

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.....

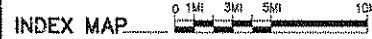
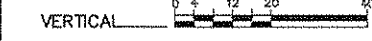
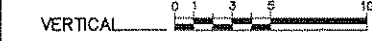
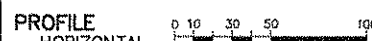
- BUILDING (One Story Frame).....
- F-FRAME C-CONCRETE
- S-STONE T-TILE
- B-BRICK ST-STUCCO

- RAILROAD CROSSING BELL.....
- RAILROAD CROSSING GATE.....
- MANHOLE.....
- CATCH BASIN.....
- FIRE HYDRANT.....
- CAST IRON MONUMENT.....
- IRON PIN.....
- GRAVEL PIT.....
- SAND PIT.....
- BORROW PIT.....
- ROCK QUARRY.....

UTILITY SYMBOLS

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

SCALES



MINNESOTA DEPARTMENT OF TRANSPORTATION

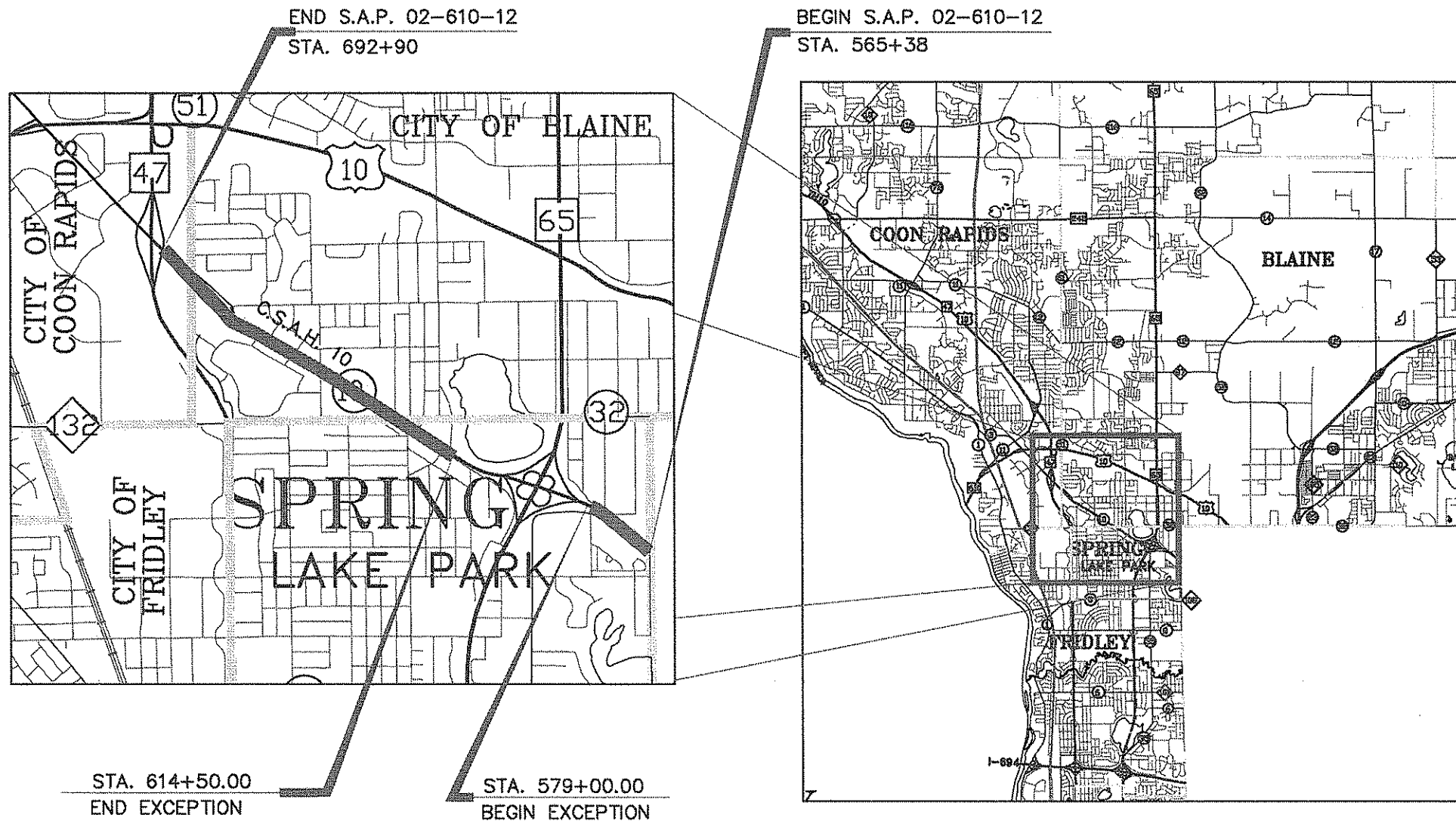
ANOKA COUNTY

CONSTRUCTION PLAN FOR GRADING, AGG.BASE, MILLING, BITUMINOUS SURFACING, DRAINAGE, AND SIGNAL SYSTEM.

LOCATED ON C.S.A.H. 10 BETWEEN E. COUNTY LINE AND T.H. 47 (Geographic Description)
 EXCEPTION BETWEEN 579+00 AND 614+50

STATE AID PROJ. NO. 02-610-12
 C.S.A.H. 10

GROSS LENGTH 12752 FEET 2.415 MILES
 BRIDGES-LENGTH 3550 FEET 0.672 MILES
 EXCEPTIONS-LENGTH 3550 FEET 0.672 MILES
 NET LENGTH 9202 FEET 1.743 MILES



MINN. PROJ. NO. _____
 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 MUTCD, INCLUDING "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS - JANUARY, 2001."

INDEX

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2 - 3	STATEMENT OF ESTIMATED QUANTITIES
4 - 6	TABULATION CHARTS
7 - 8	TYPICAL SECTIONS
9 - 10	EARTHWORK SUMMARY & CONSTRUCTION NOTES
11	TEMPORARY EROSION CONTROL DETAILS
12	PERMANENT EROSION CONTROL DETAILS
13 - 17	EXISTING CONDITIONS AND REMOVAL PLAN
18 - 22	PLAN AND STORM SHEET
23	STORM SEWER LEADS
24 - 33	CROSS-SECTION
33A	CROSS-SECTION DITCH WORK
34 - 63	SIGNAL CONSTRUCTION
64 - 84	SIGNING AND STRIPING PLANS

THIS PLAN CONTAINS 85 SHEETS

DESIGN DESIGNATION

ESAL ₂₀	3,435,860
R VALUE	50
ADT (2000)=	25631
Proj. ADT (2020)=	41,010
Proj. HCADT (2020)=	1,861
Soil Factor	NA
10	TON DESIGN

Functional Classification A, MINOR ARTERIAL
 No. of Traffic Lanes 4 No. of Parking Lanes 0
 Design Speed 55 Mp/h
 Based on Stopping Sight Distance
 Height of eye 42 IN Height of object 6 IN
 Design Speed not achieved at:

STA. _____	TO STA. _____	MPH _____
STA. _____	TO STA. _____	MPH _____
STA. _____	TO STA. _____	MPH _____

Approved 7/10/01 [Signature]
 ANOKA COUNTY ENGINEER

Approved 7/10/01 [Signature]
 CITY OF COON RAPIDS

Approved 7/12/01 [Signature]
 CITY OF BLAINE

Recommended for Approval 7/18/01 [Signature]
 METRO-ASSISTANT DIVISION ENGINEER-STATE AID

REVIEWED FOR COMPLIANCE WITH STATE AID RULES/POLICY
 Approved for State Aid Division 7/18/01 [Signature]
 APPROVED FOR STATE AID FUNDING: STATE AID ENGINEER

1	07/10/01	KLO	REV SIG. BLOCKS FOR MNDOT, ADDED CITY PROJ. NO'S. REV. SHT. 34 TO 33A IN INDEX	
2	7-13-01	KLO	REV SIG. BLOCKS FOR CITY OF SPRING LAKE REMOVED	
DATE	BY	CHKD	APPR	REVISION
08-09-00	PLAN	01	TITLE.DWG	M.N. (08-02-01)

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: Rusten Olson
 SIGNATURE: [Signature]
 DATE: 7/10/01 LICENSE NO. 26826

DRAWN BY: M.N. DATE: 05-30-01
 DESIGN BY: K.O. DATE: 05-30-01
 CHECKED BY: J.L. DATE: 05-30-01



**ANOKA COUNTY
 HIGHWAY DEPT.**

STATE AID PROJECT NO. 02-610-12
 STATE AID PROJECT NO. 02-610-13
 COUNTY PROJECT NO. 96-09-00
 CITY PROJ NO'S. 183-020-06
106-020-20 & 114-020-23

TITLE SHEET
 Sheet 1 of 84 Sheets

CHART NO.	ITEM NO.	ITEM	UNIT	TOTAL		ANOKA COUNTY		ANOKA COUNTY		ANOKA COUNTY		CITY OF SPRING LAKE PARK		CITY OF BLAINE		CITY OF COON RAPIDS	
				ESTIMATED	FINAL	ESTIMATED	FINAL	ESTIMATED	FINAL	ESTIMATED	FINAL	ESTIMATED	FINAL	ESTIMATED	FINAL	ESTIMATED	FINAL
	L 2506.501	CONSTRUCT DRAINAGE STRUCTURE, DESIGN H	LIN FT	5.65		5.65											
	L 2506.501	CONSTRUCT DRAINAGE STRUCTURE, DESIGN G	LIN FT	3.19		3.19											
	L 2506.501	CONSTRUCT DRAINAGE STRUCTURE, DESIGN SD	LIN FT	6.47		6.47											
	L 2506.501	CONSTRUCT DRAINAGE STRUCTURE, DESIGN 54-4020	LIN FT	5.77		5.77											
	L 2506.501	CONSTRUCT DRAINAGE STRUCTURE, DESIGN 60-4020	LIN FT	7.08		7.08											
	L, Q 2506.516	CASTING ASSEMBLY	EACH	9		9								1			
	2506.522	ADJUST FRAME & RING CASTING (SANITARY)	EACH	1		1											
	L 2506.602	CLEAN AND GROUT CATCH BASIN OR MANHOLE	EACH	1		1											
	L 2506.602	ADJUST CATCH BASIN CASTING SPECIAL (FOR TEMP. DRAINAGE)	EACH	3		3											
	K, L 2511.502	RANDOM RIPRAP CL IV	TON	181		101						80					
	K, M 2511.515	GEOTEXTILE FILTER, TYPE IV	SQ YD	168		96						72					
	N 2521.501	4" CONCRETE WALK	SQ FT	120		120											
	N 2521.501	6" CONCRETE WALK	SQ FT	245		245											
	N 2531.501	CONCRETE CURB AND GUTTER DESIGN B 924	LIN FT	30		30											
	N 2531.501	CONCRETE CURB AND GUTTER DESIGN B 618	LIN FT	401		401											
	N 2531.501	CONCRETE CURB AND GUTTER DESIGN B 418	LIN FT	796		796											
	2563.601	TRAFFIC CONTROL	LUMP SUM	1		1											
	2563.602	PORTABLE CHANGEABLE MESSAGE SIGN	DAY	100		100											
	2563.61	POLICE OFFICER	HOUR	50		50											
	2564.531	SIGN PANEL TYPE C	SQ FT	1,875.44		1683.69						191.75					
	T 2564.603	4" SOLID LINE WHITE-PAINT	LIN FT	37,389		35,266						2123					
	T 2564.603	4" SOLID LINE YELLOW-PAINT	LIN FT	26,018		24,825						1193					
	T 2564.603	4" BROKEN LINE WHITE-PAINT	LIN FT	5,860		5,520						340					
	T 2564.603	24" SOLID LINE WHITE - POLY PREFORM	LIN FT	228		228											
	T 2564.603	36" SOLID LINE WHITE - POLY PREFORM	LIN FT	300		300											
	R 2564.603	4" SOLID LINE WHITE PAINT (TEMPORARY)	LIN FT	57,469		55,336						2133					
	R 2564.603	4" BROKEN LINE WHITE PAINT (TEMPORARY)	LIN FT	8,230		7,890						340					
	R 2564.603	4" SOLID LINE YELLOW PAINT (TEMPORARY)	LIN FT	37,739		36,546						1193					
	2565.511	FULL TRAFFIC ACTUATED TRAFFIC CONTROL SYSTEM "A"	SIG SYS	1				0.25					0.375				0.75
	2565.511	FULL TRAFFIC ACTUATED TRAFFIC CONTROL SYSTEM "B"	SIG SYS	1				0.25				0.50					0.25
	2565.511	FULL TRAFFIC ACTUATED TRAFFIC CONTROL SYSTEM "C"	SIG SYS	1				0.25				0.50					0.25
	2565.511	FULL TRAFFIC ACTUATED TRAFFIC CONTROL SYSTEM "D"	SIG SYS	1				0.25				0.50					0.25
	2565.601	SALVAGE SIGNAL SYSTEM "A"	LUMP SUM	1				1.00									
	2565.601	SALVAGE SIGNAL SYSTEM "B"	LUMP SUM	1				1.00									
	2565.601	SALVAGE SIGNAL SYSTEM "C"	LUMP SUM	1				1.00									
	2565.601	SALVAGE SIGNAL SYSTEM "D"	LUMP SUM	1				1.00									
	2565.601	EMERGENCY VEHICLE PREEMPTION SYSTEM "A"	LUMP SUM	1						0.60				0.60			
	2565.601	EMERGENCY VEHICLE PREEMPTION SYSTEM "B"	LUMP SUM	1										1.00			
	2565.601	EMERGENCY VEHICLE PREEMPTION SYSTEM "C"	LUMP SUM	1													1.00
	2565.601	EMERGENCY VEHICLE PREEMPTION SYSTEM "D"	LUMP SUM	1													
	2565.601	TRAFFIC CONTROL INTERCONNECTION	LUMP SUM	1				1.00									
	2565.602	LOOP DETECTOR 6' X 6'	EACH	14								14					
	2565.602	LOOP DETECTOR 2-6' X 6'	EACH	3								3					
	2565.602	PVC HANDHOLE (METAL FRAME AND COVER)	EACH	4								4					
	2565.603	4" RIGID STEEL CONDUIT	LIN FT	150								150					
	F 2573.502	SILT FENCE, TYPE MACHINE SLICED	LIN FT	1,690		1,690											
	2573.511	SEDIMENT MAT	SQ FT	320		160						160					
	D 2575.502	SEED MIXTURE, 60B	POUND	100		100											
	D 2575.505	SODDING, TYPE LAWN	SQ YD	2,495		2,495											
	D 2575.608	HYDRAULIC STABILIZER, TYPE 1	POUND	101		101											
	D 2575.523	EROSION CONTROL BLANKET, CATEGORY 1	SQ YD	4,860		4,860											
	D 2575.532	COMMERCIAL FERTILIZER ANALYSIS 22-5-10 (SLOW RELEASE)	LB	458		458											

TABULATION CHART LIST		
CHART	SHEET NO.	DESCRIPTION
A	4	AGGREGATE BASE CLASS 5
B	4	BITUMINOUS SAWCUT
C	4	REMOVE BITUMINOUS PAVEMENT
D	4	TURF ESTABLISHMENT
E	4	MILL BITUMINOUS SURFACE, APPROACH TAPERS
F	4	SILT FENCE
G	4	2 INCH THICK LV4 WEARING COURSE MIXTURE
H	4	CURB OPENINGS FOR ENTS. & ST., HIGH EARLY CONCRETE
I	4	2 INCH THICK MV3NW BITUMINOUS MIXTURE
J	5	TURN LANE LOCATION
K	5	CULVERT TABULATION
L	5	STORM SEWER TABULATION
M	5	CONSTRUCT DRAINAGE STRUCTURE, DESIGN RECAP
N	6	CONCRETE WALK AND CONCRETE CURB RECAP
O	6	SAFETY APRON RECAP
P	6	LEB TEMPORARY DRAINAGE SWALES
Q	6	DRAINAGE CASTING SCHEDULE
R	6	TEMPORARY PAINT
S	6	2 INCH BITUMINOUS MILL
T	6	TRAFFIC PAINT TABULATION
U	9	EARTHWORK SUMMARY
V	9	BITUMINOUS QUANTITIES

MN/DOT STANDARD PLATES	
THESE STANDARD PLATES AS APPROVED BY THE FHWA SHALL APPLY.	
PLATE NO.	DESCRIPTION
3000 L	REINFORCED CONCRETE PIPE
3006 G	GASKET JOINT FOR R. C. PIPE
3022 C	PRECAST CONCRETE END SECTIONS
3040 F	CORRUGATED METAL PIPE CULVERTS
3100 G	CONCRETE APRON FOR REINFORCED CONCRETE PIPE
3128 H	SAFETY APRON
3139 A	RIPRAP AT RCP OUTLETS
3145 E	CONCRETE PIPE TIES
3221 C	CORRUGATED STEEL PIPE COUPLING BAND
4003 B	30' PRECAST CATCH BASIN
4005 L	MANHOLE OR CATCH BASIN
4006 L	MANHOLE OR CATCH BASIN
4010 H	CONCRETE SHORT CONE AND ADJUSTING RING
4011 E	PRECAST CONCRETE BASE
4020 I	MANHOLE OR CATCH BASIN COVER
4024 A	48" DIA. PRECAST SHALLOW DEPTH CATCH BASIN
4026 A	CONCRETE ENCASED CONCRETE ADJUSTING RINGS
4101 D	RING CASTING FOR MANHOLE OR CATCH BASIN
4110 F	COVER CASTING FOR MANHOLES
4126 F	CATCH BASIN FRAME CASTING
4140 D	SPECIAL GRATE CASTINGS FOR CATCH BASINS
4180 J	MANHOLE OR CATCH BASIN STEP
7035 K	CONCRETE WALK AND CURB RETURNS AT ENTRANCES
7036 D	PEDESTRIAN CURB RAMP
7100 G	CONCRETE CURB AND GUTTER - DESIGN B
7113 A	CONCRETE APPROACH NOSE DETAIL
8000 I	STANDARD BARRICADES
8110 D	TRAFFIC SIGNAL BRACKETING - POLE MOUNTED
8111 C	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 FOUNDATION
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
8150 B	INSTALLATION OF CULVERT MARKERS
9102 D	TURF ESTABLISHMENT AREAS - AT PIPE CULVERT ENDS

NO.	DATE	BY	CHKD	APPR	REVISION
1	07/10/01	KLO			-ADDED HEADER TO SEQ. REV. SPLIT FOR SIG. C AND 4" WHITE PAINT. ADDED CITY PROJ. NO.'S. & CHANGED STD. PLATE 8123D TO 8123E.
2	07/13/01	KLO			-DELETION OF LINE ITEMS FOR SIGNAL "A" AND EXP. "A". ADDN. OF CONST. NOTES (SHOWN IN BOLD ITALICS) & NUMBERS BY CHART.

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: *Kirsten Olson*

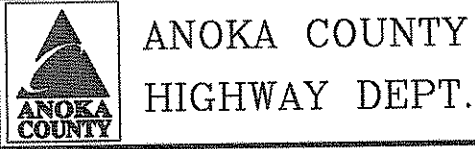
SIGNATURE: *Kirsten Olson*

DATE: *7/13/01* LICENSE NO. *26826*

DRAWN BY: *KLO* DATE *07/02/01*

DESIGN BY: *KLO* DATE *07/02/01*

CHECKED BY: *LAR* DATE *07/02/01*



STATE AID PROJECT NO. 02-610-12

STATE AID PROJECT NO. 02-610-13

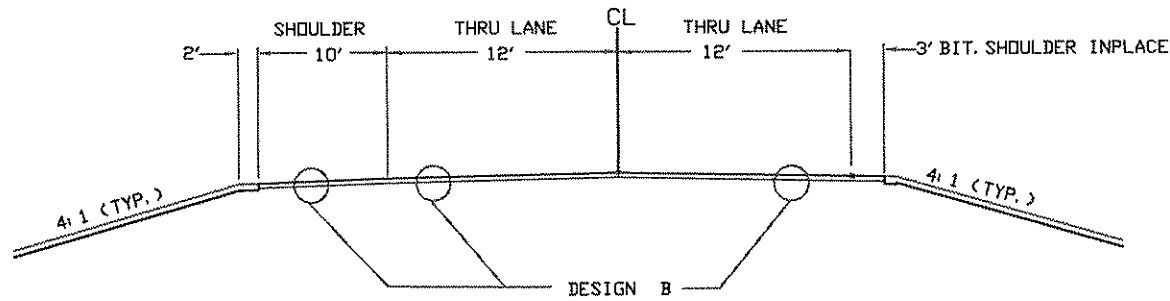
COUNTY PROJECT NO. 96-09-00

CITY PROJ NO'S. 183-020-06,
106-020-20 & 114-020-23

TABULATION CHARTS

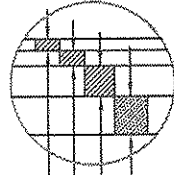
Sheet 3 of 84 Sheets

LWB STANDARD DRIVING LANES



DESIGN A

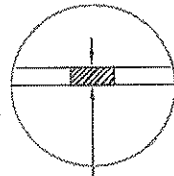
NEW FULL DEPTH CONST.



- 2' WEARING COURSE HVWE47540C
- 2' BINDER COURSE HVNW37540C
- 2' BASE COURSE MVNW35035B
- 4.5' AGGREGATE BASE CLASS 5

DESIGN B

(2" MILL AND 2" OVERLAY)



2' WEARING COURSE HVWE47540C

SPECIFIC NOTES

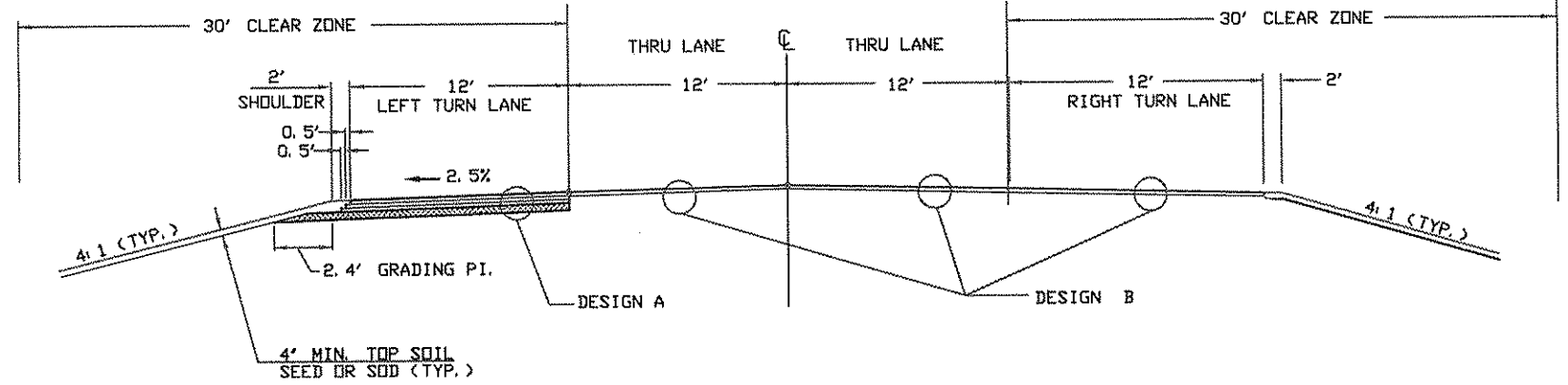
- ① -- INPLACE 7" CONCRETE TO BE CRACKED & SEATED
LEB 565+38 - 579+00 AND 614+50 - 692+90
- ② -- 6" MILL & OVERLAY OF EXISTING TURN LANE,
FULL DEPTH CONSTRUCTION IN TURN LANE EXTENSION ONLY
- ③ -- 2" MILL & OVERLAY OF EXISTING TURN LANE,
FULL DEPTH CONSTRUCTION IN TURN LANE EXTENSION ONLY

NEW FULL DEPTH CONSTRUCTION, DESIGN A

STA. TO STA.	LOC.	DESCRIPTION
564+85 - 572+00	LT. LEB	RIGHT TURN LANE
631+10 - 636+70	RT. LEB	LEFT TURN LANE
650+67 - 660+27	RT. LEB	LEFT TURN LANE
615+87 - 621+20	LT. LWB	LEFT TURN LANE
637+01 - 644+94	LT. LWB	LEFT TURN LANE
680+50 - 689+25	RT. LWB	ADDITIONAL THRU LANE CONSTRUCTION

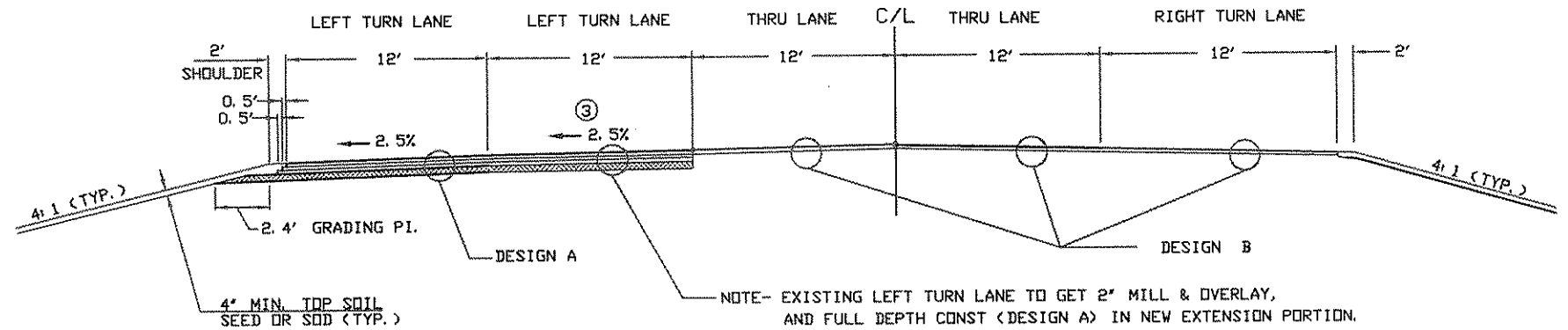
LWB STA. 637+01.00 - 638+50.00

LEFT TURNLANE EXTENSION AT ABLE ST.



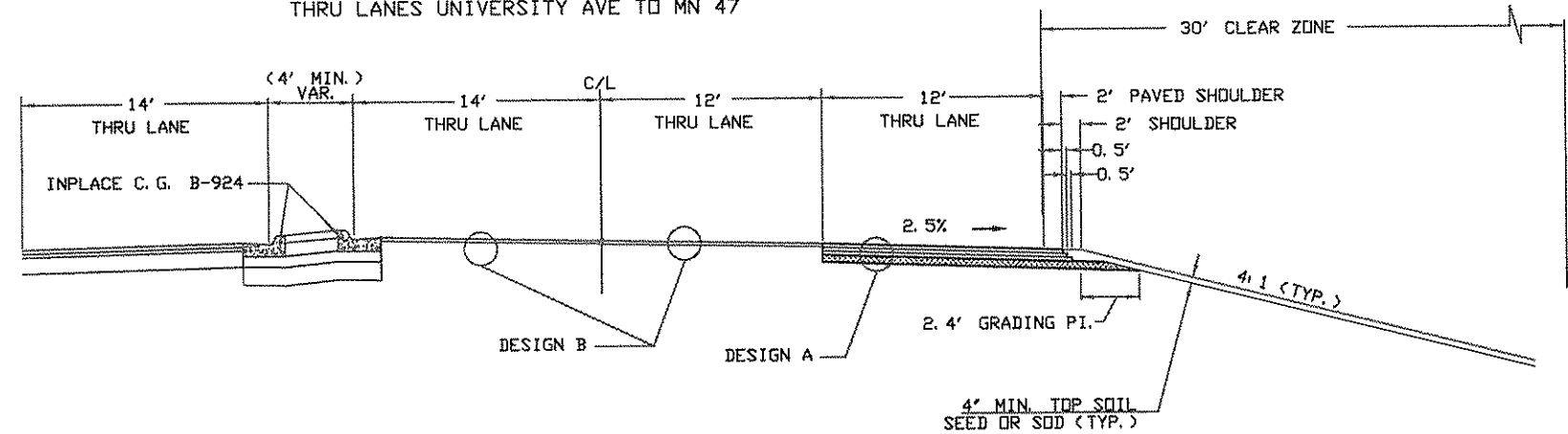
LWB STA. 638+50.00 - 644+94.00

EXTEND AND ADD LEFT TURN LANE AT JEFFERSON ST.



LWB STA. 680+50 - 689+25

THRU LANES UNIVERSITY AVE TO MN 47



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: *Kirsten Olson*
SIGNATURE: *Kirsten Olson*
DATE: *7/2/01* LICENSE NO. *26026*

DRAWN BY: MN 05/30/01
DESIGN BY: MG 05/31/01
CHECKED BY: LAR 06/06/00



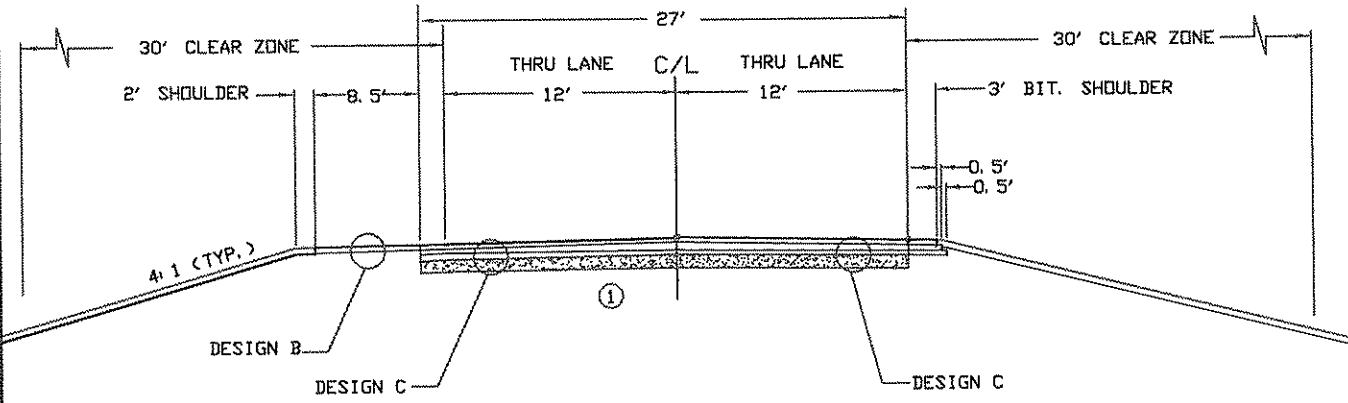
ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO. _____
STATE AID PROJECT NO. 02-610-12
STATE AID PROJECT NO. 02-610-13
COUNTY PROJECT NO. 96-09-00

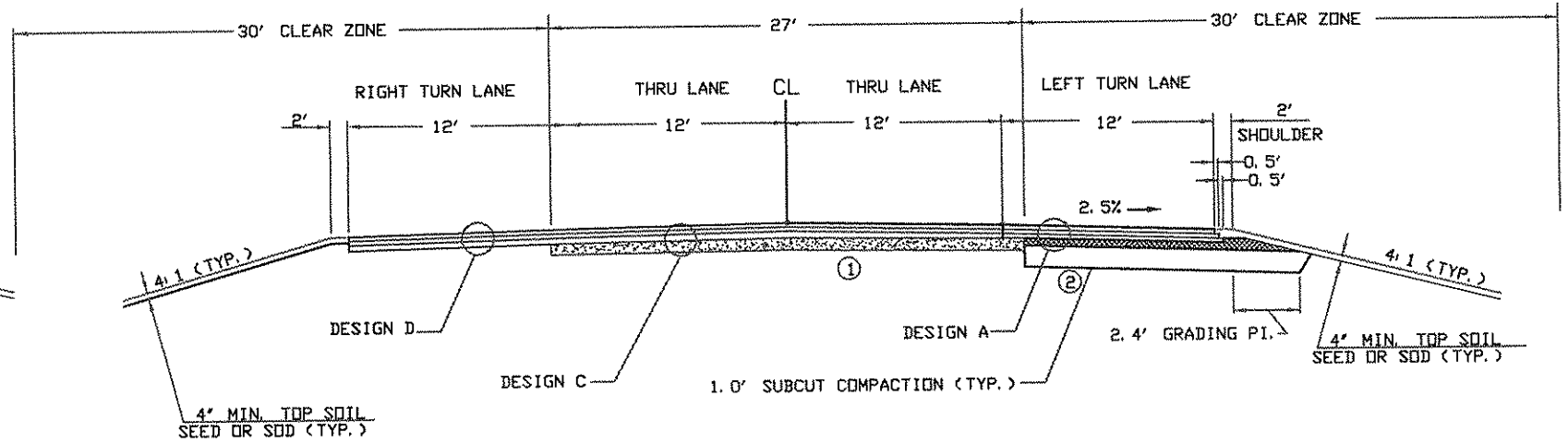
TYPICAL SECTIONS
LWB

Sheet 7 of 84 Sheets

LEB STANDARD DRIVING LANES

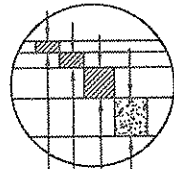


LEB STA. 631+10 TO STA. 636+70.
LEB AT ABLE ST., LEFT TURN LANE EXTENSION



DESIGN C

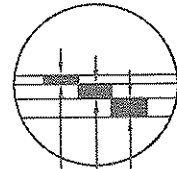
(6" BIT. REMOVAL & OVERLAY)
INPLACE CONCRETE TO BE CRACKED & SEATED



2" WEARING COURSE HVWE47540C
2" BINDER COURSE HVNW37540C
2" BASE COURSE MVNW35035B
CRACK & SEAT 7" INPLACE CONCRETE

DESIGN D

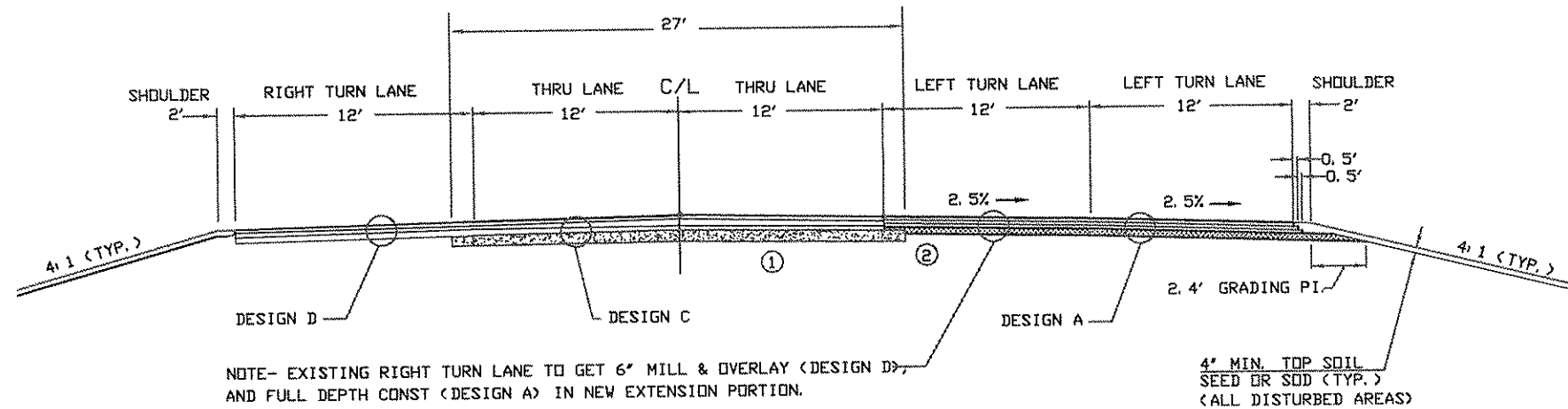
(6" BIT. REMOVAL & OVERLAY)



2" WEARING COURSE MVWE45035C
2" BINDER COURSE MVNW35035C
2" BASE COURSE LVNW35030B

LEB STA. 650+67 - 658+77

LEB AT JEFFERSON ST.

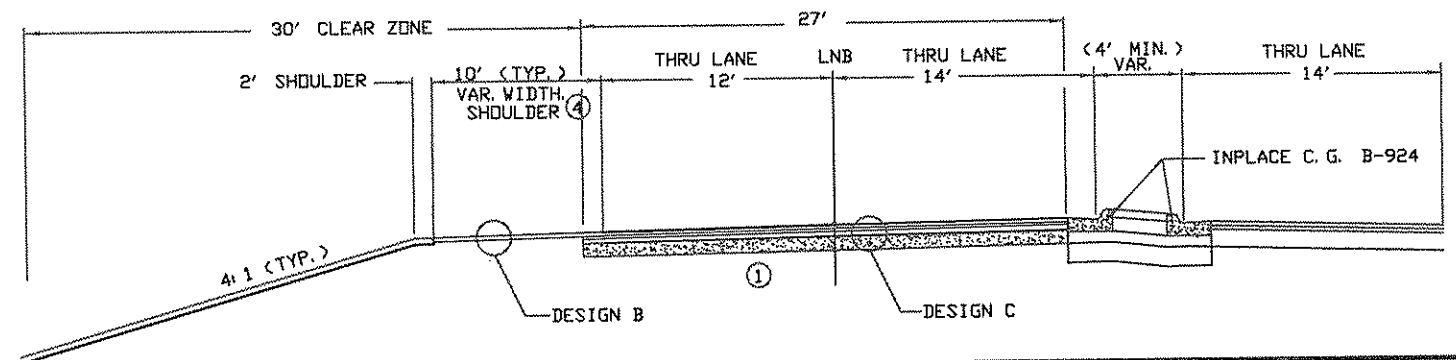


SPECIFIC NOTES

- ① -- INPLACE 7" CONCRETE TO BE CRACKED & SEATED
LEB 565+38 - 579+00 AND 614+50 - 692+90
- ② -- 6" MILL & OVERLAY OF EXISTING TURN LANE,
FULL DEPTH CONSTRUCTION IN TURN LANE EXTENSION ONLY
- ③ -- 2" MILL & OVERLAY OF EXISTING TURN LANE,
FULL DEPTH CONSTRUCTION IN TURN LANE EXTENSION ONLY

LEB STA. 676+00 - 693+00

UNIVERSITY AVE. TO MN. 47



NEW FULL DEPTH CONSTRUCTION, DESIGN A

STA. TO STA.	LOC.	DESCRIPTION
564+85 - 572+00	LT. LEB	RIGHT TURN LANE
631+10 - 636+70	RT. LEB	LEFT TURN LANE
650+67 - 660+27	RT. LEB	LEFT TURN LANE
615+87 - 621+20	LT. LWB	LEFT TURN LANE
637+01 - 644+94	LT. LWB	LEFT TURN LANE
680+50 - 689+25	RT. LWB	ADDITIONAL THRU LANE CONSTRUCTION

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
PRINT NAME: *Kirsten Olson*
SIGNATURE: *Kirsten Olson*
DATE: *7/2/01* LICENSE NO. *26826*

DRAWN BY: *MN* 05/30/01
DESIGN BY: *MG* 05/31/01
CHECKED BY: *LAR* 06/06/01



ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO. _____
STATE AID PROJECT NO. *02-610-12*
STATE AID PROJECT NO. *02-610-13*
COUNTY PROJECT NO. *96-09-00*

TYPICAL SECTIONS
LEB

Sheet *8* of *84* Sheets

EARTHWORK SUMMARY (P)

BALANCE

EXCAVATION (EV)

COMMON EXCAVATION
TOTAL= 1 090 CU.YD.
REGULAR 390 CU.YD.
TOPSOIL 700 CU.YD.

EMBANKMENT (CV)

REGULAR 1 680 CU.YD.
TOPSOIL 741 CU.YD.

TOPSOIL

((TOPSOIL STRIPPING (EV) x SHRINKAGE FACTOR) - [TOPSOIL DRESSING] (CV))
= CU.YD. EXCESS (+) OR SHORTAGE (-)
(700 x 0.80) - 741 = -181 CU.YD. (CV)
(-181 x 1.3) = -235 CU.YD. (LV) - (TOPSOIL BORROW PAY ITEM)

EMBANKMENT MATERIAL

[(REG. EXCAVATION (EV)) x SHRINKAGE FACT.] - (REG. EMB.) = CU.YD. (SHORTAGE (-)) OR (EXCESS (+))
(390 x 0.80) - [1 680] = -1 368 CU.YD. (CV)
EMBANKMENT CU.YD. (+) (CV) x SWELL FACTOR (LV) = CU.YD. [(SHORTAGE (-) = GRANULAR BORROW) OR EXCESS (+)]
(-1 368 x 1.20) = -1 642 CU.YD. (LV) - (GRANULAR BORROW PAY ITEM)

SOIL FACTORS:

- (1) REGULAR GRADING AND TOPSOIL DRESSING (EV TO CV): 80% SHRINKAGE
(2) SUBCUT COMPACTION (EV TO CV): 90% SHRINKAGE
(3) SELECT GRANULAR BORROW (CV TO LV): 120% SWELL
(4) TOPSOIL BORROW (CV TO LV): 130% SWELL
(5) MUCK EXCAVATION (EV TO CV): 70% SHRINKAGE

BITUMINOUS QUANTITIES (N)

Table with columns: STA. TO STA., LOCATION, Width, 2 in Wear, 2 in Binder, 2 in Base, Depth, Tons. Contains detailed data for various road sections and materials.

SOILS AND CONSTRUCTION NOTES:

- 1. TOP OF GRADING GRADE IS DEFINED AS THE BOTTOM OF THE AGGREGATE BASE.
2. IN FILL AREAS, THE SUBGRADE SHALL BE CONSTRUCTED WITH SELECTED GRADING MATERIAL.
3. SELECTED GRADING MATERIALS SHALL CONSIST OF SELECT GRANULAR MATERIALS.
4. GRANULAR MATERIAL, REGARDLESS OF SOURCE, SHALL MEET THE REQUIREMENTS OF SPEC. 3149.2B.
5. COMPACTION OF THE GRADING PORTION OF THIS PROJECT SHALL BE BY THE "SPECIFIED DENSITY METHOD".
6. TEST ROLLING WILL NOT BE REQUIRED.
7. BITUMINOUS OR CONCRETE ITEMS REMOVED BY CONSTRUCTION SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE EITHER RECYCLED OR DISPOSED OF IN ACCORDANCE WITH THE REQUIREMENTS OF 2104.3C3 WITH NO DIRECT COMPENSATION MADE THEREFOR.
8. DISPOSITION OF EXCESS EXCAVATED MATERIAL SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF 2105.3D WITH NO DIRECT COMPENSATION THEREFORE.
9. WHERE CONNECTING NEW SURFACING TO AN INPLACE PAVEMENT, THE EXCAVATION SHALL BE BACKFILLED PROMPTLY TO AVOID UNDERMINING THE INPLACE PAVEMENT.
10. 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/SqYd 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.
11. COMPACTION OF THE AGGREGATE BASE LAYERS SHALL BE BY THE "SPECIFIED DENSITY METHOD", UNLESS RECYCLED MATERIAL'S.
12. PLACE MINIMUM 4 Inch TOPSOIL OR SLOPE DRESSING ON ALL AREAS DISTURBED BY CONSTRUCTION AND SCHEDULED FOR PERMANENT TURF ESTABLISHMENT. FERTILIZE WITH COMMERCIAL FERTILIZER, ANALYSIS 22-5-10(SLOW RELEASE), AT A RATE OF 300 LBS PER ACRE.
13. USE MIXTURE 60B SEED AND EROSION CONTROL BLANKET, CATEGORY 1 in ALL AREAS TO BE SEEDDED.
14. 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.
15. BITUMINOUS REMOVAL QUANTITY BASED ON SQUARE METER REMOVED. DEPTH OF IN PLACE BITUMINOUS INDICATED ON THE BORINGS SHOWN ON THE PLAN. CONTRACTOR SHALL INVESTIGATE AND MAKE HIS OWN DETERMINATION OF ACTUAL PAVEMENT DEPTH.
16. ALL SILT FENCING AS SHOWN IN THE PLANS SHALL BE IN PLACE PRIOR TO THE COMMENCEMENT OF GRADING OPERATIONS.
17. TOPSOIL STRIPPINGS TO BE SALVAGED AND UTILIZED TO ITS FULLEST EXTENT WITHIN THE PROJECT LIMITS.
18. ORGANIC MATERIAL CAN BE USED AS SALVAGED TOPSOIL AND AS EMBANKMENT OUTSIDE THE ROAD BED CONSTRUCTION.

BITUMINOUS TACK COAT

Table with columns: Tack for Binder, Tack for Wear, Total Tack, Gallon. Provides summary data for tack coat application.

SAP 02-612-12 7,730
CP 96-09-00 270 GALS

SAP 02-612-12 WEAR 9,889.32 x (2 1/8" / 2")=10,518.03 TON
CP 96-09-00 WEAR 591.14 x (2 1/8" / 2")=628.09 TON

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: LYNDON ROBERT ROBERT
SIGNATURE:
DATE: DATE LICENSE NO. 25066

DRAWN BY: KGL DATE: 06/29/01
DESIGN BY: MEG DATE: 06/29/01
CHECKED BY: LAR DATE: 06/29/01



ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO.
STATE AID PROJECT NO. 02-610-12
STATE AID PROJECT NO. 02-610-13
COUNTY PROJECT NO. 96-09-00

TABULATION CHARTS

Sheet 9 of 84 Sheets

LEB-FINAL ALIGNMENT

Table with columns: STATION, AREAS (Square Feet CUT/FILL), VOLUMES (Cubic Yards CUT/FILL), CUMULATIVE VOLUMES (Cubic Yards CUT/FILL). Rows from 566+48.48 to 575+04-581+38LT.

LEB-FINAL ALIGNMENT

Table with columns: STATION, AREAS (Square Feet CUT/FILL), VOLUMES (Cubic Yards CUT/FILL), CUMULATIVE VOLUMES (Cubic Yards CUT/FILL). Rows from 630+00 to 637+00.

LEB-FINAL ALIGNMENT

Table with columns: STATION, AREAS (Square Feet CUT/FILL), VOLUMES (Cubic Yards CUT/FILL), CUMULATIVE VOLUMES (Cubic Yards CUT/FILL). Rows from 650+50 to 660+50.

LWB-FINAL ALIGNMENT

Table with columns: STATION, AREAS (Square Feet CUT/FILL), VOLUMES (Cubic Yards CUT/FILL), CUMULATIVE VOLUMES (Cubic Yards CUT/FILL). Rows from 615+50 to 621+50.

LWB-FINAL ALIGNMENT

Table with columns: STATION, AREAS (Square Feet CUT/FILL), VOLUMES (Cubic Yards CUT/FILL), CUMULATIVE VOLUMES (Cubic Yards CUT/FILL). Rows from 637+00 to 690+00 SERVICE RD.LT.

LWB-FINAL ALIGNMENT

Table with columns: STATION, AREAS (Square Feet CUT/FILL), VOLUMES (Cubic Yards CUT/FILL), CUMULATIVE VOLUMES (Cubic Yards CUT/FILL). Rows from 680+00 to 689+50.

Revision table with columns: NO, DATE, BY, CKD, APPR, REVISION.

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA. PRINT NAME: LYNDON A. ROBERTS. SIGNATURE: [Signature]. DATE: DATE. LICENSE NO. 25066.

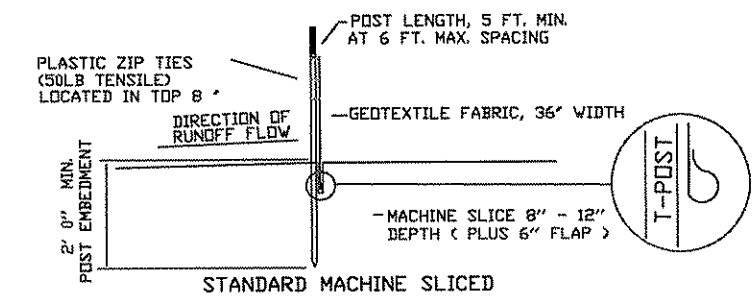
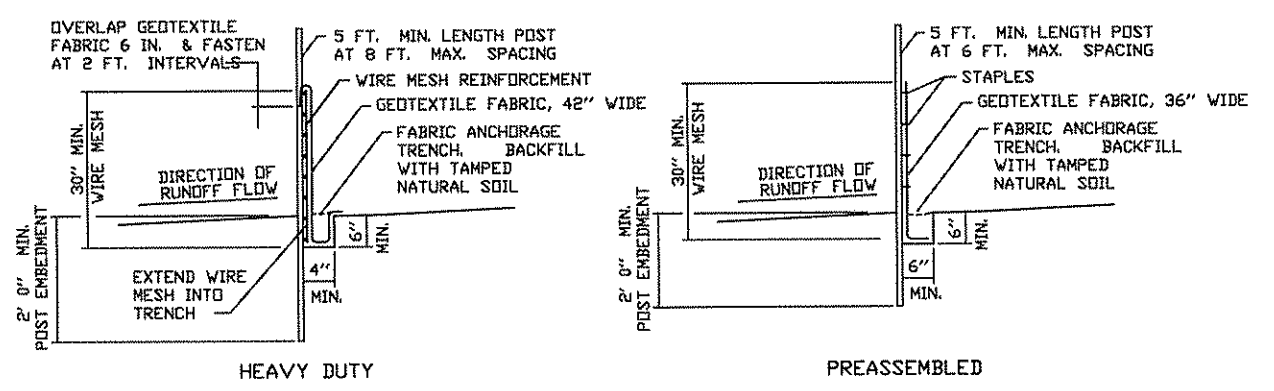
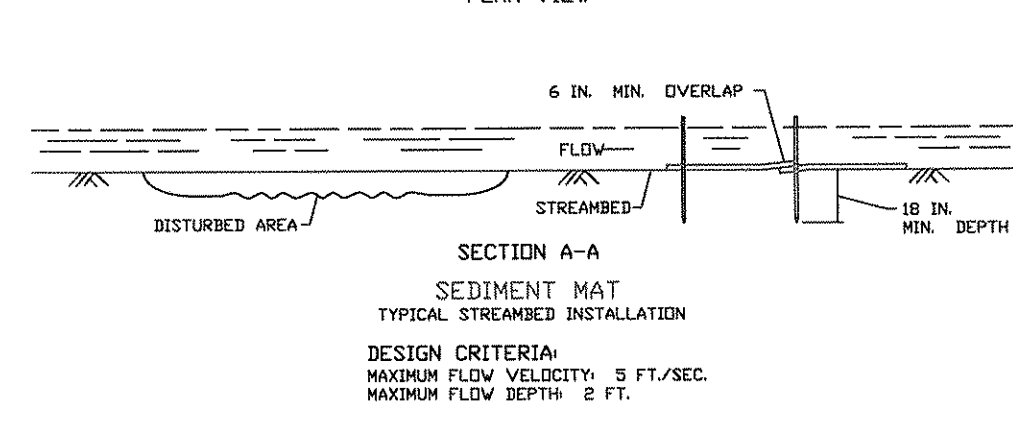
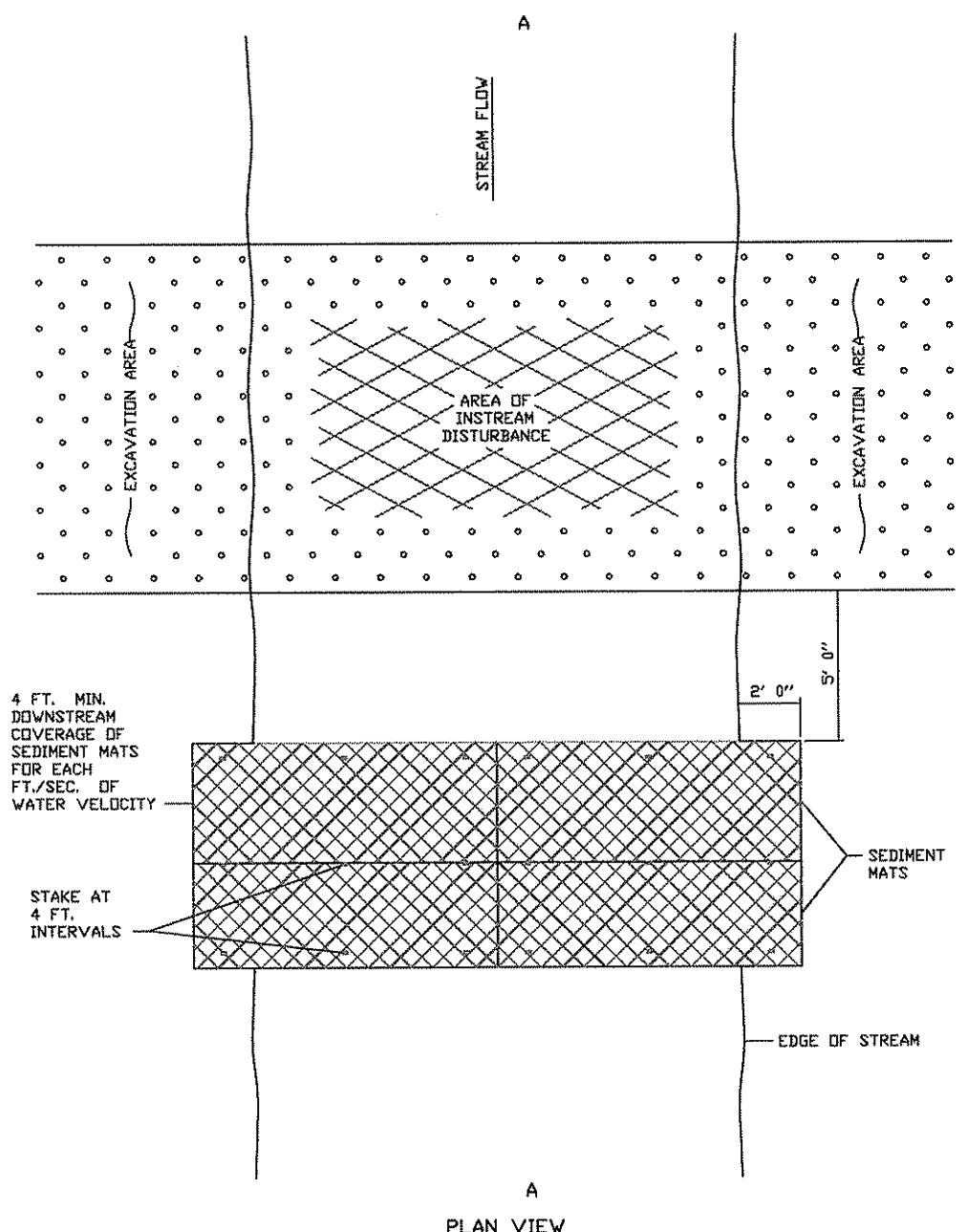
DRAWN BY: KGI DATE: 00/00/00. DESIGN BY: MFG DATE: 00/00/00. CHECKED BY: LAR DATE: 00/00/00.



ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. STATE AID PROJECT NO. 02-610-12 STATE AID PROJECT NO. 02-610-13 COUNTY PROJECT NO. 96-09-00

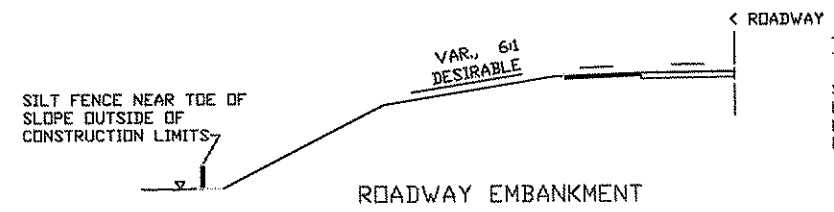
CROSS SECTIONS LWB and LEB EARTHWORK CHARTS Sheet 10 of 84 Sheets



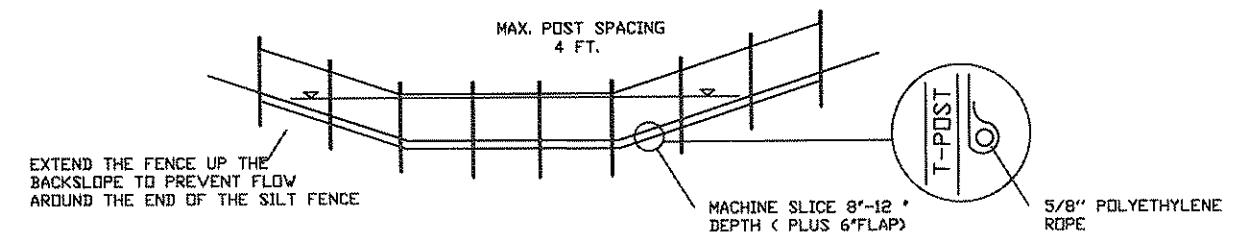
DESIGN CRITERIA:
 MAXIMUM CONTRIBUTING AREA: 3 ACRES

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

RECOMMENDED SPACING BETWEEN DITCH CHECKS	
DITCH GRADE (%)	SPACING (FT.)
2	100
4	75
6	50
8	40
10	25



DESIGN CRITERIA:
 STORM FREQUENCY: 2 YR. - 24 HR. 10 YR. - 24 HR.
 MAX. FLOW VELOCITY: 5 FT./SEC. 12 FT./SEC.
 MAX. DITCH GRADE: 5%
 MAX. DRAINAGE AREA: 2 ACRES 5 ACRES



SPACING DISTANCE = SILT FENCE HEIGHT / % CHANNEL SLOPE

SILT FENCE DITCH CHECK
 TYPE MACHINE SLICED

DESIGN CRITERIA	
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 THE EXISTING ONE AT A SUITABLE DISTANCE.

NO	DATE	BY	CKD	APPR	REVISION

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 PRINT NAME: *Kirsten Olson*
 SIGNATURE: *Kirsten Olson*
 DATE: *7/31/01* REG. NO. *26826*

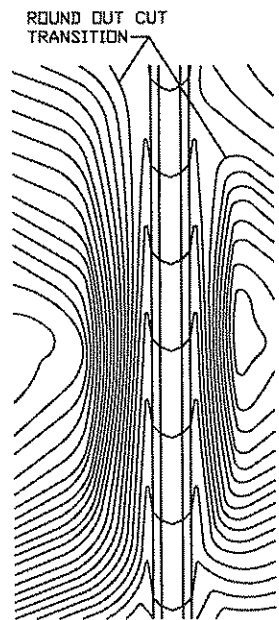
DRAWN BY: *MN* DATE *05/30/01*
 DESIGN BY: *MG* DATE *05/30/01*
 CHECKED BY: *LAR* DATE *06/06/01*



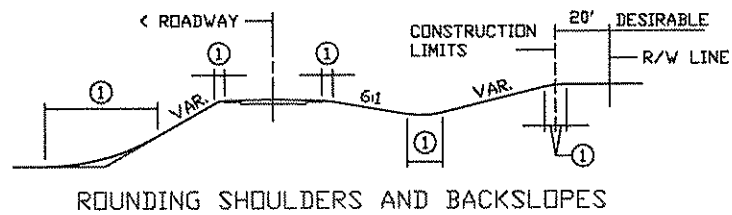
ANOKA COUNTY
 HIGHWAY DEPT.

