

MINNESOTA DEPARTMENT OF TRANSPORTATION ANOKA COUNTY HIGHWAY DEPARTMENT

CONSTRUCTION PLAN FOR GRADING, BIT. SURFACING, CONC. CURB AND GUTTER, SIGNING, LIGHTING, AND SIGNALIZATION

LOCATED ON CSAH 116 FROM IODINE ST. TO ST. FRANCIS BLVD. (TH 47)

CSAH 116 - THURSTON AVE./DYSPROSIUM ST.

STATE PROJ. NOS. 02-716-07, 103-122-12, 199-020-04

MINN. PROJ. NO. HES 0204 (038)

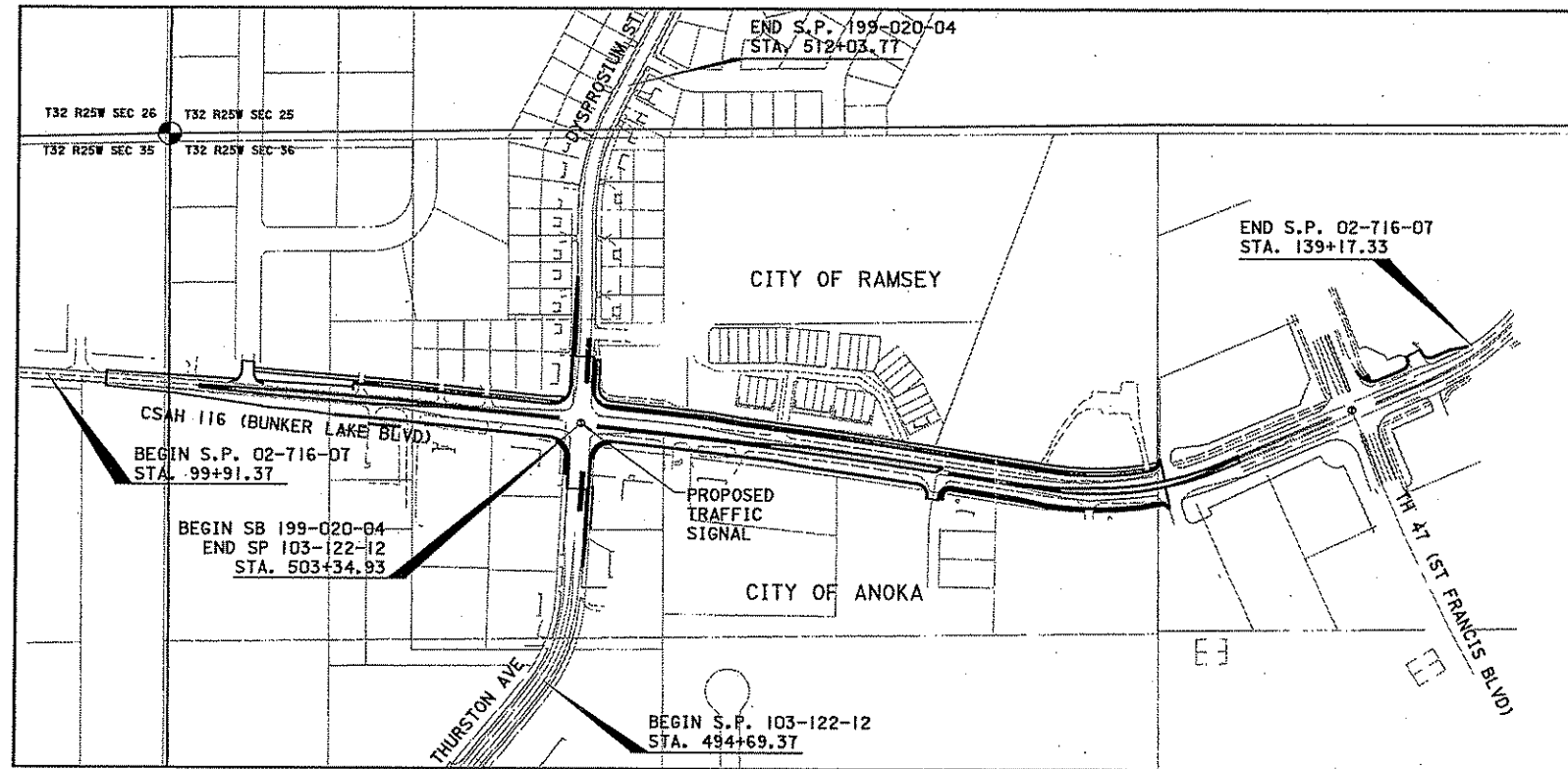
CSAH 116: S.P. 02-716-07
GROSS LENGTH..... 3928.16 FEET 0.744 MILES
BRIDGES-LENGTH..... 0.00 FEET 0.000 MILES
EXCEPTIONS-LENGTH..... 0.00 FEET 0.000 MILES
NET LENGTH..... 3928.16 FEET 0.744 MILES
NOTE: LENGTH AND DESCRIPTION BASED ON THE CSAH 116 W.B. ALIGNMENT.

THURSTON AVE: S.P. 103-122-12
GROSS LENGTH..... 865.56 FEET 0.164 MILES
BRIDGES-LENGTH..... 0.00 FEET 0.000 MILES
EXCEPTIONS-LENGTH..... 0.00 FEET 0.000 MILES
NET LENGTH..... 865.56 FEET 0.164 MILES

DYSPROSIUM ST: S.P. 199-020-04
GROSS LENGTH..... 868.84 FEET 0.165 MILES
BRIDGES-LENGTH..... 0.00 FEET 0.000 MILES
EXCEPTIONS-LENGTH..... 0.00 FEET 0.000 MILES
NET LENGTH..... 868.84 FEET 0.165 MILES

EQUATIONS

- W.B. CSAH 116 STA. 135+67.57 (BK) = STA. 135+65.37 (AH)
- E.B. CSAH 116 STA. 109+58.32 (BK) = STA. 109+59.28 (AH)
- E.B. CSAH 116 STA. 122+77.08 (BK) = STA. 122+79.20 (AH)
- E.B. CSAH 116 STA. 132+15.63 (BK) = STA. 131+91.60 (AH)



MINN. PROJ. NO. HES 0204(038)

GOVERNING SPECIFICATIONS

THE 2000 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" SHALL GOVERN.

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116-118	MCES SERVICE TUNNEL (3)

THIS 100% PLAN SET CONTAINS 110 SHEETS
SHEETS 43, 46-48, 52, 53, 58, 59,
AND 119-120 ARE NOT INCLUDED

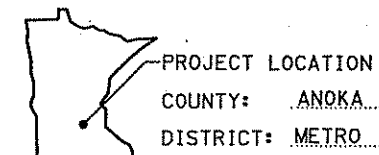
SIGNATURE: NAME: ALAN J. PALMER, P.E.
DESIGN ENGINEER: I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
DATE: 18 JUNE 2005 LICENSE NUMBER: 42462



APPROVED: ANOKA COUNTY ENGINEER 4/22 2005
APPROVED: CITY OF ANOKA 7/7 2005
APPROVED: CITY OF RAMSEY 8/31 2005
REVIEWED FOR COMPLIANCE WITH FEDERAL AND STATE AID RULES AND POLICY
 METRO DISTRICT STATE AID ENGINEER 3/1 2006
APPROVED FOR FEDERAL AND STATE AID FUNDING
 STATE AID ENGINEER 3-1 2006

ALL TRAFFIC CONTROL DEVICES SHALL CONFORM AND BE INSTALLED IN ACCORDANCE TO THE "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MMUTCD), AND PART VI, "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS".

THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS UTILITY QUALITY LEVEL C. THIS QUALITY LEVEL WAS DETERMINED ACCORDING TO THE GUIDELINES OF CI/ASCE 38.2, ENTITLED "STANDARD GUIDELINES FOR THE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA."



SCALES

PLAN	100'
PROFILE HORIZ.	100'
PROFILE VERT.	10'
INDEX MAP	500'
GENERAL LAYOUT	300'

	CSAH 116	THURSTON AVE	DYSPROSIUM ST	TRAIL
DESIGN ESALS, R VALUE	1,900,000 (58.6)	1,900,000 (58.6)	1,900,000 (58.6)	
PAVEMENT DESIGN	BITUMINOUS	BITUMINOUS	BITUMINOUS	
FUNCTIONAL CLASSIFICATION	A-MINOR ARTERIAL	MINOR ARTERIAL	MINOR ARTERIAL	
NO. OF TRAFFIC LANES	4	2	2	
ADT (CURRENT YEAR) 2005	12,400	6,400	2,700	
ADT (FUTURE YEAR) 2025	22,500	3,800	3,800	
D (DIRECTIONAL DISTR.)	50/50	50/50	50/50	
T (HEAVY COMMERCIAL)	1%	1%	1%	
DESIGN SPEED	50 MPH	30 MPH	30 MPH	20 MPH
BASED ON SIGHT DISTANCE	STOPPING	STOPPING	STOPPING	STOPPING
HEIGHT OF EYE	3.5'	3.5'	3.5'	4.5'
HEIGHT OF OBJECT	0.5'	0.5'	0.5'	0.0'
DESIGN LOADING				
LANE WIDTH	12'	12'	12'	10'
NO. PARKING LANES	0	0	0	0

CSAH 116 DESIGN SPEED IS NOT ACHIEVED BETWEEN STATION 138+49.47 TO STATION 140+79.32 - DESIGN EXCEPTION FOR HORIZONTAL CURVE (40 MPH)

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
PRINT NAME: ALAN J. PALMER, P.E.
SIGNATURE:
DATE: 18 JUNE 2005 LICENSE NO. 42462

DRAWN BY RLH/DJS DATE 02/18/05
DESIGN BY AJP/EDD DATE 02/18/05
CHECKED BY AJP DATE 02/18/05



**ANOKA COUNTY
HIGHWAY DEPT.**

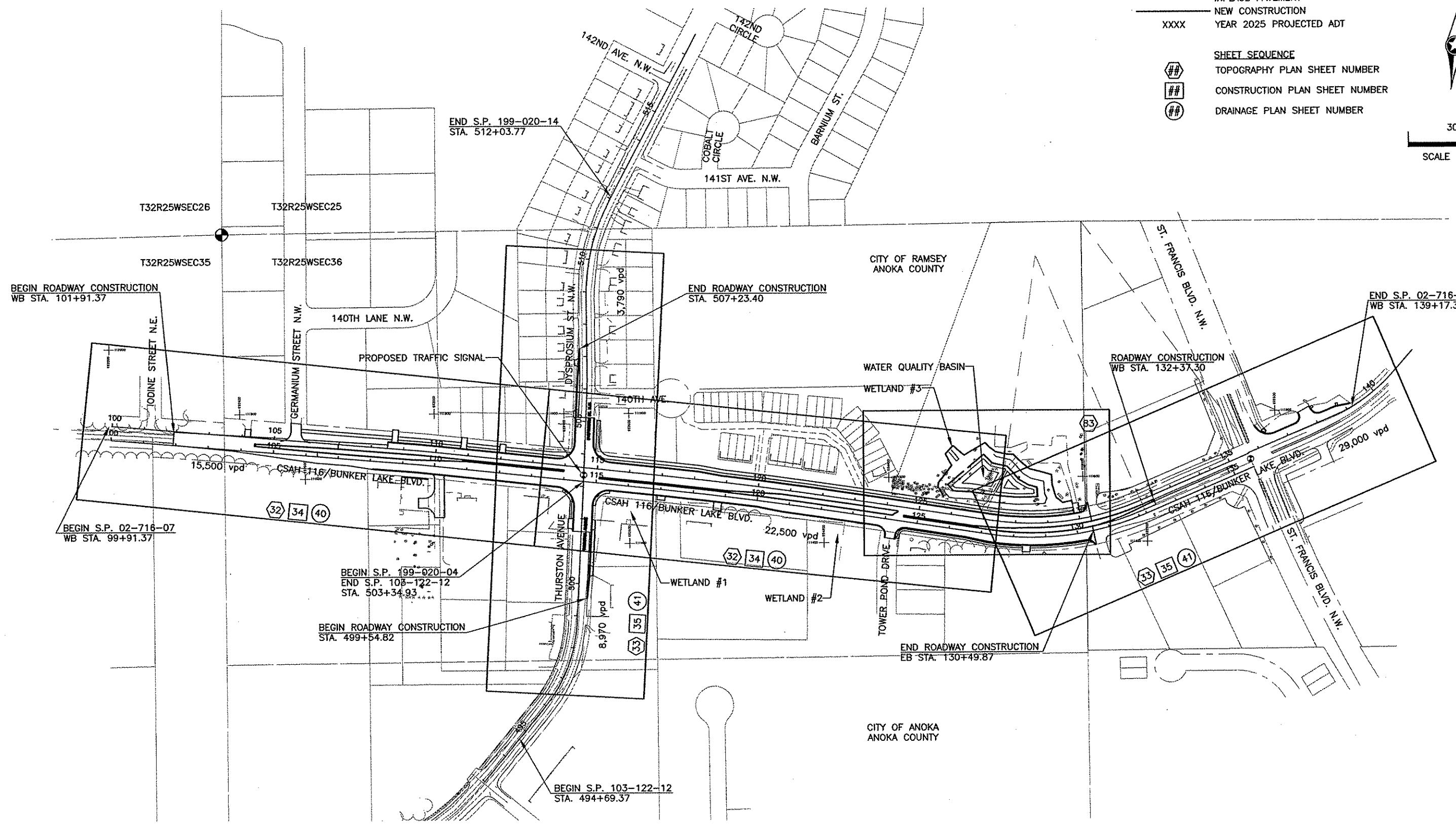
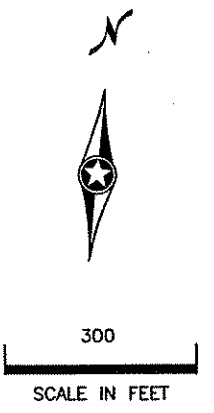
PROJECT NO.
ANOKA COUNTY
CITY OF ANOKA
CITY OF RAMSEY

S.P. 02-716-07
S.P. 103-122-12
S.P. 199-020-04

TITLE SHEET

Sheet 1 of 120 Sheets

- LEGEND**
- INPLACE PAVEMENT
 - NEW CONSTRUCTION
 - XXXX YEAR 2025 PROJECTED ADT
- SHEET SEQUENCE**
- ## TOPOGRAPHY PLAN SHEET NUMBER
 - ## CONSTRUCTION PLAN SHEET NUMBER
 - ## DRAINAGE PLAN SHEET NUMBER



NO	DATE	BY	CKD	APPR	REVISION

NAME: Q:\SHEET\17366_AP_01.DWG

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

PRINT NAME: ALAN L. PALMER - P.E.

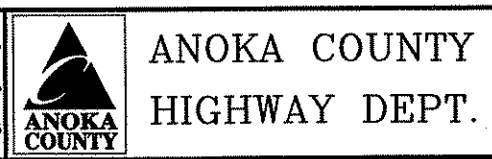
SIGNATURE: *[Signature]*

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DESIGN BY AJP/EDD DATE 02/18/05

CHECKED BY AJP DATE 02/18/05



PROJECT NO. ANOKA COUNTY S.P. 02-716-07

CITY OF ANOKA S.P. 103-122-12

CITY OF RAMSEY S.P. 199-020-04

GENERAL LAYOUT PAGE 1 OF 1

Sheet 2 of 120 Sheets

STATEMENT OF ESTIMATED QUANTITIES

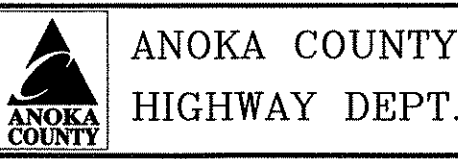
TAB.	SHEET NO.	ITEM NO.	ITEM	UNIT	ESTIMATED QUANTITIES FOR S.P. 02-716-07	ESTIMATED QUANTITIES FOR S.P. 103-122-12	ESTIMATED QUANTITIES FOR S.P. 199-020-04	DRAINAGE ITEMS	NON-PARTICIPATING	TOTAL ESTIMATED QUANTITIES
		2013.601	CELLULAR MOBILE TELEPHONE	EACH					1	1
		2021.501	MOBILIZATION	LUMP SUM	1					1
		2031.501	FIELD OFFICE TYPE D	EACH	1					1
C	8	2101.501	CLEARING	ACRE	0.75					0.75
C	8	2101.502	CLEARING	TREE	33					33
C	8	2101.506	GRUBBING	ACRE	0.75					0.75
C	8	2101.507	GRUBBING	TREE	33					33
M	27-28	2102.502	PAVEMENT MARKING REMOVAL - PERMANENT	LIN FT	500					500 (2)
A	7	2104.501	REMOVE CURB AND GUTTER	LIN FT	1448					1448
B	8	2104.501	REMOVE FENCE	LIN FT	650					650
B	8	2104.501	REMOVE GUARD RAIL - PLATE BEAM	LIN FT	142					142
B	8	2104.501	REMOVE PIPE CULVERTS	LIN FT	509					509
B	8	2104.501	REMOVE SEWER PIPE (SANITARY)	LIN FT	520					520
MCES	116-118	2104.601	REMOVE 48" DIAMETER MANHOLE STRUCTURE AND CASTING	LUMP SUM					1	1
A	7	2104.503	REMOVE CONCRETE MEDIAN	SQ FT	437					437
A	7	2104.505	REMOVE CONCRETE WALK	SQ YD	81					81
B	8	2104.509	REMOVE CONCRETE APRON	EACH	8					8
B	8	2104.509	REMOVE METAL APRON	EACH	16					16
Q	49	2104.523	SALVAGE HYDRANT AND GATE VALVE	EACH					6	6
B	8	2104.509	REMOVE LIGHT POLE	EACH	1					1
O	50-51	2104.509	REMOVE MANHOLE OR CATCH BASIN	EACH				2		2
A	7	2104.511	SAWING CONCRETE PAVEMENT (FULL DEPTH)	LIN FT	270					270
A	7	2104.513	SAWING BITUMINOUS PAVEMENT (FULL DEPTH)	LIN FT	2395					2395
T	67	2104.523	SALVAGE SIGN TYPE C	EACH	50					50
T	67	2104.523	SALVAGE SIGN TYPE SPECIAL	EACH	5					5 (4)
Q	49	2104.601	HAUL SALVAGED MATERIALS	LUMP SUM					1	1
A,E	7	2105.501	COMMON EXCAVATION (P)	CU YD	21377					21377 (1)
MCES	116-118	2105.601	DEWATERING	LUMP SUM					1	1
E	9-10	2105.607	EXCAVATION SPECIAL	CU YD	9660			9660		9660 (3)
F	11	2211.503	AGGREGATE BASE (CV) CLASS 5 (P)	CU YD	4664					4664
A	7	2232.501	MILL BITUMINOUS SURFACE, (2.0")	SQ YD	422					422 (7)
MCES	116-118	2301.601	PRESSURIZED CHEMICAL GROUT SEALING	LUMP SUM					1	1
MCES	116-118	2301.602	PRESSURIZED CHEMICAL GROUT SEALING JOINTS	EACH					4	4
F, G	11-12	2350.503	TYPE LV 4 WEARING COURSE MIXTURE (B)	SQ YD	3053		874			3927 (10)
F	11	2357.502	BITUMINOUS MATERIAL FOR TACK COAT	GAL	2708					2708
F	11	2360.501	TYPE SP 12.5 WEARING COURSE MIXTURE (4,F)	TON	5907					5907 (7)
F	11	2360.502	TYPE SP 19.0 NON WEAR COURSE MIXTURE (4,B)	TON	2700					2700 (7)
MCES	116-118	2412.511	4'X7' PRECAST CONCRETE BOX CULVERT	LIN FT					53	53
MCES	116-118	2412.512	4'X7' PRECAST CONCRETE BOX CULV END SECT	EACH					1	1
MCES	116-118	2451.501	STRUCTURE EXCAVATION CLASS U	LUMP SUM					1	1
MCES	116-118	2451.609	AGGREGATE BEDDING	TON					20	20
O	50-51	2501.515	15" RC APRON	EACH				1		1
O	50-51	2501.515	36" RC APRON	EACH				2		2
MCES	116-118	2502.601	8" PVC VENT PIPE	LUMP SUM				0	1	1
O	50-51	2503.511	15" RC PIPE SEWER CLASS III	LIN FT				1410		1410
O	50-51	2503.511	18" RC PIPE SEWER CLASS III	LIN FT				716		716
O	50-51	2503.511	21" RC PIPE SEWER CLASS III	LIN FT				219		219
O	50-51	2503.511	24" RC PIPE SEWER CLASS III	LIN FT				540		540
O	50-51	2503.511	30" RC PIPE SEWER CLASS III	LIN FT				416		416
O	50-51	2503.511	36" RC PIPE SEWER CLASS III	LIN FT				726		726
O	50-51	2503.602	CONNECT TO EXISTING STORM SEWER	EACH				3		3
O	50-51	2503.602	CONNECT TO EXISTING SANITARY SEWER	EACH	1					1
O	50-51	2503.602	CONNECT TO EXISTING SANITARY SEWER SERVICE	EACH	2					2
O	50-51	2503.603	8" PVC PIPE SEWER	LIN FT					520	520
L	15-19	2504.602	ADJUST VALVE BOX	EACH	3					3
Q	49	2504.602	FURNISH AND INSTALL HYDRANT AND GATE VALVE	EACH					5	5 (8)
Q	49	2504.603	6" WATER MAIN DUCTILE IRON, CL 52	LIN FT	44					44
Q	49	2504.603	16" WATER MAIN DUCTILE IRON CL 50	LIN FT	221					221
Q	49	2504.603	INSULATE WATER MAIN	LIN FT	1365					1365
Q	49	2504.604	4" POLYSTYRENE INSULATION	SQ YD	607					607
Q	49	2504.608	DUCTILE IRON FITTINGS	POUND	1615					1615
O	50-51	2506.501	CONSTRUCT DRAINAGE STRUCTURE DESIGN F	LIN FT				102.9	31.2	102.9
O	50-51	2506.501	CONSTRUCT DRAINAGE STRUCTURE DESIGN G	LIN FT				70.2	0.0	70.2
O	50-51	2506.501	CONSTRUCT DRAINAGE STRUCTURE DESIGN H	LIN FT				53.3	0.0	53.25

NOTE:
SEE PAGE 2 OF
3 FOR NOTES.

NO	DATE	BY	CKD	APPR	REVISION

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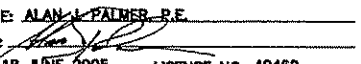

PROJECT NO. ANOKA COUNTY S.P. 02-716-07
CITY OF ANOKA S.P. 103-122-12
CITY OF RAMSEY S.P. 199-020-04

STATEMENT OF ESTIMATED QUANTITIES
PAGE 1 OF 3
Sheet 3 of 120 Sheets

STATEMENT OF ESTIMATED QUANTITIES

TAB.	SHEET NO.	ITEM NO.	ITEM	UNIT	ESTIMATED QUANTITIES FOR S.P. 02-716-07	ESTIMATED QUANTITIES FOR S.P. 103-122-12	ESTIMATED QUANTITIES FOR S.P. 199-020-04	DRAINAGE ITEMS	NON-PARTICIPATING	TOTAL ESTIMATED QUANTITIES
O	50-51	2506.501	CONSTRUCT DRAINAGE STRUCTURE DESIGN 60-4020	LIN FT				68.2	0.0	68.2
O,P	50-51	2506.516	CASTING ASSEMBLY	EACH				64.0	3.0	64
W	49	2506.522	ADJUST FRAME AND RING CASTING (SANITARY)	EACH					6	6
MCES	116-118	2506.601	CONSTRUCT 48" SQUARE PRECAST MANHOLE STRUCTURE	LUMP SUM					1	1
MCES	116-118	2506.602	CONNECT TO EXISTING STRUCTURE M302	EACH					1	1
	83	2511.501	RANDOM RIPRAP CLASS III	CY				27		27
G	12	2521.501	4" CONCRETE WALK	SQ FT	1567	3054				4621
G	12	2531.501	CONCRETE CURB & GUTTER DESIGN B624	LIN FT	365	181	185			730
G	12	2531.501	CONCRETE CURB & GUTTER DESIGN B424	LIN FT	2391	1135	1256			4782
G	12	2531.501	CONCRETE CURB & GUTTER DESIGN B412	LIN FT	5362					5362
G	12	2531.602	PEDESTRIAN CURB RAMP (TRUNCATED DOME)	EACH	7	1				8
U	12	2540.602	RELOCATE MAILBOX SUPPORT	EACH	9					9
M	27-28	2563.601	TRAFFIC CONTROL	LUMP SUM	1					1
		2563.610	POLICE OFFICER	HOURL	40					40 (6)
R	65	2564.531	SIGN PANELS TYPE C	SQ FT	4					4
S	66	2564.531	SIGN PANELS TYPE D	SQ FT	121					121
T	67	2564.536	INSTALL SIGN TYPE SPECIAL	EACH	4					4 (4)
R	65	2564.537	INSTALL SIGN TYPE C	EACH	1					1 (5)
N	13	2564.602	PAVEMENT MESSAGE (LEFT ARROW) POLY PREFORM	EACH	10					10
N	13	2564.602	PAVEMENT MESSAGE (RIGHT ARROW) POLY PREFORM	EACH	14					14
J	13	2564.603	4" SOLID LINE WHITE-EPOXY	LIN FT	11362					11362
J	13	2564.603	4" SOLID LINE YELLOW-EPOXY	LIN FT	5322					5322
J	13	2564.603	4" DOUBLE SOLID LINE YELLOW-EPOXY	LIN FT	3260					3260
J	13	2564.603	24" SOLID LINE YELLOW-EPOXY	LIN FT	205					205
J	13	2564.603	4" BROKEN LINE WHITE-EPOXY	LIN FT	790					790
J	13	2564.603	24" SOLID LINE WHITE-POLYMER PREFORMED	LIN FT	192					192
N	13	2564.618	ZEBRA CROSSWALK WHITE-POLY PREFORMED	SQ FT	1752					1752
	69-72	2565.511	FULL TACT CONTROL SIGNAL SYSTEM A	SIG SYS	0.25	0.375	0.375			1
	69-72	2565.601	TRAFFIC CONTROL INTERCONNECTION	LUMP SUM	1					1
	69-72	2565.601	EMERGENCY VEHICLE PREEMPTION SYSTEM	LUMP SUM		0.5	0.5			1
	69-72	2565.601	CONDUIT SYSTEM (SIGNALS)	LUMP SUM	1					1 (9)
	69-72	2565.602	RELOCATE HANDHOLE	EACH	2					2
K	14	2573.502	SILT FENCE, TYPE MACHINE SLICED	LIN FT	3200			788		3988
O	50-51	2573.530	INLET PROTECTION TYPE A	EACH	1					1
O	50-51	2573.530	INLET PROTECTION TYPE C	EACH	17					17
K	14	2575.501	SEEDING	ACRE	0.758			0.927		1.685
K	14	2575.502	SEED MIXTURE 28B	LB				33		33
K	14	2575.502	SEED MIXTURE 60B	LB	76			10		86
K	14	2575.505	SODDING TYPE LAWN	SQ YD	1766					1766
K	14	2575.505	SODDING TYPE SALT RESISTANT	SQ YD	5370					5370
K	14	2575.523	EROSION CONTROL BLANKETS CATEGORY 2S	SQ YD				4484		4484
K	14	2575.532	COMMERCIAL FERT ANALYSIS 22-5-10	LB	598			371		969
K	14	2575.608	HYDRAULIC SOIL STABILIZER TYPE 5	LB	1896			2316		4212

- ① COMMON EXCAVATION INCLUDES REMOVAL OF EXISTING BITUMINOUS PAVEMENT
 - ② REMOVE INPLACE PAVEMENT MARKING 300' WEST, 100' SOUTH, AND 100' NORTH OF PROJECT LIMITS
 - ③ POND EXCAVATION. INCLUDES STRIPPING AND PLACEMENT OF 6" TOPSOIL
 - ④ STREET SIGNS
 - ⑤ ADOPT-A-HIGHWAY SIGN
 - ⑥ FOR USE AS DIRECTED BY THE ENGINEER
 - ⑦ INCLUDES 2" RESURFACING AT PROJECT ENDS
 - ⑧ COST INCLUDING SALVAGE EXISTING AND FURNISH AND INSTALLATION OF NEW HYDRANT, COMPLETE WITH APPURTENANCES
 - ⑨ CONDUIT AT TH 47 FROM STATION 136+50 TO STATION 139+20
 - ⑩ INCLUDES CONSTRUCTION OF BITUMINOUS WALK, BITUMINOUS DRIVEWAY (RESIDENTIAL), BITUMINOUS DRIVEWAY (COMMERCIAL), CLASS V BASE (INCIDENTAL), AND TACK COAT (INCIDENTAL).
- MCES QUANTITY RELATED TO CONSTRUCTION OF SANITARY SEWER SERVICE TUNNEL

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA. PRINT NAME: ALAN L. FALBER, P.E. SIGNATURE:  DATE: 18 JUNE 2005 LICENSE NO. 42462					DRAWN BY RLH/DJS DATE 02/18/05 DESIGN BY AJP/EDD DATE 02/18/05 CHECKED BY AJP DATE 02/18/05		 ANOKA COUNTY HIGHWAY DEPT.		PROJECT NO. ANOKA COUNTY S.P. 02-716-07 CITY OF ANOKA S.P. 103-122-12 CITY OF RAMSEY S.P. 199-020-04		STATEMENT OF ESTIMATED QUANTITIES PAGE 2 OF 3 Sheet 4 of 120 Sheets	
NO	DATE	BY	CKD	APPR	REVISION							
NAME: Q:\SHEET\17366_AW_02.DWG												

INDEX OF TABULATIONS		
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G	12	CONCRETE AND DRIVEWAYS
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T	67	SALVAGE SIGN TYPE C
U	12	MAILBOX RELOCATION
W	49	INPLACE SANITARY SEWER

BASIS FOR ESTIMATED QUANTITIES	
SPEC. NO.	RATE
2357.502	BITUMINOUS MATERIAL FOR TACK COAT 0.05 GAL./SQ YD/PER LIFT APPLIED
2360.501	TYPE 2360 SP 12.5 WEARING COURSE MIXTURE (4,F) 148 PCF
2360.502	TYPE 2360 SP 19.0 NON WEARING COURSE MIXTURE (4,B) 148 PCF
2360.503	TYPE LV4 WEARING COURSE MIXTURE, 148 PCF
2575.502	SEED MIXTURE 28B 40 LBS/ACRE
2575.502	SEED MIXTURE 60B 100 LBS/ACRE
2575.531	COMMERICAL FERTILIZER 22-5-10 400 LBS/ACRE (SEED), 200LBS/ACRE (SOD)
2575.609	TYPE 5 HYDRAULIC SOIL STABILIZER 2500 LBS/ACRE

NO	DATE	BY	CKD	APPR	REVISION

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 PRINT NAME: ALAN J. PALMER, P.E.
 SIGNATURE: *[Signature]*
 DATE: 18 JUNE 2005 LICENSE NO. 42482

DRAWN BY RLH/DJS DATE 02/18/05
 DESIGN BY AJP/EDD DATE 02/18/05
 CHECKED BY AJP DATE 02/18/05



ANOKA COUNTY
 HIGHWAY DEPT.

PROJECT NO.
 ANOKA COUNTY
 CITY OF ANOKA
 CITY OF RAMSEY

S.P. 02-716-07
 S.P. 103-122-12
 S.P. 199-020-04

STATEMENT OF
 ESTIMATED QUANTITIES
 PAGE 3 OF 3
 Sheet 5 of 120 Sheets

GRADING

1. GRADING GRADE IS DEFINED AS THE BOTTOM OF THE PAVEMENT SECTION, I.E., THE BOTTOM OF THE CLASS 5 AGGREGATE BASE FOR THE STREET AND TRAIL PAVEMENTS,
2. SUITABLE GRADING MATERIAL SHALL BE DEFINED AS ANY GRANULAR MATERIAL IMPORTED OR ON-SITE MEETING THE REQUIREMENTS OF Mn/DOT SPECIFICATION 3149.2B1 FOR GRANULAR BORROW. INPLACE FILL MIXED WITH TOPSOIL SHALL BE CONSIDERED SUITABLE GRADING MATERIAL IF IT IS GRANULAR AND ITS AVERAGE ORGANIC CONTENT IS LESS THAN 3 PERCENT.
3. SELECT GRANULAR MATERIAL SHALL BE DEFINED AS IMPORTED OR ON-SITE MATERIAL WHICH MEETS THE REQUIREMENTS OF Mn/DOT SPECIFICATION 3149.2B2
4. UNSUITABLE MATERIALS SHALL BE DEFINED AS ANY NON-GRANULAR SOIL, TOPSOIL (SURFACE, BURIED OR FILL), CLAY, LOAM, AND OTHER ORGANIC MATERIALS. UNSUITABLE MATERIALS MAY NOT BE PLACED IN THE ZONES BENEATH PROPOSED STREET AND TRAIL PAVEMENTS, CURBS AND GUTTERS AND SIDEWALKS EXTENDING TO 1 FOOT OUTSIDE (AWAY FROM THE CENTERLINES) OF THE PROPOSED PAVEMENTS, CURBS AND SIDEWALKS. ALL EARTH MATERIALS NOT DESIGNATED FOR SALVAGE, AND ALL DEBRIS, SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE DISPOSED OF OUTSIDE THE RIGHT-OF-WAY.
5. INPLACE PAVEMENTS SHALL BE DEFINED AS ROADWAYS, CURBS AND GUTTERS, AND SIDEWALKS THAT ARE PRESENT PRIOR TO CONSTRUCTION.
6. THE DESIGNER USED A SHRINKAGE FACTOR OF 125% FOR MATERIAL SALVAGED FROM THE INPLACE ROAD CORE, AND FOR OTHER GRADING MATERIALS EXCAVATED FROM THE PROJECT. THE DESIGNER USED A SHRINKAGE FACTOR OF 135% FOR BORROW MATERIALS.
7. WHERE CONNECTING TO INPLACE ROADWAYS AT THE TERMINI OF THE PROPOSED NEW CONSTRUCTION, CUT VERTICALLY TO THE BOTTOM OF THE INPLACE SURFACING OR TO THE BOTTOM OF THE NEW SURFACING DESIGN, WHICHEVER IS DEEPER; THEN AT A 1V:20H TAPER TO THE BOTTOM OF THE RECOMMENDED SUBCUT.
8. WHERE CONNECTING TO INPLACE DRIVEWAYS, CUT VERTICALLY TO THE BOTTOM OF THE INPLACE SURFACING OR TO THE BOTTOM OF THE NEW SURFACING DESIGN, WHICHEVER IS DEEPER; THEN AT A 1V:4H TAPER TO THE BOTTOM OF THE RECOMMENDED SUBGRADE EXCAVATION.
9. COMPACTION OF ALL EMBANKMENT MATERIALS SHALL BE BY THE SPECIFIED DENSITY METHOD. COMPACTION OF CLASS 6 AGGREGATE SHALL BE VERIFIED BY THE PENETRATION INDEX METHOD (Mn/DOT SPECIFICATION 2211.3C3).
10. SURFACE TOPSOIL: THE CONTRACTOR SHALL REMOVE, STOCKPILE ON SITE, AND RESPREAD ALL TOPSOIL DISTURBED BY HIS OPERATIONS. REMOVAL SHALL EXTEND A MINIMUM OF 1 FOOT BEHIND (AWAY FROM THE CENTERLINES) THE PROPOSED PAVEMENTS, CURBS AND SIDEWALKS WITHIN THE LIMITS OF CONSTRUCTION. ASSUMED AVERAGE TOPSOIL THICKNESS ALONG CSAH 116 IS 6 INCHES. REMOVAL, STOCKPILE, AND PLACEMENT PAID AS COMMON EXCAVATION.
11. INPLACE BITUMINOUS SURFACE ASSUMED TO BE LESS THAN 6 INCHES ON CSAH 116, 4 INCHES ON THURSTON AVENUE AND 4 INCHES ON DYSPROSIUM STREET. CONTRACTOR SHALL INVESTIGATE AND MAKE OWN DETERMINATION OF ACTUAL PAVEMENT DEPTH. WHERE POSSIBLE, INPLACE PAVEMENT SHOULD BE RECLAIMED FOR USE AS AGGREGATE BASE.
12. INPLACE DRAINAGE COMPONENTS: REMOVE ALL STORM SEWER AND APPURTENANCES NOTED IN THE PLAN.
13. RADIO TOWER GROUNDING GRID CONSISTING OF #10 BARE COPPER BURIED 3"-12" UNDERGROUND SHALL BE SEVERED AT THE GRADING LIMIT LINE. THESE CABLES EXTEND RADIAL FROM THE TOWER EVERY 3 DEGREES. REMOVAL OF CABLE SHALL BE INCIDENTAL TO GRADING WITHIN THE CONSTRUCTION LIMITS NEAR THE RADIO TOWER BETWEEN STATION 125+50 TO 129+50.

SIGNAGE

1. ALL EXISTING SIGNS SHALL BE SALVAGED BY THE CONTRACTOR. SIGNS SHALL BE DELIVERED TO ANOKA COUNTY FOR RE-USE. STREET SIGNS SHALL BE REINSTALLED BY THE CONTRACTOR AS APPROPRIATE.

BITUMINOUS PAVING

1. THE BITUMINOUS MIXTURES SHALL MEET THE REQUIREMENTS OF Mn/DOT SPEC. 2350 "PLANT MIXED ASPHALT PAVEMENT", SPEC. 2360 "PLANT MIXED BITUMINOUS PAVEMENT" AND SPEC. 3139 "AGGREGATE GRADATION FOR BITUMINOUS MIXTURES" CONTAINED IN THE SPECIAL PROVISIONS AND THE Mn/DOT STANDARD SPECIFICATIONS FOR CONSTRUCTION.
2. THE BITUMINOUS TACK COAT MATERIAL SHALL BE APPLIED AT A UNIFORM RATE OF 0.05 GAL/SY BETWEEN BITUMINOUS LAYERS ON INPLACE BITUMINOUS OR MILLED BITUMINOUS SURFACES PRIOR TO BEING OVERLAID. THESE APPLICATION RATES ARE FOR UNDILUTED EMULSIONS (AS SUPPLIED FROM THE REFINERY) OR MC AND RC LIQUID ASPHALT. THE ASPHALT EMULSION MAY BE FURTHER DILUTED IN THE FIELD IN ACCORDANCE WITH Mn/DOT SPEC. 2357.
3. SURFACE REQUIREMENTS: THE FINISHED PAVEMENT SHALL BE SUBJECT TO THE PROVISIONS OF Mn/DOT SPEC. 2360.7.

TURF ESTABLISHMENT

1. TURF ESTABLISHMENT SHALL BE IN ACCORDANCE WITH Mn/DOT TURF ESTABLISHMENT RECOMMENDATIONS. SEE TURF ESTABLISHMENT PLANS FOR MORE INFORMATION.

GENERAL

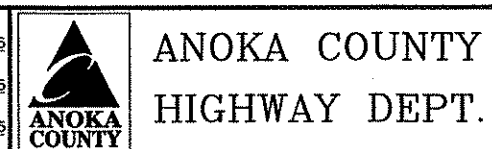
1. THE CONSTRUCTION LIMITS AS SHOWN IN THE PLANS REPRESENT THE POINT OF INTERSECTION BETWEEN THE REQUIRED FILL OR CUT SLOPE AND THE INPLACE GROUNDLINE AS DEPICTED IN THE CROSS SECTIONS.
2. PIPE SEWERS CONNECTING MANHOLES AND CATCH BASINS SHALL BE IN ACCORDANCE WITH Mn/DOT SPEC. 2503. BEDDING AND BACKFILL SHALL CONSIST OF UNIFORM GRADING MATERIAL MATCHING ADJACENT SOILS UNLESS DIRECTED BY THE ENGINEER.
3. WHENEVER THE WORD "INCIDENTAL" IS USED IN THIS PLAN, IT SHALL MEAN THIS WORK WILL BE INCIDENTAL FOR WHICH NO DIRECT COMPENSATION WILL BE MADE.
4. ALL SILT FENCE AS SHOWN IN THE PLAN SHALL BE IN PLACE PRIOR TO THE COMMENCEMENT OF GRADING OPERATIONS.

The following standard plates, approved by the Federal Highway Administration, shall apply on this project.	
STANDARD PLATES	
PLATE NO.	DESCRIPTION
3000L	REINFORCED CONCRETE PIPE
3006G	GASKET JOINT FOR R.C. PIPE
3007D	SHEAR REINFORCEMENT FOR PRECAST DRAINAGE STRUCTURES
3100G	CONCRETE APRON FOR REINFORCED CONCRETE PIPE
3133C	RIPRAP AT RCP OUTLETS
3145F	CONCRETE PIPE TIES
4005L	MANHOLE OR CATCH BASIN (DESIGN F)
4006L	MANHOLE OR CATCH BASIN (DESIGN G, DESIGN H)
4010H	CONCRETE SHORT CONE AND ADJUSTING RING
4011E	PRECAST CONCRETE BASE
4020J	MANHOLE OR CATCH BASIN COVER
4026A	CONCRETE ENCASED CONCRETE ADJUSTING RINGS
4101D	RING CASTING FOR MANHOLE OR CATCH BASIN
4110F	COVER CASTING FOR MANHOLE (CASTING NO. 715, CASTING NO. 716)
4125D	CATCH BASIN FRAME CASTING (FOR SQUARE GRATE)
4134A	CURB BOX CASTING FOR CATCH BASIN (FOR DESIGN B CURBS)
4143E	STOOL GRATE AND CONCRETE FRAME (CASTING NO. 731 AND FRAME)
4154B	CATCH BASIN GRATE CASTING
4180J	MANHOLE OR CATCH BASIN STEP
7035M	CONCRETE WALK AND CURB RETURNS AT ENTRANCES
7036F	PEDESTRIAN CURB RAMP
7100H	CONCRETE CURB AND GUTTER
7111J	INSTALLATION OF CATCH BASIN CASTINGS
7112C	INSTALLATION AND REINFORCEMENT OF CB AND MH CASTINGS
7113A	CONCRETE APPROACH NOSE DETAIL
8000I	STANDARD BARRICADES
8110D	TRAFFIC SIGNAL BRACKETING
8114A	PVC HANDHOLE / PULLBOX
8115D	PEDESTRIAN PUSH BUTTON INSTALLATION
8119C	GROUND MOUNTED CABINET FOUNDATION
8121D	TRANSFORMER BASE AND POLE BASE PLATE
8123E	POLE AND MAST ARM
8124F	MAST ARM SIGNAL HEAD MOUNTS
8126G	POLE FOUNDATION (MAST ARM)
8130D	SAW-CUT LOOP DETECTORS
8150C	INSTALLATION OF CULVERT MARKERS
9102D	TURF ESTABLISHMENT AREAS (AT PIPE CULVERT ENDS)

NO	DATE	BY	CKD	APPR	REVISION
2	12-18-05	REB	AJP		ADDED NOTE 13
1	10-13-05	REB	AJP		REVISE PLATE NUMBERS

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 PRINT NAME: ALAN J. PALMER, P.E.
 SIGNATURE: *[Signature]*
 DATE: 18 JUNE 2005 LICENSE NO. 42482


DRAWN BY RLH/DJS DATE 02/18/05
 DESIGN BY AJP/EDD DATE 02/18/05
 CHECKED BY AJP DATE 02/18/05



PROJECT NO. ANOKA COUNTY S.P. 02-716-07
 CITY OF ANOKA S.P. 103-122-12
 CITY OF RAMSEY S.P. 199-020-04

PAVEMENT SAWCUTS AND REMOVALS											A
ALIGNMENT	STATION	LOCATION	SAWCUT (2)		REMOVAL					MILLING	REMOVE CONCRETE CURB AND GUTTER (LIN FT)
			BITUMINOUS PAVEMENT (LIN FT)	CONCRETE PAVEMENT (LIN FT)	BITUMINOUS PAVEMENT (1) (SQ YD)	BITUMINOUS DRIVEWAY PAVEMENT (1) (SQ YD)	CONCRETE MEDIAN (SQ FT)	BITUMINOUS WALK (1) (SQ YD)	CONCRETE WALK (2) (SQ YD)	BITUMINOUS SURFACE, 2.0" (SQ YD)	
WB CSAH 116	101+71-101+91	LT/RT								62	
WB CSAH 116	101+91	LT/RT	30								
WB CSAH 116	101+91 - 132+37	LT/RT			14198						
WB CSAH 116	104+18	LT	18			81					
WB CSAH 116	105+64	LT	30		239						
WB CSAH 116	108+71	LT	18			92					
EB CSAH 116	109+00 - 109+80	RT	83			159					
EB CSAH 116	109+80	RT	100			104					
EB CSAH 116	110+24	RT	60			525					
WB CSAH 116	110+84	LT	18			87					
WB CSAH 116	112+04	LT	18			106					
EB CSAH 116	110+32 - 114+11	RT	379			367					
EB CSAH 116	115+00 - 130+20	RT	10			35		1539			
WB CSAH 116	117+02	LT	24								
EB CSAH 116	117+67 - 118+97	RT	141			98					
WB CSAH 116	119+97	LT	24		105	300					
EB CSAH 116	124+22	RT	28		252			14			
EB CSAH 116	128+40	RT	24			147					
WB CSAH 116	130+08	LT	18			73					
WB CSAH 116	130+35	LT	57						53	16	
EB CSAH 116	130+50	RT	108						87	31	
WB CSAH 116	130+35 - 132+37	LT	202				437				160
EB CSAH 116	130+50 - 132+37	RT	211								160
WB CSAH 116	132+37	LT	11	7							
WB CSAH 116	136+15 - 139+18	LT	303		110	197					147
THURSTON	499+55 - 501+60	RT		205		107					205
THURSTON	501+40 - 501+60	LT/RT							113		
THURSTON	501+60 - 503+10	LT/RT			905						276
THURSTON	500+25 - 501+98	RT	173			48					
THURSTON	501+80	LT		58							
THURSTON	501+66 - 502+91	LT							67		
DYSPROSIUM	504+30	RT	10								
DYSPROSIUM	505+12	LT/RT	50								
DYSPROSIUM	505+20	LT	18			26					
DYSPROSIUM	503+58 - 505+12	LT/RT			831						242
DYSPROSIUM	505+12 - 505+32	LT/RT							107		
DYSPROSIUM	505+12 - 507+23	LT	211								211
DYSPROSIUM	506+81	LT	18			18					
S.P. 103-122-11 (CITY OF ANOKA)			0	0	0	0	0	0	0	0	0
S.P. 199-020-04 (CITY OF RAMSEY)			0	0	0	0	0	0	0	0	0
S.P. 02-716-07 (ANOKA COUNTY)			2395	270	16640	2570	437	1539	81	422	1448
PROJECT TOTALS:			2395	270	16640	2570	437	1539	81	422	1448

- (1) INPLACE BIT. MATERIAL WITHIN PROJECT LIMITS IS LESS THAN 6" THICK AND IS QUANTIFIED AS COMMON EXCAVATION.
(2) SAWCUT OF CONCRETE WALK IS INCIDENTAL TO SIDEWALK CONSTRUCTION

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA. PRINT NAME: ALAN J. PALMER, P.E. SIGNATURE: <i>[Signature]</i> DATE: 18 JUNE 2005 LICENSE NO. 42462					DRAWN BY RLH/DJS DATE 02/18/05 DESIGN BY AJP/EDD DATE 02/18/05 CHECKED BY AJP DATE 02/18/05		 ANOKA COUNTY HIGHWAY DEPT.		PROJECT NO. ANOKA COUNTY S.P. 02-716-07 CITY OF ANOKA S.P. 103-122-12 CITY OF RAMSEY S.P. 199-020-04		TABULATIONS REMOVALS & SAWCUTS PAGE 1 OF 2 Sheet 7 of 120 Sheets	
NO	DATE	BY	CKD	APPR	REVISION							


MISCELLANEOUS REMOVALS					B
ALIGNMENT	STATION	LOCATION	ITEM	UNIT	QUANTITY
WB CSAH 116	104+18	11' LT	12" CMP W/APRONS	LIN FT	30
WB CSAH 116	107+90 - 110+10	26' LT	FENCE	LIN FT	330
WB CSAH 116	110+85	7' LT	15" CMP W/APRONS	LIN FT	30
WB CSAH 116	111+40 - 111+75	33' LT	FENCE	LIN FT	74
WB CSAH 116	112+14 - 112+77	31' LT	FENCE	LIN FT	87
WB CSAH 116	112+09	10' LT	15" CMP W/APRONS	LIN FT	30
WB CSAH 116	112+77 - 113+45	46' LT	FENCE	LIN FT	68
WB CSAH 116	113+45 - 114+15	46' LT	FENCE	LIN FT	59
WB CSAH 116	114+57	17' LT	12" CMP W/APRONS	LIN FT	73
WB CSAH 116	119+95	17' LT	15" RCP W/APRONS	LIN FT	56
WB CSAH 116	127+02	24' LT	15" RCP W/APRONS	LIN FT	36
WB CSAH 116	138+04 - 139+27	12' LT	GUARDRAIL	LIN FT	142
EB CSAH 116	110+16	13' RT	12" CMP W/APRONS	LIN FT	45
EB CSAH 116	114+63	21' RT	18" RCP ARCH W/APRONS	LIN FT	91
EB CSAH 116	108+07 - 113+27	30' RT	8" SANITARY SEWER SERVICE	LIN FT	520
EB CSAH 116	117+01	19' RT	15" CMP W/APRONS	LIN FT	36
EB CSAH 116	118+90	16' RT	12" CMP W/APRONS	LIN FT	32
EB CSAH 116	124+54	40' RT	15" CMP W/APRONS	LIN FT	14
EB CSAH 116	128+39	23' RT	18" RCP W/APRONS	LIN FT	36
THURSTON AVE	502+50	32' RT	LIGHT POLE	EACH	1
DYSPROSIUM	504+08 - 504+40	50' LT	FENCE	LIN FT	32

ITEM	UNIT	CITY OF ANOKA SP 103-122-12	CITY OF RAMSEY SP 199-020-04	ANOKA COUNTY S.P. 02-716-07	PROJECT TOTALS
CULVERT	LIN FT	0	0	509	509
PIPE APRON, METAL	EACH	0	0	16	16
PIPE APRON, CONCRETE	EACH	0	0	8	8
FENCE	LIN FT	0	0	650	650
LIGHT POLE	EACH	0	0	1	1
GUARDRAIL ①	LIN FT	0	0	142	142
SANITARY SEWER SERVICE	LIN FT	0	0	520	520

① CONTRACTOR IS TO USE EPOXY GROUT TO SEAL MOUNTING HOLES IN BRIDGE ABUTMENT (INCIDENTAL TO GUARDRAIL REMOVAL)

CLEARING AND GRUBBING						C
ALIGNMENT	STA. - STA.	LOCATION	CLEAR (ACRE)	CLEAR (TREE)	GRUB (ACRE)	GRUB (TREE)
W.B. CSAH 116	102+50 - 103+40	20' LT	0.05		0.05	
W.B. CSAH 116	104+32	15' LT		1		1
W.B. CSAH 116	105+90 - 107+80	30' LT	0.20		0.20	
W.B. CSAH 116	107+99	41' LT		1		1
W.B. CSAH 116	108+24	33' LT		1		1
W.B. CSAH 116	108+38	23' LT		1		1
W.B. CSAH 116	108+46	29' LT		1		1
W.B. CSAH 116	108+55	29' LT		1		1
W.B. CSAH 116	108+81	27' LT		1		1
W.B. CSAH 116	109+30	20' LT		1		1
W.B. CSAH 116	109+52	36' LT		1		1
W.B. CSAH 116	109+59	16' LT		1		1
W.B. CSAH 116	109+96	21' LT		1		1
W.B. CSAH 116	110+96	28' LT		1		1
W.B. CSAH 116	111+29	42' LT		1		1
W.B. CSAH 116	111+40	31' LT		1		1
W.B. CSAH 116	111+48	28' LT		1		1
W.B. CSAH 116	111+86	30' LT		1		1
W.B. CSAH 116	113+21	33' LT		1		1
W.B. CSAH 116	124+70 - 127+20	100' LT	0.50		0.50	
W.B. CSAH 116	128+03	140' LT		1		1
W.B. CSAH 116	128+25	107' LT		1		1
W.B. CSAH 116	128+61	68' LT		1		1
W.B. CSAH 116	128+66	74' LT		1		1
W.B. CSAH 116	128+69	58' LT		1		1
W.B. CSAH 116	128+70	72' LT		1		1
W.B. CSAH 116	128+73	59' LT		1		1
W.B. CSAH 116	129+09	100' LT		1		1
E.B. CSAH 116	115+08	41' RT		1		1
E.B. CSAH 116	115+11	34' RT		1		1
E.B. CSAH 116	115+19	39' RT		1		1
E.B. CSAH 116	120+83	29' RT		3		3
THURSTON AVENUE	500+78	35' RT		1		1
THURSTON AVENUE	502+23	34' RT		1		1
S.P. 103-122-12 (CITY OF ANOKA)			0.00	0.00	0.00	0.00
S.P. 199-020-04 (CITY OF RAMSEY)			0.00	0.00	0.00	0.00
S.P. 02-716-07 (ANOKA COUNTY)			0.75	33.00	0.75	33.00
PROJECT TOTALS:			0.75	33	0.75	33

NO	DATE	BY	CKD	APPR	REVISION

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 PRINT NAME: ALAN L. PALMER, P.E.
 SIGNATURE: 
 DATE: 18 JUNE 2005 LICENSE NO. 42452

DRAWN BY RLH/DJS DATE 02/18/05
 DESIGN BY AJP/EDD DATE 02/18/05
 CHECKED BY AJP DATE 02/18/05



ANOKA COUNTY
 HIGHWAY DEPT.

PROJECT NO.
 ANOKA COUNTY S.P. 02-716-07
 CITY OF ANOKA S.P. 103-122-12
 CITY OF RAMSEY S.P. 199-020-04

TABULATIONS
 REMOVALS & SAWCUTS
 PAGE 2 OF 2
 Sheet 8 of 120 Sheets

THURSTON/DYSPROSIUM		EXCAVATION		EMBANKMENT				E	
STATION	STATION	TOPSOIL (EV) (CU YD)	COMMON (EV) (CU YD)	SUITABLE GRADING (CV) (CU YD)	TOPSOIL (CV) (CU YD)	CLASS 5 (CV) (CU YD)	SELECT (CV) (CU YD)	TOTAL EXCAVATION (EV) (CU YD)	TOTAL EMBANKMENT (CV) (CU YD)
499+75.00	500+00.00	3	9		1	3	5	12	9
500+00.00	500+25.00	5	13		1	4	6	18	11
500+25.00	500+50.00	6	15			4	7	21	11
500+50.00	500+75.00	5	13			4	6	18	10
500+75.00	501+00.00	3	13		1	4	6	16	11
501+00.00	501+25.00	3	14		1	4	7	17	12
501+25.00	501+50.00	4	12		1	4	6	16	11
501+50.00	501+75.00	8	64			17	32	72	49
501+75.00	502+00.00	12	113		4	30	58	125	92
502+00.00	502+25.00	12	103		7	30	58	115	95
502+25.00	502+50.00	11	90	8	11	31	59	101	109
502+50.00	502+75.00	12	85	59	19	37	71	97	186
502+75.00	503+00.00	7	44	51	11	21	41	51	124
503+00.00	503+75.00								
503+75.00	504+00.00	12	56	12	10	20	39	68	81
504+00.00	504+25.00	17	101	13	14	36	69	118	132
504+25.00	504+50.00	9	93	1	9	31	59	102	100
504+50.00	504+75.00	8	97		8	30	58	105	96
504+75.00	505+00.00	9	102		6	30	58	111	94
505+00.00	505+25.00	8	62		3	18	34	70	55
505+25.00	505+50.00	6	17		1	5	9	23	15
505+50.00	505+75.00	5	16		1	5	9	21	15
505+75.00	506+00.00	6	18		2	5	9	24	16
506+00.00	506+25.00	6	18		2	5	9	24	16
506+25.00	506+50.00	5	15		2	4	7	20	13
506+50.00	506+75.00	6	14		1	3	6	20	10
506+75.00	507+00.00	4	11		1	3	4	15	8
TOTALS		192	1208	144	117	388	732	1400	1381

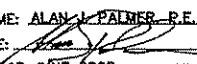
	EXCAVATION		EMBANKMENT				E	
ROADWAY	TOPSOIL (EV) (CU YD)	COMMON (EV) (CU YD)	SUITABLE GRADING (CV) (CU YD)	TOPSOIL (CV) (CU YD)	CLASS 5 (CV) (CU YD)	SELECT (CV) (CU YD)	TOTAL EXCAVATION (EV) (CU YD)	TOTAL EMBANKMENT (CV) (CU YD)
C SAH 116	2515	17462	3243	1810	5175	9354	19977	19582
THURSTON/DYSPROSIUM	192	1208	144	117	388	732	1400	1381
POND	769 ①	8891 ①	0	530	0	0	9660	530
TOTALS	3476	27561	3387	2457	5563	10086	31037	21493

① PAID AS EXCAVATION SPECIAL

NOTES:

- SEE CONSTRUCTION NOTES FOR MATERIAL DEFINITIONS AND ADDITIONAL INFORMATION.
- 125% SHRINKAGE FACTOR USED FROM EXCAVATED VOLUME (EV) TO COMPACTED VOLUME (CV), EXCEPT FOR TOPSOIL AND MUCK. 145% SHRINKAGE FACTOR USED FROM LOOSE VOLUME (LV) TO COMPACTED VOLUME (CV), EXCEPT FOR TOPSOIL AND MUCK. SHRINK FACTORS ARE ASSUMED VALUES, USED ONLY FOR THE PURPOSE OF ESTIMATED QUANTITIES. IT SHALL BE UNDERSTOOD THAT NO WARRANTY IS MADE OR IMPLIED AS TO THE ACCURACY, SUFFICIENCY, OR RELIABILITY OF THE SHRINKAGE FACTOR.
- EXCESS MATERIAL SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE PROJECT LIMITS WITH NO DIRECT PAYMENT THEREFOR. THE EXCESS MATERIAL QUANTITY IS BASED ON ESTIMATED QUANTITIES. IT SHALL BE UNDERSTOOD THAT NO WARRANTY IS MADE OR IMPLIED AS TO THE ACCURACY, SUFFICIENCY, OR RELIABILITY OF THESE FIGURES, DISPOSAL SHALL BE IN ACCORDANCE WITH SPEC. 2105.

NO	DATE	BY	CKD	APPR	REVISION

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 PRINT NAME: ALAN J. PALMER, P.E.
 SIGNATURE: 
 DATE: 18 JUNE 2005 LICENSE NO. 42462

DRAWN BY: RLH/DJS DATE 02/18/05
 DESIGN BY: AJP/EDD DATE 02/18/05
 CHECKED BY: AJP DATE 02/18/05



ANOKA COUNTY
 HIGHWAY DEPT.


PROJECT NO.
 ANOKA COUNTY S.P. 02-716-07
 CITY OF ANOKA S.P. 103-122-12
 CITY OF RAMSEY S.P. 199-020-04

TABULATION
 EARTHWORK
 PAGE 1 OF 2
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CSAH 116		EXCAVATION		EMBANKMENT				E	
STATION	STATION	TOPSOIL (EV) (CU YD)	COMMON (EV) (CU YD)	SUITABLE GRADING (CV) (CU YD)	TOPSOIL (CV) (CU YD)	CLASS 5 (CV) (CU YD)	SELECT (CV) (CU YD)	TOTAL EXCAVATION (EV) (CU YD)	TOTAL EMBANKMENT (CV) (CU YD)
102+00.00	102+50.00	24	182	15	32	42	81	206	170
102+50.00	103+00.00	32	173	22	40	43	85	205	190
103+00.00	103+50.00	29	86	25	36	34	51	115	146
103+50.00	104+00.00	22	54	39	32	36	55	76	162
104+00.00	104+17.00	6	15	18	8	13	21	21	60
104+17.00	104+50.00	11	28	43	17	27	42	39	129
104+50.00	105+00.00	13	92	88	34	56	106	105	284
105+00.00	105+50.00	30	252	72	23	85	159	282	339
105+50.00	105+66.98	17	143	14	5	37	70	160	126
105+66.98	106+00.00	28	217	63	26	59	111	245	259
106+00.00	106+50.00	34	233	160	62	73	131	267	426
106+50.00	107+00.00	43	267	109	59	76	135	310	379
107+00.00	107+50.00	68	331	27	53	77	138	399	295
107+50.00	108+00.00	84	406	1	43	80	144	490	268
108+00.00	108+50.00	82	501	0	29	89	159	583	277
108+50.00	108+71.00	33	275	0	5	40	71	308	116
108+71.00	109+00.00	40	452	0	9	55	99	492	163
109+00.00	109+50.00	78	768	0	30	96	170	846	296
109+50.00	110+00.00	93	680	0	35	95	170	773	300
110+00.00	110+16.64	31	206	0	10	31	57	237	98
110+16.64	110+50.00	58	383	0	18	62	113	441	193
110+50.00	110+84.00	49	389	2	13	62	116	438	193
110+84.00	111+00.00	20	179	2	5	29	54	199	90
111+00.00	111+50.00	64	446	9	23	89	170	510	291
111+50.00	112+00.00	62	378	12	21	89	170	440	292
112+00.00	112+03.00	4	24	1	1	5	10	28	17
112+03.00	112+50.00	48	303	13	19	84	160	351	276
112+50.00	113+00.00	39	233	51	35	89	170	272	345
113+00.00	113+31.89	18	139	64	24	57	108	157	253
113+31.89	113+50.00	8	72	43	13	32	62	80	150
113+50.00	113+79.89	13	115	81	22	53	102	128	258
113+79.89	115+27.99	82	645	330	109	264	504	727	1207
115+27.99	115+50.00	15	112	37	17	39	75	127	168
115+50.00	115+75.99	16	138	51	20	46	88	154	205
115+75.99	116+00.00	15	129	50	18	43	82	144	193
116+00.00	116+50.00	32	273	66	30	89	170	305	355
116+50.00	116+71.99	17	119	11	12	39	75	136	137
116+71.99	117+00.00	25	157	9	13	50	95	182	167
117+00.00	117+03.00	3	18	1	1	5	10	21	17
117+03.00	117+50.00	38	253	11	13	83	160	291	267
117+50.00	118+00.00	43	228	6	16	89	170	271	281
118+00.00	118+50.00	48	189	3	17	88	167	237	275
118+50.00	118+80.00	29	106	3	10	51	98	135	162
118+80.00	119+00.00	21	76	2	7	34	64	97	107
119+00.00	119+50.00	38	146	45	24	86	161	184	316
119+50.00	120+00.00	22	102	91	29	88	161	124	369
120+00.00	120+50.00	21	99	103	31	93	163	120	390
120+50.00	121+00.00	23	112	79	30	97	168	135	374
121+00.00	121+50.00	34	148	43	28	98	170	182	339
121+50.00	122+00.00	41	176	36	26	98	170	217	330
122+00.00	122+50.00	34	204	46	26	98	170	238	340
122+50.00	123+00.00	29	243	62	28	98	170	272	358
123+00.00	123+50.00	30	279	68	30	98	170	309	366
123+50.00	124+00.00	33	337	58	29	102	178	370	367
124+00.00	124+23.25	22	194	26	11	54	96	216	187
124+23.25	124+50.00	26	211	38	12	60	107	237	217
124+50.00	125+00.00	35	325	125	32	96	166	360	419
125+00.00	125+14.59	8	91	50	11	27	47	99	135
125+14.59	125+50.00	20	216	122	25	66	114	236	327
125+50.00	126+00.00	31	311	161	36	94	161	342	452

CSAH 116		EXCAVATION		EMBANKMENT				E	
STATION	STATION	TOPSOIL (EV) (CU YD)	COMMON (EV) (CU YD)	SUITABLE GRADING (CV) (CU YD)	TOPSOIL (CV) (CU YD)	CLASS 5 (CV) (CU YD)	SELECT (CV) (CU YD)	TOTAL EXCAVATION (EV) (CU YD)	TOTAL EMBANKMENT (CV) (CU YD)
126+00.00	126+16.12	10	101	51	12	30	52	111	145
126+16.12	126+50.00	22	215	91	25	64	109	237	289
126+50.00	127+00.00	45	349	74	35	96	164	394	369
127+00.00	127+03.00	3	22	3	2	6	10	25	21
127+03.00	127+50.00	39	333	42	31	92	158	372	323
127+50.00	128+00.00	29	346	54	31	99	170	375	354
128+00.00	128+24.12	15	170	22	11	48	82	185	163
128+24.12	128+34.25	7	71	7	3	20	34	78	64
128+34.25	128+50.00	9	106	18	7	30	54	115	109
128+50.00	129+00.00	25	310	68	27	94	171	335	360
129+00.00	129+50.00	27	304	40	24	95	171	331	330
129+50.00	129+95.00	32	296	11	16	85	154	328	266
129+95.00	130+00.00	5	35	0	1	9	17	40	27
130+00.00	130+50.00	22	178	3	5	47	86	200	141
130+50.00	131+00.00	0	21	0	0	5	6	21	11
131+00.00	131+50.00	0	43	0	0	11	16	43	27
131+50.00	132+00.00	0	59	0	0	15	23	59	38
132+00.00	136+50.00	82	509	0	19	156	263	591	438
136+50.00	137+00.00	18	43	22	21	18	32	61	93
137+00.00	137+50.00	27	53	22	29	18	33	80	102
137+50.00	137+75.00	18	47	0	5	14	27	65	46
137+75.00	138+00.00	16	54	0	1	16	31	70	48
138+00.00	138+50.00	29	83	0	11	22	41	112	74
138+50.00	139+00.00	23	55	8	21	17	30	78	76
TOTALS		2515	17462	3243	1810	5175	9354	19977	19582

NO	DATE	BY	CKD	APPR	REVISION

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 PRINT NAME: ALAN J. PALMER, P.E.
 SIGNATURE: 
 DATE: 18 JUNE 2005 LICENSE NO. 42462

DRAWN BY RLH/DJS DATE 02/18/05
 DESIGN BY AJP/EDD DATE 02/18/05
 CHECKED BY AJP DATE 02/18/05

 ANOKA COUNTY
 HIGHWAY DEPT.

PROJECT NO.
 ANOKA COUNTY S.P. 02-716-07
 CITY OF ANOKA S.P. 103-122-12
 CITY OF RAMSEY S.P. 199-020-04

TABULATION
 EARTHWORK
 PAGE 2 OF 2
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AGGREGATE AND BITUMINOUS							F
ALIGNMENT	STATION	TO	STATION	AGGREGATE	BITUMINOUS		BITUMINOUS MATERIAL FOR TACK COAT (GAL)
				BASE CLASS 5 (CU YD)	TYPE - SP 12.5 WEAR SPWEB 440F (TON)	TYPE - SP 19.0 NONWEAR SPNWB 430B (TON)	
WB CSAH 116, 2"	101+71	TO	101+91	0	7	0	7
WB CSAH 116	101+91	TO	114+50	1558	1952	899	888
WB CSAH 116	114+50	TO	130+35	2600	3284	1513	1494
WB CSAH 116	130+35	TO	132+27	38	30	14	14
WB CSAH 116, 2"	130+35	TO	130+55	0	16	0	14
WB CSAH 116	136+15	TO	139+18	104	130	60	59
THURSTON AVENUE	499+55	TO	501+60	16	17	8	8
THURSTON AVENUE, 2"	501+60	TO	501+80	0	13	0	11
THURSTON AVENUE	501+60	TO	503+10	164	212	98	96
DYSPROSIUM STREET	503+58	TO	505+12	161	209	96	95
DYSPROSIUM STREET, 2"	505+12	TO	505+32	0	12	0	11
DYSPROSIUM STREET	505+12	TO	507+23	23	25	12	11
S.P. 103-122-12 (CITY OF ANOKA)				0	0	0	0
S.P. 199-020-04 (CITY OF RAMSEY)				0	0	0	0
S.P. 02-716-07 (ANOKA COUNTY)				4664	5907	2700	2708
PROJECT TOTALS:				4664	5907	2700	2708

AGGREGATE AND BITUMINOUS							F
ALIGNMENT	STATION	TO	STATION	AGGREGATE	BITUMINOUS SIDEWALK		BITUMINOUS MATERIAL FOR TACK COAT (GAL)
				BASE CLASS 5 (CU YD)	TYPE LV4 WEAR, 2" DEPTH (TON)	TYPE LV4 WEAR, 2" DEPTH (SQ YD)	
WB CSAH 116 (TRAIL)	105+80	TO	108+62	37	35	314	16
WB CSAH 116 (TRAIL)	108+80	TO	110+75	26	24	217	11
WB CSAH 116 (TRAIL)	110+93	TO	111+94	13	12	112	6
WB CSAH 116 (TRAIL)	112+12	TO	114+12	27	26	231	12
WB CSAH 116 (TRAIL)	114+96	TO	129+86	210	197	1777	89
WB CSAH 116 (TRAIL)	130+04	TO	130+30	6	6	55	3
S.P. 103-122-12 (CITY OF ANOKA)				0	0	0	0
S.P. 199-020-04 (CITY OF RAMSEY)				103	97	874	45
S.P. 02-716-07 (ANOKA COUNTY)				216	203	1832	92
PROJECT TOTALS:				319	300	2706	137

① CLASS 5 BASE AND TACK COAT ARE INCIDENTAL TO BITUMINOUS SIDEWALK, PAID AS TYPE LV WEARING COURSE MIXTURE.

NO	DATE	BY	CKD	APPR	REVISION

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 PRINT NAME: ALAN L. PALMER, P.E.
 SIGNATURE: *[Signature]*
 DATE: 18 JUNE 2005 LICENSE NO. 42452

DRAWN BY: RLH/DJS DATE: 02/18/05
 DESIGN BY: AJP/EDD DATE: 02/18/05
 CHECKED BY: AJP DATE: 02/18/05



ANOKA COUNTY
 HIGHWAY DEPT.

PROJECT NO.
 ANOKA COUNTY S.P. 02-716-07
 CITY OF ANOKA S.P. 103-122-12
 CITY OF RAMSEY S.P. 199-020-04

TABULATIONS
 AGGREGATE & BIT.
 PAGE 1 OF 4

CONCRETE AND DRIVEWAYS										G
ALIGNMENT	STA. - STA.	LOCATION	CONCRETE CURB DESIGN B624	CONCRETE CURB & GUTTER DESIGN B412	CONCRETE CURB & GUTTER DESIGN B424	4" CONCRETE MEDIAN ③	4" CONCRETE WALK ④	PEDESTRIAN RAMP (TRUNCATED DOME)	TYPE LV BITUMINOUS DRWY PAVT (RESIDENTIAL) ①	TYPE LV BITUMINOUS DRWY PAVT (COMMERCIAL) ②
			(LIN FT)	(LIN FT)	(LIN FT)	(SQ YD)	(SQ FT)	(EACH)	(SQ YD)	(SQ YD)
WB CSAH 116	104+16	LT							50	
WB CSAH 116	104+40 - 108+50	RT		410						
WB CSAH 116	108+50 - 113+98	LT/RT		548	548					
WB CSAH 116	108+71	LT							77	
WB CSAH 116	108+50 - 113+98	RT				974				
WB CSAH 116	110+84	LT							72	
WB CSAH 116	112+03	LT							54	
WB CSAH 116	113+98 - 114+22	LT			55			1		
WB CSAH 116	114+80 - 115+08	LT			58			1		
WB CSAH 116	115+08 - 130+35	LT/RT		1500	1531					
WB CSAH 116	115+08 - 130+35	RT				1413				
WB CSAH 116	129+95	LT								60
WB CSAH 116	130+26	LT						1		
WB CSAH 116	130+35 - 132+37	RT		202		208				
WB CSAH 116	136+15 - 139+15	LT			320					
WB CSAH 116	136+34	LT					105	1		
WB CSAH 116	137+75	LT					96			
EB CSAH 116	104+40 - 108+10	LT		370						
EB CSAH 116	108+10 - 113+98	LT/RT		588	588					
EB CSAH 116	110+15	RT								608
EB CSAH 116	113+98 - 114+38	RT			71		577	1		
EB CSAH 116	114+97 - 115+08	RT			41		541	1		
EB CSAH 116	115+08 - 124+06	LT/RT		898	918					
EB CSAH 116	117+03	RT								33
EB CSAH 116	118+79	RT								66
EB CSAH 116	124+42	RT					201	1		
EB CSAH 116	124+36 - 130+47	LT/RT		635	652		2797	1		
EB CSAH 116	128+40	RT								51
EB CSAH 116	130+47 - 132+37	LT		211						
THURSTON AVENUE	499+55 - 501+60	RT	205							
THURSTON AVENUE	500+40	RT								33
THURSTON AVENUE	501+60 - 502+43	LT/RT	156							
THURSTON AVENUE	501+83	RT								33
THURSTON AVENUE	501+83	LT								48
THURSTON AVENUE	501-98 - 502+43	LT					304			
DYSPROSIUM STREET	504+31 - 505+12	LT/RT	158							
DYSPROSIUM STREET	505+12 - 507+23	LT	211							
DYSPROSIUM STREET	505+20	LT								12
DYSPROSIUM STREET	506+81	LT								24
S.P. 103-122-12 (CITY OF ANOKA)			181	0	1135	0	0	1	0	0
S.P. 199-020-04 (CITY OF RAMSEY)			185	0	1256	0	0	0	0	0
S.P. 02-716-07 (ANOKA COUNTY)			365	5362	2391	2595	4621	7	253	968
PROJECT TOTALS:			730	5362	4782	2595	4621	8	253	968

MAILBOX SUPPORT				U
ROADWAY	STATION	LOCATION	RELOCATE MAILBOX (EACH)	
WB CSAH 116	108+57	LT	1	
WB CSAH 116	112+34	LT	1	
EB CSAH 116	103+72	RT	1	
EB CSAH 116	111+25	RT	1	
EB CSAH 116	111+90	RT	1	
EB CSAH 116	121+93	RT	1	
DYSPROSIUM STREET	505+09	RT	3	
S.P. 103-122-12 (CITY OF ANOKA)			0	
S.P. 199-020-04 (CITY OF RAMSEY)			0	
S.P. 02-716-07 (ANOKA COUNTY)			9	
PROJECT TOTALS:			9	

- ① RESIDENTIAL DRIVES TO BE 2" TYPE LV OVER 4" CL 5, PAID AS LV WEARING COURSE. CL 5 BASE AND TACK COAT INCIDENTAL TO BITUMINOUS DRIVE.
- ② COMMERCIAL DRIVES TO BE 2" (MIN.) TYPE LV OVER 4" CL 5, PAID AS LV WEARING COURSE. CL 5 BASE AND TACK COAT INCIDENTAL TO BITUMINOUS DRIVE.
- ③ PAID AS 4" CONCRETE WALK
- ④ INCLUDES CONCRETE FLUMES AT STATION 137+75, LT, COMPLETE

PAVEMENT MARKINGS STRIPING							J
ALIGNMENT	STATION - STATION	4" SOLID LINE WHITE-EPOXY	4" SOLID LINE YELLOW-EPOXY	4" DOUBLE SOLID LINE YELLOW-EPOXY	24" SOLID LINE YELLOW-EPOXY	4" BROKEN LINE WHITE-EPOXY	24" SOLID LINE WHITE-POLY-PREFORMED
		LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT
WB CSAH 116	96+91 TO 101+91			500			
WB CSAH 116	101+91 TO 104+40	249		249	54		
EB CSAH 116	101+91 TO 104+40	249		249			
WB CSAH 116	104+40 TO 105+20	80	80				
EB CSAH 116	104+40 TO 105+20	80	80				
WB CSAH 116	105+20 TO 106+10		90				
EB CSAH 116	105+20 TO 106+10	90	90				
WB CSAH 116	106+10 TO 109+50	340	340				
EB CSAH 116	106+10 TO 109+00	290	290			50	
WB CSAH 116	109+50 TO 111+49	199	199				
EB CSAH 116	109+00 TO 110+99	398	199			40	
WB CSAH 116	111+49 TO 113+98	229	249			30	
EB CSAH 116	110+99 TO 113+98	897	299			50	48
WB CSAH 116	115+14 TO 118+08	882	294			50	53
EB CSAH 116	115+14 TO 118+08	213	294			50	
WB CSAH 116	118+08 TO 119+08	200	100			20	
EB CSAH 116	118+08 TO 119+08	100	100			20	
WB CSAH 116	119+08 TO 121+28	220	220			60	
EB CSAH 116	119+08 TO 120+78	170	170			60	
WB CSAH 116	121+28 TO 123+78	250	250			50	
EB CSAH 116	120+78 TO 123+78	600	300			50	
WB CSAH 116	123+78 TO 124+55	77	55			20	
EB CSAH 116	123+78 TO 124+55	0	41			20	
WB CSAH 116	124+55 TO 127+74	557	319			60	
EB CSAH 116	124+55 TO 127+24	269	269			60	
WB CSAH 116	127+74 TO 130+06	232	232			40	
EB CSAH 116	127+24 TO 130+24	600	300			50	
WB CSAH 116	130+06 TO 132+37		231			10	
EB CSAH 116	130+06 TO 132+37	29	231				
WB CSAH 116	136+15 TO 137+35	231					
WB CSAH 116	137+35 TO 139+17	228					
THURSTON AVENUE	494+69 TO 496+69			200			
THURSTON AVENUE	496+69 TO 499+69	600		600	76		
THURSTON AVENUE	499+69 TO 500+19	150		100			
THURSTON AVENUE	500+19 TO 502+73	981		254			44
DYSPROSIUM STREET	503+96 TO 506+04	772		208			47
DYSPROSIUM STREET	506+04 TO 507+04	300		100			
DYSPROSIUM STREET	507+04 TO 510+04	600		600	75		
DYSPROSIUM STREET	510+04 TO 512+04			200			
S.P. 103-122-12		0	0	0	0	0	0
S.P. 199-020-04		0	0	0	0	0	0
S.P. 02-716-07		11362	5322	3260	205	790	192
PROJECT TOTALS:		11362	5322	3260	205	790	192

PAVEMENT MARKINGS MESSAGES					N
ALIGNMENT		ZEBRA CROSSWALK WHITE-POLY PREFORMED	HANDICAPPED SYMBOL-POLY PREFORMED	LEFT ARROW-POLY PREFORMED	RIGHT ARROW-POLY PREFORMED
		SQ FT	EACH	EACH	EACH
EB CSAH 116	109+00 TO 110+99				1
WB CSAH 116	111+49 TO 113+98	126			
EB CSAH 116	110+99 TO 113+98	162		2	1
WB CSAH 116	115+14 TO 118+08	162		1	2
EB CSAH 116	115+14 TO 118+08	126			
WB CSAH 116	118+08 TO 119+08			1	
EB CSAH 116	120+78 TO 123+78				2
WB CSAH 116	124+55 TO 126+71			2	
EB CSAH 116	127+24 TO 130+24				2
WB CSAH 116	136+15 TO 137+35	630			1
WB CSAH 116	137+35 TO 139+17				1
THURSTON AVENUE	499+69 TO 500+19			1	
THURSTON AVENUE	500+19 TO 502+73	234		1	2
DYSPROSIUM STREET	503+96 TO 506+04	312		1	2
DYSPROSIUM STREET	506+04 TO 507+04			1	
S.P. 103-122-12		0	0	0	0
S.P. 199-020-04		0	0	0	0
S.P. 02-716-07		1752	0	10	14

NO	DATE	BY	CKD	APPR	REVISION

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TABULATIONS
 PAVEMENT MARKINGS
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 Sheet 13 of 120 Sheets

TURF ESTABLISHMENT / EROSION CONTROL												K
ROADWAY	STATION TO STATION	LOCATION	SEEDING MIXTURE 60B	SEED MIXTURE 60B	SEEDING MIXTURE 28B	SEED MIXTURE 28B	COMMERCIAL FERT. ANALYSIS	HYDRAULIC SOIL STABILIZER TYPE 5	EROSION CONTROL BLANKETS (CATEGORY 2S)	SILT FENCE MACHINE SLICED	SOD - LAWN	SOD - SALT RESISTANT
							22-5-10					POUND
			ACRE	LB	ACRE	LB	(3)					
				(1)		(2)						
WB CSAH 116	101+91 TO 104+08	LT	0.110	11			44	275		76		
WB CSAH 116	104+26 TO 105+49	LT	0.064	6			26	161		125		
WB CSAH 116	105+78 TO 108+62	LT	0.216	22			86	540		225		
WB CSAH 116	108+80 TO 110+75	LT	0.036	4			32	89			419	
WB CSAH 116	110+93 TO 111+94	LT	0.018	2			11	46			83	
WB CSAH 116	112+12 TO 114+00	LT	0.033	3			28	83			364	
WB CSAH 116	115+08 TO 124+06	LT					70			509	899	790
WB CSAH 116	124+06 TO 129+86	LT	0.105	10	0.822	33	371	2316	4484	788		
WB CSAH 116	130+04 TO 130+30	LT	0.013	1			5	33		32		
WB CSAH 116	136+17 TO 137+55	LT					18					437
WB CSAH 116	137+96 TO 139+18	LT					12					284
EB CSAH 116	101+97 TO 108+10	RT	0.268	27			107	669		476		
EB CSAH 116	108+10 TO 110+02	RT					16					378
EB CSAH 116	110+33 TO 114+14	RT					28			263		683
EB CSAH 116	115+16 TO 116+91	RT					13			174		319
EB CSAH 116	117+15 TO 118+68	RT					5			141		133
EB CSAH 116	118+92 TO 124+06	RT					40			505		968
EB CSAH 116	124+38 TO 128+23	RT					19			383		465
EB CSAH 116	128+45 TO 130+30	RT					7			207		176
EB CSAH 116	130+63 TO 131+31	RT					6			84		134
THURSTON AVENUE	499+55 TO 500+25	RT					1					29
THURSTON AVENUE	500+55 TO 501+68	RT					2					48
THURSTON AVENUE	501+60 TO 501+68	LT										6
THURSTON AVENUE	501+98 TO 502+73	LT					6					143
THURSTON AVENUE	501+98 TO 502+72	RT					4					92
DYSPROSIUM STREET	503+96 TO 505+12	RT					3					80
DYSPROSIUM STREET	503+99 TO 505+12	LT					4					99
DYSPROSIUM STREET	505+30 TO 506+72	LT					4					86
DYSPROSIUM STREET	506+90 TO 507+23	LT					1					20
S.P. 103-122-12 (CITY OF ANOKA)			0.000	0	0.000	0	0	0	0	0	0	0
S.P. 199-020-04 (CITY OF RAMSEY)			0.000	0	0.000	0	0	0	0	0	0	0
S.P. 02-716-07 (ANOKA COUNTY)			0.863	86	0.822	33	969	4212	4484	3988	1766	5370
PROJECT TOTALS:			0.863	86	0.822	33	969	4212	4484	3988	1766	5370

- (1) SEED AT A RATE OF 100 LBS / ACRE
- (2) SEED AT A RATE OF 40 LBS / ACRE
- (3) FERTILIZE SODDED AREAS AT A RATE OF 200 LBS / ACRE AND SEEDED AREAS AT A RATE OF 400 LBS / ACRE
- (4) SOIL STABILIZER AT A RATE OF 2500 LBS/ACRE FOR SEEDED AREAS

NO	DATE	BY	CKD	APPR	REVISION

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 PRINT NAME: ALAN L. PALMER, P.E.
 SIGNATURE: *[Signature]*
 DATE: 18 JUNE 2005 LICENSE NO. 42462

DRAWN BY RLH/DJS DATE 02/18/05
 DESIGN BY AJP/EDD DATE 02/18/05
 CHECKED BY AJP DATE 02/18/05



ANOKA COUNTY
 HIGHWAY DEPT.

