MINNESOTA DEPARTMENT OF TRANSPORTATION

ANOKA COUNTY

CONSTRUCTION PLAN FOR GRADING, AGG.BASE, BITUMINOUS SURFACING, DRAINAGE, CURB & GUTTER AND SIGNAL SYSTEM AND BITUMINOUS PATH.

LOCATED ON CSAH 17 BETWEEN 660' SO. OF PHEASANT RIDGE DR. AND 1800' NORTH OF CSAH 14 (Geographic Description)

LOCATED ON CSAH 12 BETWEEN 1500' WEST OF CSAH 17 AND 1800' EAST OF CSAH 17 (Geographic Description)

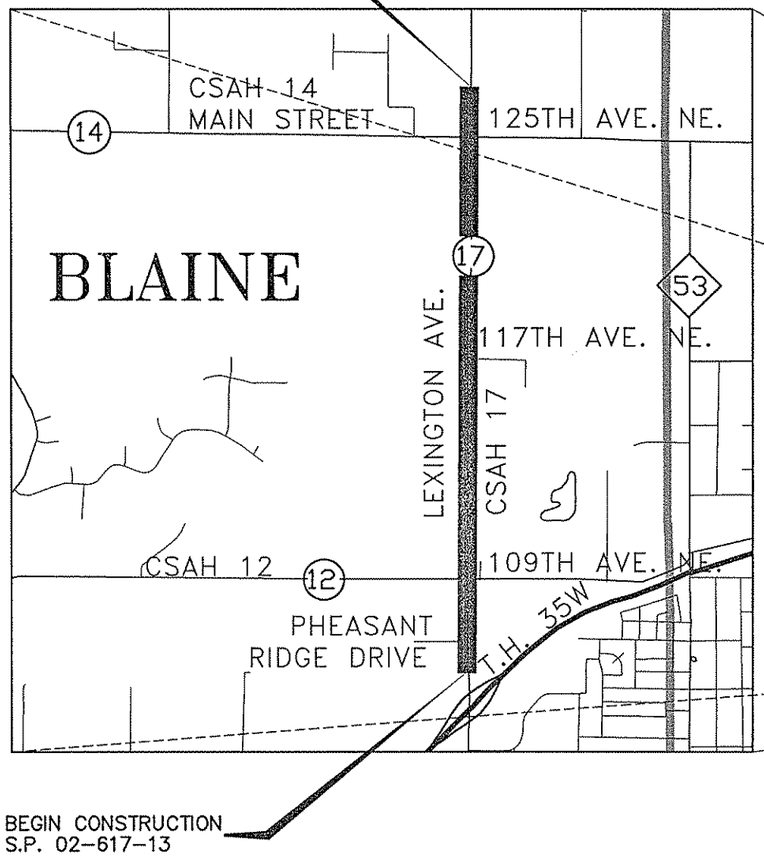
STATE PROJ. NO. SP 02-617-13, SP 106-020-23

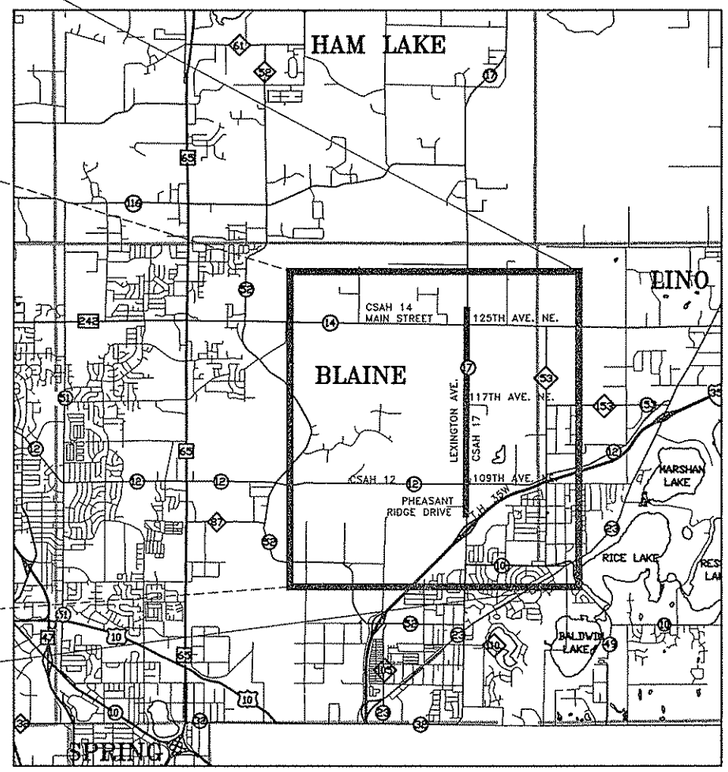
CSAH 17

GROSS LENGTH	15092.50	FEET	2.858	MILES
BRIDGES-LENGTH	0.000	FEET	0.000	MILES
EXCEPTIONS-LENGTH	0.000	FEET	0.000	MILES
NET LENGTH	15092.50	FEET	2.858	MILES

END CONSTRUCTION
S.P. 02-617-13
STA. 187+70.00

DESIGN DESIGNATION (TRAIL)
DESIGN SPEED 20 MPH
STOPPING SIGHT DISTANCE
BASED ON:
4.5 FOOT HIEGHT OF EYE
0.0 FOOT HIEGHT OF OBJECT





BEGIN CONSTRUCTION
S.P. 02-617-13
STA. 36+77.50

PLAN SYMBOLS

COUNTY LINE
TOWNSHIP OR RANGE LINE
SECTION LINE
QUARTER LINE
SIXTEENTH LINE
RIGHT OF WAY LINE
SLOPE EASEMENT
EXISTING RIGHT OF WAY
PROPERTY LINE
CORPORATE OR CITY LIMITS
RETAINING WALL
RAILROAD
RAILROAD RIGHT OF WAY
RIVER OR CREEK
DRAINAGE DITCH
CULVERT
DROP INLET
GUARD RAIL
BARBED WIRE FENCE
WOVEN WIRE FENCE
CHAIN LINK FENCE
WOOD FENCE
STONE WALL OR FENCE
HEDGE
LOWLAND
TIMBER
ORCHARD
BRUSH
NURSERY
CATTLE GUARD
OVERPASS (Highway Over)
UNDERPASS (Highway Under)
BRIDGE
BUILDING (One Story Frame)
F-FRAME C-CONCRETE
S-STONE T-TILE
B-BRICK ST-STUCCO
RAILROAD CROSSING BELL
RAILROAD CROSSING GATE
MANHOLE M.H.
CATCH BASIN C.B.
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
JOINT TELEPHONE & POWER ON TELEPHONE POLES
ANCHOR
STEEL TOWER
STREET LIGHT
PEDESTAL (Cable Terminal)
GAS MAIN
WATERMAIN
TELEPHONE CABLE IN CONDUIT T-CON
ELECTRIC CABLE IN CONDUIT P-CON
TELEPHONE MANHOLE T
ELECTRIC MANHOLE P
BURIED TELEPHONE CABLE T-BUR
BURIED ELECTRIC CABLE P-BUR
AERIAL TELEPHONE CABLE T-AE-P
SEWER (Sanitary or Storm)
SEWER MANHOLE

SCALES

PLAN 0 10ft 20ft 40ft

PROFILE
HORIZONTAL 0 10ft 20ft 40ft
VERTICAL 0 1ft 2ft 2m

X-SECTIONS
HORIZONTAL 0 2ft 4ft 8ft
VERTICAL 0 2ft 4ft 8ft

INDEX MAP 0.25mi 0 0.5mi 1mi

MINN. PROJ. NO. STPX 0203(123)
MINN. PROJ. NO.

GOVERNING SPECIFICATIONS

THE 2000 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.

INDEX

THIS PLAN CONTAINS 231 SHEETS

DESIGN DESIGNATION

ESAL 1,877,383
R VALUE 65
ADT (2003)= 14,989
Proj. ADT (2023)= 20,985
Proj. HCADT (2023)= 2023
Soil Factor NA
Structural Design Strength 10 Ton
Functional Classification MINOR ARTERIAL
No. of Traffic Lanes 4 No. of Parking Lanes 0
Design Speed 55 mph
Based on Stopping Sight Distance
Height of eye 3.5' Height of object 0.5'
Design Speed not achieved at:
STA. TO STA. MPH
STA. TO STA. MPH
STA. TO STA. MPH

Approved 9/29, 2003 — ANOKA COUNTY ENGINEER

Approved 9/29, 2003 — CITY OF BLAINE

Reviewed for Compliance with Federal and State Aid Rules/Policy: 1-5, 2004 — METRO DISTRICT STATE AID ENGINEER

Approved for Federal and State Aid Funding: 1-5, 2004 — STATE AID ENGINEER

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-13\Plan\01-Title.dwg 09/29/2003 09:03:39 AM CDT

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
PRINT NAME: PETER M. LEMKE
SIGNATURE: Peter M Lemke
DATE: 9/26/2003 REG. NO. 40118

DRAWN BY MN DATE 5/01/03
DESIGN BY MN DATE 5/20/03
CHECKED BY PML DATE 8/04/03

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13
STATE PROJECT NO. 106-020-23
STATE AID PROJECT NO.
COUNTY PROJECT NO.

TITLE SHEET

Sheet 1 of 226 Sheets

STATEMENT OF ESTIMATED QUANTITIES

TAB LETTER, PAGE NUMBER	NOTE	ITEM NO.	ITEM	UNIT	TOTAL	ANOKA COUNTY SP 02-617-13		ANOKA COUNTY NON-PARTICIPATING		CITY OF BLAINE SP 106-020-23		CITY OF BLAINE NON-PARTICIPATING		STORM SEWER SP 02-617-13 SP 106-020-23	
						EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL
		2013.602	CELLULAR MOBILE TELEPHONE	EACH	5			5							
		2015.601	COMPUTER EQUIPMENT	LS	1			1							
		2021.501	MOBILIZATION	LS	1			1							
		2031.501	FIELD OFFICE TYPE D	EACH	1			1							
		2031.503	FIELD LABORATORY TYPE D	EACH	1			1							
A-12		2101.501	CLEARING	EACH	127	127									
A-12		2101.502	CLEARING	ACRE	1.95	1.95									
A-12		2101.506	GRUBBING	EACH	148	148									
A-12		2101.507	GRUBBING	ACRE	1.95	1.95									
		2102.502	PAVEMENT MARKING REMOVAL	LIN FT	17700	17700									
B-13	1	2104.501	REMOVE CULVERT	LIN FT	1708	1708									
B-13	1	2104.501	REMOVE SEWER PIPE (STORM)	LIN FT	92	92									
E-13	1	2104.501	REMOVE CURB & GUTTER	LIN FT	5257	5257									
F-13	1	2104.501	REMOVE FENCE	LIN FT	7986	7986									
E-13	2	2104.503	REMOVE CONCRETE MEDIAN	SQ FT	2634	2634									
J-14	2	2104.505	REMOVE BITUMINOUS DRIVEWAY PAVEMENT	SQ YD	1573	1573									
L-15, O-15	2, 3	2104.505	REMOVE BITUMINOUS PAVEMENT	SQ YD	68817	66249								2568	
C-13	2	2104.503	REMOVE BITUMINOUS FLUME	SQ FT	110	110									
B-13	1	2104.509	REMOVE DRAINAGE STRUCTURE	EACH	3	3									
B-13	1	2104.509	REMOVE CONCRETE APRON	EACH	2	2									
K-14	2	2104.511	SAWING CONCRETE PAVEMENT (FULL DEPTH)	LIN FT	12	12									
J-14,L-15,O-15,U-54	2, 15	2104.513	SAWING BITUMINOUS PAVEMENT (FULL DEPTH)	LIN FT	13740	9365								4375	
B-13		2104.523	SALVAGE CASTING	EACH	2	2									
	4	2104.523	SALVAGE SIGN PANEL TYPE C	EACH	7	7									
D-13	5	2104.523	SALVAGE SIGN TYPE SPECIAL	EACH	3	3									
	6	2104.601	HAUL SALVAGED MATERIAL	LS	1			1							
T-8		2105.501	COMMON EXCAVATION (P)	CU YD	93792	93792									
T-8		2105.503	MUCK EXCAVATION	CU YD	165913	165913									
T-8		2105.522	SELECT GRANULAR BORROW (LV)	CU YD	293932	293932									
R-13	7	2105.607	SPECIAL EXCAVATION	CU YD	40443	40443									
S-22		2105.607	MUCK EXCAVATION SPECIAL	CU YD	22276	22276									
	8	2123.509	DOZER	HR	10	10									
	9	2130.501	WATER	MGAL	30	30									
L-15		2211.503	AGGREGATE BASE (CV) CL 5 (P)	CU YD	74772	74772									
J-14	15	2211.604	AGGREGATE BASE CL 5 (4" THICK)	SQ YD	1006	1006									
L-15		2221.501	AGGREGATE SHOULDERING CL 7B	TON	1226	1226									
L-15		2232.501	MILL BITUMINOUS SURFACE (1 1/2")	SQ YD	6919	6919									
L-15		2350.503	TYPE LV4 WEARING COURSE MIXTURE (B) (2")	SQ YD	11045					11045					
J-14	15	2350.604	TYPE LV4 BITUMINOUS MIXTURE FOR DRIVEWAYS (2")	SQ YD	1165	1165									
L-15		2357.502	BITUMINOUS MATERIAL FOR TACK COAT	GALLON	11562	11562									
U-54		2350.604	BITUMINOUS MATERIAL FOR TEMPORARY WIDENING	SQ YD	3149	3149									
O-15	10	2350.604	BIT PAVEMENT FOR TRENCH RESTORATION	SQ YD	2568									2568	

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-13\Plan\03-SEQ.dwg 02/20/2004 07:19:33 AM CST

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

PRINT NAME: PETER M. LEMKE

SIGNATURE: Peter M Lemke

DATE: 2-19-2004 REG. NO. 40118

DRAWN BY MTH DATE 9/18/03

DESIGN BY MTH DATE 9/18/03

CHECKED BY PML DATE 9/26/03

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13

STATE PROJECT NO. 106-020-23

STATE AID PROJECT NO.

COUNTY PROJECT NO.

STATEMENT OF ESTIMATED QUANTITIES

STATEMENT OF ESTIMATED QUANTITIES

TAB LETTER, PAGE NUMBER	NOTE	ITEM NO.	ITEM	UNIT	TOTAL	ANOKA COUNTY SP 02-617-13		ANOKA COUNTY NON-PARTICIPATING		CITY OF BLAINE SP 106-020-23		CITY OF BLAINE NON-PARTICIPATING		STORM SEWER SP 02-617-13 SP 106-020-23	
						EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL
L-15		2360.501	TYPE SP12.5 WEARING COURSE MIXTURE (4,F)	TON	22161	22161									
L-15		2360.502	TYPE SP19.0 NON WEARING COURSE MIXTURE (4,B)	TON	16964	16964									
P-14	14	2411.618	MODULAR BLOCK RETAINING WALL	SQ FT	463	463									
Q-16	17	2451.609	AGGREGATE BEDDING	TON	2121									2121	
N-103-109		2501.511	24" RC PIPE CULVERT CL III	LIN FT	147									147	
N-103-109		2501.511	36" RC PIPE CULVERT	LIN FT	125									125	
N-103-109		2501.511	48" RC PIPE CULVERT	LIN FT	204									204	
N-103-109		2501.515	12" RC PIPE APRON	EACH	19									19	
N-103-109		2501.515	15" RC PIPE APRON	EACH	8									8	
N-103-109		2501.515	24" RC PIPE APRON	EACH	3									3	
N-103-109		2501.515	36" RC PIPE APRON	EACH	7									7	
N-103-109		2501.515	42" RC PIPE APRON	EACH	1									1	
N-103-109		2501.515	48" RC PIPE APRON	EACH	2									2	
N-103-109		2501.525	28" SPAN RC PIPE-ARCH CULVERT APRON CL IIA	EACH	2									2	
N-103-109		2501.565	28" SPAN RC PIPE CULVERT CL IIA	LIN FT	178									178	
N-103-109		2503.541	12" RC PIPE SEWER DES 3006 CL V	LIN FT	9014									9014	
N-103-109		2503.541	15" RC PIPE SEWER DES 3006 CL V	LIN FT	4670									4670	
N-103-109		2503.541	18" RC PIPE SEWER DES 3006 CL III	LIN FT	2603									2603	
N-103-109		2503.541	21" RC PIPE SEWER DES 3006 CL III	LIN FT	2294									2294	
N-103-109		2503.541	24" RC PIPE SEWER DES 3006 CL III	LIN FT	1847									1847	
N-103-109		2503.541	27" RC PIPE SEWER DES 3006 CL III	LIN FT	1155									1155	
N-103-109		2503.541	30" RC PIPE SEWER DES 3006 CL III	LIN FT	811									811	
N-103-109		2503.541	36" RC PIPE SEWER DES 3006 CL III	LIN FT	265									265	
N-103-109		2503.541	42" RC PIPE SEWER DES 3006 CL III	LIN FT	51									51	
N-103-109		2503.602	CONNECT TO EXISTING STORM SEWER	EACH	1									1	
N-103-109		2506.501	CONST DRAINAGE STRUCTURE DESIGN F	LIN FT	36									36	
N-103-109		2506.501	CONST DRAINAGE STRUCTURE DESIGN G	LIN FT	81									81	
N-103-109		2506.501	CONST DRAINAGE STRUCTURE DESIGN H	LIN FT	210									210	
N-103-109		2506.501	CONST DRAINAGE STRUCTURE DESIGN 48-4020	LIN FT	159									159	
N-103-109		2506.501	CONST DRAINAGE STRUCTURE DESIGN 54-4020	LIN FT	137									137	
N-103-109		2506.501	CONST DRAINAGE STRUCTURE DESIGN 60-4020	LIN FT	82									82	
N-103-109		2506.501	CONST DRAINAGE STRUCTURE DESIGN 66-4020	LIN FT	6									6	
N-103-109		2506.501	CONST DRAINAGE STRUCTURE DESIGN 72-4020	LIN FT	5									5	
N-103-109		2506.501	CONST DRAINAGE STRUCTURE DESIGN 78-4020	LIN FT	13									13	
N-103-109		2506.501	CONST DRAINAGE STRUCTURE DESIGN 84-4020	LIN FT	27									27	
110	11	2506.502	CONST DRAINAGE STRUCTURE DESIGN SPECIAL 2	EACH	1									1	
111	11	2506.502	CONST DRAINAGE STRUCTURE DESIGN SPECIAL 3	EACH	1									1	
112	11	2506.502	CONST DRAINAGE STRUCTURE DESIGN SPECIAL 4	EACH	1									1	
113	11	2506.502	CONST DRAINAGE STRUCTURE DESIGN SPECIAL 5	EACH	1									1	
N-103-109		2506.502	CONST DRAINAGE STRUCTURE DESIGN PC-12"	EACH	10									10	
I-14		2506.516	CASTING ASSEMBLY	EACH	179									179	
N-103-109		2511.501	RANDOM RIPRAP, CL III	CU YD	233									233	
N-103-109		2511.515	GEOTEXTILE FILTER TYPE IV	SQ YD	357									357	
G-14		2521.501	4" CONCRETE WALK	SQ FT	9026	9026									
G-14		2531.501	CONCRETE CURB AND GUTTER B424	LIN FT	30394	16128				14,266					
G-14		2531.618	CONCRETE APPROACH NOSE DES 7113	SQ FT	1888	1888									

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-13\Plan\03-SEQ.dwg 02/20/2004 07:18:33 AM CST

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

PRINT NAME: PETER M. LEMKE

SIGNATURE: Peter M Lemke

DATE: 2-19-2004 REG. NO. 40118

DRAWN BY MTH DATE 9/18/03

DESIGN BY MTH DATE 9/18/03

CHECKED BY PML DATE 9/26/03

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13

STATE PROJECT NO. 106-020-23

STATE AID PROJECT NO.

COUNTY PROJECT NO.

STATEMENT OF ESTIMATED QUANTITIES

STATEMENT OF ESTIMATED QUANTITIES

TAB LETTER, PAGE NUMBER	NOTE	ITEM NO.	ITEM	UNIT	TOTAL	ANOKA COUNTY SP 02-617-13		ANOKA COUNTY NON-PARTICIPATING		CITY OF BLAINE SP 106-020-23		CITY OF BLAINE NON-PARTICIPATING		STORM SEWER SP 02-617-13 SP 106-020-23	
						EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL
G-14	12	2531.602	PEDESTRIAN CURB RAMP (TRUNCATED DOME)	EACH	18	18									
U-54		2533.603	CONCRETE MEDIAN BARRIER DES 8337	LIN FT	5730	5730									
U-54		2533.603	RELOCATE CONCRETE MEDIAN BARRIER	LIN FT	4350	4350									
H-14		2540.602	RELOCATE MAIL BOX SUPPORT	EACH	27	27									
U-54		2554.615	IMPACT ATTENUATOR	AMBY	8	8									
		2563.601	TRAFFIC CONTROL STAGE 1	LS	1			1							
		2563.601	TRAFFIC CONTROL STAGE 2	LS	1			1							
		2563.601	TRAFFIC CONTROL STAGE 3	LS	1			1							
		2563.601	TRAFFIC CONTROL STAGE 4	LS	1			1							
		2563.601	TRAFFIC CONTROL STAGE 5	LS	1			1							
		2563.601	TRAFFIC CONTROL STAGE 6	LS	1			1							
		2563.601	TRAFFIC CONTROL STAGE 7	LS	1			1							
		2563.601	TRAFFIC CONTROL STAGE 8	LS	1			1							
		2563.601	TRAFFIC CONTROL STAGE 9	LS	1			1							
		2563.601	TRAFFIC CONTROL STAGE 10	LS	1			1							
		2563.601	TRAFFIC CONTROL STAGE 11	LS	1			1							
		2563.601	DETOUR SIGNING CSAH 17	LS	1			1							
		2563.601	DETOUR SIGNING CSAH 12	LS	1			1							
U-54		2563.602	RAISED PAVEMENT MARKER TEMPORARY	EACH	2052	2052									
		2563.610	POLICE OFFICER	HOUR	50	50									
		2564.531	SIGN PANELS TYPE C	SQ FT	1002	1002									
		2564.537	INSTALL SIGN TYPE SPECIAL	EACH	3	3									
	13	2564.602	TEMPORARILY RELOCATE SIGN TYPE C	EACH	15	15									
	13	2564.602	TEMPORARILY RELOCATE SIGN TYPE SPECIAL	EACH	3	3									
	18	2564.602	PVMT MESSAGE (LT ARROW) PAINT	EACH	19	19									
	18	2564.602	PVMT MESSAGE (RT ARROW) PAINT	EACH	2	2									
	18	2564.602	PVMT MESSAGE (ONLY) PAINT	EACH	12	12									
		2564.602	PVMT MESSAGE (LT ARROW) POLY PREFORM	EACH	19	19									
		2564.602	PVMT MESSAGE (RT ARROW) POLY PREFORM	EACH	2	2									
		2564.602	PVMT MESSAGE (ONLY) POLY PREFORM	EACH	12	12									
U-54	18	2564.603	4" SOLID LINE WHITE-PAINT	LIN FT	20220	20220									
	18	2564.603	4" BROKEN LINE WHITE-PAINT	LIN FT	3018	3018									
U-54	18	2564.603	4" SOLID LINE YELLOW-PAINT	LIN FT	1100	1100									
U-54	18	2564.603	4" DOUBLE SOLID LINE YELLOW-PAINT	LIN FT	9555	9555									
	18	2564.603	24" SOLID LINE YELLOW-PAINT	LIN FT	1497	1497									
		2564.603	4" SOLID LINE WHITE-EPOXY	LIN FT	44642	44642									
		2564.603	4" BROKEN LINE WHITE-EPOXY	LIN FT	28470	28470									
		2564.603	4" SOLID LINE YELLOW-EPOXY	LIN FT	32040	32040									
		2564.603	4" DOUBLE SOLID LINE YELLOW-EPOXY	LIN FT	4590	4590									
		2564.603	24" SOLID LINE YELLOW-EPOXY	LIN FT	1497	1497									
		2564.603	24" STOP LINE WHITE-PAINT	LIN FT	445	445									
		2564.618	ZEBRA CROSSWALK WHITE-PAINT	SQ FT	3016	3016									
		2564.603	24" STOP LINE WHITE-POLY PREFORM	LIN FT	445	445									

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-13\Plan\03-SEQ.dwg 02/20/2004 07:18:33 AM CST

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

PRINT NAME: PETER M. LEMKE

SIGNATURE: Peter M Lemke

DATE: 2-19-2004 REG. NO. 40118

DRAWN BY MTH DATE 9/18/03

DESIGN BY MTH DATE 9/18/03

CHECKED BY PML DATE 9/26/03

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13

STATE PROJECT NO. 106-020-23

STATE AID PROJECT NO.

COUNTY PROJECT NO.

STATEMENT OF ESTIMATED QUANTITIES

STATEMENT OF ESTIMATED QUANTITIES

TAB LETTER, PAGE NUMBER	NOTE	ITEM NO.	ITEM	UNIT	TOTAL	ANOKA COUNTY SP 02-617-13		ANOKA COUNTY NON-PARTICIPATING		CITY OF BLAINE SP 106-020-23		CITY OF BLAINE NON-PARTICIPATING		STORM SEWER SP 02-617-13 SP 106-020-23	
						EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL
		2564.618	ZEBRA CROSSWALK WHITE-POLY PREFORM	SQ FT	3016	3016									
	16	2565.511	FULL T ACT T CONTROL SIGNAL SYSTEM "A"	SIGS	1	0.5				0.5					
	16	2565.511	FULL T ACT T CONTROL SIGNAL SYSTEM "B"	SIGS	1	1									
	16	2565.601	SALVAGE SIGNAL SYSTEM "A"	LS	1	1									
	16	2565.601	SALVAGE SIGNAL SYSTEM "B"	LS	1	1									
		2565.601	TRAFFIC CONTROL INTERCONNECTION	LS	1					1					
	16	2565.601	EMERGENCY VEHICLE PREEMPTION SYSTEM "A"	LS	1					1					
	16	2565.601	EMERGENCY VEHICLE PREEMPTION SYSTEM "B"	LS	1					1					
		2565.602	PVC HANDHOLE (METAL FRAME & COVER)	EACH	30	30									
		2565.603	4 INCH RIGID STEEL CONDUIT	LIN FT	1400	1400									
	16	2565.616	REVISE SIGNAL SYSTEM "PHEASANT RIDGE"	SYST	1	1									
M-16		2573.502	SILT FENCE, TYPE HEAVY DUTY	LIN FT	39494	39494									
N-103		2573.602	SILT FENCE BOX	EACH	26	26									
M-16		2575.501	SEEDING	ACRE	38	38									
M-16		2575.502	SEED MIXTURE 28B	POUND	58	58									
M-16		2575.608	SEED MIXTURE 240	POUND	2400	2400									
M-16		2575.608	SEED MIXTURE 310	POUND	114	114									
M-16		2575.608	SEED MIXTURE 350	POUND	319	319									
M-16		2575.505	SODDING TYPE LAWN	SQ YD	5050	5050									
M-16		2575.511	MULCH MATERIAL TYPE 3	TON	76	76									
M-16		2575.519	DISK ANCHORING	ACRE	38	38									
M-16		2575.523	EROSION CONTROL BLANKETS CATEGORY 3	SQ YD	5024	5024									
M-16		2575.531	COMMERCIAL FERT ANALYSIS 22-5-10	TON	6.4	6.4									
M-16		2575.531	COMMERCIAL FERT ANALYSIS 18-1-8	TON	0.4	0.4									
U-54		2580.502	TEMPORARY LANE MARKING	LIN FT	1720	1720									
U-54		2581.501	REMOVABLE PREFORMED PLASTIC MARKING	LIN FT	5400	5400									

CONSTRUCTION NOTES

1 INCLUDES ALL TYPES AND SIZES
2 INCLUDES ALL DEPTHS
3 BORINGS OF THE DRIVING LANES INDICATE PAVEMENT DEPTH AVERAGING 5.5". BIDDER TO MAKE HIS OWN DETERMINATION BEFORE SUBMITTING HIS BID.
4 SALVAGE TO ANOKA COUNTY HIGHWAY DEPT, 1440 BUNKER LAKE BLVD, ANDOVER, MN
5 SALVAGE AND REINSTALL TO PERMANENT LOCATION AFTER CONSTRUCTION.
6 HAUL SALVAGED SIGNAL EQUIPMENT TO THE ANOKA COUNTY HIGHWAY DEPARTMENT. LOCAL FUNDS ONLY.
7 POND EXCAVATION
8 TO BE USED AT THE DIRECTION OF THE ENGINEER.
9 FOR DUST CONTROL, AS DIRECTED BY THE ENGINEER.
10 LV4 MIXTURE, SEE SPECIAL PROVISIONS
11 POND OUTLET SKIMMER STRUCTURE
12 SEE THE TECHNICAL MEMO NO. 03-19-TS-02, IN THE ATTACHMENTS, FOR THE TRUNCATED DOME CONSTRUCTION DETAILS
13 FOR RELOCATING TRAFFIC SIGNS DURING CONSTRUCTION, AS DIRECTED BY THE ENGINEER
14 SEE RETAINING WALL PRFILE ON SHEET 21
15 SEE ENTRANCE DETAILS ON SHEET 20
16 SIGNAL SYSTEM AT CSAH 17 & PHEASANT RIDGE IS BEING REVISED; SIGNAL SYSTEM "A" IS AT CSAH 17 & CSAH 12; SIGNAL SYSTEM "B" IS AT CSAH 17 & CSAH 14
17 FOR USE ON STORM SEWER WHEN PLACED IN WET CONDITIONS, AS DIRECTED BY THE ENGINEER
18 FOR TRAFFIC CONTROL DURING CONSTRUCTION AND PAVEMENT MARKING DURING WINTER SUSPENSION

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-13\Plan\03-SEQ.dwg 02/20/2004 07:18:33 AM CST

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
PRINT NAME: PETER M. LEMKE
SIGNATURE: Peter M Lemke
DATE: 2-19-2004 REG. NO. 40118

DRAWN BY MTH DATE 9/18/03
DESIGN BY MTH DATE 9/18/03
CHECKED BY PML DATE 9/26/03

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13
STATE PROJECT NO. 106-020-23
STATE AID PROJECT NO.
COUNTY PROJECT NO.

STATEMENT OF ESTIMATED QUANTITIES

STANDARD PLATES

THE FOLLOWING STANDARD PLATES APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION SHALL APPLY

PLATE NO.	DESCRIPTION
3000L	REINFORCED CONCRETE PIPE
3006G	GASKET JOINT FOR R.C. PIPE
3007C	SHEAR REINFORCEMENT FOR PRECAST DRAINAGE STRUCTURES
3100G	CONCRETE APRON FOR REINFORCED CONCRETE PIPE
3133C	RIPRAP AT RCP OUTLETS
3145E	CONCRETE PIPE TIES
4005L	MANHOLE OR CATCH BASIN
4006L	MANHOLE OR CATCH BASIN
4010H	CONCRETE SHORT CONE AND ADJUSTING RING
4011E	PRECAST CONCRETE BASE
4017C	CATCH BASIN (in median - ditch block)
4018A	MANHOLE OR CATCH BASIN REDUCER CONE SECTION
4020I	MANHOLE OR CATCH BASIN COVER
4026A	CONCRETE ENCASED CONCRETE ADJUSTING RINGS
4101D	RING CASTING FOR MANHOLE OR CATCH BASIN
4110F	COVER CASTING FOR MANHOLE
4129G	CATCH BASIN FRAME CASTING
4143E	STOOL GRATE AND CONCRETE FRAME
4154B	CATCH BASIN GRATE CASTING
4160D	CURB BOX CASTING FOR CATCH BASIN
4180J	MANHOLE OR CATCH BASIN STEP
7035L	CONCRETE WALK AND CURB RETURNS AND ENTRANCES
7065C	BITUMINOUS CURB
7100G	CONCRETE CURB AND GUTTER
7111J	INSTALLATION OF CATCH BASIN CASTINGS
7113A	CONCRETE APPROACH NOSE DETAIL
8000I	STANDARD BARRICADES
8110D	TRAFFIC SIGNAL BRACKETING (POLE MOUNTED)
8114A	PVC HANDHOLE/PULLBOX
8115D	PEDESTRIAN PUSH BUTTON INSTALLATION
8118C	SERVICE EQUIPMENT AND POLE-TRAFFIC CONTROL SIGNALS
8119C	GROUND MOUNTED CABINET FOUNDATION
8121D	TRANSFORMER BASE AND POLE BASE PLATE
8123E	POLE AND MAST ARM
8124E	MAST ARM SIGNAL HEAD MOUNTS
8126F	POLE FOUNDATION (PA90 AND PA100)
8150B	INSTALLATION OF CULVERT MARKERS
8337B	TEMPORARY PORTABLE PRECAST CONCRETE BARRIER (TYPE F)
9102D	TURF ESTABLISHMENT AREAS (AT PIPE CULVERT ENDS)

INDEX OF TABULATION CHARTS

BASIS OF PLANNED QUANTITIES

SPEC NO.	RATE
2221.501	AGGREGATE SHOULDERING CL 7B 1 CU YD (CV) = 1.8 TONS
2357.502	BITUMINOUS MATERIAL FOR TACK COAT 0.05 GAL./SQ YD/PER LIFT APPLIED
2360.501	TYPE SP12.5 WEARING COURSE MIXTURE (4,F) 110LBS / SQ YD / INCH (1.5" LIFT)
2360.502	TYPE SP19.0 NON WEARING COURSE MIXTURE (4,B) 110LBS / SQ YD / INCH (2" LIFT) 137.5LBS / SQ YD / INCH (2.5" LIFT)
2575.502	SEED MIXTURE 28B 50 LBS/ ACRE
2575.502	SEED MIXTURE 240 75 LBS / ACRE
2575.502	SEED MIXTURE 310 82 LBS / ACRE
2575.502	SEED MIXTURE 350 84.5 LBS / ACRE
2575.511	MULCH MATERIAL TYPE 3 2 TONS / ACRE
2575.531	COMMERCIAL FERTILIZER 22-5-10 400 LBS / ACRE
2575.531	COMMERCIAL FERTILIZER 18-1-8 120 LBS / ACRE

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-13\Plan\04-Standard Plates.dwg 02/02/2004 11:49:11 AM CST

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

PRINT NAME: PETER M. LEMKE

SIGNATURE: Peter M Lemke

DATE: 1-30-2004 LICENSE NO. 40118

DRAWN BY JF DATE 9/11/03

DESIGN BY PML DATE 9/11/03

CHECKED BY MTH DATE 9/25/03

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13

STATE PROJECT NO. 106-020-23

STATE AID PROJECT NO.

COUNTY PROJECT NO.

STANDARD PLATES
INDEX OF TABULATIONS
BASIS OF PLANNED QUANTITIES

EARTHWORK SUMMARY SHEET

T

EXCAVATION (EV)	CSAH 17 CU YD	CSAH 12 CU YD	TOTAL CU YD
COMMON	58890	10248	69138
SUBCUT	15483	3606	19089
MUCK	145574	20339	165913
TOPSOIL STRIPPING (DISTURBED AREA x 3 INCH DEPTH)	15480	1879	17359

COMMON EXCAVATION PAY ITEM = COMMON EXCAVATION PLUS SUBCUT PLUS TOPSOIL STRIPPING MINUS REMOVALS =
69138 (EV) + 19089 (EV) + 17359 (EV) - 11794 (EV) = 93792 (EV) CU YD

MUCK EXCAVATION PAY ITEM = MUCK EXCAVATION =
165913 (EV) = 165913 (EV) CU YD

REMOVALS INCLUDE 69217 SQ YD BITUMINOUS (CSAH 17), 1257 SQ YD CONCRETE (CSAH 17), AND 10207 SQ YD BITUMINOUS (CSAH 12) WHICH EQUALS 80681 SQ YD = 11794 CU YD TO BE PAID UNDER ITEM 2104

EMBANKMENT (CV)	CSAH 17 CU YD	CSAH 12 CU YD	TOTAL CU YD
SELECT GRANULAR	106034	2339	108373
SELECT GRANULAR (MUCK EXCAVATION REPLACEMENT)	134749	19178	153927
SELECT GRANULAR (SUBCUT)	15483	3606	19089
MUCK DISPOSAL	21504	867	22371
TOPSOIL DRESSING (DISTURBED AREA x 4 INCH DEPTH)	12242	1509	13751

BALANCE

SELECT GRANULAR MATERIAL FOR COMMON EMBANKMENT
SELECT GRANULAR EMBANKMENT (CV) - ((COMMON EXCAVATION (EV) MINUS REMOVALS) x SHRINKAGE FACTOR) = EXCESS (-) OR SHORTAGE (+)
(108373) - ((69138-11794) x 0.80) = 62498 (CV) CU YD
BORROW QUANTITY = 62498 (CV) x 120% = 74998 (LV) CU YD

SELECT GRANULAR MATERIAL FOR MUCK EXCAVATION REPLACEMENT
SELECT GRANULAR EMBANKMENT (CV) = EXCESS (-) OR SHORTAGE (+)
153927 (CV) CU YD
BORROW QUANTITY = 153927 (CV) x 140% = 215498 (LV) CU YD

SELECT GRANULAR MATERIAL FOR SUBCUT EMBANKMENT
SELECT GRANULAR EMBANKMENT (CV) - (SUBCUT (EV) x SHRINKAGE FACTOR) = EXCESS (-) OR SHORTAGE (+)
19089 (CV) - (19089 (CV) x 0.85) = 2863 (CV) CU YD
BORROW QUANTITY = 2863 (CV) x 120% = 3436 (LV) CU YD

SELECT GRANULAR BORROW PAY ITEM = (74998 + 215497 + 3436) (LV) = 293932 (LV) CU YD

MUCK DISPOSAL
MUCK DISPOSAL (CV) - (MUCK EXCAVATION (EV) x SHRINKAGE FACTOR) = EXCESS (-) OR SHORTAGE (+)
22371 (CV) - (165913 (EV) x 80%) = -110359 (CV) CU YD

TOPSOIL DISPOSAL
TOPSOIL DRESSING (CV) - (TOPSOIL STRIPPING (EV) x SHRINKAGE FACTOR) = EXCESS (-) OR SHORTAGE (+)
13751 (CV) - (17359 (EV) x 80%) = -136 (CV) CU YD

SOIL FACTORS	
(1) REGULAR GRADING AND TOPSOIL DRESSING (EV TO CV):	80 % SHRINKAGE
(2) SUBCUT COMPACTION (EV TO CV):	85 % SHRINKAGE
(3) MUCK DISPOSAL (EV TO CV):	80 % SHRINKAGE
(4) SELECT GRANULAR BORROW (CV TO LV):	120 % SWELL
(4) SELECT GRANULAR BORROW FOR MUCK REPLACEMENT (CV TO LV):	140 % SWELL
(5) TOPSOIL BORROW (CV TO LV):	130 % SWELL

SOIL AND CONSTRUCTION NOTES

1. TOP OF GRADING GRADE IS DEFINED AS THE BOTTOM OF THE AGGREGATE BASE.
2. DELETED
3. SELECT GRANULAR MATERIALS SHALL MEET THE REQUIREMENTS OF OF MN/DOT SPEC 3149.2B2.
4. SUITABLE GRADING MATERIAL OBTAINED FROM COMMON EXCAVATION NOT MEETING THE REQUIREMENTS OF MN/DOT SPEC 3149.2B1, SHALL BE USED AS EMBANKMENT MATERIAL ON THE PROJECT AS APPROVED BY THE ENGINEER.
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 20:1 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 0.05 GAL/SQ.YD. 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 THE AGGREGATE BASE LAYERS SHALL BE BY THE "DYNAMIC CONE PENETROMETER METHOD."
13. PLACE MINIMUM 4 INCH TOPSOIL OR SLOPE DRESSING ON ALL AREAS DISTURBED BY CONSTRUCTION AND SCHEDULED FOR PERMANENT TURF ESTABLISHMENT. FERTILIZE WITH COMMERCIAL FERTILIZER, IN ACCORDANCE WITH THE TURF ESTABLISHMENT PLAN.
14. USE MIXTURE 240 SEED AND TYPE 3 MULCH IN AREAS TO BE SEEDED,EXCEPT AS NOTED IN THE TURF ESTABILISHMENT PLAN SHEETS.
15. SOD ALL MAINTAINED LAWNS DISTURBED BY CONSTRUCTION.
16. ALL SOD UTILIZED WITHIN THE PROJECT LIMITS SHALL MEET THE REQUIREMENTS OF SPEC. 3878.2A (LAWN SOD).
17. ORGANIC AND NONGRANULAR EXCAVATED MATERIAL MAY BE USED IN EMBANKMENT CONSTRUCTION IN AREAS OUTSIDE OF A 1 1/2:1 SLOPE FROM THE BACK OF CURB, OR GRADING P.I.
18. BITUMINOUS REMOVAL QUANTITY BASED ON SQ.YD. REMOVED. INPLACE SURFACE ASSUMED TO BE 5.50 CSAH 17 AND 4.5 CSAH 12, (ROADWAY) INCHES IN DEPTH. CONTRACTOR SHALL INVESTIGATE AND MAKE OWN DETERMINATION OF ACTUAL PAVEMENT DEPTH.
19. ALL SILT FENCING AS SHOWN IN THE PLANS SHALL BE IN PLACE PRIOR TO THE COMMENCEMENT OF GRADING OPERATIONS.
20. TOPSOIL STRIPPINGS TO BE SALVAGED AND UTILIZED TO ITS FULLEST EXTENT WITHIN THE PROJECT LIMITS.
21. THE CONTRACTOR MAY ELECT TO REMOVE THE BITUMINOUS BEFORE CONSTRUCTING THE STORM SEWER CROSSINGS AND ASSOCIATED TRENCH RESTORATION WORK (SEE TAB O, SHEET 15). IF THE CONTRACTOR ELECTS TO REMOVE THE BITUMINOUS FIRST, THEN THE PROVISIONS OF MnDOT 1903 SHALL NOT APPLY TO THE TRENCH RESTORATION AND ASSOCIATED WORK.

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-13\Plan\05-EarthWork.dwg 02/20/2004 11:28:50 AM CST

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
PRINT NAME: PETER M. LEMKE
SIGNATURE: Peter M Lemke
DATE: 2-19-2004 LICENSE NO. 40118

DRAWN BY MN DATE 09/17/03
DESIGN BY MN DATE 09/17/03
CHECKED BY MG DATE 09/18/03

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13
STATE AID PROJECT NO. 106-020-23
STATE AID PROJECT NO.
COUNTY PROJECT NO.

EARTHWORK SUMMARY TABULATION

Sheet 8 of 226 Sheets

CABLE TV - COMCAST

AA

STATION TO STATION			OFFSET						REMARKS	SIZE & ITEM
39+78	TO	42+07	29	RT	TO	24	RT		R	OVERHEAD
42+07	TO	42+58	24	RT	TO	24	RT		R	OVERHEAD
42+58	TO	44+43	24	RT	TO	48	RT		R	OVERHEAD
44+43	TO	47+06	48	RT	TO	23	RT		R	OVERHEAD
47+06	TO	49+45	23	RT	TO	21	RT		R	OVERHEAD
49+45	TO	51+74	21	RT	TO	18	RT		R	OVERHEAD
51+74	TO	54+05	18	RT	TO	18	RT		R	OVERHEAD
54+05	TO	56+28	18	RT	TO	19	RT		R	OVERHEAD
56+28	TO	58+53	19	RT	TO	18	RT		R	OVERHEAD
58+53	TO	60+76	18	RT	TO	19	RT		R	OVERHEAD
60+76	TO	62+43	19	RT	TO	29	RT		R	OVERHEAD
62+43	TO	63+08	29	RT	TO	18	RT		R	OVERHEAD
63+08	TO	65+44	18	RT	TO	19	RT		R	OVERHEAD
65+44	TO	67+82	19	RT	TO	18	RT		R	OVERHEAD
67+82	TO	70+22	18	RT	TO	18	RT		R	OVERHEAD
70+22	TO	72+60	18	RT	TO	18	RT		R	OVERHEAD
72+60	TO	74+98	18	RT	TO	18	RT		R	OVERHEAD
74+98	TO	77+37	18	RT	TO	21	RT		R	OVERHEAD
77+37	TO	79+68	21	RT	TO	19	RT		R	OVERHEAD
79+68	TO	82+06	19	RT	TO	19	RT		R	OVERHEAD
82+06	TO	84+47	19	RT	TO	19	RT		R	OVERHEAD
84+47	TO	86+88	19	RT	TO	18	RT		R	OVERHEAD
86+88	TO	89+18	18	RT	TO	17	RT		R	OVERHEAD
89+18	TO	92+47	17	RT	TO	19	RT		R	OVERHEAD
92+47	TO	93+62	19	RT	TO	19	RT		R	OVERHEAD
93+62	TO	95+75	19	RT	TO	20	RT		R	OVERHEAD
95+75	TO	97+15	20	RT	TO	21	RT		R	OVERHEAD
97+15	TO	99+21	21	RT	TO	24	RT		R	OVERHEAD
99+21	TO	100+61	24	RT	TO	28	RT		R	OVERHEAD
100+61	TO	101+74	28	RT	TO	25	RT		R	OVERHEAD
101+74	TO	104+42	25	RT	TO	23	RT		R	OVERHEAD
104+42	TO	106+01	23	RT	TO	25	RT		R	OVERHEAD
106+01	TO	107+10	25	RT	TO	22	RT		R	OVERHEAD
107+10	TO	109+29	22	RT	TO	26	RT		R	OVERHEAD
109+29	TO	111+48	26	RT	TO	23	RT		R	OVERHEAD
111+48	TO	113+69	23	RT	TO	22	RT		R	OVERHEAD
113+69	TO	115+92	22	RT	TO	22	RT		R	OVERHEAD
115+92	TO	115+87	22	RT	TO	71	RT		R	OVERHEAD
115+92	TO	117+97	22	RT	TO	22	RT		R	OVERHEAD
117+97	TO	119+99	22	RT	TO	24	RT		R	OVERHEAD
119+99	TO	121+98	24	RT	TO	24	RT		R	OVERHEAD
121+98	TO	124+46	24	RT	TO	24	RT		R	OVERHEAD
124+46	TO	125+82	24	RT	TO	22	RT		R	OVERHEAD
125+82	TO	127+00	22	RT	TO	24	RT		R	OVERHEAD
127+00	TO	129+41	24	RT	TO	24	RT		R	OVERHEAD
129+41	TO	131+91	24	RT	TO	25	RT		R	OVERHEAD
131+91	TO	134+37	25	RT	TO	24	RT		R	OVERHEAD
134+37	TO	136+87	24	RT	TO	18	RT		R	OVERHEAD
136+87	TO	139+35	18	RT	TO	18	RT		R	OVERHEAD
139+35	TO	141+86	18	RT	TO	17	RT		R	OVERHEAD
141+86	TO	144+49	17	RT	TO	18	RT		R	OVERHEAD
144+49	TO	146+61	18	RT	TO	19	RT		R	OVERHEAD
146+61	TO	149+26	19	RT	TO	18	RT		R	OVERHEAD
149+26	TO	153+36	18	RT	TO	18	RT		R	OVERHEAD
153+36	TO	155+33	18	RT	TO	13	RT		R	OVERHEAD
155+33	TO	156+81	13	RT	TO	15	RT		R	OVERHEAD
156+81	TO	159+74	15	RT	TO	18	RT		R	OVERHEAD
159+74	TO	162+14	18	RT	TO	21	RT		R	OVERHEAD
162+14	TO	164+94	21	RT	TO	28	RT		R	OVERHEAD
164+94	TO	167+74	28	RT	TO	29	RT		R	OVERHEAD
167+74	TO	169+10	29	RT	TO	29	RT		R	OVERHEAD
169+10	TO	171+20	29	RT	TO	25	RT		R	OVERHEAD
171+20	TO	173+47	25	RT	TO	21	RT		R	OVERHEAD
173+47	TO	176+06	21	RT	TO	18	RT		R	OVERHEAD

OVERHEAD POWER - XCEL ENERGY

AA

STATION TO STATION			OFFSET						REMARKS	SIZE & ITEM
39+78	TO	42+07	29	RT	TO	24	RT		R	OVERHEAD
42+07	TO	42+58	24	RT	TO	24	RT		R	OVERHEAD
42+58	TO	44+43	24	RT	TO	48	RT		R	OVERHEAD
44+43	TO	47+06	48	RT	TO	23	RT		R	OVERHEAD
47+06	TO	49+45	23	RT	TO	21	RT		R	OVERHEAD
49+45	TO	51+74	21	RT	TO	18	RT		R	OVERHEAD
51+74	TO	54+05	18	RT	TO	18	RT		R	OVERHEAD
54+05	TO	56+28	18	RT	TO	19	RT		R	OVERHEAD
56+28	TO	58+53	19	RT	TO	18	RT		R	OVERHEAD
58+53	TO	60+76	18	RT	TO	19	RT		R	OVERHEAD
60+76	TO	62+43	19	RT	TO	29	RT		R	OVERHEAD
62+43	TO	63+08	29	RT	TO	18	RT		R	OVERHEAD
63+08	TO	65+44	18	RT	TO	19	RT		R	OVERHEAD
65+44	TO	67+82	19	RT	TO	18	RT		R	OVERHEAD
67+82	TO	70+22	18	RT	TO	18	RT		R	OVERHEAD
70+22	TO	72+60	18	RT	TO	18	RT		R	OVERHEAD
72+60	TO	74+98	18	RT	TO	18	RT		R	OVERHEAD
74+98	TO	77+37	18	RT	TO	21	RT		R	OVERHEAD
77+37	TO	79+68	21	RT	TO	19	RT		R	OVERHEAD
79+68	TO	82+06	19	RT	TO	19	RT		R	OVERHEAD
82+06	TO	84+47	19	RT	TO	19	RT		R	OVERHEAD
84+47	TO	86+88	19	RT	TO	18	RT		R	OVERHEAD
86+88	TO	89+18	18	RT	TO	17	RT		R	OVERHEAD
89+18	TO	92+47	17	RT	TO	19	RT		R	OVERHEAD
92+47	TO	93+62	19	RT	TO	19	RT		R	OVERHEAD
93+62	TO	95+75	19	RT	TO	20	RT		R	OVERHEAD
95+75	TO	97+15	20	RT	TO	21	RT		R	OVERHEAD
97+15	TO	99+21	21	RT	TO	24	RT		R	OVERHEAD
99+21	TO	100+61	24	RT	TO	28	RT		R	OVERHEAD
100+61	TO	101+74	28	RT	TO	25	RT		R	OVERHEAD
101+74	TO	104+42	25	RT	TO	23	RT		R	OVERHEAD
104+42	TO	106+01	23	RT	TO	25	RT		R	OVERHEAD
106+01	TO	107+10	25	RT	TO	22	RT		R	OVERHEAD
107+10	TO	109+29	22	RT	TO	26	RT		R	OVERHEAD
109+29	TO	111+48	26	RT	TO	23	RT		R	OVERHEAD
111+48	TO	113+69	23	RT	TO	22	RT		R	OVERHEAD
113+69	TO	115+92	22	RT	TO	22	RT		R	OVERHEAD
115+92	TO	115+87	22	RT	TO	71	RT		R	OVERHEAD
115+92	TO	117+97	22	RT	TO	22	RT		R	OVERHEAD
117+97	TO	119+99	22	RT	TO	24	RT		R	OVERHEAD
119+99	TO	121+98	24	RT	TO	24	RT		R	OVERHEAD
121+98	TO	124+46	24	RT	TO	24	RT		R	OVERHEAD
124+46	TO	125+82	24	RT	TO	22	RT		R	OVERHEAD
125+82	TO	127+00	22	RT	TO	24	RT		R	OVERHEAD
127+00	TO	129+41	24	RT	TO	24	RT		R	OVERHEAD
129+41	TO	131+91	24	RT	TO	25	RT		R	OVERHEAD
131+91	TO	134+37	25	RT	TO	24	RT		R	OVERHEAD
134+37	TO	136+87	24	RT	TO	18	RT		R	OVERHEAD
136+87	TO	139+35	18	RT	TO	18	RT		R	OVERHEAD
139+35	TO	141+86	18	RT	TO	17	RT		R	OVERHEAD
141+86	TO	144+49	17	RT	TO	18	RT		R	OVERHEAD
144+49	TO	146+61	18	RT	TO	19	RT		R	OVERHEAD
146+61	TO	149+26	19	RT	TO	18	RT		R	OVERHEAD
149+26	TO	153+36	18	RT	TO	18	RT		R	OVERHEAD
153+36	TO	155+33	18	RT	TO	13	RT		R	OVERHEAD
155+33	TO	156+81	13	RT	TO	15	RT		R	OVERHEAD
156+81	TO	159+74	15	RT	TO	18	RT		R	OVERHEAD
159+74	TO	162+14	18	RT	TO	21	RT		R	OVERHEAD
162+14	TO	164+94	21	RT	TO	28	RT		R	OVERHEAD
164+94	TO	167+74	28	RT	TO	29	RT		R	OVERHEAD
167+74	TO	169+10	29	RT	TO	29	RT		R	OVERHEAD
169+10	TO	171+20	29	RT	TO	25	RT		R	OVERHEAD
171+20	TO	173+47	25	RT	TO	21	RT		R	OVERHEAD
173+47	TO	176+06	21	RT	TO	18	RT		R	OVERHEAD

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-13\Plan\07-Utility Tab.dwg 09/25/2003 09:24:57 AM CDT

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

PRINT NAME: PETER M. LEMKE

SIGNATURE: Peter M Lemke

DATE: 9-26-2003 LICENSE NO. 40118

DRAWN BY PML DATE 07/07/03

DESIGN BY PML DATE 07/07/03

CHECKED BY MFG DATE 09/10/03

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13

STATE PROJECT NO. 106-020-23

STATE AID PROJECT NO.

COUNTY PROJECT NO.

UTILITY TABULATIONS

Sheet 9 of 226 Sheets

UNDERGROUND POWER - CONNEXUS — AA

STATION TO STATION			OFFSET						REMARKS	SIZE & ITEM
150+28	TO	150+62	124	LT	TO	75	LT		R	BURIED CABLE
150+62	TO	153+37	75	LT	TO	73	LT		R	BURIED CABLE
153+37	TO	153+37	73	LT	TO	148	LT		R	BURIED CABLE
153+37	TO	153+82	73	LT	TO	143	LT		R	BURIED CABLE
153+37	TO	156+00	73	LT	TO	78	LT		R	BURIED CABLE
156+00	TO	158+00	78	LT	TO	78	LT		R	BURIED CABLE
158+00	TO	160+00	78	LT	TO	79	LT		R	BURIED CABLE
160+00	TO	162+00	79	LT	TO	80	LT		R	BURIED CABLE
162+00	TO	164+00	80	LT	TO	79	LT		R	BURIED CABLE
164+00	TO	167+54	79	LT	TO	79	LT		R	BURIED CABLE
167+54	TO	167+98	79	LT	TO	132	LT		R	BURIED CABLE
167+75	TO	173+56	30	RT	TO	30	RT		R	BURIED CABLE
173+56	TO	173+83	30	RT	TO	83	RT		R	BURIED CABLE
173+56	TO	176+47	30	RT	TO	15	RT		R	BURIED CABLE
176+47	TO	176+55	15	RT	TO	41	RT		LAI	BURIED CABLE
176+47	TO	179+54	15	RT	TO	7	RT		LAI	BURIED CABLE
179+54	TO	183+00	7	RT	TO	13	RT		LAI	BURIED CABLE

OHP - GREAT RIVER ENERGY — AA

STATION TO STATION			OFFSET						REMARKS	SIZE & ITEM
45+44	TO	49+06	82	LT	TO	77	LT		R	OVERHEAD
49+06	TO	53+57	77	LT	TO	78	LT		R	OVERHEAD
53+57	TO	58+06	78	LT	TO	72	LT		R	OVERHEAD
58+06	TO	62+21	72	LT	TO	69	LT		R	OVERHEAD
62+21	TO	66+43	69	LT	TO	70	LT		R	OVERHEAD
66+43	TO	70+76	70	LT	TO	70	LT		R	OVERHEAD
70+76	TO	74+94	70	LT	TO	74	LT		R	OVERHEAD
74+94	TO	79+23	74	LT	TO	69	LT		R	OVERHEAD
79+23	TO	83+95	69	LT	TO	65	LT		R	OVERHEAD
83+95	TO	88+48	65	LT	TO	68	LT		R	OVERHEAD
88+48	TO	92+55	68	LT	TO	69	LT		R	OVERHEAD
92+55	TO	96+71	69	LT	TO	67	LT		R	OVERHEAD
96+71	TO	101+01	67	LT	TO	62	LT		R	OVERHEAD
101+01	TO	105+05	62	LT	TO	60	LT		R	OVERHEAD
105+05	TO	106+29	60	LT	TO	61	LT		R	OVERHEAD
106+29	TO	113+10	61	LT	TO	62	LT		R	OVERHEAD
113+10	TO	117+70	62	LT	TO	62	LT		R	OVERHEAD
117+70	TO	121+83	62	LT	TO	63	LT		R	OVERHEAD
121+83	TO	126+54	63	LT	TO	63	LT		R	OVERHEAD
126+54	TO	131+31	63	LT	TO	64	LT		R	OVERHEAD
131+31	TO	135+38	64	LT	TO	70	LT		R	OVERHEAD
135+38	TO	140+33	70	LT	TO	79	LT		R	OVERHEAD
140+33	TO	144+73	79	LT	TO	79	LT		R	OVERHEAD
144+73	TO	144+97	79	LT	TO	79	LT		R	OVERHEAD
144+97	TO	146+10	79	LT	TO	124	LT		R	OVERHEAD
146+10	TO	149+37	124	LT	TO	82	LT		R	OVERHEAD
149+37	TO	153+37	82	LT	TO	83	LT		R	OVERHEAD
153+37	TO	160+42	83	LT	TO	83	LT		R	OVERHEAD
160+42	TO	163+91	83	LT	TO	88	LT		R	OVERHEAD
163+91	TO	167+41	88	LT	TO	88	LT		R	OVERHEAD
167+41	TO	167+91	88	LT	TO	132	LT		R	OVERHEAD
167+91	TO	169+43	132	LT	TO	88	LT		R	OVERHEAD
169+43	TO	173+44	88	LT	TO	87	LT		R	OVERHEAD
173+44	TO	177+43	87	LT	TO	85	LT		R	OVERHEAD

GAS - CENTERPOINT ENERGY/MINNEGASCO — AA

STATION TO STATION			OFFSET						REMARKS	SIZE & ITEM
39+80	TO	42+88	40	LT	TO	41	LT		LAI	8" STEEL
42+88	TO	42+88	41	LT	TO	250	LT		LAI	8" STEEL
42+88	TO	44+00	41	LT	TO	43	LT		LAI	8" STEEL
98+06	TO	98+42	58	LT	TO	58	LT		R	4" STEEL
98+42	TO	98+42	58	LT	TO	263	LT		R	2" PVC
98+42	TO	111+00	58	LT	TO	52	LT		R	4" PVC
111+00	TO	115+12	52	LT	TO	49	LT		R	4" PVC
115+12	TO	115+12	49	LT	TO	172	RT		R	2" PVC
115+12	TO	126+60	49	LT	TO	61	LT		R	4" PVC
126+60	TO	133+69	61	LT	TO	60	LT		R	4" PVC
133+69	TO	139+00	60	LT	TO	63	LT		R	4" PVC
139+00	TO	148+00	63	LT	TO	62	LT		R	4" PVC
148+00	TO	155+22	62	LT	TO	46	LT		R	4" PVC
155+22	TO	167+82	46	LT	TO	88	LT		R	4" PVC
167+82	TO	168+90	88	LT	TO	81	LT		R	4" PVC
168+90	TO	168+90	81	LT	TO	289	LT		R	4" PVC
168+90	TO	168+90	81	LT	TO	205	RT		R	4" PVC
168+90	TO	169+14	91	LT	TO	83	LT		R	4" PVC
169+14	TO	176+78	83	LT	TO	67	LT		R	4" PVC
176+78	TO	177+01	67	LT	TO	52	LT		LAI	4" PVC
177+01	TO	179+00	52	LT	TO	60	LT		LAI	4" PVC
179+00	TO	180+01	60	LT	TO	44	LT		LAI	4" PVC

UTILITY NOTES

A = ADJUST (BY OTHERS)
R = RELOCATE (BY OTHERS)
LAI = LEAVE AS IS

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-13\Plan\07-Utility Tab.dwg 09/25/2003 09:24:57 AM CDT

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
PRINT NAME: PETER M. LEMKE
SIGNATURE: Peter M Lemke
DATE: 9-26-2003 LICENSE NO. 40118

DRAWN BY PML DATE 07/07/03
DESIGN BY PML DATE 07/07/03
CHECKED BY MFG DATE 09/10/03

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13
STATE PROJECT NO. 106-020-23
STATE AID PROJECT NO.
COUNTY PROJECT NO.

UTILITY TABULATIONS

TELEPHONE - QWEST										AA
STATION TO STATION			OFFSET					REMARKS	SIZE & ITEM
38+64	TO	39+60	51	RT	TO	27	RT	R	BURIED CABLE
39+60	TO	43+25	27	RT	TO	24	RT	R	BURIED CABLE
43+25	TO	45+61	24	RT	TO	24	RT	R	BURIED CABLE
45+61	TO	45+58	24	RT	TO	60	LT	R	BURIED CABLE
45+58	TO	45+46	60	LT	TO	70	LT	R	BURIED CABLE
45+46	TO	43+96	70	LT	TO	72	LT	R	BURIED CABLE
43+96	TO	43+78	72	LT	TO	90	LT	R	BURIED CABLE
43+78	TO	43+78	90	LT	TO	196	LT	R	BURIED CABLE
45+61	TO	46+75	24	RT	TO	23	RT	R	BURIED CABLE
39+62	TO	45+03	32	RT	TO	28	RT	R	BURIED CABLE
45+03	TO	45+06	28	RT	TO	32	RT	R	BURIED CABLE
45+06	TO	45+11	32	RT	TO	27	RT	R	BURIED CABLE
45+11	TO	48+37	27	RT	TO	22	RT	R	BURIED CABLE
48+37	TO	48+42	22	RT	TO	25	RT	R	BURIED CABLE
48+42	TO	48+47	25	RT	TO	22	RT	R	BURIED CABLE
48+47	TO	54+54	22	RT	TO	10	RT	R	BURIED CABLE
54+54	TO	58+88	10	RT	TO	6	RT	R	BURIED CABLE
58+88	TO	58+88	6	RT	TO	85	LT	R	BURIED CABLE
58+88	TO	59+16	85	LT	TO	45	LT	R	BURIED CABLE
59+16	TO	62+06	45	LT	TO	47	LT	R	BURIED CABLE
62+06	TO	62+46	47	LT	TO	102	LT	R	BURIED CABLE
62+46	TO	62+32	102	LT	TO	1156	LT	LAI	BURIED CABLE
58+88	TO	61+78	6	RT	TO	6	RT	R	BURIED CABLE
61+78	TO	62+01	6	RT	TO	47	RT	R	BURIED CABLE
62+01	TO	62+20	47	RT	TO	6	RT	R	BURIED CABLE
62+20	TO	64+02	6	RT	TO	4	RT	R	BURIED CABLE
64+02	TO	67+93	4	RT	TO	2	RT	R	BURIED CABLE
67+93	TO	74+76	2	RT	TO	10	LT	R	BURIED CABLE
74+76	TO	74+96	10	LT	TO	16	RT	R	BURIED CABLE
74+96	TO	75+09	16	RT	TO	9	LT	R	BURIED CABLE
75+09	TO	80+54	9	LT	TO	9	LT	R	BURIED CABLE
80+54	TO	86+66	9	LT	TO	9	LT	R	BURIED CABLE
86+66	TO	86+91	9	LT	TO	17	RT	R	BURIED CABLE
86+91	TO	87+06	17	RT	TO	9	LT	R	BURIED CABLE
87+06	TO	96+85	9	LT	TO	5	LT	R	BURIED CABLE
96+85	TO	97+10	5	LT	TO	22	RT	R	BURIED CABLE
97+10	TO	97+30	22	RT	TO	4	LT	R	BURIED CABLE
97+30	TO	107+13	4	LT	TO	3	LT	R	BURIED CABLE
107+13	TO	107+10	3	LT	TO	66	LT	R	BURIED CABLE
107+13	TO	115+23	3	LT	TO	2	LT	R	BURIED CABLE
115+23	TO	115+12	2	LT	TO	647	RT	R	BURIED CABLE
115+23	TO	122+99	2	LT	TO	1	LT	R	BURIED CABLE
122+99	TO	122+99	1	LT	TO	50	LT	R	BURIED CABLE
122+99	TO	126+98	1	LT	TO	1	LT	R	BURIED CABLE
126+98	TO	126+99	1	LT	TO	67	LT	R	BURIED CABLE
126+98	TO	131+02	1	LT	TO	0		R	BURIED CABLE
131+02	TO	131+04	0		TO	58	LT	R	BURIED CABLE
131+02	TO	132+96	0		TO	0		R	BURIED CABLE
132+96	TO	132+96	0		TO	71	LT	R	BURIED CABLE
132+96	TO	149+67	0		TO	8	LT	R	BURIED CABLE
149+67	TO	155+37	8	LT	TO	8	LT	R	BURIED CABLE
155+37	TO	155+41	8	LT	TO	65	LT	R	BURIED CABLE
155+37	TO	156+68	8	LT	TO	7	LT	R	BURIED CABLE
156+68	TO	156+72	7	LT	TO	72	LT	R	BURIED CABLE
156+68	TO	158+04	7	LT	TO	3	RT	R	BURIED CABLE
158+04	TO	158+11	3	RT	TO	32	RT	R	BURIED CABLE
158+11	TO	158+34	32	RT	TO	3	RT	R	BURIED CABLE
158+34	TO	163+19	3	RT	TO	13	RT	R	BURIED CABLE
163+19	TO	165+12	13	RT	TO	23	RT	R	BURIED CABLE
165+12	TO	167+78	23	RT	TO	22	RT	R	BURIED CABLE
167+78	TO	167+76	22	RT	TO	65	RT	R	BURIED CABLE
167+76	TO	167+71	65	RT	TO	851	RT	LAI	BURIED CABLE
167+71	TO	167+47	851	RT	TO	1329	RT	LAI	BURIED CABLE
167+78	TO	168+42	22	RT	TO	1098	LT	R	BURIED CABLE
167+78	TO	169+08	22	RT	TO	20	RT	R	BURIED CABLE
169+08	TO	168+96	20	RT	TO	62	RT	R	BURIED CABLE
168+96	TO	168+93	62	RT	TO	178	RT	R	BURIED CABLE
168+93	TO	169+04	178	RT	TO	187	RT	LAI	BURIED CABLE
169+04	TO	168+92	187	RT	TO	199	RT	LAI	BURIED CABLE
168+92	TO	168+28	199	RT	TO	1331	RT	LAI	BURIED CABLE
169+08	TO	170+37	20	RT	TO	17	RT	R	BURIED CABLE
170+37	TO	170+48	17	RT	TO	37	RT	R	BURIED CABLE
170+48	TO	170+81	37	RT	TO	15	RT	R	BURIED CABLE
170+81	TO	176+46	15	RT	TO	18	RT	R	BURIED CABLE

Mr. Chuck Lenthe
City Engineer
City of Blaine
10801 Town Square Drive
Blaine, MN 55449
Phone: 763 785 6188

Mr. Matt Hotzler
Connexus Energy
14601 Ramsey Boulevard
Anoka, MN 55303
Phone: 763 323 2665

Mr. Joe Kotula
Design Engineer
Qwest
425 Monroe Street
Anoka, MN 55303
Phone: 763 712 5002
Fax: 763 712 5023

Mr. Steve Guhanick
Centerpoint Energy/Minnegasco
700 West Linden Avenue
P.O.Box 1165
Minneapolis, MN 55440-1165
Phone: 612 321 5421

Mr. David Stillman
Xcel Energy/Gas
825 Rice St.
Saint Paul, MN 55117-9922
Phone: 651 229 2589

Mr. Darren Nordskog
Design Tech
Xcel Energy
825 Rice St., 1st Floor
Saint Paul, MN 55117-9922
Phone: 651 229 2329

Mr. Craig Poorker
Great River Energy
17845 E. Hwy 10
Elk River, MN 55330
Phone: 763 241 2367

Mr. Tony Sandwick
Comcast Cable
934 Woodhill Drive
Roseville, MN 55113
Phone: 651 493 5116

UTILITY NOTES

A = ADJUST (BY OTHERS)
R = RELOCATE (BY OTHERS)
LAI = LEAVE AS IS

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-13\Plan\07-Utility Tab.dwg 10/21/2003 02:50:34 PM CDT

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
PRINT NAME: PETER M. LEMKE
SIGNATURE: Peter M Lemke
DATE: 9-26-2003 LICENSE NO. 40118

DRAWN BY PML DATE 07/07/03
DESIGN BY PML DATE 07/07/03
CHECKED BY MEG DATE 09/10/03

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13
STATE PROJECT NO. 106-020-23
STATE AID PROJECT NO.
COUNTY PROJECT NO.

UTILITY TABULATIONS

Sheet 11 of 226 Sheets

CLEAR & GRUB (ACRE) — A

STATION	LOCATION	AREA SQ FT	CLEAR ACRE	GRUB ACRE
CSAH 17 - LNB				
52+09 TO 55+76	35' RT TO 66' RT LNB	8018	0.20	0.20
83+47 TO 86+56	31' RT TO 68' RT LNB	10315	0.25	0.25
84+00 TO 84+83	55' LT TO 65' LT LSB	366	0.05	0.05
87+76 TO 88+27	47' LT TO 53' LT LSB	124	0.05	0.05
92+81 TO 95+35	48' LT TO 60' LT LSB	1663	0.05	0.05
94+55 TO 95+93	32' RT TO 48' RT LNB	1806	0.05	0.05
96+64 TO 100+07	39' RT TO 56' RT LNB	2266	0.05	0.05
100+64 TO 103+50	30' RT TO 47' RT LNB	2414	0.05	0.05
103+13 TO 104+08	22' LT TO 37' LT LSB	683	0.05	0.05
105+75 TO 106+23	22' RT TO 44' RT LNB	368	0.05	0.05
106+75 TO 108+45	30' RT TO 59' RT LNB	1508	0.05	0.05
111+24 TO 115+10	34' RT TO 53' RT LNB	5298	0.10	0.10
115+69 TO 115+97	44' LT TO 64' LT LSB	225	0.05	0.05
116+07 TO 116+39	47' LT TO 55' LT LSB	115	0.05	0.05
116+05 TO 125+55	24' RT TO 52' RT LNB	1943	0.05	0.05
124+01 TO 124+69	33' LT TO 71' LT LSB	1277	0.05	0.05
124+86 TO 125+76	30' LT TO 70' LT LSB	2559	0.05	0.05
126+69 TO 128+60	23' LT TO 55' LT LSB	4045	0.10	0.10
128+86 TO 131+16	48' LT TO 64' LT LSB	1294	0.05	0.05
132+57 TO 133+94	18' LT TO 49' LT LSB	3284	0.10	0.10
133+90 TO 134+67	31' LT TO 54' LT LSB	862	0.05	0.05
135+28 TO 135+97	21' LT TO 50' LT LSB	1271	0.05	0.05
142+58 TO 148+25	33' LT TO 68' LT LSB	10285	0.25	0.25
152+28 TO 152+48	45' RT TO 56' RT LNB	125	0.05	0.05
155+67 TO 157+52	25' LT TO 48' LT LSB	2120	0.05	0.05
	TOTALS	64234	1.95	1.95

CLEAR & GRUB (EACH)

STATION	LOCATION	CLEAR EACH	GRUB EACH
CSAH 17			
44+28	37' LT LSB	1	1
44+93	36' LT LSB	1	1
45+14	39' LT LSB	1	1
45+61	50' LT LSB	1	1
46+88	37' LT LSB	1	1
47+61	37' LT LSB	1	1
48+94	41' RT LNB	1	1
49+06	42' RT LNB	1	1
49+16	45' RT LNB	1	1
49+25	42' RT LNB	1	1
49+29	34' LT LSB	1	1
49+34	44' RT LNB	1	1
49+43	42' RT LNB	1	1
49+53	42' RT LNB	1	1
49+62	41' RT LNB	1	1
49+71	41' RT LNB	1	1
49+80	38' RT LNB	1	1
49+92	40' RT LNB	1	1
50+00	37' RT LNB	1	1
50+17	39' RT LNB	1	1
50+18	36' LT LSB	0	1
50+25	43' RT LNB	1	1
50+34	41' RT LNB	1	1
50+86	34' RT LNB	2	2
51+36	35' RT LNB	2	1
51+37	35' RT LNB	2	1
51+46	33' RT LNB	1	1
52+54	23' RT LNB	2	1
52+66	24' RT LNB	2	1
53+52	21' RT LNB	2	1
54+03	20' RT LNB	1	1
54+31	21' RT LNB	1	1
77+23	48' RT LNB	1	1
77+24	54' RT LNB	1	1
77+30	56' RT LNB	1	1
77+28	58' RT LNB	1	1
77+32	60' RT LNB	1	1
77+28	64' RT LNB	1	1
77+25	66' RT LNB	1	1
77+25	70' RT LNB	1	1
77+23	71' RT LNB	1	1
77+29	72' RT LNB	1	1
77+24	76' RT LNB	1	1
78+96	37' RT LNB	1	1
79+04	37' RT LNB	1	1
79+03	42' RT LNB	1	1
79+07	43' RT LNB	1	1
79+09	44' RT LNB	1	1
79+09	46' RT LNB	1	1

CLEAR & GRUB (EACH) CONT.

STATION	LOCATION	CLEAR EACH	GRUB EACH
CSAH 17			
96+28	53' RT LNB	5	1
100+98	52' LT LSB	1	1
101+10	54' LT LSB	1	1
101+23	53' LT LSB	1	1
101+30	55' LT LSB	1	1
101+37	53' LT LSB	1	1
101+47	53' LT LSB	1	1
101+53	57' LT LSB	1	1
101+68	54' LT LSB	1	1
101+72	52' LT LSB	1	1
101+75	55' LT LSB	1	1
101+88	53' LT LSB	1	1
101+95	52' LT LSB	1	1
101+99	56' LT LSB	1	1
102+02	53' LT LSB	1	1
102+07	58' LT LSB	1	1
102+11	59' LT LSB	1	1
103+39	27' RT LNB	0	1
103+52	25' RT LNB	1	1
103+53	34' RT LNB	1	1
103+68	30' RT LNB	1	1
103+72	25' RT LNB	1	1
107+12	41' LT LSB	1	1
107+17	41' LT LSB	1	1
108+46	48' LT LSB	1	1
108+48	49' LT LSB	1	1
108+66	43' LT LSB	1	1
115+61	54' LT LSB	1	1
117+70	35' LT LSB	1	1
118+63	39' LT LSB	1	1
118+81	55' LT LSB	1	1
119+62	35' LT LSB	1	1
119+80	43' LT LSB	1	1
120+52	34' LT LSB	1	1
121+24	48' LT LSB	1	1
121+63	26' LT LSB	1	1
121+66	43' LT LSB	1	1
122+24	39' LT LSB	1	1
122+76	52' LT LSB	1	1
123+00	46' LT LSB	1	1
123+01	47' LT LSB	1	1
123+42	53' LT LSB	1	1
123+58	46' LT LSB	1	1
123+69	47' LT LSB	1	1
123+76	46' LT LSB	1	1
123+79	48' LT LSB	1	1
123+96	41' LT LSB	1	1
126+81	50' LT LSB	0	1
126+88	48' LT LSB	0	1

CLEAR & GRUB (EACH) CONT.

STATION	LOCATION	CLEAR EACH	GRUB EACH
CSAH 17			
126+88	60' LT LSB	1	1
127+23	53' LT LSB	1	1
127+25	55' LT LSB	1	1
127+27	65' LT LSB	1	1
127+41	57' LT LSB	1	1
128+24	50' LT LSB	1	1
128+31	52' LT LSB	1	1
128+67	34' LT LSB	0	1
134+95	27' LT LSB	5	1
134+97	26' LT LSB	5	1
141+85	18' RT LNB	0	1
145+99	20' RT LNB	0	1
146+04	16' RT LNB	0	1
146+02	25' RT LNB	0	1
146+56	16' RT LNB	0	1
146+59	16' RT LNB	0	1
146+77	22' RT LNB	0	1
147+34	18' RT LNB	0	1
147+38	23' RT LNB	0	1
148+05	25' RT LNB	0	1
148+20	27' RT LNB	0	1
148+58	27' RT LNB	0	1
148+58	25' RT LNB	0	1
148+76	27' RT LNB	1	1
148+89	23' RT LNB	0	1
148+97	24' RT LNB	0	1
149+07	20' RT LNB	0	1
149+09	20' RT LNB	0	1
149+20	24' RT LNB	0	1
149+29	22' RT LNB	0	1
149+31	21' RT LNB	0	1
149+31	23' RT LNB	0	1
149+31	22' RT LNB	0	1
149+32	21' RT LNB	0	1
154+94	20' RT LNB	0	1
154+98	19' RT LNB	0	1
155+02	14' RT LNB	0	1
155+09	18' RT LNB	0	1
155+09	20' RT LNB	0	1
155+16	17' RT LNB	0	1
155+23	22' RT LNB	0	1
155+33	15' RT LNB	0	1
155+35	21' RT LNB	0	1
155+38	23' RT LNB	0	1
155+41	22' RT LNB	0	1
155+44	21' RT LNB	0	1
156+57	21' RT LNB	0	1
156+79	27' RT LNB	0	1
157+87	28' RT LNB	5	1
TOTALS		127	148

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-13\Plan\08-Removal Tab.dwg 10/20/2003 12:59:55 PM CDT

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
PRINT NAME: PETER M LEMKE
SIGNATURE: Peter M Lemke
DATE: 9/26/2003 LICENSE NO. 40118

DRAWN BY MTH DATE 09/25/03
DESIGN BY MTH DATE 09/25/03
CHECKED BY PML DATE 09/25/03

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13
STATE PROJECT NO. 198-020-17
STATE AID PROJECT NO.
COUNTY PROJECT NO.

REMOVALS

Sheet 12 of 226 Sheets

REMOVE CULVERT / STORM SEWER — B

STATION	LOCATION	DESCRIPTION	REMOVE CULVERT	REMOVE SEWER PIPE (STORM)	REMOVE DRAINAGE STRUCTURE	REMOVE CONCRETE APRON	SALVAGE CASTING
			LIN FT	LIN FT	EACH	EACH	EACH
CSAH 17 - LNB							
43+89 - 44+20	72' LT - 104 LT	12" RCP		44.5	1	1	1
49+46 - 49+72	34' RT	15" CMP	26				
58+79 - 59+29	67' LT - 69' LT	18" CMP	50				
62+28 - 63+37	83' LT - 86' LT	36" RCP	109				
62+01 - 62+44	50' RT - 20' RT	24" CMP	55				
62+44	20' RT	48" MH			1		
62+44 - 63+12	16' RT - 18' RT	24" CMP	68				
63+18	73' RT - 105' RT	12" RCP	32				
76+64 - 77+34	18' RT - 20' RT	15" CMP	70				
78+78 - 79+25	21' RT	15" CMP	47				
89+07 - 89+77	15' RT - 20' RT	15" CMP	71				
93+72 - 93+79	46' LT - 4' RT	48" RCP	50				
96+28 - 96+72	16' RT - 19' RT	15" CMP	44				
98+22 - 98+88	63' LT	18" CMP	67				
99+97 - 100+57	17' RT - 19' RT	18" CMP	60				
106+24 - 106+74	21' RT	15" CMP	50				
107+79 - 108+30	60' LT	18" CMP	51				
115+35 - 115+84	17' RT	15" PVC-DR	49				
118+56 - 118+95	50' LT	15" CMP	39				
124+61 - 124+91	49' LT	15" CMP	30				
127+47 - 127+77	55' LT	15" CMP	30				
131+60 - 131+89	62' LT	15" CMP	30				
134+91 - 135+32	58' LT	15" CMP	41				
140+75 - 141+13	61' LT	15" CMP	38				
143+03 - 143+12	51' LT - 9' RT	24" RCP	61				
145+54 - 146+00	8' RT	18" CMP	46				
148+23 - 148+63	69' LT	15" CMP	40				
151+67 - 152+27	7' RT	15" CMP	60				
163+43 - 163+46	76' LT - 19' RT	18" RCP	94				
164+36 - 164+89	31' RT - 32' RT	15" CMP	52				
165+18	30' LT - 77' LT	12" RCP		47	1	1	1
172+52 - 172+89	23' RT	18" CMP	37				
172+94	82' LT - 20' RT	18" RCP	102				
173+49 - 173+89	20' RT	18" CMP	40				
173+91 - 174+26	72' LT	18" CMP	35				
175+19 - 175+54	71' LT	18" CMP	34				
		TOTAL	1708	92	3	2	2

SALVAGE SIGN TYPE SPECIAL — D

LOCATION	DESCRIPTION	SALVAGE SIGN TYPE SPECIAL
		EACH
PHEASANT RIDGE DR	ON SIGNAL	
CSAH 12 (109TH AVE)		1
LOCHNESS PARK		1
114TH LANE		1
CSAH 14 (MAIN ST)	ON SIGNAL	
	TOTALS	3

SPECIAL EXCAVATION — R

POND	STATION	SPECIAL EXCAVATION
		SQ YD
2	75+00	2248
3	91+00	6448
4	105+00	8436
5	138+00	10470
6	158+00	6342
7	182+00	6499
	TOTAL	40443

REMOVE CURB & GUTTER AND CONCRETE MEDIAN — E

STATION	LOCATION	REMOVE CURB & GUTTER	REMOVE CONCRETE MEDIAN
		LIN FT	SQ FT
CSAH 17 - LNB			
37+37 TO 39+99	14' RT TO 29' RT		263
43+79 TO 44+08	23' RT TO 50' RT		46
43+86 TO 49+40	13' LT TO 20' LT	3644	1116
98+40	91' LT TO 160' LT		69
165+00 TO 167+85	31' LT TO 35' LT	883	568
169+08 TO 171+93	18' LT TO 25' LT	730	572
	TOTAL	5257	2634

REMOVE FENCE — F

STATION	LOCATION	DESCRIPTION	REMOVE FENCE
			LIN FT
CSAH 17 - LNB			
59+29 TO 61+81	74' LT TO 119' LT		297
53+75 TO 55+64	36' RT TO 39' RT		189
77+34 TO 86+68	33' RT TO 50' RT		951
92+50 TO 93+17	33' RT TO 42' RT		81
93+68 TO 95+77	30' RT TO 31' RT		210
96+54 TO 99+11	37' RT TO 47' RT		257
95+92 TO 96+35	97' LT TO 98' LT		45
102+20 TO 107+06	73' LT TO 101' LT		497
111+21 TO 114+40	71' LT TO 98' LT		367
125+55 TO 145+66	34' RT TO 53' RT		2073
145+86 TO 151+91	24' RT TO 58' RT		703
152+13 TO 164+03	24' RT TO 58' RT		1222
148+60 TO 155+44	83' LT TO 115' LT		704
155+76 TO 157+33	72' LT TO 98' LT		208
177+50 TO 178+97	57' LT TO 94' LT		182
		TOTAL	7986

REMOVE BITUMINOUS FLUME — C

STATION	OFFSET	BIT FLUME
		SQ FT
9869	70' LT TO 93' LT	110
	TOTAL	110

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-13\Plan\08-Removal Tab.dwg 01/09/2004 04:57:24 PM CST

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

PRINT NAME: PETER M LEMKE

SIGNATURE: Peter M Lemke

DATE: 1/9/2004 LICENSE NO. 40118

DRAWN BY MTH DATE 09/25/03

DESIGN BY MTH DATE 09/25/03

CHECKED BY PML DATE 09/25/03

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13

STATE PROJECT NO. 198-020-17

STATE AID PROJECT NO.

COUNTY PROJECT NO.

REMOVALS

Sheet 13 of 226 Sheets

CONCRETE CONSTRUCTION — G

STATION	LOCATION	* DETECTABLE WARNINGS	4" CONCRETE WALK	CONCRETE MEDIAN NOSE	B-424 CURB AND GUTTER
		EACH	SQ FT	SQ FT	LIN FT
CSAH 17 - LNB					
36+80 TO 40+00	25' RT				345
42+83	40' RT	1	47		
42+83	81' LT	2	94		
42+85	26' LT			32	
43+80 TO 62+45	25' RT				1924
43+86	40' RT	1	47		
43+86	81' LT	2	94		
43+90	16' LT			27	
43+90 TO 48+79	14' LT TO 18' LT		2472		620
48+79 TO 50+10	14' LT TO 35' LT		2033		
43+90 TO 50+10	12' LT				620
62+25	25' LT			231	
62+31	42' RT	1	47		
62+31	91' LT	2	94		
63+25	25' LT			206	
63+30 TO 76+80	25' RT				1405
63+45	42' RT	1	47		
63+45	91' LT	2	94		
77+35 TO 115+15	25' RT				3824
84+85	30' LT			113	
85+60	24' LT			113	
114+90	23' LT			110	
115+80 TO 145+40	25' RT				3015
115+95	18' LT			107	
145+35	22' LT			113	
146+05 TO 164+50	25' RT				1877
146+15	28' LT			114	
164+80 TO 168+10	25' RT				408
167+90	26' LT			274	
167+90	44' RT	1	47		
167+90	92' LT	2	94		
168+95 TO 175+40	25' RT				675
169+00	26' LT			278	
169+07	42' RT	1	47		
169+07	92' LT	2	94		
CSAH 17 - LSB					
43+90 TO 50+10	25' RT				621
43+70 TO 62+40	25' LT				1939
63+20 TO 84+90	25' LT				2219
85+50 TO 98+40	25' LT				1382
98+70 TO 115+20	25' LT				1695
115+75 TO 145+45	25' LT				3015
146+10 TO 168+00	25' LT				2242
168+85 TO 175+55	25' LT				706
CSAH 12 - LEB					
12+25 TO 16+95	25' LT				464
12+25	37' LT			30	
12+25 TO 16+95	35' LT TO 39' LT		1835		
16+95	37' LT			30	
18+65 TO 23+35	12' LT				467
18+65	15' LT			30	
23+35	15' LT			30	
CSAH 12 - LWB					
12+25 TO 16+95	12' RT				464
18+65 TO 23+35	35' RT TO 39' LT		1840		
18+65 TO 23+35	25' RT				467
CSAH 14 - LEB					
188+45	28' LT			25	
190+40	16' LT			25	
	TOTALS	18	9026	1888	30394

*NOTE: CONSTRUCT DETECTABLE WARNING SYSTEM ON EACH PEDESTRIAN CURB RAMP USING A 2'X4' AREA WITH CONTRASTING COLOR AND TRUNCATED DOMES.

RELOCATE MAILBOX SUPPORT — H

STATION	ADDRESS	RELOCATE MAILBOX SUPPORT
		EACH
86+20	11261	1
89+20	11301	1
93+00	11375	1
96+00	11425	1
100+40	11475	1
106+00	11575	1
108+00	11662	1
115+00	11670	1
119+00	11770/11800	2
125+00	11802	1
127+00	11882	1
131+00	11940	1
135+00	11980	1
141+00	12064	1
148+00	12200	1
152+00	12225	1
153+00	12256	1
154+00	12260	1
165+00	12475	1
172+00	12581	1
174+00	12592	1
176+00	12614	1
176+00	12621	1
181+00	12691	1
186+00	12780	1
190+00	12801	1
	TOTALS	27

DRIVEWAY REMOVAL/CONSTRUCTION — J

ADDRESS	STATION	LOCATION	SAWING BITUMINOUS PAVEMENT	REMOVE BITUMINOUS PAVEMENT	TYPE LV4 BIT MIXTURE FOR DRIVEWAYS (B)	AGGREGATE BASE CLASS 5 (4" THICK)	AGGREGATE BASE CLASS 5 (4" THICK)
			LIN FT	SQ YD	SQ YD	SQ FT	SQ YD
CSAH 17 LNB							
PARCEL 15	79+00	RT			11	645	72
PARCEL 25	87+50	LT			17	709	79
#11261	86+75	RT			9	268	30
#11301	89+40	RT			9	475	53
#11375	93+40	RT			9	351	39
#11425	96+50	RT			9	593	66
#11475	100+25	RT	9	66	40	408	45
#11575	106+50	RT			9	666	74
#11662	108+00	LT			17	440	49
#11670	115+35	LT					0
#11770/11800	118+75	LT			18	427	47
PARCEL 39	122+70	LT			17	305	34
#11802	124+75	LT			17	614	68
PARCEL 31	126+27	RT			0	1115	124
#11882	127+60	LT	17	157	81		0
PARCEL 32	129+00	RT			15	618	69
#11940	131+75	LT	52	149	90	0	0
#11980	135+15	LT			16	731	81
#12064	140+95	LT			13	87	10
#12200	148+50	LT			18	387	43
#12225	152+00	RT	11	187	46	0	0
#12256	153+30	LT		72	52	0	0
#12260	153+56	LT	16	147	56	0	0
3700 - 125TH AV	158+00	LT			19	211	23
#12475	164+50	RT	75	163	164		0
#12581 S	172+67	RT			53	0	0
#12581 N	173+67	RT	16	91	45	0	0
#12592	174+15	LT		65	33	0	0
#12614 S	175+40	LT	16	79	31	0	0
#12614 N	176+65	LT	8	60	39	0	0
#12621	176+65	RT		50	49	0	0
#12691	181+00	RT	16	131	49	0	0
#12780S	182+10	LT	16	61	117		
#12780N	186+75	LT		98			
#12801	189+90	RT					
TOTALS			252	1573	1165	9050	1006

NOTE: SEE ENTRANCE DETAILS ON SHEET 20

CASTING ASSEMBLY SCHEDULE — I

ASSEMBLY	RING OR FRAME CASTING	COVER OR GRATE CASTING	CURB BOX CASTING	STANDARD PLATE	QUANTITY	REMARKS
B-5	802A			4129F	150	
		816		4154B		
B-5 (LP)	802A			4129F	16	CB LOW POINTS, USE CURB BOX
		816		4154B		
			823	4160D		
AD-7	700-7			4101D	13	MANHOLE
		715		4110F		
			TOTAL		179	

SAWING CONCRETE PAVEMENT — K

STATION	LOCATION	DESCRIPTION	LIN FT
190+42	12.9 LT TO 19 LT	MEDIAN	6
188+33	24.8 LT TO 30.9 LT	MEDIAN	6
		TOTAL	12

CONSTRUCT RETAINING WALL — P

NOTE : INCLUDE 0.8' UNDERGROUND

STATION TO STATION		LOCATION	SQ FT
141+10	142+05	LSB	271
133+75	134+50	LSB	192
		TOTAL	463

NOTE: SEE RETAINING WALL PROFILE DETAILS ON SHEET 21.

NOTE. THE CONTRACTOR SHALL FURNISH AND INSTALL 1/4" X 7 1/2" X 24" GALVANIZED STEEL PLATES TO COVER THE CURB BOX OPENINGS FOR THE B-5 CASTING ASSEMBLIES. THE COST OF FURNISHING AND INSTALLING THE GALVANIZED STEEL PLATES TO THE CURB BOX OPENING SHALL BE CONSIDERED INCIDENTAL TO THE CASTING ASSEMBLY AND NO ADDITIONAL COMPENSATION SHALL BE MADE.

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-13\Plan\09-Const Tab.dwg 02/04/2004 10:20:58 AM CST

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
PRINT NAME: PETER M. LEMKE
SIGNATURE: Peter M Lemke
DATE: 1-30-2004 LICENSE NO. 40118

DRAWN BY J.F DATE 08/01/03
DESIGN BY PML DATE 08/01/03
CHECKED BY MTH DATE 9/24/03

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13
STATE PROJECT NO. 106-020-23
STATE AID PROJECT NO.
COUNTY PROJECT NO.

CONSTRUCTION TABS

Sheet 14 of 226 Sheets

BITUMINOUS CONSTRUCTION — L

LOCATION	TYPE LV4 WEAR COURSE MIX FOR BIT PATH (B)	SAW BIT PVMNT	MILL BIT SURFACE	REMOVE PAVEMENT SECTION	AGGREGATE BASE CLASS 7B SHOULDERING	AREA	AGGREGATE BASE CLASS 5 (CV)	BIT MATERIAL FOR TACK COAT	1.5" SPWEB 440	2" SPWEB 440	2.5" SPNWC 430
STA TO STA	SQ YD	LIN FT	SQ YD	SQ YD	TON	SQ FT	CU YD	GALLON	TON	TON	TON
CSAH 17											
36+89 TO 39+90		375									
43+74 TO 48+78	448	156		4200		38478	2850	428	353	470	647
48+78 TO 52+34	316			2967	18	14774	1094	164	135	181	248
52+34 TO 61+58	821			7700	80	54516	4038	606	500	666	916
61+58 TO 70+74	814			5089	195	56915	4216	632	522	696	956
70+74 TO 77+70	619			1856		36192	2681	402	332	442	608
77+70 TO 86+00	738			2213		51449	3811	572	472	629	865
86+00 TO 92+19	550			1651	234	32188	2384	358	295	393	541
92+19 TO 97+83	501			1504		33276	2465	370	305	407	559
97+83 TO 109+24	1014			3043		60322	4468	670	553	737	1014
109+24 TO 115+00	512			1536		33984	2517	378	312	415	571
115+00 TO 121+89	612			1837	235	43121	3194	479	395	527	725
121+89 TO 137+16	1357			4072		79404	5882	882	728	970	1334
137+16 TO 145+06	702			2107		46610	3453	518	427	570	783
145+06 TO 153+32	734			2203	174	52534	3891	584	482	642	883
153+32 TO 160+73	659			1976		38532	2854	428	353	471	648
160+73 TO 169+00	646			5973		51218	3794	569	469	626	861
169+00 TO 176+76				4311	89	45784	3391	509	420	560	769
176+76 TO 180+25				1551		16054	1189	178	147	196	270
180+25 TO 185+94		26		400	28	22760	1686	253	209	278	382
MAINLANE 4' ADD IN						54896	4066	610	503	671	923
TURNLANES						6787	503	75	62	83	114
MILL AREAS (WEAR)			6919			62269	0	346	571		
SIDESTREETS											
CSAH 12		95		238		2146	159	24	20	26	36
LOCHNESS PARK		28		227		2042	151	23	19	25	34
STA 85+00				0		2500	185	28	23	31	42
114TH LANE NE		25		346		3112	231	35	29	38	52
117TH LANE NE		24		472		4252	315	47	39	52	71
121ST AVE NE		0		0		6804	504	76	62	83	114
MAIN ST		152		238		2146	159	24	20	26	36
CSAH 12											
7+77 TO 10+38				1450	85	11484	851	128	105	140	193
10+38 TO 12+25				1039		10285	762	114	94	126	173
12+25 TO 16+93				2600		30888	2288	343	283	378	519
16+93 TO 23+33				1500	88	31020	2298	345	284	379	521
23+33 TO 25+20				519		10285	762	114	94	126	173
25+20 TO 30+35				1431		22660	1679	252	208	277	381
TOTALS	11045	879	6919	66249	1226		74772	11562	9824	12337	16964

TRENCH RESTORATION — O

STRUCTURE	to	STRUCTURE	SAWCUT BIT LENGTH	REMOVE BITUMINOUS PAVEMENT	BITUMINOUS TRENCH
				SQ YDS	SQ YDS
104	to	101	176	98	98
108	to	105	176	101	101
112	to	109	176	110	110
116	to	113	160	104	104
120	to	117	140	99	99
124	to	121	65	92	92
128	to	125	116	73	73
132	to	129	104	60	60
135	to	133	96	49	49
435	to	438	48	27	27
439	to	442	48	25	25
443	to	446	48	28	28
447	to	450	48	26	26
451	to	454	48	23	23
455	to	458	48	23	23
459	to	462	48	22	22
463	to	466	48	21	21
504	to	501	48	21	21
508	to	505	48	23	23
512	to	509	48	24	24
516	to	513	48	26	26
520	to	517	48	28	28
524	to	521	48	30	30
528	to	525	48	31	31
532	to	529	48	32	32
536	to	533	48	30	30
540	to	537	48	28	28
544	to	541	48	26	26
548	to	545	48	23	23
552	to	549	48	22	22
556	to	553	48	22	22
560	to	557	48	22	22
564	to	561	48	21	21
568	to	565	48	21	21
604	to	601	48	25	25
608	to	605	48	27	27
612	to	609	100	63	63
616	to	613	100	65	65
620	to	617	100	65	65
624	to	621	120	75	75
628	to	625	150	90	90
632	to	629	160	92	92
636	to	633	160	88	88
701	to	704	160	82	82
705	to	708	140	75	75
709	to	712	124	70	70
715	to	715A	56	42	42
804	to	803	20	11	11
803	to	801	370	224	224
802	to	801	20	12	12
801	to	801A	90	54	54
TOTALS			4375	2568	2568

NO	DATE	BY	CKD	APPR	REVISION
NAME: P:\02-617-13\Plan\09-Const Tab.dwg 01/09/2004 02:15:11 PM CST					

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
PRINT NAME: PETER M. LEMKE
SIGNATURE: Peter M Lemke
DATE: 1/9/2004 LICENSE NO. 40118

DRAWN BY J.F. DATE 08/01/03
DESIGN BY PMI DATE 08/01/03
CHECKED BY MTH DATE 9/24/03

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13
STATE PROJECT NO. 106-020-23
STATE AID PROJECT NO.
COUNTY PROJECT NO.

CONSTRUCTION TABS

TURF ESTABLISHMENT — M

STATION	LOCATION	DESCRIPTION	SEEDING AND DISK ANCHORING	SEED MIX 240	SEED MIX 28B	SEED MIX 310	SEED MIX 350	SOD TYPE LAWN	COMM FERT ANALYSIS 22-5-10	COMM FERT ANALYSIS 18-1-8	MULCH MATERIAL TYPE 3	SILT FENCE TYPE HEAVEY DUTY	EROSION CONTROL BLANKET CATERGORY 3
			ACRE	LB	LB	LB	LB	SQ YD	LB	LB	TON	LIN FT	SQ YD
CSAH 17 - LNB													
43+75 TO 48+50	RT	SHLD						828				475	
48+50 TO 62+50	RT	SHLD	1.27	95					508		2.5	925	
63+10 TO 76+80	RT	SHLD	0.91	68					364		1.8	800	
77+20 TO 85+00	RT	SHLD	0.69	52					276		1.4	500	
85+50 TO 115+15	RT	SHLD	2.18	164					872		4.4	1984	
115+75 TO 145+50	RT	SHLD	1.79	134					716		3.6	1800	
146+00 TO 164+07	RT	SHLD	1.08	81					432		2.2	1400	
164+07 TO 168+00	RT	SHLD						1393				400	
168+90 TO 187+00	RT	SHLD	1.21	91					484		2.4	1500	
50+05 TO 62+05	LT	MEDIAN	1.01	76					404		2.0	850	
63+25 TO 84+80	LT	MEDIAN	1.92	144					768		3.8	1600	
85+70 TO 114+95	LT	MEDIAN	2.31	173					924		4.6	2500	
116+00 TO 145+30	LT	MEDIAN	2.23	167					892		4.5	2200	
146+15 TO 167+90	LT	MEDIAN	1.94	146					776		3.9	1800	
169+00 TO 180+15	LT	MEDIAN	0.90	68					360		1.8	900	
CSAH 17 - LSB													
43+70 TO 49+45	LT	SHLD						2829				475	
49+45 TO 62+50	LT	SHLD	0.91	68					364		1.8	1225	
63+25 TO 85+00	LT	SHLD	2.52	189					1008		5.0	1800	
85+50 TO 98+30	LT	SHLD	0.90	68					360		1.8	1100	
98+75 TO 115+15	LT	SHLD	0.80	60					320		1.6	1500	
115+75 TO 145+50	LT	SHLD	2.06	155					824		4.1	2400	
146+00 TO 168+00	LT	SHLD	1.37	103					548		2.7	1800	
168+90 TO 187+00	LT	SHLD	1.04	78					416		2.1	1300	
CSAH 17 - PONDS													
72+00 TO 76+80	RT	POND 2	0.83			30	39			100	1.7	949.0	816
90+00 TO 92+50	RT	POND 3	0.87			26	46			104	1.7	678.0	594
103+15 TO 105+95	LT	POND 4	0.93			16	63			112	1.9	728.0	756
135+10 TO 142+00	RT	POND 5	1.51			42	85			181	3.0	1318.0	1150
155+15 TO 160+15	RT	POND 6	1.09		33		36			131	2.2	968.0	1028
182+30 TO 183+30	LT	POND 7	1.09		25		50			131	2.2	719.0	617
CSAH 12 - LEB													
12+85 TO 16+75	RT	SHLD	0.43	32					172		0.9	300	
18+80 TO 30+35	RT	SHLD	0.85	64					340		1.7	900	
CSAH 12 - LWB													
7+75 TO 16+70	LT	SHLD	0.67	50					268		1.3	500	
18+75 TO 35+61	LT	SHLD	1.01	76					404		2.0	1200	
APRON ENDS													
94+40	RT	IN 350											8
99+00	LT	1N 402A											8
114+83	RT	IN 443A											8
115+86	RT	IN 447A											8
125+55	RT	IN 501A											8
148+90	LT	IN 560A											8
176+30	LT	IN 713A											8
178+50	LT	IN 714											8
		TOTAL	38.32	2400	58	114	319	5050	12800	758	76.6	39494.0	5024

AGGREGATE BEDDING — Q

LOCATION CB	to CB	LENGTH FEET	PIPE SIZE INCHES	WIDTH FEET	DEPTH FEET	CU YDS	TONS
109	113	144	18	5.0	1.5	40.0	72
113	140	50	36	6.5	1.5	18.1	33
117	113	195	30	6.0	1.5	65.0	117
121	117	119	30	6.0	1.5	39.7	71
125	121	100	24	5.5	1.5	30.6	55
213	217	100	24	5.5	1.5	30.6	55
217	221	223	30	6.0	1.5	74.3	134
221	233	30	36	6.5	1.5	10.8	20
224	221	10	12	4.5	1.5	2.5	5
225	221	100	18	5.0	1.5	27.8	50
325	328	36	12	4.5	1.5	9.0	16
337	325A	85	36	6.5	1.5	30.7	55
351	350	203	72	9.5	1.5	107.1	193
362	360	196	15	6.5	1.5	70.8	127
414	418	170	27	5.8	1.5	54.3	98
418	415	20	12	4.5	1.5	5.0	9
418	418A	25	27	5.8	1.5	8.0	14
418A	422	110	36	6.5	1.5	39.7	72
418A	467	50	42	7.0	1.5	19.4	35
422	426	85	36	6.5	1.5	30.7	55
422	419	40	12	4.5	1.5	10.0	18
470	471	24	15	4.8	1.5	6.3	11
517	521	50	27	5.8	1.5	16.0	29
524	521	20	12	4.5	1.5	5.0	9
525	528	50	12	4.5	1.5	12.5	23
525	529	40	27	5.8	1.5	12.8	23
529	569	46	42	7.0	1.5	17.9	32
529	532	50	12	4.5	1.5	12.5	23
529	533	126	36	6.5	1.5	45.5	82
533	536	50	12	4.5	1.5	12.5	23
533	537	170	33	6.3	1.5	59.0	106
537	540	30	12	4.5	1.5	7.5	14
537	541	170	30	6.0	1.5	56.7	102
570	571	178	24	5.5	1.5	54.4	98
801	801A	87	12	4.5	1.5	21.8	39
810	811	125	12	4.5	1.5	31.3	56
811	812	250	12	4.5	1.5	62.5	113
812	813	81	12	4.5	1.5	20.3	36
					TOTAL:	2121	

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-13\Plan\09-Const Tab.dwg 10/20/2003 11:20:14 AM CDT

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
PRINT NAME: PETER M. LEMKE
SIGNATURE: Peter M Lemke
DATE: 9/26/2003 LICENSE NO. 40118

DRAWN BY J.F DATE 08/01/03
DESIGN BY PML DATE 08/01/03
CHECKED BY MTH DATE 9/24/03

ANOKA COUNTY HIGHWAY DEPT.

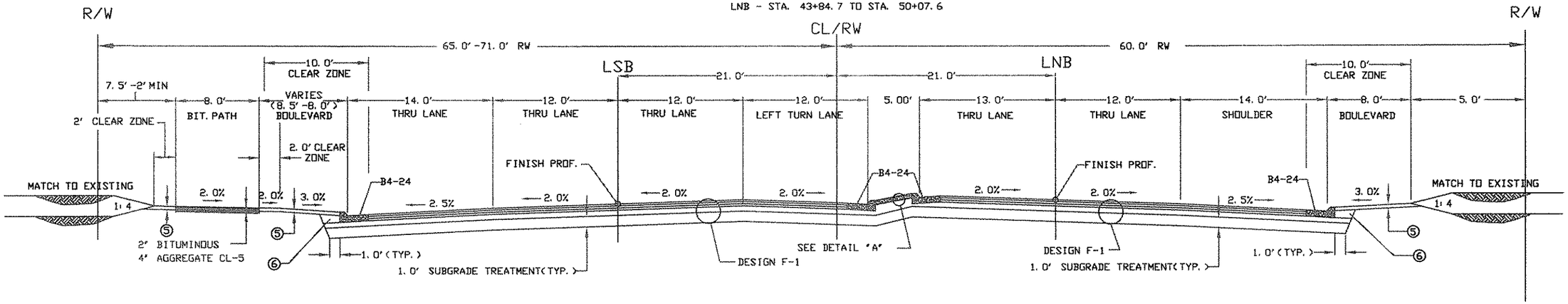
STATE PROJECT NO. 02-617-13
STATE PROJECT NO. 106-020-23
STATE AID PROJECT NO.
COUNTY PROJECT NO.

CONSTRUCTION TABS

Sheet 16 of 226 Sheets

LEXINGTON AVE. (CSAH 17)

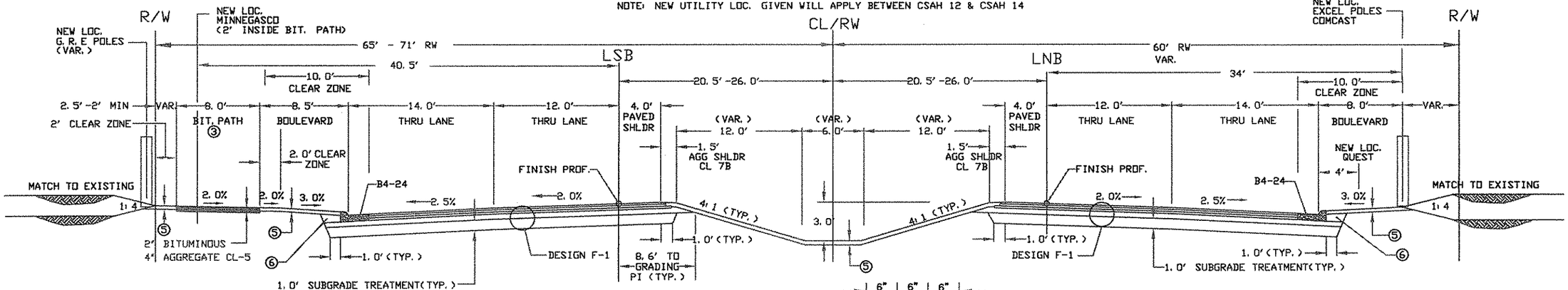
LNB - STA. 43+84.7 TO STA. 50+07.6

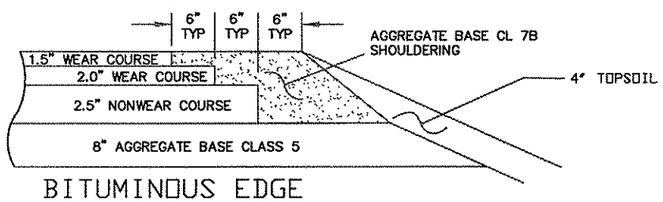


LEXINGTON AVE. (CSAH 17)

LNB - STA. 50+07.6 TO STA. 175+38.4

NOTE: NEW UTILITY LOC. GIVEN WILL APPLY BETWEEN CSAH 12 & CSAH 14





BITUMINOUS EDGE AND AGGREGATE SHOULDER DETAIL

① 14' FROM LNB STA 175+38.4 TO 176+28.4
8' FROM LNB STA 176+28.4 TO 180+25

② 14' FROM LSB STA 175+58.1 TO 176+48.1
8' FROM LSB STA 176+48.1 TO 180+25

③ 8' BITUMINOUS PATH ENDS AT SOUTH EDGE OF CSAH 14 - MAIN STREET, LSB STATION 167+80

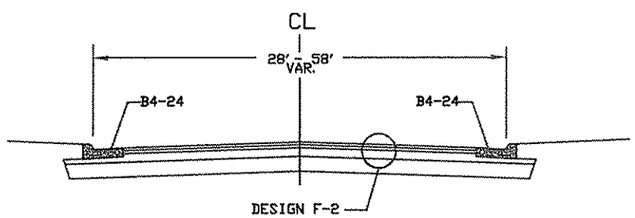
④ DEPRESSED MEDIAN ENDS AT STATION 180+25 LNB

⑤ 4" MIN. TOPSOIL (TYP.)

⑥ BACKFILL WITH SUITABLE MATERIAL

⑦ SEE CROSS SECTIONS FOR DEPTHS

CITY STREET APPROACHES



DESIGN F-2
(CITY STREET APPROACHES)

1.5" 2360 TYPE SP 12.5 WEARING COURSE MIXTURE (4,F),(SPWEB440F)
2.0" 2360 TYPE SP 12.5 WEARING COURSE MIXTURE (4,F),(SPWEB440F)
6.0" AGGREGATE BASE CLASS 5

DESIGN F-1

1.5" 2360 TYPE SP 12.5 WEARING COURSE MIXTURE (4,F),(SPWEB440F)
2.0" 2360 TYPE SP 12.5 WEARING COURSE MIXTURE (4,F),(SPWEB440F)
2.5" 2360 TYPE SP 19.0 NON WEARING COURSE MIXTURE (4,B),(SPNWC430B)
8.0" AGGREGATE BASE CLASS 5

NO	DATE	BY	CKD	APPR	REVISION

P:\02-617-13\Plan\10-Typical Sections.dwg 01/30/2004 06:27:16 PM CST

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

PRINT NAME: PETER M. LEMKE
SIGNATURE: Peter M Lemke
DATE: 1-30-2004 REG. NO. 40118

DRAWN BY MN DATE 06-12-03
DESIGN BY MN DATE 06-12-03
CHECKED BY KJ DATE 06-12-03

ANOKA COUNTY HIGHWAY DEPT.

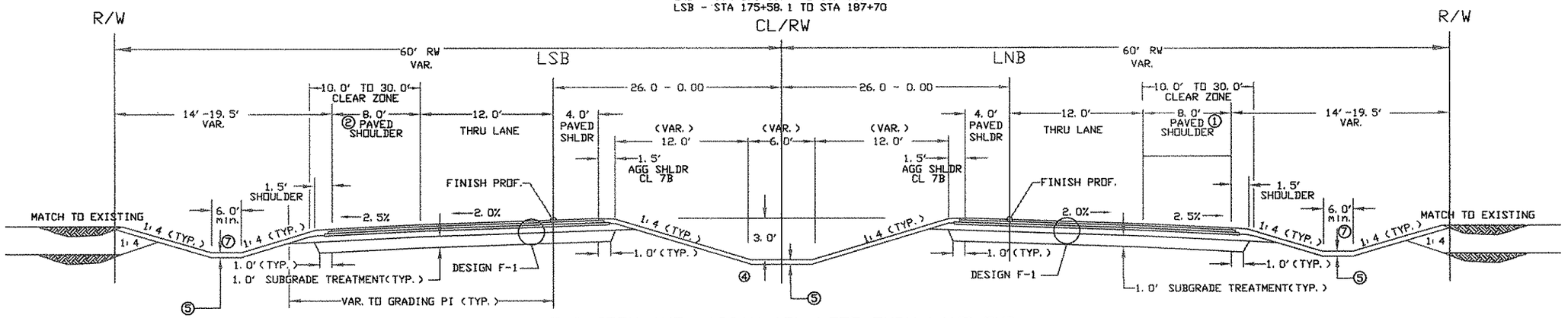
STATE PROJECT NO. 02-617-13
STATE PROJECT NO. 106-020-23
STATE AID PROJECT NO.
COUNTY PROJECT NO.

TYPICAL SECTIONS

Sheet 17 of 226 Sheets

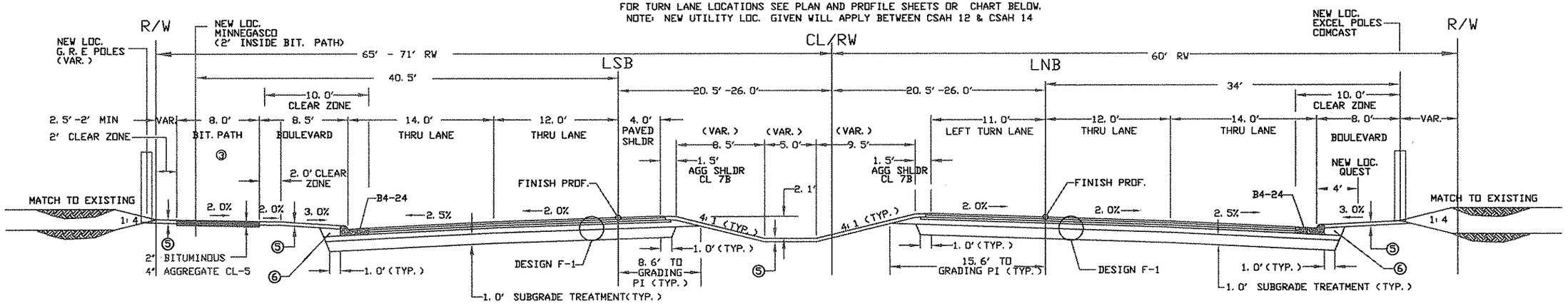
LEXINGTON AVE. (CSAH 17) - TRANSITION SECTION

LNB - STA 175+38.4 TO STA 187+70
LSB - STA 175+58.1 TO STA 187+70



LEXINGTON AVE. (CSAH 17) LEFT TURN LANE TYP.

FOR TURN LANE LOCATIONS SEE PLAN AND PROFILE SHEETS OR CHART BELOW.
NOTE: NEW UTILITY LOC. GIVEN WILL APPLY BETWEEN CSAH 12 & CSAH 14



① 14' FROM LNB STA 175+38.4 TO 176+28.4
8' FROM LNB STA 176+28.4 TO 180+25

② 14' FROM LSB STA 175+58.1 TO 176+48.1
8' FROM LSB STA 176+48.1 TO 180+25

③ 8' BITUMINOUS PATH ENDS AT SOUTH EDGE OF CSAH 14 - MAIN STREET, LSB STATION 167+80

④ DEPRESSED MEDIAN ENDS AT STATION 180+25 LNB

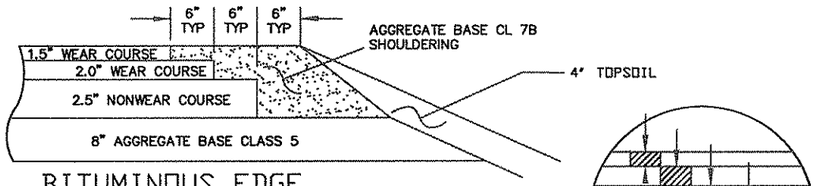
⑤ 4" MIN. TOPSOIL (TYP.)

⑥ BACKFILL WITH SUITABLE MATERIAL

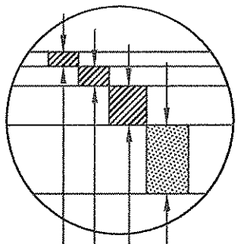
⑦ SEE CROSS SECTIONS FOR DEPTHS

TURN LANE LOCATIONS

STA. TO STA.		LOCATION	DESCRIPTION
LNB. 78+71.00	84+81.00	LT.	LEFT TURN LANE
LNB. 109+24.30	115+96.90	LT.	LEFT TURN LANE
LNB. 137+16.00	145+36.50	LT.	LEFT TURN LANE
LNB. 160+72.60	167+95.80	LT.	LEFT TURN LANE
LSB. 43+84.70	52+33.90	RT.	LEFT TURN LANE
LSB. 63+30.00	70+74.40	RT.	LEFT TURN LANE
LSB. 85+62.00	90+60.60	RT.	LEFT TURN LANE
LSB. 121+89.00	115+36.50	RT.	LEFT TURN LANE
LSB. 153+35.00	146+16.50	RT.	LEFT TURN LANE
LSB. 168+93.70	176+48.10	RT.	LEFT TURN LANE



BITUMINOUS EDGE AND AGGREGATE SHOULDER DETAIL



DESIGN F-1

1.5" 2360 TYPE SP 12.5 WEARING COURSE MIXTURE (4,F),(SPWEB440F)
2.0" 2360 TYPE SP 12.5 WEARING COURSE MIXTURE (4,F),(SPWEB440F)
2.5" 2360 TYPE SP 19.0 NON WEARING COURSE MIXTURE (4,B),(SPNWC430B)
8.0" AGGREGATE BASE CLASS 5

NO	DATE	BY	CKD	APPR	REVISION

P:\02-617-13\Plan\10-Typical Sections.dwg 01/30/2004 06:27:16 PM CST

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
PRINT NAME: PETER M. LEMKE
SIGNATURE: Peter M Lemke
DATE: 1-30-2004 REG. NO. 40118

DRAWN BY MN DATE 06-12-03
DESIGN BY MN DATE 06-12-03
CHECKED BY KJ DATE 06-12-03

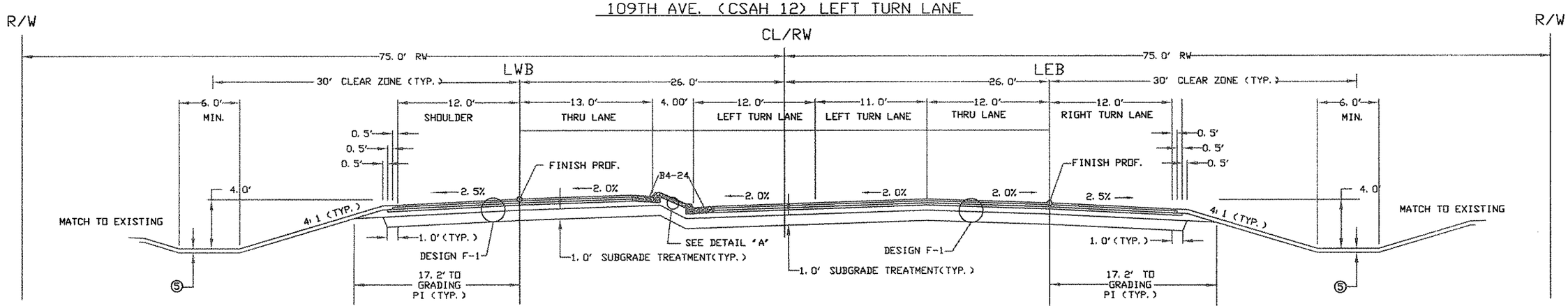
ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13
STATE PROJECT NO. 106-020-23
STATE AID PROJECT NO.
COUNTY PROJECT NO.

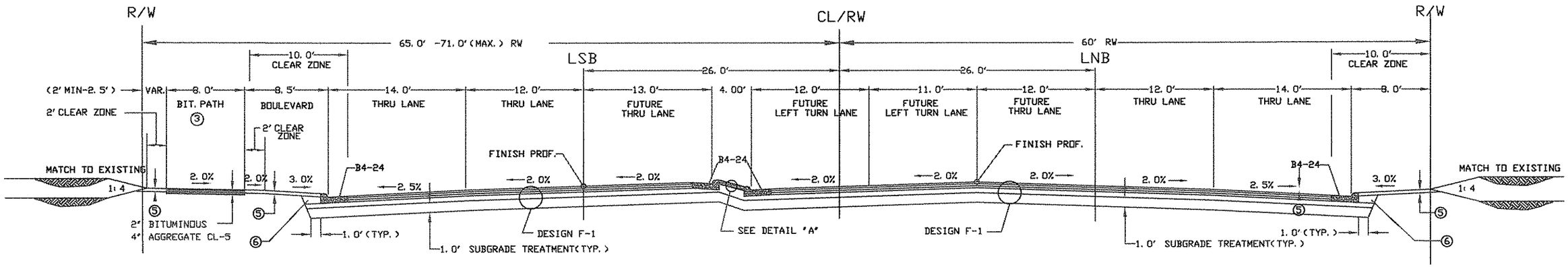
TYPICAL SECTIONS

Sheet 18 of 226 Sheets

109TH AVE. (CSAH 12) LEFT TURN LANE



FUTURE LEXINGTON AVE. (CSAH 17) DOUBLE LEFT TURN LANE



① 14' FROM LNB STA 175+38.4 TO 176+28.4
8' FROM LNB STA 176+28.4 TO 180+25

② 14' FROM LSB STA 175+58.1 TO 176+48.1
8' FROM LSB STA 176+48.1 TO 180+25

③ 8' BITUMINOUS PATH ENDS AT SOUTH EDGE OF CSAH 14 - MAIN STREET, LSB STATION 167+80

④ DEPRESSED MEDIAN ENDS AT STATION 180+25 LNB

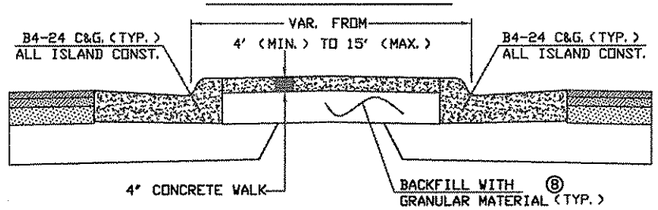
⑤ 4" MIN. TOPSOIL (TYP.)

⑥ BACKFILL WITH SUITABLE MATERIAL

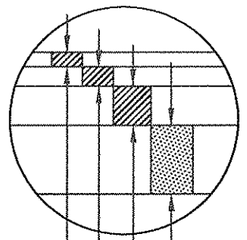
⑦ SEE CROSS SECTIONS FOR DEPTHS

⑧ GRANULAR MATERIAL PAID FOR AS COMMON EMBANKMENT

DETAIL "A"



DESIGN F-1



1.5" 2360 TYPE SP 12.5 WEARING COURSE MIXTURE (4,F),(SPWEB440F)
2.0" 2360 TYPE SP 12.5 WEARING COURSE MIXTURE (4,F),(SPWEB440F)
2.5" 2360 TYPE SP 19.0 NON WEARING COURSE MIXTURE (4,B),(SPNWC430B)
8.0" AGGREGATE BASE CLASS 5

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-13\Plan\10-Typical Sections.dwg 01/30/2004 05:27:16 PM CST

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

PRINT NAME: PETER M. LEMKE

SIGNATURE: Peter M Lemke

DATE: 1-30-2004 REG. NO. 40118

DRAWN BY MN DATE 6-12-03

DESIGN BY MN DATE 6-12-03

CHECKED BY KJ DATE 6-12-03

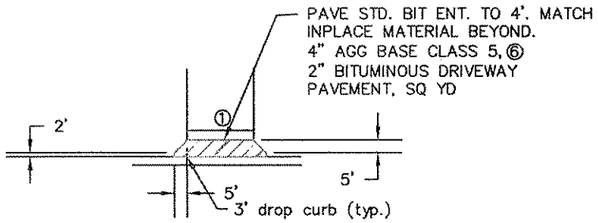
ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

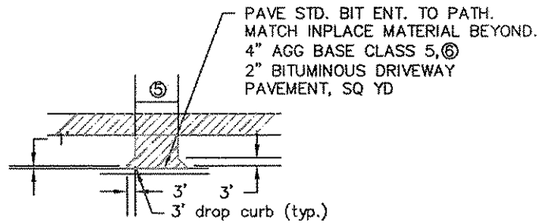
STATE PROJECT NO. 02-617-13
STATE PROJECT NO. 106-020-23
STATE AID PROJECT NO.
COUNTY PROJECT NO.

TYPICAL SECTIONS

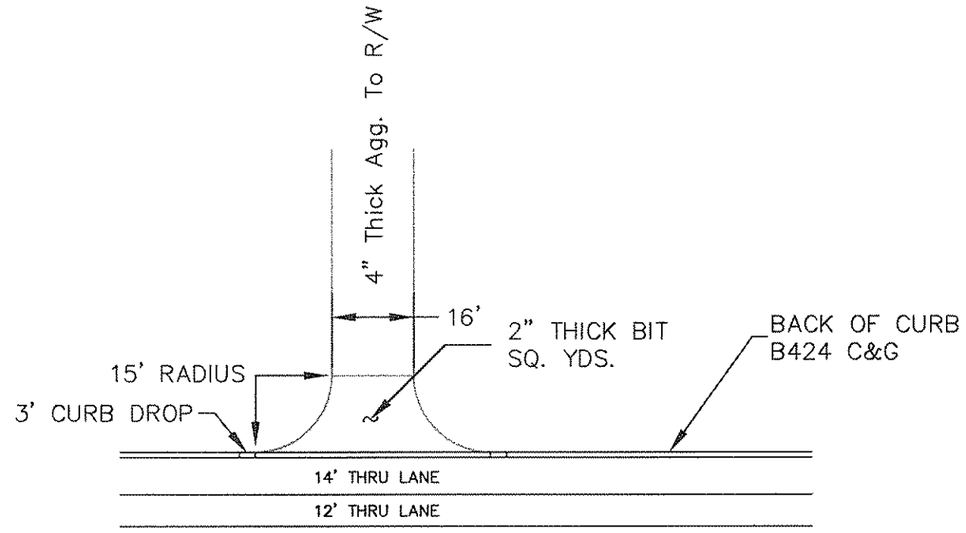
Sheet 19 of 226 Sheets



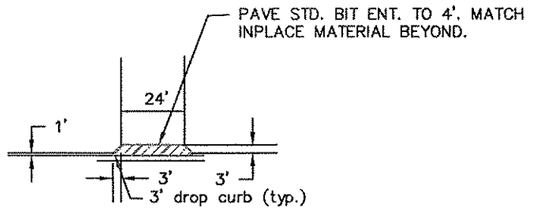
URBAN RESIDENTIAL ENTRANCE
WITHOUT BITUMINOUS PATH



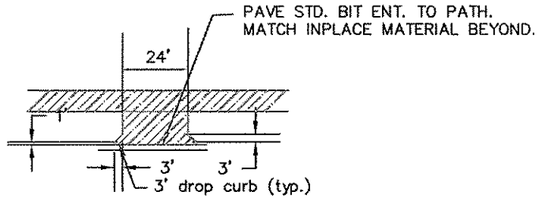
URBAN RESIDENTIAL ENTRANCE
WITH BITUMINOUS PATH



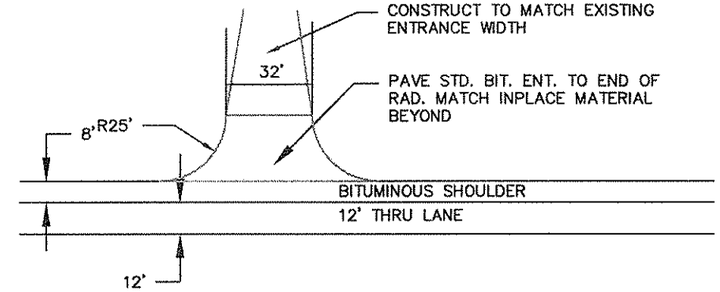
RURAL RESIDENTIAL ENTRANCE



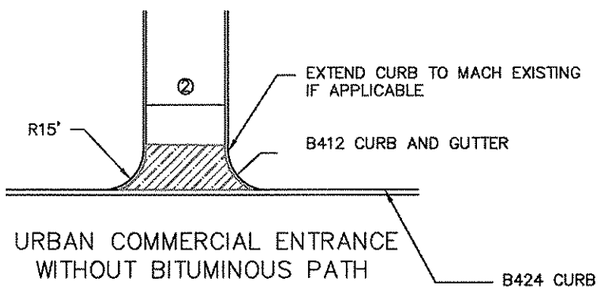
URBAN FIELD ENTRANCE
WITHOUT BITUMINOUS PATH



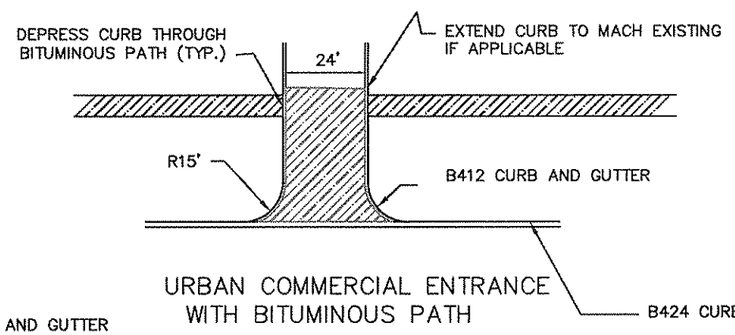
URBAN FIELD ENTRANCE
WITH BITUMINOUS PATH



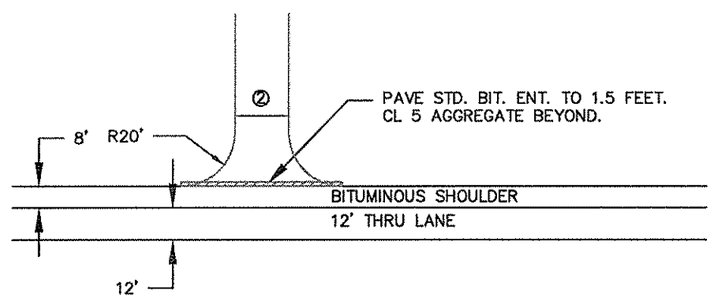
RURAL COMMERCIAL ENTRANCE



URBAN COMMERCIAL ENTRANCE
WITHOUT BITUMINOUS PATH



URBAN COMMERCIAL ENTRANCE
WITH BITUMINOUS PATH



RURAL FIELD ENTRANCE

1) EXISTING WIDTH (16' MIN / 24' MAX) TO R/W LINE, 4" AGG BASE CLASS 5 TO R/W
2) EXISTING WIDTH (32' MIN / 50'MAX) AT END OF RADII.
3) EXISTING WIDTH (20' MIN / 32' MAX).
4) FOR EXISTING CONCRETE DRIVEWAYS AND ENTRANCES.
   REPLACE IN KIND USING BITUMINOUS DRIVEWAY DIMENSIONS. FOR EXISTING CONCRETE APRONS, REPLACE IN KIND USING STANDARD PLATE 7035.
5) EXISTING WIDTH (16' MIN / 24' MAX) TO BACK OF PATH.
6) 4" AGG BASE CL 5 UNDER 2" BITUMINOUS DRIVEWAY PAVEMENT SHALL BE INCIDENTAL AND NO ADDITIONAL COMPENSATION WILL BE MADE FOR THIS WORK.

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-13\Plan\11-Standard-Details.dwg 01/31/2004 11:14:37 AM CST

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
PRINT NAME: PETER M. LEMKE
SIGNATURE: Peter M Lemke
DATE: 1-30-2004 REG. NO. 40118

DRAWN BY MTH DATE 9/24/03
DESIGN BY MTH DATE 9/24/03
CHECKED BY BFL DATE 9/24/03

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13
STATE PROJECT NO. 106-020-23
STATE AID PROJECT NO.
COUNTY PROJECT NO.

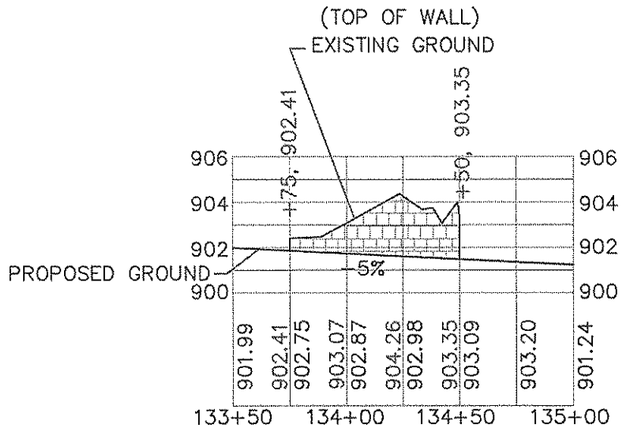
DRIVEWAY DETAILS

Sheet 20 of 226 Sheets

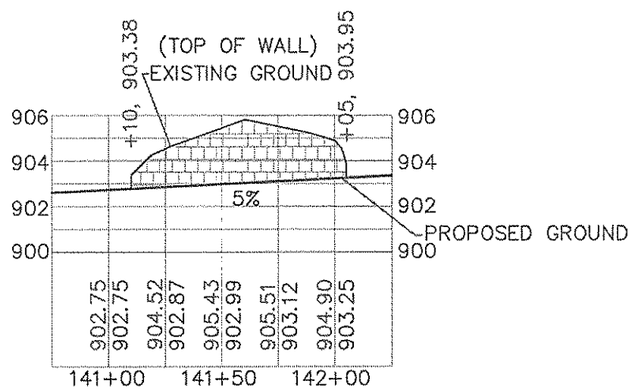
RETAINING WALL PROFILE AND DETAIL

SEE CONSTRUCT RETAINING WALL TAB (P) FOR LOCATIONS

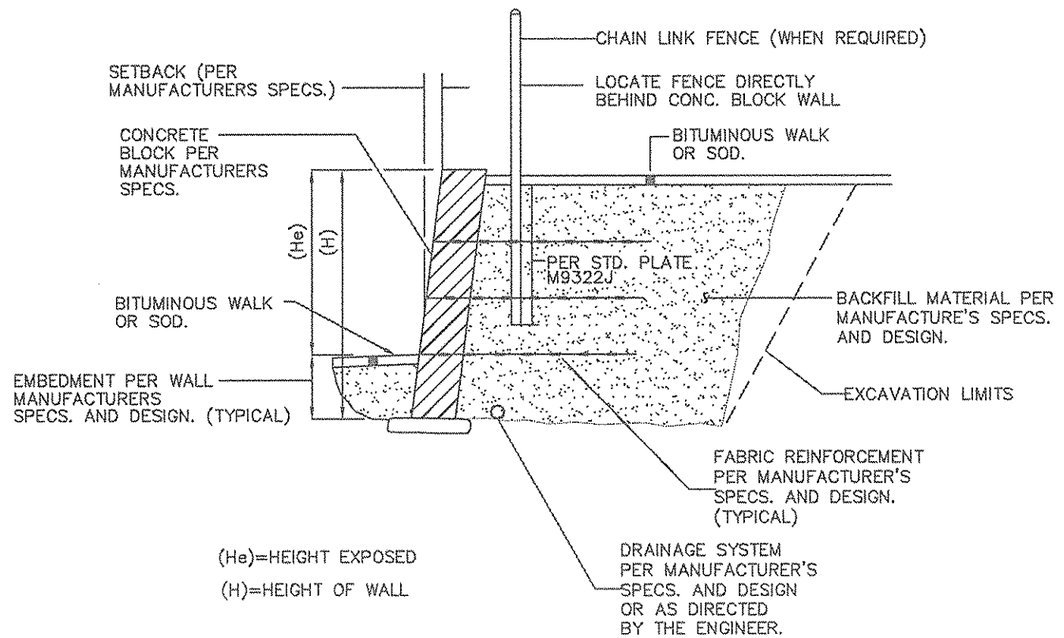
RETAINING WALL CONST. STA. 133+75 TO 134+50



RETAINING WALL CONST. STA. 141+10 TO 142+05



CONCRETE BLOCK RETAINING WALL DETAIL



NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-13\Plan\11-Standard-Details.dwg 09/29/2003 08:07:52 AM CDT

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

PRINT NAME: PETER M. LEMKE

SIGNATURE: Peter M Lemke

DATE: 9-26-2003 REG. NO. 40118

DRAWN BY MTH DATE 4/29/03

DESIGN BY MN DATE 09/25/03

CHECKED BY MN DATE 09/25/03

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13

STATE PROJECT NO. 106-020-23

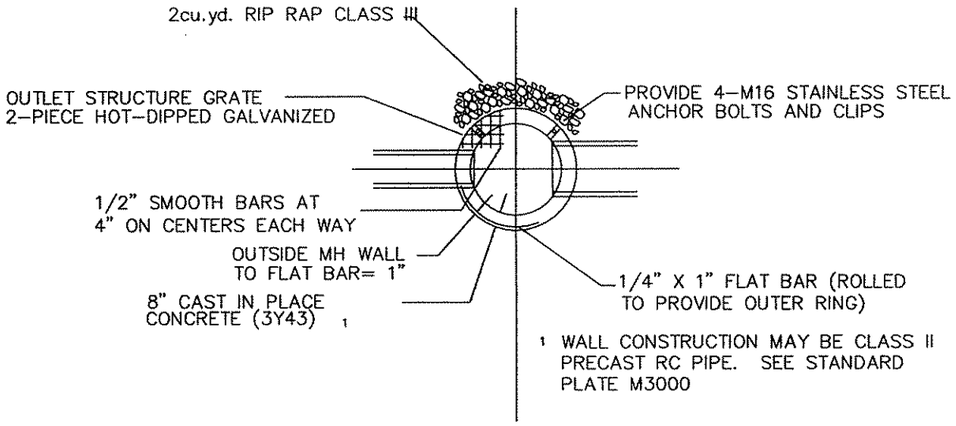
STATE AID PROJECT NO.

COUNTY PROJECT NO.

MISC. DETAILS

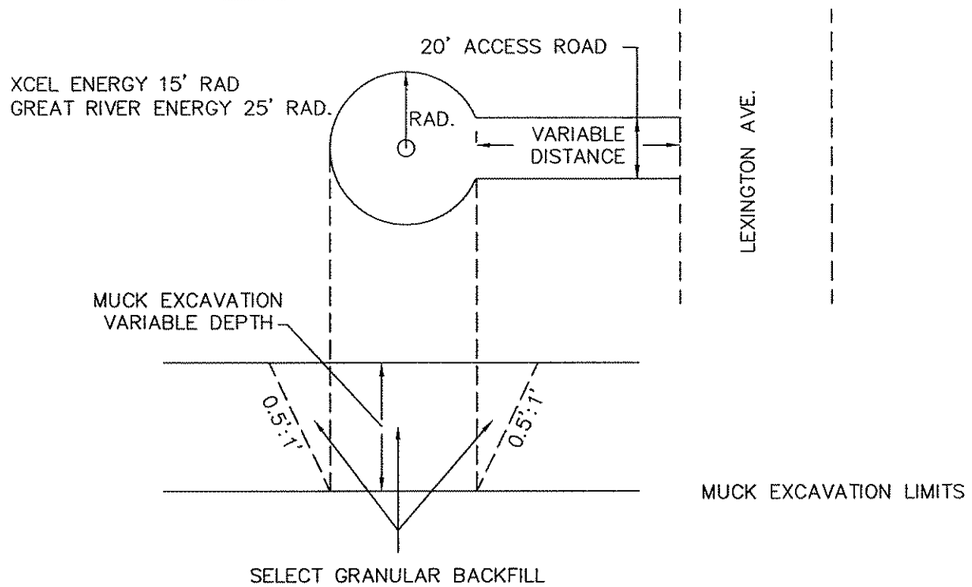
TYPICAL POND GRATE OUTLET STRUCTURE

(DRAINAGE STRUCTURE DESIGN SPECIAL)

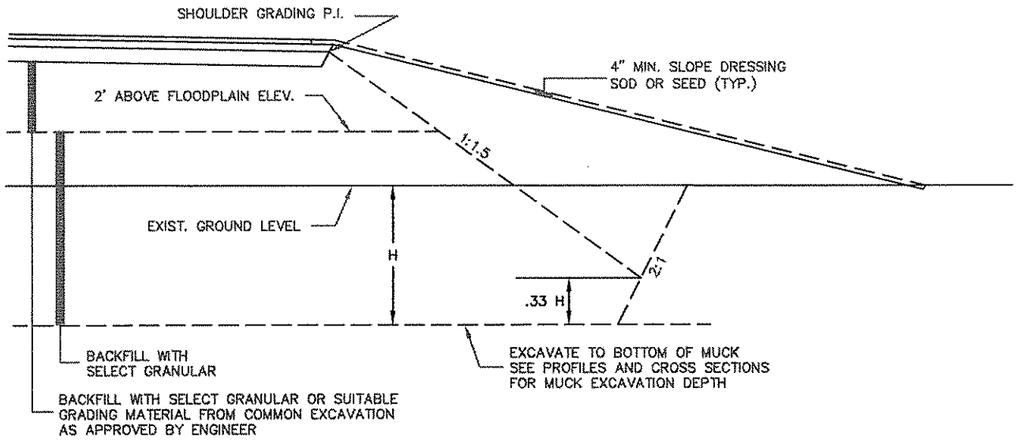


1 WALL CONSTRUCTION MAY BE CLASS II PRECAST RC PIPE. SEE STANDARD PLATE M3000

POWER POLE PADS TYPICAL



TYPICAL MUCK EXCAVATION DETAIL



XCEL ENERGY			S
LNB STATION	EXISTING POLE LOCATION	NEW POLE LOCATION	MUCK EXCAVATION SPECIAL (EV) (C.Y.)
6544	19	34	488
6782	18	34	788
7022	18	34	800
7260	18	34	472
7498	18	34	426
7737	21	34	350
7968	19	34	1325
8206	19	34	1343
8447	19	34	465
8688	18	34	570
8918	17	34	554
9247	19	34	275
9362	19	34	154
9575	20	34	208
9715	21	34	263
9921	24	34	198
10061	28	34	436
10174	25	34	250
10442	23	34	250
10601	25	34	371
10710	22	34	246
10929	26	34	142
11148		34	
		SUB-TOTAL	10374

GREAT RIVER ENERGY			S
LNB STATION	EXISTING POLE LOCATION	NEW POLE LOCATION	MUCK EXCAVATION SPECIAL (EV) (C.Y.)
6643	70	102	1052
7076	70	102	1833
7494	74	102	786
7923	69	102	1987
8395	65	102	2338
8848	68	102	917
9255	69	102	535
9671	67	102	543
10101	62	97	671
10505	60	90	630
10629	61	90	609
		SUB-TOTAL	11902
		TOTAL	22276

NOTES:
1. LOCATIONS GIVEN ARE FROM LNB ALIGNMENT
2. NEW GRE POLE LOCATION ARE 5' BEYOND NEW R/W
3. LOCATIONS TO BE DETERMINED IN THE FIELD

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-13\Plan\11-Standard-Details.dwg 02/05/2004 12:44:06 PM CST

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
PRINT NAME: PETER M. LEMKE
SIGNATURE: Peter M Lemke
DATE: 1–30–2004 REG. NO. 40118

DRAWN BY MTH DATE 4/29/03
DESIGN BY MN DATE 09/25/03
CHECKED BY MN DATE 09/25/03

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13
STATE PROJECT NO. 106-020-23
STATE AID PROJECT NO.
COUNTY PROJECT NO.

MISC. DETAILS

Sheet 22 of 226 Sheets

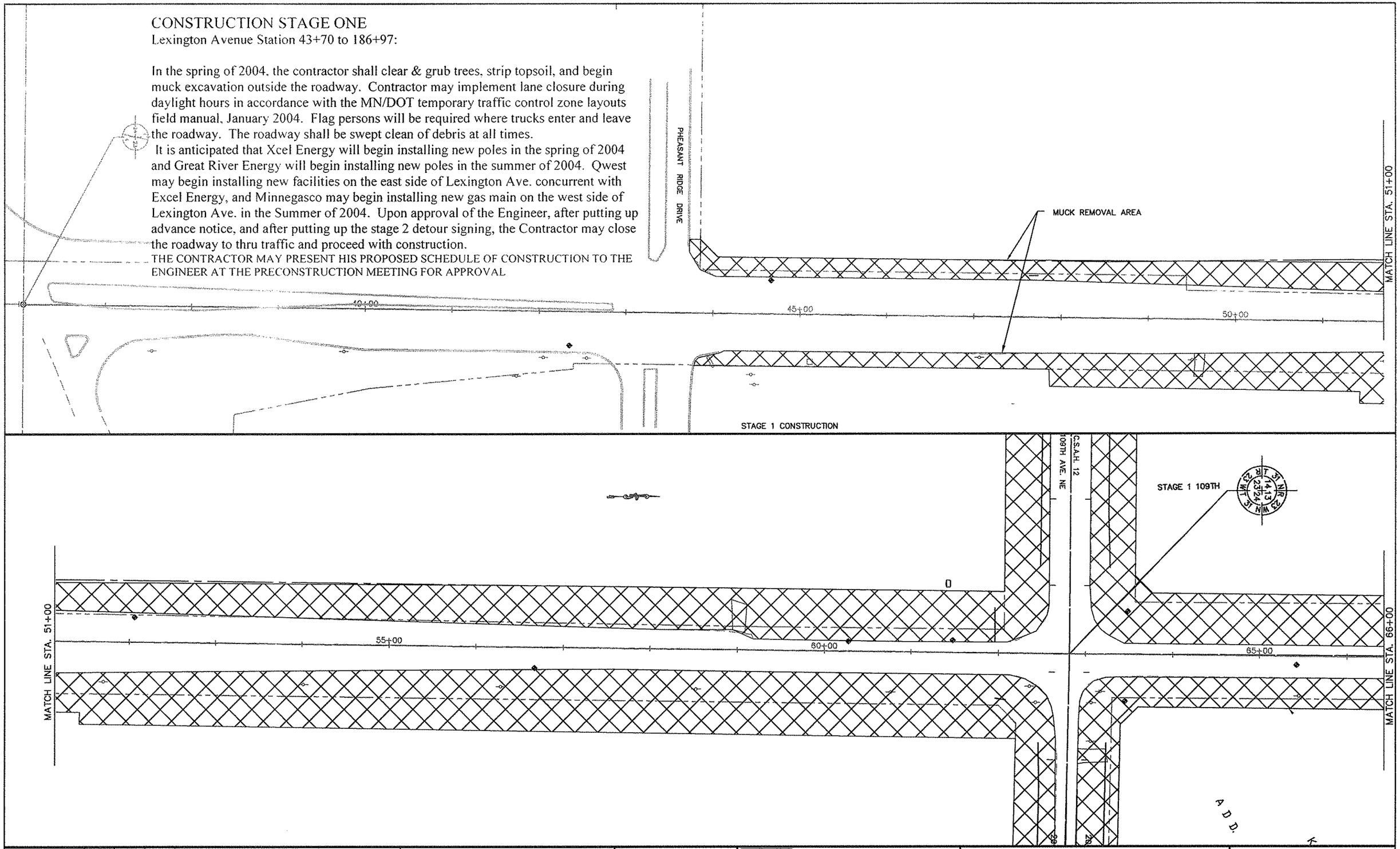
CONSTRUCTION STAGE ONE

Lexington Avenue Station 43+70 to 186+97:

In the spring of 2004, the contractor shall clear & grub trees, strip topsoil, and begin muck excavation outside the roadway. Contractor may implement lane closure during daylight hours in accordance with the MN/DOT temporary traffic control zone layouts field manual, January 2004. Flag persons will be required where trucks enter and leave the roadway. The roadway shall be swept clean of debris at all times.

It is anticipated that Xcel Energy will begin installing new poles in the spring of 2004 and Great River Energy will begin installing new poles in the summer of 2004. Qwest may begin installing new facilities on the east side of Lexington Ave. concurrent with Excel Energy, and Minnegasco may begin installing new gas main on the west side of Lexington Ave. in the Summer of 2004. Upon approval of the Engineer, after putting up advance notice, and after putting up the stage 2 detour signing, the Contractor may close the roadway to thru traffic and proceed with construction.

THE CONTRACTOR MAY PRESENT HIS PROPOSED SCHEDULE OF CONSTRUCTION TO THE ENGINEER AT THE PRECONSTRUCTION MEETING FOR APPROVAL



NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-13\Plan\20-Stage 1.dwg 02/18/2004 01:51:48 PM CST

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

PRINT NAME: PETER M. LEMKE

SIGNATURE: Peter M Lemke

DATE: 2-19-2004 REG. NO. 40118

DRAWN BY BFL DATE 9/1/03

DESIGN BY MFG DATE 9/1/03

CHECKED BY PML DATE 9/25/03

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13

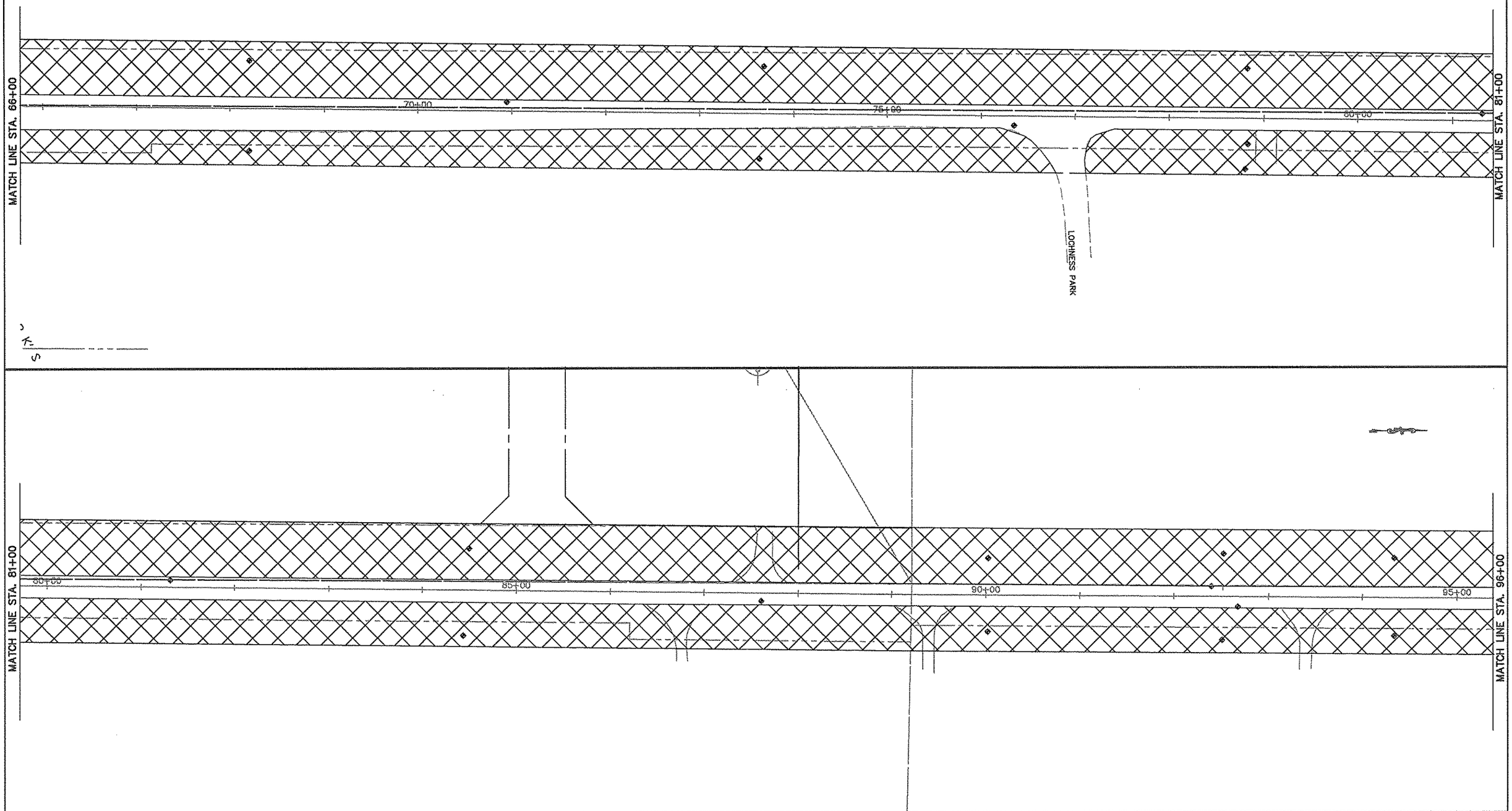
STATE PROJECT NO. 106-020-23

STATE AID PROJECT NO.

COUNTY PROJECT NO.

STAGE 1 CONSTRUCTION
STA. 36+77.50 TO 66+00

Sheet 23 of 226 Sheets



NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-13\Plan\20-Stage 1.dwg 09/25/2003 04:04:47 PM CDT

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

PRINT NAME: PETER M. LEMKE

SIGNATURE: Peter M Lemke

DATE: 9-26-2003 REG. NO. 40118

DRAWN BY BFL DATE 9/1/03

DESIGN BY MFG DATE 9/1/03

CHECKED BY PML DATE 9/25/03

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13

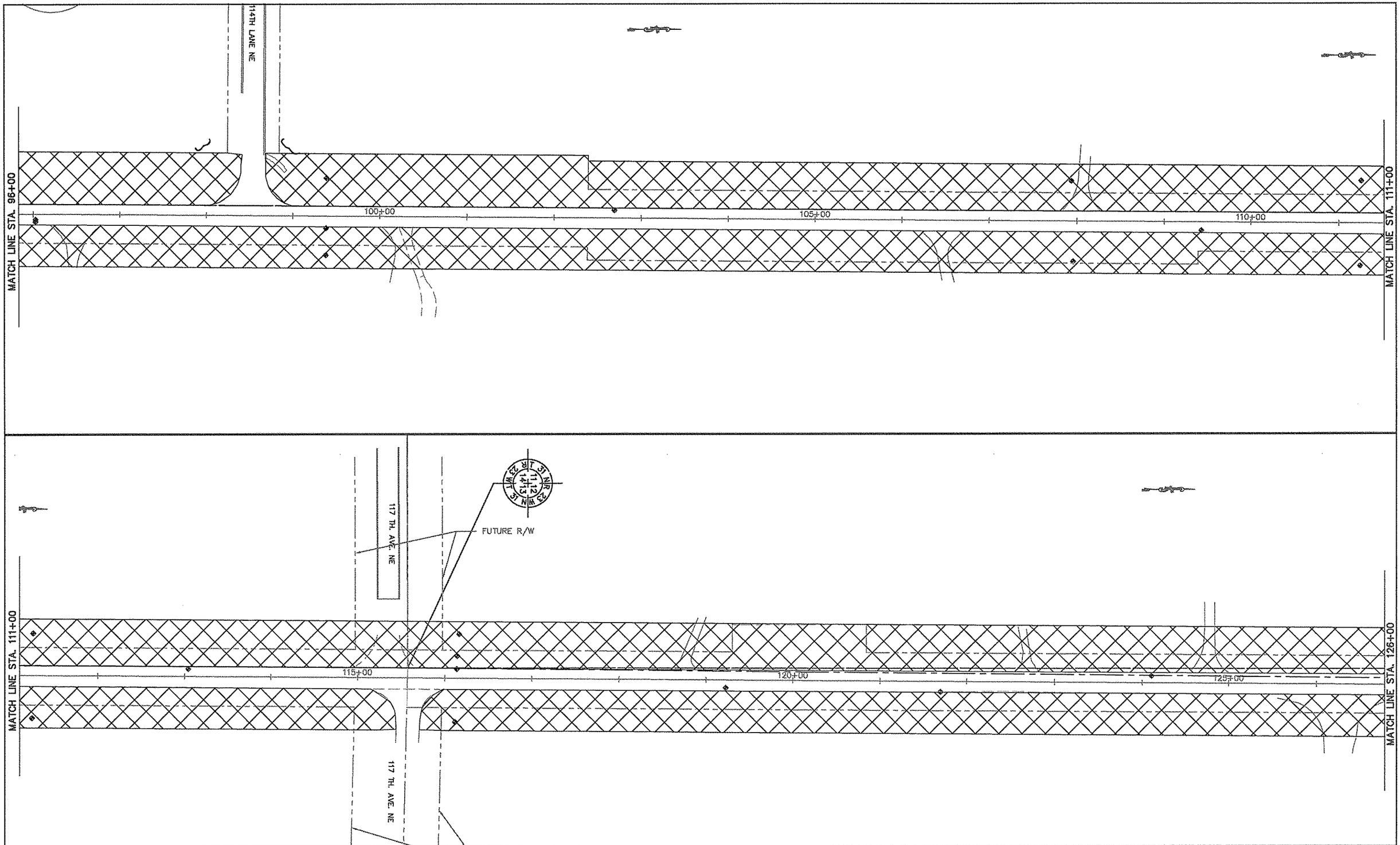
STATE PROJECT NO. 106-020-23

STATE AID PROJECT NO.

COUNTY PROJECT NO.

STAGE 1 CONSTRUCTION
STA. 66+00 TO 96+00

Sheet 24 of 226 Sheets



NO	DATE	BY	CKD	APPR	REVISION

NAME P:\02-617-13\Plan\20-Stage 1.dwg 09/25/2003 04:04:47 PM CDT

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

PRINT NAME: PETER M. LEMKE

SIGNATURE: Peter M Lemke

DATE: 9-26-2003 REG. NO. 40118

DRAWN BY BFL DATE 9/1/03

DESIGN BY MFG DATE 9/1/03

CHECKED BY PML DATE 9/25/03

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13

STATE PROJECT NO. 106-020-23

STATE AID PROJECT NO.

COUNTY PROJECT NO.

STAGE 1 CONSTRUCTION
STA. 96+00 TO 126+00

Sheet 25 of 226 Sheets

MATCH LINE STA. 126+00

130+00

135+00

140+00

MATCH LINE STA. 141+00

MATCH LINE STA. 141+00

145+00

150+00

155+00

MATCH LINE STA. 156+00

121 ST. AVE. N.E. (FUTURE)

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-13\Plan\20-Stage 1.dwg 09/25/2003 04:04:47 PM CDT

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

PRINT NAME: PETER M. LEMKE

SIGNATURE: Peter M Lemke

DATE: 9-26-2003 REG. NO. 40118

DRAWN BY BFL DATE 9/1/03

DESIGN BY MFG DATE 9/1/03

CHECKED BY PML DATE 9/25/03

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13

STATE PROJECT NO. 106-020-23

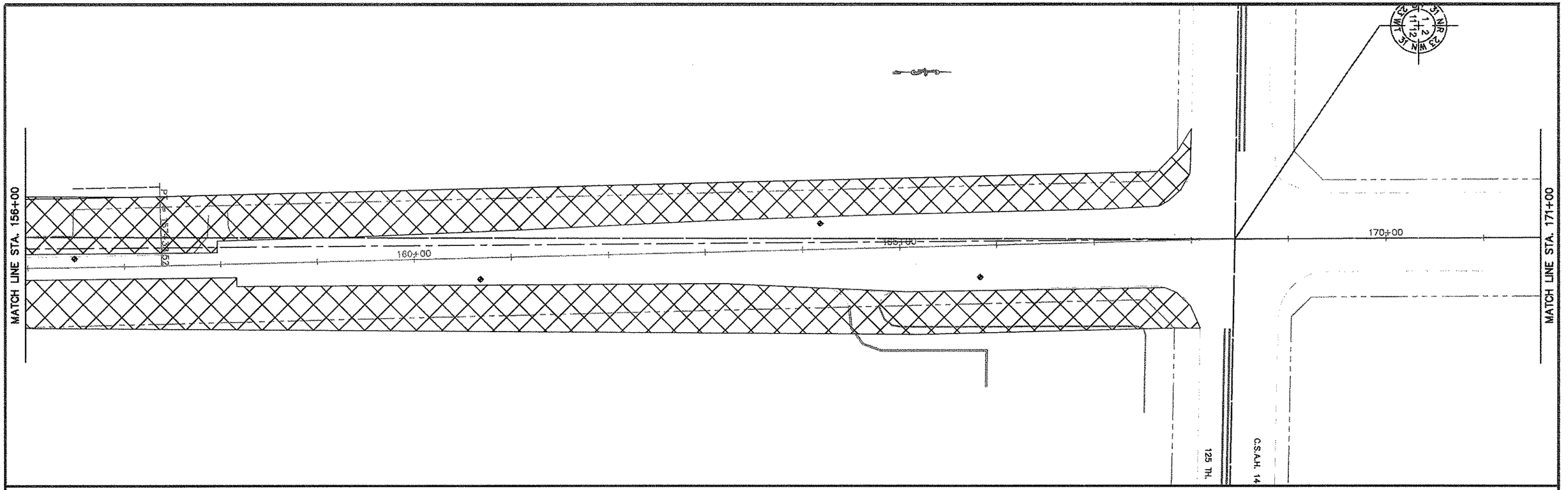
STATE AID PROJECT NO.

COUNTY PROJECT NO.