STATE PROJECT NO. _____
 STATE AID PROJECT NO. 02-610-12
 STATE AID PROJECT NO. 02-610-13
 COUNTY PROJECT NO. 96-09-00

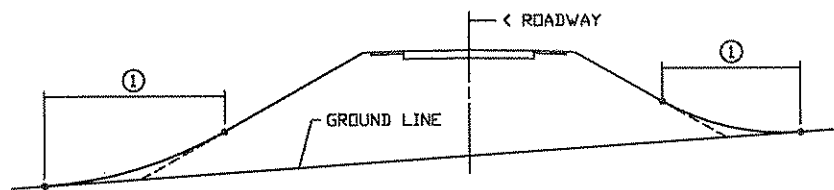
TEMPORARY EROSION CONTROL
 Sheet 11 of 84 Sheets



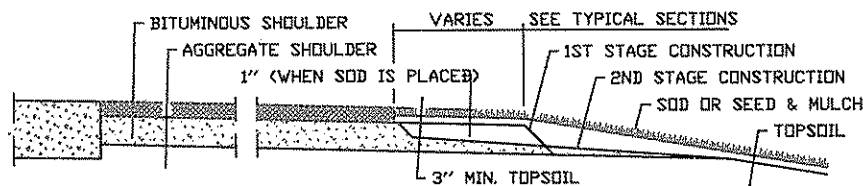
CONTOURING ROAD CUTS



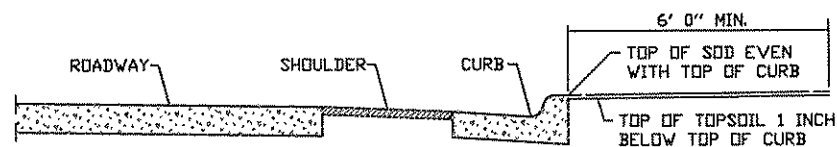
ROUNDING SHOULDERS AND BACKSLOPES



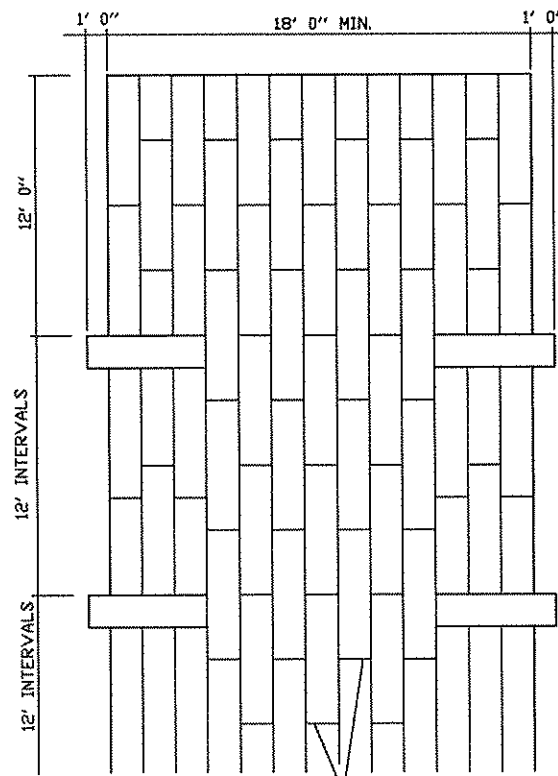
SHAPING FOR DRAINAGE ALONG THE TOE OF FILL SLOPES



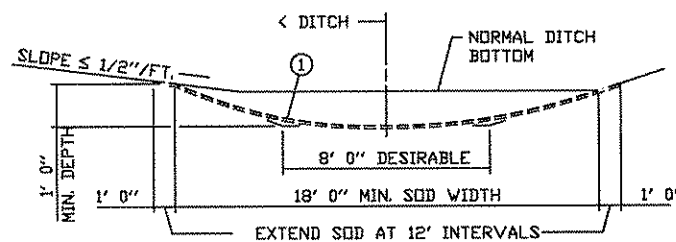
SHAPING AND TOPSOILING INSLOPES



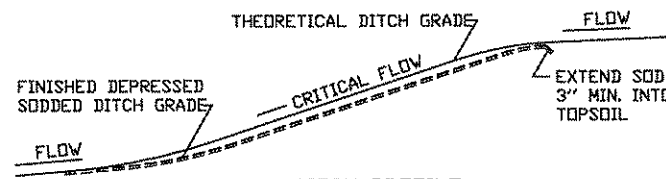
SHAPING ADJACENT TO CURBS WHEN SDD IS PLACED



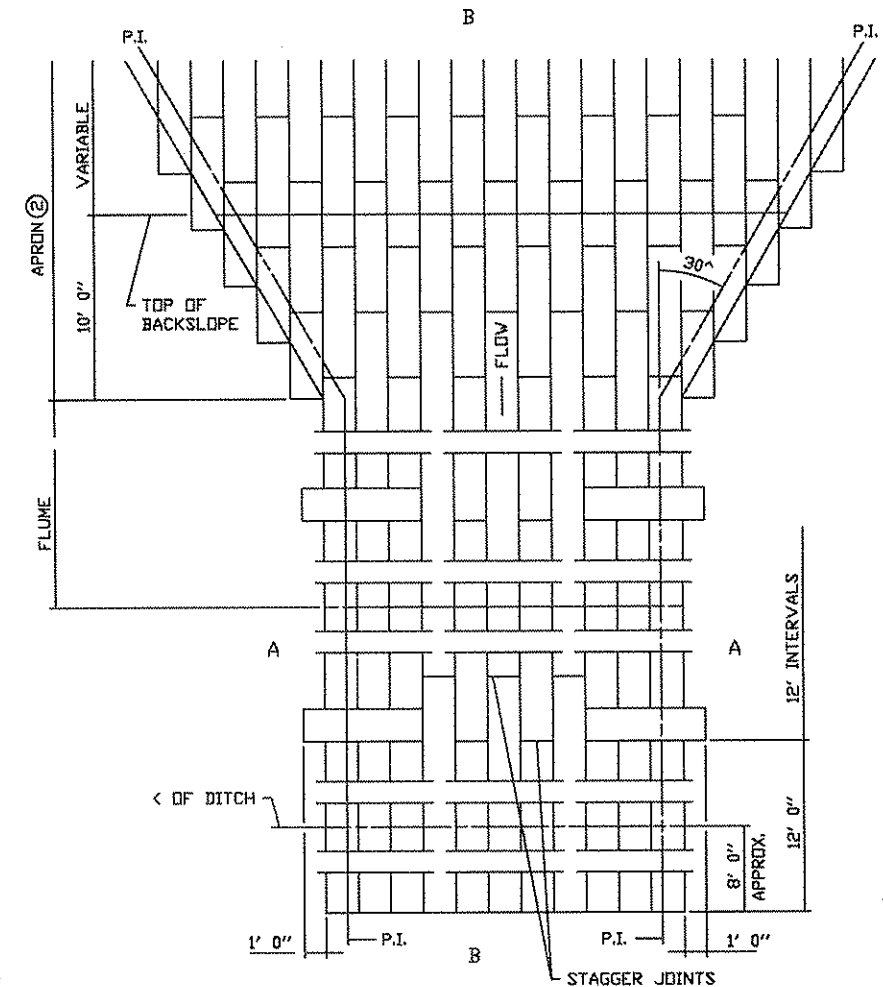
STAGGER JOINTS
PLAN VIEW



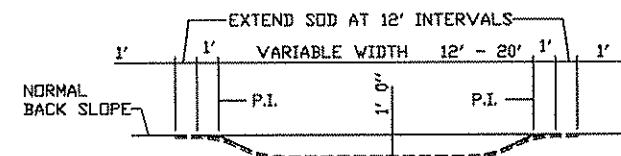
SODDED DITCH CROSS SECTION
WHERE FRONT OR BACK SLOPE IS FLAT (LESS THAN 1\"/>



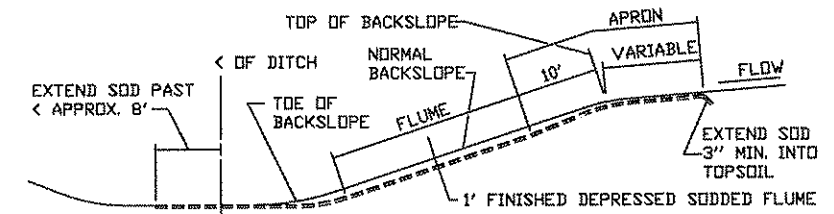
DITCH PROFILE
SODDED DITCH DETAILS



PLAN VIEW



SECTION A-A



SECTION B-B

NO	DATE	BY	CHKD	APPR	REVISION

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 PRINT NAME: *Kristen Carlson*
 SIGNATURE: *Kristen Carlson*
 DATE: *7/2/01* LICENSE NO. *26826*

DRAWN BY: *MIN* .05/30/01
 DESIGN BY: *MG* .05/30/01
 CHECKED BY: *LAR* .06/06/01








ANOKA COUNTY
 HIGHWAY DEPT.

STATE PROJECT NO. _____
 STATE AID PROJECT NO. *02-610-12*
 STATE AID PROJECT NO. *02-610-13*
 COUNTY PROJECT NO. *96-09-00*






PERMANENT EROSION CONTROL
 Sheet *12* of *84* Sheets

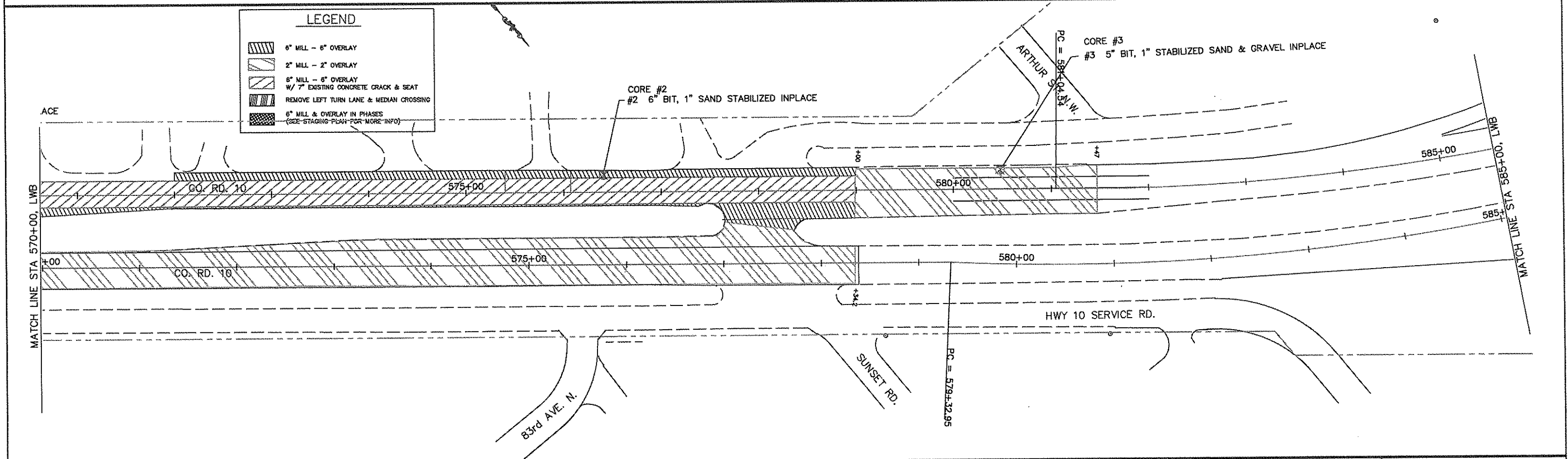
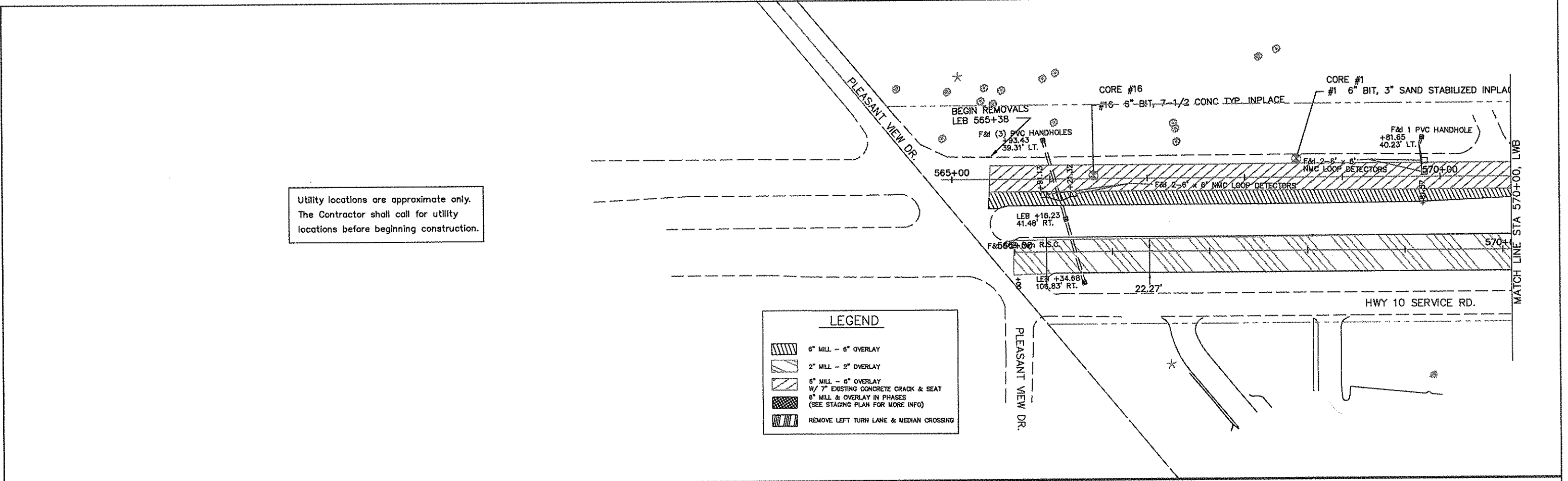
Utility locations are approximate only.
The Contractor shall call for utility locations before beginning construction.


LEGEND

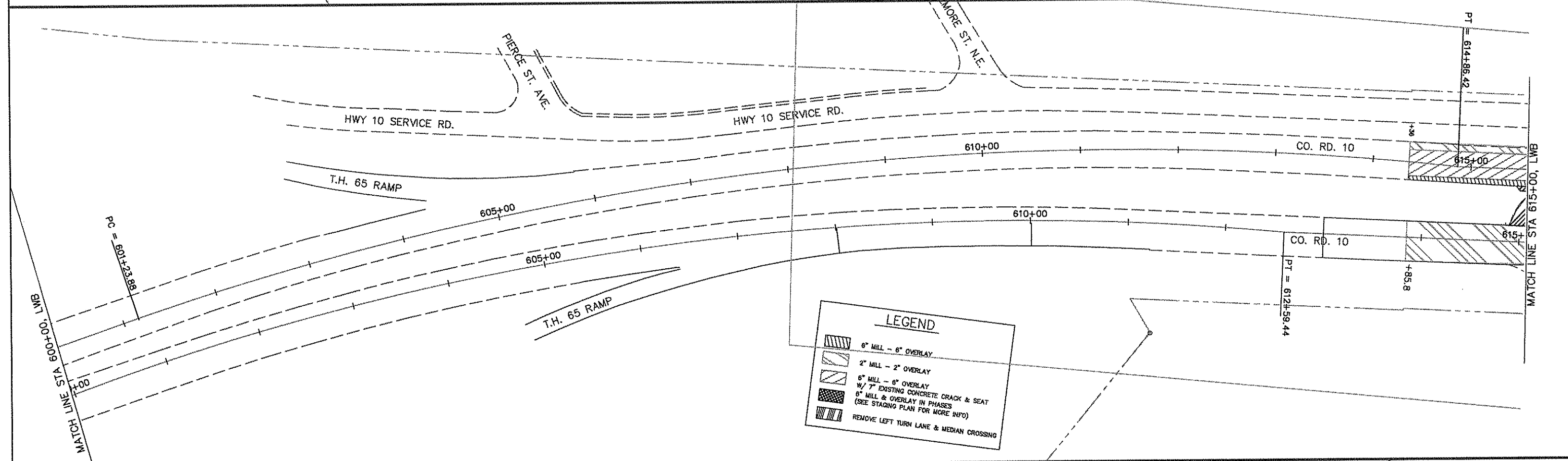
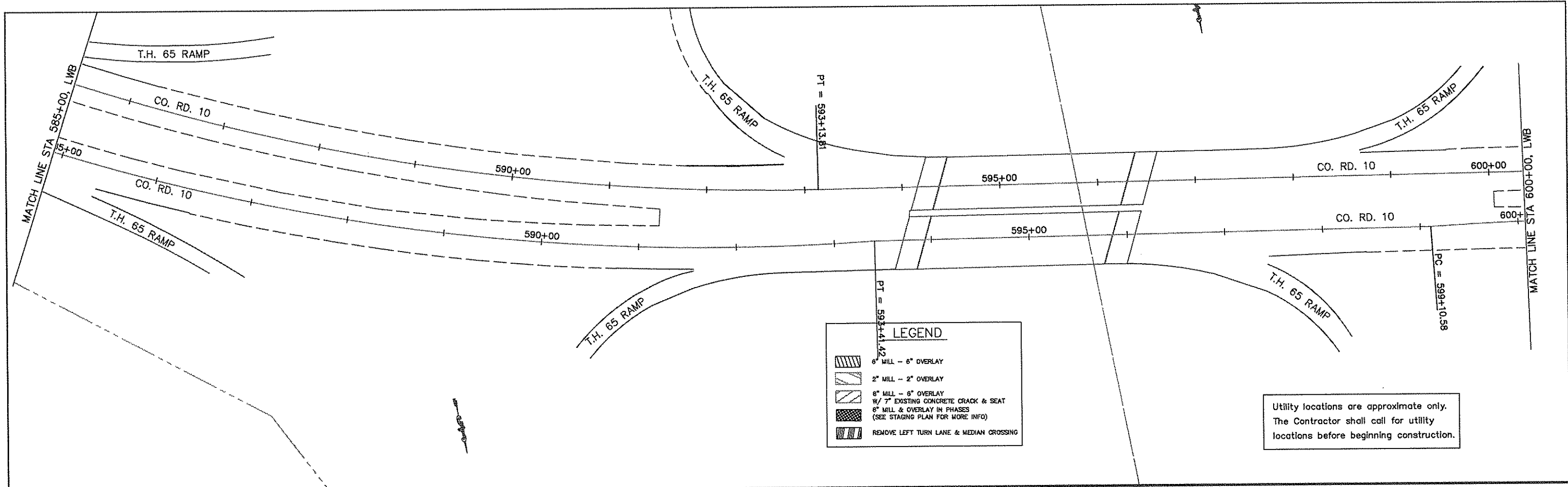
-  6" MILL - 6" OVERLAY
-  2" MILL - 2" OVERLAY
-  6" MILL - 6" OVERLAY W/ 7" EXISTING CONCRETE CRACK & SEAT
-  6" MILL & OVERLAY IN PHASES (SEE STAGING PLAN FOR MORE INFO)
-  REMOVE LEFT TURN LANE & MEDIAN CROSSING

LEGEND

-  6" MILL - 6" OVERLAY
-  2" MILL - 2" OVERLAY
-  6" MILL - 6" OVERLAY W/ 7" EXISTING CONCRETE CRACK & SEAT
-  REMOVE LEFT TURN LANE & MEDIAN CROSSING
-  6" MILL & OVERLAY IN PHASES (SEE STAGING PLAN FOR MORE INFO)



	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.	DRAWN BY: MN DATE: 00/00/00		ANOKA COUNTY HIGHWAY DEPT.	STATE PROJECT NO. _____	EXISTING CONDITIONS AND REMOVAL PLAN STA 560+00 TO 585+00 Sheet 13 of 84 Sheets
NO DATE BY CKD APPR REVISION NAME: S:\DCSR\PROJ\06-08-00\BASE\002B1012.DWG M.N. (08-22-01)	PRINT NAME: <i>Justin Olson</i> SIGNATURE: <i>Justin Olson</i> DATE: <i>7/2/01</i> LICENSE NO. <i>26826</i>	DESIGN BY: LAR DATE: 00/00/00 CHECKED BY: LAR DATE: 00/00/00			STATE AID PROJECT NO. <u>02-610-12</u> STATE AID PROJECT NO. <u>02-610-13</u> COUNTY PROJECT NO. <u>96-09-00</u>	



NO	DATE	BY	CKD	APPR	REVISION

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

PRINT NAME: *Diasten Olson*

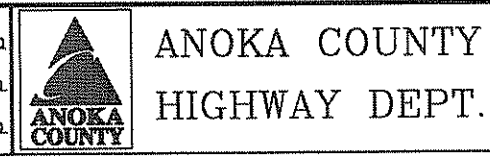
SIGNATURE: *Diasten Olson*

DATE: *4/2/01* LICENSE NO. *26826*

DRAWN BY: *MN* DATE: *00/00/00*

DESIGN BY: *LAR* DATE: *00/00/00*

CHECKED BY: *LAR* DATE: *00/00/00*



STATE PROJECT NO. _____

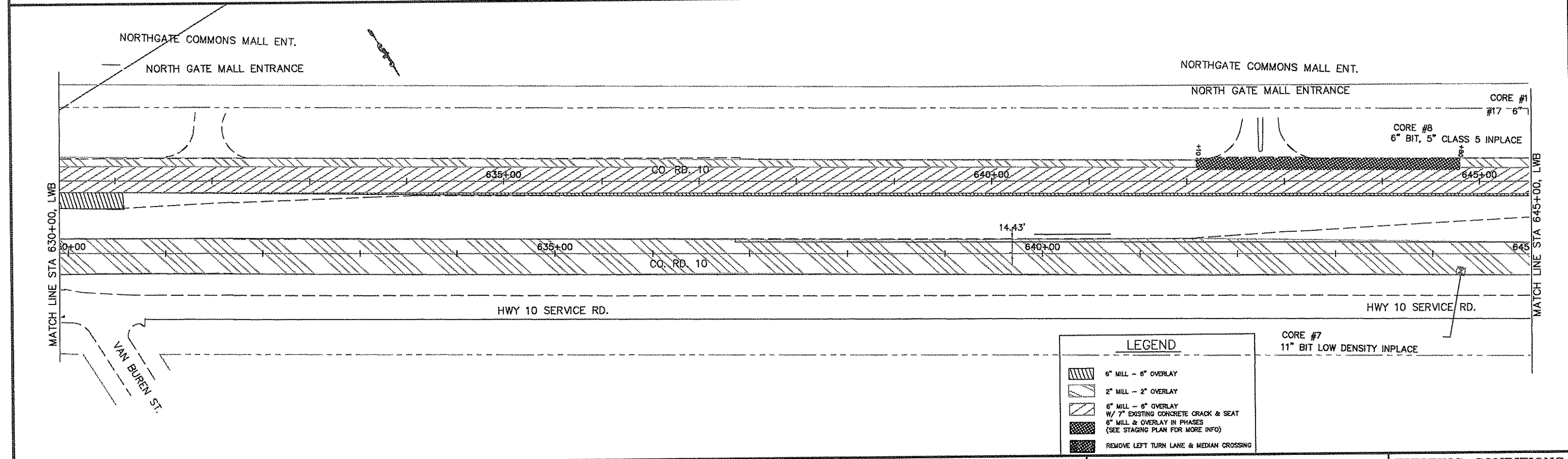
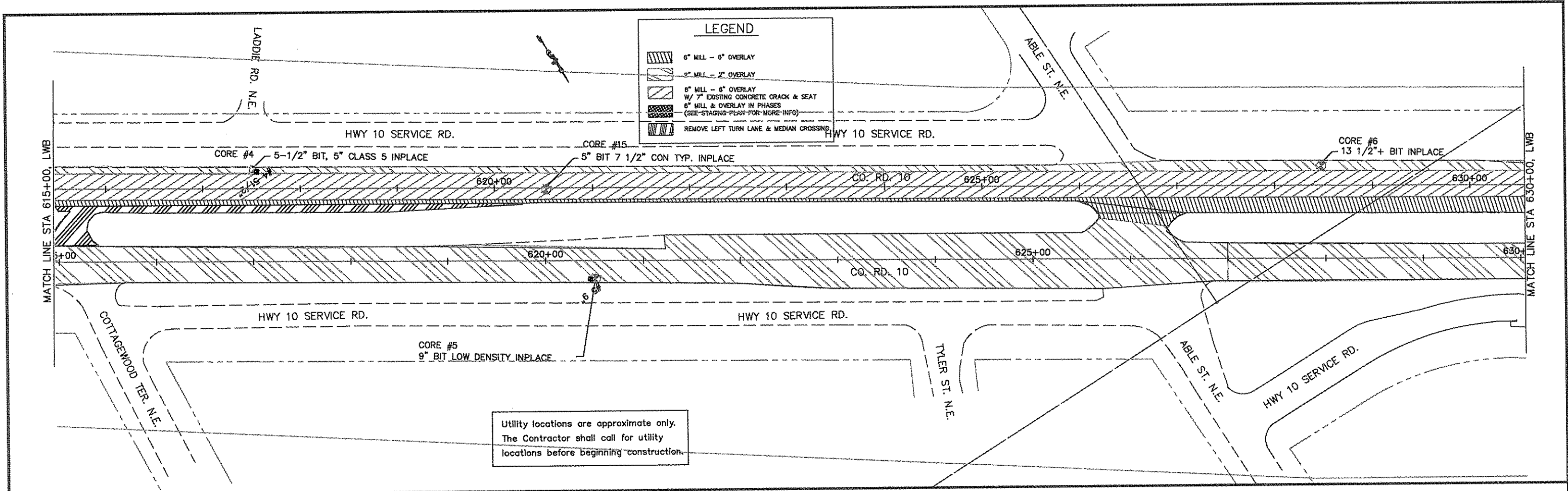
STATE AID PROJECT NO. 02-610-12

STATE AID PROJECT NO. 02-610-13

COUNTY PROJECT NO. 96-09-00

EXISTING CONDITIONS AND REMOVAL PLAN
STA 585+00 TO 615+00

Sheet 14 of 84 Sheets



NO	DATE	BY	CKD	APPR	REVISION

NAME: S:\SDSKPROJ\98-09-00\BASE\0261012.DWG M.N. (05-22-01)

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: *Rooster Olson*

SIGNATURE: *Rooster Olson*

DATE: *7/2/01* LICENSE NO: *26826*

DRAWN BY: MN DATE:

DESIGN BY: LAR DATE:

CHECKED BY: LAR DATE:

ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO.

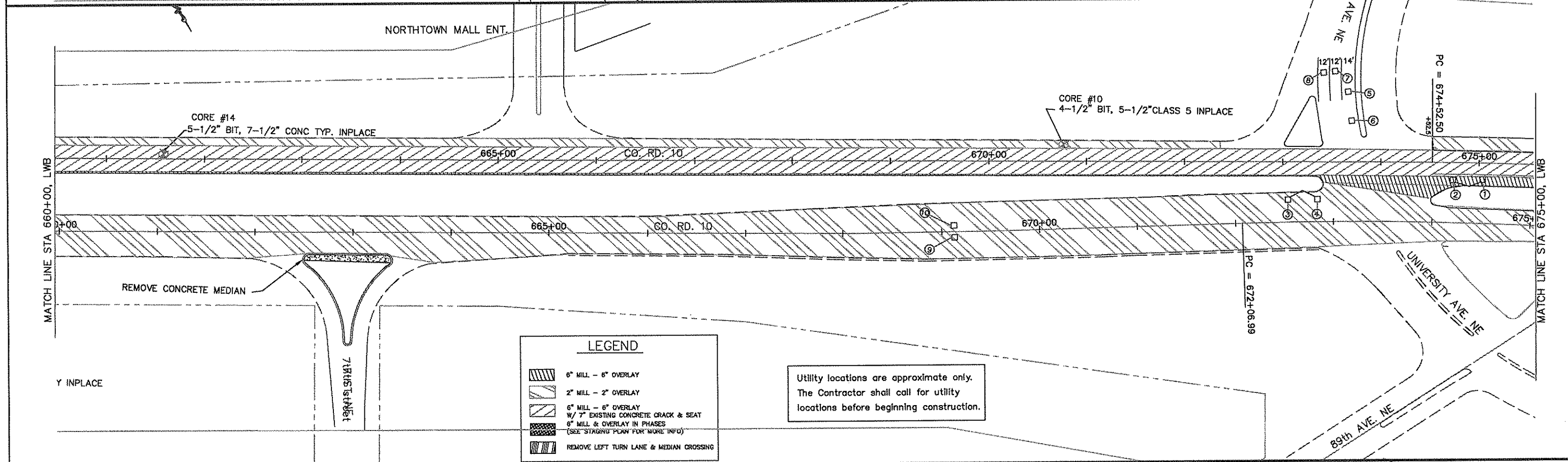
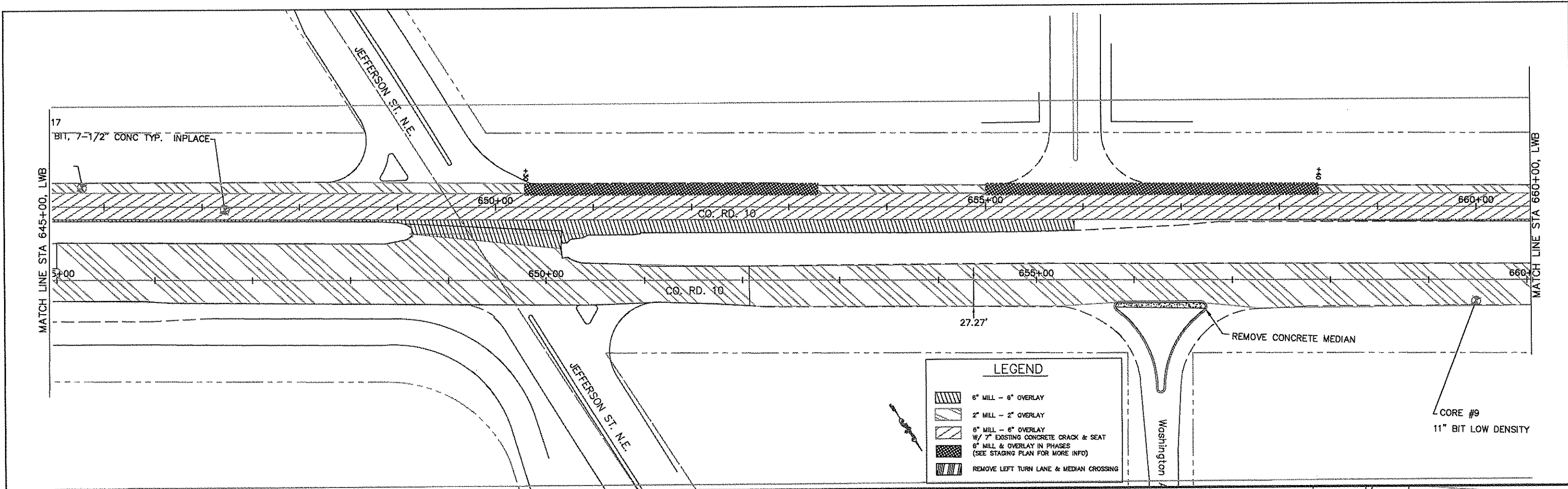
STATE AID PROJECT NO. *02-610-12*

STATE AID PROJECT NO. *02-610-13*

COUNTY PROJECT NO. *96-09-00*

EXISTING CONDITIONS AND REMOVAL PLAN
STA 615+00 TO 645+00

Sheet *15* of *84* Sheets



NO	DATE	BY	CKD	APPR	REVISION

NAME: S:\SDSK\PROJ\66-09-00\BASE\00281012.DWG M.N. (05-22-01)

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: *Kirsten Olson*

SIGNATURE: *Kirsten Olson*

DATE: *7/5/01* LICENSE NO. *26826*

DRAWN BY: *MN* DATE: *00/00/00*

DESIGN BY: *LAR* DATE: *00/00/00*

CHECKED BY: *LAR* DATE: *00/00/00*

ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO. _____

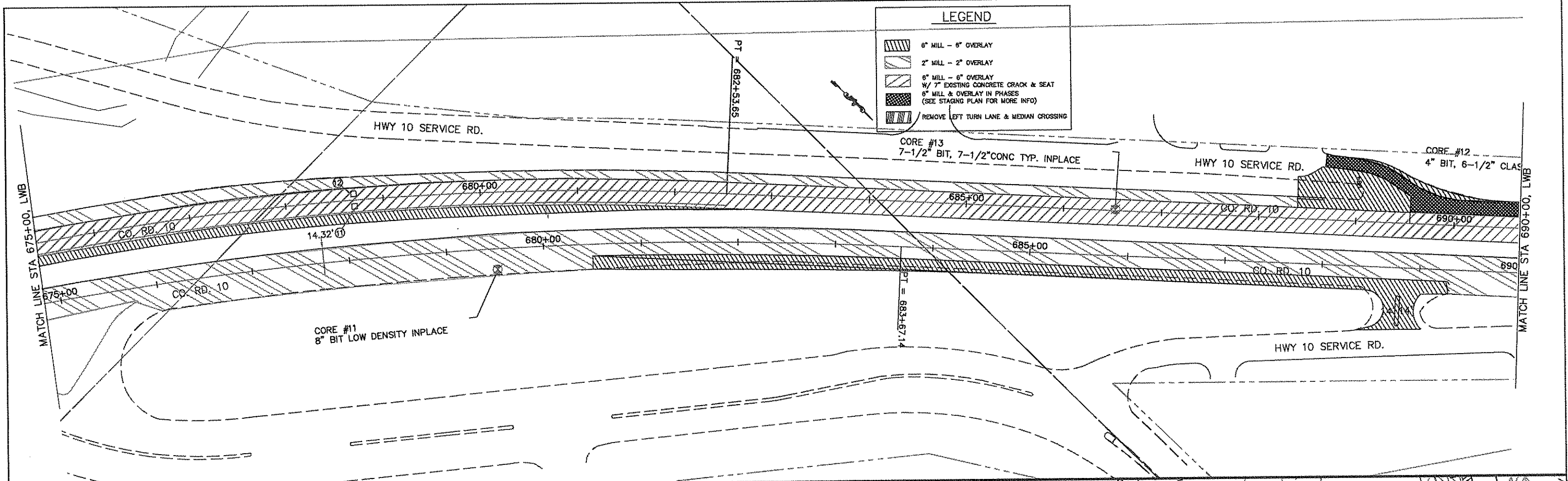
STATE AID PROJECT NO. 02-610-12

STATE AID PROJECT NO. 02-610-13

COUNTY PROJECT NO. 96-09-00

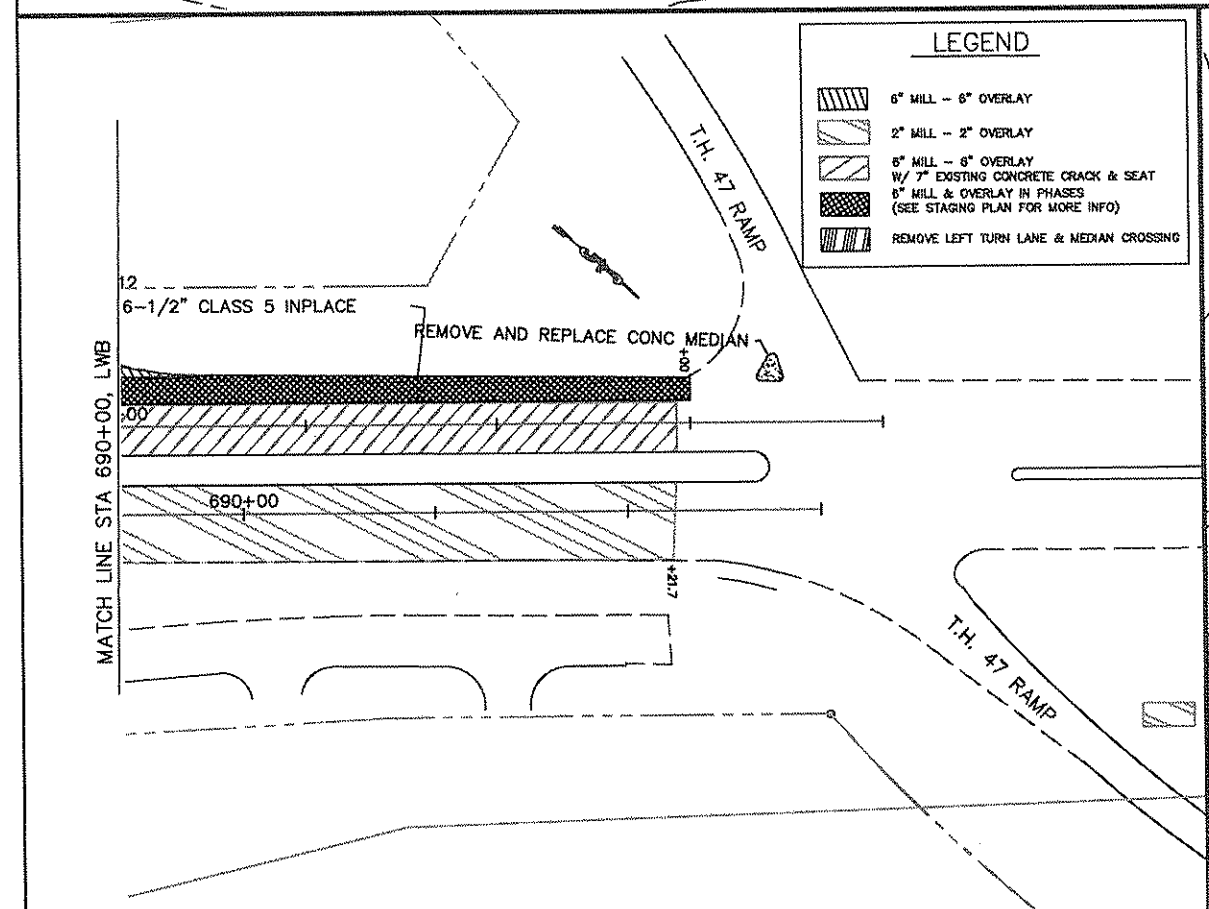
EXISTING CONDITIONS AND REMOVAL PLAN
STA 645+00 TO 675+00

Sheet 16 of 84 Sheets



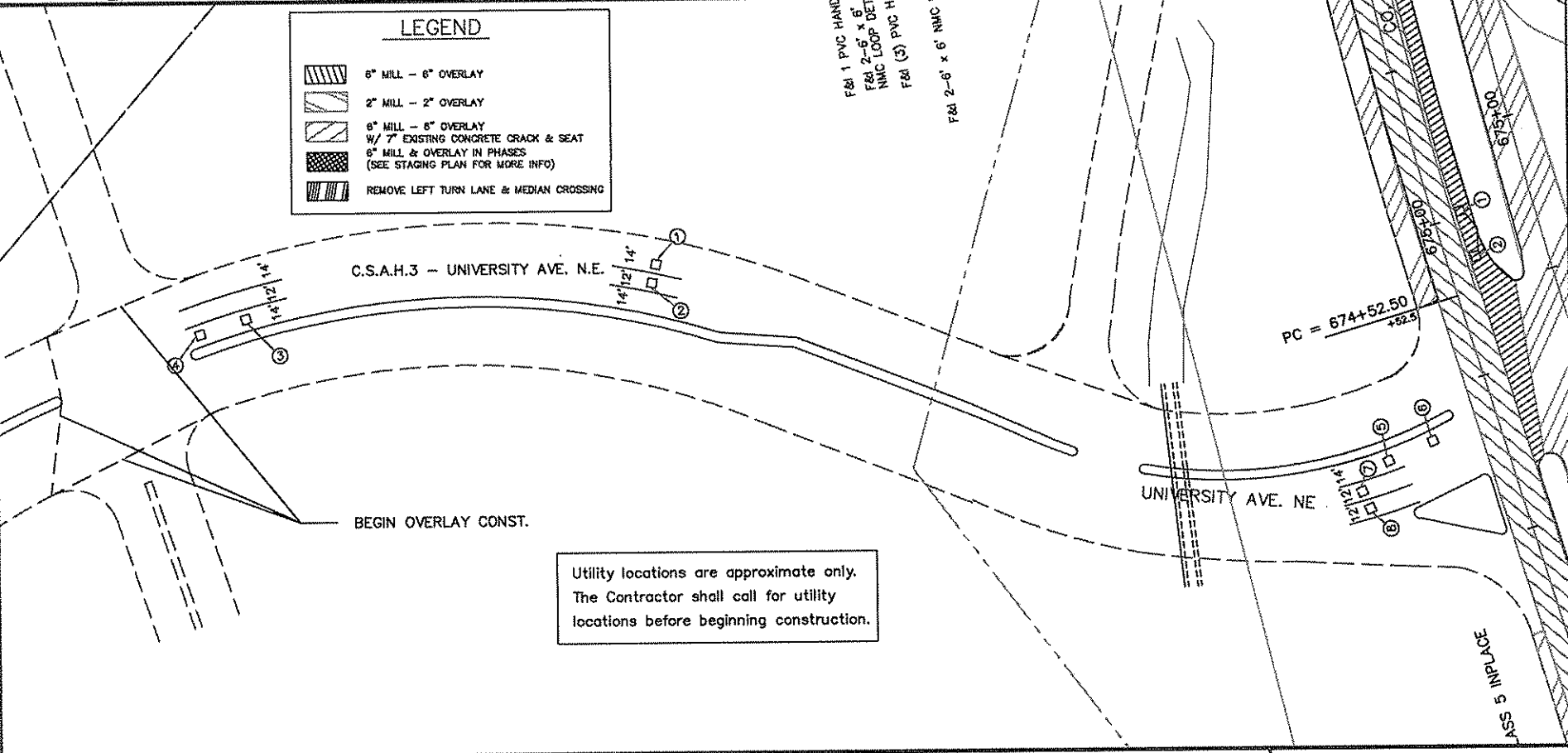
LEGEND

- 6" MILL - 6" OVERLAY
- 2" MILL - 2" OVERLAY
- 6" MILL - 6" OVERLAY W/ 7" EXISTING CONCRETE CRACK & SEAT
- 6" MILL & OVERLAY IN PHASES (SEE STAGING PLAN FOR MORE INFO)
- REMOVE LEFT TURN LANE & MEDIAN CROSSING



LEGEND

- 6" MILL - 6" OVERLAY
- 2" MILL - 2" OVERLAY
- 6" MILL - 6" OVERLAY W/ 7" EXISTING CONCRETE CRACK & SEAT
- 6" MILL & OVERLAY IN PHASES (SEE STAGING PLAN FOR MORE INFO)
- REMOVE LEFT TURN LANE & MEDIAN CROSSING



LEGEND

- 6" MILL - 6" OVERLAY
- 2" MILL - 2" OVERLAY
- 6" MILL - 6" OVERLAY W/ 7" EXISTING CONCRETE CRACK & SEAT
- 6" MILL & OVERLAY IN PHASES (SEE STAGING PLAN FOR MORE INFO)
- REMOVE LEFT TURN LANE & MEDIAN CROSSING

NO	DATE	BY	CKD	APPR	REVISION

NAME: S:\SOSKPROJ\96-08-00\BASE\00281012.DWG N.N. (08-22-01)

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: *Kirsten Olson*

SIGNATURE: *Kirsten Olson*

DATE: *7/3/01* LICENSE NO. *26826*

DRAWN BY: *MN* DATE: *00/00/00*

DESIGN BY: *LAR* DATE: *00/00/00*

CHECKED BY: *LAR* DATE: *00/00/00*

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. _____

STATE AID PROJECT NO. 02-610-12

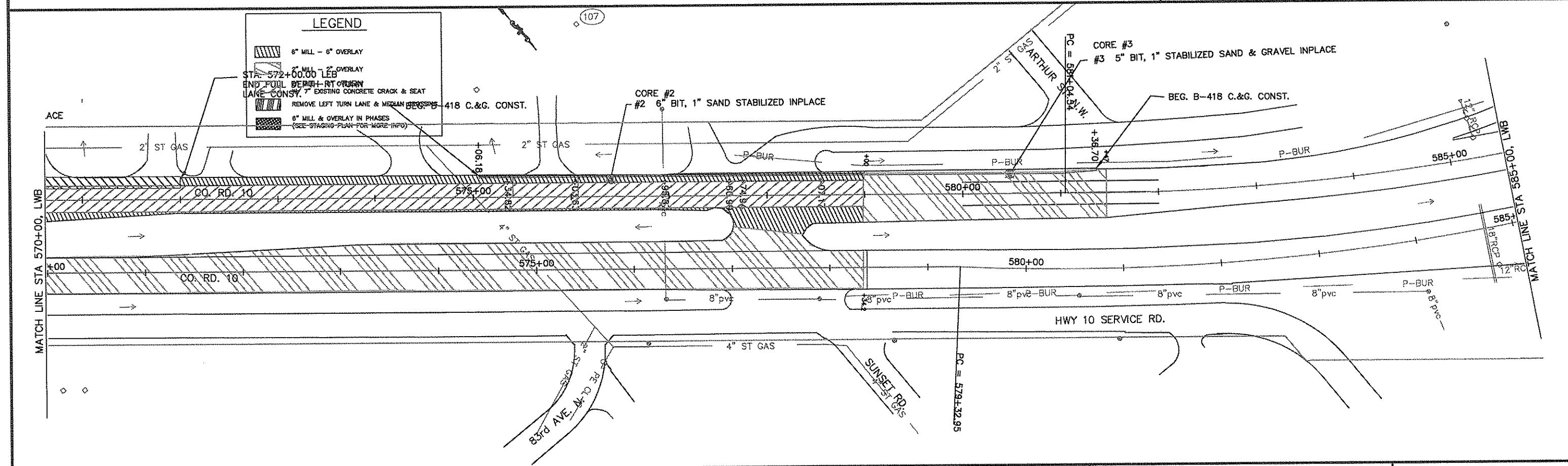
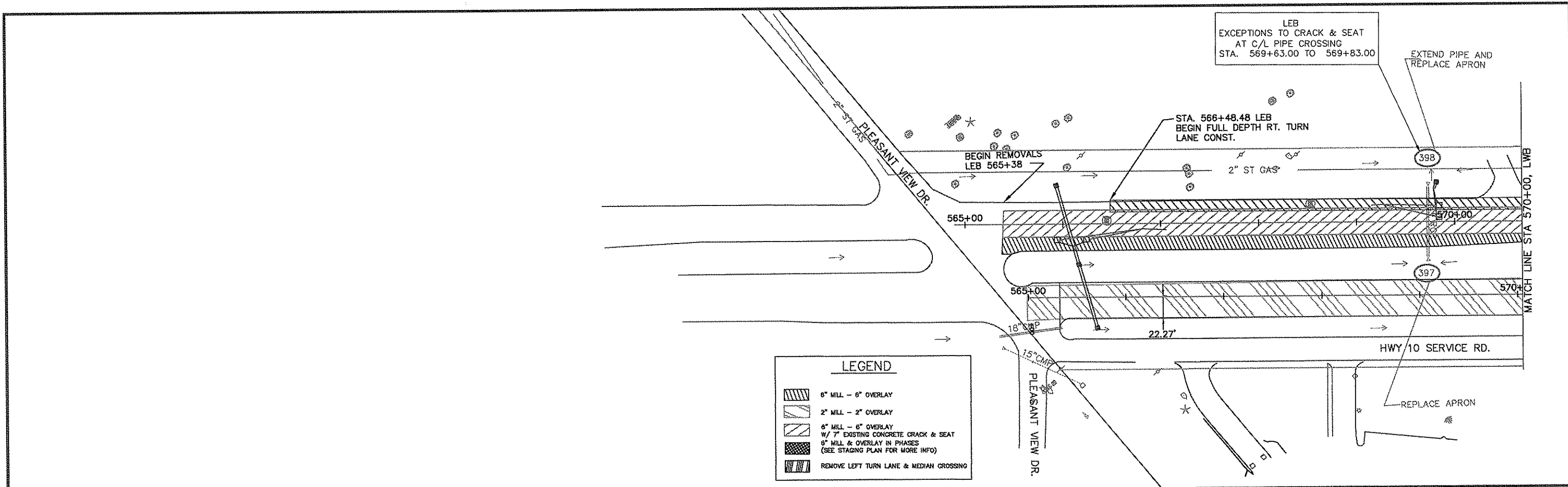
STATE AID PROJECT NO. 02-610-13

COUNTY PROJECT NO. 96-09-00

EXISTING CONDITIONS AND REMOVAL PLAN

STA 675+00 TO 710+00 & UNIVERSITY AVE. N.E.

Sheet 17 of 84 Sheets

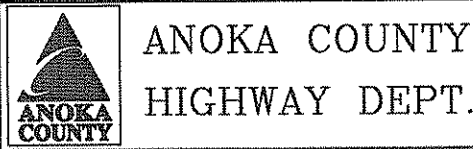


NO.	BY	CKD	APPR	REVISION

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

PRINT NAME: Foster Olson
 SIGNATURE: [Signature]
 DATE: 7/2/01 LICENSE NO. 26824

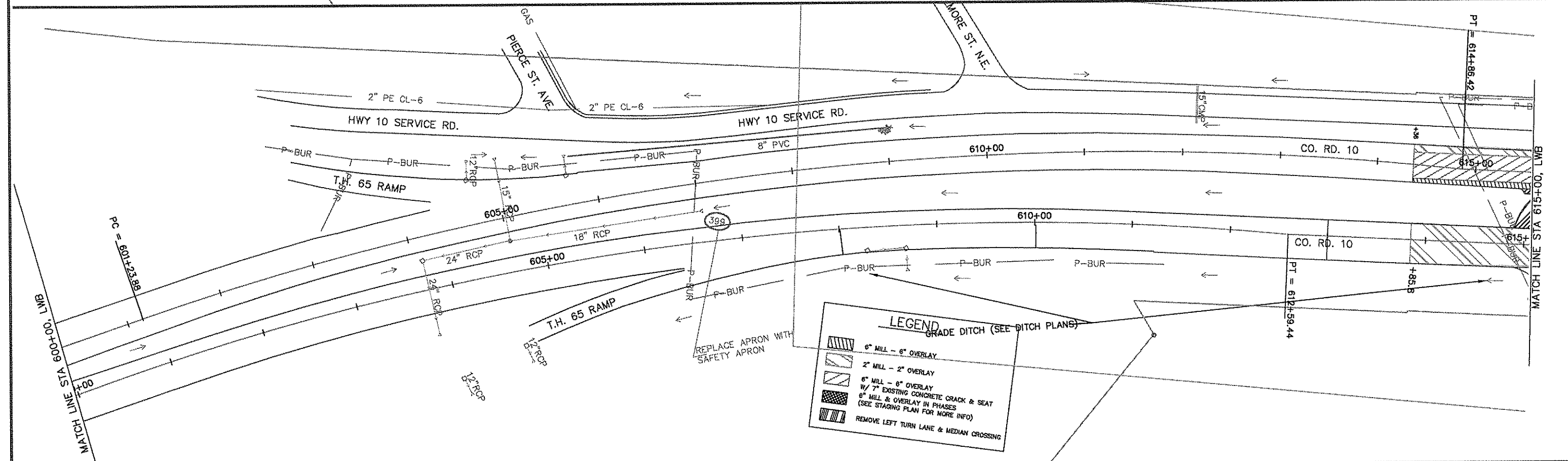
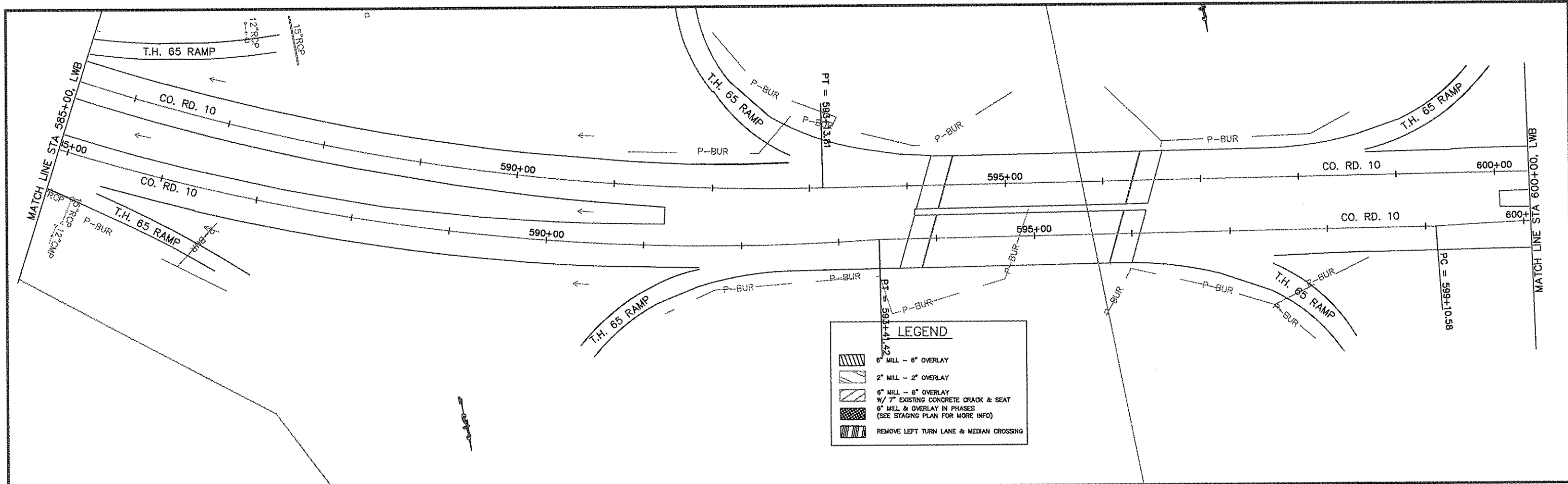
DRAWN BY: MN DATE 06/06/01
 DESIGN BY: MG DATE 06/06/01
 CHECKED BY: LAR DATE 06/08/01



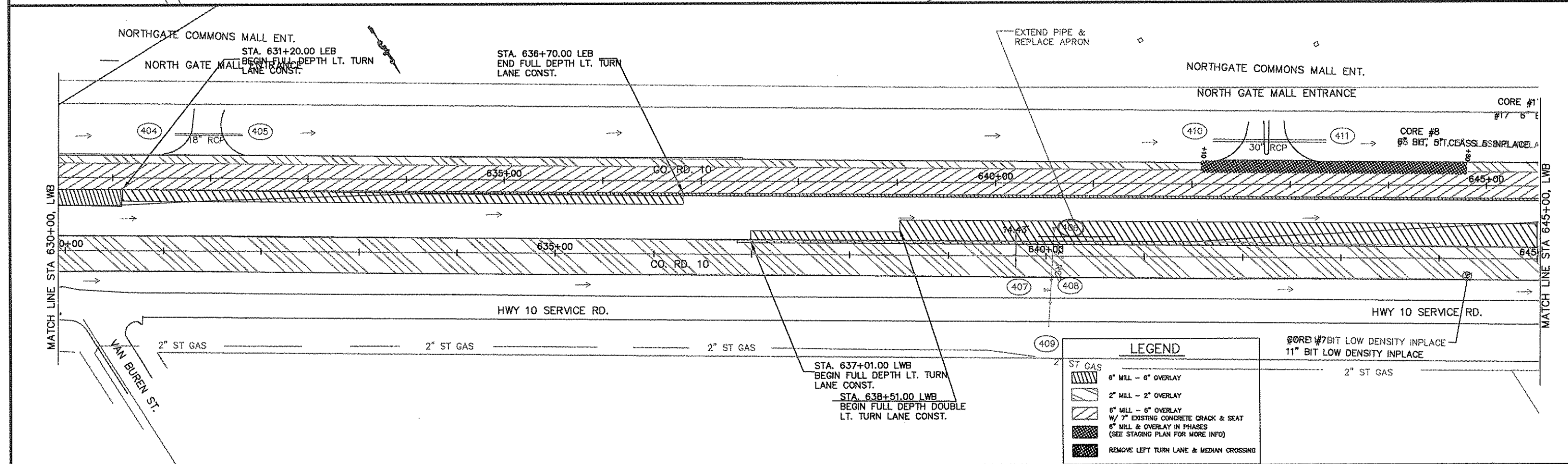
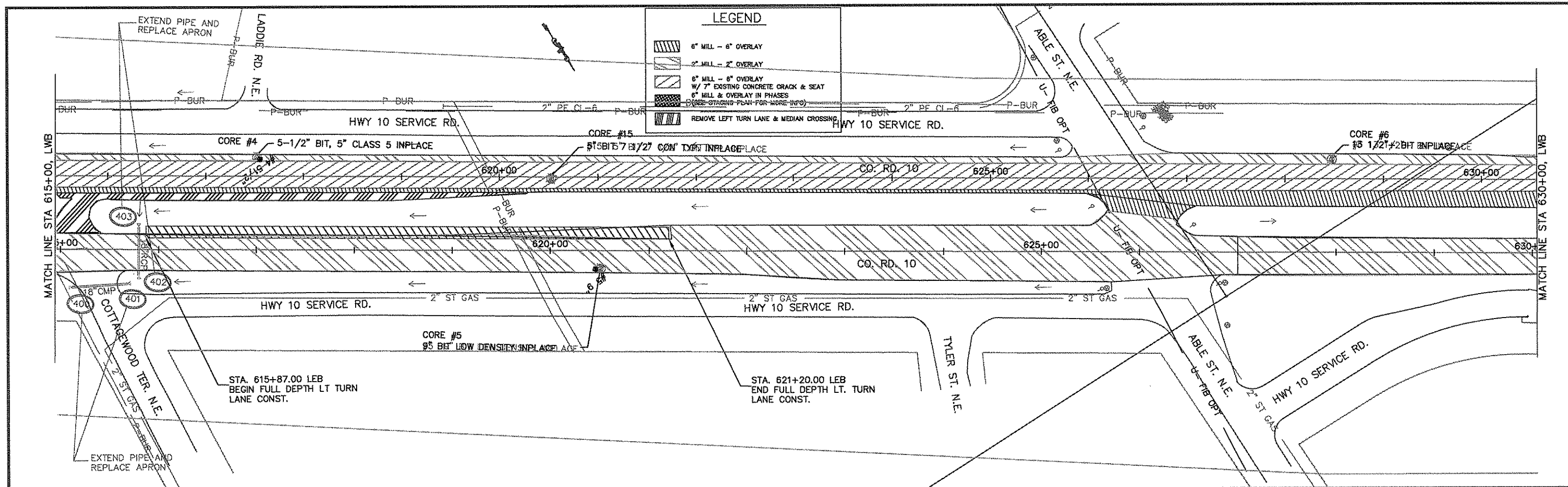
ANOKA COUNTY
 HIGHWAY DEPT.