PROJECT NO.
 ANOKA COUNTY
 CITY OF ANOKA
 CITY OF RAMSEY

S.P. 02-716-07
 S.P. 103-122-12
 S.P. 199-020-04

TABULATIONS
 TURF & EROSION
 PAGE 4 OF 4

UTILITY			
ANC = ANCHOR	DI = DROP INLET	MH = MANHOLE	RCP = REINFORCED CONCRETE PIPE
APR = APRON	F/O = FIBER OPTIC	P-BUR = BURIED POWER	SAN = SANITARY SEWER
CABINET = SIGNAL CABINET	HH = HAND HOLE	PED = PEDESTAL	SGL = SIGNAL
CAB = CABLE	HYD = HYDRANT	PET = PETROLEUM	TAP = TELEPHONE & POWER
CB = CATCH BASIN	GASL = GAS LINE	PIP = PIPE	T-BUR = TELEPHONE
CMP = CORRUGATED METAL PIPE	GASV = GAS VALVE	P-OH = OVERHEAD POWER	TV = TELEVISION
COM = COMMUNICATION	GASM = GAS METER	PP = POWER POLE	WAT = WATER
	L = LIGHT POLE	PM = POWER METER	WATV = WATER VALVE

UTILITIES								L
CITY OF ANOKA - OVERHEAD POWER LINES								
ROADWAY NAME	STATION	LOCATION	INPLACE ITEM	LEAVE AS IS	RELOCATE (1)	ADJUST	REMARKS	
E.B. CSAH 116	101+40	56' RT	PP	X				
E.B. CSAH 116	109+77	11' RT	PP		X			
E.B. CSAH 116	109+77 - 108+99	11' RT - 61' RT	P-OH		X			
E.B. CSAH 116	114+23	88' RT	PP		X			
E.B. CSAH 116	117+26	47' RT	PP	X				
E.B. CSAH 116	122+79	148' RT	PP	X				
E.B. CSAH 116	130+23	106' RT	PP	X				
W.B. CSAH 116	99+00 - 101+49	2' LT - 16' LT	P-OH	X				
W.B. CSAH 116	101+49	16' LT	PP	X				
W.B. CSAH 116	101+49 - 101+40	13' LT - 100' RT	P-OH	X				
W.B. CSAH 116	101+49 - 103+35	13' LT - 16' LT	P-OH	X				
W.B. CSAH 116	103+35	16' LT	PP	X				
W.B. CSAH 116	103+35 - 105+44	16' LT - 15' LT	P-OH	X				
W.B. CSAH 116	105+44	15' LT	PP		X			
W.B. CSAH 116	105+44 - 106+91	15' LT - 11' LT	P-OH		X			
W.B. CSAH 116	106+91	11' LT	PP		X			
W.B. CSAH 116	106+91 - 109+63	11' LT - 9' LT	P-OH		X			
W.B. CSAH 116	109+63	9' LT	PP		X			
W.B. CSAH 116	109+63 - 109+77	9' LT - 56' RT	P-OH		X			
W.B. CSAH 116	109+63 - 112+35	9' LT - 18' LT	P-OH		X			
W.B. CSAH 116	112+35	18' LT	PP		X			
W.B. CSAH 116	112+35 - 114+05	18' LT - 18' LT	P-OH		X			
W.B. CSAH 116	114+05	18' LT	PP		X			
W.B. CSAH 116	114+05 - 114+26	18' LT - 117' RT	P-OH		X			
W.B. CSAH 116	114+05 - 115+26	18' LT - 48' LT	P-OH		X			
W.B. CSAH 116	115+26	48' LT	PP		X			
W.B. CSAH 116	115+26 - 117+15	48' LT - 35' LT	P-OH		X			
W.B. CSAH 116	117+15	35' LT	PP		X			
W.B. CSAH 116	117+15 - 117+26	35' LT - 90' RT	P-OH		X			
W.B. CSAH 116	117+15 - 119+50	35' LT - 30' LT	P-OH		X			
W.B. CSAH 116	119+50	30' LT	PP		X			
W.B. CSAH 116	119+50 - 121+42	30' LT	P-OH	△	X			
W.B. CSAH 116	121+42	30' LT	PP		X			
W.B. CSAH 116	121+42 - 122+54	30' LT - 32' LT	P-OH		X			
W.B. CSAH 116	122+54	32' LT	PP		X			
W.B. CSAH 116	122+79 - 124+07	39' LT - 34' LT	P-OH		X			
W.B. CSAH 116	124+07	34' LT	PP		X			
W.B. CSAH 116	124+07 - 124+57	34' LT - 98' RT	P-OH		X			
W.B. CSAH 116	124+07 - 125+82	34' LT - 46' LT	P-OH		X			
W.B. CSAH 116	125+82	46' LT	PP		X			
W.B. CSAH 116	125+82 - 125+85	46' LT - 84' RT	P-OH		X			
W.B. CSAH 116	125+82 - 127+52	46' LT - 57' LT	P-OH		X			
W.B. CSAH 116	127+52	57' LT	PP		X			
W.B. CSAH 116	127+52 - 127+58	57' LT - 217' RT	P-OH		X			
W.B. CSAH 116	127+52 - 128+95	57' LT - 52' LT	P-OH		X			
W.B. CSAH 116	128+95	52' LT	PP		X			
W.B. CSAH 116	128+95 - 129+76	52' LT - 37' LT	P-OH		X			
W.B. CSAH 116	129+76	37' LT	PP		X			
W.B. CSAH 116	129+76 - 130+23	37' LT - 37' LT	P-OH		X			
W.B. CSAH 116	130+23	37' LT	PP		X			
W.B. CSAH 116	130+23 - 130+08	37' LT - 149' RT	P-OH		X			
W.B. CSAH 116	129+76 - 130+72	37' LT - 40' LT	P-OH		X			
W.B. CSAH 116	130+72	40' LT	PP	X				
W.B. CSAH 116	130+72 - 131+51	40' LT - 36' LT	P-OH	X				
W.B. CSAH 116	131+51	36' LT	PP	X				
T.H. 47	136+34	114' RT	PP	X			STATIONING FROM W.B. CSAH 116	
T.H. 47	136+37	73' LT	PP	X			STATIONING FROM W.B. CSAH 116	
T.H. 47	136+37 - 136+34	73' RT - 114' RT	P-OH	X			STATIONING FROM W.B. CSAH 116	
DYSPROSIUM ST.	504+04	62' LT	PM	X			CABINET FOR SEWER METER STATION	

UTILITIES		L
THE FOLLOWING LIST SHOWS THE CONTACT PERSONS AT THE		
CITY OF ANOKA PUBLIC WORKS 501 PIERCE STREET ANOKA, MN 55303 TELEPHONE NO. (763) 576-2902 CONTACT PERSON: GREG GORHAM	SHAL NETWORKS 9938 STATE HIGHWAY 55 NW PO BOX 340 ANNANDALE, MN 55302-0340 TELEPHONE NO. (320) 274-7415 CONTACT PERSON: PETE JOHNSON	
CITY OF RAMSEY 15153 NOWTHEN BOULEVARD NW RAMSEY, MN 55303	CENTERPOINT ENERGY MINNEGASCO 700 W LINDEN AVE PO BOX 1165 MINNEAPOLIS, MN 55440-1165 TELEPHONE NO. (612) 321-5421 CONTACT PERSON: STEVE GUHANIC	
COMCAST CABLE COMMUNICATIONS 1238 GREY FOX ROAD ARDEN HILLS, MN 55112 TELEPHONE NO. (651) 493-5303 CONTACT PERSON: DUANE CARLSON	METROPOLITAN WASTE CONTROL COMMISSION MEARS PARK CENTRE 230 EAST 5TH STREET ST. PAUL, MN 55101-1626 TELEPHONE NO. (651) 602-4535 CONTACT PERSON: PETE OWENS	
CONNEXUS ENERGY 14601 RAMSEY BLVD RAMSEY, MN 55303 TELEPHONE NO. (763) 323-2761 CONTACT PERSON: PAUL ORNDORFF	NORTHSTAR ACCESS 440 EAGLE LAKE ROAD BIG LAKE, MN 55309 TELEPHONE NO. (763) 262-4364 CONTACT PERSON: TIM ERICKSON	
QWEST CORPORATION 420 MONROE ANOKA, MN 55303 TELEPHONE NO. (763) 712-5015 CONTACT PERSON: TOM ADRIAENS	INFINITY RADIO 625 SECOND AVE. S. MINNEAPOLIS, MN 55402 TELEPHONE NO. (612) 370-0614 CONTACT PERSON: DOUG CAMPBELL	△

GENERAL NOTES:

- ALL UTILITY WORK SHOWN ON THESE SHEETS SHALL BE DONE BY OTHERS UNLESS NOTED.
- UTILITY LOCATIONS ARE APPROXIMATE AND MUST BE FIELD VERIFIED DURING CONSTRUCTION.
- UTILITIES MARKED AS "RELOCATE" OR "ADJUST" SHALL APPLY TO FACILITIES LOCATED WITHIN CONSTRUCTION LIMITS ONLY.

NOTES:

1. OVERHEAD POWER LINES WITHIN PROJECT LIMITS ARE "DISTRIBUTION" WITH A VOLTAGE OF 12.5 KILOVOLTS UNLESS OTHERWISE NOTED.

NO	DATE	BY	CKD	APPR	REVISION
1	12-18-05	REB	AJP	AP	ADDED UTILITIES CONTACT

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

PRINT NAME: ALAN J. PALMER, P.E.

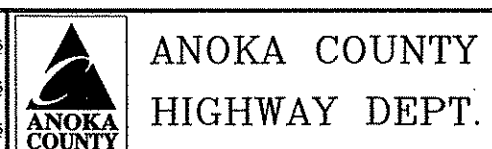
SIGNATURE: *[Signature]*

DATE: 18 JUNE 2005 LICENSE NO. 42462

DRAWN BY: RLH/DJS DATE: 02/18/05

DESIGN BY: AJP/EDD DATE: 02/18/05

CHECKED BY: AJP DATE: 02/18/05



PROJECT NO. ANOKA COUNTY S.P. 02-716-07
CITY OF ANOKA S.P. 103-122-12
CITY OF RAMSEY S.P. 199-020-04

UTILITIES CITY OF ANOKA - WATER							L
ROADWAY NAME	STATION	LOCATION	INPLACE ITEM	LEAVE AS IS	RELOCATE (2)	ADJUST (2)	REMARKS
E.B. CSAH 116	99+00 - 100+94	35'RT - 35'RT	WAT	X			12" WATER MAIN (1)
E.B. CSAH 116	100+94	10'RT	HYD	X			12" WATER MAIN (1)
E.B. CSAH 116	100+94 - 103+97	35'RT - 35'RT	WAT	X			12" WATER MAIN (1)
E.B. CSAH 116	103+97	5'RT	HYD		X		
E.B. CSAH 116	103+97 - 108+00	35'RT - 35'RT	WAT	X			12" WATER MAIN (1)
E.B. CSAH 116	108+00	10'RT	HYD		X		
E.B. CSAH 116	108+00 - 110+69	35'RT - 35'RT	WAT	X			12" WATER MAIN (1)
E.B. CSAH 116	110+69 - 110+78	35'RT - 89'RT	WAT	X			SERVICE LINE
E.B. CSAH 116	110+69 - 111+03	35'RT - 35'RT	WAT	X			12" WATER MAIN (1)
E.B. CSAH 116	111+03	12'RT	HYD		X		
E.B. CSAH 116	111+03 - 114+99	35'RT - 35'RT	WAT	X			12" WATER MAIN (1)
E.B. CSAH 116	114+99	35'RT	HYD		X		REMOVE
E.B. CSAH 116	115+05	80'RT	HYD		X		
E.B. CSAH 116	114+99 - 119+30	35'RT - 24'RT	WAT	X			12" WATER MAIN (1)
E.B. CSAH 116	119+30 - 119+32	24'RT - 52'RT	WAT	X			
E.B. CSAH 116	119+32	52'RT	HYD	X			
E.B. CSAH 116	119+30 - 123+88	24'RT - 19'RT	HYD	X			
E.B. CSAH 116	123+89	51'RT	HYD	X			
E.B. CSAH 116	123+88 - 123+89	19'RT - 51'RT	WAT	X			
E.B. CSAH 116	123+88 - 127+99	19'RT - 15'RT	WAT	X			12" WATER MAIN (1)
E.B. CSAH 116	127+98	51'RT	HYD	X			
E.B. CSAH 116	128+98 - 127+98	15'RT - 51'RT	WAT	X			
E.B. CSAH 116	127+99 - 130+52	15'RT - 28'RT	WAT	X			12" WATER MAIN (1)
E.B. CSAH 116	130+52 - 137+47	28'RT	WAT	X			16" WATER MAIN (1)
W.B. CSAH 116	137+47	95'RT	HYD	X			
THURSTON AVE	499+38	31'LT	HYD	X			
THURSTON AVE	499+38 - 499+37	31'LT - 22'RT	WAT	X			
THURSTON AVE	499+37 - 502+81	22'RT - 23'RT	WAT	X			

UTILITIES CENTER POINT ENERGY - GAS							
ROADWAY NAME	STATION	LOCATION	INPLACE ITEM	LEAVE AS IS	RELOCATE (3)	ADJUST (3)	REMARKS
E.B. CSAH 116	99+00 - 101+52	12'RT - 10'RT	GASL	X			6" GAS
E.B. CSAH 116	101+47	42'RT	GASV	X			
E.B. CSAH 116	101+52 - 101+39	10'RT - 122'LT	GASL	X			IODINE STREET; 3" GAS
E.B. CSAH 116	101+52 - 105+79	10'RT - 6'RT	GASL	X			6" GAS
E.B. CSAH 116	105+79 - 105+71	6'RT - 114'LT	GASL		X		GERMANIUM STREET; 2" GAS
E.B. CSAH 116	105+79 - 114+35	6'RT - 6'RT	GASL		X		6" GAS
E.B. CSAH 116	107+43	32'RT	GASV		X		
E.B. CSAH 116	107+83	42'RT	GASV		X		
E.B. CSAH 116	107+83	6'RT - 42'RT	GASL		X		
E.B. CSAH 116	114+15	43'RT	GASV			X	THURSTON AVE
E.B. CSAH 116	114+35 - 114+24	6'RT - 82'LT	GASL		X		DYSPROSIUM STREET; 3" GAS
E.B. CSAH 116	114+35 - 114+92	6'RT - 9'RT	GASL		X		6" GAS
E.B. CSAH 116	114+74	55'RT	GASV			X	
E.B. CSAH 116	114+92 - 114+97	9'RT - 52'RT	GASL		X		THURSTON AVE; 4" GAS
E.B. CSAH 116	114+92 - 129+12	9'RT - 5'RT	GASL		X		6" GAS
E.B. CSAH 116	114+97	63'RT	GASV			X	
E.B. CSAH 116	124+43 - 124+47	60'RT - 150'RT	GASL		X		TOWER POND DRIVE; 2" GAS
E.B. CSAH 116	127+98	49'RT	GASV			X	
E.B. CSAH 116	128+03	44'RT	GASV			X	
E.B. CSAH 116	129+12 - 130+76	5'RT - 19'RT	GASL		X		6" GAS
E.B. CSAH 116	130+56	17'RT - 150'RT	GASL	X			6" GAS
E.B. CSAH 116	130+76	19'RT - 150'RT	GASL	X			6" GAS
E.B. CSAH 116	130+76 - 132+00	19'RT - 20'RT	GASL	X			6" GAS
E.B. CSAH 116	132+00 - 134+77	20'RT - 15'RT	GASL	X			6" GAS
W.B. CSAH 116	135+57 - 138+09	67'LT - 65'LT	GASL	X			8" GAS
W.B. CSAH 116	135+66	250'LT - 65'LT	GASL	X			T.H. 47; 6" GAS
W.B. CSAH 116	135+66 - 135+38	65'LT - 307'RT	GASL	X			T.H. 47; 6" GAS
W.B. CSAH 116	138+09	65'LT	GASV	X			
W.B. CSAH 116	138+09 - 138+62	65'LT - 1'LT	GASL	X			8" GAS
W.B. CSAH 116	138+14	43'LT	GASV			X	
W.B. CSAH 116	138+19	52'LT	GASV			X	
W.B. CSAH 116	138+62 - 141+74	1'LT - 1'LT	GASL	X			8" GAS
THURSTON AVE	498+79 - 502+61	30'RT - 33'RT	GASL			X	
THURSTON AVE	502+50	30'RT	GASV			X	
THURSTON AVE	502+60	10'RT	GASV			X	
THURSTON AVE	502+60 - 502+61	10'RT - 33'RT	GASL	X			
DYSPROSIUM ST	504+04	44'LT	GASV		X		
DYSPROSIUM ST	504+04 - 503+99	44'LT - 32'LT	GASL	X			
DYSPROSIUM ST	503+99 - 507+37	32'LT - 26'LT	GASL	X			

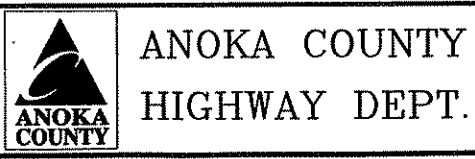
UTILITIES CITY OF RAMSEY - WATER							L
ROADWAY NAME	STATION	LOCATION	INPLACE ITEM	LEAVE AS IS	RELOCATE (2)	ADJUST (2)	REMARKS
W.B. CSAH 116	99+00 - 101+30	0'LT - 6'LT	WAT	X			(1)
W.B. CSAH 116	101+30 - 101+38	6'LT - 31'LT	WAT	X			(1)
W.B. CSAH 116	101+38	31'LT	HYD	X			
W.B. CSAH 116	101+30 - 105+79	6'LT - 9'LT	WAT	X			(1)
W.B. CSAH 116	105+79	19'LT	WATV			X	
W.B. CSAH 116	105+79 - 110+22	9'LT - 6'LT	WAT	X			16" WATER MAIN (1)
W.B. CSAH 116	105+79 - 105+79	9'LT - 30'LT	WAT	X			
W.B. CSAH 116	110+22 - 112+17	6'LT - 38'LT	WAT		X		(1)
W.B. CSAH 116	112+17 - 114+94	38'LT - 39'LT	WAT	X			16" WATER MAIN (1)
W.B. CSAH 116	114+09	38'LT	WATV			X	
W.B. CSAH 116	114+66	45'LT	WATV			X	
W.B. CSAH 116	114+94	49'LT	HYD		X		
W.B. CSAH 116	114+67 - 114+63	39'LT - 100'LT	WAT	X			
W.B. CSAH 116	114+94 - 115+56	39'LT - 39'LT	WAT	X			16" WATER MAIN (1)
W.B. CSAH 116	115+57 - 115+57	39'LT - 49'LT	WAT	X			
W.B. CSAH 116	122+94	54'LT	HYD	X			
W.B. CSAH 116	135+02	67'LT	HYD	X			
W.B. CSAH 116	135+04	66'LT	WATV	X			
W.B. CSAH 116	138+07	64'LT	HYD	X			
W.B. CSAH 116	138+23 - 138+14	73'RT - 105'LT	WAT	X			
DYPROSIUM ST	503+96 - 507+55	10'RT - 10'RT	WAT	X			
DYPROSIUM ST	507+55 - 507+55	26'LT - 10'RT	WAT	X			
DYPROSIUM ST	507+55	26'LT	HYD	X			

(1) INSULATE WATER MAIN FROM WB STATION 99+91 TO WB STATION 115+56.
(2) BY CONTRACTOR
(3) BY OTHERS

NO	DATE	BY	CKD	APPR	REVISION

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
PRINT NAME: ALAN L. PALMER, P.E.
SIGNATURE: *[Signature]*
DATE: 18 JUNE 2005 LICENSE NO. 42462

DRAWN BY: RLH/DJS DATE 02/18/05
DESIGN BY: AJP/EDD DATE 02/18/05
CHECKED BY: AJP DATE 02/18/05



PROJECT NO.
ANOKA COUNTY S.P. 02-716-07
CITY OF ANOKA S.P. 103-122-12
CITY OF RAMSEY S.P. 199-020-04

UTILITIES QWEST - TELEPHONE							L
ROADWAY NAME	STATION	LOCATION	INPLACE ITEM	LEAVE AS IS	RELOCATE (1)	ADJUST (1)	REMARKS
E.B. CSAH 116	102+14	8'RT	PED		X		
E.B. CSAH 116	102+14 - 102+13	8'RT - 59'LT	T-BUR		X		
E.B. CSAH 116	102+14 - 108+15	8'RT - 9'RT	T-BUR		X		
E.B. CSAH 116	108+15 - 108+21	9'RT - 25'RT	T-BUR		X		
E.B. CSAH 116	108+15 - 109+42	9'RT - 7'RT	T-BUR		X		
E.B. CSAH 116	108+21 - 108+51	25'RT - 27'RT	T-BUR		X		
E.B. CSAH 116	109+42	7'RT	PED		X		
E.B. CSAH 116	109+42 - 111+01	7'RT - 15'RT	T-BUR		X		
E.B. CSAH 116	110+01 - 110+73	16'RT - 98'RT	T-BUR	X			
E.B. CSAH 116	111+01 - 114+10	15'RT - 29'RT	T-BUR	X			
E.B. CSAH 116	111+19 - 120+31	21'RT - 8'RT	T-BUR	X			
E.B. CSAH 116	114+10	29'RT	PED		X		
E.B. CSAH 116	115+02	24'RT	HH		X		
E.B. CSAH 116	115+04	30'RT	PED		X		
E.B. CSAH 116	115+04 - 117+32	30'RT - 53'RT	T-BUR	X			
E.B. CSAH 116	117+32	53'RT	CABINET	X			
E.B. CSAH 116	117+36 - 121+12	53'RT - 35'RT	T-BUR	X			ABANDONED - NOT ON PLAN
E.B. CSAH 116	121+12 - 130+00	35'RT - 35'RT	T-BUR	X			ABANDONED - NOT ON PLAN
E.B. CSAH 116	120+31 - 121+12	8'RT - 35'RT	T-BUR	X			
E.B. CSAH 116	121+12 - 121+55	35'RT - 44'RT	T-BUR	X			
E.B. CSAH 116	121+35 - 121+55	97'LT - 44'RT	T-BUR		X		
E.B. CSAH 116	121+55 - 122+23	44'RT - 36'RT	T-BUR	X			
E.B. CSAH 116	121+63	38'RT	PED			X	
E.B. CSAH 116	122+23 - 123+67	36'RT - 36'RT	T-BUR	X			
E.B. CSAH 116	123+67 - 125+96	36'RT - 36'RT	T-BUR	X			
E.B. CSAH 116	125+96	36'RT	PED			X	
E.B. CSAH 116	125+96 - 130+19	36'RT - 49'RT	T-BUR	X			
E.B. CSAH 116	130+19	42'RT	PED			X	
E.B. CSAH 116	130+26	40'RT	HH			X	
W.B. CSAH 116	101+42 - 101+49	79'LT - 13'LT	TAP	X			
W.B. CSAH 116	101+49 - 103+35	13'LT - 16'LT	TAP		X		
W.B. CSAH 116	101+55	32'LT	PED	X			
W.B. CSAH 116	103+35 - 103+35	16'LT - 39'LT	T-BUR	X			
W.B. CSAH 116	103+35 - 105+44	16'LT - 15'LT	TAP	X			
W.B. CSAH 116	105+44 - 105+96	15'LT - 16'LT	T-BUR		X		
W.B. CSAH 116	105+96 - 105+96	16'LT - 64'LT	T-BUR	X			
W.B. CSAH 116	110+06	53'LT	PED	X			
W.B. CSAH 116	111+39	53'LT	PED			X	
W.B. CSAH 116	112+77	52'LT	PED	X			
W.B. CSAH 116	115+96 - 116+00	108'LT - 48'LT	T-BUR		X		
W.B. CSAH 116	116+00 - 117+31	48'LT - 36'LT	T-BUR		X		
W.B. CSAH 116	117+31 - 117+41	36'LT - 90'RT	T-BUR		X		
W.B. CSAH 116	119+70	46'LT	PED	X			
W.B. CSAH 116	119+70 - 120+18	46'LT - 51'LT	T-BUR	X			
W.B. CSAH 116	120+18	51'LT	PED	X			
W.B. CSAH 116	120-18 - 121+51	51'LT - 55'LT	T-BUR	X			
W.B. CSAH 116	121+40	32'LT	PED		X		
W.B. CSAH 116	121+51 - 122+54	55'LT - 47'LT	T-BUR	X			
W.B. CSAH 116	122+54 - 124+71	47'LT - 32'LT	T-BUR	X			
W.B. CSAH 116	124+71 - 125+55	32'LT - 36'LT	T-BUR	X			
W.B. CSAH 116	125+55 - 126+88	36'LT - 32'LT	T-BUR	X			
W.B. CSAH 116	126+88 - 127+05	32'LT - 78'LT	T-BUR	X			
W.B. CSAH 116	126+88 - 129+76	32'LT - 37'LT	TAP	X			
W.B. CSAH 116	129+73 - 130+25	37'LT - 31'LT	TAP	X			
W.B. CSAH 116	130+04 - 130+26	43'RT - 31'LT	T-BUR	X			
W.B. CSAH 116	130+26	31'LT	PED		X		
W.B. CSAH 116	130+26 - 134+73	31'LT - 28'LT	T-BUR			X	
W.B. CSAH 116	134+73	28'LT	MH	X			
W.B. CSAH 116	136+56	83'RT	PED	X			

UTILITIES QWEST - TELEPHONE							L
ROADWAY NAME	STATION	LOCATION	INPLACE ITEM	LEAVE AS IS	RELOCATE (1)	ADJUST (1)	REMARKS
THURSTON AVE	498+17	44'LT	PED	X			
THURSTON AVE	498+17 - 501+04	44'LT - 31'LT	T-BUR	X			
THURSTON AVE	498+45 - 502+83	42'RT - 42'RT	T-BUR	X			
THURSTON AVE	501+04 - 502+89	31'LT - 52'LT	T-BUR	X			
DYSPROSIUM ST	504+82 - 506+07	33'LT - 34'LT	T-BUR		X		
DYSPROSIUM ST	504+83 - 504+82	124'LT - 33'LT	T-BUR			X	
DYSPROSIUM ST	506+01	35'RT	PED	X			
DYSPROSIUM ST	506+01 - 507+51	35'RT - 35'RT	T-BUR		X		
DYSPROSIUM ST	506+07	34'LT	PED		X		
DYSPROSIUM ST	506+07 - 507+50	34'LT - 36'LT	T-BUR		X		
DYSPROSIUM ST	507+50	36'LT	PED	X			
DYSPROSIUM ST	507+51	35'RT	PED	X			

(1) BY OTHERS

NO	DATE	BY	CKD	APPR	REVISION

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 PRINT NAME: ALAN L. PALMER, P.E.
 SIGNATURE: *[Signature]*
 DATE: 18 JUNE 2005 LICENSE NO. 42462

DRAWN BY RLH/DJS DATE 02/18/05
 DESIGN BY AJP/EDD DATE 02/18/05
 CHECKED BY AJP DATE 02/18/05

ANOKA COUNTY
HIGHWAY DEPT.

PROJECT NO.
 ANOKA COUNTY S.P. 02-716-07
 CITY OF ANOKA S.P. 103-122-12
 CITY OF RAMSEY S.P. 199-020-04

INPLACE UTILITY
 TABULATIONS
 PAGE 3 OF 5
 Sheet 17 of 120 Sheets

UTILITIES SHAL NETWORKS - UNDERGROUND FIBER OPTIC							L
ROADWAY NAME	STATION	LOCATION	INPLACE ITEM	LEAVE AS IS	RELOCATE	ADJUST (1)	REMARKS
E.B. CSAH 116	115+02 - 116+54	25'RT - 17'RT	FO	X			
E.B. CSAH 116	116+54 - 117+32	17'RT - 38'RT	FO	X			
E.B. CSAH 116	117+32	38'RT	MH	X			FIBER
E.B. CSAH 116	117+32 - 120+51	38'RT - 31'RT	FO	X			OPTIC
E.B. CSAH 116	120+51 - 122+81	31'RT - 29'RT	FO	X			CABLE
E.B. CSAH 116	122+81 - 125+21	29'RT - 25'RT	FO			X	IN
E.B. CSAH 116	125+21 - 127+86	25'RT - 22'RT	FO	X			SHARED
E.B. CSAH 116	127+86 - 130+21	22'RT - 42'RT	FO	X			CONDUIT
E.B. CSAH 116	130+21	42'RT	PED	X			WITH
E.B. CSAH 116	130+21 - 132+62	42'RT - 38'RT	FO	X			NORTHSTAR
E.B. CSAH 116	132+62	38'RT	PED	X			ACCESS
E.B. CSAH 116	132+62 - 134+92	38'RT - 43'RT	FO	X			FACILITIES
E.B. CSAH 116	134+92	43'RT	PED	X			
E.B. CSAH 116	134+92 - 136+56	43'RT - 36'RT	FO	X			

UTILITIES NORTHSTAR ACCESS - UNDERGROUND FIBER OPTIC							L
ROADWAY NAME	STATION	LOCATION	INPLACE ITEM	LEAVE AS IS	RELOCATE	ADJUST (1)	REMARKS
E.B. CSAH 116	115+02 - 116+54	25'RT - 17'RT	FO	X			
E.B. CSAH 116	116+54 - 117+32	17'RT - 38'RT	FO	X			
E.B. CSAH 116	117+32	38'RT	MH	X			FIBER
E.B. CSAH 116	117+32 - 120+51	38'RT - 31'RT	FO	X			OPTIC
E.B. CSAH 116	120+51 - 122+81	31'RT - 29'RT	FO	X			CABLE
E.B. CSAH 116	122+81 - 125+21	29'RT - 25'RT	FO			X	IN
E.B. CSAH 116	125+21 - 127+86	25'RT - 22'RT	FO	X			SHARED
E.B. CSAH 116	127+86 - 130+21	22'RT - 42'RT	FO	X			CONDUIT
E.B. CSAH 116	130+21	42'RT	PED	X			WITH
E.B. CSAH 116	130+21 - 132+62	42'RT - 38'RT	FO	X			SHAL
E.B. CSAH 116	132+62	38'RT	PED	X			NETWORKS
E.B. CSAH 116	132+62 - 134+92	38'RT - 43'RT	FO	X			FACILITIES
E.B. CSAH 116	134+92	43'RT	PED	X			
E.B. CSAH 116	134+92 - 136+56	43'RT - 36'RT	FO	X			

(1) BY OTHERS

UTILITIES METROPOLITAN WASTE COMMISSION - SEWER							W
ROADWAY NAME	STATION	LOCATION	INPLACE ITEM	LEAVE AS IS	RELOCATE	ADJUST	REMARKS
THURSTON AVE.	500+00 - 502+82	3'LT	SAN	X			
THURSTON AVE.	502+82	3'LT	MH			X	
THURSTON AVE.	502+82 - 503+81	3'LT - 8'LT	SAN	X			
THURSTON AVE.	503+03	14'LT	MH			X	
DYSPROSIUM ST.	503+81	8'LT	MH			X	METER VAULT/STATION

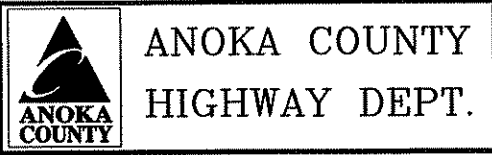
UTILITIES CITY OF RAMSEY - SEWER							W
ROADWAY NAME	STATION	LOCATION	INPLACE ITEM	LEAVE AS IS	RELOCATE	ADJUST	REMARKS
DYSPROSIUM ST.	503+81 - 504+11	8'LT - 9'LT	SAN	X			
DYSPROSIUM ST.	504+11	9'LT	MH			X	
DYSPROSIUM ST.	504+11 - 506+19	9'LT - 1'LT	SAN	X			
DYSPROSIUM ST.	506+19	1'LT	MH			X	

UTILITIES CITY OF ANOKA - SEWER							W
ROADWAY NAME	STATION	LOCATION	INPLACE ITEM	LEAVE AS IS	RELOCATE	ADJUST	REMARKS
E.B. CSAH 116	108+07	28'RT	CLEANOUT		X		REPLACE WITH MANHOLE
E.B. CSAH 116	108+07 - 109+46	28'RT - 26'RT	SERVICE		X		REPLACE WITH 8" VCP SEWER AT 0.50%
E.B. CSAH 116	109+46	26'RT	CLEANOUT		X		REPLACE WITH MANHOLE
E.B. CSAH 116	109+46 - 110+19	26'RT - 23'RT	SERVICE		X		REPLACE WITH 8" VCP SEWER AT 0.50%
E.B. CSAH 116	110+18	23'RT	MH			X	

NO	DATE	BY	CKD	APPR	REVISION

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 PRINT NAME: ALAN J. PALMER, P.E.
 SIGNATURE: *[Signature]*
 DATE: 18 JUNE 2005 LICENSE NO. 42452

DRAWN BY: RLH/DJS DATE: 02/18/05
 DESIGN BY: AJP/EDD DATE: 02/18/05
 CHECKED BY: AJP DATE: 02/18/05



PROJECT NO.
 ANOKA COUNTY S.P. 02-716-07
 CITY OF ANOKA S.P. 103-122-12
 CITY OF RAMSEY S.P. 199-020-04

UTILITIES MN/DOT - ELECTRIC						L
ROADWAY NAME	STATION	LOCATION	INPLACE ITEM	RELOCATE	ADJUST (1)	REMARKS
E.B. CSAH 116	130+26	40'RT	HH		X	
E.B. CSAH 116	131+83	29'RT	HH			
E.B. CSAH 116	132+39	30'RT	HH			
E.B. CSAH 116	133+62	29'RT	HH			
W.B. CSAH 116	134+74	28'LT	MH			
W.B. CSAH 116	134+92	15'RT	HH			
W.B. CSAH 116	134+92	32'LT	MH			
W.B. CSAH 116	134+94	33'RT	HH			
W.B. CSAH 116	135+22	54'LT	MH			
W.B. CSAH 116	136+12	116'RT	HH			
W.B. CSAH 116	136+46	32'LT	HH		X	
W.B. CSAH 116	136+47	80'RT	HH			
W.B. CSAH 116	136+48	54'LT	SGL MET			
W.B. CSAH 116	136+48	48'LT	SGL CAB			
W.B. CSAH 116	136+48	29'RT	HH			
W.B. CSAH 116	136+54	40'LT	HH			
W.B. CSAH 116	136+63	47'LT	HH			

(1) BY OTHERS

UTILITIES MISCELLANY							L
ROADWAY NAME	STATION	LOCATION	INPLACE ITEM	LEAVE AS IS	RELOCATE (1)	ADJUST	REMARKS
W.B. CSAH 116	119+70	50'RT	PED	X			BURIED POWER
W.B. CSAH 116	120+19	49'RT	PED	X			BURIED POWER
THURSTON AVE	498+15 - 502+28	48'LT - 28'LT	POW	X			BURIED POWER
THURSTON AVE	502+21	40'LT	POW		X		BURIED POWER
THURSTON AVE	502+28 - 502+29	28'LT - 43'LT	POW		X		BURIED POWER
THURSTON AVE	502+33	42'LT	POW		X		BURIED POWER
THURSTON AVE	502+42	29'RT	HH		X		HAND HOLE
THURSTON AVE	502+50	32'RT	LP		X		LIGHT POLE - REMOVE
DYSPROSIUM ST	504+02 - 503+81	60'LT - 7'LT	POW		X		BURIED POWER, 3" CONDUIT AT 36"
DYSPROSIUM ST	504+04	60'LT	CABINET		X		BURIED POWER
DYSPROSIUM ST	504+04 - 504+26	60'LT - 38'LT	POW		X		BURIED POWER
DYSPROSIUM ST	504+26 - 506+11	38'LT - 39'LT	POW		X		BURIED POWER
DYSPROSIUM ST	505+05	41'LT	HH	X			HANDHOLE
DYSPROSIUM ST	506+11	39'LT	PED		X		BURIED POWER
DYSPROSIUM ST	506+11 - 507+53	39'LT - 34'LT	POW	X			BURIED POWER
DYSPROSIUM ST	507+53	34'LT	PED	X			BURIED POWER

UTILITIES
COMCAST - CABLE TELEVISION / FIBER OPTIC

UTILITIES COMCAST - CABLE TELEVISION / FIBER OPTIC							L
ROADWAY NAME	STATION	LOCATION	INPLACE ITEM	LEAVE AS IS	RELOCATE (1)	ADJUST	REMARKS
W.B. CSAH 116	105+81 - 105+86	90'LT - 19'LT	COAX		X		
W.B. CSAH 116	105+86 - 106+91	19'LT - 11' LT	COAX		X		
W.B. CSAH 116	112+76	53'RT	TVPED		X		
W.B. CSAH 116	117+15 - 119+70	35'LT - 54'LT	COAX		X		
W.B. CSAH 116	119+70	54'RT	TVPED	X			
W.B. CSAH 116	120+18	47'RT	TVPED	X			
W.B. CSAH 116	131+51 - 131+54	36'LT - 78'RT	COAX	X			
W.B. CSAH 116	131+54 - 135+10	78'RT - 81'RT	COAX	X			
W.B. CSAH 116	136+18 - 138+72	56'LT - 54'LT	FO	X			174 COUNT FIBER OPTIC
W.B. CSAH 116	136+21 - 136+18	171'LT - 56'LT	FO	X			174 COUNT FIBER OPTIC
DYSPROSIUM ST	503+80 - 506+15	53'LT - 35'LT	COAX		X		
DYSPROSIUM ST	506+15	35'LT	TVPED		X		
DYSPROSIUM ST	506+15 - 507+56	35'LT - 35'LT	COAX		X		
DYSPROSIUM ST	507+56	35'LT	TVPED	X			

(1) BY OTHERS

NO	DATE	BY	CKD	APPR	REVISION

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 PRINT NAME: ALAN J. PALMER, P.E.
 SIGNATURE: [Signature]
 DATE: 18 JUNE 2005 LICENSE NO. 42462

DRAWN BY: RLH/DJS DATE: 02/18/05
 DESIGN BY: AJP/EDD DATE: 02/18/05
 CHECKED BY: AJP DATE: 02/18/05



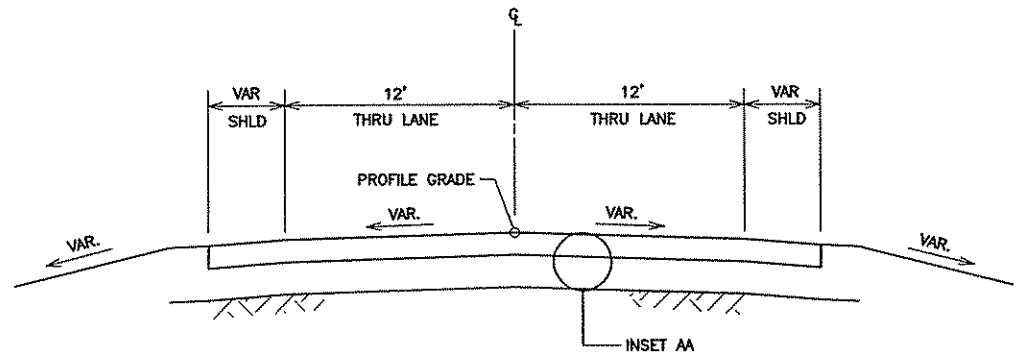
ANOKA COUNTY
HIGHWAY DEPT.

PROJECT NO.
ANOKA COUNTY S.P. 02-716-07
CITY OF ANOKA S.P. 103-122-12
CITY OF RAMSEY S.P. 199-020-04

INPLACE UTILITY
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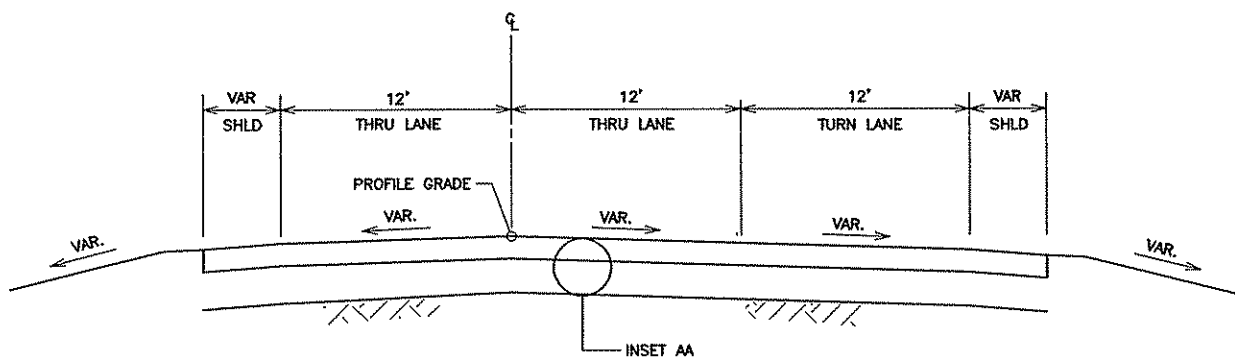
TYP. 01 - INPLACE CSAH 116

W.B. CSAH 116 STATIONS
101+91.37 TO 111+33.27
117+55.59 TO 130+35.17



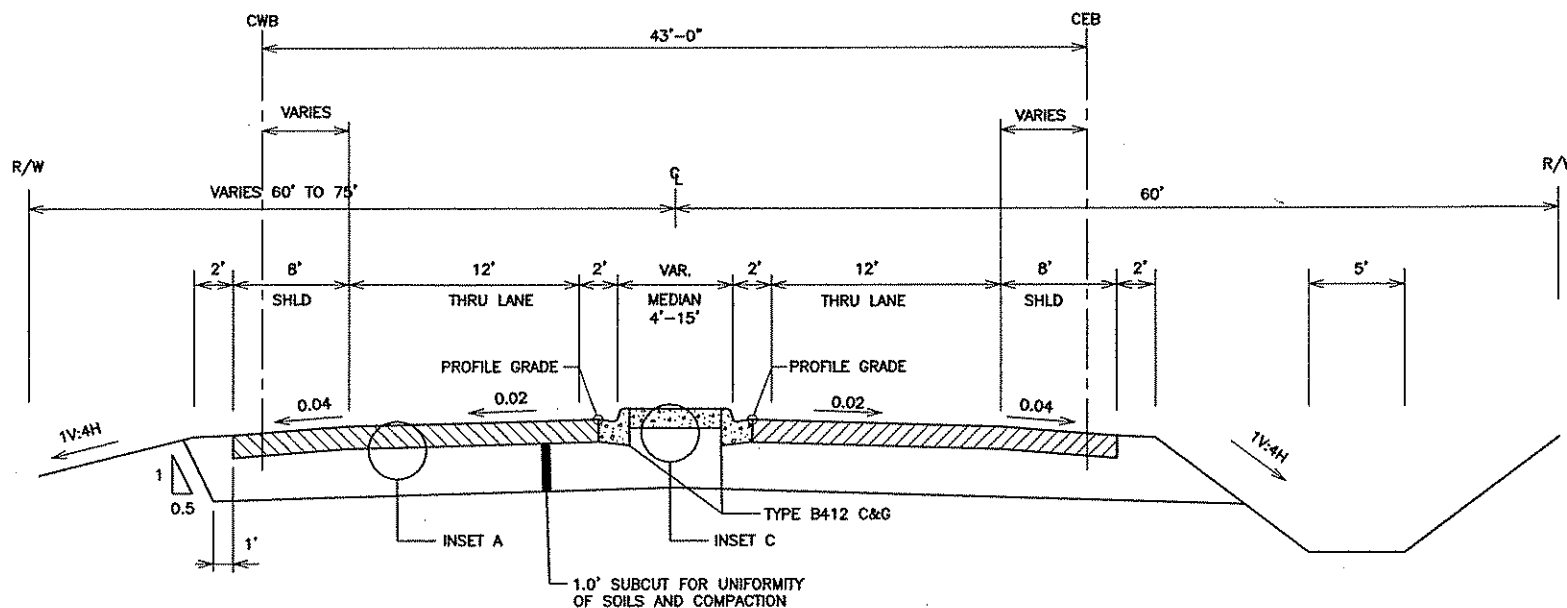
TYP. 02 - INPLACE CSAH 116 WITH RIGHT TURN LANE

W.B. CSAH 116 STATION 111+33.27 TO 117+55.59



TYP. 03 - CSAH 116, RURAL TRANSITION SECTION

W.B. CSAH 116 STATION 101+91.37 TO 104+40.26



GENERAL NOTES:

(APPLIES TO ALL TYPICAL SECTIONS)

FOR CSAH 116, CURB AND GUTTER ALONG THE OUTSIDE OF THE ROADWAY IS B424 (TYPICAL). CURB AND GUTTER ADJACENT TO THE RAISED MEDIAN IS B412 (TYPICAL). FOR THURSTON/DYSPROSIUM, CURB AND GUTTER IS B624 (TYPICAL).

ALL CROSS SLOPES ARE IN FT. PER FT. SLOPE RATIOS ARE IN FT. VERTICAL TO FT. HORIZONTAL.

ALL CROSS SLOPES SHOWN ARE FOR NORMAL CROWN. SEE SUPERELEVATION PLANS AND CROSS SECTIONS FOR CROSS SLOPES INSUPERELEVATED SECTIONS.

FOR DITCH WIDTHS, SLOPE VARIATIONS, AND INPLACE GROUND LINES, SEE CROSS SECTIONS.

UNLESS NOTED OTHERWISE, THE CROSS SLOPE OF THE GRADING GRADE MATCHES THE CROSS SLOPE OF THE DRIVING LANE.

MAXIMUM SUPERELEVATION ROLLOVER SHALL BE 0.07 FT. PER FT.

THE BOTTOM OF THE WEAR COURSE AND NONWEAR COURSE IS NOT SHOWN ON THE TYPICAL SECTIONS FOR CLARITY. IT IS SHOWN ON THE INSETS.

UNLESS NOTED OTHERWISE, THE CROSS SLOPE OF THE BOTTOM OF THE SELECT GRANULAR MATERIAL SHALL BE AT 0.02 FT. PER FT. DOWN AND OUT FROM A CROWN LOCATED UNDER THE ROADWAY CENTERLINE OR CENTER OF MEDIAN.

GRADE FORESLOPE AT A MAXIMUM OF 1V:4H OR AS REQUIRED TO ENSURE POSITIVE DRAINAGE.

NOTES:
SEE PAGE 3 OF 4 FOR INSETS.

PROPOSED CROSS SECTIONS INCLUDE 10' CLEAR ZONE FROM EDGE OF TRAVELED LANE.

NO	DATE	BY	CKD	APPR	REVISION

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
PRINT NAME: ALAN J. PALMER, P.E.
SIGNATURE: *[Signature]*
DATE: 18 JUNE 2005 LICENSE NO. 42482

DRAWN BY: RLH/DJS DATE: 02/18/05
DESIGN BY: AJP/EDD DATE: 02/18/05
CHECKED BY: AJP DATE: 02/18/05



ANOKA COUNTY
HIGHWAY DEPT.

PROJECT NO.
ANOKA COUNTY S.P. 02-716-07
CITY OF ANOKA S.P. 103-122-12
CITY OF RAMSEY S.P. 199-020-04

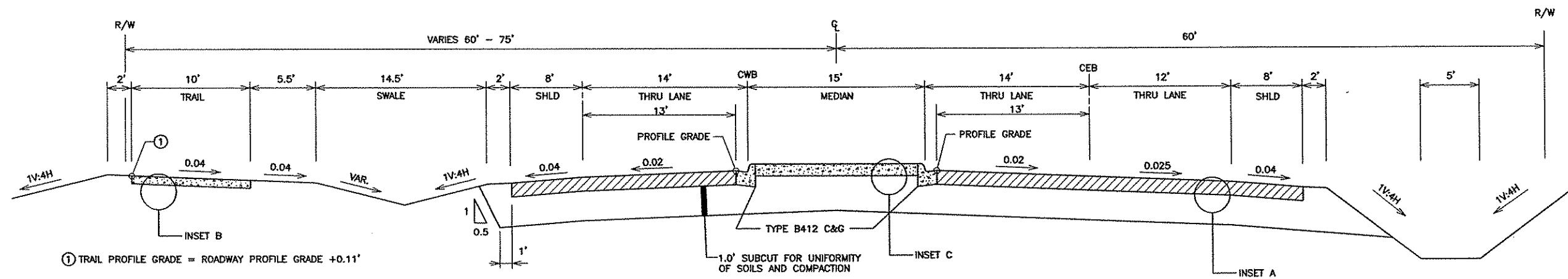
TYPICAL SECTIONS

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TYP. 04 - CSAH 116, RURAL TRANSITION SECTION, RAISED MEDIAN

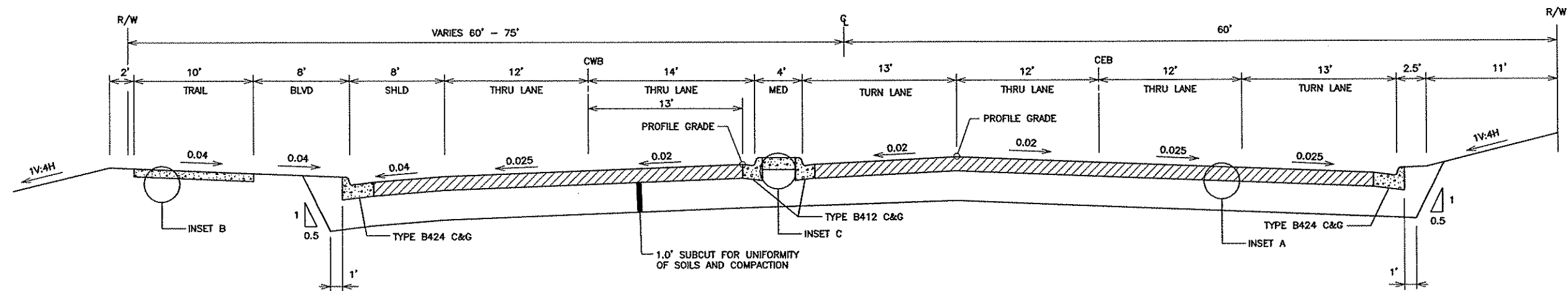
W.B. CSAH 116 STATION 104+40.26 TO 108+50.00



① TRAIL PROFILE GRADE = ROADWAY PROFILE GRADE +0.11'

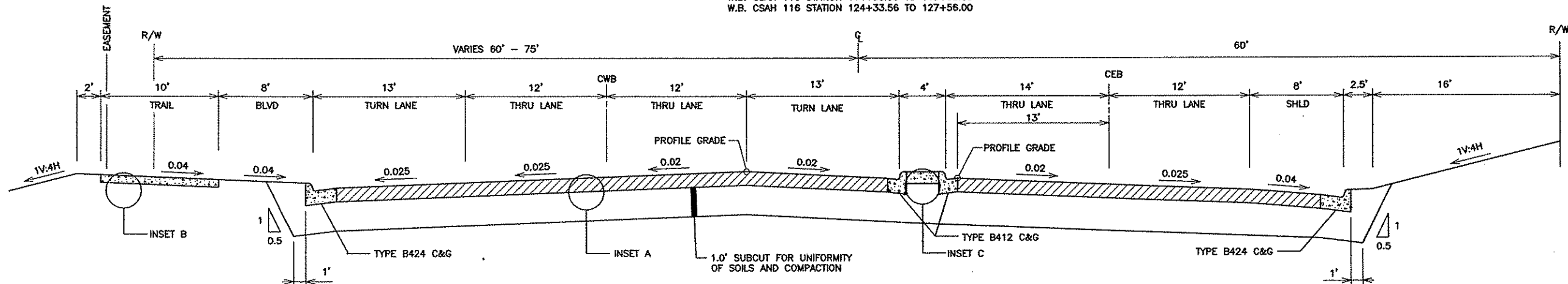
TYP. 05 - CSAH 116, EASTBOUND TURN LANES

W.B. CSAH 116 STATION 110+97.75 TO 114+58.53



TYP. 06 - CSAH 116, WESTBOUND TURN LANES

W.B. CSAH 116 STATION 114+58.53 TO 119+08.06
W.B. CSAH 116 STATION 124+33.56 TO 127+56.00



NOTES:
SEE PAGE 3 OF 4 FOR INSETS.
PROPOSED CROSS SECTIONS INCLUDE
10' CLEAR ZONE FROM EDGE OF
TRAVELED LANE.

NO	DATE	BY	CKD	APPR	REVISION

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
PRINT NAME: ALAN J. PALMER, P.E.
SIGNATURE: *Alan J. Palmer*
DATE: 18 JUNE 2005 LICENSE NO. 42452

DRAWN BY: RLH/DJS DATE: 02/18/05
DESIGN BY: AJP/EDD DATE: 02/18/05
CHECKED BY: AJP DATE: 02/18/05



ANOKA COUNTY
HIGHWAY DEPT.

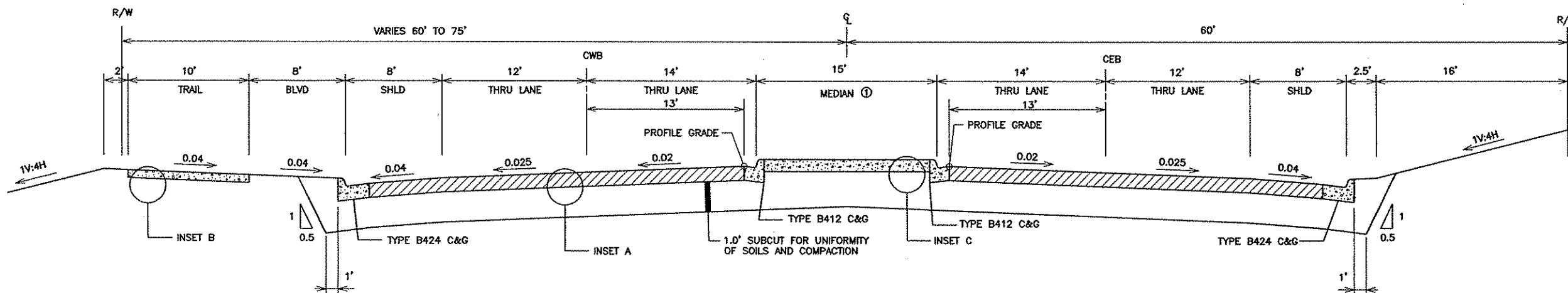
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ANOKA COUNTY S.P. 02-716-07
CITY OF ANOKA S.P. 103-122-12
CITY OF RAMSEY S.P. 199-020-04

TYPICAL SECTIONS
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TYP. 07 - CSAH 116, FULL WIDTH RAISED MEDIAN

W.B. CSAH 116 STATIONS
 108+50.00 TO 110+97.75
 119+08.06 TO 124+33.56
 127+56.00 TO 130+35.17

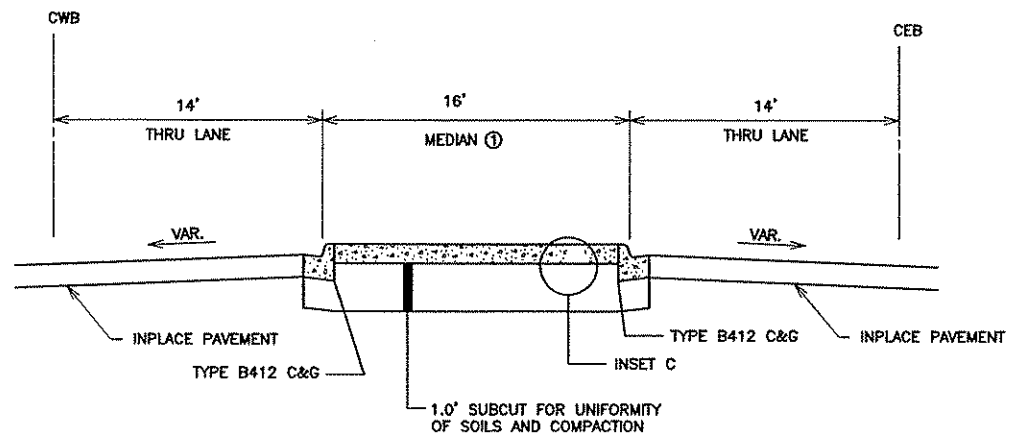
① MEDIAN VARIES FROM 15' AT W.B. STA. 127+22.23
 TO 16' AT W.B. STA. 131+90.54



NOTE:
 PROPOSED CROSS SECTIONS INCLUDE
 10' CLEAR ZONE FROM EDGE OF
 TRAVELED LANE.

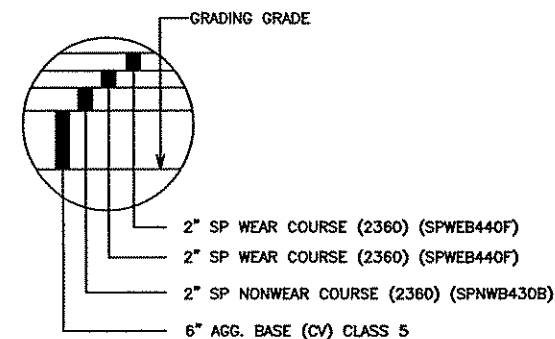
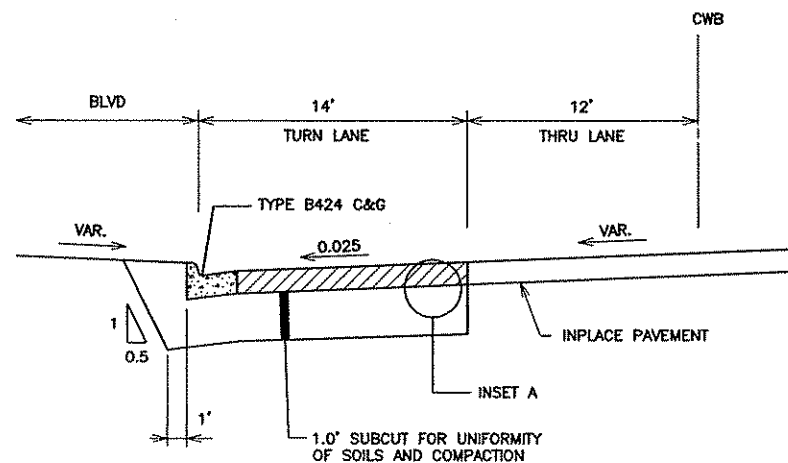
TYP. 08 - CSAH 116, FULL WIDTH RAISED MEDIAN ONLY

W.B. CSAH 116 STATION 130+35.17 TO 132+37.30

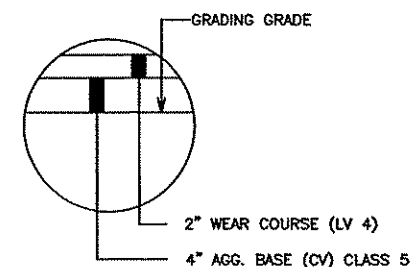


TYP. 09 - CSAH 116, RIGHT TURN LANE ONLY

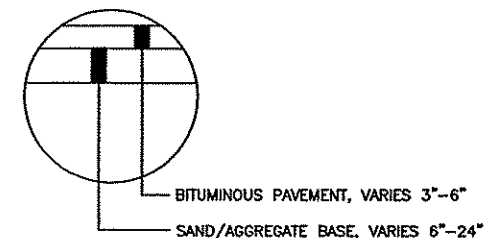
W.B. CSAH 116 STATION 136+14.71 TO 139+17.81



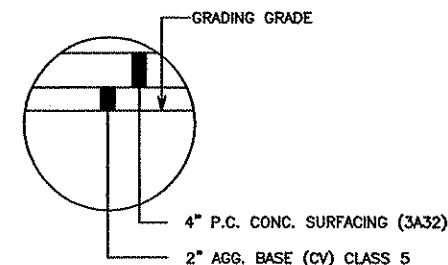
INSET A



INSET B



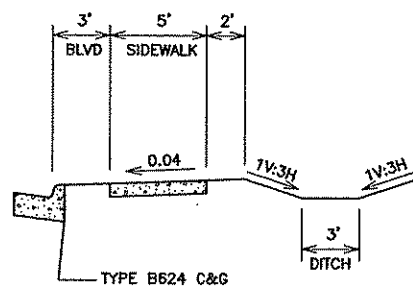
INSET AA



INSET C

TYP. 10 - CITY SIDEWALK

E.B. CSAH 116 STATION 124+38.30 TO 130+43.98



I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 PRINT NAME: ALAN J. PALMER, P.E.
 SIGNATURE: *[Signature]*
 DATE: 18 JUNE 2005 LICENSE NO. 42462

DRAWN BY: RLH/DJS DATE: 02/18/05
 DESIGN BY: AJP/EDD DATE: 02/18/05
 CHECKED BY: AJP DATE: 02/18/05



ANOKA COUNTY
 HIGHWAY DEPT.

PROJECT NO.
 ANOKA COUNTY
 CITY OF ANOKA
 CITY OF RAMSEY

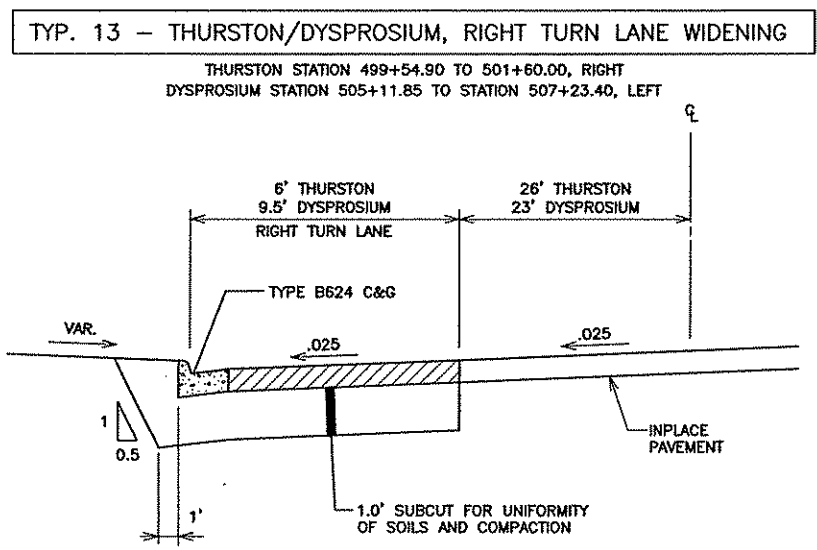
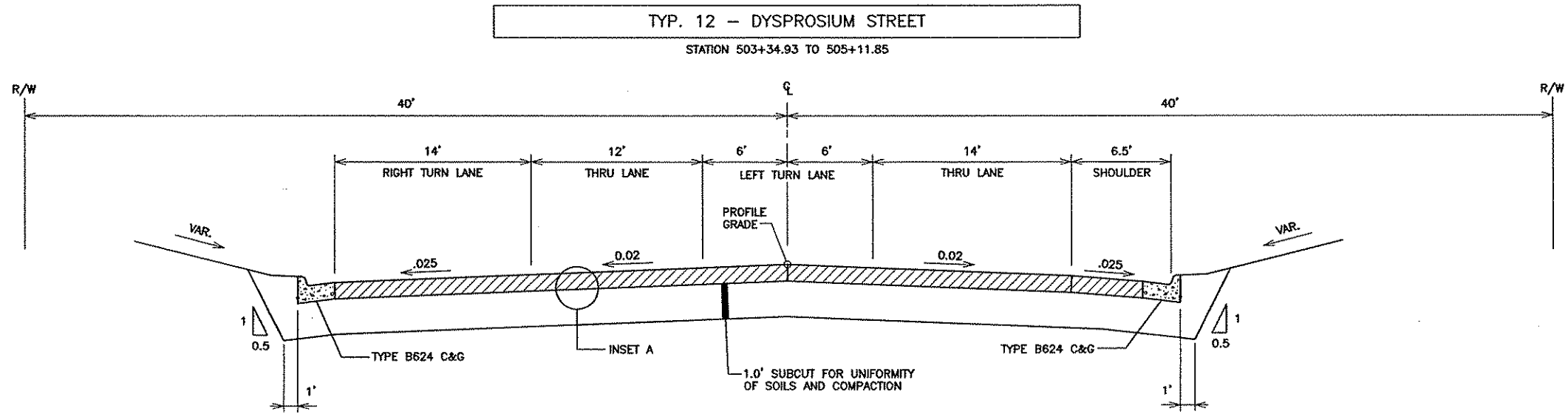
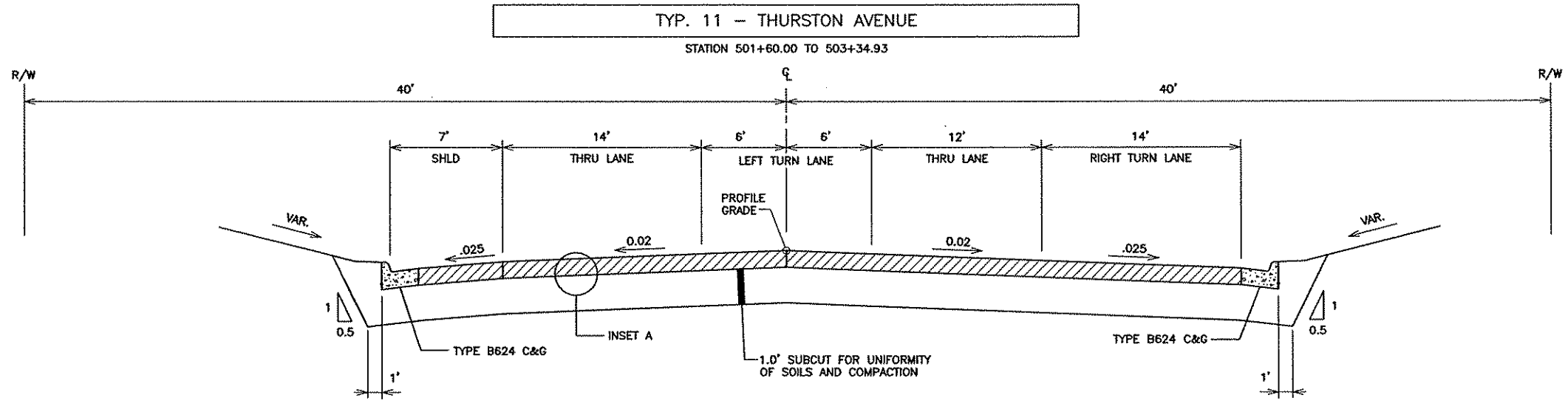
S.P. 02-716-07
 S.P. 103-122-12
 S.P. 199-020-04

TYPICAL SECTIONS

PAGE 3 OF 4

Sheet 22 of 120 Sheets

NO	DATE	BY	CKD	APPR	REVISION



NOTE:
SEE PAGE 3 OF 4 FOR INSETS.

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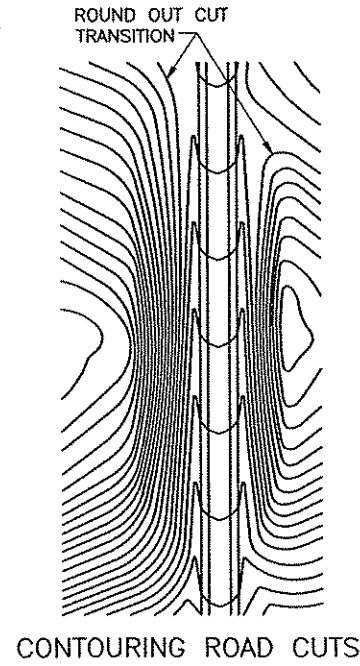
DRAWN BY RLH/DJS DATE 02/18/05
 DESIGN BY AJP/EDD DATE 02/18/05
 CHECKED BY AJP DATE 02/18/05



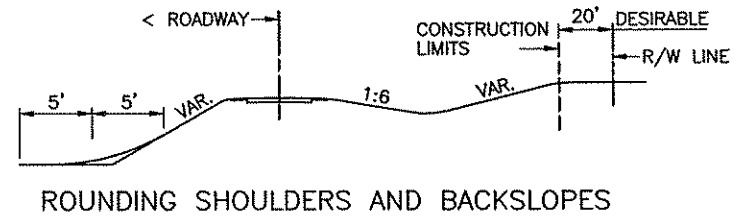
**ANOKA COUNTY
HIGHWAY DEPT.**

PROJECT NO.
 ANOKA COUNTY S.P. 02-716-07
 CITY OF ANOKA S.P. 103-122-12
 CITY OF RAMSEY S.P. 199-020-04

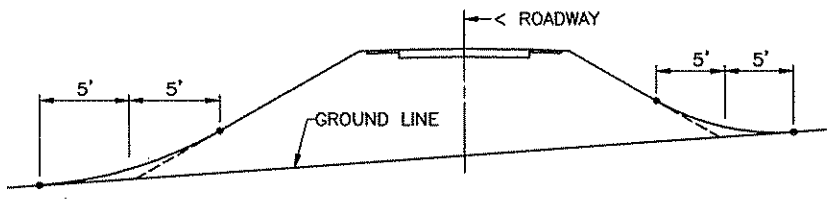
TYPICAL SECTIONS
 PAGE 4 OF 4
 Sheet 23 of 120 Sheets



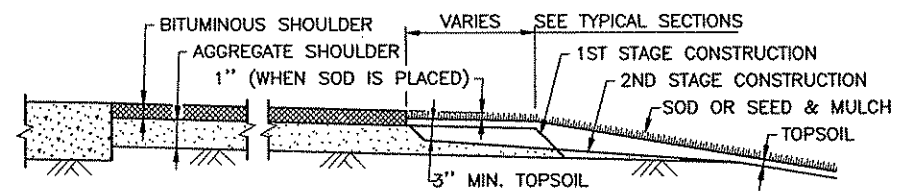
CONTOURING ROAD CUTS



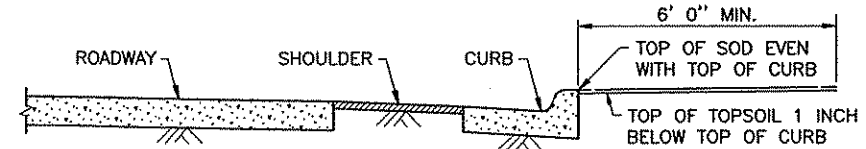
ROUNDING SHOULDERS AND BACKSLOPES



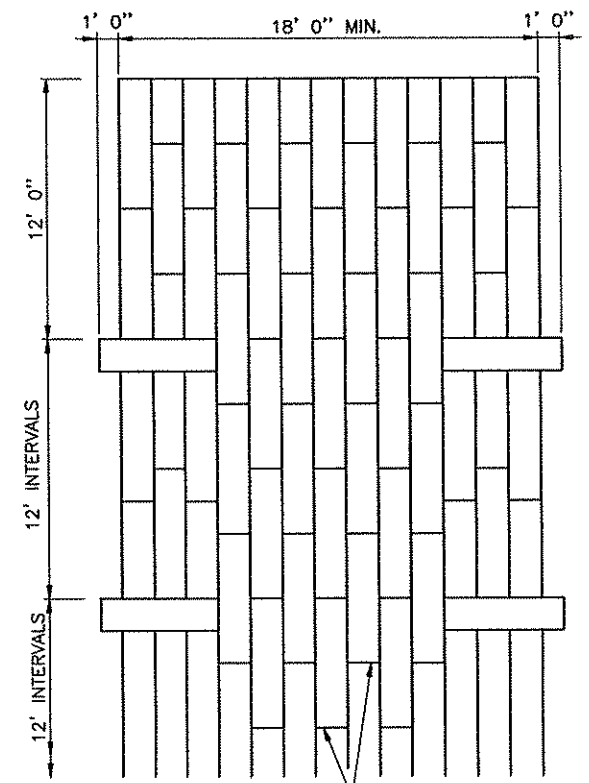
SHAPING FOR DRAINAGE ALONG THE TOE OF FILL SLOPES



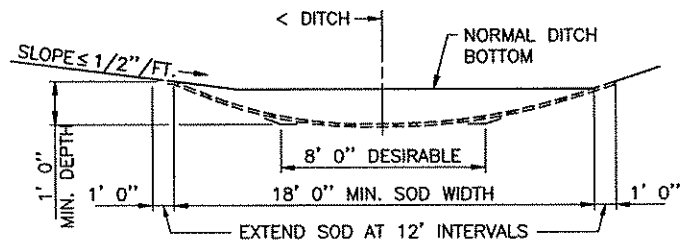
SHAPING AND TOPSOILING INSLOPES



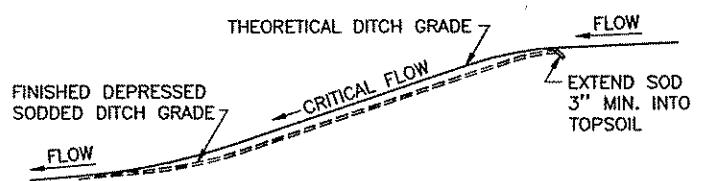
SHAPING ADJACENT TO CURBS WHEN SOD IS PLACED



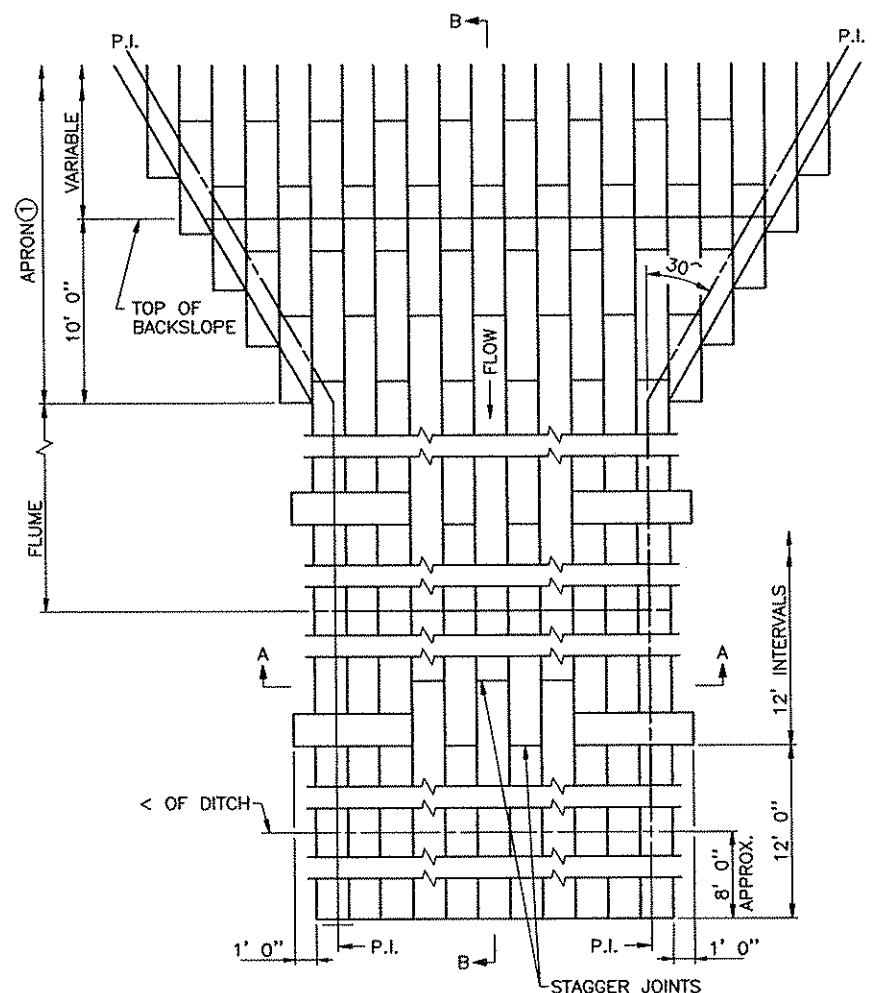
PLAN VIEW



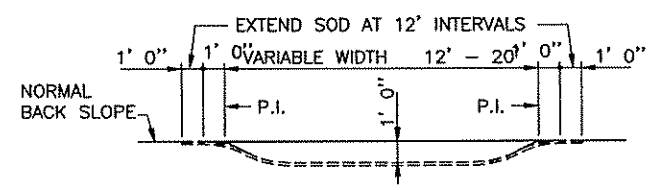
WHERE FRONT OR BACK SLOPE IS FLAT (LESS THAN 1/2"/FT.), FIRST NOTCH DITCH AND THEN PROVIDE ROUNDING.



