MINNESOTA DEPARTMENT OF TRANSPORTATION

ANOKA COUNTY

CONSTRUCTION PLAN FOR GRADING, BITUMINOUS SURFACING AND SIGNAL SYSTEM

LOCATED ON CSAH 116 FROM 435 m WEST OF TH 65 TO 465 m EAST OF TH 65
T.H. 65 FROM 143.043 SOUTH OF LEB, & 154.644 m NORTH OF LEB CSA

ATTENTION !!
THIS IS A
METRIC PLAN.

MASTER COPY
5-17-00 MN.

MINN. PROJ. NO. STPF 0298 (264)
MINN. PROJ. NO.

PLAN SYMBOLS

COUNTY LINE
TOWNSHIP OR RANGE LINE
SECTION LINE
QUARTER LINE
SIXTEENTH LINE
RIGHT OF WAY LINE
SLOPE EASEMENT
PRESENT RIGHT OF WAY
PROPERTY LINE
CORPORATE OR CITY LIMITS
RETAINING WALL
RAILROAD
RAILROAD RIGHT OF WAY
RIVER OR CREEK
DRAINAGE DITCH
CULVERT
DROP INLET
GAURD RAIL
BARBED WIRE FENCE
WOVEN WIRE FENCE
CHAIN LINK FENCE
WOOD FENCE
STONE WALL OR FENCE
HEDGE
LOWLAND
TIMBER
ORCHARD
BRUSH
NURSERY
CATTLE GAURD
OVERPASS (Highway Over)
UNDERPASS (Highway Under)
BRIDGE
BUILDING (One Story Frame)
F-FRAME C-CONCRETE
S-STONE T-TILE
B-BRICK ST-STUCCO
RAILROAD CROSSING BELL
RAILROAD CROSSING GATE
MANHOLE
CATCH BASIN
FIRE HYDRANT
CAST IRON MONUMENT
IRON PIN
GRAVEL PIT
SAND PIT
BORROW PIT
ROCK QUARRY

UTILITY SYMBOLS

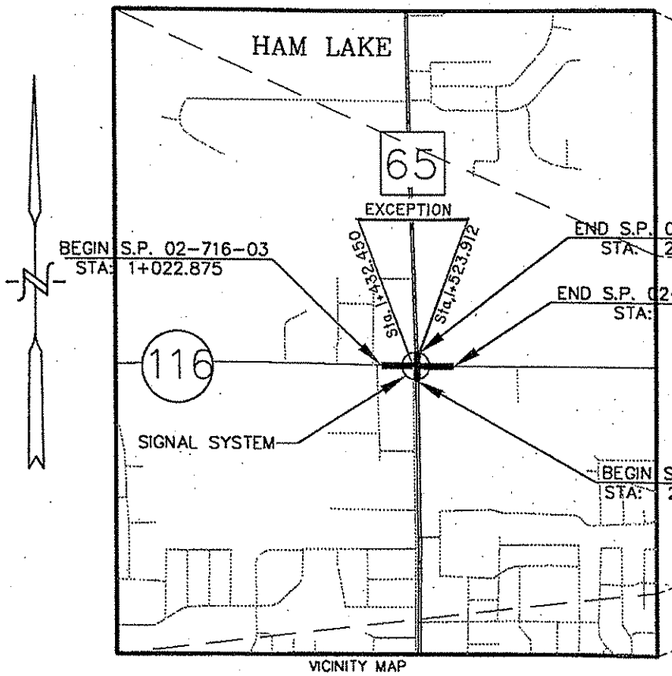
POWER POLE LINE
TELEPHONE OR TELEGRAPH POLE LINE
JOINT TELEPHONE & POWER ON POWER POLES
ON TELEPHONE POLES
ANCHOR
STEEL TOWER
STREET LIGHT
PEDESTAL (Cable Terminal)
GAS MAIN
WATERMAIN
TELEPHONE CABLE IN CONDUIT
ELECTRIC CABLE IN CONDUIT
TELEPHONE MANHOLE
ELECTRIC MANHOLE
BURIED TELEPHONE CABLE
BURIED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

SCALES

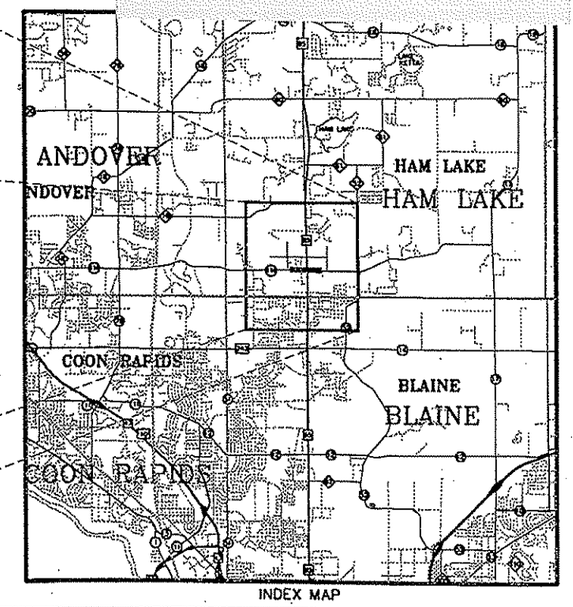
PLAN 0 10 20 m
PROFILE HORIZONTAL 0 10 20 m
VERTICAL 0 5 10 m
X-SECTIONS HORIZONTAL 0 2 4 m
VERTICAL 0 1 2 m
INDEX MAP

CSAH 116	
STATE PROJ. NO.	02-716-03
GROSS LENGTH	940.947 m
BRIDGES-LENGTH	0 m
EXCEPTIONS-LENGTH	91.462 m
NET LENGTH	849.508 m

STATE PROJ. NO.	0
GROSS LENGTH	2
BRIDGES-LENGTH	
EXCEPTIONS-LENGTH	
NET LENGTH	



VICINITY MAP



INDEX MAP

BASED ON STOPPING SIGHT DISTANCE.
Height of eye 1070 mm
Height of object 150 mm

DESIGN DESIGNATION	TH 65	CSAH 116 WEST OF TH 65	CSAH 116 EAST OF TH 65
DESIGN SPEED	100	80	90
EXISTING A.D.T. (1999)	N/A	9 325	3 955
PROJECTED A.D.T. (2019)	N/A	14 920	6 328
FUNCTION CLASSIFICATION	PRINCIPAL ARTERIAL	MINOR ARTERIAL	MINOR ARTERIAL
NO. OF TRAFFIC LANES	4	2	2
NO. OF PARKING LANES	0	0	0
ESAL FACTOR	N/A	2 482 960	1 053 248
R-VALUE	N/A	60	60
STRUCTURAL DESIGN STRENGTH	N/A	9.1 t	9.1 t

GOVERNING SPECIFICATIONS

THE 1995 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" SHALL GOVERN.

ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE MMUTCD, INCLUDING "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS - JANUARY 1998."

INDEX

THIS PLAN CONTAINS 67 SHEETS

Approved [signature] 12/13, 19 99
ANOKA COUNTY ENGINEER

Approved [signature] 12/21, 19 99
CITY OF HAM LAKE ENGINEER

Recommended for Approval [signature] 12/21, 19 99
FOR METRO DIVISION

Recommended for Approval [signature] 12/22, 19 99
STATE TRAFFIC ENGINEER

Recommended for Approval [signature] 2/22, 20 00
STATE PRE-LETTING ENGINEER

Office of Land Management Approval [signature] 2-23, 20 00
DIRECTOR, LAND MANAGEMENT

Approved [signature] 2/23/, 20 00
STATE DESIGN ENGINEER

[signature] 12/21, 19 99
METRO-ASSISTANT DIVISION ENGINEER - STATE AID: REVIEWED FOR COMPLIANCE WITH STATE-AID RULES/POLICY

[signature] 2/22, 20 00
APPROVED FOR STATE AID FUNDING: STATE AID ENGINEER

NO	DATE	BY	CKD	APPR	REVISION

NAME: 01Titlesheet.dwg 11-24-99 2:27:41 pm EST

minnesota metric

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
[signature]
DATE 12/13/99 REG. NO. 25066

DRAWN BY KLO DATE 8/99
DESIGN BY KLO DATE 8/99
CHECKED BY LAR DATE 8/99

STATE PROJECT NO. 0208-105 (TH 65=5)
STATE PROJECT NO. 02-716-03
STATE AID PROJECT NO.
COUNTY PROJECT NO.

ANOKA COUNTY
HIGHWAY DEPT.

TITLE SHEET

Sheet 1 of 66 Sheets

OR 2-22-00

Fed. Project No. _____

STATEMENT OF ESTIMATED QUANTITIES

CHART NO.	ITEM NO.	ITEM	UNIT	TOTAL ESTIMATED QUANTITY	FINAL QUANTITY	ESTIMATED QUANTITIES A	B	C	D
	2013.602	CELLULAR MOBILE TELEPHONE	EACH	1			1.0		
	2015.601	COMPUTER EQUIPMENT	LUMP SUM	1			1.0		
	2021.501	MOBILIZATION	LUMP SUM	1		0.6	0.1	0.2	0.1
	2031.501	FIELD OFFICE TYPE D	EACH	1		0.8	0.1	0.2	0.1
	2051.501	MAINT. AND RESTORATION OF HAUL ROADS	LUMP SUM	1				1	
A	2101.501	CLEARING	ha	2		2			
A	2101.502	CLEARING	TREE	66		66			
A	2101.506	GRUBBING	ha	2		2			
A	2101.507	GRUBBING	TREE	66		66			
	2102.502	PAVEMENT MARKING REMOVAL	m	2880		2880			
(2) Q	2104.501	REMOVE PIPE CULVERT	m	191		160		31	
H	2104.501	REMOVE FENCE	m	458		458			
B	2104.501	REMOVE CURB AND GUTTER	m	18		18			
E	2104.503	REMOVE CONCRETE SIDEWALK	m2	3		3			
(1) C,N	2104.503	REMOVE BITUMINOUS PAVEMENT	m2	9250		7894		1356	
O	2104.507	REMOVE RIPRAP	m3	14		14			
F	2104.509	REMOVE CONCRETE FLUME	EACH	1		1			
T	2104.509	REMOVE DRAINAGE STRUCTURE	EACH	1		1			
D	2104.511	SAWING CONCRETE PAVEMENT (FULL DEPTH)	m	4.4		4.4			
(1) I	2104.513	SAWING BITUMINOUS PAVEMENT (FULL DEPTH)	m	455.4		130.0		325.4	
H	2104.521	SALVAGE FENCE	m	4		4			
(9) T	2104.523	SALVAGE CASTING	EACH	1		1			
	2104.523	SALVAGE SIGN TYPE C	EACH	19		19			
(5)	2104.523	SALVAGE SIGN TYPE SPECIAL	EACH	7		7			
(14)	2104.601	HAUL SALVAGED MATERIAL	LS	1			1		
BB	2105.501	COMMON EXCAVATION	m3	8603 (P)		8039		564	
BB	2105.505	MUCK EXCAVATION	m3	2100		2100			
BB	2105.521	COMMON BORROW (LV)	m3	722 (P)		675		47	
BB	2105.522	SELECT GRANULAR BORROW (LV)	m3	2249 (P)		2249			
BB	2105.525	TOPSOIL BORROW (LV)	m3	296 (P)		291		5	
(4)	2130.501	WATER	m3	50		50			
(5) N,CC	2211.503	AGGREGATE BASE (CV) CLASS 5	m3	2932 (P)		2541		408	
	2221.503	AGGREGATE SHOULDERING (CV) CLASS 2	m3	14				14	
G	2232.501	MILL BITUMINOUS SURFACE	m2	7772		2518	5254		
	2331.603	SAWED/SEALED JOINT	m	1274		1130		144	
(6) N	2350.604	TYPE MV 4 WEARING COURSE MIX 50 mm THICK	m2	772		765		7	
CC	2350.609	TYPE MV 4 WEARING COURSE MIXTURE	t	1676		1350		326	
CC	2350.609	TYPE MV 3 NON WEARING COURSE MIXTURE	t	1577		1292		285	
CC	2350.609	TYPE LV 3 NON WEARING COURSE MIXTURE	t	2496		2057		439	
CC	2357.502	BITUMINOUS MATERIAL FOR TACK COAT	L	10 657		6444	3028	1185	
CC	2360.609	TYPE SP 9.5 WEARING COURSE MIXTURE (4,E)	t	632			632		
CC	2360.609	TYPE SP 12.5 WEARING COURSE MIXTURE (4,E)	t	1427			1427		
K	2411.604	MODULAR BLOCK RETAINING WALL	m2	27		27			
Q	2501.511	375 mm CS PIPE CULVERT	m	32.9		32.9			
Q	2501.511	450 mm CS PIPE CULVERT	m	20.7		20.7			
Q	2501.511	450 mm RC PIPE CULVERT	m	38.0		18.8		19.2	
Q	2501.511	900 mm RC PIPE CULVERT	m	33.5		33.5			
T	2501.515	300 mm RC PIPE APRON	EACH	4		4			
T	2501.515	600 mm RC PIPE APRON	EACH	1		1			
Q	2501.515	900 mm RC PIPE SAFETY APRON	EACH	2		2			
Q	2501.521	430 mm SPAN CS PIPE - ARCH CULVERT	m	6.6		6.6			
Q	2501.569	430 mm SPAN CS SAFETY APRON	EACH	2		2			
T	2501.569	300 mm RC SAFETY APRON	EACH	3		3			
Q	2501.569	375 mm CS SAFETY APRON	EACH	8		8			
Q	2501.569	450 mm CS SAFETY APRON	EACH	2		2			
T	2501.569	450 mm RC SAFETY APRON	EACH	7		3		4	
T	2503.541	300 mm RC PIPE SEWER DES 3006	m	71.4		71.4			
T	2503.541	300 mm RC PIPE SEWER DES 3006, CL IV	m	40.4		40.4			
T	2503.541	375 mm RC PIPE SEWER DES 3006, CL IV	m	39.9		39.9			
T	2503.541	450 mm RC PIPE SEWER DES 3006, CL III	m	208.1		138		70.1	
T	2503.541	600 mm RC PIPE SEWER DES 3006	m	102.8		102.8			
T	2506.501	CONSTRUCT DRAINAGE STRUCTURE DESIGN F	m	9.7		8.5		1.2	
T	2506.501	CONSTRUCT DRAINAGE STRUCTURE DESIGN G	m	4.5		2.2		2.3	
T	2506.501	CONSTRUCT DRAINAGE STRUCTURE DESIGN H	m	3.6		3.6			
T	2506.501	CONSTRUCT DRAINAGE STRUCT. DES. 1500 mm 4020	m	0.9		0.9			
U	2506.516	CASTING ASSEMBLY	EACH	16		13		3	
T	2511.502	RANDOM RIPRAP CLASS III	m3	6.3		6.3			
L	2521.501	100 mm CONCRETE WALK	m2	820		714		106	
DD	2521.501	150 mm CONCRETE WALK	m2	45		5		40	
M	2521.501	200 mm CONCRETE WALK	m2	94		94			

STATEMENT OF ESTIMATED QUANTITIES

CHART NO.	ITEM NO.	ITEM	UNIT	TOTAL ESTIMATED QUANTITY	FINAL QUANTITY	ESTIMATED QUANTITIES A	B	C	D
J	2531.501	CONCRETE CURB & GUTTER DESIGN B424	m	884.6		707.7		176.9	
(13)	2533.603	CONCRETE MEDIAN BARRIER DESIGN 8337	m	100		100			
S	2540.602	RELOCATE MAIL BOX SUPPORT	EACH	12		12			
Q, T	2554.509	GUIDE POSTS TYPE B	EACH	27		24		3	
H	2557.603	INSTALL FENCE	m	4		4			
	2563.601	TRAFFIC CONTROL	LUMP SUM	1		0.6	0.1	0.2	0.1
	2563.602	RAISED PAVEMENT MARKER TEMPORARY	EACH	454		340		114	
	2563.602	RELOCATE RAISED PAVEMENT MARKER TEMP	EACH	68		51		17	
	2564.531	SIGN PANELS TYPE C	m2	26		22		4	
	2564.550	CYLINDER STYLE DELINEATOR	EACH	4		4			
(3)	2564.602	INSTALL SIGN TYPE SPECIAL	EACH	7		7			
	2564.602	CLEARANCE MARKER X4-4	EACH	5		2		3	
	2564.602	END ROADWAY MARKER X4-2	EACH	6		3		3	
	2564.602	PAVEMENT MESSAGE (LT ARROW) POLY PREFORM	EACH	10		5		5	
	2564.602	PAVEMENT MESSAGE (RT ARROW) POLY PREFORM	EACH	2		1		1	
(10)	2564.603	100 mm SOLID LINE WHITE-PAINT	m	3234		3098		136	
(11)	2564.603	100 mm SOLID LINE YELLOW-PAINT	m	1043		1002		41	
(12)	2564.603	100 mm DOUBLE SOLID LINE YELLOW-PAINT	m	1206		1206			
	2564.603	200 mm SOLID LINE WHITE-PAINT	m	136				136	
	2564.603	600 mm SOLID LINE YELLOW-PAINT	m	186		186			
	2564.603	600 mm STOP LINE WHITE PAINT	m	17				17	
	2564.603	100 mm BROKEN LINE YELLOW-PAINT	m	33		33			
	2565.511	FULL T ACT T CONTROL SIGNAL SYSTEM	SIG SYS	1					1
	2565.601	EMERGENCY VEHICLE PREEMPTION SYSTEM	LUMP SUM	1				1	
	2565.616	TEMPORARY SIGNAL SYSTEM	SYS	1				1	
(7)	2573.501	BALE CHECK	EACH	56		56			
(7) P	2573.502	SILT FENCE, TYPE PREASSEMBLED	m	322		322			
R	2575.501	SEEDING	ha	2.6 (P)		2.4		0.2	
	2575.502	SEED MIXTURE 70A	kg	129		118		11	
R	2575.505	SODDING TYPE SALT RESISTANT	m2	7392		6830		562	
R	2575.511	MULCH MATERIAL TYPE 1	t	12		11		1	
R	2575.519	DISK ANCHORING	ha	2.6 (P)		2.4		0.2	
(8) Q,T	2575.523	EROSION CONTROL BLANKET CATEGORY 2	m2	283		231		52	
R	2575.532	COMMERCIAL FERTILIZER ANALYSIS 10-10-10	kg	1435		1341		94	
	2581.501	REMOVABLE PREFORMED PLASTIC MARKING	m	2040		2040			

BASIS OF PLANNED QUANTITIES

2350 TYPE HV 4 WEARING COURSE
BITUMINOUS MIXTURE 2.35 kg/mm/m2 THICKNESS

2350 TYPE HV 3 NON WEARING COURSE
BITUMINOUS MIXTURE 2.35 kg/mm/m2 THICKNESS

2350 TYPE MV 3 NON WEARING COURSE
BITUMINOUS MIXTURE 2.60 kg/mm/m2THICKNESS

2357 BITUMINOUS MATERIAL FOR TACK
0.23 L/m2 PER LIFT APPLIED

2575 MULCH MATERIAL TYPE 1, 4.5 t/ha

2575 COMMERCIAL FERTILIZER, ANALYSIS 10-10-10 (OR EQUIVALENT)
560 kg/ha ON ALL SEED AREAS

2575 ROADSIDE SEEDING BASED ON HORIZONTAL MEASUREMENT
+10% SEED MIXTURE NO. 70A, 50 kg/ha

NOTES

(1) INCLUDES ALL BITUMINOUS PAVEMENTS REGARDLESS OF DEPTH AND WIDTH.
(2) INCLUDES ALL TYPES AND SIZES; LENGTH INCLUDES APRONS
(3) MUNICIPAL STREET SIGNS.
(4) FOR DUST CONTROL AS DIRECTED BY THE ENGINEER.
(5) INCLUDES 17 m3 FOR AGGREGATE APPROACHES AND ENTRANCES, 21 m3 FOR TRENCH RESTORATION AND 28 m3 FOR TEMP. PAVEMENT WIDENING.
(6) INCLUDES 284 m2 FOR DRIVEWAY CONSTRUCTION, 210.0 m2 FOR TRENCH RESTORATION AND 278 m2 FOR TEMPORARY PAVEMENT WIDENING.
(7) FOR EROSION CONTROL AS SHOWN IN THE PLANS OR AS DIRECTED BY THE ENGINEER.
(8) FOR USE AT CULVERT ENDS AND AS DIRECTED BY THE ENGINEER SEE STD. PLATE M9102 .
(9) SALVAGE TO ANOKA COUNTY HIGHWAY MAINTENANCE.
(10) INCLUDES 4420 m FOR TRAFFIC CONTROL STAGING.
(11) INCLUDES 662 m FOR TRAFFIC CONTROL STAGING.
(12) INCLUDES 2684 m FOR TRAFFIC CONTROL STAGING.
(13) CONTRACTOR OWNED; USED FOR MUCKING.
(14) HAUL EXISTING IN-PLACE SIGNAL BACK TO MN/DOT

INDEX OF TABULATION CHARTS

FUNDING CATEGORIES

A ANOKA COUNTY 100% - S.P. 02-716-03
B MN/DOT 100% - S.P. 0208-105
C 80% FEDERAL, 20% MN/DOT - S.P. 0208-105
D 80% FEDERAL, 10% MN/DOT/ 10% ANOKA COUNTY - S.P. 0208-105, S.P. 02-716-03

NO	DATE	BY	CKD	APPR	REVISION

NAME: 02Est_Quantities 11-23-99 2:15:14 pm EST

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

DATE _____ REG. NO. _____

DRAWN BY KLO DATE 8/99
DESIGN BY KLO DATE 8/99
CHECKED BY LAR DATE 8/99

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 0208-105(T.H. 65)
STATE PROJECT NO. 02-716-03
STATE AID PROJECT NO. _____
COUNTY PROJECT NO. _____

STATEMENT OF ESTIMATED QUANTITIES

Fed. Project No. _____

CLEARING AND GRUBBING (A)

STATION - STATION	LOCATION	CLEARING TREE	CLEARING ha	GRUBBING TREE	GRUBBING ha
S.P. 02-716-03					
1+141.07	11.88 m LT LWB	1		1	
1+205.60	9.83 m LT LWB	1		1	
1+207.89	10.38 m LT LWB	1		1	
1+217.85	16.03 m RT LEB	1		1	
1+218.18	17.37 m RT LEB	1		1	
1+218.18	11.87 m RT LEB	1		1	
1+218.24	13.64 m RT LEB	1		1	
1+218.24	16.10 m RT LEB	1		1	
1+218.26	15.00 m RT LEB	1		1	
1+218.48	11.08 m RT LEB	1		1	
1+218.97	15.55 m RT LEB	1		1	
1+219.01	16.84 m RT LEB	1		1	
1+219.21	13.23 m RT LEB	1		1	
1+219.54	11.62 m RT LEB	1		1	
1+233.70	11.40 m RT LEB	1		1	
1+234.99	16.63 m RT LEB	1		1	
1+241.10	14.33 m RT LEB	1		1	
1+242.93	7.10 m LT LWB	1		1	
1+243.78	11.89 m RT LEB	1		1	
1+244.56	7.79 m LT LWB	1		1	
1+247.44	13.64 m RT LEB	1		1	
1+248.09	7.66 m LT LWB	1		1	
1+249.26	7.61 m LT LWB	1		1	
1+250.54	7.53 m LT LWB	1		1	
1+252.07	7.44 m LT LWB	1		1	
1+254.66	7.15 m LT LWB	1		1	
1+254.88	13.01 m RT LEB	1		1	
1+254.91	12.54 m RT LEB	1		1	
1+254.97	14.48 m RT LEB	1		1	
1+255.00	15.11 m RT LEB	1		1	
1+255.04	14.04 m RT LEB	1		1	
1+255.07	15.78 m RT LEB	1		1	
1+255.07	16.12 m RT LEB	1		1	
1+255.11	16.92 m RT LEB	1		1	
1+255.16	13.63 m RT LEB	1		1	
1+268.22	13.77 m RT LEB	1		1	
1+275.31	13.80 m RT LEB	1		1	
1+282.15	13.82 m RT LEB	1		1	
1+288.75	13.78 m RT LEB	1		1	
1+324.08	11.14 m RT LEB	1		1	
1+329.06	10.56 m RT LEB	1		1	
1+329.97	11.76 m RT LEB	1		1	
1+334.68	10.66 m RT LEB	1		1	
1+338.50	14.51 m RT LEB	0		1	
1+341.02	11.49 m RT LEB	0		1	
1+343.17	15.40 m RT LEB	0		1	
1+344.54	12.80 m RT LEB	1		1	
1+352.67	12.85 m RT LEB	1		1	
1+353.70	12.98 m RT LEB	1		1	
1+355.22	10.94 m RT LEB	1		1	
1+355.27	12.54 m RT LEB	1		1	
1+357.24	11.36 m RT LEB	1		1	
1+358.52	12.96 m RT LEB	1		1	
1+359.03	11.34 m RT LEB	1		1	
1+360.10	11.30 m RT LEB	1		1	
1+360.81	12.60 m RT LEB	1		1	
1+361.61	11.17 m RT LEB	1		1	
1+363.13	15.39 m RT LEB	1		1	
1+364.46	10.94 m RT LEB	1		1	
1+367.40	10.71 m RT LEB	1		1	
1+369.69	12.18 m RT LEB	1		1	
1+526.17	10.18 m LT LWB	1		1	
1+537.64 - 1+544.82	6.99-12.19 LT LWB		0.2		0.2
1+561.30 - 1+609.69	5.67-12.42 LT LWB		0.6		0.6
1+616.91 - 1+626.14	7.00-12.63 LT LWB		0.2		0.2
1+617.19 - 1+635.84	14.09-16.69 RT LEB		0.2		0.2
1+654.26- 1+698.79	14.97-17.27 RT LEB		0.2		0.2
1+729.74- 1+738.90	14.22-17.37 RT LEB		0.2		0.2
1+748.49 - 1+772.69	12.24-17.30 RT LEB		0.4		0.4
1+829.94	10.10 m LT LWB	1		1	
1+830.18	11.16 m LT LWB	2		1	
1+830.46	12.08 m LT LWB	1		1	
1+830.77	11.04 m LT LWB	3		1	
	TOTAL	66	2.0	66	2.0

REMOVE CURB & GUTTER (B)

STATION	LOCATION (m)	m2
S.P. 02-716-03		
1+132.55	18.1 - 19.3 LT LEB	1.2
1+230.63	10.6 - 15.7 RT LEB	5.1
1+725.12	15.9 - 22.1 LT LEB	6.2
1+734.23	15.8 - 21.2 LT LEB	5.4
	TOTAL	17.9

SAWING CONCRETE PAVEMENT (D)

STATION	LOCATION	REMARKS	m
S.P. 02-716-03			
1+218.4 - 1+219.12	LT		0.71
1+900.18- 1+903.82	RT		3.64
	TOTAL		4.35

REMOVE CONCRETE SIDEWALK (E)

STATION	LOCATION (m)	m2
S.P. 02-716-03		
1+218.40 - 1+219.12	5.47 - 10.26 LT LWB	3.2
	TOTAL	3.2

CONCRETE CURB & GUTTER (J)

STATION TO STATION	LOC.	DESIGN	REMARKS	B424 m
S.P. 02-716-03				
1+315 - 1+432	LT LEB	B424	MEDIAN	131.6
1+524 - 1+712	LT LEB	B424	MEDIAN	189.9
1+397.9 - 1+448.1	RT LEB	B424	TOTAL STATION PARKING LOT	80.2
1+315 - 1+432	RT LWB	B424	MEDIAN	116.1
1+524- 1+712	RT LWB	B424	MEDIAN	189.9
			SUBTOTAL	707.7
S.P. 0208-105				
1+498 - 1+503	RT LEB	B424	FREE-RIGHT ISLAND	47.4
1+449 - 1+445	LT LWB	B424	FREE-RIGHT ISLAND	47.1
1+432 - 1+450	LT LEB	B424	MEDIAN	18.8
1+503 - 1+524	LT LEB	B424	MEDIAN	22.3
1+315 - 1+450	RT LWB	B424	MEDIAN	19.0
1+503 - 1+524	RT LWB	B424	MEDIAN	22.3
			SUBTOTAL	176.9
			TOTAL	884.6

100 mm CONCRETE WALK (L)

STATION	LOCATION	REMARKS	m2
S.P. 02-716-03			
1+315 - 1+450	LT LEB	MEDIAN	309.0
1+500 - 1+705	LT LEB	MEDIAN	405.3
S.P. 0208-105			
1+315 - 1+450	LT LEB	MEDIAN	XXX
1+500 - 1+705	LT LEB	MEDIAN	XXX
1+498 - 1+503	RT LEB	FREE-RIGHT ISL	51.6
1+445 - 1+449	LT LWB	FREE-RIGHT ISL	54.2
	TOTAL		820.1

200 mm CONCRETE WALK (M)

STATION	LOCATION	REMARKS	m2
S.P. 02-716-03			
1+532 - 1+555	LT LEB	CROSSOVER @ J&I	93.6
	TOTAL		93.6

REMOVE BITUMINOUS PAVEMENT (C)

STATION-STATION	LOCATION (m)	DESCRIPTION	m2
S.P. 02-716-03			
1+114.00 - 1+432.45	3.75 LT - RT	MAIN LINE	2801.09
1+523.90 - 1+728.00	3.75 LT - RT	MAIN LINE	1879.91
1+114.00 - 1+432.45	6.00 LT - RT	SHOULDER	911.44
1+114.00 - 1+296.00	6.00 LT - RT	SHOULDER	405.08
1+540.00 - 1+650.00	6.00 LT - RT	SHOULDER	360.50
1+600.00 - 1+650.00	6.00 LT - RT	SHOULDER	142.95
1+129.98	LT -LWB	LINCOLN ST	158.90
1+299.49	LT -LWB	JOHNSON ST.	217.81
1+309.09	LT -LEB	JOHNSON ST.	155.71
1+729.86	LT -LWB	ABERDEEN ST.	241.71
		SUBTOTAL	7275.10
S.P. 0208-105			
1+440.50	LT -LEB	FRONTAGE ROAD	80.39
1+432.45 - 1+458.25	LT - RT	TH 65	644.15
1+495.15 - 1+523.90	LT - RT	TH 65	662.00
		SUBTOTAL	1386.54
		TOTAL	8661.64

150 mm CONCRETE WALK (D)

STATION	LOCATION	REMARKS	m2
S.P. 02-716-03			
1+453.3 - 1+455.0	LT LWB	MEDIAN NOSE BUNKER	2.9
1+498.1 - 1+499.9	RT LEB	MEDIAN NOSE BUNKER	1.8
		SUBTOTAL	4.7
S.P. 0208-105			
1+472 - 1+477	RT LEB	MEDIAN NOSE TH 65	24.9
1+453.3 - 1+455.0	LT LWB	MEDIAN NOSE BUNKER	3.3
1+498.1 - 1+499.9	RT LEB	MEDIAN NOSE BUNKER	6.6
1+453.3 - 1+455.0	LT LWB	FREE-RIGHT ISL	2.7
1+498.1 - 1+499.9	RT LEB	FREE-RIGHT ISL	2.7
		SUBTOTAL	40.2
		TOTAL	44.9

REMOVE CONCRETE FLUME (F)

STATION	LOCATION (m)	EACH
S.P. 02-716-03		
1+743.09 - 1+746.57	7.88 - 13.56 LT LWB	1
	TOTAL	1

MILL BITUMINOUS SURFACE (G)

STATION	LOCATION	REMARKS	m2
S.P. 02-716-03			
1+022.875 - 1+114.00	CL LEB	40 mm	1133.4
1+748.00 - 1+963.822	CL LEB	40 mm	1384.8
S.P. 0208-105			
1+465.44 - 1+487.93	CL LEB		5254.0 ①
	TOTAL		7772.2

① 2190 m2 @ 50 mm DEPTH
2205 m2 @ 75 mm DEPTH

FENCE CONSTRUCTION AND REMOVAL (H)

STATION	LOCATION (m)	REMARKS	REMOVE m	SALVAGE m	INSTALL m
S.P. 02-716-03					
1+239.87 - OUT	8.76 - 10.07 LT LWB	CHAIN LINK	1.3		
1+616.50 - 1+772.90	15.86 RT LEB	BARBED WIRE	456.4		
1+381.43 - OUT	11.44 - 15.73 RT LEB	WOODEN		4.3	4.3
	TOTAL		457.7	4.3	4.3

PRECAST CONCRETE STONE RETAINING WALL (K)

STATION TO STATION	LOC. (m)	LENGTH	HEIGHT	DESCRIPTION	m2
S.P. 02-716-03					
1+397.8- 1+424.8 RT	9.0 RT LEB	27	1.0	PRECAST CONC.	27
				TOTAL	27

SAWING BITUMINOUS PAVEMENT (I)

STATION	LOCATION (m)	REMARKS	(m)
S.P. 02-716-03			
1+114.00	CL EB	CL L12.25	12.25
1+129.98	19.20 LT LWB	LINCOLN ST.	8.17
1+221.20	9.20 LT LWB	HOUSE 1253	4.38
1+299.49	20.50 LT LWB	JOHNSON ST.	8.03
1+301.09	17.70 RT LWB	JOHNSON ST.	7.37
1+374.94	15.80 RT LWB	DRIVEWAY	5.54
1+391.00	9.30 RT LWB	TOTAL STATION	15.36
1+539.57	15.60 RT LWB	J and I MOBILE HOMES	24.10
1+608.00	14.30 RT LWB	DRIVE WAY	9.11
1+729.86	16.10 LT LWB	ABERDEEN ST.	9.85
1+747.96	CL LEB	CL LEB	7.06
1+836.26	8.80 LT LWB	HOUSE 1561	3.15
1+905.33	4.70 LT LWB	HOUSE 1607	8.96
1+939.33	4.50 LT LWB	GARAGE	6.67
		SUBTOTAL	130.00
S.P. 0208-105			
1+440.50	15.60 m	FRONTAGE ROAD	7.41
1+458.24	CL LEB	TH 65 SB	160.48
1+495.13	CL LEB	TH 65 NB	157.48
		SUBTOTAL	325.37
		TOTAL	455.37

TABULATION CHARTS

CLEARING AND GRUBBING
REMOVE CURB & GUTTER
REMOVE BITUMINOUS PAVEMENT
SAWING CONCRETE PAVEMENT
REMOVE CONCRETE SIDEWALK
REMOVE FLUME
MILL BITUMINOUS SURFACE
FENCE CONSTRUCTION AND REMOVAL
SAWING BITUMINOUS PAVEMENT
CONCRETE CURB & GUTTER
PRECAST CONCRETE STONE RETAINING WALL
100 mm CONCRETE WALK
150 mm CONCRETE WALK
200 mm CONCRETE WALK

NO	DATE	BY	CKD	APPR	REVISION

NAME: 03Tabulate.dwg 11-24-99 2:29:06 pm EST

minnesota metric

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
DATE 2/14/2000 REG. NO. 26826

DRAWN BY KLO DATE 8/99
DESIGN BY KLO DATE 8/99
CHECKED BY LAR DATE 8/99

STATE PROJECT NO. 0208-105(TH 65)
STATE PROJECT NO. 02-716-03
STATE AID PROJECT NO. _____
COUNTY PROJECT NO. _____

ANOKA COUNTY
HIGHWAY DEPT.

TABULATION CHARTS

Sheet 3 of 66 Sheets

Fed. Project No. _____

DRIVEWAY REMOVAL & CONSTRUCTION (N)

S.P. 02-716-03

STATION	LOC.	REMOVAL WIDTH m2	REMOVAL LENGTH m2	REMOVAL BIT m2	REMOVAL GRAVEL m2	TYPE MV 4 WEAR (MVWE45035C) WIDTH	TYPE MV 4 WEAR (MVWE45035C) LENGTH	TYPE MV 4 WEAR (MVWE45035C) m2	AGG. BASE , CLASS 5 WIDTH	AGG. BASE , CLASS 5 LENGTH	AGG. BASE , CLASS 5 m2
1+125.4	RT-LEB	2.7	6.6		32.46				3.1	9.7	48.7
1+175.6	LT-LWB	3.9	9.2		43.82				3.3	6.9	19.5
1+221.2	LT-LWB	4.4	8.9	42.08		4.3	3.4	17.58			
1+227.1	RT-LEB	6.5	9.9		64.22				6.1	6.5	49.2
1+263.6	RT-LEB	4.7	13.5		65.07						
1+263.6	LT-LWB	4.6	10.4		55.38				4.6	5.1	23.2
1+349.2	RT-LEB	3.2	9.8		43.41				3.2	5.6	30.55
1+375.0	RT-LEB	5.5	12.9	79.88		5.5	8.5	54.73			
1+390.5	RT-LEB	12.3	6.4	84.57		15.5	2.1	26.74			
1+538.9	RT-LEB	14.5	13.3	246.97		17.5	11.2	171.4			
1+607.8	RT-LEB	8.6	8.7	68.75							
1+836.5	LT-LWB	3.2	7.5	39.7		3.2	3.2	11.6			
1+906.0	LT-LWB	1.5	9.2	18.1							
1+940.0	LT-LWB	1.2	6.4	8.62		0.33	6.4	2.3			
		TOTAL:		588.67	304.36 (3)			284.35			171.15

(3) REMOVAL INCLUDED IN COMMON EXCAVATION

TURF ESTABLISHMENT (R)

S.P. 02-716-03

STATION-STATION	LOCATION (m)	SOD m2	SEED ha	MULCH t	FERTILIZER kg
1+023 - 1+125	6 - 17 LT LWB		0.118	0.53	66.00
1+023 - 1+057	6 - 22 RT LEB		0.055	0.25	30.80
1+062 - 1+073	6 - 22 RT LEB	157.50			
1+078 - 1+123.5	6- 21.5 RT LEB	695			
1+127 - 1+219	6 - 20 RT LEB	1,121.25			
1+134 - 1+163	6 - 17 LT LWB	251.25			
1+177 - 1+219	6 - 11 LT LWB	200			
1+223 - 1+261	6 - 10 LT LWB	142.50			
1+219 - 1+224	7 - 17.5 RT LEB	68.75			
1+230 - 1+261	7 - 17 RT LEB	311.25			
1+265 - 1+297	7 - 22 RT LEB	292.50			
1+265 - 1+296	7 - 23 LT LWB	135			
1+304 - 1+340	7 - 23 RT LWB		0.026	0.25	14.50
1+305 - 1+340	8 - 19 RT LEB	293.75			
1+340 - 1+451	7 - 60 LT LWB		0.140	0.63	78.40
1+340 - 1+347	8 - 16 RT LEB	56.25			
1+350 - 1+372	6 - 16 RT LEB	157.50			
1+378 - 1+383	8 - 16 RT LEB	42.50			
1+495 - 1+615	7 - 53 RT LEB		0.905	4.07	506.80
1+547 - 1+635	7 - 16 RT LEB		0.405	1.82	226.80
1+628 - 1+700	7 - 17 RT LEB		0.064	0.29	35.80
1+673 - 1+700	6 - 12 LT LWB		0.053	0.24	29.50
1+700 - 1+725	6 - 13 LT LWB		0.16	0.74	92.40
1+700 - 1+773	6 - 17 RT LEB		0.079	0.35	44.20
1+735 - 1+832	7 - 17 LT LWB	863.75			
1+773 - 1+805	5 - 9 RT LEB	165			
1+810 - 1+900	4 - 9 RT LEB	418.75			
1+838 - 1+903	3 - 16 LT LWB	662.5			
1+903 - 1+931	4 - 9 RT LEB	132.5			
1+908 - 1+938	5 - 20 LT LWB	451.25			
DITCH 0+000 TO 3+335	0 - 10 RT SH-PI		0.335	1.50	187.60
	SUBTOTAL	6619.50	2.340	10.670	1312.80
	S.P. 0208-105				
1+422 - 1+459	8 - 43 RT LEB	772.50			
1+466 - 1+484	10 - 43 RT LEB		0.050	0.23	28.20
1+469 - 1+487	13 - 60 LT LWB		0.078	0.35	43.80
1+503 - 1+528	9 - 53 RT LEB		0.089	0.40	50.20
	SUBTOTAL	772.50	0.217	0.980	78.20
	TOTAL	7392	2.56	11.65	1 435.0

REMOVE RIPRAP (O)

S.P. 02-716-03

STATION	LOCATION	m3
1+221.21 - 1+223.24	6.24 - 9.63 RT LEB	1.8
1+743.09 - 1+746.57	7.65 - 14.44 LT LWB	11.8
	TOTAL	13.6

SILT FENCE (P)

S.P. 02-716-03

STATION TO STATION	LOCATION	REMARKS	m.
1+129.600 - 1+224.600	19.50 m RT	LEB	95
1+561.700 - 1+666.700	15.20 m RT	LEB	95
1+588.000 - 1+720.000	10.50 m LT	LWB	132
	TOTAL		322

RELOCATE MAILBOX SUPPORT (S)

S.P. 02-716-03

ADDRESS	EACH
13625	1
1206	1
1235	1
1253	1
1256	1
1300	1
1336	1
ARROW SIGN & AWNING	1
1554	1
1561	1
1607	1
1612	1
TOTAL	12

CULVERT TABULATION (Q)

STATION	LOC	INPLACE	REMARKS	REMOVE PIPE CULV. m	FURNISH AND INSTALL 430 mm ARCH CSP (2) m	430 mm ARCH CSP (2) S.APRON	375 mm CSP (2) m	375 mm CSP (2) S.APRON	450 mm CSP (2) m	450 mm CSP (2) S.APRON	450 mm RCP (1) m	450 mm RCP (1) S.APRON	900 mm RCP (1) m	SAFETY APRON	CULVERT MARKERS	EROSION CONTROL BLANKET SQ. m	CLASS PIPE
							S.P. 02-716-03										
1+131.13	LT		LINCOLN ST.	23													
1+175.00	LT		ENTRANCE				7.0	2									
1+226.56	RT		ENTRANCE	9.1			8.1	2							2	14	
1+263.32	LT		ENTRANCE		6.6	2									2	14	
1+263.32	RT		ENTRANCE	9.1											2	14	
1+300.32	LT		JOHNSON ST.	21.6													
1+349.06	RT		ENTRANCE	6.1													
1+426.50	C/L	450 mm X 21.7 m	C/L PIPE CROSSING	21.7			7.3	2							2	14	
1+540.11	RT	450 mm X 18.4 m	ENTRANCE	18.4											1		
1+608.67	RT	300 mm X 15.2 m	ENTRANCE	15.2					20.7	2					2	18	
1+622.83	C/L	915 mm X 20.6 m	C/L PIPE CROSSING	20.6													
1+731.49	LT	460 mm X 15.4 m	ABERDEEN STREET	15.4													
1+837.00	LT		ENTRANCE								18.8	2	33.5	2	2	48	II
							10.5	2							2	18	II
															2	14	
		SUBTOTALS (S.P. 02-716-03)		160.2	6.6	2	32.9	8	20.7	2	18.80	4	33.5	2	17	154	
							S.P. 0208-105										
1+447.64	C/L	500 mm X 31 m	C/L PIPE CROSSING	31.0													
1+481.18	RT	450 mm X 23.8 m	N.B. T.H. 65 PIPE EXTENSION								2.4	1			1	9	
1+502.00	RT	450 mm X 23.8 m	N.B. T.H. 65 PIPE EXTENSION								16.8	1				9	
		SUBTOTALS (S.P. 0208-105)		31.0							19.2	2			1	18	
		TOTALS		191.2	6.6	2	32.9	8	20.7	2	38.0	4	33.5	2	18	172	

(1) TIE ALL JOINTS
(2) USE POSITIVE JOINTS

TABULATION CHARTS

DRIVEWAY REMOVAL AND CONSTRUCTION
REMOVE RIPRAP
SILT FENCE
CULVERT TABULATION
TURF ESTABLISHMENT
RELOCATE MAILBOX SUPPORT

NO	DATE	BY	CKD	APPR	REVISION

NAME: 04Tabulate.dwg 11-24-99 2:30:00 pm EST

minnesota metric

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

DATE 2/15/00 REG. NO. 26826

DRAWN BY KLO DATE 8/99
DESIGN BY KLO DATE 8/99
CHECKED BY LAR DATE 8/99

STATE PROJECT NO. 0208-105 (TH65)
STATE PROJECT NO. 02-716-03
STATE AID PROJECT NO. _____
COUNTY PROJECT NO. _____

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

TABULATION CHARTS

Sheet 4 of 66 Sheets

Fed. Project No. _____

DRAINAGE TABULATION

STRUCT. NO.	STATION	LOCATION (m)	REMARKS	MH OR CB	STRUCT. DESIGN	PAY HEIGHT	TOP OF CASTING ELEV.	OUTLET ELEV.	DRAINS TO	GRADE %	F & I CAST. ASSY.	FURNISH AND INSTALL RC PIPE SEWER DESIGN 3006 (T) 300 mm RCP m	RCP APRON EACH	375 mm RCP m	RCP APRON EACH	450 mm RCP m	RCP APRON EACH	450 mm PIPE BEND 7.5 DEG.	600 mm RCP m	RCP APRON EACH	RIPRAP m3	CLASS	CULVERT MARKERS EACH	EROSION CONTROL BLANKET m2	NOTES
100	1+130.865	14.31 m RT LEB		APRON				272.955	101	7.2 %		10	1									II	1	7	SAFETY APRON
101	1+119.314	14.39 m RT LEB		CB	G	1.513	272.870	271.787	103	0.5 %	C					28.4						III			
102	1+143.434	11.18 m LT LWB		APRON				273.013	103	2.0 %		21.7	1									II	1	7	SAFETY APRON
103	1+119.927	11.74 m LT LWB		CB	F	1.725	273.370	271.645	104	0.5 %	C								62.0			II			
104	1+122.616	73.66 m LT LWB		CB	F	1.817	273.152	271.335	105	0.5 %	C								30.0			II			
105	1+123.974	103.71 m LT LWB		CB	F	1.585	272.770	271.185	106	0.5 %	C								10.8			II			
106	1+114.297	111.79 m LT LWB		APRON				271.122	POND											1	6.3 (1)	II	1	13	
107	1+327.192	3.87 m RT LWB		CB	H	0.510	274.090	273.515	108	0.4 %	B	12.0										IV			
108	1+327.250	10.33 m LT LWB		APRON				273.458	DITCH				1										1	8	
109	1+365.823	3.87 m LT LEB		CB	H	0.637	274.360	273.658	110	0.44 %	B	14.7										IV			
110	1+365.852	10.02 m LT LWB		APRON				273.585	DITCH				1										1	8	
111	1+384.192	10.63 m RT LEB		CB	H	0.513	274.388	273.810	112	0.4 %	B	14.2										II			
112	1+397.885	7.13 m RT LEB		CB	G	0.647	274.465	273.753	114	0.4 %	B			39.9								IV			
114	1+437.656	10.61 m RT LEB	S.P. 0208-105	MH	F	1.207	274.775	273.593	115	0.5 %	A					38.0						III			
113	1+447.902	23.84 m RT LEB	S.P. 0208-105	APRON				273.979	DITCH							15.0	1						1	9	SAFETY APRON
115	1+437.778	20.64 m LT LWB	S.P. 0208-105	APRON				273.389	DITCH								1						1	9	SAFETY APRON
116	1+588.758	3.87 m RT LWB		CB	F	1.872	274.255	272.328	117	0.5 %	B	13.7										IV			GRIT CHAMBER
117	1+588.698	11.62 m LT LWB		APRON				273.150	DITCH				1										1	8	
118	1+681.843	3.87 m LT LEB		CB	F	1.528	273.943	272.360	119	0.5 %	B	12.1										II			GRIT CHAMBER
119	1+681.741	10.44 m RT LEB		APRON				273.190	DITCH				1										1	8	
EX.	1+426.789	8.58 m RT LEB	REMOVE MH, SALV. CASTING																						
120	1+477.471	14.44 m RT LEB	S.P. 0208-105	APRON				273.949	121	1.14%												III		8	SAFETY APRON
121	1+499.901	13.99 m RT LEB	S.P. 0208-105	MH	G	1.221	274.934	273.738	122	3.50%	A					2.4	1					III			
122	1+520.697	12.30 m RT LEB	S.P. 0208-105	MH	G	1.100	274.078	273.003	123	0.3%	A					21.0						III			
123	1+535.340	9.60 m RT LEB		CB	H	1.000	273.959	272.959	124	0.3%	C					14.7						III			
124	1+573.467	9.60 m RT LEB		CB	H	0.947	273.856	272.844	125	0.3%	B					38.2						III			
125	1+629.987	9.60 m RT LEB		MH	4020-1500	0.859	273.609	272.675	CULVERT		A					50.4		4 (2)							
126	1+513.515	25.07 m RT LEB		APRON				273.865	122	5.7%		13.3	1									III			
																						III		7	SAFETY APRON
				TOTAL	DES F	9.734		SUBTOTAL S.P. 02-716-03				111.7	7	39.9		208.10			102.8	1	6.3		7	69	
					DES G	4.481		SUBTOTAL S.P. 0208-105									3	4					2	34	
					DES H	3.607		TOTALS				111.7	7	39.9		208.10	3	4	102.8	1	6.3		9	103	
					4020-1500	0.859																			

TIE ALL JOINTS ON STORM SEWER THAT GOES UNDER THE ROADWAY AND HAS A FREE END

(1) FILTER MATERIAL CONSIDERED INCIDENTAL FOR WHICH NO DIRECT PAYMENT WILL BE MADE

(2) INCIDENTAL FOR WHICH NO DIRECT PAYMENT WILL BE MADE

CASTING ASSEMBLY SUMMARY (U)

ASSEMBLY	RING OR FRAME CASTING	COVER OR GRATE CASTING	CURB BOX	STANDARD PLATE	QUANTITY	REMARKS
S.P. 0208-105						
A	700-7			M4101	3	MANHOLE
		715		M4110		
				TOTALS	3	
S.P. 02-716-03						
A	700-7			M4101	1	MANHOLE
		715		M4110		
B	801			M4126		CURB INLET
		810		M4149	7	
			821B	M4161		
C	RD. CONC.			M4143		STOOL
		731		M4143	5	
				TOTALS	16	

NO	DATE	BY	CKD	APPR	REVISION

NAME: 05Drainage tab.dwg 11-24-99 2:30:49 pm EST

minnesota metric

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

DATE 12/15/00 REG. NO. 26826

DRAWN BY KLD DATE 8/99

DESIGN BY KLD DATE 8/99

CHECKED BY LAR DATE 8/99

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 0208-105 (TH65)

STATE PROJECT NO. 02-716-03

STATE AID PROJECT NO. _____

COUNTY PROJECT NO. _____

DRAINAGE TABULATION

Sheet 5 of 66 Sheets

Fed. Project No. _____

PUBLIC UTILITY

OWNED BY CONNEXUS ENERGY (OVER HEAD) (V)
(SHARED WITH MEREDITH CABLE)

	STATION	LOCATION (m)	DESCRIPTION	EACH	REMARKS
	1+051.374	9.57 RT LEB	POWER POLE	1	LEAVE AS IS
	1+139.204	8.74 RT LEB	POWER POLE	1	LEAVE AS IS
	1+239.940	1.70 LT LWB	POWER POLE	1	RELOCATE
	1+253.898	6.48 RT LEB	POWER POLE	1	RELOCATE
	1+311.009	6.04 RT LEB	POWER POLE	1	RELOCATE
	1+341.685	16.16 RT LEB	POWER POLE	1	LEAVE AS IS
	1+345.586	5.83 RT LEB	POWER POLE	1	RELOCATE
	1+380.913	6.04 RT LEB	POWER POLE	1	RELOCATE
	1+404.893	5.26 RT LEB	POWER POLE	1	RELOCATE
	1+432.872	4.64 RT LEB	POWER POLE	1	RELOCATE
	1+432.687	9.07 LT LWB	POWER POLE	1	RELOCATE
	27+470.397	29.11 LT LSB TH65	POWER POLE	1	LEAVE AS IS
	27+419.932	29.16 LT LSB TH65	POWER POLE	1	LEAVE AS IS
	27+363.127	29.36 LT LSB TH65	POWER POLE	1	LEAVE AS IS
	27+347.581	29.13 LT LSB TH65	POWER POLE	1	LEAVE AS IS
	27+322.993	29.21 LT LSB TH65	POWER POLE	1	RELOCATE
	27+263.365	28.8 LT LSB TH65	POWER POLE	1	LEAVE AS IS
	27+190.019	28.90 LT LSB TH65	POWER POLE	1	LEAVE AS IS
(3)	1+514.659	10.45 LT LWB	POWER POLE	1	RELOCATE
(2)	1+522.545	32.35 LT LWB	POWER POLE	1	RELOCATE
(1)	1+523.932	6.38 RT LEB	POWER POLE	1	RELOCATE
	1+529.057	6.99 RT LEB	POWER POLE	1	RELOCATE
	1+602.175	7.77 RT LEB	POWER POLE	1	RELOCATE
	1+616.781	8.00 RT LEB	POWER POLE	1	RELOCATE
	1+624.909	8.24 RT LEB	POWER POLE	1	RELOCATE
	1+689.274	9.25 RT LEB	POWER POLE	1	RELOCATE
	1+772.439	9.46 RT LEB	POWER POLE	1	LEAVE AS IS
	1+814.644	9.38 RT LEB	POWER POLE	1	LEAVE AS IS
	1+831.520	6.98 LT LWB	POWER POLE	1	LEAVE AS IS
	1+867.239	9.44 RT LEB	POWER POLE	1	LEAVE AS IS
	1+868.851	7.89 LT LWB	POWER POLE	1	LEAVE AS IS
	1+941.898	9.49 RT LEB	POWER POLE	1	LEAVE AS IS
	1+942.078	9.15 LT LWB	POWER POLE	1	LEAVE AS IS
	2+032.068	9.76 RT LEB	POWER POLE	1	LEAVE AS IS
	2+042.878	13.82 LT LWB	POWER POLE	1	LEAVE AS IS
	2+091.458	8.76 LT LWB	POWER POLE	1	LEAVE AS IS
	2+100.430	10.02 RT LEB	POWER POLE	1	LEAVE AS IS
	2+121.044	10.00 RT LEB	POWER POLE	1	LEAVE AS IS
	2+196.020	13.82 RT LEB	POWER POLE	1	LEAVE AS IS
	2+203.904	18.03 LT LWB	POWER POLE	1	LEAVE AS IS
	2+178.933	23.49 RT LNB TH65	POWER POLE	1	LEAVE AS IS
	2+259.779	31.84 RT LNB TH65	POWER POLE	1	LEAVE AS IS
					LEAVE AS IS
	TOTAL			40	

(1) SHARED WITH GREAT RIVER ENERGY AND MEREDITH CABLE
(2) SHARED WITH GREAT RIVER ENERGY, BUT NOT WITH MEREDITH CABLE
(3) NOT SHARED WITH ANY OTHER COMPANY

PUBLIC UTILITY

PUBLIC UTILITY OWNED BY US WEST (W)