STATE PROJECT NO.
 STATE AID PROJECT NO. 02-610-12
 STATE AID PROJECT NO. 02-610-13
 COUNTY PROJECT NO. 96-09-00

PLAN & STORM SHEET
 STA 560+00 TO 585+00
 Sheet 18 of 84 Sheets



<table border="1"> <tr> <th>NO.</th> <th>BY</th> <th>CHKD</th> <th>APPR</th> <th>REVISION</th> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </table>	NO.	BY	CHKD	APPR	REVISION											I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA. PRINT NAME: <i>Kristen Olson</i> SIGNATURE: <i>Kristen Olson</i> DATE: <i>7/2/01</i> LICENSE NO. <i>21826</i>	DRAWN BY: <i> </i> MN DATE: <i>06/06/01</i> DESIGN BY: <i> </i> MG DATE: <i>06/06/01</i> CHECKED BY: <i> </i> LAR DATE: <i>06/08/01</i>	ANOKA COUNTY HIGHWAY DEPT.	STATE PROJECT NO. <i> </i> STATE AID PROJECT NO. <i>02-610-12</i> STATE AID PROJECT NO. <i>02-610-13</i> COUNTY PROJECT NO. <i>96-09-00</i>	PLAN & STORM SHEET STA 585+00 TO 615+00 Sheet <i>19</i> of <i>84</i> Sheets
	NO.	BY	CHKD	APPR	REVISION															



NO.	BY	CHKD	APPR	REVISION

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

PRINT NAME: *Bursten Olson*
 SIGNATURE: *Bursten Olson*
 DATE: *7/2/01* LICENSE NO. *26824*

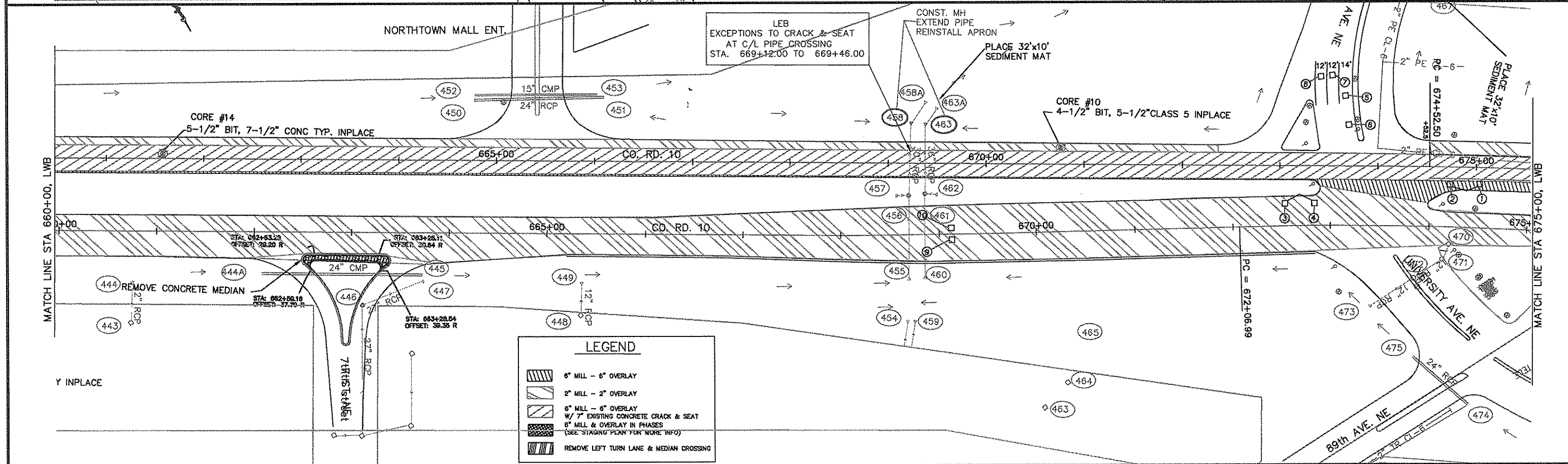
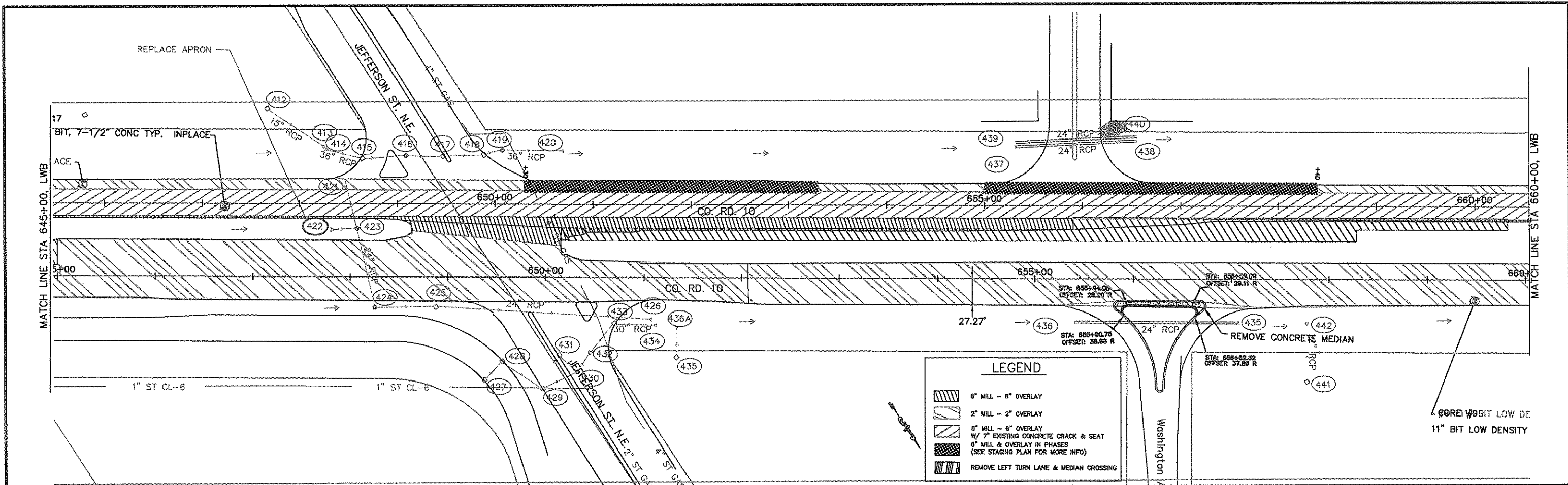
DRAWN BY: *MN* DATE *06/06/01*
 DESIGN BY: *MG* DATE *06/06/01*
 CHECKED BY: *LAR* DATE *06/08/01*



ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO. _____
 STATE AID PROJECT NO. 02-610-12
 STATE AID PROJECT NO. 02-610-13
 COUNTY PROJECT NO. 96-09-00

PLAN & STORM SHEET
 STA 615+00 TO 645+00
 Sheet 20 of 84 Sheets

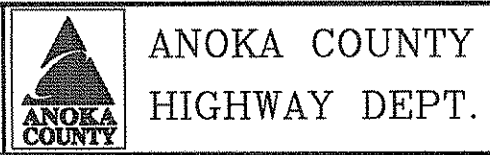


NO.	BY	CHKD	APPR	REVISION

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

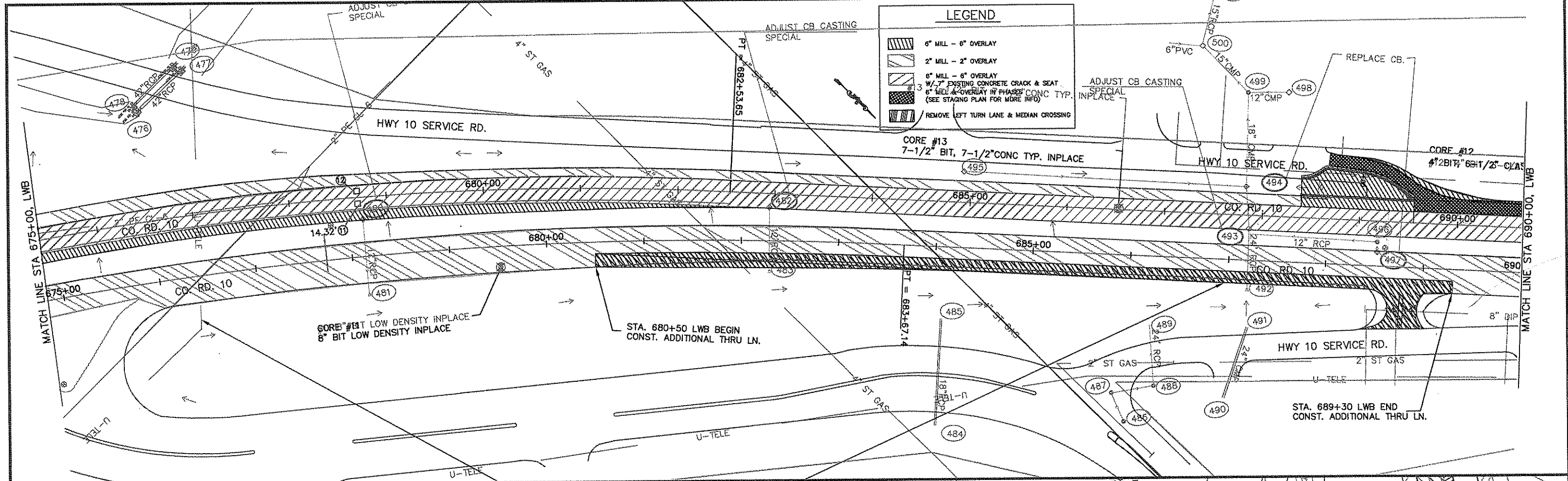
PRINT NAME: *Kristen Olson*
 SIGNATURE: *Kristen Olson*
 DATE: *10/01* LICENSE NO. *26826*

DRAWN BY: *MN* DATE: *08/08/01*
 DESIGN BY: *MG* DATE: *06/06/01*
 CHECKED BY: *LAR* DATE: *06/08/01*



STATE PROJECT NO. _____
 STATE AID PROJECT NO. 02-610-12
 STATE AID PROJECT NO. 02-610-13
 COUNTY PROJECT NO. 96-09-00

PLAN & STORM SHEET
 STA 645+00 TO 675+00
 Sheet 21 of 84 Sheets



LEGEND

- 6\"/>
- 2\"/>
- 6\"/>
- 6\"/>
- REMOVE LEFT TURN LANE & MEDIAN CROSSING

CURVE TABLE

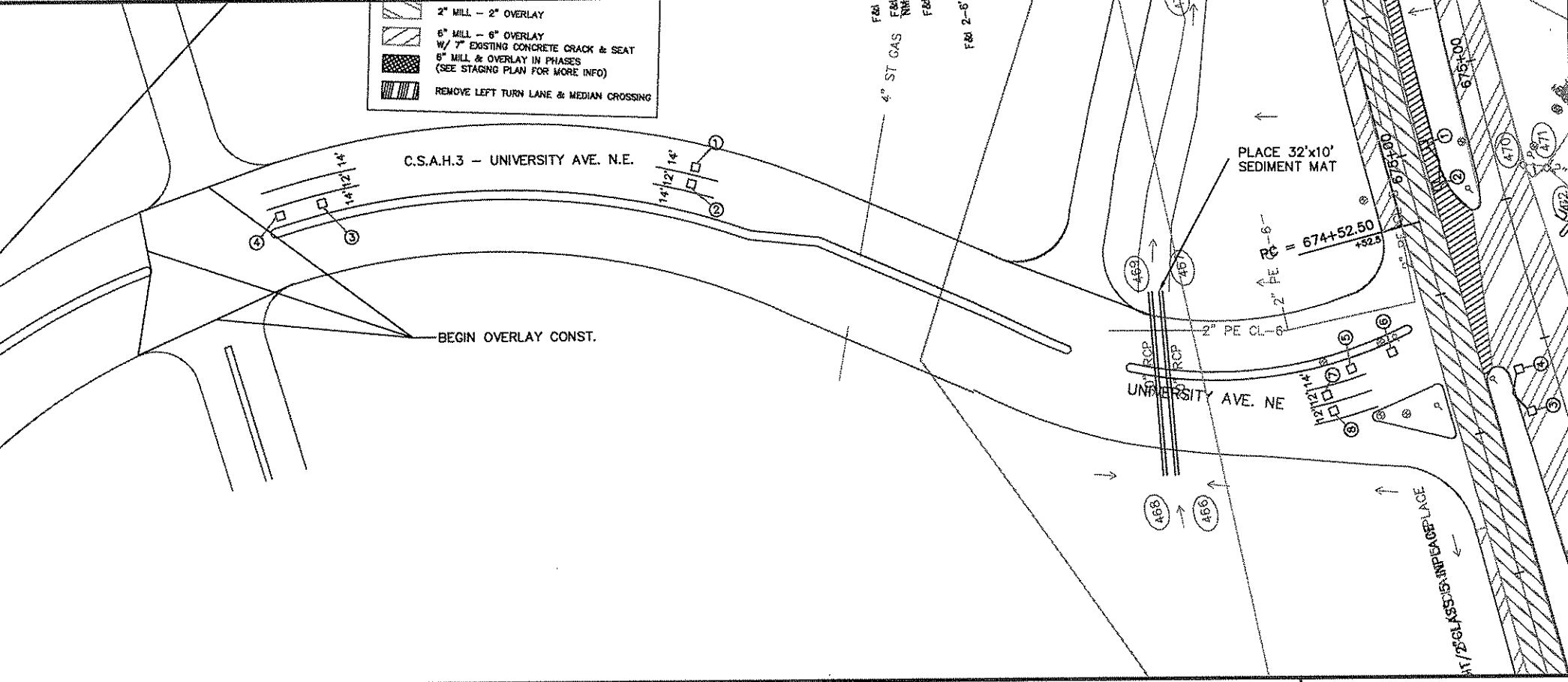
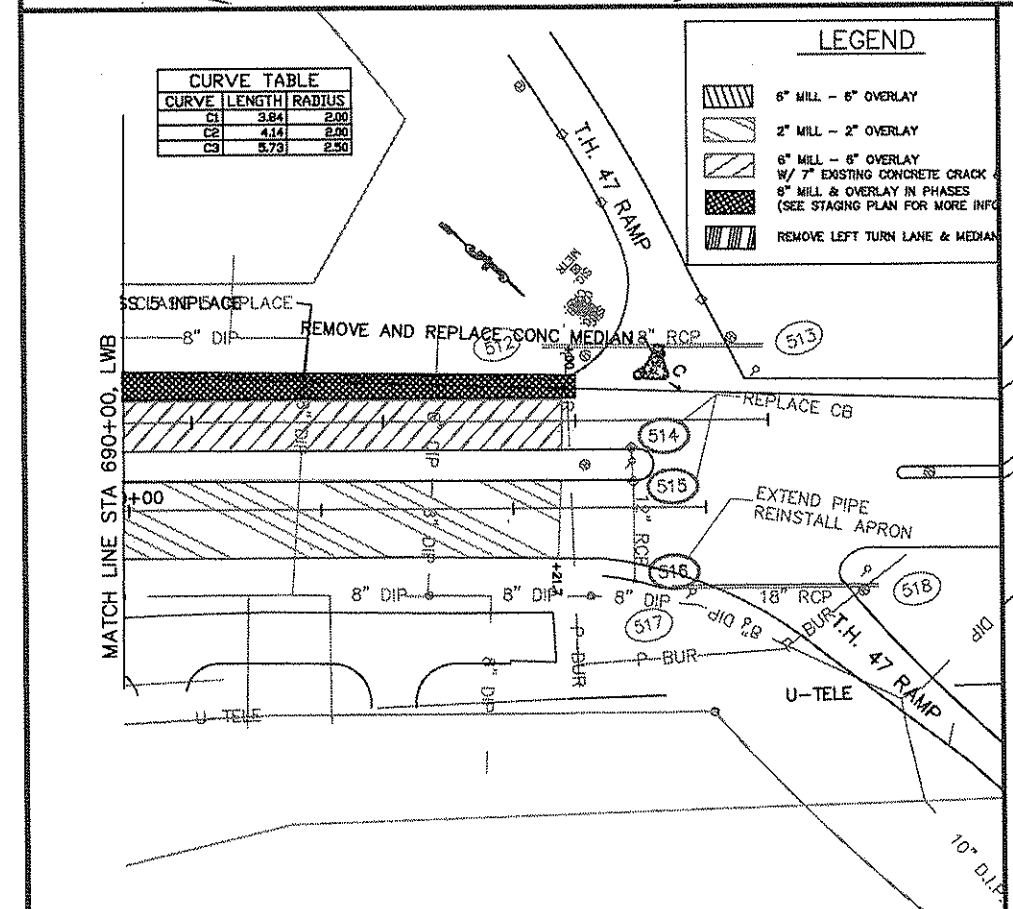
CURVE	LENGTH	RADIUS
C1	3.84	2.00
C2	4.14	2.00
C3	5.73	2.50

LEGEND

- 6\"/>
- 2\"/>
- 6\"/>
- 6\"/>
- REMOVE LEFT TURN LANE & MEDIAN

LEGEND

- 2\"/>
- 6\"/>
- 6\"/>
- REMOVE LEFT TURN LANE & MEDIAN CROSSING



NO	DATE	BY	CHKD	APPR	REVISION

NAME: S:\SDS\PROJ\98-09-00\BASE\00261012.DWG M.N. (07-03-01)

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: *Ernest Olson*

SIGNATURE: *Ernest Olson*

DATE: *12/01* LICENSE NO: *26826*

DRAWN BY: *MN* DATE: *08/08/01*

DESIGN BY: *MG* DATE: *08/08/01*

CHECKED BY: *LAR* DATE: *06/08/01*



ANOKA COUNTY
HIGHWAY DEPT.

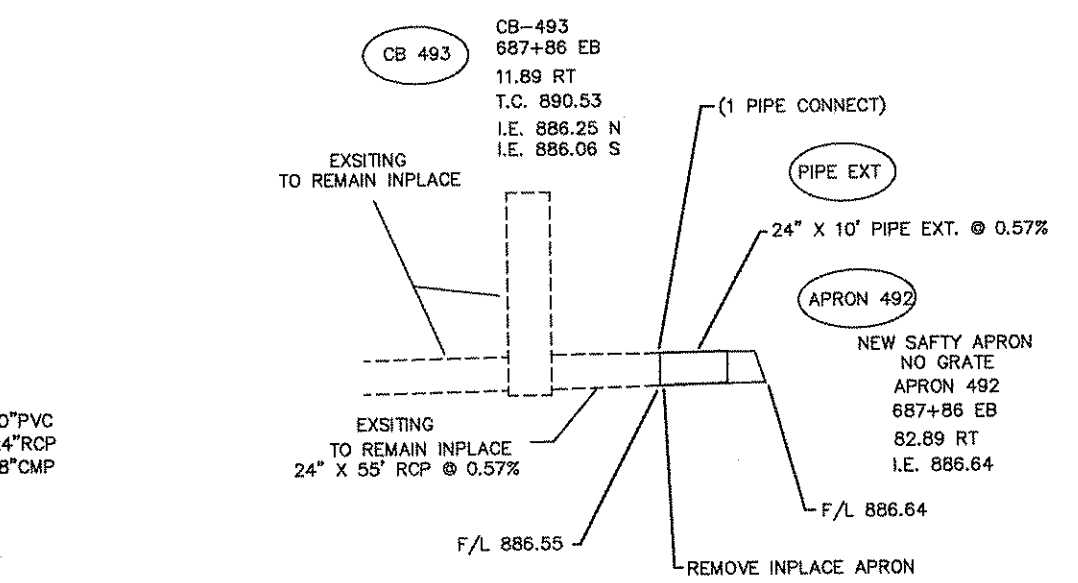
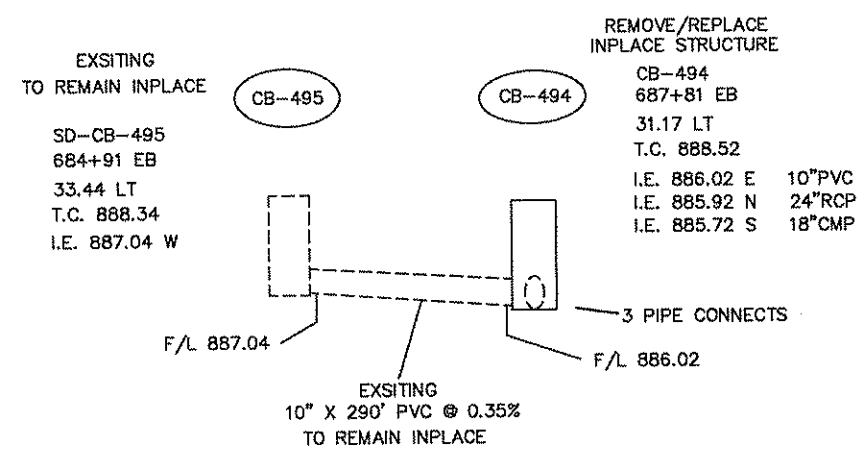
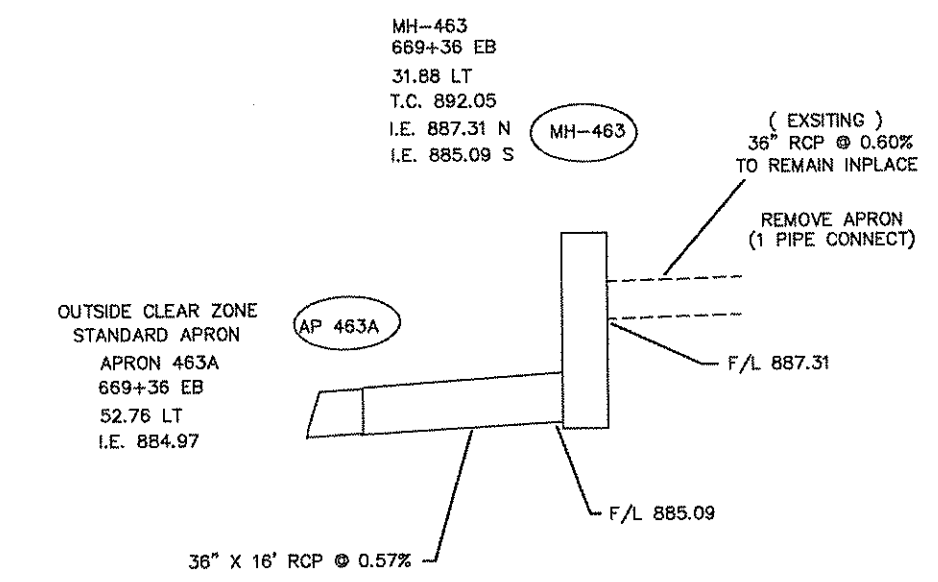
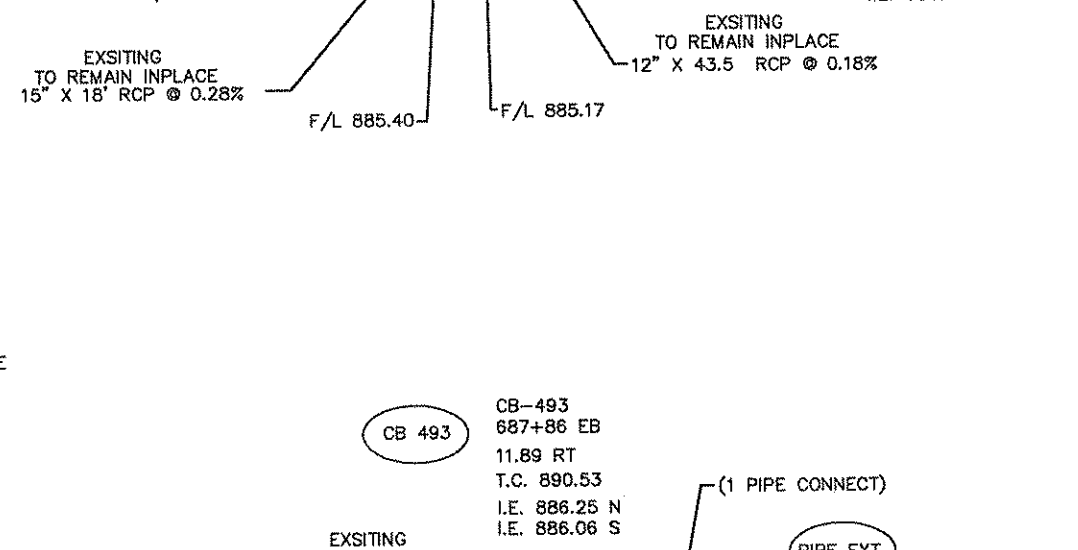
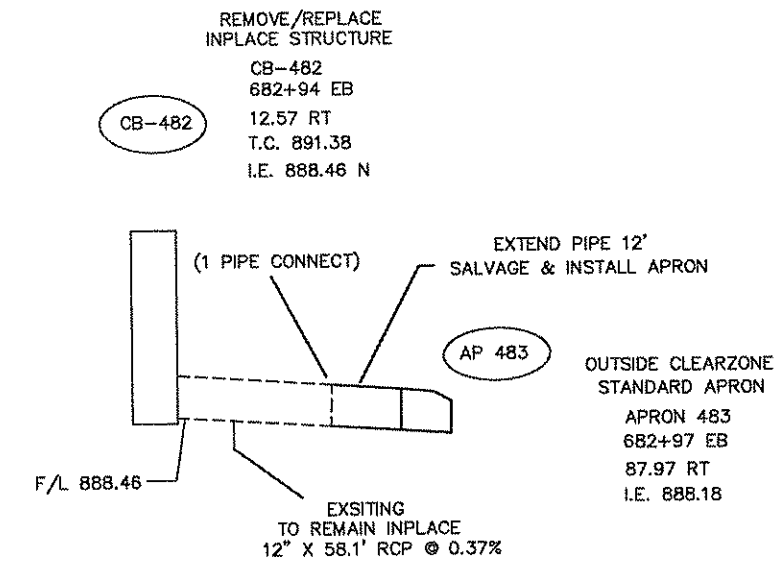
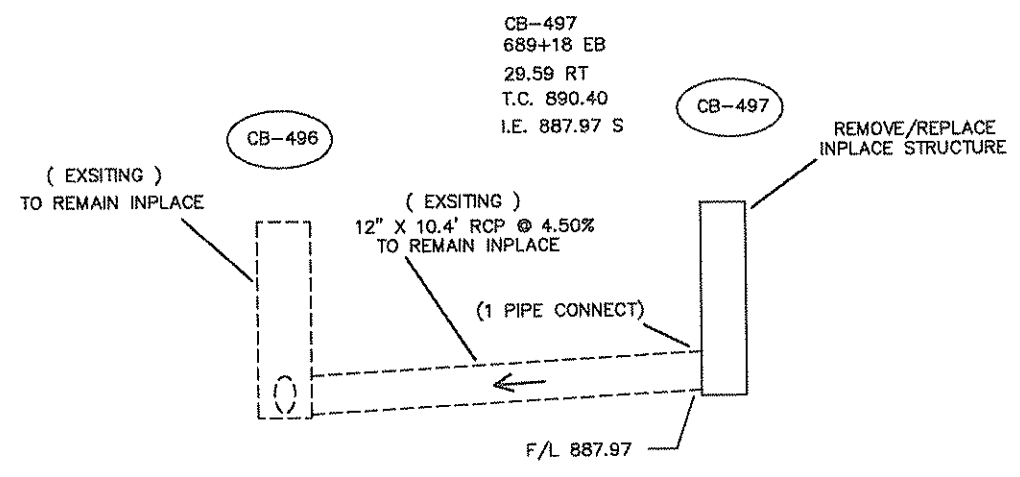
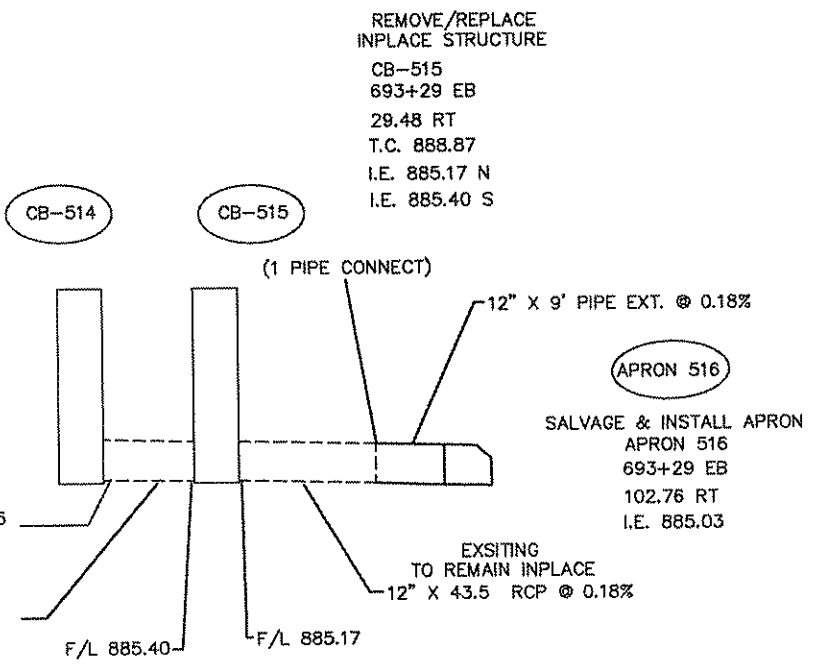
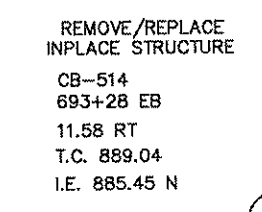
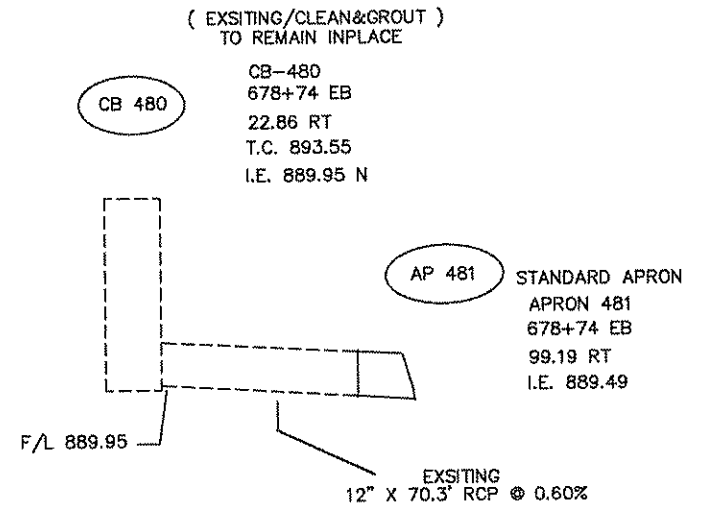
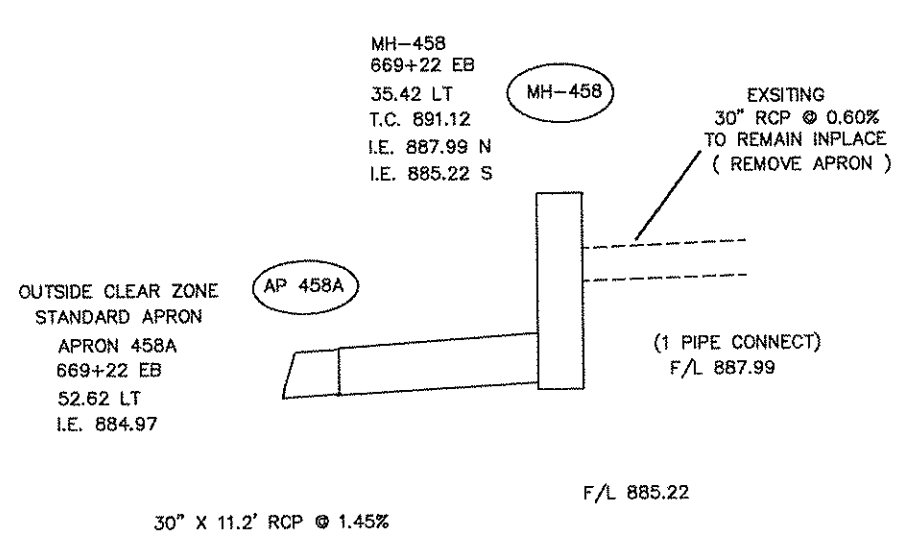
STATE PROJECT NO. _____

STATE AID PROJECT NO. *02-610-12*

STATE AID PROJECT NO. *02-610-13*

COUNTY PROJECT NO. *96-09-00*

PLAN & STORM SHEET
STA 675+00 TO 710+00
& UNIV. AVE. N.E.-C.S.A.H.3
Sheet *22* of *84* Sheets



NO	DATE	BY	CKD	APPR	REVISION

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

PRINT NAME: Kristen Olson

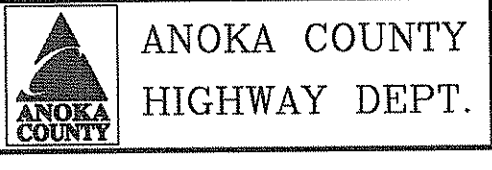
SIGNATURE: [Signature]

DATE: 7/10/01 REG. NO. 26826

DRAWN BY: MAN DATE: 05/30/01

DESIGN BY: MG DATE: 05/31/01

CHECKED BY: LAR DATE: 06/06/01



STATE PROJECT NO. _____

STATE AID PROJECT NO. 02-610-12

STATE AID PROJECT NO. 02-610-13

COUNTY PROJECT NO. 96-09-00

STORM SEWER LEADS

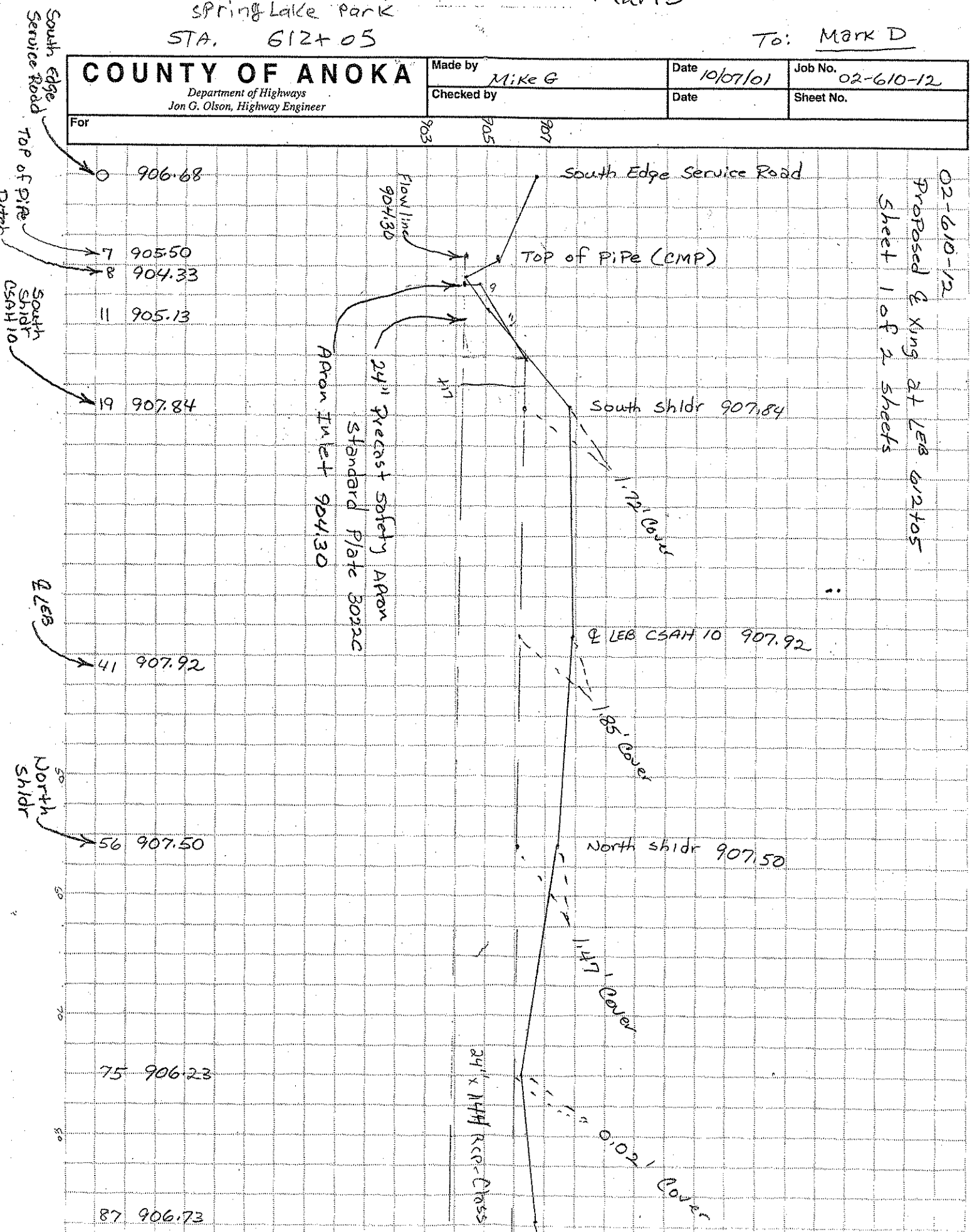
Sheet 23 of 64 Sheets

X-Road culvert put in
 by request of city of
 Spring Lake Park
 STA. 612+05

08/22/2005
 Mario

To: Mark D

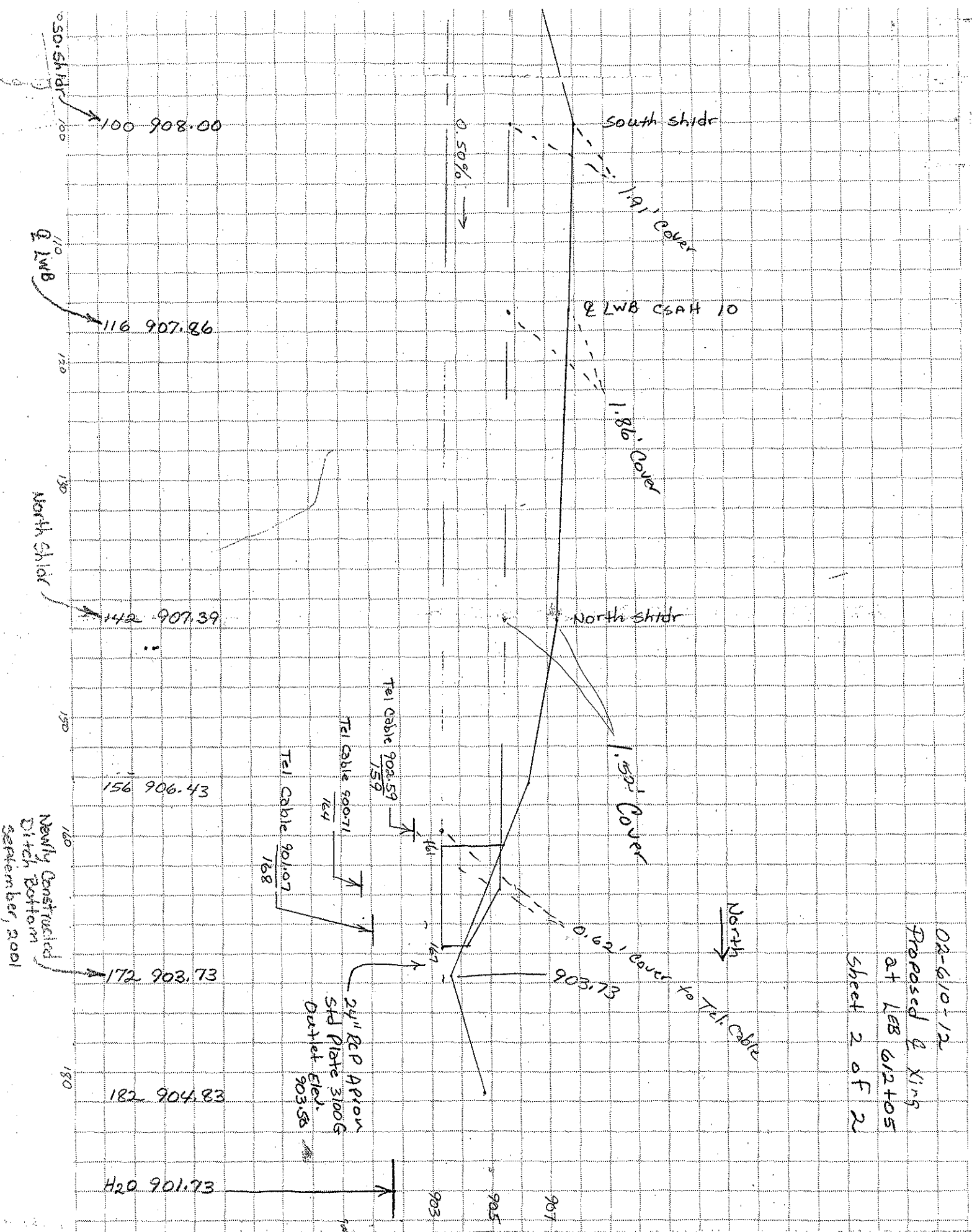
COUNTY OF ANOKA Department of Highways Jon G. Olson, Highway Engineer	Made by	Date	Job No.
	Checked by	Date	Sheet No.



02-610-12
 Proposed 2' xing at LE8 612+05
 Sheet 1 of 2 sheets

South Edge Service Road
 Top of pipe
 Ditch
 South Shldr CSAH 10
 2 LE8
 North Shldr

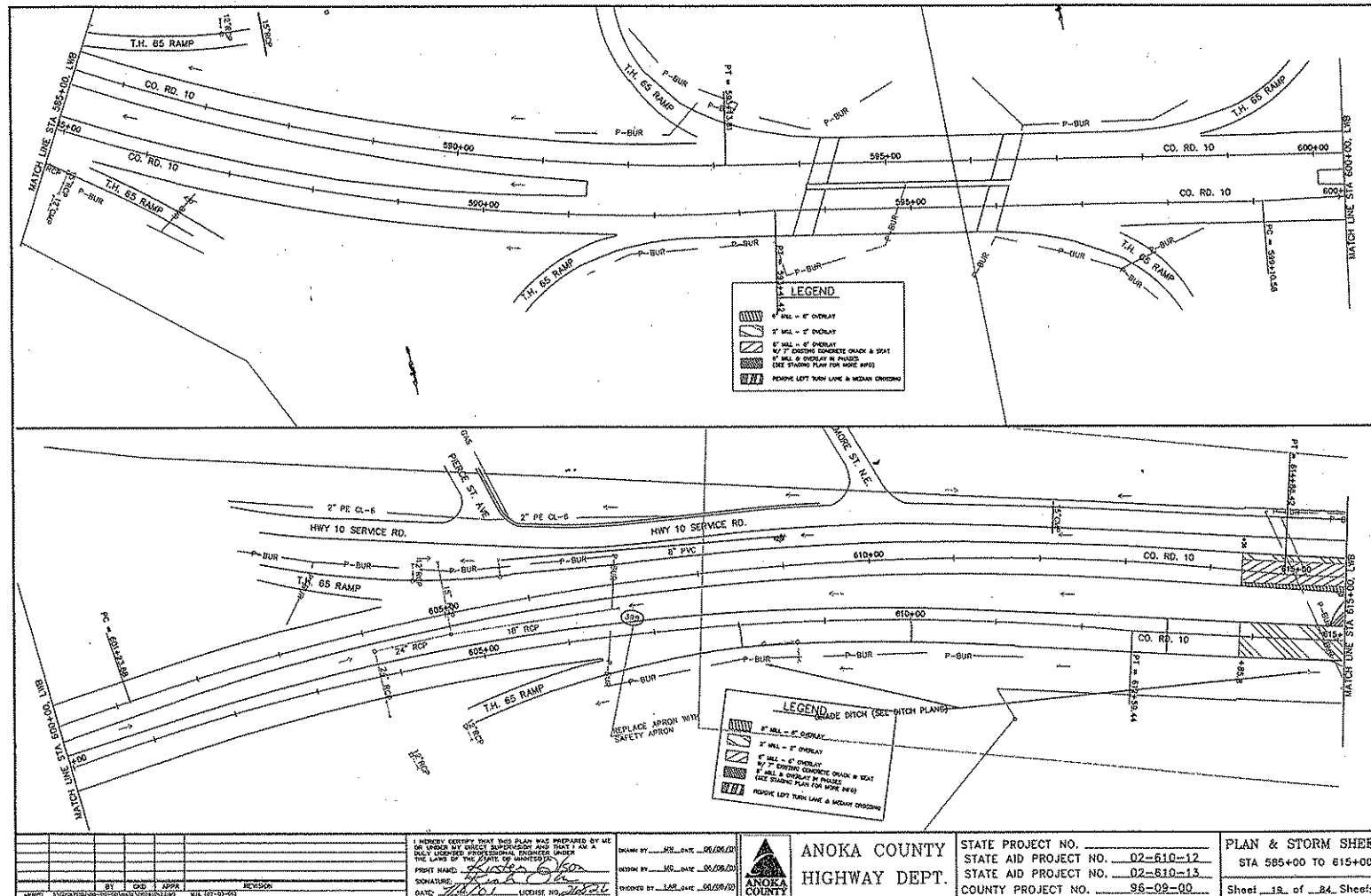
903 905 907
 South Edge Service Road
 TOP of PIPE (CMP)
 Flow line 904.30
 24" Precast Safety Apron
 Standard Plate 30°
 Apron Inlet 904.30
 24" x 14" R.C. Cross
 18" Cover
 14" Cover
 0.02%
 South shldr 907.84
 2" LE8 CSAH 10 907.92
 North shldr 907.50
 906.68
 905.50
 904.33
 905.13
 907.84
 907.92
 907.50
 906.23
 906.73



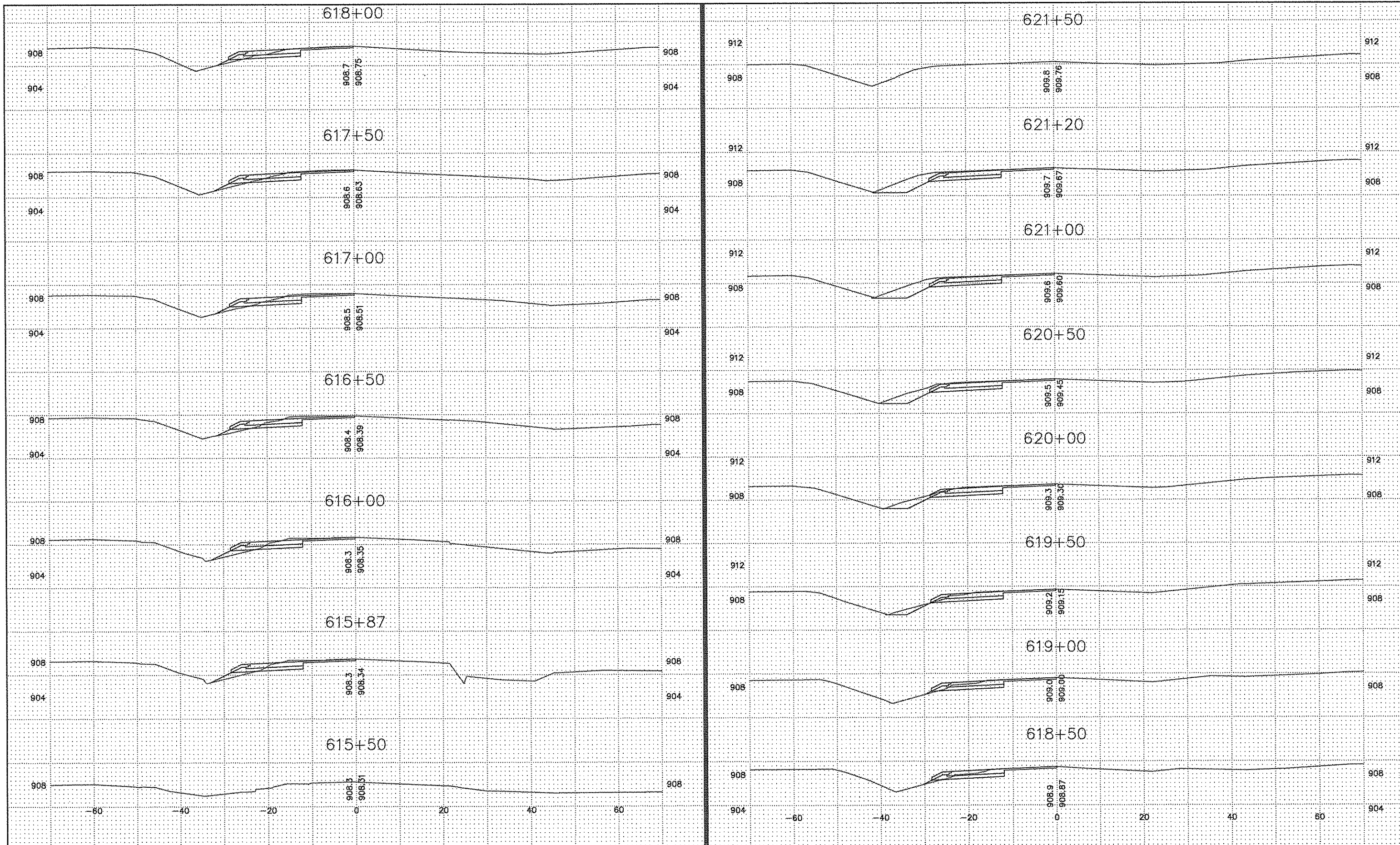
02-6/10-12
 Proposed 2 Xing
 at LWB 6/12/05
 Sheet 2 of 2

Newly Constructed
 Ditch Bottom
 September, 2001

Post-it® Fax Note	7671	Date	# of pages ▶ 3
To Mark Statz	From Mario Nayl	Co./Dept.	Co. ANOKA COUNTY
Phone # 651-604-4709	Phone # 763-862-4241	Fax # 651-636-1311	Fax #



I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY CLOSE SUPERVISION AND THAT I AM A LICENSED PROFESSIONAL ENGINEER IN THE STATE OF MINNESOTA. DATE: 7/1/01 LICENSE NO. 26221	DRAWN BY: [Signature] DATE: 06/28/00 CHECKED BY: [Signature] DATE: 06/28/00 DESIGNED BY: [Signature] DATE: 06/28/00	ANOKA COUNTY HIGHWAY DEPT.	STATE PROJECT NO. _____ STATE AID PROJECT NO. 02-610-12 STATE AID PROJECT NO. 02-610-13 COUNTY PROJECT NO. 96-08-00	PLAN & STORM SHEET STA 585+00 TO 615+00 Sheet 18 of 84 Sheets
--	---	---	--	--



NO	DATE	BY	CKD	APPR	REVISION

NAME: S:\SOSK\PROJ\96-09-00\X-SECTION.DWG M.N. (08-06-01)

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: *Kirsten Olson*
 SIGNATURE: *[Signature]*
 DATE: *7/10/01* REG. NO. *26822*

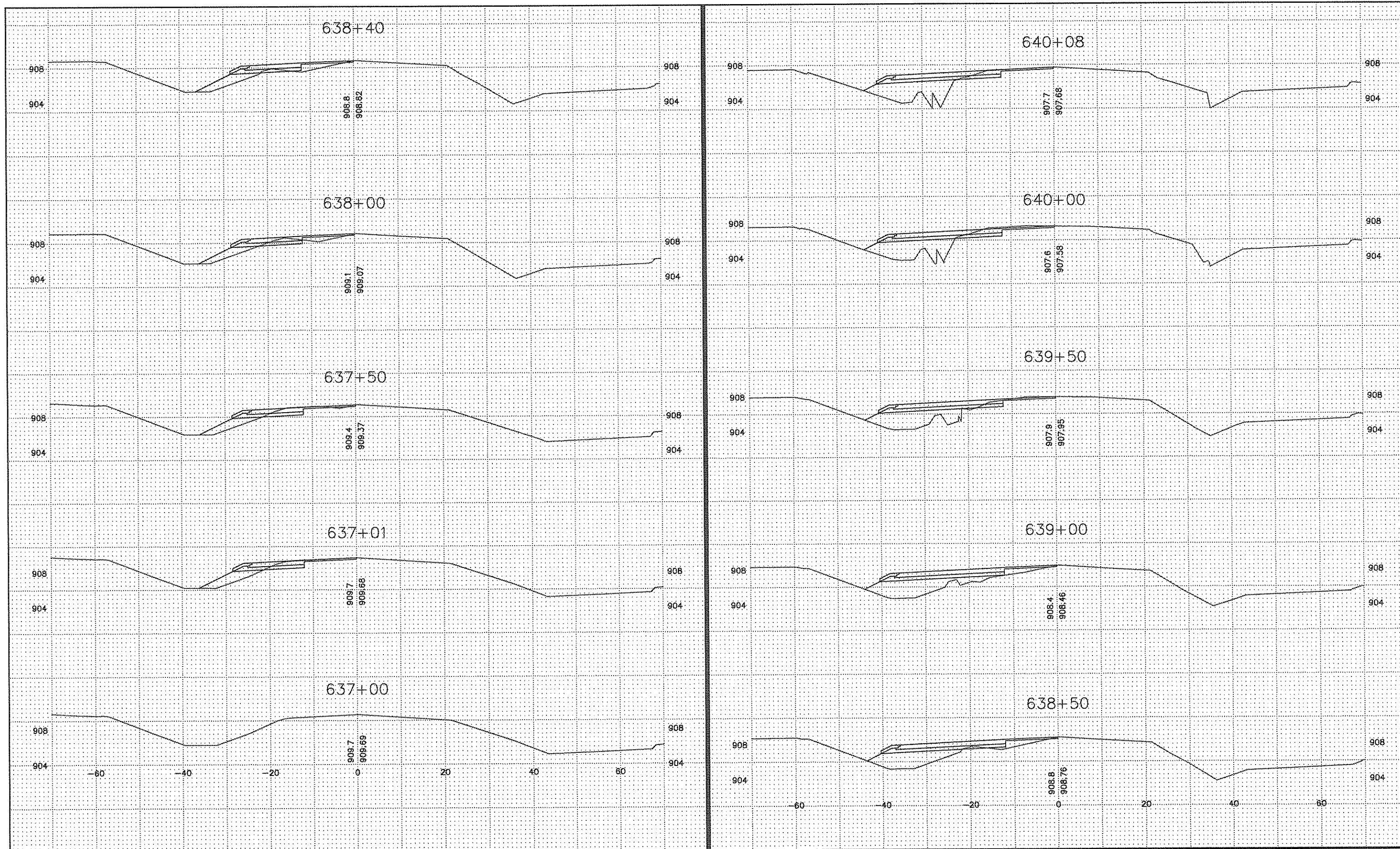
DRAWN BY: MN DATE 00/00/00
 DESIGN BY: LAR DATE 00/00/00
 CHECKED BY: LAR DATE 00/00/00



ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO.
 STATE AID PROJECT NO. 02-610-12
 STATE AID PROJECT NO. 02-610-13
 COUNTY PROJECT NO. 96-09-00

CROSS SECTIONS
LWB
 STA 615+50 TO 621+50
 Sheet 24 of 84 Sheets



NO	DATE	BY	CHKD	APPR	REVISION

NAME: S:\BOSKPRO\199-09-00\X-SECTION.DWG M.N. (08-08-01)

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: Kristen Olson

SIGNATURE: Kristen Olson

DATE: 7/10/01 REG. NO. 20826

DRAWN BY: MN. DATE / /

DESIGN BY: LAR DATE / /

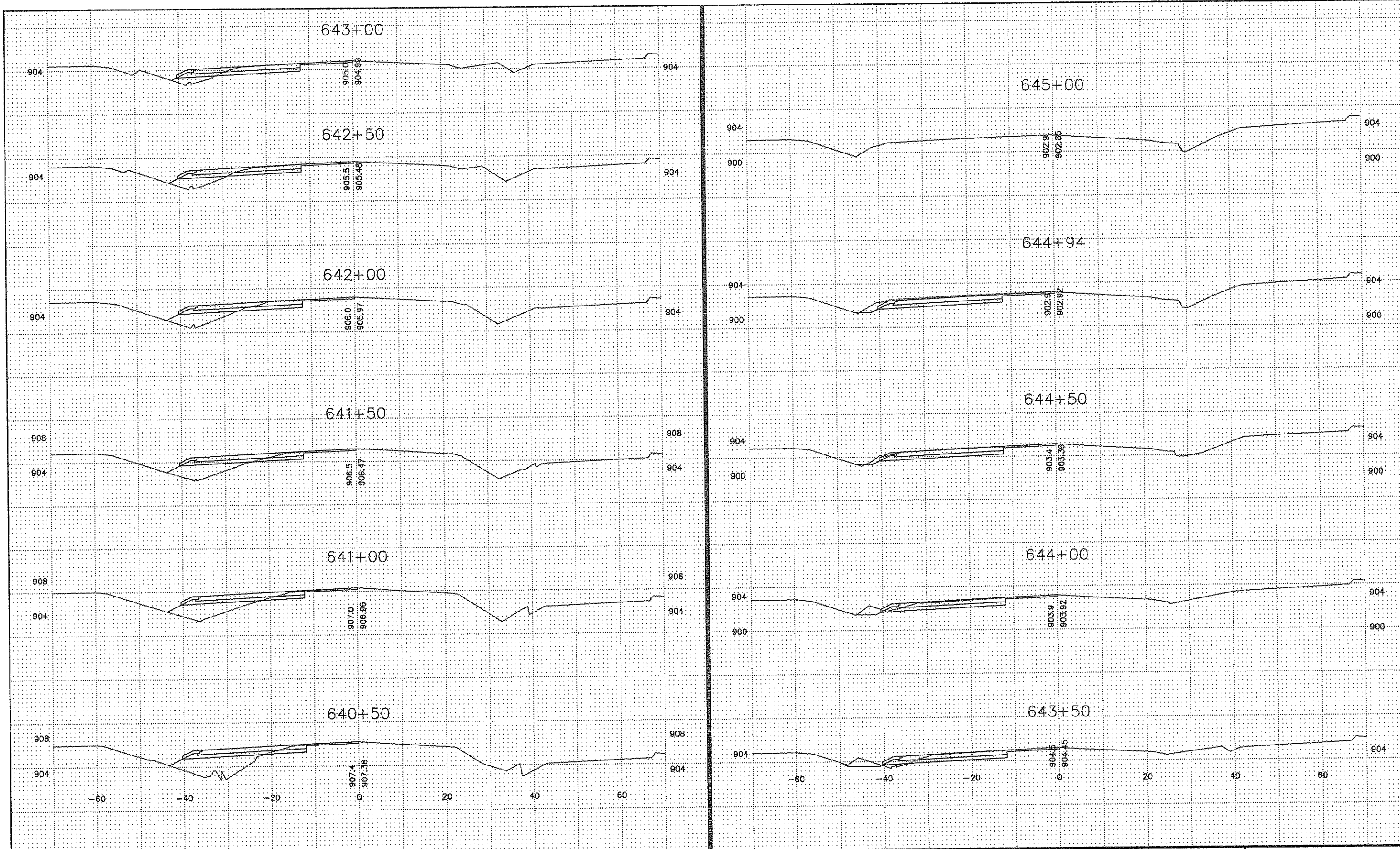
CHECKED BY: LAR DATE / /



ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO.
 STATE AID PROJECT NO. 02-610-12
 STATE AID PROJECT NO. 02-610-13
 COUNTY PROJECT NO. 96-09-00

CROSS SECTIONS
LWB
 STA 637+00 TO 640+08
 Sheet 25 of 84 Sheets



NO	DATE	BY	CHKD	APPR	REVISION

NAME: S:\SDSKPROJ\96-08-00\X-SECTION.DWG M.N. (08-05-01)

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: *Kristen Olson*

SIGNATURE: *Kristen Olson*

DATE: *7/10/01* REG. NO. *26826*

DRAWN BY: MN DATE 00/00/00

DESIGN BY: LAR DATE 00/00/00

CHECKED BY: LAR DATE 00/00/00



ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO.