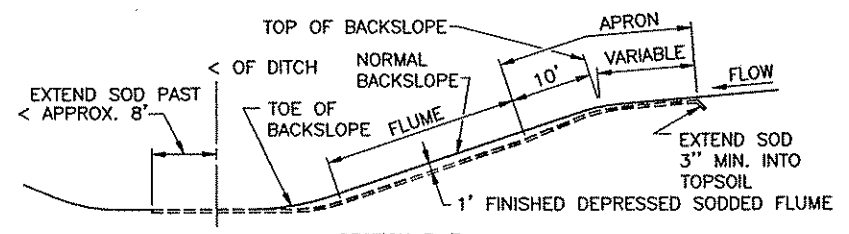
SODDED DITCH DETAILS



PLAN VIEW



SECTION A-A



SODDED FLUME DETAILS

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

NO	DATE	BY	CKD	APPR	REVISION

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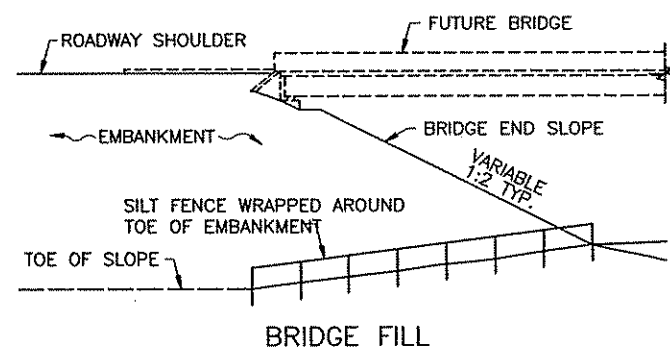
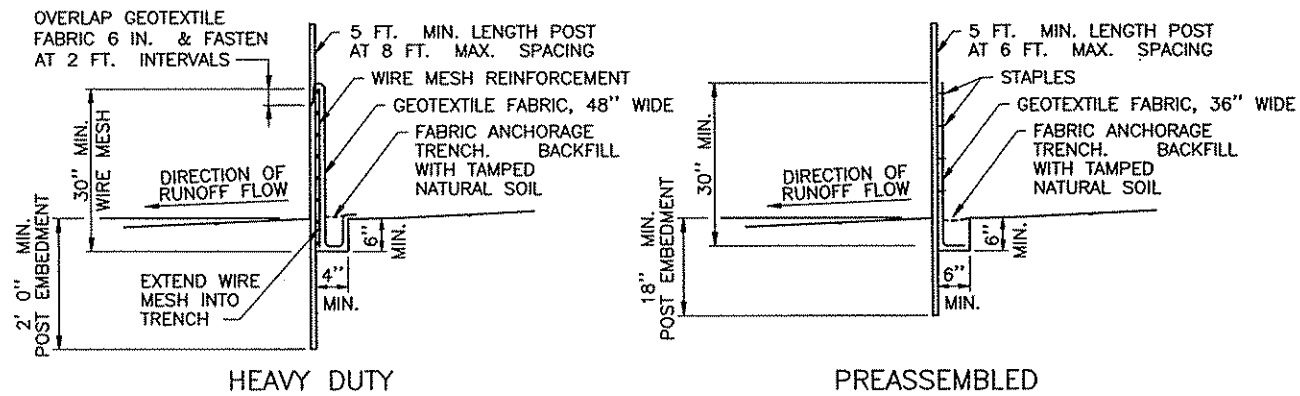
DRAWN BY: R.H./D.J.S. DATE: 02/18/05
DESIGN BY: A.J.P./E.D.D. DATE: 02/18/05
CHECKED BY: A.J.P. DATE: 02/18/05



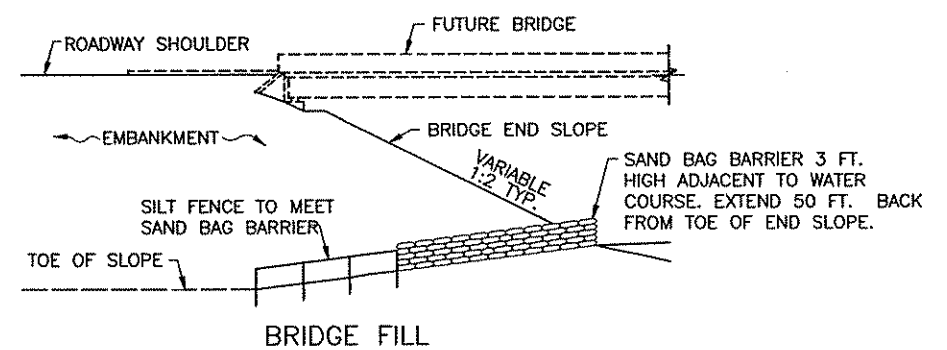
ANOKA COUNTY
HIGHWAY DEPT.

PROJECT NO.
ANOKA COUNTY S.P. 02-716-07
CITY OF ANOKA S.P. 103-122-12
CITY OF RAMSEY S.P. 199-020-04

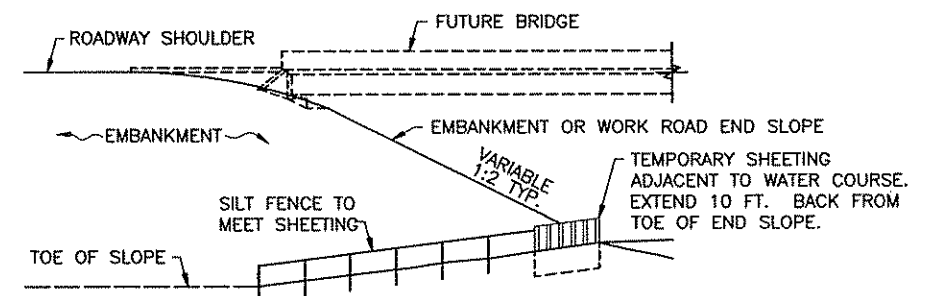
MISCELLANEOUS
DETAILS
PAGE 1 OF 3
Sheet 24 of 120 Sheets



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



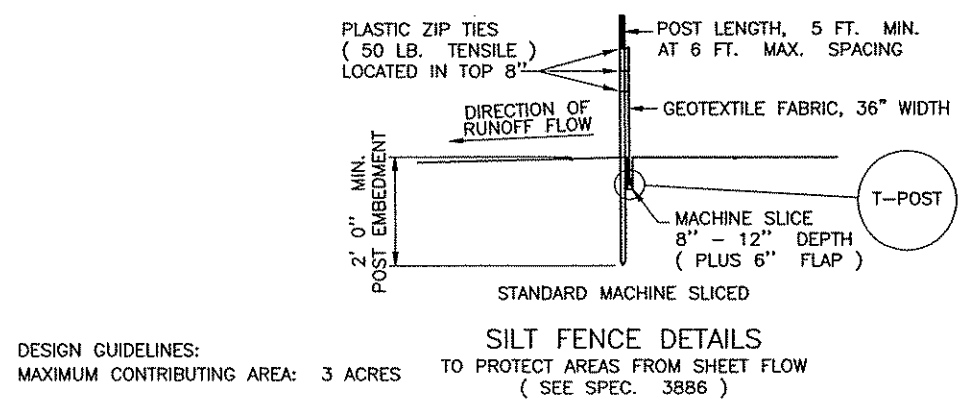
DESIGN GUIDELINES:
 MAX. WATER COURSE FLOW VELOCITY: 7 FT./SEC.
 CONTRIBUTING SLOPE AREA: 1 ACRE



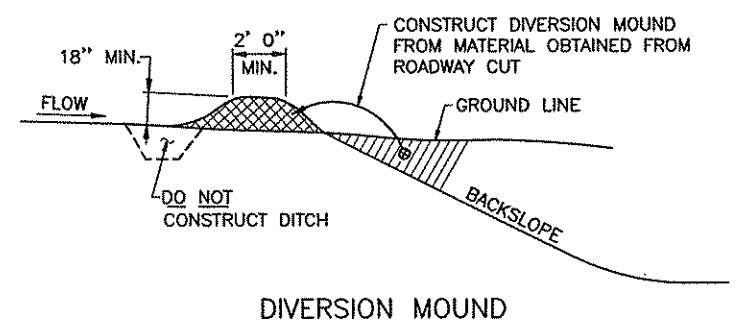
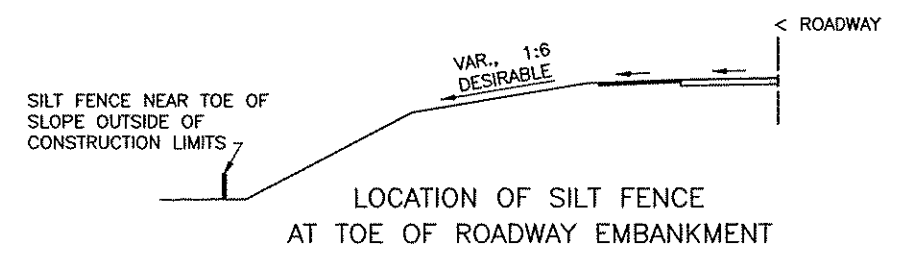
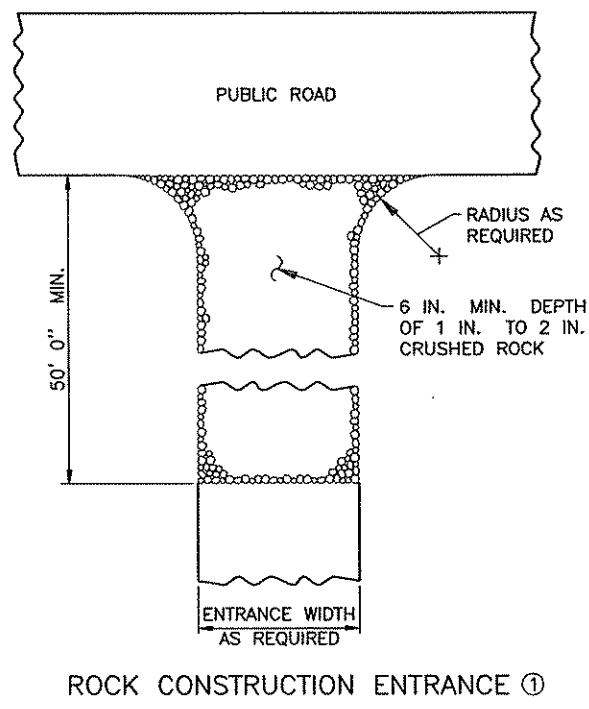
DESIGN GUIDELINES:
 MAX. WATER COURSE FLOW VELOCITY: 15 FT./SEC.
 CONTRIBUTING SLOPE AREA: 3 ACRES

SILT FENCE AT BRIDGE EMBANKMENT

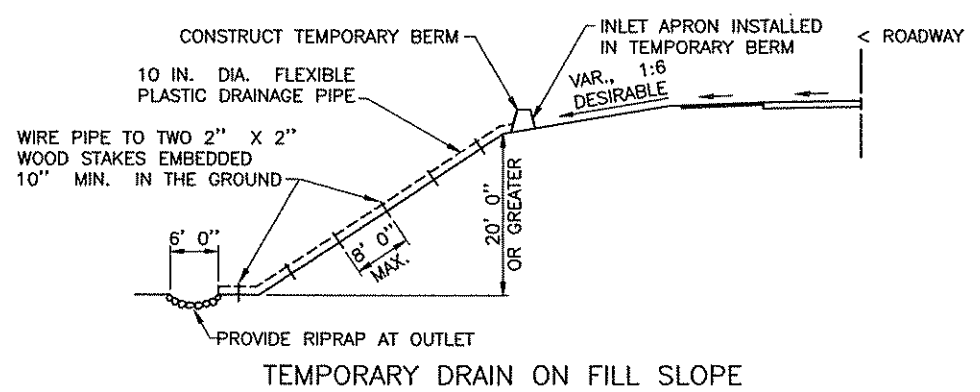
NOTES:
 SEE SPECS. 2573 & 3886.
 ① ROCKS AT ENTRANCE CLEAN WORKSITE MUD OFF OF TRUCK TIRES BEFORE DRIVING ON MAIN ROAD. THIS WILL PREVENT AUTO DAMAGE. WE NEED TO KEEP CONSTRUCTION SEDIMENT OUT OF DRAINAGE SYSTEMS AND WETLANDS.



DESIGN GUIDELINES:
 MAXIMUM CONTRIBUTING AREA: 3 ACRES



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



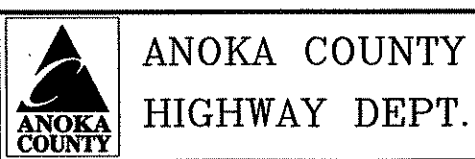
DESIGN GUIDELINES:
 STORM FREQUENCY: 2 YEAR - 24 HOUR
 MAXIMUM DRAINAGE AREA: 3 ACRES

NO	DATE	BY	CKD	APPR	REVISION

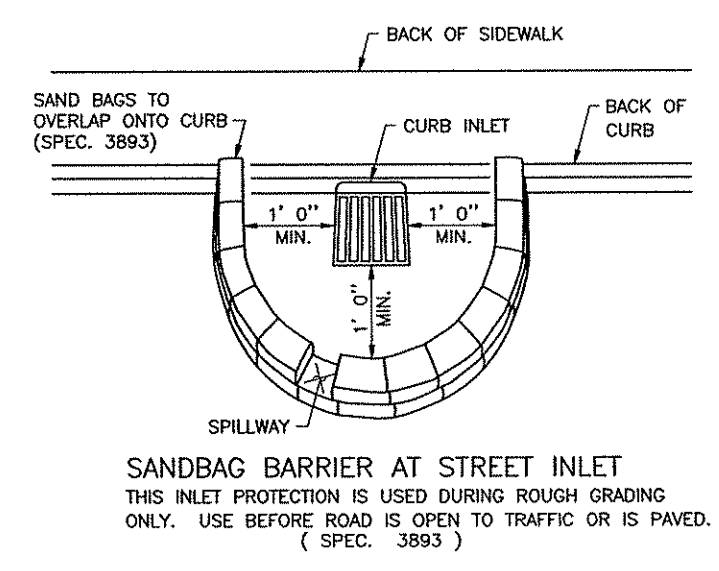
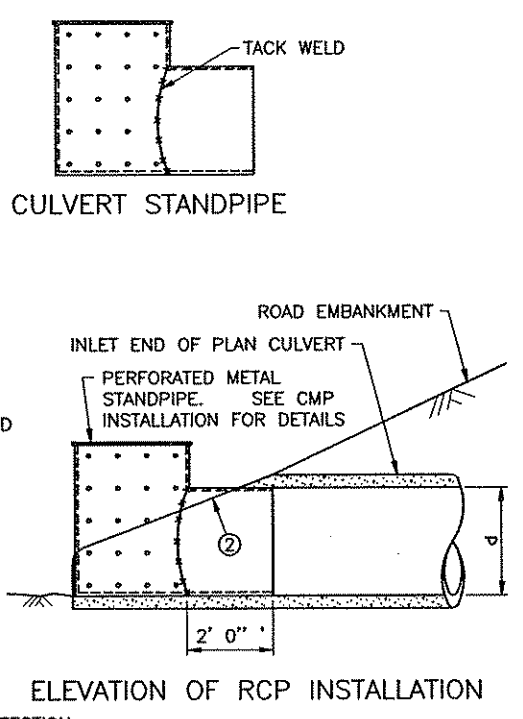
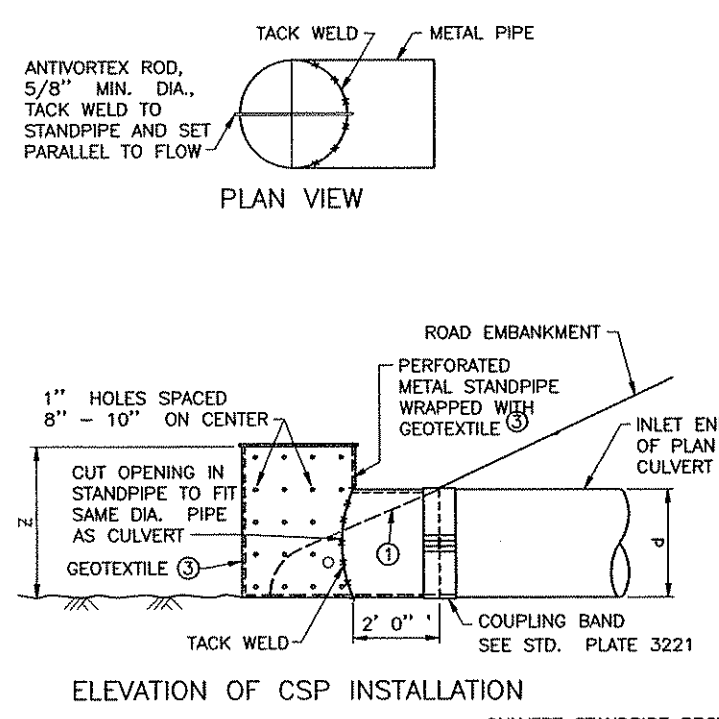
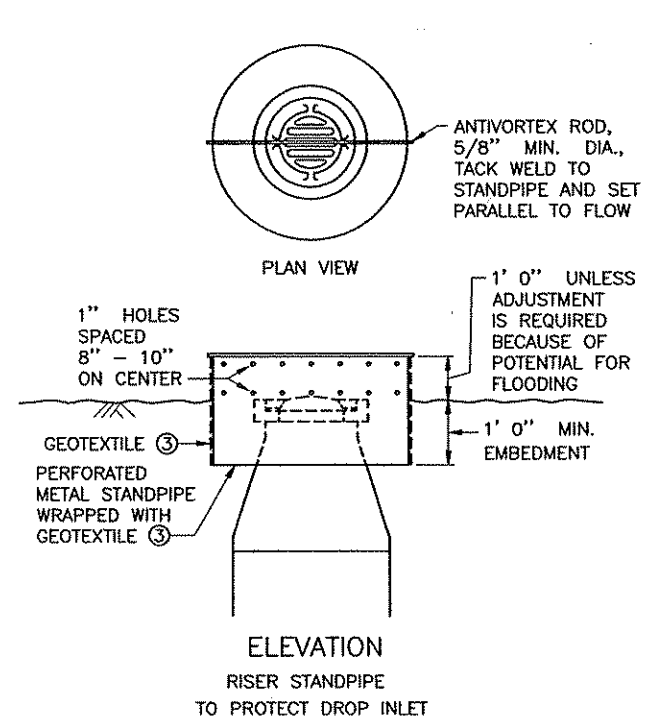
NAME: G:\SHEET\17366_DE_04.DWG

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PROJECT NO. ANOKA COUNTY S.P. 02-716-07
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 CITY OF RAMSEY S.P. 199-020-04

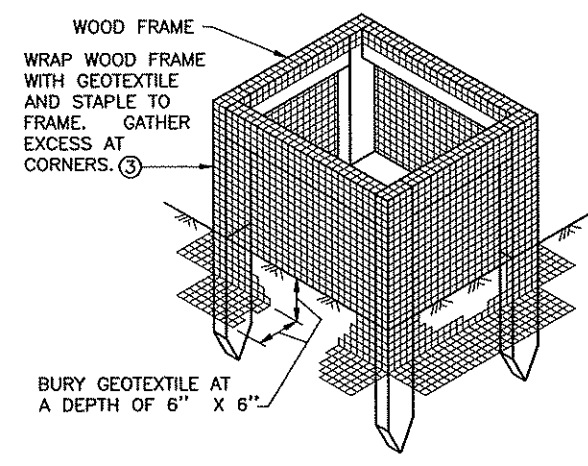
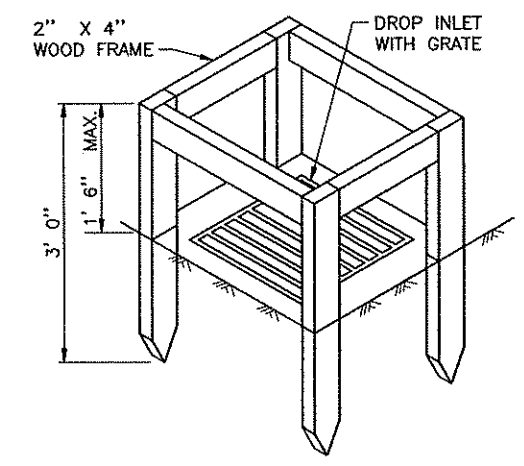
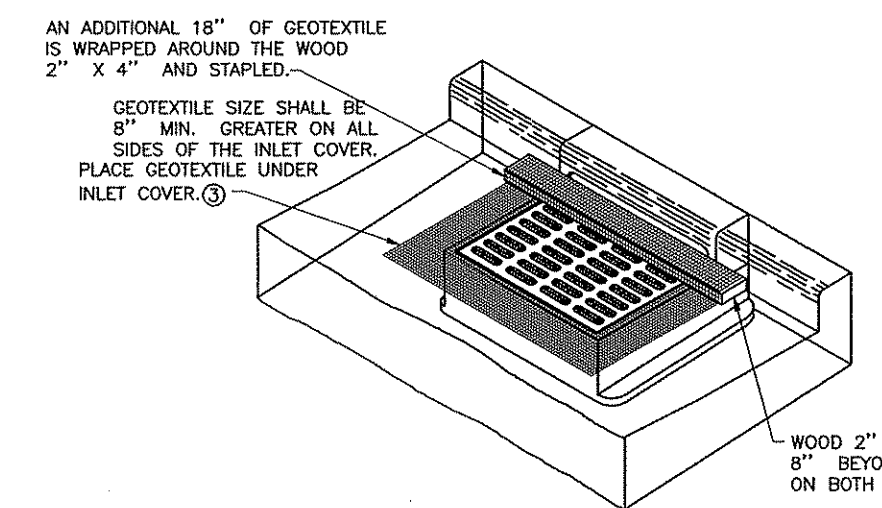
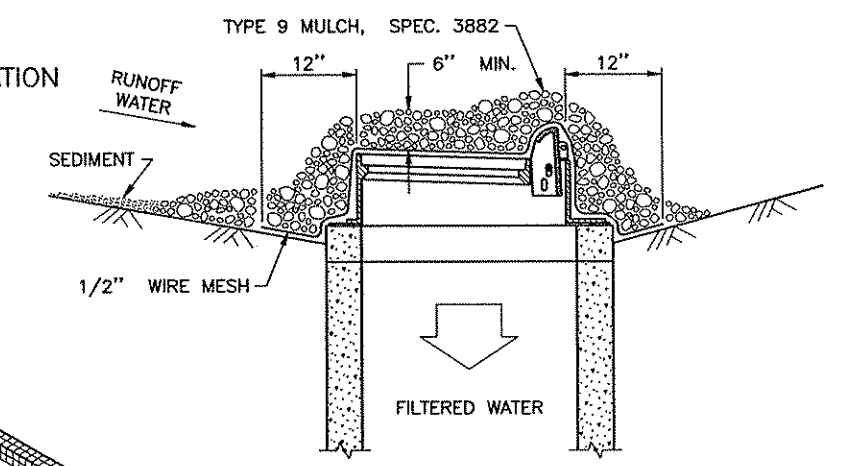


CULVERT STANDPIPE PROTECTION FOR SEDIMENT CONTROL ON CULVERT INLET (TYPE D SPEC. 3891)

CULVERT SIZE: 12" - 36"

d = DIA. OF STANDPIPE EQUAL TO DIA. OF PLAN CULVERT

Z = LENGTH OF PERFORATED STANDPIPE + (12' d)



NOTES:

SEE SPECS. 2573, 3891 & 3893.

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

① FOR CSP, REMOVE TEMPORARY STANDPIPE AND INSTALL CULVERT APRON AFTER VEGETATION IS ESTABLISHED.

② FOR RCP, INSTALL CULVERT APRON AND SLIDE TEMPORARY STANDPIPE INTO RCP. AFTER VEGETATION IS ESTABLISHED REMOVE TEMPORARY STANDPIPE.

③ ALL GEOTEXTILE USED FOR INLET PROTECTION SHALL BE MONOFILAMENT IN BOTH DIRECTIONS, MEETING SPEC. 3886 FOR MACHINE SLICED.

NO	DATE	BY	CKD	APPR	REVISION

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ANOKA COUNTY HIGHWAY DEPT.

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CITY OF ANOKA S.P. 103-122-12

CITY OF RAMSEY S.P. 199-020-04

MISCELLANEOUS DETAILS

PAGE 3 OF 3

Sheet 26 of 120 Sheets

TRAFFIC CONTROL DEVICES & SYMBOLS LEGEND

NOTES & GUIDELINES:

THE CONTRACTOR SHALL MAINTAIN SUITABLE ACCESS ALONG THURSTON AVE/DYSPROURM ST AT ALL TIMES FOR EMERGENCY VEHICLE ACCESS AND THROUGH MOVEMENT.

ALL TRAFFIC CONTROL DEVICES SHALL CONFORM AND BE INSTALLED IN ACCORDANCE TO THE "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MN MUTCD) AND PART VI, "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS."

GENERAL INFORMATION:

1. QUANTITIES OF TRAFFIC CONTROL DEVICES ON THIS SHEET ARE APPROXIMATE AND ARE SHOWN FOR INFORMATION ONLY. THIS DOES NOT INCLUDE QUANTITIES FOR LAYOUTS AND DEVICES THAT ARE REFERRED TO BY THE "TEMPORARY TRAFFIC CONTROL ZONE LAYOUT FIELD MANUAL 2003". PAYMENT FOR TRAFFIC CONTROL IS INTENDED TO COVER ALL SUCH DEVICES AS SHOWN ON THE TRAFFIC CONTROL LAYOUT SHEETS OR MANUAL.
2. NUMBER OF DEVICES/LAYOUTS NEEDED WILL BE DETERMINED BY CONTRACTORS OPERATIONS.
3. SIGNS 24" X 24" AND LARGER REQUIRE TWO POSTS. ALL POSTS SHALL BE 2.5 lb/ft OR 3 lb/ft.
4. ALL DISTANCES ARE APPROXIMATE.
5. THE CONTRACTOR IS RESPONSIBLE FOR PROTECTING ANY WORK AREAS NEAR TRAFFIC IN ACCORDANCE WITH THE MNMUTCD.
6. TYPE A WARNING LIGHTS WILL BE USED ON NIGHT OPERATIONS.

SIGNING:

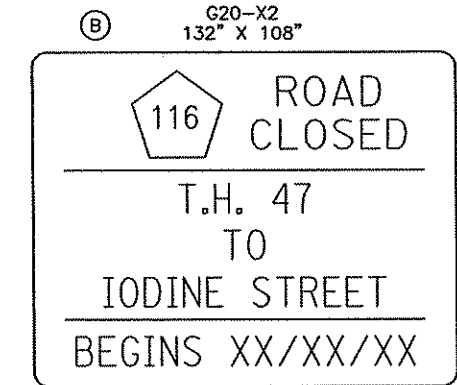
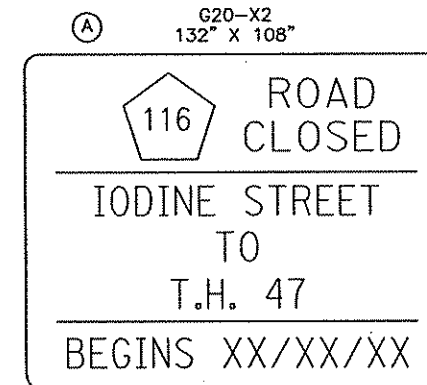
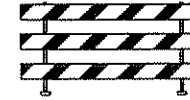
1. ALL TRAFFIC CONTROL DEVICES, INPLACE SIGNING, AND PAVEMENT MARKINGS ON ROADS OPEN TO TRAFFIC THAT ARE NOT CONSISTENT WITH TRAFFIC OPERATION SHALL BE COVERED, REMOVED, OR REVISED AS DIRECTED BY THE ENGINEER.
2. WHEN SIGNS ARE INSTALLED, THEY SHALL BE MOUNTED ON POSTS DRIVEN INTO THE GROUND AT THE PROPER HEIGHT AND LATERAL OFFSET AS DETAILED IN THE MNMUTCD. IF THIS IS NOT POSSIBLE THEY WILL BE MOUNTED ON PORTABLE SUPPORTS AS APPROVED BY THE ENGINEER. WHEN THE SIGNS ARE REMOVED THE SIGN POSTS SHALL ALSO BE REMOVED AS SOON AS POSSIBLE.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY EXTRA SIGNING NEEDED TO FACILITATE TRAFFIC SWITCHES OR FOR TRANSITIONING TRAFFIC FROM ONE STAGE TO ANOTHER.
4. THE CONTRACTOR SHALL COORDINATE THE INSTALLATION OF THE FINAL SIGNS TO ASSURE THAT THE FINAL SIGNS ARE INSTALLED AS NEEDED, OR PROVIDE TEMPORARY SIGNING AT THEIR EXPENSE UNTIL THE FINAL SIGNING IS INSTALLED.

SYMBOL DESCRIPTION

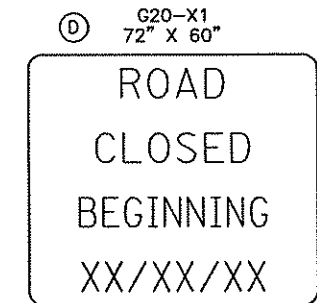
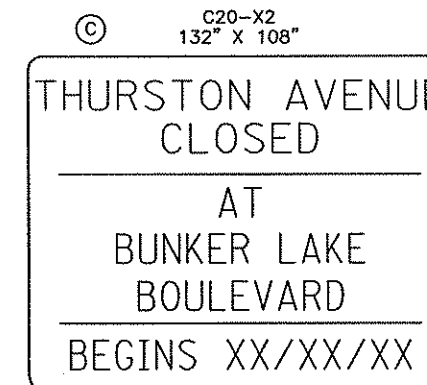
⊥ TRAFFIC CONTROL SIGN

□ TYPE III BARRICADE =

○ PLASTIC DRUM



THE SIGNS TO BE INSTALLED 10 DAYS PRIOR TO CLOSURE. AT THE TIME OF CLOSURE, CHANGE BOTTOM PANEL TO "FOLLOW DETOUR".
INSTALL AS SHOWN ON SHEET 29.



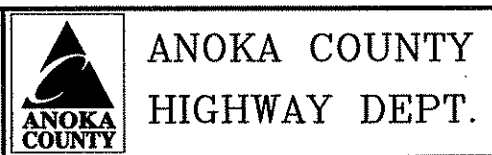
INSTALL TWO (2) AS SHOWN ON SHEET 29.

INSTALL FOUR (4) AS SHOWN ON SHEET 29.

NO	DATE	BY	CHKD	APPR	REVISION

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PROJECT NO. ANOKA COUNTY S.P. 02-716-07
 CITY OF ANOKA S.P. 103-122-12
 CITY OF RAMSEY S.P. 199-020-04

STAGING/TRAFFIC CONTROL NOTES
 PAGE 1 OF 1
 Sheet 27 of 120 Sheets

DETOUR SIGN TABULATION					M
ITEM	SIGN NO.	COLOR	SIZE (INCHES)	EST. QTY.	
	W20-1	BLK/OR	48"x48"	5	
	W20-2	BLK/OR	48"x48"	2	
	W20-3	BLK/OR	48"x48"	9	
	TYPE III BARRICADE (LT)			10	
	TYPE III BARRICADE (RT)			2	
	M1-6	YELL/BLU	24"x24"	28	
	M3-2	BLK/WH	24"x12"	14	
	M3-4	BLK/WH	24"x12"	14	
	M4-8	BLK/OR	24"x12"	26	
	M4-8A	BLK/OR	21"x15"	2	
	M4-10L	BLK/OR	48"x18"	1	
	M4-10R	BLK/OR	48"x18"	1	
	M5-1R	BLK/WH	21"x15"	4	
	M5-1L	BLK/WH	21"x15"	3	
	M6-1R	BLK/WH	21"x15"	3	
	M6-1L	BLK/WH	21"x15"	3	

DETOUR SIGN TABULATION					M
ITEM	SIGN NO.	COLOR	SIZE (INCHES)	EST. QTY.	
	M6-3	BLK/WH	21"x15"	8	
	R11-2	BLK/WH	48"x30"	4	
	R11-4	BLK/WH	60"x30"	6	
		BLK/OR		1	
		BLK/OR		3	

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- ACTUAL NUMBER OF DEVICES NEEDED FOR EACH STAGE OF CONSTRUCTION WILL VARY DEPENDING ON THE NUMBER OF SIMULTANEOUS WORK ZONES MAINTAINED. THE NUMBERS SHOWN ASSUME ALL WORK IS CONSTRUCTED AT THE SAME TIME DURING EACH STAGE.

NO	DATE	BY	CKD	APPR	REVISION

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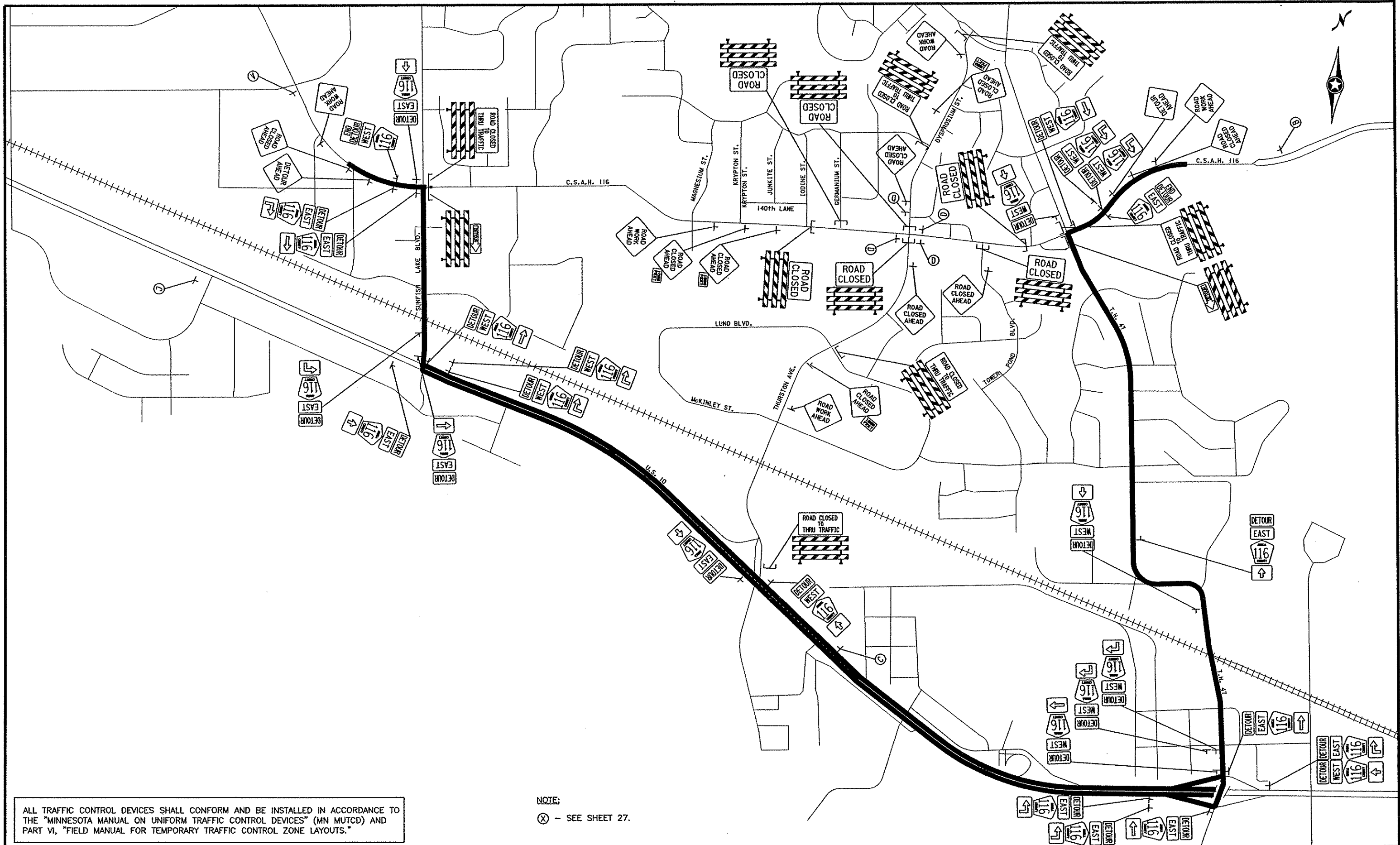
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 DESIGN BY AJP/EDD DATE 02/18/05
 CHECKED BY AJP DATE 02/18/05



ANOKA COUNTY
 HIGHWAY DEPT.

PROJECT NO.
 ANOKA COUNTY S.P. 02-716-07
 CITY OF ANOKA S.P. 103-122-12
 CITY OF RAMSEY S.P. 199-020-04

STAGING/TRAFFIC CONTROL
 DETOUR TABULATIONS
 PAGE 1 OF 1
 Sheet 28 of 120 Sheets



NOTE:
 (X) - SEE SHEET 27.

ALL TRAFFIC CONTROL DEVICES SHALL CONFORM AND BE INSTALLED IN ACCORDANCE TO THE "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MN MUTCD) AND PART VI, "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS."

NO	DATE	BY	CKD	APPR	REVISION

NAME: G:\SHEET\17366_ER_01.DWG

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 PRINT NAME: ALAN L. PALMER, P.E.
 SIGNATURE: *[Signature]*
 DATE: 18 JUNE 2005 LICENSE NO. 42462

DRAWN BY: RLH/DJS DATE: 02/18/05
 DESIGN BY: AJP/EDD DATE: 02/18/05
 CHECKED BY: AJP DATE: 02/18/05



ANOKA COUNTY
 HIGHWAY DEPT.

PROJECT NO.
 ANOKA COUNTY S.P. 02-716-07
 CITY OF ANOKA S.P. 103-122-12
 CITY OF RAMSEY S.P. 199-020-04

DETOUR PLAN
 PAGE 1 OF 1
 Sheet 29 of 120 Sheets

POINT NUMBER	POINT	STATION	CURVE DATA		RADIUS	TANGENT	LENGTH	COORDINATES		
			DELTA	DEGREE				NORTHING	EASTING	BEARING
INPLACE CSAH 116										
2010	POT	100+00.00						111742.646	852005.880	S 85°18'00.00" E
2011	PI	109+58.32						111664.123	852960.981	S 84°01'09.00" E
2012	POT	112+22.64						111636.582	853223.862	S 84°01'09.00" E
2013	PI	116+80.62						111588.862	853679.349	S 84°00'49.32" E
2014	PC	117+12.92						111585.494	853711.468	S 84°00'49.32" E
2015	PI	119+95.35	2°49'25.32"	0°30'00"	11459.160	282.427	564.740	111556.040	853992.355	
2016	PT	122+77.66						111512.784	854271.450	S 81°11'24.00" E
2017	PC	127+40.24						111441.936	854728.572	S 81°11'24.00" E
2018	PI	129+82.18	31°49'07.00"	6°44'59.90"	858.830	241.945	471.389	111404.880	854967.662	
2019	PT	132+11.63						111499.449	855190.359	N 66°59'29.00" E
2020	POT	135+74.03						111641.100	855523.928	N 67°12'21.10" E
2021	PC	138+62.09						111752.702	855789.495	N 67°12'21.10" E
2022	PI	139+85.64	25°43'16.76"	10°35'14.88"	541.166	123.553	242.941	111800.569	855903.398	
2023	PT	141+05.03						111893.126	855985.242	N 41°29'04.35" E
2024	POT	142+00.27						111964.472	856048.328	
PROPOSED W.B. CSAH 116										
1030	POT	100+00.00						111764.066	852007.641	S 85°18'00.00" E
1031	PI	109+58.80						111685.503	852963.221	S 84°01'09.00" E
1032	PC	117+12.30						111606.991	853712.620	S 84°01'09.00" E
1033	PI	119+85.81	2°49'45.00"	0°29'45.00"	11480.660	283.505	566.895	111577.451	853994.582	
1034	PT	122+79.20						111534.030	854274.742	S 81°11'24.00" E
1035	PC	127+22.23						111466.176	854712.550	S 81°11'24.00" E
1036	PI	129+62.51	31°36'14.90"	6°44'55.03"	849.000	240.276	468.305	111429.375	854949.991	
1037	PT	131+90.54						111522.463	855171.502	N 83°00'28.55" E
1038	POT	135+65.57						111667.760	855517.247	N 22°47'38.90" W
1039	POT	135+67.57 (BK)	EQUATION	WB RANGE 1				111669.604	855516.473	
1040	POT	135+65.57 (AH)	EQUATION	WB RANGE 2				111669.604	855516.473	N 67°12'21.10" E
1041	PC	138+49.47						111779.590	855779.195	N 67°12'21.10" E
1042	PI	139+66.36	25°43'16.75"	11°11'26.09"	512.000	116.894	229.848	111824.877	855885.960	
1043	PT	140+79.32						111912.446	855963.393	N 41°29'04.35" E
1044	POT	141+74.55						111983.792	856026.479	
PROPOSED E.B. CSAH 116										
1060	POT	100+00.00						111721.211	852004.117	S 85°18'00.00" E
1061	POT	109+58.32 (BK)	EQUATION	EB RANGE 1				111642.687	852959.218	
1062	POT	109+59.28 (AH)	EQUATION	EB RANGE 2				111642.687	852959.218	S 84°01'09.00" E
1063	PC	117+12.30						111564.225	853708.139	S 84°01'09.00" E
1064	PI	119+94.75	2°49'45.00"	0°30'03.38"	11437.660	282.443	564.772	111534.796	853989.045	
1065	PT	122+77.08 (BK)	EQUATION	EB RANGE 2				111491.538	854268.156	S 81°11'24.00" E
1066	POT	122+79.20 (AH)	EQUATION	EB RANGE 3				111491.538	854268.156	S 81°11'24.00" E
1067	PC	127+24.70						111423.304	854708.409	S 81°11'24.00" E
1068	PI	129+76.58	31°36'14.90"	6°26'15.82"	890.000	251.879	490.921	111384.727	854957.317	
1069	PT	132+15.63 (BK)	EQUATION	EB RANGE 3				111482.310	855189.525	N 67°12'21.10" E
1070	POT	131+91.60 (AH)	EQUATION	EB RANGE 4				111482.310	855189.525	
1071	POT	135+65.57						111627.196	855534.294	
PROPOSED THURSTON AVE / DYSTROSIUM ST										
2080	POT	493+00.00						110665.784	853148.666	N 39°07'50.41" E
2081	PC	495+95.88						110895.303	853335.395	N 39°07'50.41" E
2082	PI	497+42.75	36°09'03.41"	12°43'56.62"	450.000	146.870	283.929	111009.231	853428.083	
2083	PT	498+79.81						111155.902	853435.718	N 2°58'47.00" E
2084	PI	503+06.91						111582.423	853457.919	N 2°35'27.00" E
2085	PC	506+04.29						111879.495	853471.362	N 2°35'27.00" E
2086	PI	506+19.63	2°50'05.69"	9°14'28.52"	620.000	15.342	30.677	111894.821	853472.055	
2087	PT	506+34.96						111910.162	853471.990	N 0°14'38.69" W
2088	PC	508+83.47						112158.672	853470.931	N 0°14'38.69" W
2089	PI	510+38.70	28°06'42.36"	9°14'28.52"	620.000	155.226	304.199	112313.897	853470.270	
2090	PT	511+87.67						112451.121	853542.827	N 27°52'03.67" E
2091	POT	517+69.31						112965.306	853814.703	

NO	DATE	BY	CKD	APPR	REVISION

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 PRINT NAME: ALAN L. PALMER, P.E.
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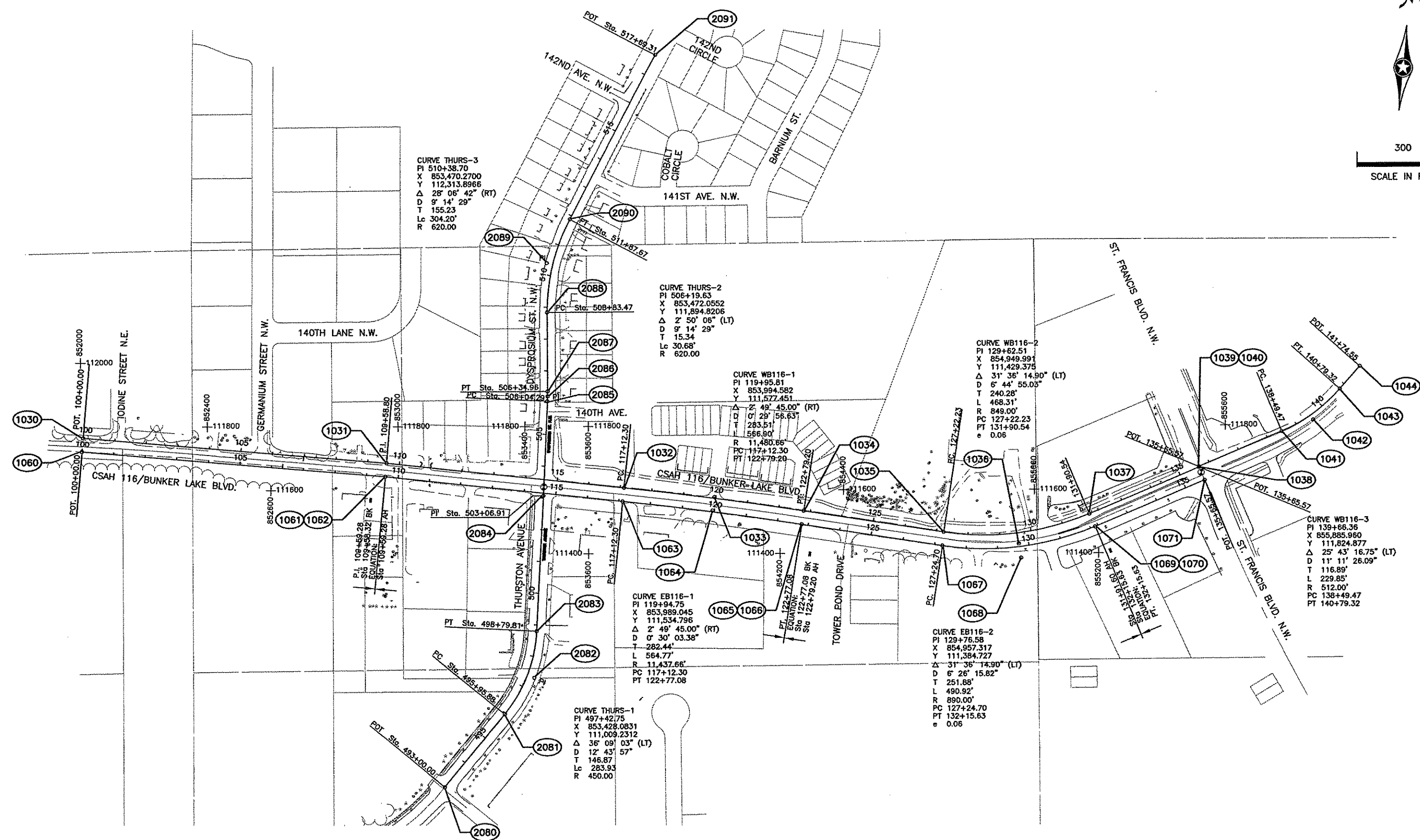
ANOKA COUNTY
 HIGHWAY DEPT.

PROJECT NO.
 ANOKA COUNTY S.P. 02-716-07
 CITY OF ANOKA S.P. 103-122-12
 CITY OF RAMSEY S.P. 199-020-04

ALIGNMENT
 TABULATIONS
 PAGE 1 OF 1
 Sheet 30 of 120 Sheets



300
SCALE IN FEET



CURVE THURS-3
PI 510+38.70
X 853,470.2700
Y 112,313.8966
Δ 28° 06' 42" (RT)
D 9' 14' 29"
T 155.23
Lc 304.20'
R 620.00

CURVE THURS-2
PI 506+19.63
X 853,472.0552
Y 111,894.8206
Δ 2° 50' 06" (LT)
D 9' 14' 29"
T 15.34
Lc 30.68'
R 620.00

CURVE WB116-1
PI 119+95.81
X 853,994.582
Y 111,577.451
Δ 2° 49' 45.00" (RT)
D 0' 29' 56.63"
T 283.51'
L 566.90'
R 11,480.66'
PC 117+12.30
PT 122+79.20

CURVE WB116-2
PI 129+62.51
X 854,949.991
Y 111,429.375
Δ 31° 36' 14.90" (LT)
D 6' 44' 55.03"
T 240.28'
L 468.31'
R 849.00'
PC 127+22.23
PT 131+90.54
e 0.06

CURVE WB116-3
PI 139+66.36
X 855,885.960
Y 111,824.877
Δ 25° 43' 16.75" (LT)
D 11' 11' 26.09"
T 116.89'
L 229.85'
R 512.00'
PC 138+49.47
PT 140+79.32

CURVE EB116-1
PI 119+94.75
X 853,889.045
Y 111,534.796
Δ 2° 49' 45.00" (RT)
D 0' 30' 03.38"
T 282.44'
L 564.77'
R 11,437.66'
PC 117+12.30
PT 122+77.08

CURVE EB116-2
PI 129+76.58
X 854,957.317
Y 111,384.727
Δ 31° 36' 14.90" (LT)
D 6' 26' 15.82"
T 251.68'
L 490.92'
R 890.00'
PC 127+24.70
PT 132+15.63
e 0.06

CURVE THURS-1
PI 497+42.75
X 853,428.0831
Y 111,009.2312
Δ 36° 09' 03" (LT)
D 12' 43' 57"
T 146.87'
Lc 283.93'
R 450.00

NO	DATE	BY	CKD	APPR	REVISION

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
PRINT NAME: ALAN L. PALMER, P.E.
SIGNATURE: *[Signature]*
DATE: 18 JUNE 2005 LICENSE NO. 42462

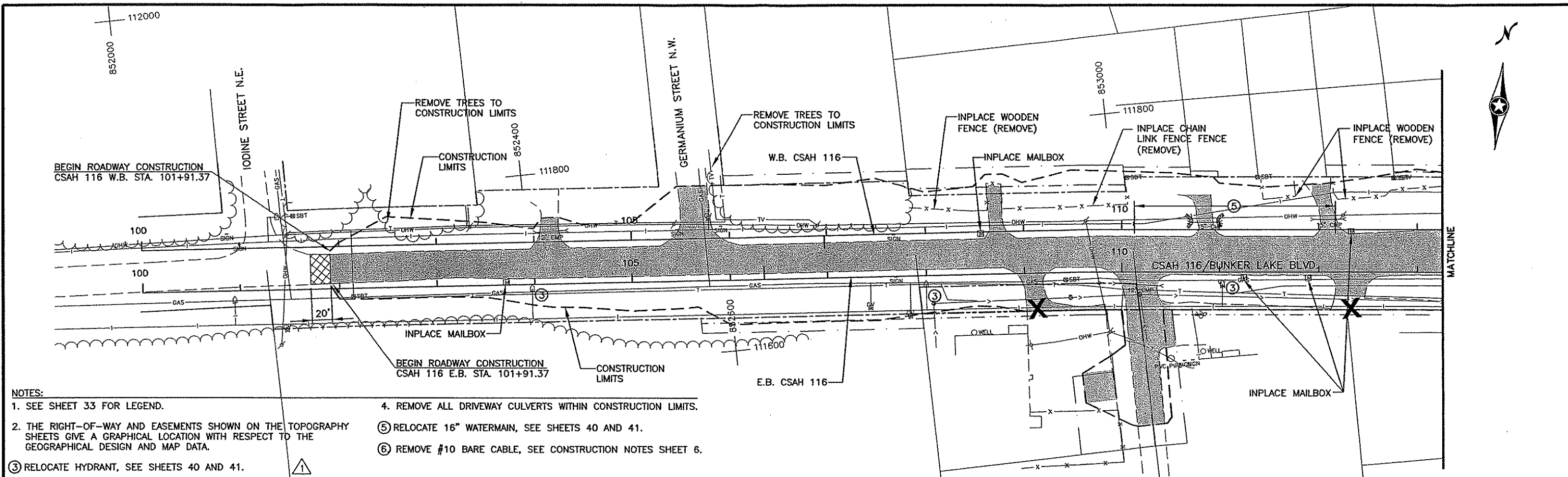
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DESIGN BY AJP/EDD DATE 02/18/05
CHECKED BY AJP DATE 02/18/05



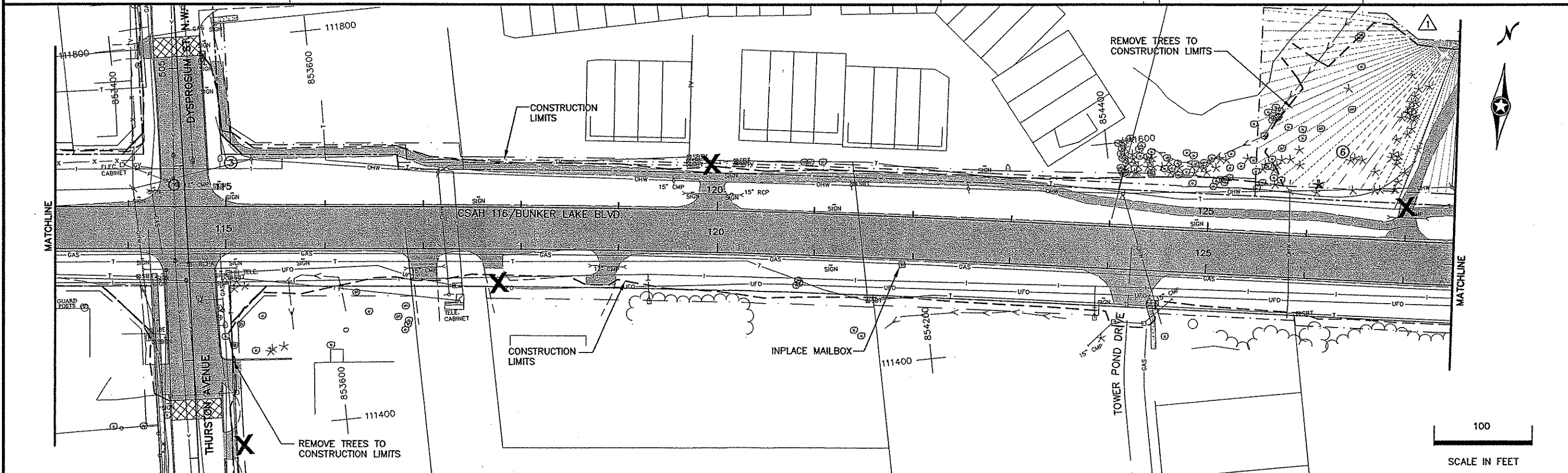
ANOKA COUNTY
HIGHWAY DEPT.

PROJECT NO.
ANOKA COUNTY S.P. 02-716-07
CITY OF ANOKA S.P. 103-122-12
CITY OF RAMSEY S.P. 199-020-04

ALIGNMENT PLAN
PAGE 1 OF 1
Sheet 31 of 120 Sheets



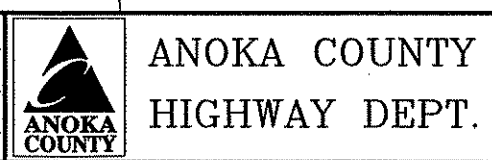
- NOTES:
1. SEE SHEET 33 FOR LEGEND.
 2. THE RIGHT-OF-WAY AND EASEMENTS SHOWN ON THE TOPOGRAPHY SHEETS GIVE A GRAPHICAL LOCATION WITH RESPECT TO THE GEOGRAPHICAL DESIGN AND MAP DATA.
 3. RELOCATE HYDRANT, SEE SHEETS 40 AND 41.
 4. REMOVE ALL DRIVEWAY CULVERTS WITHIN CONSTRUCTION LIMITS.
 5. RELOCATE 16" WATERMAIN, SEE SHEETS 40 AND 41.
 6. REMOVE #10 BARE CABLE, SEE CONSTRUCTION NOTES SHEET 6.



NO	DATE	BY	CKD	APPR	REVISION
1	12-18-05	REB	AJP	APR	ADDED CABLE REMOVAL AND NOTE 6

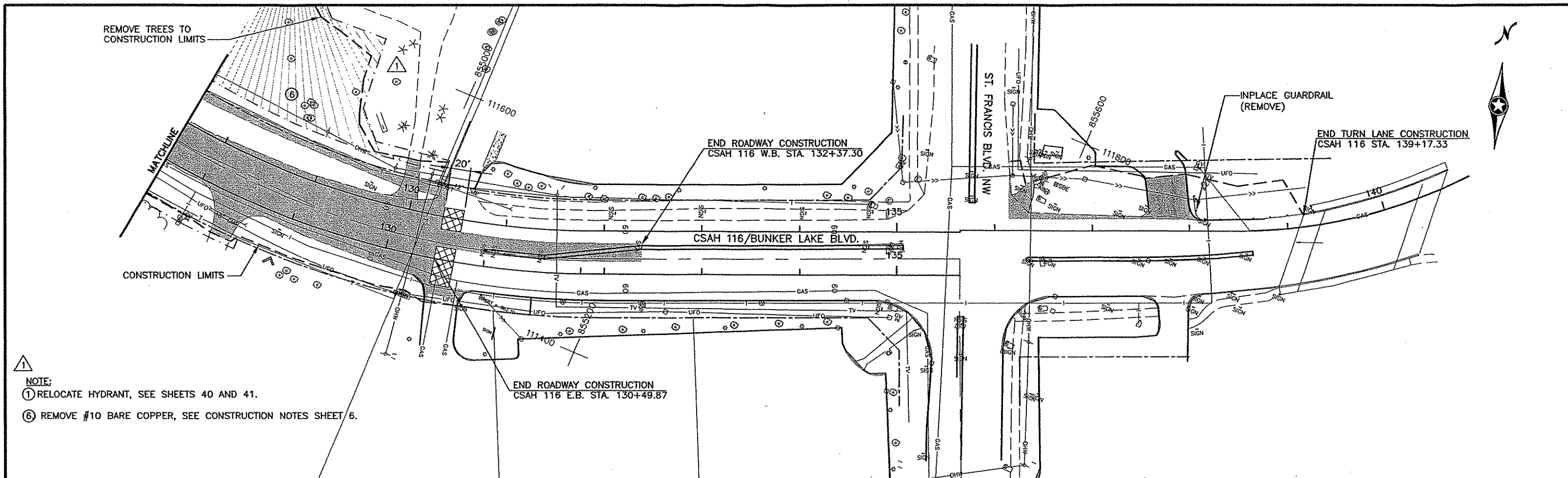
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 PRINT NAME: ALAN J. PALMER - P.E.
 SIGNATURE: *[Signature]*
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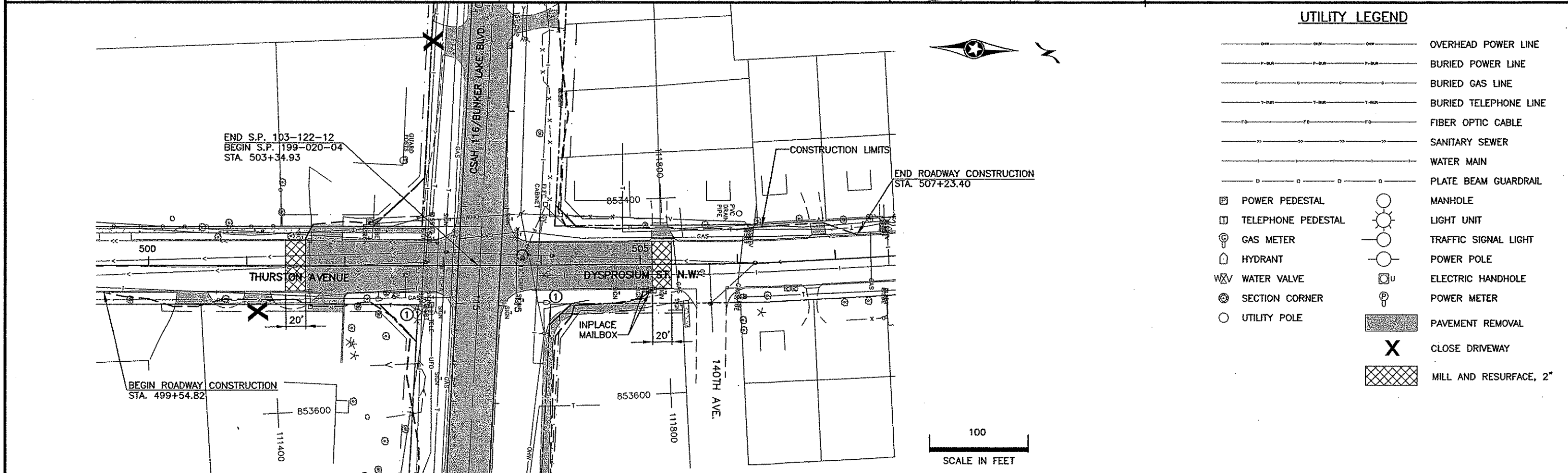


PROJECT NO. ANOKA COUNTY S.P. 02-716-07
 CITY OF ANOKA S.P. 103-122-12
 CITY OF RAMSEY S.P. 199-020-04

TOPOGRAPHY UTILITIES REMOVALS
 PAGE 1 OF 2
 Sheet 32 of 120 Sheets



NOTE:
 ① RELOCATE HYDRANT, SEE SHEETS 40 AND 41.
 ⑥ REMOVE #10 BARE COPPER, SEE CONSTRUCTION NOTES SHEET 6.



UTILITY LEGEND

	OVERHEAD POWER LINE
	BURIED POWER LINE
	BURIED GAS LINE
	BURIED TELEPHONE LINE
	FIBER OPTIC CABLE
	SANITARY SEWER
	WATER MAIN
	PLATE BEAM GUARDRAIL
	POWER PEDESTAL
	TELEPHONE PEDESTAL
	GAS METER
	HYDRANT
	WATER VALVE
	SECTION CORNER
	UTILITY POLE
	MANHOLE
	LIGHT UNIT
	TRAFFIC SIGNAL LIGHT
	POWER POLE
	ELECTRIC HANDHOLE
	POWER METER
	PAVEMENT REMOVAL
	CLOSE DRIVEWAY
	MILL AND RESURFACE, 2"

100
SCALE IN FEET

NO	DATE	BY	CKD	APPR	REVISION
1	12-18-05	REB	AJP	APR	ADDED CABLE REMOVAL AND NOTE 6

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 PRINT NAME: ALAN V. PALMER - P.E.
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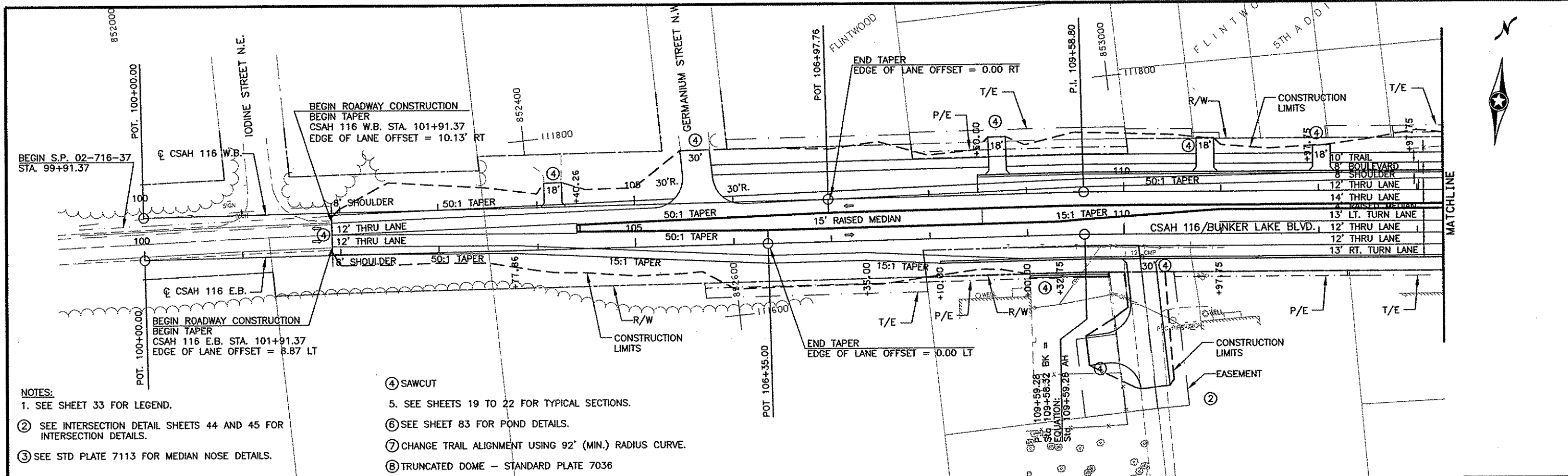


**ANOKA COUNTY
HIGHWAY DEPT.**

PROJECT NO.
ANOKA COUNTY
CITY OF ANOKA
CITY OF RAMSEY

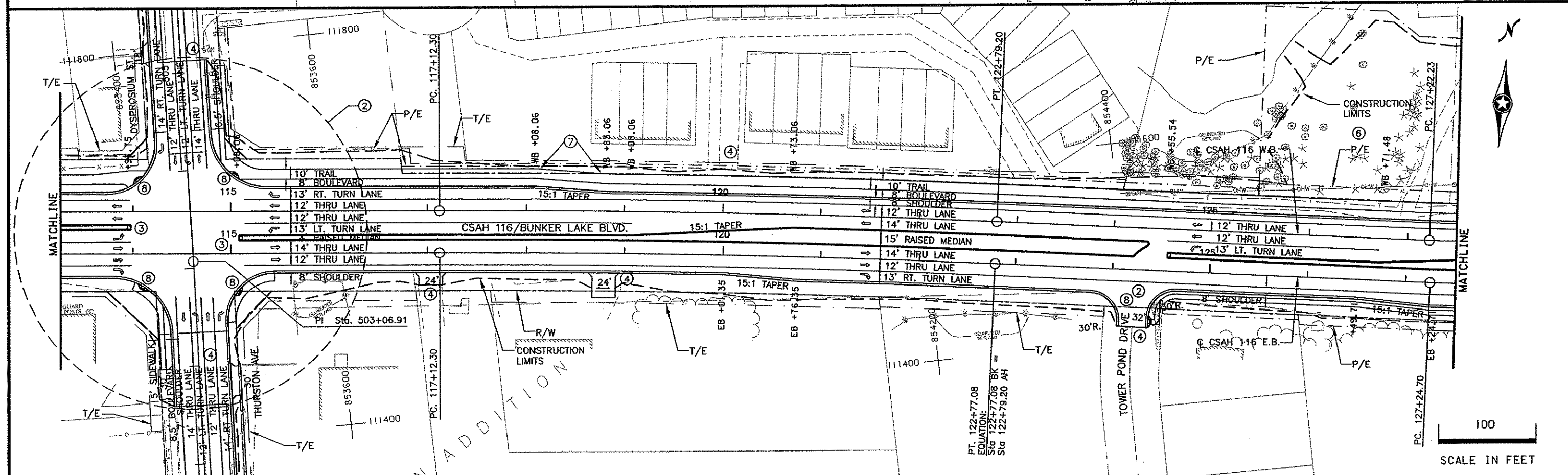
S.P. 02-716-07
S.P. 103-122-12
S.P. 199-020-04

**TOPOGRAPHY UTILITIES
REMOVALS**
PAGE 2 OF 2
Sheet 33 of 120 Sheets



- NOTES:
- SEE SHEET 33 FOR LEGEND.
 - SEE INTERSECTION DETAIL SHEETS 44 AND 45 FOR INTERSECTION DETAILS.
 - SEE STD PLATE 7113 FOR MEDIAN NOSE DETAILS.

- SAWCUT
- SEE SHEETS 19 TO 22 FOR TYPICAL SECTIONS.
- SEE SHEET 83 FOR POND DETAILS.
- CHANGE TRAIL ALIGNMENT USING 92' (MIN.) RADIUS CURVE.
- TRUNCATED DOME - STANDARD PLATE 7036

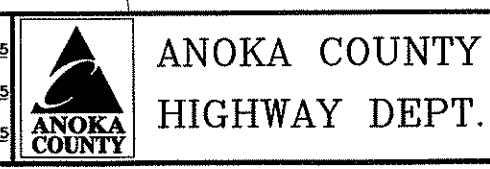


NO	DATE	BY	CKD	APPR	REVISION

NAME: C:\SHEET\17366\17366_FV_01.DWG

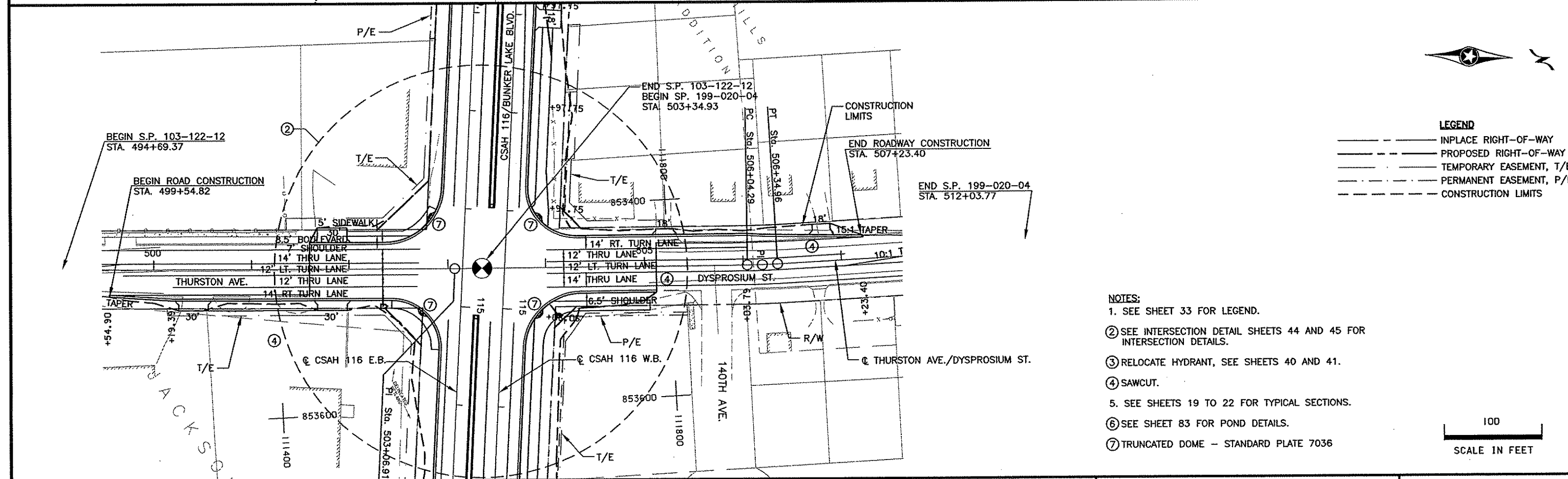
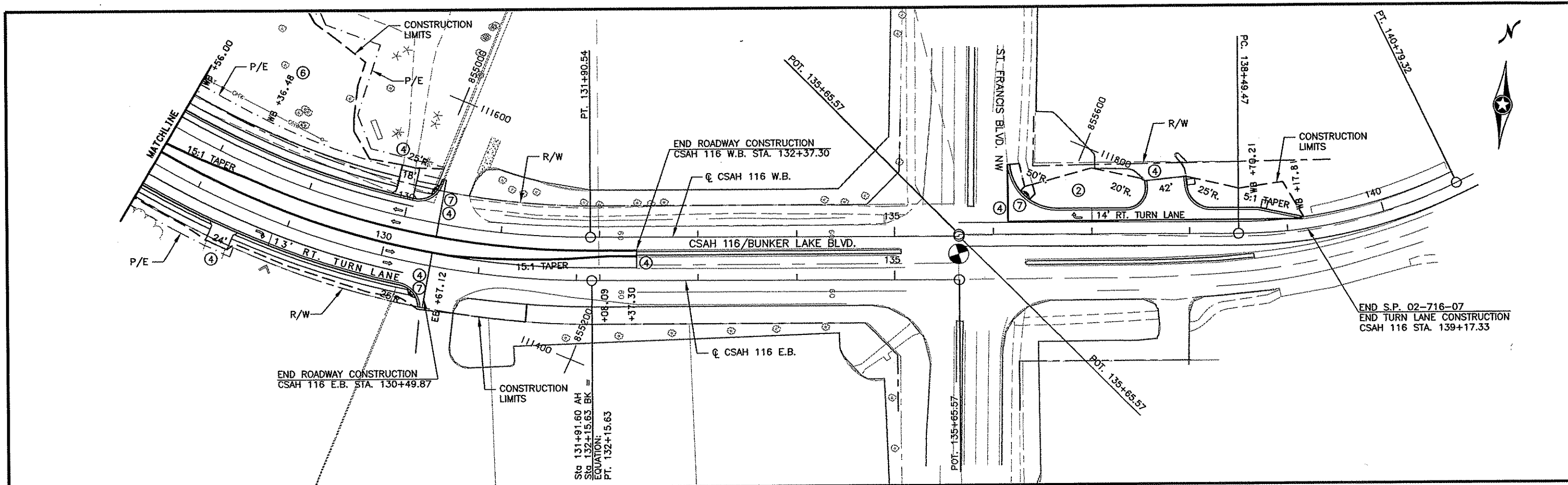
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 PRINT NAME: ALAN J. PALMER, P.E.
 SIGNATURE: *Alan J. Palmer*
 DATE: 18 JUNE 2005 LICENSE NO. 42462

DRAWN BY: RLH/DJS DATE 02/18/05
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PROJECT NO.
 ANOKA COUNTY S.P. 02-716-07
 CITY OF ANOKA S.P. 103-122-12
 CITY OF RAMSEY S.P. 199-020-04

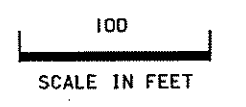
CONSTRUCTION PLAN
 PAGE 1 OF 2
 Sheet 34 of 120 Sheets



LEGEND

---	INPLACE RIGHT-OF-WAY
---	PROPOSED RIGHT-OF-WAY
---	TEMPORARY EASEMENT, T/E
---	PERMANENT EASEMENT, P/E
---	CONSTRUCTION LIMITS

- NOTES:**
1. SEE SHEET 33 FOR LEGEND.
 - ② SEE INTERSECTION DETAIL SHEETS 44 AND 45 FOR INTERSECTION DETAILS.
 - ③ RELOCATE HYDRANT, SEE SHEETS 40 AND 41.
 - ④ SAWCUT.
 5. SEE SHEETS 19 TO 22 FOR TYPICAL SECTIONS.
 - ⑥ SEE SHEET 83 FOR POND DETAILS.
 - ⑦ TRUNCATED DOME - STANDARD PLATE 7036



NO	DATE	BY	CKD	APPR	REVISION

NAME: Q:\SHEET\17366_FV_02.DWG

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

PRINT NAME: ALAN J. PALMER, P.E.

