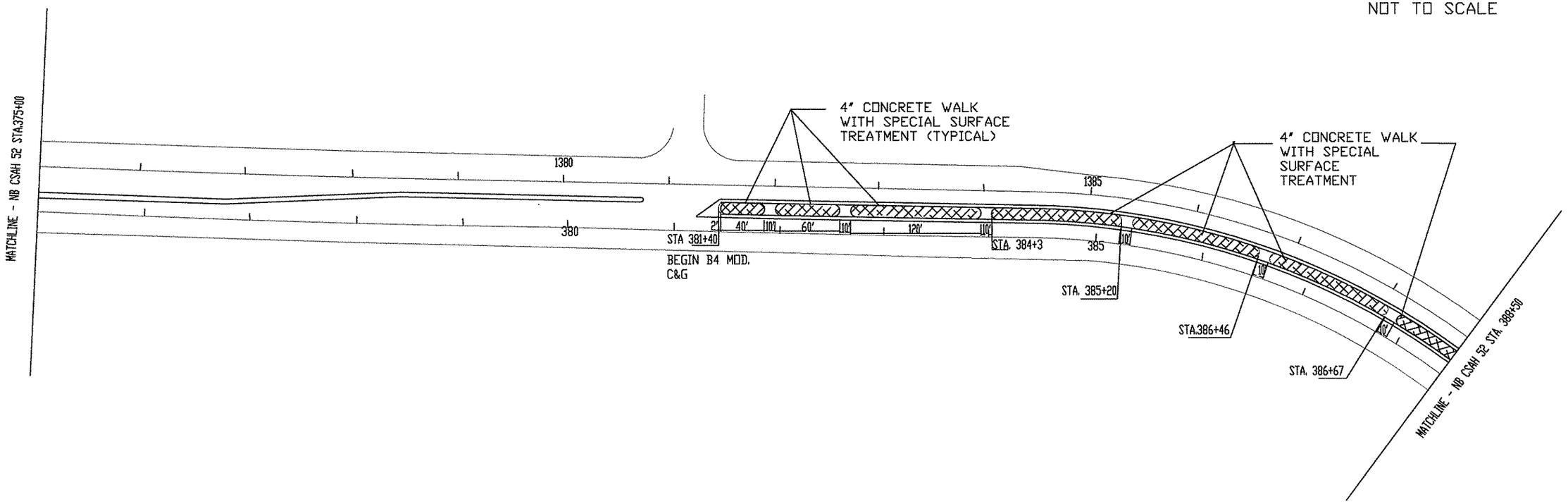
DESIGN BY: CAN	DRAWN BY: CAN
CHECKED BY: DSS	APPROVED BY: DSS
AS BUILT BY:	

RADISSON ROAD LANDSCAPE/IRRIGATION

SHEET NO. 16.03 OF 294 SHEETS

NOT TO SCALE



NOTES:
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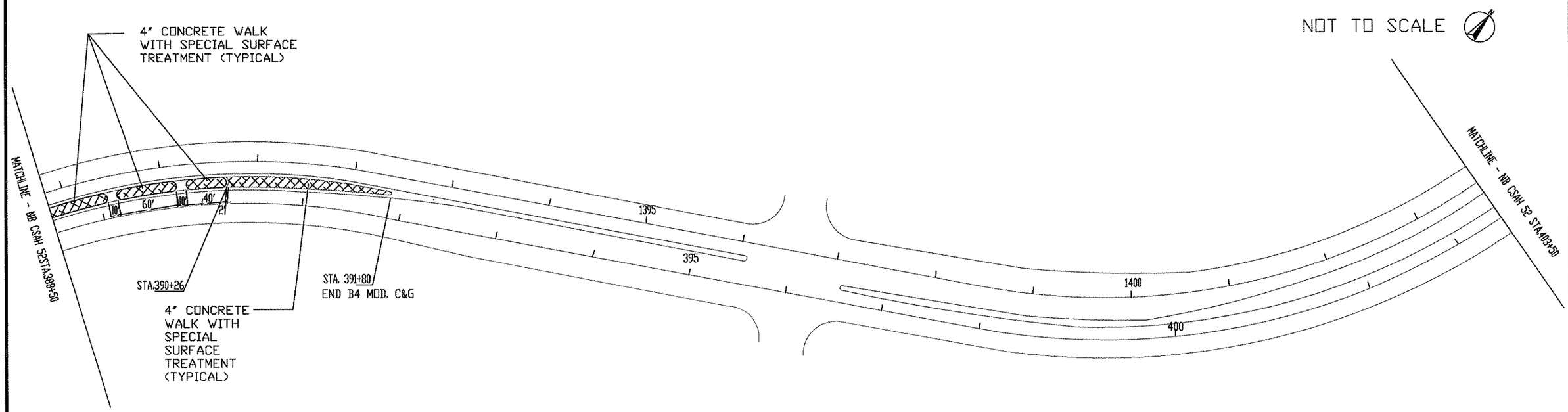
Date 8-11-2008 Reg. No. 26771

DATE	REVISION

PROJECT NO.	04-16
DESIGN BY: CAN	DRAWN BY: CAN
CHECKED BY: DSS	APPROVED BY: DSS
AS BUILT BY:	

RADISSON ROAD LANDSCAPE/IRRIGATION



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DANIEL SCHLUEMER
Date 8-11-2008 Reg. No. 26771

DATE	REVISION

PROJECT NO.	04-16
DESIGN BY: CAN	DRAWN BY: CAN
CHECKED BY: DSS	APPROVED BY: DSS
AS BUILT BY:	

RADISSON ROAD LANDSCAPE/IRRIGATION

SHEET NO. 16.05 OF 294 SHEETS

NOTE:
1. ALL STATIONING BASED ON NORTH BOUND CENTERLINE

346+88 ABANDON EXISTING CURB STOP AND SAN SEWER SERVICE INPLACE

347+06
SALVAGE EXISTING HYD & GV. REMOVE EXISTING LEAD. CONNECT TO EXISTING WM W/ 40 LF 6" DIP. INSTALL NEW HYD & 6" GV & BOX TNH 903.40

348+63
ABANDON EXISTING CURB STOP AND SAN SEWER INPLACE

349+21
REMOVE EXISTING CURB STOP & BOX; INSTALL CURB STOP & BOX; 20 LF 1" TYPE K COPPER; 1" COPPER TO COPPER FITTING

STATION 351+07
SALVAGE EXISTING HYD & GV. REMOVE EXISTING LEAD. CONNECT TO EXISTING WM 10 LF 6"DIP, 6" 90° BEND; 30LF 6" DIP; INSTALL NEW HYD & 6" GV & BOX TNH 906.10

351+13
ADJUST EXISTING GATE VALVE BOX

351+23
ADJUST EXISTING MANHOLE (LOWER ±0.70')
- SALVAGE CONE SECTION
- REMOVE 1.5' SECTION
- INSTALL 1' SECTION
- REINSTALL SALVAGED CONE SECTION
- INSTALL NEW CASTING R1733
- RIM 902.4

355+86
ADJUST EXISTING MANHOLE (RAISE ±0.86')
- SALVAGE CONE SECTION
- INSTALL 1' SECTION
- REINSTALL SALVAGED CONE SECTION
- INSTALL NEW CASTING R1733
- RIM 904.6

356+32
ADJUST EXISTING MANHOLE (LOWER ±1.00')
- SALVAGE CONE SECTION
- REMOVE 5' SECTION
- INSTALL 4' SECTION
- REINSTALL SALVAGED CONE SECTION
- INSTALL NEW CASTING R1733
- RIM 905.90

356+17 HYDRANT (NO ADJUST) ADJUST GATE VALVE BOX

NOTE:
338+22
MODIFY EXISTING IRRIGATION WATER SERVICE SYSTEM AS NECESSARY

348+57
ADJUST EXISTING MANHOLE (LOWER ± 2.80')
- REMOVE CONE SECTION
- INSTALL LOW PROFILE CONE
- INSTALL NEW CASTING R1733
- RIM 900.9

351+23
ADJUST EXISTING MANHOLE RAISE (±1.03')
- SALVAGE CONE SECTION
- INSTALL 1' SECTION
- REINSTALL SALVAGE CONE
- INSTALL NEW CASTING R1733
- RIM 902.2

CONNECT TO EXISTING MH INSTALL 19' OF 8" PVC @ 0.40%
MH#1 RIM 902.5 INV. 886.58

352+08
CONNECT TO EXISTING 16" WM W/ 16"X8"WET TAP 8" G.V. & BOX 30' - 8" WM W/ 8" PLUG

354+04 ADJUST EXISTING MANHOLE (LOWER ±0.72')
- SALVAGE CONE SECTION
- REMOVE 4' SECTION
- INSTALL 3' SECTION
- REINSTALL SALVAGED CONE
- INSTALL NEW CASTING R1733
- RIM 903.8

353+03 AND 355+19
REMOVE EXISTING CURB STOP & BOX; INSTALL 1" COPPER TO NEW R/W LINE; CONNECT TO EXISTING COPPER; 1" CURB STOP & BOX (EACH); 17 LF 1" TYPE "K" COPPER (EACH); 1" COPPER TO COPPER FITTING (EACH)

356+89 ADJUST EXISTING CLEANOUT

355+79; 356+96; 358+92
REMOVE EXISTING CURB STOP & BOX; INSTALL 1" COPPER TO NEW R/W LINE; CONNECT TO EXISTING COPPER; 1" CURB STOP & BOX; 15 LF 1" TYPE "K" COPPER ; 1" COPPER TO COPPER FITTING

100 0 100
SCALE

NOTE:
1. ALL STATIONING BASED ON NORTH BOUND CENTERLINE

362+73
ADJUST EXISTING MANHOLE (LOWER ±0.79')
- SALVAGE CONE
- REMOVE 1.5' SECTION
- INSTALL 1' SECTION
- REINSTALL SALVAGED CONE
- INSTALL NEW CASTING R1733
- RIM 909.00

EXTEND SEWER 65'-8" PVC @ 0.40% INSTALL 8" PLUG INVERT 889.40

362+81
INSTALL 8" GV & BOX EXTEND 8" WATERMAIN 65'

360+81
ADJUST HYDRANT (RAISE WITH 6" EXTENSION) ADJUST GATE VALVE BOX

363+58
EXTEND 4" SANITARY SERVICE 60'

365+82
EXTEND 4" SANITARY SERVICE 60'

363+68; 365+10
REMOVE EXISTING CURB STOP & BOX INSTALL 1" COPPER TO NEW R/W LINE CONNECT TO EXISTING COPPER 1" CURB STOP & BOX 60 LF 1" TYPE "K" COPPER 1" COPPER TO COPPER FITTING

366+45
HYDRANT (NO ADJUST) ADJUST GATE VALVE & BOX

368+79
ADJUST EXISTING MANHOLE (LOWER ± 1.5')
- SALVAGE CONE SECTION
- REMOVE 1.5' SECTION
- REINSTALL SALVAGED CONE SECTION
- INSTALL NEW CASTING R1733
- RIM 912.60

373+11
ADJUST EXISTING MANHOLE (LOWER ±0.93')
- SALVAGE CONE SECTION
- REMOVE 1' SECTION
- REINSTALL SALVAGED CONE SECTION
- INSTALL NEW CASTING R1733
- RIM 912.10

STATION 370+94
SALVAGE EXISTING HYD & GV. REMOVE EXISTING LEAD. CONNECT TO EXISTING WM 30 LF 6"DIP INSTALL NEW HYD & 6" GV & BOX TNH 915.90

359+63
ADJUST EXISTING MANHOLE RINGS (LOWER ±0.55') RIM 907.4 INSTALL NEW CASTING R1733 CONNECT TO EXISTING 8" PVC; EXTEND SEWER 52'-8" PVC; 8" PLUG INV. 888.45

359+69
INSTALL 25LF - 8" WM 8" G.V. & BOX

360+65; 361+05; 362+50; 362+91; 363+83
REMOVE EXISTING CURB STOP & BOX INSTALL 1" COPPER TO NEW R/W LINE CONNECT TO EXISTING COPPER 1" CURB STOP & BOX 15 LF 1" TYPE "K" COPPER (EACH) 1" COPPER TO COPPER FITTING (EACH)

364+80
ADJUST EXISTING MH RINGS (LOWER ±1.2') INSTALL NEW CASTING R1733
- RIM 910.28

364+94
ADJUST EXISTING GATE VALVE BOX

365+81; 367+36
REMOVE EXISTING CURB STOP & BOX INSTALL 1" COPPER TO NEW R/W LINE CONNECT TO EXISTING COPPER 1" CURB STOP & BOX 23 LF 1" TYPE "K" COPPER (EACH) 1" COPPER TO COPPER FITTING (EACH)

368+02; 369+31
REMOVE EXISTING CURB STOP & BOX INSTALL 1" COPPER TO NEW R/W LINE CONNECT TO EXISTING COPPER 1" CURB STOP & BOX 12 LF 1" TYPE "K" COPPER (EACH) 1" COPPER TO COPPER FITTING (EACH)

370+59; 371+77
REMOVE EXISTING CURB STOP & BOX; INSTALL 1" COPPER TO NEW R/W LINE; CONNECT TO EXISTING COPPER; 1" CURB STOP & BOX; 15 LF 1" TYPE "K" COPPER (EACH); 1" COPPER TO COPPER FITTING (EACH)

373+68
ADJUST EXISTING GATE VALVE BOX (2 EACH)

373+11
ADJUST EXISTING MANHOLE RINGS (LOWER 0.75')
- SALVAGE CONE SECTION
- REMOVE 1.5' SECTION
- REINSTALL SALVAGED CONE SECTION
- INSTALL NEW CASTING R1733
- RIM 912.20

ENGINEERING DEPARTMENT
9150 Central Ave., N.E. Blaine, Minnesota 55434
Phone (612) 784-6700

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly registered professional engineer under the laws of the State of Minnesota.
DANIEL SCHLUENDER
Date 8-11-2008 Reg. No. 26771

DATE	REVISION

PROJECT NO. 04-16
DESIGN BY: CAN DRAWN BY: CAN
CHECKED BY: DSS APPROVED BY: DSS
AS BUILT BY:

RADISSON ROAD
UTILITY PLAN

S.P. 02-652-05
S.P. 106-020-28

NOTE:
1. ALL STATIONING BASED ON NORTH BOUND CENTERLINE

375+55
INSULATE - 160 SF
SANITARY SERVICE
AT CURB

375+56; 376+76; 377+61
REMOVE EXISTING CURB STOP & BOX
INSTALL 1' COPPER TO NEW R/W LINE
CONNECT TO EXISTING COPPER
1' CURB STOP & BOX
28 LF 1" TYPE 'K' COPPER (EACH)
1' COPPER TO COPPER FITTING (EACH)

375+82
ADJUST EXISTING MANHOLE (RAISE ±1.1')
- SALVAGE CONE SECTION
- INSTALL 1' SECTION
- REINSTALL SALVAGED CONE SECTION
- INSTALL NEW CASTING R1733
- RIM 910.6

376+71; 377+57; 378+96
INSULATE - 160 SF

378+93
REMOVE EXISTING CURB STOP & BOX
INSTALL 1' COPPER TO NEW R/W LINE
CONNECT TO EXISTING COPPER
1' CURB STOP & BOX
15 LF 1" TYPE 'K' COPPER (EACH)
1' COPPER TO COPPER FITTING (EACH)

379+01
REMOVE CLEAN OUT
INSTALL NEW MANHOLE
OVER EXISTING SANITARY SEWER
EXISTING INVERT 901.85
TOP 910.00

380+95
SALVAGE EXISTING HYD & GV.
REMOVE EXISTING LEAD. CONNECT TO EXISTING WM 17 LF 6"DIP.
INSTALL NEW HYD & 6" GV & BOX
TNH 913.90

381+04
ADJUST EXISTING GATE VALVE & BOX

381+04
WATERMAIN OFFSET

374+10
ADJUST EXISTING CURB STOP & BOX

376+45
- SALVAGE EXISTING HYDRANT & GATE VALVE
- REMOVE EXISTING LEAD
- CONNECT TO EXISTING WATERMAIN WITH 15 LF 6" DIP
- INSTALL NEW HYDRANT & 6' GATE VALVE & BOX
- TNH 913.10

378+02 INSULATE - 160 SF
SANITARY SERVICE
AT CURB

100 0 100
SCALE

394+93
CONNECT TO EXISTING
WATERMAIN WITH 8" GATE
VALVE & BOX

395+14
CONNECT TO EXISTING
WATERMAIN WITH 8" GATE
VALVE & BOX
- INSTALL 190 LF 8" WATERMAIN @ 1.5 FEET UNDER BOTH STORM SEWER CROSSINGS
- 2 - 45° BENDS

396+62
REMOVE EXISTING GATE
VALVE & BOX
REMOVE EXISTING 8"
WATERMAIN

100 0 100
SCALE

QUAIL CREEK DRIVE NE

ENGINEERING DEPARTMENT
9150 Central Ave., N.E. Blaine, Minnesota 55434
Phone (612) 784-6700

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DANIEL SCHLUENDER
Date 8-11-2008 Reg. No. 26771

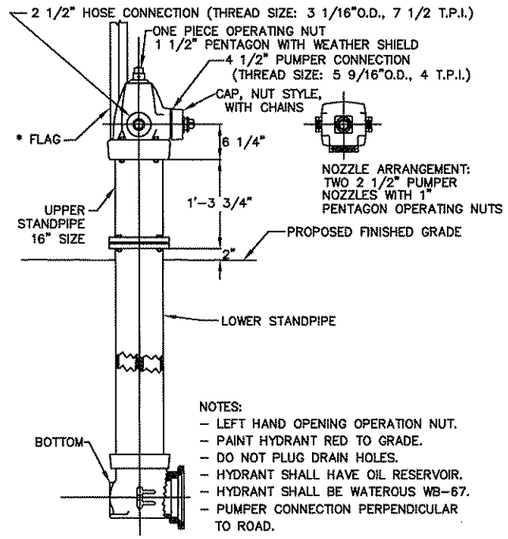
DATE	REVISION

PROJECT NO. 04-16
DESIGN BY: CAN DRAWN BY: CAN
CHECKED BY: DSS APPROVED BY: DSS
AS BUILT BY:

RADISSON ROAD
UTILITY PLAN

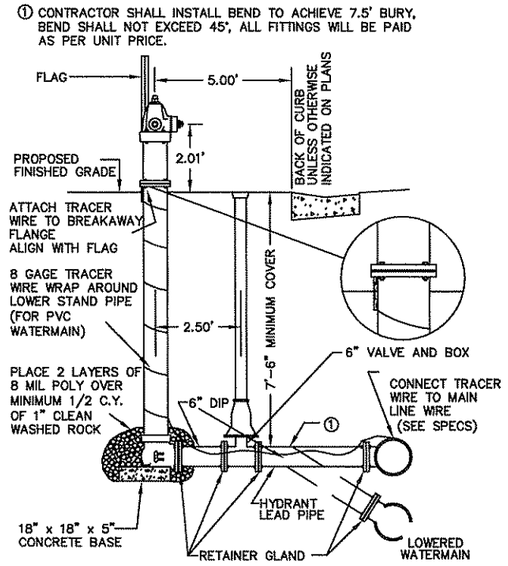
S.P. 02-652-05
S.P. 106-020-28

SHEET NO. 17.02 OF 294 SHEETS

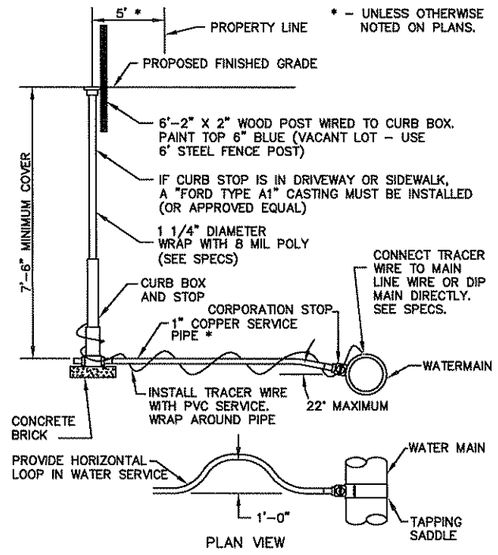


* FLAG TO BE EITHER INSTALLED OR DELIVERED AS DIRECTED IN FIELD BY THE ENGINEER.

Date: 02/21/07 TYPICAL HYDRANT Plate No. WS-1

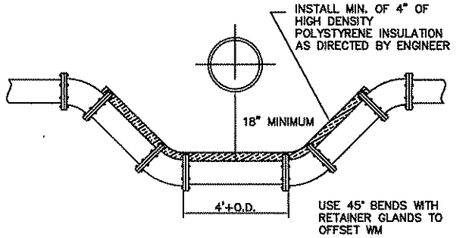


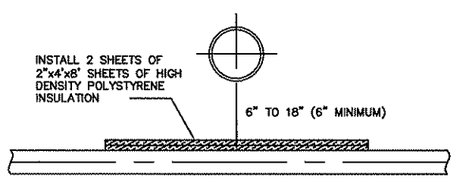
Date: 02/22/07 HYDRANT INSTALLATION Plate No. WS-2



WATER SERVICE CONNECTION

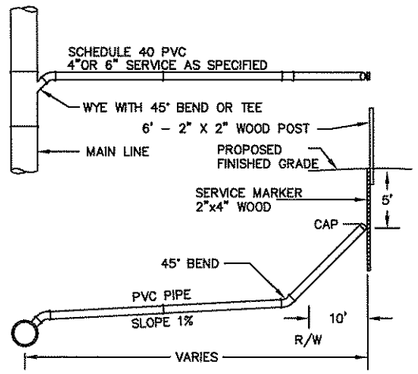
Date: 07/23/07 Plate No. WS-3





WATERMAIN OFFSET & INSULATION DETAIL

Date: 03/06/07 Plate No. WS-6



NOTE: WHEN SANITARY SERVICE IS NOT ACCOMPANIED BY A WATER SERVICE IN THE SAME TRENCH, INSTALL A 6' POST NEXT TO THE 2"x4" MARKER AND PAINT THE TOP 6" GREEN, FOR VACANT LOTS, USE 6' STEEL FENCE POST.

· UNLESS OTHERWISE INDICATED ON PLANS

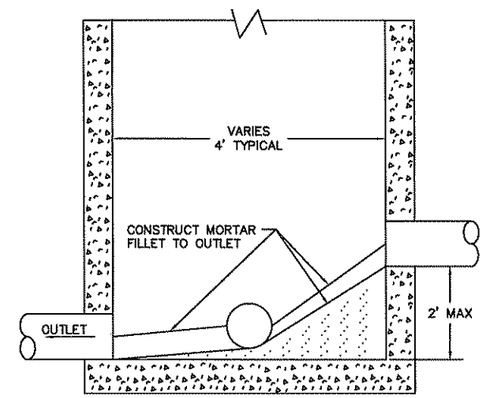
NO BEND MAY BE USED OTHER THAN THOSE SHOWN ON DETAIL

SOLVENT WELD ALL JOINTS

ON EXISTING MAINS, SEE DETAIL SSS-2

IF DISTANCE FROM MAIN TO STRUCTURE IS GREATER THAN 100', A CLEAN OUT MUST BE INSTALLED AT 100' INTERVALS, SEE DETAIL SSS-8.

Date: 02/21/07 SERVICE CONNECTION Plate No. SSS-3



TYPICAL SANITARY MANHOLE INVERT

Date: 02/21/07 Plate No. SSS-8

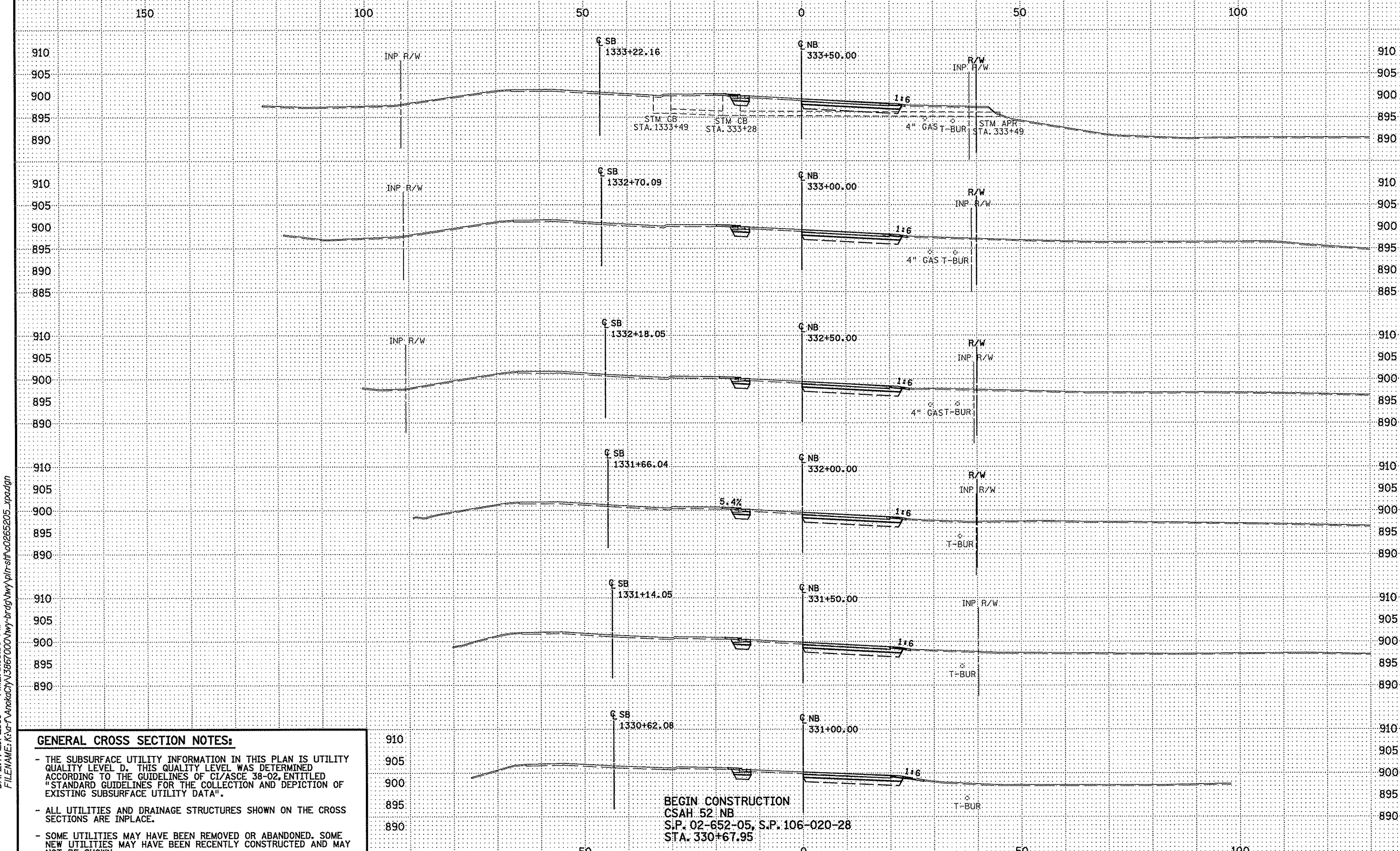
ENGINEERING DEPARTMENT
9150 Central Ave., N.E. Blaine, Minnesota 55434
Phone (612) 784-6700

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly registered professional engineer under the laws of the State of Minnesota.
DANIEL SCHLUENDER
Date 8-11-2008 Reg. No. 26771

DATE	REVISION

PROJECT NO.	04-16
DESIGN BY: CAN	DRAWN BY: CAN
CHECKED BY: DSS	APPROVED BY: DSS
AS BUILT BY:	

RADISSION ROAD
UTILITY PLAN
S.P. 02-652-05
S.P. 106-020-28
SHEET NO. 17.03 OF 294 SHEETS



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GENERAL CROSS SECTION NOTES:

- THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS UTILITY QUALITY LEVEL D. THIS QUALITY LEVEL WAS DETERMINED ACCORDING TO THE GUIDELINES OF CI/ASCE 38-02, ENTITLED "STANDARD GUIDELINES FOR THE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA".
- ALL UTILITIES AND DRAINAGE STRUCTURES SHOWN ON THE CROSS SECTIONS ARE INPLACE.
- SOME UTILITIES MAY HAVE BEEN REMOVED OR ABANDONED. SOME NEW UTILITIES MAY HAVE BEEN RECENTLY CONSTRUCTED AND MAY NOT BE SHOWN.
- SPECIAL DITCH GRADES ARE IDENTIFIED ON THE CROSS SECTIONS AND PROFILES. DITCH GRADE ELEVATIONS ARE TO BOTTOM OF TOPSOIL.

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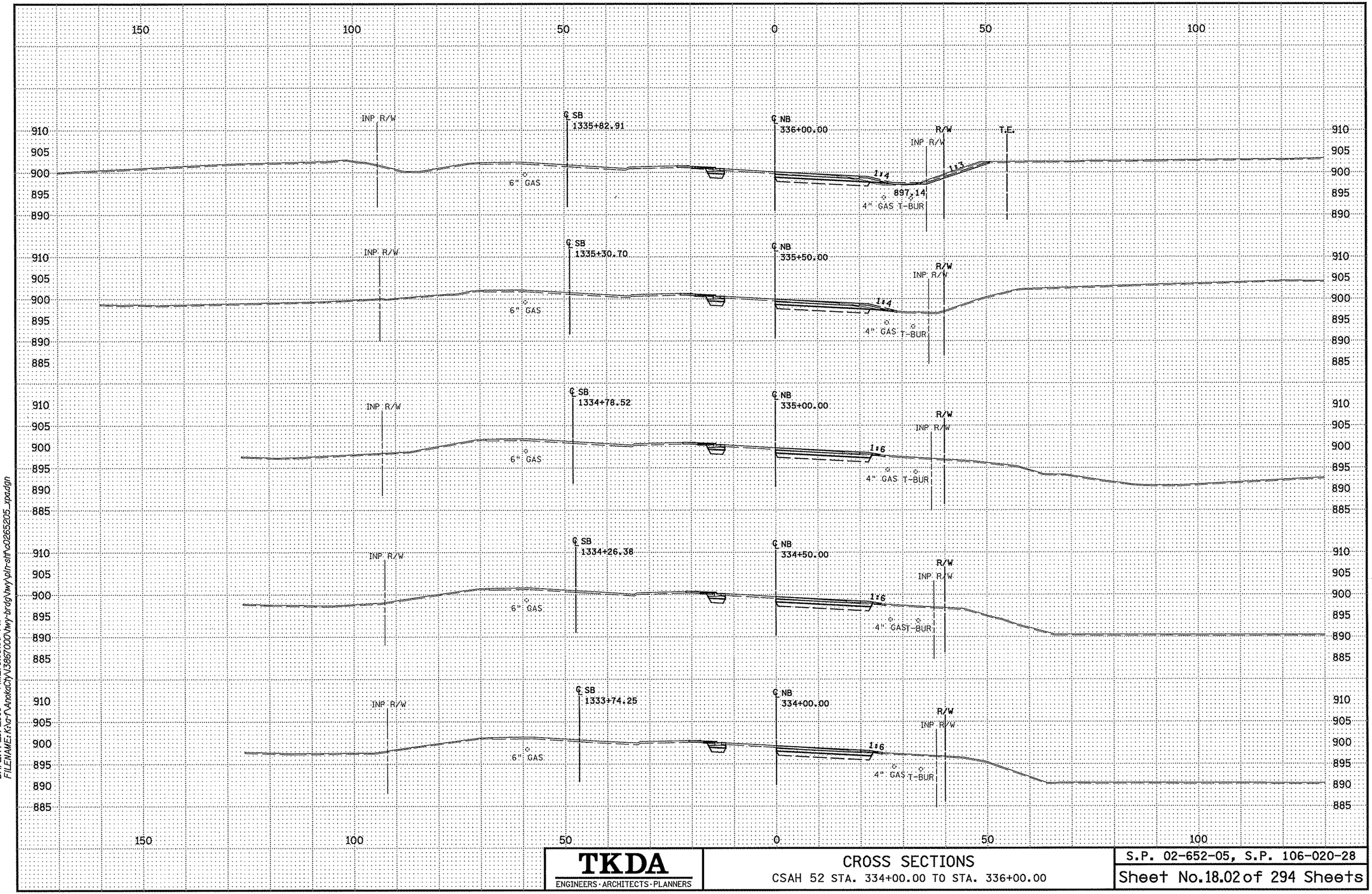
CROSS SECTIONS
CSAH 52 STA. 331+00.00 TO STA. 333+50.00

S.P. 02-652-05, S.P. 106-020-28



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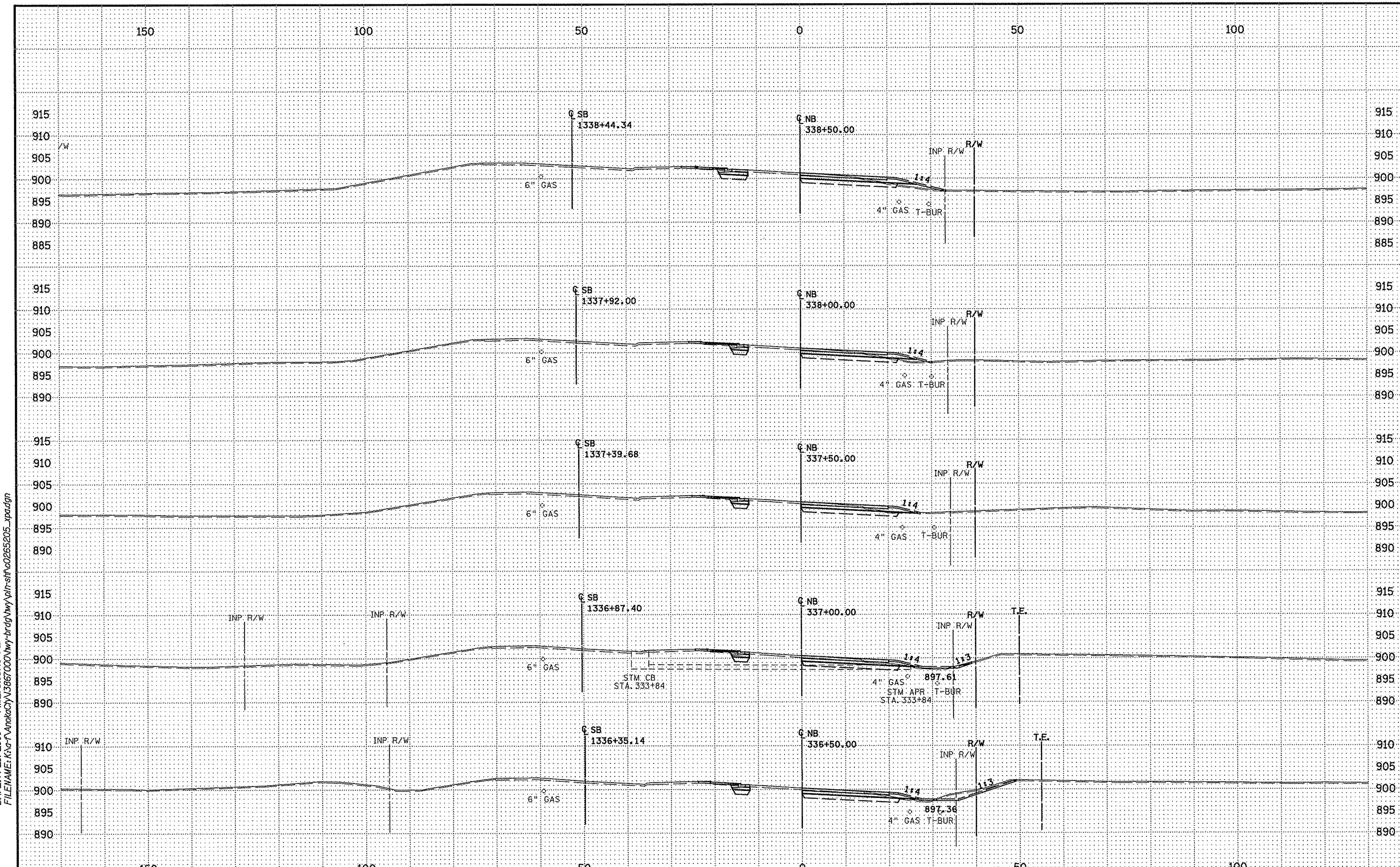
CROSS SECTIONS

CSAH 52 STA. 334+00.00 TO STA. 336+00.00

S.P. 02-652-05, S.P. 106-020-28

Sheet No.18.02 of 294 Sheets



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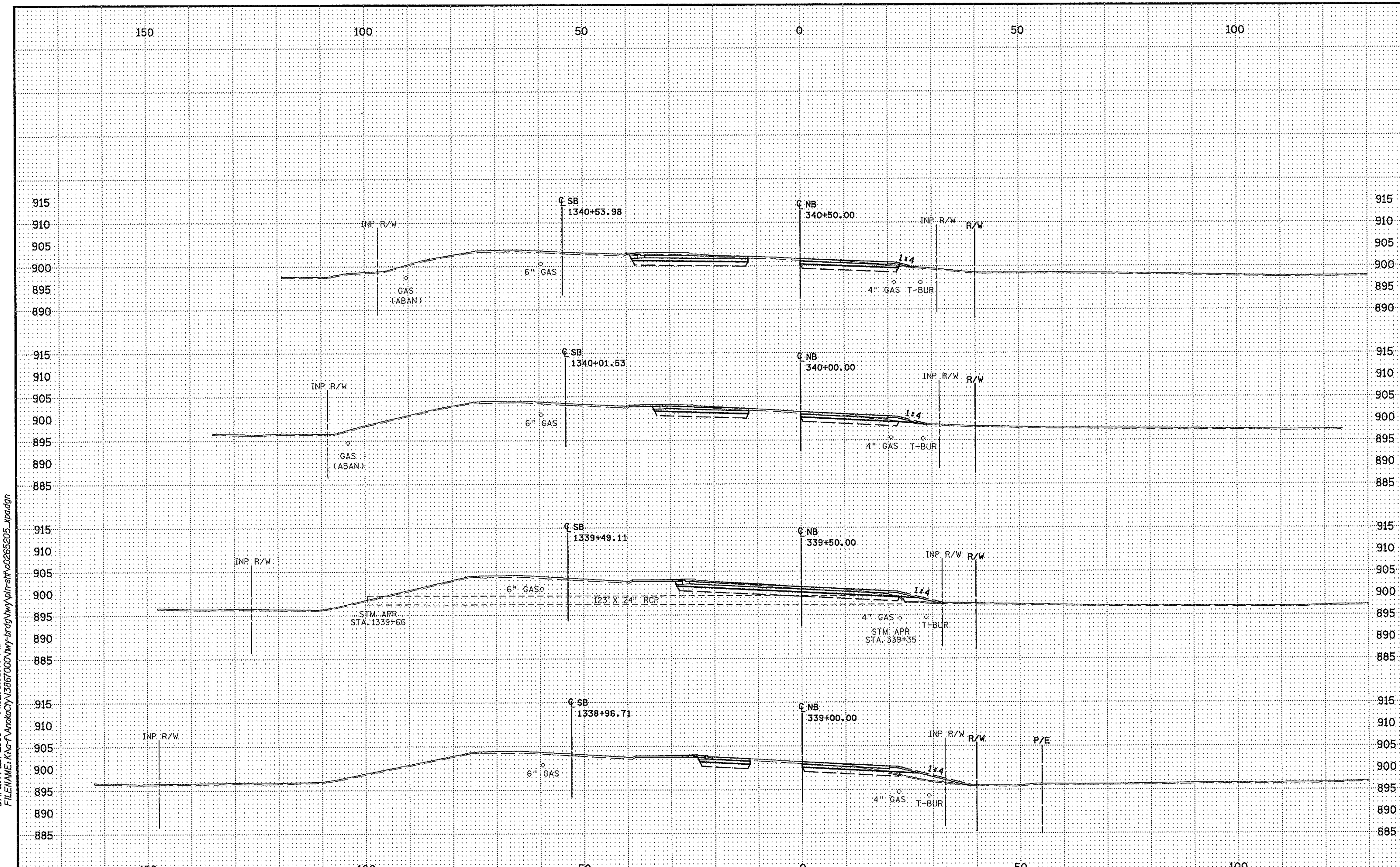
CROSS SECTIONS
CSAH 52 STA. 336+50.00 TO STA. 338+50.00

S.P. 02-652-05, S.P. 106-020-28

Sheet No.18.03 of 294 Sheets



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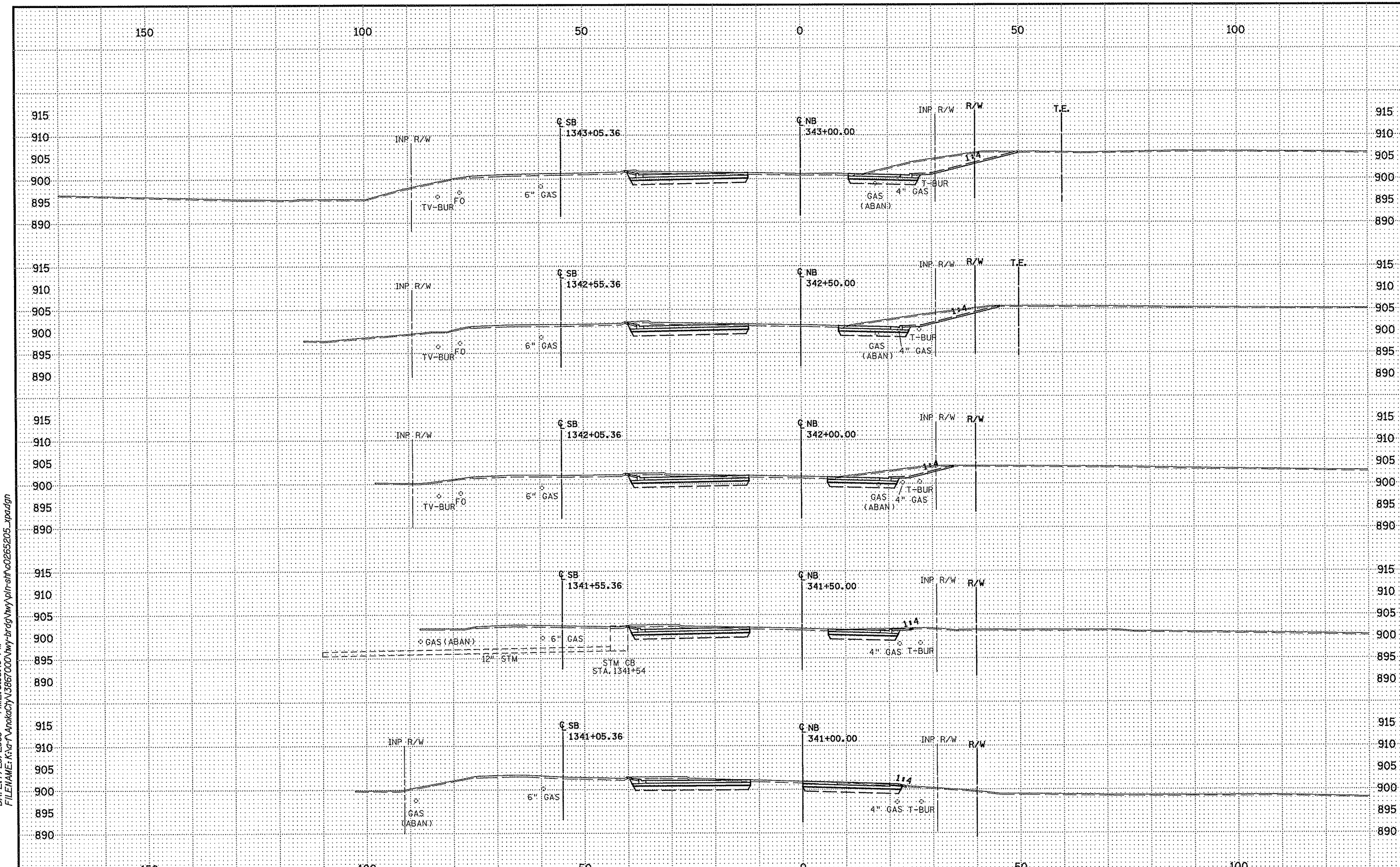
CROSS SECTIONS
CSAH 52 STA. 339+00.00 TO STA. 340+50.00