STATION	LOCATION (m)	TO STATION	LOCATION	REMARKS
1+012.289	9.45 LT LWB	1+109.957	9.64 LT CL	RELOCATE
1+109.957	9.64 LT LWB	1+120.213	12.62 LT LWB	RELOCATE
1+120.213	12.62 LT LWB	1+137.297	10.55 LT LWB	RELOCATE
1+137.297	10.55 LT LWB	1+140.160	12.03 LT LWB	RELOCATE
1+134.023	25.99 LT LWB	1+134.408	15.77 LT LWB	RELOCATE
1+134.408	15.77 LT LWB	1+139.740	11.55 LT LWB	RELOCATE
1+139.740	11.55 LT LWB	1+143.930	18.58 LT LWB	RELOCATE
1+140.160	12.03 LT LWB	1+147.112	8.25 LT LWB	RELOCATE
1+147.112	8.25 LT LWB	1+292.131	5.26 LT LWB	RELOCATE
1+292.131	5.26 LT LWB	1+292.309	12.14 LT LWB	RELOCATE
1+292.309	12.14 LT LWB	1+292.467	26.72 LT LWB	RELOCATE
1+292.309	12.14 LT LWB	1+313.049	12.34 LT LWB	RELOCATE
1+313.049	12.34 LT LWB	1+307.119	17.50 LT LWB	RELOCATE
1+307.119	17.50 LT LWB	1+307.158	28.41 LT LWB	RELOCATE
1+313.049	12.34 LT LWB	1+418.005	12.49 LT LWB	RELOCATE
1+418.005	12.49 LT LWB	1+431.607	10.06 LT LWB	RELOCATE
1+431.607	10.06 LT LWB	1+433.965	66.98 LT LWB	RELOCATE
1+431.607	10.06 LT LWB	1+433.957	46.98 RT LEB	ADJUST
1+434.823	66.96 LT LWB	1+434.240	46.98 RT LEB	ADJUST
1+435.494	66.97 LT LWB	1+434.844	46.97 RT LEB	ADJUST
1+436.468	66.99 LT LWB	1+435.478	46.95 RT LEB	ADJUST
1+433.700	8.36 RT LEB	1+389.071	10.29 RT LEB	RELOCATE
1+389.071	10.29 RT LEB	1+398.357	18.51 RT LEB	RELOCATE
1+434.773	35.74 RT LEB	1+520.011	35.10 RT LEB	RELOCATE
1+520.011	35.10 RT LEB	1+520.743	14.56 RT LEB	RELOCATE
1+520.743	14.56 RT LEB	1+529.890	6.26 RT LEB	RELOCATE
1+529.890	6.26 RT LEB	1+525.717	2.32 LT LWB	ADJUST
1+525.717	2.32 LT LWB	1+543.614	4.44 LT LWB	RELOCATE
1+543.614	4.44 LT LWB	1+602.415	3.83 LT LWB	RELOCATE
1+602.415	3.83 LT LWB	1+603.531	2.71 LT LWB	RELOCATE
1+603.531	2.71 LT LWB	1+653.717	2.47 LT LWB	RELOCATE
1+653.717	2.47 LT LWB	1+723.082	8.08 LT LWB	RELOCATE
1+723.082	8.08 LT LWB	1+824.217	10.40 LT LWB	RELOCATE
1+824.217	10.40 LT LWB	1+825.983	11.37 LT LWB	RELOCATE
1+825.983	11.37 LT LWB	1+830.964	7.48 LT LWB	RELOCATE
1+868.866	7.89 LT LWB	1+867.809	9.23 RT LEB	ADJUST
1+867.809	9.23 RT LEB	1+897.304	14.06 RT LEB	LEAVE AS IS
1+867.809	9.23 RT LEB	1+870.505	12.53 RT LEB	LEAVE AS IS

PUBLIC UTILITY

PUBLIC UTILITY OWNED BY MINNEGASCO (Y)

STATION	LOCATION (m)	STATION	LOCATION (m)	SIZE AND ITEM	REMARKS
1+060.190	10.38 RT LEB	1+116.407	11.47 RT LEB	50 mm STEEL	ADJUST
1+116.407	11.47 RT LEB	1+114.404	4.52 LT LWB	50 mm STEEL	ADJUST
1+114.404	4.52 LT LWB	1+116.311	10.35 LT LWB	50 mm STEEL	ADJUST
1+116.311	10.35 LT LWB	1+117.945	11.39 LT LWB	50 mm STEEL	ADJUST
1+116.407	11.47 RT LEB	1+295.671	7.65 RT LEB	50 mm STEEL	ADJUST
1+116	10.89 LT LWB	1+121	10.89 LT LWB	50 mm STEEL	ADJUST
1+121	10.89 LT LWB	1+121	4.3 LT LWB	50 mm STEEL	ADJUST
1+295.671	7.65 RT LEB	1+296.475	15.46 RT LEB	50 mm STEEL	ADJUST
1+295.671	7.65 RT LEB	1+434.699	8.38 RT LEB	50 mm STEEL	ADJUST
1+434.699	8.38 RT LEB	1+434.658	7.21 RT LEB	76 mm STEEL	ADJUST
1+434.658	7.21 RT LEB	1+425.866	7.52 RT LEB	101 mm STEEL	ADJUST
1+425.866	7.52 RT LEB	1+422.392	7.57 RT LEB	101 mm STEEL	ADJUST
1+425.866	7.52 RT LEB	1+427.629	5.10 LT LWB	101 mm STEEL	ADJUST
1+427.629	5.10 LT LWB	1+432.413	5.51 LT LWB	101mm STEEL	LEAVE AS IS
1+432.413	5.51 LT LWB	1+432.347	11.99 LT LWB	101 mm STEEL	LEAVE AS IS
1+432.347	11.99 LT LWB	1+432.331	13.51 LT LWB	101 mm STEEL	LEAVE AS IS
1+432.347	11.99 LT LWB	1+414.526	12.07 LT LWB	101 mm STEEL	LEAVE AS IS
1+414.526	12.07 LT LWB	1+414.500	13.59 LT LWB	101 mm STEEL	ADJUST
1+414.500	13.59 LT LWB	1+432.331	13.51 LT LWB	76 mm STEEL	ADJUST
1+432.331	13.51 LT LWB	1+432.236	22.87 LT LWB	101 mm PE	LEAVE AS IS
1+432.236	22.87 LT LWB	1+432.026	75.57 LT LWB	101 mm PE	LEAVE AS IS
1+432.331	13.51 LT LWB	1+434.284	13.50 LT LWB	152 mm STEEL	LEAVE AS IS
1+434.284	13.50 LT LWB	1+434.205	18.00 LT LWB	152 mm STEEL	LEAVE AS IS
1+434.205	18.00 LT LWB	1+433.095	75.60 LT WB	152 mm STEEL	LEAVE AS IS
1+434.205	18.00 LT LWB	1+443.538	17.96 LT LWB	152 mm STEEL	LEAVE AS IS
1+443.538	17.96 LT LWB	1+445.226	68.47 RT LEB	152 mm STEEL	LEAVE AS IS
1+432.236	22.87 LT LWB	1+520.806	24.02 LT LWB	101 mm PE	LEAVE AS IS
1+520.806	24.02 LT LWB	1+522.173	8.13 RT LEB	101 mm PE	ADJUST
1+522.173	8.13 RT LEB	1+521.365	8.62 RT LEB	76 mm PE	ADJUST
1+521.365	8.62 RT LEB	1+520.630	68.86 RT LEB	76 mm PE	ADJUST
1+522.173	8.13 RT LEB	1+558.889	6.44 RT LEB	101 mm PE	ADJUST
1+558.889	6.44 RT LEB	1+817.272	9.39 RT LEB	101 mm PE	ADJUST
1+722	8.56 RT LEB	1+722	13.50 LT LWB	50 mm PE	ADJUST
1+817.272	9.39 RT LEB	1+814.056	1.84 LT LWB	50 mm PE	LEAVE AS IS
1+814.056	1.84 LT LWB	1+813.273	15.90 LT LWB	50 mm PE	LEAVE AS IS
1+817.272	9.39 RT LEB	2+101.528	9.35 RT CL	50 mm PE	LEAVE AS IS

PUBLIC UTILITY

OWNED BY CONNEXUS ENERGY (BURIED) (X)

STATION	LOCATION (m)	STATION	LOCATION	REMARKS
1+100.547	13.31 LT LWB	1+142.382	3.37 LT LWB	RELOCATE
1+034.045	9.082 LT LWB	1+034.045	8.97 RT LEB	ADJUST
1+142.382	3.37 LT LWB	1+285.568	0.77 LT LWB	ADJUST
1+285.568	0.77 LT LWB	1+353.043	3.65 LT LWB	ADJUST
1+353.043	3.65 LT LWB	1+423.045	2.71 LT LWB	ADJUST
1+423.045	2.71 LT LWB	1+433.812	6.62 LT LWB	ADJUST
1+433.812	6.62 LT LWB	1+435.101	15.32 LT LWB	LEAVE AS IS
1+435.101	15.32 LT LWB	1+432.784	24.91 LT LWB	LEAVE AS IS
1+309.676	26.59 LT LWB	1+309.979	13.34 LT LWB	LEAVE AS IS
1+309.979	13.34 LT LWB	1+425.303	14.31 LT LWB	LEAVE AS IS
1+404.890	5.82 RT LEB	1+395.136	21.44 RT LEB	LEAVE AS IS
1+425.303	14.31 LT LWB	1+430.800	16.01 LT LWB	LEAVE AS IS
1+430.800	16.01 LT LWB	1+432.175	24.91 LT LWB	LEAVE AS IS
1+423.045	2.71 LT LWB	1+422.700	8.20 RT LEB	LEAVE AS IS
1+422.700	8.20 RT LEB	1+429.102	9.89 RT LEB	LEAVE AS IS
1+429.102	9.89 RT LEB	1+432.707	14.08 RT LEB	LEAVE AS IS
1+432.707	14.08 RT LEB	1+434.514	20.78 RT LEB	LEAVE AS IS
1+434.514	20.78 RT LEB	1+504.345	20.84 RT LEB	LEAVE AS IS
1+504.345	20.84 RT LEB	1+513.658	14.09 RT LEB	LEAVE AS IS
1+513.658	14.09 RT LEB	1+515.444	8.92 RT LEB	RELOCATE
1+515.444	8.92 RT LEB	1+548.336	9.67 RT LEB	RELOCATE
1+548.336	9.67 RT LEB	1+567.168	7.88 RT LEB	RELOCATE
1+567.168	7.88 RT LEB	1+603.931	8.12 RT LEB	RELOCATE
1+603.931	8.12 RT LEB	1+616.175	7.89 RT LEB	RELOCATE
1+724.31	21.5 LT LWB	1+724.31	8.96 RT LEB	ADJUST
1+814.140	10.10 LT LWB	1+814.140	8.72 RT LEB	LEAVE AS IS

(4) CONSTRUCT CONCRETE PEDESTRIAN RAMPS (Z)

STATION	LOCATION	DESCRIPTION	EACH
	S.P. 0208-105		
1+452.300	9.20 LT LWB		1
1+497.800	9.20 RT LEB		1
1+500.800	6.60 RT LEB		1
TOTAL			3

(4) FOR INFORMATION ONLY

ANY REMOVALS OR RELOCATION TO BE DONE BY OTHERS
ALL DISTANCES ARE IN METERS.
LOCATIONS OF UTILITIES ARE APPROXIMATE ONLY.
ACTUAL LOCATIONS ARE TO BE DETERMINED IN THE FIELD DURING CONSTRUCTION.

PUBLIC UTILITIES TABULATION

PUBLIC UTILITY OWNED BY MINNEGASCO
PUBLIC UTILITY OWNED BY CONNEXUS ENERGEY
PUBLIC UTILITY OWNED BY GREAT RIVER ENERGY
CONSTRUCT CONCRETE PEDESTRIAN RAMPS

NO	DATE	BY	CKD	APPR	REVISION

NAME: 06Pubutil Tab.dwg 21400 74124

minnesota metric

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
DATE 2/14/00 REG. NO. 26826

DRAWN BY KLO DATE 8/99
DESIGN BY KLO DATE 8/99
CHECKED BY LAR DATE 8/99

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 0208-105 (TH 65)
STATE PROJECT NO. 02-716-03
STATE AID PROJECT NO. _____
COUNTY PROJECT NO. _____

TABULATION CHARTS

Sheet 6 of 66 Sheets

Fed. Project No. _____

CUT AND FILL (AA)

STATION	AREAS m2		VOLUMES m3		CUMULATIVE VOLUMES m3	
	CUT	FILL	CUT*	FILL	CUT*	FILL
1+040	0.31	0.26	9.01	3.74	9.01	3.74
1+060	0.59	0.11	14.54	9.23	23.55	12.97
1+075	1.35	1.12	6.33	5.90	29.88	18.88
1+080	1.18	1.24	5.78	8.98	35.66	27.86
1+085.82	0.80	1.84	11.30	30.87	46.96	58.73
1+100	0.79	2.49	39.93	28.10	86.89	86.82
1+116	4.20	1.01	18.16	1.99	105.05	88.82
1+119.37	6.57	0.18	4.79	0.22	109.84	89.04
1+120	8.62	0.53	32.88	5.51	142.72	94.54
1+125	4.52	1.68	28.11	4.32	170.83	98.86
1+130	6.73	0.05	66.55	6.78	237.38	105.65
1+140	6.60	1.30	23.35	6.68	260.73	112.33
1+143.71	6.00	2.29	36.34	18.56	297.08	130.89
1+150	5.55	3.61	16.68	11.20	313.76	142.09
1+153	5.57	3.86	41.47	32.66	355.23	174.75
1+160	6.28	5.48	64.55	47.18	419.78	221.93
1+170	6.63	3.96	39.57	15.55	459.35	237.47
1+175	9.20	2.26	42.85	13.74	502.20	251.21
1+180	7.94	3.24	82.79	33.25	584.98	284.46
1+190	8.61	3.41	90.75	30.63	675.74	315.10
1+200	9.54	2.71	79.10	19.69	754.84	334.78
1+208.06	10.09	2.17	19.93	4.11	774.77	338.89
1+210	10.49	2.07	126.53	14.23	901.30	353.12
1+220	14.86	0.77	115.93	3.96	1017.23	357.07
1+228	14.16	0.22	28.21	0.65	1045.44	357.72
1+230	14.05	0.43	139.78	5.30	1185.22	363.02
1+240	13.93	0.63	319.77	6.29	1504.99	369.30
1+260	18.11	0.00	100.30	0.00	1605.29	369.30
1+265.52	18.31	0.00	239.71	4.25	1845.00	373.55
1+280	14.80	0.59	59.47	2.43	1904.47	375.98
1+284	14.94	0.63	116.11	2.19	2020.58	378.17
1+291	18.23	0.00	203.72	0.00	2224.30	378.17
1+300	27.04	0.00	129.61	0.00	2353.91	378.17
1+306	16.17	0.00	26.73	0.00	2380.64	378.17
1+307.70	15.28	0.00	191.77	5.38	2572.41	383.54
1+320	15.90	0.87	263.06	38.85	2835.47	422.40
1+340	10.40	3.01	86.33	22.28	2921.80	444.68
1+348	11.18	2.56	111.40	39.75	3033.20	484.43
1+360	7.39	4.07	124.01	48.90	3157.21	533.33
1+375	9.15	2.45	36.65	16.21	3193.87	549.54
1+380	5.52	4.03	93.17	67.01	3287.04	616.55
1+397.89	4.90	3.46	9.83	7.46	3296.87	624.01

*NOTE: CUT VOLUME DOES NOT INCLUDE SUBCUT.

CUT AND FILL (AA)

STATION	AREAS m2		VOLUMES m3		CUMULATIVE VOLUMES m3	
	CUT	FILL	CUT*	FILL	CUT*	FILL
1+400	4.43	3.62	58.56	102.04	3355.43	726.06
1+420	1.42	6.59	10.84	81.99	3366.27	808.05
1+431.80	0.41	7.32	2.68	45.16	3368.95	853.21
1+437.81	0.48	7.71	0.83	17.38	3369.78	870.60
1+440	0.28	8.15	2.85	57.81	3372.62	928.40
1+445	0.86	14.97	49.44	97.30	3422.07	1025.70
1+458	6.75	0.00	3.37	0.00	3425.44	1025.70
1+459	0.00	0.00	0.00	0.00	3425.44	1025.70
1+460	0.00	0.00	0.00	0.00	3425.44	1025.70
1+480	0.00	0.00	0.00	0.00	3425.44	1025.70
1+494	0.00	0.00	3.43	0.00	3428.87	1025.70
1+495	6.87	0.00	28.27	0.28	3457.15	1025.98
1+500	4.44	0.11	52.01	91.99	3509.16	1117.96
1+520	0.76	9.09	14.91	158.81	3524.06	1276.77
1+540	0.73	6.79	23.49	125.48	3547.56	1402.26
1+560	1.62	5.75	40.70	136.68	3588.26	1538.94
1+580	2.45	7.91	81.64	124.45	3669.90	1663.39
1+600	5.71	4.53	106.10	159.66	3776.00	1823.05
1+620	4.90	11.43	10.91	21.49	3786.91	1844.54
1+622	6.01	10.06	12.98	19.82	3799.88	1864.36
1+624	6.97	9.76	119.71	133.40	3919.59	1997.76
1+640	8.00	6.91	136.03	120.64	4055.63	2118.40
1+660	5.60	5.15	110.65	96.86	4166.28	2215.26
1+680	5.46	4.53	119.19	73.43	4285.47	2288.69
1+700	6.46	2.81	114.36	74.75	4399.83	2363.44
1+720	4.98	4.67	71.23	24.29	4471.06	2387.73
1+730	9.27	0.19	78.02	11.80	4549.08	2399.52
1+740	6.34	2.17	83.07	67.57	4632.16	2467.10
1+760	1.97	4.59	51.65	73.79	4683.81	2540.89
1+780	3.19	2.79	44.35	42.13	4728.16	2583.02
1+800	1.24	1.42	31.38	30.12	4759.54	2613.14
1+820	1.90	1.59	72.68	12.17	4832.22	2625.31
1+835	7.79	0.03	11.78	0.05	4844.00	2625.36
1+836.55	7.39	0.03	15.36	0.11	4859.36	2625.47
1+840	1.53	0.03	22.17	5.15	4881.53	2630.62
1+860	0.69	0.48	12.30	12.17	4893.83	2642.79
1+880	0.54	0.74	20.08	8.77	4913.91	2651.56
1+900	1.47	0.14	6.07	0.35	4919.98	2651.91
1+905	0.96	0.00	14.14	0.44	4934.12	2652.35
1+920	0.93	0.06	7.59	0.73	4941.71	2653.07
1+930	0.59	0.09	0.00	0.00	4941.71	2653.07
			TOTAL		4941.71	2653.07

JOHNSON ST. DITCH – CUT AND FILL (AA)

STATION	AREAS m2		VOLUMES m3		CUMULATIVE VOLUMES m3	
	CUT	FILL	CUT	FILL	CUT	FILL
0+000	3.55	0.00	3.48	0.00	3.48	0.00
0+001	3.41	0.00	3.37	0.00	6.85	0.00
0+002	3.33	0.00	3.24	0.01	10.09	0.01
0+003	3.15	0.01	3.05	0.02	13.14	0.03
0+004	2.94	0.02	2.85	0.03	15.98	0.06
0+005	2.75	0.04	2.65	0.05	18.63	0.10
0+006	2.54	0.05	2.46	0.06	21.09	0.16
0+007	2.37	0.07	2.33	0.08	23.42	0.24
0+008	2.29	0.09	2.28	0.09	25.70	0.33
0+009	2.27	0.09	2.26	0.09	27.96	0.42
0+010	2.25	0.09	21.12	0.48	49.08	0.90
0+020	1.98	0.01	35.76	0.38	84.84	1.27
0+040	1.60	0.03	45.06	0.30	129.90	1.57
0+060	2.91	0.00	47.17	0.00	177.06	1.57
0+080	1.81	0.00	36.39	0.00	213.45	1.57
0+100	1.83	0.00	38.51	0.00	251.96	1.57
0+120	2.02	0.00	34.85	0.00	286.82	1.58
0+140	1.46	0.00	26.30	0.00	313.12	1.58
0+160	1.17	0.00	23.52	0.00	336.64	1.58
0+180	1.18	0.00	21.16	0.00	357.81	1.58
0+200	0.93	0.00	23.41	0.00	381.22	1.58
0+220	1.41	0.00	26.63	0.00	407.85	1.58
0+240	1.25	0.00	26.66	0.00	434.51	1.58
0+260	1.41	0.00	24.00	0.01	458.51	1.59
0+280	0.99	0.00	18.68	0.01	477.19	1.60
0+300	0.88	0.00	18.20	0.00	495.40	1.61
0+320	0.94	0.00	15.12	0.00	510.52	1.61
0+335.80	0.98	0.00	0.00	0.00	510.52	1.61

**NOTE: CUT VOLUME INCLUDES 167.5 m3 TOPSOIL TO BE STRIPPED

CUT AND FILL TABULATION

NO	DATE	BY	CKD	APPR	REVISION

NAME: 07CutFill Tab.dwg 11-24-99 3:02:57 pm EST

minnesota metric

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

DATE 2/15/00 REG. NO. 26826

DRAWN BY KLD DATE 8/99

DESIGN BY KLD DATE 8/99

CHECKED BY LAR DATE 8/99

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 0208-105 (TH 65)
STATE PROJECT NO. 02-716-03
STATE AID PROJECT NO. _____
COUNTY PROJECT NO. _____

TABULATION CHARTS
STA 1+040.000 TO 1+930.000

Sheet 7 of 66 Sheets

EARTHWORK SUMMARY (BB)

EXCAVATION

COMMON EXCAVATION . . .9181 m3
9181 − 578 = 8603 m3 (PAY QUAN.)

- REGULAR . . . . 3841 m3 ①
- SUBCUT 3728 m3
- TOPSOIL 1612 m3

MUCK EXCAVATION . . . .2100 m3 (PAY QUAN.)

EMBANKMENT (CV)

REG. EMB. . . .7337 m3

- REGULAR 2653 m3
- SUBCUT 3728 m3
- TOPSOIL. 1517 m3

MUCK EMB. . . .226 m3

SOIL FACTORS:
(1) REGULAR GRADING AND TOPSOIL DRESSING (EV TO CV): 80% SHRINKAGE
(2) SUBCUT COMPACTION (EV TO CV): 90% SHRINKAGE
(3) SELECT GRANULAR BORROW (CV TO LV): 120% SWELL
(4) TOPSOIL BORROW (CV TO LV): 120% SWELL

BALANCE

TOPSOIL

TOPSOIL NEEDED (CV) − [TOPSOIL STRIPPING (EV) x SHRINKAGE FACTOR] = EXCESS(−) OR SHORTAGE(+)

1517 − (1612 x 0.80) = 227.4m3

TOPSOIL BORROW

SHORTAGE x SWELL FACTOR = TOPSOIL BORROW NEEDED (LV)

227.4 x 1.30 = 296 m3 (PAY QUAN.)

COMMON BORROW (LV)

(REGULAR EMB (CV) + SUBCUT+SUBGRADE) − [REGULAR EXCAVATION (EV) x SHRNKG FACTOR] − [(SUBCUT+ SUBGRADE EXCAVATION) x SHRINKAGE FACTOR] = EXCESS(−) OR SHORTAGE(+)

(2653 + 3728) − ((3841−578) x 0.80) − ((3728 − 0) x 0.85) = +601.8 m3

SHORTAGE x SWELL FACTOR = EXCESS (LV)

601.8 x 1.2 = 722 m3 (PAY QUAN.)

SELECT GRANULAR BORROW (LV)

(MUCK EXCAVATION AREA x SWELL FACTOR) =

1874 x 1.2 = 2249 m3 (PAY QUAN.)

① INCLUDES 578 m3 BITUMINOUS REMOVAL. BITUMINOUS PAVEMENT REMOVALS WILL BE PAID UNDER ITEM 2104.503.

BASE AND BITUMINOUS QUANTITIES CHART (CC)

STATION − STATION	LOCATION	DESCRIPTION	BITUMINOUS SURFACE AREA m2	BITUMINOUS− SPEC 2350 TYPE MV 4 WEAR MVWE45035C t	TYPE MV 3 NON WEAR MVNW35035C t *	TYPE LV 3 NON WEAR LVNW35030B t *	BITUMINOUS−SPEC 2360 TYPE SP 9.5 WEAR SPWEA440E t	TYPE SP 12.5 WEAR SPWEB440E t	TACK COAT L	AGGREGATE BASE AREA m2	AGGREGATE CL2 SHOULDER m3	AGGREGATE CL5 BASE m3
		S.P. 02−716−03 WEST OF TH 65										
1+022.875 − 1+113.800		OVERLAY	990.810	95.118	-	-			227.886			-
1+040.000 − 1+113.800	3.6−60 m LT LWB	PAVEMENT WIDENING	188.740	18.119	20.837	38.956			43.410	226.490		43.033
1+113.875 − 1+150.600	3.6−60 m RT LEB	SHOULDER	87.290	8.380	9.637	18.017			40.153	124.110		23.581
1+150.600 − 1+288.500	3.6−7.2 m RT LEB	RIGHT TURN LN	541.090	51.945	59.736	111.681			248.901	637.160		121.060
1+113.800 − 1+288.500	3.6 m RT LEB	MAIN	676.830	64.976	74.722	139.698			311.342	676.830		128.598
1+113.800 − 1+288.500	BETWEEN LEB−LWB	GORE	1204.520	115.634	132.979	248.613			554.079	1204.520		228.859
1+116.100 − 1+142.500	SAWCUT 6 m LT LWB	LINCOLN ST. ENT.	92.790	8.908	10.244	19.152			42.683	80.250		15.248
1+113.800 − 1+288.500	3.6−6.0 m LT LWB	SHOULDER	423.940	40.698	46.803	87.501			195.012	554.590		105.372
1+288.500 − 1+313.900	3.6 m LT LWB	MAIN	624.500	59.952	68.945	128.897			287.270	624.510		118.657
1+313.900 − 1+432.400	BETWEEN SAWCUTS	JOHNSON ST. INT.	889.670	85.408	98.220	183.628			409.248	933.950		177.451
1+313.900 − 1+432.400	3.6−7.2 m LT LWB	RIGHT TURN LN	478.050	45.893	52.777	98.670			219.903	628.820		119.476
1+313.900 − 1+432.400	3.6 m LT LWB	MAIN	421.130	30.638	36.703	65.701			193.720	445.130		84.575
1+328.900 − 1+432.400	3.6 m RT LWB	LEFT TURN LN	387.580	37.208	42.789	79.997			178.287	516.710		98.175
1+313.900 − 1+432.400	3.6 m LT LEB	LEFT TURN LN	308.630	29.628	34.073	63.701			141.970	457.630		86.950
1+313.900 − 1+432.400	3.6 m RT LEB	MAIN	433.690	31.844	47.879	68.294			199.497	456.670		86.767
	3.6−7.2 m RT LEB	RIGHT TURN LN	451.560	43.350	49.852	93.202			207.718	580.090		110.217
		SUBTOTAL S.P. 02−716−03 WEST	8200.820	767.699	786.195	1445.706	0.000	0.000	3501.081	8147.460		1548.017
		S.P. 02−716−03 EAST OF TH 65										
1+524.000 − 1+648.700	3.6−7.2 m LT LWB	RIGHT TURN LN	486.530	46.707	53.713	65.390			223.804	638.200		95.730
1+524.000 − 1+748.000	3.6 m LT LWB	MAIN	809.440	61.533	73.189	86.889			372.342	849.150		127.373
1+648.700 − 1+800.000	3.6−6.0 m LT LWB	SHOULDER	369.610	35.483	40.805	49.676			170.021	521.100		78.165
1+524.000 − 1+643.000	3.6 m RT LWB	LEFT TURN LN	333.440	32.010	36.812	44.814			153.382	605.470		90.821
1+570.800 − 1+748.000	3.6 m LT LEB	LEFT TURN LN	599.330	57.536	66.166	80.550			275.692	731.990		109.799
1+524.000 − 1+748.000	3.6 m RT LEB	MAIN	801.520	60.773	72.315	85.824			368.699	926.370		138.956
1+524.000 − 1+722.100	3.6−7.2 m RT LEB	ACCELERATION LN	782.210	75.092	86.356	105.129			359.817	1021.570		153.236
1+722.100 − 1+800.000	3.6−6.0 m LT LEB	SHOULDER	185.220	17.781	20.448	24.894			85.201	263.450		39.518
1+748.000 − 1+963.800		PAVEMENT WIDENING	509.450	48.907	56.243	68.470			234.347	673.130		100.970
1+748.000 − 1+963.800		OVERLAY	1521.080	146.024	-	-			699.697	-		-
		SUBTOTAL S.P. 02−716−03 EAST	6397.830	581.846	506.047	611.635	0.000	0.000	2943.002	6230.430		934.565
		S.P. 0208−105										
1+495.200 − 1+524.000	W. SIDE OF TH 65	TH 65	1287.490	123.599	142.139	265.738	-	-	592.245	1226.250		232.988
	NB & SB TH 65	OVERLAY @ TH 65	6581.840	-	-	-	631.857	1427.127	3027.646	-		-
27+195.400 − 27+507.100	E. SIDE OF TH 65	SHOULDER @ TH 65	1289.83	123.824	142.397	173.353	-	-	593.322	1117.35	14.000	167.603
1+438.800 − 1+423.000	SHOULDERS	TH 65	827.800	79.469	-	-	-	-	-	-		-
		SUBTOTAL S.P. 0208−105	9986.960	326.892	284.536	439.091	631.857	1427.127	4213.214	2343.600		400.590
		UNADJUSTED TOTAL	24585.610	1676.436	1576.778	2496.432	631.857	1427.127	10657.296	16721.490		2883.172
		ADJUSTED TOTAL	24586	1676	1577	2496	632	1427	10657	16721		2883

TACK COAT INCLUDES TWO LAYERS (0.23 l/m2)
* 6 mm BITUMINOUS THICKNESS ADDED TO COURSES

Fed. Project No. _____

SOILS AND CONSTRUCTION NOTES:

1. TOP OF GRADING GRADE IS DEFINED AS THE BOTTOM OF THE AGGREGATE BASE.
2. IN FILL AREAS, THE SUBGRADE SHALL BE CONSTRUCTED WITH SELECTED GRADING MATERIAL.
3. SELECTED GRADING MATERIALS SHALL CONSIST OF SELECT GRANULAR MATERIALS.
4. GRANULAR MATERIAL, REGARDLESS OF SOURCE, SHALL MEET THE REQUIREMENTS OF SPEC. 3149.2B.
5. COMPACTION OF THE GRADING PORTION OF THIS PROJECT SHALL BE BY THE "SPECIFIED DENSITY METHOD".
6. TEST ROLLING WILL NOT BE REQUIRED.
7. BITUMINOUS OR CONCRETE ITEMS REMOVED BY CONSTRUCTION SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE EITHER RECYCLED OR DISPOSED OF IN ACCORDANCE WITH THE REQUIREMENTS OF 2104.3C3 WITH NO DIRECT COMPENSATION MADE THEREFORE.
8. DISPOSITION OF EXCESS EXCAVATED MATERIAL SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF 2105.3D WITH NO DIRECT COMPENSATION THEREFORE.
9. WHERE MATCHING INTO THE INPLACE ROADWAY AT THE ENDS OF CONSTRUCTION, CUT VERTICALLY TO THE TOP OF THE GRADING GRADE, AND THEN AT A 1:20 TAPER TO THE BOTTOM OF THE RECOMMENDED SUBGRADE EXCAVATION.
10. WHERE CONNECTING NEW SURFACING TO AN INPLACE PAVEMENT, THE EXCAVATION SHALL BE BACKFILLED PROMPTLY TO AVOID UNDERMINING THE INPLACE PAVEMENT.
11. USE TACK COAT BETWEEN ALL BITUMINOUS MIXTURES PRIOR TO PLACING BITUMINOUS MIXTURES AND PRIOR TO PLACING ANY BITUMINOUS MIXTURES ON EXISTING CONCRETE OR BITUMINOUS SURFACES. THE BITUMINOUS TACK COAT MATERIAL SHALL BE APPLIED AT UNIFORM RATE OF 0.23 L/m2 BETWEEN BITUMINOUS LAYERS. THE APPLICATION RATES ARE FOR UNDILUTED EMULSION (AS SUPPLIED FROM THE REFINERY): ASPHALT EMULSION MAY BE FURTHER DILUTED IN THE FIELD IN ACCORDANCE WITH SPEC. 2357.
12. COMPACTION OF ALL OF THE BITUMINOUS COURSES SHALL MEET THE REQUIREMENTS OF SPEC. 2350 AND 2360.
13. COMPACTION OF THE AGGREGATE BASE LAYERS SHALL BE BY THE "SPECIFIED DENSITY METHOD", UNLESS CLASS 7 IS USED.
14. PLACE MINIMUM 100 mm TOPSOIL OR SLOPE DRESSING ON ALL AREAS DISTURBED BY CONSTRUCTION AND SCHEDULED FOR PERMANENT TURF ESTABLISHMENT. TOPSOIL BORROW TO BE UTILIZED IN AREAS TO BE SODDED. FERTILIZE WITH COMMERCIAL FERTILIZER, ANALYSIS 10−10−10 (OR EQUIVALENT), AT A RATE OF 560 kg/ha.
15. USE MIXTURE 70A SEED AND TYPE 1 MULCH IN AREAS TO BE SEEDED.
16. SOD ALL MAINTAINED LAWNS DISTURBED BY CONSTRUCTION.
17. ALL SOD UTILIZED WITHIN THE PROJECT LIMITS SHALL MEET THE REQUIREMENTS OF SPEC. 3878.2A (LAWN AND SOD).
18. ORGANIC AND NONGRANULAR EXCAVATED MATERIAL MAY BE USED IN EMBANKMENT CONSTRUCTION IN AREAS OUTSIDE OF A 1:1.5 SLOPE FROM THE BACK OF CURB, OR GRADING P.I.
19. BITUMINOUS REMOVAL QUANTITY BASED ON m2 REMOVED. IN PLACE SURFACE ASSUMED TO BE 75 mm IN DEPTH. CONTRACTOR SHALL INVESTIGATE AND MAKE OWN DETERMINATION OF ACTUAL PAVEMENT DEPTH.
20. ALL SILT FENCING AS SHOWN IN THE PLANS SHALL BE IN PLACE PRIOR TO THE COMMENCEMENT OF GRADING OPERATIONS.
21. SILT FENCE SHALL FOLLOW, AS CLOSE AS POSSIBLE, TO A SINGLE CONTOUR LINE.
22. A DOUBLE ROW OF BALE CHECKS OR SLOTTED SILT FENCE SHALL BE INSTALLED ALONG DITCH RUNS FOR EROSION CONTROL AS DIRECTED BY THE ENGINEER.
23. TOPSOIL STRIPPINGS TO BE SALVAGED AND UTILIZED TO ITS FULLEST EXTENT WITHIN THE PROJECT LIMITS.
24. WHEN SEDIMENT DEPOSIT IN A WATER OF THE STATE, THE MATERIAL MUST BE REMOVED WITHIN 7 DAYS.
25. USE CLASS "B" BEDDING UNDER ARCH PIPE

TABULATION CHARTS

EARTHWORK SUMMARY, CONSTRUCTION NOTES
BASE AND BITUMINOUS QUANTITIES CHART

NO	DATE	BY	CKD	APPR	REVISION

NAME: GBearthwork.dwg 11-24-99 1:57:33 pm EST

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
DATE 2/15/00 REG. NO. 26826

DRAWN BY KLO DATE 8/99
DESIGN BY KLO DATE 8/99
CHECKED BY LAR DATE 8/99

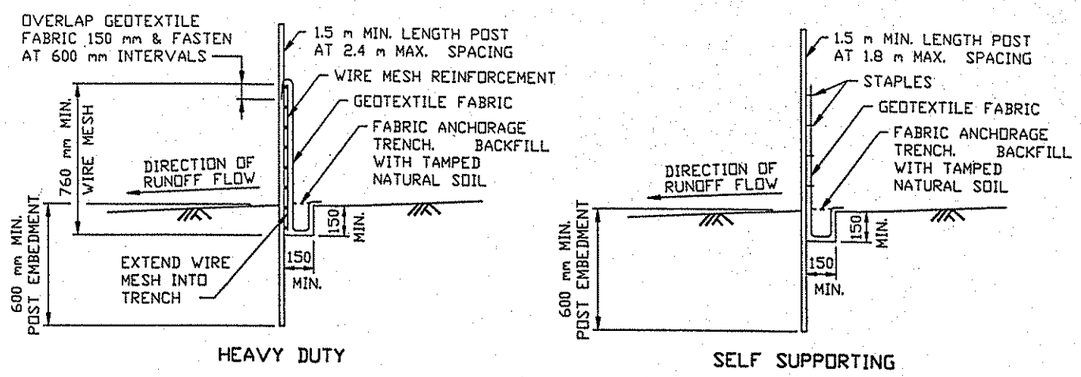
ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 0208−105(TH 65)
STATE PROJECT NO. 02−716−03
STATE AID PROJECT NO. _____
COUNTY PROJECT NO. _____

TABULATION CHARTS

Sheet 8 of 66 Sheets

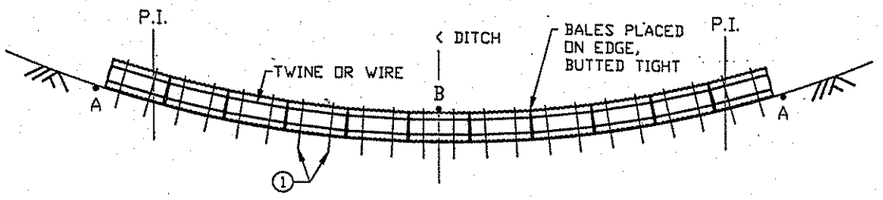
Fed. Project No. _____



SILT FENCE DETAILS

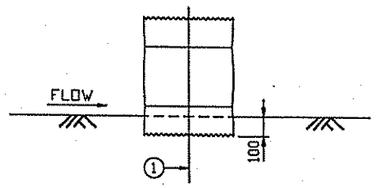
TO PROTECT AREAS FROM SHEET FLOW
(SEE SPEC. 3886)

DESIGN CRITERIA:
MAXIMUM CONTRIBUTING AREA: 1.2 ha

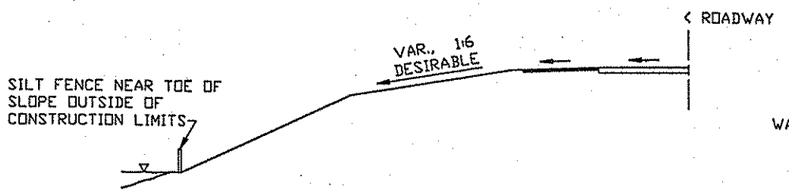


NOTE:
POINT A MUST BE HIGHER THAN POINT B

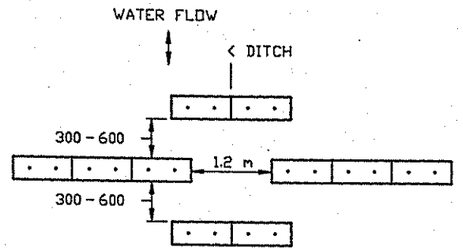
BALE DITCH SEDIMENT CHECK



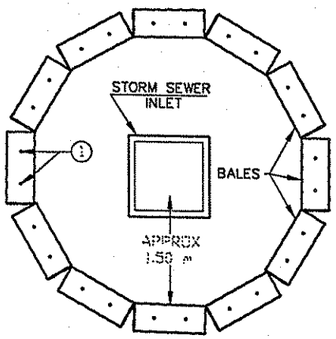
BALE CHECK DETAIL



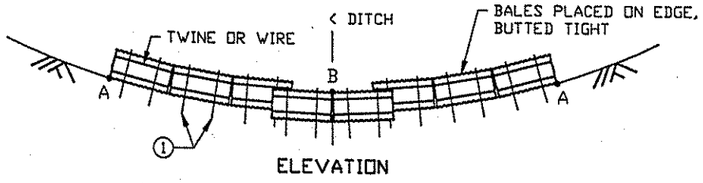
ROADWAY EMBANKMENT



PLAN VIEW



BALE CHECK
TO PROTECT STORM SEWER INLETS



ELEVATION

NOTE:
POINT A MUST BE HIGHER THAN POINT B

BALE DITCH VELOCITY CHECKS
(WILL REQUIRE A MINUMUM OF 10 BALES PER SITE)

RECOMMENDED SPACING BETWEEN DITCH CHECKS	
DITCH GRADE (%)	SPACING (m)
2	30
4	23
6	15
8	12
10	8

DESIGN CRITERIA:

	BALE	ROCK
STORM FREQUENCY:	2 YR. - 24 HR.	10 YR. - 24 HR.
MAX. FLOW VELOCITY:	1.5 m/s	3.6 m/s
MAX. DITCH GRADE:	5%	—
MAX. DRAINAGE AREA:	0.8 ha	2.0 ha

NOTE:
TWO 50 mm X 50 mm WOOD STAKES OR REINFORCING BARS IN EACH BALE AND EMBEDDED IN THE GROUND 250 mm MINIMUM.

NOTE: ALL DIMENSIONS ARE IN MILLIMETERS, EXCEPT AS NOTED.

NO	DATE	BY	CKD	APPR	REVISION

NAME: 09TempEros.dwg 9-15-99 @29:22 am EST

minnesota metric

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
DATE 2/14/00 REG. NO. 26826

DRAWN BY KLO DATE 8/99
DESIGN BY KLO DATE 8/99
CHECKED BY LAR DATE 8/99

ANOKA COUNTY

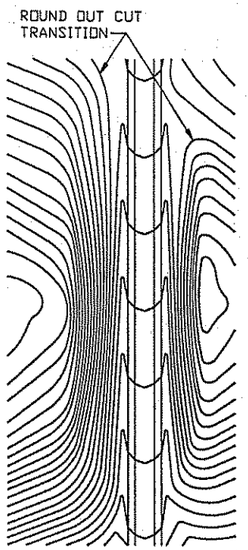
ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 0208-105(TH 65)
STATE PROJECT NO. 02-716-03
STATE AID PROJECT NO. _____
COUNTY PROJECT NO. _____

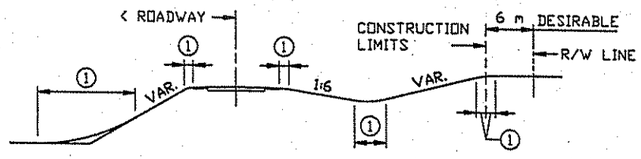
TEMPORARY EROSION CONTROL

Sheet 9 of 66 Sheets

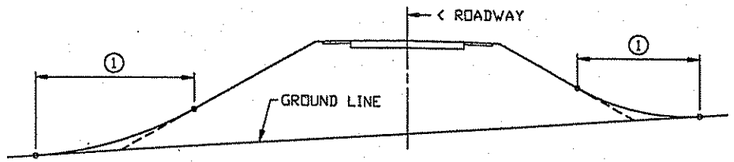
Fed. Project No. _____



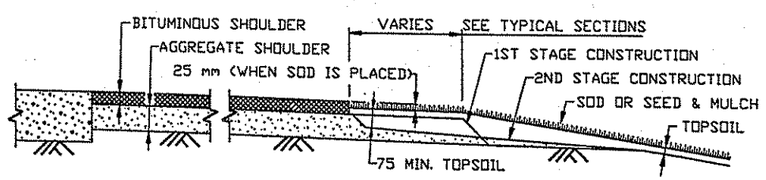
CONTOURING ROAD CUTS



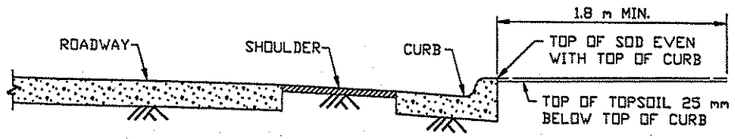
ROUNDING SHOULDERS AND BACKSLOPES



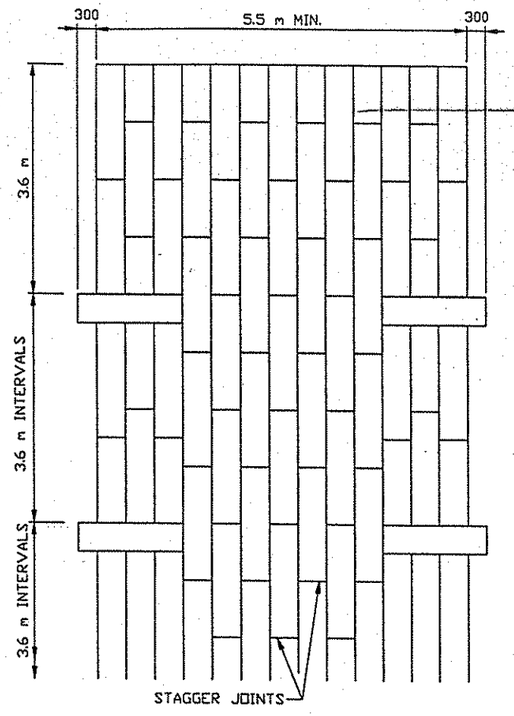
SHAPING FOR DRAINAGE ALONG THE TOE OF FILL SLOPES



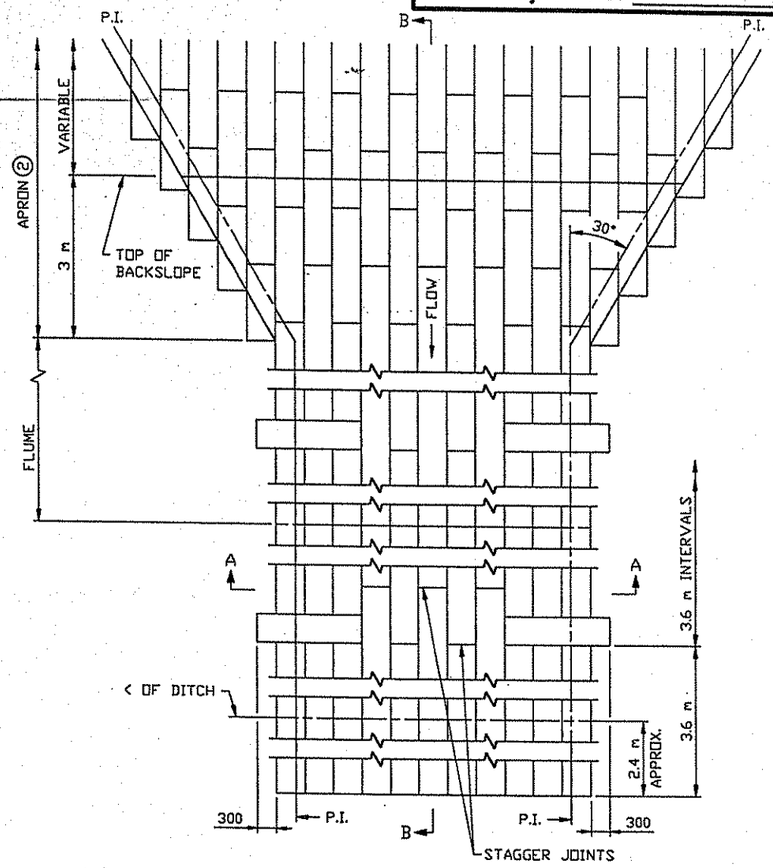
SHAPING AND TOPSOILING INSLOPES



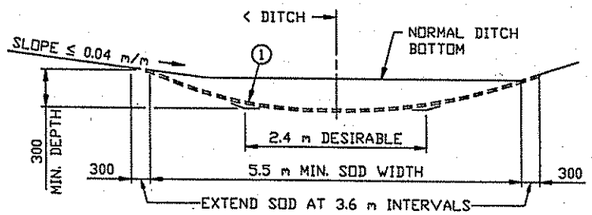
SHAPING ADJACENT TO CURBS WHEN SOD IS PLACED



PLAN VIEW

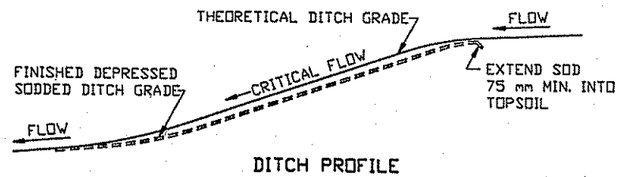


PLAN VIEW



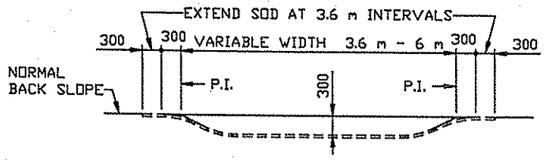
SODDED DITCH CROSS SECTION

WHERE FRONT OR BACK SLOPE IS FLAT (LESS THAN 0.04 m/m), FIRST NOTCH DITCH AND THEN PROVIDE ROUNDING.

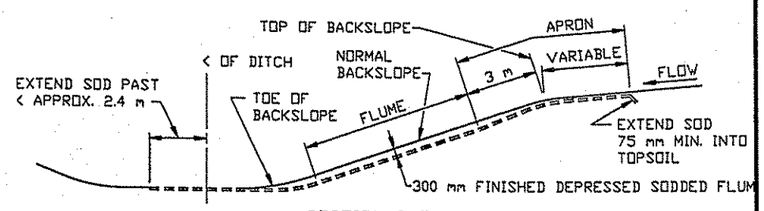


DITCH PROFILE

SODDED DITCH DETAILS



SECTION A-A



SECTION B-B

SODDED FLUME DETAILS

NOTES:
SEE SPEC. 2575.3 FOR ADDITIONAL INFORMATION.
① FOR ROUNDING, SEE ROAD DESIGN MANUAL.
② CONSTRUCT TAPER AS DIRECTED BY THE ENGINEER.

NOTE: ALL DIMENSIONS ARE IN MILLIMETERS, EXCEPT AS NOTED.

STANDARD SHEET No. 5-297.404

NO	DATE	BY	CKD	APPR	REVISION

NAME: 10PermEros.dwg 9-15-99 8:34:49 am EST

minnesota metric

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
DATE 2/14/00 REG. NO. 26826

DRAWN BY KLO DATE 8/99
DESIGN BY KLO DATE 8/99
CHECKED BY LAR DATE 8/99

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

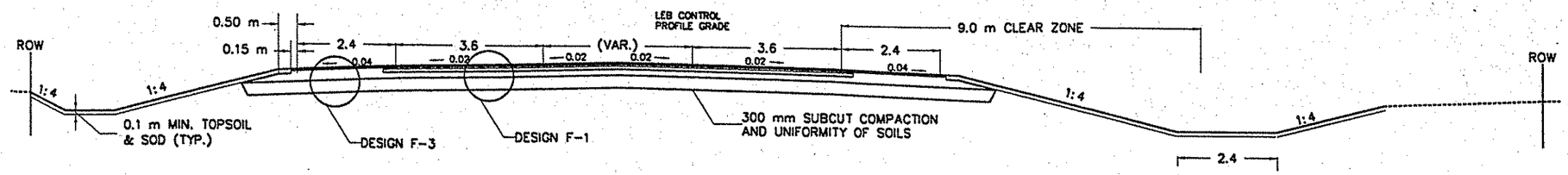
STATE PROJECT NO. 0208-105 (TH 65)
STATE PROJECT NO. 02-716-03
STATE AID PROJECT NO. _____
COUNTY PROJECT NO. _____

PERMANENT EROSION CONTROL
ALONG ROADWAYS, DITCHES AND FLUME

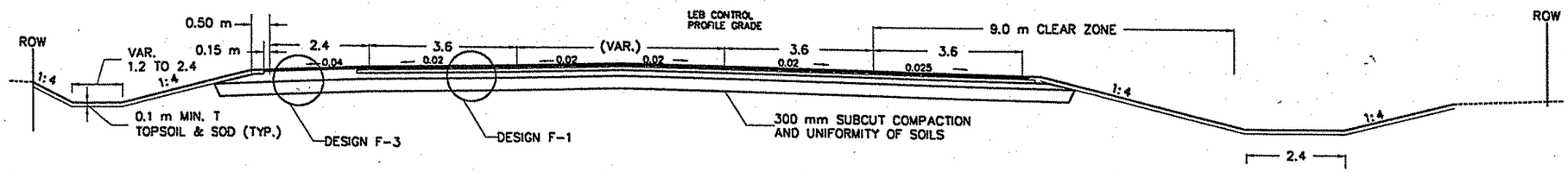
Sheet 10 of 66 Sheets

Fed. Project No. _____

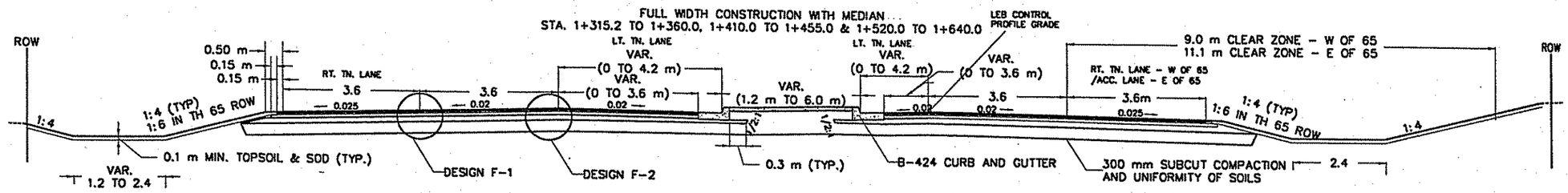
FULL WIDTH RECONSTRUCTION WITHOUT MEDIAN
(STA. 1+114.0 TO 1+153.0)



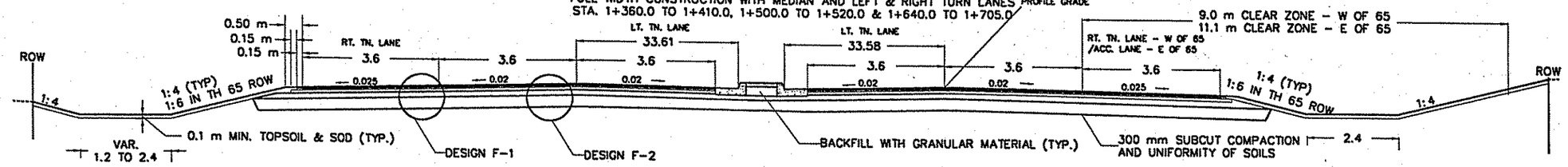
FULL WIDTH RECONSTRUCTION WITH RIGHT TURN LANE
(STA. 1+153.0 TO 1+315.0)



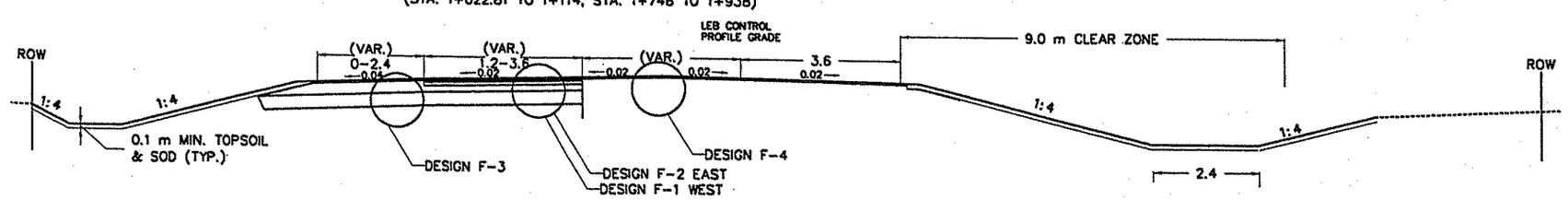
FULL WIDTH CONSTRUCTION WITH MEDIAN
STA. 1+315.2 TO 1+360.0, 1+410.0 TO 1+455.0 & 1+520.0 TO 1+640.0



FULL WIDTH CONSTRUCTION WITH MEDIAN AND LEFT & RIGHT TURN LANES
STA. 1+360.0 TO 1+410.0, 1+500.0 TO 1+520.0 & 1+640.0 TO 1+705.0

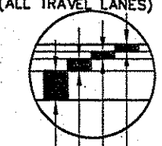


TRANSITION AREA EAST AND WEST ENDS
(STA. 1+022.81 TO 1+114, STA. 1+748 TO 1+938)



① ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE NOTED
② ALL CROSS-SLOPES ARE m/m

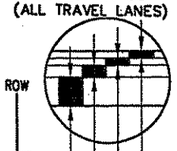
DESIGN F-1
WEST OF TH 65
(ALL TRAVEL LANES)



- 40 mm TYPE MV 4 WEARING COURSE MIXTURE (MVWE45035C) SPEC 2350
- 40 mm TYPE MV 3 NON WEARING COURSE MIXTURE (MVNW35035C) SPEC 2350
- 80 mm TYPE LV 3 NON WEARING COURSE MIXTURE (LVNW35035B) SPEC 2350
- 190 mm AGGREGATE BASE CLASS 5 SPEC 2211

TACK COAT-SPEC. 2357, TO BE APPLIED BETWEEN ALL BITUMINOUS LIFTS.