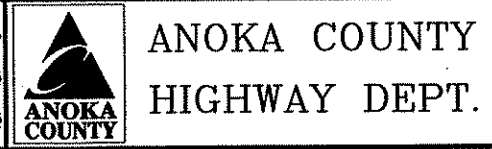
SIGNATURE: *Alan J. Palmer*

DATE: 18 JUNE 2005 LICENSE NO. 42462

DRAWN BY RLH/DJS DATE 02/18/05

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PROJECT NO. S.P. 02-716-07

ANOKA COUNTY S.P. 103-122-12

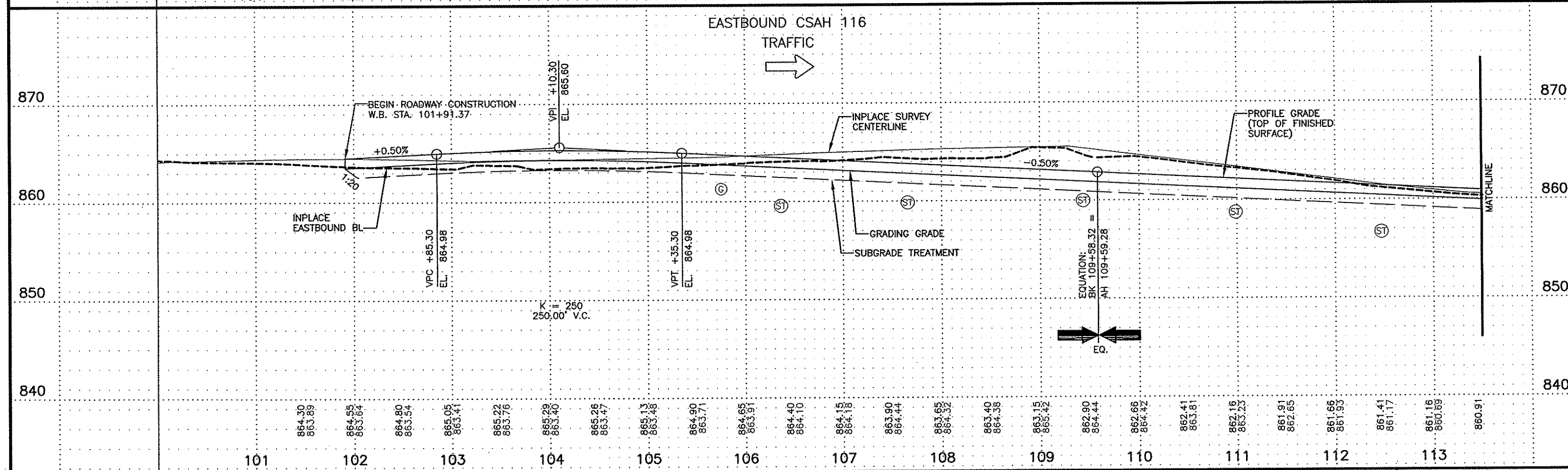
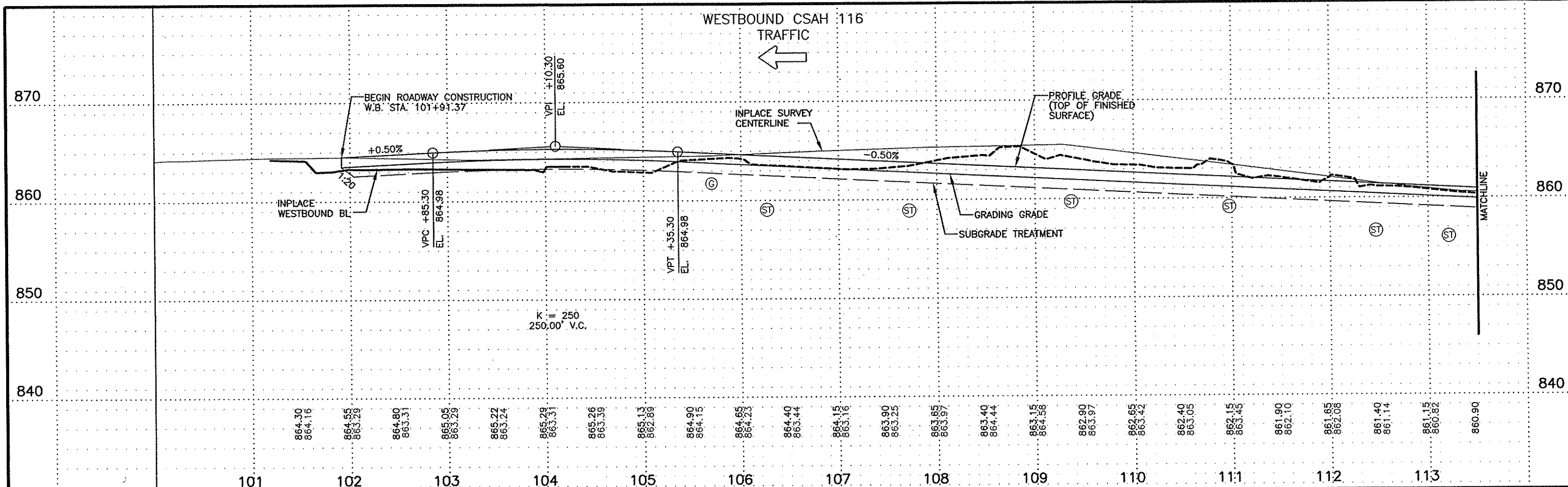
CITY OF ANOKA S.P. 199-020-04

CITY OF RAMSEY

CONSTRUCTION PLAN

PAGE 2 OF 2

Sheet 35 of 120 Sheets



NO	DATE	BY	CKD	APPR	REVISION

NAME: Q:\SHEET\17366_GS_01.DWG

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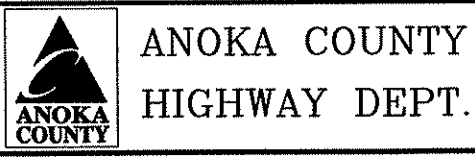
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DATE: 18 JUNE 2005 LICENSE NO. 42462

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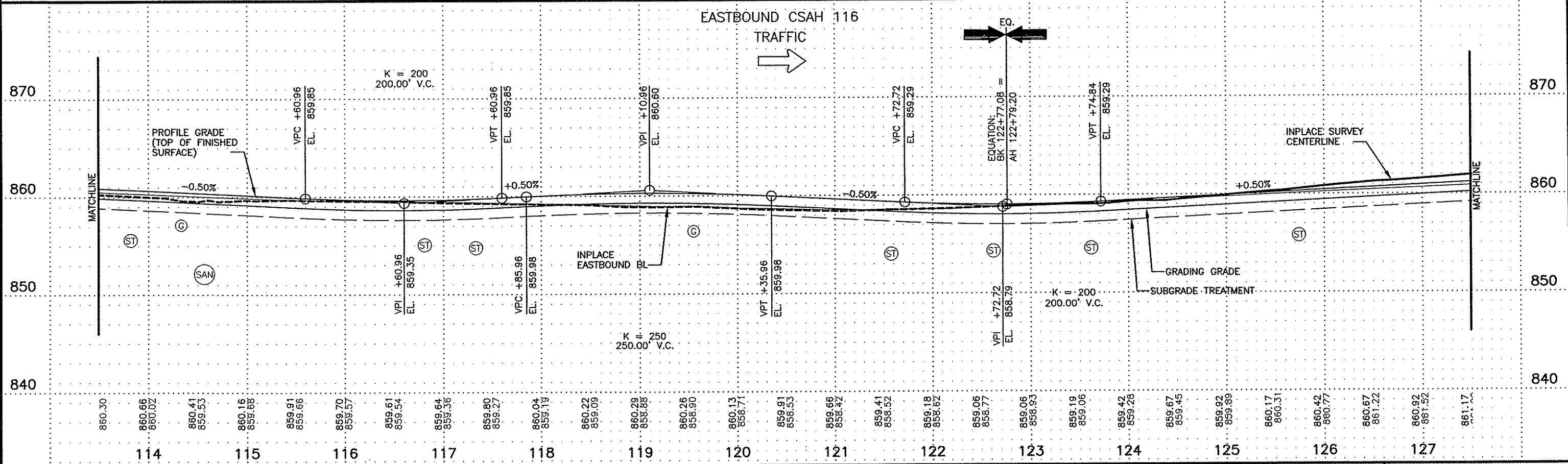
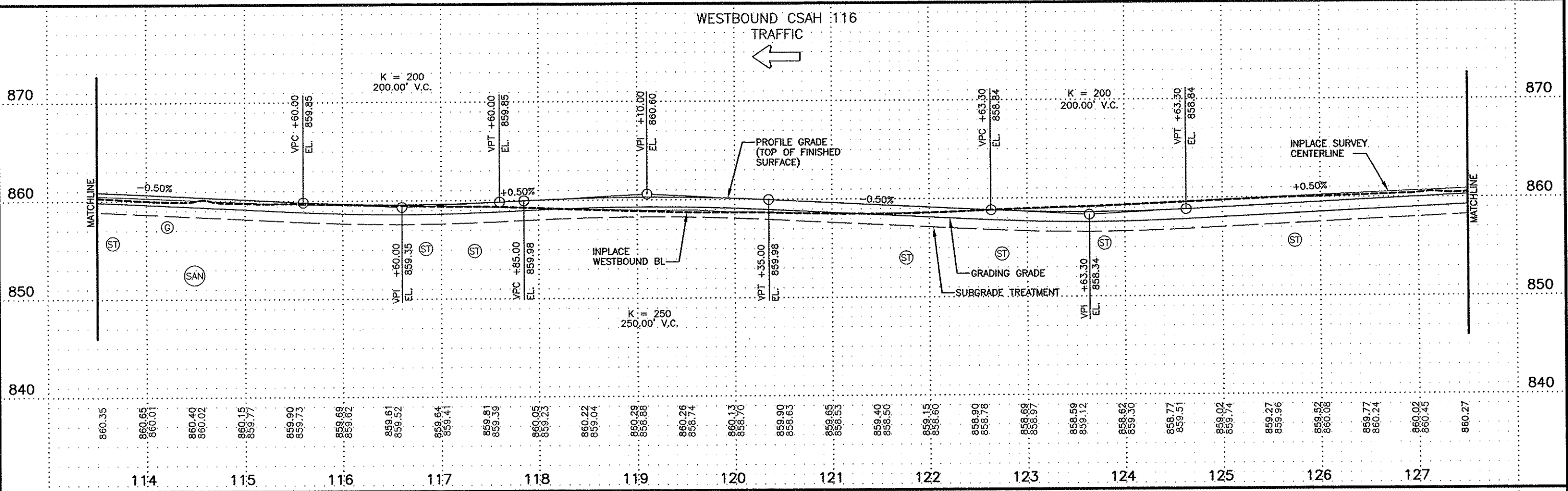
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CHECKED BY: AJP DATE: 02/18/05



PROJECT NO. ANOKA COUNTY S.P. 02-716-07
CITY OF ANOKA S.P. 103-122-12
CITY OF RAMSEY S.P. 199-020-04

PROFILE SHEET STA. 101+00 TO 113+50 PAGE 1 OF 4
Sheet 36 of 120 Sheets



NO	DATE	BY	CKD	APPR	REVISION

NAME: Q:\SHEET\17366_GS_02.DWG

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

PRINT NAME: ALAN J. PALMER, P.E.

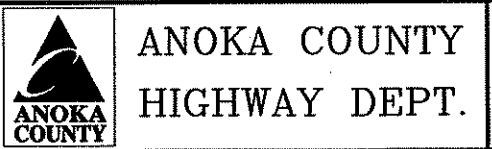
SIGNATURE: *Alan J. Palmer*

DATE: 18 JUNE 2005 LICENSE NO. 42482

DRAWN BY: RLH/DJS DATE: 02/18/05

DESIGN BY: AJP/EDD DATE: 02/18/05

CHECKED BY: AJP DATE: 02/18/05



PROJECT NO. ANOKA COUNTY CITY OF ANOKA CITY OF RAMSEY

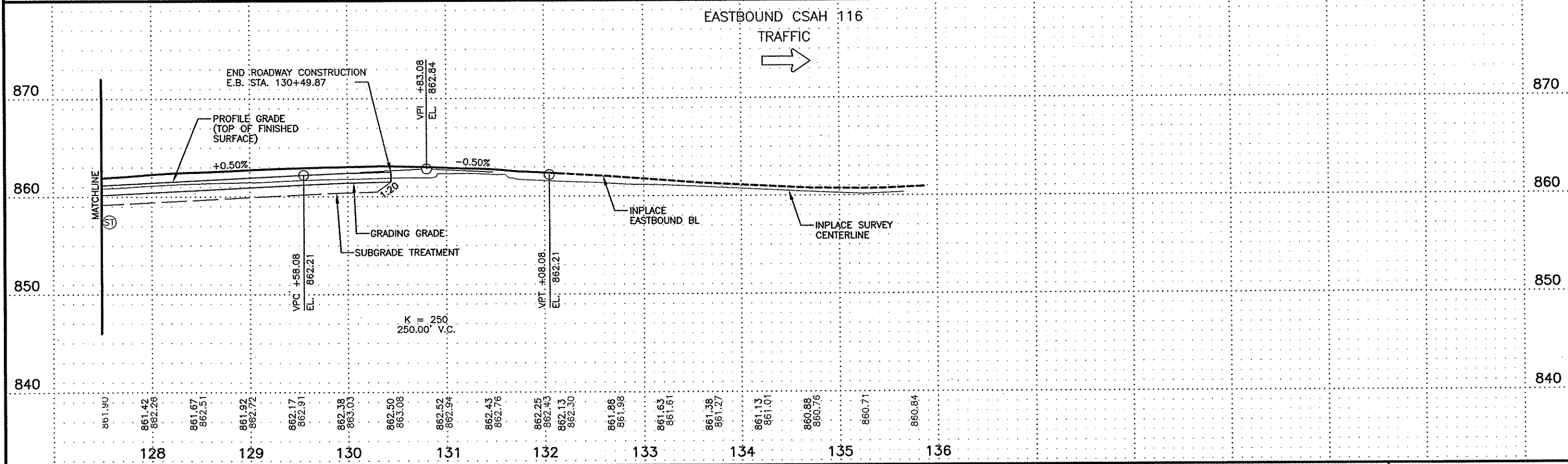
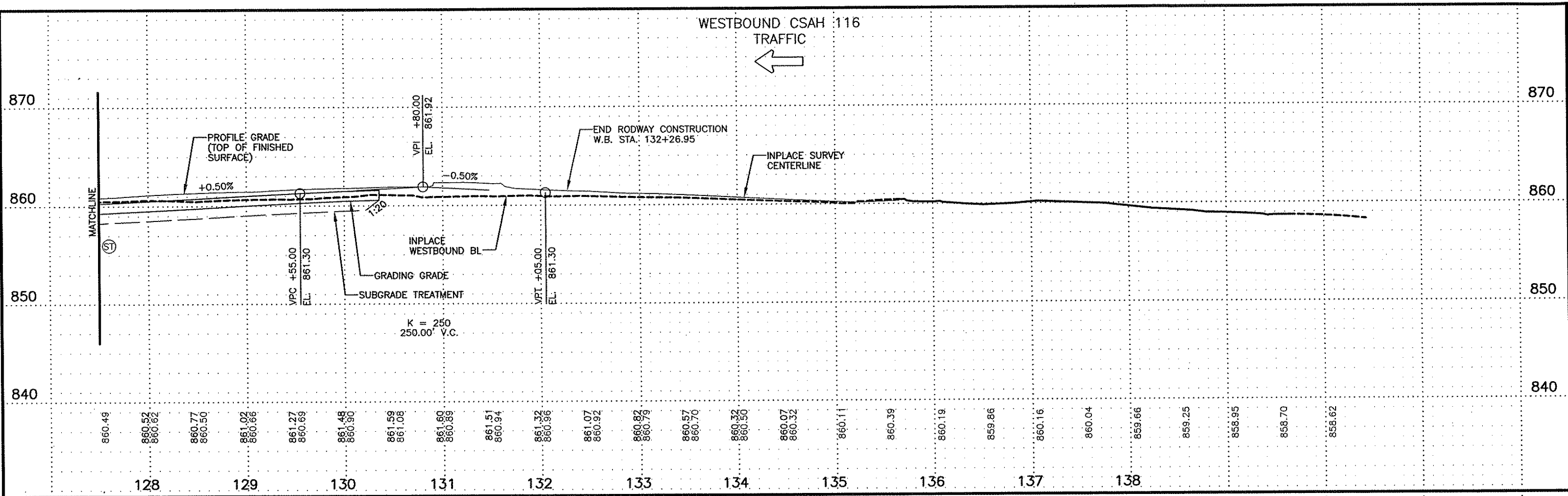
S.P. 02-716-07

S.P. 103-122-12

S.P. 199-020-04

PROFILE SHEET STA. 113+50 TO 127+50 PAGE 2 OF 4

Sheet 37 of 120 Sheets



NO	DATE	BY	CKD	APPR	REVISION

NAME: Q:\SHEET\17366_GS_03.DWG

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

PRINT NAME: ALAN J. PALMER, P.E.

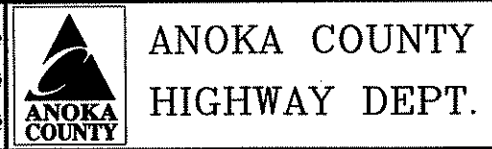
SIGNATURE: *Alan J. Palmer*

DATE: 18 JUNE 2005 LICENSE NO. 42462

DRAWN BY: RLH/DJS DATE: 02/18/05

DESIGN BY: AJP/EDD DATE: 02/18/05

CHECKED BY: AJP DATE: 02/18/05



PROJECT NO. ANOKA COUNTY CITY OF ANOKA CITY OF RAMSEY

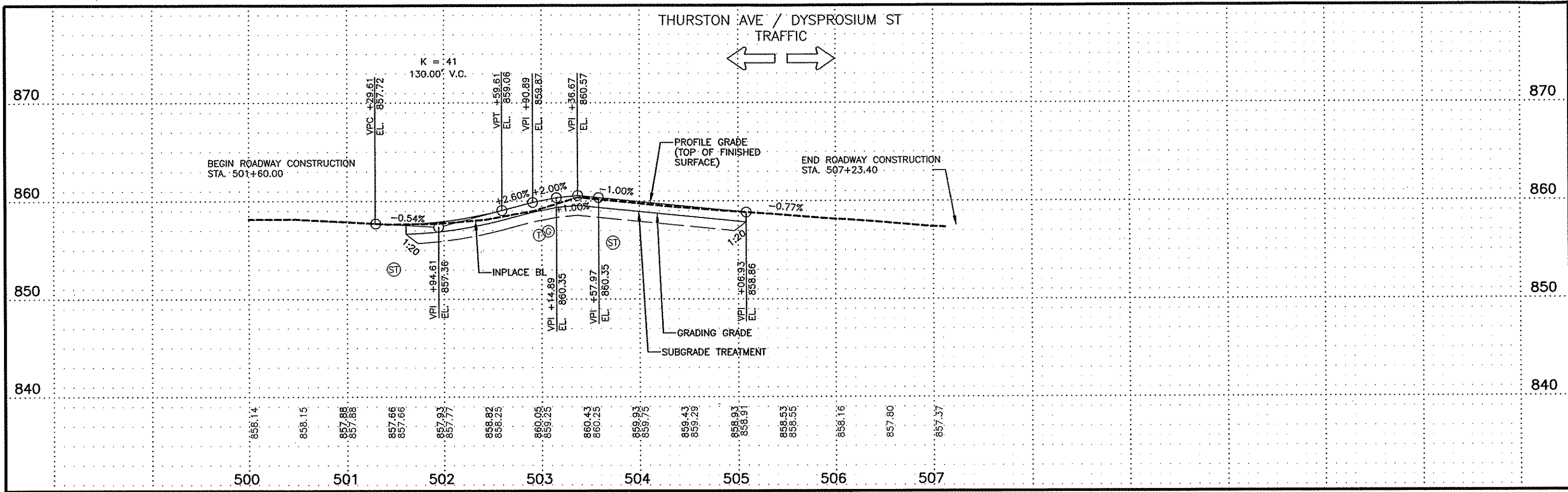
S.P. 02-716-07

S.P. 103-122-12

S.P. 199-020-04

PROFILE SHEET STA. 127+50 TO 135+50 PAGE 3 OF 4

Sheet 38 of 120 Sheets



NO	DATE	BY	CKD	APPR	REVISION

NAME: O:\SHEET\17368_CS_04.DWG

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

PRINT NAME: ALAN L. PALMER, P.E.

SIGNATURE: *[Signature]*

DATE: 18 JUNE 2005 LICENSE NO. 42482

DRAWN BY: RLH/DJS DATE: 02/18/05

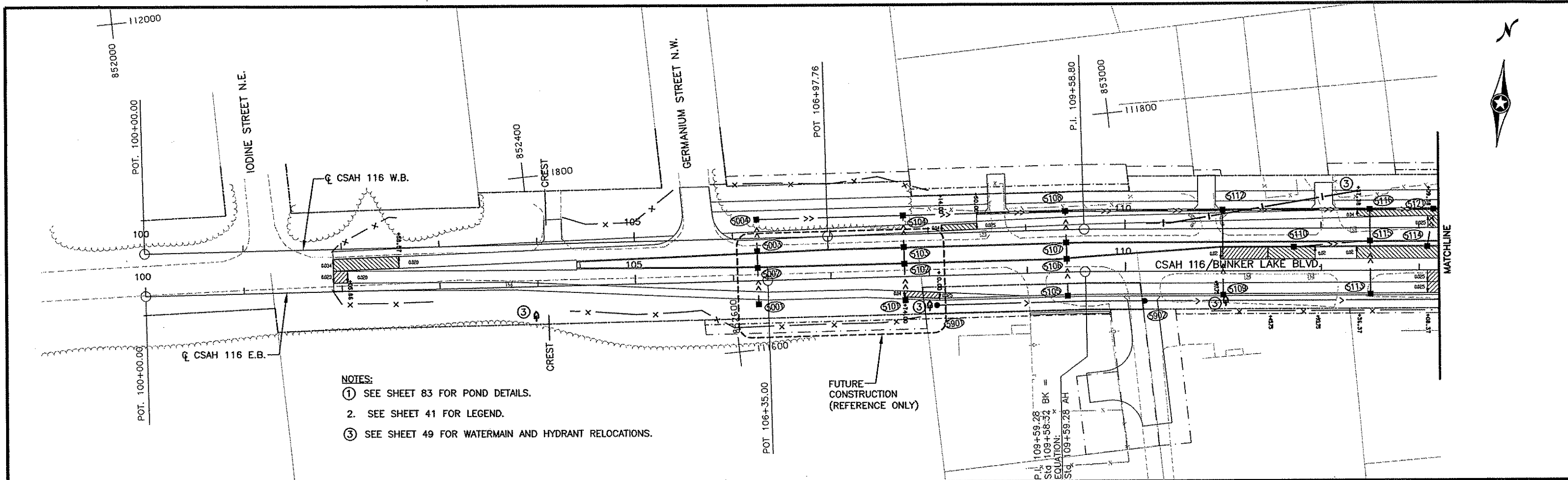
DESIGN BY: AJP/EDD DATE: 02/18/05

CHECKED BY: AJP DATE: 02/18/05

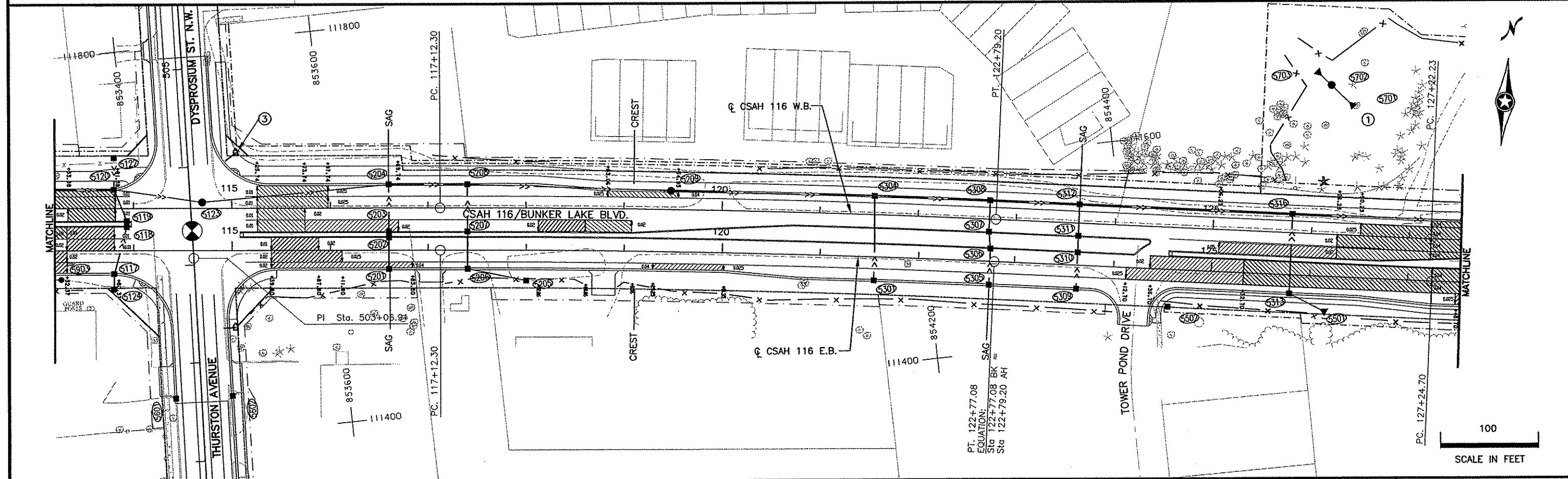
ANOKA COUNTY
HIGHWAY DEPT.

PROJECT NO.
ANOKA COUNTY S.P. 02-716-07
CITY OF ANOKA S.P. 103-122-12
CITY OF RAMSEY S.P. 199-020-04

PROFILE SHEET
STA. 501+00 TO 505+50
PAGE 4 OF 4
Sheet 39 of 120 Sheets



- NOTES:
- ① SEE SHEET 83 FOR POND DETAILS.
 - 2. SEE SHEET 41 FOR LEGEND.
 - ③ SEE SHEET 49 FOR WATERMAIN AND HYDRANT RELOCATIONS.



NO	DATE	BY	CKD	APPR	REVISION

NAME: Q:\SHEET\17366_G2_01.DWG

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

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SIGNATURE: *Alan J. Palmer*

DATE: 18 JUNE 2005 LICENSE NO. 42482

DRAWN BY: RLH/DJS DATE: 02/18/05

DESIGN BY: AJP/EDD DATE: 02/18/05

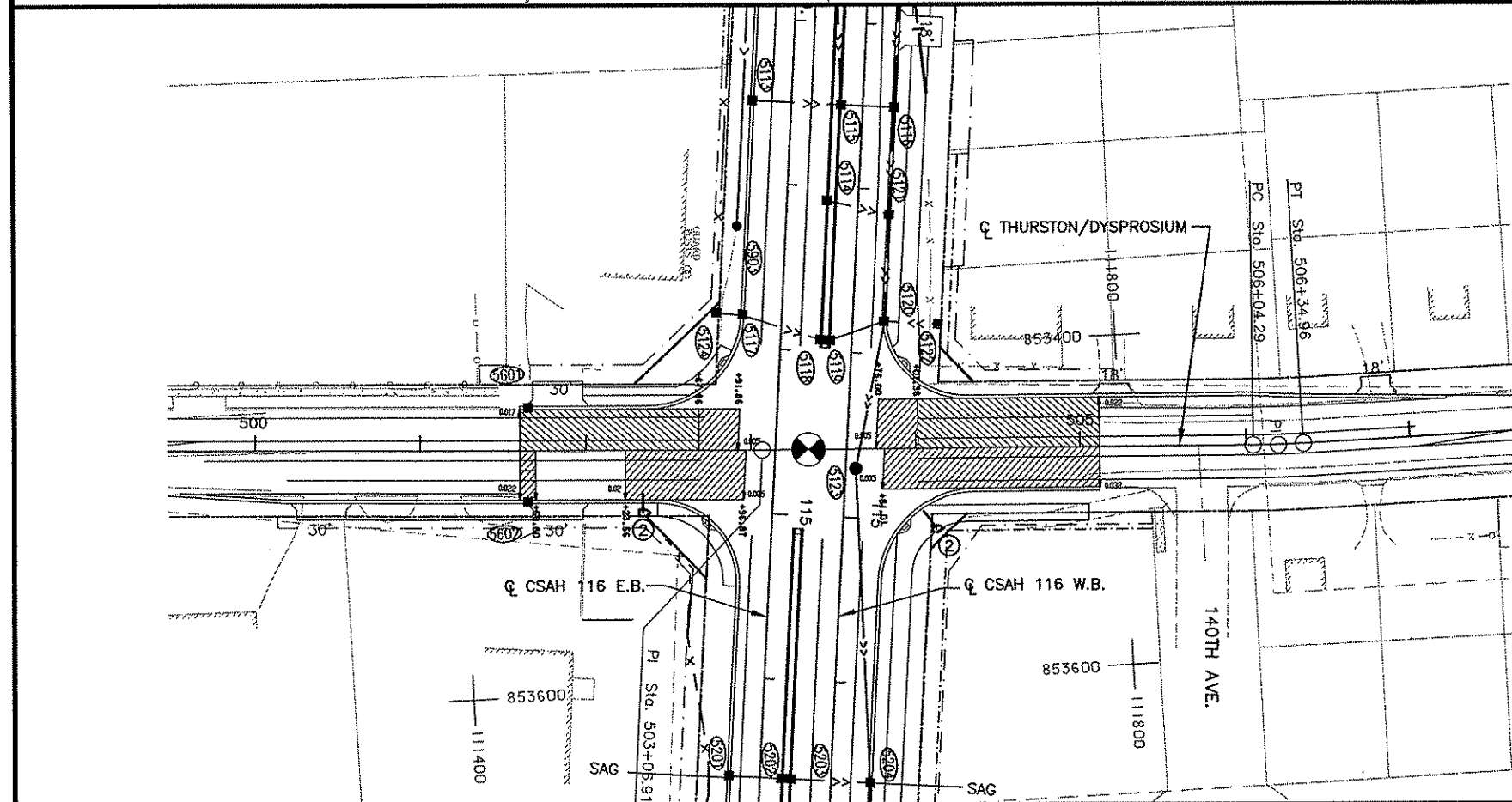
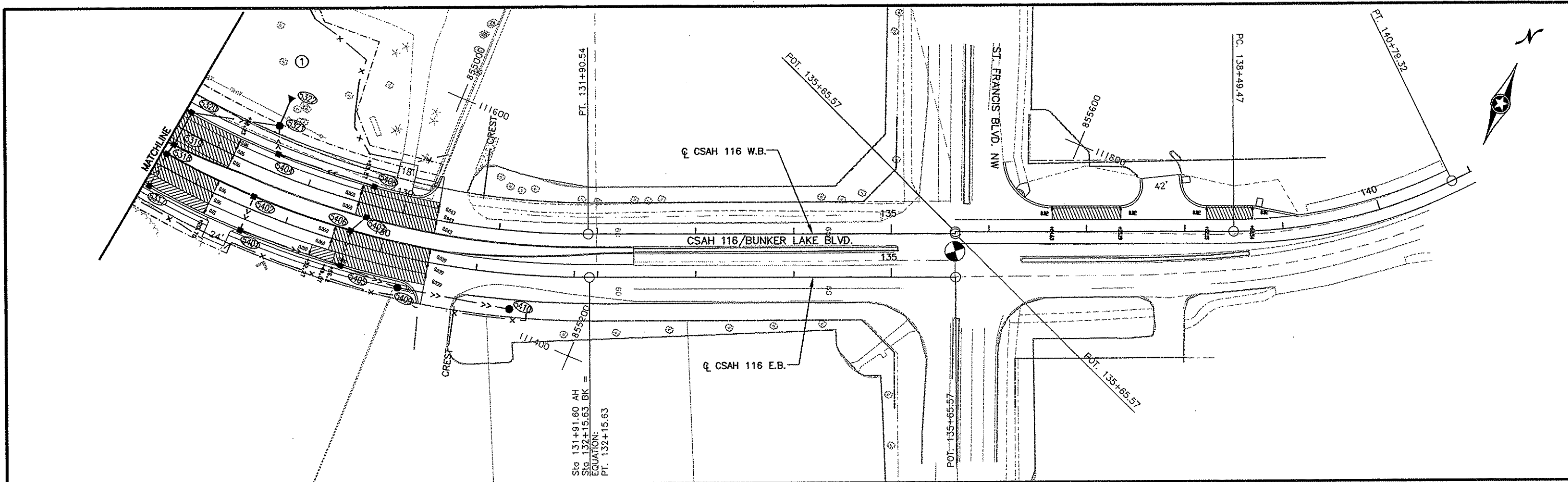
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ANOKA COUNTY
HIGHWAY DEPT.

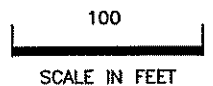
PROJECT NO.
ANOKA COUNTY S.P. 02-716-07
CITY OF ANOKA S.P. 103-122-12
CITY OF RAMSEY S.P. 199-020-04

WATER, DRAINAGE AND SUPERELEVATION PLAN
PAGE 1 OF 2
Sheet 40 of 120 Sheets



- LEGEND**
- SUPERELEVATION TRANSITION
 - STRUCTURE NUMBER
 - PROPOSED CATCH BASIN
 - PROPOSED MANHOLE
 - PROPOSED STORM SEWER
 - PROPOSED SANITARY SEWER
 - PROPOSED CONCRETE FLUME
 - SILT FENCE

NOTES:
 ① SEE SHEET 83 FOR POND DETAILS.
 ② SEE SHEET 49 FOR HYDRANT RELOCATIONS.



NO	DATE	BY	CKD	APPR	REVISION

NAME: Q:\SHEET\17366_G2_02.DWG

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 PRINT NAME: ALAN J. PALMER, P.E.
 SIGNATURE: *Alan J. Palmer*
 DATE: 18 JUNE 2005 LICENSE NO. 42482

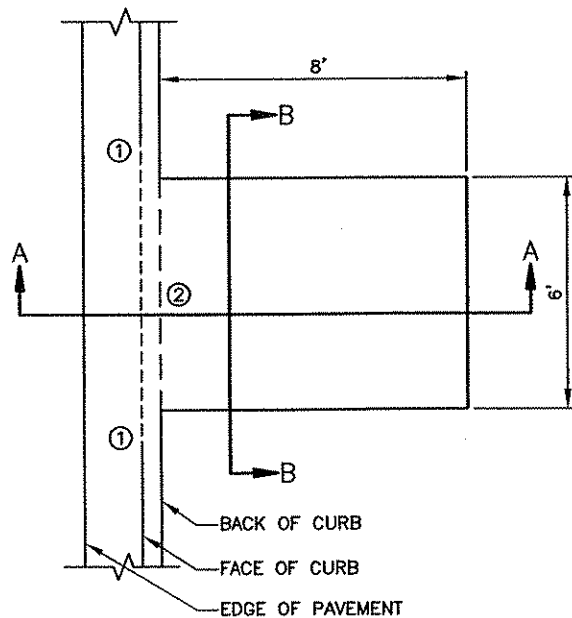
DRAWN BY: RLH/DJS DATE: 02/18/05
 DESIGN BY: AJP/EDD DATE: 02/18/05
 CHECKED BY: AJP DATE: 02/18/05



**ANOKA COUNTY
HIGHWAY DEPT.**

PROJECT NO.
 ANOKA COUNTY S.P. 02-716-07
 CITY OF ANOKA S.P. 103-122-12
 CITY OF RAMSEY S.P. 199-020-04

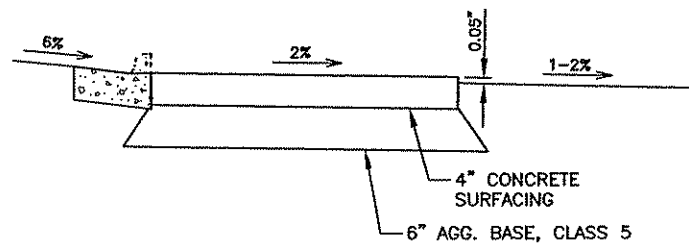
**WATER, DRAINAGE AND
SUPERELEVATION PLAN**
 PAGE 2 OF 2
 Sheet 41 of 120 Sheets



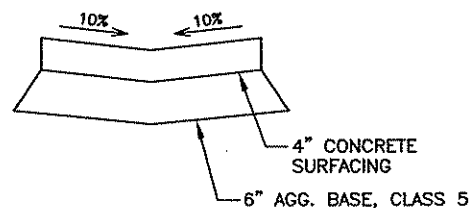
NOTES:

- ① TRANSITION CURB TO FULL HEIGHT WITHIN 8'.
- ② L2KT JOINT. TYPE LENGTH AND SPACING SHALL BE AS DIRECTED BY THE ENGINEER.

FLUME DETAIL
NOT TO SCALE



SECTION A-A
NOT TO SCALE



SECTION B-B
NOT TO SCALE

NO	DATE	BY	CKD	APPR	REVISION

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 PRINT NAME: ALAN J. PALMER, P.E.
 SIGNATURE: *[Signature]*
 DATE: 18 JUNE 2005 LICENSE NO. 42462

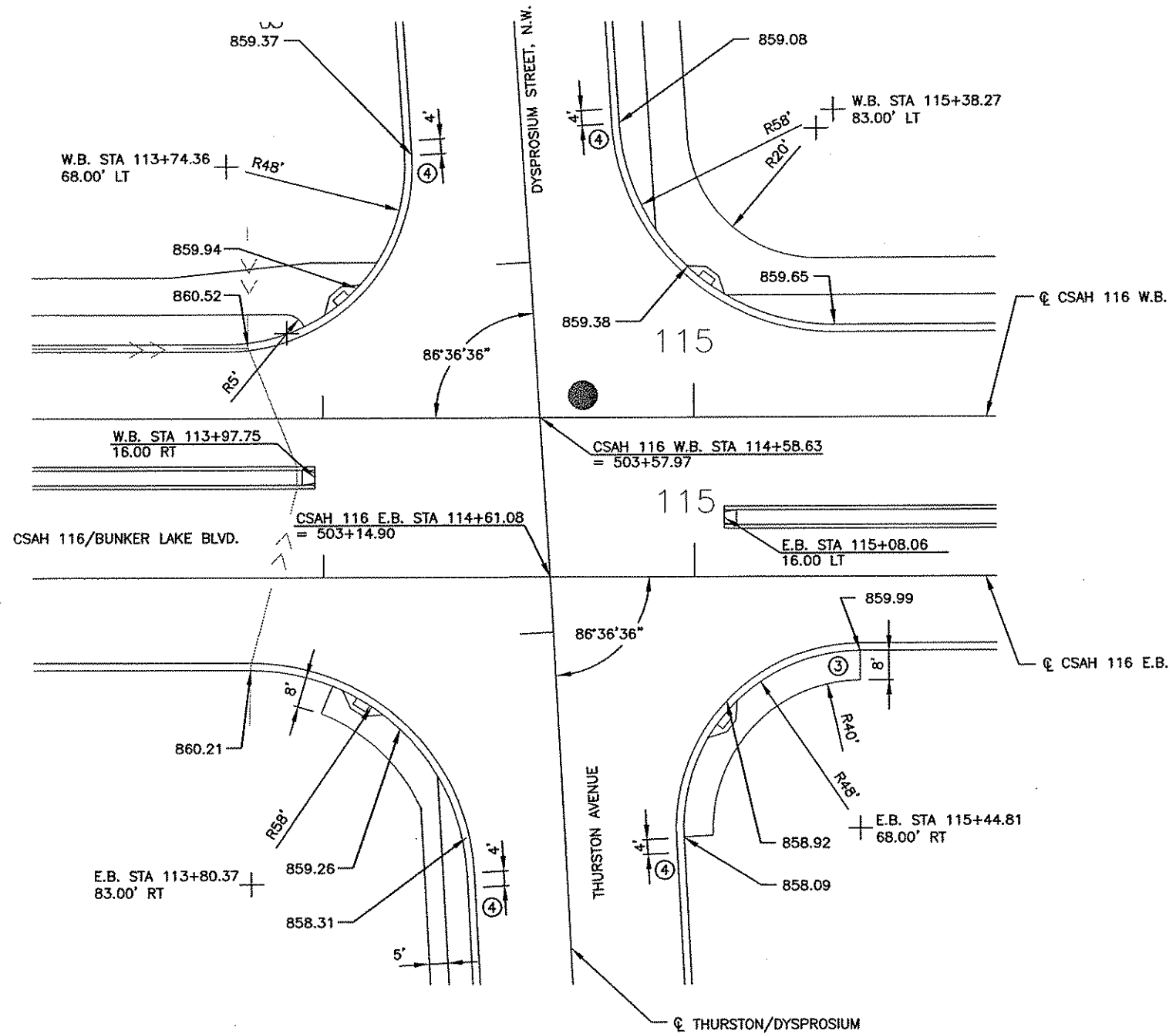
DRAWN BY RLH/DJS DATE 02/18/05
 DESIGN BY AJP/EDD DATE 02/18/05
 CHECKED BY AJP DATE 02/18/05



ANOKA COUNTY
 HIGHWAY DEPT.

PROJECT NO.
 ANOKA COUNTY S.P. 02-716-07
 CITY OF ANOKA S.P. 103-122-12
 CITY OF RAMSEY S.P. 199-020-04

MISCELLANEOUS
 DETAILS
 PAGE 1 OF 1
 Sheet 42 of 120 Sheets



CSAH 116 AT THURSTON AVENUE/DYPROSIUM STREET

NOTES:

1. ELEVATIONS ARE SHOWN TO FACE OF CURB AT GUTTER.
2. ELEVATIONS SHOWN ARE AT MIDPOINT OF RADIUS.
- ③ FUTURE SIDEWALK - CONTRACTOR TO GRADE AS REQUIRED TO ACCOMMODATE FUTURE CONSTRUCTION.
- ④ TRANSITION FROM B424 TO B624 OVER 4' LENGTH.
5. PROVIDE 5' MINIMUM SIDEWALK/TRAIL WIDTH FROM TRAFFIC SIGNAL POLE TO EDGE OF PAVEMENT.

NO	DATE	BY	CHKD	APPR	REVISION

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 PRINT NAME: ALAN J. PALMER, P.E.
 SIGNATURE: *[Signature]*
 DATE: 18 JUNE 2005 LICENSE NO. 42452

DRAWN BY: RLH/DJS DATE: 02/18/05
 DESIGN BY: AJP/EDD DATE: 02/18/05
 CHECKED BY: AJP DATE: 02/18/05



**ANOKA COUNTY
HIGHWAY DEPT.**

PROJECT NO.
 ANOKA COUNTY S.P. 02-716-07
 CITY OF ANOKA S.P. 103-122-12
 CITY OF RAMSEY S.P. 199-020-04

**INTERSECTION
DETAILS**
 PAGE 1 OF 2
 Sheet 44 of 120 Sheets

INPLACE SANITARY SEWER								W
ALIGNMENT	STRUCTURE NUMBER	STATION	LOCATION	INPLACE ITEM	LENGTH (LIN FT)	CONSTRUCT MANHOLE (LIN FT)	ADJUST SEWER STRUCTURE (EACH)	REMARKS
E.B. CSAH 116	5901	108+07	28'RT	CLEANOUT				REPLACE WITH MANHOLE
E.B. CSAH 116		108+07 - 109+46	28'RT - 26'RT	SERVICE	139			REPLACE WITH 8" PVC SEWER AT 0.50%
E.B. CSAH 116	5902	109+46	26'RT	CLEANOUT				REPLACE WITH MANHOLE
E.B. CSAH 116		109+46 - 110+19	26'RT - 23'RT	SERVICE	70			REPLACE WITH 8" PVC SEWER AT 0.50%
E.B. CSAH 116	5903	110+18	23'RT	CLEANOUT				REPLACE WITH MANHOLE
E.B. CSAH 116		110+19 - 113+27	23'RT - 30'RT	SERVICE	308			REPLACE WITH 8" PVC SEWER AT 0.50%
THURSTON AVENUE	6200	502+82	3'LT	MH			1	MATCH PROPOSED GRADE
THURSTON AVENUE	6201	503+03	14'LT	MH			1	MATCH PROPOSED GRADE
THURSTON AVENUE	6202	503+81	8'LT	MH			1	
DYSPROSIUM STREET	6202	504+11	9'LT	MH			1	MATCH PROPOSED GRADE
DYSPROSIUM STREET	6203	506+19	1'LT	MH			1	MATCH PROPOSED GRADE
S.P. 103-122-12					0	0.0	0	
S.P. 199-020-04					0	0.0	0	
S.P. 02-716-07					517	0.0	5	
PROJECT TOTALS:					517	0.0	5	

ALIGNMENT	LOCATION	INSULATE WATER MAIN (LIN FT)	WATER MAIN AND APPURTENANCES					Q
			DIP, CLASS 52, 6" (LIN FT)	DIP, 16" (LIN FT)	SALVAGE HYDRANT (EACH)	BEND, 45° X 6" (EACH)	BEND, 22.5° X 16" (EACH)	
W.B. CSAH 116	110+22-112+40, 6'LT-38'LT			221			4	LOWER 16" WATER MAIN
W.B. CSAH 116	114+94, 49'LT		24		1	1		F & I HYDRANT (1)
W.B. CSAH 116	101+91-115+56, 8'LT-39'LT	1365						4" POLYSTYRENE
E.B. CSAH 116	103+97, 5'RT		5		1			F & I HYDRANT (1)
E.B. CSAH 116	108+00, 10'RT		5		1			F & I HYDRANT (1)
E.B. CSAH 116	111+03, 12'RT		5		1			F & I HYDRANT (1)
E.B. CSAH 116	114+99, 35'RT							REMOVE HYDRANT
E.B. CSAH 116	115+05, 80'RT		5		1			F & I HYDRANT (1)
TOTALS:		1365	44	221	5	1	4	
						75	385	UNIT MASS, LBS
						75	1540	TOTAL MASS, LBS

(1) INSTALL NEW HYDRANT. INPLACE HYDRANT TO BE SALVAGED AND DELIVERED TO OWNER

CASTING ASSEMBLIES SUMMARY						P
ASSEMBLY	RING OR FRAME CASTING NO.	GRATE CASTING NO.	COVER CASTING NO.	CURB BOX NO.	PROJECT TOTAL	REMARKS
B-17	806 SQUARE	816		825	30.0	
M-11	ROUND CONCRETE	731			7.0	
A-8D	700-8 ROUND		715		8.0	
B-1	801 ROUND	R-3250-DSVP		R-3250-DSVP	19.0	USE NEENAH R-3250-DSVP (WITH CURB BOX) OR EQUIVALENT
PROJECT TOTALS:					64.0	

NO	DATE	BY	CKD	APPR	REVISION

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PRINT NAME: ALAN PALMER, P.E.

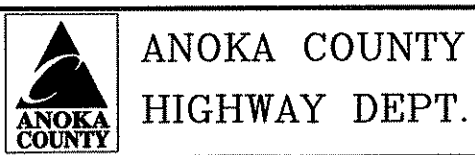
SIGNATURE: *[Signature]*

DATE: 18 JUNE 2005 LICENSE NO. 42482

DRAWN BY: RLH/DJS DATE 02/18/05

DESIGN BY: AJP/EDD DATE 02/18/05

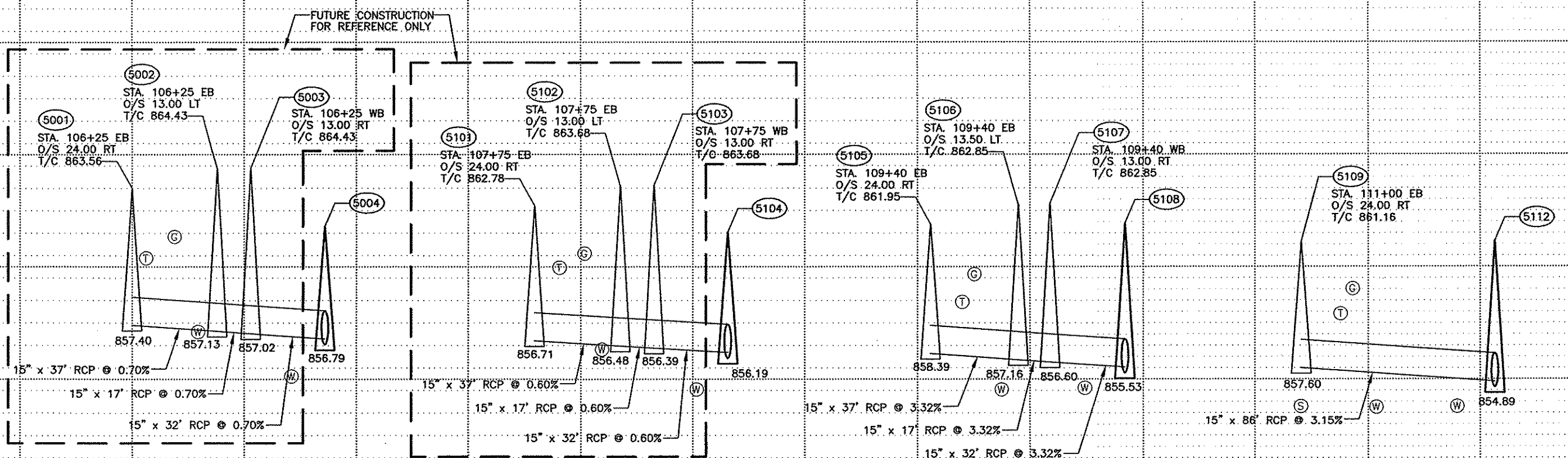
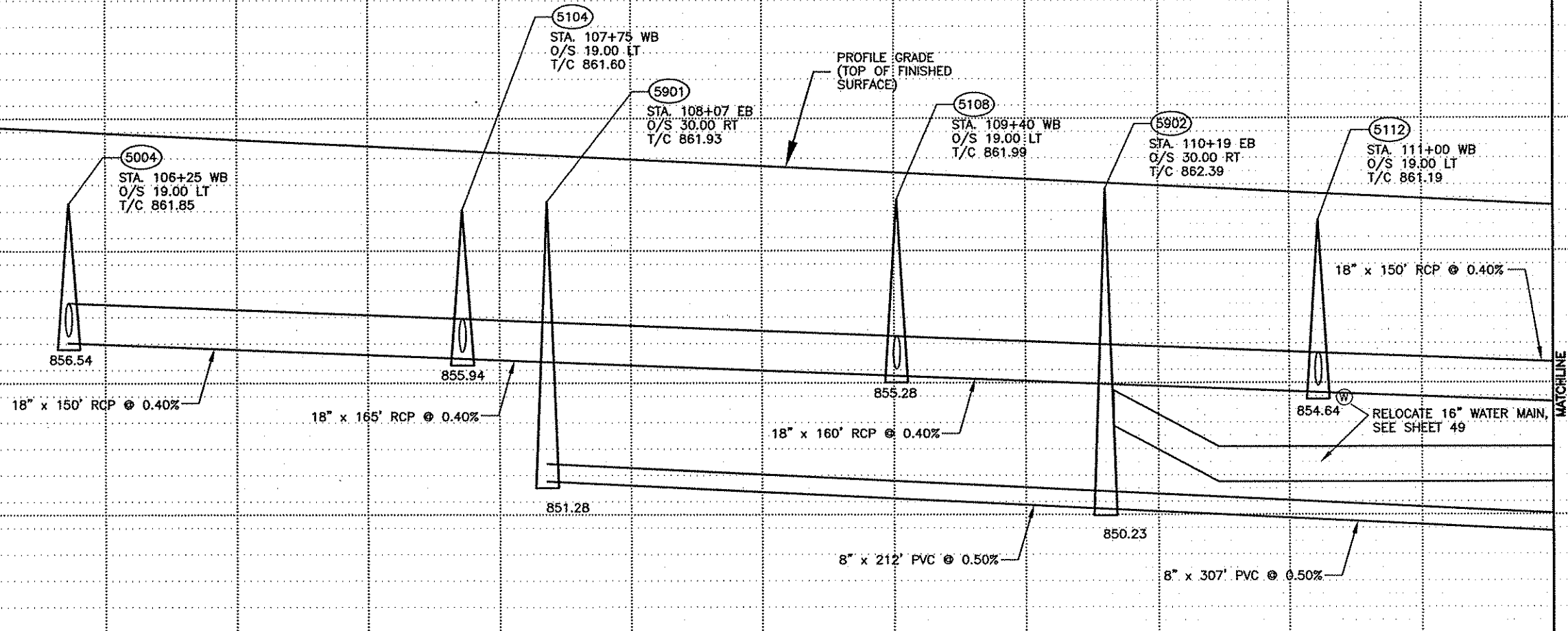
CHECKED BY: AJP DATE 02/18/05



PROJECT NO. ANOKA COUNTY S.P. 02-716-07
 CITY OF ANOKA S.P. 103-122-12
 CITY OF RAMSEY S.P. 199-020-04

LEGEND

- (F) BURIED FIBER OPTIC
- (C) BURIED GAS
- (S) SANITARY SEWER
- (T) BURIED TELEPHONE
- (W) WATER MAIN



NO	DATE	BY	CKD	APPR	REVISION

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PRINT NAME: ALAN J. PALMER, P.E.

SIGNATURE: *[Signature]*

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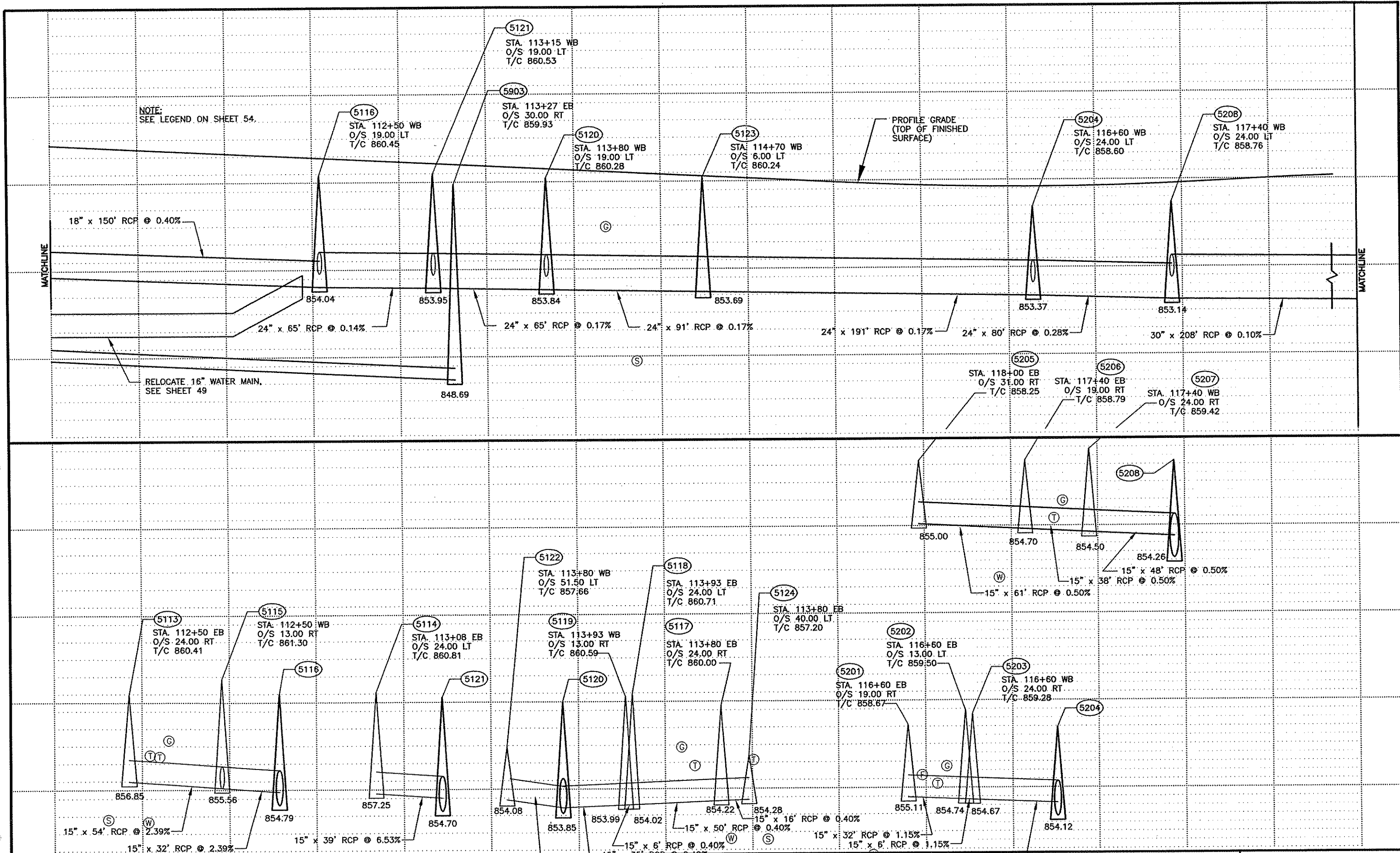
**ANOKA COUNTY
HIGHWAY DEPT.**

PROJECT NO.
ANOKA COUNTY
CITY OF ANOKA
CITY OF RAMSEY

S.P. 02-716-07
S.P. 103-122-12
S.P. 199-020-04

DRAINAGE PROFILE
PAGE 1 OF 4

Sheet 54 of 120 Sheets



NOTE:
SEE LEGEND ON SHEET 54.

PROFILE GRADE
(TOP OF FINISHED
SURFACE)

RELOCATE 16" WATER MAIN,
SEE SHEET 49

NO	DATE	BY	CKD	APPR	REVISION

NAME: Q:\SHEET\17366_KH_02.DWG

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

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SIGNATURE: *Alan J. Palmer*

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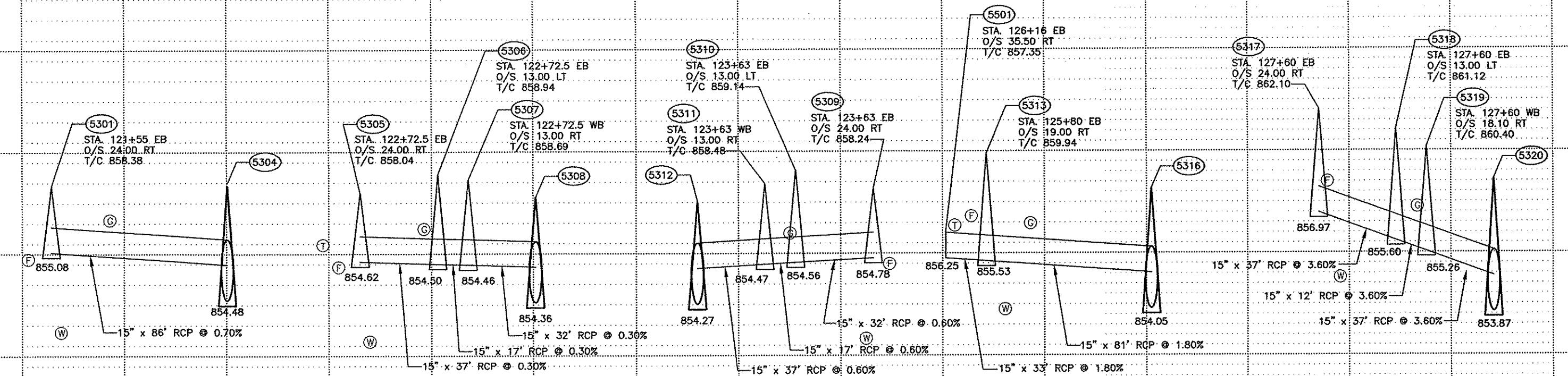
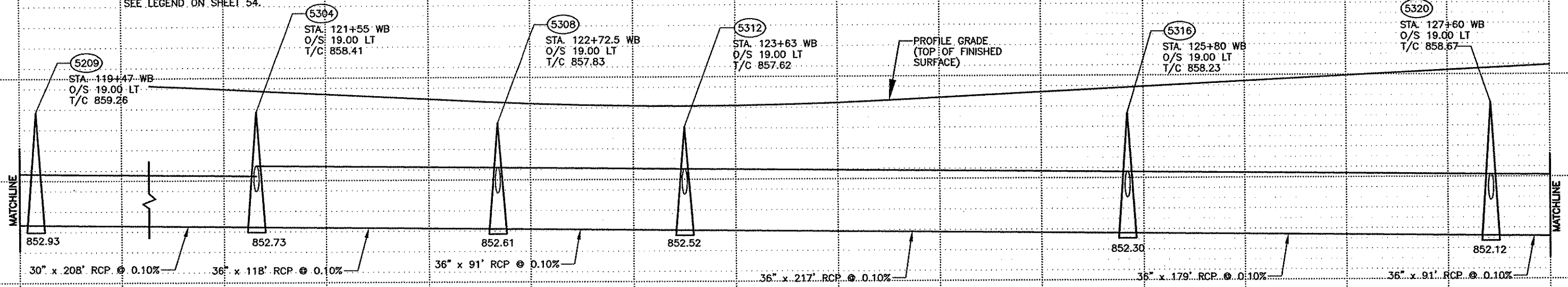


ANOKA COUNTY
HIGHWAY DEPT.

PROJECT NO.
ANOKA COUNTY S.P. 02-716-07
CITY OF ANOKA S.P. 103-122-12
CITY OF RAMSEY S.P. 199-020-04

DRAINAGE PROFILE
PAGE 2 OF 4
Sheet 55 of 120 Sheets

NOTE:
SEE LEGEND ON SHEET 54.



NO	DATE	BY	CKD	APPR	REVISION

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SIGNATURE: *[Signature]*

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DRAWN BY: RLH/DJS DATE 02/18/05

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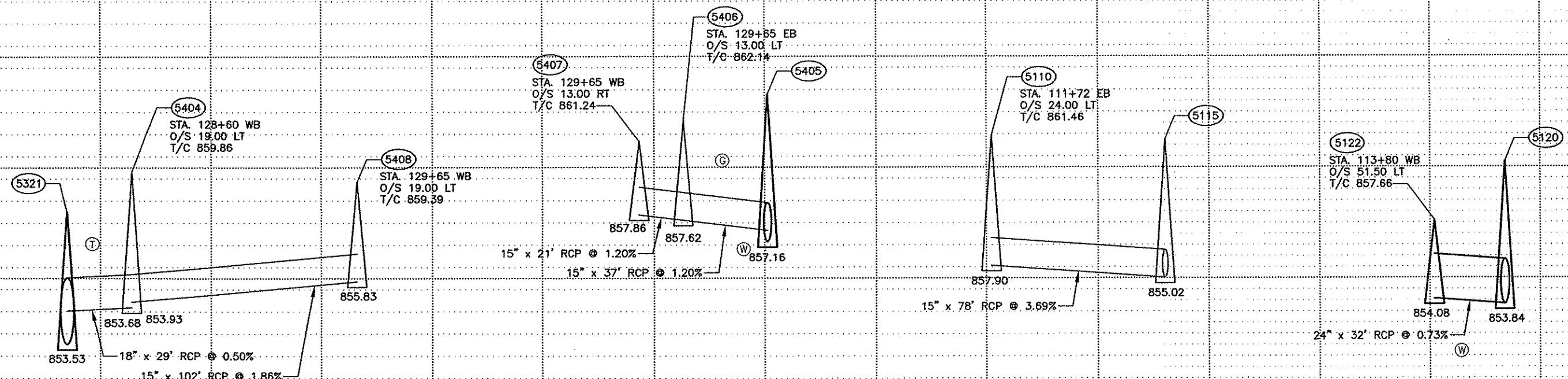
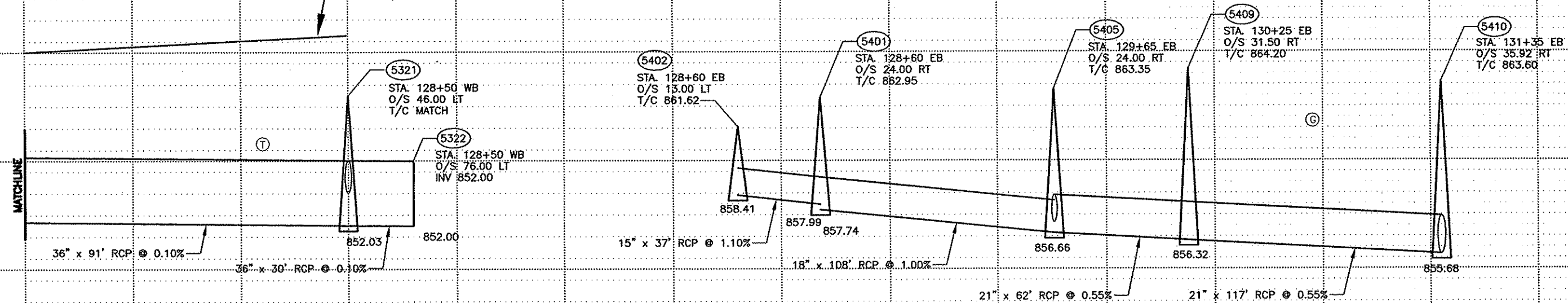
ANOKA COUNTY
HIGHWAY DEPT.

PROJECT NO.
ANOKA COUNTY S.P. 02-716-07
CITY OF ANOKA S.P. 103-122-12
CITY OF RAMSEY S.P. 199-020-04

DRAINAGE PROFILE
PAGE 3 OF 4
Sheet 56 of 120 Sheets

NOTE:
SEE LEGEND ON SHEET 54.

PROFILE GRADE
(TOP OF FINISHED
SURFACE)



NO	DATE	BY	CKD	APPR	REVISION

NAME: G:\SHEET\17368_KH_04.DWG

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

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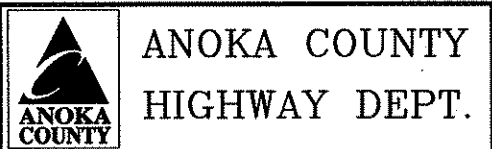
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DATE: 18 JUNE 2005 LICENSE NO. 42462

DRAWN BY: RLH/DJS DATE 02/18/05

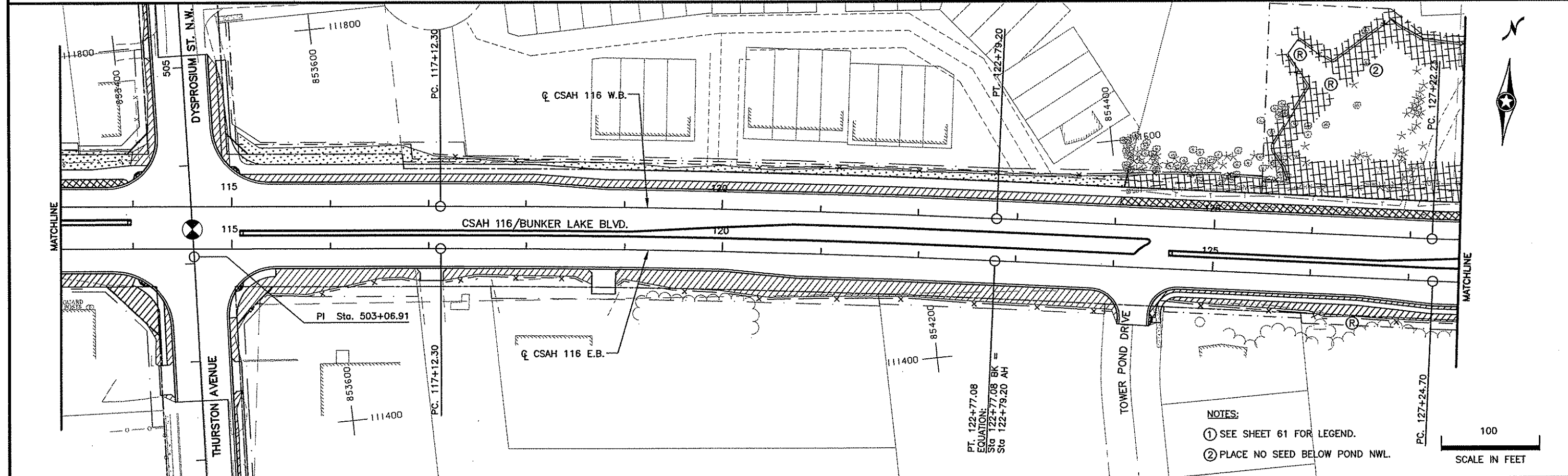
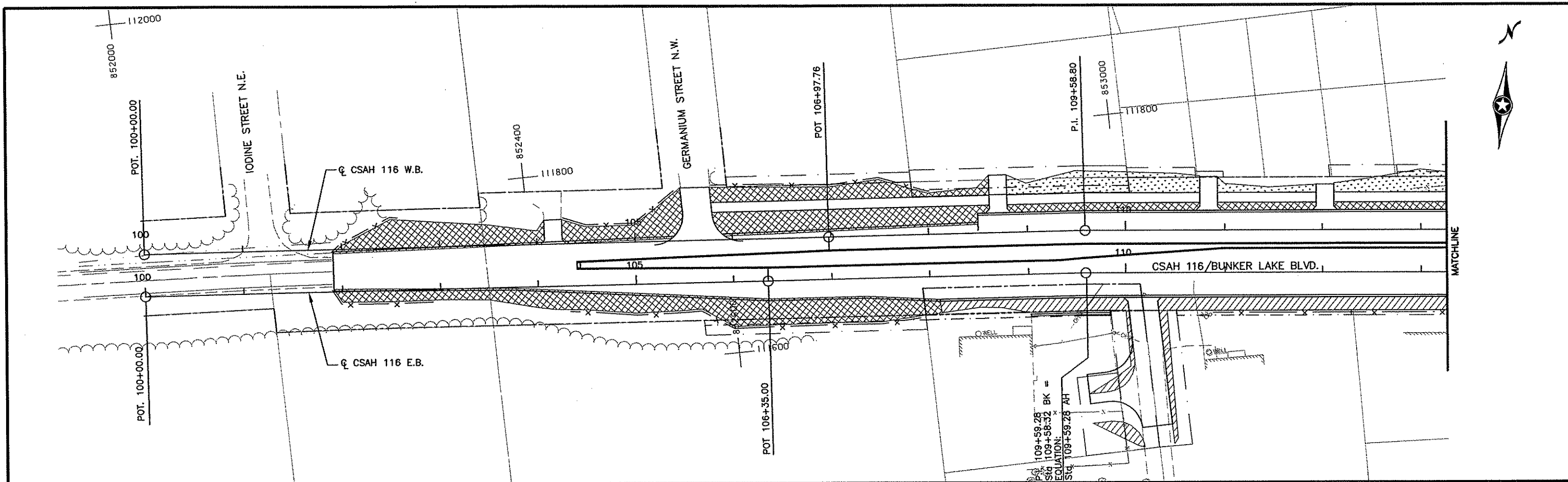
DESIGN BY: AJP/EDD DATE 02/18/05

CHECKED BY: AJP DATE 02/18/05



PROJECT NO.
ANOKA COUNTY S.P. 02-716-07
CITY OF ANOKA S.P. 103-122-12
CITY OF RAMSEY S.P. 199-020-04

DRAINAGE PROFILE
PAGE 4 OF 4
Sheet 57 of 120 Sheets



- NOTES:
- ① SEE SHEET 61 FOR LEGEND.
 - ② PLACE NO SEED BELOW POND NWL.

NO	DATE	BY	CKD	APPR	REVISION

NAME: G:\SHEET\17366_MJ_01.DWG

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

PRINT NAME: ALAN J. PALMER, P.E.

SIGNATURE: *Alan J. Palmer*


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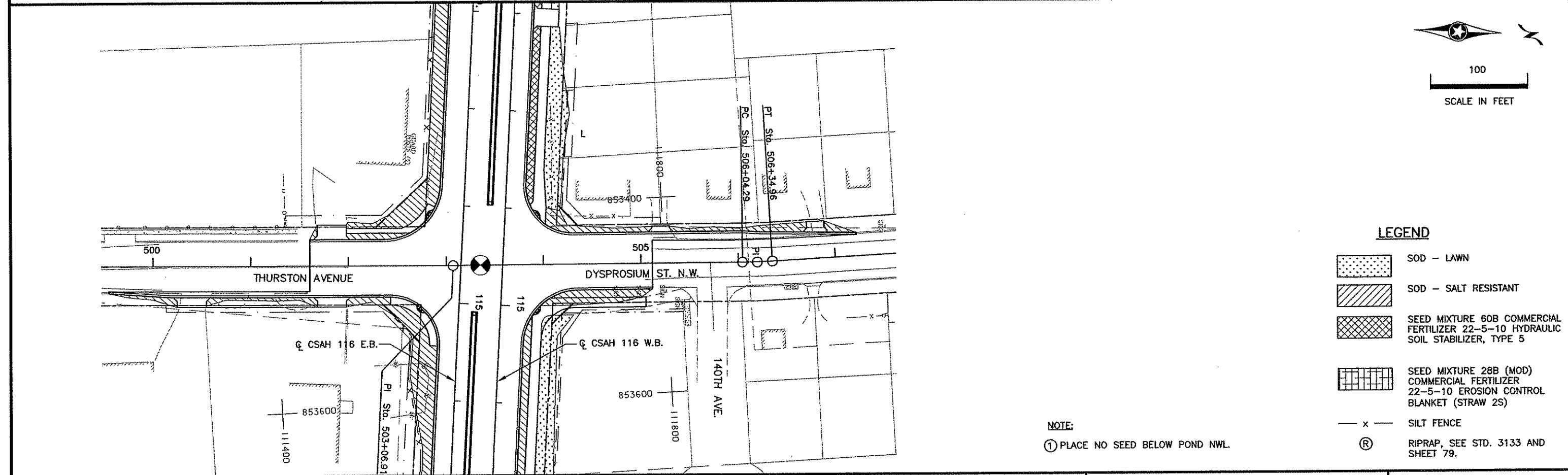
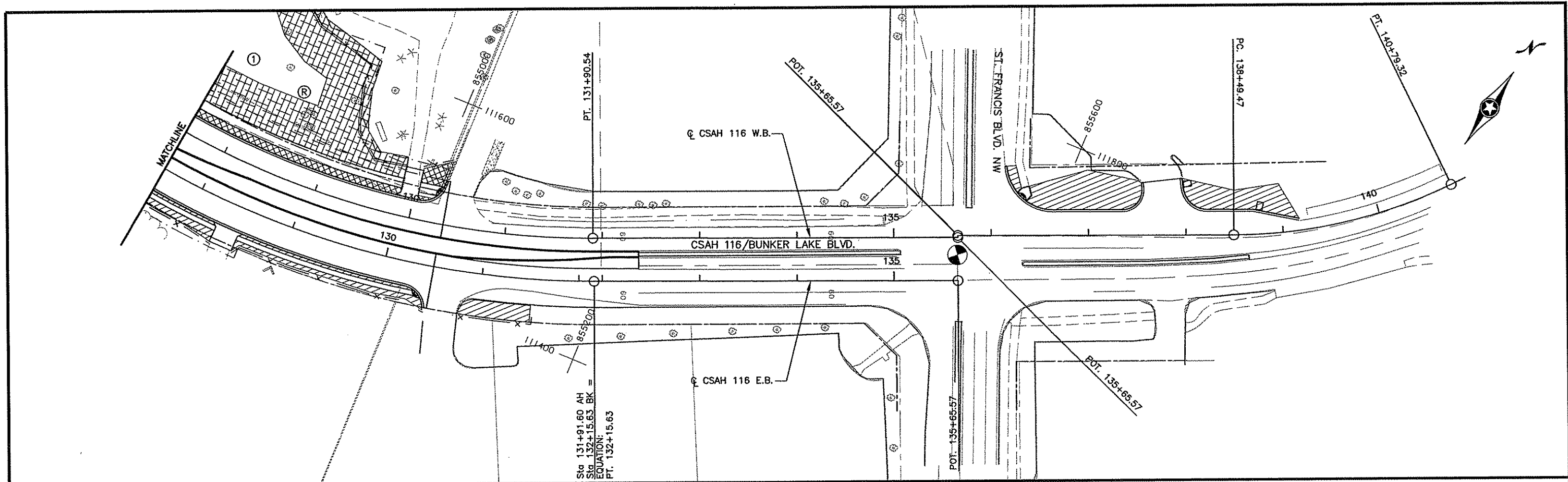
CHECKED BY: AJP DATE 02/18/05

ANOKA COUNTY
HIGHWAY DEPT.




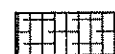
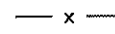



PROJECT NO. ANOKA COUNTY S.P. 02-716-07
CITY OF ANOKA S.P. 103-122-12
CITY OF RAMSEY S.P. 199-020-04

TURF ESTABLISHMENT AND EROSION CONTROL
PAGE 1 OF 2
Sheet 60 of 120 Sheets



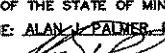
LEGEND

-  SOD - LAWN
-  SOD - SALT RESISTANT
-  SEED MIXTURE 60B COMMERCIAL FERTILIZER 22-5-10 HYDRAULIC SOIL STABILIZER, TYPE 5
-  SEED MIXTURE 28B (MOD) COMMERCIAL FERTILIZER 22-5-10 EROSION CONTROL BLANKET (STRAW 2S)
-  SILT FENCE
-  RIPRAP, SEE STD. 3133 AND SHEET 79.

NOTE:
 ① PLACE NO SEED BELOW POND NWL.

NO	DATE	BY	CKD	APPR	REVISION

NAME: Q:\SHEET\17366_MJ_02.DWG

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 PRINT NAME: ALAN L. PALMER, P.E.
 SIGNATURE: 
 DATE: 18 JUNE 2005 LICENSE NO. 42452

DRAWN BY RLH/DJS DATE 02/18/05
 DESIGN BY AJP/EDD DATE 02/18/05
 CHECKED BY AJP DATE 02/18/05



**ANOKA COUNTY
 HIGHWAY DEPT.**

PROJECT NO.
 ANOKA COUNTY S.P. 02-716-07
 CITY OF ANOKA S.P. 103-122-12
 CITY OF RAMSEY S.P. 199-020-04

**TURF ESTABLISHMENT
 AND EROSION CONTROL**
 PAGE 2 OF 2
 Sheet 61 of 120 Sheets

GENERAL NOTES:

- 1) LOCATION OF ALL SIGNS AND PAVEMENT MARKINGS SHOWN ARE APPROXIMATE AND SHALL BE LOCATED BY THE ENGINEER IN THE FIELD PRIOR TO INSTALLATION.
- 2) SEE STANDARD SIGNS MANUAL FOR DETAILED DRAWINGS OF TYPE C SIGN PANELS.
- 3) PUNCHING CODES FOR TYPE C SIGN PANELS SHALL BE GOVERNED BY THE NUMBER OF SIGN POSTS SPECIFIED ON THE PLANS AT EACH LOCATION (NOT BY WHAT IS SHOWN ON THE DETAILED DRAWINGS IN THE STANDARD SIGNS MANUAL). DIMENSIONS SHALL BE AS SPECIFIED ON PAGES 108-III OF THE STANDARD SIGNS MANUAL.
- 4) SEE SPECIAL PROVISIONS REGARDING STRUCTURAL DETAILS FOR TYPE C SIGN PANELS.
- 5) COORDINATE INSTALLATION OF ALL SIGN POSTS AND PAVEMENT MARKINGS WITH SIDEWALK AND ROAD CONSTRUCTION.
- 6) ① = MOUNTED ABOVE, BELOW, OR WITH OTHER SIGN PANEL ON SAME POST.
- 7) ALL NEW TYPE C SIGN PANELS, STREET NAME SIGN PANELS, AND X4-2 SIGN PANELS SHALL BE FABRICATED USING VIP SHEETING. SEE SPECIAL PROVISIONS.
- 8) NEW STREET NAME SIGNS SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR (SEE SPECIAL PROVISIONS).
- 9) ISLAND SIGN MOUNTS WILL BE PROVIDED BY ANOKA COUNTY.

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

THE ROAD SURFACE SHALL BE CLEANED AT THE DIRECTION OF THE ENGINEER JUST PRIOR TO APPLICATION. PAVEMENT CLEANING SHALL CONSIST OF AT LEAST BRUSHING WITH A ROTARY BROOM (NON-METALLIC) OR AS RECOMMENDED BY THE MATERIAL MANUFACTURER AND ACCEPTABLE TO THE ENGINEER. NEW PORTLAND CEMENT CONCRETE SURFACES SHALL BE SANDBLAST CLEANED TO REMOVE ANY SURFACE 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 MILL THICKNESS (WET), REQUIRES AN APPLICATION RATE OF (1) GALLON OF COMPONENTS FOR 320 FEET OF LINE. GLASS BEADS SHALL BE APPLIED AT A 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 TAPE MARKINGS.

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 120° F. APPLICATION BELOW 120° F MAY NOT GET PROPER INLAY. INLAYS ARE NOT RECOMMENDED AFTER SEPTEMBER 15TH AS THE ASPHALT COOLS TOO FAST AT THIS TIME OF THE YEAR.