STAGE 1 CONSTRUCTION

STA. 126+00 TO 156+00

Sheet 26 of 226 Sheets



NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-13\Plan\20-Stage 1.dwg 01/30/2004 02:25:48 PM CST

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

PRINT NAME: PETER M. LEMKE

SIGNATURE: Peter M Lemke

DATE: 1-30-2004 REG. NO. 40118

DRAWN BY BFL DATE 9/1/03

DESIGN BY MFG DATE 9/1/03

CHECKED BY PML DATE 9/25/03

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13

STATE PROJECT NO. 106-020-23

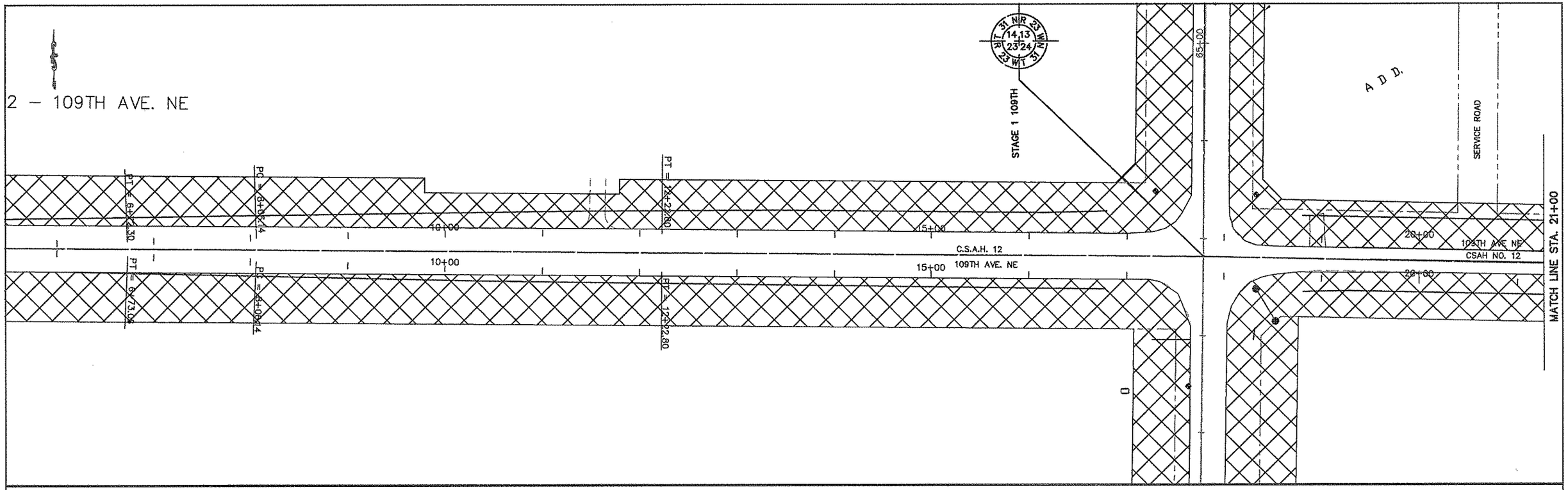
STATE AID PROJECT NO.

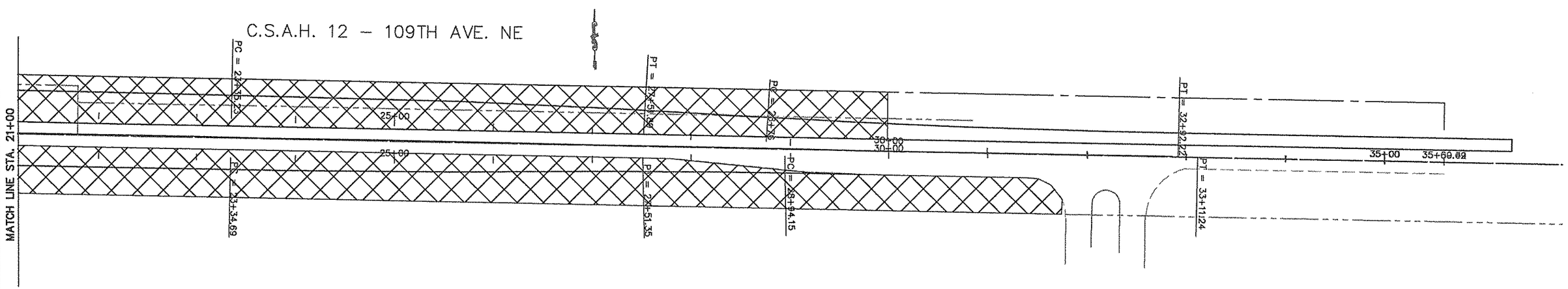
COUNTY PROJECT NO.

STAGE 1 CONSTRUCTION

STA. 156+00 TO 187+70.00

Sheet 27 of 226 Sheets





NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-13\Plan\20-Stage 1.dwg 09/25/2003 04:04:47 PM CDT

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

PRINT NAME: PETER M. LEMKE

SIGNATURE: Peter M Lemke

DATE: 9-26-2003 REG. NO. 40118

DRAWN BY BFL DATE 9/1/03

DESIGN BY MFG DATE 9/1/03

CHECKED BY PML DATE 9/25/03

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13

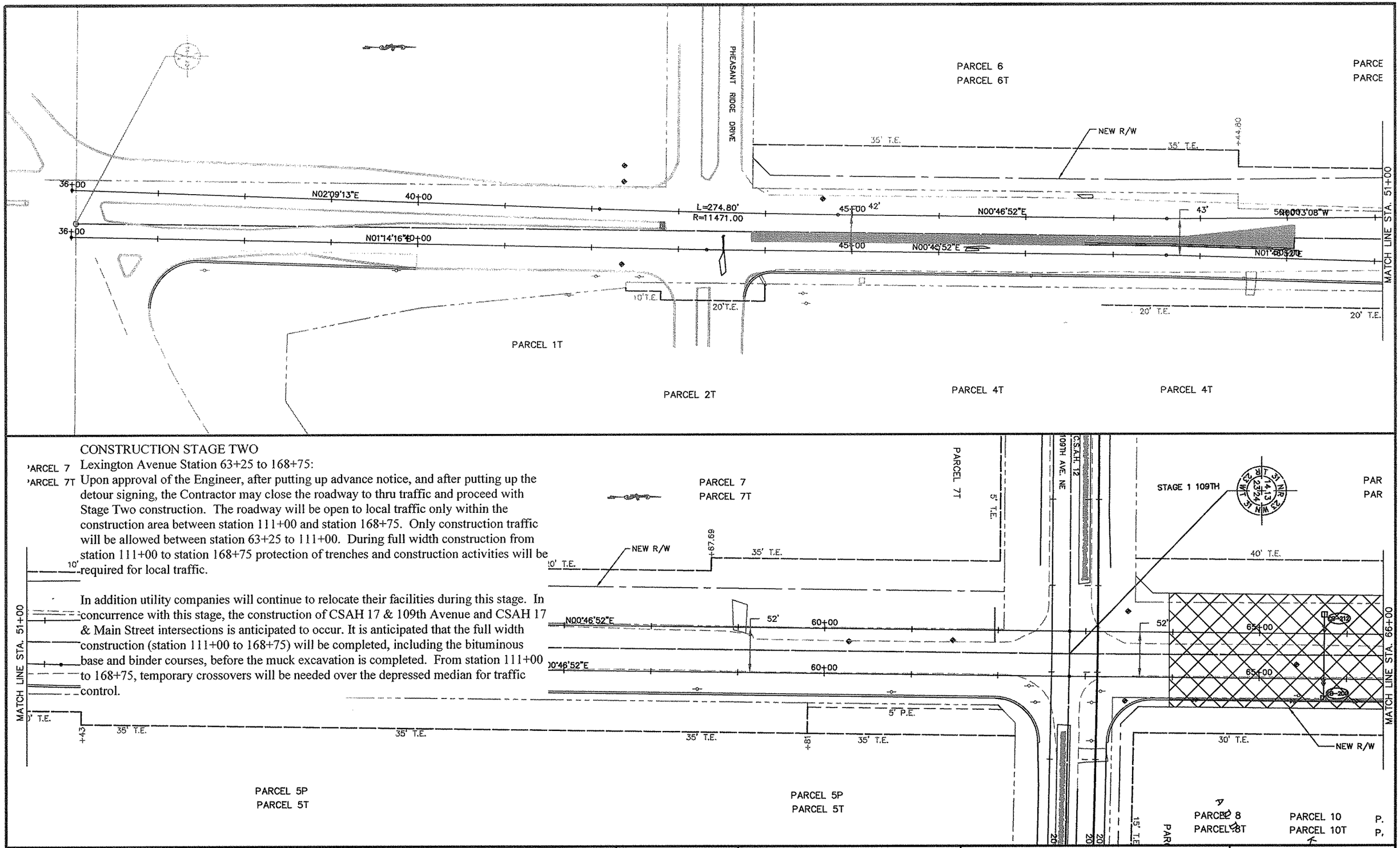
STATE PROJECT NO. 106-020-23

STATE AID PROJECT NO.

COUNTY PROJECT NO.

STAGE 1 CONSTRUCTION
STA.2+65.28 TO 35+61.00

Sheet 28 of 226 Sheets



CONSTRUCTION STAGE TWO

Lexington Avenue Station 63+25 to 168+75:

Upon approval of the Engineer, after putting up advance notice, and after putting up the detour signing, the Contractor may close the roadway to thru traffic and proceed with Stage Two construction. The roadway will be open to local traffic only within the construction area between station 111+00 and station 168+75. Only construction traffic will be allowed between station 63+25 to 111+00. During full width construction from station 111+00 to station 168+75 protection of trenches and construction activities will be required for local traffic.

In addition utility companies will continue to relocate their facilities during this stage. In concurrence with this stage, the construction of CSAH 17 & 109th Avenue and CSAH 17 & Main Street intersections is anticipated to occur. It is anticipated that the full width construction (station 111+00 to 168+75) will be completed, including the bituminous base and binder courses, before the muck excavation is completed. From station 111+00 to 168+75, temporary crossovers will be needed over the depressed median for traffic control.

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-13\Plan\21-Stage 2.dwg 02/18/2004 01:30:44 PM CST

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

PRINT NAME: PETER M. LEMKE

SIGNATURE: Peter M Lemke

DATE: 2-19-2004 REG. NO. 40118

DRAWN BY BFL DATE 9/1/03

DESIGN BY MFG DATE 9/1/03

CHECKED BY PML DATE 9/25/03

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13

STATE PROJECT NO. 106-020-23

STATE AID PROJECT NO.

COUNTY PROJECT NO.

STAGE 2 CONSTRUCTION

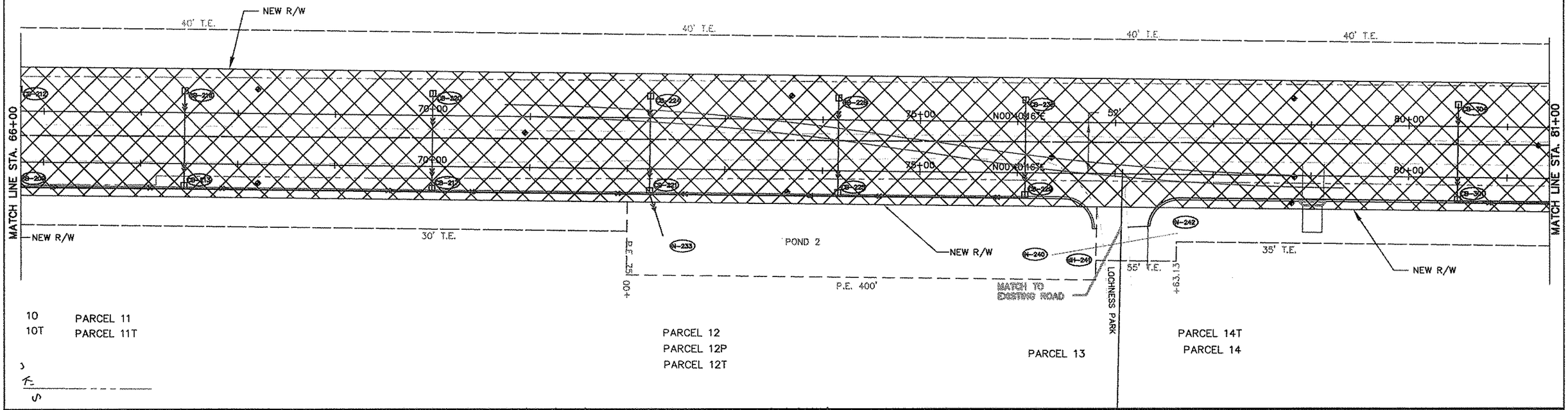
STA. 36+77.50 TO 66+00

Sheet 29 of 226 Sheets

PARCEL 24
PARCEL 24T

PARCEL 24
PARCEL 24T

PARCEL 25
PARCEL 25T



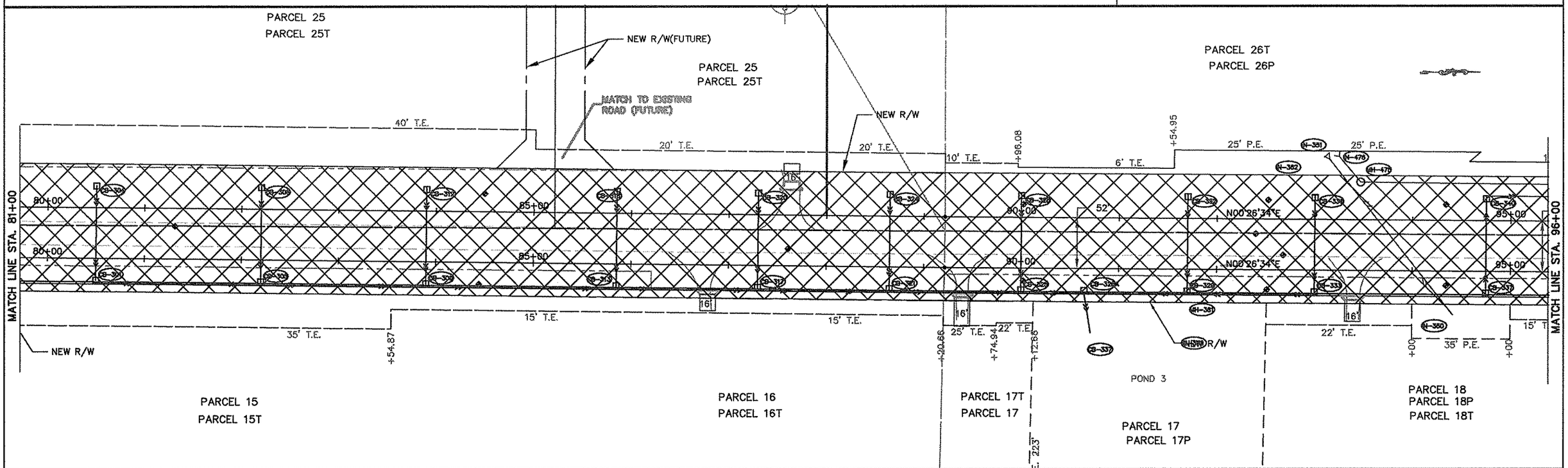
10 PARCEL 11
10T PARCEL 11T

PARCEL 12
PARCEL 12P
PARCEL 12T

PARCEL 13

PARCEL 14T
PARCEL 14

PARCEL 25
PARCEL 25T



PARCEL 15
PARCEL 15T

PARCEL 16
PARCEL 16T

PARCEL 17T
PARCEL 17

PARCEL 17
PARCEL 17P

PARCEL 18
PARCEL 18P
PARCEL 18T

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-13\Plan\21-Stage 2.dwg 01/30/2004 01:25:50 PM CST

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
PRINT NAME: PETER M. LEMKE
SIGNATURE: Peter M Lemke
DATE: 1-30-2004 REG. NO. 40118

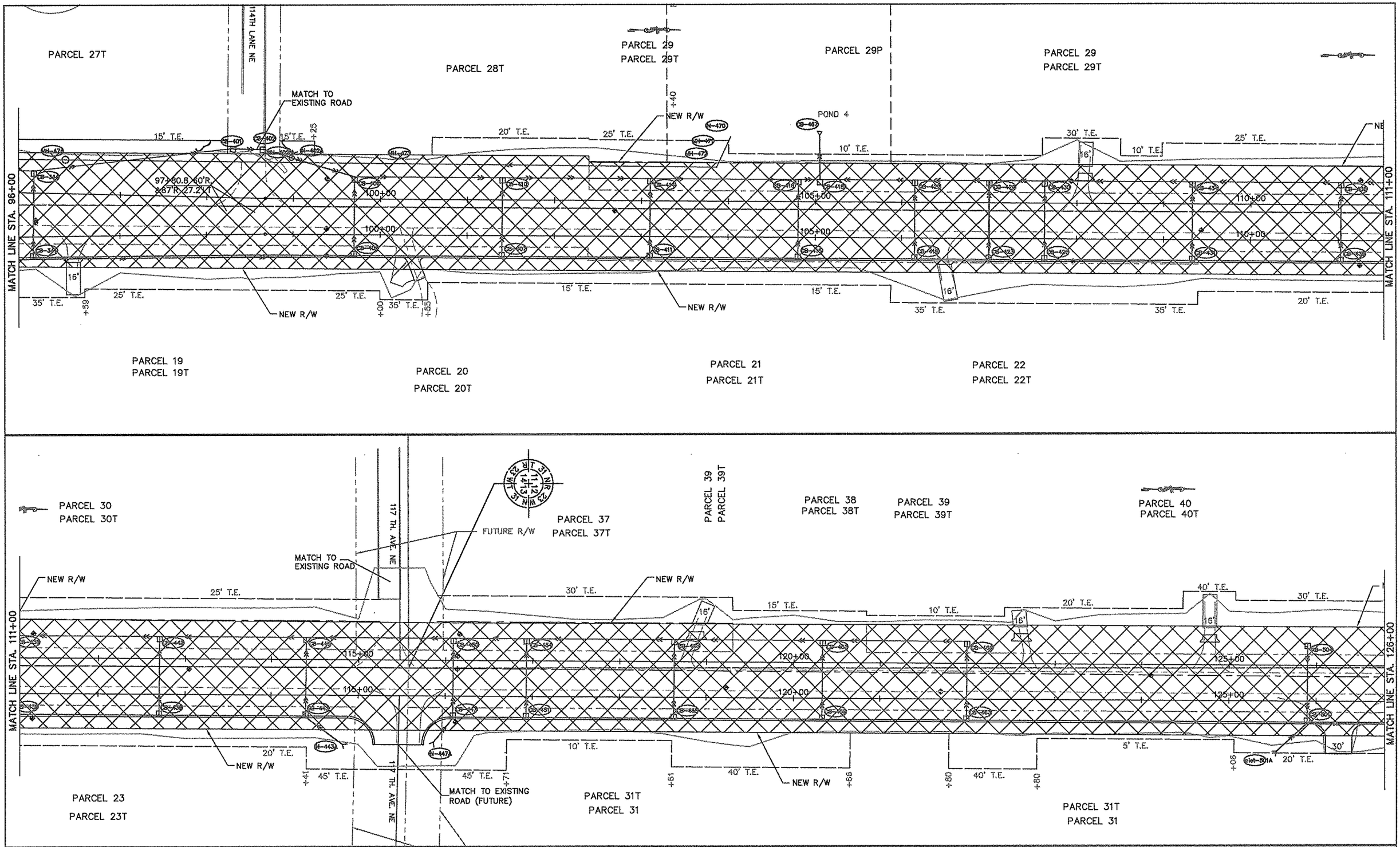
DRAWN BY BFL DATE 9/1/03
DESIGN BY MFG DATE 9/1/03
CHECKED BY PML DATE 9/25/03

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13
STATE PROJECT NO. 106-020-23
STATE AID PROJECT NO.
COUNTY PROJECT NO.

STAGE 2
CONSTRUCTION
STA. 66+00 TO 96+00

Sheet 30 of 226 Sheets



NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-13\Plan\21-Stage 2.dwg 09/25/2003 04:40:24 PM CDT

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

PRINT NAME: PETER M. LEMKE

SIGNATURE: Peter M Lemke

DATE: 9-26-2003 REG. NO. 40118

DRAWN BY BFL DATE 9/1/03

DESIGN BY MFG DATE 9/1/03

CHECKED BY PML DATE 9/25/03

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13

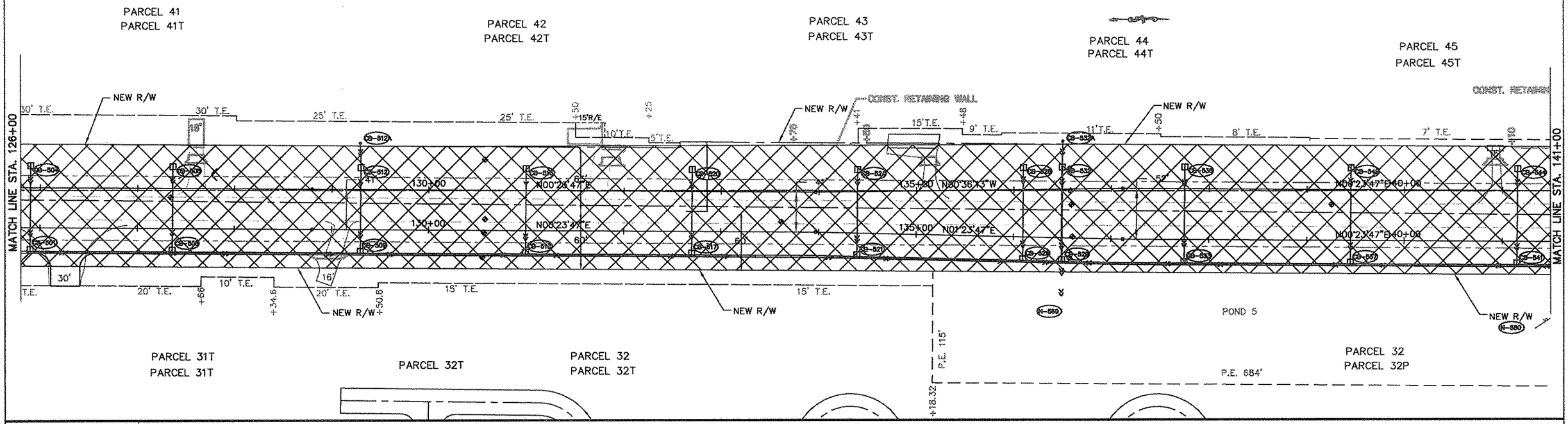
STATE PROJECT NO. 106-020-23

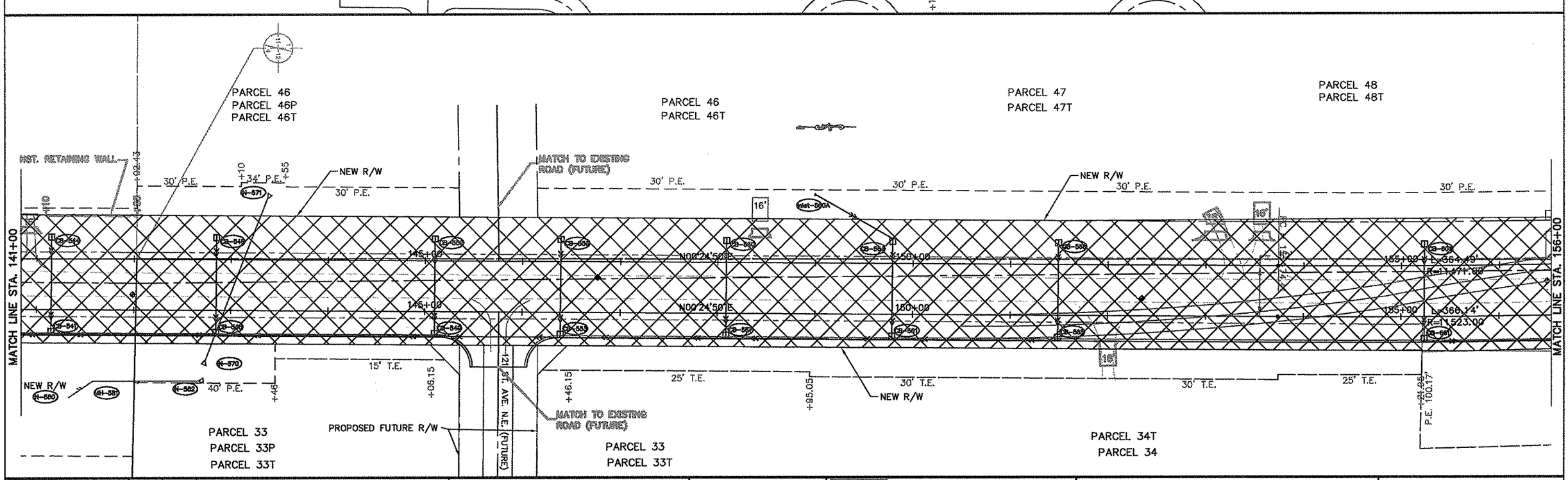
STATE AID PROJECT NO.

COUNTY PROJECT NO.

STAGE 2 CONSTRUCTION
STA. 96+00 TO 126+00

Sheet 31 of 226 Sheets





NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-13\Plan\21-Stage 2.dwg 01/30/2004 01:25:50 PM CST

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

PRINT NAME: PETER M. LEMKE

SIGNATURE: Peter M Lemke

DATE: 1-30-2004 REG. NO. 40118

DRAWN BY BFL DATE 9/1/03

DESIGN BY MFG DATE 9/1/03

CHECKED BY PML DATE 9/25/03

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13

STATE PROJECT NO. 106-020-23

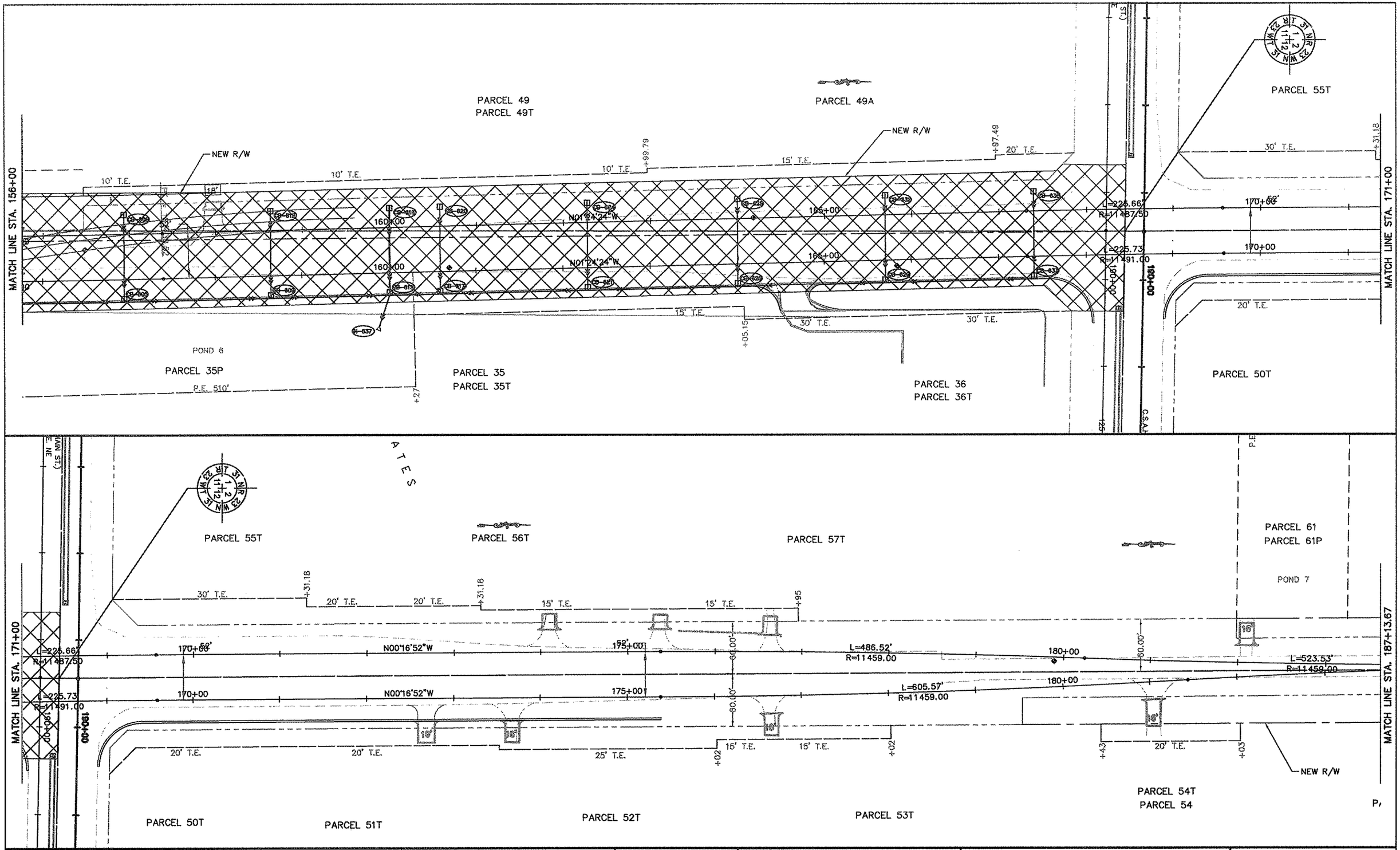
STATE AID PROJECT NO.

COUNTY PROJECT NO.

STAGE 2 CONSTRUCTION

STA. 126+00 TO 156+00

Sheet 32 of 226 Sheets



NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-13\Plan\21-Stage 2.dwg 01/30/2004 01:25:50 PM CST

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

PRINT NAME: PETER M. LEMKE

SIGNATURE: Peter M Lemke

DATE: 1-30-2004 REG. NO. 40118

DRAWN BY BFL DATE 9/1/03

DESIGN BY MFG DATE 9/1/03

CHECKED BY PML DATE 9/25/03

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13

STATE PROJECT NO. 106-020-23

STATE AID PROJECT NO.

COUNTY PROJECT NO.

STAGE 2 CONSTRUCTION

STA. 156+00 TO 187+70.00

Sheet 33 of 226 Sheets

Construction Stage Three

Lexington Avenue Station 44+15 to 49+60

Place traffic signal at Pheasant Ridge Drive on flash and place all way stops as shown in Traffic Control Stage 4.

Remove inplace concrete median; temporary bituminous patch, station 43+90 to 49+50

Recreate median using reboundable drums (25) and two "Keep Right" and two "Nine Button" Signs.

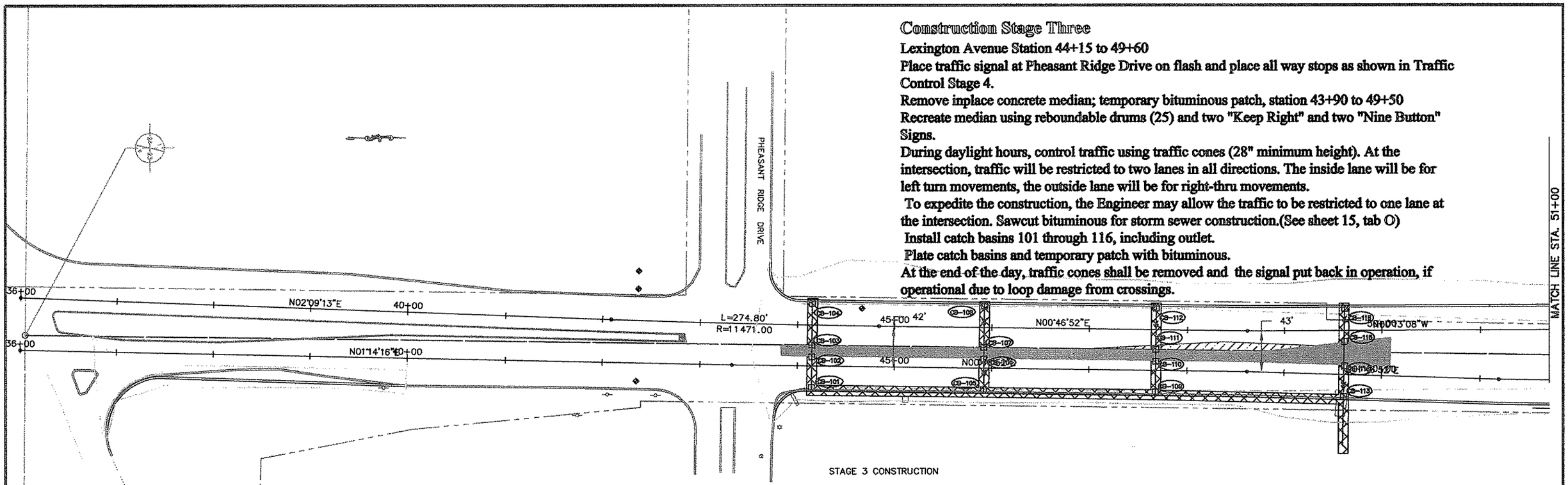
During daylight hours, control traffic using traffic cones (28" minimum height). At the intersection, traffic will be restricted to two lanes in all directions. The inside lane will be for left turn movements, the outside lane will be for right-thru movements.

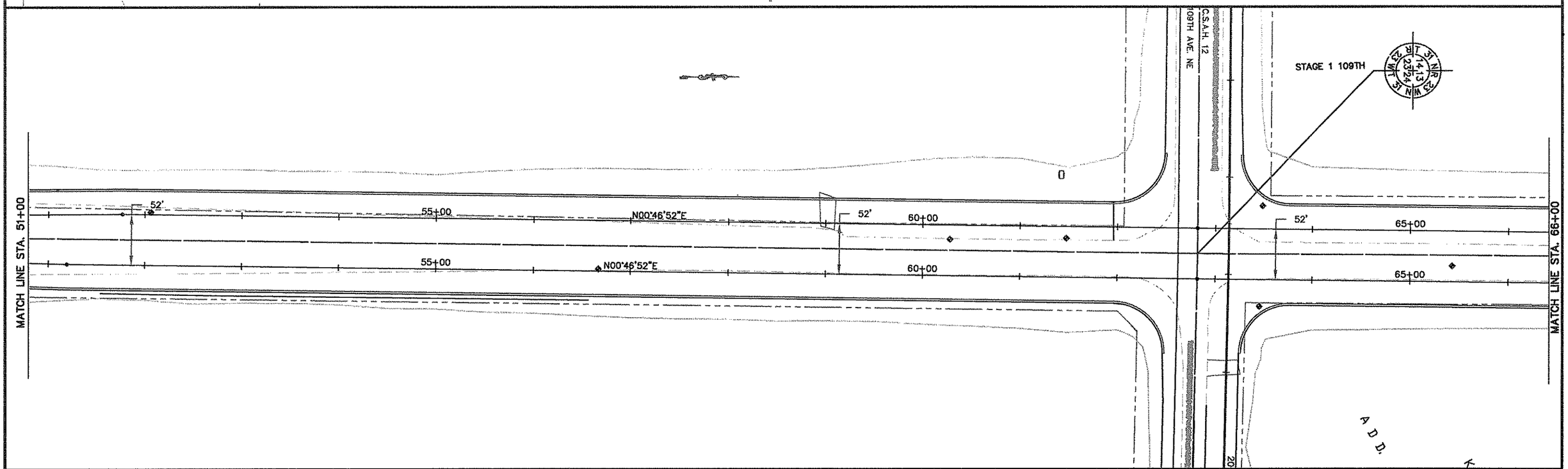
To expedite the construction, the Engineer may allow the traffic to be restricted to one lane at the intersection. Sawcut bituminous for storm sewer construction.(See sheet 15, tab O)

Install catch basins 101 through 116, including outlet.

Plate catch basins and temporary patch with bituminous.

At the end of the day, traffic cones shall be removed and the signal put back in operation, if operational due to loop damage from crossings.





NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-13\Plan\22-Stage 3.dwg 01/30/2004 03:17:31 PM CST

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

PRINT NAME: PETER M. LEMKE

SIGNATURE: Peter M Lemke

DATE: 1-30-2004 REG. NO. 40118

DRAWN BY BFL DATE 9/1/03

DESIGN BY MFG DATE 9/1/03

CHECKED BY PML DATE 9/25/03

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13

STATE PROJECT NO. 106-020-23

STATE AID PROJECT NO.

COUNTY PROJECT NO.

STAGE 3 CONSTRUCTION
STA. 36+77.50 TO 66+00

Sheet 34 of 226 Sheets

Construction Stage Four

Lexington Avenue Station 43+70 to 62+10

Shutdown traffic signal at 109th Ave and place all way stops. Traffic will be restricted to one lane in each direction.

On the west side of Lexington Avenue, remove inplace traffic paint lines and repaint shifting traffic to the south side of the roadway.

Removable plastic marking and TRPMs will be needed west of station 2+65 to direct traffic on the inplace bituminous.

Shutdown traffic signal at Pheasant Ridge Drive and place all way stops. At the intersection, traffic will be restricted to two lanes in all directions.

Remove traffic paint as needed to make the lane drop and repaint traffic lane lines.The inside lane will be for left turn movements, the outside lane will be for right-thru movements.

Remove LSB white edge line traffic paint, station 45+00 to 62+00

Paint new interim latex traffic paint lines, 26' to face of barrier. from edge of inplace southbound bituminous

Install portable concrete traffic barrier, separating LNB from construction.

Rough grade and place granular borrow for storm sewer construction.

Install signal conduit as needed.

Gas and telephone will have to relocate for storm sewer construction and will need to lower in some areas to maintain proper bury depth.

Sawcut bituminous for storm sewer trench.Sawcut bituminous for stage construction, sta. 43+70 to 62+10, approximatly 1,840'.

Install storm sewer leads, catch basin No. 117 to 133, install storm sewer pipe as far as jersey barrier will allow.

Muck will be encountered in the roadbed starting at approximately LNB 60+00. The Contractor shall excavate the muck full width, as far as the jersey barrier will allow. The Contractor shall muck full width up to LNB 62+00.

At this point the Contractor shall schedule the closure of 109th Ave. to the East.

Stage Four and Stage Five construction overlap at the 109th Avenue Intersection.

Stage Four construction will continue

Place and tolerance granular borrow.

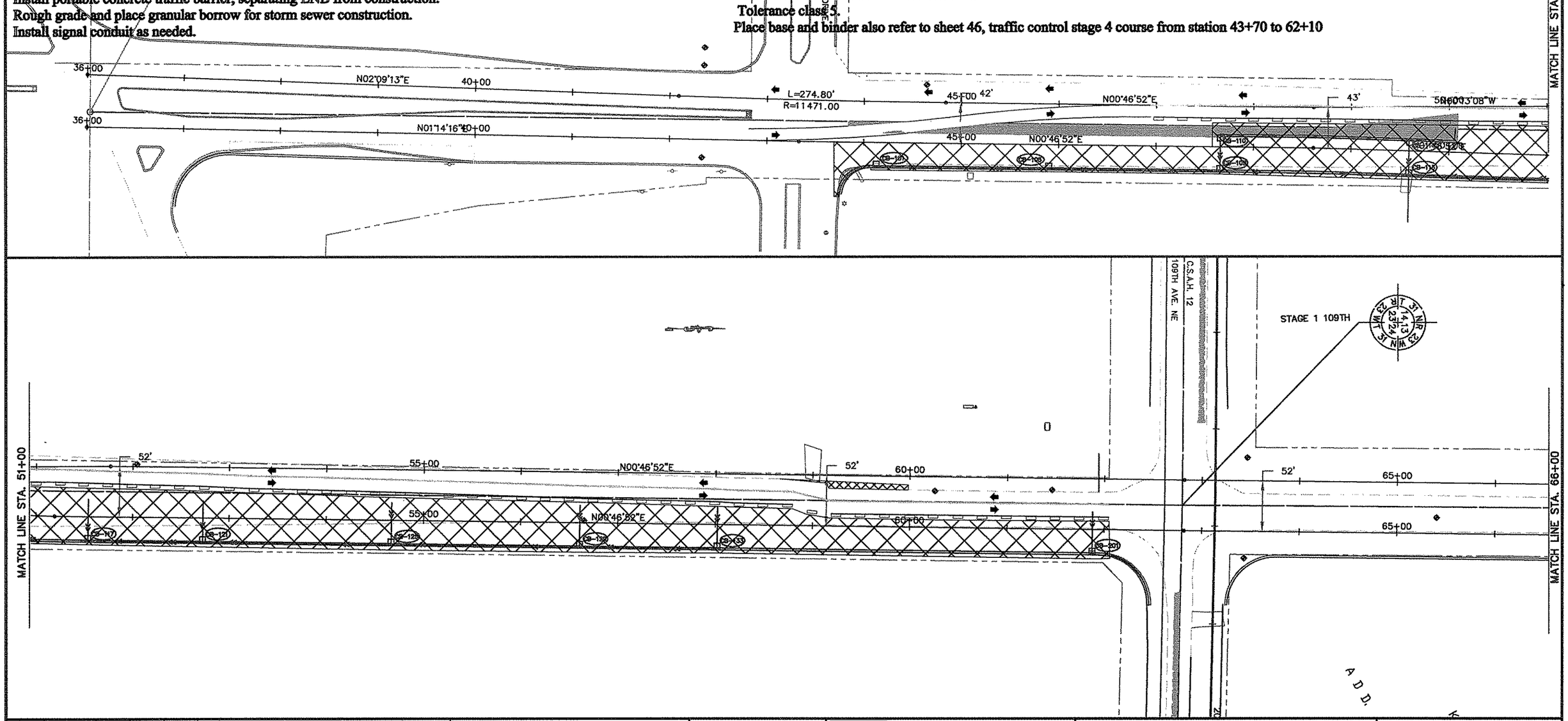
Place signal conduit as needed.

Place class 5. Place shoulder concrete curb and gutter, station 43+70 to 62+10.

Place median curb station 47+65 to 50+10.

Tolerance class 5.

Place base and binder also refer to sheet 46, traffic control stage 4 course from station 43+70 to 62+10



NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-13\Plan\23-Stage 4.dwg 01/30/2004 03:38:56 PM CST

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

PRINT NAME: PETER M. LEMKE

SIGNATURE: Peter M Lemke

DATE: 1-30-2004 REG. NO. 40118

DRAWN BY BFL DATE 9/1/03

DESIGN BY MFG DATE 9/1/03

CHECKED BY PML DATE 9/25/03

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13

STATE PROJECT NO. 106-020-23

STATE AID PROJECT NO.

COUNTY PROJECT NO.

STAGE 4 CONSTRUCTION

STA. 36+77.50 TO 66+00

Sheet 35 of 226 Sheets

Construction Stage Five

109th Ave Station 16+93 to 30+00

The Contractor will be allowed fourteen (14) calendar days to excavate the muck (approximate limits 500 feet to the east) backfill with granular, place the storm sewer and place class 5, place both sides of the concrete median, and pave bituminous base and binder courses for the both sides of 109th Avenue.

The Lexington Avenue / 109th Avenue intersection (to the limits of the traffic) will be mucked and backfilled at this time. Remove all of the 18" CMP in the intersection on the east side of 109th Ave. Remove a portion of the 36" RCP in the intersection on the west side of 109th Ave.

Protect traffic from muck excavation using temporary concrete median as needed.

Signal conduit will need to be installed in the grading grade. Install CB No. 201 towards No. 204 and No. 201 towards No. 205.

Tolerance subgrade, place and tolerance class 5, pave bituminous base and binder courses for Lexington Avenue Intersection to station 16+93, as much as possible.

109th Ave Station 2+65 to 16+93

During this stage, protect construction trench height differences with reflectorized reboundable drums.

During daylight hours, shift traffic using traffic cones (28" minimum height), sawcut bituminous and install storm sewer structures 801A to 804.

Muck underneath the outlet pipe as needed, place granular borrow in the muck area, and place rock bedding for the pipe outlet..

Plate catch basins and temporary patch the storm sewer trench with bituminous.

Remove traffic paint as directed for traffic shift (approximately 4,000 lin. ft.)place removal preformed plastic marking, interm latex paint, TRPMs, reboundable drums, and portable conc. barrier, shift traffic to LNB side of roadway.

Excavate muck for the two LWB lanes.

Backfill the muck excavation with granular borrow up to the elevation of the new grading elevations.

Sawcut the inplace bituminous from station 2+65 to 16+93 at the proposed limits of the Stage Four bituminous paving. (approximatly 1,428') sawcut the inplace bituminous for the widening, station 30+00 to 35+61 (approximatly 561')

Tolerance the subgrade, place class 5 and install both sides of the median curb and gutter.

Install signal conduit as needed.

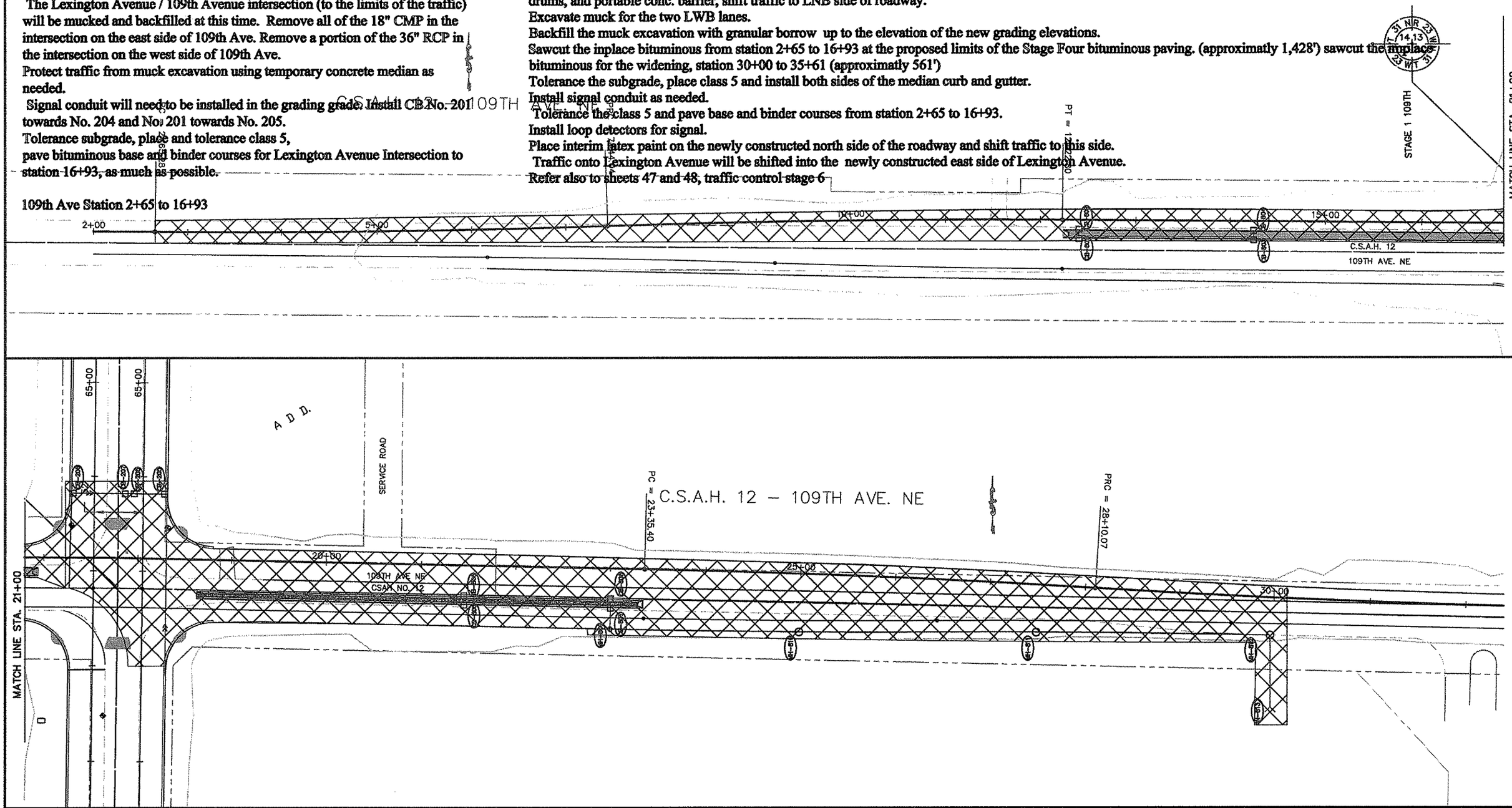
Tolerance the class 5 and pave base and binder courses from station 2+65 to 16+93.

Install loop detectors for signal.

Place interim latex paint on the newly constructed north side of the roadway and shift traffic to this side.

Traffic onto Lexington Avenue will be shifted into the newly constructed east side of Lexington Avenue.

Refer also to sheets 47 and 48, traffic control stage 6



NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-13\Plan\24-Stage 5.dwg 01/30/2004 03:25:21 PM CST

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

PRINT NAME: PETER M. LEMKE

SIGNATURE: Peter M Lemke

DATE: 1-30-2004 REG. NO. 40118

DRAWN BY BFL DATE 9/1/03

DESIGN BY MFG DATE 9/1/03

CHECKED BY PML DATE 9/25/03

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13

STATE PROJECT NO. 106-020-23

STATE AID PROJECT NO.

COUNTY PROJECT NO.

STAGE 5 CONSTRUCTION
STA.6+00 TO 31+00

Sheet 36 of 226 Sheets

Construction Stage Six

Lexington Avenue Station 43+70 to 62+10
Place latex paint for staging traffic on northbound side of roadway.
Shift temporary concrete barrier to the northbound side of Lexington Ave.
Shift traffic to northbound side of Lexington Ave .
Construct remainder of Lexington Ave southbound (including bituminous base and binder courses) station 43+70 to 62+90, including 109th Avenue from station 2+65 to 17+50.
Install loop detectors for signal.
Refer also to Sheets 47 and 48, Traffic Control Stage 6

REMOVE MEDIAN
CONSTRUCTION AREA
TRAFFIC FLOW
BARREL
JERSEY BARRIER

PHEASANT RIDGE DRIVE
36+00
N02°09'13"E
40+00
36+00
N01°14'16"E
40+00
L=274.80
R=11471.00
45+09.42
45+00
45+00
N00°46'52"E
N00°46'52"E
N01°46'52"E
N09°05'08"W
MATCH LINE STA. 51+00

MATCH LINE STA. 51+00
52'
55+00
55+00
55+00
N00°46'52"E
N00°46'52"E
52'
60+00
60+00
60+00
60'
60'
STAGE 1 109TH
109TH AVE NE
52'
65+00
65+00
65+00
20'
20'
A D D.
MATCH LINE STA. 66+00

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-13\Plan\25-Stage 6.dwg 01/30/2004 03:43:00 PM CST

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
PRINT NAME: PETER M. LEMKE
SIGNATURE: Peter M Lemke
DATE: 1-30-2004 REG. NO. 40118

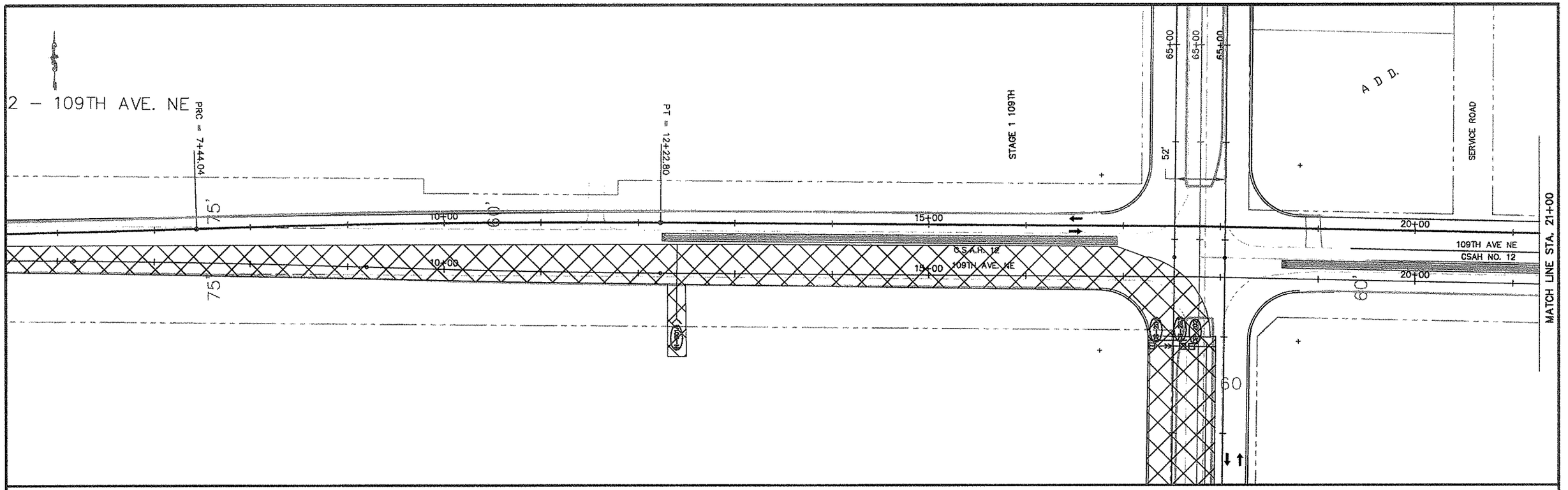
DRAWN BY BFL DATE 9/1/03
DESIGN BY MFG DATE 9/1/03
CHECKED BY PML DATE 9/25/03

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO.
STATE PROJECT NO. 02-617-13
STATE AID PROJECT NO. 106-020-23
COUNTY PROJECT NO.

STAGE 6 CONSTRUCTION
STA. 36+00 TO 66+00

Sheet 37 of 226 Sheets



NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-13\Plan\25-Stage 6.dwg 01/30/2004 03:43:00 PM CST

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

PRINT NAME: PETER M. LEMKE

SIGNATURE: Peter M Lemke

DATE: 1-30-2004 REG. NO. 40118

DRAWN BY BFL DATE 9/1/03

DESIGN BY MFG DATE 9/1/03

CHECKED BY PML DATE 9/25/03

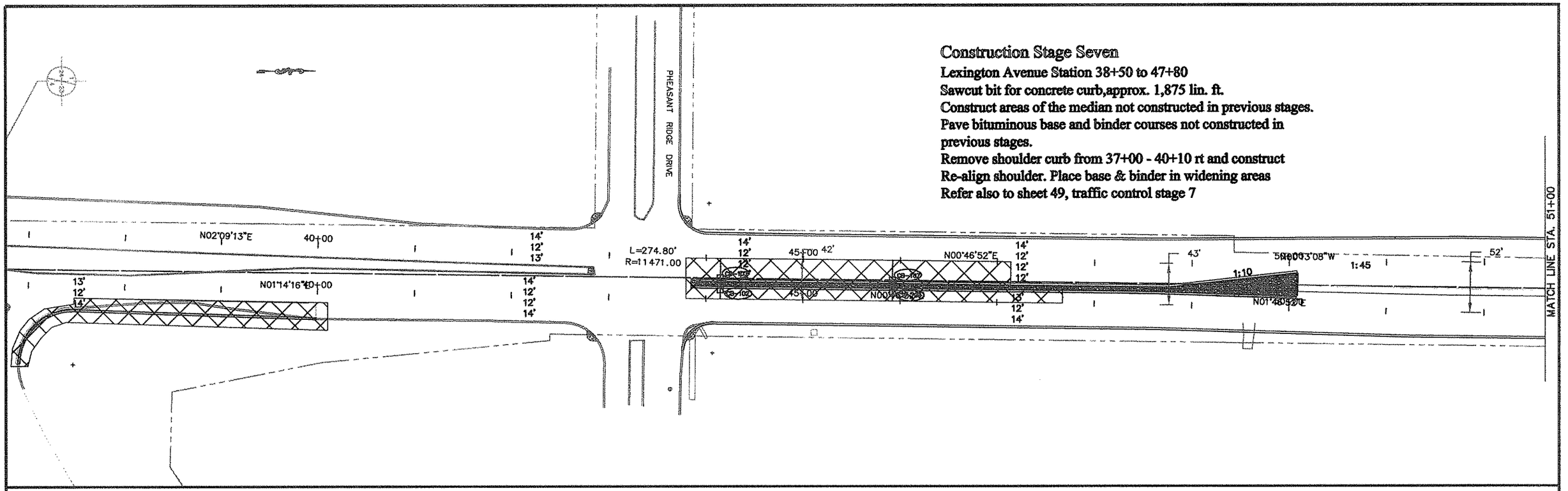
ANOKA COUNTY

ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13
STATE PROJECT NO. 106-020-23
STATE AID PROJECT NO.
COUNTY PROJECT NO.

STAGE 6
CONSTRUCTION
STA. 2+65.28 TO 35+61.00

Sheet 38 of 226 Sheets



Construction Stage Seven

Lexington Avenue Station 38+50 to 47+80
Sawcut bit for concrete curb,approx. 1,875 lin. ft.
Construct areas of the median not constructed in previous stages.
Pave bituminous base and binder courses not constructed in previous stages.
Remove shoulder curb from 37+00 - 40+10 rt and construct
Re-align shoulder. Place base & binder in widening areas
Refer also to sheet 49, traffic control stage 7

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-13\Plan\26-Stage 7.dwg 01/30/2004 03:50:34 PM CST

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

PRINT NAME: PETER M. LEMKE
SIGNATURE: Peter M Lemke
DATE: 1-30-2004 REG. NO. 40118

DRAWN BY BFL DATE 9/1/03
DESIGN BY MFG DATE 9/1/03
CHECKED BY PML DATE 9/25/03

ANOKA COUNTY HIGHWAY DEPT.

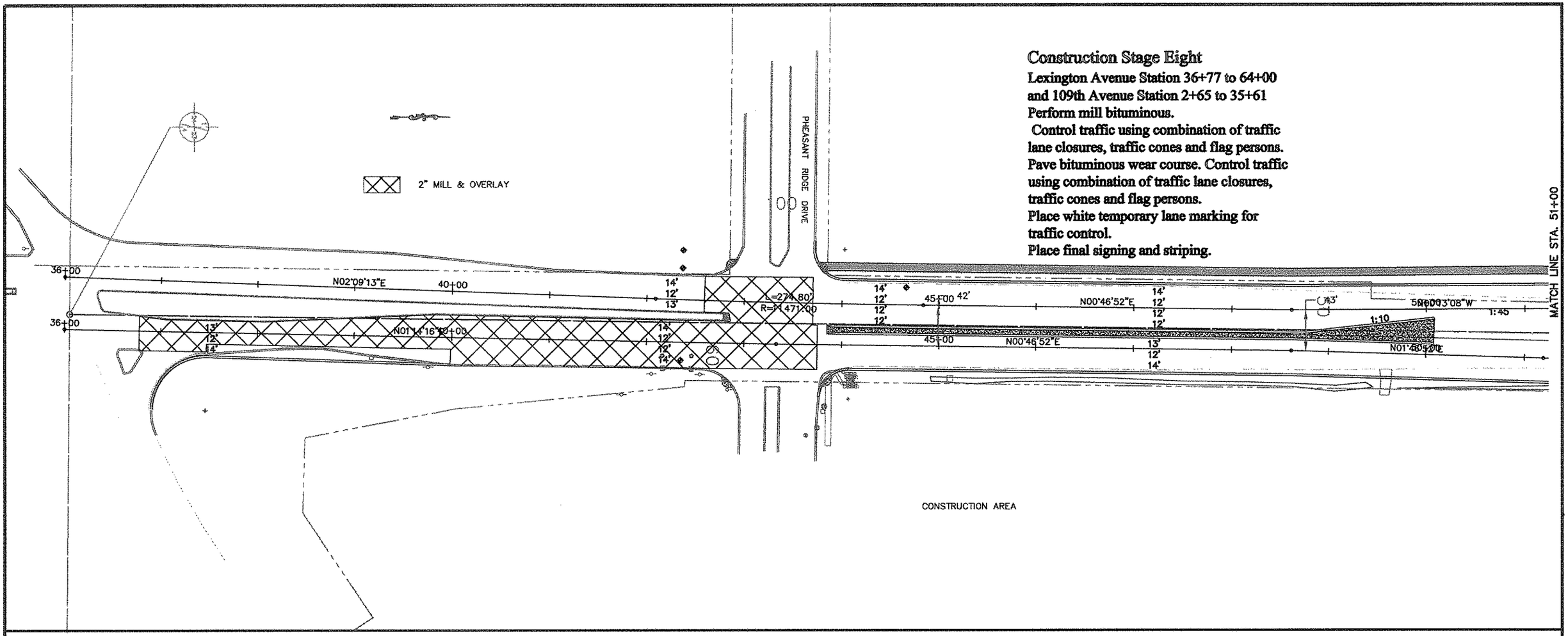
STATE PROJECT NO. 02-617-13
STATE PROJECT NO. 106-020-23
STATE AID PROJECT NO.
COUNTY PROJECT NO.

STAGE 7 CONSTRUCTION
STA. 36+77.50 TO 66+00

Sheet 39 of 226 Sheets

Construction Stage Eight

Lexington Avenue Station 36+77 to 64+00
and 109th Avenue Station 2+65 to 35+61
Perform mill bituminous.
Control traffic using combination of traffic lane closures, traffic cones and flag persons.
Pave bituminous wear course. Control traffic using combination of traffic lane closures, traffic cones and flag persons.
Place white temporary lane marking for traffic control.
Place final signing and striping.



NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-13\Plan\27-Stage 8.dwg 01/30/2004 03:55:21 PM CST

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
PRINT NAME: PETER M. LEMKE
SIGNATURE: Peter M Lemke
DATE: 1-30-2004 REG. NO. 40118

DRAWN BY BFL DATE 9/1/03
DESIGN BY MFG DATE 9/1/03
CHECKED BY PML DATE 9/25/03

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13
STATE PROJECT NO. 106-020-23
STATE AID PROJECT NO.
COUNTY PROJECT NO.

STAGE 8
CONSTRUCTION
STA. 36+77.50 TO 66+00

Sheet 40 of 226 Sheets

C.S.A.H. 12 – 109TH AVE. NE

2" MILL & OVERLAY

STAGE 1 109TH

MATCH LINE STA. 21+00

C.S.A.H. 12

109TH AVE. NE

2" MILL & OVERLAY

C.S.A.H. 12 – 109TH AVE. NE

SERVICE ROAD

109TH AVE NE

CSAH NO. 12

MATCH LINE STA. 21+00

MATCH LINE STA. 33+00

MATCH LINE STA. 33+00

NO	DATE	BY	CKD	APPR	REVISION

NAME P:\02-617-13\Plan\27-Stage 8.dwg 01/30/2004 03:55:21 PM CST

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

PRINT NAME: PETER M. LEMKE

SIGNATURE: Peter M Lemke

DATE: 1-30-2004 REG. NO. 40118

DRAWN BY BFL DATE 9/1/03

DESIGN BY MFG DATE 9/1/03

CHECKED BY PML DATE 9/25/03

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13

STATE PROJECT NO. 106-020-23

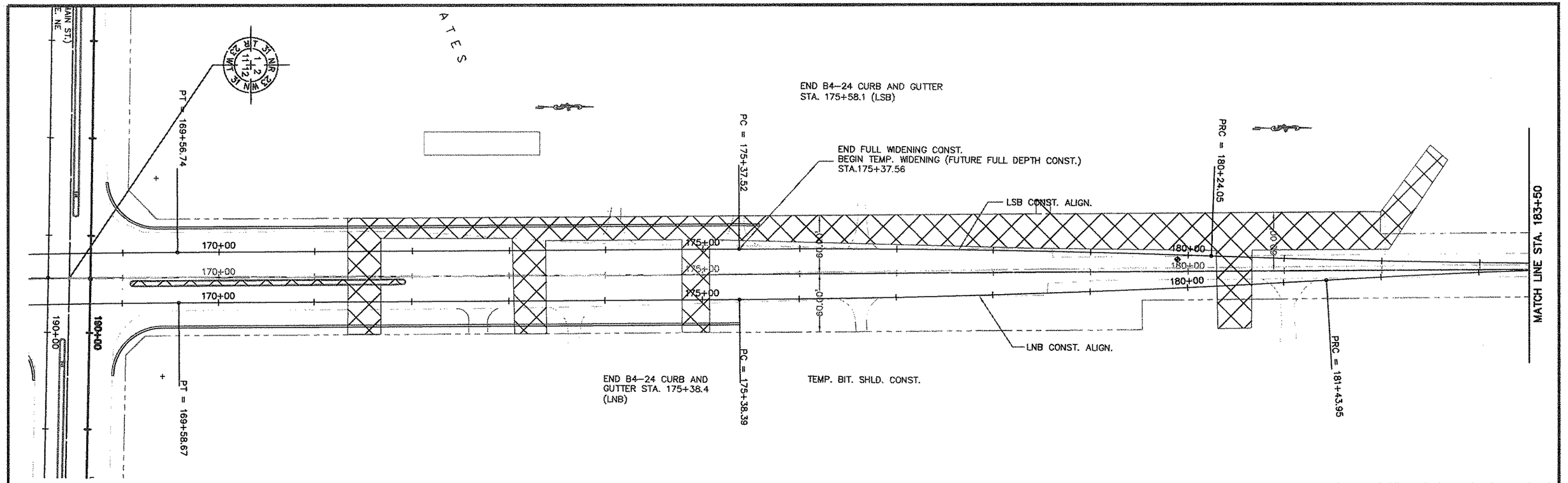
STATE AID PROJECT NO.

COUNTY PROJECT NO.

STAGE 8 CONSTRUCTION

STA. 2+65.28 TO 35+61.00

Sheet 41 of 226 Sheets



Construction Stage Nine

Lexington Avenue Station 168+75 to 186+97
Remove inplace concrete median station 169+90 to 172+00, and temporary bituminous patch
Construct Storm Sewer System No. 701 through MH 716 and pond outlet.
Control traffic by using lane shifts, traffic cones, reboundable drums, flag persons, or temporary paint.
Temporary patch bituminous trenches.
Shutdown traffic signal at Main Street and place all way stops. At the intersection,
traffic will be restricted to two lanes in all directions. Remove traffic paint as needed to make the lane drop and repaint, or removeable plastic mark, traffic lane lines.The inside lane will be for left turn movements, the outside lane will be for right-thru movements.

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-13\Plan\28-Stage 9.dwg 01/30/2004 04:06:18 PM CST

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
PRINT NAME: PETER M. LEMKE
SIGNATURE: Peter M Lemke
DATE: 1-30-2004 REG. NO. 40118

DRAWN BY BFL DATE 9/1/03
DESIGN BY MFG DATE 9/1/03
CHECKED BY PML DATE 9/25/03

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13
STATE PROJECT NO. 106-020-23
STATE AID PROJECT NO.
COUNTY PROJECT NO.

STAGE 9 CONSTRUCTION
STA. 168+75 TO 187+70.00

Sheet 42 of 226 Sheets

Construction Stage Ten

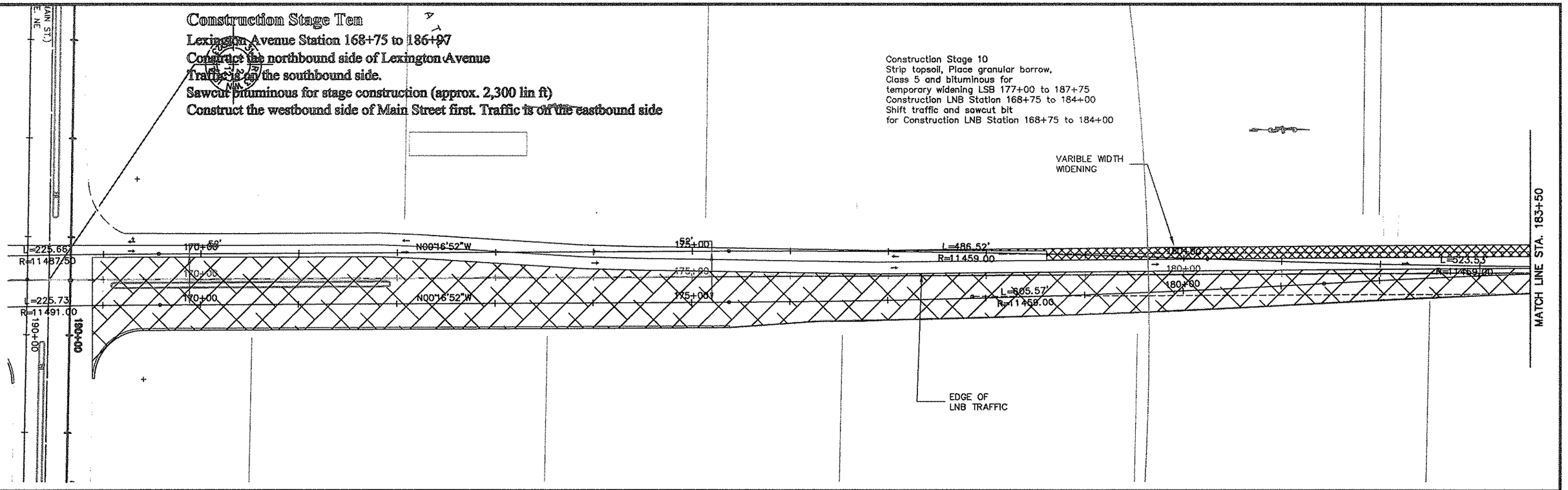
Lexington Avenue Station 168+75 to 186+97

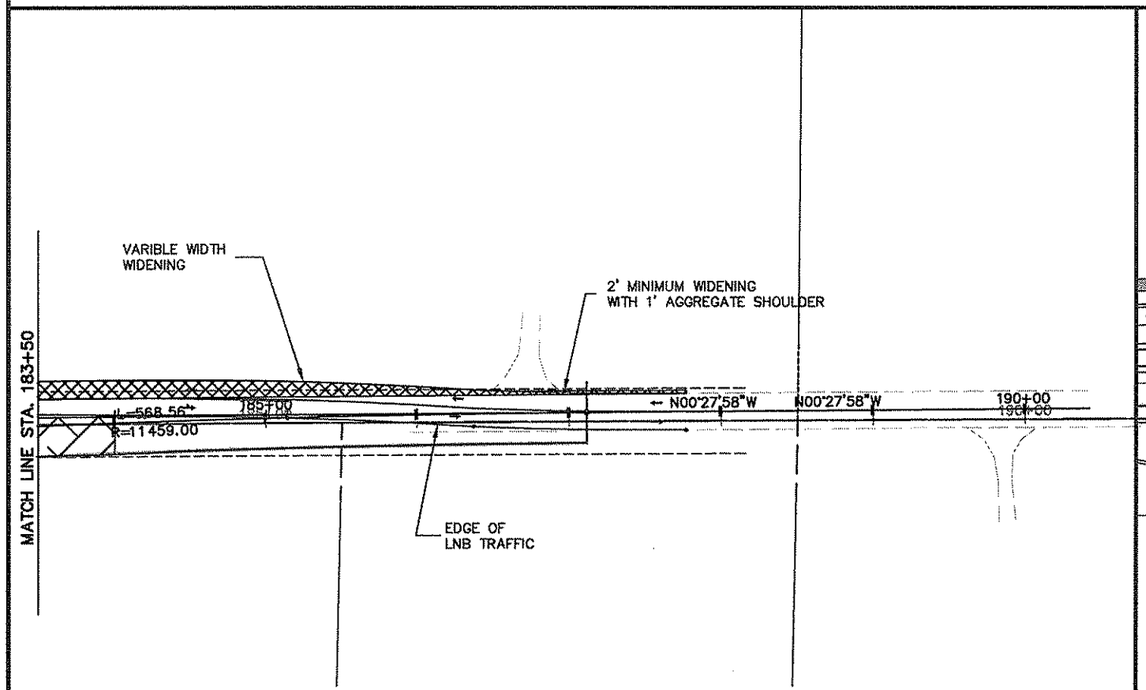
Construct the northbound side of Lexington Avenue

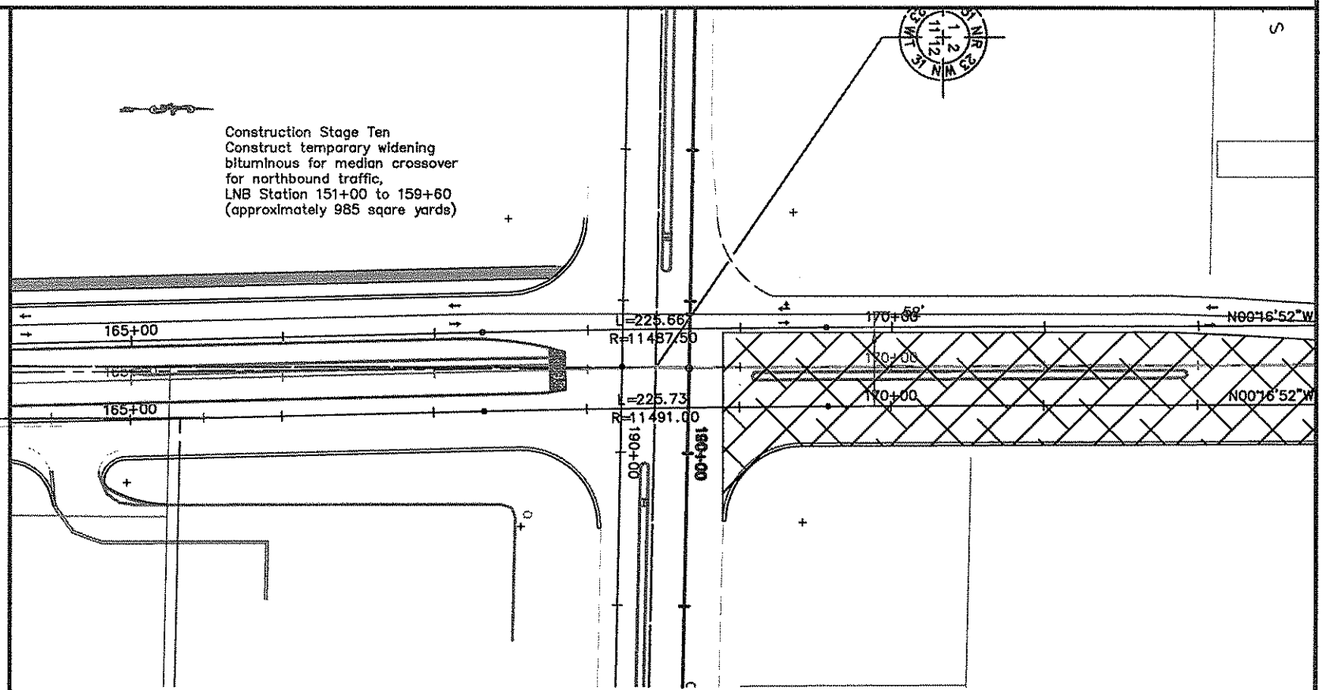
Traffic is on the southbound side.

Sawcut bituminous for stage construction (approx. 2,300 lin ft)

Construct the westbound side of Main Street first. Traffic is on the eastbound side







NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-13\Plan\29-Stage 10.dwg 01/30/2004 04:08:15 PM CST

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

PRINT NAME: PETER M. LEMKE

SIGNATURE: Peter M Lemke

DATE: 1-30-2004 REG. NO. 40118

DRAWN BY BFL DATE 9/1/03

DESIGN BY MFG DATE 9/1/03

CHECKED BY PML DATE 9/25/03

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13

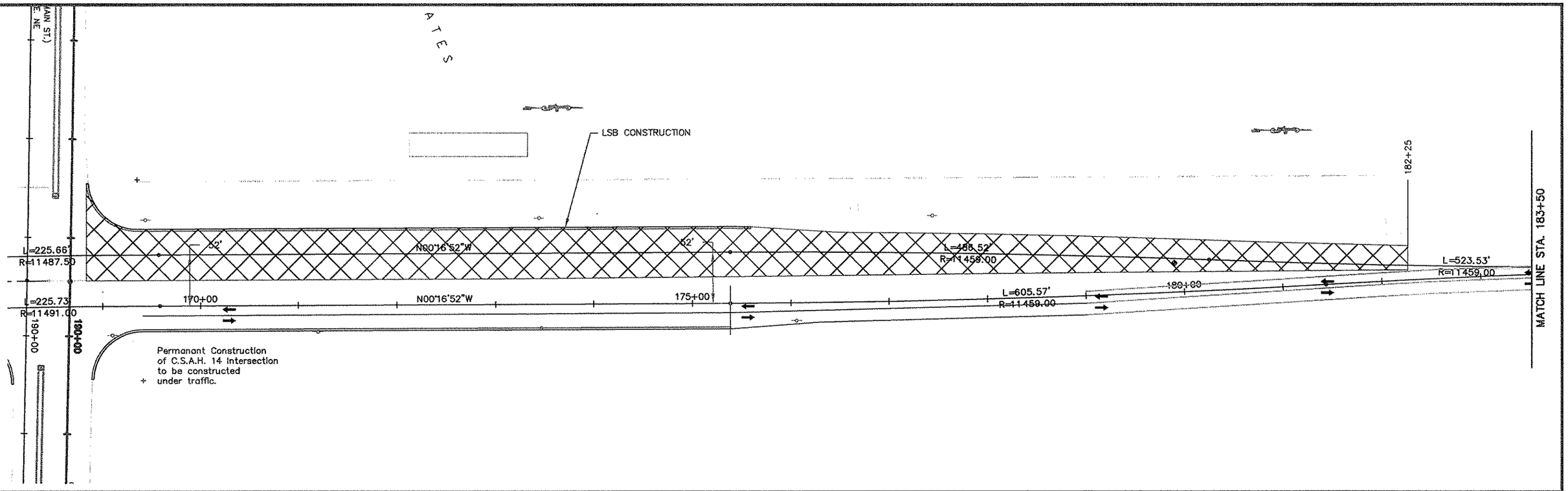
STATE PROJECT NO. 106-020-23

STATE AID PROJECT NO.

COUNTY PROJECT NO.

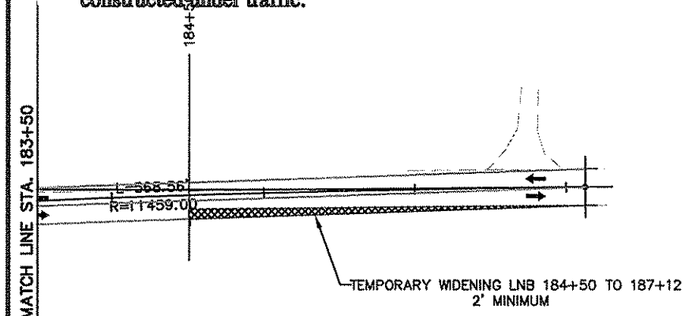
STAGE 10
CONSTRUCTION
STA. 168+75 TO 187+70.00

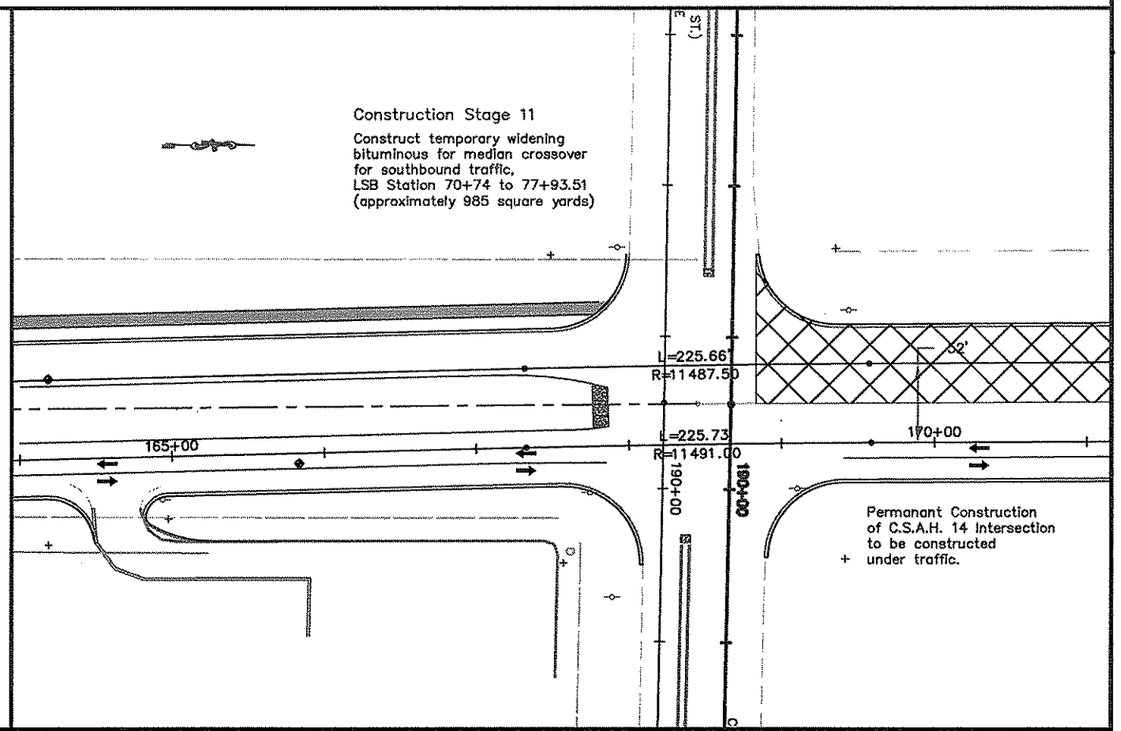
Sheet 43 of 226 Sheets



Construction Stage Eleven

Lexington Avenue Station 168+75 to 182+25
Construct the southbound side of Lexington Avenue
Traffic is on the northbound side.
Construct the eastbound side of Main Street first. Traffic is on the westbound side.
Permanent Construction, LNB/LSB Station 182+25 to 187+12, to be constructed under traffic.





NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-13\Plan\30-Stage 11.dwg 01/30/2004 04:12:27 PM CST

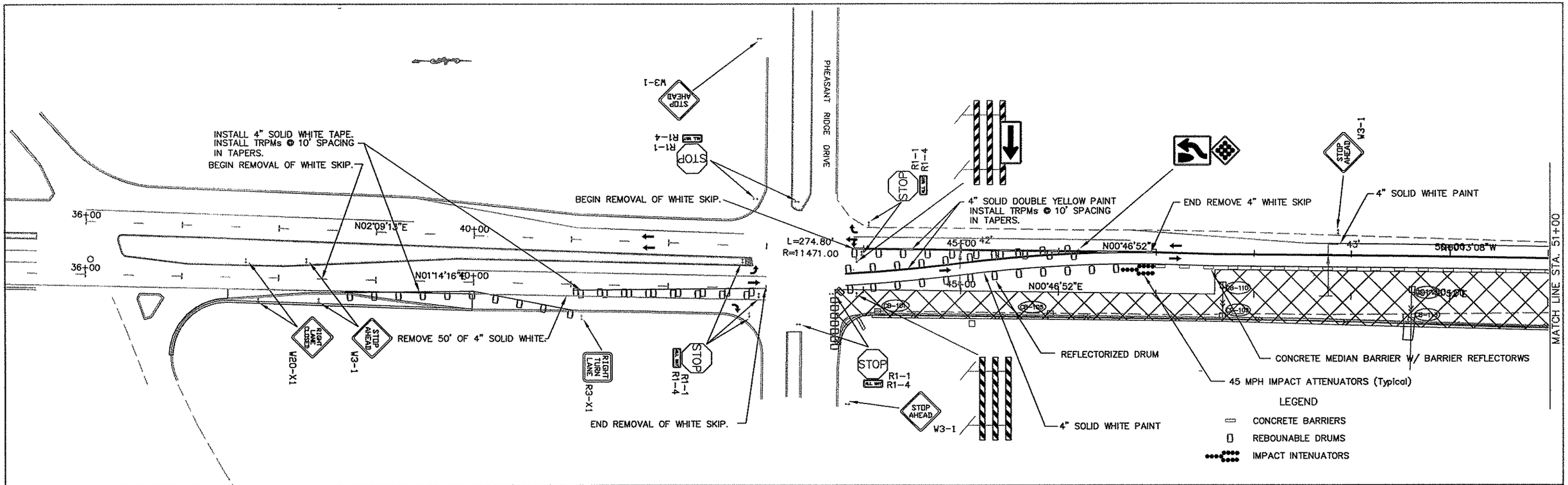
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
PRINT NAME: PETER M. LEMKE
SIGNATURE: Peter M Lemke
DATE: 1-30-2004 REG. NO. 40118

DRAWN BY BFL DATE 9/1/03
DESIGN BY MFG DATE 9/1/03
CHECKED BY PML DATE 9/25/03

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13
STATE PROJECT NO. 106-020-23
STATE AID PROJECT NO.
COUNTY PROJECT NO.

STAGE 11 CONSTRUCTION
STA. 168+75 TO 187+70.00
Sheet 44 of 226 Sheets



NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-13\Plan\40-TRAFFIC CONT-STAGE 4.dwg 01/27/2004 08:39:46 AM CST

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

PRINT NAME: PETER M. LEMKE

SIGNATURE: Peter M Lemke

DATE: 1-30-2004 REG. NO. 40118

DRAWN BY RLB DATE 9/18/03

DESIGN BY RLB DATE 9/18/03

CHECKED BY PML DATE 9/18/03

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13

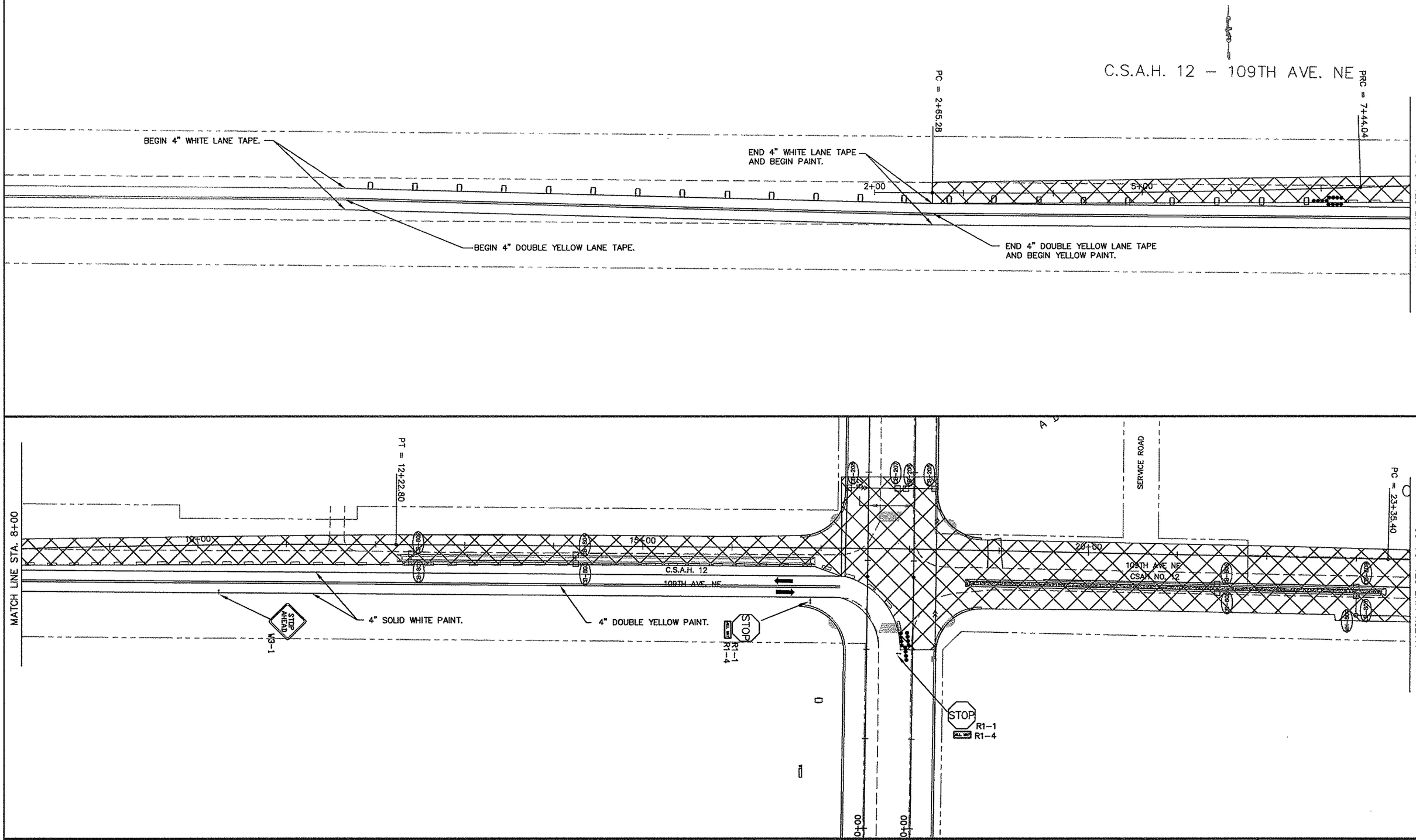
STATE PROJECT NO. 106-020-23

STATE AID PROJECT NO.

COUNTY PROJECT NO.

TRAFFIC CONTROL
STAGE 4
STA. 36+77.50 TO 66+00

Sheet 45 of 226 Sheets



NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-13\Plan\24-Stage 5.dwg 09/25/2003 04:04:05 PM CDT

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

PRINT NAME: PETER M. LEMKE

SIGNATURE: Peter M Lemke

DATE: 1-30-2004 REG. NO. 40118

DRAWN BY RLB DATE 1/26/04

DESIGN BY MFG DATE 9/1/03

CHECKED BY PML DATE 9/25/03

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13

STATE PROJECT NO. 106-020-23

STATE AID PROJECT NO.

COUNTY PROJECT NO.

TRAFFIC CONTROL
STAGE 5
STA.6+00 TO 31+00

Sheet 46 of 226 Sheets

REMOVE MEDIAN

CONSTRUCTION AREA

TRAFFIC FLOW

BARREL

JERSEY BARRIER

Install 4" Solid White Tape With TRPM's at 10' Spacing

PHEASANT RIDGE DRIVE

4" Solid Yellow Paint

Place TRPMs on Paint, Stations 43+80 to 51+00 at 10' Spacing

N02°09'13"E

N01°14'16"E

L=274.80'
R=11471.00'

42'

N00°46'52"E

43'

N00°13'08"W

N01°46'52"E

MATCH LINE STA. 51+00

4" SOLID WHITE PAINT. INSTALL TRPMs @ 10' SPACING IN TAPERS.

Concrete Barrier

Sta 49+00 Impact Attenuators

4" DOUBLE YELLOW PAINT.

MATCH LINE STA. 51+00

50'

52'

N00°46'52"E

4" SOLID WHITE PAINT.

C.S.A.H. 12
109TH AVE. NE

ROAD CLOSED

20

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-13\Plan\40-TRAFFIC CONT-STAGE 6.dwg 01/26/2004 02:56:26 PM CST

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

PRINT NAME: PETER M. LEMKE

SIGNATURE: Peter M Lemke

DATE: 1-30-2004 REG. NO. 40118

DRAWN BY RLB DATE 9/18/03

DESIGN BY RLB DATE 9/18/03

CHECKED BY PML DATE 9/18/03

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13

STATE PROJECT NO. 106-020-23

STATE AID PROJECT NO.

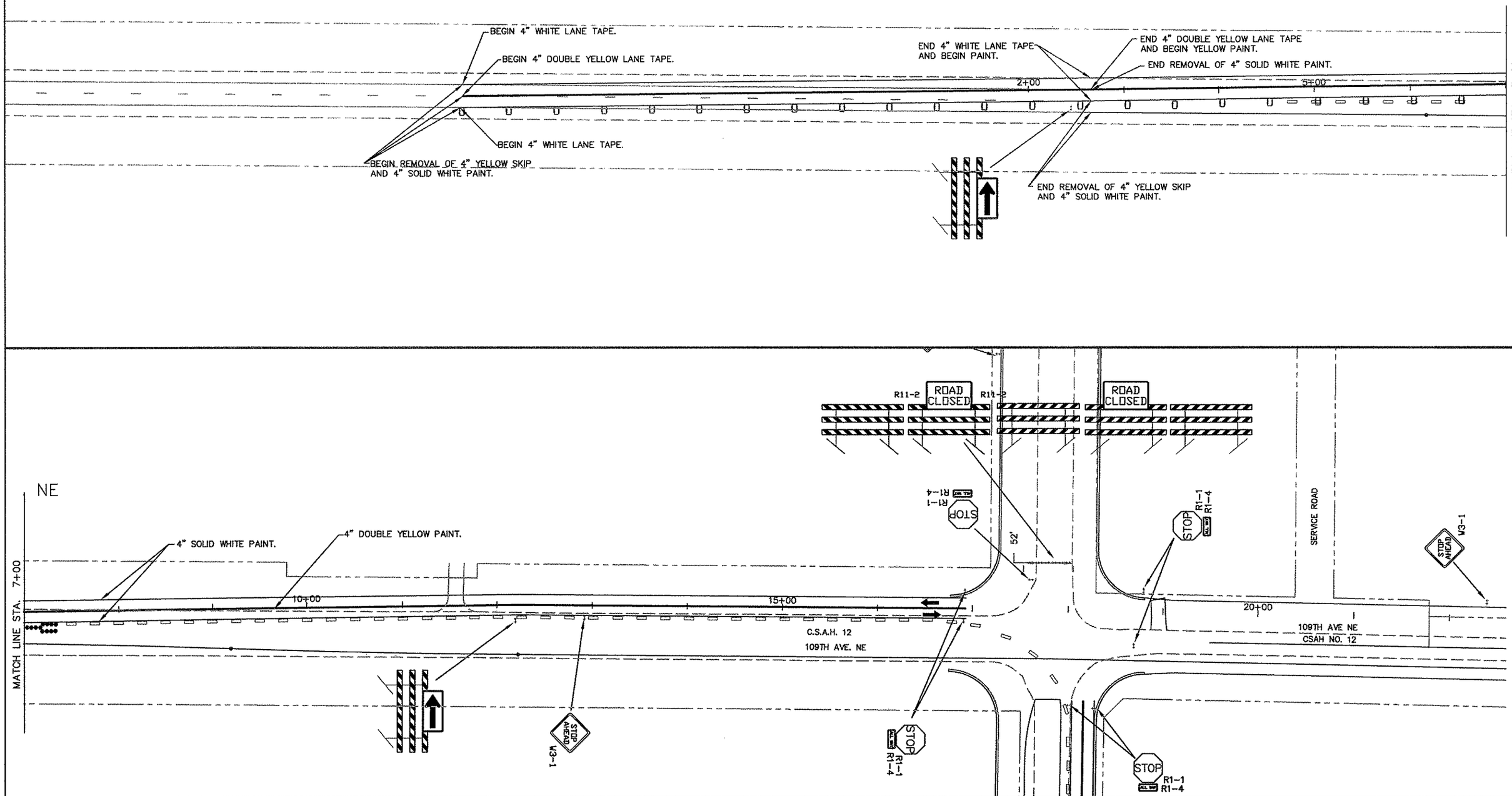
COUNTY PROJECT NO.

TRAFFIC CONTROL STAGE 6

STA. 36+77.50 TO 66+00

Sheet 47 of 226 Sheets

C.S.A.H. 12 – 109TH AVE.



NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-13\Plan\40-TRAFFIC CONT-STAGE 6.dwg 01/26/2004 02:56:26 PM CST

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

PRINT NAME: PETER M. LEMKE

SIGNATURE: Peter M Lemke

DATE: 1-30-2004 REG. NO. 40118

DRAWN BY RLB DATE 9/18/03

DESIGN BY RLB DATE 09/18/03

CHECKED BY PML DATE 9/18/03

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13

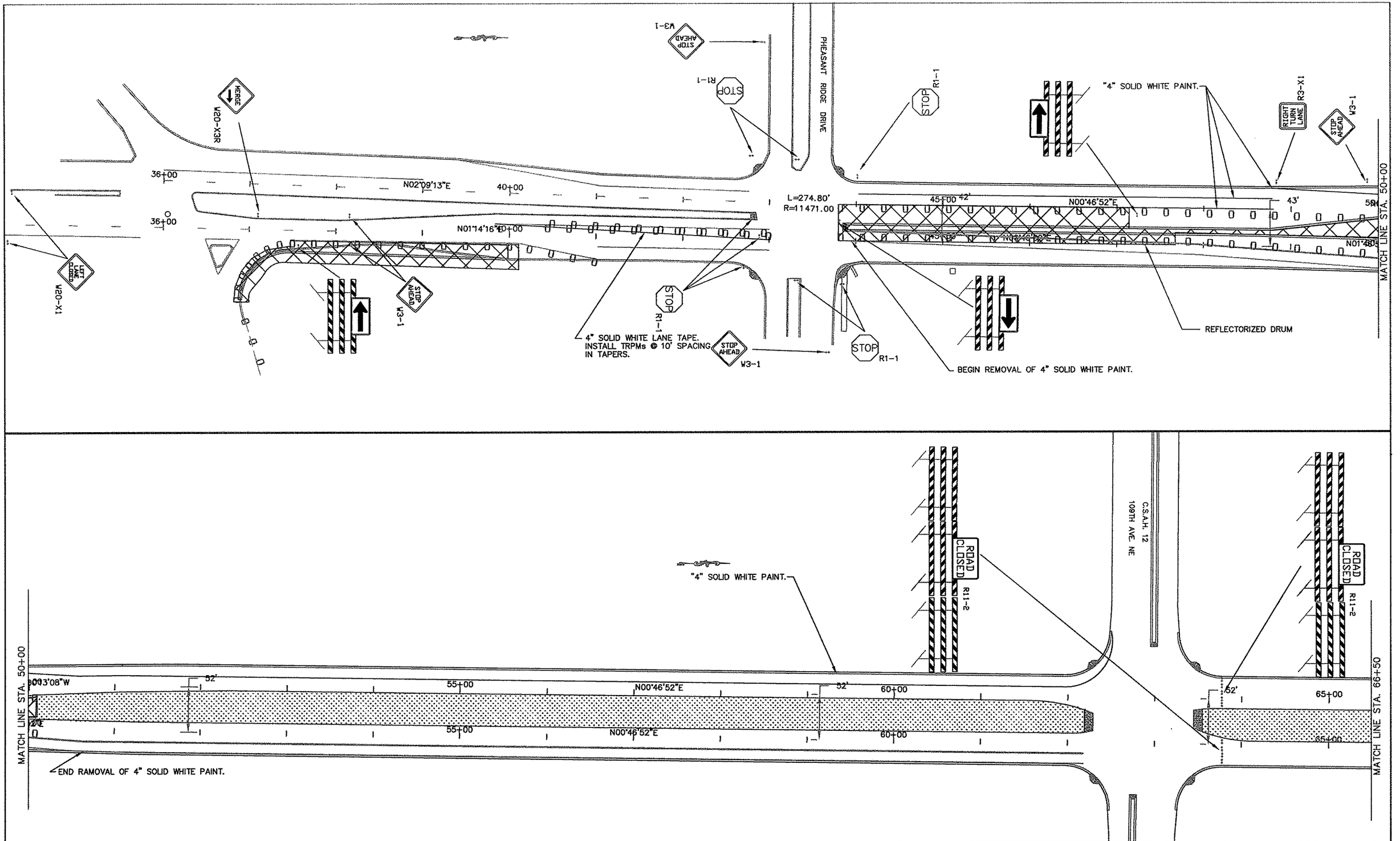
STATE PROJECT NO. 106-020-23

STATE AID PROJECT NO.

COUNTY PROJECT NO.

TRAFFIC CONTROL
STAGE 6
STA. 2+65.28 TO 35+61.00

Sheet 48 of 226 Sheets



NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-13\Plan\40-TRAFFIC CONT-STAGE 7.dwg 01/15/2004 02:55:35 PM CST

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

PRINT NAME: PETER M. LEMKE

SIGNATURE: Peter M Lemke

DATE: 1-30-2004 REG. NO. 40118

DRAWN BY RLB DATE 9/18/03

DESIGN BY RLB DATE 9/18/03

CHECKED BY PML DATE 9/18/03

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13

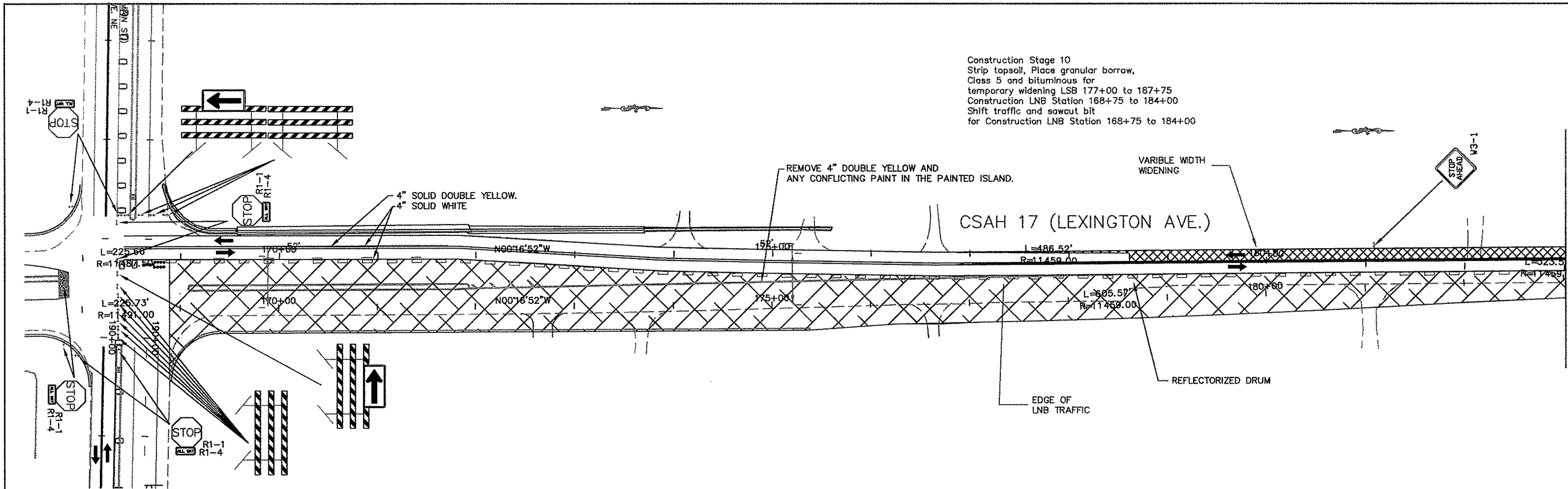
STATE PROJECT NO. 106-020-23

STATE AID PROJECT NO.

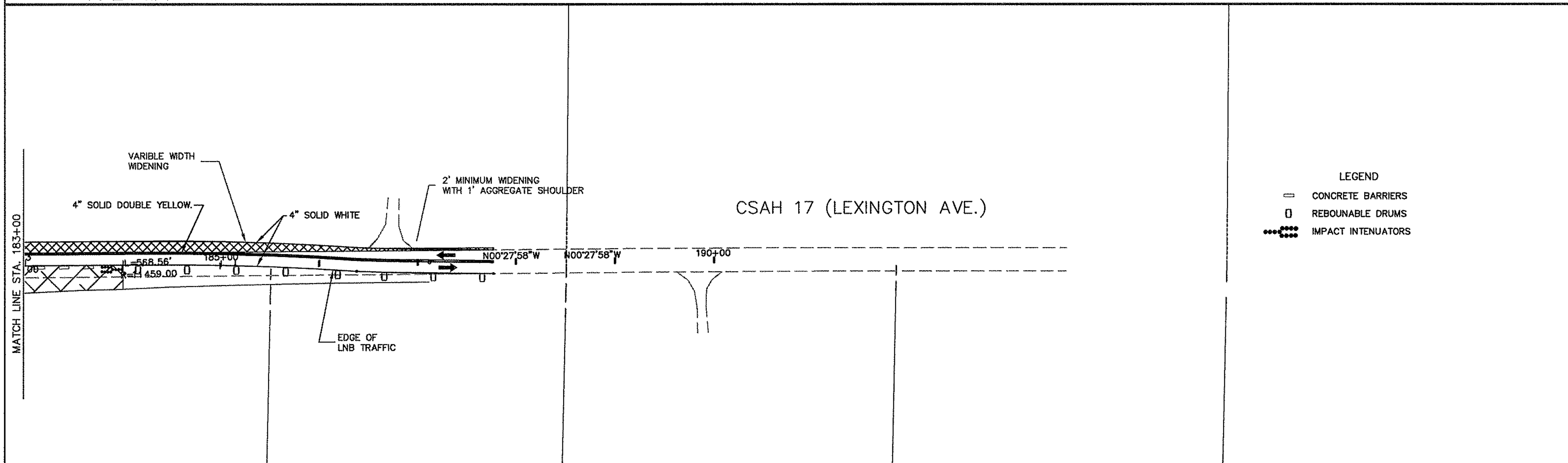
COUNTY PROJECT NO.

TRAFFIC CONTROL
STAGE 7
STA. 36+77.50 TO 66+00

Sheet 49 of 226 Sheets



Construction Stage 10
Strip topsoil, Place granular borrow,
Class 5 and bituminous for
temporary widening LSB 177+00 to 187+75
Construction LNB Station 168+75 to 184+00
Shift traffic and sawcut bit
for Construction LNB Station 168+75 to 184+00
CSAH 17 (LEXINGTON AVE.)
REMOVE 4" DOUBLE YELLOW AND
ANY CONFLICTING PAINT IN THE PAINTED ISLAND.
4" SOLID DOUBLE YELLOW.
4" SOLID WHITE
VARIBLE WIDTH
WIDENING
STOP
AHEAD
W3-1
STOP
R1-1
R1-4
L=225.66'
R=1145
L=226.73'
R=11491.00
170+00
175+00
180+00
N00°16'52"W
L=486.52'
R=11459.00
L=605.57'
R=11459.00
REFLECTORIZED DRUM
EDGE OF
LNB TRAFFIC
MATCH LINE STA. 183+00



VARIBLE WIDTH
WIDENING
2' MINIMUM WIDENING
WITH 1' AGGREGATE SHOULDER
4" SOLID DOUBLE YELLOW.
4" SOLID WHITE
CSAH 17 (LEXINGTON AVE.)
MATCH LINE STA. 183+00
L=568.56'
R=11459.00
185+00
190+00
N00°27'58"W
EDGE OF
LNB TRAFFIC
LEGEND
CONCRETE BARRIERS
REBOUNABLE DRUMS
IMPACT INTENUATORS

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-13\Plan\40-TRAFFIC CONT-STAGE 10.dwg 01/27/2004 02:54:36 PM CST

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

PRINT NAME: PETER M. LEMKE
SIGNATURE: Peter M. Lemke
DATE: 1-30-2004 REG. NO. 40118

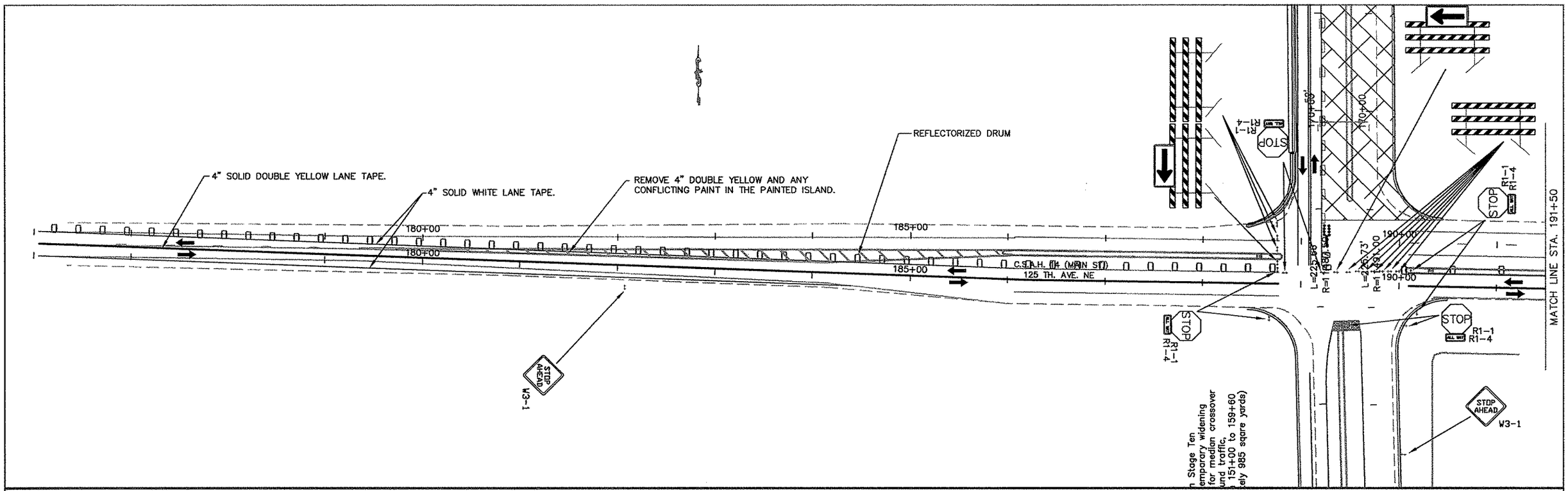
DRAWN BY RLB DATE 9/19/03
DESIGN BY RLB DATE 9/19/03
CHECKED BY PML DATE 9/19/03

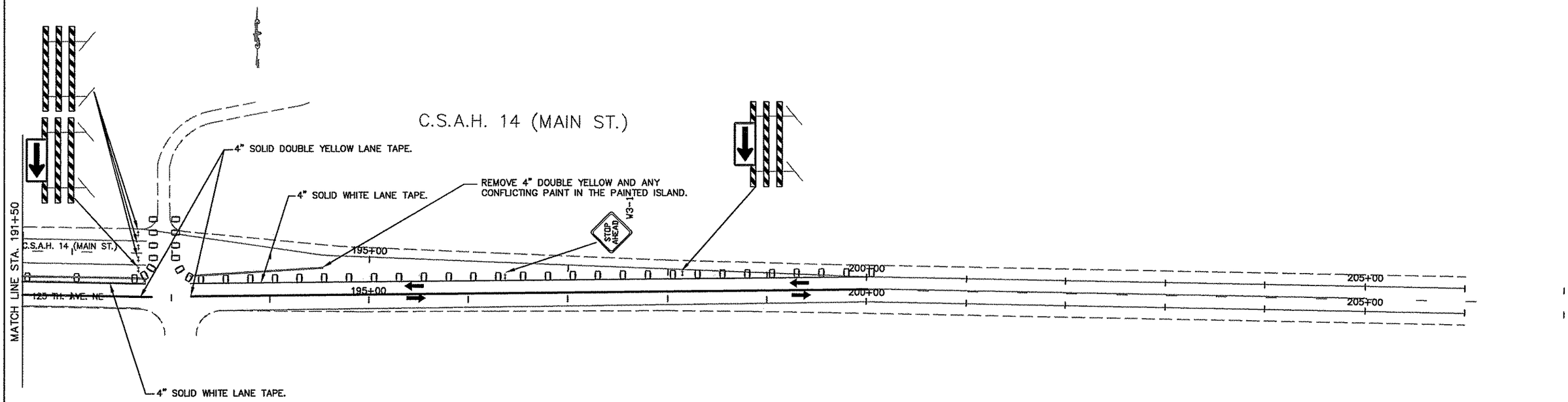
ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13
STATE PROJECT NO. 106-020-23
STATE AID PROJECT NO.
COUNTY PROJECT NO.

TRAFFIC CONTROL STAGE 10
STA. 168+75 TO 187+70.00

Sheet 50 of 226 Sheets





NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-13\Plan\40-TRAFFIC CONT-STAGE 10.dwg 01/27/2004 08:54:36 PM CST

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

PRINT NAME: PETER M. LEMKE

SIGNATURE: Peter M Lemke

DATE: 1-30-2004 REG. NO. 40118

DRAWN BY RLB DATE 9/19/03

DESIGN BY RLB DATE 9/19/03

CHECKED BY PML DATE 9/19/03

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13

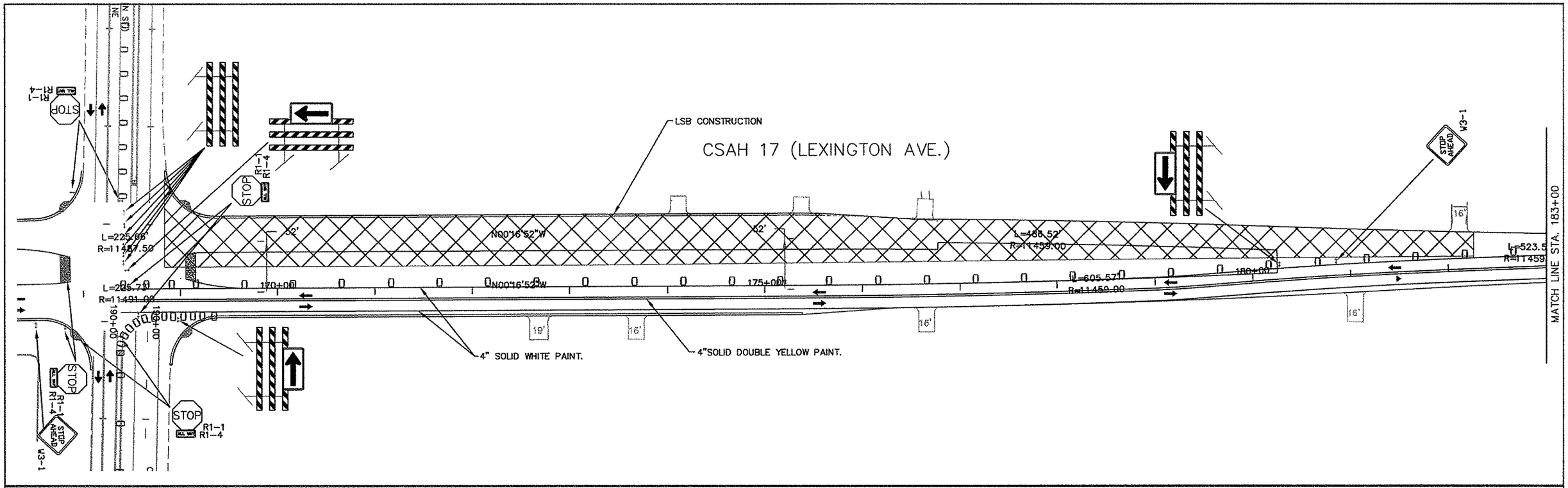
STATE PROJECT NO. 106-020-23

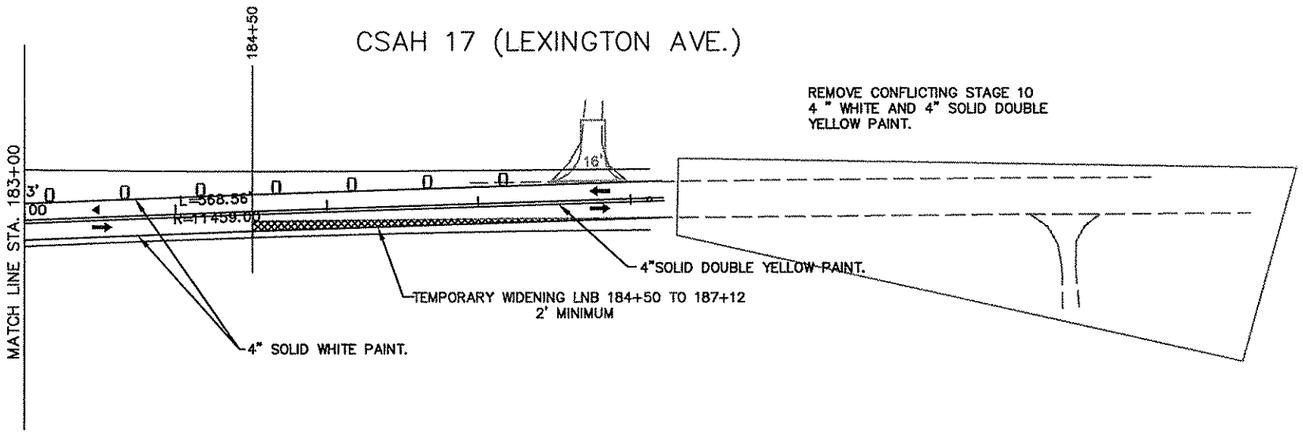
STATE AID PROJECT NO.

COUNTY PROJECT NO.

TRAFFIC CONTROL
STAGE 10
STA. 178+00 TO 193+00

Sheet 51 of 226 Sheets





NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-13\Plan\40-TRAFFIC CON-STAGE 11.dwg 01/27/2004 01:41:26 PM CST

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

PRINT NAME: PETER M. LEMKE

SIGNATURE: Peter M Lemke

DATE: 1-30-2004 REG. NO. 40118

DRAWN BY RLB DATE 9/19/03

DESIGN BY RLB DATE 9/19/03

CHECKED BY PML DATE 9/19/03

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13

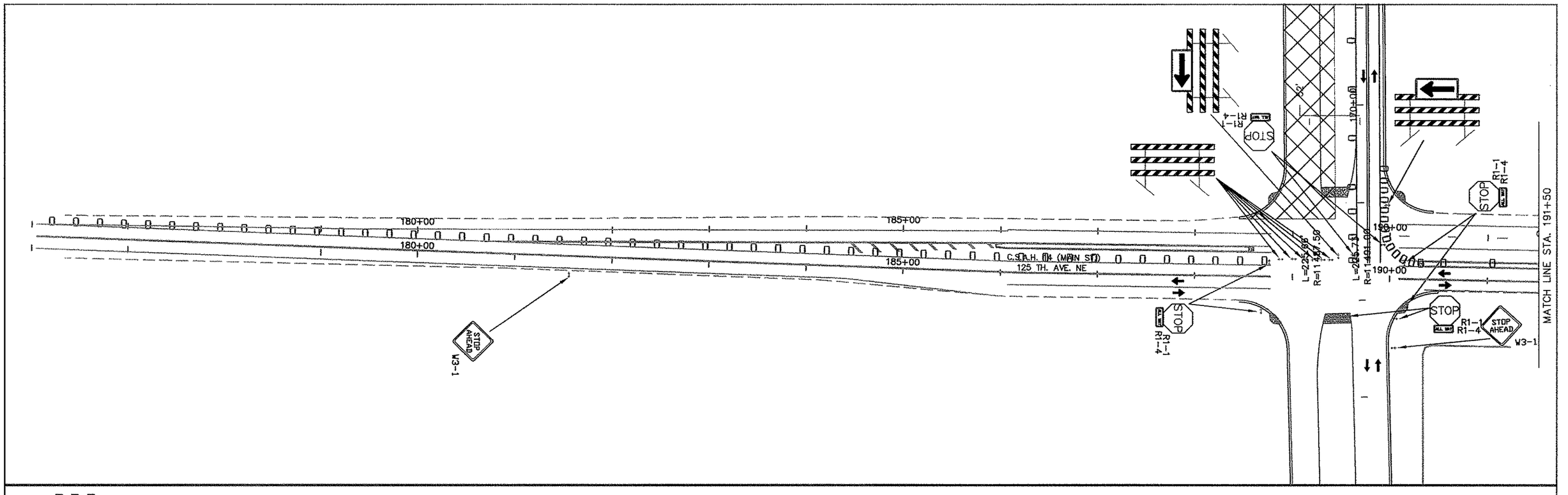
STATE PROJECT NO. 106-020-23

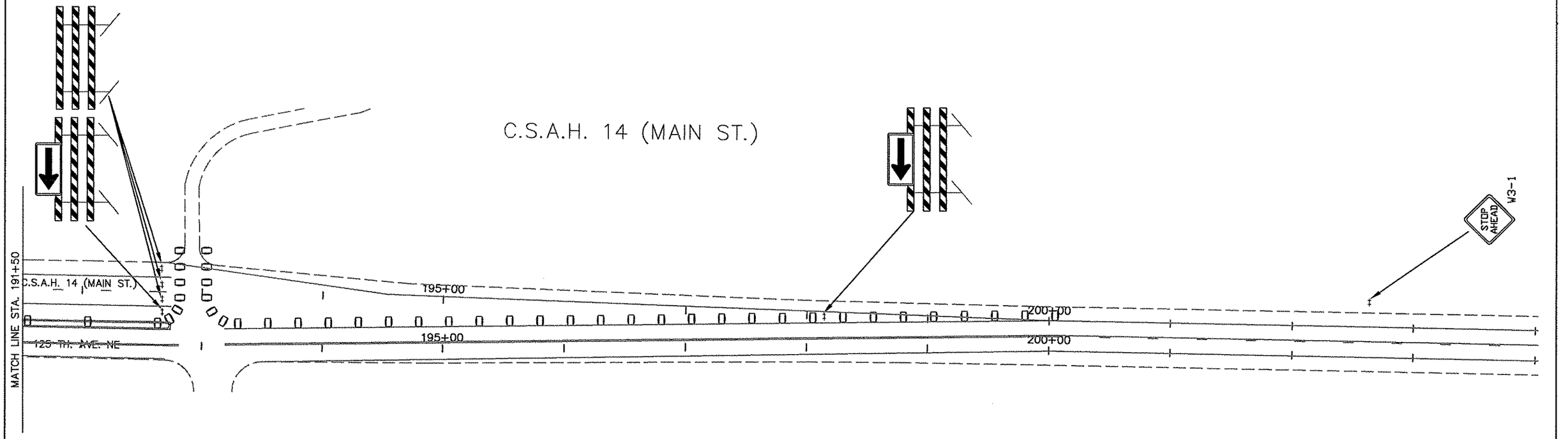
STATE AID PROJECT NO.

COUNTY PROJECT NO.

TRAFFIC CONTROL
STAGE 11
STA. 168+00 TO 193+00

Sheet 52 of 226 Sheets





NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-13\Plan\40-TRAFFIC CON-STAGE 11.dwg 01/27/2004 01:41:26 PM CST

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

PRINT NAME: PETER M. LEMKE

SIGNATURE: Peter M Lemke

DATE: 1-30-2004 REG. NO. 40118

DRAWN BY RLB DATE 9/19/03

DESIGN BY RLB DATE 9/19/03

CHECKED BY PML DATE 9/19/03

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13

STATE PROJECT NO. 106-020-23

STATE AID PROJECT NO.

COUNTY PROJECT NO.

TRAFFIC CONTROL
STAGE 11
STA. 176+00 TO 204+00

Sheet 53 of 226 Sheets

M.U.T.C.D. CODE	SIZE	INSERT	QTY. STG. 4	QTY. STG. 5	QTY. STG. 6	QTY. STG. 7	QTY. STG. 10	QTY. STG. 11
R1-1	48" x 48"	STOP	13	2	15	7	8	8
R1-4	18" x 6"	ALL WAY	13	2	15	7	8	8
R4-7	24" x 30"		1	0	1	0	0	0
X4-11	18" x 18"		1	0	1	0	0	0
W3-1	48" x 48"	STOP AHEAD	9	2	10	5	4	4
TYPE III	8 FOOT		1	0	0	0	9	4
TYPE III	8 FOOT		1	0	0	0	5	3
REFLECTORIZED REBOUNDABLE DRUM			73	25	123	99	107	147

M.U.T.C.D. CODE	SIZE	INSERT	QTY. STG. 4	QTY. STG. 5	QTY. STG. 6	QTY. STG. 7	QTY. STG. 10	QTY. STG. 11
W21-X5	48" x 48"	RIGHT LANE CLOSED	2	0	2	0	0	0
W20-X3R	48" x 48"	MERGE	0	0	0	1	0	0
W21-X5	48" x 48"	LEFT LANE CLOSED	0	0	0	2	0	0
R3-X1	30" x 30"	RIGHT TURN LANE	1	0	1	1	0	3
W1-6 TYPE III	48" x 24" 8 FOOT		1	0	1	1	0	0
W1-6 TYPE III	48" x 24" 8 FOOT		0	0	3	1	4	3

TRAFFIC CONTROL DEVICE & SYMBOLS LEGEND

SYMBOL	DESCRIPTION
	REFLECTORIZED REBOUNDABLE DRUM
	PORTABLE BARRIER WITH BARRIER DELINEATORS SPACED AT 50' Mn/DOT 2563
	IMPACT ATTENUATOR BARRELS Mn/DOT 2554
	SOLID LINE PAVEMENT MARKING WITH TRPM"s (TEMPORARY RAISED PAVEMENT MARKERS) SPACED AT 10' INTERVALS

CONSTRUCTION STAGING ITEMS SUMMARY

U

	PORTABLE CONCRETE BARRIER	IMPACT ATTENTUATOR	WHITE TRPM	YELLOW TRPM	4" SOLID LINE YELLOW LATEX	4" SOLID LINE WHITE LATEX	4" DOUBLE SOLID LINE YELLOW LATEX	REMOVABLE PREFORMED PLASTIC MARKING	REMOVE PAVEMENT MARKING	TEMPORARY LANE MARKING	RELOCATE PORTABLE CONCRETE BARRIER	SAWCUT BITUMINOUS	TEMPORARY BITUMINOUS WIDENING
	LIN FT	EACH	EACH	EACH	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	SQ YD
CONSTRUCTION STAGE 2												230	
CONSTRUCTION STAGE 4	1380	2	50	50	500	3550	1515	200	1700			1840	63
CONSTRUCTION STAGE 5	2550	2	132	132		2900	1450	2600	4000			1989	
CONSTRUCTION STAGE 6			144	144	600	6570	2990	2600	4000		2550		
CONSTRUCTION STAGE 7												1875	
CONSTRUCTION STAGE 8										1120			
CONSTRUCTION STAGE 10	1800	2	640	640		3600	1800		8000	300		2300	2004
CONSTRUCTION STAGE 11		2	60	60		3600	1800			300	1800		1082
TOTALS	**5730**	**8**	**1026**	**1026**	**1100**	**20220**	**9555**	**5400**	**17700**	**1720**	**4350**	**8234**	**3149**

NO	DATE	BY	CKD	APPR	REVISION
1	9-06-03	MFG	PML	PML	FINAL SHEET COMPLETED.

NAME: P:\02-617-13\Plan\40-TRAFFIC CONTROL STGQTY.dgn 02/02/2004 11:41:12 AM CST

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
PRINT NAME: PETER M. LEMKE
SIGNATURE: Peter M Lemke
DATE: 1-30-2004 REG. NO. 40118

DRAWN BY RLB DATE 9/19/03
DESIGN BY RLB DATE 9/19/03
CHECKED BY PML DATE 9/19/03

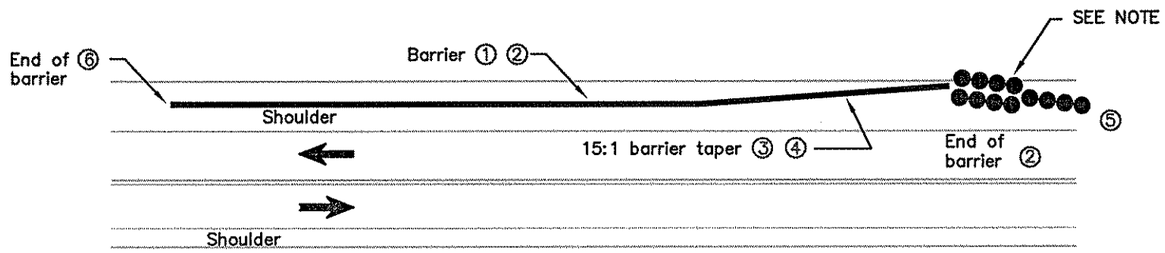
ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13
STATE AID PROJECT NO. 106-020-23
CITY PROJECT NO.
COUNTY PROJECT NO.

TRAFFIC CONTROL SIGNING AND STAGING QUANTITIES

Sheet 54 of 226 Sheets

PORTABLE CONCRETE BARRIER PLACEMENT



① It is desirable to maintain full shoulder width whenever possible. If not possible, minimum desirable lateral offsets are based on the following speeds:

60MPH – 8.0 ft.
50MPH – 6.5 ft.
40MPH – 5.0 ft.

For restricted conditions, lesser offsets May be used. The offsets should be a minimum of 2 ft. unless the conditions are extreme. Lateral offsets are measured to the bottom of the barrier. Barrier offset from edge of through lane should not exceed 15 ft.

② Desirable treatments for exposed barrier ends are: a connection to existing barrier: impact attenuator: taper away to the edge the clear zone: and extending through a plate beam guardrail by removing panel.

For posted speeds 30MPH or less, the tapering away from traffic is desirable and use of pact attenuator are optional.

③ A 10:1 taper may be used when posted speed limit is 35MPH or less.

④ If the barrier is to be extended beyond the shoulder, additional fill will be needed in order to provide a flat (10:1) approach area to the barrier. Fill will be incidental to Barrier and/or IMPACT ATTENUATOR. (see shoulder fill detail below)

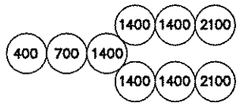
⑤ The impact attenuator should be offset a minimum of 2 FT. from the edge of the through lane (see Sand Barrel Offset detail). The impact attenuator should be oriented to accommodate the probable impact angle of an encroaching vehicle. For most roadside conditions, an angle approximately 10 degrees, as measured between the highway and the impact attenuator longitudinal centerline, is considered appropriate (*see Shoulder Fill detail). For Sand Barrel Arrangement see detail below.

⑥ For Two–LAne Two Way traffic both ends of the barrier should be treated in the same manner as described in ②

NOTE:
At the direction of the Engineer, other approved impact attenuates can be substituted in lieu of the sand barrels especially where redirection is desired or at width restriction area.

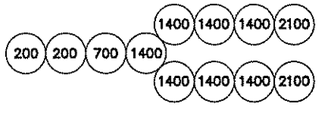
* See M.U.T.C.D. Manual page 6F–49 figure VI–12b for shoulder fill details.

SAND FILLED BARREL ARRANGEMENT



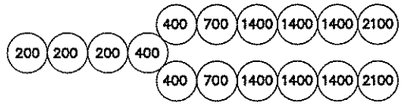
POSTED SPEED 35–40 MPH

Direction of travel



POSTED SPEED 45–50 MPH

Direction of travel



POSTED SPEED 55–60 MPH

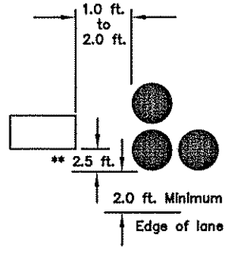
Direction of travel

NOTE:

1. Numbers indicate standard module weights in pounds.
2. These arrangemnets meet the Energite Systems specifications.
3. See the manufacturer's specifications for the Fitch System.

See M.U.T.C.D. Manual page 6F–49 figure VI–12b for sand barrel details.

SAND BARREL OFFSETS



** Distance may be reduced to a minimum of 15 in. (1.25ft.) This is acceptable only where a greater offset would cause unacceptable interference with traffic.

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-13\Plan\55 END TREATMENT.dwg 09/26/2003 02:20:32 PM CDT

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

PRINT NAME: PETER M. LEMKE
SIGNATURE: Peter M Lemke
DATE: 9/26/2003 REG. NO. 40118

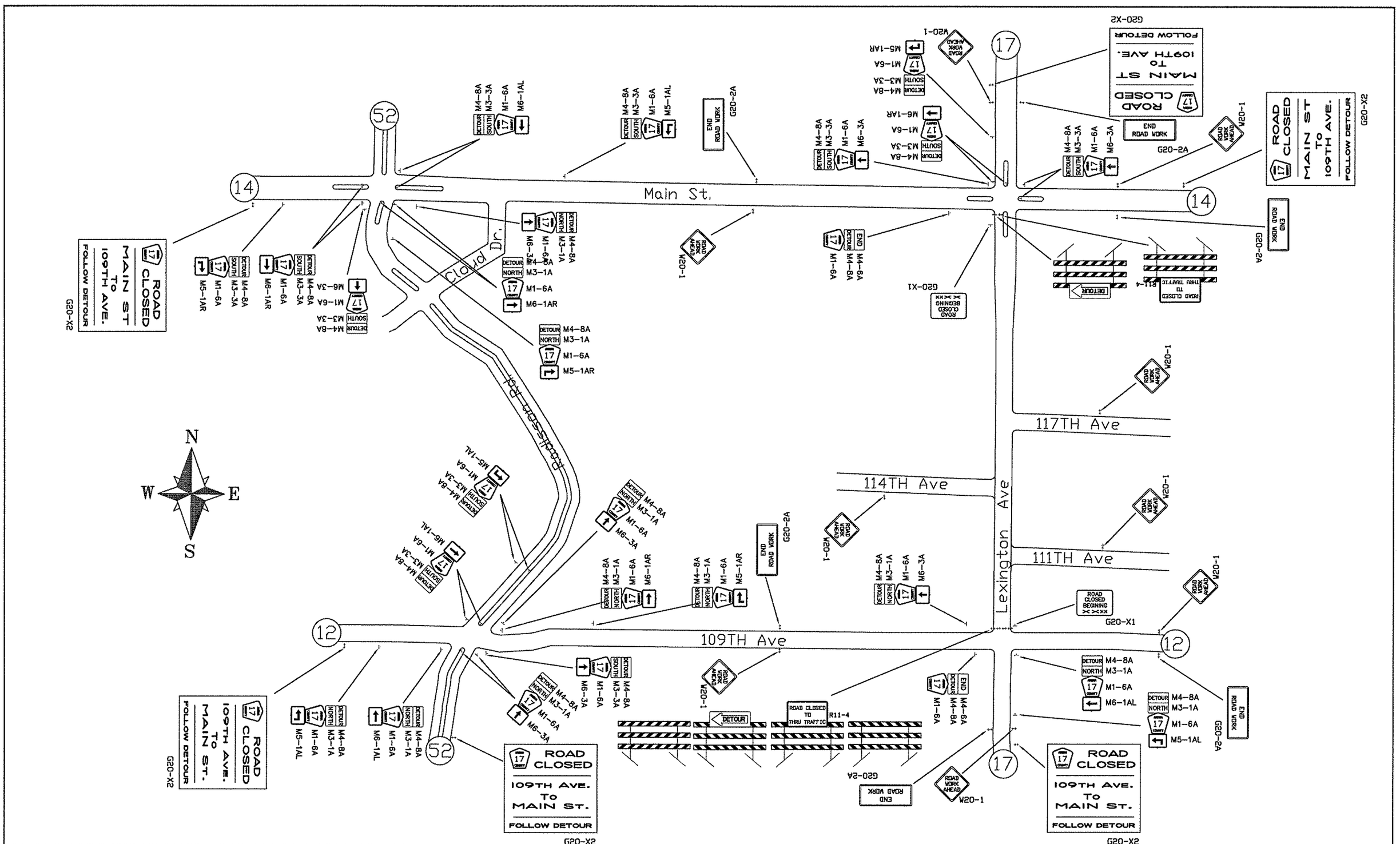
DRAWN BY RLB DATE 9/21/03
DESIGN BY RLB DATE 9/21/03
CHECKED BY PML DATE 9/21/03

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13
STATE PROJECT NO. 106-020-23
STATE AID PROJECT NO.
COUNTY PROJECT NO.

TRAFFIC CONTROL BARRIER AND ATTENUATOR DETAILS

Sheet 55 of 226 Sheets



NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-13\Plan\XX-XX Detour.dwg 09/23/03 07:26:21 AM CDT

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

PRINT NAME: PETER M. LEMKE

SIGNATURE: Peter M Lemke

DATE: 9-26-2003 REG. NO. 40118

DRAWN BY RLB DATE 09/08/03

DESIGN BY RLB DATE 09/08/03

CHECKED BY PML DATE 09/08/03

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13

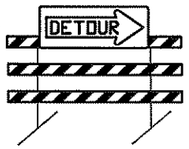
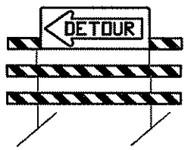
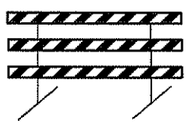
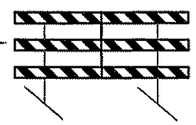
STATE PROJECT NO. 106-020-23

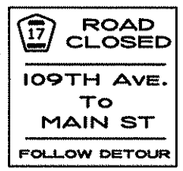
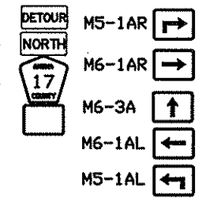
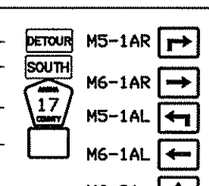
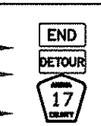
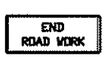
STATE AID PROJECT NO.

COUNTY PROJECT NO.

DETOUR PLAN
CSAH 17

Sheet 56 of 226 Sheets

M. U. T. C. D. CODE	SIZE	INSERT	QUANTITY
W20-1	48" x 48"		• 9
M4-10R TYPE III	48" x 18" 8 FOOT		SEE NOTE ② • 1
M4-10L TYPE III	48" x 18" 8 FOOT		SEE NOTE ② • 1
R11-4 TYPE III	60" x 30" 8 FOOT		SEE NOTE ② • 1
R11-4 TYPE III	60" x 30" 8 FOOT		SEE NOTE ② • 1
TYPE III	8 FOOT		• 1
TYPE III	8 FOOT		• 1

M. U. T. C. D. CODE	SIZE	INSERT	QUANTITY
G20-X2	132" x 108"		• 3
G20-X2	132" x 108"		• 3
G20-X1	60" x 48"		• 2
M4-8A M3-1A M1-6A 	24" x 12" 24" x 12" 24" x 24" 21" x 15"		• 2 • 3 • 5 • 2 • 2
M4-8A M3-3A M1-6A 	24" x 12" 24" x 12" 24" x 24" 21" x 15"		• 2 • 4 • 3 • 4 • 5
M4-6A M4-8A M1-6A	24" x 12" 24" x 12" 24" x 24"		• 2
G20-2A	24" x 48"		• 6

✳ SIGN TO BE INSTALLED A MINIMUM OF SEVEN DAYS PRIOR TO ACTUAL CLOSING DATE OF ROAD CLOSURE AND IMPLEMENTATION OF DETOUR SIGING. SIGNS TO BE REMOVED AT TIME OF DETOUR INSTALLATION.

NOTES:

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

2) ALL TYPE III BARICADES SHALL BE REFLECTORIZED ON BOTH SIDES. BARRICADES MARKINGS SHALL BE SLANTED IN ACCORDANCE WITH THE MN MUTCD.

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-13\Plan\45-Detour.dwg 11/10/2003 10:06:24 AM CST

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
PRINT NAME: PETER M. LEMKE
SIGNATURE: Peter M Lemke
DATE: 9-26-2003 REG. NO. 40118

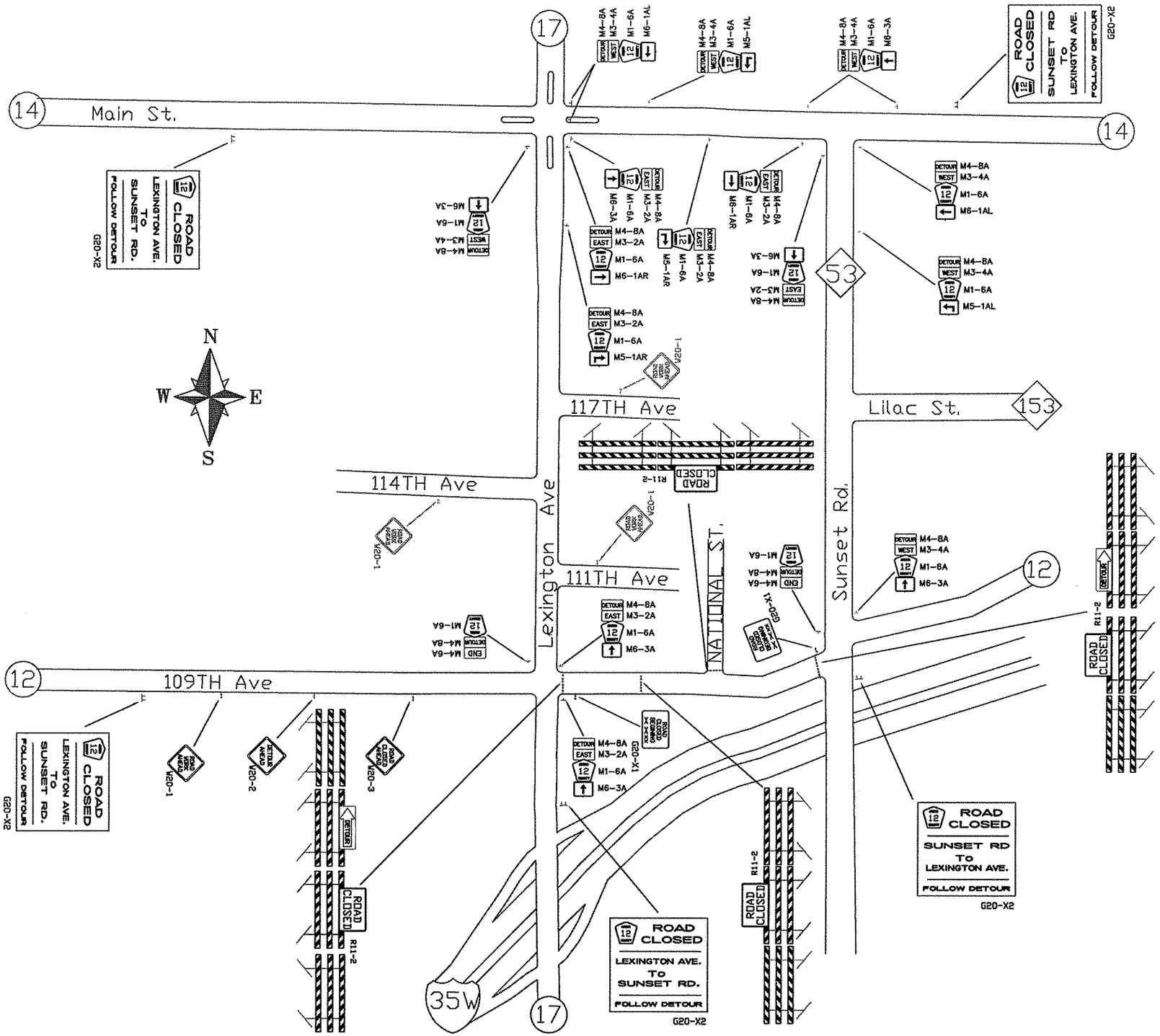
DRAWN BY RLB DATE 09/09/03
DESIGN BY RLB DATE 09/09/03
CHECKED BY PML DATE 09/09/03

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13
STATE PROJECT NO. 106-020-23
STATE AID PROJECT NO.
COUNTY PROJECT NO.

DETOUR CSAH 17
SIGN QUANTITIES

Sheet 57 of 226 Sheets



NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-13\Plan\45-Detour2.dwg 11/10/2003 10:38:31 AM CST

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

PRINT NAME: PETER M. LEMKE

SIGNATURE: Peter M Lemke

DATE: 1-30-2004 REG. NO. 40118

DRAWN BY RLB DATE 09/08/03

DESIGN BY RLB DATE 09/08/03

CHECKED BY PML DATE 09/08/03

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13

STATE PROJECT NO. 106-020-23

STATE AID PROJECT NO.

COUNTY PROJECT NO.

DETOUR PLAN
CSAH 12

Sheet 58 of 226 Sheets

M. U. T. C. D. CODE	SIZE	INSERT	QUANTITY
W20-1	48" x 48"	ROAD WORK AHEAD	1
M4-10R TYPE III	48" x 18" 8 FOOT	DETOUR	SEE NOTE (2) 1
M4-10L TYPE III	48" x 18" 8 FOOT	DETOUR	SEE NOTE (2) 1
TYPE III	8 FOOT		4
TYPE III	8 FOOT		4
R11-2 TYPE III	48" x 30" 8 FOOT	ROAD CLOSED	SEE NOTE (2) 4

M. U. T. C. D. CODE	SIZE	INSERT	QUANTITY
G20-X2	132" x 108"	ROAD CLOSED SUNSET RD TO LEXINGTON AVE FOLLOW DETOUR	2
G20-X2	132" x 108"	ROAD CLOSED LEXINGTON AVE TO SUNSET RD FOLLOW DETOUR	3
G20-X1	60" x 48"	ROAD CLOSED BEGINING MONTH DAY	2
M4-8A M3-2A M1-6A	24" x 12" 24" x 12" 24" x 24" 21" x 15"	DETOUR EAST ANOKA 12 COUNTY M5-1AR M6-1AR M6-3A	2 2 4
M4-8A M3-4A M1-6A	24" x 12" 24" x 12" 24" x 24" 21" x 15"	DETOUR WEST ANOKA 12 COUNTY M5-1AL M6-1AL M6-3A	2 3 4
M4-6A M4-8A M1-6A	24" x 12" 24" x 12" 24" x 24"	END DETOUR ANOKA 12 COUNTY	2
W20-3	48" x 48"	ROAD CLOSED AHEAD	1
W20-2	48" x 48"	DETOUR AHEAD	1

✳ SIGN TO BE INSTALLED A MINIMUM OF SEVEN DAYS PRIOR TO ACTUAL CLOSING DATE OF ROAD CLOSURE AND IMPLEMENTATION OF DETOUR SIGING. SIGNS TO BE REMOVED AT TIME OF DETOUR INSTALLATION.

NOTES:

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

2) ALL TYPE III BARICADES SHALL BE REFLECTORIZED ON BOTH SIDES. BARRICADES MARKINGS SHALL BE SLANTED IN ACCORDANCE WITH THE MN MUTCD.

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-13\Plan\45-Detour2.dwg 11/10/2003 10:38:31 AM CST

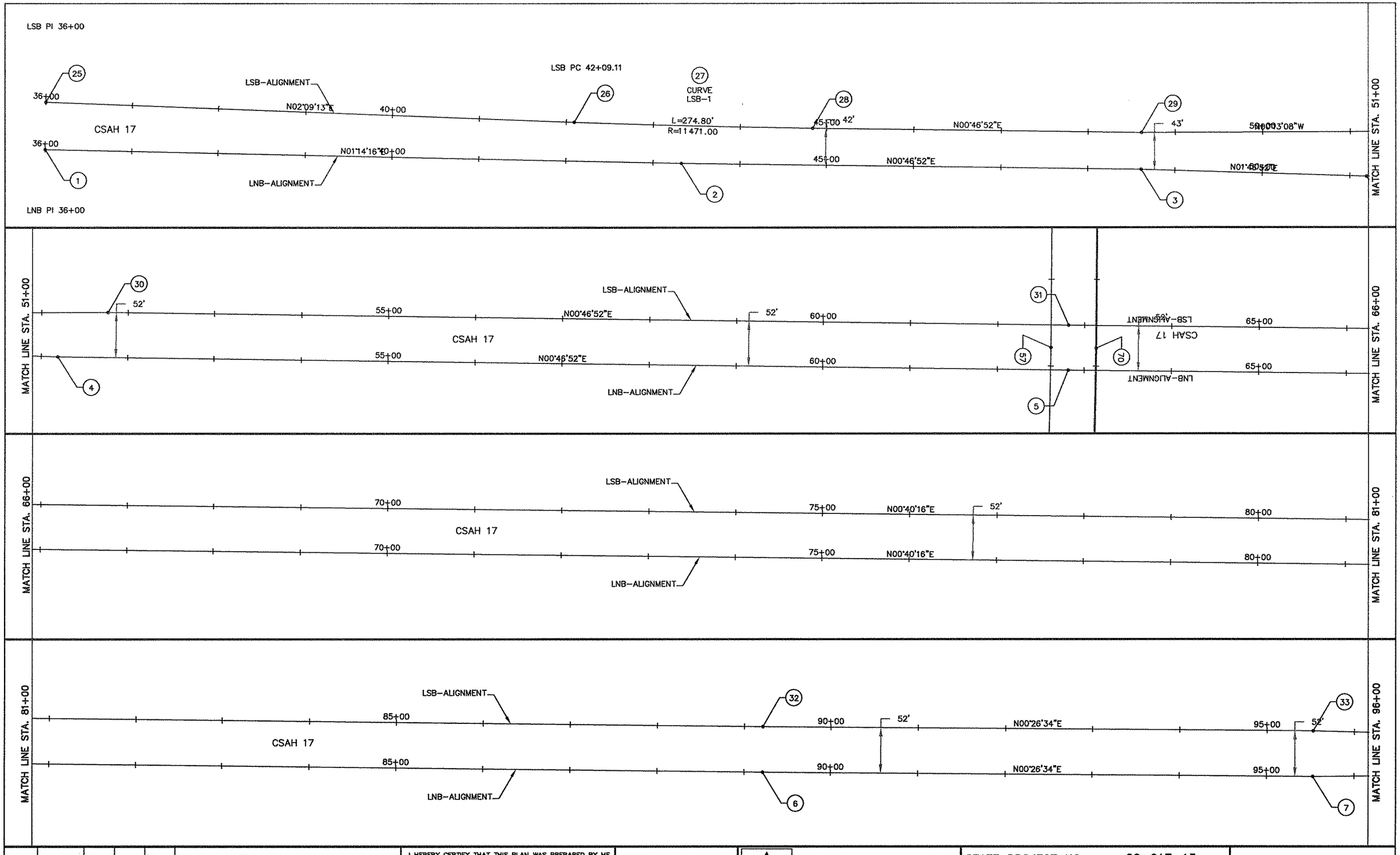
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
PRINT NAME: PETER M. LEMKE
SIGNATURE: Peter M Lemke
DATE: 1-30-2004 REG. NO. 40118

DRAWN BY RLB DATE 09/09/03
DESIGN BY RLB DATE 09/09/03
CHECKED BY PML DATE 09/09/03

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13
STATE PROJECT NO. 106-020-23
STATE AID PROJECT NO.
COUNTY PROJECT NO.

DETOUR CSAH 12
SIGN QUANTITIES



NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-13\Plan\50-Alignment Plan.dwg 01/30/2004 05:39:14 PM CST

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

PRINT NAME: PETER M. LEMKE

SIGNATURE: Peter M Lemke

DATE: 1-30-2004 REG. NO. 40118

DRAWN BY CSO DATE 8/29/03

DESIGN BY MN DATE 09/23/03

CHECKED BY MN DATE 09/23/03

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13

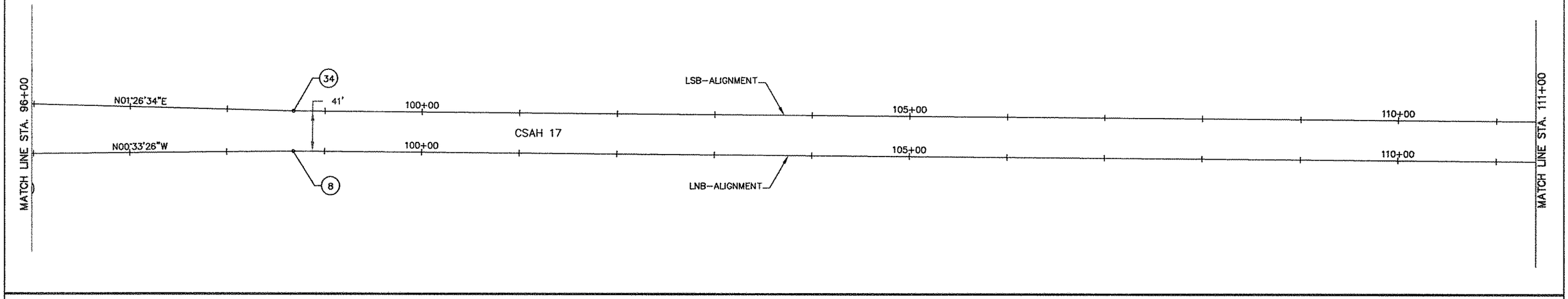
STATE PROJECT NO. 106-020-23

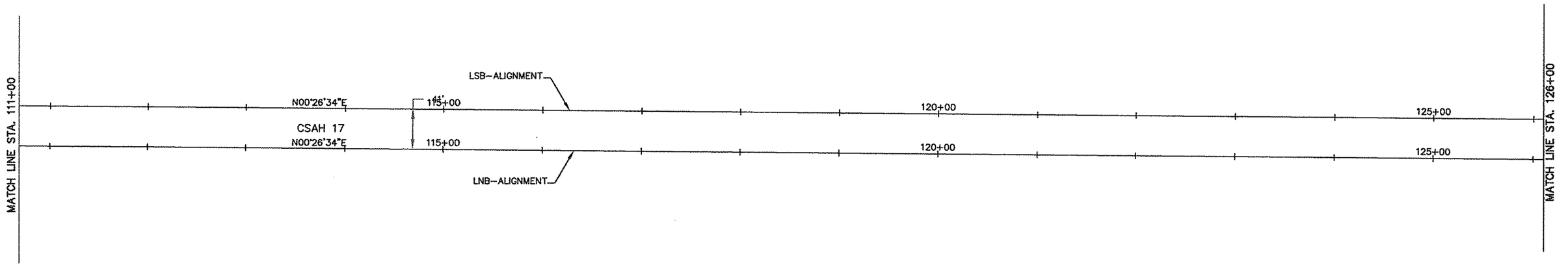
STATE AID PROJECT NO.

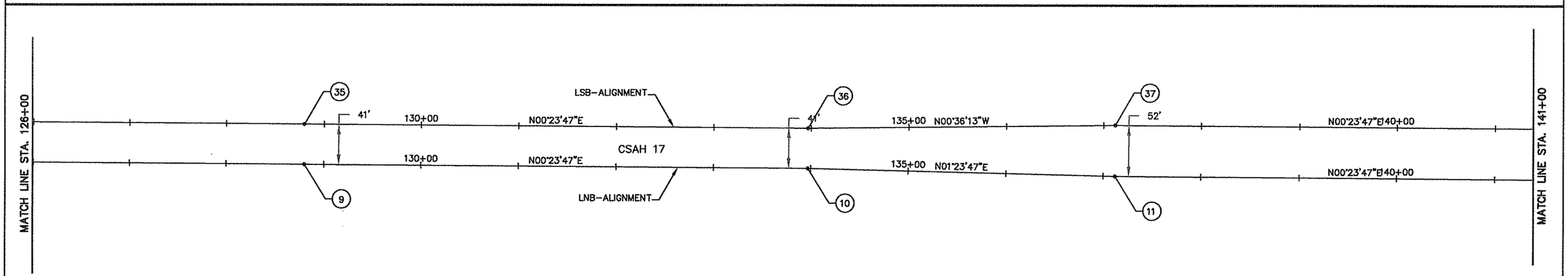
COUNTY PROJECT NO.

ALIGNMENT PLAN

Sheet 60 of 226 Sheets







NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-13\Plan\50-Alignment Plan.dwg 01/30/2004 05:39:14 PM CST

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

PRINT NAME: PETER M. LEMKE

SIGNATURE: Peter M Lemke

DATE: 1-30-2004 REG. NO. 40118

DRAWN BY CSO DATE 8/29/03

DESIGN BY MN DATE 09/23/03

CHECKED BY MN DATE 09/23/03

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13

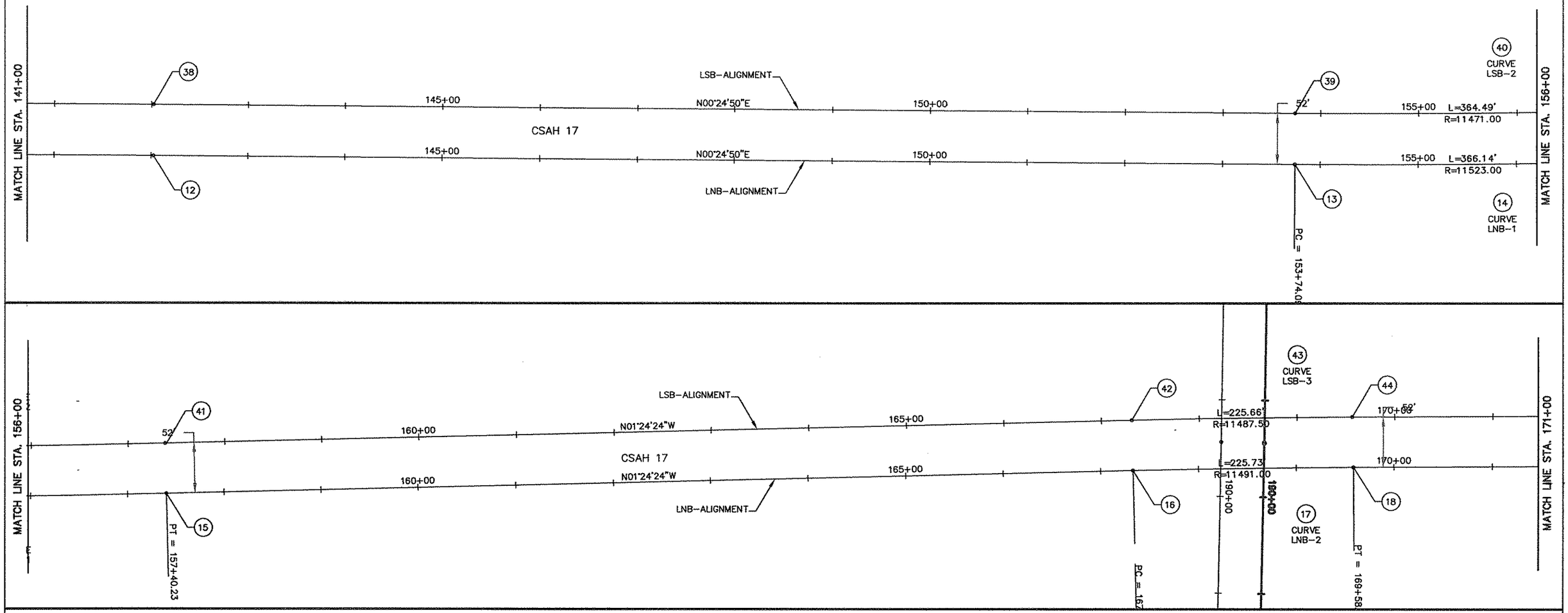
STATE PROJECT NO. 106-020-23

STATE AID PROJECT NO.

COUNTY PROJECT NO.

ALIGNMENT PLAN

Sheet 61 of 226 Sheets



NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-13\Plan\50-Alignment Plan.dwg 01/30/2004 05:39:14 PM CST

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

PRINT NAME: PETER M. LEMKE

SIGNATURE: Peter M Lemke

DATE: 1-30-2004 REG. NO. 40118

DRAWN BY CSQ DATE 08/29/03

DESIGN BY MN DATE 09/23/03

CHECKED BY MN DATE 09/23/03

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13

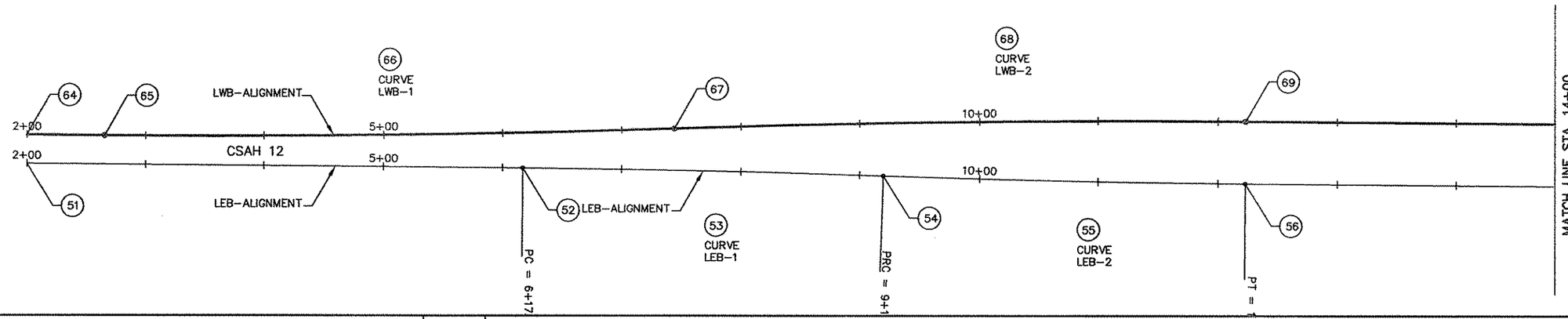
STATE PROJECT NO. 106-020-23

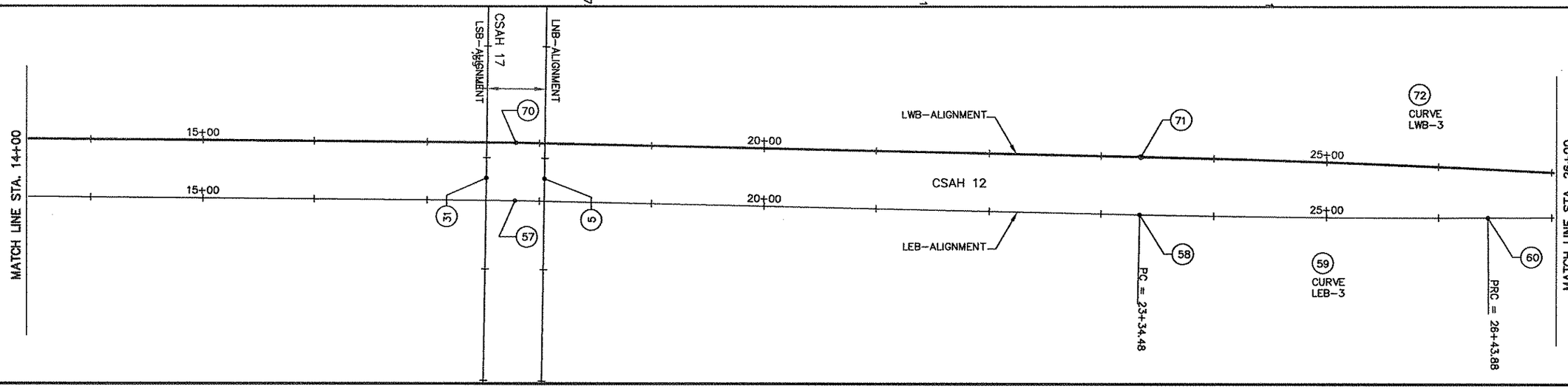
STATE AID PROJECT NO.