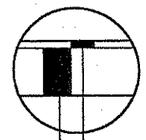
DESIGN F-2
EAST OF TH 65
(ALL TRAVEL LANES)



- 40 mm TYPE MV 4 WEARING COURSE MIXTURE (MVWE45035C) SPEC. 2350
- 40 mm TYPE MV 3 NON WEARING COURSE MIXTURE (MVNW35035C) SPEC. 2350
- 50 mm TYPE LV 3 NON WEARING COURSE MIXTURE (LVNW35030B) SPEC. 2350
- 150 mm AGGREGATE BASE CLASS 5 SPEC. 2211

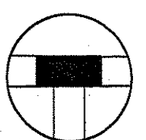
TACK COAT-SPEC. 2357, TO BE APPLIED BETWEEN ALL BITUMINOUS LIFTS.

DESIGN F-3



- 40 mm TYPE MV 4 WEARING COURSE MIXTURE (MVWE45035C) SPEC. 2350
- 260 mm AGGREGATE BASE CLASS 5 - SPEC. 2211

DESIGN F-4



- 40 mm TYPE MV 4 WEARING COURSE MIXTURE (MVWE45035C) SPEC. 2350
- MILL 40 mm BELOW THE INPLACE SURFACE

NO	DATE	BY	CKD	APPR	REVISION

NAME: I:\Typicals.dwg 21400 80406

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DATE 2/14/00 REG. NO. 26826

DRAWN BY KLO DATE 8/99
DESIGN BY KLO DATE 8/99
CHECKED BY LAR DATE 8/99

ANOKA COUNTY HIGHWAY DEPT.

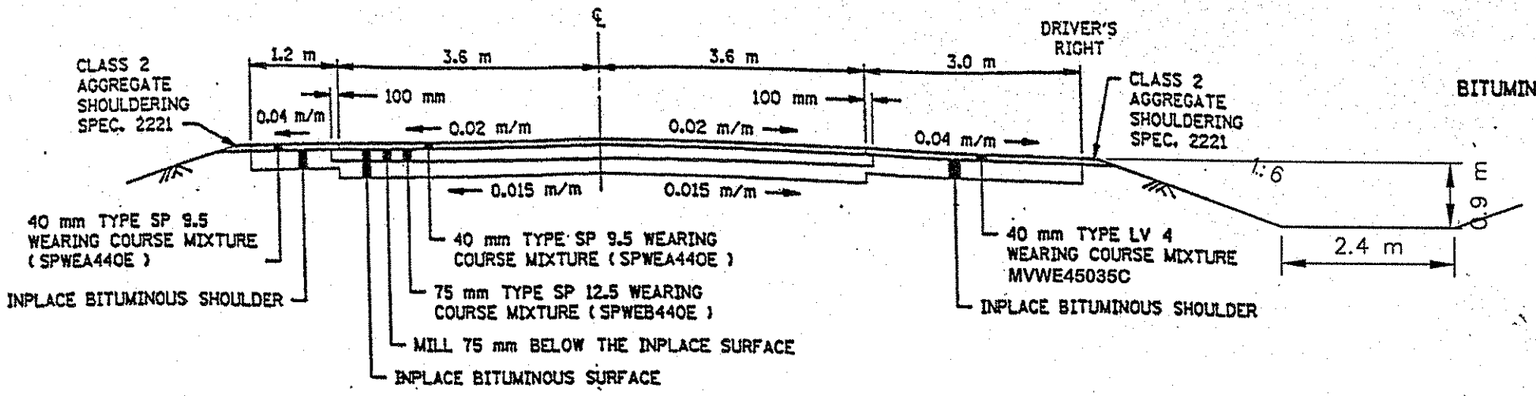
STATE PROJECT NO. 0208-105(TH 65)
STATE PROJECT NO. 02-716-03
STATE AID PROJECT NO. _____
COUNTY PROJECT NO. _____

TYPICAL SECTIONS

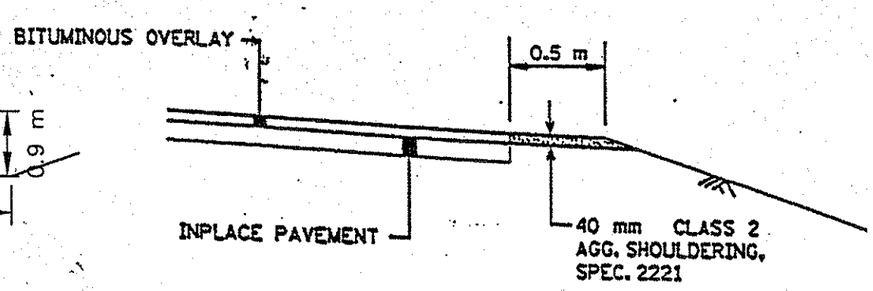
Sheet 11 of 66 Sheets

Fed. Project No. _____

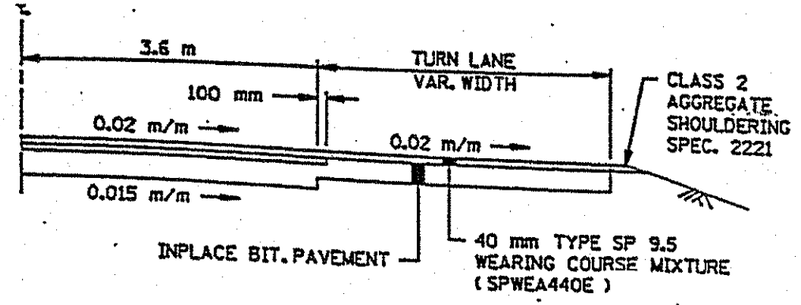
NB TH 65

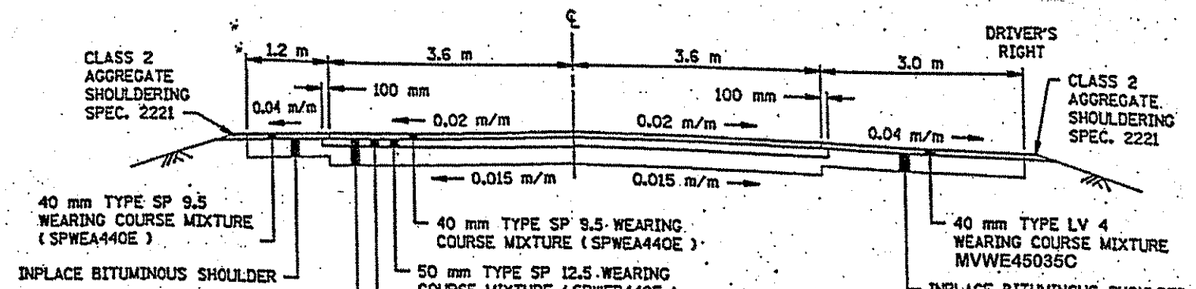


AGGREGATE SHOULDERING DETAIL

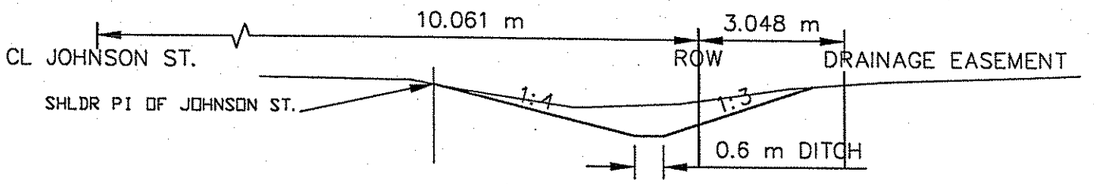


TURN LANES (LEFT AND RIGHT)





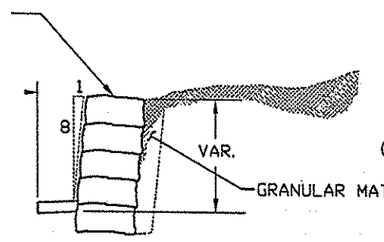
JOHNSON STREET TYPICAL DITCH SECTION STA. 0+00 TO 0+100



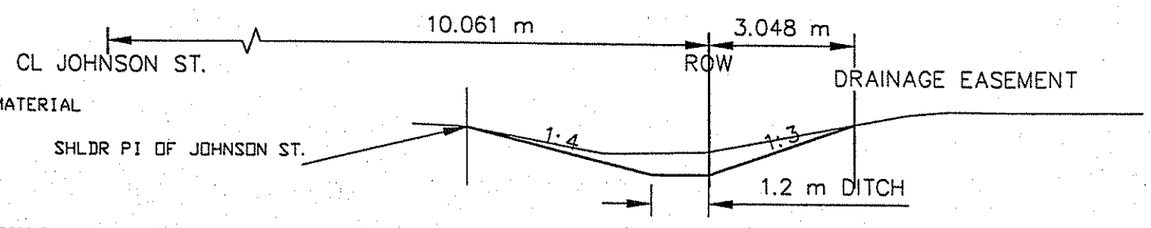
MODULAR BLOCK RETAINING WALL DETAIL

FOR LOCATION SEE CHART (K)

PRECAST CONCRETE BLOCK



JOHNSON STREET TYPICAL DITCH SECTION STA. 1+20 TO 3+335



STANDARD PLATES

THESE STANDARD PLATES AS APPROVED BY THE FHWA SHALL APPLY.

PLATE NO.	DESCRIPTION
M3000 L	REINFORCED CONCRETE PIPE
M3006 G	GASKET JOINT FOR R.C. PIPE
M3022 B	PRECAST CONCRETE END SECTION
M3040 F	CORRUGATED METAL PIPE CULVERT
M3100 G	CONCRETE APRON FOR REINFORCED CONCRETE PIPE
M3128 F	SAFETY APRON
M3133 C	RIPRAP AT RCP OUTLETS
M3145 E	CONCRETE PIPE TIES
M3221 C	CORRUGATED STEEL PIPE COUPLING BAND
M4005 L	MANHOLE OR CATCH BASIN (DES. F)
M4006 L	MANHOLE OR CATCHBASIN
M4010 H	ADJUST RINGS
M4011 E	PRECAST CONCRETE BASE
M4020 H	MANHOLE OR CATCH BASIN COVER
M4101 D	RING CASTING FOR MANHOLE OR CATCH BASIN
M4110 F	COVER CASTING FOR MANHOLE
M4126 F	CATCH BASIN FRAME CASTING
M4143 E	STOOL GRATE & CONCRETE FRAME
M4149 C	GRATE CASTING FOR C.B.
M4180 J	MANHOLE OR CATCH BASIN STEP
M4161 F	CURB BOX CASTING FOR CATCH BASIN
M7035 K	CONC. WALK & CURB RETURN AT ENTRANCE
M7036 D	PED CURB RAMP
M7100 G	CONCRETE CURB AND GUTTER (DES. B)
M7113 A	CONCRETE APROACH NOSE DETAIL
M8000 I	STANDARD BARRICADES
M8150 B	INSTALLATION OF CULVERT MARKERS
M9102 D	TURF ESTABLISHMENT AREAS (AT PIPE CULVERT ENDS)

SEE TRAFFIC SIGNAL PLAN SHEETS FOR ADDITIONAL STANDARD PLATES

NO	DATE	BY	CKD	APPR	REVISION

NAME: 12Details.dwg 8-30-99 11:46:54 am EST

minnesota m.etric

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

DATE 8/25/00 REG. NO. 21582

DRAWN BY KLO DATE 8/99
DESIGN BY KLO DATE 8/99
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ANOKA COUNTY

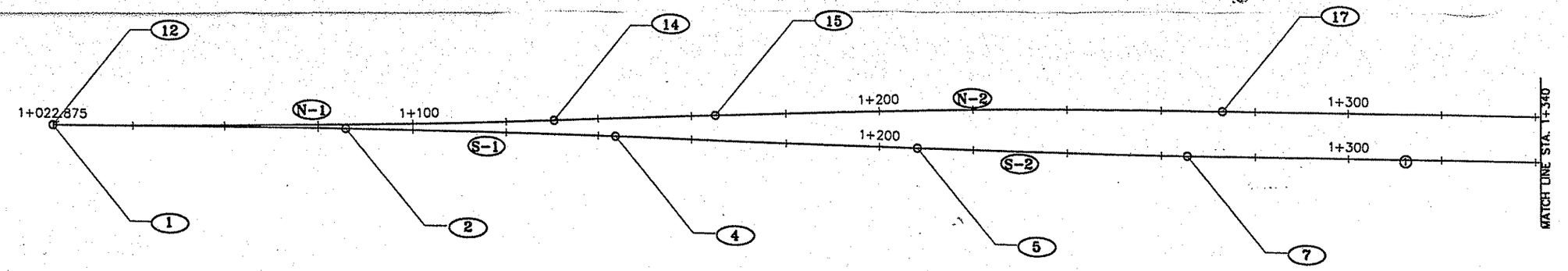
ANOKA COUNTY HIGHWAY DEPT.

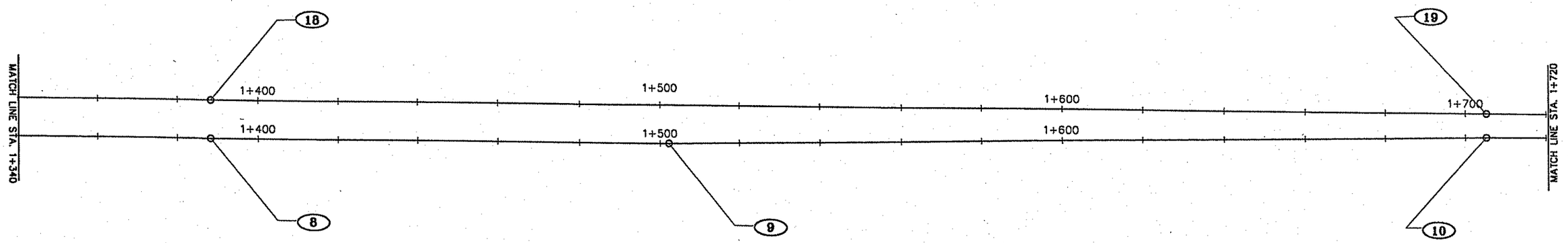
STATE PROJECT NO. 0208-105(TH 65)
STATE PROJECT NO. 02-716-03
STATE AID PROJECT NO. _____
COUNTY PROJECT NO. _____

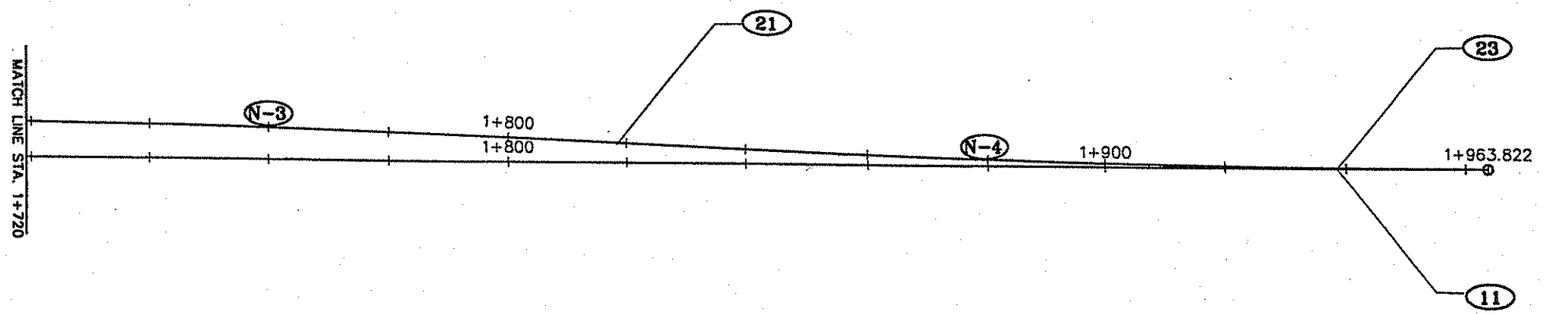
TYPICAL SECTIONS/ STANDARD DETAILS

Sheet 12 of 66 Sheets

Fed. Project No. _____







NO	DATE	BY	CKD	APPR	REVISION

NAME: 13Align.dwg 2-14-00 7:32:45 am EST

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

DATE 2/15/00 REG. NO. 26826

DRAWN BY KLO DATE 8/99

DESIGN BY KLO DATE 8/99

CHECKED BY LAR DATE 8/99

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 0208-105 (TH 65)
STATE PROJECT NO. 02-716-03
STATE AID PROJECT NO. _____
COUNTY PROJECT NO. _____

ALIGNMENT PLAN
STA 1+022.875 TO 1+938.446

Sheet 13 of 66 Sheets

Fed. Project No. _____

ALIGNMENT TABULATION

CURVE NO.	POINT NO.	POINT TYPE	LOCATION	CURVE DATA COURSE	DELTA	RADIUS(m)	TANGENT(m)	LENGTH(m)	COORDINATES NORTHING	EASTING	AZIMUTH
			LEB ALIGNMENT								
	1	PI	LEB STA. 1+022.875	S89°41'17"E			62.944	91.890	50885.1889	154467.8399	
	2	PC	LEB STA. 1+085.819						50884.8460	154530.7829	
S-1	3	PI	LEB STA. 1+114.765	S88°15'52"E	1°25'25"	2330.000	28.496	57.889	50884.6883	154559.7284	
	4	PT	LEB STA. 1+143.708				64.354		50883.8116	154588.6609	
	5	RP							48554.8805	154518.0923	
	6	PC	LEB STA. 1+208.061						50881.8626	154652.9852	
S-2	7	PI	LEB STA. 1+236.791	S89°40'38"E	1°24'46"	2330.000	28.730	57.457	50880.9924	154681.7018	
	8	PT	LEB STA. 1+265.518				122.798		50880.8306	154710.4312	
	9	RP							53210.7937	154723.5539	
	10	PI	LEB STA. 1+388.316	S89°55'58"E	0°15'20"			113.921	50880.1390	154833.2268	
	11	PI	LEB STA. 1+502.237	N89°03'03"E	1°00'59"			202.960	50880.0054	154947.1480	
	12	PI	LEB STA. 1+705.197	N89°56'33"E	0°53'30"			258.538	50883.3673	155150.0802	
	13	PI	LEB STA. 1+963.735						50883.6265	155408.6179	
			LWB ALIGNMENT								
	14	PC	LWB STA. 1+022.875						50885.1888	154467.8399	
N-1	15	PI	LWB STA. 1+076.668	N87°40'01"E	2°38'42"	2330.000	53.793	107.567	50884.8958	154521.6322	
	16	PT	LWB STA. 1+130.442				34.600		50887.0856	154575.3806	
	17	RP							53215.1542	154480.5306	
	18	PC	LWB STA. 1+165.042						50888.4941	154609.9517	
N-2	19	PI	LWB STA. 1+219.051	S89°40'38"E	2°39'21"	2330.000	54.009	107.999	50890.6927	154663.9161	
	20	PT	LWB STA. 1+273.041				115.358		50890.3886	154717.9244	
	21	PI	LWB STA. 1+388.399	S89°55'58"E	0°15'20"		316.805	373.537	50889.7389	154833.2808	
	22	RP							48560.4255	154704.8017	
	23	PC	LWB STA. 1+705.204						50889.3573	155150.0859	
N-3	24	PI	LWB STA. 1+761.936	S87°25'58"E	2°03'00"	2600	56.732	113.446	50889.3007	155206.8180	
	25	PT	LWB STA. 1+818.651						50886.7596	155263.4933	
	26	RP							48289.3691	155147.0362	
	27	PC	LWB STA. 1+818.651						50886.7596	155263.4933	
N-4	28	PI	LWB STA. 1+891.249	N89°54'21"E	2°39'41"	3125.333	72.599	145.172	50883.5077	155336.0192	
	29	PT	LWB STA. 1+963.822						50883.6268	155408.6179	
	30	RP							54008.9559	155403.4884	

NO	DATE	BY	CKD	APPR	REVISION

NAME: 14Align Tab.dwg 2-14-00 7:33:36 am EST

M.N. minnesota metric

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

DATE 2/15/00 REG. NO. 26826

DRAWN BY KLO DATE 8/99

DESIGN BY KLO DATE 8/99

CHECKED BY LAR DATE 8/99

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 0208-105 (TH 65)

STATE PROJECT NO. 02-716-03

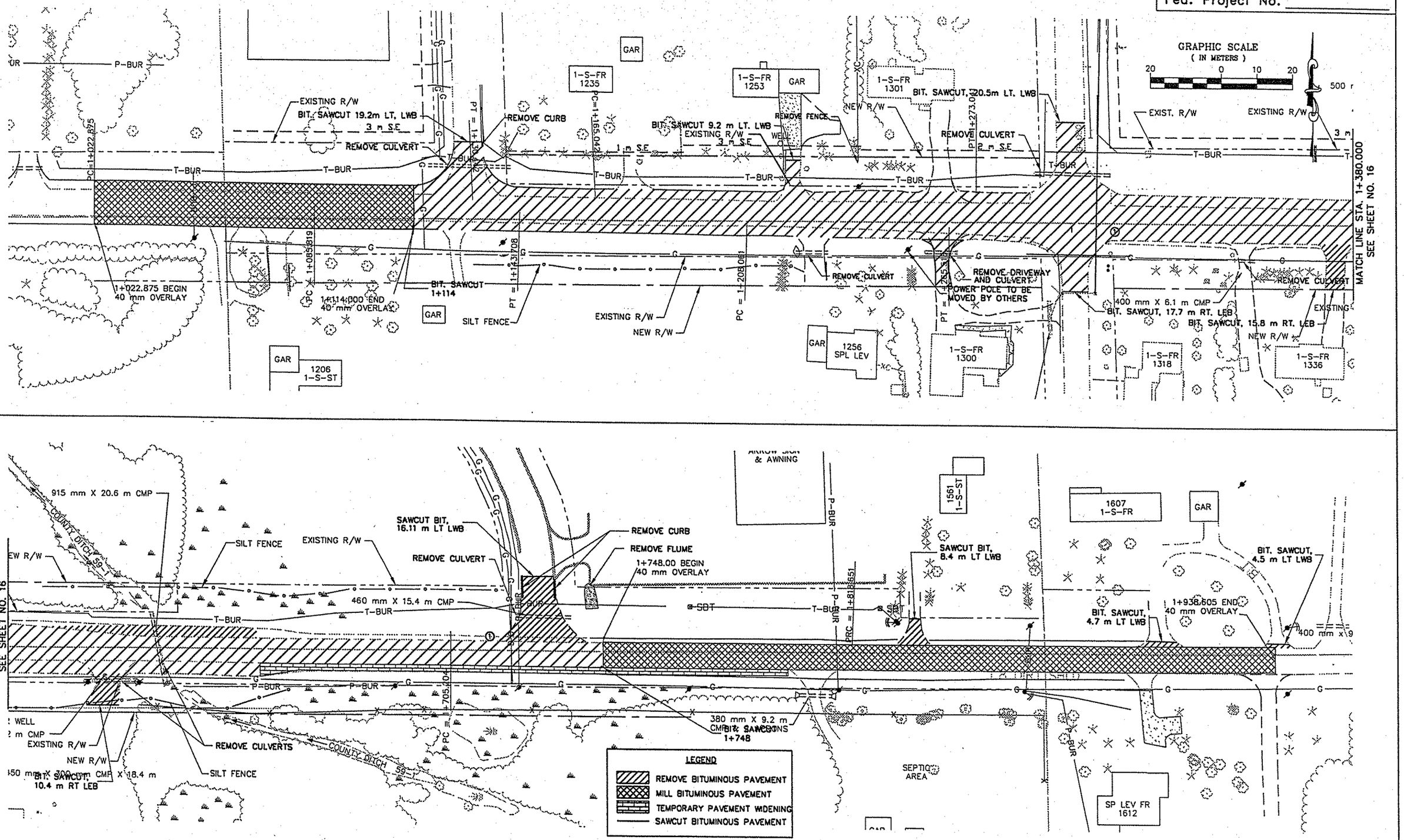
STATE AID PROJECT NO. _____

COUNTY PROJECT NO. _____

ALIGNMENT TABULATION

Sheet 14 of 66 Sheets

Fed. Project No. _____



NO	DATE	BY	CKD	APPR	REVISION

NAME: 15-16Removals.dwg 11-23-99 3:30:17 pm EST

minnesota metric

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

DATE 2/14/00 REG. NO. 26826

DRAWN BY KLO DATE 8/99
DESIGN BY KLO DATE 8/99
CHECKED BY LAR DATE 8/99

STATE PROJECT NO. 0208-105(TH 65)
STATE PROJECT NO. 02-716-03
STATE AID PROJECT NO. _____
COUNTY PROJECT NO. _____

ANOKA COUNTY

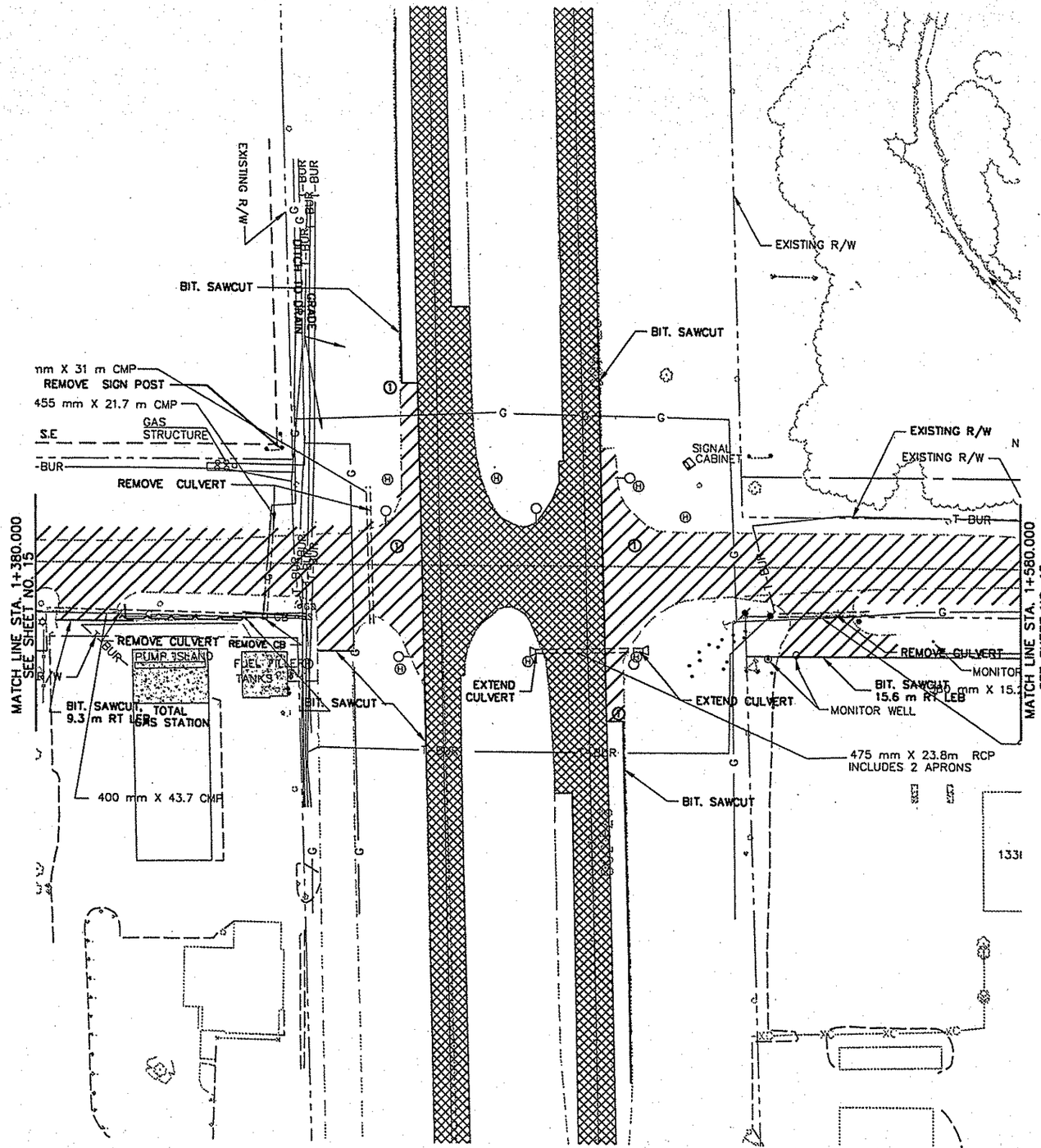
ANOKA COUNTY HIGHWAY DEPT.

EXISTING CONDITION AND REMOVAL PLAN

STA. 1+022.875 TO STA. 1+963.822

Sheet 15 of 66 Sheets

Fed. Project No. _____



GRAPHIC SCALE
(IN METERS)
20 0 10 20

LEGEND
- REMOVE BITUMINOUS PAVEMENT
- MILL BITUMINOUS PAVEMENT
- TEMPORARY PAVEMENT WIDENING
- SAWCUT BITUMINOUS PAVEMENT

NO	DATE	BY	CKD	APPR	REVISION

NAME: 15-16Removals.dwg 11-23-99 3:30:17 pm EST

minnesota metric

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STATE PROJECT NO. 02-716-03
STATE AID PROJECT NO. _____
COUNTY PROJECT NO. _____

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

EXISTING CONDITION AND REMOVAL PLAN
STA. 1+380 TO STA. 1+580

Sheet 16 of 66 Sheets

Fed. Project No. _____

① STANDARD PLATE 7113

BEGIN SAP. 02-716-03
STA. 1+022.875

CSAH 116
BUNKER LAKE BLVD.

1+022.875 BEGIN
40 mm OVERLAY

1+114.000 END
40 mm OVERLAY

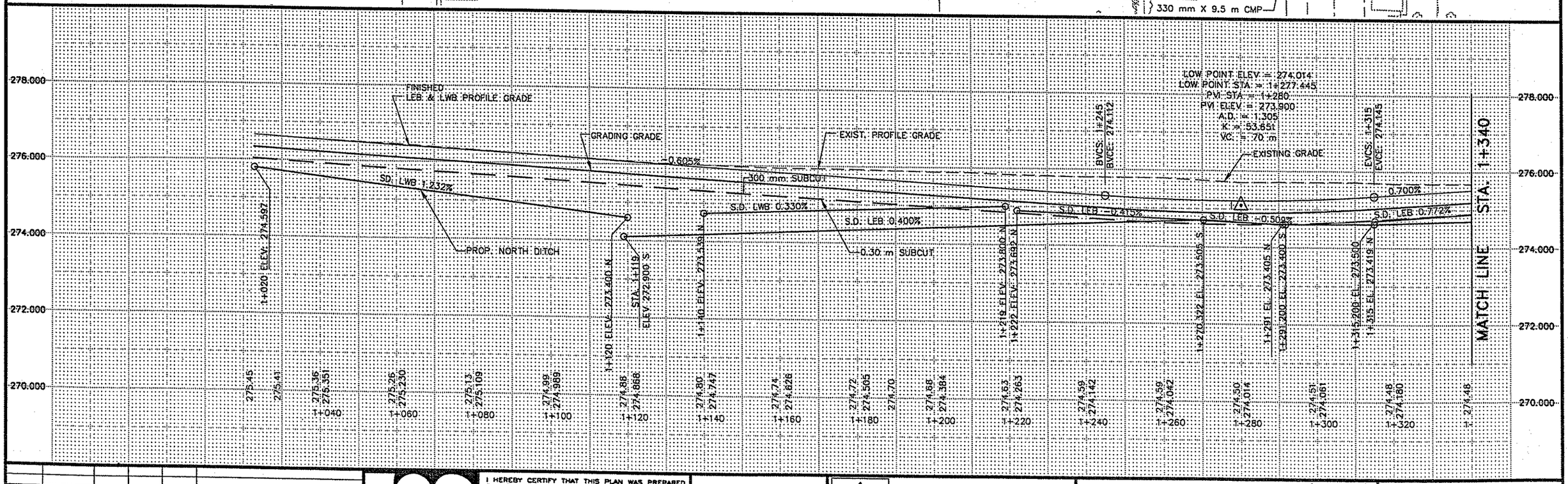
EXISTING R/W
CONSTRUCTION LIMITS
GRADE TO DRAIN TO CB 103
LINCOLN ST. N.E.
SILT FENCE
STA. 1+152.99
7.2 m RT LEB
EXISTING R/W
NEW R/W
JOHNSON ST.
BUNKER LAKE BLVD.
PIPE TO BE INSTALLED BY OTHERS
EXIST. R/W
NEW R/W
330 mm X 9.5 m CMP
400 mm 16.1 m CMP
10 m R,17.2 RT
MATCH LINE STA. 1+340

1-S-FR 1235
1-S-FR 1253
GAR
1-S-FR 1301
1-S-FR 1300
1-S-FR 1318
1206 1-S-ST
1256 SPL LEV

1+144.10
10 m R,16.0 m
1+115.60
10 m R,16.1 LT
1+285.64
10 m R,16.0 LT
1+313.70
10 m R 17.2 LT
1+316.59
10 m R,17.2 m RT

CONST. CONC WALK
40 mm OVERLAY

GRAPHIC SCALE
(IN METERS)
20 0 10 20



NO	DATE	BY	CKD	APPR	REVISION

NAME:17-19Plan&Prof.dwg 12-14-99 9:54:02 am EST

minnesota metric

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
DATE 12/14/00 REG. NO. 26826

DRAWN BY KLO DATE 8/99
DESIGN BY KLO DATE 8/99
CHECKED BY LAR DATE 8/99

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 0208-105(TH 65)
STATE PROJECT NO. 02-716-03
STATE AID PROJECT NO. _____
COUNTY PROJECT NO. _____

PLAN-PROFILE
STA 1+022.875 TO 1+340.000

Sheet 17 of 66 Sheets

Fed. Project No. _____

GRAPHIC SCALE
(IN METERS)
20 0 10 20

① STANDARD PLATE 7113

MATCH LINE STA. 1+340

MATCH LINE STA. 1+700

500 mm X 31 m CMP
455 mm X 21.7 m CMP
915 mm X 20.6 m CMP
460 mm X 15.4 m
380 mm X 15.2 m CMP
450 mm X 300 mm CMP X 18.4 m
475 mm X 23.8m RCP INCLUDES 2 APRONS
400 mm X 43.7 CMP

EXISTING R/W
NEW R/W
3 m S.E
GAS STRUCTURE
3.6 m RT.TN.LN.
4.2 m LT.TN.LN. BUNKER LAKE BLVD
4.2 m LT.TN.LN
LOOP 4.2 m RT.TN.LN.
3.6 m ACC. LANE
1:55 TAPER
14 m ENT.
35 m R.
0.67 m RAD.
GRADE DITCH TO DRAIN AT 1:10
200 mm CONC. MEDIAN STA. 1+532 TO 1+555
SILT FENCE
ENVIRONMENTALLY SENSITIVE AREA
STA. 1+646.27 7.2 m LT LWB
COUNTY DITCH 59-1
MONITOR WELL
SIGNAL CABINET
TOTAL GAS STATION
BEGIN RET. WALL STA. 1+397.8
END RET. WALL STA. 1+424.8
1-S-FR 1336
P-BUR
T-BUR
CONST. CONC WALK
40 mm OVERLAY

1+413.29 60 m R 67.2 LT
1+426.38 20 m R 29.4 LT
1+313.22 60 m R 44.2 LT
1+529.94 60 m R 67.2 LT
1+516.85 20 m R 29.4 LT
1+554.37 60 m R 43.3 LT
1+563.69 60 m R 45.0 RT
1+436.50 20 m R 30.0 RT
1+399.01 60 m R 43.9 RT
1+539.30 60 m R 67.2 RT
1+506.22 20 m R 29.4 RT

278.000
276.000
274.000
272.000
270.000

PVI STA. = 1+380
PVI ELEV. = 274.600
PVI STA. = 1+455.479
PVI ELEV. = 276.004
PVI STA. = 1+462.079
PVI ELEV. = 275.736
PVI STA. = 1+465.679
PVI ELEV. = 275.116
PVI STA. = 1+484.512
PVI ELEV. = 274.897
PVI STA. = 1+491.712
PVI ELEV. = 274.933
PVI STA. = 1+498.312
PVI ELEV. = 274.801
PVI STA. = 1+540
PVI ELEV. = 274.605

TH. 65

FINISHED LWB PROFILE GRADE
FINISHED LEB PROFILE GRADE
LWB PROFILE GRADE
LEB PROFILE GRADE
LEB & LWB PROFILE GRADE
EXIST. PROFILE GRADE
EXISTING GRADE

0.700%
0.539% LEB 0.472% LWB
1.173%
0.354% LWB -0.431% LEB
-0.431%
-0.250%
S.D. LEB 0.772%
S.D. LWB 0.325%
S.D. LWB -0.3%
S.D. LWB -0.460%
S.D. LEB -1.252%
S.D. LWB 0.416%
LWB -1.440%
2.0%
0.5%
0.5%
2.0%
2:1
300 mm SUBCUT
0.300 m SUBCUT
MUCK LIMITS

1+380 ELEV. 274.000 S.
1+420 ELEV. 273.760 N.
1+520 ELEV. 273.695
1+520 ELEV. 273.586
1+540 ELEV. 273.278
1+520 ELEV. 273.385
1+600 ELEV. 272.990
1+620 ELEV. 272.911
1+624 ELEV. 272.907
1+640 ELEV. 272.590

LOW POINT ELEV. = 274.083
LOW POINT STA. = 1+681.714
PVI STA. = 1+680
PVI ELEV. = 274.000
A.D. = 0.836
K = 95.716
VC. = 80 m

BVCS. 1+640
BVCE. 274.174

340 1+360 1+380 1+400 1+420 1+440 1+460 1+480 1+500 1+520 1+540 1+560 1+580 1+600 1+620 1+640 1+660 1+680

274.320 274.453 274.460 274.57 274.600 274.60 274.708 274.57 274.616 274.62 274.923 275.00 275.098 274.68 274.950 274.65 274.778 274.38 274.692 274.33 274.606 274.37 274.519 274.33 274.433 274.35 274.347 274.37 274.261 274.36 274.174 274.27 274.108 274.22 274.084 274.27

NO	DATE	BY	CKD	APPR	REVISION

NAME:17-19Plan&Prof.dwg 12-14-99 9:54:02 am EST

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DATE 12/14/00 REG. NO 26826

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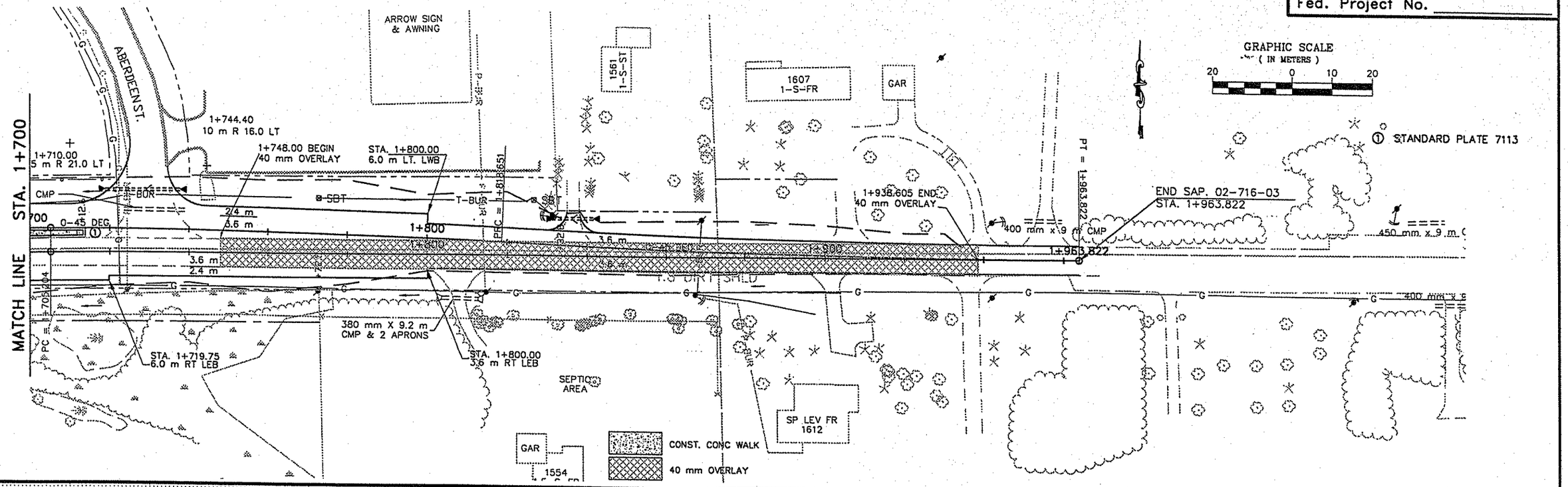
ANOKA COUNTY HIGHWAY DEPT.

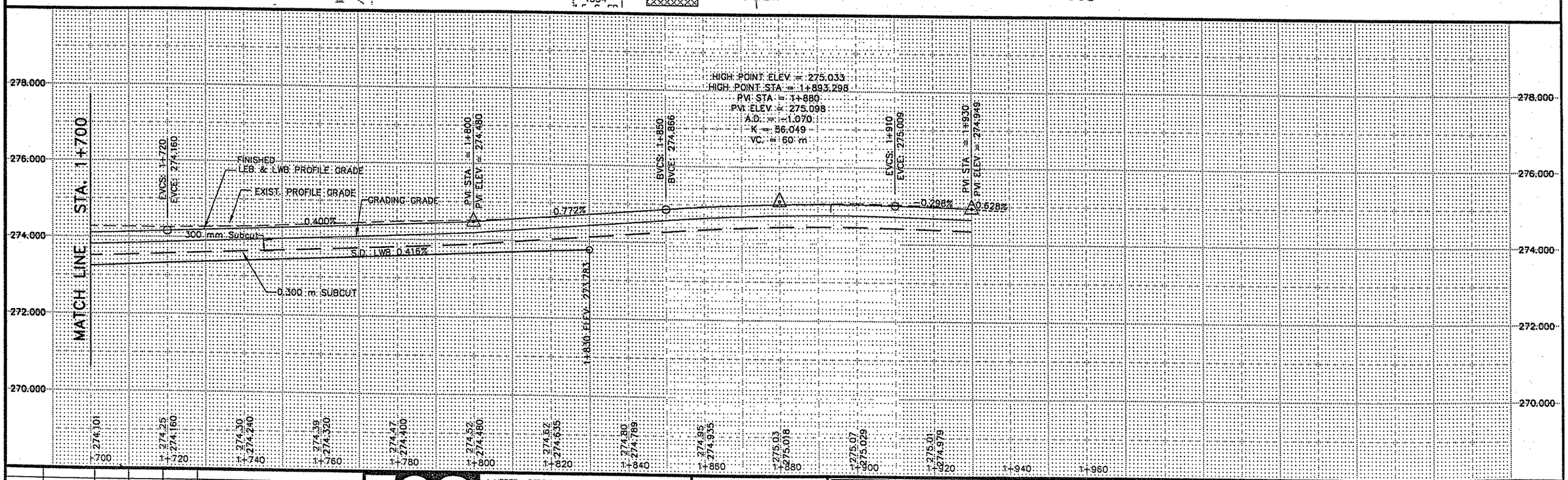
STATE PROJECT NO. 0208-105(TH 65)
STATE PROJECT NO. 02-716-03
STATE AID PROJECT NO. _____
COUNTY PROJECT NO. _____

PLAN-PROFILE
STA 1+340.0 TO 1+700.0

Sheet 18 of 66 Sheets

Fed. Project No. _____





NO	DATE	BY	CKD	APPR	REVISION

NAME:17-19Plan&Prof.dwg 12-14-99 9:54:02 am EST

minnesota metric

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ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

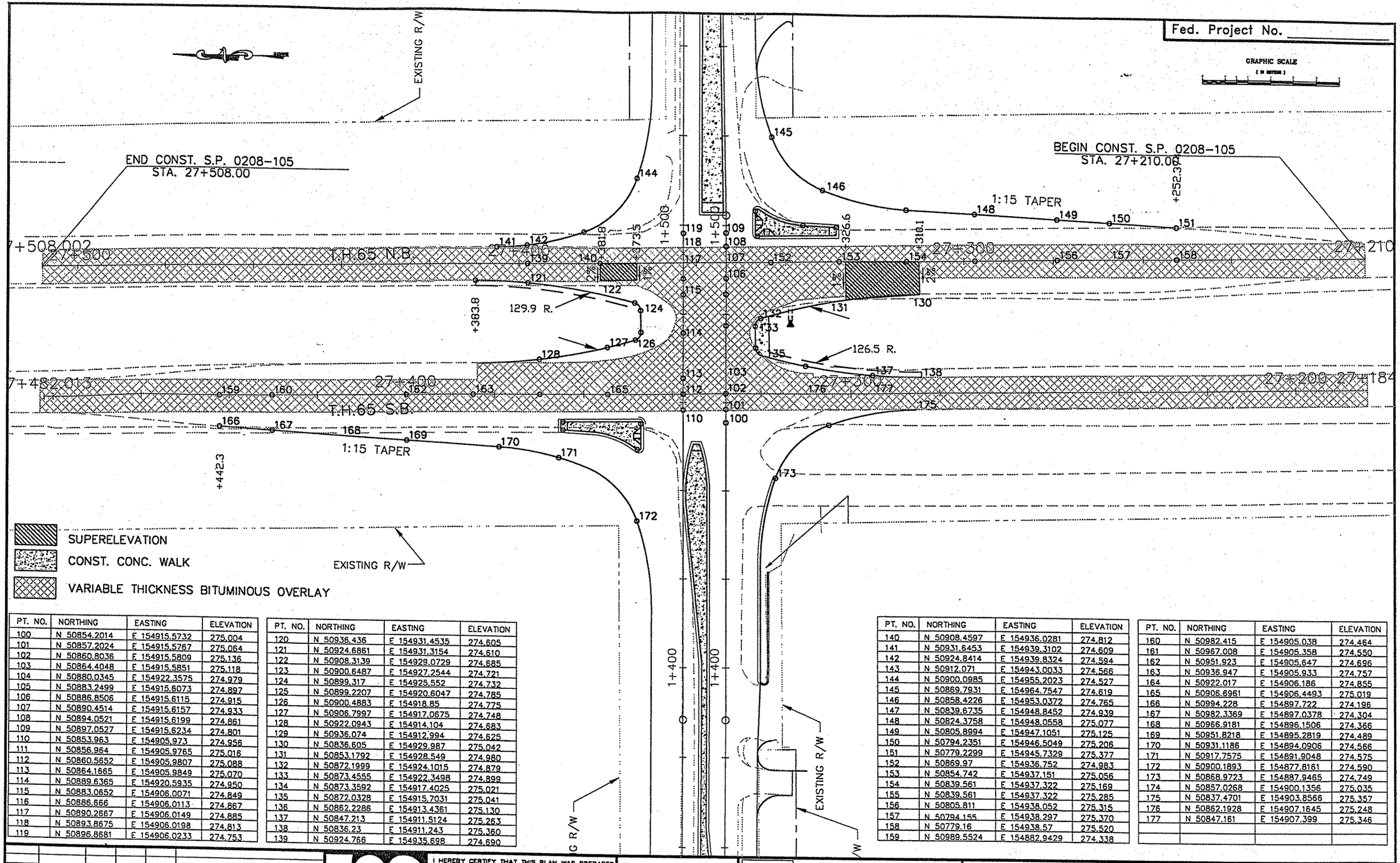
STATE PROJECT NO. 0208-105(TH 65)
STATE PROJECT NO. 02-716-03
STATE AID PROJECT NO. _____
COUNTY PROJECT NO. _____

PLAN-PROFILE
STA 1+700.0 TO 1+938.50

Sheet 19 of 66 Sheets

Fed. Project No. _____

GRAPHIC SCALE
(IN METERS)



SUPERELEVATION

CONST. CONC. WALK

VARIABLE THICKNESS BITUMINOUS OVERLAY

PT. NO.	NORTHING	EASTING	ELEVATION
100	N 50854.2014	E 154915.5732	275.004
101	N 50857.2024	E 154915.5767	275.064
102	N 50860.8036	E 154915.5809	275.136
103	N 50864.4048	E 154915.5851	275.118
104	N 50880.0345	E 154922.3575	274.979
105	N 50883.2499	E 154915.6073	274.897
106	N 50886.8506	E 154915.6115	274.915
107	N 50890.4514	E 154915.6157	274.933
108	N 50894.0521	E 154915.6199	274.861
109	N 50897.0527	E 154915.6234	274.801
110	N 50853.963	E 154905.973	274.956
111	N 50856.964	E 154905.9765	275.016
112	N 50860.5652	E 154905.9807	275.088
113	N 50864.1665	E 154905.9849	275.070
114	N 50889.6365	E 154920.5935	274.950
115	N 50883.0652	E 154906.0071	274.849
116	N 50886.666	E 154906.0113	274.867
117	N 50890.2667	E 154906.0149	274.885
118	N 50893.8675	E 154906.0198	274.813
119	N 50896.8681	E 154906.0233	274.753

PT. NO.	NORTHING	EASTING	ELEVATION
120	N 50936.436	E 154931.4535	274.605
121	N 50924.6861	E 154931.3154	274.610
122	N 50908.3139	E 154929.0729	274.685
123	N 50900.6487	E 154927.2544	274.721
124	N 50899.317	E 154925.552	274.732
125	N 50899.2207	E 154920.6047	274.785
126	N 50900.4883	E 154918.85	274.775
127	N 50906.7997	E 154917.0675	274.748
128	N 50922.0943	E 154914.104	274.683
129	N 50936.074	E 154912.994	274.625
130	N 50836.605	E 154929.987	275.042
131	N 50853.1792	E 154928.549	274.980
132	N 50872.1999	E 154924.1015	274.879
133	N 50873.4555	E 154922.3498	274.899
134	N 50873.3592	E 154917.4025	275.021
135	N 50872.0328	E 154915.7031	275.041
136	N 50862.2286	E 154913.4361	275.130
137	N 50847.213	E 154911.5124	275.263
138	N 50836.23	E 154911.243	275.360
139	N 50924.766	E 154935.698	274.690

PT. NO.	NORTHING	EASTING	ELEVATION
140	N 50908.4597	E 154936.0281	274.812
141	N 50931.6453	E 154939.3102	274.609
142	N 50924.8414	E 154939.8324	274.594
143	N 50912.071	E 154943.0033	274.566
144	N 50900.0985	E 154955.2023	274.527
145	N 50869.7931	E 154964.7547	274.619
146	N 50858.4226	E 154953.0372	274.765
147	N 50839.6735	E 154948.8452	274.939
148	N 50824.3758	E 154948.0558	275.077
149	N 50805.8994	E 154947.1051	275.125
150	N 50794.2351	E 154946.5049	275.206
151	N 50779.2299	E 154945.7329	275.377
152	N 50869.97	E 154936.752	274.983
153	N 50854.742	E 154937.151	275.056
154	N 50839.561	E 154937.322	275.169
155	N 50839.561	E 154937.322	275.285
156	N 50805.811	E 154938.052	275.315
157	N 50794.155	E 154938.297	275.370
158	N 50779.16	E 154938.57	275.520
159	N 50989.5524	E 154882.9429	274.338

PT. NO.	NORTHING	EASTING	ELEVATION
160	N 50982.415	E 154905.038	274.464
161	N 50967.008	E 154905.358	274.550
162	N 50951.923	E 154905.647	274.696
163	N 50936.947	E 154905.933	274.757
164	N 50922.017	E 154906.186	274.855
165	N 50906.6961	E 154906.4493	275.019
166	N 50994.228	E 154897.722	274.196
167	N 50982.3369	E 154897.0378	274.304
168	N 50966.9181	E 154896.1506	274.366
169	N 50951.8218	E 154895.2819	274.489
170	N 50931.1186	E 154894.0906	274.566
171	N 50917.7575	E 154891.9048	274.575
172	N 50900.1893	E 154877.8161	274.590
173	N 50868.9723	E 154887.9465	274.749
174	N 50857.0268	E 154900.1356	275.035
175	N 50837.4701	E 154903.8566	275.357
176	N 50862.1928	E 154907.1645	275.248
177	N 50847.161	E 154907.399	275.346

NO	DATE	BY	CKD	APPR	REVISION

NAME: 20_TH65.dwg 11-23-99 1:56:07 pm EST

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

DATE 2/14/02 REG. NO. 16826

DRAWN BY KLO DATE 8/99

DESIGN BY KLO DATE 8/99

CHECKED BY LAR DATE 8/99

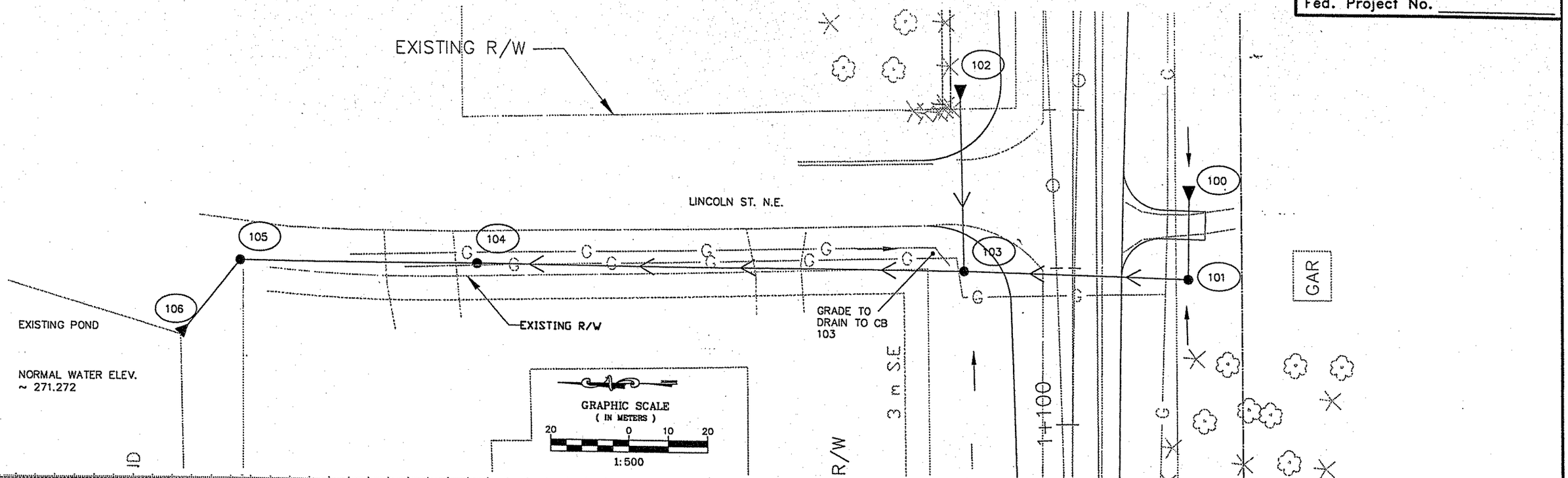
ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 0208-105(TH 65)
STATE PROJECT NO. 02-716-03
STATE AID PROJECT NO. _____
COUNTY PROJECT NO. _____