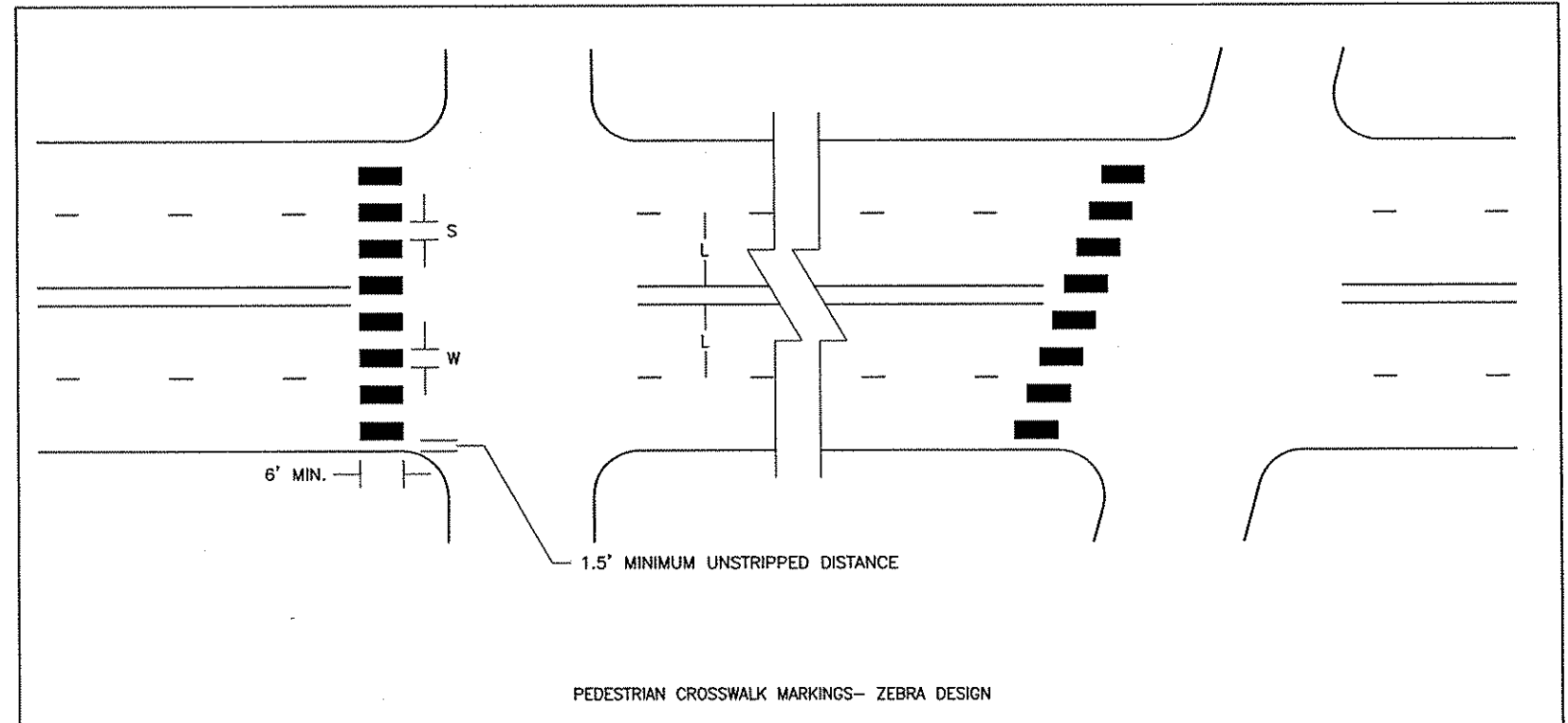
NO PRIMERS ARE USED FOR INLAY APPLICATION. DO NOT INSTALL LANE LINES ON AN ASPHALT SEAM. ROLLING OF ALL THE MARKINGS SHOULD BE LENGTHWISE IN THE DIRECTION THEY WERE LAID. FOR CROSSWALKS AND STOP BARS, INITIAL TAMPING WITH THE TAMPING CART IS RECOMMENDED USING ONLY 100 LBS. OF WEIGHT.

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.

(L) WIDTH OF INSIDE LANE	(W) WIDTH OF PAINTED AREA	(S) WIDTH OF SPACE
9'	3.0'	3.0'
10'	3.0'	3.0'
11'	3.0'	3.0'
12'	3.0'	3.0'
13'	3.0'	3.0'

NOTES:

1. PAINTED AREAS TO BE CENTERED ON CENTERLINE AND LANE LINES.
2. A MINIMUM OF 1.5 FEET CLEAR DISTANCE SHALL BE LEFT ADJACENT TO THE CURB. IF THE LAST PAINTED AREA FALLS INTO THIS DISTANCE, IT MUST BE OMITTED.
3. ON TWO-LANE, TWO-WAY STREETS, USE THE SPACING SHOWN FOR A 11 FOOT INSIDE LANE.
4. 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.
5. AT SKEWED CROSSWALKS, THE BLOCKS ARE TO REMAIN PARALLEL TO THE LANE LINES AS SHOWN



LEGEND

- TYPE C SIGN PANEL SUPPORTS
- 4" DOUBLE SOLID YELLOW PAVEMENT MARKING
- 4" SOLID WHITE PAVEMENT MARKING
- 4" BROKEN WHITE PAVEMENT MARKING (10:40)
- ZEBRA CROSSWALK - WHITE (POLY PREFORMED)
- 24" SOLID WHITE STOP BAR (POLY PREFORMED)
- PAVEMENT SYMBOLS/MESSAGES - WHITE (POLY PREFORMED)
- 4" DOUBLE SOLID YELLOW PAVEMENT MARKING SURROUNDING 24" SOLID YELLOW PAVEMENT MARKING @ 45°, 20' C-C

NO	DATE	BY	CHKD	APPR	REVISION

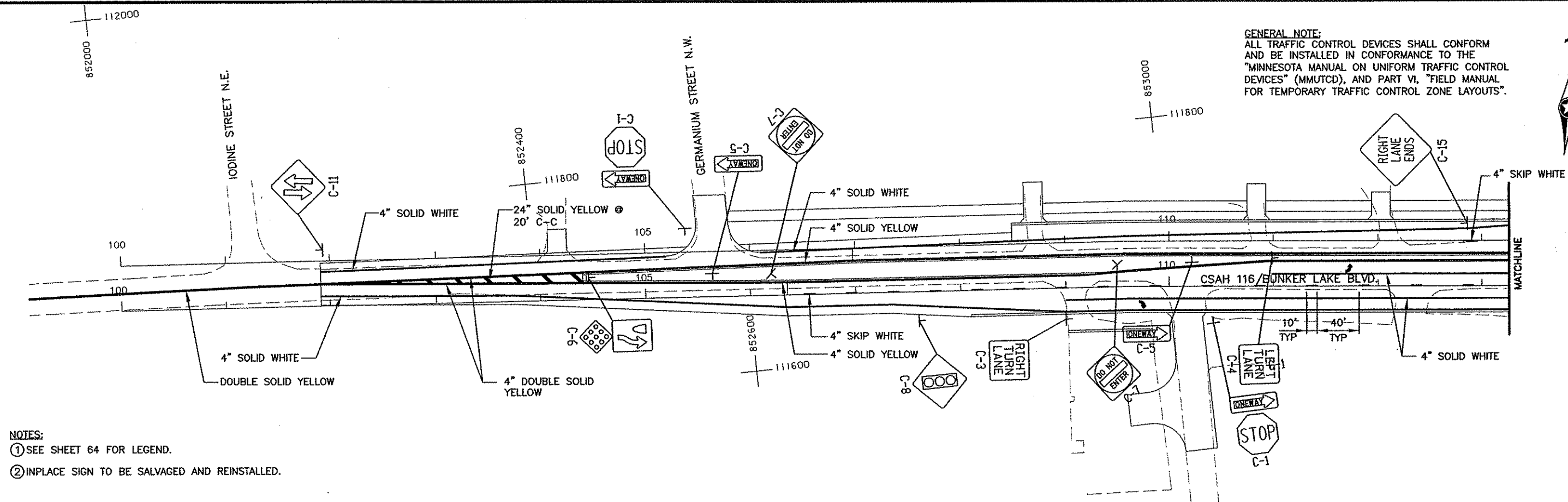
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 PRINT NAME: ALAN J. PALMER, P.E.
 SIGNATURE:
 DATE: 18 JUNE 2005 LICENSE NO. 42452

DRAWN BY: RLH/DJS DATE: 02/18/05
 DESIGN BY: AJP/EDD DATE: 02/18/05
 CHECKED BY: AJP DATE: 02/18/05

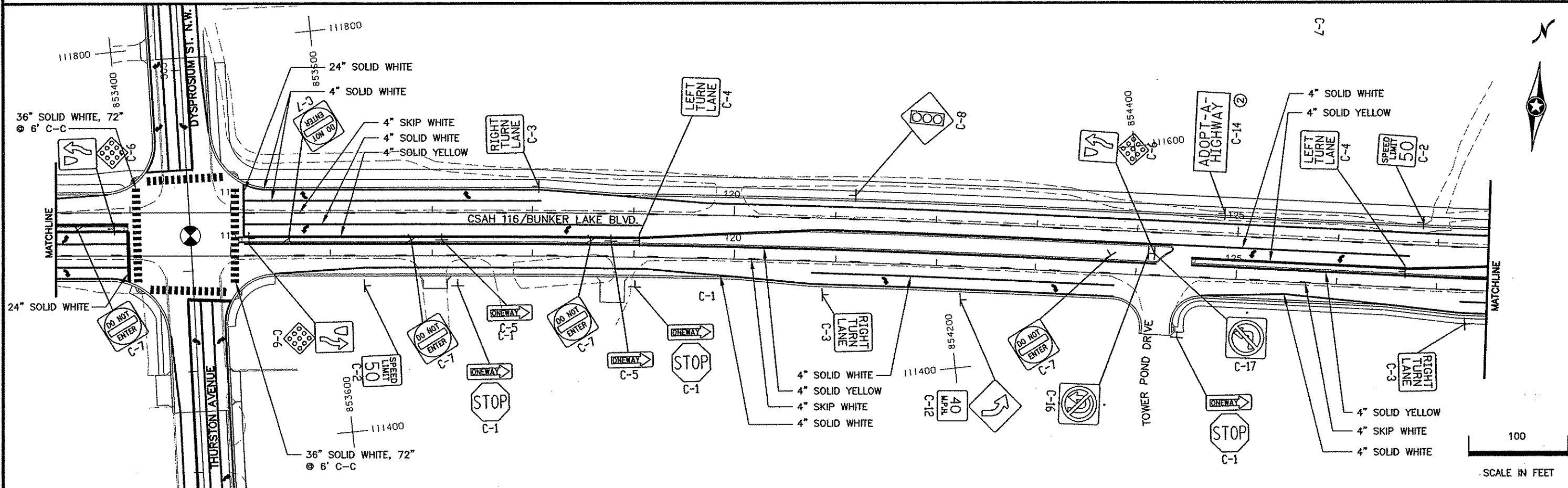
ANOKA COUNTY
HIGHWAY DEPT.

PROJECT NO. ANOKA COUNTY S.P. 02-716-07
 CITY OF ANOKA S.P. 103-122-12
 CITY OF RAMSEY S.P. 199-020-04

GENERAL NOTE:
 ALL TRAFFIC CONTROL DEVICES SHALL CONFORM AND BE INSTALLED IN CONFORMANCE TO THE "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MMUTCD), AND PART VI, "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS".



- NOTES:
 ① SEE SHEET 64 FOR LEGEND.
 ② INPLACE SIGN TO BE SALVAGED AND REINSTALLED.



100
 SCALE IN FEET

NO	DATE	BY	CKD	APPR	REVISION

NAME: Q:\SHEET\17366_PC_01.DWG

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 PRINT NAME: ALAN L. PALMER, P.E.
 SIGNATURE: *[Signature]*
 DATE: 18 JUNE 2005 LICENSE NO. 42462

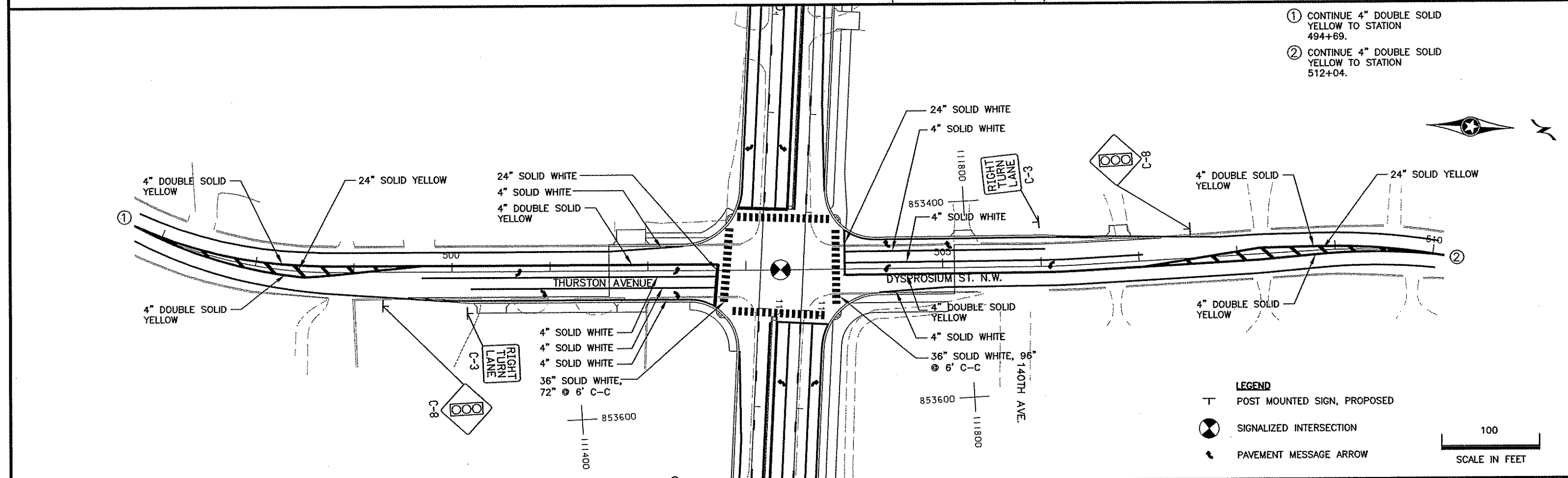
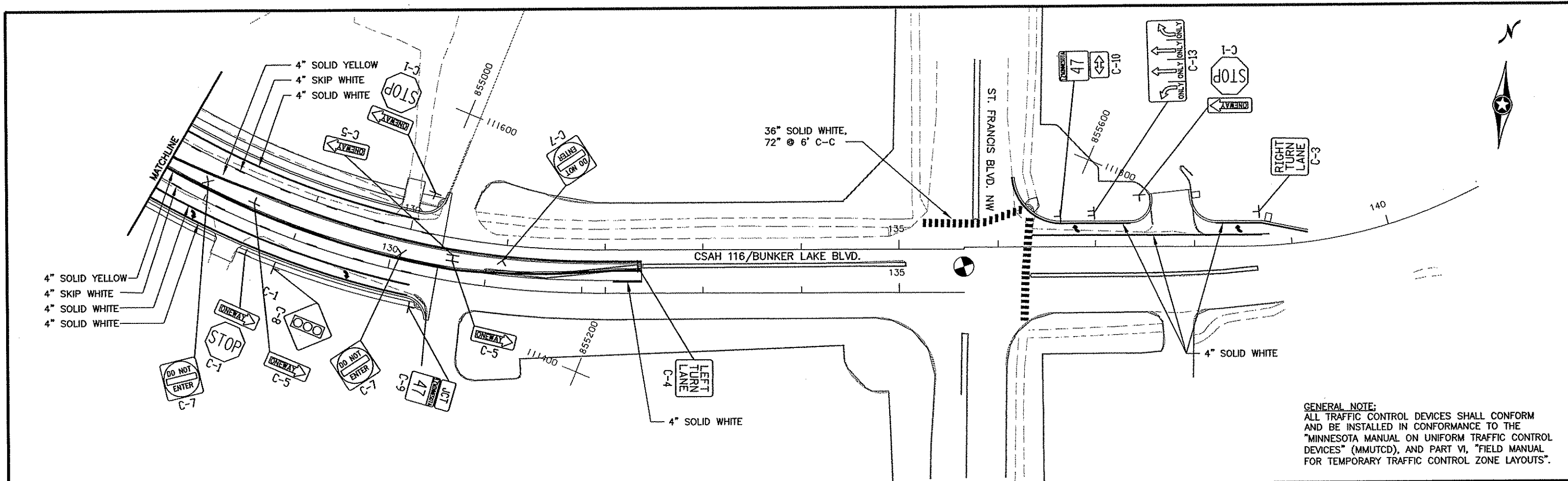
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 CITY OF ANOKA S.P. 103-122-12
 CITY OF RAMSEY S.P. 199-020-04

SIGNAGE AND
 PAVEMENT MARKING
 PAGE 1 OF 2
 Sheet 63 of 120 Sheets



I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA. PRINT NAME: ALAN J. FALBER, P.E. SIGNATURE: <i>[Signature]</i> DATE: 18 JUNE 2005 LICENSE NO. 42462					DRAWN BY: RLH/DJS. DATE 02/18/05 DESIGN BY: AJP/EDD. DATE 02/18/05 CHECKED BY: AJP. DATE 02/18/05		ANOKA COUNTY HIGHWAY DEPT. PROJECT NO. ANOKA COUNTY CITY OF ANOKA CITY OF RAMSEY S.P. 02-716-07 S.P. 103-122-12 S.P. 199-020-04		SIGNAGE AND PAVEMENT MARKING PAGE 2 OF 2 Sheet 64 of 120 Sheets	
NO	DATE	BY	CKD	APPR	REVISION					

SIGN PANELS TYPE C											R
SIGN NO.	TOTAL QUANTITY	POSTS			MTG HT.	SIZE	AREA	TOTAL AREA	CODE NO.	PANEL LEGEND	
		NO. & TYPE	KNEE BRACE QUANT.	LENGTH (FT)							
				(FT)	(FT)	(IN.)	(SQ FT)	(SQ FT)			
C-1	8	U		14	7	30 x 30	6.25	50.00	R1-1	STOP	
						36 x 12	3.00	24.00	R6-1(R)	ONE WAY	
C-2	2	U		13	7	24 x 30	5.00	10.00	R2-1	SPEED LIMIT	
C-3	7	U		13	7	30 x 30	6.25	43.75	R3-X1	RIGHT TURN LANE	
C-4	3	U		13	7	30 x 30	6.25	18.75	R3-X2	LEFT TURN LANE	
C-5	8	U		12	7	36 x 12	3.00	24.00	R6-1(R)	ONE WAY	
C-6	4	U		12	4	24 x 30	5.00	20.00	R4-7	KEEP RIGHT	
						18 x 18	2.25	9.00	X4-2	HAZARD MARKER	
C-7	10	U		13	7	30 x 30	6.25	62.50	R5-1	DO NOT ENTER	
C-8	5	U		14	7	36 x 36	9.00	45.00	W3-3	SIGNAL AHEAD	
C-9	1	U		14	7	24 x 15	2.50	2.50	M2-1A	JCT	
						24 x 24	4.00	4.00	M1-5B	MINNESOTA 47	
C-10	1	U		14	7	24 x 24	4.00	4.00	M1-5B	MINNESOTA 47	
						21 x 15	2.19	2.19	M6-4A	DOUBLE ARROW	
C-11	1	U				30 x 30	6.25	6.25	W6-3	TWO WAY TRAFFIC	
C-12	1	U		14	7	30 x 30	6.25	6.25	W1-2(L)	CURVE LEFT	
						18 x 18	2.25	2.25	W13-1	ADVISORY SPEED (NORTH FRONTAGE ROAD)	
C-13	1	2-U		13	7	66 x 30	13.75	13.75	R3-30ACCA	LANE USE CONTROL	
C-14	1	2-U		14	7	42 x 24	7.00	7.00	I-X1	ADOPT-A-HIGHWAY (1)	
C-15	1	U		13	7	24 x 24	4.00	4.00	W9-1R	RIGHT LANE ENDS	
C-16	1	U		13	7	24 x 24	4.00	4.00	R3-4	NO U TURN	
C-17	1	U		13	7	24 x 24	4.00	4.00	R3-2	NO LEFT TURN	
TOTAL								367.19			
SPECIFIC NOTE											
(1) SALVAGE AND REINSTALL											
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											

NO	DATE	BY	CKD	APPR	REVISION

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

PRINT NAME: ALAN J. PALMER - P.E.

SIGNATURE: *[Signature]*

DATE: 18 JUNE 2005 LICENSE NO. 42462

DRAWN BY: RLH/DJS DATE: 02/18/05

DESIGN BY: AJP/EDD DATE: 02/18/05

CHECKED BY: AJP DATE: 02/18/05



ANOKA COUNTY
HIGHWAY DEPT.

PROJECT NO.
ANOKA COUNTY S.P. 02-716-07
CITY OF ANOKA S.P. 103-122-12
CITY OF RAMSEY S.P. 199-020-04

C SIGN DATA SHEET
PAGE 1 OF 1
Sheet 65 of 120 Sheets

SIGN PANELS TYPE D (PERMANENT - WHITE ON GREEN)									S
SIGN NO.	QUANT.	MOUNTING	SIZE (IN.)	AREA EACH (SQ FT)	TOTAL AREA (SQ FT)	ANOKA COUNTY TOTAL (SQ FT)	CITY OF ANOKA TOTAL (SQ FT)	CITY OF RAMSEY TOTAL (SQ FT)	PANEL LEGEND
BL	2	MAST ARM	132 X 24	22.00	44.00	44.00			BUNKER LAKE BLVD
TD	1	MAST ARM	132 X 42	38.50	38.50	38.50			THURSTON AVE / DYSPROSIUM ST
DT	1	MAST ARM	132 X 42	38.50	38.50	38.50			DYSPROSIUM ST / THURSTON AVE
ANOKA COUNTY TOTALS:						121.00			
CITY OF ANOKA TOTALS:							0.00		
CITY OF RAMSEY TOTALS:								0.00	


SPECIFIC NOTE:

1. THESE SIGNS TO BE PAID FOR UNDER SPEC. 2563 - TRAFFIC CONTROL.

GENERAL NOTES:

- POST LENGTHS ARE APPROXIMATE AND INCLUDE EMBEDMENT BUT DO NOT INCLUDE ADDITIONAL LENGTH REQUIRED FOR SPLICE.
- SEE STANDARD SIGNS MANUAL FOR PUNCHING CODE AND DETAILED DRAWINGS OF TYPE C SIGN PANELS.

NO	DATE	BY	CKD	APPR	REVISION

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ANOKA COUNTY
 HIGHWAY DEPT.


PROJECT NO.
 ANOKA COUNTY S.P. 02-716-07
 CITY OF ANOKA S.P. 103-122-12
 CITY OF RAMSEY S.P. 199-020-04

D SIGN DATA SHEET
 PAGE 1 OF 1

Sheet 66 of 120 Sheets

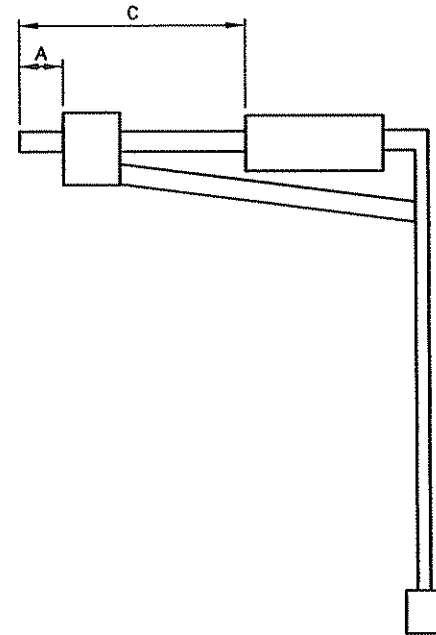
SALVAGE SIGN TYPE C						T
SIGN NO.	QUANTITY	POSTS		PANEL SIZE (IN.)	PANEL LEGEND	
		NO. & TYPE	KNEE BRACES QUANT.			
C-201	4	2-U		30 x 30	STOP	
C-202	6	2-U		36 x 36	STOP AHEAD	
C-203	2	1-U		30 x 30	RIGHT TURN LANE	
C-204	7	2-U		30 x 30	STOP	
				12 X 6	ALL WAY	
C-205	2	2-U		24 x 30	SPEED LIMIT 50	
C-206	1	2-U		36 X 36	RIGHT LANE ENDS	
C-207	2	2-U			ANOKA HENNEPIN TECHNICAL COLLEGE	
C-208	1	2-U		36 X 36	CURVE LEFT	
				18 X 18	40 M.P.H.	
C-209	1	2-U		36 X 36 X 48	NO PASSING ZONE	
C-210	1			42 X 24	ADOPT A HIGHWAY	
C-211	1	2-U		36 X 36	SIGNAL AHEAD	
C-212	1	2-U		36 X 36	MERGE (LEFT ARROW)	
C-213	1	1-U		21 X 15	JCT	
				24 x 24	MINNESOTA 47	
C-214	1	1-U		24 X 30	KEEP RIGHT	
				18 X 18	HAZARD MARKER	
C-215	1	1-U		30 x 30	DO NOT ENTER	
C-216	2	1-U		30 x 30	LEFT TURN LANE	
C-217	1	1-U		24 x 24	MINNESOTA 47	
				20 X 15	HORIZONTAL DOUBLE ARROW	
C-218	1	2-U		54 X 30	LANE USE CONTROL	
				36 X 12	ONE WAY	
C-219	1	1-U		36 X 12	ONE WAY	
				30 x 30	STOP	
C-220	1			? X 24	BUNKER LAKE BLVD	
C-221	1	1-U		18 X 30	CLEARANCE MARKER (L)	
C-222	1	2-U		36 X 36	LANE REDUCTION TRANSITION	
				24 X 30	SPEED LIMIT 15	
C-223	1	1-U		12 X 18	PRIVATE DRIVE	
				30 X 18	PRIVATE PROPERTY RESIDENTS & GUESTS ONLY	
C-224	1	1-U		36 X 12	ONE WAY	
				36 X 12	ONE WAY	
C-225	4			18 X 6	BUNKER LAKE BLVD (1)	
C-226	1			18 X 6	GERMANIUM ST (1)	
C-227	1			18 X 6	THURSTON AVE (1)	
C-228	1			18 X 6	DYSPROSIUM ST (1)	
C-229	1			18 X 6	TOWER POND BLVD (1)	
TOTAL	50					

① STREET SIGNS, SPECIAL

					I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA. PRINT NAME: <u>ALAN J. PALMER, P.E.</u> SIGNATURE: <u>[Signature]</u> DATE: <u>18 JUNE 2005</u> LICENSE NO. <u>42462</u>		DRAWN BY: <u>RLH/DJS</u> DATE: <u>02/18/05</u> DESIGN BY: <u>AJP/EDD</u> DATE: <u>02/18/05</u> CHECKED BY: <u>AJP</u> DATE: <u>02/18/05</u>		 ANOKA COUNTY HIGHWAY DEPT.		PROJECT NO. _____ ANOKA COUNTY <u>S.P. 02-716-07</u> CITY OF ANOKA <u>S.P. 103-122-12</u> CITY OF RAMSEY <u>S.P. 199-020-04</u>		SIGN SALVAGE DATA SHEET PAGE 1 OF 1 Sheet <u>67</u> of <u>120</u> Sheets	
NO	DATE	BY	CKD	APPR	REVISION									
NAME: G:\SHEET\17366_OP_03.DWG														

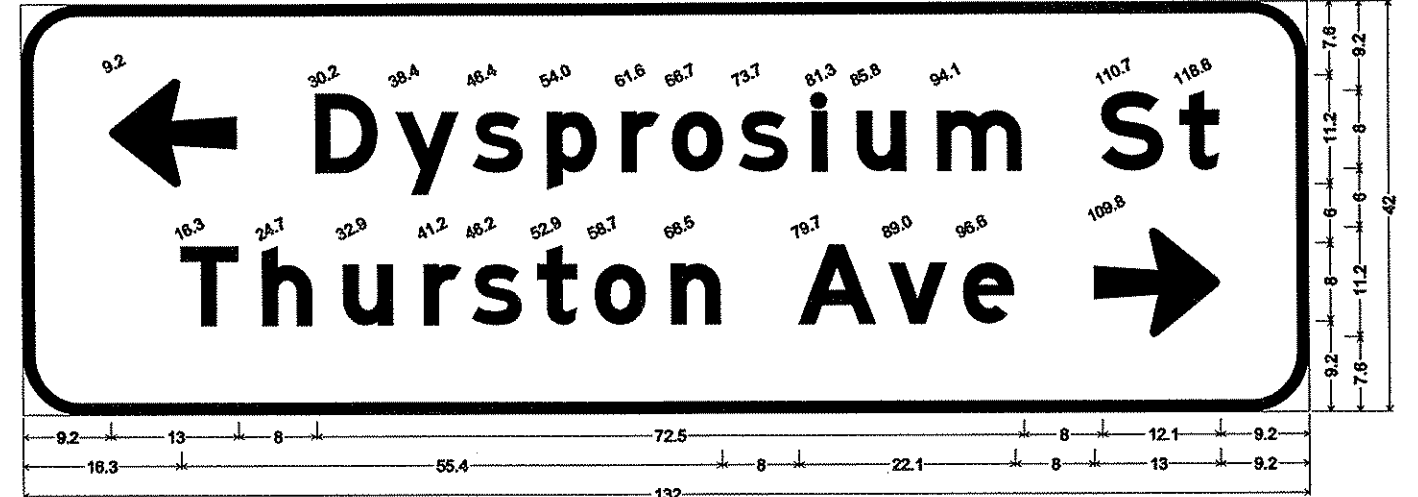
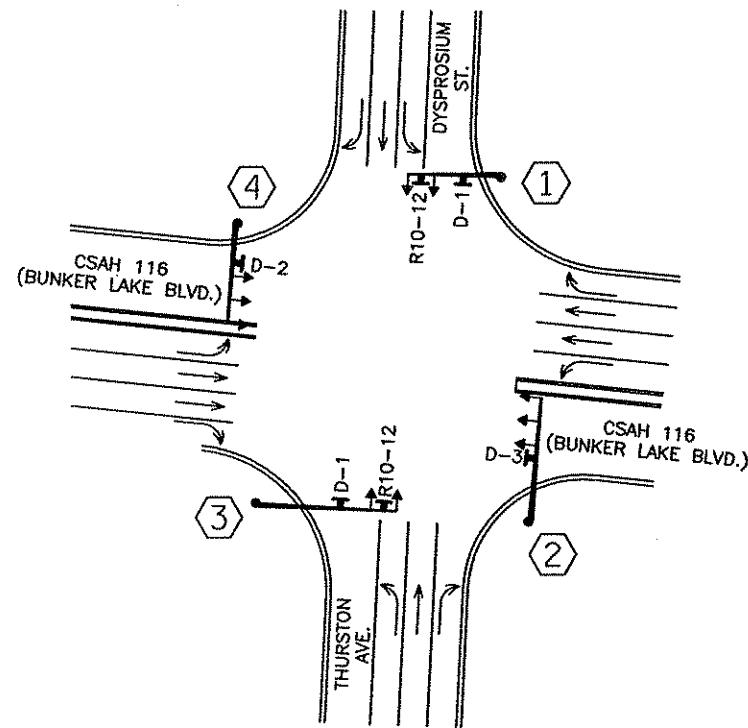
SIGN PANELS TYPE C (MAST ARM)							
SIGN PANEL	SIZE (inches)	NO. REQ.	MOUNTING BRACKETS		AREA PER SIGN (sq. ft.)	POLE NO.	A (ft.)
			NO.	SPACING (in.)(2)			
R10-12	24x30	1	2	18	5.00	1	2
R10-12	24x30	1	2	18	5.00	3	2
R6-1R	36x12	1	(1)	-	3.00	2	-
R6-1L	36x12	1	(1)	-	3.00	2	-
R6-1R	36x12	1	(1)	-	3.00	4	-
R6-1L	36x12	1	(1)	-	3.00	4	-
TOTAL					22.00		

SIGN PANELS TYPE D (MAST ARM)							
SIGN PANEL	SIZE (inches)	NO. REQ.	MOUNTING BRACKETS		AREA PER SIGN (sq. ft.)	POLE NO.	C (ft.)
			NO.	SPACING (in.)(2)			
D-1	132x24	1	5	-	22.00	1	20
D-3	132x42	1	5	-	38.50	2	26
D-1	132x24	1	5	-	22.00	3	20
D-2	132x42	1	5	-	38.50	4	29
TOTAL					121.00		

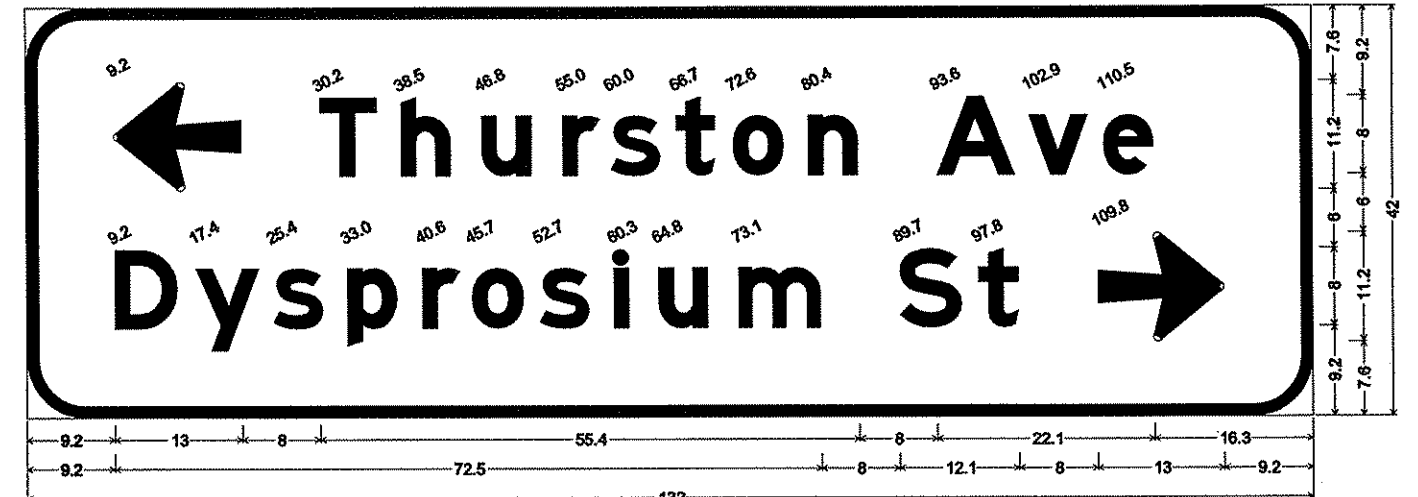


MAST ARM SIGN LOCATION

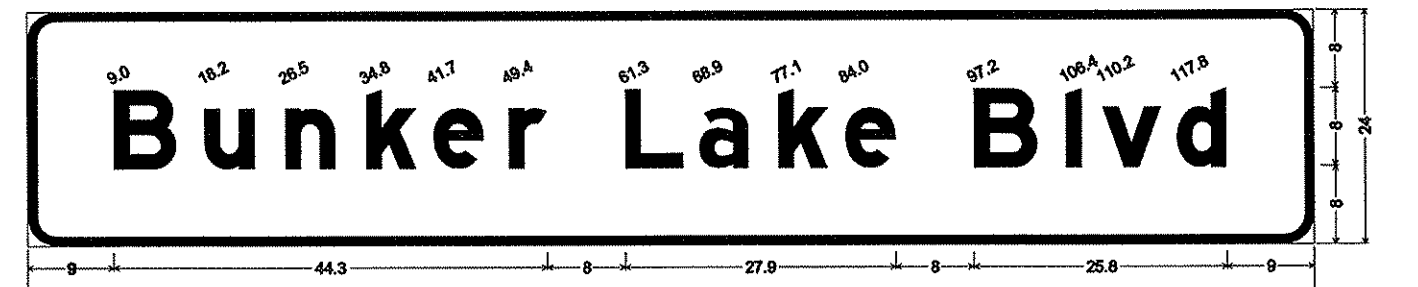
- (1) SIGN SHALL BE MOUNTED ON TRAFFIC SIGNAL MAST ARM POLE AS NOTED IN THE PLANS AND SPECIAL PROVISIONS.
- (2) SPACING BETWEEN STIFFENERS SHALL NOT EXCEED 36" AND SHALL BE UNIFORMLY SPACED. SEE SPECIAL PROVISIONS FOR BRACKET SPACING REQUIREMENTS.



D-3; 6.0" Radius, 1.3" Border, White on Green;
Arrow 5 - 13.0° 180°; [Dysprosium St] E Mod; [Thurston Ave] E Mod; Arrow 5 - 13.0° 0°;



D-2; 6.0" Radius, 1.3" Border, White on Green;
Arrow 5 - 13.0° 180°; [Thurston Ave] E Mod; [Dysprosium St] E Mod; Arrow 5 - 13.0° 0°;




D-1; 3.0" Radius, 1.0" Border, White on Green;
[Bunker Lake Blvd] E Mod;

NOTES:

- 1) FURNISHING AND INSTALLING TYPE C AND TYPE D SIGNS SHALL BE INCIDENTAL TO THE SIGNAL SYSTEM PAY ITEM.
- 2) CORNERS EXTENDING BEYOND THE BORDER SHALL NOT BE TRIMMED.
- 3) FOR ARROW AND OVERLAY DETAILS, SEE STANDARD SIGNS MANUAL.
- 4) FOR TYPE D STRINGER AND PANEL JOINT DETAIL, SEE STANDARD SIGNS MANUAL.

NO.	DATE	BY	CKD	APPR	REVISION

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 PRINT NAME: ALAN L. PALMER, P.E.
 SIGNATURE: 
 DATE: 18 JUNE 2005 LICENSE NO. 42462

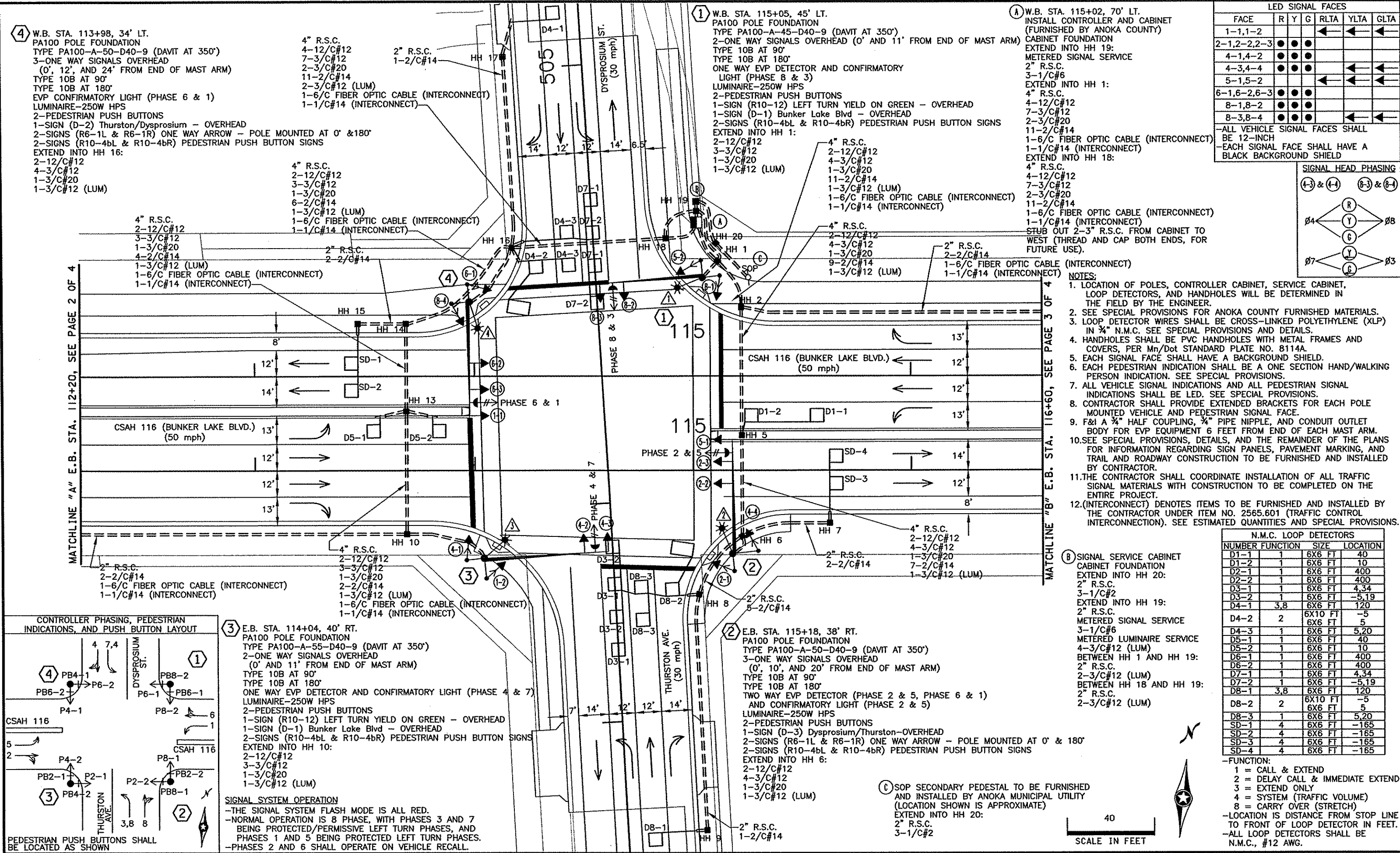
DRAWN BY: RLH/DJS DATE 02/18/05
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ANOKA COUNTY
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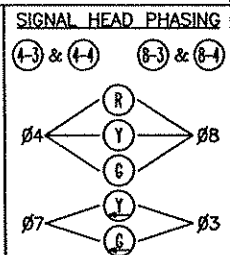
SIGNAL PLAN
 SIGNING DETAILS
 PAGE 1 OF 1



LED SIGNAL FACES

FACE	R	Y	G	RLTA	YLTA	GLTA
1-1,1-2				←	←	←
2-1,2-2,2-3	●	●	●			
4-1,4-2	●	●	●			
4-3,4-4	●	●	●	←	←	←
5-1,5-2				←	←	←
6-1,6-2,6-3	●	●	●			
8-1,8-2	●	●	●			
8-3,8-4	●	●	●	←	←	←

-ALL VEHICLE SIGNAL FACES SHALL BE 12-INCH
-EACH SIGNAL FACE SHALL HAVE A BLACK BACKGROUND SHIELD

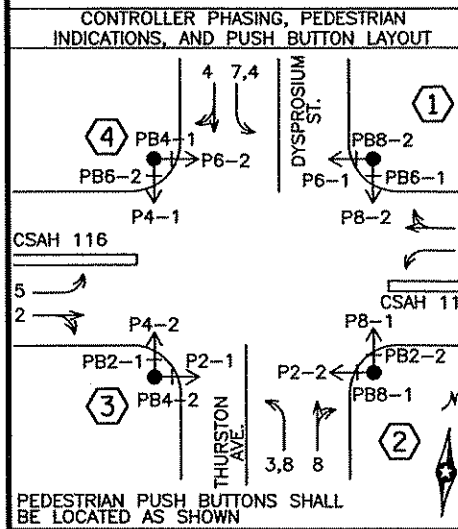


- NOTES:
1. LOCATION OF POLES, CONTROLLER CABINET, SERVICE CABINET, LOOP DETECTORS, AND HANDHOLES WILL BE DETERMINED IN THE FIELD BY THE ENGINEER.
 2. SEE SPECIAL PROVISIONS FOR ANOKA COUNTY FURNISHED MATERIALS.
 3. LOOP DETECTOR WIRES SHALL BE CROSS-LINKED POLYETHYLENE (XLP) IN 3/4" N.M.C. SEE SPECIAL PROVISIONS AND DETAILS.
 4. HANDHOLES SHALL BE PVC HANDHOLES WITH METAL FRAMES AND COVERS, PER Mn/DOT STANDARD PLATE NO. 8114A.
 5. EACH SIGNAL FACE SHALL HAVE A BACKGROUND SHIELD.
 6. EACH PEDESTRIAN INDICATION SHALL BE A ONE SECTION HAND/WALKING PERSON INDICATION. SEE SPECIAL PROVISIONS.
 7. ALL VEHICLE SIGNAL INDICATIONS AND ALL PEDESTRIAN SIGNAL INDICATIONS SHALL BE LED. SEE SPECIAL PROVISIONS.
 8. CONTRACTOR SHALL PROVIDE EXTENDED BRACKETS FOR EACH POLE MOUNTED VEHICLE AND PEDESTRIAN SIGNAL FACE.
 9. F&I A 3/4" HALF COUPLING, 3/4" PIPE NIPPLE, AND CONDUIT OUTLET BODY FOR EVP EQUIPMENT 6 FEET FROM END OF EACH MAST ARM.
 10. SEE SPECIAL PROVISIONS, DETAILS, AND THE REMAINDER OF THE PLANS FOR INFORMATION REGARDING SIGN PANELS, PAVEMENT MARKING, AND TRAIL AND ROADWAY CONSTRUCTION TO BE FURNISHED AND INSTALLED BY CONTRACTOR.
 11. THE CONTRACTOR SHALL COORDINATE INSTALLATION OF ALL TRAFFIC SIGNAL MATERIALS WITH CONSTRUCTION TO BE COMPLETED ON THE ENTIRE PROJECT.
 12. (INTERCONNECT) DENOTES ITEMS TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR UNDER ITEM NO. 2565.601 (TRAFFIC CONTROL INTERCONNECTION). SEE ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.

N.M.C. LOOP DETECTORS

NUMBER	FUNCTION	SIZE	LOCATION
D1-1	1	6X6 FT	40
D1-2	1	6X6 FT	10
D2-1	1	6X6 FT	400
D2-2	1	6X6 FT	400
D3-1	1	6X6 FT	4,34
D3-2	1	6X6 FT	-5,19
D4-1	3,8	6X6 FT	120
D4-2	2	6X10 FT	-5
D4-3	1	6X6 FT	5,20
D5-1	1	6X6 FT	40
D5-2	1	6X6 FT	10
D6-1	1	6X6 FT	400
D6-2	1	6X6 FT	400
D7-1	1	6X6 FT	4,34
D7-2	1	6X6 FT	-5,19
D8-1	3,8	6X6 FT	120
D8-2	2	6X10 FT	-5
D8-3	1	6X6 FT	5,20
SD-1	4	6X6 FT	-165
SD-2	4	6X6 FT	-165
SD-3	4	6X6 FT	-165
SD-4	4	6X6 FT	-165

-FUNCTION:
 1 = CALL & EXTEND
 2 = DELAY CALL & IMMEDIATE EXTEND
 3 = EXTEND ONLY
 4 = SYSTEM (TRAFFIC VOLUME)
 8 = CARRY OVER (STRETCH)
 -LOCATION IS DISTANCE FROM STOP LINE TO FRONT OF LOOP DETECTOR IN FEET.
 -ALL LOOP DETECTORS SHALL BE N.M.C., #12 AWG.



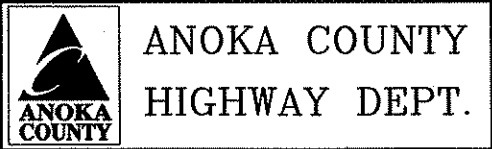
3 E.B. STA. 114+04, 40' RT. PA100 POLE FOUNDATION TYPE PA100-A-55-D40-9 (DAVIT AT 350') 2-ONE WAY SIGNALS OVERHEAD (0' AND 11' FROM END OF MAST ARM) TYPE 10B AT 90' TYPE 10B AT 180' ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT (PHASE 4 & 7) LUMINAIRE-250W HPS 2-PEDESTRIAN PUSH BUTTONS 1-SIGN (R10-12) LEFT TURN YIELD ON GREEN - OVERHEAD 1-SIGN (D-1) Bunker Lake Blvd - OVERHEAD 2-SIGNS (R10-4bL & R10-4bR) PEDESTRIAN PUSH BUTTON SIGNS EXTEND INTO HH 10:
 2-12/C#12
 3-3/C#12
 1-3/C#20
 1-3/C#12 (LUM)
 1-6/C FIBER OPTIC CABLE (INTERCONNECT)
 1-1/C#14 (INTERCONNECT)

SIGNAL SYSTEM OPERATION
 -THE SIGNAL SYSTEM FLASH MODE IS ALL RED.
 -NORMAL OPERATION IS 8 PHASE, WITH PHASES 3 AND 7 BEING PROTECTED/PERMISSIVE LEFT TURN PHASES, AND PHASES 1 AND 5 BEING PROTECTED LEFT TURN PHASES.
 -PHASES 2 AND 6 SHALL OPERATE ON VEHICLE RECALL.

NO	DATE	BY	CKD	APPR	REVISION

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 PRINT NAME: ALAN J. PALMER, P.E.
 SIGNATURE: [Signature]
 DATE: 18 JUNE 2005 LICENSE NO. 42462

DRAWN BY: RLH/DJS DATE 02/18/05
 DESIGN BY: AJP/EDD DATE 02/18/05
 CHECKED BY: AJP DATE 02/18/05

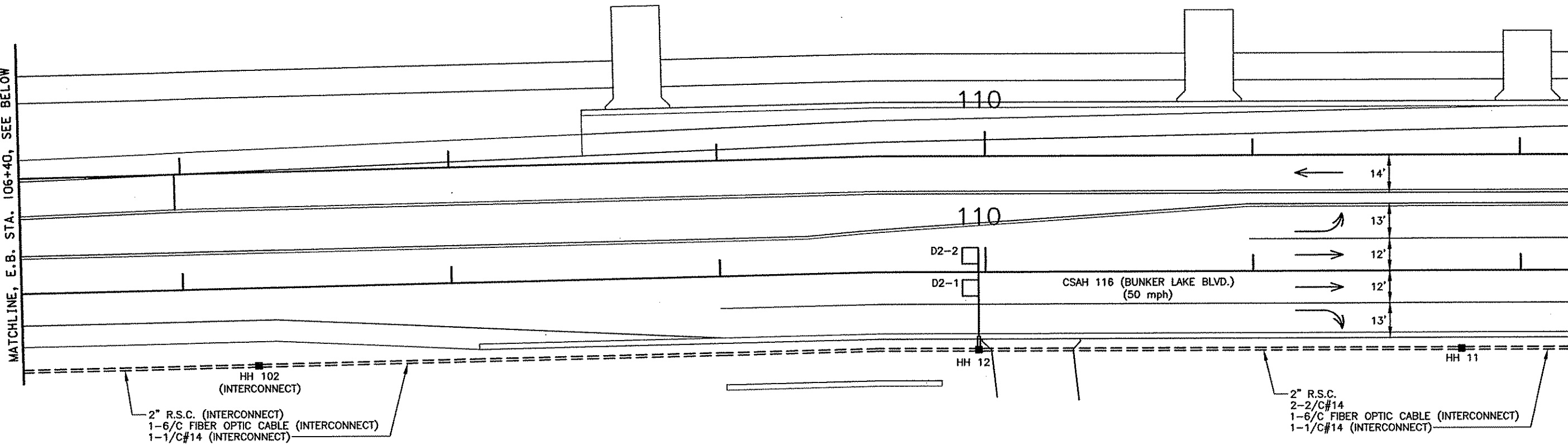


PROJECT NO. ANOKA COUNTY S.P. 02-716-07
 CITY OF ANOKA S.P. 103-122-12
 CITY OF RAMSEY S.P. 199-020-04

SIGNAL SYSTEM INTERSECTION LAYOUT
 PAGE 1 OF 4
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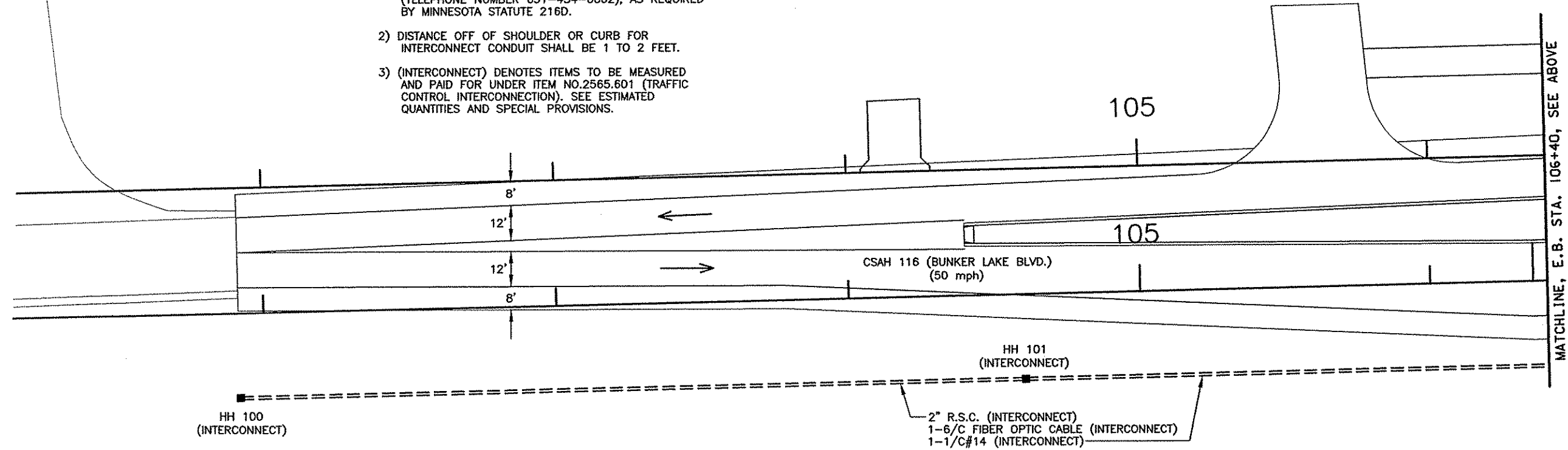
MATCHLINE, E.B. STA. 106+40, SEE BELOW

MATCHLINE "A" E.B. STA. 112+20, SEE PAGE 1 OF 4



NOTES:

- 1) IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO UTILIZE THE "ONE CALL EXCAVATION NOTICE SYSTEM" (TELEPHONE NUMBER 651-454-0002), AS REQUIRED BY MINNESOTA STATUTE 216D.
- 2) DISTANCE OFF OF SHOULDER OR CURB FOR INTERCONNECT CONDUIT SHALL BE 1 TO 2 FEET.
- 3) (INTERCONNECT) DENOTES ITEMS TO BE MEASURED AND PAID FOR UNDER ITEM NO.2565.601 (TRAFFIC CONTROL INTERCONNECTION). SEE ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.



NO	DATE	BY	CHKD	APPR	REVISION

NAME: Q:\SHEET\17366_RL_02.DWG

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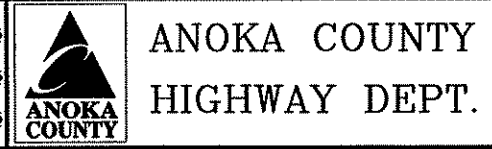
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DATE: 18 JUNE 2005 LICENSE NO. 42452

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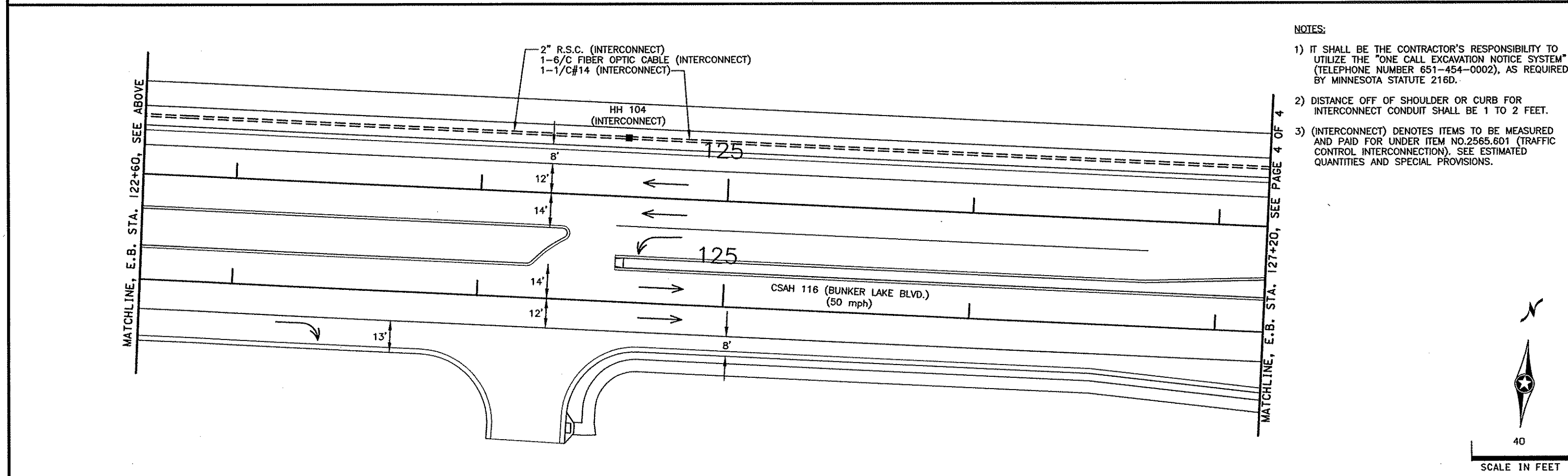
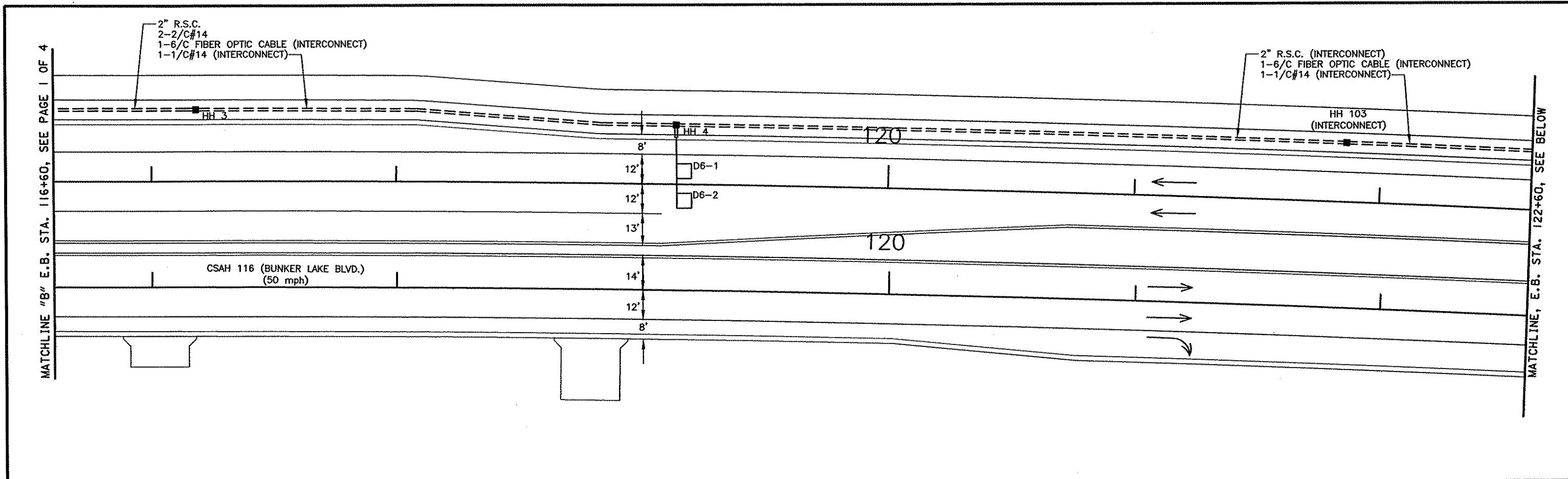
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SIGNAL SYSTEM/INTERCONNECT
INTERSECTION LAYOUT
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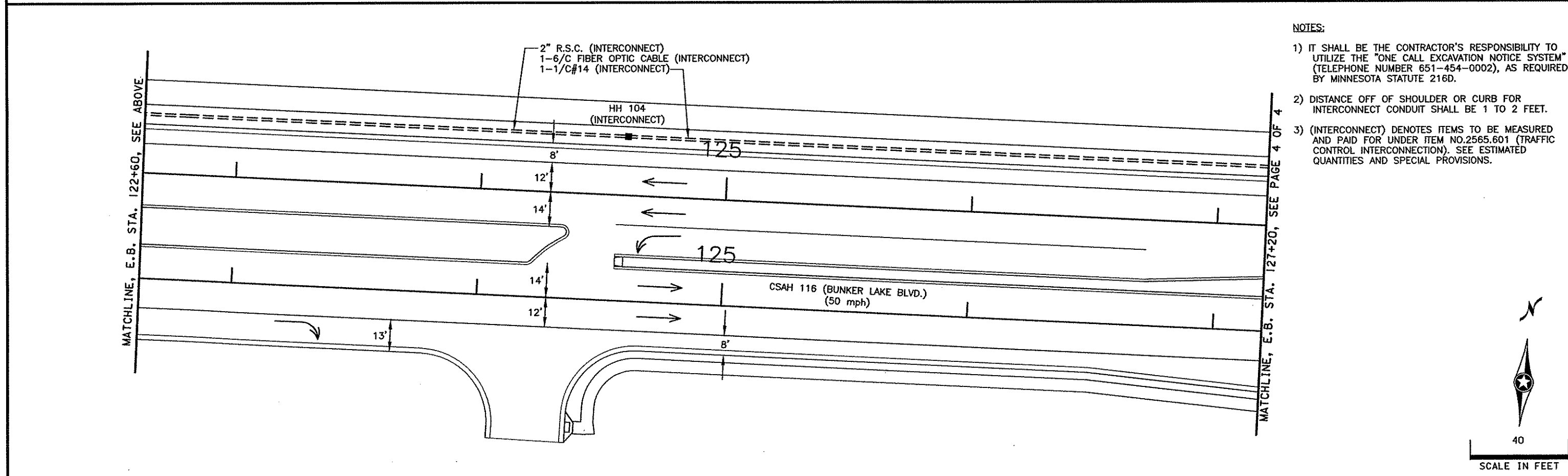
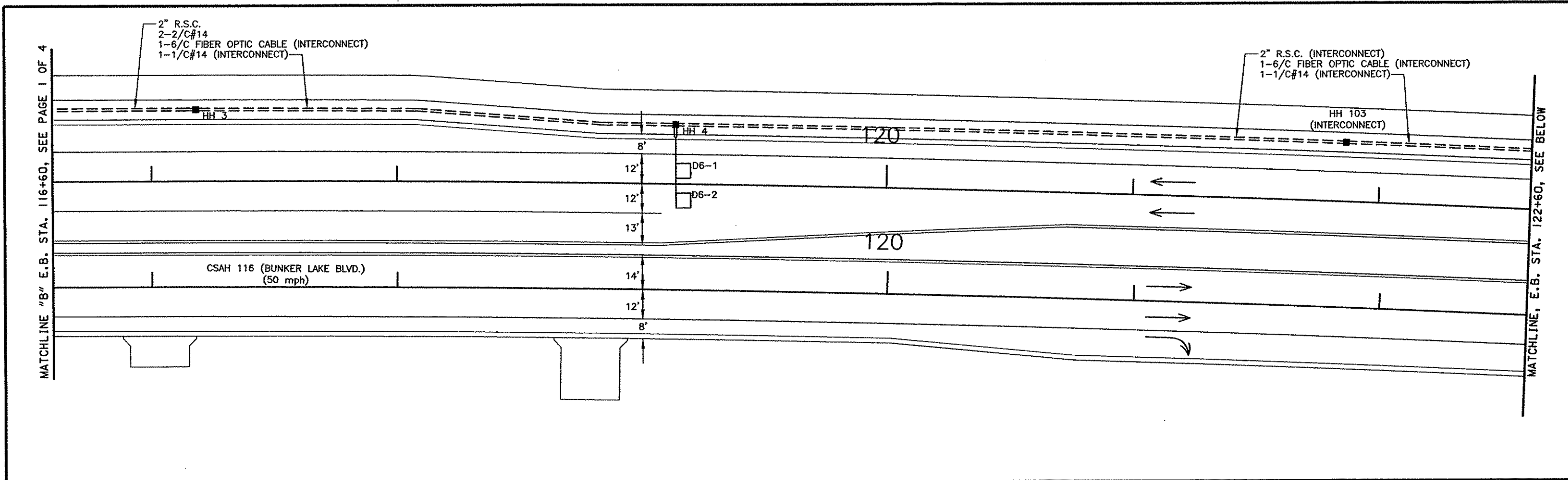
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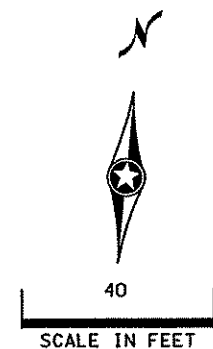
ANOKA COUNTY
HIGHWAY DEPT.

PROJECT NO. ANOKA COUNTY S.P. 02-716-07
 CITY OF ANOKA S.P. 103-122-12
 CITY OF RAMSEY S.P. 199-020-04

SIGNAL SYSTEM/INTERCONNECT INTERSECTION LAYOUT
 PAGE 3 OF 4
 Sheet 71 of 120 Sheets



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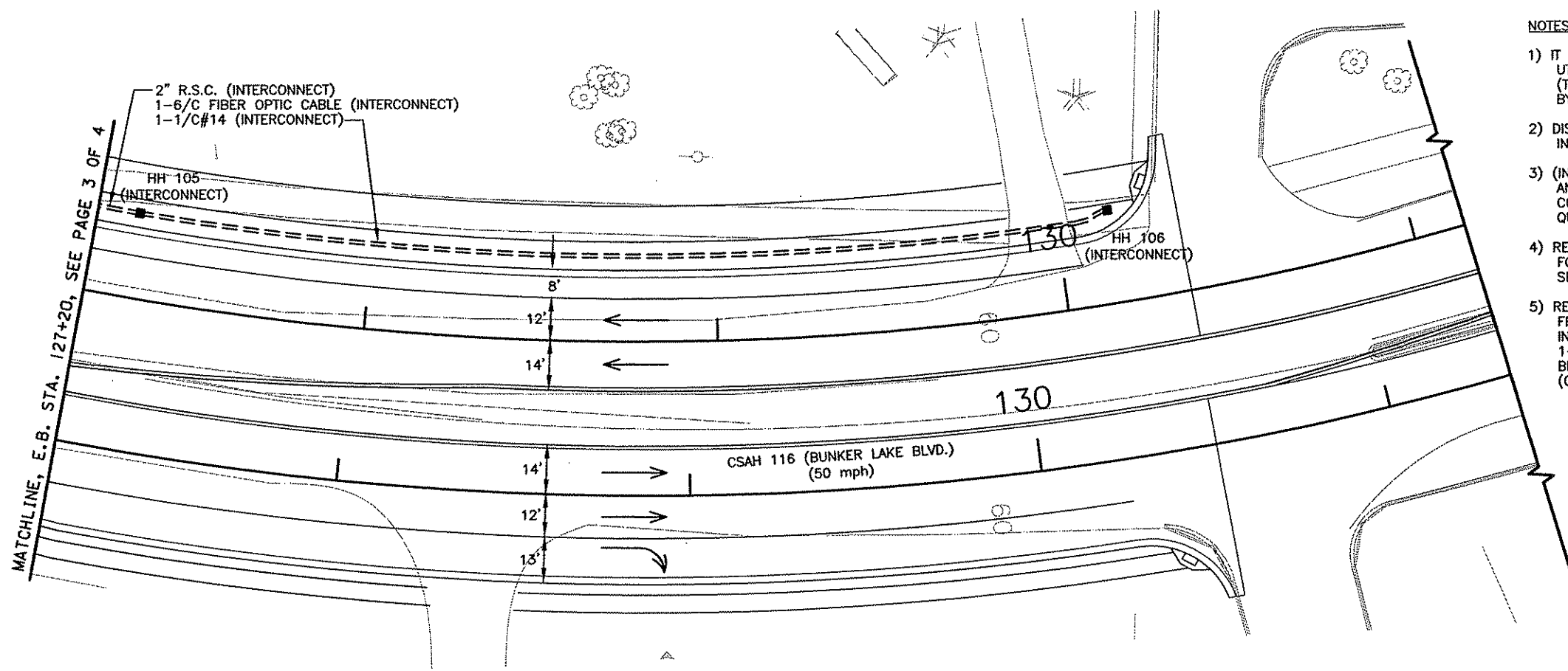
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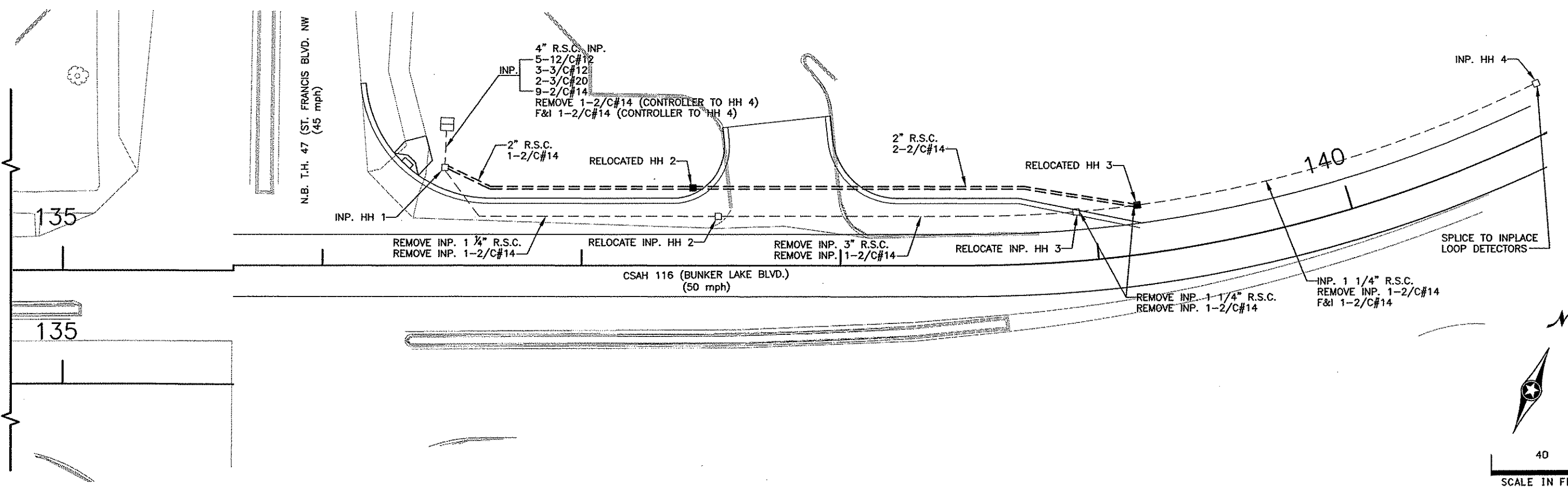
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INTERSECTION LAYOUT
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 - 4) RELOCATING HANDHOLES WILL BE MEASURED AND PAID FOR UNDER ITEM NO. 2550.602 (RELOCATE HANDHOLE). SEE SPECIAL PROVISIONS.
 - 5) REMOVING EXISTING CONDUIT, REMOVING 1-2/C#14 FROM CONTROLLER TO INPLACE HH 4, FURNISHING AND INSTALLING NEW CONDUIT, FURNISHING AND INSTALLING 1-2/C#14 FROM CONTROLLER TO INPLACE HH 4, WILL BE MEASURED AND PAID UNDER ITEM NO. 2545.509 (CONDUIT SYSTEM (SIGNALS)). SEE SPECIAL PROVISIONS.



NO	DATE	BY	CKD	APPR	REVISION

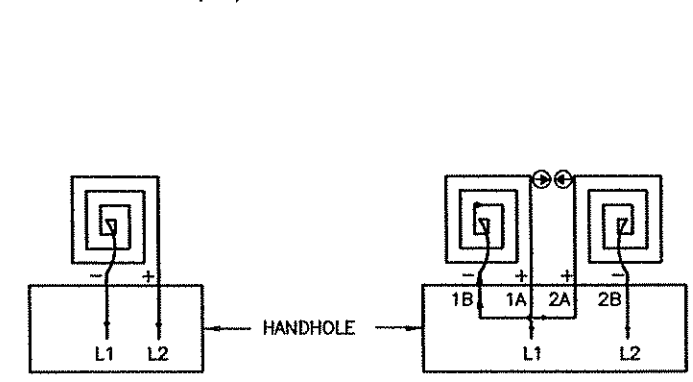
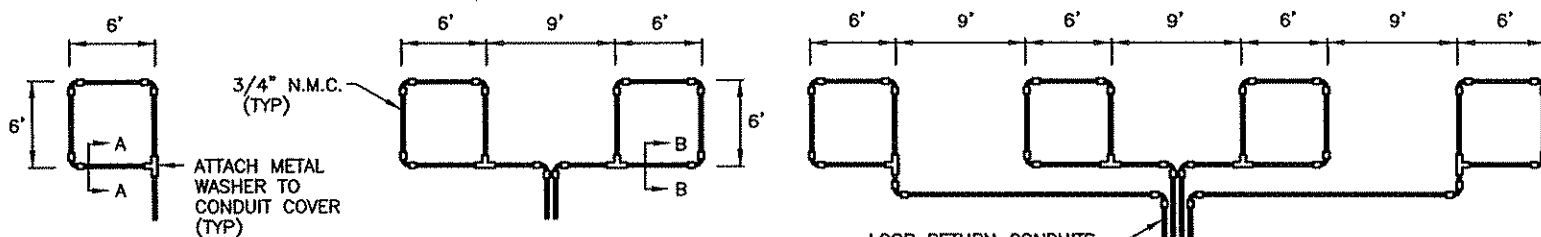
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SIGNAL SYSTEM/INTERCONNECT
INTERSECTION LAYOUT
 PAGE 4 OF 4
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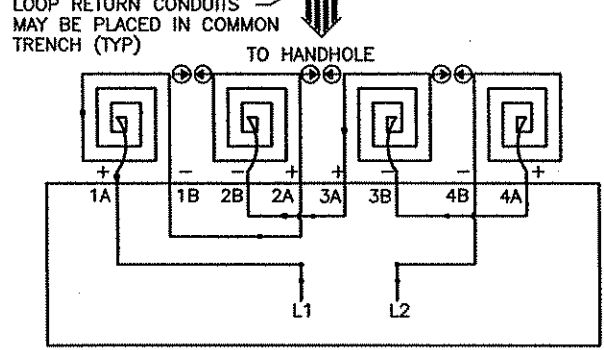
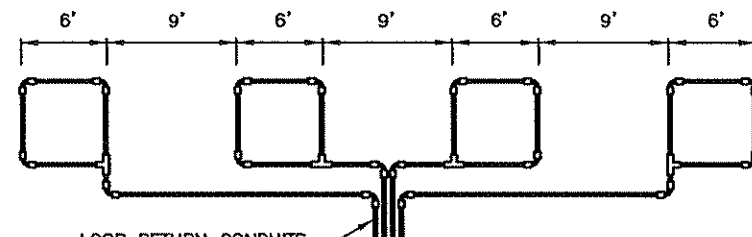


LOOP DETECTOR
DETAIL 'A'
(LOOP PHASING FOR
SINGLE CONNECTION)

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)

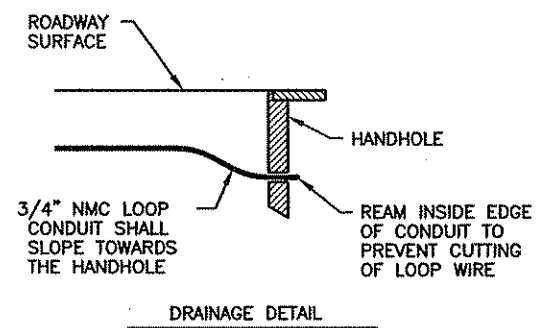
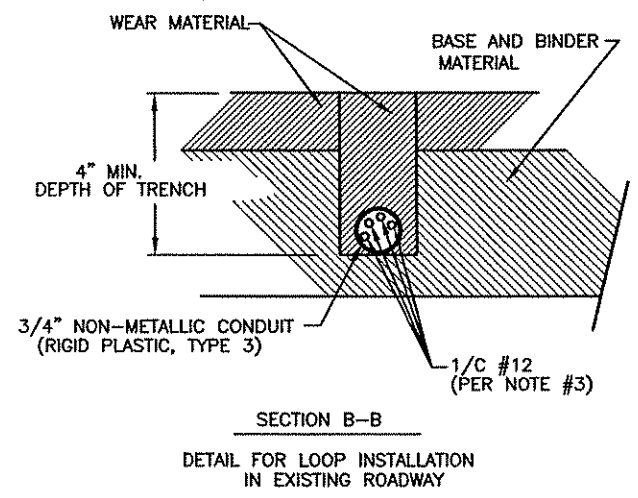
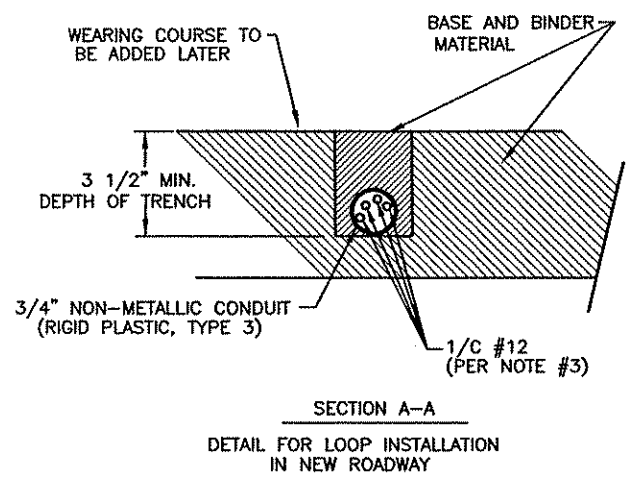


LOOP CONNECTIONS SHALL BE LABELED AND SPLICED
IN THE HANDHOLE AS FOLLOWS:

- 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)



- 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.