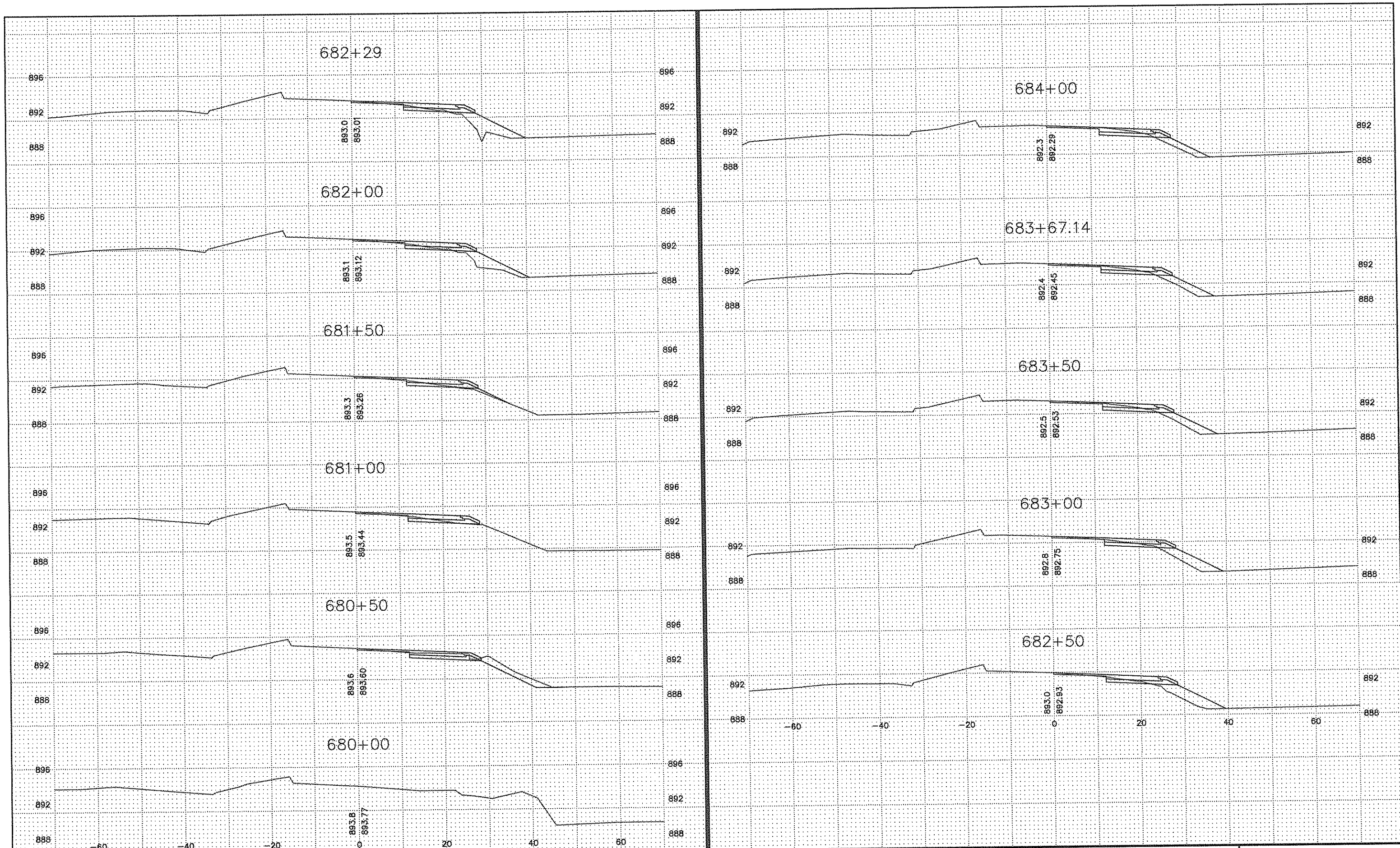
STATE AID PROJECT NO. 02-610-12

STATE AID PROJECT NO. 02-610-13

COUNTY PROJECT NO. 96-09-00

CROSS SECTIONS
LWB
STA 640+50 TO 645+00

Sheet 26 of 84 Sheets



NO	DATE	BY	CHKD	APPR	REVISION

NAME: 5:\SDSK\PROJ\96-09-00\X-SECTION.DWG M.N. (08-05-01)

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: X

SIGNATURE: X

DATE: _____ REG. NO. _____

DRAWN BY: MIN DATE 00/00/00

DESIGN BY: LAR DATE 00/00/00

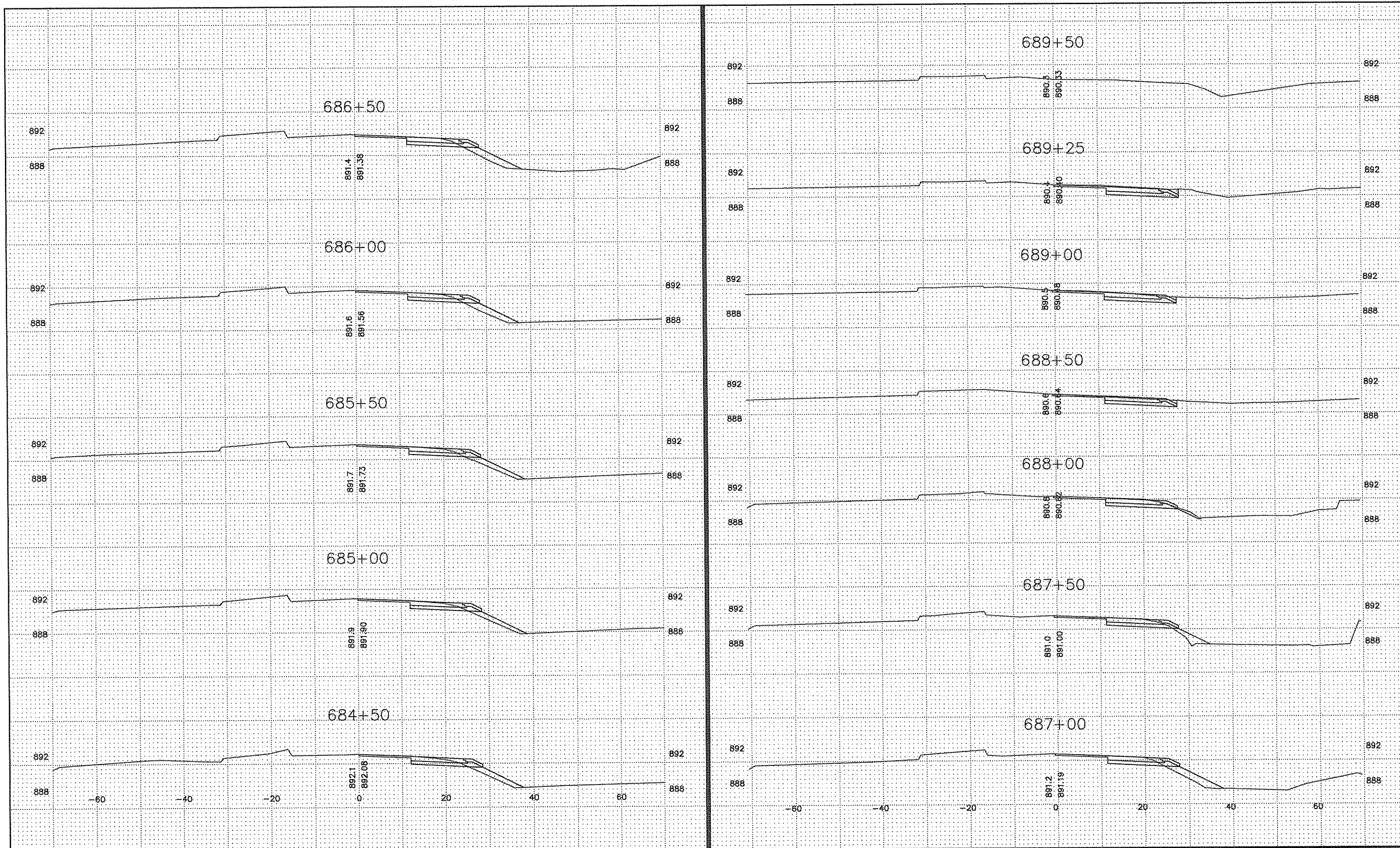
CHECKED BY: LAR DATE 00/00/00



ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO. _____
 STATE AID PROJECT NO. 02-610-12
 STATE AID PROJECT NO. 02-610-13
 COUNTY PROJECT NO. 96-09-00

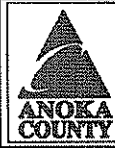
CROSS SECTIONS
 LWB
 STA 680+00 TO 684+00
 Sheet 27 of 84 Sheets



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: _____
 SIGNATURE: _____
 DATE: _____ REG. NO. _____

DRAWN BY _____ MN. DATE 00/00/00
 DESIGN BY LAR DATE 00/00/00
 CHECKED BY LAR DATE 00/00/00



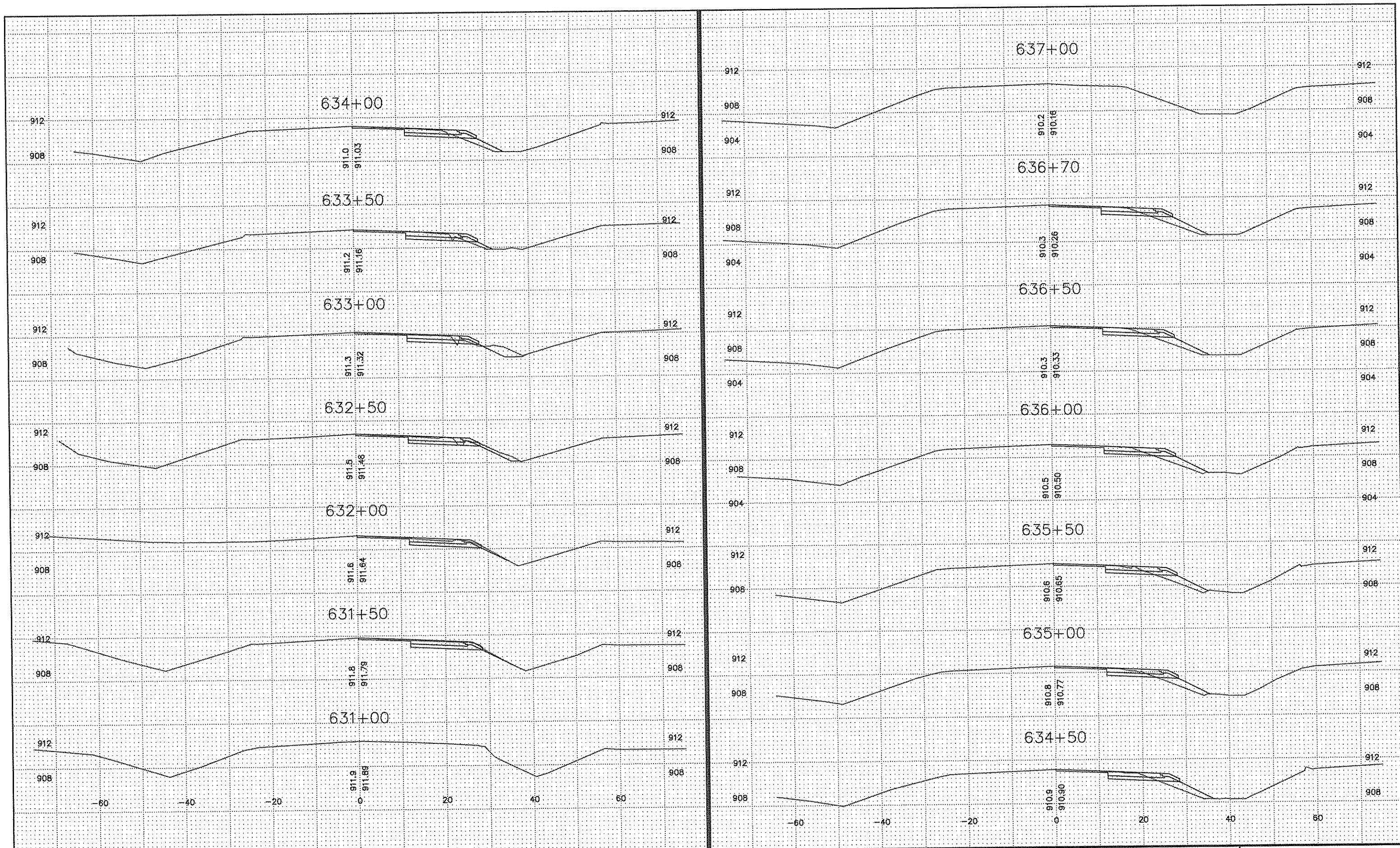
ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO. _____
 STATE AID PROJECT NO. 02-610-12
 STATE AID PROJECT NO. 02-610-13
 COUNTY PROJECT NO. 96-09-00

CROSS SECTIONS
LWB
 STA 684+50 TO 689+50
 Sheet 28 of 84 Sheets

NO	DATE	BY	CKD	APPR	REVISION

NAME: S:\SDSR\PROJ\96-09-00\X-SECTION.DWG M.N. (06-06-01)



NO	DATE	BY	CHKD	APPR	REVISION

NAME: S:\SDSKPRO\06-08-00\X-SECTION.DWG M.N. (08-05-01)

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: _____
 SIGNATURE: _____
 DATE: _____ REG. NO. _____

DRAWN BY: MN DATE 00/00/00
 DESIGN BY: LAR DATE 00/00/00
 CHECKED BY: LAR DATE 00/00/00

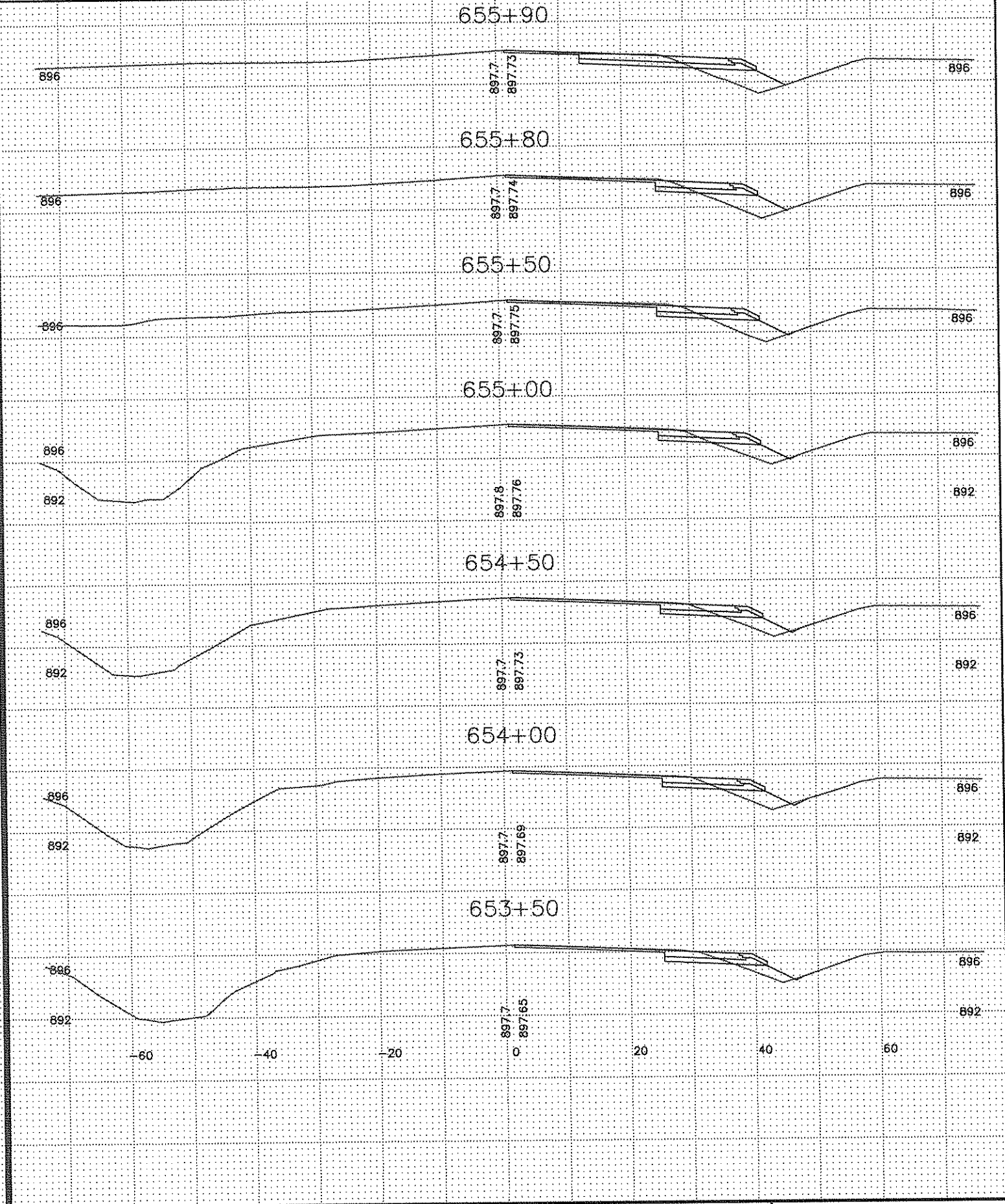
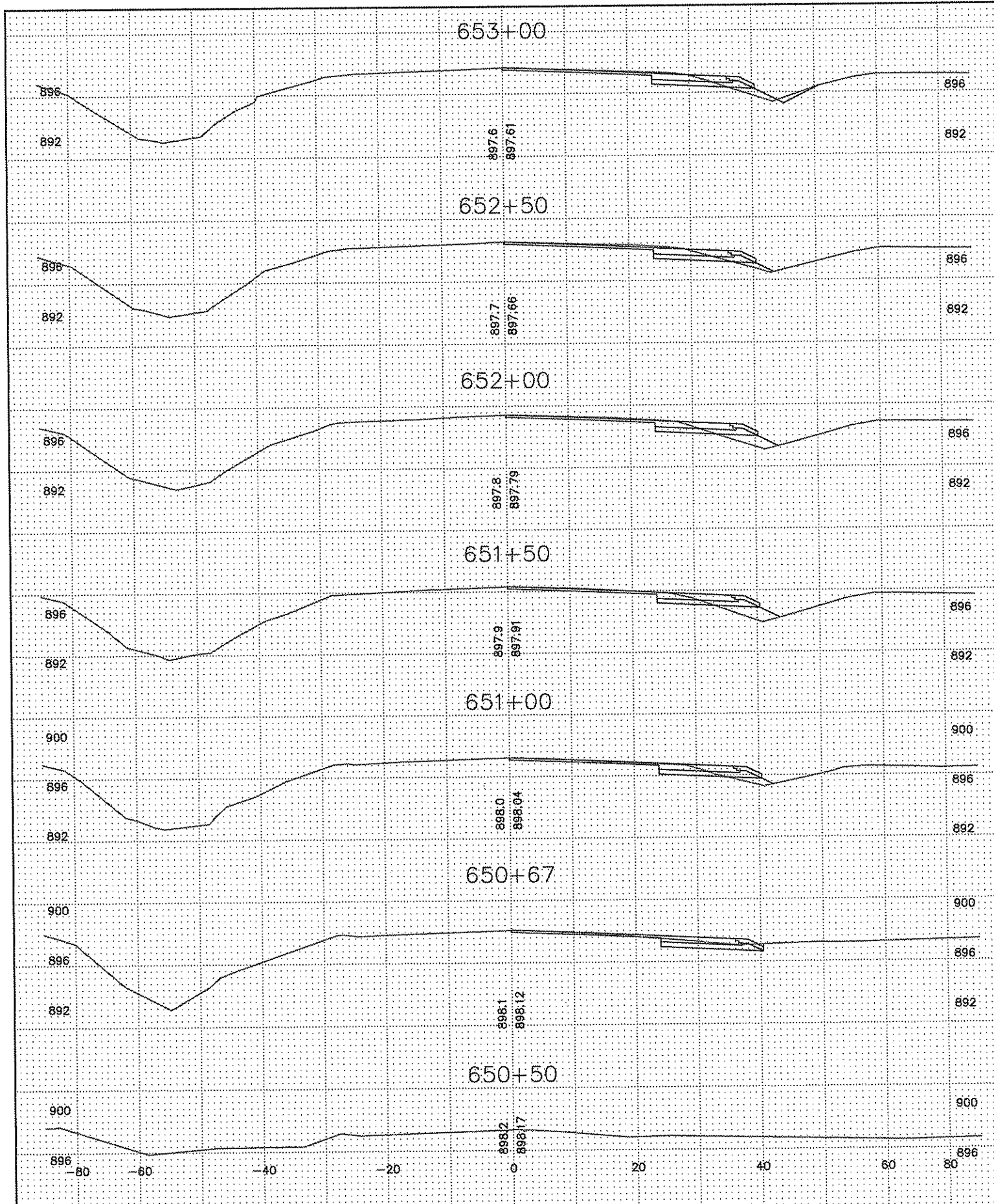


**ANOKA COUNTY
HIGHWAY DEPT.**

STATE PROJECT NO. _____
 STATE AID PROJECT NO. 02-610-12
 STATE AID PROJECT NO. 02-610-13
 COUNTY PROJECT NO. 96-09-00

**CROSS SECTIONS
LEB
STA 631+00 TO 637+00**

Sheet 29 of 84 Sheets



NO	DATE	BY	CHKD	APPR	REVISION

NAME: S:\SDS\PROJ\96-09-00\X-SECTION.DWG M.N. (08-05-01)

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: _____
SIGNATURE: _____
DATE: _____ REG. NO. _____

DRAWN BY: _____ MN DATE: 00/00/00
DESIGN BY: _____ LAR DATE: 00/00/00
CHECKED BY: _____ LAR DATE: 00/00/00

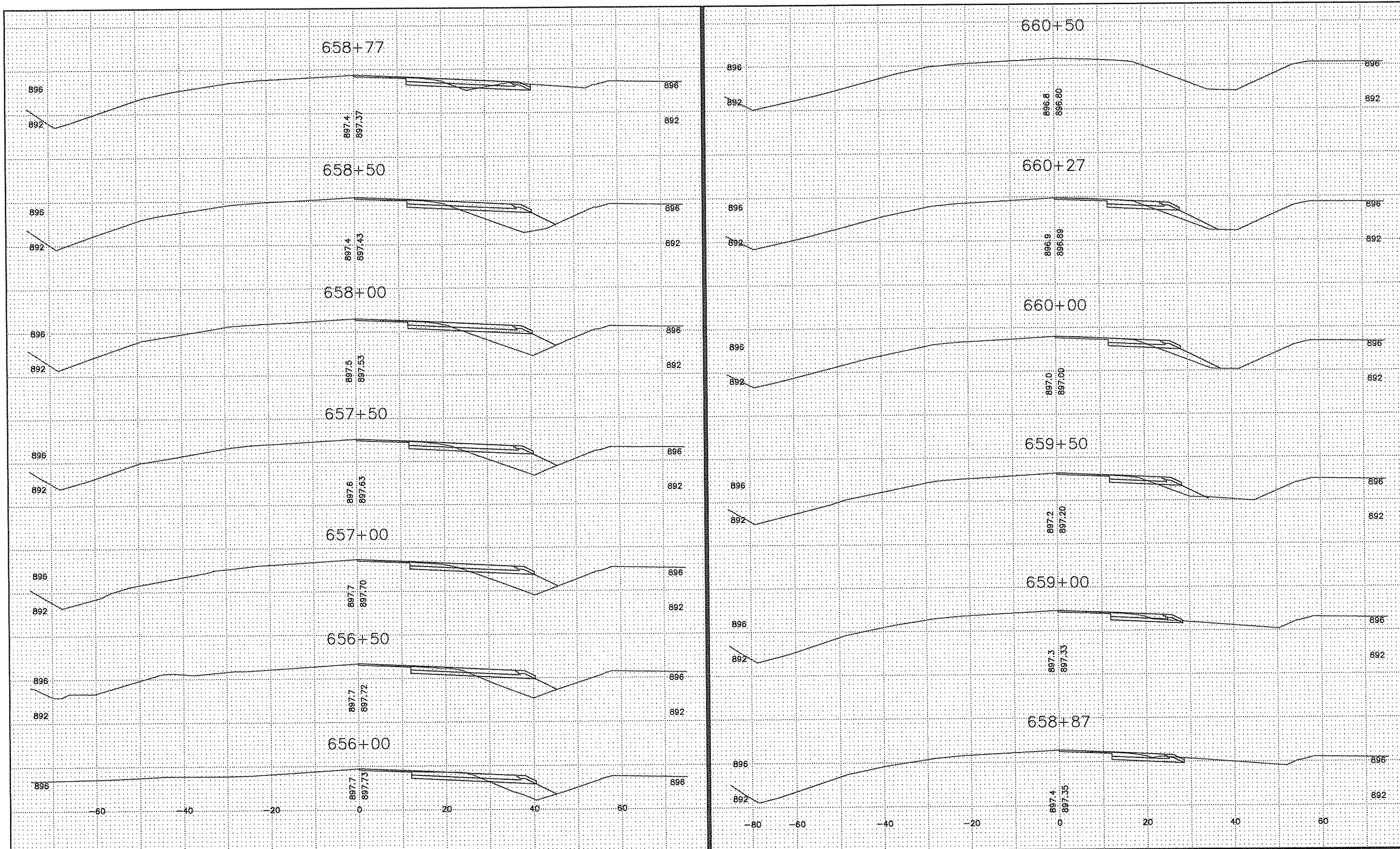


**ANOKA COUNTY
HIGHWAY DEPT.**

STATE PROJECT NO. _____
STATE AID PROJECT NO. 02-610-12
STATE AID PROJECT NO. 02-610-13
COUNTY PROJECT NO. 96-09-00

**CROSS SECTIONS
LEB
STA 650+50 TO 655+90**

Sheet 30 of 84 Sheets



NO	DATE	BY	CHKD	APPR	REVISION

NAME: S:\SDSR\PROJ\05-08-00\X-SECTION.DWG M.N. (08-06-01)

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: _____
 SIGNATURE: _____
 DATE: _____ REG. NO. _____

DRAWN BY: MN DATE 00/00/00
 DESIGN BY: LAR DATE 00/00/00
 CHECKED BY: LAR DATE 00/00/00

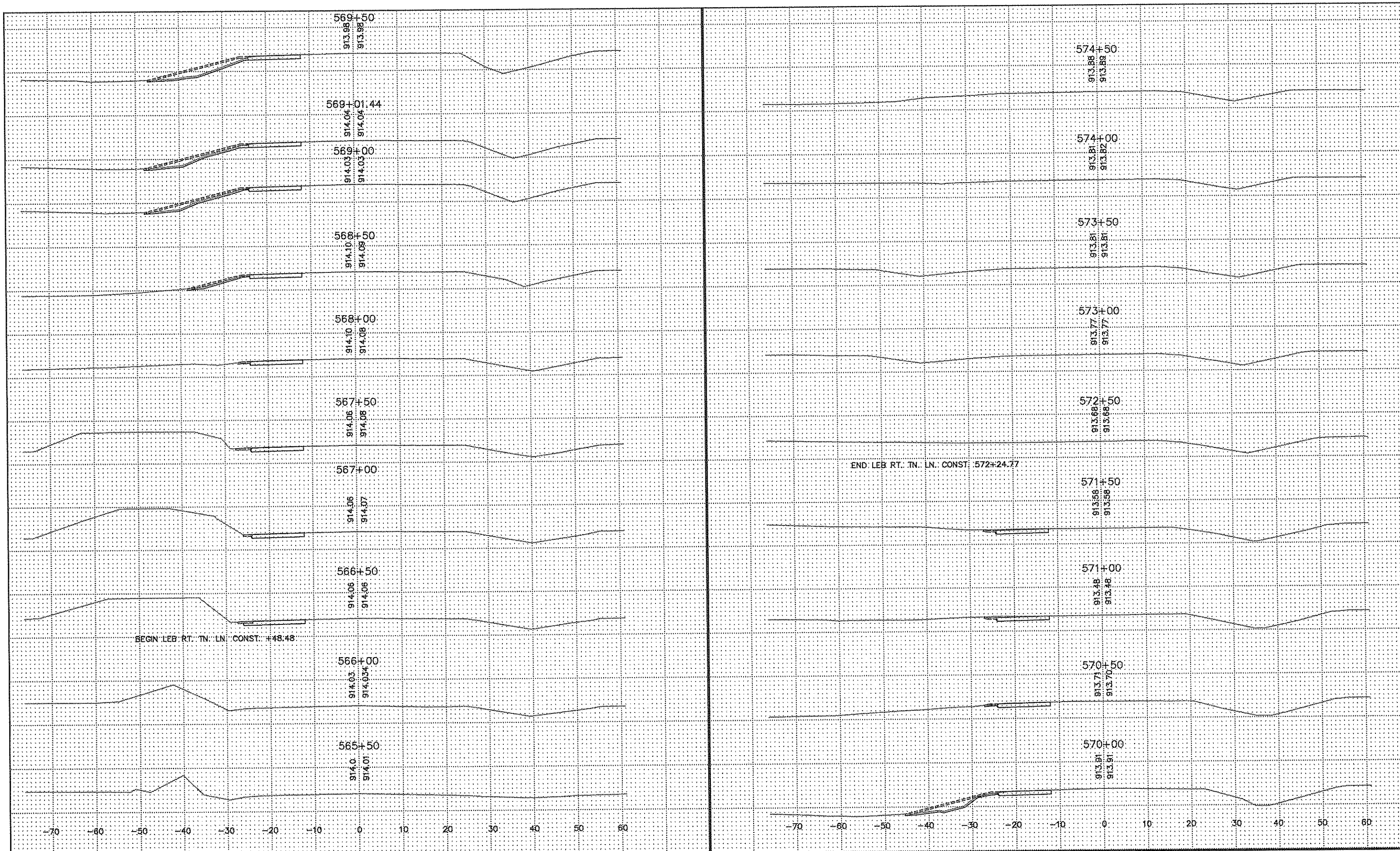


**ANOKA COUNTY
 HIGHWAY DEPT.**

STATE PROJECT NO. _____
 STATE AID PROJECT NO. 02-610-12
 STATE AID PROJECT NO. 02-610-13
 COUNTY PROJECT NO. 96-09-00

**CROSS SECTIONS
 LEB
 STA 656+00 TO 660+50**

Sheet 31 of 84 Sheets



NO	DATE	BY	CHKD	APPR	REVISION

NAME: P:\96-09-00\PLAN\35-XSECT.dwg 07/05/2001 08:25:11 PH 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: _____
 SIGNATURE: _____
 DATE: _____ REG. NO. _____

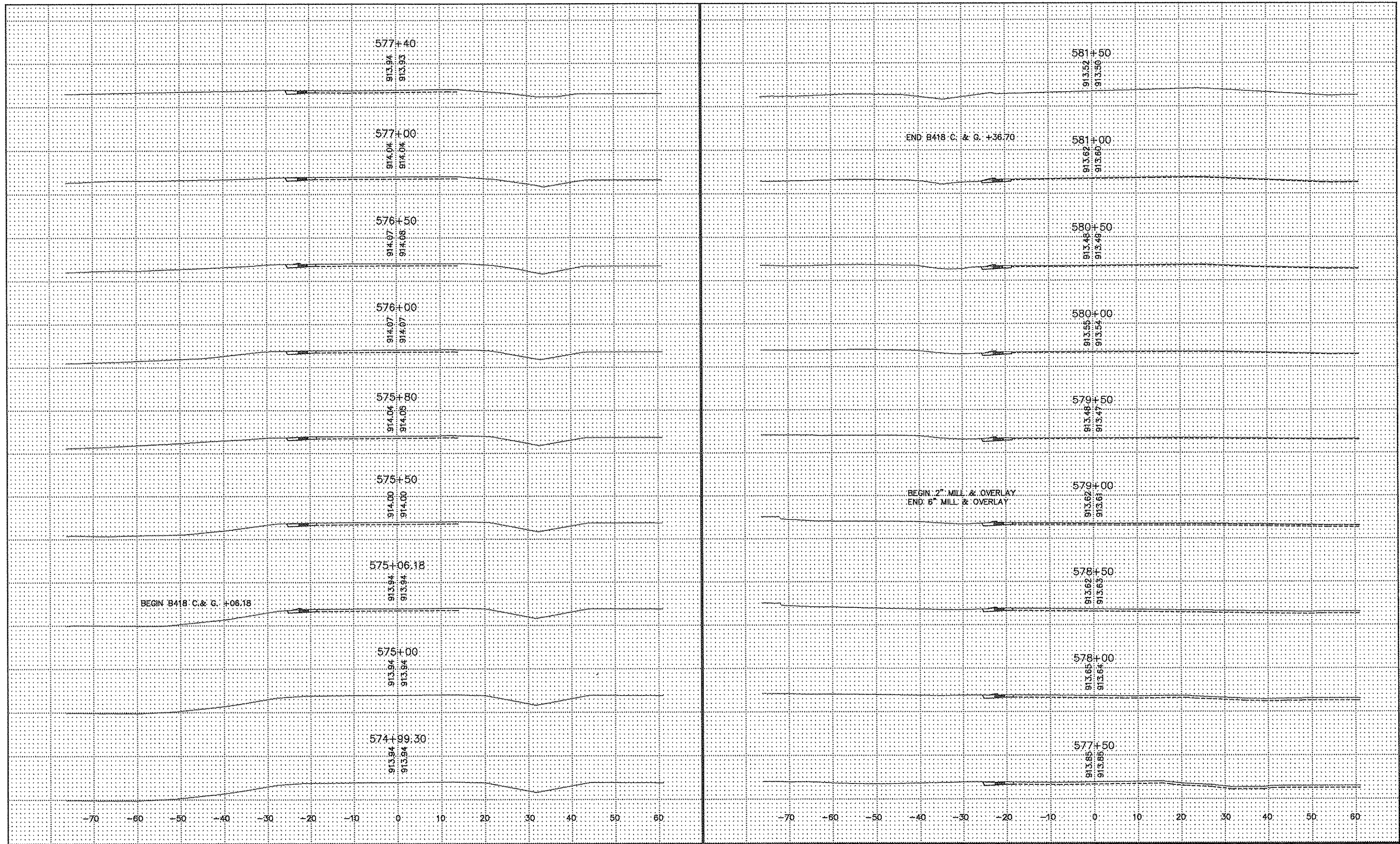
DRAWN BY: KGJ DATE 00/00/00
 DESIGN BY: MFG DATE 00/00/00
 CHECKED BY: LAR DATE 00/00/00



ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO. _____
 STATE AID PROJECT NO. 02-610-12
 STATE AID PROJECT NO. 02-610-13
 COUNTY PROJECT NO. 96-09-00

CROSS SECTIONS
LEB
 STA 565+50 TO 574+50
 Sheet 32 of 84 Sheets



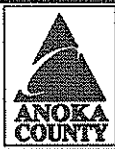
NO	DATE	BY	CHKD	APPR	REVISION

NAME: P:\96-09-00\PLAN\35-XSECT.dwg 07/03/2001 02:29:11 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: _____
SIGNATURE: _____
DATE: _____ REG. NO. _____

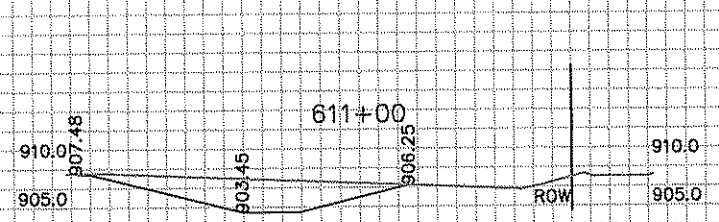
DRAWN BY KGL DATE 00/00/00
DESIGN BY MEG DATE 00/00/00
CHECKED BY LAR DATE 00/00/00



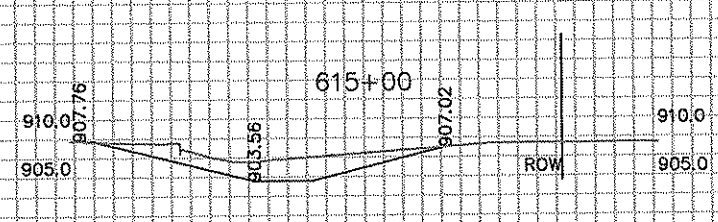
ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO. _____
STATE AID PROJECT NO. 02-610-12
STATE AID PROJECT NO. 02-610-13
COUNTY PROJECT NO. 96-09-00

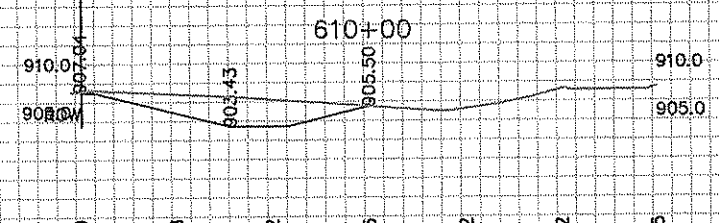
CROSS SECTIONS
LEB
STA 574+99.30 TO 581+50
Sheet 33 of 84 Sheets



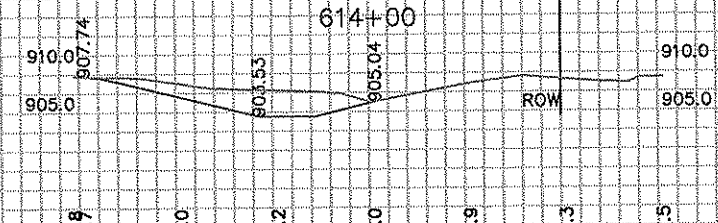
Cut Area: 67.42 ft²
 Fill Area: 0.00 ft²
 Cut Volume: 401.8 yds
 Fill Volume: 0.0 yds



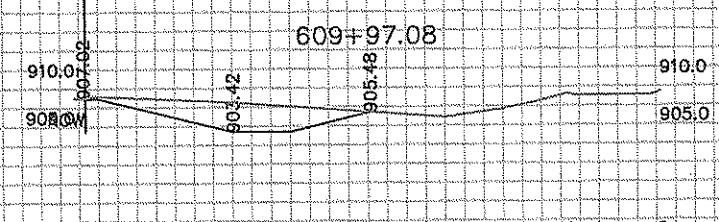
Cut Area: 50.76 ft²
 Fill Area: 0.05 ft²
 Cut Volume: 1238.2 yds
 Fill Volume: 0.1 yds



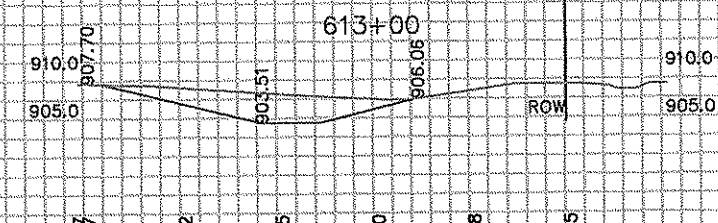
Cut Area: 52.73 ft²
 Fill Area: 0.00 ft²
 Cut Volume: 179.6 yds
 Fill Volume: 0.0 yds



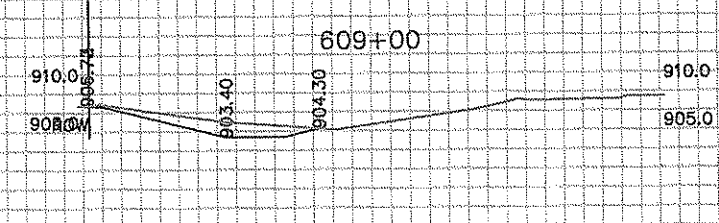
Cut Area: 47.29 ft²
 Fill Area: 0.00 ft²
 Cut Volume: 1056.6 yds
 Fill Volume: 0.0 yds



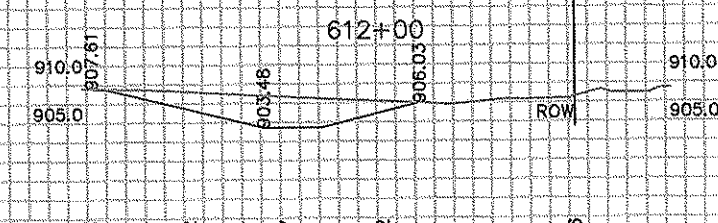
Cut Area: 52.17 ft²
 Fill Area: 0.00 ft²
 Cut Volume: 173.9 yds
 Fill Volume: 0.0 yds



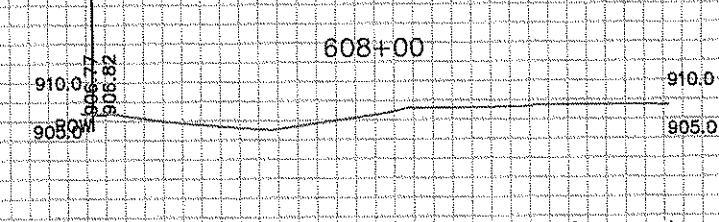
Cut Area: 57.86 ft²
 Fill Area: 0.00 ft²
 Cut Volume: 861.9 yds
 Fill Volume: 0.0 yds



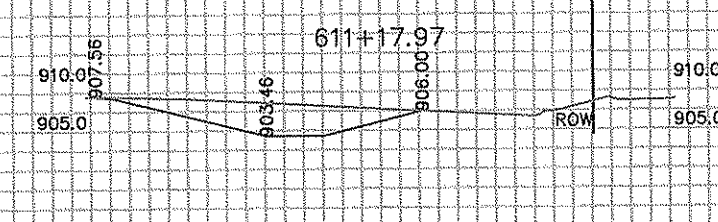
Cut Area: 22.28 ft²
 Fill Area: 0.00 ft²
 Cut Volume: 41.3 yds
 Fill Volume: 0.0 yds



Cut Area: 62.54 ft²
 Fill Area: 0.00 ft²
 Cut Volume: 638.8 yds
 Fill Volume: 0.0 yds



Cut Area: 0.12 ft²
 Fill Area: 0.00 ft²
 Cut Volume: 0.0 yds
 Fill Volume: 0.0 yds



Cut Area: 64.65 ft²
 Fill Area: 0.00 ft²
 Cut Volume: 445.7 yds
 Fill Volume: 0.0 yds

NO	DATE	BY	CHK	APPR	REVISION

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

DATE _____ REG. NO. _____

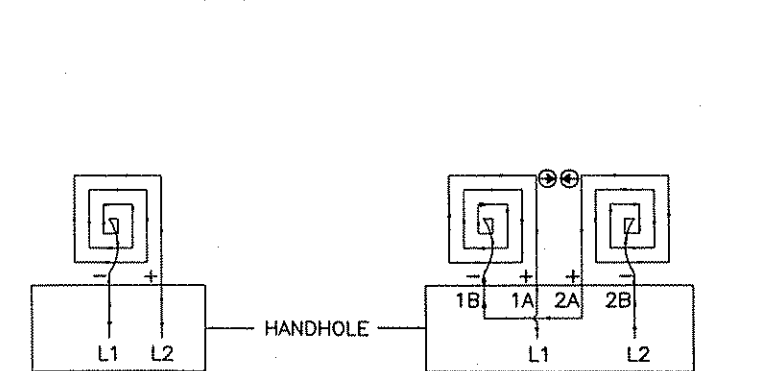
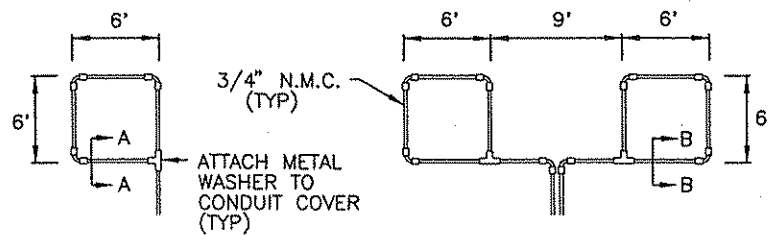
DRAWN BY: KLO DATE: 06/01/01
 DESIGN BY: KLO DATE: 08/01/01
 CHECKED BY: LAR DATE: 02/02/02



ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO. _____
 STATE AID PROJECT NO. 02-610-12
 STATE AID PROJECT NO. _____
 COUNTY PROJECT NO. _____

DITCH CROSS-SECTIONS
BY COTTAGEWOOD
 Sheet 33A of 84 Sheets

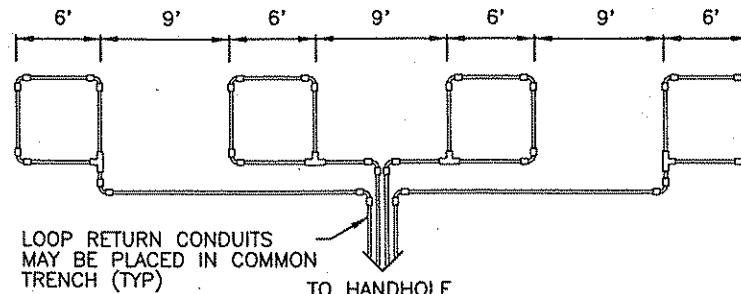


**LOOP DETECTOR
DETAIL 'A'**
(LOOP PHASING FOR
SINGLE CONNECTION)

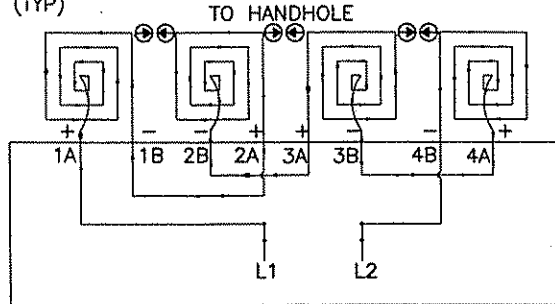
LOOP CONNECTIONS SHALL BE
LABELED AND SPLICED IN THE
HANDHOLE AS FOLLOWS:

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

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



LOOP RETURN CONDUITS
MAY BE PLACED IN COMMON
TRENCH (TYP)

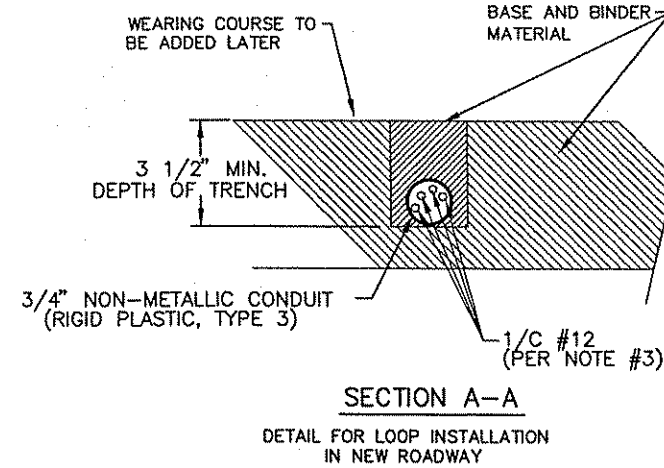


LOOP CONNECTIONS SHALL BE LABELED AND SPLICED
IN THE HANDHOLE AS FOLLOWS:

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

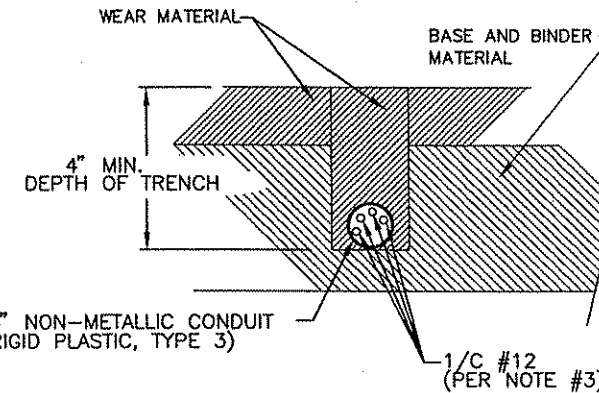
SPLICE CONTROL CABLE TO L1 & L2 IN HANDHOLE.
ALL CONDUCTORS SHALL BE TAGGED IN HANDHOLE
(1A, 1B, ECT)

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



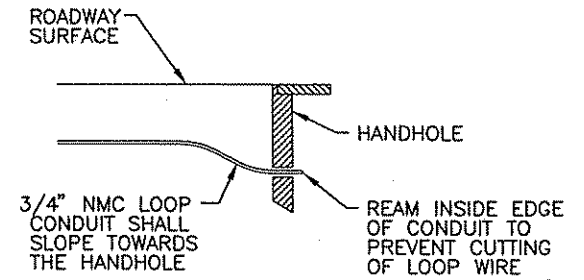
SECTION A-A

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
* 7035 K	CONCRETE WALK AND CURB RETURNS AT ENTRANCES
* 7036 D	PEDESTRIAN CURB RAMP
* 7100 G	CONCRETE CURB AND GUTTER (DESIGN B)
* 8110 D	TRAFFIC SIGNAL BRACKETING - POLE MOUNTED
* 8111 C	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	PAB5 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 PAT00 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

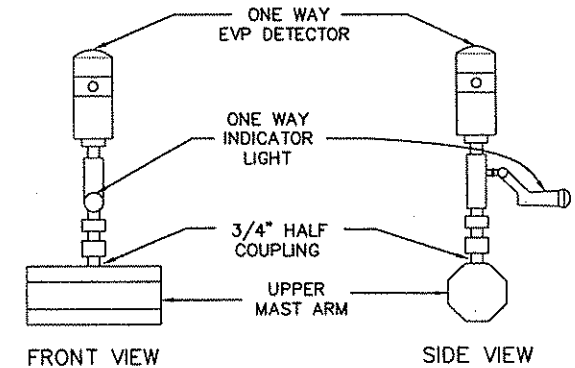
LEGEND OF SYMBOLS

CONTROLLER AND SERVICE EQUIP. NO'S	(A)
SIGNAL BASE NO.	(B)
SIGNAL FACE NO.	(C)
LUMINAIRE NO.	(D)
CONTROLLER AND CABINET	(E)
CONTROLLER AND CABINET - IN PLACE	(F)
HANDHOLE	(G)
HANDHOLE - IN PLACE	(H)
RIGID STEEL CONDUIT (RSC)	(I)
RIGID STEEL CONDUIT (RSC) - IN PLACE	(J)
SIGNAL FACE WITH BACKGROUND SHIELD	(K)
SIGNAL FACE W/O BACKGROUND SHIELD	(L)
SIGNAL FACE - IN PLACE	(M)
PEDESTRIAN INDICATORS	(N)
PEDESTRIAN INDICATORS - IN PLACE	(O)
PEDESTRIAN PUSH BUTTONS ON PEDESTAL OR POLE	(P)
PEDESTRIAN PUSH BUTTON STATION	(Q)
TRAFFIC SIGNAL PEDESTAL	(R)
TRAFFIC SIGNAL PEDESTAL - INPLACE	(S)
TRAFFIC SIGNAL POLE AND MAST ARM	(T)
TRAFFIC SIGNAL POLE AND MAST ARM - IN PLACE	(U)
STREET LIGHT POLE AND LUMINAIRE	(V)
STREET LIGHT POLE AND LUMINAIRE - IN PLACE	(W)
MAST ARM AND LUMINAIRE	(X)
MAST ARM AND LUMINAIRE - INPLACE	(Y)
WOOD POLE	(Z)
WOOD POLE - IN PLACE	(AA)
SOURCE OF POWER	(AB)
RAILROAD SIGNAL - IN PLACE	(AC)
RIGHT OF WAY LINE	(AD)
CENTERLINE	(AE)
EDGE OF ROADWAY	(AF)
SHOULDERLINE	(AG)
CURB LINE	(AH)
STOP BAR	(AI)
EMERGENCY VEHICLE PREEMPTION DETECTOR	(AJ)

ABBREVIATIONS

J-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

**EVP DETECTOR AND LIGHT
MOUNTING DETAIL ON MAST ARM**



S.A.P. 02-610-13
S.A.P. 106-020-20
S.A.P. 114-020-23
S.A.P. 183-020-06

DRAWN BY: GEN
DESIGNER: JMG
CHECKED BY: JMG

DESIGN TEAM	NO.	BY	DATE	REVISIONS

©SHORT ELLIOTT HENDRICKSON 1998. ANY USE OR REUSE OF THIS PLAN/DRAWING AND THE CORRESPONDING COMPUTER AIDED DESIGN/DRAFTING FILES WITHOUT THE EXPRESS WRITTEN CONSENT OF SEH IS PROHIBITED. SEH SHALL NOT BE RESPONSIBLE FOR ANY UNAUTHORIZED USE OR REUSE OF THESE MATERIALS, OR DAMAGES RESULTING THEREFROM.

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 15, 2001 Lic. No. 22457

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

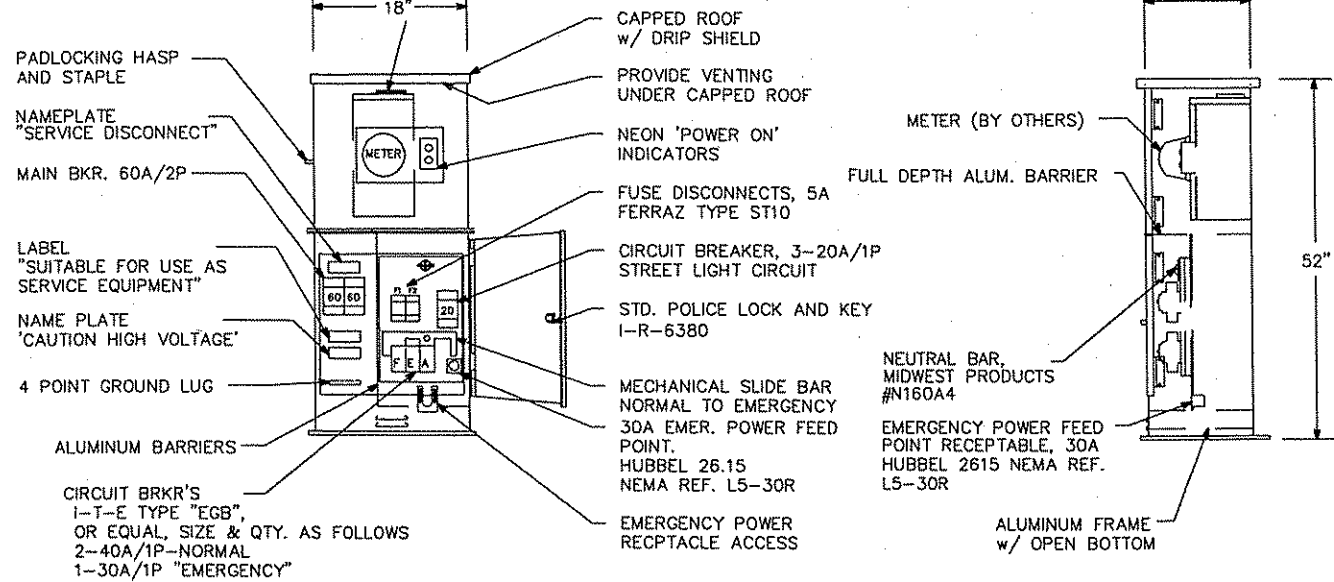
**ANOKA COUNTY,
MINNESOTA**

**TRAFFIC SIGNAL SYSTEMS 'A-D'
DETAILS & STANDARD PLATES
CSAH 10 SIGNAL SYSTEMS**

FILE NO.
AANOKC0101
DATE
06/15/01
34
84

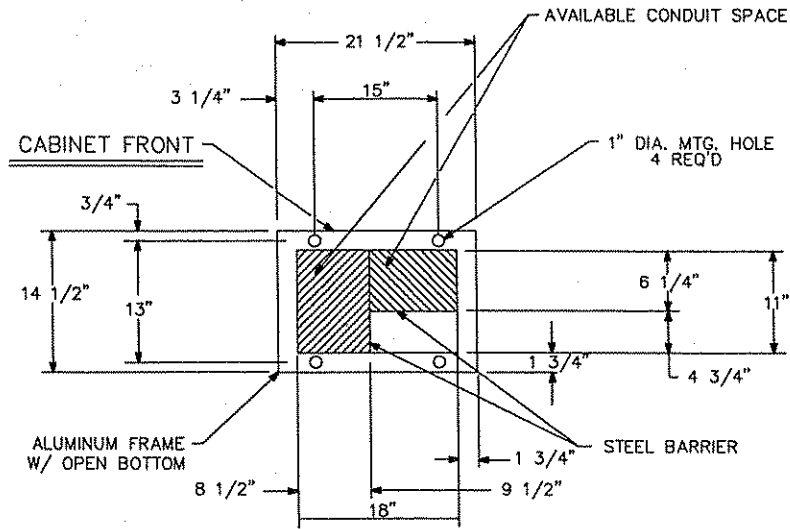
SIGNAL SERVICE CABINET

N.S.P. METER SOCKET, 5-TERMINAL
w/POSTIVE BY-PASS MECHANISM
MILBANK CAT. No. U-2272-RL.



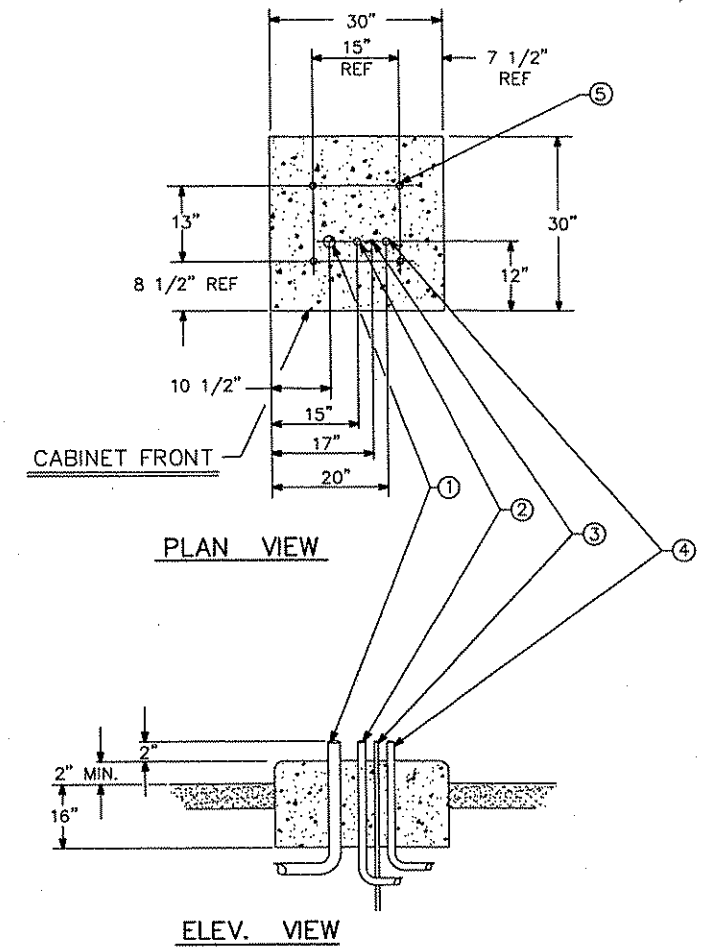
CONSTRUCTION NOTES

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

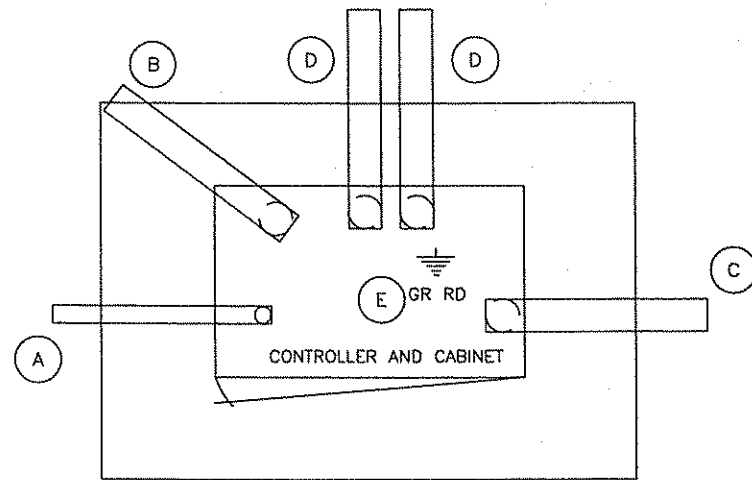


- ① 2" RSC STUB OUT (FOR SOP)
- ② 2" RSC TO CONTROLLER CABINET (VIA HH)
- ③ GROUNDING ROD
- ④ 2" RSC TO HANDHOLES (FOR STREET LIGHTING)
- ⑤ ANCHOR BOLT LOCATIONS (4 REQUIRED)

SERVICE CABINET FOUNDATION



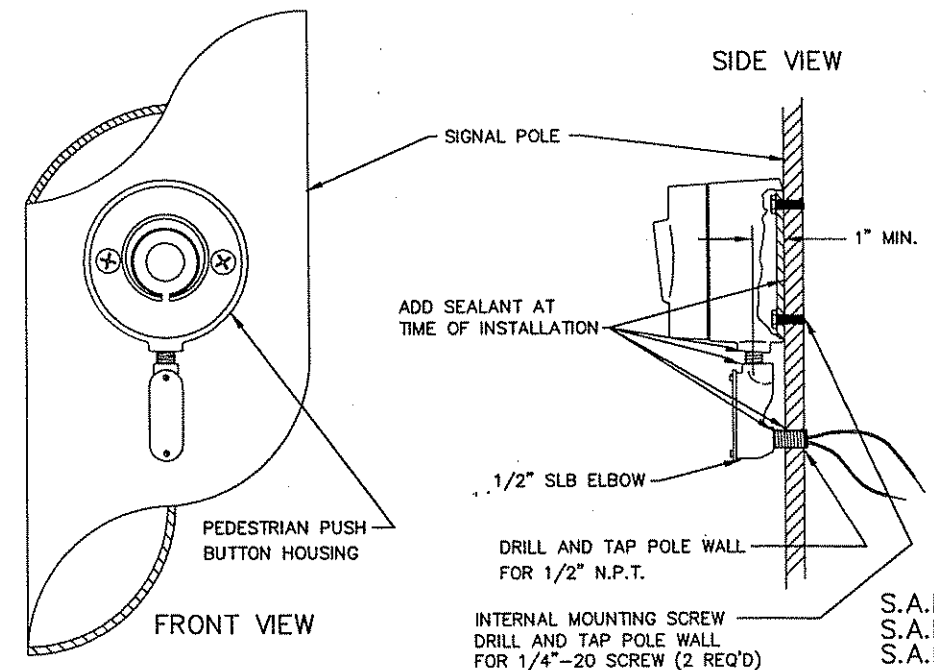
- Ⓐ 2" R.S.C. FOR SERVICE CONNECTION (VIA HH)
- Ⓑ 4" R.S.C. TO HH
- Ⓒ 4" R.S.C. TO HH
- Ⓓ 3" R.S.C. STUBOUT, THREAD & CAP BOTH ENDS (FOR FUTURE USE).
- Ⓔ 5/8" DIA X 15' GROUND ROD



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

SEE INTERSECTION LAYOUT FOR
CONDUIT & CABLE INFORMATION

**MAST ARM POLE
PEDESTRIAN PUSH BUTTON DETAIL**



S.A.P. 02-610-13
S.A.P. 106-020-20
S.A.P. 114-020-23
S.A.P. 183-020-06

DRAWN BY: GEN				
DESIGNER: JMG				
CHECKED BY: JMG				
DESIGN TEAM	NO.	BY	DATE	REVISIONS

©SHORT ELLIOTT HENDRICKSON 1998. ANY USE OR REUSE OF THIS PLAN/DRAWING AND THE CORRESPONDING COMPUTER AIDED DESIGN/DRAFTING FILES WITHOUT THE EXPRESS WRITTEN CONSENT OF SEH, IS PROHIBITED. SEH SHALL NOT BE RESPONSIBLE FOR ANY UNAUTHORIZED USE OR REUSE OF THESE MATERIALS, OR DAMAGES RESULTING THEREFROM.