S.P. 02-652-05, S.P. 106-020-28

Sheet No. 18.04 of 294 Sheets



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CROSS SECTIONS

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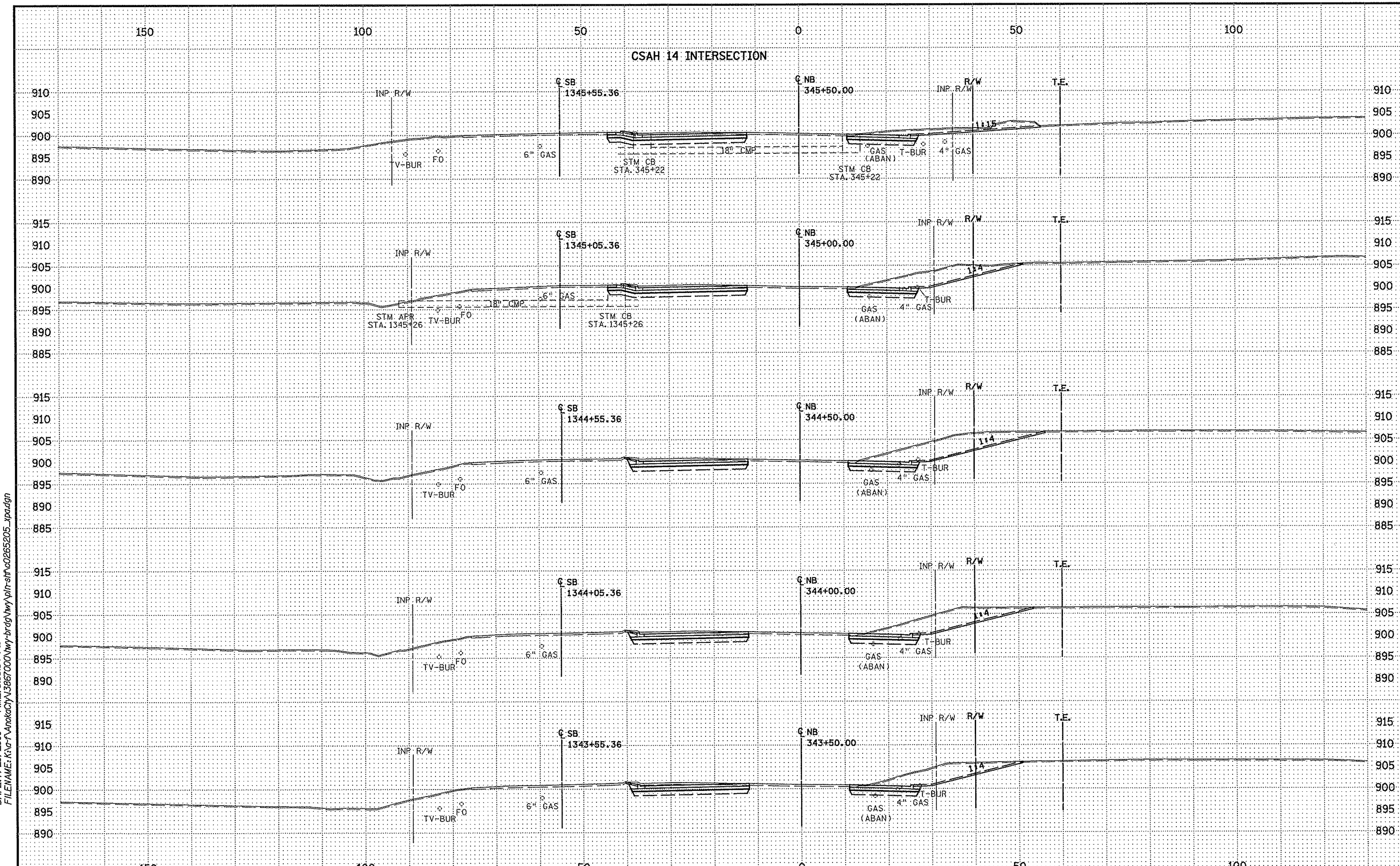
S.P. 02-652-05, S.P. 106-020-28

Sheet No. 18.05 of 294 Sheets



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CROSS SECTIONS

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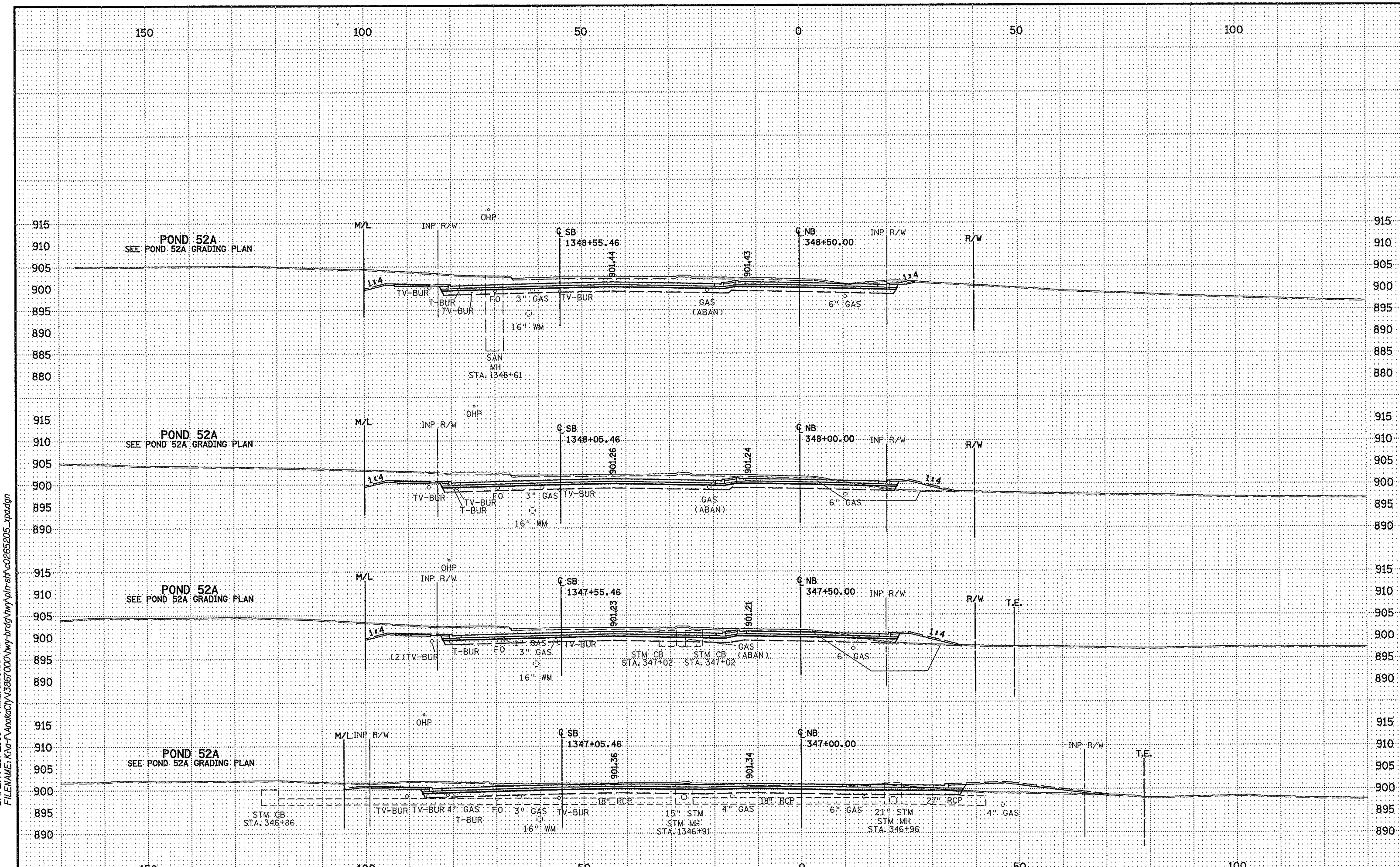
S.P. 02-652-05, S.P. 106-020-28

Sheet No. 18.06 of 294 Sheets



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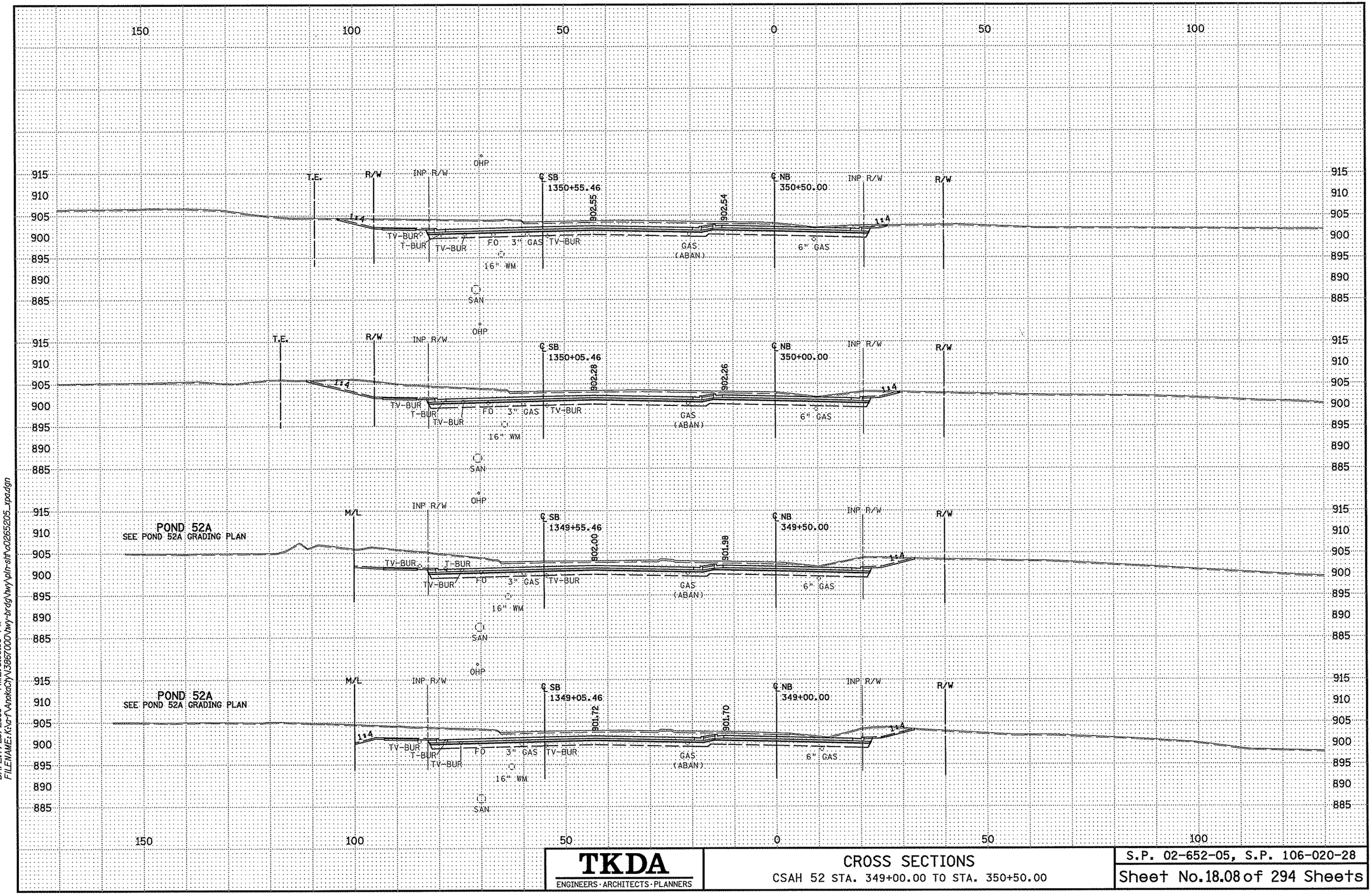
CROSS SECTIONS
CSAH 52 STA. 347+00.00 TO STA. 348+50.00

S.P. 02-652-05, S.P. 106-020-28

Sheet No. 18.07 of 294 Sheets



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CROSS SECTIONS
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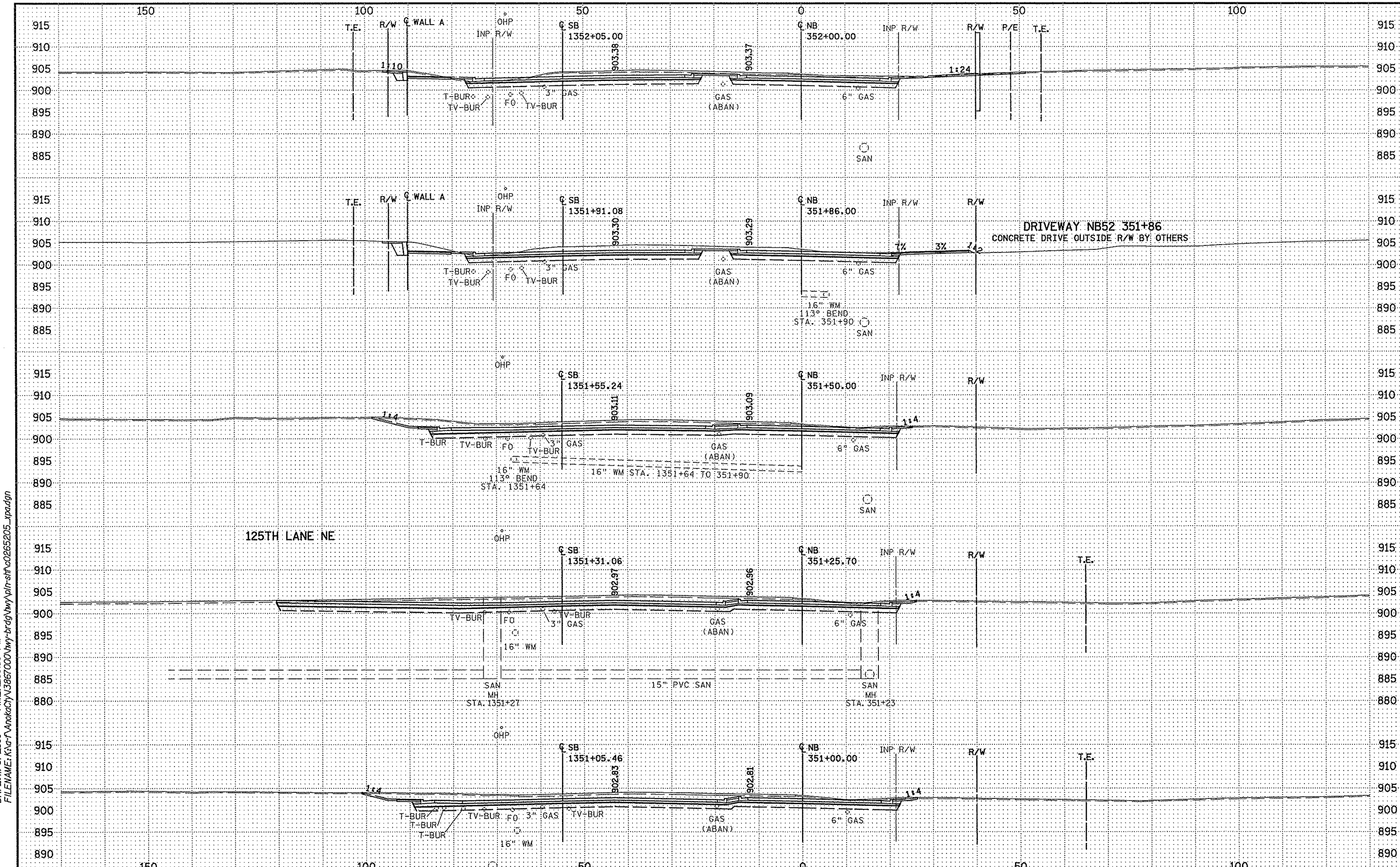
S.P. 02-652-05, S.P. 106-020-28
Sheet No.18.08 of 294 Sheets



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CROSS SECTIONS
CSAH 52 STA. 351+00.00 TO STA. 352+00.00

S.P. 02-652-05, S.P. 106-020-28

Sheet No. 18.09 of 294 Sheets

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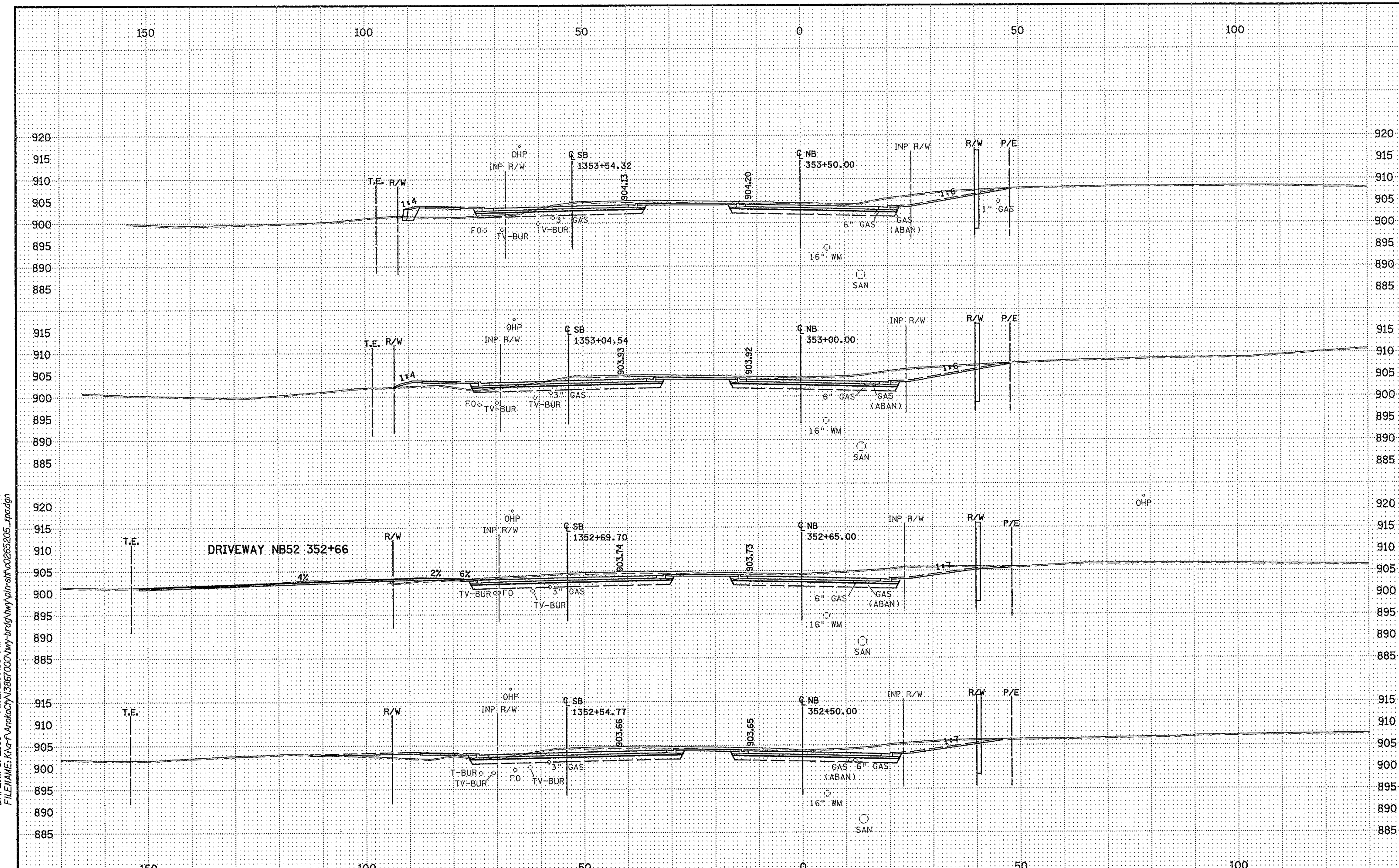

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CROSS SECTIONS

CSAH 52 STA. 352+50.00 TO STA. 353+50.00

S.P. 02-652-05, S.P. 106-020-28

Sheet No. 18.10 of 294 Sheets

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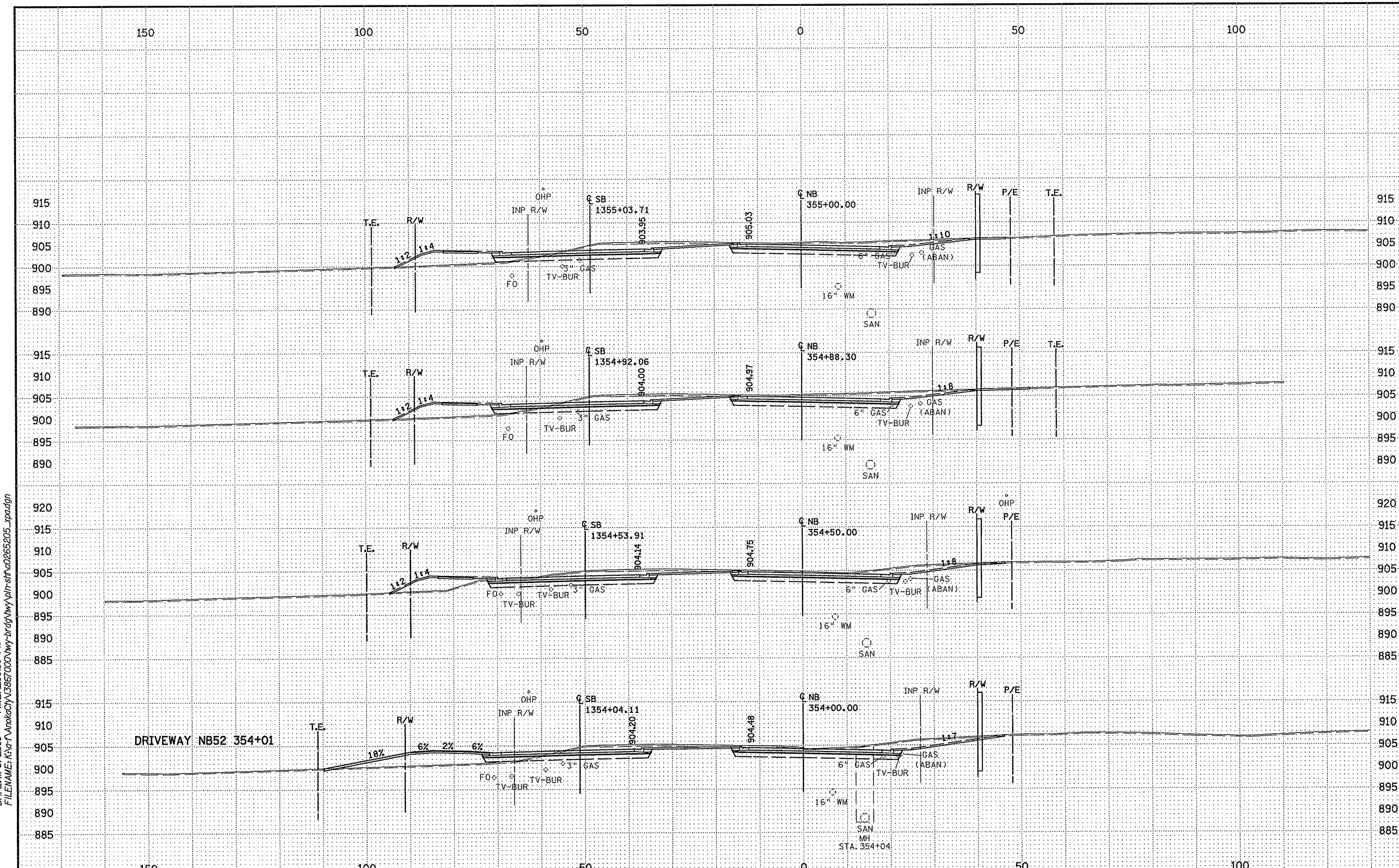

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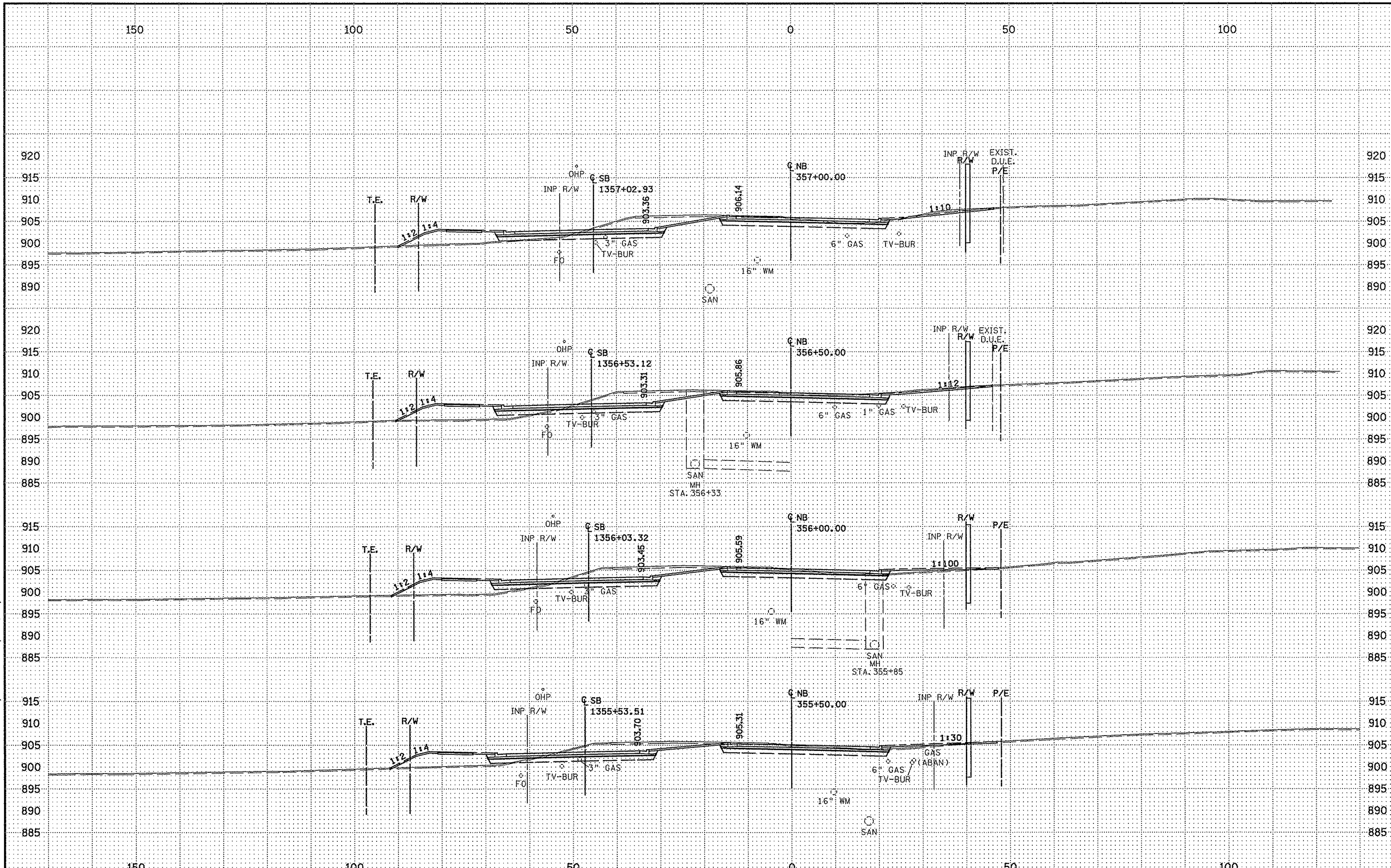
CROSS SECTIONS
CSAH 52 STA. 354+00.00 TO STA. 355+00.00

S.P. 02-652-05, S.P. 106-020-28
Sheet No. 18.11 of 294 Sheets



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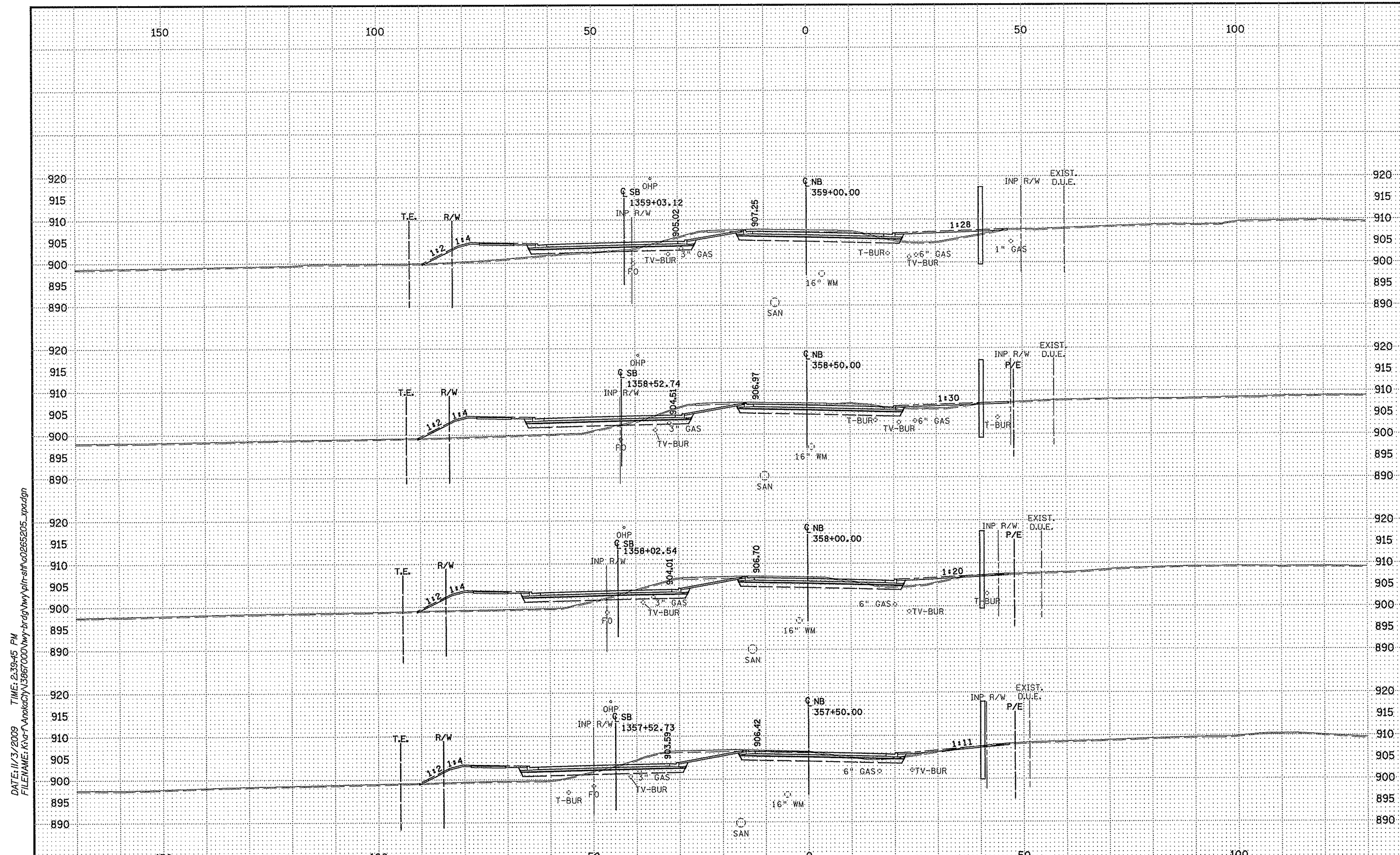
CROSS SECTIONS
CSAH 52 STA. 355+50.00 TO STA. 357+00.00

S.P. 02-652-05, S.P. 106-020-28

Sheet No. 18.12 of 294 Sheets



TKDA
ENGINEERS · ARCHITECTS · PLANNERS

CROSS SECTIONS
CSAH 52 STA. 357+50.00 TO STA. 359+00.00

S.P. 02-652-05, S.P. 106-020-28

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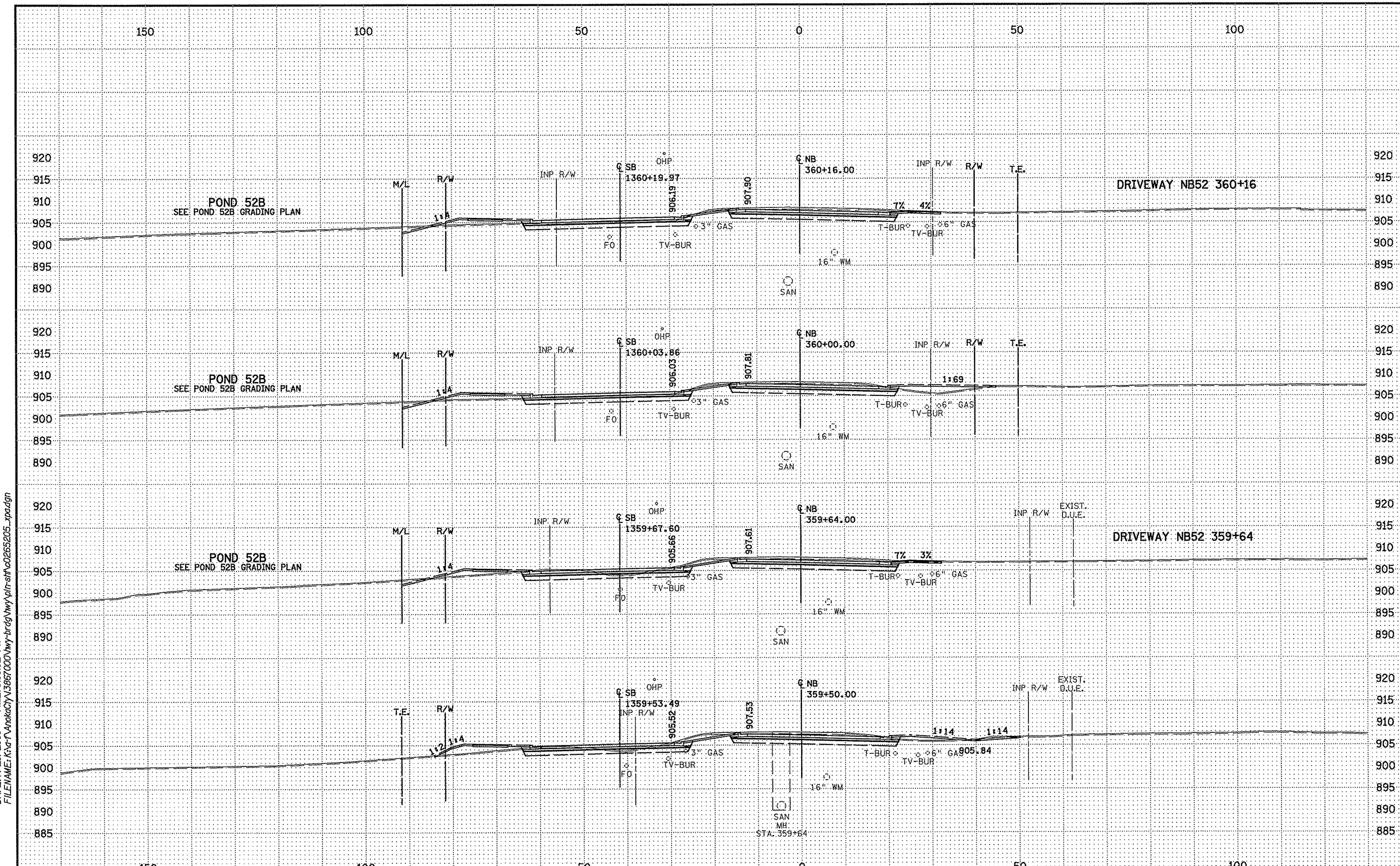
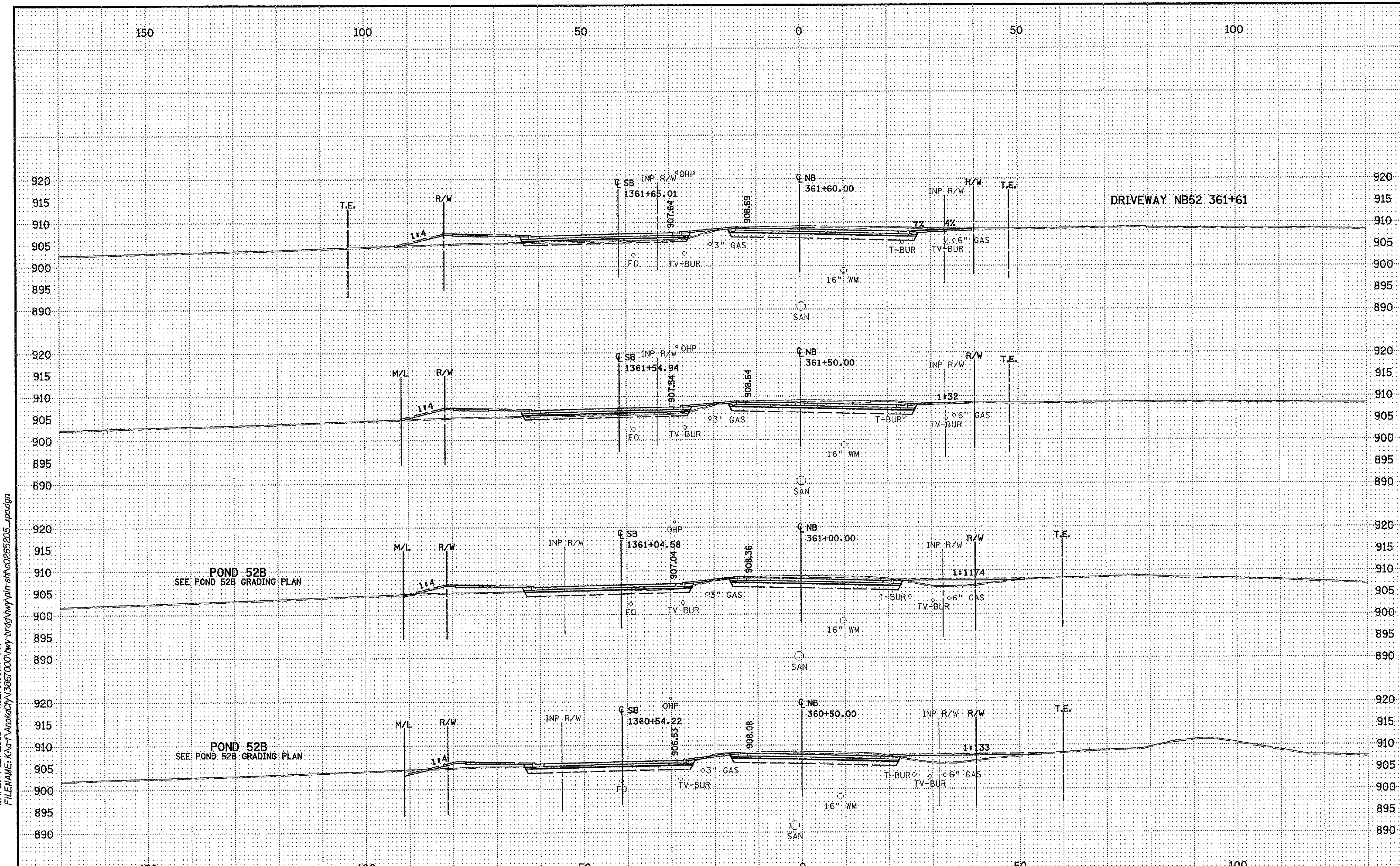


TKDA
ENGINEERS · ARCHITECTS · PLANNERS

CROSS SECTIONS
CSAH 52 STA. 359+50.00 TO STA. 360+16.00

S.P. 02-652-05, S.P. 106-020-28

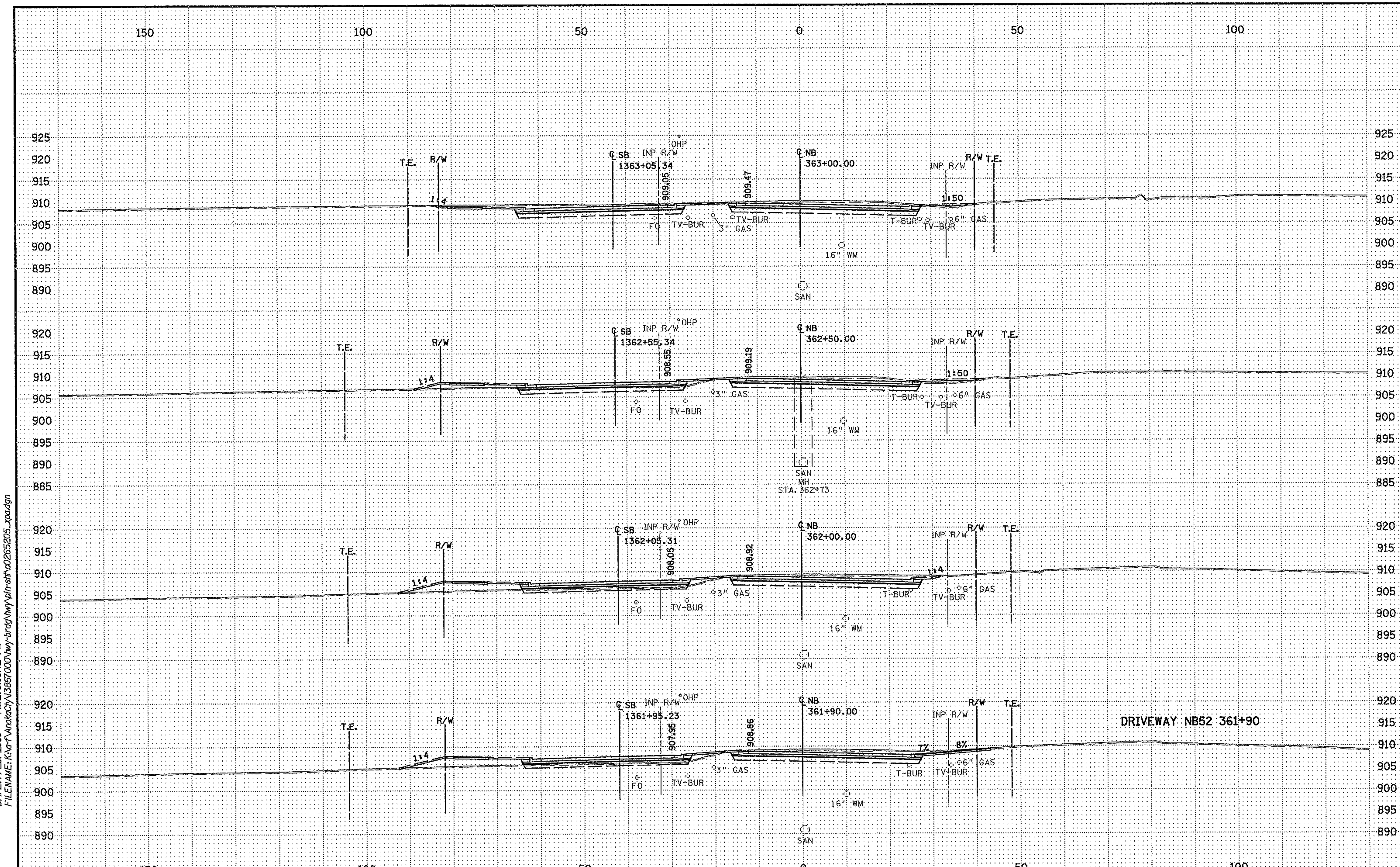
Sheet No. 18.14 of 294 Sheets



TKDA
ENGINEERS · ARCHITECTS · PLANNERS

CROSS SECTIONS
CSAH 52 STA. 360+50.00 TO STA. 361+60.00

S.P. 02-652-05, S.P. 106-020-28



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TKDA
ENGINEERS · ARCHITECTS · PLANNERS

CROSS SECTIONS
CSAH 52 STA. 361+90.00 TO STA. 363+00.00

S.P. 02-652-05, S.P. 106-020-28

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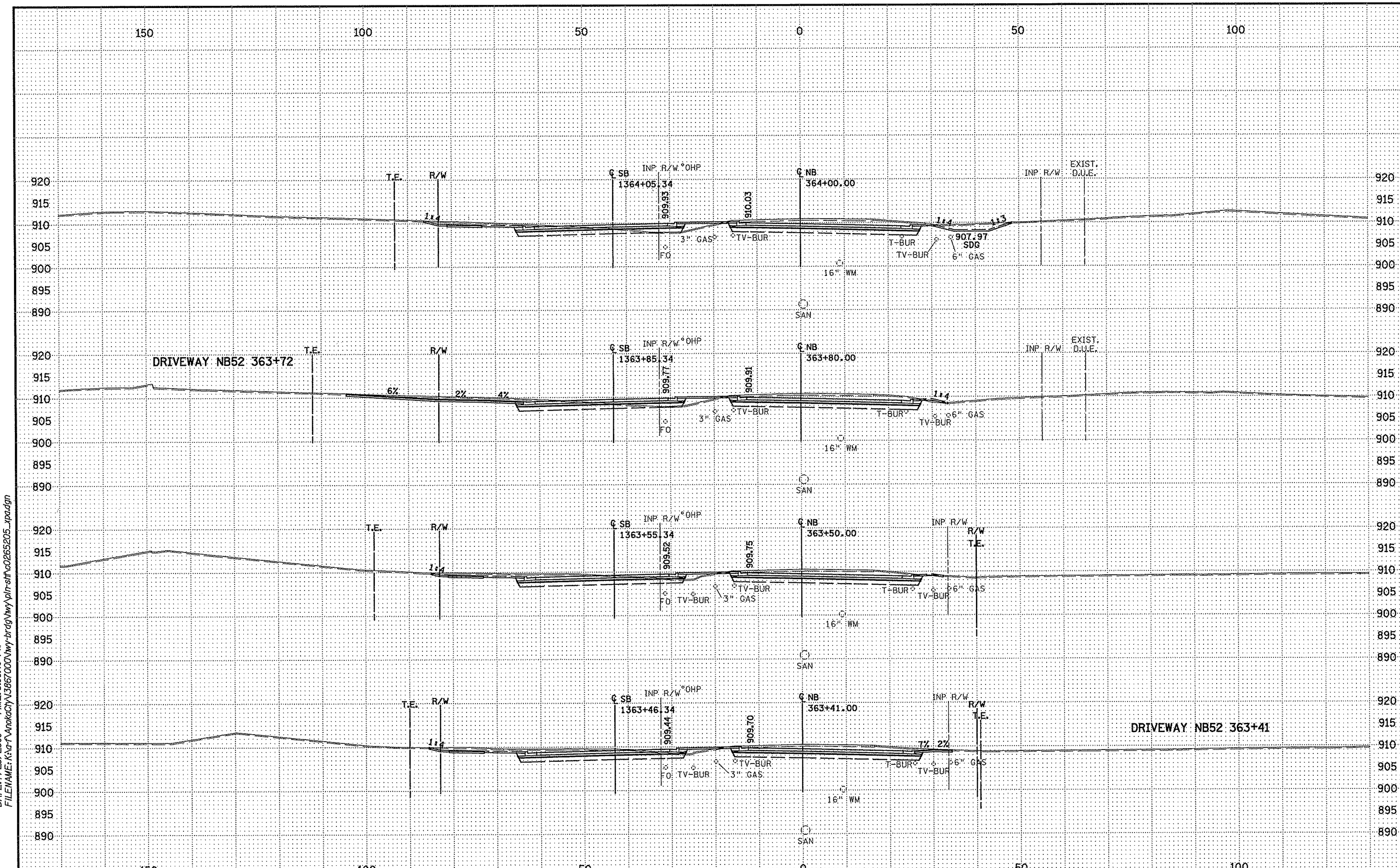