TH 65
STA 27+210 TO 27+508

Sheet 20 of 66 Sheets

Fed. Project No. _____



NO	DATE	BY	CKD	APPR	REVISION

NAME: 21-22StormSewer.dwg 11-23-99 3:56:26 pm EST

minnesota metric

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

DATE 12/14/00 REG. NO. 26826

DRAWN BY KLO DATE 8/99

DESIGN BY KLO DATE 8/99

CHECKED BY LAR DATE 8/99

ANOKA COUNTY

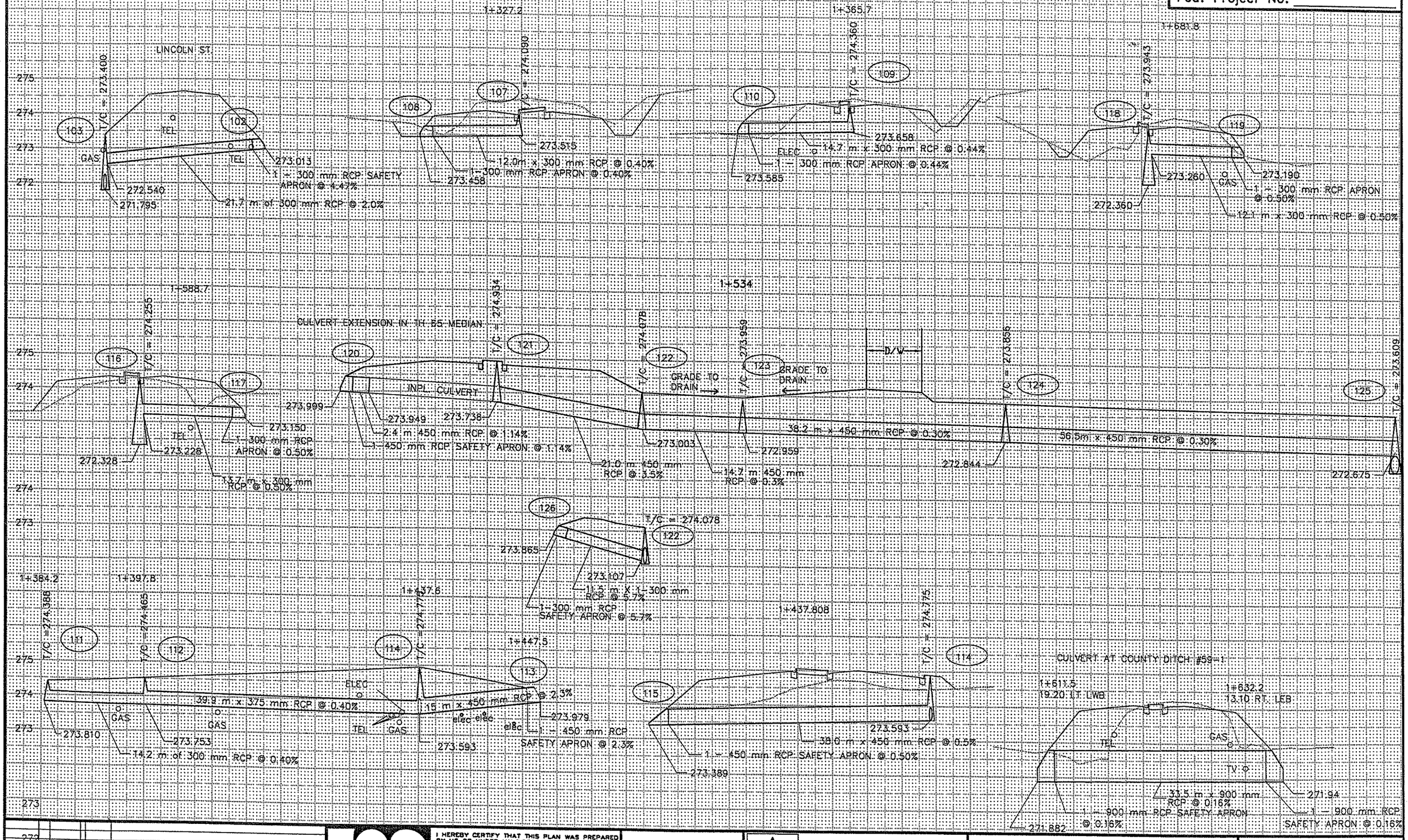
ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 0208-105 (TH 65)
STATE PROJECT NO. 02-716-03
STATE AID PROJECT NO. _____
COUNTY PROJECT NO. _____

STORM SEWER PROFILES

Sheet 21 of 66 Sheets

Fed. Project No. _____



NO	DATE	BY	CKD	APPR	REVISION

NAME: 21-22StormSewer.dwg 11-23-99 3:56:26 pm EST

minnesota metric

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DATE 2/14/00 REG. NO. 26826

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ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 0208-105 (TH 65)

STATE PROJECT NO. 02-716-03

STATE AID PROJECT NO. _____

COUNTY PROJECT NO. _____

DRAINAGE PROFILES

Sheet 22 of 66 Sheets

Fed. Project No. _____

GRAPHIC SCALE
(IN METERS)
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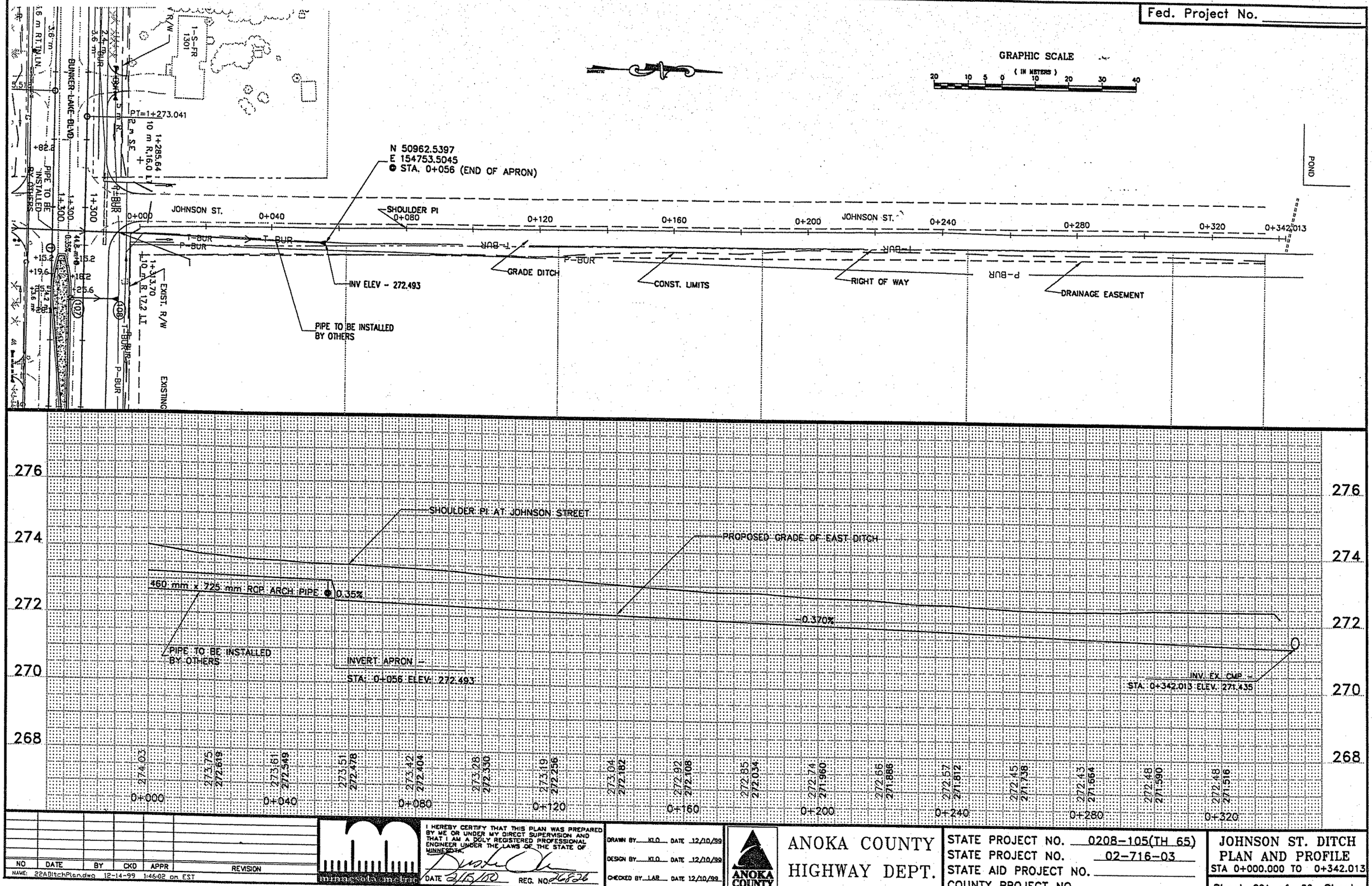


NO	DATE	BY	CKD	APPR	REVISION

NAME: 22ADitchPlan.dwg 12-14-99 1:46:02 pm EST

minnesota metric

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

DATE 2/15/00 REG. NO. 26826

DRAWN BY KLO DATE 12/10/99
DESIGN BY KLO DATE 12/10/99
CHECKED BY LAR DATE 12/10/99

ANOKA COUNTY

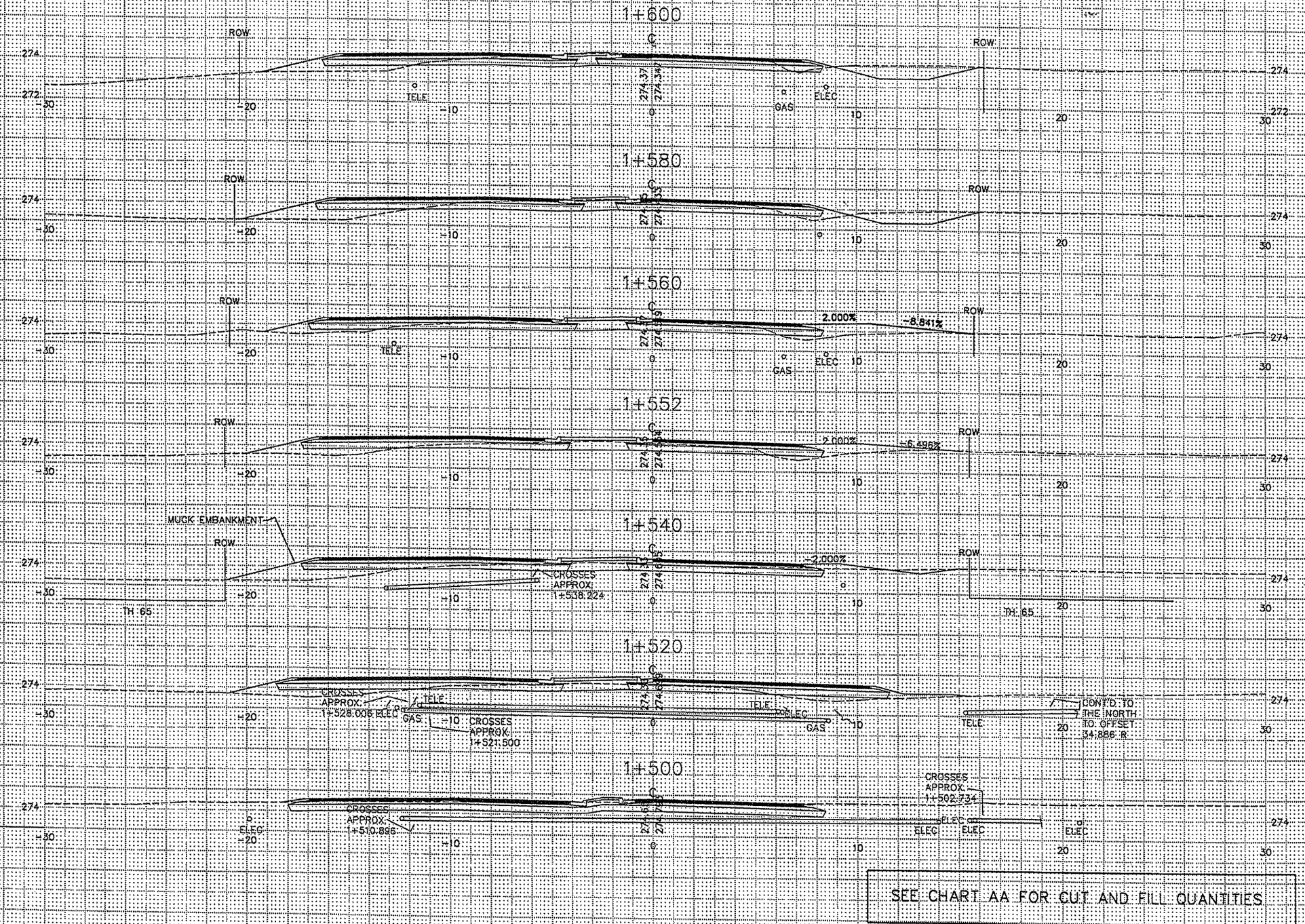
ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 0208-105(TH 65)
STATE PROJECT NO. 02-716-03
STATE AID PROJECT NO. _____
COUNTY PROJECT NO. _____

JOHNSON ST. DITCH
PLAN AND PROFILE
STA 0+000.000 TO 0+342.013

Sheet 22A of 66 Sheets

Fed. Project No. _____



SEE CHART AA FOR CUT AND FILL QUANTITIES

NO	DATE	BY	CKD	APPR	REVISION

NAME: 23-35XSections.dwg 12399 111727

minnesota metro

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

DATE 2/24/00 REG. NO. 7700

DRAWN BY KO DATE 2/00

DESIGN BY KO DATE 2/00

CHECKED BY _____ DATE _____

ANOKA COUNTY

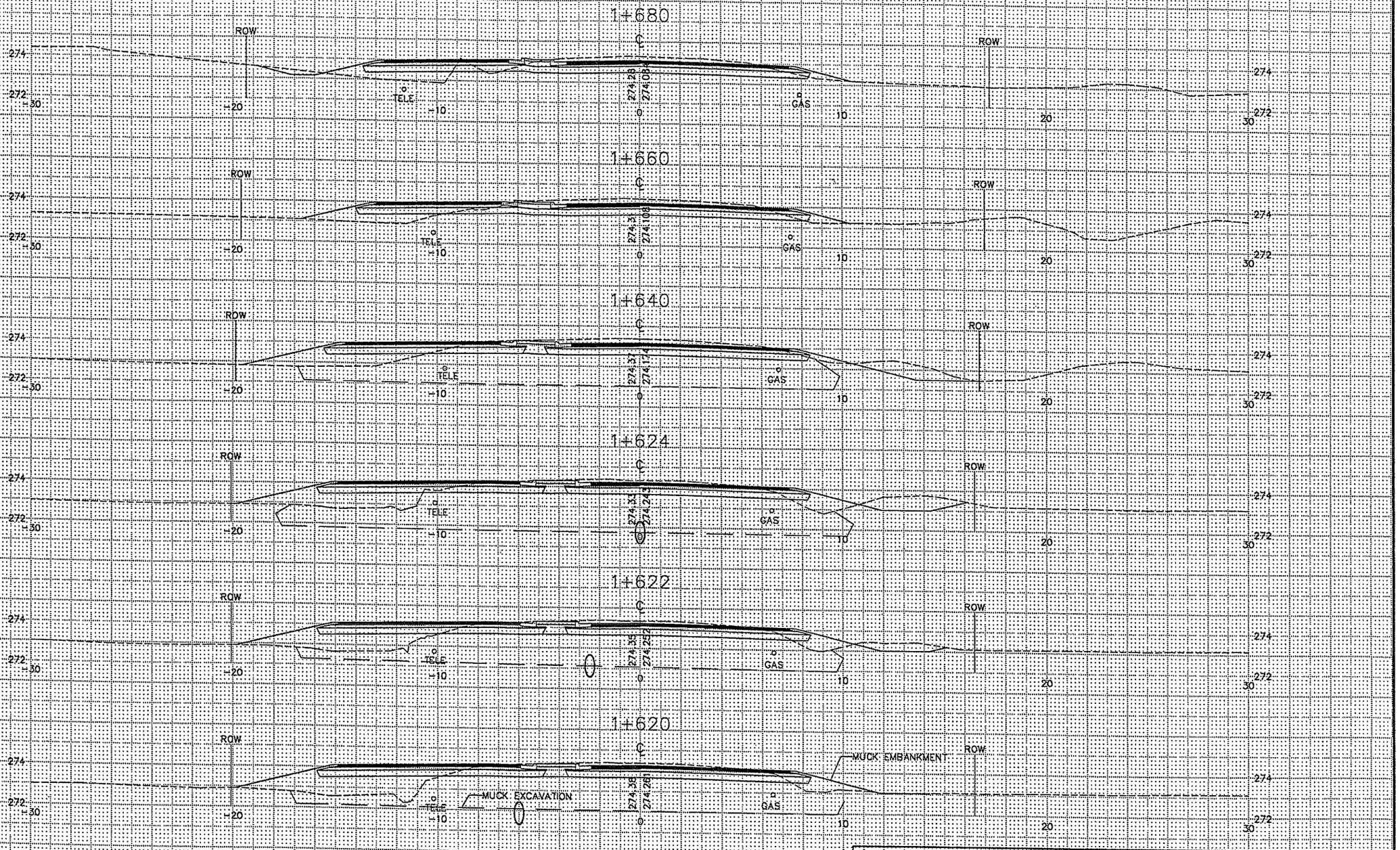
ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 0208-105 (TH 65)
STATE PROJECT NO. 02-716-03
STATE AID PROJECT NO. _____
COUNTY PROJECT NO. _____

CROSS - SECTIONS
STA. 1+495.000 TO 1+600.000

Sheet 31 of 66 Sheets

Fed. Project No. _____



SEE CHART AA FOR CUT AND FILL QUANTITIES

NO	DATE	BY	CKD	APPR	REVISION

NAME: 23-35XSections.dwg 12399 111727

minnesota metric

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DATE 2/14/00 REG. NO. 26826

DRAWN BY KO DATE 2/00

DESIGN BY KO DATE 2/00

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ANOKA COUNTY

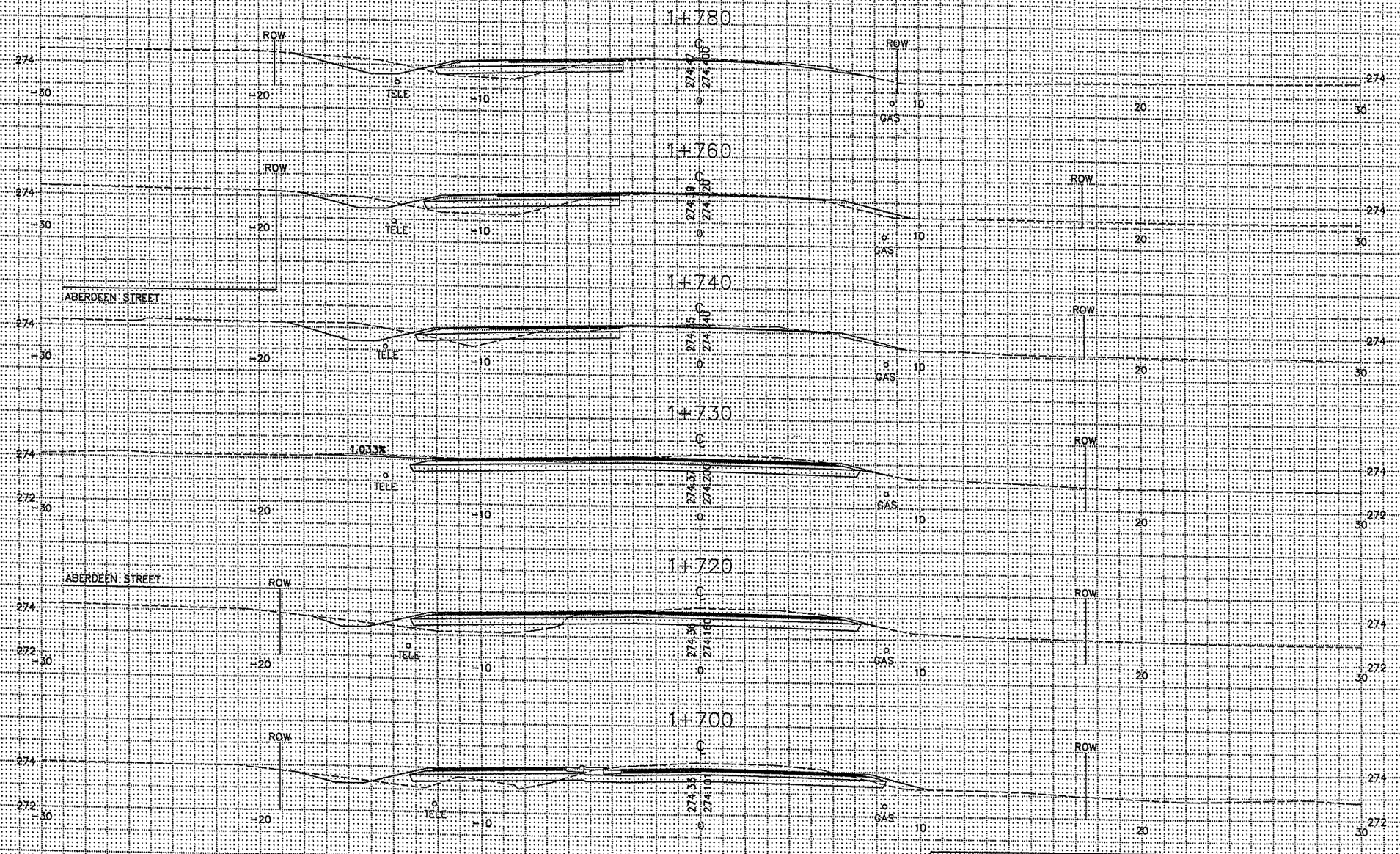
ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 0208-105 (TH 65)
STATE PROJECT NO. 02-716-03
STATE AID PROJECT NO. _____
COUNTY PROJECT NO. _____

CROSS - SECTIONS
STA. 1+620.000 TO 1+680.000

Sheet 32 of 66 Sheets

Fed. Project No. _____



SEE CHART AA FOR CUT AND FILL QUANTITIES

NO	DATE	BY	CKD	APPR	REVISION

NAME: 23-35XSections.dwg 12399 111727

minnesota metric

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DATE 2/14/00 REG. NO 26826

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DESIGN BY KO DATE 2/00

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ANOKA COUNTY

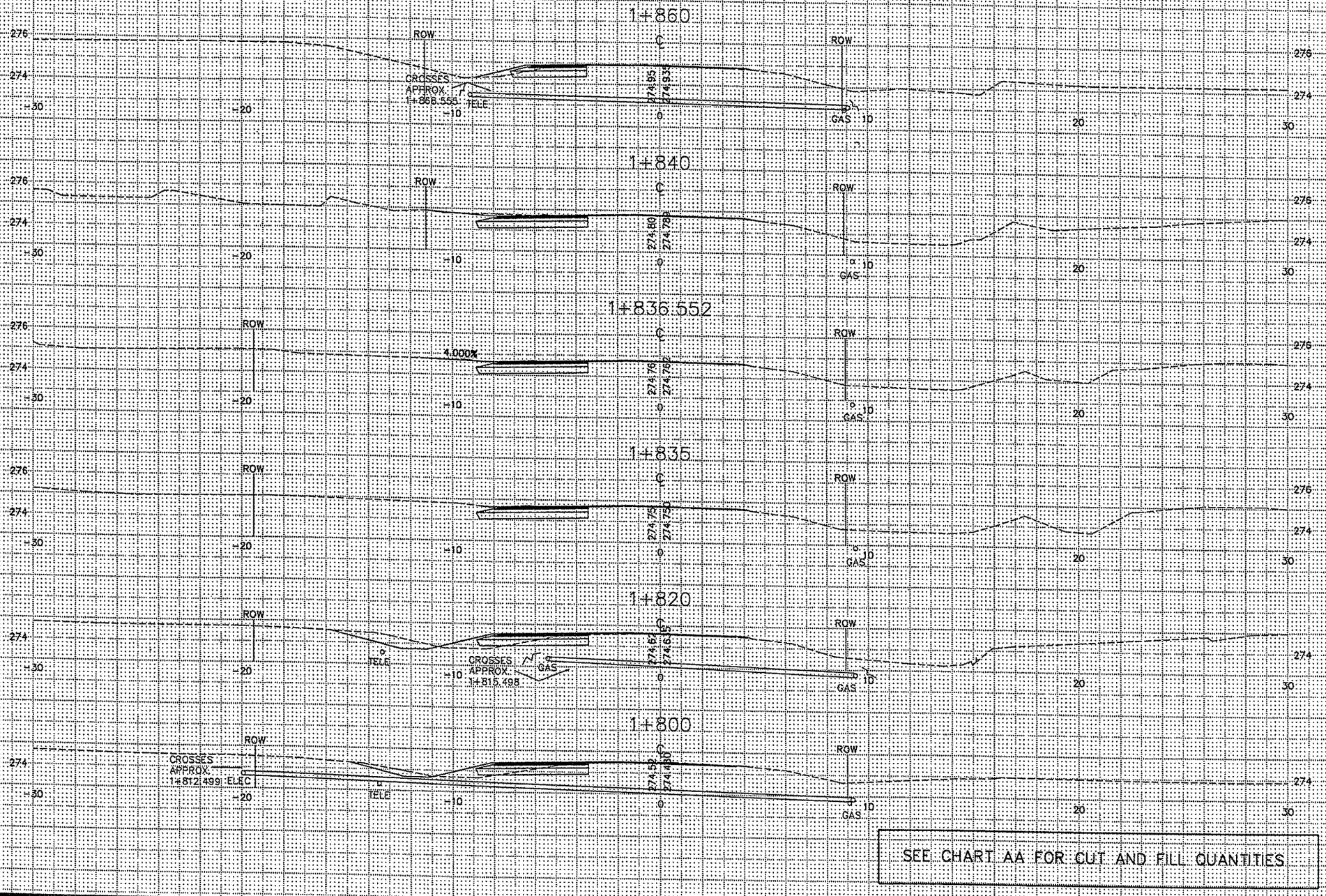
ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 0208-105 (TH 65)
STATE PROJECT NO. 02-716-03
STATE AID PROJECT NO. _____
COUNTY PROJECT NO. _____

CROSS - SECTIONS
STA. 1+700.000 TO 1+780.000

Sheet 33 of 66 Sheets

Fed. Project No. _____



SEE CHART AA FOR CUT AND FILL QUANTITIES

NO	DATE	BY	CKD	APPR	REVISION

NAME: 23-35XSections.dwg 12399 111727

minnesota limited

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DATE 2/14/00 REG. NO. 26826

DRAWN BY KD DATE 2/00

DESIGN BY KD DATE 2/00

CHECKED BY _____ DATE _____

ANOKA COUNTY

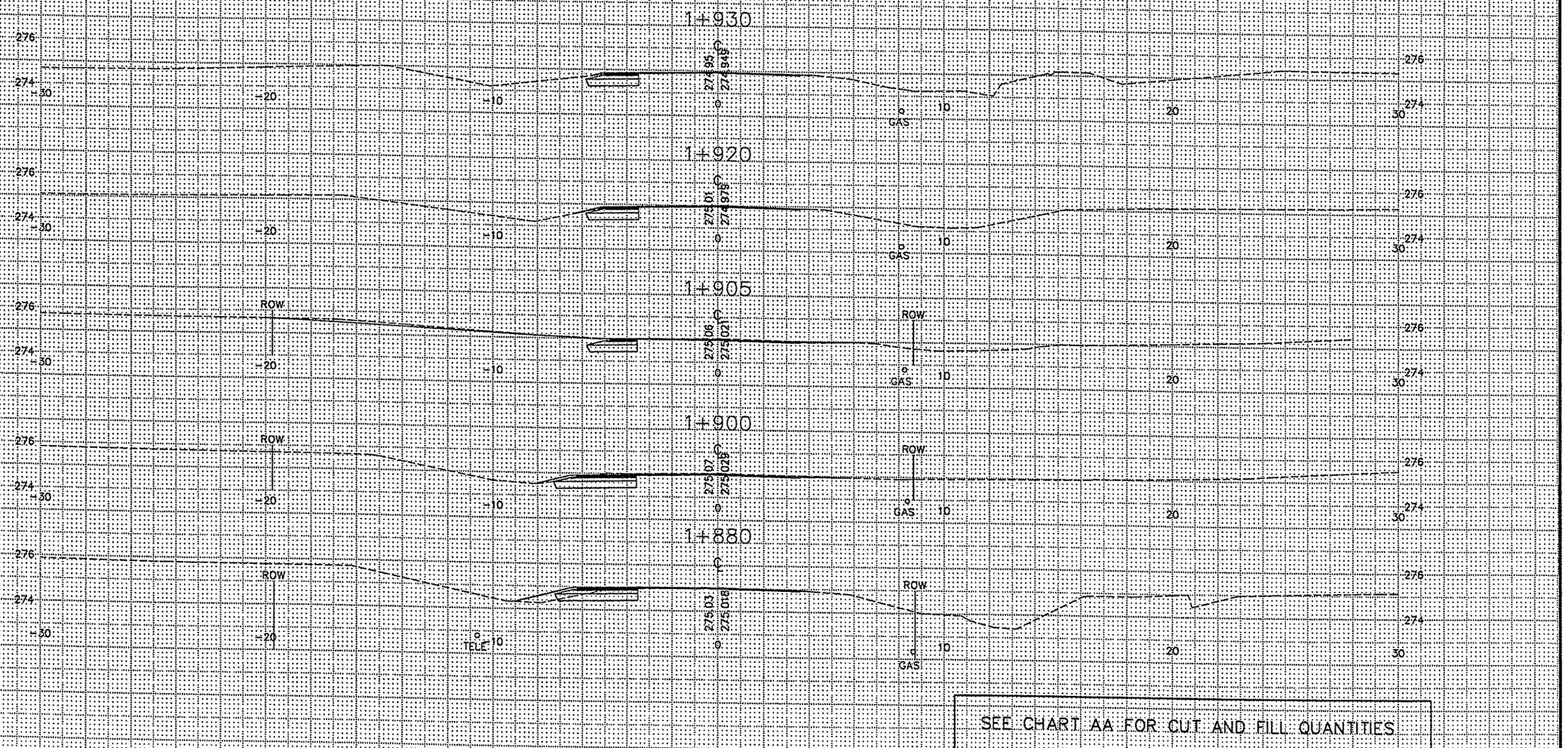
ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 0208-105 (TH 65)
STATE PROJECT NO. 02-716-03
STATE AID PROJECT NO. _____
COUNTY PROJECT NO. _____

CROSS - SECTIONS
STA. 1+800.000 TO 1+860.000

Sheet 34 of 66 Sheets

Fed. Project No. _____



SEE CHART AA FOR CUT AND FILL QUANTITIES

NO	DATE	BY	CKD	APPR	REVISION

NAME: 23-35XSections.dwg 12099 111727

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

DATE 7/4/00 REG. NO. 21826

DRAWN BY KO DATE 7/00
DESIGN BY KO DATE 7/00
CHECKED BY _____ DATE _____

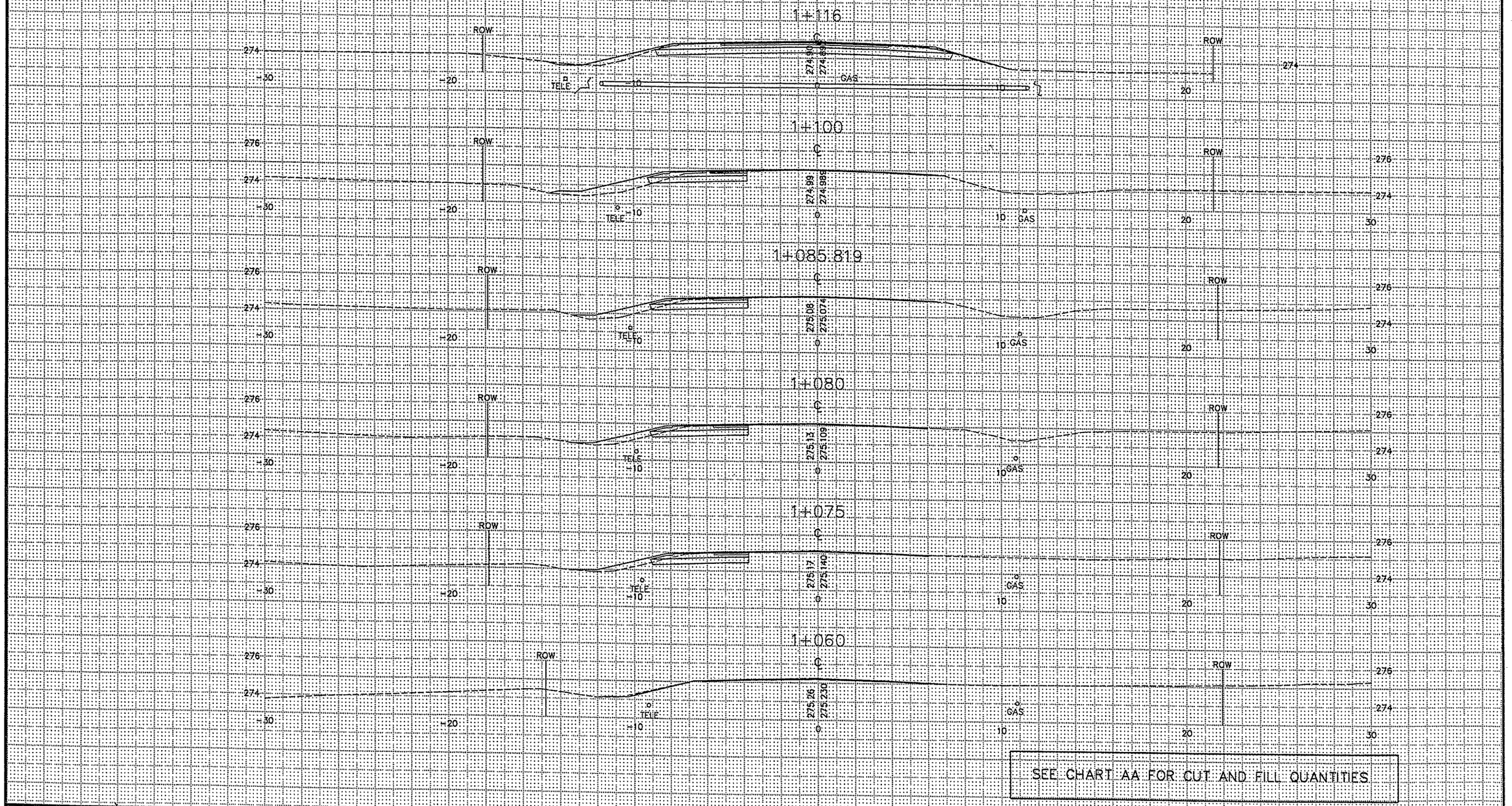
ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 0208-105 (TH 65)
STATE PROJECT NO. 02-716-03
STATE AID PROJECT NO. _____
COUNTY PROJECT NO. _____

CROSS - SECTIONS
STA. 1+880.000 TO 1+930.000

Sheet 35 of 66 Sheets

Fed. Project No. _____



SEE CHART AA FOR CUT AND FILL QUANTITIES

NO	DATE	BY	CKD	APPR	REVISION

NAME: 23-35XSections.dwg 12399 111727

minnesota metric

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

Dustin Olson

DATE 2/14/00 REG. NO. 26826

DRAWN BY _____ DATE _____

DESIGN BY _____ DATE _____

CHECKED BY _____ DATE _____

ANOKA COUNTY

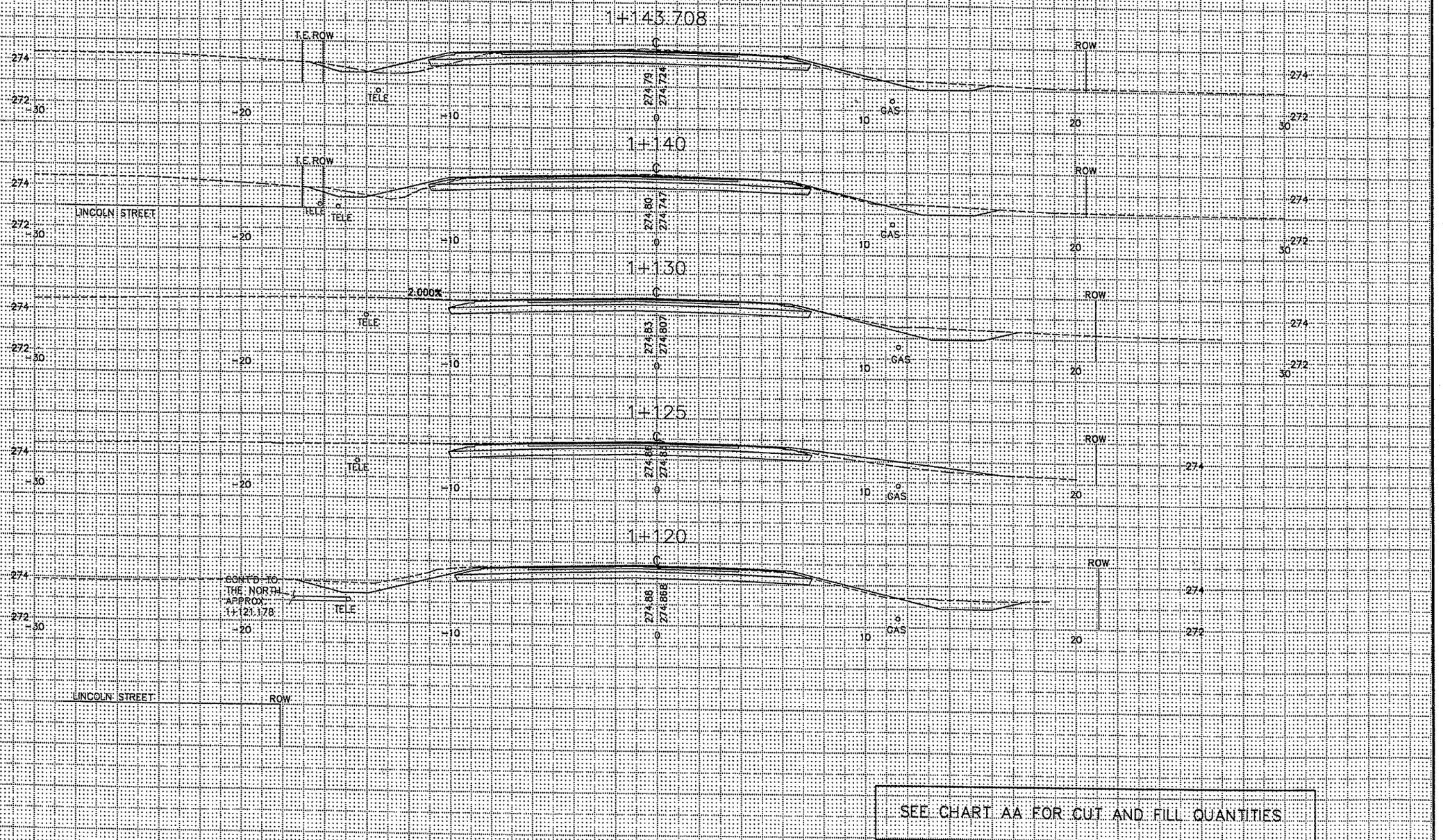
ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 0208-105 (TH 65)
STATE PROJECT NO. 02-716-03
STATE AID PROJECT NO. _____
COUNTY PROJECT NO. _____

CROSS - SECTIONS
STA. 1+060.000 TO 1+116.000

Sheet 23 of 66 Sheets

Fed. Project No. _____



SEE CHART AA FOR CUT AND FILL QUANTITIES

NO	DATE	BY	CKD	APPR	REVISION

NAME: 23-35XSections.dwg 12399 111727

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

DATE 2/14/00 REG. NO. 26826

DRAWN BY BLO DATE 2/14/00
DESIGN BY KLO DATE 2/00
CHECKED BY LAR DATE 2/00

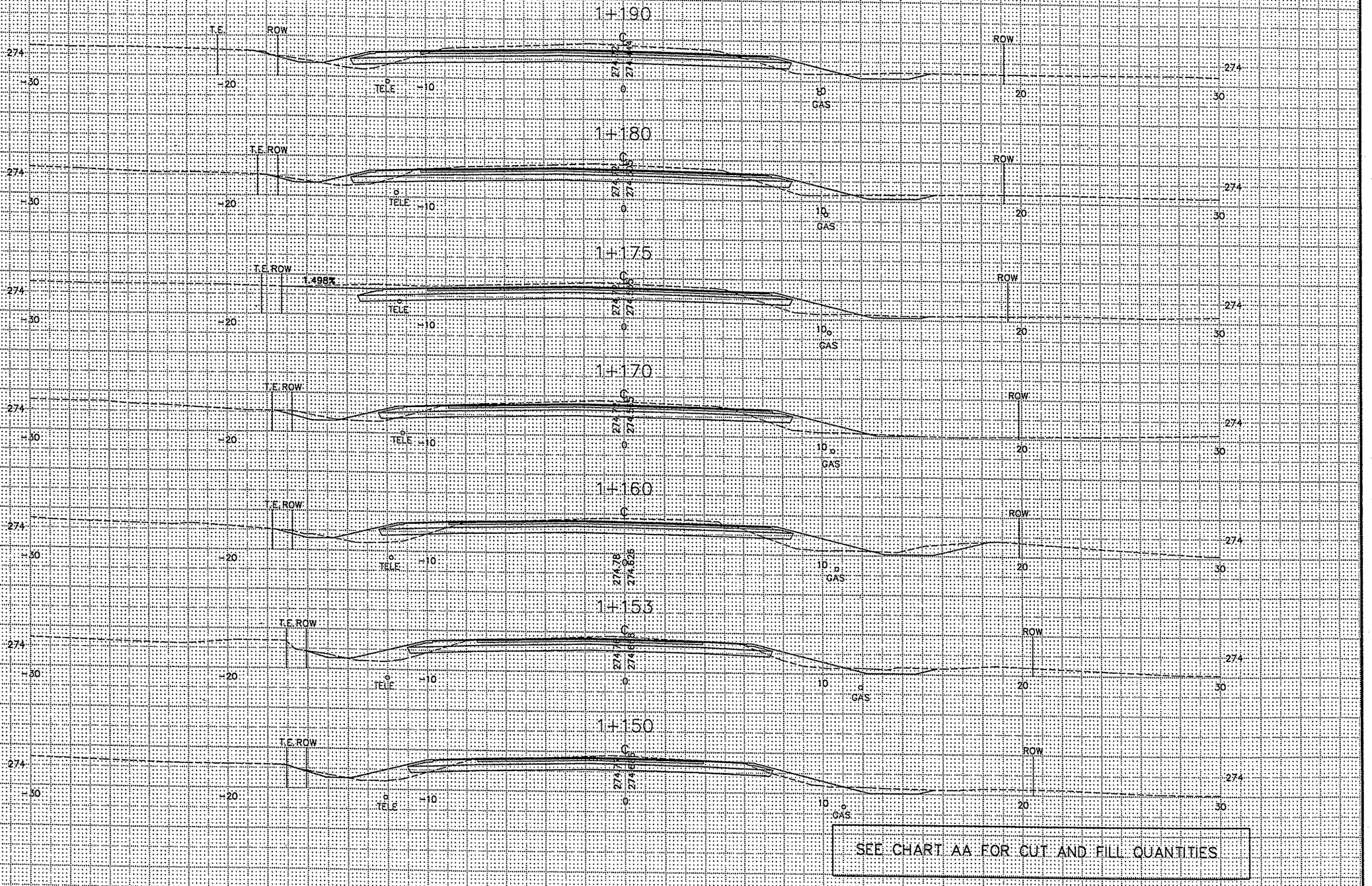
ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 0208-105 (TH 65)
STATE PROJECT NO. 02-716-03
STATE AID PROJECT NO. _____
COUNTY PROJECT NO. _____

CROSS - SECTIONS
STA. 1+119.370 TO 1+143.708

Sheet 24 of 66 Sheets

Fed. Project No. _____



SEE CHART AA FOR CUT AND FILL QUANTITIES

NO	DATE	BY	CKD	APPR	REVISION

NAME: 23-35XSections.dwg 12399 111727

minnesota metric

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

DATE 2/14/02 REG. NO. 21892

DRAWN BY KD DATE 2/00

DESIGN BY KO DATE 2/00

CHECKED BY LAR DATE 2/00

ANOKA COUNTY

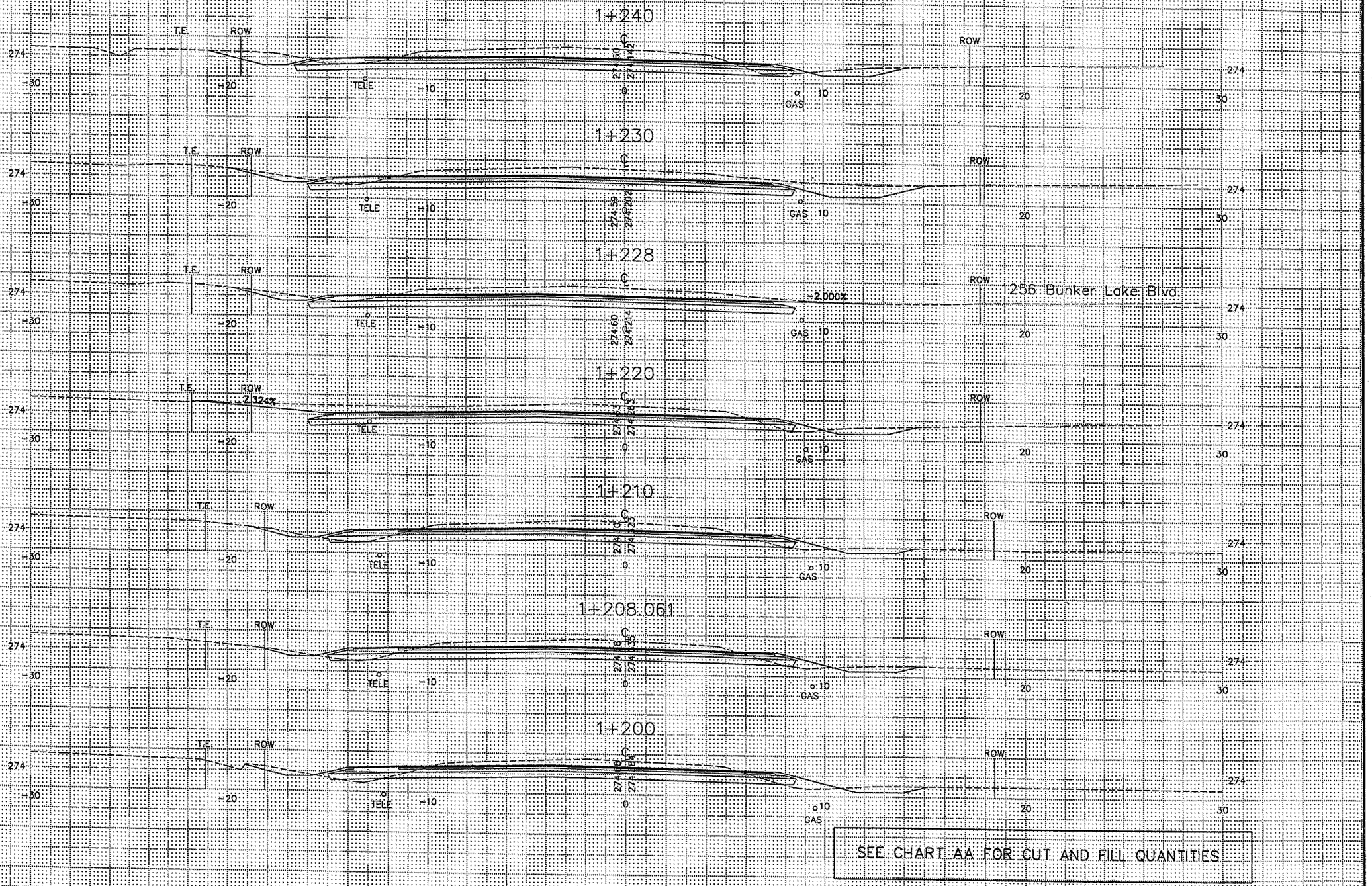
ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 0208-105 (TH 65)
STATE PROJECT NO. 02-716-03
STATE AID PROJECT NO. _____
COUNTY PROJECT NO. _____

CROSS - SECTIONS
STA. 1+150.000 TO 1+190.000

Sheet 25 of 66 Sheets

Fed. Project No. _____



SEE CHART AA FOR CUT AND FILL QUANTITIES

NO	DATE	BY	CKD	APPR	REVISION

NAME: 23-35XSections.dwg 12399 111727

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

DATE 2/14/00 REG. NO. 26826

DRAWN BY KO DATE 2/00

DESIGN BY KO DATE 2/00

CHECKED BY _____ DATE _____

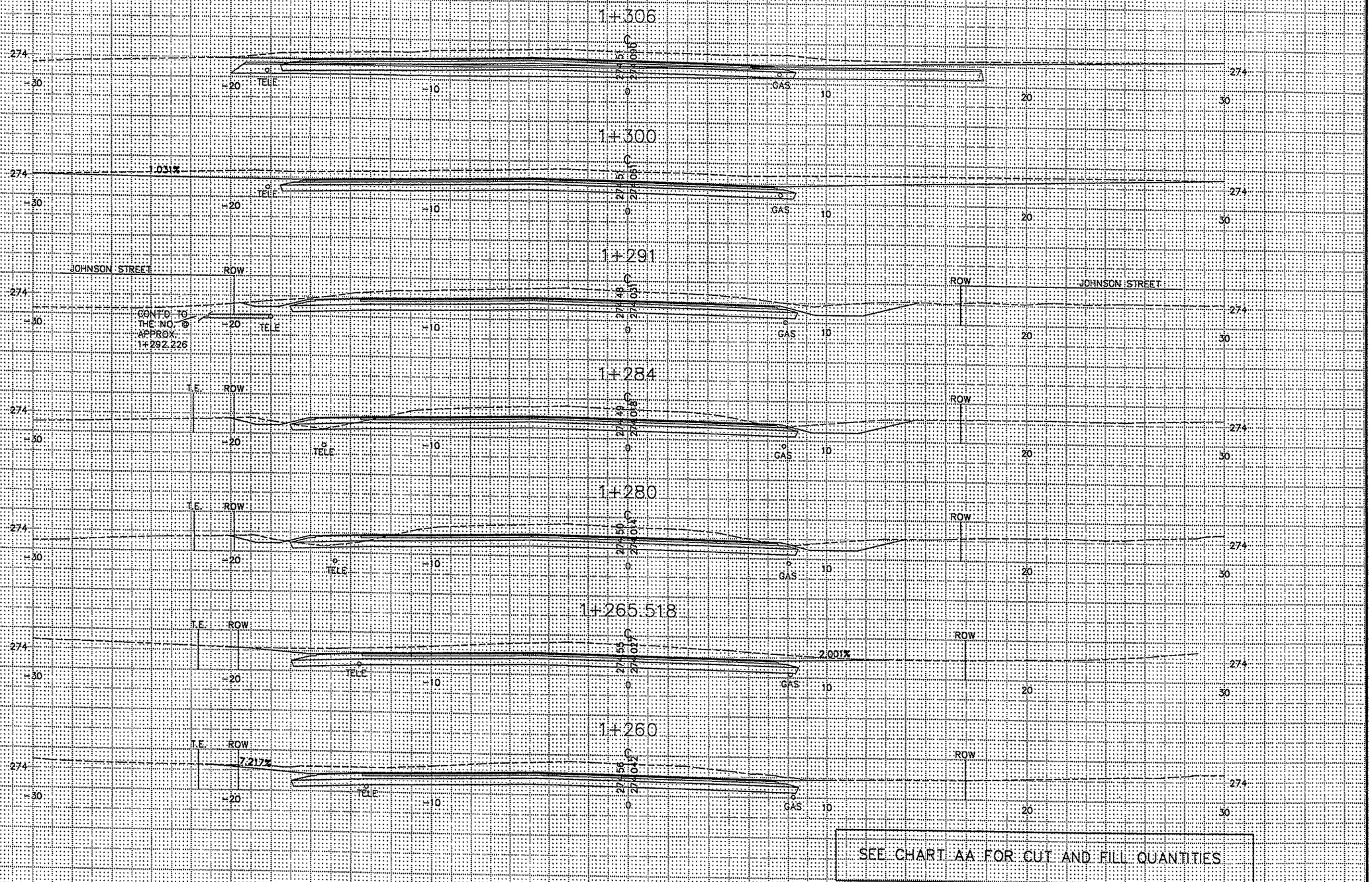
ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 0208-105 (TH 65)
STATE PROJECT NO. 02-716-03
STATE AID PROJECT NO. _____
COUNTY PROJECT NO. _____

CROSS - SECTIONS
STA. 1+200.000 TO 1+240.000

Sheet 26 of 66 Sheets

Fed. Project No. _____



SEE CHART AA FOR CUT AND FILL QUANTITIES

NO	DATE	BY	CKD	APPR	REVISION

NAME: 23-35XSections.dwg 12399 111727

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

DATE 2/14/00 REG. NO. 20826

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DESIGN BY KO DATE 2/00

CHECKED BY _____ DATE _____

ANOKA COUNTY

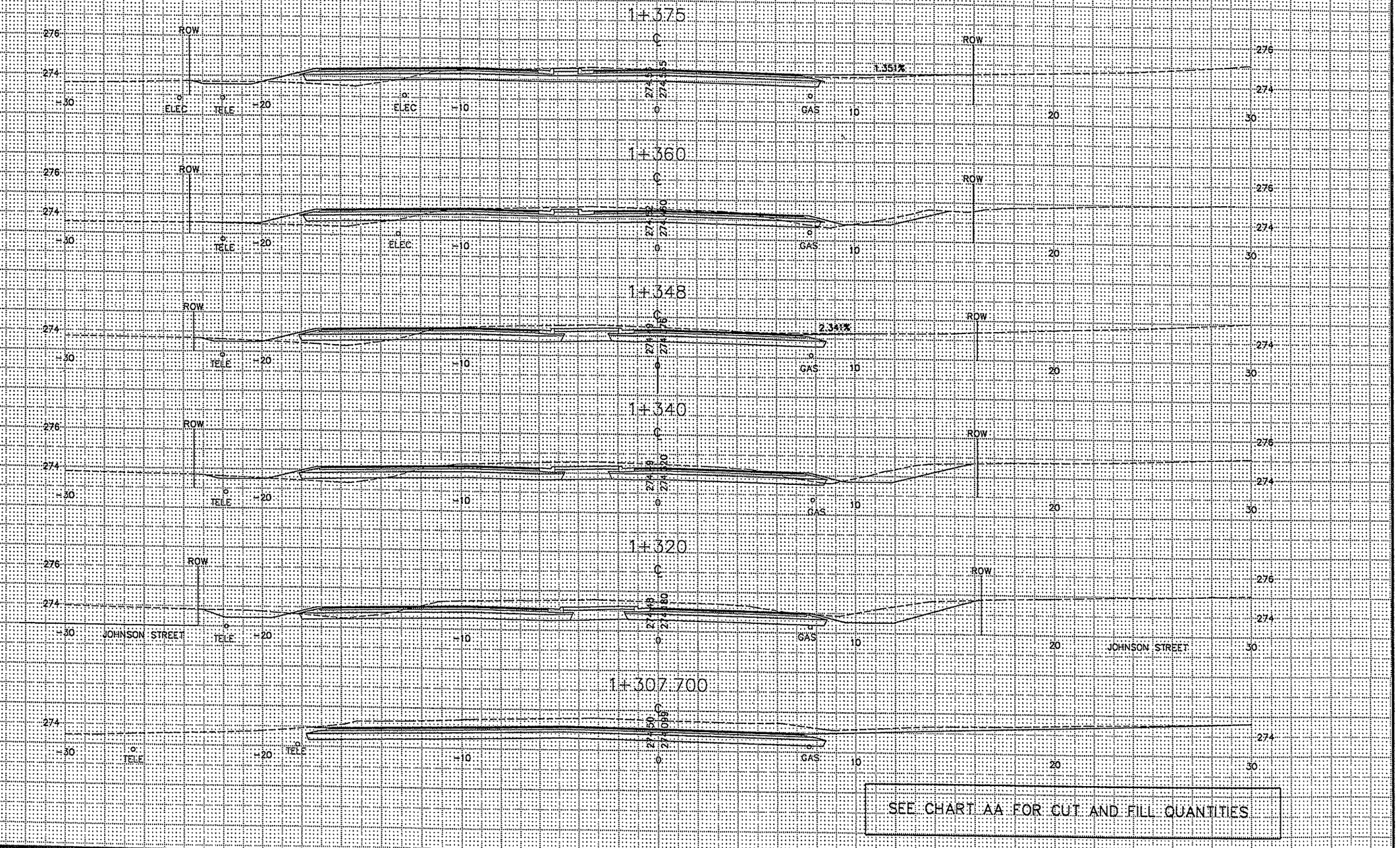
ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 0208-105 (TH 65)
STATE PROJECT NO. 02-716-03
STATE AID PROJECT NO. _____
COUNTY PROJECT NO. _____