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 15, 2001 Lic. No. 22457

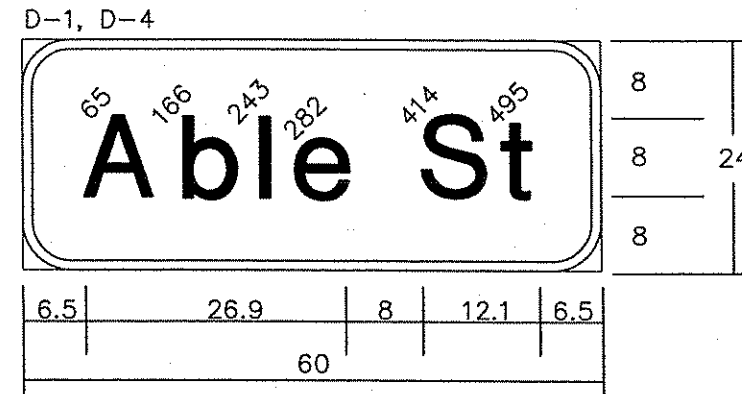
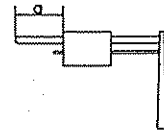
SEH
PHONE: (651) 490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

**ANOKA COUNTY,
MINNESOTA**

**TRAFFIC SIGNAL SYSTEMS 'A-D'
CABINET PAD/PUSH BUTTON DETAILS
CSAH 10 SIGNAL SYSTEMS**

FILE NO. AANOKC0101
DATE 06/15/01
35
84

TYPE "D" SIGNS - F & I								
SIGNAL SYSTEM	SIGN PANEL	SIZE (inches)	NO. REQ.	NO. POSTS PER SIGN	POST SPACING (inches)	AREA (sq. ft.) PER SIGN	POLE NO.	α
A	D-1	60x24	1	2	36"	10.00	3	18'
A	D-2	84x24	1	2	54"	14.00	5	18'
A	D-3	84x24	1	2	54"	14.00	5	18'
A	D-4	60x24	1	2	36"	10.00	6	18'
B	D-5	84x24	1	2	54"	14.00	1	26'
B	D-6	96x24	1	2	54"	16.00	3	18'
B	D-7	84x24	1	2	54"	14.00	4	26'
B	D-8	96x24	1	2	54"	16.00	6	18'
C	D-9	102x66	1	3	45"	46.75	1	14'
C	D-10	102x66	1	3	45"	46.75	3	2'
C	D-11	54x66	1	2	30"	24.75	3	14'
C	D-12	144x36	1	4	45"	36.00	4	8'
D	D-13	102x66	1	3	45"	46.75	1	2'
D	D-14	54x66	1	2	30"	24.75	1	14'
D	D-15	144x36	1	4	45"	36.00	2	8'
D	D-16	102x66	1	3	45"	46.75	3	14'



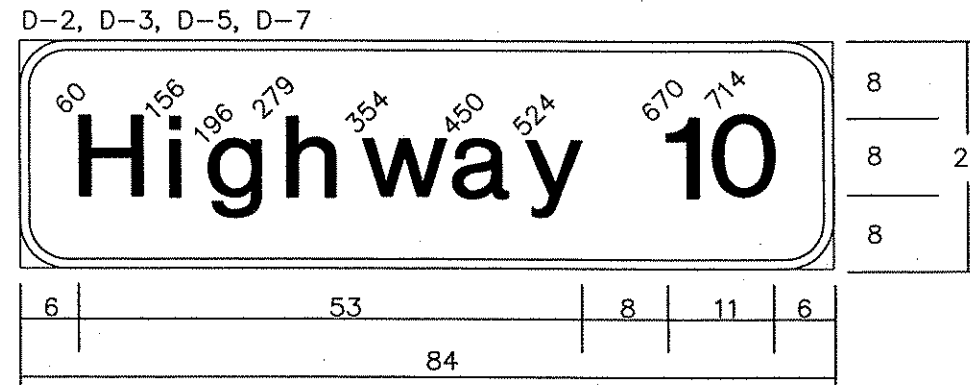
D-1, D-4; 60" x 24", 3.0" Radius, 1.0" Border, White on Green "Able St" E Mod.

TYPE C SIGNS - F & I								
SIGNAL SYSTEM	SIGN PANEL	SIZE (in.)	NO. REQ.	NO. POSTS PER SIGN	POST SPACING (in.)	SQ. FT. PER SIGN	POLE NO.	α
A	R9-3a	18x18	4	①	-	2.25	4,5,6	-
A	R10-7	30x30	2	1-U	-	6.25	-	-
B	R10-12	36x48	2	2	24"	12.00	1,4	2'
C	R9-3a	18x18	2	①	-	2.25	1,3	-
C	R9-3a	18x18	2	②	-	2.25	2,5	-
D	R9-3a	18x18	3	①	-	2.25	1,2,4	-
D	R9-3a	18x18	1	②	-	2.25	5	-

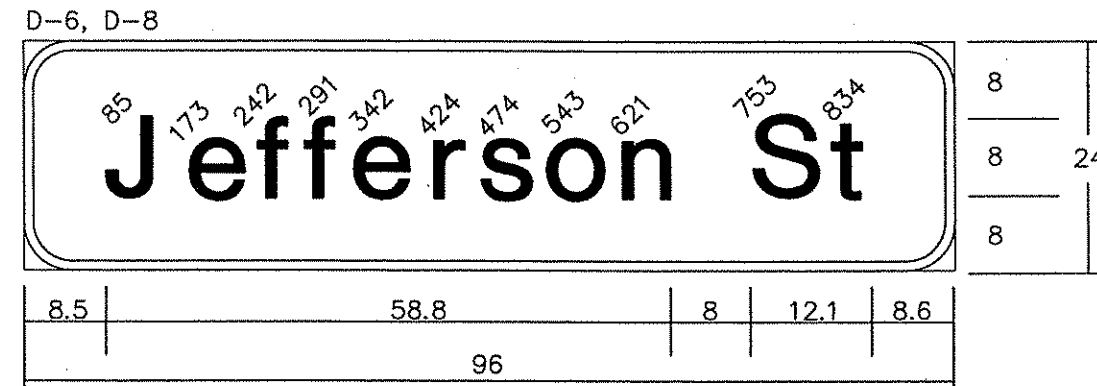
OVERLAYS				
CODE NO.	QUANTITY	SIZE (IN.)	LEGEND	Sq. Ft. per OVERLAY
M1-5B	6	24x24	MINN TRUNK HWY 47	4.00
M1-6A	2	24x24	COUNTY 3	4.00
M1-6A	2	24x24	COUNTY 10	4.00

NOTES:

- 1) COLOR-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, PAGE 105A AND B.
- 4) FOR TYPE "D" STRINGER AND PANEL-JOINT DETAIL, SEE STANDARD SIGNS MANUAL.
- 5) SIGN PANELS TO BE FURNISHED AND INSTALLED INCIDENTAL TO ITEM NO. 2565.511 FOR EACH SIGNAL SYSTEM.
- 6) SEE STANDARD SIGNS MANUAL FOR ARROW AND OVERLAY DETAILS.
- 7) ① = MOUNT ON TRAFFIC SIGNAL MAST ARM POLE AS NOTED IN PLANS & SPECIAL PROVISIONS.
- 8) ② = MOUNT ON TRAFFIC SIGNAL PEDESTAL POLE AS NOTED IN PLANS & SPECIAL PROVISIONS.
- 9) ALL NEW TYPE C AND D SIGNS SHALL BE FABRICATED USING VIP SHEETING. SEE SPECIAL PROVISIONS.



D-2, D-3, D-5, D-7: 84" x 24", 3.0" Radius, 1.0" Border, White on Green "Highway 10" E Mod.



D-6, D-8; 96" x 24", 3.0" Radius, 1.0" Border, White on Green "Jefferson St" E Mod.

S.A.P. 02-610-13
S.A.P. 106-020-20
S.A.P. 114-020-23
S.A.P. 183-020-06

DRAWN BY: GEN				
DESIGNER: JMG				
CHECKED BY: JMG				
DESIGN TEAM	NO.	BY	DATE	REVISIONS

©SHORT ELLIOTT HENDRICKSON 1998. ANY USE OR REUSE OF THIS PLAN/DRAWING AND THE CORRESPONDING COMPUTER AIDED DESIGN/DRAFTING FILES WITHOUT THE EXPRESS WRITTEN CONSENT OF SEH, IS PROHIBITED. SEH SHALL NOT BE RESPONSIBLE FOR ANY UNAUTHORIZED USE OR REUSE OF THESE MATERIALS, OR DAMAGES RESULTING THEREFROM.

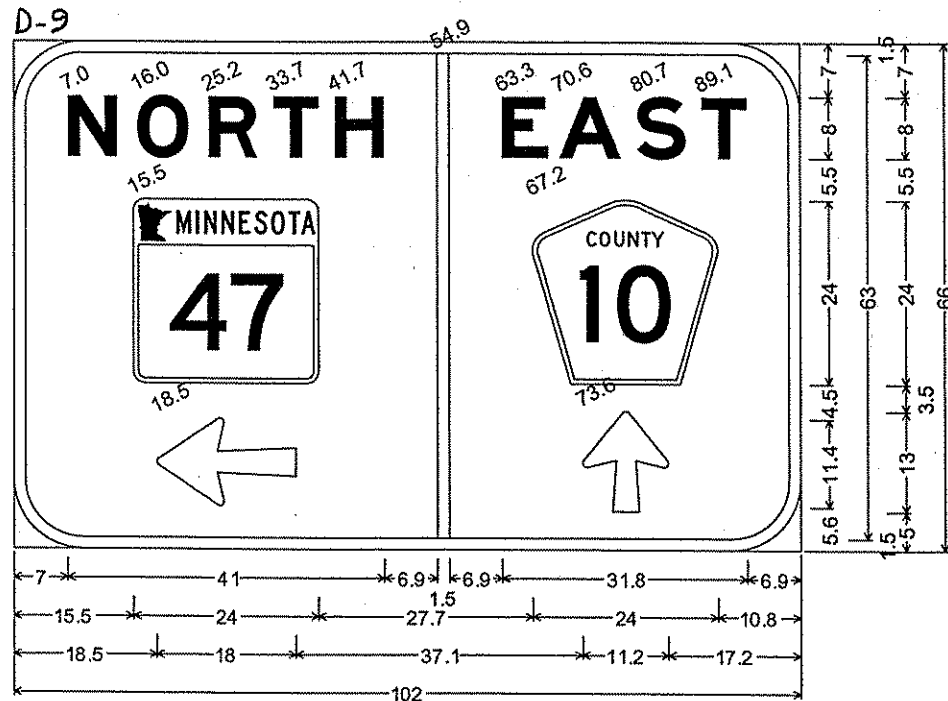
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
Date: June 15, 2001 Lic. No. 22457

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

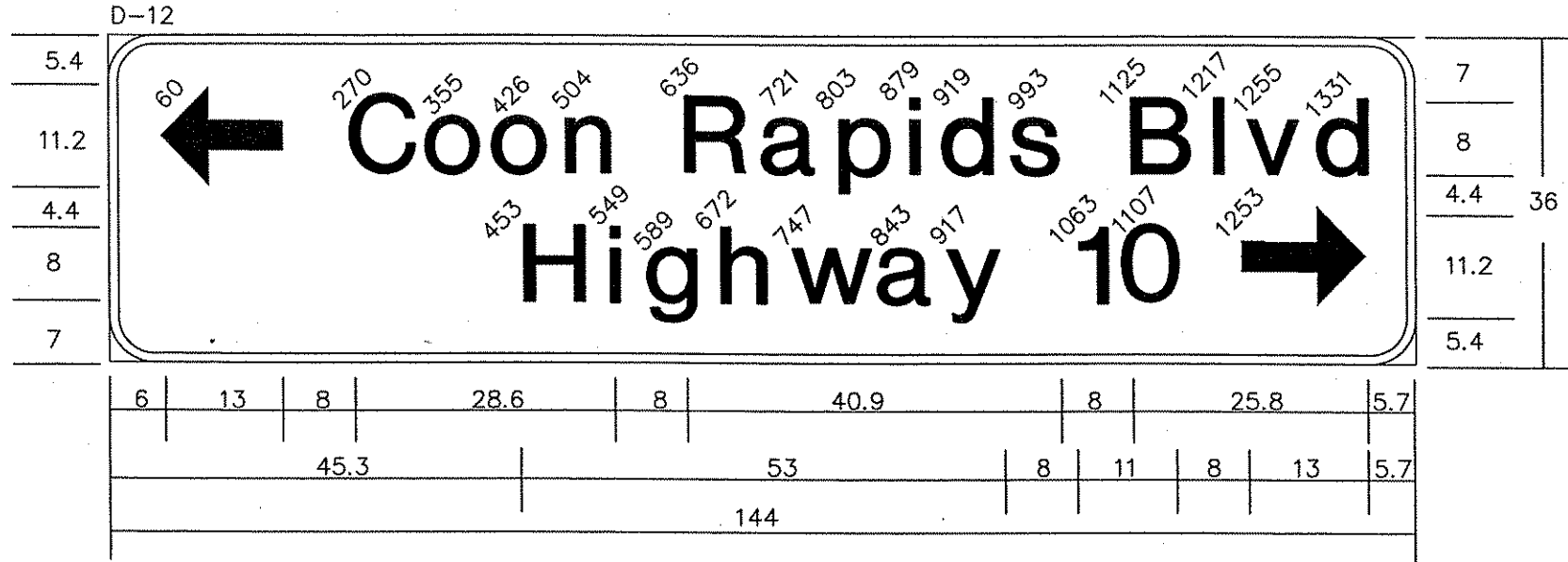
ANOKA COUNTY, MINNESOTA

TRAFFIC SIGNAL SYSTEMS "A-D" SIGNING DETAILS CSAH 10 SIGNAL SYSTEMS

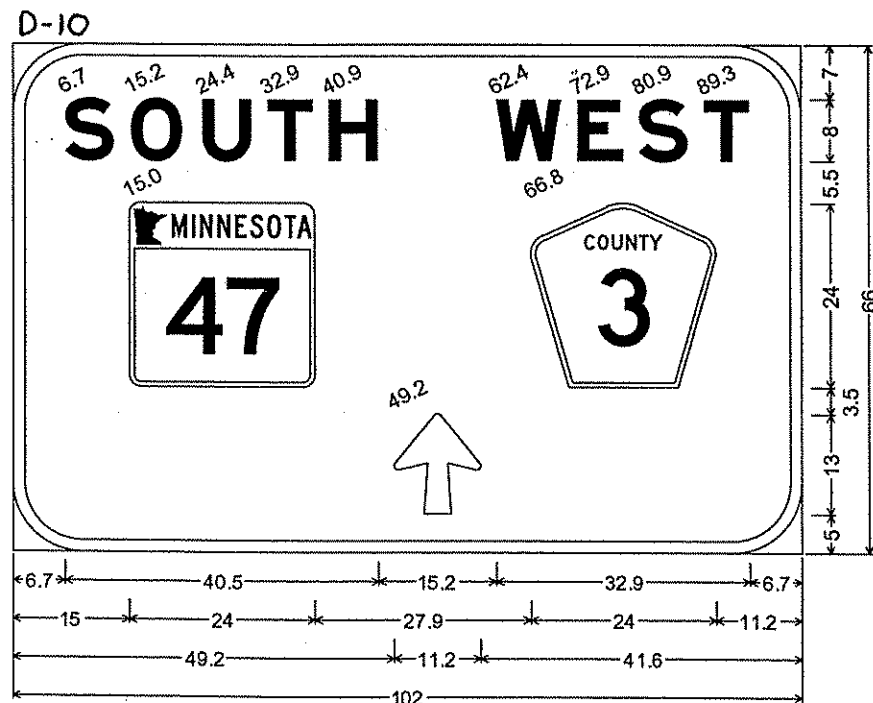
FILE NO. AANOKC0101	36
DATE 06/15/01	84



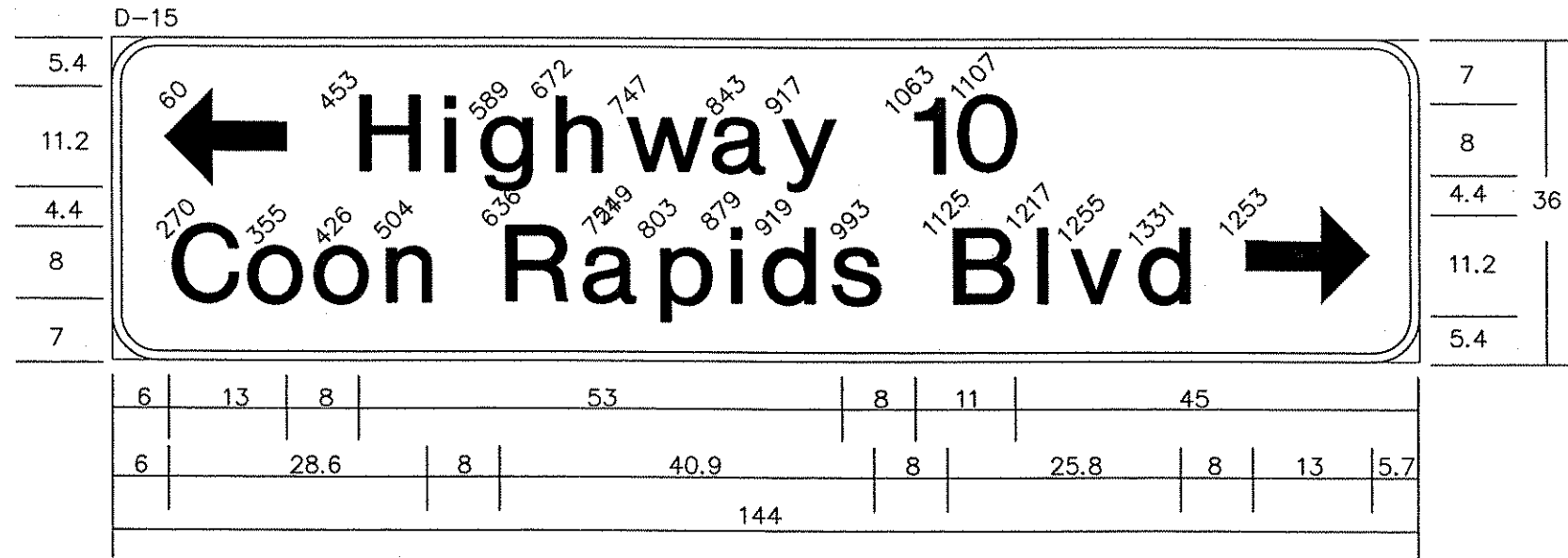
D-9; 102" x 66"; 9.0" Radius, 1.5" Border, White on Green;
 "NORTH" E Mod 125% spacing; Arrow 14 - 18.0" 180°;
 "EAST" E Mod 125% spacing; Arrow 5 - 13.0" 90°;



D-12; 144" x 36", 3.0" Radius, 1.0" Border, White on Green
 Line 1: Arrow 5 - 13.0" 180°, "Coon Rapids Blvd" E Mod.
 Line 2: "Highway 10" E Mod., Arrow 5 - 13.0" 0°



D-10; 102" x 66"; 9.0" Radius, 1.5" Border, White on Green;
 "SOUTH" E Mod 125% spacing; "WEST" E Mod 125% spacing;
 Arrow 5 - 13.0" 90°;



D-15; 144" x 36", 3.0" Radius, 1.0" Border, White on Green
 Line 1: Arrow 5 - 13.0" 180°, "Highway 10" E Mod.
 Line 2: "Coon Rapids Blvd" E Mod., Arrow 5 - 13.0" 0°

S.A.P. 02-610-13
 S.A.P. 106-020-20
 S.A.P. 114-020-23
 S.A.P. 183-020-06

DRAWN BY: GEN				
DESIGNER: JMG				
CHECKED BY: JMG				
DESIGN TEAM	NO.	BY	DATE	REVISIONS

© SHORT ELLIOTT HENDRICKSON 1998. ANY USE OR REUSE OF THIS PLAN/DRAWING AND THE CORRESPONDING COMPUTER AIDED DESIGN/DRAFTING FILES WITHOUT THE EXPRESS WRITTEN CONSENT OF SEH, IS PROHIBITED. SEH SHALL NOT BE RESPONSIBLE FOR ANY UNAUTHORIZED USE OR REUSE OF THESE MATERIALS, OR DAMAGES RESULTING THEREFROM.

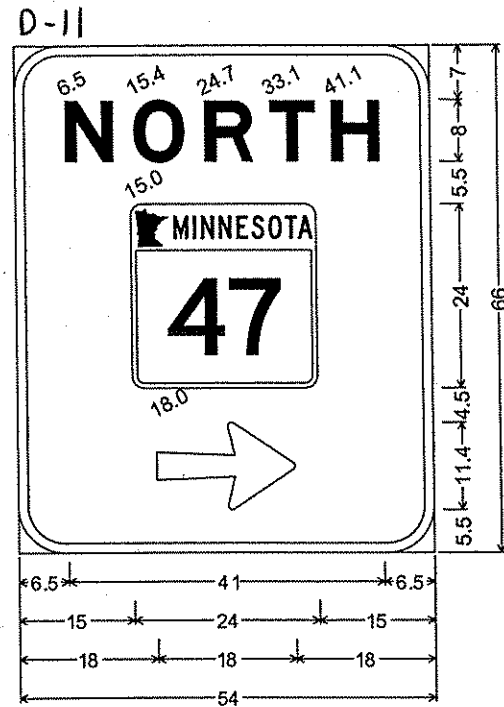
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 Date: June 15, 2001 Lic. No. 22457

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

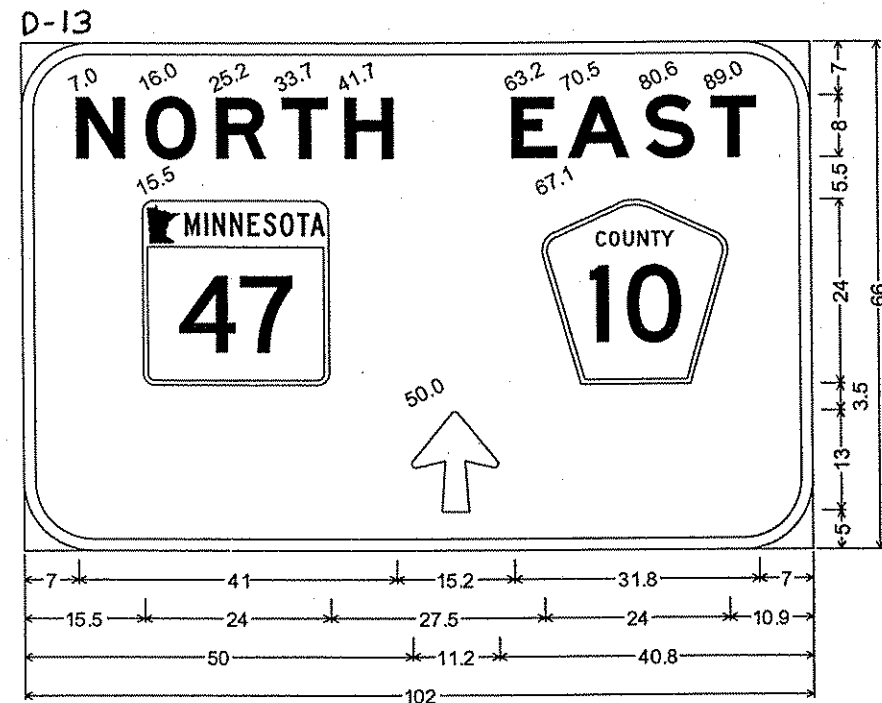
**ANOKA COUNTY,
 MINNESOTA**

**TRAFFIC SIGNAL SYSTEMS "A-D"
 SIGNING DETAILS
 CSAH 10 SIGNAL SYSTEMS**

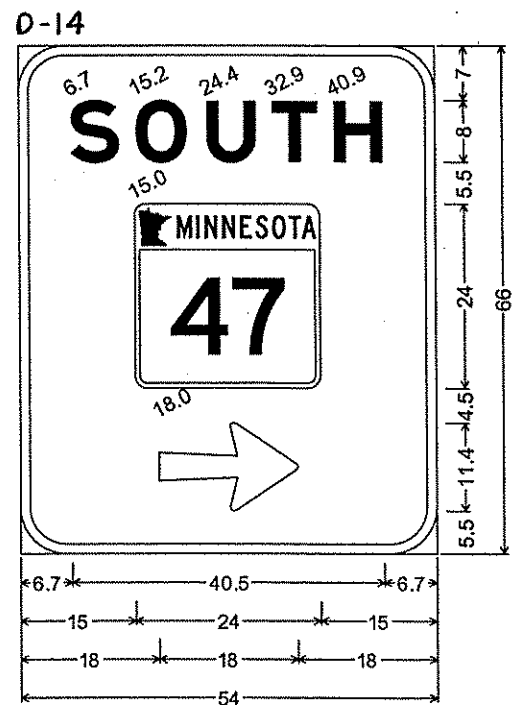
FILE NO. **37**
 DATE 06/15/01
84



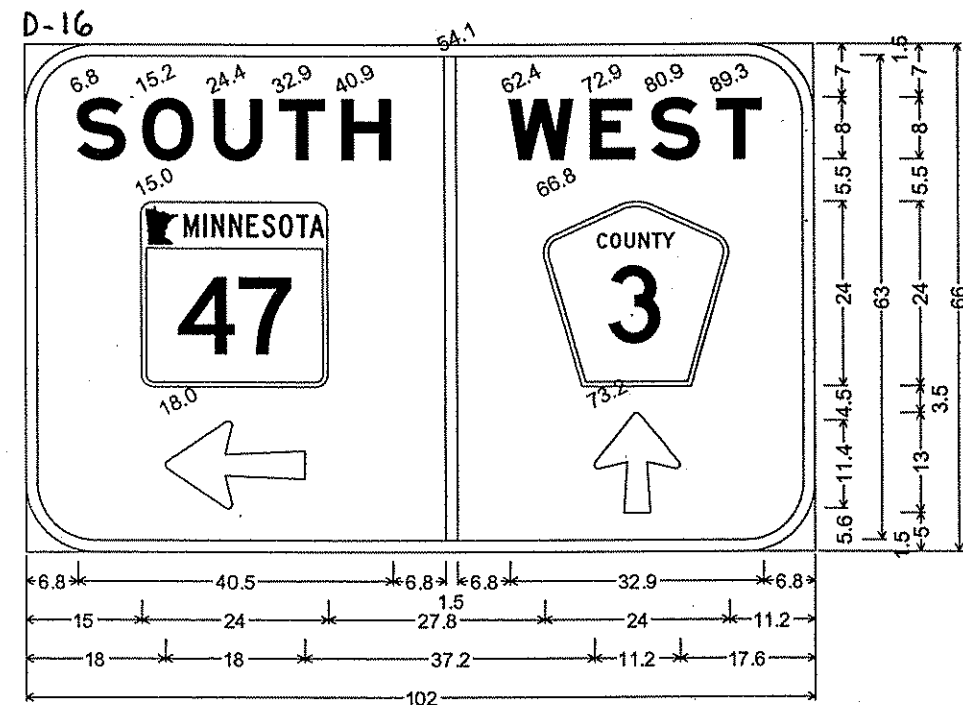
D-11; 54" x 66";
6.0" Radius, 1.3" Border, White on Green;
"NORTH" E Mod 125% spacing;
Arrow 14 - 18.0" 0°;



D-13; 102" x 66"; 9.0" Radius, 1.5" Border, White on Green;
"NORTH" E Mod 125% spacing; "EAST" E Mod 125% spacing;
Arrow 5 - 13.0" 90°;



D-14; 54" x 66";
6.0" Radius, 1.3" Border, White on Green;
"SOUTH" E Mod 125% spacing;
Arrow 14 - 18.0" 0°;



D-16; 102" x 66"; 9.0" Radius, 1.5" Border, White on Green;
"SOUTH" E Mod 125% spacing; Arrow 14 - 18.0" 180°;
"WEST" E Mod 125% spacing; Arrow 5 - 13.0" 90°;

S.A.P. 02-610-13
S.A.P. 106-020-20
S.A.P. 114-020-23
S.A.P. 183-020-06

DRAWN BY: GEN				
DESIGNER: JMG				
CHECKED BY: JMG				
DESIGN TEAM	NO.	BY	DATE	REVISIONS

© SHORT ELLIOTT HENDRICKSON 1998. ANY USE OR REUSE OF THIS PLAN/DRAWING AND THE CORRESPONDING COMPUTER AIDED DESIGN/DRAFTING FILES WITHOUT THE EXPRESS WRITTEN CONSENT OF SEH, IS PROHIBITED. SEH SHALL NOT BE RESPONSIBLE FOR ANY UNAUTHORIZED USE OR REUSE OF THESE MATERIALS, OR DAMAGES RESULTING THEREFROM.

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.
John M. [Signature]
Date: 08/15/01 Lic. No. 22457

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

**ANOKA COUNTY,
MINNESOTA**

**TRAFFIC SIGNAL SYSTEMS "A-D"
SIGNING DETAILS
CSAH 10 SIGNAL SYSTEMS**

FILE NO. AANOKCD101	38
DATE 06/15/01	84

NOTES:

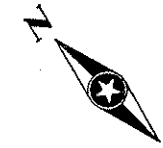
- 1) LOCATION OF POLES, CONTROLLER CABINET, SERVICE CABINET, LOOP DETECTORS AND HANDHOLES SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER.
- 2) SEE SPECIAL PROVISIONS FOR COUNTY FURNISHED MATERIALS.
- 3) LOOP DETECTOR WIRES SHALL BE CROSS-LINKED POLYETHYLENE (XLP) IN 3/4" N.M.C. SEE SPECIAL PROVISIONS.
- 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. SEE SPECIAL PROVISIONS.
- 7) ALL VEHICLE SIGNAL INDICATIONS, AND ALL PEDESTRIAN SIGNAL INDICATIONS SHALL BE LED. SEE SPECIAL PROVISIONS.
- 8) SEE SPECIAL PROVISIONS AND DETAILS REGARDING SIGNS AND CONCRETE WALK TO BE FURNISHED & INSTALLED BY CONTRACTOR.
- 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 APPROX. 6 FEET FROM THE END OF MAST ARMS 3, 5 AND 6, AND APPROX. 18' FROM THE END OF MAST ARM 5 (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, UNLESS OTHERWISE APPROVED BY THE ENGINEER.
- 13) (INTERCONNECT) DENOTES ITEMS TO BE MEASURED AND PAID FOR SEPARATELY UNDER ITEM NO. 2565.601 (TRAFFIC CONTROL INTERCONNECTION). SEE SPECIAL PROVISIONS.

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) SPECIAL DETECTOR (COUNTING)

N.M.C. LOOP DETECTORS			
NUMBER	SIZE (FT.)	LOCATION	FUNCTION
D1-1	6x6	40'	1
D1-2	6x6	10'	1
D2-1	6x6	400'	1
D2-2	6x6	400'	1
D3-1	6x6	90'	3,8
D3-2	6x6	90'	3,8
D3-3	2-6x12	AS SHOWN	7
D3-4	2-6x6	AS SHOWN	7
D3-5	2-6x6	AS SHOWN	7
D3-6	6x6	5'	7
D4-1	6x6	110'	3,8
D4-2	6x10&6x6	AS SHOWN	7
D4-3	2-6x6	AS SHOWN	7
D4-4	2-6x6	AS SHOWN	7
D4-5	6x6	5'	7
D5-1	6x6	40'	1
D5-2	6x6	10'	1
D6-1	6x6	400'	1
D6-2	6x6	400'	1
D1	6x6	50'	11
D2	6x6	50'	11
D3	6x6	50'	11
D4	6x6	50'	11

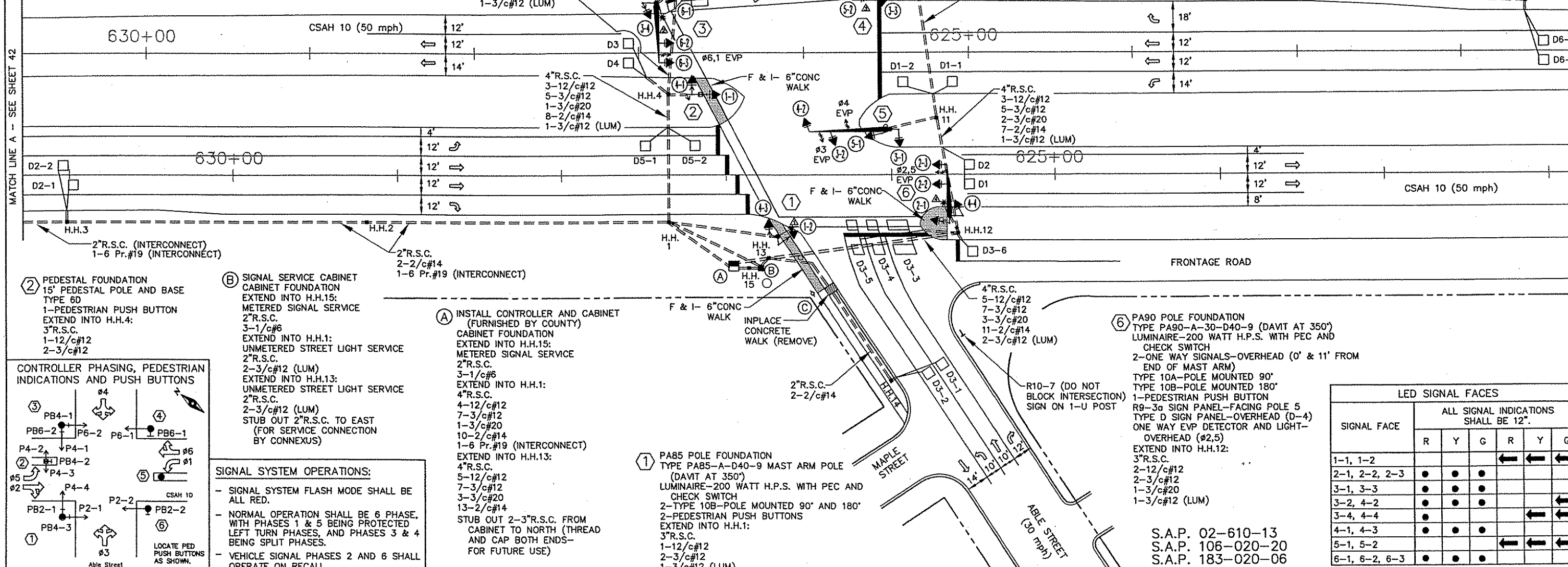
NOTE: LOCATION=DISTANCE FROM STOP BAR TO FRONT OF LOOP DETECTOR.



③ PA90 POLE FOUNDATION
 TYPE PA90-A-35-D40-9 (DAVIT AT 350°)
 LUMINAIRE-200 WATT H.P.S. WITH PEC AND CHECK SWITCH
 2-ONE WAY SIGNALS-OVERHEAD (0' & 11' FROM END OF MAST ARM)
 2-TYPE 10B-POLE MOUNTED 90° AND 180°
 2-PEDESTRIAN PUSH BUTTONS
 TYPE D SIGN PANEL-OVERHEAD (D-1)
 ONE WAY EVP DETECTOR AND LIGHT-OVERHEAD (#6,1)
 EXTEND INTO H.H.5:
 3"R.S.C.
 2-12/c#12
 3-3/c#12
 1-3/c#20
 1-3/c#12 (LUM)

④ PA85 POLE FOUNDATION
 TYPE PA85-A-D40-9 MAST ARM POLE (DAVIT AT 350°)
 LUMINAIRE-200 WATT H.P.S. WITH PEC AND CHECK SWITCH
 TYPE 10B-POLE MOUNTED 90°
 TYPE 10A-POLE MOUNTED 180°
 1-PEDESTRIAN PUSH BUTTON
 R9-3a SIGN PANEL-FACING POLE 5
 EXTEND INTO H.H.7:
 3"R.S.C.
 1-12/c#12
 2-3/c#12
 1-3/c#12 (LUM)

⑤ PA100 POLE FOUNDATION
 TYPE PA100-A-45
 2-ONE WAY SIGNALS-OVERHEAD (0' & 12' FROM END OF MAST ARM)
 2-TYPE 10A-POLE MOUNTED 0° AND 180°
 2-R9-3a SIGN PANELS-FACING POLES 4 & 6
 2-TYPE D SIGN PANELS-OVERHEAD (D-2,3)
 ONE WAY EVP DETECTOR AND LIGHT-OVERHEAD (#3)
 ONE WAY EVP DETECTOR AND LIGHT-OVERHEAD (#4)
 EXTEND INTO H.H.11:
 3"R.S.C.
 2-12/c#12
 3-3/c#12
 2-3/c#20

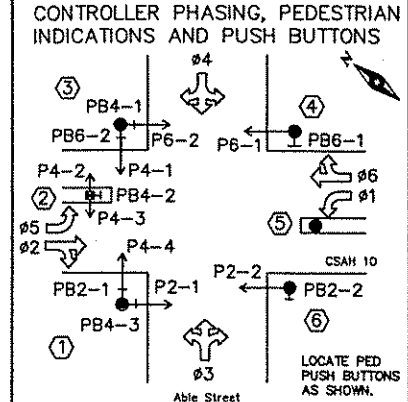


② PEDESTAL FOUNDATION
 15' PEDESTAL POLE AND BASE
 TYPE 6D
 1-PEDESTRIAN PUSH BUTTON
 EXTEND INTO H.H.4:
 3"R.S.C.
 1-12/c#12
 2-3/c#12

⑥ SIGNAL SERVICE CABINET
 CABINET FOUNDATION
 EXTEND INTO H.H.15:
 METERED SIGNAL SERVICE
 2"R.S.C.
 3-1/c#6
 EXTEND INTO H.H.1:
 UNMETERED STREET LIGHT SERVICE
 2"R.S.C.
 2-3/c#12 (LUM)
 EXTEND INTO H.H.13:
 UNMETERED STREET LIGHT SERVICE
 2"R.S.C.
 2-3/c#12 (LUM)
 STUB OUT 2"R.S.C. TO EAST
 (FOR SERVICE CONNECTION BY CONNEXUS)

① INSTALL CONTROLLER AND CABINET
 (FURNISHED BY COUNTY)
 CABINET FOUNDATION
 EXTEND INTO H.H.15:
 METERED SIGNAL SERVICE
 2"R.S.C.
 3-1/c#6
 EXTEND INTO H.H.1:
 UNMETERED STREET LIGHT SERVICE
 2"R.S.C.
 4-12/c#12
 7-3/c#12
 1-3/c#20
 10-2/c#14
 1-6 Pr.#19 (INTERCONNECT)
 EXTEND INTO H.H.13:
 4"R.S.C.
 5-12/c#12
 7-3/c#12
 3-3/c#20
 13-2/c#14
 STUB OUT 2-3"R.S.C. FROM CABINET TO NORTH (THREAD AND CAP BOTH ENDS-FOR FUTURE USE)

⑥ PA90 POLE FOUNDATION
 TYPE PA90-A-30-D40-9 (DAVIT AT 350°)
 LUMINAIRE-200 WATT H.P.S. WITH PEC AND CHECK SWITCH
 2-ONE WAY SIGNALS-OVERHEAD (0' & 11' FROM END OF MAST ARM)
 TYPE 10A-POLE MOUNTED 90°
 TYPE 10B-POLE MOUNTED 180°
 1-PEDESTRIAN PUSH BUTTON
 R9-3a SIGN PANEL-FACING POLE 5
 TYPE D SIGN PANEL-OVERHEAD (D-4)
 ONE WAY EVP DETECTOR AND LIGHT-OVERHEAD (#2,5)
 EXTEND INTO H.H.12:
 3"R.S.C.
 2-12/c#12
 2-3/c#12
 1-3/c#20
 1-3/c#12 (LUM)



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 PHASES 3 & 4 BEING SPLIT PHASES.
- VEHICLE SIGNAL PHASES 2 AND 6 SHALL OPERATE ON RECALL.

SIGNAL FACE	ALL SIGNAL INDICATIONS SHALL BE 12"					
	R	Y	G	R	Y	G
1-1, 1-2				←	←	←
2-1, 2-2, 2-3	•	•	•			
3-1, 3-3	•	•	•			
3-2, 4-2	•	•	•			←
3-4, 4-4	•	•	•			←
4-1, 4-3	•	•	•			
5-1, 5-2				←	←	←
6-1, 6-2, 6-3	•	•	•			

DRAWN BY: GN
 DESIGNER: JMG
 CHECKED BY: JMG

DESIGN TEAM	NO.	BY	DATE	REVISIONS

©SHORT ELLIOTT HENDRICKSON 1998. ANY USE OR REUSE OF THIS PLAN/DRAWING AND THE CORRESPONDING COMPUTER AIDED DESIGN/DRAFTING FILES WITHOUT THE EXPRESS WRITTEN CONSENT OF SEH, IS PROHIBITED. SEH SHALL NOT BE RESPONSIBLE FOR ANY UNAUTHORIZED USE OR REUSE OF THESE MATERIALS, OR DAMAGES RESULTING THEREFROM.

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 15, 2001 Lic. No. 22457

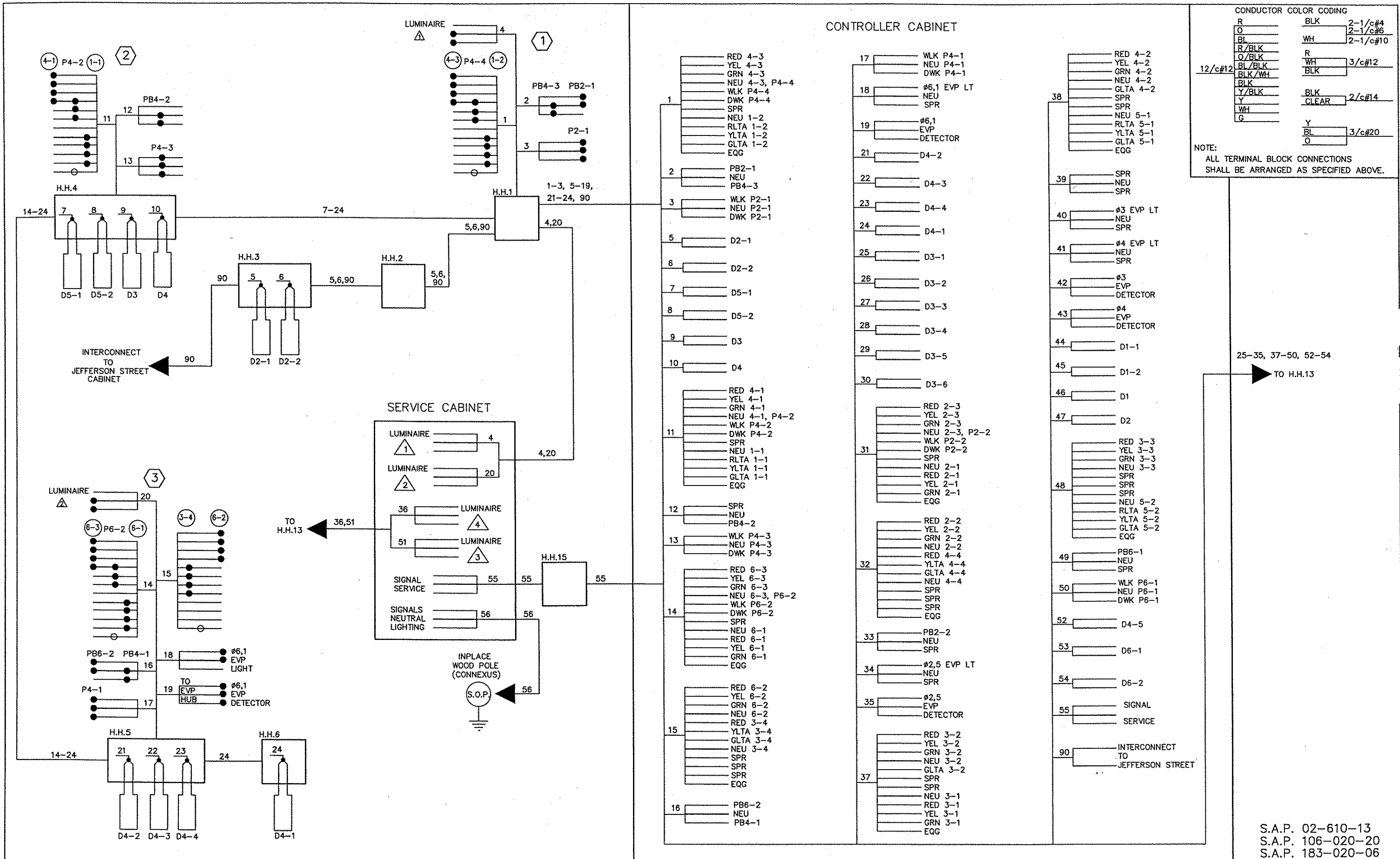


ANOKA COUNTY, MINNESOTA
 CITIES OF BLAINE & SPRING LAKE PARK

TRAFFIC SIGNAL SYSTEM 'A'
INTERSECTION LAYOUT
CSAH 10 AT ABLE STREET

FILE NO. ANOKC0101
 DATE 06/15/01
39
84

S.A.P. 02-610-13
 S.A.P. 106-020-20
 S.A.P. 183-020-06



DRAWN BY:	GEN		
DESIGNER:	JMG		
CHECKED BY:	JMG		
DESIGN TEAM			
NO.	BY	DATE	REVISIONS

©SHORT ELLIOTT HENDRICKSON 1998. ANY USE OR REUSE OF THIS PLAN/DRAWING AND THE CORRESPONDING COMPUTER AIDED DESIGN/DRAFTING FILES WITHOUT THE EXPRESS WRITTEN CONSENT OF SEH, IS PROHIBITED. SEH SHALL NOT BE RESPONSIBLE FOR ANY UNAUTHORIZED USE OR REUSE OF THESE MATERIALS, OR DAMAGES RESULTING THEREFROM.

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.

John M. Kelly
Date: June 15, 2001 Lic. No. 22457



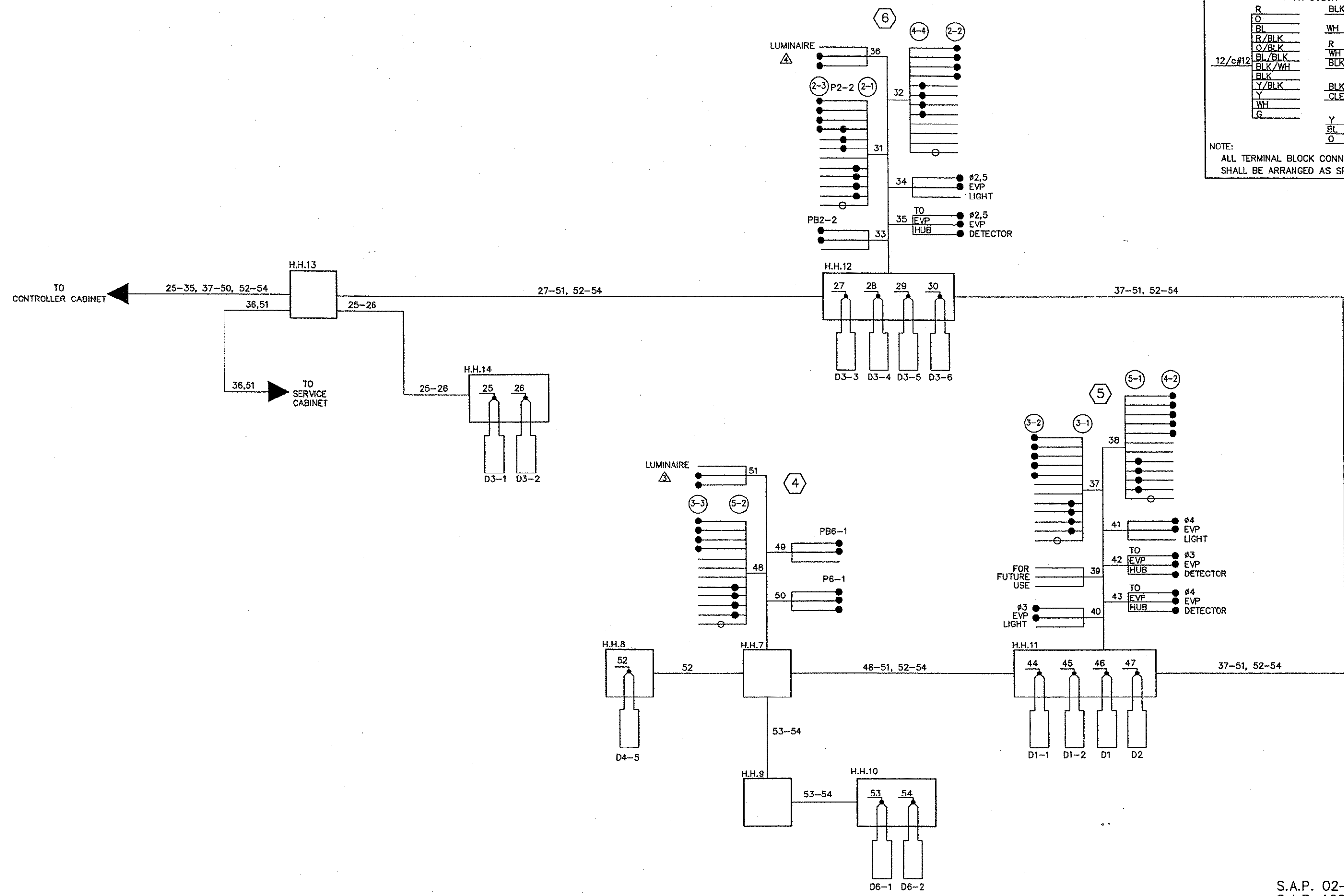
ANOKA COUNTY, MINNESOTA
CITIES OF BLAINE & SPRING LAKE PARK

TRAFFIC SIGNAL SYSTEM 'A'
FIELD WIRING DIAGRAM
CSAH 10 AT ABLE STREET

FILE NO.	40
AANOKC0101	
DATE	06/15/01
	84

CONDUCTOR COLOR CODING		
R	BLK	2-1/c#4
O	WH	2-1/c#6
BL	WH	2-1/c#10
R/BLK	R	
O/BLK	WH	3/c#12
BL/BLK	BLK	
BLK/WH	BLK	
BLK	BLK	2/c#14
Y/BLK	CLEAR	
Y	BLK	2/c#14
WH	CLEAR	
G	Y	3/c#20
	O	

NOTE:
ALL TERMINAL BLOCK CONNECTIONS
SHALL BE ARRANGED AS SPECIFIED ABOVE.



S.A.P. 02-610-13
S.A.P. 106-020-20
S.A.P. 183-020-06

DRAWN BY: GEN			
DESIGNER: JMG			
CHECKED BY: JMG			
DESIGN TEAM	NO.	BY	DATE
			REVISIONS

©SHORT ELLIOTT HENDRICKSON 1998. ANY USE OR REUSE OF THIS PLAN/DRAWING AND THE CORRESPONDING COMPUTER AIDED DESIGN/DRAFTING FILES WITHOUT THE EXPRESS WRITTEN CONSENT OF SEH, IS PROHIBITED. SEH SHALL NOT BE RESPONSIBLE FOR ANY UNAUTHORIZED USE OR REUSE OF THESE MATERIALS, OR DAMAGES RESULTING THEREFROM.

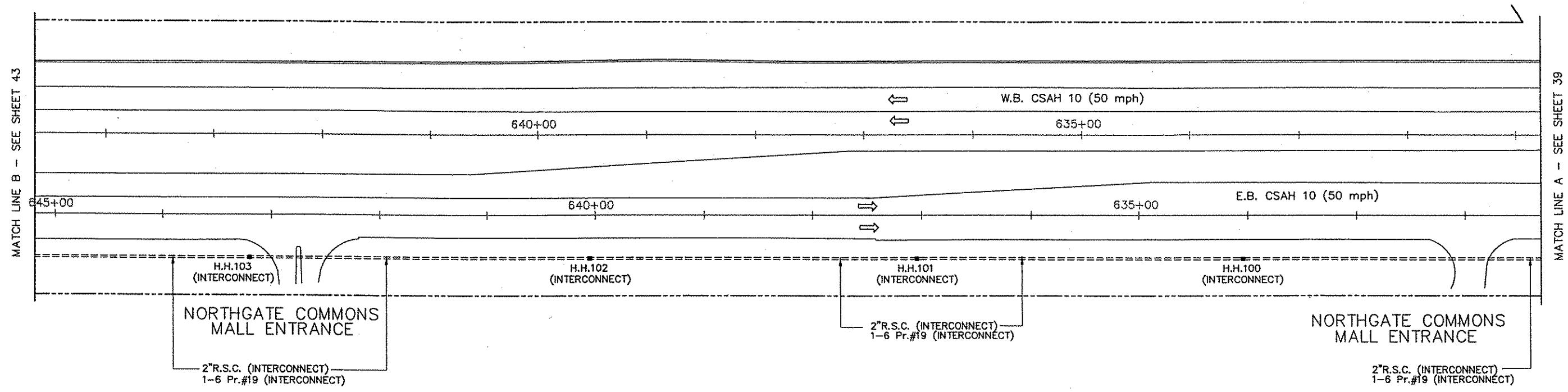
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
John M. A.
Date: June 15, 2001 Lic. No. 22457

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

ANOKA COUNTY, MINNESOTA
CITIES OF BLAINE & SPRING LAKE PARK

TRAFFIC SIGNAL SYSTEM 'A'
FIELD WIRING DIAGRAM
CSAH 10 AT ABLE STREET

FILE NO. AANOKC0101	41
DATE 06/15/01	84



S.A.P. 02-610-13

DRAWN BY:	GN			
DESIGNER:	JMG			
CHECKED BY:	JMG			
DESIGN TEAM	NO.	BY	DATE	REVISIONS

© SHORT ELLIOTT HENDRICKSON 1998. ANY USE OR REUSE OF THIS PLAN/DRAWING AND THE CORRESPONDING COMPUTER AIDED DESIGN/DRAFTING FILES WITHOUT THE EXPRESS WRITTEN CONSENT OF SEH, IS PROHIBITED. SEH SHALL NOT BE RESPONSIBLE FOR ANY UNAUTHORIZED USE OR REUSE OF THESE MATERIALS, OR DAMAGES RESULTING THEREFROM.

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 15, 2001 Lic. No. 22457



ANOKA COUNTY, MINNESOTA

TRAFFIC CONTROL INTERCONNECT (ABLE TO JEFFERSON)

FILE NO.	AANOKC0101	42
DATE	06/15/01	84

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. SEE SPECIAL PROVISIONS.
- 7) ALL VEHICLE SIGNAL INDICATIONS, AND ALL PEDESTRIAN SIGNAL INDICATIONS SHALL BE LED. SEE SPECIAL PROVISIONS.
- 8) SEE SPECIAL PROVISIONS AND DETAILS REGARDING SIGNS AND CONCRETE WALK TO BE FURNISHED & INSTALLED BY CONTRACTOR.
- 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 APPROX. 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, UNLESS OTHERWISE APPROVED BY THE ENGINEER.
- 13) (INTERCONNECT) DENOTES ITEMS TO BE MEASURED AND PAID FOR SEPARATELY UNDER ITEM NO. 2565.601 (TRAFFIC CONTROL INTERCONNECTION). SEE SPECIAL PROVISIONS.