STANDARD PLATES	
THESE STANDARD PLATES AS APPROVED BY FHWA SHALL APPLY:	
PLATE NO.	DESCRIPTION
* 8110 D	TRAFFIC SIGNAL BRACKETING -- POLE MOUNTED
8111 D	TRAFFIC SIGNAL BRACKETING -- PEDESTAL MOUNTED
8112 C	PEDESTAL FOUNDATION
* 8114 A	PVC HANDHOLE/PULLBOX
* 8115 D	PEDESTRIAN PUSH BUTTON INSTALLATION
8118 C	SERVICE EQUIPMENT AND POLE-TRAFFIC CONTROL SIGNALS
* 8119 C	GROUND MOUNTED CABINET FOUNDATION
8120 K	PA85 POLE FOUNDATION
8121 D	TRANSFORMER BASE AND POLE BASE PLATE
8122 C	PEDESTAL AND PEDESTAL BASE
* 8123 E	POLE AND MAST ARM
* 8124 E	MAST ARM SIGNAL HEAD MOUNTS
* 8126 F	PA90 AND PA100 POLE FOUNDATION
8127 B	LIGHT BASE DESIGN E

* - 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	(A)
SIGNAL BASE NO.	(1)
SIGNAL FACE NO.	(2)
LUMINAIRE NO.	(3)
CONTROLLER AND CABINET	(4)
CONTROLLER AND CABINET - IN PLACE	(5)
HANDHOLE	(6)
HANDHOLE - IN PLACE	(7)
RIGID STEEL CONDUIT (RSC)	(8)
RIGID STEEL CONDUIT (RSC) - IN PLACE	(9)
SIGNAL FACE WITH BACKGROUND SHIELD	(10)
SIGNAL FACE W/O BACKGROUND SHIELD	(11)
SIGNAL FACE - IN PLACE	(12)
PEDESTRIAN INDICATORS	(13)
PEDESTRIAN INDICATORS - IN PLACE	(14)
PEDESTRIAN PUSH BUTTONS ON PEDESTAL OR POLE	(15)
PEDESTRIAN PUSH BUTTON STATION	(16)
TRAFFIC SIGNAL PEDESTAL	(17)
TRAFFIC SIGNAL PEDESTAL - INPLACE	(18)
TRAFFIC SIGNAL POLE AND MAST ARM	(19)
TRAFFIC SIGNAL POLE AND MAST ARM - IN PLACE	(20)
STREET LIGHT POLE AND LUMINAIRE	(21)
STREET LIGHT POLE AND LUMINAIRE - IN PLACE	(22)
MAST ARM AND LUMINAIRE	(23)
MAST ARM AND LUMINAIRE - INPLACE	(24)
WOOD POLE	(25)
WOOD POLE - IN PLACE	(26)
SOURCE OF POWER	(27)
RAILROAD SIGNAL - IN PLACE	(28)
RIGHT OF WAY LINE	(29)
CENTERLINE	(30)
EDGE OF ROADWAY	(31)
SHOULDERLINE	(32)
CURB LINE	(33)
STOP BAR	(34)
EMERGENCY VEHICLE PREEMPTION DETECTOR	(35)

ABBREVIATIONS			
3-1(EG)	SIGNAL HEAD PHASE "3" - NO "1"	P2-1(EG) PED INDICATION PHASE "2" - NO. "1"	
BR. GR.	BARE GROUND	PB	PUSH BUTTON
CH. SW.	CHECK SWITCH	PB2-1(EG)	PUSH BUTTON PHASE "2" - NO. "1"
CLR	CLEAR	PEC	PHOTOELECTRIC CELL
D2-1(EG)	DETECTOR PHASE "2" - NO. "1"	PED	PEDESTRIAN
DWK	DON'T WALK	R	RED
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	DATE	BY	CKD	APPR	REVISION

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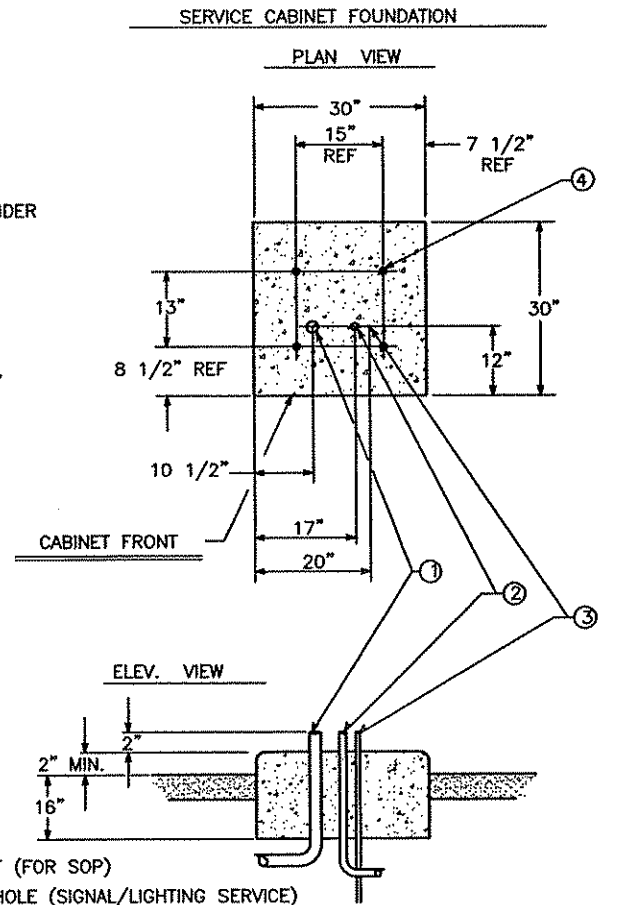
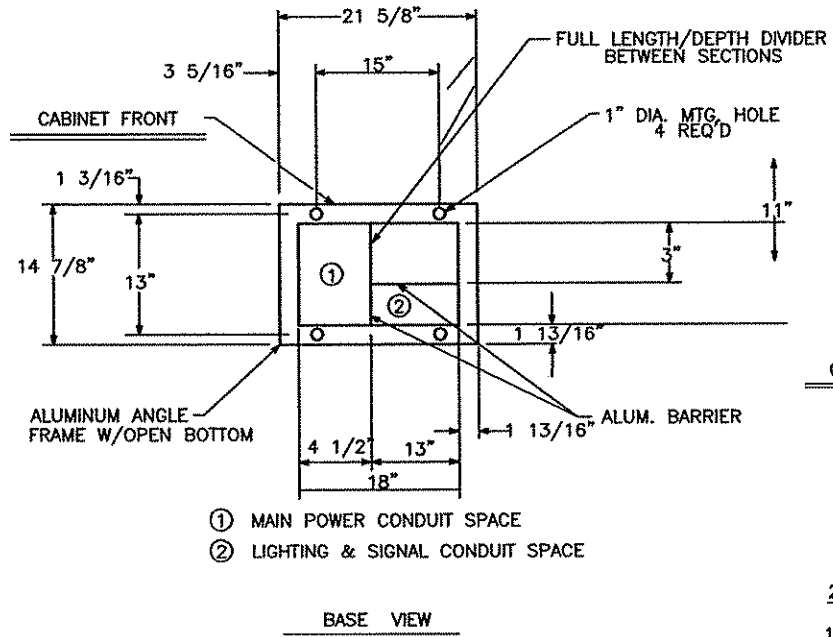
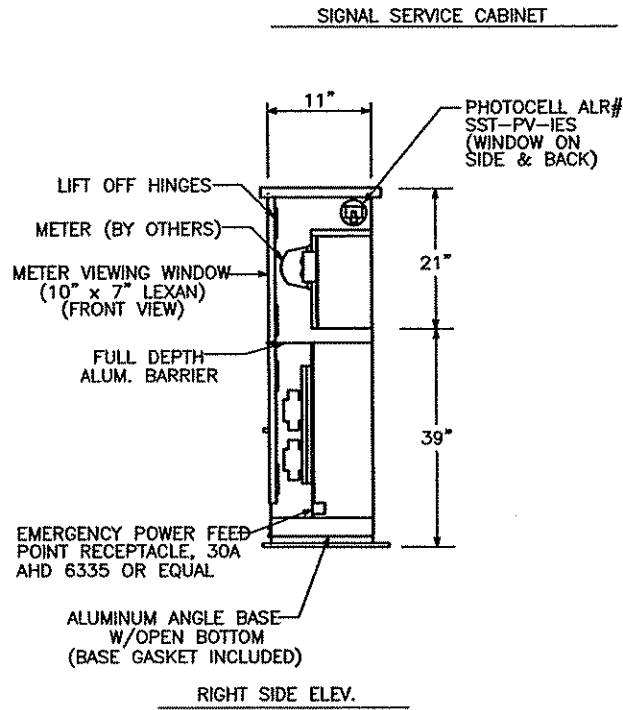
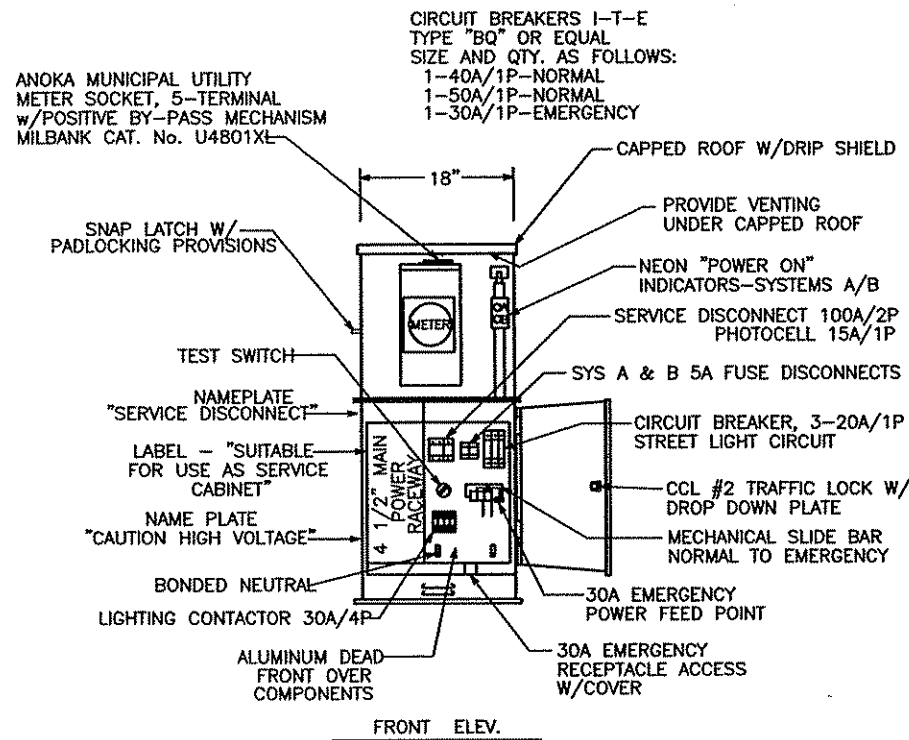
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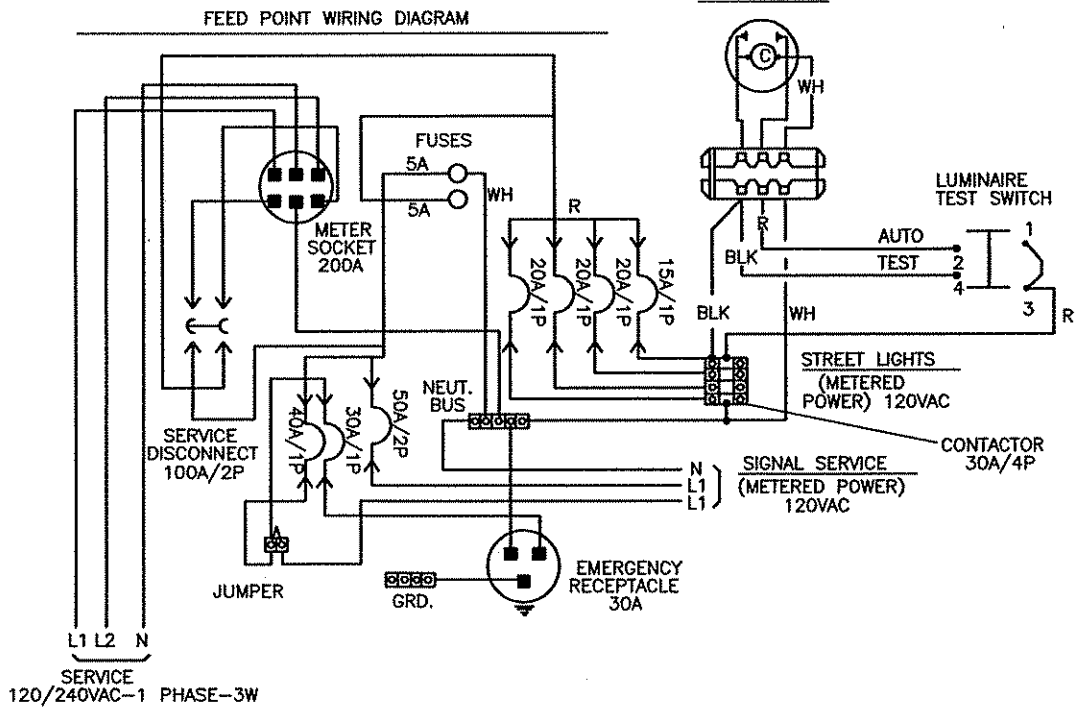
TRAFFIC SIGNAL SYSTEM
DETAILS & STD PLATES
PAGE 1 OF 2
Sheet 74 of 120 Sheets



- ① 2" RSC STUB OUT (FOR SOP)
- ② 2" RSC TO HANDHOLE (SIGNAL/LIGHTING SERVICE)
- ③ GROUNDING ROD
- ④ ANCHOR BOLT LOCATIONS (4 REQUIRED)

CONSTRUCTION NOTES

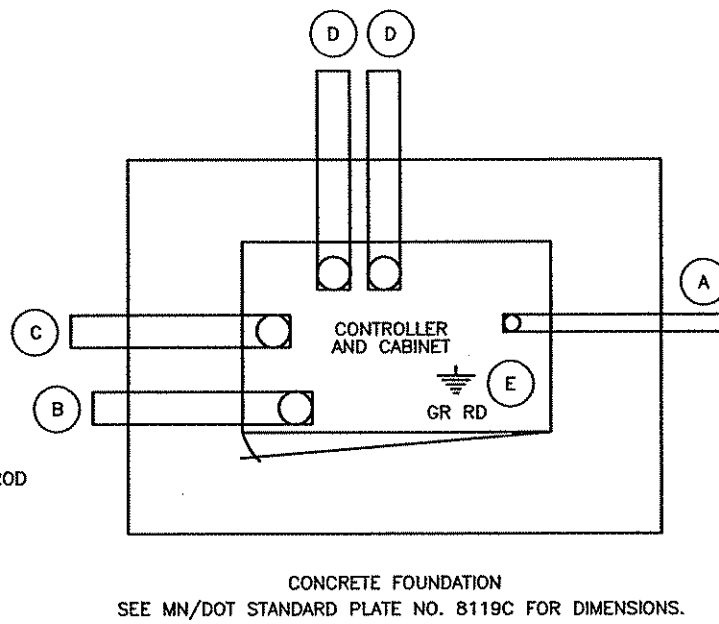
ENCLOSURE SHALL BE FABRICATED FROM 1/8" ALUMINUM FOR OUTDOOR WEATHERPROOF SERVICE.
DOORS TO BE NEOPRENE GASKETED. ALL HINGES, PINS AND LOCKS TO BE OF NON-CORRODING CONSTRUCTION.
CABINET SHALL HAVE ANODIC COATING FOR ALL ALUMINUM SURFACES. SEE SPECIAL PROVISIONS.
NEMA 3R ENCLOSURE SHALL BE "UL" APPROVED.
CABINET SHALL HAVE BASE GASKET INCLUDED.



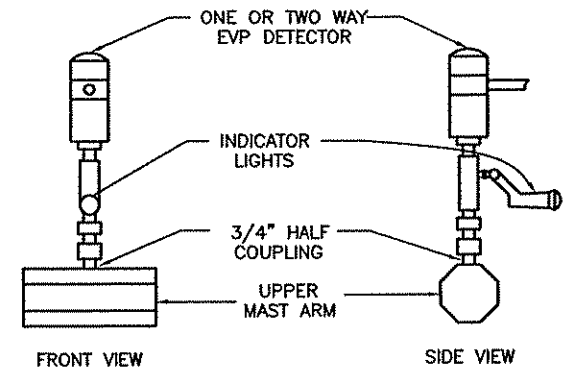
- Ⓐ 2" R.S.C. FOR SERVICE CONNECTION (VIA HH 19)
- Ⓑ 4" R.S.C. TO HH 1
- Ⓒ 4" R.S.C. TO HH 18
- Ⓓ 3" R.S.C. STUBOUT, THREAD & CAP BOTH ENDS (FOR FUTURE USE).
- Ⓔ 5/8" DIA X 15' GROUND ROD

SEE INTERSECTION LAYOUT FOR CONDUIT & CABLE INFORMATION

TYPICAL CONTROLLER CABINET PAD LAYOUT



EVP DETECTOR AND LIGHT MOUNTING DETAIL ON MAST ARM



NO	DATE	BY	CKD	APPR	REVISION

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
PRINT NAME: ALAN J. FALBER, P.E.
SIGNATURE: *[Signature]*
DATE: 18 JUNE 2005 LICENSE NO. 42452

DRAWN BY: RLH/DJS DATE 02/18/05
DESIGN BY: AJP/EDD DATE 02/18/05
CHECKED BY: AJP DATE 02/18/05



ANOKA COUNTY
HIGHWAY DEPT.

PROJECT NO.
ANOKA COUNTY
CITY OF ANOKA
CITY OF RAMSEY

S.P. 02-716-07
S.P. 103-122-12
S.P. 199-020-04

TRAFFIC SIGNAL SYSTEM
CABINET DETAILS AND
EVP DETAILS
PAGE 2 OF 2
Sheet 75 of 120 Sheets

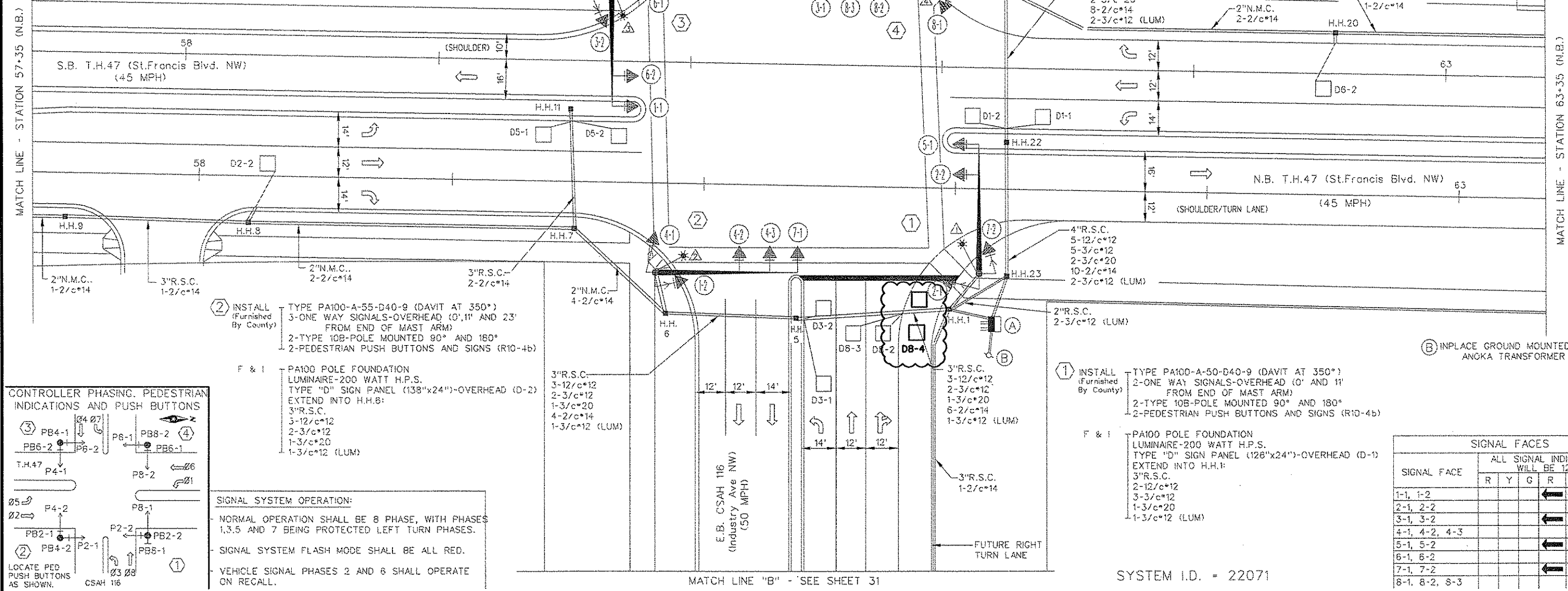
NOTES:

- LOCATION OF POLES, LOOP DETECTORS, EQUIPMENT PAD AND HANDHOLES SHALL BE DETERMINED IN THE FIELD BY Mn/DOT DISTRICT TRAFFIC OFFICE PERSONNEL AND BY ANOKA COUNTY PERSONNEL.
- EACH SIGNAL FACE SHALL HAVE BACKGROUND SHIELD.
- EACH PEDESTRIAN INDICATION SHALL BE A ONE SECTION HAND/WALKING PERSON INDICATION.
- ALL RED (CIRCULAR AND ARROW) SIGNAL INDICATIONS SHALL BE LED.
- ALL NEW HANDHOLES SHALL BE PVC HANDHOLES WITH METAL FRAMES AND COVERS AND SHALL CONTAIN A STATE FURNISHED "BALL LOCATOR". SEE SPECIAL PROVISIONS.
- INPLACE HANDHOLES 2,3,4,13,14,15 AND 16 SHALL ALSO CONTAIN A STATE FURNISHED "BALL LOCATOR". SEE SPECIAL PROVISIONS.
- SEE SPECIAL PROVISIONS AND DETAILS REGARDING SIGN PANELS TO BE FURNISHED AND INSTALLED BY CONTRACTOR (INCIDENTAL TO ITEM NO.2565.511).
- SEE SPECIAL PROVISIONS FOR INFORMATION REGARDING STATE AND COUNTY FURNISHED MATERIALS.
- SEE SPECIAL PROVISIONS AND DETAILS REGARDING CONSTRUCTION STAGING INVOLVING TRAFFIC SIGNAL OPERATION AND CONSTRUCTION DURING ROAD CONSTRUCTION.
- REMOVAL AND SALVAGING OF INPLACE SIGNAL SYSTEM SHALL BE MEASURED AND PAID FOR AS ITEM NO. 0565.601. SEE SPECIAL PROVISIONS.
- ALL NEW LOOP DETECTORS SHALL BE INSTALLED IN NON-METALLIC CONDUIT. SEE SPECIAL PROVISIONS AND DETAILS.
- A 3/4" HALF COUPLING AND CONDUIT OUTLET BODY FOR FUTURE EVP DETECTOR SHALL BE FURNISHED AND INSTALLED 6 FEET FROM THE END OF EACH MAST ARM. A 1-3/c*20 CABLE SHALL BE WIRED DIRECT TO THE CONDUIT OUTLET BODY CONTINUOUS WITHOUT SPLICES FROM CONTROLLER CABINET. 2-1/c*14 CONDUCTORS SHALL BE WIRED FROM THE CONDUIT OUTLET BODY TO THE TERMINAL BLOCK IN EACH POLE BASE FOR FUTURE EVP LIGHT.

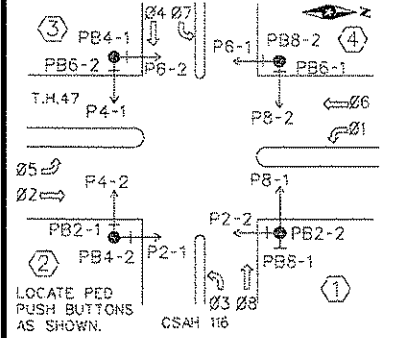
LOOP DETECTORS		
NUMBER	SIZE (FT.)	LOCATION
D1-1	6x6	40'
D1-2	6x6	10'
D2-1	6x6	300'
D2-2	6x6	150'
D3-1	6x6	40'
D3-2	6x6	10'
D4-1	2-6x6	475'
D4-2	6x15	0'
D4-3	6x6	20'
D4-4	6x6	20'
D5-1	6x6	40'
D5-2	6x6	10'
D6-1	6x6	300'
D6-2	6x6	150'
D7-1	6x6	40'
D7-2	6x6	10'
D8-1	2-6x6	475'
D8-2	6x6	20'
D8-3	6x6	20'
D8-4	2-6x6	5', 15'

NOTE: LOCATION-DISTANCE FROM CROSSWALK TO FRONT OF LOOP DETECTOR.

** INPLACE LOOP DETECTOR - REUSE AND MAINTAIN INPLACE. SEE SPECIAL PROVISIONS.

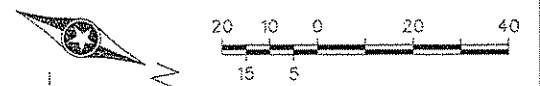


CONTROLLER PHASING, PEDESTRIAN INDICATIONS AND PUSH BUTTONS



SIGNAL SYSTEM OPERATION:

- NORMAL OPERATION SHALL BE 8 PHASE, WITH PHASES 1,3,5 AND 7 BEING PROTECTED LEFT TURN PHASES.
- SIGNAL SYSTEM FLASH MODE SHALL BE ALL RED.
- VEHICLE SIGNAL PHASES 2 AND 6 SHALL OPERATE ON RECALL.



- (A) EQUIPMENT PAD - SEE DETAILS**
INSTALL CONTROLLER AND CABINET (FURNISHED BY STATE)
SERVICE CABINET - SEE DETAILS
- CONTROLLER CABINET TO H.H.1: 4" R.S.C., 5-12/c*12, 5-3/c*12, 2-3/c*20, 9-2/c*14
SERVICE CABINET TO H.H.23: 2" R.S.C., 4-3/c*12 (LUM)
- BETWEEN SERVICE CABINET AND CONTROLLER CABINET: 2" R.S.C., 2-1/c*6
CONTROLLER CABINET TO H.H.23: 4" R.S.C., 5-12/c*12, 5-3/c*12, 2-3/c*20, 10-2/c*14
SERVICE CABINET TO S.O.P.: 2" R.S.C., 3-1/c*2 (SOLID COPPER CABLE)
- STUB OUT 1-2" R.S.C. AND 1-3" R.S.C. FROM CONTROLLER CABINET TO SOUTH (THREAD AND CAP BOTH ENDS-FOR FUTURE USE)

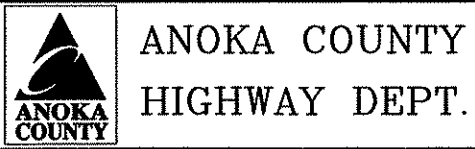
SIGNAL FACE	SIGNAL FACES					
	ALL SIGNAL INDICATIONS WILL BE 12"					
	R	Y	G	R	Y	G
1-1, 1-2				←	←	←
2-1, 2-2				←	←	←
3-1, 3-2				←	←	←
4-1, 4-2, 4-3				←	←	←
5-1, 5-2				←	←	←
6-1, 6-2				←	←	←
7-1, 7-2				←	←	←
8-1, 8-2, 8-3				←	←	←

NO	DATE	BY	CHKD	APPR	REVISION

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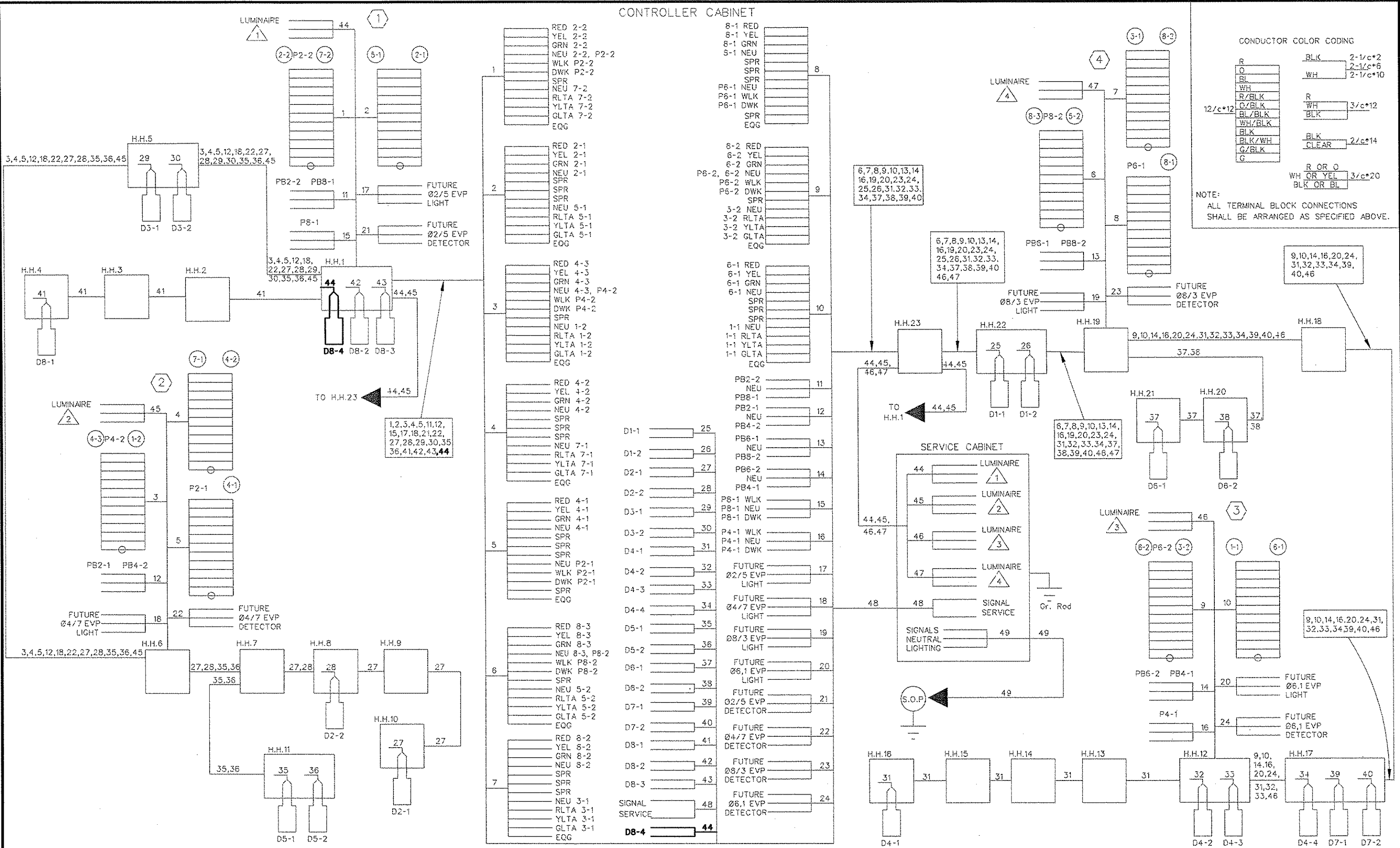
PRINT NAME: ALAN J. PALMER, P.E.
SIGNATURE: *[Signature]*
DATE: 18 JUNE 2005 LICENSE NO. 42452

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PROJECT NO. ANOKA COUNTY S.P. 02-716-07
CITY OF ANOKA S.P. 103-122-12
CITY OF RAMSEY S.P. 199-020-04

TRAFFIC SIGNAL SYSTEM INTERSECTION LAYOUT
TRUNK HIGHWAY 47 AT CSAH 116
Sheet 76 of 120 Sheets



NO	DATE	BY	CKD	APPR	REVISION

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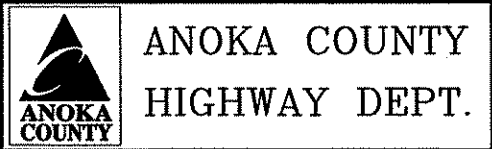
SIGNATURE: *Alan J. Palmer*

DATE: 18 JUNE 2005 LICENSE NO. 42462

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CHECKED BY: AJP DATE 02/18/05



PROJECT NO. ANOKA COUNTY CITY OF ANOKA CITY OF RAMSEY

S.P. 02-716-07

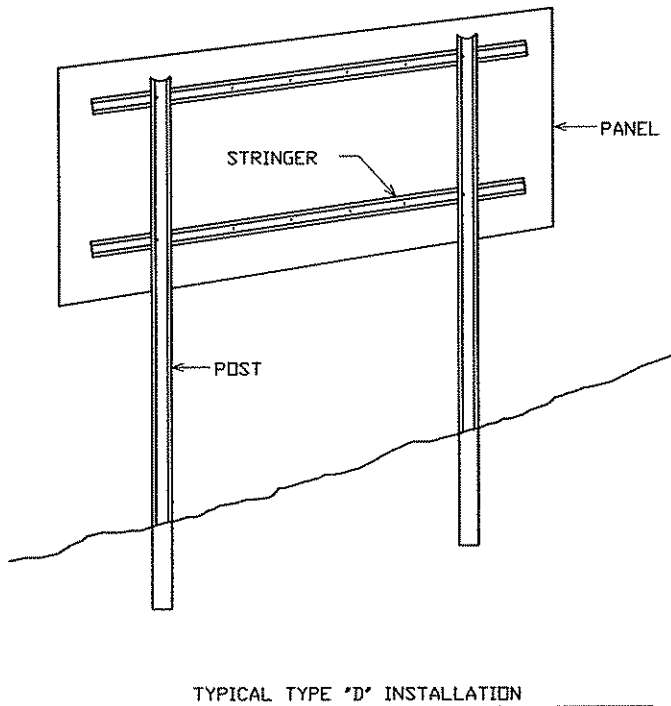
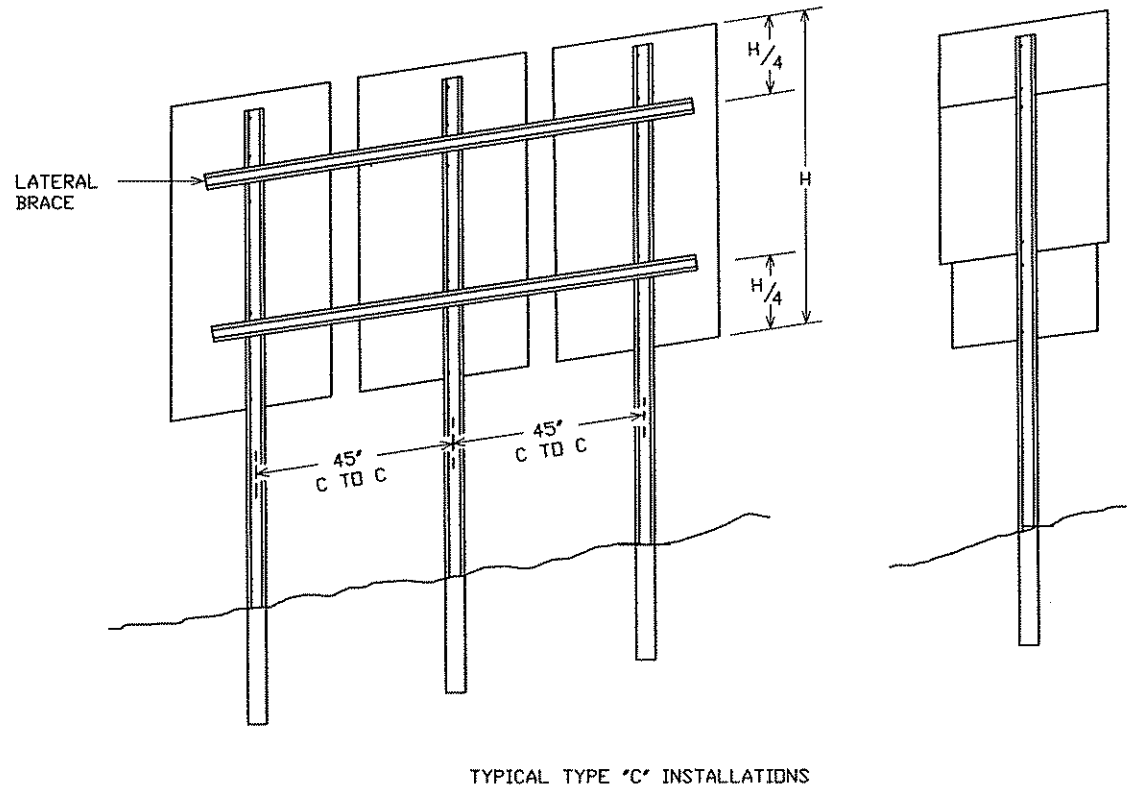
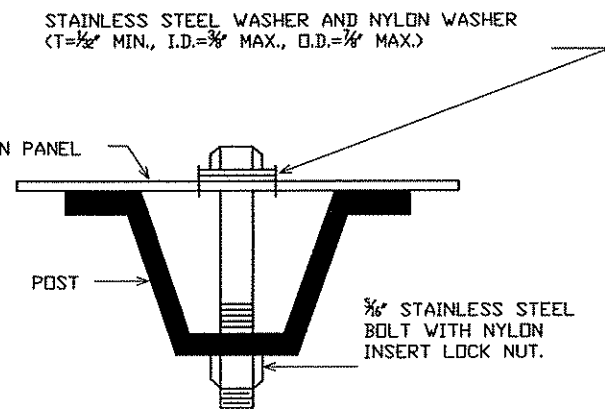
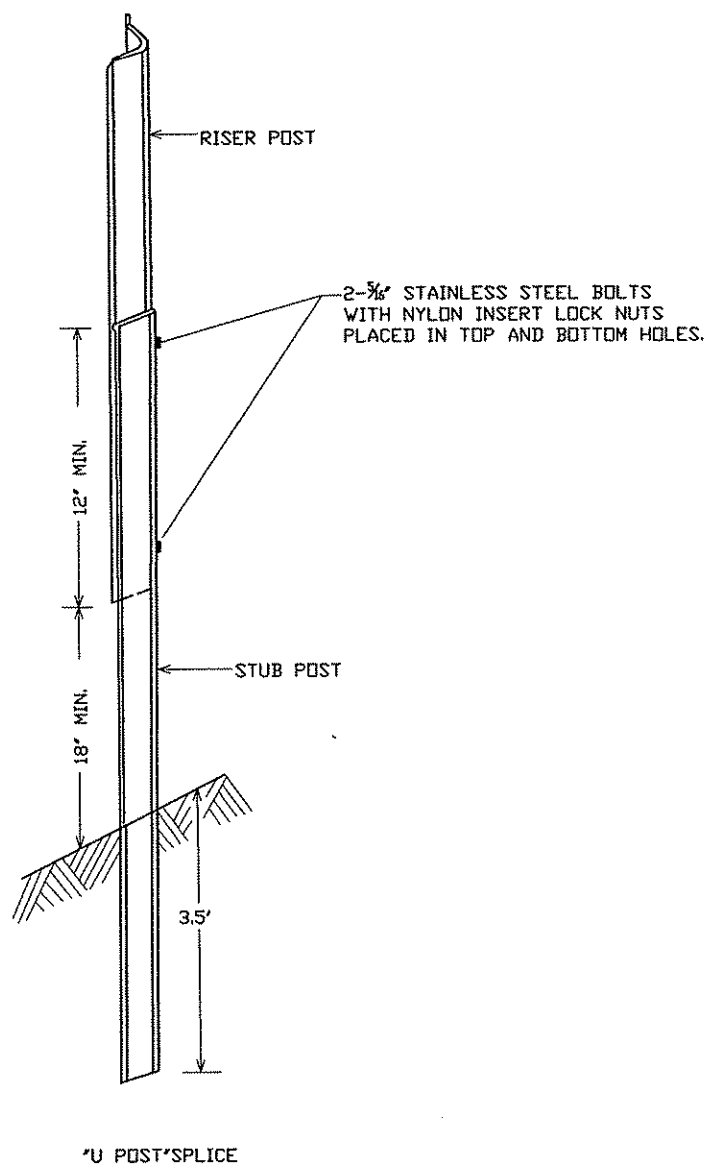
S.P. 103-122-12

S.P. 199-020-04

TRAFFIC SIGNAL SYSTEM FIELD WIRING DIAGRAM TRUNK HIGHWAY 47 AT CSAH 116

Sheet 77 of 120 Sheets

TYPE 'C' & 'D' POST



- NOTES:
1. USE 3# STUB POSTS, RISER POSTS, STRINGERS, KNEE BRACES, LATERAL BRACES AND KNEE BRACE STUB POSTS. ALL SHALL CONFORM TO MN/DDT 3401.
 2. FOR TYPE 'D' SIGN POSTS LENGTHS AND SPACINGS, SEE SIGN DATA SHEET.
 3. TYPE 'D' SIGN PANELS SHALL BE BOLTED TO STRINGERS AT 24" MAXIMUM INTERVALS IN ACCORDANCE WITH TYPE 'D' STRINGER AND PANEL-JOINT DETAIL (SEE STANDARD SIGNS MANUAL).
 4. MOUNTING (PUNCHING CODE) FOR TYPE 'C' SIGN PANELS SHALL BE AS INDICATED IN THE STANDARD SIGNS MANUAL UNLESS OTHERWISE SPECIFIED.
 5. ALL RISER (VERTICAL) 'U POSTS' SHALL BE SPLICED. DRIVEN STUB POSTS SHALL BE AT LEAST 7' LONG.
 6. USE STAINLESS STEEL 0-5/16" BOLTS, WASHERS, AND NYLON INSERT LOCK NUTS AS SHOWN FOR ALL GROUND MOUNTED AND OVERHEAD MOUNTED SIGNS.
 7. STAINLESS STEEL WASHER WITH SAME DIMENSIONS SHALL BE PROVIDED BETWEEN ALL NYLON WASHERS AND BOLT HEADS.
 8. BRACING STUBS SHALL BE NO MORE THAN 4' ABOVE GROUND AND EMBEDDED AT LEAST 3-1/2'.
 9. A-FRAME BRACKET SHALL BE STEEL CONFORMING TO MN/DDT 3306 AND GALVANIZED IN ACCORDANCE WITH MN/DDT 3394.
 10. COLLARS SHALL BE USED TO SHIM OVERLAYS AND DEMOUNTABLE LEGEND AWAY FROM PANEL WHERE INTERFERENCE WITH BOLT HEADS IS ENCOUNTERED. MN/DDT 3352.2A5.
 11. 2 AND 3 POST TYPE 'C' SIGNS SHALL BE REINFORCED WITH AT LEAST ONE LATERAL BRACE. INSTALLATIONS WHERE THE TOTAL PANEL HEIGHT IS 60' OR MORE SHALL HAVE TWO LATERAL BRACES LOCATED APPROXIMATELY AT THE QUARTER POINTS.
 12. WHERE 2 OR MORE SINGLE POST SIGNS (TYPE 'C') ARE MOUNTED SIDE BY SIDE, THEY SHALL BE REINFORCED Laterally BY AT LEAST 2 POST SECTIONS, BOLTED AT EACH POST AND LOCATED APPROXIMATELY AT THE QUARTER POINTS AS SHOWN IN SKETCH.

NO	DATE	BY	CHKD	APPR	REVISION

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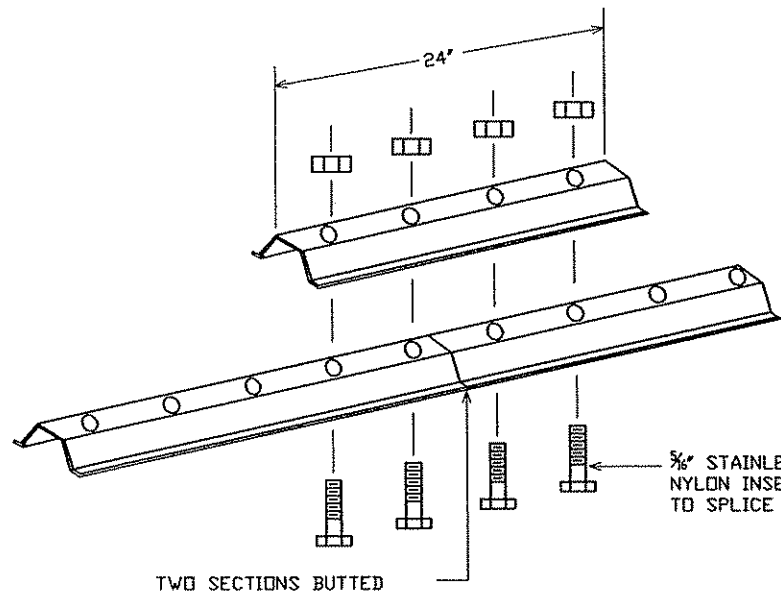
DRAWN BY RLH/DJS DATE 02/18/05
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ANOKA COUNTY
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PROJECT NO.
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 CITY OF ANOKA S.P. 103-122-12
 CITY OF RAMSEY S.P. 199-020-04

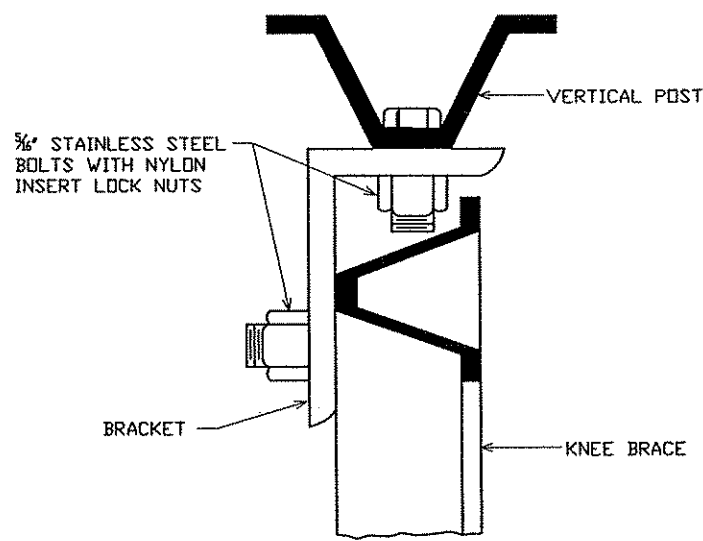
TYPE C & D SIGN
 STRUCTURAL DETAILS
 PAGE 1 OF 3
 Sheet 78 of 120 Sheets



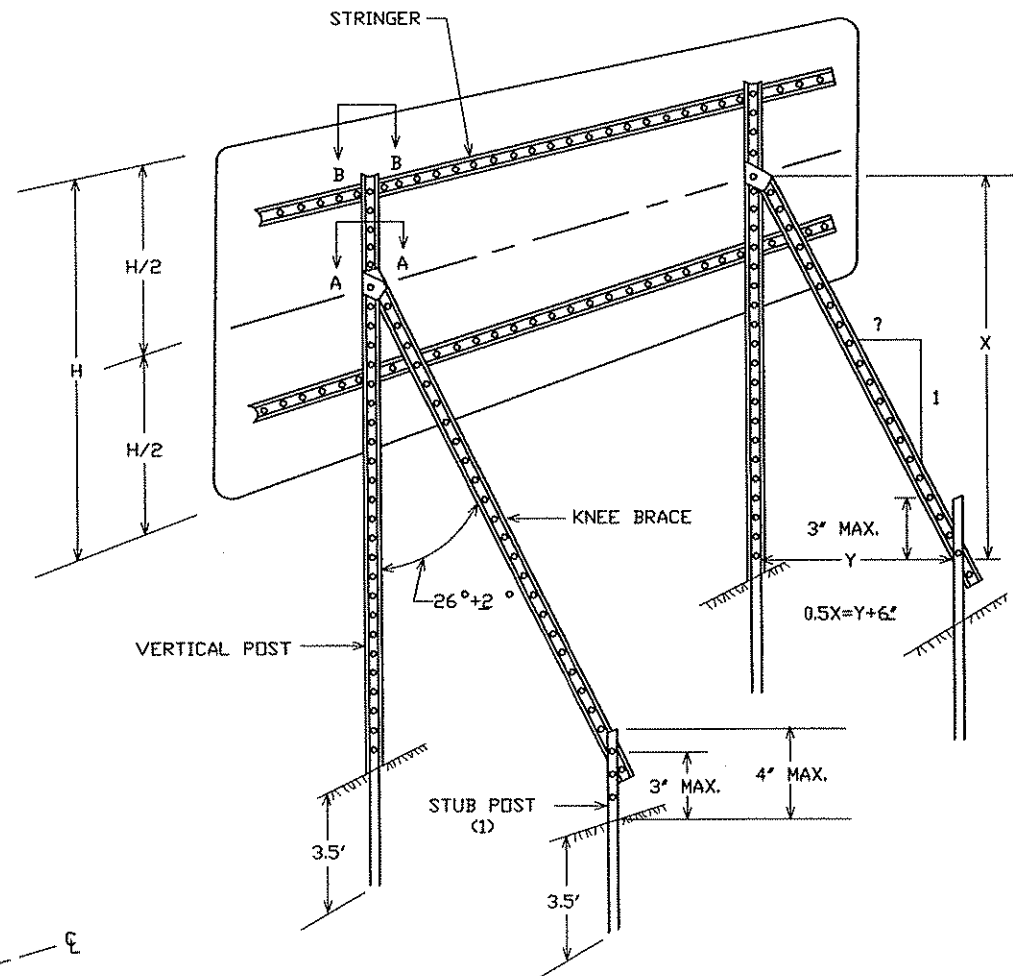
TWO SECTIONS BUTTED

LATERAL BRACE OR STRINGER
SPLICE DETAIL (EXPLODED VIEW)

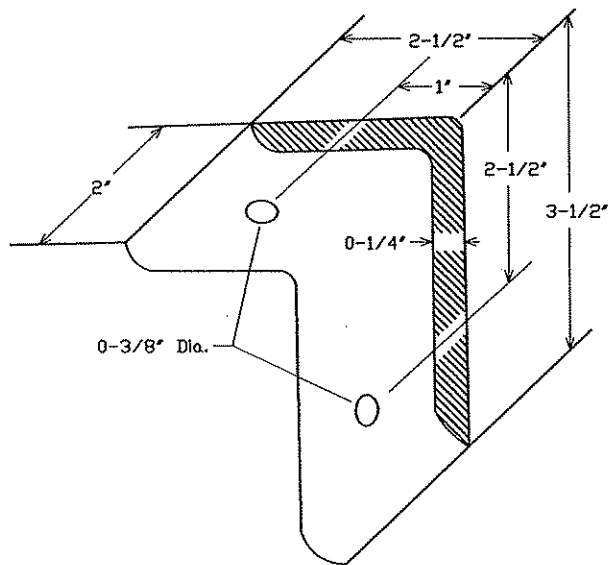
3/8" STAINLESS STEEL BOLTS WITH NYLON INSERT LOCK NUTS AS CLOSE TO SPLICE & OUTSIDE HOLES.



SECTION A-A

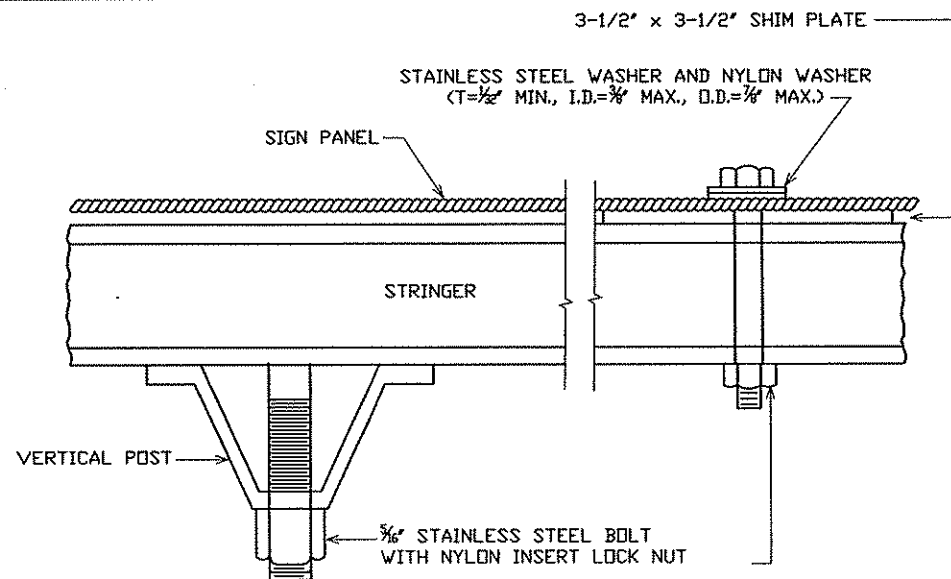


TYPICAL "A-FRAME" INSTALLATION
TYPE "D" SIGNS

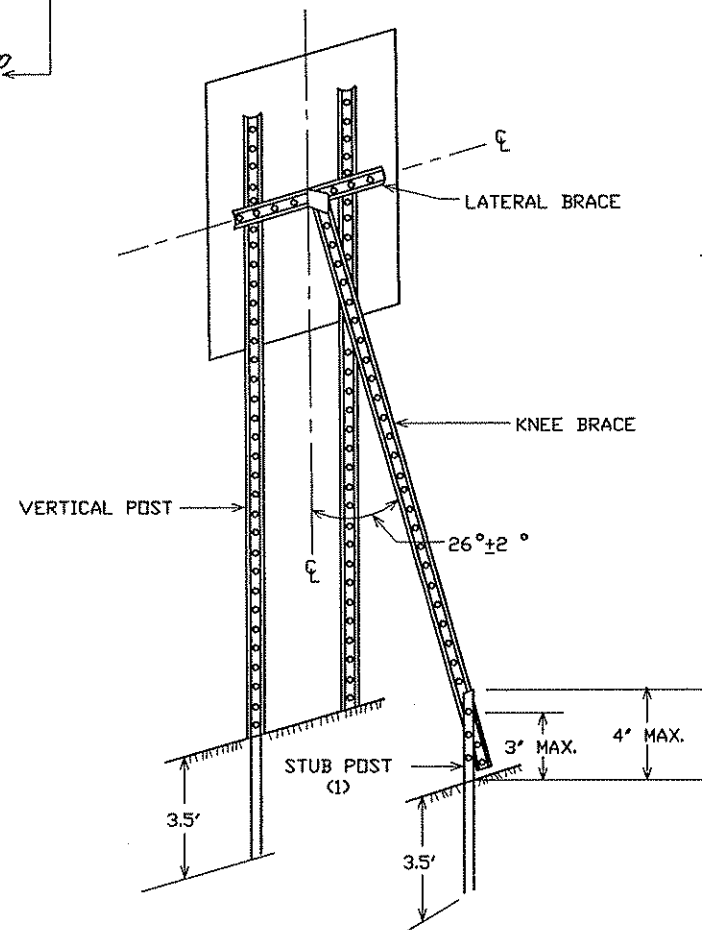


A-FRAME BRACKET

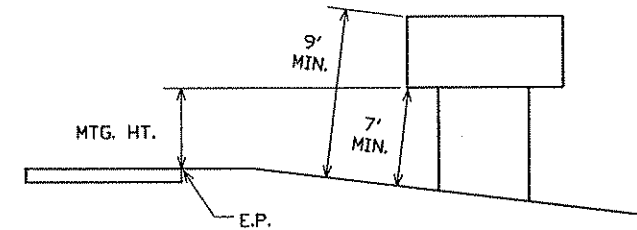
(STEEL MN/DDT 3306 GALVANIZED PER MN/DDT 3394)



SECTION B-B

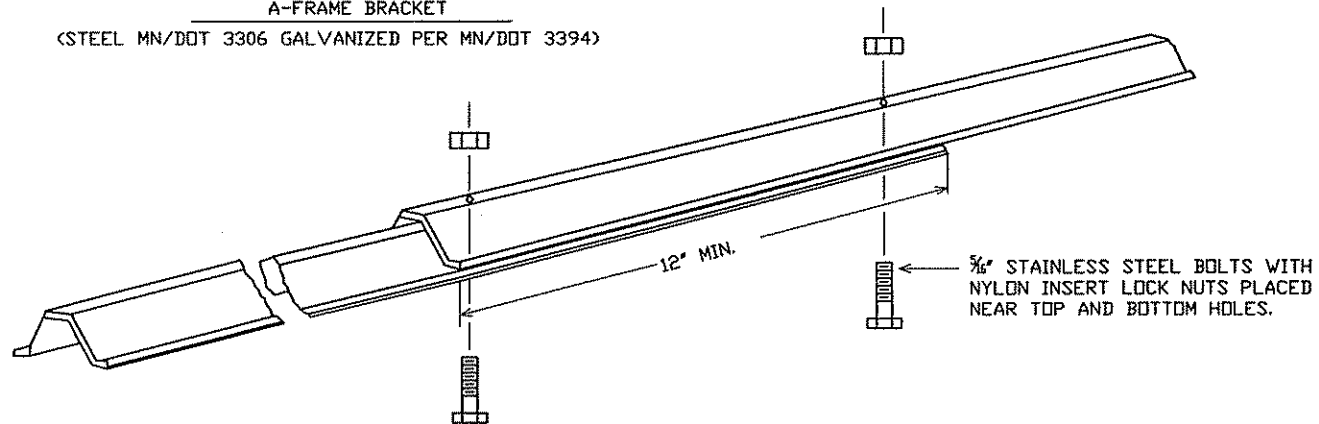


TYPICAL "A-FRAME" INSTALLATION
TYPE "C" SIGNS



TYPICAL MOUNTING

(1) OFFSET STUB POST 1' TOWARD ROADWAY
RELATIVE TO VERTICAL POST.



KNEE BRACE SPLICE

NO	DATE	BY	CHKD	APPR	REVISION

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HIGHWAY DEPT.

PROJECT NO.
ANOKA COUNTY
CITY OF ANOKA
CITY OF RAMSEY

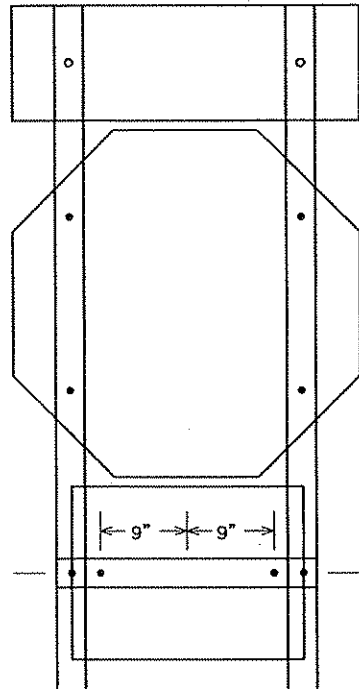
S.P. 02-716-07

S.P. 103-122-12

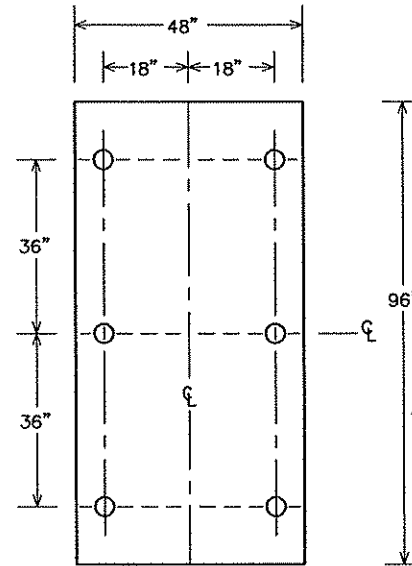
S.P. 199-020-04

TYPE C & D SIGN
STRUCTURAL DETAILS
PAGE 2 OF 3

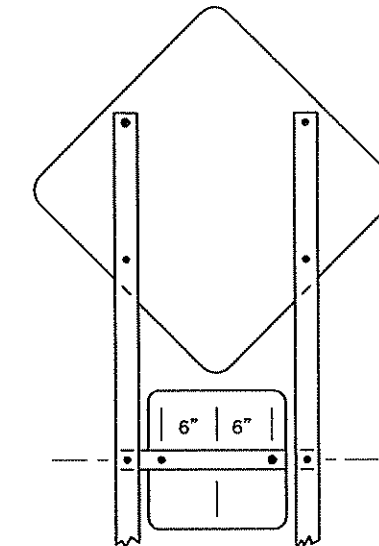
Sheet 79 of 120 Sheets



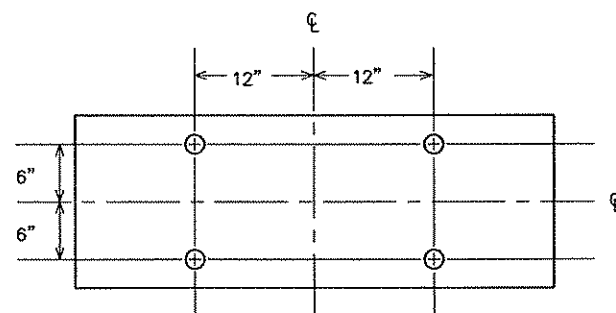
R6-1, R1-1 & (R6-3 OR R6-3a)
MOUNTING



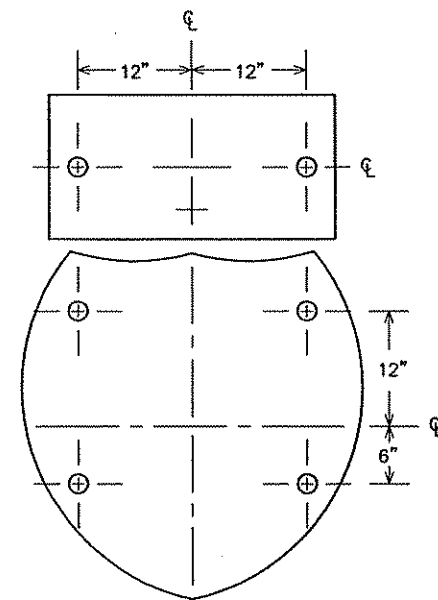
PUNCHING FOR R2-4b
SPEED LIMIT



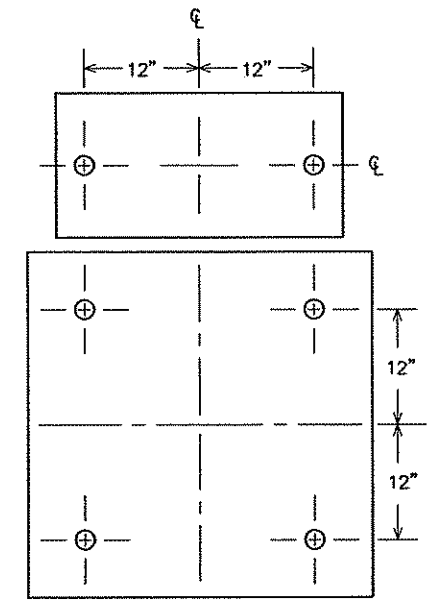
(W1-1, W1-2, W1-3, W1-4 OR W1-5) & W13-1
MOUNTING



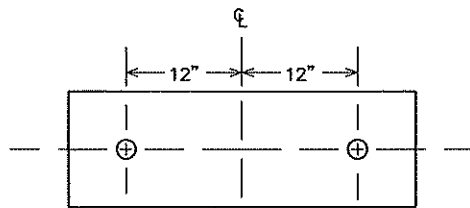
PUNCHING FOR R6-1(48"x18")



(M3-1A, M3-2A, M3-3A OR M3-4A) [30"x15"] AND
M1-1 [45"x36" OR 36"x36"]
PUNCHING



(M3-1, M3-1A, M3-2, M3-2A, M3-3, M3-3A, M3-4 OR
M3-4A) [30"x15"] AND (M1-4 OR M1-5A) [36"x36"]
PUNCHING



PUNCHING FOR R6-1(36"x12")

NO	DATE	BY	CKD	APPR	REVISION

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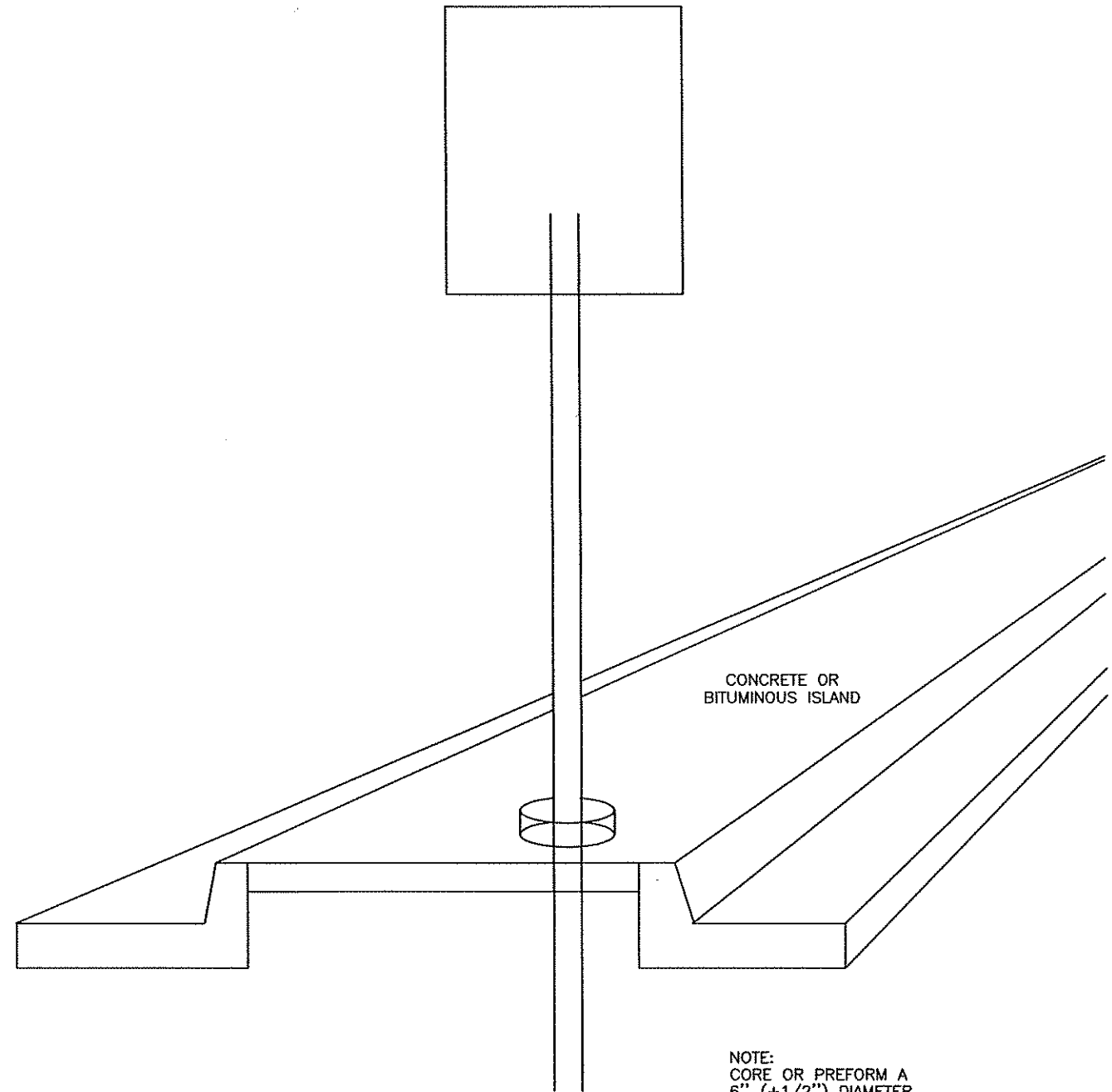
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ANOKA COUNTY
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 CITY OF RAMSEY S.P. 199-020-04

TYPE C & D SIGN
 STRUCTURAL DETAILS
 PAGE 3 OF 3
 Sheet 80 of 120 Sheets



FLANGED CHANNEL POST MOUNTED THROUGH SURFACED
MEDIAN OR SIDEWALK

NOTE:
CORE OR PREFORM A
6" (+1/2") DIAMETER
HOLE FOR EACH POST.

NO	DATE	BY	CKD	APPR	REVISION

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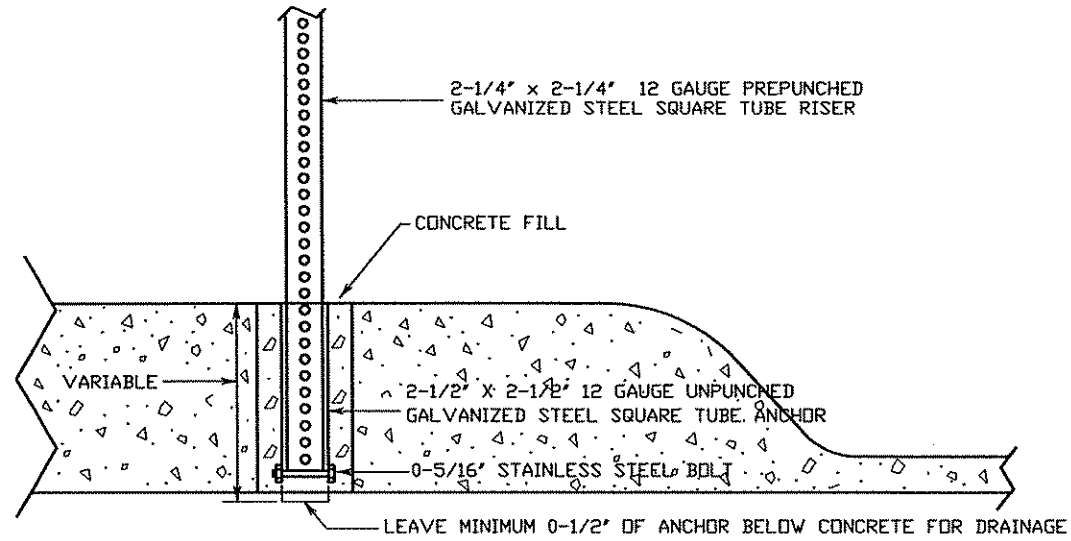


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FLANGE CHANNEL
POST DETAILS
PAGE 1 OF 1



NOTES;

1. DRILL A 8" DIAMETER HOLE THE FULL DEPTH OF THE CONCRETE ISLAND.
2. DRILL 0-3/8" HOLES ON OPPOSITE SIDES OF THE UNPUNCHED GALVANIZED STEEL SQUARE TUBE ANCHOR APPROX. 1" FROM THE BOTTOM OF THE ANCHOR. INSERT A 0-5/16" STAINLESS STEEL BOLT THROUGH THE HOLES AND SECURE WITH A STAINLESS STEEL LOCK NUT WITH NYLON INSERT. THE PREPUNCHED GALVANIZED STEEL SQUARE TUBE RISER (TO BE INSERTED INSIDE THE UNPUNCHED GALVANIZED SQUARE TUBE ANCHOR) WILL REST ON BOLT.
3. INSERT THE ANCHOR IN THE PRE DRILLED HOLE IN THE CONCRETE ISLAND.
4. AFTER INSTALLATION OF THE UNPUNCHED GALVANIZED STEEL SQUARE TUBE ANCHOR, FILL THE HOLE WITH A CONCRETE MIX APPROVED BY THE ENGINEER AND LEVEL OFF THE TOP OF CONCRETE.

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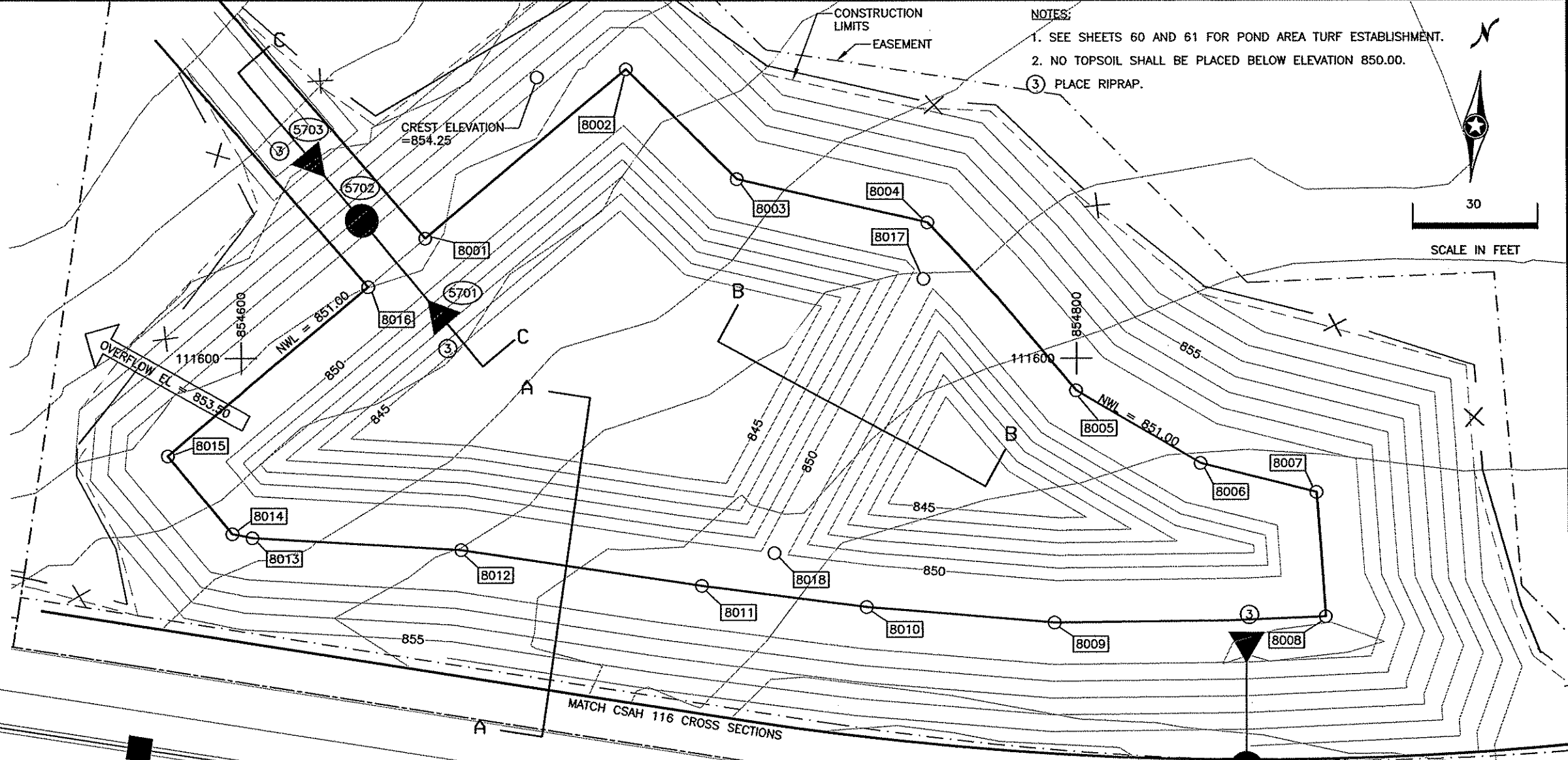
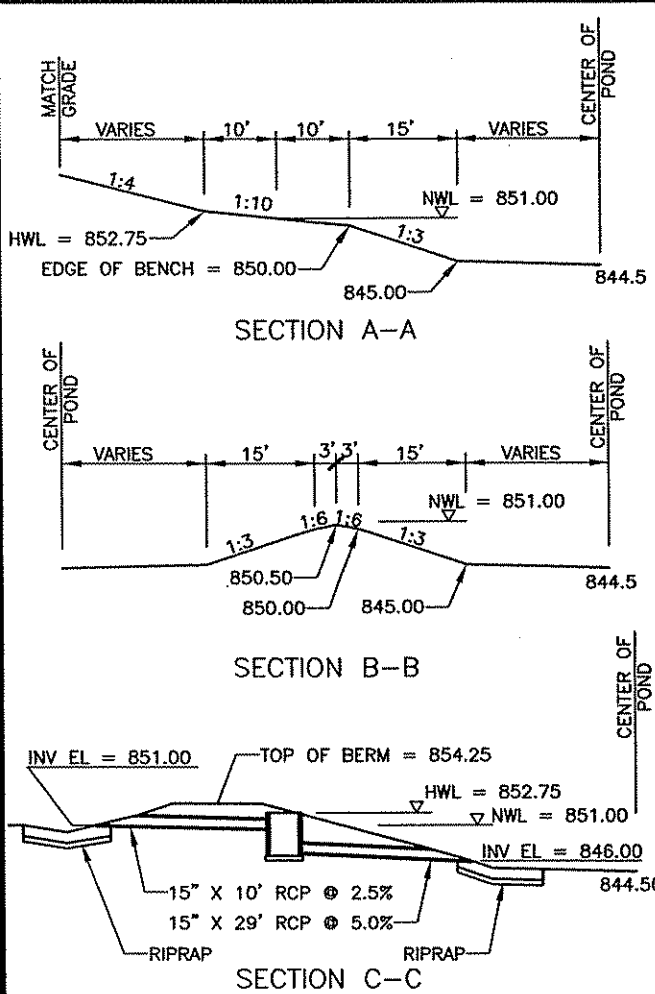
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 CITY OF RAMSEY S.P. 199-020-04

TYPE C SIGNS
 PAGE 1 OF 1
 Sheet 82 of 120 Sheets



NOTES:
 1. SEE SHEETS 60 AND 61 FOR POND AREA TURF ESTABLISHMENT.
 2. NO TOPSOIL SHALL BE PLACED BELOW ELEVATION 850.00.
 3. PLACE RIPRAP.