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CROSS SECTIONS
CSAH 52 STA. 363+41.00 TO STA. 364+00.00

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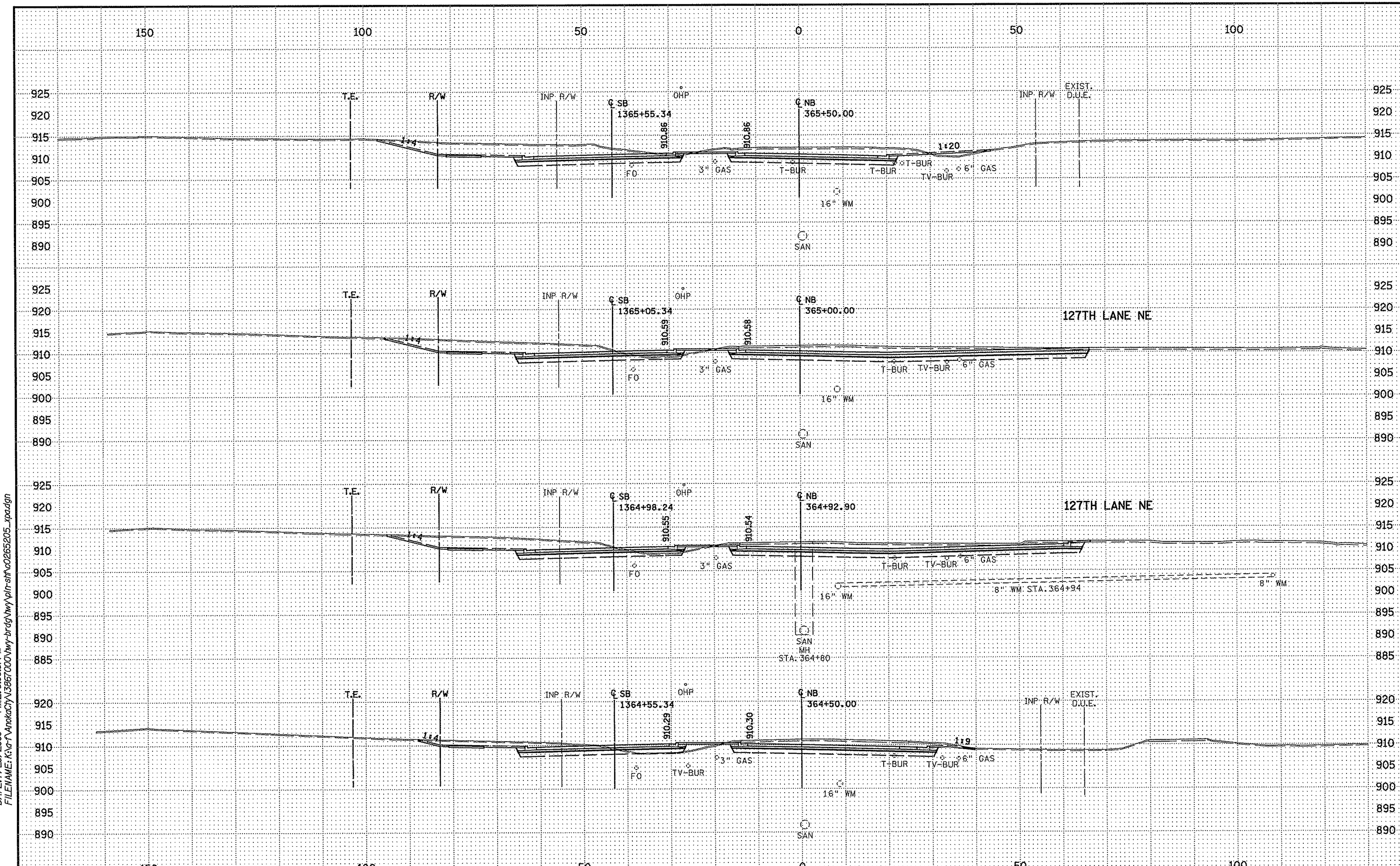

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CROSS SECTIONS
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S.P. 02-652-05, S.P. 106-020-28

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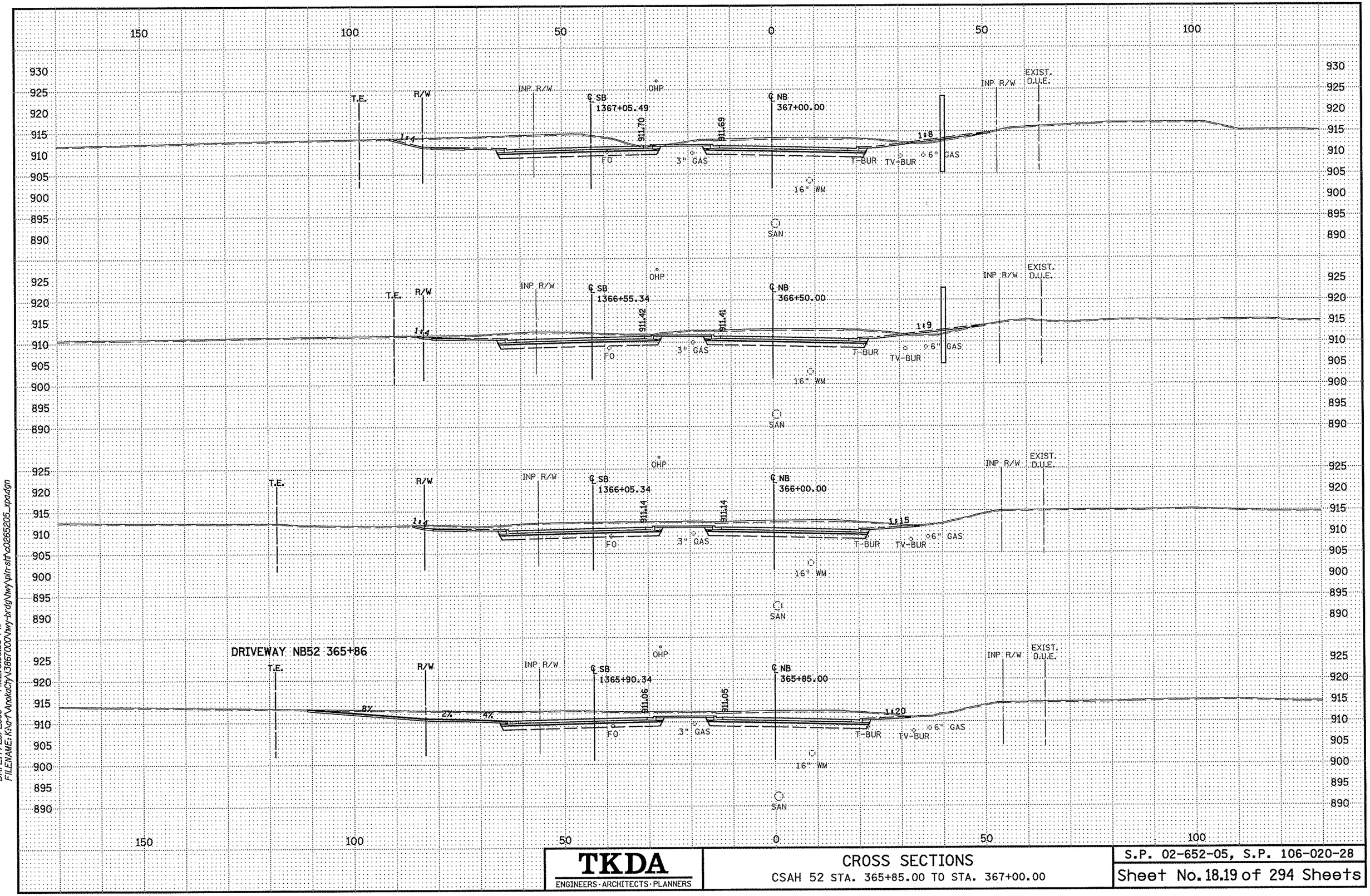

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CROSS SECTIONS

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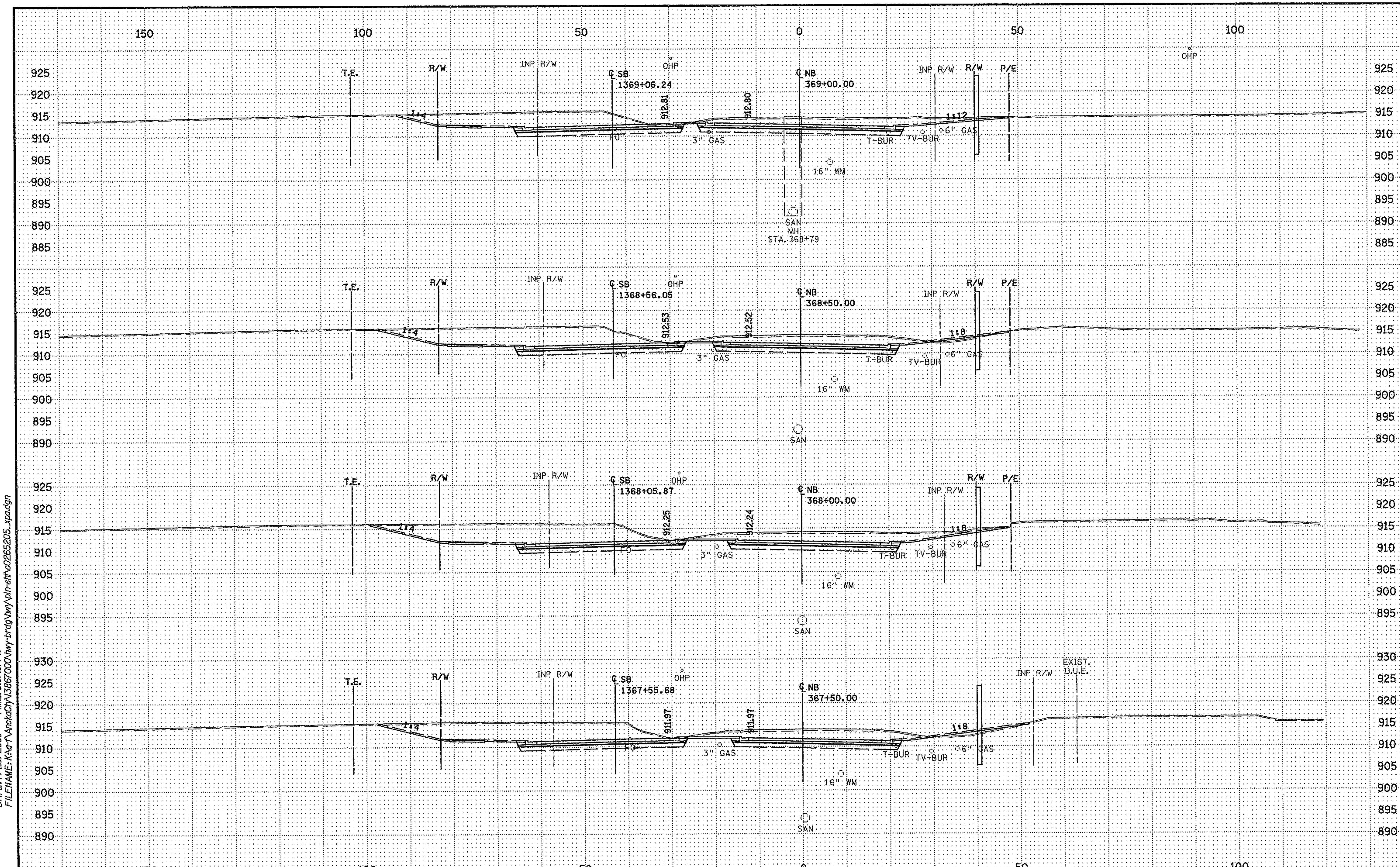
S.P. 02-652-05, S.P. 106-020-28



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CROSS SECTIONS
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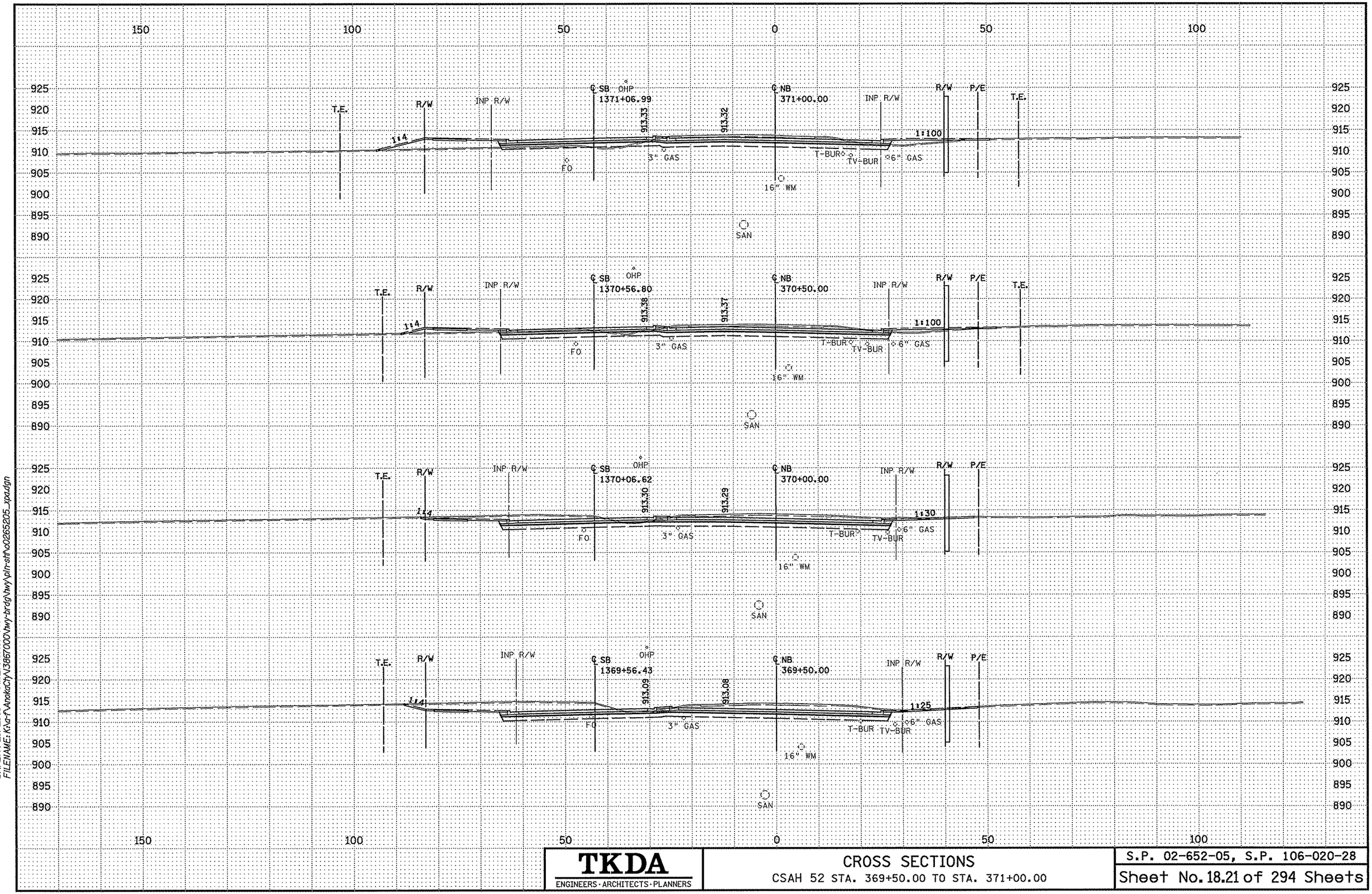

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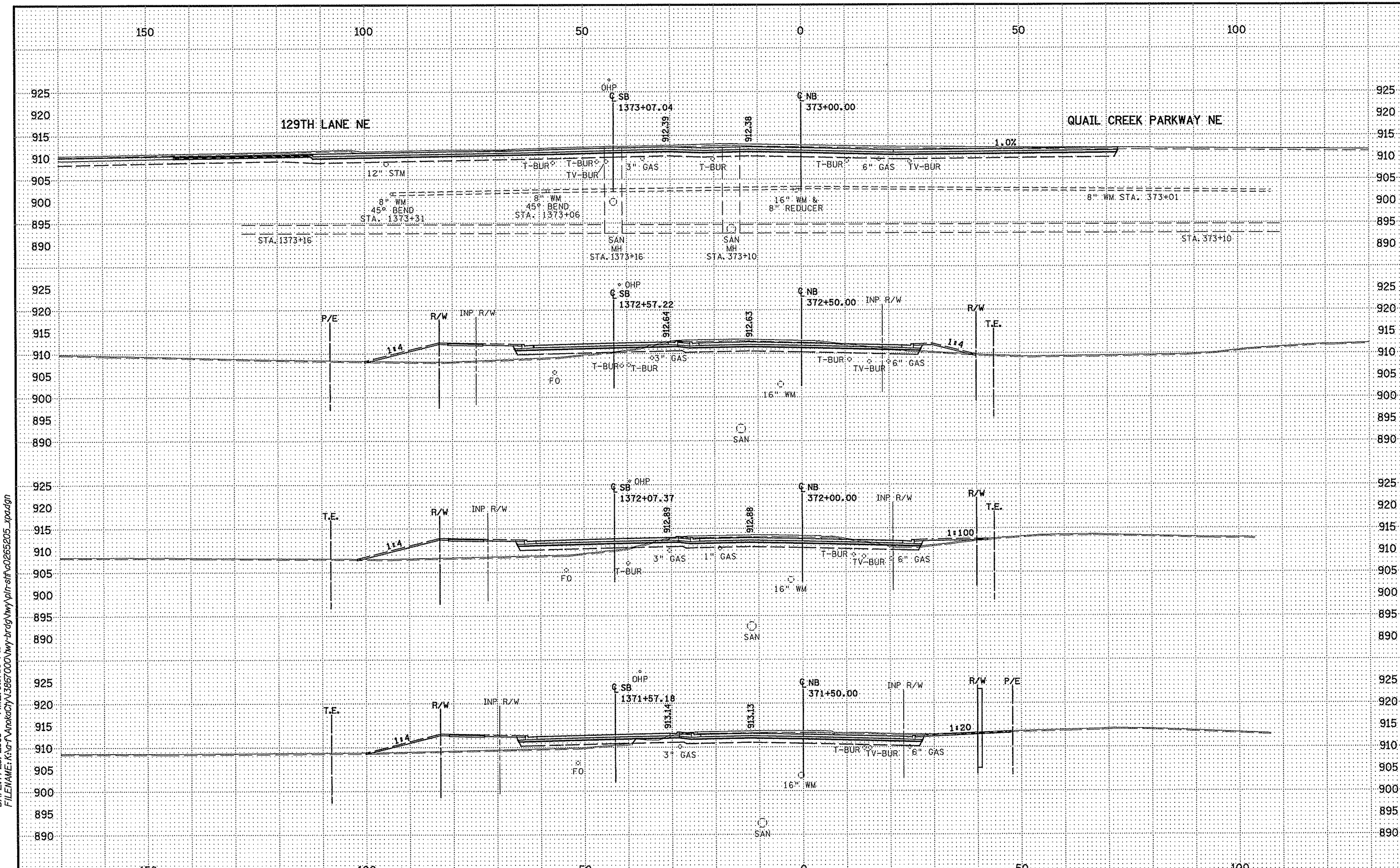
TKDA ENGINEERS · ARCHITECTS · PLANNERS	CROSS SECTIONS CSAH 52 STA. 369+50.00 TO STA. 371+00.00	S.P. 02-652-05, S.P. 106-020-28 Sheet No. 18.21 of 294 Sheets



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CROSS SECTIONS
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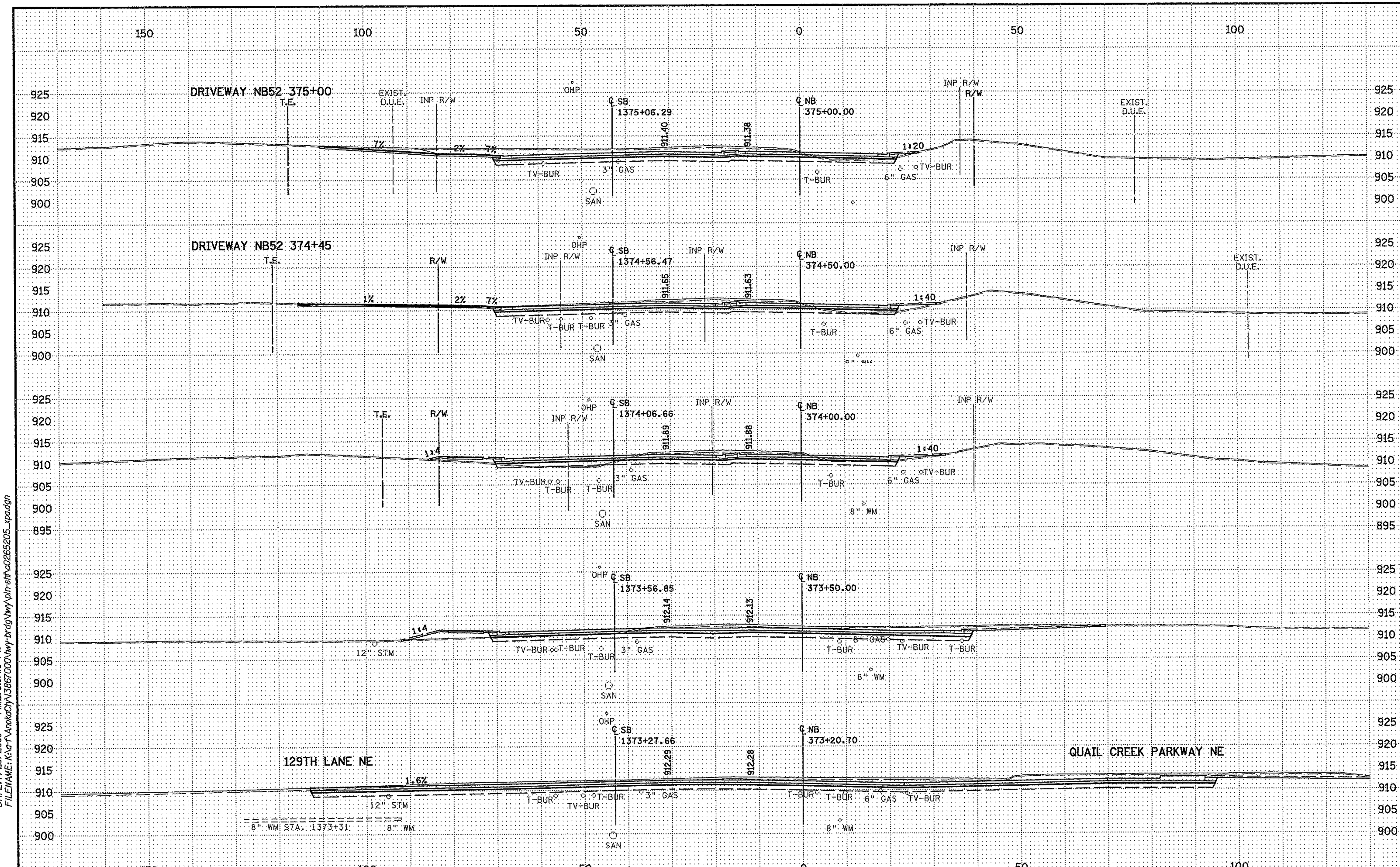

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CROSS SECTIONS
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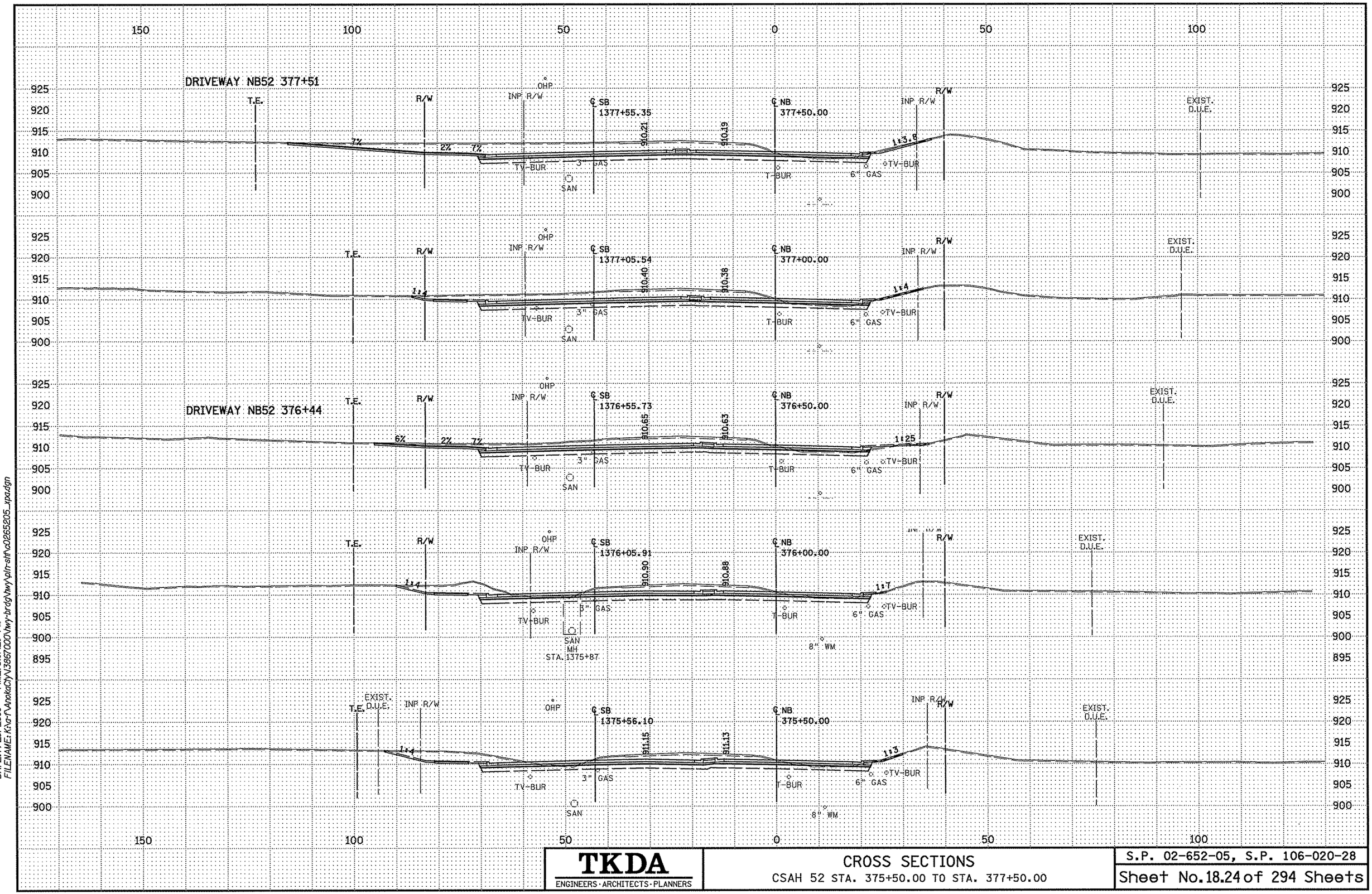

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CROSS SECTIONS
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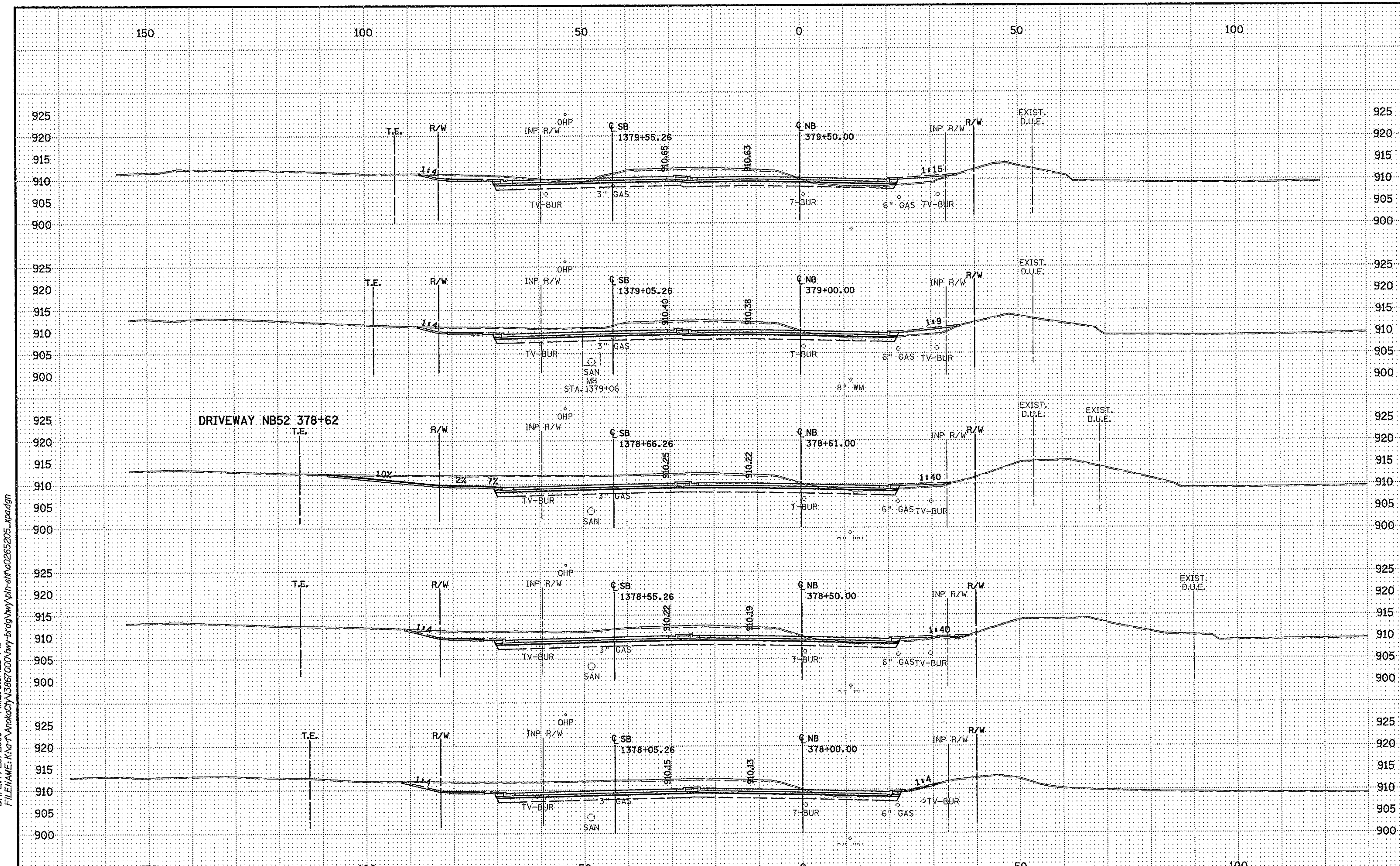
S.P. 02-652-05, S.P. 106-020-28



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CROSS SECTIONS
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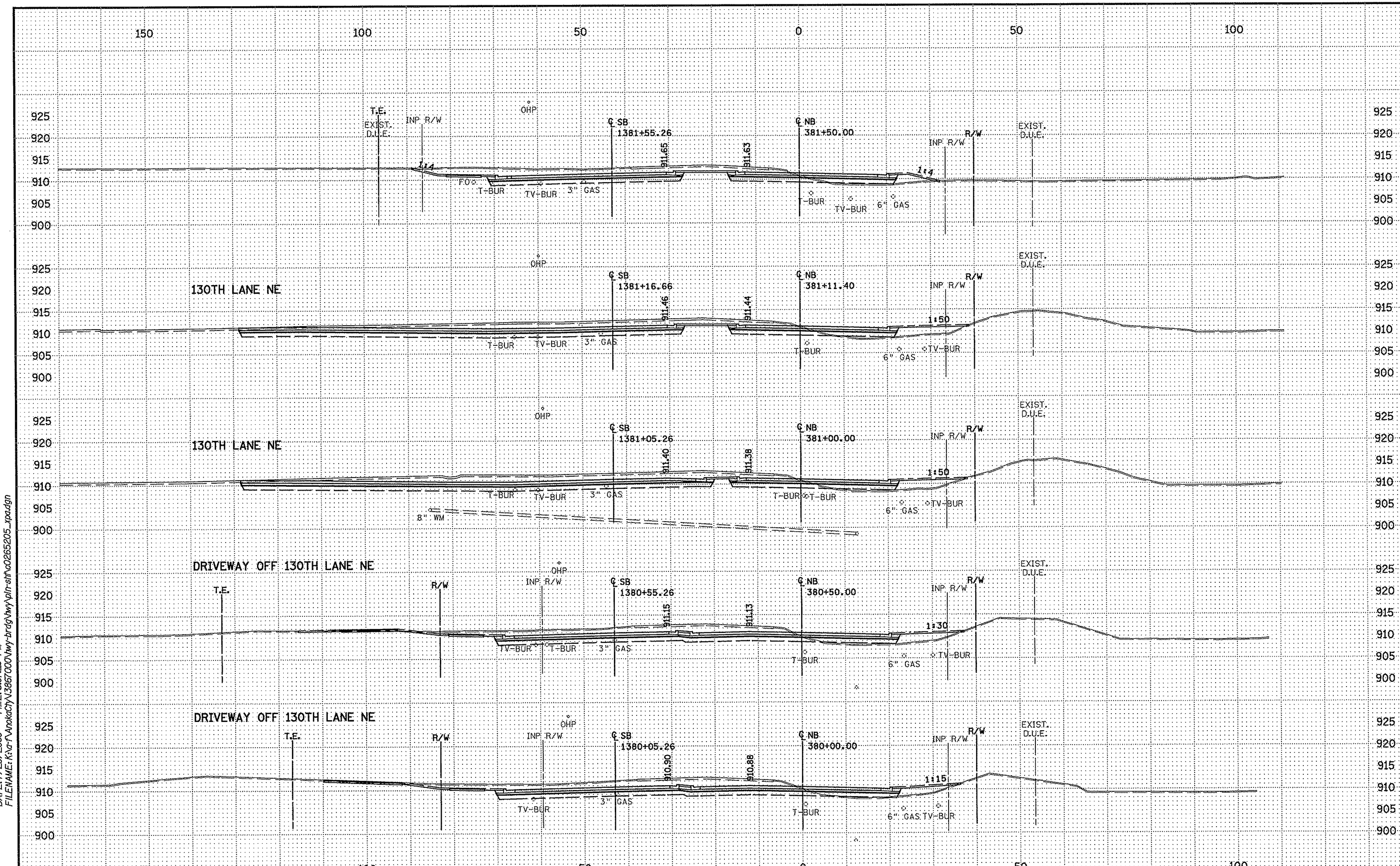

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CROSS SECTIONS
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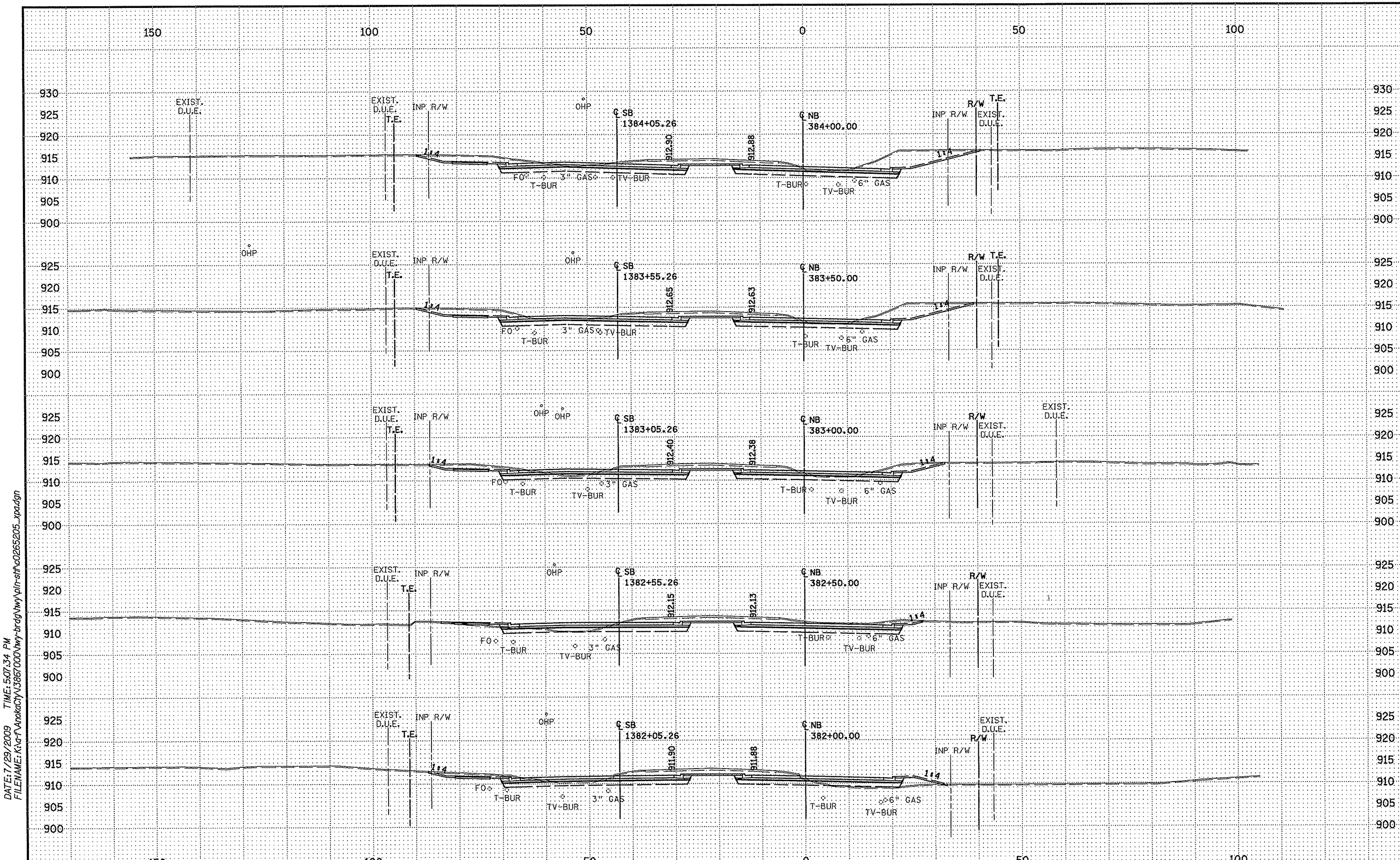

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CROSS SECTIONS
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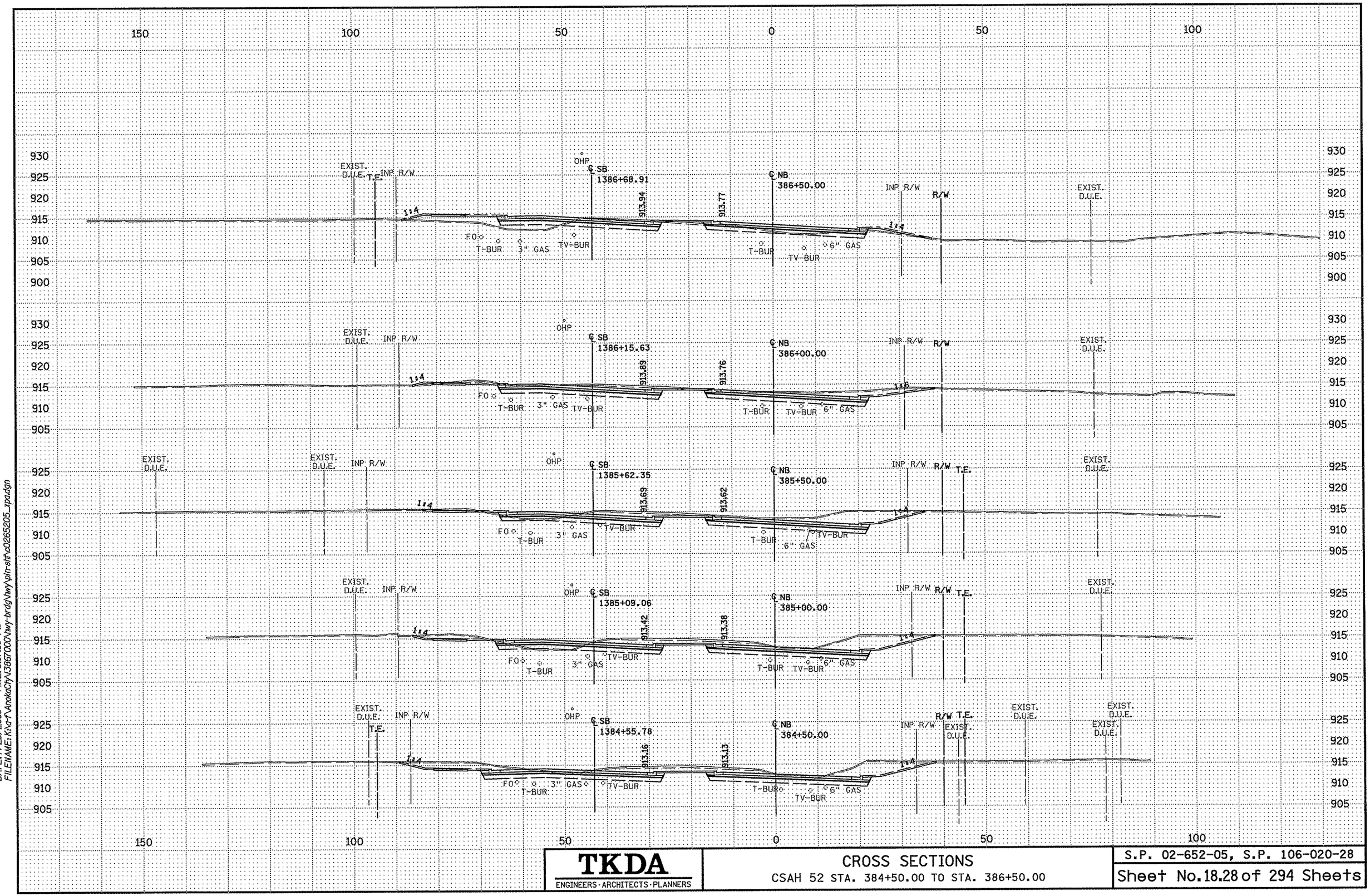
S.P. 02-652-05, S.P. 106-020-28