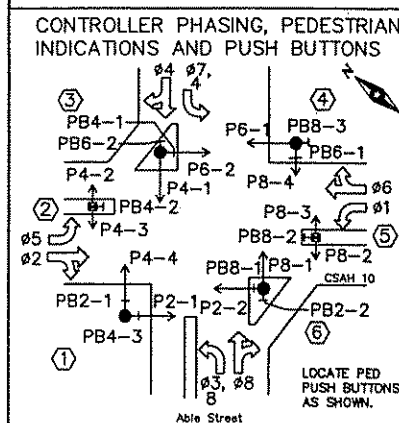
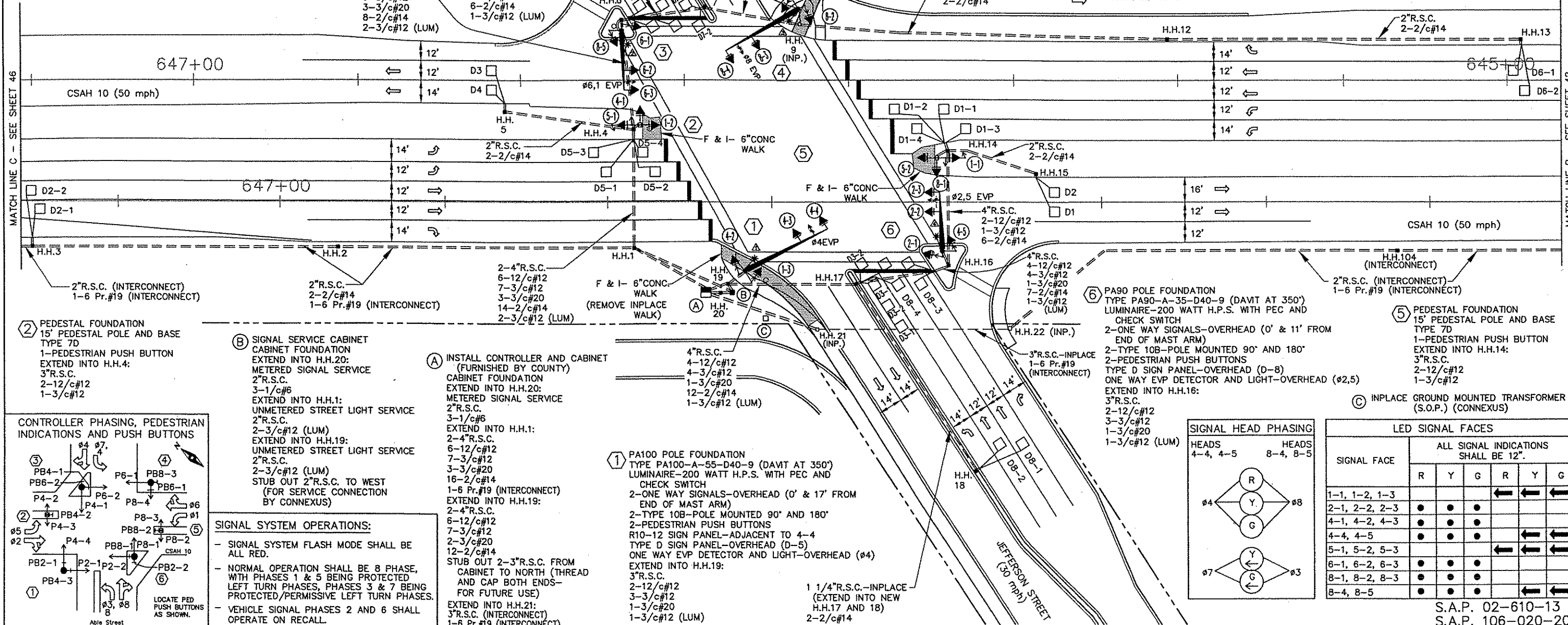
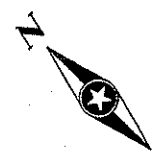
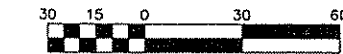
LOOP DETECTORS FUNCTIONS:

- 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) SPECIAL DETECTOR (COUNTING)

N.M.C. LOOP DETECTORS

NUMBER	SIZE (FT.)	LOCATION	FUNCTION
D1-1	6x6	40'	1
D1-2	6x6	10'	1
D1-3	6x6	40'	1
D1-4	6x6	10'	1
D2-1	6x6	400'	1
D2-2	6x6	400'	1
D3-1	2-6x6	5' & 35'	1
D3-2	2-6x6	5' & 20'	1
D4-1	6x6	120'	3,8
D4-2	6x6	120'	3,8
D4-3	2-6x6	AS SHOWN	1
D4-4	2-6x6	AS SHOWN	1
D5-1	6x6	40'	1
D5-2	6x6	10'	1
D5-3	6x6	40'	1
D5-4	6x6	10'	1
D6-1	6x6	400'	1
D6-2	6x6	400'	1
D7-1	2-6x6	5' & 35'	1
D7-2	2-6x6	5' & 20'	1
D8-1	6x6	120'	3,8
D8-2	6x6	120'	3,8
D8-3	2-6x6	AS SHOWN	1
D8-4	2-6x6	AS SHOWN	1
D1	6x6	100'	11
D2	6x6	100'	11
D3	6x6	100'	11
D4	6x6	100'	11

NOTE: LOCATION=DISTANCE FROM STOP BAR TO FRONT OF LOOP DETECTOR.



SIGNAL SYSTEM OPERATIONS:

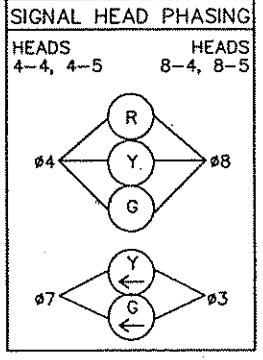
- SIGNAL SYSTEM FLASH MODE SHALL BE ALL RED.
- NORMAL OPERATION SHALL BE 8 PHASE, WITH PHASES 1 & 5 BEING PROTECTED LEFT TURN PHASES, PHASES 3 & 7 BEING PROTECTED/PERMISSIVE LEFT TURN PHASES.
- VEHICLE SIGNAL PHASES 2 AND 6 SHALL OPERATE ON RECALL.

(A) INSTALL CONTROLLER AND CABINET (FURNISHED BY COUNTY) CABINET FOUNDATION
 EXTEND INTO H.H.20:
 METERED SIGNAL SERVICE
 2\"/>

(1) PA100 POLE FOUNDATION
 TYPE PA100-A-55-D40-9 (DAVIT AT 350')
 LUMINAIRE-200 WATT H.P.S. WITH PEC AND CHECK SWITCH
 2-ONE WAY SIGNALS-OVERHEAD (0' & 17' FROM END OF MAST ARM)
 2-TYPE 10B-POLE MOUNTED 90° AND 180°
 2-PEDESTRIAN PUSH BUTTONS
 R10-12 SIGN PANEL-ADJACENT TO 4-4
 TYPE D SIGN PANEL-OVERHEAD (D-5)
 ONE WAY EVP DETECTOR AND LIGHT-OVERHEAD (04)
 EXTEND INTO H.H.19:
 3\"/>

(6) PA90 POLE FOUNDATION
 TYPE PA90-A-35-D40-9 (DAVIT AT 350')
 LUMINAIRE-200 WATT H.P.S. WITH PEC AND CHECK SWITCH
 2-ONE WAY SIGNALS-OVERHEAD (0' & 11' FROM END OF MAST ARM)
 2-TYPE 10B-POLE MOUNTED 90° AND 180°
 2-PEDESTRIAN PUSH BUTTONS
 TYPE D SIGN PANEL-OVERHEAD (D-8)
 ONE WAY EVP DETECTOR AND LIGHT-OVERHEAD (02,5)
 EXTEND INTO H.H.16:
 3\"/>

(5) PEDESTAL FOUNDATION
 15' PEDESTAL POLE AND BASE TYPE 7D
 1-PEDESTRIAN PUSH BUTTON
 EXTEND INTO H.H.14:
 3\"/>



SIGNAL FACE	LED SIGNAL FACES					
	ALL SIGNAL INDICATIONS SHALL BE 12\"/>					
1-1, 1-2, 1-3				←	←	←
2-1, 2-2, 2-3	•	•	•			
4-1, 4-2, 4-3	•	•	•			
4-4, 4-5	•	•	•	←	←	←
5-1, 5-2, 5-3				←	←	←
6-1, 6-2, 6-3	•	•	•			
8-1, 8-2, 8-3	•	•	•			
8-4, 8-5	•	•	•	←	←	←

DRAWN BY: GN
 DESIGNER: JMG
 CHECKED BY: JMG

NO.	BY	DATE	REVISIONS

©SHORT ELLIOTT HENDRICKSON 1998. ANY USE OR REUSE OF THIS PLAN/DRAWING AND THE CORRESPONDING COMPUTER AIDED DESIGN/DRAFTING FILES WITHOUT THE EXPRESS WRITTEN CONSENT OF SEH, IS PROHIBITED. SEH SHALL NOT BE RESPONSIBLE FOR ANY UNAUTHORIZED USE OR REUSE OF THESE MATERIALS, OR DAMAGES RESULTING THEREFROM.

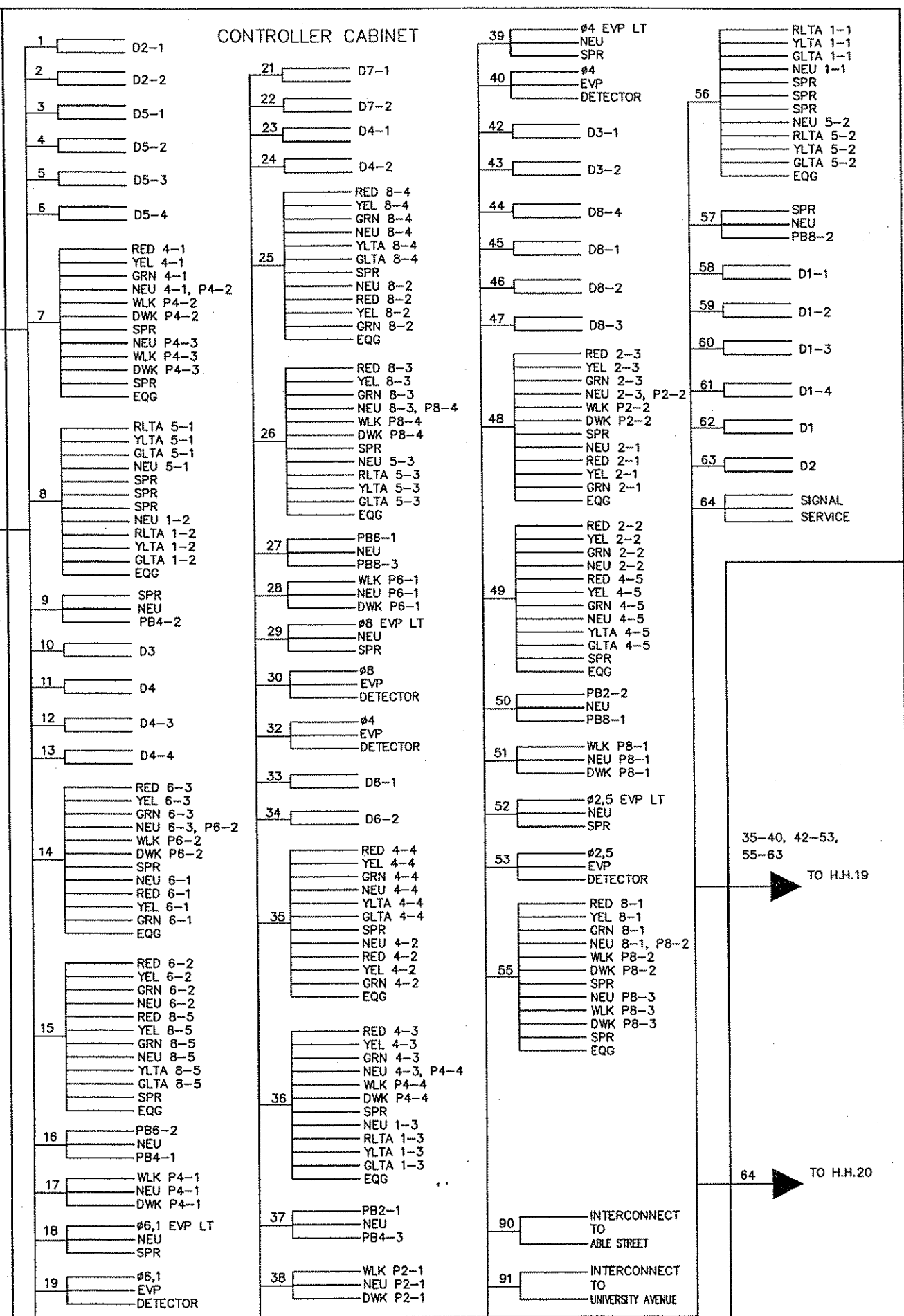
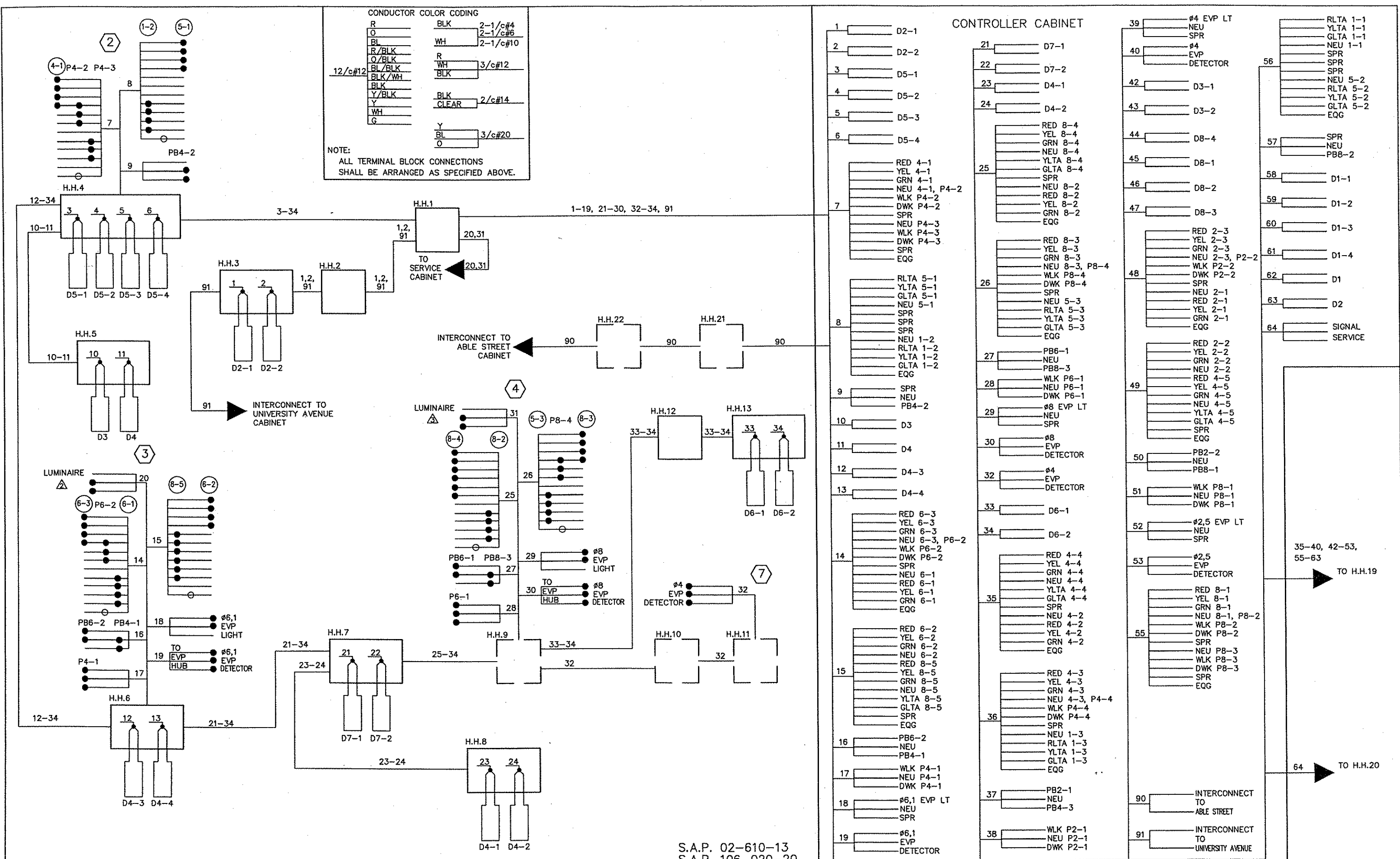
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 Date: June 15, 2001 Lic. No. 22457



ANOKA COUNTY, MINNESOTA
 CITY OF BLANE

TRAFFIC SIGNAL SYSTEM "B"
 INTERSECTION LAYOUT
 CSAH 10 AT JEFFERSON STREET

FILE NO. AANOKC0101
 DATE 06/15/01
43
84



S.A.P. 02-610-13
S.A.P. 106-020-20

DRAWN BY:	GEN		
DESIGNER:	JMG		
CHECKED BY:	JMG		
DESIGN TEAM			
NO.	BY	DATE	REVISIONS

©SHORT ELLIOTT HENDRICKSON 1998. ANY USE OR REUSE OF THIS PLAN/DRAWING AND THE CORRESPONDING COMPUTER AIDED DESIGN/DRAFTING FILES WITHOUT THE EXPRESS WRITTEN CONSENT OF SEH, IS PROHIBITED. SEH SHALL NOT BE RESPONSIBLE FOR ANY UNAUTHORIZED USE OR REUSE OF THESE MATERIALS, OR DAMAGES RESULTING THEREFROM.

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 15, 2001 Lic. No. 22457



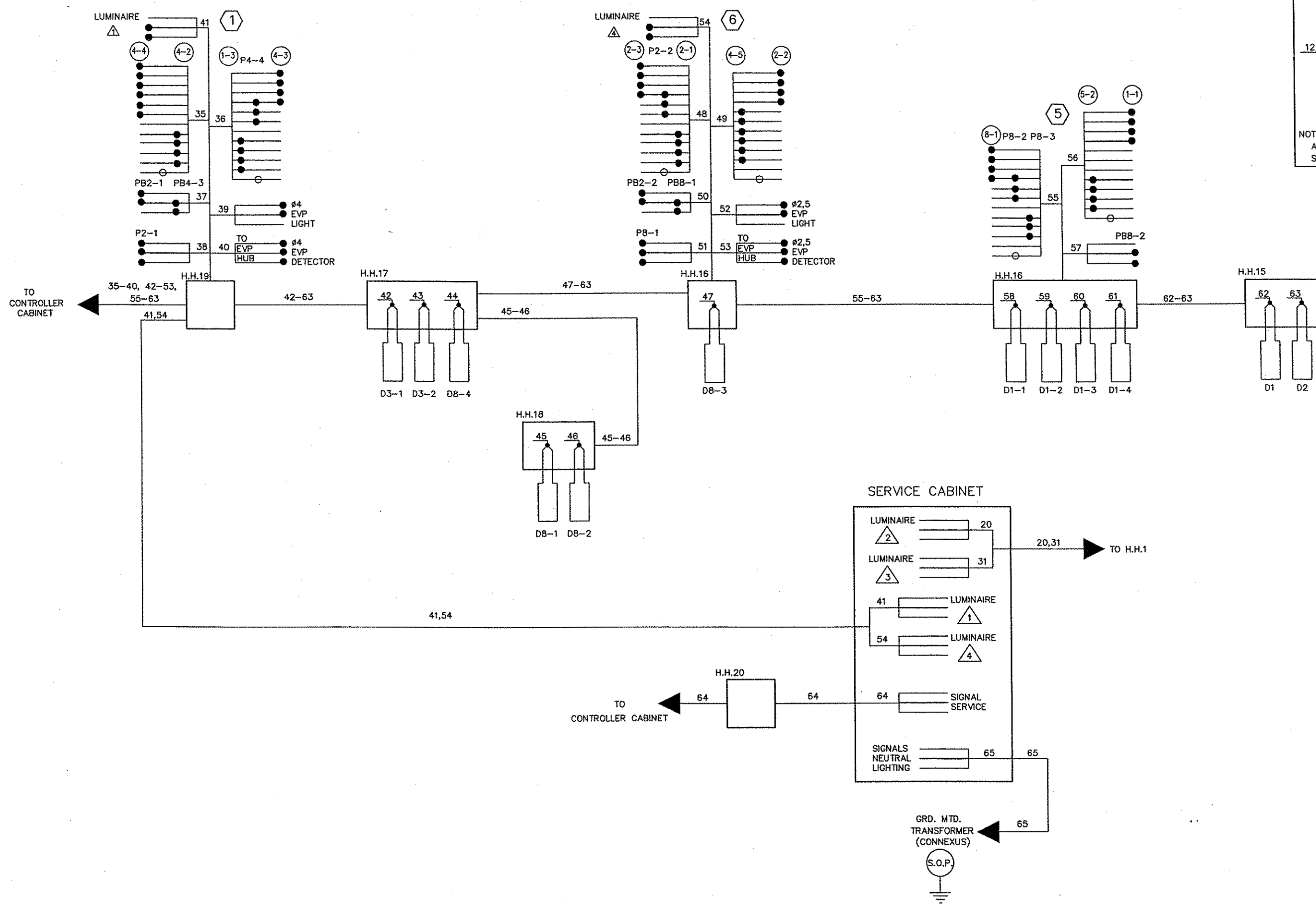
ANOKA COUNTY, MINNESOTA
CITY OF BLANE

TRAFFIC SIGNAL SYSTEM 'B'
FIELD WIRING DIAGRAM
CSAH 10 AT JEFFERSON STREET

FILE NO.	44
AANOKC0101	
DATE	06/15/01
	84

CONDUCTOR COLOR CODING		
R	BLK	2-1/c#4
O	WH	2-1/c#6
BL	WH	2-1/c#10
R/BLK	R	
O/BLK	WH	3/c#12
BL/BLK	BLK	
BLK/WH	BLK	
BLK	BLK	2/c#14
Y/BLK	CLEAR	
Y	Y	3/c#20
WH	O	
G		

NOTE:
ALL TERMINAL BLOCK CONNECTIONS SHALL BE ARRANGED AS SPECIFIED ABOVE.



DRAWN BY: GEN	DESIGNER: JMG	CHECKED BY: JMG
DESIGN TEAM	NO. BY DATE	REVISIONS

©SHORT ELLIOTT HENDRICKSON 1998. ANY USE OR REUSE OF THIS PLAN/DRAWING AND THE CORRESPONDING COMPUTER AIDED DESIGN/DRAFTING FILES WITHOUT THE EXPRESS WRITTEN CONSENT OF SEH, IS PROHIBITED. SEH SHALL NOT BE RESPONSIBLE FOR ANY UNAUTHORIZED USE OR REUSE OF THESE MATERIALS, OR DAMAGES RESULTING THEREFROM.

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 15, 2001 Lic. No. 22457

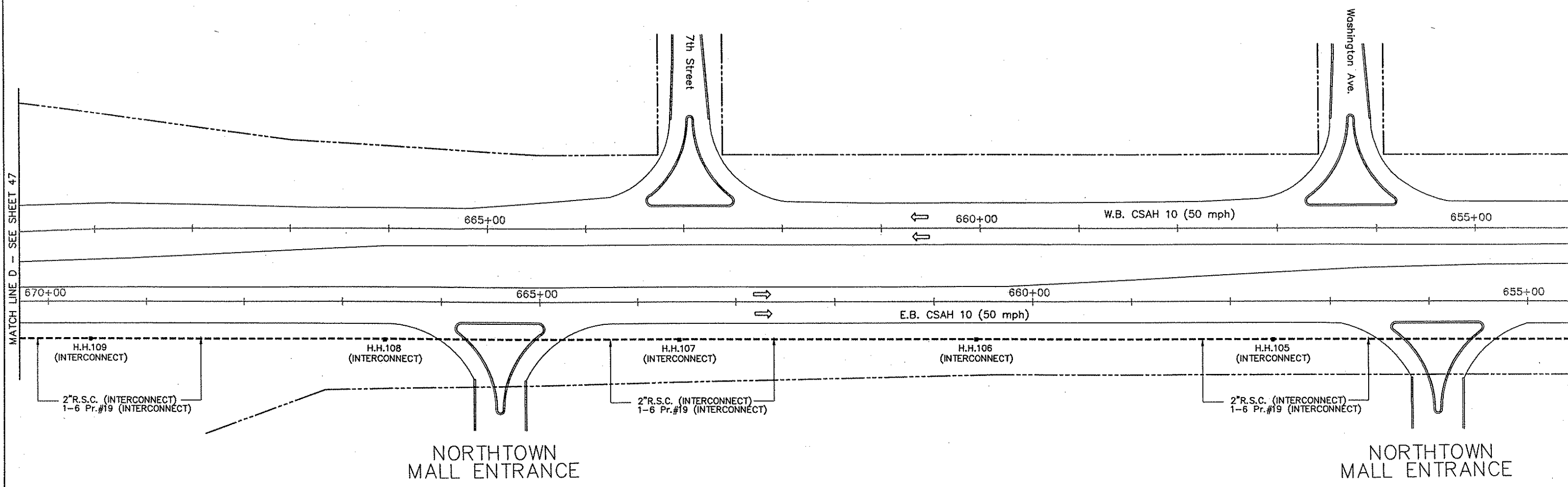
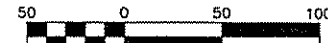


ANOKA COUNTY, MINNESOTA
CITY OF BLAINE

TRAFFIC SIGNAL SYSTEM 'B'
FIELD WIRING DIAGRAM
CSAH 10 AT JEFFERSON STREET

FILE NO. AANOKC0101	45
DATE 06/15/01	84

S.A.P. 02-610-13
S.A.P. 106-020-20



MATCH LINE D - SEE SHEET 47

MATCH LINE C - SEE SHEET 43

NORTHTOWN
MALL ENTRANCE

NORTHTOWN
MALL ENTRANCE

S.A.P. 02-610-13

DRAWN BY:	GN			
DESIGNER:	JMG			
CHECKED BY:	JMG			
DESIGN TEAM	NO.	BY	DATE	REVISIONS

© SHORT ELLIOTT HENDRICKSON 1998. ANY USE OR REUSE OF THIS PLAN/DRAWING AND THE CORRESPONDING COMPUTER AIDED DESIGN/DRAFTING FILES WITHOUT THE EXPRESS WRITTEN CONSENT OF SEH, IS PROHIBITED. SEH SHALL NOT BE RESPONSIBLE FOR ANY UNAUTHORIZED USE OR REUSE OF THESE MATERIALS, OR DAMAGES RESULTING THEREFROM.

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

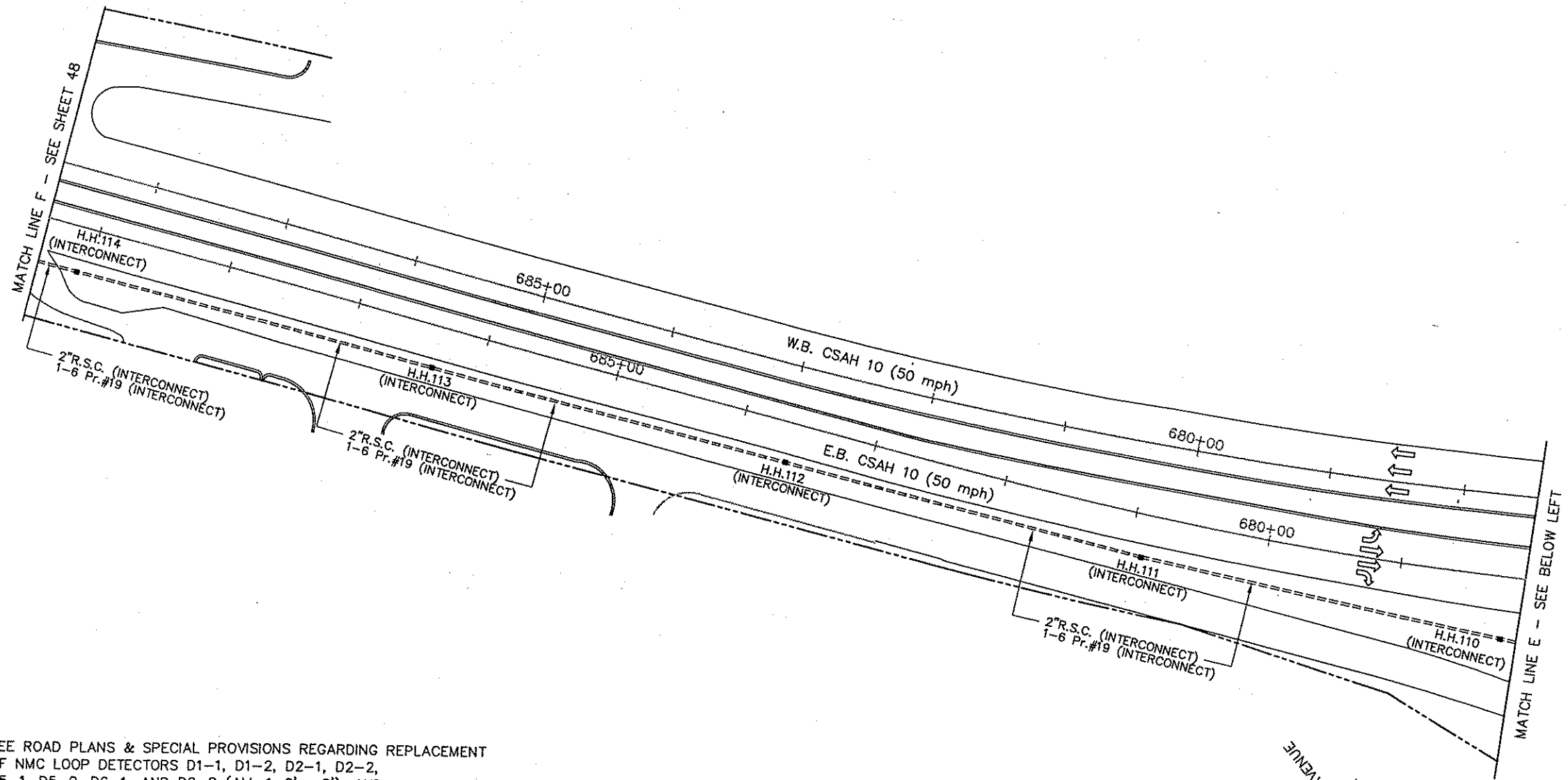
[Signature]
Date: June 15, 2001 Lic. No. 22457



**ANOKA COUNTY,
MINNESOTA**

**TRAFFIC CONTROL INTERCONNECT
(JEFFERSON TO UNIVERSITY)**

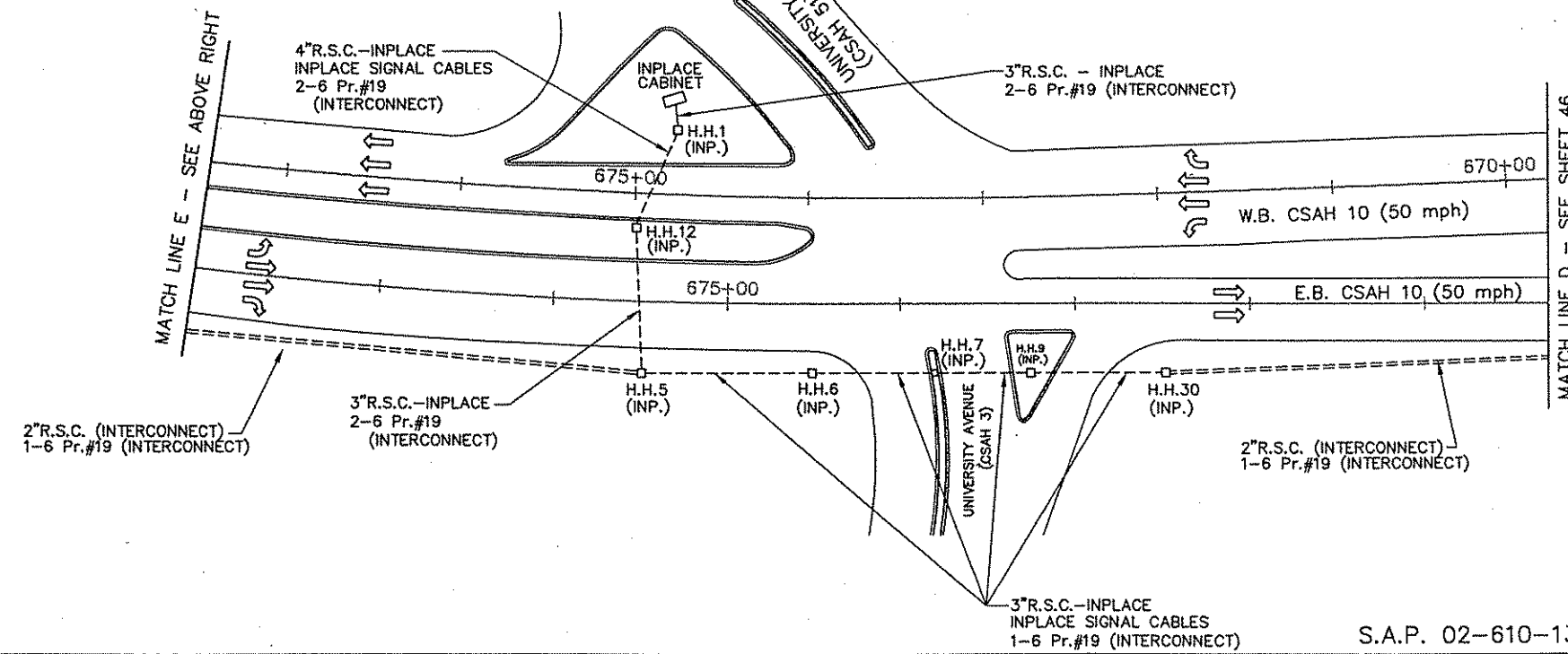
FILE NO. AANOKC0101	46
DATE 06/15/01	84



SEE ROAD PLANS & SPECIAL PROVISIONS REGARDING REPLACEMENT OF NMC LOOP DETECTORS D1-1, D1-2, D2-1, D2-2, D5-1, D5-2, D6-1, AND D6-2 (ALL 1-6' x 6'), AND NMC LOOP DETECTORS D4-1 AND D7-1 (BOTH 2-6' x 6'), TO BE MEASURED AND PAID FOR UNDER ITEM NO. 2565.602 (LOOP DETECTOR 6' x 6'-8 TOTAL, AND LOOP DETECTOR 2-6' x 6'-2 TOTAL) AT CSAH 10/UNIVERSITY AVENUE.

ALSO SEE ROAD PLANS AND SPECIAL PROVISIONS REGARDING REPLACEMENT OF NMC LOOP DETECTORS D2-1 AND D2-2 (BOTH 1-6' x 6') AND NMC LOOP DETECTOR D5-1 (2-6' x 6'), TO BE MEASURED AND PAID FOR UNDER ITEM NO. 2565.602 (LOOP DETECTOR 6' x 6'-2 TOTAL, AND LOOP DETECTOR 2-6' x 6'-1 TOTAL) AT CSAH 3/86TH LANE.

SEE CSAH 10/PLEASANTVIEW DRIVE ROAD PLANS AND SPECIAL PROVISIONS REGARDING 6' x 6' NMC LOOP DETECTORS (4 TOTAL), 4 INCH RIGID STEEL CONDUIT (150' TOTAL) AND PVC HANDHOLES WITH METAL FRAMES AND COVERS (4 TOTAL) TO BE FURNISHED AND INSTALLED BY CONTRACTOR AS PART OF THIS PROJECT (FOR FUTURE SIGNAL SYSTEM AT INTERSECTION BY OTHERS).



DRAWN BY:	GN			
DESIGNER:	JMG			
CHECKED BY:	JMG			
DESIGN TEAM		NO.	BY	DATE
				REVISIONS

© SHORT ELLIOTT HENDRICKSON 1998. ANY USE OR REUSE OF THIS PLAN/DRAWING AND THE CORRESPONDING COMPUTER AIDED DESIGN/DRAFTING FILES WITHOUT THE EXPRESS WRITTEN CONSENT OF SEH, IS PROHIBITED. SEH SHALL NOT BE RESPONSIBLE FOR ANY UNAUTHORIZED USE OR REUSE OF THESE MATERIALS, OR DAMAGES RESULTING THEREFROM.

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 15, 2001 Lic. No. 22457

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

**ANOKA COUNTY,
 MINNESOTA**

**TRAFFIC CONTROL INTERCONNECT
 (UNIVERSITY TO TH 47 RAMPS)**

FILE NO.	AANOKC0101	47
DATE	06/15/01	84

S.A.P. 02-610-13

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. SEE SPECIAL PROVISIONS.
- 7) ALL VEHICLE SIGNAL INDICATIONS, AND ALL PEDESTRIAN SIGNAL INDICATIONS SHALL BE LED. SEE SPECIAL PROVISIONS.
- 8) SEE SPECIAL PROVISIONS AND DETAILS REGARDING SIGNS AND CONCRETE WALK TO BE FURNISHED & INSTALLED BY CONTRACTOR.
- 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 APPROX. 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, UNLESS OTHERWISE APPROVED BY THE ENGINEER.
- 13) (INTERCONNECT) DENOTES ITEMS TO BE MEASURED AND PAID FOR SEPARATELY UNDER ITEM NO. 2565.601 (TRAFFIC CONTROL INTERCONNECTION). SEE SPECIAL PROVISIONS.

N.M.C. LOOP DETECTORS			
NUMBER	SIZE (FT.)	LOCATION	FUNCTION
D2-1	6x6	400'	1
D2-2	6x6	400'	1
D5-1	6x6	40'	1
D5-2	6x6	10'	1
D6-1	6x6	300'	1
D6-2	6x6	300'	1
D6-3	6x6	300'	1
D8-1	6x6	250'	3,8
D8-2	6x6	250'	3,8
D8-3	2-6x6	AS SHOWN	1
D8-4	2-6x6	AS SHOWN	1
D1	6x6	100'	11
D2	6x6	100'	11
D3	6x6	50'	11
D4	6x6	50'	11

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) SPECIAL DETECTOR (COUNTING)

NOTE: LOCATION=DISTANCE FROM STOP BAR TO FRONT OF LOOP DETECTOR.

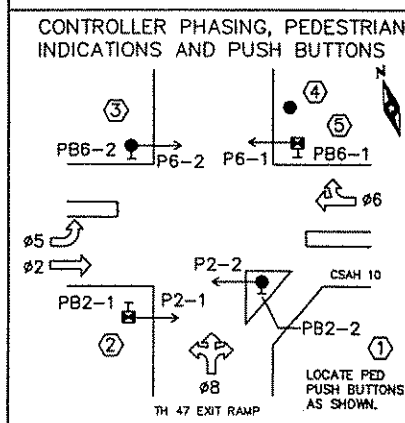
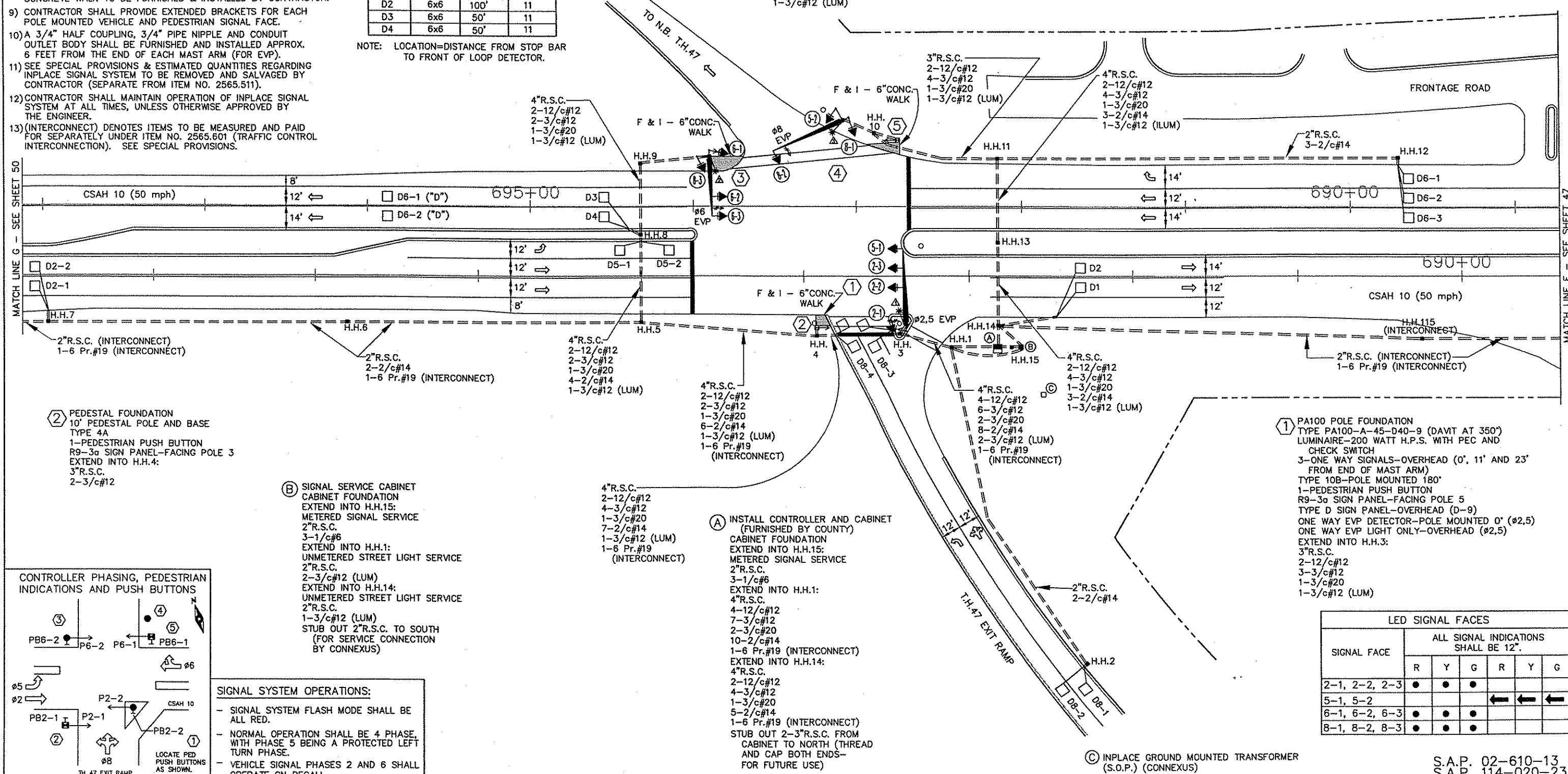
- 3) PA90 POLE FOUNDATION
TYPE PA90-A-35-D40-9 (DAVIT AT 350')
LUMINAIRE-200 WATT H.P.S. WITH PEC AND CHECK SWITCH
2-ONE WAY SIGNALS-OVERHEAD (0' & 11' FROM END OF MAST ARM)
TYPE 10A-POLE MOUNTED 90'
TYPE 10B-POLE MOUNTED 180'
1-PEDESTRIAN PUSH BUTTON
R9-3a SIGN PANEL-FACING POLE 2
2-TYPE D SIGN PANELS-OVERHEAD (D-10,11)
ONE WAY EVP DETECTOR AND LIGHT-OVERHEAD (#6)
EXTEND INTO H.H.9:
3"R.S.C.
2-12/c#12
2-3/c#12
1-3/c#20
1-3/c#12 (LUM)

- 4) PA100 POLE FOUNDATION
TYPE PA100-A-45-D40-9 (DAVIT AT 350')
LUMINAIRE-200 WATT H.P.S. WITH PEC AND CHECK SWITCH
ONE WAY SIGNAL-OVERHEAD
2-TYPE 10A-POLE MOUNTED 90' & 180'
TYPE D SIGN PANEL-OVERHEAD (D-12)
ONE WAY EVP DETECTOR AND LIGHT-OVERHEAD (#8)
EXTEND INTO H.H.10:
3"R.S.C.
2-12/c#12
1-3/c#12
1-3/c#20
1-3/c#12 (LUM)

- 5) PEDESTAL FOUNDATION
10' PEDESTAL POLE AND BASE
TYPE 4A
1-PEDESTRIAN PUSH BUTTON
R9-3a SIGN PANEL-FACING POLE 1
EXTEND INTO H.H.10:
3"R.S.C.
3-3/c#12

MATCH LINE G - SEE SHEET 50

MATCH LINE F - SEE SHEET 47



SIGNAL SYSTEM OPERATIONS:

- SIGNAL SYSTEM FLASH MODE SHALL BE ALL RED.
- NORMAL OPERATION SHALL BE 4 PHASE, WITH PHASE 5 BEING A PROTECTED LEFT TURN PHASE.
- VEHICLE SIGNAL PHASES 2 AND 6 SHALL OPERATE ON RECALL.

LED SIGNAL FACES						
SIGNAL FACE	ALL SIGNAL INDICATIONS SHALL BE 12"					
	R	Y	G	R	Y	G
2-1, 2-2, 2-3	•	•	•			
5-1, 5-2				←	←	←
6-1, 6-2, 6-3	•	•	•			
8-1, 8-2, 8-3	•	•	•			

DRAWN BY: GN	NO.	BY	DATE	REVISIONS
DESIGNER: JMG				
CHECKED BY: JMG				

© SHORT ELLIOTT HENDRICKSON 1998. ANY USE OR REUSE OF THIS PLAN/DRAWING AND THE CORRESPONDING COMPUTER AIDED DESIGN/DRAFTING FILES WITHOUT THE EXPRESS WRITTEN CONSENT OF SEH, IS PROHIBITED. SEH SHALL NOT BE RESPONSIBLE FOR ANY UNAUTHORIZED USE OR REUSE OF THESE MATERIALS, OR DAMAGES RESULTING THEREFROM.

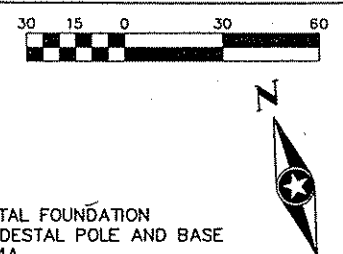
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
Date: June 15, 2001 Lic. No. 22457

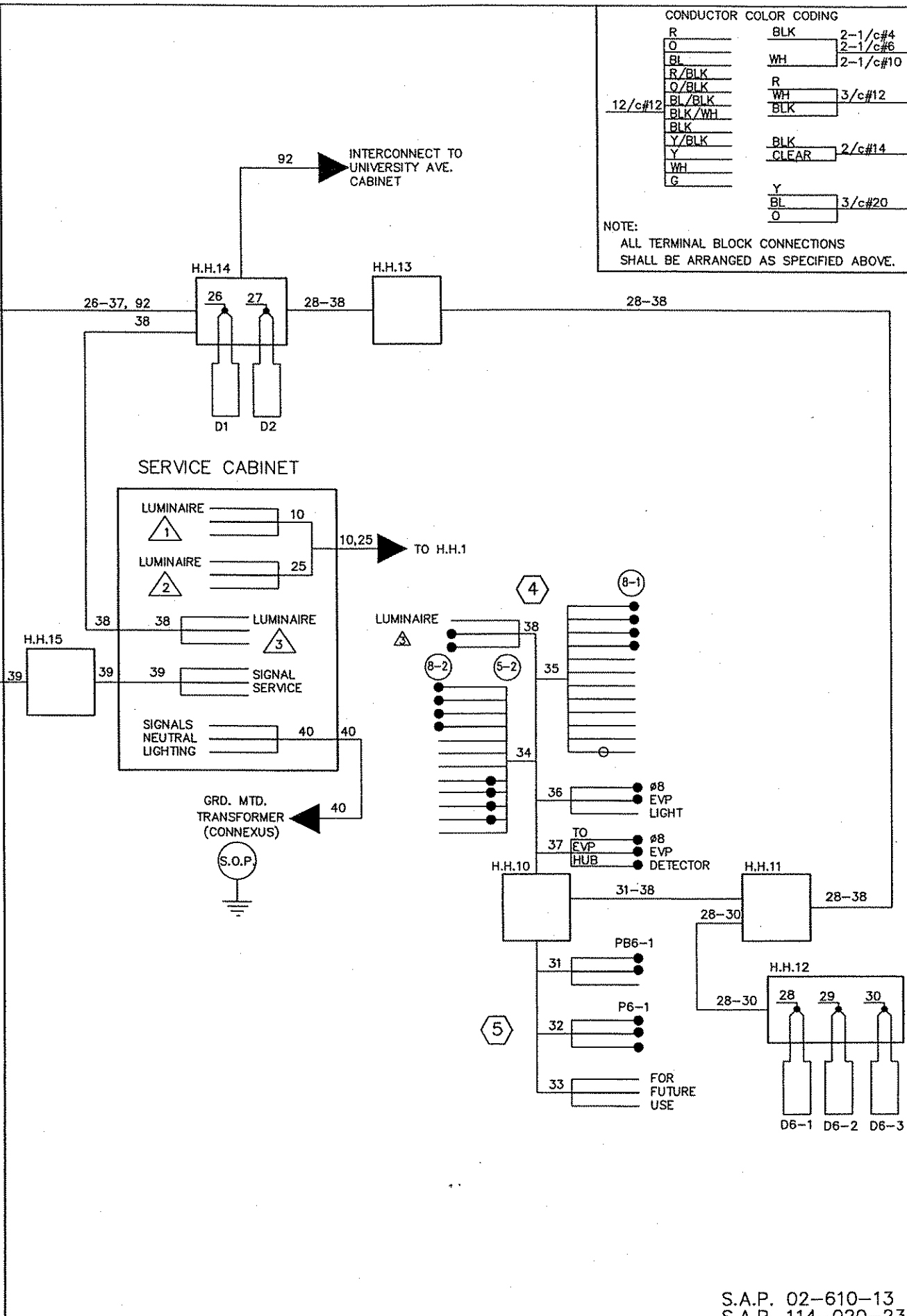
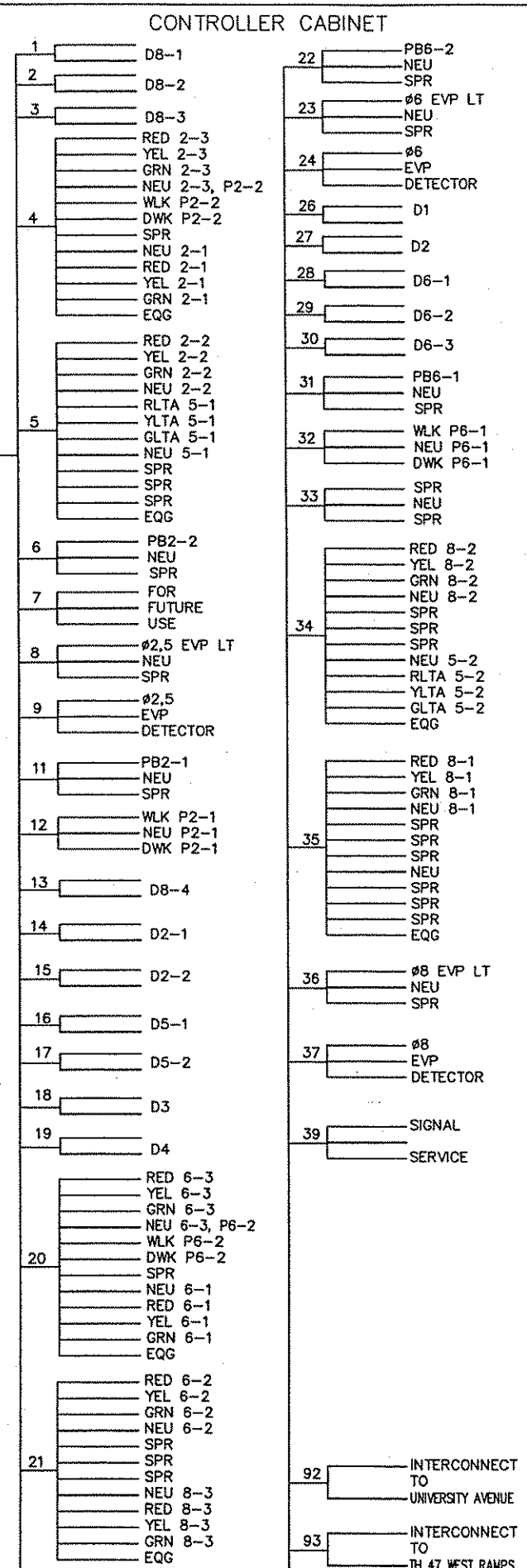
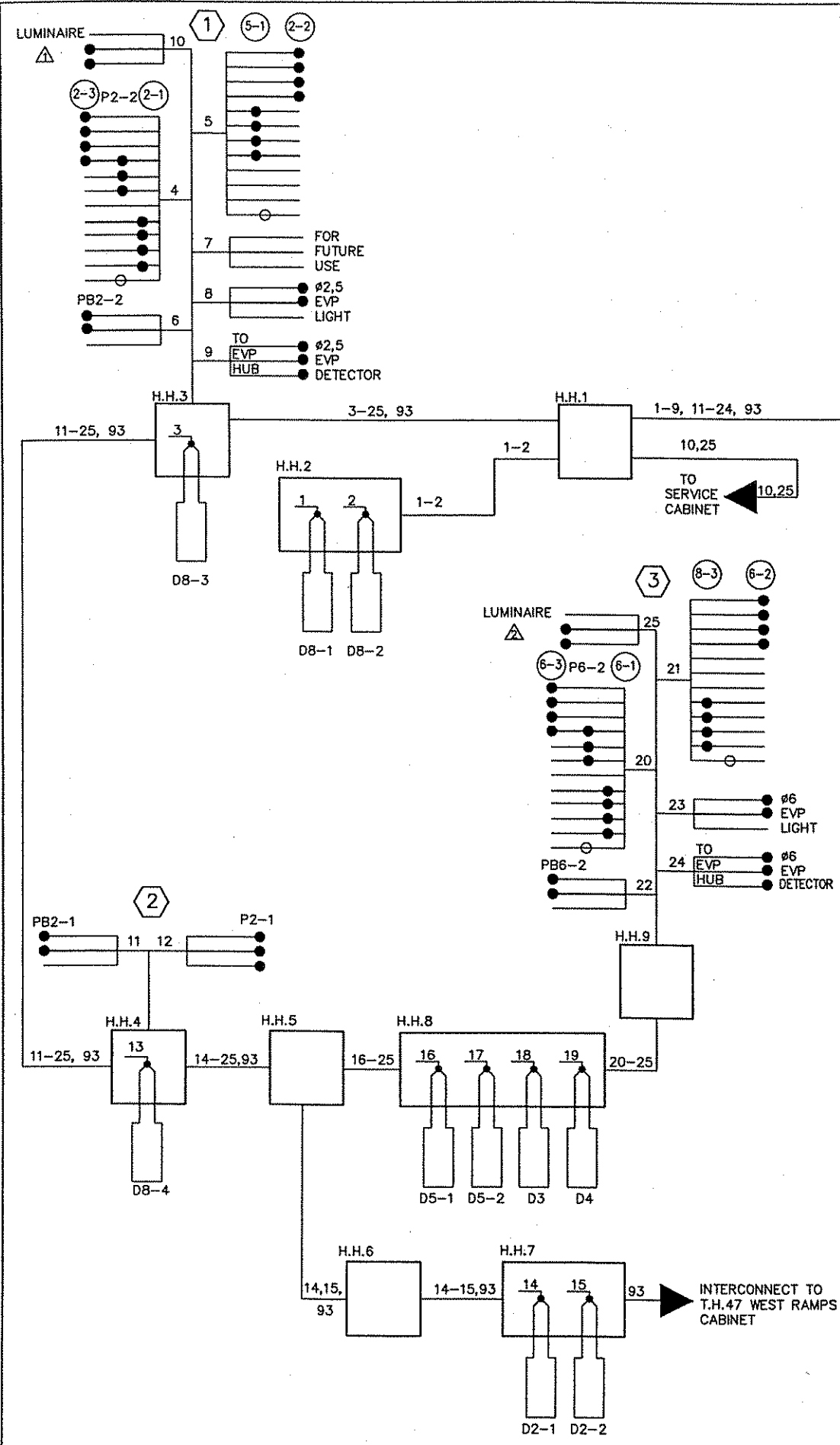


ANOKA COUNTY, MINNESOTA
CITY OF COON RAPIDS

TRAFFIC SIGNAL SYSTEM 'C'
INTERSECTION LAYOUT
CSAH 10 AT TH 47 EAST RAMP

FILE NO. AANOKC0101
DATE 06/15/01
48
84





CONDUCTOR COLOR CODING

R	BLK	2-1/c#4
O	WH	2-1/c#6
R/BLK	WH	2-1/c#10
O/BLK	R	
BL/BLK	WH	3/c#12
BLK/WH	BLK	
BLK	BLK	
Y/BLK	BLK	2/c#14
WH	CLEAR	
G	Y	
	BL	3/c#20
	O	

NOTE:
ALL TERMINAL BLOCK CONNECTIONS SHALL BE ARRANGED AS SPECIFIED ABOVE.

DRAWN BY: GEN							
DESIGNER: JMG							
CHECKED BY: JMG							
DESIGN TEAM	NO.	BY	DATE	REVISIONS			

© SHORT ELLIOTT HENDRICKSON 1998. ANY USE OR REUSE OF THIS PLAN/DRAWING AND THE CORRESPONDING COMPUTER AIDED DESIGN/DRAFTING FILES WITHOUT THE EXPRESS WRITTEN CONSENT OF SEH, IS PROHIBITED. SEH SHALL NOT BE RESPONSIBLE FOR ANY UNAUTHORIZED USE OR REUSE OF THESE MATERIALS, OR DAMAGES RESULTING THEREFROM.

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

[Signature]

Date: June 15, 2001 Lic. No. 22457



**ANOKA COUNTY,
MINNESOTA**

CITY OF COON RAPIDS

**TRAFFIC SIGNAL SYSTEM 'C'
FIELD WIRING DIAGRAM**

CSAH 10 AT TH 47 EAST RAMPS

FILE NO. AANOKC0101	49
DATE 06/15/01	84

S.A.P. 02-610-13
S.A.P. 114-020-23

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. SEE SPECIAL PROVISIONS.
- 7) ALL VEHICLE SIGNAL INDICATIONS, AND ALL PEDESTRIAN SIGNAL INDICATIONS SHALL BE LED. SEE SPECIAL PROVISIONS.
- 8) SEE SPECIAL PROVISIONS AND DETAILS REGARDING SIGNS AND CONCRETE WALK TO BE FURNISHED & INSTALLED BY CONTRACTOR.
- 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 APPROX. 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, UNLESS OTHERWISE APPROVED BY THE ENGINEER.
- 13) (INTERCONNECT) DENOTES ITEMS TO BE MEASURED AND PAID FOR SEPARATELY UNDER ITEM NO. 2565.601 (TRAFFIC CONTROL INTERCONNECTION). SEE SPECIAL PROVISIONS.