CROSS - SECTIONS
STA. 1+260.000 TO 1+306.000

Sheet 27 of 66 Sheets

Fed. Project No. _____



SEE CHART AA FOR CUT AND FILL QUANTITIES

NO	DATE	BY	CKD	APPR	REVISION

NAME: 23-35XSections.dgn 12399 111727

minnesota metric

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

DATE 2/14/00 REG. NO. 26826

DRAWN BY KO DATE 2/00

DESIGN BY KO DATE 2/00

CHECKED BY _____ DATE _____

ANOKA COUNTY

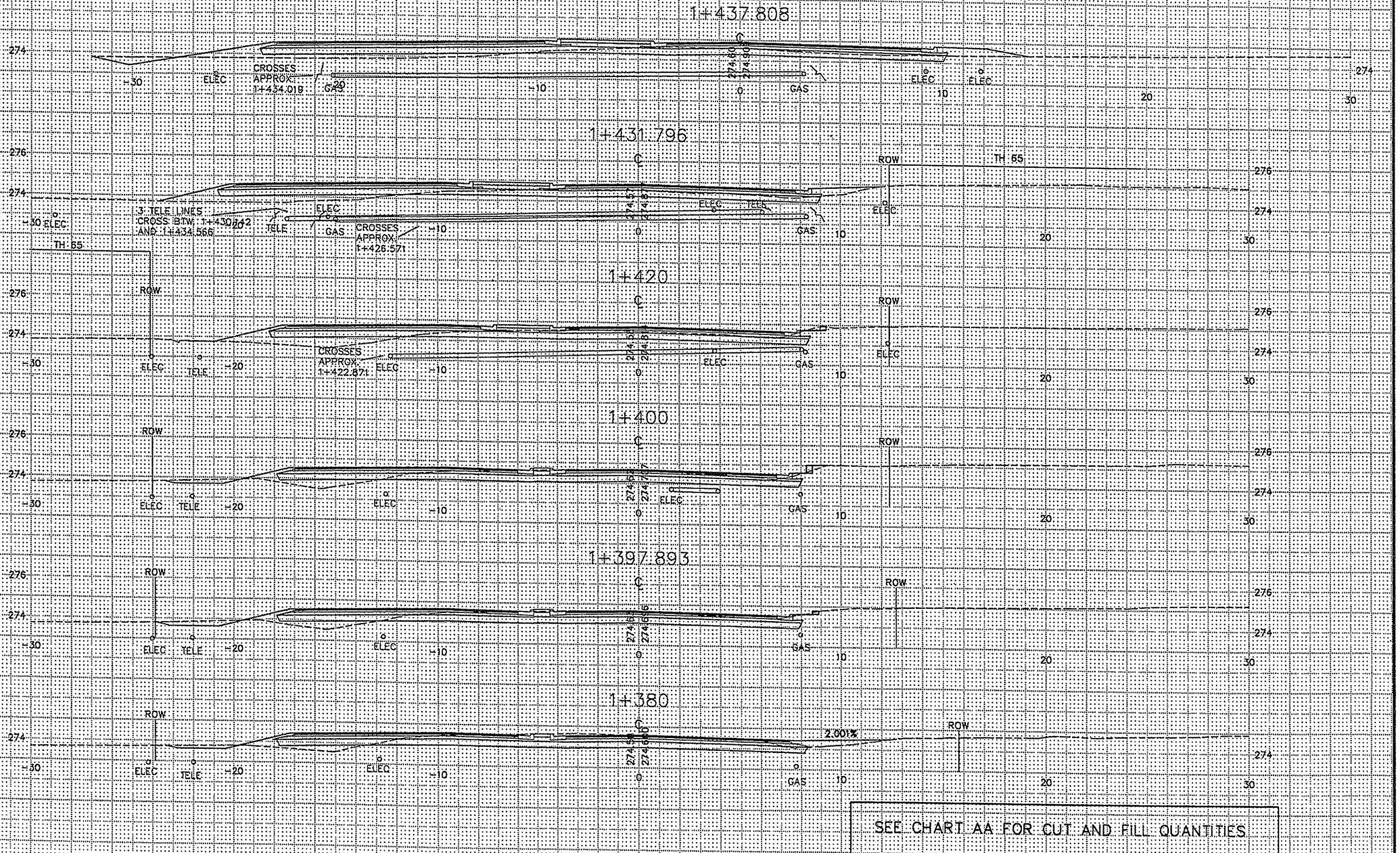
ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 0208-105 (TH 65)
STATE PROJECT NO. 02-716-03
STATE AID PROJECT NO. _____
COUNTY PROJECT NO. _____

CROSS - SECTIONS
STA. 1+307.700 TO 1+375.000

Sheet 28 of 66 Sheets

Fed. Project No. _____



SEE CHART AA FOR CUT AND FILL QUANTITIES

NO	DATE	BY	CKD	APPR	REVISION

NAME: 23-35XSections.dwg 12399 111787

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

DATE 2/14/00 REG. NO. 26212

DRAWN BY KD DATE 2/00

DESIGN BY KD DATE 2/00

CHECKED BY _____ DATE _____

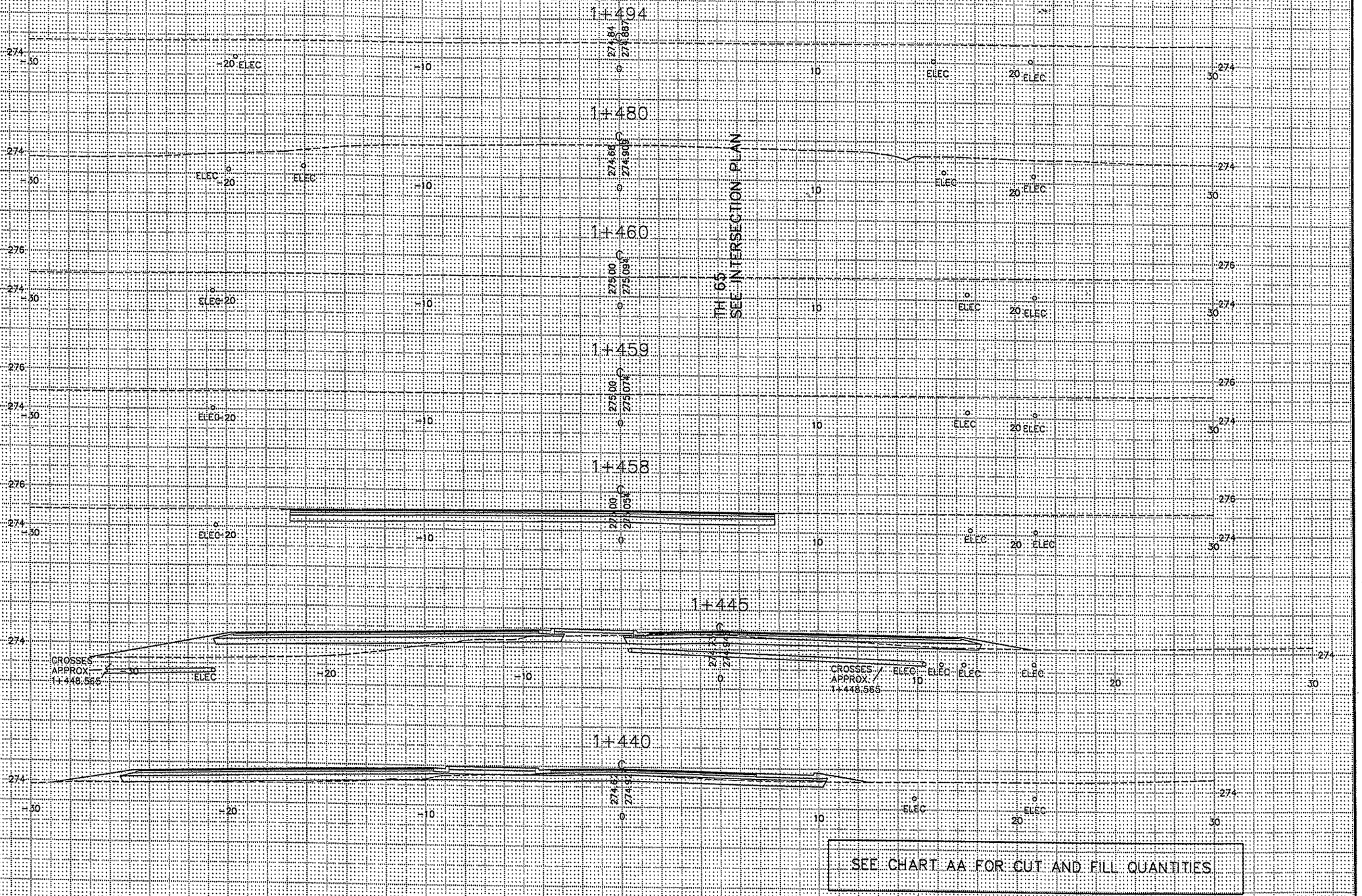
ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 0208-105 (TH 65)
STATE PROJECT NO. 02-716-03
STATE AID PROJECT NO. _____
COUNTY PROJECT NO. _____

CROSS - SECTIONS
STA. 1+380.000 TO 1+437.808

Sheet 29 of 66 Sheets

Fed. Project No. _____



NO	DATE	BY	CKD	APPR	REVISION

NAME: 23-35XSections.dwg 12299 111727

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

DATE 2/14/00 REG. NO. 26826

DRAWN BY KO DATE 2/00

DESIGN BY KO DATE 2/00

CHECKED BY _____ DATE _____

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 0208-105 (TH 65)
STATE PROJECT NO. 02-716-03
STATE AID PROJECT NO. _____
COUNTY PROJECT NO. _____

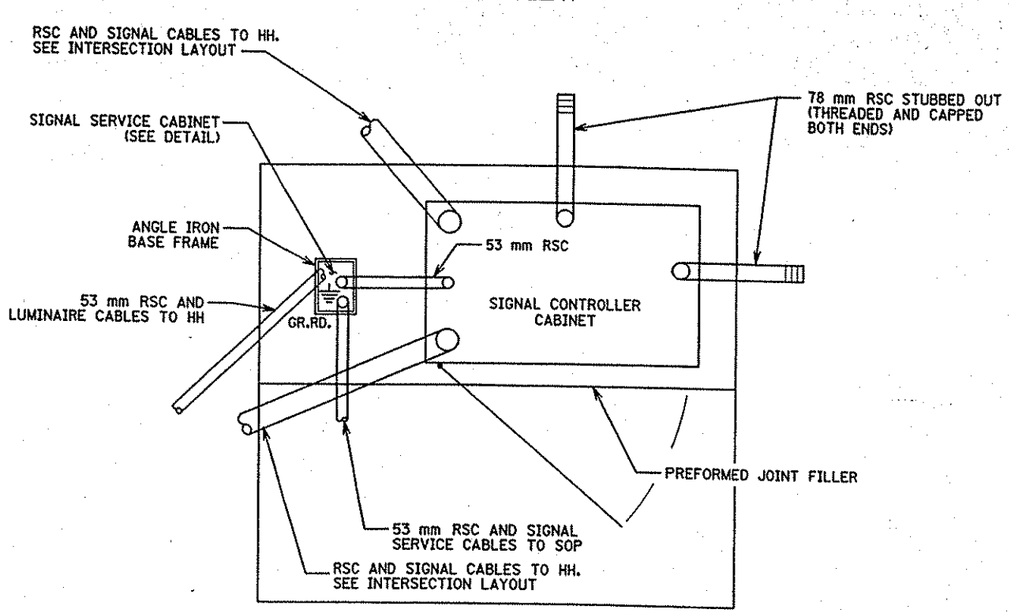
CROSS - SECTIONS
STA. 1+440.000 TO 1+494.000

Sheet 30 of 66 Sheets

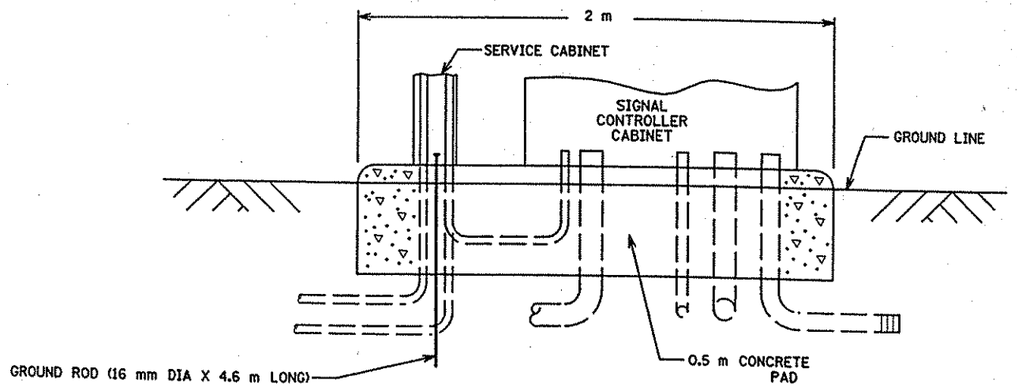
TYPICAL PAD WITH CONTROLLER CABINET AND SERVICE CABINET

SEE INTERSECTION LAYOUT FOR CABLE INFORMATION
(NOT TO SCALE)

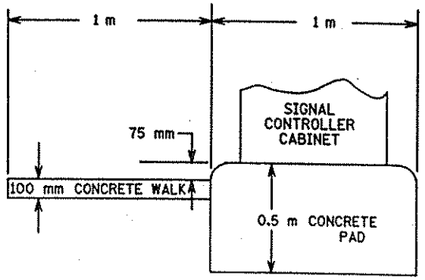
PLAN VIEW



FRONT VIEW



SIDE VIEW



NOTES:

1. THE ANCHOR RODS, NUTS AND WASHERS FOR THE CONTROLLER CABINET SHALL BE FURNISHED BY MNDOT.
2. THE UPPER PART OF THE EQUIPMENT PAD SHALL BE BEVELLED OR CHAMFERRED IN A NEAT MANNER AS DIRECTED BY THE ENGINEER.
3. THE TOP OF THE CONDUITS SHALL BE THREADED AND CAPPED AFTER INSTALLATION (UNTIL CABLES ARE INSTALLED).
4. CONDUIT SHALL PROJECT A MINIMUM OF 50 mm ABOVE THE CONCRETE AND SHALL BE LOCATED INSIDE THE CABINET WHERE DIRECTED BY THE ENGINEER, BUT SHALL NOT INTERFERE WITH THE CABINET FUNCTIONS (SUPPORTING MEMBERS, ETC.).
5. CONCRETE MIX 3A32 OR EQUAL SHALL BE USED FOR THE EQUIPMENT PAD AND SIDEWALK.
6. CONDUITS WITH BOTH ENDS TERMINATING WITHIN THE PAD SHALL NOT BE INSTALLED BELOW THE CONCRETE.
7. THE EXACT LOCATION OF CONDUITS WITHIN THE PAD SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD.

DRAWN BY: SFH	REVISED BY:	REVISED BY:	AS BUILT BY:
CHECKED: TAC DATE: 11/99	CHECKED: DATE:	CHECKED: DATE:	CHECKED: DATE:
SYSTEM I.D.: 21180			
METER ADDRESS: 13701 HWY. 65			
T.E. REQUEST NO. 2160			

EQUIPMENT PAD LAYOUT

T.H. 65 AT C.S.A.H. 116 (BUNKER LAKE BLVD.)
IN HAM LAKE, ANOKA COUNTY

TKDA
minnesota metric

CERTIFIED BY Timothy A. Chapin PROFESSIONAL ENGINEER REG. NO. 15400 DATE 12/20/99

State Proj. No. 0208-105 (T.H. 65), S.A.P. 02-716-03 Sheet No. 36 of 66 Sheets

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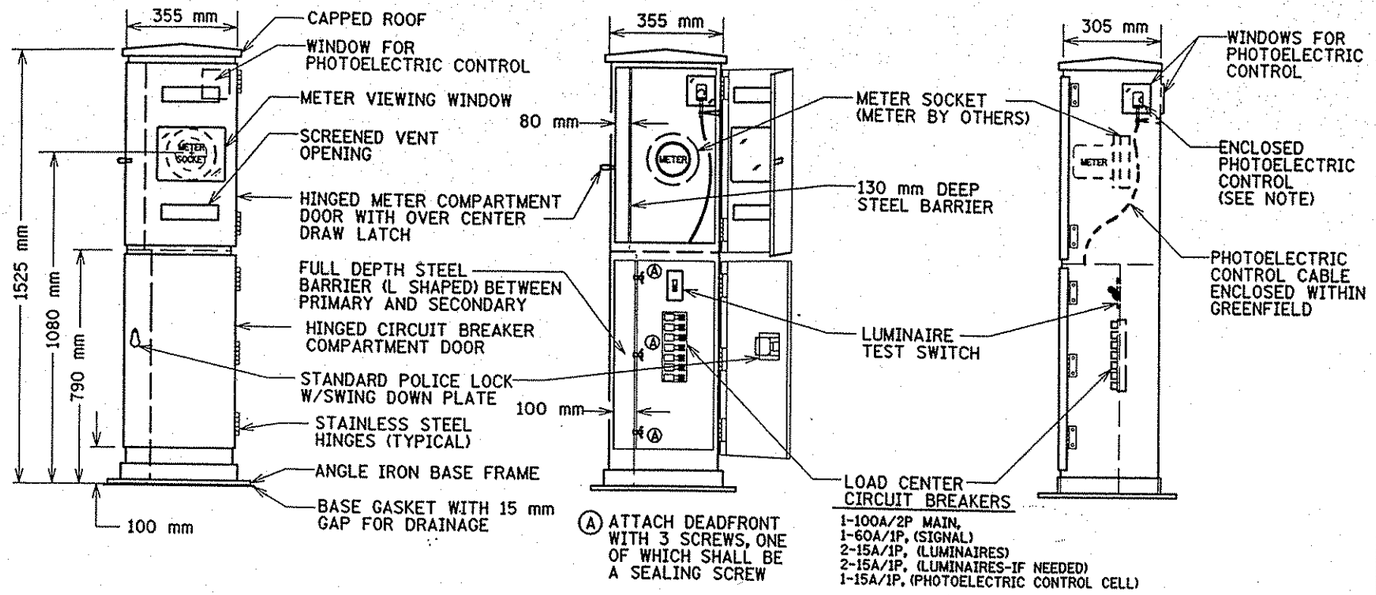
SERVICE CABINET DETAILS

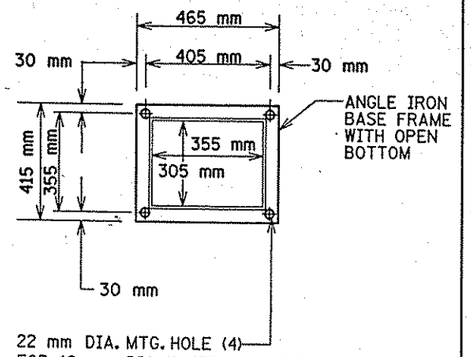


FRONT ELEVATION

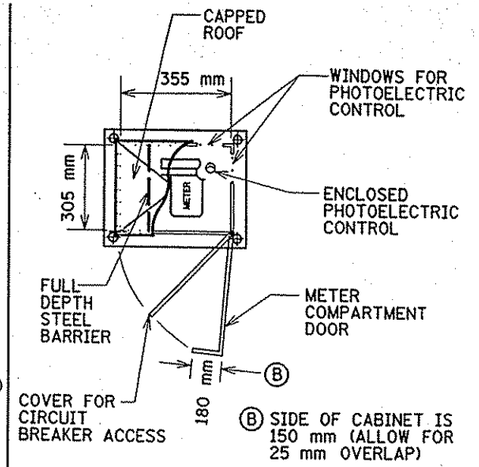
FRONT ELEVATION

RIGHT SIDE ELEVATION

CABINET BASE DETAILS

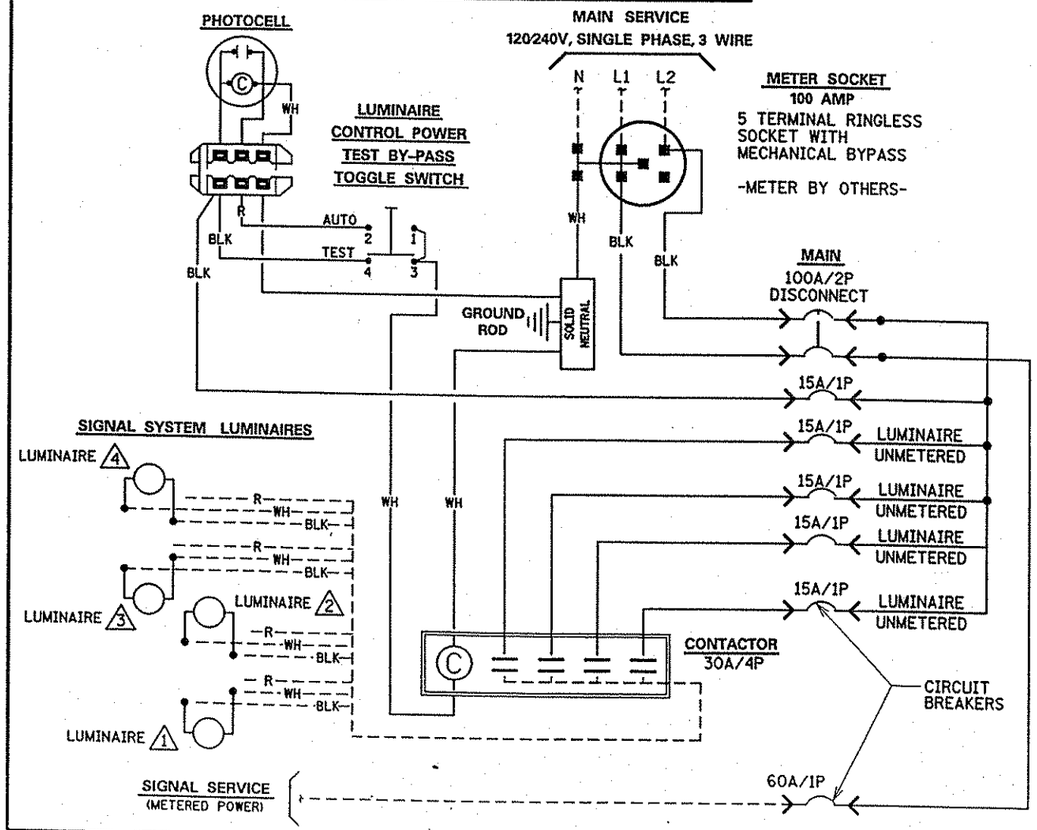


BASE LAYOUT



TOP ELEVATION

FEED POINT WIRING DIAGRAM



CONSTRUCTION NOTES

1. THE SERVICE CABINET SHALL BE FABRICATED FROM FORMED AND WELDED NO. 12 GAUGE COLD ROLLED STEEL.
2. ALL HINGES, HINGE PINS, AND LOCKS SHALL BE OF NON-CORRODING MATERIALS.
3. THE SERVICE CABINET DOORS SHALL BE ATTACHED TO THE ENCLOSURE WITH NON-CORRODING TYPE TAMPERPROOF CARRIAGE BOLTS. THE METER COMPARTMENT DOOR SHALL BE SECURED WITH AN OVER CENTER DRAW LATCH AND DUAL LOCKING FIXTURE WITH LOCK. THE CIRCUIT BREAKER COMPARTMENT DOOR SHALL BE SECURED WITH A STANDARD POLICE LOCK EQUIPPED WITH A SWING DOWN PLATE WITH TWO (2) KEYS.
4. BOTH DOOR OPENINGS SHALL BE SEALED WITH NEOPRENE GASKETS TO FORM A COMPLETE SEAL WITH THE ENCLOSURE.
5. THE VIEWING AND PHOTOELECTRIC CONTROL WINDOWS SHALL BE CLEAR LEXAN MATERIAL - 180 mm X 180 mm MINIMUM FOR VIEWING WINDOW AND 100 mm X 100 mm FOR PHOTOELECTRIC CONTROL CELL WINDOW.
6. THE SERVICE CABINET SHALL BE PROTECTED INSIDE AND OUTSIDE WITH A RUST INHIBITING RED IRON OXIDE ENAMEL PRIMER AND FINISHED WITH AN OVEN BAKED ENAMEL (SILVER).
7. CIRCUIT BREAKERS SHALL BE 120/240 VOLT AC, 60 Hz, AND SHALL BE CLEARLY MARKED WITH THE "ON" AND "OFF" POSITIONS AND IDENTIFIED WITH THE LOAD WHICH IT IS CARRYING (E.G. "SIGNALS" OR "LIGHTING"). ALL CIRCUIT BREAKERS SHALL BE CLEARLY MARKED IN A MANNER THAT WILL NOT DETERIORATE WITH MOISTURE OR AGE.
8. SHORT CIRCUIT RATING - 10,000 AIC SYMMETRICAL.
9. PROVIDE CLEARANCE TO INSTALL OR REMOVE PHOTOELECTRIC CONTROL.
10. PHOTOELECTRIC CONTROL LENS SHALL BE ORIENTED TO ELIMINATE INTERFERENCE BY MANMADE LIGHT SOURCES, PHOTOELECTRIC CONTROL LENS SHALL NORMALLY FACE NORTH AND EAST.
11. ALL CONDUIT ENTERING FOUNDATION SHALL BE SEALED WITH AN APPROVED DUCT SEALER.
12. THE SERVICE CABINET SHALL BE U.L. LISTED AND APPROVED FOR USE AS OUTDOOR WEATHER PROOF SERVICE ENTRANCE EQUIPMENT.
13. THE SERVICE CABINET SHALL BE WELDED TO THE BASE IN ACCORDANCE WITH U.L. STANDARDS.

DRAWN BY: T.WELLER	REVISED BY:	REVISED BY:	AS BUILT BY:
CHECKED: DATE: 9-97	CHECKED: DATE:	CHECKED: DATE:	CHECKED: DATE:
SYSTEM I.D.: 21180			
METER ADDRESS: 13701 HWY. 65			
T.E. REQUEST NO. 2160			

SIGNAL SERVICE CABINET DETAILS

T.H. 65 AT C.S.A.H. 116 (BUNKER LAKE BLVD.)

IN HAM LAKE, ANOKA COUNTY

CERTIFIED BY _____ REG. NO. _____ DATE _____
PROFESSIONAL ENGINEER

minnesota metric

State Proj. No. 0208-105 (T.H. 65), S.A.P. 02-716-03 Sheet No. 37 of 66 Sheets

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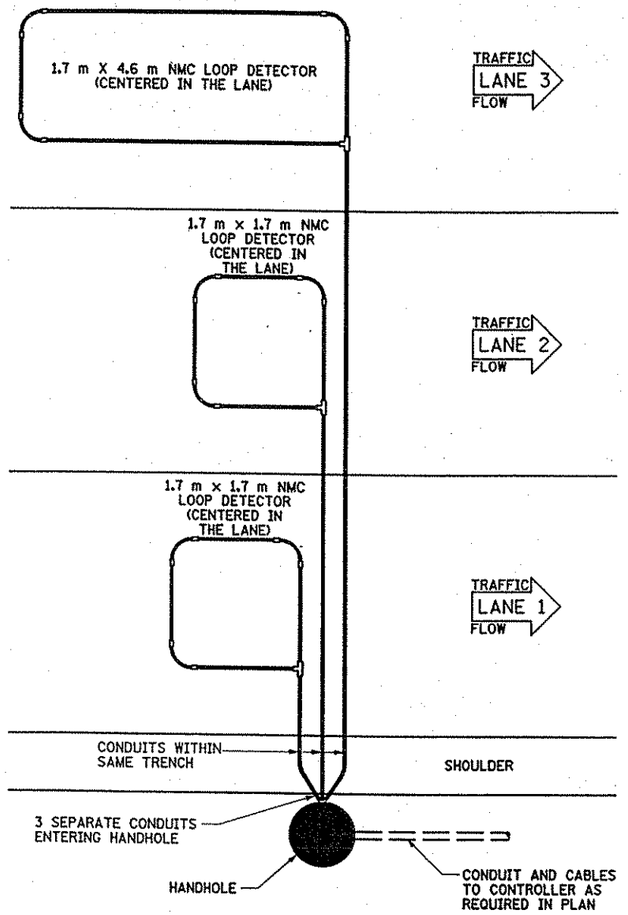
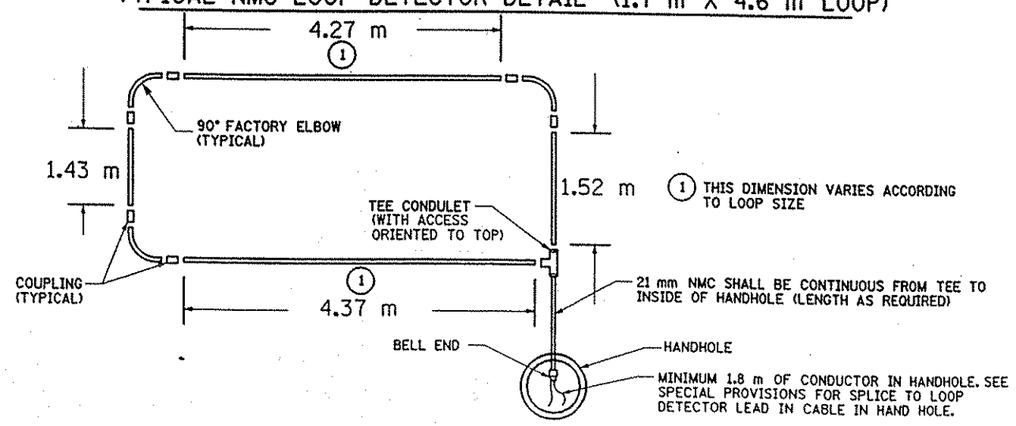
TYPICAL NMC LOOP DETECTOR LAYOUT



GENERAL NOTES:

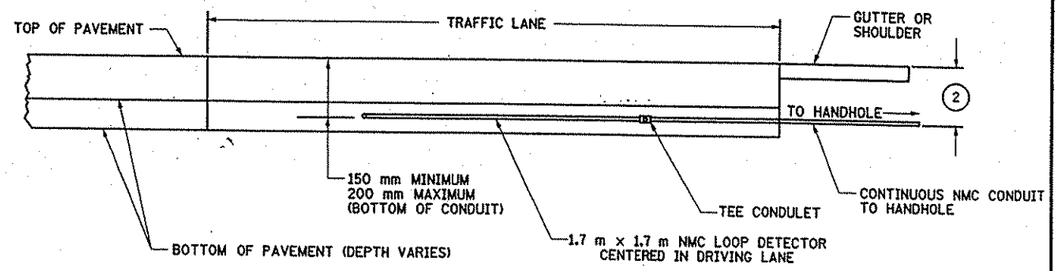
1. SEE SPECIAL PROVISIONS FOR REQUIRED LOOP DETECTOR CONDUCTORS AND SPLICE KITS.
2. THE 20 mm NON-METALLIC CONDUIT (NMC) AND FITTINGS SHALL BE SCHEDULE 40 HEAVY WALL RIGID POLYVINYL CHLORIDE (PVC). SEE SPEC. 3803.
3. THREE CORNERS OF EACH LOOP DETECTOR SHALL BE A 90° FACTORY ELBOW (150 mm RADIUS). THE FOURTH SHALL BE A NMC TEE CONDULET.
4. APPROVED PVC PRIMER AND CEMENT SHALL BE USED FOR THE PVC JOINTS.
5. ALL SLACK MUST BE REMOVED FROM LOOP DETECTOR CONDUCTORS WITHIN THE NMC.
6. THE LOOP DETECTOR ROADWAY CONDUCTORS (1/C#14) SHALL BE TWISTED NINE TURNS PER METER FROM THE NMC TEE CONDULET TO THE HANDHOLE.
7. ATTACH A FERROUS METAL ITEM TO THE INTERIOR OF THE TEE CONDULET COVER.
8. EACH LOOP DETECTOR CONDUIT TO THE HANDHOLE SHALL BE SLOPED TOWARDS THE HANDHOLE.
9. LOOP DETECTOR CONDUITS TO THE HANDHOLE MAY BE PLACED WITHIN THE SAME TRENCH.
10. THE LOOP DETECTOR ROADWAY CONDUCTORS SHALL END IN THE HANDHOLE.
11. NO SPLICES ALLOWED IN CONDUIT TO TEE CONDUIT.
12. THE LOOP DETECTOR ROADWAY CONDUCTORS AND THE LOOP DETECTOR LEAD-IN CABLE CONDUCTORS SHALL BE PROPERLY PREPARED AND CLEANED BEFORE SPLICING.
13. SPLICE KITS SHALL BE INSTALLED IN HANDHOLES IN SUCH A MANNER AS TO ENSURE THAT EACH SPLICE KIT IS SUSPENDED AND/ OR SECURED NEAR THE TOP OF THE HANDHOLE TO THE SATISFACTION OF THE ENGINEER. (PLACING SPLICE KITS ON TOP OF THE ELECTRICAL CABLES AND CONDUCTORS IS NOT ACCEPTABLE.)
14. TYPICAL SIZE OF LOOP DETECTORS ARE 1.7 m x 1.7 m, 1.7 m x 3.0 m, 1.7 m x 4.6 m AND 1.7 m x 6.1 m. REFER TO INTERSECTION LAYOUT FOR SPECIFIC LOOP DETECTORS TO BE PLACED.
15. ALL LOOP DETECTORS SHALL HAVE 4 TURNS OF CONDUCTORS.

TYPICAL NMC LOOP DETECTOR DETAIL- (1.7 m X 4.6 m LOOP)

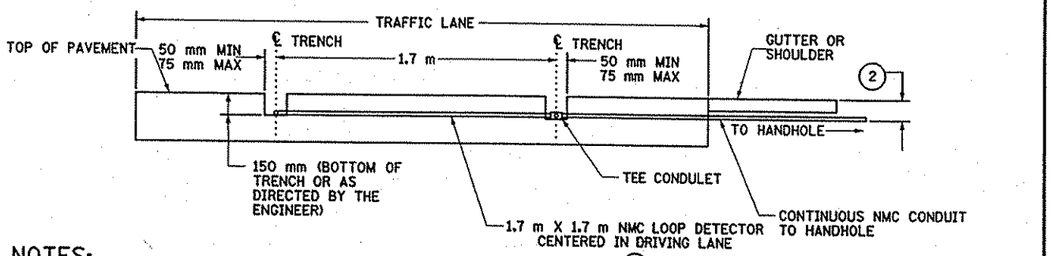


TYPICAL NMC LOOP DETECTOR INSTALLATION

NEW BITUMINOUS OR CONCRETE PAVEMENT



INPLACE BITUMINOUS PAVEMENT



NOTES:

(2) VARIABLE DEPTH-MAINTAIN DRAINAGE TO HANDHOLE

1. USE THE ACTUAL LOOP DETECTOR TO BE PLACED FOR MARKING THE PAVEMENT FOR MILLING LOCATION.
2. MILL PAST THE CENTER OF THE CONDUIT TO BE PLACED.
3. ACHIEVE A MINIMUM 50 mm VERTICAL EDGE ON ALL CUTS.
4. AN AIR COMPRESSOR UNIT (50 HP) IS REQUIRED FOR REMOVING ALL LOOSE MATERIAL FROM TRENCH PRIOR TO TACK COAT APPLICATION.
5. APPLY A TACK COAT AT A UNIFORM RATE TO THE BOTTOM AND EDGES OF THE MILLED AREA USE A EMULSIFIED ASPHALT PER SPEC. 2357.2A
6. USE MIXTURE TYPE 41 WEARING COURSE (TYPE 41WEA50055) TO BACKFILL THE TRENCH. OTHER WEARING COURSE MIXTURE TYPES ARE ALLOWED WHEN APPROVED BY ENGINEER. (AGGREGATE SIZE "A" IS REQUIRED).
7. THE USE OF PETROLEUM DISTILLATES AS AN ANTI-ADHESIVE AGENT IS NOT ALLOWED. REFER TO MN/DOT TECH. MEMO NO. 94-16-MRE-05 DATED 3/10/94 FOR ADDITIONAL INFORMATION.
8. COMPACTION SHALL BE OBTAINED BY THE ORDINARY COMPACTION METHOD. BACKFILL THE TRENCH WITH A MINIMUM OF TWO LIFTS AND COMPACT EACH LIFT. BEFORE COMPACTING THE FIRST LIFT ENSURE THAT THERE IS ADEQUATE MIXTURE ON EACH SIDE AND ABOVE THE CONDUIT SO THAT THE CONDUIT IS NOT DAMAGED DURING COMPACTION OPERATIONS.
9. THE COMPACTED MIXTURE IN THE TRENCH SHOULD BE LEFT 6 mm TO 12 mm ABOVE THE ADJACENT PAVEMENT SURFACE TO PROVIDE FOR ADDITIONAL COMPACTION BY TRAFFIC.
10. APPLY A BITUMINOUS FOG SEAL ON THE NEWLY COMPACTED MIXTURE TO PROVIDE AN ADDITIONAL SURFACE SEAL (EMULSIFIED ASPHALT 2355.2A). DRY SAND SHALL BE SPREAD ON THE FOG SEAL TO PREVENT MATERIAL PICKUP AND TRACKING.

DRAWN BY: NAME DMC	REVISED BY:	REVISED BY:	AS BUILT BY:
CHECKED: BAF DATE: 6/97	CHECKED: DATE:	CHECKED: DATE:	CHECKED: DATE:
SYSTEM I.D. : 21180			
METER ADDRESS: 13701 HWY. 65			
T.E. REQUEST NO. 2160			

PREFORMED NON-METALLIC CONDUIT (NMC) LOOP DETECTOR DETAILS

T.H. 65 AT C.S.A.H. 116 (BUNKER LAKE BLVD.)

IN HAM LAKE, ANOKA COUNTY

CERTIFIED BY _____ REG. NO. _____ DATE _____
PROFESSIONAL ENGINEER

minnesota metro

State Proj. No. 0208-105 (T.H. 65), S.A.P. 02-716-03 Sheet No. 38 of 66 Sheets

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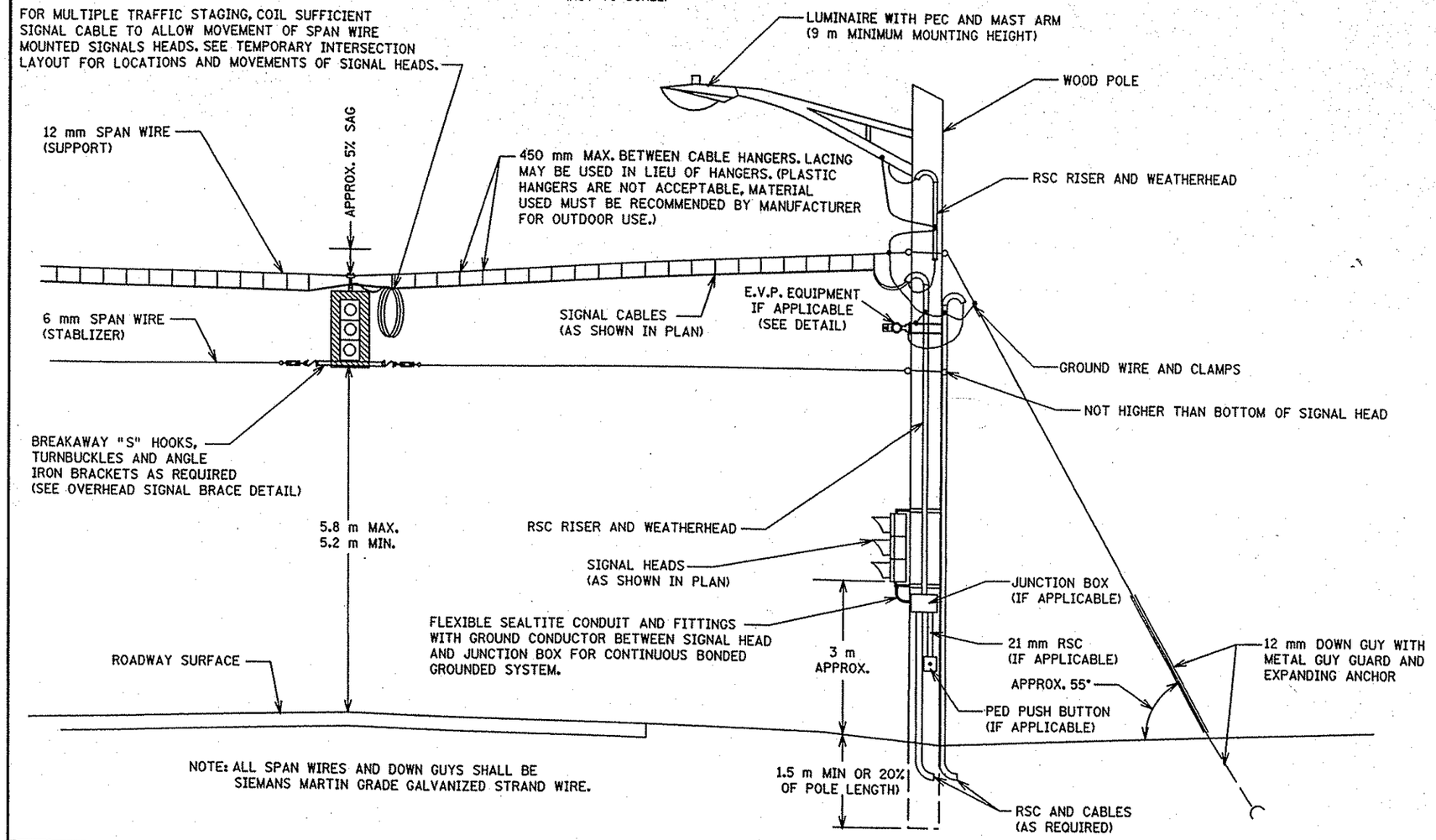
TYPICAL WOOD POLE AND SPAN WIRE MOUNTED TRAFFIC SIGNALS

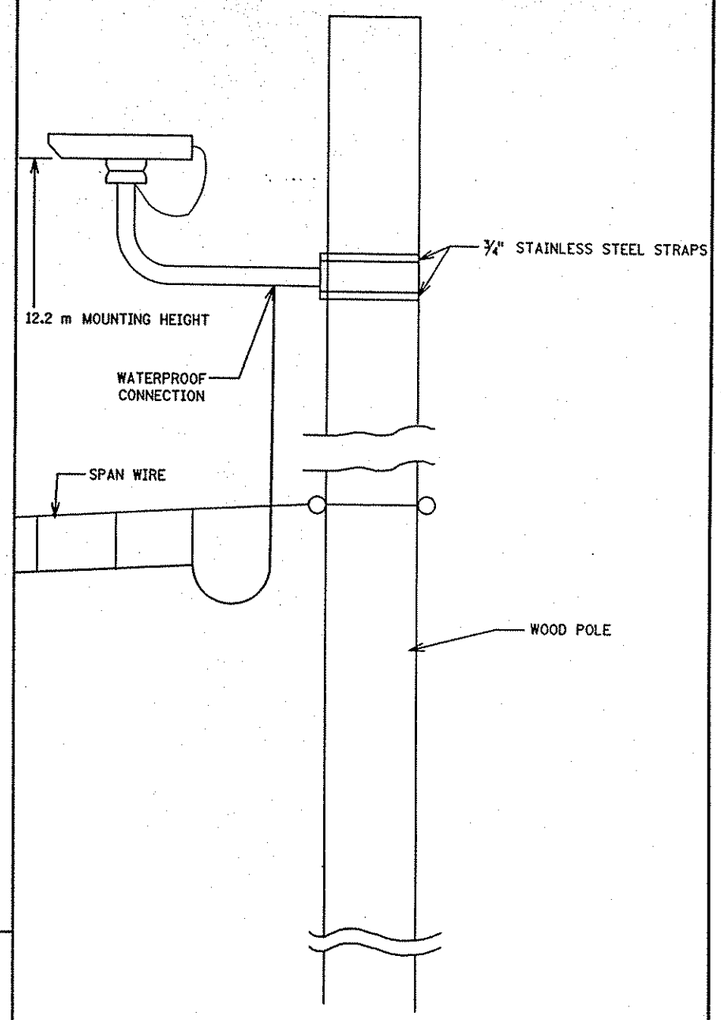
(NOT TO SCALE)



NOTE: ALL SPAN WIRES AND DOWN GUYS SHALL BE SIEMANS MARTIN GRADE GALVANIZED STRAND WIRE.

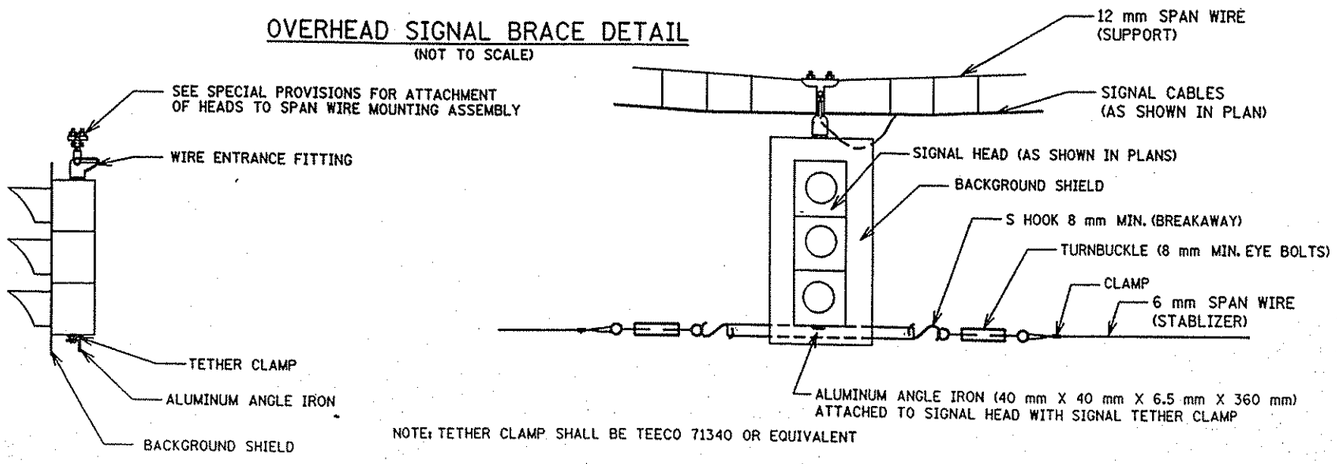
IMAGE SENSOR WOOD POLE MOUNT

(NOT TO SCALE)



OVERHEAD SIGNAL BRACE DETAIL

(NOT TO SCALE)



NOTE: TETHER CLAMP SHALL BE TEECO 71340 OR EQUIVALENT

DRAWN BY: SFH	REVISED BY:	REVISED BY:	AS BUILT BY:
CHECKED: TAC DATE: 11/99	CHECKED: DATE:	CHECKED: DATE:	CHECKED: DATE:

SYSTEM I.D.: 21180
METER ADDRESS: 13701 HWY. 65
T.E. REQUEST NO. 2160

TKDA
minnesota metric

TEMPORARY SIGNAL SYSTEM DETAIL
TEMPORARY SYSTEM
C.S.A.H. 116
T.H. 65 AT (BUNKER LAKE BLVD.)
IN HAM LAKE, ANOKA COUNTY

CERTIFIED BY Timothy A. Chalgol PROFESSIONAL ENGINEER REG. NO. 15400 DATE 12/20/99

State Proj. No. 0208-105 (T.H. 65), S.A.P. 02-716-03 Sheet No. 39 of 66 Sheets

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NOTES:

1) SALVAGE TEMPORARY SIGNAL SYSTEM (INCIDENTAL TO CONSTRUCTION OF PERMANENT SIGNAL SYSTEM - SEE SPECIAL PROVISIONS).

2) SEE SPECIAL PROVISIONS FOR PEDESTRIAN INDICATIONS, LED INDICATIONS, AND STATE FURNISHED MATERIALS.

3) LOCATIONS OF POLES, PEDESTALS, PAD, HANDHOLES AND LOOP DETECTORS SHALL BE DETERMINED BY MN/DOT TRAFFIC OFFICE PERSONNEL.

4) FOR TYPE "D" SIGNS AND PAVEMENT MARKINGS SEE SHEET NO. 40.

5) A 21 mm HALF COUPLING, 21 mm PIPE NIPPLE AND CONDUIT OUTLET BODY FOR EMERGENCY VEHICLE PRE-EMPTION EQUIPMENT SHALL BE FURNISHED AND INSTALLED 1.8 m FROM THE END OF EACH MAST ARM.

6) FOR EQUIPMENT PAD LAYOUT SEE SHEET NO. 36.

7) FOR SERVICE CABINET DETAILS SEE SHEET NO. 37.

8) FOR NMC LOOP DETAILS SEE SHEET NO. 38.

0 5 10 15 m

MATCH LINE C

MATCH LINE A

MATCH LINE B

MATCH LINE D

BUNKER LAKE BLVD. 85TH %TILE 40 M.P.H.

T.H. 65 N.B.
60 M.P.H. SPEED LIMIT

T.H. 65 S.B.
60 M.P.H. SPEED LIMIT

53 mm NMC
1-2/C #14

78 mm RSC
2-2/C #14

78 mm RSC
2-12/C #12
3-3/C #12
1-3/C #20
2-2/C #14

103 mm RSC
3-12/C #12
5-3/C #12
1-3/C #20
7-2/C #14

78 mm RSC
2-12/C #12
3-3/C #12
1-3/C #20
5-2/C #14

103 mm RSC
3-12/C #12
3-3/C #12
1-3/C #20
4-2/C #14

78 mm RSC
1-3/C #12

2-103 mm RSC
5-12/C #12
9-3/C #12
2-3/C #20
9-2/C #14

2-103 mm RSC
5-12/C #12
9-3/C #12
2-3/C #20
12-2/C #14

53 mm NMC
1-2/C #14

53 mm NMC
2-2/C #14

78 mm RSC
2-2/C #14

Ø6 & Ø1

Ø8 & Ø3

Ø4 & Ø7

Ø2 & Ø5

D4-2 D4-3 D7-1 D7-2 D5-1 D5-2 D1-2 D1-1 D3-2 D3-1 D8-3 D8-2

(4) PA100 POLE FOUNDATION
TYPE PA100-A-15.2-D12.2-2.7 (DAVIT AT 350°)
2-SWING AWAY HINGES
2-ONE WAY SIGNALS OVERHEAD AT 0 m AND 3.4 m
2-TYPE 10B POLE MOUNTED AT 90° AND 180°
ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT
LUMINAIRE-250 W HPS
2-PEDESTRIAN PUSH BUTTONS AND SIGNS (R10-4B)
2-TYPE D SIGNS (D-1 AND D-2)
2-SIGNS (R6-1L AND R6-1R)
EXTEND INTO HH 9
78 mm RSC
2-12/C #12
3-3/C #12
1-3/C #20

(3) PEDESTAL FOUNDATION
4.6 m PEDESTAL POLE AND BASE
TYPE 6D
PEDESTRIAN PUSH BUTTON AND SIGN (R10-4B)
EXTEND INTO HH 8
78 mm RSC
1-12/C #12
2-3/C #12

(2) PA100 POLE FOUNDATION
TYPE PA100-A-12.2-D12.2-2.7 (DAVIT AT 350°)
2-ONE WAY SIGNALS OVERHEAD AT 0 m AND 3.4 m
2-TYPE 10B POLE MOUNTED AT 90° AND 180°
ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT
LUMINAIRE-250 W HPS
2-PEDESTRIAN PUSH BUTTONS AND SIGNS (R10-4B)
2-SIGNS (R6-1L AND R6-1R)
EXTEND INTO HH 4
78 mm RSC
2-12/C #12
4-3/C #12
1-3/C #20

(5) PA100 POLE FOUNDATION
TYPE PA100-A-13.7-D12.2-2.7 (DAVIT AT 350°)
2-ONE WAY SIGNALS OVERHEAD AT 0 m AND 3.4 m
TYPE 10A POLE MOUNTED AT 270°
TYPE 10B POLE MOUNTED AT 0°
ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT
LUMINAIRE-250 W HPS
PEDESTRIAN PUSH BUTTON AND SIGN (R10-4B)
2-SIGNS (R6-1L AND R6-1R)
EXTEND INTO HH 15
78 mm RSC
2-12/C #12
3-3/C #12
1-3/C #20

(6) PEDESTAL FOUNDATION
4.6 m PEDESTAL POLE AND BASE
TYPE 6A
2-R9-3a SIGNS (NO PED) FACING POLES 1 & 5
EXTEND INTO HH 16
78 mm RSC
1-12/C #12

(1) PA100 POLE FOUNDATION
TYPE PA100-A-12.2-D12.2-2.7 (DAVIT AT 350°)
2-SWING AWAY HINGES
2-ONE WAY SIGNALS OVERHEAD AT 0 m AND 3.4 m
TYPE 10A POLE MOUNTED AT 90°
TYPE 10B POLE MOUNTED AT 180°
ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT
LUMINAIRE-250 W HPS
PEDESTRIAN PUSH BUTTON AND SIGN (R10-4B)
2-TYPE D SIGNS (D-1 AND D-2)
2-SIGNS (R6-1L AND R6-1R)
SIGN (R9-3a) FACING PEDESTAL 6
EXTEND INTO HH 17
78 mm RSC
2-12/C #12
3-3/C #12
1-3/C #20

(A) EQUIPMENT PAD SEE SHEET NO. 36
SERVICE CABINET SEE SHEET NO. 37
CONTROLLER CABINET AND CONTROLLER

SERVICE CABINET TO CONTROLLER CABINET
53 mm RSC
2-1/C #6
1-1/C #6 INS. GR.

SERVICE CABINET TO HH 17
53 mm RSC
2-3/C #12

SERVICE CABINET TO HH 18
53 mm RSC
3-1/C #2

CONTROLLER CABINET TO HH 1
2-103 mm RSC
5-12/C #12
7-3/C #12
2-3/C #20
14-2/C #14

CONTROLLER CABINET TO HH 17
2-103 mm RSC
5-12/C #12
4-3/C #12
2-3/C #20
4-2/C #14

STUB OUT THREAD AND CAP
2-78 mm RSC

(B) SOP - INPLACE WOOD POLE
53 mm RSC RISER WITH WEATHERHEAD AND CONDUIT TO HH 18
3-1/C #2

LOOP DETECTORS

NUMBER	SIZE (METERS)	LOCATION
D1-1	1.7 x 1.7	12
D1-2	1.7 x 3.0	3
D2-1	1.7 x 1.7	168
D2-2	1.7 x 1.7	168
D3-1	1.7 x 1.7	12
D3-2	1.7 x 1.7	3
D4-1	1.7 x 1.7	76
D4-2	1.7x1.7, 1.7x4.6	AS SHOWN
D4-3	2-1.7 x 1.7	1.5 & 6
D5-1	1.7 x 1.7	12
D5-2	1.7 x 3.0	3
D6-1	1.7 x 1.7	168
D6-2	1.7 x 1.7	168
D7-1	1.7 x 1.7	12
D7-2	1.7 x 1.7	3
D8-1	1.7 x 1.7	76
D8-2	1.7x1.7, 1.7x4.6	AS SHOWN
D8-3	2-1.7 x 1.7	1.5 & 6

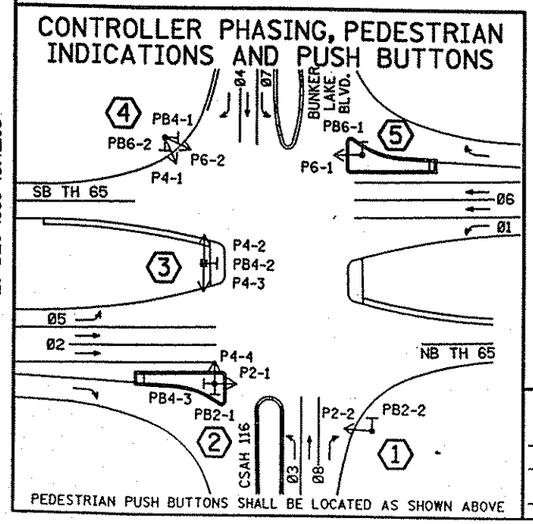
LOCATION = DISTANCE FROM STOP LINE OR CROSSWALK TO DETECTOR IN METERS

SIGNAL FACES

FACE	R	Y	G	RLTA	YLTA	GLTA
1-1, 1-2				←	←	←
2-1, 2-2, 2-3	●	●	●			
3-1, 3-2				←	←	←
4-1, 4-2, 4-3	●	●	●			
5-1, 5-2				←	←	←
6-1, 6-2, 6-3	●	●	●			
7-1, 7-2				←	←	←
8-1, 8-2, 8-3	●	●	●			

EACH SIGNAL FACE SHALL HAVE A BACKGROUND SHIELD.
ALL SIGNAL INDICATIONS SHALL BE 300 mm.
ALL SIGNAL INDICATIONS SHALL BE LED.