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CROSS SECTIONS

CSAH 52 STA. 384+50.00 TO STA. 386+50.00

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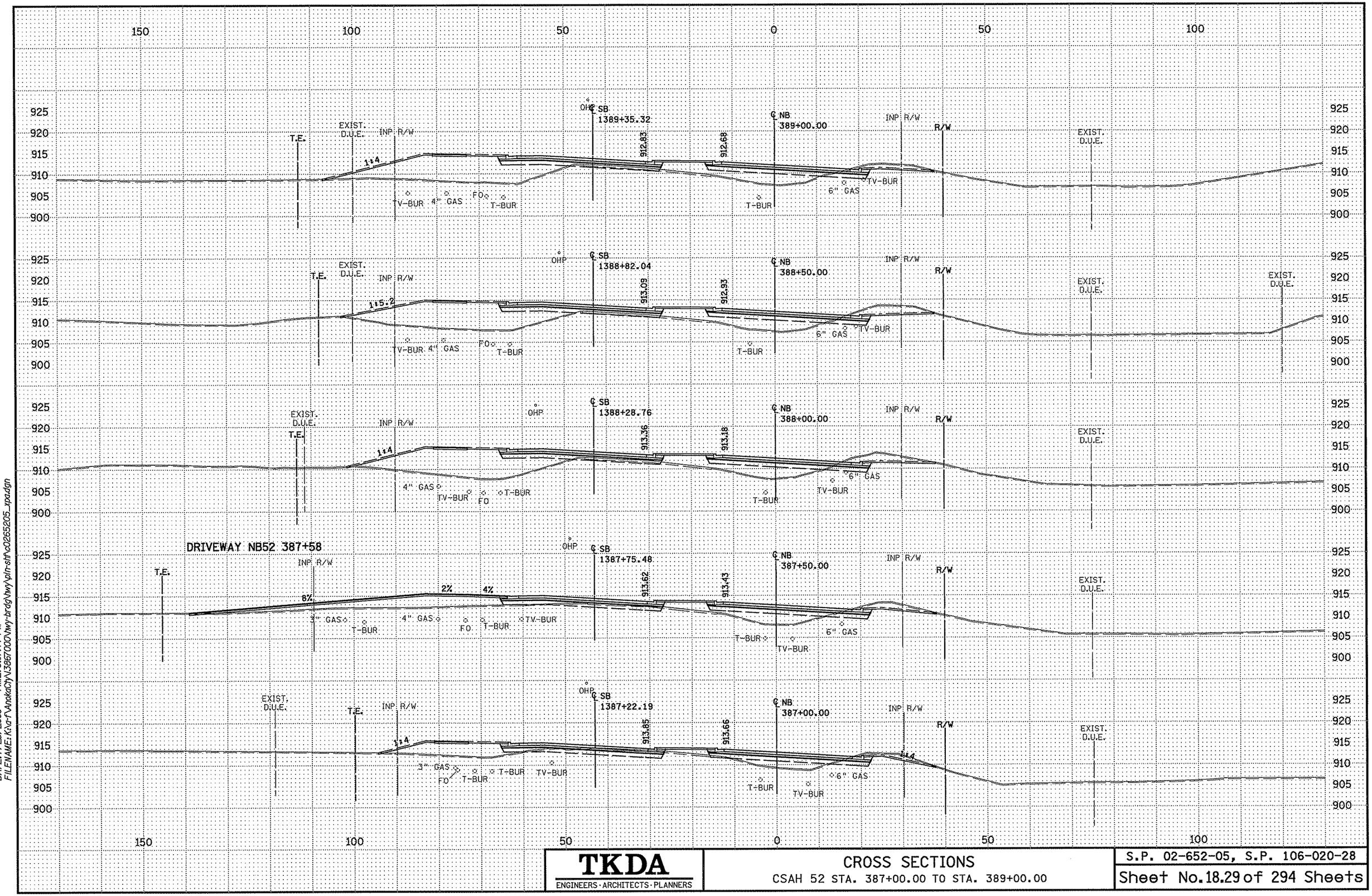

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CROSS SECTIONS

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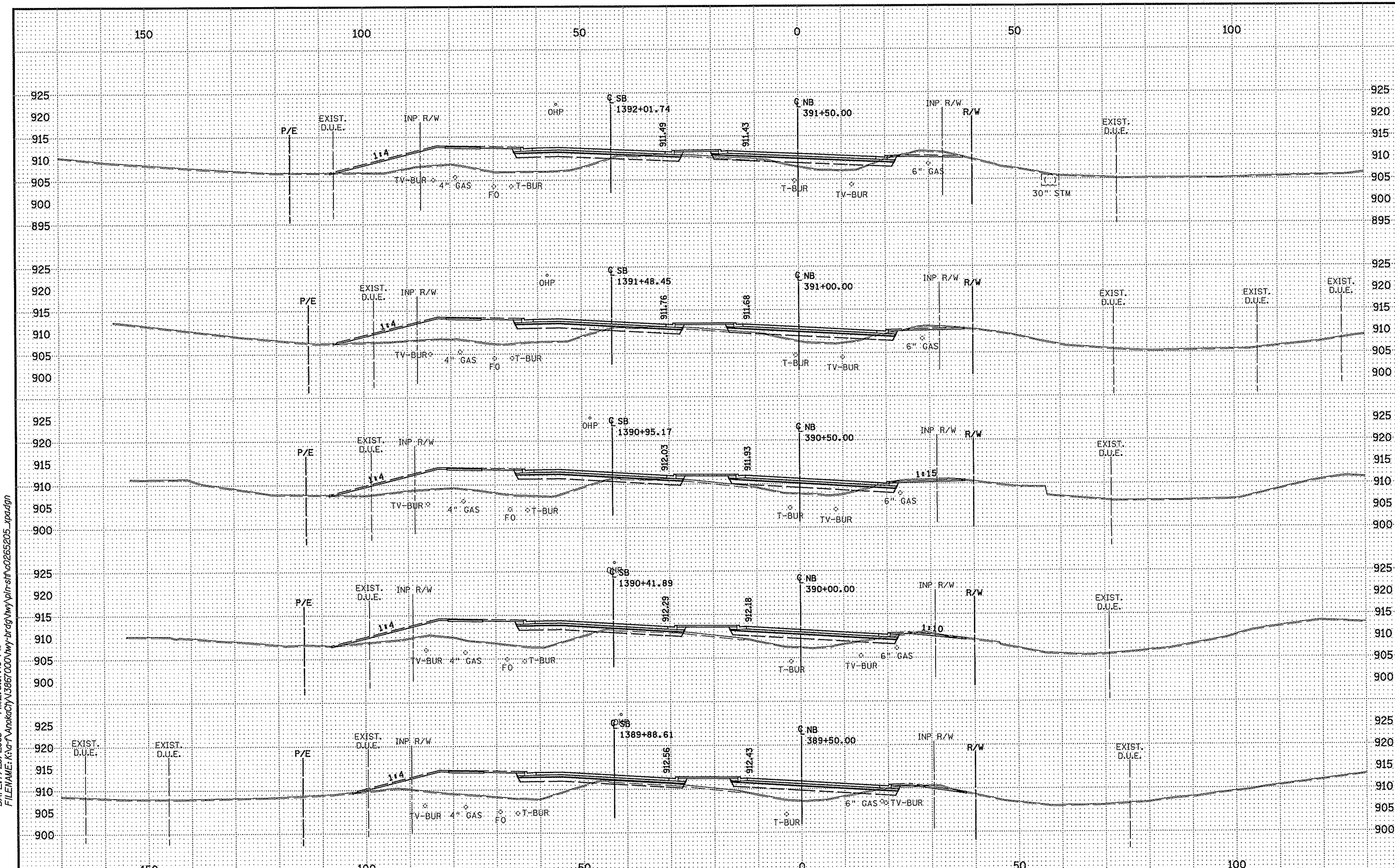

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CROSS SECTIONS
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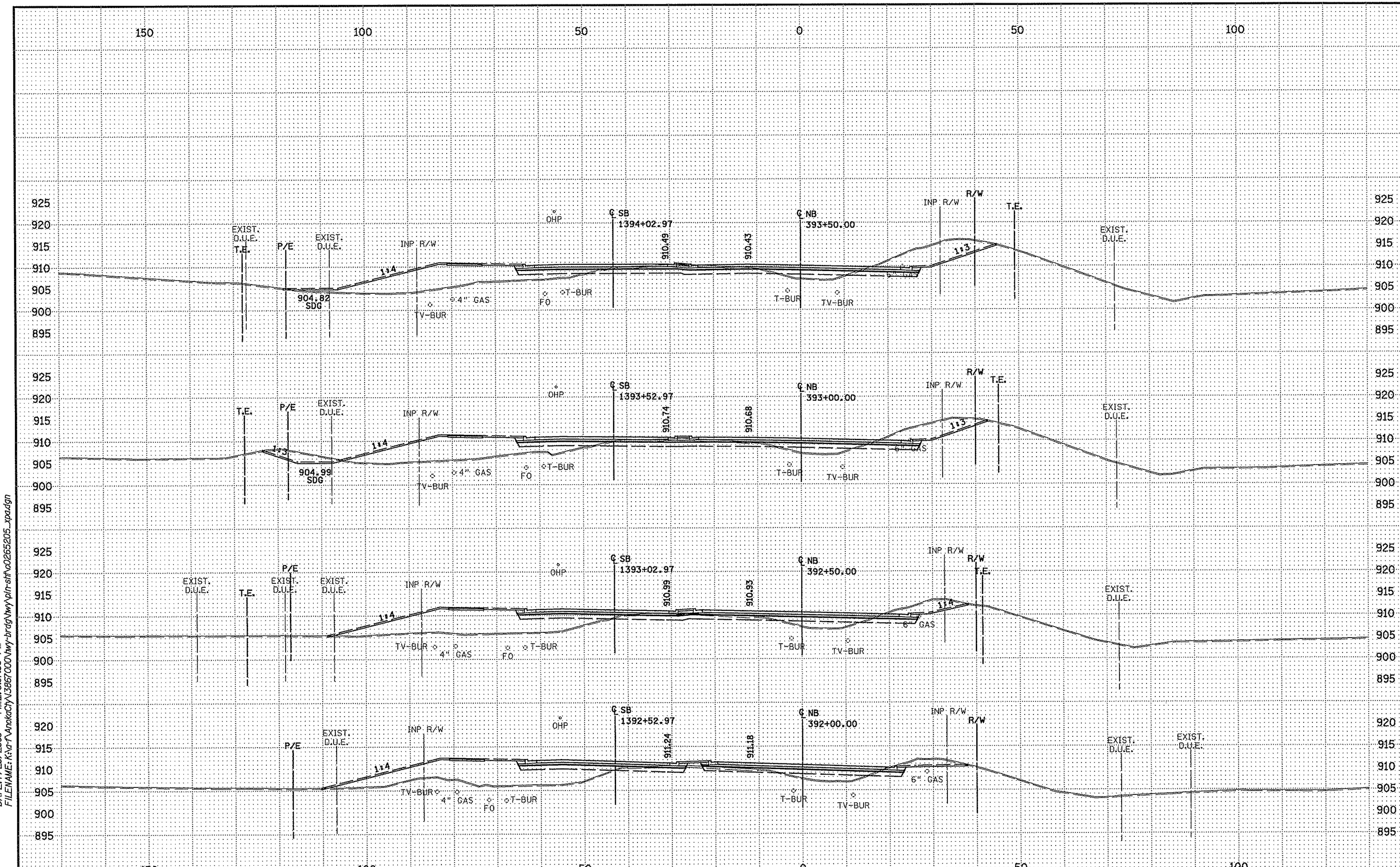

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CROSS SECTIONS
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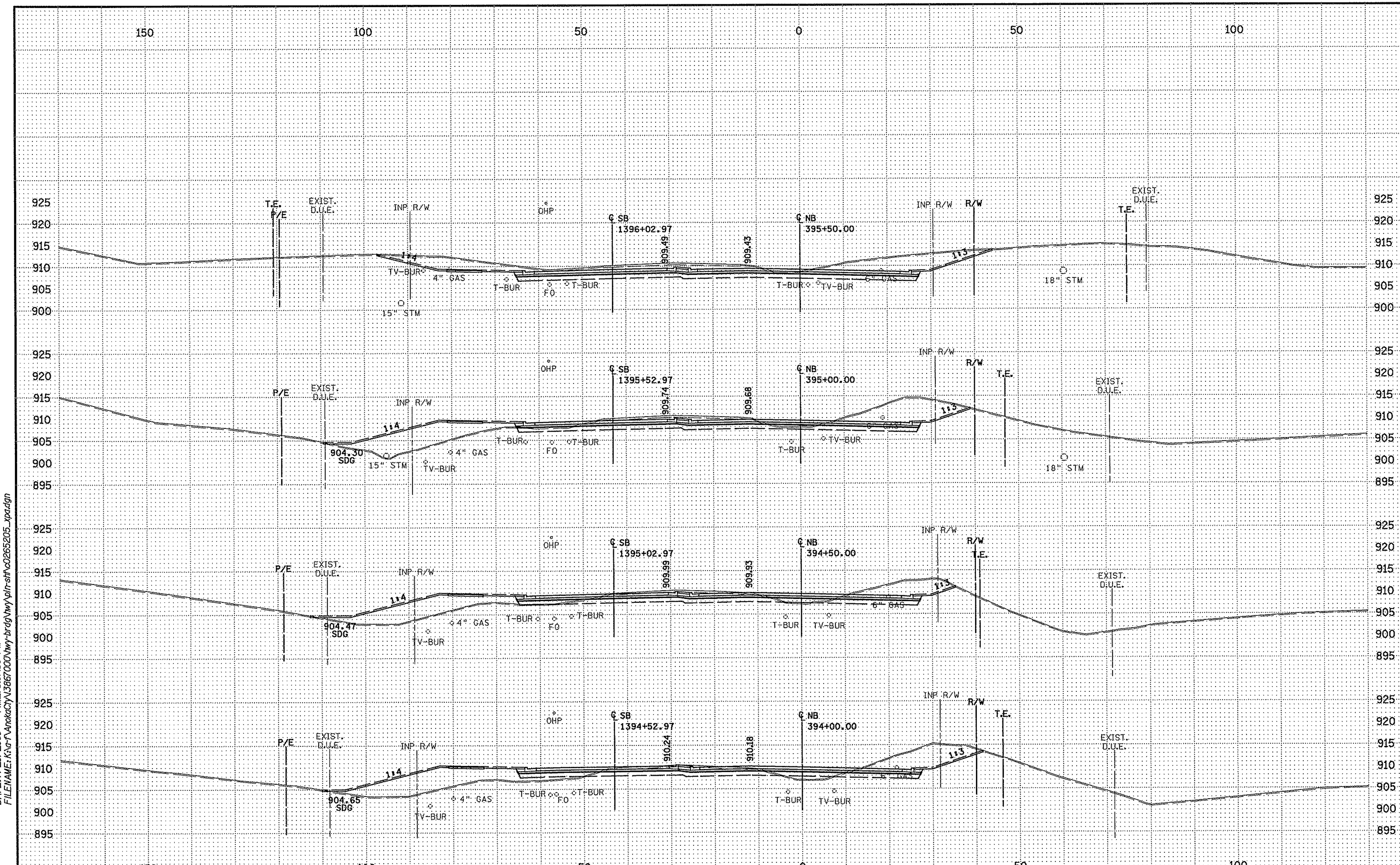

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CROSS SECTIONS
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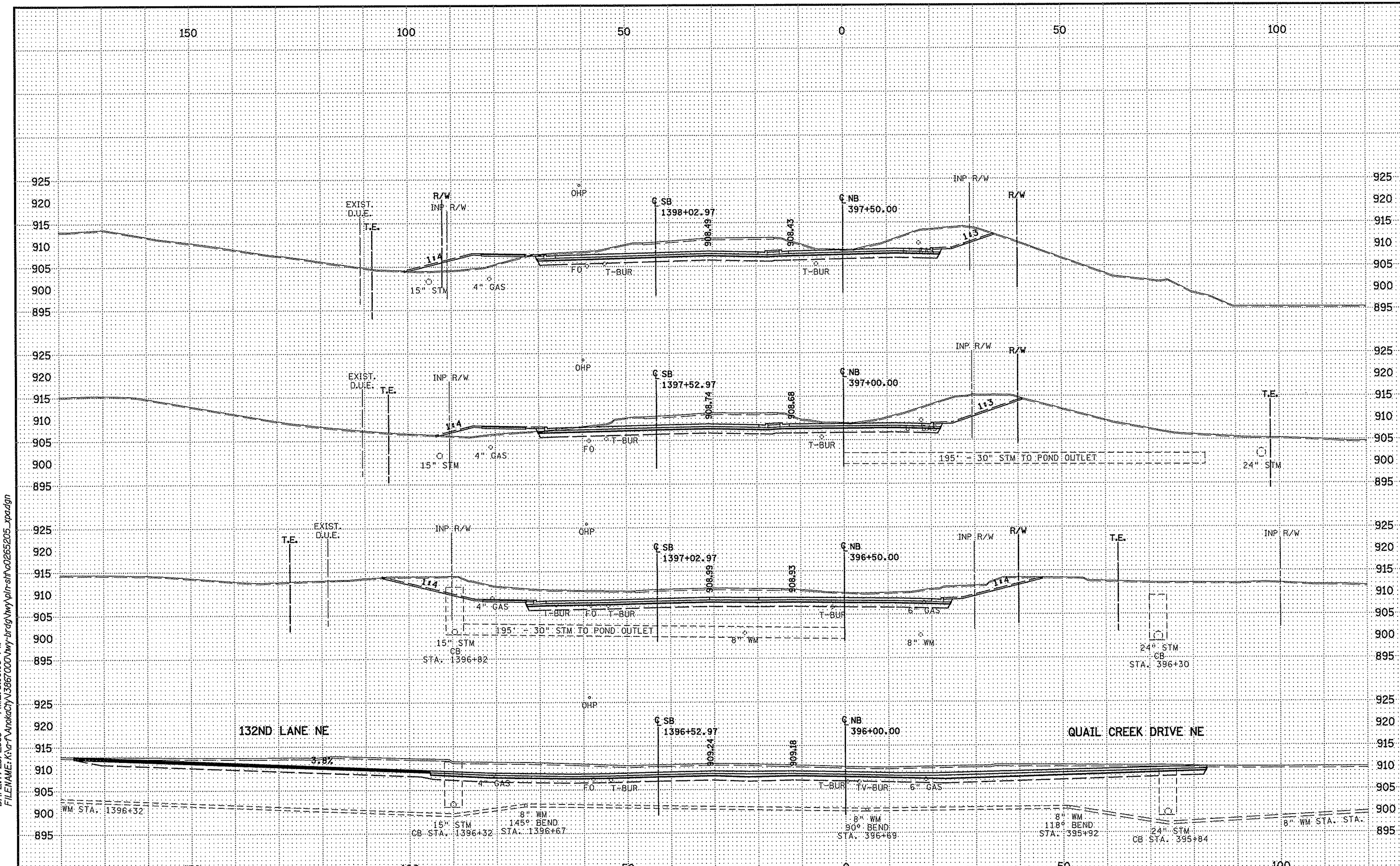

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CROSS SECTIONS
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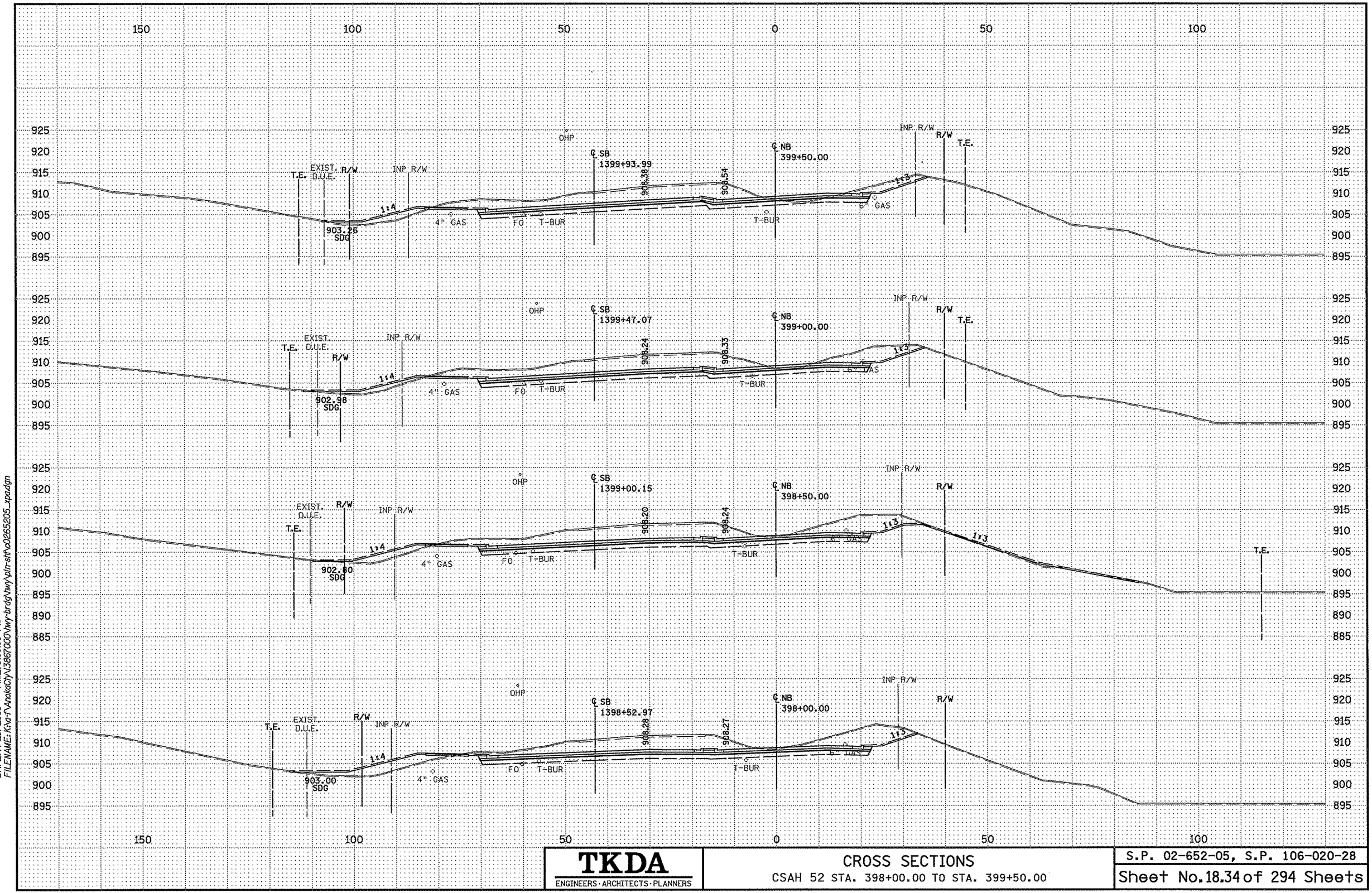

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CROSS SECTIONS

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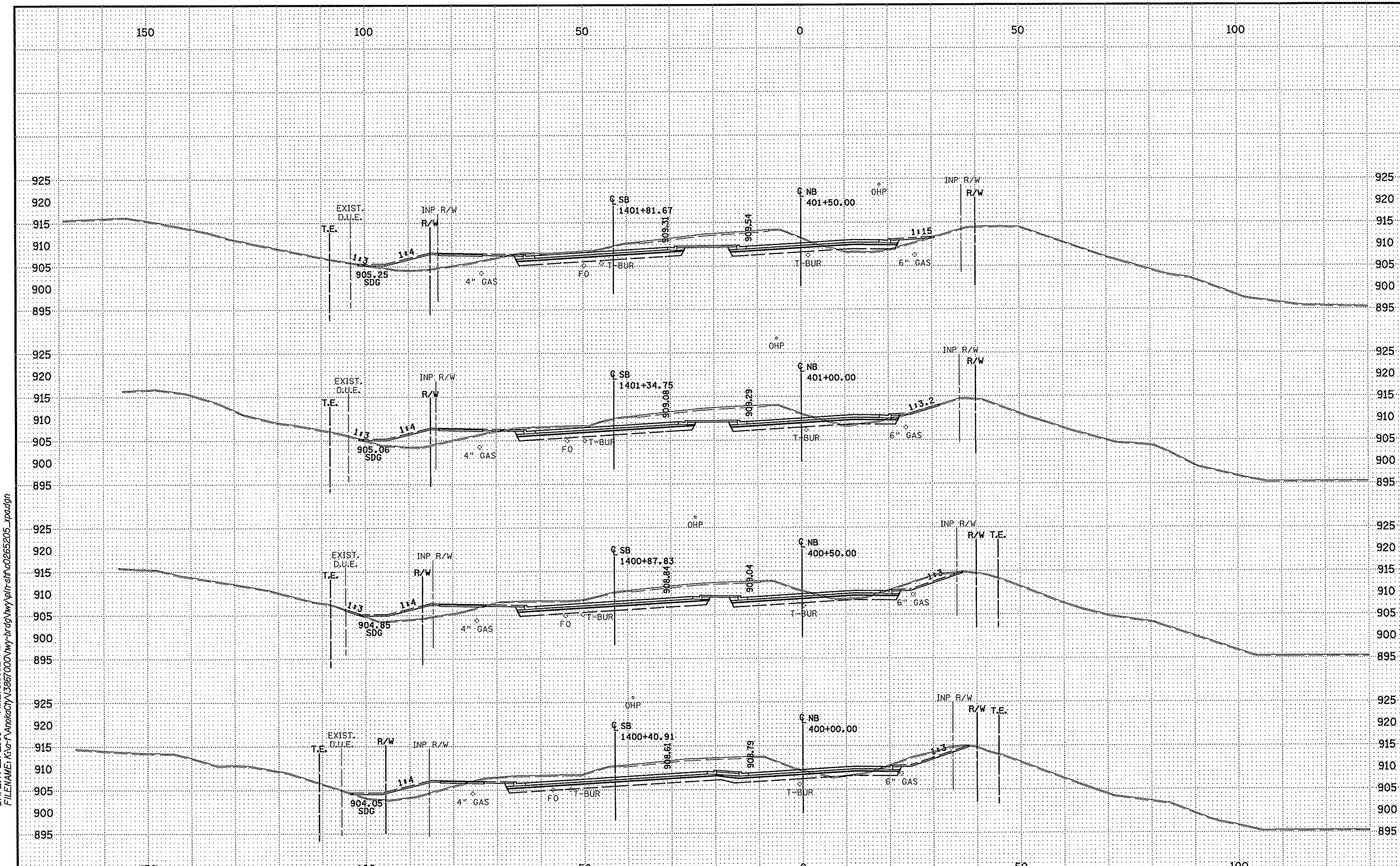

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CROSS SECTIONS
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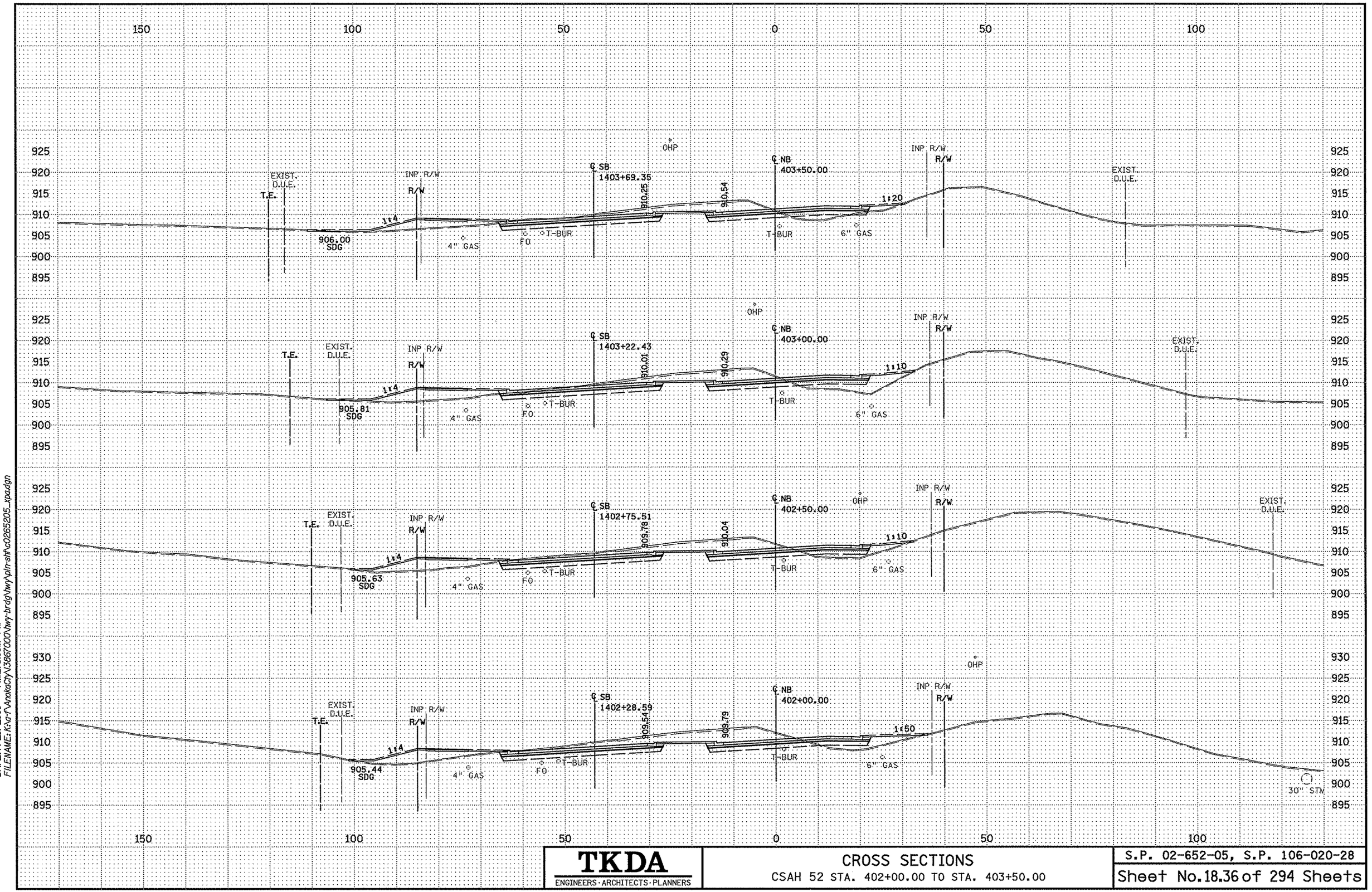

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CROSS SECTIONS

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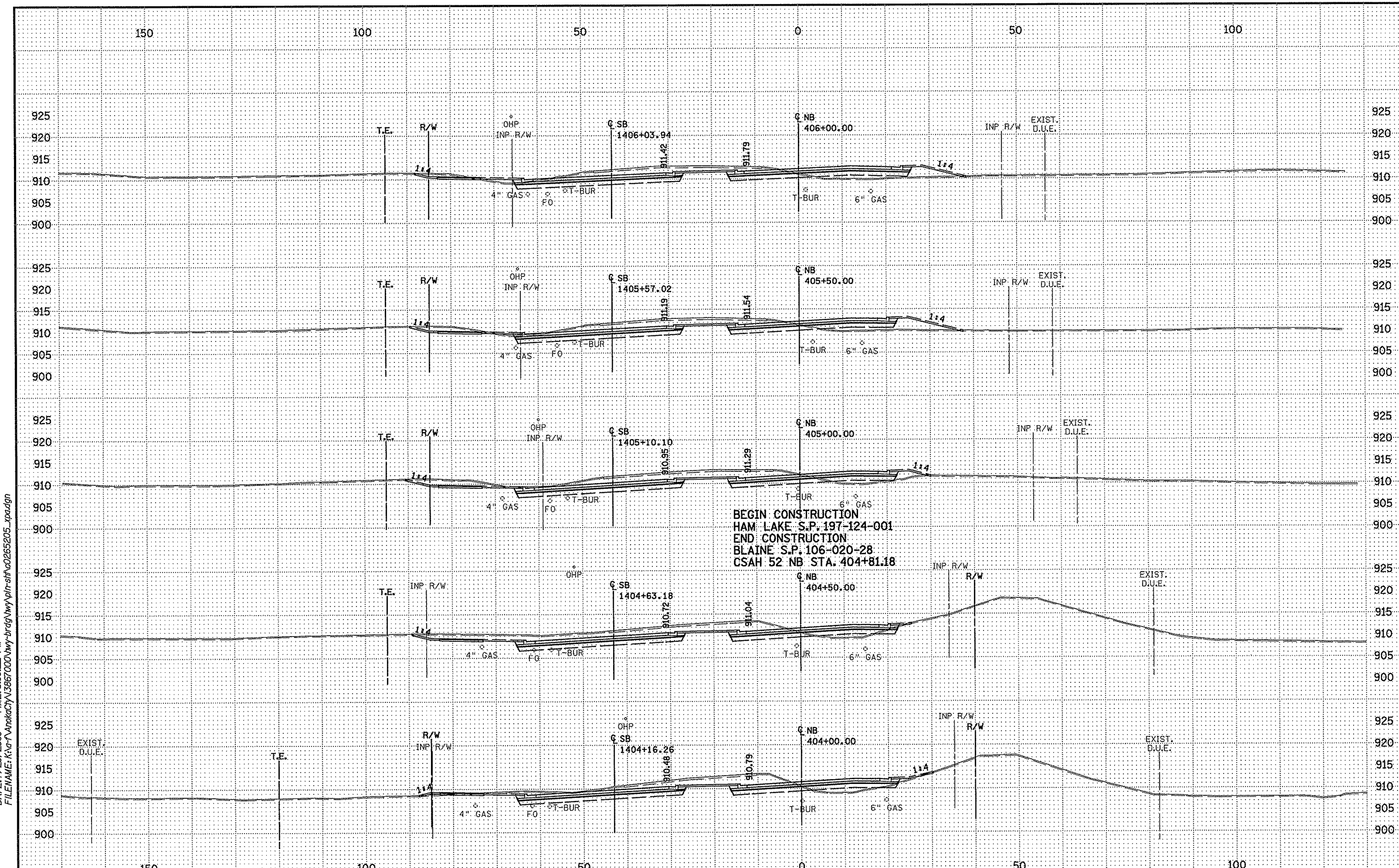

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CROSS SECTIONS
CSAH 52 STA. 404+00.00 TO STA. 406+00.00

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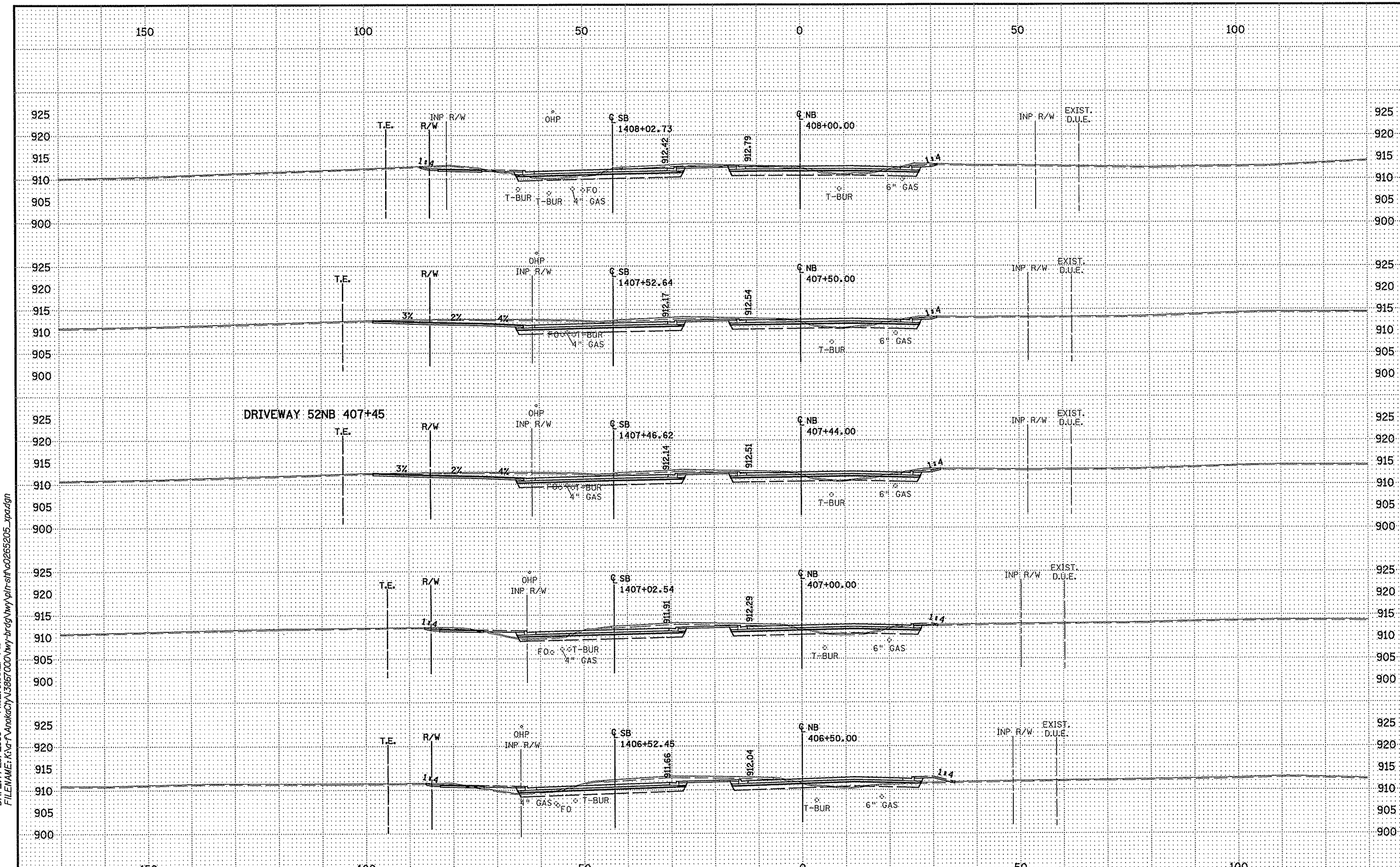

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CROSS SECTIONS
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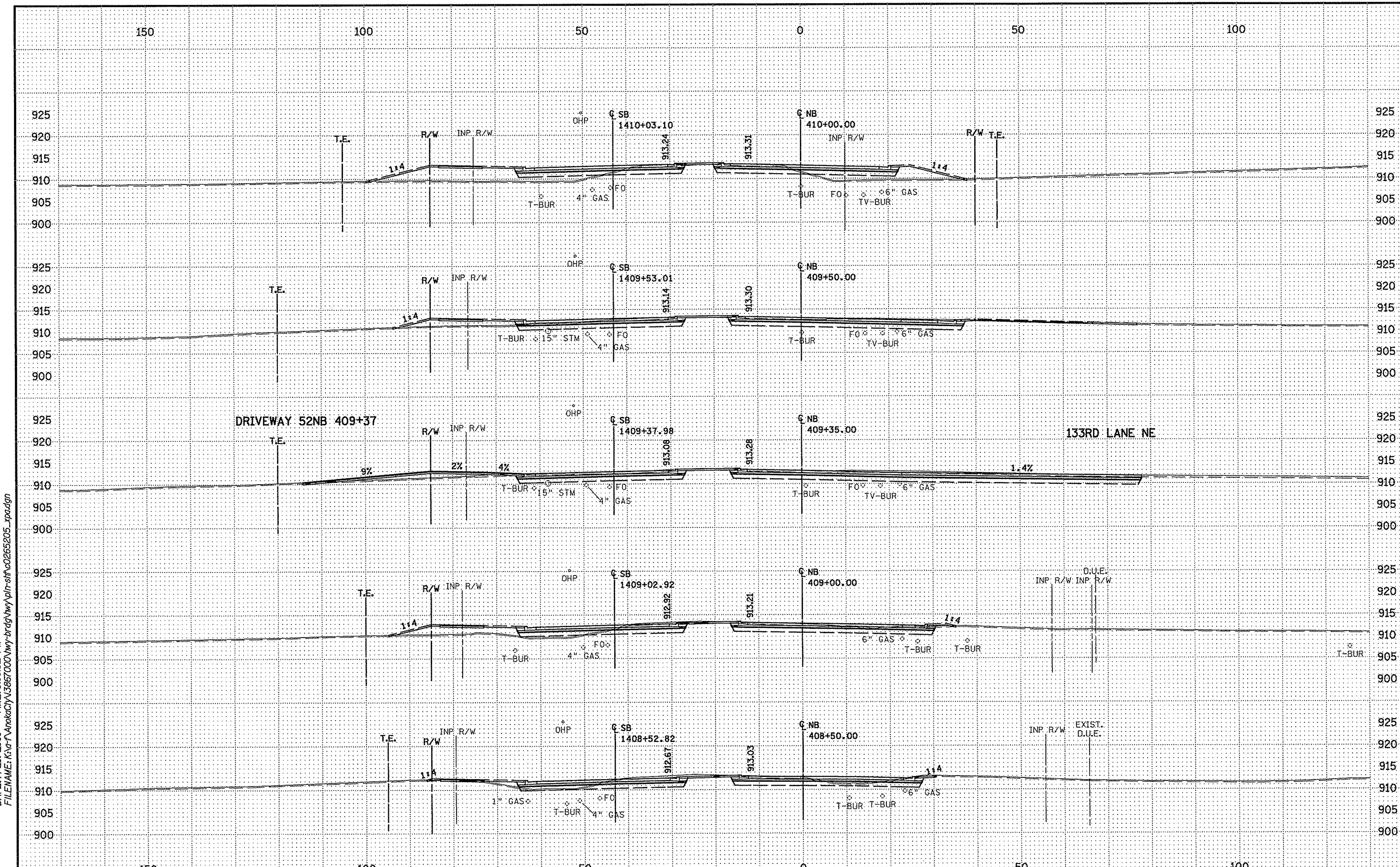

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CROSS SECTIONS
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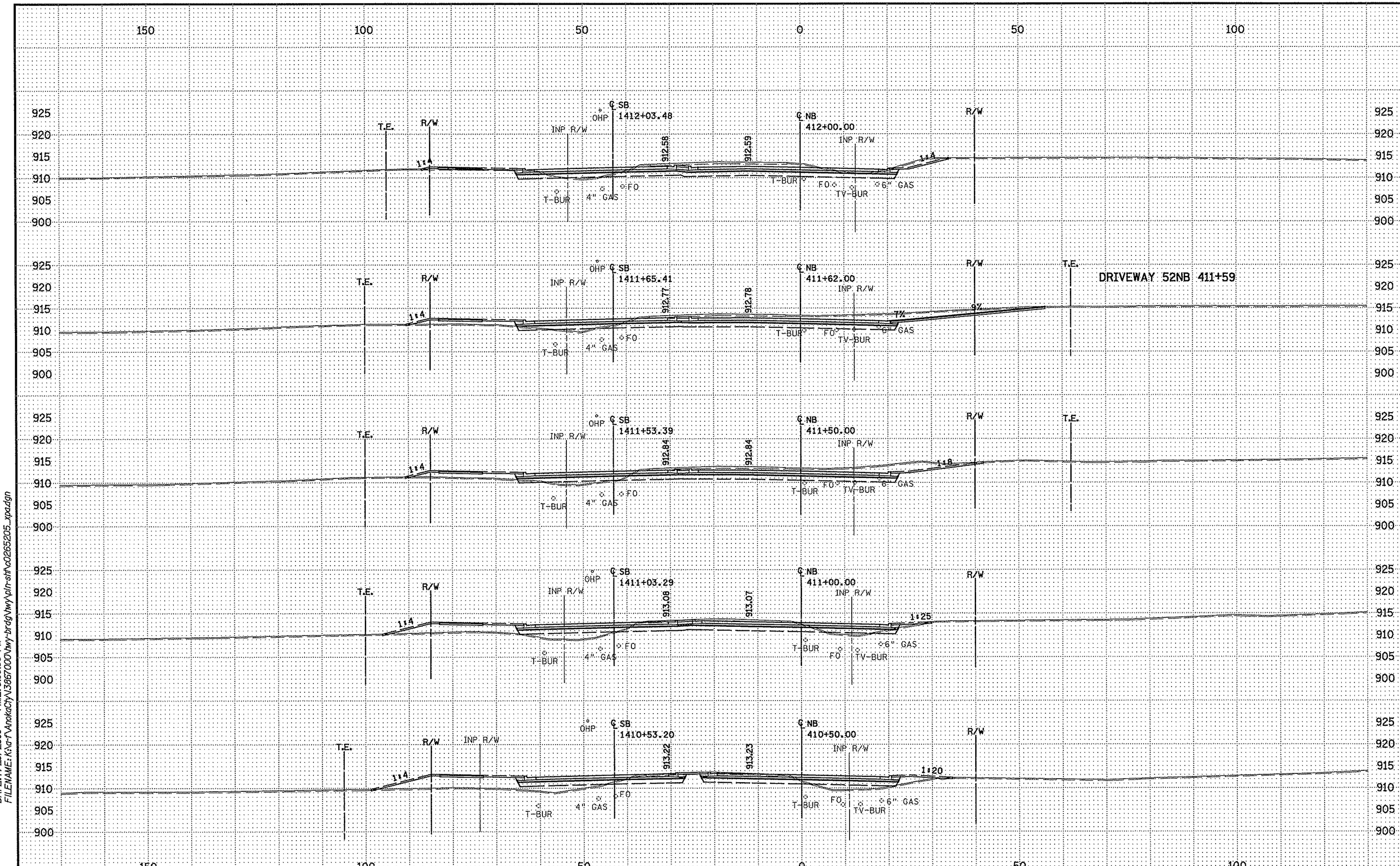