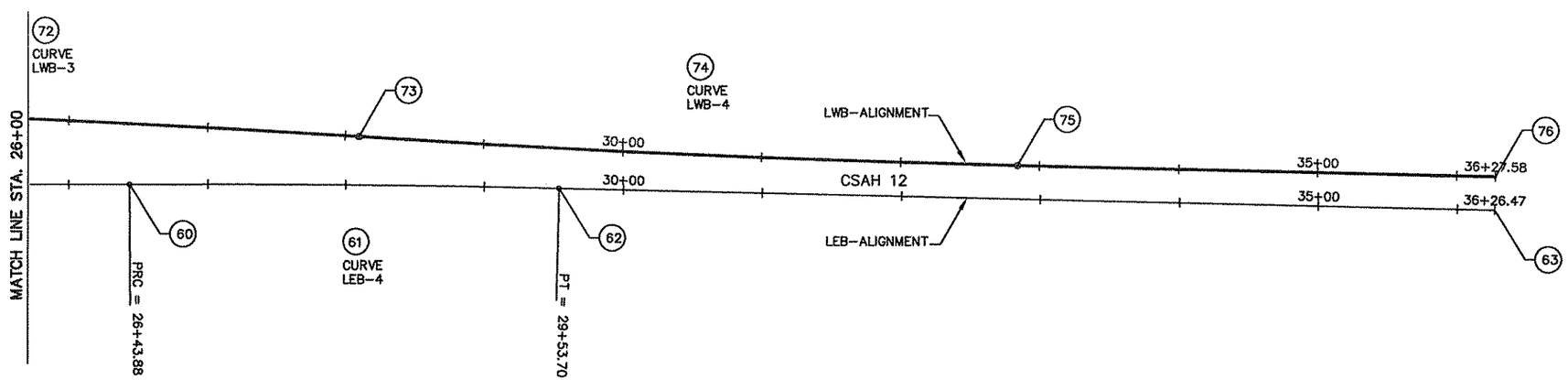
COUNTY PROJECT NO.

ALIGNMENT PLAN

Sheet 62 of 226 Sheets







NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-13\Plan\50-Alignment Plan.dwg 01/30/2004 05:39:14 PM CST

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

PRINT NAME: PETER M. LEMKE

SIGNATURE: Peter M Lemke

DATE: 1-30-2004 REG. NO. 40118

DRAWN BY CSO DATE 08/29/03

DESIGN BY MN DATE 09/23/03

CHECKED BY MN DATE 09/23/03

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13

STATE PROJECT NO. 106-020-23

STATE AID PROJECT NO.

COUNTY PROJECT NO.

ALIGNMENT PLAN

Sheet 63 of 226 Sheets

ALIGNMENT TABULATION -LNB CSAH 17

CURVE NO.	POINT NO.	POINT	STATION	LNB CURVE DATA					NORTHING	EASTING	BEARING
				DELTA	DEGREE	RADIUS	TANGENT	LENGTH			
	1	PI	36+00	0-27-24.66				732.85	145610.0681	526693.1650	N 01-14-16.46 E
	2	PI	43+32.85	0-27-24.66				528.66	146342.7443	526708.9973	N 00-46-51.80 E
	3	PI	48+61.51	1-00-00.00				257.84	146871.3531	526716.2038	N 01-46-51.80 E
	4	PI	51+19.35	1-00-00.00				1162.40	147129.0727	526724.2176	N 00-46-51.80 E
	5	PI	62+81.75	0-06-35.80				2639.69	148291.3605	526740.0629	N 00-40-16.00 E
	6	PI	89+21.44	0-13-42.00				631.58	150930.8724	526770.9812	N 00-26-34.00 E
	7	PI	95+53.02	1-00-00.00				315.14	151562.4381	526775.8620	N 00-33-26.00 W
	8	PI	98+68.17	1-00-00.00				3011.77	151877.5660	526772.7972	N 00-26-34.00 E
	9	PI	128+79.94	0-02-47.00				517.06	154889.2491	526796.0717	N 00-23-47.00 E
	10	PI	133+97	1-00-00.00				490.37	155406.2997	526799.6489	N 01-23-47.00 E
	11	PI	137+12.14	1-00-00.00				315.14	155721.3489	526807.3286	N 00-23-47.00 E
	12	PI	142+02.51	0-01-03.00				1354.66	156211.7052	526810.7211	N 00-24-50.00 E
	13	PC	153+74.09						157383.2489	526819.1842	PC
LNB-1	14	PI	155+57.17	1-49-14.00	0-29-50	11523.00	183.09	1175.80	157566.3294	526820.5067	N 01-24-24.00 W
	15	PT	157+40.23						157749.3595	526816.0123	PT
	16	PC	167+32.94						158741.7728	526791.6426	PC
LNB-2	17	PI	168+45.81	1-07-31.87	0-29-55	11491.00	112.87	882.57	158854.6073	526788.8750	N 00-16-46.49 W
	18	PT	169+58.67						158967.4743	526788.3242	PT
	19	PC	175+38.39						159547.1844	526785.4796	PC
LNB-3	20	PI	178+41.24	03-01-40.39	0-30-00	11459.00	302.86	587.19	159850.0358	526783.9935	N 03-18-32.52 W
	21	PT-PC	181+43.95					605.57	160152.3858	526766.5123	N 01-47-42.32 W
LNB-4	22	PI	184+28.29	02-50-34.23	0-30-00	11459.00	284.34	615.26	160436.2503	526750.0999	N 00-27-58.29 W
	23	PT	187+12.51						160720.5794	526747.7864	PT
	24	PI	190+43.43					330.92	161051.4876	526745.0938	

ALIGNMENT TABULATION -LSB CSAH 17

CURVE NO.	POINT NO.	POINT	STATION	LSB CURVE DATA					NORTHING	EASTING	BEARING
				DELTA	DEGREE	RADIUS	TANGENT	LENGTH			
	25	PI	36+00					746.52	145610.9407	526639.1335	N 02-09-13.03 E
	26	PC	42+09.11						146219.6234	526662.0233	PC
LSB-1	27	PI	43+46.52	1-22-21.23	0-29-58	11471.00	137.40	274.80	146356.9311	526667.1868	N 00-46-51.80 E
	28	PT	44+83.91						146494.3230	526669.0599	PT
	29	PI	48+61.55	1-00-00.00				315.14	146871.9257	526674.2077	N 00-13-08.20 W
	30	PI	51+76.69	1-00-00.00				1105.06	147187.0661	526673.0034	N 00-46-51.80 E
	31	PI	62+81.75	0-06-35.80				2639.54	148292.0195	526688.0671	N 00-40-16.00 E
	32	PI	89+21.29	0-13-42.00				631.48	150931.3779	526718.9836	N 00-26-34.00 E
	33	PI	95+52.77	1-00-00.00				315.14	151562.8400	526723.8635	N 01-26-34.00 E
	34	PI	98+67.91	1-00-00.00				3011.76	151877.8829	526731.7984	N 00-26-34.00 E
	35	PI	128+79.67	0-02-47.00				517.05	154889.5493	526755.0728	N 00-23-47.00 E
	36	PI	133+96.71	1-00-00.00				315.14	155406.5834	526758.6498	N 00-36-13.00 W
	37	PI	137+11.85	1-00-00.00				490.38	155721.7087	526755.3299	N 00-23-47.00 E
	38	PI	142+02.23	0-01-03.00				1353.84	156212.0729	526758.7224	N 00-24-50.00 E
	39	PC	153+73.81						157383.6245	526767.1855	PC
LSB-2	40	PI	155+56.07	1-49-14.00	0-29-58	11471.00	182.26	1175.04	157565.8788	526768.5021	N 01-24-24.00 W
	41	PT	157+38.30						157748.0830	526764.0279	PT
	42	PC	167+31.08						158740.5650	526739.6566	PC
LSB-3	43	PI	168+43.92	1-07-31.87	0-29-58	11487.50	112.83	112.83	158853.3650	526736.8851	N 00-16-55.04 W
	44	PT	169+56.74						158966.1977	526736.3299	PT
	45	PC	175+37.52						159546.9716	526733.4800	PC
LSB-4	46	PI	177+80.82	2-25-57.55	0-30-00	11459.00	243.30	505.11	159790.2671	526732.2862	N 02-09-05.42 E
	47	PT PC	180+24.05						160033.3940	526741.4201	PT-PC
LSB-5	48	PI	182+85.86	2-37-03.71	0-30-00	11459.00	261.81	756.49	160295.0211	526751.2490	N 00-27-58.29 W
	49	PT	185+47.58						160556.8241	526749.1188	PT
	50	PI	190+42.26					494.68	161051.4876	526745.0938	

ALIGNMENT TABULATION -LEB CSAH 12

CURVE NO.	POINT NO.	POINT	STATION	LEB CURVE DATA					NORTHING	EASTING	BEARING
				DELTA	DEGREE	RADIUS	TANGENT	LENGTH			
	51	POT	2+00.00					568.43	148292.5952	525135.4963	S 89-31-54 E
	52	PC	6+17.03						148289.1860	525552.5126	PC
LEB-1	53	PI	7+68.43	1-30-50	0-30-00	11459.00	151.40	302.78	148287.9483	525703.9077	S 88-01-04 E
	54	PT-PC	9+19.81						148282.7112	525855.2172	PT
LEB-2	55	PI	10+71.21	1-30-50	0-30-00	11459.00	151.40	707.26	148277.4740	526006.5267	S 89-31-54 E
	56	PT	12+22.60						148276.2363	526157.9218	PC
	57	PI	17+78.46	0-46-35				710.73	148271.6922	526713.7665	S 88-49-19 E
	58	PC	23+34.48						148259.6134	527269.6604	PT
LEB-3	59	PI	24+89.19	1-32-49	0-30-00	11459.00	154.71	309.63	148256.2526	527424.3290	N 89-41-52 E
	60	PT-PC	26+43.88						148257.0686	527579.0319	PC
LEB-4	61	PI	27+98.80	1-32-57	0-30-00	11459.00	154.92	309.83	148257.8858	527733.9538	S 88-45-11 E
	62	PT	29+53.70						148254.5144	527888.8412	PT
	63	POT	36+26.47						148239.8739	528561.4435	

ALIGNMENT TABULATION -LWB CSAH 12

CURVE NO.	POINT NO.	POINT	STATION	LWB CURVE DATA					NORTHING	EASTING	BEARING
				DELTA	DEGREE	RADIUS	TANGENT	LENGTH			
	64	POT	2+00.00					304.70	148316.5944	525135.6925	S 89-31-53.77 E
	65	PC	2+65.28						148316.0607	525200.9693	PC
LWB-1	66	PI	5+04.69	2-23-38	0-30-00	11459.00	239.42	478.76	148314.1036	525440.3773	N 88-04-28.39 E
	67	PRC	7+44.04						148322.1477	525679.6581	PT
LWB-2	68	PI	9+83.46	2-23-38	0-30-00	11459.00	239.42	478.76	148330.1918	525918.9389	S 89-31-53.77 E
	69	PT	12+22.80						148328.2346	526158.3469	PC
	70	PI	17+79.02	0-46-35				793.75	148323.6876	526714.5439	S 88-45-18.85 E
	71	PC	23+35.40						148311.6011	527270.7900	PT
LWB-3	72	PI	25+72.77	2-22-24	0-30-00	11459.00	237.37	474.67	148306.4446	527508.1029	S 86-22-54.68 E
	73	PRC	28+10.07						148291.4651	527744.9986	PC
LWB-4	74	PI	30+47.22		0-30-00	11459.00	237.15	474.23	148276.4994	527981.6758	S 88-45-10.97 E
	75	PT	32+84.30						148271.3386	528218.7695	PT
	76	POT	36+27.58						148263.8682	528561.9658	

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-13\Plan\50-Alignment Plan.dwg 09/23/2003 12:23:24 PM CDT

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

PRINT NAME: PETER M. LEMKE

SIGNATURE: Peter M Lemke

DATE: 9-26-2003 REG. NO. 40118

DRAWN BY CSO DATE 8/29/03

DESIGN BY MN DATE 09/23/03

CHECKED BY MN DATE 09/23/03

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13

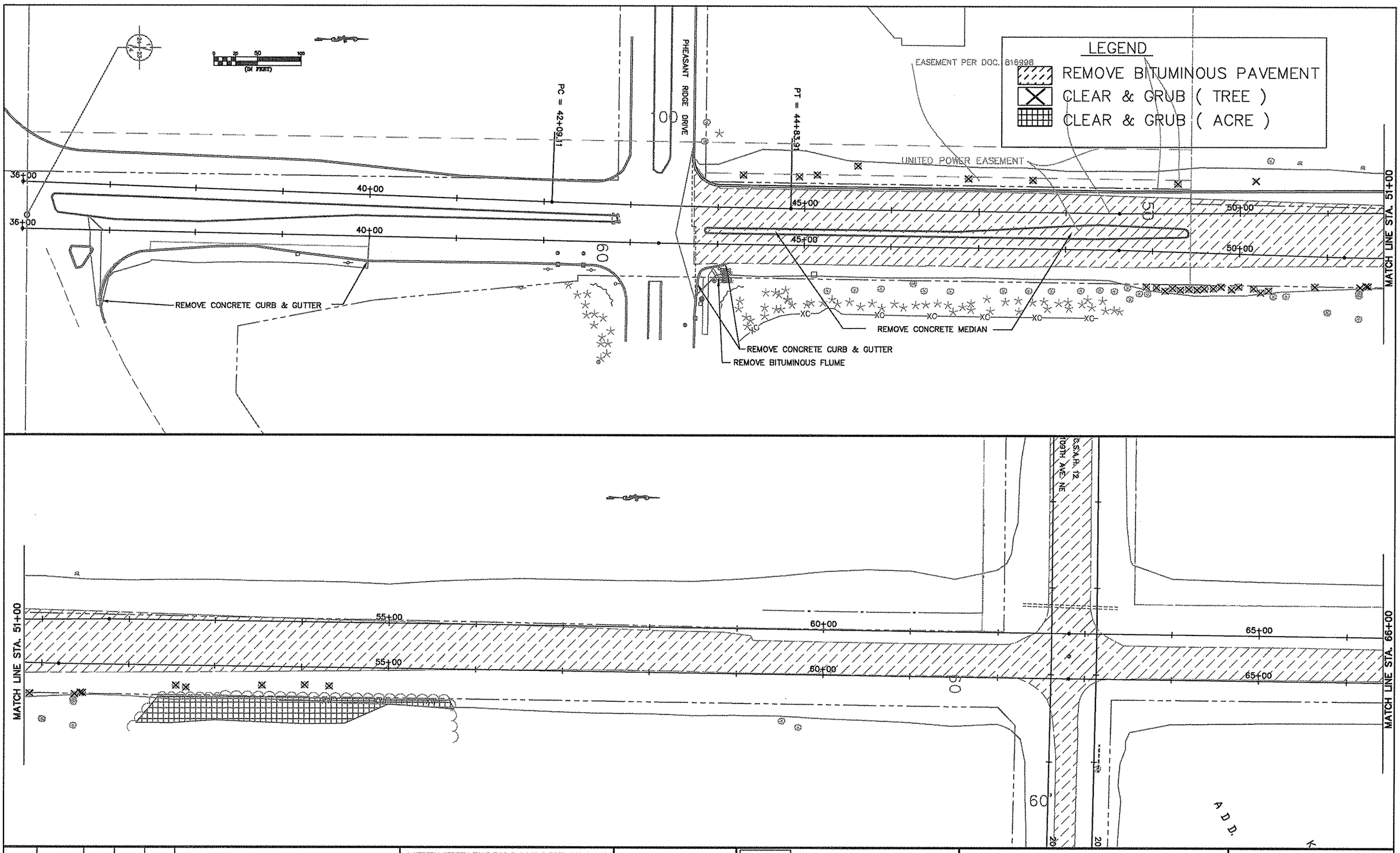
STATE PROJECT NO. 106-020-23

STATE AID PROJECT NO.

COUNTY PROJECT NO.

ALIGNMENT TABULATION

Sheet 64 of 226 Sheets



NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-13\Plan\51-Removal Plan.dwg 10/20/2003 03:00:50 PM CDT

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

PRINT NAME: PETER M. LEMKE

SIGNATURE: Peter M Lemke

DATE: 9-26-2003 REG. NO. 40118

DRAWN BY CSO DATE 8/20/03

DESIGN BY PML DATE 7/16/03

CHECKED BY PML DATE 8/24/03

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13

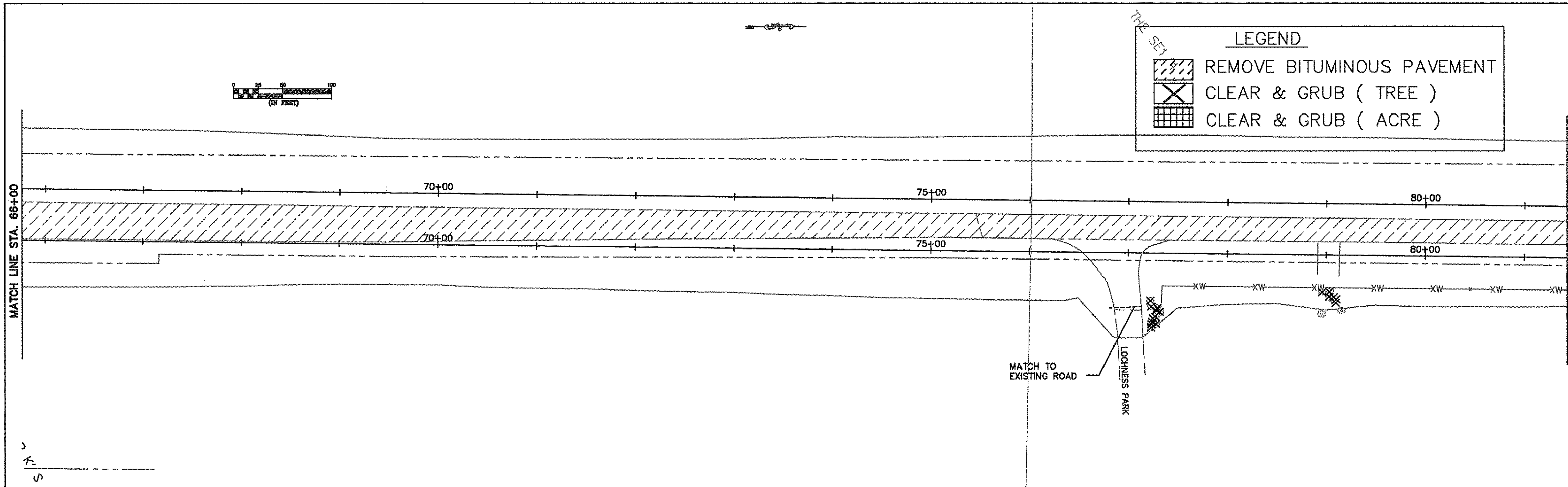
STATE PROJECT NO. 106-020-23

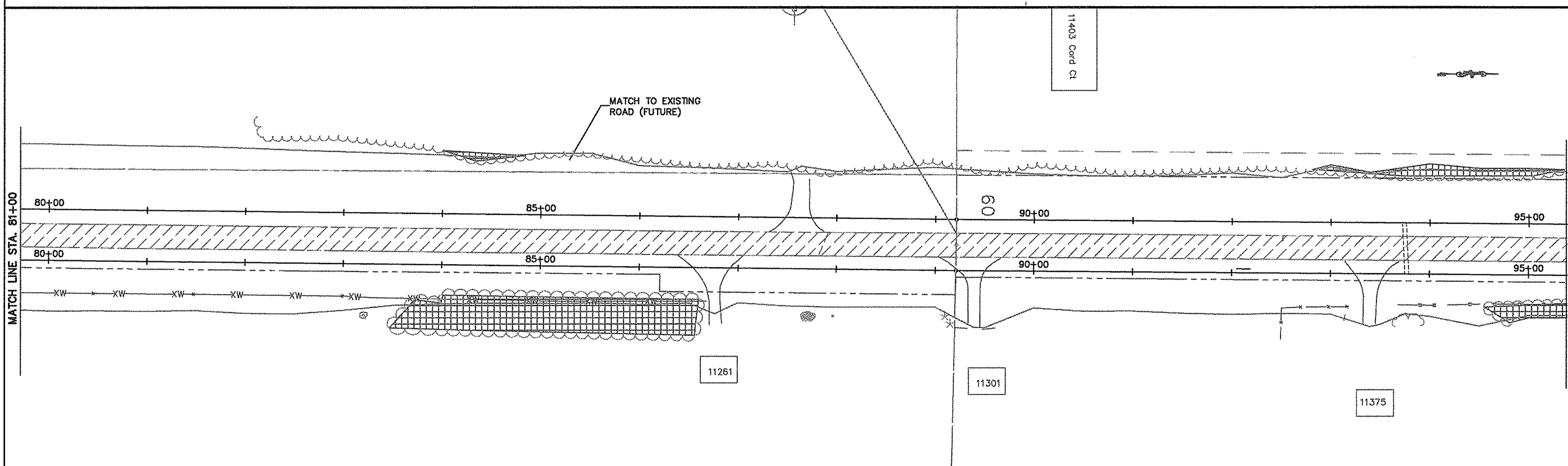
STATE AID PROJECT NO.

COUNTY PROJECT NO.

EXISTING CONDITIONS AND REMOVALS
STA. 36+77.50 TO 66+00

Sheet 65 of 226 Sheets





NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-13\Plan\51-Removal Plan.dwg 10/20/2003 03:00:50 PM CDT

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

PRINT NAME: PETER M. LEMKE

SIGNATURE: Peter M. Lemke

DATE: 9-26-2003 REG. NO. 40118

DRAWN BY CSO DATE 8/20/03

DESIGN BY PML DATE 7/16/03

CHECKED BY PML DATE 8/24/03

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13

STATE PROJECT NO. 106-020-23

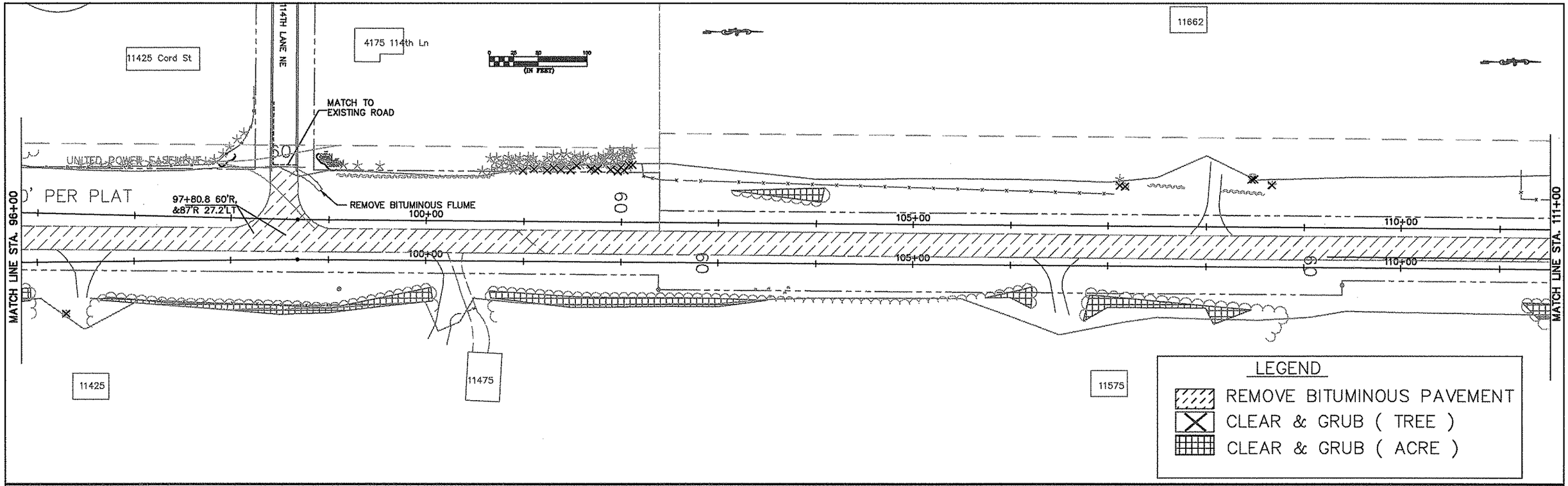
STATE AID PROJECT NO.

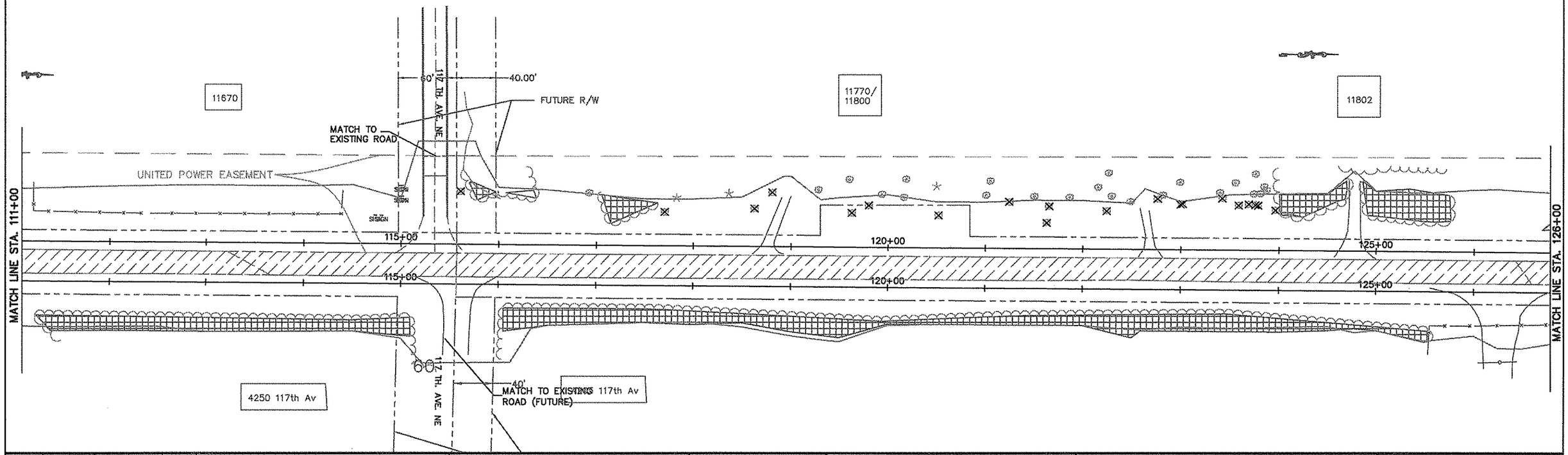
COUNTY PROJECT NO.

EXISTING CONDITIONS AND RERMOVALS

STA. 66+00 TO 96+00

Sheet 66 of 226 Sheets





NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-13\Plan\51-Removal Plan.dwg 10/20/2003 03:00:50 PM CDT

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

PRINT NAME: PETER M. LEMKE

SIGNATURE: Peter M Lemke

DATE: 9-26-2003 REG. NO. 40118

DRAWN BY CSO DATE 8/20/03

DESIGN BY PML DATE 7/16/03

CHECKED BY PML DATE 8/24/03

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13

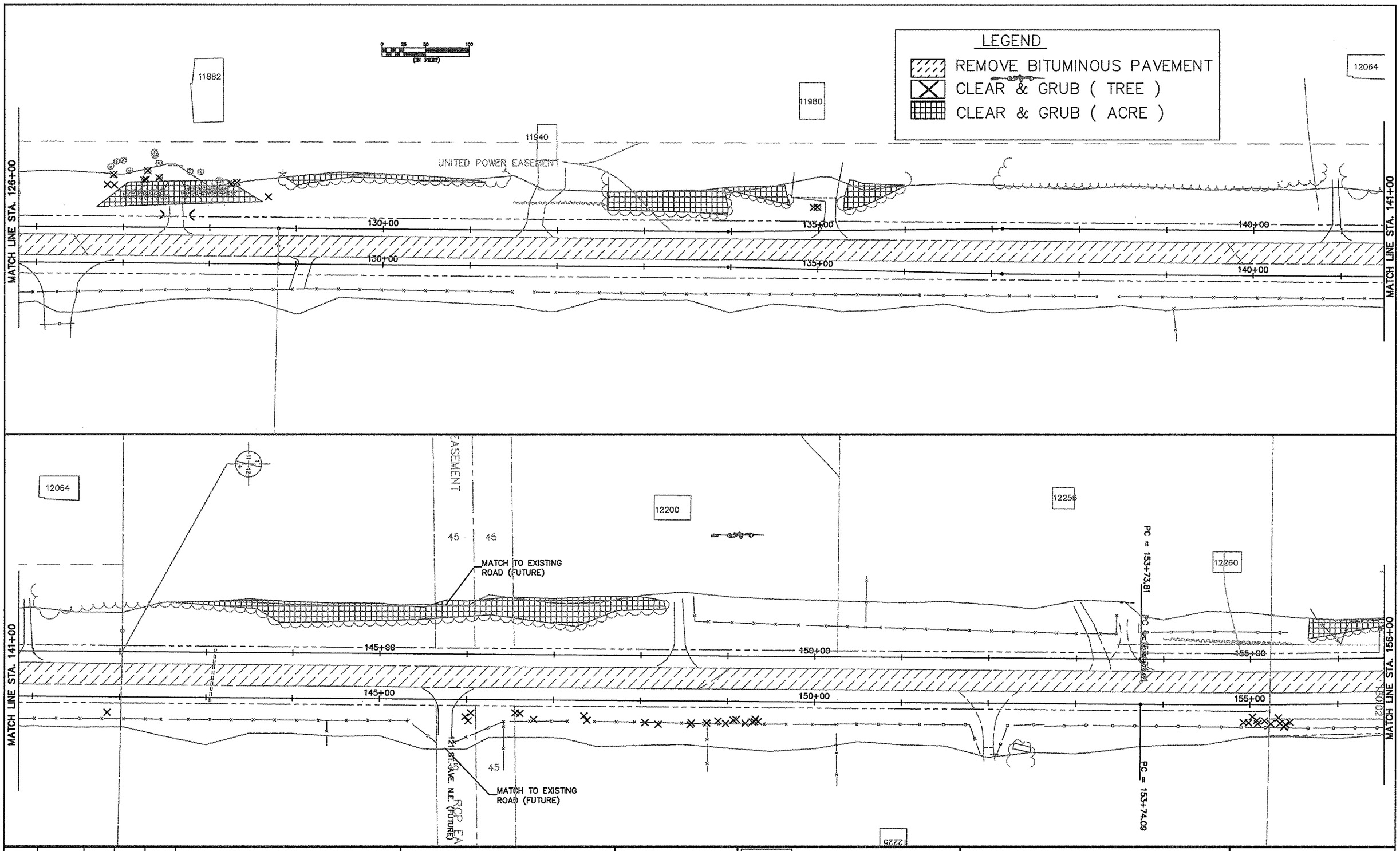
STATE PROJECT NO. 106-020-23

STATE AID PROJECT NO.

COUNTY PROJECT NO.

EXISTING CONDITIONS AND REMOVALS
STA. 96+00 TO 126+00

Sheet 67 of 226 Sheets



NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-13\Plan\51-Removal Plan.dwg 10/20/2003 03:00:50 PM CDT

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

PRINT NAME: PETER M. LEMKE

SIGNATURE: Peter M Lemke

DATE: 9-26-2003 REG. NO. 40118

DRAWN BY CSO DATE 8/20/03

DESIGN BY PML DATE 7/16/03

CHECKED BY PML DATE 8/24/03

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13

STATE PROJECT NO. 106-020-23

STATE AID PROJECT NO.

COUNTY PROJECT NO.

EXISITING CONDITIONS AND REMOVALS
STA. 126+00 TO 156+00

Sheet 68 of 226 Sheets

LEGEND

- REMOVE BITUMINOUS PAVEMENT
- CLEAR & GRUB (TREE)
- CLEAR & GRUB (ACRE)

0 25 50 100 (IN FEET)

MATCH LINE STA. 156+00

PT = 157+38.30

UNITED POWER EASEMENT

160+00

160+00

30.02

30.02

40

PT = 157+40.23

165+00

PC = 167+31.08

REMOVE CONCRETE MEDIAN

60

60

PT = 169+56.74

170+00

170+00

60

60

PC = 167+32.94

REMOVE CONCRETE MEDIAN

PT = 169+58.67

125

C.S.A.H.

MATCH LINE STA. 171+00

A T E S

END FULL DEPTH CONST. BEGIN MILL & OVERLAY

12780 END CONSTRUCTION PROJ. 02-617-13 AND MILL & OVERLAY LNB STA.187+70.00

Z05 S.E

190+00

PT = 185+47.58

END FULL D BEGIN MILL

MATCH LINE STA. 171+00

12592

12614

PC = 175+37.52

END FULL WIDENING CONST. BEGIN TEMP. WIDENING (FUTURE FULL DEPTH CONST.) STA.175+37.56

UNITED POWER EASEMENT

LSB CONST. ALIGN.

175+00

175+00

180+00

180+00

185+00

PRC = 180+24.05

PC = 175+38.39

LNB CONST. ALIGN.

TEMP. BIT. SHLD. CONST.

12581

12621

12691

PRC = 181+43.95

MATCH LINE STA. 187+13.67

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-13\Plan\51-Removal Plan.dwg 10/20/2003 03:00:50 PM CDT

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

PRINT NAME: PETER M. LEMKE

SIGNATURE: Peter M Lemke

DATE: 9-26-2003 REG. NO. 40118

DRAWN BY CSO DATE 8/20/03

DESIGN BY PML DATE 7/16/03

CHECKED BY PML DATE 8/24/03

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13

STATE PROJECT NO. 106-020-23

STATE AID PROJECT NO.

COUNTY PROJECT NO.

EXISTING CONDITIONS AND REMOVALS

STA. 156+00 TO 187+70.00

Sheet 69 of 226 Sheets

C.S.A.H. 12 – 109TH AVE. NE

PC = 2+65.28

LWB STA. 2+65.28
BEGIN MILL AND OVERLAY
SP. 02–617–13

PRC = 7+44.04

PT = 12+22.80

LWB CONST. ALIGN.

5+00

10+00

15+00

C.S.A.H. 12
109TH AVE. NE

65+00

MATCH LINE STA. 18+00

LEB CONST. ALIGN.

PC = 6+17.00

LEB STA. 6+17.00
BEGIN FULL CONST.
SP. 02–617–13

PRC = 9+19.88

PT = 12+22.60

EASEMENT PER DOC. 874152

2+00

LEGEND

REMOVE BITUMINOUS PAVEMENT

CLEAR & GRUB (TREE)

CLEAR & GRUB (ACRE)

60

A D D.

SERVICE ROAD

C.S.A.H. 12 – 109TH AVE. NE

PC = 23+35.40

PRC = 28+10.07

PT = 32+84.30

35+00

36+27.58

36+26.47

LEB STA. 35+61.00
END MILL AND OVERLAY
END 02–617–13

20+00

25+00

30+00

109TH AVE NE
CSAH NO. 12

LWB CONST. ALIGN.

LEB CONST. ALIGN.

PC = 23+34.48

PRC = 26+43.88

MATCH TO INPLACE SURFACE
STA. 30+00.00
END FULL DEPTH CONST.
BEGIN LWB MILL & OVERLAY
SP–02–617–13

PT = 29+53.70

NO | DATE | BY | CKD | APPR | REVISION

NAME: P:\02-617-13\Plan\51-Removal Plan.dwg 10/20/2003 03:00:50 PM CDT

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

PRINT NAME: PETER M. LEMKE

SIGNATURE: Peter M Lemke

DATE: 9–26–2003 REG. NO. 40118

DRAWN BY CSO DATE 8/20/03

DESIGN BY PML DATE 7/16/03

CHECKED BY PML DATE 8/24/03

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02–617–13

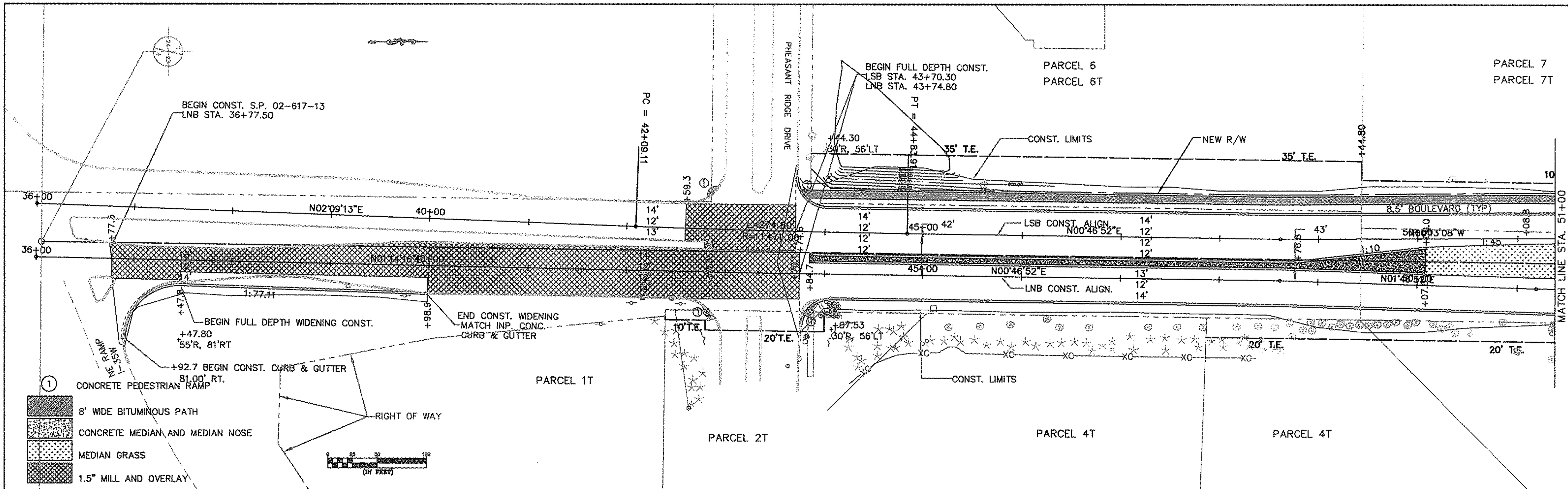
STATE PROJECT NO. 106–020–23

STATE AID PROJECT NO.

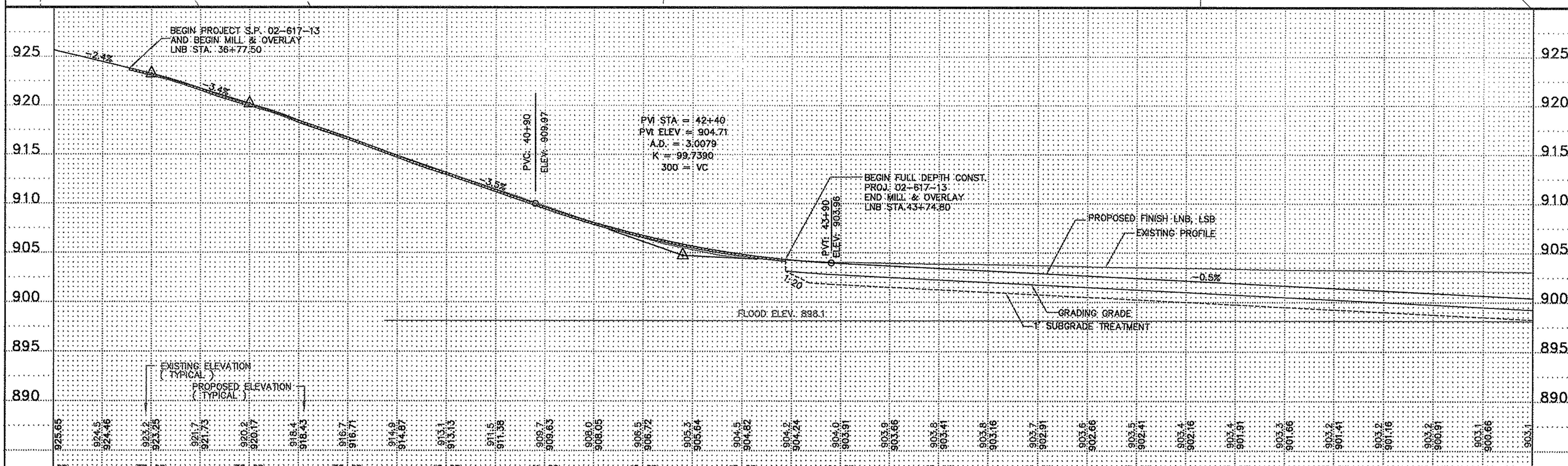
COUNTY PROJECT NO.

EXISTING CONDITIONS AND REMOVALS
STA.2+65.28 TO 35+61.00

Sheet 70 of 226 Sheets



BEGIN CONST. S.P. 02-617-13
LNB STA. 36+77.50
PC = 42+09.11
PHEASANT RIDGE DRIVE
BEGIN FULL DEPTH CONST.
LSB STA. 43+70.30
LNB STA. 43+74.80
PT = 44+83.91
PARCEL 6
PARCEL 6T
PARCEL 7
PARCEL 7T
CONST. LIMITS
NEW R/W
35' T.E.
8.5' BOULEVARD (TYP)
N02°09'13"E
N01°14'16"E
LSB CONST. ALIGN.
N00°46'52"E
LNB CONST. ALIGN.
MATCH LINE STA. 51+00
1:77.11
BEGIN FULL DEPTH WIDENING CONST.
+47.80
55'R, 81'RT
END CONST. WIDENING
MATCH INP. CONC.
CURB & GUTTER
+92.7 BEGIN CONST. CURB & GUTTER
81.00' RT.
NE RAMP I-35W
10' T.E.
20' T.E.
+87.53
30'R, 56'LT
+44.30
30'R, 56'LT
PARCEL 1T
PARCEL 2T
PARCEL 4T
PARCEL 4T
RIGHT OF WAY
1 CONCRETE PEDESTRIAN RAMP
8' WIDE BITUMINOUS PATH
CONCRETE MEDIAN AND MEDIAN NOSE
MEDIAN GRASS
1.5" MILL AND OVERLAY
(IN FEET)



BEGIN PROJECT S.P. 02-617-13
AND BEGIN MILL & OVERLAY
LNB STA. 36+77.50
-2.4%
-3.4%
-3.5%
PVC: 40+90
ELEV: 909.97
PVI STA = 42+40
PVI ELEV = 904.71
A.D. = 3.0079
K = 99.7390
300 = VC
BEGIN FULL DEPTH CONST.
PROJ. 02-617-13
END MILL & OVERLAY
LNB STA. 43+74.80
PVI: 43+90
ELEV: 903.96
PROPOSED FINISH LNB, LSB
EXISTING PROFILE
-0.5%
1:20
FLOOD ELEV. 898.1
GRADING GRADE
1' SUBGRADE TREATMENT
EXISTING ELEVATION (TYPICAL)
PROPOSED ELEVATION (TYPICAL)
925
920
915
910
905
900
895
890
37+00
38+00
39+00
40+00
41+00
42+00
43+00
44+00
45+00
46+00
47+00
48+00
49+00
50+00

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-13\Plan\52-Plan Profile.dwg 02/02/2004 04:43:39 PM CST

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

PRINT NAME: PETER M. LEMKE

SIGNATURE: Peter M Lemke

DATE: 1-30-2004 REG. NO. 40118

DRAWN BY MN DATE 08/22/03

DESIGN BY KJ DATE 08/22/03

CHECKED BY PMI DATE 08/22/03

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13

STATE PROJECT NO. 106-020-23

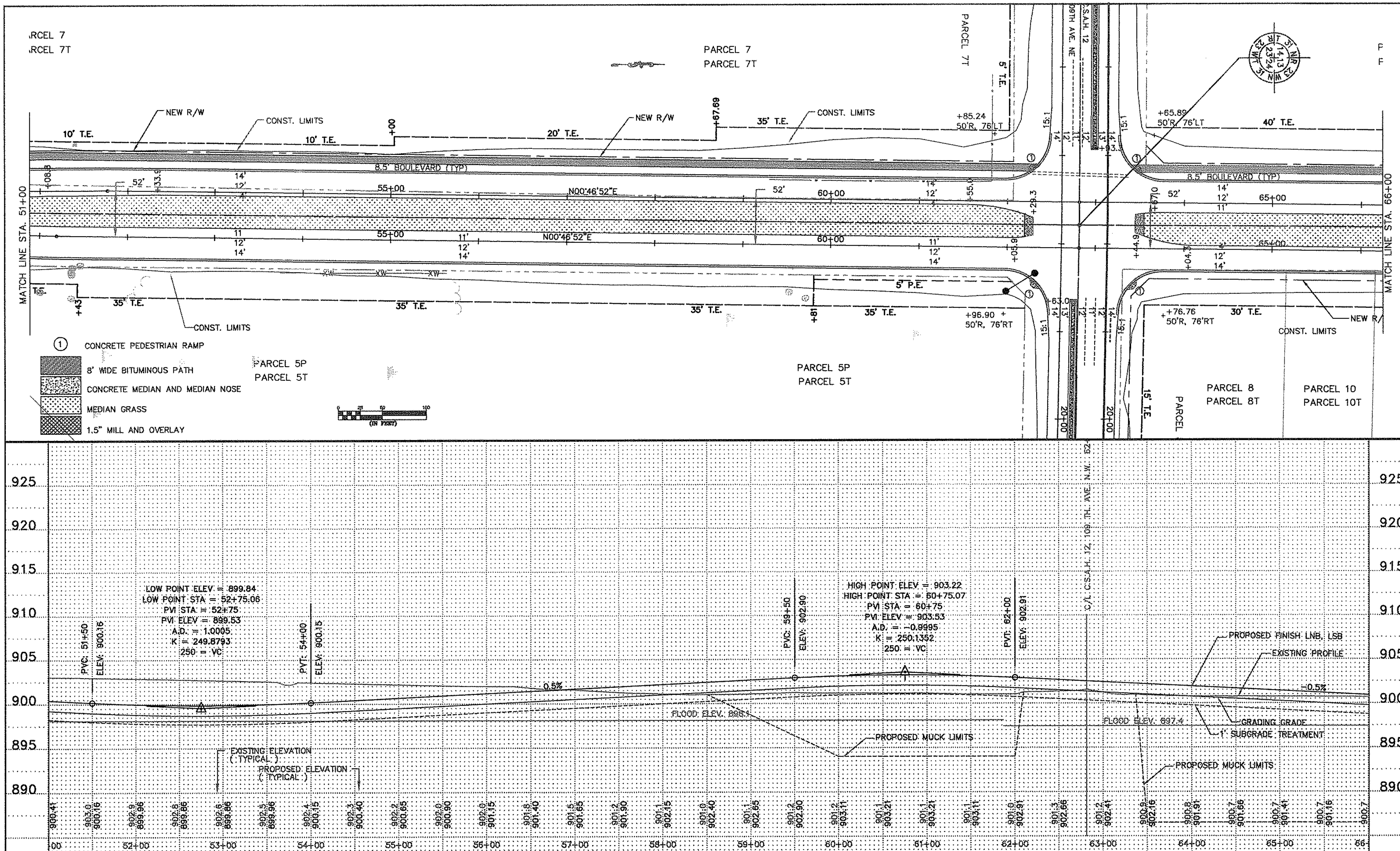
STATE AID PROJECT NO.

COUNTY PROJECT NO.

PLAN AND PROFILE

STA. 36+77.50 TO 51+00

Sheet 71 of 226 Sheets


PARCEL 7
PARCEL 7T
NEW R/W
CONST. LIMITS
10' T.E.
20' T.E.
35' T.E.
40' T.E.
30' T.E.
5' P.E.
8.5' BOULEVARD (TYP)
N00°46'52"E
+85.24
50'R, 76'LT
+65.89
50'R, 76'LT
+96.90
50'R, 76'RT
+76.76
50'R, 76'RT
MATCH LINE STA. 51+00
MATCH LINE STA. 66+00
C.S.A.H. 12
109TH AVE. NE
PARCEL 5P
PARCEL 5T
PARCEL 8
PARCEL 8T
PARCEL 10
PARCEL 10T
CONCRETE PEDESTRIAN RAMP
8' WIDE BITUMINOUS PATH
CONCRETE MEDIAN AND MEDIAN NOSE
MEDIAN GRASS
1.5" MILL AND OVERLAY
(IN FEET)
LOW POINT ELEV = 899.84
LOW POINT STA = 52+75.06
PVI STA = 52+75
PVI ELEV = 899.53
A.D. = 1.0005
K = 249.8793
250 = VC
PVC: 51+50 ELEV: 900.16
PVT: 54+00 ELEV: 900.15
HIGH POINT ELEV = 903.22
HIGH POINT STA = 60+75.07
PVI STA = 60+75
PVI ELEV = 903.53
A.D. = -0.9995
K = 250.1352
250 = VC
PVC: 59+50 ELEV: 902.90
PVT: 62+00 ELEV: 902.91
C/L C.S.A.H. 12, 109 TH. AVE. N.W. 62
0.5%
-0.5%
FLOOD ELEV. 898.1
FLOOD ELEV. 897.4
PROPOSED MUCK LIMITS
PROPOSED FINISH LNB, LSB
EXISTING PROFILE
GRADING GRADE
1' SUBGRADE TREATMENT
EXISTING ELEVATION (TYPICAL)
PROPOSED ELEVATION (TYPICAL)
925
920
915
910
905
900
895
890
52+00
53+00
54+00
55+00
56+00
57+00
58+00
59+00
60+00
61+00
62+00
63+00
64+00
65+00

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-13\Plan\52-Plan Profile.dwg 02/02/2004 04:43:39 PM CST

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

PRINT NAME: PETER M. LEMKE
SIGNATURE: Peter M. Lemke
DATE: 1-30-2004 REG. NO. 40118

DRAWN BY MN DATE 08/22/03
DESIGN BY KJ DATE 08/22/03
CHECKED BY PML DATE 08/22/03

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13
STATE PROJECT NO. 106-020-23
STATE AID PROJECT NO.
COUNTY PROJECT NO.

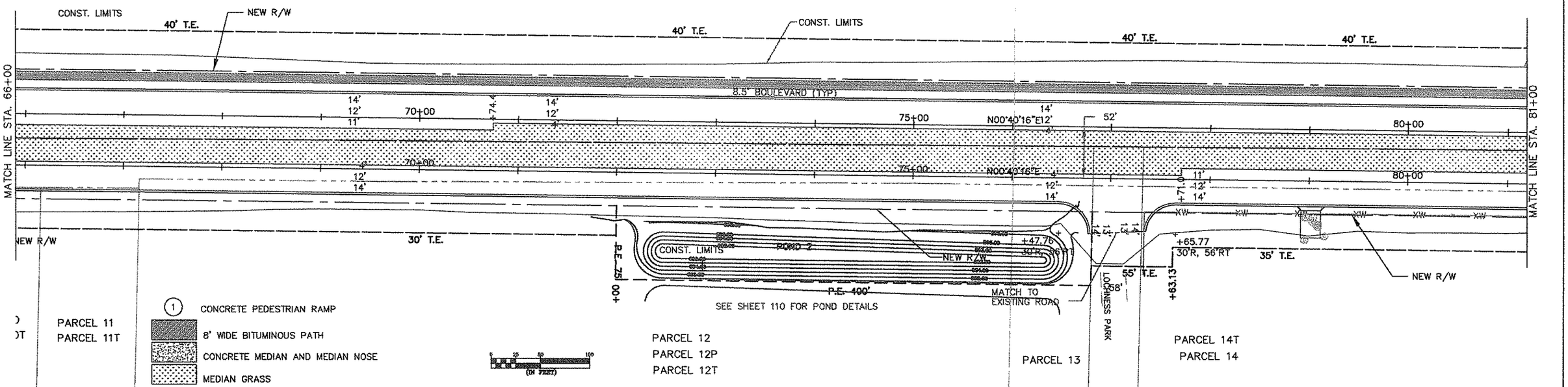
PLAN AND PROFILE
STA. 51+00 TO 66+00

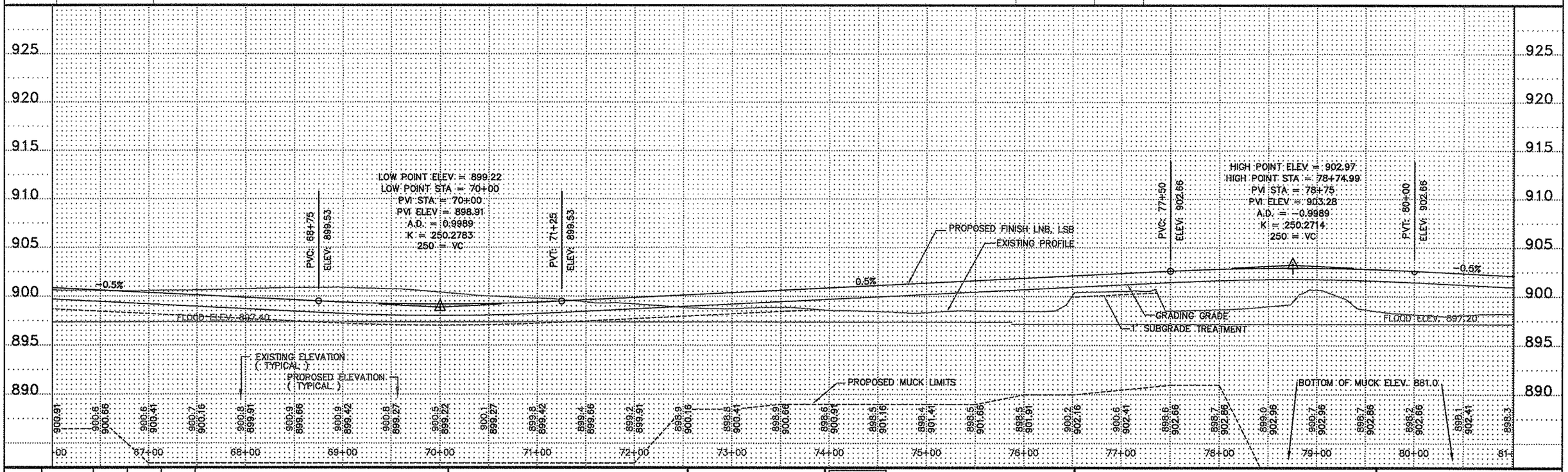
Sheet 72 of 226 Sheets

PARCEL 24
PARCEL 24T

PARCEL 24
PARCEL 24T

PARCEL 25
PARCEL 25T





NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-13\Plan\52-Plan Profile.dwg 02/02/2004 04:43:39 PM CST

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

PRINT NAME: PETER M. LEMKE
SIGNATURE: Peter M Lemke
DATE: 1-30-2004 REG. NO. 40118

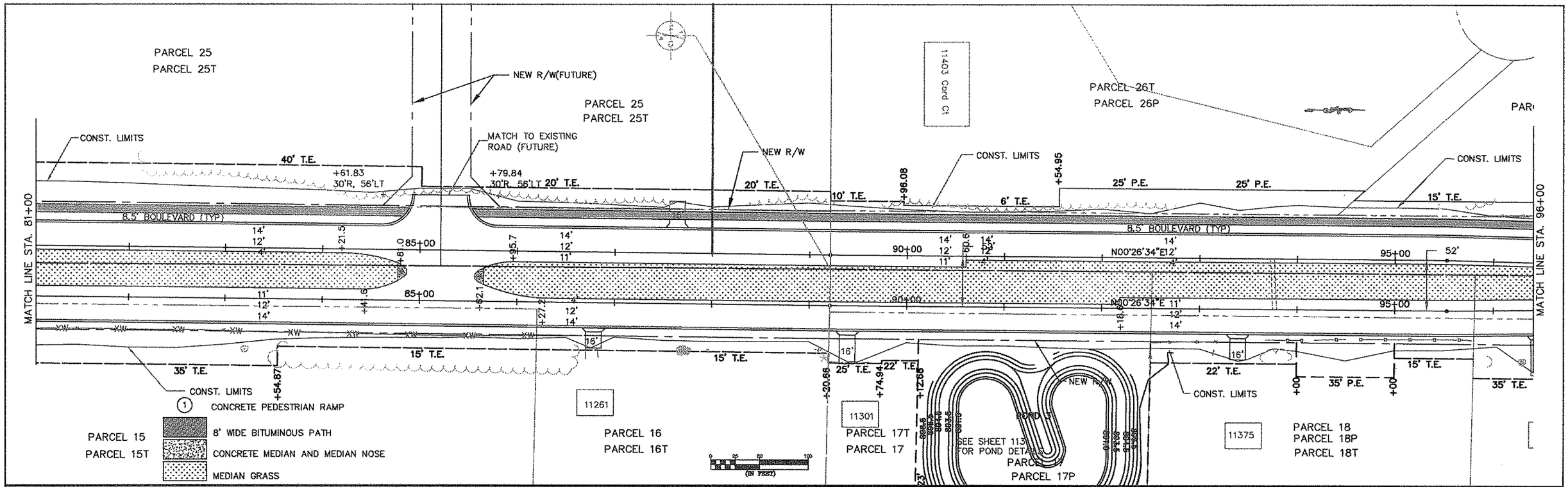
DRAWN BY MN DATE 08/22/03
DESIGN BY KJ DATE 08/22/03
CHECKED BY PML DATE 08/22/03

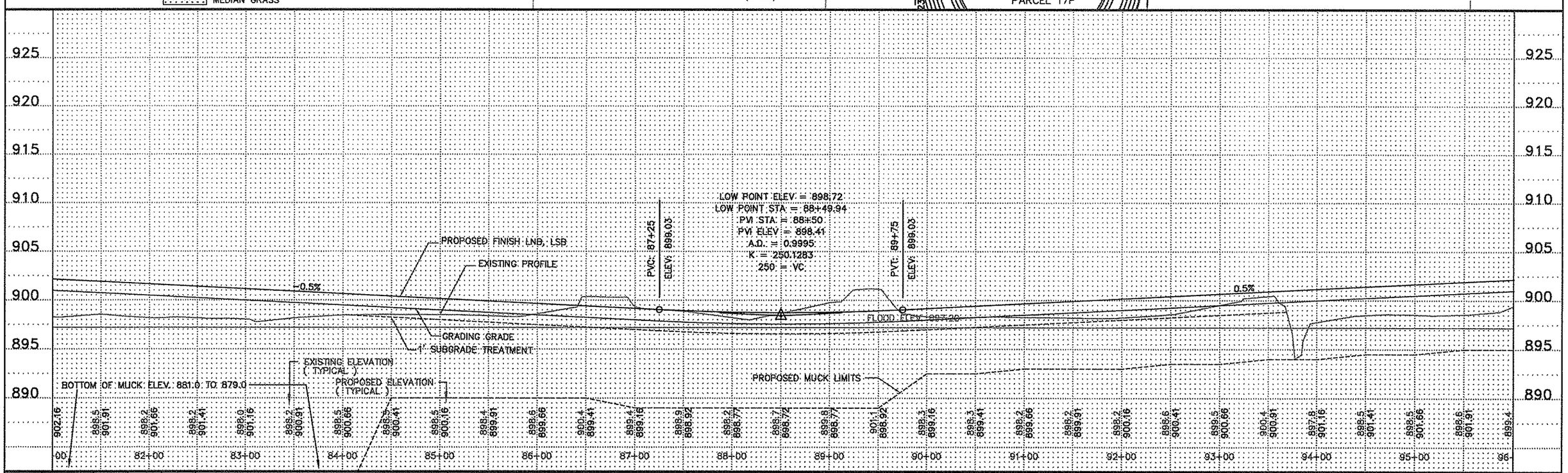
ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13
STATE PROJECT NO. 106-020-23
STATE AID PROJECT NO.
COUNTY PROJECT NO.

PLAN AND PROFILE
STA. 66+00 TO 81+00

Sheet 73 of 226 Sheets





NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-13\Plan\S2-Plan Profile.dwg 02/02/2004 04:49:39 PM CST

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

PRINT NAME: PETER M. LEMKE

SIGNATURE: Peter M Lemke

DATE: 1-30-2004 REG. NO. 40118

DRAWN BY MN DATE 08/22/03

DESIGN BY KJ DATE 08/22/03

CHECKED BY PML DATE 08/22/03

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13

STATE PROJECT NO. 106-020-23

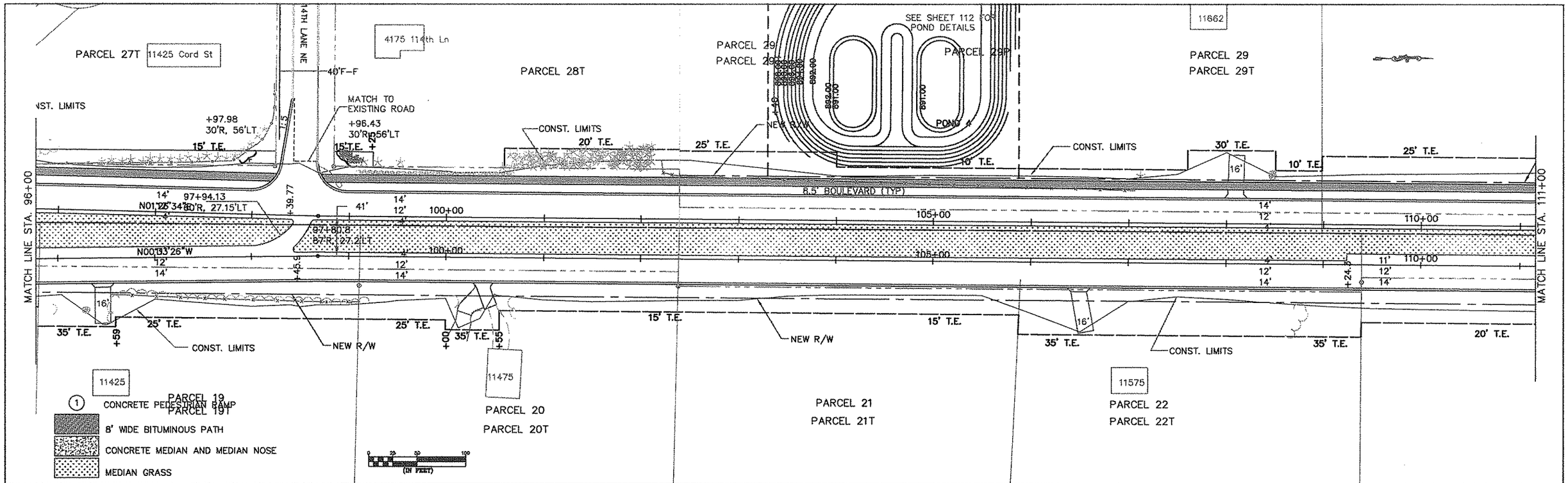
STATE AID PROJECT NO.

COUNTY PROJECT NO.

PLAN AND PROFILE

STA. 81+00 TO 96+00

Sheet 74 of 226 Sheets



NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-13\Plan\S2-Plan Profile.dwg 02/02/2004 04:49:39 PM CST

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

PRINT NAME: PETER M. LEMKE

SIGNATURE: Peter M Lemke

DATE: 1-30-2004 REG. NO. 40118

DRAWN BY MN DATE 08/22/03

DESIGN BY KJ DATE 08/22/03

CHECKED BY PML DATE 08/22/03

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13

STATE PROJECT NO. 106-020-23

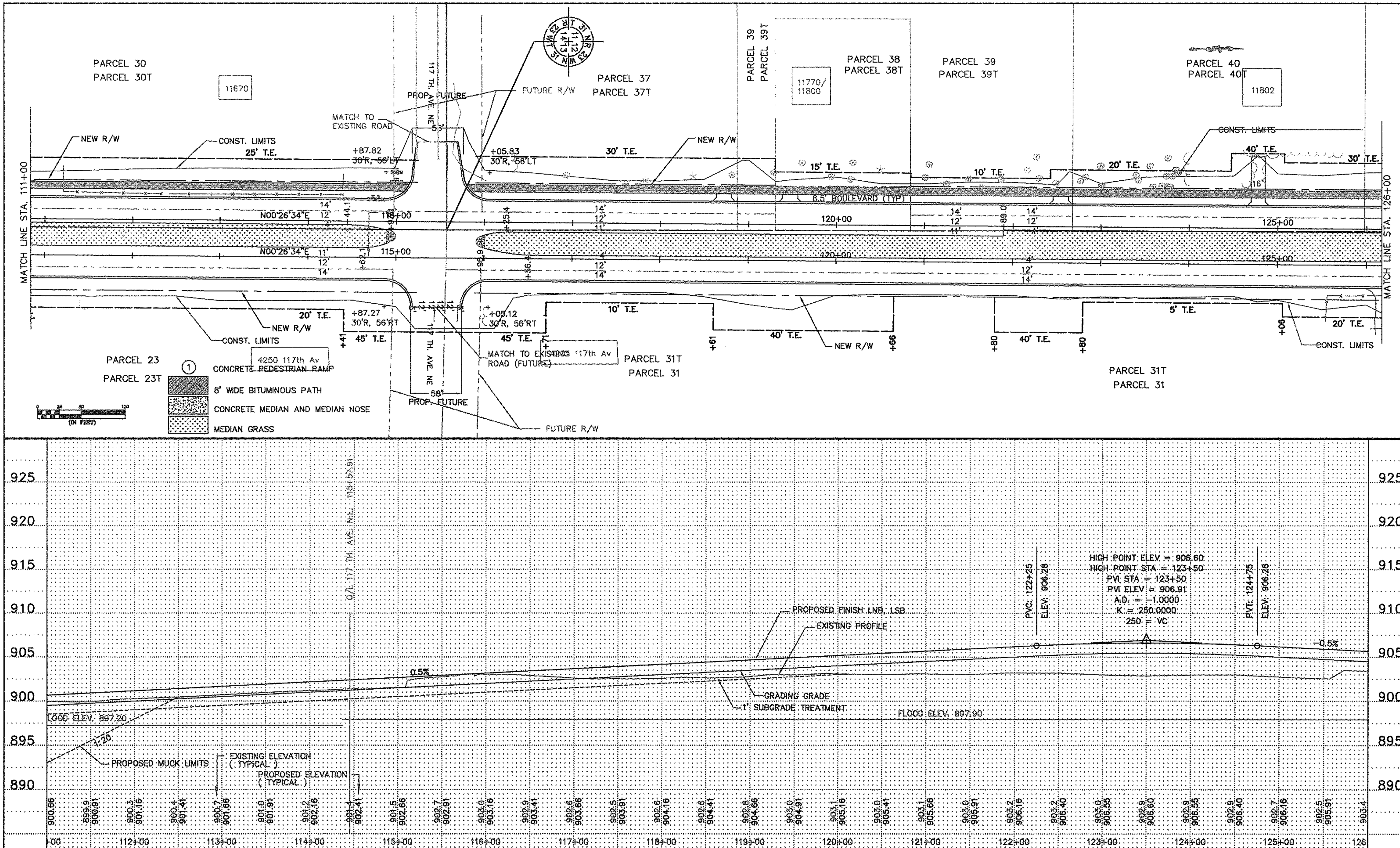
STATE AID PROJECT NO.

COUNTY PROJECT NO.

PLAN AND PROFILE

STA. 96+00 TO 111+00

Sheet 75 of 226 Sheets



PARCEL 30
PARCEL 30T
11670
117 TH. AVE. NE
PROP. FUTURE
FUTURE R/W
MATCH TO EXISTING ROAD
PARCEL 37
PARCEL 37T
PARCEL 39
PARCEL 39T
PARCEL 38
PARCEL 38T
11770/ 11800
PARCEL 39
PARCEL 39T
PARCEL 40
PARCEL 40T
11802
NEW R/W
CONST. LIMITS
25' T.E.
+87.82 30'R, 56'LT
+05.83 30'R, 56'LT
30' T.E.
15' T.E.
10' T.E.
20' T.E.
40' T.E.
30' T.E.
8.5' BOULEVARD (TYP)
MATCH LINE STA. 111+00
MATCH LINE STA. 126+00
N00°26'34"E
118+00
115+00
120+00
125+00
20' T.E.
+87.27 30'R, 56'RT
+05.12 30'R, 56'RT
45' T.E.
10' T.E.
40' T.E.
5' T.E.
MATCH TO EXISTING ROAD (FUTURE)
PARCEL 23
PARCEL 23T
4250 117th Av
PARCEL 31T
PARCEL 31
CONCRETE PEDESTRIAN RAMP
8' WIDE BITUMINOUS PATH
CONCRETE MEDIAN AND MEDIAN NOSE
MEDIAN GRASS
(IN FEET)
58'
C/L 117 TH. AVE. N.E. 115+57.91
HIGH POINT ELEV. = 906.60
HIGH POINT STA. = 123+50
PVI STA = 123+50
PVI ELEV = 906.91
A.D. = -1.0000
K = 250.0000
250 = VC
PVC: 122+25 ELEV: 906.28
PVT: 124+75 ELEV: 906.28
PROPOSED FINISH LNB, LSB
EXISTING PROFILE
GRADING GRADE
1' SUBGRADE TREATMENT
FLOOD ELEV. 897.90
FLOOD ELEV. 897.20
PROPOSED MUCK LIMITS
EXISTING ELEVATION (TYPICAL)
PROPOSED ELEVATION (TYPICAL)
0.5%
-0.5%
1:20
925
920
915
910
905
900
895
890
112+00
113+00
114+00
115+00
116+00
117+00
118+00
119+00
120+00
121+00
122+00
123+00
124+00
125+00

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-13\Plan\52-Plan Profile.dwg 02/02/2004 04:43:39 PM CST

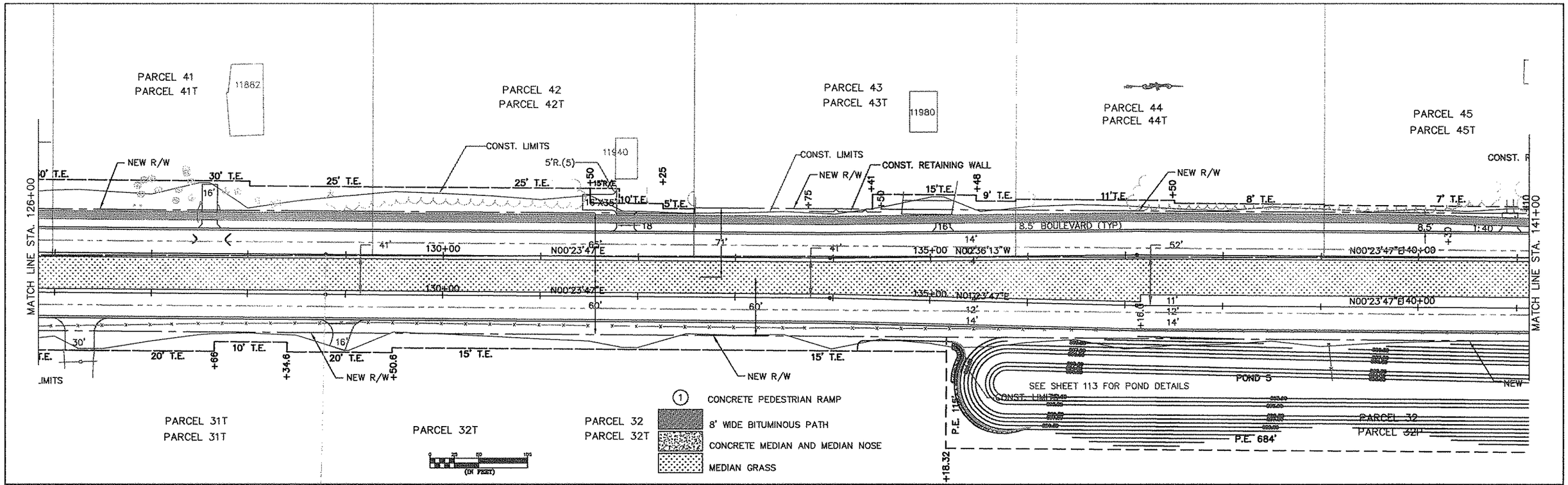
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
PRINT NAME: PETER M. LEMKE
SIGNATURE: Peter M Lemke
DATE: 1-30-2004 REG. NO. 40118

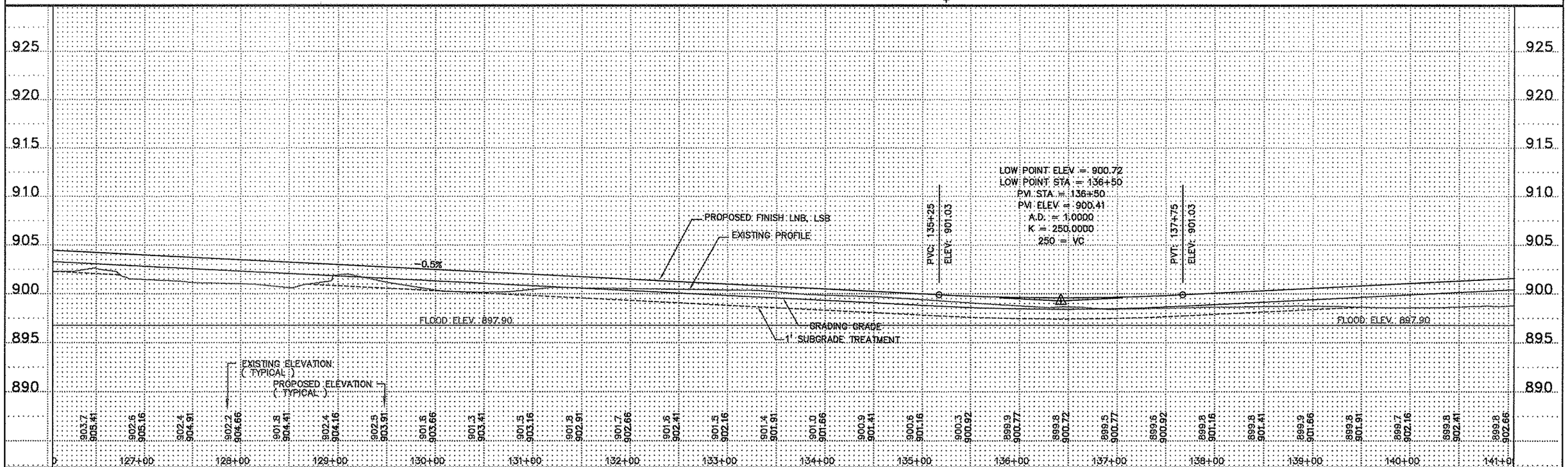
DRAWN BY MN DATE 08/22/03
DESIGN BY KJ DATE 08/22/03
CHECKED BY PMI DATE 08/22/03

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13
STATE PROJECT NO. 106-020-23
STATE AID PROJECT NO.
COUNTY PROJECT NO.

PLAN AND PROFILE
STA. 111+00 TO 126+00





NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-13\Plan\52-Plan Profile.dwg 02/02/2004 04:43:39 PM CST

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

PRINT NAME: PETER M. LEMKE

SIGNATURE: Peter M Lemke

DATE: 1-30-2004 REG. NO. 40118

DRAWN BY MN DATE 08/22/03

DESIGN BY KJ DATE 08/22/03

CHECKED BY PML DATE 08/22/03

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13

STATE PROJECT NO. 106-020-23

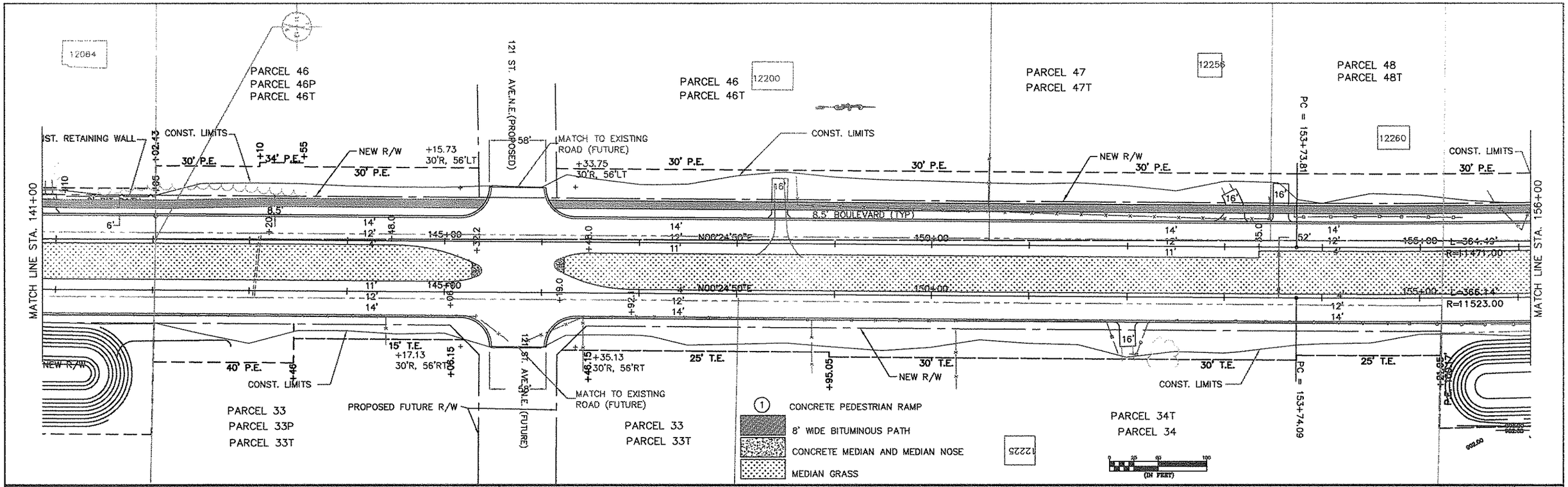
STATE AID PROJECT NO.

COUNTY PROJECT NO.

PLAN AND PROFILE

STA. 126+00 TO 141+00

Sheet 77 of 226 Sheets



NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-13\Plan\52-Plan Profile.dwg 02/02/2004 05:16:38 PM CST

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

PRINT NAME: PETER M. LEMKE

SIGNATURE: Peter M Lemke

DATE: 1-30-2004 REG. NO. 40118

DRAWN BY MN DATE 08/22/03

DESIGN BY KJ DATE 08/22/03

CHECKED BY PML DATE 08/22/03

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13

STATE PROJECT NO. 106-020-23

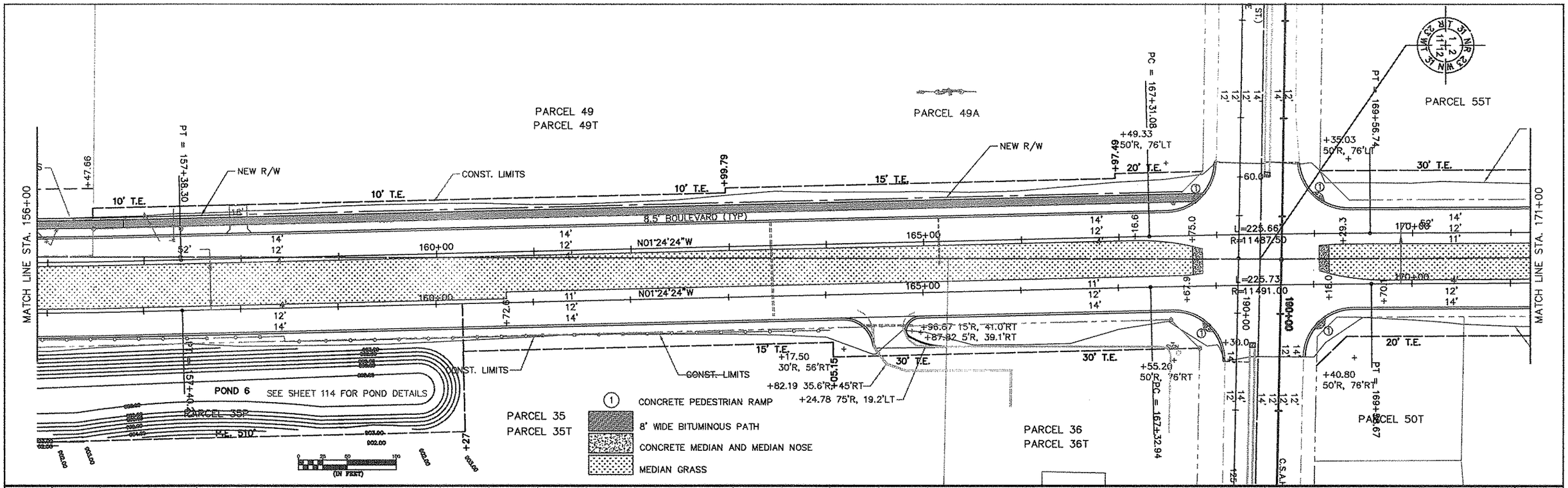
STATE AID PROJECT NO.

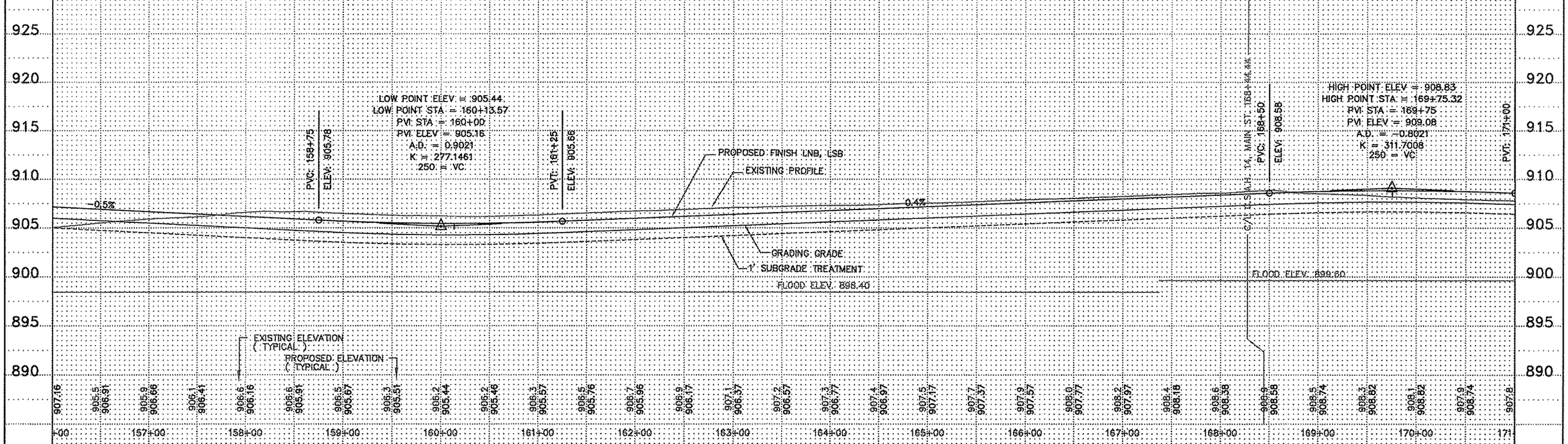
COUNTY PROJECT NO.

PLAN AND PROFILE

STA. 141+00 TO 156+00

Sheet 78 of 226 Sheets





NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-13\Plan\52-Plan Profile.dwg 02/02/2004 05:16:38 PM CST

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

PRINT NAME: PETER M. LEMKE

SIGNATURE: Peter M Lemke

DATE: 1-30-2004 REG. NO. 40118

DRAWN BY MN DATE 08/22/03

DESIGN BY KJ DATE 08/22/03

CHECKED BY PML DATE 08/22/03

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13

STATE PROJECT NO. 106-020-23

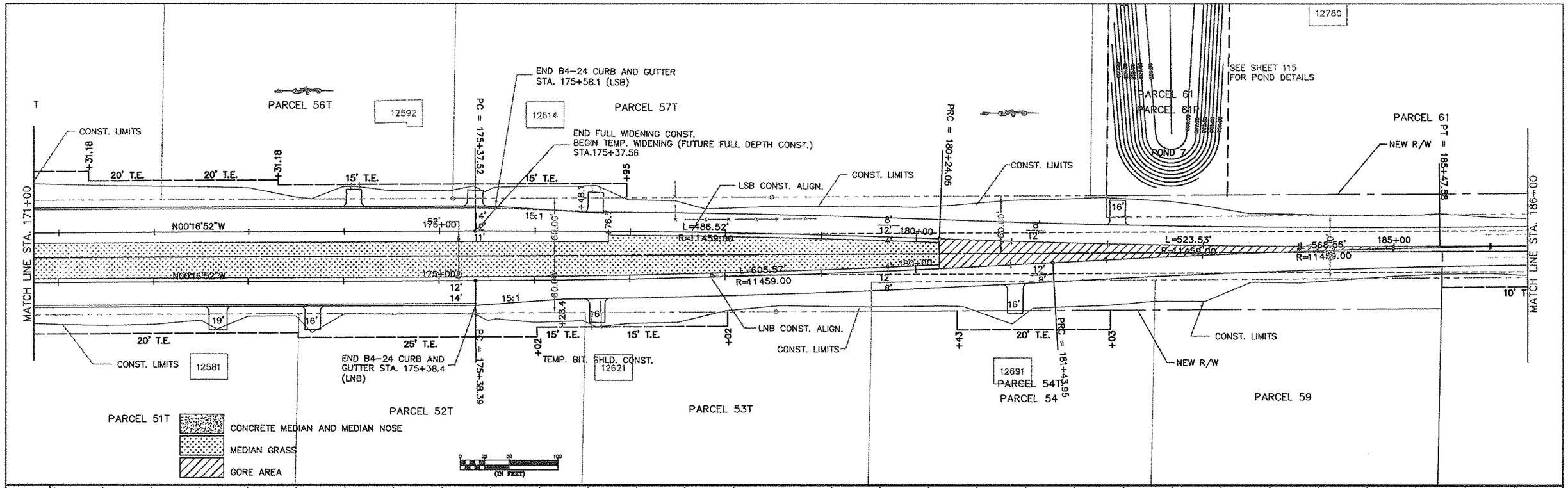
STATE AID PROJECT NO.

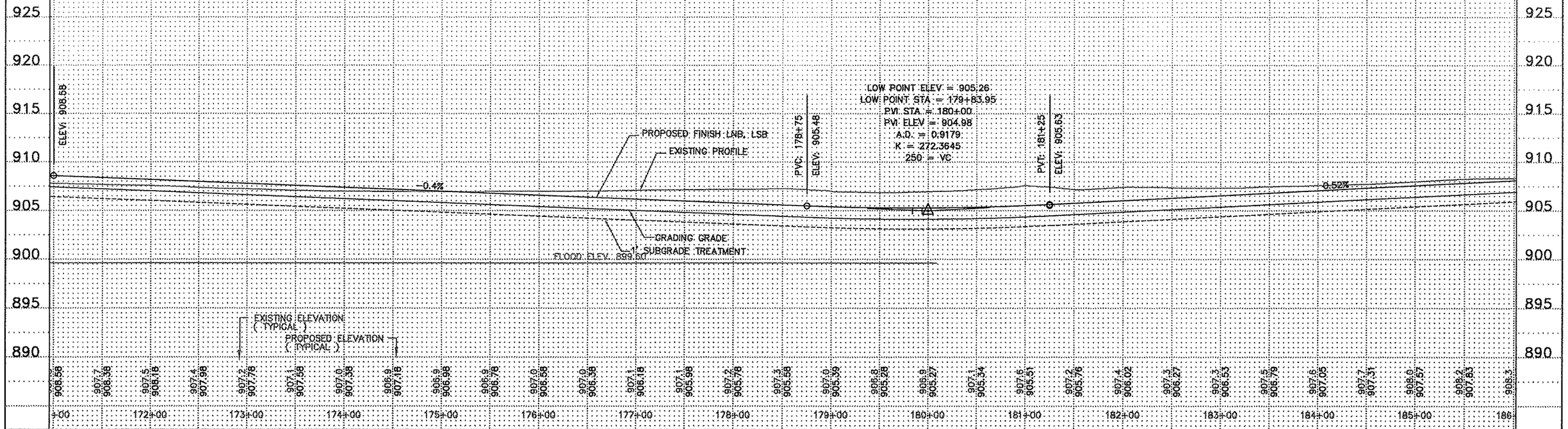
COUNTY PROJECT NO.

PLAN AND PROFILE

STA. 156+00 TO 171+00

Sheet 79 of 226 Sheets





NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-13\Plan\52-Plan Profile.dwg 02/02/2004 05:16:38 PM CST

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

PRINT NAME: PETER M. LEMKE

SIGNATURE: Peter M Lemke

DATE: 1-30-2004 REG. NO. 40118

DRAWN BY MN DATE 08/22/03

DESIGN BY K.I DATE 08/22/03

CHECKED BY PML DATE 08/22/03

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13

STATE PROJECT NO. 106-020-23

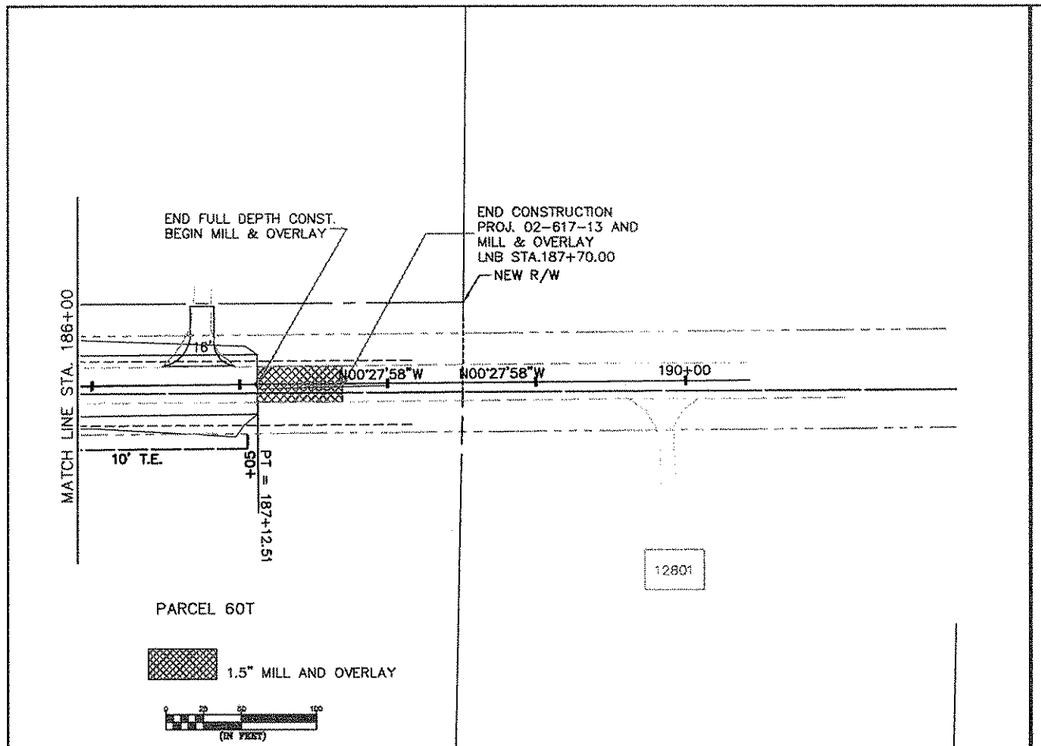
STATE AID PROJECT NO.

COUNTY PROJECT NO.

PLAN AND PROFILE

STA.171+00 TO 186+00

Sheet 80 of 226 Sheets



NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-13\Plan\52-Plan Profile.dwg 02/02/2004 05:16:38 PM CST

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

PRINT NAME: PETER M. LEMKE

SIGNATURE: Peter M Lemke

DATE: 1-30-2004 REG. NO. 40118

DRAWN BY MN DATE 08/22/03

DESIGN BY KJ DATE 08/22/03

CHECKED BY KJ DATE 08/22/03

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13

STATE PROJECT NO. 106-020-23

STATE AID PROJECT NO.

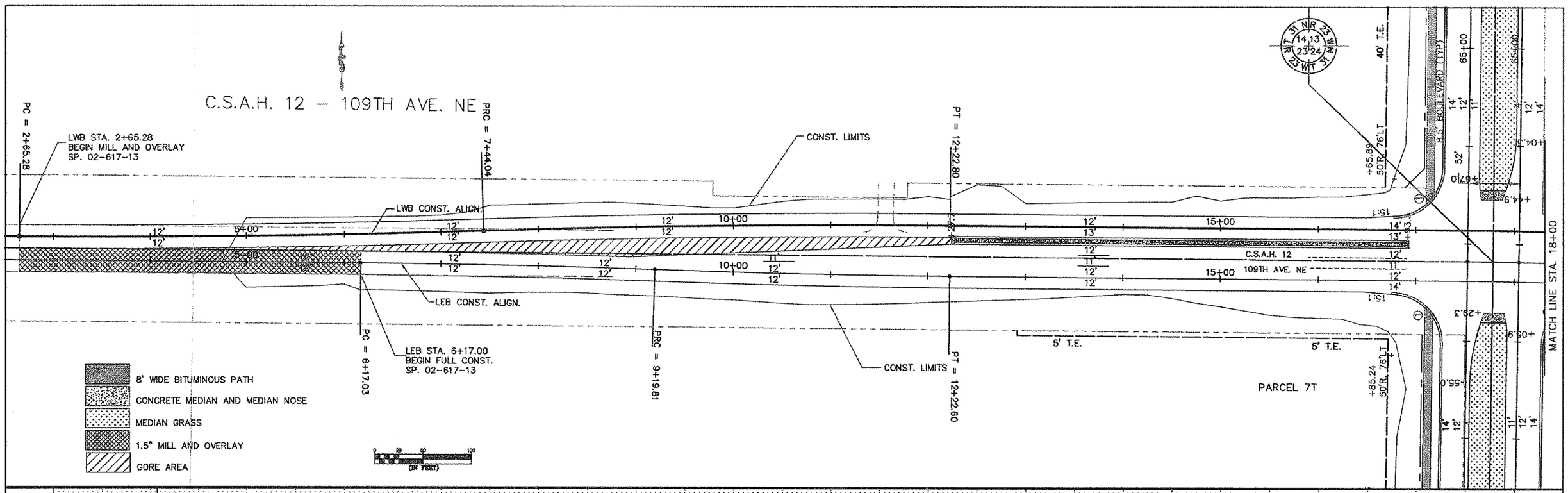
COUNTY PROJECT NO.

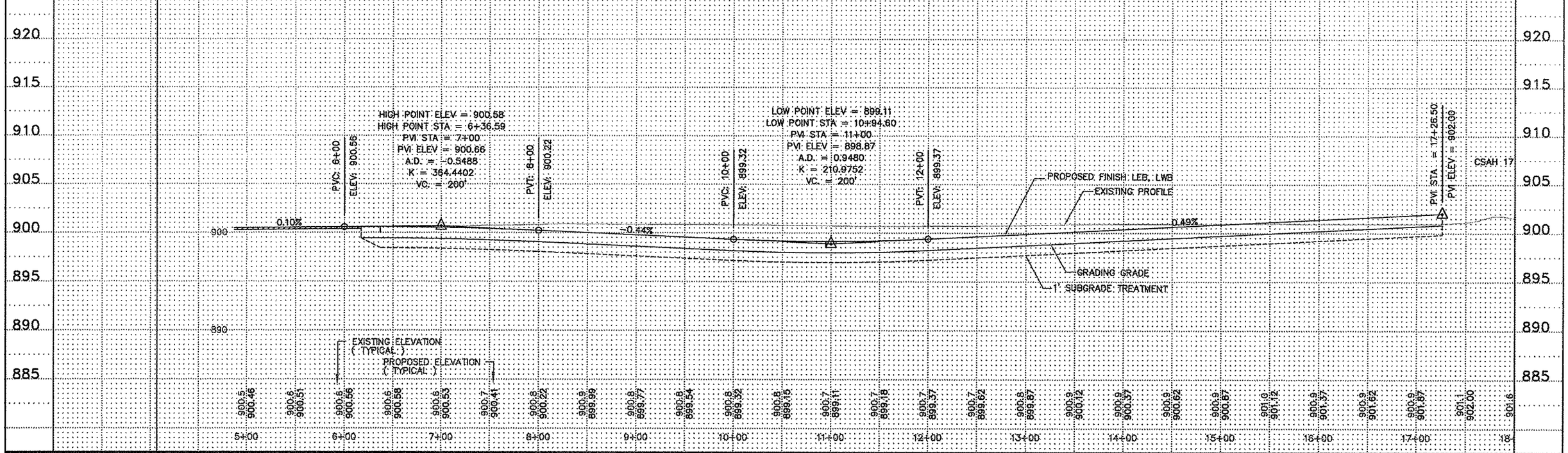
PLAN AND PROFILE

STA.186+00 TO 186+97.13

Sheet 81 of 226 Sheets

C.S.A.H. 12 – 109TH AVE. NE





NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-13\Plan\52-Plan Profile.dwg 02/02/2004 05:16:38 PM CST

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

PRINT NAME: PETER M. LEMKE

SIGNATURE: Peter M Lemke

DATE: 1-30-2004 REG. NO. 40118

DRAWN BY MN DATE 08/22/03

DESIGN BY KJ DATE 08/22/03

CHECKED BY KJ DATE 08/22/03

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13

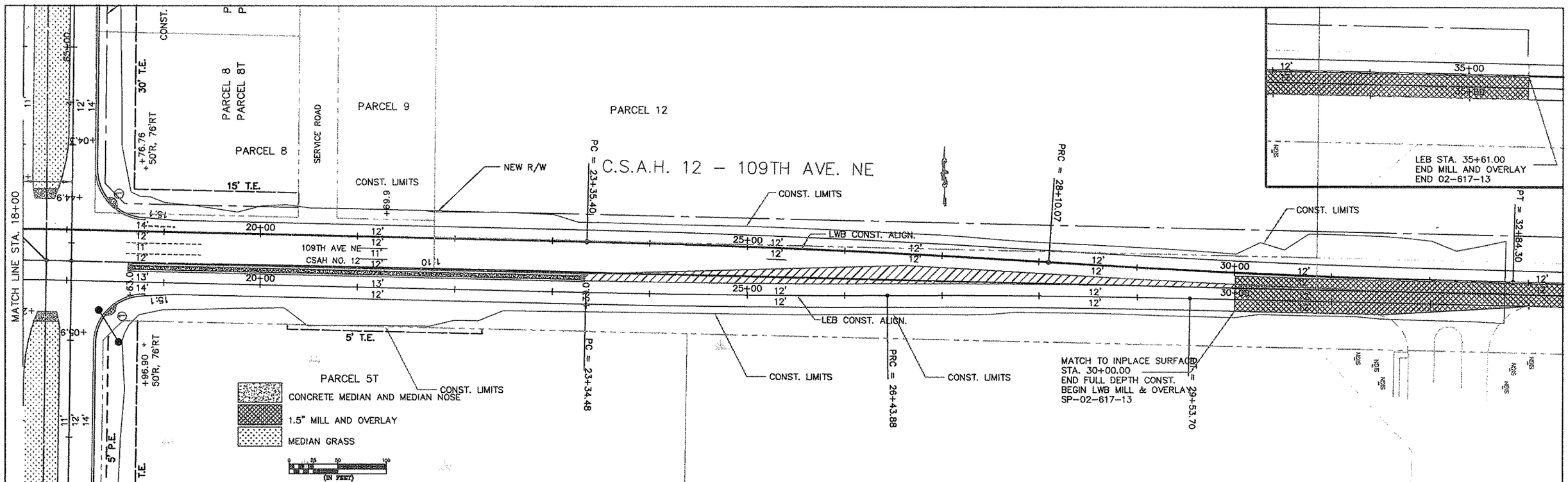
STATE PROJECT NO. 106-020-23

STATE AID PROJECT NO.

COUNTY PROJECT NO.

PLAN AND PROFILE
109TH AVE NE – CSAH 12
STA. 2+65.28 TO 18+00

Sheet 82 of 226 Sheets



NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-13\Plan\S2-Plan Profile.dwg 02/02/2004 05:16:38 PM CST

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

PRINT NAME: PETER M. LEMKE

SIGNATURE: Peter M Lemke

DATE: 1-30-2004 REG. NO. 40118

DRAWN BY MN DATE 08/22/03

DESIGN BY K.J. DATE 08/22/03

CHECKED BY K.J. DATE 08/22/03

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13

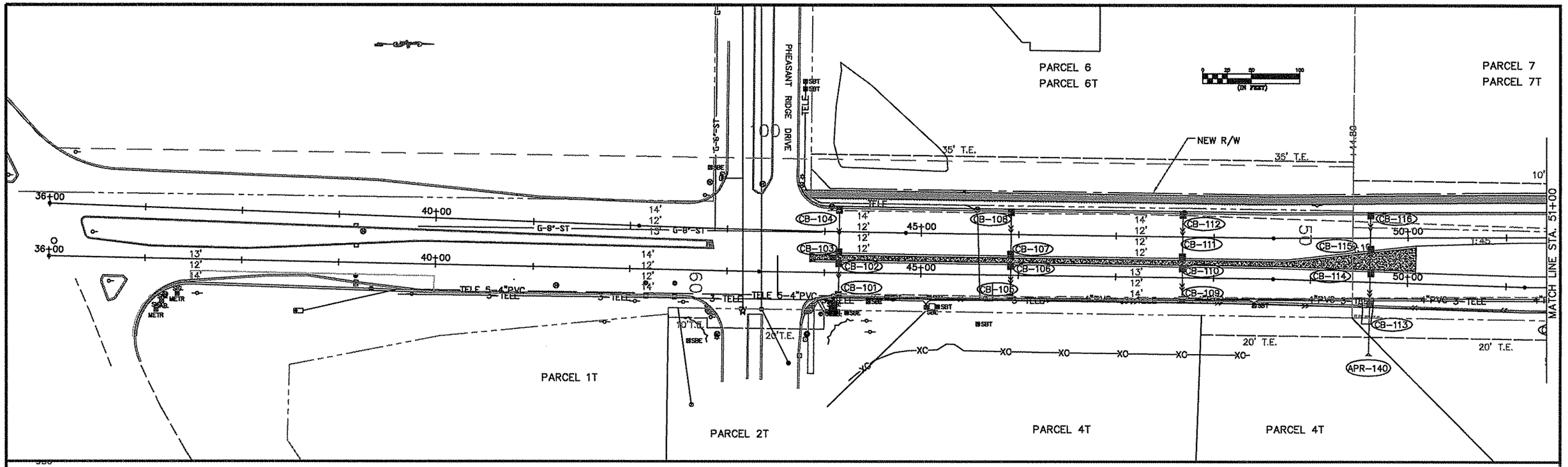
STATE PROJECT NO. 106-020-23

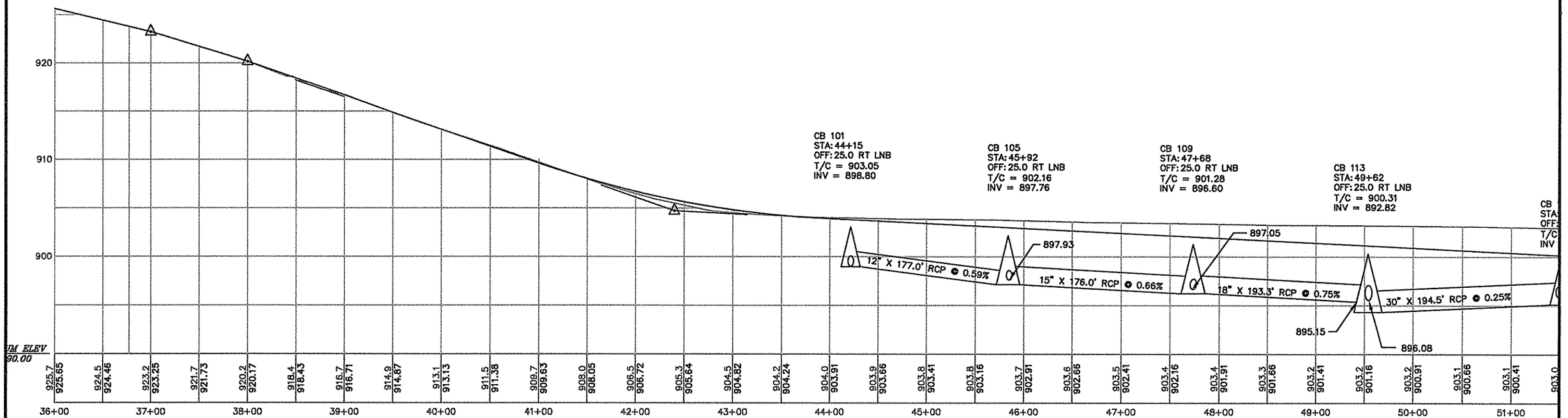
STATE AID PROJECT NO.

COUNTY PROJECT NO.

PLAN AND PROFILE
109TH AVE NE – CSAH 12
STA. 18+00 TO 35+61.00

Sheet 83 of 226 Sheets





NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-13\Plan\S3-Storm Drainage Planding 01/09/2004 08:03:55 AM CST

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

PRINT NAME: PETER M. LEMKE

SIGNATURE: Peter M Lemke

DATE: 1/09/2004 REG. NO. 40118

DRAWN BY CSO DATE 8/26/03

DESIGN BY MTH DATE 8/26/03

CHECKED BY PML DATE 8/26/03

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13

STATE PROJECT NO. 106-020-23

STATE AID PROJECT NO.

COUNTY PROJECT NO.

STORM DRAINAGE

STA. 36+77.5 TO 51+00

Sheet 84 of 226 Sheets

PARCEL 7
PARCEL 7T

PARCEL 7
PARCEL 7T

PARCEL 7T

5' T.E.

T.S.A.H. 12
109TH AVE. NE

PARC
PARC

(IN FEET)

NEW R/W

10' T.E.

10' T.E.

+00

20' T.E.

NEW R/W

+67.69

35' T.E.

40' T.E.

MATCH LINE STA. 51+00

MATCH LINE STA. 66+00

CB-120

CB-124

CB-128

CB-132

CB-135

CB-204

CB-208

CB-212

APR-117A

55+00

60+00

65+00

4"PVC 3-TELE

CB-125

CB-129

CB-133

CB-201

CB-205

CB-209

CB-117

CB-121

XW

5' P.E.

Str-822

APR-823

+43

+81

35' T.E.

30' T.E.

NEW R/W

PARCEL 5P
PARCEL 5T

PARCEL 5P
PARCEL 5T

PARCEL 8
PARCEL 8T

PARCEL 10
PARCEL 10T

CB 117
STA: 51+56
OFF: 25.0 RT LNB
T/C = 899.35
INV = 893.30

CB 121
STA: 52+75
OFF: 25.0 RT LNB
T/C = 899.06
INV = 893.66

CB 125
STA: 54+69
OFF: 25.0 RT LNB
T/C = 899.72
INV = 894.82

CB 129
STA: 56+63
OFF: 25.0 RT LNB
T/C = 900.69
INV = 896.04

CB 133
STA: 58+04
OFF: 25.0 RT LNB
T/C = 901.40
INV = 896.75

CB 201
STA: 61+90
OFF: 25.0 RT LNB
T/C = 902.17
INV = 897.85

CB 205
STA: 63+82
OFF: 25.0 RT LNB
T/C = 901.22
INV = 896.82

CB 209
STA: 65+74
OFF: 25.0 RT LNB
T/C = 900.26
INV = 895.36

27" X 119' RCP @ 0.30%

21" X 194.0' RCP @ 0.50%

18" X 141.0' RCP @ 0.69%

18" X 141.0' RCP @ 0.5%

12" X 192' RCP @ 0.5%

15" X 192' RCP @ 0.70%

895.03

894.64

893.85

895.40

895.07

896.37

897.08

896.89

896.89

895.48

895.93

900.66
903.1 900.41
903.0 900.16
902.9 899.96
902.8 899.86
902.6 899.86
902.5 899.96
902.4 900.15
902.3 900.40
902.2 900.65
902.0 900.90
902.0 901.15
901.8 901.40
901.5 901.65
901.2 901.90
901.1 902.15
901.0 902.40
901.1 902.65
901.2 902.90
901.2 903.11
901.1 903.21
901.1 903.21
901.1 903.11
901.0 902.91
901.3 902.66
901.2 902.41
900.9 902.16
900.8 901.91
900.7 901.66
900.7 901.41
900.7 901.16
900.7 900.91

51+00 52+00 53+00 54+00 55+00 56+00 57+00 58+00 59+00 60+00 61+00 62+00 63+00 64+00 65+00 66+00

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-13\Plan\53-Storm Drainage Planing 01/09/2004 0829:48 AM CST

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

PRINT NAME: PETER M. LEMKE

SIGNATURE: Peter M Lemke

DATE: 1/09/2004 REG. NO. 40118

DRAWN BY CSO DATE 8/26/03

DESIGN BY MTH DATE 8/26/03

CHECKED BY PML DATE 8/26/03

ANOKA COUNTY

ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13
STATE PROJECT NO. 106-020-23
STATE PROJECT NO.
COUNTY PROJECT NO.

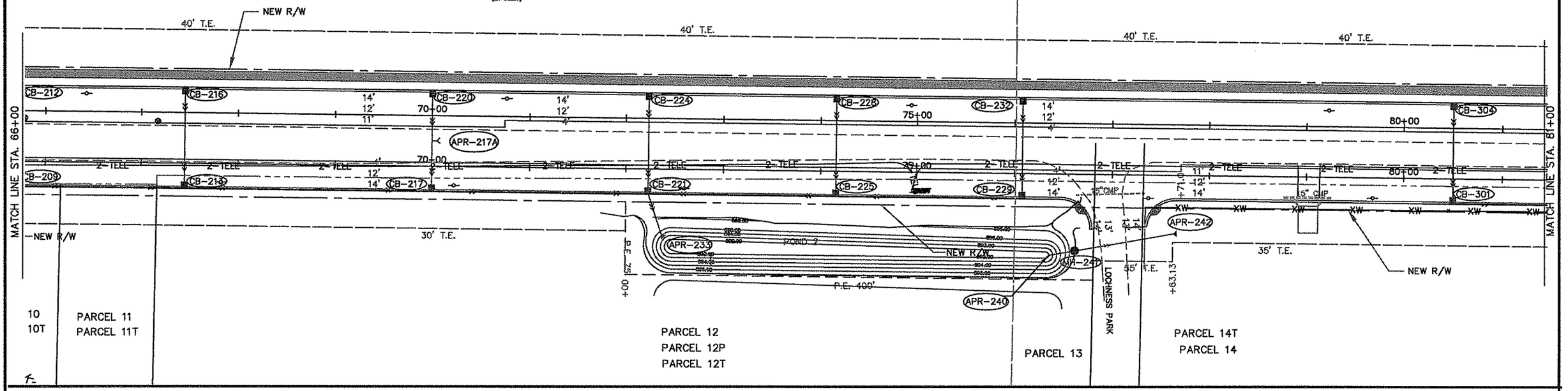
STORM DRAINAGE
STA. 51+00 TO 66+00

Sheet 85 of 226 Sheets

PARCEL 24
PARCEL 24T

PARCEL 24
PARCEL 24T

PARCEL 25
PARCEL 25T



10
10T

PARCEL 11
PARCEL 11T

PARCEL 12
PARCEL 12P
PARCEL 12T

PARCEL 13

PARCEL 14T
PARCEL 14

B 209
TA: 65+74
FF: 25.0 RT LNB
/C = 900.26
IV = 895.36

CB 213
STA: 67+45
OFF: 25.0 RT LNB
T/C = 899.40
INV = 894.25

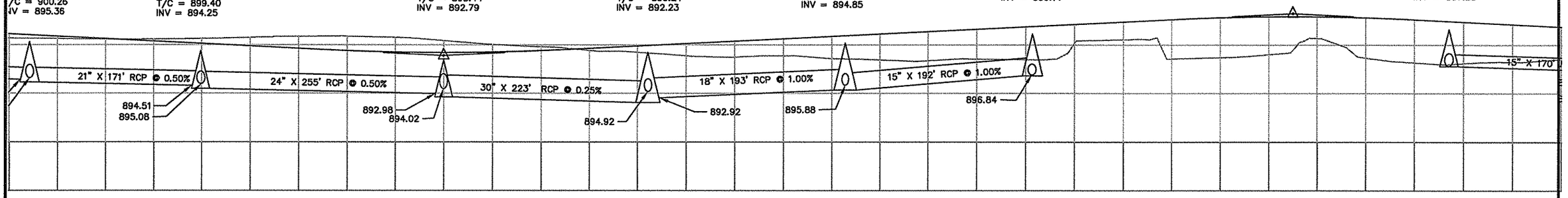
CB 217
STA: 70+00
OFF: 25.0 RT LNB
T/C = 898.44
INV = 892.79

CB 221
STA: 72+23
OFF: 25.0 RT LNB
T/C = 899.24
INV = 892.23

CB 225
STA: 74+16
OFF: 25.0 RT LNB
T/C = 900.21
INV = 894.85

CB 229
STA: 76+08
OFF: 25.0 RT LNB
T/C = 901.17
INV = 896.77

CB 301
STA: 80+50
OFF: 25.0 RT LNB
T/C = 901.63
INV = 897.23



901.16	900.7	900.6	900.6	900.7	900.8	900.9	900.9	900.8	900.5	900.1	899.8	899.4	899.2	898.9	898.8	898.9	898.6	898.5	898.4	898.5	898.5	900.2	900.6	898.6	898.7	899.0	900.7	898.7	898.2	898.1	898.3
	900.91	900.66	900.41	900.16	899.91	899.66	899.42	899.27	899.22	899.27	899.42	899.66	899.91	900.16	900.41	900.66	900.91	901.16	901.41	901.66	901.91	902.16	902.41	902.66	902.86	902.96	902.96	902.86	902.66	902.41	902.16

66+00 67+00 68+00 69+00 70+00 71+00 72+00 73+00 74+00 75+00 76+00 77+00 78+00 79+00 80+00 81+00

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-13\Plan\53-Storm Drainage Plan.dwg 01/09/2004 09:35:17 AM CST

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
PRINT NAME: PETER M. LEMKE
SIGNATURE: Peter M Lemke
DATE: 1/09/2004 REG. NO. 40118

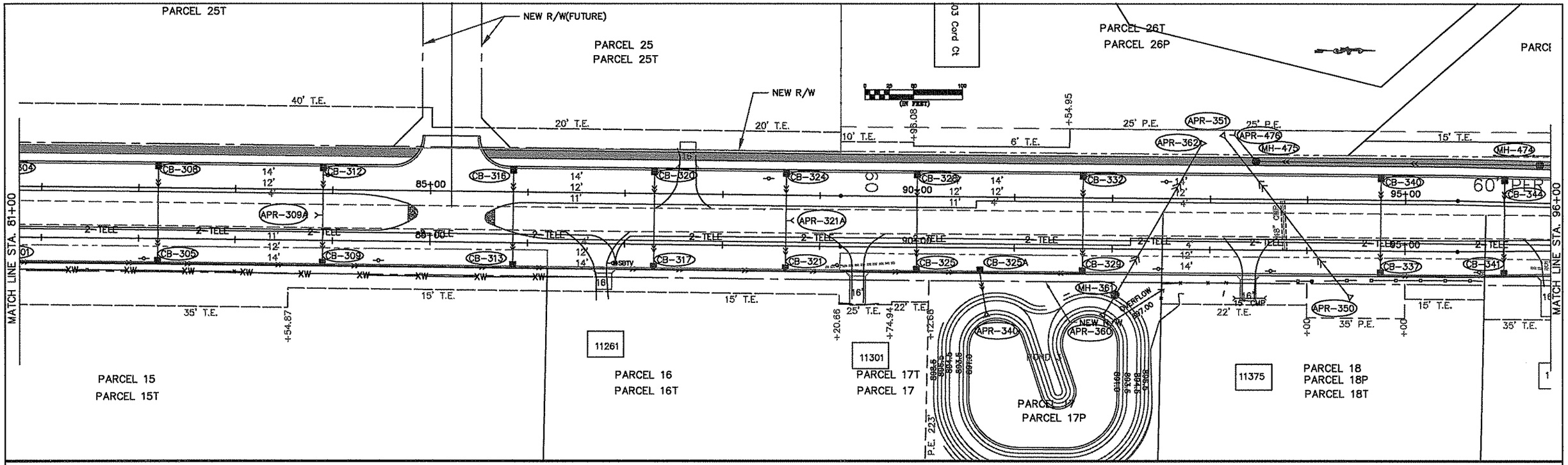
DRAWN BY CSO DATE 8/26/03
DESIGN BY MTH DATE 8/26/03
CHECKED BY PML DATE 8/26/03

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13
STATE PROJECT NO. 106-020-23
STATE AID PROJECT NO.
COUNTY PROJECT NO.

STORM DRAINAGE
STA. 66+00 TO 81+00

Sheet 86 of 226 Sheets



MH 475
STA: 93+46
OFF: 38.0 LT LSB
T/C = 900.90
INV = 894.00

15" X 303' RCP @ 0.18%

894.00

CB 301
STA: 80+50
OFF: 25.0 RT LNB
T/C = 901.63
INV = 897.23

CB 305
STA: 82+20
OFF: 25.0 RT LNB
T/C = 900.78
INV = 896.13

CB 309
STA: 83+90
OFF: 25.0 RT LNB
T/C = 899.93
INV = 895.03

CB 313
STA: 85+85
OFF: 25.0 RT LNB
T/C = 898.95
INV = 893.80

CB 317
STA: 87+30
OFF: 25.0 RT LNB
T/C = 898.23
INV = 892.83

CB 321
STA: 88+65
OFF: 25.0 RT LNB
T/C = 897.95
INV = 892.30

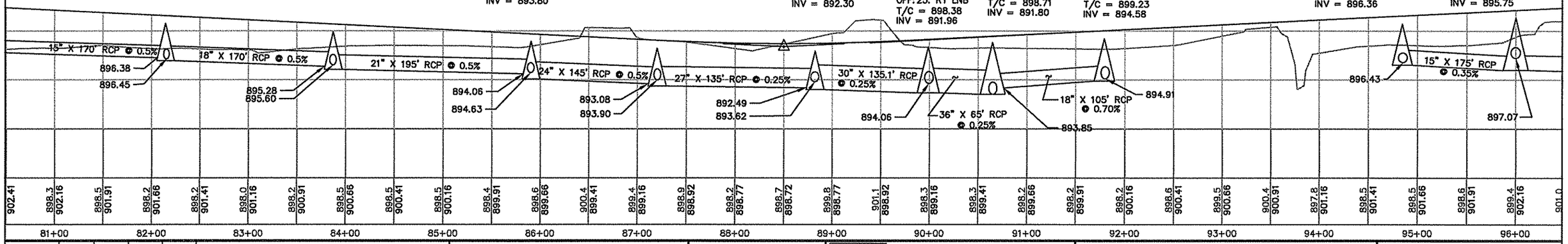
CB 325
STA: 90+00
OFF: 25. RT LNB
T/C = 898.38
INV = 891.96

CB 325A
STA: 90+65
OFF: 25.0 RT LNB
T/C = 898.71
INV = 891.80

CB 329
STA: 91+70
OFF: 25.0 RT LNB
T/C = 899.23
INV = 894.58

CB 337
STA: 94+75
OFF: 25.0 RT LNB
T/C = 900.76
INV = 896.36

CB 341
STA: 96+00
OFF: 25.0 RT LNB
T/C = 901.38
INV = 895.75



NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-13\Plan\53-Storm Drainage Plan.dwg 01/08/2004 08:53:47 AM CST

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

PRINT NAME: PETER M. LEMKE

SIGNATURE: Peter M Lemke

DATE: 1/09/2004 REG. NO. 40118

DRAWN BY CSO DATE 8/26/03

DESIGN BY MTH DATE 8/26/03

CHECKED BY PML DATE 8/26/03

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13

STATE PROJECT NO. 106-020-23

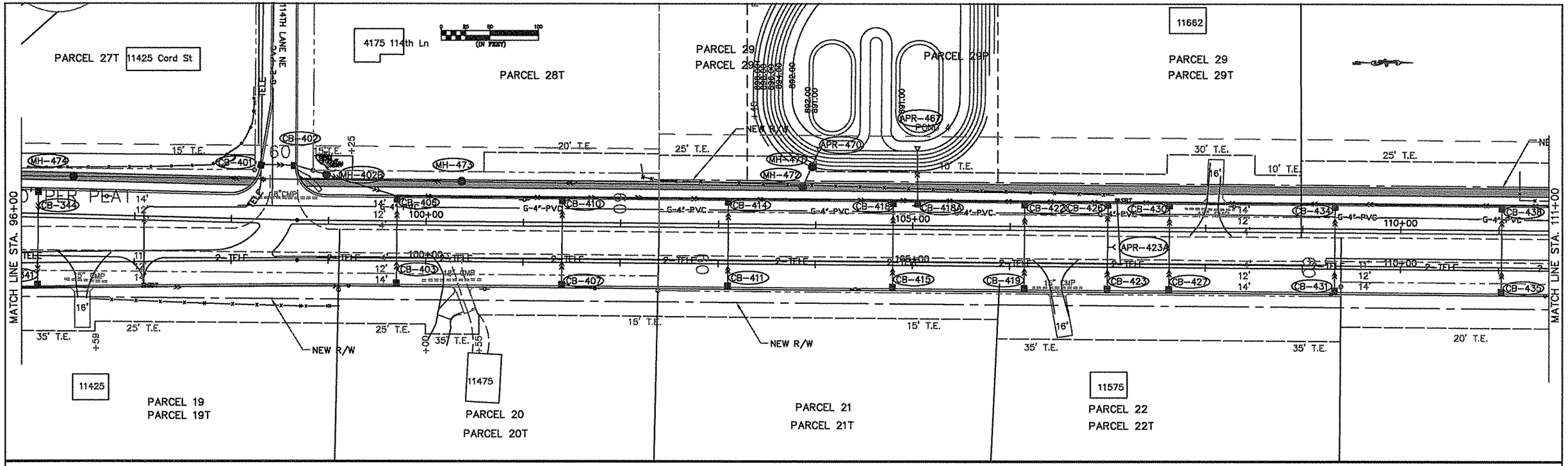
STATE AID PROJECT NO.

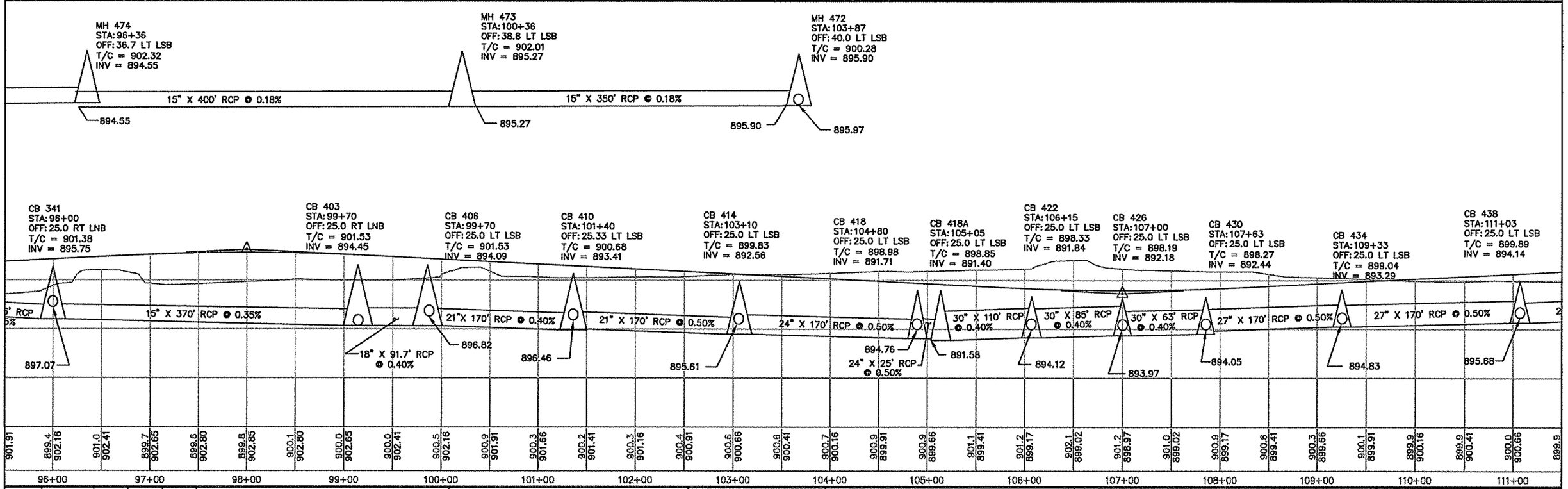
COUNTY PROJECT NO.

STORM DRAINAGE

STA. 81+00 TO 96+00

Sheet 87 of 226 Sheets





NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-13\Plan\53-Storm Drainage Plan.dwg 01/08/2004 09:00:52 AM CST

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

PRINT NAME: PETER M. LEMKE

SIGNATURE: Peter M Lemke

DATE: 1/09/2004 REG. NO. 40118

DRAWN BY CSO DATE 8/26/03

DESIGN BY MTH DATE 8/26/03

CHECKED BY PML DATE 8/26/03

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13

STATE PROJECT NO. 106-020-23

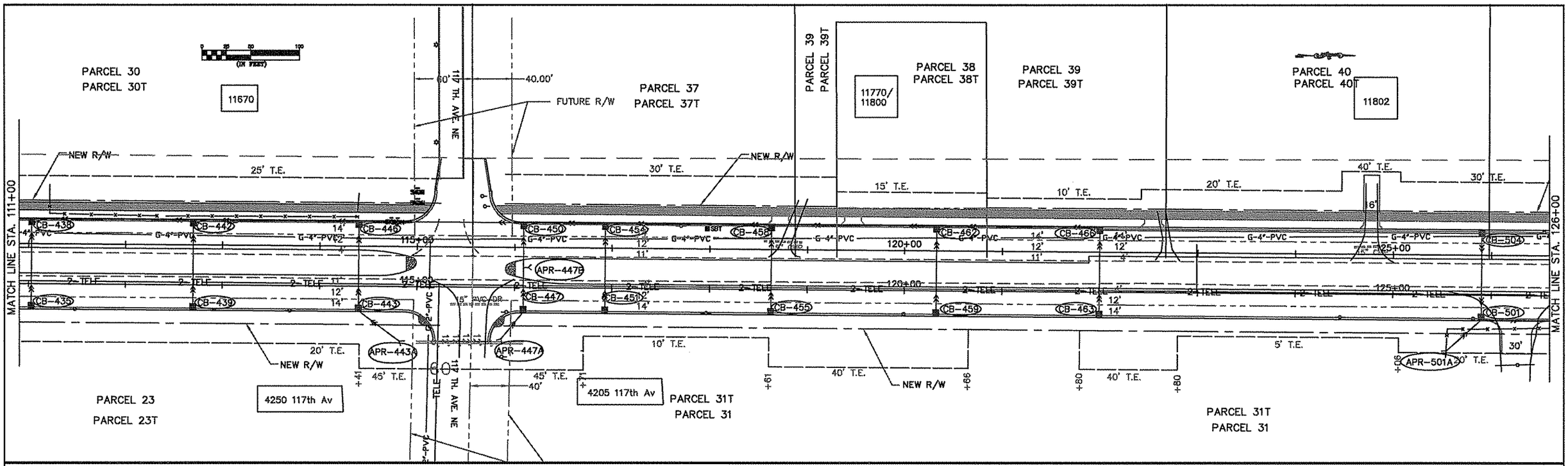
STATE AID PROJECT NO.

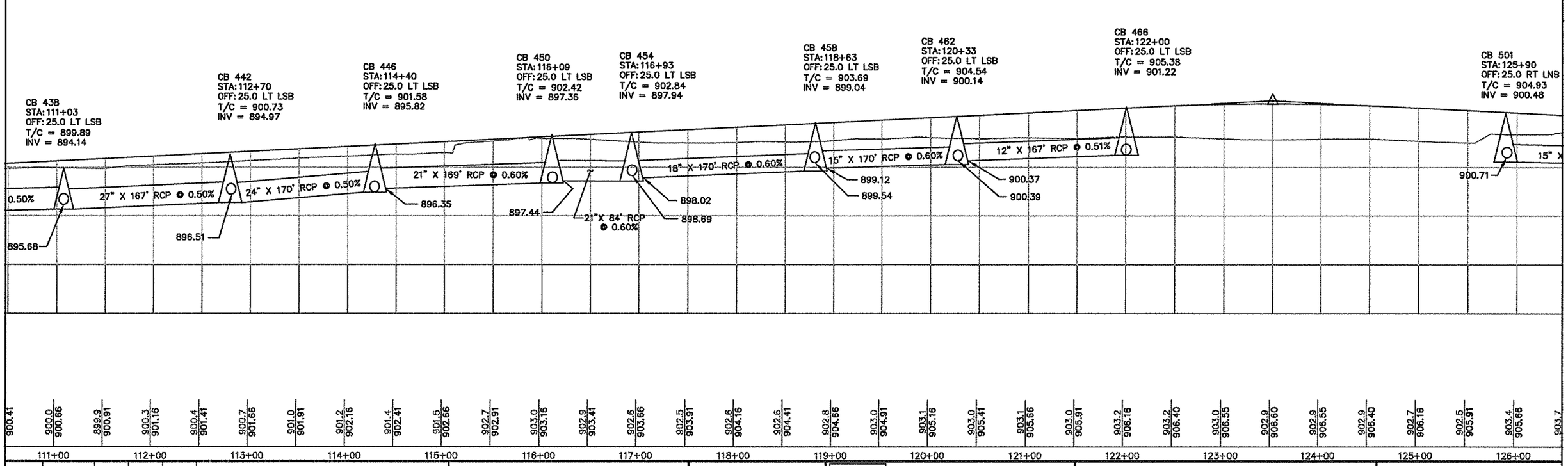
COUNTY PROJECT NO.

STORM DRAINAGE

STA. 96+00 TO 111+00

Sheet 88 of 226 Sheets





NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-13\Plan\S3-Storm Drainage Plan.dwg 01/08/2004 09:10:37 AM CST

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

PRINT NAME: PETER M. LEMKE

SIGNATURE: Peter M Lemke

DATE: 1/09/2004 REG. NO. 40118

DRAWN BY CSO DATE 8/26/03

DESIGN BY MTH DATE 8/26/03

CHECKED BY PML DATE 8/26/03

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13

STATE PROJECT NO. 106-020-23

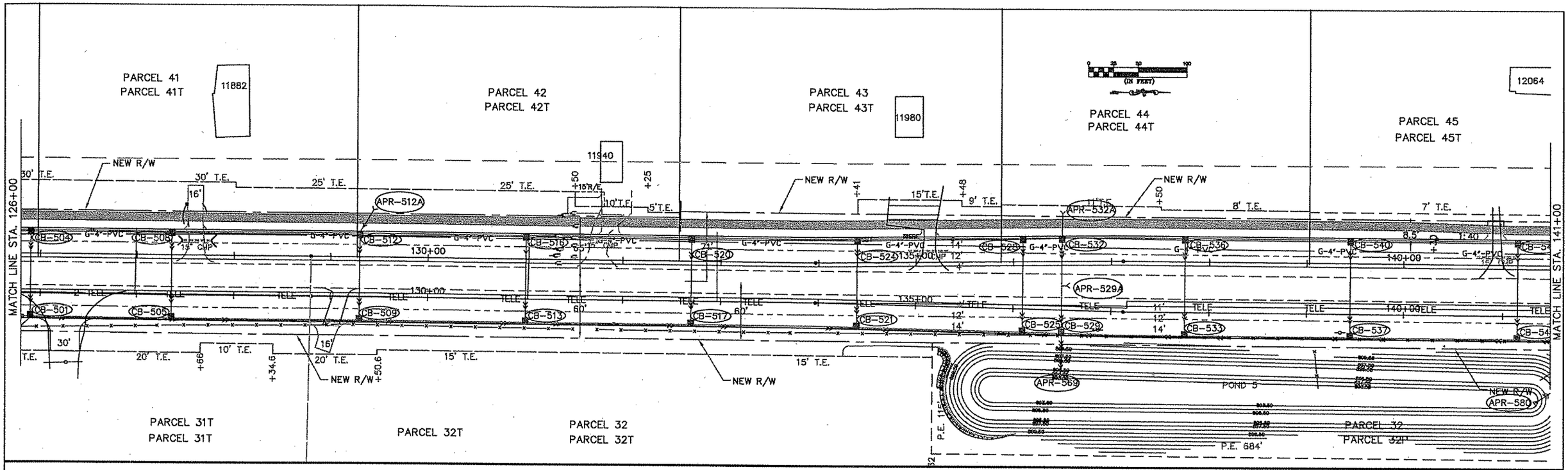
STATE AID PROJECT NO.

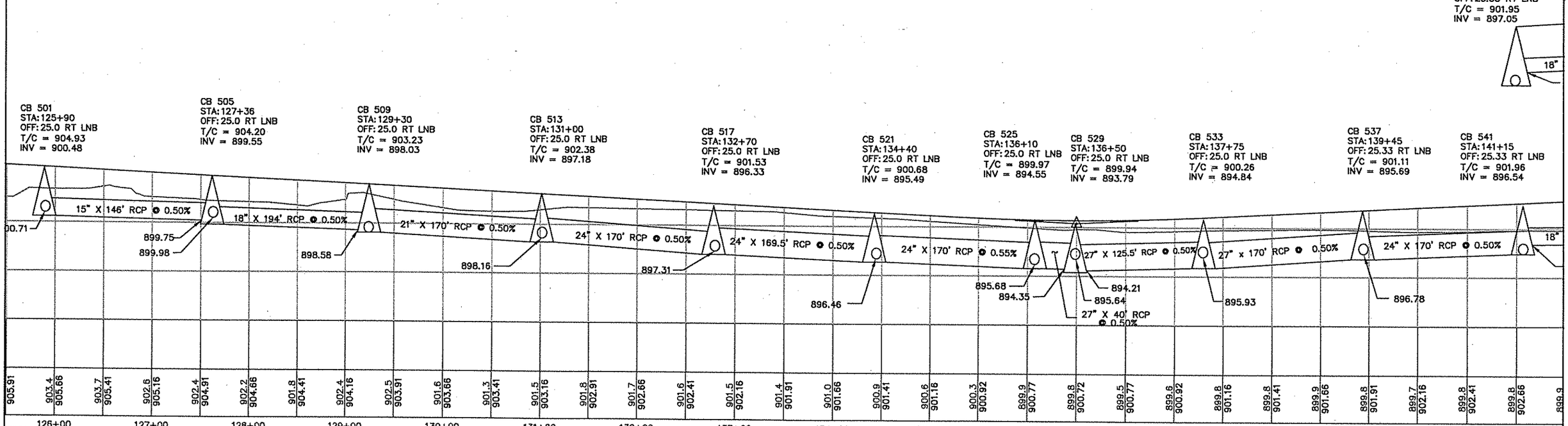
COUNTY PROJECT NO.

STORM DRAINAGE

STA. 111+00 TO 126+00

Sheet 89 of 226 Sheets





NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-13\Plan\53-Storm Drainage Plan.dwg 01/08/2004 09:10:37 AM CST

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

PRINT NAME: PETER M. LEMKE

SIGNATURE: Peter M Lemke

DATE: 1/09/2004 REG. NO. 40118

DRAWN BY CSO DATE 8/26/03

DESIGN BY MTH DATE 8/26/03

CHECKED BY PML DATE 8/26/03

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13

STATE PROJECT NO. 106-020-23

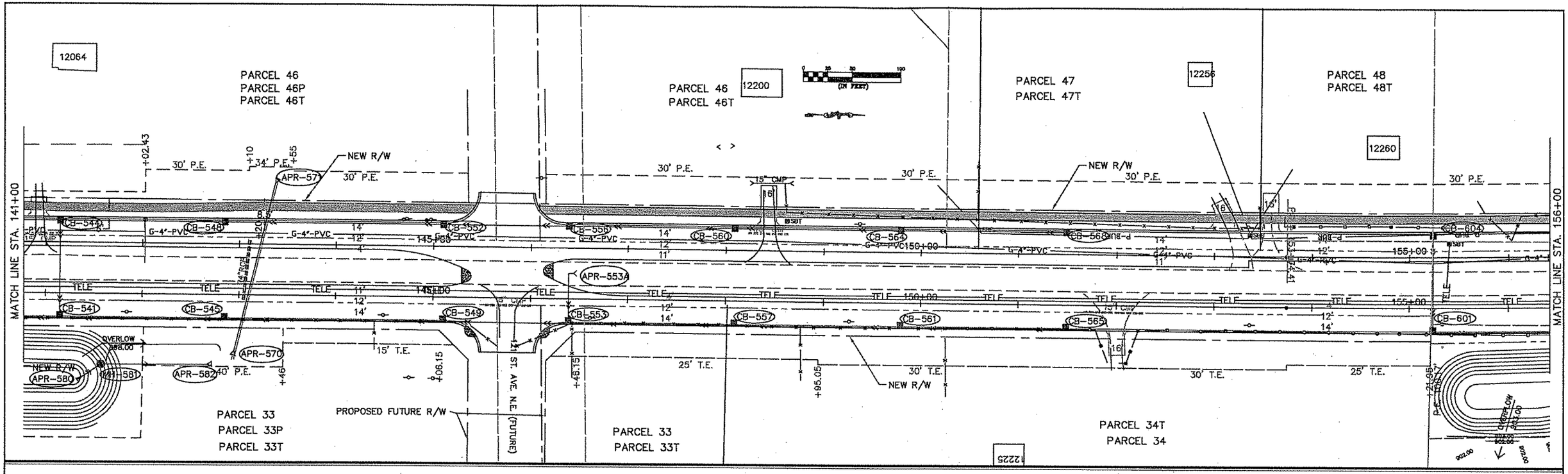
STATE AID PROJECT NO.

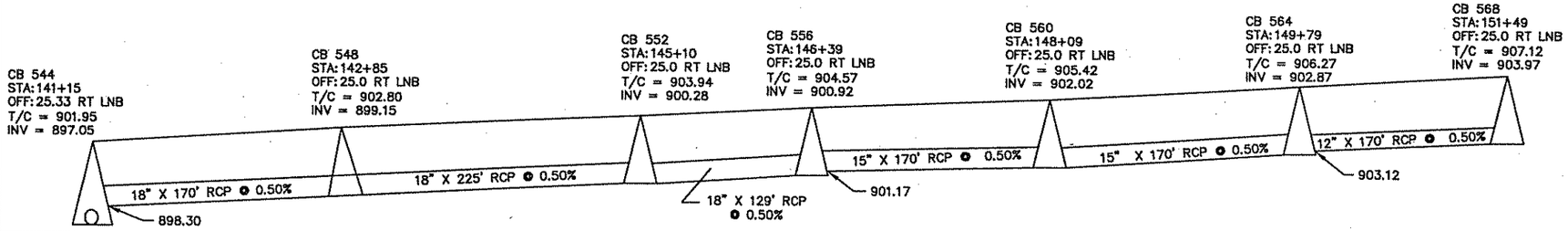
COUNTY PROJECT NO.

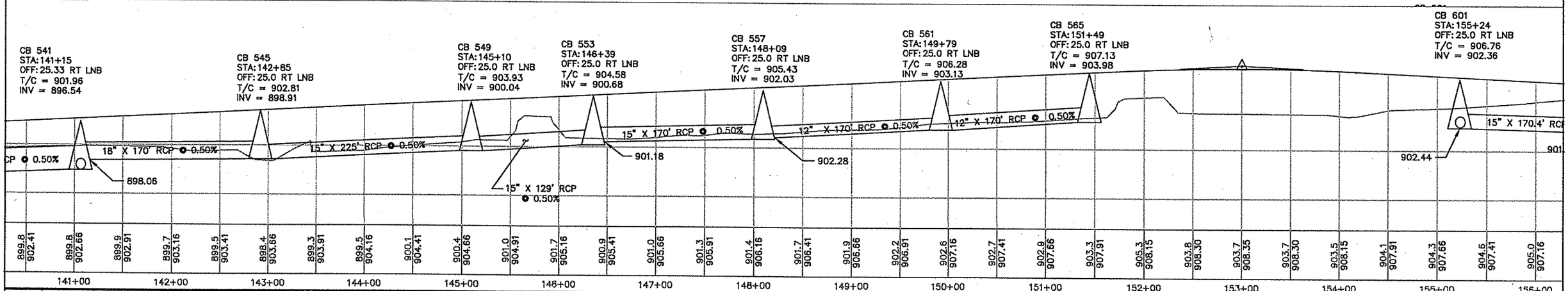
STORM DRAINAGE

STA. 126+00 TO 141+00

Sheet 90 of 226 Sheets







NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-13\Plan\53-Storm Drainage Plan.dwg 01/08/2004 09:39:47 AM CST

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

PRINT NAME: PETER M. LEMKE

SIGNATURE: Peter M Lemke

DATE: 1/09/2004 REG. NO. 40118

DRAWN BY CSO DATE 8/26/03

DESIGN BY MTH DATE 8/26/03

CHECKED BY PML DATE 8/26/03

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13

STATE PROJECT NO. 106-020-23

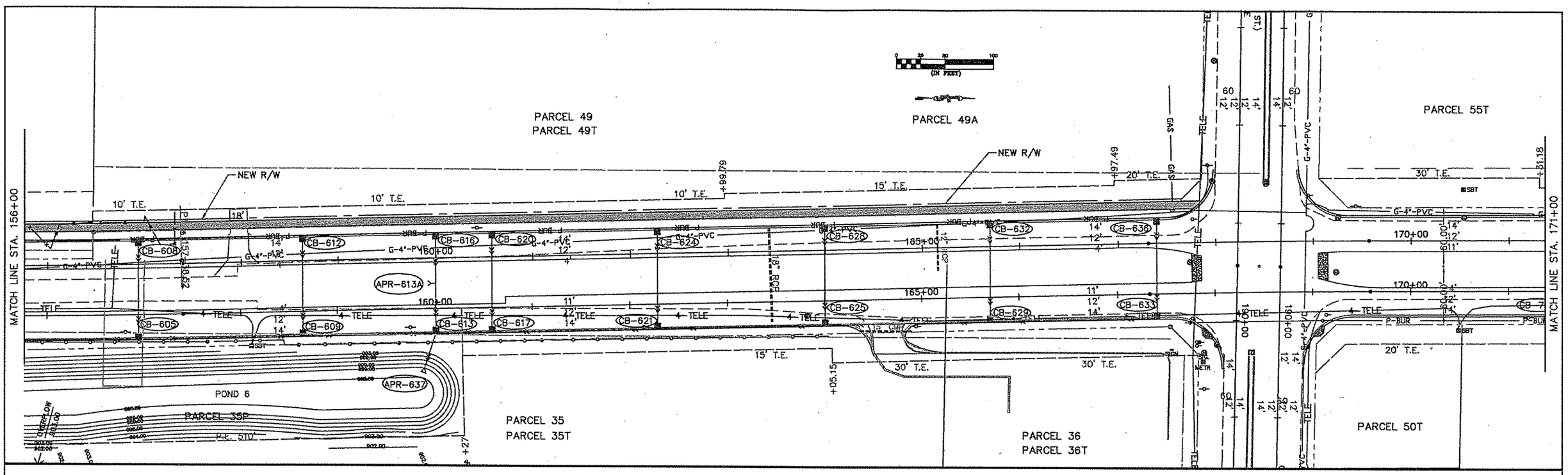
STATE AID PROJECT NO.

COUNTY PROJECT NO.

STORM DRAINAGE

STA. 141+00 TO 156+00

Sheet 91 of 226 Sheets



CB 601
STA: 155+24
OFF: 25.0 RT LNB
T/C = 906.76
INV = 902.36

CB 605
STA: 156+94
OFF: 25.0 LT LSB
T/C = 905.91
INV = 901.26

CB 609
STA: 158+64
OFF: 25.0 LT LSB
T/C = 905.06
INV = 900.16

CB 613
STA: 160+00
OFF: 25.0 LT LSB
T/C = 904.66
INV = 898.51

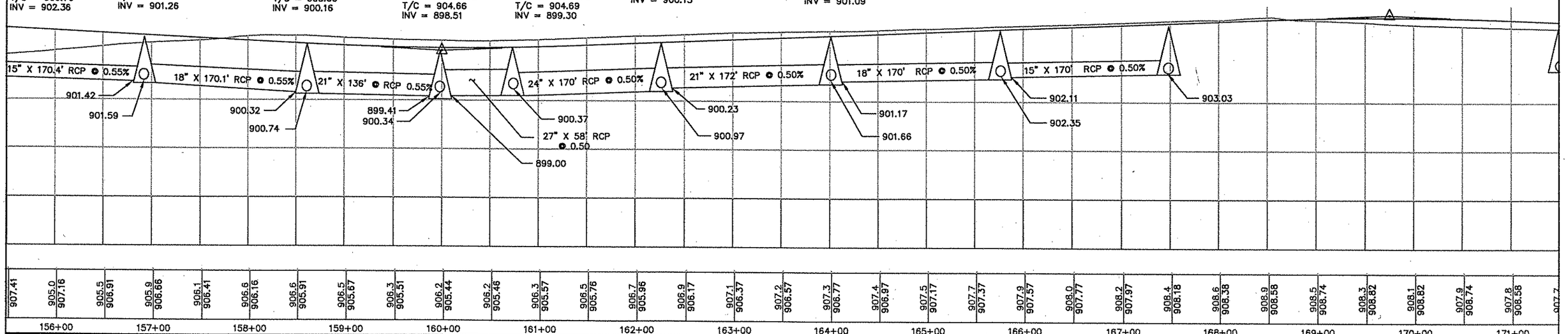
CB 617
STA: 160+58
OFF: 25.0 RT LNB
T/C = 904.69
INV = 899.30

CB 621
STA: 162+28
OFF: 25.0 RT LNB
T/C = 905.30
INV = 900.15

CB 625
STA: 164+00
OFF: 25.0 RT LNB
T/C = 905.99
INV = 901.09

CB 629
STA: 165+70
OFF: 25.0 RT LNB
T/C = 906.67
INV = 902.02

CB 633
STA: 167+40
OFF: 25.0 RT LNB
T/C = 907.36
INV = 902.96



NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-13\Plan\53-Storm Drainage Plan.dwg 01/08/2004 09:39:47 AM CST

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

PRINT NAME: PETER M. LEMKE

SIGNATURE: Peter M Lemke

DATE: 1/09/2004 REG. NO. 40118

DRAWN BY CSO DATE 8/26/03

DESIGN BY MTH DATE 8/26/03

CHECKED BY PML DATE 8/26/03

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13

STATE PROJECT NO. 106-020-23

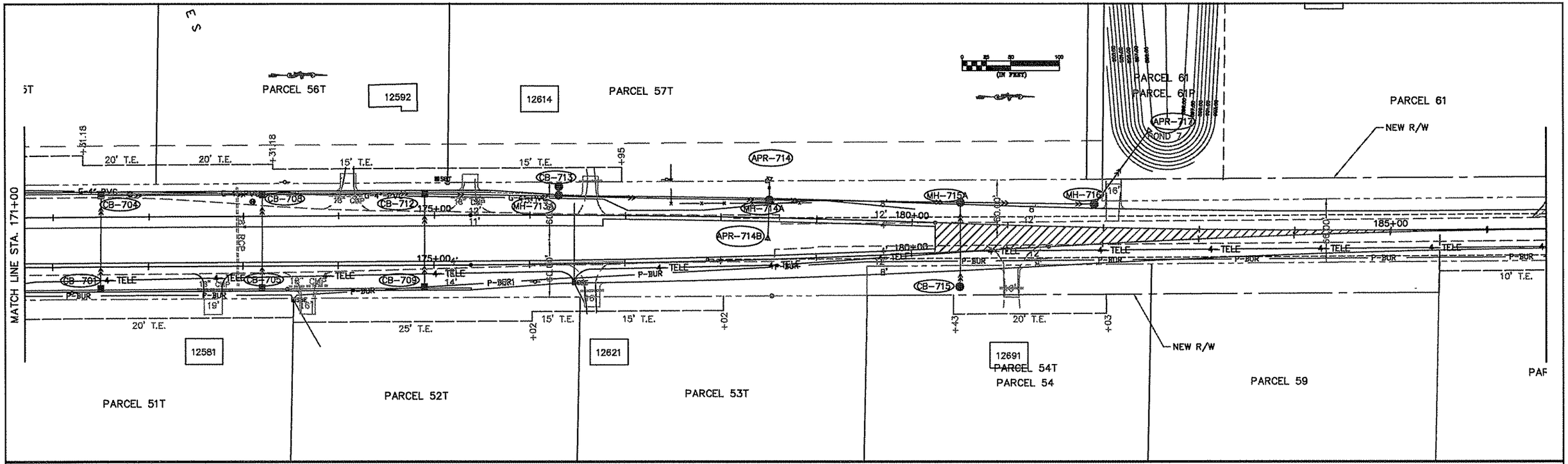
STATE AID PROJECT NO.

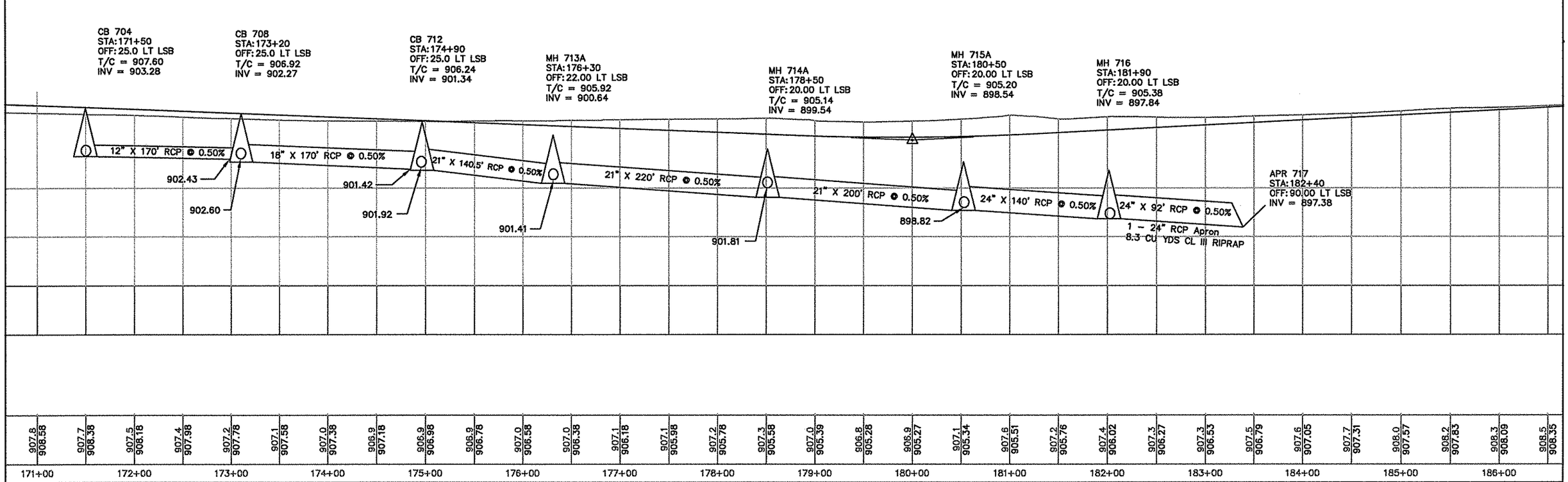
COUNTY PROJECT NO.

STORM DRAINAGE

STA. 156+00 TO 171+00

Sheet 92 of 226 Sheets





NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-13\Plan\53-Storm Drainage Plan.dwg 01/08/2004 09:39:47 AM CST

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

PRINT NAME: PETER M. LEMKE

SIGNATURE: Peter M Lemke

DATE: 1/09/2004 REG. NO. 40118

DRAWN BY CSO DATE 8/26/03

DESIGN BY MTH DATE 8/26/03

CHECKED BY PML DATE 8/26/03

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13

STATE PROJECT NO. 106-020-23

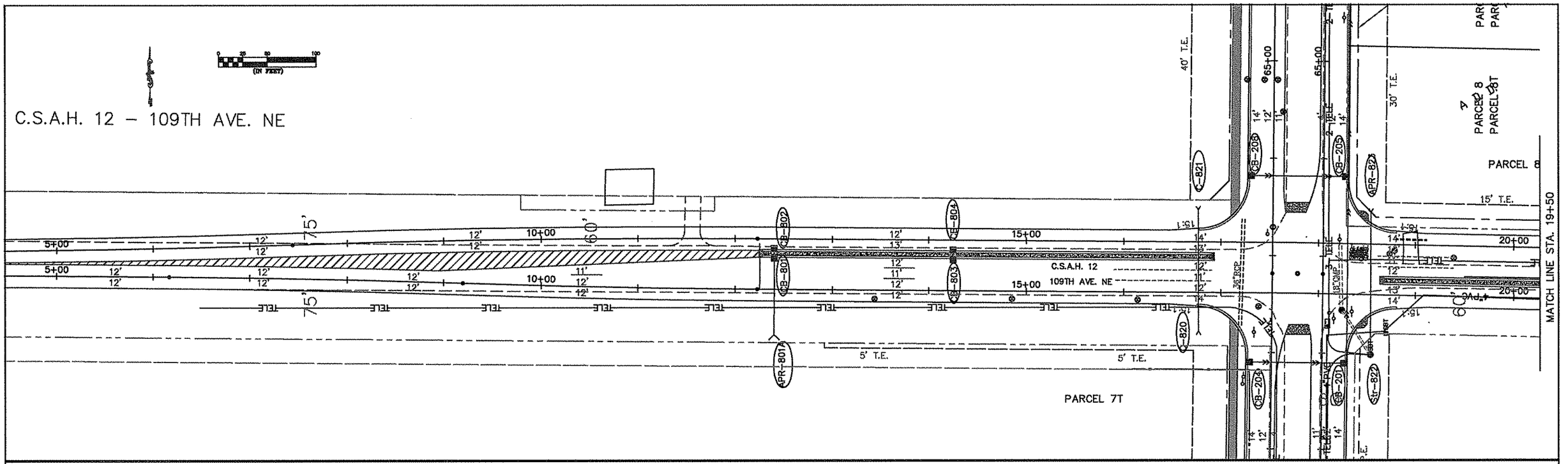
STATE AID PROJECT NO.

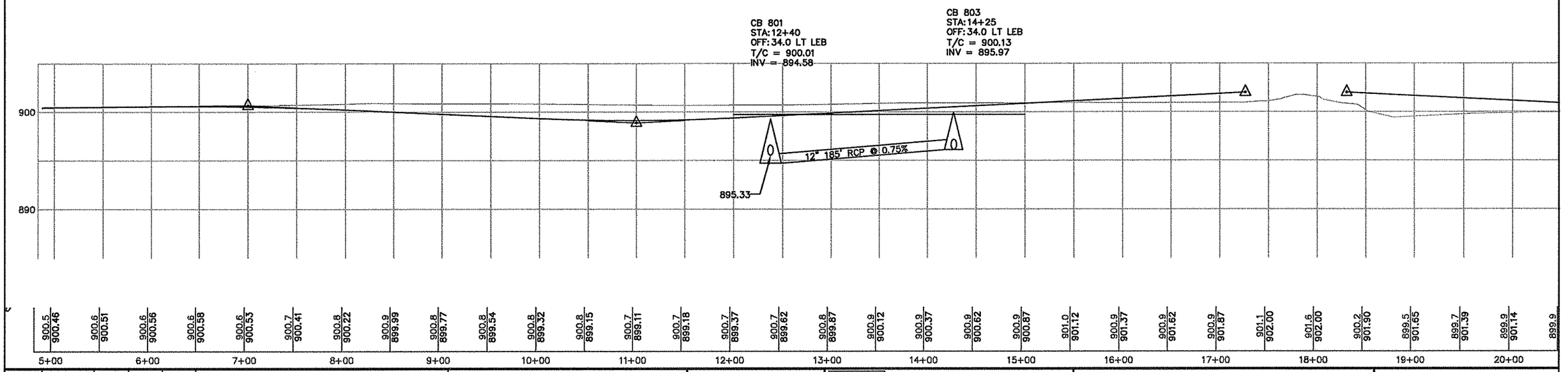
COUNTY PROJECT NO.

STORM DRAINAGE

STA.171+00 TO 187+70.00

Sheet 93 of 226 Sheets





NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-13\Plan\53-Storm Drainage Plan.dwg 01/09/2004 09:39:47 AM CST

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

PRINT NAME: PETER M. LEMKE

SIGNATURE: Peter M Lemke

DATE: 1/09/2004 REG. NO. 40118

DRAWN BY CSO DATE 8/26/03

DESIGN BY MTH DATE 8/26/03

CHECKED BY PML DATE 8/26/03

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13

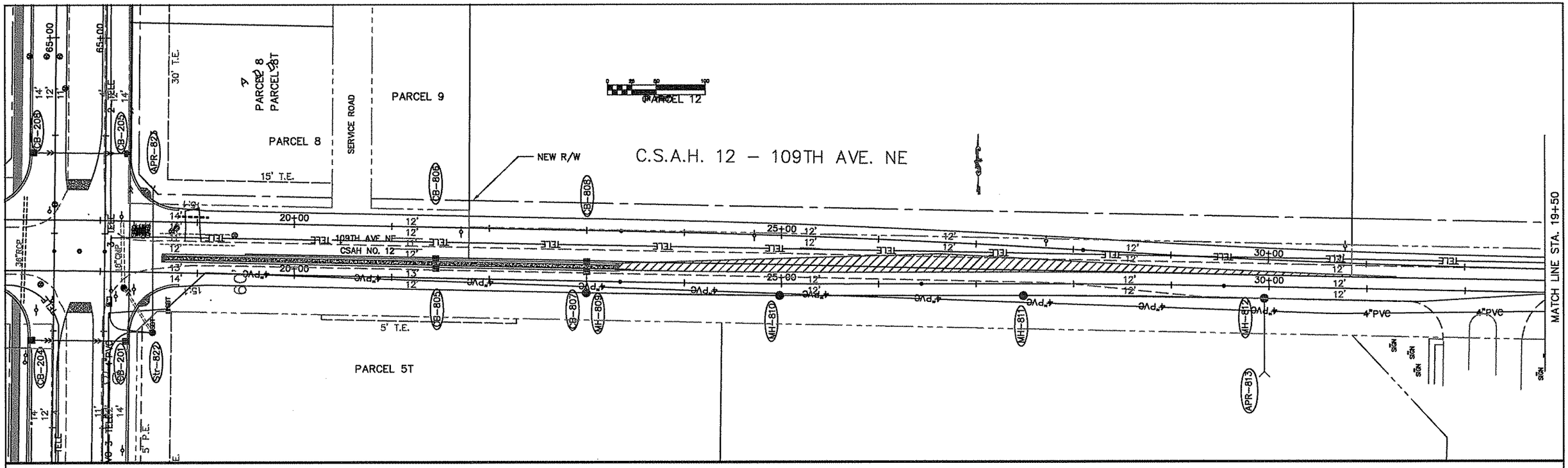
STATE PROJECT NO. 102-060-23

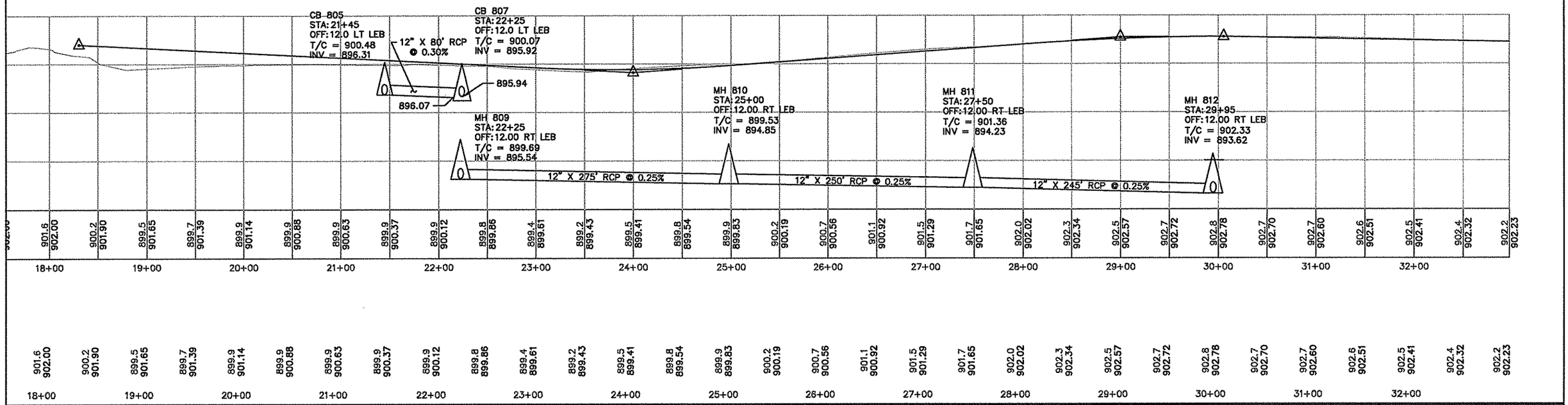
STATE AID PROJECT NO.

COUNTY PROJECT NO.

STORM DRAINAGE
109TH AVE NE – CSAH 12
STA. 2+65.28 TO 18+00

Sheet 94 of 226 Sheets





NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-13\Plan\53-Storm Drainage Plan.dwg 01/09/2004 09:39:47 AM CST

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

PRINT NAME: PETER M. LEMKE

SIGNATURE: Peter M Lemke

DATE: 1/09/2004 REG. NO. 40118

DRAWN BY CSO DATE 8/26/03

DESIGN BY MTH DATE 8/26/03

CHECKED BY PML DATE 8/26/03

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13

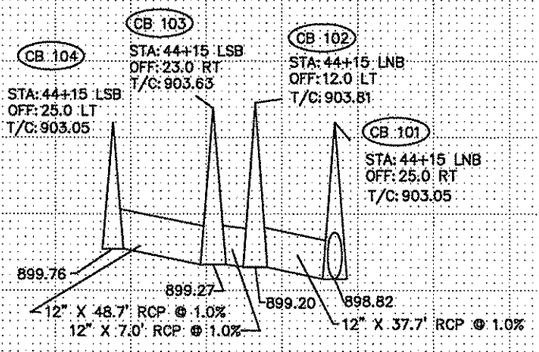
STATE PROJECT NO. 102-060-23

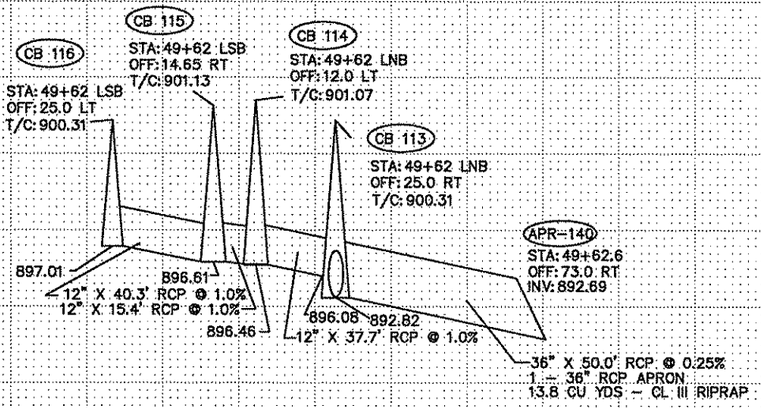
STATE AID PROJECT NO.