CONTROLLER PHASING, PEDESTRIAN INDICATIONS AND PUSH BUTTONS



PEDESTRIAN PUSH BUTTONS SHALL BE LOCATED AS SHOWN ABOVE

SIGNAL SYSTEM OPERATION

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

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DRAWN BY: SJS	REVISED BY:	REVISED BY:	AS BUILT BY:
CHECKED: TAC DATE: 11/99	CHECKED: DATE:	CHECKED: DATE:	CHECKED: DATE:

SYSTEM I.D.: 21180
METER ADDRESS: 13701 HWY. 65
T.E. REQUEST NO. 2160

INTERSECTION LAYOUT

T.H. 65 AT C.S.A.H. 116 (BUNKER LAKE BLVD.)
IN HAM LAKE, ANOKA COUNTY

CERTIFIED BY Timothy D. Chilgren PROFESSIONAL ENGINEER REG. NO. 15400 DATE 12/20/99

State Proj. No. 0208-105 (T.H. 65), S.A.P. 02-716-03 Sheet No. 41 of 66 Sheets

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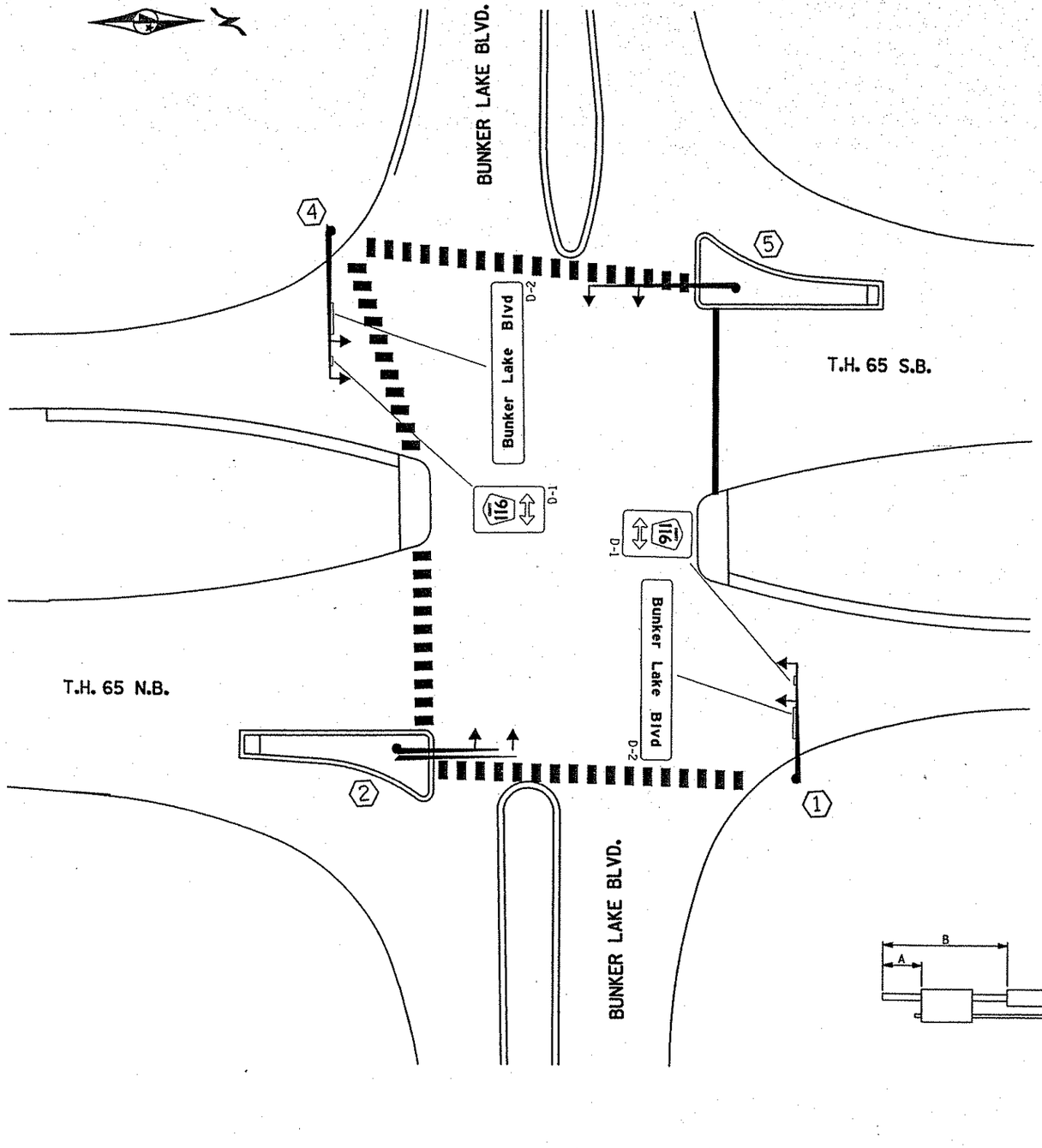
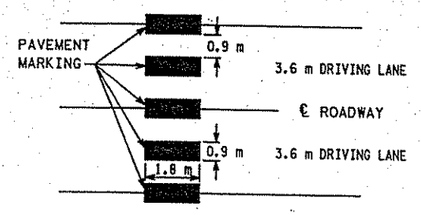


CROSSWALK DETAIL

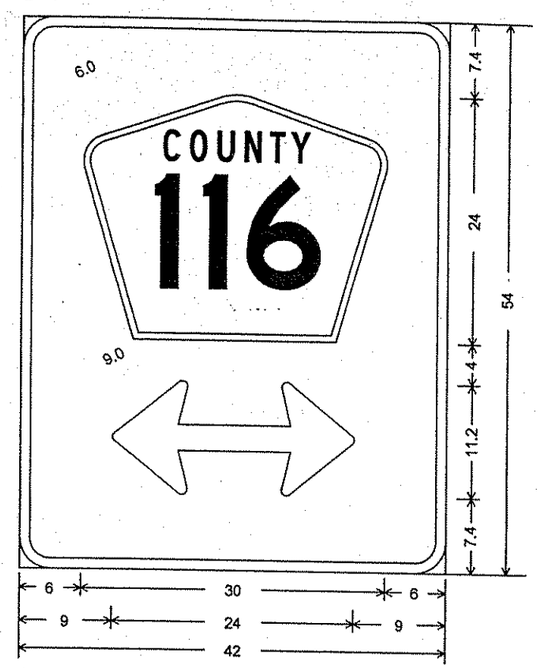
PEDESTRIAN PAVEMENT MARKING DETAIL
(PERPENDICULAR INTERSECTION)



NOTES:

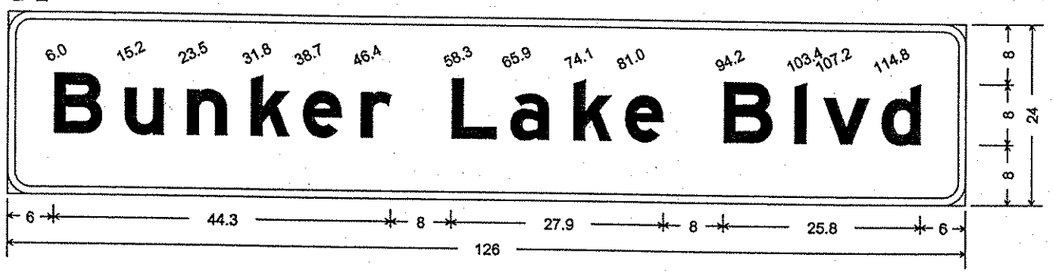
1. CROSSWALK AND STOP LINE MARKINGS SHALL BE EPOXY.
2. CROSSWALK AND STOP LINE MARKINGS SHALL BE INCIDENTAL TO THE SIGNAL SYSTEMS.
3. CROSSWALK MARKINGS TO BE CENTERED AND ALIGNED ON CENTER LINE AND LANE LINES. MAKE ADJUSTMENTS IN MEDIAN AREA.
4. FOR CROSSWALK MARKINGS, A MINIMUM OF 460 mm CLEAR DISTANCE MUST BE LEFT ADJACENT TO CURB.
5. AT SKEWED CROSSWALKS, THE BLOCKS ARE TO BE REMAIN PARALLEL TO THE LANE LINES.
6. WHITE STOP LINES SHALL BE 600 mm WIDE.
7. REMOVE ALL CONFLICTING PAVEMENT MARKINGS AS DIRECTED BY THE ENGINEER.

D-1



3.0" Radius, 1.0" Border, White on Green;
Double Headed Arrow 5 - 24.0" 0°;

D-2



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

TYPE "D" SIGN NOTES:

1) FOR STRUCTURAL DETAILS, TYPE "D" SIGNS, SEE STANDARD SIGNS MANUAL, PG. 105A & 105B.
2) FOR TYPE D STRINGER AND PANEL JOINT DETAIL, SEE STANDARD SIGNS MANUAL.
3) FURNISHING AND INSTALLING TYPE "D" SIGNS SHALL BE INCIDENTAL TO THE SIGNAL SYSTEM.

TYPE "D" SIGNS

SIGN PANEL	SIZE	NO. REQ.	NO. OF POSTS PER SIGN	POST SPACING	SQ. FT. PER SIGN	A	B	MAST ARM
D-1	42"×54"	2	2	30"	15.75	4'		1.4
D-2	24"×126"	2	3	45"	21.0		14'	1.4

OVERLAYS

CODE NO.	QUANTITY	SIZE	LEGEND	SQ. FT. PER OVERLAY
M1-6A	2	30"×24"	CO. 116	5

TYPE "D" SIGN DETAILS
IN ENGLISH UNITS

DRAWN BY: BDP	REVISED BY:	REVISED BY:	AS BUILT BY:
CHECKED: TAC DATE: 11/99	CHECKED: DATE:	CHECKED: DATE:	CHECKED: DATE:
SYSTEM I.D.: 21180			
METER ADDRESS: 13701 HWY. 65			
T.E. REQUEST NO. 2160			

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TYPE "D" SIGN DETAILS

T.H. 65 AT C.S.A.H. 116 (BUNKER LAKE BLVD.)
IN HAM LAKE, ANOKA COUNTY

CERTIFIED BY Timothy A. Chadgil PROFESSIONAL ENGINEER REG. NO. 15400 DATE 12/20/99

State Proj. No. 0208-105 (T.H. 65), S.A.P. 02-716-03 Sheet No. 40 of 66 Sheets

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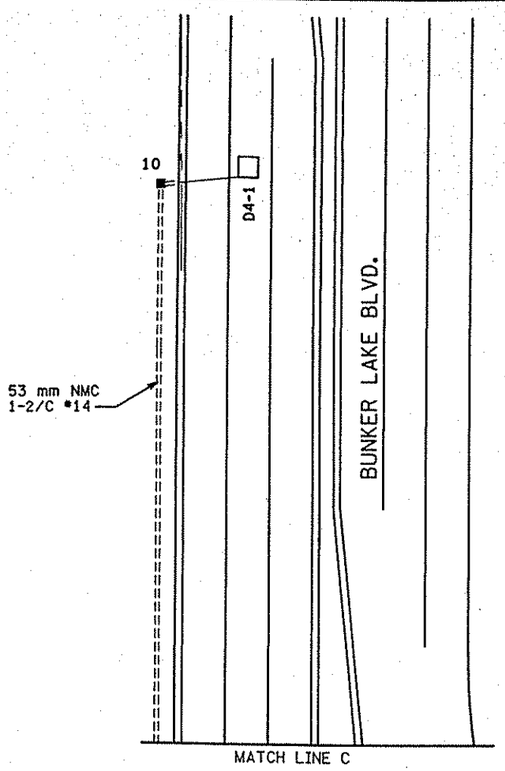

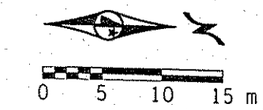

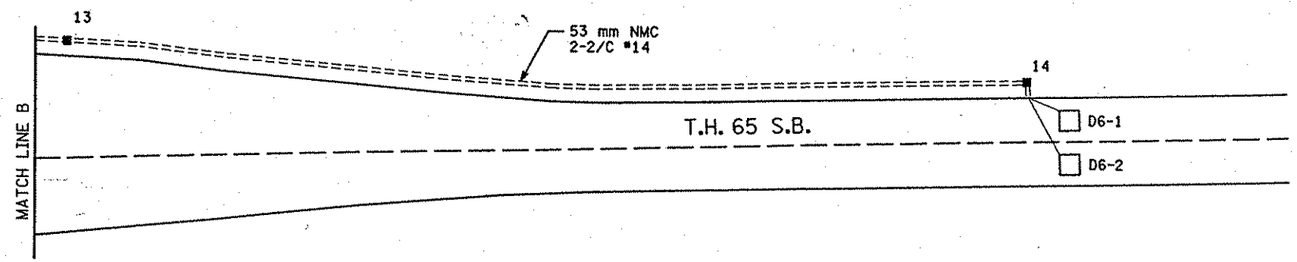

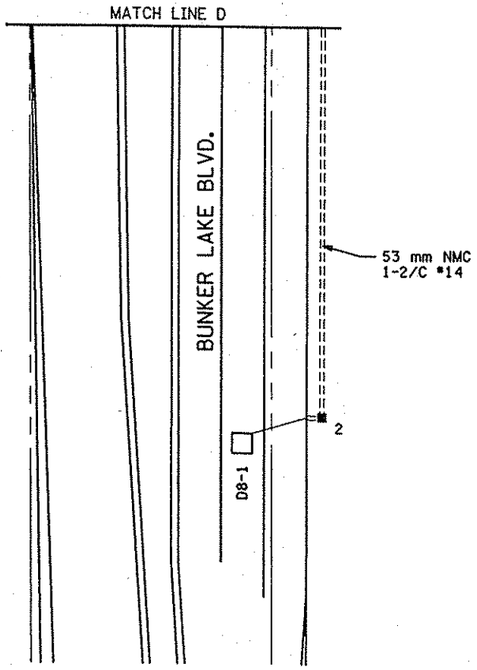

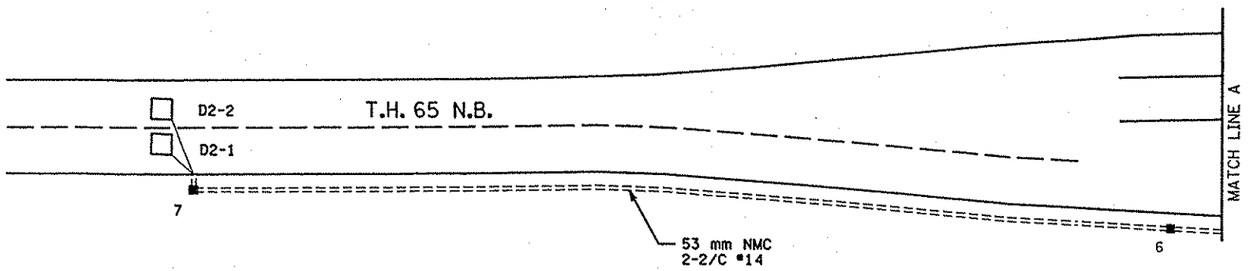

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DRAWN BY: SJS	REVISED BY:	REVISED BY:	AS BUILT BY:
CHECKED: TAC DATE: 11/99	CHECKED: DATE:	CHECKED: DATE:	CHECKED: DATE:

SYSTEM I.D.: 21180
METER ADDRESS: 13701 HWY. 65
T.E. REQUEST NO. 2160

MATCH LINES

T.H. 65 AT C.S.A.H. 116 (BUNKER LAKE BLVD.)
IN HAM LAKE, ANOKA COUNTY

CERTIFIED BY Todd S. Clough PROFESSIONAL ENGINEER REG. NO. 15400 DATE 12/20/99

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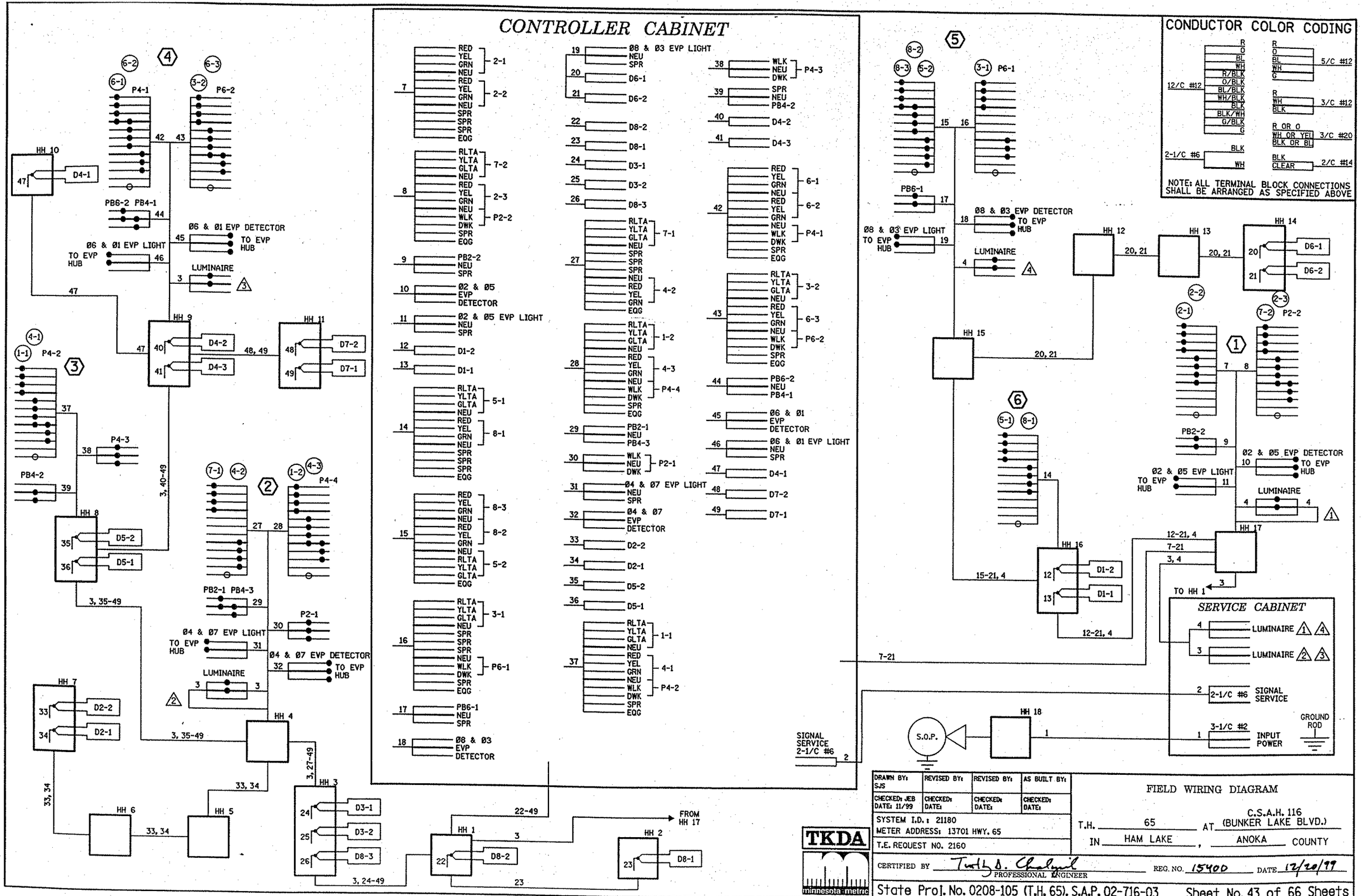
State Proj. No. 0208-105 (T.H. 65), S.A.P. 02-716-03 Sheet No. 42 of 66 Sheets


CONTROLLER CABINET
RED YEL GRN NEU 2-1
RED YEL GRN NEU SPR SPR SPR EQG 2-2
RLTA YLTA GLTA NEU 7-2
RED YEL GRN NEU WLK DWK SPR EQG 2-3 P2-2
PB2-2 NEU SPR 9
Ø2 & Ø5 EVP DETECTOR 10
Ø2 & Ø5 EVP LIGHT NEU SPR 11
D1-2 12
D1-1 13
RLTA YLTA GLTA NEU SPR SPR SPR NEU RED YEL GRN EQG 4-2
RLTA YLTA GLTA NEU 5-1
RED YEL GRN NEU SPR SPR SPR EQG 8-1
RED YEL GRN NEU RED YEL GRN NEU SPR SPR SPR EQG 8-3 8-2 5-2
RLTA YLTA GLTA NEU SPR SPR SPR NEU WLK DWK SPR EQG 3-1 P6-1
PB6-1 NEU SPR 17
Ø8 & Ø3 EVP DETECTOR 18
Ø8 & Ø3 EVP LIGHT NEU SPR 19
D6-1 20
D6-2 21
D8-2 22
D8-1 23
D3-1 24
D3-2 25
D8-3 26
RLTA YLTA GLTA NEU SPR SPR SPR NEU RED YEL GRN EQG 7-1 4-2
RLTA YLTA GLTA NEU RED YEL GRN NEU WLK DWK SPR EQG 1-2 4-3 P4-4
PB2-1 NEU PB4-3 29
WLK NEU DWK P2-1 30
Ø4 & Ø7 EVP LIGHT NEU SPR 31
Ø4 & Ø7 EVP DETECTOR 32
D2-2 33
D2-1 34
D5-2 35
D5-1 36
RLTA YLTA GLTA NEU RED YEL GRN NEU WLK DWK SPR EQG 1-1 4-1 P4-2
WLK NEU DWK P4-3 38
SPR NEU PB4-2 39
D4-2 40
D4-3 41
RED YEL GRN NEU RED YEL GRN NEU WLK DWK SPR EQG 6-1 6-2 P4-1
RLTA YLTA GLTA NEU RED YEL GRN NEU WLK DWK SPR EQG 3-2 6-3 P6-2
PB6-2 NEU PB4-1 44
Ø6 & Ø1 EVP DETECTOR 45
Ø6 & Ø1 EVP LIGHT NEU SPR 46
D4-1 47
D7-2 48
D7-1 49
SIGNAL SERVICE 2-1/C #6 2
HH 1
HH 2
HH 3
HH 4
HH 5
HH 6
HH 7
HH 8
HH 9
HH 10
HH 11
HH 12
HH 13
HH 14
HH 15
HH 16
HH 17
HH 18
S.O.P.
FROM HH 17
TO HH 1
LUMINAIRE
SERVICE CABINET
LUMINAIRE 1 4
LUMINAIRE 2 3
2-1/C #6 SIGNAL SERVICE
3-1/C #2 INPUT POWER
GROUND ROD
CONDUCTOR COLOR CODING
R O BL WH R/BLK O/BLK BL/BLK WH/BLK BLK BLK/WH G/BLK G 12/C #12
R O BL WH G 5/C #12
R WH BLK 3/C #12
R OR O WH OR YEL BLK OR BL 3/C #20
BLK WH 2-1/C #6
BLK CLEAR 2/C #14
NOTE: ALL TERMINAL BLOCK CONNECTIONS SHALL BE ARRANGED AS SPECIFIED ABOVE
FIELD WIRING DIAGRAM
C.S.A.H. 116
T.H. 65 AT (BUNKER LAKE BLVD.)
IN HAM LAKE , ANOKA COUNTY
DRAWN BY: SJS
REVISED BY:
REVISED BY:
AS BUILT BY:
CHECKED: JEB DATE: 11/99
SYSTEM I.D.: 21180
METER ADDRESS: 13701 HWY. 65
T.E. REQUEST NO. 2160
TKDA
minnesota metric
CERTIFIED BY Timothy S. Chalgren PROFESSIONAL ENGINEER
REG. NO. 15400 DATE 12/20/99
State Proj. No. 0208-105 (T.H. 65), S.A.P. 02-716-03
Sheet No. 43 of 66 Sheets
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NOTES:

1) SEE SPECIAL PROVISIONS FOR STATE FURNISHED MATERIALS.

2) LOCATIONS OF POLES, PAD, AND HANDHOLES SHALL BE DETERMINED BY MN/DOT TRAFFIC OFFICE PERSONNEL.

3) SIGNAL HEADS 4-3, 4-4, 8-2 AND 8-4 SHALL BE BAGGED UNTIL WIDENING IS CONSTRUCTED AND TRAFFIC IS PLACED ON PROPOSED LANES. AT THAT TIME SIGNAL HEADS 4-5 AND 8-5 SHALL BE BAGGED.

4) SALVAGE INPLACE SIGNAL SYSTEM (INCIDENTAL TO CONSTRUCTION OF TEMPORARY SIGNAL SYSTEM - SEE SPECIAL PROVISIONS AND SHEETS 46-48).

IMAGE SENSOR DETECTION CHART				
			DETECTION AREA	
CAMERA NO.	SIGNAL POLE LOCATION	PHASE	INTERSECTION APPROACH	LOCATION
1	3	Ø4	EB BUNKER LAKE BLVD.	STOP LINE & 76 m FROM STOP LINE
2	3	Ø1	SB T.H. 65	STOP LINE
		Ø6	SB T.H. 65	168 m FROM STOP LINE
3	6	Ø8	WB BUNKER LAKE BLVD.	STOP LINE & 76 m FROM STOP LINE
4	6	Ø5	NB T.H. 65	STOP LINE
		Ø2	NB T.H. 65	168 m FROM STOP LINE

0 5 10 15 m

BUNKER LAKE BLVD. 85TH %TILE 40 M.P.H.

T.H. 65 S.B.
60 M.P.H. SPEED LIMIT

T.H. 65 N.B.
60 M.P.H. SPEED LIMIT

BUNKER LAKE BLVD. 85TH %TILE 40 M.P.H.

4 14 m WOOD POLE
2-DOWN GUYS, GUARDS, & ANCHORS
2-TYPE 10A (6-1 & 8-6)
4.5 m LUMINAIRE MAST ARM (9 m MOUNTING HEIGHT)
2-SIGNS (R9-3a) (FACING POLES 3 AND 5)
METAL JUNCTION BOX WITH TERMINAL BLOCK
35 mm RSC RISER WITH WEATHERHEAD
ABOVE JUNCTION BOX WITH
1-12/C #12
35 mm RSC RISER WITH WEATHERHEAD
ABOVE SPAN WIRE WITH
1-3/C #12

1-12 mm SPAN WIRE
1-6 mm SPAN WIRE

1-12 mm SPAN WIRE
1-6 mm SPAN WIRE
1-12/C #12
1-3/C #12

1-12 mm SPAN WIRE
1-6 mm SPAN WIRE
2-5/C #12

1-12 mm SPAN WIRE
1-6 mm SPAN WIRE
1-5/C #12

5 14 m WOOD POLE
2-DOWN GUYS, GUARDS, & ANCHORS
TYPE 10A (5-2)
4.5 m LUMINAIRE MAST ARM (9 m MOUNTING HEIGHT)
2-SIGNS (R9-3a) (FACING POLES 4 AND 6)
METAL JUNCTION BOX WITH TERMINAL BLOCK
35 mm RSC RISER WITH WEATHERHEAD
ABOVE JUNCTION BOX WITH
1-5/C #12
35 mm RSC RISER WITH WEATHERHEAD
ABOVE SPAN WIRE WITH
1-3/C #12

1-12 mm SPAN WIRE
1-6 mm SPAN WIRE
3-5/C #12
1-3/C #12

1-12 mm SPAN WIRE
1-6 mm SPAN WIRE
1-5/C #12

1-12 mm SPAN WIRE
1-6 mm SPAN WIRE
2-5/C #12

1-12 mm SPAN WIRE
1-6 mm SPAN WIRE
4-5/C #12

3 15.3 m WOOD POLE
DOWN GUY, GUARD, & ANCHOR
2-TYPE 10A (1-1 & 4-1)
4.5 m LUMINAIRE MAST ARM (9 m MOUNTING HEIGHT)
2-SIGNS (R9-3a) (FACING POLES 2 AND 4)
METAL JUNCTION BOX WITH TERMINAL BLOCK
35 mm RSC RISER WITH WEATHERHEAD
ABOVE JUNCTION BOX WITH
1-12/C #12
2-8 mm IMAGE SENSORS 1 & 2 (POLE MOUNTED)
35 mm RSC RISER WITH WEATHERHEAD
ABOVE SPAN WIRE WITH
2-3/C #12
2-BELDEN #8281

1-12 mm SPAN WIRE
1-6 mm SPAN WIRE
1-12/C #12
1-5/C #12
1-3/C #12

1-12 mm SPAN WIRE
1-6 mm SPAN WIRE
1-12/C #12
2-5/C #12
1-3/C #12

1-12 mm SPAN WIRE
1-6 mm SPAN WIRE
1-12/C #12
7-5/C #12
3-3/C #12
2-BELDEN #8281

6 15.3 m WOOD POLE
DOWN GUY, GUARD, & ANCHOR
2-TYPE 10A (5-1 & 8-1)
2-SIGNS (R9-3a) (FACING POLES 1 AND 5)
METAL JUNCTION BOX WITH TERMINAL BLOCK
35 mm RSC RISER WITH WEATHERHEAD
ABOVE JUNCTION BOX WITH
1-12/C #12
2-8 mm IMAGE SENSORS (3 & 4) (POLE MOUNTED)
35 mm RSC RISER WITH WEATHERHEAD
ABOVE SPAN WIRE WITH
2-3/C #12
2-BELDEN #8281

1-12 mm SPAN WIRE
1-6 mm SPAN WIRE
3-5/C #12

1 14 m WOOD POLE
2-DOWN GUYS, GUARDS, & ANCHORS
2-TYPE 10A (2-1 & 4-6)
4.5 m LUMINAIRE MAST ARM (9 m MOUNTING HEIGHT)
2-SIGNS (R9-3a) (FACING POLES 2 AND 6)
METAL JUNCTION BOX WITH TERMINAL BLOCK
35 mm RSC RISER AND CONDUIT BELOW JUNCTION BOX
TO HH 2 WITH
1-12/C #12
103 mm RSC RISER WITH WEATHERHEAD AND
CONDUIT TO HH 2 WITH
2-12/C #12
5-5/C #12
3-3/C #12
2-BELDEN #8281
103 mm RSC RISER WITH WEATHERHEAD AND
CONDUIT TO HH 2 WITH
1-12/C #12
9-5/C #12
3-3/C #12
2-BELDEN #8281
35 mm RSC RISER WITH WEATHERHEAD
ABOVE SPAN WIRE WITH
2-3/C #12

1-12 mm SPAN WIRE
1-6 mm SPAN WIRE
1-12/C #12
9-5/C #12
3-3/C #12
2-BELDEN #8281

1-12 mm SPAN WIRE
1-6 mm SPAN WIRE
1-12/C #12
8-5/C #12
3-3/C #12
2-BELDEN #8281

1-12 mm SPAN WIRE
1-6 mm SPAN WIRE
2-12/C #12
5-5/C #12
3-3/C #12
2-BELDEN #8281

2 14 m WOOD POLE
2-DOWN GUYS, GUARDS, & ANCHORS
TYPE 10A (1-2)
4.5 m LUMINAIRE MAST ARM (9 m MOUNTING HEIGHT)
2-SIGNS (R9-3a) (FACING POLES 1 AND 3)
METAL JUNCTION BOX WITH TERMINAL BLOCK
35 mm RSC RISER WITH WEATHERHEAD
ABOVE JUNCTION BOX WITH
1-5/C #12
35 mm RSC RISER WITH WEATHERHEAD
ABOVE SPAN WIRE WITH
2-3/C #12

1-12 mm SPAN WIRE
1-6 mm SPAN WIRE
2-12/C #12
3-5/C #12
3-3/C #12
2-BELDEN #8281

1-12 mm SPAN WIRE
1-6 mm SPAN WIRE
2-12/C #12
4-5/C #12
3-3/C #12
2-BELDEN #8281

A TEMPORARY EQUIPMENT PAD (STATE FURNISHED)
CONTROLLER CABINET AND CONTROLLER

CABINET TO HH 1
53 mm RSC
2-1/C #6
1-1/C #6 INS. GR.

53 mm RSC
2-3/C #12

B SOP - INPLACE WOOD POLE
METER & LOAD CENTER 120/240 V.
53 mm RSC RISER WITH WEATHERHEAD
ABOVE METER WITH
3-1/C #2
53 mm RSC BETWEEN METER & LOAD
CENTER WITH
3-1/C #2
53 mm RSC RISER AND CONDUIT
BELOW LOAD CENTER
TO HH 1 WITH
2-1/C #6
1-1/C #6 INS. GR.
2-3/C #12

CABINET TO HH 2
103 mm RSC
2-12/C #12
5-5/C #12
2-3/C #12
2-BELDEN #8281

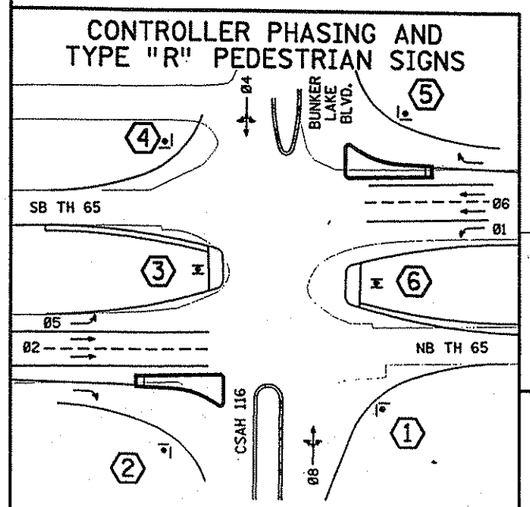
CABINET TO HH 2
103 mm RSC
2-12/C #12
9-5/C #12
2-3/C #12
2-BELDEN #8281

SIGNAL FACES

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

EACH SIGNAL FACE SHALL HAVE A BACKGROUND SHIELD.
ALL SIGNAL INDICATIONS SHALL BE 300 mm.
VEHICLE SIGNAL INDICATIONS SHALL HAVE GLASS LENSES.

CONTROLLER PHASING AND TYPE "R" PEDESTRIAN SIGNS



SIGNAL SYSTEM OPERATION

- THE SIGNAL SYSTEM FLASH MODE IS ALL RED.
- NORMAL OPERATION IS 6 PHASE. PHASES 1 AND 5 ARE PROTECTED LEFT TURN PHASES.

TKDA
minnesota metric

DRAWN BY: BDP	REVISED BY:	REVISED BY:	AS BUILT BY:
CHECKED: TAC DATE: 11/99	CHECKED: DATE:	CHECKED: DATE:	CHECKED: DATE:

SYSTEM I.D.: 21180
METER ADDRESS: 13701 HWY. 65
T.E. REQUEST NO. 2160

INTERSECTION LAYOUT
TEMPORARY SYSTEM

T.H. 65 AT C.S.A.H. 116 (BUNKER LAKE BLVD.)
IN HAM LAKE, ANOKA COUNTY

CERTIFIED BY Timothy A. Chelmo PROFESSIONAL ENGINEER REG. NO. 15400 DATE 12/20/99

State Proj. No. 0208-105 (T.H. 65), S.A.P. 02-716-03 Sheet No. 44 of 66 Sheets

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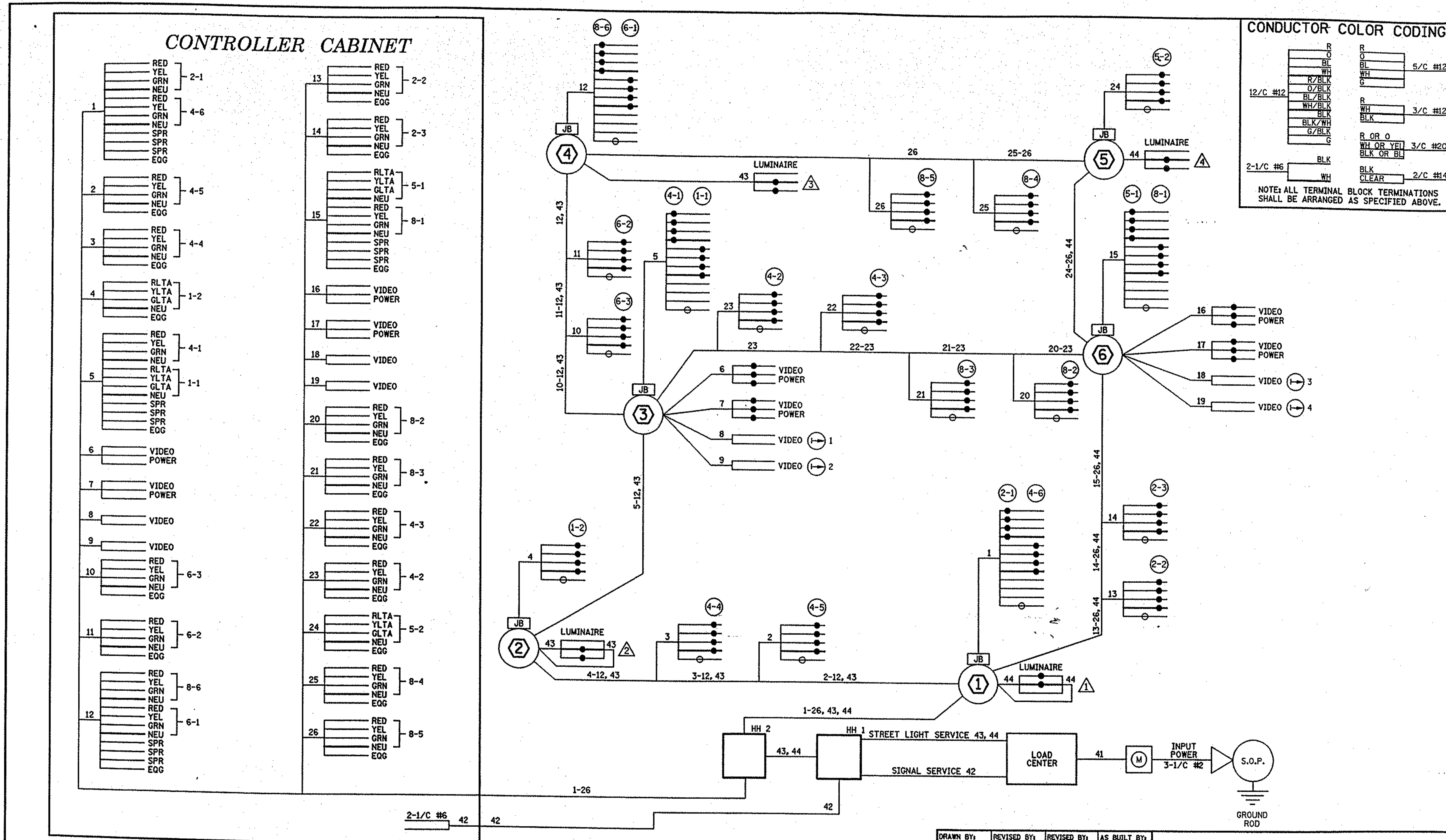


DRAWN BY: BDP	REVISED BY:	REVISED BY:	AS BUILT BY:
CHECKED: JEB DATE: 11/99	CHECKED: DATE:	CHECKED: DATE:	CHECKED: DATE:

SYSTEM I.D.: 21180
METER ADDRESS: 13701 HWY. 65
T.E. REQUEST NO. 2160

TKDA

minnesota metro

FIELD WIRING DIAGRAM
TEMPORARY SYSTEM

T.H. 65 AT C.S.A.H. 116 (BUNKER LAKE BLVD.)
IN HAM LAKE, ANOKA COUNTY

CERTIFIED BY Todd A. Chlgr... PROFESSIONAL ENGINEER REG. NO. 15400 DATE 12/20/99

State Proj. No. 0208-105 (T.H. 65), S.A.P. 02-716-03 Sheet No. 45 of 66 Sheets

..\c0208105.wdl 20 DEC 1999 15:40:20

SIGNAL INDICATION CHART

FACE	PHASE	FLASH	INDICATION SIZE (IN INCHES) R	Y	G	← R	← Y	← G
1-1	1	R				12	12	12
2-1	2	Y	12	12	12			
2-2	2	Y	12	12	12			
4-1	4	R	12	12	12			
4-2	4	R	12	12	12			
4-3	4	R	12	12	12			
4-4	4	R	12	12	12			
4-5	4	R	12	12	12			
4-6	4	R	12	12	12			
5-1	5	R				12	12	12
6-1	6	Y	12	12	12			
6-2	6	Y	12	12	12			
6-3	6	Y	8*	8*	8*			

* - DIRECTIONAL LOUVERS

(1) A25-D40-9
ONE WAY SIGNAL (OVERHEAD)
2-SWING AWAY HINGES
TYPE 20B-POLE MOUNTED AT 270°
LUMINAIRE AT 355°
1-PEDESTRIAN PUSH BUTTON
3-STEEL GUARD POSTS
EXTEND INTO H.H.1 3" R.S.C.
1-12/C#12, 4-3/C#12 & 2-1/C#10
PHOTOELECTRIC CELL

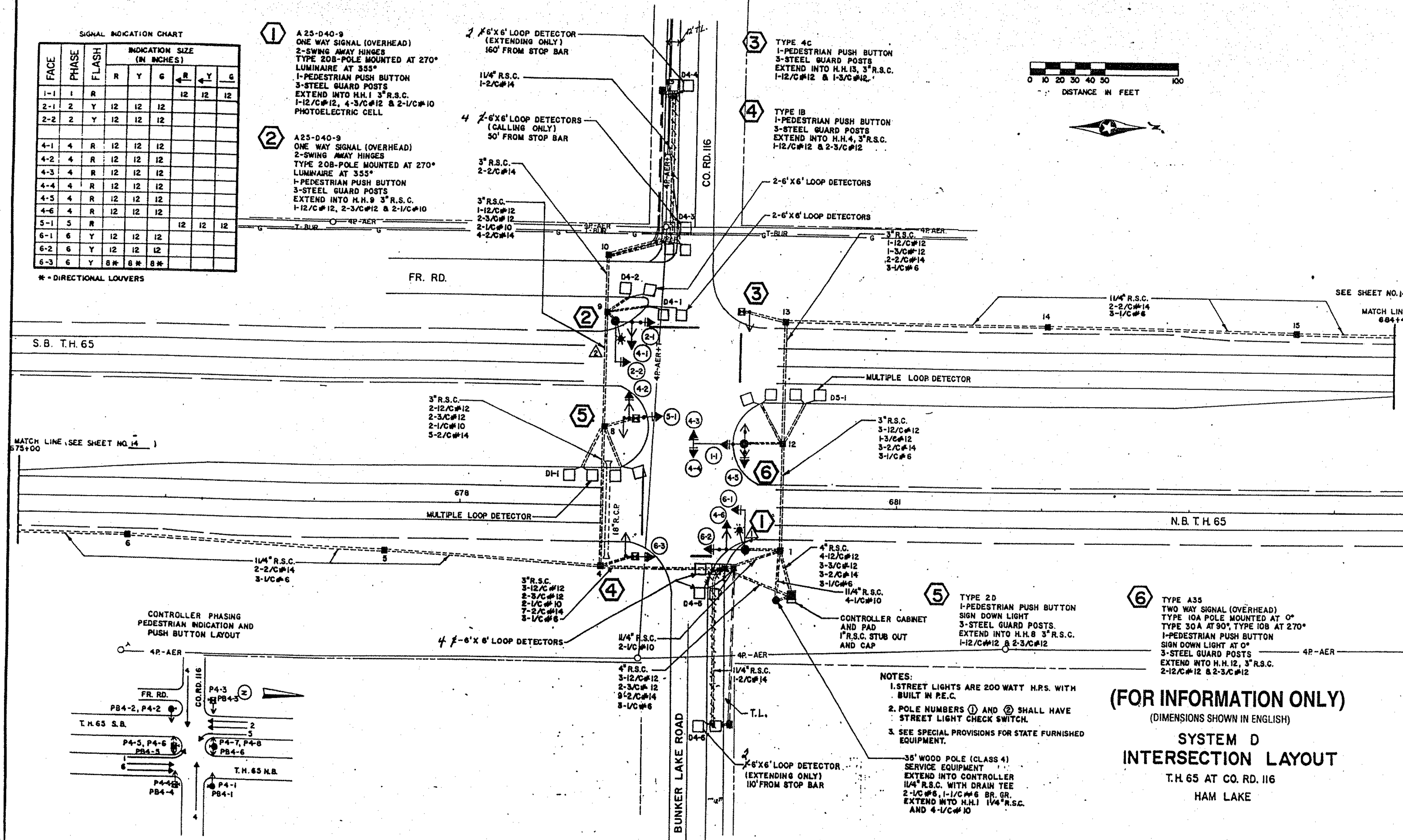
(2) A25-D40-9
ONE WAY SIGNAL (OVERHEAD)
2-SWING AWAY HINGES
TYPE 20B-POLE MOUNTED AT 270°
LUMINAIRE AT 355°
1-PEDESTRIAN PUSH BUTTON
3-STEEL GUARD POSTS
EXTEND INTO H.H.9 3" R.S.C.
1-12/C#12, 2-3/C#12 & 2-1/C#10

(3) TYPE 4C
1-PEDESTRIAN PUSH BUTTON
3-STEEL GUARD POSTS
EXTEND INTO H.H.13, 3" R.S.C.
1-12/C#12 & 1-3/C#12

(4) TYPE 1B
1-PEDESTRIAN PUSH BUTTON
3-STEEL GUARD POSTS
EXTEND INTO H.H.4, 3" R.S.C.
1-12/C#12 & 2-3/C#12

(5) TYPE 2D
1-PEDESTRIAN PUSH BUTTON
SIGN DOWN LIGHT
3-STEEL GUARD POSTS.
EXTEND INTO H.H.8 3" R.S.C.
1-12/C#12 & 2-3/C#12

(6) TYPE A35
TWO WAY SIGNAL (OVERHEAD)
TYPE 10A POLE MOUNTED AT 0°
TYPE 30A AT 90°, TYPE 10B AT 270°
1-PEDESTRIAN PUSH BUTTON
SIGN DOWN LIGHT AT 0°
3-STEEL GUARD POSTS
EXTEND INTO H.H.12, 3" R.S.C.
2-12/C#12 & 2-3/C#12



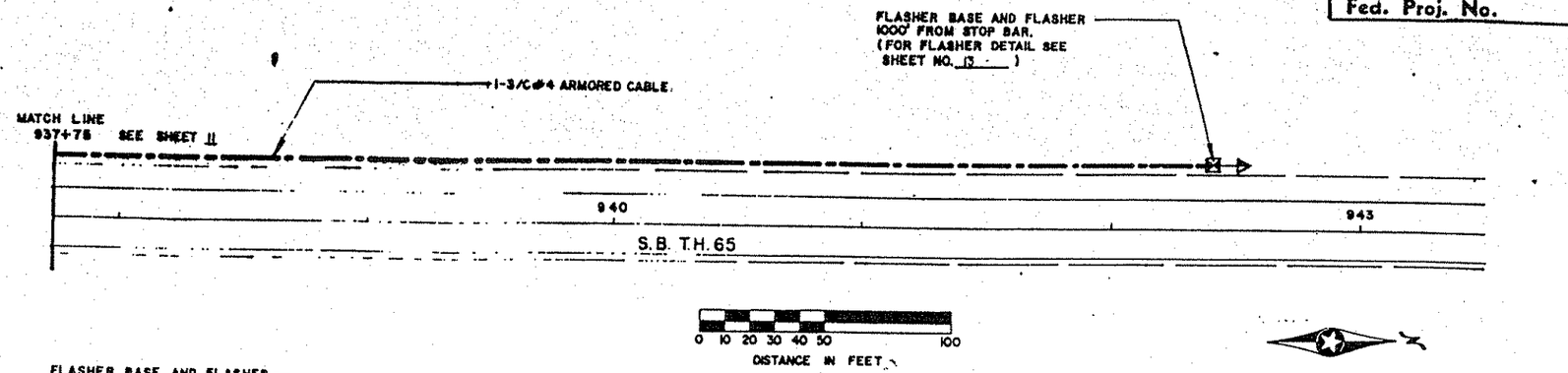
NOTES:
1. STREET LIGHTS ARE 200 WATT H.P.S. WITH BUILT IN P.E.C.
2. POLE NUMBERS (1) AND (2) SHALL HAVE STREET LIGHT CHECK SWITCH.
3. SEE SPECIAL PROVISIONS FOR STATE FURNISHED EQUIPMENT.

(FOR INFORMATION ONLY)
(DIMENSIONS SHOWN IN ENGLISH)

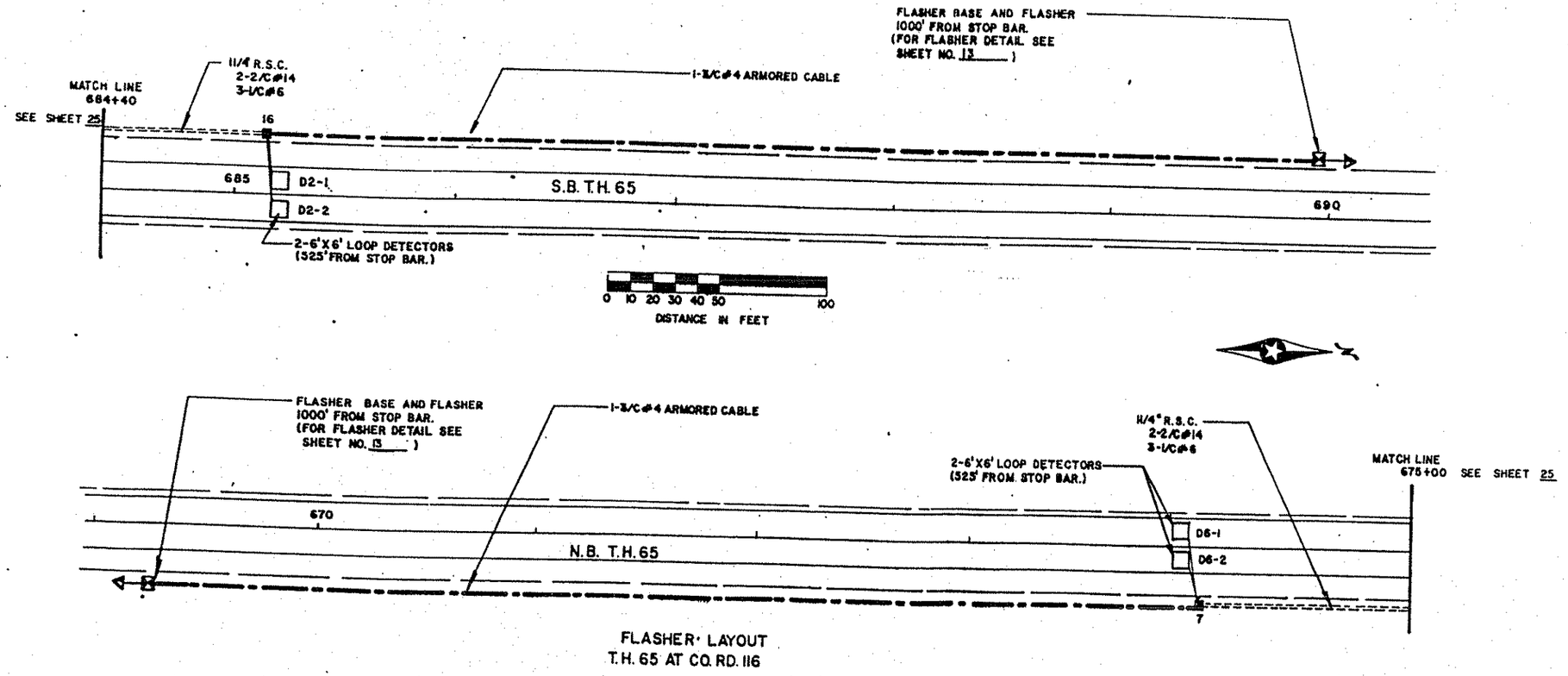
SYSTEM D INTERSECTION LAYOUT

T.H. 65 AT CO. RD. 116
HAM LAKE

I.D. NO. 02030065*016928*



FLASHER LAYOUT
T.H. 65 AT C.S.A.H. 18



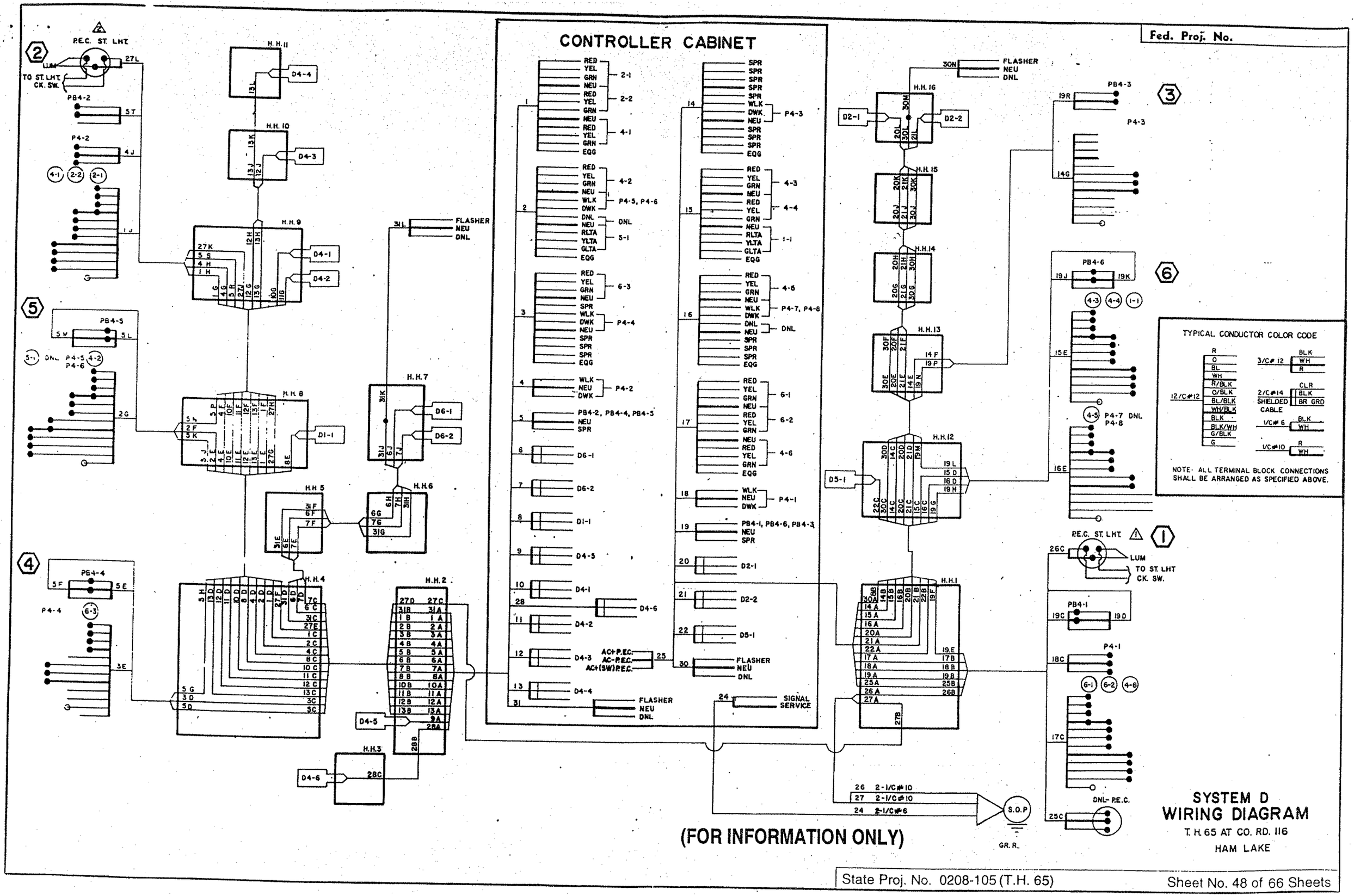
FLASHER LAYOUT
T.H. 65 AT CO. RD. 116

(FOR INFORMATION ONLY)

(DIMENSIONS SHOWN IN ENGLISH)

FLASHER LAYOUTS

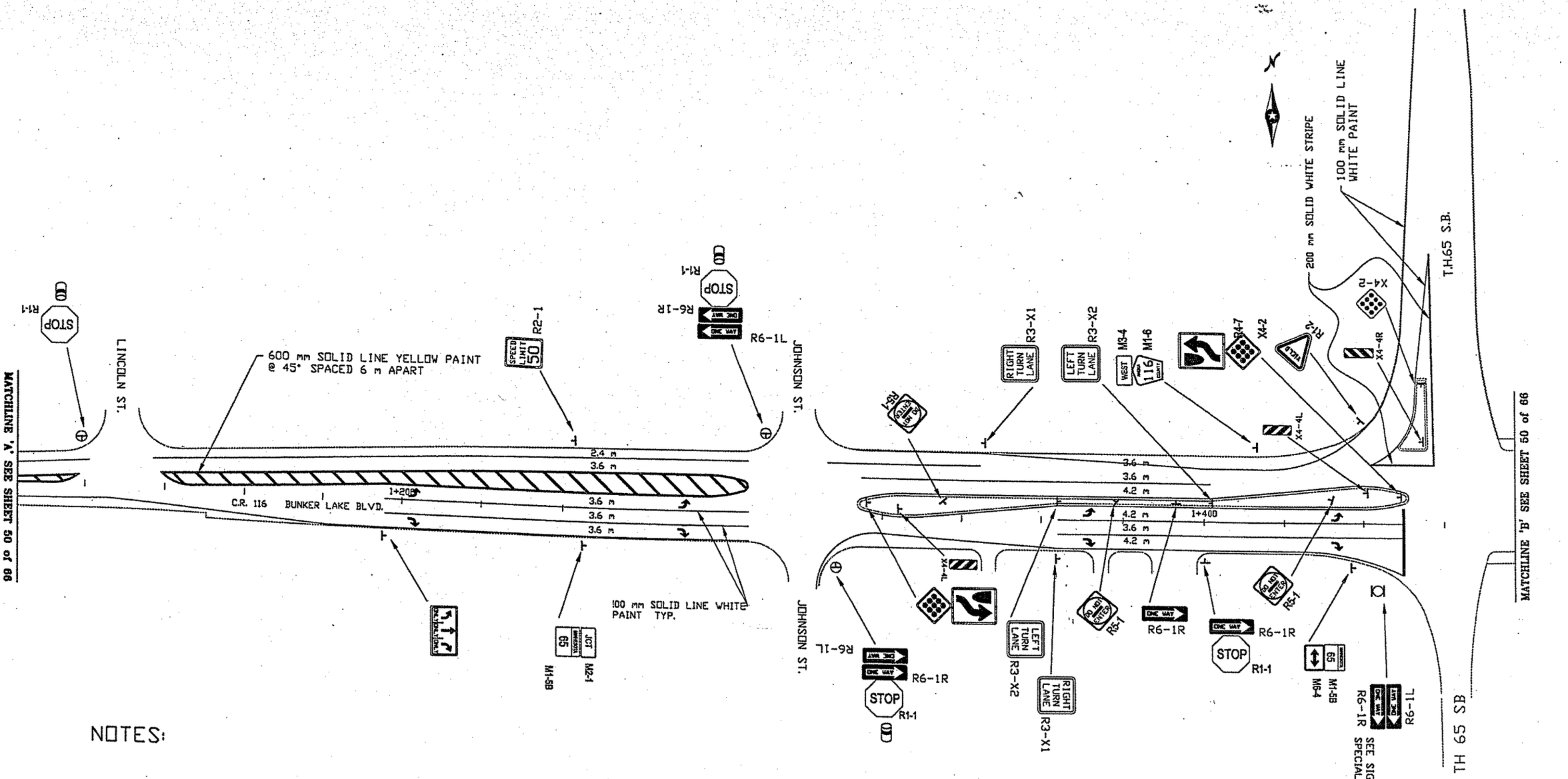
Fed. Proj. No.