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CROSS SECTIONS

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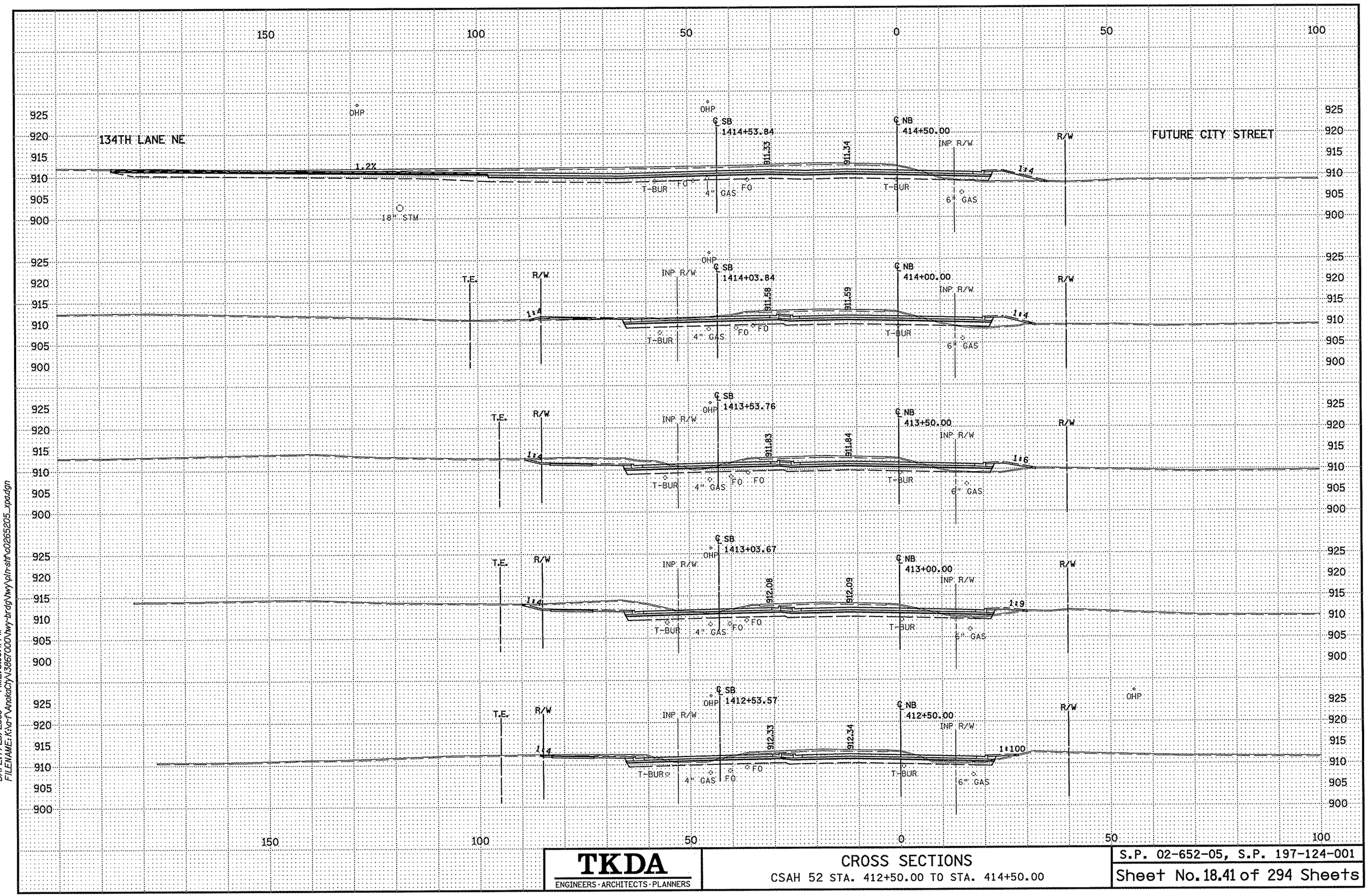

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CROSS SECTIONS

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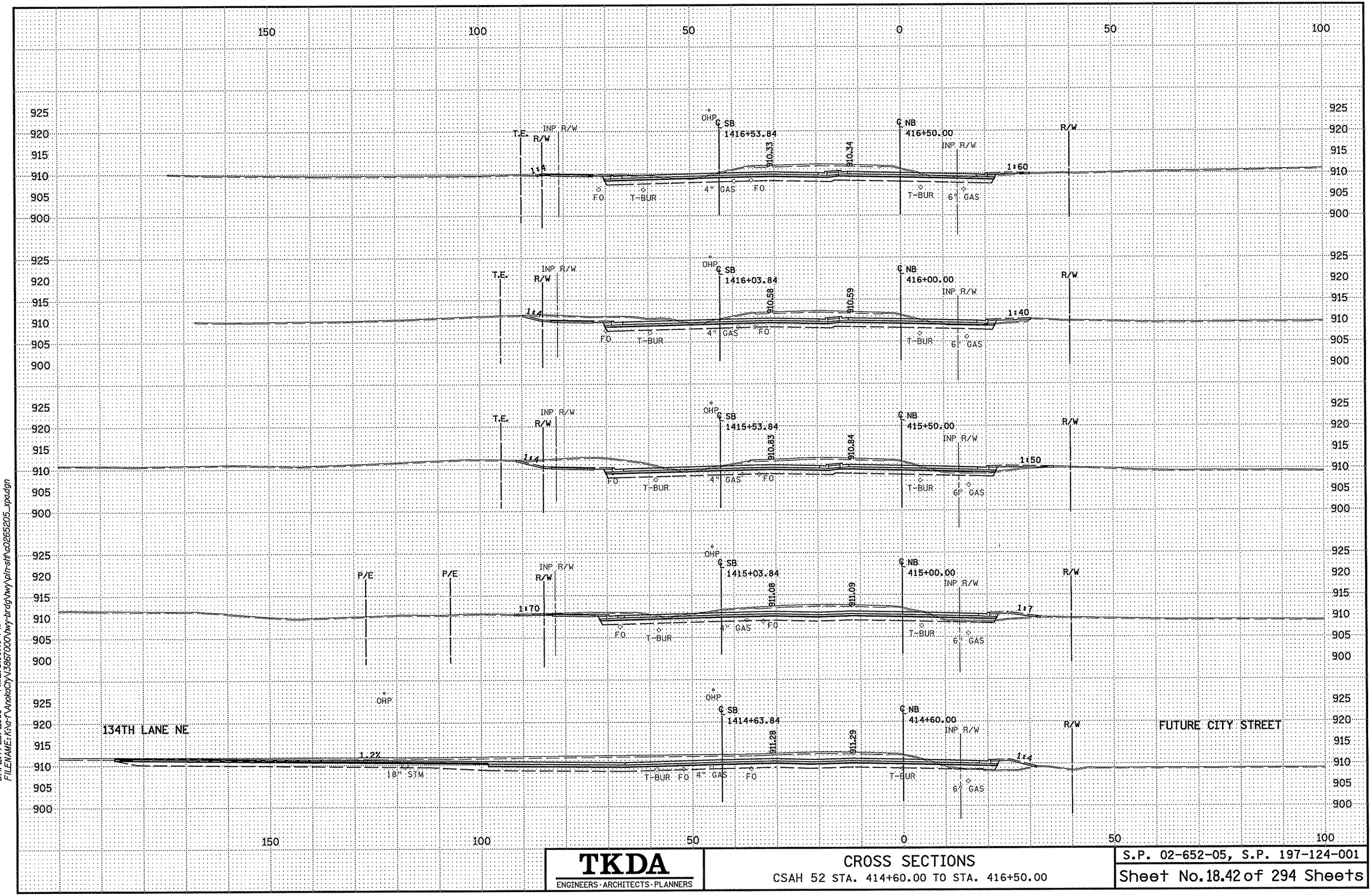

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CROSS SECTIONS

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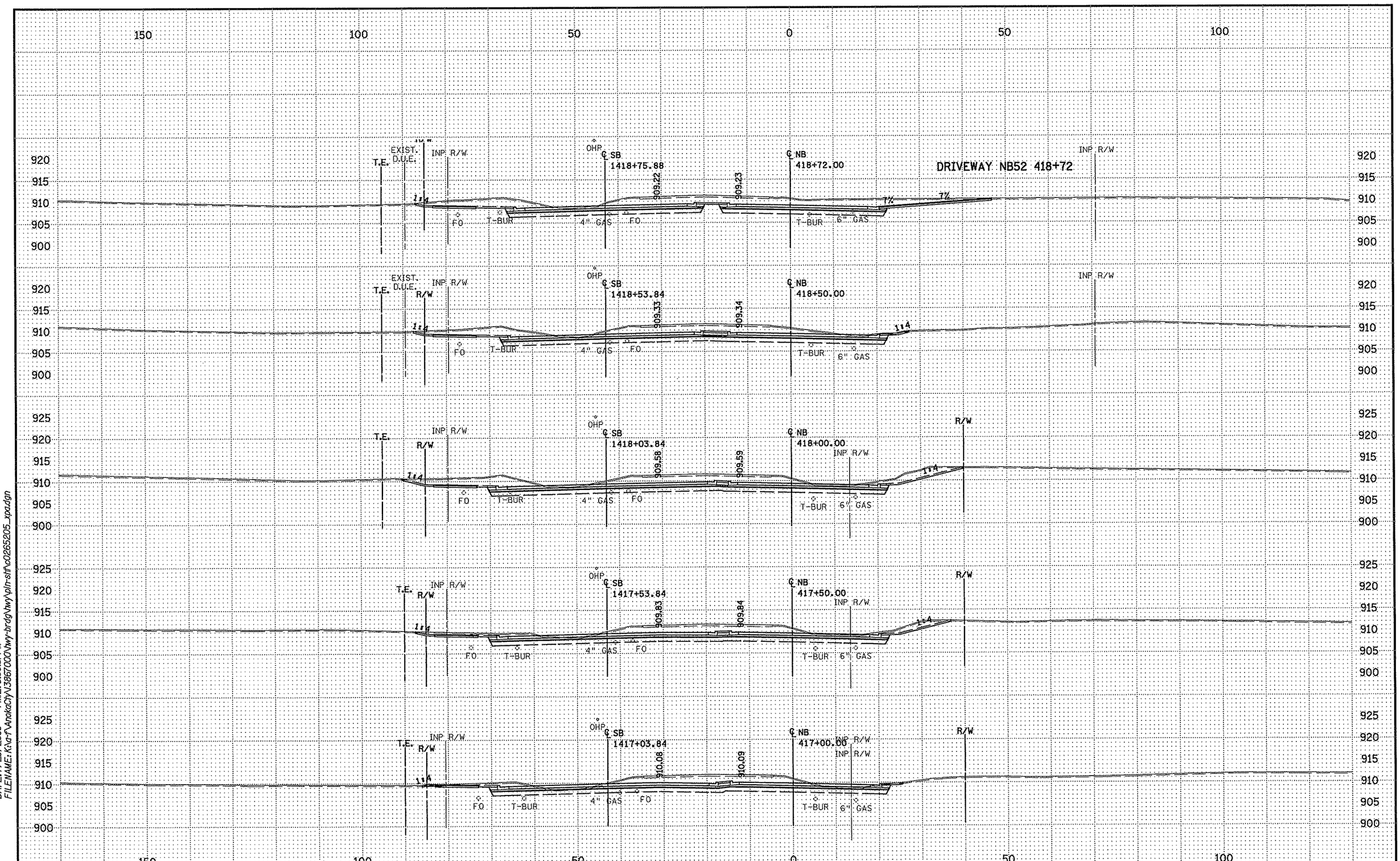

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CROSS SECTIONS
CSAH 52 STA. 417+00.00 TO STA. 418+72.00

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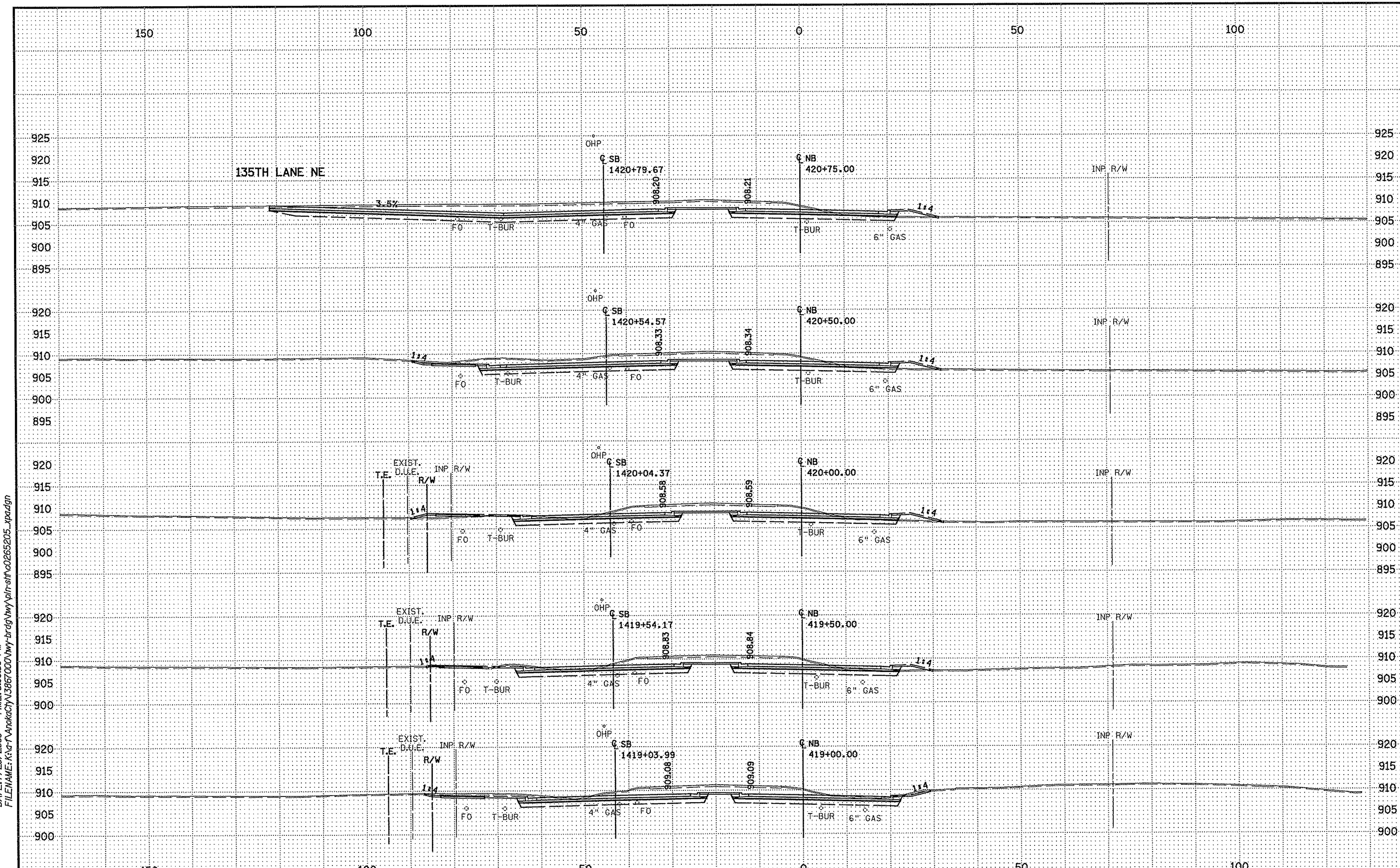

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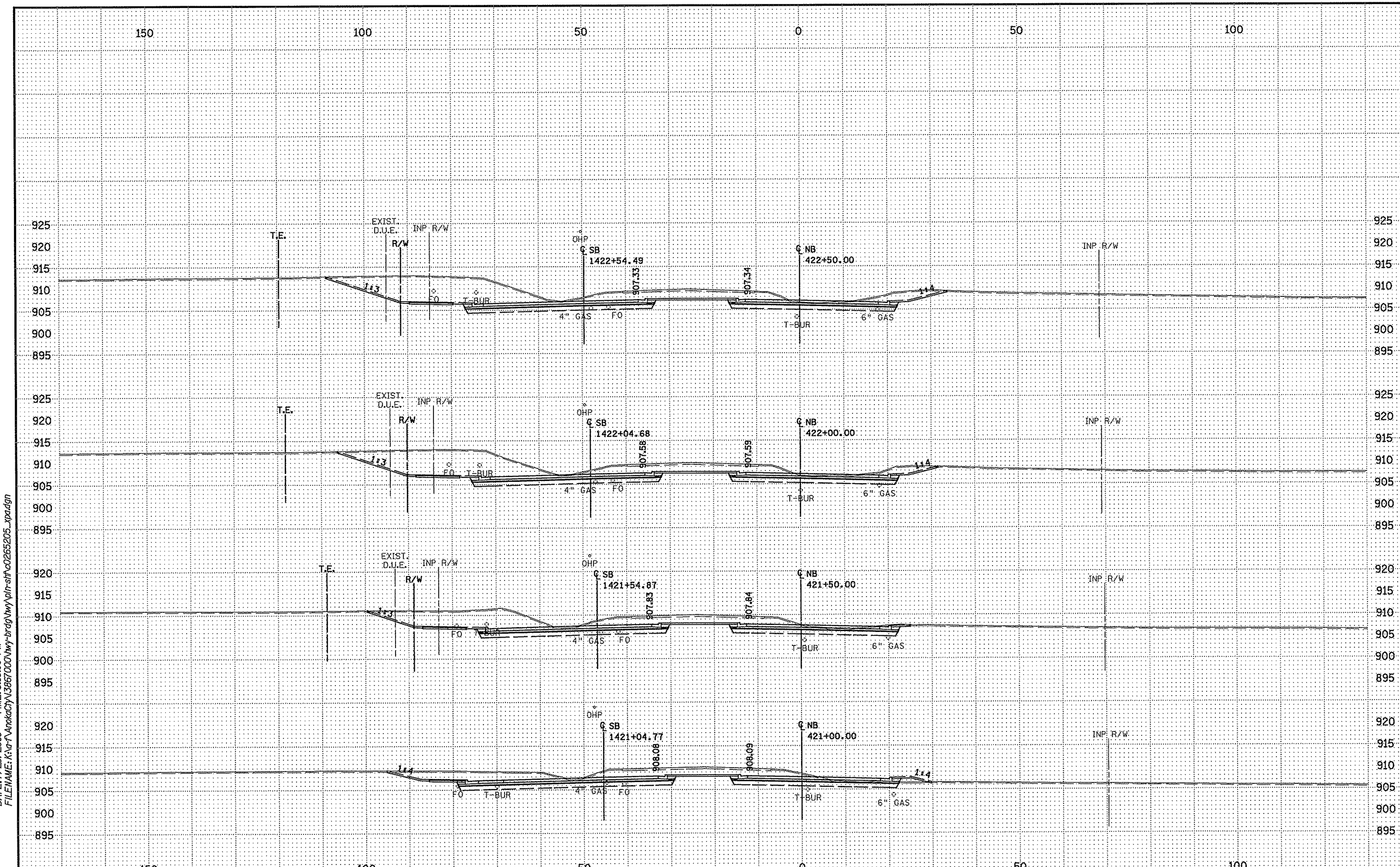
TKDA ENGINEERS · ARCHITECTS · PLANNERS	CROSS SECTIONS CSAH 52 STA. 419+00.00 TO STA. 420+75.00	S.P. 02-652-05, S.P. 197-124-001 Sheet No. 18.44 of 294 Sheets



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CROSS SECTIONS
CSAH 52 STA. 421+00.00 TO STA. 422+50.00

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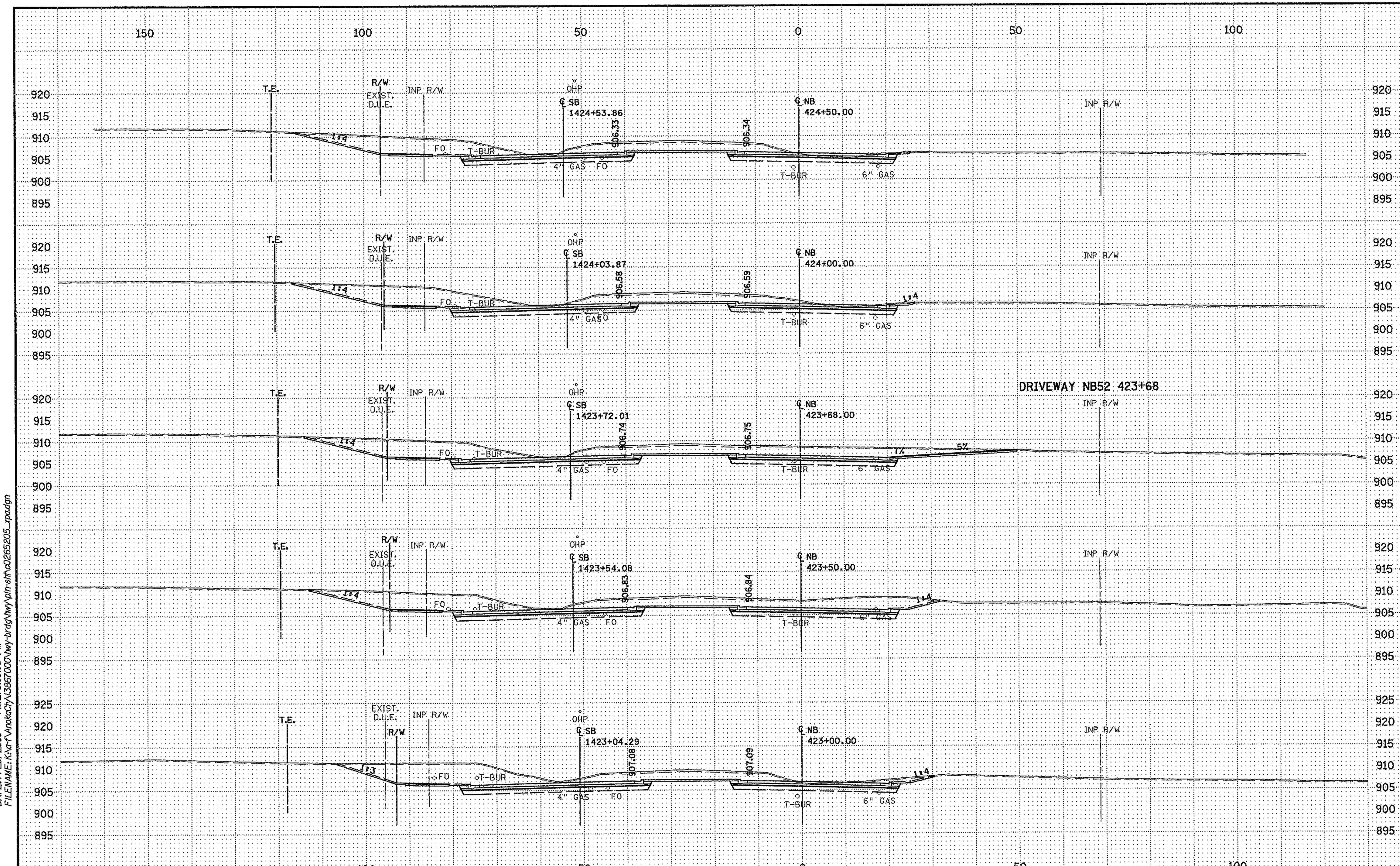

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CROSS SECTIONS
CSAH 52 STA. 423+00.00 TO STA. 424+50.00

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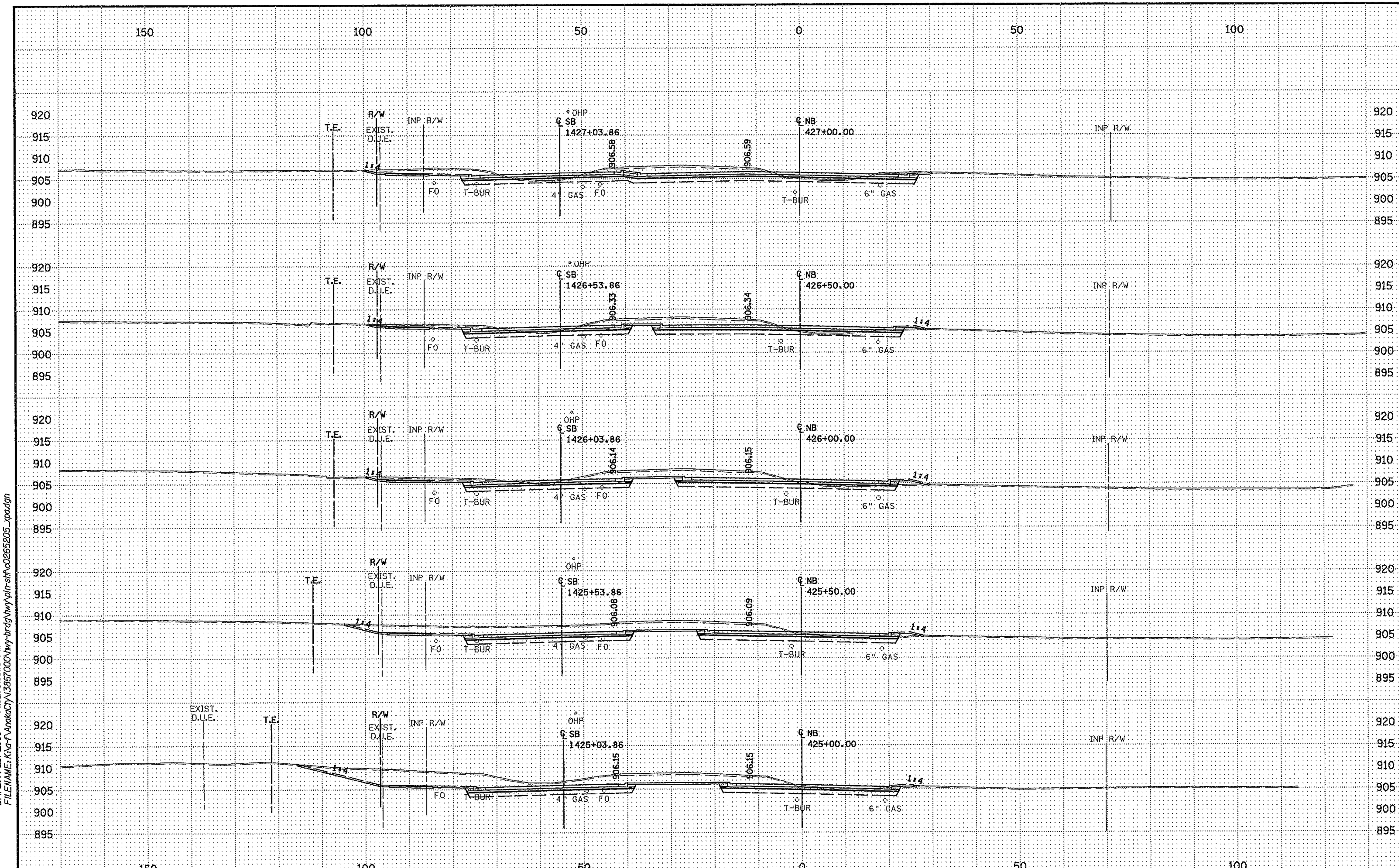

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CROSS SECTIONS
CSAH 52 STA. 425+00.00 TO STA. 427+00.00

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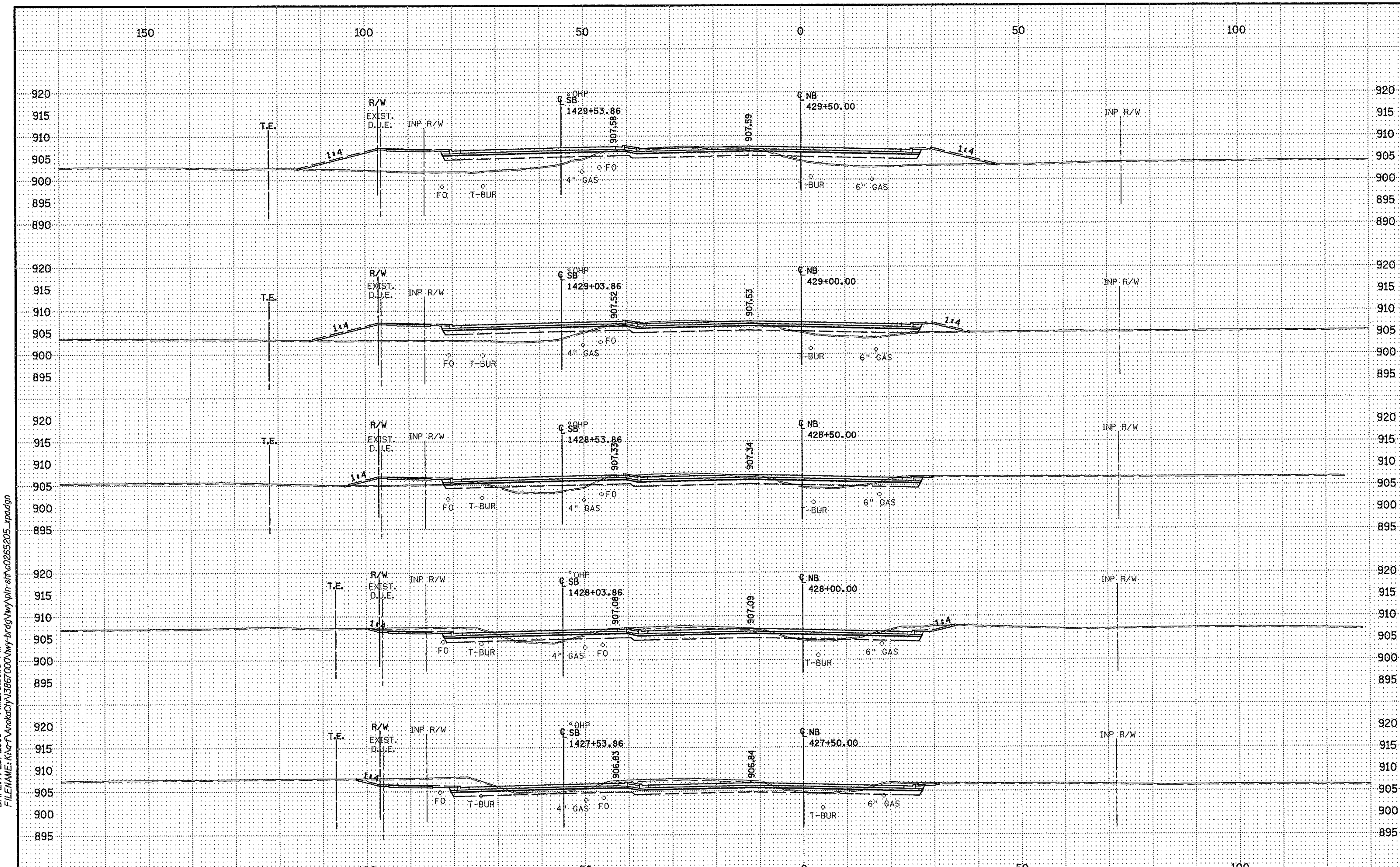

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CROSS SECTIONS
CSAH 52 STA. 427+50.00 TO STA. 429+50.00

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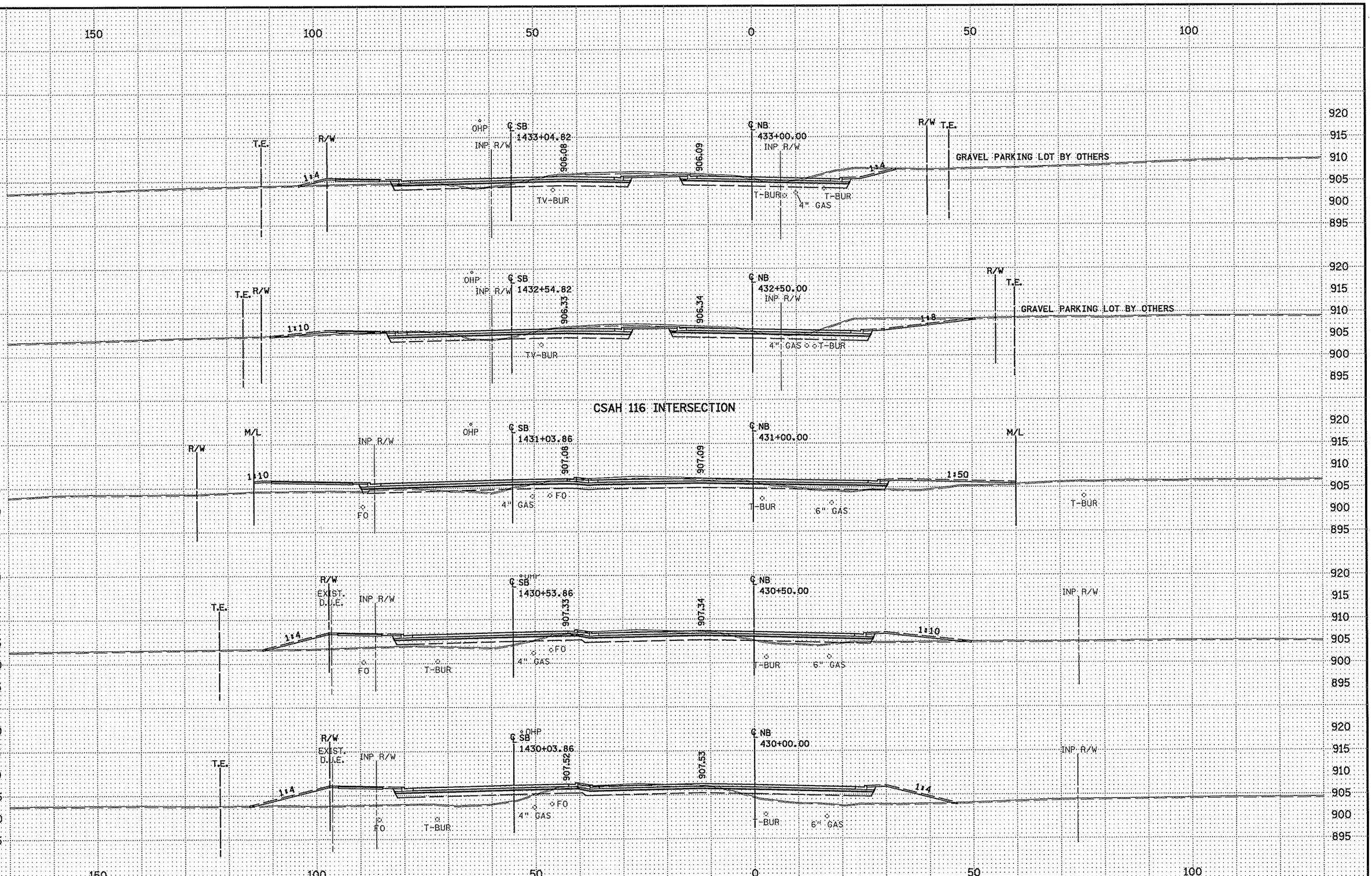

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TKDA ENGINEERS·ARCHITECTS·PLANNERS	CROSS SECTIONS CSAH 52 STA. 430+00.00 TO STA. 433+00.00	S.P. 02-652-05, S.P. 197-124-001 Sheet No. 18.49 of 294 Sheets

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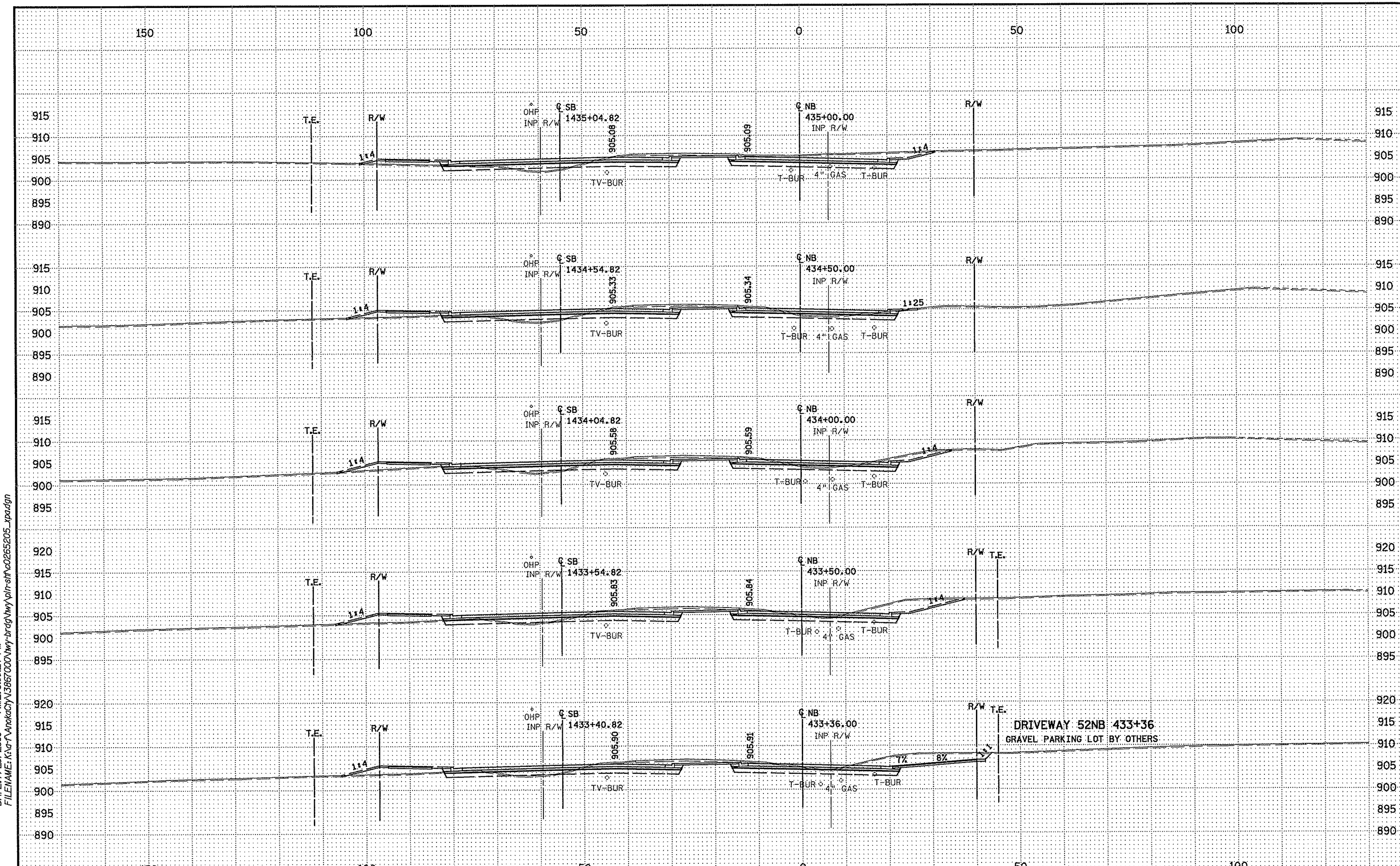

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ENGINEERS · ARCHITECTS · PLANNERS

CROSS SECTIONS
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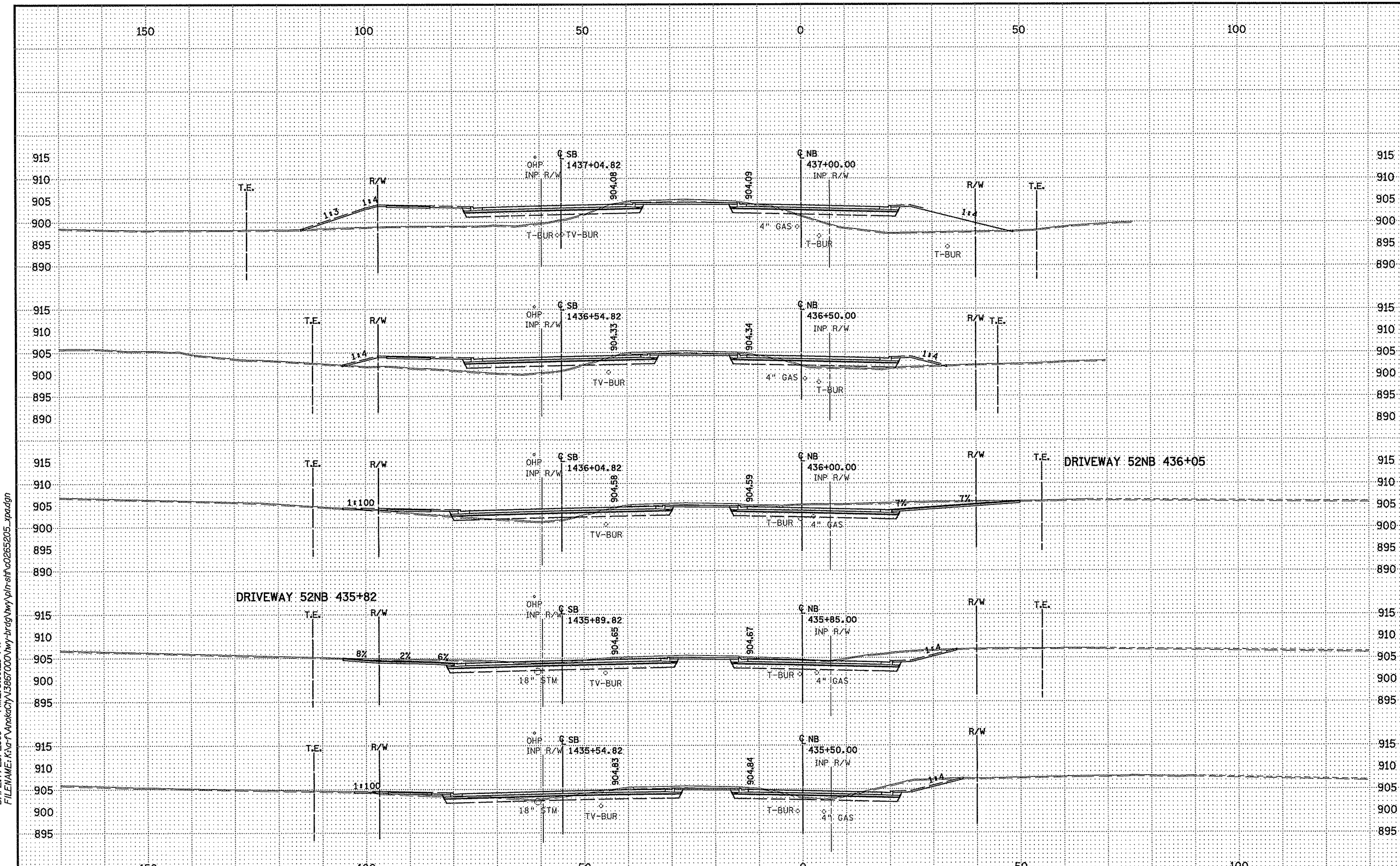

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CROSS SECTIONS
CSAH 52 STA. 435+50.00 TO STA. 437+00.00

S.P. 02-652-05, S.P. 197-124-001

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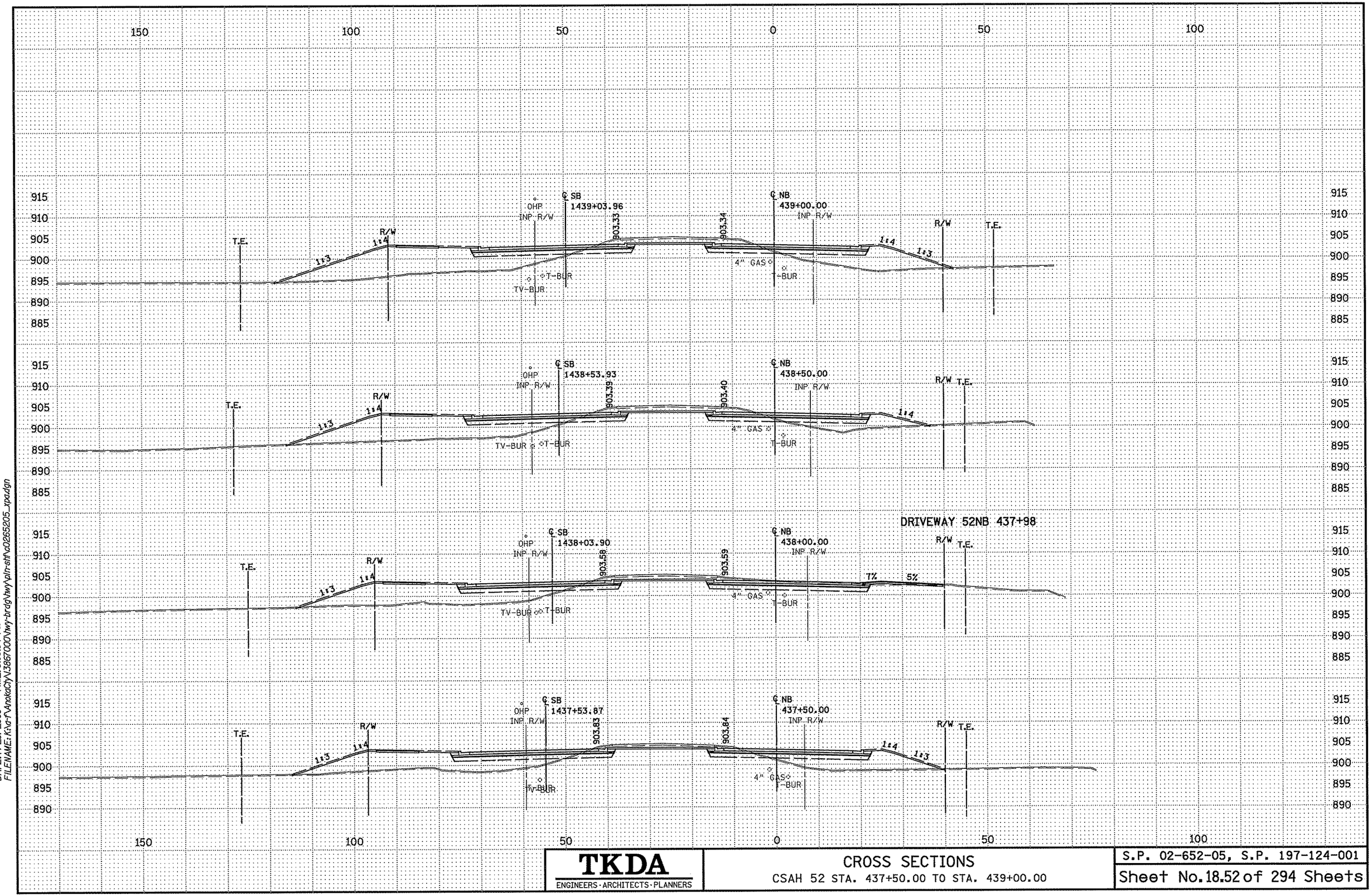