N.M.C. LOOP DETECTORS			
NUMBER	SIZE (FT.)	LOCATION	FUNCTION
D1-1	6x6	40'	1
D1-2	6x6	10'	1
D2-1	6x6	400'	1
D2-2	6x6	400'	1
D4-1	6x6	250'	3,8
D4-2	6x6	250'	3,8
D4-3	2-6x6	AS SHOWN	1
D4-4	2-6x6	AS SHOWN	1
D6-1	6x6	400'	1
D6-2	6x6	400'	1
D1	6x6	50'	11
D2	6x6	50'	11
D3	6x6	100'	11
D4	6x6	100'	11

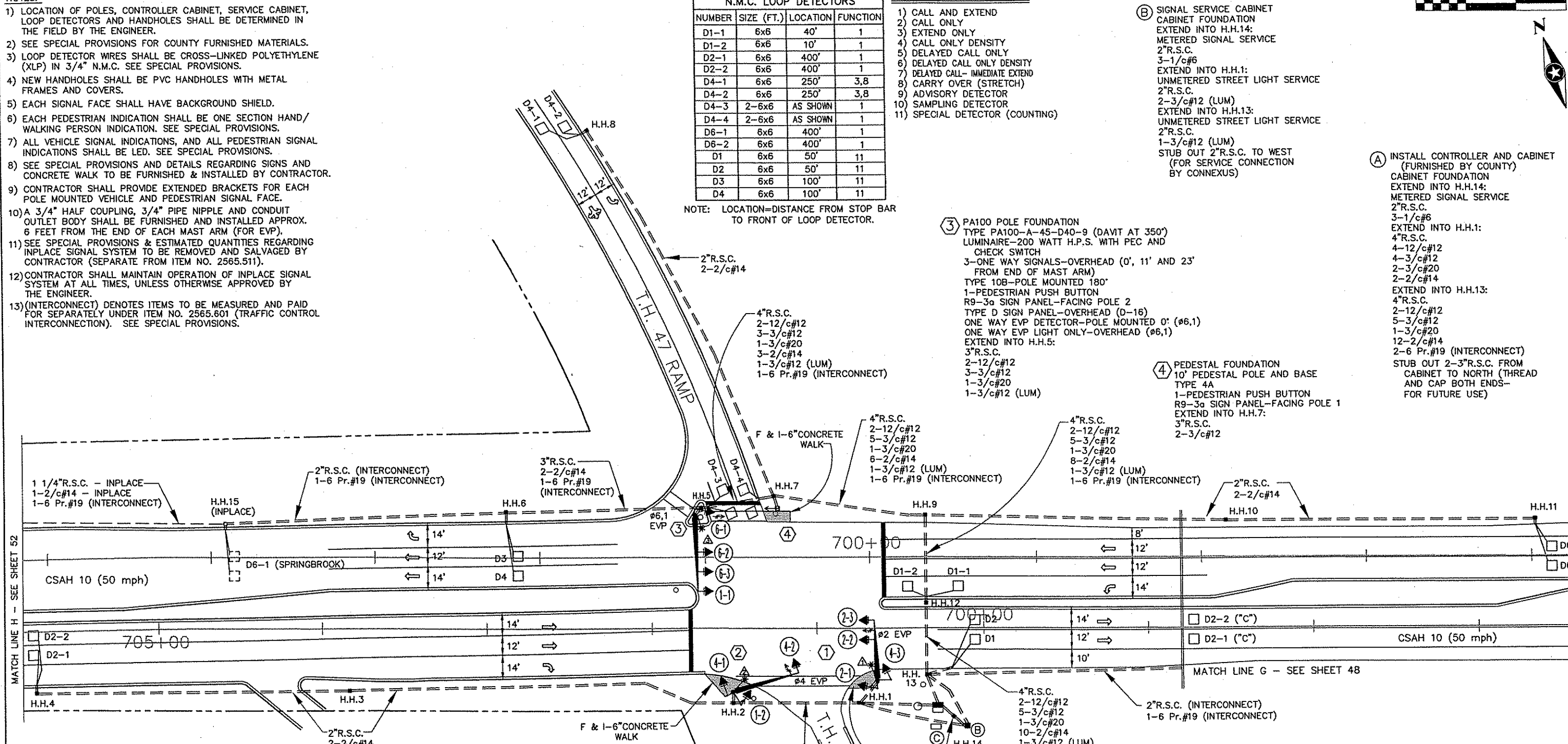
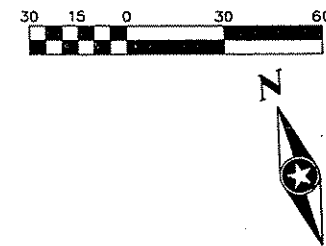
NOTE: LOCATION=DISTANCE FROM STOP BAR TO FRONT OF LOOP DETECTOR.

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) SPECIAL DETECTOR (COUNTING)

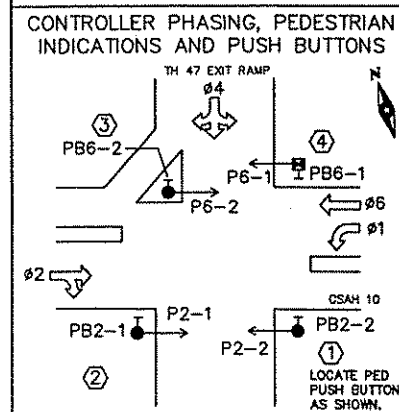
- (B) SIGNAL SERVICE CABINET
CABINET FOUNDATION
EXTEND INTO H.H.14:
METERED SIGNAL SERVICE
2"R.S.C.
3-1/c#6
EXTEND INTO H.H.1:
UNMETERED STREET LIGHT SERVICE
2"R.S.C.
2-3/c#12 (LUM)
EXTEND INTO H.H.13:
UNMETERED STREET LIGHT SERVICE
2"R.S.C.
1-3/c#12 (LUM)
STUB OUT 2"R.S.C. TO WEST
(FOR SERVICE CONNECTION
BY CONNEXUS)

- (A) INSTALL CONTROLLER AND CABINET
(FURNISHED BY COUNTY)
CABINET FOUNDATION
EXTEND INTO H.H.14:
METERED SIGNAL SERVICE
2"R.S.C.
3-1/c#6
EXTEND INTO H.H.1:
4"R.S.C.
4-12/c#12
4-3/c#12
2-3/c#20
2-2/c#14
EXTEND INTO H.H.13:
4"R.S.C.
2-12/c#12
5-3/c#12
1-3/c#20
12-2/c#14
2-6 Pr.#19 (INTERCONNECT)
STUB OUT 2-3"R.S.C. FROM
CABINET TO NORTH (THREAD
AND CAP BOTH ENDS-
FOR FUTURE USE)



MATCH LINE H - SEE SHEET 52

MATCH LINE G - SEE SHEET 48



SIGNAL SYSTEM OPERATIONS:

- SIGNAL SYSTEM FLASH MODE SHALL BE ALL RED.
- NORMAL OPERATION SHALL BE 4 PHASE, WITH PHASE 1 BEING A PROTECTED LEFT TURN PHASE.
- VEHICLE SIGNAL PHASES 2 AND 6 SHALL OPERATE ON RECALL.

- (2) PA100 POLE FOUNDATION
TYPE PA100-A-40-D40-9 (DAVIT AT 350')
LUMINAIRE-200 WATT H.P.S. WITH PEC AND CHECK SWITCH
ONE WAY SIGNAL-OVERHEAD
TYPE 10B-POLE MOUNTED 90'
TYPE 10A-POLE MOUNTED 180'
R9-3a SIGN PANEL-FACING POLE 3
TYPE D SIGN PANEL-OVERHEAD (D-15)
ONE WAY EVP DETECTOR AND LIGHT-OVERHEAD (#4)
EXTEND INTO H.H.2:
3"R.S.C.
2-12/c#12
2-3/c#12
1-3/c#20
1-3/c#12 (LUM)

- (C) INPLACE GROUND MOUNTED TRANSFORMER (S.O.P.) (CONNEXUS)

- (1) PA90 POLE FOUNDATION
TYPE PA90-A-35-D40-9 (DAVIT AT 350')
LUMINAIRE-200 WATT H.P.S. WITH PEC AND CHECK SWITCH
2-ONE WAY SIGNALS-OVERHEAD (0' & 11' FROM END OF MAST ARM)
TYPE 10A-POLE MOUNTED 90'
TYPE 10B-POLE MOUNTED 180'
1-PEDESTRIAN PUSH BUTTON
R9-3a SIGN PANEL-FACING POLE 5
2-TYPE D SIGN PANELS-OVERHEAD (D-13,14)
ONE WAY EVP DETECTOR AND LIGHT-OVERHEAD (#2)
EXTEND INTO H.H.1:
3"R.S.C.
2-12/c#12
2-3/c#12
1-3/c#20
1-3/c#12 (LUM)

LED SIGNAL FACES						
SIGNAL FACE	ALL SIGNAL INDICATIONS SHALL BE 12".					
	R	Y	G	R	Y	G
1-1, 1-2				←	←	←
2-1, 2-2, 2-3	●	●	●			
4-1, 4-2, 4-3	●	●	●			
6-1, 6-2, 6-3	●	●	●			

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

NO.	BY	DATE	REVISIONS

©SHORT ELLIOTT HENDRICKSON 1998. ANY USE OR REUSE OF THIS PLAN/DRAWING AND THE CORRESPONDING COMPUTER AIDED DESIGN/DRAFTING FILES WITHOUT THE EXPRESS WRITTEN CONSENT OF SEH, IS PROHIBITED. SEH SHALL NOT BE RESPONSIBLE FOR ANY UNAUTHORIZED USE OR REUSE OF THESE MATERIALS, OR DAMAGES RESULTING THEREFROM.

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 15, 2001 Lic. No. 22457

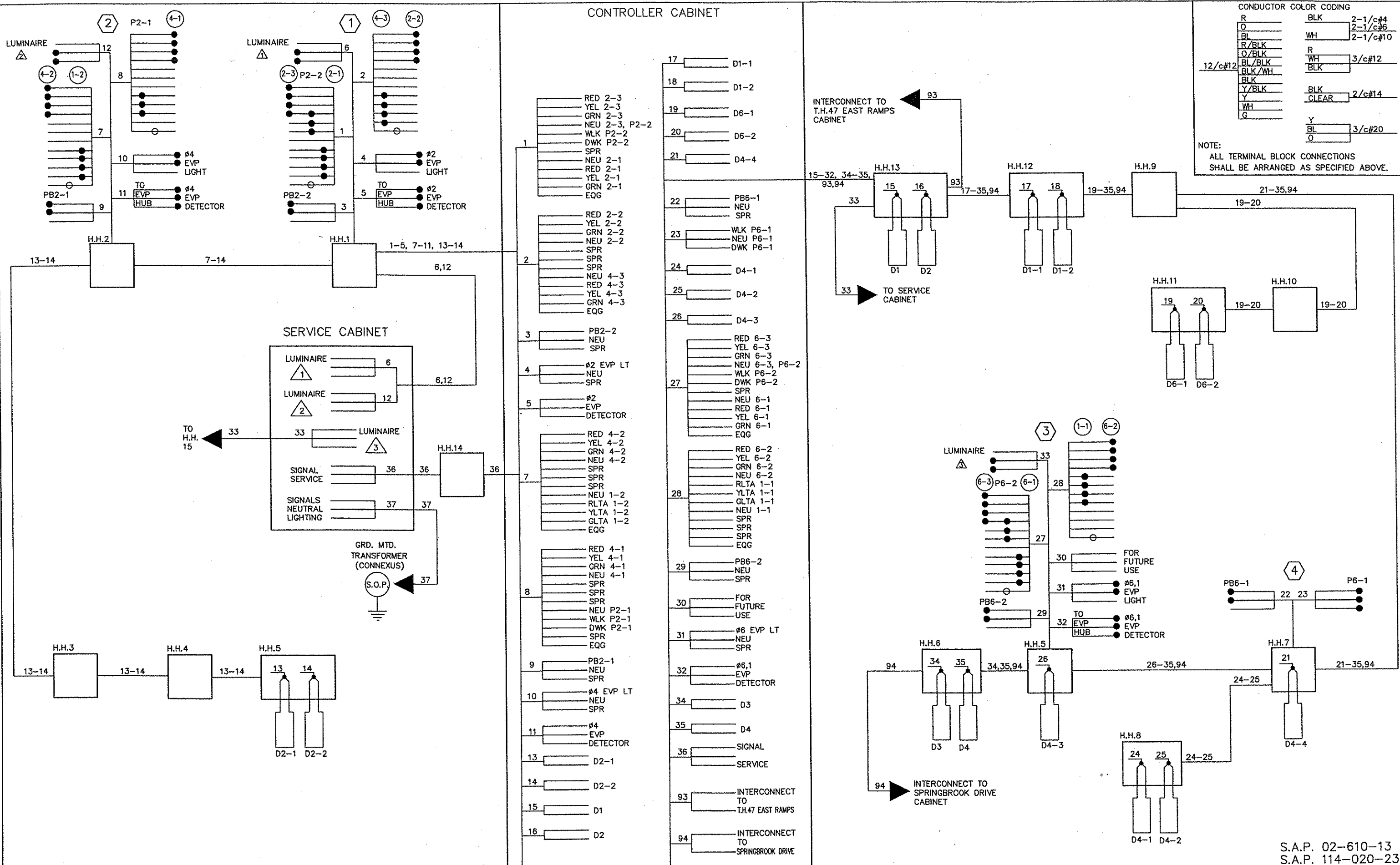


ANOKA COUNTY, MINNESOTA
CITY OF COON RAPIDS

TRAFFIC SIGNAL SYSTEM 'D'
INTERSECTION LAYOUT
CSAH 10 AT TH 47 WEST RAMPS

FILE NO.	AANOKC0101	50
DATE	06/15/01	84

S.A.P. 02-610-13
S.A.P. 114-020-23



CONDUCTOR COLOR CODING

R	BLK	2-1/c#4
O	WH	2-1/c#6
BL	WH	2-1/c#10
R/BLK	R	
O/BLK	WH	3/c#12
BL/BLK	BLK	
BLK/WH	BLK	
Y/BLK	BLK	2/c#14
Y	CLEAR	
WH	Y	3/c#20
G	O	

NOTE:
ALL TERMINAL BLOCK CONNECTIONS SHALL BE ARRANGED AS SPECIFIED ABOVE.

DESIGN TEAM

NO.	BY	DATE	REVISIONS

©SHORT ELLIOTT HENDRICKSON 1998. ANY USE OR REUSE OF THIS PLAN/DRAWING AND THE CORRESPONDING COMPUTER AIDED DESIGN/DRAFTING FILES WITHOUT THE EXPRESS WRITTEN CONSENT OF SEH, IS PROHIBITED. SEH SHALL NOT BE RESPONSIBLE FOR ANY UNAUTHORIZED USE OR REUSE OF THESE MATERIALS, OR DAMAGES RESULTING THEREFROM.

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.

John Miller
Date: June 15, 2001 Lic. No. 22457

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

ANOKA COUNTY, MINNESOTA
CITY OF COON RAPIDS

TRAFFIC SIGNAL SYSTEM 'D'
FIELD WIRING DIAGRAM
CSAH 10 AT TH 47 WEST RAMPS

FILE NO. AANOKC0101
DATE 06/15/01
51
84

S.A.P. 02-610-13
S.A.P. 114-020-23

NOTES:

- 1) SEE SPECIAL PROVISIONS FOR CONTRACTORS RESPONSIBILITY FOR THE LOCATION OF UTILITIES.
- 2) ALL SIGNAL FACES SHALL HAVE BACKGROUND SHIELDS.
- 3) LUMINAIRES Δ AND \triangle WITH P.E.C. AND CHECK SWITCH.
- 4) SEE SPECIAL PROVISIONS FOR ANOKA COUNTY SERVICE CABINET DETAILS.
- 5) DIRECTIONAL SIGNS TO BE INSTALLED ON MAST ARMS AT (1)(2)(3) AND (4). SEE SPECIAL PROVISIONS.
- 6) ALL HANDHOLES WITH TYPE "C" COVERS.
- 7) LOOP DETECTOR WRES SHALL BE CROSS LINKED POLYETHYLENE (XLP) IN 1" N.M.C.. SEE DETAIL SHEET.
- 8) ALL PEDESTRIAN INDICATIONS SHALL BE 12" x 12".

NOTE: ALL ITEMS OF THIS SIGNAL SYSTEM ARE INPLACE AND SHALL BE REUSED AND MAINTAINED INPLACE, EXCEPT WHERE BOXED IN AND DENOTED BY F & I (ITEMS TO BE FURNISHED AND INSTALLED BY CONTRACTOR UNDER ITEM NO. 2565.601-TRAFFIC CONTROL INTERCONNECTION).

- ONE WAY EVP DETECTOR AND INDICATOR LIGHT ($\phi 6.1$) - OVERHEAD
1-3/c#12
1-3/c#20
- (3) TYPE P100-A-40-D40-9
P100 POLE FOUNDATION
TWO-ONE WAY SIGNALS-OVERHEAD
TYPE 20C-POLE MOUNTED 270"
LUMINAIRE-200W H.P.S. (APPROX.350")
TWO-PEDESTRIAN PUSH BUTTONS AND SIGNS
EXTEND INTO H.H. 4:
3" R.S.C.
2- 12/C #12
1- 3/C #12
4- 1/C #10

- (2) TYPE 1A
PEDESTAL FOUNDATION
R10-10L SIGN AND DOWNLIGHT
EXTEND INTO H.H. 5:
3" R.S.C.
1- 12/C #12
1- 3/C #12



SIGNAL FACES						
SIGNAL FACE	SIGNAL INDICATIONS ARE 12"					
	R	Y	G	R	Y	G
1-1				←	←	←
2-1, 2-2, 2-3	•	•	•			
4-1, 4-2, 4-3	•	•	•			
5-1				←	←	←
6-1, 6-2, 6-3	•	•	•			
8-1, 8-2, 8-3	•	•	•			

- (A) SERVICE CABINET
CABINET FOUNDATION
EXTEND INTO H.H. 15:
2" R.S.C.
EXTEND INTO H.H. 1:
METERED SIGNAL SERVICE
1 1/4" R.S.C.
3- 1/C #6
UNMETERED STREET LIGHTING SERVICE
1" R.S.C.
4- 1/C #10
- (B) CONTROLLER & CABINET
CABINET FOUNDATION
EXTEND INTO H.H. 1:
4" R.S.C.
5- 12/C #12
3- 3/C #12
5- 2/C #14
2- 3/C #12
3- 3/C #20
METERED SIGNAL SERVICE
1 1/4" R.S.C.
3- 1/C #6
EXTEND INTO H.H. 9:
4" R.S.C.
5- 12/C #12
3- 3/C #12
5- 2/C #14
2- 3/C #12
2- 3/C #20
- F & I - 1-6 Pr.#19 (INTERCONNECT)
- BETWEEN H.H.1 AND H.H.9:
2" R.S.C.
2- 1/C #10

- ONE WAY EVP DETECTOR AND INDICATOR LIGHT ($\phi 8$) - OVERHEAD
1-3/c#12
1-3/c#20
- (4) TYPE P90-A-30-D40-9
P90 POLE FOUNDATION
ONE WAY SIGNAL-OVERHEAD
TYPE 10C-POLE MOUNTED 270"
LUMINAIRE-200W H.P.S. (APPROX. 350")
TWO-PEDESTRIAN PUSH BUTTONS AND SIGNS
EXTEND INTO H.H. 9:
3" R.S.C.
2- 12/C #12
1- 3/C #12
4- 1/C #10

- (5) TYPE 1A
PEDESTAL FOUNDATION
R10-10L SIGN AND DOWNLIGHT
EXTEND INTO H.H. 10:
3" R.S.C.
2- 12/C #12
1- 3/C #12

- ONE WAY EVP DETECTOR AND INDICATOR LIGHT ($\phi 2.5$) - OVERHEAD
1-3/c#12
1-3/c#20
- (6) TYPE P100-A-40-D40-9
P100 POLE FOUNDATION
TWO-ONE WAY SIGNALS-OVERHEAD
TYPE 20C-POLE MOUNTED 270"
LUMINAIRE-200W H.P.S. (APPROX.350")
TWO-PEDESTRIAN PUSH BUTTONS AND SIGNS
EXTEND INTO H.H. 11:
3" R.S.C.
2- 12/C #12
1- 3/C #12
2- 1/C #10

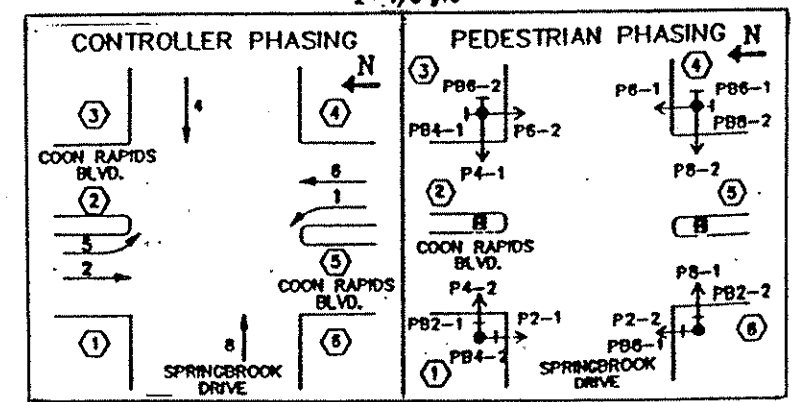
- ONE WAY EVP DETECTOR AND INDICATOR LIGHT ($\phi 4$) - OVERHEAD
1-3/c#12
1-3/c#20
- (1) TYPE P90-A-30-D40-9
P90 POLE FOUNDATION
ONE WAY SIGNAL-OVERHEAD
TYPE 10C-POLE MOUNTED 270"
LUMINAIRE-200W H.P.S. (APPROX.350")
TWO-PEDESTRIAN PUSH BUTTONS & SIGNS
EXTEND INTO H.H. 8:
3" R.S.C.
2- 12/C #12
1- 3/C #12
2- 1/C #10

- (7) PEDESTAL FOUNDATION
PEDESTAL POLE AND BASE (10')
ONE WAY EVP DETECTOR-MOUNT ON TOP
OF PEDESTAL POLE ($\phi 8$)
EXTEND INTO H.H. 7:
1 1/4" R.S.C.
1-3/c#20

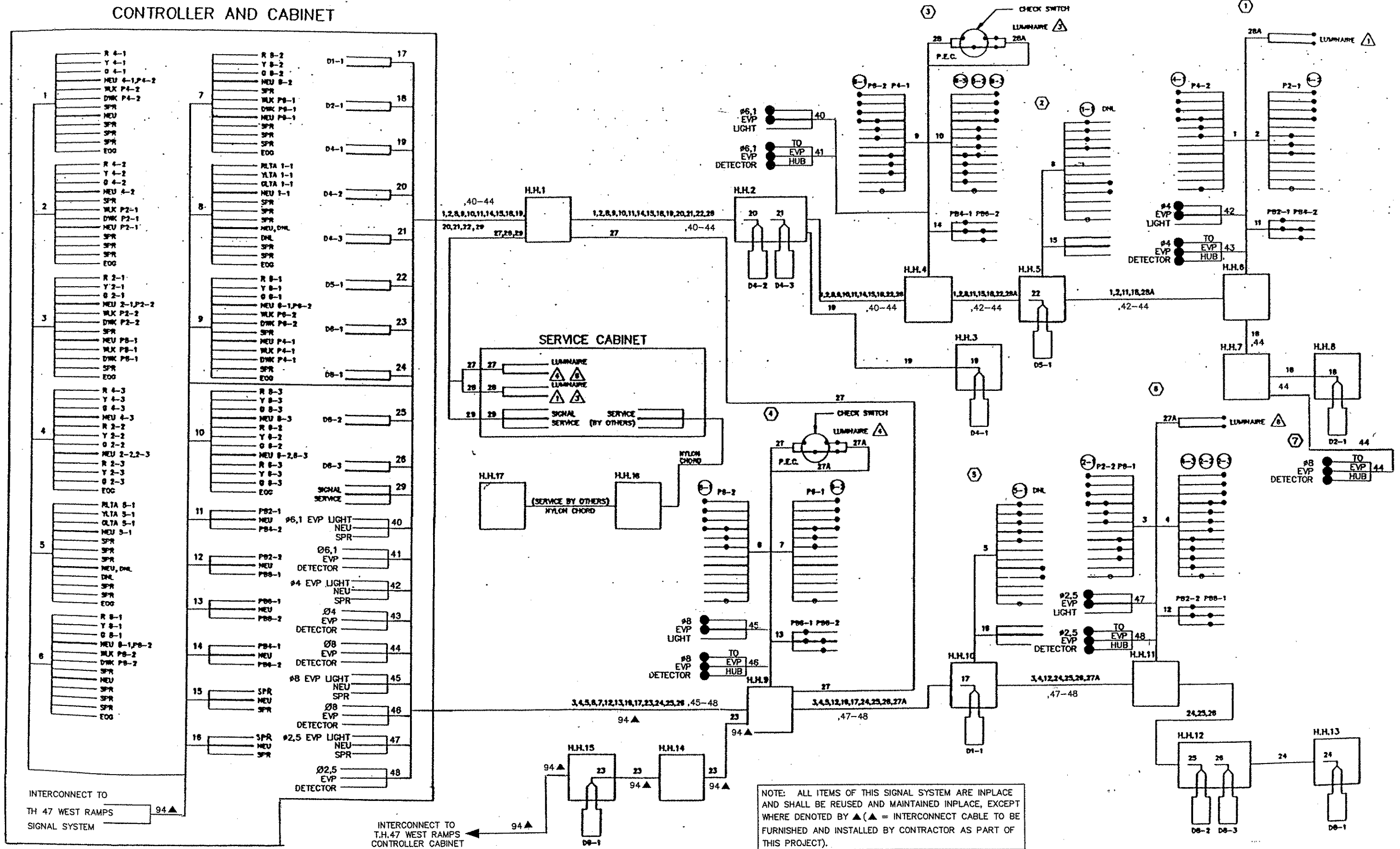
LOOP DETECTORS			
NUMBER	SIZE	LOCATION	FUNCTION
D1-1	MULTIPLE	---	1
D2-1	2-8'x8'	370'	1
D4-1	2-8'x8'	140'	3,8
D4-2	2-8'x8'	---	1
D4-3	2-8'x8'	---	7
D5-1	MULTIPLE	---	1
D6-1	2-8'x8'	370'	1
D6-1	2-8'x8'	140'	3,8
D6-2	2-8'x8'	---	1
D6-3	2-8'x8'	---	7

- 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) SPECIAL DETECTOR

NOTE: LOCATION = DISTANCE FROM STOP BAR TO DETECTOR



CONTROLLER AND CABINET



NOTE: ALL ITEMS OF THIS SIGNAL SYSTEM ARE INPLACE AND SHALL BE REUSED AND MAINTAINED INPLACE, EXCEPT WHERE DENOTED BY ▲ (▲ = INTERCONNECT CABLE TO BE FURNISHED AND INSTALLED BY CONTRACTOR AS PART OF THIS PROJECT).

S.A.P. 02-610-13

DRAWN BY:	GEN			
DESIGNER:	JMG			
CHECKED BY:	JMG			
DESIGN TEAM	NO.	BY	DATE	REVISIONS

©SHORT ELLIOTT HENDRICKSON 1998. ANY USE OR REUSE OF THIS PLAN/DRAWING AND THE CORRESPONDING COMPUTER AIDED DESIGN/DRAFTING FILES WITHOUT THE EXPRESS WRITTEN CONSENT OF SEH, IS PROHIBITED. SEH SHALL NOT BE RESPONSIBLE FOR ANY UNAUTHORIZED USE OR REUSE OF THESE MATERIALS, OR DAMAGES RESULTING THEREFROM.

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

[Signature]
Date: June 15, 2001 Lic. No. 22457

SEH
PHONE: (651) 480-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

**ANOKA COUNTY,
MINNESOTA**

**INPLACE SIGNAL SYSTEM
INTERCONNECT WIRING DIAGRAM
CSAH 3 AT SPRINGBROOK DRIVE**

FILE NO. AANOKC0101	53
DATE 06/15/01	
	84

SIGNAL FACES						
SIGNAL FACE	SIGNAL INDICATIONS ARE 12"					
	LED R	Y	G	LED R	Y	G
1-1, 1-2				←	←	←
2-1, 2-2	•	•	•			
3-1, 3-2	•	•	•			
3-3, 4-2	•	•	•			
4-1, 4-3	•	•	•			
5-1, 5-2				←	←	←
6-1, 6-2	•	•	•			

ONE WAY EVP DETECTOR AND INDICATOR LIGHT (Ø6,1)-OVERHEAD
ONE WAY EVP DETECTOR-MAST ARM POLE MOUNTED (Ø3)
1-3/c#12
2-3/c#20

ONE WAY EVP DETECTOR AND INDICATOR LIGHT (Ø2,5)-OVERHEAD
1-3/c#12
1-3/c#20

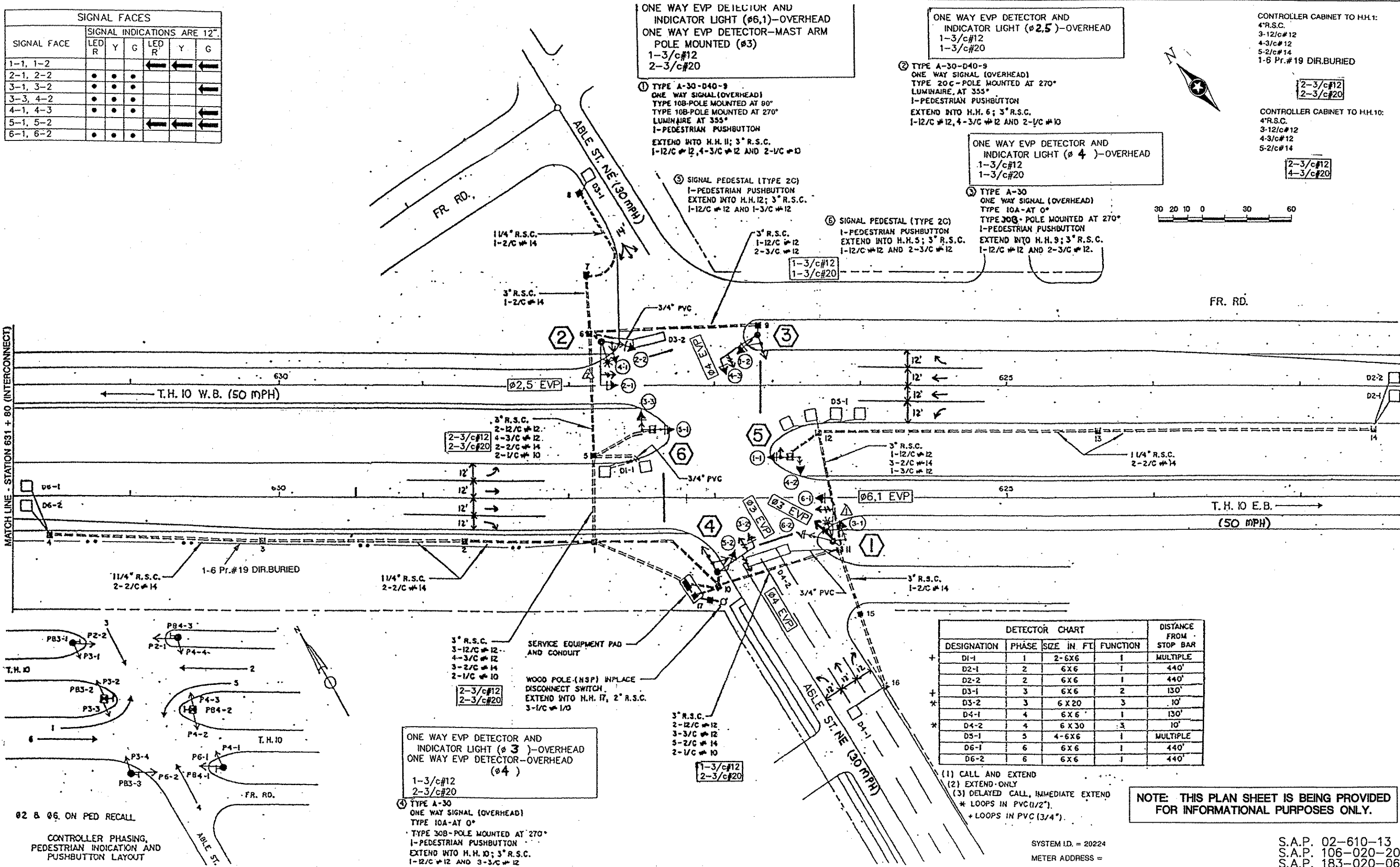
CONTROLLER CABINET TO H.H.1:
4" R.S.C.
3-12/c#12
4-3/c#12
5-2/c#14
1-6 Pr.#19 DIR.BURIED



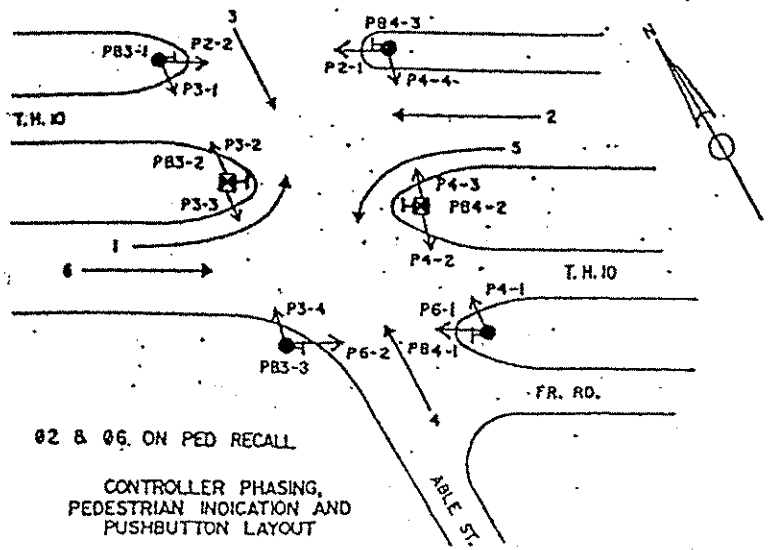
CONTROLLER CABINET TO H.H.10:
4" R.S.C.
3-12/c#12
4-3/c#12
5-2/c#14

2-3/c#12
2-3/c#20

2-3/c#12
4-3/c#20



MATCH LINE - STATION 631 + 80 (INTERCONNECT)



ONE WAY EVP DETECTOR AND INDICATOR LIGHT (Ø3)-OVERHEAD
ONE WAY EVP DETECTOR-OVERHEAD (Ø4)
1-3/c#12
2-3/c#20

④ TYPE A-30
ONE WAY SIGNAL (OVERHEAD)
TYPE 10A-AT 0°
TYPE 30B-POLE MOUNTED AT 270°
1-PEDESTRIAN PUSHBUTTON
EXTEND INTO H.H. 10; 3" R.S.C.
1-12/C #12 AND 3-3/C #12

DETECTOR CHART				DISTANCE FROM STOP BAR
DESIGNATION	PHASE	SIZE IN FT.	FUNCTION	
D1-1	1	2-6X6	1	MULTIPLE
D2-1	2	6X6	1	440'
D2-2	2	6X6	1	440'
D3-1	3	6X6	2	130'
D3-2	3	6X20	3	10'
D4-1	4	6X6	1	130'
D4-2	4	6X30	3	10'
D5-1	5	4-6X6	1	MULTIPLE
D6-1	6	6X6	1	440'
D6-2	6	6X6	1	440'

(1) CALL AND EXTEND
(2) EXTEND ONLY
(3) DELAYED CALL, IMMEDIATE EXTEND
* LOOPS IN PVC (1/2")
+ LOOPS IN PVC (3/4")

NOTE: THIS PLAN SHEET IS BEING PROVIDED FOR INFORMATIONAL PURPOSES ONLY.

SYSTEM I.D. = 20224
METER ADDRESS =

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

NO.	BY	DATE	REVISIONS

©SHORT ELLIOTT HENDRICKSON 1998. ANY USE OR REUSE OF THIS PLAN/DRAWING AND THE CORRESPONDING COMPUTER AIDED DESIGN/DRAFTING FILES WITHOUT THE EXPRESS WRITTEN CONSENT OF SEH, IS PROHIBITED. SEH SHALL NOT BE RESPONSIBLE FOR ANY UNAUTHORIZED USE OR REUSE OF THESE MATERIALS, OR DAMAGES RESULTING THEREFROM.

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 15, 2001 Lic. No. 22457

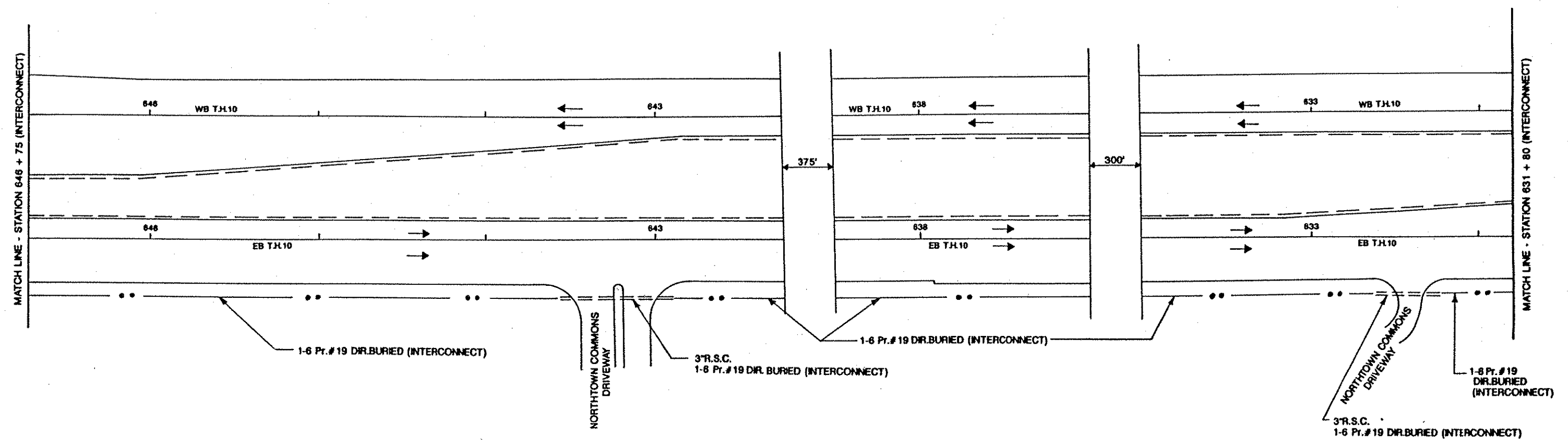
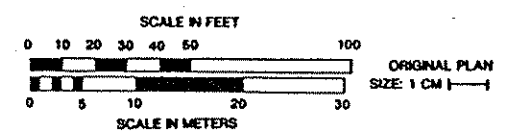
SEH
PHONE: (651) 490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

ANOKA COUNTY, MINNESOTA

INPLACE SIGNAL SYSTEM 'A' FOR INFORMATION ONLY CSAH 10 AT ABLE STREET

FILE NO. AANOKC0101
DATE 06/15/01
54
84

S.A.P. 02-610-13
S.A.P. 106-020-20
S.A.P. 183-020-06



NOTE: THIS PLAN SHEET IS BEING PROVIDED FOR INFORMATIONAL PURPOSES ONLY.

S.A.P. 02-610-13

DRAWN BY: GEN			
DESIGNER: JMG			
CHECKED BY: JMG			
DESIGN TEAM	NO.	BY	DATE
			REVISIONS

©SHORT ELLIOTT HENDRICKSON 1998. ANY USE OR REUSE OF THIS PLAN/DRAWING AND THE CORRESPONDING COMPUTER AIDED DESIGN/DRAFTING FILES WITHOUT THE EXPRESS WRITTEN CONSENT OF SEH, IS PROHIBITED. SEH SHALL NOT BE RESPONSIBLE FOR ANY UNAUTHORIZED USE OR REUSE OF THESE MATERIALS, OR DAMAGES RESULTING THEREFROM.

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 15, 2001 Lic. No. 22457



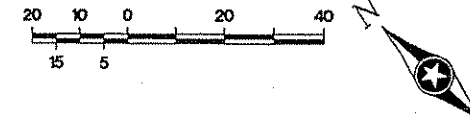
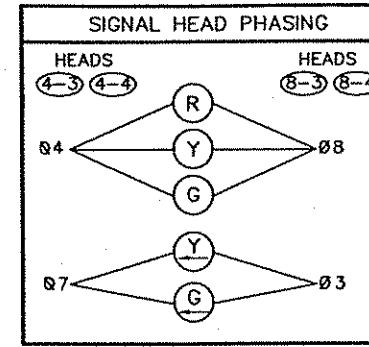
ANOKA COUNTY, MINNESOTA

INPLACE INTERCONNECT PLAN FOR INFORMATION ONLY (ABLE TO JEFFERSON)

FILE NO. AANOKC0101	55
DATE 06/15/01	84

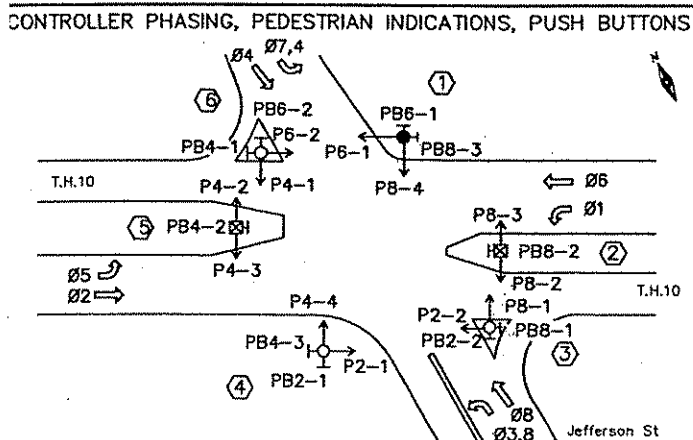
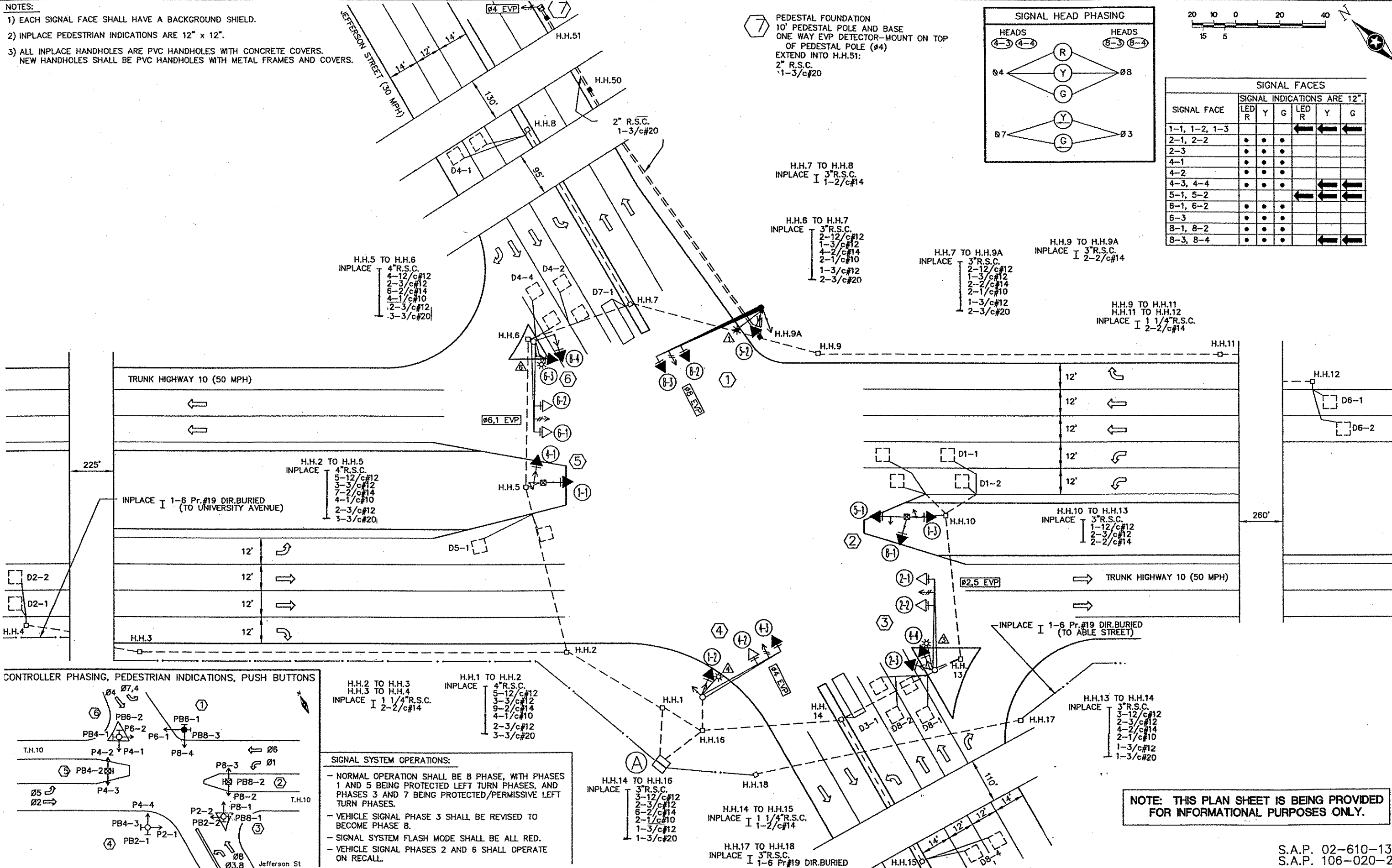
- NOTES:
- 1) EACH SIGNAL FACE SHALL HAVE A BACKGROUND SHIELD.
 - 2) INPLACE PEDESTRIAN INDICATIONS ARE 12" x 12".
 - 3) ALL INPLACE HANDHOLES ARE PVC HANDHOLES WITH CONCRETE COVERS. NEW HANDHOLES SHALL BE PVC HANDHOLES WITH METAL FRAMES AND COVERS.

7 PEDESTAL FOUNDATION
 10' PEDESTAL POLE AND BASE
 ONE WAY EVP DETECTOR—MOUNT ON TOP
 OF PEDESTAL POLE (#4)
 EXTEND INTO H.H.51:
 2" R.S.C.
 1-3/c#20



SIGNAL FACES

SIGNAL FACE	SIGNAL INDICATIONS ARE 12"							
	LED	R	Y	G	LED	R	Y	G
1-1, 1-2, 1-3					←	←	←	
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	•	•	•		←	←	←	



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

NOTE: THIS PLAN SHEET IS BEING PROVIDED FOR INFORMATIONAL PURPOSES ONLY.

F & I ONE WAY EVP DETECTOR AND INDICATOR LIGHT (#8)-OVERHEAD
 ▲1-3/c#12
 ▲1-3/c#20

① S & R TYPE A100-A-50-D40-9 (DAVIT AT 350')
 ONE WAY SIGNAL (OVERHEAD) (3-2, RENAME TO 8-2 AND INSTALL AT 17' FROM END OF MAST ARM)
 LUMINAIRE-200 WATT HPS (WITH PEC)
 ONE WAY SIGNAL-POLE MOUNTED (5-2)
 2-PEDESTRIAN PUSH BUTTONS
 2-12/C#12
 2-3/C#12
 2-1/C#10

SALVAGE ONE WAY SIGNAL (OVERHEAD) (3-3, 12" 4-SECTION SIGNAL)
 2-PEDESTRIAN INDICATIONS
 2-PEDESTRIAN INSTRUCTION SIGNS (R10-4c)

REMOVE A100 POLE FOUNDATION
 TYPE 10B BRACKETING
 TYPE 30A BRACKETING

F & I PA100 POLE FOUNDATION
 ONE WAY SIGNAL (OVERHEAD) (8-3, 12" 5-SECTION SIGNAL)
 MID MAST ARM MOUNT AT 17' FROM END OF MAST ARM
 TYPE 10B BRACKETING-POLE MOUNTED 0'
 TYPE 30A BRACKETING-POLE MOUNTED 270'
 2-PEDESTRIAN INDICATIONS
 2-PEDESTRIAN INSTRUCTION SIGNS (R10-4b)
 R10-12 SIGN PANEL (36"x48")-ADJACENT TO 8-3
 EXTEND INTO H.H.9:
 3'R.S.C.

F & I ONE WAY EVP DETECTOR AND INDICATOR LIGHT (#2,5)-OVERHEAD
 ▲1-3/c#12
 ▲1-3/c#20

③ INPLACE TYPE P100-A-40-D40-9 (DAVIT AT 350')
 P100 POLE FOUNDATION
 2-ONE WAY SIGNALS (OVERHEAD)
 LUMINAIRE-200 WATT HPS (WITH PEC)
 2-PEDESTRIAN PUSH BUTTONS
 EXTENDED INTO H.H.13:
 3'R.S.C.
 2-12/C#12
 2-3/C#12
 2-1/C#10

S & R ONE WAY SIGNAL-POLE MOUNTED (2-3)

SALVAGE ONE WAY SIGNAL-POLE MOUNTED (4-4, 12" 4-SECTION SIGNAL)
 2-PEDESTRIAN INDICATIONS
 2-PEDESTRIAN INSTRUCTION SIGNS (R10-4c)

REMOVE TYPE 20C BRACKETING

F & I TYPE 20C BRACKETING-POLE MOUNTED 270'
 ONE WAY SIGNAL-POLE MOUNTED (4-4, 12" 5-SECTION SIGNAL)
 2-PEDESTRIAN INDICATIONS
 2-PEDESTRIAN INSTRUCTION SIGNS (R10-4b)

⑤ INPLACE PEDESTAL POLE AND BASE
 PEDESTAL FOUNDATION
 PEDESTRIAN PUSH BUTTON
 EXTENDED INTO H.H.5:
 3'R.S.C.
 1-12/C#12
 1-3/C#12

S & R 2-ONE WAY SIGNALS-POLE MOUNTED

SALVAGE 2-PEDESTRIAN INDICATIONS
 PEDESTRIAN INSTRUCTION SIGN (R10-4c)

REMOVE TYPE 2D BRACKETING

F & I TYPE 2D BRACKETING
 2-PEDESTRIAN INDICATIONS
 PEDESTRIAN INSTRUCTION SIGN (R10-4b)

F & I ONE WAY EVP DETECTOR AND INDICATOR LIGHT (#4)-OVERHEAD
 ▲1-3/c#12
 ▲1-3/c#20

④ INPLACE TYPE P100-A-40-D40-9 (DAVIT AT 350')
 P100 POLE FOUNDATION
 ONE WAY SIGNAL (OVERHEAD) (4-2)
 LUMINAIRE-200 WATT HPS (WITH PEC)
 2-PEDESTRIAN PUSH BUTTONS
 EXTENDED INTO H.H.16:
 3'R.S.C.
 2-12/C#12
 2-3/C#12
 2-1/C#10

S & R ONE WAY SIGNAL-POLE MOUNTED (1-2)

SALVAGE ONE WAY SIGNAL (OVERHEAD) (4-3, 12" 4-SECTION SIGNAL)
 2-PEDESTRIAN INDICATIONS
 2-PEDESTRIAN INSTRUCTION SIGNS (R10-4c)

REMOVE TYPE 10B BRACKETING
 TYPE 30A BRACKETING

F & I ONE WAY SIGNAL (OVERHEAD) (4-3, 12" 5-SECTION SIGNAL)
 R10-12 SIGN PANEL (36"x48")-ADJACENT TO 4-3
 TYPE 10B BRACKETING-POLE MOUNTED 0'
 TYPE 30A BRACKETING-POLE MOUNTED 270'
 2-PEDESTRIAN INDICATIONS
 2-PEDESTRIAN INSTRUCTION SIGNS (R10-4c)

F & I ONE WAY EVP DETECTOR AND INDICATOR LIGHT (#6,1)-OVERHEAD
 ▲1-3/c#12
 ▲1-3/c#20

⑥ INPLACE TYPE P100-A-40-D40-9 (DAVIT AT 350')
 P100 POLE FOUNDATION
 2-ONE WAY SIGNALS (OVERHEAD)
 LUMINAIRE-200 WATT HPS (WITH PEC)
 2-PEDESTRIAN PUSH BUTTONS
 EXTENDED INTO H.H.6:
 3'R.S.C.
 2-12/C#12
 1-3/C#12
 2-1/C#10

S & R ONE WAY SIGNAL-POLE MOUNTED (6-3)

SALVAGE ONE WAY SIGNAL-POLE MOUNTED (3-4, 12" 4-SECTION SIGNAL)
 2-PEDESTRIAN INDICATIONS
 2-PEDESTRIAN INSTRUCTION SIGNS (R10-4c)

REMOVE 2-TYPE 10B BRACKETING

F & I 2-TYPE 10B BRACKETING-POLE MOUNTED 0' AND 270'
 ONE WAY SIGNAL-POLE MOUNTED (8-4, 12" 5-SECTION SIGNAL)
 2-PEDESTRIAN INDICATIONS
 2-PEDESTRIAN INSTRUCTION SIGNS (R10-4b)

② INPLACE PEDESTAL POLE AND BASE
 PEDESTAL FOUNDATION
 PEDESTRIAN PUSH BUTTON
 EXTENDED INTO H.H.10:
 3'R.S.C.
 1-12/C#12
 2-3/C#12

S & R 3-ONE WAY SIGNALS-POLE MOUNTED (RENAME 3-1 TO 8-1)

SALVAGE 2-PEDESTRIAN INDICATIONS
 PEDESTRIAN INSTRUCTION SIGN (R10-4c)

REMOVE TYPE 3C BRACKETING

F & I TYPE 3C BRACKETING
 2-PEDESTRIAN INDICATIONS
 PEDESTRIAN INSTRUCTION SIGN (R10-4b)

① INPLACE EQUIPMENT PAD
 CONTROLLER AND CABINET
 SERVICE EQUIPMENT (PAD MOUNTED)
 LOAD CENTER TO H.H.1:
 1 1/4" R.S.C.
 8-1/C#10
 LOAD CENTER TO CABINET:
 1 1/4" R.S.C.
 2-1/C#6
 1-1/C#5 BR.GR.
 CONTROLLER CABINET TO H.H.1:
 4'R.S.C.
 5-12/C#12
 2-3/C#12
 9-2/C#14

F & I ▲2-3/c#12
 ▲3-3/c#20

INPLACE CONTROLLER CABINET TO H.H.16:
 4'R.S.C.
 5-12/C#12
 3-3/C#12
 6-2/C#14

F & I ▲2-3/c#12
 ▲2-3/c#20

INPLACE 3'R.S.C. STUB OUT TO EAST
 1-6 Pr.#19 DIR.BURIED
 3'R.S.C. STUB OUT TO WEST
 1-6 Pr.#19 DIR.BURIED

LOOP DETECTORS			
NUMBER	SIZE (FT)	FUNCTION	LOCATION FROM STOP BAR
D1-1	2-6x6	1	5' & 35'
D1-2	2-6x6	1	5' & 35'
D2-1	6x6	1	450'
D2-2	6x6	1	450'
D3-1	6x20	1	0'
D4-1	2-6x6	2	150'
D4-2	2-6x6	1	5' & 15'
D4-4	2-6x6	1	5' & 15'
D5-1	2-6x6	1	5' & 35'
D6-1	6x6	1	450'
D6-2	6x6	1	450'
D7-1	6x20	1	0'
D8-1	2-6x6	1	5' & 15'
D8-2	2-6x6	1	5' & 15'
D8-4	2-6x6	2	150'

NOTE: THIS PLAN SHEET IS BEING PROVIDED FOR INFORMATIONAL PURPOSES ONLY.

LOOP DETECTOR FUNCTIONS:
 1. CALL AND EXTEND
 2. EXTEND ONLY

S.A.P. 02-610-13
 S.A.P. 106-020-20

DRAWN BY: GEN			
DESIGNER: JMG			
CHECKED BY: JMG			
DESIGN TEAM	NO.	BY	DATE
			REVISIONS

©SHORT ELLIOTT HENDRICKSON 1998. ANY USE OR REUSE OF THIS PLAN/DRAWING AND THE CORRESPONDING COMPUTER AIDED DESIGN/DRAFTING FILES WITHOUT THE EXPRESS WRITTEN CONSENT OF SEH, IS PROHIBITED. SEH SHALL NOT BE RESPONSIBLE FOR ANY UNAUTHORIZED USE OR REUSE OF THESE MATERIALS, OR DAMAGES RESULTING THEREFROM.

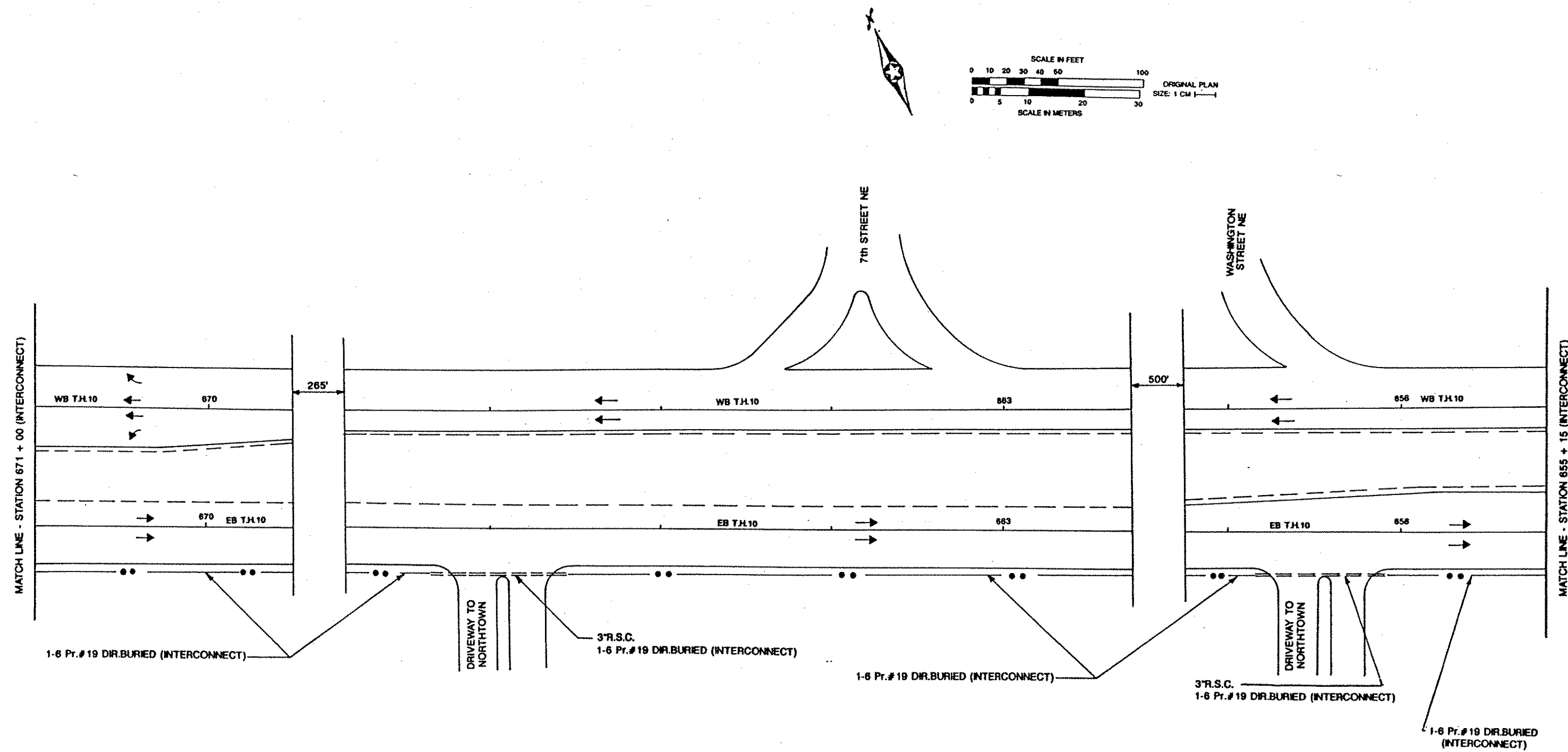
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 Date: June 15, 2001 Lic. No. 22457



ANOKA COUNTY, MINNESOTA

INPLACE SIGNAL SYSTEM 'B' FOR INFORMATION ONLY
 CSAH 10 AT JEFFERSON STREET

FILE NO. AANOKC0101	57
DATE 06/15/01	84



NOTE: THIS PLAN SHEET IS BEING PROVIDED FOR INFORMATIONAL PURPOSES ONLY.

S.A.P. 02-610-13

DRAWN BY: GEN				
DESIGNER: JMG				
CHECKED BY: JMG				
DESIGN TEAM	NO.	BY	DATE	REVISIONS

©SHORT ELLIOTT HENDRICKSON 1998. ANY USE OR REUSE OF THIS PLAN/DRAWING AND THE CORRESPONDING COMPUTER AIDED DESIGN/DRAFTING FILES WITHOUT THE EXPRESS WRITTEN CONSENT OF SEH, IS PROHIBITED. SEH SHALL NOT BE RESPONSIBLE FOR ANY UNAUTHORIZED USE OR REUSE OF THESE MATERIALS, OR DAMAGES RESULTING THEREFROM.