State Proj. No. 0208-105 (T.H. 65)

Sheet No. 48 of 66 Sheets

Fed. Project No. _____



NOTES:

1.) LOCATIONS OF 'NO PASSING ZONES' ARE APPROXIMATE. EXACT LOCATIONS WILL BE DETERMINED IN THE FIELD.

2.) ALL TRAFFIC CONTROL DEVICES SHALL CONFORM THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, INCLUDING THE FIELD MANUAL DATED JANUARY 1998.

NO	DATE	BY	CKD	APPR	REVISION

NAME: S:\TRAFFIC\DICK\ARCHIVES\026781.DWG (12-13-99)

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

DATE _____ REG. NO. _____

DRAWN BY D.W. DATE 7/99
DESIGN BY D.W. DATE 7/99
CHECKED BY J.P. DATE 9/99

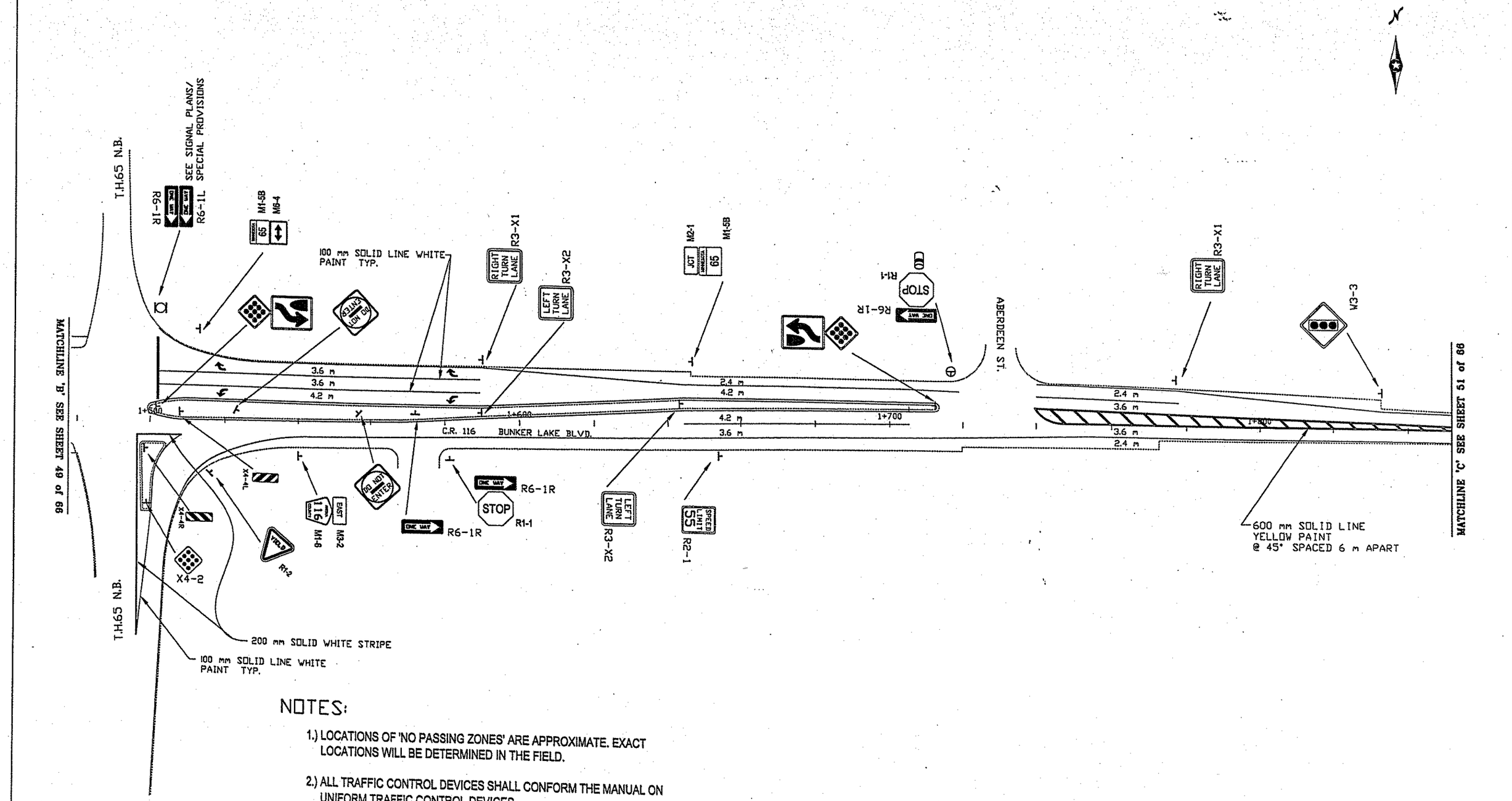
ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 0208-105
STATE PROJECT NO. 02-716-03
STATE AID PROJECT NO. _____
COUNTY PROJECT NO. _____

PERMANENT SIGNING / STRIPING

Sheet 49 of 66 Sheets

Fed. Project No. _____



NOTES:

1.) LOCATIONS OF 'NO PASSING ZONES' ARE APPROXIMATE. EXACT LOCATIONS WILL BE DETERMINED IN THE FIELD.

2.) ALL TRAFFIC CONTROL DEVICES SHALL CONFORM THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, INCLUDING THE FIELD MANUAL DATED JANUARY 1998.

NO	DATE	BY	CKD	APPR	REVISION

NAME: S:\TRAFFIC\DICK\ARCHIVES\0267811.DWG (12-13-99)

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

DATE 12/14/00 REG. NO. 26126

DRAWN BY D.M. DATE 7/99
DESIGN BY D.M. DATE 7/99
CHECKED BY J.P. DATE 9/99

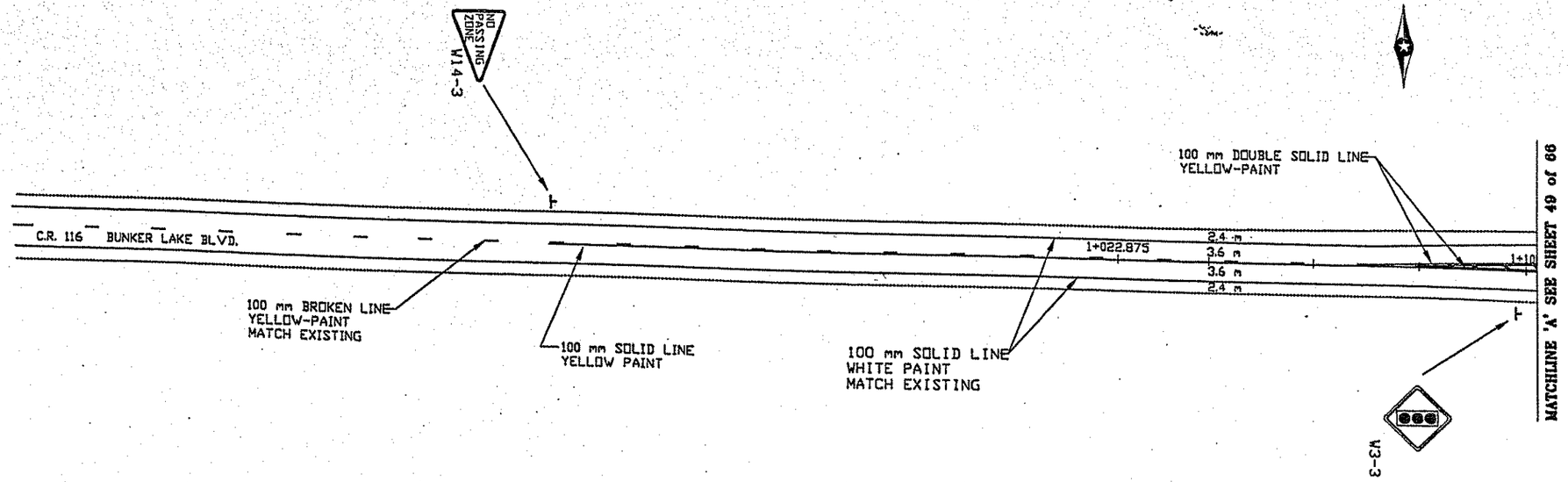
ANOKA COUNTY HIGHWAY DEPT.

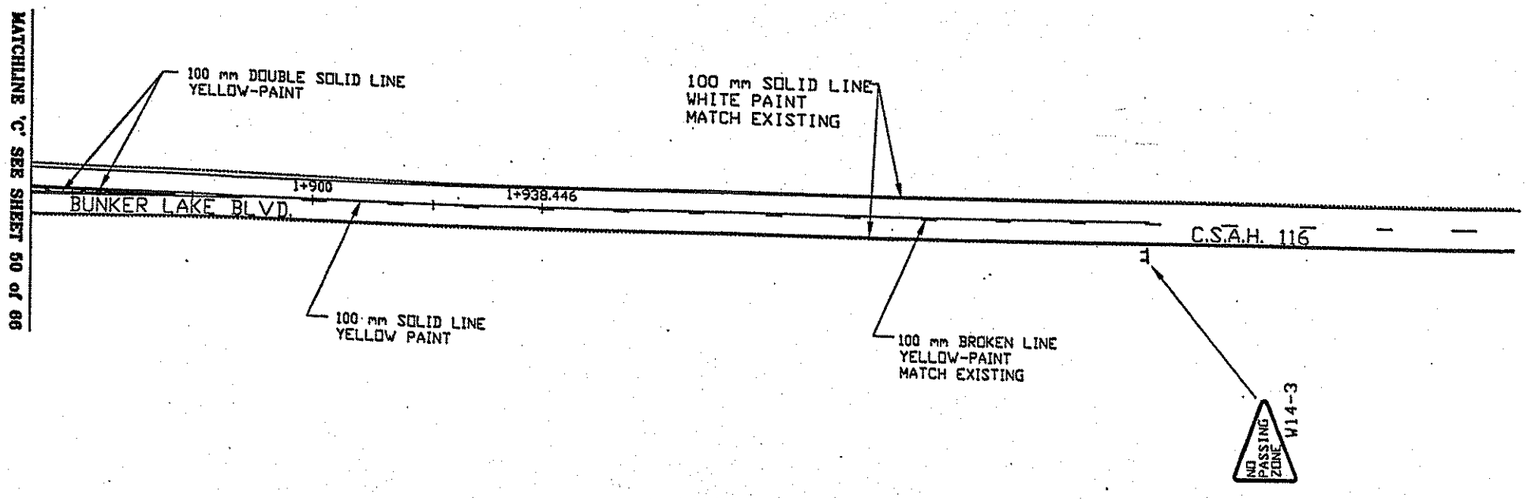
STATE PROJECT NO. 0208-105
STATE PROJECT NO. 02-716-03
STATE AID PROJECT NO. _____
COUNTY PROJECT NO. _____

PERMANENT SIGNING / STRIPING

Sheet 50 of 66 Sheets

Fed. Project No. _____





NOTES:

1.) LOCATIONS OF 'NO PASSING ZONES' ARE APPROXIMATE. EXACT LOCATIONS WILL BE DETERMINED IN THE FIELD.

2.) ALL TRAFFIC CONTROL DEVICES SHALL CONFORM THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, INCLUDING THE FIELD MANUAL DATED JANUARY 1998.

NO	DATE	BY	CKD	APPR	REVISION

NAME: S:\TRAFFIC\DICK\ARCHIVES\0267811.DWG (12-13-99)

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

DATE 12/14/00 REG. NO. 16826

DRAWN BY D.M. DATE 7/99
DESIGN BY D.M. DATE 7/99
CHECKED BY J.P. DATE 9/99

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 0208-105
STATE PROJECT NO. 02-716-03
STATE AID PROJECT NO. _____
COUNTY PROJECT NO. _____

PERMANENT SIGNING / STRIPING

Sheet 51 of 66 Sheets

Fed. Project No. _____

M.U.T.C.D. CODE	SIZE	PANEL AREA ft²	PANEL AREA m²	INSERT	No. of ISLAND MOUNT INSTALL	No. GROUND POST MOUNT INSTALL	No. POST	MOUNTING HEIGHT ft.	MOUNTING HEIGHT m
R1-1	30" x 30"	6.25		STOP	0	6	1	7.0'	2.13
mm	762 x 762		0.581						
R1-2	36"x36"x36"	3.90		YIELD	0	2	1	7.0'	2.13
mm	914x914x914		0.362						
R2-1	36" x 48"	12.00		SPEED LIMIT 50	0	1	1	7.0'	2.13
mm	914 x 1219		1.115						
R2-1	36" x 48"	12.00		SPEED LIMIT 55	0	1	1	7.0'	2.13
mm	914 x 1219		1.115						
R3-X1	30" x 30"	6.25		RIGHT TURN LANE	0	4	1	7.0'	2.13
mm	762 x 762		0.580						
R3-X2	30" x 30"	6.25		LEFT TURN LANE	4	0	1	7.0'	2.13
mm	762 x 762		0.580						
R3-8H	54" x 30"	11.25		ONLY ONLY ONLY	0	1	2	7.0'	2.13
mm	1372 x 762		1.045						
R4-7	24" x 30"	5.00			4	0	1	7.0'	2.13
mm	609 x 762		0.465						
R5-1	30" x 30"	6.25		DO NOT ENTER	5	0	1	7.0'	2.13
mm	762 x 762		0.580						
R6-1R	36" x 12"	3.00		ONE WAY	0	7	(#1)		
mm	914 x 305		0.279						
R6-1L	36" x 12"	3.00		ONE WAY	0	2	(#1)		
mm	914 x 305		0.279						

M.U.T.C.D. CODE	SIZE	PANEL AREA ft²	PANEL AREA m²	INSERT	No. of ISLAND MOUNT INSTALL	No. GROUND POST MOUNT INSTALL	No. POST	MOUNTING HEIGHT ft.	MOUNTING HEIGHT m
W3-3	36" x 36"	9.00			0	2	2	7.0'	2.13
mm	914 x 914		0.836						
W14-3	36"X48"X48"	6.00		NO PASSING ZONE	0	2	2	7.0'	2.13
mm	457 x 457		0.557						
M3-2A	24" x 12"	2.00		EAST		1	(#3)		
mm	610 x 304		0.19						
M3-4A	24" x 12"	2.00		WEST		1	(#3)		
mm	610 x 304		0.19						
M1-6A	24" x 24"	4.00		116	0	2	2	7.0'	2.13
mm	610 x 610		0.37						
M2-1A	24" x 15"	2.18		JCT		2	(#4)		
mm	610 x 457		0.20						
M1-5A	24" x 24"	4.00		MINNESOTA 65	0	4	1	7.0'	2.13
mm	610 x 610		0.37						
M6-4A	24" x 15"	2.18				2	(#5)		
mm	610 x 457		0.20						

M.U.T.C.D. CODE	SIZE	PANEL AREA ft²	PANEL AREA m²	INSERT	No. of ISLAND MOUNT INSTALL	No. GROUND POST MOUNT INSTALL	No. POST	MOUNTING HEIGHT ft.	MOUNTING HEIGHT m
X4-2	18" x 18"	2.25			6	0	(#2)		
mm	457 x 457		0.209						
DELINEATOR 4" DIA. x 15'	1.31				0	4	(#6)		
mm	010 x 381		0.111						
X4-4L	12" x 36"	3.00			3	0	1	4.0'	1.22
mm	304 x 914		0.279						
X4-4R	12" x 36"	3.00			2	0	1	4.0'	1.22
mm	304 x 914		0.279						

*1. MOUNTED ABOVE R1-1

*2. MOUNTED BELOW R4-7

*3. MOUNTED ABOVE M1-6A

*4. MOUNTED ABOVE M1-5A

*5. MOUNTED BELOW M1-5A

*6. MOUNTED BELOW R1-1

NOTES:

1.) LOCATIONS OF 'NO PASSING ZONES' ARE APPROXIMATE. EXACT LOCATIONS WILL BE DETERMINED IN THE FIELD.

2.) ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, INCLUDING THE FIELD MANUAL DATED JANUARY 1998.

NO	DATE	BY	CKD	APPR	REVISION

NAME: S:\TRAFFIC\DICK\ARCHIVES\0257811.DWG (12-13-99)

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

DATE 2/14/00 REG. NO. 21524

DRAWN BY D.M. DATE 2/99

DESIGN BY D.M. DATE 2/99

CHECKED BY J.P. DATE 2/99

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 0208-105

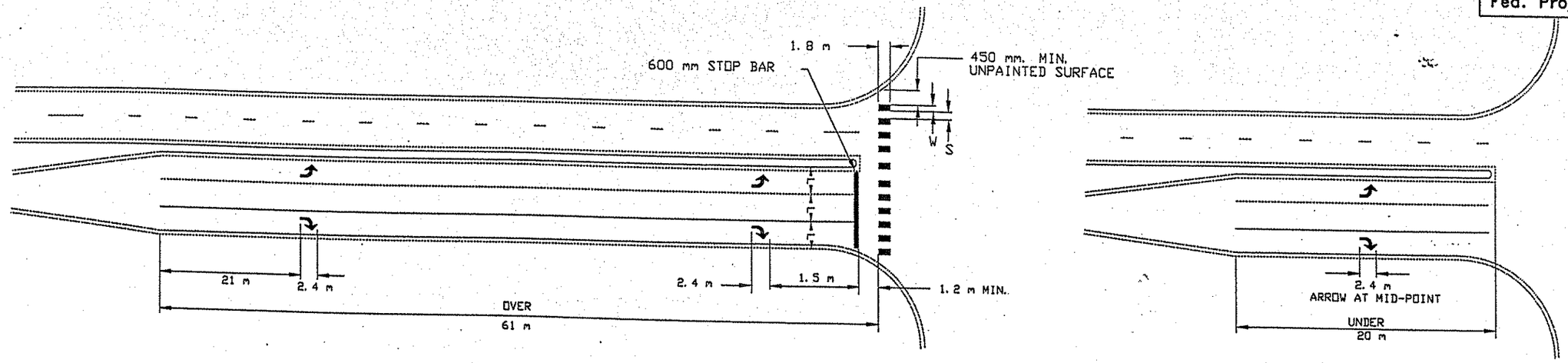
STATE PROJECT NO. 02-716-03

STATE AID PROJECT NO. _____

COUNTY PROJECT NO. _____

PERMANENT SIGNING QUANTITIES

Fed. Project No. _____



(L)	(W)	(S)
WIDTH OF INSIDE LANE	WIDTH OF PAINTED AREAS	WIDTH OF SPACE
2.7 m	600 mm	750 mm
3.0 m	750 mm	750 mm
3.3 m	750 mm	900 mm
3.6 m	900 mm	900 mm
4.0 m	900 mm	1100 mm

NOTES: CROSSWALKS:

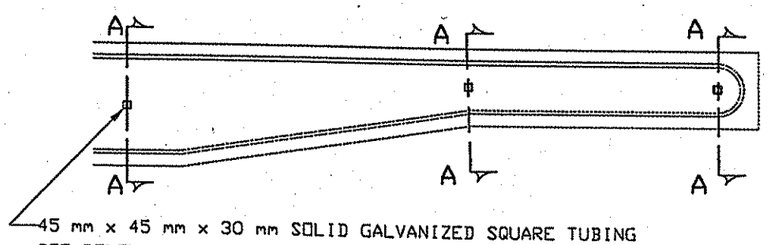
1.) PAINTED AREAS ARE TO BE CENTERED ON CENTER AND LANE LINES, EVEN IF INTERSECTION IS NOT ALIGNED.

2.) LOCATION OF ZEBRA CROSSWALKS AND STOP BARS, SIGNAL LOOPS AND PED RAMPS ARE APPROXIMATE. FINAL LOCATIONS ARE TO BE DETERMINED AND FIELD VERIFIED DURING CONSTRUCTION BY THE FIELD ENGR.

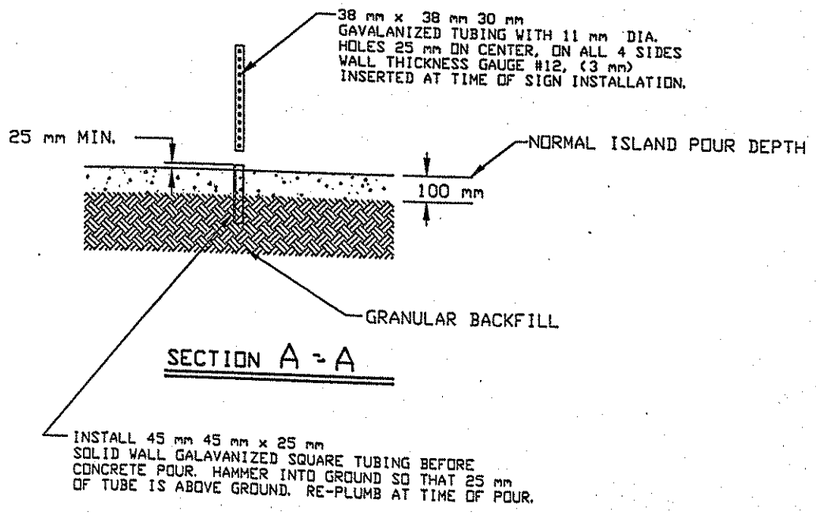
3.) ZEBRA CROSSWALKS ARE TO BE PARALLEL TO THE DRIVING LANE OR LANES. EVEN IF THE STREET IS ON AN ANGLE TO THE INTERSECTION.

4.) A MIN. OF 450 mm CLEAR DISTANCE MUST BE LEFT ADJACENT TO THE CURB. IF LAST PAINTED AREA FALLS INTO THIS AREA, IT MUST BE OMITTED.

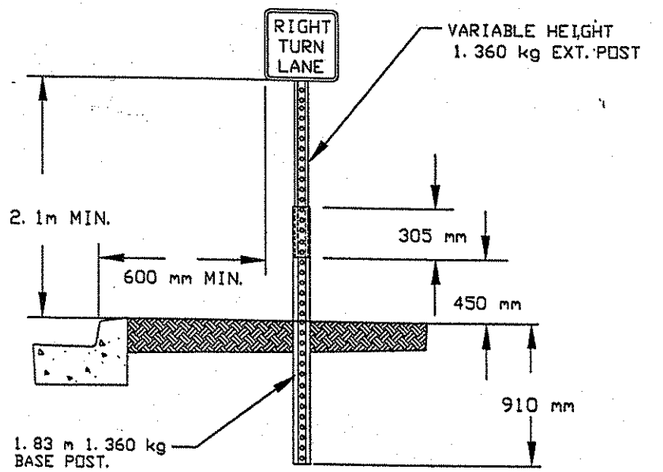
5.) ON TWO LANE STREETS, USE SPACING SHOWN FOR AN 3.3 mm INSIDE LANE.



45 mm x 45 mm x 30 mm SOLID GALVANIZED SQUARE TUBING SEE BELOW

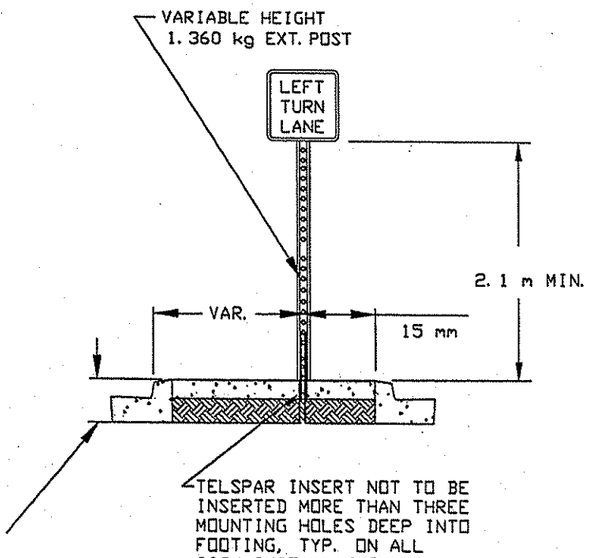


GROUND POST MOUNT SIGN
INSTALLATION TYPICAL



200 mm MEDIAN HEIGHT.

ISLAND MOUNT BREAK-AWAY SIGN
INSTALLATION TYPICAL



NO	DATE	BY	CKD	APPR	REVISION

NAME: S:\TRAFFIC\DICK\ARCHIVES\0267811.DWG (12-13-99)

minnesota metric

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

DATE 2/4/00 REG. NO. 26526

DRAWN BY D.M. DATE 7/99
DESIGN BY D.M. DATE 7/99
CHECKED BY J.P. DATE 9/99

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 0208-105
STATE PROJECT NO. 02-716-03
STATE AID PROJECT NO. _____
COUNTY PROJECT NO. _____

SIGNING / STRIPING DETAILS

Sheet 53 of 66 Sheets

Fed. Project No. _____

NOTES:

1) ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, INCLUDING THE FIELD MANUAL DATED JANUARY, 1998

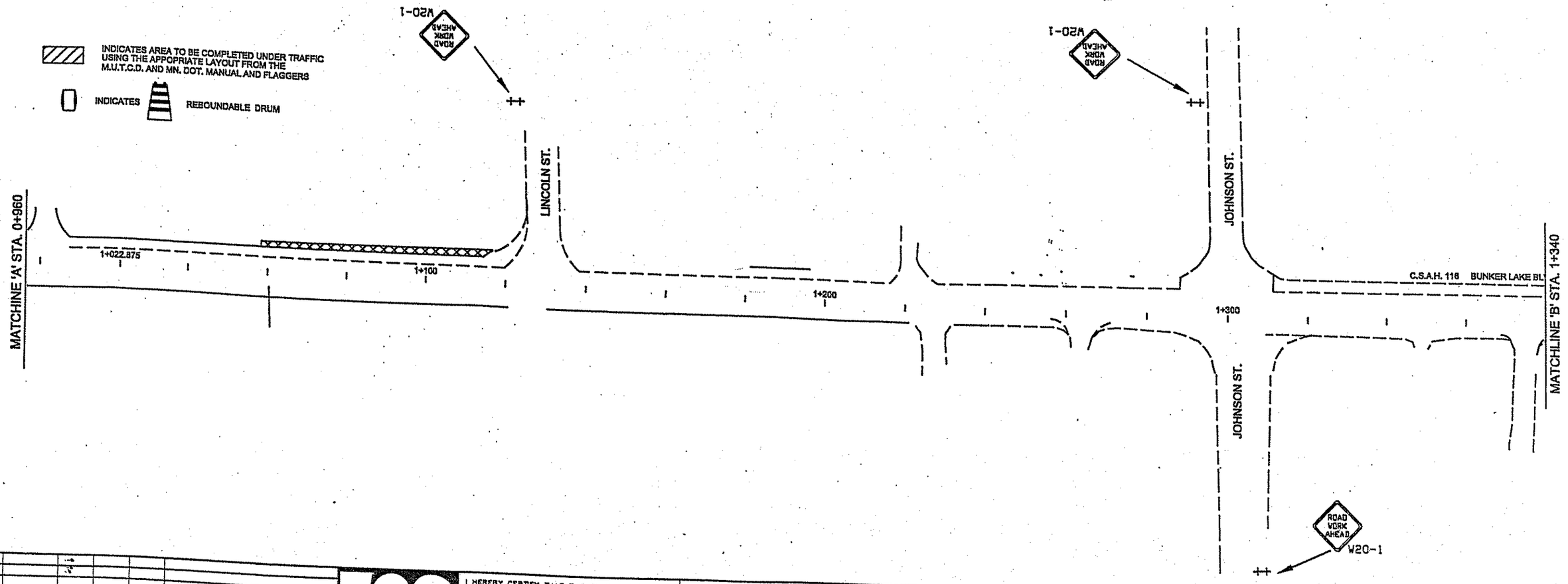
2) PAVEMENT MARKINGS IN ALL TAPER AREAS SHALL HAVE TEMPORARY RAISED PAVEMENT MARKERS AT 3 m INTERVALS

3) ALL TYPE III BARRICADES SHALL BE REFLECTORIZED ON BOTH SIDES, AND BARRICADE MARKINGS SHALL BE SLANTED IN ACCORDANCE WITH THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

4) THE CONTRACTOR SHALL INSTALL A TEMPORARY SIGNAL SYSTEM AT THE TH. 65 / BUNKER LAKE BLVD. INTERSECTION. THE TEMPORARY SIGNAL SHALL BE MADE OPERATIONAL PRIOR TO ANY CONSTRUCTION OPERATIONS WHICH WOULD AFFECT THE INPLACE SIGNAL SYSTEM. SEE SHEET 44.

INDICATES AREA TO BE COMPLETED UNDER TRAFFIC USING THE APPOPRIATE LAYOUT FROM THE M.U.T.C.D. AND MN. DOT. MANUAL AND FLAGGERS

INDICATES REBOUNDABLE DRUM



NO	DATE	BY	CKD	APPR	REVISION

NAME: S:\SDSXPROJ\0000000\0000000\026000.DWG

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

DATE 7/14/00 REG. NO. 24526

DRAWN BY D.M. DATE 7/00

DESIGN BY D.M. DATE 7/00

CHECKED BY _____ DATE _____

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

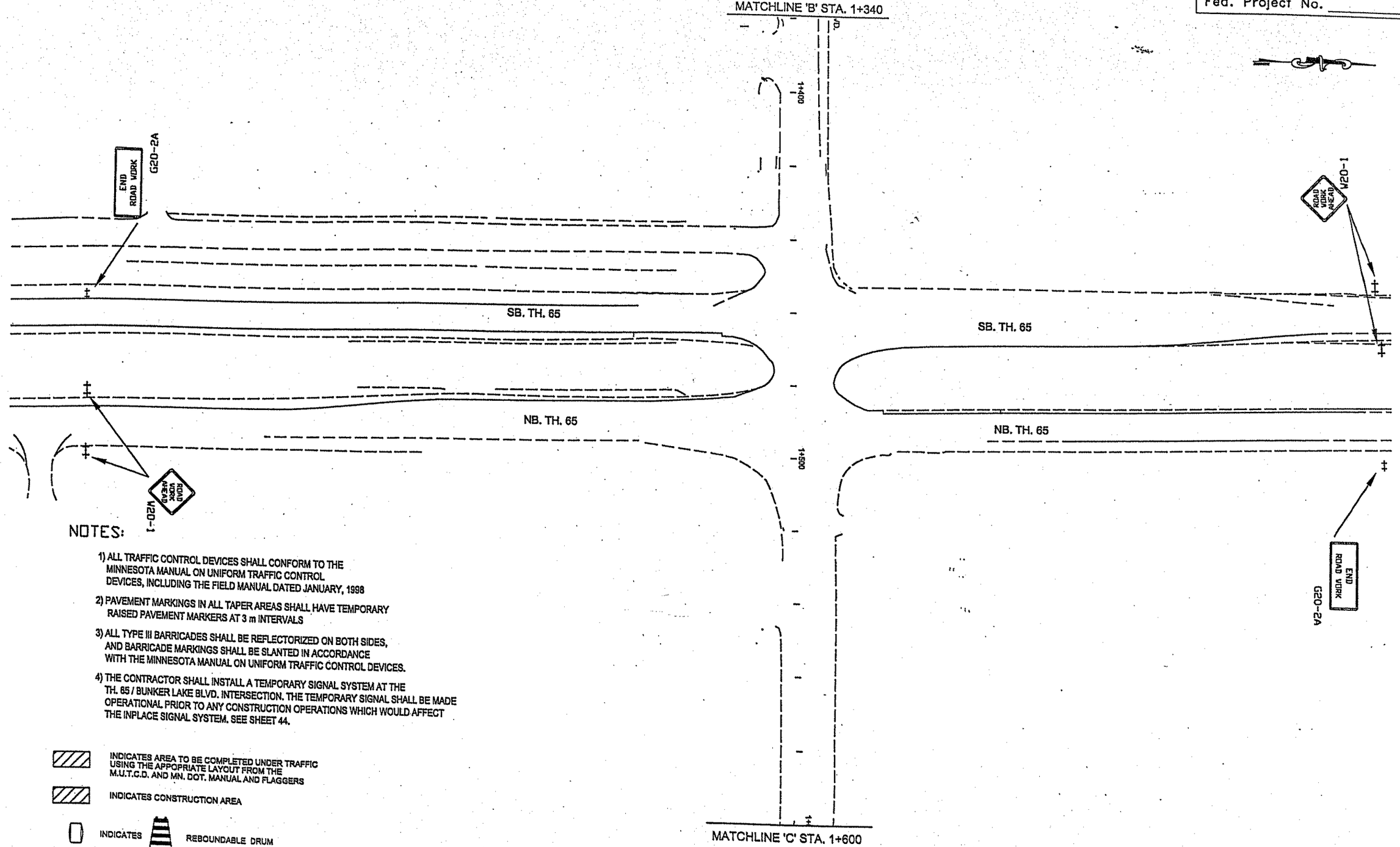
STATE PROJECT NO. 0208-105
STATE PROJECT NO. 02-716-03
STATE AID PROJECT NO. _____
COUNTY PROJECT NO. _____

STAGE I
CONSTRUCTION STAGIN
AND TRAFFIC CONTRO

Sheet 54 of 66 Shee

Fed. Project No. _____

MATCHLINE 'B' STA. 1+340



MATCHLINE 'C' STA. 1+600

NOTES:

1) ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, INCLUDING THE FIELD MANUAL DATED JANUARY, 1998

2) PAVEMENT MARKINGS IN ALL TAPER AREAS SHALL HAVE TEMPORARY RAISED PAVEMENT MARKERS AT 3 m INTERVALS

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INDICATES AREA TO BE COMPLETED UNDER TRAFFIC USING THE APPOPRIATE LAYOUT FROM THE M.U.T.C.D. AND MN. DOT. MANUAL AND FLAGGERS

INDICATES CONSTRUCTION AREA

INDICATES REBOUNDABLE DRUM

NO	DATE	BY	CKD	APPR	REVISION

NAME: S:\SDSKPRO\...\025003.DWG

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

DATE 2/24/00 REG. NO. 26826

DRAWN BY D.M. DATE 7/99

DESIGN BY D.M. DATE 7/99

CHECKED BY _____ DATE _____

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 0208-105

STATE PROJECT NO. 02-716-03

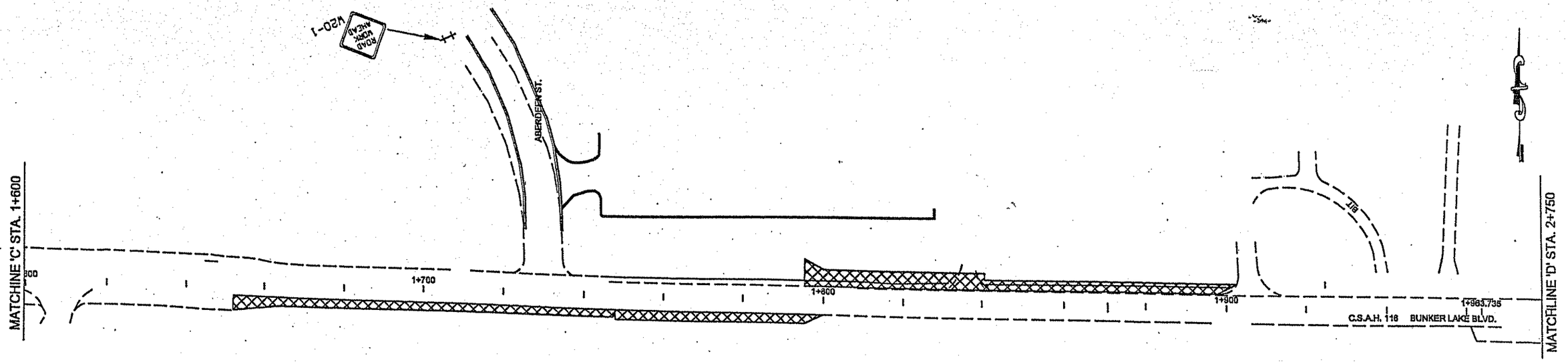
STATE AID PROJECT NO. _____

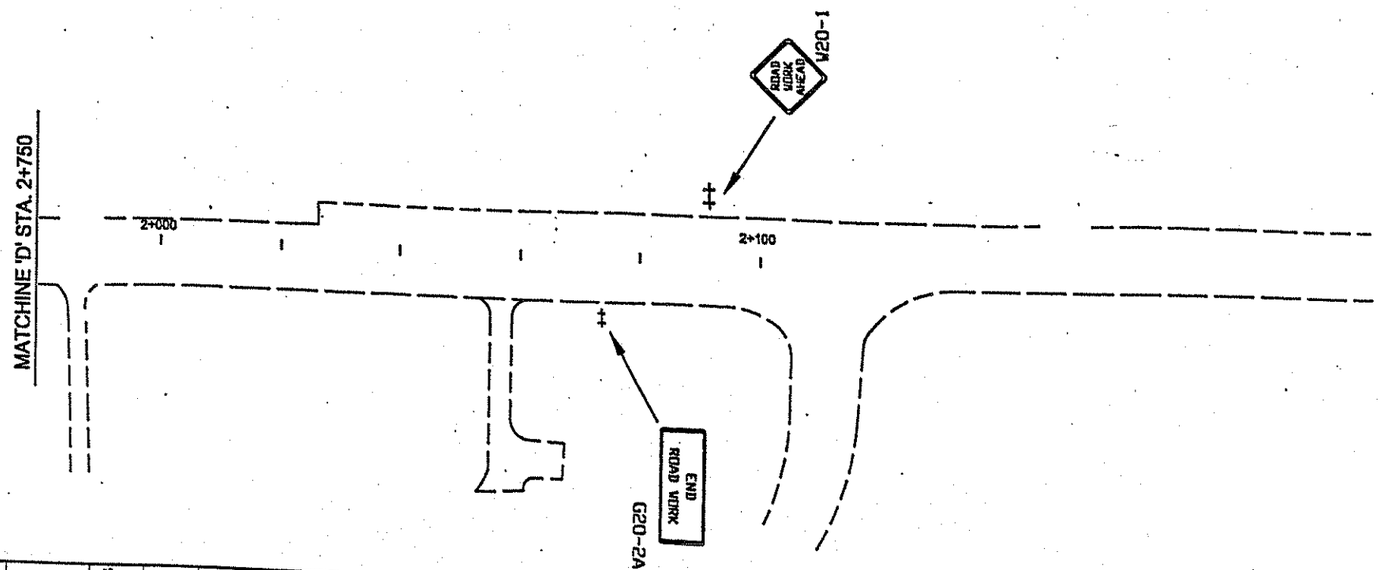
COUNTY PROJECT NO. _____

STAGE I CONSTRUCTION STAGI AND TRAFFIC CONTRO

Sheet 55 of 66 Shee

Fed. Project No. _____





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INDICATES REBOUNDABLE DRUM

NO	DATE	BY	CKD	APPR	REVISION

NAME: S:\SSSXPRO\...\025000.DWG

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DATE 2/14/00 REG. NO. 26826

DRAWN BY O.M. DATE 7/99

DESIGN BY O.M. DATE 7/99

CHECKED BY _____ DATE _____

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 0208-105

STATE PROJECT NO. 02-716-03

STATE AID PROJECT NO. _____

COUNTY PROJECT NO. _____

STAGE I CONSTRUCTION STAGI AND TRAFFIC CONTR

Sheet 56 of 66 Shee

Fed. Project No. _____

NOTES:

1) ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, INCLUDING THE FIELD MANUAL DATED JANUARY, 1998

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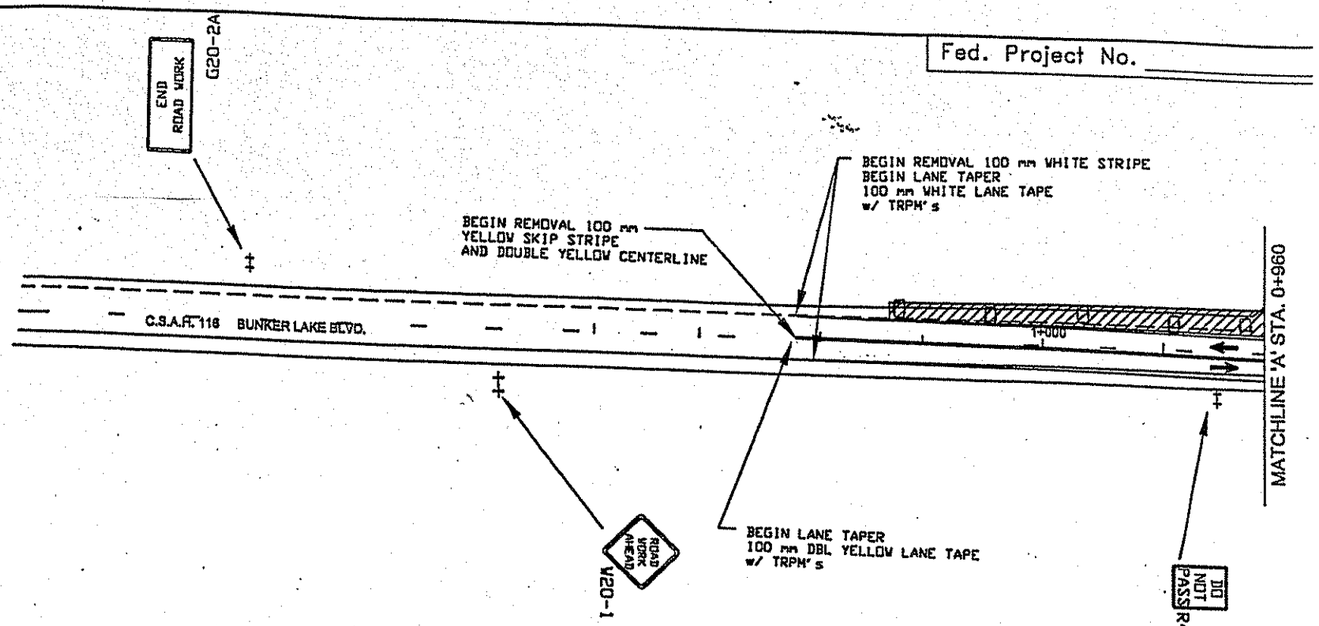
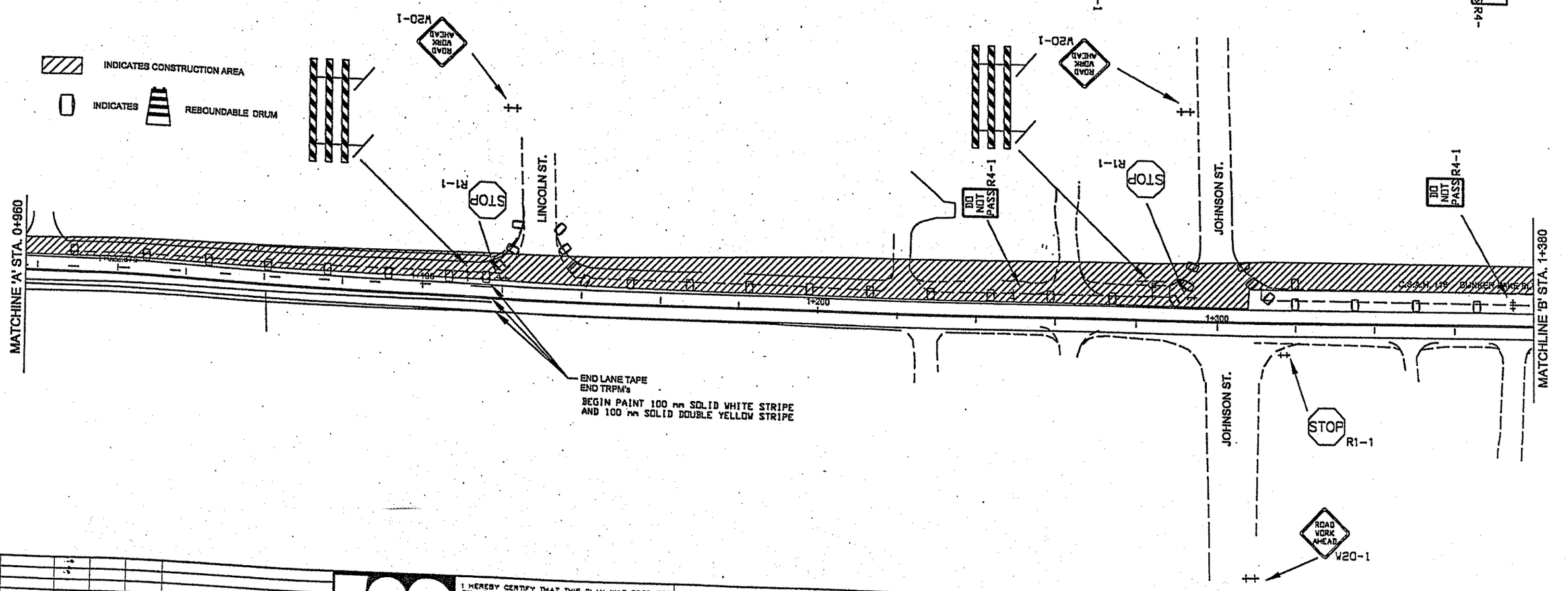


INDICATES CONSTRUCTION AREA

INDICATES REBOUNDABLE DRUM



NO	DATE	BY	CKD	APPR	REVISION

NAME: S:\SDSKPROJ\000000\000000\025000.DWG

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

DATE 2/14/00 REG. NO. 26826

DRAWN BY O.M. DATE 7/99

DESIGN BY O.M. DATE 7/99

CHECKED BY _____ DATE _____

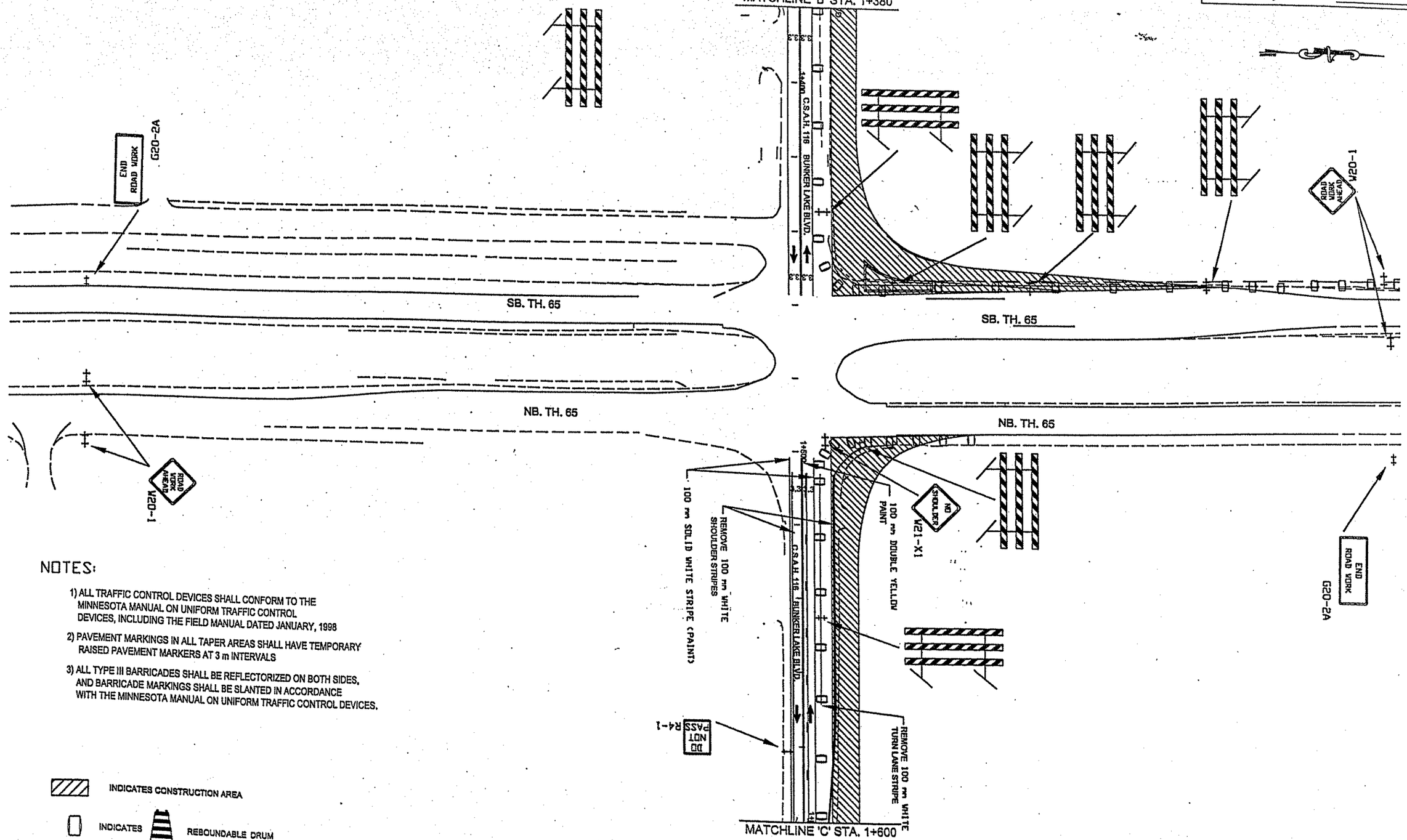
ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 0208-105
STATE PROJECT NO. 02-716-03
STATE AID PROJECT NO. _____
COUNTY PROJECT NO. _____

STAGE II
CONSTRUCTION STAGIN
AND TRAFFIC CONTRO

Fed. Project No. _____



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1) ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, INCLUDING THE FIELD MANUAL DATED JANUARY, 1998