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TKDA ENGINEERS·ARCHITECTS·PLANNERS	CROSS SECTIONS CSAH 52 STA. 437+50.00 TO STA. 439+00.00	S.P. 02-652-05, S.P. 197-124-001 Sheet No. 18.52 of 294 Sheets

150 100 50 0 50 100

915 910 905 900 895 890

T.E. R/W ℄ OHP INP R/W ℄ SB 1441+04.83 ℄ NB 441+00.00 INP R/W R/W T.E.
1:4 1:4 904.08 904.09
TV-BUR T-BUR 4" GAS T-BUR

T.E. R/W ℄ OHP INP R/W ℄ SB 1440+82.83 ℄ NB 440+78.00 INP R/W R/W T.E.
DRIVEWAY 52NB 440+76
1:4 903.97 903.98 7% 10%
TV-BUR T-BUR 4" GAS T-BUR

T.E. R/W ℄ OHP INP R/W ℄ SB 1440+54.82 ℄ NB 440+50.00 INP R/W R/W
1:4 903.83 903.84 1:4
TV-BUR T-BUR 4" GAS T-BUR

915 910 905 900 895 890

T.E. R/W ℄ OHP INP R/W ℄ SB 1440+04.02 ℄ NB 440+00.00 INP R/W R/W
1:3 1:4 903.57 903.59 1:4
TV-BUR T-BUR 4" GAS T-BUR

915 910 905 900 895 890 885

T.E. R/W ℄ OHP INP R/W ℄ SB 1439+53.99 ℄ NB 439+50.00 INP R/W R/W T.E.
1:3 1:4 903.39 903.40 1:4 1:3
TV-BUR T-BUR 4" GAS T-BUR

150 100 50 0 50 100

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CROSS SECTIONS
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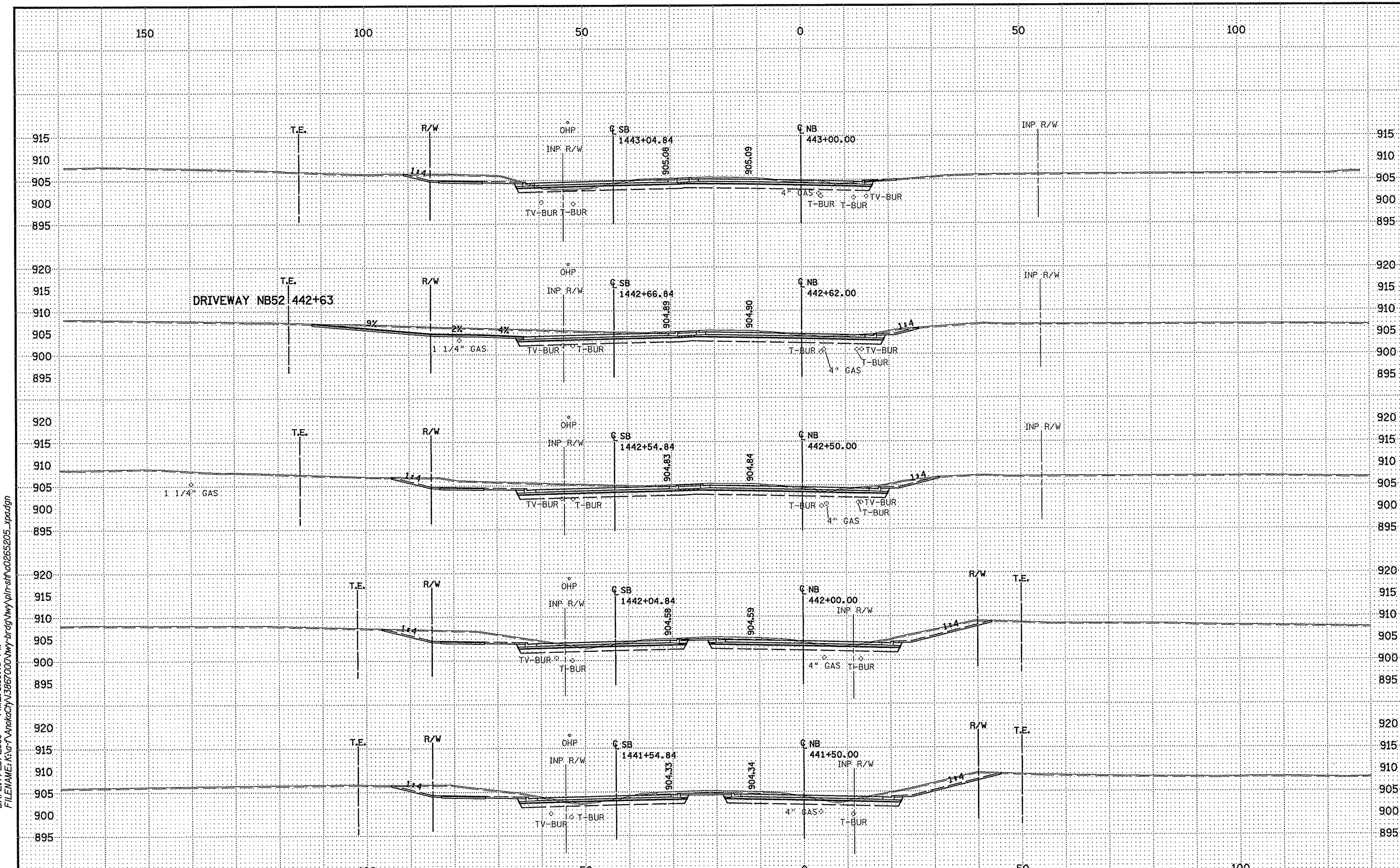

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CROSS SECTIONS
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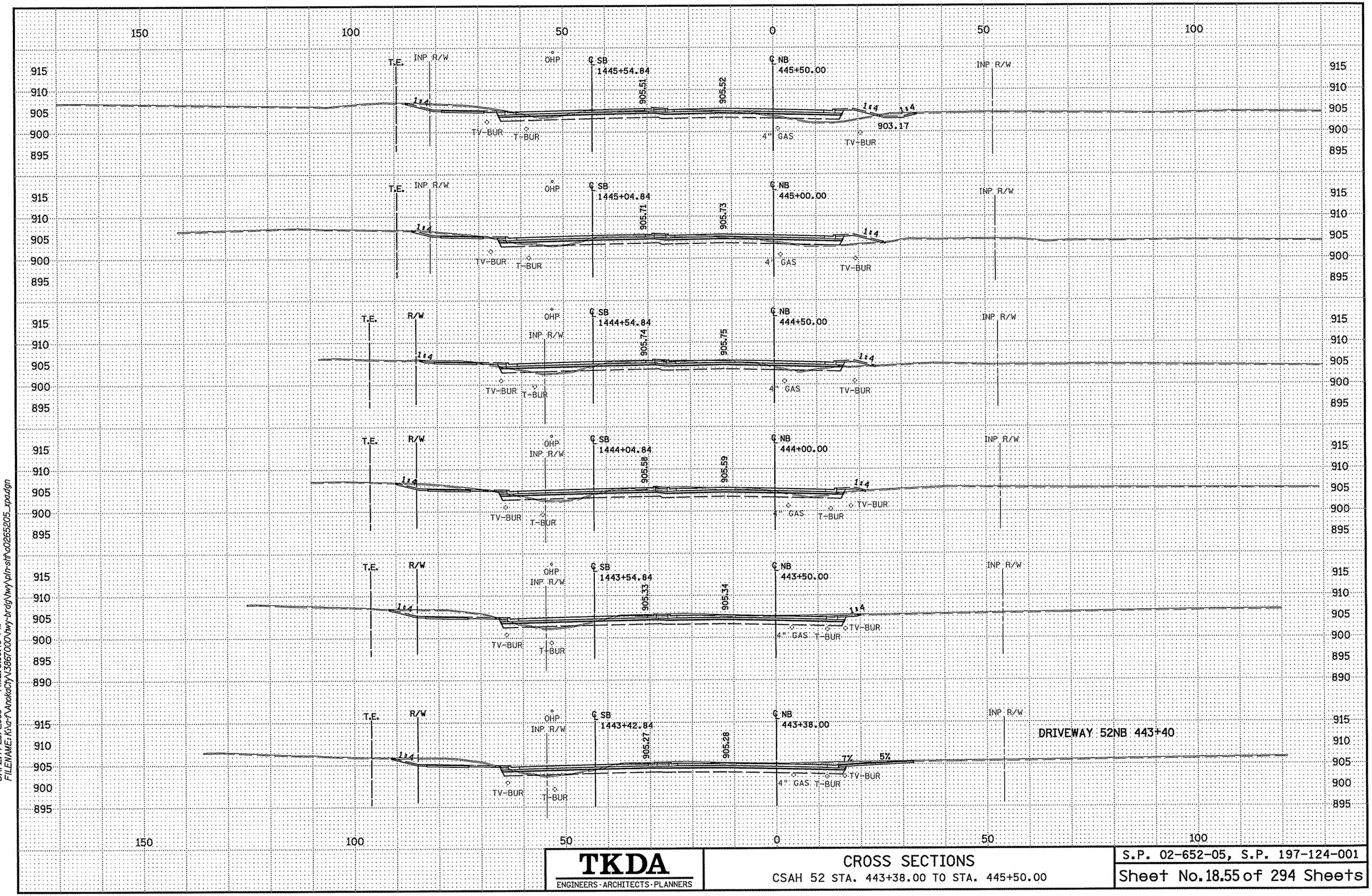

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CROSS SECTIONS

CSAH 52 STA. 443+38.00 TO STA. 445+50.00

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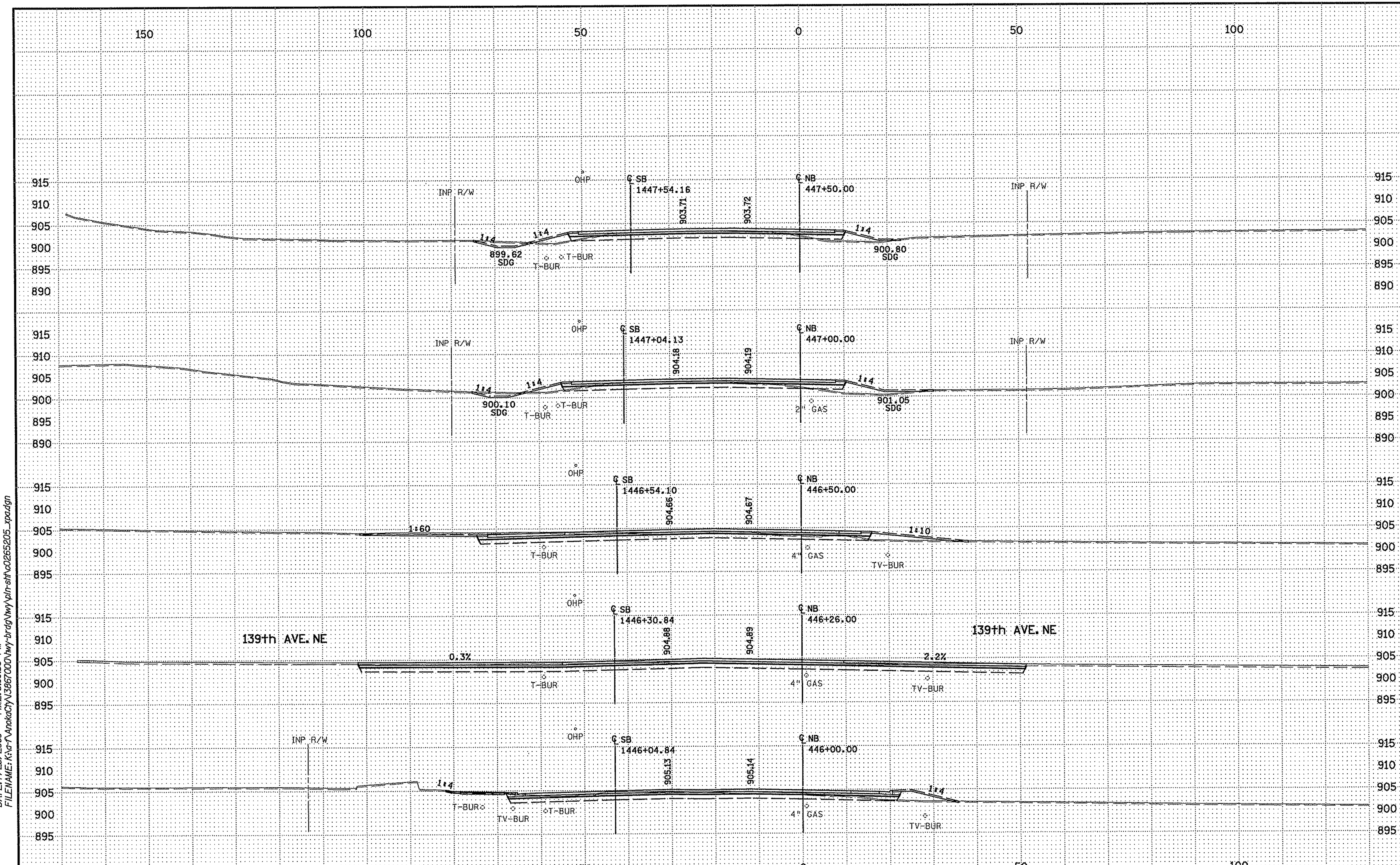

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CROSS SECTIONS

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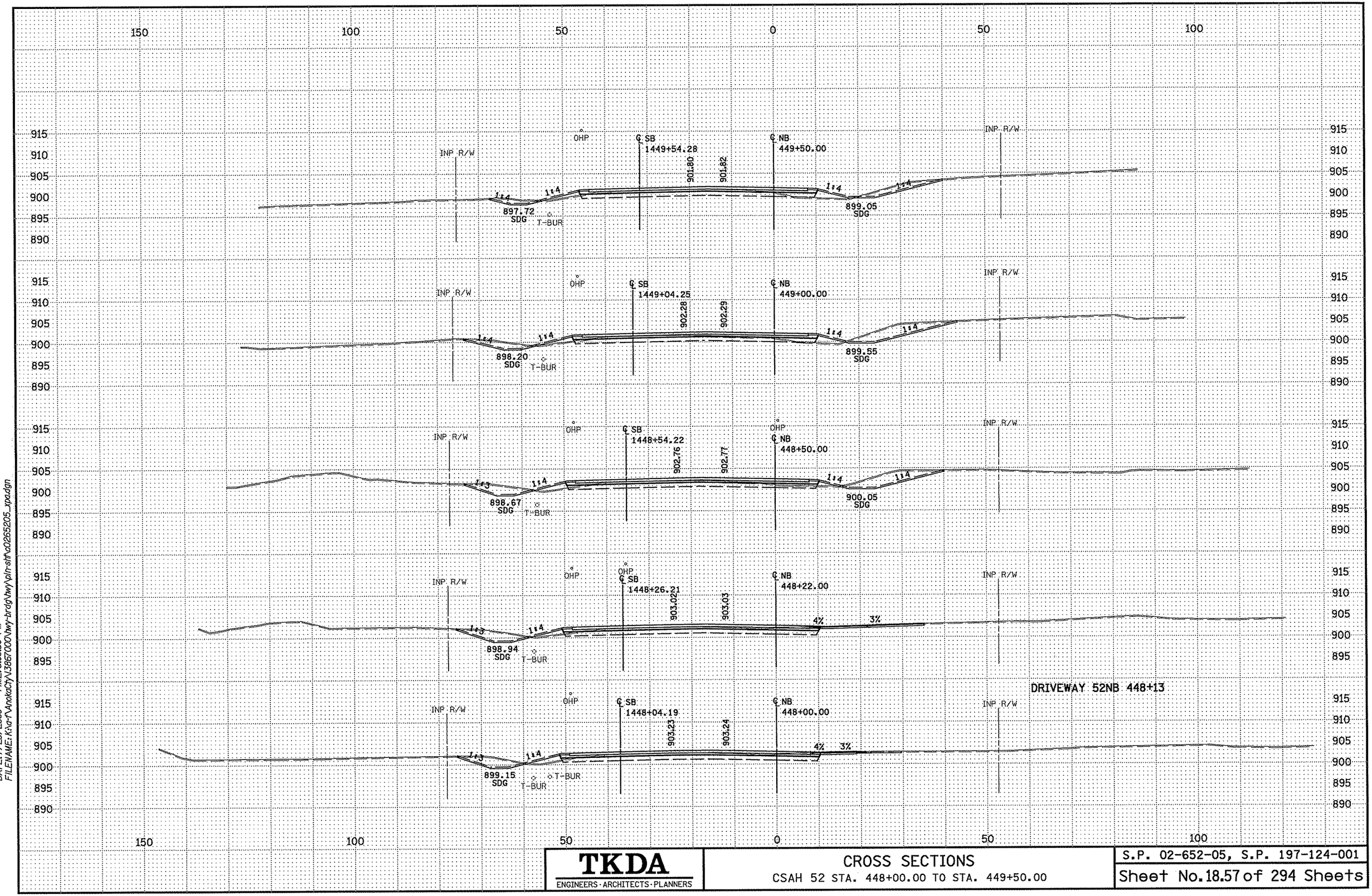

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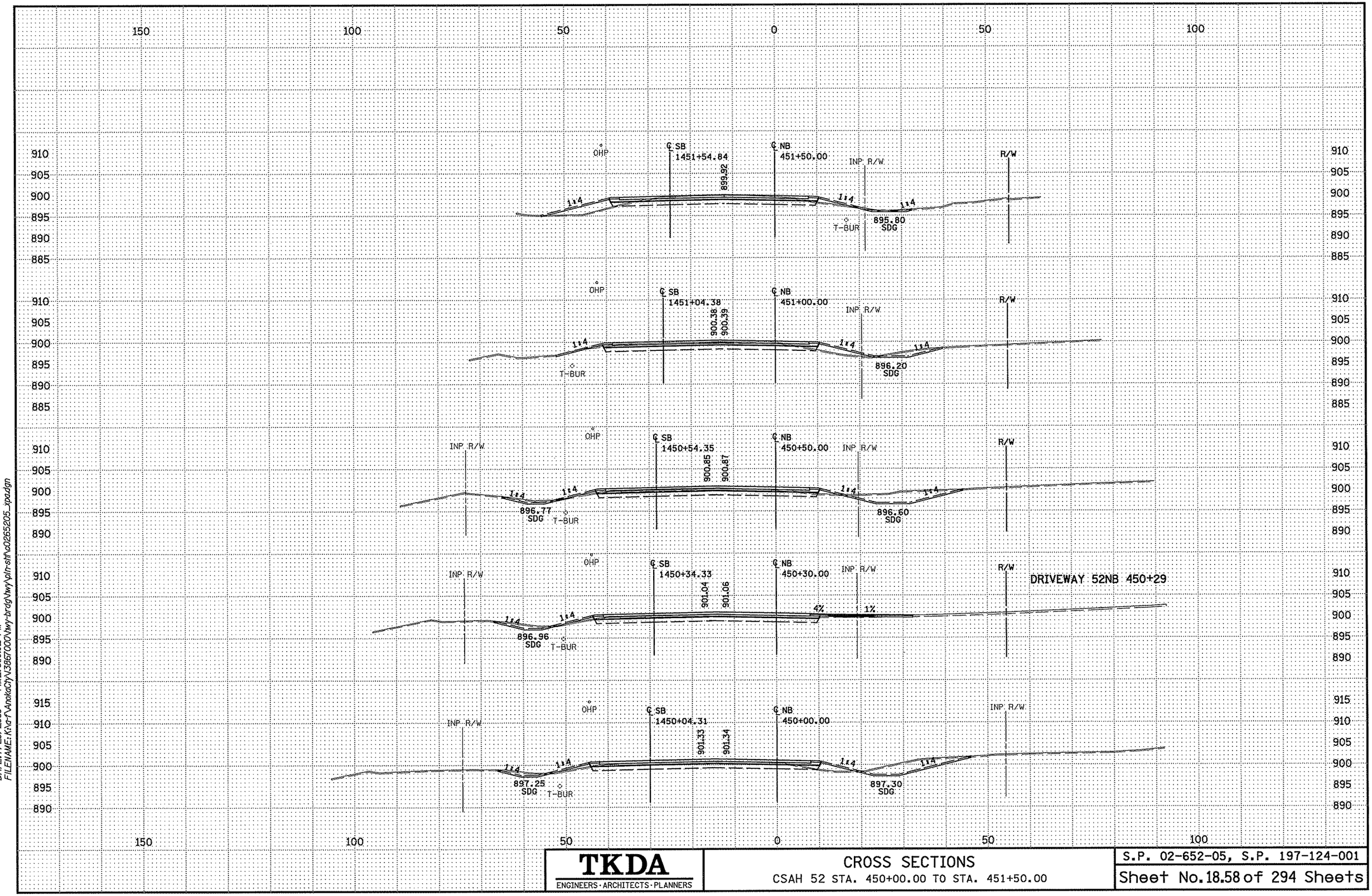
TKDA ENGINEERS·ARCHITECTS·PLANNERS	CROSS SECTIONS CSAH 52 STA. 448+00.00 TO STA. 449+50.00	S.P. 02-652-05, S.P. 197-124-001 Sheet No. 18.57 of 294 Sheets



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CROSS SECTIONS
CSAH 52 STA. 450+00.00 TO STA. 451+50.00

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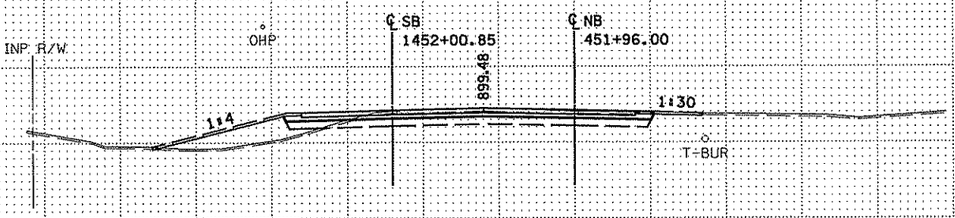
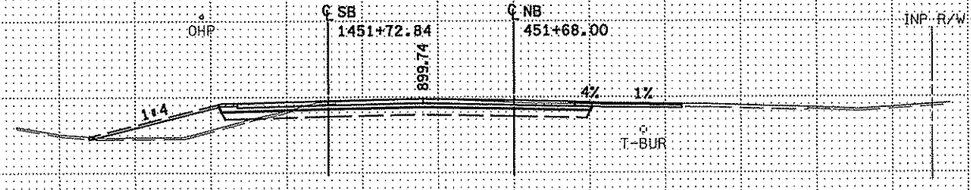
END CONSTRUCTION
HAM LAKE S.P. 197-124-001
CSAH 52 NB STA. 451+96.66



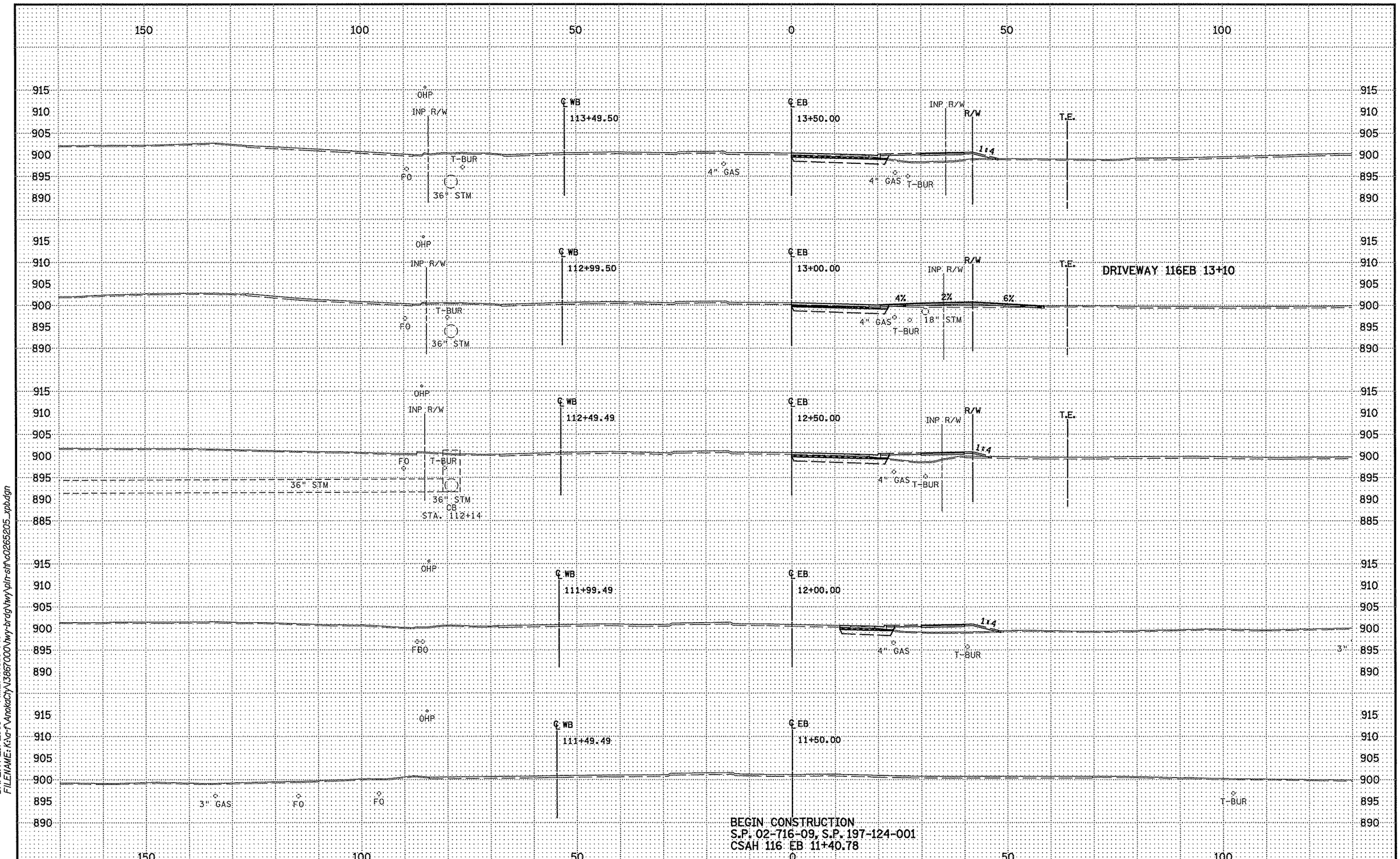


DRIVEWAY 52NB 451+69

150 100 50 0 50 100

910 905 900 895 890 885

910 905 900 895 890



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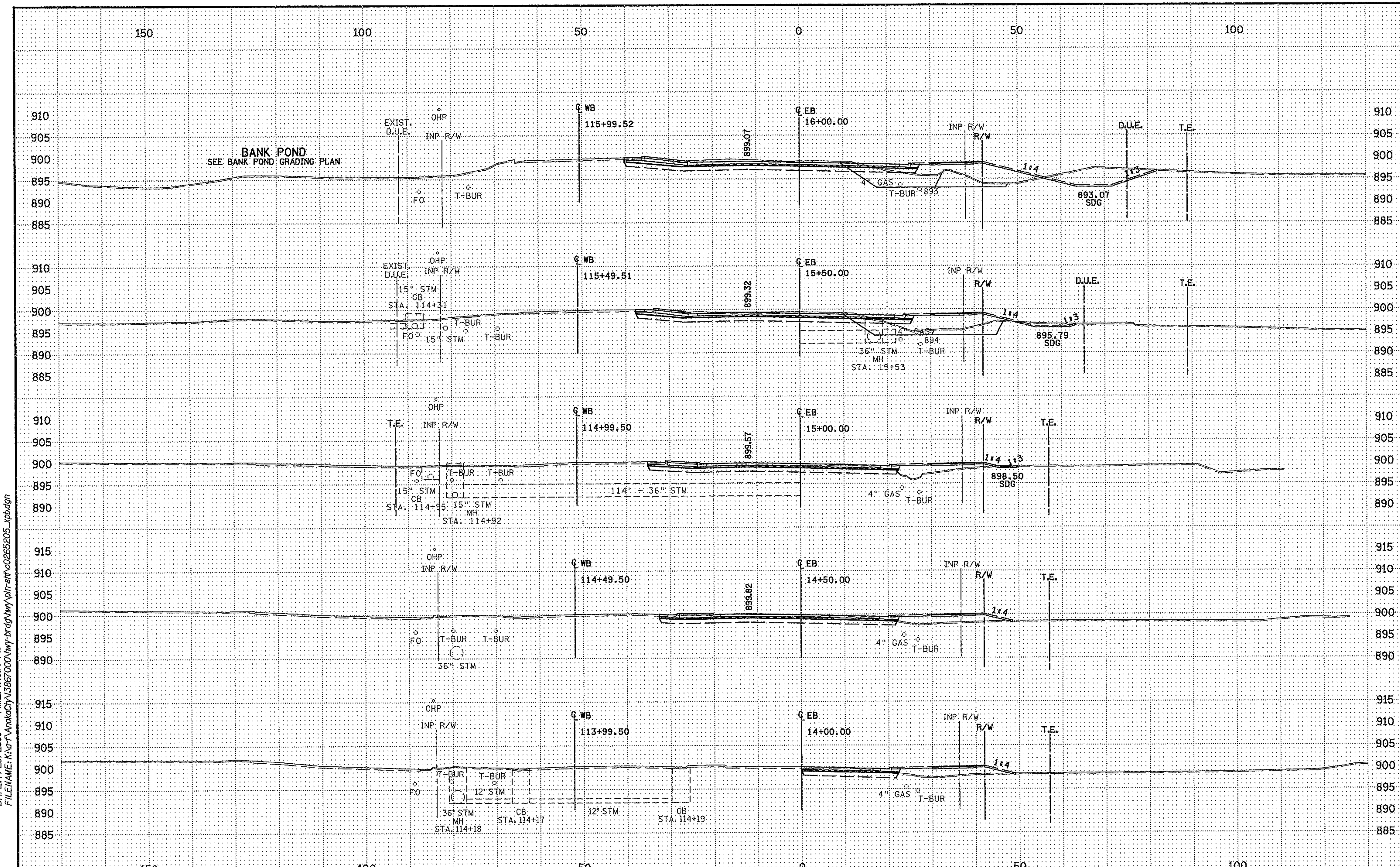
TKDA ENGINEERS·ARCHITECTS·PLANNERS	CROSS SECTIONS CSAH 116 STA. 11+50.00 TO STA. 13+50.00	S.P. 02-716-09, S.P. 197-124-001 Sheet No.18.60 of 294 Sheets



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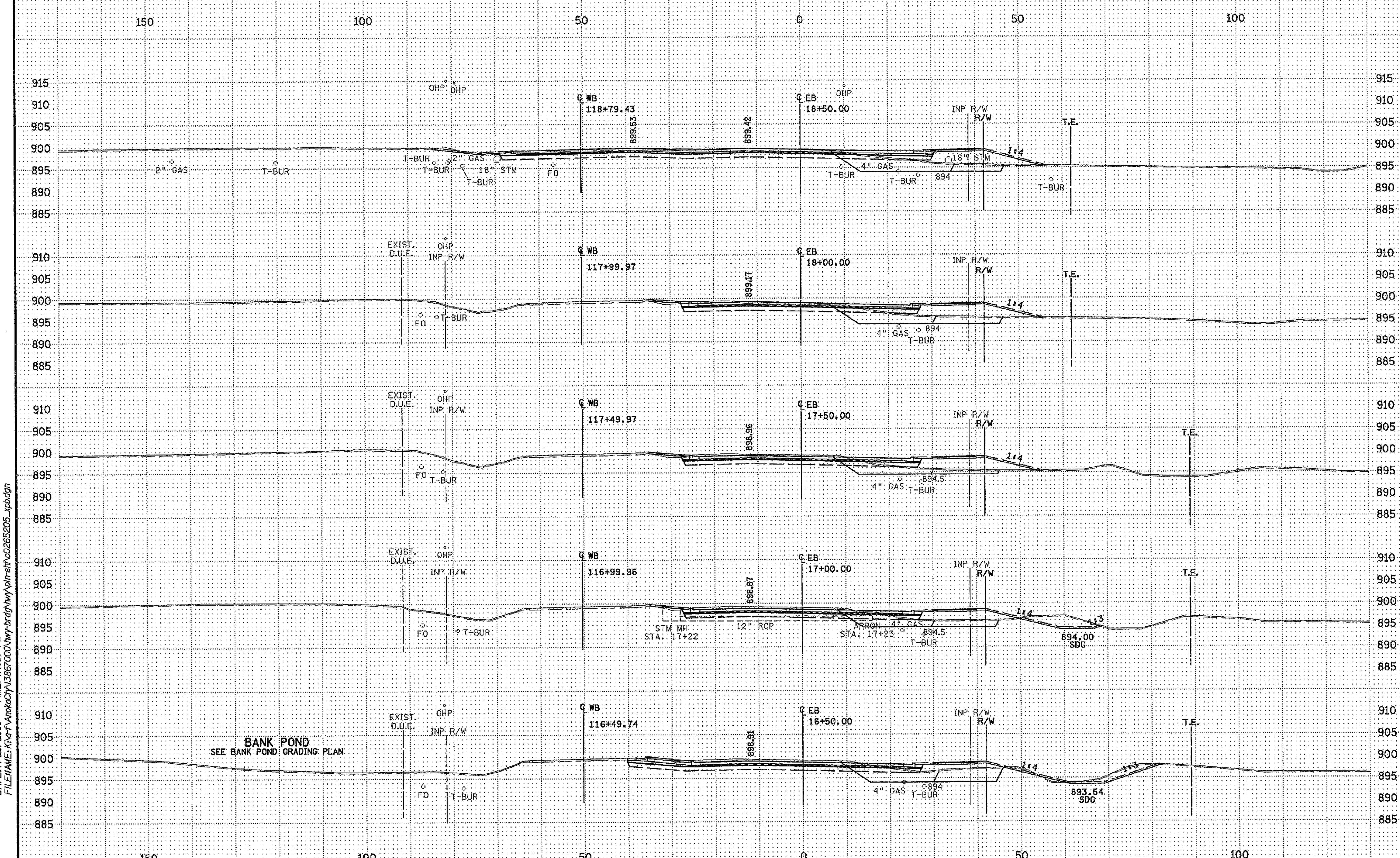
CROSS SECTIONS

CSAH 116 STA. 14+00.00 TO STA. 16+00.00

S.P. 02-716-09, S.P. 197-124-001



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CROSS SECTIONS

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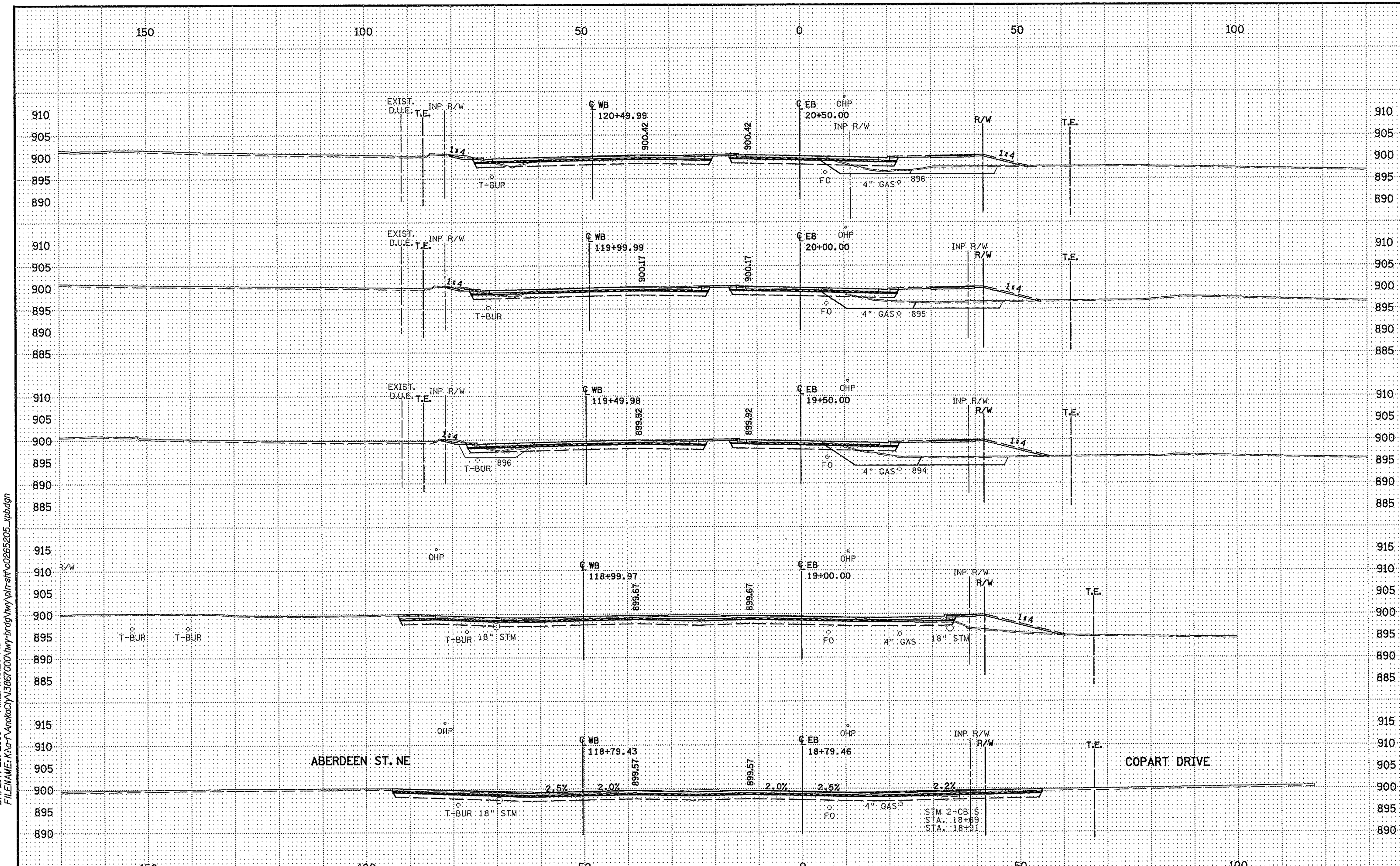
S.P. 02-716-09, S.P. 197-124-001



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CROSS SECTIONS
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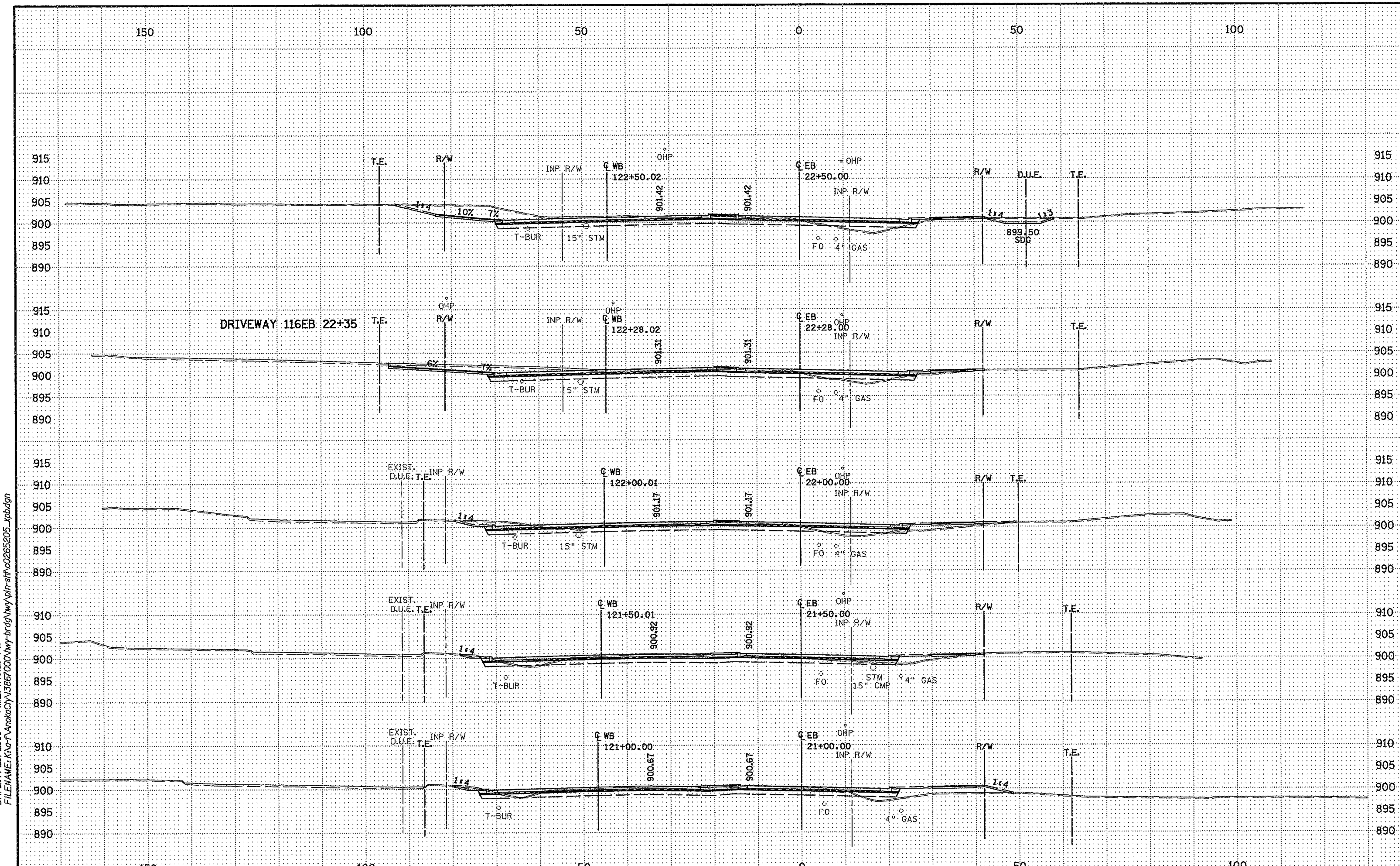

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CROSS SECTIONS
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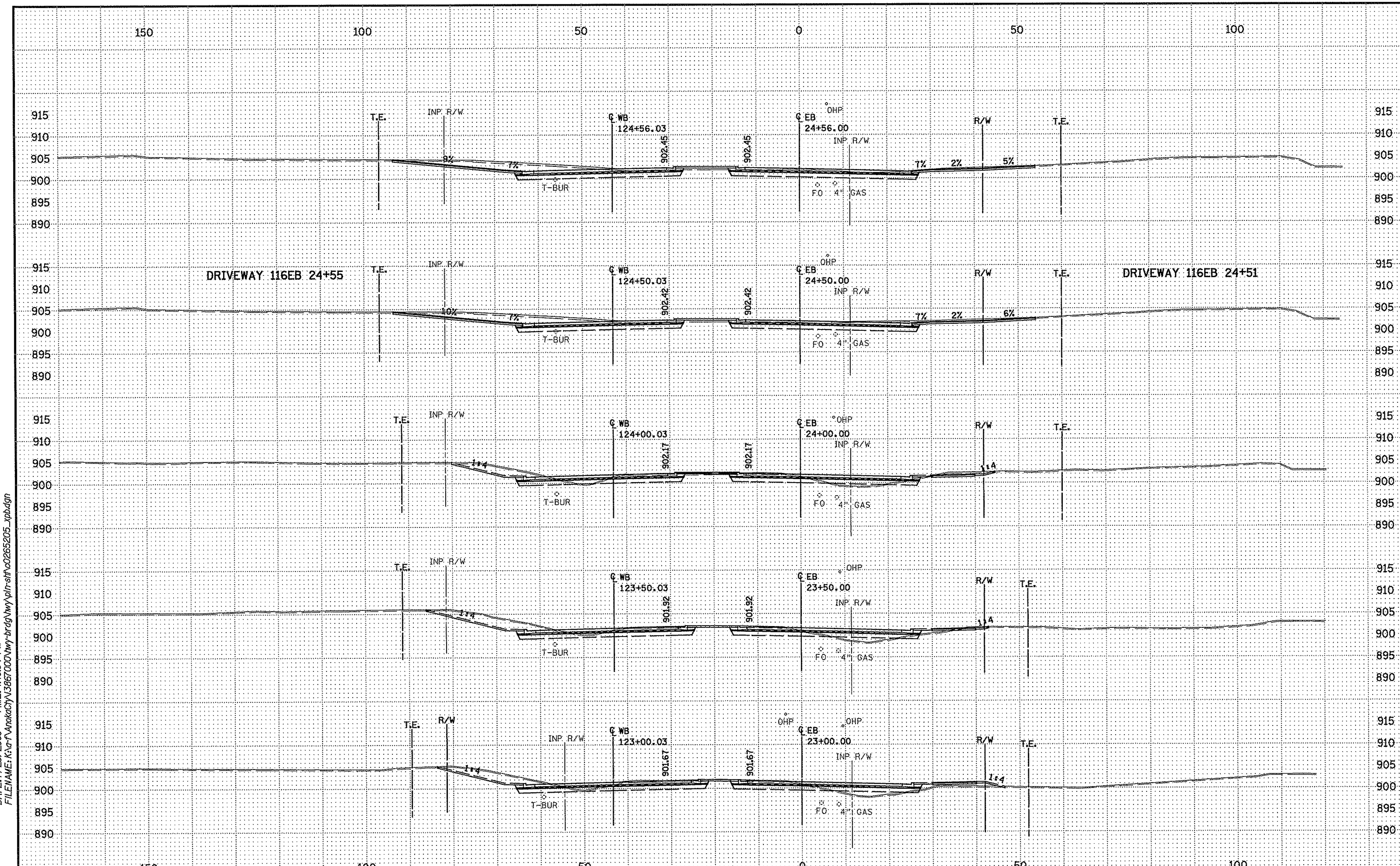

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CROSS SECTIONS
CSAH 116 STA. 23+00.00 TO STA. 24+56.00

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150 100 50 0 50 100

915 910 905 900 895 890

DRIVEWAY 116EB 26+23

T.E. INP R/W 10% 1% 7% ℄ WB 126+18.53 903.25 T-BUR 15" STM ° OHP ℄ EB 26+18.50 903.25 INP R/W 4" GAS FO R/W 1:10 T.E.