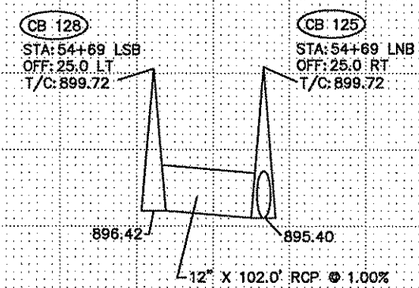
COUNTY PROJECT NO.

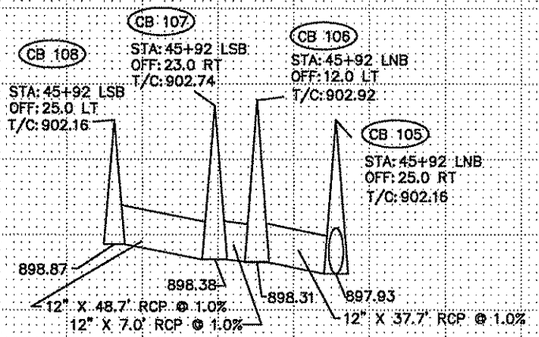
STORM DRAINAGE
109TH AVE NE – CSAH 12
STA. 18+00 TO 35+61.00

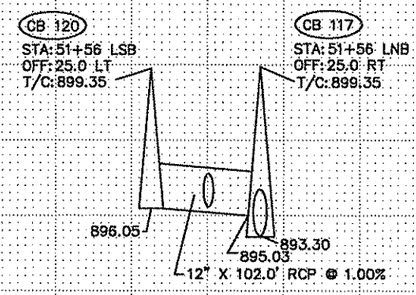
Sheet 95 of 226 Sheets

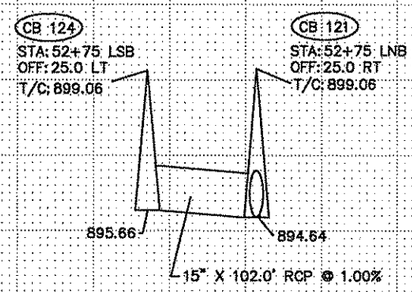


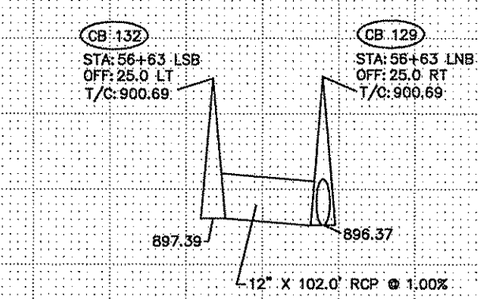


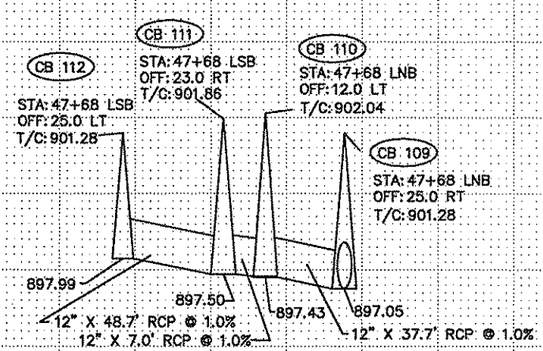


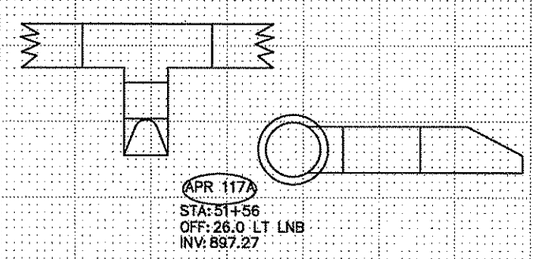


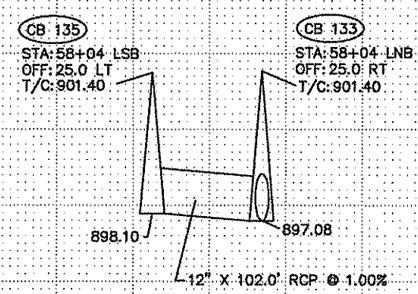












NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-13\Plan\54-Storm Leads.dwg 01/05/2004 08:08:39 PM CST

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

PRINT NAME: PETER M. LEMKE

SIGNATURE: Peter M Lemke

DATE: 1/09/2004 LICENSE NO. 40118

DRAWN BY CSO DATE 8/22/03

DESIGN BY MTH DATE 8/22/03

CHECKED BY MTH DATE 8/22/03

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13

STATE PROJECT NO. 106-020-23

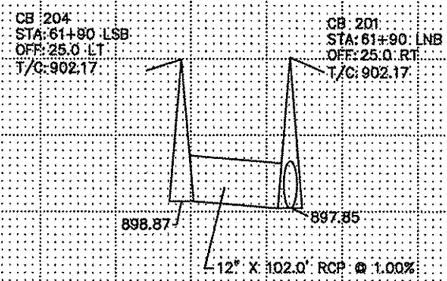
STATE AID PROJECT NO.

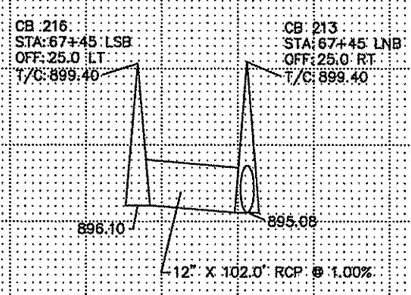
COUNTY PROJECT NO.

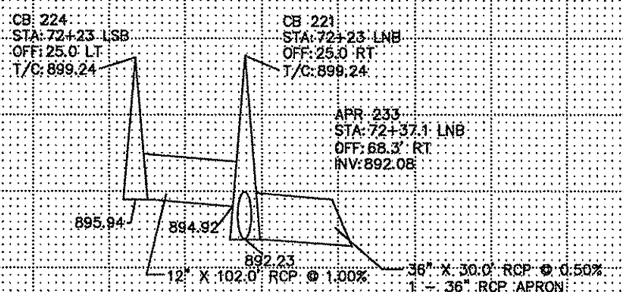
STORM LEADS

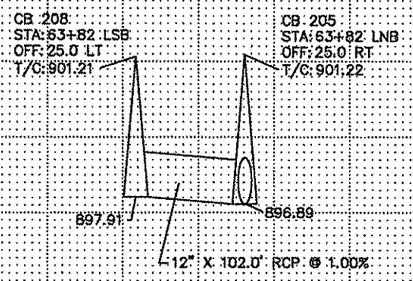
SYSTEM 100

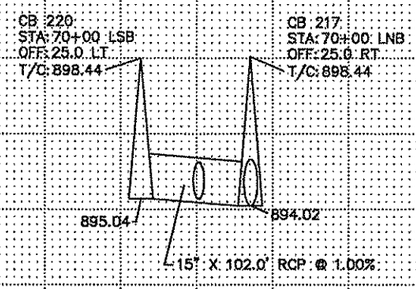
Sheet 96 of 226 Sheets

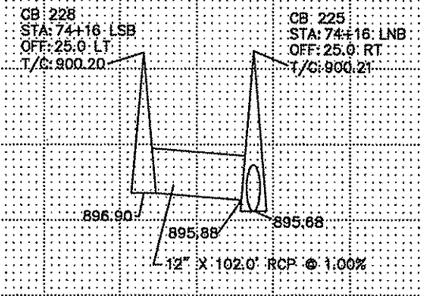


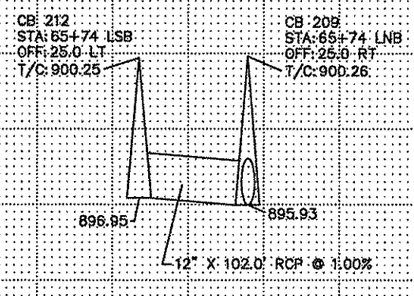


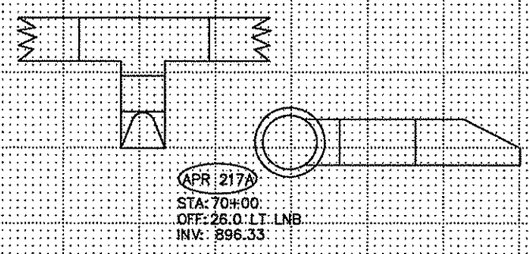


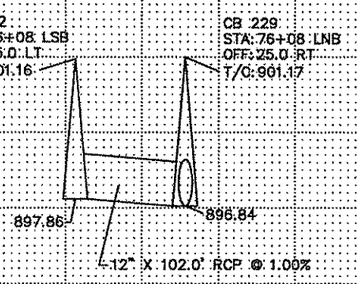












NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-13\Plan\S4-Storm Leads.dwg 01/08/2004 10:04:39 AM CST

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

PRINT NAME: PETER M. LEMKE

SIGNATURE: Peter M Lemke

DATE: 1/09/2004 LICENSE NO. 40118

DRAWN BY CSO DATE 8/22/03

DESIGN BY MTH DATE 8/22/03

CHECKED BY MTH DATE 8/22/03

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13

STATE PROJECT NO. 106-020-23

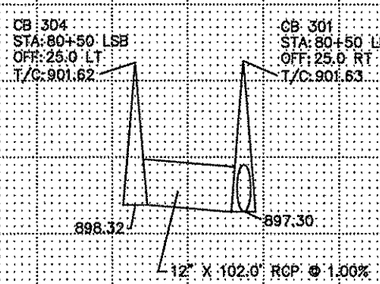
STATE AID PROJECT NO.

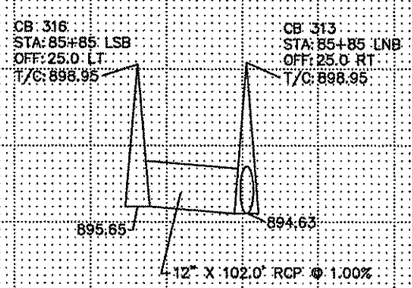
COUNTY PROJECT NO.

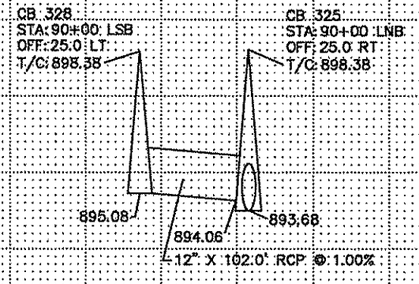
STORM LEADS

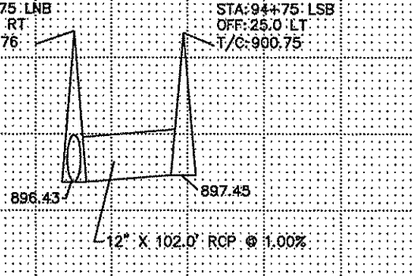
SYSTEM 200

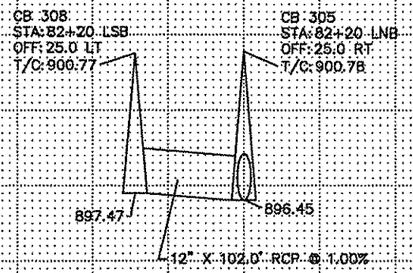
Sheet 97 of 226 Sheets

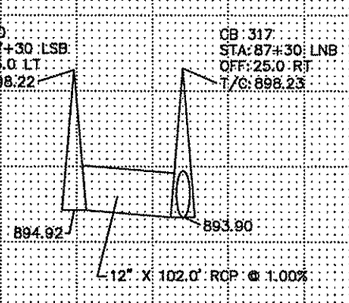


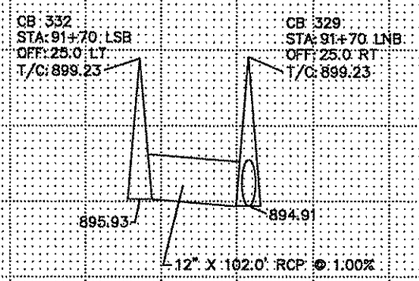


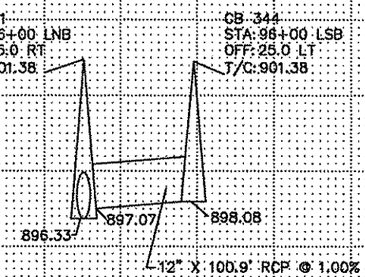


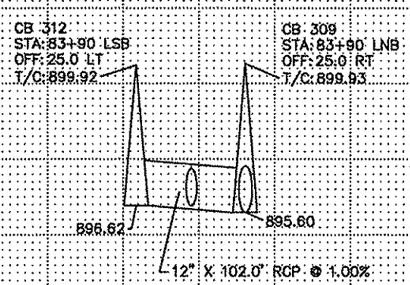


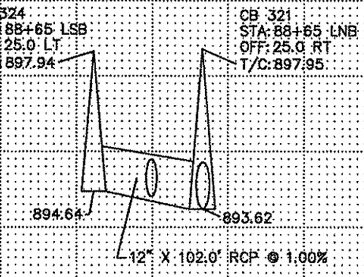


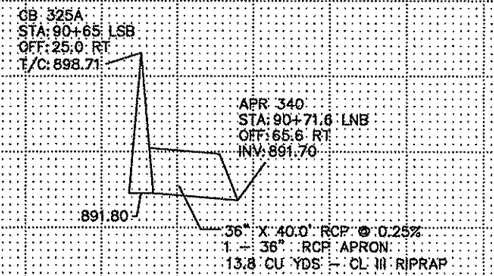


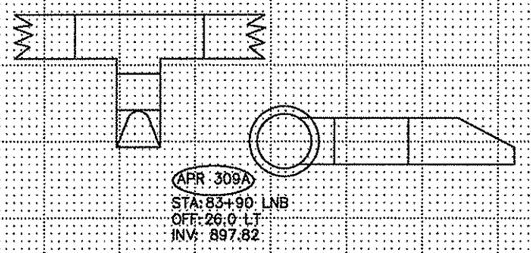


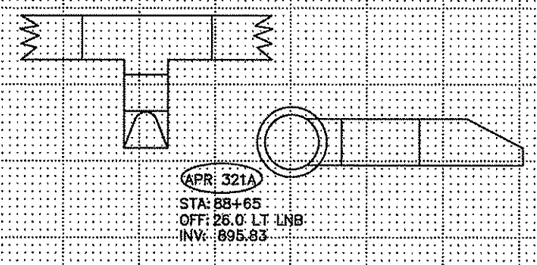


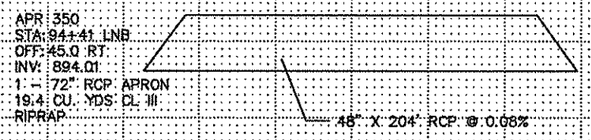












NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-13\Plan\54-Storm Leads.dwg 01/08/2004 10:07:45 AM CST

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

PRINT NAME: PETER M. LEMKE

SIGNATURE: Peter M Lemke

DATE: 1/09/2004 LICENSE NO. 40118

DRAWN BY CSO DATE 8/22/03

DESIGN BY MTH DATE 8/22/03

CHECKED BY MTH DATE 8/22/03

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13

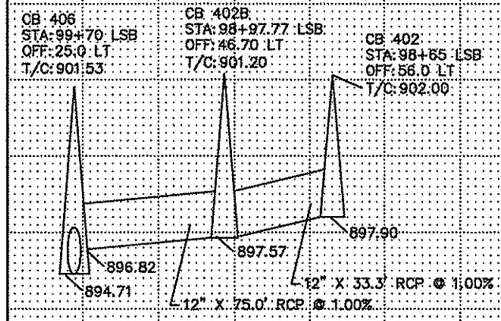
STATE PROJECT NO. 106-020-23

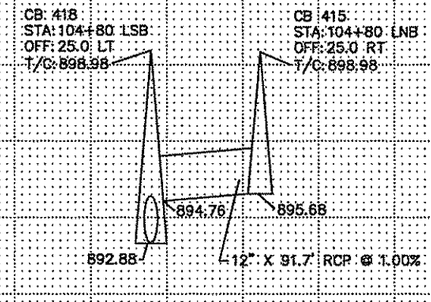
STATE AID PROJECT NO.

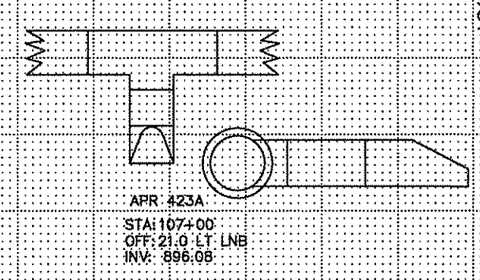
COUNTY PROJECT NO.

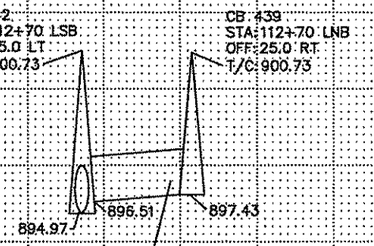
STORM LEADS

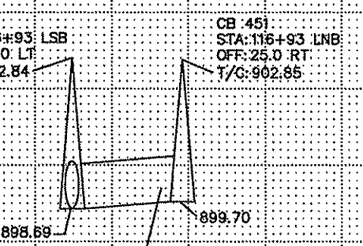
SYSTEM 300

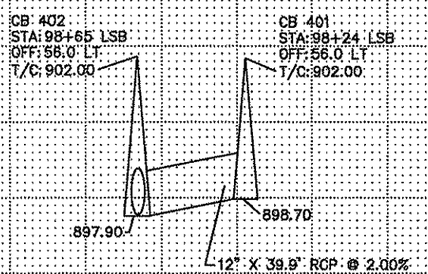


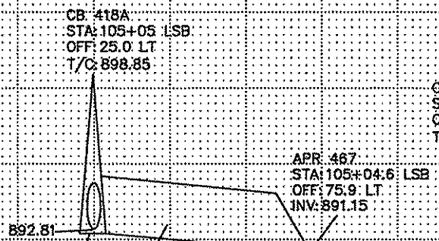


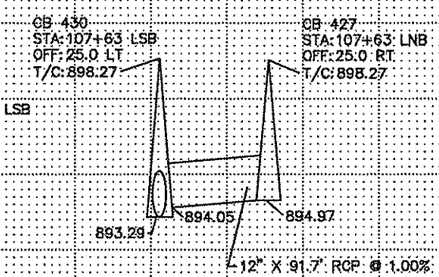


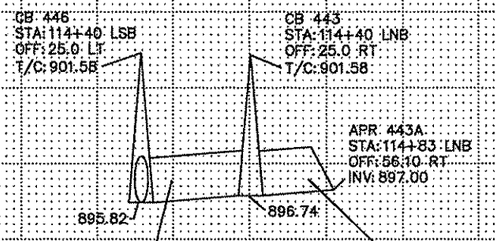


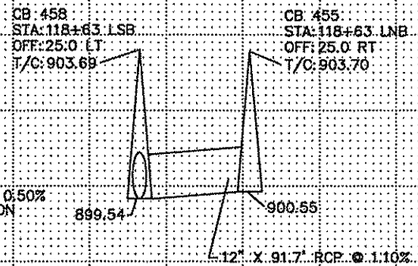


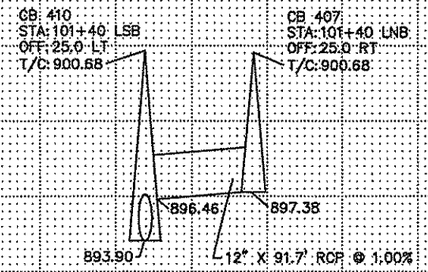


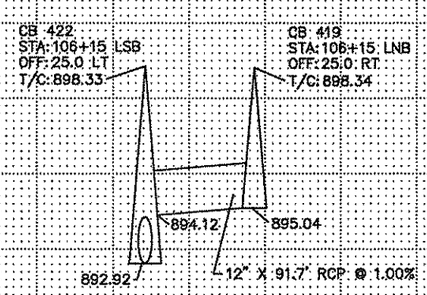


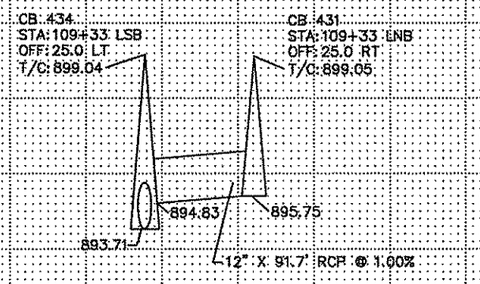


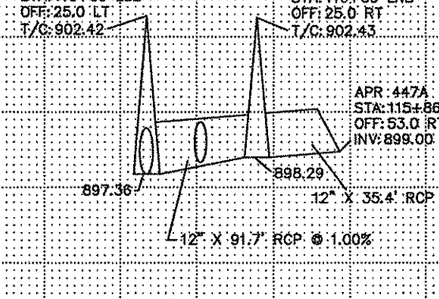


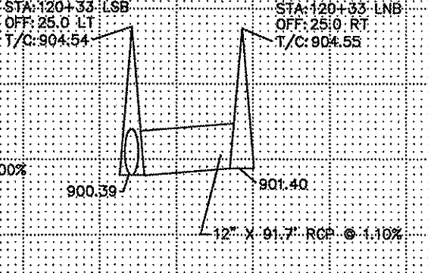


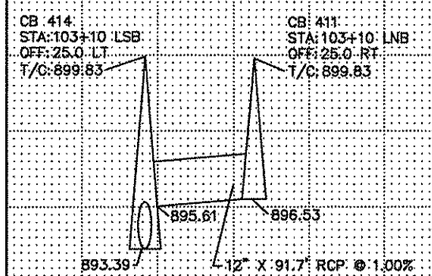


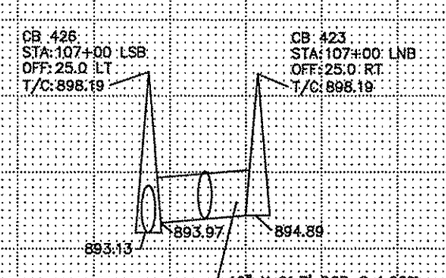


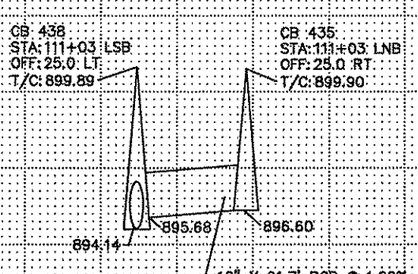


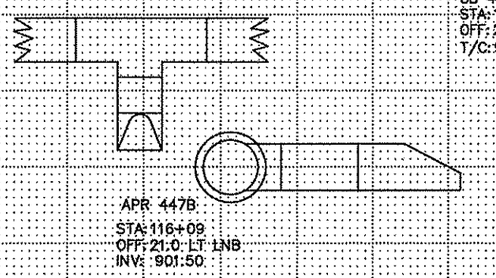


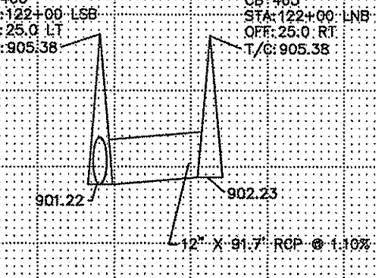












NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-13\Plan\54-Storm Leads.dwg 01/08/2004 10:09:32 AM CST

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

PRINT NAME: PETER M. LEMKE

SIGNATURE: Peter M Lemke

DATE: 1/09/2004 LICENSE NO. 40118

DRAWN BY CSO DATE 8/22/03

DESIGN BY MTH DATE 8/22/03

CHECKED BY MTH DATE 8/22/03

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13

STATE PROJECT NO. 106-020-23

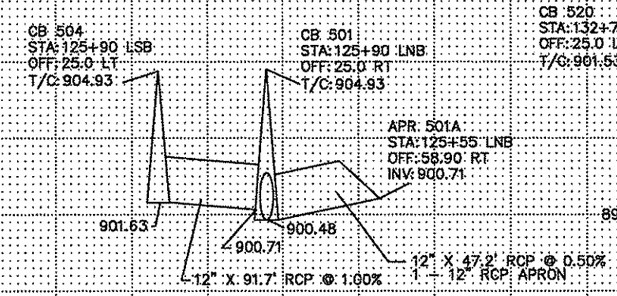
STATE AID PROJECT NO.

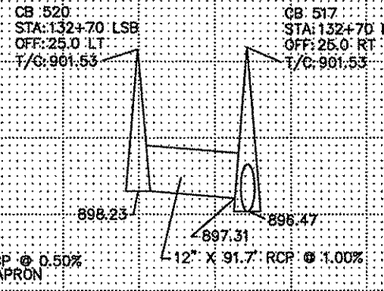
COUNTY PROJECT NO.

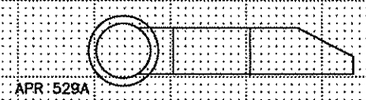
STORM LEADS

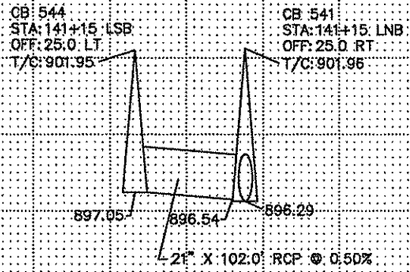
SYSTEM 400

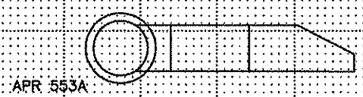
Sheet 99 of 226 Sheets

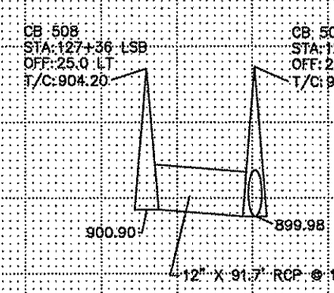


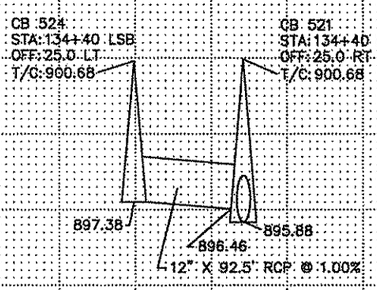


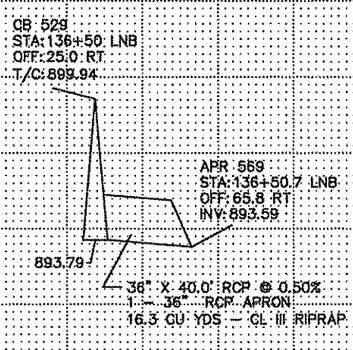


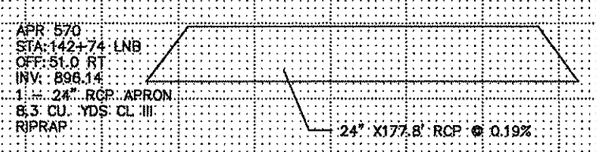


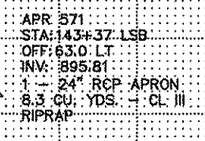


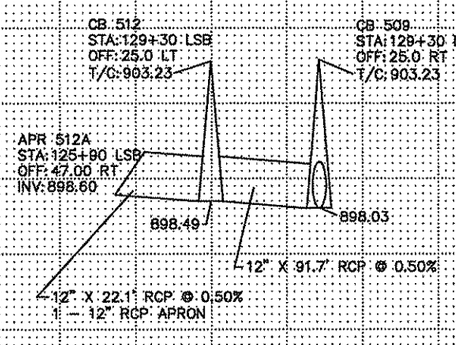


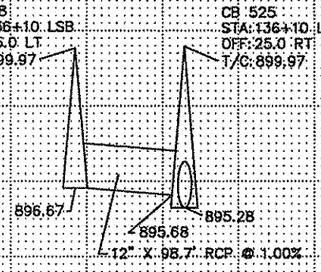


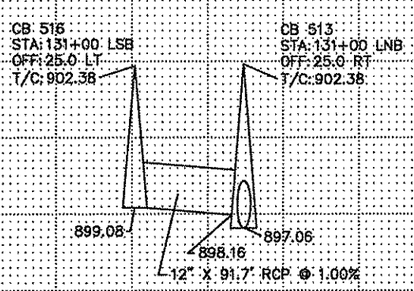


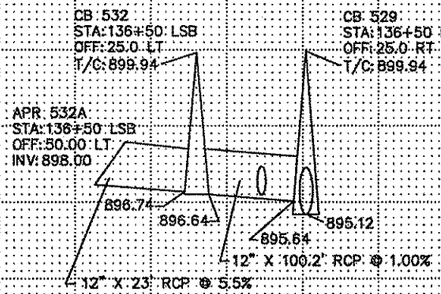


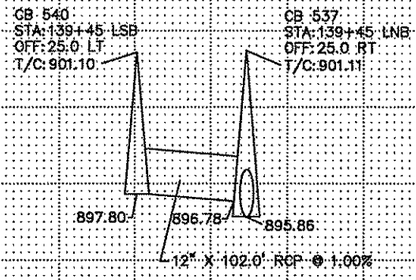












NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-13\Plan\54-Storm Leads.dwg 01/09/2004 10:09:32 AM CST

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

PRINT NAME: PETER M. LEMKE

SIGNATURE: Peter M Lemke

DATE: 1/09/2004 LICENSE NO. 40118

DRAWN BY CSO DATE 8/22/03

DESIGN BY MTH DATE 8/22/03

CHECKED BY MTH DATE 8/22/03

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13

STATE PROJECT NO. 106-020-23

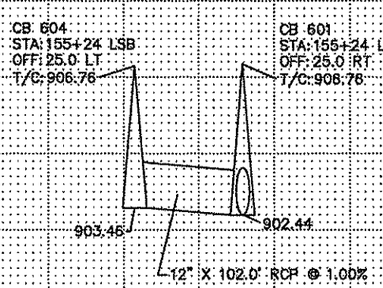
STATE AID PROJECT NO.

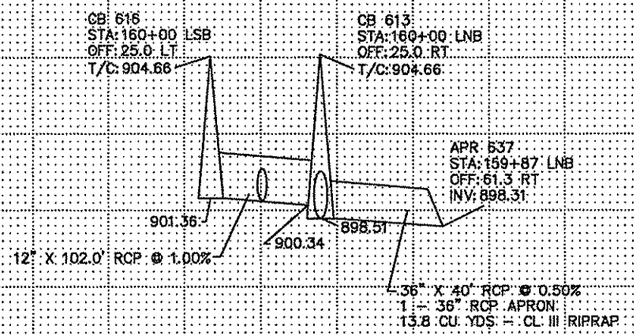
COUNTY PROJECT NO.

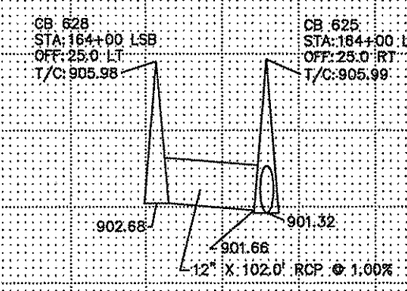
STORM LEADS

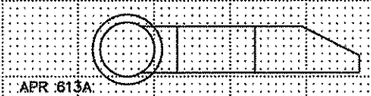
SYSTEM 500

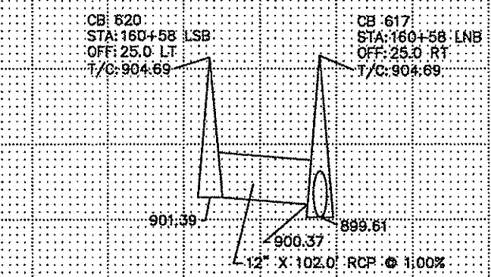
Sheet 100 of 226 Sheets

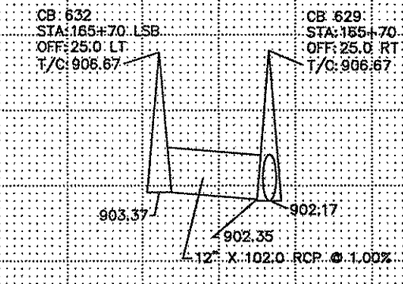


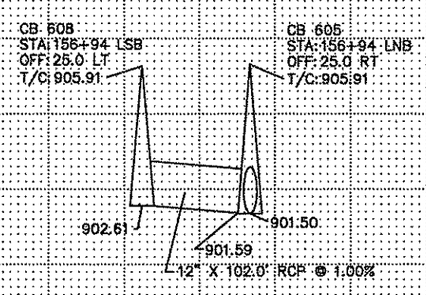


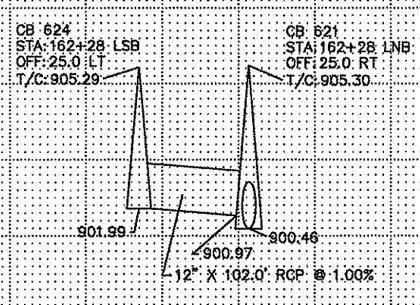


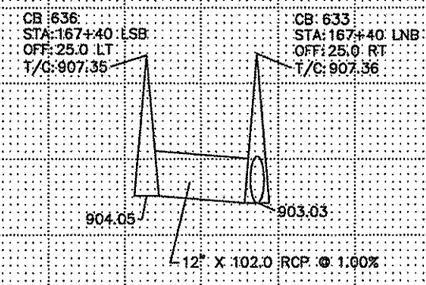


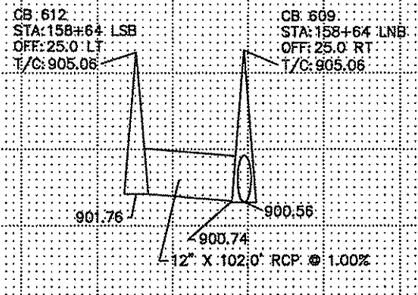












NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-13\Plan\54-Storm Leads.dwg 01/09/2004 10:18:01 AM CST

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

PRINT NAME: PETER M. LEMKE

SIGNATURE: Peter M Lemke

DATE: 1/09/2004 LICENSE NO. 40118

DRAWN BY CSO DATE 8/22/03

DESIGN BY MTH DATE 8/22/03

CHECKED BY MTH DATE 8/22/03

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13

STATE PROJECT NO. 106-020-23

STATE AID PROJECT NO.

COUNTY PROJECT NO.

STORM LEADS

SYSTEM 600

Sheet 101 of 226 Sheets

CB 704
STA: 171+50 LSB
OFF: 25.0 LT
T/C: 907.60

CB 701
STA: 171+50 LNB
OFF: 25.0 RT
T/C: 907.50

903.28

904.30

12" X 102.0' RCP @ 1.00%

CB 713
STA: 176+30 LSB
OFF: 31.00 LT
T/C: 904.80

MH 713A
STA: 176+30 LSB
OFF: 22.00 LT
T/C: 905.92

901.50

901.41

900.87

12" X 9.0' RCP @ 1.00%

CB 801
STA: 12+40 LEB
OFF: 34.0 LT
T/C: 900.01

CB 802
STA: 12+40 LWB
OFF: 12.0 RT
T/C: 899.65

APR 801A
STA: 12+40 LEB
OFF: 47.0 RT
INV: 893.77

895.65

895.30

894.58

12" X 7.0' RCP @ 5.00%

12" X 81' RCP @ 1.00%
1 – 12" RCP APRON
4.1 CU YDS CL III RIPRAP

MH 812
STA: 29+95 LEB
OFF: 12.0 RT
T/C: 902.33

APR 813
STA: 29+97 LEB
OFF: 87.0 RT
INV: 893.43

893.62

12" X 75' RCP @ 0.25%
1 – 12" RCP APRON
4.1 CU YDS CL III RIPRAP

MH 714A
STA: 178+50 LSB
OFF: 20.00 LT
T/C: 905.14

APR 714
STA: 178+50 LSB
OFF: 38.00 LT
INV: 902.00

APR 714B
STA: 178+50 LNB
OFF: 20.0 LT
INV: 902.69

901.81

902.27

899.77

12" X 42.0' RCP @ 1.00%
1 – 12" RCP APRON

12" X 19.0' RCP @ 1.00%
1 – 12" RCP APRON

CB 803
STA: 14+25 LEB
OFF: 34.0 LT
T/C: 900.13

CB 804
STA: 14+25 LWB
OFF: 12.0 RT
T/C: 900.57

895.97

895.32

12" X 7.0' RCP @ 5.00%

APR 820
STA: 16+77 LEB
OFF: 40.0 RT
INV: 894.4

36" X 125.0' RCP @ 0.00%

APR 821
STA: 16+77 LWB
OFF: 33.0 RT
INV: 894.4

CB 708
STA: 173+20 LSB
OFF: 25.0 LT
T/C: 905.92

CB 705
STA: 173+20 LNB
OFF: 25.0 RT
T/C: 906.92

902.42

902.60

903.62

12" X 102.0' RCP @ 1.00%

MH 715A
STA: 180+50 LSB
OFF: 20.00 LT
T/C: 905.20

CB 715
STA: 180+50 LNB
OFF: 35.00 RT
T/C: 903.00

899.70

898.77

898.82

12" X 88.4' RCP @ 1.00%

CB 805
STA: 21+45 LEB
OFF: 12.0 LT
T/C: 900.48

CB 806
STA: 21+45 LWB
OFF: 34.0 RT
T/C: 900.08

896.38

896.31

12" X 7.0' RCP @ 1.00%

EX MH 822
STA: 18+54.8 LEB
OFF: 52.0 RT
T/C: 902.0
INV: 892.8

APR 823
STA: 18+53.6 LWB
OFF: 33.0 RT
INV: 895.8

24" X 147.0' RCP @ 0.80%

895.8

CB 712
STA: 174+90 LSB
OFF: 25.0 LT
T/C: 906.24

CB 709
STA: 174+90 LNB
OFF: 25.0 RT
T/C: 906.24

901.57

901.92

902.94

12" X 102.0' RCP @ 1.00%

MH 716
STA: 181+90 LSB
OFF: 20.00 LT
T/C: 905.38

APR 717
STA: 182+40 LSB
OFF: 88.00 LT
INV: 897.38

897.84

24" X 92.0' RCP @ 0.50%
1 – 24" RCP APRON
8.3 CU YDS CL III RIPRAP

CB 807
STA: 22+25 LEB
OFF: 12.0 LT
T/C: 900.07

CB 808
STA: 22+25 LWB
OFF: 34.0 RT
T/C: 900.04

CB 809
STA: 22+25 LEB
OFF: 12.00 RT
T/C: 899.69

895.92

895.84

896.04

895.56

12" X 24.3' RCP @ 1.50%

12" X 7.0' RCP @ 1.50%

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-13\Plan\S4-Storm Leads.dwg 01/14/2004 10:40:25 AM CST

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

PRINT NAME: PETER M. LEMKE

SIGNATURE: Peter M Lemke

DATE: 1/09/2004 LICENSE NO. 40118

DRAWN BY CSO DATE 8/22/03

DESIGN BY MTH DATE 8/22/03

CHECKED BY MTH DATE 8/22/03

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13
STATE PROJECT NO. 106-020-23
STATE AID PROJECT NO.
COUNTY PROJECT NO.

STORM LEADS
SYSTEM 700 & 800

Sheet 102 of 226 Sheets

FLOWS FROM STR. OR APRON INLET	ALIGNMENT	STATION	OFFSET	L/R	TOP OF CASTING ELEVATION	INVERT ELEVATION	PIPE SLOPE	FLOWS TO STR. OR APRON OUTLET	NEW STRUCTURE CONSTRUCTION			DRAINAGE PIPE - RCP (DESIGN 3006)									RIPRAP AT RCP OUTLETS		FLOWS FROM STR. OR APRON INLET	FOOTNOTES
									DESIGN	PAY HT	CASTING ASSEMBLY	12 in CL V	12 in APR	15 in CL V	18 in CL III	21 in CL III	27 in CL III	30 in CL III	36 in CL II	36 in APR	CL III RIPRAP	GEOTEXTILE FILTER TYPE IV		
					FT	FT	%			FT	TYPE	FT	EACH	FT	FT	FT	FT	FT	FT	EACH	CU YD	SQ YD		
101	LNB	44+15	25.00	RT	903.05	898.82	0.59	105	48-4020	4.01	B-5	177											101	
102	LNB	44+15	12.00	LT	903.81	899.19	1.00	101	G	4.40	B-5	38											102	
103	LSB	44+15	23.00	RT	903.63	899.26	1.00	102	G	4.15	B-5	7											103	
104	LSB	44+15	25.00	LT	903.05	899.75	1.00	103	H	3.08	B-5	49											104	
105	LNB	45+92	25.00	RT	902.16	897.76	0.66	109	48-4020	4.18	B-5			176									105	
106	LNB	45+92	12.00	LT	902.92	898.30	1.00	105	G	4.40	B-5	38											106	
107	LSB	45+92	23.00	RT	902.74	898.37	1.00	106	G	4.15	B-5	7											107	
108	LSB	45+92	25.00	LT	902.16	898.86	1.00	107	H	3.08	B-5	49											108	
109	LNB	47+68	25.00	RT	901.28	896.60	0.75	113	48-4020	4.46	B-5				193								109	
110	LNB	47+68	12.00	LT	902.04	897.42	1.00	109	G	4.40	B-5	38											110	
111	LSB	47+68	23.00	RT	901.86	897.49	1.00	110	G	4.15	B-5	7											111	
112	LSB	47+68	25.00	LT	901.28	897.98	1.00	111	H	3.08	B-5	49											112	
113	LNB	49+62	25.00	RT	900.31	892.82	0.25	140	78-4020	7.27	B-5								50				113	
114	LNB	49+62	12.00	LT	901.07	896.45	1.00	113	G	4.40	B-5	38											114	
115	LSB	49+62	14.65	RT	901.13	896.61	1.00	114	G	4.30	B-5	15											115	
116	LSB	49+62	25.00	LT	900.31	897.01	1.00	115	H	3.08	B-5	40											116	
117	LNB	51+56	25.00	RT	899.35	893.30	0.25	113	60-4020	5.83	B-5							195					117	
117A	LNB	51+56	26.00	LT		897.27	1.00	117	PC		APRON		1										117A	E,G
120	LSB	51+56	25.00	LT	899.35	896.05	1.00	117	H	3.08	B-5	102											120	
121	LNB	52+75	25.00	RT	899.06	893.66	0.30	117	60-4020	5.18	B-5 (LP)						119						121	E
124	LSB	52+75	25.00	LT	899.06	895.66	1.00	121	H	3.18	B-5 (LP)			102									124	E
125	LNB	54+69	25.00	RT	899.72	894.82	0.50	121	54-4020	4.68	B-5					194							125	
128	LSB	54+69	25.00	LT	899.72	896.42	1.00	125	H	3.08	B-5	102											128	
129	LNB	56+63	25.00	RT	900.69	896.04	0.69	125	48-4020	4.43	B-5				141								129	
132	LSB	56+63	25.00	LT	900.69	897.39	1.00	129	H	3.08	B-5	102											132	
133	LNB	58+04	25.00	RT	901.40	896.75	0.50	129	48-4020	4.43	B-5				141								133	
135	LSB	58+04	25.00	LT	901.40	898.10	1.00	133	H	3.08	B-5	102											135	
140	LNB	49+63	73.00	RT	895.80	892.69		POND	APRON		APRON									1	13.8	20.8	140	B
											SUB TOTAL	959	1	278	475	194	119	195	50	1	13.8	20.8		

(A) STATIONS, OFFSETS, AND TOP OF CASTING ELEVATIONS ARE GIVEN TO CENTER OF STRUCTURE OPENING. CENTER OF CATCH BASIN CASTING IS 1.0 FT FROM FACE OF CURB.
(B) TIE LAST THREE JOINTS AT APRON END. FURNISHING AND INSTALLING PIPE TIES IS CONSIDERED INCIDENTAL WORK FOR WHICH NO DIRECT PAYMENT WILL BE MADE.
(C) ALL POTENTIAL CONFLICTS WITH PUBLIC AND PRIVATE UTILITIES SHALL BE FIELD VERIFIED PRIOR TO INSTALLATION OF STORM SEWER.
(D) FURNISHING AND INSTALLING STEPS IS CONSIDERED INCIDENTAL WORK FOR WHICH NO DIRECT PAYMENT WILL BE MADE.
(E) SEDIMENT BARRIERS SHALL BE USED ON ALL LOW POINT CATCH BASINS PRIOR TO PAVEMENT PLACEMENT.
(F) OUTLET CONTROL STRUCTURE DESIGN SPECIAL. SEE DETAILS ON PAGES 32, AND 110-113.
(G) SEE STANDARD PLATE NO. 4017C FOR CONSTR DRAINAGE STRUCTURE DESIGN PC-12 DETAIL.

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-13\Plan\55-Storm Drainage Tabs.dwg 01/08/2004 11:09:44 AM CST

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
PRINT NAME: PETER M. LEMKE
SIGNATURE: Peter M Lemke
DATE: 1/09/2004 REG. NO. 40118

DRAWN BY MTH DATE 8/29/03
DESIGN BY MTH DATE 08/29/03
CHECKED BY MTH DATE 08/29/03

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13
STATE PROJECT NO. 106-020-23
STATE AID PROJECT NO.
COUNTY PROJECT NO.

STORM DRAINAGE TABULATIONS
SYSTEM 100

Sheet 103 of 226 Sheets

FLOWS FROM STR. OR APRON INLET	ALIGNMENT	STATION	OFFSET	L/R	TOP OF CASTING ELEVATION	INVERT ELEVATION	PIPE SLOPE	FLOWS TO STR. OR APRON OUTLET	NEW STRUCTURE CONSTRUCTION			DRAINAGE PIPE - RCP (DESIGN 3006)										RIPRAP AT RCP OUTLETS		FLOWS FROM STR. OR APRON INLET	FOOTNOTES
									DESIGN	PAY HT	CASTING ASSEMBLY	12 in CL V	12 in APRON	15 in CL V	15 in APRON	18 in CL III	21 in CL III	24 in CL III	30 in CL III	36 in CL II	36 in APRON	CL III RIPRAP	GEOTEXTILE FILTER TYPE IV		
					FT	FT	%			FT	TYPE	FT	EACH	FT	EACH	FT	FT	FT	FT	FT	EACH	CU YD	SQ YD		
201	LNB	61+90	25.00	RT	902.17	897.85	0.50	205	48-4020	4.10	B-5	192												201	
204	LSB	61+90	25.00	LT	902.17	898.87	1.00	201	H	3.08	B-5	102												204	
205	LNB	63+82	25.00	RT	901.22	896.82	0.70	209	48-4020	4.18	B-5			192										205	
208	LSB	63+82	25.00	LT	901.21	897.91	1.00	205	H	3.08	B-5	102												208	
209	LNB	65+74	25.00	RT	900.26	895.36	0.50	213	54-4020	4.68	B-5						171							209	
212	LSB	65+74	25.00	LT	900.25	896.95	1.00	209	H	3.08	B-5	102												212	
213	LNB	67+45	25.00	RT	899.40	894.25	0.50	217	54-4020	4.93	B-5							255						213	
216	LSB	67+45	25.00	LT	899.40	896.10	1.00	213	H	3.08	B-5	102												216	
217	LNB	70+00	25.00	RT	898.44	892.79	0.25	221	72-4020	5.43	B-5 (LP)								223					217	E
217A	LNB	70+00	26.00	LT		896.33	1.00	220	PC		APRON		1											217A	E,G
220	LSB	70+00	25.00	LT	898.44	895.04	1.00	217	H	3.18	B-5 (LP)			102										220	E
221	LNB	72+23	25.00	RT	899.24	892.23	0.50	233	84-4020	6.79	B-5									30				221	
224	LSB	72+23	25.00	LT	899.24	895.94	1.00	221	H	3.08	B-5	102												224	
225	LNB	74+16	25.00	RT	900.21	894.85	1.00	221	48-4020	5.14	B-5					193								225	
228	LSB	74+16	25.00	LT	900.20	896.90	1.00	225	H	3.08	B-5	102												228	
229	LNB	76+08	25.00	RT	901.17	896.77	1.00	225	48-4020	4.18	B-5			192										229	
232	LSB	76+08	25.00	LT	901.16	897.86	1.00	229	H	3.08	B-5	102												232	
233	LNB	72+38	68.10	RT	895.50	892.08		POND	APRON		APRON										1	13.8	20.8	233	B
240	LNB	76+36	82.00	RT		892.75	0.00	241	APRON		APRON			14	1									240	B
241	LNB	76+62	79.00	RT	897.50	892.75	0.00	242	DESIGN SPECIAL 2					204										241	F
242	LNB	77+65	59.00	RT		895.80		OUT	APRON		APRON				1							4.4	8.7	242	B
											SUBTOTAL	906	1	704	2	193	171	255	223	30	1	18.2	29.5		

(A) STATIONS, OFFSETS, AND TOP OF CASTING ELEVATIONS ARE GIVEN TO CENTER OF STRUCTURE OPENING. CENTER OF CATCH BASIN CASTING IS 1.0 FT FROM FACE OF CURB.
(B) TIE LAST THREE JOINTS AT APRON END. FURNISHING AND INSTALLING PIPE TIES IS CONSIDERED INCIDENTAL WORK FOR WHICH NO DIRECT PAYMENT WILL BE MADE.
(C) ALL POTENTIAL CONFLICTS WITH PUBLIC AND PRIVATE UTILITIES SHALL BE FIELD VERIFIED PRIOR TO INSTALLATION OF STORM SEWER.
(D) FURNISHING AND INSTALLING STEPS IS CONSIDERED INCIDENTAL WORK FOR WHICH NO DIRECT PAYMENT WILL BE MADE.
(E) SEDIMENT BARRIERS SHALL BE USED ON ALL LOW POINT CATCH BASINS PRIOR TO PAVEMENT PLACEMENT.
(F) OUTLET CONTROL STRUCTURE DESIGN SPECIAL. SEE DETAILS ON PAGES 32, AND 110-113.
(G) SEE STANDARD PLATE NO. 4017C FOR CONSTR DRAINAGE STRUCTURE DESIGN PC-12 DETAIL.

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-13\Plan\55-Storm Drainage Tabs.dwg 01/08/2004 11:12:25 AM CST

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
PRINT NAME: PETER M. LEMKE
SIGNATURE: Peter M Lemke
DATE: 1/09/2004 REG. NO. 40118

DRAWN BY MTH DATE 8/29/03
DESIGN BY MTH DATE 08/29/03
CHECKED BY MTH DATE 08/29/03

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13
STATE PROJECT NO. 106-020-23
STATE AID PROJECT NO.
COUNTY PROJECT NO.

STORM DRAINAGE TABULATIONS
SYSTEM 200

Sheet 104 of 226 Sheets

FLOWS FROM STR. OR APRON INLET	ALIGNMENT	STATION	OFFSET	L/R	TOP OF CASTING ELEVATION	INVERT ELEVATION	PIPE SLOPE	FLOWS TO STR. OR APRON OUTLET	NEW STRUCTURE CONSTRUCTION			DRAINAGE PIPE - RCP (DESIGN 3006)												RIPRAP AT RCP OUTLETS		FLOWS FROM STR. OR APRON INLET	FOOTNOTES
									DESIGN	PAY HT	CASTING ASSEMBLY	12 in CL V	12 in APRON	15 in CL V	15 in APRON	18 in CL III	21 in CL III	24 in CL III	27 in CL III	30 in CL III	36 in CL II	36 in APRON	48 in CL II Culvert	48 in APRON	CL III RIPRAP	GEOTEXTILE FILTER TYPE IV		
		FT	FT	%						FT	TYPE	FT	EACH	FT	EACH	FT	FT	FT	FT	FT	FT	EACH	FT	EACH	CU YD	SQ YD		
301	LNB	80+50	25.00	RT	901.63	897.23	0.50	305	48-4020	4.18	B-5			170													
304	LSB	80+50	25.00	LT	901.62	898.32	1.00	301	H	3.08	B-5	102															304	
305	LNB	82+20	25.00	RT	900.78	896.13	0.50	309	48-4020	4.43	B-5					170											305	
308	LSB	82+20	25.00	LT	900.77	897.47	1.00	305	H	3.08	B-5	102															308	
309	LNB	83+90	25.00	RT	899.93	895.03	0.50	313	54-4020	4.68	B-5						195										309	
309A	LNB	83+90	26.00	LT		897.82	1.00	313	PC		APRON		1														309A	E,G
312	LSB	83+90	25.00	LT	899.92	896.62	1.00	309	H	3.08	B-5	102															312	
313	LNB	85+85	25.00	RT	898.95	893.80	0.50	317	54-4020	4.93	B-5							145									313	
316	LSB	85+85	25.00	LT	898.95	895.65	1.00	313	H	3.08	B-5	102															316	
317	LNB	87+30	25.00	RT	898.23	892.83	0.25	321	60-4020	5.18	B-5								135								317	
320	LSB	87+30	25.00	LT	898.22	894.92	1.00	317	H	3.08	B-5	102															320	
321	LNB	88+65	25.00	RT	897.95	892.30	0.25	325	60-4020	5.43	B-5 (LP)									135							321	E
321A	LNB	88+65	26.00	LT		895.83	1.00	325	PC		APRON		1														321A	E,G
324	LSB	88+65	25.00	LT	897.94	894.64	1.00	321	H	3.08	B-5 (LP)	102															324	E
325	LNB	90+00	25.00	RT	898.38	891.96	0.25	325A	66-4020	6.20	B-5										65						325	
325A	LNB	90+65	25.00	RT	898.71	891.80	0.25	340	84-4020	6.69	B-5										40						325A	
328	LSB	90+00	25.00	LT	898.38	895.08	1.00	325	H	3.08	B-5	102															328	
329	LNB	91+70	25.00	RT	899.23	894.58	0.70	325A	48-4020	4.43	B-5					105											329	
332	LSB	91+70	25.00	LT	899.23	895.93	1.00	329	H	3.08	B-5	102															332	
340	LNB	90+72	65.60	RT	894.00	891.70	0.25	POND	APRON		APRON											1			13.8	20.8	340	B
350	LNB	94+41	45.00	RT		894.01	0.0008	351	APRON		APRON												204	1	19.4	29.1	350	B
351	LSB	93+15	62.00	LT		893.84		JD 53-62	APRON		APRON													1	19.4	29.1	351	B
360	LNB	91+94	67.00	RT		891.75	0.00	361	APRON		APRON			20	1												360	B
361	LNB	92+05	42.00	RT	896.50	894.50	0.37	362	DESIGN SPECIAL 3					176													361	F
362	LSB	92+90	54.00	LT		893.85		JD 53-62	APRON		APRON				1										4.4	8.7	362	B
											SUBTOTAL	816	2	366	2	275	195	145	135	135	105	1	204	2	57	87.7		

(A) STATIONS, OFFSETS, AND TOP OF CASTING ELEVATIONS ARE GIVEN TO CENTER OF STRUCTURE OPENING. CENTER OF CATCH BASIN CASTING IS 1.0 FT FROM FACE OF CURB.
(B) TIE LAST THREE JOINTS AT APRON END. FURNISHING AND INSTALLING PIPE TIES IS CONSIDERED INCIDENTAL WORK FOR WHICH NO DIRECT PAYMENT WILL BE MADE.
(C) ALL POTENTIAL CONFLICTS WITH PUBLIC AND PRIVATE UTILITIES SHALL BE FIELD VERIFIED PRIOR TO INSTALLATION OF STORM SEWER.
(D) FURNISHING AND INSTALLING STEPS IS CONSIDERED INCIDENTAL WORK FOR WHICH NO DIRECT PAYMENT WILL BE MADE.
(E) SEDIMENT BARRIERS SHALL BE USED ON ALL LOW POINT CATCH BASINS PRIOR TO PAVEMENT PLACEMENT.
(F) OUTLET CONTROL STRUCTURE DESIGN SPECIAL. SEE DETAILS ON PAGES 32, AND 110-113.
(G) SEE STANDARD PLATE NO. 4017C FOR CONSTR DRAINAGE STRUCTURE DESIGN PC-12 DETAIL.

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-13\Plan\55-Storm Drainage Tabs.dwg 01/08/2004 11:13:37 AM CST

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
PRINT NAME: PETER M. LEMKE
SIGNATURE: Peter M Lemke
DATE: 1/09/2004 REG. NO. 40118

DRAWN BY MTH DATE 8/29/03
DESIGN BY MTH DATE 08/29/03
CHECKED BY MTH DATE 08/29/03

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13
STATE PROJECT NO. 106-020-23
STATE AID PROJECT NO.
COUNTY PROJECT NO.

STORM DRAINAGE TABULATIONS
SYSTEM 300

FLOWS FROM STR. OR APRON INLET	ALIGNMENT	STATION	OFFSET	L/R	TOP OF CASTING ELEVATION	INVERT ELEVATION	PIPE SLOPE	FLOWS TO STR. OR APRON OUTLET	NEW STRUCTURE CONSTRUCTION			DRAINAGE PIPE - RCP (DESIGN 3006)											RIPRAP AT RCP OUTLETS		FLOWS FROM STR. OR APRON INLET	FOOTNOTES
									DESIGN	PAY HT	CASTING ASSEMBLY	12 in CL V	12 in APRON	15 in CL V	15 in APRON	18 in CL III	21 in CL III	24 in CL III	27 in CL III	30 in CL III	42 in CL II	42 in APRON	CL III RIPRAP	GEOTEXTILE FILTER TYPE IV		
					FT	FT	%			FT	TYPE	FT	EACH	FT	EACH	FT	FT	FT	FT	FT	FT	FT	CU YD	SQ YD		
337	LNB	94+75	25.00	RT	900.76	896.36	0.35	341	48-4020	4.18	B-5			175											337	
340	LSB	94+75	25.00	LT	900.75	897.45	1.00	337	H	3.08	B-5	102													340	
341	LNB	96+00	25.00	RT	901.38	895.75	0.35	403	48-4020	5.41	B-5			370											341	
344	LSB	96+00	25.00	LT	901.38	898.08	1.00	341	H	3.08	B-5	101													344	
401	LSB	98+24	56.00	LT	902.00	898.70	2.00	402	H	3.08	B-5	40													401	
402	LSB	98+65	56.00	LT	902.00	897.90	1.00	402B	G	3.88	B-5	33													402	
402B	LSB	98+98	46.70	LT	901.20	897.57	1.00	406	48-4020	3.41	A7-D	75													402B	
403	LNB	99+70	25.00	RT	901.53	894.45	0.40	406	54-4020	6.86	B-5					92									403	
406	LSB	99+70	25.00	LT	901.53	894.09	0.40	410	54-4020	7.22	B-5						170								406	
407	LNB	101+40	25.00	RT	900.68	897.38	1.00	410	H	3.08	B-5	92													407	
410	LSB	101+40	25.00	LT	900.68	893.41	0.50	414	54-4020	7.05	B-5						170								410	
411	LNB	103+10	25.00	RT	899.83	896.59	1.00	414	H	3.08	B-5	92													411	
414	LSB	103+10	25.00	LT	899.83	892.56	0.50	418	54-4020	7.05	B-5							170							414	
415	LNB	104+80	25.00	RT	898.98	895.68	1.00	418	H	3.08	B-5	92													415	
418	LSB	104+80	25.00	LT	898.98	891.71	0.50	418A	54-4020	7.05	B-5							25							418	
418A	LSB	105+05	25.00	LT	898.85	891.40	0.50	467	84-4020	7.23	B-5										51				418A	
419	LNB	106+15	25.00	RT	898.34	895.04	1.00	422	H	3.08	B-5	92													419	
422	LSB	106+15	25.00	LT	898.33	891.84	0.40	418A	60-4020	6.27	B-5									110					422	
423	LNB	107+00	25.00	RT	898.19	894.89	1.00	426	H	3.08	B-5 (LP)	92													423	E
423A	LNB	107+00	21.00	LT		896.08	34.00	426	PC		APRON		1												423A	E,G
426	LSB	107+00	25.00	LT	898.19	892.18	0.40	422	60-4020	5.79	B-5 (LP)									85					426	E
427	LNB	107+63	25.00	RT	898.27	894.97	1.00	430	H	3.08	B-5	92													427	
430	LSB	107+63	25.00	LT	898.27	892.44	0.40	426	60-4020	5.61	B-5									63					430	
431	LNB	109+33	25.00	RT	899.05	895.75	1.00	434	H	3.08	B-5	92													431	
434	LSB	109+33	25.00	LT	899.04	893.29	0.50	430	60-4020	5.53	B-5								170						434	
435	LNB	111+03	25.00	RT	899.90	896.60	1.00	438	H	3.08	B-5	92	1												435	
438	LSB	111+03	25.00	LT	899.89	894.14	0.50	434	60-4020	5.53	B-5								170						438	
439	LNB	112+70	25.00	RT	900.73	897.43	1.00	442	H	3.08	B-5	92													439	
442	LSB	112+70	25.00	LT	900.73	894.97	0.50	438	60-4020	5.54	B-5								167						442	
443	LNB	114+40	25.00	RT	901.58	896.74	1.00	446	48-4020	4.62	B-5	92													443	
443A	LNB	114+83	56.10	RT	897.00	897.00	0.50	443	APRON		APRON	52	1												443A	B
446	LSB	114+40	25.00	LT	901.58	895.82	0.50	442	54-4020	5.54	B-5							170							446	
447	LNB	116+09	25.00	RT	902.43	898.28	1.00	450	48-4020	3.93	B-5	92													447	
447A	LNB	115+86	53.90	RT	899.00	899.00	2.00	447	APRON		APRON	35	1												447A	B
447B	LNB	116+09	21.00	LT		901.50	54.00	450	PC		APRON		1												447B	E,G
450	LSB	116+09	25.00	LT	902.42	897.36	0.60	446	54-4020	4.84	B-5						169								450	
451	LNB	116+93	25.00	RT	902.85	899.70	1.10	454	H	2.93	B-5	92													451	
454	LSB	116+93	25.00	LT	902.84	897.94	0.60	450	54-4020	4.68	B-5						84								454	
455	LNB	118+63	25.00	RT	903.70	900.55	1.10	458	H	2.93	B-5	92													455	
458	LSB	118+63	25.00	LT	903.69	899.04	0.60	454	48-4020	4.43	B-5					170									458	
459	LNB	120+33	25.00	RT	904.55	901.40	1.10	462	H	2.93	B-5	92													459	
462	LSB	120+33	25.00	LT	904.54	900.14	0.60	458	48-4020	4.18	B-5			170											462	
463	LNB	122+00	25.00	RT	905.98	902.23	1.10	466	H	2.93	B-5	92													463	
466	LSB	122+00	25.00	LT	905.98	901.22	0.51	462	48-4020	3.94	B-5	167													466	
467	LSB	105+04	75.90	LT		891.15	0.25	POND	APRON		APRON											1	16.9	20.8	467	B
470	LSB	104+04	79.00	LT		892.00	0.00	471	APRON		APRON			24	1										470	B
471	LSB	103+95	58.00	LT	898.00	896.00	0.18	472	DESIGN SPECIAL 4					15											471	F
472	LSB	103+87	40.00	LT	900.28	895.88	0.18	473	48-4020	4.18	A7-D			350											472	
473	LSB	100+36	38.80	LT	902.01	895.27	0.18	474	F	6.52	A7-D			400											473	
474	LSB	96+36	36.70	LT	902.32	894.55	0.18	475	F	7.55	A7-D			303											474	
475	LSB	93+46	38.00	LT	900.90	894.00	0.18	476	F	6.68	A7-D			35											475	
476	LSB	93+24	65.00	LT		893.94		JD-53-62	APRON		APRON				1								4.4	8.7	476	B
											SUBTOTAL	1981	5	1842	2	262	593	365	507	258	51	1	20.7	29.5		

(A) STATIONS, OFFSETS, AND TOP OF CASTING ELEVATIONS ARE GIVEN TO CENTER OF STRUCTURE OPENING. CENTER OF CATCH BASIN CASTING IS 1.0 FT FROM FACE OF CURB.
(B) TIE LAST THREE JOINTS AT APRON END. FURNISHING AND INSTALLING PIPE TIES IS CONSIDERED INCIDENTAL WORK FOR WHICH NO DIRECT PAYMENT WILL BE MADE.
(C) ALL POTENTIAL CONFLICTS WITH PUBLIC AND PRIVATE UTILITIES SHALL BE FIELD VERIFIED PRIOR TO INSTALLATION OF STORM SEWER.
(D) FURNISHING AND INSTALLING STEPS IS CONSIDERED INCIDENTAL WORK FOR WHICH NO DIRECT PAYMENT WILL BE MADE.
(E) SEDIMENT BARRIERS SHALL BE USED ON ALL LOW POINT CATCH BASINS PRIOR TO PAVEMENT PLACEMENT.
(F) OUTLET CONTROL STRUCTURE DESIGN SPECIAL. SEE DETAILS ON PAGES 32, AND 110-113.
(G) SEE STANDARD PLATE NO. 4017C FOR CONSTR DRAINAGE STRUCTURE DESIGN PC-12 DETAIL.

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-13\Plan\55-Storm Drainage Tabs.dwg 01/08/2004 11:14:53 AM CST

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
PRINT NAME: PETER M. LEMKE
SIGNATURE: Peter M Lemke
DATE: 1/09/2004 REG. NO. 40118

DRAWN BY MTH DATE 8/29/03
DESIGN BY MTH DATE 08/29/03
CHECKED BY MTH DATE 08/29/03

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13
STATE PROJECT NO. 106-020-23
STATE AID PROJECT NO.
COUNTY PROJECT NO.

STORM DRAINAGE TABULATIONS
SYSTEM 400

FLOWS FROM STR. OR APRON INLET	ALIGNMENT	STATION	OFFSET	L/R	TOP OF CASTING ELEVATION	INVERT ELEVATION	PIPE SLOPE	FLOWS TO STR. OR APRON OUTLET	NEW STRUCTURE CONSTRUCTION			DRAINAGE PIPE - RCP (DESIGN 3006)												RIPRAP AT RCP OUTLETS		FLOWS FROM STR. OR APRON INLET	FOOTNOTES
									DESIGN	PAY HT	CASTING ASSEMBLY	12 in CL V	12 in APRON	15 in CL V	15 in APRON	18 in CL III	21 in CL III	24 in CL III	28 in SPAN RCP PIPE-ARCH CULVERT CL III	28 in SPAN RCP PIPE-ARCH APRON CL III	27 in CL III	36 in CL II	36 in APRON	CL III RIPRAP	GEOTEXTILE FILTER TYPE IV		
					FT	FT	%			FT	TYPE	FT	EACH	FT	EACH	FT	FT	FT	FT	EACH	FT	FT	EACH	CU YD	SQ YD		
501	LNB	125+90	25.00	RT	904.93	900.48	0.50	505	48-4020	4.23	B-5			146												501	
501A	LNB	125+55	58.90	RT	901.20	900.71	0.50	501	APRON		APRON	47	1													501A	B
504	LSB	125+90	25.00	LT	904.93	901.63	1.00	501	H	3.08	B-5	92														504	
505	LNB	127+36	25.00	RT	904.20	899.55	0.50	509	48-4020	4.43	B-5					194										505	
508	LSB	127+36	25.00	LT	904.20	900.90	1.00	505	H	3.08	B-5	92														508	
509	LNB	129+30	25.00	RT	903.23	898.03	0.50	513	54-4020	4.98	B-5						170									509	
512	LSB	129+30	25.00	LT	903.23	898.49	0.50	509	G	4.52	B-5	92														512	
512A	LSB	129+30	47.00	LT	898.60	898.60	0.50	512	APRON		APRON	22	1													512A	B
513	LNB	131+00	25.00	RT	902.38	897.18	0.50	517	54-4020	4.98	B-5							170								513	
516	LSB	131+00	25.00	LT	902.38	899.08	1.00	513	H	3.08	B-5	92														516	
517	LNB	132+70	25.00	RT	901.53	896.33	0.50	521	54-4020	4.98	B-5							170								517	
520	LSB	132+70	25.00	LT	901.53	898.23	1.00	517	H	3.08	B-5	92														520	
521	LNB	134+40	25.00	RT	900.68	895.49	0.55	525	54-4020	4.97	B-5							170								521	
524	LSB	134+40	25.00	LT	900.68	897.38	1.00	521	H	3.08	B-5	93														524	
525	LNB	136+10	25.00	RT	899.97	894.55	0.50	529	60-4020	5.20	B-5										40					525	
528	LSB	136+10	25.00	LT	899.97	896.67	1.00	525	H	3.08	B-5	99														528	
529	LNB	136+50	25.00	RT	899.94	893.79	0.50	569	78-4020	5.93	B-5 (LP)											40				529	E
529A	LNB	136+50	26.00	LT		897.83	1.00	529	PC		APRON		1													529A	E,G
532	LSB	136+50	25.00	LT	899.94	896.64	1.00	529	H	3.08	B-5 (LP)	100														532	E
532A	LSB	136+50	50.00	LT	898.00	898.00	5.50	532	APRON		APRON	23	1													532A	
533	LNB	137+75	25.00	RT	900.26	894.84	0.50	529	60-4020	5.20	B-5										126					533	
536	LSB	137+75	25.00	LT	900.25	896.95	1.00	533	H	3.08	B-5	102														536	
537	LNB	139+45	25.00	RT	901.11	895.69	0.50	533	60-4020	5.20	B-5										170					537	
540	LSB	139+45	25.00	LT	901.10	897.80	1.00	537	H	3.08	B-5	102														540	
541	LNB	141+15	25.00	RT	901.96	896.54	0.50	537	60-4020	5.20	B-5							170								541	
544	LSB	141+15	25.00	LT	901.95	897.05	0.50	541	48-4020	4.68	B-5						102									544	
545	LNB	142+85	25.00	RT	902.81	898.91	0.50	541	G	3.68	B-5					170										545	
548	LSB	142+85	25.00	LT	902.80	899.15	0.50	544	G	3.43	B-5					170										548	
549	LNB	145+10	25.00	RT	903.93	900.04	0.50	545	G	3.67	B-5			225												549	
552	LSB	145+10	25.00	LT	903.94	900.26	0.50	548	G	3.45	B-5					225										552	
553	LNB	146+39	25.00	RT	904.58	900.68	0.50	549	48-4020	3.68	B-5			129												553	
553A	LNB	146+39	26.00	LT		902.46	2.10	553	PC		APRON		1													553A	E,G
556	LSB	146+39	25.00	LT	904.57	900.92	0.50	552	G	3.43	B-5					129										556	
557	LNB	148+09	25.00	RT	905.43	902.03	0.50	553	G	3.18	B-5			170												557	
560	LSB	148+09	25.00	LT	905.42	902.02	0.50	556	G	3.18	B-5			170												560	
561	LNB	149+79	25.00	RT	906.28	903.13	0.50	557	G	2.93	B-5	170														561	
564	LSB	149+79	25.00	LT	906.27	902.87	0.50	560	G	3.18	B-5			170												564	
565	LNB	151+49	25.00	RT	907.13	903.98	0.50	561	H	2.93	B-5	170														565	
568	LSB	151+49	25.00	LT	907.12	903.97	0.50	564	H	2.93	B-5	170														568	
569	LNB	136+51	65.80	RT		893.59	0.25																1	16.3	20.8	569	B
570	LNB	142+95	57.50	RT		896.14	0.19	571	APRON		APRON								178	1				8.3	14.0	570	B
571	LSB	143+37	63.00	LT		895.81		JD 53-62	APRON		APRON									1				8.3	14.0	571	B
580	LNB	141+38	79.00	RT		893.75	0.00	581	APRON		APRON			20	1											580	B
581	LNB	141+58	63.00	RT	900.00	896.50	0.24	582	DESIGN SPECIAL 5					110												581	F
582	LNB	142+68	72.00	RT		896.24		JD 53-62	APRON		APRON				1									4.4	8.7	582	B
											SUBTOTAL	1556	5	1140	2	888	272	680	178	2	336	40	1	37.3	57.5		

(A) STATIONS, OFFSETS, AND TOP OF CASTING ELEVATIONS ARE GIVEN TO CENTER OF STRUCTURE OPENING. CENTER OF CATCH BASIN CASTING IS 1.0 FT FROM FACE OF CURB.
(B) TIE LAST THREE JOINTS AT APRON END. FURNISHING AND INSTALLING PIPE TIES IS CONSIDERED INCIDENTAL WORK FOR WHICH NO DIRECT PAYMENT WILL BE MADE.
(C) ALL POTENTIAL CONFLICTS WITH PUBLIC AND PRIVATE UTILITIES SHALL BE FIELD VERIFIED PRIOR TO INSTALLATION OF STORM SEWER.
(D) FURNISHING AND INSTALLING STEPS IS CONSIDERED INCIDENTAL WORK FOR WHICH NO DIRECT PAYMENT WILL BE MADE.
(E) SEDIMENT BARRIERS SHALL BE USED ON ALL LOW POINT CATCH BASINS PRIOR TO PAVEMENT PLACEMENT.
(F) OUTLET CONTROL STRUCTURE DESIGN SPECIAL. SEE DETAILS ON PAGES 32, AND 110-113.
(G) SEE STANDARD PLATE NO. 4017C FOR CONSTR DRAINAGE STRUCTURE DESIGN PC-12 DETAIL.

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-13\Plan\55-Storm Drainage Tabs.dwg 01/08/2004 11:16:19 AM CST

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
PRINT NAME: PETER M. LEMKE
SIGNATURE: Peter M Lemke
DATE: 1/09/2004 REG. NO. 40118

DRAWN BY MTH DATE 8/29/03
DESIGN BY MTH DATE 08/29/03
CHECKED BY MTH DATE 08/29/03

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13
STATE PROJECT NO. 106-020-23
STATE AID PROJECT NO.
COUNTY PROJECT NO.

STORM DRAINAGE TABULATIONS
SYSTEM 500

Sheet 107 of 226 Sheets

FLOWS FROM STR. OR APRON INLET	ALIGNMENT	STATION	OFFSET	L/R	TOP OF CASTING ELEVATION	INVERT ELEVATION	PIPE SLOPE	FLOWS TO STR. OR APRON OUTLET	NEW STRUCTURE CONSTRUCTION			DRAINAGE PIPE - RCP (DESIGN 3006)									RIPRAP AT RCP OUTLETS		FLOWS FROM STR. OR APRON INLET	FOOTNOTES
									DESIGN	PAY HT	CASTING ASSEMBLY	12 in CL V	12 in APRON	15 in CL V	18 in CL III	21 in CL III	24 in CL III	27 in CL III	36 in CL II	36 in APRON	CL III RIPRAP	GEOTEXTILE FILTER TYPE IV		
					FT	FT	%			FT	TYPE	FT	EACH	FT	FT	FT	FT	FT	FT	EACH	CU YD	SQ YD		
601	LNB	155+24	25.00	RT	906.76	902.36	0.55	605	48-4020	4.18	B-5			170									601	
604	LSB	155+24	25.00	LT	906.76	903.46	1.00	601	H	3.08	B-5	102											604	
605	LNB	156+94	25.00	RT	905.91	901.26	0.55	609	48-4020	4.43	B-5				170								605	
608	LSB	156+94	25.00	LT	905.91	902.61	1.00	605	H	3.08	B-5	102											608	
609	LNB	158+64	25.00	RT	905.06	900.16	0.55	613	54-4020	4.68	B-5					136							609	
612	LSB	158+64	25.00	LT	905.06	901.76	1.00	609	H	3.08	B-5	102											612	
613	LNB	160+00	25.00	RT	904.66	898.51	0.50	637	84-4020	5.93	B-5 (LP)								40				613	E
613A	LNB	160+00	26.00	LT		902.20	28.00	613	PC		APRON		1										613A	E, G
616	LSB	160+00	25.00	LT	904.66	901.36	1.00	613	H	3.08	B-5 (LP)	102											616	E
617	LNB	160+58	25.00	RT	904.69	899.29	0.50	613	60-4020	5.18	B-5							58					617	
620	LSB	160+58	25.00	LT	904.69	901.39	1.00	617	H	3.08	B-5	102											620	
621	LNB	162+28	25.00	RT	905.30	900.15	0.50	617	54-4020	4.93	B-5						170						621	
624	LSB	162+28	25.00	LT	905.29	901.99	1.00	621	H	3.08	B-5	102											624	
625	LNB	164+00	25.00	RT	905.99	901.09	0.50	621	54-4020	4.68	B-5					172							625	
628	LSB	164+00	25.00	LT	905.98	902.68	1.00	625	H	3.08	B-5	102											628	
629	LNB	165+70	25.00	RT	906.67	902.02	0.50	625	48-4020	4.43	B-5				170								629	
632	LSB	165+70	25.00	LT	906.67	903.37	1.00	629	H	3.08	B-5	102											632	
633	LNB	167+40	25.00	RT	907.36	902.96	0.50	629	48-4020	4.18	B-5			170									633	
636	LSB	167+40	25.00	LT	907.35	904.05	1.00	633	H	3.08	B-5	102											636	
637	LNB	159+87	61.30	RT		898.31	0.50	POND	APRON		APRON									1	13.8	20.8	637	B
											SUBTOTAL	918	1	340	340	308	170	58	40	1	13.8	20.8		

(A) STATIONS, OFFSETS, AND TOP OF CASTING ELEVATIONS ARE GIVEN TO CENTER OF STRUCTURE OPENING. CENTER OF CATCH BASIN CASTING IS 1.0 FT FROM FACE OF CURB.
(B) TIE LAST THREE JOINTS AT APRON END. FURNISHING AND INSTALLING PIPE TIES IS CONSIDERED INCIDENTAL WORK FOR WHICH NO DIRECT PAYMENT WILL BE MADE.
(C) ALL POTENTIAL CONFLICTS WITH PUBLIC AND PRIVATE UTILITIES SHALL BE FIELD VERIFIED PRIOR TO INSTALLATION OF STORM SEWER.
(D) FURNISHING AND INSTALLING STEPS IS CONSIDERED INCIDENTAL WORK FOR WHICH NO DIRECT PAYMENT WILL BE MADE.
(E) SEDIMENT BARRIERS SHALL BE USED ON ALL LOW POINT CATCH BASINS PRIOR TO PAVEMENT PLACEMENT.
(F) OUTLET CONTROL STRUCTURE DESIGN SPECIAL. SEE DETAILS ON PAGES 32, AND 110-113.
(G) SEE STANDARD PLATE NO. 4017C FOR CONSTR DRAINAGE STRUCTURE DESIGN PC-12 DETAIL.

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-13\Plan\55-Storm Drainage Tabs.dwg 01/08/2004 11:18:35 AM CST

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
PRINT NAME: PETER M. LEMKE
SIGNATURE: Peter M Lemke
DATE: 1/09/2004 REG. NO. 40118

DRAWN BY MTH DATE 8/29/03
DESIGN BY MTH DATE 08/29/03
CHECKED BY MTH DATE 08/29/03

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13
STATE PROJECT NO. 106-020-23
STATE AID PROJECT NO.
COUNTY PROJECT NO.

STORM DRAINAGE TABULATIONS
SYSTEM 600

FLOWS FROM STR. OR APRON INLET	ALIGNMENT	STATION	OFFSET	L/R	TOP OF CASTING ELEVATION	INVERT ELEVATION	PIPE SLOPE	FLOWS TO STR. OR APRON OUTLET	NEW STRUCTURE CONSTRUCTION				DRAINAGE PIPE - RCP (DESIGN 3006)										RIPRAP AT RCP OUTLETS		FLOWS FROM STR. OR APRON INLET	FOOTNOTES
									DESIGN	PAY HT	CASTING ASSEMBLY	Connect to Existing Storm Manhole	12 in CL V	12 in APRON	18 in CL III	21 in CL III	24 in CL III	24 in APRON	24 in CL III Culvert	24 in Culvert APRON	36 in CL II Culvert	36 in CL II Culvert APR	CL III RIPRAP	GEOTEXTILE FILTER TYPE IV		
		FT			FT	FT	%			FT	TYPE	EACH	FT	EACH	FT	FT	FT	EACH	FT	EACH	FT	EACH	CU YD	SQ YD		
701	LNB	171+50	25.00	RT	907.60	904.30	1.00	704	H	3.08	B-5		102												701	
704	LSB	171+50	25.00	LT	907.60	903.28	0.50	708	48-4020	4.10	B-5		170												704	
705	LNB	173+20	25.00	RT	906.92	903.62	1.00	708	H	3.08	B-5		102												705	
708	LSB	173+20	25.00	LT	906.92	902.27	0.50	712	48-4020	4.43	B-5				170										708	
709	LNB	174+90	25.00	RT	906.24	902.94	1.00	712	H	3.08	B-5		102												709	
712	LSB	174+90	25.00	LT	906.24	901.34	0.50	713A	54-4020	4.68	B-5					141									712	
713	LSB	176+30	31.00	LT	904.80	901.50	1.00	713A	H	3.08	B-5		9												713	
713A	LSB	176+30	22.00	LT	905.92	900.64	0.50	714A	54-4020	5.06	A7-D					220									713A	
714	LSB	178+50	38.00	LT	902.00	902.00	1.00	714A	APRON		APRON		19	1											714	B
714A	LSB	178+50	20.00	LT	905.14	899.54	0.50	715A	54-4020	5.38	A7-D					200									714A	
714B	LNB	178+50	20.00	LT		902.69	1.00	714A	PC		APRON		42	1											714B	E,G
715	LNB	180+50	35.00	RT	903.00	899.70	1.00	715A	H	3.08	B-5		88												715	
715A	LSB	180+50	20.00	LT	905.20	898.54	0.50	716	54-4020	6.44	A7-D						140								715A	
716	LSB	181+90	20.00	LT	905.38	897.84	0.50	717	54-4020	7.32	A7-D						92								716	
717	LSB	182+40	90.00	LT		897.38	0.50	POND	APRON		APRON							1					8.3	11.0	717	B
801	LEB	12+40	34.00	LT	900.01	894.58	1.00	801A	48-4020	5.21	B-5 (LP)		81												801	E
801A	LEB	12+40	47.00	RT	893.90	893.77	1.00	DITCH	APRON		APRON			1									4.1	8.4	801A	B
802	LWB	12+40	12.00	RT	899.65	895.65	5.00	801	G	3.78	B-5 (LP)		7												802	E
803	LEB	14+25	34.00	LT	900.13	895.97	0.75	801	48-4020	3.94	B-5		185												803	
804	LWB	14+25	12.00	RT	900.57	896.32	5.00	803	G	4.03	B-5		7												804	
805	LEB	21+45	12.00	LT	900.48	896.31	0.30	807	48-4020	3.95	B-5		80												805	
806	LWB	21+45	34.00	RT	900.08	896.38	1.00	805	H	3.48	B-5		7												806	
807	LEB	22+25	12.00	LT	900.07	895.92	1.50	809	48-4020	3.93	B-5 (LP)		24												807	E
808	LWB	22+25	34.00	RT	900.04	896.04	1.50	807	H	3.78	B-5 (LP)		7												808	E
809	LEB	22+25	12.00	RT	899.69	895.54	0.25	810	48-4020	3.93	A7-D		275												809	
810	LEB	25+00	12.00	RT	899.53	894.85	0.25	811	48-4020	4.46	A7-D		250												810	
811	LEB	27+50	12.00	RT	901.36	894.23	0.25	812	F	6.91	A7-D		245												811	
812	LEB	29+95	12.00	RT	902.33	893.62	0.25	813	F	8.49	A7-D		75												812	
813	LEB	29+97	87.00	RT		893.43	0.25	POND	APRON		APRON			1									4.1	8.4	813	B
POND																									POND	
DITCH																									DITCH	
820	LEB	16+77	40.00	RT		894.40		821	APRON		APRON										125	1	13.8	20.8	820	B
821	LWB	16+77	33.00	RT		894.40		820	APRON		APRON											1	13.8	20.8	821	B
822	LEB	18+55	62.00	RT	902.00	895.80		823	EX-MH		EX-MH	1							147	1			13.8	20.8	822	
823	LWB	18+54	33.00	RT		895.80		DITCH	APRON		APRON									1			13.8	20.8	823	B
											SUBTOTAL	1	1878	4	170	561	232	1	147	2	125	2	71.7	111.0		

(A) STATIONS, OFFSETS, AND TOP OF CASTING ELEVATIONS ARE GIVEN TO CENTER OF STRUCTURE OPENING. CENTER OF CATCH BASIN CASTING IS 1.0 FT FROM FACE OF CURB.
(B) TIE LAST THREE JOINTS AT APRON END. FURNISHING AND INSTALLING PIPE TIES IS CONSIDERED INCIDENTAL WORK FOR WHICH NO DIRECT PAYMENT WILL BE MADE.
(C) ALL POTENTIAL CONFLICTS WITH PUBLIC AND PRIVATE UTILITIES SHALL BE FIELD VERIFIED PRIOR TO INSTALLATION OF STORM SEWER.
(D) FURNISHING AND INSTALLING STEPS IS CONSIDERED INCIDENTAL WORK FOR WHICH NO DIRECT PAYMENT WILL BE MADE.
(E) SEDIMENT BARRIERS SHALL BE USED ON ALL LOW POINT CATCH BASINS PRIOR TO PAVEMENT PLACEMENT.
(F) OUTLET CONTROL STRUCTURE DESIGN SPECIAL. SEE DETAILS ON PAGES 32, AND 110-113.
(G) SEE STANDARD PLATE NO. 4017C FOR CONSTR DRAINAGE STRUCTURE DESIGN PC-12 DETAIL.

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-13\Plan\55-Storm Drainage Tabs.dwg 01/08/2004 11:20:05 AM CST

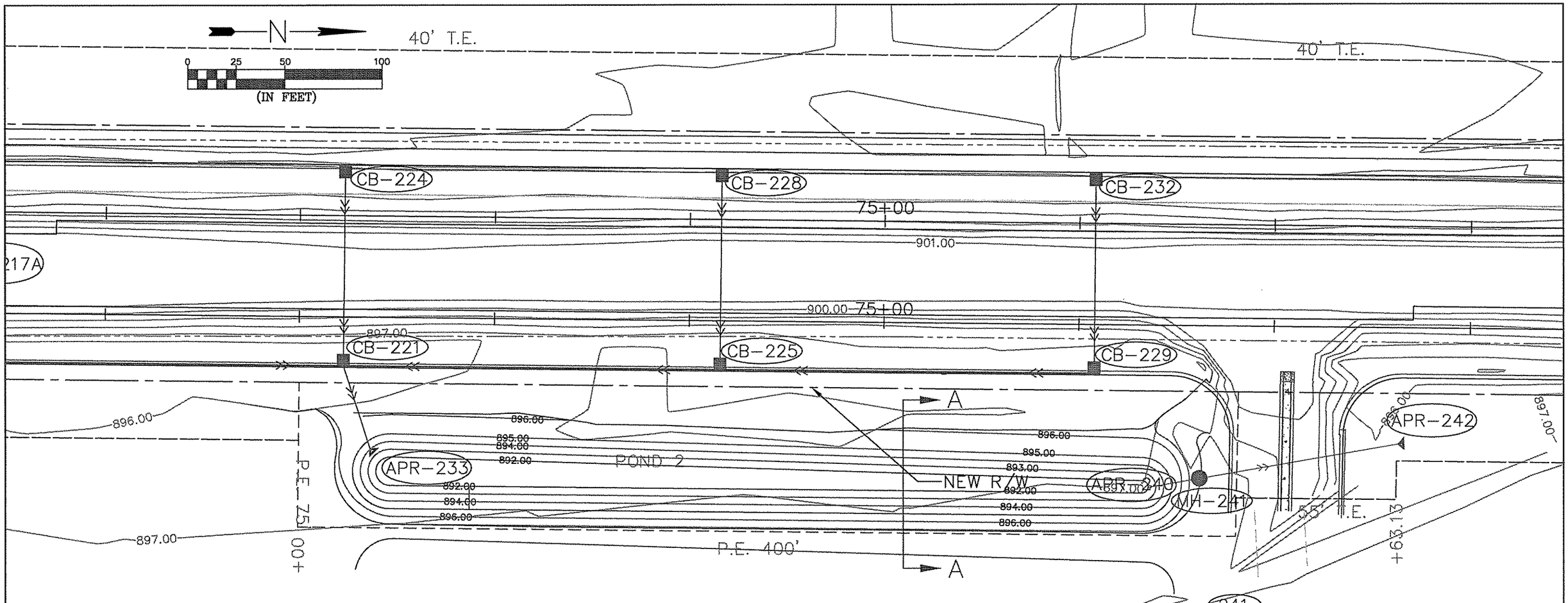
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
PRINT NAME: PETER M. LEMKE
SIGNATURE: Peter M Lemke
DATE: 1/09/2004 REG. NO. 40118

DRAWN BY MTH DATE 8/29/03
DESIGN BY MTH DATE 08/29/03
CHECKED BY MTH DATE 08/29/03

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13
STATE PROJECT NO. 106-020-23
STATE AID PROJECT NO.
COUNTY PROJECT NO.

STORM DRAINAGE TABULATIONS
SYSTEM 700 & 800



NOTES :

1. SEE SHEET 153 – TURF ESTABLISHMENT AND EROSION CONTROL PLAN FOR POND 2 SEEDING AND EROSION CONTROL REQUIREMENTS.
2. NO TOPSOIL SHALL BE PLACED ON THE BOTTOM OF THE POND.
3. STANDARD SLOPE OF GRATE CASTING =1:4
4. STRUCTURE 241 IS DRAINAGE STRUCTURE DESIGN SPECIAL 2 .

SECTION A–A

POND 2 OUTLET SKIMMER STRUCTURE

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-13\Plan\56-Ponds.dwg 09/24/2003 02:47:00 PM CDT

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

PRINT NAME: PETER M. LEMKE

SIGNATURE: Peter M Lemke

DATE: 9-26-2003 LICENSE NO. 40118

DRAWN BY MN DATE 7/28/03

DESIGN BY MN DATE 7/28/03

CHECKED BY MTH DATE 7/28/03

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13

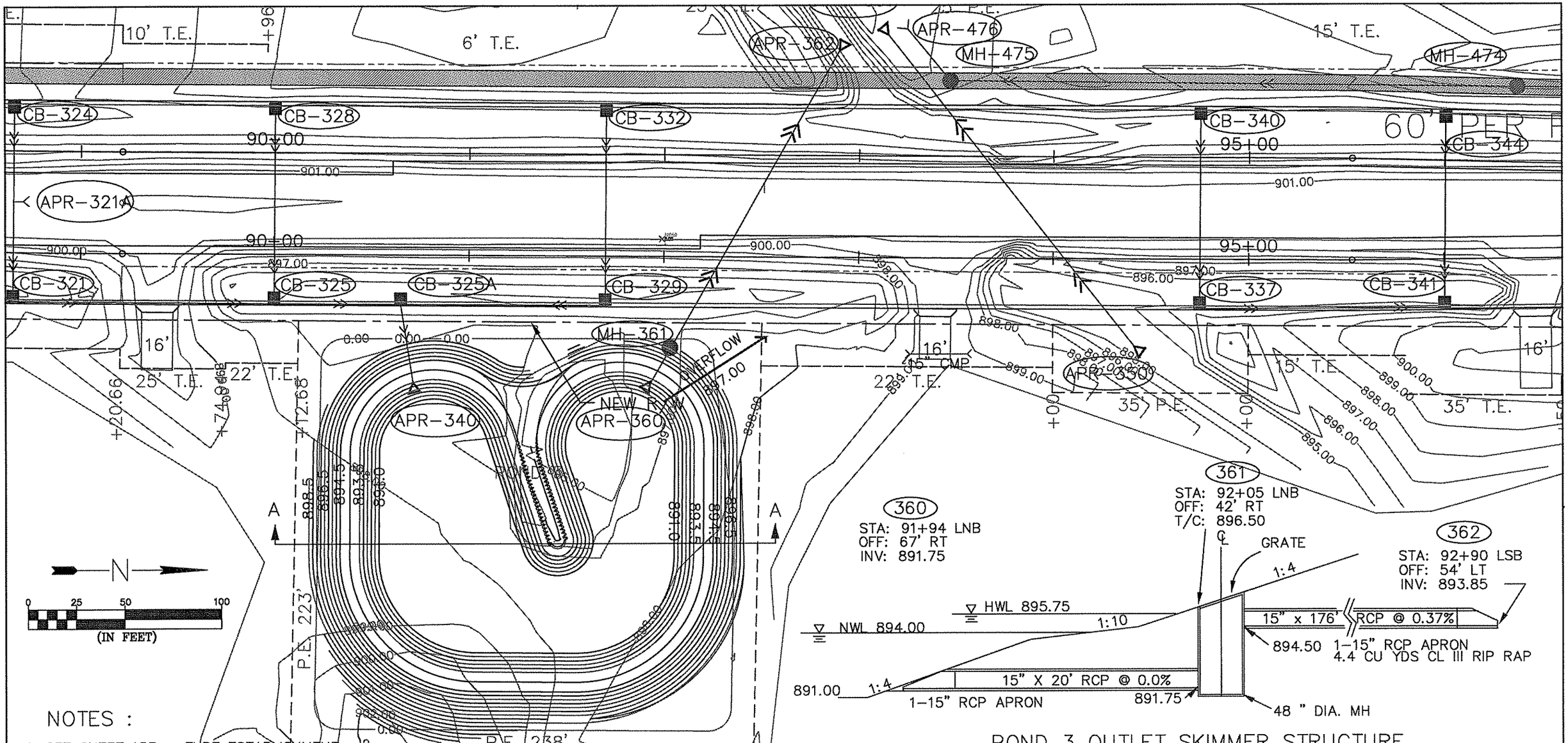
STATE PROJECT NO. 106-020-23

STATE AID PROJECT NO.

COUNTY PROJECT NO.

GRADING PLAN
POND 2

Sheet 110 of 226 Sheets

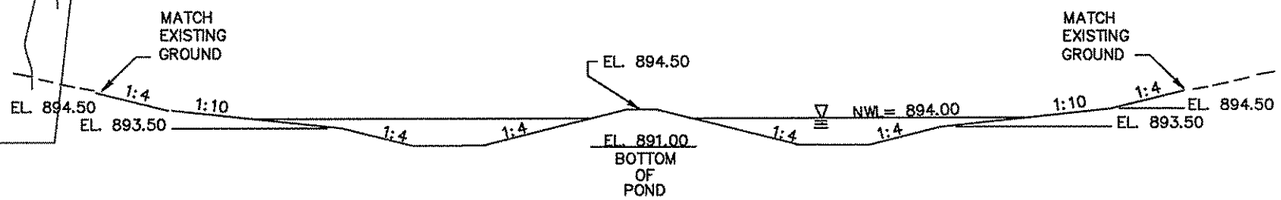


360
STA: 91+94 LNB
OFF: 67' RT
INV: 891.75

361
STA: 92+05 LNB
OFF: 42' RT
T/C: 896.50

362
STA: 92+90 LSB
OFF: 54' LT
INV: 893.85

POND 3 OUTLET SKIMMER STRUCTURE



SECTION A-A

NOTES :

1. SEE SHEET 153 – TURF ESTABLISHMENT AND EROSION CONTROL PLAN FOR POND 3 SEEDING AND EROSION CONTROL REQUIREMENTS.
2. NO TOPSOIL SHALL BE PLACED ON THE BOTTOM OF THE POND.
3. STANDARD SLOPE OF GRATE CASTING = 1:4
4. STRUCTURE 361 IS DRAINAGE STRUCTURE DESIGN SPECIAL 3 .

NO	DATE	BY	CKD	APPR	REVISION
NAME: P:\02-617-13\Plan\56-Ponds.dwg 01/09/2004 10:03:10 AM CST					

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
PRINT NAME: PETER M. LEMKE
SIGNATURE: Peter M Lemke
DATE: 1/09/2004 LICENSE NO. 40118

DRAWN BY MN DATE 7/28/03
DESIGN BY MN DATE 7/28/03
CHECKED BY MTH DATE 7/28/03

ANOKA COUNTY HIGHWAY DEPT.

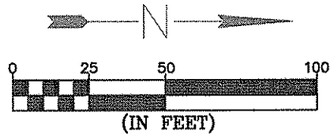
STATE PROJECT NO. 02-617-13
STATE PROJECT NO. 106-020-23
STATE AID PROJECT NO.
COUNTY PROJECT NO.

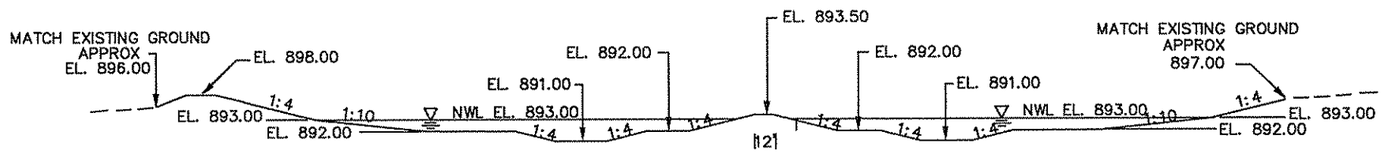
GRADING PLAN
POND 3

Sheet 111 of 226 Sheets

NOTES :

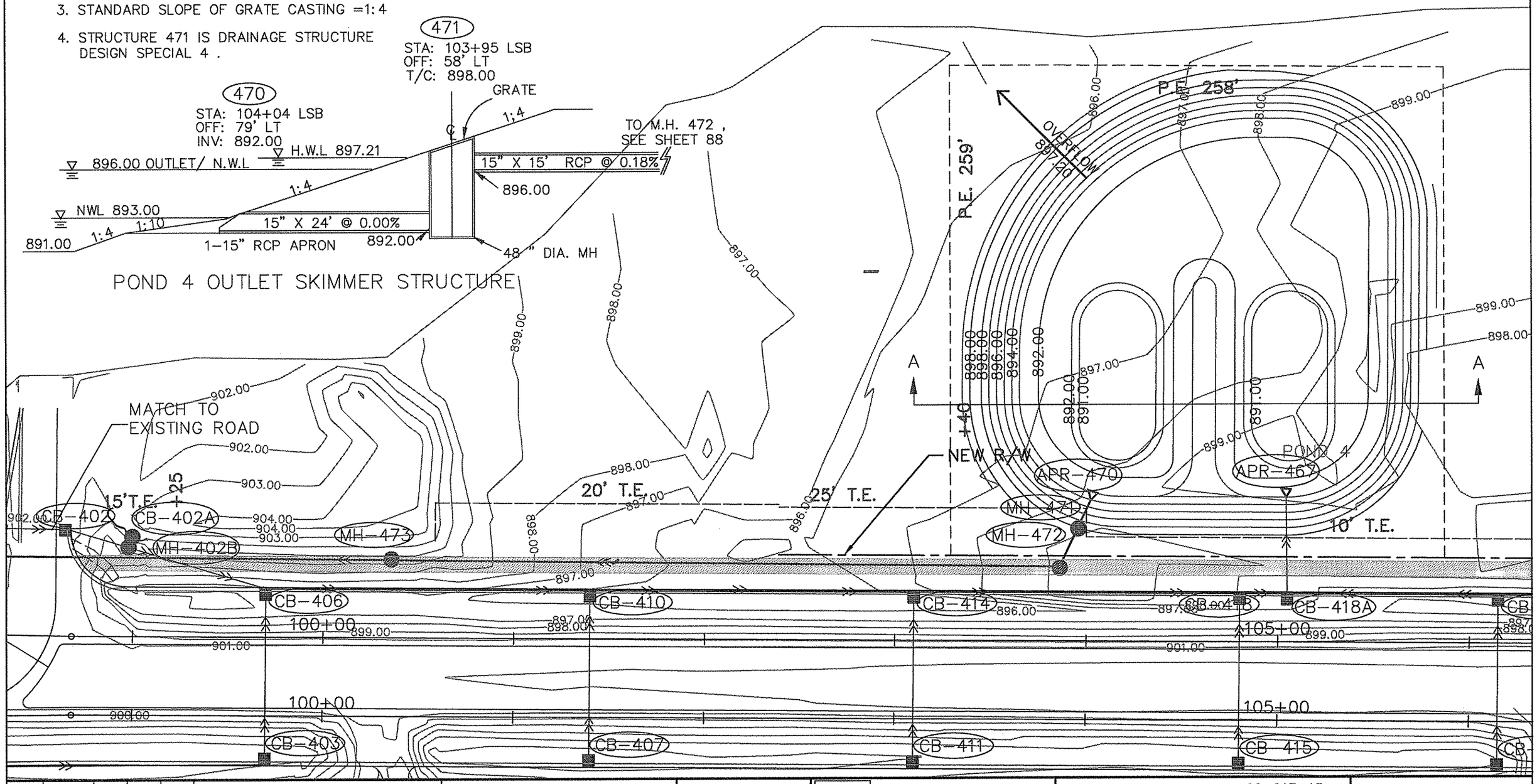
1. SEE SHEET 154 – TURF ESTABLISHMENT AND EROSION CONTROL PLAN FOR POND 4 SEEDING AND EROSION CONTROL REQUIREMENTS.
2. NO TOPSOIL SHALL BE PLACED ON THE BOTTOM OF THE POND.
3. STANDARD SLOPE OF GRATE CASTING =1:4
4. STRUCTURE 471 IS DRAINAGE STRUCTURE DESIGN SPECIAL 4 .





SECTION A–A

POND 4 OUTLET SKIMMER STRUCTURE



NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-13\Plan\SS-Ponds.dwg 10/20/2003 105137 AM CDT

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

PRINT NAME: PETER M. LEMKE

SIGNATURE: Peter M Lemke

DATE: 9-26-2003 LICENSE NO. 40118

DRAWN BY MN DATE 7/28/03

DESIGN BY MN DATE 7/28/03

CHECKED BY MTH DATE 7/28/03

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13

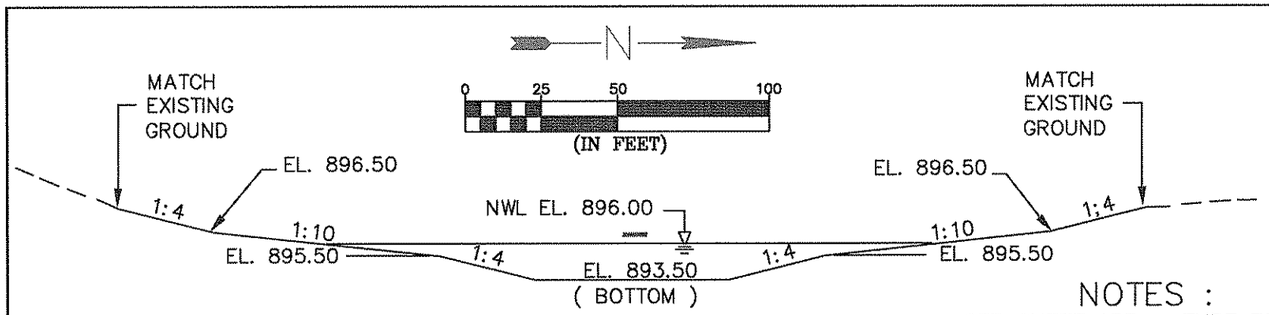
STATE PROJECT NO. 106-020-23

STATE AID PROJECT NO.

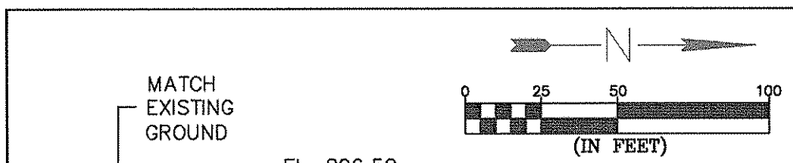
COUNTY PROJECT NO.

GRADING PLAN
POND 4

Sheet 112 of 226 Sheets

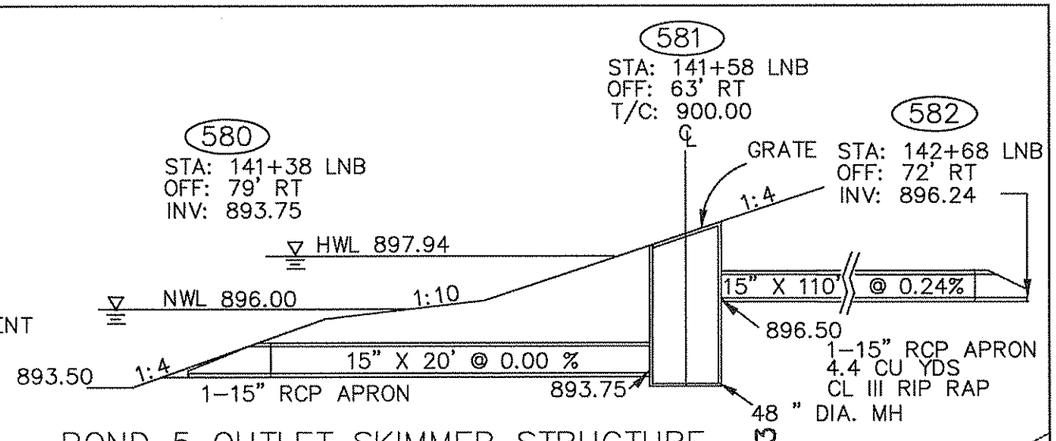


SECTION A–A

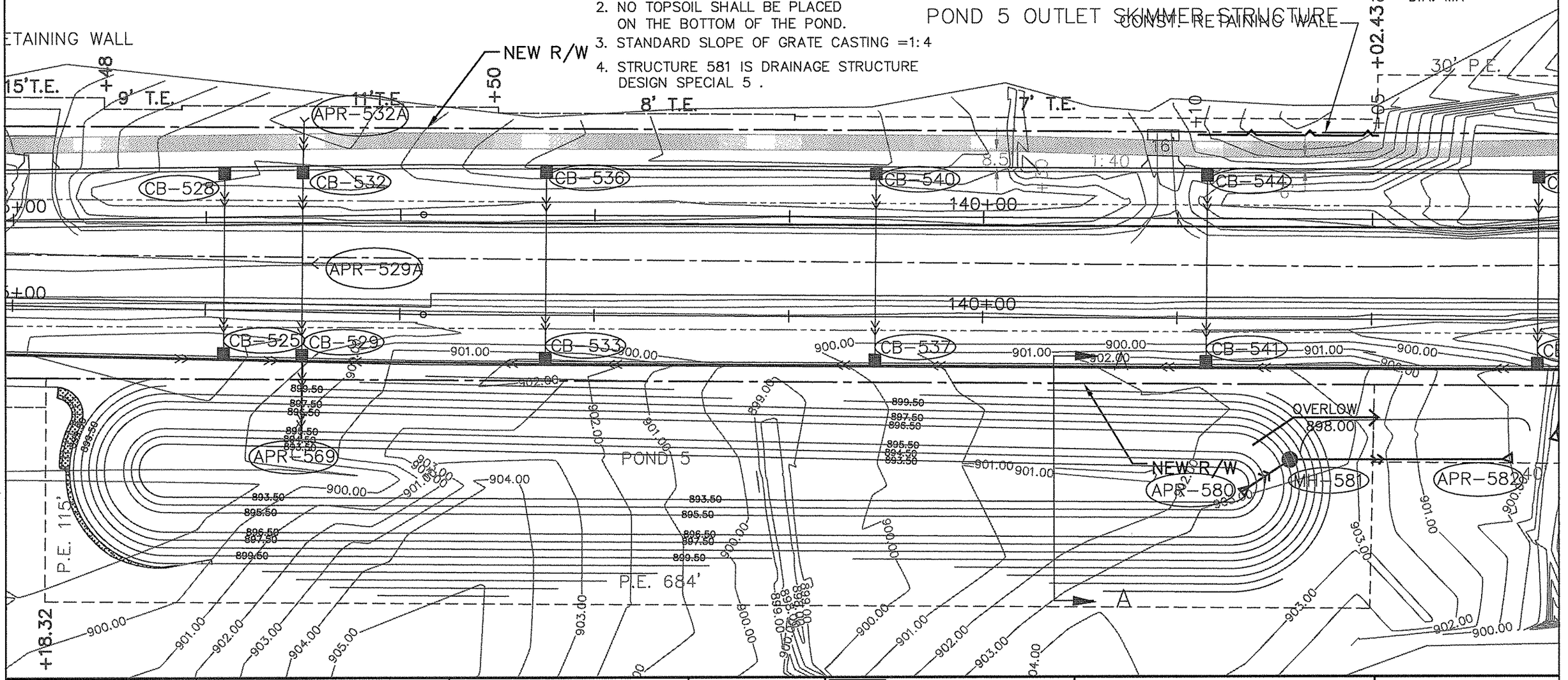


NOTES :

1. SEE SHEET 155 – TURF ESTABLISHMENT AND EROSION CONTROL PLAN FOR POND 5 SEEDING AND EROSION CONTROL REQUIREMENTS.
2. NO TOPSOIL SHALL BE PLACED ON THE BOTTOM OF THE POND.
3. STANDARD SLOPE OF GRATE CASTING =1:4
4. STRUCTURE 581 IS DRAINAGE STRUCTURE DESIGN SPECIAL 5 .



POND 5 OUTLET SKIMMER STRUCTURE



NO	DATE	BY	CKD	APPR	REVISION
NAME: P:\02-617-13\Plan\SS-Ponds.dwg 10/20/2003 10:51:37 AM CDT					

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
PRINT NAME: PETER M. LEMKE
SIGNATURE: Peter M Lemke
DATE: 9-26-2003 LICENSE NO. 40118

DRAWN BY MN DATE 7/28/03
DESIGN BY MN DATE 7/28/03
CHECKED BY MTH DATE 7/28/03

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13
STATE PROJECT NO. 106-020-23
STATE AID PROJECT NO.
COUNTY PROJECT NO.

GRADING PLAN
POND 5

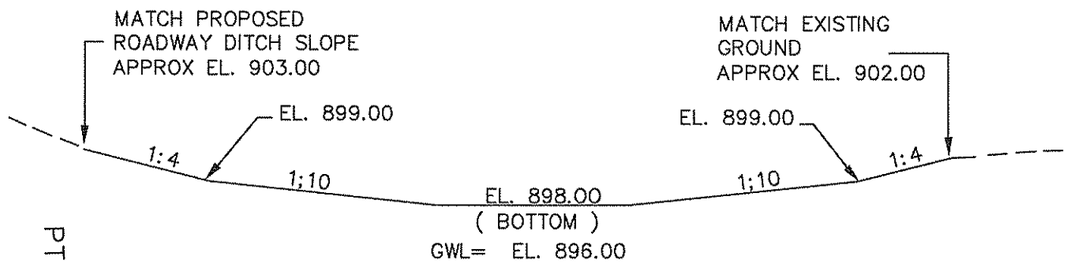
Sheet 113 of 226 Sheets

N

0 25 50 100
(IN FEET)

NOTES :

1. SEE SHEET 156 – TURF ESTABLISHMENT AND EROSION CONTROL PLAN FOR POND 6 SEEDING AND EROSION CONTROL REQUIREMENTS.
2. NO TOPSOIL SHALL BE PLACED ON THE BOTTOM OF THE POND.



SECTION A–A

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-13\Plan\56-Ponds.dwg 09/24/2003 08:47:00 PM CDT

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

PRINT NAME: PETER M. LEMKE

SIGNATURE: Peter M Lemke

DATE: 9-26-2003 LICENSE NO. 40118

DRAWN BY MN DATE 7/28/03

DESIGN BY MN DATE 7/28/03

CHECKED BY MTH DATE 7/28/03

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13

STATE PROJECT NO. 106-020-23

STATE AID PROJECT NO.

COUNTY PROJECT NO.

GRADING PLAN
POND 6

Sheet 114 of 226 Sheets

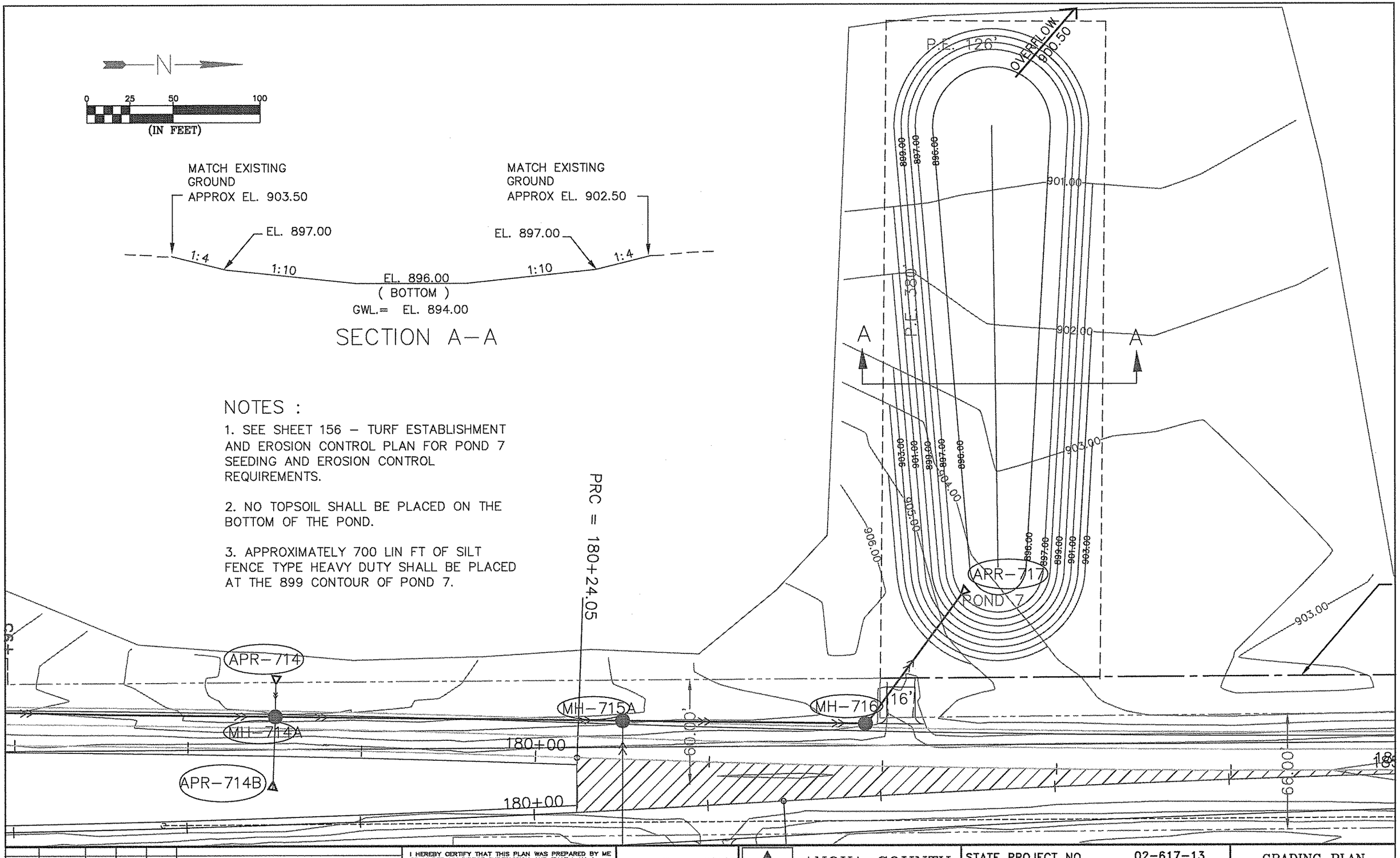
SECTION A–A

NOTES :

1. SEE SHEET 156 – TURF ESTABLISHMENT AND EROSION CONTROL PLAN FOR POND 7 SEEDING AND EROSION CONTROL REQUIREMENTS.

2. NO TOPSOIL SHALL BE PLACED ON THE BOTTOM OF THE POND.

3. APPROXIMATELY 700 LIN FT OF SILT FENCE TYPE HEAVY DUTY SHALL BE PLACED AT THE 899 CONTOUR OF POND 7.



NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-13\Plan\56-Ponds.dwg 09/24/2003 08:47:00 PM CDT

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

PRINT NAME: PETER M. LEMKE

SIGNATURE: Peter M Lemke

DATE: 9-26-2003 LICENSE NO. 40118

DRAWN BY MN DATE 7/28/03

DESIGN BY MN DATE 7/28/03

CHECKED BY MTH DATE 7/28/03

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13

STATE PROJECT NO. 106-020-23

STATE AID PROJECT NO.

COUNTY PROJECT NO.

GRADING PLAN
POND 7

Sheet 115 of 226 Sheets

N

0 25 50 100

(IN FEET)

NOTES :

1. SEE SHEET 152 – TURF ESTABLISHMENT AND EROSION CONTROL PLAN FOR BGK POND SODDING AND EROSION CONTROL REQUIREMENTS.
2. NO TOPSOIL SHALL BE PLACED ON THE BOTTOM OF THE POND.

BGK POND EXISTING – 8422 SQ FT
BGK POND PROPOSED – 7166 SQ FT

PC = 42+09.11

BGK POND

PT = 44+83.91

NEW R/W

35' T.E.

10' T.E.

20' T.E.

45+00

45+00

CB–104
CB–103
CB–102
CB–101
CB–108
CB–107
CB–106
CB–105
CB–112
CB–111
CB–110
CB–109

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-13\Plan\06-Ponds.dwg 09/24/2003 02:47:00 PM CDT

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

PRINT NAME: PETER M. LEMKE

SIGNATURE: Peter M Lemke

DATE: 9-26-2003 LICENSE NO. 40118

DRAWN BY MN DATE 7/28/03

DESIGN BY MN DATE 7/28/03

CHECKED BY MTH DATE 7/28/03

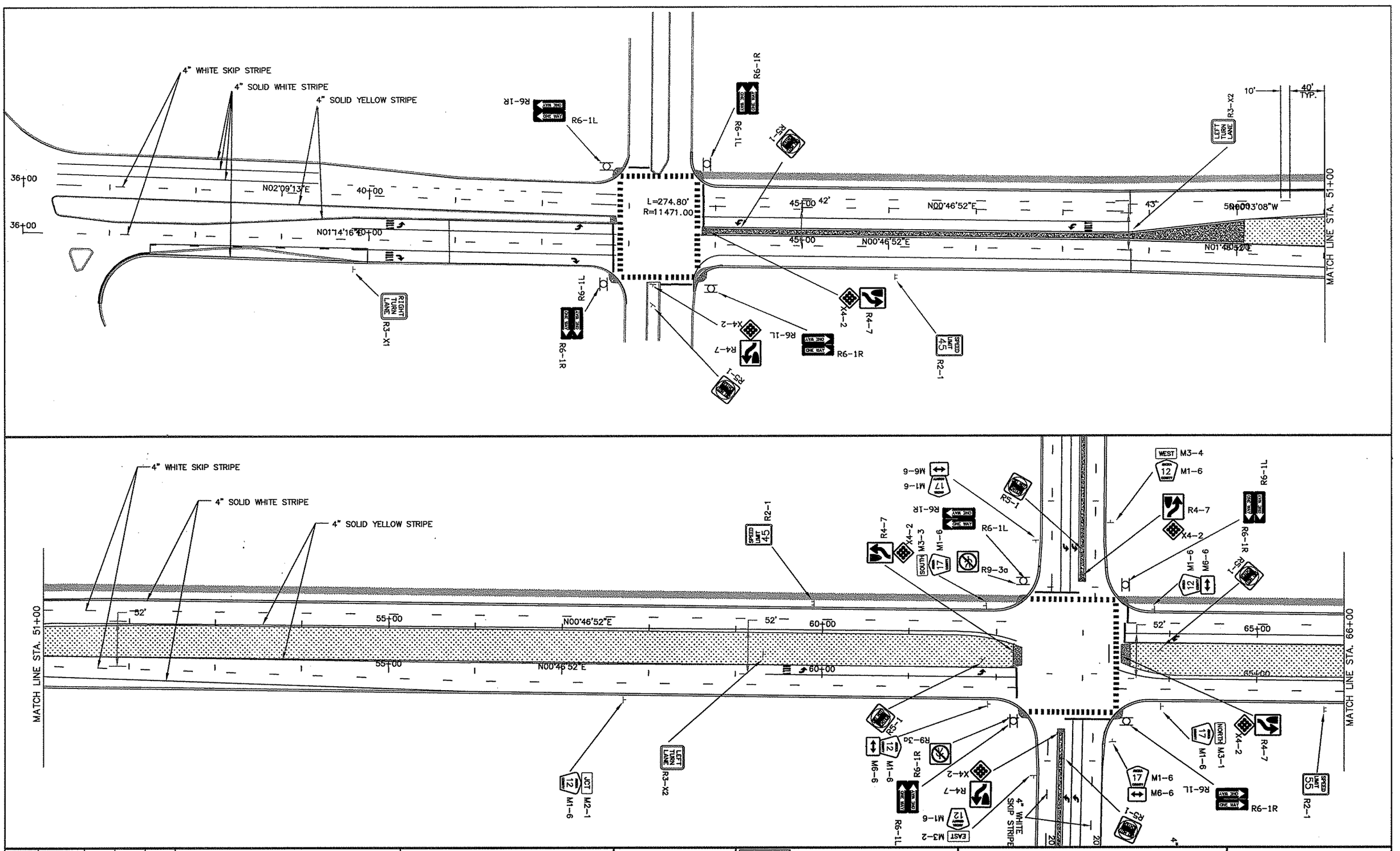
ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13
STATE PROJECT NO. 106-020-23
STATE AID PROJECT NO.
COUNTY PROJECT NO.

GRADING PLAN
BGK POND

Sheet 116 of 226 Sheets



NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-13\Plan\70-SIGNING STRIPING.dwg 10/20/2003 01:14:55 PM CDT

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

PRINT NAME: PETER M. LEMKE

SIGNATURE: Peter M Lemke

DATE: 1-30-2004 REG. NO. 40118

DRAWN BY DM DATE 9/24/03

DESIGN BY DM DATE 9/24/03

CHECKED BY PML DATE 9/24/03

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13

STATE PROJECT NO. 106-020-23

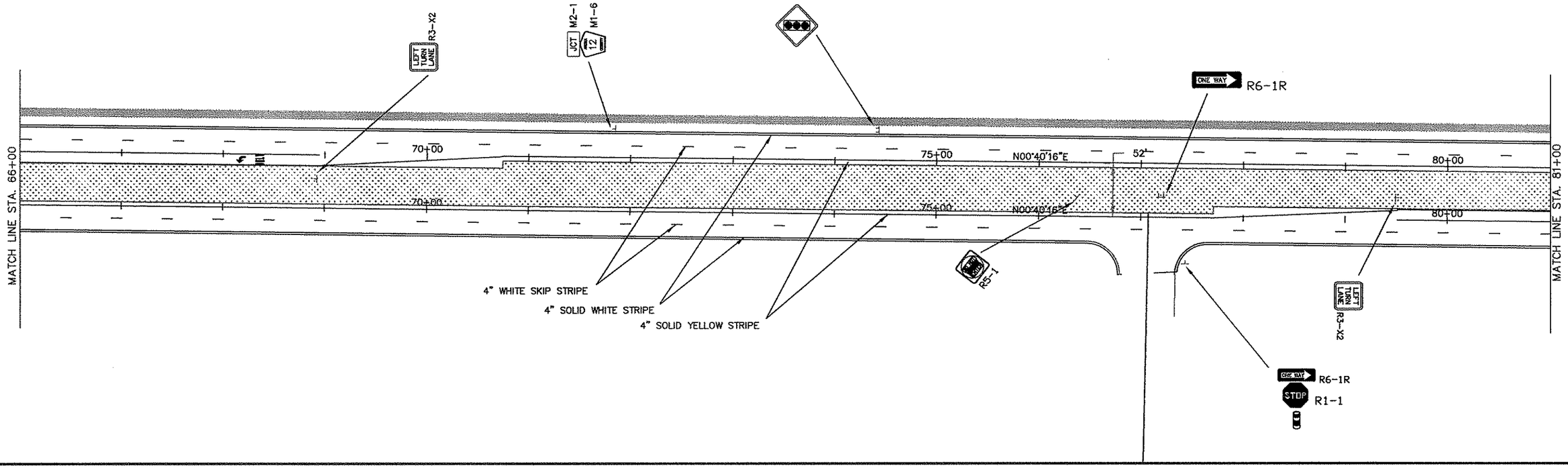
STATE AID PROJECT NO.

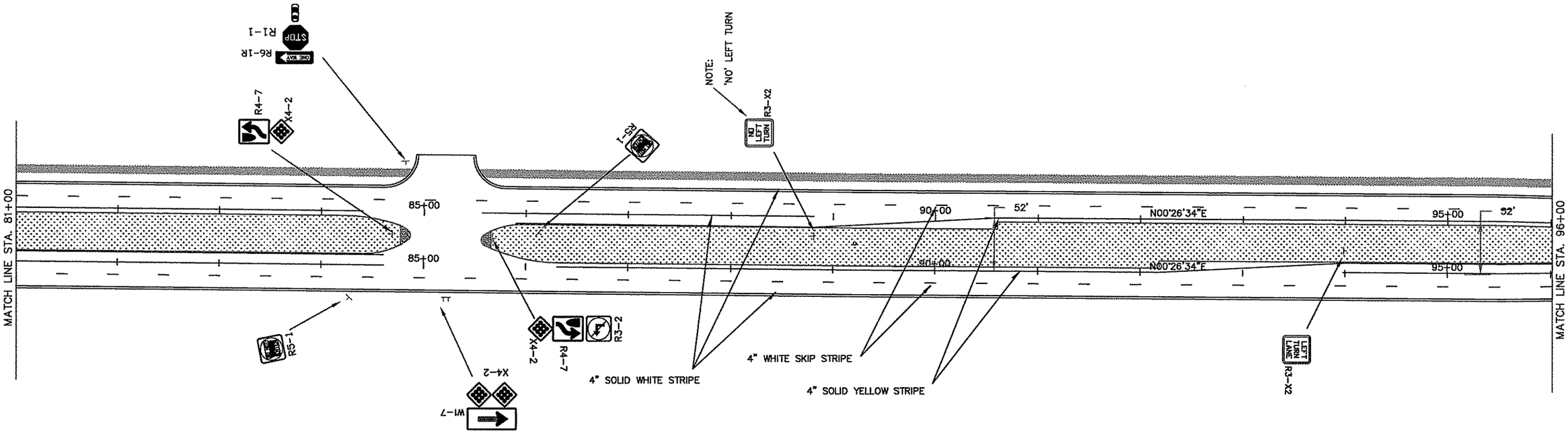
COUNTY PROJECT NO.

SIGNING AND STRIPING

STA. 36+00 TO 66+00

Sheet 117 of 226 Sheets





NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-13\Plan\70-SIGNING STRIPING.dwg 10/20/2003 01:14:55 PM CDT

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

PRINT NAME: PETER M. LEMKE

SIGNATURE: Peter M Lemke

DATE: 1-30-2004 REG. NO. 40118

DRAWN BY DM DATE 9/24/03

DESIGN BY DM DATE 9/24/03

CHECKED BY PML DATE 9/24/03

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13

STATE PROJECT NO. 106-020-23

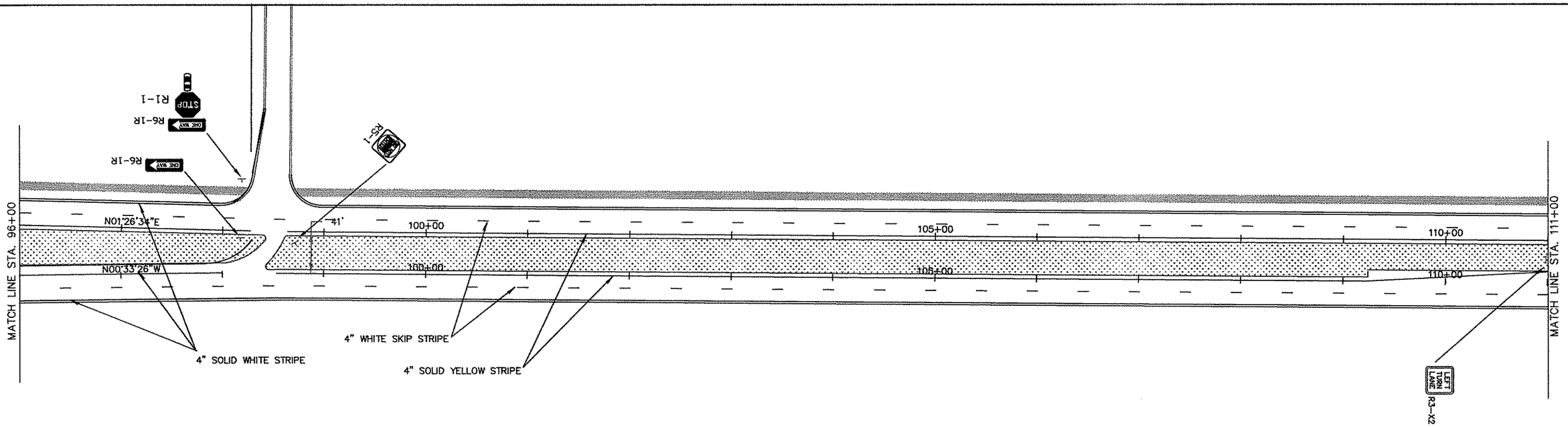
STATE AID PROJECT NO.

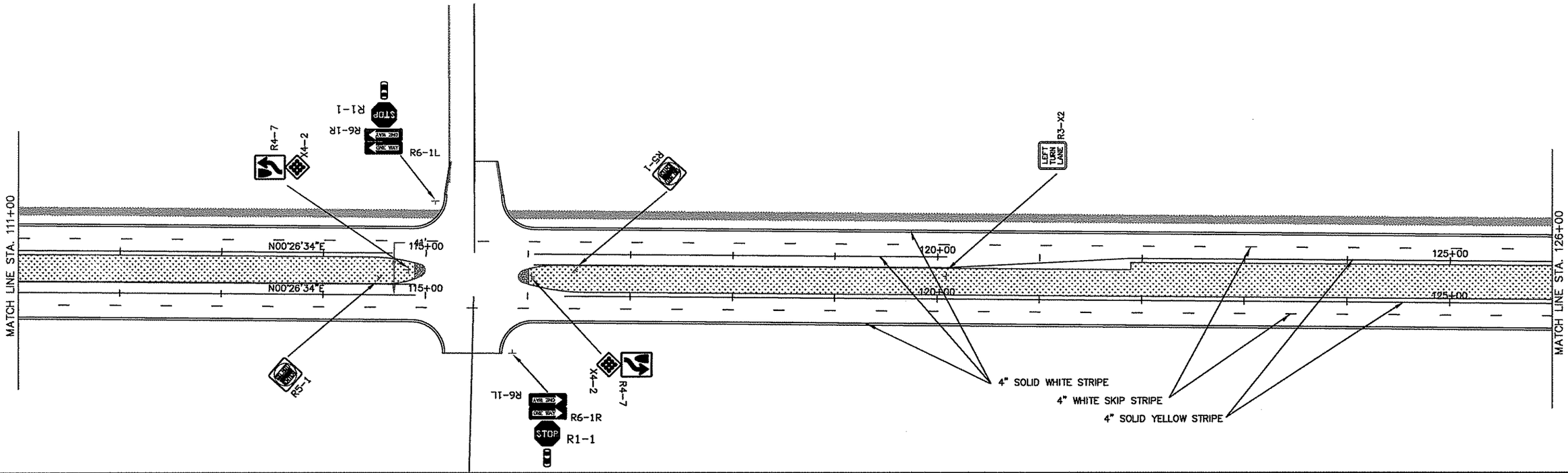
COUNTY PROJECT NO.

SIGNING AND STRIPING

STA. 66+00 TO 96+00

Sheet 118 of 226 Sheets





NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-13\Plan\70-SIGNING STRIPING.dwg 10/20/2003 01:14:55 PM CDT

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

PRINT NAME: PETER M. LEMKE

SIGNATURE: Peter M Lemke

DATE: 1-30-2004 REG. NO. 40118

DRAWN BY DM DATE 9/24/03

DESIGN BY DM DATE 9/24/03

CHECKED BY PML DATE 9/24/03

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13

STATE PROJECT NO. 106-020-23

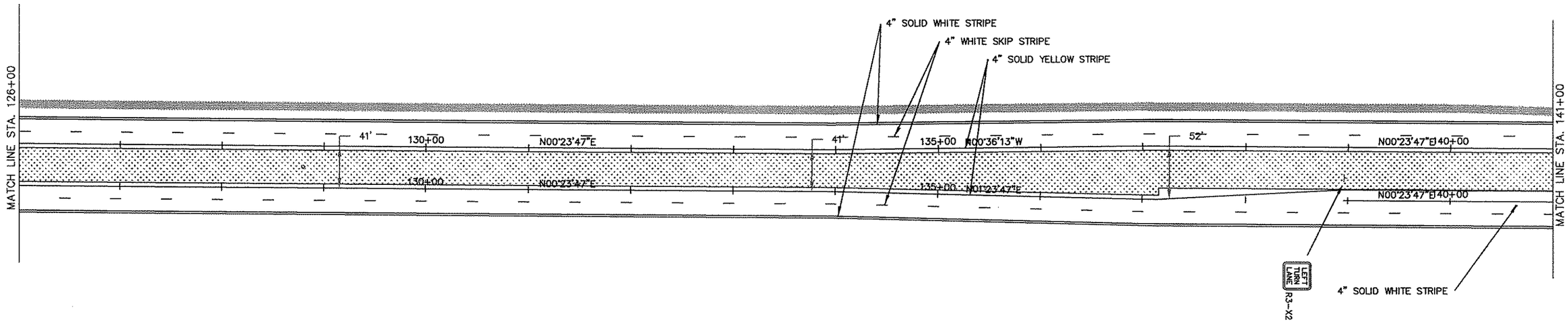
STATE AID PROJECT NO.

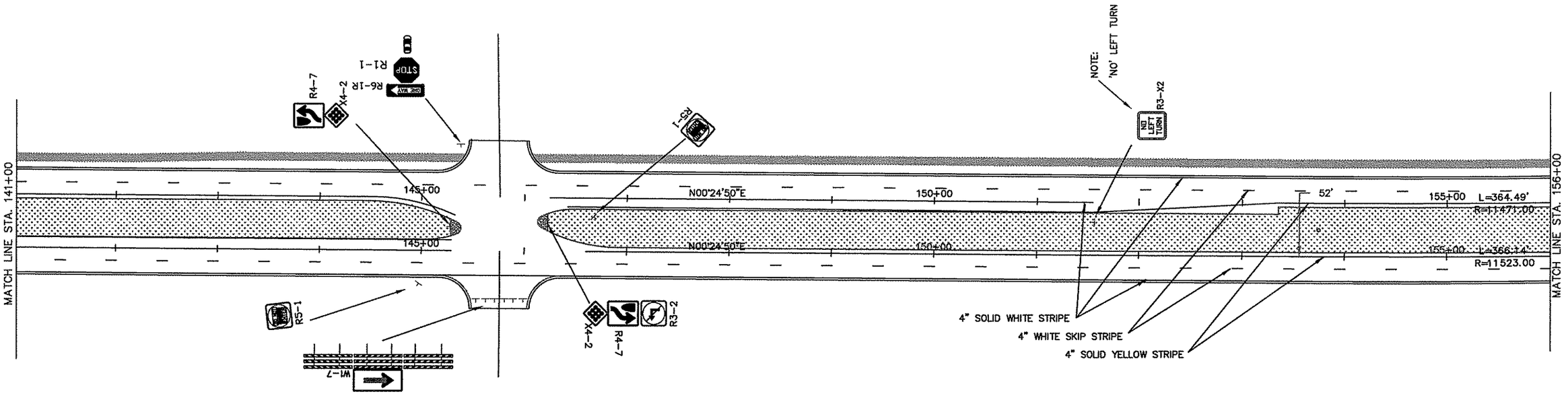
COUNTY PROJECT NO.

SIGNING AND STRIPING

STA. 96+00 TO 126+00

Sheet 119 of 226 Sheets





NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-13\Plan\70-SIGNING STRIPING.dwg 10/20/2003 01:14:55 PM CDT

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

PRINT NAME: PETER M. LEMKE

SIGNATURE: Pete M Lemke

DATE: 1-30-2004 REG. NO. 40118

DRAWN BY DM DATE 9/24/03

DESIGN BY DM DATE 9/24/03

CHECKED BY PML DATE 9/24/03

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13

STATE PROJECT NO. 106-020-23

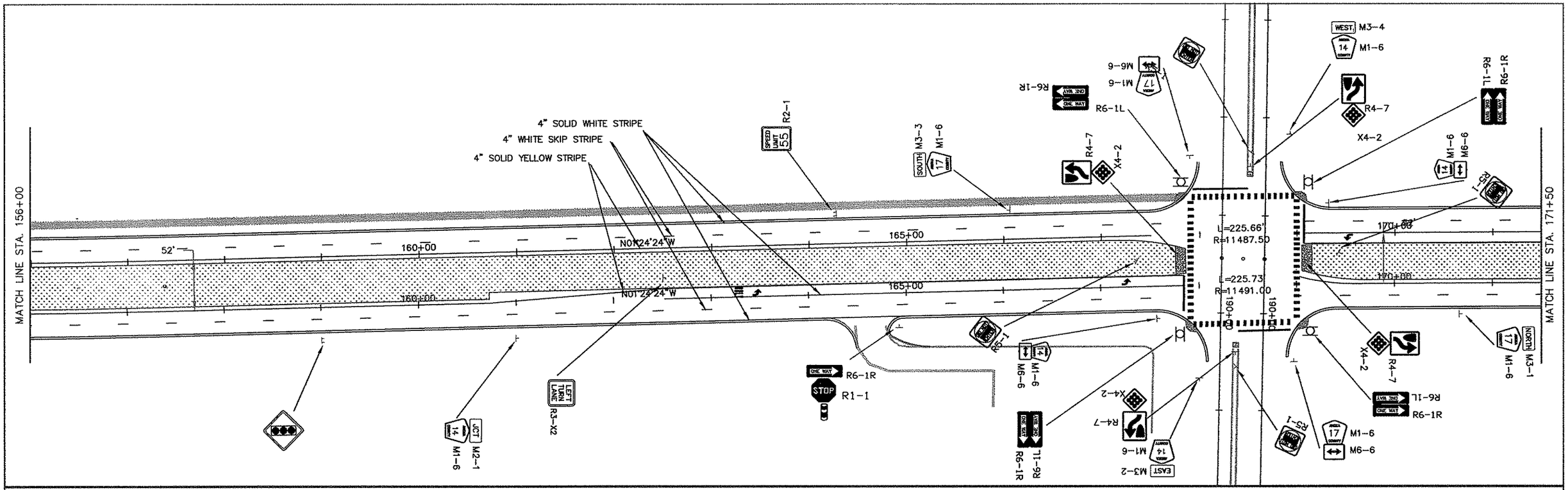
STATE AID PROJECT NO.

COUNTY PROJECT NO.

SIGNING AND STRIPING

STA. 126+00 TO 156+00

Sheet 120 of 226 Sheets



NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-13\Plan\70-SIGNING STRIPING.dwg 10/20/2003 01:14:55 PM CDT

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

PRINT NAME: PETER M. LEMKE

SIGNATURE: Peter M Lemke

DATE: 1-30-2004 REG. NO. 40118

DRAWN BY DM DATE 9/24/03

DESIGN BY DM DATE 9/24/03

CHECKED BY PML DATE 9/24/03

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13

STATE PROJECT NO. 106-020-23

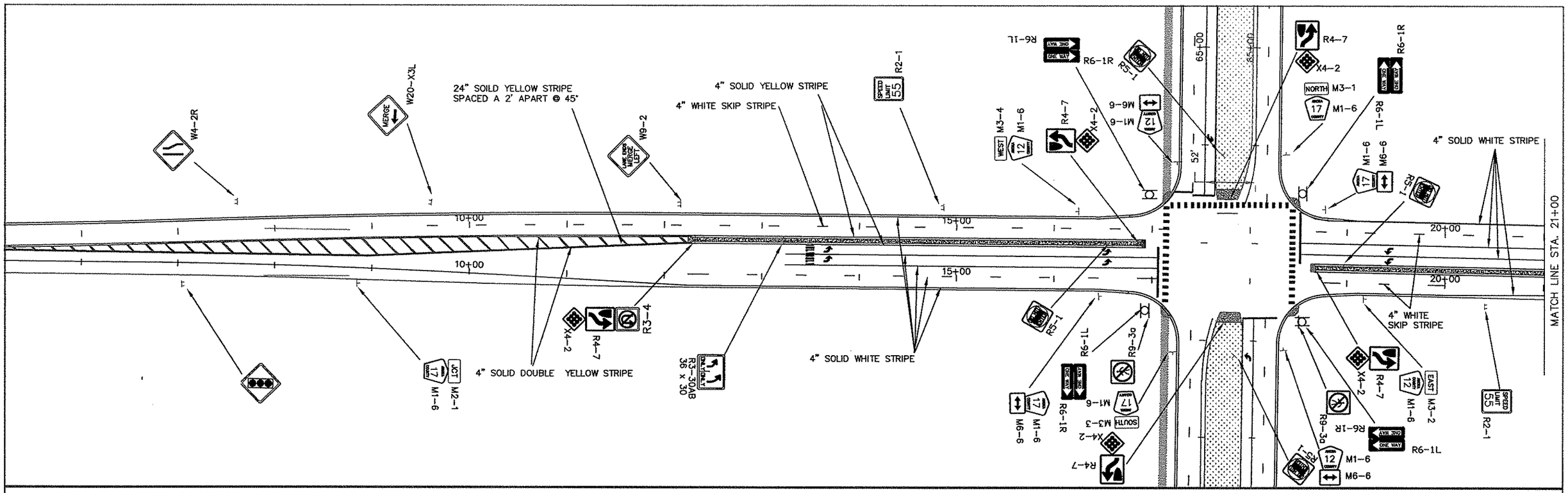
STATE AID PROJECT NO.

COUNTY PROJECT NO.

SIGNING AND STRIPING

STA. 156+00 TO 187+70.00

Sheet 121 of 226 Sheets



NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-13\Plan\70-SIGNING STRIPING.dwg 10/20/2003 01:14:55 PM CDT

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

PRINT NAME: PETER M. LEMKE

SIGNATURE: Peter M Lemke

DATE: 1-30-2004 REG. NO. 40118

DRAWN BY DM DATE 9/24/03

DESIGN BY DM DATE 9/24/03

CHECKED BY PML DATE 9/24/03

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13

STATE PROJECT NO. 106-020-23

STATE AID PROJECT NO.

COUNTY PROJECT NO.

SIGNING AND STRIPING

STA.6+00 TO 35+61.00

Sheet 122 of 226 Sheets

M.U.T.C.D. CODE	SIZE	INSERT	QTY	SQ. FT.	TOTAL SQ. FT.	(A) MOUNTING POST PER INSTALLATION	MOUNTING HEIGHT
R1-1	30" x 30"	STOP	6	6.25	37.50	2	7.0
DELINEATOR	4"DIA x 15"		6	0.42	2.52		7.0
R2-1	36" x 48"	SPEED LIMIT 45	2	12.00	24.00	4	7.0
		SPEED LIMIT 55	5	12.00	60.00	4	7.0
R3-2	24"x 24"		3	4.00	12.00		7.0
R3-4	24"x 24"		3	4.00	12.00		7.0
R3-X1	30" x 30"	RIGHT TURN LANE	2	6.25	12.50	2	7.0
	30" x 30"	NO LEFT TURN	2	6.25	12.50	2	7.0
R3-X2	30" x 30"	LEFT TURN LANE	10	6.25	62.50	2	7.0
R4-7	24" x 30"		18	5.00	90.00	2	7.0
R4-7	36" x 48"		1	12.00	12.00	4	7.0
X4-2	18" x 18"		18	2.25	40.50		7.0
R5-1	30" x 30"	DO NOT ENTER	18	6.25	112.5	2	7.0
R6-1R	36" x 12"	ONE WAY	20	3.00	60.00	(1)(2)(3)	7.0
R6-1L	48" x 18"		1	6.00	6.00		
R6-1L	36" x 12"	ONE WAY	14	3.00	42.00	(1)(2)(3)	7.0
R9-3A	18" x 18"		2	2.25	4.50		7.0
R3-30AB	36" x 30"	ONLY ONLY	2	7.50	15.00	2	7.0
W3-3	48" x 48"		5	16.00	80.00	4	7.0

M.U.T.C.D. CODE	SIZE	INSERT	QTY	SQ. FT.	TOTAL SQ. FT.	(A) MOUNTING POST PER INSTALLATION	MOUNTING HEIGHT
W4-2R	48" x 48"		3	16.00	48.00	4	7.0
W6-1	48" x 48"		1	16.00	16.00	4	7.0
W20-X3L	48" x 48"	MERGE	3	16.00	48.00	4	7.0
W9-2	48" x 48"	LANE ENDS MERGE LEFT	3	16.00	48.00	4	7.0
W1-6	48" x 24"		2	8.00	16.00	4	7.0
M1-6	24" x 24"	ANOKA 12 COUNTY	6	4.00	24.00	2	7.0
M1-6	24" x 24"	ANOKA 14 COUNTY	6	4.00	24.00	2	7.0
M1-6	24" x 24"	ANOKA 17 COUNTY	10	4.00	40.00	2	7.0
M3-1	24" x 12"	NORTH	2	2.00	4.00		7.0
M3-2	24" x 12"	EAST	2	2.00	4.00		7.0
M3-3	24" x 12"	SOUTH	2	2.00	4.00		7.0
M3-4	24" x 12"	WEST	2	2.00	4.00		7.0
M6-4	21" x 15"		8	2.19	17.52		7.0
M2-1	21" x 15"	JCT	6	2.19	13.14		7.0
TYPE III	8' (MIN)		6			2	7.0

SQ FT TOTAL = 1002.43 SQ FT

(A) POST TOTAL = 274 POSTS

NOTE: (A) MOUNTING POSTS PER INSTALLATION INCLUDES BASE POST & UPRIGHT POST.

(1) SIGNAL POLE MOUNT (12) R6-1R / (12) R6-1L)

(2) 9 MOUNTED ABOVE R1-1

(3) POST MOUNTED (1) R6-1R 36"X12" (1) R6-1R 48"X18"

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-13\Plan\70-SIGNING STRIPING.dwg 10/20/2003 01:14:55 PM CDT

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

PRINT NAME: PETER M. LEMKE

SIGNATURE: Peter M Lemke

DATE: 1-30-2004 REG. NO. 40118

DRAWN BY DM DATE 9/24/03

DESIGN BY DM DATE 9/24/03

CHECKED BY PML DATE 9/24/03

ANOKA COUNTY HIGHWAY DEPT.

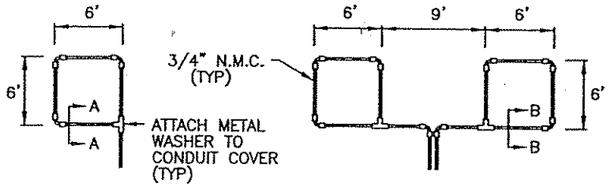
STATE PROJECT NO. 02-617-13

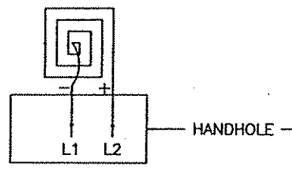
STATE PROJECT NO. 106-020-23

STATE AID PROJECT NO.

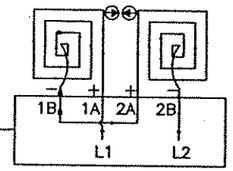
COUNTY PROJECT NO.

SIGNING AND STRIPING TABULATIONS





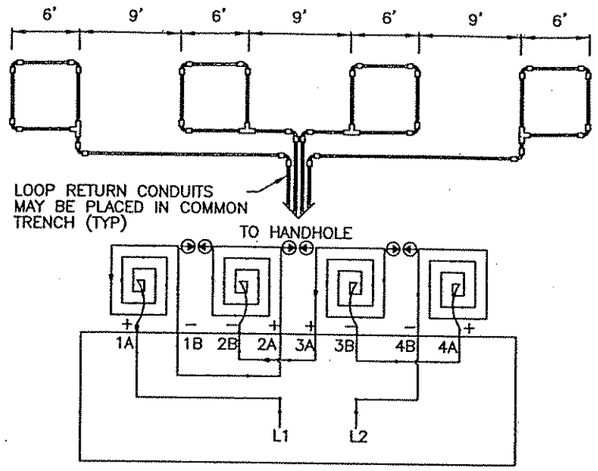
LOOP DETECTOR
DETAIL 'A'
(LOOP PHASING FOR SINGLE CONNECTION)



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

L1 TO 1A
1B TO 2A
2B TO L2

LOOP DETECTOR
DETAIL 'B'
(LOOP PHASING FOR SERIES CONNECTION)

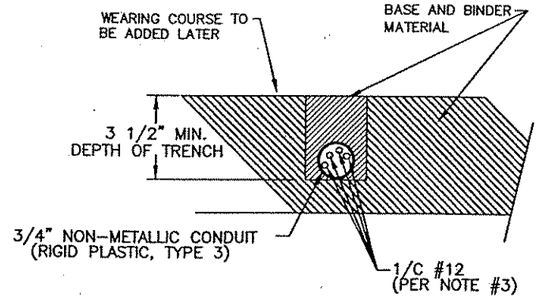


LOOP CONNECTIONS SHALL BE LABELED AND SPLICED IN THE HANDHOLE AS FOLLOWS:

L1 TO 1A	3B TO 4A
1B TO 2A	4B TO L2
2B TO 3A	

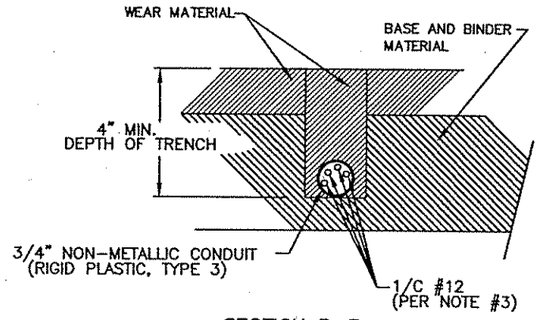
SPLICE CONTROL CABLE TO L1 & L2 IN HANDHOLE. ALL CONDUCTORS SHALL BE TAGGED IN HANDHOLE (1A, 1B, ECT)

LOOP DETECTOR
DETAIL 'C'
(LOOP PHASING FOR SERIES CONNECTION)



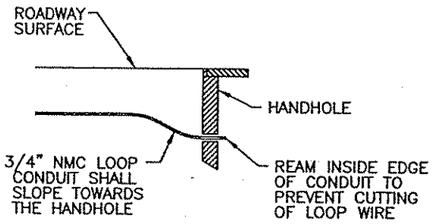
SECTION A-A

DETAIL FOR LOOP INSTALLATION IN NEW ROADWAY



SECTION B-B

DETAIL FOR LOOP INSTALLATION IN EXISTING ROADWAY



DRAINAGE DETAIL

LOOP DETECTOR WIRING

1) ALL CORNERS SHALL BE 90° CONDUIT BENDS.
2) CONNECT WIRES IN HANDHOLES USING SPLICE KIT METHOD DESCRIBED IN THE SPECIAL PROVISIONS.
3) LOOP DETECTOR WIRES SHALL BE #12 AWG CROSSED LINKED POLYETHYLENE (XLP). SEE SPECIAL PROVISIONS.
4) LOOP LEAD IN WIRES SHALL BE TWISTED A MIN. OF (5) TURNS PER FOOT THROUGH THE CONDUIT TO THE HANDHOLE.
5) NMC DESIGNATES NON-METALLIC CONDUIT (SPEC. 3803)
6) LOOPS 6' x 6' THRU 6' x 14' SHALL HAVE (4) TURNS.
7) LOOPS 6' x 15' AND LARGER SHALL HAVE (2) TURNS.

STANDARD PLATES

THESE STANDARD PLATES AS APPROVED BY FHWA SHALL APPLY:

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

* - APPLIES TO THIS PROJECT

CONDUCTOR COLOR CODE

R	RED
O	ORANGE
BL	BLUE
WH	WHITE
R/BLK	RED WITH BLACK TRACER
O/BLK	ORANGE WITH BLACK TRACER
BL/BLK	BLUE WITH BLACK TRACER
WH/BLK	WHITE WITH BLACK TRACER
BLK	BLACK
BLK/WH	BLACK WITH WHITE TRACER
G/BLK	GREEN WITH BLACK TRACER
G	GREEN

LEGEND OF SYMBOLS

CONTROLLER AND SERVICE EQUIP. NO's
SIGNAL BASE NO.
SIGNAL FACE NO.
LUMINAIRE NO.
CONTROLLER AND CABINET
CONTROLLER AND CABINET - IN PLACE
HANDHOLE
HANDHOLE - IN PLACE
RIGID STEEL CONDUIT (RSC)
RIGID STEEL CONDUIT (RSC) - IN PLACE
SIGNAL FACE WITH BACKGROUND SHIELD
SIGNAL FACE W/O BACKGROUND SHIELD
SIGNAL FACE - IN PLACE
PEDESTRIAN INDICATORS
PEDESTRIAN INDICATORS - IN PLACE
PEDESTRIAN PUSH BUTTONS ON PEDESTAL OR POLE
PEDESTRIAN PUSH BUTTON STATION
TRAFFIC SIGNAL PEDESTAL
TRAFFIC SIGNAL PEDESTAL - INPLACE
TRAFFIC SIGNAL POLE AND MAST ARM
TRAFFIC SIGNAL POLE AND MAST ARM - IN PLACE
STREET LIGHT POLE AND LUMINAIRE
STREET LIGHT POLE AND LUMINAIRE - IN PLACE
MAST ARM AND LUMINAIRE
MAST ARM AND LUMINAIRE - INPLACE
WOOD POLE
WOOD POLE - IN PLACE
SOURCE OF POWER
RAILROAD SIGNAL - IN PLACE
RIGHT OF WAY LINE
CENTERLINE
EDGE OF ROADWAY
SHOULDERLINE
CURB LINE
STOP BAR
EMERGENCY VEHICLE PREEMPTION DETECTOR

ABBREVIATIONS

3-1(EG)	SIGNAL HEAD PHASE "3" - NO "1"	P2-1(EG)	PED INDICATION PHASE "2" - NO. "1"
BR. GR.	BARE GROUND	PB	PUSH BUTTON
CH. SW.	CHECK SWITCH	PB2-1(EG)	PUSH BUTTON PHASE "2" - NO. "1"
CLR	CLEAR	PEC	PHOTOELECTRIC CELL
D2-1(EG)	DETECTOR PHASE "2" - NO. "1"	PED	PEDESTRIAN
DWK	DON'T WALK	R	RED
EQG	EQUIPMENT GROUND	R&S	REMOVE AND SALVAGE
EVP	EMERGENCY VEHICLE PRE-EMPTION	RLTA	RED LEFT TURN ARROW
F&I	FURNISH AND INSTALL	RRTA	RED RIGHT TURN ARROW
FL	FLASH/FLASHING	RSC	RIGID STEEL CONDUIT
G	GREEN	SOP	SOURCE OF POWER
GLTA	GREEN LEFT TURN ARROW	SPR	SPARE
GRN	GREEN	ST. LHT	STREET LIGHT
GR. R	GROUND ROD	STA	STATION
GRTA	GREEN RIGHT TURN ARROW	SW	SWITCH
GTHA	GREEN THRU ARROW	SWD	SWITCHED
HH	HANDHOLE	S&R	SALVAGE AND REINSTALL
HPS	HIGH PRESSURE SODIUM	TDW	TELEPHONE DROP WIRE
JB	JUNCTION BOX	WLK	WALK
LUM	LUMINAIRE	YEL	YELLOW
NEU	NEUTRAL	YLTA	YELLOW LEFT TURN ARROW
NMC	NONMETALLIC CONDUIT	YRTA	YELLOW RIGHT TURN ARROW
		YTHA	YELLOW THRU ARROW

S.P. 02-617-13
S.P. 106-020-23

W:/AE/ANOKC/030000/173SIGDETL.DWG

DRAWN BY: JMG
DESIGNER: JMG
CHECKED BY: JMG
DESIGN TEAM

NO.	BY	DATE	REVISIONS

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

Date: October 9, 2003
Name: John M. Gray, P.E.
Lic. No. 22457

SEH®
PHONE: (651) 490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

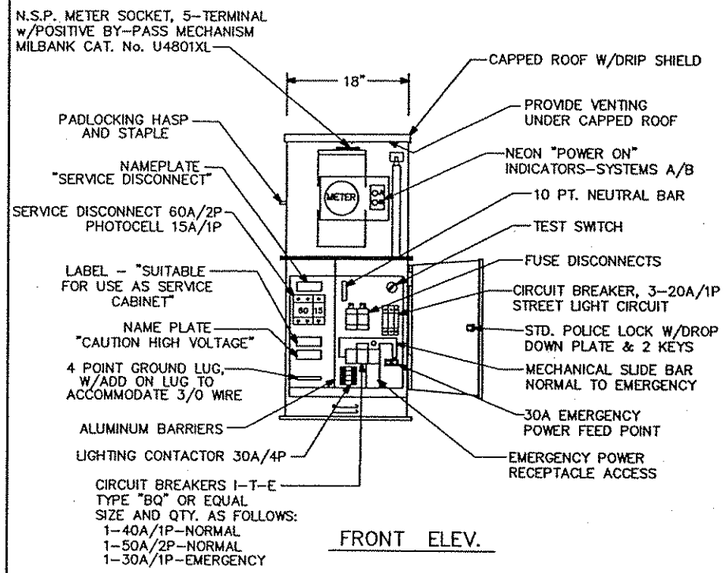
ANOKA COUNTY, MINNESOTA
CITY OF BLAINE

TRAFFIC SIGNAL SYSTEMS
DETAILS & STANDARD PLATES
CSAH 17 (LEXINGTON AVENUE)

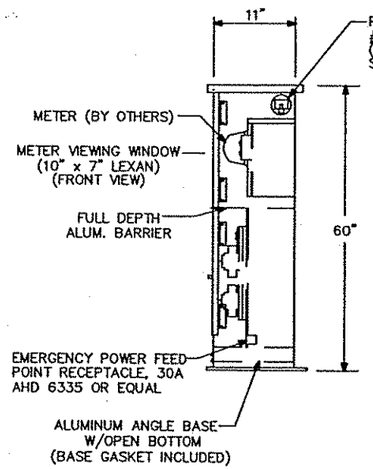
FILE NO. AANOKC0305.00
SIGNAL SHEET 1 OF 28

124/226

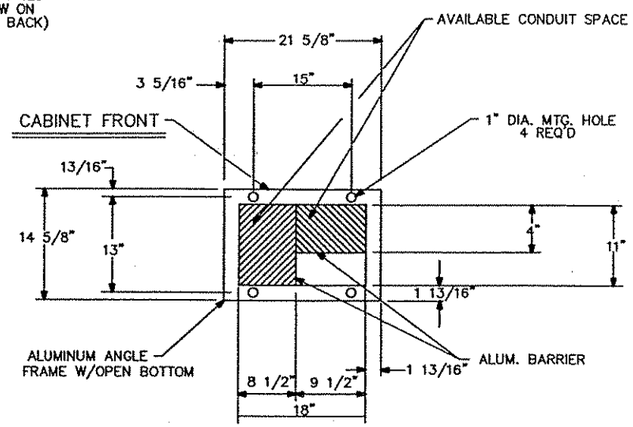
SIGNAL SERVICE CABINET



FRONT ELEV.

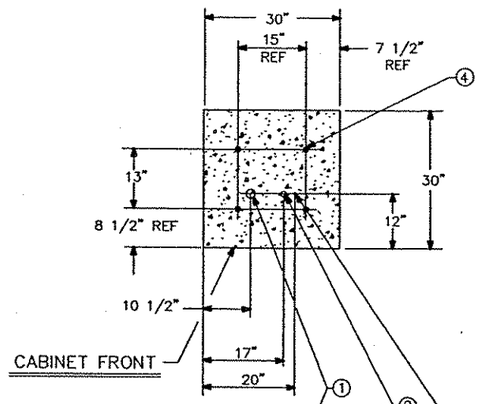


RIGHT SIDE ELEV.

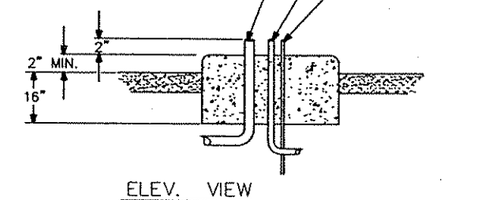


BASE VIEW

SERVICE CABINET FOUNDATION



PLAN VIEW



ELEV. VIEW

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

CONSTRUCTION NOTES

ENCLOSURE SHALL BE FABRICATED FROM 1/8" ALUMINUM FOR OUTDOOR WEATHERPROOF SERVICE.