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INDICATES CONSTRUCTION AREA

INDICATES REBOUNDABLE DRUM

NO	DATE	BY	CKD	APPR	REVISION

NAME: S:\SDSKPRO\...\026000.DWG

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

DATE 2/14/00 REG. NO. 21672

DRAWN BY O.M. DATE 7/99

DESIGN BY O.M. DATE 7/99

CHECKED BY _____ DATE _____

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 0208-105

STATE PROJECT NO. 02-716-03

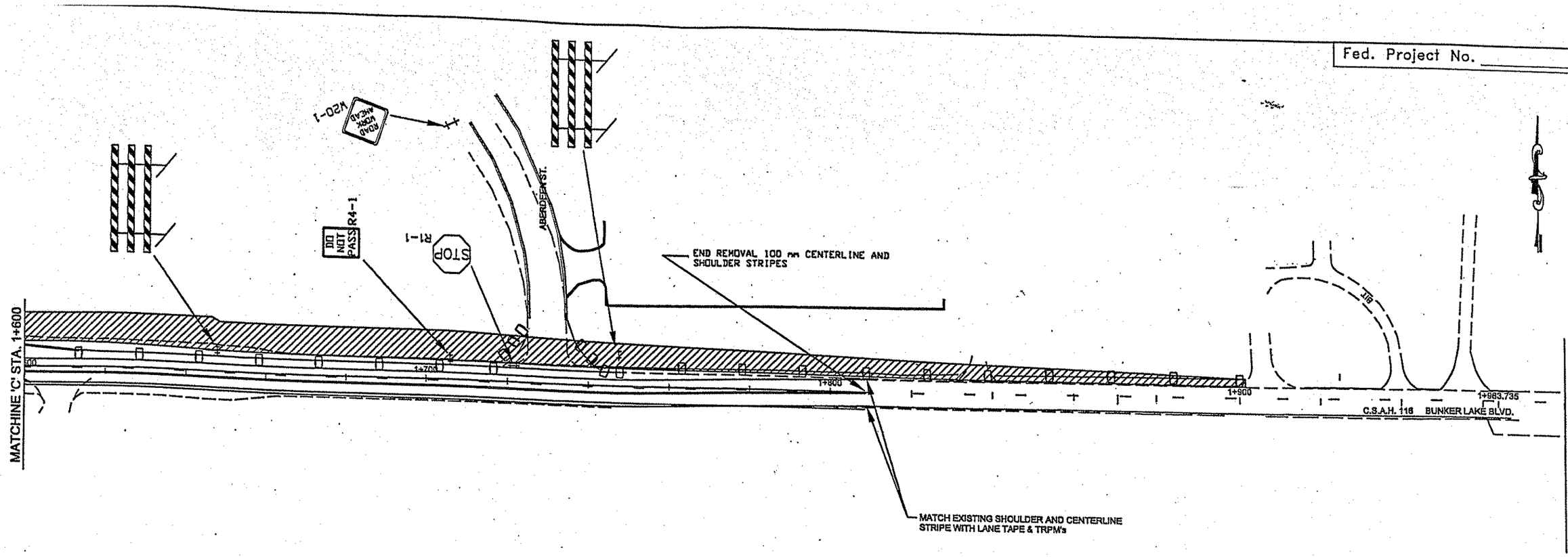
STATE AID PROJECT NO. _____

COUNTY PROJECT NO. _____

STAGE II CONSTRUCTION STAGI AND TRAFFIC CONTR

Sheet 58 of 66 Shee

Fed. Project No. _____



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INDICATES CONSTRUCTION AREA

INDICATES REBOUNDABLE DRUM

NO	DATE	BY	CKD	APPR	REVISION

NAME: S:\SSSKPROJ\000000\000000\026000.DWG

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

DATE 7/7/00 REG. NO. 26726

DRAWN BY D.M. DATE 7/00

DESIGN BY D.M. DATE 7/00

CHECKED BY _____ DATE _____

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 0208-105
STATE PROJECT NO. 02-716-03
STATE AID PROJECT NO. _____
COUNTY PROJECT NO. _____

STAGE II
CONSTRUCTION STAGI
AND TRAFFIC CONTR

Sheet 59 of 66 She

Fed. Project No. _____

NOTES:

1) ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, INCLUDING THE FIELD MANUAL DATED JANUARY, 1998

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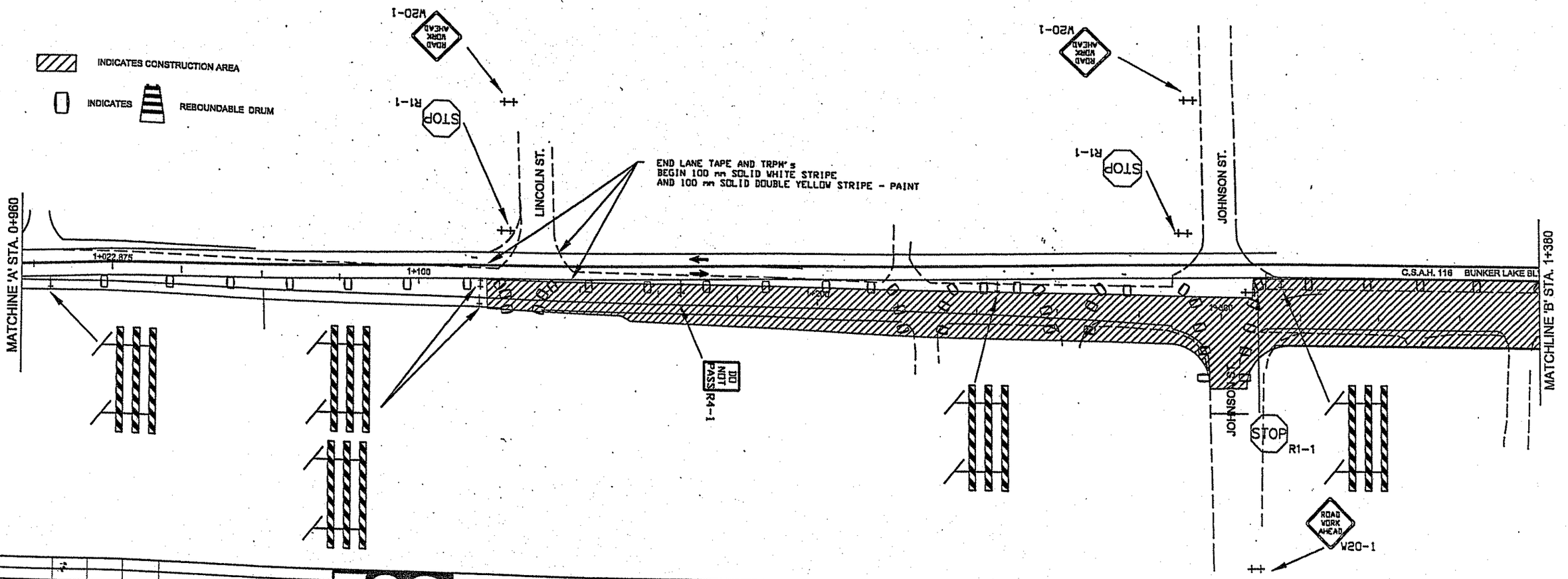
INDICATES CONSTRUCTION AREA

INDICATES REBOUNDABLE DRUM



NO	DATE	BY	CKD	APPR	REVISION

NAME: S:\SSXPRO\...\025003.DWG

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

DATE 2/14/00 REG. NO. 16827

DRAWN BY O.M. DATE 7/99

DESIGN BY O.M. DATE 7/99

CHECKED BY _____ DATE _____

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 0208-105

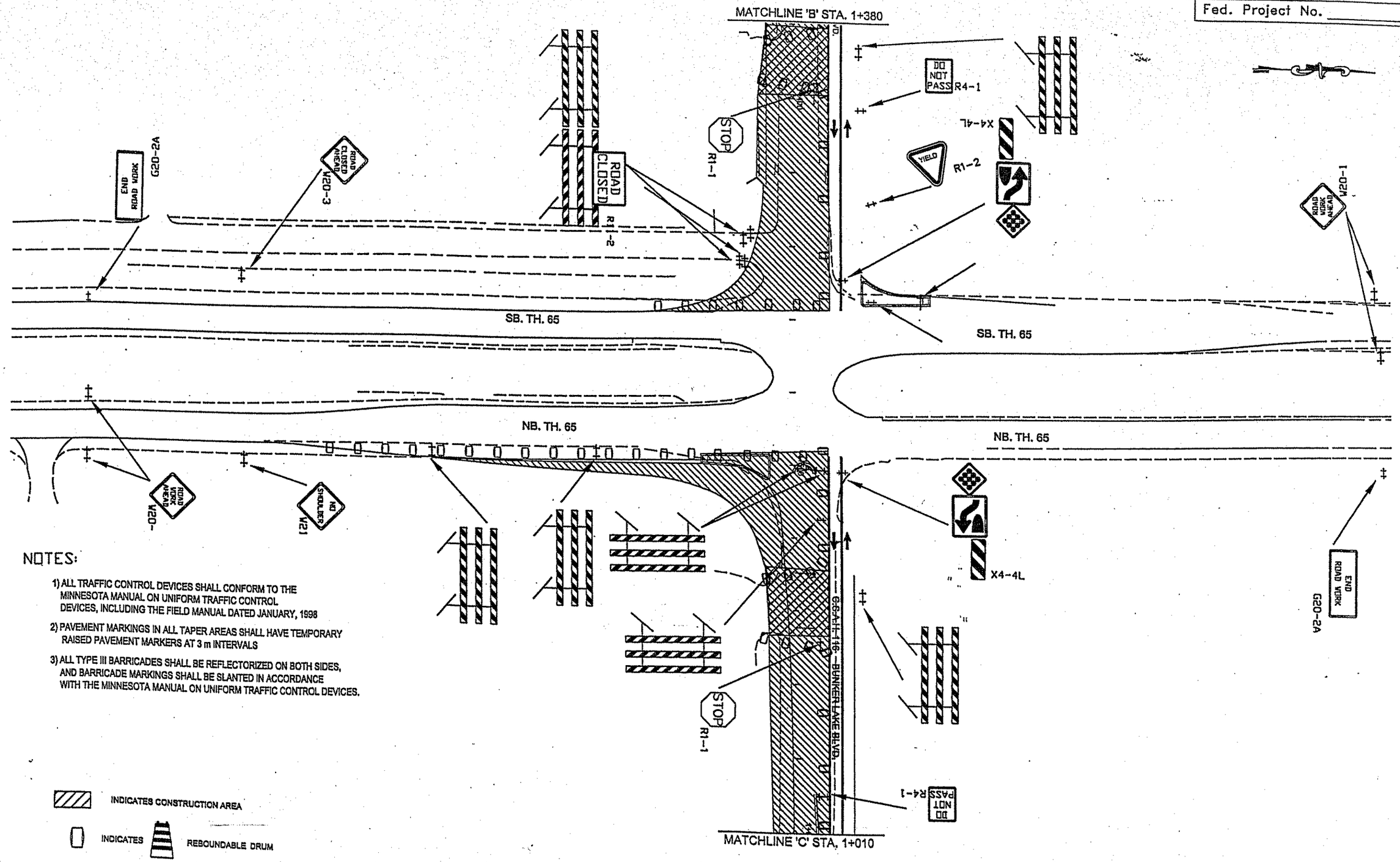
STATE PROJECT NO. 02-716-03

STATE AID PROJECT NO. _____

COUNTY PROJECT NO. _____

STAGE III CONSTRUCTION STAGI AND TRAFFIC CONTRO

Fed. Project No. _____



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INDICATES CONSTRUCTION AREA

INDICATES REBOUNDABLE DRUM

NO	DATE	BY	CKD	APPR	REVISION

NAME: S:\SDSKPROJ\...\025003.DWG

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

DATE 2/14/00 REG. NO. 26826

DRAWN BY D.M. DATE 7/99

DESIGN BY D.M. DATE 7/99

CHECKED BY _____ DATE _____

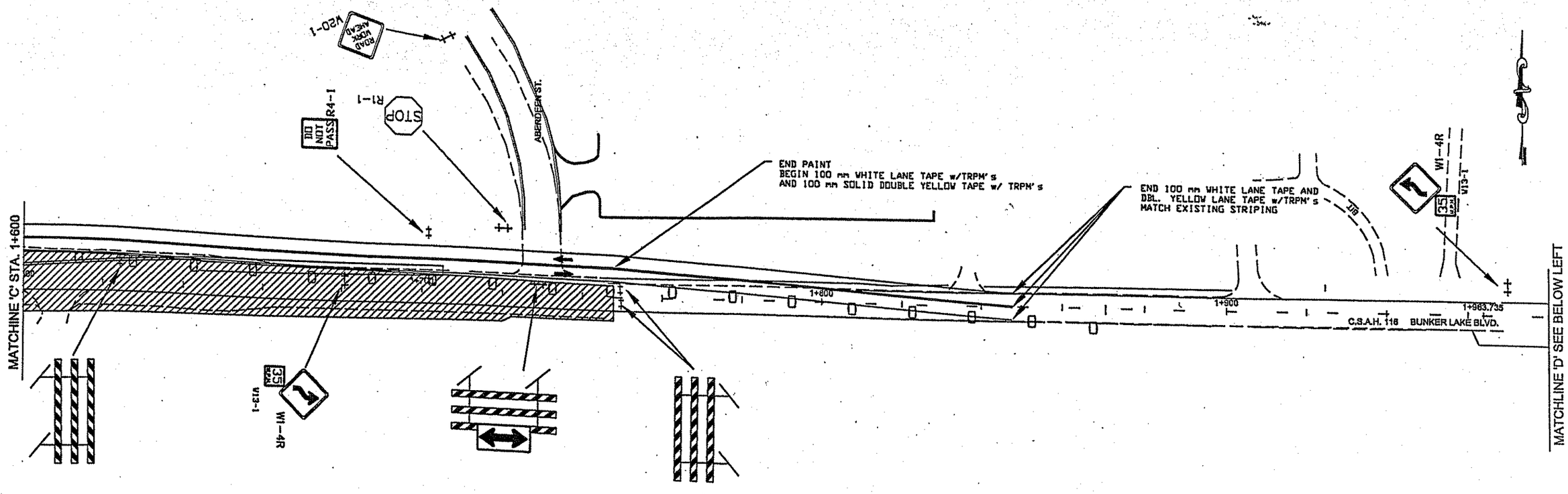
ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 0208-105
STATE PROJECT NO. 02-716-03
STATE AID PROJECT NO. _____
COUNTY PROJECT NO. _____

STAGE III CONSTRUCTION STAGI AND TRAFFIC CONTRO

Sheet 61 of 66 Shee

Fed. Project No. _____



NOTES:

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INDICATES CONSTRUCTION AREA

INDICATES REBOUNDABLE DRUM

NO	DATE	BY	CKD	APPR	REVISION

NAME: S:\SSSXPRO_\000000\000000\025000.DVG

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

DATE 2/14/00 REG. NO. 26524

DRAWN BY D.M. DATE 7/99
DESIGN BY D.M. DATE 7/99
CHECKED BY _____ DATE _____

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 0208-105
STATE PROJECT NO. 02-716-03
STATE AID PROJECT NO. _____
COUNTY PROJECT NO. _____

STAGE III CONSTRUCTION STAGI AND TRAFFIC CONTR

Sheet 62 of 66 Shee

Fed. Project No. _____

NOTES:

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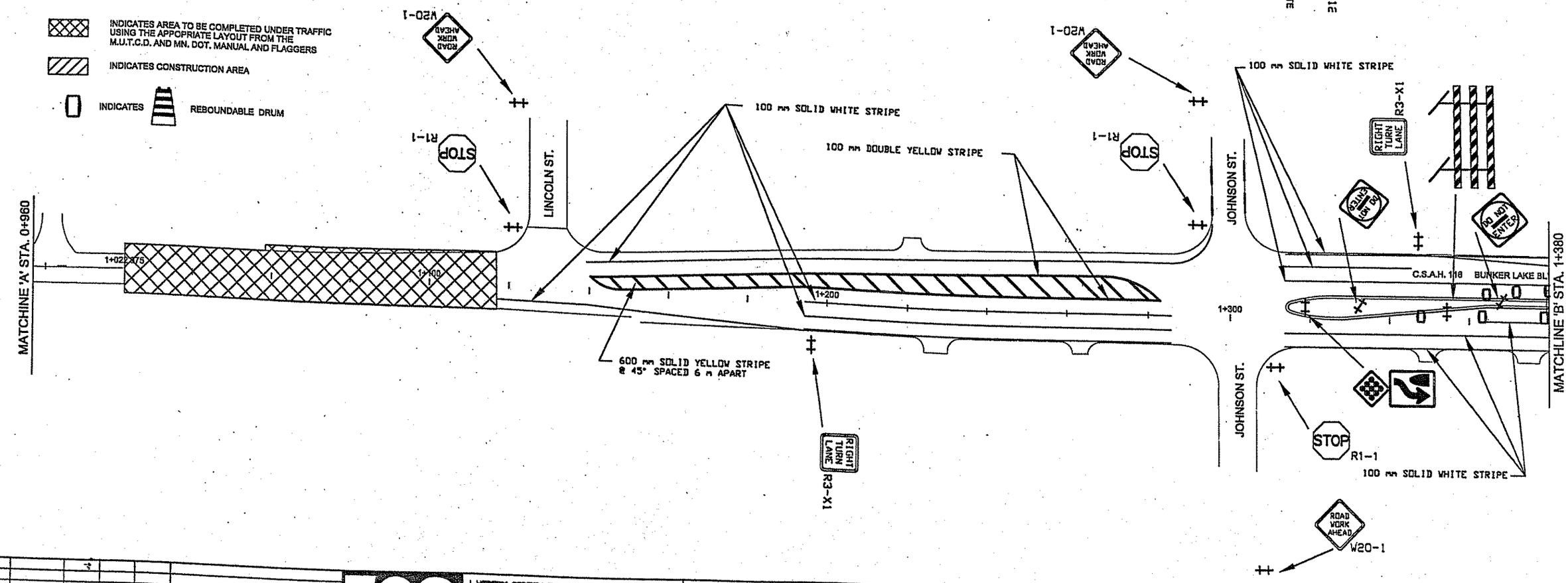
INDICATES AREA TO BE COMPLETED UNDER TRAFFIC USING THE APPOPRIATE LAYOUT FROM THE M.U.T.C.D. AND MN. DOT. MANUAL AND FLAGGERS

INDICATES CONSTRUCTION AREA

INDICATES REBOUNDABLE DRUM



NO	DATE	BY	CKD	APPR	REVISION

NAME: S:\SDSKPROJ\000000\000000\026000.DWG

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

DATE 2/14/00 REG. NO. 26826

DRAWN BY D.M. DATE 7/99
DESIGN BY D.M. DATE 7/99
CHECKED BY _____ DATE _____

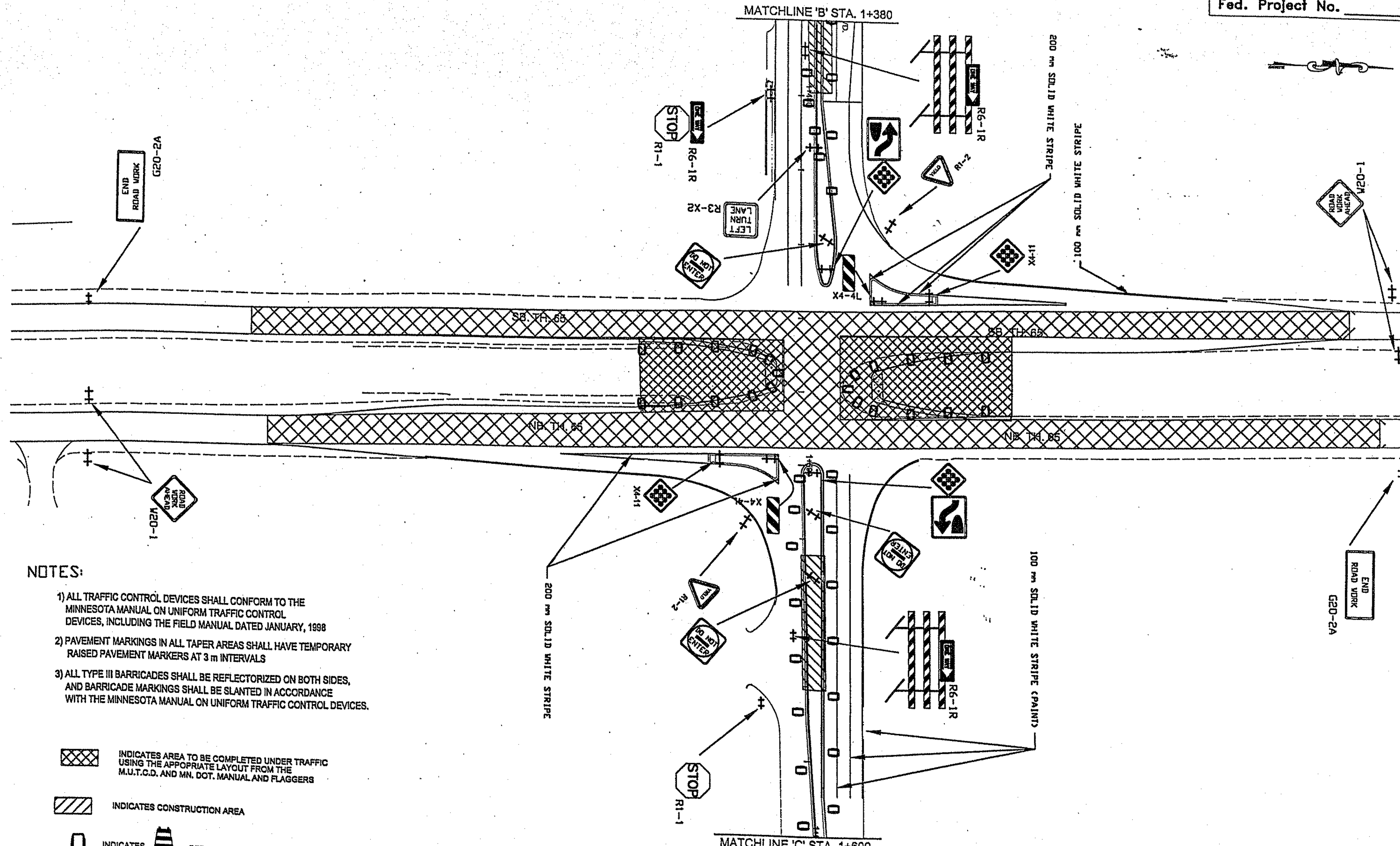
ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 0208-105
STATE PROJECT NO. 02-716-03
STATE AID PROJECT NO. _____
COUNTY PROJECT NO. _____

STAGE IV
CONSTRUCTION STAGING AND TRAFFIC CONTROL

Sheet 63 of 66 Sheets

Fed. Project No. ____



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INDICATES CONSTRUCTION AREA

INDICATES REBOUNDABLE DRUM

NO	DATE	BY	CKD	APPR	REVISION

NAME: S:\SDSKPROJ\000000\000000\026000.DWG

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

DATE 2/14/00 REG. NO. 26826

DRAWN BY D.M. DATE 7/99
DESIGN BY D.M. DATE 7/99
CHECKED BY ____ DATE ____

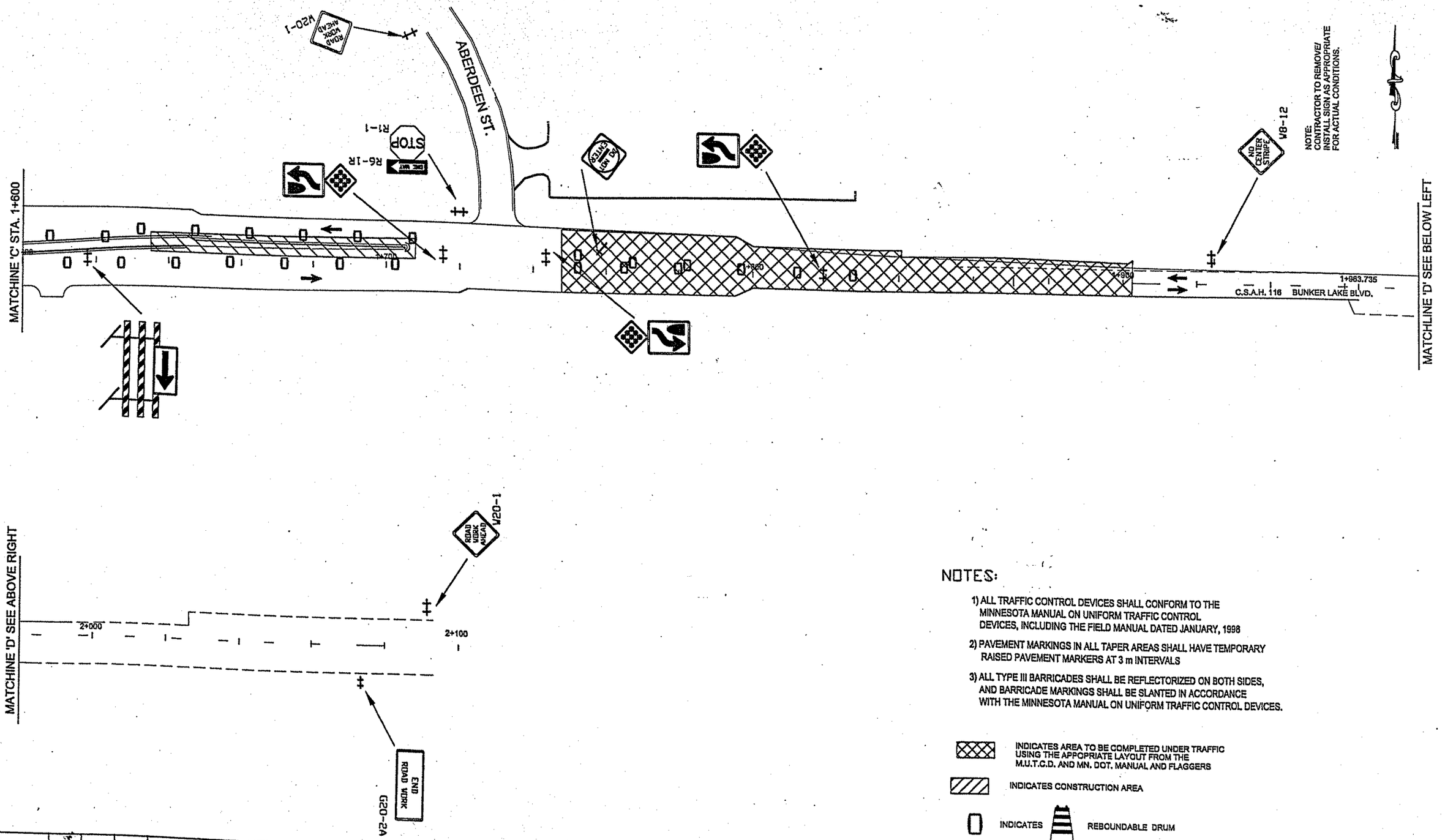
ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 0208-105
STATE PROJECT NO. 02-716-03
STATE AID PROJECT NO. ____
COUNTY PROJECT NO. ____

STAGE IV
CONSTRUCTION STAGING AND TRAFFIC CONTROL

Sheet 64 of 66 Sheets

Fed. Project No. _____



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INDICATES CONSTRUCTION AREA

INDICATES REBOUNDABLE DRUM

NO	DATE	BY	CKD	APPR	REVISION

NAME: S:\SDSKPROJ\000000\000000\025000.DWG

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DATE 2/14/00 REG. NO. 26876

DRAWN BY D.M. DATE 7/99

DESIGN BY D.M. DATE 7/99

CHECKED BY _____ DATE _____

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 0208-105
STATE PROJECT NO. 02-716-03
STATE AID PROJECT NO. _____
COUNTY PROJECT NO. _____

STAGE IV CONSTRUCTION STAGING AND TRAFFIC CONTROL

Sheet 65 of 66 Sheets

Fed. Project No.

M. U. T. C. D. CODE	SIZE	INSERT	STAGE I QUANTITY	STAGE II QUANTITY	STAGE III QUANTITY	STAGE IV QUANTITY	
R1-1	48" x 48"	STOP	0	4	6	6	
R1-2	36" PEND.	YIELD	0	0	0	2	
R3-X1	30" x 30"	RIGHT TURN LANE	0	0	0	2	
R3-X2	30" x 30"	LEFT TURN LANE	0	0	0	1	
R4-1	24" x 30"	DO NOT PASS	0	5	4	0	
R4-7	24" x 30"		0	0	2	6	MOUNTED BELOW R4-7
R5-1	30" x 30"	DO NOT ENTER	0	0	0	2	
R6-1R	36" x 12"	ONE WAY	0	0	0	1	* 1 MOUNTED ABOVE R1-1
G20-2A	48" x 24"	END ROAD WORK	4	4	4	4	
W1-4R	48" x 48"		0	0	1	0	
W8-12	48" x 48"	NO CENTERLINE STRIPE	0	0	0	2	AS REQUIRED
W12-1	24" x 24"		0	0	0	2	
W13-1	24" x 24"	35 M.P.H.	0	0	1	0	* 1 MOUNTED BELOW W1-4L

M. U. T. C. D. CODE	SIZE	INSERT	STAGE I QUANTITY	STAGE II QUANTITY	STAGE III QUANTITY	STAGE I QUANTITY
W20-1	48" x 48"	ROAD WORK AHEAD	10	10	10	10
W21-X1	48" x 48"	NO SHOULDER	0	1	1	0
X4-2	24" x 24"		0	0	2	6
W1-7 TYPE III	48" x 24" 8 FOOT		0	0	1	0
TYPE III	8 FOOT		0	3	15	4
REBOUNDABLE DRUM			0	100	100	111

NOTES:

1) ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, INCLUDING THE FIELD MANUAL DATED JANUARY, 1998

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4) ALL SIGN SIZES SHOWN ARE ENGLISH UNITS

NO	DATE	BY	CKD	APPR	REVISION

NAME: S:\SDSXPROJ\000000\000000\G26000.DWG

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

DATE 2/14/00 REG. NO. 26521

DRAWN BY D.M. DATE 7/99

DESIGN BY D.M. DATE 7/99

CHECKED BY DATE

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 0208-105
STATE PROJECT NO. 02-716-03
STATE AID PROJECT NO.
COUNTY PROJECT NO

SIGN QUANTITIES
TRAFFIC CONTROL

Sheet 66 of 66 Sheets

Fed. Project No. 02-716-03

Revisions to accomodate Bank construction

DRAINAGE TABULATION

STRUCT. NO.	STATION	LOCATION (m)	REMARKS	MH OR CB	STRUCT. DESIGN	PAY HEIGHT	TOP OF CASTING ELEV.	OUTLET ELEV.	DRAINS TO	GRADE %	F & I CAST. ASSY.	FURNISH AND INSTALL RC PIPE SEWER DESIGN 3006													
												300 mm RCP	RCP APRON	375 mm RCP	RCP APRON	450 mm RCP	RCP APRON	450 mm PIPE BEND 7.5 DEG.	600 mm RCP	RCP APRON	RIPRAP	CLASS	CULVERT MARKERS	EROSION CONTROL BLANKET	NOTES
												m	EACH	m	EACH	m	EACH		m	EACH	m3		EACH	m2	
100	1+130.865	14.31 m RT LEB		APRON				272.955	101	7.2 %		10	1									II	1	7	SAFETY APRON
101	1+119.314	14.39 m RT LEB		CB	G	1.513	272.870	271.787	103	0.5 %	C					28.4						III			
102	1+143.434	11.18 m LT LWB		APRON				273.013	103	2.0 %		21.7	1									II	1	7	SAFETY APRON
103	1+119.927	11.74 m LT LWB		CB	F	1.725	273.370	271.645	104	0.5 %	C								62.0			II			
104	1+122.616	73.66 m LT LWB		CB	F	1.817	273.152	271.335	105	0.5 %	C								30.0			II			
105	1+123.974	103.71 m LT LWB		CB	F	1.585	272.770	271.185	106	0.5 %	C								10.8			II			
106	1+114.297	111.79 m LT LWB		APRON				271.122	POND											1	6.3 ①		1	13	
107	1+327.192	3.87 m RT LWB		CB	H	0.510	274.090	273.515	108	0.4 %	B	12.0										IV			
108	1+327.250	10.33 m LT LWB		APRON				273.458	DITCH				1										1	8	
109	1+365.823	3.87 m LT LEB		CB	H	0.637	274.360	273.658	110	0.44 %	B	14.7										IV			
110	1+365.852	10.02 m LT LWB		APRON				273.585	DITCH				1										1	8	
111	1+384.192	10.63 m RT LEB		CB	H	0.513	274.388	273.810	112	0.4 %	B	14.2										II			
112	1+397.885	7.13 m RT LEB		CB	G	0.647	274.465	273.753	114	0.4 %	B			39.9								IV			
114	1+437.656	10.61 m RT LEB	S.P. 0208-105	MH	F	1.207	274.775	273.593	115	0.5 %	A					38.0						III			
113	1+447.902	23.84 m RT LEB	S.P. 0208-105	APRON				273.979	DITCH							15.0	1						1	9	SAFETY APRON
115	1+437.778	20.64 m LT LWB	S.P. 0208-105	APRON				273.389	DITCH								1						1	9	SAFETY APRON
116	1+588.758	3.87 m RT LWB		CB	F	1.872	274.255	272.328	117	0.5 %	B	13.7										IV			GRIT CHAMBER
117	1+588.698	11.62 m LT LWB		APRON				273.150	DITCH				1										1	8	
118	1+681.843	3.87 m LT LEB		CB	F	1.528	273.943	272.360	119	0.5 %	B	12.1										II			GRIT CHAMBER
119	1+681.741	10.44 m RT LEB		APRON				273.190	DITCH				1										1	8	
EX.	1+426.789	8.58 m RT LEB	REMOVE MH, SALV. CASTING																						
120	1+477.471	14.44 m RT LEB	S.P. 0208-105	APRON				273.949	121	1.14%						2.4	1					III		8	SAFETY APRON
121	1+499.901	13.99 m RT LEB	S.P. 0208-105	MH	G	1.221	274.934	273.738	122	3.50%	A					21.0						III			
122	1+520.697	12.30 m RT LEB	S.P. 0208-105	MH	G	1.100	274.078	273.003	123	0.3%	A					14.7						III			
123	1+535.340	9.60 m RT LEB		CB	H	1.000	273.959	272.959	124	0.3%	C					38.2						III			
124	1+573.467	9.60 m RT LEB		CB	H	0.947	273.856	272.844	125	0.3%	B					50.4		4 ②							
125	1+629.987	9.60 m RT LEB		MH	4020-1500	0.859	273.609	272.675	CULVERT		A											III			
126	1+513.515	25.07 m RT LEB		APRON				273.865	122	5.7%		13.3	1									III		7	SAFETY APRON
				TOTAL	DES F	9.734																			
					DES G	4.481																			
					DES H	3.607																			
					4020-1500	0.859																			
								SUBTOTAL S.P. 02-716-03				111.7	7	39.9		208.10			102.8	1	6.3		7	69	
								SUBTOTAL S.P. 0208-105									3	4					2	34	
								TOTALS				111.7	7	39.9		208.10	3	4	102.8	1	6.3		9	103	
116a	1+528.8	7.46 LT LWB	Build w/ existing Pipe	CB	G	0.957	274.193	273.171	EX STMH2	0.5%	B														
130a	1+6M	7.46 LT LWB		CB	H	0.820	274.085	273.200	STMH1	0.5%	B	3.7													Drains to 36" Pipe-install bracketed

TIE ALL JOINTS ON STORM SEWER THAT GOES UNDER THE ROADWAY AND HAS A FREE END

① FILTER MATERIAL CONSIDERED INCIDENTAL FOR WHICH NO DIRECT PAYMENT WILL BE MADE

② INCIDENTAL FOR WHICH NO DIRECT PAYMENT WILL BE MADE

0.820

273.200

CASTING ASSEMBLY SUMMARY Ⓤ

ASSEMBLY	RING OR FRAME CASTING	COVER OR GRATE CASTING	CURB BOX	STANDARD PLATE	QUANTITY	REMARKS
S.P. 0208-105						
A	700-7			M4101	3	MANHOLE
		715		M4110		
				TOTALS	3	
S.P. 02-716-03						
A	700-7			M4101	1	MANHOLE
		715		M4110		
B	801			M4126		CURB INLET
		810		M4149	1/0	
			8218	M4161		
C	RD. CONC.			M4143		STOOL
		731		M4143	5	
				TOTALS	16	

NO	DATE	BY	CKD	APPR	REVISION
1	6/23/00	KLO	LAR		Added 2 CB's

NAME: 05Drainage tab.dwg 11-24-99 2:30:49 pm EST

minnesota metric

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

DATE 2/5/00 REG. NO. 26826

DRAWN BY KLO DATE 8/99

DESIGN BY KLO DATE 8/99

CHECKED BY LAR DATE 8/99

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

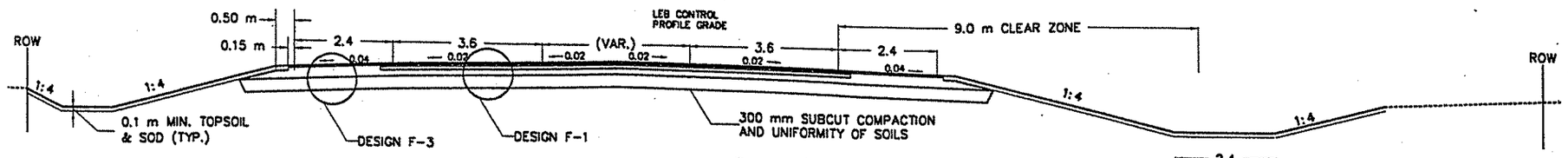
STATE PROJECT NO. 0208-105 (TH65)
STATE PROJECT NO. 02-716-03
STATE AID PROJECT NO.
COUNTY PROJECT NO.

DRAINAGE TABULATION

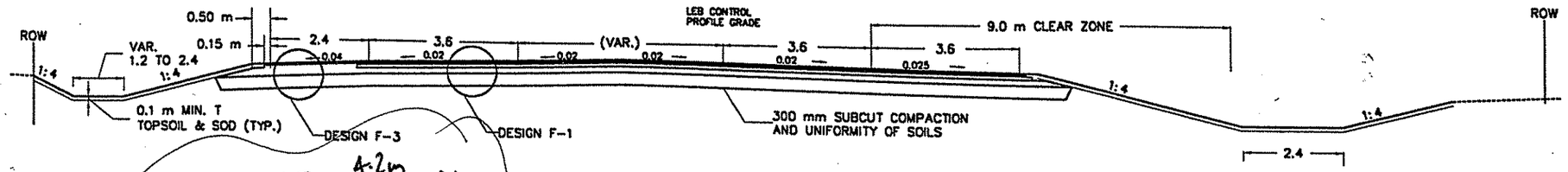
Sheet 5 of 66 Sheets

Fed. Project No. _____

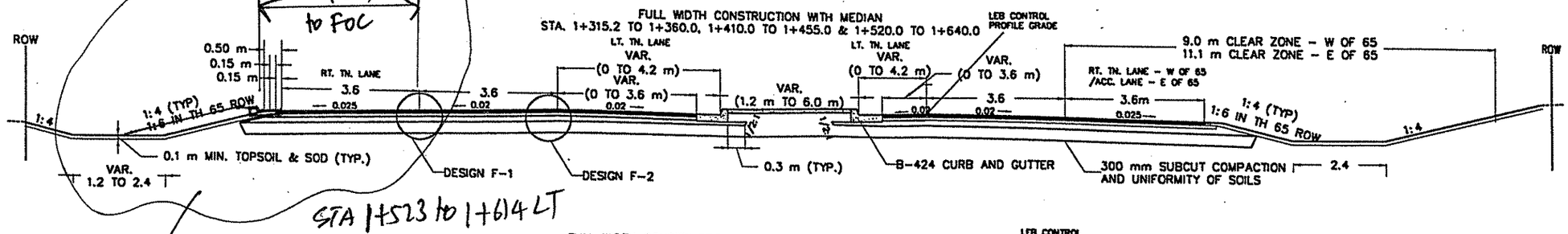
FULL WIDTH RECONSTRUCTION WITHOUT MEDIAN
(STA. 1+114.0 TO 1+153.0)



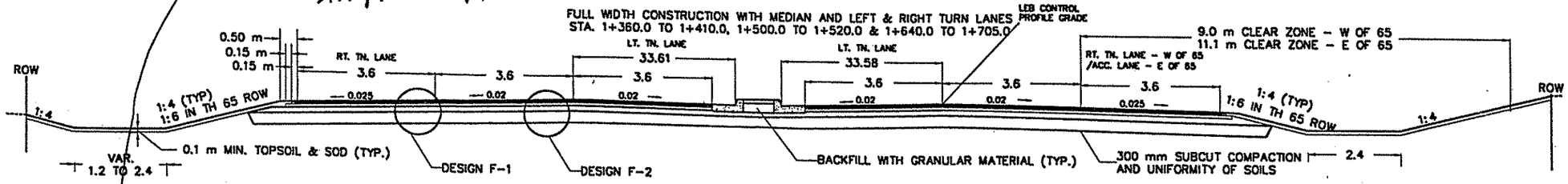
FULL WIDTH RECONSTRUCTION WITH RIGHT TURN LANE
(STA. 1+153.0 TO 1+315.0)



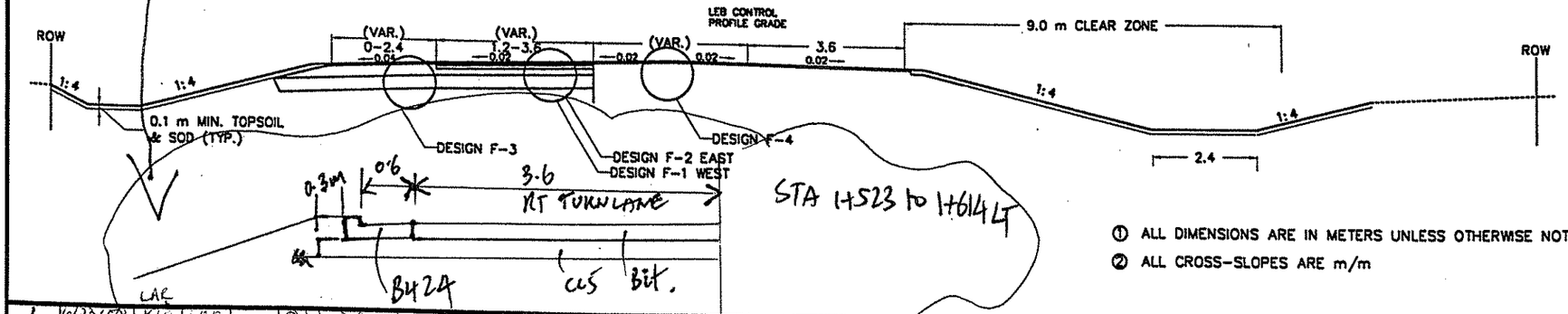
FULL WIDTH CONSTRUCTION WITH MEDIAN
STA. 1+315.2 TO 1+360.0, 1+410.0 TO 1+455.0 & 1+520.0 TO 1+640.0



FULL WIDTH CONSTRUCTION WITH MEDIAN AND LEFT & RIGHT TURN LANES
STA. 1+360.0 TO 1+410.0, 1+500.0 TO 1+520.0 & 1+640.0 TO 1+705.0

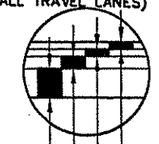


TRANSITION AREA EAST AND WEST ENDS
(STA. 1+022.81 TO 1+114, STA. 1+748 TO 1+938)



① ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE NOTED
② ALL CROSS-SLOPES ARE m/m

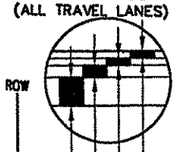
DESIGN F-1
WEST OF TH 65
(ALL TRAVEL LANES)



- 40 mm TYPE MV 4 WEARING COURSE MIXTURE (MVWE45035C) SPEC 2350
- 40 mm TYPE MV 3 NON WEARING COURSE MIXTURE (MVNW35035C) SPEC 2350
- 80 mm TYPE LV 3 NON WEARING COURSE MIXTURE (LVNW35035B) SPEC 2350
- 190 mm AGGREGATE BASE CLASS 5 SPEC 2211

TACK COAT-SPEC. 2357, TO BE APPLIED BETWEEN ALL BITUMINOUS LIFTS.

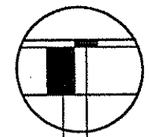
DESIGN F-2
EAST OF TH 65
(ALL TRAVEL LANES)



- 40 mm TYPE MV 4 WEARING COURSE MIXTURE (MVWE45035C) SPEC. 2350
- 40 mm TYPE MV 3 NON WEARING COURSE MIXTURE (MVNW35035C) SPEC. 2350
- 50 mm TYPE LV 3 NON WEARING COURSE MIXTURE (LVNW35030B) SPEC. 2350
- 150 mm AGGREGATE BASE CLASS 5 SPEC. 2211

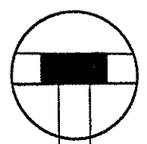
TACK COAT-SPEC. 2357, TO BE APPLIED BETWEEN ALL BITUMINOUS LIFTS.

DESIGN F-3



- 40 mm TYPE MV 4 WEARING COURSE MIXTURE (MVWE45035C) SPEC. 2350
- 260 mm AGGREGATE BASE CLASS 5 - SPEC. 2211

DESIGN F-4



- 40 mm TYPE MV 4 WEARING COURSE MIXTURE (MVWE45035C) SPEC. 2350
- MILL 40 mm BELOW THE INPLACE SURFACE

NO	DATE	BY	CKD	APPR	REVISION
1	10/22/100	KLO	LAR		Added Curb

NAME: I:\Typicals.dwg 21400 80406

minnesota metric

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
DATE 2/14/100 REG. NO 26822

DRAWN BY KLO DATE 8/99
DESIGN BY KLO DATE 8/99
CHECKED BY LAR DATE 8/99

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 0208-105(TH 65)
STATE PROJECT NO. 02-716-03
STATE AID PROJECT NO. _____
COUNTY PROJECT NO. _____

TYPICAL SECTIONS

Sheet 11 of 66

Fed. Project No. _____

GRAPHIC SCALE
(IN METERS)
20 0 10 20

① STANDARD PLATE 7113

MATCH LINE STA. 1+340

MATCH LINE STA. 1+700

500 mm X 31 m CMP
455 mm X 21.7 m CMP
915 mm X 20.6 m CMP
EXISTING R/W
NEW R/W
3 m S.E.
GAS STRUCTURE
P-BUR
T-BUR
3.6 m RT.TN.LN.
4.2 m LT.TN.LN.
LOOP
0.67 m RAD.
GRADE DITCH TO DRAIN AT 1:10
200 mm CONC. MEDIAN STA. 1+532 TO 1+555
SILT FENCE
ENVIRONMENTALLY SENSITIVE AREA
STA. 1+646.27 7.2 m LT LWB
460 mm X 15.4 m
4.2 m LT.TN.LN. BUNKER LAKE BLVD
3.6 m ACC. LANE
1:55 TAPER
15 m R.
14 m ENT.
MONITOR WELL
380 mm X 15.2 m CMP
450 mm X 300 mm CMP X 18.4 m
475 mm X 23.8m RCP INCLUDES 2 APRONS
SILT FENCE
ENVIRONMENTALLY SENSITIVE AREA
COUNTY DITCH 59
1-S-FR 1336
TOTAL GAS STATION
BEGIN RET. WALL STA. 1+397.8
END RET. WALL STA. 1+424.8
400 mm X 43.7 CMP
1+413.29 60 m R 67.2 LT
1+426.38 20 m R 29.4 LT
1+313.22 60 m R 44.2 LT
1+554.37 60 m R 43.3 LT
1+529.99 60 m R 67.2 LT
1+516.85 20 m R 29.4 LT
1+436.50 20 m R 30.0 RT
1+399.01 60 m R 43.9 RT
1+563.69 60 m R 45.0 RT
1+539.30 60 m R 67.2 RT
1+526.27 20 m R 29.4 RT
CONST. CONC WALK
40 mm OVERLAY

278.000
276.000
274.000
272.000
270.000

0.700%
0.539% LEB 0.472% LWB
S.D. LEB 0.772%
S.D. LWB 0.325%
300 mm SUBCUT
FINISHED LWB PROFILE GRADE
FINISHED LEB PROFILE GRADE
PVI STA. = 1+380
PVI ELEV. = 274.800
PVI STA. = 1+455.879
PVI ELEV. = 275.004
PVI STA. = 1+462.078
PVI ELEV. = 275.136
PVI STA. = 1+465.679
PVI ELEV. = 275.118
TH. 85
1.173%
0.5%
2.0%
PVI STA. = 1+484.512
PVI ELEV. = 274.897
PVI STA. = 1+491.712
PVI ELEV. = 274.933
PVI STA. = 1+498.312
PVI ELEV. = 274.801
PVI STA. = 1+580
PVI ELEV. = 274.605
LWB PROFILE GRADE
LEB PROFILE GRADE
LEB & LWB PROFILE GRADE
EXIST. PROFILE GRADE
EXISTING GRADE
-0.354% LWB -0.431% LEB
-0.431%
0.300 m SUBCUT
S.D. LWB -0.3%
1+420 ELEV. 273.760 N
1+380 ELEV. 274.000 S
1+520 ELEV. 273.695
1+520 ELEV. 273.586
1+540 ELEV. 273.228
1+520 ELEV. 273.385
1+600 ELEV. 273.297
1+620 ELEV. 272.911
1+624 ELEV. 272.901
1+640 ELEV. 272.500
LWB -1.440%
0.250%
LWB -0.460%
S.D. LEB -2.522%
S.D. LWB 0.416%
MUCK LIMITS
BVCS 1+640
BVCE 274.174
LOW POINT ELEV. = 274.083
LOW POINT STA. = 1+681.714
PVI STA. = 1+680
PVI ELEV. = 274.000
A.D. = 0.836
K = 95.715
VC. = 80 m

NO	DATE	BY	CKD	APPR	REVISION
1	6/23/00	KLO	LAR		Added Curb to Storm

NAME:17-19Plan&Prof.dwg 12-14-99 9:54:02 am EST

minnesota metric

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
DATE 12/14/00 REG. NO 26826

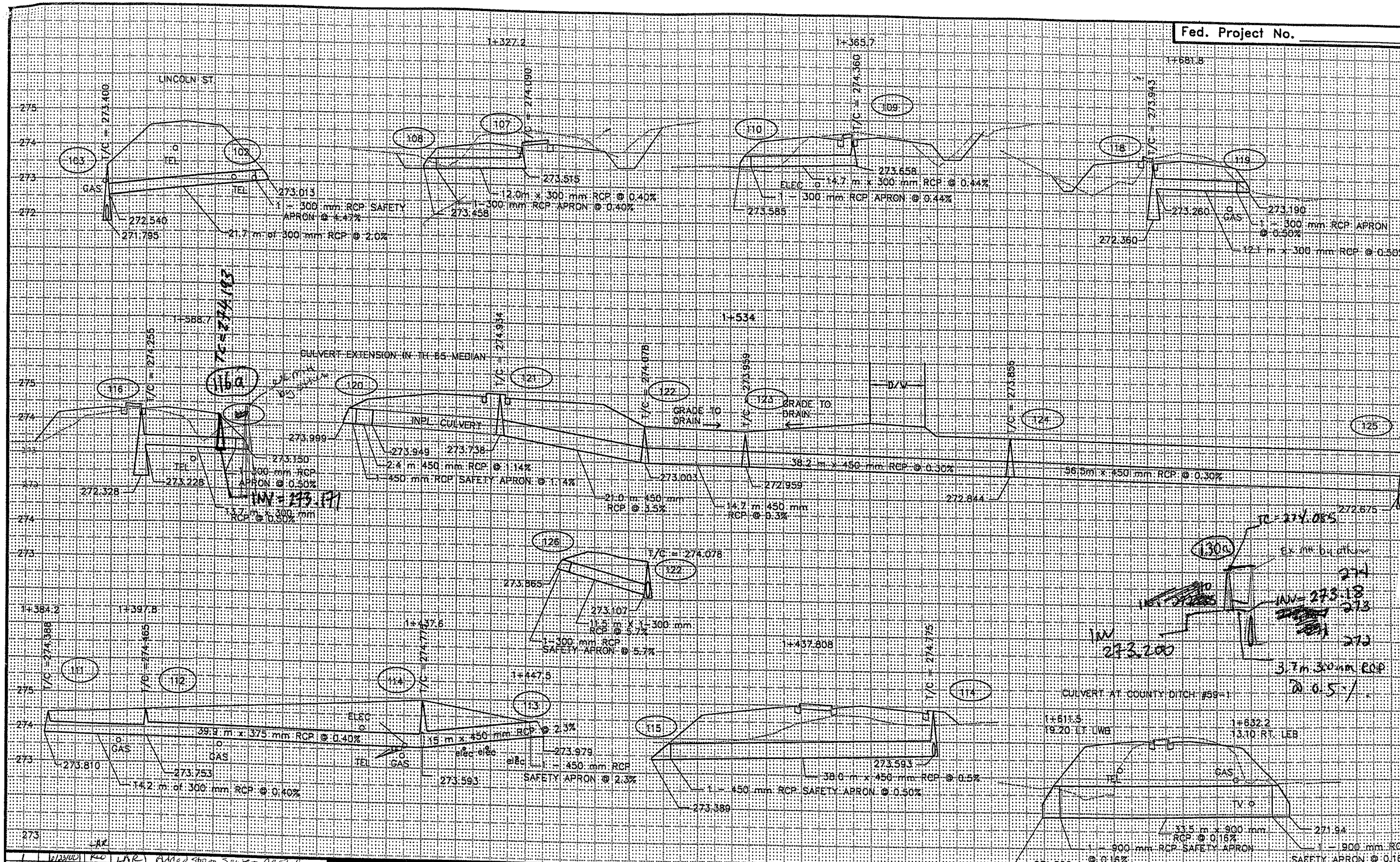
DRAWN BY KLO DATE 8/99
DESIGN BY KLO DATE 8/99
CHECKED BY LAR DATE 8/99

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 0208-105(TH 65)
STATE PROJECT NO. 02-716-03
STATE AID PROJECT NO. _____
COUNTY PROJECT NO. _____

PLAN-PROFILE
STA 1+340.0 TO 1+700.0

Sheet 18 of 66 Sheets


Fed. Project No.
1+327.2
1+365.7
1+681.8
LINCOLN ST.
T/C = 273.400
T/C = 274.090
T/C = 274.360
T/C = 273.943
103
102
107
108
110
109
118
119
TEL
GAS
ELEC
272.540
271.795
273.013
1 - 300 mm RCP SAFETY APRON @ 4.47%
21.7 m of 300 mm RCP @ 2.0%
273.575
12.0m x 300 mm RCP @ 0.40%
1-300 mm RCP APRON @ 0.40%
273.458
273.658
14.7 m x 300 mm RCP @ 0.44%
1 - 300 mm RCP APRON @ 0.44%
273.585
273.260
273.190
1 - 300 mm RCP APRON @ 0.50%
272.360
12.1 m x 300 mm RCP @ 0.50%
1+588.7
1+534
CULVERT EXTENSION IN TH 65 MEDIAN
T/C = 274.256
T/C = 274.934
T/C = 274.078
T/C = 273.959
T/C = 273.855
T/C = 273.609
116
116a
120
121
122
123
124
125
T/C = 274.193
IN = 273.171
GRADE TO DRAIN
D/W
INPL. CULVERT
273.999
273.949
273.738
273.150
1-300 mm RCP APRON @ 0.50%
273.228
272.328
3.7 m x 300 mm RCP @ 0.50%
2.4 m 450 mm RCP @ 1.14%
1-450 mm RCP SAFETY APRON @ 1.14%
273.003
21.0 m 450 mm RCP @ 3.5%
272.959
14.7 m 450 mm RCP @ 0.3%
38.2 m x 450 mm RCP @ 0.30%
272.844
56.5m x 450 mm RCP @ 0.30%
272.675
126
T/C = 274.078
122
273.865
273.107
11.5 m X 1-300 mm RCP @ 5.7%
1-300 mm RCP SAFETY APRON @ 5.7%
130a
TC = 274.085
Ex MH b-cathoro
INV = 273.18
IN 273.200
3.7m 300mm RCP @ 0.5%
1+384.2
1+397.8
1+437.6
1+437.808
1+447.5
T/C = 274.388
T/C = 274.465
T/C = 274.775
T/C = 274.775
111
112
114
113
115
114
CULVERT AT COUNTY DITCH #59-1
1+611.5
19.20 LT LWB
1+632.2
13.10 RT. LEB
39.9 m x 375 mm RCP @ 0.40%
15 m x 450 mm RCP @ 2.3%
273.810
273.753
14.2 m of 300 mm RCP @ 0.40%
273.593
273.979
1 - 450 mm RCP SAFETY APRON @ 2.3%
273.593
38.0 m x 450 mm RCP @ 0.5%
1 - 450 mm RCP SAFETY APRON @ 0.50%
273.389
TV
271.94
33.5 m x 900 mm RCP @ 0.16%
1 - 900 mm RCP SAFETY APRON @ 0.16%
271.882
1 - 900 mm RCP SAFETY APRON @ 0.16%

NO	DATE	BY	CKD	APPR	REVISION
1	2/23/00	KLO	LAR		Added storm sewer profile

NAME: 21-22StormSewer.dwg 11-23-99 3:56:26 pm EST

minnesota metric

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

DATE 2/14/00 REG. NO. 26826

DRAWN BY KLO DATE 8/99
DESIGN BY KLO DATE 8/99
CHECKED BY LAR DATE 8/99

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 0208-105 (TH 65)
STATE PROJECT NO. 02-716-03
STATE AID PROJECT NO.
COUNTY PROJECT NO.

DRAINAGE PROFILES

Sheet 22 of 66 Sheets