T.E. INP R/W 1:4 ℄ WB 126+00.03 903.17 T-BUR T-BUR ° OHP ℄ EB 26+00.00 903.17 INP R/W 4" GAS FO R/W 1:16 T.E.

OHP INP R/W 1:4 ℄ WB 125+63.50 902.99 T-BUR ° OHP ℄ EB 25+63.47 902.99 INP R/W 4" GAS FO R/W 1:4 T.E.

EVELETH ST. NE

INP R/W ℄ WB 125+50.03 902.92 T-BUR ° OHP ℄ EB 25+50.00 902.92 INP R/W FO 4" GAS R/W 1:4 T.E.

INP R/W ℄ WB 125+00.03 902.67 T-BUR ° OHP ℄ EB 25+00.00 902.67 INP R/W FO 4" GAS R/W 1:4 T.E.

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ENGINEERS · ARCHITECTS · PLANNERS

CROSS SECTIONS
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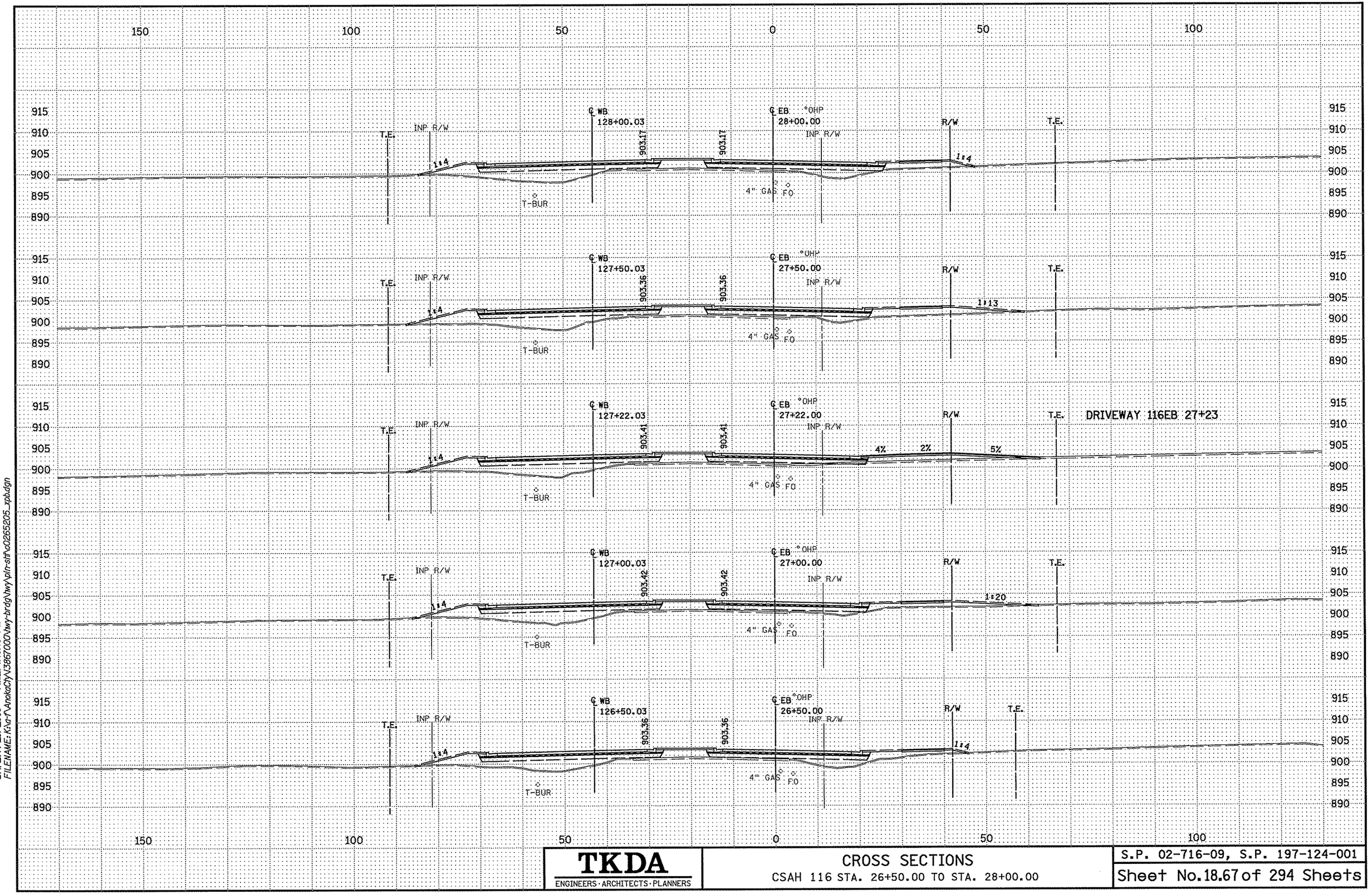

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CROSS SECTIONS
CSAH 116 STA. 26+50.00 TO STA. 28+00.00

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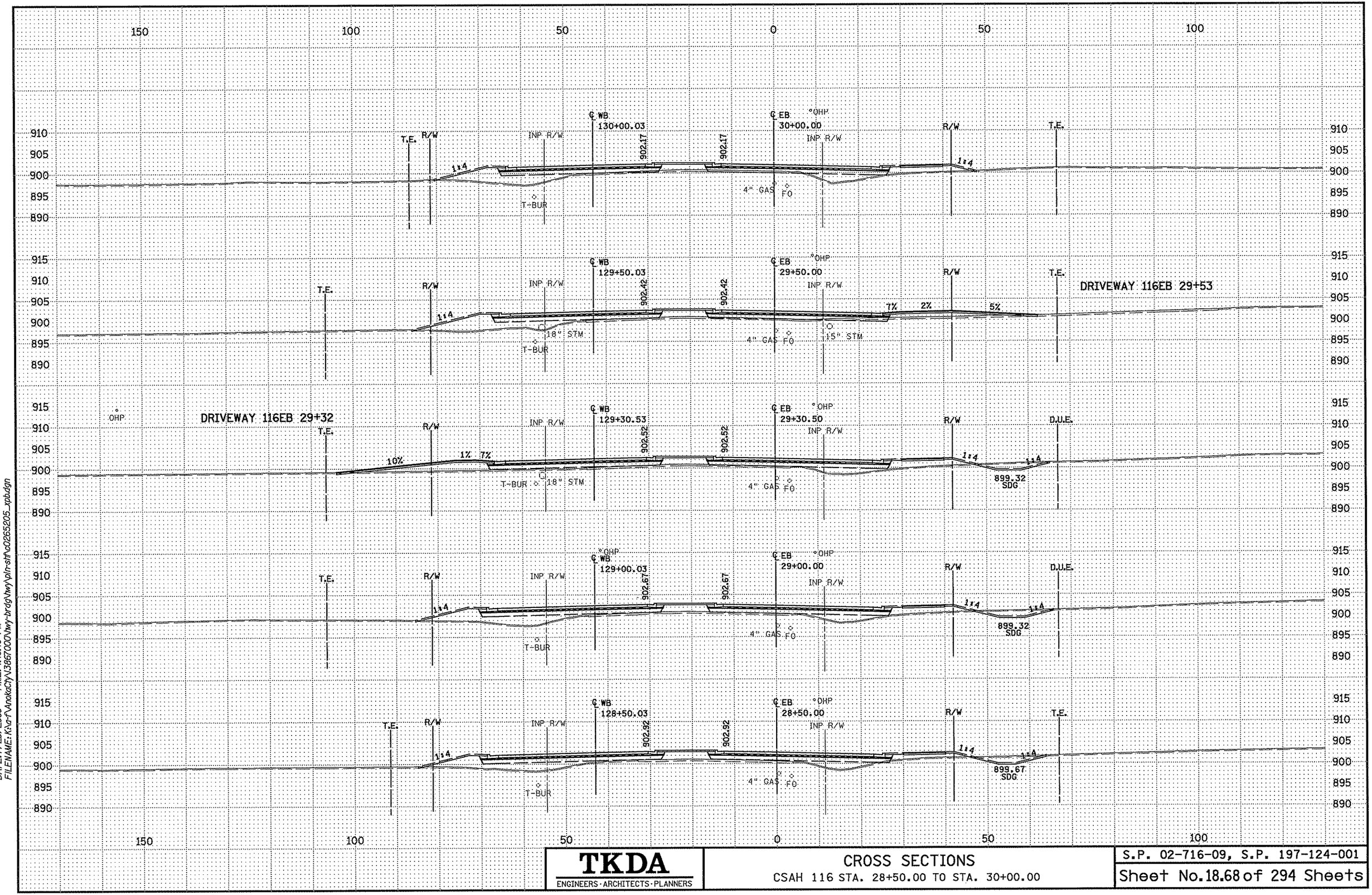

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CROSS SECTIONS

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S.P. 02-716-09, S.P. 197-124-001

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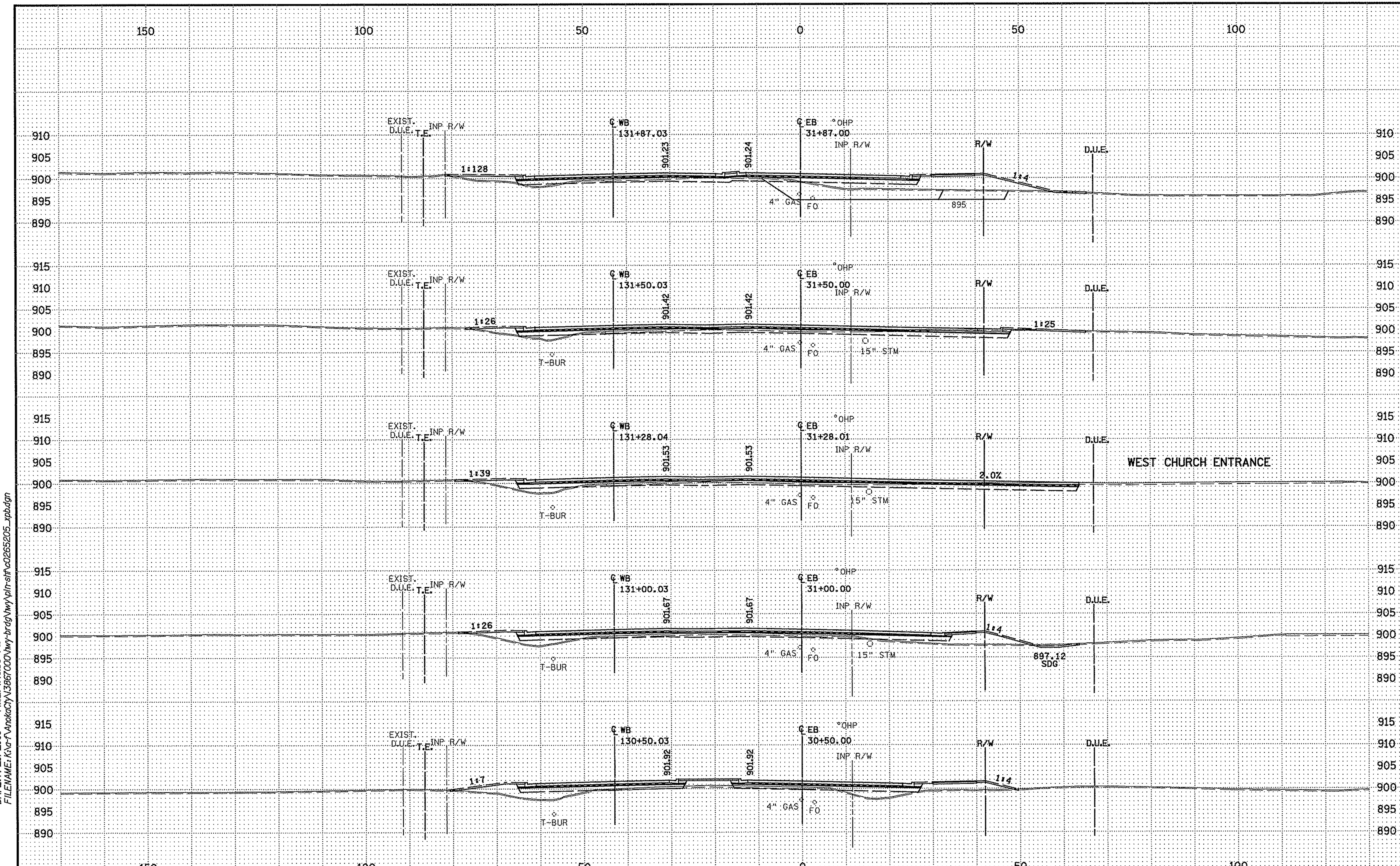

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CROSS SECTIONS
CSAH 116 STA. 30+50.00 TO STA. 31+87.00

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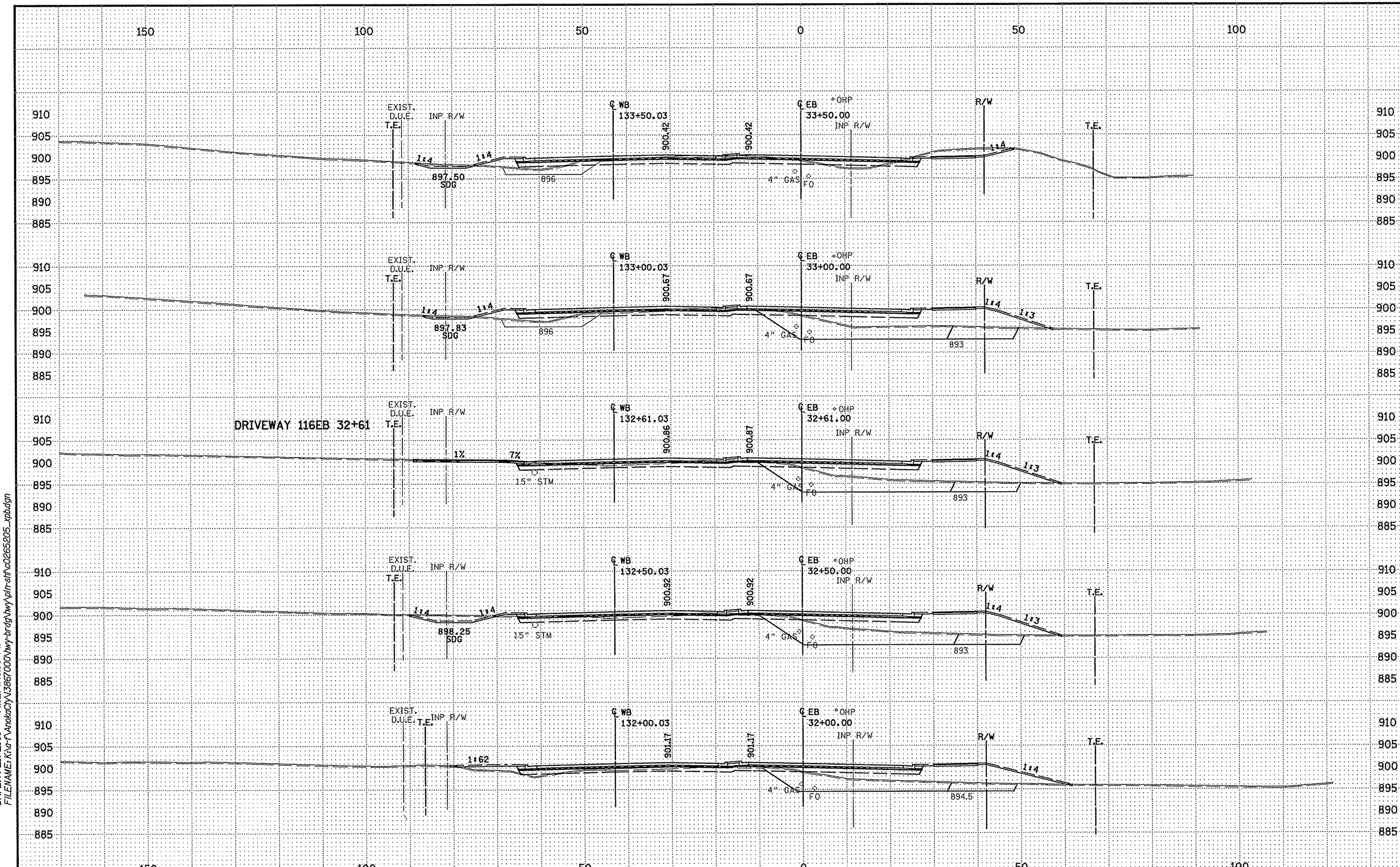

TKDA

ENGINEERS · ARCHITECTS · PLANNERS

CROSS SECTIONS

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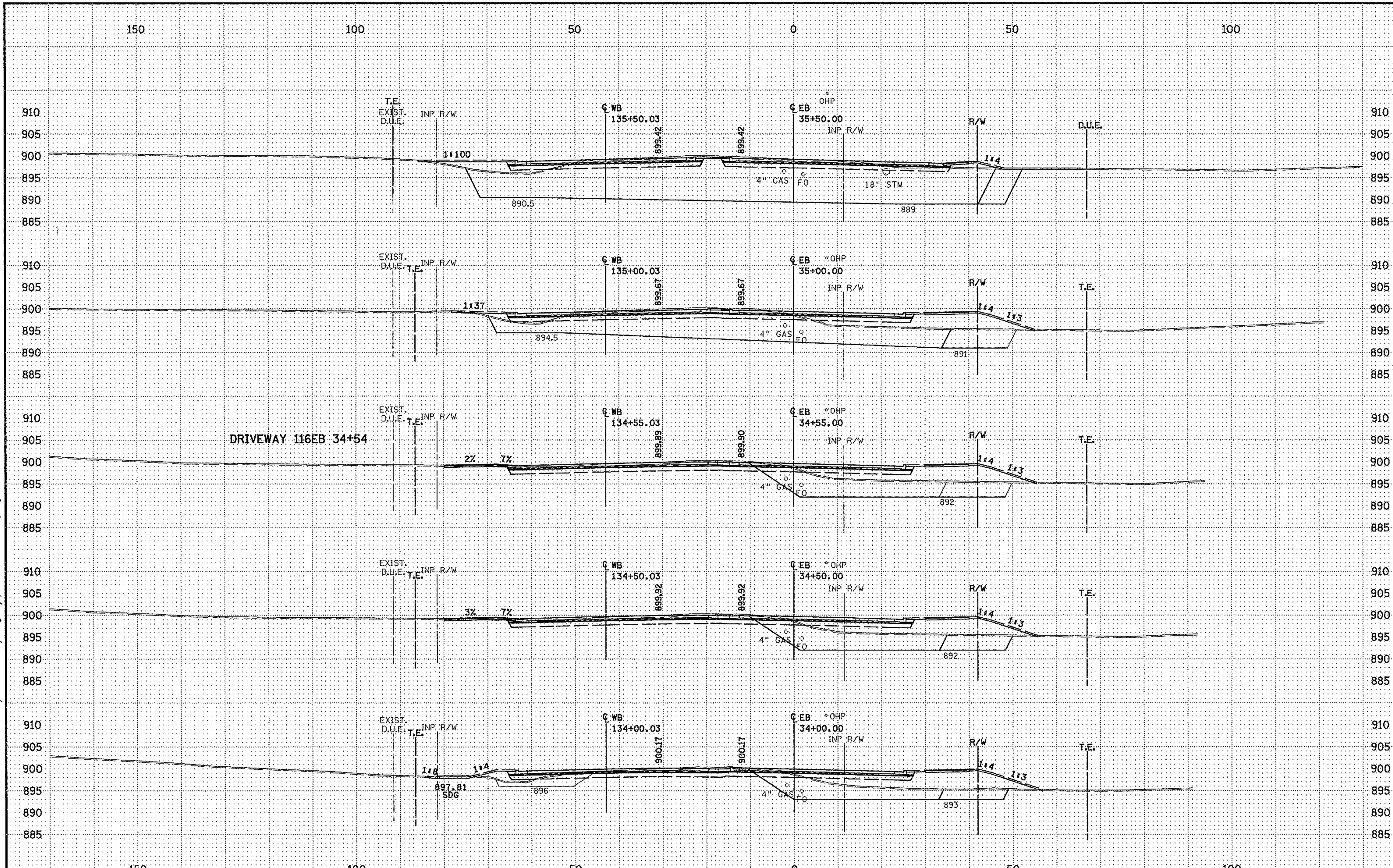

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CROSS SECTIONS

CSAH 116 STA. 34+00.00 TO STA. 35+50.00

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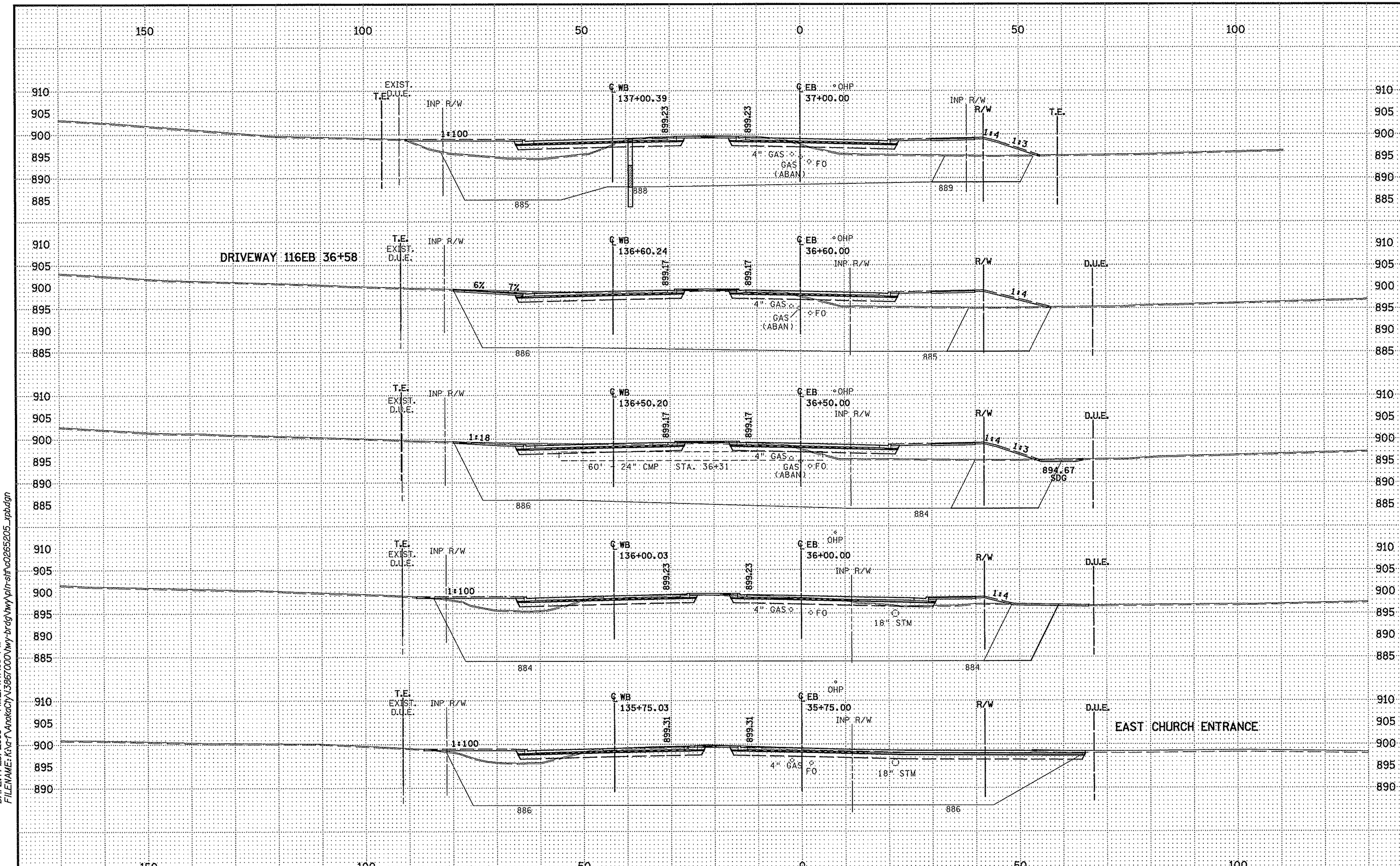

150
100
50
0
50
100
910
905
900
895
890
885
T.E.
EXIST. D.U.E.
INP R/W
℄ WB 137+00.39
899.23
899.23
℄ EB 37+00.00
OHP
INP R/W
R/W
T.E.
1:100
1:4
1:3
4" GAS
GAS (ABAN)
FO
885
888
889
DRIVEWAY 116EB 36+58
T.E.
EXIST. D.U.E.
INP R/W
℄ WB 136+60.24
899.17
899.17
℄ EB 36+60.00
OHP
INP R/W
R/W
D.U.E.
6%
7%
1:4
4" GAS
GAS (ABAN)
FO
886
885
T.E.
EXIST. D.U.E.
INP R/W
℄ WB 136+50.20
899.17
899.17
℄ EB 36+50.00
OHP
INP R/W
R/W
D.U.E.
1:18
1:4
1:3
60' - 24" CMP STA. 36+31
4" GAS
GAS (ABAN)
FO
894.67 SDG
886
884
T.E.
EXIST. D.U.E.
INP R/W
℄ WB 136+00.03
899.23
899.23
℄ EB 36+00.00
OHP
INP R/W
R/W
D.U.E.
1:100
1:4
4" GAS
FO
18" STM
884
884
T.E.
EXIST. D.U.E.
INP R/W
℄ WB 135+75.03
899.31
899.31
℄ EB 35+75.00
OHP
INP R/W
R/W
D.U.E.
EAST CHURCH ENTRANCE
1:100
4" GAS
FO
18" STM
886
886
150
100
50
0
50
100

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CROSS SECTIONS
CSAH 116 STA. 35+75.00 TO STA. 37+00.00

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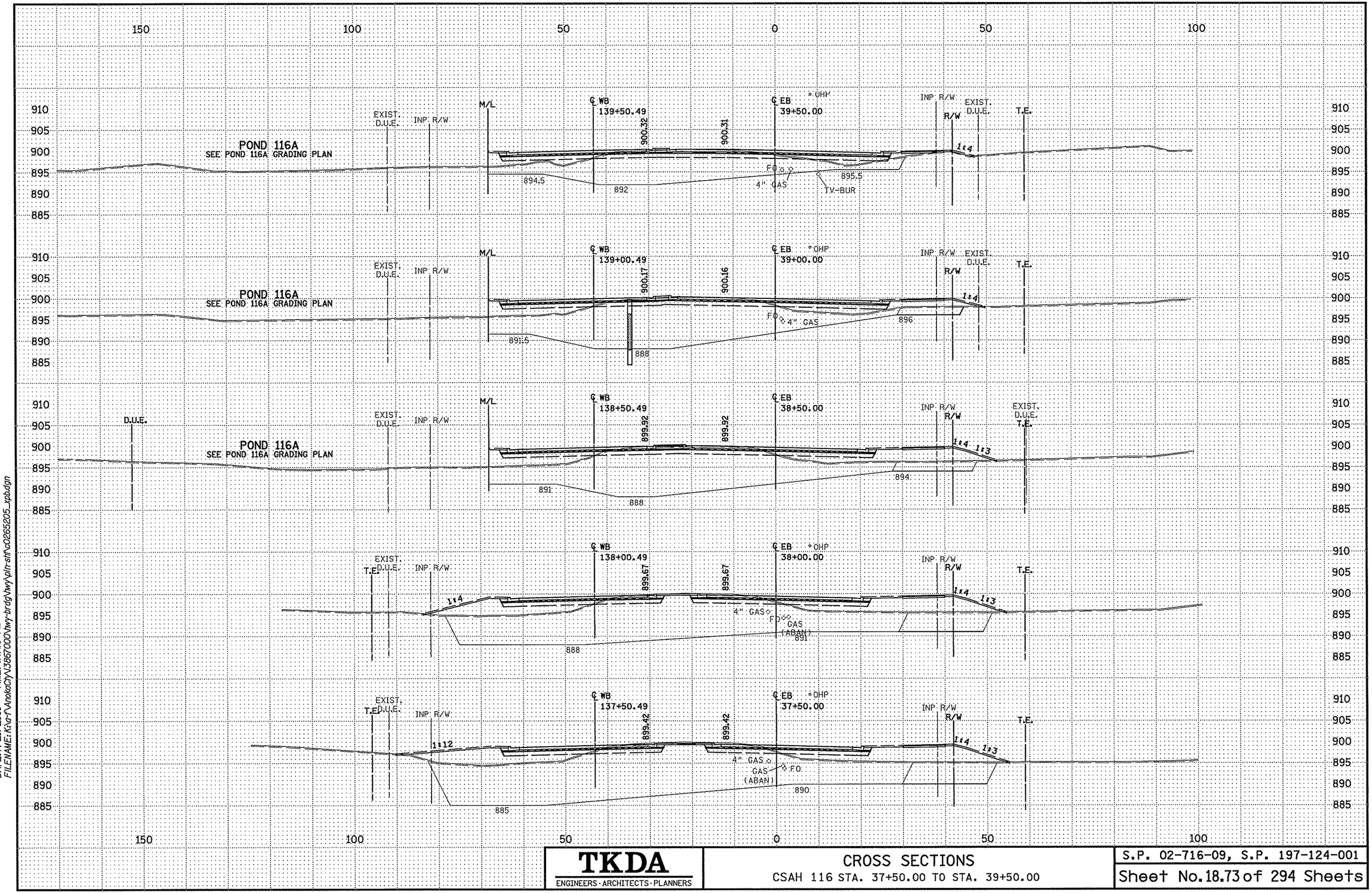

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TKDA
ENGINEERS · ARCHITECTS · PLANNERS

CROSS SECTIONS
CSAH 116 STA. 37+50.00 TO STA. 39+50.00

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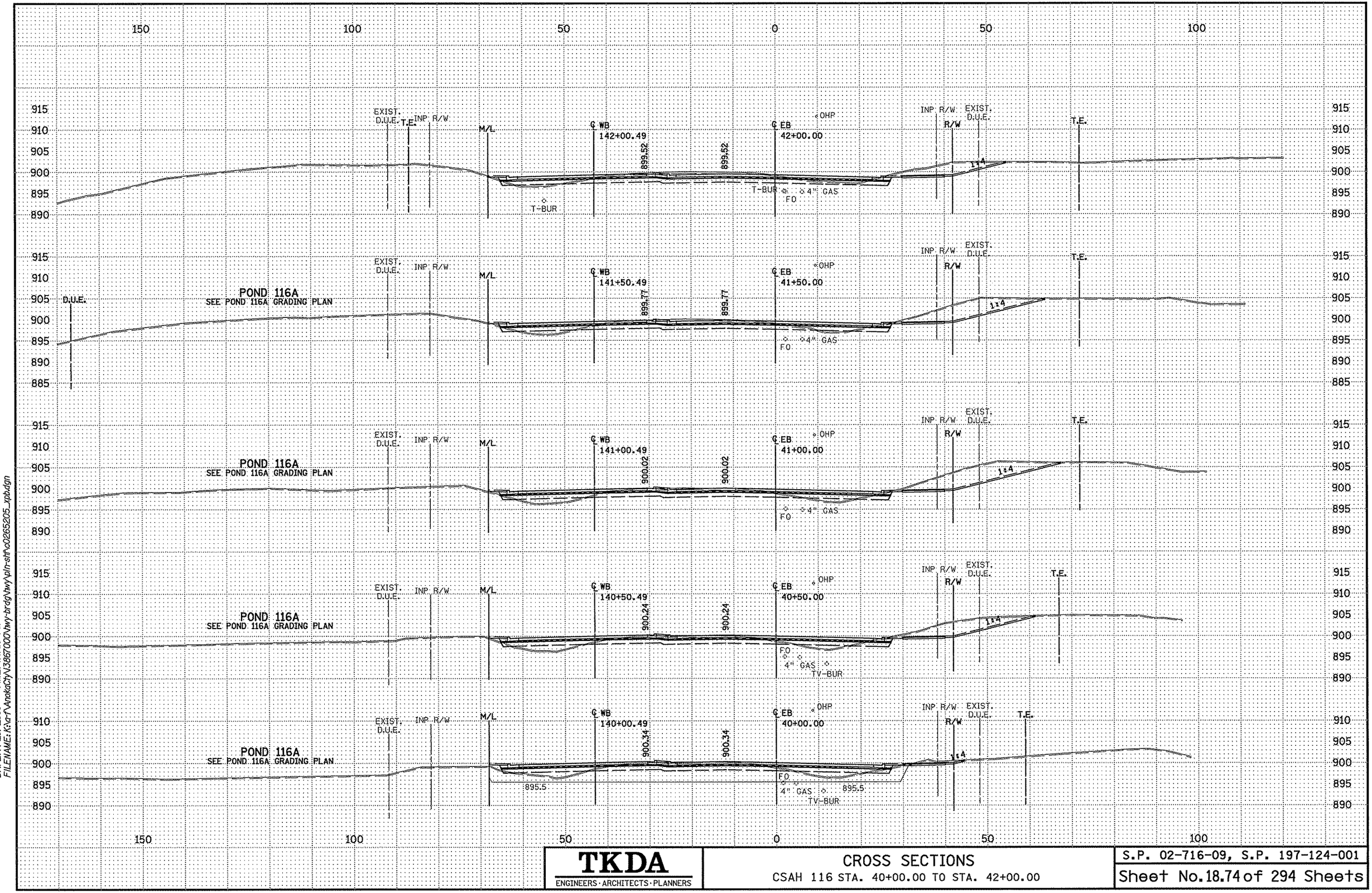

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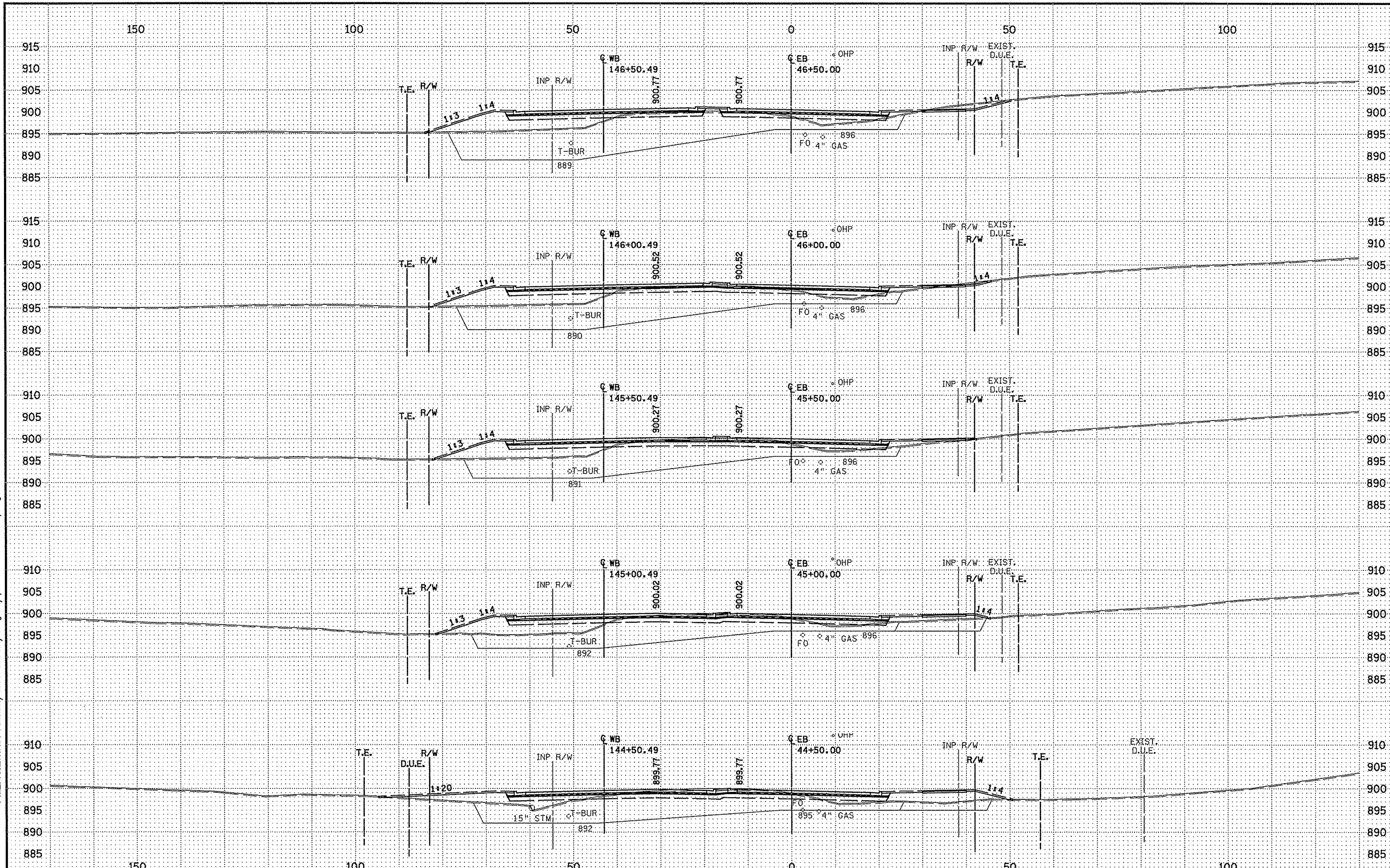
TKDA ENGINEERS · ARCHITECTS · PLANNERS	CROSS SECTIONS CSAH 116 STA. 40+00.00 TO STA. 42+00.00	S.P. 02-716-09, S.P. 197-124-001 Sheet No.18.74 of 294 Sheets



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TKDA
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CROSS SECTIONS
CSAH 116 STA. 44+50.00 TO STA. 46+50.00

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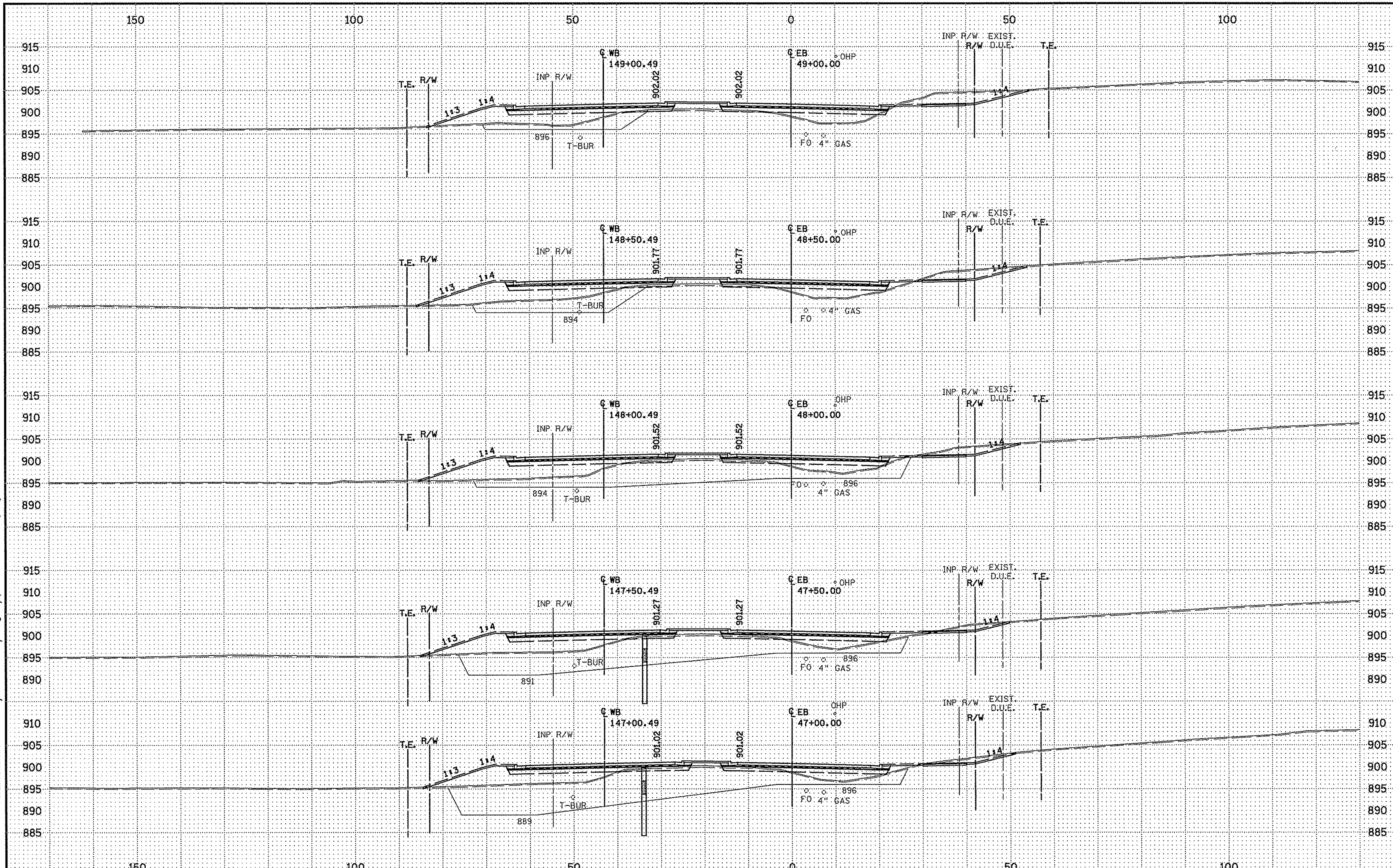

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TKDA
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CROSS SECTIONS
CSAH 116 STA. 47+00.00 TO STA. 49+00.00