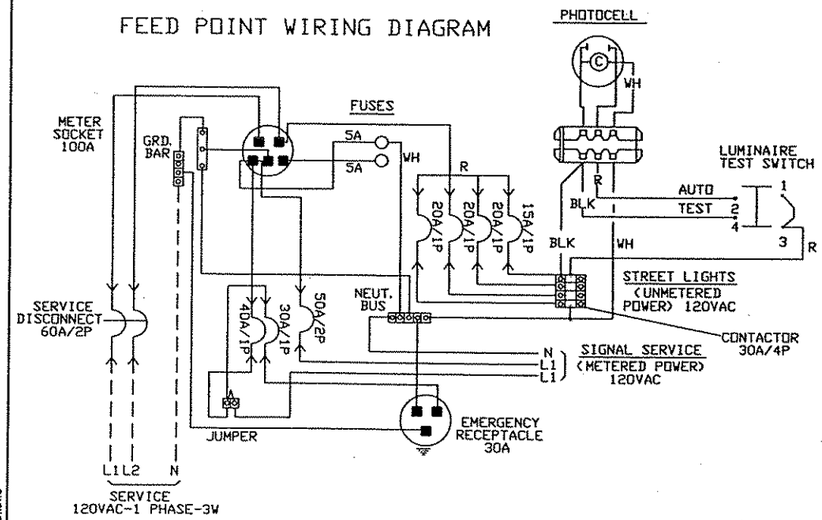
DOORS TO BE NEOPRENE GASKETED. ALL HINGES, PINS, AND LOCKS TO BE OF NON-CORRODING CONSTRUCTION.

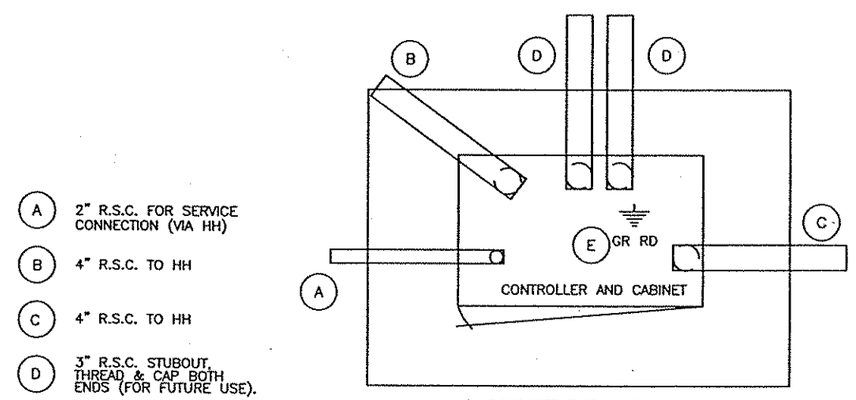
CABINET SHALL HAVE ANODIC COATING FOR ALL ALUMINUM SURFACES. SEE SPECIAL PROVISIONS.

NEMA 3R ENCLOSURE SHALL BE "UL" APPROVED.

CABINET SHALL HAVE BASE GASKET INCLUDED.

FEED POINT WIRING DIAGRAM





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

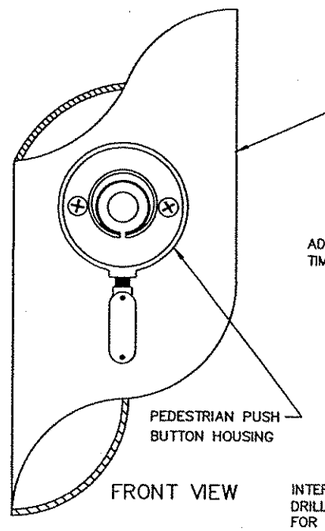
CONCRETE FOUNDATION
SEE MN/DOT STANDARD PLATE NO. 8119C FOR DIMENSIONS.

SEE INTERSECTION LAYOUT FOR CONDUIT & CABLE INFORMATION

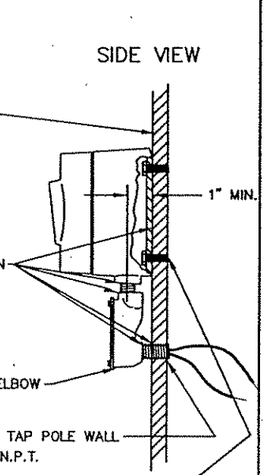
TYPICAL CONTROLLER CABINET PAD LAYOUT

NO SCALE

MAST ARM POLE PEDESTRIAN PUSH BUTTON DETAIL



FRONT VIEW



S.P. 02-617-13
S.P. 106-020-23

W:/AE/ANOKC/030500/TTSIDCET.DWG

DRAWN BY: JMG
DESIGNER: JMG
CHECKED BY: JMG
DESIGN TEAM

NO.	BY	DATE	REVISIONS

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
Date: October 9, 2003
Name: John M. Gray, P.E.
Lic. No. 22457

SEH®
PHONE: (651) 490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

ANOKA COUNTY, MINNESOTA
CITY OF BLAINE

TRAFFIC SIGNAL SYSTEMS
CABINET & PUSH BUTTON DETAILS
CSAH 17 (LEXINGTON AVENUE)

FILE NO. AANOKC0305.00
SIGNAL SHEET 2 OF 28

125/226

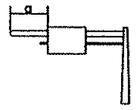
SIGN PANELS – TYPE D								
SIGNAL SYSTEM	SIGN PANEL	SIZE (inches)	NO. REQ.	BRACKETS PER SIGN	BRACKET SPACING (**)	AREA (sq.ft.) PER SIGN	POLE NO.	a
A	D–1	102x24	1	4	–	17.00	1	44'
A	D–2	108x24	1	4	–	18.00	2	34'
A	D–3	102x24	1	4	–	17.00	3	44'
A	D–4	108x24	1	4	–	18.00	4	34'
B	D–5	108x24	1	4	–	18.00	1	28'
B	D–6	60x24	1	3	–	10.00	2	44'
B	D–7	108x24	1	4	–	18.00	3	28'
B	D–8	60x24	1	3	–	10.00	4	44'
		TOTALS	8			126.00		

(**) = SPACING BETWEEN STIFFENERS SHALL NOT EXCEED 36 INCHES AND SHALL BE UNIFORMLY SPACED. SEE SPECIAL PROVISIONS FOR BRACKET SPACING REQUIREMENTS.

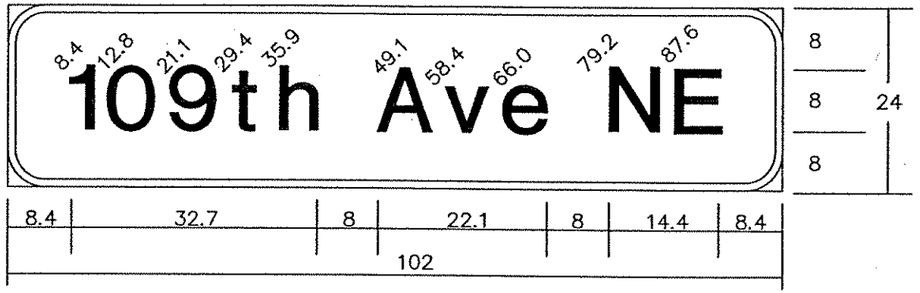
SIGN PANELS – TYPE C								
SIGNAL SYSTEM	SIGN PANEL	SIZE (in.)	NO. REQ.	NO. POSTS PER SIGN	POST SPACING (in.)	SQ. FT. PER SIGN	POLE NO.	a
A	R6–1L	36x12	4	①	–	3.00	1,2,3,4	–
A	R6–1R	36x12	4	①	–	3.00	1,2,3,4	–
A	R9–3a	18x18	2	①	–	2.25	2,3	–
B	R6–1R	36x12	4	①	–	3.00	1,2,3,4	–
B	R6–1R	36x12	4	①	–	3.00	1,2,3,4	–
TOTALS			18			52.50		

NOTES:

1) COLOR FOR TYPE D SIGNS SHALL BE WHITE LEGEND AND BORDER ON GREEN BACKGROUND, FULLY REFLECTORIZED.
2) CORNERS EXTENDING BEYOND THE BORDER SHALL NOT BE TRIMMED.
3) FOR STRUCTURAL DETAILS, TYPE D SIGNS, SEE STANDARD SIGNS MANUAL AND SPECIAL PROVISIONS, PAGE 105A.
4) SIGN PANELS TO BE FURNISHED AND INSTALLED (OR SALVAGED) INCIDENTAL TO EACH SIGNAL SYSTEM.
5) ① = MOUNT ON TRAFFIC SIGNAL MAST ARM POLE AS NOTED IN PLANS & SPECIAL PROVISIONS.
6) ALL NEW TYPE C AND D SIGNS SHALL BE FABRICATED USING VIP SHEETING. SEE SPECIAL PROVISIONS.

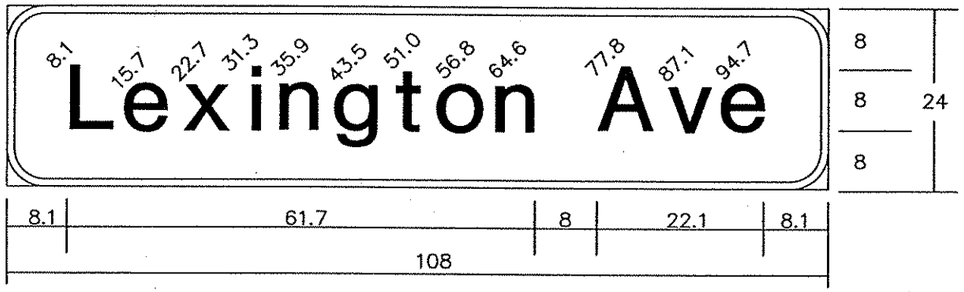


D–1, D–3



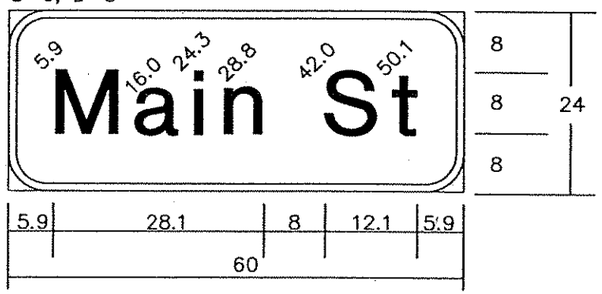
D–1, D–3; 102" x 24", 3.0" Radius, 1.0" Border, White on Green "109th Ave NE" E Mod.

D–2, D–4, D–5, D–7



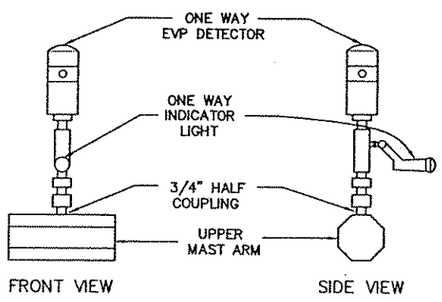
D–2, D–4, D–5, D–7; 108" x 24", 3.0" Radius, 1.0" Border, White on Green "Lexington Ave" E Mod.

D–6, D–8



D–6, D–8; 60" x 24", 3.0" Radius, 1.0" Border, White on Green "Main St" E Mod.

EVP DETECTOR AND LIGHT MOUNTING DETAIL ON MAST ARM



S.P. 02–617–13
S.P. 106–020–23

W:/AE/ANOKC/030500/17SIGDET.DWG

DRAWN BY: JMG
DESIGNER: JMG
CHECKED BY: JMG
DESIGN TEAM

NO.	BY	DATE	REVISIONS

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
Name: John M. Gray, P.E.
Date: October 9, 2003 Lic. No. 22457

SEH®
PHONE: (651) 490–2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

ANOKA COUNTY, MINNESOTA
CITY OF BLAINE

TRAFFIC SIGNAL SYSTEMS
SIGNING AND EVP DETAILS
CSAH 17 (LEXINGTON AVENUE)

FILE NO. AANOKC0305.00
SIGNAL SHEET 3 OF 28
126/226

SEE NEXT SHEET FOR POLE AND GENERAL NOTES.

Ⓐ INPLACE (SALVAGE) — CONTROLLER AND CABINET

INPLACE (REMOVE) — CABINET FOUNDATION
3"R.S.C. INTO H.H.18 WITH METERED SIGNAL SERVICE
2-1/c#6
1-1/c#6 Br.Gr.
4"R.S.C. INTO H.H.1
1-6 Pr.#19 (INTERCONNECT)
4"R.S.C. INTO H.H.17
5-12/c#12
6-3/c#12
2-3/c#20
8-2/c#14

INSTALL — CONTROLLER AND CABINET (FURNISHED BY COUNTY)

F & I — CABINET FOUNDATION
EXTEND INTO H.H.18:
METERED SIGNAL SERVICE
2"R.S.C.
3-1/c#6
EXTEND INTO H.H.17:
2-4"R.S.C.
6-12/c#12
4-3/c#12
2-3/c#20
12-2/c#14
1-6/c FIBER OPTIC CABLE (INTERCONNECT)
1-1/c#14 (INTERCONNECT)
EXTEND INTO H.H.1:
2-4"R.S.C.
4-2/c#14
1-6/c FIBER OPTIC CABLE (INTERCONNECT)
1-1/c#14 (INTERCONNECT)

INPLACE (SALVAGE & INSTALL) — 5-12/c#12
5-3/c#12
2-3/c#20
8-2/c#14

Ⓑ INPLACE (SALVAGE) — SIGNAL SERVICE CABINET

INPLACE (REMOVE) — CABINET FOUNDATION
1 1/4"R.S.C. INTO H.H.19
3-1/c#4
1-1/c#6 Br.Gr.
1-1/c#6 Br.Gr.
1 1/4"R.S.C. INTO H.H.18 WITH METERED SIGNAL SERVICE
2-1/c#6
1-1/c#6 Br.Gr.
UNMETERED STREET LIGHT SERVICE
2-1/c#10 (LUM)

F & I — CABINET FOUNDATION
SIGNAL SERVICE CABINET
EXTEND INTO H.H.19:
2"R.S.C.
3-1/c#2
EXTEND INTO H.H.18:
METERED SIGNAL SERVICE
2"R.S.C.
3-1/c#6
UNMETERED STREET LIGHT SERVICE
2-3/c#12 (LUM)

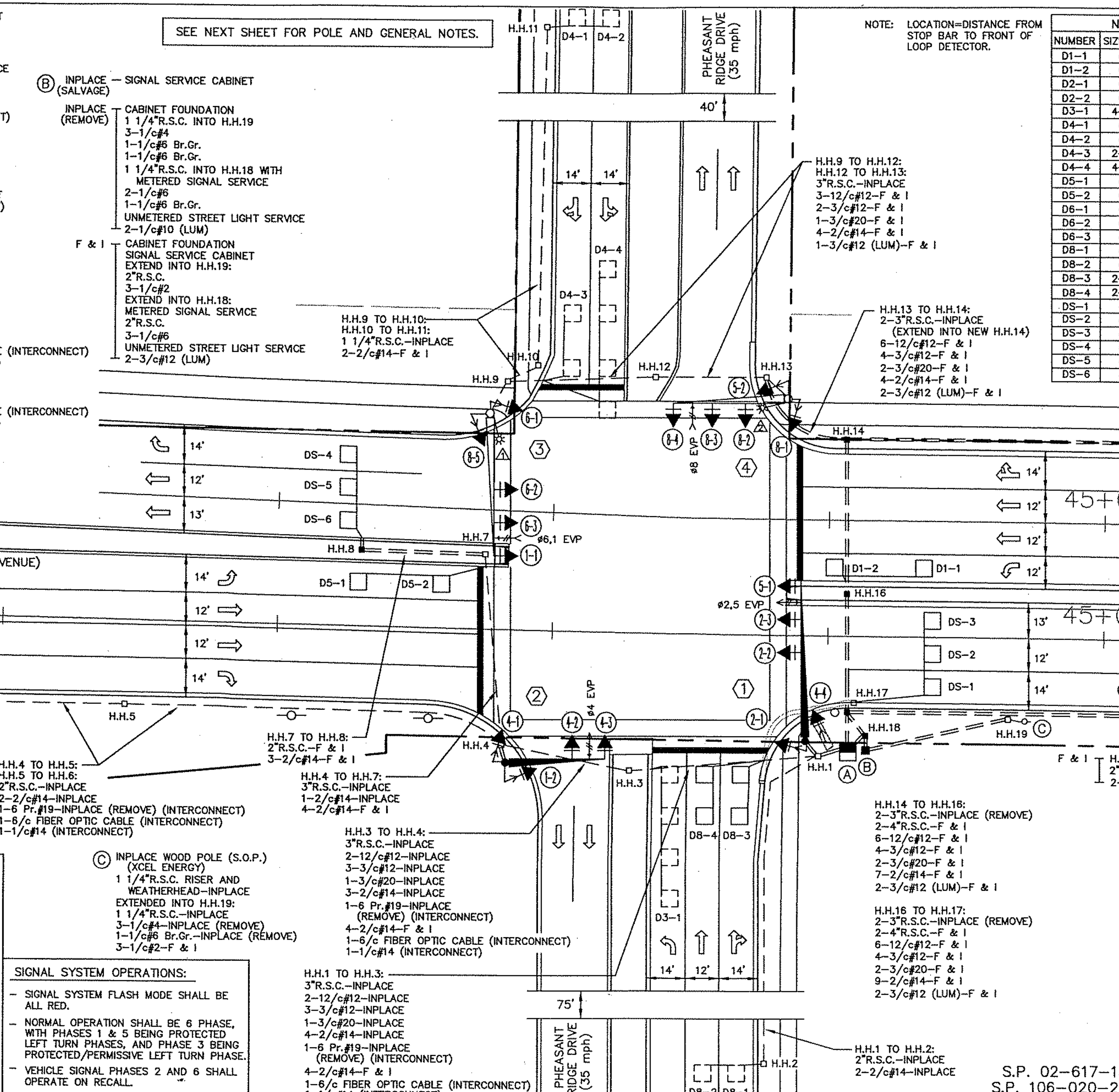
Ⓒ INPLACE WOOD POLE (S.O.P.) (XCEL ENERGY)
1 1/4"R.S.C. RISER AND WEATHERHEAD-INPLACE
EXTENDED INTO H.H.19:
1 1/4"R.S.C.-INPLACE
3-1/c#4-INPLACE (REMOVE)
1-1/c#6 Br.Gr.-INPLACE (REMOVE)
3-1/c#2-F & I

NOTE: LOCATION=DISTANCE FROM STOP BAR TO FRONT OF LOOP DETECTOR.

N.M.C. LOOP DETECTORS				
NUMBER	SIZE (FT.)	LOCATION	FUNCTION	STATUS
D1-1	6x6	40'	1	F & I
D1-2	6x6	10'	1	F & I
D2-1	6x6	300'	1	F & I
D2-2	6x6	300'	1	F & I
D3-1	4-6x6	AS SHOWN	1	INPLACE
D4-1	6x6	160'	3,8	INPLACE
D4-2	6x6	160'	3,8	INPLACE
D4-3	2-6x6	AS SHOWN	7	INPLACE
D4-4	4-6x6	AS SHOWN	1	INPLACE
D5-1	6x6	40'	1	F & I
D5-2	6x6	10'	1	F & I
D6-1	6x6	300'	1	F & I
D6-2	6x6	300'	1	F & I
D6-3	6x6	300'	1	F & I
D8-1	6x6	180'	3,8	INPLACE
D8-2	6x6	180'	3,8	INPLACE
D8-3	2-6x6	5' & 20'	7	F & I
D8-4	2-6x6	5' & 20'	1	F & I
DS-1	6x6	50'	11	F & I
DS-2	6x6	50'	11	F & I
DS-3	6x6	50'	11	F & I
DS-4	6x6	50'	11	F & I
DS-5	6x6	50'	11	F & I
DS-6	6x6	50'	11	F & I

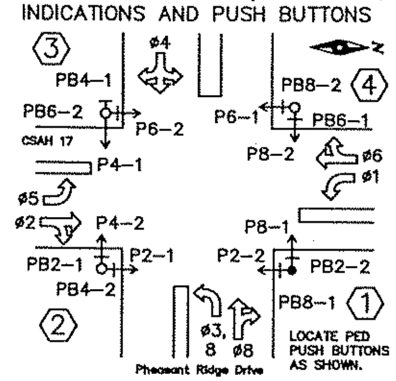
LOOP DETECTORS FUNCTIONS:

1) CALL AND EXTEND
2) CALL ONLY
3) EXTEND ONLY
4) CALL ONLY DENSITY
5) DELAYED CALL ONLY
6) DELAYED CALL ONLY DENSITY
7) DELAYED CALL- IMMEDIATE EXTEND
8) CARRY OVER (STRETCH)
9) ADVISORY DETECTOR
10) SAMPLING DETECTOR
11) COUNTING DETECTOR



S.P. 02-617-13
S.P. 106-020-23

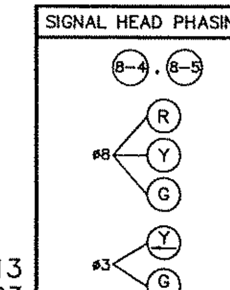
CONTROLLER PHASING, PEDESTRIAN INDICATIONS AND PUSH BUTTONS



SIGNAL SYSTEM OPERATIONS:

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

SIGNAL HEAD PHASING



LED SIGNAL FACES					
SIGNAL FACE	ALL SIGNAL INDICATIONS SHALL BE 12".				
	R	Y	G	Y	G
1-1, 1-2	←	←	←		
2-1, 2-2, 2-3	●	●	●		
4-1, 4-2, 4-3, 4-4	●	●	●		
5-1, 5-2	←	←	←		
6-1, 6-2, 6-3	●	●	●		
8-1, 8-2, 8-3	●	●	●		
8-4, 8-5	●	●	●	←	←

DESIGN TEAM		NO.	BY	DATE	REVISIONS
DRAWN BY:	JMG				
DESIGNER:	JMG				
CHECKED BY:	JMG				

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

Date: October 9, 2003 Name: John M. Gray, P.E. Lic. No. 22457

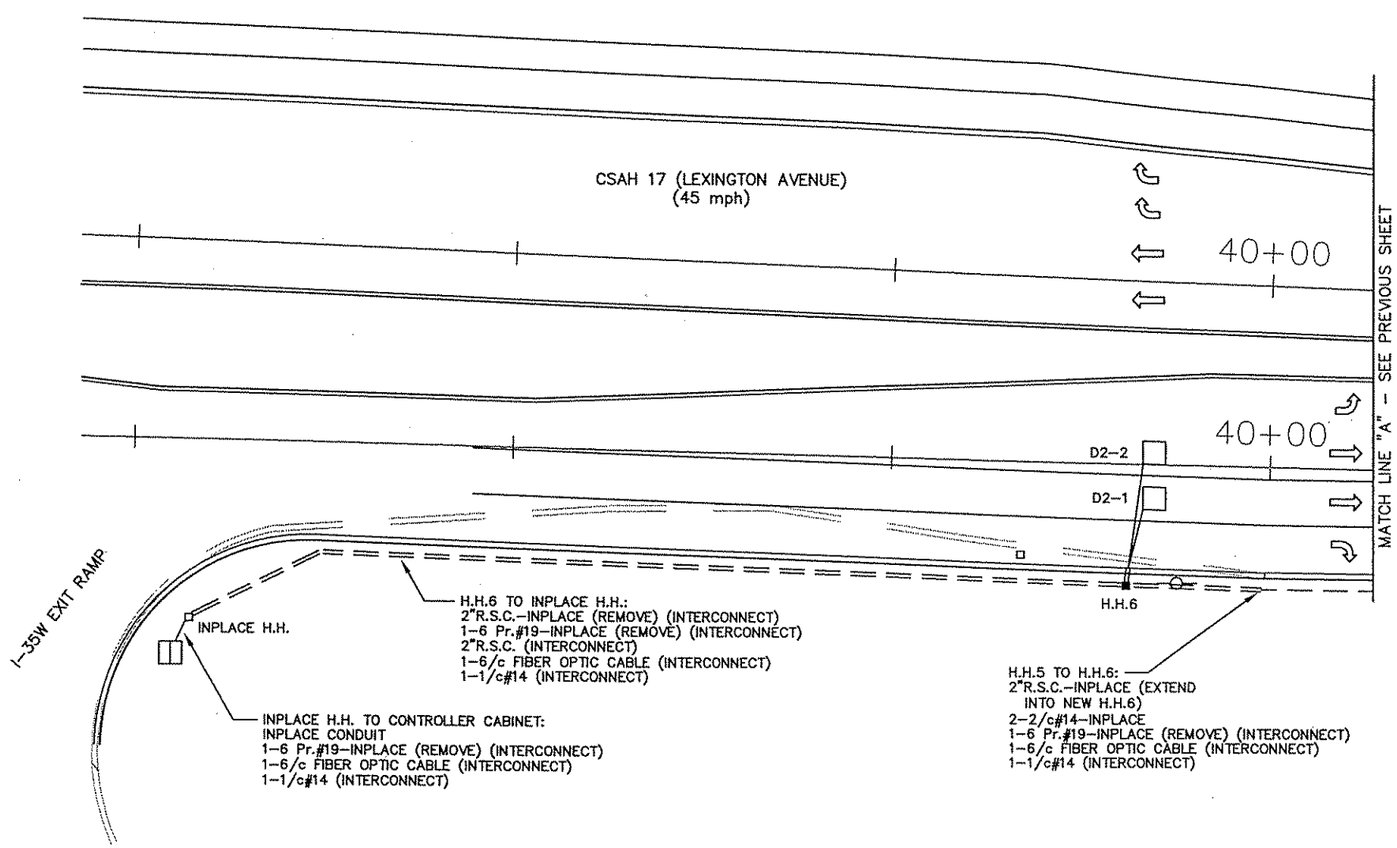
SEH®
PHONE: (651) 490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

ANOKA COUNTY, MINNESOTA
CITY OF BLAINE

REVISE SIGNAL SYSTEM INTERSECTION LAYOUT
CSAH 17 (LEXINGTON AVENUE) AT PHEASANT RIDGE DRIVE

FILE NO. AANOKC0305.00

W:/AE/ANOKC/030500/TTBASE.DWG



20 10 0 20 40
15 5

N

NOTES:

1) LOCATION OF POLES, LOOP DETECTORS AND HANDHOLES SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER.
2) LOOP DETECTOR WIRES SHALL BE CROSS-LINKED POLYETHYLENE (XLP) IN 3/4" N.M.C. SEE SPECIAL PROVISIONS.
3) NEW HANDHOLES SHALL BE PVC HANDHOLES WITH METAL FRAMES AND COVERS.
4) EACH SIGNAL FACE SHALL HAVE BACKGROUND SHIELD.
5) NEW PEDESTRIAN INDICATIONS SHALL BE ONE SECTION HAND/WALKING PERSON INDICATIONS (REMOVE AND SALVAGE INPLACE 12 x 12 INDICATIONS). SEE SPECIAL PROVISIONS.
6) ALL VEHICLE SIGNAL INDICATIONS, AND ALL PEDESTRIAN SIGNAL INDICATIONS SHALL BE LED.
7) CONTRACTOR SHALL PROVIDE EXTENDED BRACKETS FOR EACH POLE MOUNTED VEHICLE AND PEDESTRIAN SIGNAL FACE.
8) A 3/4" HALF COUPLING, 3/4" PIPE NIPPLE AND CONDUIT OUTLET BODY SHALL BE FURNISHED AND INSTALLED 6 FEET FROM THE END OF NEW MAST ARM 1 (FOR EVP).
9) CONTRACTOR SHALL MAINTAIN OPERATION OF INPLACE SIGNAL SYSTEM AT ALL TIMES, UNTIL APPROVED BY ENGINEER FOR SIGNAL SYSTEM TO BE TURNED OFF.
10) CONTRACTOR SHALL COORDINATE ALL TRAFFIC SIGNAL INSTALLATION WORK WITH ROAD CONSTRUCTION TO BE COMPLETED BY OTHERS AS PART OF ENTIRE PROJECT.
11) (INTERCONNECT) DENOTES ITEMS TO BE FURNISHED & INSTALLED BY CONTRACTOR UNDER ITEM NO. 2565.601 (TRAFFIC CONTROL INTERCONNECTION). SEE ESTIMATED QUANTITIES & SPECIAL PROVISIONS.
12) INPLACE ITEMS SHOWN TO BE REUSED INPLACE AS PART OF REVISE SIGNAL SYSTEM "A" SHALL BE PROTECTED AND MAINTAINED INPLACE BY CONTRACTOR DURING ALL PROJECT WORK.
13) (F & I) = ITEMS TO BE FURNISHED AND INSTALLED BY CONTRACTOR.
14) ALL CABLES AND CONDUCTORS FROM CONTROLLER CABINET TO NORTHWEST AND SOUTHWEST QUADRANTS SHALL BE NEW (REMOVE AND DISPOSE OF ALL INPLACE CABLES AND CONDUCTORS TO THESE LOCATIONS).
15) CONTRACTOR SHALL RELABEL ALL SIGNAL HEADS, PUSH BUTTONS, AND LOOP DETECTORS IN EACH POLE BASE, HANDHOLE AND IN CONTROLLER CABINET TO CORRESPOND TO NUMBERING SHOWN ON THIS PLAN SHEET AND ON FIELD WIRING DIAGRAM.

(1)
- INPLACE (SALVAGE & INSTALL): TYPE P100-A MAST ARM POLE; 2-PEDESTRIAN PUSH BUTTONS & SIGNS (R10-4b); TYPE D SIGN PANEL-OVERHEAD AT 28'; ONE WAY EVP DETECTOR AND LIGHT (ø2,5); 3-12/c#12; 2-3/c#12; 1-3/c#20
- INPLACE (SALVAGE): 40' MAST ARM; 3-ONE WAY SIGNALS-OVERHEAD; 2-ONE WAY SIGNALS-POLE MOUNTED; 2-SETS PEDESTRIAN INDICATIONS
- INPLACE (REMOVE): P100 POLE FOUNDATION; TYPE 10A BRACKETING-POLE MOUNTED 90°; TYPE 10C BRACKETING-POLE MOUNTED 270°; 3"R.S.C. TO H.H.1
- F & I: PA100 POLE FOUNDATION; 55' MAST ARM; 3-ONE WAY SIGNALS-OVERHEAD (0', 11' & 23' FROM END OF MAST ARM); 2-TYPE 10B-POLE MOUNTED 90° & 180°; EXTEND INTO H.H.1: 3"R.S.C.

(2)
- INPLACE (SALVAGE & INSTALL): TYPE P100-A-35; 2-PEDESTRIAN PUSH BUTTONS & SIGNS (R10-4b); TYPE D SIGN PANEL-OVERHEAD; ONE WAY EVP DETECTOR AND LIGHT (ø4); 2-12/c#12; 3-3/c#12; 1-3/c#20
- INPLACE (SALVAGE): 2-ONE WAY SIGNALS-OVERHEAD; 2-ONE WAY SIGNALS-POLE MOUNTED; 2-SETS PEDESTRIAN INDICATIONS; R10-12 SIGN PANEL-OVERHEAD
- INPLACE (REMOVE): P100 POLE FOUNDATION; TYPE 10A BRACKETING-POLE MOUNTED 0°; TYPE 10C BRACKETING-POLE MOUNTED 270°; 3"R.S.C. TO H.H.4
- F & I: PA100 POLE FOUNDATION; 2-ONE WAY SIGNALS-OVERHEAD (0' & 12' FROM END OF MAST ARM); 2-TYPE 10B-POLE MOUNTED 90° & 180°; EXTEND INTO H.H.4: 3"R.S.C.

(3)
- INPLACE (MAINTAIN INPLACE): PA100 POLE FOUNDATION; TYPE PA100-A-50-D30-9 (DAVIT AT 350°); LUMINAIRE-250 W HPS W/PEC; 2-PEDESTRIAN PUSH BUTTONS & SIGNS (R10-4b); TYPE D SIGN PANEL-OVERHEAD; ONE WAY EVP DETECTOR AND LIGHT (ø6,1); EXTENDED INTO H.H.9: 3"R.S.C.
- INPLACE (SALVAGE): 3-ONE WAY SIGNALS-OVERHEAD; 2-ONE WAY SIGNALS-POLE MOUNTED; 2-SETS PEDESTRIAN INDICATIONS
- INPLACE (REMOVE): TYPE 10A BRACKETING-POLE MOUNTED 90°; TYPE 10C BRACKETING-POLE MOUNTED 270°; LUMINAIRE CHECK SWITCH-POLE MOUNTED; 3-12/c#12; 2-3/c#12; 1-3/c#20; 2-1/c#10 (LUM)
- F & I: 3-ONE WAY SIGNALS-OVERHEAD (0', 11' AND 23' FROM END OF MAST ARM); 2-TYPE 10B-POLE MOUNTED 90° & 180°; 3-12/c#12; 2-3/c#12; 1-3/c#20; 1-3/c#12 (LUM)

(4)
- INPLACE (MAINTAIN INPLACE): P100 POLE FOUNDATION; TYPE P100-A-40-D25-6 (DAVIT AT 270°); LUMINAIRE-250 W HPS W/PEC; 1-PEDESTRIAN PUSH BUTTON & SIGN AT 0° (PB8-2) (R10-4b); TYPE D SIGN PANEL-OVERHEAD; ONE WAY EVP DETECTOR AND LIGHT (ø8); R10-12 SIGN PANEL-ADJACENT TO 8-4; EXTENDED INTO H.H.13: 3"R.S.C.
- INPLACE (SALVAGE & INSTALL): 1-PEDESTRIAN PUSH BUTTON AT 270° (PB6-1)
- INPLACE (SALVAGE): 3-ONE WAY SIGNALS-OVERHEAD; 2-ONE WAY SIGNALS-POLE MOUNTED; 2-SETS PEDESTRIAN INDICATIONS
- INPLACE (REMOVE): TYPE 10C BRACKETING-POLE MOUNTED 0°; TYPE 10A BRACKETING-POLE MOUNTED 270°; LUMINAIRE CHECK SWITCH-POLE MOUNTED; 1-PEDESTRIAN INSTRUCTION SIGN AT 90°; 2-12/c#12; 4-3/c#12; 1-3/c#20; 4-1/c#10 (LUM)
- F & I: 3-ONE WAY SIGNALS-OVERHEAD (0', 14' AND 26' FROM END OF MAST ARM); 2-TYPE 10B-POLE MOUNTED 90° & 180°; 3-12/c#12; 2-3/c#12; 1-3/c#20; 1-3/c#12 (LUM)

S.P. 02-617-13
S.P. 106-020-23

W:/AE/ANOKC/030500/178ASE.DWG

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: JMG				
DESIGNER: JMG				
CHECKED BY: JMG				

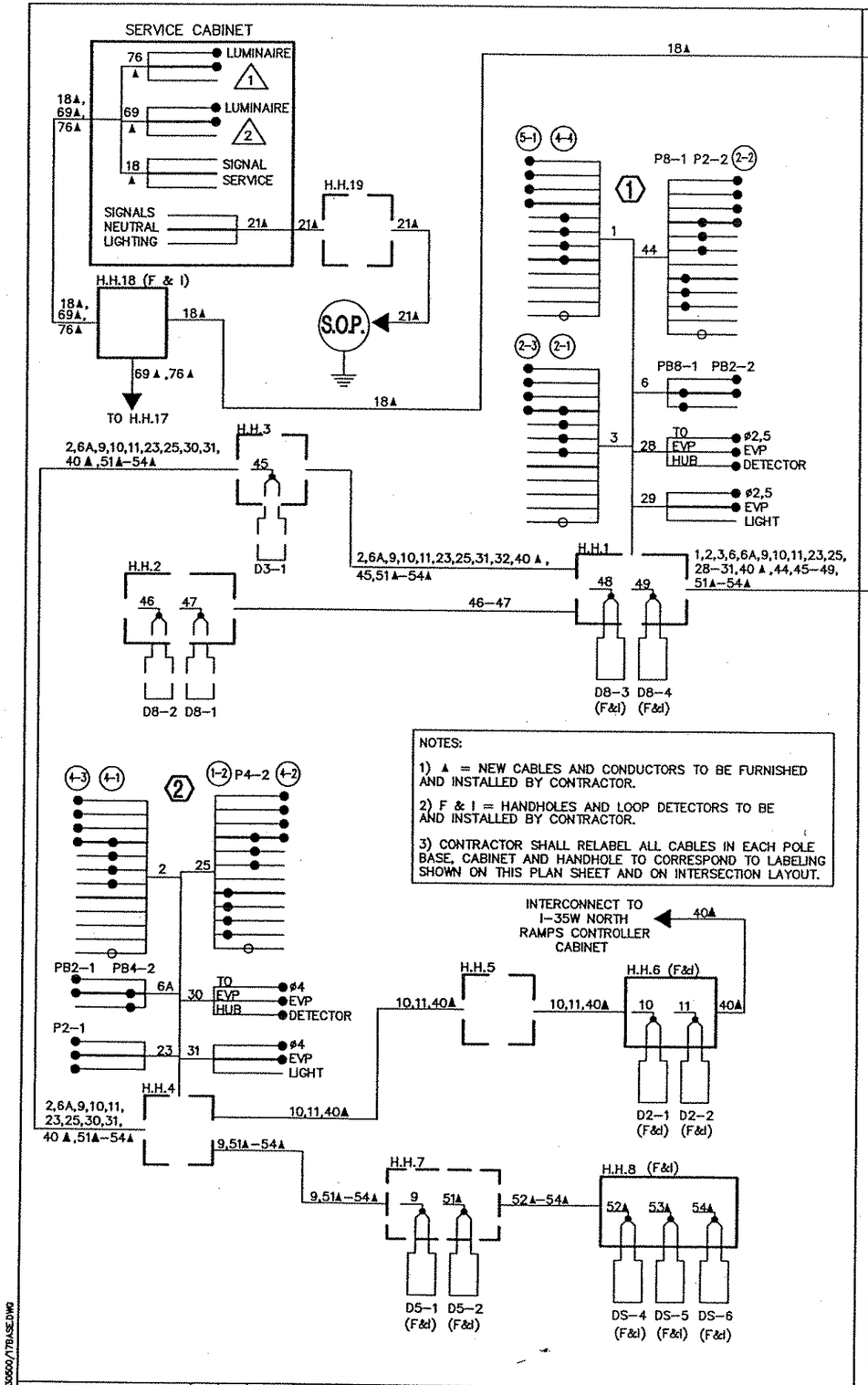
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
Name: John M. Gray, P.E.
Date: October 9, 2003 Lic. No. 22457

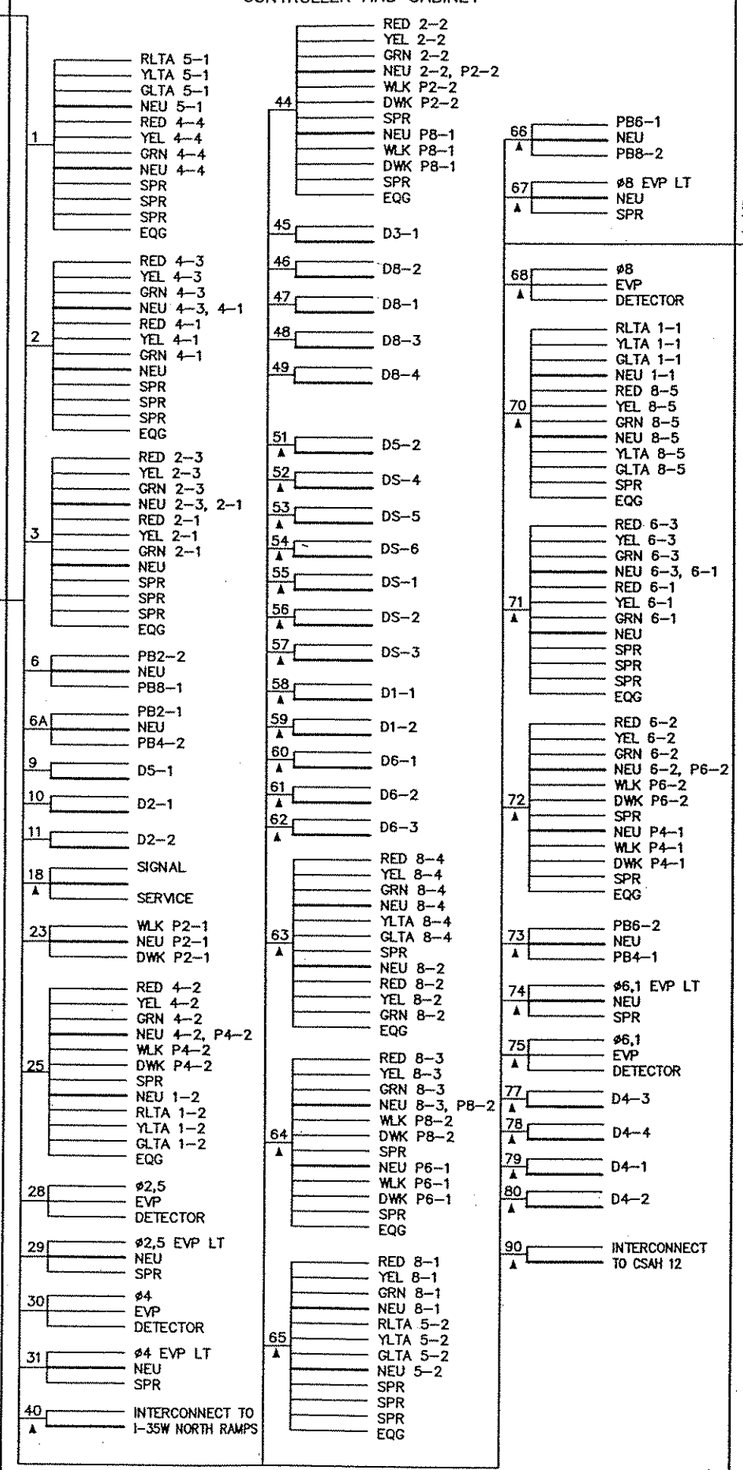
SEH®
PHONE: (651) 490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

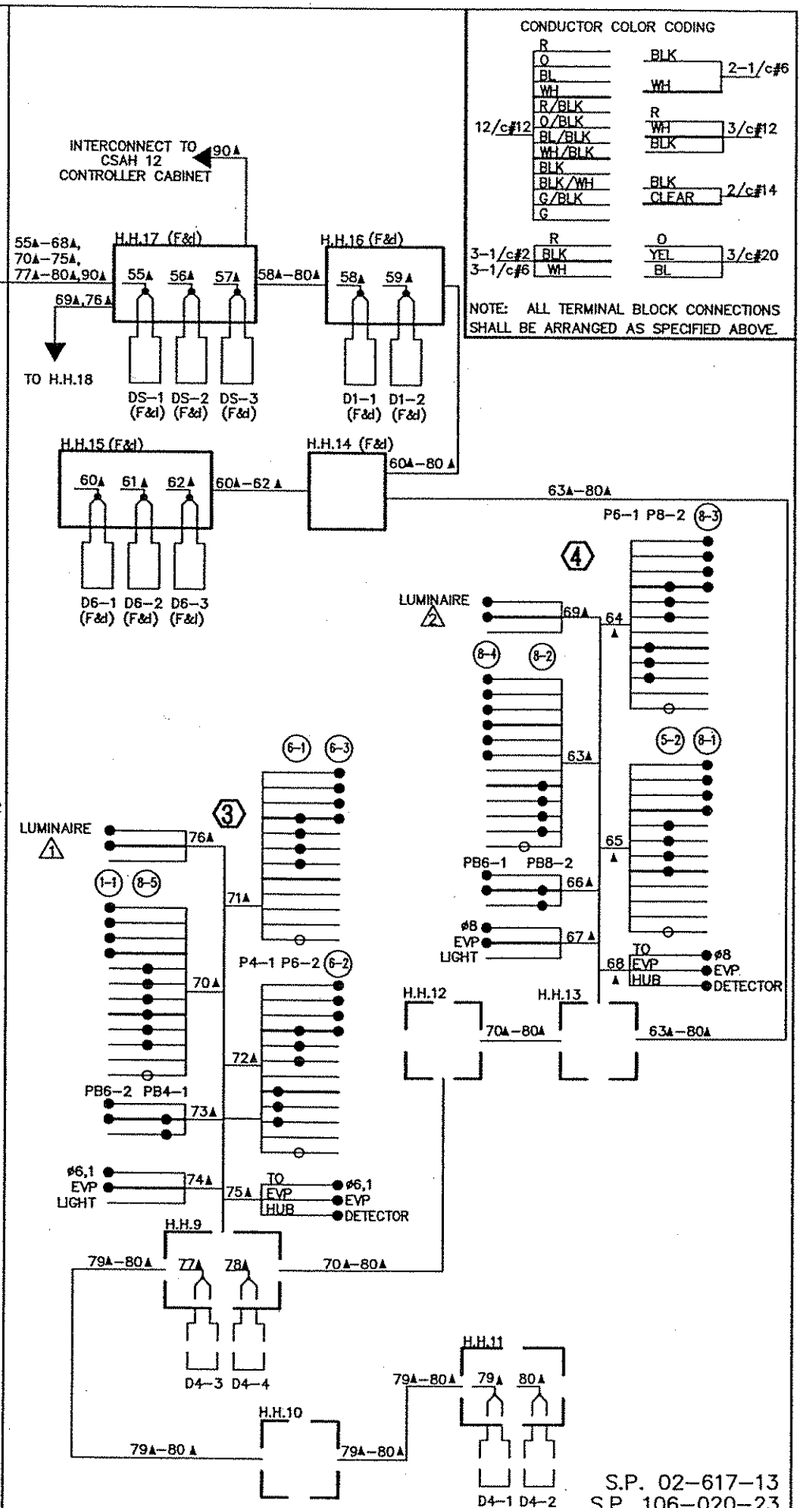
ANOKA COUNTY, MINNESOTA
CITY OF BLAINE

REVISE SIGNAL SYSTEM INTERSECTION LAYOUT
CSAH 17 (LEXINGTON AVENUE) AT PHEASANT RIDGE DRIVE

FILE NO. AANOKC0305.00
SIGNAL SHEET 5 OF 28
128/226







S.P. 02-617-13
S.P. 106-020-23

W:/AE/ANOKO/030000/178ASE.DWG

DRAWN BY:	JMG
DESIGNER:	JMG
CHECKED BY:	JMG
DESIGN TEAM	

NO.	BY	DATE	REVISIONS

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
Date: October 9, 2003
Name: John M. Gray, P.E.
Lic. No. 22457

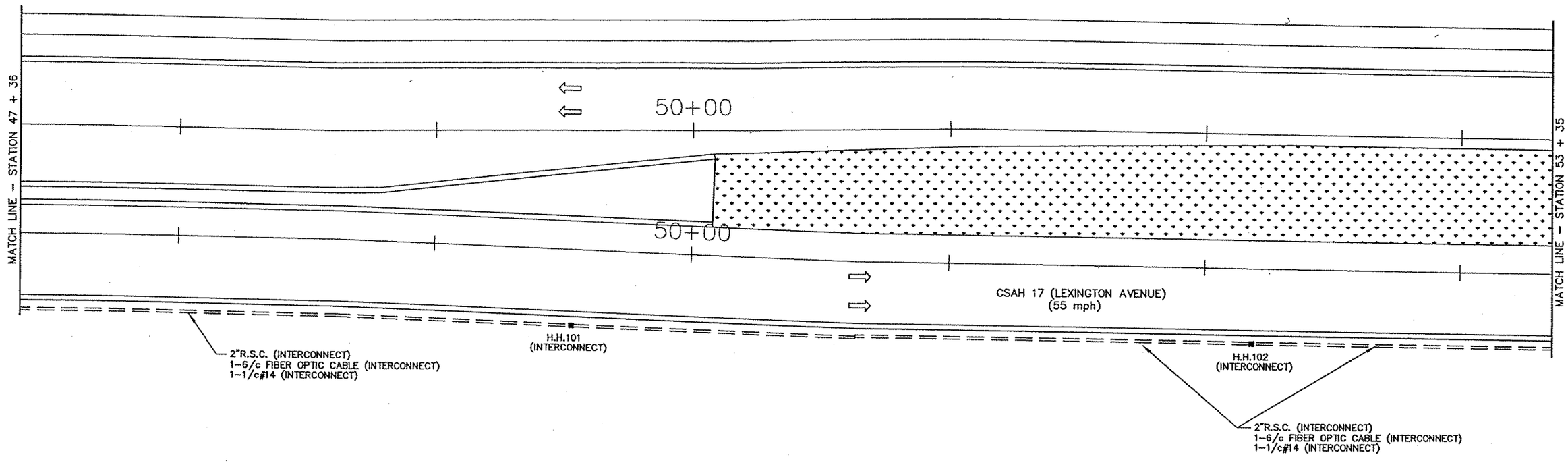
SEH®
PHONE: (651) 490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

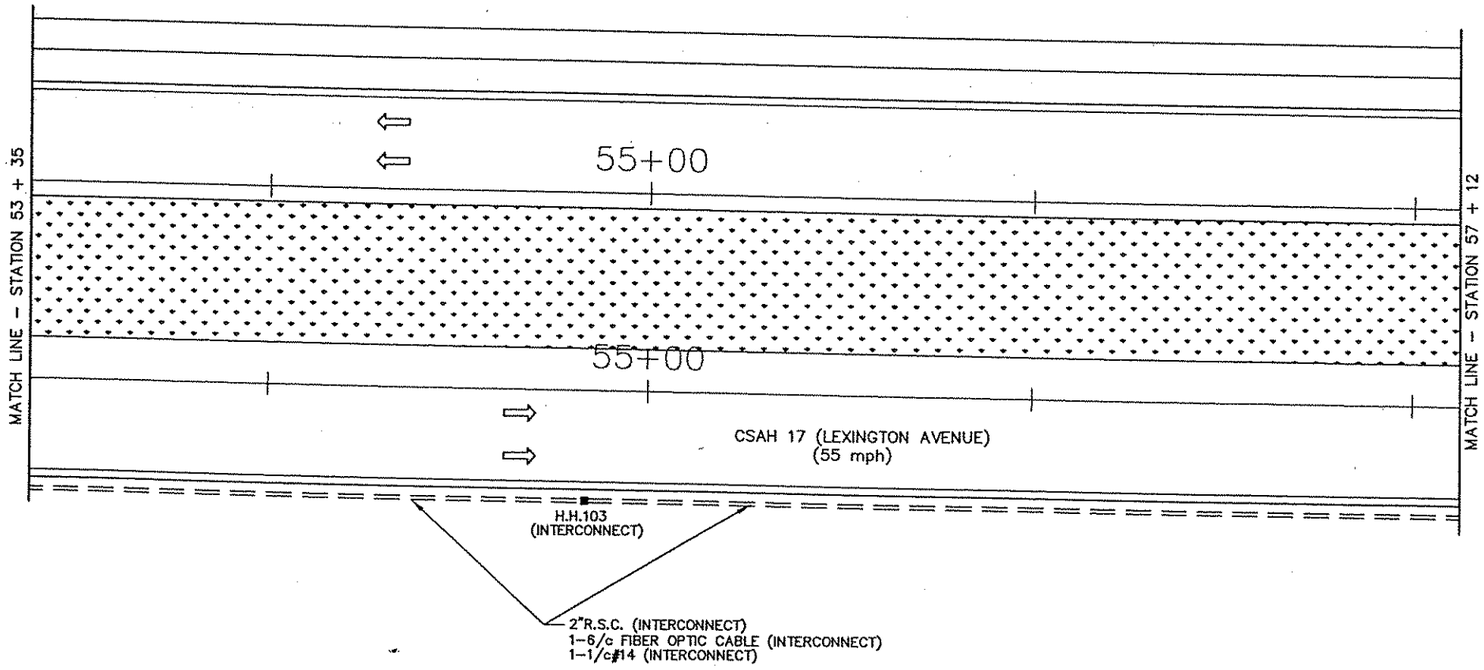
ANOKA COUNTY, MINNESOTA
CITY OF BLAINE

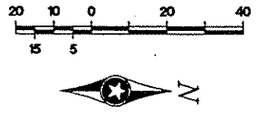
REVISE SIGNAL SYSTEM
FIELD WIRING DIAGRAM
CSAH 17 (LEXINGTON AVENUE) AT PHEASANT RIDGE DRIVE

FILE NO.	SIGNAL SHEET
AANOKC0305.00	6 OF 28

129/226







NOTES:

1) IT SHALL BE CONTRACTOR'S RESPONSIBILITY TO UTILIZE THE "ONE CALL EXCAVATION NOTICE SYSTEM" (TELEPHONE NUMBER 651–454–0002), AS REQUIRED BY MINNESOTA STATUTE 2160.

2) DISTANCE OFF SHOULDER OR CURB FOR INTERCONNECT CONDUIT SHALL BE 1–2 FEET.

3) (INTERCONNECT) DENOTES ITEMS TO BE MEASURED AND PAID FOR UNDER ITEM NO. 2565.601 (TRAFFIC CONTROL INTERCONNECTION). SEE ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.

S.P. 02–617–13
S.P. 106–020–23

W:/AE/ANOKC/030900/TTBASE.DWG

DRAWN BY: JMG
DESIGNER: JMG
CHECKED BY: JMG
DESIGN TEAM

NO.	BY	DATE	REVISIONS

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
Date: October 9, 2003
Name: John M. Gray, P.E.
Lic. No. 22457

SEH®
PHONE: (851) 490–2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

ANOKA COUNTY, MINNESOTA
CITY OF BLAINE

TRAFFIC SIGNAL INTERCONNECT
INTERSECTION LAYOUT
CSAH 17 (LEXINGTON AVENUE)

FILE NO. AANOKC0305.00
SIGNAL SHEET 7 OF 28
130/226

(1) PA100 POLE FOUNDATION
TYPE PA100–A–55–D40–9 (DAVIT AT 350°)
LUMINAIRE–250 W HPS
3–ONE WAY SIGNALS–OVERHEAD (17', 29' AND 41' FROM END OF MAST ARM)
CAP END MOUNT (FOR FUTURE USE BY OTHERS)
TYPE 10A–POLE MOUNTED 180°
TYPE D SIGN PANEL–OVERHEAD (D–1)
ONE WAY EVP DETECTOR AND LIGHT (ø2,5)
2–R6–1 SIGN PANELS–POLE MOUNTED 0° & 180°
EXTEND INTO H.H.20:
3"R.S.C.
2–12/c#12
1–3/c#12
1–3/c#20
1–3/c#12 (LUM)

(2) PA100 POLE FOUNDATION
TYPE PA100–A–55–D40–9 (DAVIT AT 350°)
LUMINAIRE–250 W HPS
3–ONE WAY SIGNALS–OVERHEAD (0', 18' AND 30' FROM END OF MAST ARM)
TYPE 10B–POLE MOUNTED 90°
TYPE 10A–POLE MOUNTED 180°
1–PEDESTRIAN PUSH BUTTON
R9–3a SIGN PANEL–FACING POLE 3
TYPE D SIGN PANEL–OVERHEAD (D–2)
ONE WAY EVP DETECTOR AND LIGHT (ø4,7)
2–R6–1 SIGN PANELS–POLE MOUNTED 0° & 180°
EXTEND INTO H.H.5:
3"R.S.C.
2–12/c#12
4–3/c#12
1–3/c#20
1–3/c#12 (LUM)

(3) PA100 POLE FOUNDATION
TYPE PA100–A–55–D40–9 (DAVIT AT 350°)
LUMINAIRE–250 W HPS
3–ONE WAY SIGNALS–OVERHEAD (17', 29' AND 41' FROM END OF MAST ARM)
CAP END MOUNT (FOR FUTURE USE BY OTHERS)
TYPE 10A–POLE MOUNTED 90°
TYPE 10B–POLE MOUNTED 180°
1–PEDESTRIAN PUSH BUTTON
R9–3a SIGN PANEL–FACING POLE 2
TYPE D SIGN PANEL–OVERHEAD (D–3)
ONE WAY EVP DETECTOR AND LIGHT (ø6,1)
2–R6–1 SIGN PANELS–POLE MOUNTED 0° & 180°
EXTEND INTO H.H.10:
3"R.S.C.
3–12/c#12
2–3/c#12
1–3/c#20
1–3/c#12 (LUM)

(5) PEDESTAL FOUNDATION
14' PEDESTAL POLE (INCLUDES BASE)
WIND COLLAR FOR PEDESTAL POLE
TYPE 5D
2–PEDESTRIAN PUSH BUTTONS
EXTEND INTO H.H.20:
3"R.S.C.
1–12/c#12
1–3/c#12

MATCH LINE "B" – SEE NEXT SHEET

N.M.C. LOOP DETECTORS			
NUMBER	SIZE (FT.)	LOCATION	FUNCTION
D1–1	6x6	40'	1
D1–2	6x6	10'	1
D2–1	6x6	475'	1
D2–2	6x6	475'	1
D2–3	6x6	475'	1
D3–1	6x6	40'	1
D3–2	6x6	40'	1
D3–3	6x6	10'	1
D3–4	6x6	10'	1
D4–1	6x6	475'	3,8
D4–2	6x6	475'	3,8
D4–3	6x10&6x6	5' & 20'	7
D4–4	2–6x6	5' & 20'	1
D5–1	6x6	40'	1
D5–2	6x6	10'	1

N.M.C. LOOP DETECTORS			
NUMBER	SIZE (FT.)	LOCATION	FUNCTION
D6–1	6x6	475'	1
D6–2	6x6	475'	1
D6–3	6x6	475'	1
D7–1	6x6	40'	1
D7–2	6x6	40'	1
D7–3	6x6	10'	1
D7–4	6x6	10'	1
D8–1	6x6	475'	3,8
D8–2	6x6	475'	3,8
D8–3	6x10&6x6	5' & 20'	7
D8–4	2–6x6	5' & 20'	1
D8–5	2–6x6	5' & 20'	1
DS–1	6x6	50'	11
DS–2	6x6	50'	11
DS–4	6x6	50'	11
DS–5	6x6	50'	11

FUTURE LOOP DETECTORS			
NUMBER	SIZE (FT.)	LOCATION	FUNCTION
D1–3	–	FUTURE	1
D1–4	–	FUTURE	1
D5–3	–	FUTURE	1
D5–4	–	FUTURE	1
DS–3	–	FUTURE	11
DS–6	–	FUTURE	11

LOOP DETECTORS FUNCTIONS:
1) CALL AND EXTEND
3) EXTEND ONLY
7) DELAYED CALL– IMMEDIATE EXTEND
8) CARRY OVER (STRETCH)
11) COUNTING DETECTOR

NOTE: LOCATION=DISTANCE FROM STOP BAR TO FRONT OF LOOP DETECTOR.

(4) PA100 POLE FOUNDATION
TYPE PA100–A–55–D40–9 (DAVIT AT 350°)
LUMINAIRE–250 W HPS
3–ONE WAY SIGNALS–OVERHEAD (0', 17' AND 29' FROM END OF MAST ARM)
2–TYPE 10B–POLE MOUNTED 90° & 180°
2–PEDESTRIAN PUSH BUTTONS
TYPE D SIGN PANEL–OVERHEAD (D–4)
ONE WAY EVP DETECTOR AND LIGHT (ø8,3)
2–R6–1 SIGN PANELS–POLE MOUNTED 0° & 180°
EXTEND INTO H.H.16:
3"R.S.C.
2–12/c#12
4–3/c#12
1–3/c#20
1–3/c#12 (LUM)

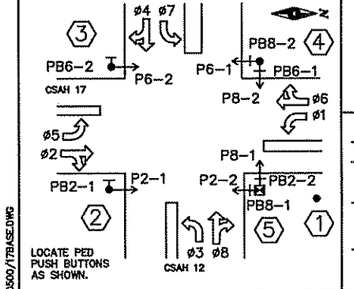
CSAH 17 (LEXINGTON AVENUE) (55 mph)
CSAH 12 (109TH AVENUE N) (55 mph)
CSAH 12 (109TH AVENUE NE) (55 mph)
60+00
65+00
H.H.5 H.H.6 H.H.9 H.H.10 H.H.11 H.H.12 H.H.15 H.H.16 H.H.17 H.H.19 H.H.20 H.H.21 H.H. 1
ø6,1 EVP ø8,3 EVP ø2,5 EVP ø4,7 EVP
DS–4 DS–5 DS–1 DS–2 D1–1 D1–2 D5–1 D5–2 D7–1 D7–2 D7–3 D7–4 D4–3 D4–4 D8–5 D8–4 D8–3 D3–1 D3–2 D3–3

2"R.S.C.
2–2/c#14
3"R.S.C.
2–2/c#14
3"R.S.C.
8–2/c#14
4"R.S.C.
3–12/c#12
2–3/c#12
1–3/c#20
3–2/c#14
1–3/c#12 (LUM)
4"R.S.C.
2–12/c#12
4–3/c#12
1–3/c#20
13–2/c#14
1–3/c#12 (LUM)
2"R.S.C.
3–2/c#14
2"R.S.C.
3–2/c#14
1–6/c FIBER OPTIC CABLE (INTERCONNECT)
1–1/c#14 (INTERCONNECT)
4"R.S.C.
3–12/c#12
2–3/c#12
1–3/c#20
7–2/c#14
1–3/c#12 (LUM)
4"R.S.C.
3–12/c#12
2–3/c#12
1–3/c#20
12–2/c#14
1–3/c#12 (LUM)
1–6/c FIBER OPTIC CABLE (INTERCONNECT)
1–1/c#14 (INTERCONNECT)
2–4"R.S.C.
5–12/c#12
6–3/c#12
2–3/c#20
12–2/c#14
2–3/c#12 (LUM)
1–6/c FIBER OPTIC CABLE (INTERCONNECT)
1–1/c#14 (INTERCONNECT)
2–4"R.S.C.
5–12/c#12
6–3/c#12
2–3/c#20
18–2/c#14
2–3/c#12 (LUM)
1–6/c FIBER OPTIC CABLE (INTERCONNECT)
1–1/c#14 (INTERCONNECT)
2"R.S.C.
2–2/c#14
4"R.S.C.
2–12/c#12
4–3/c#12
1–3/c#20
15–2/c#14
1–3/c#12 (LUM)
2"R.S.C. (INTERCONNECT)
1–6/c FIBER OPTIC CABLE (INTERCONNECT)
1–1/c#14 (INTERCONNECT)

MATCH LINE "A" – SEE NEXT SHEET
MATCH LINE "C" – SEE NEXT SHEET
MATCH LINE "D" – SEE NEXT SHEET

SEE NEXT SHEET FOR GENERAL NOTES.

CONTROLLER PHASING, PEDESTRIAN INDICATIONS AND PUSH BUTTONS



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

(C) INPLACE WOOD POLE (S.O.P.)
(TO BE RELOCATED BY XCEL ENERGY)
EXTEND INTO SERVICE CABINET:
2"R.S.C. RISER AND WEATHERHEAD
3–1/c#2

(A) INSTALL CONTROLLER AND CABINET (FURNISHED BY COUNTY)
CABINET FOUNDATION
EXTEND INTO H.H.21:
METERED SIGNAL SERVICE
2"R.S.C.
3–1/c#6
EXTEND INTO H.H.1:
2–4"R.S.C.
5–12/c#12
6–3/c#12
2–3/c#20
21–2/c#14
1–6/c FIBER OPTIC CABLE (INTERCONNECT)
1–1/c#14 (INTERCONNECT)
EXTEND INTO H.H.20:
2–4"R.S.C.
5–12/c#12
6–3/c#12
2–3/c#20
18–2/c#14
1–6/c FIBER OPTIC CABLE (INTERCONNECT)
1–1/c#14 (INTERCONNECT)
STUB OUT 2–3"R.S.C. FROM CABINET TO SOUTH (THREAD AND CAP–FOR FUTURE USE)

(B) SIGNAL SERVICE CABINET CABINET FOUNDATION
EXTEND INTO H.H.21:
2"R.S.C.
METERED SIGNAL SERVICE
3–1/c#6
UNMETERED STREET LIGHT SERVICE
4–3/c#12 (LUM)
BETWEEN H.H.1 AND H.H.21:
2"R.S.C.
2–3/c#12 (LUM)
BETWEEN H.H.20 AND H.H.21:
2"R.S.C.
2–3/c#12 (LUM)

S.P. 02–617–13
S.P. 106–020–23

LED SIGNAL FACES			
SIGNAL FACE	ALL 12".		
	R	Y	G
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	●	●	●

DRAWN BY:	JMG	1	JMG	06/23
DESIGNER:	JMG			
CHECKED BY:	JMG			
DESIGN TEAM		NO.	BY	DATE

REVISED TO ACCOMMODATE NEW EAST GEOMETRICS
REVISIONS

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
Date: June 23, 2004
Name: John M. Gray, P.E.
Lic. No. 22457

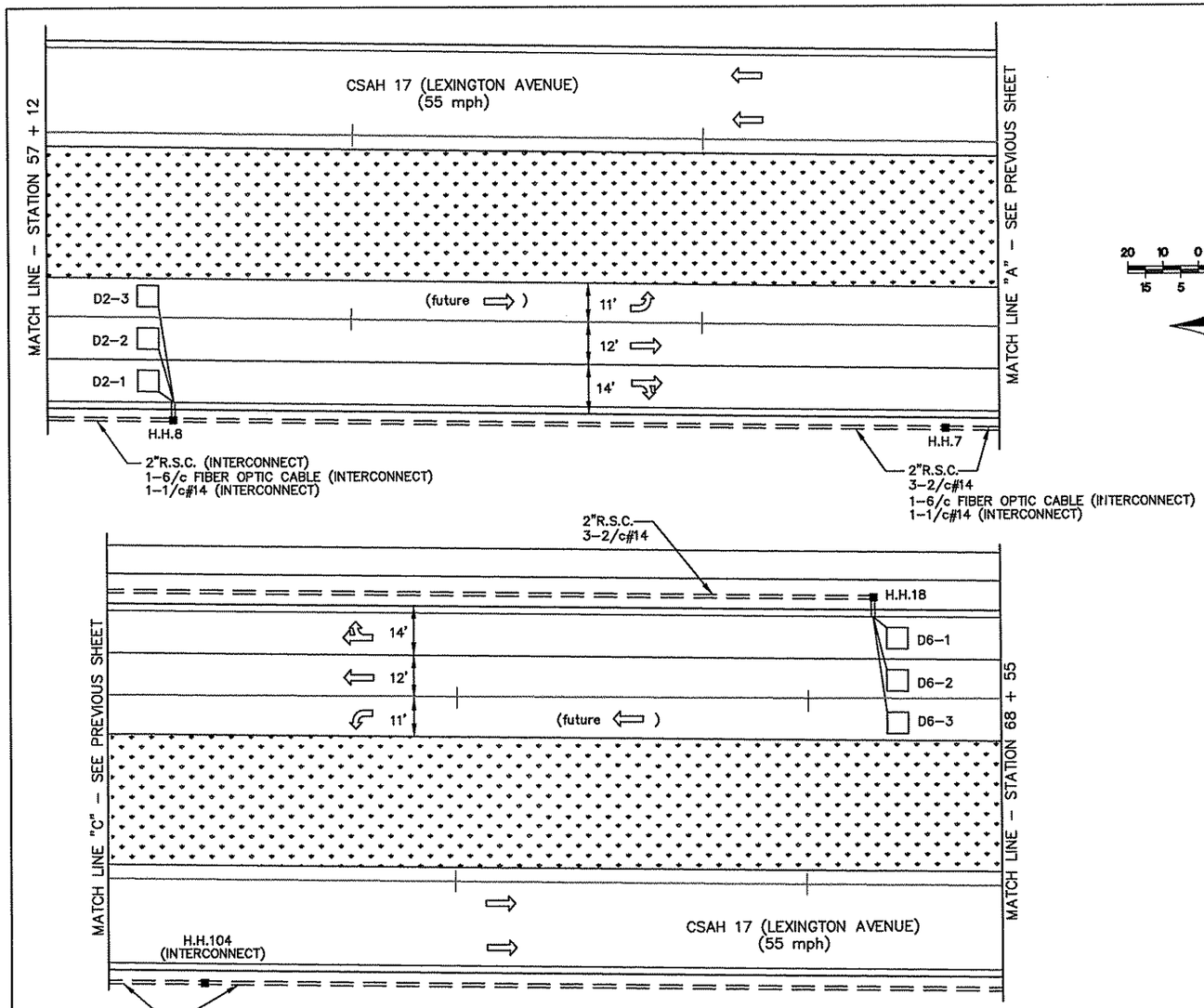
SEH®
PHONE: (651) 490–2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

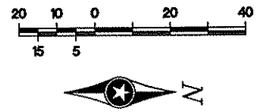
ANOKA COUNTY, MINNESOTA
CITY OF BLAINE

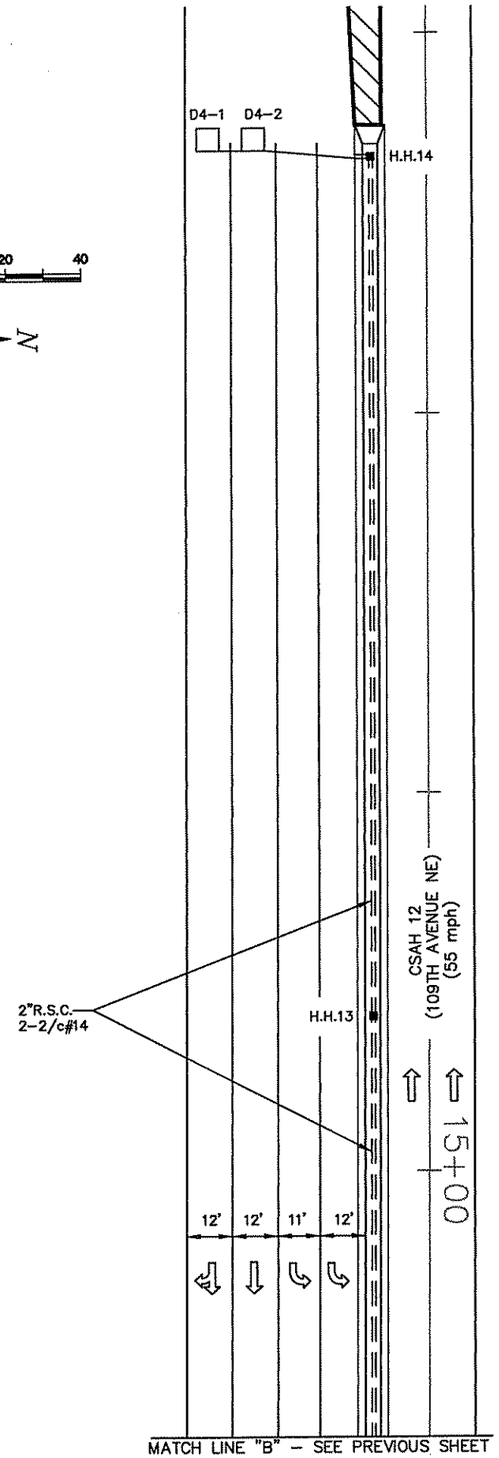
TRAFFIC SIGNAL SYSTEM "A"
INTERSECTION LAYOUT
CSAH 17 (LEXINGTON AVENUE) AT CSAH 12 (109TH AVENUE NE)

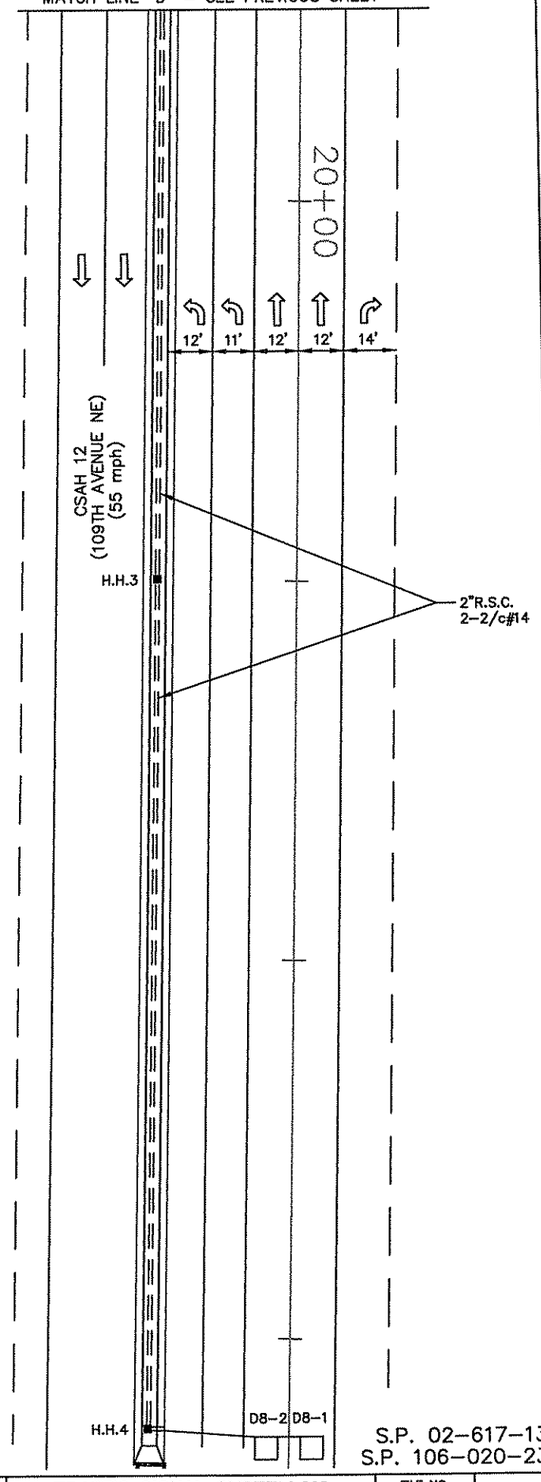
FILE NO. AANOKC0305.00
SIGNAL SHEET 8A OF 28
131/226

W:/NE/ANOKC/030500/T/BASE.DWG









NOTES:

1) LOCATION OF POLES, CONTROLLER CABINET, SERVICE CABINET, LOOP DETECTORS AND HANDHOLES SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER.
2) SEE SPECIAL PROVISIONS FOR COUNTY FURNISHED MATERIALS.
3) LOOP DETECTOR WIRES SHALL BE CROSS–LINKED POLYETHYLENE (XLP) IN 3/4" N.M.C. SEE SPECIAL PROVISIONS.
4) NEW HANDHOLES SHALL BE PVC HANDHOLES WITH METAL FRAMES AND COVERS.
5) EACH SIGNAL FACE SHALL HAVE BACKGROUND SHIELD.
6) EACH PEDESTRIAN INDICATION SHALL BE ONE SECTION HAND/WALKING PERSON INDICATION.
7) ALL VEHICLE SIGNAL INDICATIONS, AND ALL PEDESTRIAN SIGNAL INDICATIONS SHALL BE LED.
8) SEE SPECIAL PROVISIONS AND DETAILS REGARDING SIGNS TO BE FURNISHED & INSTALLED BY CONTRACTOR (INCIDENTAL TO ITEM NO. 2565.511 FOR THIS SIGNAL SYSTEM).
9) CONTRACTOR SHALL PROVIDE EXTENDED BRACKETS FOR EACH POLE MOUNTED VEHICLE AND PEDESTRIAN SIGNAL FACE.
10) A 3/4" HALF COUPLING, 3/4" PIPE NIPPLE AND CONDUIT OUTLET BODY SHALL BE FURNISHED AND INSTALLED 6 FEET FROM THE END OF EACH MAST ARM (FOR EVP).
11) SEE SPECIAL PROVISIONS & ESTIMATED QUANTITIES REGARDING INPLACE SIGNAL SYSTEM TO BE REMOVED AND SALVAGED BY CONTRACTOR (SEPARATE FROM ITEM NO. 2565.511).
12) CONTRACTOR SHALL MAINTAIN OPERATION OF INPLACE SIGNAL SYSTEM AT ALL TIMES, UNTIL APPROVED BY ENGINEER FOR SIGNAL SYSTEM TO BE TURNED OFF.
13) CONTRACTOR SHALL COORDINATE ALL TRAFFIC SIGNAL INSTALLATION WORK WITH ROAD CONSTRUCTION TO BE COMPLETED BY OTHERS AS PART OF ENTIRE PROJECT.
14) (INTERCONNECT) DENOTES ITEMS TO BE FURNISHED & INSTALLED BY CONTRACTOR UNDER ITEM NO. 2565.601 (TRAFFIC CONTROL INTERCONNECTION). SEE ESTIMATED QUANTITIES & SPECIAL PROVISIONS.
15) CONTRACTOR SHALL COIL AND STORE AN ADDITIONAL 10' OF 1–2/c#14 CABLE IN HANDHOLES 10 AND 20 (FOR FUTURE LOOP DETECTOR INSTALLATIONS BY OTHERS).
16) CONTRACTOR SHALL COIL AND STORE AN ADDITIONAL 10' OF 2–2/c#14 CABLE IN HANDHOLE 19 (FOR FUTURE LOOP DETECTOR INSTALLATIONS BY OTHERS).
17) CONTRACTOR SHALL COIL AND STORE AN ADDITIONAL 10' OF 4–2/c#14 CABLE IN HANDHOLE 9 (FOR FUTURE LOOP DETECTOR INSTALLATIONS BY OTHERS).

W:/IE/ANOKC/030500/TRBASE.DWG

DRAWN BY: JMG
DESIGNER: JMG
CHECKED BY: JMG
DESIGN TEAM

NO.	BY	DATE	REVISIONS
1	JMG	06/23	REVISED TO ACCOMMODATE NEW EAST GEOMETRICS

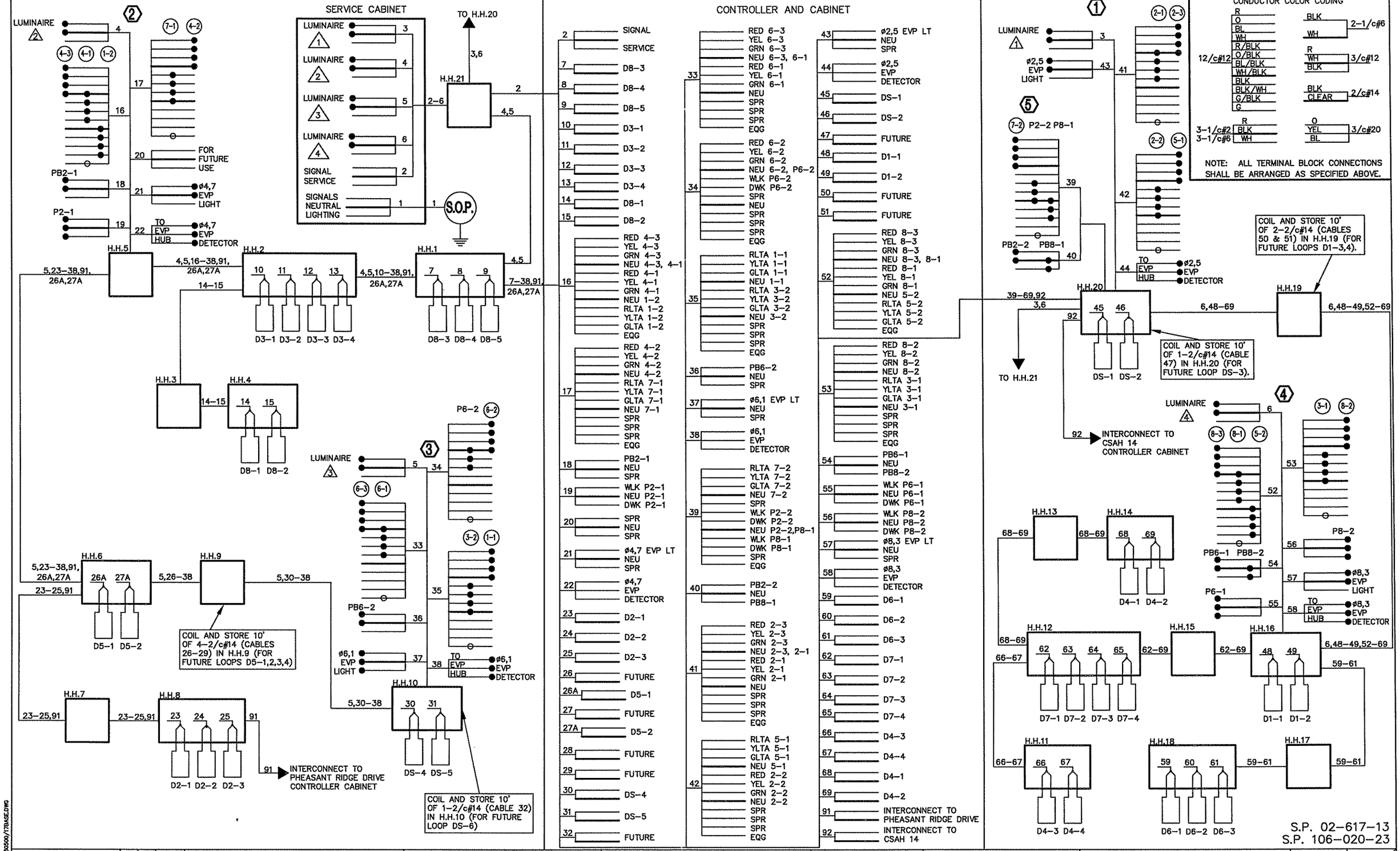
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
Date June 23, 2004 Name: John M. Gray, P.E. Lic. No. 22457

SEH®
PHONE: (651) 490–2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

ANOKA COUNTY, MINNESOTA
CITY OF BLAINE

TRAFFIC SIGNAL SYSTEM "A"
INTERSECTION LAYOUT
CSAH 17 (LEXINGTON AVENUE) AT CSAH 12 (109TH AVENUE NE)

FILE NO. AANOKC0305.00
SIGNAL SHEET 9A OF 28
132/226



DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: JMG	1	JMG	06/23	REVISED TO ACCOMMODATE NEW EAST GEOMETRICS
DESIGNER: JMG				
CHECKED BY: JMG				

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
Date: June 23, 2004 Name: John M. Gray, P.E. Lic. No. 22457

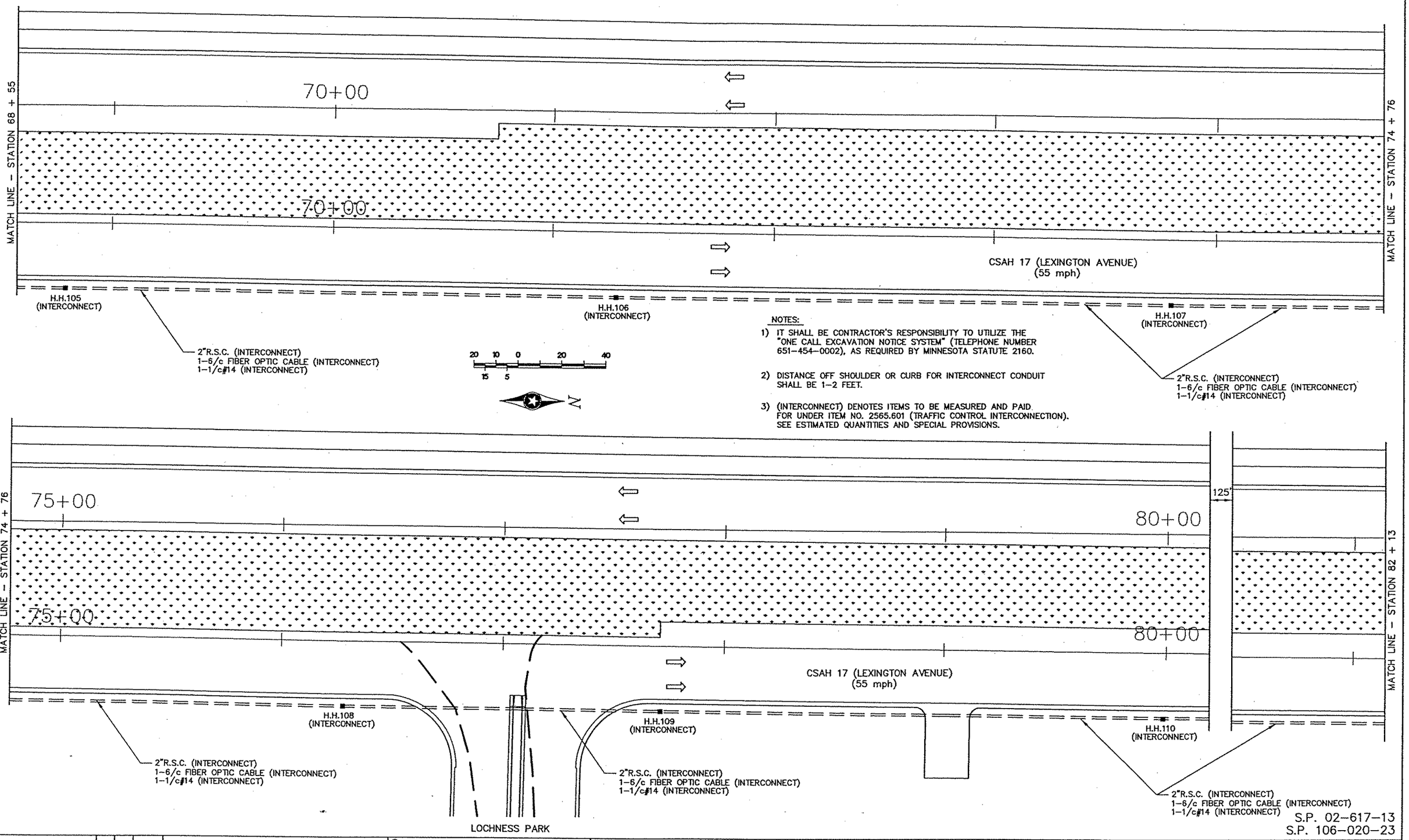
SEH®
PHONE: (651) 490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

ANOKA COUNTY, MINNESOTA
CITY OF BLAINE

TRAFFIC SIGNAL SYSTEM "A"
FIELD WIRING DIAGRAM
CSAH 17 (LEXINGTON AVENUE) AT CSAH 12 (109TH AVENUE NE)

FILE NO. AANOKC0305.00
SIGNAL SHEET 10A OF 28
133/226

W:/AE/ANOKC/030500/17BASE.DWG



NOTES:

1) IT SHALL BE CONTRACTOR'S RESPONSIBILITY TO UTILIZE THE "ONE CALL EXCAVATION NOTICE SYSTEM" (TELEPHONE NUMBER 651–454–0002), AS REQUIRED BY MINNESOTA STATUTE 2160.

2) DISTANCE OFF SHOULDER OR CURB FOR INTERCONNECT CONDUIT SHALL BE 1–2 FEET.

3) (INTERCONNECT) DENOTES ITEMS TO BE MEASURED AND PAID FOR UNDER ITEM NO. 2565.601 (TRAFFIC CONTROL INTERCONNECTION). SEE ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.

S.P. 02–617–13
S.P. 106–020–23

W:/AE/ANOKC/030500/17BASE.DWG

DRAWN BY: JMG
DESIGNER: JMG
CHECKED BY: JMG
DESIGN TEAM

NO.	BY	DATE	REVISIONS

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

Date October 9, 2003 Name: John M. Gray, P.E. Lic. No. 22457

SEH®
PHONE: (651) 490–2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

ANOKA COUNTY, MINNESOTA
CITY OF BLAINE

TRAFFIC SIGNAL INTERCONNECT
INTERSECTION LAYOUT
CSAH 17 (LEXINGTON AVENUE)

FILE NO. AANOKC0305.00
SIGNAL SHEET 11 OF 28

NOTES:

1) IT SHALL BE CONTRACTOR'S RESPONSIBILITY TO UTILIZE THE "ONE CALL EXCAVATION NOTICE SYSTEM" (TELEPHONE NUMBER 651-454-0002), AS REQUIRED BY MINNESOTA STATUTE 2160.

2) DISTANCE OFF SHOULDER OR CURB FOR INTERCONNECT CONDUIT SHALL BE 1-2 FEET.

3) (INTERCONNECT) DENOTES ITEMS TO BE MEASURED AND PAID FOR UNDER ITEM NO. 2565.601 (TRAFFIC CONTROL INTERCONNECTION). SEE ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.

4) ALL ITEMS NOT DENOTED BY (INTERCONNECT), SUCH AS CONDUIT AND HANDHOLES FOR THE FUTURE TRAFFIC SIGNAL SYSTEM, SHALL BE MEASURED AND PAID FOR SEPARATELY (SEE ESTIMATED QUANTITIES AND SPECIAL PROVISIONS) (ITEMS DENOTED BY F & I).

5) CONTRACTOR SHALL THREAD AND CAP ALL CONDUIT FOR FUTURE TRAFFIC SIGNAL SYSTEM IN EACH HANDHOLE.

20 10 0 20 40
15 5

N

4"R.S.C. (F & I)

H.H.53 (F & I)

H.H.54 (F & I)

H.H.52 (F & I)

H.H.55 (F & I)

CSAH 17 (LEXINGTON AVENUE)
(55 mph)

4"R.S.C. (F & I)

85+00

H.H.51 (F & I)

H.H.56 (F & I)

85+00

MATCH LINE – STATION 82 + 13

MATCH LINE – STATION 88 + 32

4"R.S.C. (F & I)

4"R.S.C. (F & I)

CSAH 17 (LEXINGTON AVENUE)
(55 mph)

H.H.111 (INTERCONNECT)

H.H.50 (F & I)

H.H.57 (F & I)

2"R.S.C. (INTERCONNECT)
1-6/c FIBER OPTIC CABLE (INTERCONNECT)
1-1/c#14 (INTERCONNECT)

H.H.59 (F & I)

H.H.58 (F & I)

2"R.S.C. (INTERCONNECT)
1-6/c FIBER OPTIC CABLE (INTERCONNECT)
1-1/c#14 (INTERCONNECT)

4"R.S.C. (F & I)
1-6/c FIBER OPTIC CABLE (INTERCONNECT)
1-1/c#14 (INTERCONNECT)

4"R.S.C. (F & I)
1-6/c FIBER OPTIC CABLE (INTERCONNECT)
1-1/c#14 (INTERCONNECT)

FUTURE 113TH AVENUE NE

S.P. 02-617-13
S.P. 106-020-23

W:/AE/ANOKC/030500/TTBASE.DWG

DRAWN BY: JMG					
DESIGNER: JMG					
CHECKED BY: JMG					
DESIGN TEAM	NO.	BY	DATE	REVISIONS	

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

Name: John M. Gray, P.E.
Date: October 9, 2003 Lic. No. 22457

SEH®
PHONE: (651) 490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

ANOKA COUNTY, MINNESOTA
CITY OF BLAINE

INTERCONNECT/FUTURE SIGNAL SYSTEM
INTERSECTION LAYOUT
CSAH 17 (LEXINGTON AVENUE) AT 113TH AVENUE NORTHEAST

FILE NO. AANOKC0305.00
SIGNAL SHEET 12 OF 28

135/226

MATCH LINE – STATION 88 + 32

90+00

90+00

CSAH 17 (LEXINGTON AVENUE)
(55 mph)

MATCH LINE – STATION 94 + 55

H.H.112
(INTERCONNECT)

2"R.S.C. (INTERCONNECT)
1–6/c FIBER OPTIC CABLE (INTERCONNECT)
1–1/c#14 (INTERCONNECT)

H.H.113
(INTERCONNECT)

2"R.S.C. (INTERCONNECT)
1–6/c FIBER OPTIC CABLE (INTERCONNECT)
1–1/c#14 (INTERCONNECT)

NOTES:

1) IT SHALL BE CONTRACTOR'S RESPONSIBILITY TO UTILIZE THE "ONE CALL EXCAVATION NOTICE SYSTEM" (TELEPHONE NUMBER 651–454–0002), AS REQUIRED BY MINNESOTA STATUTE 216D.

2) DISTANCE OFF SHOULDER OR CURB FOR INTERCONNECT CONDUIT SHALL BE 1–2 FEET.

3) (INTERCONNECT) DENOTES ITEMS TO BE MEASURED AND PAID FOR UNDER ITEM NO. 2565.601 (TRAFFIC CONTROL INTERCONNECTION). SEE ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.

114TH AVENUE NE

20 10 0 20 40
15 5

N

MATCH LINE – STATION 94 + 55

95+00

95+00

100+00

100+00

MATCH LINE – STATION 100 + 61

CSAH 17 (LEXINGTON AVENUE)
(55 mph)

H.H.114
(INTERCONNECT)

2"R.S.C. (INTERCONNECT)
1–6/c FIBER OPTIC CABLE (INTERCONNECT)
1–1/c#14 (INTERCONNECT)

H.H.115
(INTERCONNECT)

2"R.S.C. (INTERCONNECT)
1–6/c FIBER OPTIC CABLE (INTERCONNECT)
1–1/c#14 (INTERCONNECT)

S.P. 02–617–13
S.P. 106–020–23

W:/AE/ANOKC/030000/17BASE.DWG

DRAWN BY: JMG
DESIGNER: JMG
CHECKED BY: JMG
DESIGN TEAM

NO.	BY	DATE	REVISIONS

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

Date: October 9, 2003

Name: John M. Gray, P.E.
Lic. No. 22457

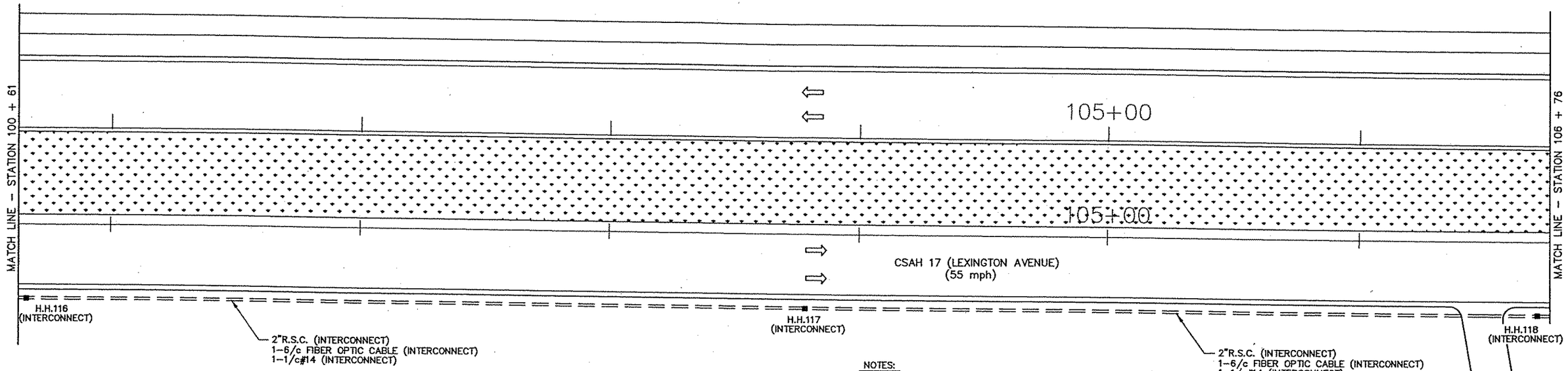
SEH®
PHONE: (651) 490–2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

ANOKA COUNTY, MINNESOTA
CITY OF BLAINE

TRAFFIC SIGNAL INTERCONNECT
INTERSECTION LAYOUT
CSAH 17 (LEXINGTON AVENUE)

FILE NO. AANOKC0305.00
SIGNAL SHEET 13 OF 28

136/226



20 10 0 20 40
15 5

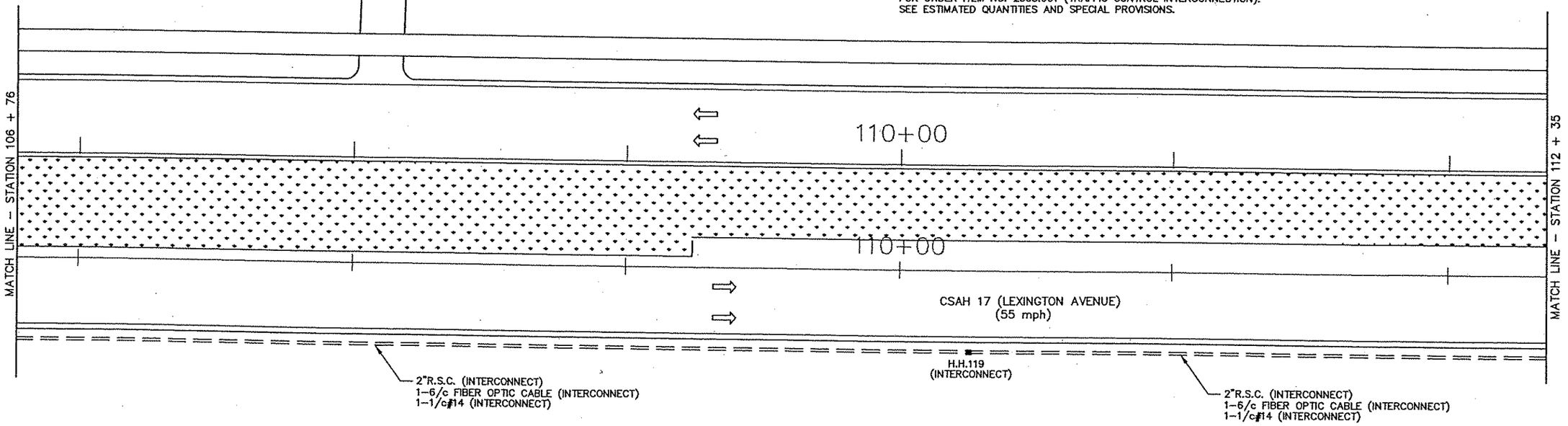
N

NOTES:

1) IT SHALL BE CONTRACTOR'S RESPONSIBILITY TO UTILIZE THE "ONE CALL EXCAVATION NOTICE SYSTEM" (TELEPHONE NUMBER 651–454–0002), AS REQUIRED BY MINNESOTA STATUTE 2160.

2) DISTANCE OFF SHOULDER OR CURB FOR INTERCONNECT CONDUIT SHALL BE 1–2 FEET.

3) (INTERCONNECT) DENOTES ITEMS TO BE MEASURED AND PAID FOR UNDER ITEM NO. 2565.601 (TRAFFIC CONTROL INTERCONNECTION). SEE ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.



S.P. 02–617–13
S.P. 106–020–23

W:/AE/ANOKC/030500/17BASE.DWG

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: JMG				
DESIGNER: JMG				
CHECKED BY: JMG				

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

Name: John M. Gray, P.E.
Date: October 9, 2003 Lic. No. 22457

SEH®
PHONE: (651) 490–2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

ANOKA COUNTY, MINNESOTA
CITY OF BLAINE

TRAFFIC SIGNAL INTERCONNECT
INTERSECTION LAYOUT
CSAH 17 (LEXINGTON AVENUE)

FILE NO. AANOKC0305.00
SIGNAL SHEET 14 OF 28
137/226

NOTES:

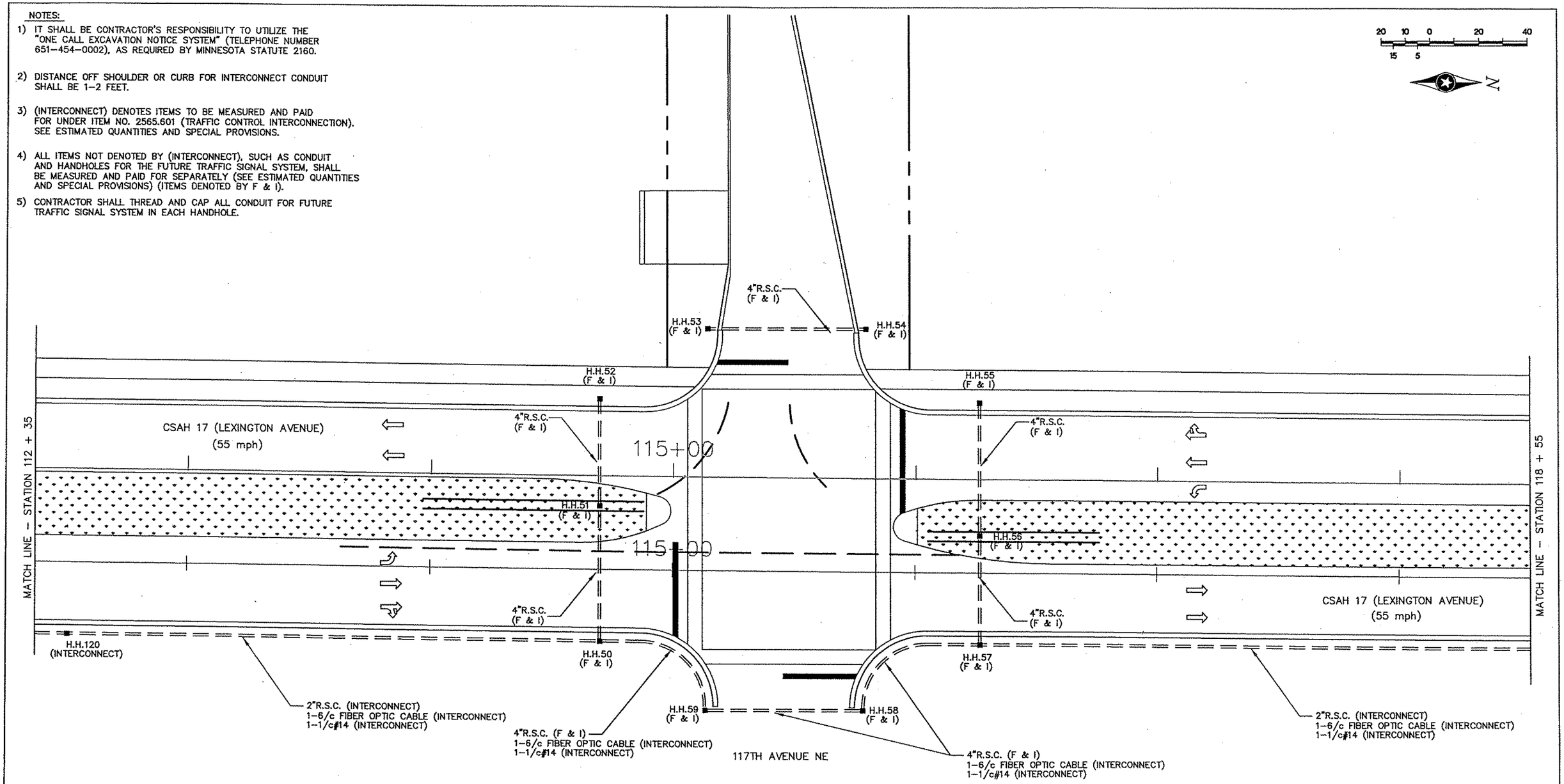
1) IT SHALL BE CONTRACTOR'S RESPONSIBILITY TO UTILIZE THE "ONE CALL EXCAVATION NOTICE SYSTEM" (TELEPHONE NUMBER 651–454–0002), AS REQUIRED BY MINNESOTA STATUTE 2160.

2) DISTANCE OFF SHOULDER OR CURB FOR INTERCONNECT CONDUIT SHALL BE 1–2 FEET.

3) (INTERCONNECT) DENOTES ITEMS TO BE MEASURED AND PAID FOR UNDER ITEM NO. 2565.601 (TRAFFIC CONTROL INTERCONNECTION). SEE ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.

4) ALL ITEMS NOT DENOTED BY (INTERCONNECT), SUCH AS CONDUIT AND HANDHOLES FOR THE FUTURE TRAFFIC SIGNAL SYSTEM, SHALL BE MEASURED AND PAID FOR SEPARATELY (SEE ESTIMATED QUANTITIES AND SPECIAL PROVISIONS) (ITEMS DENOTED BY F & I).

5) CONTRACTOR SHALL THREAD AND CAP ALL CONDUIT FOR FUTURE TRAFFIC SIGNAL SYSTEM IN EACH HANDHOLE.



S.P. 02–617–13
S.P. 106–020–23

W:/AE/ANOKC/030500/178ASE.DWG

DRAWN BY: JMG				
DESIGNER: JMG				
CHECKED BY: JMG				
DESIGN TEAM	NO.	BY	DATE	REVISIONS

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

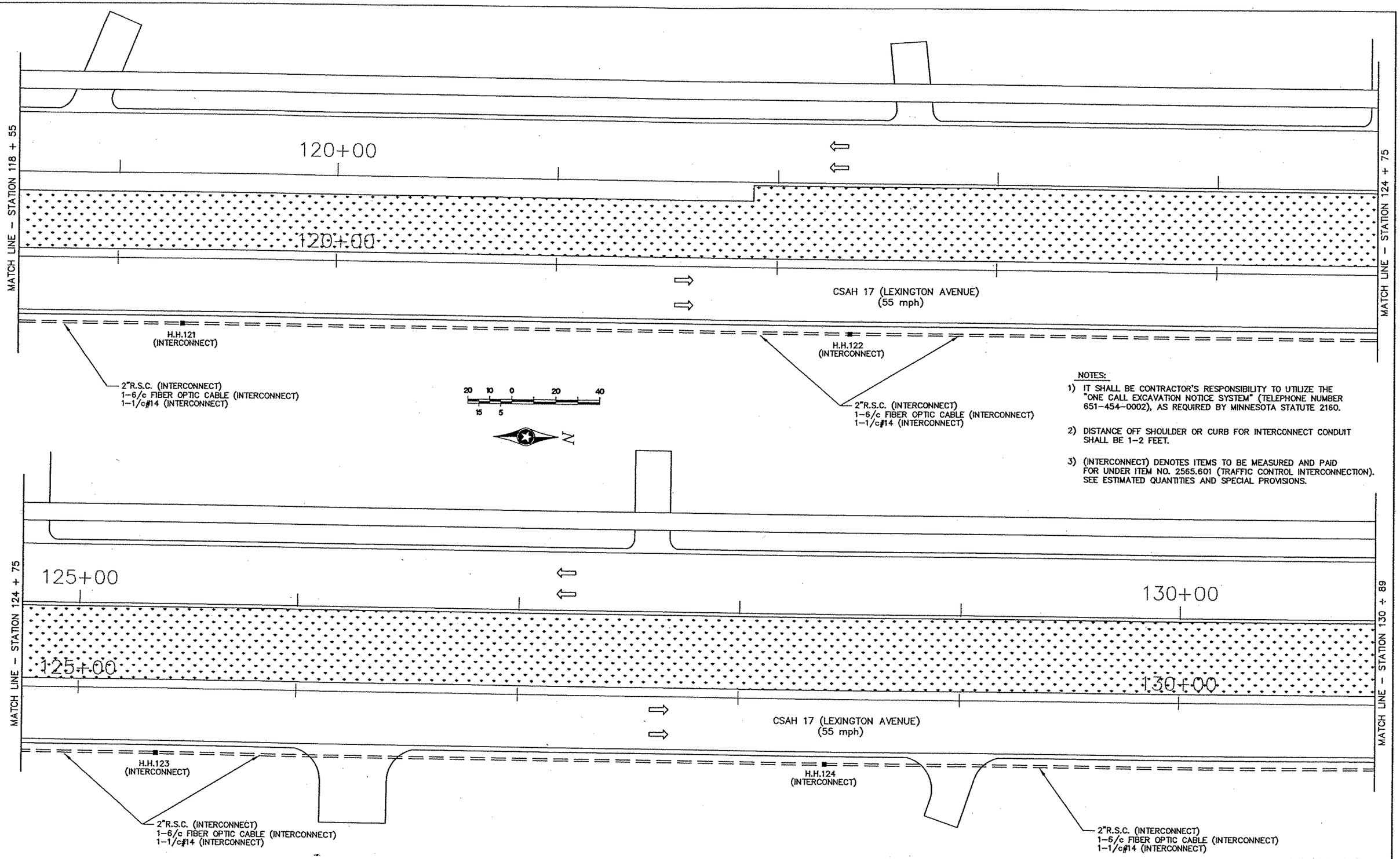
Date: October 9, 2003 Name: John M. Gray, P.E. Lic. No. 22457

SEH®
PHONE: (651) 490–2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

ANOKA COUNTY, MINNESOTA
CITY OF BLAINE

INTERCONNECT/FUTURE SIGNAL SYSTEM
INTERSECTION LAYOUT
CSAH 17 (LEXINGTON AVENUE) AT 117TH AVENUE NORTHEAST

FILE NO. AANOKC0305.00
SIGNAL SHEET 15 OF 28
138/226



NOTES:

1) IT SHALL BE CONTRACTOR'S RESPONSIBILITY TO UTILIZE THE "ONE CALL EXCAVATION NOTICE SYSTEM" (TELEPHONE NUMBER 651–454–0002), AS REQUIRED BY MINNESOTA STATUTE 2160.

2) DISTANCE OFF SHOULDER OR CURB FOR INTERCONNECT CONDUIT SHALL BE 1–2 FEET.

3) (INTERCONNECT) DENOTES ITEMS TO BE MEASURED AND PAID FOR UNDER ITEM NO. 2565.601 (TRAFFIC CONTROL INTERCONNECTION). SEE ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.

S.P. 02–617–13
S.P. 106–020–23

W:/AE/ANOKC/030500/TRIASE.DWG

DRAWN BY: JMG
DESIGNER: JMG
CHECKED BY: JMG
DESIGN TEAM

NO.	BY	DATE	REVISIONS

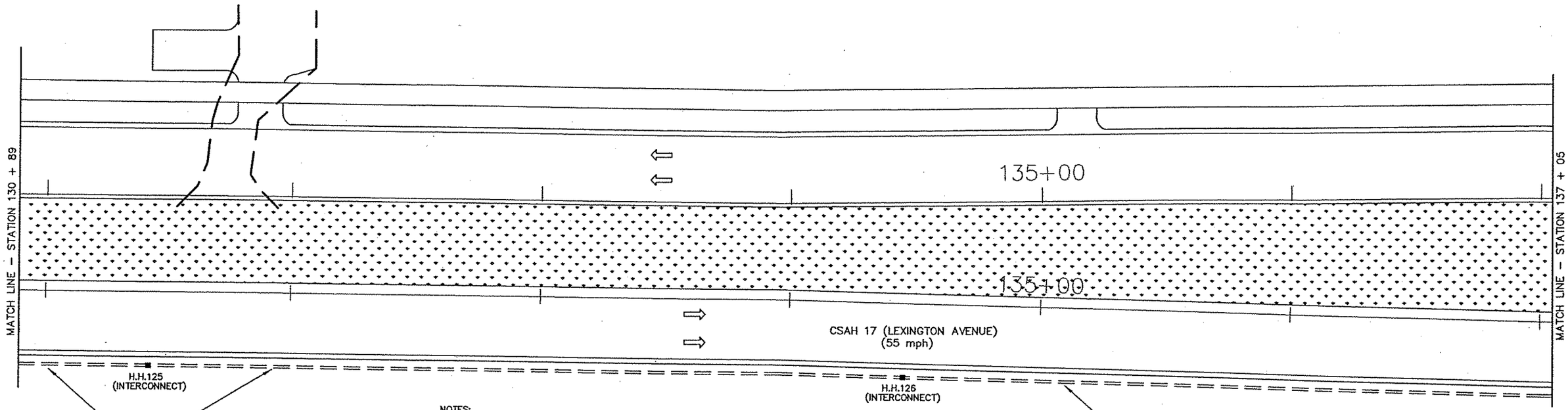
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
Date: October 9, 2003
Name: John M. Gray, P.E.
Lic. No. 22457

SEH®
PHONE: (651) 490–2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

ANOKA COUNTY, MINNESOTA
CITY OF BLAINE

TRAFFIC SIGNAL INTERCONNECT
INTERSECTION LAYOUT
CSAH 17 (LEXINGTON AVENUE)

FILE NO. AANOKC0305.00
SIGNAL SHEET 16 OF 28

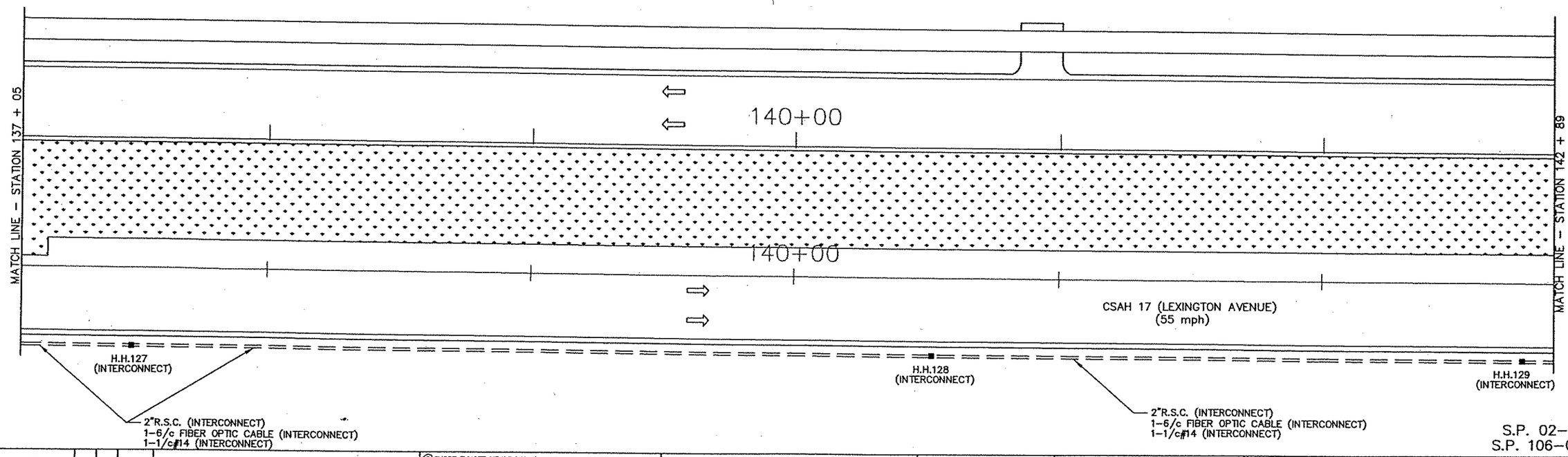


NOTES:

1) IT SHALL BE CONTRACTOR'S RESPONSIBILITY TO UTILIZE THE "ONE CALL EXCAVATION NOTICE SYSTEM" (TELEPHONE NUMBER 651–454–0002), AS REQUIRED BY MINNESOTA STATUTE 2160.

2) DISTANCE OFF SHOULDER OR CURB FOR INTERCONNECT CONDUIT SHALL BE 1–2 FEET.

3) (INTERCONNECT) DENOTES ITEMS TO BE MEASURED AND PAID FOR UNDER ITEM NO. 2565.601 (TRAFFIC CONTROL INTERCONNECTION). SEE ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.



S.P. 02–617–13
S.P. 106–020–23

W:/AE/ANOKC/030600/TTBASE.DWG

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: JMG				
DESIGNER: JMG				
CHECKED BY: JMG				

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

Name: John M. Gray, P.E.
Date: October 9, 2003
Lic. No. 22457

SEH®
PHONE: (651) 490–2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

ANOKA COUNTY, MINNESOTA
CITY OF BLAINE

TRAFFIC SIGNAL INTERCONNECT
INTERSECTION LAYOUT
CSAH 17 (LEXINGTON AVENUE)

FILE NO. AANOKC0305.00
SIGNAL SHEET 17 OF 28

140/226

NOTES:

1) IT SHALL BE CONTRACTOR'S RESPONSIBILITY TO UTILIZE THE "ONE CALL EXCAVATION NOTICE SYSTEM" (TELEPHONE NUMBER 651-454-0002), AS REQUIRED BY MINNESOTA STATUTE 2160.

2) DISTANCE OFF SHOULDER OR CURB FOR INTERCONNECT CONDUIT SHALL BE 1-2 FEET.

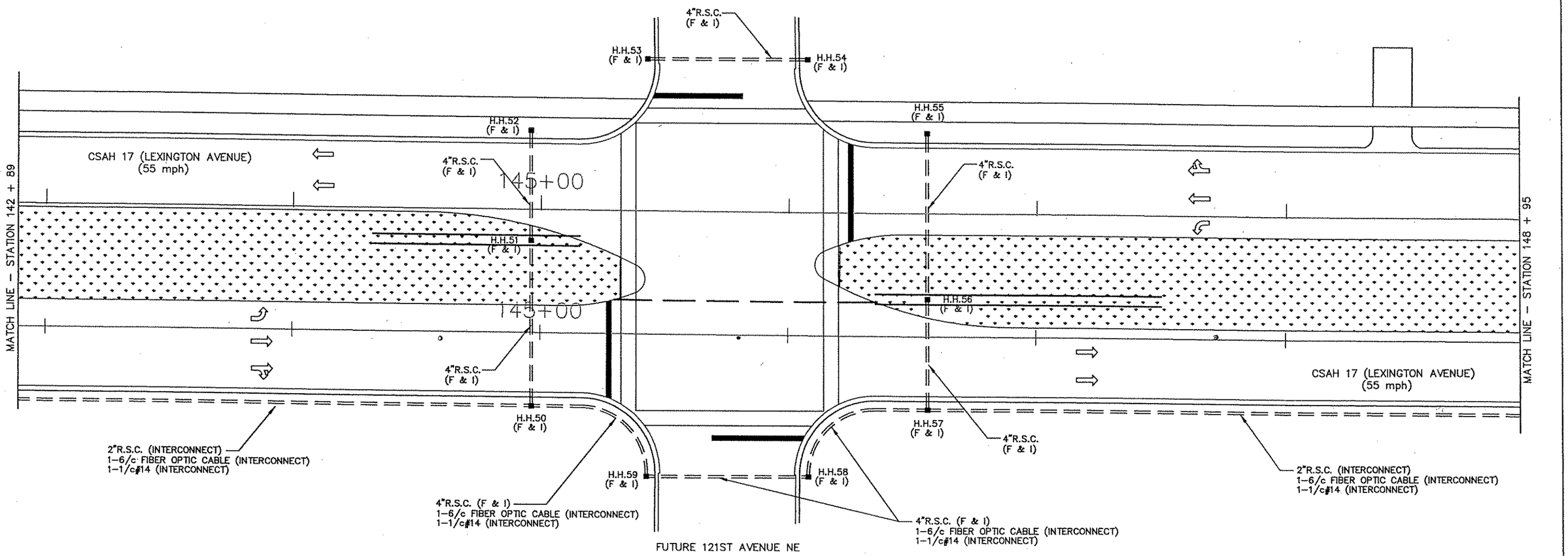
3) (INTERCONNECT) DENOTES ITEMS TO BE MEASURED AND PAID FOR UNDER ITEM NO. 2565.601 (TRAFFIC CONTROL INTERCONNECTION). SEE ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.

4) ALL ITEMS NOT DENOTED BY (INTERCONNECT), SUCH AS CONDUIT AND HANDHOLES FOR THE FUTURE TRAFFIC SIGNAL SYSTEM, SHALL BE MEASURED AND PAID FOR SEPARATELY (SEE ESTIMATED QUANTITIES AND SPECIAL PROVISIONS) (ITEMS DENOTED BY F & I).

5) CONTRACTOR SHALL THREAD AND CAP ALL CONDUIT FOR FUTURE TRAFFIC SIGNAL SYSTEM IN EACH HANDHOLE.

20 10 0 20 40
15 5

N



S.P. 02-617-13
S.P. 106-020-23

W:/IE/ANOKC/030500/17BASE.DWG

DRAWN BY: JMG				
DESIGNER: JMG				
CHECKED BY: JMG				
DESIGN TEAM	NO.	BY	DATE	REVISIONS

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

Date: October 9, 2003 Name: John M. Gray, P.E. Lic. No. 22457

SEH®
PHONE: (651) 490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

ANOKA COUNTY, MINNESOTA
CITY OF BLAINE

INTERCONNECT/FUTURE SIGNAL SYSTEM
INTERSECTION LAYOUT
CSAH 17 (LEXINGTON AVENUE) AT 121ST AVENUE NORTHEAST

FILE NO. AANOKC0305.00
SIGNAL SHEET 18 OF 28

MATCH LINE – STATION 148 + 95

150+00

CSAH 17 (LEXINGTON AVENUE)
(55 mph)

155+00

MATCH LINE – STATION 155 + 23

150+00

155+00

H.H.130
(INTERCONNECT)

H.H.131
(INTERCONNECT)

H.H.132
(INTERCONNECT)

2"R.S.C. (INTERCONNECT)
1–6/c FIBER OPTIC CABLE (INTERCONNECT)
1–1/c#14 (INTERCONNECT)

2"R.S.C. (INTERCONNECT)
1–6/c FIBER OPTIC CABLE (INTERCONNECT)
1–1/c#14 (INTERCONNECT)

NOTES:

1) IT SHALL BE CONTRACTOR'S RESPONSIBILITY TO UTILIZE THE "ONE CALL EXCAVATION NOTICE SYSTEM" (TELEPHONE NUMBER 651–454–0002), AS REQUIRED BY MINNESOTA STATUTE 2160.

2) DISTANCE OFF SHOULDER OR CURB FOR INTERCONNECT CONDUIT SHALL BE 1–2 FEET.

3) (INTERCONNECT) DENOTES ITEMS TO BE MEASURED AND PAID FOR UNDER ITEM NO. 2565.601 (TRAFFIC CONTROL INTERCONNECTION). SEE ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.

20 10 0 20 40
15 5

N

MATCH LINE – STATION 155 + 23

CSAH 17 (LEXINGTON AVENUE)
(55 mph)

160+00

125'

MATCH LINE – STATION 162 + 66

160+00

H.H.133
(INTERCONNECT)

H.H.134
(INTERCONNECT)

2"R.S.C. (INTERCONNECT)
1–6/c FIBER OPTIC CABLE (INTERCONNECT)
1–1/c#14 (INTERCONNECT)

2"R.S.C. (INTERCONNECT)
1–6/c FIBER OPTIC CABLE (INTERCONNECT)
1–1/c#14 (INTERCONNECT)

S.P. 02–617–13
S.P. 106–020–23

W:/AE/ANOKC/030000/TRBASE.DWG

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: JMG				
DESIGNER: JMG				
CHECKED BY: JMG				

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

Name: John M. Gray, P.E.
Date: October 9, 2003 Lic. No. 22457

SEH®
PHONE: (651) 490–2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

ANOKA COUNTY, MINNESOTA
CITY OF BLAINE

TRAFFIC SIGNAL INTERCONNECT
INTERSECTION LAYOUT
CSAH 17 (LEXINGTON AVENUE)

FILE NO. AANOKC0305.00
SIGNAL SHEET 19 OF 28

142/226

(1) PA100 POLE FOUNDATION
TYPE PA100-A-55-D40-9 (DAVIT AT 350°)
LUMINAIRE-250 W HPS
3-ONE WAY SIGNALS-OVERHEAD (0', 11' AND 23' FROM END OF MAST ARM)
2-TYPE 10B-POLE MOUNTED 90° & 180°
2-PEDESTRIAN PUSH BUTTONS
TYPE D SIGN PANEL-OVERHEAD (D-5)
ONE WAY EVP DETECTOR AND LIGHT (ø4,7)
2-R6-1 SIGN PANELS-POLE MOUNTED 0° & 180°
EXTEND INTO H.H.1:
3"R.S.C.
2-12/c#12
4-3/c#12
1-3/c#20
1-3/c#12 (LUM)

(2) PA100 POLE FOUNDATION
TYPE PA100-A-55-D40-9 (DAVIT AT 350°)
LUMINAIRE-250 W HPS
3-ONE WAY SIGNALS-OVERHEAD (17', 29' AND 41' FROM END OF MAST ARM)
CAP END MOUNT (FOR FUTURE USE BY OTHERS)
2-TYPE 10B-POLE MOUNTED 90° & 180°
2-PEDESTRIAN PUSH BUTTONS
TYPE D SIGN PANEL-OVERHEAD (D-6)
ONE WAY EVP DETECTOR AND LIGHT (ø6,1)
2-R6-1 SIGN PANELS-POLE MOUNTED 0° & 180°
EXTEND INTO H.H.5:
3"R.S.C.
3-12/c#12
2-3/c#12
1-3/c#20
1-3/c#12 (LUM)

SEE NEXT SHEET FOR GENERAL NOTES.

1 1/4"R.S.C.-INPLACE
1-2/c#14

MATCH LINE "B" - SEE NEXT SHEET

H.H.7

12' 12' 12' 14'

CSAH 14 (MAIN STREET) (55 mph)

1 1/4"R.S.C.-INPLACE (EXTEND INTO NEW H.H.6)
1-2/c#14

3"R.S.C.
3-2/c#14

H.H.6

2"R.S.C.
6-2/c#14

4"R.S.C.
3-12/c#12
2-3/c#12
1-3/c#20
9-2/c#14
1-3/c#12 (LUM)

D7-1

H.H.11

D7-2

D4-2 D4-3 D4-4

ø8,3 EVP

H.H.5

CSAH 17 (LEXINGTON AVENUE) (55 mph)

14' 12' 4'

DS-4 DS-5

(future) (future median) (future) (future)

ø6,1 EVP

H.H.4

MATCH LINE "A" - SEE NEXT SHEET

11' 12' 14'

D5-1 D5-2

H.H.1

2"R.S.C.
3-2/c#14
1-6/c FIBER OPTIC CABLE (INTERCONNECT)
1-1/c#14 (INTERCONNECT)

(B) SIGNAL SERVICE CABINET CABINET FOUNDATION
EXTEND INTO H.H.24:
2"R.S.C.
METERED SIGNAL SERVICE
3-1/c#6
UNMETERED STREET LIGHT SERVICE
4-3/c#12 (LUM)
BETWEEN H.H.1 AND H.H.24:
2"R.S.C.
2-3/c#12 (LUM)
BETWEEN H.H.23 AND H.H.24:
2"R.S.C.
2-3/c#12 (LUM)

4"R.S.C.
3-12/c#12
2-3/c#12
1-3/c#20
1-3/c#12 (LUM)

ø4,7 EVP

H.H.24

H.H.23

H.H.22

D3-2 D3-1

D8-4 D8-3 D8-2

CSAH 14 (MAIN STREET) (55 mph)

14' 12' 12' 12'

(C) INPLACE WOOD POLE (S.O.P.) (XCEL ENERGY)
EXTEND INTO SERVICE CABINET:
2"R.S.C. RISER AND WEATHERHEAD
3-1/c#2

2-4"R.S.C.
5-12/c#12
6-3/c#12
2-3/c#20
16-2/c#14
2-3/c#12 (LUM)

MATCH LINE "D" - SEE NEXT SHEET

H.H.12

4"R.S.C.
2-12/c#12
4-3/c#12
1-3/c#20
5-2/c#14
1-3/c#12 (LUM)

2"R.S.C.
3-2/c#14

H.H.13

170+00

14' 12' 11'

(future) (future) (future) (future median) (future)

D1-2 D1-1

ø2,5 EVP

H.H.15

170+00

DS-2 DS-1

12' 14'

CSAH 17 (LEXINGTON AVENUE) (55 mph)

MATCH LINE "C" - SEE NEXT SHEET

H.H.16

4"R.S.C.
2-12/c#12
4-3/c#12
1-3/c#20
7-2/c#14
1-3/c#12 (LUM)

2-4"R.S.C.
5-12/c#12
6-3/c#12
2-3/c#20
10-2/c#14
2-3/c#12 (LUM)

(A) INSTALL CONTROLLER AND CABINET (FURNISHED BY COUNTY)
CABINET FOUNDATION
EXTEND INTO H.H.24:
METERED SIGNAL SERVICE
2"R.S.C.
3-1/c#6
EXTEND INTO H.H.1:
2-4"R.S.C.
5-12/c#12
6-3/c#12
2-3/c#20
18-2/c#14
1-6/c FIBER OPTIC CABLE (INTERCONNECT)
1-1/c#14 (INTERCONNECT)

EXTEND INTO H.H.23:
2-4"R.S.C.
5-12/c#12
6-3/c#12
2-3/c#20
16-2/c#14
STUB OUT 2-3"R.S.C. FROM CABINET TO NORTH (THREAD AND CAP-FOR FUTURE USE)

2-4"R.S.C.
5-12/c#12
6-3/c#12
2-3/c#20
13-2/c#14
2-3/c#12 (LUM)

1 1/4"R.S.C.-INPLACE (EXTEND INTO NEW H.H.17)
1-2/c#14

(4) PA100 POLE FOUNDATION
TYPE PA100-A-55-D40-9 (DAVIT AT 350°)
LUMINAIRE-250 W HPS
3-ONE WAY SIGNALS-OVERHEAD (17', 29' AND 41' FROM END OF MAST ARM)
CAP END MOUNT (FOR FUTURE USE BY OTHERS)
2-TYPE 10B-POLE MOUNTED 90° & 180°
2-PEDESTRIAN PUSH BUTTONS
TYPE D SIGN PANEL-OVERHEAD (D-8)
ONE WAY EVP DETECTOR AND LIGHT (ø2,5)
2-R6-1 SIGN PANELS-POLE MOUNTED 0° & 180°
EXTEND INTO H.H.16:
3"R.S.C.
3-12/c#12
2-3/c#12
1-3/c#20
1-3/c#12 (LUM)

(3) PA100 POLE FOUNDATION
TYPE PA100-A-55-D40-9 (DAVIT AT 350°)
LUMINAIRE-250 W HPS
3-ONE WAY SIGNALS-OVERHEAD (0', 11' AND 23' FROM END OF MAST ARM)
2-TYPE 10B-POLE MOUNTED 90° & 180°
2-PEDESTRIAN PUSH BUTTONS
TYPE D SIGN PANEL-OVERHEAD (D-7)
ONE WAY EVP DETECTOR AND LIGHT (ø8,3)
2-R6-1 SIGN PANELS-POLE MOUNTED 0° & 180°
EXTEND INTO H.H.12:
3"R.S.C.
2-12/c#12
4-3/c#12
1-3/c#20
1-3/c#12 (LUM)

N.M.C. LOOP DETECTORS			
NUMBER	SIZE (FT.)	LOCATION	FUNCTION
D1-1	6x6	40'	1
D1-2	6x6	10'	1
D2-1	6x6	475'	1
D2-2	6x6	475'	1
D2-3	6x6	475'	1
D3-1	6x6	40'	1
D3-2	6x6	10'	1
D4-1	6x6	475'	3,8
D4-2	6x10&6x6	5' & 20'	7
D4-3	2-6x6	5' & 20'	1
D4-4	2-6x6	5' & 20'	1
D5-1	6x6	40'	1
D5-2	6x6	10'	1
D6-1	6x6	475'	1
D6-2	6x6	475'	1
D6-3	6x6	475'	1
D7-1	6x6	40'	1
D7-2	6x6	10'	1
D8-1	6x6	475'	3,8
D8-2	6x10&6x6	5' & 20'	7
D8-3	2-6x6	5' & 20'	1
D8-4	2-6x6	5' & 20'	1
DS-1	6x6	50'	11
DS-2	6x6	50'	11
DS-4	6x6	50'	11
DS-5	6x6	50'	11

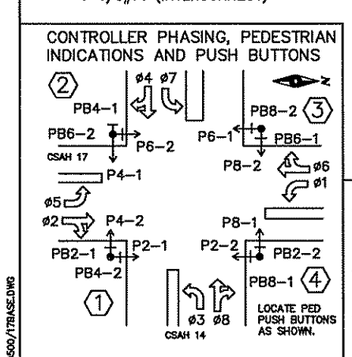
FUTURE LOOP DETECTORS			
NUMBER	SIZE (FT.)	LOCATION	FUNCTION
D1-3	-	FUTURE	1
D1-4	-	FUTURE	1
D5-3	-	FUTURE	1
D5-4	-	FUTURE	1
DS-3	-	FUTURE	11
DS-6	-	FUTURE	11

NOTE: LOCATION=DISTANCE FROM STOP BAR TO FRONT OF DETECTOR.

LOOP DETECTORS FUNCTIONS:
1) CALL AND EXTEND
3) EXTEND ONLY
7) DELAYED CALL- IMMEDIATE EXTEND
8) CARRY OVER (STRETCH)
11) COUNTING DETECTOR

20 10 0 20 40
15 5
N

CONTROLLER PHASING, PEDESTRIAN INDICATIONS AND PUSH BUTTONS



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

LED SIGNAL FACES			
SIGNAL FACE	ALL 12".		
	R	Y	G
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		●	

S.P. 02-617-13
S.P. 106-020-23

W:/AE/ANOKC/030500/17BASE.DWG

DRAWN BY:	JMG
DESIGNER:	JMG
CHECKED BY:	JMG
DESIGN TEAM	

NO.	BY	DATE	REVISIONS
1	JMG	06/23	REVISED MEDIAN LOOP DETECTOR TERMINATION LOCATIONS

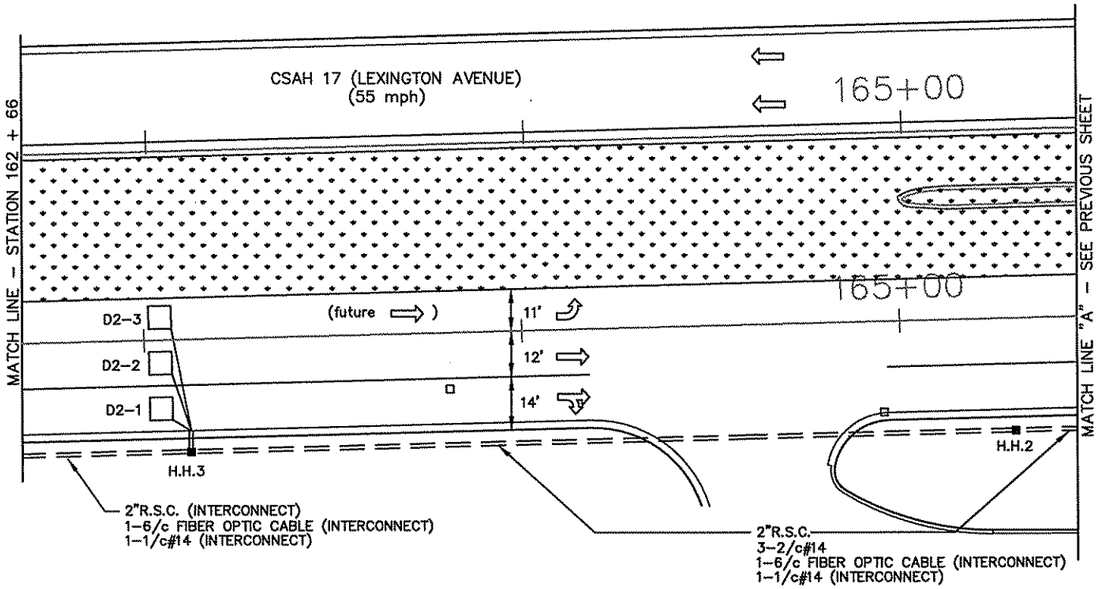
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
Date: June 23, 2004
Name: John M. Gray, P.E.
Lic. No. 22457

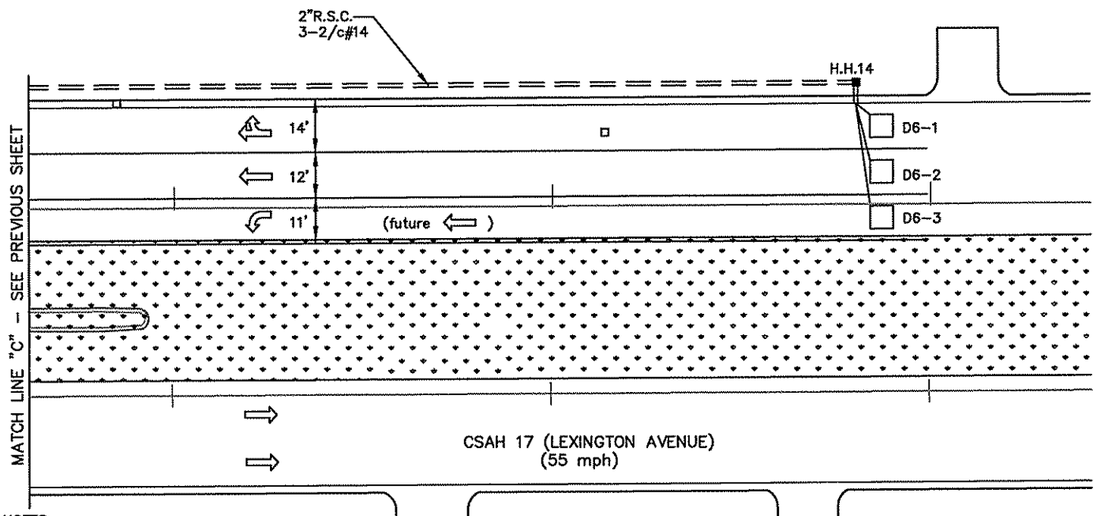
SEH®
PHONE: (651) 490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

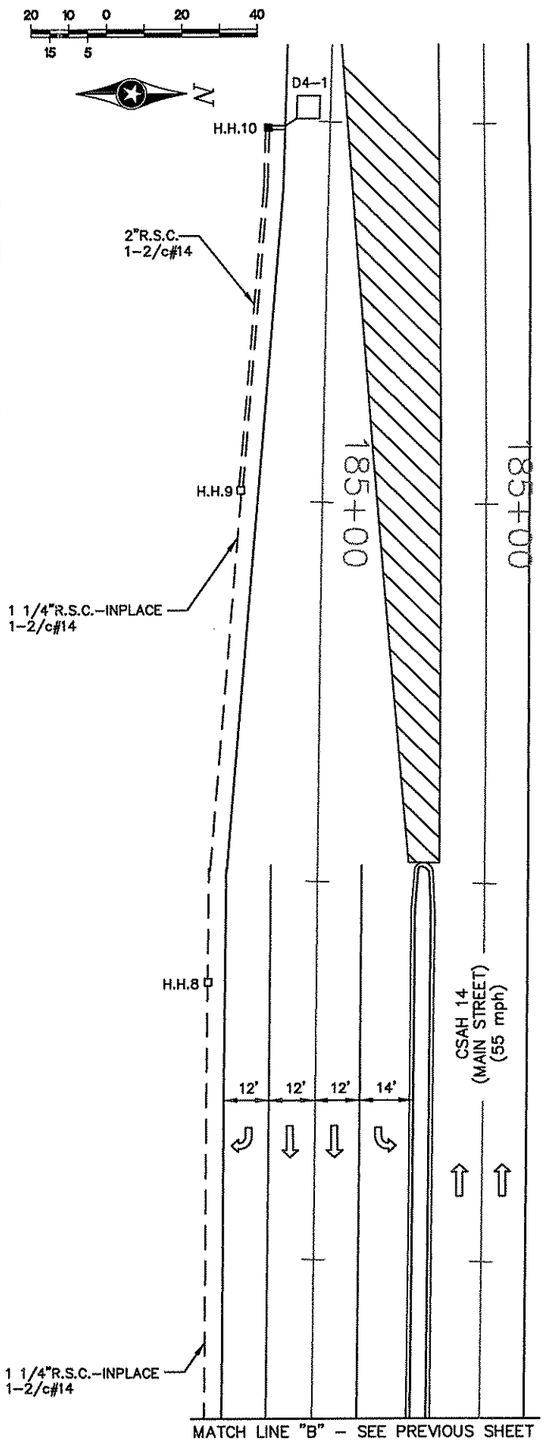
ANOKA COUNTY, MINNESOTA
CITY OF BLAINE

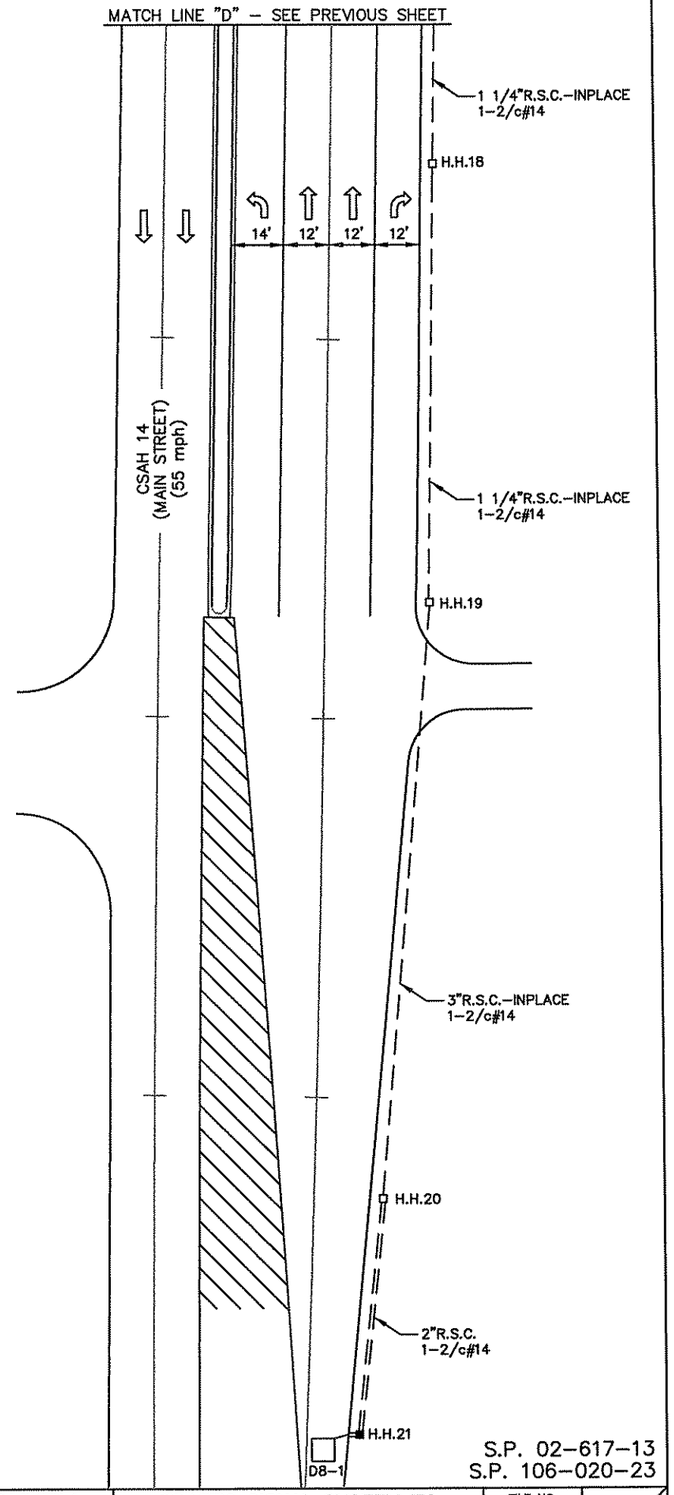
TRAFFIC SIGNAL SYSTEM "B"
INTERSECTION LAYOUT
CSAH 17 (LEXINGTON AVENUE) AT CSAH 14 (MAIN STREET/125TH AVE)

FILE NO. AANOKC0305.00
SIGNAL SHEET 20A OF 28
143/226









NOTES:

1) LOCATION OF POLES, CONTROLLER CABINET, SERVICE CABINET, LOOP DETECTORS AND HANDHOLES SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER.
2) SEE SPECIAL PROVISIONS FOR COUNTY FURNISHED MATERIALS.
3) LOOP DETECTOR WIRES SHALL BE CROSS–LINKED POLYETHYLENE (XLP) IN 3/4" N.M.C. SEE SPECIAL PROVISIONS.
4) NEW HANDHOLES SHALL BE PVC HANDHOLES WITH METAL FRAMES AND COVERS.
5) EACH SIGNAL FACE SHALL HAVE BACKGROUND SHIELD.
6) EACH PEDESTRIAN INDICATION SHALL BE ONE SECTION HAND/WALKING PERSON INDICATION.
7) ALL VEHICLE SIGNAL INDICATIONS, AND ALL PEDESTRIAN SIGNAL INDICATIONS SHALL BE LED.
8) SEE SPECIAL PROVISIONS AND DETAILS REGARDING SIGNS TO BE FURNISHED & INSTALLED BY CONTRACTOR (INCIDENTAL TO ITEM NO. 2565.511 FOR THIS SIGNAL SYSTEM).
9) CONTRACTOR SHALL PROVIDE EXTENDED BRACKETS FOR EACH POLE MOUNTED VEHICLE AND PEDESTRIAN SIGNAL FACE.
10) A 3/4" HALF COUPLING, 3/4" PIPE NIPPLE AND CONDUIT OUTLET BODY SHALL BE FURNISHED AND INSTALLED 6 FEET FROM THE END OF EACH MAST ARM (FOR EVP).
11) SEE SPECIAL PROVISIONS & ESTIMATED QUANTITIES REGARDING INPLACE SIGNAL SYSTEM TO BE REMOVED AND SALVAGED BY CONTRACTOR (SEPARATE FROM ITEM NO. 2565.511).
12) CONTRACTOR SHALL MAINTAIN OPERATION OF INPLACE SIGNAL SYSTEM AT ALL TIMES, UNTIL APPROVED BY ENGINEER FOR SIGNAL SYSTEM TO BE TURNED OFF.
13) CONTRACTOR SHALL COORDINATE ALL TRAFFIC SIGNAL INSTALLATION WORK WITH ROAD CONSTRUCTION TO BE COMPLETED BY OTHERS AS PART OF ENTIRE PROJECT.
14) (INTERCONNECT) DENOTES ITEMS TO BE FURNISHED & INSTALLED BY CONTRACTOR UNDER ITEM NO. 2565.601 (TRAFFIC CONTROL INTERCONNECTION). SEE ESTIMATED QUANTITIES & SPECIAL PROVISIONS.
15) CONTRACTOR SHALL COIL AND STORE AN ADDITIONAL 10' OF 1–2/c#14 CABLE IN HANDHOLES 5 AND 16 (FOR FUTURE LOOP DETECTOR INSTALLATIONS BY OTHERS).
16) CONTRACTOR SHALL COIL AND STORE AN ADDITIONAL 10' OF 2–2/c#14 CABLE IN HANDHOLE 15 (FOR FUTURE LOOP DETECTOR INSTALLATIONS BY OTHERS).
17) CONTRACTOR SHALL COIL AND STORE AN ADDITIONAL 10' OF 4–2/c#14 CABLE IN HANDHOLE 4 (FOR FUTURE LOOP DETECTOR INSTALLATIONS BY OTHERS).

W:/AE/ANOKC/030500/178ASE.DWG

DRAWN BY: JMG
DESIGNER: JMG
CHECKED BY: JMG
DESIGN TEAM

NO.	BY	DATE	REVISIONS
1	JMG	06/23	REVISED MEDIAN LOOP DETECTOR TERMINATION LOCATIONS

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
Name: John M. Gray, P.E.
Date: June 23, 2004 Lic. No. 22457

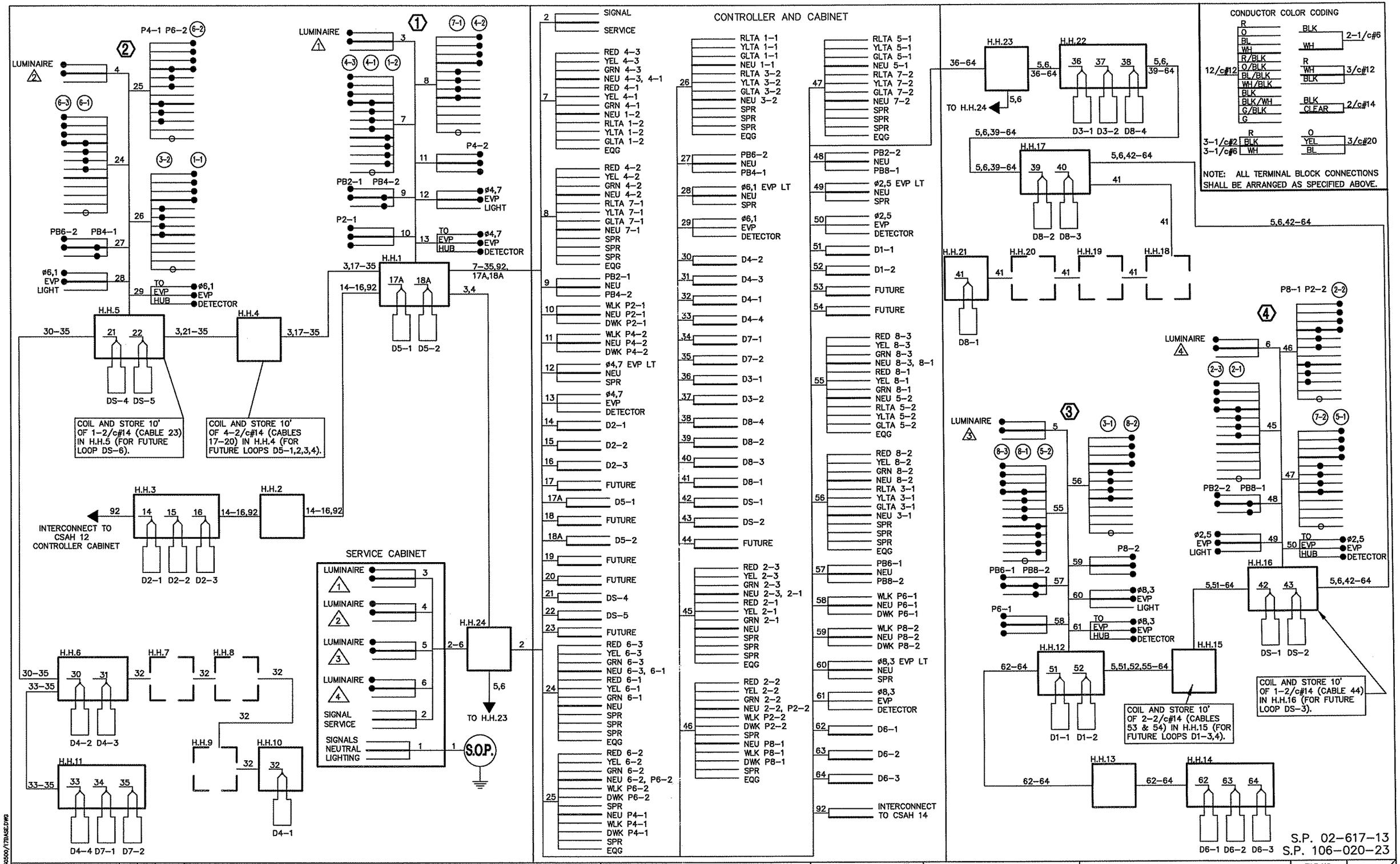
SEH®
PHONE: (651) 490–2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

ANOKA COUNTY, MINNESOTA
CITY OF BLAINE

TRAFFIC SIGNAL SYSTEM "B"
INTERSECTION LAYOUT
CSAH 17 (LEXINGTON AVENUE) AT CSAH 14 (MAIN STREET/125TH AVE)

FILE NO. AANOKC0305.00
SIGNAL SHEET 21A OF 28
144/226

S.P. 02–617–13
S.P. 106–020–23



S.P. 02-617-13
S.P. 106-020-23

W:/AE/ANOKC/030500/17BASE.DWG

DRAWN BY: JMG	1	JMG	06/23	REVISED MEDIAN LOOP DETECTOR TERMINATION LOCATIONS	
DESIGNER: JMG					
CHECKED BY: JMG					
DESIGN TEAM	NO.	BY	DATE	REVISIONS	

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
Date June 23, 2004 Name: John M. Gray, P.E. Lic. No. 22457

SEH®
PHONE: (651) 490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

ANOKA COUNTY, MINNESOTA
CITY OF BLAINE

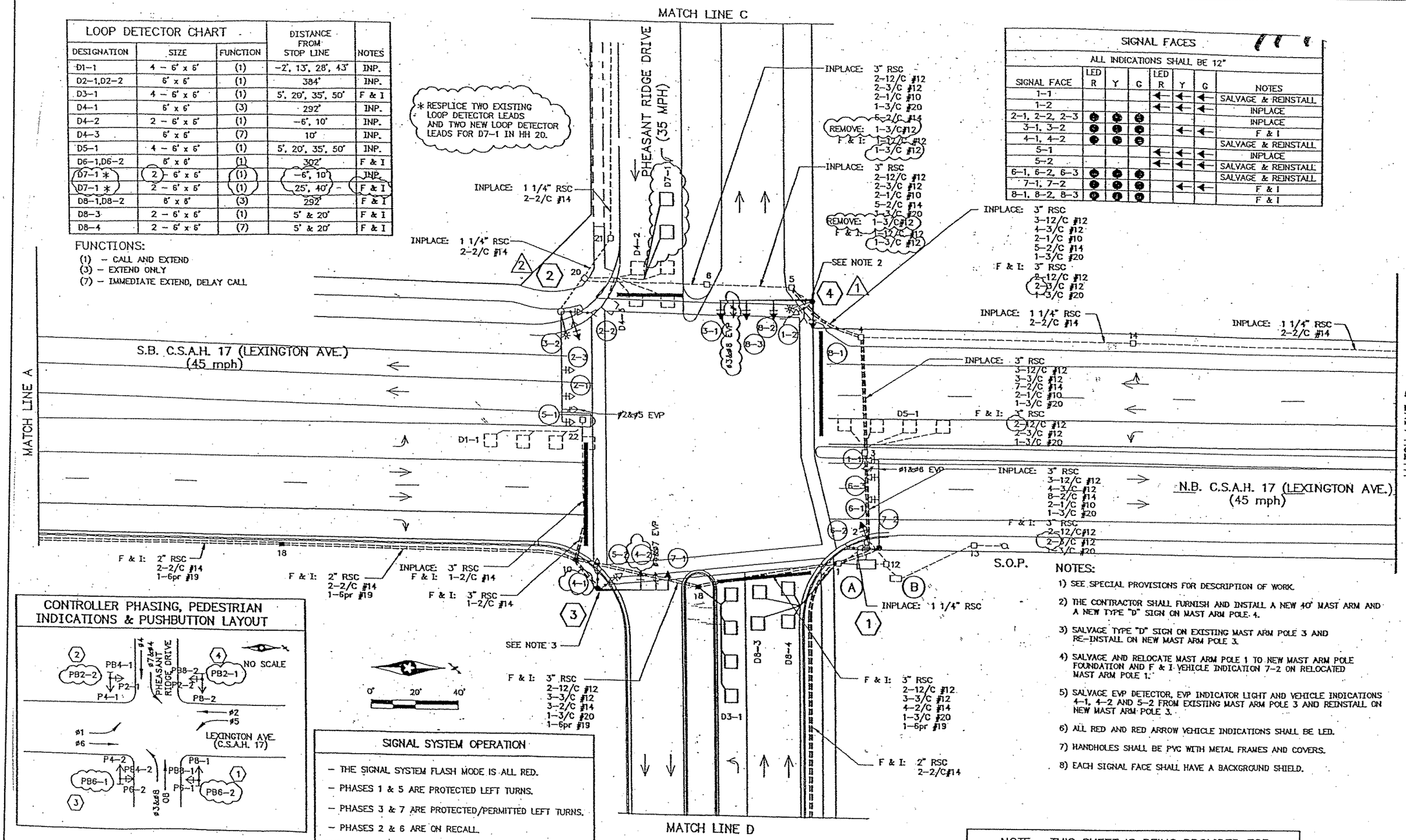
TRAFFIC SIGNAL SYSTEM "B" FIELD WIRING DIAGRAM
CSAH 17 (LEXINGTON AVENUE) AT CSAH 14 (MAIN STREET/125TH AVE)

FILE NO. AANOKC0305.00
SIGNAL SHEET 22A OF 28
145/226

LOOP DETECTOR CHART				
DESIGNATION	SIZE	FUNCTION	DISTANCE FROM STOP LINE	NOTES
D1-1	4 - 6' x 6'	(1)	-2', 13', 28', 43'	INP.
D2-1,D2-2	6' x 6'	(1)	384'	INP.
D3-1	4 - 6' x 6'	(1)	5', 20', 35', 50'	F & I
D4-1	6' x 6'	(3)	292'	INP.
D4-2	2 - 6' x 6'	(1)	-6', 10'	INP.
D4-3	6' x 6'	(7)	10'	INP.
D5-1	4 - 6' x 6'	(1)	5', 20', 35', 50'	INP.
D6-1,D6-2	6' x 6'	(1)	302'	F & I
D7-1 *	2 - 6' x 6'	(1)	-6', 10'	INP.
D7-1 *	2 - 6' x 6'	(1)	25', 40'	F & I
D8-1,D8-2	6' x 6'	(3)	292'	F & I
D8-3	2 - 6' x 6'	(1)	5' & 20'	F & I
D8-4	2 - 6' x 6'	(7)	5' & 20'	F & I

FUNCTIONS:
(1) - CALL AND EXTEND
(3) - EXTEND ONLY
(7) - IMMEDIATE EXTEND, DELAY CALL

SIGNAL FACES							
ALL INDICATIONS SHALL BE 12"							
SIGNAL FACE	LED R	Y	G	LED R	Y	G	NOTES
1-1				←	←	←	SALVAGE & REINSTALL
1-2				←	←	←	INPLACE
2-1, 2-2, 2-3	●	●	●				INPLACE
3-1, 3-2	●	●	●		←	←	F & I
4-1, 4-2	●	●	●				SALVAGE & REINSTALL
5-1				←	←	←	INPLACE
5-2				←	←	←	SALVAGE & REINSTALL
6-1, 6-2, 6-3	●	●	●				SALVAGE & REINSTALL
7-1, 7-2	●	●	●		←	←	F & I
8-1, 8-2, 8-3	●	●	●				F & I



CONTROLLER PHASING, PEDESTRIAN INDICATIONS & PUSHBUTTON LAYOUT

SIGNAL SYSTEM OPERATION

- THE SIGNAL SYSTEM FLASH MODE IS ALL RED.
- PHASES 1 & 5 ARE PROTECTED LEFT TURNS.
- PHASES 3 & 7 ARE PROTECTED/PERMITTED LEFT TURNS.
- PHASES 2 & 6 ARE ON RECALL.

NOTES:

1) SEE SPECIAL PROVISIONS FOR DESCRIPTION OF WORK.
2) THE CONTRACTOR SHALL FURNISH AND INSTALL A NEW 40' MAST ARM AND A NEW TYPE "D" SIGN ON MAST ARM POLE 4.
3) SALVAGE TYPE "D" SIGN ON EXISTING MAST ARM POLE 3 AND RE-INSTALL ON NEW MAST ARM POLE 3.
4) SALVAGE AND RELOCATE MAST ARM POLE 1 TO NEW MAST ARM POLE FOUNDATION AND F & I VEHICLE INDICATION 7-2 ON RELOCATED MAST ARM POLE 1.
5) SALVAGE EVP DETECTOR, EVP INDICATOR LIGHT AND VEHICLE INDICATIONS 4-1, 4-2 AND 5-2 FROM EXISTING MAST ARM POLE 3 AND REINSTALL ON NEW MAST ARM POLE 3.
6) ALL RED AND RED ARROW VEHICLE INDICATIONS SHALL BE LED.
7) HANDHOLES SHALL BE PVC WITH METAL FRAMES AND COVERS.
8) EACH SIGNAL FACE SHALL HAVE A BACKGROUND SHIELD.

NOTE: THIS SHEET IS BEING PROVIDED FOR INFORMATIONAL PURPOSES ONLY.

S.P. 02-617-13
S.P. 106-020-23

DRAWN BY: JMG
DESIGNER: JMG
CHECKED BY: JMG
DESIGN TEAM

NO.	BY	DATE	REVISIONS

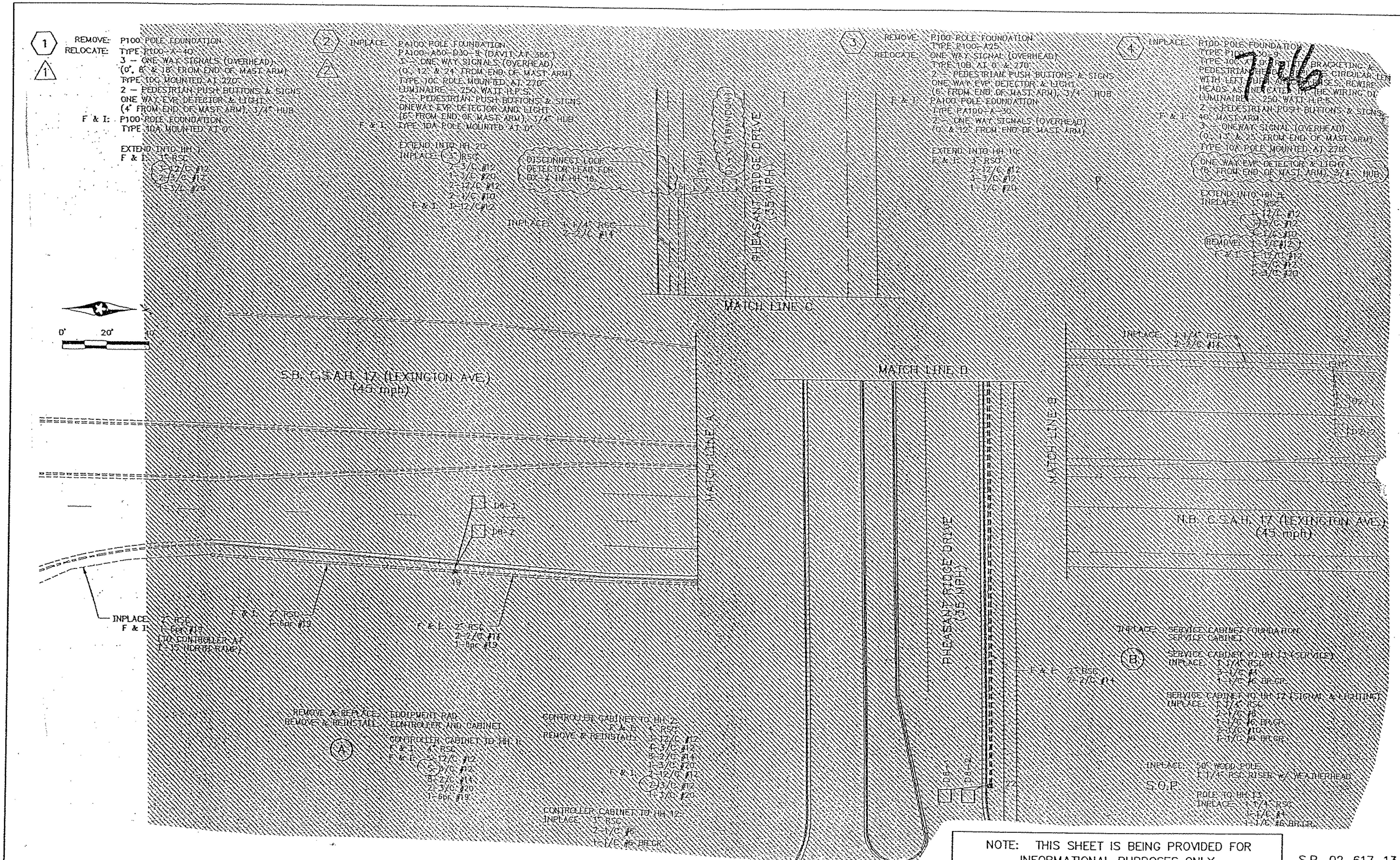
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
Date: October 9, 2003 Name: John M. Gray, P.E. Lic. No. 22457

SEH®
PHONE: (651) 490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

ANOKA COUNTY, MINNESOTA
CITY OF BLAINE

INPLACE SIGNAL SYSTEM FOR INFORMATION ONLY
CSAH 17 (LEXINGTON AVENUE) AT PHEASANT RIDGE DRIVE

FILE NO. AANOKC0305.00
SIGNAL SHEET 23 OF 28
146/226



NOTE: THIS SHEET IS BEING PROVIDED FOR INFORMATIONAL PURPOSES ONLY.