POINT NUMBER	STATION	LOCATION	COORDINATES		ELEVATION
			X	Y	
8001	126+29.97	150.07 LT	854644.36	111628.61	851.00
8002	126+71.57	197.35 LT	854692.70	111668.95	851.00
8003	127+01.62	175.44 LT	854719.05	111642.71	851.00
8004	127+54.33	171.67 LT	854764.21	111632.38	851.00
8005	128+01.93	134.94 LT	854799.84	111592.38	851.00
8006	128+37.38	118.68 LT	854829.33	111574.96	851.00
8007	128+69.42	111.69 LT	854857.03	111567.99	851.00
8008	128+71.07	81.99 LT	854859.10	111538.32	851.00
8009	127+99.59	79.25 LT	854794.39	111536.92	851.00
8010	127+49.76	78.82 LT	854749.35	111540.64	851.00
8017	127+55.05	158.22 LT	854763.24	111618.95	850.50
8016	126+18.08	136.56 LT	854630.54	111617.08	851.00
8015	125+76.43	89.22 LT	854582.13	111576.68	851.00
8014	125+94.63	73.21 LT	854597.66	111558.06	851.00
8013	125+99.61	73.00 LT	854602.55	111557.10	851.00
8012	126+49.48	77.87 LT	854652.59	111554.27	851.00
8011	126+99.80	78.02 LT	854702.33	111546.71	851.00
8018	127+23.88	88.63 LT	854727.58	111553.53	850.50

NO	DATE	BY	CKD	APPR	REVISION

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 PRINT NAME: ALAN L. PALMER, P.E.
 SIGNATURE: *[Signature]*
 DATE: 18 JUNE 2005 LICENSE NO. 42452

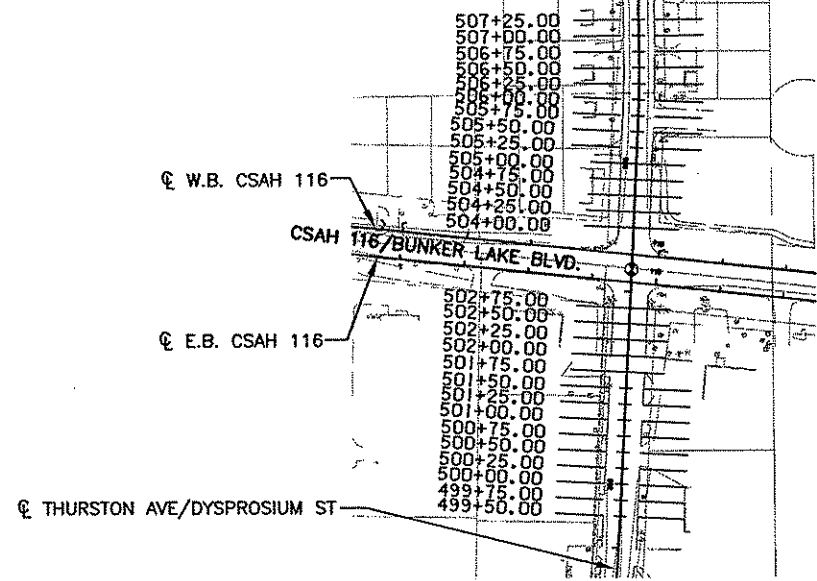
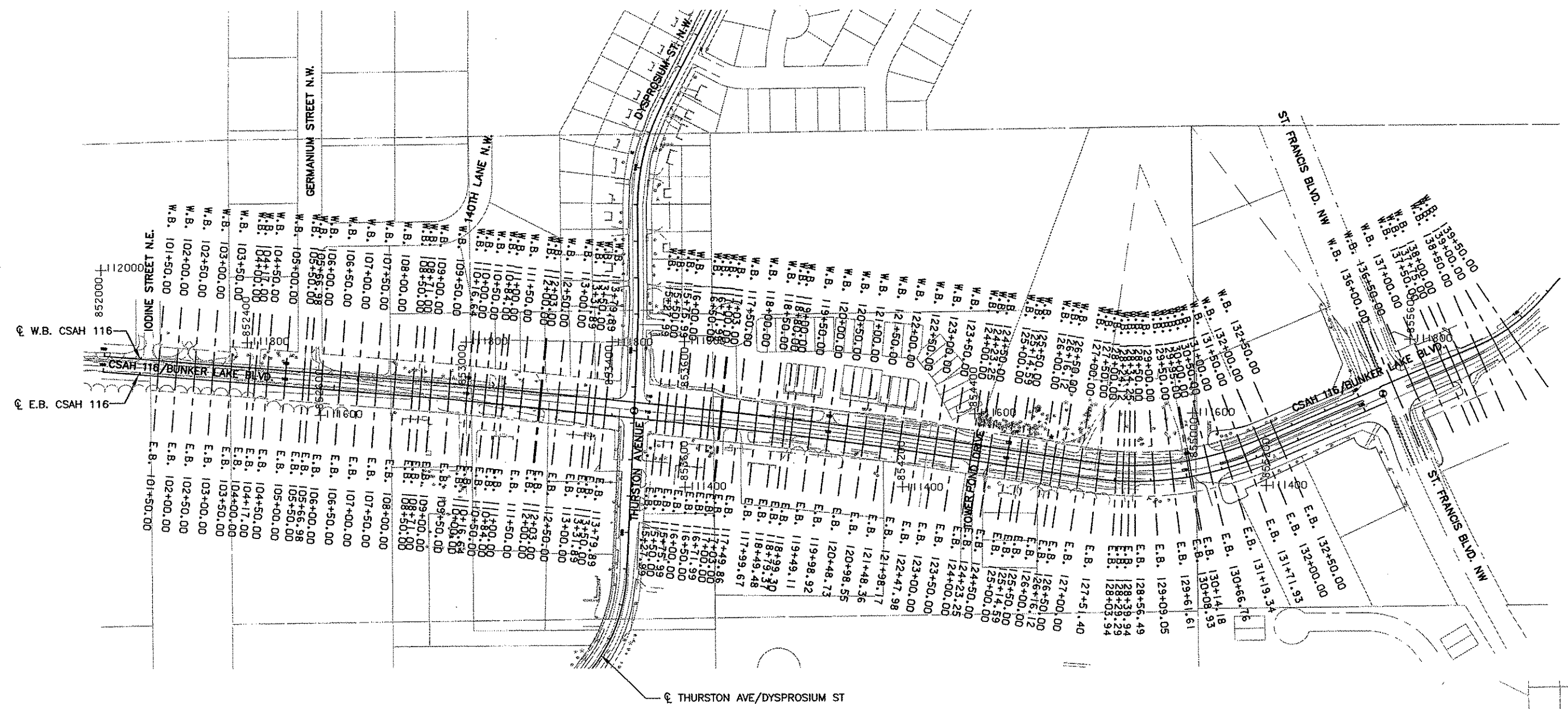
ANOKA COUNTY HIGHWAY DEPT.
 DRAWN BY: RLH/DJS DATE: 02/18/05
 DESIGN BY: AJP/EDD DATE: 02/18/05
 CHECKED BY: AJP DATE: 02/18/05

PROJECT NO. ANOKA COUNTY CITY OF ANOKA CITY OF RAMSEY
 S.P. 02-716-07
 S.P. 103-122-12
 S.P. 199-020-04

WATER QUALITY POND
 PAGE 1 OF 1
 Sheet 83 of 120 Sheets



300
SCALE IN FEET



NO	DATE	BY	CKD	APPR	REVISION

NAME: Q:\SHEET\17366_S0_01.DWG

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

PRINT NAME: ALAN J. PALBER, R.E.
SIGNATURE: *[Signature]*
DATE: 18 JUNE 2005 LICENSE NO. 42452

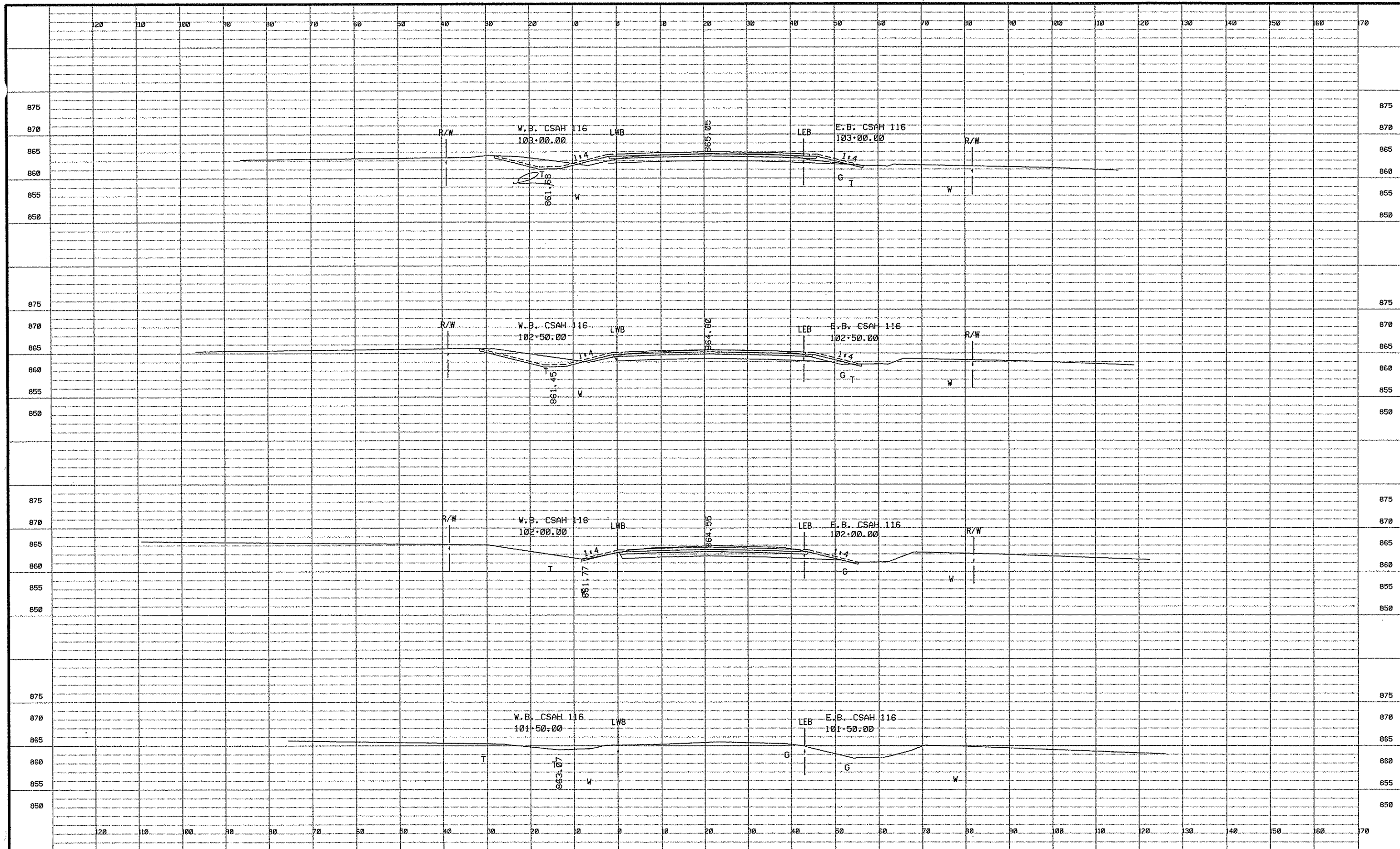
DRAWN BY: RLH/DJS DATE: 02/18/05
DESIGN BY: AJP/EDD DATE: 02/18/05
CHECKED BY: AJP DATE: 02/18/05



ANOKA COUNTY
HIGHWAY DEPT.

PROJECT NO.
ANOKA COUNTY S.P. 02-716-07
CITY OF ANOKA S.P. 103-122-12
CITY OF RAMSEY S.P. 199-020-04

CROSS SECTION
LAYOUT
PAGE 1 OF 1
Sheet 84 of 120 Sheets

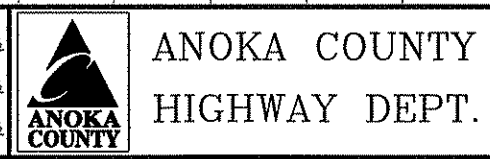


NO	DATE	BY	CKD	APPR	REVISION

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

PRINT NAME: ALAN J. PALMER, P.E.
 SIGNATURE: *[Signature]*
 DATE: 15 JUNE 2005 LICENSE NO. 42462

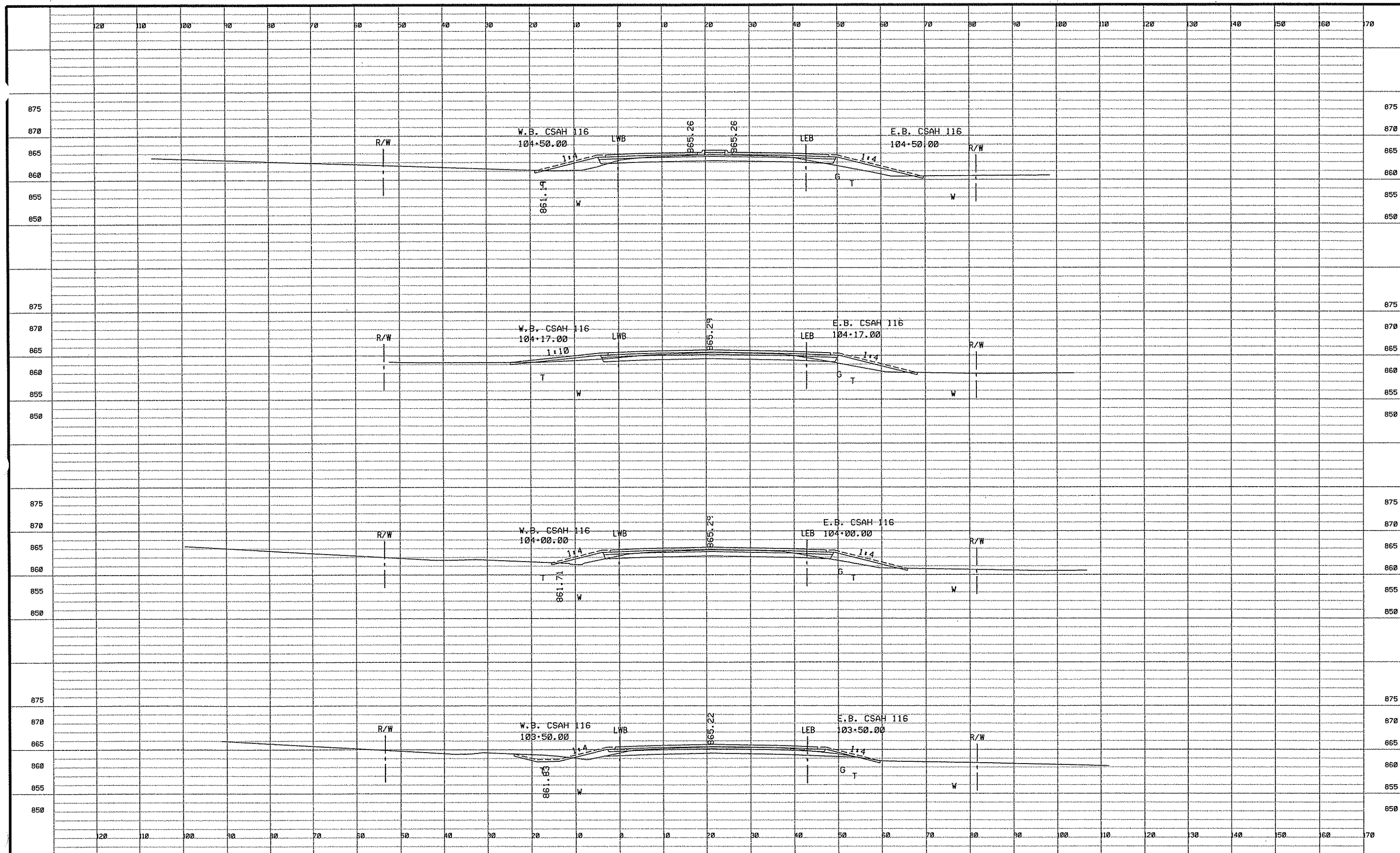
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 DESIGN BY: AJP/EDD DATE 02/18/05
 CHECKED BY: AJP DATE 02/18/05



PROJECT NO. ANOKA COUNTY CITY OF ANOKA CITY OF RAMSEY

S.P. 02-716-07
 S.P. 103-122-12
 S.P. 199-020-04

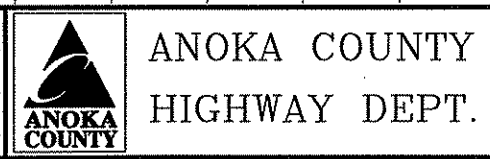
CROSS SECTIONS
 STA 101+50.00 TO 103+00.00
 Sheet 85 of 120 Sheets



NO	DATE	BY	CKD	APPR	REVISION

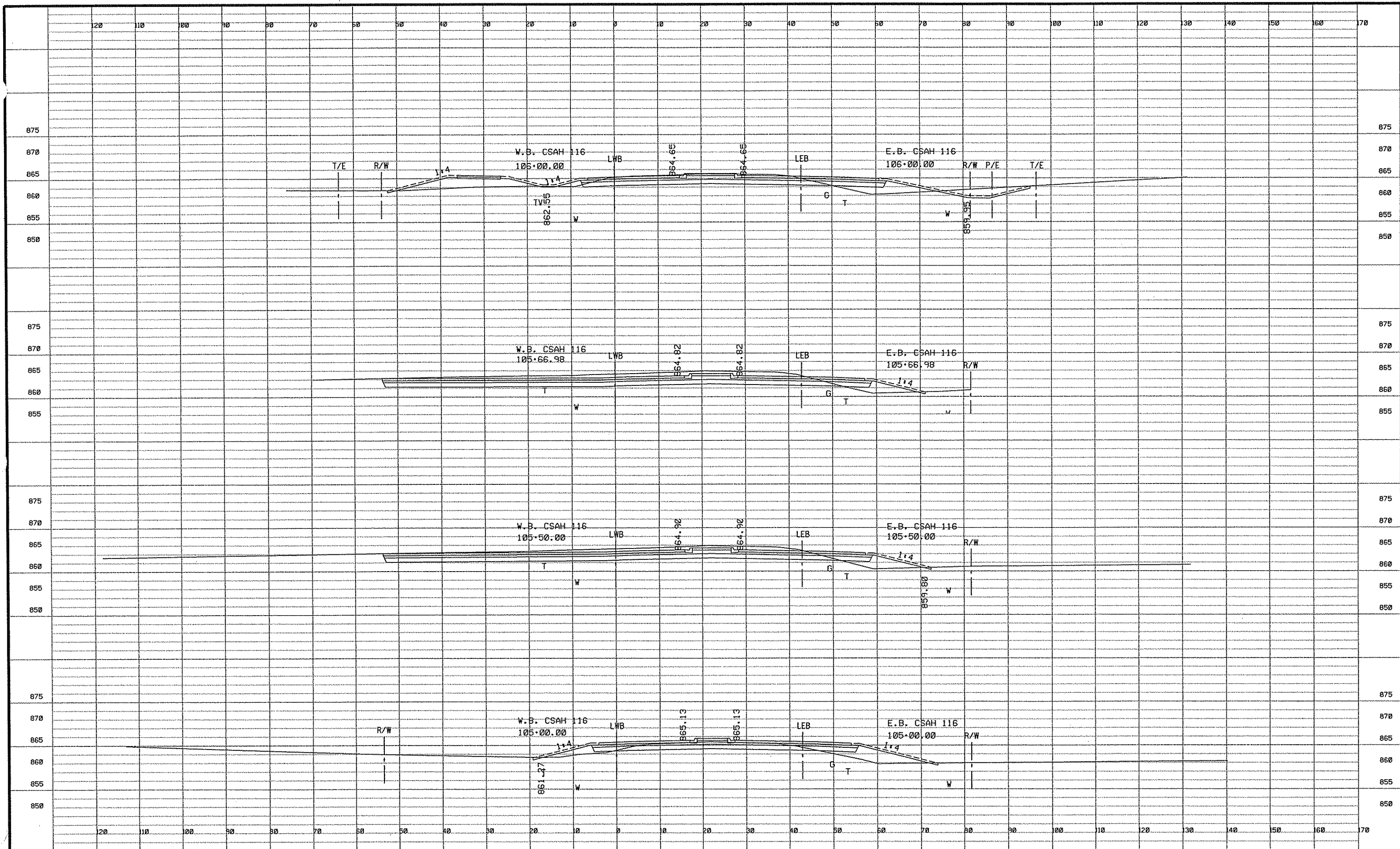
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 PRINT NAME: ALAN J. PALMER, P.E.
 SIGNATURE: *[Signature]*
 DATE: 18 JUNE 2005 LICENSE NO. 42462

DRAWN BY: REB/RH/LSD DATE 02/18/05
 DESIGN BY: AJP/EDD DATE 02/18/05
 CHECKED BY: AJP DATE 02/18/05



PROJECT NO.
 ANOKA COUNTY S.P. 02-716-07
 CITY OF ANOKA S.P. 103-122-12
 CITY OF RAMSEY S.P. 199-020-04

CROSS SECTIONS
 STA 103+50.00 TO 104+50.00
 Sheet 86 of 120 Sheets

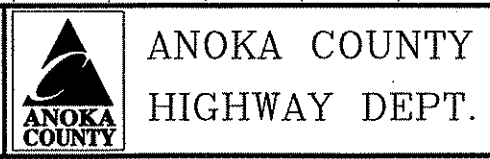


NO	DATE	BY	CHKD	APPR	REVISION

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

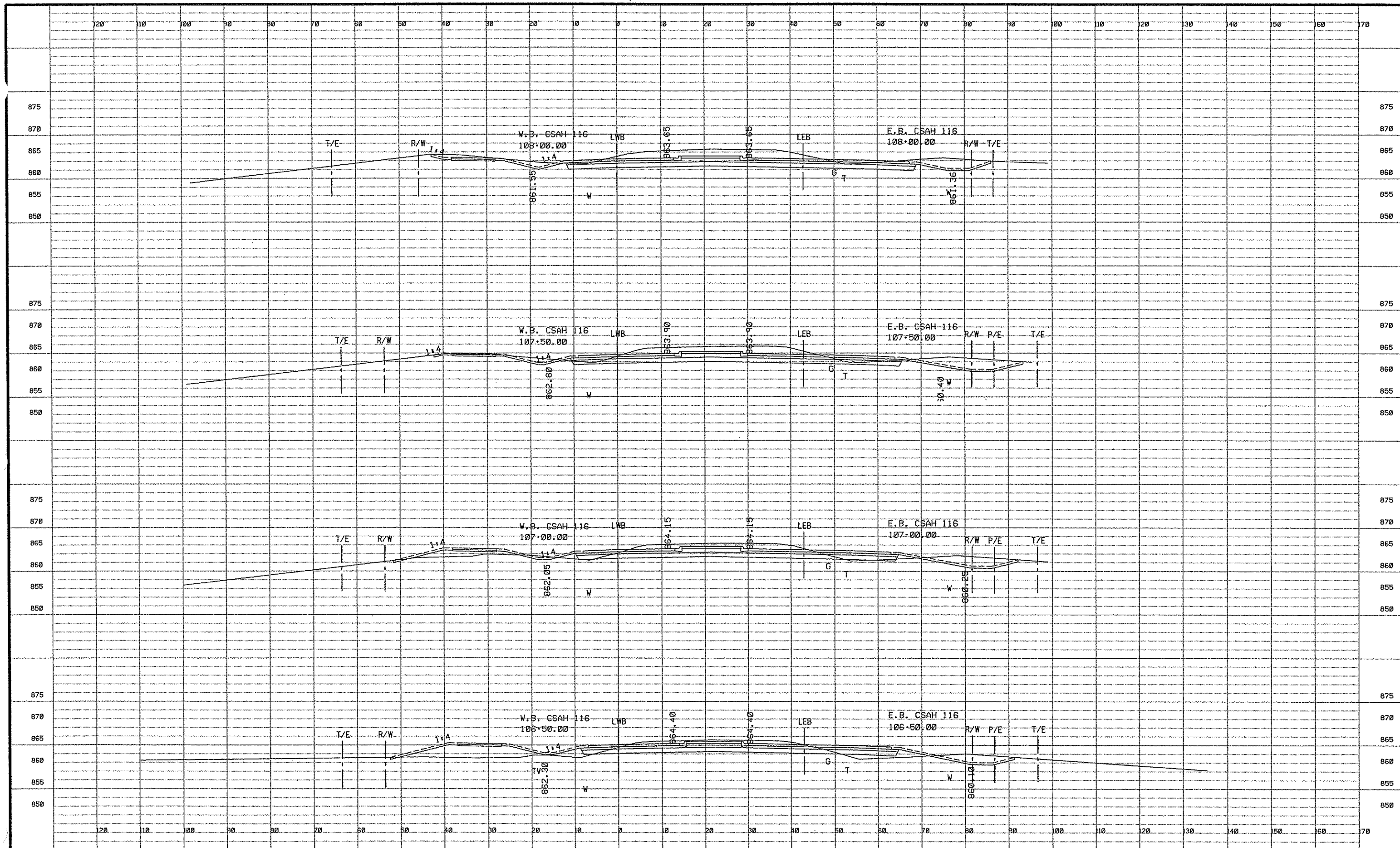
PRINT NAME: ALAN J. PALMER, P.E.
 SIGNATURE: *[Signature]*
 DATE: 18 JUNE 2005 LICENSE NO. 42462

DRAWN BY: REB/RUH/ISO DATE: 02/18/05
 DESIGN BY: AJP/EDD DATE: 02/18/05
 CHECKED BY: AJP DATE: 02/18/05



PROJECT NO.
 ANOKA COUNTY S.P. 02-716-07
 CITY OF ANOKA S.P. 103-122-12
 CITY OF RAMSEY S.P. 199-020-04

CROSS SECTIONS
 STA 105+00.00 TO 106+00.00
 Sheet 87 of 120 Sheets



I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 PRINT NAME: ALAN J. PALMER, P.E.
 SIGNATURE: *[Signature]*
 DATE: 18 JUNE 2005 LICENSE NO. 42462

DRAWN BY: REB/RH/LSD DATE 02/18/05
 DESIGN BY: AJP/EDD DATE 02/18/05
 CHECKED BY: AJP DATE 02/18/05



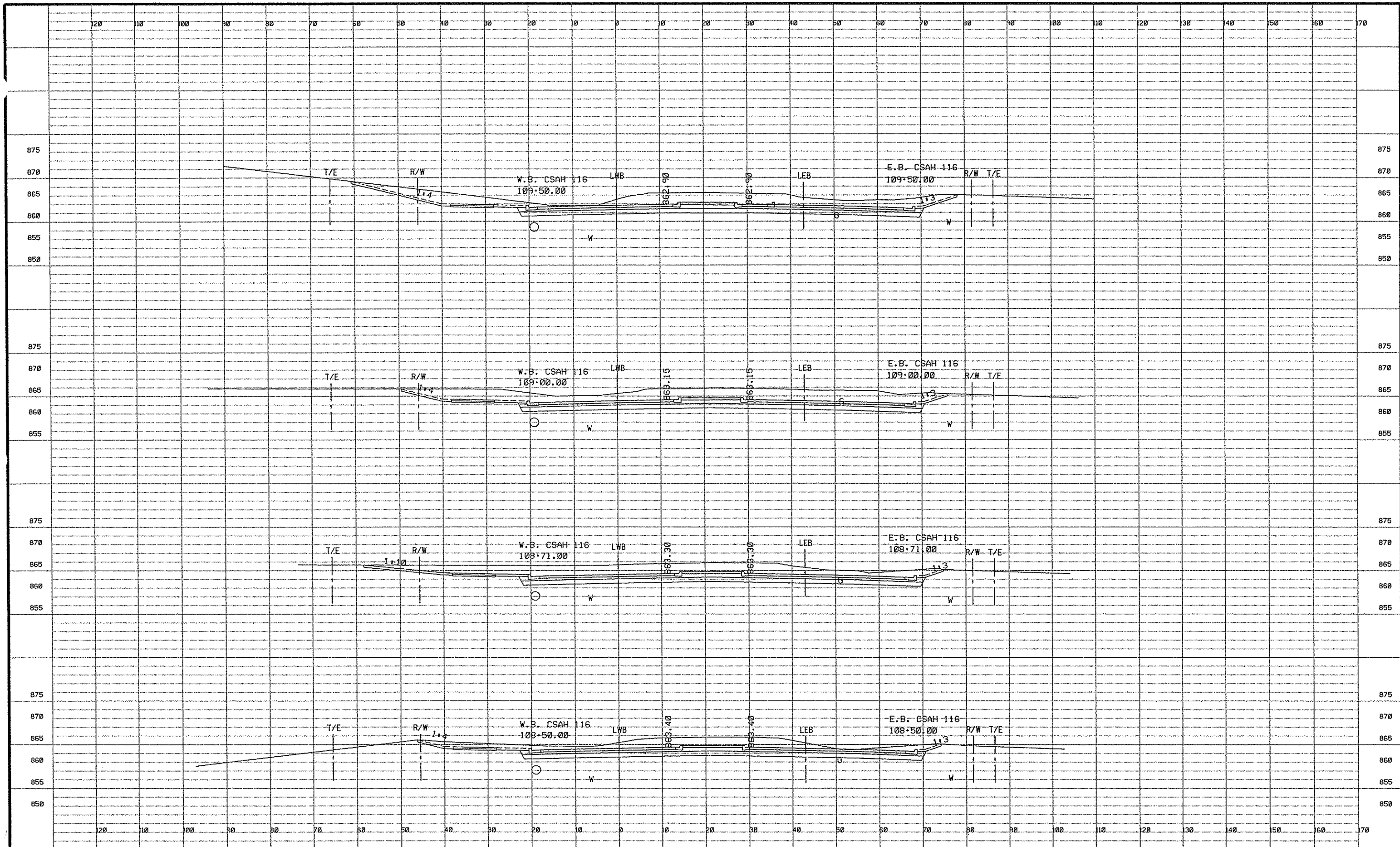
ANOKA COUNTY
 HIGHWAY DEPT.

PROJECT NO.
 ANOKA COUNTY
 CITY OF ANOKA
 CITY OF RAMSEY

S.P. 02-716-07
 S.P. 103-122-12
 S.P. 199-020-04

CROSS SECTIONS
 STA 106+50.00 TO 108+00.00
 Sheet 88 of 120 Sheets

NO	DATE	BY	CKD	APPR	REVISION

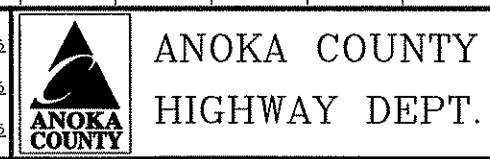


NO	DATE	BY	CKD	APPR	REVISION

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

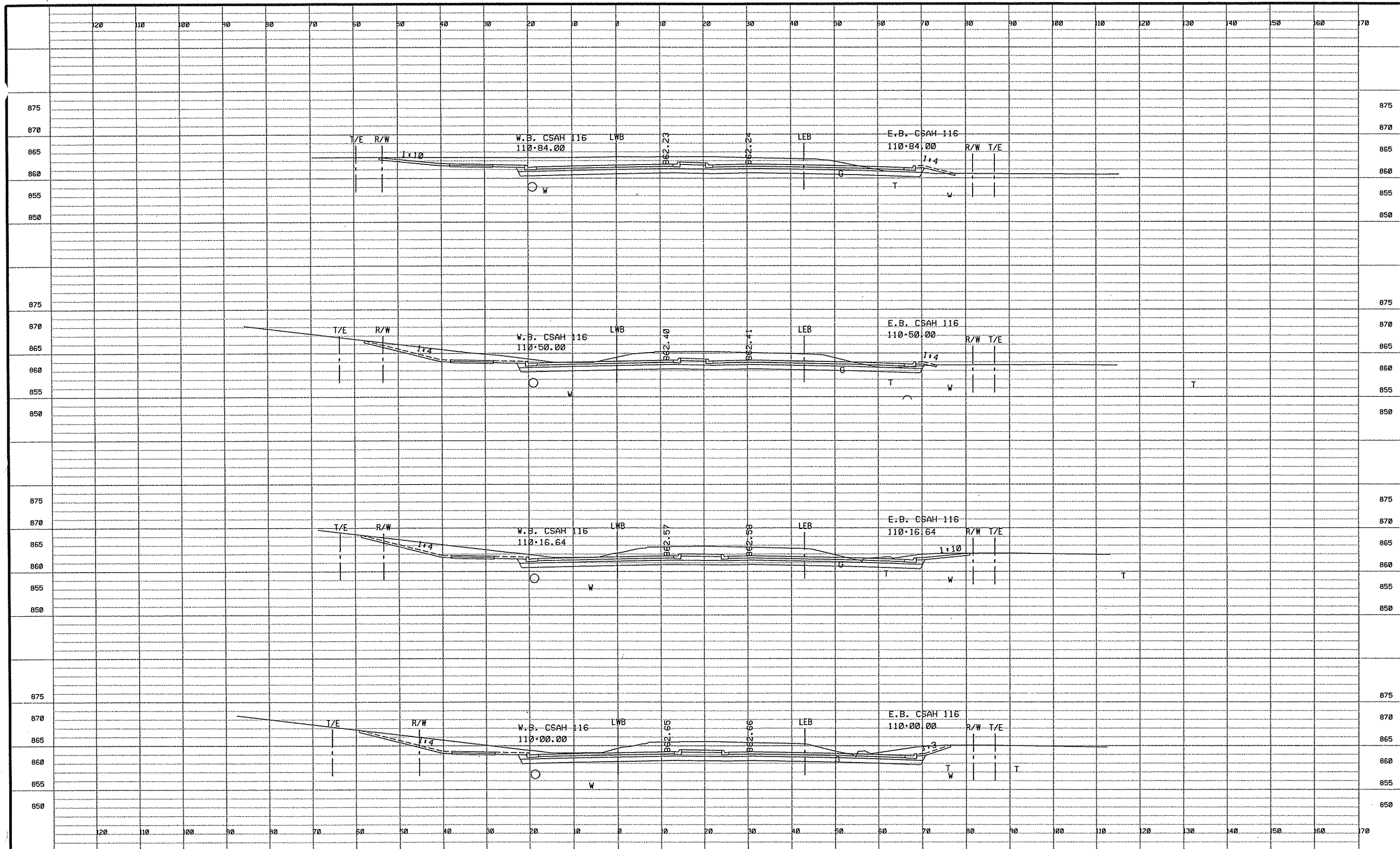
PRINT NAME: ALAN J. PALMER, P.E.
 SIGNATURE: *[Signature]*
 DATE: 18 JUNE 2005 LICENSE NO. 42462

DRAWN BY: REB/RLH/LSO DATE 02/18/05
 DESIGN BY: AJP/EDD DATE 02/18/05
 CHECKED BY: AJP DATE 02/18/05



PROJECT NO. ANOKA COUNTY S.P. 02-716-07
 CITY OF ANOKA S.P. 103-122-12
 CITY OF RAMSEY S.P. 199-020-04

CROSS SECTIONS
 STA 108+50.00 TO 109+50.00
 Sheet 89 of 120 Sheets



NO	DATE	BY	CKD	APPR	REVISION

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 PRINT NAME: ALAN J. PALMER, P.E.
 SIGNATURE: *[Signature]*
 DATE: 18 JUNE 2005 LICENSE NO. 42462

DRAWN BY: REB/RLH/ASO DATE 02/18/05
 DESIGN BY: AJP/EDD DATE 02/18/05
 CHECKED BY: AJP DATE 02/18/05

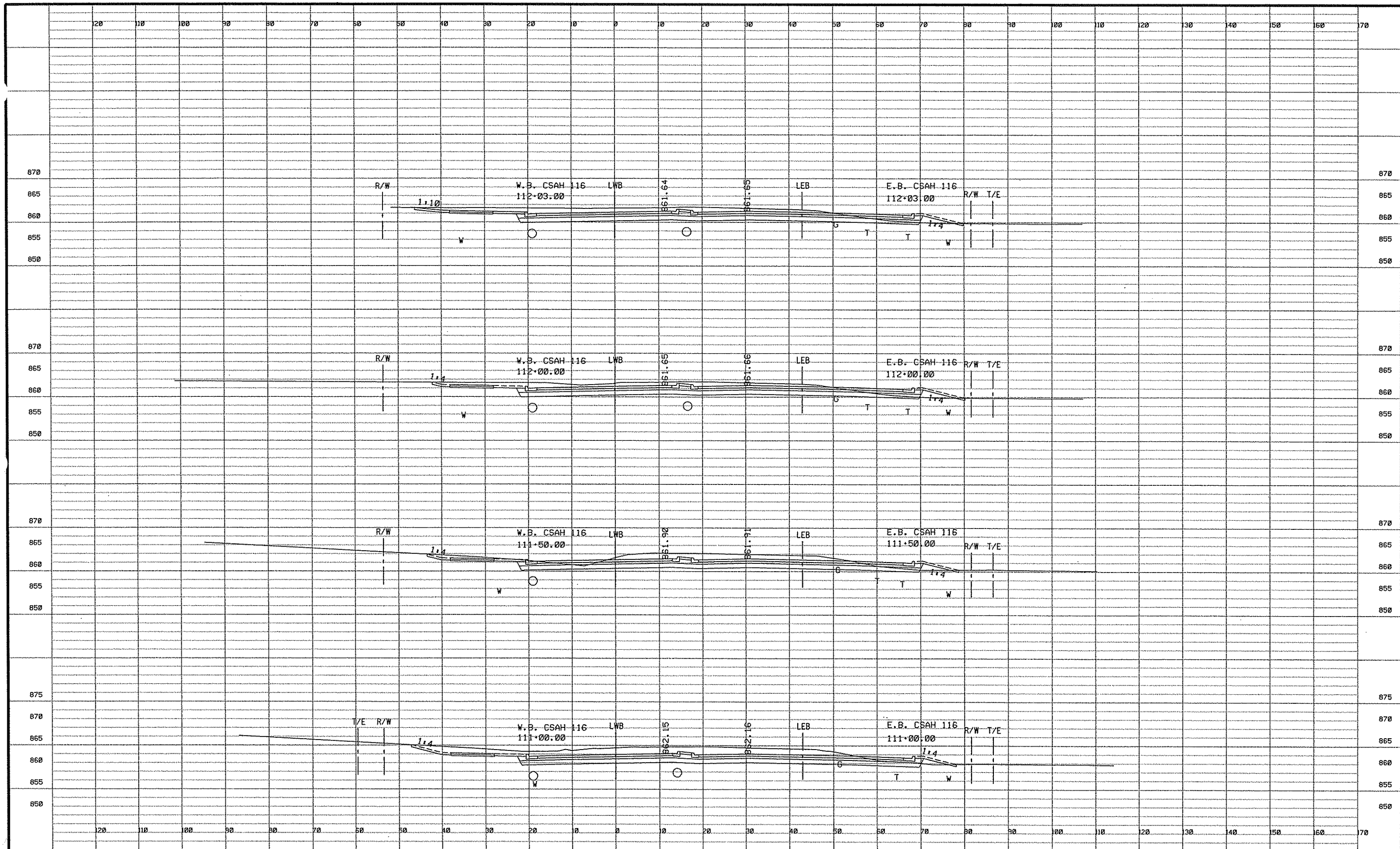


ANOKA COUNTY
 HIGHWAY DEPT.

PROJECT NO.
 ANOKA COUNTY
 CITY OF ANOKA
 CITY OF RAMSEY

S.P. 02-716-07
 S.P. 103-122-12
 S.P. 199-020-04

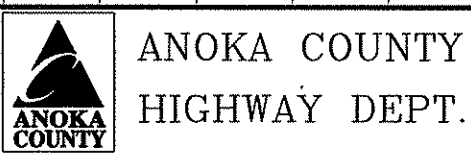
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 Sheet 90 of 120 Sheets



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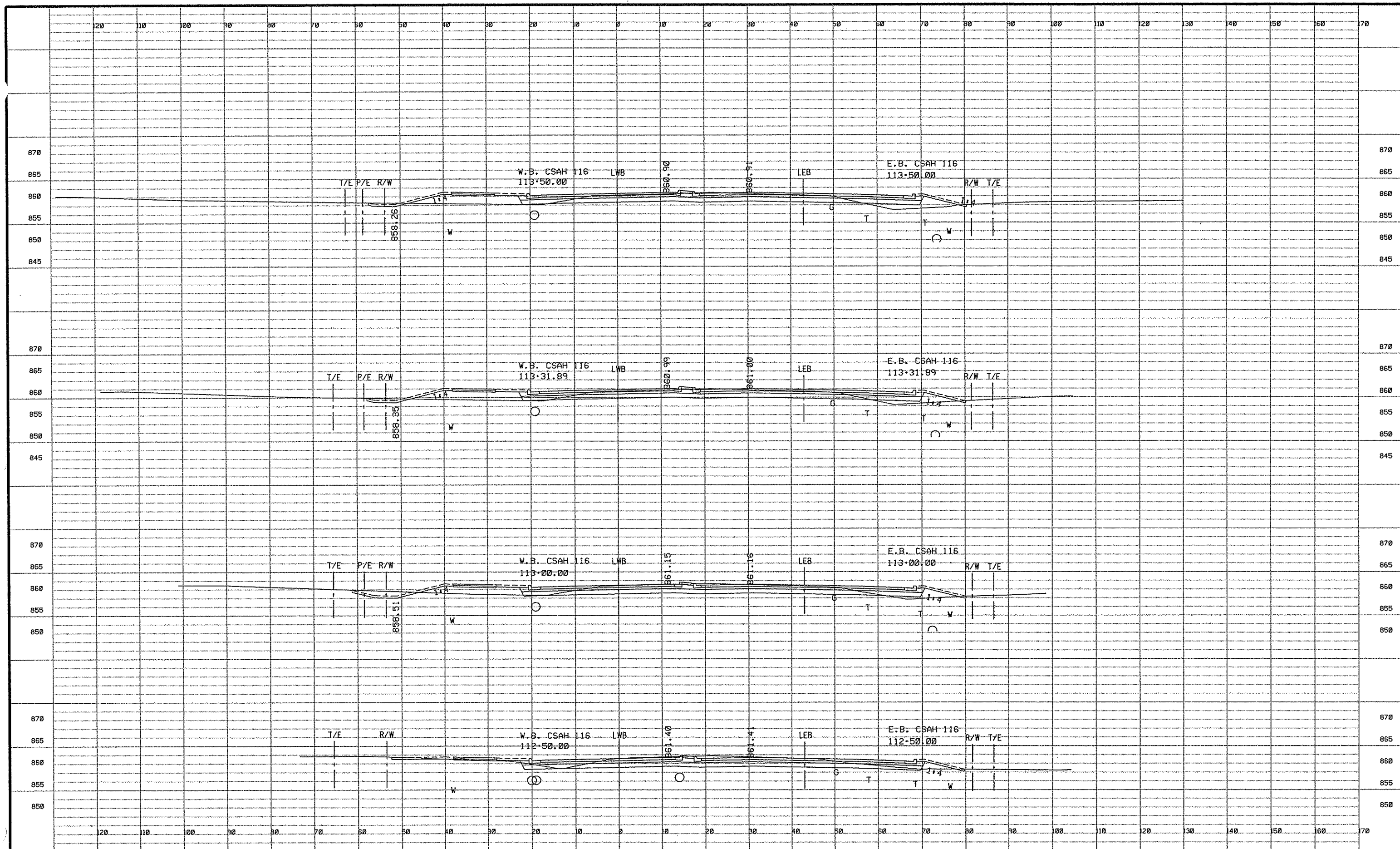
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 PRINT NAME: ALAN J. PALMER, P.E.
 SIGNATURE: *[Signature]*
 DATE: 18 JUNE 2005 LICENSE NO. 42462

DRAWN BY: REB/RLH/LSO DATE 02/18/05
 DESIGN BY: AJP/EDD DATE 02/18/05
 CHECKED BY: AJP DATE 02/18/05



PROJECT NO.
 ANOKA COUNTY S.P. 02-716-07
 CITY OF ANOKA S.P. 103-122-12
 CITY OF RAMSEY S.P. 199-020-04

CROSS SECTIONS
 STA 111+00.00 TO 112+03.00
 Sheet 91 of 120 Sheets



NO	DATE	BY	CRD	APPR	REVISION

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

PRINT NAME: ALAN J. PALMER, P.E.
 SIGNATURE: *[Signature]*
 DATE: 18 JUNE 2005 LICENSE NO. 42462

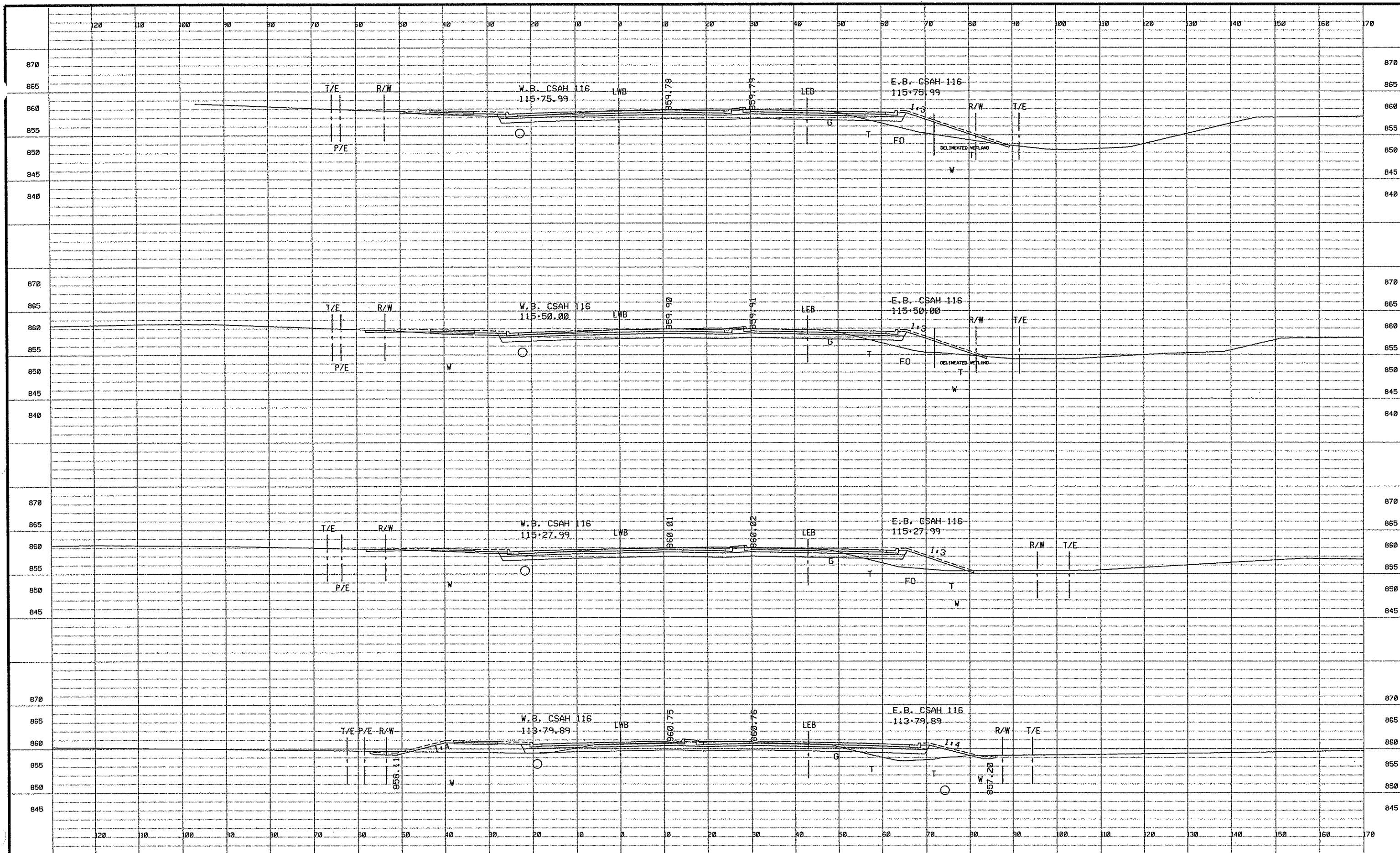
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 DESIGN BY: AJP/EDD DATE 02/18/05
 CHECKED BY: AJP DATE 02/18/05



**ANOKA COUNTY
HIGHWAY DEPT.**

PROJECT NO.
 ANOKA COUNTY S.P. 02-716-07
 CITY OF ANOKA S.P. 103-122-12
 CITY OF RAMSEY S.P. 199-020-04

CROSS SECTIONS
 STA 112+50.00 TO 113+50.00
 Sheet 92 of 120 Sheets

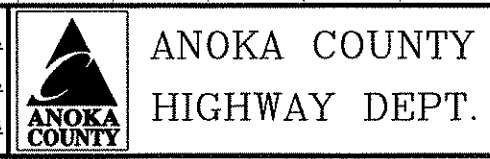


NO	DATE	BY	CKD	APPR	REVISION

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

PRINT NAME: ALAN J. PALMER, P.E.
 SIGNATURE: *[Signature]*
 DATE: 18 JUNE 2005 LICENSE NO. 42462

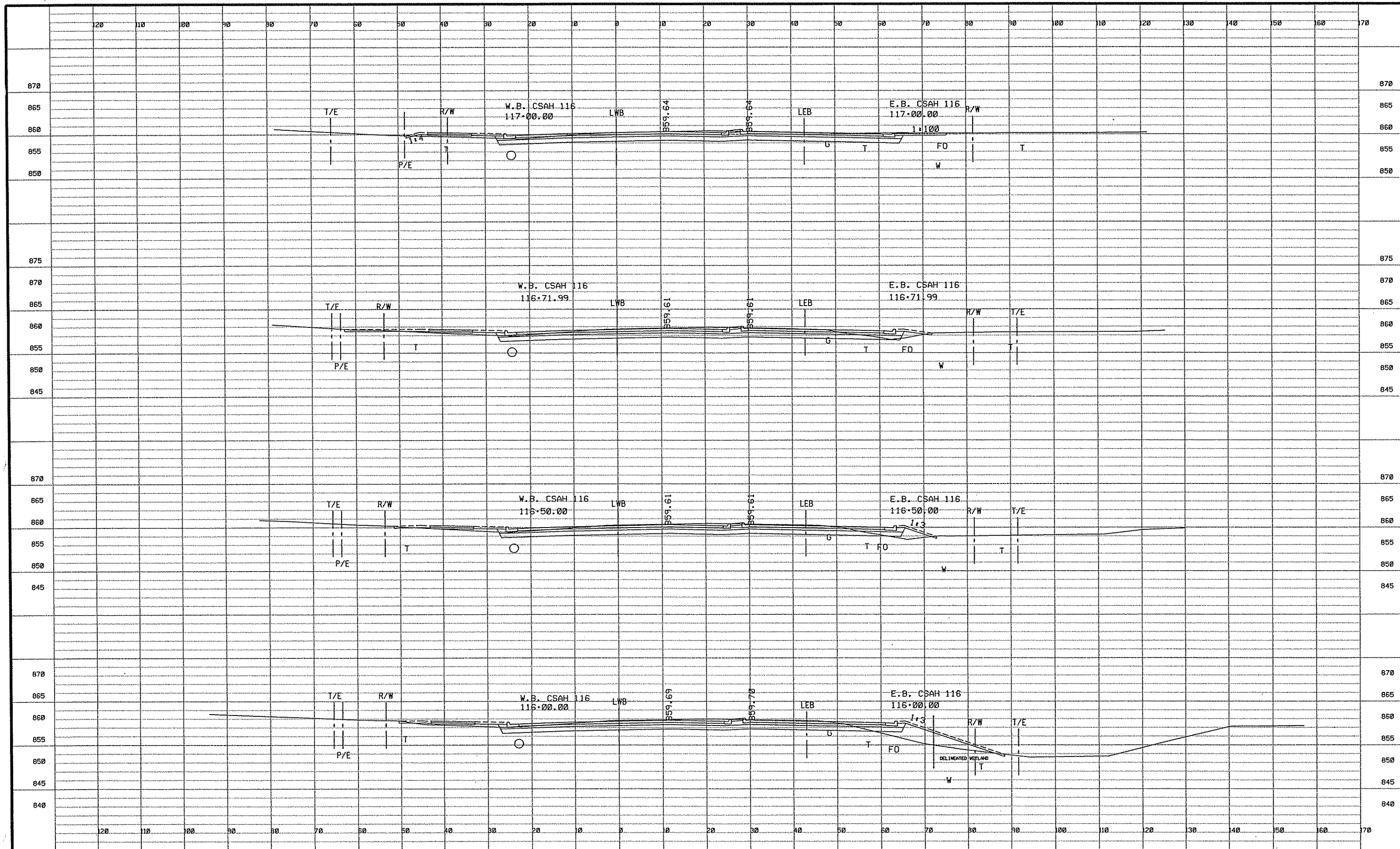
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 DESIGN BY: AJP/EDD DATE 02/18/05
 CHECKED BY: AJP DATE 02/18/05



PROJECT NO. ANOKA COUNTY CITY OF ANOKA CITY OF RAMSEY

S.P. 02-716-07
 S.P. 103-122-12
 S.P. 199-020-04

CROSS SECTIONS
 STA 113+79.89 TO 115+75.99
 Sheet 93 of 120 Sheets

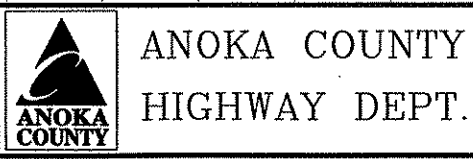


NO	DATE	BY	CKD	APPR	REVISION

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

PRINT NAME: ALAN J. PALMER, P.E.
 SIGNATURE: *[Signature]*
 DATE: 18 JUNE 2005 LICENSE NO. 42462

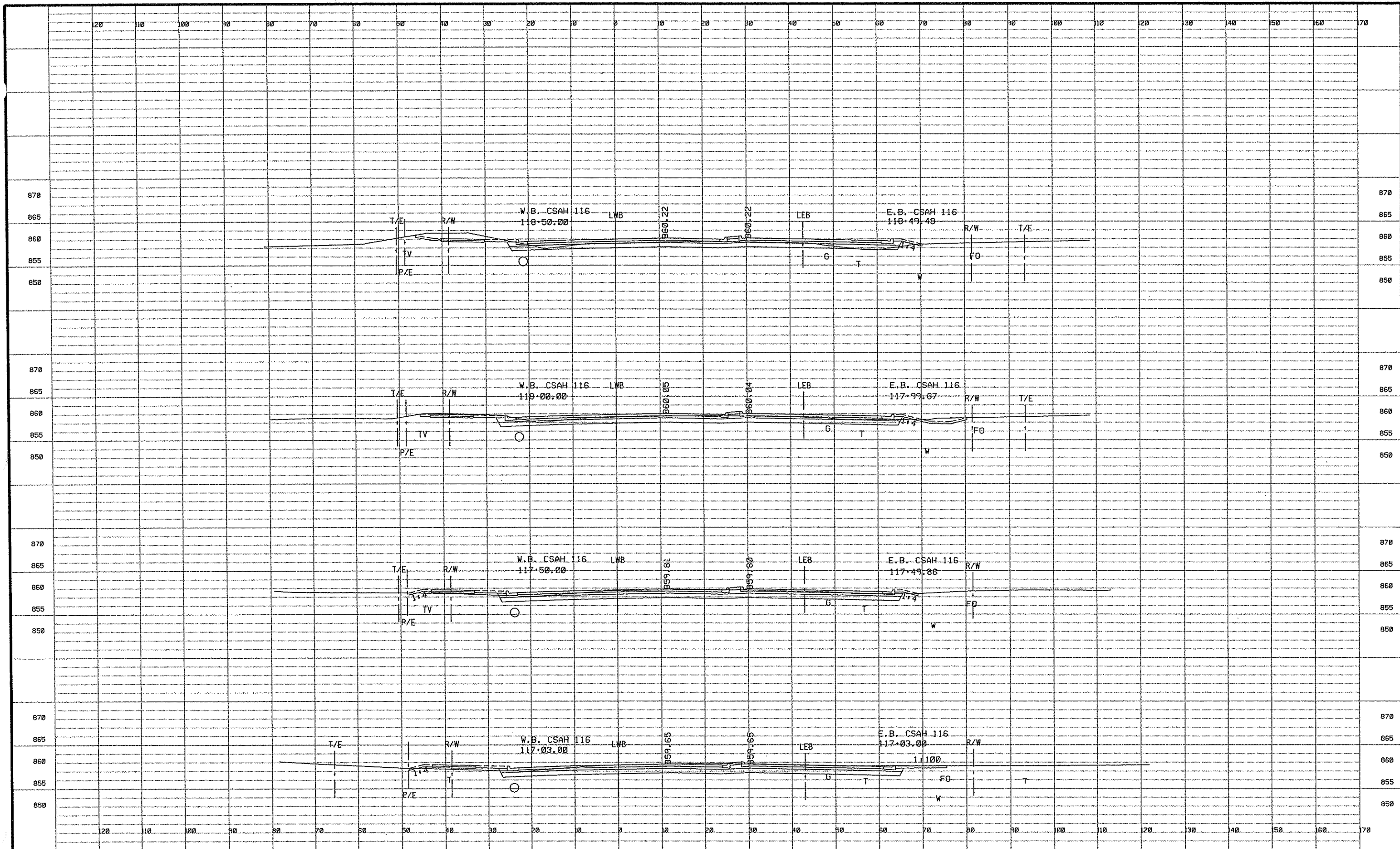
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 DESIGN BY: AJP/EDD DATE 02/18/05
 CHECKED BY: AJP DATE 02/18/05



PROJECT NO. ANOKA COUNTY CITY OF ANOKA CITY OF RAMSEY

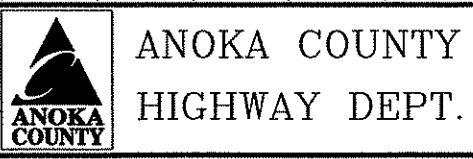
S.P. 02-716-07
 S.P. 103-122-12
 S.P. 199-020-04

CROSS SECTIONS
 STA 116+00.00 TO 117+00.00
 Sheet 94 of 120 Sheets



I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 PRINT NAME: ALAN J. PALMER, P.E.
 SIGNATURE: *[Signature]*
 DATE: 18 JUNE 2005 LICENSE NO. 42462

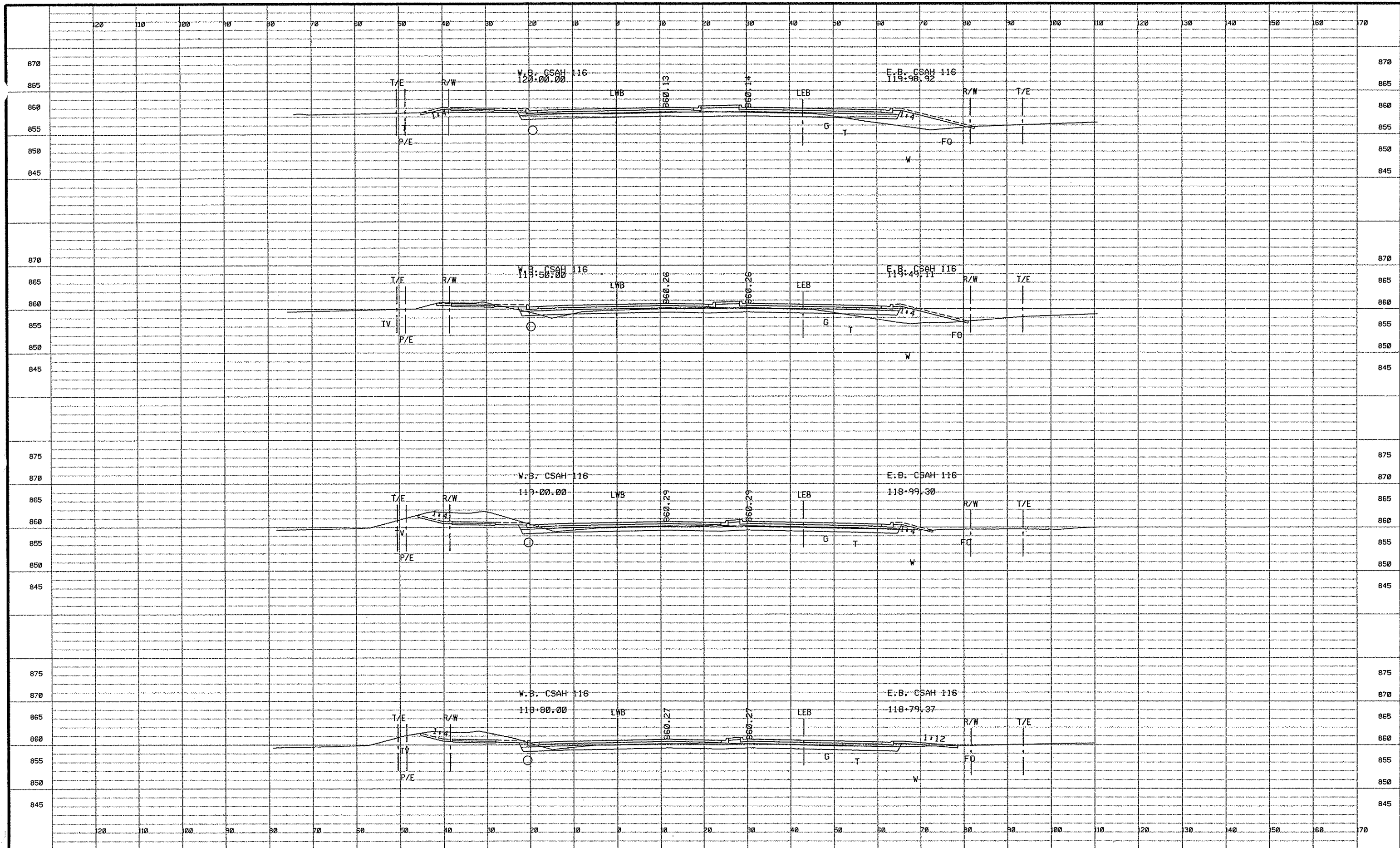
DRAWN BY: REB/RUH/LSO DATE 02/18/05
 DESIGN BY: AJP/EDD DATE 02/18/05
 CHECKED BY: AJP DATE 02/18/05



PROJECT NO. ANOKA COUNTY CITY OF ANOKA CITY OF RAMSEY
 S.P. 02-716-07
 S.P. 103-122-12
 S.P. 199-020-04

CROSS SECTIONS
 STA 117+03.00 TO 118+50.00
 Sheet 95 of 120 Sheets

NO	DATE	BY	CKD	APPR	REVISION



NO	DATE	BY	CKD	APPR	REVISION

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

PRINT NAME: ALAN L. PALMER, P.E.
 SIGNATURE: *[Signature]*
 DATE: 18 JUNE 2005 LICENSE NO. 42462

DRAWN BY: REB/RUH/LSO DATE 02/18/05
 DESIGN BY: AJP/EDD DATE 02/18/05
 CHECKED BY: AJP DATE 02/18/05



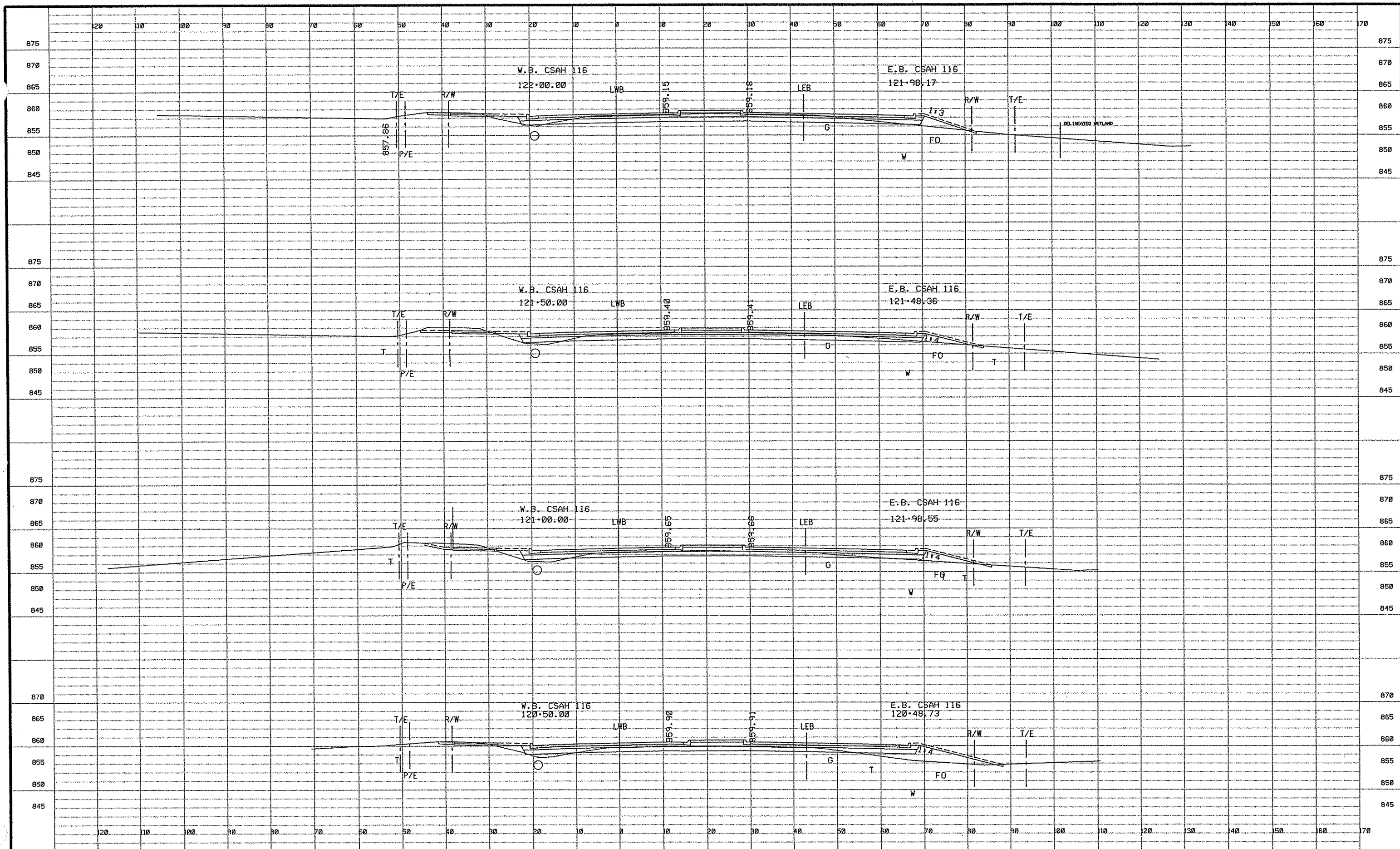
**ANOKA COUNTY
HIGHWAY DEPT.**

PROJECT NO.
 ANOKA COUNTY
 CITY OF ANOKA
 CITY OF RAMSEY

S.P. 02-716-07
 S.P. 103-122-12
 S.P. 199-020-04

CROSS SECTIONS
 STA 118+80.00 TO 120+00.00

Sheet 96 of 120 Sheets

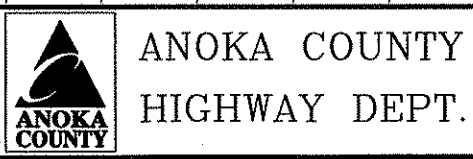


NO	DATE	BY	CKD	APPR	REVISION

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

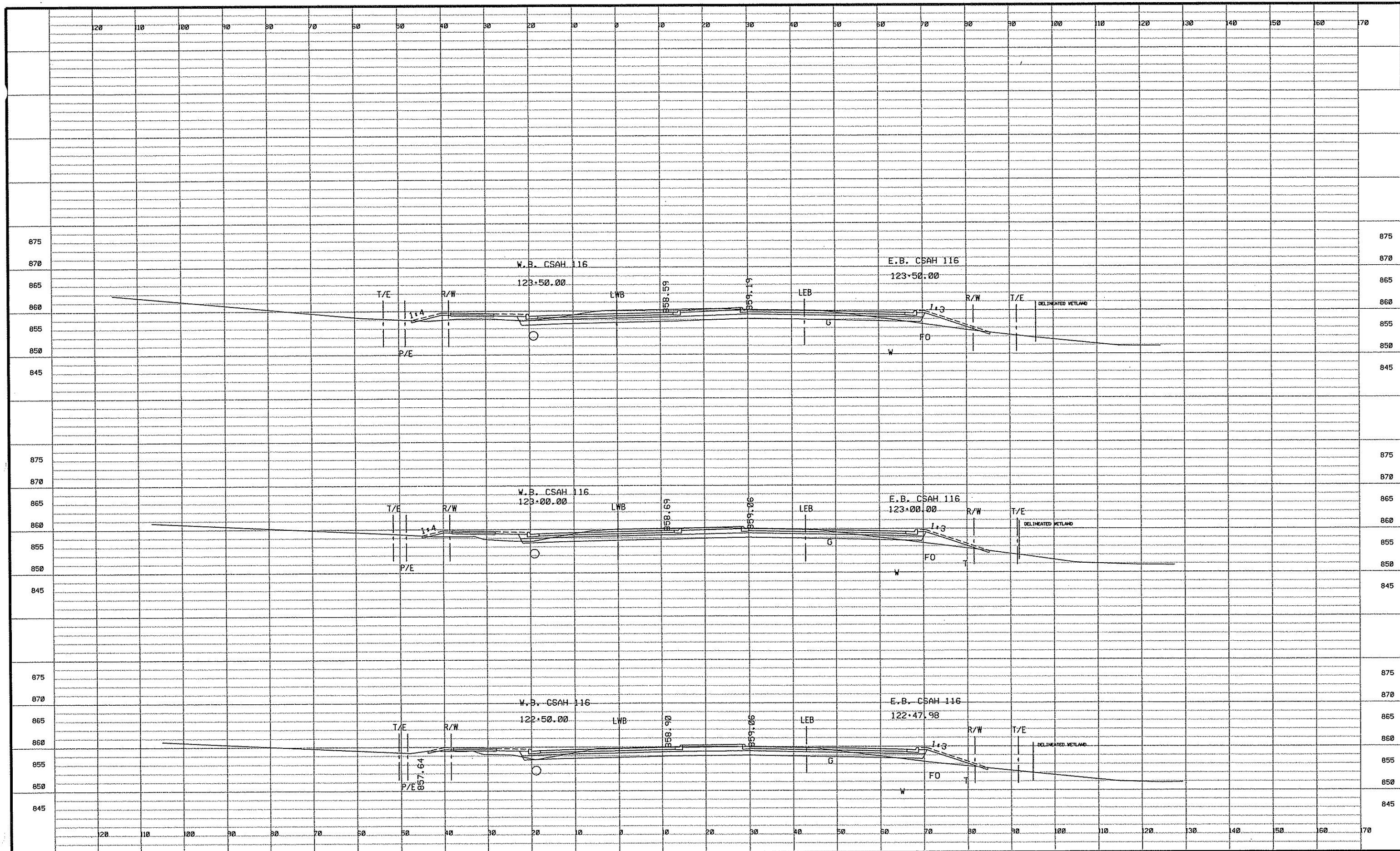
PRINT NAME: ALAN J. PALMER, P.E.
 SIGNATURE: *[Signature]*
 DATE: 18 JUNE 2005 LICENSE NO. 42462

DRAWN BY: REB/RLH/LSO DATE 02/18/05
 DESIGN BY: AJP/EDD DATE 02/18/05
 CHECKED BY: AJP DATE 02/18/05



PROJECT NO.
 ANOKA COUNTY S.P. 02-716-07
 CITY OF ANOKA S.P. 103-122-12
 CITY OF RAMSEY S.P. 199-020-04

CROSS SECTIONS
 STA 120+50.00 TO 122+00.00
 Sheet 97 of 120 Sheets



NO	DATE	BY	CKD	APPR	REVISION

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

PRINT NAME: ALAN J. PALMER, P.E.
 SIGNATURE: *[Signature]*
 DATE: 18 JUNE 2005 LICENSE NO. 42462

DRAWN BY: REB/RLH/LSO DATE 02/18/05
 DESIGN BY: AJP/EDD DATE 02/18/05
 CHECKED BY: AJP DATE 02/18/05

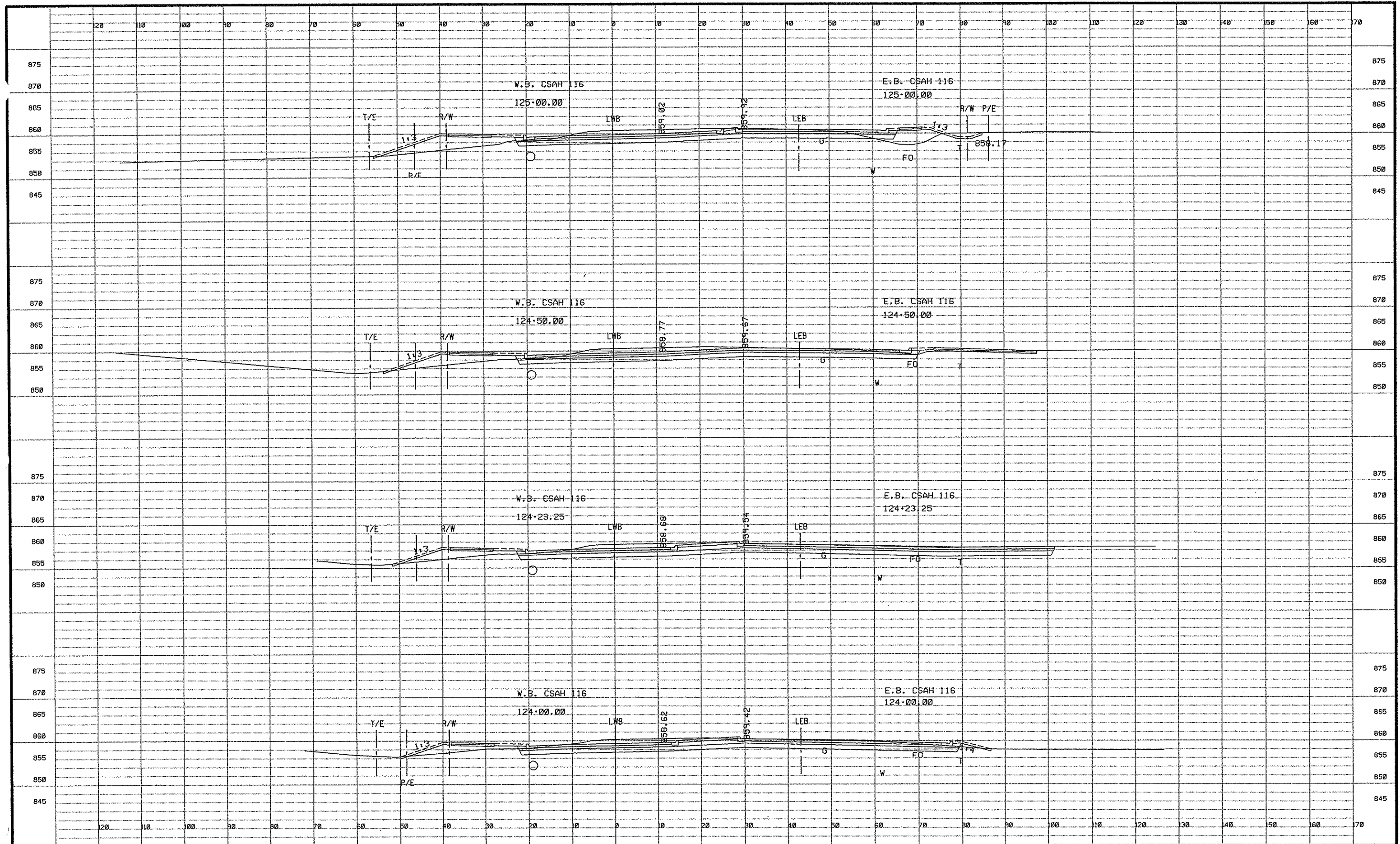


**ANOKA COUNTY
HIGHWAY DEPT.**

PROJECT NO.
 ANOKA COUNTY
 CITY OF ANOKA
 CITY OF RAMSEY

S.P. 02-716-07
 S.P. 103-122-12
 S.P. 199-020-04

CROSS SECTIONS
 STA 122+50.00 TO 123+50.00
 Sheet 98 of 120 Sheets



I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 PRINT NAME: ALAN J. PALMER, P.E.
 SIGNATURE: *[Signature]*
 DATE: 18 JUNE 2005 LICENSE NO. 42462

DRAWN BY: REB/RLH/LSO DATE 02/18/05
 DESIGN BY: AJP/EDD DATE 02/18/05
 CHECKED BY: AJP DATE 02/18/05

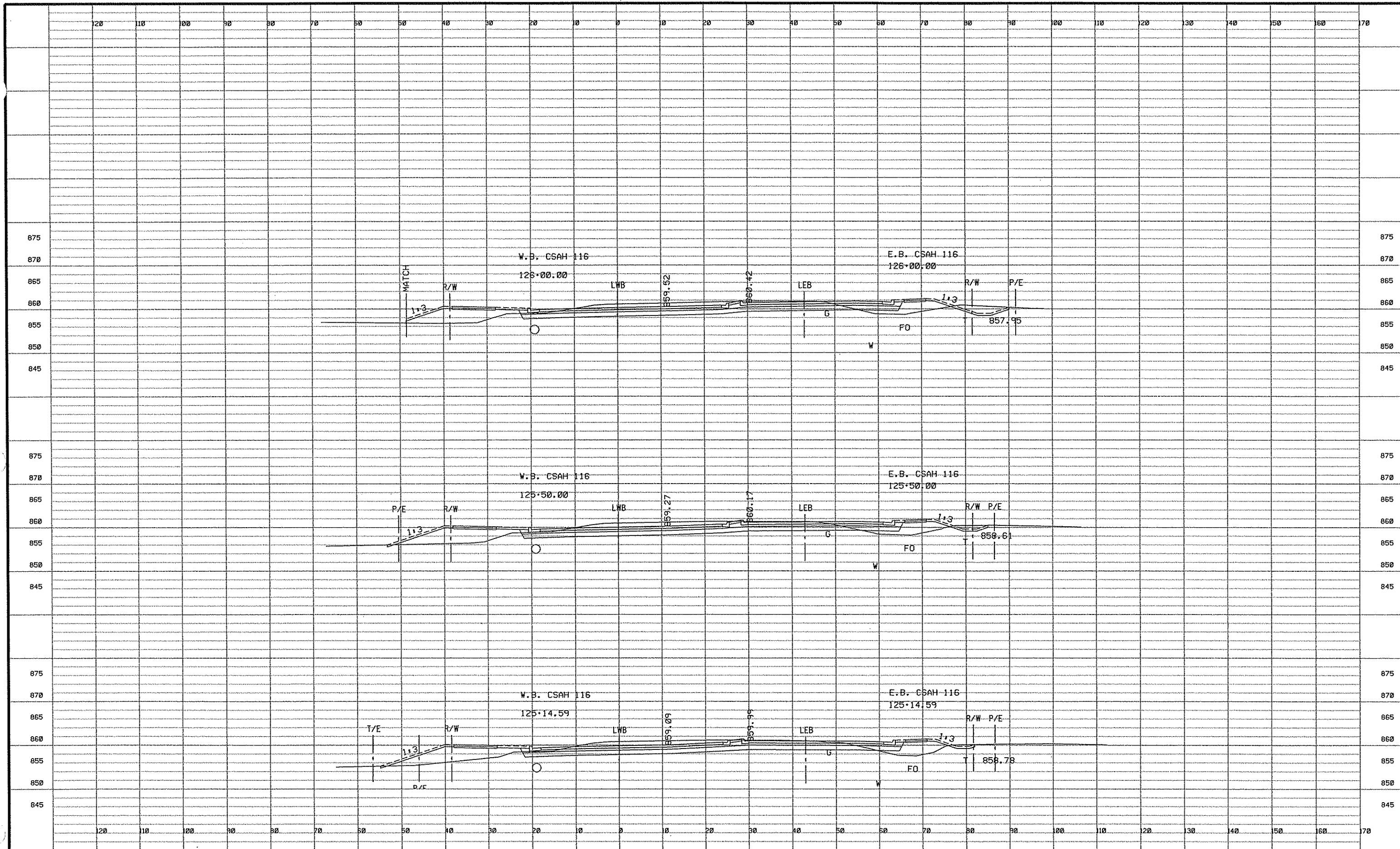


ANOKA COUNTY
 HIGHWAY DEPT.

PROJECT NO.
 ANOKA COUNTY S.P. 02-716-07
 CITY OF ANOKA S.P. 103-122-12
 CITY OF RAMSEY S.P. 199-020-04

CROSS SECTIONS
 STA 124+00.00 TO 125+00.00
 Sheet 99 of 120 Sheets

NO	DATE	BY	CKD	APPR	REVISION



I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 PRINT NAME: ALAN J. PALMER, P.E.
 SIGNATURE: *[Signature]*
 DATE: 18 JUNE 2005 LICENSE NO. 42462

DRAWN BY: BEB/RUH/LSO DATE 02/18/05
 DESIGN BY: AJP/EDD DATE 02/18/05
 CHECKED BY: AJP DATE 02/18/05



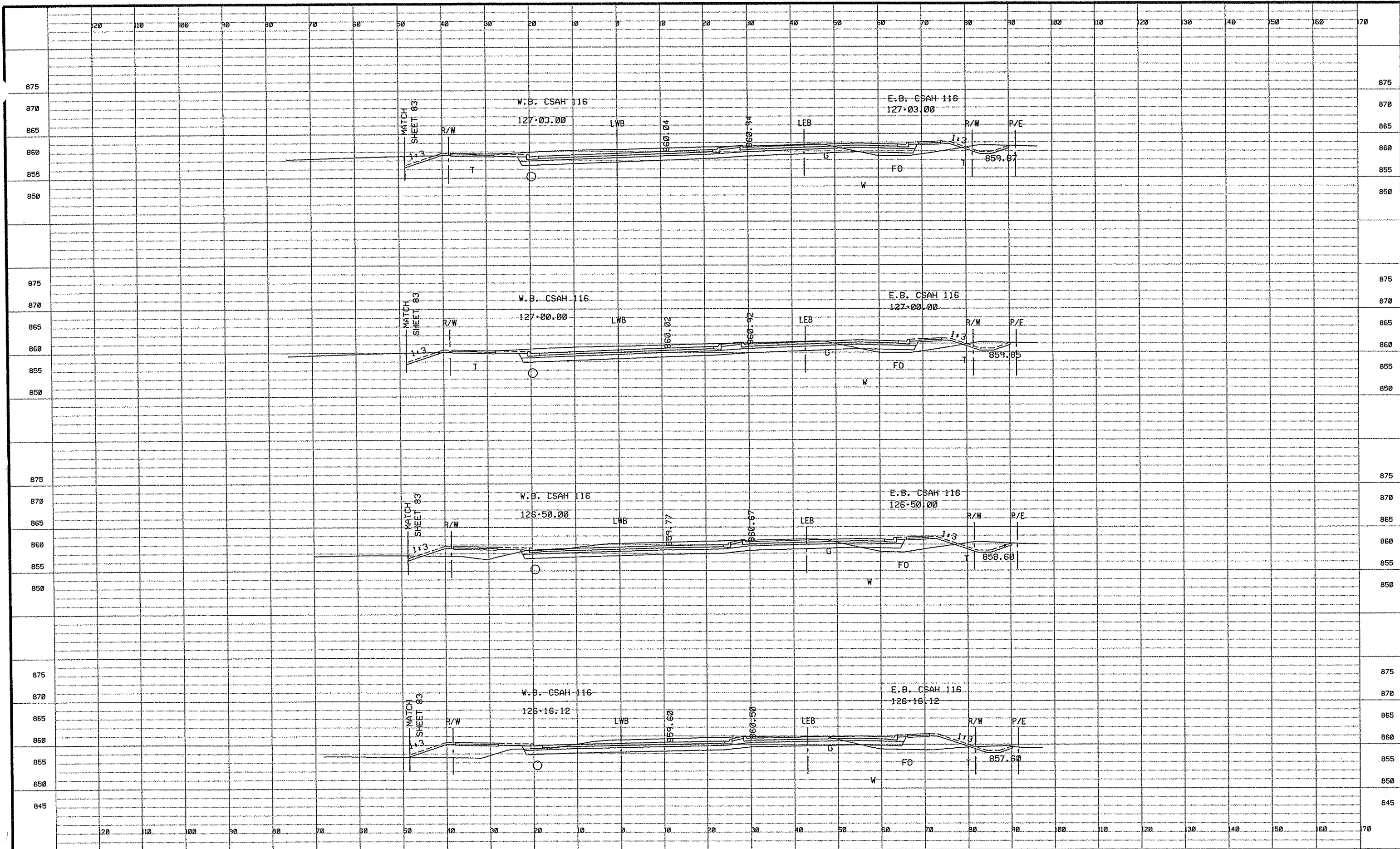
ANOKA COUNTY
 HIGHWAY DEPT.