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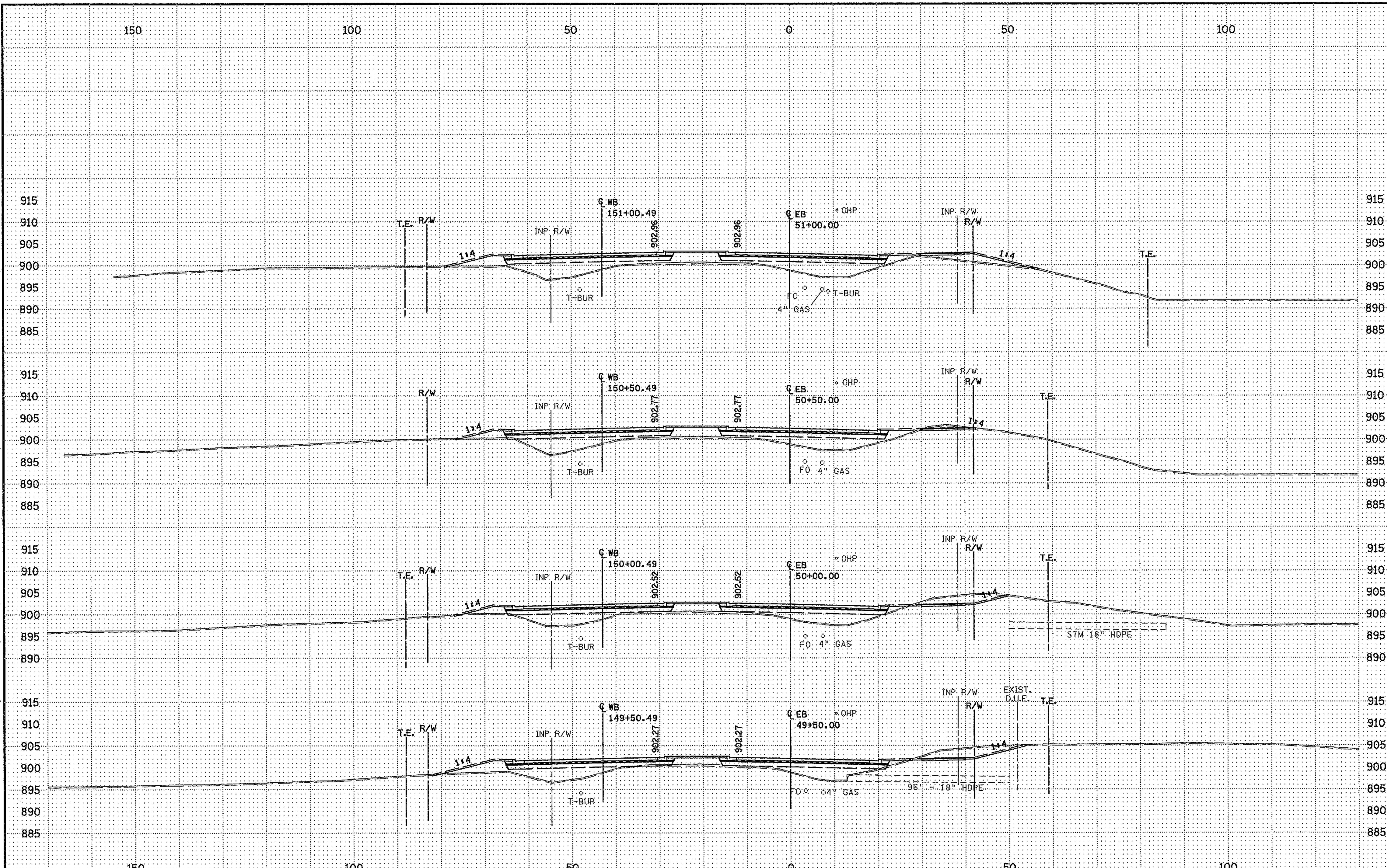

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CROSS SECTIONS

CSAH 116 STA. 49+50.00 TO STA. 51+00.00

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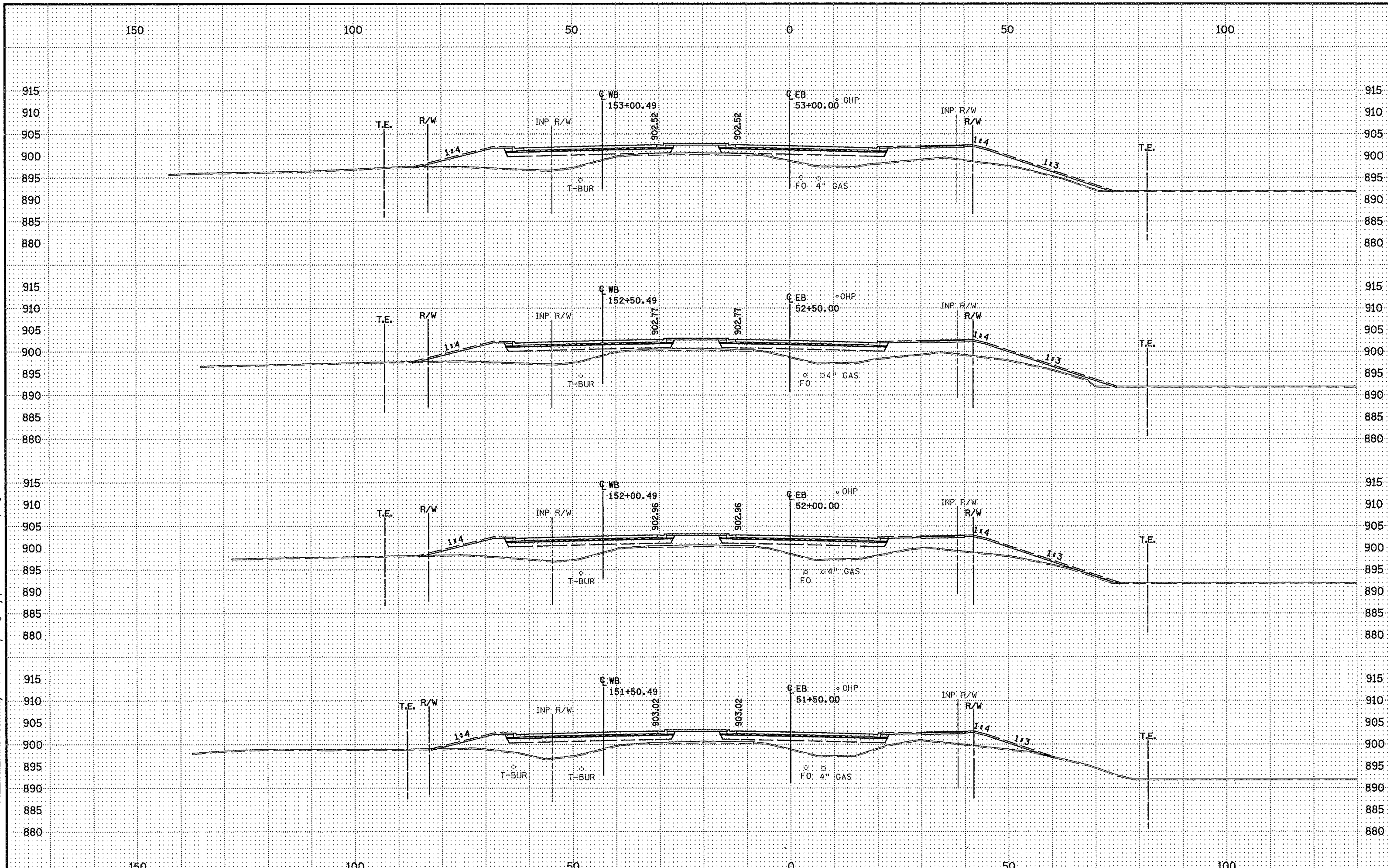

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CSAH 116 STA. 51+50.00 TO STA. 53+00.00

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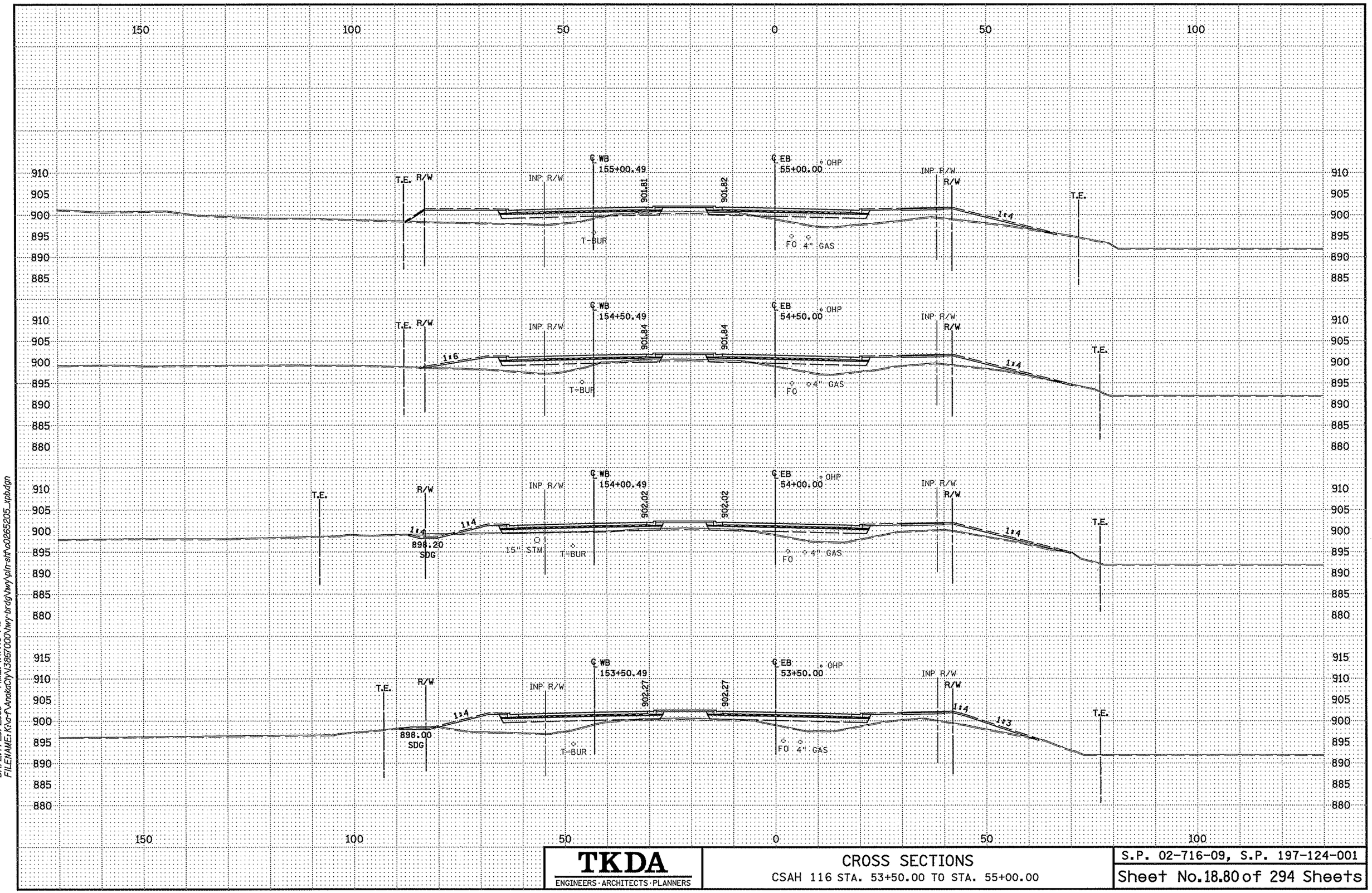

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CSAH 116 STA. 53+50.00 TO STA. 55+00.00

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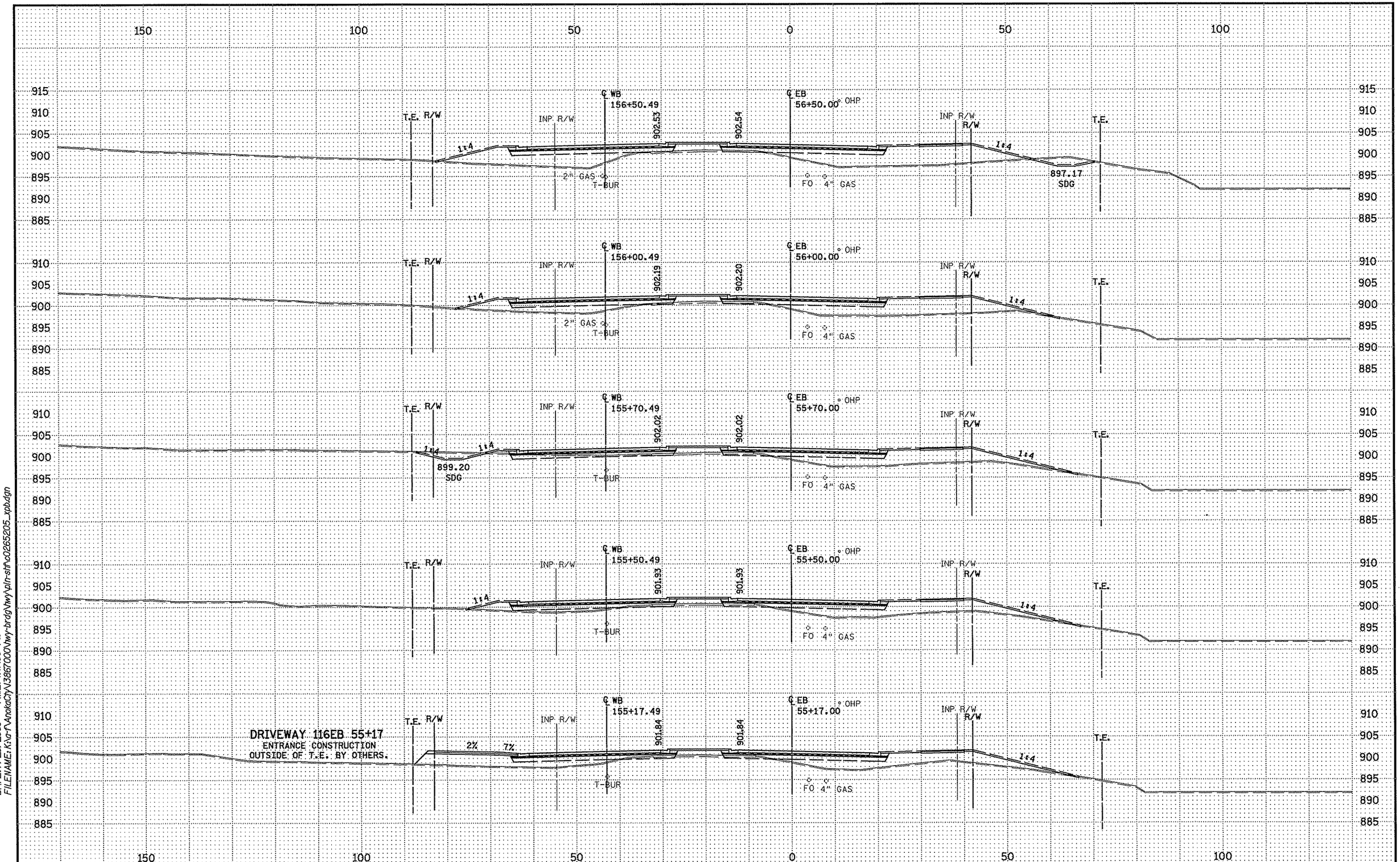

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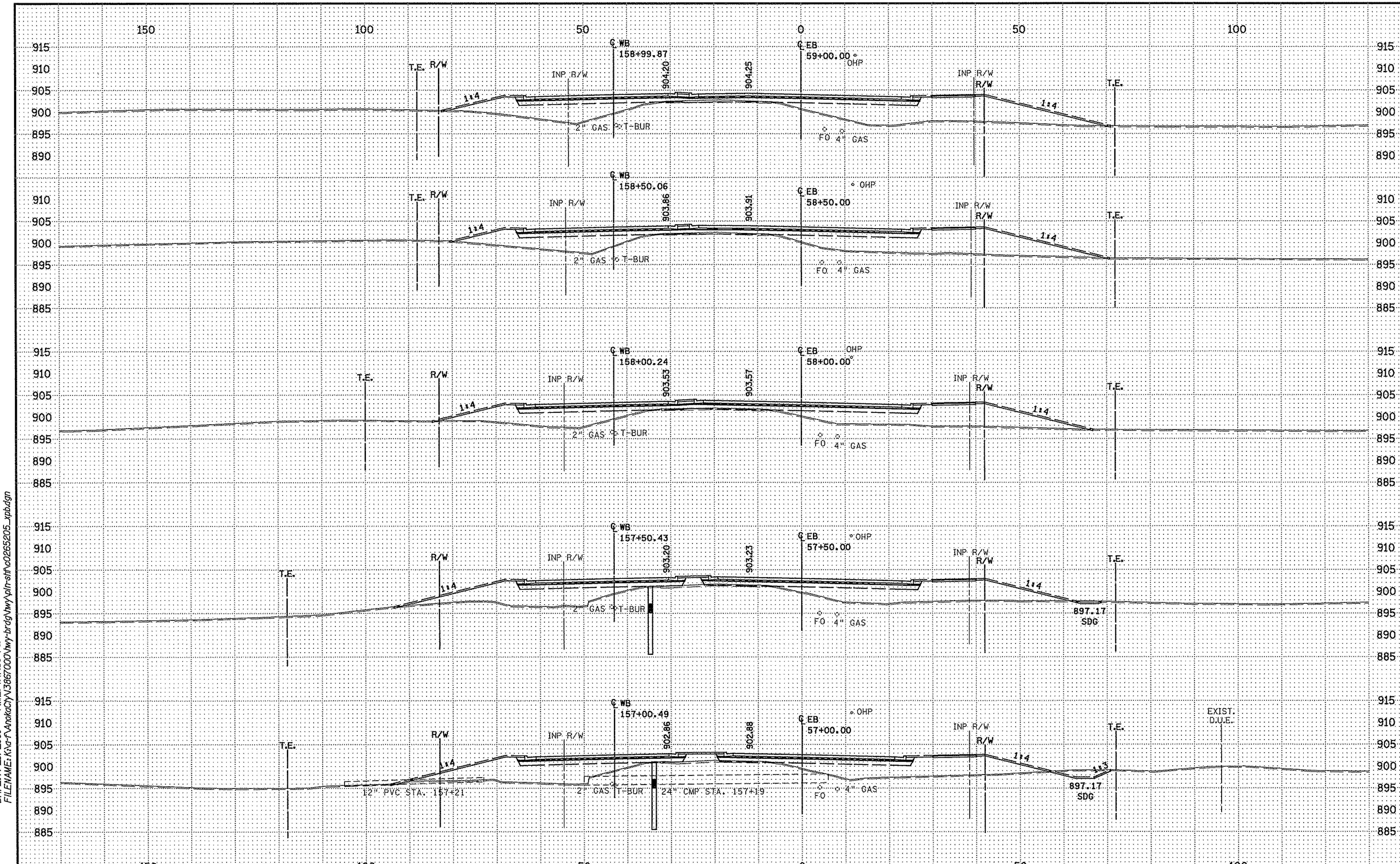

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CSAH 116 STA. 57+00.00 TO STA. 59+00.00

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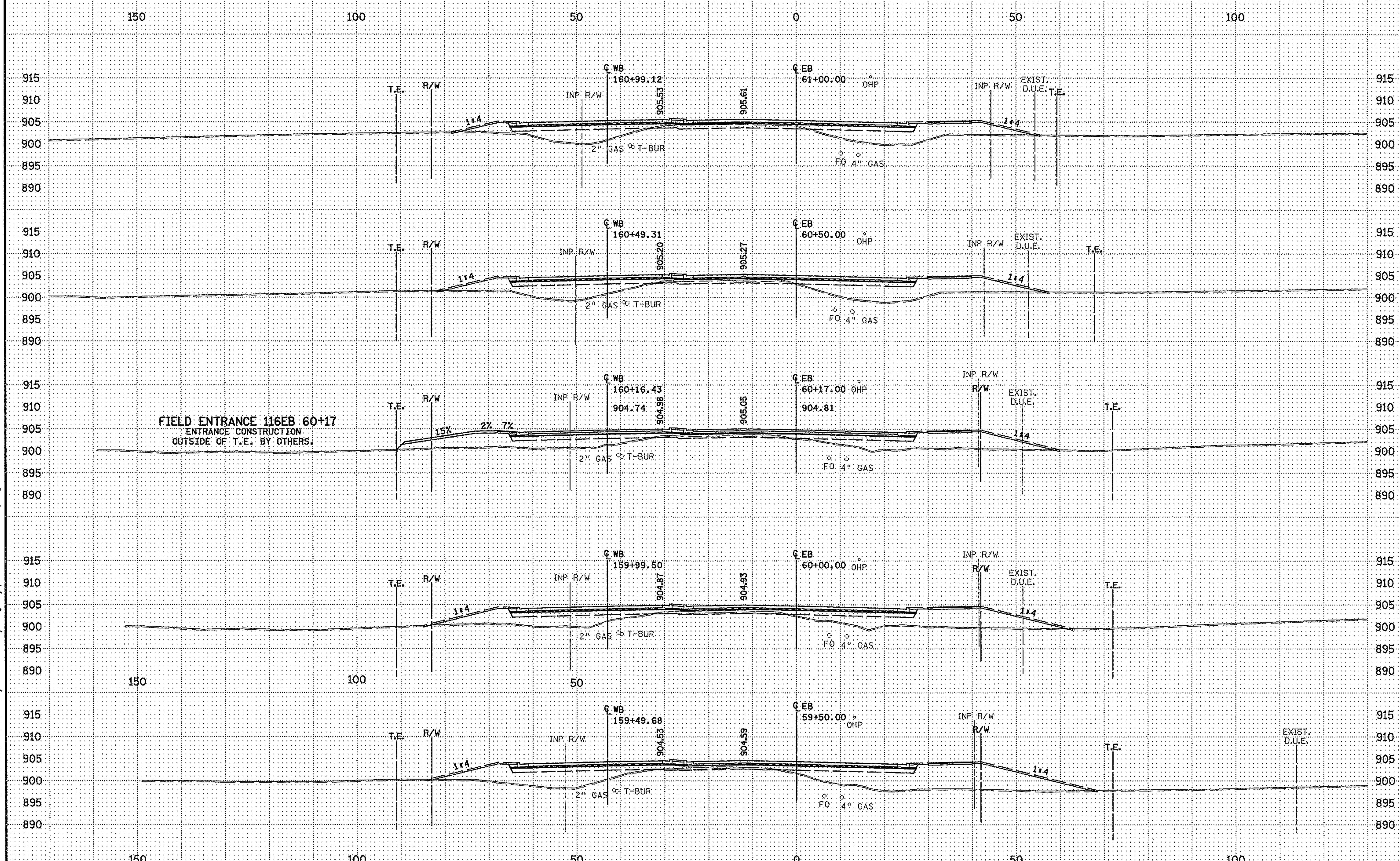

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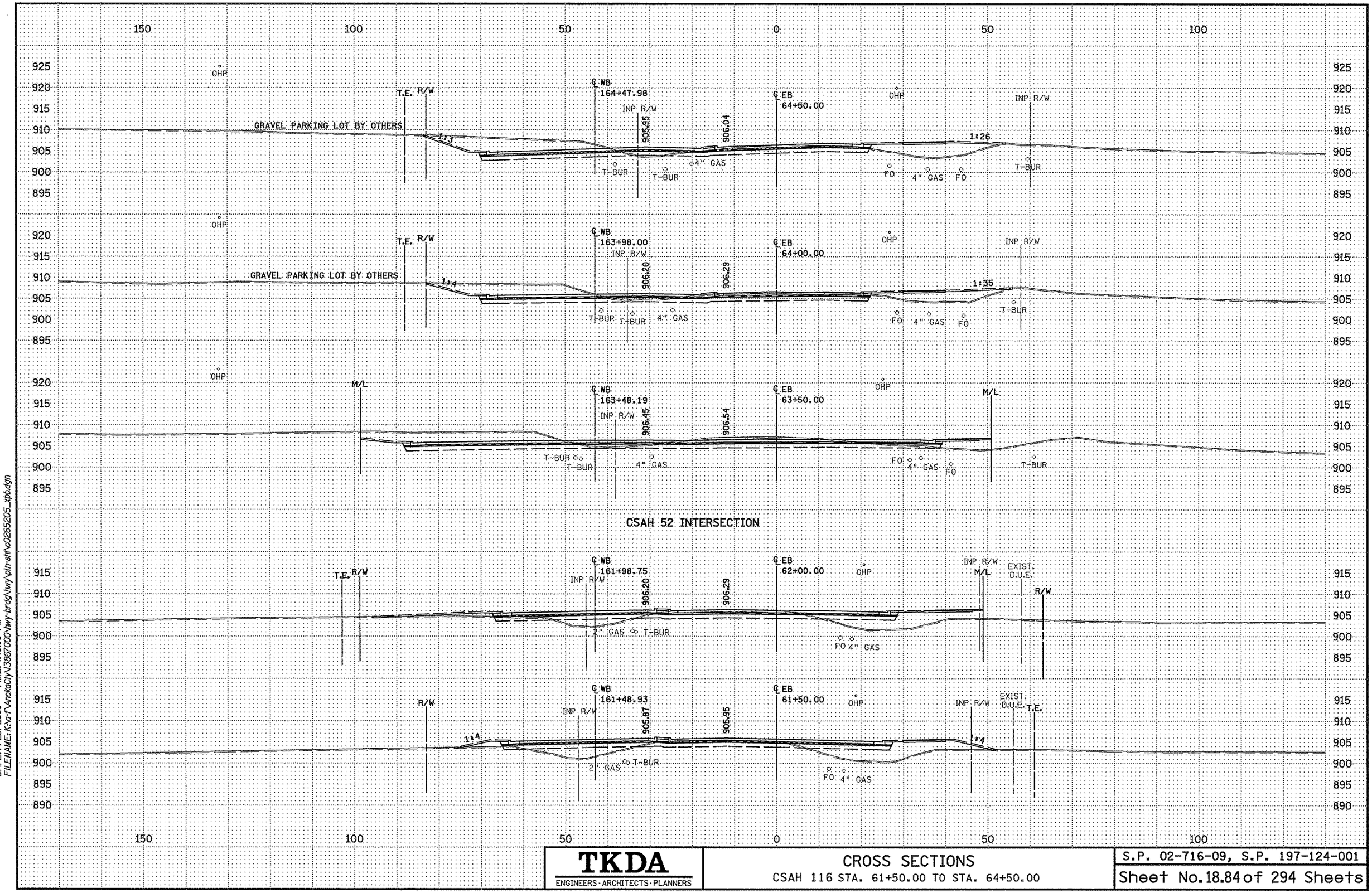

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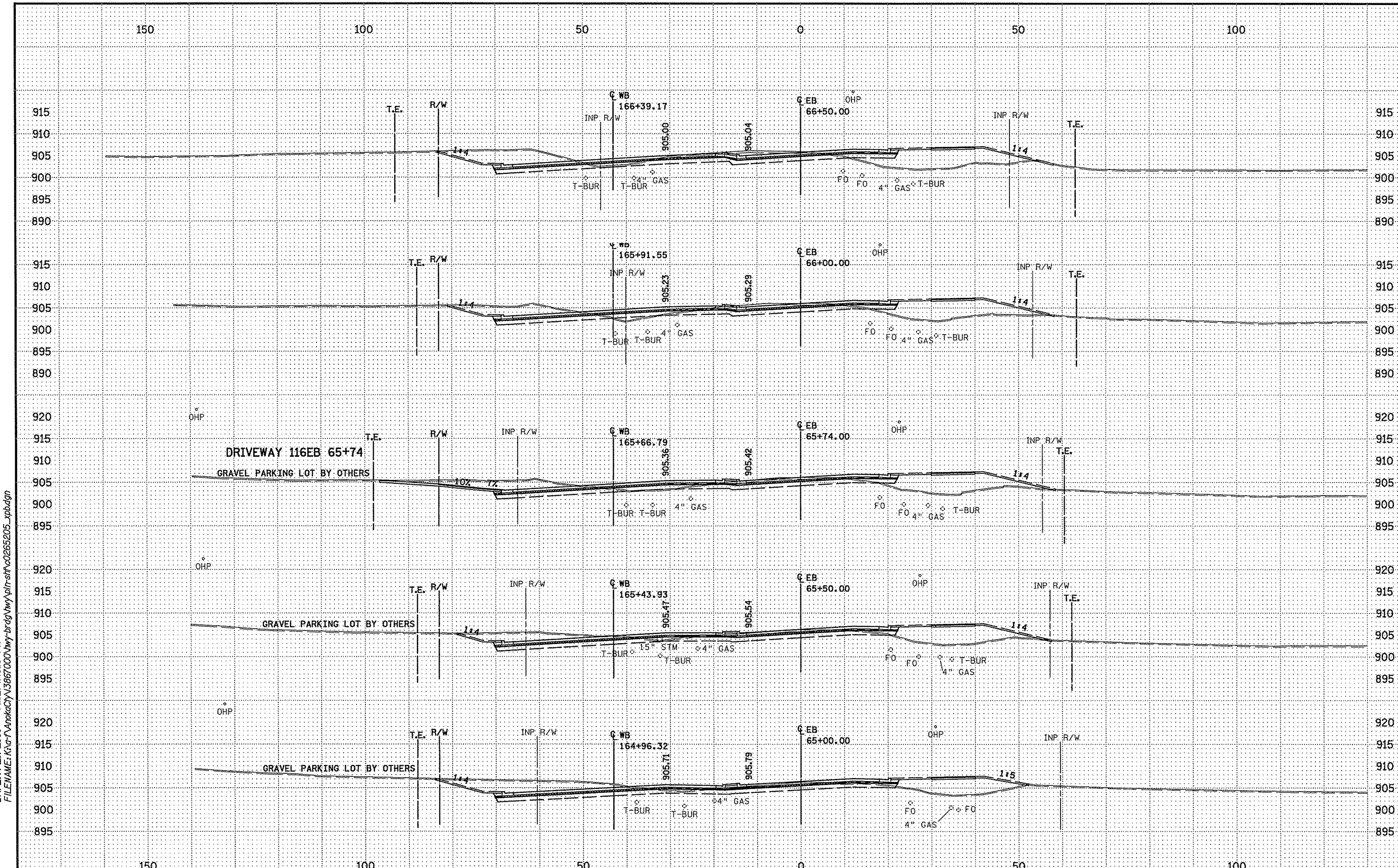

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CSAH 116 STA. 65+00.00 TO STA. 66+50.00

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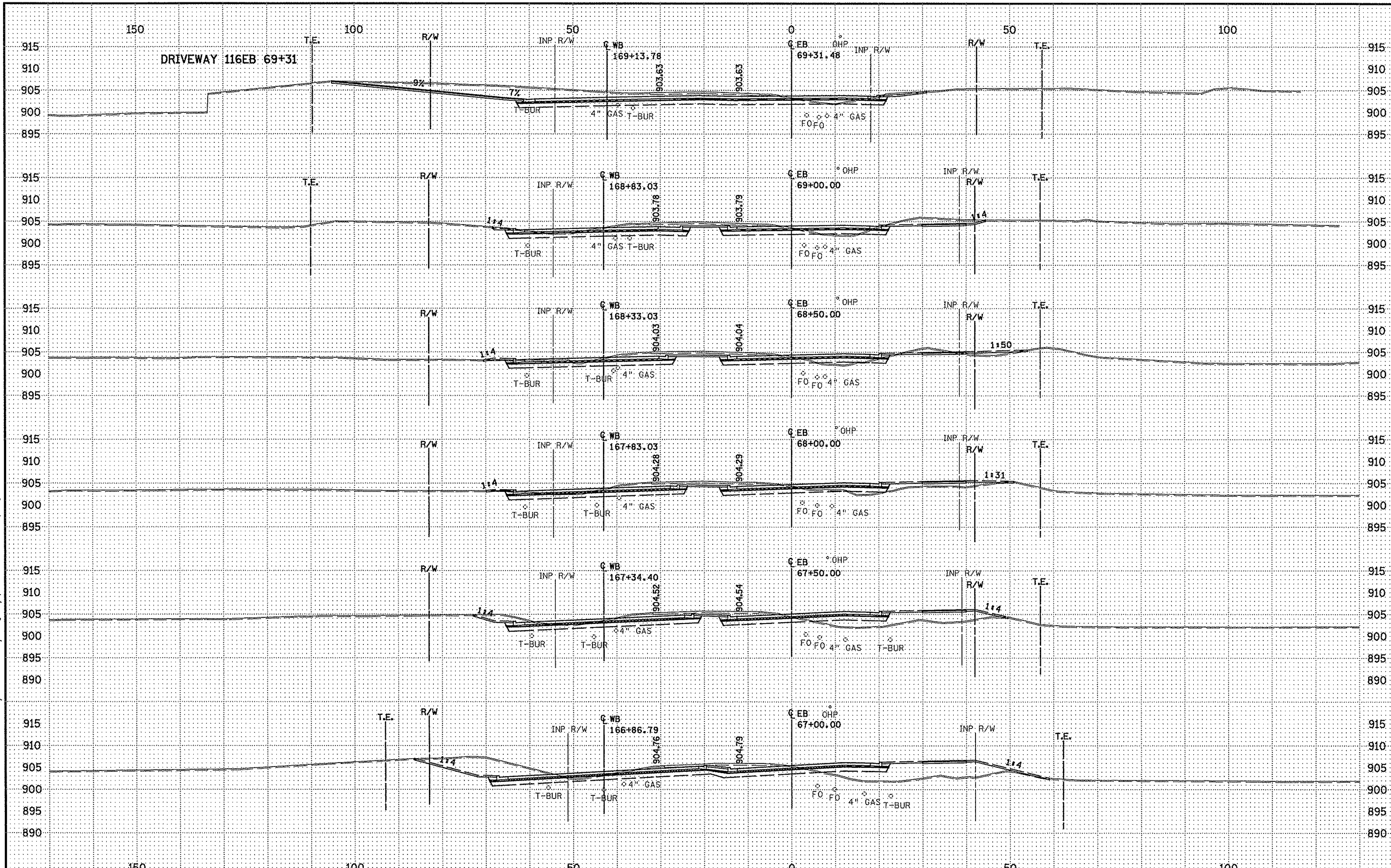

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CSAH 116 STA. 67+00.00 TO STA. 69+31.48

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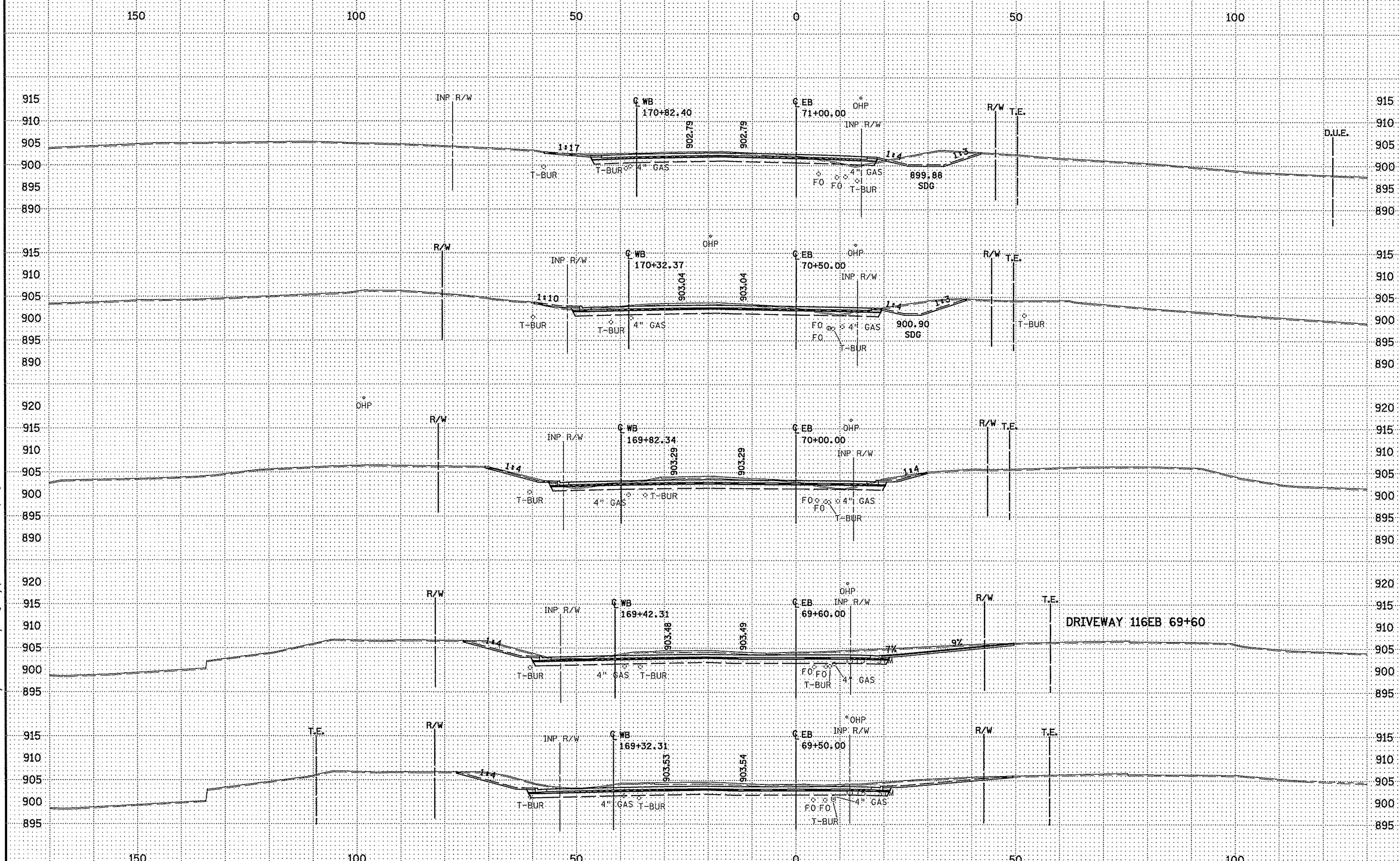

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CSAH 116 STA. 69+50.00 TO STA. 71+00.00

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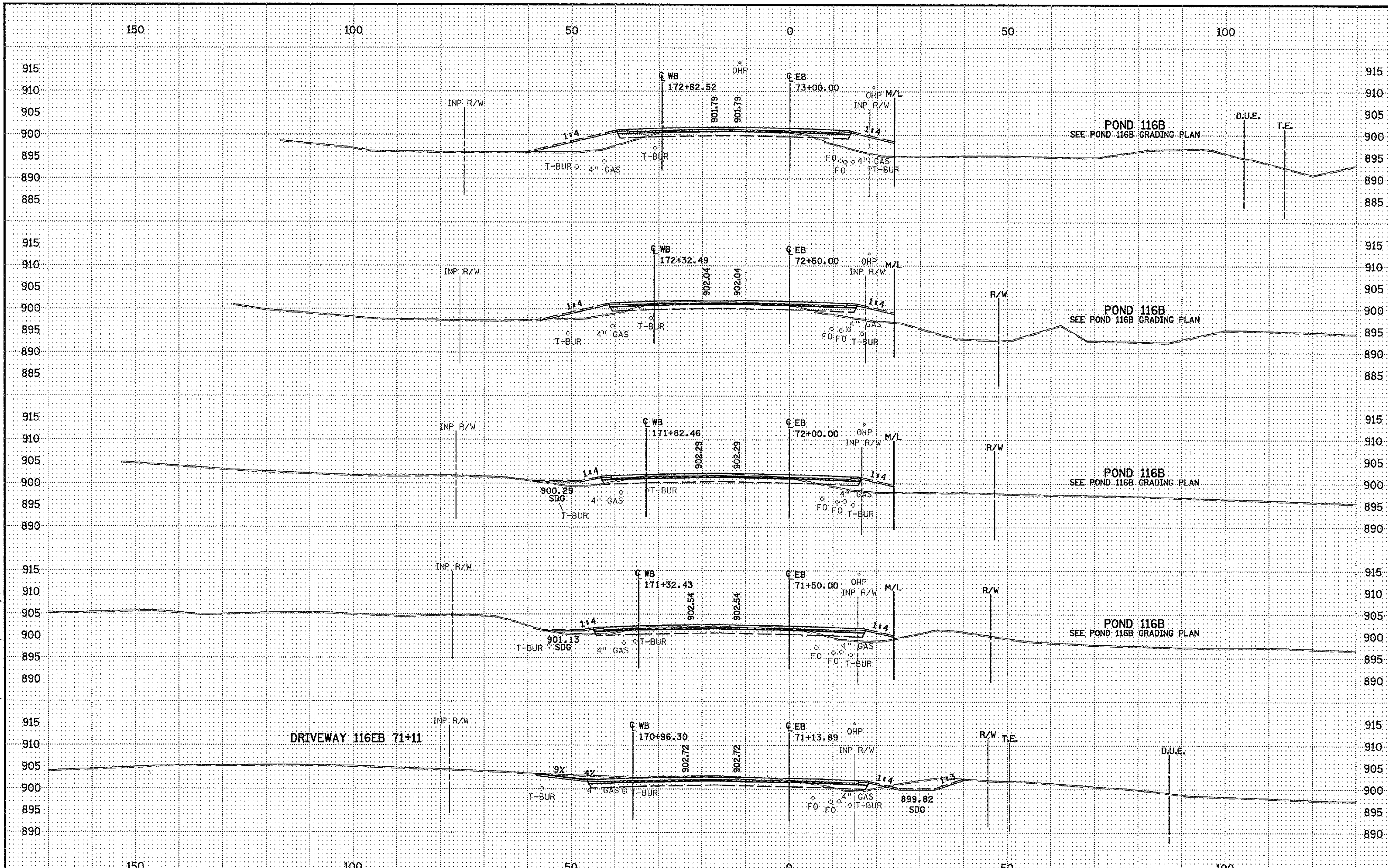

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CSAH 116 STA. 71+13.89 TO STA. 73+00.00

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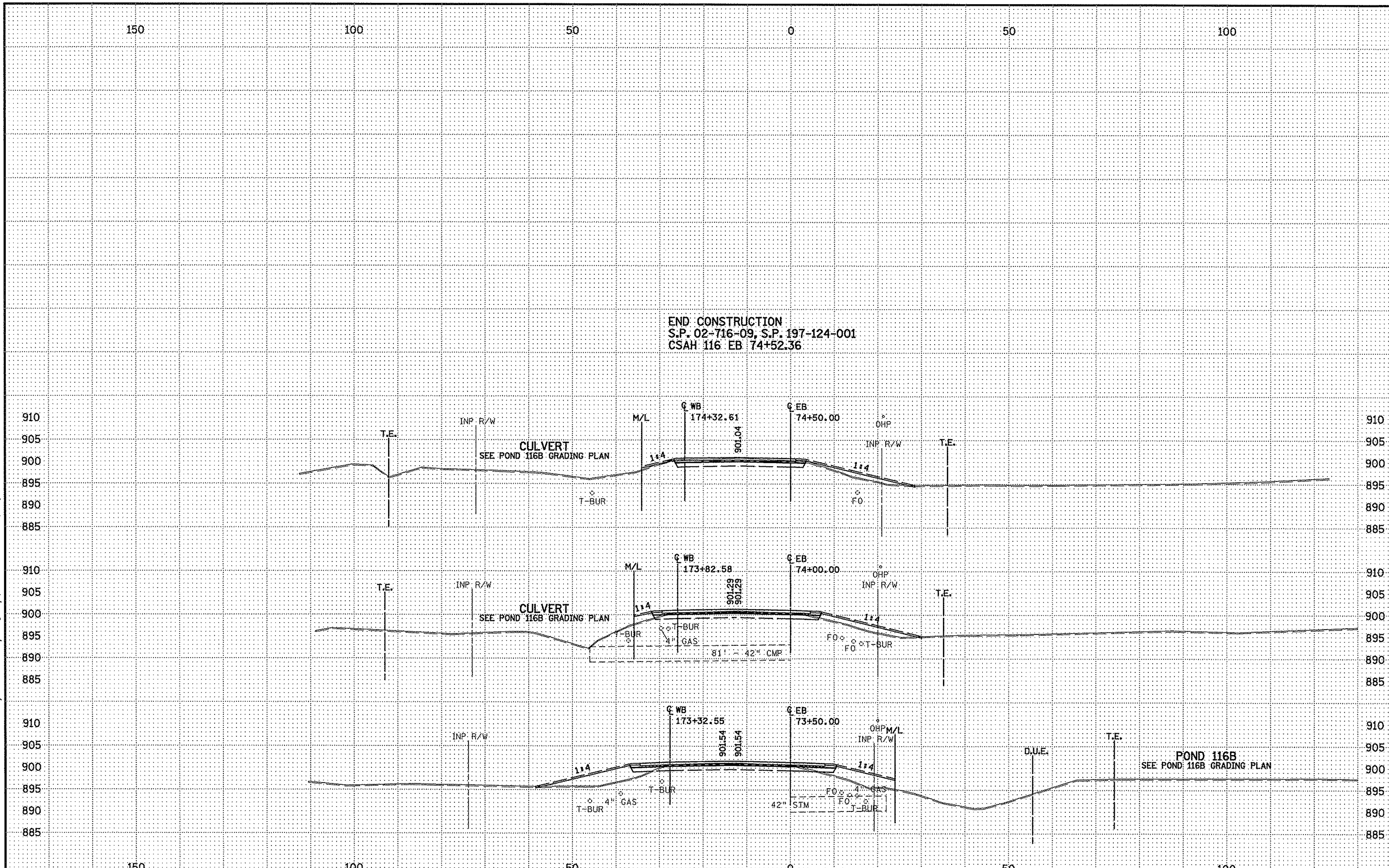

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CSAH 116 STA. 73+50.00 TO STA. 74+50.00

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