S.P. 02-617-13
S.P. 106-020-23

DRAWN BY: JMG	NO.	BY	DATE	REVISIONS
DESIGNER: JMG				
CHECKED BY: JMG				
DESIGN TEAM				

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
Date: October 9, 2003 Name: John M. Gray, P.E. Lic. No. 22457

SEH
PHONE: (651) 490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

ANOKA COUNTY, MINNESOTA
CITY OF BLAINE

INPLACE SIGNAL SYSTEM
FOR INFORMATION ONLY
CSAH 17 (LEXINGTON AVENUE) AT PHEASANT RIDGE DRIVE

FILE NO. AANOKC0305.00
SIGNAL SHEET 24 OF 28

147/226

CONTROLLER CABINET

CONDUCTOR COLOR CODING

12/C#12	R, O, BL, WH, R/BLK, O/BLK, BL/BLK, WH/BLK, BLK, BLK/WH, G/BLK, G	R, WH, BLK — 3/C#12
		CLR, BLK, BR. GR. — 2/C#14 SHEILDED CABLE
		BLK, WH — 2-1/C#6
		R, WH — 2-1/C#10
		YEL, BL, O — 3/C#20

NOTE: ALL TERMINAL BLOCK CONNECTIONS SHALL BE ARRANGED AS SPECIFIED ABOVE.

NOTES:

ALL ITEMS INPLACE UNLESS OTHERWISE NOTED.

▲ DENOTES F & I ITEMS.

* DENOTES SALVAGED AND REINSTALLED ITEMS.

INTERCONNECT TO NORTH RAMPS (SYS. D)

INTERCONNECT TO NORTH RAMPS (SYS D)

Ø4+Ø7 EVP DETECTOR

Ø4+Ø7 EVP LIGHT

*Ø1+Ø6 EVP DETECTOR

*Ø1+Ø6 EVP LIGHT

Ø3+Ø8 EVP DETECTOR

Ø3+Ø8 EVP LIGHT

Ø2+Ø5 EVP DETECTOR

Ø2+Ø5 EVP LIGHT

Ø1+Ø6 EVP DETECTOR

Ø1+Ø6 EVP LIGHT

Ø4+Ø7 EVP DETECTOR

Ø4+Ø7 EVP LIGHT

LUMINAIRE

ST. LHT. CHK. SW.

DISCONNECT DX-X IN HH 16

NOTE: THIS SHEET IS BEING PROVIDED FOR INFORMATIONAL PURPOSES ONLY.

S.P. 02-617-13
S.P. 106-020-23

DRAWN BY: JMG
DESIGNER: JMG
CHECKED BY: JMG
DESIGN TEAM

NO.	BY	DATE	REVISIONS

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

Date: October 9, 2003 Name: John M. Gray, P.E. Lic. No. 22457

SEH®
PHONE: (651) 490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

ANOKA COUNTY, MINNESOTA
CITY OF BLAINE

INPLACE SIGNAL SYSTEM FOR INFORMATION ONLY
CSAH 17 (LEXINGTON AVENUE) AT PHEASANT RIDGE DRIVE

FILE NO. AANOKC0305.00
SIGNAL SHEET 25 OF 28

148/226

LOOP DETECTORS				
NUMBER	SIZE (FT)	FUNCTION	LOCATION	NOTES
D1-1	4-6 X 6	1	5'	F & I
D2-1	6 X 6	1	330'	F & I
D2-2	2-6 X 6	7	5'	F & I
D4-1	6 X 6	1	400'	INPLACE
D4-2	2-6 X 6	1	5'	INPLACE
D4-3	2-6 X 6	1	5'	INPLACE
D5-1	4-6 X 6	1	5'	F & I
D6-1	6 X 6	1	400'	INPLACE
D6-2	2-6 X 6	1	5'	F & I
D8-1	6 X 6	1	400'	INPLACE
D8-2	2-6 X 6	7	5'	INPLACE

LOCATION = DISTANCE FROM STOP LINE TO DETECTOR

1 - CALL AND DETECT
7 - DELAY CALL, IMMEDIATE EXTEND

NOTES:

1. SEE SPECIAL PROVISIONS FOR COUNTY FURNISHED MATERIALS.
2. EACH SIGNAL FACE SHALL HAVE A BACKGROUND SHIELD.
3. SEE SPECIAL PROVISIONS FOR CONTRACTORS RESPONSIBILITY FOR LOCATION OF UTILITIES.
4. ALL SIGNAL FACES SHALL BE 12".
5. ALL VEHICLE SIGNAL INDICATIONS SHALL USE GLASS LENSES.
6. REMOVE, SALVAGE, AND REINSTALL VEHICLE SIGNAL INDICATIONS 2-1, 2-2, 4-1, 4-2, 4-3 AND 6-2.
7. THE CONTRACTOR SHALL FURNISH ONE CARD RACK MOUNTED EVP PHASE SELECTOR FOR THE CONTROLLER CABINET. THE COUNTY WILL INSTALL THE PHASE SELECTOR IN THE CABINET.
8. REMOVE, SALVAGE, AND REINSTALL EXISTING EVP DETECTORS AND INDICATOR LIGHTS.

SIGNAL FACES							
ALL INDICATIONS SHALL BE 12"							
SIGNAL FACE	R	Y	G	R	Y	G	NOTES
1-1, 1-2				←	←	←	F & I
2-1, 2-2	●	●	●				SALVAGE & REINSTALL
4-1, 4-2, 4-3	●	●	●				SALVAGE & REINSTALL
5-1, 5-2				←	←	←	F & I
6-1	●	●	●				INPLACE
6-2	●	●	●				SALVAGE & REINSTALL
8-1, 8-2, 8-3	●	●	●				INPLACE

(A) INPLACE: CONTROLLER AND CABINET

CONTROLLER CABINET TO HH 1:
INPLACE: 4" RSC
F & I: 5-12/C#12
1-2/C#14
4-3/C#12
4-3/C#20

CONTROLLER CABINET TO HH 16 (SERVICE):
INPLACE: 1-1/4" RSC
3-1/C#6

(3) INPLACE: 45' WOOD POLE
2 - DOWN GUYS, GUARDS AND ANCHORS
2 - TYPE 10A WOOD POLE MOUNTED AT 0° & 270°

METAL JUNCTION BOX
INPLACE: 1 1/4" RSC RISER BELOW JUNCTION BOX TO HH 8:
F & I: 3-2/C#14

INPLACE: 2" RSC RISER AND WEATHER HEAD ABOVE JUNCTION BOX
F & I: 1-12/C#12
3-2/C#14

(2) REMOVE & REPLACE: TYPE 10A POLE MOUNTED AT 0° (1-2)
REMOVE: 45' WOOD POLE
SALVATE & REINSTALL: TYPE 10A POLE MOUNTED AT 270° (4-1)
F & I: 45' WOOD POLE
2 - CONCRETE BASE FOR ANCHORS
2-DOWNGUYS, GUARDS AND ANCHORS
METAL JUNCTION BOX:
2" RSC RISER BELOW JUNCTION BOX TO HH 5:
3-2/C#14
2" RSC RISER AND WEATHERHEAD ABOVE JUNCTION BOX
1-12/C#12
3-2/C#14

(B) INPLACE: SERVICE CABINET FOUNDATION

SERVICE CABINET TO HH 17:
INPLACE: 2" RSC
3-1/C#6

SERVICE CABINET TO HH 16 (SERVICE):
INPLACE: 1 1/4" RSC
3-1/C#6

SERVICE CABINET TO HH 1 (LIGHTING):
INPLACE: 1 1/4" RSC
F & I: 2-3/C#12 (LUM)

S.O.P. INPLACE: WOOD POLE
2" RSC RISER AND WEATHERHEAD
INPLACE: 3-1/C#6

POLE TO HH 17:
INPLACE: 2" RSC
3-1/C#6

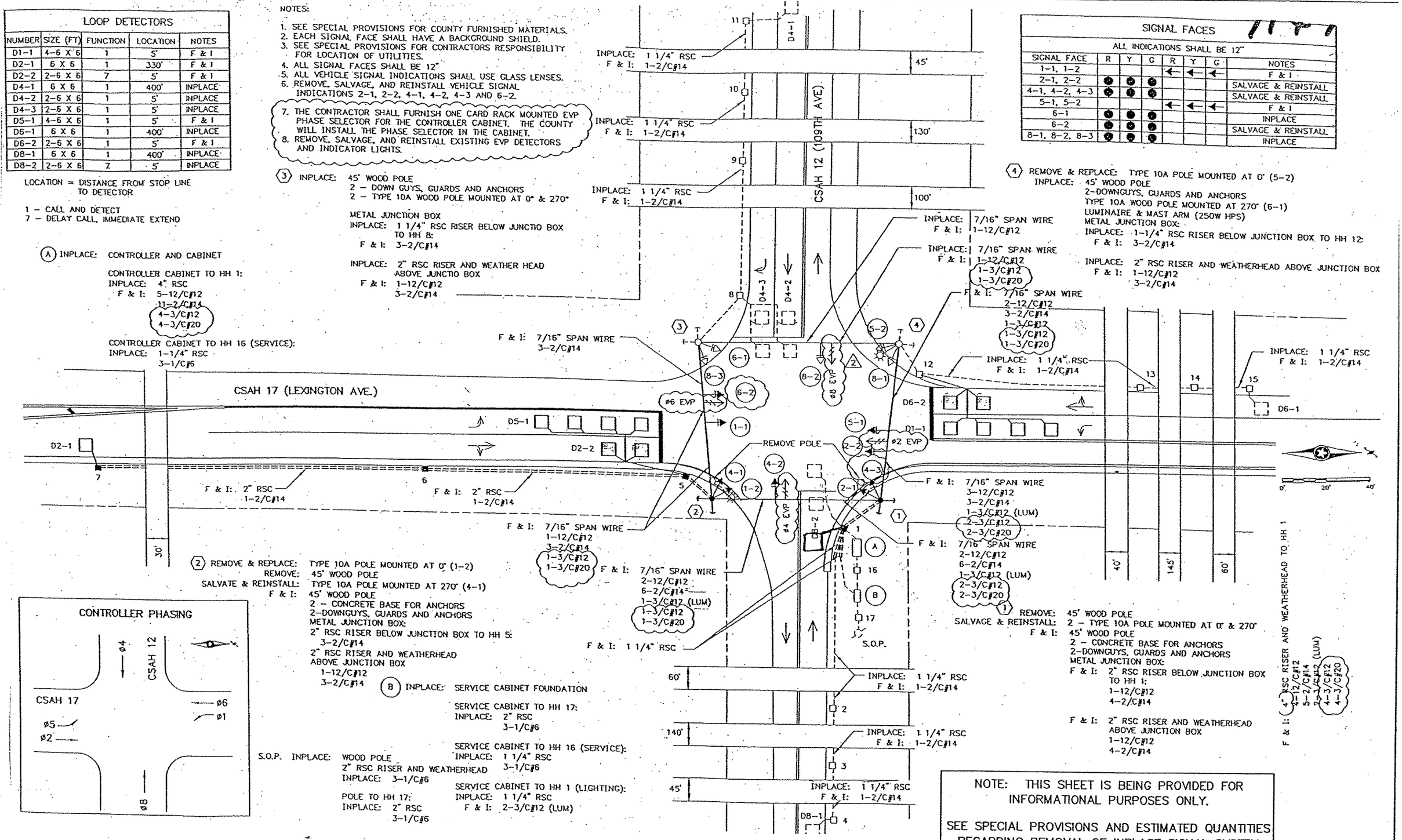
(4) REMOVE & REPLACE: TYPE 10A POLE MOUNTED AT 0° (5-2)
INPLACE: 45' WOOD POLE
2-DOWNGUYS, GUARDS AND ANCHORS
TYPE 10A WOOD POLE MOUNTED AT 270° (6-1)
LUMINAIRE & MAST ARM (250W HPS)
METAL JUNCTION BOX:
INPLACE: 1-1/4" RSC RISER BELOW JUNCTION BOX TO HH 12:
F & I: 3-2/C#14

INPLACE: 2" RSC RISER AND WEATHERHEAD ABOVE JUNCTION BOX
F & I: 1-12/C#12
3-2/C#14

(1) REMOVE: 45' WOOD POLE
SALVAGE & REINSTALL: 2 - TYPE 10A POLE MOUNTED AT 0° & 270°
F & I: 45' WOOD POLE
2 - CONCRETE BASE FOR ANCHORS
2-DOWNGUYS, GUARDS AND ANCHORS
METAL JUNCTION BOX:
F & I: 2" RSC RISER BELOW JUNCTION BOX TO HH 1:
1-12/C#12
4-2/C#14

F & I: 2" RSC RISER AND WEATHERHEAD ABOVE JUNCTION BOX
1-12/C#12
4-2/C#14

F & I: (4" RSC RISER AND WEATHERHEAD TO HH 1
4-12/C#12
5-2/C#14
2-3/C#12 (LUM)
4-3/C#12
4-3/C#20)



CONTROLLER PHASING

NOTE: THIS SHEET IS BEING PROVIDED FOR INFORMATIONAL PURPOSES ONLY.

SEE SPECIAL PROVISIONS AND ESTIMATED QUANTITIES REGARDING REMOVAL OF INPLACE SIGNAL SYSTEM (MEASURED SEPARATELY FROM ITEM NO. 2565.511).

S.P. 02-617-13
S.P. 106-020-23

DRAWN BY: JMG
DESIGNER: JMG
CHECKED BY: JMG
DESIGN TEAM

NO.	BY	DATE	REVISIONS

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
Date: October 9, 2003
Name: John M. Gray, P.E.
Lic. No. 22457

SEH®
PHONE: (651) 490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

ANOKA COUNTY, MINNESOTA
CITY OF BLAINE

INPLACE SIGNAL SYSTEM "A"
FOR INFORMATION ONLY
CSAH 17 (LEXINGTON AVENUE) AT CSAH 12 (109TH AVENUE NE)

FILE NO. AANOKC0305.00
SIGNAL SHEET 26 OF 28

149/226

NOTES:

1) LOCATION OF CONTROLLER CABINET, SERVICE CABINET, LOOP DETECTORS, POLE BASES AND HANDHOLES SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER.

2) EACH SIGNAL FACE SHALL BE 12"-3 SECTION R-Y-G, EXCEPT THAT SIGNAL FACES (1-1), (1-2), (3-1), (2-1), (2-2), (7-1) AND (7-2) SHALL BE 12"-3 SECTION RLTA-YLTA-GLTA.

3) SIGNAL SYSTEM FLASH MODE SHALL BE ALL RED.

4) EACH SIGNAL FACE SHALL HAVE BACKGROUND SHIELD.

5) EACH PEDESTRIAN INDICATION SHALL BE 12"x12".

6) EACH LUMINAIRE SHALL INCLUDE PHOTOELECTRIC CELL AND STREET LIGHT CHECK SWITCH.

7) SEE SPECIAL PROVISIONS AND DETAILS FOR ANOKA COUNTY SERVICE CABINET INFORMATION.

8) SEE SPECIAL PROVISIONS FOR COUNTY FURNISHED MATERIALS.

9) LOOP DETECTOR WIRES SHALL BE CROSS-LINKED POLYETHYLENE (XLP) IN 1"N.M.C. SEE SPECIAL PROVISIONS AND DETAILS.

10) EACH HANDHOLE SHALL BE CONCRETE HANDHOLE WITH TYPE "C" COVER PER Mn/DOT STANDARD PLATE NO.8117F.

11) SEE SPECIAL PROVISIONS AND DETAILS REGARDING TYPE "D" SIGN PANELS TO BE FURNISHED AND INSTALLED BY CONTRACTOR (INCIDENTAL TO ITEM NO.2565.511)

CONTRACTOR SHALL FURNISH & INSTALL THE FOLLOWING MATERIALS ON MAST ARMS 1,2,3 AND 4:

ONE WAY EVP DETECTOR AND INDICATOR LIGHT AT APPROX. 4 FEET FROM THE LEFT END OF THE MAST ARM.

(3) TYPE A100-A-45-D30-9 (DAVIT AT 0')
A100 POLE FOUNDATION
3-ONE WAY SIGNALS-OVERHEAD
2-TYPE 108-POLE MOUNTED 90° AND 180° MID MAST ARM MOUNTS AT 12' AND 25'
2-PEDESTRIAN PUSH BUTTONS
TYPE "D" SIGN PANEL (108"x18")-OVERHEAD
LUMINAIRE-200 WATT H.P.S.
EXTEND INTO H.H.18:
3"R.S.C.
3-12/c#12
1-3/c#12
2-1/c#10

3"R.S.C.
3-12/c#12
1-3/c#12
4-2/c#14
2-1/c#10

F & I ONE WAY EVP DETECTOR AND INDICATOR LIGHT (ø6,1)-OVERHEAD
A1-3/c#12
A1-3/c#20

F & I A1-3/c#12 A1-3/c#20

1 1/4"R.S.C.
1-2/c#14

LEXINGTON AVENUE (C.S.A.H.17) (55 MPH)

ø8,3 EVP

F & I ONE WAY EVP DETECTOR AND INDICATOR LIGHT (ø8,3)-OVERHEAD
A1-3/c#12
A1-3/c#20

(4) TYPE A100-A-45-D30-9 (DAVIT AT 0')
A100-POLE FOUNDATION
2-ONE WAY SIGNALS-OVERHEAD
2-TYPE 108-POLE MOUNTED 90° AND 180° MID MAST ARM MOUNTS AT 12' AND 25'
2-PEDESTRIAN PUSH BUTTONS
TYPE "D" SIGN PANEL (66"x18")-OVERHEAD
LUMINAIRE-200 WATT H.P.S.
EXTEND INTO H.H.13:
3"R.S.C.
3-12/c#12
1-3/c#12
2-1/c#10

3"R.S.C.
3-12/c#12
1-3/c#12
5-2/c#14
2-1/c#10

F & I A1-3/c#12 A1-3/c#20

BITUMINOUS WALK

CONTRACTOR SHALL FURNISH AND INSTALL NEW LED RED SIGNAL INDICATIONS IN EACH INPLACE SIGNAL FACE WITH EVP SYSTEM INSTALLATION. SEE SPECIAL PROVISIONS.

CONTRACTOR SHALL SALVAGE ALL INPLACE PEDESTRIAN SIGNAL INDICATIONS (WITH ATTACHED POLE MOUNTED BRACKETING) AND INPLACE PED INSTRUCTION SIGNS, AND SHALL FURNISH AND INSTALL NEW ONE SECTION HAND/WALKING PERSON INDICATIONS, R10-4b PED INSTRUCTION SIGNS, AND POLE MOUNTED BRACKETING AT EACH LOCATION. HAND INDICATIONS SHALL BE LED. SEE SPECIAL PROVISIONS AND DETAILS.

(A) CONTROLLER AND CABINET (FURNISHED BY OTHERS)
CABINET FOUNDATION
EXTEND INTO H.H.22:
METERED SIGNAL SERVICE
1 1/4"R.S.C.
3-1/c#6
EXTEND INTO H.H.1:
4"R.S.C.
6-12/c#12
2-3/c#12
10-2/c#14
EXTEND INTO H.H.11:
4"R.S.C.
6-12/c#12
2-3/c#12
10-2/c#14
STUB OUT 3"R.S.C. AND CAP (FOR FUTURE USE)

F & I A2-3/c#12 A2-3/c#20

F & I A2-3/c#12 A2-3/c#20

F & I A2-3/c#12 A2-3/c#20

(B) SERVICE CABINET
CABINET FOUNDATION
STUB OUT 2"R.S.C. (FOR SERVICE BY OTHERS)
EXTEND INTO H.H.22:
METERED SIGNAL SERVICE
1 1/4"R.S.C.
3-1/c#6
EXTEND INTO H.H.11:
UNMETERED STREET LIGHT SERVICE
2"R.S.C.
8-1/c#10
BETWEEN H.H.1 AND H.H.11:
2"R.S.C.
4-1/c#10

SIGNAL FACES

SIGNAL FACE	SIGNAL INDICATIONS ARE 12"					
	LED R	Y	G	LED R	Y	G
1-1, 1-2				←	←	←
2-1, 2-2, 2-3	•	•	•			
3-1, 3-2				←	←	←
4-1, 4-3	•	•	•			
5-1, 5-2				←	←	←
6-1, 6-2, 6-3	•	•	•			
7-1, 7-2				←	←	←
8-1, 8-3	•	•	•			

BITUMINOUS WALK

H.H.18 H.H.17 H.H.16 H.H.15 H.H.14 H.H.13 H.H.12 H.H.11 H.H.10 H.H.9 H.H.8 H.H.7 H.H.6 H.H.5 H.H.4 H.H.3 H.H.2 H.H.1 H.H.22

D7-1 D6-2 D6-3 D6-4 D5-1 D4-2 D4-3 D4-4 D3-1 D2-4 D2-3 D2-2 D1-1 D8-2 D8-3 D8-4

ø6,1 EVP

ø2,5 EVP

ø4,7 EVP

MAIN STREET (C.S.A.H.14) (55 MPH)

LEXINGTON AVENUE (C.S.A.H.17) (55 MPH)

MATCH LINE - STATION 188+42

MATCH LINE - STATION 192+42

MATCH LINE - STATION 598+25

F & I ONE WAY EVP DETECTOR AND INDICATOR LIGHT (ø4,7)-OVERHEAD
A1-3/c#12
A1-3/c#20

(2) TYPE A100-A-45-D30-9 (DAVIT AT 0')
A100 POLE FOUNDATION
2-ONE WAY SIGNALS-OVERHEAD
2-TYPE 108-POLE MOUNTED 90° AND 180° MID MAST ARM MOUNTS AT 12' AND 25'
2-PEDESTRIAN PUSH BUTTONS
TYPE "D" SIGN PANEL (66"x18")-OVERHEAD
LUMINAIRE-200 WATT H.P.S.
EXTEND INTO H.H.6:
3"R.S.C.
3-12/c#12
1-3/c#12
2-1/c#10

3"R.S.C.
3-12/c#12
1-3/c#12
5-2/c#14
2-1/c#10

F & I A1-3/c#12 A1-3/c#20

(1) TYPE A100-A-45-D30-9 (DAVIT AT 0')
A100 POLE FOUNDATION
3-ONE WAY SIGNALS-OVERHEAD
2-TYPE 108-POLE MOUNTED 90° AND 180° MID MAST ARM MOUNTS AT 12' AND 25'
2-PEDESTRIAN PUSH BUTTONS
TYPE "D" SIGN PANEL (108"x18")-OVERHEAD
LUMINAIRE-200 WATT H.P.S.
EXTEND INTO H.H.1:
3"R.S.C.
3-12/c#12
1-3/c#12
2-1/c#10

3"R.S.C.
3-12/c#12
1-3/c#12
6-2/c#14
2-1/c#10

F & I A1-3/c#12 A1-3/c#20

1 1/4"R.S.C.
1-2/c#14

SERVICE CABINET SEE (B)

CONTROLLER AND CABINET SEE (A)

F & I ONE WAY EVP DETECTOR AND INDICATOR LIGHT (ø2,5)-OVERHEAD
A1-3/c#12
A1-3/c#20

CONTROLLER PHASING, PEDESTRIAN INDICATIONS AND PUSH BUTTONS

ø4 ø7 ø5 ø2 ø6 ø1 ø3 ø8

PB4-1 PB6-2 P6-2 P6-1 PB8-2 PB6-1 P4-1 P8-2 C.S.A.H.14

P4-2 PB2-1 P2-1 P2-2 PB2-2 PB4-2 P8-1 PB8-1 C.S.A.H.17

NOTE: THIS SHEET IS BEING PROVIDED FOR INFORMATIONAL PURPOSES ONLY.

SEE SPECIAL PROVISIONS AND ESTIMATED QUANTITIES REGARDING REMOVAL OF INPLACE SIGNAL SYSTEM (MEASURED SEPARATELY FROM ITEM NO. 2565.511).

S.P. 02-617-13
S.P. 106-020-23

NOTE: CONTRACTOR SHALL CHECK EACH MAST ARM POLE FOR HUBS AND SHALL FURNISH AND INSTALL ANY HUBS THAT ARE NEEDED PRIOR TO BEGINNING ANY OTHER EVP WORK. SEE SPECIAL PROVISIONS.

LOOP DETECTORS

NUMBER	SIZE(FT.)	LOCATION	FUNCTION
D1-1	MULTIPLE	5'	1
D2-1	2-6x6	405'	1
D2-2	6x6	5'	6
D2-3	6x6	5'	4
D2-4	6x6	5'	4
D3-1	MULTIPLE	5'	1
D4-1	2-6x6	405'	1
D4-2	6x6	5'	6
D4-3	6x6	5'	6
D4-4	6x6	5'	4
D5-1	MULTIPLE	5'	1
D6-1	2-6x6	405'	1
D6-2	6x6	5'	6
D6-3	6x6	5'	4
D6-4	6x6	5'	4
D7-1	MULTIPLE	5'	1
D8-1	2-6x6	405'	1
D8-2	6x6	5'	6
D8-3	6x6	5'	6
D8-4	6x6	5'	4

NOTE: LOCATION = DISTANCE FROM STOP BAR TO LOOP DETECTOR.

FUNCTIONS:
1) CALL AND EXTEND
2) CALL ONLY
3) EXTEND ONLY
4) CALL ONLY DENSITY
5) DELAYED CALL ONLY
6) DELAYED CALL ONLY DENSITY
7) DELAYED CALL-IMMEDIATE EXTEND
8) CARRY OVER (STRETCH)
9) ADVISORY DETECTOR SAMPLING DETECTOR
11) SPECIAL DETECTOR

DRAWN BY: JMG
DESIGNER: JMG
CHECKED BY: JMG
DESIGN TEAM

NO.	BY	DATE	REVISIONS

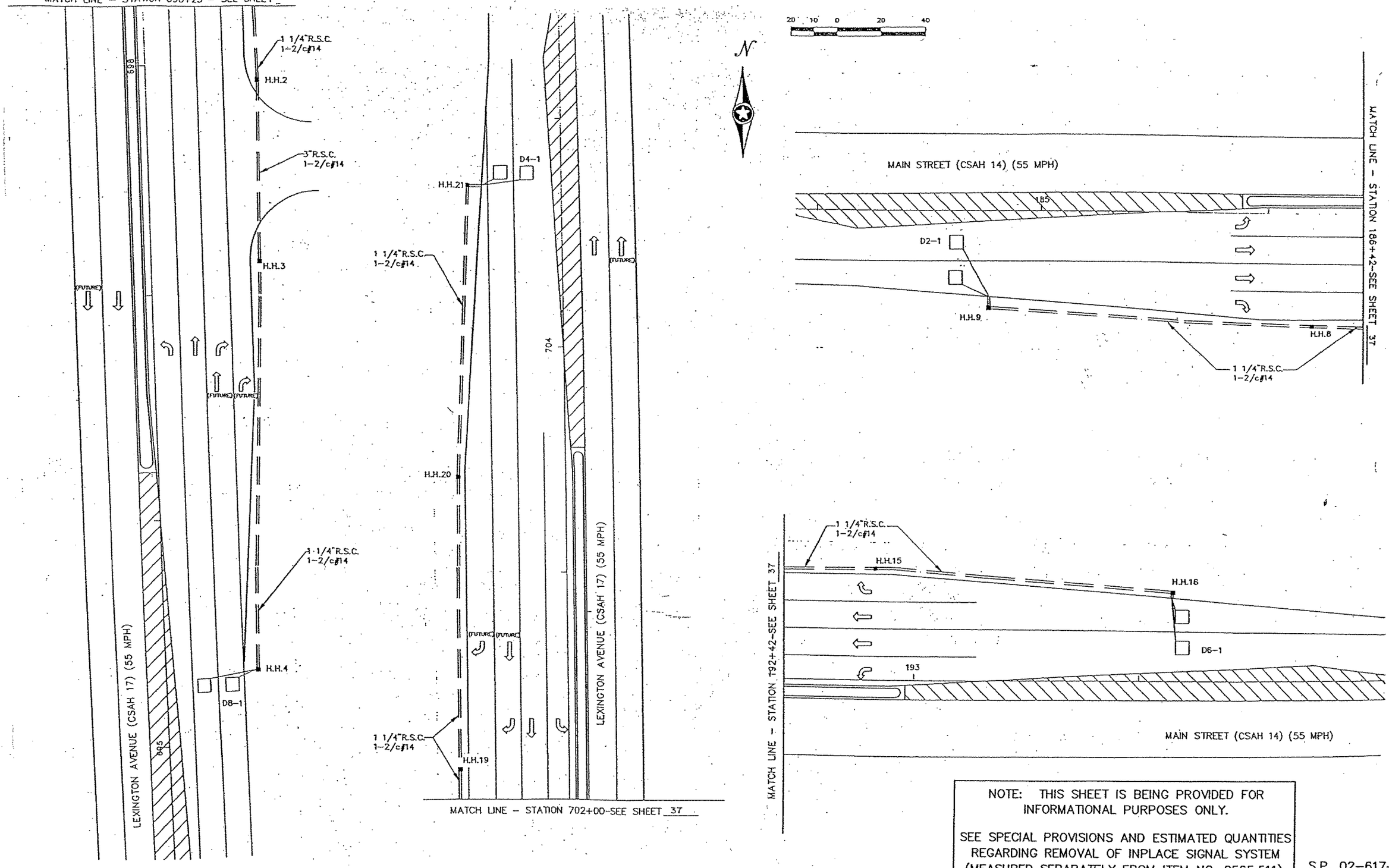
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
Date: October 9, 2003
Name: John M. Gray, P.E.
Lic. No. 22457

SEH®
PHONE: (651) 490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

ANOKA COUNTY, MINNESOTA
CITY OF BLAINE

INPLACE SIGNAL SYSTEM "B"
FOR INFORMATION ONLY
CSAH 17 (LEXINGTON AVENUE) AT CSAH 14 (MAIN ST/125TH AVE NE)

FILE NO. AANOKC0305.00
SIGNAL SHEET 27 OF 28
150/226



NOTE: THIS SHEET IS BEING PROVIDED FOR INFORMATIONAL PURPOSES ONLY.

SEE SPECIAL PROVISIONS AND ESTIMATED QUANTITIES REGARDING REMOVAL OF INPLACE SIGNAL SYSTEM (MEASURED SEPARATELY FROM ITEM NO. 2565.511).

S.P. 02-617-13
S.P. 106-020-23

DRAWN BY: JMG
DESIGNER: JMG
CHECKED BY: JMG
DESIGN TEAM

NO.	BY	DATE	REVISIONS

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

Name: John M. Gray, P.E.
Date: October 9, 2003 Lic. No. 22457

SEH®
PHONE: (651) 490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

ANOKA COUNTY, MINNESOTA
CITY OF BLAINE

INPLACE SIGNAL SYSTEM "B"
FOR INFORMATION ONLY
CSAH 17 (LEXINGTON AVENUE) AT CSAH 14 (MAIN ST/125TH AVE NE)

FILE NO. AANOKC0305.00
SIGNAL SHEET 28 OF 28

151/226

LEGEND

SOD (TYPE LAWN)

BLANKET (CATEGORY 3)

(R) Place RipRap at Apron end
See STD. PLATE 3133

(B) PLACE BLANKET (CATEGORY 3)
AT APRON END
See STD. PLATE 9102

SILT FENCE (TYPE HEAVY DUTY)

SEED MIXTURE 240
COMMERCIAL FERT. ANALYSIS 22-5-10
MULCH MATERIAL TYPE 3
DISK ANCHORING

SEED MIXTURE 350
COMMERCIAL FERT. ANALYSIS 18-1-8
DISK ANCHORING
MULCH MATERIAL - TYPE 3

SEED MIXTURE 310
COMMERCIAL FERT. ANALYSIS 18-1-8
DISK ANCHORING
MULCH MATERIAL TYPE 3

SEED MIXTURE 28B
COMMERCIAL FERT. ANALYSIS 18-1-8
DISK ANCHORING
MULCH MATERIAL TYPE 3

PHEASANT RIDGE DRIVE

N

0 25 50 100
(IN FEET)

SODDING
2829 SQ YDS

36+00

40+00

36+00

40+00

CB-104 CB-108 CB-112 CB-116

45+00 50+00

CB-103 CB-107 CB-111 CB-115

CB-102 45+00 CB-106 CB-110 50+00

CB-101 CB-105 CB-109 CB-113

SODDING
828 SQ YDS

(R) APR-140

MATCH LINE STA. 51+00

SEEDING/DISC ANC.
0.91 ACRES
SEED 240
68 LBS
FERT. 22-5-10
364 LBS
MULCH TYP 3
1.82 TONS

N

0 25 50 100
(IN FEET)

C.S.A.H. 12
109TH AVE. NE

CB-120 CB-124 CB-128 CB-132 CB-135 CB-204

55+00 60+00

APR-117A

SEED 240
76 LBS
FERT. 22-5-10
404 LBS
MULCH TYP 3
2.02 TONS
SEEDING/DISC ANC.
1.01 ACRES

55+00 60+00

CB-117 CB-121 CB-125 CB-129 CB-133 CB-201

CB-208 CB-212

65+00

65+00

CB-205 CB-209

SEEDING/DISC ANC.
1.26 ACRES
SEED 240
95 LBS
FERT. 22-5-10
508 LBS
MULCH TYP 3
2.54 TONS

RAPID STABILIZATION AREA A
(1 ACRE) POND 1
METHOD 1 & 5

MATCH LINE STA. 51+00

MATCH LINE STA. 66+00

20 20

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-13\Plan\80-TURF ESTABLISHMENT.dwg 09/24/2003 09:08:07 AM CDT

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

PRINT NAME: PETER M. LEMKE

SIGNATURE: Peter M Lemke

DATE: 9-26-2003 REG. NO. 40118

DRAWN BY JJF DATE 8/01/03

DESIGN BY PML DATE 7/28/03

CHECKED BY PML DATE 8/04/03

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13

STATE PROJECT NO. 106-020-23

STATE AID PROJECT NO.

COUNTY PROJECT NO.

TURF ESTABLISHMENT AND EROSION CONTROL

STA. 36+77.50 TO 66+00

Sheet 152 of 226 Sheets

SEEDING/DISC ANC.
2.52 ACRES
SEED 240
189 LBS
FERT. 22-5-10
1008 LBS
MULCH TYP 3
5.04 TONS

N

0 25 50 100
(IN FEET)

MATCH LINE STA. 66+00

CB-212 CB-216 CB-220 CB-224 CB-228 CB-232 CB-304

70+00 75+00 80+00

APR-220 SEED 240 144 LBS | FERT. 22-5-10 768 LBS | MULCH TYP 3 3.84 TONS | SEEDING/DISC ANC. 1.92 ACRES

CB-209 CB-213 CB-217 CB-221 CB-225 CB-229 CB-301

SEEDING/DISC ANC.
0.91 ACRES
SEED 240
68 LBS
FERT. 22-5-10
364 LBS
MULCH TYP 3
1.82 TONS

APR-233 APR-241 MH-241

RAPID STABILIZATION AREA B
(0.83 ACRES) POND 2
METHOD 1 & 5

POND 2
SEEDING/DISC ANC. 0.83 ACRES | FERT. 18-1-8 100 LBS
SEED 310 30 LBS | MULCH TYP 3 1.66 TONS
SEED 350 39 LBS | BLANKET 816 SQ YDS

LOCHNESS PARK

APR-242

SEEDING/DISC ANC.
0.69 ACRES
SEED 240
52 LBS
FERT. 22-5-10
276 LBS
MULCH TYP 3
1.38 TONS

MATCH LINE STA. 81+00

LEGEND

- SOD (TYPE LAWN)
- BLANKET (CATEGORY 3)
- (R) Place RipRap at Apron end See STD. PLATE 3133
- (B) PLACE BLANKET (CATEGORY 3) AT APRON END See STD. PLATE 9102
- SILT FENCE (TYPE HEAVY DUTY)
- SEED MIXTURE 240 COMMERCIAL FERT. ANALYSIS 22-5-10 MULCH MATERIAL TYPE 3 DISK ANCHORING
- SEED MIXTURE 350 COMMERCIAL FERT. ANALYSIS 18-1-8 DISK ANCHORING MULCH MATERIAL - TYPE 3
- SEED MIXTURE 310 COMMERCIAL FERT. ANALYSIS 18-1-8 DISK ANCHORING MULCH MATERIAL TYPE 3
- SEED MIXTURE 28B COMMERCIAL FERT. ANALYSIS 18-1-8 DISK ANCHORING MULCH MATERIAL TYPE 3

MATCH LINE STA. 81+00

FUTURE STREET

N

0 25 50 100
(IN FEET)

RAPID STABILIZATION AREA I
(0.75 ACRE) INLET 351,362&476
METHOD 4 & 5

APR-351 APR-362 APR-476 MH-476 MH-477

304 CB-308 CB-312 CB-316 CB-320 CB-324 CB-328 CB-332 CB-336 CB-340 CB-344

85+00 90+00 95+00

APR-302A APR-321A

301 CB-305 CB-309 CB-313 CB-317 CB-321 CB-325 CB-325A CB-329 CB-333 CB-337 CB-341

16' 16' 16'

RAPID STABILIZATION AREA C
(1.32 ACRES) POND 3
METHOD 1 & 5

POND 3
SEEDING/DISC ANC. 0.87 ACRES
SEED 310 26 LBS
SEED 350 46 LBS
FERT. 18-1-8 104 LBS
MULCH TYP 3 1.74 TONS
BLANKET 593 SQ YDS

APR-361 APR-360 MH-361

APR-350

RAPID STABILIZATION AREA H
(0.25 ACRE) INLET 350
METHOD 4 & 5

MATCH LINE STA. 96+00

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-13\Plan\80-TURF ESTABLISHMENT.dwg 09/24/2003 09:08:07 AM CDT

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

PRINT NAME: PETER M. LEMKE

SIGNATURE: Peter M. Lemke

DATE: 9-26-2003 REG. NO. 40118

DRAWN BY JJF DATE 08/01/03

DESIGN BY PML DATE 07/28/03

CHECKED BY PML DATE 08/04/03

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13

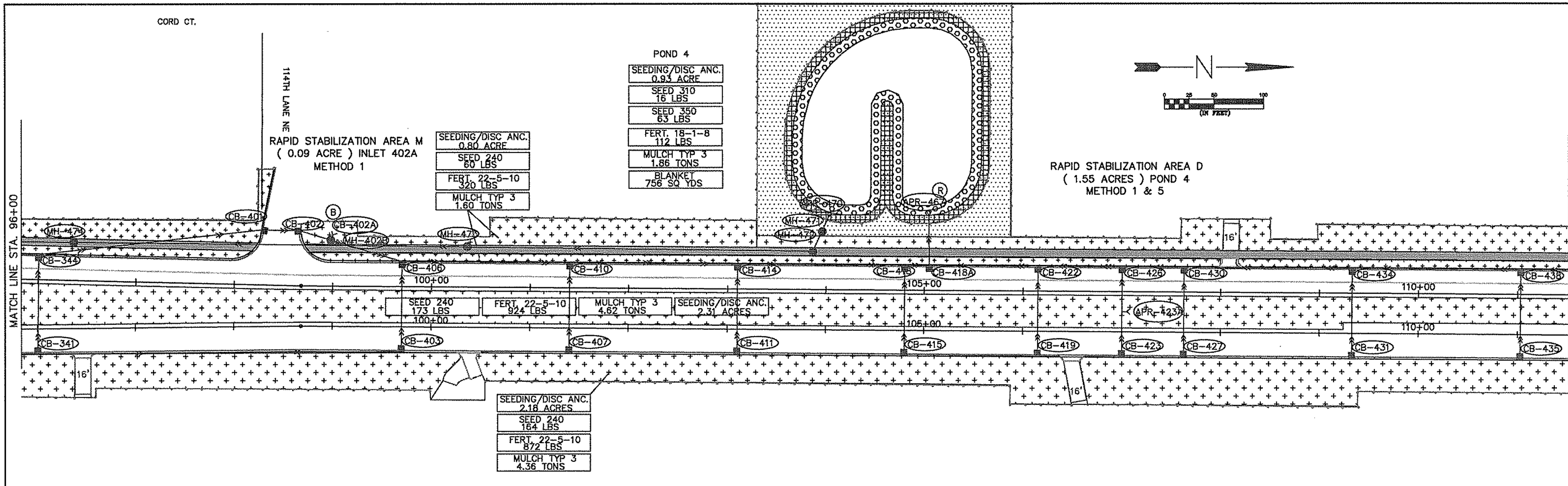
STATE PROJECT NO. 106-020-23

STATE AID PROJECT NO.

COUNTY PROJECT NO.

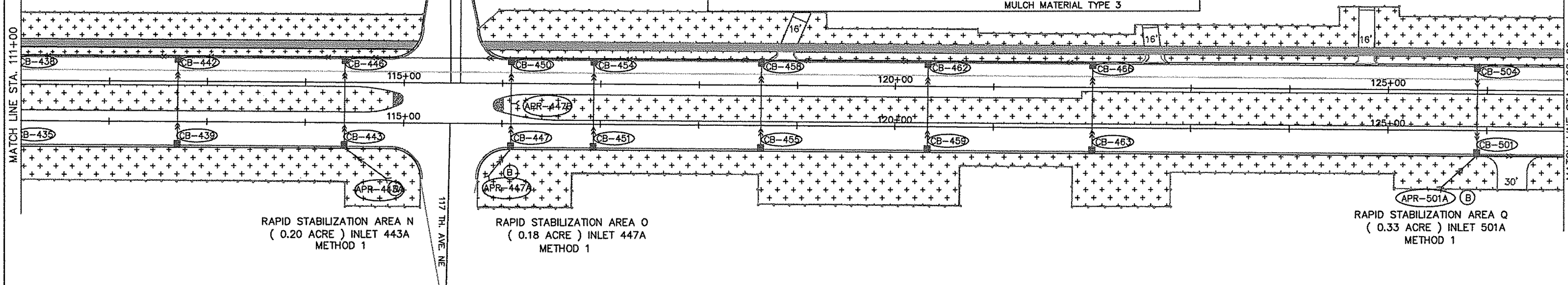
TURF ESTABLISHMENT AND EROSION CONTROL
STA. 66+00 TO 96+00

Sheet 153 of 226 Sheets


CORD CT.
114TH LANE NE
POND 4
SEEDING/DISC ANC. 0.93 ACRE
SEED 310 16 LBS
SEED 350 63 LBS
FERT. 18-1-8 112 LBS
MULCH TYP 3 1.86 TONS
BLANKET 756 SQ YDS
RAPID STABILIZATION AREA M (0.09 ACRE) INLET 402A METHOD 1
SEEDING/DISC ANC. 0.80 ACRE
SEED 240 60 LBS
FERT. 22-5-10 320 LBS
MULCH TYP 3 1.60 TONS
RAPID STABILIZATION AREA D (1.55 ACRES) POND 4 METHOD 1 & 5
MATCH LINE STA. 96+00
MATCH LINE STA. 111+00
MH-474
CB-344
CB-401
CB-402
CB-402A
MH-402B
MH-473
MH-472
MH-471
APR-467
CB-406
CB-410
CB-414
CB-418A
CB-422
CB-426
CB-430
CB-434
CB-438
100+00
105+00
110+00
SEED 240 173 LBS
FERT. 22-5-10 924 LBS
MULCH TYP 3 4.62 TONS
SEEDING/DISC ANC. 2.31 ACRES
APR-423A
CB-341
CB-403
CB-407
CB-411
CB-415
CB-419
CB-423
CB-427
CB-431
CB-435
16'
SEEDING/DISC ANC. 2.18 ACRES
SEED 240 164 LBS
FERT. 22-5-10 872 LBS
MULCH TYP 3 4.36 TONS

LEGEND

Symbol	Description	Symbol	Description
(hatched)	SOD (TYPE LAWN)	(+ +)	SEED MIXTURE 240 COMMERCIAL FERT. ANALYSIS 22-5-10 MULCH MATERIAL TYPE 3 DISK ANCHORING
(grid)	BLANKET (CATEGORY 3)	(dots)	SEED MIXTURE 350 COMMERCIAL FERT. ANALYSIS 18-1-8 DISK ANCHORING MULCH MATERIAL - TYPE 3
(R)	Place RipRap at Apron end See STD. PLATE 3133	(circles)	SEED MIXTURE 310 COMMERCIAL FERT. ANALYSIS 18-1-8 DISK ANCHORING MULCH MATERIAL TYPE 3
(B)	PLACE BLANKET (CATEGORY 3) AT APRON END See STD. PLATE 9102	(triangles)	SEED MIXTURE 28B COMMERCIAL FERT. ANALYSIS 18-1-8 DISK ANCHORING MULCH MATERIAL TYPE 3
(line)	SILT FENCE (TYPE HEAVY DUTY)		


117 TH. AVE NE
MATCH LINE STA. 111+00
MATCH LINE STA. 126+00
CB-438
CB-442
CB-446
CB-450
CB-454
CB-458
CB-462
CB-466
CB-504
115+00
120+00
125+00
APR-447B
CB-435
CB-439
CB-443
CB-447
CB-451
CB-455
CB-459
CB-463
CB-501
APR-443A
APR-447A
APR-501A
16'
30'
RAPID STABILIZATION AREA N (0.20 ACRE) INLET 443A METHOD 1
RAPID STABILIZATION AREA O (0.18 ACRE) INLET 447A METHOD 1
RAPID STABILIZATION AREA Q (0.33 ACRE) INLET 501A METHOD 1

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-13\Plan\80-TURF ESTABLISHMENT.dwg 09/24/2003 09:08:07 AM CDT

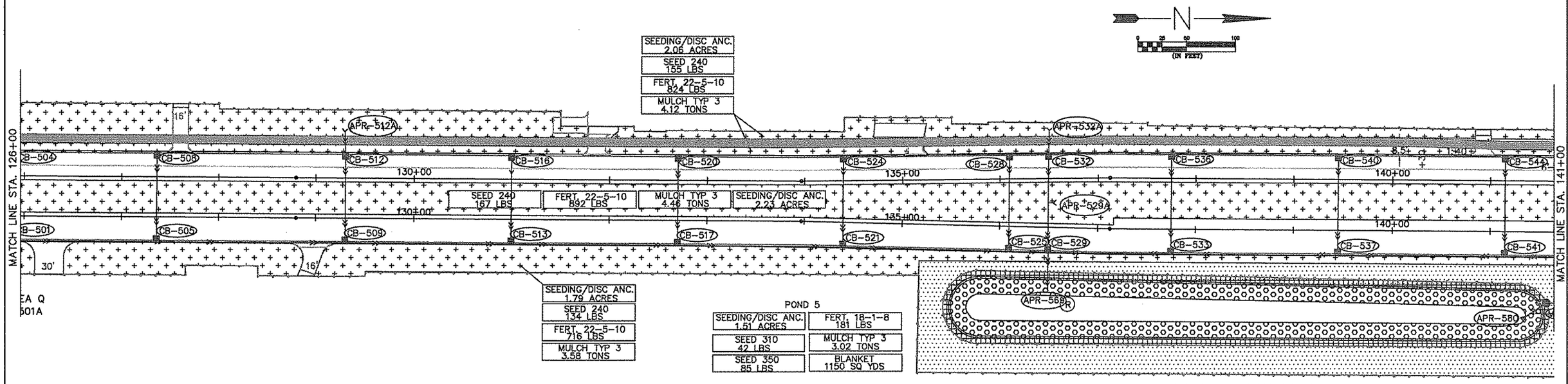
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
PRINT NAME: PETER M. LEMKE
SIGNATURE: Peter M Lemke
DATE: 9-26-2003 REG. NO. 40118

DRAWN BY JJF DATE 08/01/03
DESIGN BY PML DATE 07/28/03
CHECKED BY PML DATE 08/04/03

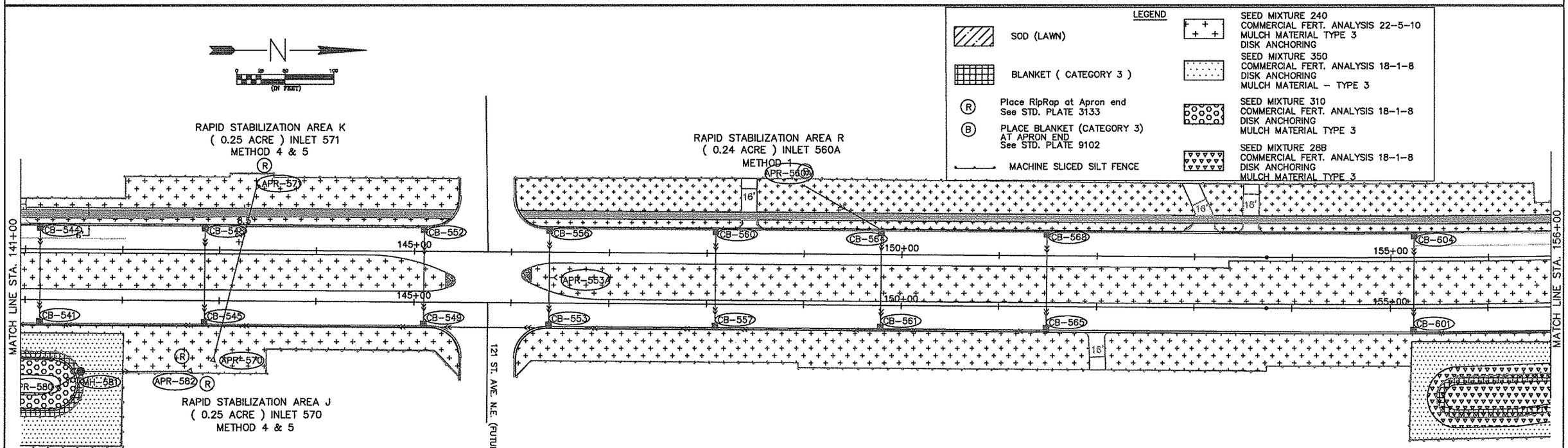
ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13
STATE PROJECT NO. 106-020-23
STATE AID PROJECT NO.
COUNTY PROJECT NO.

TURF ESTABLISHMENT AND EROSION CONTROL
STA. 96+00 TO 126+00



RAPID STABILIZATION AREA E
(1.80 ACRES) POND 5
METHOD 1 & 5



RAPID STABILIZATION AREA K
(0.25 ACRE) INLET 571
METHOD 4 & 5

RAPID STABILIZATION AREA J
(0.25 ACRE) INLET 570
METHOD 4 & 5

RAPID STABILIZATION AREA R
(0.24 ACRE) INLET 560A
METHOD 1

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-13\Plan\80-TURF ESTABLISHMENT.dwg 09/24/2003 09:08:07 AM CDT

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

PRINT NAME: PETER M. LEMKE

SIGNATURE: Peter M Lemke

DATE: 9-26-2003 REG. NO. 40118

DRAWN BY JJF DATE 08/01/03

DESIGN BY PML DATE 07/28/03

CHECKED BY PML DATE 08/04/03

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13

STATE PROJECT NO. 106-020-23

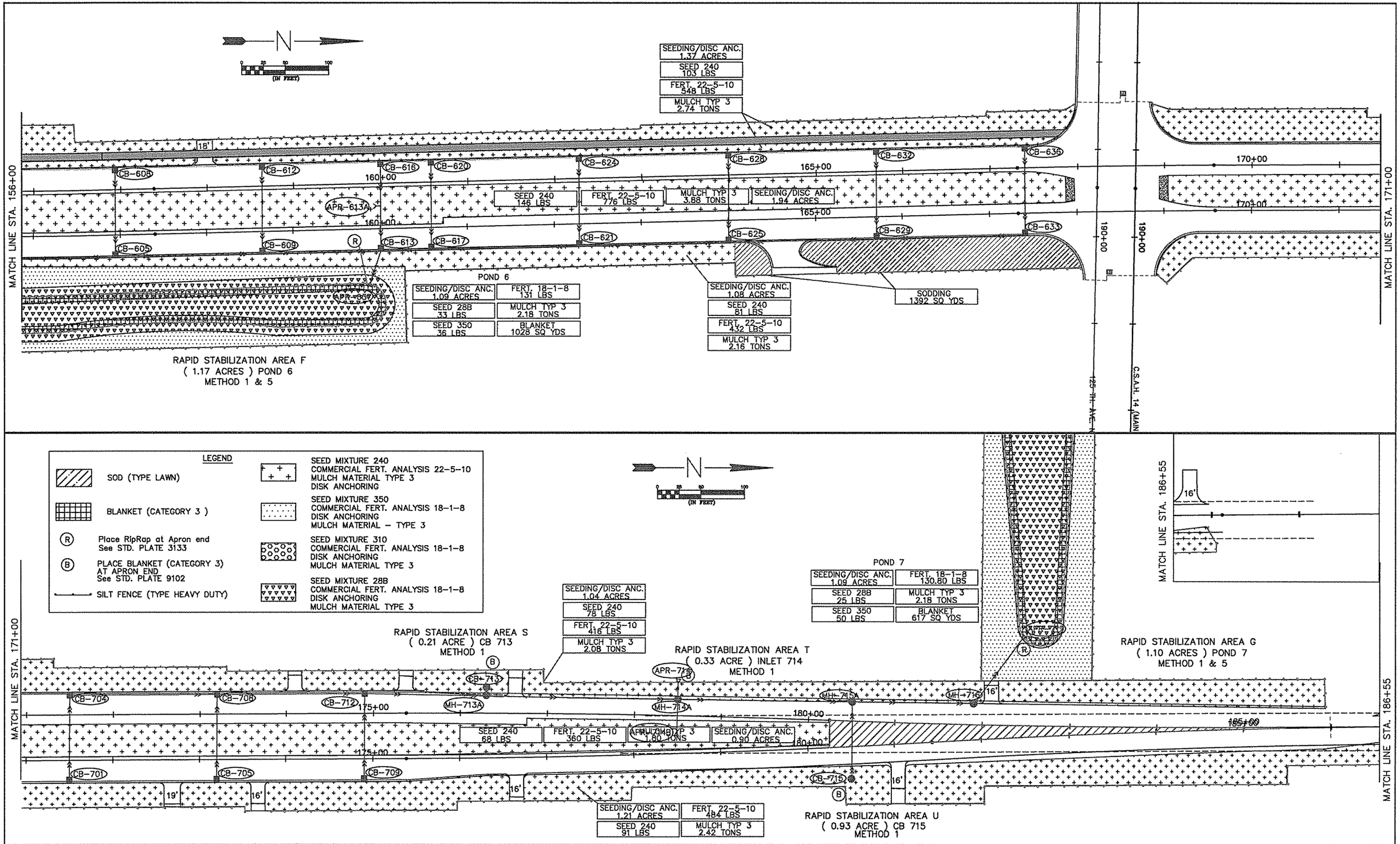
STATE AID PROJECT NO.

COUNTY PROJECT NO.

TURF ESTABLISHMENT AND EROSION CONTROL

STA. 126+00 TO 156+00

Sheet 155 of 226 Sheets



NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-13\Plan\80-TURF ESTABLISHMENT.dwg 09/24/2003 04:57:38 PM CDT

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

PRINT NAME: PETER M. LEMKE

SIGNATURE: Peter M Lemke

DATE: 9-26-2003 REG. NO. 40118

DRAWN BY JJF DATE 08/01/03

DESIGN BY PML DATE 07/28/03

CHECKED BY PML DATE 08/04/03

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13

STATE PROJECT NO. 106-020-23

STATE AID PROJECT NO.

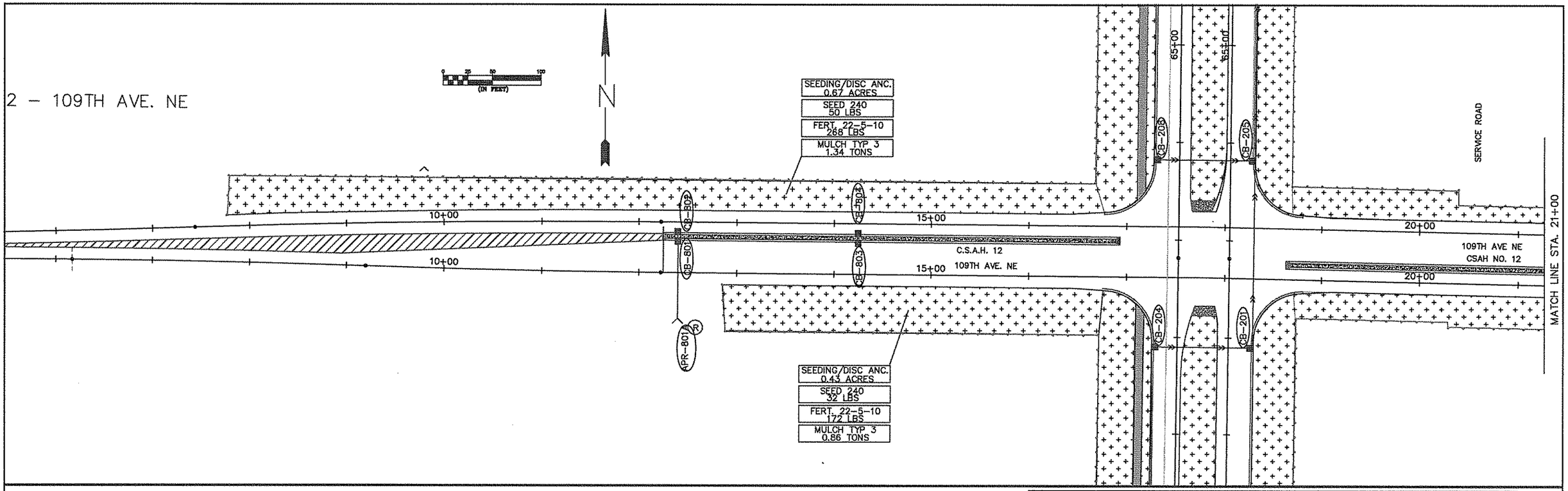
COUNTY PROJECT NO.

TURF ESTABLISHMENT AND EROSION CONTROL

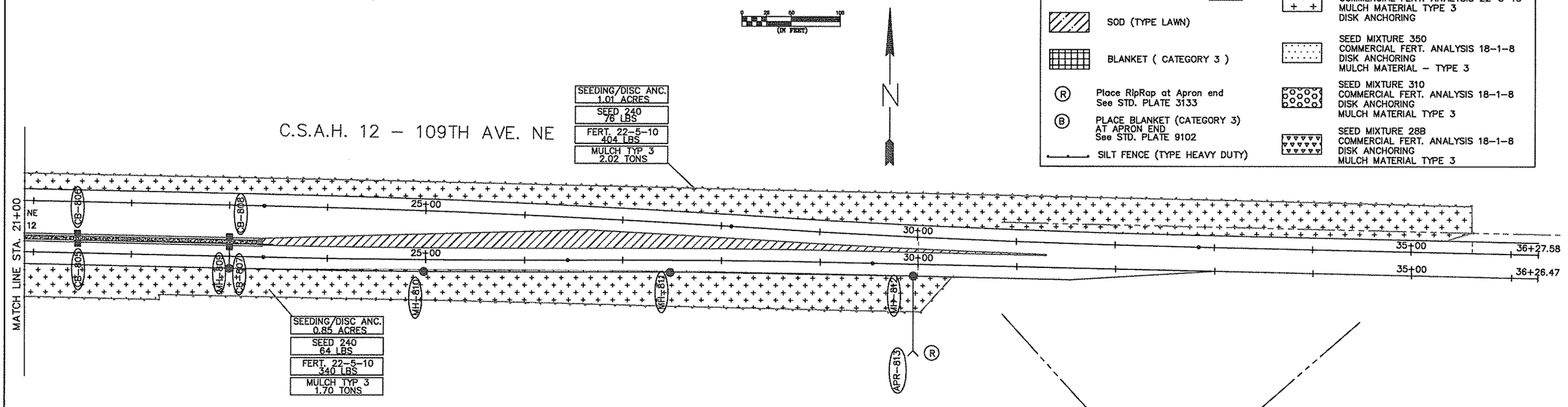
STA. 156+00 TO 187+70.00

Sheet 156 of 226 Sheets

2 – 109TH AVE. NE



C.S.A.H. 12 – 109TH AVE. NE



LEGEND

- SOD (TYPE LAWN)
- BLANKET (CATEGORY 3)
- (R) Place RipRap at Apron end See STD. PLATE 3133
- (B) PLACE BLANKET (CATEGORY 3) AT APRON END See STD. PLATE 9102
- SILT FENCE (TYPE HEAVY DUTY)
- SEED MIXTURE 240 COMMERCIAL FERT. ANALYSIS 22-5-10 MULCH MATERIAL TYPE 3 DISK ANCHORING
- SEED MIXTURE 350 COMMERCIAL FERT. ANALYSIS 18-1-8 DISK ANCHORING MULCH MATERIAL – TYPE 3
- SEED MIXTURE 310 COMMERCIAL FERT. ANALYSIS 18-1-8 DISK ANCHORING MULCH MATERIAL TYPE 3
- SEED MIXTURE 28B COMMERCIAL FERT. ANALYSIS 18-1-8 DISK ANCHORING MULCH MATERIAL TYPE 3

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-13\Plan\80-TURF ESTABLISHMENT.dwg 09/24/2003 09:08:07 AM CDT

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

PRINT NAME: PETER M. LEMKE

SIGNATURE: Peter M Lemke

DATE: 9-26-2003 REG. NO. 40118

DRAWN BY JJF DATE 08/01/03

DESIGN BY PML DATE 07/28/03

CHECKED BY PML DATE 08/04/03

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13

STATE PROJECT NO. 106-020-23

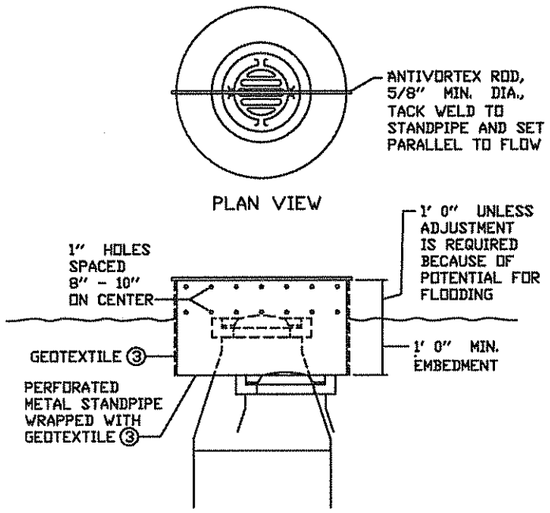
STATE AID PROJECT NO.

COUNTY PROJECT NO.

TURF ESTABLISHMENT AND EROSION CONTROL

STA. 2+65.28 TO 35+61.00

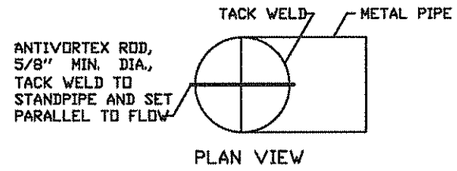
Sheet 157 of 226 Sheets

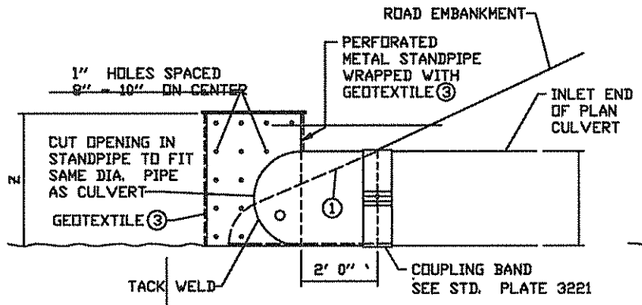


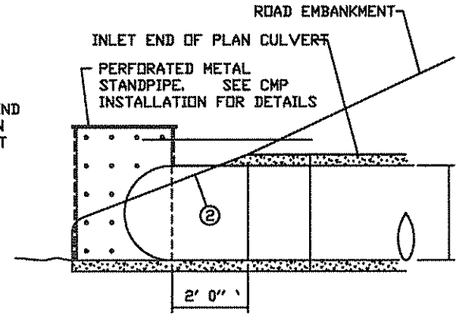
RISER STANDPIPE

TO PROTECT DROP INLET
(TYPE A SPEC. 3891)

DESIGN GUIDELINES:
STORM FREQUENCY: 10 YEAR. - 24 HOUR.





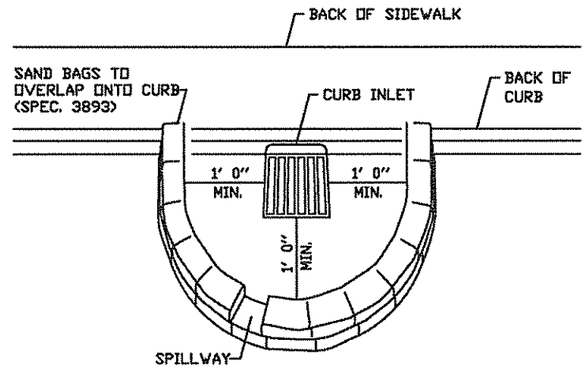


RISER STANDPIPE

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

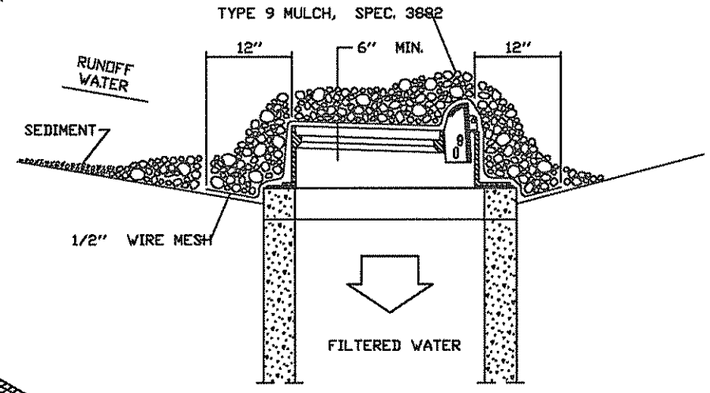
= DIA. OF STANDPIPE EQUAL TO DIA. OF PLAN CULVERT
Z = LENGTH OF PERFORATED STANDPIPE (+ 12")

DESIGN GUIDELINES:
CULVERT SIZE: 12" - 36"
STORM FREQUENCY: 10 YR. - 24 HR.



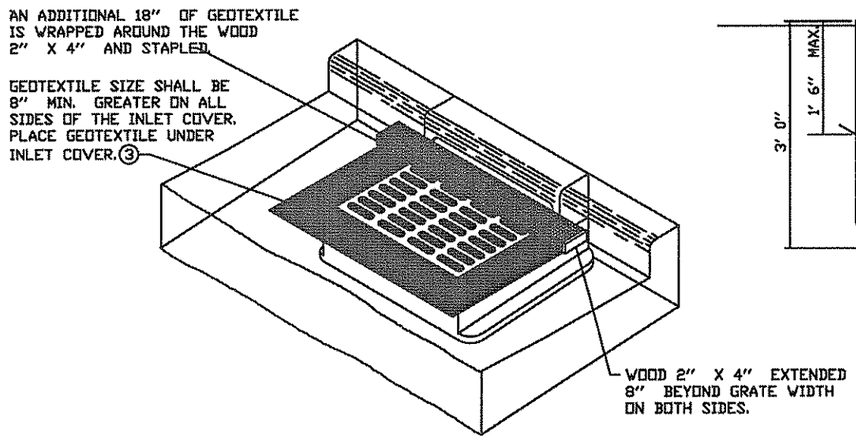
CURB INLET SAND BAG BARRIER

THIS INLET PROTECTION IS USED DURING ROUGH GRADING ONLY. USE BEFORE ROAD IS OPEN TO TRAFFIC OR IS PAVED.
(TYPE B OR C SPEC. 3891)



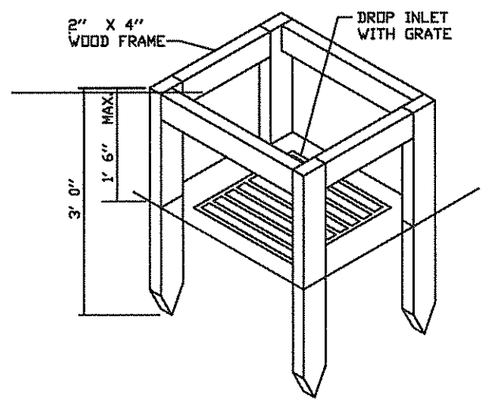
AGGREGATE FILTER AT CURB INLET

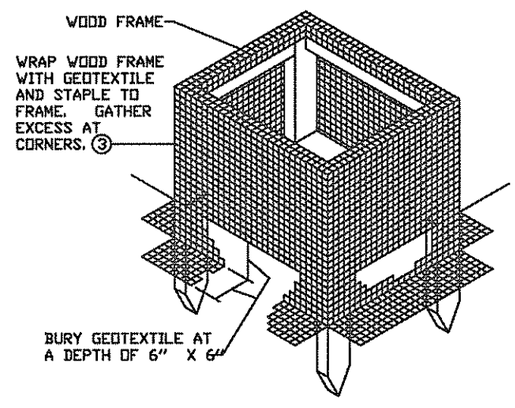
(TYPE B OR C SPEC. 3891)



SILT FENCE BOX TO PROTECT DROP INLETS

(TYPE A SPEC. 3891)





SILT FENCE BOX TO PROTECT DROP INLETS

USE WHERE INLET DRAINS AN AREA WITH SLOPES AT 1:3 or LESS
(TYPE A SPEC. 3891)

NOTES:
SEE SPECS. 2573, 3891 & 3893.

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

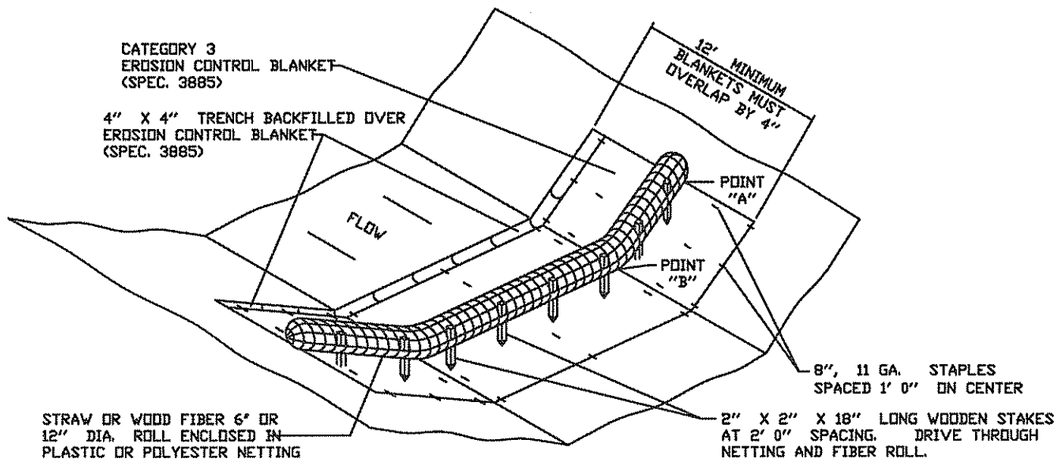
(1) FOR CMP, REMOVE TEMPORARY STANDPIPE AND INSTALL CULVERT APRON AFTER VEGETATION IS ESTABLISHED.

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

(3) ALL GEOTEXTILE USED FOR INLET PROTECTION SHALL BE MOND/MOND, MEETING SPEC. 3886 FOR MACHINE SLICED.

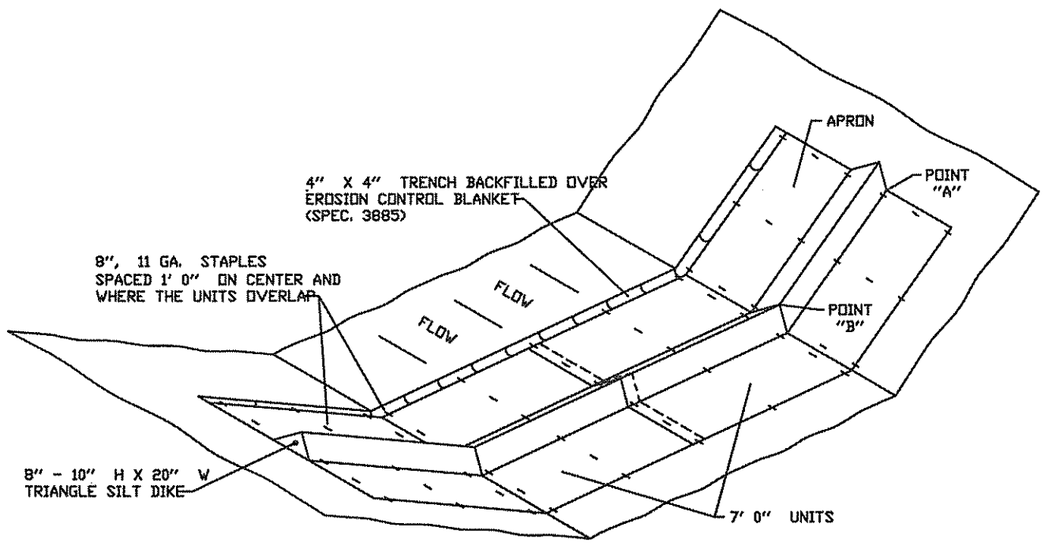
STANDARD SHEET NO.	TITLE:
5-297.405 (4 OF 4)	TEMPORARY EROSION CONTROL TEMPORARY INLET PROTECTION
STANDARD APPROVED JULY 30, 2001	

STATE PROJ NO. 02-617-13 SHEET 158 OF 226 SHEETS



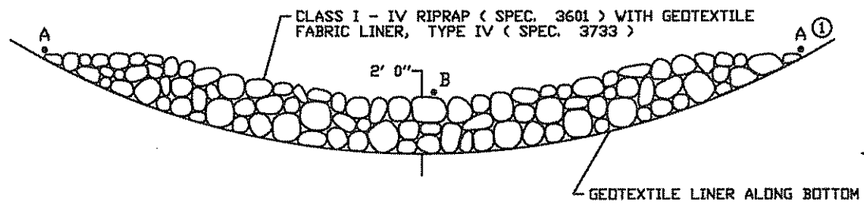
POINT "A" MUST BE HIGHER THAN POINT "B" TO ENSURE
THAT WATER FLOWS OVER THE DIKE AND NOT AROUND THE ENDS.

BIOROLL BLANKET SYSTEM
(TYPE 3 SPEC. 3889)

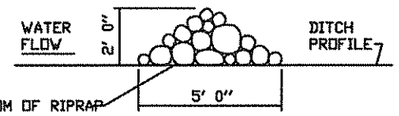


POINT "A" MUST BE HIGHER THAN POINT "B" TO ENSURE
THAT WATER FLOWS OVER THE DIKE AND NOT AROUND THE ENDS.

GEOTEXTILE TRIANGULAR DIKE
(TYPE 6 SPEC. 3889)

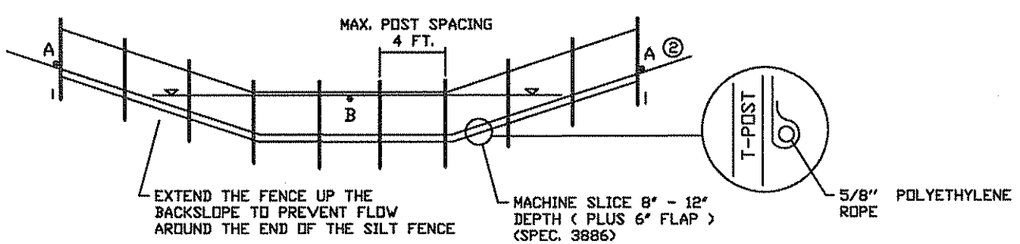


CROSS SECTION



PROFILE VIEW

ROCK CHECK
(TYPE 7 SPEC. 3889)



DESIGN GUIDELINES	
STORM FREQUENCY	2 YR.- 24 HR.
MAX. DITCH GRADE	5%
MAX. DRAINAGE AREA	1 ACRE

NOTE:
WHEN SEDIMENT BUILD UP REACHES 1.5 FT.,
THE SILT SHOULD BE REMOVED OR A SECOND
SILT FENCE BUILT UPSTREAM FROM THE
EXISTING ONE AT A SUITABLE DISTANCE.

MACHINE SLICED
(TYPE 1 SPEC. 3889)

NOTES:
SEE SPECS. 2573, 3885, 3886 & 3889.

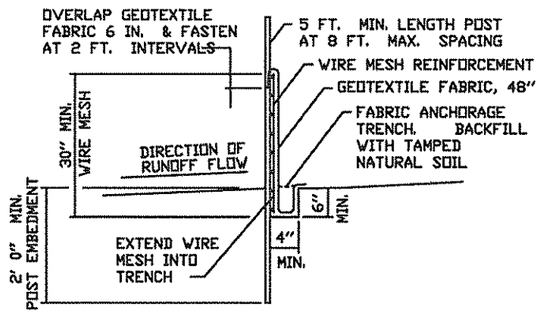
SPACING OF DITCH CHECKS IS DEPENDENT ON DRAINAGE AREA AND GRADES. SEE DISTRICT HYDRAULICS ENGINEER FOR RECOMMENDATIONS

(1) POINT A MUST BE 2' 6" MIN. HIGHER THAN POINT B.

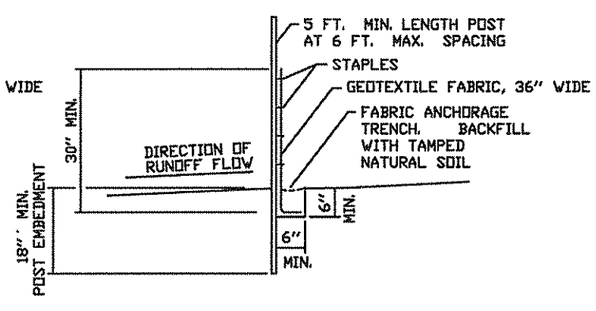
(2) POINT A MUST BE 2' 0" MIN. HIGHER THAN POINT B.

STANDARD SHEET NO.	TITLE:
5-297.405 (3 OF 4)	TEMPORARY EROSION CONTROL DITCH CHECKS
STANDARD APPROVED: JULY 30, 2001	

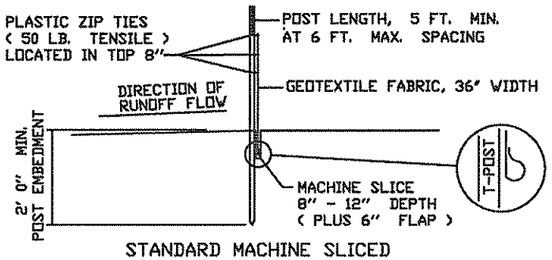
STATE PROJ NO. 02-617-13 SHEET 159 OF 226 SHEETS



HEAVY DUTY



PREASSEMBLED

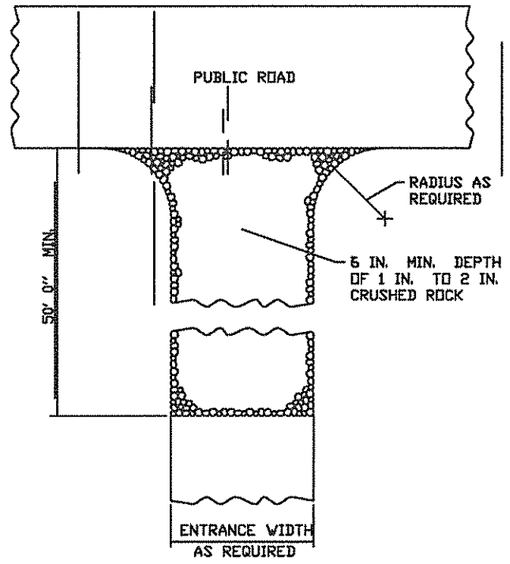


STANDARD MACHINE SLICED

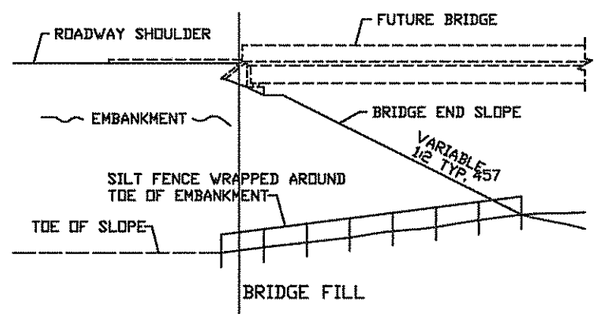
DESIGN GUIDELINES:
MAXIMUM CONTRIBUTING AREA: 3 ACRES

SILT FENCE DETAILS

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

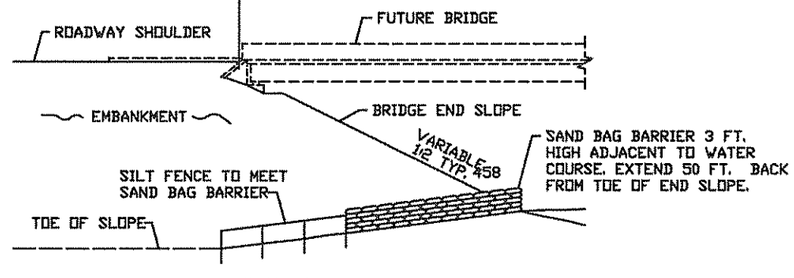


ROCK CONSTRUCTION ENTRANCE①



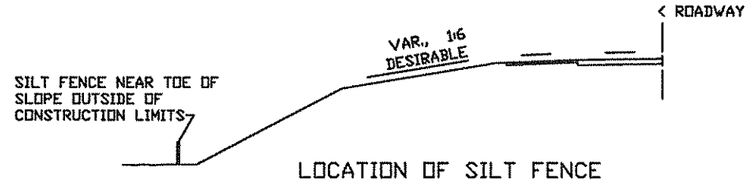
BRIDGE FILL

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

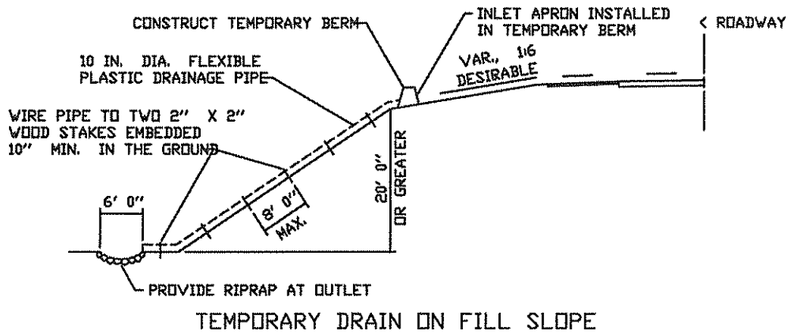


BRIDGE FILL

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

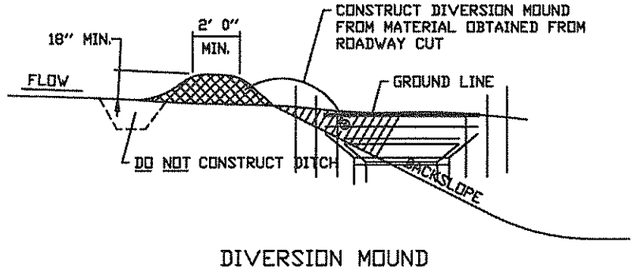


LOCATION OF SILT FENCE
AT TOE OF ROADWAY EMBANKMENT



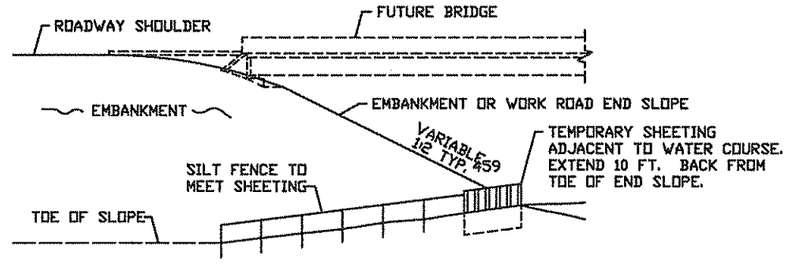
TEMPORARY DRAIN ON FILL SLOPE

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



DIVERSION MOUND

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

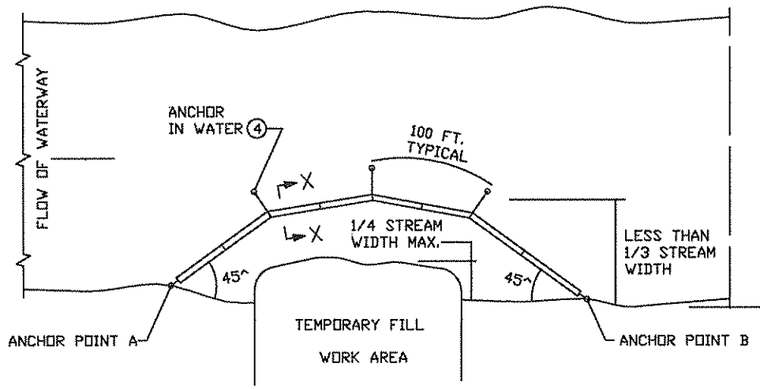


EMBANKMENT OR WORK ROAD FILL

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

SILT FENCE AT BRIDGE EMBANKMENT

STANDARD SHEET NO.	TITLE:
5-297.405 (2 OF 4)	TEMPORARY EROSION CONTROL
STANDARD APPROVED: JULY 30, 2001	
STATE PROJ NO. 02-617-13	SHEET 160 OF 226 SHEETS



PLAN VIEW

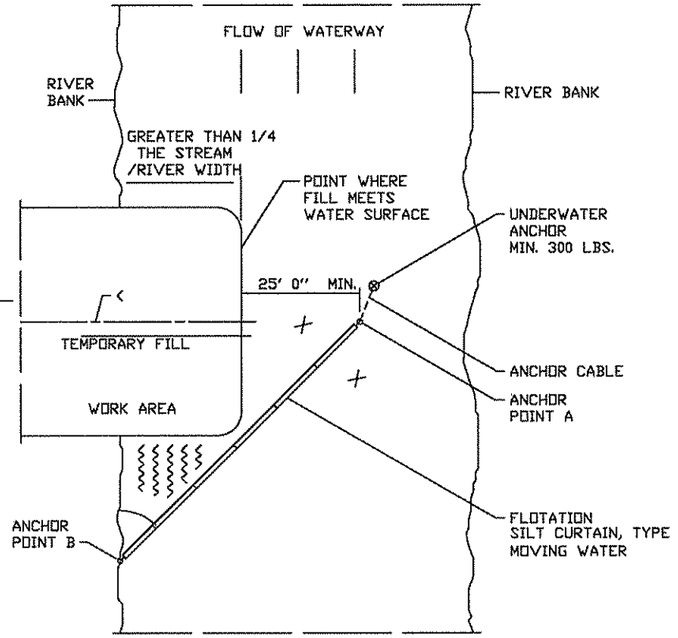
FLOTATION SILT CURTAIN - TYPE WORK AREA

(SPEC. 3887)

FOR CONTAINING OVERFLOWS FROM WEIRS, STANDPIPES, SETTLING PONDS

DESIGN GUIDELINES:

WHEN TEMPORARY FILL ENCROACHES LESS THAN 1/4 OF THE WIDTH OF STREAM.
MAXIMUM WATER VELOCITY: 5 FT./SEC.
MAXIMUM WATER DEPTH: 11 FT.



∠	RIVER VELOCITY
45^	SLOW, LESS THAN 3 FT./SEC.
35^	MODERATE, 3 - 5 FT./SEC.

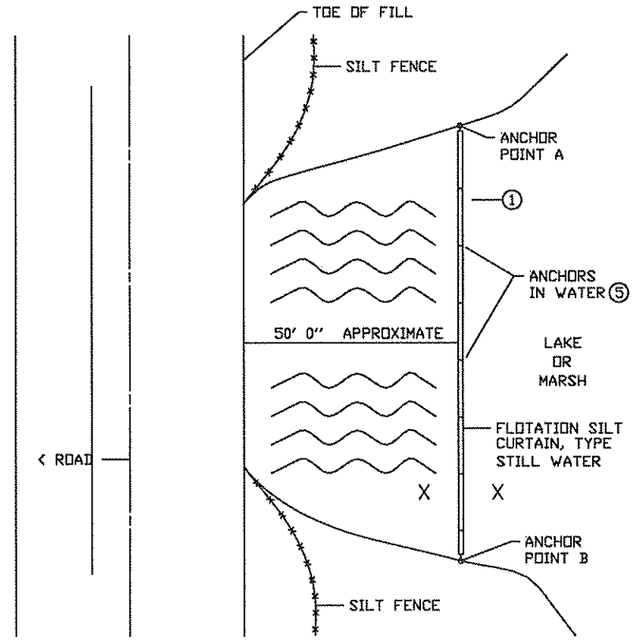
PLAN VIEW

FLOTATION SILT CURTAIN - TYPE MOVING WATER

(SPEC. 3887)

DESIGN GUIDELINES:

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



PLAN VIEW

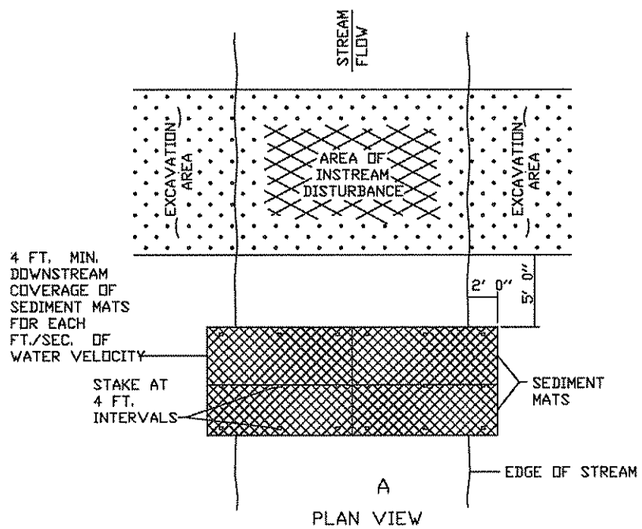
FLOTATION SILT CURTAIN - TYPE STILL WATER

(SPEC. 3887)

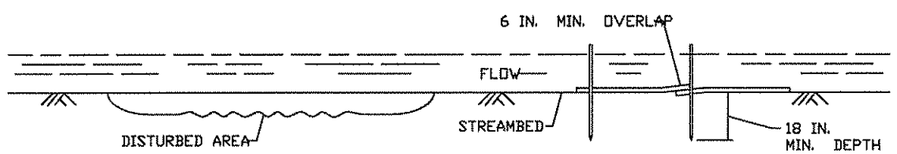
DESIGN GUIDELINES:

MAXIMUM WATER DEPTH: 11 FT.(1)
MINIMUM WATER DEPTH: 3 FT.

A



PLAN VIEW



SECTION A-A

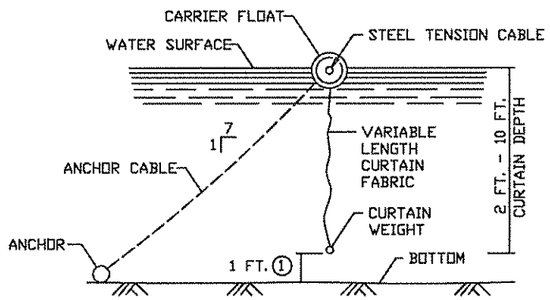
SEDIMENT MAT

(SPEC. 3894)

TYPICAL STREAMBED INSTALLATION

DESIGN GUIDELINES:

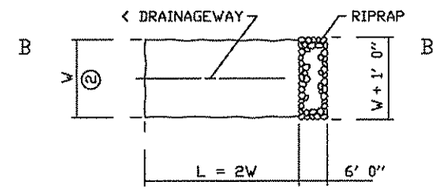
MAXIMUM FLOW VELOCITY: 5 FT./SEC.
MAXIMUM FLOW DEPTH: 2 FT.



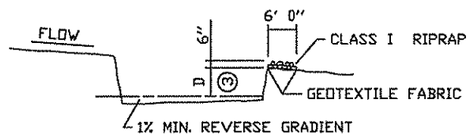
SECTION X-X

FLOTATION SILT CURTAINS

(SPEC. 3887)



PLAN



SECTION B-B

SEDIMENT TRAP DETAIL

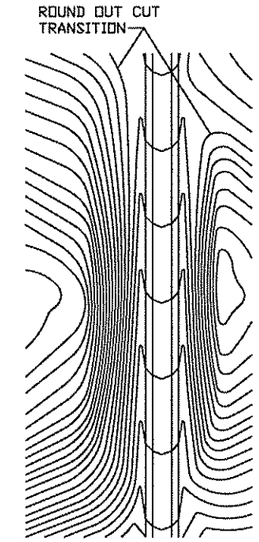
(SPEC. 2573)

NOTES:

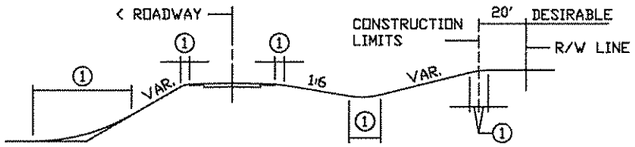
SEE SPECS. 2573, 3887 & 3894.

(1) CURTAIN 1 FT. FROM BOTTOM
(2) W = 10 FT. MIN., 20 FT. MAX.
(3) D = 2 FT.
(4) 100 FT. MAX. SPACING BETWEEN ANCHORS, MIN. 40 LBS.
(5) USE ENOUGH ANCHORS TO HOLD SILT CURTAIN IN PLACE.

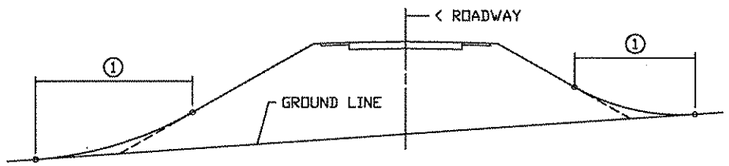
STANDARD SHEET NO.	TITLE:
5-297.405 (1 OF 4)	TEMPORARY EROSION CONTROL
STANDARD APPROVED: July 30, 2001	



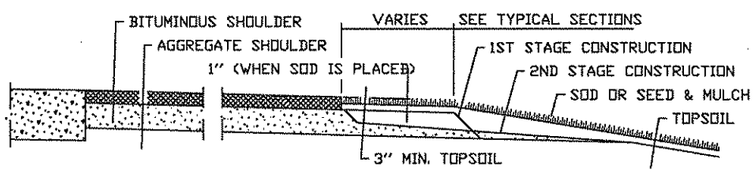
CONTOURING ROAD CUTS



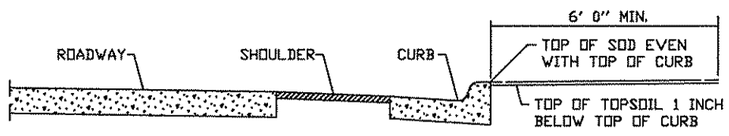
ROUNDING SHOULDERS AND BACKSLOPES



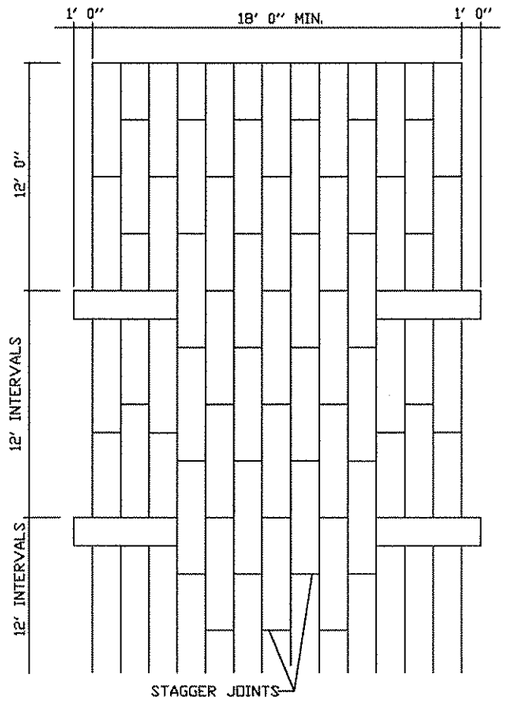
SHAPING FOR DRAINAGE ALONG THE TOE OF FILL SLOPES



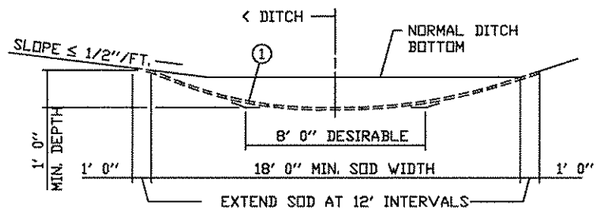
SHAPING AND TOPSOILING INSLOPES



SHAPING ADJACENT TO CURBS WHEN SOD IS PLACED

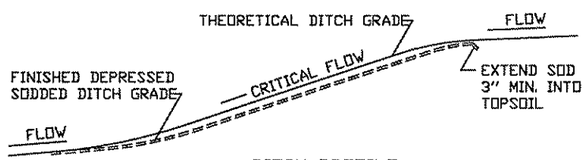


PLAN VIEW



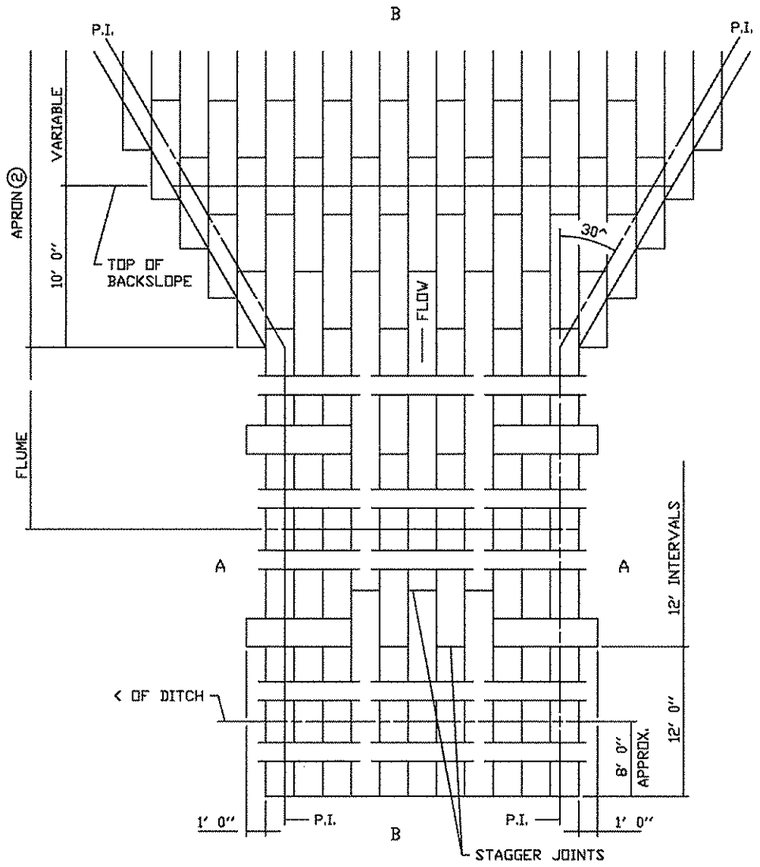
SODDED DITCH CROSS SECTION

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

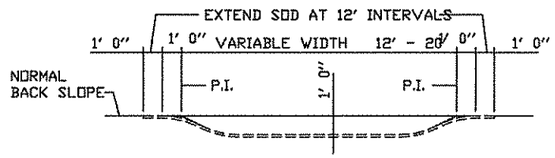


DITCH PROFILE

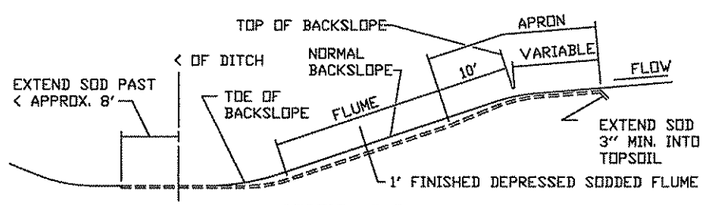
SODDED DITCH DETAILS



PLAN VIEW



SECTION A-A



SECTION B-B

SODDED FLUME DETAILS

NOTES:

SEE SPEC. 2575.3 FOR ADDITIONAL INFORMATION.

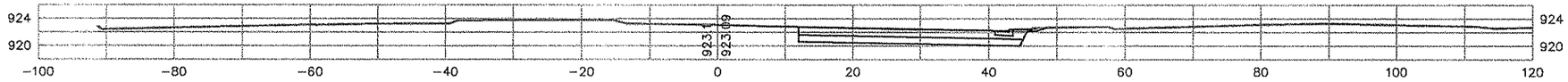
(1) FOR ROUNDING, SEE ROAD DESIGN MANUAL.

(2) CONSTRUCT TAPER AS DIRECTED BY THE ENGINEER.

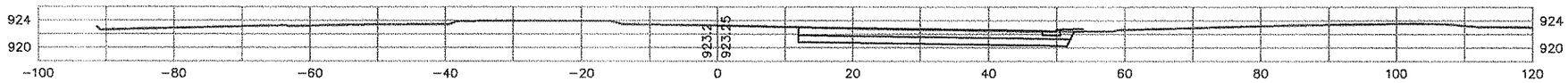
REVISION DATE
10-26-2000

STANDARD SHEET NO. 5-297.404	TITLE: PERMANENT EROSION CONTROL ALONG ROADWAYS, DITCHES AND FLUMES
STANDARD APPROVED: DECEMBER 19, 1990	
STATE PROJ NO. 02-617-13	SHEET 162 OF 226 SHEETS

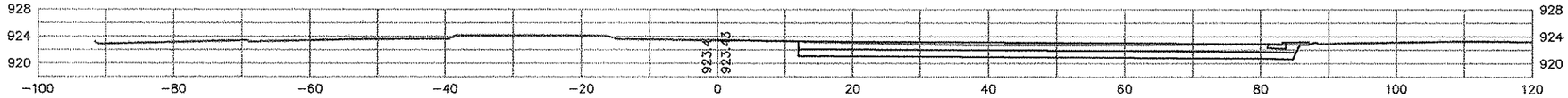
37+05.34



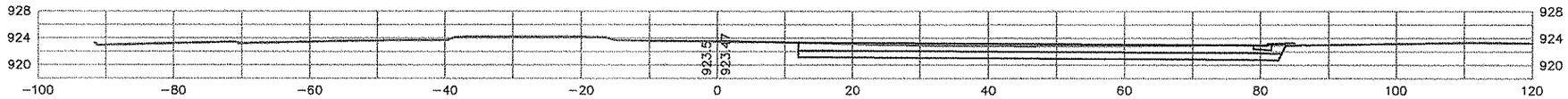
37+00



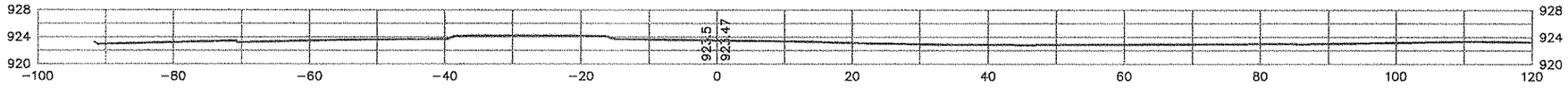
36+92.76



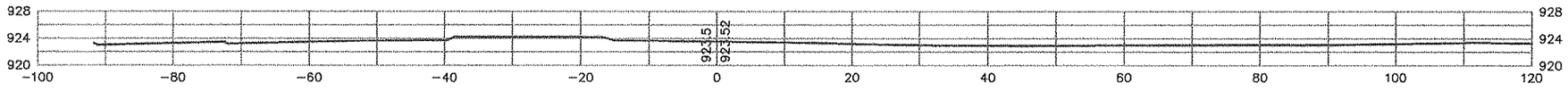
36+90.77



36+90.76

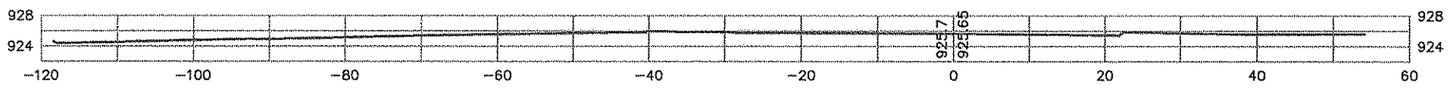


36+88.80



36+50

36+00



NAME: P:\02-617-13\Plan\82-X-Sec RECALC MN.dwg 01/06/2004 03:24:59 PM CST

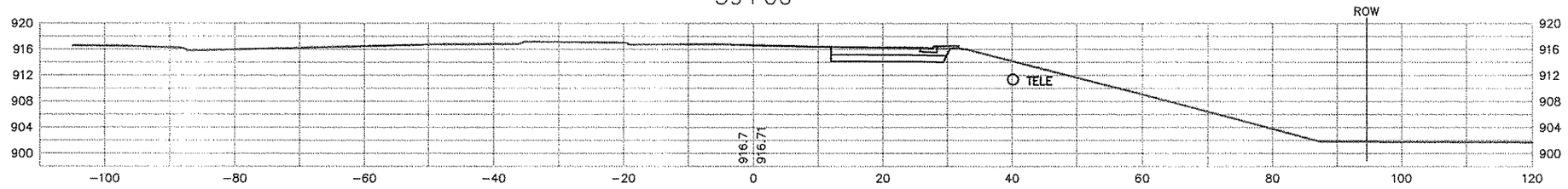
ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13
STATE PROJECT NO. 106-020-23
STATE AID PROJECT NO. _____
COUNTY PROJECT NO. _____

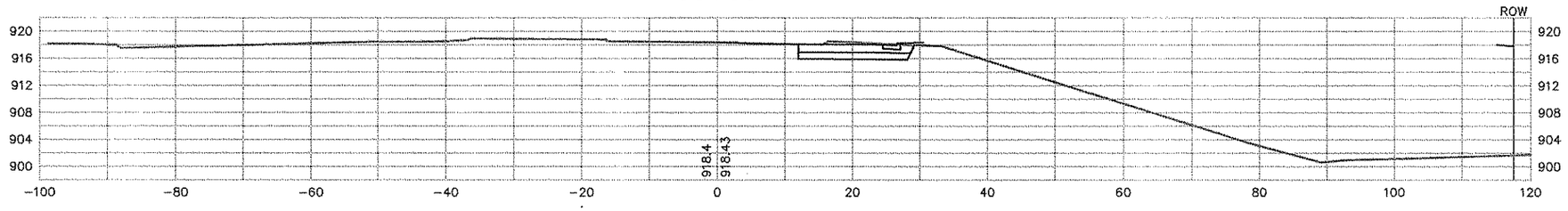
CROSS SECTIONS
STA 36+00 TO 37+05.34

Sheet 163 of 226 Sheets

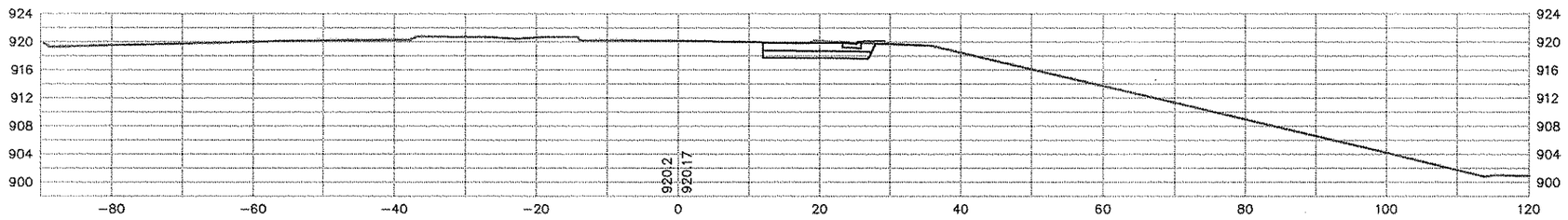
39+00



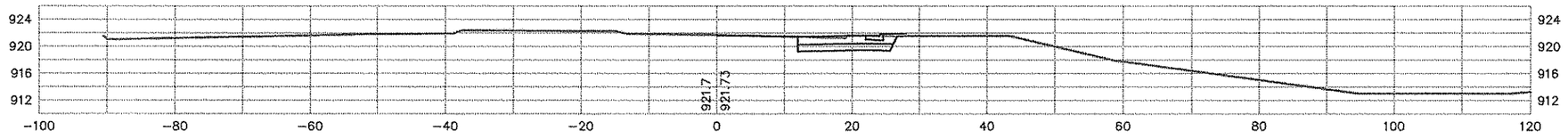
38+50



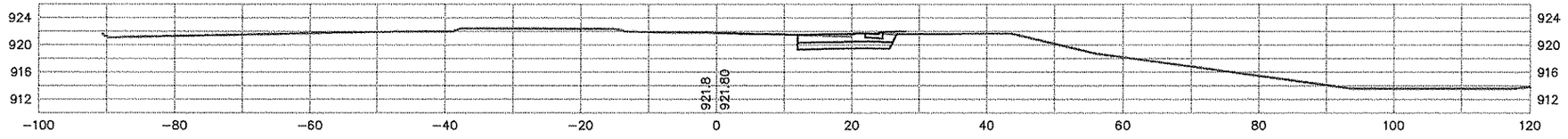
38+00



37+50



37+47.76



NAME: P:\02-617-13\Plan\82-X-Sec RECALC MN.dwg 01/06/2004 03:24:59 PM CST

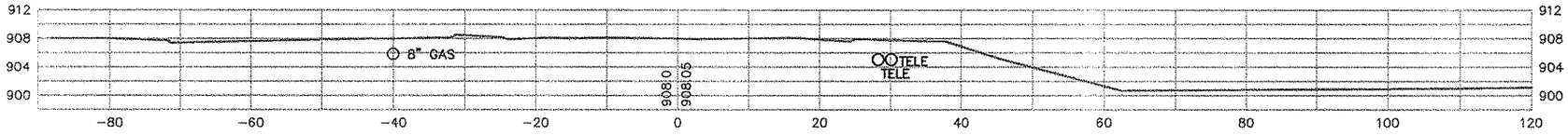
ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13
STATE PROJECT NO. 106-020-23
STATE AID PROJECT NO. _____
COUNTY PROJECT NO. _____

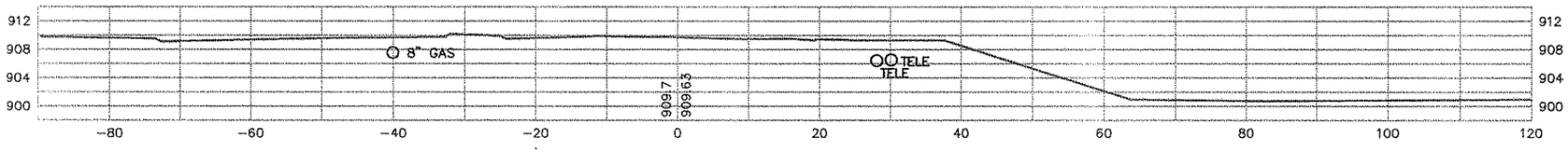
CROSS SECTIONS
STA 37+47.76 TO 39+00

Sheet 164 of 226 Sheets

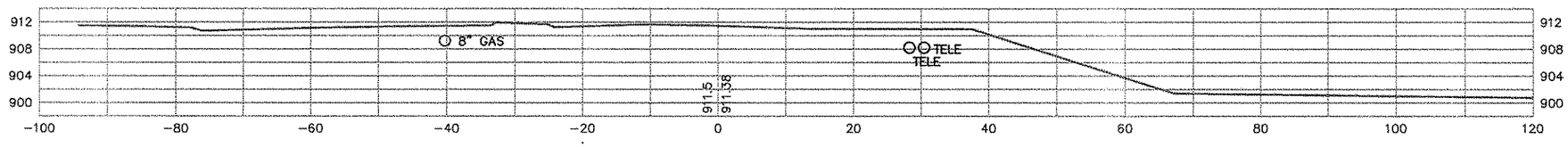
41+50



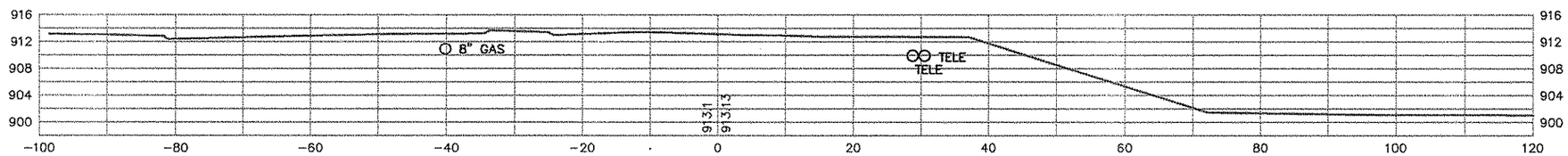
41+00



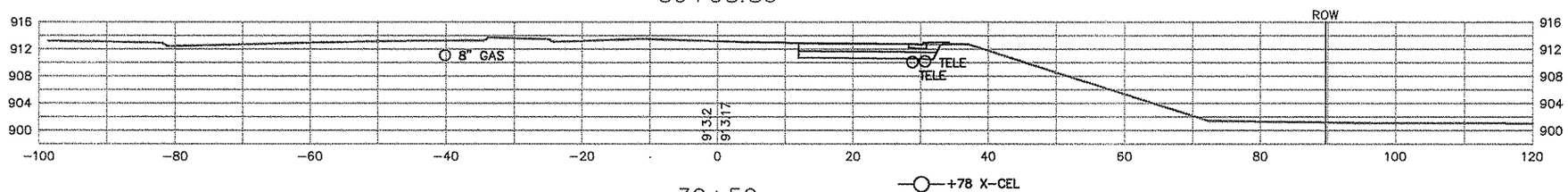
40+50



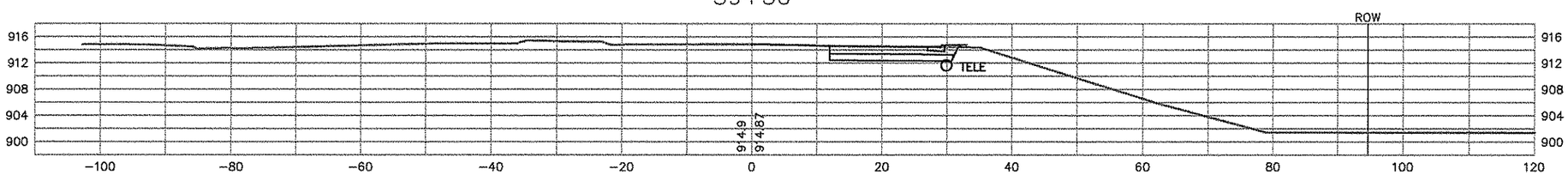
40+00



39+98.86



39+50



NAME: P:\02-617-13\Plan\82-X-Sec RECALC MN.dwg 01/06/2004 03:24:59 PM CST

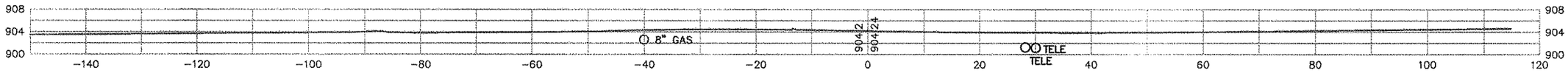
ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13
STATE PROJECT NO. 106-020-23
STATE AID PROJECT NO. _____
COUNTY PROJECT NO. _____

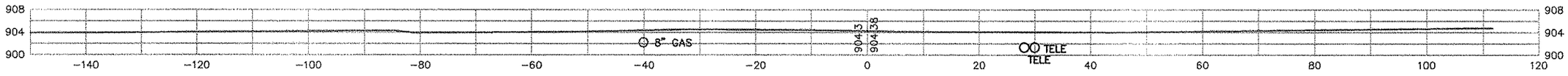
CROSS SECTIONS
STA 39+50 TO 41+50

Sheet 165 of 226 Sheets

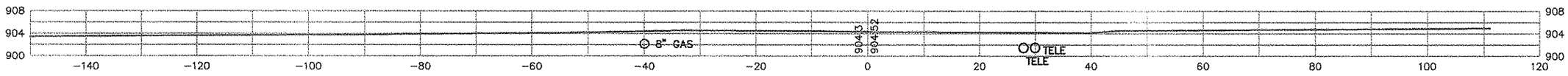
43+50



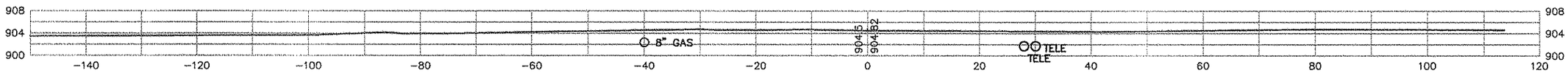
43+35.57



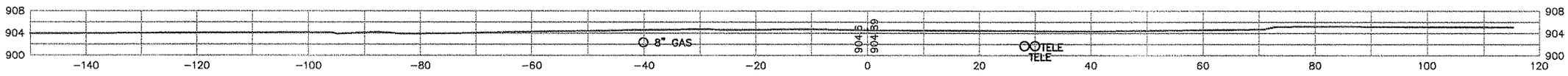
43+22.87



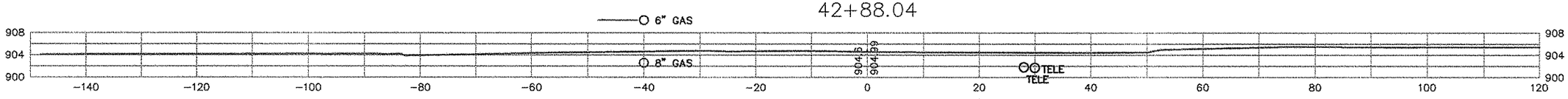
43+00



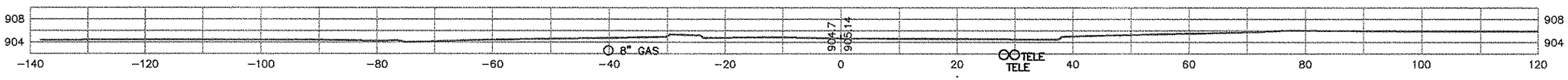
42+94.80



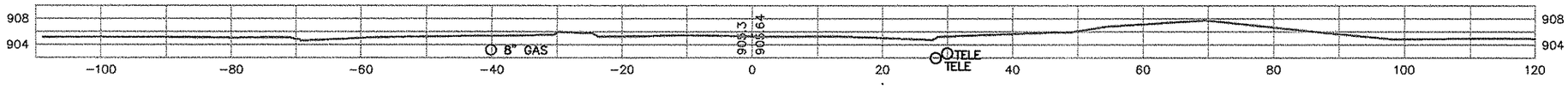
42+88.04



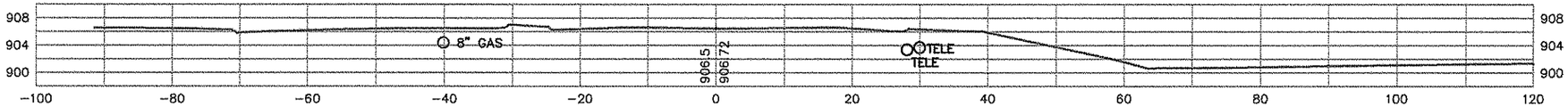
42+78.41



42+50 +58 X-CEL



42+00 +07 X-CEL



NAME: P:\02-617-13\Plan\82-X-Sec RECALC MN.dwg 01/06/2004 03:24:59 PM CST

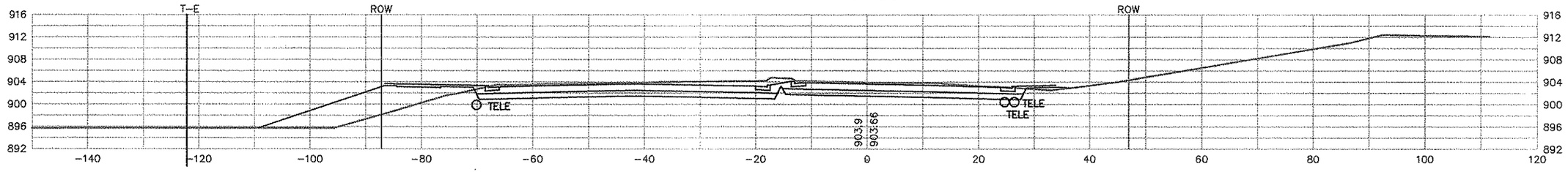
ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13
STATE PROJECT NO. 106-020-23
STATE AID PROJECT NO.
COUNTY PROJECT NO.

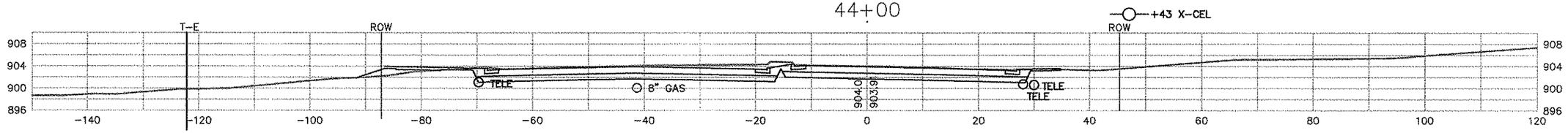
CROSS SECTIONS
STA 42+00 TO 43+50

Sheet 166 of 226 Sheets

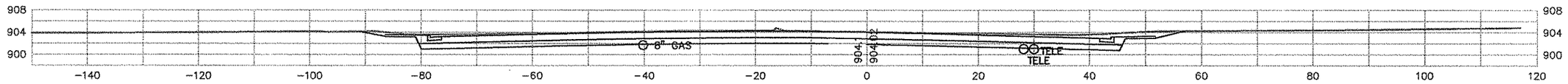
44+50



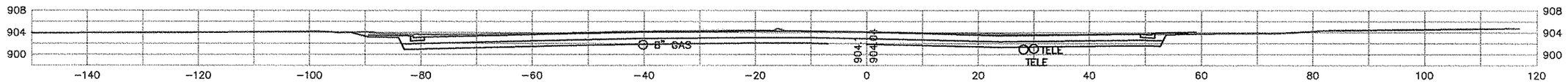
44+00



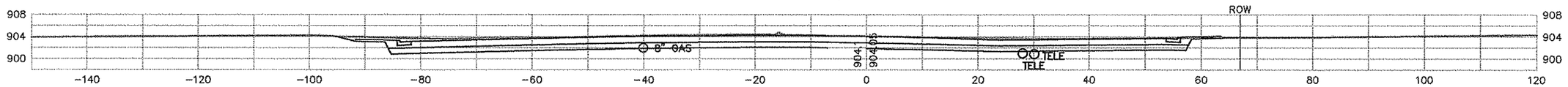
43+78.70



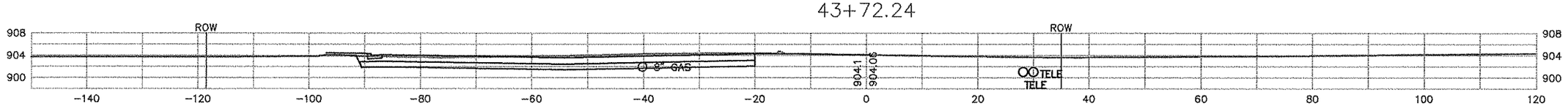
43+76.23



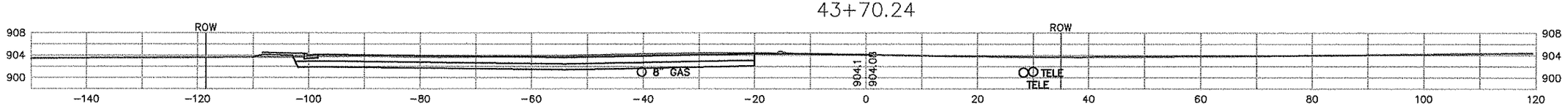
43+74.71



43+72.24



43+70.24



NAME: P:\02-617-13\Plan\82-X-Sec RECALC MN.dwg 01/06/2004 03:24:59 PM CST

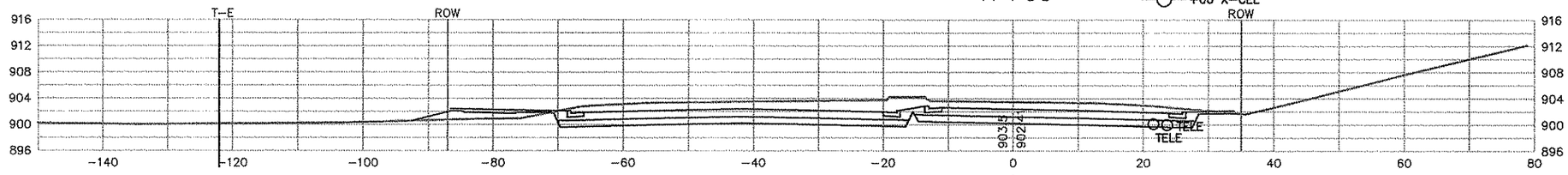
ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13
STATE PROJECT NO. 106-020-23
STATE AID PROJECT NO. _____
COUNTY PROJECT NO. _____

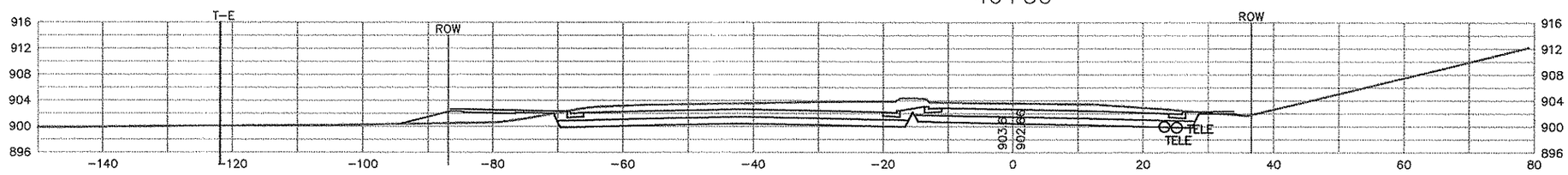
CROSS SECTIONS
STA 43+70.24 TO 44+50

Sheet 167 of 226 Sheets

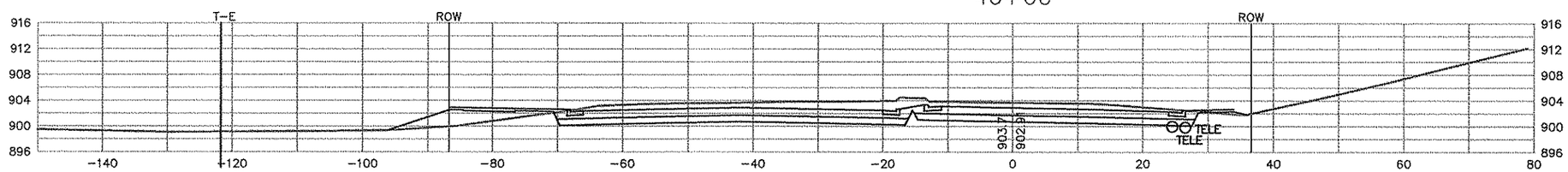
47+00



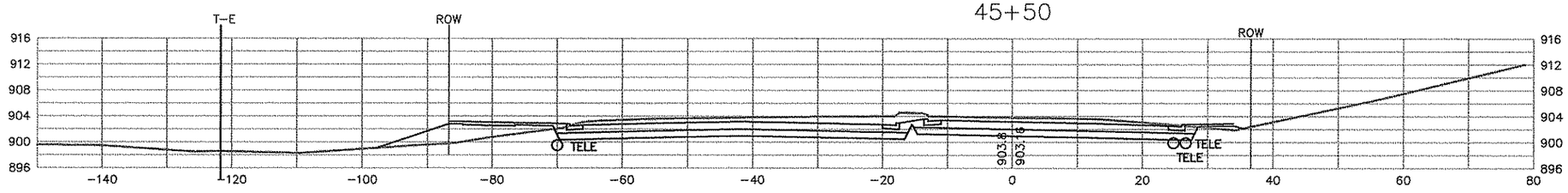
46+50



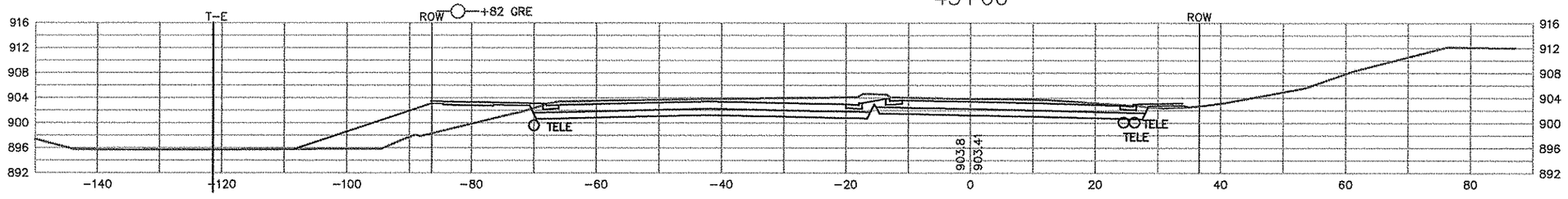
46+00



45+50



45+00



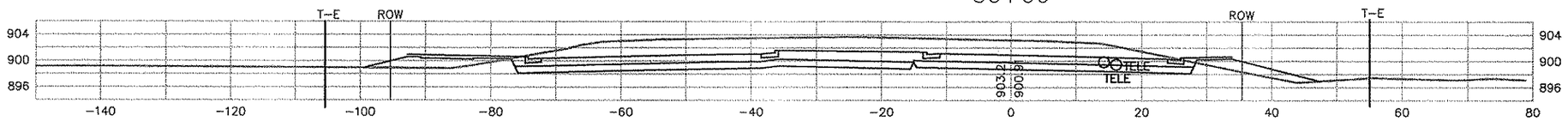
NAME: P:\02-617-13\Plan\82-X-Sec RECALC MN.dwg 01/06/2004 03:24:59 PM CST

ANOKA COUNTY HIGHWAY DEPT.

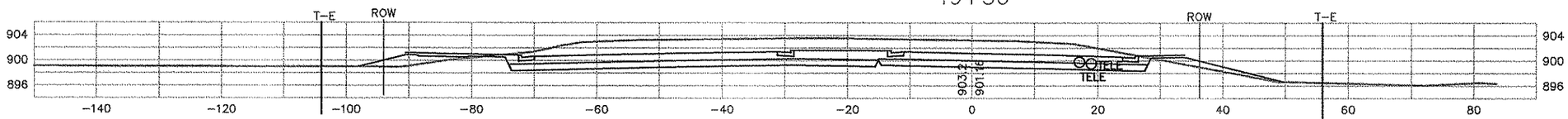
STATE PROJECT NO. 02-617-13
STATE PROJECT NO. 106-020-23
STATE AID PROJECT NO. _____
COUNTY PROJECT NO. _____

CROSS SECTIONS
STA 45+00 TO 47+00

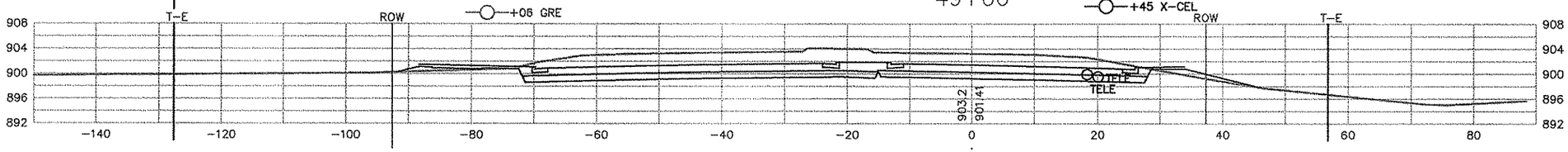
50+00



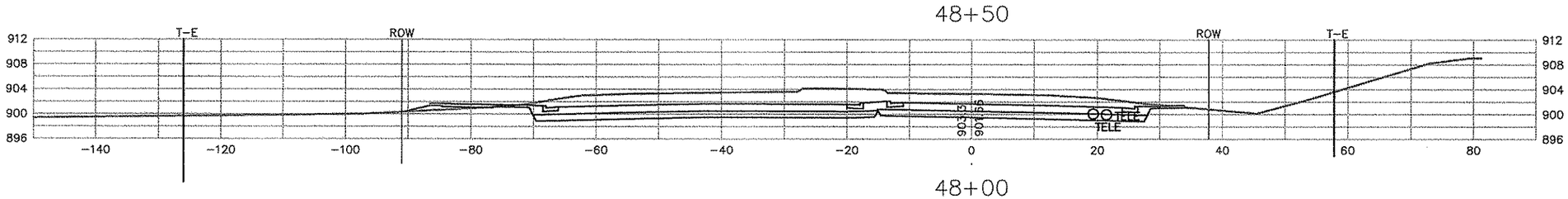
49+50



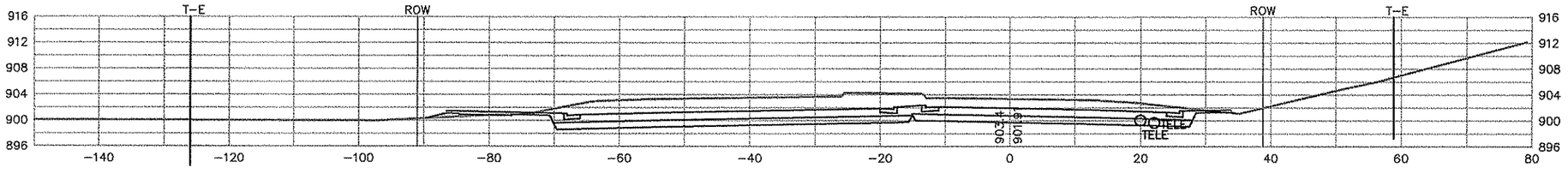
49+00



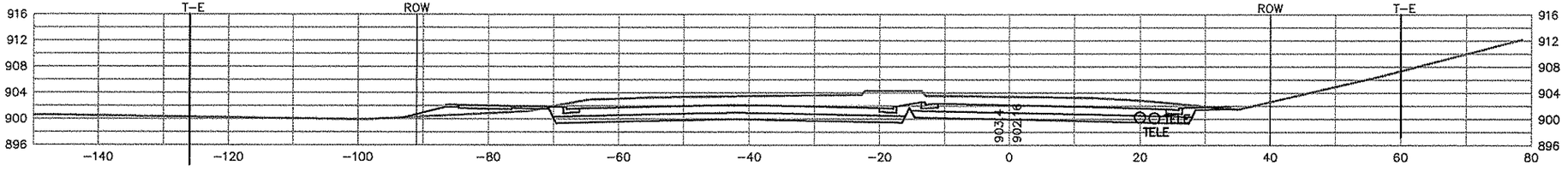
48+50



48+00



47+50



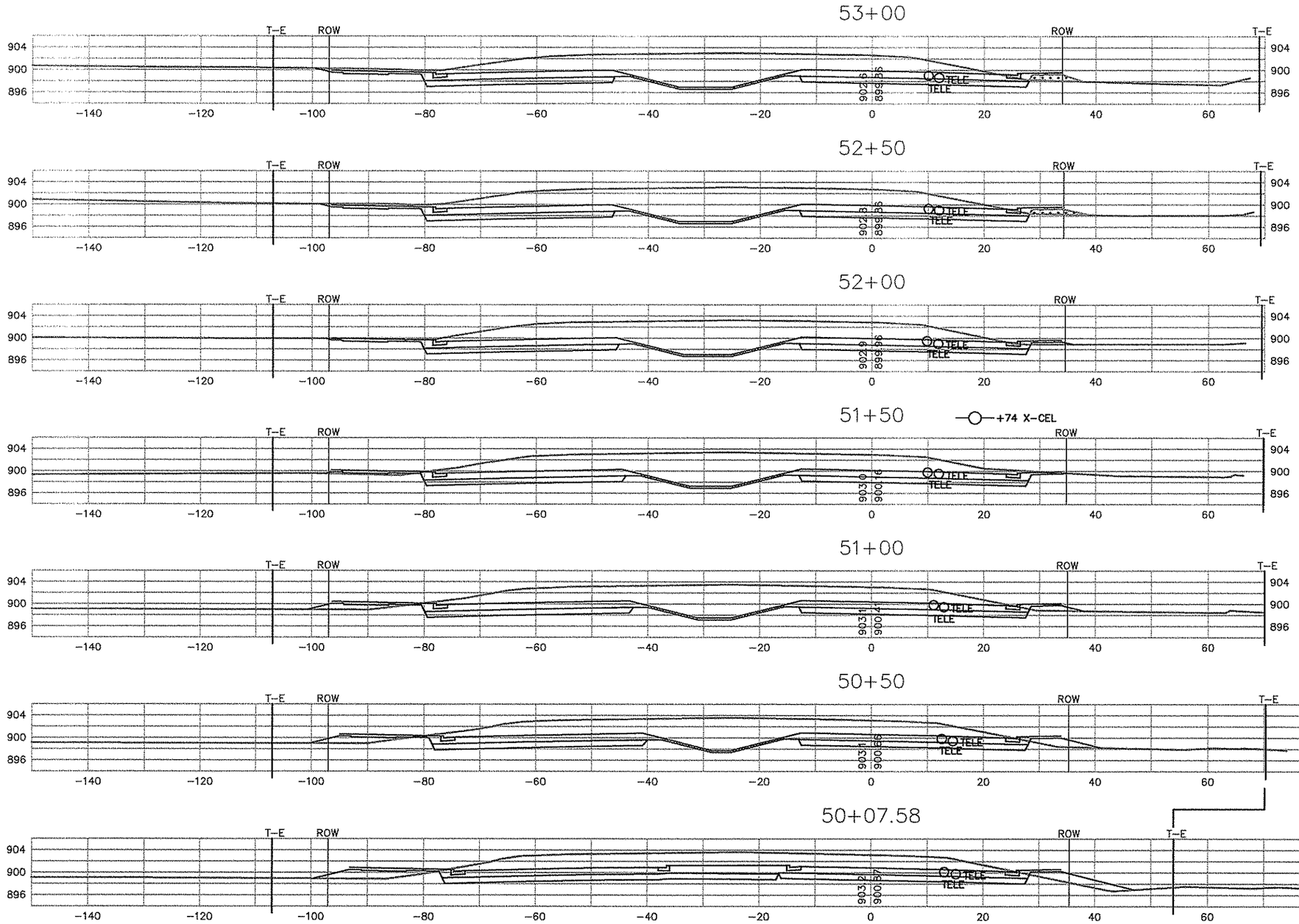
NAME: P:\02-617-13\Plan\82-X-Sec RECALC MN.dwg 01/06/2004 03:24:59 PM CST

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13
STATE PROJECT NO. 106-020-23
STATE AID PROJECT NO. _____
COUNTY PROJECT NO. _____

CROSS SECTIONS
STA 47+50 TO 50+00

Sheet 169 of 226 Sheets

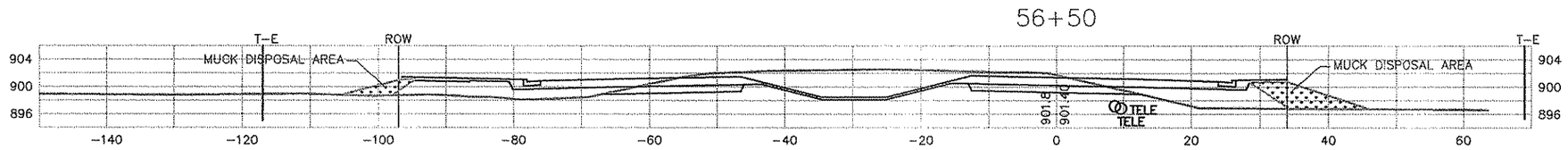


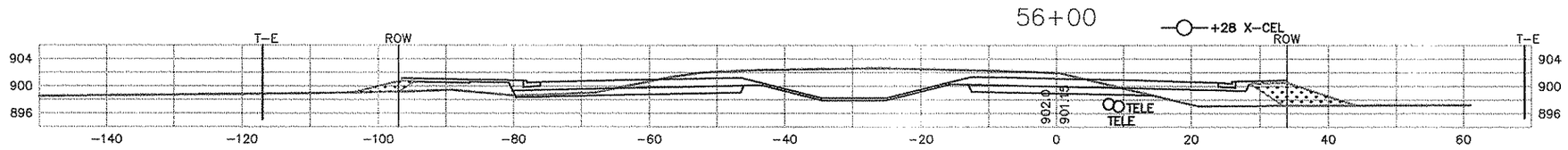
NAME: P:\02-617-13\Plan\82-X-Sec RECALC MN.dwg 01/06/2004 03:24:59 PM CST

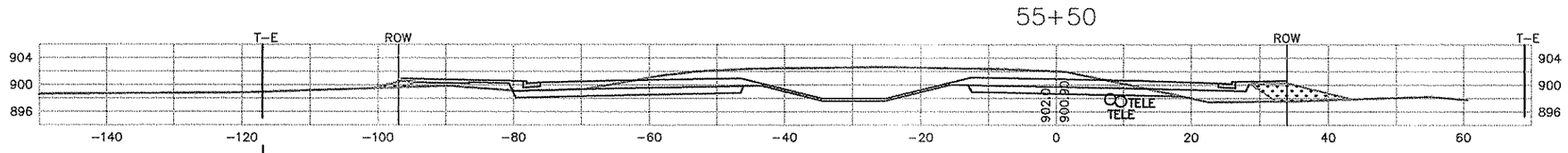
ANOKA COUNTY HIGHWAY DEPT.

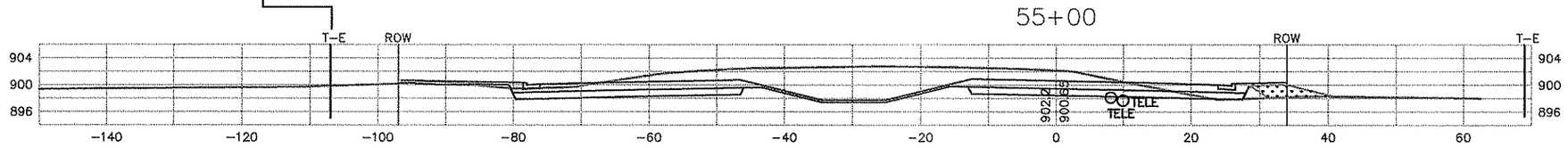
STATE PROJECT NO. 02-617-13
STATE PROJECT NO. 106-020-23
STATE AID PROJECT NO.
COUNTY PROJECT NO.

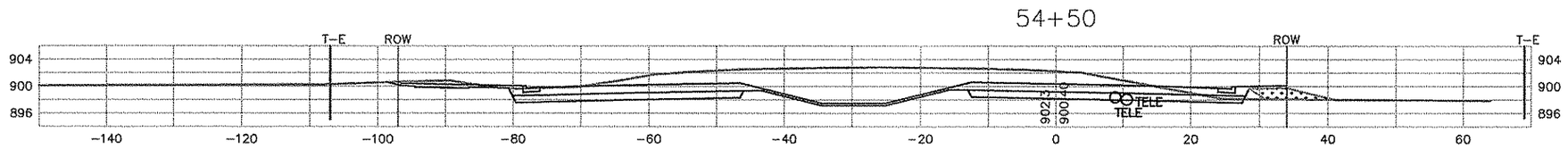
CROSS SECTIONS
STA 50+07.58 TO 53+00

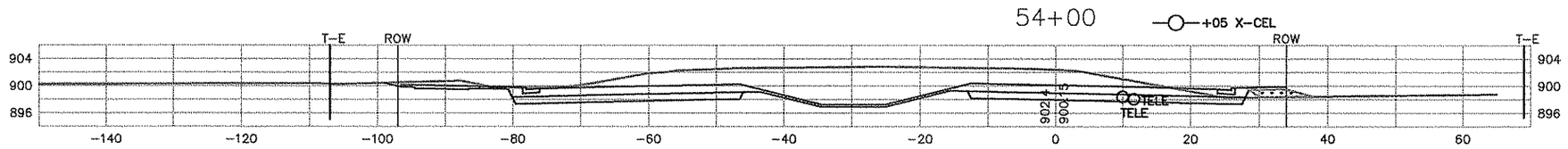


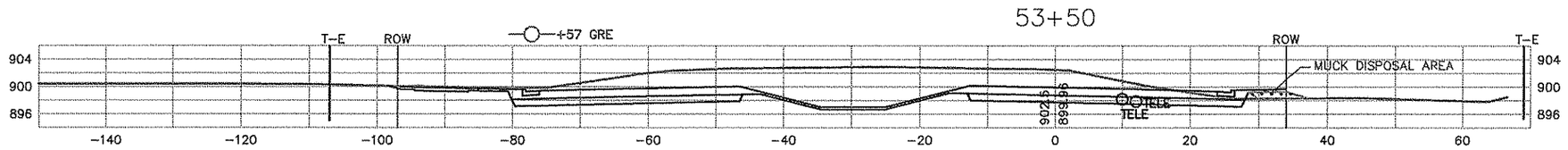












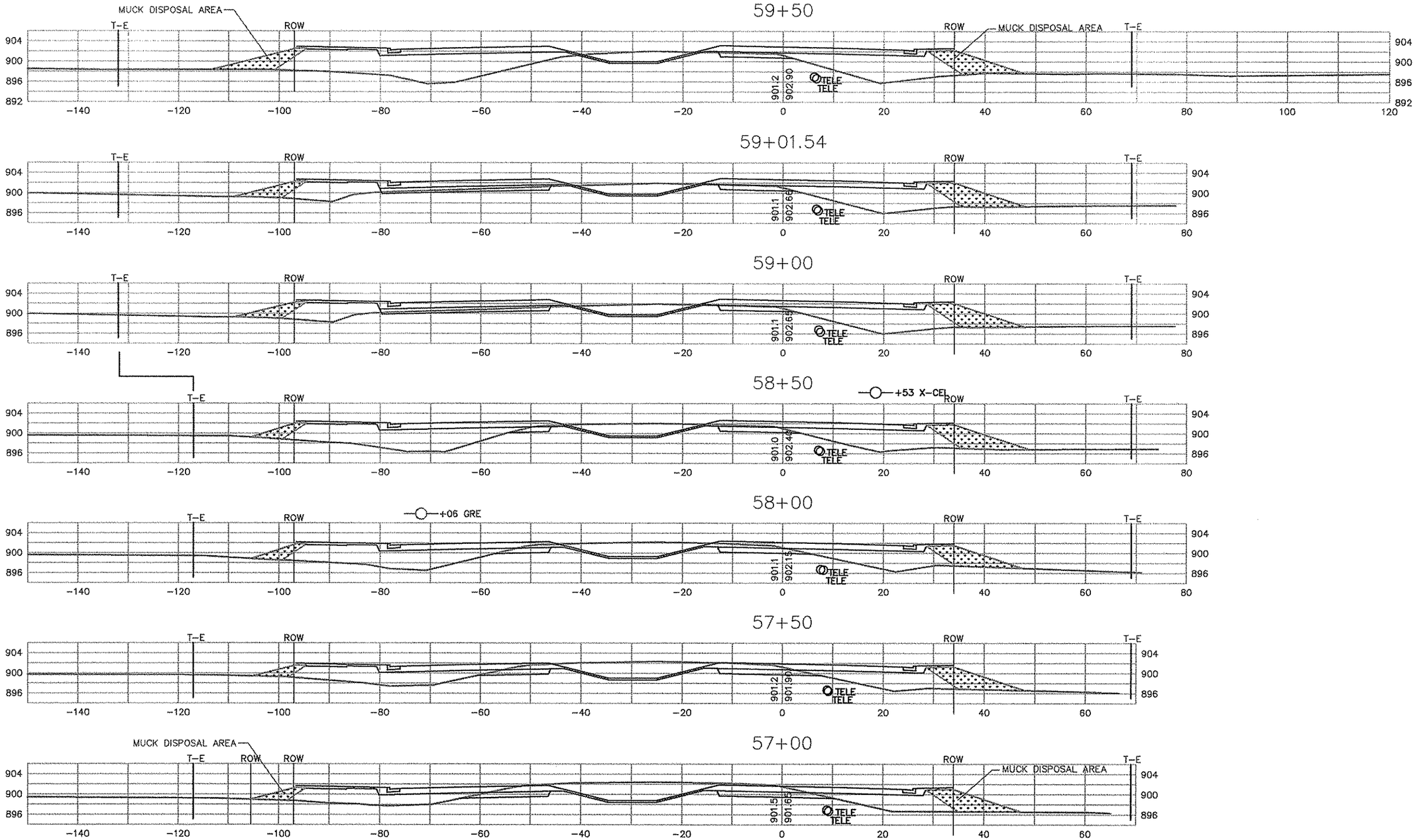
NAME: P:\02-617-13\Plan\82-X-Sec RECALC MN.dwg 01/06/2004 03:24:59 PM CST

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13
STATE PROJECT NO. 106-020-23
STATE AID PROJECT NO. _____
COUNTY PROJECT NO. _____

CROSS SECTIONS
STA 53+50 TO 56+50

Sheet 171 of 226 Sheets



NAME: P:\02-617-13\Plan\82-X-Sec RECALC MN.dwg 01/06/2004 03:24:59 PM CST

ANOKA COUNTY HIGHWAY DEPT.

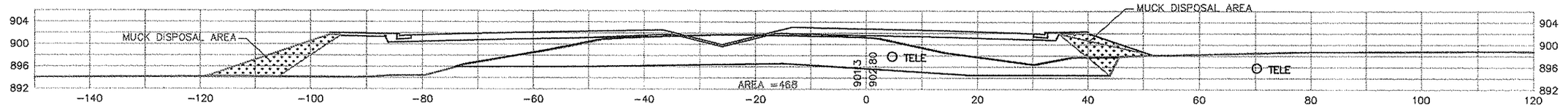
STATE PROJECT NO. 02-617-13
STATE PROJECT NO. 106-020-23
STATE AID PROJECT NO. _____
COUNTY PROJECT NO. _____

CROSS SECTIONS
STA 57+00 TO 59+50

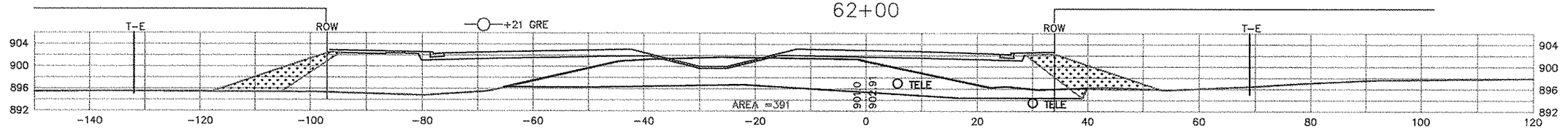
Sheet 172 of 226 Sheets

C.S.A.H 12

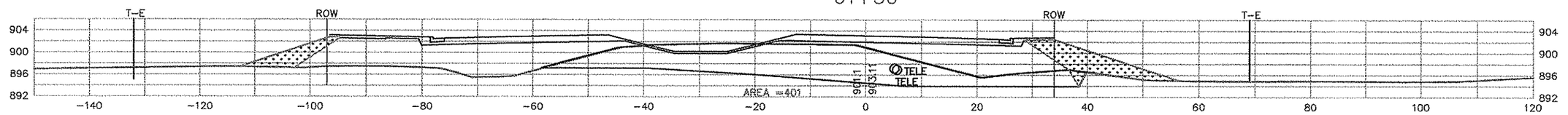
62+21.57



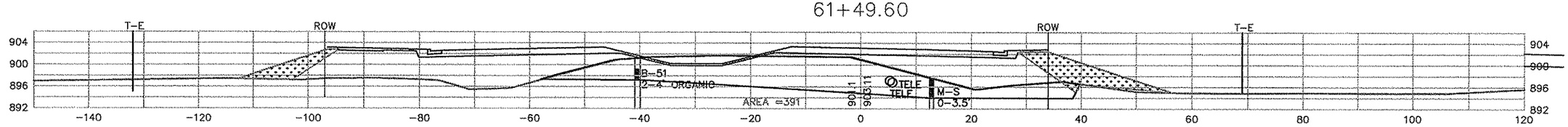
62+00



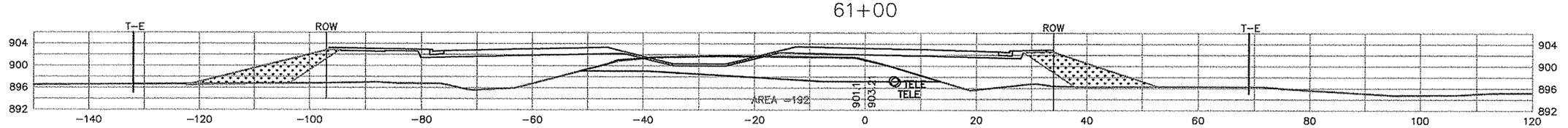
61+50



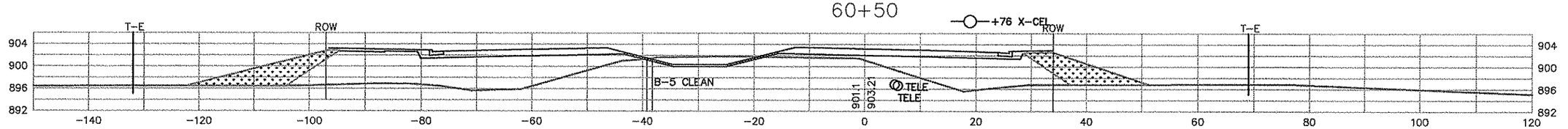
61+49.60



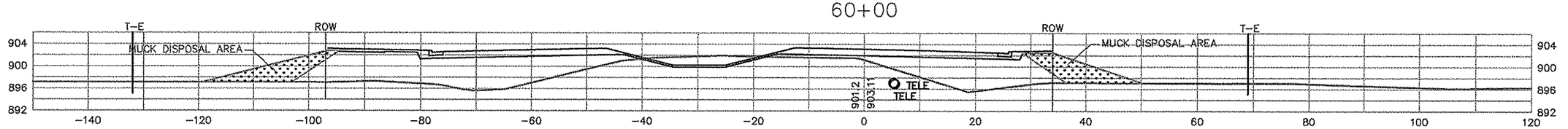
61+00



60+50



60+00



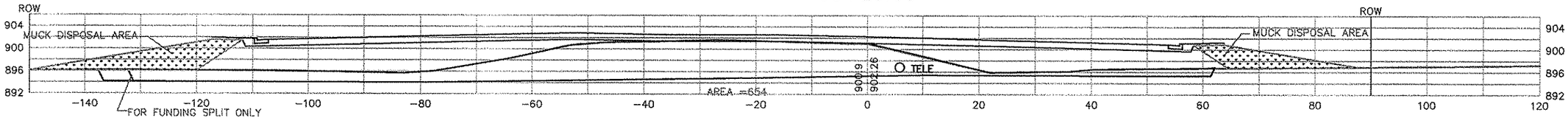
NAME: P:\02-617-13\Plan\82-X-Sec RECALC MN.dwg 01/06/2004 03:24:59 PM CST

ANOKA COUNTY HIGHWAY DEPT.

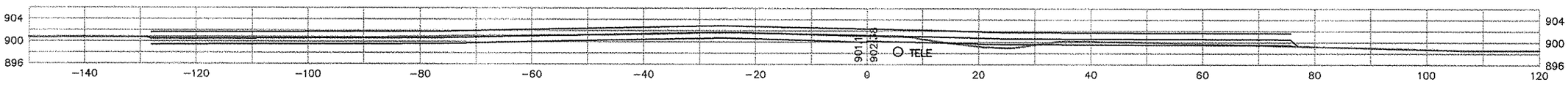
STATE PROJECT NO. 02-617-13
STATE PROJECT NO. 106-020-23
STATE AID PROJECT NO. _____
COUNTY PROJECT NO. _____

CROSS SECTIONS
STA 60+00 TO 62+21.57

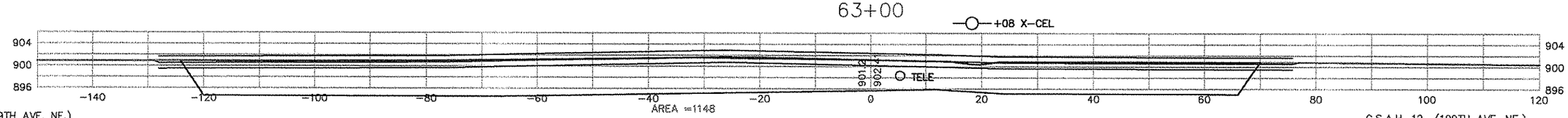
63+29.63



63+05.90



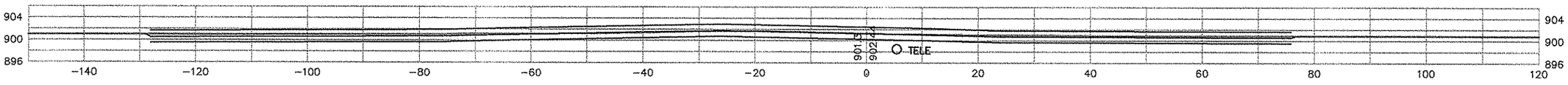
63+00



C.S.A.H. 12 (109TH AVE. NE.)

C.S.A.H. 12 (109TH AVE. NE.)

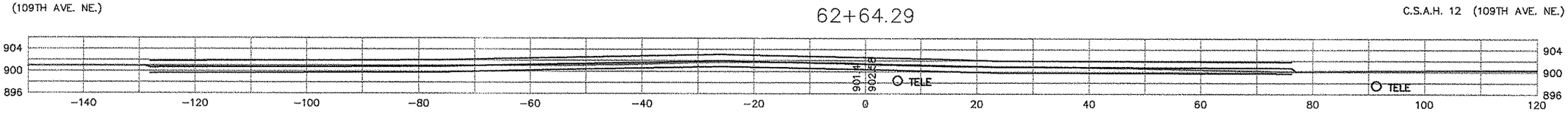
62+94.15



C.S.A.H. 12 (109TH AVE. NE.)

C.S.A.H. 12 (109TH AVE. NE.)

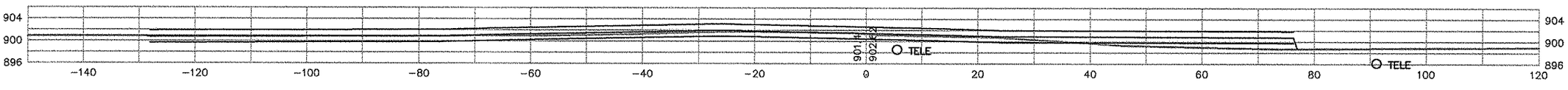
62+64.29



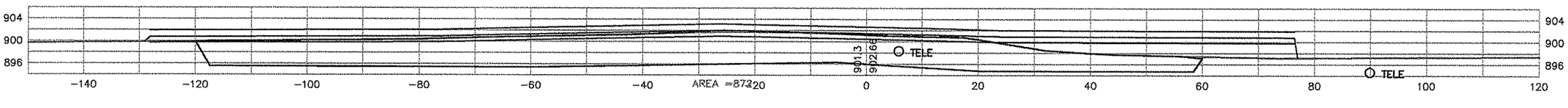
C.S.A.H. 12 (109TH AVE. NE.)

C.S.A.H. 12 (109TH AVE. NE.)

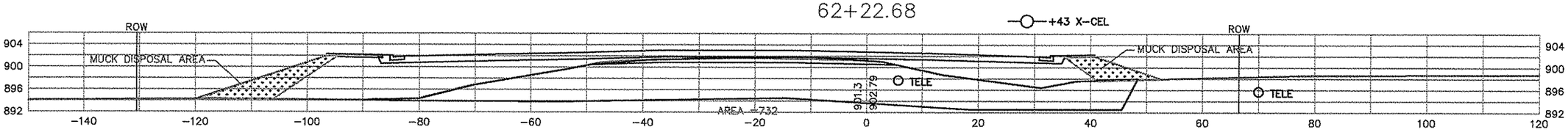
62+57.55



62+50



62+22.68



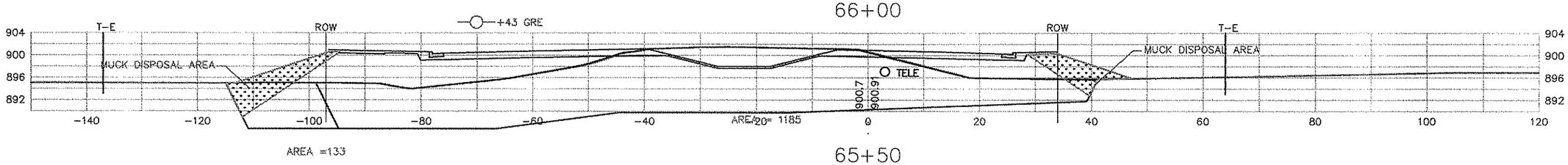
NAME: P:\02-617-13\Plan\82-X-Sec RECALC MN.dwg 01/06/2004 03:24:59 PM CST

ANOKA COUNTY HIGHWAY DEPT.