PROJECT NO.
 ANOKA COUNTY
 CITY OF ANOKA
 CITY OF RAMSEY

S.P. 02-716-07
 S.P. 103-122-12
 S.P. 199-020-04

CROSS SECTIONS
 STA 125+14.59 TO 126+00.00
 Sheet 100 of 120 Sheets

NO	DATE	BY	CKD	APPR	REVISION

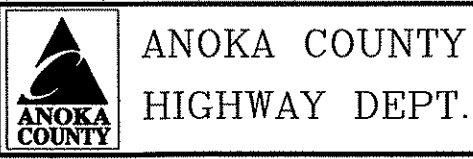


NO	DATE	BY	CKD	APPR	REVISION

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

PRINT NAME: ALAN J. PALMER, P.E.
 SIGNATURE: *[Signature]*
 DATE: 18 JUNE 2005 LICENSE NO. 42462

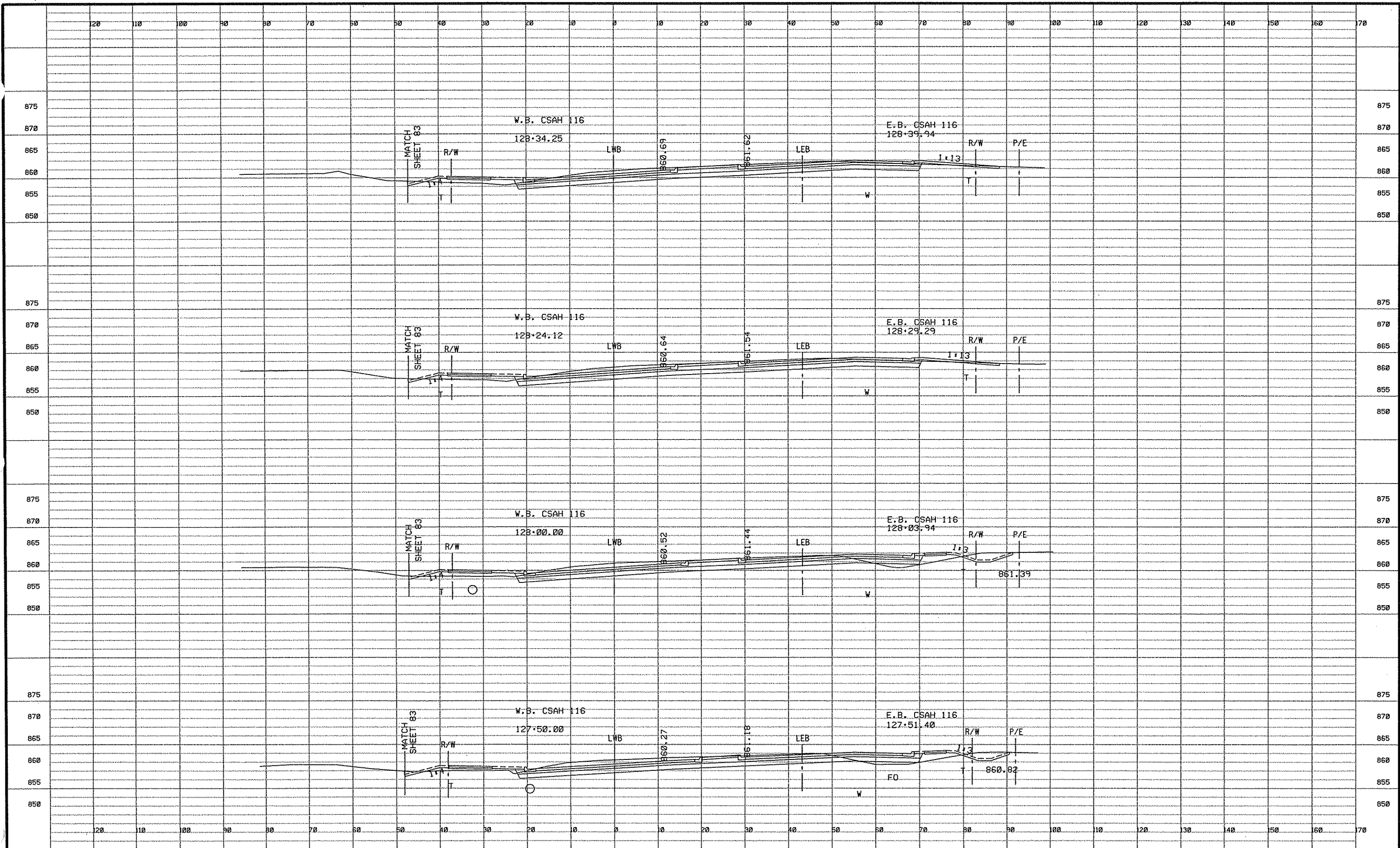
DRAWN BY: RBG/RLH/LSO DATE 02/18/05
 DESIGN BY: AJP/EDD DATE 02/18/05
 CHECKED BY: AJP DATE 02/18/05



PROJECT NO. ANOKA COUNTY CITY OF ANOKA CITY OF RAMSEY

S.P. 02-716-07
 S.P. 103-122-12
 S.P. 199-020-04

CROSS SECTIONS
 STA 126+16.12 TO 127+03.00
 Sheet 101 of 120 Sheets



NO	DATE	BY	CKD	APPR	REVISION

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

PRINT NAME: ALAN J. SALMER, P.E.
 SIGNATURE: *[Signature]*
 DATE: 18 JUNE 2005 LICENSE NO. 42462

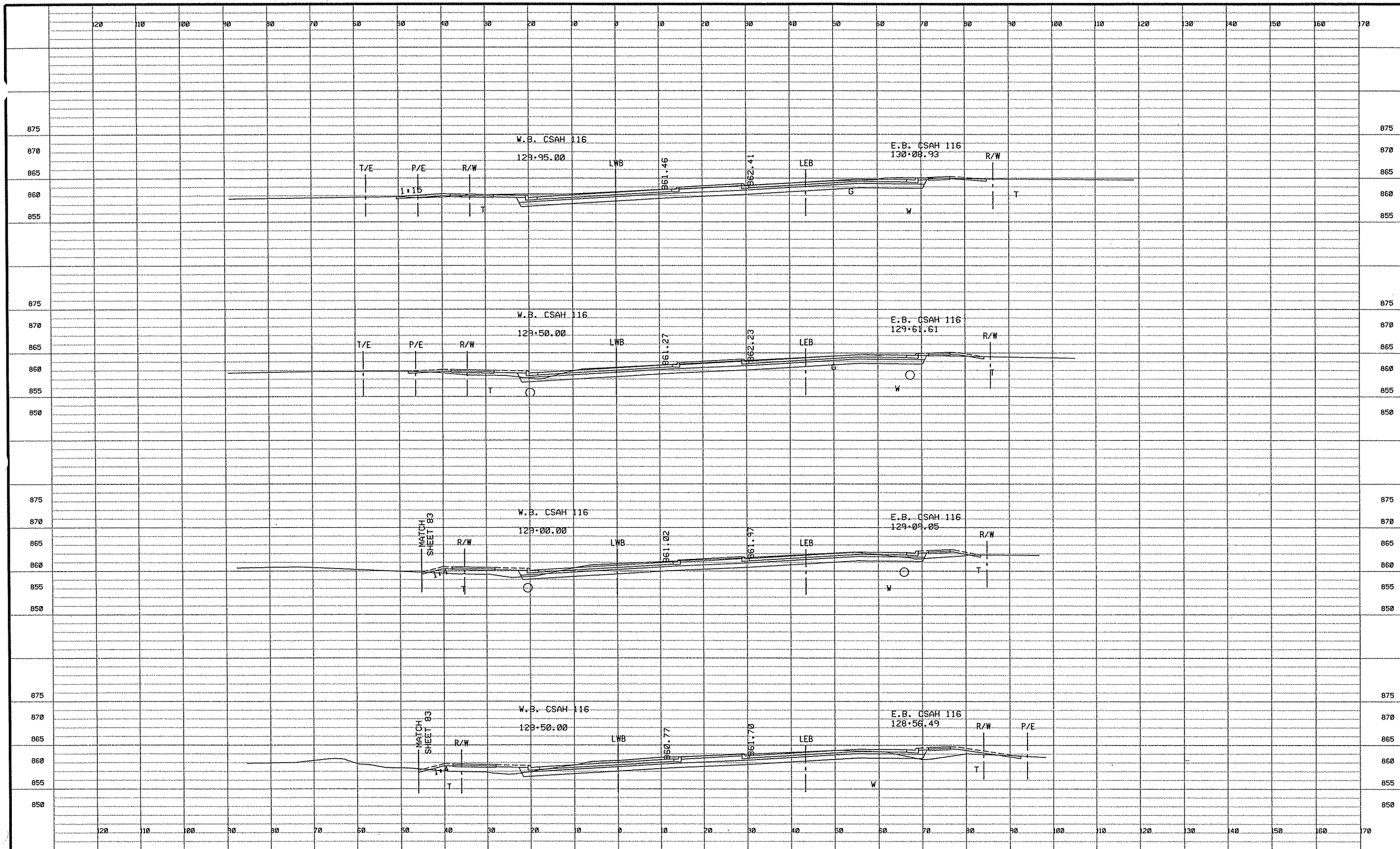
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 DESIGN BY: AJP/EOD DATE 02/18/05
 CHECKED BY: AJP DATE 02/18/05



ANOKA COUNTY
 HIGHWAY DEPT.

PROJECT NO.
 ANOKA COUNTY S.P. 02-716-07
 CITY OF ANOKA S.P. 103-122-12
 CITY OF RAMSEY S.P. 199-020-04

CROSS SECTIONS
 STA 127+50.00 TO 128+34.25
 Sheet 102 of 120 Sheets



I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 PRINT NAME: ALAN J. PALMER, P.E.
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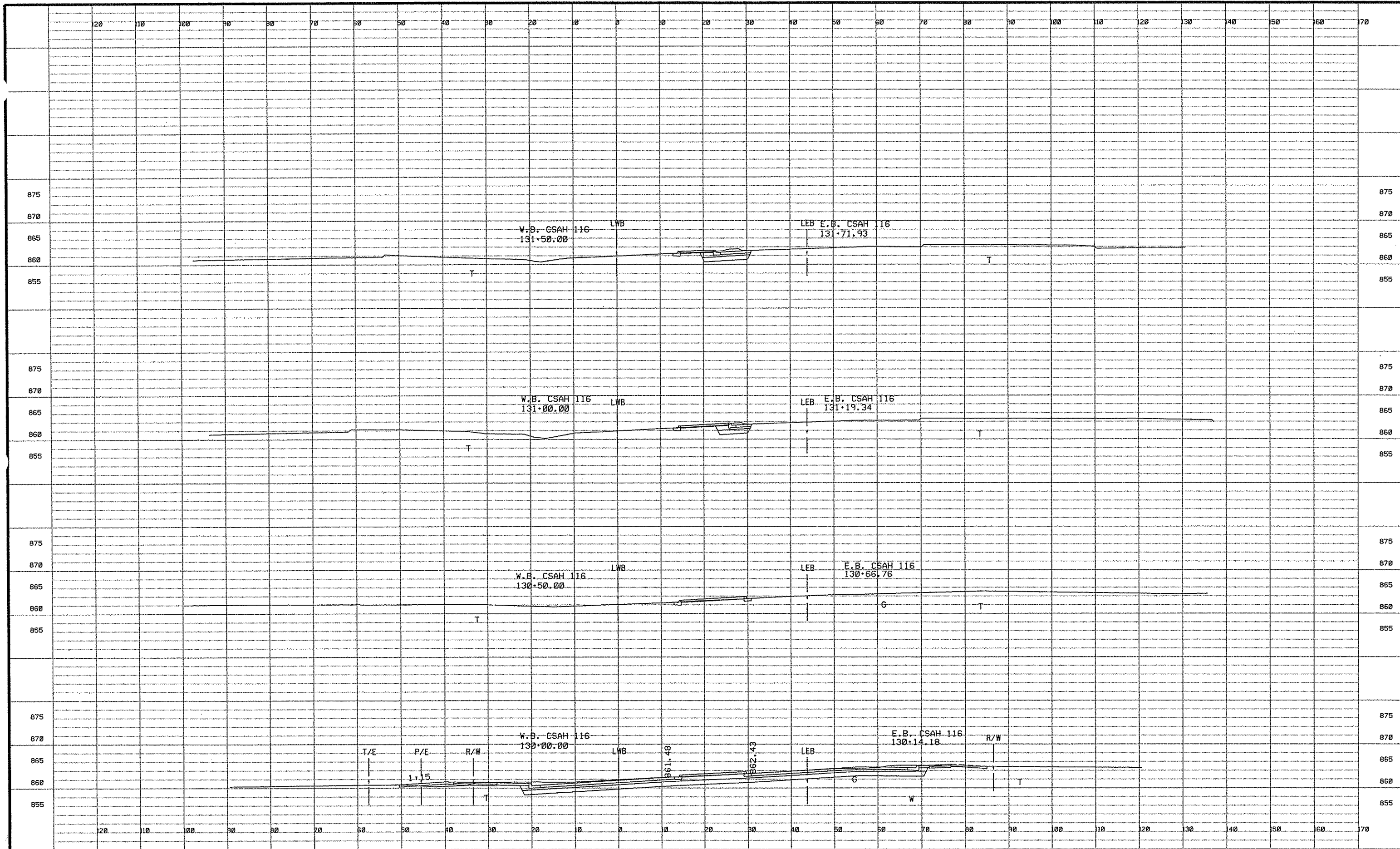


ANOKA COUNTY
 HIGHWAY DEPT.

PROJECT NO.
 ANOKA COUNTY S.P. 02-716-07
 CITY OF ANOKA S.P. 103-122-12
 CITY OF RAMSEY S.P. 199-020-04

CROSS SECTIONS
 STA 128+50.00 TO 129+95.00
 Sheet 103 of 120 Sheets

NO	DATE	BY	CKD	APPR	REVISION

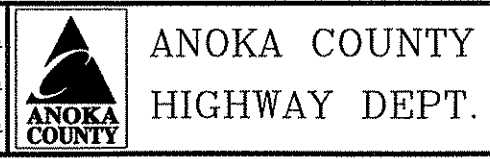


NO	DATE	BY	CKD	APPR	REVISION

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

PRINT NAME: ALAN J. PALMER, P.E.
 SIGNATURE: *[Signature]*
 DATE: 18 JUNE 2005 LICENSE NO. 42462

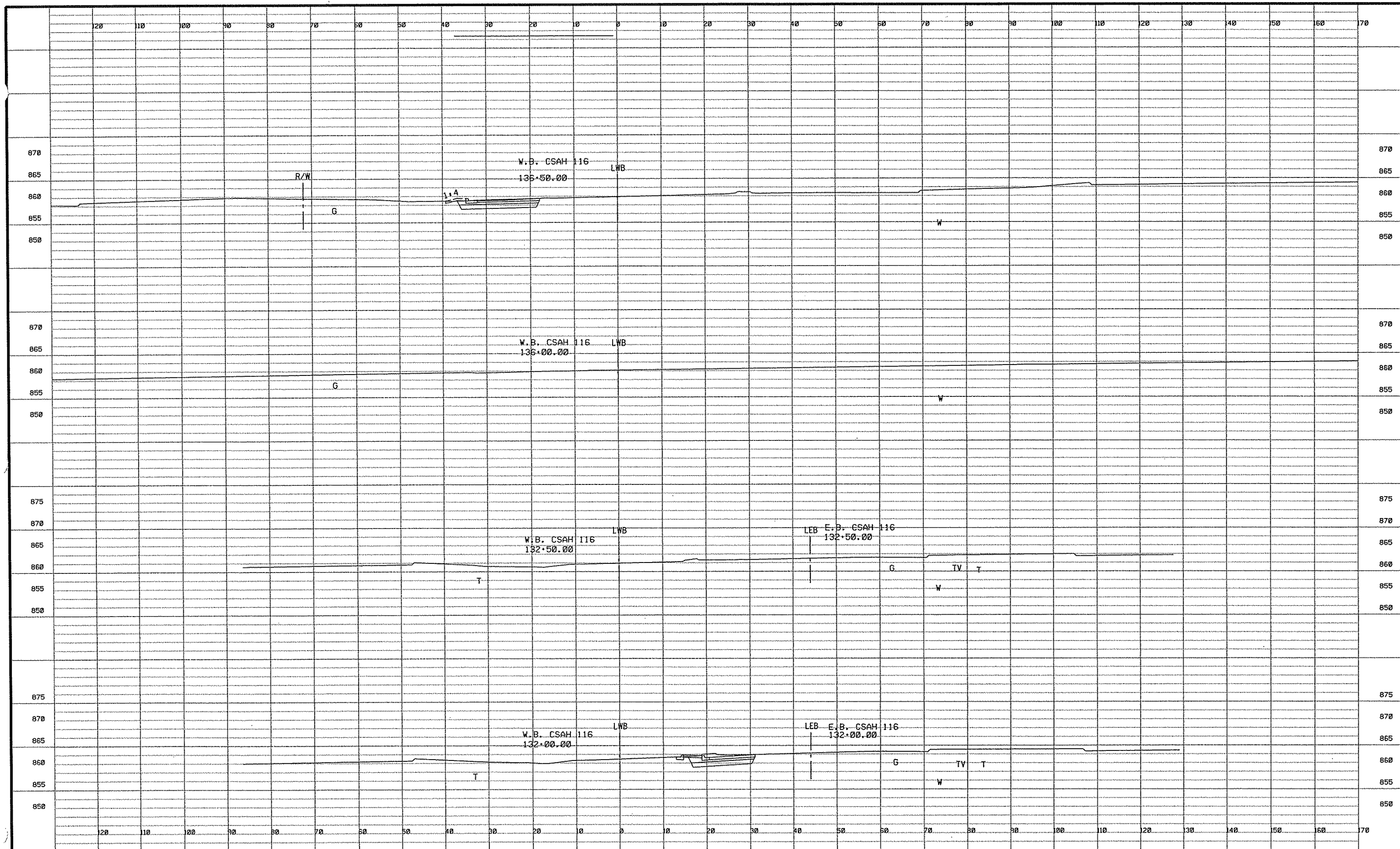
DRAWN BY: REB/RLH/LSO DATE 02/18/05
 DESIGN BY: AJP/EDD DATE 02/18/05
 CHECKED BY: AJP DATE 02/18/05



PROJECT NO. ANOKA COUNTY CITY OF ANOKA CITY OF RAMSEY

S.P. 02-716-07
 S.P. 103-122-12
 S.P. 199-020-04

CROSS SECTIONS
 STA 130+00.00 TO 131+50.00
 Sheet 104 of 120 Sheets



I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED 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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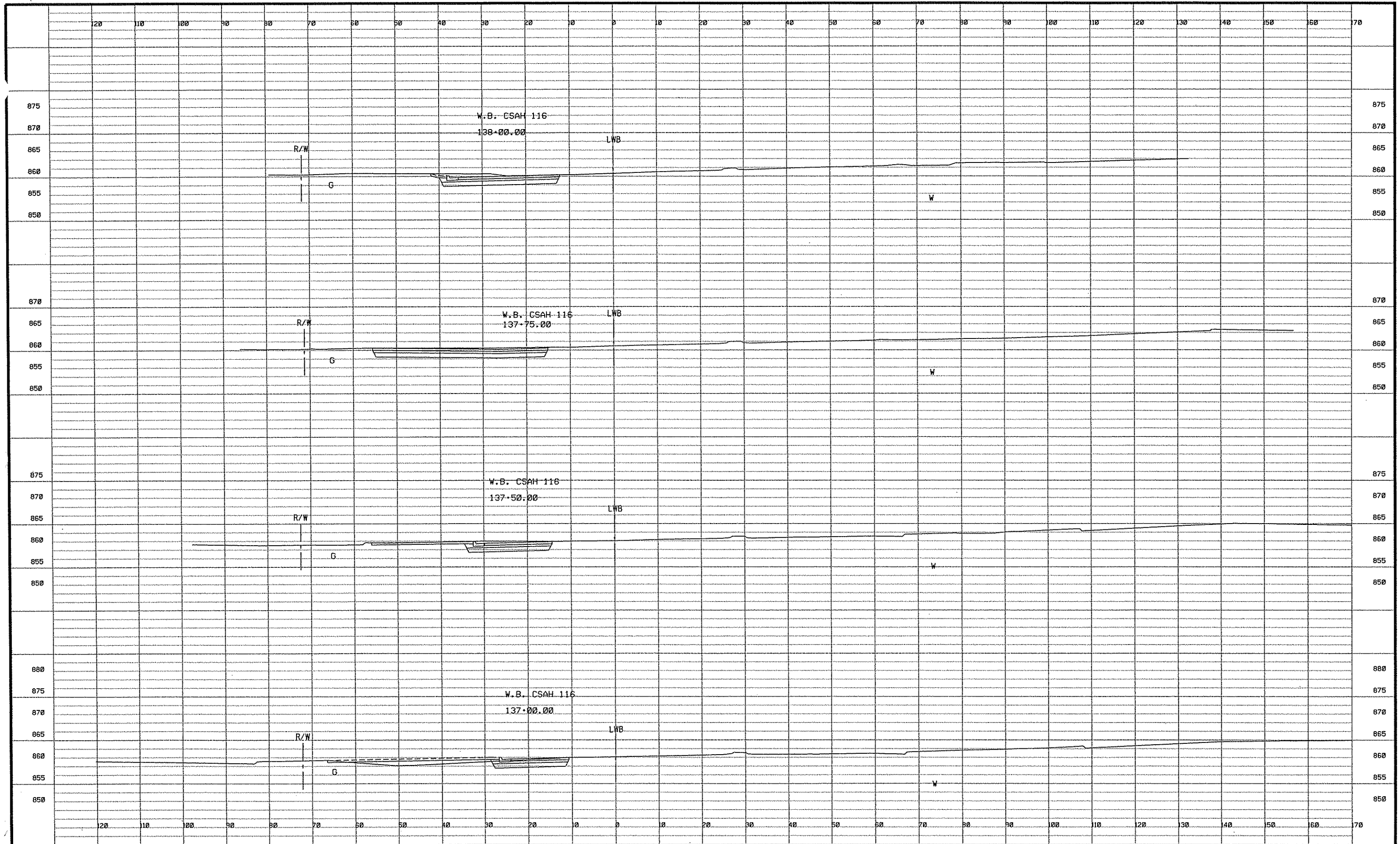
ANOKA COUNTY
 HIGHWAY DEPT.

PROJECT NO.
 ANOKA COUNTY
 CITY OF ANOKA
 CITY OF RAMSEY

S.P. 02-716-07
 S.P. 103-122-12
 S.P. 199-020-04

CROSS SECTIONS
 STA 132+00.00 TO 136+50.00
 Sheet 105 of 120 Sheets

NO	DATE	BY	CKD	APPR	REVISION



NO	DATE	BY	CKD	APPR	REVISION

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PRINT NAME: ALAN J. PALMER, P.E.

SIGNATURE: *[Signature]*

DATE: 18 JUNE 2005 LICENSE NO. 42462

DRAWN BY: RLB/RLH/LSO DATE 02/18/05

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CHECKED BY: AJP DATE 02/18/05

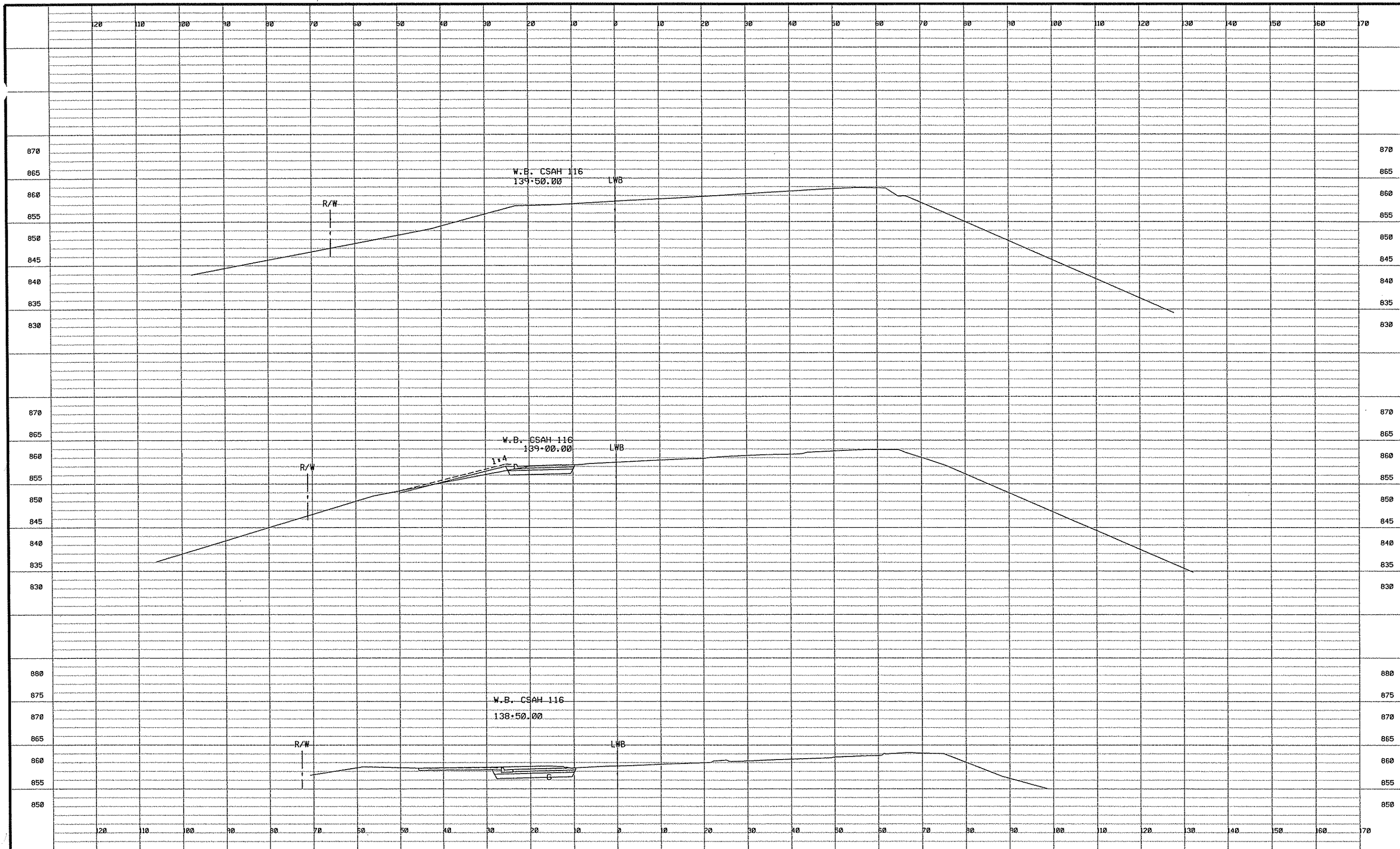


**ANOKA COUNTY
HIGHWAY DEPT.**

PROJECT NO.
ANOKA COUNTY S.P. 02-716-07
CITY OF ANOKA S.P. 103-122-12
CITY OF RAMSEY S.P. 199-020-04

CROSS SECTIONS
STA 137+00.00 TO 138+00.00

Sheet 106 of 120 Sheets



I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED 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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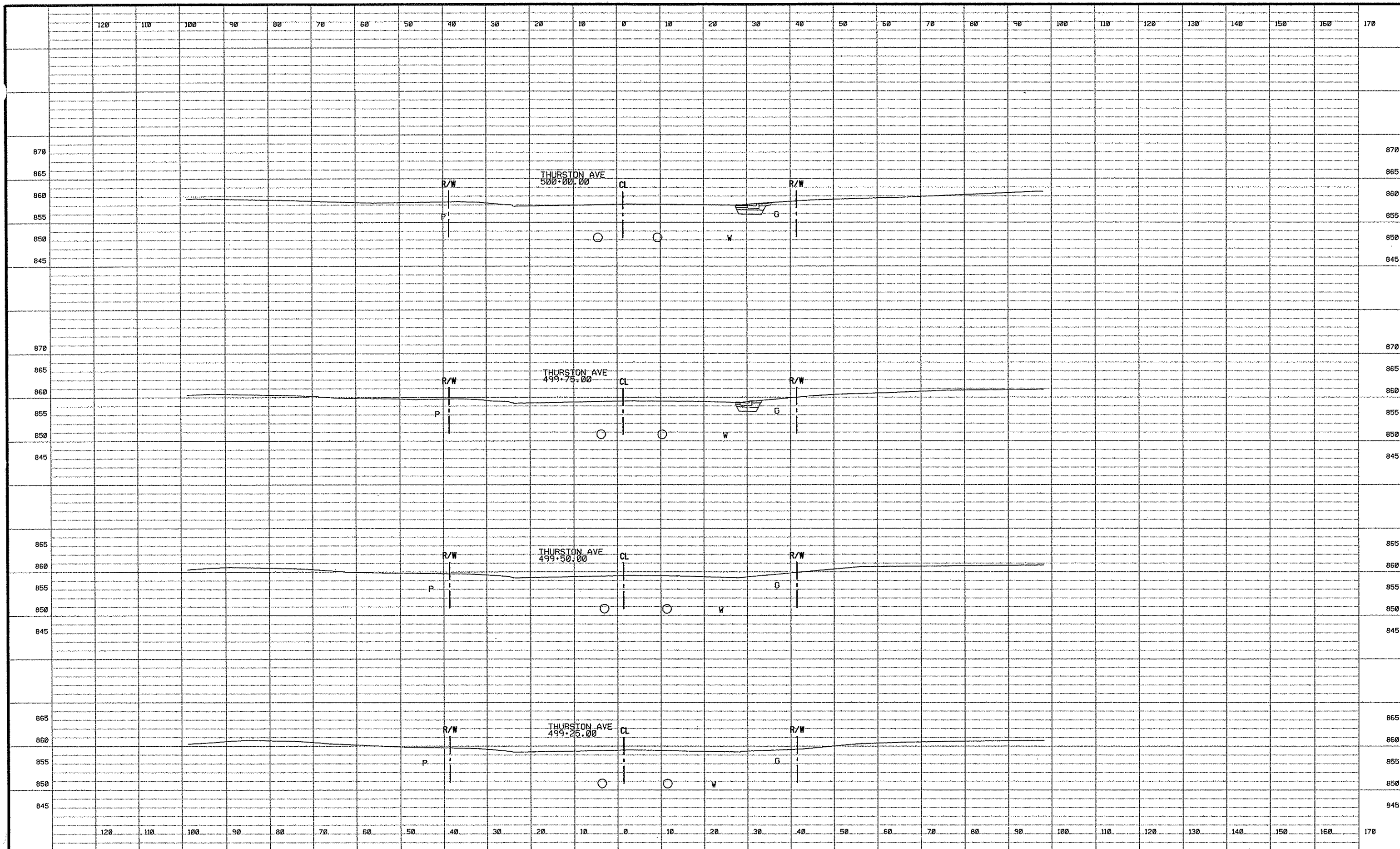


ANOKA COUNTY
 HIGHWAY DEPT.

PROJECT NO.
 ANOKA COUNTY S.P. 02-716-07
 CITY OF ANOKA S.P. 103-122-12
 CITY OF RAMSEY S.P. 199-020-04

CROSS SECTIONS
 STA 138+50.00 TO 139+50.00
 Sheet 107 of 120 Sheets

NO	DATE	BY	CKD	APPR	REVISION



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PRINT NAME: ALAN J. PALMER, P.E.
 SIGNATURE: *[Signature]*
 DATE: 02/18/05 LICENSE NO. 42482

DRAWN BY REB/RLH/LSO DATE 11/12/04
 DESIGN BY AJP/EDD DATE 11/12/04
 CHECKED BY AJP DATE 11/12/04



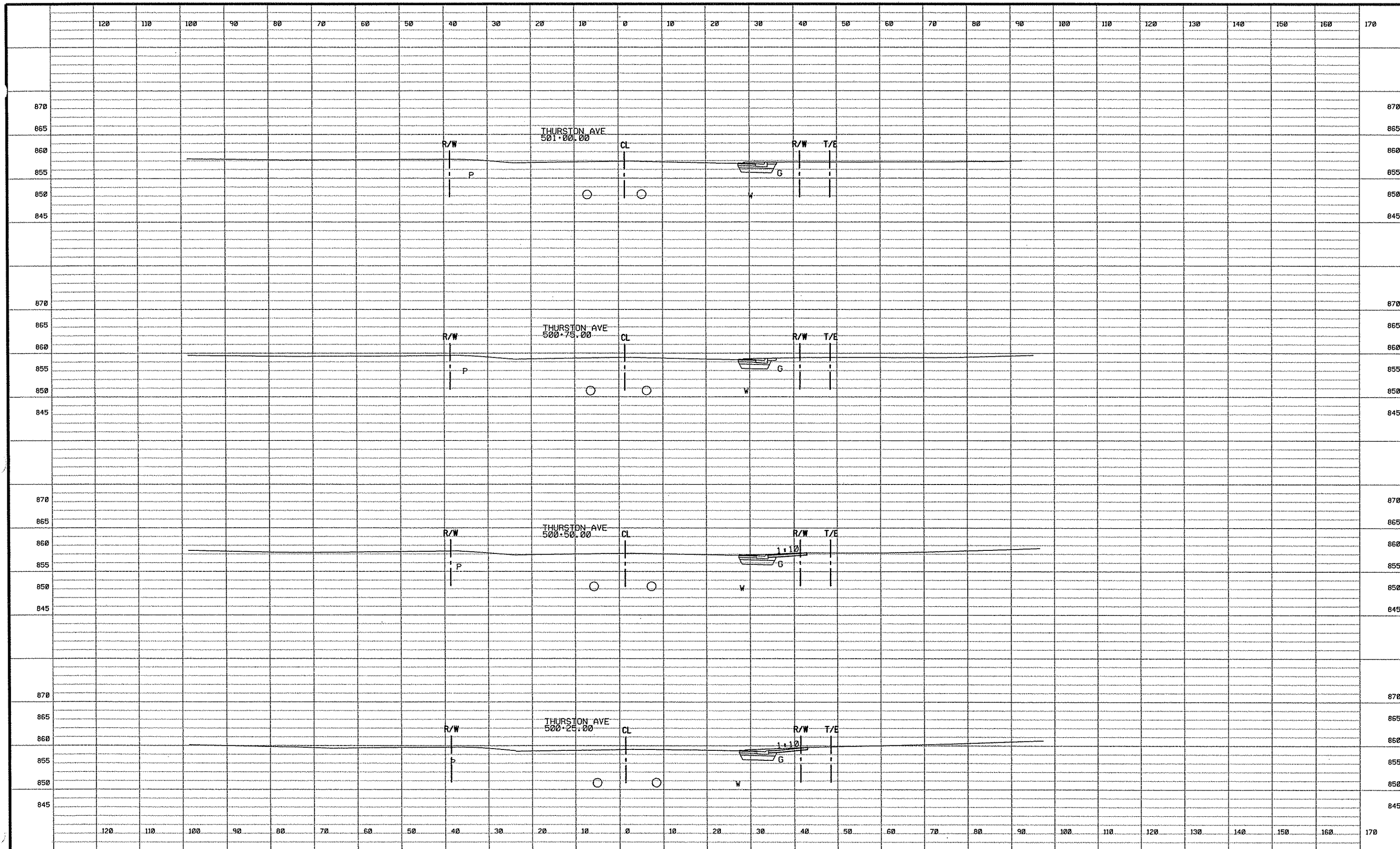
ANOKA COUNTY
 HIGHWAY DEPT.

PROJECT NO.
 ANOKA COUNTY
 CITY OF ANOKA
 CITY OF RAMSEY

S.P. 02-716-07
 S.P. 103-122-12
 S.P. 199-020-04

CROSS SECTIONS
 STA 499+25.00 TO 500+00.00
 Sheet 108 of 120 Sheets

NO	DATE	BY	CKD	APPR	REVISION



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DRAWN BY: REG/RUH/LSO DATE 11/12/04
 DESIGN BY: AJP/EDD DATE 11/12/04
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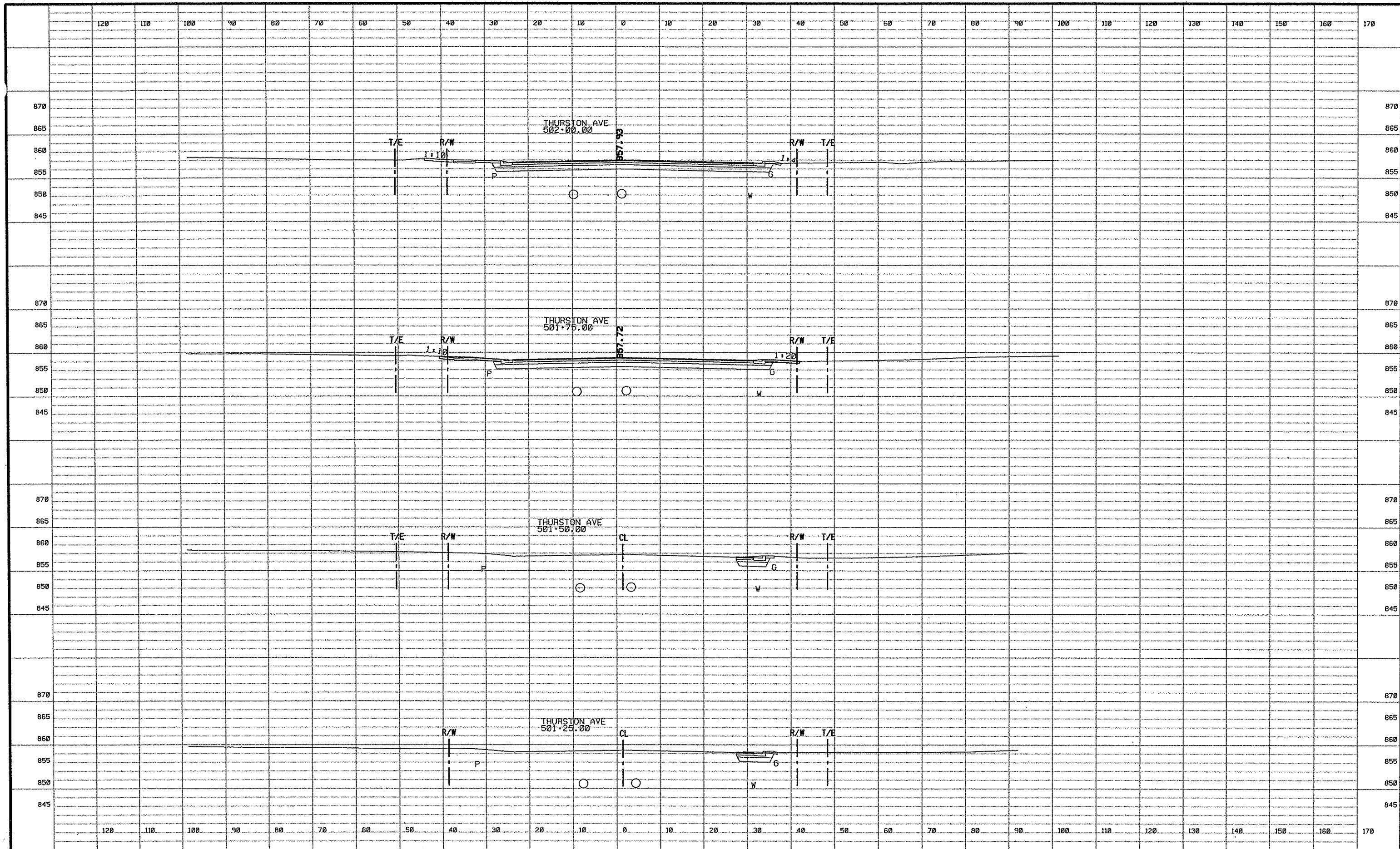
ANOKA COUNTY
 HIGHWAY DEPT.

PROJECT NO.
 ANOKA COUNTY
 CITY OF ANOKA
 CITY OF RAMSEY

S.P. 02-716-07
 S.P. 103-122-12
 S.P. 199-020-04

CROSS SECTIONS
 STA 500+25.00 TO 501+00.00
 Sheet 109 of 120 Sheets

NO	DATE	BY	CKD	APPR	REVISION



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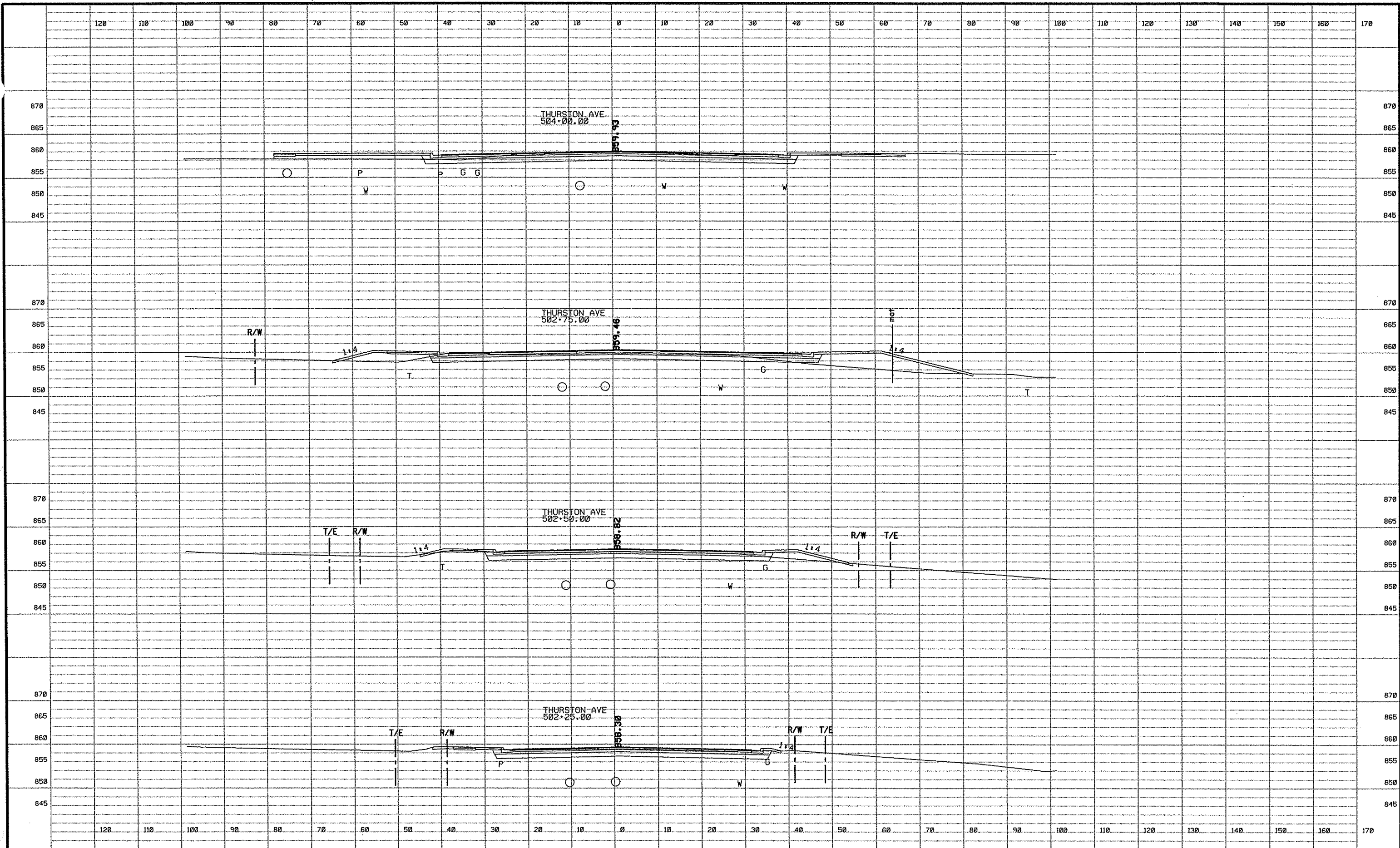
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 CHECKED BY: AJP DATE 11/12/04



**ANOKA COUNTY
HIGHWAY DEPT.**

PROJECT NO.
 ANOKA COUNTY S.P. 02-716-07
 CITY OF ANOKA S.P. 103-122-12
 CITY OF RAMSEY S.P. 199-020-04

CROSS SECTIONS
 STA 501+25.00 TO 502+00.00
 Sheet 110 of 120 Sheets



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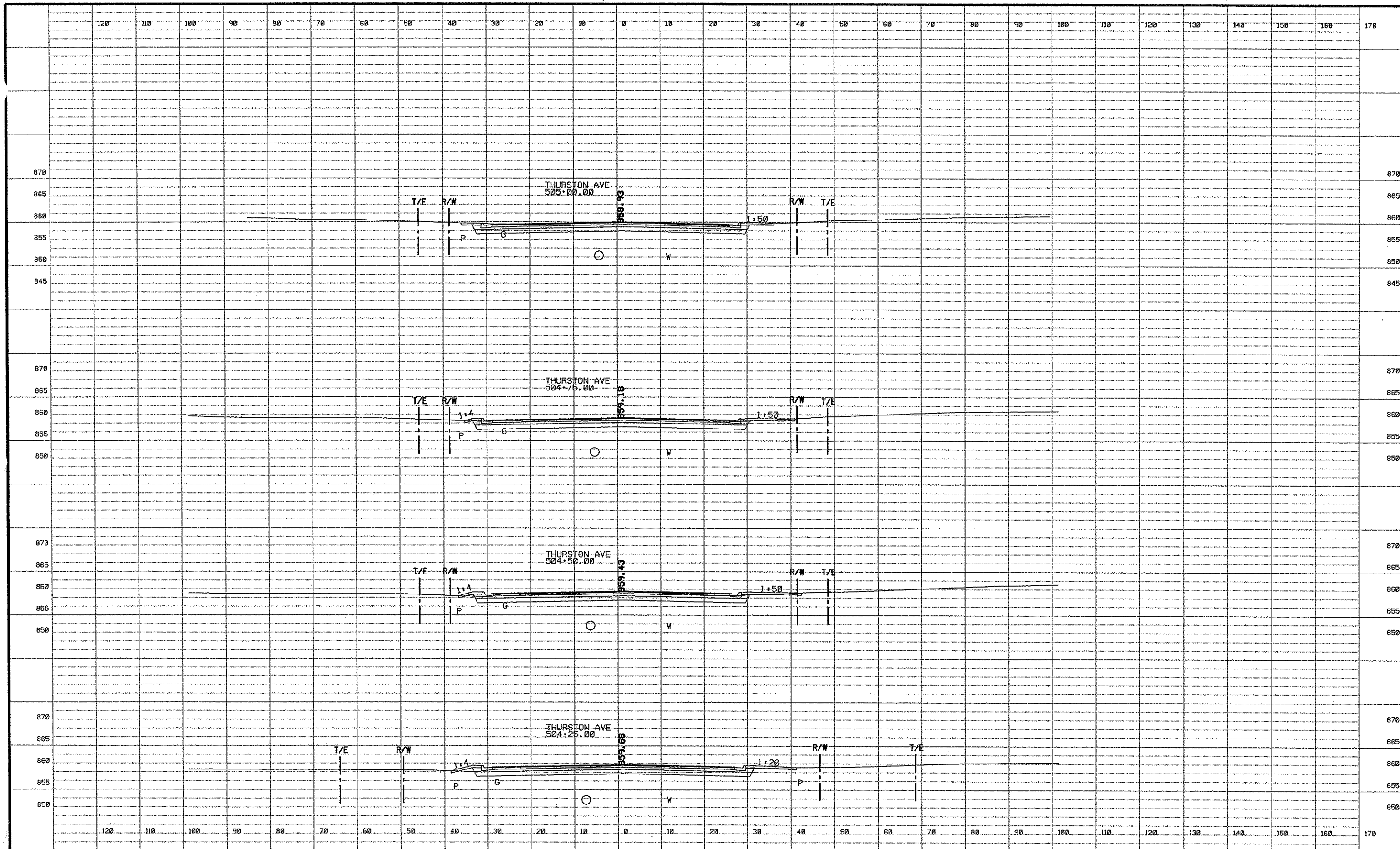
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**ANOKA COUNTY
HIGHWAY DEPT.**

PROJECT NO.
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 CITY OF ANOKA S.P. 103-122-12
 CITY OF RAMSEY S.P. 199-020-04

CROSS SECTIONS
 STA 502+25.00 TO 504+00.00
 Sheet 111 of 120 Sheets



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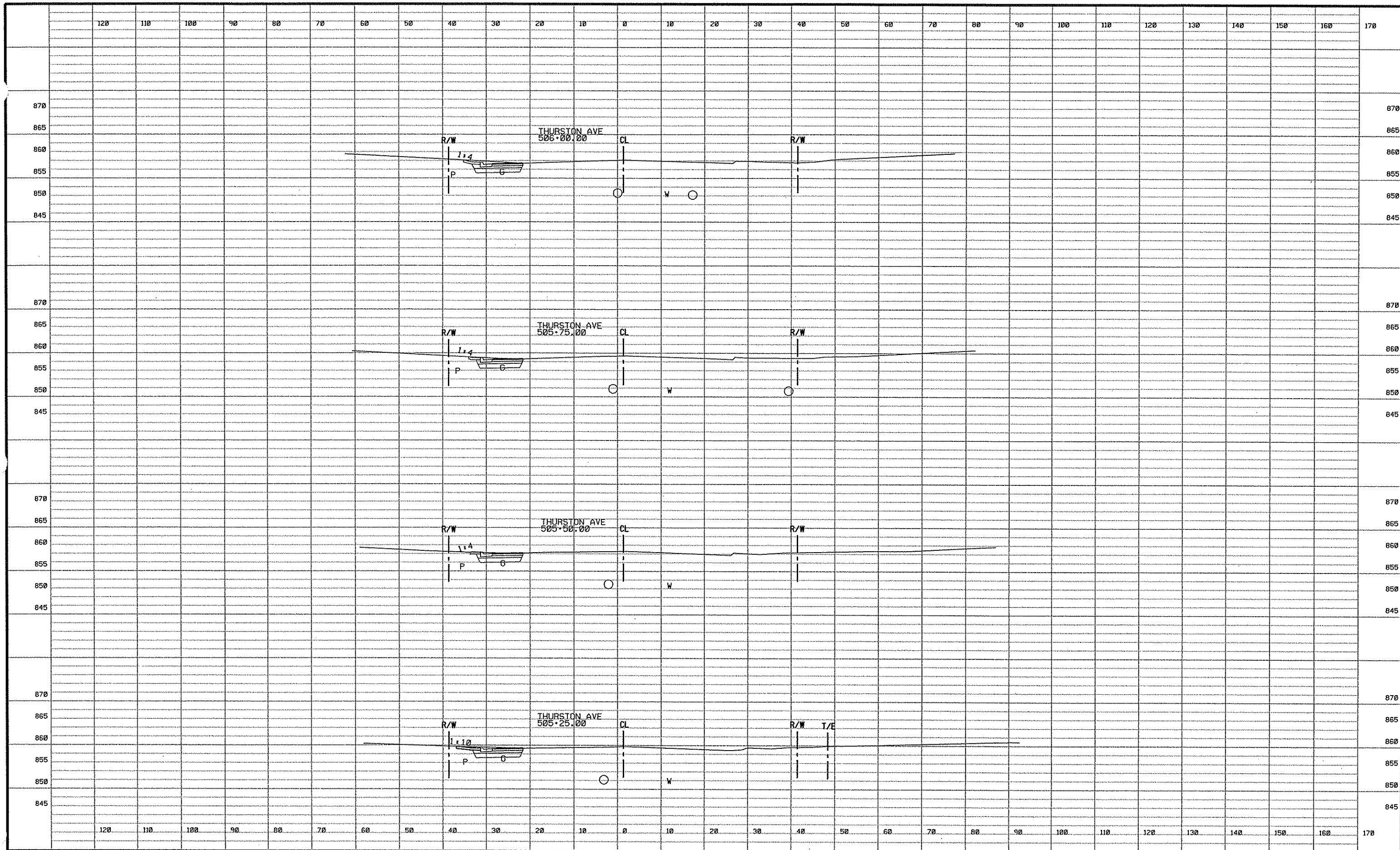


ANOKA COUNTY
HIGHWAY DEPT.

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CITY OF ANOKA
CITY OF RAMSEY

S.P. 02-716-07
S.P. 103-122-12
S.P. 199-020-04

CROSS SECTIONS
STA 504+25.00 TO 505+00.00
Sheet 112 of 120 Sheets



NO	DATE	BY	CKD	APPR	REVISION

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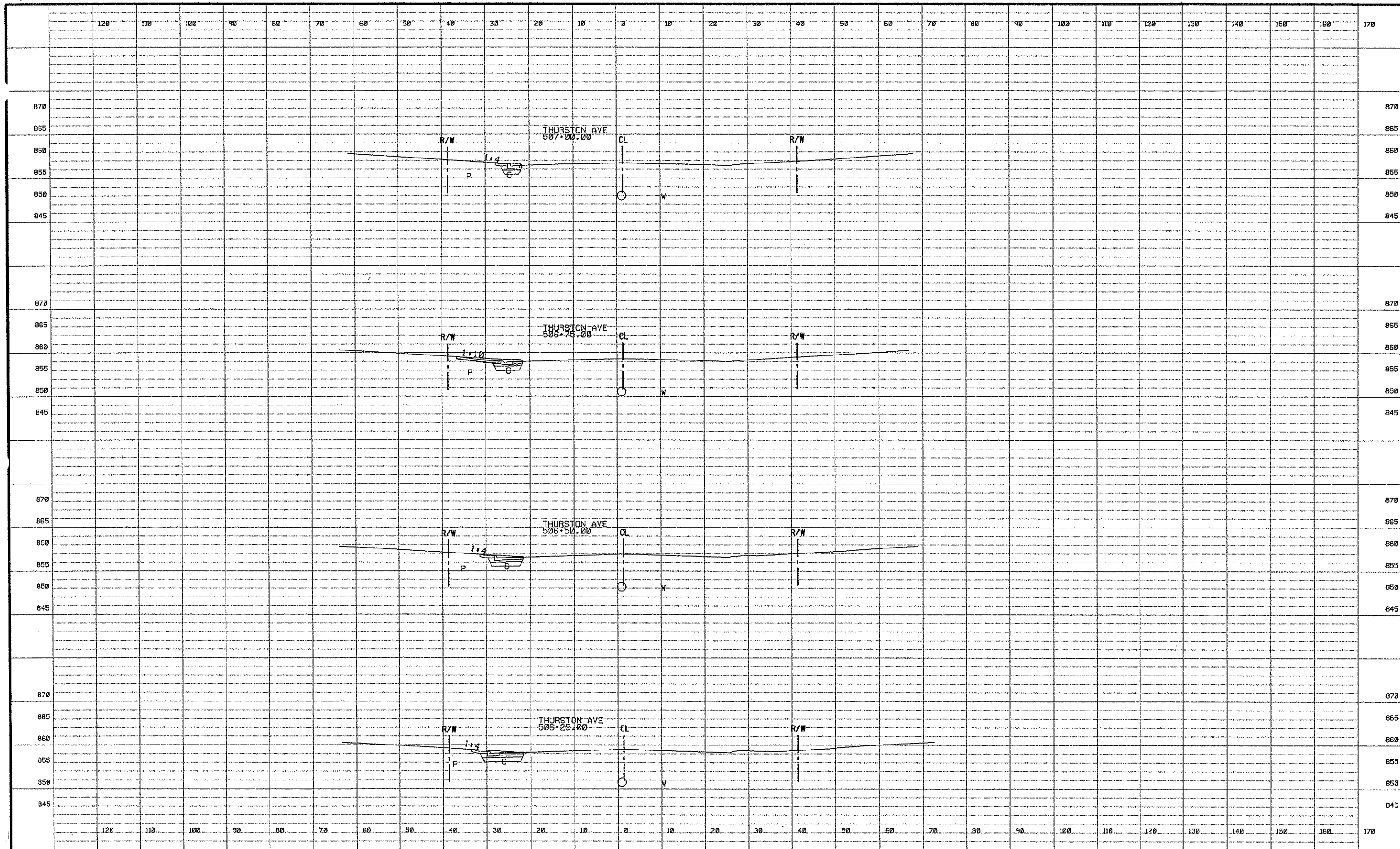
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**ANOKA COUNTY
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PROJECT NO.
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 CITY OF RAMSEY S.P. 199-020-04

CROSS SECTIONS
 STA 505+25.00 TO 506+00.00
 Sheet 113 of 120 Sheets



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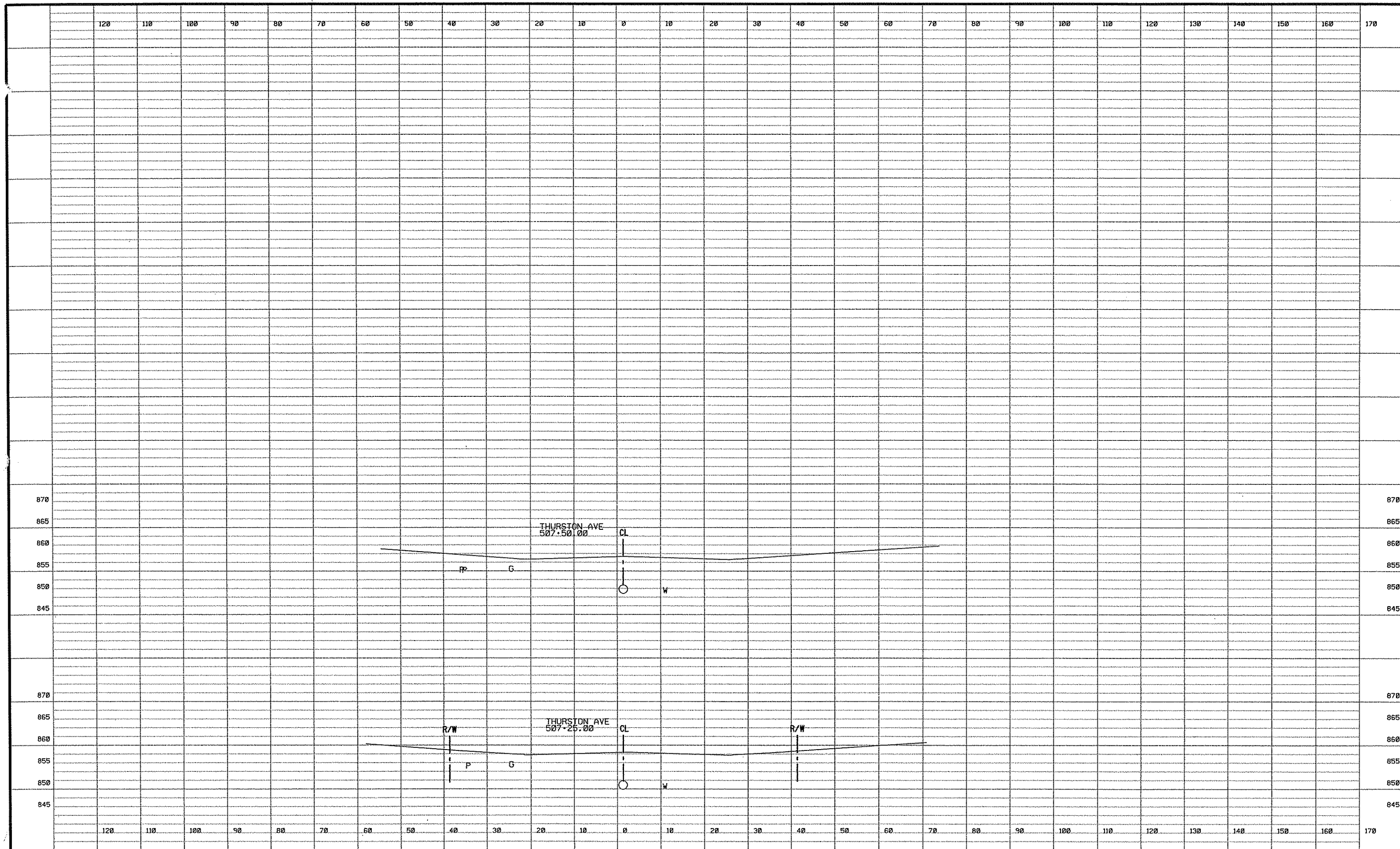
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ANOKA COUNTY
 HIGHWAY DEPT.

PROJECT NO.
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 CITY OF ANOKA S.P. 103-122-12
 CITY OF RAMSEY S.P. 199-020-04

CROSS SECTIONS
 STA 506+25.00 TO 507+00.00
 Sheet 114 of 120 Sheets



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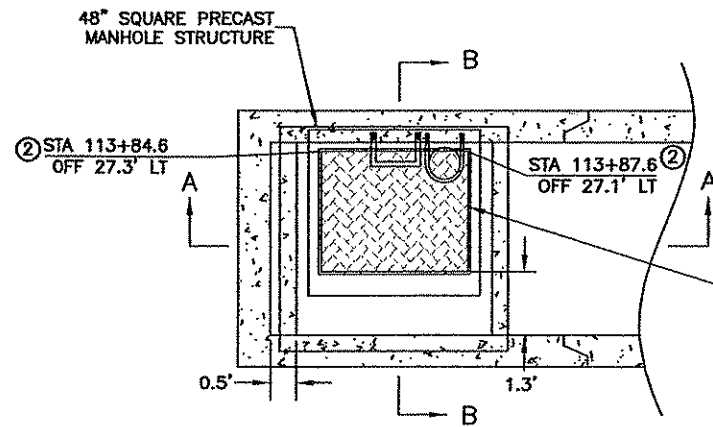
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ANOKA COUNTY
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PROJECT NO.
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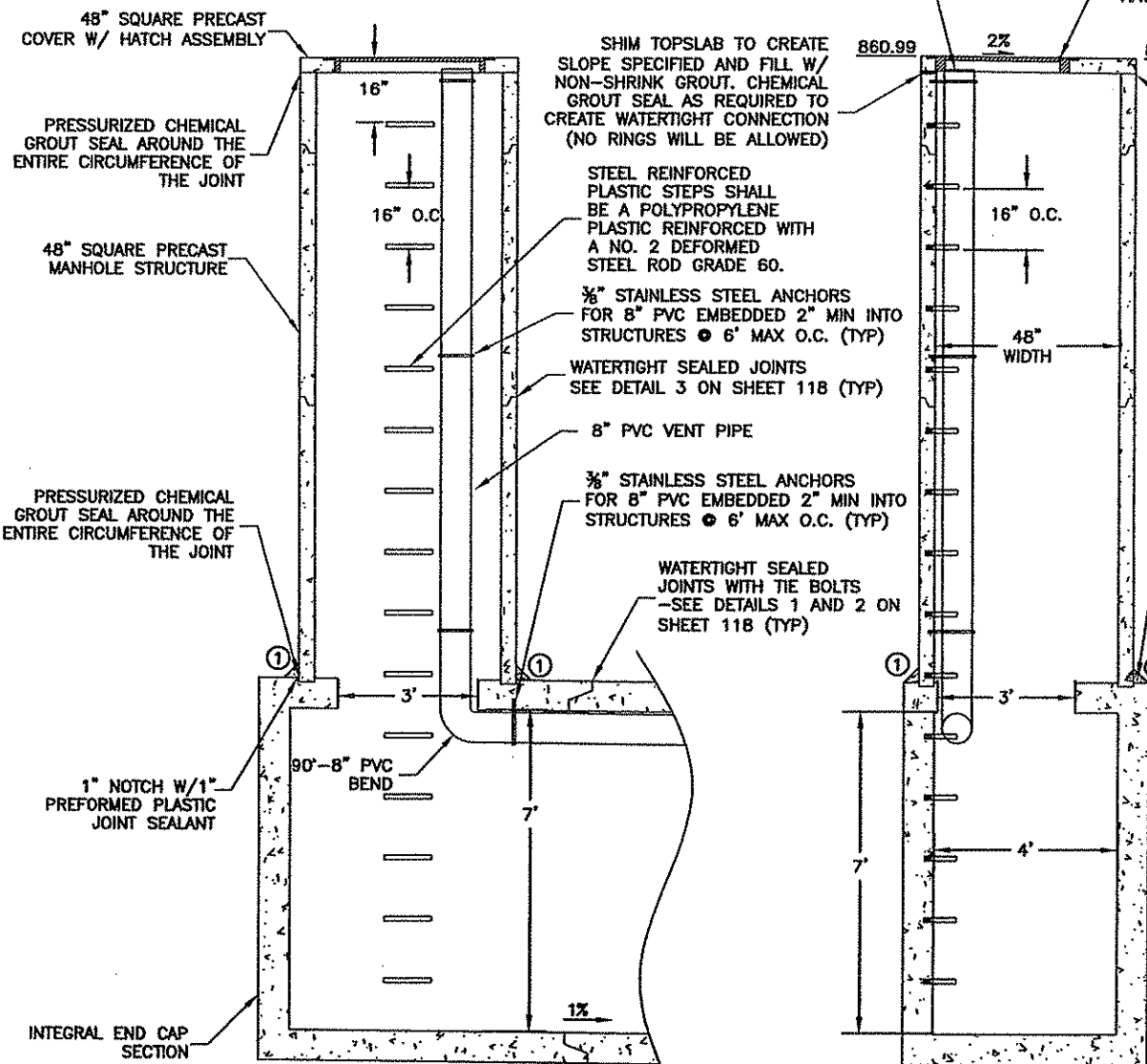
CROSS SECTIONS
 STA 507+25.00 TO 507+50.00
 Sheet 115 of 120 Sheets



PLAN - ACCESS MANHOLE

FLYGT FLE-SHD 30"X36" HEAVY DUTY ALUMINUM HATCH W/ RECESSED PADLOCK CLIP LOCKING ASSEMBLY OR APPROVED EQUAL

PLACE VENT PIPE 4" BELOW TOP OF HATCH



A SECTION 117

B SECTION 117

ACCESS MANHOLE AND SERVICE TUNNEL SECTION VIEWS

NOTES:

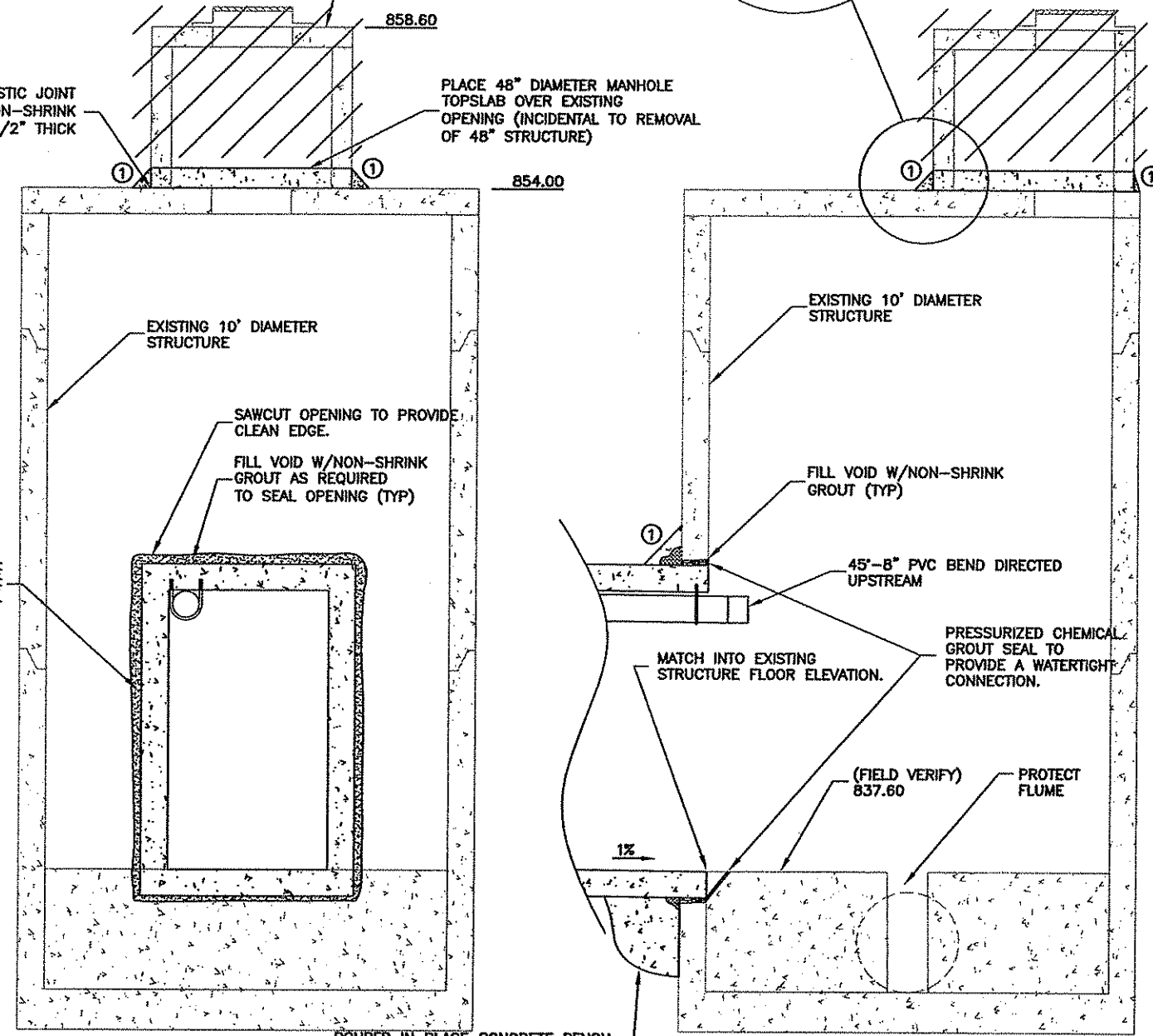
- ① PLACE 5" FILLETS W/ NON-SHRINK GROUT (INCIDENTAL)
- ② STATIONING OFF OF THE W.B. CSAH 116 ALIGNMENT

BOLT TOP SLAB TO EXISTING STRUCTURE USING THREE 316 STAINLESS STEEL ANCHORS EVENLY SPACED AROUND THE 48" TOPSLAB (INCIDENTAL TO REMOVAL OF 48" STRUCTURE)

REMOVE AND DISPOSE OF EXISTING CASTING AND 48" STRUCTURE

1" PREFORMED PLASTIC JOINT SEALANT W/ NON-SHRINK GROUT PLASTERED 1/2" THICK

PLACE 48" DIAMETER MANHOLE TOPSLAB OVER EXISTING OPENING (INCIDENTAL TO REMOVAL OF 48" STRUCTURE)



SECTION (LOOKING EAST)

SECTION (LOOKING NORTH)

CONNECTION TO EXISTING METER STATION 302

NO	DATE	BY	CHKD	APPR	REVISION

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 PRINT NAME: DANIEL A. LONNES
 SIGNATURE: *[Signature]*
 DATE: 4/28/2005 LICENSE NO. 42779

DRAWN BY: SCD DATE: 3/25/05
 DESIGN BY: DAL DATE: 3/25/05
 CHECKED BY: JKS DATE: 3/25/05



ANOKA COUNTY HIGHWAY DEPT.

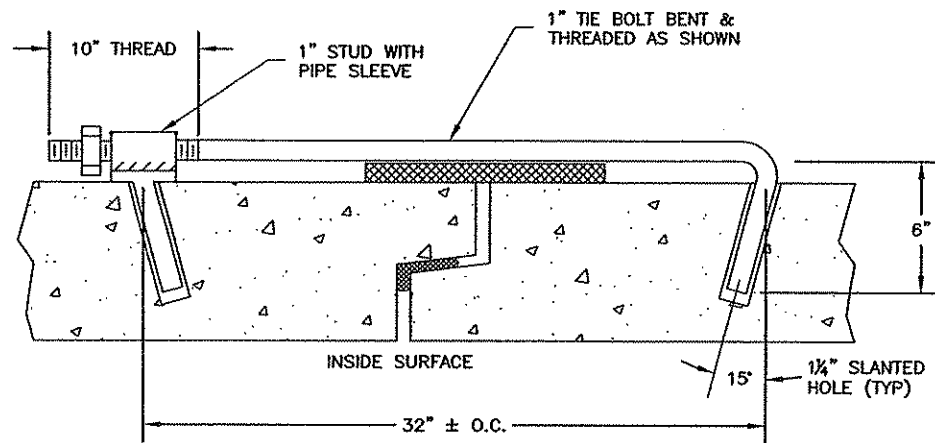


Metropolitan Council Environmental Services

PROJECT NO. METROPOLITAN COUNCIL 801103
 ANOKA COUNTY S.P. 02-716-07
 CITY OF ANOKA S.P. 103-122-12
 CITY OF RAMSEY S.P. 199-020-04

SERVICE TUNNEL AND STRUCTURE DETAILS

Sheet 117 of 120 Sheets



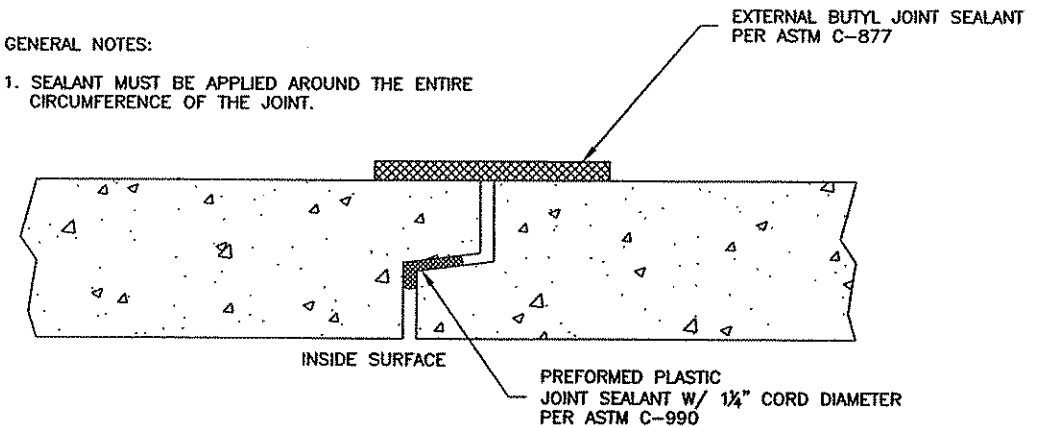
1 TUNNEL TIE BOLT DETAIL
118 NOT TO SCALE

GENERAL NOTES:

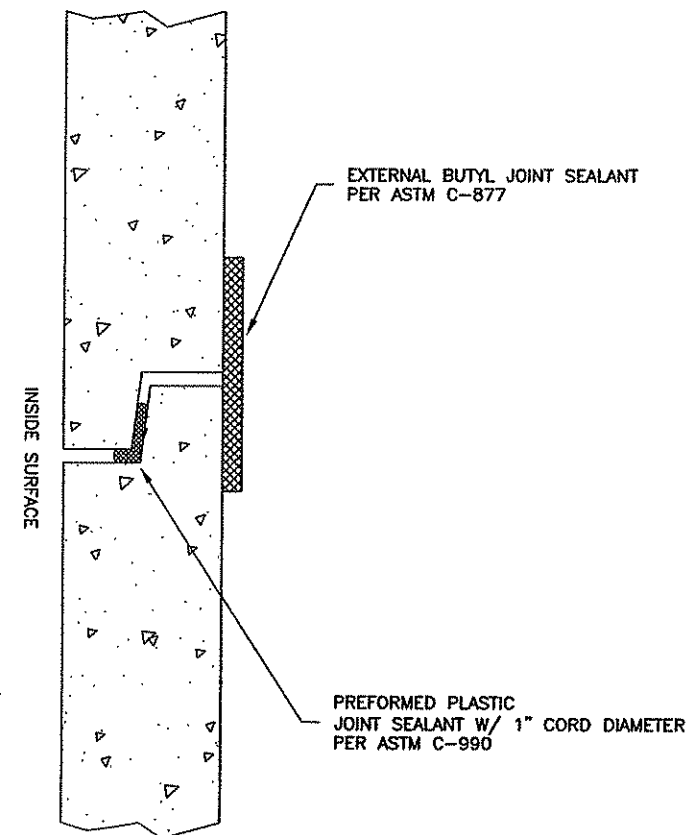
1. TIE BOLTS ARE MANUFACTURED CONFORMING TO ASTM A36.
2. STANDARD 1" DIAMETER THREADS ARE ROLLED ON ADJUSTING BOLTS.
3. HEAVY HEX NUTS CONFORM TO ASTM A563.
4. THE WELDED PIPE SLEEVE CONFORMS TO ASTM A53, GRADE B.
5. WELDING IS DONE IN ACCORDANCE WITH AWS/ANSI D1.1-94 STRUCTURAL WELDING CODE.
6. ALL HARDWARE SHALL BE STAINLESS STEEL.
7. 3 TIE BOLTS WILL BE INSTALLED PER JOINT WITH ONE AT THE CENTER OF THE TUNNEL CROWN AND ONE EACH AT THE CENTER OF EACH SIDE.

GENERAL NOTES:

1. SEALANT MUST BE APPLIED AROUND THE ENTIRE CIRCUMFERENCE OF THE JOINT.



2 TUNNEL JOINT SEALANT DETAIL
118 NOT TO SCALE



3 MANHOLE JOINT SEALANT DETAIL
118 NOT TO SCALE

GENERAL NOTES:

1. SEALANT MUST BE APPLIED AROUND THE ENTIRE CIRCUMFERENCE OF THE JOINT.

NO	DATE	BY	CHKD	APPR	REVISION

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ANOKA COUNTY
HIGHWAY DEPT.



Metropolitan Council
Environmental Services

PROJECT NO. 801103
 METROPOLITAN COUNCIL S.P. 02-716-07
 ANOKA COUNTY S.P. 103-122-12
 CITY OF ANOKA S.P. 199-020-04
 CITY OF RAMSEY

SERVICE TUNNEL
AND STRUCTURE DETAILS