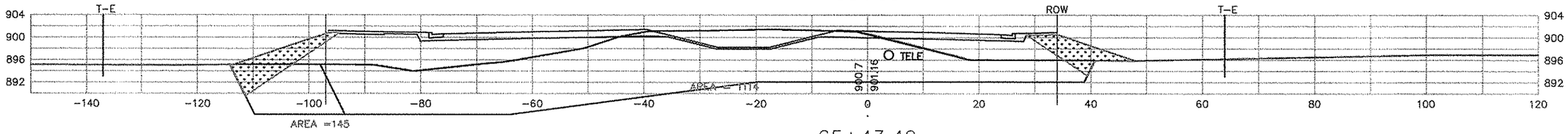
STATE PROJECT NO. 02-617-13
STATE PROJECT NO. 106-020-23
STATE AID PROJECT NO.
COUNTY PROJECT NO.

CROSS SECTIONS
STA 62+22.68 TO 63+29.63

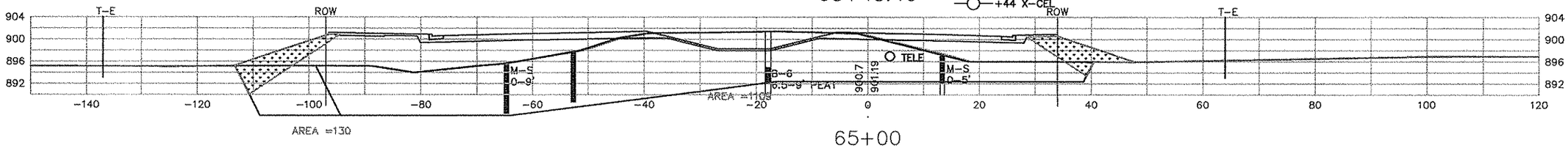
66+00



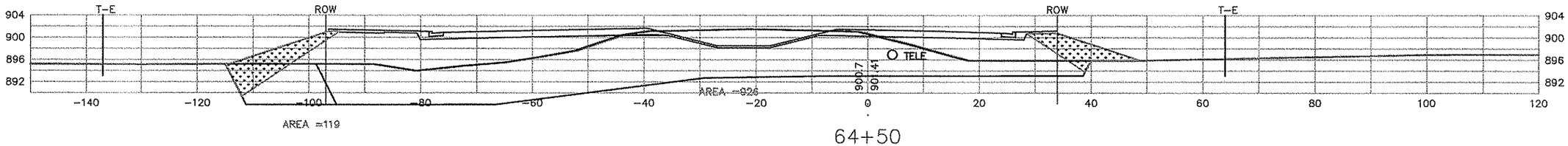
65+50



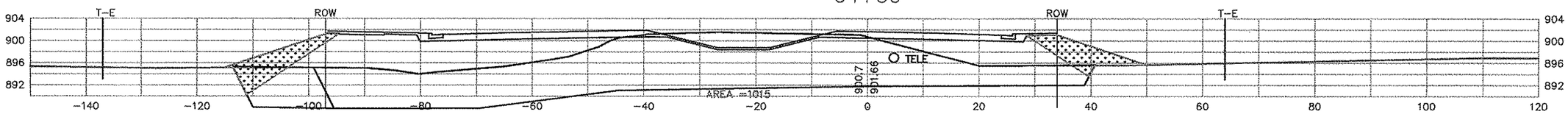
65+43.40



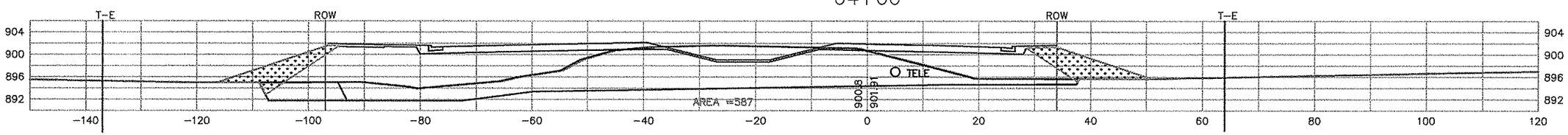
65+00



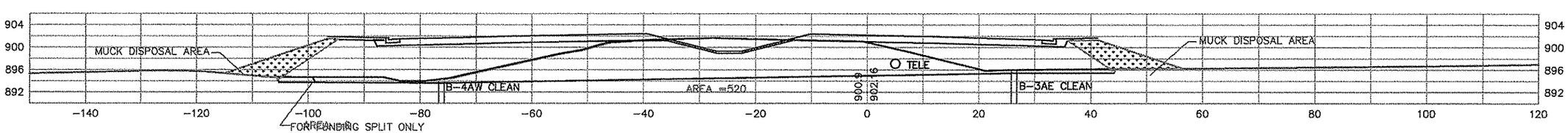
64+50



64+00



63+50



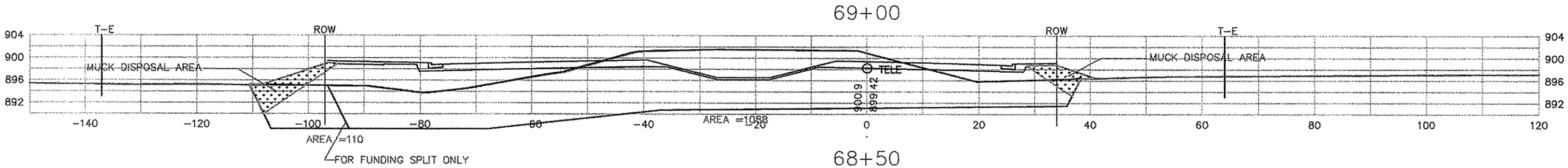
NAME: P:\02-617-13\Plan\82-X-Sec RECALC MN.dwg 01/06/2004 03:24:59 PM CST

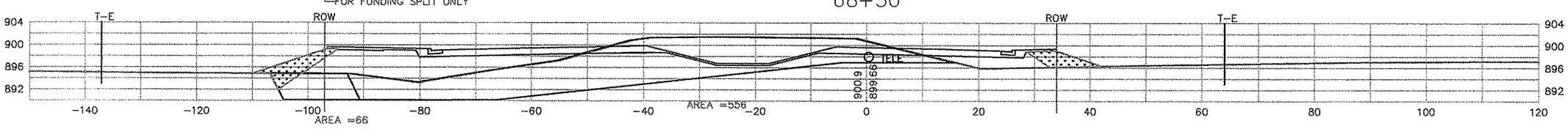
ANOKA COUNTY HIGHWAY DEPT.

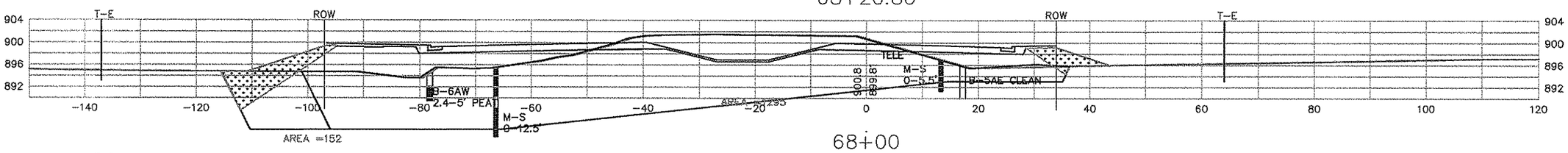
STATE PROJECT NO. 02-617-13
STATE PROJECT NO. 106-020-23
STATE AID PROJECT NO.
COUNTY PROJECT NO.

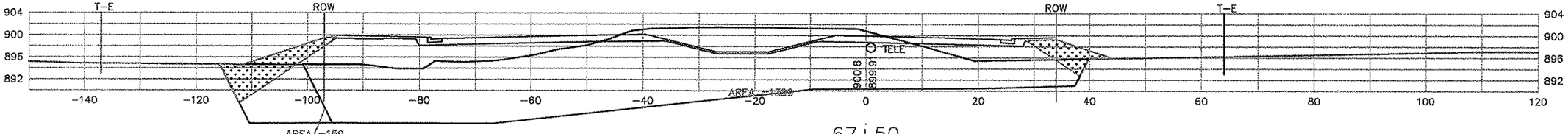
CROSS SECTIONS
STA 63+50 TO 66+00

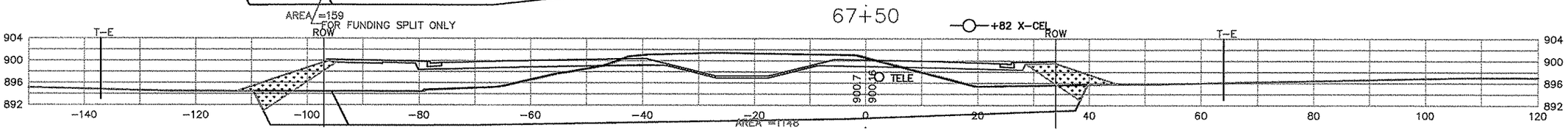
Sheet 175 of 226 Sheets

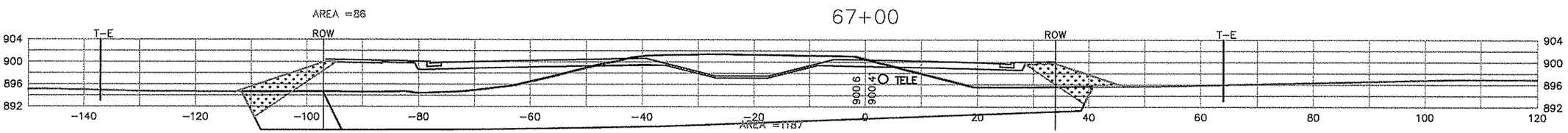


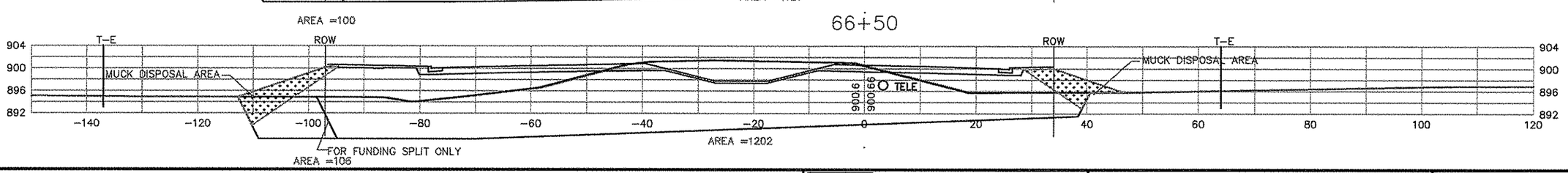












ANOKA COUNTY HIGHWAY DEPT.

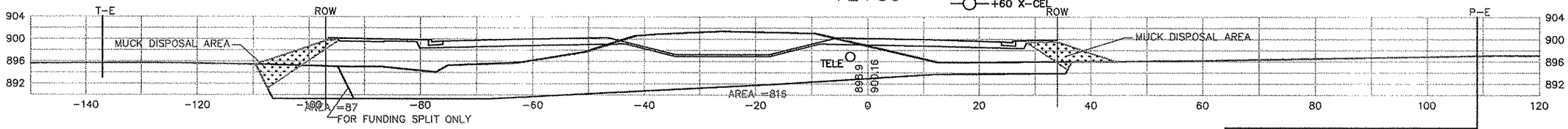
STATE PROJECT NO. 02-617-13
STATE PROJECT NO. 106-020-23
STATE AID PROJECT NO. _____
COUNTY PROJECT NO. _____

CROSS SECTIONS
STA 66+50 TO 69+00

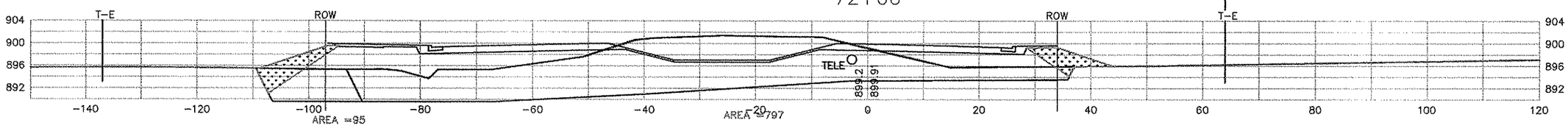
Sheet 176 of 226 Sheets

NAME: P:\02-617-13\Plan\82-X-Sec RECALC MN.dwg 01/06/2004 03:24:59 PM CST

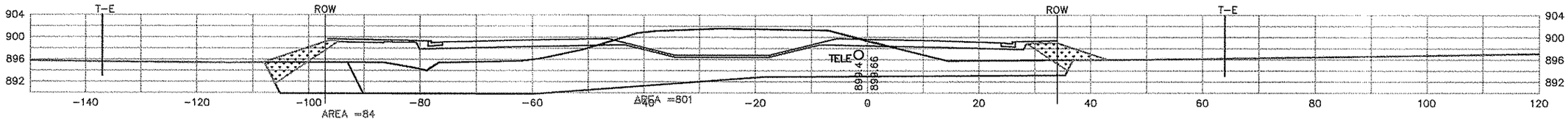
72+50



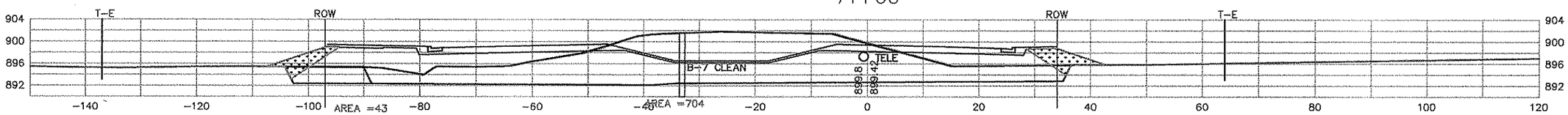
72+00



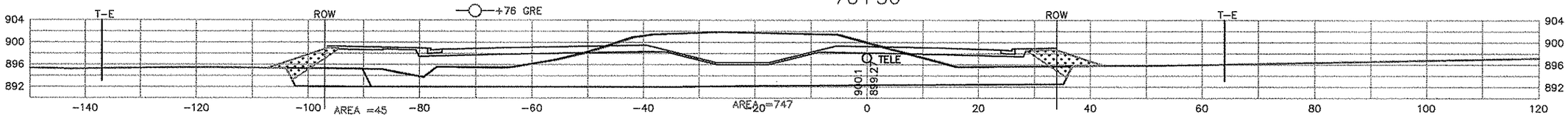
71+50



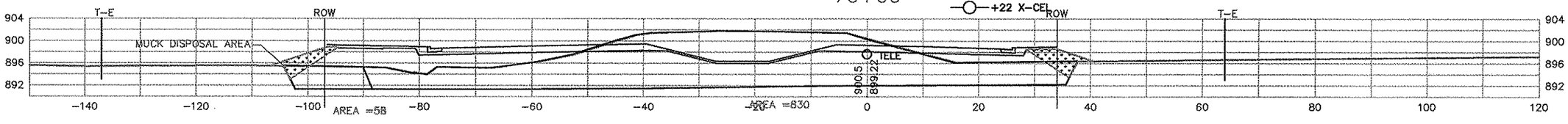
71+00



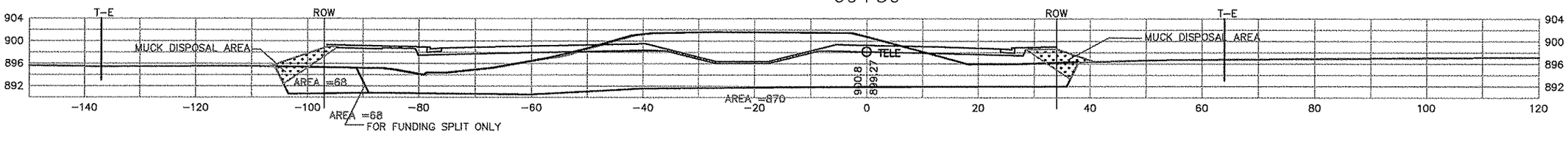
70+50



70+00



69+50



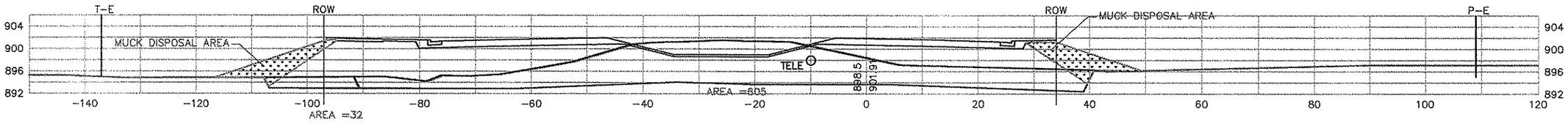
NAME: P:\02-617-13\Plan\82-X-Sec RECALC MN.dwg 01/05/2004 03:24:59 PM CST

ANOKA COUNTY HIGHWAY DEPT.

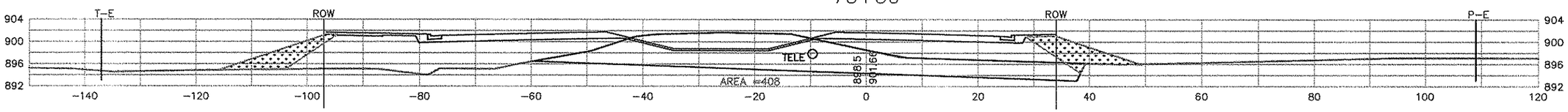
STATE PROJECT NO. 02-617-13
STATE PROJECT NO. 106-020-23
STATE AID PROJECT NO. _____
COUNTY PROJECT NO. _____

CROSS SECTIONS
STA 69+50 TO 72+50

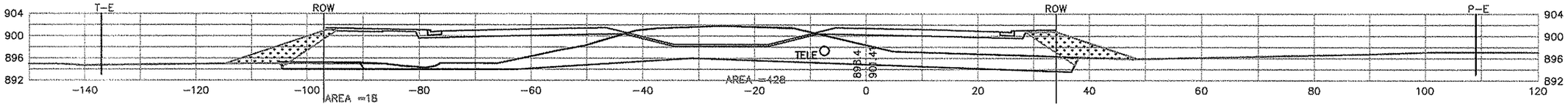
76+00



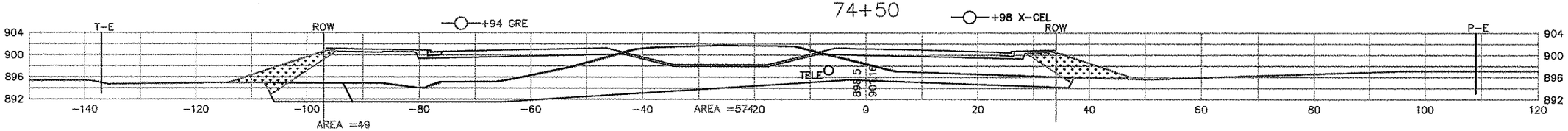
75+50



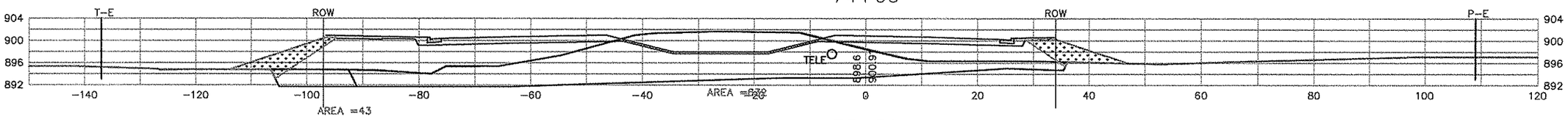
75+00



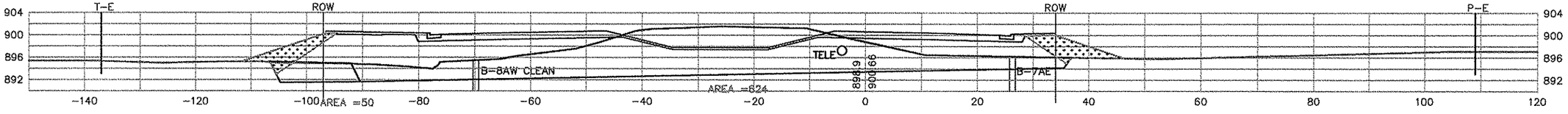
74+50



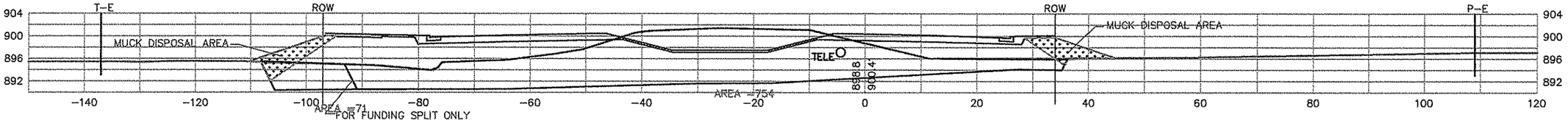
74+00



73+50



73+00



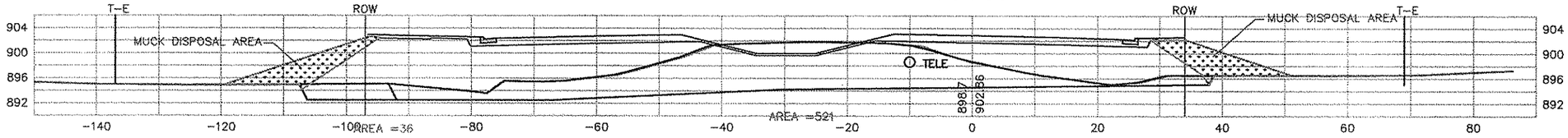
NAME: P:\02-617-13\Plan\82-X-Sec RECALC MN.dwg 01/06/2004 03:24:59 PM CST

ANOKA COUNTY HIGHWAY DEPT.

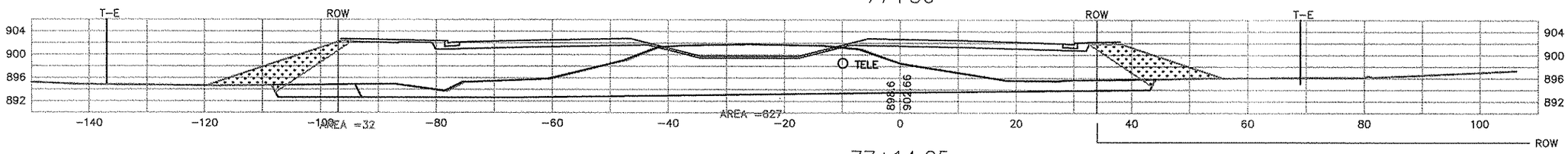
STATE PROJECT NO. 02-617-13
STATE PROJECT NO. 106-020-23
STATE AID PROJECT NO.
COUNTY PROJECT NO.

CROSS SECTIONS
STA73+00 TO 76+00

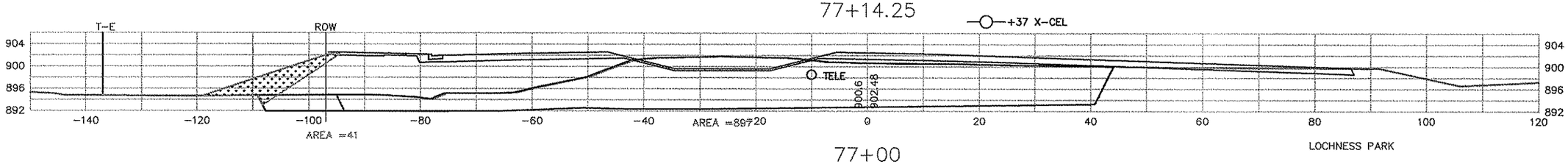
78+00



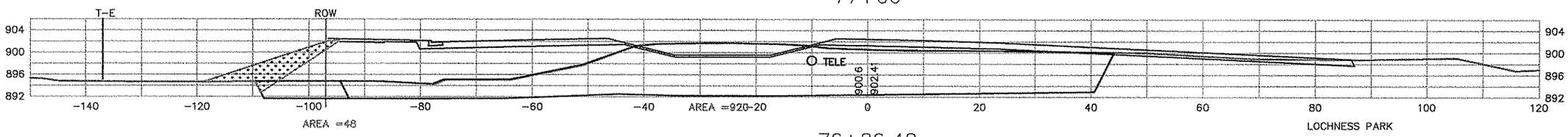
77+50



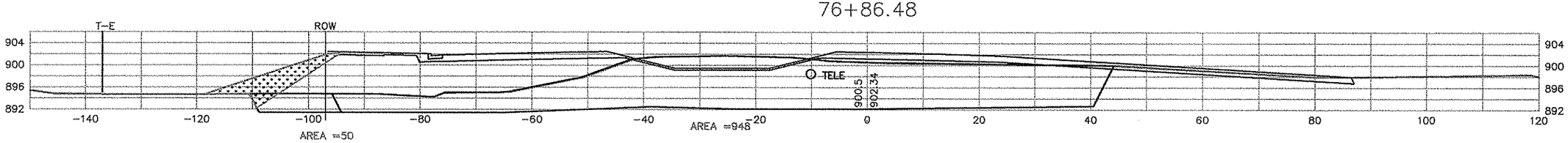
77+14.25



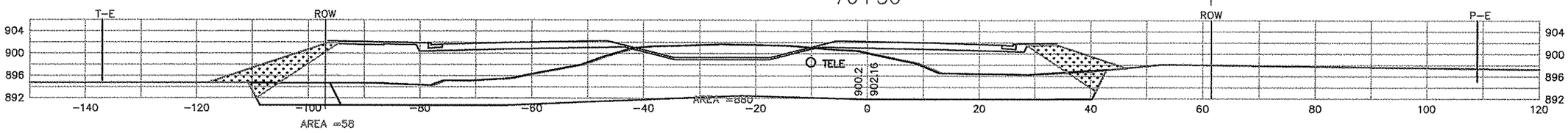
77+00



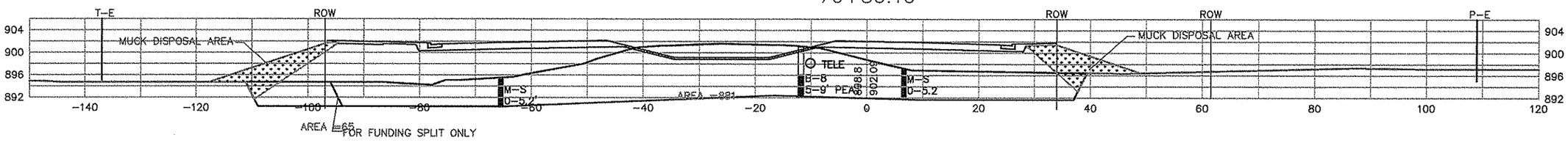
76+86.48



76+50



76+36.10

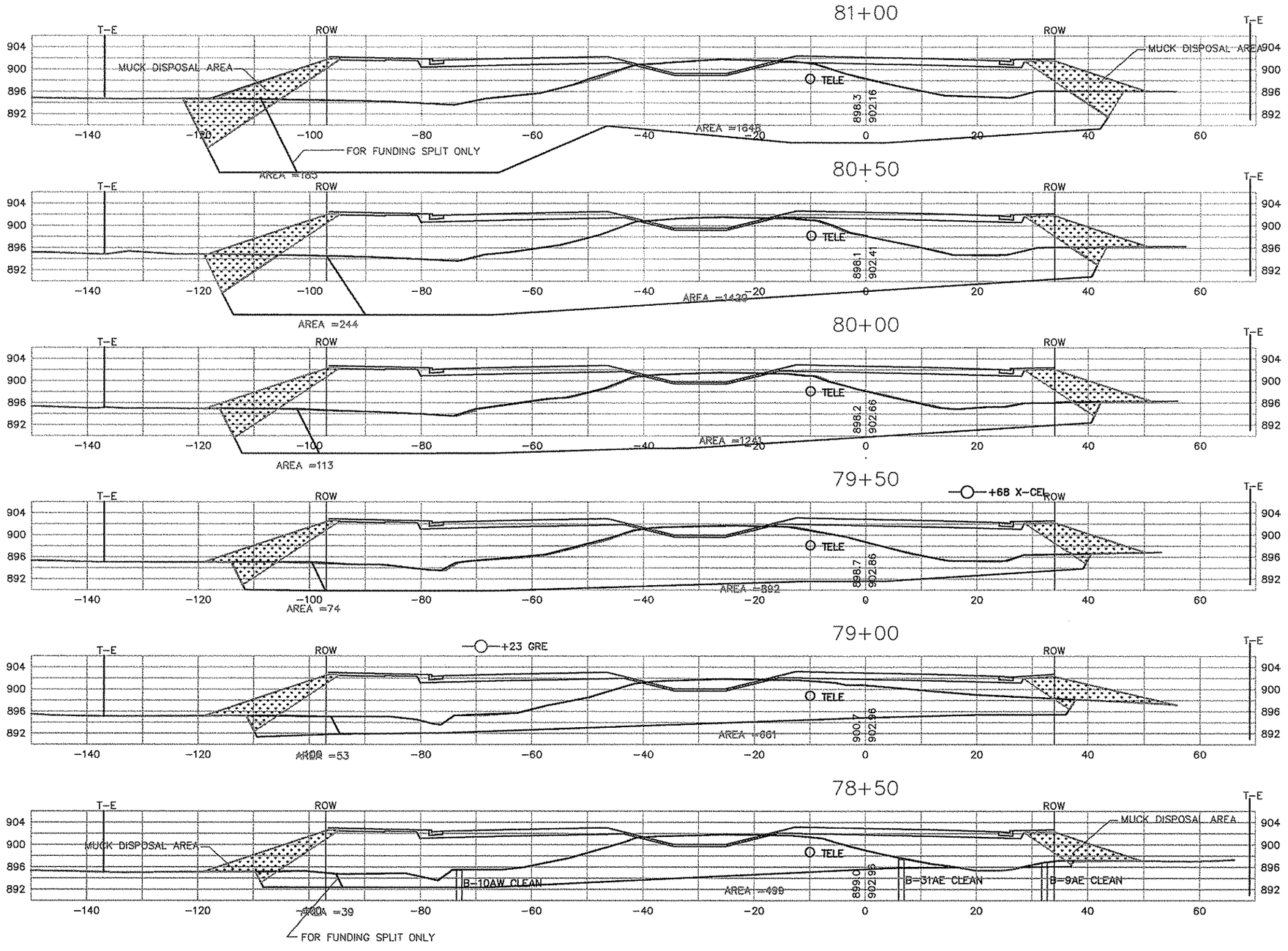


NAME: P:\02-617-13\Plan\82-X-Sec RECALC MN.dwg 01/05/2004 03:24:59 PM CST

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13
STATE PROJECT NO. 106-020-23
STATE AID PROJECT NO.
COUNTY PROJECT NO.

CROSS SECTIONS
STA 76+36.10 TO 78+00



NAME: P:\02-617-13\Plan\82-X-Sec RECALC MN.dwg 01/06/2004 03:24:59 PM CST

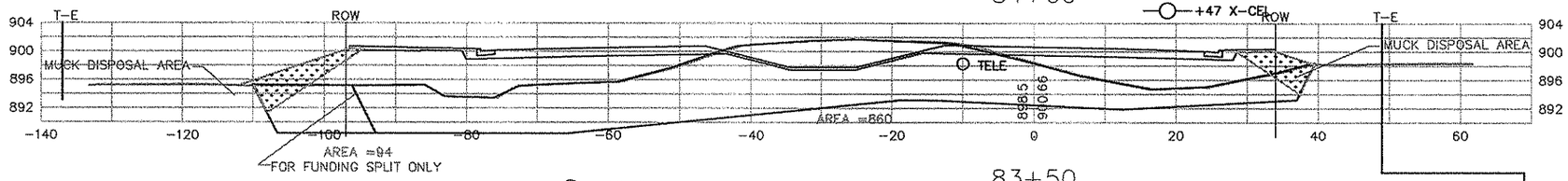
ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13
STATE PROJECT NO. 106-020-23
STATE AID PROJECT NO. _____
COUNTY PROJECT NO. _____

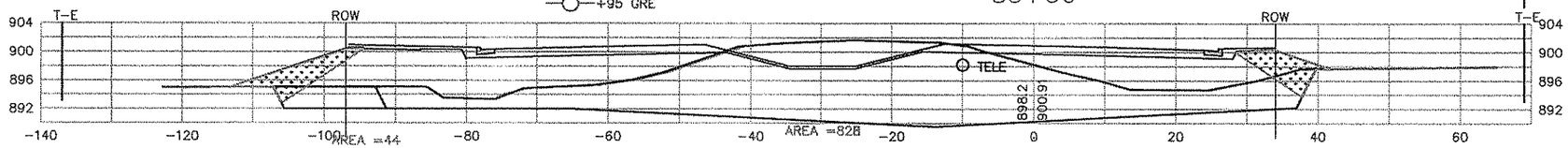
CROSS SECTIONS
STA 78+50 TO 81+00

Sheet 180 of 226 Sheets

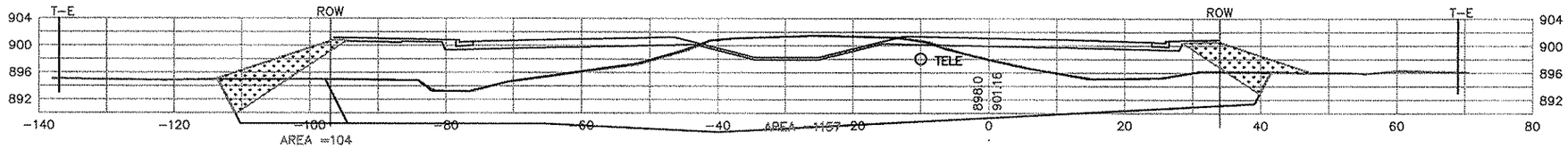
84+00



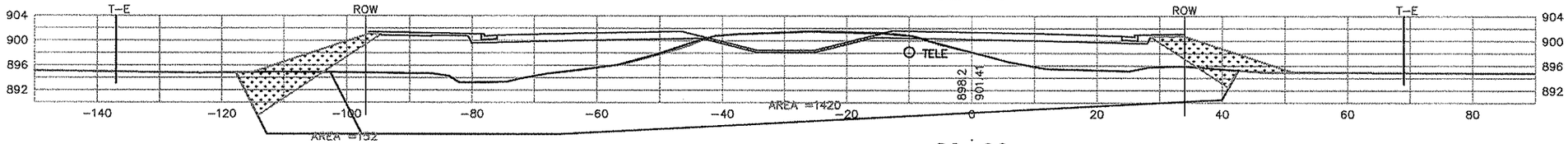
83+50



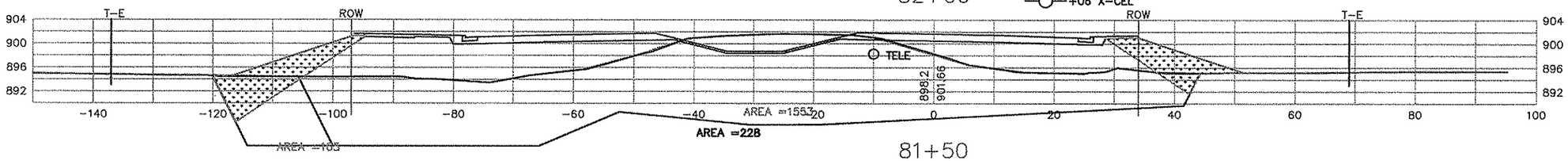
83+00



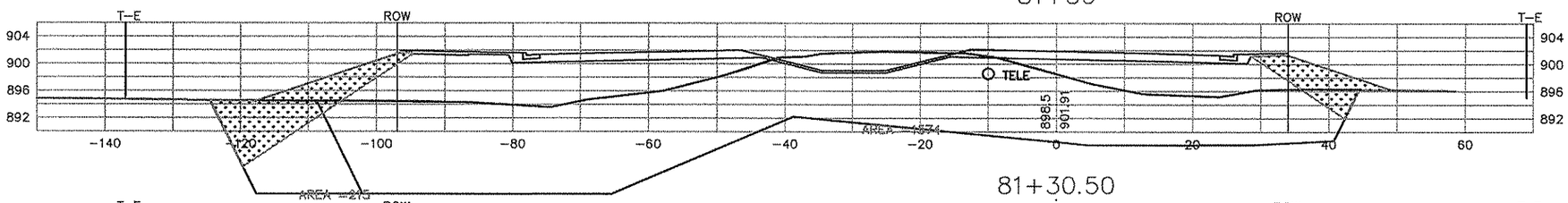
82+50



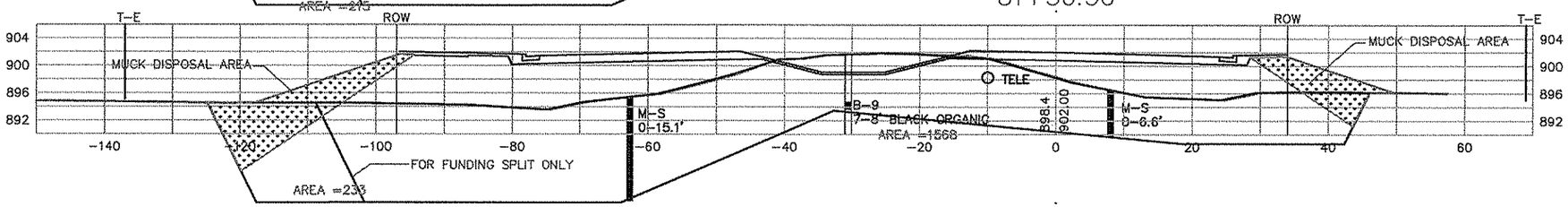
82+00



81+50



81+30.50



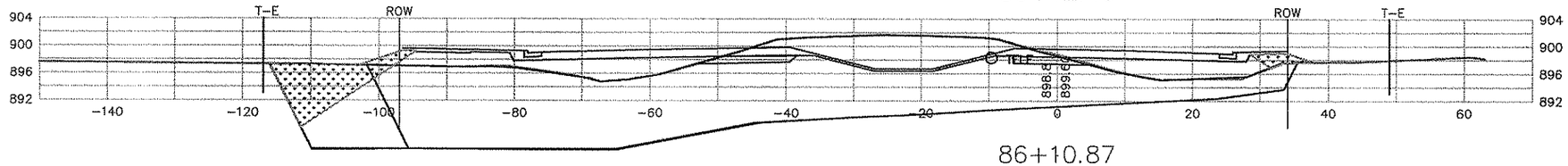
NAME: P:\02-617-13\Plan\82-X-Sec RECALC MN.dwg 01/06/2004 03:24:59 PM CST

STATE PROJECT NO. 02-617-13
STATE PROJECT NO. 106-020-23
STATE AID PROJECT NO. _____
COUNTY PROJECT NO. _____

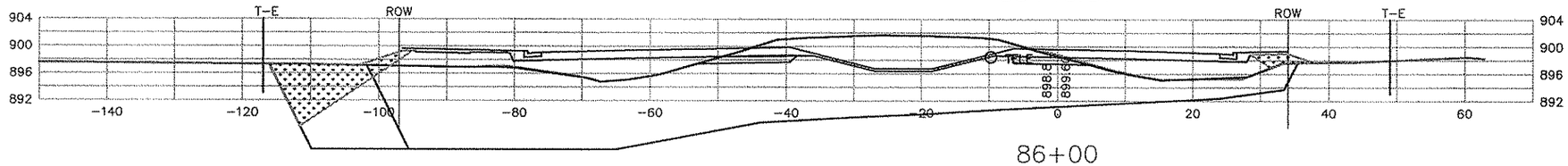
CROSS SECTIONS
STA 81+30.50 TO 84+00

Sheet 181 of 226 Sheets

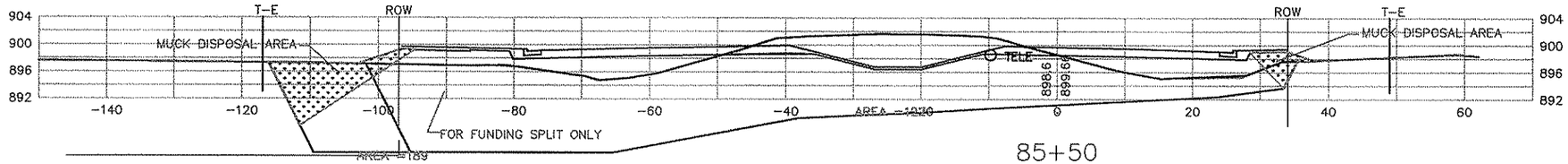
86+12.49



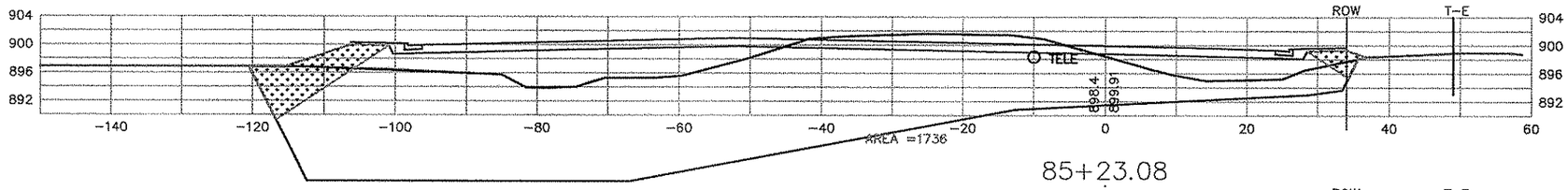
86+10.87



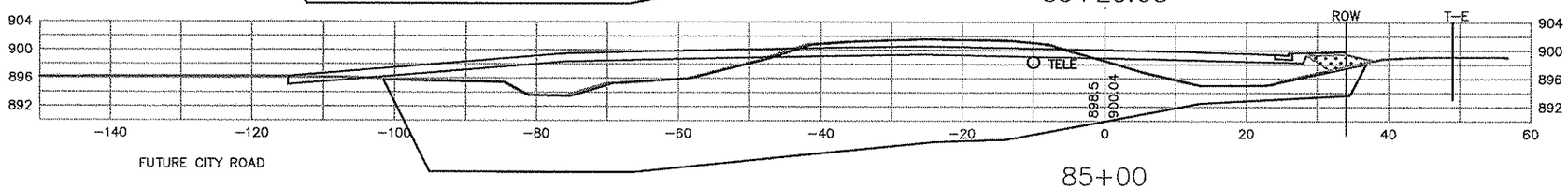
86+00



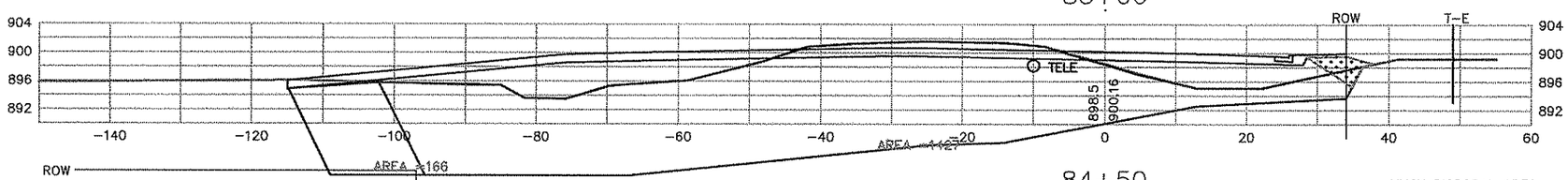
85+50



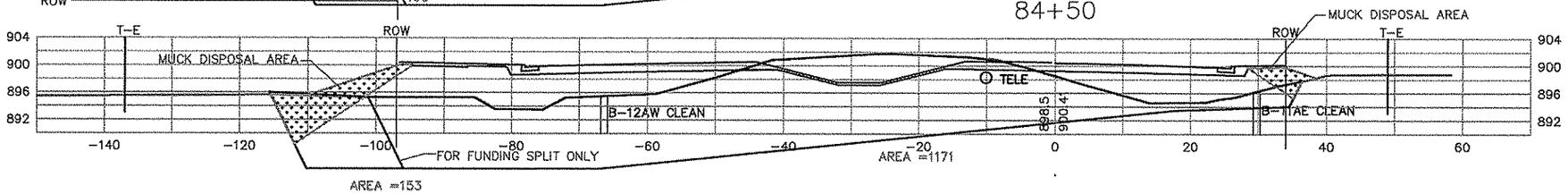
85+23.08



85+00



84+50



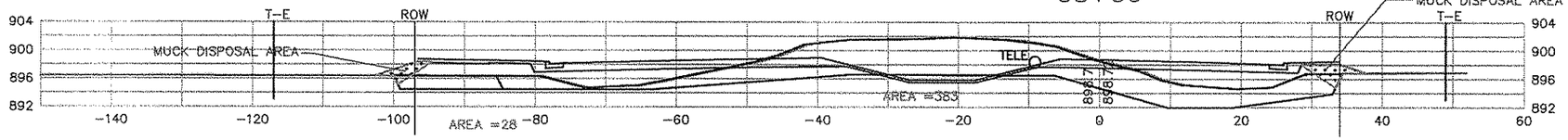
NAME: P:\02-617-13\Plan\82-X-Sec RECALC MN.dwg 01/06/2004 03:24:59 PM CST

STATE PROJECT NO. 02-617-13
STATE PROJECT NO. 106-020-23
STATE AID PROJECT NO. _____
COUNTY PROJECT NO. _____

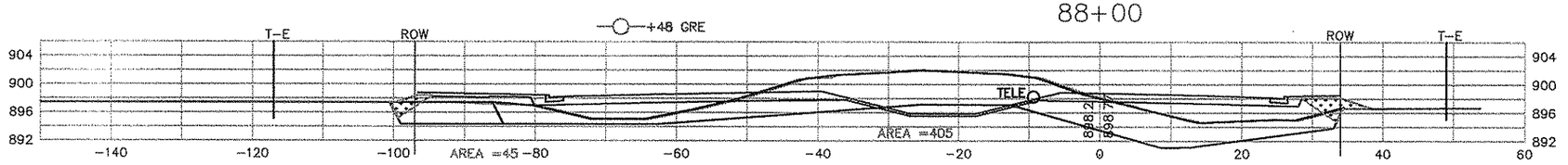
CROSS SECTIONS
STA 84+50 TO 86+12.49

Sheet 182 of 226 Sheets

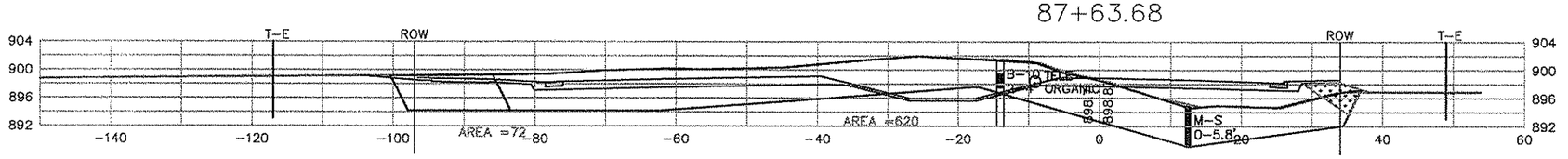
88+50



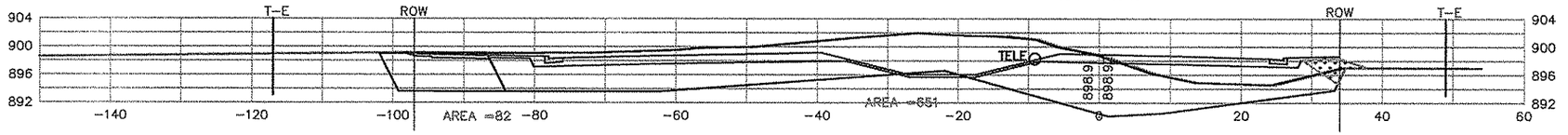
88+00



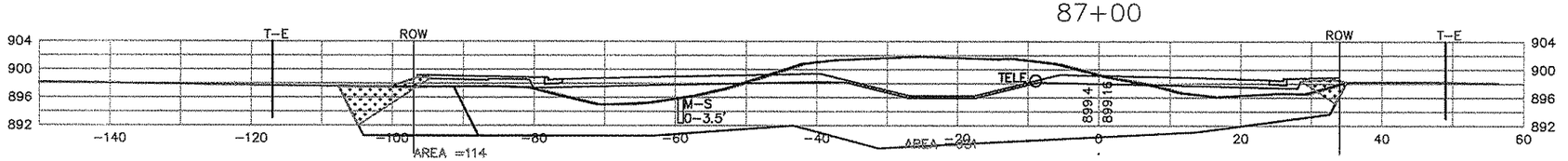
87+63.68



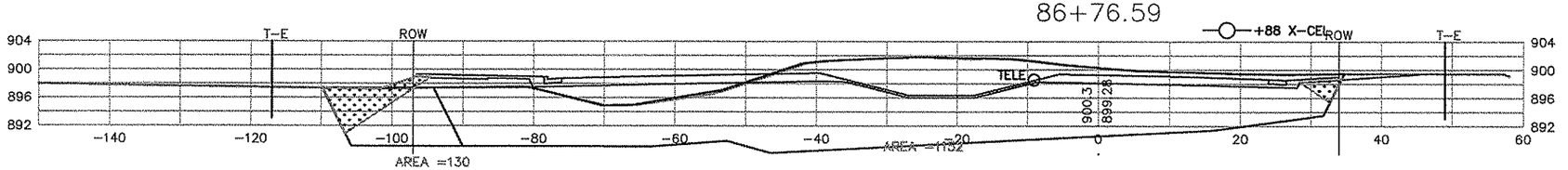
87+50



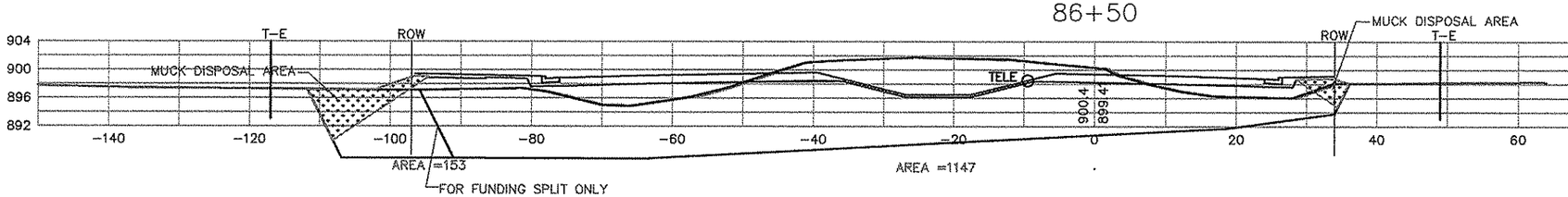
87+00



86+76.59



86+50



NAME: P:\02-617-13\Plan\82-X-Sec RECALC MN.dwg 01/06/2004 03:24:59 PM CST

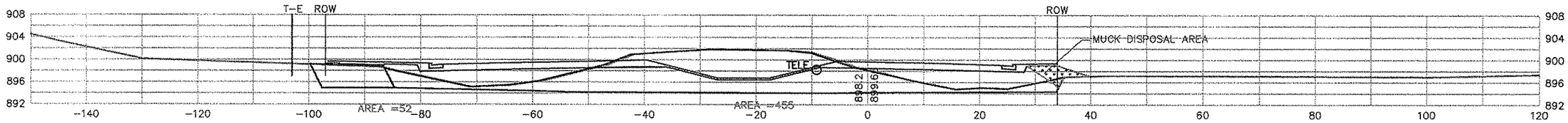
ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13
STATE PROJECT NO. 106-020-23
STATE AID PROJECT NO.
COUNTY PROJECT NO.

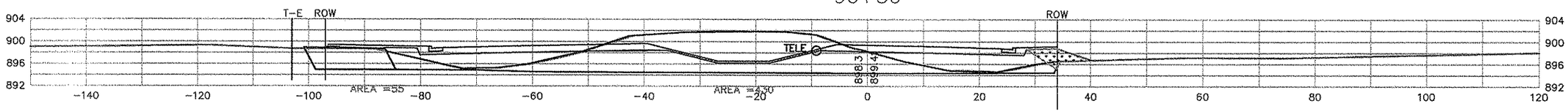
CROSS SECTIONS
STA 86+50 TO 88+50

Sheet 183 of 226 Sheets

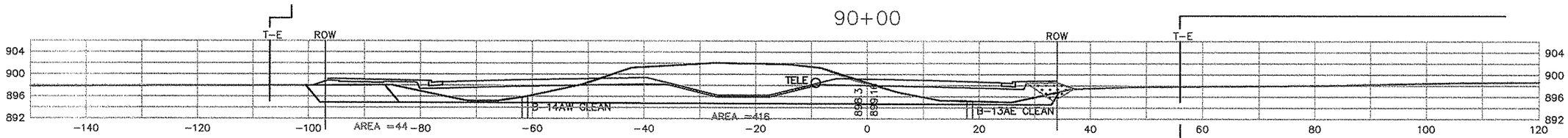
91+00



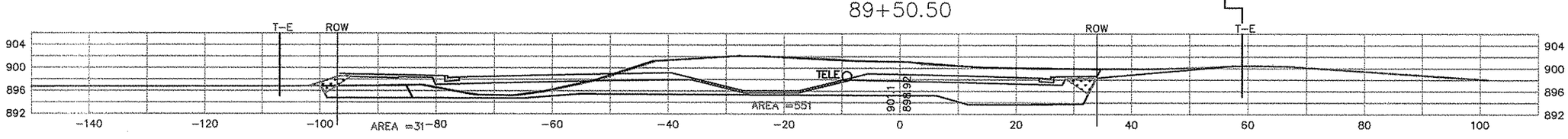
90+50



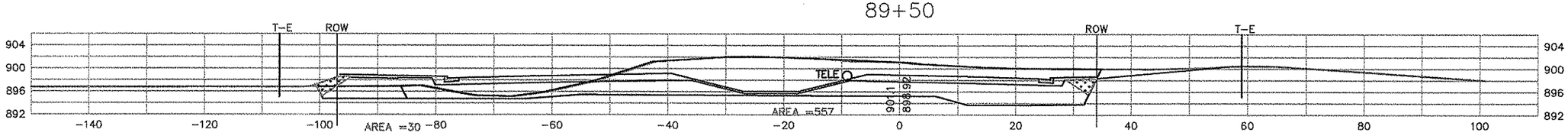
90+00



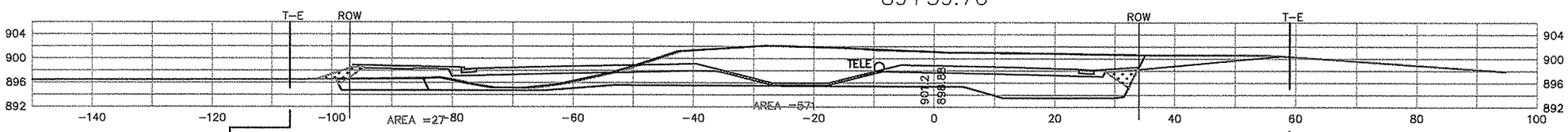
89+50.50



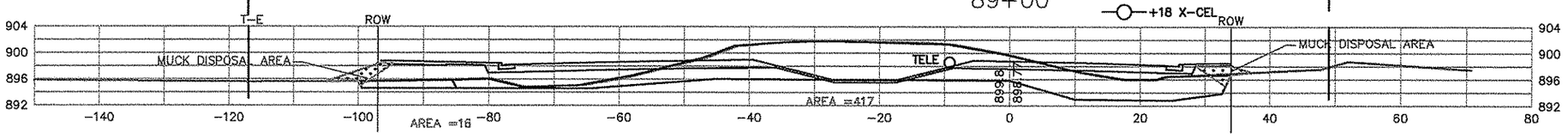
89+50



89+39.70



89+00



NAME: P:\02-617-13\Plan\82-X-Sec RECALC MN.dwg 01/06/2004 03:24:59 PM CST

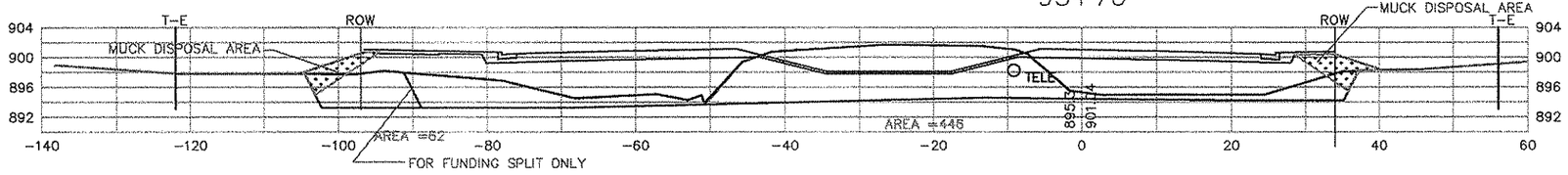
ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13
STATE PROJECT NO. 106-020-23
STATE AID PROJECT NO.
COUNTY PROJECT NO.

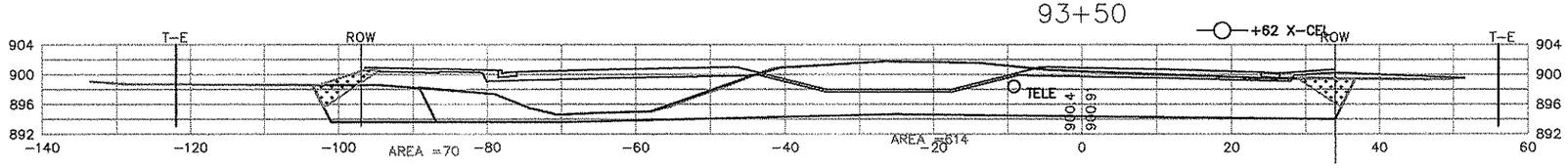
CROSS SECTIONS
STA 89+00 TO 91+00

Sheet 184 of 226 Sheets

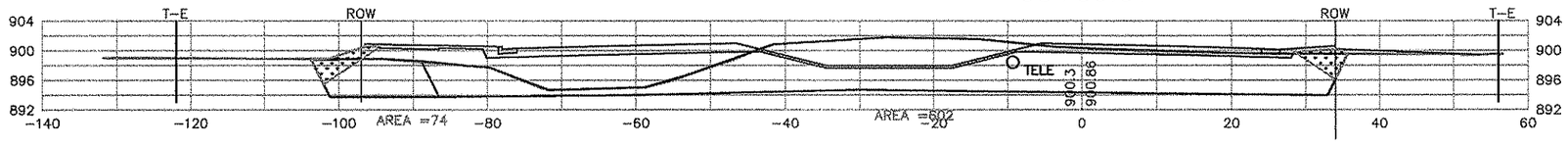
93+76



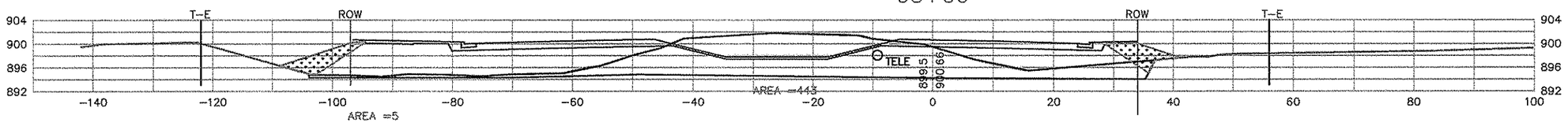
93+50



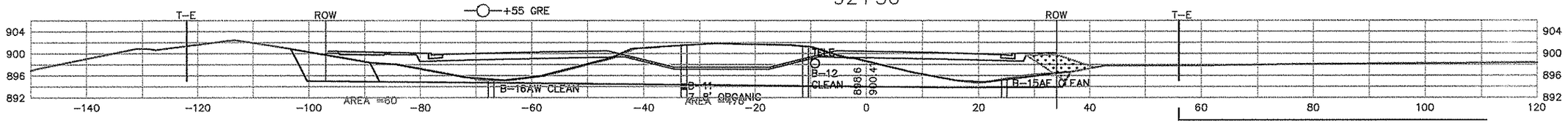
93+39.91



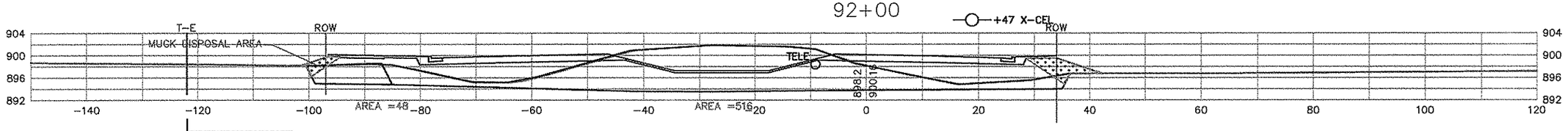
93+00



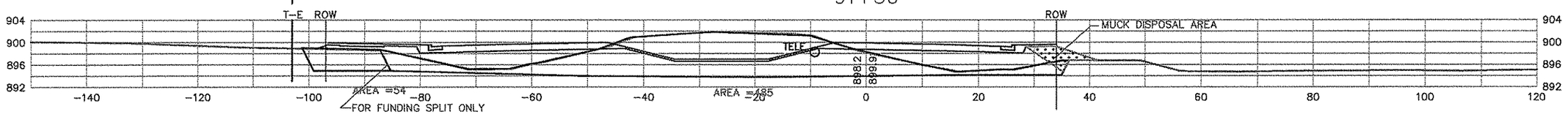
92+50



92+00



91+50



NAME: P:\02-617-13\Plan\82-X-Sec RECALC MN.dwg 01/06/2004 03:24:59 PM CST

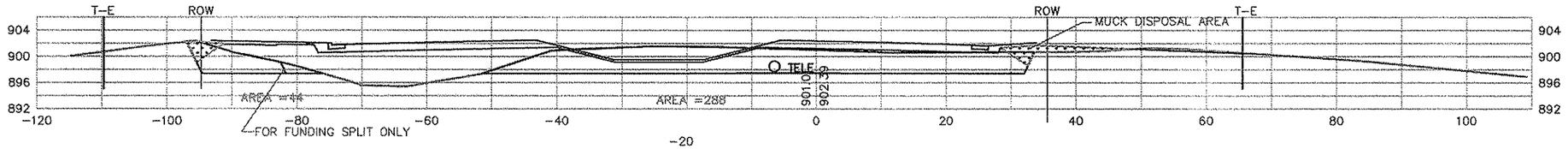
ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13
STATE PROJECT NO. 106-020-23
STATE AID PROJECT NO.
COUNTY PROJECT NO.

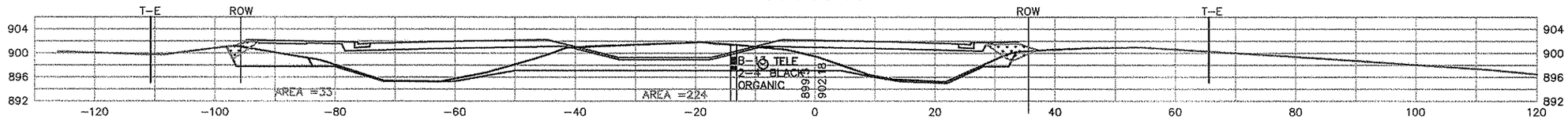
CROSS SECTIONS
STA 91+50 TO 93+76

Sheet 185 of 226 Sheets

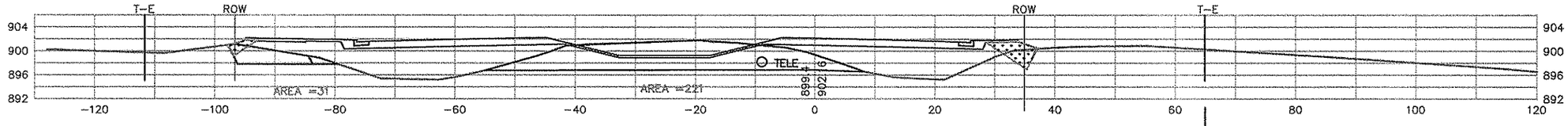
96+46.38



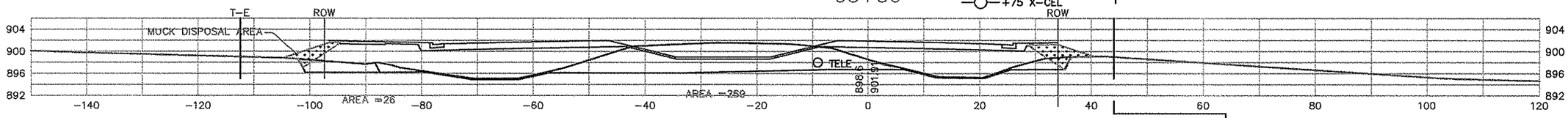
96+03.10



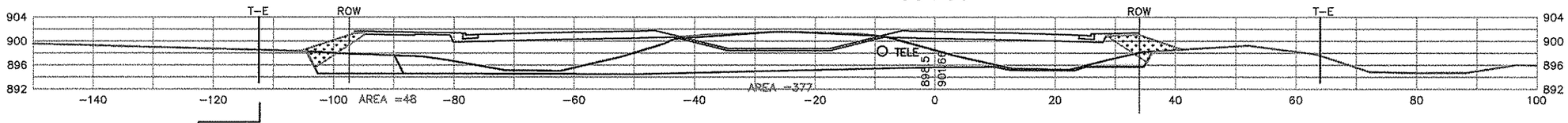
96+00



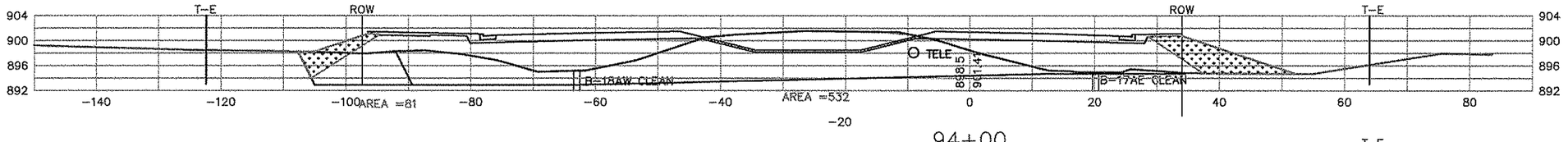
95+50



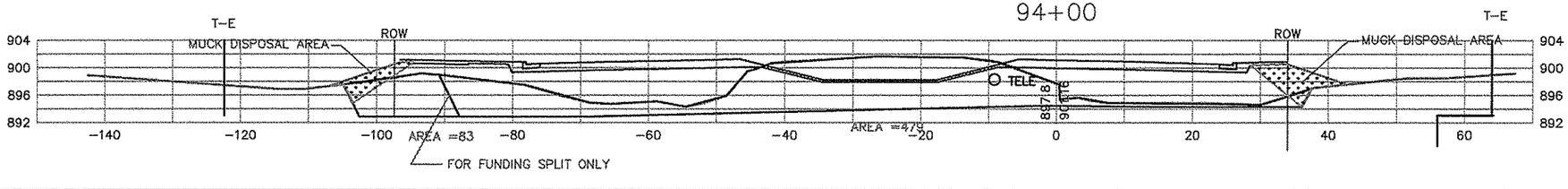
95+00



94+50



94+00



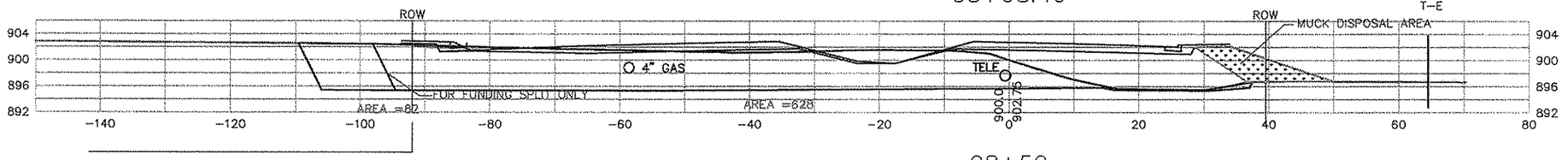
ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13
STATE PROJECT NO. 106-020-23
STATE AID PROJECT NO.
COUNTY PROJECT NO.

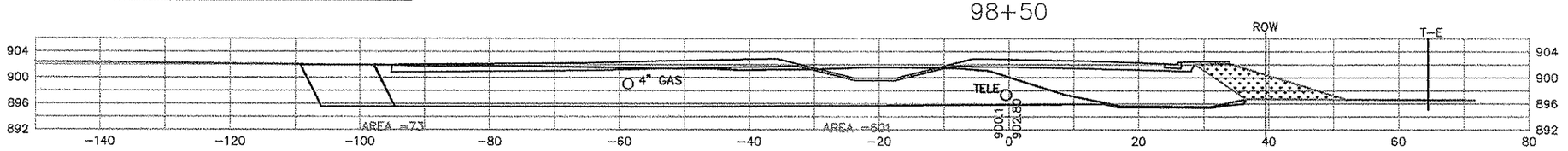
CROSS SECTIONS
STA 94+00 TO 96+46.38

NAME: P:\02-617-13\Plan\82-X-Sec RECALC MN.dwg 01/06/2004 03:24:59 PM CST

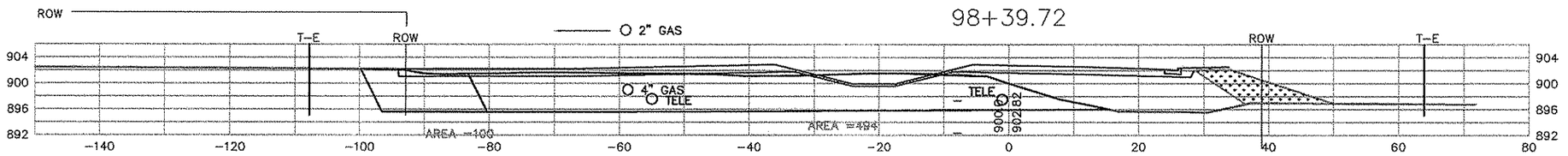
98+68.49



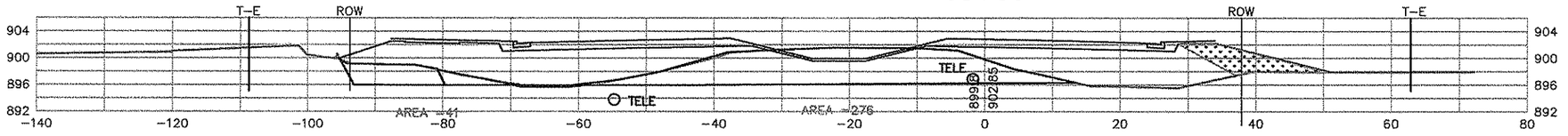
98+50



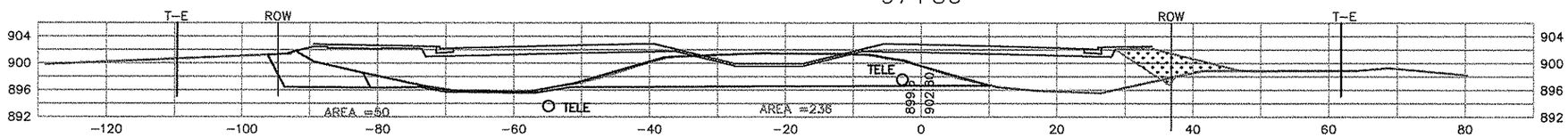
98+39.72



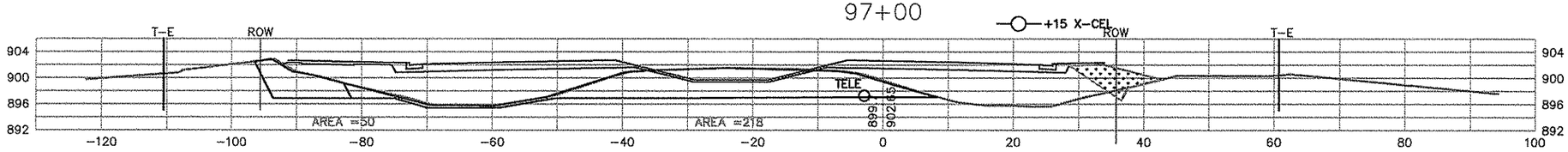
98+00



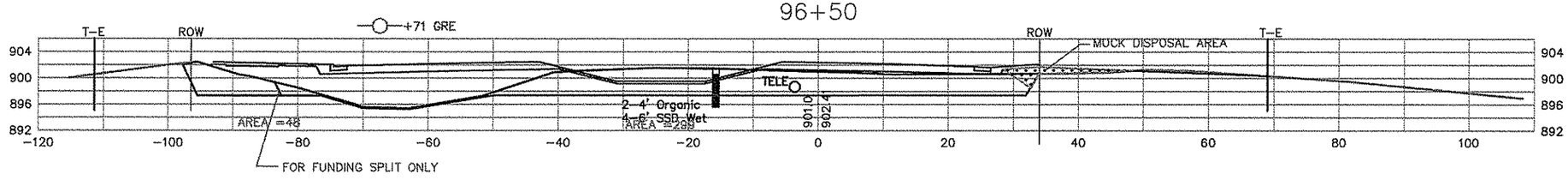
97+50



97+00



96+50



NAME: P:\02-617-13\Plan\82-X-Sec RECALC MN.dwg 01/06/2004 03:24:59 PM CST

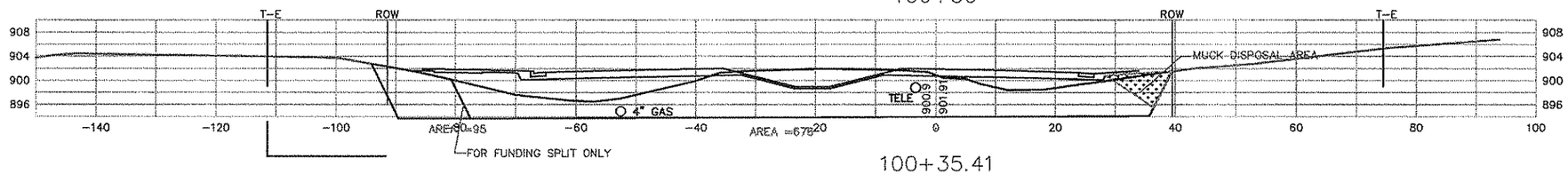
ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13
STATE PROJECT NO. 106-020-23
STATE AID PROJECT NO.
COUNTY PROJECT NO.

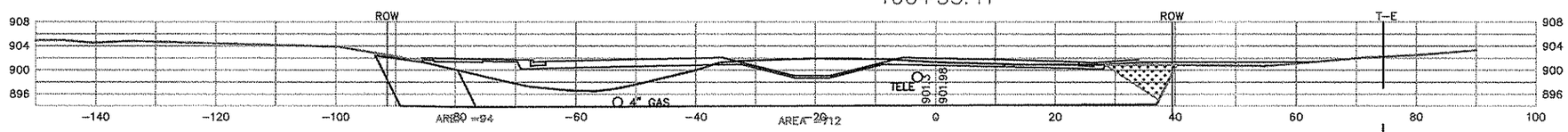
CROSS SECTIONS
STA 96+50 TO 98+68.49

Sheet 187 of 226 Sheets

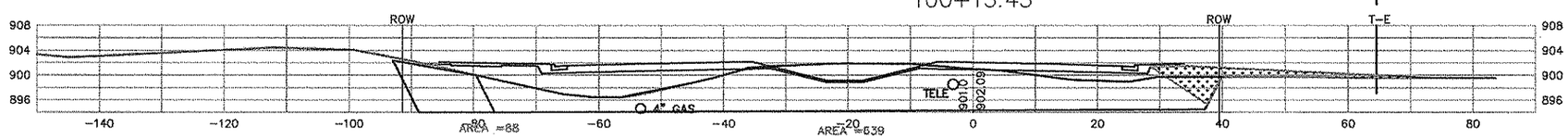
100+50



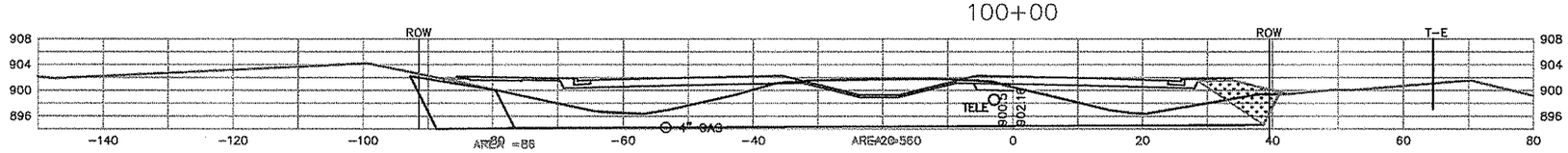
100+35.41



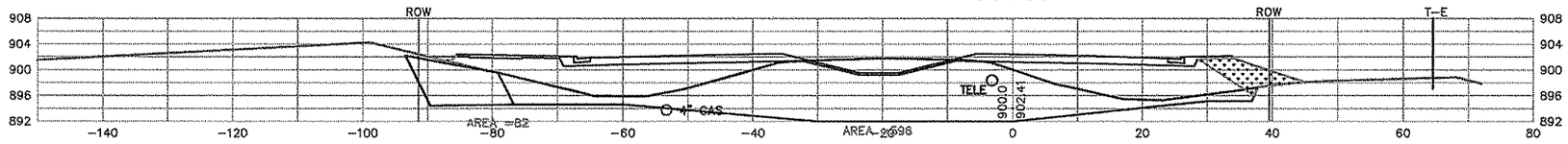
100+13.45



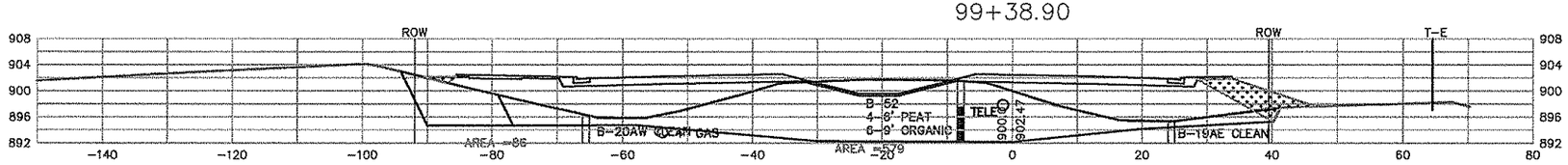
100+00



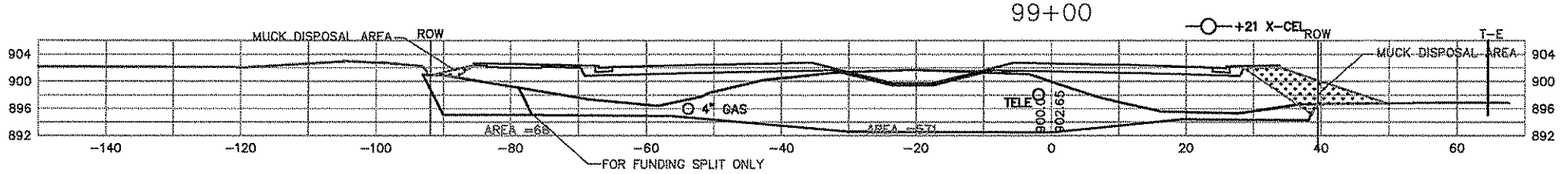
99+50



99+38.90



99+00



NAME: P:\02-617-13\Plan\82-X-Sec RECALC MN.dwg 01/06/2004 03:24:59 PM CST

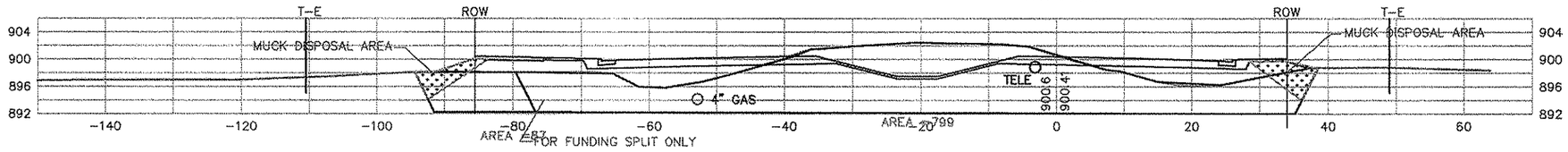
ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13
STATE PROJECT NO. 106-020-23
STATE AID PROJECT NO. _____
COUNTY PROJECT NO. _____

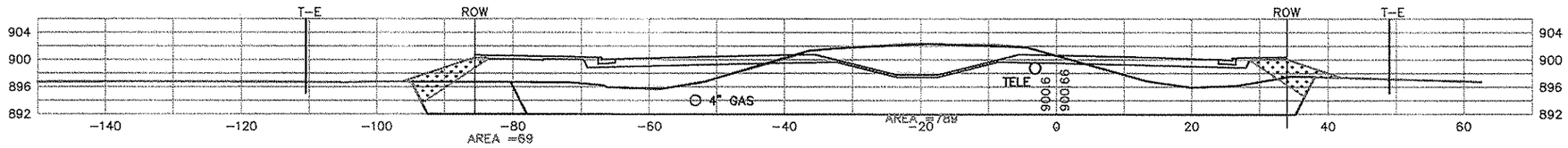
CROSS SECTIONS
STA 99+00 TO 100+50

Sheet 188 of 226 Sheets

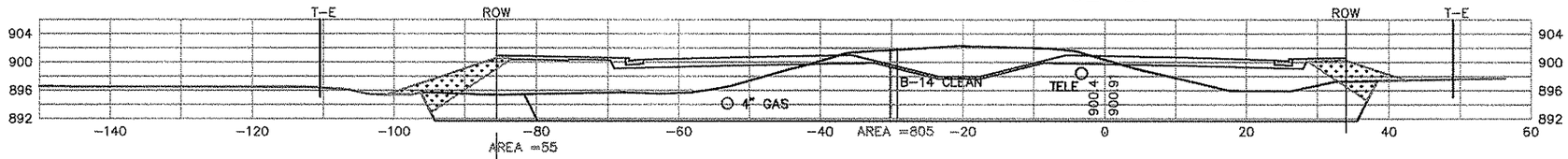
103+50



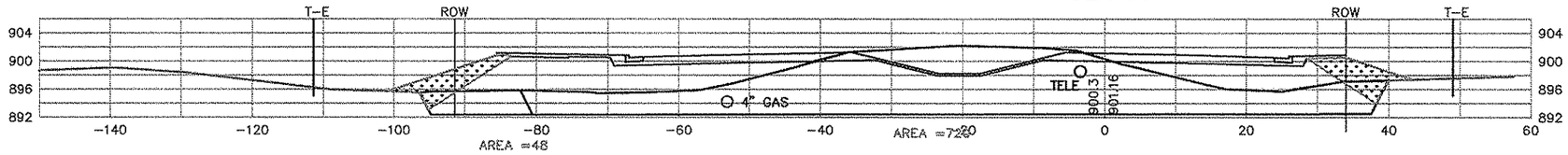
103+00



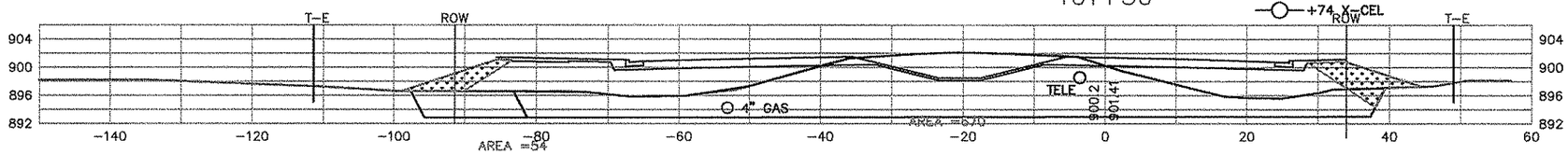
102+50



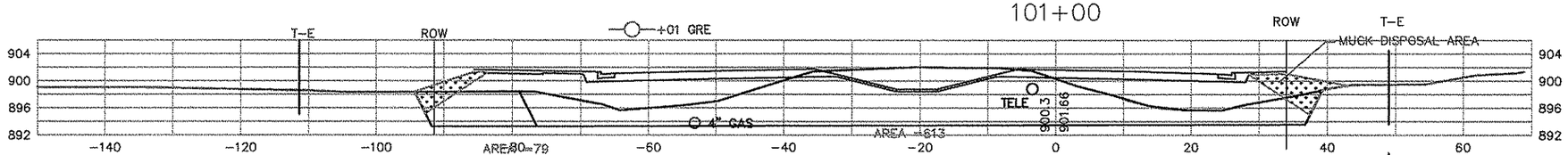
102+00



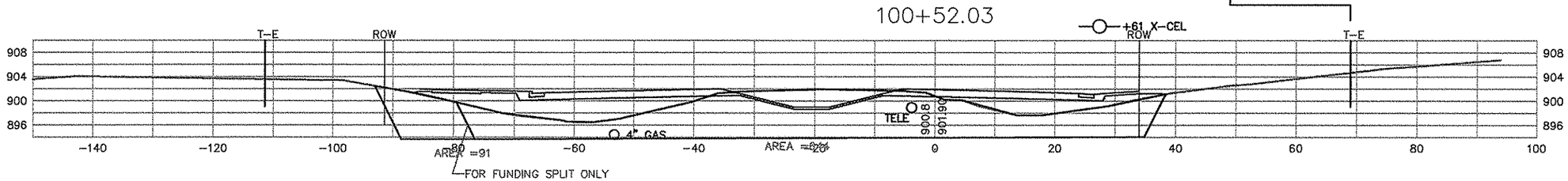
101+50



101+00



100+52.03



NAME: P:\02-617-13\Plan\82-X-Sec RECALC MN.dwg 01/06/2004 03:24:59 PM CST

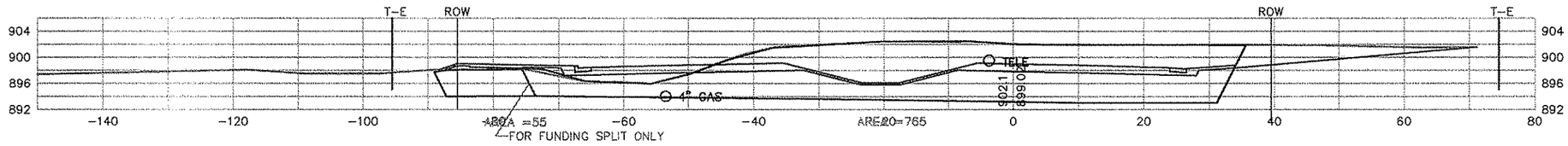
ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13
STATE PROJECT NO. 106-020-23
STATE AID PROJECT NO.
COUNTY PROJECT NO.

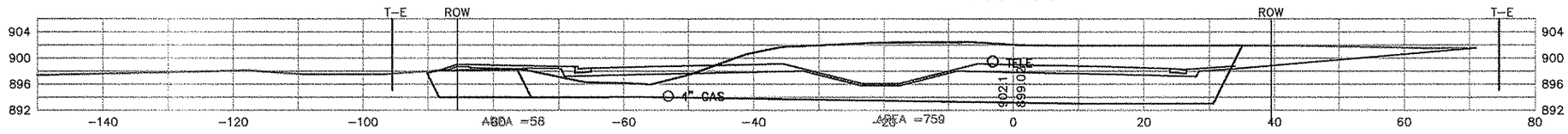
CROSS SECTIONS
STA 100+52.03 TO 103+50

Sheet 189 of 226 Sheets

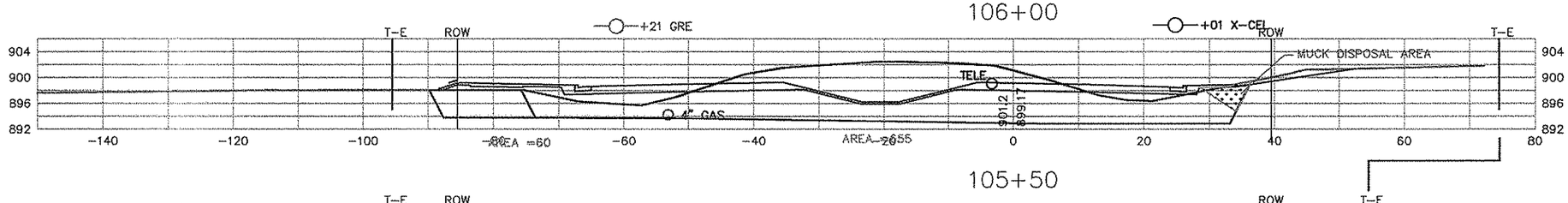
106+51.51



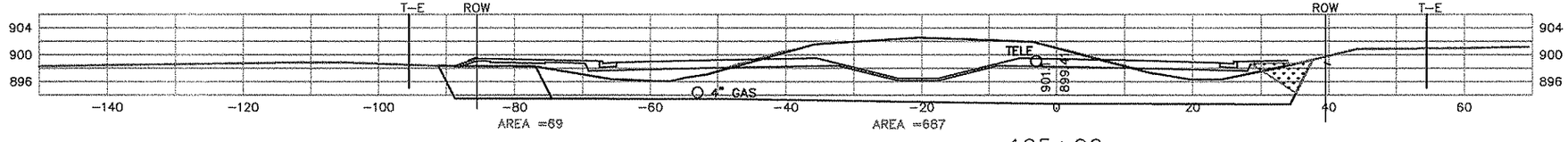
106+50



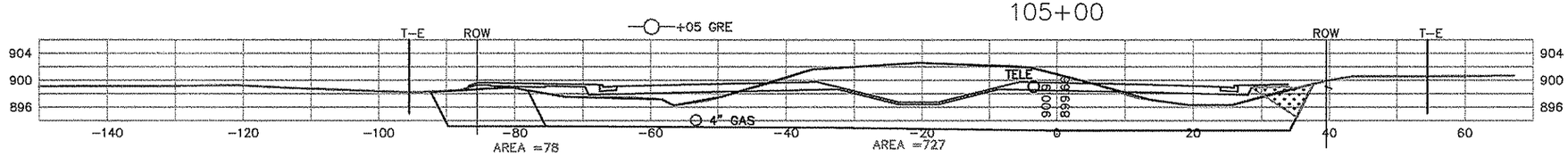
106+00



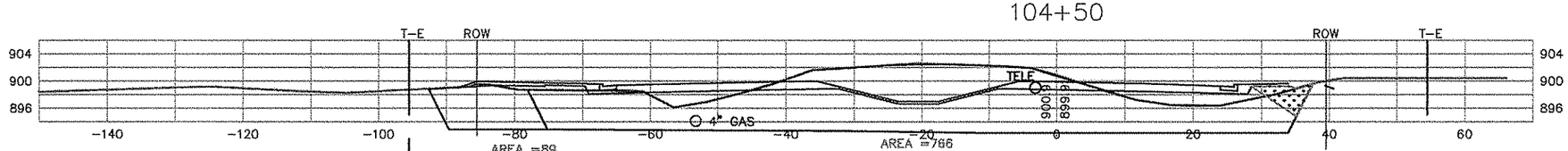
105+50



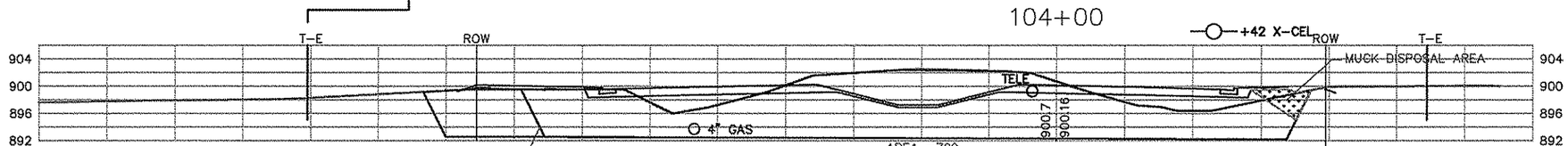
105+00



104+50



104+00



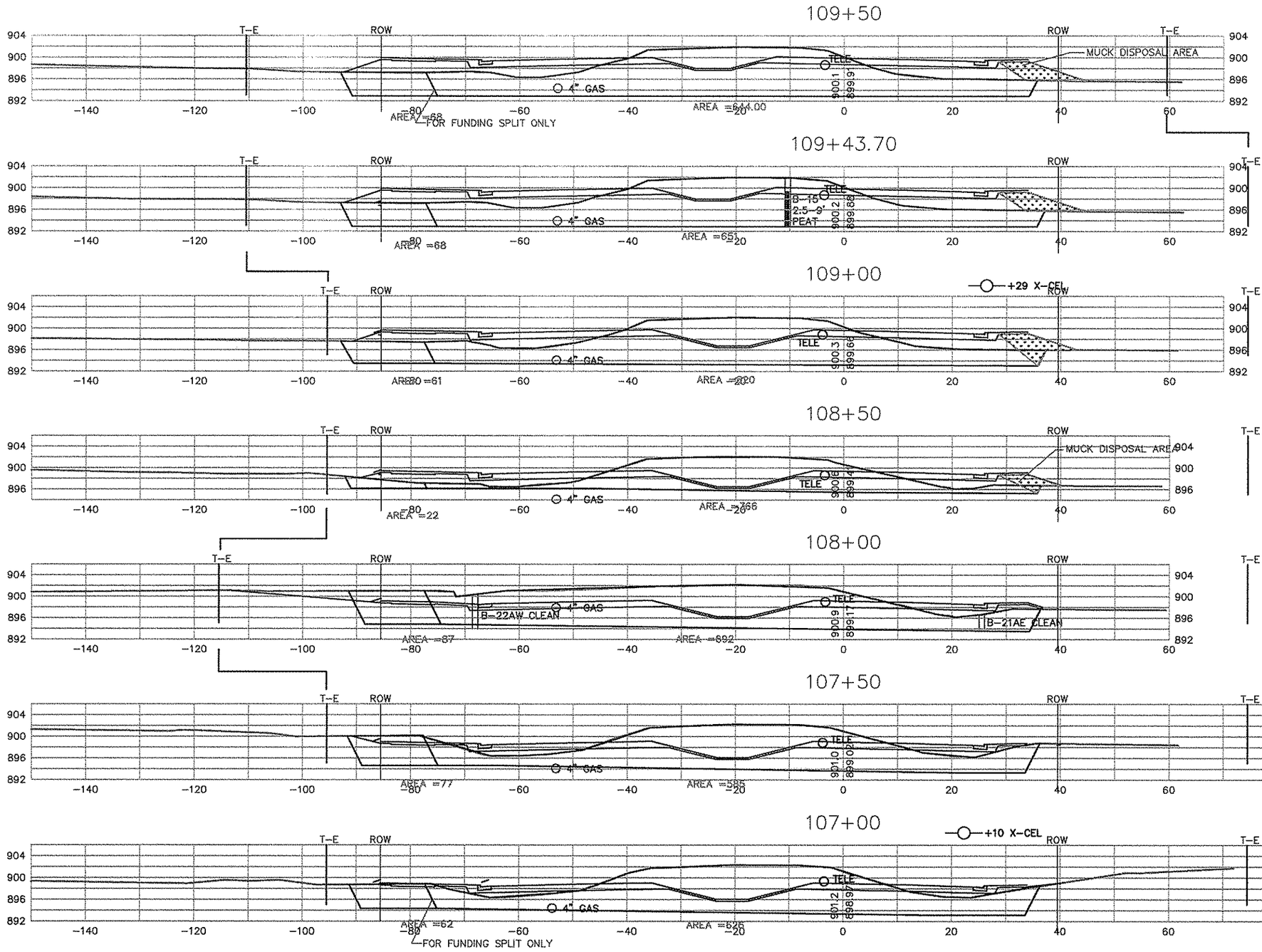
NAME: P:\02-617-13\Plan\82-X-Sec RECALC MN.dwg 01/06/2004 03:24:59 PM CST

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13
STATE PROJECT NO. 106-020-23
STATE AID PROJECT NO.
COUNTY PROJECT NO.

CROSS SECTIONS
STA 104+00 TO 106+51.51

Sheet 190 of 226 Sheets



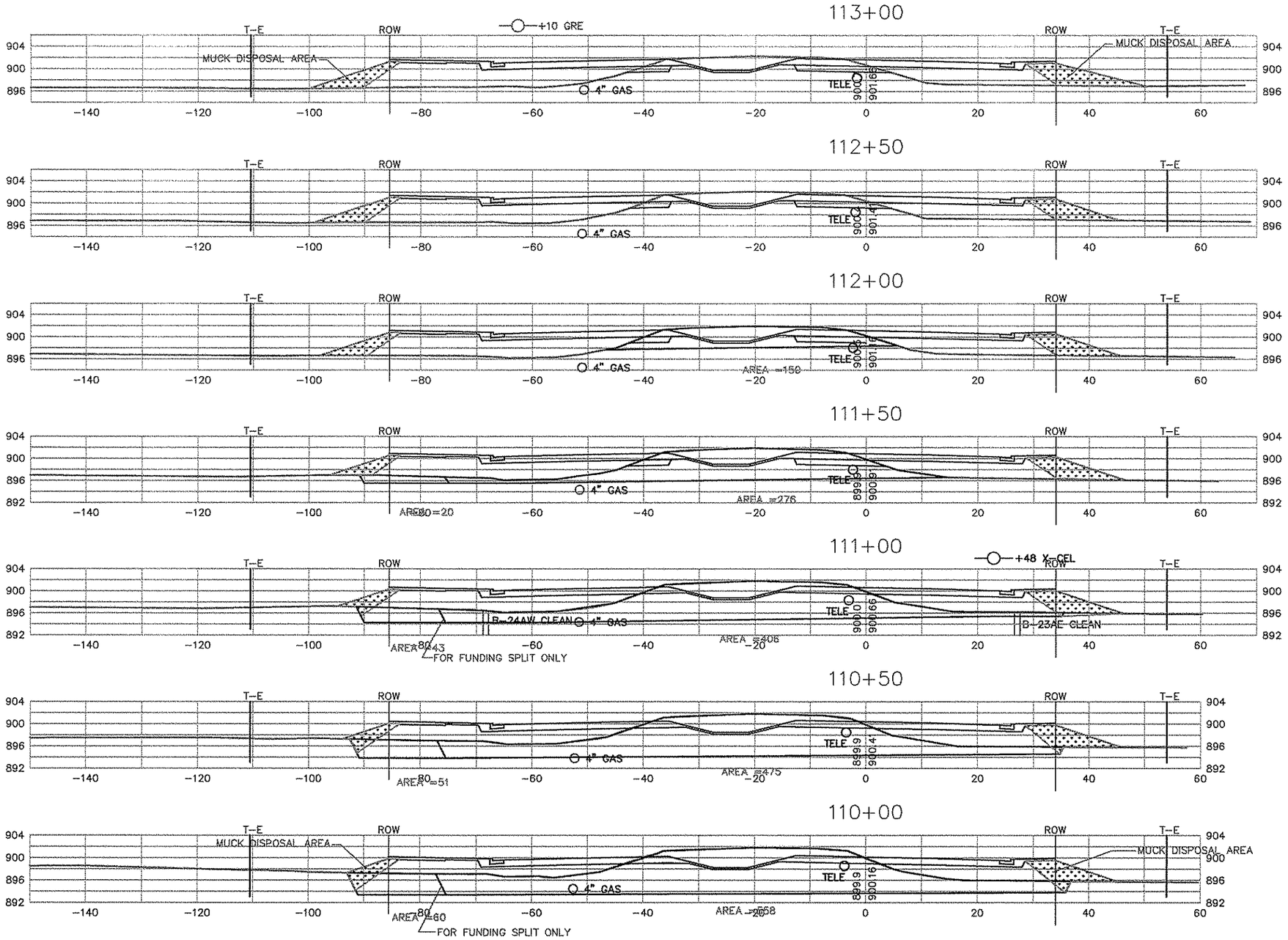
NAME: P:\02-617-13\Plan\02-X-Sec RECALC MN.dwg 01/06/2004 03:24:59 PM CST

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13
STATE PROJECT NO. 106-020-23
STATE AID PROJECT NO.
COUNTY PROJECT NO.

CROSS SECTIONS
STA 107+00 TO 109+50

Sheet 191 of 226 Sheets



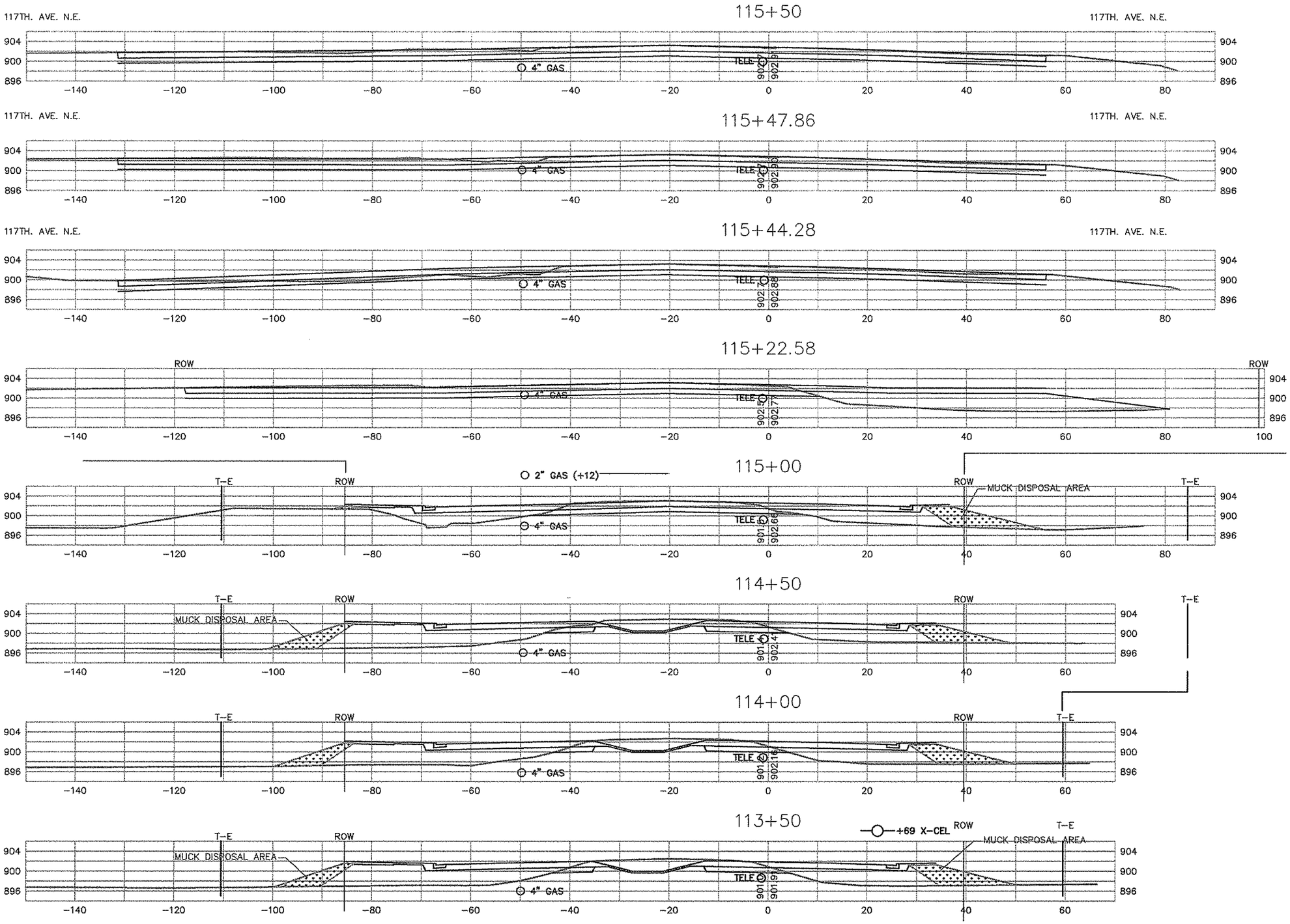
NAME: P:\02-617-13\Plan\82-X-Sec RECALC MN.dwg 01/06/2004 03:24:59 PM CST

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13
STATE PROJECT NO. 106-020-23
STATE AID PROJECT NO.
COUNTY PROJECT NO.

CROSS SECTIONS
STA 110+00 TO 113+00

Sheet 192 of 226 Sheets



NAME: P:\02-617-13\Plan\82-X-Sec RECALC MN.dwg 01/06/2004 03:24:59 PM CST

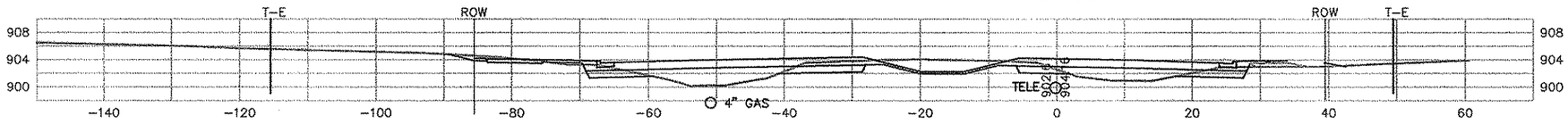
ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13
STATE PROJECT NO. 106-020-23
STATE AID PROJECT NO. _____
COUNTY PROJECT NO. _____

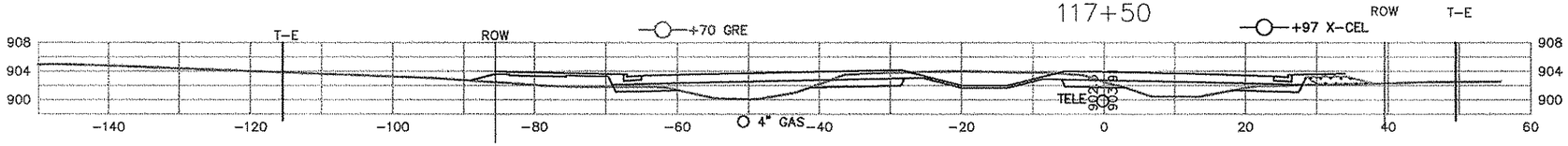
CROSS SECTIONS
STA 113+50 TO 115+50

Sheet 193 of 226 Sheets

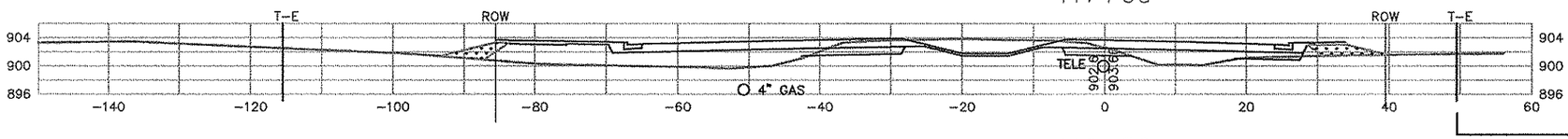
118+00



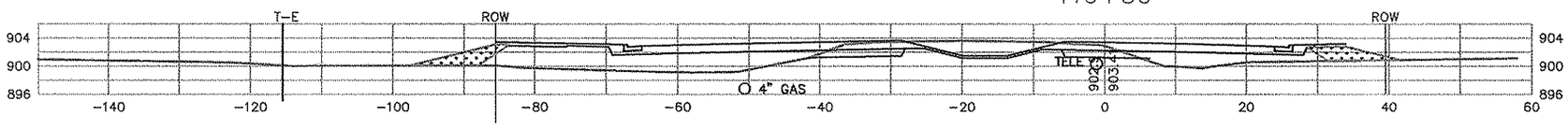
117+50



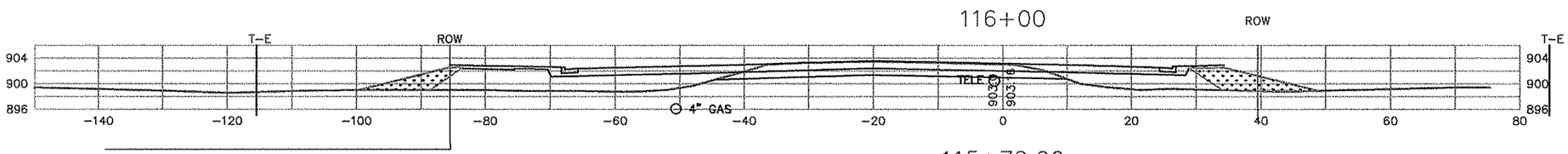
117+00



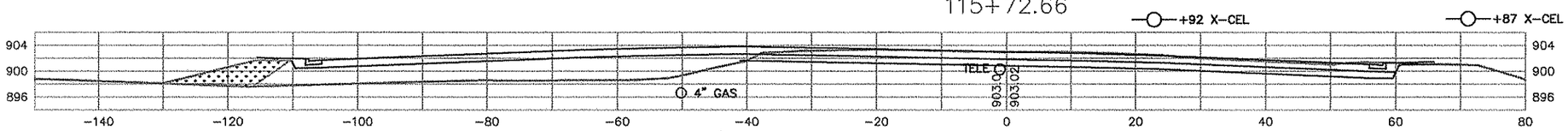
116+50



116+00



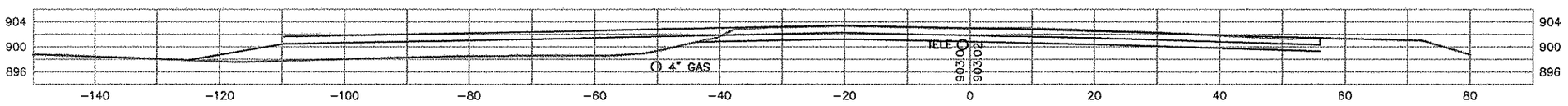
115+72.66



117TH. AVE. N.E.

117TH. AVE. N.E.

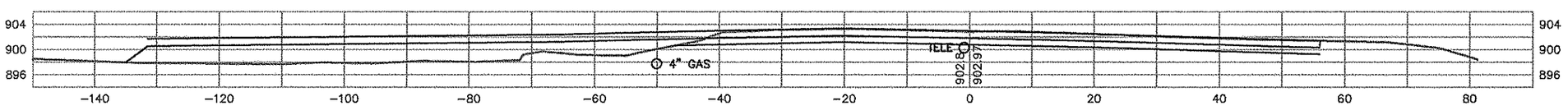
115+71.84



117TH. AVE. N.E.

117TH. AVE. N.E.

115+61.41



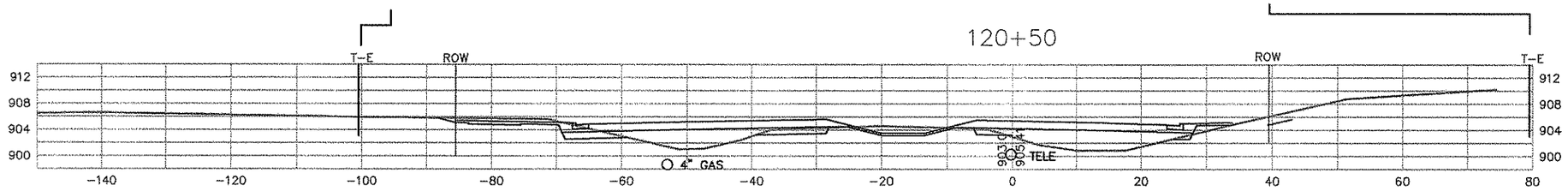
NAME: P:\02-617-13\Plan\82-X-Sec RECALC MN.dwg 01/06/2004 03:24:59 PM CST

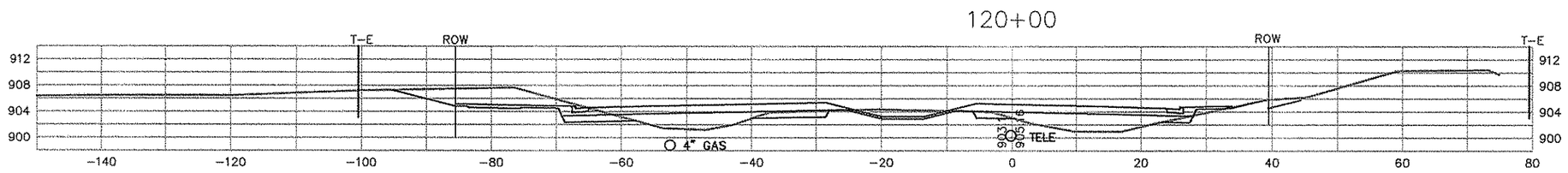
ANOKA COUNTY HIGHWAY DEPT.

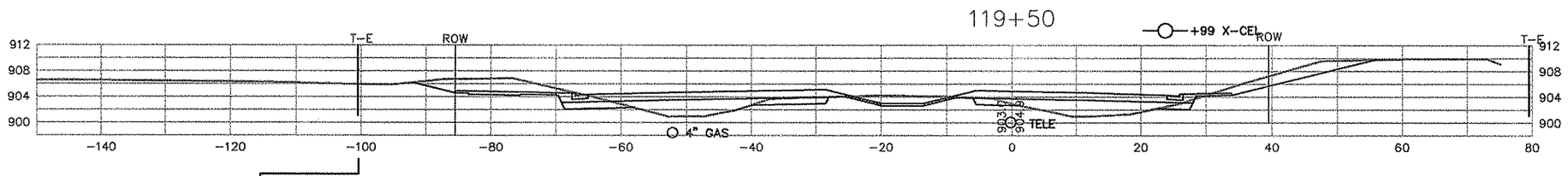
STATE PROJECT NO. 02-617-13
STATE PROJECT NO. 106-020-23
STATE AID PROJECT NO.
COUNTY PROJECT NO.

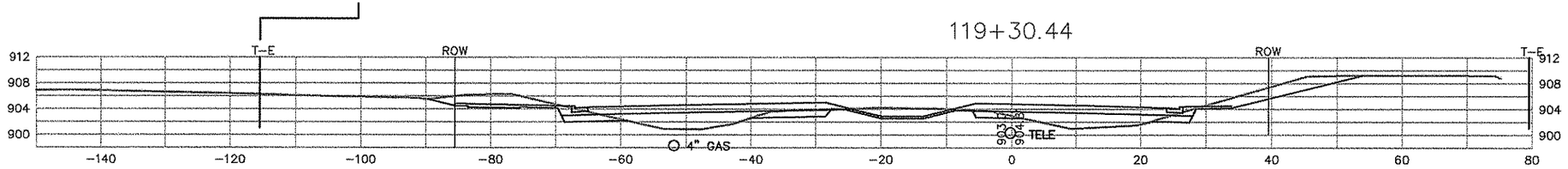
CROSS SECTIONS
STA 115+61.41 TO 118+00

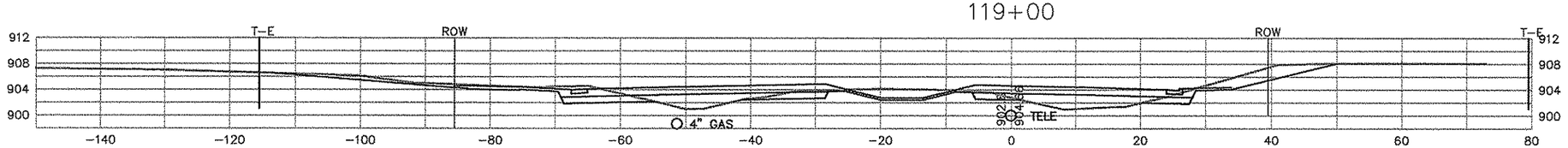
Sheet 194 of 226 Sheets

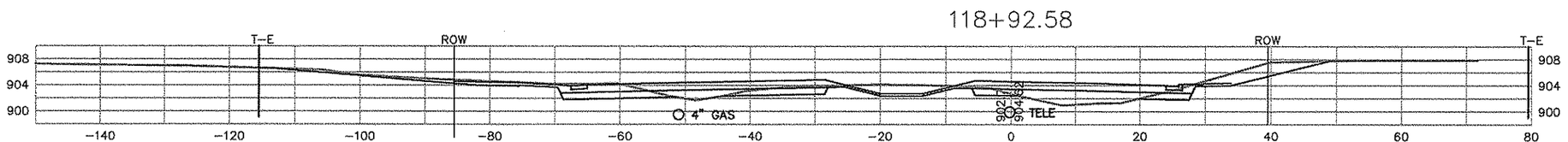


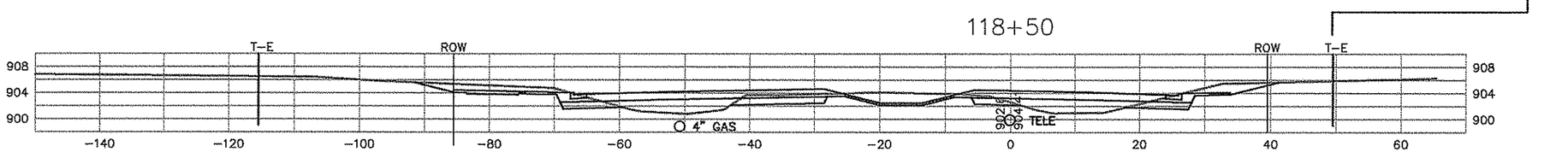












NAME: P:\02-617-13\Plan\82-X-Sec RECALC MN.dwg 01/06/2004 03:24:59 PM CST

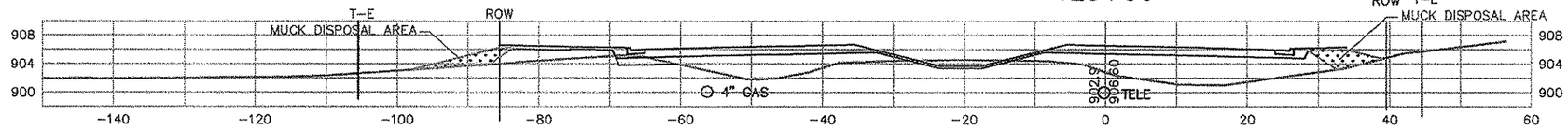
ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13
STATE PROJECT NO. 106-020-23
STATE AID PROJECT NO. _____
COUNTY PROJECT NO. _____

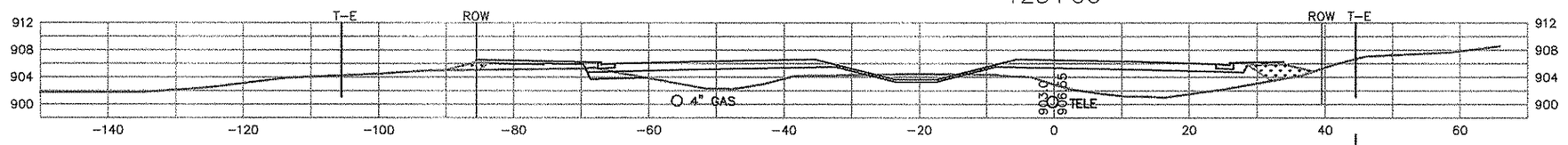
CROSS SECTIONS
STA 118+50 TO 120+50

Sheet 195 of 226 Sheets

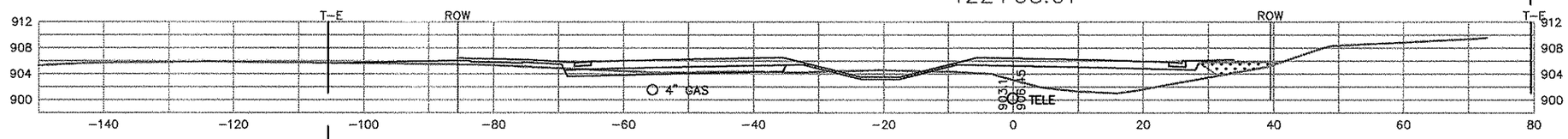
123+50



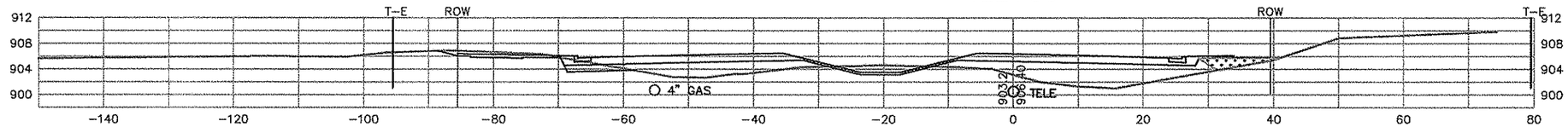
123+00



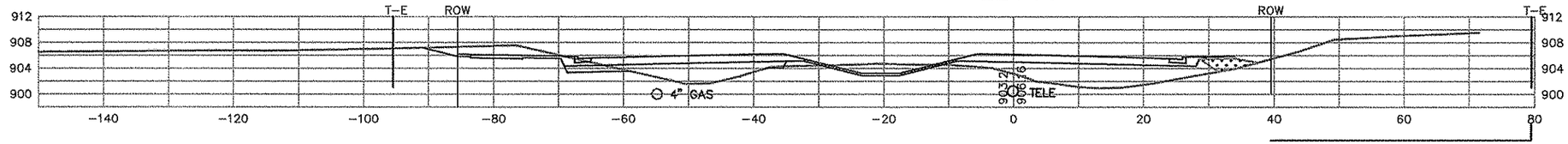
122+63.61



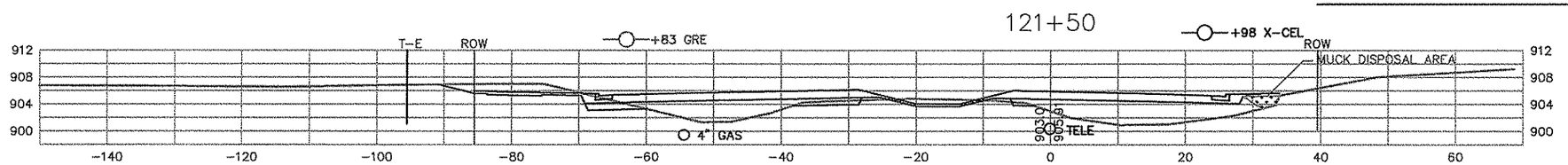
122+50



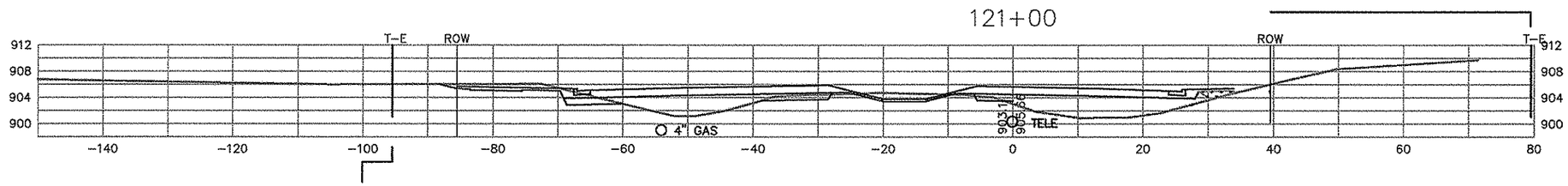
122+00



121+50



121+00



NAME: P:\02-617-13\Plan\82-X-Sec RECALC MN.dwg 01/06/2004 03:24:59 PM CST

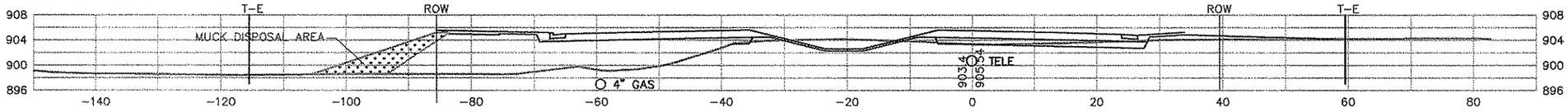
ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13
STATE PROJECT NO. 106-020-23
STATE AID PROJECT NO.
COUNTY PROJECT NO.

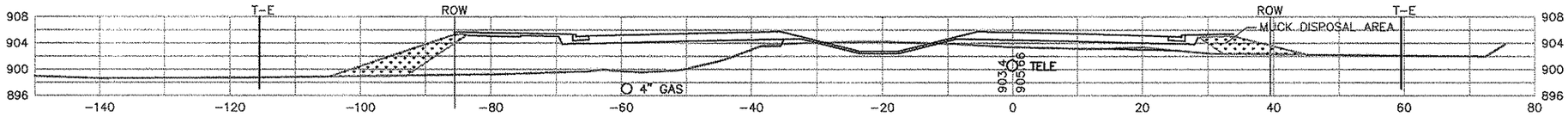
CROSS SECTIONS
STA 121+00 TO 123+50

Sheet 196 of 226 Sheets

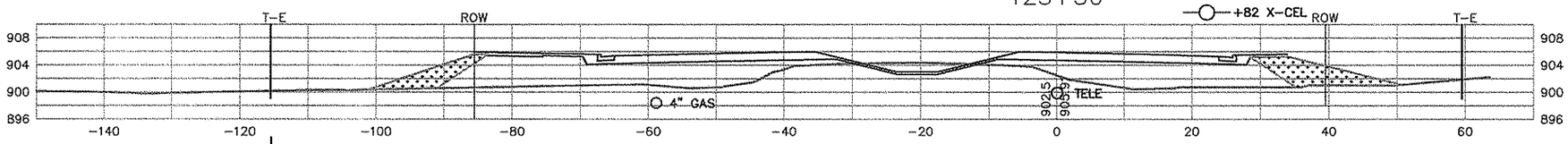
126+24.72



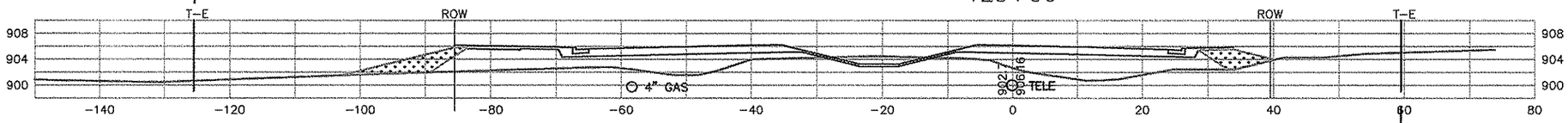
126+00



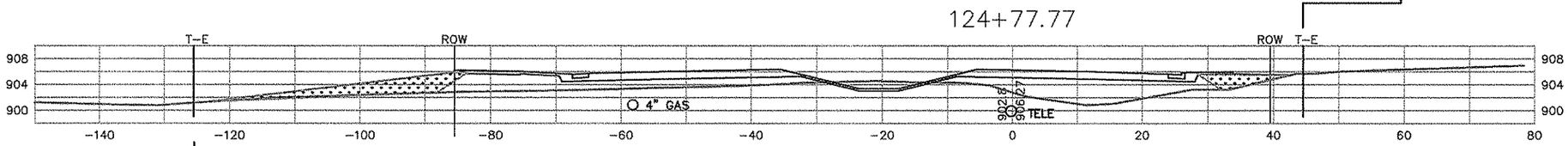
125+50



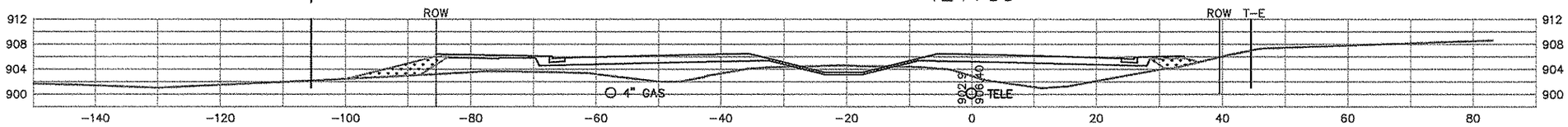
125+00



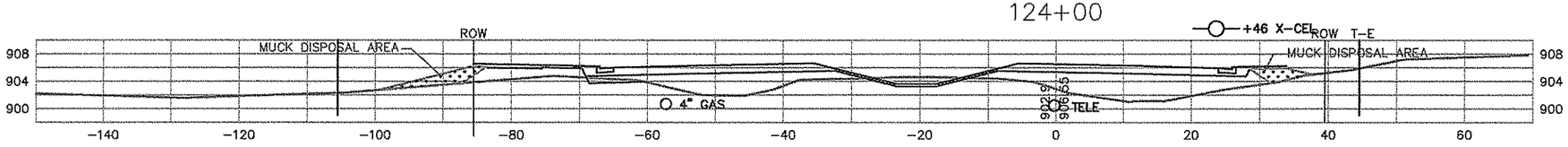
124+77.77



124+50



124+00



NAME: P:\02-617-13\Plan\82-X-Sec RECALC MN.dwg 01/06/2004 03:24:59 PM CST

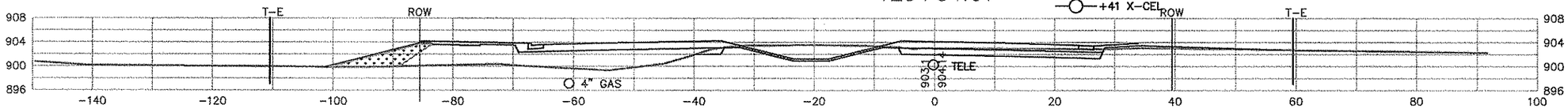
ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13
STATE PROJECT NO. 106-020-23
STATE AID PROJECT NO.
COUNTY PROJECT NO.

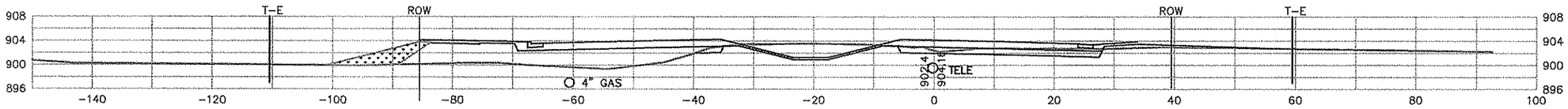
CROSS SECTIONS
STA 124+00 TO 126+24.72

Sheet 197 of 226 Sheets

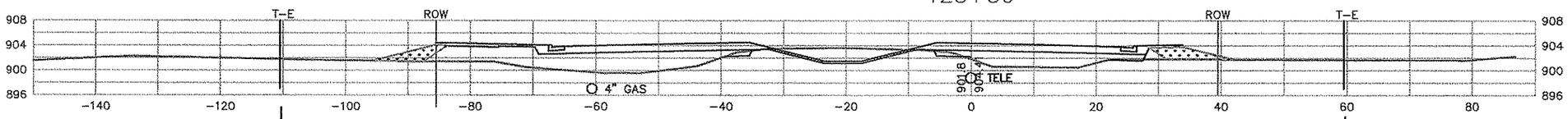
129+04.01



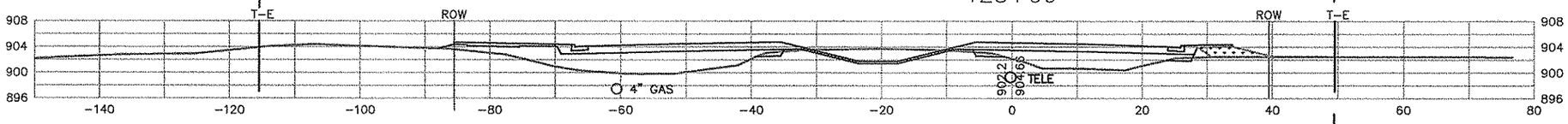
129+00



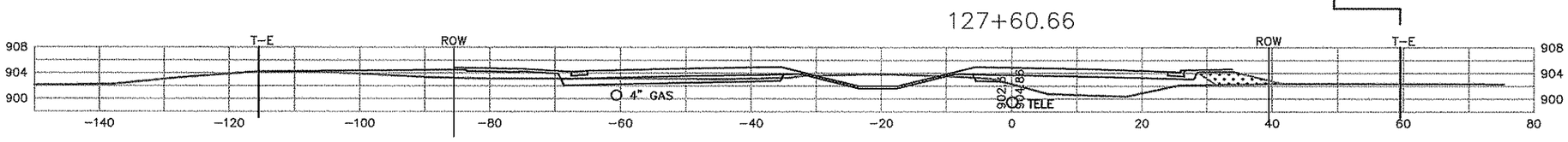
128+50



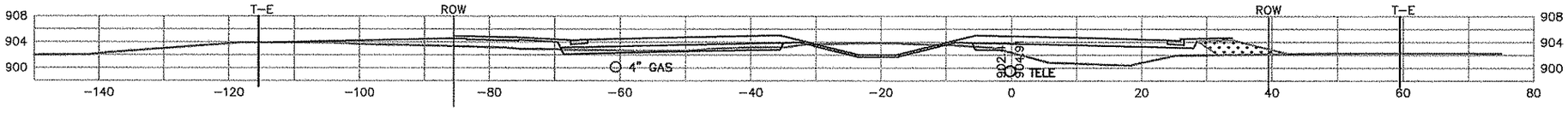
128+00



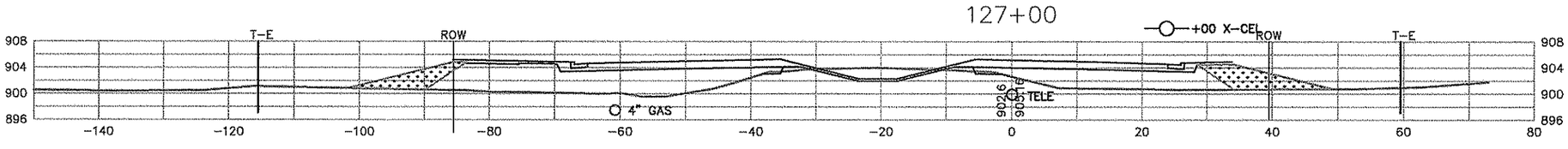
127+60.66



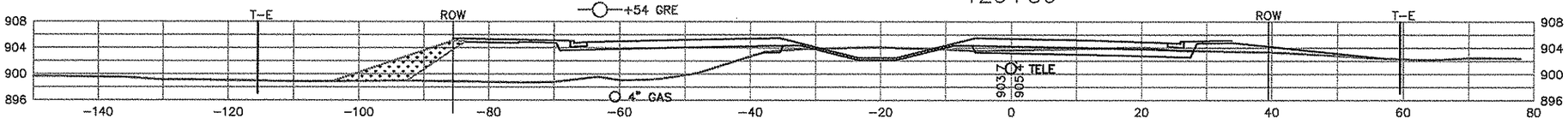
127+50



127+00



126+50



NAME: P:\02-617-13\Plan\82-X-Sec RECALC MN.dwg 01/06/2004 03:24:59 PM CST

ANOKA COUNTY HIGHWAY DEPT.

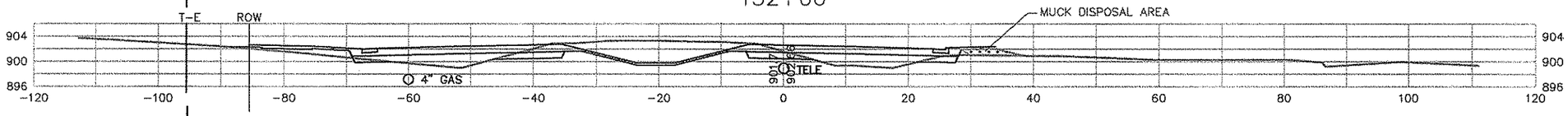
STATE PROJECT NO. 02-617-13
STATE PROJECT NO. 106-020-23
STATE AID PROJECT NO.
COUNTY PROJECT NO.

CROSS SECTIONS
STA 126+50 TO 129+04.01

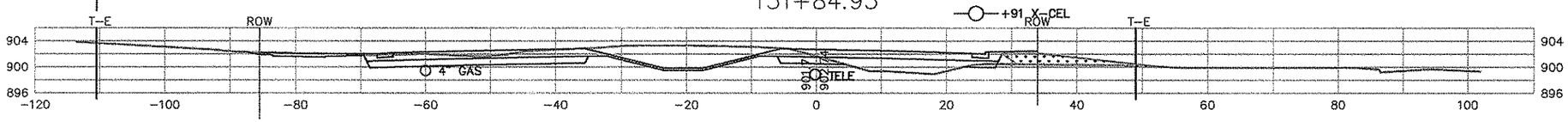
Sheet 198 of 226 Sheets

132+50

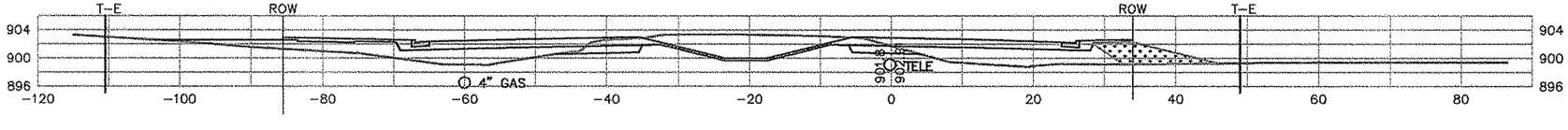
132+00



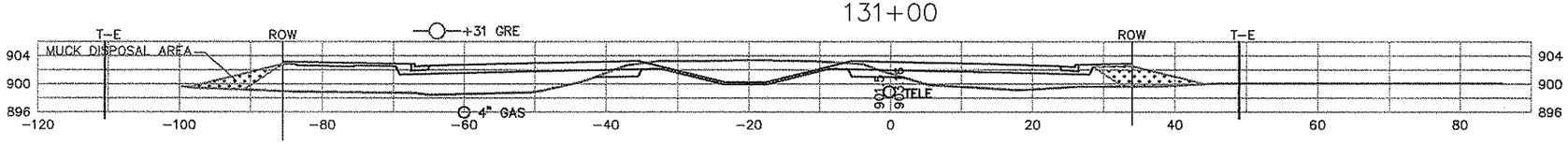
131+84.93



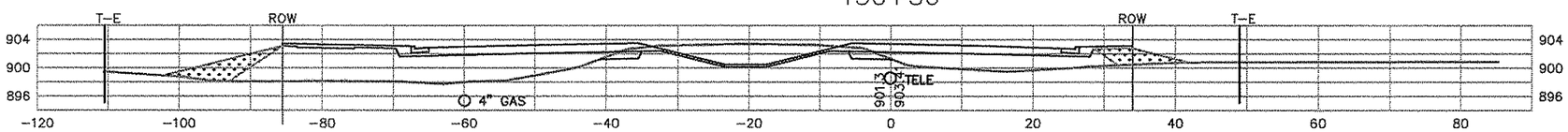
131+50



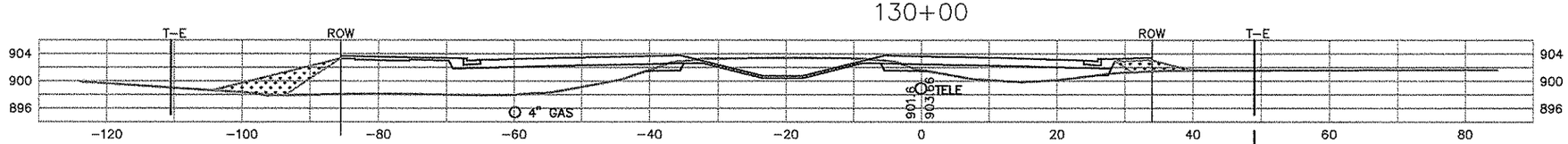
131+00



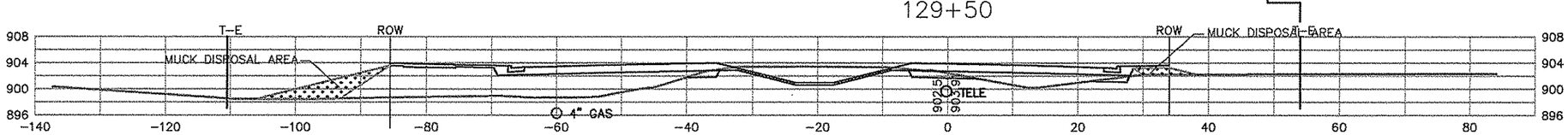
130+50



130+00



129+50



NAME: P:\02-617-13\Plan\82-X-Sec RECALC MN.dwg 01/06/2004 03:24:59 PM CST

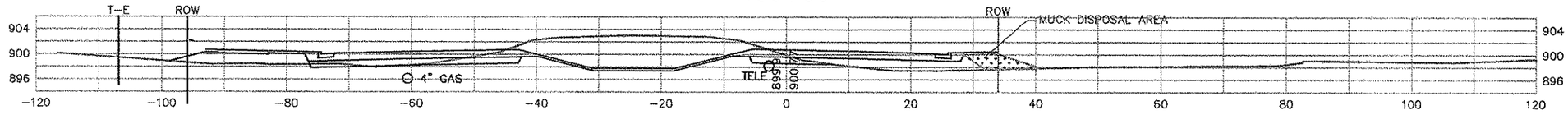
ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13
STATE PROJECT NO. 106-020-23
STATE AID PROJECT NO. _____
COUNTY PROJECT NO. _____

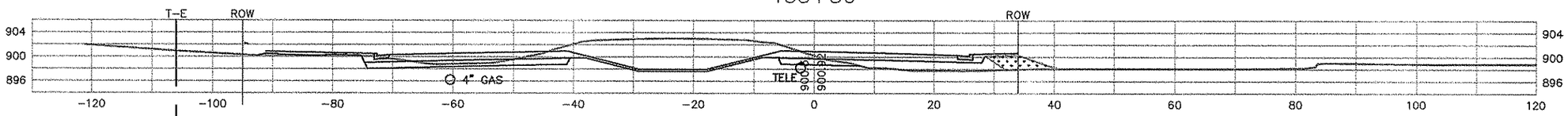
CROSS SECTIONS
STA 129+50 TO 132+50

Sheet 199 of 226 Sheets

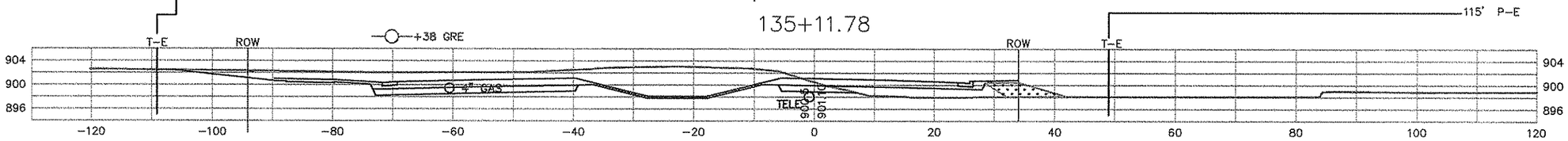
136+00



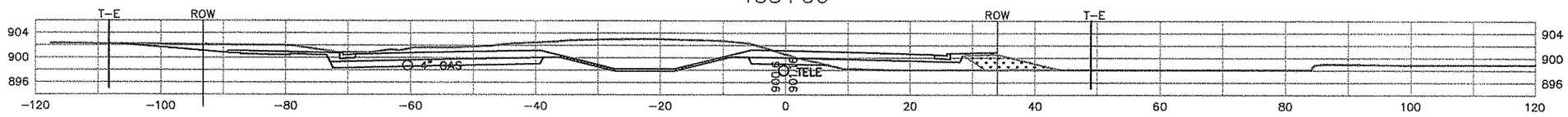
135+50



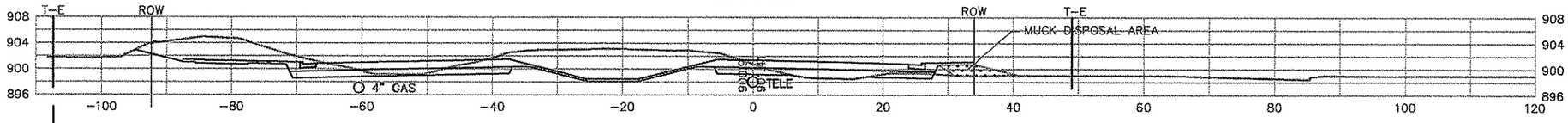
135+11.78



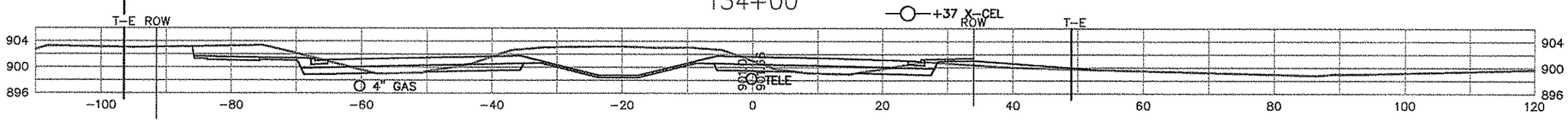
135+00



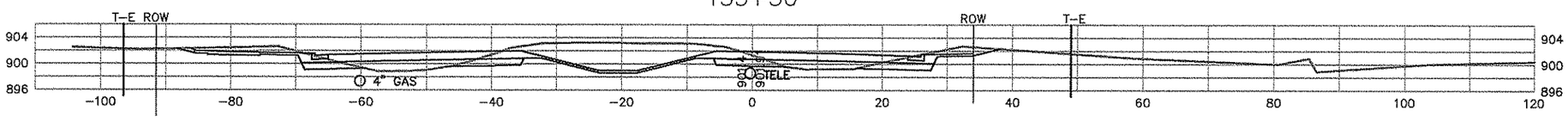
134+50



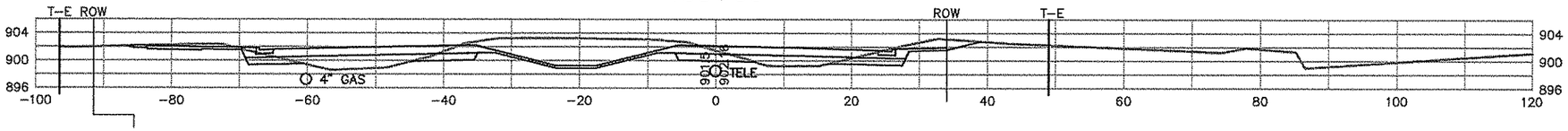
134+00



133+50



133+00



ANOKA COUNTY HIGHWAY DEPT.

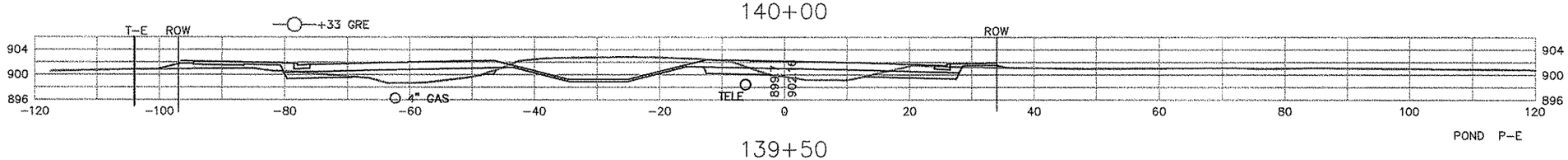
STATE PROJECT NO. 02-617-13
STATE PROJECT NO. 106-020-23
STATE AID PROJECT NO. _____
COUNTY PROJECT NO. _____

CROSS SECTIONS
STA 133+00 TO 136+00

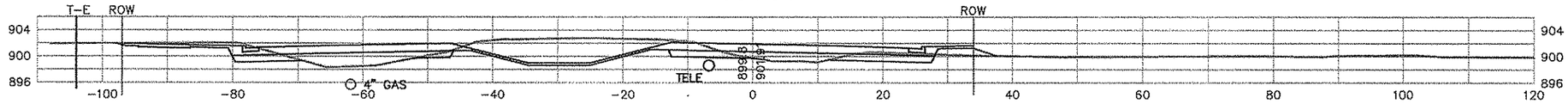
Sheet 200 of 226 Sheets

NAME: P:\02-617-13\Plan\82-X-Sec RECALC MN.dwg 01/06/2004 03:24:59 PM CST

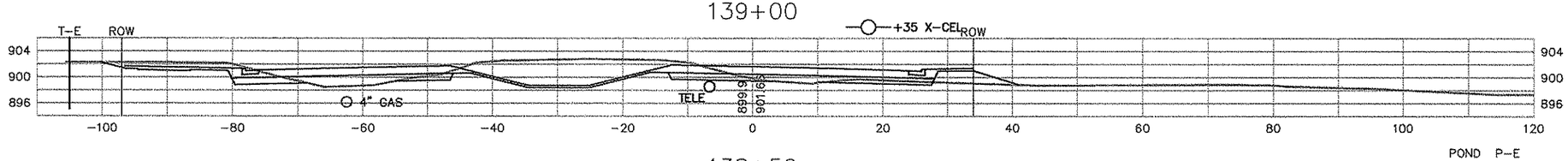
140+00



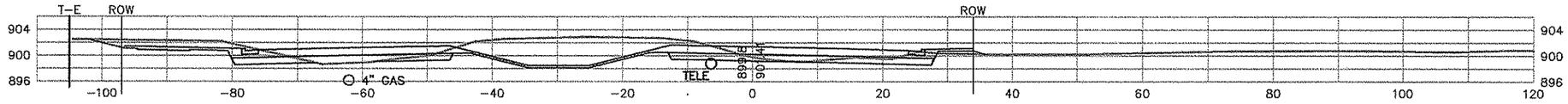
139+50



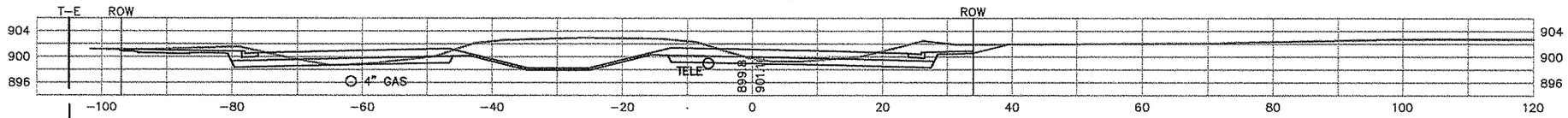
139+00



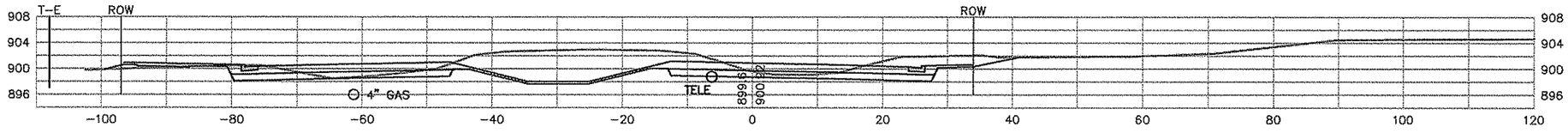
138+50



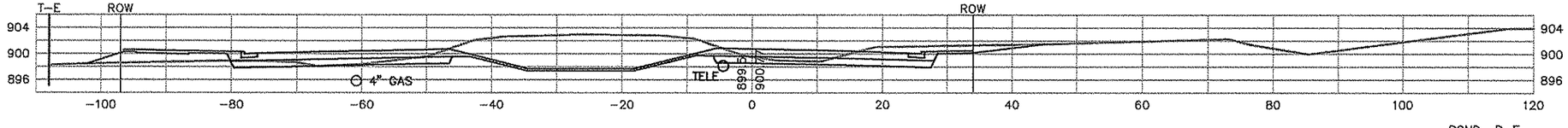
138+00



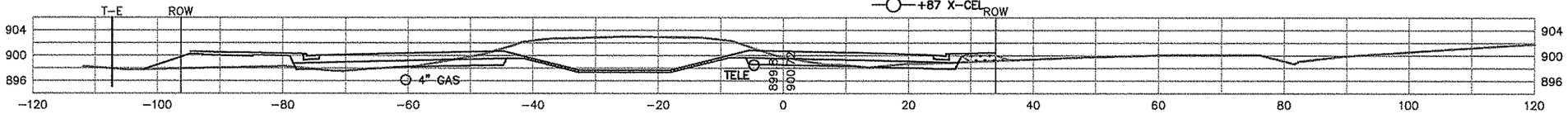
137+50



137+00



136+50



NAME: P:\02-617-13\Plan\82-X-Sec RECALC MN.dwg 01/06/2004 03:24:59 PM CST

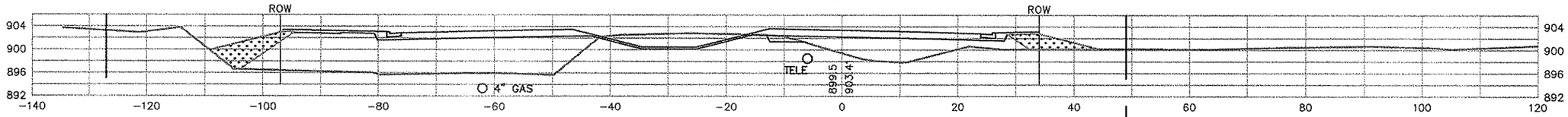
ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13
STATE PROJECT NO. 106-020-23
STATE AID PROJECT NO. _____
COUNTY PROJECT NO. _____

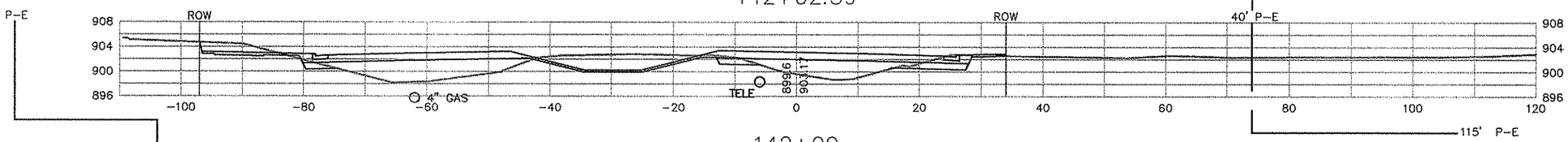
CROSS SECTIONS
STA 136+50 TO 140+00

Sheet 201 of 226 Sheets

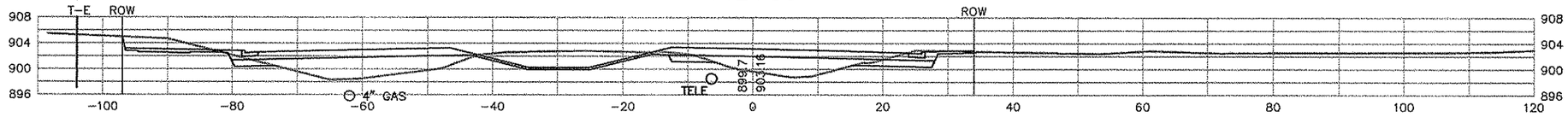
142+50



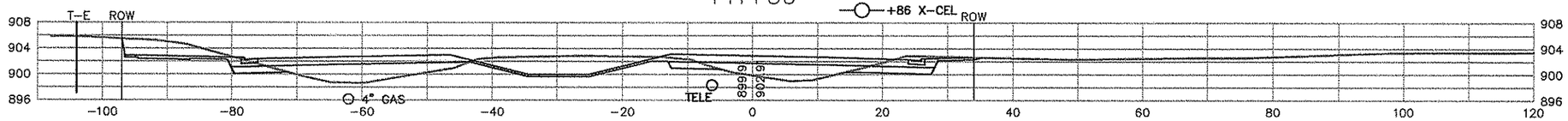
142+02.59



142+00

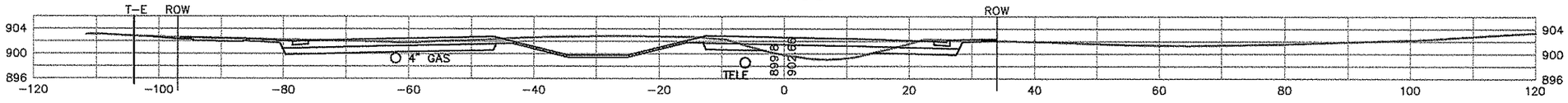


141+50

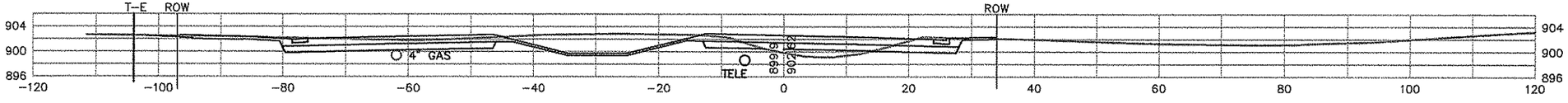


POND P-E

141+00

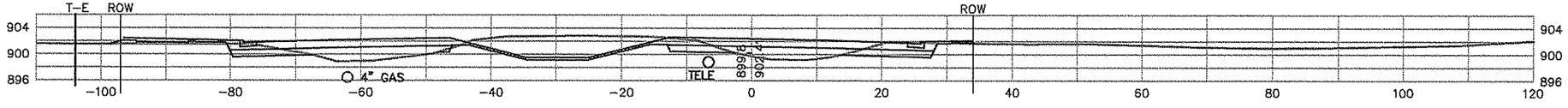


140+92.76



POND P-E

140+50



NAME: P:\02-617-13\Plan\82-X-Sec RECALC MN.dwg 01/05/2004 03:24:59 PM CST

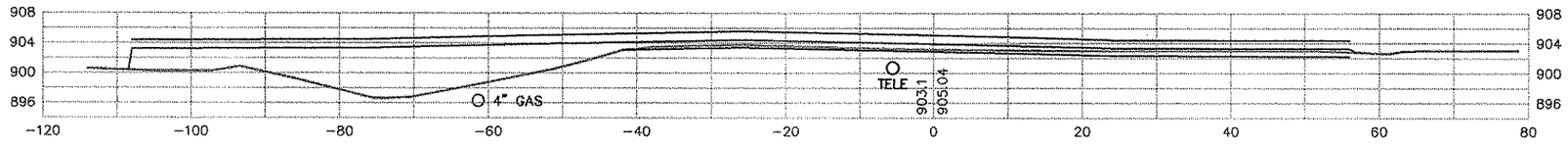
ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13
STATE PROJECT NO. 106-020-23
STATE AID PROJECT NO.
COUNTY PROJECT NO.

CROSS SECTIONS
STA 140+50 TO 142+50

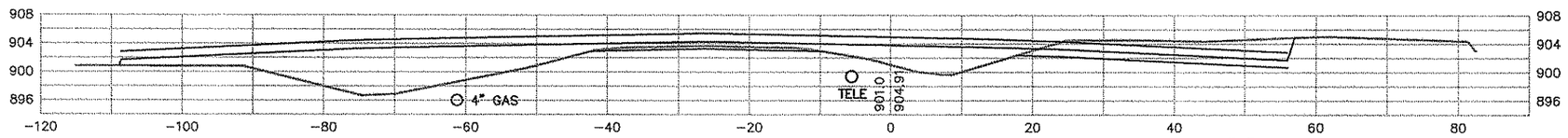
Sheet 202 of 226 Sheets

145+75.48

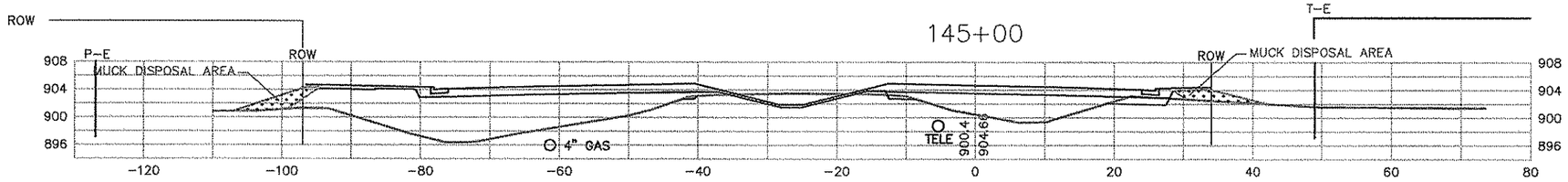


121 ST. AVE. N.E. (FUTURE)

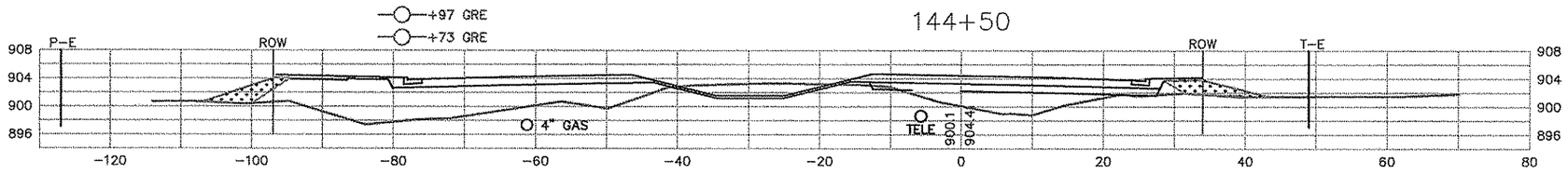
145+50



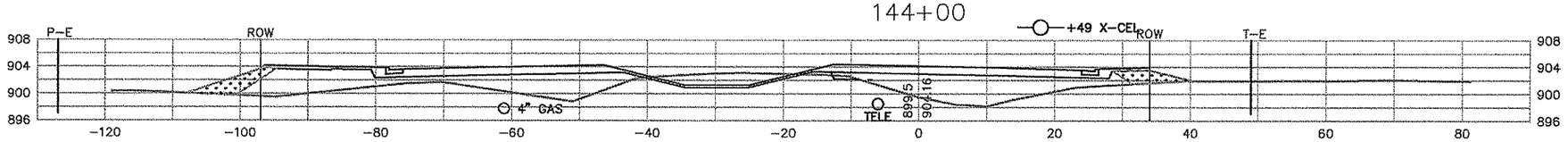
145+00



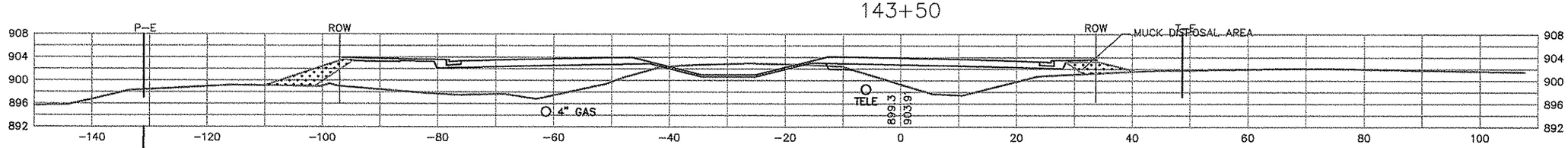
144+50



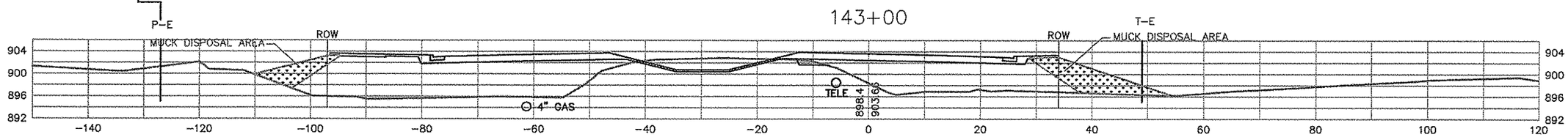
144+00



143+50



143+00



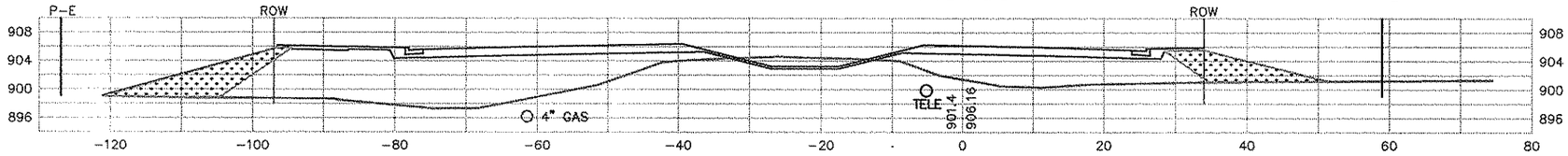
NAME: P:\02-617-13\Plan\82-X-Sec RECALC MN.dwg 01/06/2004 03:24:59 PM CST

ANOKA COUNTY HIGHWAY DEPT.

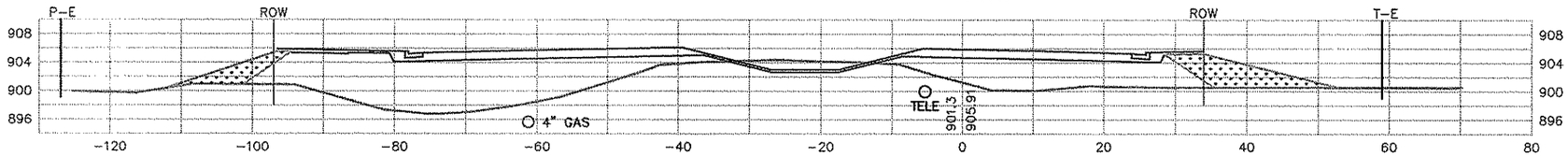
STATE PROJECT NO. 02-617-13
STATE PROJECT NO. 106-020-23
STATE AID PROJECT NO. _____
COUNTY PROJECT NO. _____

CROSS SECTIONS
STA 143+00 TO 145+75.48

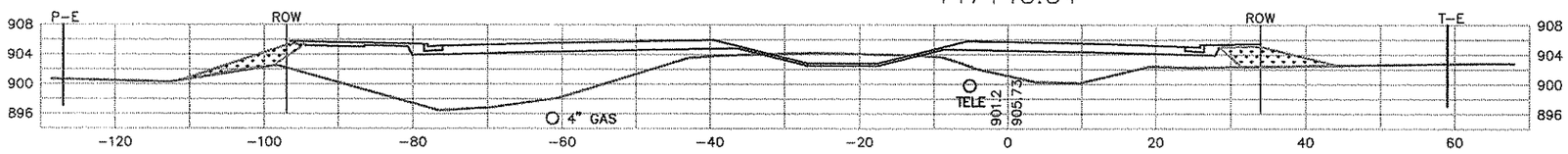
148+00



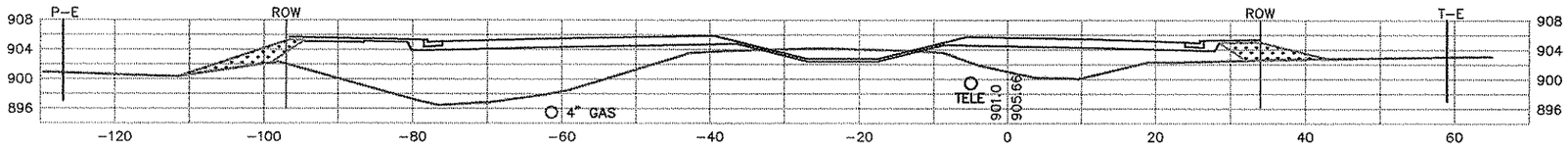
147+50



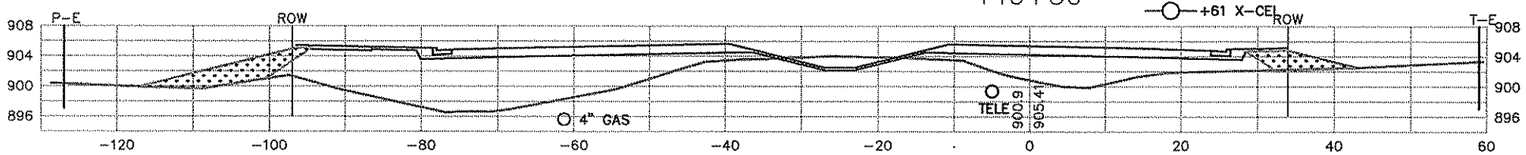
147+13.34



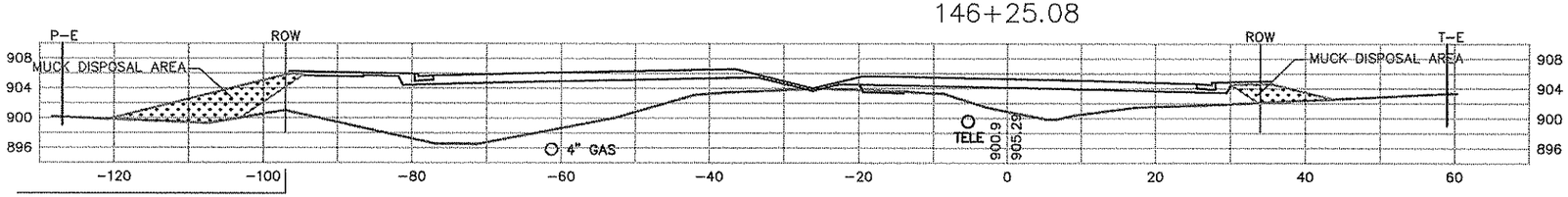
147+00



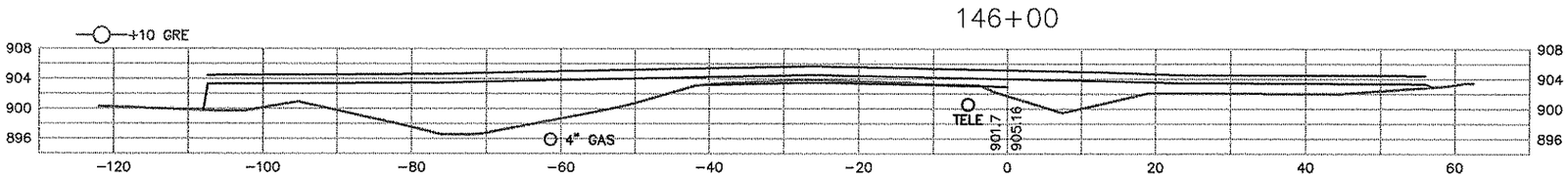
146+50



146+25.08



146+00



NAME: P:\02-617-13\Plan\82-X-Sec RECALC MN.dwg 01/06/2004 03:24:59 PM CST

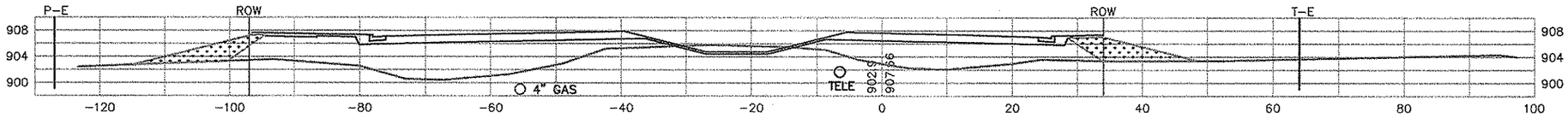
ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13
STATE PROJECT NO. 106-020-23
STATE AID PROJECT NO. _____
COUNTY PROJECT NO. _____

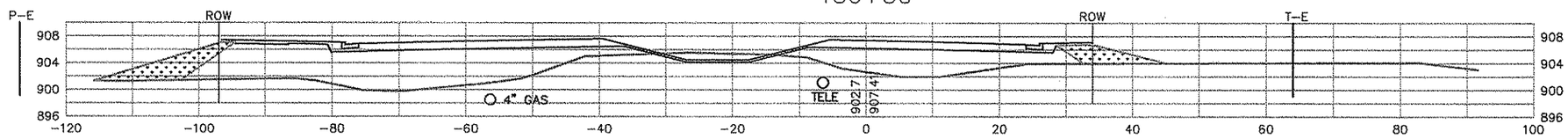
CROSS SECTIONS
STA 146+00 TO 148+00

Sheet 204 of 226 Sheets

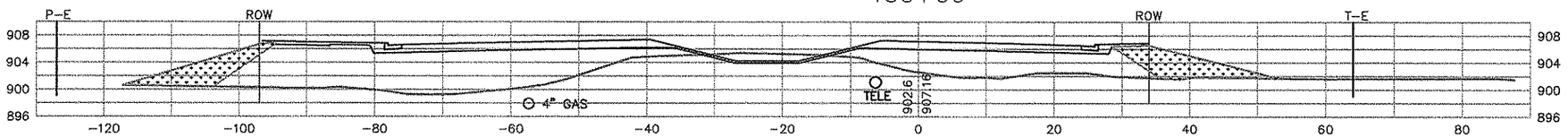
151+00



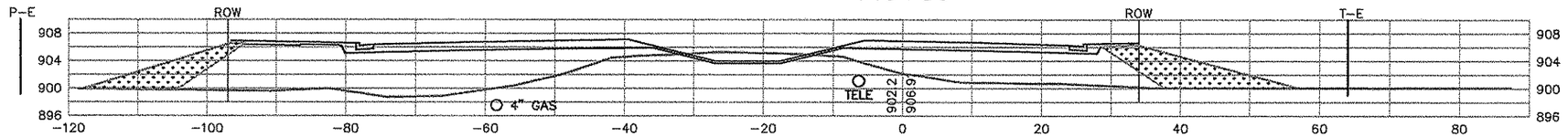
150+50



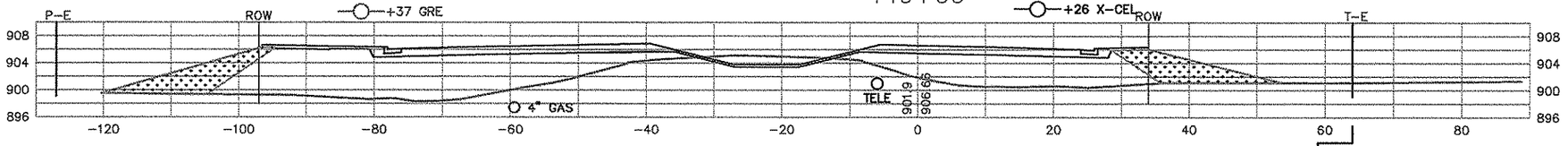
150+00



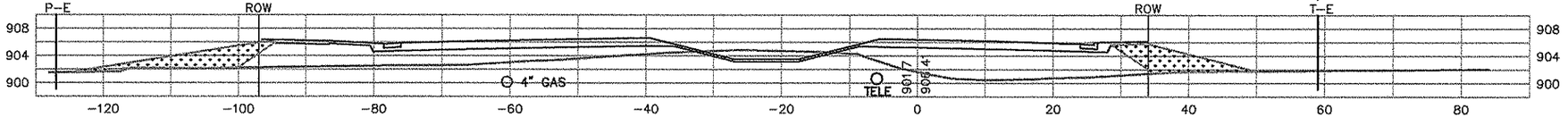
149+50



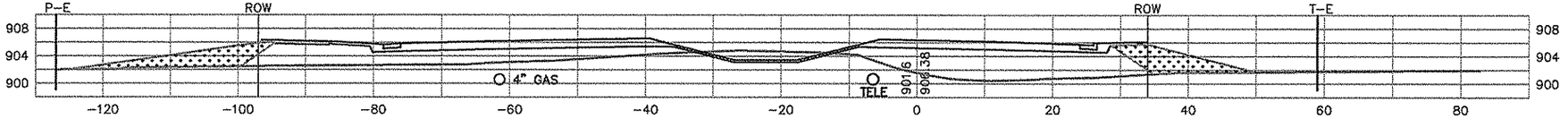
149+00



148+50



148+43.81



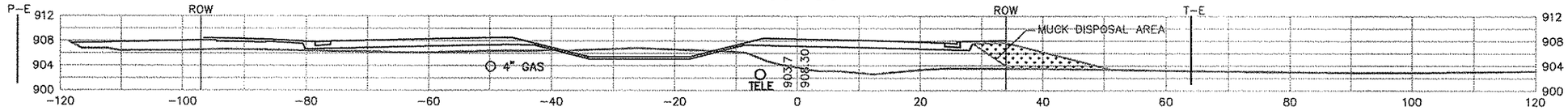
NAME: P:\02-617-13\Plan\82-X-Sec RECALC MN.dwg 01/06/2004 03:24:59 PM CST

ANOKA COUNTY HIGHWAY DEPT.

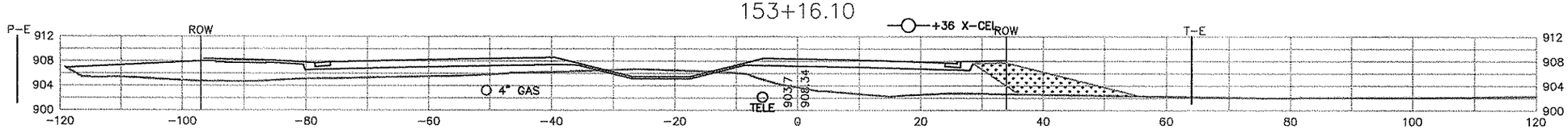
STATE PROJECT NO. 02-617-13
STATE PROJECT NO. 106-020-23
STATE AID PROJECT NO.
COUNTY PROJECT NO.

CROSS SECTIONS
STA 148+43.81 TO 151+00

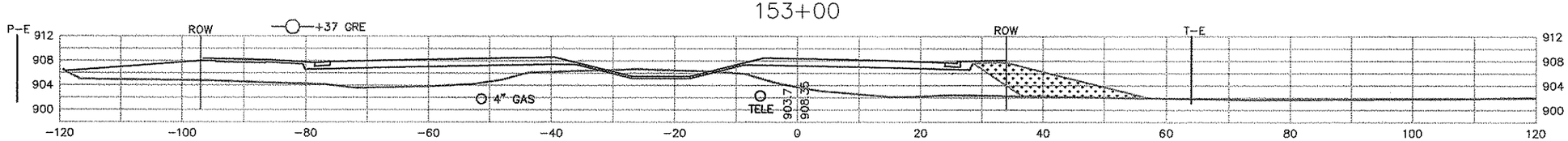
153+50



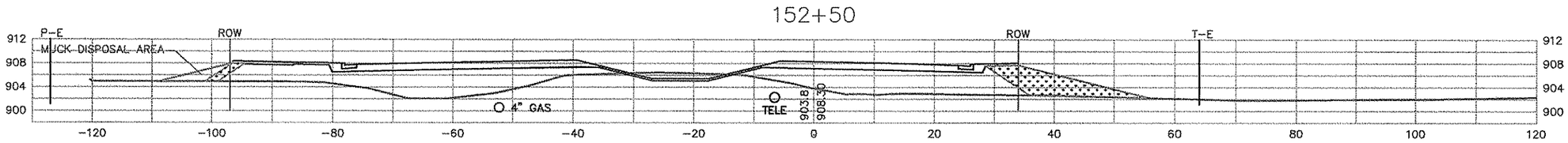
153+16.10



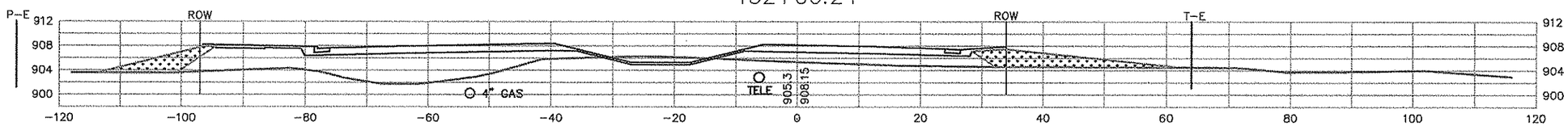
153+00



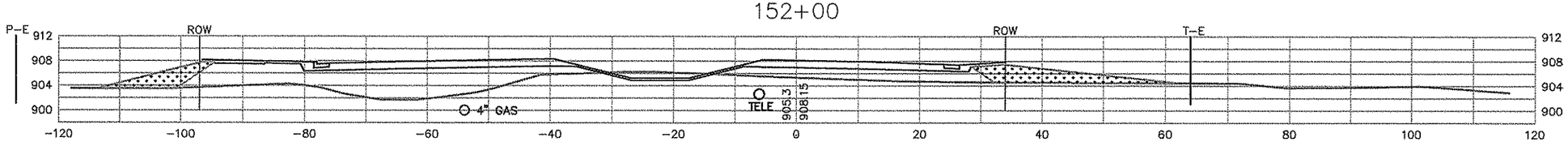
152+50



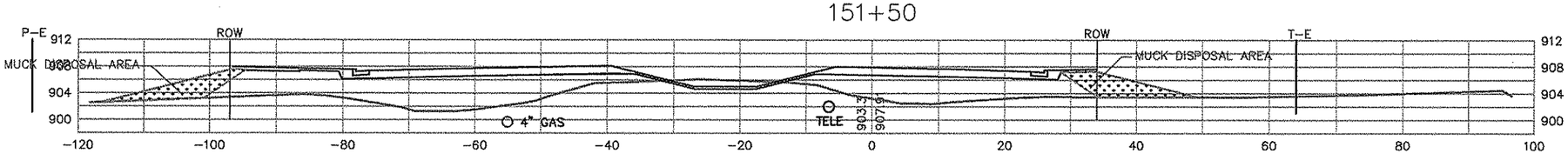
152+00.24



152+00



151+50



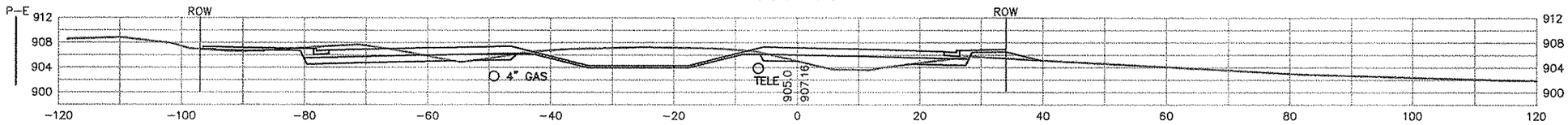
NAME: P:\02-617-13\Plan\82-X-Sec RECALC MN.dwg 01/06/2004 03:24:59 PM CST

ANOKA COUNTY HIGHWAY DEPT.

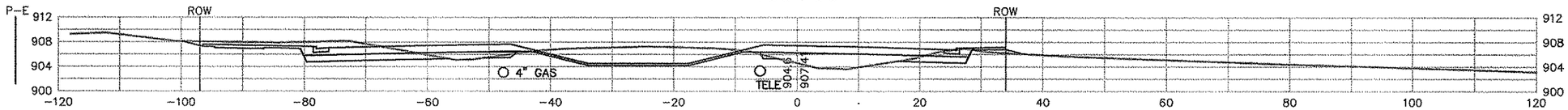
STATE PROJECT NO. 02-617-13
STATE PROJECT NO. 106-020-23
STATE AID PROJECT NO. _____
COUNTY PROJECT NO. _____

CROSS SECTIONS
STA 151+50 TO 153+50

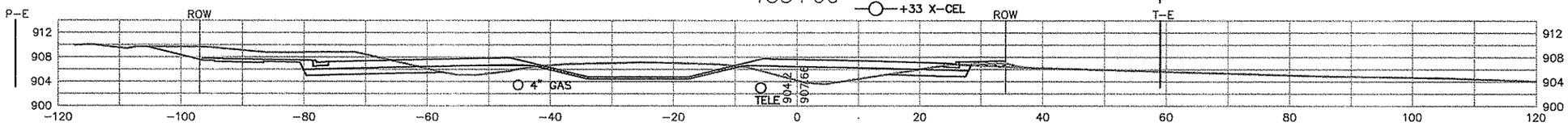
156+00



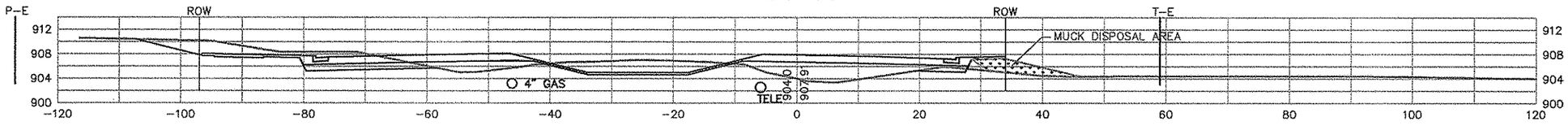
155+50



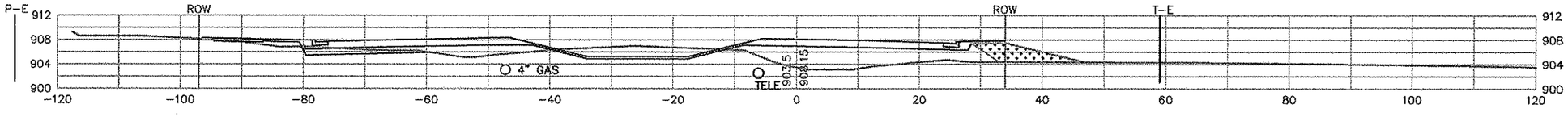
155+00



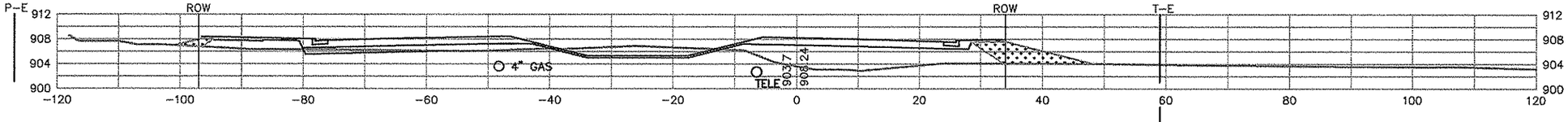
154+50



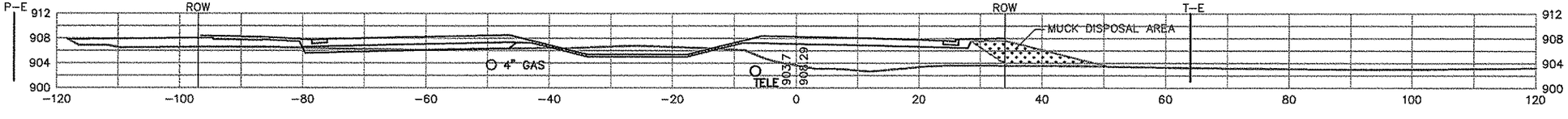
154+00



153+74.72



153+54.79



NAME: P:\02-617-13\Plan\82-X-Sec RECALC MN.dwg 01/06/2004 03:24:59 PM CST

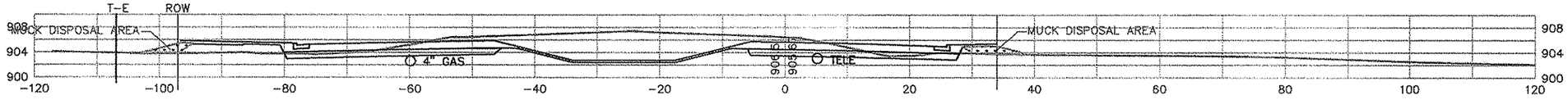
ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13
STATE PROJECT NO. 106-020-23
STATE AID PROJECT NO.
COUNTY PROJECT NO.

CROSS SECTIONS
STA 153+54.79 TO 156+00

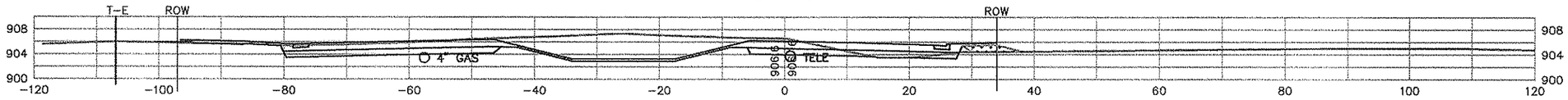
Sheet 207 of 226 Sheets

159+00

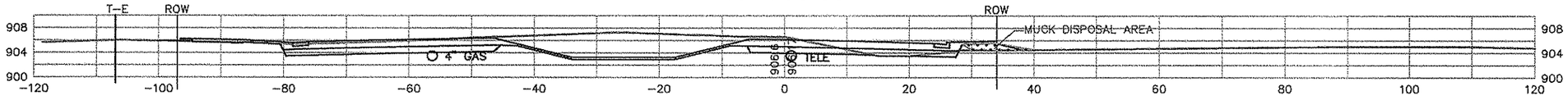


158+50

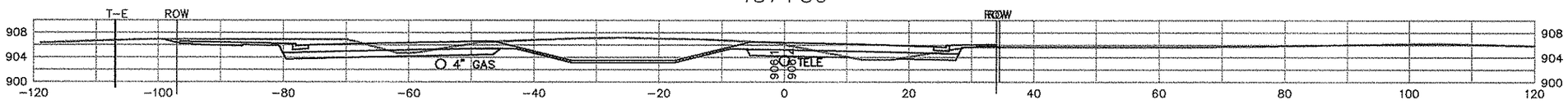
158+00



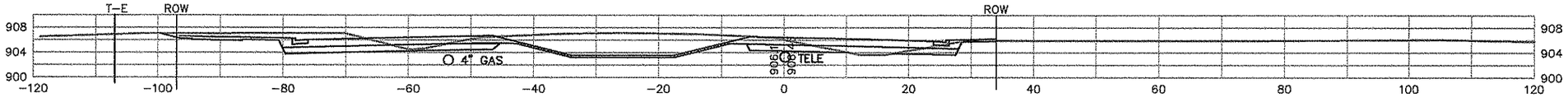
157+98.83



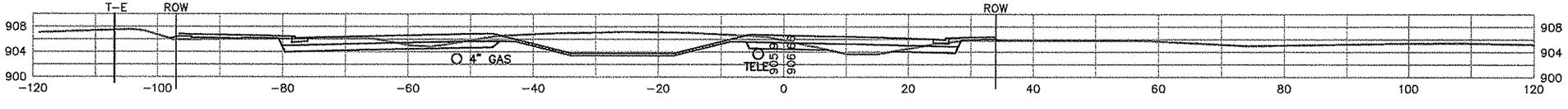
157+50



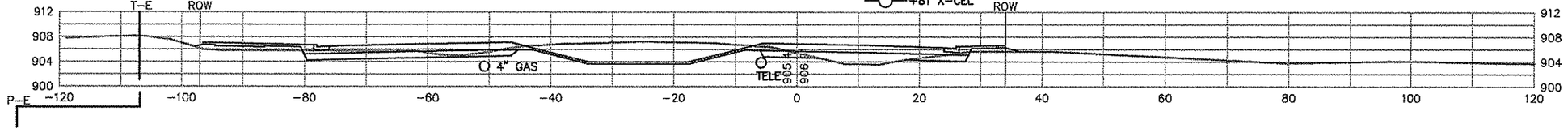
157+39.67



157+00



156+50



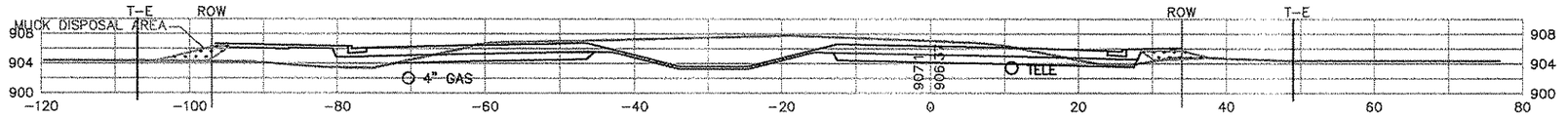
NAME: P:\02-617-13\Plan\82-X-Sec RECALC MN.dwg 01/06/2004 03:24:59 PM CST

ANOKA COUNTY HIGHWAY DEPT.

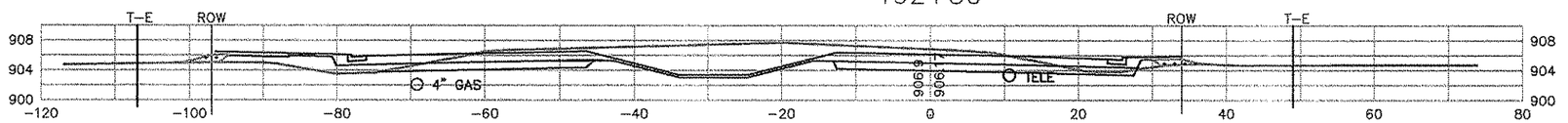
STATE PROJECT NO. 02-617-13
STATE PROJECT NO. 106-020-23
STATE AID PROJECT NO.
COUNTY PROJECT NO.

CROSS SECTIONS
STA 156+50 TO 159+00

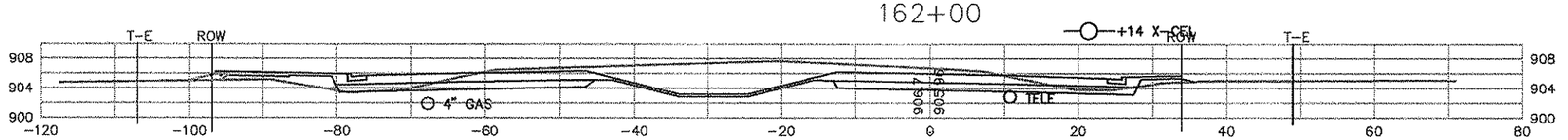
163+00



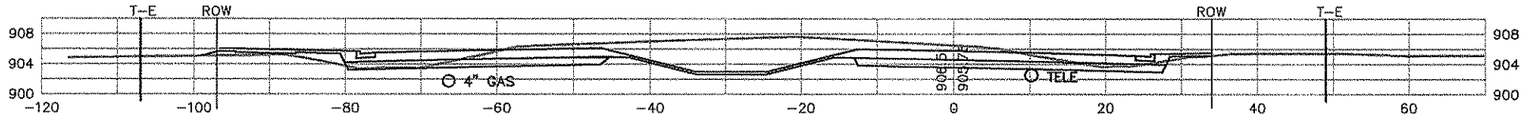
162+50



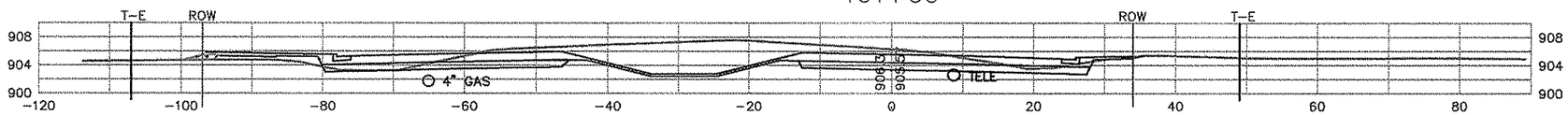
162+00



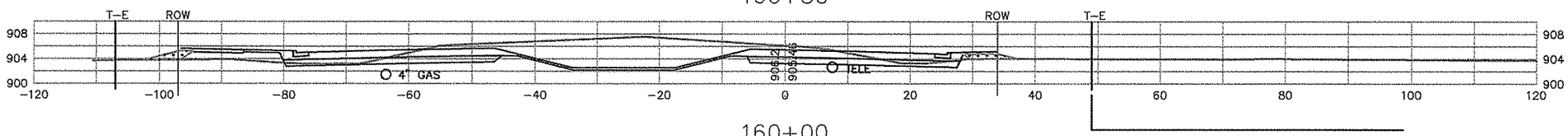
161+50



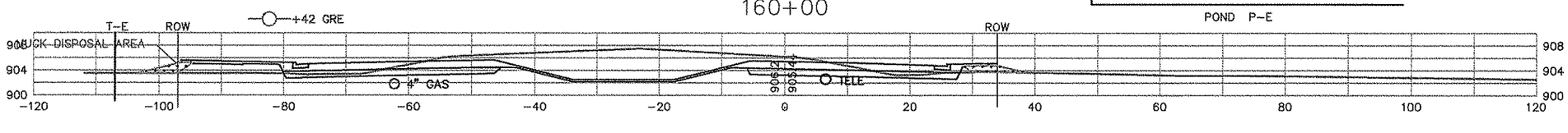
161+00



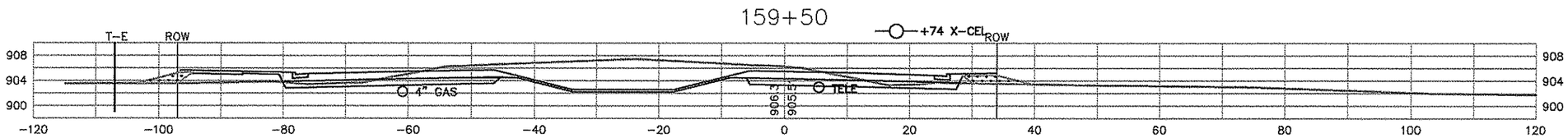
160+50



160+00



159+50



NAME: P:\02-617-13\Plan\82-X-Sec RECALC MN.dwg 01/06/2004 03:24:59 PM CST

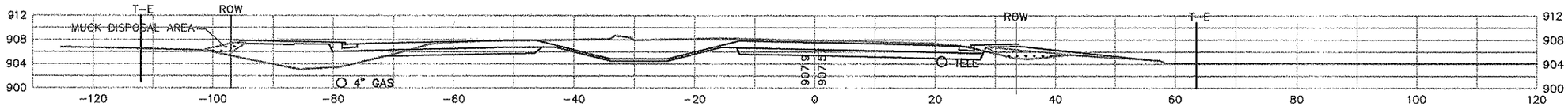
ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13
STATE PROJECT NO. 106-020-23
STATE AID PROJECT NO.
COUNTY PROJECT NO.

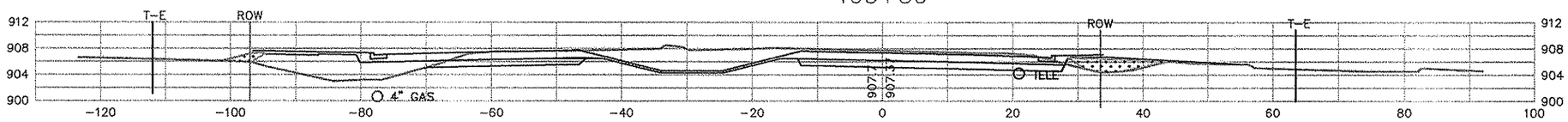
CROSS SECTIONS
STA 159+50 TO 163+00

Sheet 209 of 226 Sheets

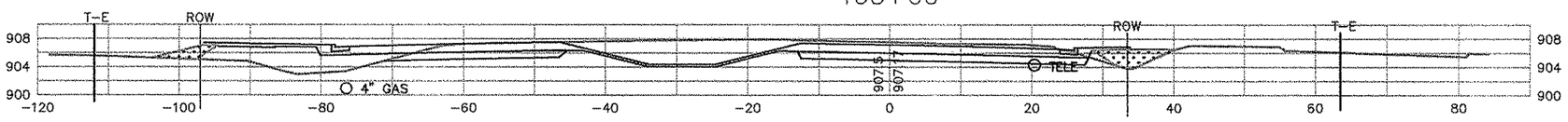
166+00



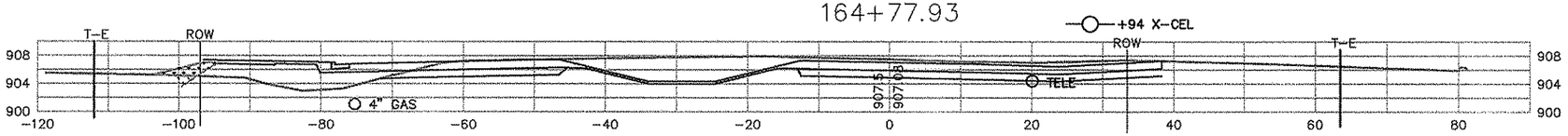
165+50



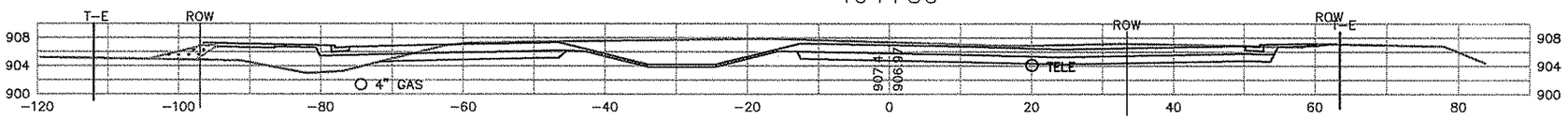
165+00



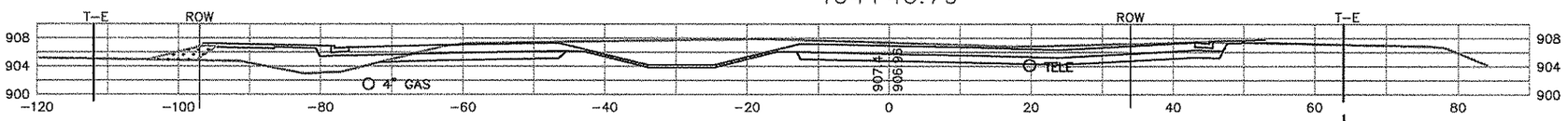
164+77.93



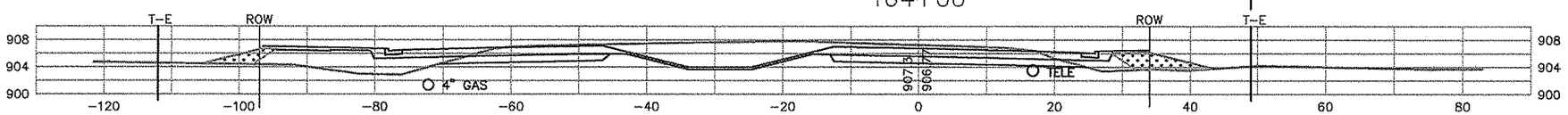
164+50



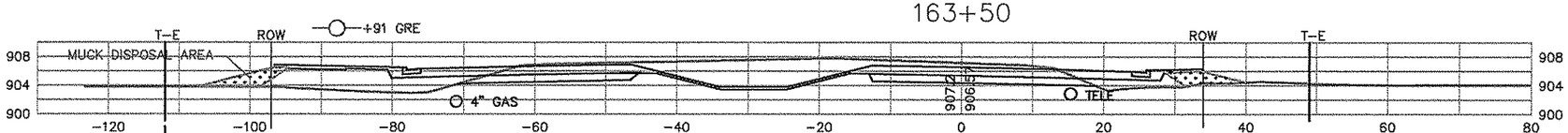
164+46.79



164+00



163+50



NAME: P:\02-617-13\Plan\82-X-Sec RECALC MN.dwg 01/06/2004 03:24:59 PM CST

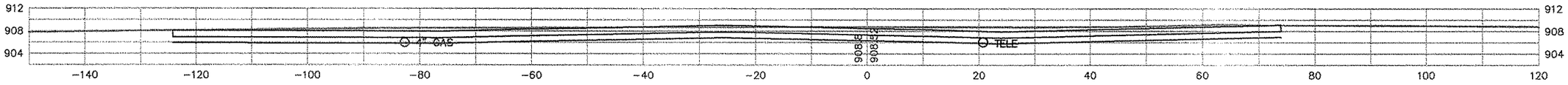
ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13
STATE PROJECT NO. 106-020-23
STATE AID PROJECT NO.
COUNTY PROJECT NO.

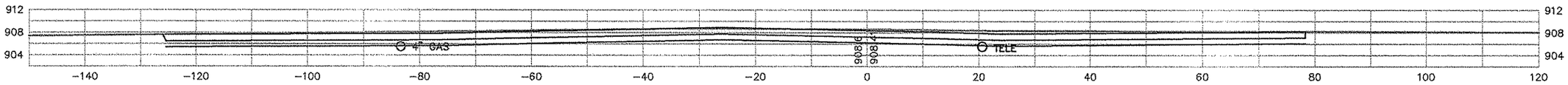
CROSS SECTIONS
STA 163+50 TO 166+00

Sheet 210 of 226 Sheets

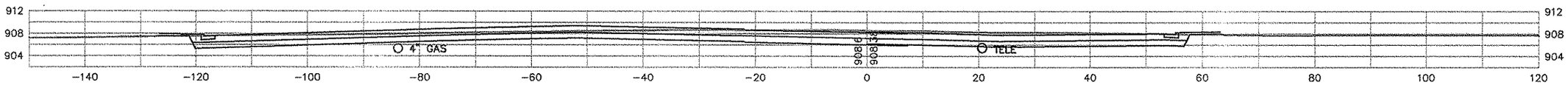
168+34.58



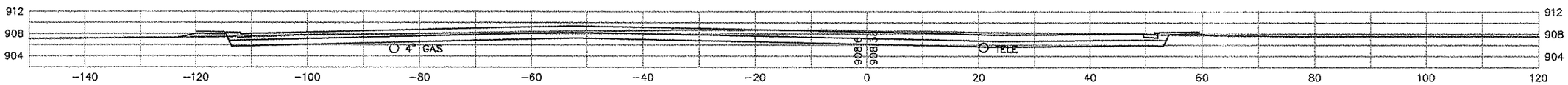
168+07.62



168+01.96



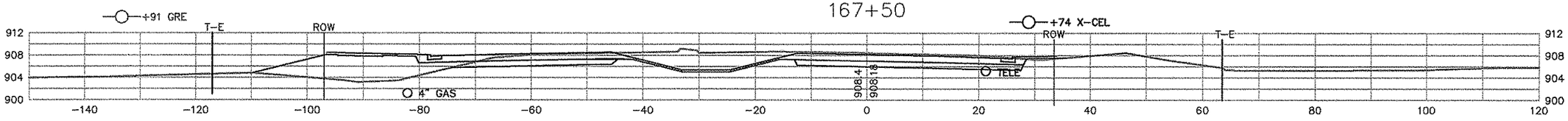
168+00



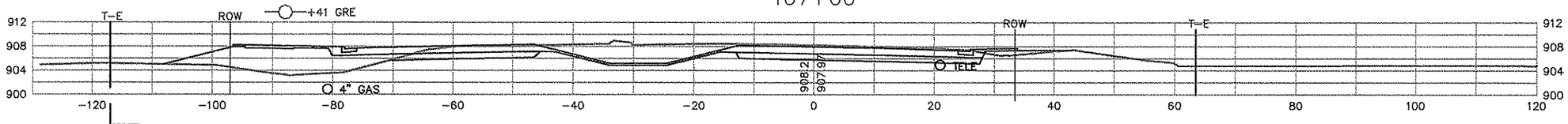
167+89.37

C.S.A.H. 14

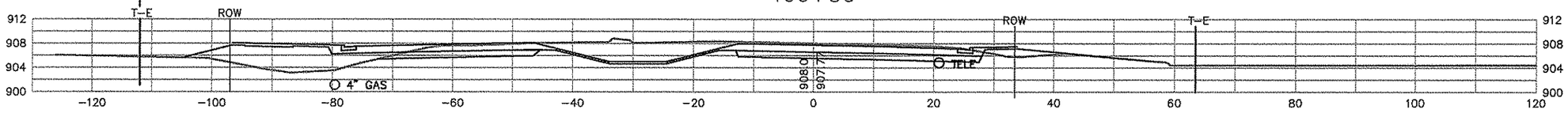
167+50



167+00



166+50



NAME: P:\02-617-13\Plan\82-X-Sec RECALC MN.dwg 01/06/2004 03:24:59 PM CST

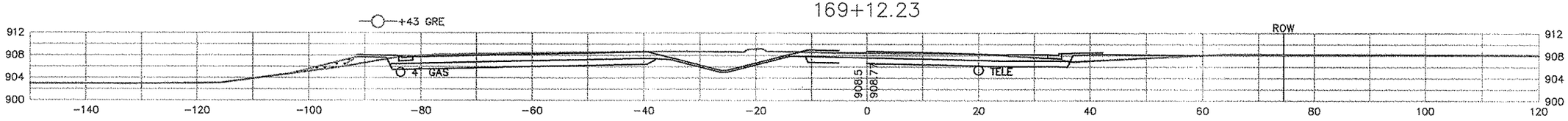
ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13
STATE PROJECT NO. 106-020-23
STATE AID PROJECT NO.
COUNTY PROJECT NO.

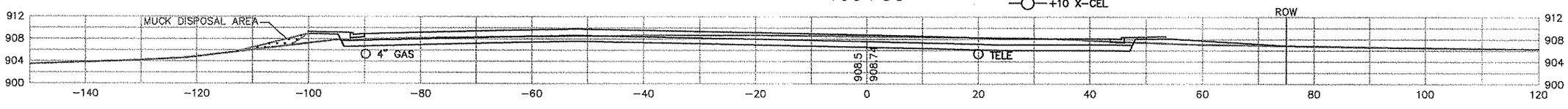
CROSS SECTIONS
STA.166+50 TO 168+34.58

Sheet 211 of 226 Sheets

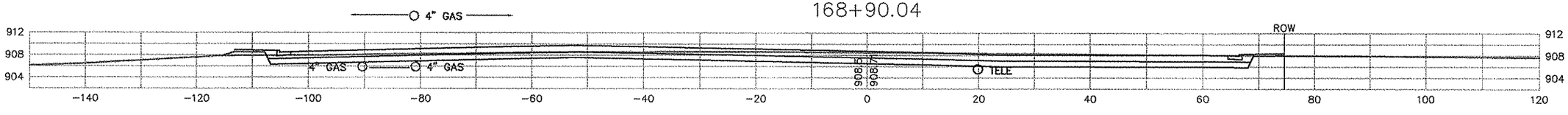
169+12.23



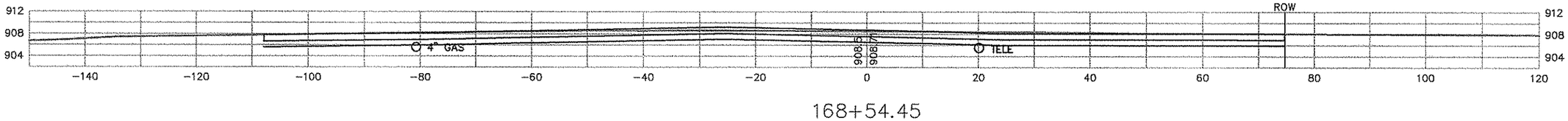
169+00



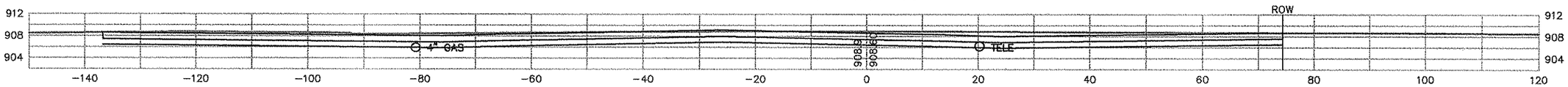
168+90.04



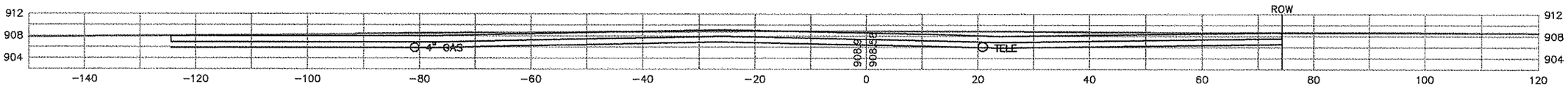
168+87.80



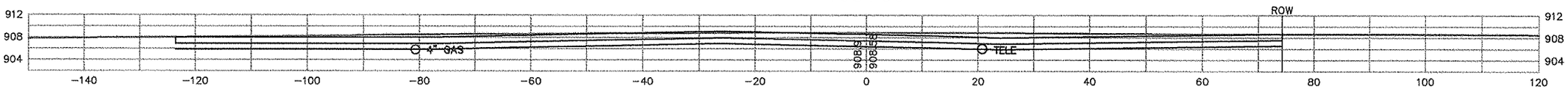
168+54.45



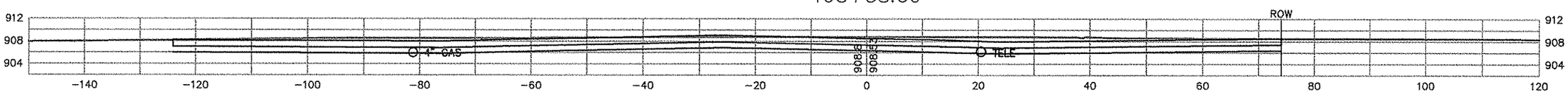
168+50.09



168+50



168+38.69



NAME: P:\02-617-13\Plan\82-X-Sec RECALC MN.dwg 01/06/2004 03:24:59 PM CST

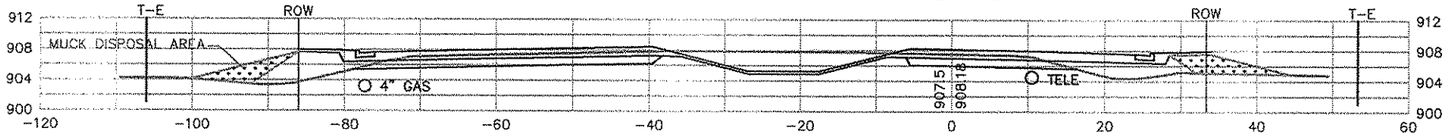
ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13
STATE PROJECT NO. 106-020-23
STATE AID PROJECT NO.
COUNTY PROJECT NO.

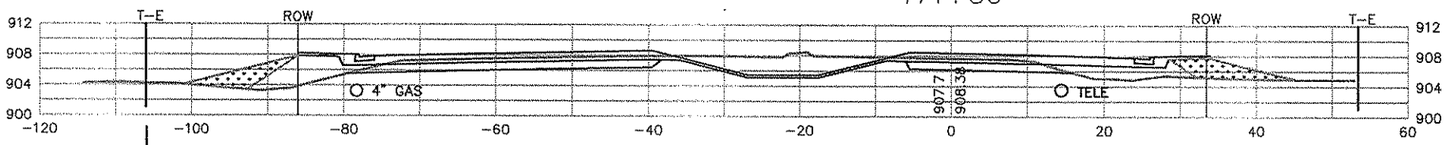
CROSS SECTIONS
STA168+38.69 TO 169+12.23

Sheet 212 of 226 Sheets

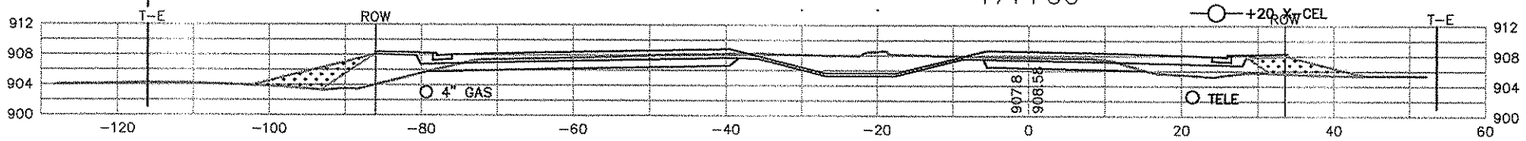
172+00



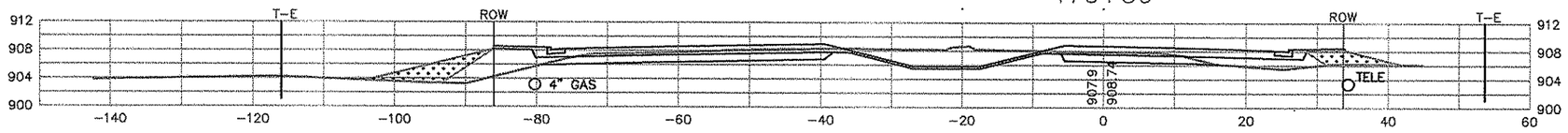
171+50



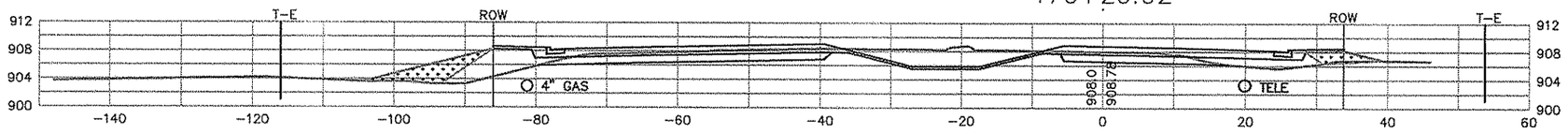
171+00



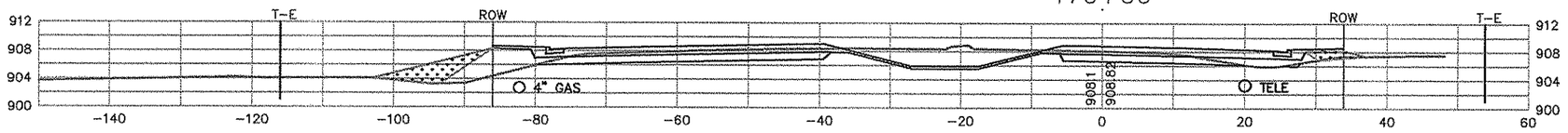
170+50



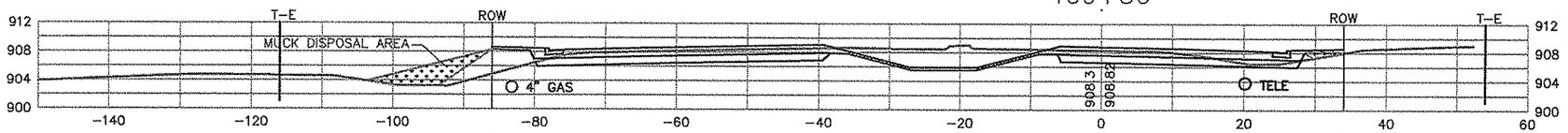
170+29.92



170+00



169+50



NAME: P:\02-617-13\Plan\82-X-Sec RECALC MN.dwg 01/06/2004 03:24:59 PM CST

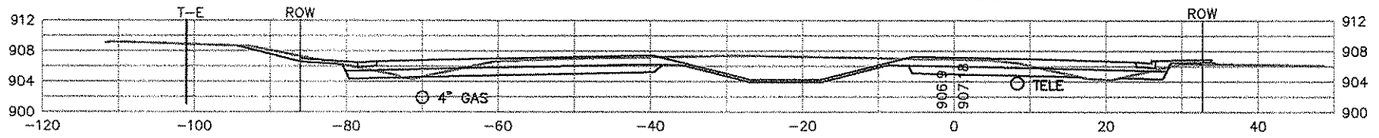
ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13
STATE PROJECT NO. 106-020-23
STATE AID PROJECT NO. _____
COUNTY PROJECT NO. _____

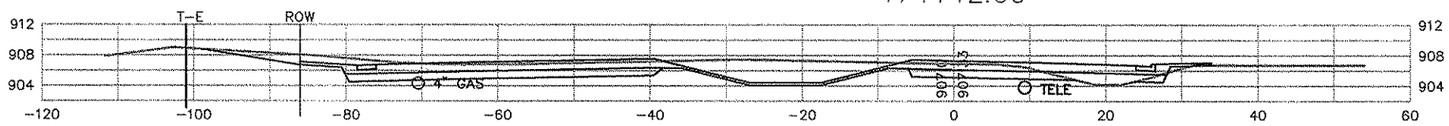
CROSS SECTIONS
STA 169+50 TO 172+00

Sheet 213 of 226 Sheets

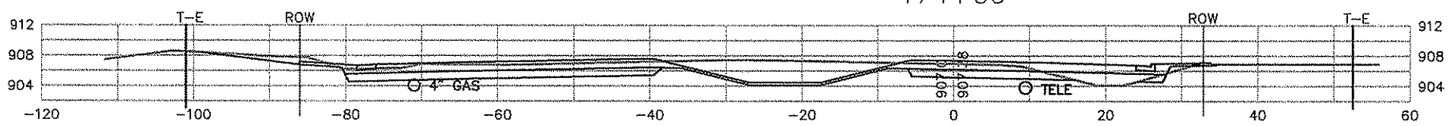
174+50



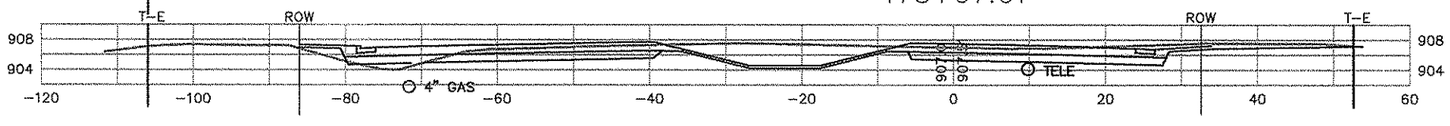
174+12.69



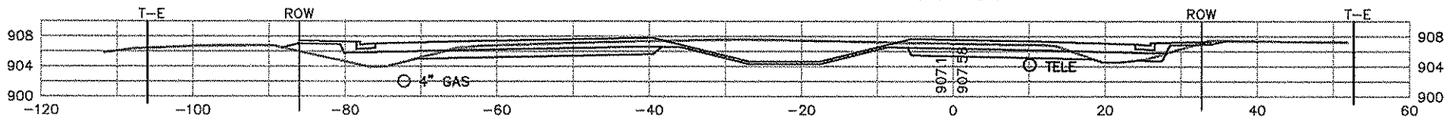
174+00



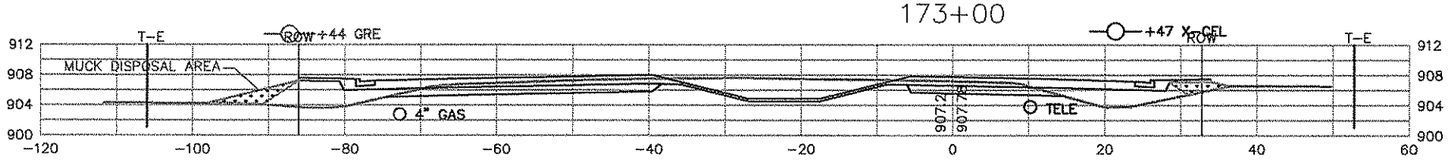
173+67.01



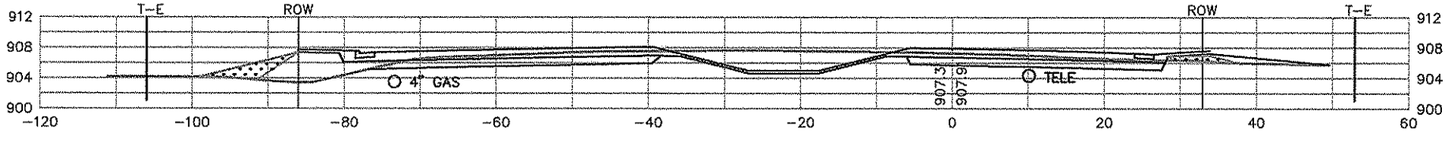
173+50



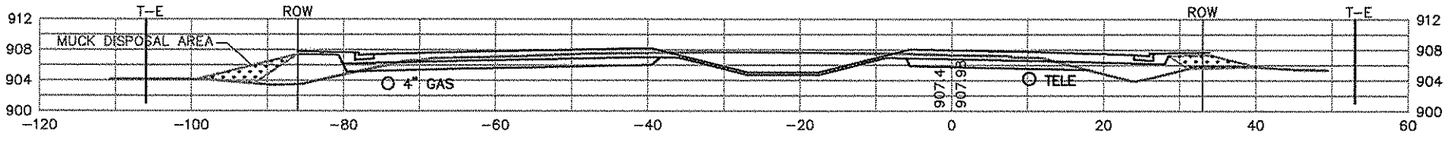
173+00



172+67.51



172+50



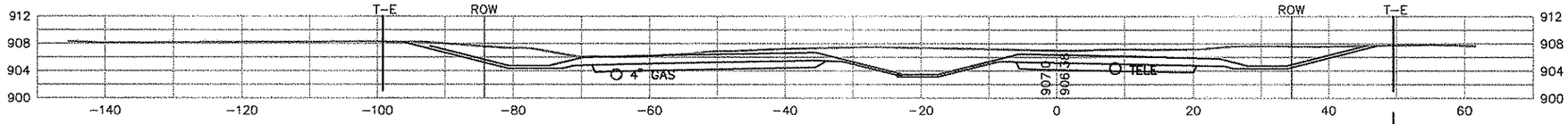
NAME: P:\02-617-13\Plan\82-X-Sec RECALC MN.dwg 01/06/2004 03:24:59 PM CST

ANOKA COUNTY HIGHWAY DEPT.

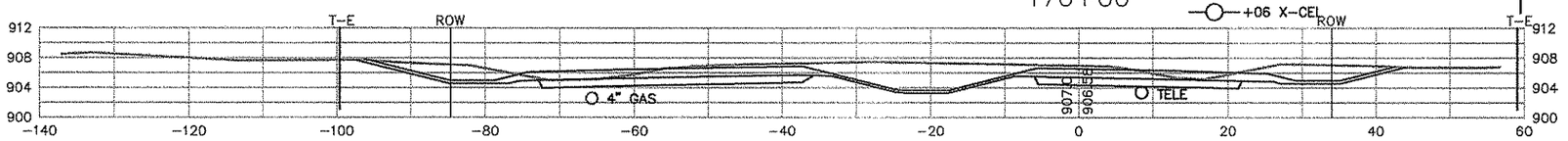
STATE PROJECT NO. 02-617-13
STATE PROJECT NO. 106-020-23
STATE AID PROJECT NO. _____
COUNTY PROJECT NO. _____

CROSS SECTIONS
STA 172+50 TO 174+50

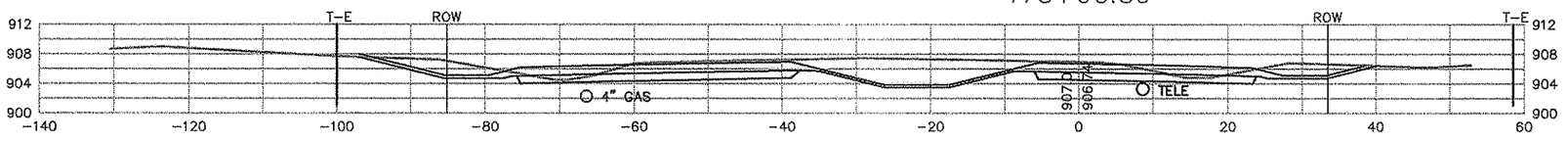
176+50



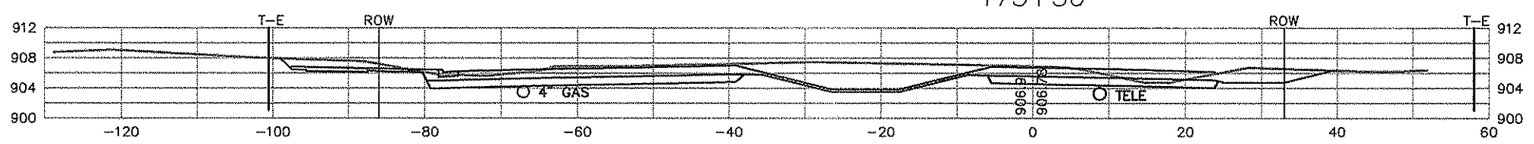
176+00



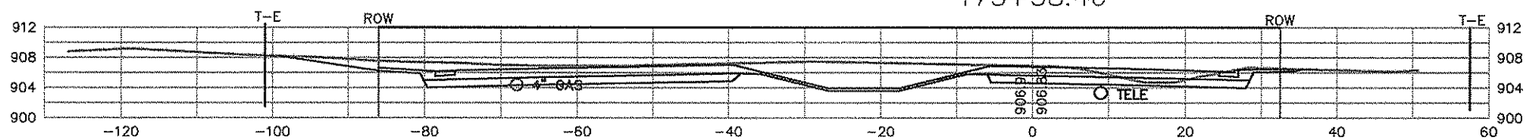
175+60.39



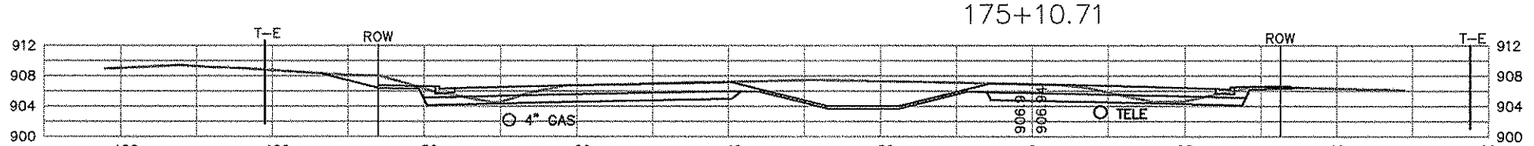
175+50



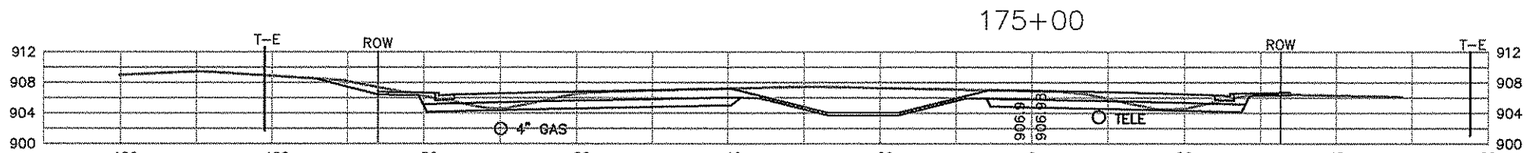
175+38.46



175+10.71



175+00



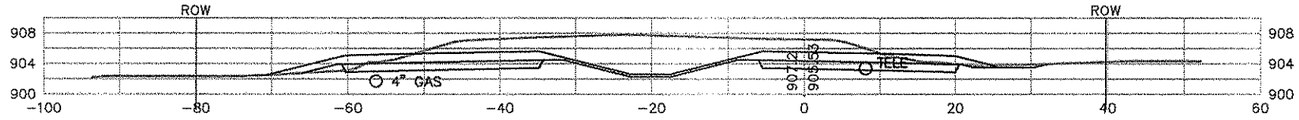
NAME: P:\02-617-13\Plan\82-X-Sec RECALC MN.dwg 01/06/2004 03:24:59 PM CST

ANOKA COUNTY HIGHWAY DEPT.

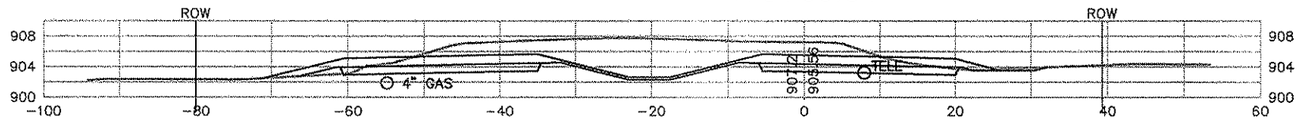
STATE PROJECT NO. 02-617-13
STATE PROJECT NO. 106-020-23
STATE AID PROJECT NO. _____
COUNTY PROJECT NO. _____

CROSS SECTIONS
STA 175+00 TO 176+50

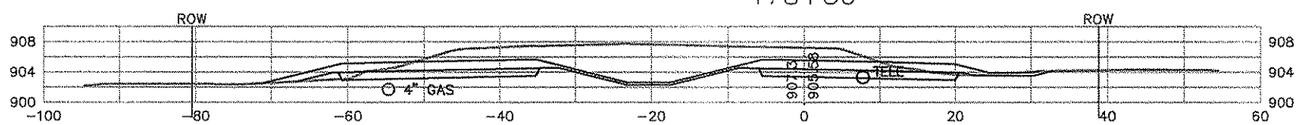
178+62.25



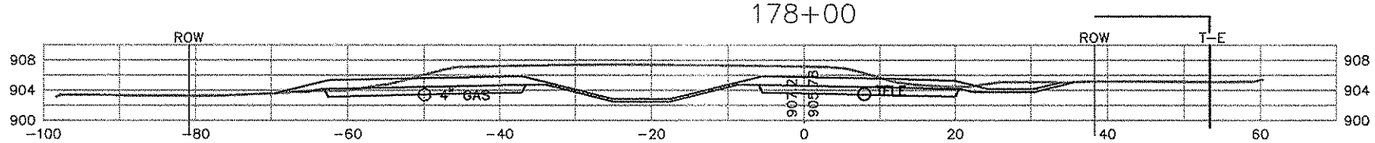
178+55.84



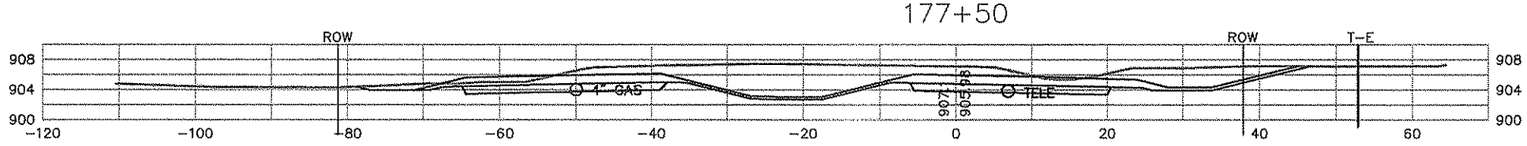
178+50



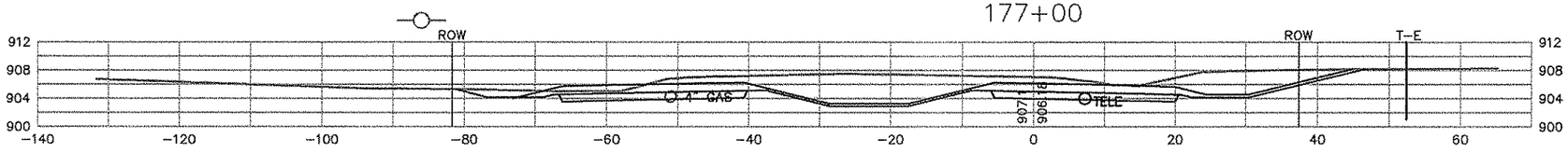
178+00



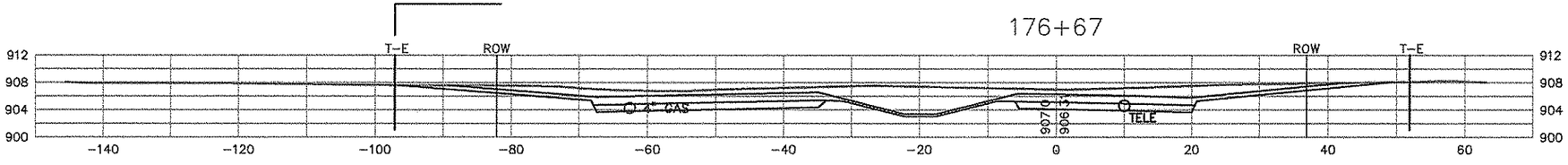
177+50



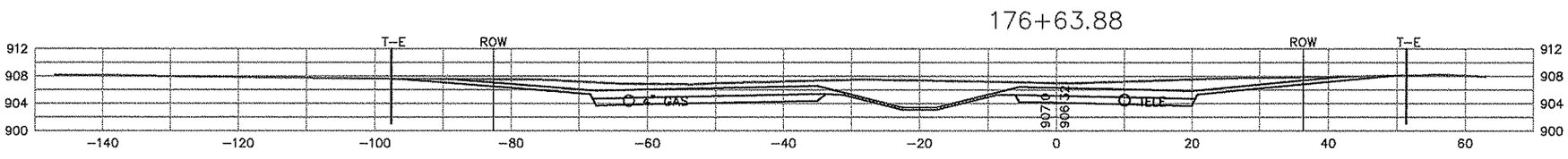
177+00



176+67



176+63.88



NAME: P:\02-617-13\Plan\82-X-Sec RECALC MN.dwg 01/06/2004 03:24:59 PM CST

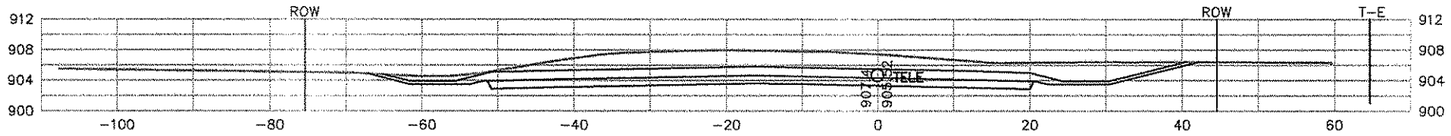
ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13
STATE PROJECT NO. 106-020-23
STATE AID PROJECT NO.
COUNTY PROJECT NO.

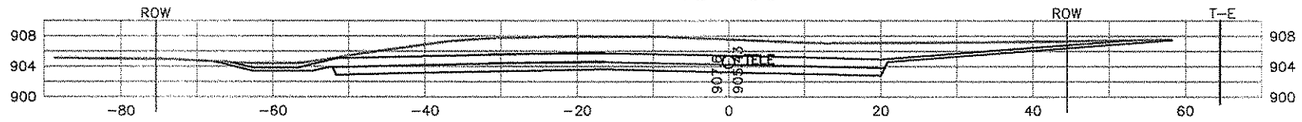
CROSS SECTIONS
STA176+63.88 TO 178+62.25

Sheet 216 of 226 Sheets

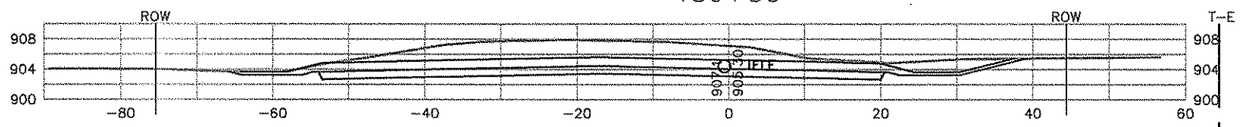
181+22



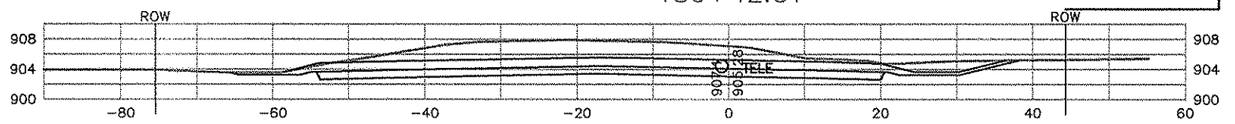
181+00



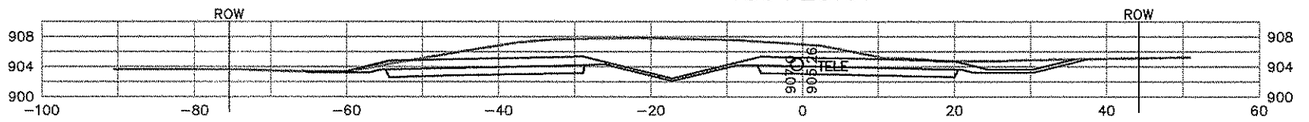
180+50



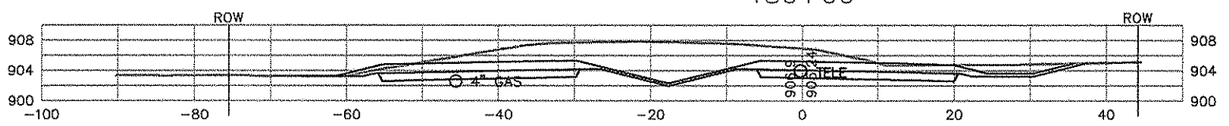
180+42.51



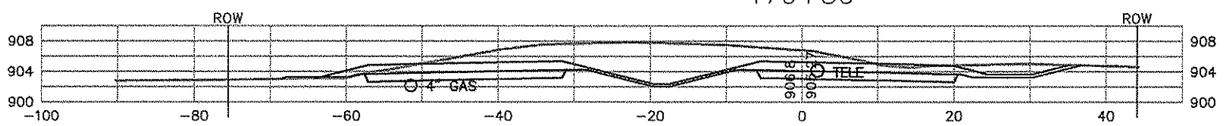
180+25.07



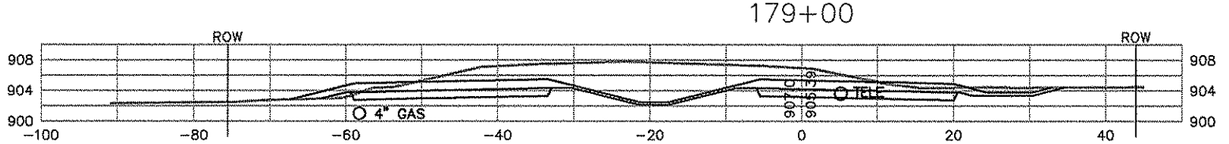
180+00



179+50



179+00



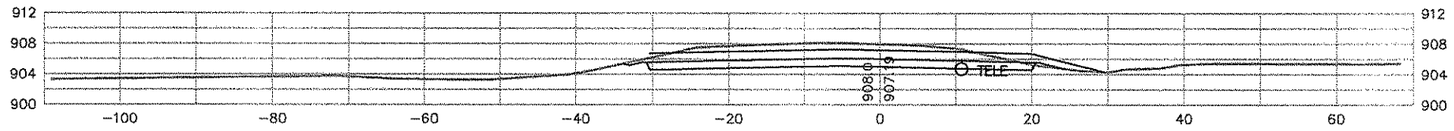
NAME: P:\02-617-13\Plan\82-X-Sec RECALC MN.dwg 01/06/2004 03:24:59 PM CST

ANOKA COUNTY HIGHWAY DEPT.

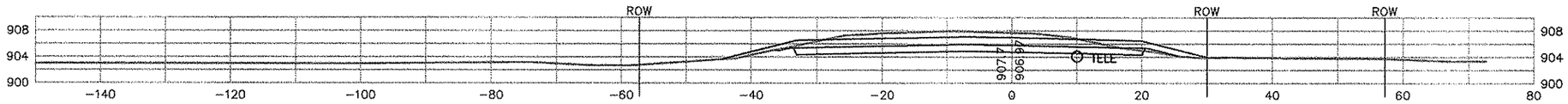
STATE PROJECT NO. 02-617-13
STATE PROJECT NO. 106-020-23
STATE AID PROJECT NO.
COUNTY PROJECT NO.

CROSS SECTIONS
STA 179+00 TO 181+22

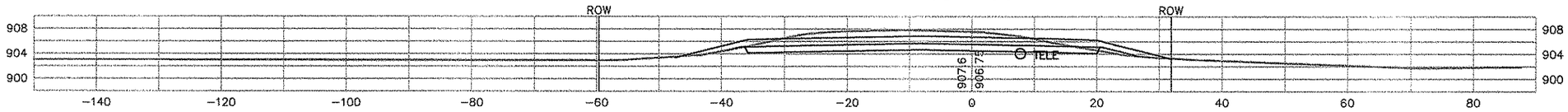
185+00



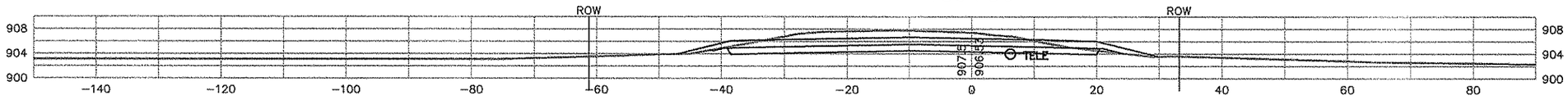
184+50



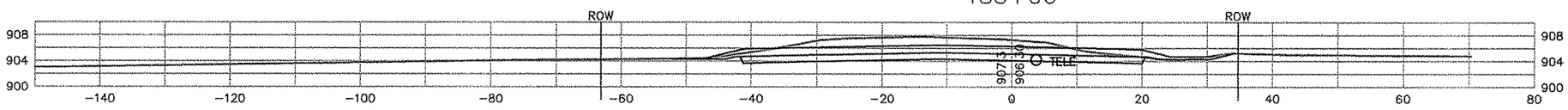
184+00



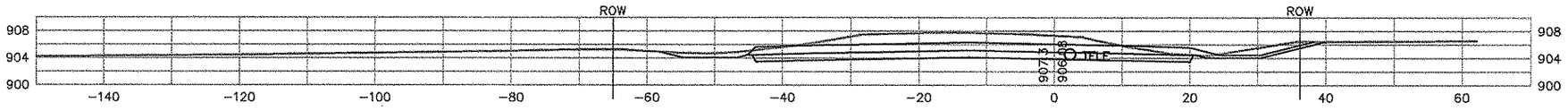
183+50



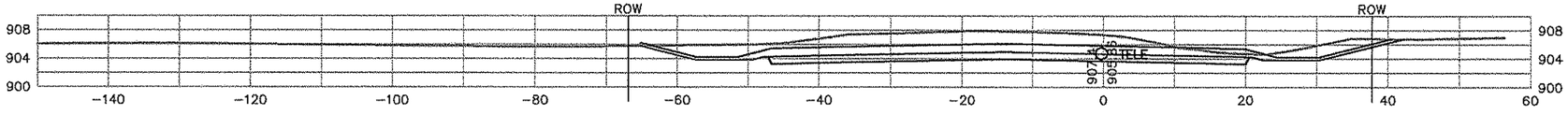
183+00



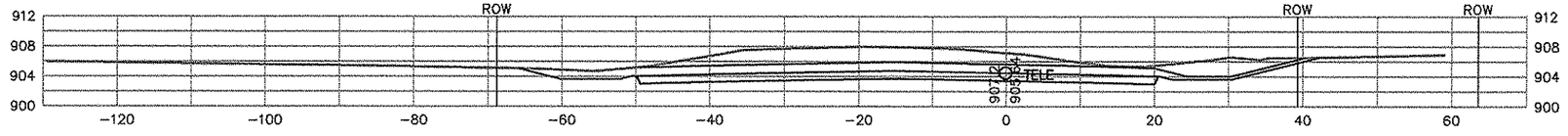
182+50



182+00



181+50



NAME: P:\02-617-13\Plan\82-X-Sec RECALC MN.dwg 01/06/2004 03:24:59 PM CST

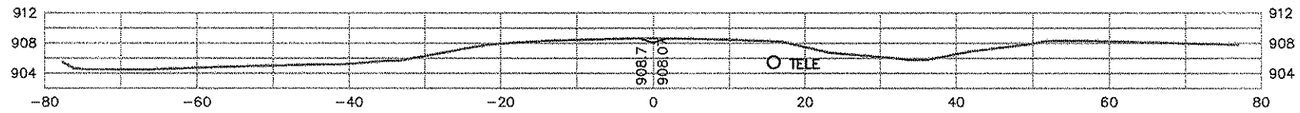
ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13
STATE PROJECT NO. 106-020-23
STATE AID PROJECT NO.
COUNTY PROJECT NO.

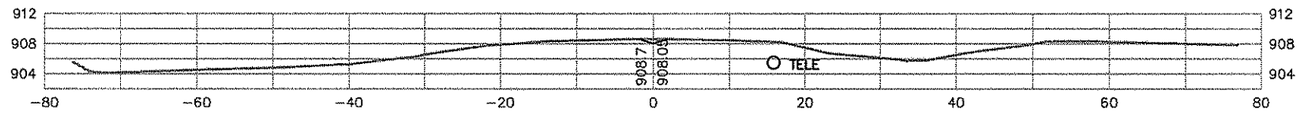
CROSS SECTIONS
STA 181+50 TO 185+00

Sheet 218 of 226 Sheets

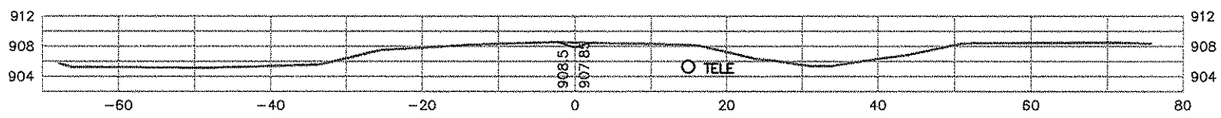
187+00



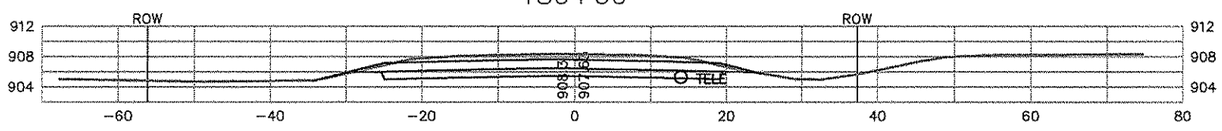
186+96



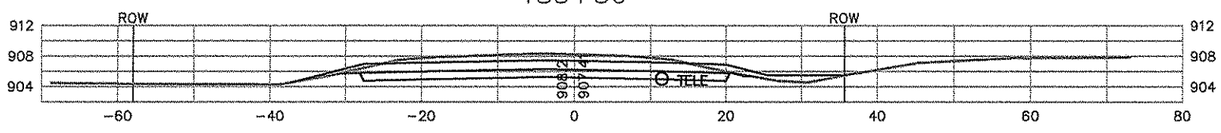
186+50



186+00



185+50



NAME: P:\02-617-13\Plan\82-X-Sec RECALC MN.dwg 01/06/2004 03:24:59 PM CST

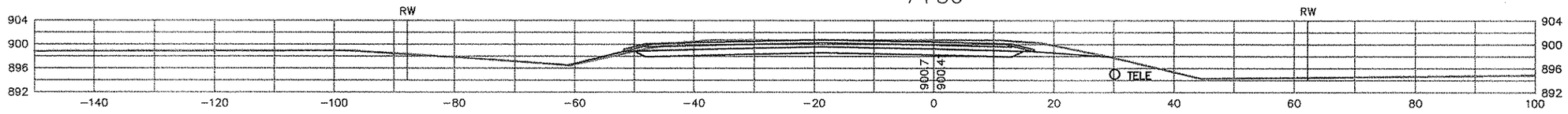
ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13
STATE PROJECT NO. 106-020-23
STATE AID PROJECT NO.
COUNTY PROJECT NO.

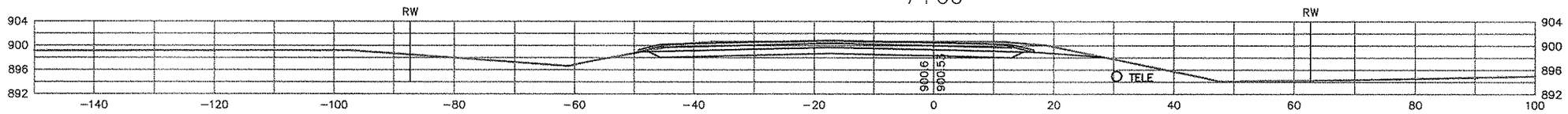
CROSS SECTIONS
STA 185+50 TO 187+00

Sheet 219 of 226 Sheets

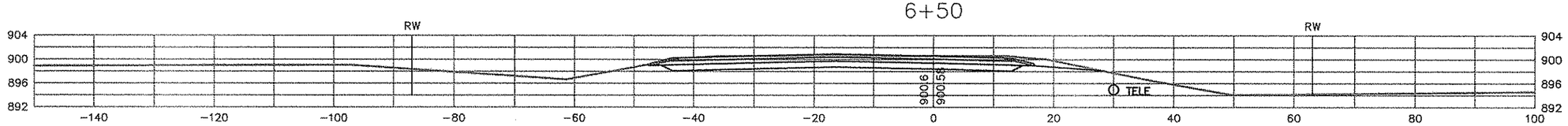
7+50



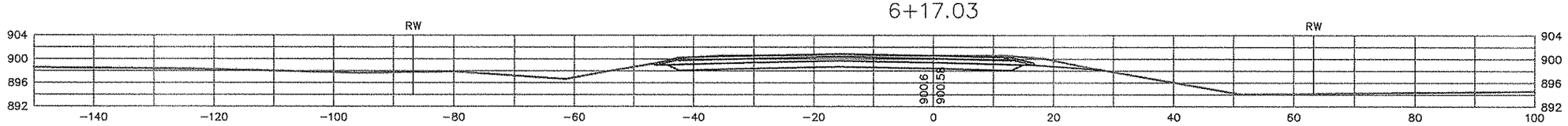
7+00



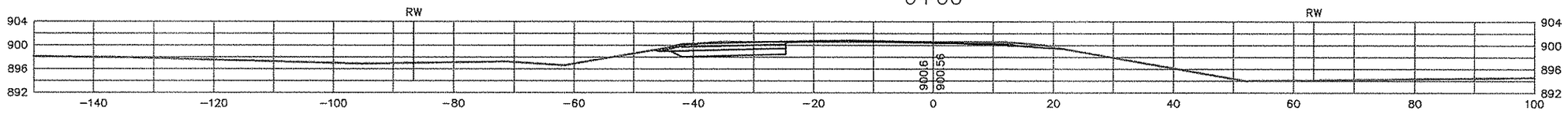
6+50



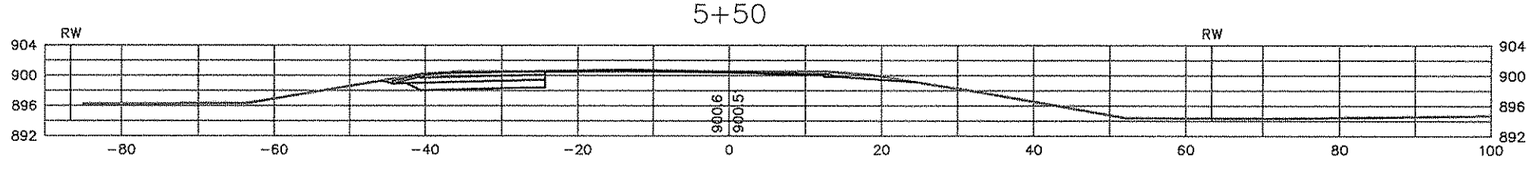
6+17.03



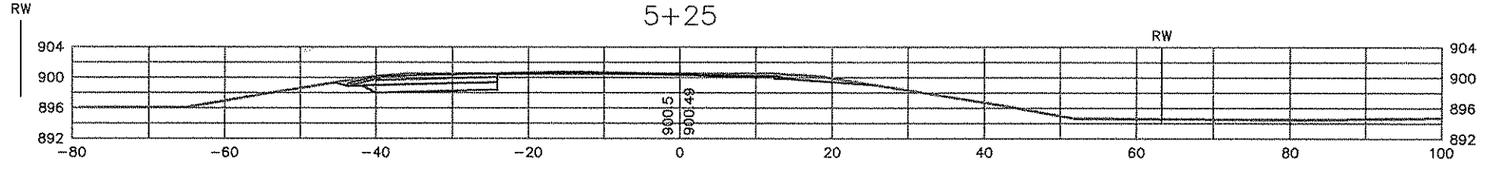
6+00



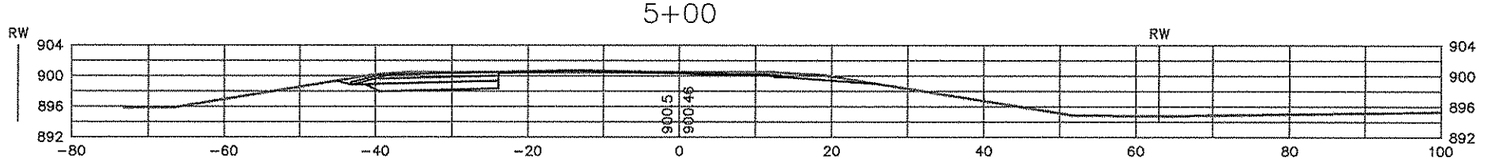
5+50



5+25



5+00



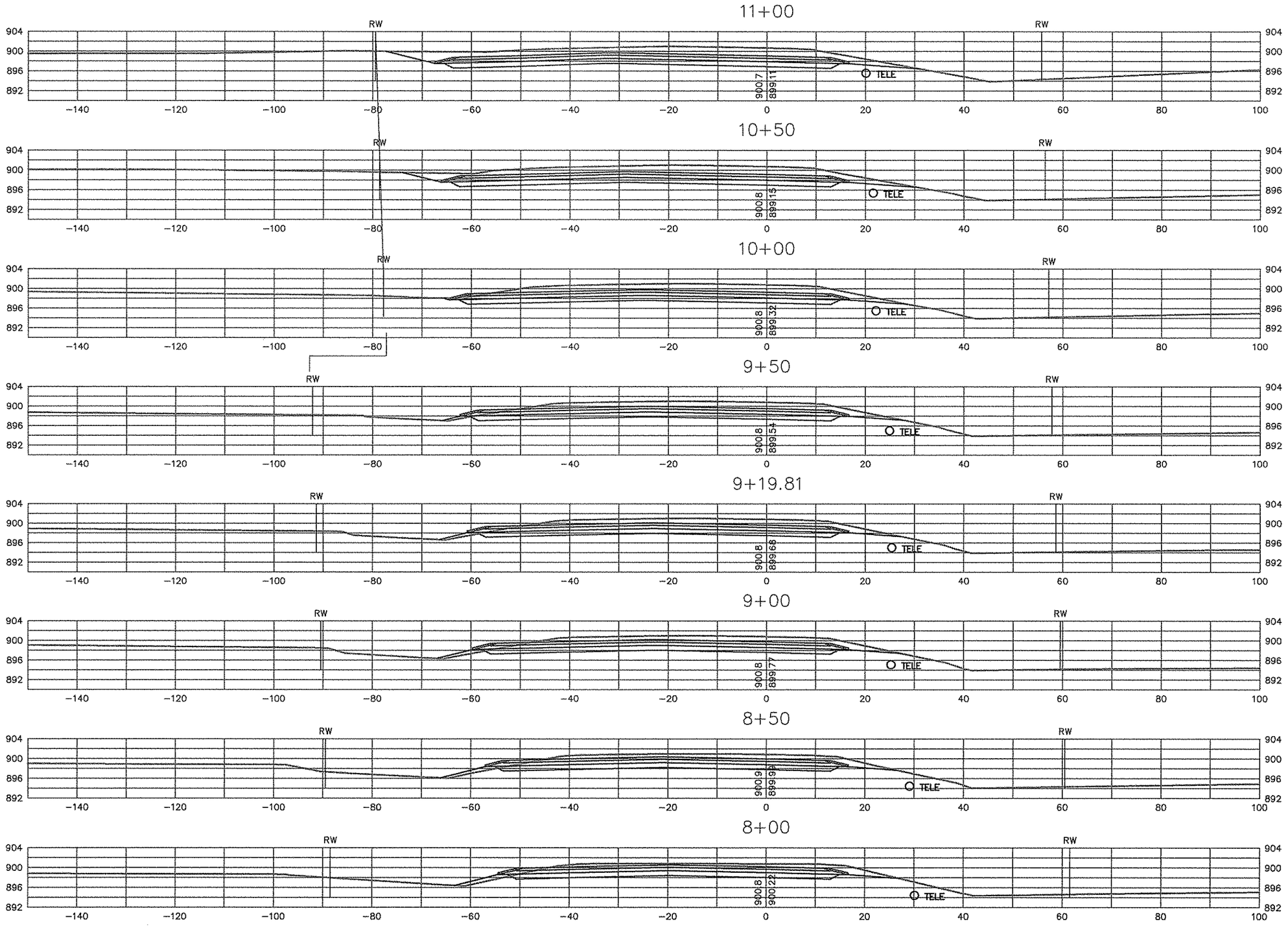
ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13
STATE PROJECT NO. 106-020-23
STATE AID PROJECT NO.
COUNTY PROJECT NO.

CROSS SECTIONS
109TH AVE. (CSAH 12)
LEB STA 5+00.00 TO 7+50.00

Sheet 220 of 226 Sheets

P:\02-617-13\Plan\83-X-Sections-Co-12.dwg 02/19/2004 04:01:30 PM CST



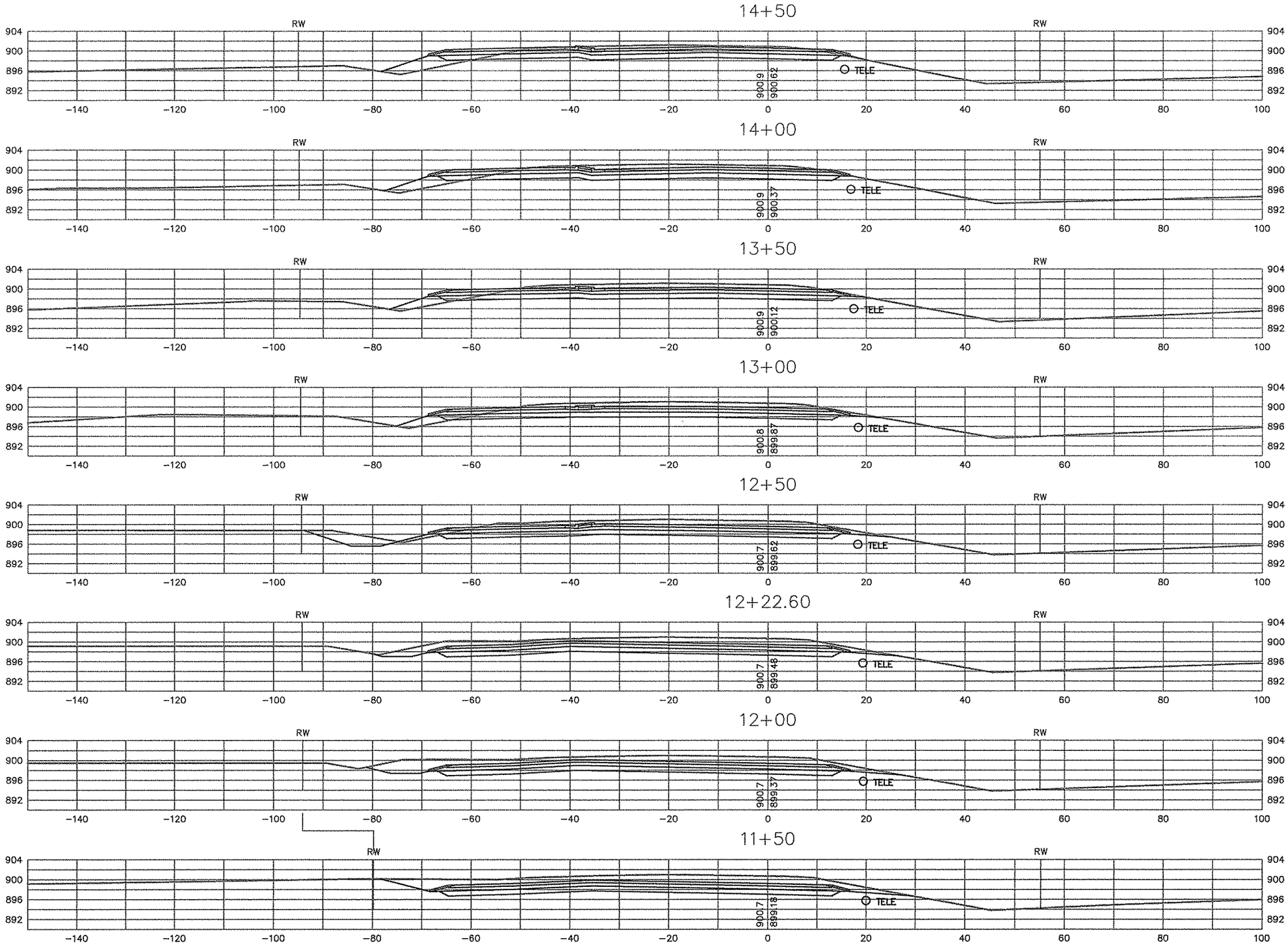
P:\02-617-13\Plan\83-X-Sections-Co-12.dwg 02/19/2004 04:01:30 PM CST

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13
STATE PROJECT NO. 106-020-23
STATE AID PROJECT NO.
COUNTY PROJECT NO.

CROSS SECTIONS
109TH AVE. (CSAH 12)
LEB STA 8+00.00 TO 11+00.00

Sheet 221 of 226 Sheets



P:\02-617-13\Plan\83-X-Sections-Co-12.dwg 02/19/2004 04:01:30 PM CST

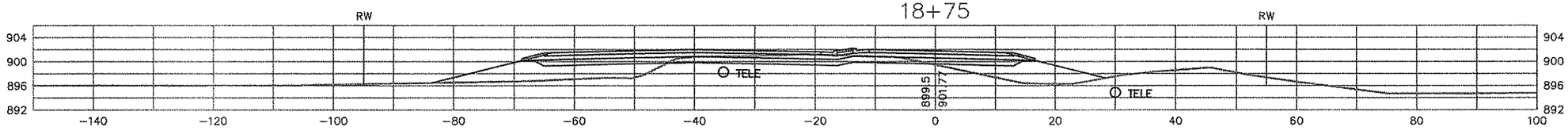
ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13
STATE PROJECT NO. 106-020-23
STATE AID PROJECT NO.
COUNTY PROJECT NO.

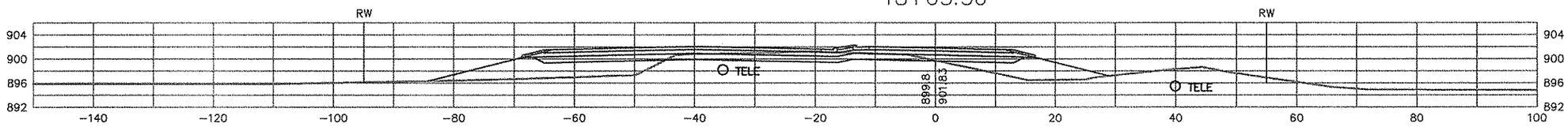
CROSS SECTIONS
109TH AVE. (CSAH 12)
LEB STA 11+50.00 TO 14+50.00

Sheet 222 of 226 Sheets

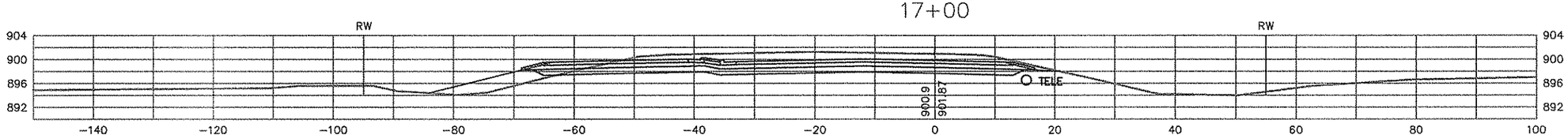
18+75



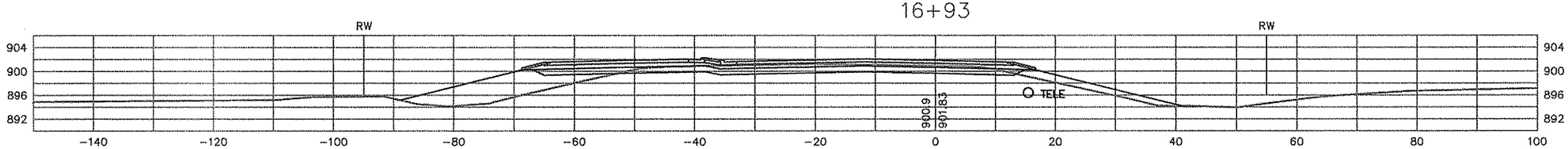
18+63.50



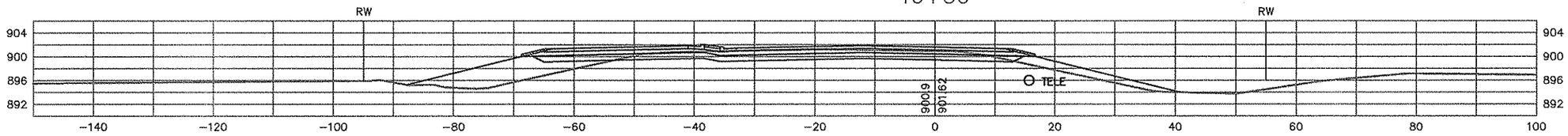
17+00



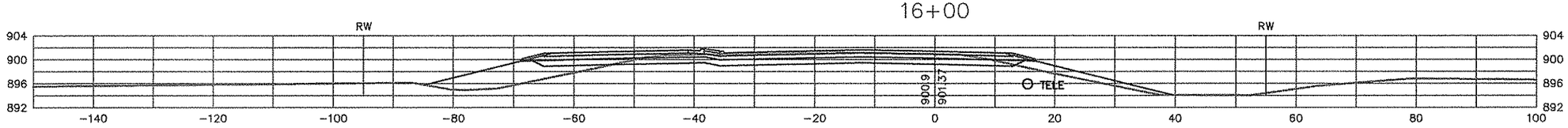
16+93



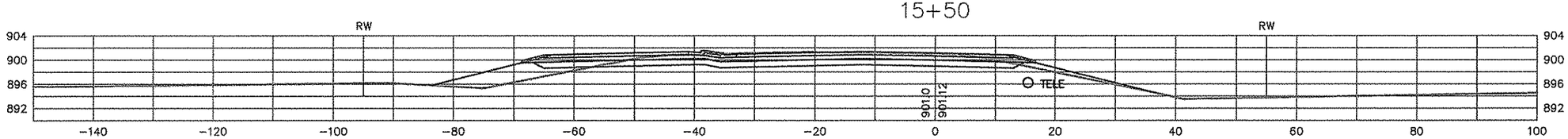
16+50



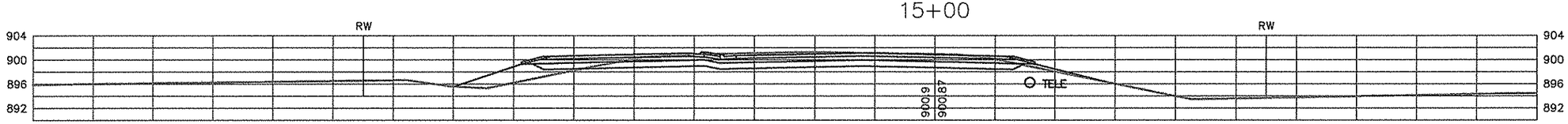
16+00



15+50



15+00



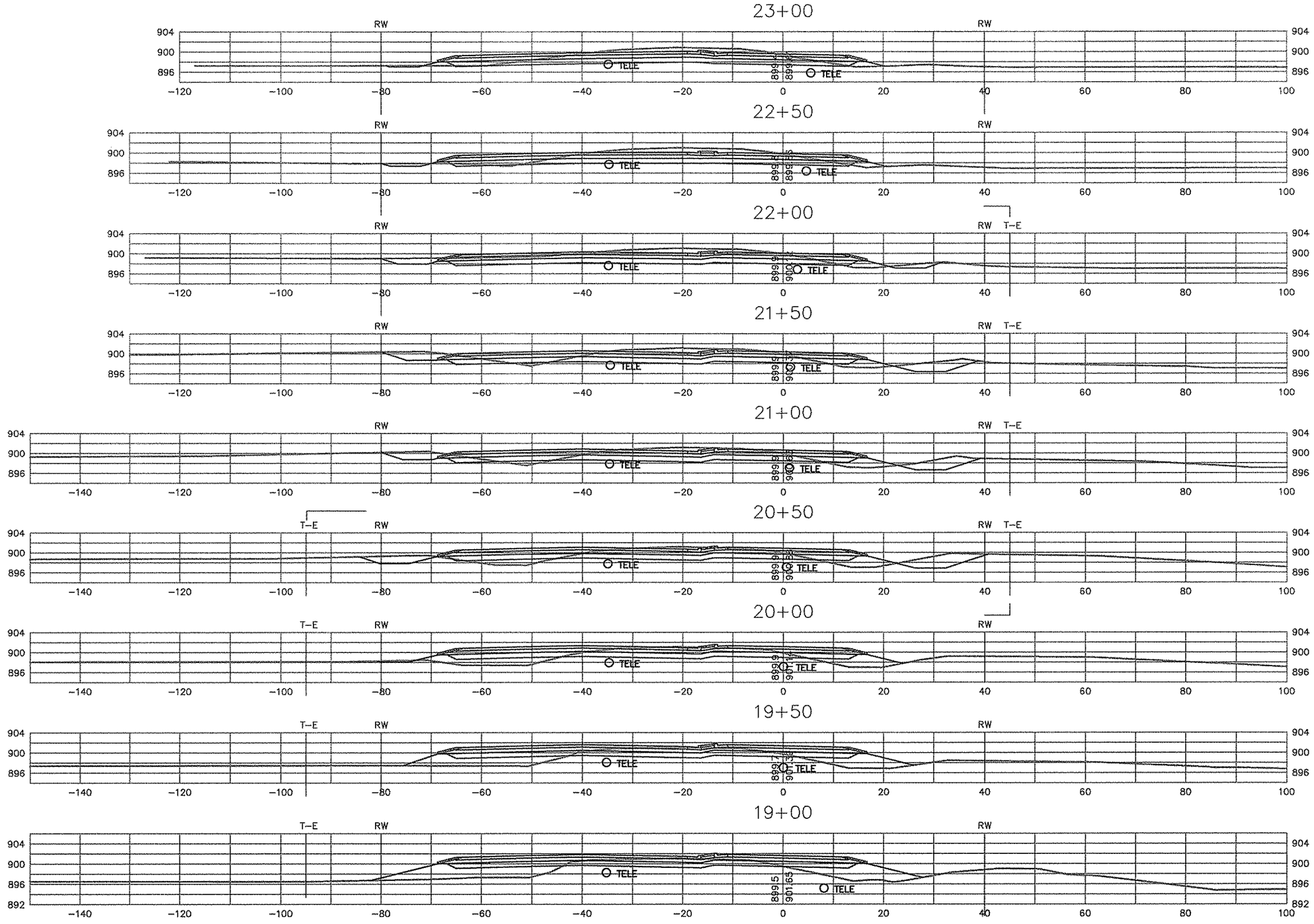
ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13
STATE PROJECT NO. 106-020-23
STATE AID PROJECT NO.
COUNTY PROJECT NO.

CROSS SECTIONS
109TH AVE. (CSAH 12)
LEB STA 11+50.00 TO 14+50.00

Sheet 223 of 226 Sheets

P:\02-617-13\Plan\83-X-Sections-Co-12.dwg 02/19/2004 04:01:30 PM CST



P:\02-617-13\Plan\83-X-Sections-Co-12.dwg 02/19/2004 04:01:30 PM CST

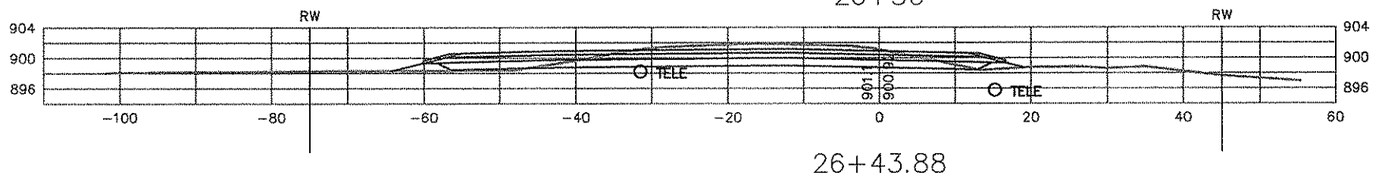
ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13
STATE PROJECT NO. 106-020-23
STATE AID PROJECT NO.
COUNTY PROJECT NO.

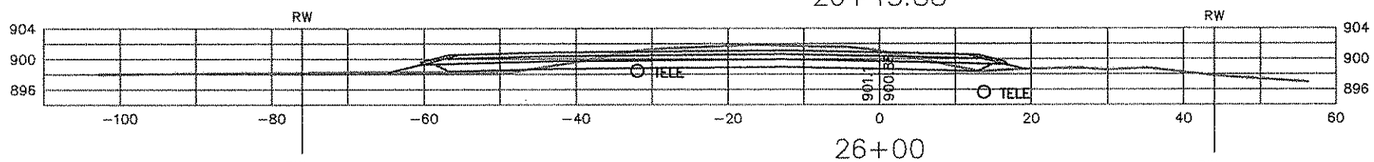
CROSS SECTIONS
109TH AVE. (CSAH 12)
LEB STA 19+00.00 TO 23+00.00

Sheet 224 of 226 Sheets

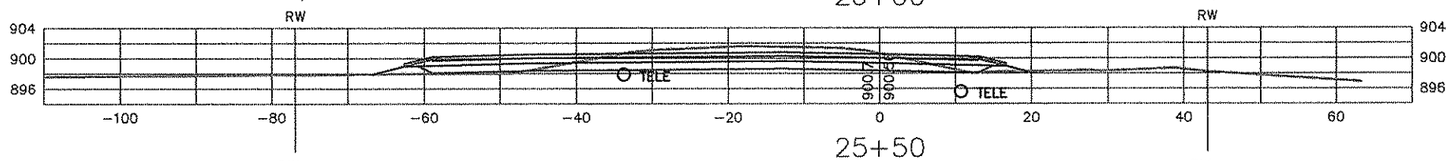
26+50



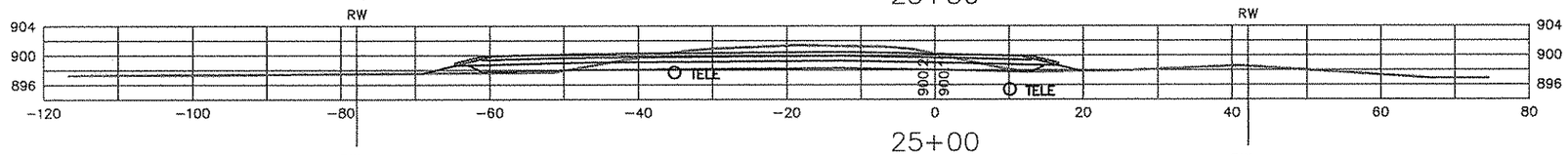
26+43.88



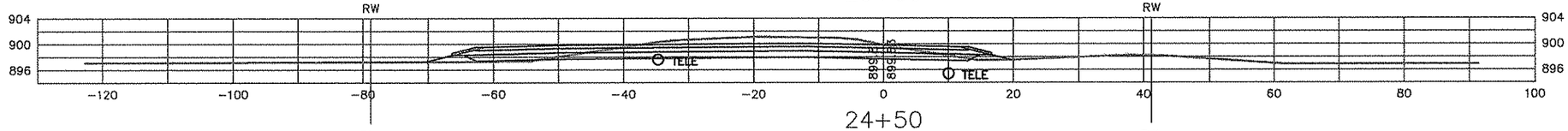
26+00



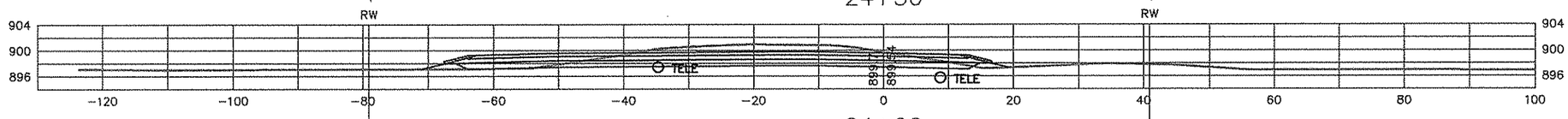
25+50



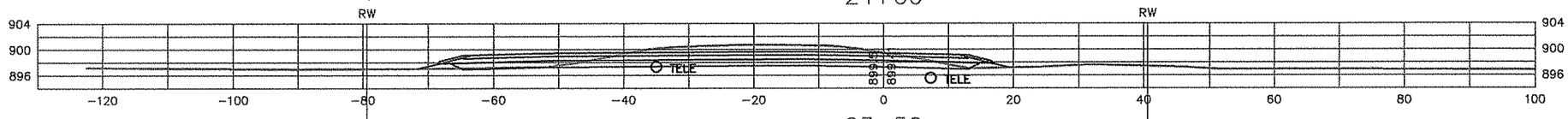
25+00



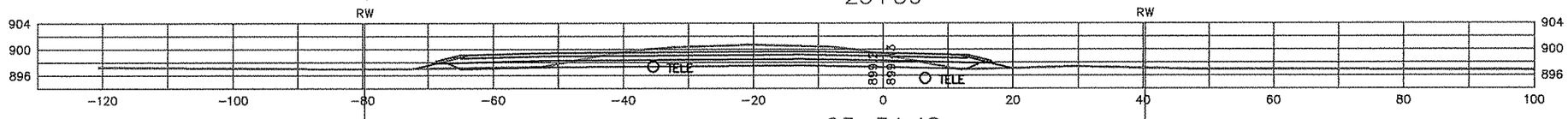
24+50



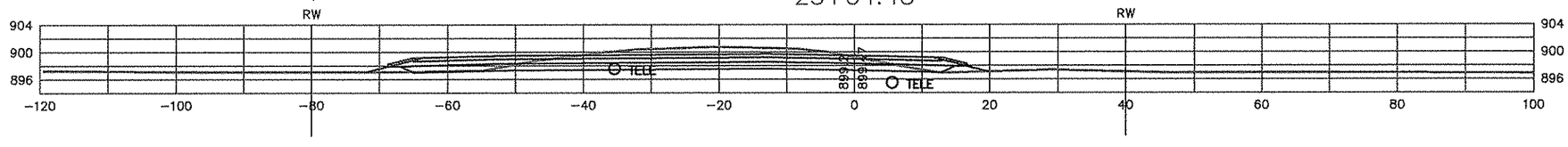
24+00



23+50



23+34.48



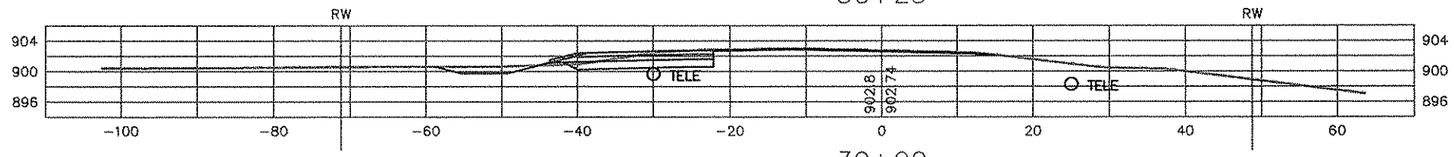
P:\02-617-13\Plan\83-X-Sections-Co-12.dwg 02/19/2004 04:01:30 PM CST

ANOKA COUNTY HIGHWAY DEPT.

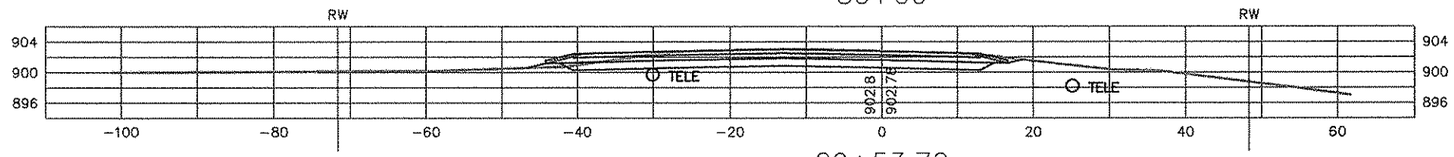
STATE PROJECT NO. 02-617-13
STATE PROJECT NO. 106-020-23
STATE AID PROJECT NO.
COUNTY PROJECT NO.

CROSS SECTIONS
109TH AVE. (CSAH 12)
LEB STA 23+34.48 TO 26+50.00

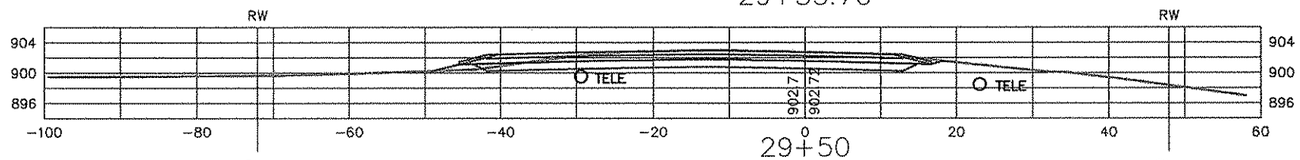
30+25



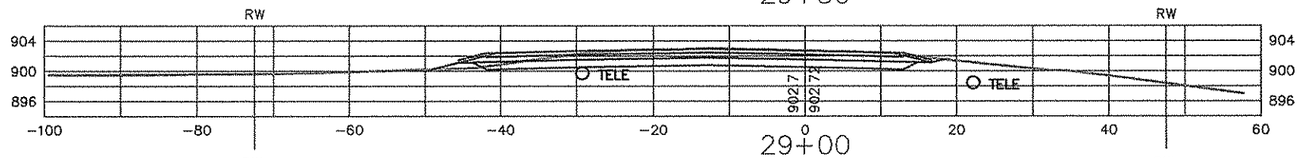
30+00



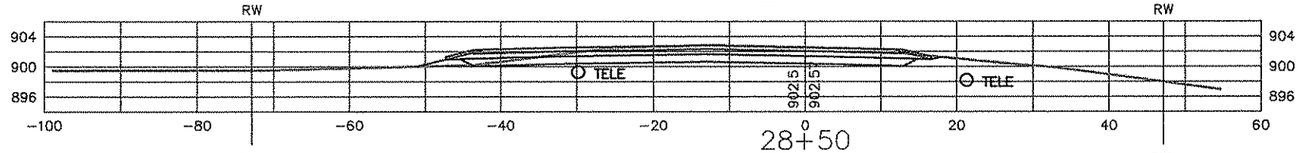
29+53.70



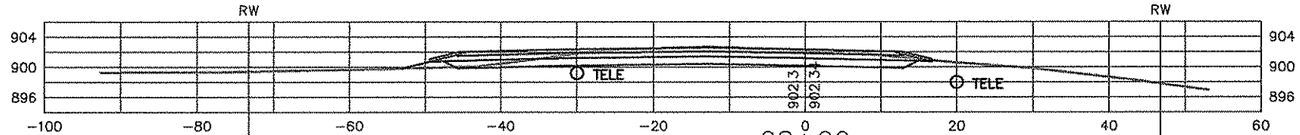
29+50



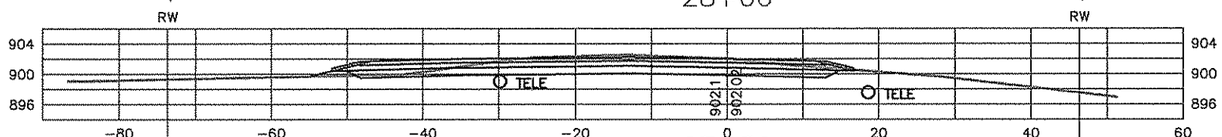
29+00



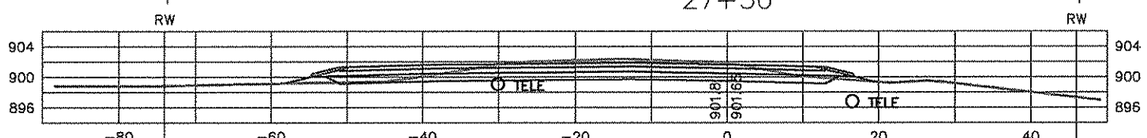
28+50



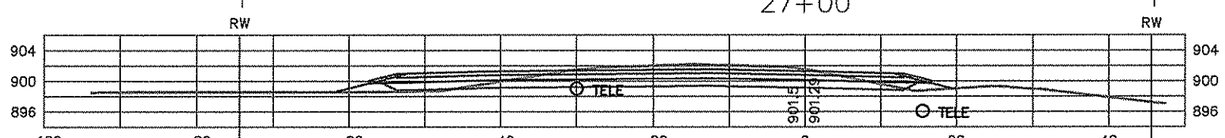
28+00



27+50



27+00



P:\02-617-13\Plan\83-X-Sections-Co-12.dwg 02/19/2004 04:01:30 PM CST

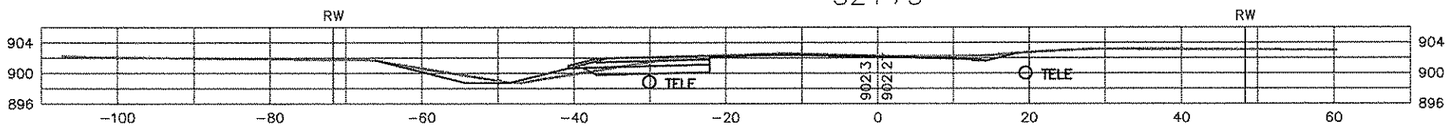
ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13
STATE PROJECT NO. 106-020-23
STATE AID PROJECT NO.
COUNTY PROJECT NO.

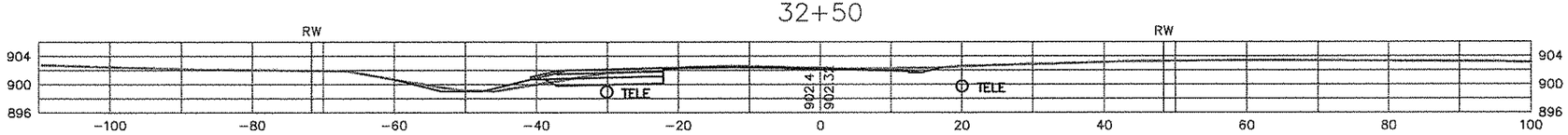
CROSS SECTIONS
109TH AVE. (CSAH 12)
LEB STA 27+00.00 TO 30+25.00

Sheet 226 of 226 Sheets

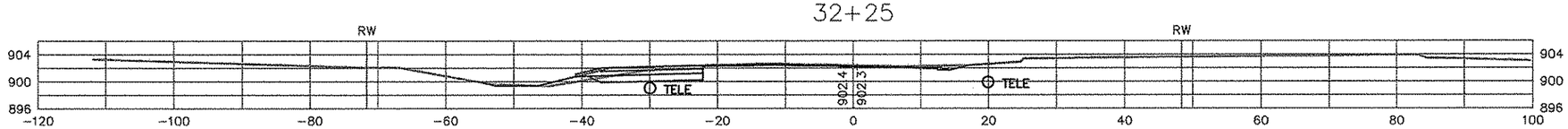
32+75



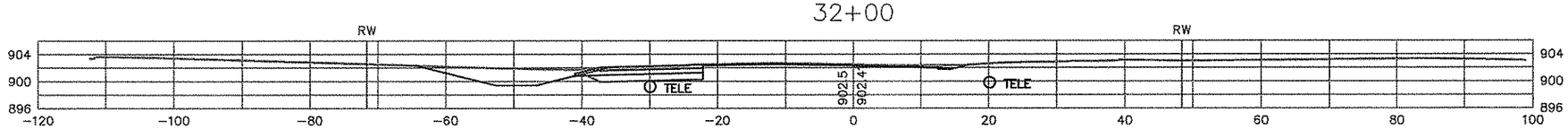
32+50



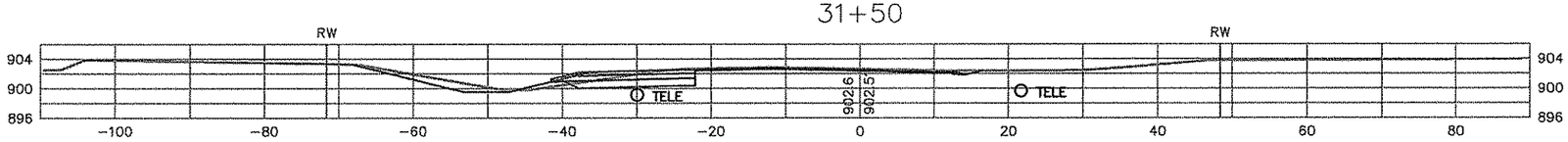
32+25



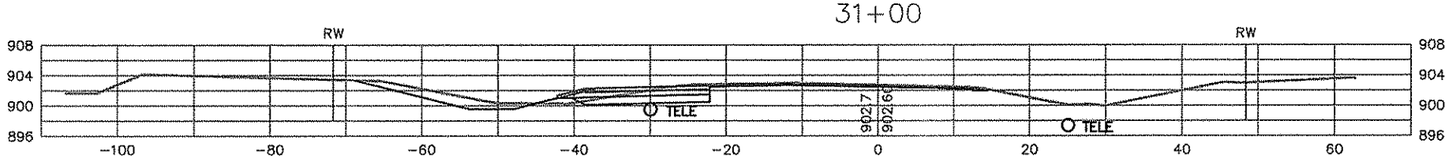
32+00



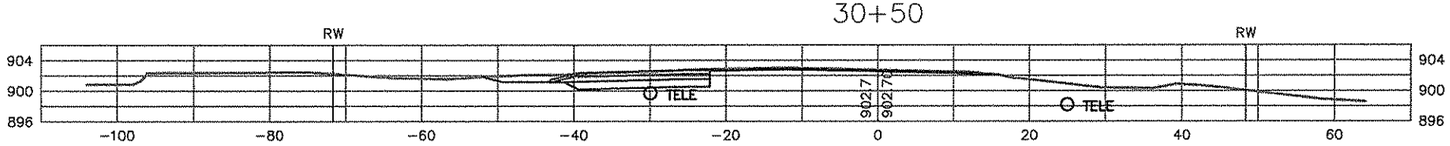
31+50



31+00



30+50



P:\02-617-13\Plan\83-X-Sections-Co-12.dwg 02/19/2004 04:01:30 PM CST

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13
STATE PROJECT NO. 106-020-23
STATE AID PROJECT NO.
COUNTY PROJECT NO.

CROSS SECTIONS
109TH AVE. (CSAH 12)
LEB STA 30+50.00 TO 32+75.00

Sheet 226A of 226 Sheets

CSAH 17 LEXINGTON AVE.

STATION	EXCAVATION			EMBANKMENT			
	COMMON	SUBCUT	MUCK	SELECT GRANULAR	SELECT GRANULAR (SUBCUT)	SELECT GRANULAR (MUCK EXC BACKFILL)	MUCK DISPOSAL
	CU YD	CU YD	CU YD	CU YD	CU YD	CU YD	CU YD
36+00	0	0	0	0	0	0	0
36+50	0	0	0	0	0	0	0
36+89	0	0	0	0	0	0	0
36+91	0	0	0	0	0	0	0
36+91	5	5	0	0	5	0	0
36+93	15	15	0	0	15	0	0
37+00	8	7	0	0	7	0	0
37+05	44	37	0	0	37	0	0
37+48	1	1	0	0	1	0	0
37+50	33	27	0	1	27	0	0
38+00	39	29	0	1	29	0	0
38+50	40	32	0	1	32	0	0
39+00	40	34	0	0	34	0	0
39+50	42	35	0	0	35	0	0
39+99	1	0	0	0	0	0	0
40+00	0	0	0	0	0	0	0
40+50	0	0	0	0	0	0	0
41+00	0	0	0	0	0	0	0
41+50	0	0	0	0	0	0	0
42+00	0	0	0	0	0	0	0
42+50	0	0	0	0	0	0	0
42+78	0	0	0	0	0	0	0
42+88	0	0	0	0	0	0	0
42+95	0	0	0	0	0	0	0
43+00	0	0	0	0	0	0	0
43+23	0	0	0	0	0	0	0
43+36	0	0	0	0	0	0	0
43+50	40	31	0	1	31	0	0
43+70	8	6	0	0	6	0	0
43+72	13	10	0	0	10	0	0
43+75	11	8	0	0	8	0	0
43+76	17	12	0	0	12	0	0
43+79	132	90	0	3	90	0	0
44+00	272	183	0	117	183	0	0
44+50	293	182	0	212	182	0	0
45+00	323	182	0	147	182	0	0
45+50	352	182	0	76	182	0	0
46+00	381	182	0	57	182	0	0
46+50	415	182	0	39	182	0	0
47+00	455	182	0	28	182	0	0
47+50	508	183	0	16	183	0	0
48+00	536	184	0	7	184	0	0
48+50	539	185	0	17	185	0	0
49+00	560	189	0	40	189	0	0
49+50	592	193	0	69	193	0	0
50+00	93	30	0	12	30	0	0
50+08	564	146	0	54	146	0	0
50+50	722	146	0	40	146	0	0
51+00	758	144	0	20	144	0	0
51+50	783	142	0	6	142	0	0
52+00	793	141	0	9	141	0	7
52+50	784	140	0	14	140	0	14
53+00	733	140	0	14	140	0	13
53+50							

CSAH 17 LEXINGTON AVE.

STATION	EXCAVATION			EMBANKMENT			
	COMMON	SUBCUT	MUCK	SELECT GRANULAR	SELECT GRANULAR (SUBCUT)	SELECT GRANULAR (MUCK EXC BACKFILL)	MUCK DISPOSAL
	CU YD	CU YD	CU YD	CU YD	CU YD	CU YD	CU YD
53+50	670	140	0	15	140	0	13
54+00	612	138	0	25	138	0	19
54+50	530	131	0	41	131	0	25
55+00	441	122	0	80	122	0	34
55+50	368	106	0	153	106	0	46
56+00	314	85	0	239	85	0	76
56+50	263	72	0	322	72	0	89
57+00	213	61	0	384	61	0	95
57+50	168	51	0	449	51	0	96
58+00	129	42	0	538	42	0	103
58+50	95	45	0	519	45	0	113
59+00	2	2	0	14	2	0	4
59+02	72	35	0	603	35	0	127
59+50	63	16	0	867	16	0	170
60+00	54	0	5	991	0	0	209
60+50	50	0	182	1033	0	178	204
61+00	49	0	540	978	0	535	187
61+50	0	0	6	8	0	6	2
61+50	47	0	733	978	0	733	204
62+00	16	0	343	400	0	343	83
62+22	0	0	19	20	0	25	4
62+23	0	0	679	374	0	812	47
62+50	1	0	248	45	0	122	9
62+58	2	0	243	15	0	0	0
62+64	31	0	1189	14	0	0	3
62+94	8	0	244	1	0	124	1
63+00	6	0	251	7	0	125	0
63+06	8	0	1015	307	0	287	86
63+30	15	0	636	420	0	443	125
63+50	91	0	1073	892	0	1025	254
64+00	120	0	1636	875	0	1483	260
64+50	136	0	2028	816	0	1724	260
65+00	132	0	1853	646	0	1572	219
65+43	21	0	307	94	0	272	33
65+50	176	0	2386	684	0	2129	228
66+00	200	0	2431	643	0	2210	228
66+50	221	0	2403	609	0	2212	222
67+00	243	0	2334	575	0	2162	192
67+50	272	0	2585	531	0	2358	212
68+00	123	0	1016	205	0	1038	93
68+21	185	0	920	269	0	1001	82
68+50	345	0	1685	410	0	1522	96
69+00	369	0	1978	364	0	1813	94
69+50	378	0	1691	337	0	1574	91
70+00	369	0	1556	351	0	1460	88
70+50	363	0	1425	383	0	1344	101
71+00	341	0	1511	409	0	1394	113
71+50	297	0	1641	453	0	1480	123
72+00	262	0	1657	516	0	1494	133
72+50	237	0	1600	572	0	1454	132
73+00	222	0	1388	616	0	1276	130
73+50	212	0	1249	670	0	1163	137
74+00	200	0	1177	728	0	1117	151
74+50							

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-13\Plan\226-EarthWork Tab.dwg 02/20/2004 07:43:08 AM CST

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

PRINT NAME: PETER M. LEMKE

SIGNATURE: Peter M Lemke

DATE: 2-19-2004 LICENSE NO. 40118

DRAWN BY MN DATE 09/17/03

DESIGN BY MN DATE 09/17/03

CHECKED BY MN DATE 09/18/03

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13

STATE AID PROJECT NO. 106-020-23

STATE AID PROJECT NO.

COUNTY PROJECT NO.

EARTHWORK TABULATION

Sheet 226B of 226 Sheets

CSAH 17 LEXINGTON AVE.

STATION	EXCAVATION			EMBANKMENT			
	COMMON	SUBCUT	MUCK	SELECT GRANULAR	SELECT GRANULAR (SUBCUT)	SELECT GRANULAR (MUCK EXC BACKFILL)	MUCK DISPOSAL
	CU YD	CU YD	CU YD	CU YD	CU YD	CU YD	CU YD
74+50							
	183	0	965	775	0	928	158
75+00							
	162	0	791	822	0	774	165
75+50							
	140	0	968	882	0	938	181
76+00							
	90	0	586	675	0	993	143
76+36							
	34	0	303	264	0	453	58
76+50							
	108	0	878	606	0	1235	135
76+86							
	45	0	332	197	0	468	37
77+00							
	44	0	379	210	0	479	41
77+14							
	90	0	752	690	0	974	155
77+50							
	84	0	1131	1189	0	1014	241
78+00							
	64	0	1007	1172	0	944	223
78+50							
	61	0	1156	1061	0	1074	225
79+00							
	60	0	1556	1094	0	1438	240
79+50							
	58	0	2148	1228	0	1975	262
80+00							
	63	0	2794	1214	0	2464	294
80+50							
	79	0	3238	1158	0	2841	304
81+00							
	59	0	2037	667	0	1816	208
81+31							
	42	0	1292	410	0	1135	151
81+50							
	115	0	3328	1039	0	2895	355
82+00							
	124	0	3194	999	0	2753	306
82+50							
	134	0	2842	902	0	2386	321
83+00							
	152	0	2307	815	0	1838	356
83+50							
	175	0	2043	735	0	1563	638
84+00							
	192	0	2194	655	0	1881	543
84+50							
	173	0	2555	530	0	2406	97
85+00							
	72	0	1292	197	0	610	46
85+23							
	83	0	1619	267	0	865	58
85+50							
	207	0	2959	462	0	2784	200
86+00							
	60	0	584	73	0	256	41
86+11							
	9	0	86	11	0	0	5
86+12							
	232	0	1896	210	0	797	122
86+50							
	209	0	1273	101	0	1132	75
86+77							
	187	0	1105	78	0	912	50
87+00							
	423	0	1850	154	0	1483	56
87+50							
	143	0	355	33	0	322	8
87+64							
	333	0	753	125	0	689	27
88+00							
	373	0	797	232	0	730	39
88+50							
	393	0	784	228	0	741	41
89+00							
	430	0	687	139	0	726	29
89+40							
	132	0	207	27	0	215	11
89+50							
	6	0	11	1	0	10	0
89+51							
	469	0	960	177	0	886	68
90+00							
	334	0	875	255	0	783	70
90+50							
	301	0	919	292	0	819	53
91+00							
	287	0	969	324	0	870	38
91+50							
	281	0	1021	369	0	927	53
92+00							
	259	0	1019	405	0	919	63
92+50							
	238	0	912	528	0	851	80
93+00							
	188	0	812	375	0	772	62
93+40							
	48	0	249	63	0	227	12
93+50							
	112	0	625	267	0	510	36
93+76							
	90	0	523	335	0	411	38
94+00							
	172	0	1088	708	0	936	110
94+50							

CSAH 17 LEXINGTON AVE.

STATION	EXCAVATION			EMBANKMENT			
	COMMON	SUBCUT	MUCK	SELECT GRANULAR	SELECT GRANULAR (SUBCUT)	SELECT GRANULAR (MUCK EXC BACKFILL)	MUCK DISPOSAL
	CU YD	CU YD	CU YD	CU YD	CU YD	CU YD	CU YD
94+50							
	153	0	961	697	0	842	108
95+00							
	140	0	667	677	0	598	75
95+50							
	124	0	506	633	0	454	57
96+00							
	7	0	29	36	0	26	3
96+03							
	93	0	483	413	0	410	45
96+46							
	7	0	47	27	0	39	4
96+50							
	85	0	571	532	0	479	57
97+00							
	64	0	505	735	0	420	64
97+50							
	55	0	582	795	0	474	75
98+00							
	54	0	557	485	0	566	68
98+40							
	15	0	204	85	0	208	20
98+50							
	23	0	453	153	0	421	37
98+68							
	38	0	780	345	0	700	61
99+00							
	49	0	958	526	0	828	68
99+39							
	16	0	256	145	0	242	16
99+50							
	84	0	1070	538	0	1070	71
100+00							
	26	0	287	107	0	299	32
100+13							
	53	0	501	133	0	549	51
100+35							
	38	0	356	78	0	375	18
100+50							
	5	0	51	13	0	50	3
100+52							
	123	0	1215	407	0	1117	82
101+00							
	146	0	1311	546	0	1188	114
101+50							
	165	0	1381	569	0	1287	127
102+00							
	188	0	1507	546	0	1412	132
102+50							
	216	0	1591	466	0	1476	114
103+00							
	245	0	1615	330	0	1470	83
103+50							
	279	0	1653	191	0	1480	49
104+00							
	311	0	1624	126	0	1449	36
104+50							
	334	0	1537	122	0	1382	37
105+00							
	362	0	1445	119	0	1309	37
105+50							
	404	0	1362	106	0	1243	34
106+00							
	608	0	1424	74	0	1309	15
106+50							
	24	0	46	2	0	43	0
106+52							
	591	0	1354	51	0	1249	0
107+00							
	440	0	1250	54	0	1121	0
107+50							
	568	0	1334	45	0	1182	0
108+00							
	523	0	1081	96	0	980	13
108+50							
	330	0	990	192	0	913	43
109+00							
	233	0	1119	224	0	1029	52
109+44							
	29	0	165	36	0	151	8
109+50							
	209	0	1231	317	0	1113	81
110+00							
	180	0	1059	372	0	956	88
110+50							
	157	0	903	425	0	816	87
111+00							
	139	0	690	465	0	631	73
111+50							
	128	0	418	495	0	394	78
112+00							
	120	39	144	510	39	139	103
112+50							
	115	39	0	533	39	0	118
113+00							
	111	40	0	551	40	0	130
113+50							
	110	40	0	541	40	0	127
114+00							
	108	42	0	537	42	0	126
114+50							
	98	67	0	447	67	0	124
115+00							
	85	74	0	158	74	0	28
115+23							
	109	119	0	84	119	0	0
115+44							

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-13\Plan\228-EarthWork Tab.dwg 02/20/2004 07:43:08 AM CST

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

PRINT NAME: PETER M. LEMKE

SIGNATURE: Peter M Lemke

DATE: 2-19-2004 LICENSE NO. 40118

DRAWN BY MN DATE 09/17/03

DESIGN BY MN DATE 09/17/03

CHECKED BY MN DATE 09/18/03

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13

STATE AID PROJECT NO. 106-020-23

STATE AID PROJECT NO.

COUNTY PROJECT NO.

EARTHWORK TABULATION

CSAH 17 LEXINGTON AVE.

STATION	EXCAVATION			EMBANKMENT			
	COMMON	SUBCUT	MUCK	SELECT GRANULAR	SELECT GRANULAR (SUBCUT)	SELECT GRANULAR (MUCK EXC BACKFILL)	MUCK DISPOSAL
	CU YD	CU YD	CU YD	CU YD	CU YD	CU YD	CU YD
115+44	21	24	0	2	24	0	0
115+48	16	15	0	0	15	0	1
115+50	64	62	0	49	62	0	0
115+61	40	39	0	82	39	0	0
115+72	3	3	0	7	3	0	1
115+73	75	77	0	246	77	0	49
116+00	86	71	0	389	71	0	87
116+50	81	46	0	332	46	0	51
117+00	74	54	0	253	54	0	42
117+50	78	63	0	172	63	0	32
118+00	115	68	0	135	68	0	16
118+50	129	60	0	96	60	0	10
118+93	24	10	0	17	10	0	2
119+00	100	32	0	91	32	0	8
119+30	69	19	0	68	19	0	2
119+50	168	47	0	186	47	0	6
120+00	107	40	0	216	40	0	0
120+50	63	32	0	255	32	0	0
121+00	69	26	0	294	26	0	6
121+50	89	20	0	309	20	0	15
122+00	80	16	0	308	16	0	21
122+50	12	5	0	84	5	0	7
122+64	19	13	0	251	13	0	21
123+00	25	12	0	420	12	0	45
123+50	25	10	0	444	10	0	54
124+00	27	4	0	437	4	0	52
124+50	16	0	0	259	0	0	35
124+78	14	0	0	228	0	0	35
125+00	35	1	0	625	1	0	115
125+50	39	3	0	675	3	0	133
126+00	21	8	0	307	8	0	52
126+25	23	20	0	300	20	0	41
126+50	47	26	0	610	26	0	101
127+00	51	14	0	464	14	0	80
127+50	12	7	0	57	7	0	7
127+61	45	22	0	239	22	0	19
128+00	63	10	0	382	10	0	38
128+50	75	36	0	368	36	0	59
129+00	7	5	0	26	5	0	4
129+04	84	43	0	366	43	0	56
129+50	94	20	0	514	20	0	77
130+00	106	16	0	548	16	0	81
130+50	121	18	0	504	18	0	77
131+00	141	26	0	389	26	0	63
131+50	128	40	0	151	40	0	32
131+85	58	19	0	42	19	0	8
132+00	185	49	0	138	49	0	6
132+50	229	57	0	105	57	0	0
133+00	271	64	0	84	64	0	0
133+50	300	70	0	75	70	0	0
134+00	361	75	0	81	75	0	13
134+50	424	80	0	99	80	0	32
135+00	112	20	0	25	20	0	9
135+12							

CSAH 17 LEXINGTON AVE.

STATION	EXCAVATION			EMBANKMENT			
	COMMON	SUBCUT	MUCK	SELECT GRANULAR	SELECT GRANULAR (SUBCUT)	SELECT GRANULAR (MUCK EXC BACKFILL)	MUCK DISPOSAL
	CU YD	CU YD	CU YD	CU YD	CU YD	CU YD	CU YD
135+12	315	58	0	85	58	0	25
135+50	319	59	0	160	59	0	32
136+00	330	54	0	181	54	0	22
136+50	373	75	0	121	75	0	6
137+00	397	101	0	60	101	0	0
137+50	379	108	0	35	108	0	0
138+00	345	96	0	48	96	0	0
138+50	291	75	0	92	75	0	0
139+00	249	66	0	119	66	0	0
139+50	211	61	0	135	61	0	0
140+00	189	57	0	145	57	0	0
140+50	162	68	0	85	68	0	0
140+93	34	14	0	9	14	0	0
141+00	232	73	0	124	73	0	0
141+50	199	42	0	209	42	0	0
142+00	8	2	0	13	2	0	1
142+03	116	20	0	558	20	0	75
142+50	83	7	0	1056	7	0	153
143+00	73	4	0	969	4	0	132
143+50	65	4	0	646	4	0	68
144+00	62	3	0	596	3	0	63
144+50	51	10	0	666	10	0	57
145+00	83	54	0	642	54	0	26
145+50	32	44	0	310	44	0	0
145+75	0	25	0	347	25	0	0
146+00	0	6	0	468	6	0	38
146+25	9	1	0	484	1	0	68
146+50	41	0	0	855	0	0	97
147+00	12	0	0	223	0	0	21
147+13	33	0	0	684	0	0	85
147+50	44	0	0	1090	0	0	180
148+00	38	0	0	814	0	0	168
148+44	5	0	0	88	0	0	22
148+50	44	0	0	940	0	0	193
149+00	43	0	0	1175	0	0	229
149+50	39	0	0	1123	0	0	217
150+00	35	0	0	976	0	0	161
150+50	33	0	0	866	0	0	126
151+00	33	0	0	826	0	0	135
151+50	33	0	0	756	0	0	148
152+00	0	0	0	3	0	0	1
152+00	33	0	0	746	0	0	163
152+50	35	0	0	827	0	0	141
153+00	12	0	0	252	0	0	40
153+16	34	5	0	410	5	0	69
153+50	6	1	0	47	1	0	8
153+55	26	7	0	174	7	0	30
153+75	38	11	0	184	11	0	31
154+00	151	35	0	275	35	0	49
154+50	248	51	0	170	51	0	25
155+00	257	59	0	114	59	0	6
155+50	229	62	0	106	62	0	3
156+00	209	70	0	99	70	0	0
156+50							

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-13\Plan\228-EarthWork Tab.dwg 02/20/2004 07:43:08 AM CST

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

PRINT NAME: PETER M. LEMKE

SIGNATURE: Peter M Lemke

DATE: 2-19-2004 LICENSE NO. 40118

DRAWN BY MN DATE 09/17/03

DESIGN BY MN DATE 09/17/03

CHECKED BY MN DATE 09/18/03

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13

STATE AID PROJECT NO. 106-020-23

STATE AID PROJECT NO.

COUNTY PROJECT NO.

EARTHWORK TABULATION

Sheet 226D of 226 Sheets

CSAH 17 LEXINGTON AVE.

STATION	EXCAVATION			EMBANKMENT			
	COMMON	SUBCUT	MUCK	SELECT GRANULAR	SELECT GRANULAR (SUBCUT)	SELECT GRANULAR (MUCK EXC BACKFILL)	MUCK DISPOSAL
	CU YD	CU YD	CU YD	CU YD	CU YD	CU YD	CU YD
156+50							
	224	83	0	73	83	0	0
157+00							
	232	73	0	36	73	0	0
157+40							
	69	20	0	7	20	0	0
157+50							
	327	98	0	36	98	0	1
157+99							
	8	2	0	1	2	0	0
158+00							
	348	110	0	52	110	0	20
158+50							
	368	113	0	74	113	0	29
159+00							
	382	109	0	89	109	0	31
159+50							
	391	106	0	92	106	0	30
160+00							
	395	102	0	89	102	0	26
160+50							
	379	107	0	67	107	0	15
161+00							
	358	115	0	47	115	0	2
161+50							
	352	114	0	56	114	0	3
162+00							
	347	114	0	74	114	0	10
162+50							
	339	112	0	107	112	0	23
163+00							
	330	105	0	170	105	0	42
163+50							
	323	105	0	205	105	0	55
164+00							
	330	125	0	156	125	0	36
164+47							
	26	11	0	8	11	0	1
164+50							
	215	87	0	72	87	0	9
164+78							
	149	58	0	67	58	0	14
165+00							
	313	119	0	181	119	0	46
165+50							
	308	119	0	192	119	0	22
166+00							
	303	121	0	191	121	0	0
166+50							
	297	120	0	200	120	0	0
167+00							
	296	123	0	211	123	0	0
167+50							
	200	150	0	106	150	0	0
167+89							
	52	61	0	7	61	0	0
168+00							
	12	13	0	0	13	0	0
168+02							
	46	41	0	0	41	0	0
168+08							
	276	205	0	0	205	0	0
168+35							
	43	31	0	0	31	0	0
168+39							
	117	85	0	0	85	0	0
168+50							
	1	1	0	0	1	0	0
168+50							
	46	34	0	0	34	0	0
168+54							
	304	248	0	0	248	0	0
168+88							
	13	15	0	0	15	0	0
168+90							
	37	59	0	7	59	0	0
169+00							
	55	54	0	14	54	0	0
169+12							
	187	116	0	68	116	0	0
169+50							
	173	123	0	141	123	0	0
170+00							
	90	68	0	99	68	0	0
170+30							
	58	44	0	73	44	0	0
170+50							
	146	109	0	192	109	0	0
171+00							
	152	109	0	196	109	0	0
171+50							
	160	109	0	194	109	0	0
172+00							
	164	110	0	176	110	0	0
172+50							
	59	42	0	50	42	0	0
172+68							
	110	74	0	94	74	0	0
173+00							
	176	100	0	121	100	0	0
173+50							
	74	37	0	19	37	0	0
173+67							
	158	78	0	24	78	0	0
174+00							
	64	30	0	8	30	0	0
174+13							

CSAH 17 LEXINGTON AVE.

STATION	EXCAVATION			EMBANKMENT			
	COMMON	SUBCUT	MUCK	SELECT GRANULAR	SELECT GRANULAR (SUBCUT)	SELECT GRANULAR (MUCK EXC BACKFILL)	MUCK DISPOSAL
	CU YD	CU YD	CU YD	CU YD	CU YD	CU YD	CU YD
174+13							
	183	85	0	25	85	0	0
174+50							
	241	114	0	29	114	0	0
175+00							
	58	26	0	4	26	0	0
175+11							
	181	72	0	7	72	0	0
175+38							
	86	31	0	1	31	0	0
175+50							
	78	25	0	2	25	0	0
175+60							
	312	93	0	4	93	0	0
176+00							
	480	116	0	0	116	0	0
176+50							
	146	32	0	0	32	0	0
176+64							
	32	7	0	0	7	0	0
176+67							
	337	69	0	0	69	0	0
177+00							
	500	96	0	0	96	0	0
177+50							
	440	95	0	1	95	0	0
178+00							
	390	95	0	7	95	0	0
178+50							
	46	11	0	1	11	0	0
178+56							
	50	12	0	1	12	0	0
178+62							
	305	73	0	4	73	0	0
179+00							
	421	98	0	3	98	0	0
179+50							
	435	98	0	1	98	0	0
180+00							
	221	49	0	0	49	0	0
180+25							
	151	41	0	0	41	0	0
180+43							
	64	21	0	0	21	0	0
180+50							
	479	138	0	0	138	0	0
181+00							
	224	60	0	0	60	0	0
181+22							
	260	75	0	0	75	0	0
181+50							
	415	129	0	0	129	0	0
182+00							
	336	124	0	0	124	0	0
182+50							
	241	119	0	0	119	0	0
183+00							
	192	113	0	2	113	0	0
183+50							
	166	107	0	5	107	0	0
184+00							
	152	102	0	5	102	0	0
184+50							
	149	98	0	3	98	0	0
185+00							
	151	93	0	1	93	0	0
185+50							
	152	87	0	0	87	0	0
186+00							
	77	42	0	0	42	0	0
186+50							
	2	0	0	0	0	0	0
186+96							
	0	0	0	0	0	0	0
187+00							
	2	0	0	0	0	0	0
187+50							
	1	0	0	0	0	0	0
188+00							
	0	0	0	0	0	0	0
188+50							
	0	0	0	0	0	0	0
189+00							
CSAH 17 (a)	67,798	15,483	152,146	106,034	15,483	134,749	21,504

(a) Common Excavation includes 8908 CU YDs topsoil; Muck Excavation includes 6572 CU YD topsoil.

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-13\Plan\228-EarthWork Tab.dwg 02/20/2004 07:43:08 AM CST

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

PRINT NAME: PETER M. LEMKE

SIGNATURE: Peter M Lemke

DATE: 2-19-2004 LICENSE NO. 40118

DRAWN BY MN DATE 09/17/03

DESIGN BY MN DATE 09/17/03

CHECKED BY MN DATE 09/18/03

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13

STATE AID PROJECT NO. 106-020-23

STATE AID PROJECT NO.

COUNTY PROJECT NO.

EARTHWORK TABULATION

Sheet 226E of 226 Sheets

CSAH 12 109TH AVE. NE

STATION	EXCAVATION			EMBANKMENT			
	COMMON	SUBCUT	MUCK	SELECT GRANULAR	SELECT GRANULAR (SUBCUT)	SELECT GRANULAR (MUCK EXC BACKFILL)	MUCK DISPOSAL
	CU YD	CU YD	CU YD	CU YD	CU YD	CU YD	CU YD
4+75	24	8	0	0	8	0	0
5+00	48	15	0	1	15	0	0
5+25	48	16	0	1	16	0	0
5+50	94	31	0	2	31	0	0
6+00	59	23	0	0	23	0	0
6+17	167	71	0	0	71	0	0
6+50	261	115	0	0	115	0	0
7+00	283	125	0	2	125	0	0
7+50	314	133	0	9	133	0	0
8+00	346	136	0	12	136	0	0
8+50	379	143	0	10	143	0	0
9+00	160	56	0	3	56	0	0
9+20	256	86	0	3	86	0	0
9+50	460	159	0	2	159	0	0
10+00	513	168	0	0	168	0	0
10+50	555	159	0	0	159	0	0
11+00	561	142	0	0	142	0	0
11+50	552	146	0	0	146	0	0
12+00	237	68	0	0	68	0	0
12+23	271	79	0	2	79	0	0
12+50	437	115	0	15	115	0	0
13+00	374	108	0	26	108	0	0
13+50	349	123	0	33	123	0	0
14+00	317	117	0	44	117	0	0
14+50	283	114	0	58	114	0	0
15+00	251	112	0	83	112	0	0
15+50	214	92	0	132	92	0	0
16+00	179	75	0	180	75	0	0
16+50	134	73	0	177	73	0	0
16+93	10	6	0	15	6	0	0
17+00	0	0	0	0	0	0	0
18+50	13	10	0	34	10	0	46
18+64	540	0	519	650	0	395	0
19+00	692	0	1,382	765	0	1,270	82
19+50	0	0	1,351	0	0	1,424	75
20+00							

CSAH 12 109TH AVE. NE

STATION	EXCAVATION			EMBANKMENT			
	COMMON	SUBCUT	MUCK	SELECT GRANULAR	SELECT GRANULAR (SUBCUT)	SELECT GRANULAR (MUCK EXC BACKFILL)	MUCK DISPOSAL
	CU YD	CU YD	CU YD	CU YD	CU YD	CU YD	CU YD
20+00	0	0	1,371	0	0	1,361	72
20+50	0	0	1,382	0	0	1,296	61
21+00	0	0	1,375	0	0	1,236	53
21+50	0	0	1,369	0	0	1,186	48
22+00	0	0	1,323	0	0	1,145	44
22+50	0	0	634	0	0	564	21
22+75	0	0	630	0	0	562	21
23+00	0	0	862	0	0	760	30
23+34	0	0	384	0	0	337	14
23+50	0	0	1,227	0	0	1,073	44
24+00	0	0	1,218	0	0	1,056	44
24+50	0	0	1,198	0	0	1,045	42
25+00	0	0	1,143	0	0	1,013	40
25+50	0	0	1,114	0	0	999	40
26+00	0	0	970	0	0	871	38
26+44	0	0	134	0	0	120	6
26+50	107	0	1,092	10	0	980	47
27+00	208	95	540	15	95	484	0
27+50	201	98	0	7	98	0	0
28+00	194	100	0	6	100	0	0
28+50	191	101	0	7	101	0	0
29+00	198	104	0	7	104	0	0
29+50	15	8	0	0	8	0	0
29+54	189	93	0	4	93	0	0
30+00	72	33	0	1	33	0	0
30+25	46	17	0	0	17	0	0
30+50	54	16	0	1	16	0	0
30+75	55	15	0	2	15	0	0
31+00	52	15	0	3	15	0	0
31+25	49	15	0	3	15	0	0
31+50	49	15	0	3	15	0	0
31+75	64	15	0	1	15	0	0
32+00	55	15	0	2	15	0	0
32+25	33	14	0	4	14	0	0
32+50	36	14	0	5	14	0	0
32+75							
CSAH 12 (b)	11,248	3,606	21,218	2,339	3,606	19,178	867

(b) Common Excavation includes 1000 CU YDs topsoil; Muck Excavation includes 879 CU YDs topsoil.

CSAH 17	58,890	15,483	145,574	106,034	15,483	134,749	21,504
CSAH 12	10,248	3,606	20,339	2,339	3,606	19,178	867
TOTAL	69,138	19,089	165,913	108,373	19,089	153,927	22,371

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-13\Plan\228-EarthWork Tab.dwg 02/20/2004 07:43:08 AM CST

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

PRINT NAME: PETER M. LEMKE

SIGNATURE: Peter M Lemke

DATE: 2-19-2004 LICENSE NO. 40118

DRAWN BY MN DATE 09/17/03

DESIGN BY MN DATE 09/17/03

CHECKED BY MN DATE 09/18/03

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. 02-617-13

STATE AID PROJECT NO. 106-020-23

STATE AID PROJECT NO.

COUNTY PROJECT NO.

EARTHWORK TABULATION

Sheet 226F of 226 Sheets