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 15, 2001 Lic. No. 22457



ANOKA COUNTY, MINNESOTA

INPLACE INTERCONNECT PLAN FOR INFORMATION ONLY (JEFFERSON TO UNIVERSITY)

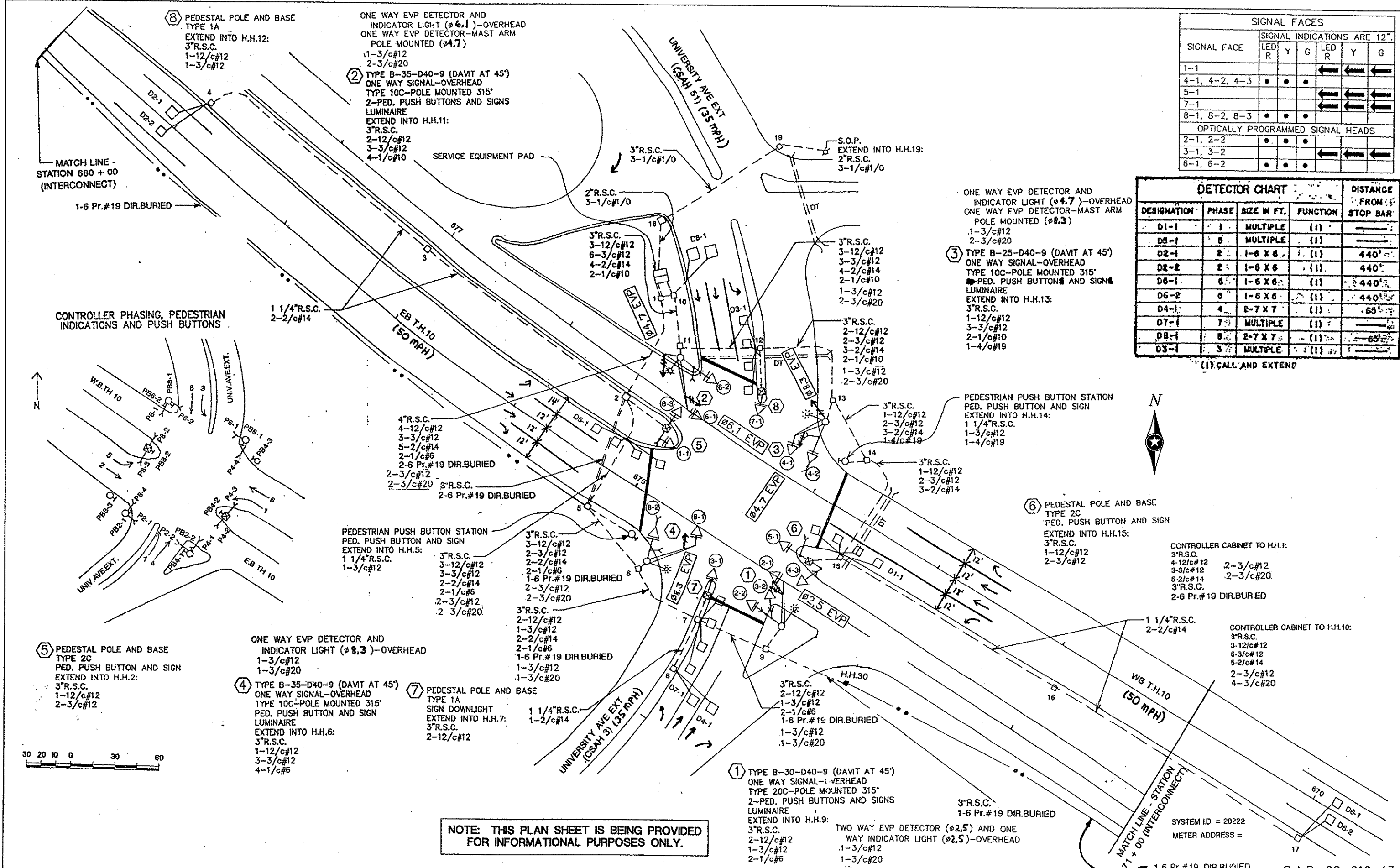
FILE NO. AANOKC0101
 DATE 06/15/01

58
84

SIGNAL FACES						
SIGNAL FACE	SIGNAL INDICATIONS ARE 12"					
	LED R	Y	G	LED R	Y	G
1-1				←	←	←
4-1, 4-2, 4-3	•	•	•			
5-1				←	←	←
7-1				←	←	←
8-1, 8-2, 8-3	•	•	•			
OPTICALLY PROGRAMMED SIGNAL HEADS						
2-1, 2-2	•	•	•			
3-1, 3-2				←	←	←
6-1, 6-2	•	•	•			

DETECTOR CHART				DISTANCE FROM STOP BAR
DESIGNATION	PHASE	SIZE IN FT.	FUNCTION	
D1-1	1	MULTIPLE	(1)	---
D5-1	5	MULTIPLE	(1)	---
D2-1	2	1-6 X 6	(1)	440'
D2-2	2	1-6 X 6	(1)	440'
D6-1	6	1-6 X 6	(1)	440'
D6-2	6	1-6 X 6	(1)	440'
D4-1	4	8-7 X 7	(1)	65'
D7-1	7	MULTIPLE	(1)	---
D8-1	8	2-7 X 7	(1)	65'
D3-1	3	MULTIPLE	(1)	---

(1) CALL AND EXTEND



NOTE: THIS PLAN SHEET IS BEING PROVIDED FOR INFORMATIONAL PURPOSES ONLY.

DRAWN BY: GEN
 DESIGNER: JMG
 CHECKED BY: JMG

DESIGN TEAM	NO.	BY	DATE	REVISIONS

©SHORT ELLIOTT HENDRICKSON 1998. ANY USE OR REUSE OF THIS PLAN/DRAWING AND THE CORRESPONDING COMPUTER AIDED DESIGN/DRAFTING FILES WITHOUT THE EXPRESS WRITTEN CONSENT OF SEH, IS PROHIBITED. SEH SHALL NOT BE RESPONSIBLE FOR ANY UNAUTHORIZED USE OR REUSE OF THESE MATERIALS, OR DAMAGES RESULTING THEREFROM.

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 15, 2001 Lic. No. 22457

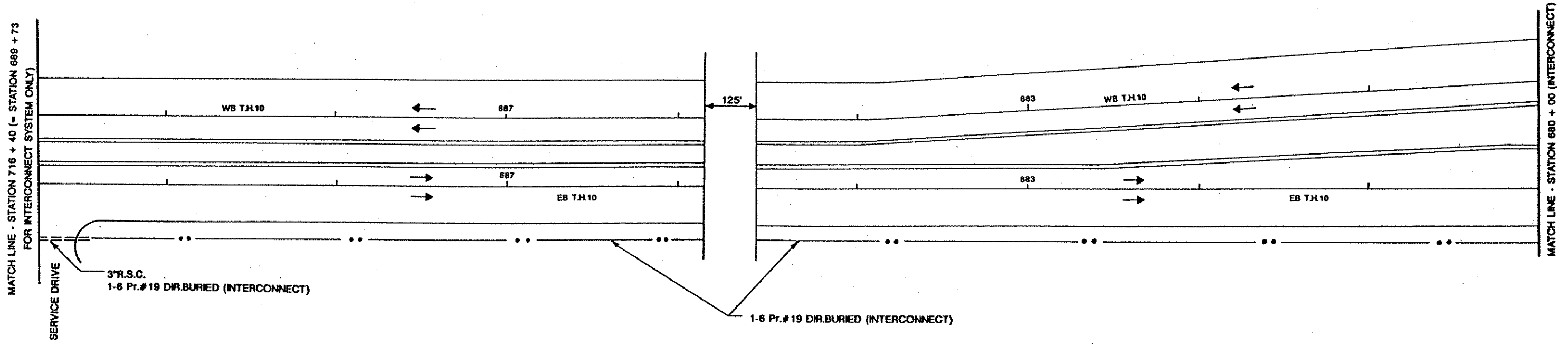
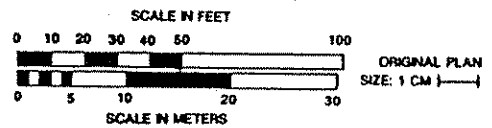
SEH
 PHONE: (651) 490-2000
 3535 WADNAIS CENTER DR.
 ST. PAUL, MN 55110

ANOKA COUNTY, MINNESOTA

INPLACE INTERCONNECT PLAN FOR INFORMATION ONLY
 CSAH 10 AT UNIVERSITY AVENUE

FILE NO. AANOKC0101
 DATE 06/15/01
59
84

S.A.P. 02-610-13



NOTE: THIS PLAN SHEET IS BEING PROVIDED FOR INFORMATIONAL PURPOSES ONLY.

S.A.P. 02-610-13

DRAWN BY:	GEN			
DESIGNER:	JMG			
CHECKED BY:	JMG			
DESIGN TEAM	NO.	BY	DATE	REVISIONS

©SHORT ELLIOTT HENDRICKSON 1998. ANY USE OR REUSE OF THIS PLAN/DRAWING AND THE CORRESPONDING COMPUTER AIDED DESIGN/DRAFTING FILES WITHOUT THE EXPRESS WRITTEN CONSENT OF SEH, IS PROHIBITED. SEH SHALL NOT BE RESPONSIBLE FOR ANY UNAUTHORIZED USE OR REUSE OF THESE MATERIALS, OR DAMAGES RESULTING THEREFROM.

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.

John M. Hendrickson
 Date: June 15, 2001 Lic. No. 22457

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

ANOKA COUNTY,
 MINNESOTA

INPLACE INTERCONNECT PLAN
 FOR INFORMATION ONLY
 (UNIVERSITY TO T.H.47 RAMPS)

FILE NO.	AANOKCD101
DATE	06/15/01

60
 84

DETECTOR CHART				DISTANCE FROM STOP BAR
DESIGNATION	PHASE	SIZE IN FT.	FUNCTION	
D2-1	2	1-6X6	(1)	400'
D2-2	2	1-6X6	(1)	400'
D6-1	6	1-6X6	(1)	400'
D6-2	6	1-6X6	(1)	400'
D1-1	1	2-6X6	(1)	0' AND 30'
D4-1	4	1-6X12	(2)	150'
* D4-2	4	2-6X6	(1)	25'

SIGNAL FACES						
SIGNAL FACE	SIGNAL INDICATIONS ARE 12"					
	R	Y	G	R	Y	G
1-1				←	←	←
2-1, 2-2	•	•	•			
4-1, 4-2, 4-3	•	•	•			
6-1, 6-2, 6-3	•	•	•			

ONE WAY EVP DETECTOR AND INDICATOR LIGHT (Ø 6,1)-OVERHEAD
1-3/c#12
1-3/c#20

TYPE P90-A-25-D40-9
ONE WAY SIGNAL (OVERHEAD)
TYPE 10 B-POLE MOUNTED AT 270°
TYPE 30 A-POLE MOUNTED AT 90°
LUMINAIRE AT 355°-200 W HPS-REC. 8 CKSW
2-PEDESTRIAN PUSHBUTTONS & SIGNS
EXTEND INTO H.H. 3; 3" R.S.C.
1-12/C#12, 2-3/C#12 AND 2-1/C#10

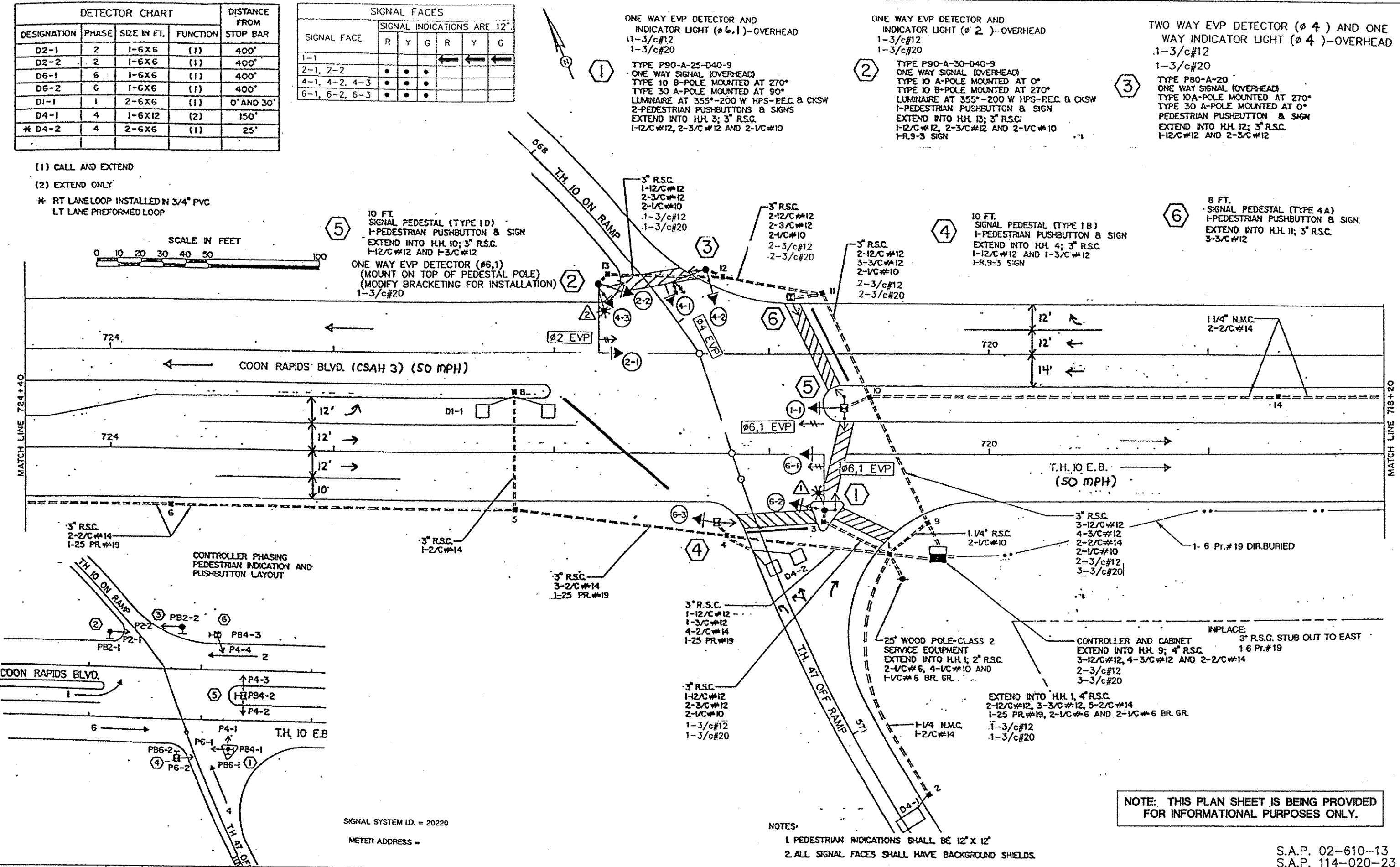
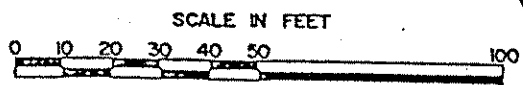
ONE WAY EVP DETECTOR AND INDICATOR LIGHT (Ø 2)-OVERHEAD
1-3/c#12
1-3/c#20

TYPE P90-A-30-D40-9
ONE WAY SIGNAL (OVERHEAD)
TYPE 10 A-POLE MOUNTED AT 0°
TYPE 10 B-POLE MOUNTED AT 270°
LUMINAIRE AT 355°-200 W HPS-REC. 8 CKSW
1-PEDESTRIAN PUSHBUTTON & SIGN
EXTEND INTO H.H. 13; 3" R.S.C.
1-12/C#12, 2-3/C#12 AND 2-1/C#10
1-R-9-3 SIGN

TWO WAY EVP DETECTOR (Ø 4) AND ONE WAY INDICATOR LIGHT (Ø 4)-OVERHEAD
1-3/c#12
1-3/c#20

TYPE P80-A-20
ONE WAY SIGNAL (OVERHEAD)
TYPE 10A-POLE MOUNTED AT 270°
TYPE 30 A-POLE MOUNTED AT 0°
PEDESTRIAN PUSHBUTTON & SIGN
EXTEND INTO H.H. 12; 3" R.S.C.
1-12/C#12 AND 2-3/C#12

- (1) CALL AND EXTEND
- (2) EXTEND ONLY
- * RT LANE LOOP INSTALLED IN 3/4" PVC
LT LANE PREFORMED LOOP



NOTE: THIS PLAN SHEET IS BEING PROVIDED FOR INFORMATIONAL PURPOSES ONLY.

NOTES:
1. PEDESTRIAN INDICATIONS SHALL BE 12" X 12"
2. ALL SIGNAL FACES SHALL HAVE BACKGROUND SHIELDS.

SIGNAL SYSTEM I.D. = 20220
METER ADDRESS =

DRAWN BY: GEN	DESIGNER: JMG	CHECKED BY: JMG
DESIGN TEAM	NO. BY DATE	REVISIONS

©SHORT ELLIOTT HENDRICKSON 1998. ANY USE OR REUSE OF THIS PLAN/DRAWING AND THE CORRESPONDING COMPUTER AIDED DESIGN/DRAFTING FILES WITHOUT THE EXPRESS WRITTEN CONSENT OF SEH, IS PROHIBITED. SEH SHALL NOT BE RESPONSIBLE FOR ANY UNAUTHORIZED USE OR REUSE OF THESE MATERIALS, OR DAMAGES RESULTING THEREFROM.

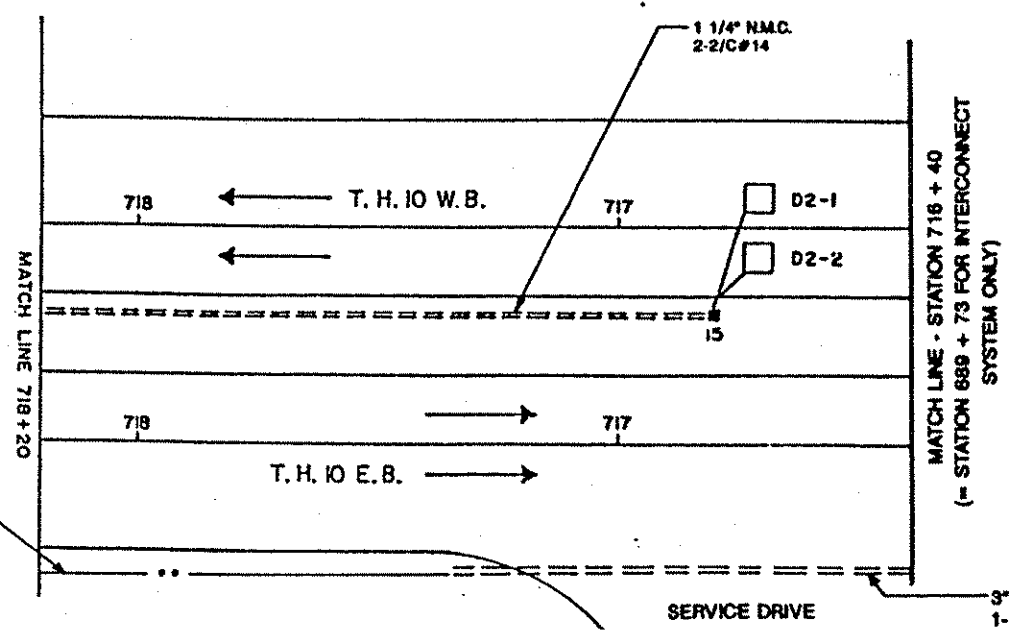
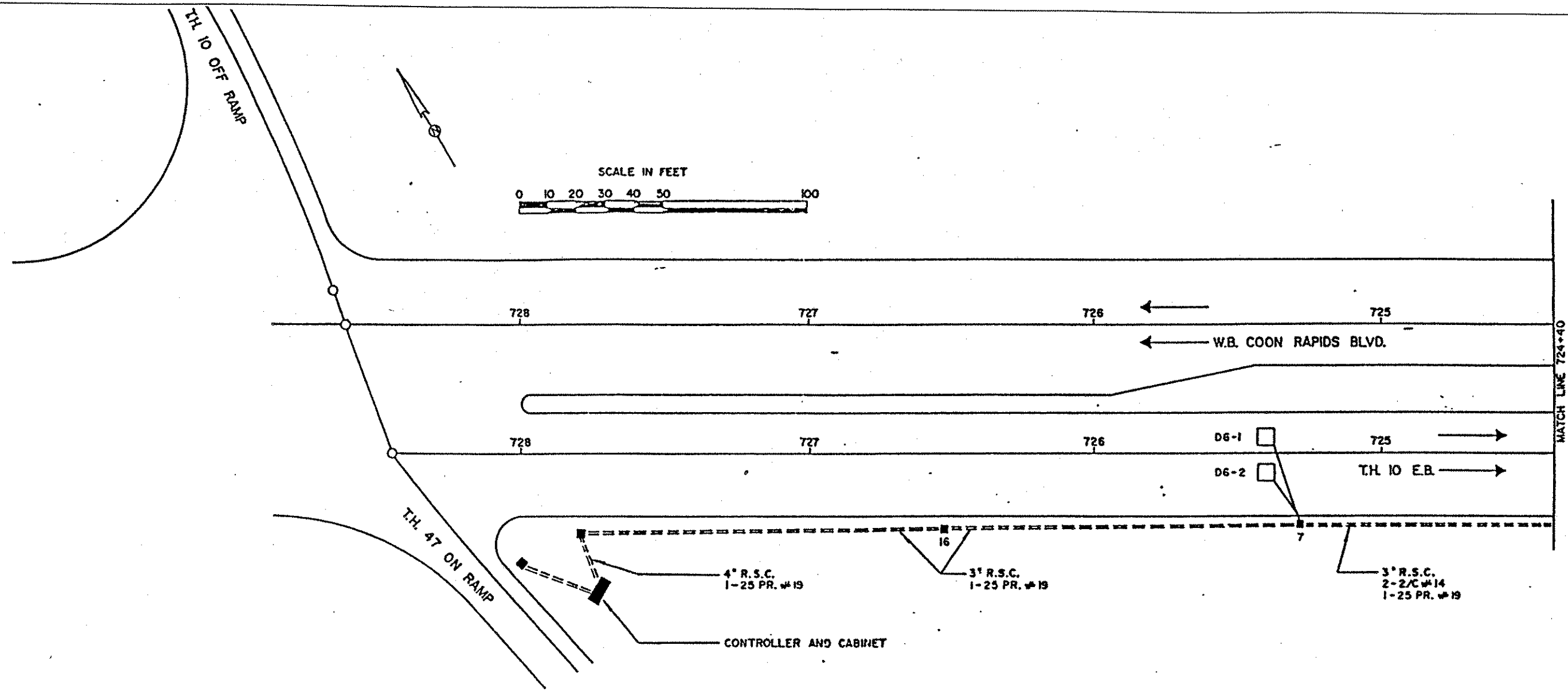
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
Date: June 15, 2001 Lic. No. 22457



ANOKA COUNTY, MINNESOTA

INPLACE SIGNAL SYSTEM 'C' FOR INFORMATION ONLY
CSAH 10 AT T.H.47 EAST RAMPS

S.A.P. 02-610-13
S.A.P. 114-020-23
FILE NO. AANOKC0101
DATE 06/15/01
61
84



NOTE: THIS PLAN SHEET IS BEING PROVIDED FOR INFORMATIONAL PURPOSES ONLY.

1- 6 Pr.#19 DIR.BURIED (INTERCONNECT)

DRAWN BY: GEN				
DESIGNER: JMG				
CHECKED BY: JMG				
DESIGN TEAM	NO.	BY	DATE	REVISIONS

©SHORT ELLIOTT HENDRICKSON 1998. ANY USE OR REUSE OF THIS PLAN/DRAWING AND THE CORRESPONDING COMPUTER AIDED DESIGN/DRAFTING FILES WITHOUT THE EXPRESS WRITTEN CONSENT OF SEH, IS PROHIBITED. SEH SHALL NOT BE RESPONSIBLE FOR ANY UNAUTHORIZED USE OR REUSE OF THESE MATERIALS, OR DAMAGES RESULTING THEREFROM.

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 15, 2001 Lic. No. 22457



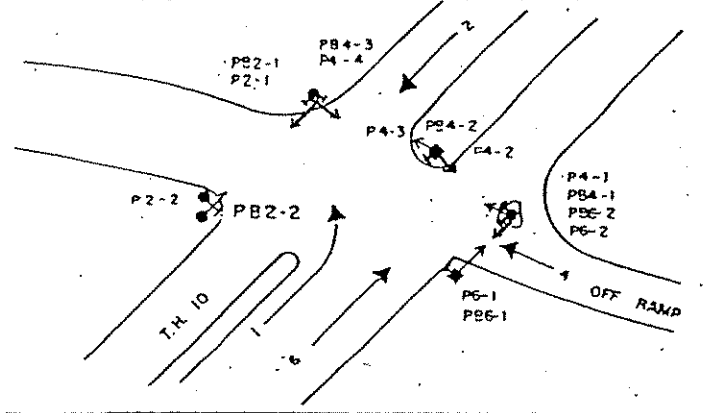
ANOKA COUNTY, MINNESOTA

INPLACE INTERCONNECT PLAN FOR INFORMATION ONLY (BETWEEN T.H.47 RAMPS)

S.A.P. 02-610-13

FILE NO. AANOKC0101	62
DATE 06/15/01	84

CONTROLLER PHASING & PEDESTRIAN INDICATION AND PUSHBUTTON LAYOUT



SIGNAL FACES					
SIGNAL INDICATIONS ARE 12"					
SIGNAL FACE	R	Y	G	Y	G
1-1				←	←
2-1, 2-2	•	•	•		
4-1, 4-2	•	•	•		
4-3	•	•	•		
6-1, 6-2	•	•	•		

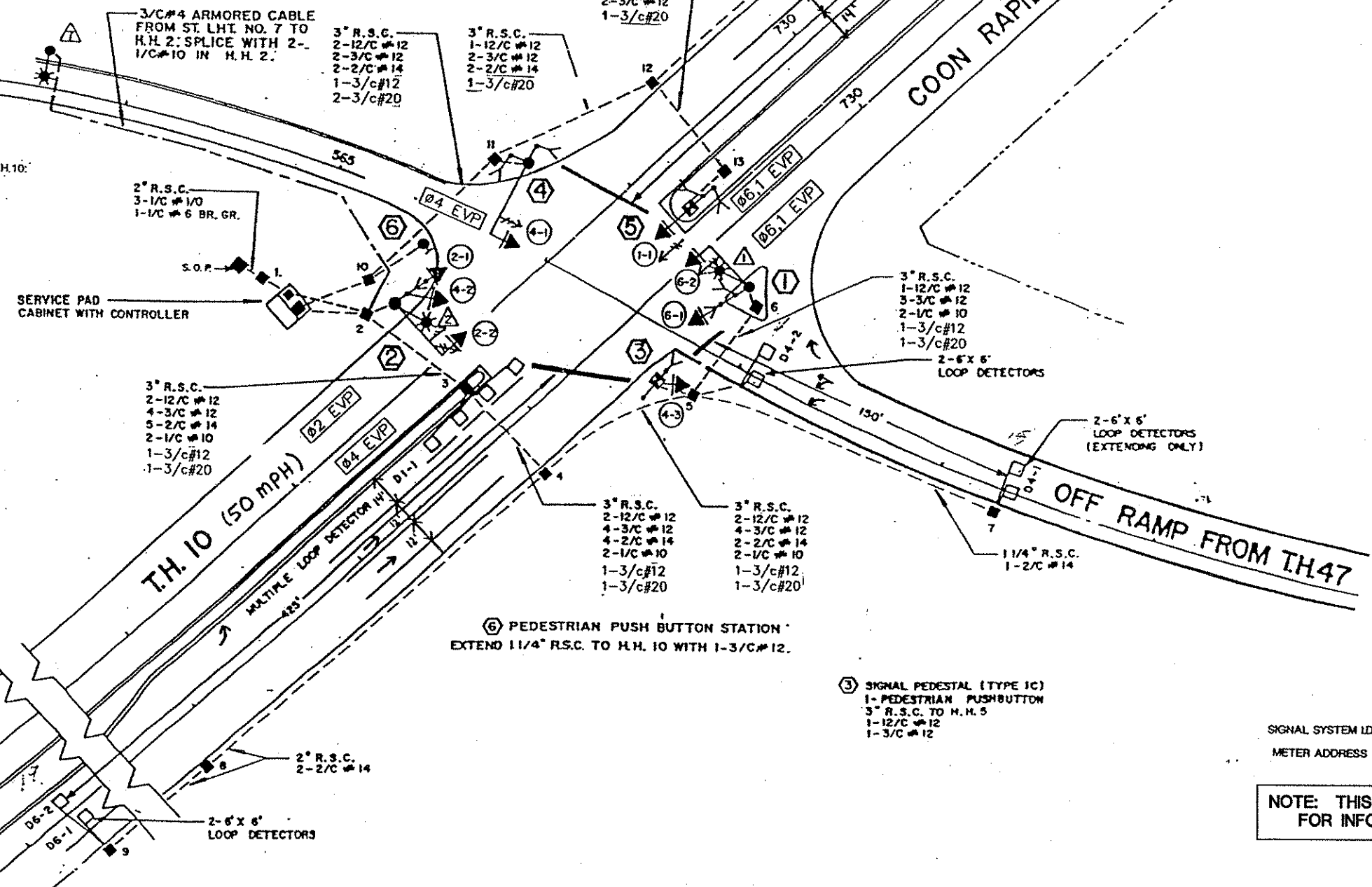
- CONTROLLER CABINET TO H.H.2:
 4" R.S.C.
 3-12/C#12
 5-3/C#12
 5-2/C#14
 2-3/C#12
 3-3/C#20
- CONTROLLER CABINET TO H.H.10:
 4" R.S.C.
 2-12/C#12
 3-3/C#12
 2-2/C#14
 1-3/C#12
 2-3/C#20

- ONE WAY EVP DETECTOR AND INDICATOR LIGHT (Ø 2) - OVERHEAD
 ONE WAY EVP DETECTOR - OVERHEAD (Ø 4)
- 1-3/c#12
 2-3/c#20
- ② TYPE A-30-D40-9
 ONE WAY SIGNAL (OVERHEAD)
 TYPE 20B AT 270°
 LUMINAIRE (MOUNTED 355") - 200 W - HPS
 3" R.S.C. TO H.H. 2
 1-12/C #12
 3-3/C #12
 2-1/C #10

- ONE WAY EVP DETECTOR AND INDICATOR LIGHT (Ø 4) - OVERHEAD
- 1-3/c#12
 1-3/c#20
- ④ TYPE A-35
 ONE WAY SIGNAL (OVERHEAD)
 2 - TYPE 30A AT 90° AND 270°
 2 - PEDESTRIAN PUSHBUTTONS
 3" R.S.C. TO H.H. 11
 1-12/C #12
 2-3/C #12

- ONE WAY EVP DETECTOR (Ø 6.1)
 (MOUNT ON TOP OF PEDESTAL POLE)
 (MODIFY BRACKETING FOR INSTALLATION)
 1-3/c#20
- ⑤ SIGNAL PEDESTAL (TYPE 1D)
 1- PEDESTRIAN PUSHBUTTON
 3" R.S.C. TO H.H. 13
 1-12/C #12
 2-3/C #12

- ONE WAY EVP DETECTOR AND INDICATOR LIGHT (Ø 6.1) - OVERHEAD
- 1-3/c#12
 1-3/c#20
- ① TYPE A-25-D40-9
 ONE WAY SIGNAL (OVERHEAD)
 TYPE 10C AT 270°
 2- PEDESTRIAN PUSHBUTTONS
 LUMINAIRE (MOUNTED 355") - 200 W - HPS
 3" R.S.C. TO H.H. 6
 1-12/C #12
 3-3/C #12
 2-1/C #10



- ⑥ PEDESTRIAN PUSH BUTTON STATION
 EXTEND 1 1/4" R.S.C. TO H.H. 10 WITH 1-3/C#12.

- ③ SIGNAL PEDESTAL (TYPE 1C)
 1- PEDESTRIAN PUSHBUTTON
 3" R.S.C. TO H.H. 5
 1-12/C #12
 1-3/C #12

SIGNAL SYSTEM ID. = 20221
 METER ADDRESS =

NOTE: THIS PLAN SHEET IS BEING PROVIDED FOR INFORMATIONAL PURPOSES ONLY.

DRAWN BY: GEN				
DESIGNER: JMG				
CHECKED BY: JMG				
DESIGN TEAM	NO.	BY	DATE	REVISIONS

© SHORT ELLIOTT HENDRICKSON 1998. ANY USE OR REUSE OF THIS PLAN/DRAWING AND THE CORRESPONDING COMPUTER AIDED DESIGN/DRAFTING FILES WITHOUT THE EXPRESS WRITTEN CONSENT OF SEH, IS PROHIBITED. SEH SHALL NOT BE RESPONSIBLE FOR ANY UNAUTHORIZED USE OR REUSE OF THESE MATERIALS, OR DAMAGES RESULTING THEREFROM.

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 15, 2001 Lic. No. 22457

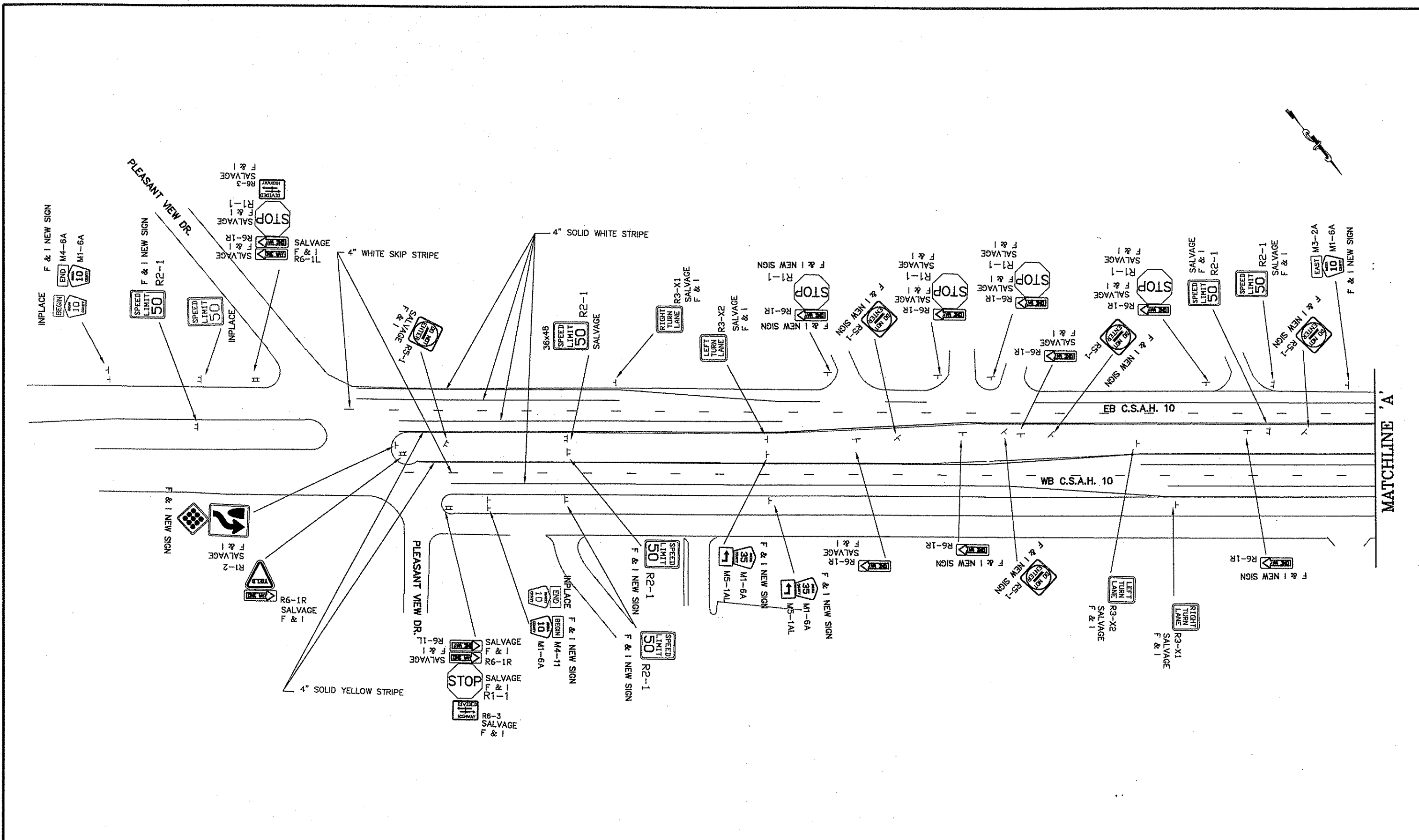
SEH
 PHONE: (651) 490-2000
 3535 VADNAIS CENTER DR.
 ST. PAUL, MN 55110

ANOKA COUNTY,
 MINNESOTA

INPLACE SIGNAL SYSTEM 'D'
 FOR INFORMATION ONLY
 CSAH 10 AT T.H.47 WEST RAMPS

FILE NO. AANOKC0101
 DATE 06/15/01
63
84

S.A.P. 02-610-13
 S.A.P. 114-020-23



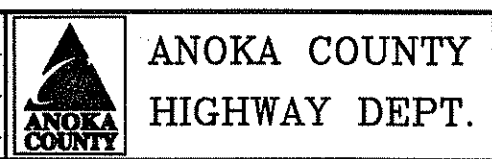
C.S.A.H. 10 TURNBACK

NO	DATE	BY	CHKD	APPR	REVISION

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

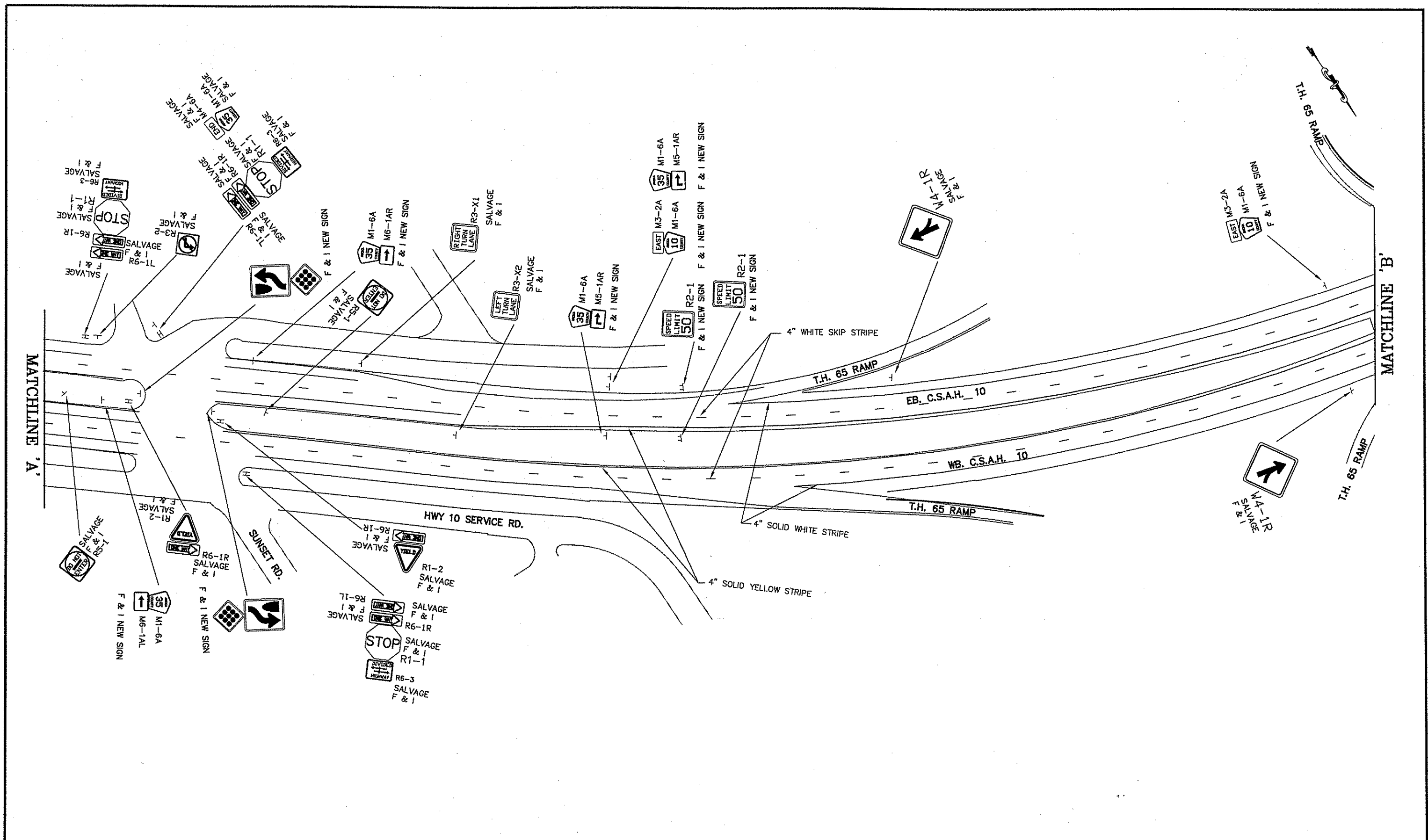
PRINT NAME: *Kristen Olson*
 SIGNATURE: *[Signature]*
 DATE: *7/10/01* REG. NO. *26226*

DRAWN BY: *DM* DATE: *07/02/01*
 DESIGN BY: _____ DATE: _____
 CHECKED BY: _____ DATE: _____



STATE PROJECT NO. _____
 STATE AID PROJECT NO. _____
 STATE AID PROJECT NO. *02-610-12*
 COUNTY PROJECT NO. *96-09-00*

PERMANENT SIGN / STRIPE
 Sheet *64* of *84* Sheets



C.S.A.H. 10 TURNBACK

NO	DATE	BY	CHKD	APPR	REVISION

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

PRINT NAME: *Justin Olson*

SIGNATURE: *Justin Olson*

DATE: *7/10/01* REG. NO. *26826*

DRAWN BY: DM DATE 07/02/01

DESIGN BY: DATE

CHECKED BY: DATE



ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO. _____

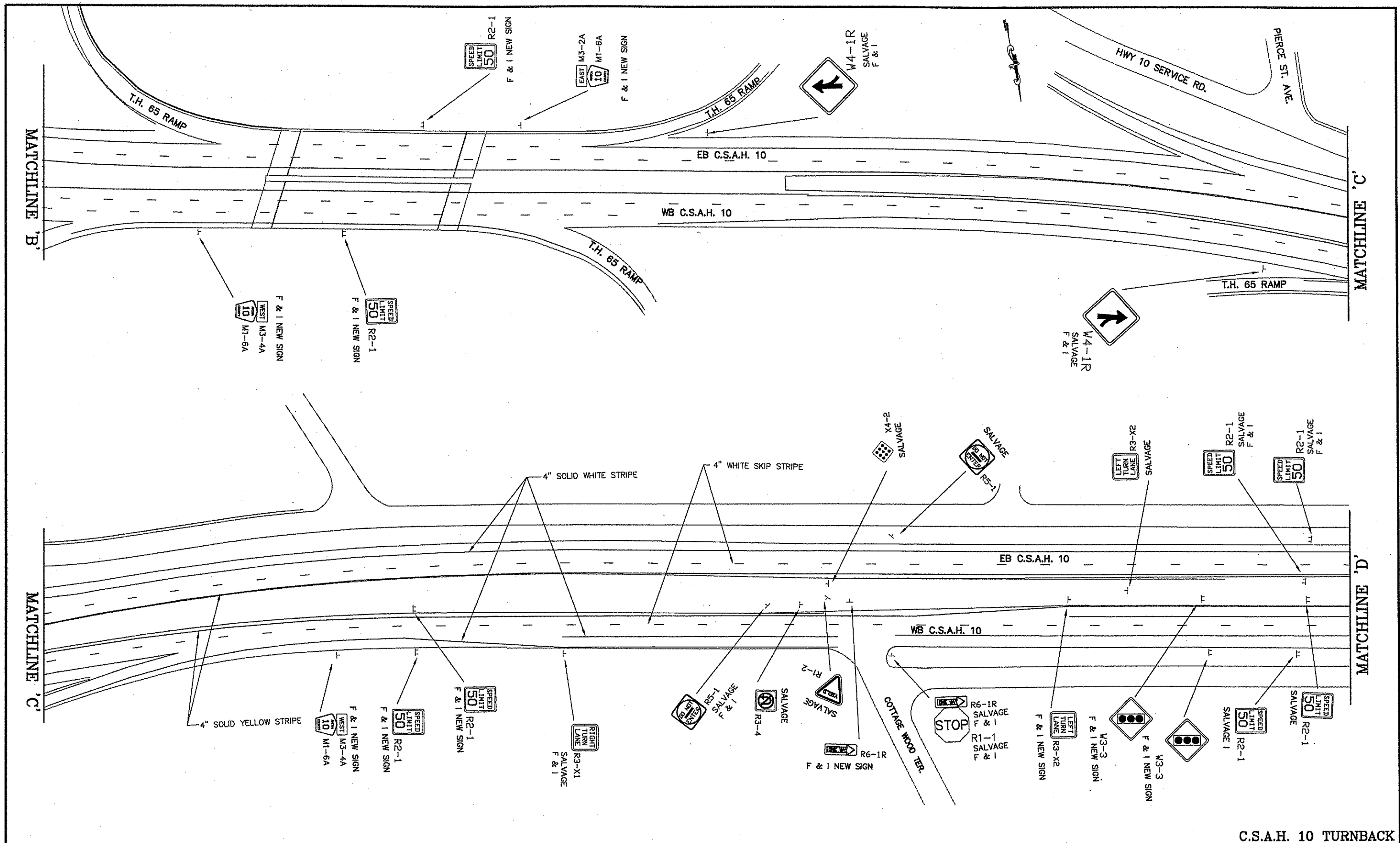
STATE AID PROJECT NO. _____

STATE AID PROJECT NO. 02-610-12

COUNTY PROJECT NO. 96-09-00

PERMANENT
SIGN / STRIPE

Sheet 65 of 84 Sheets



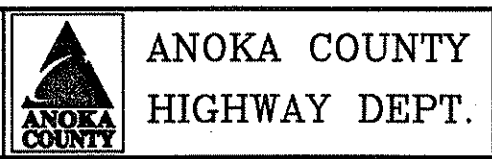
C.S.A.H. 10 TURNBACK

NO	DATE	BY	CHKD	APPR	REVISION

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

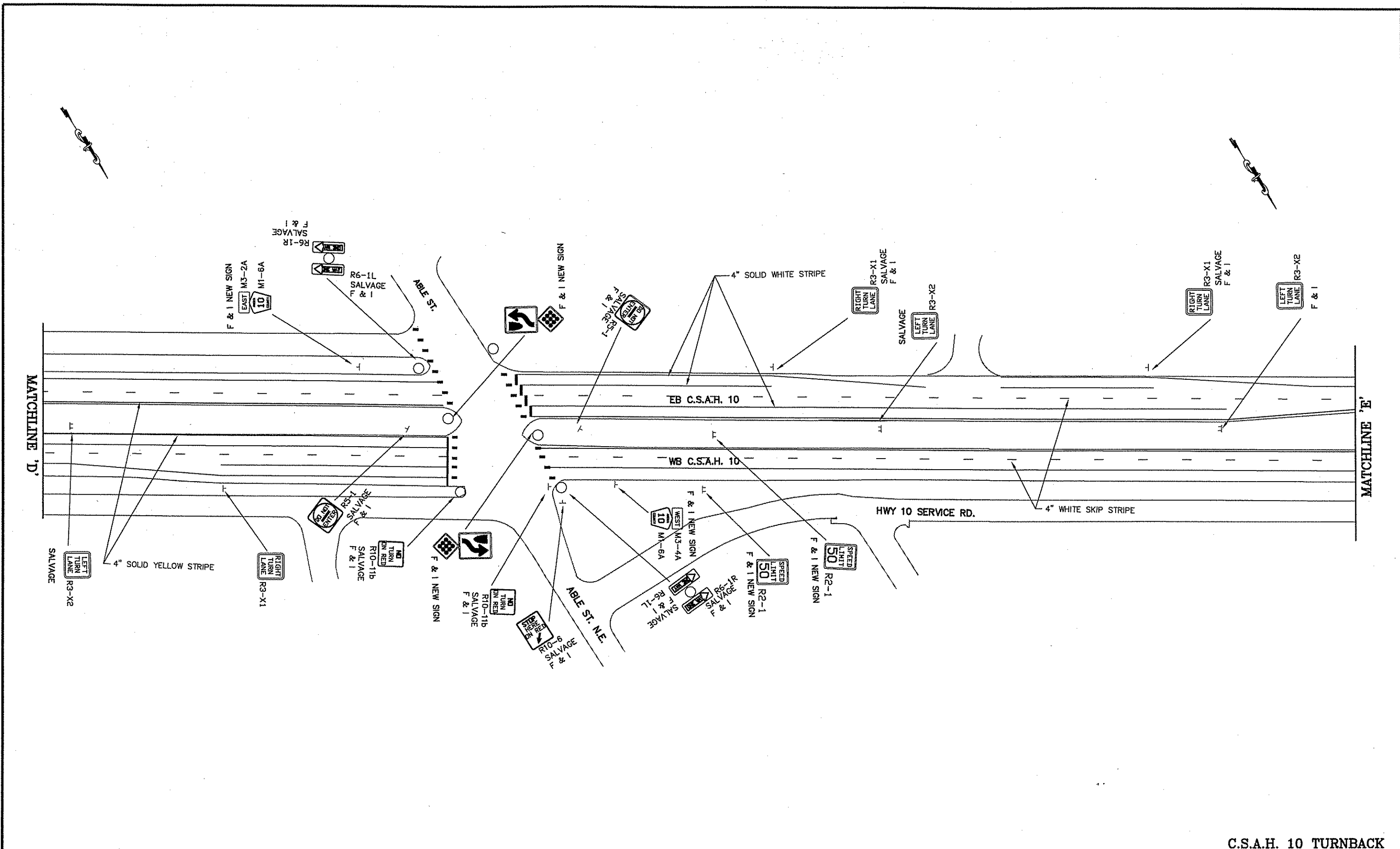
PRINT NAME: *Rystey Olson*
 SIGNATURE: *Rystey Olson*
 DATE: *7/16/01* REG. NO. *24826*

DRAWN BY: *DM* DATE: *07/02/01*
 DESIGN BY: _____ DATE: _____
 CHECKED BY: _____ DATE: _____



STATE PROJECT NO. _____
 STATE AID PROJECT NO. _____
 STATE AID PROJECT NO. **02-610-12**
 COUNTY PROJECT NO. **96-09-00**

PERMANENT SIGN / STRIPE
 Sheet **66** of **84** Sheets



C.S.A.H. 10 TURNBACK

NO	DATE	BY	CKD	APPR	REVISION

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

PRINT NAME: *Sydney Olson*
 SIGNATURE: *[Signature]*
 DATE: *7/10/01* REG. NO. *26826*

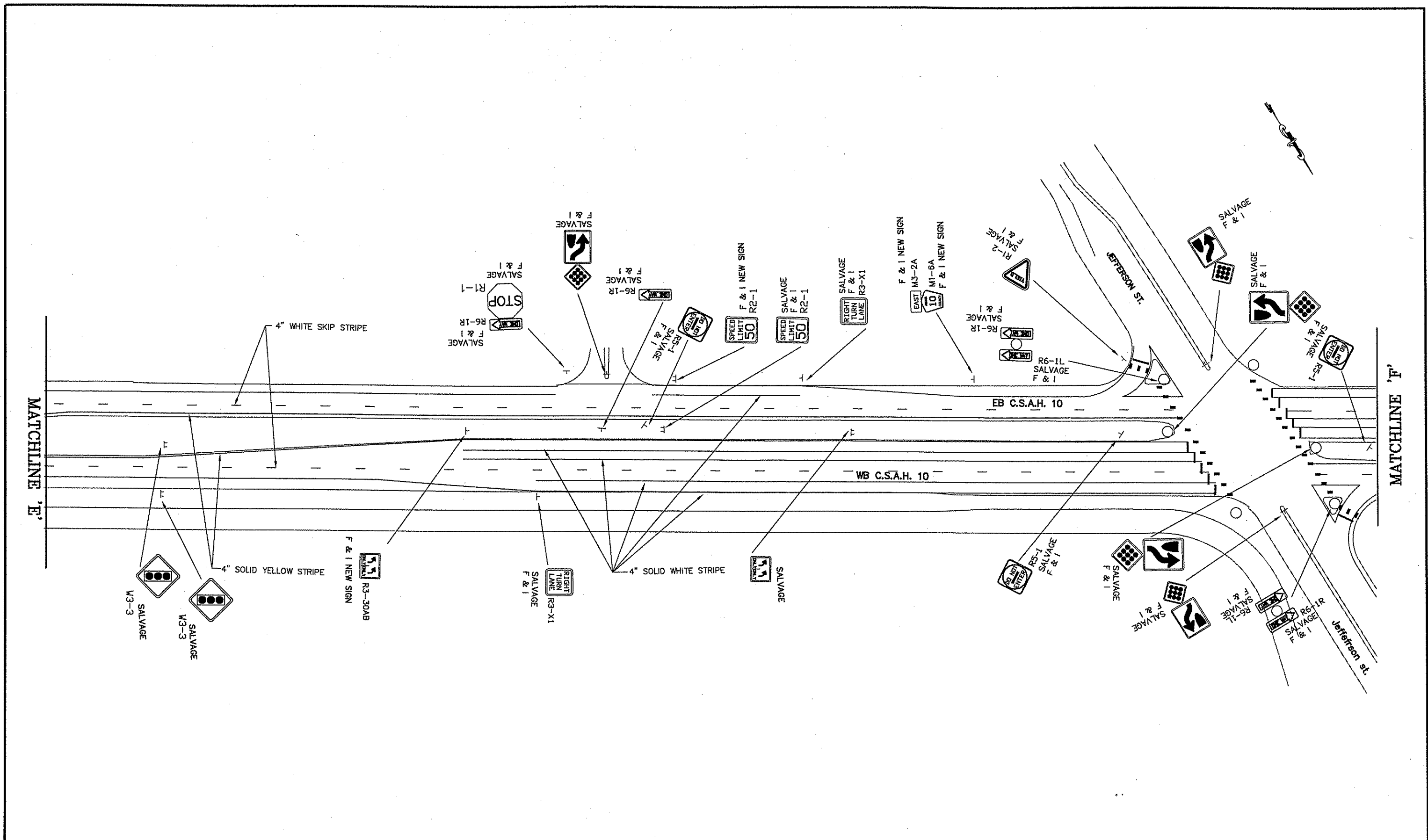
DRAWN BY: *DM* DATE: *07/02/01*
 DESIGN BY: _____ DATE: _____
 CHECKED BY: _____ DATE: _____



ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO. _____
 STATE AID PROJECT NO. _____
 STATE AID PROJECT NO. **02-610-12**
 COUNTY PROJECT NO. **96-09-00**

PERMANENT
SIGN / STRIPE
 Sheet **67** of **84** Sheets



C.S.A.H. 10 TURNBACK

NO	DATE	BY	CHKD	APPR	REVISION

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

PRINT NAME: *Kirsten Olson*

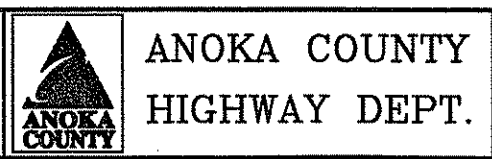
SIGNATURE: *[Signature]*

DATE: *7/10/01* REG. NO. *26826*

DRAWN BY: *DM* DATE: *07/02/01*

DESIGN BY: _____ DATE: _____

CHECKED BY: _____ DATE: _____



STATE PROJECT NO. _____

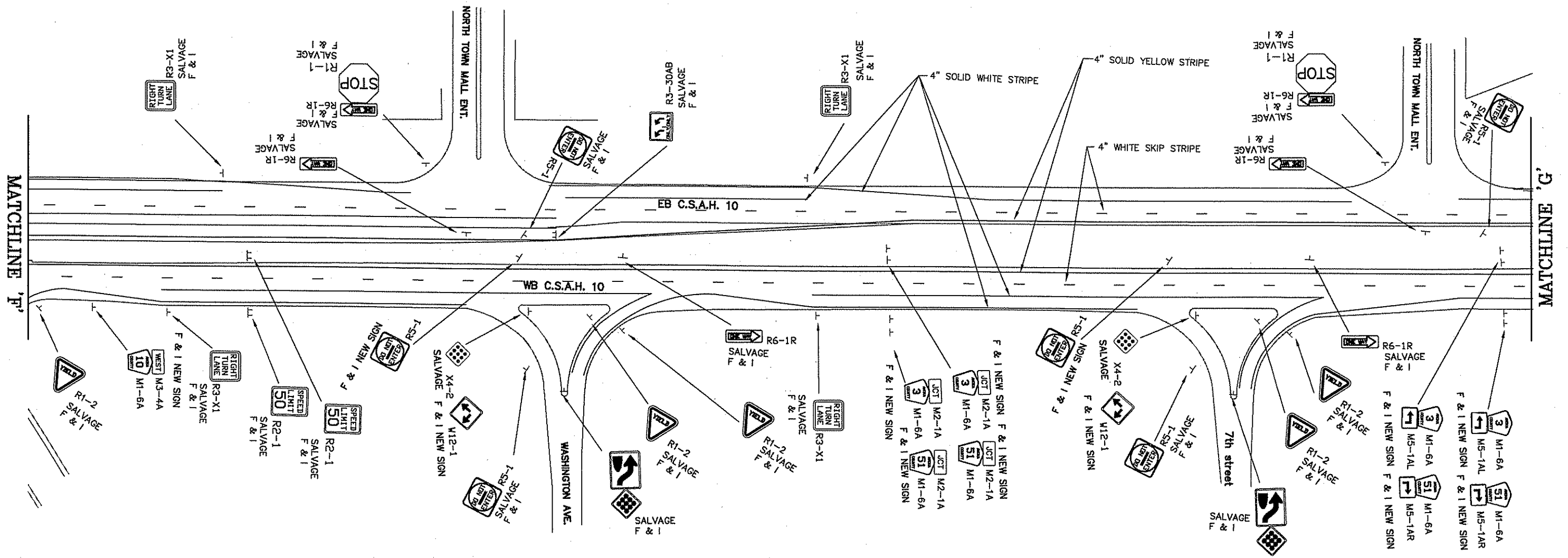
STATE AID PROJECT NO. _____

STATE AID PROJECT NO. **02-610-12**

COUNTY PROJECT NO. **96-09-00**

PERMANENT
SIGN / STRIPE

Sheet **68** of **84** Sheets



C.S.A.H. 10 TURNBACK

NO	DATE	BY	CKD	APPR	REVISION

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

PRINT NAME: *Shirley Olson*

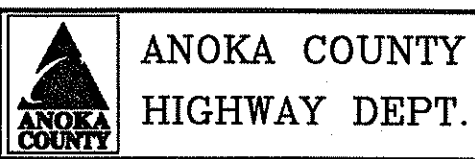
SIGNATURE: *Shirley Olson*

DATE: *7/13/01* REG. NO. *2086*

DRAWN BY: *DM* DATE: *07/02/01*

DESIGN BY: _____ DATE: _____

CHECKED BY: _____ DATE: _____



STATE PROJECT NO. _____

STATE AID PROJECT NO. _____

STATE AID PROJECT NO. **02-610-12**

COUNTY PROJECT NO. **96-09-00**

PERMANENT SIGN / STRIPE

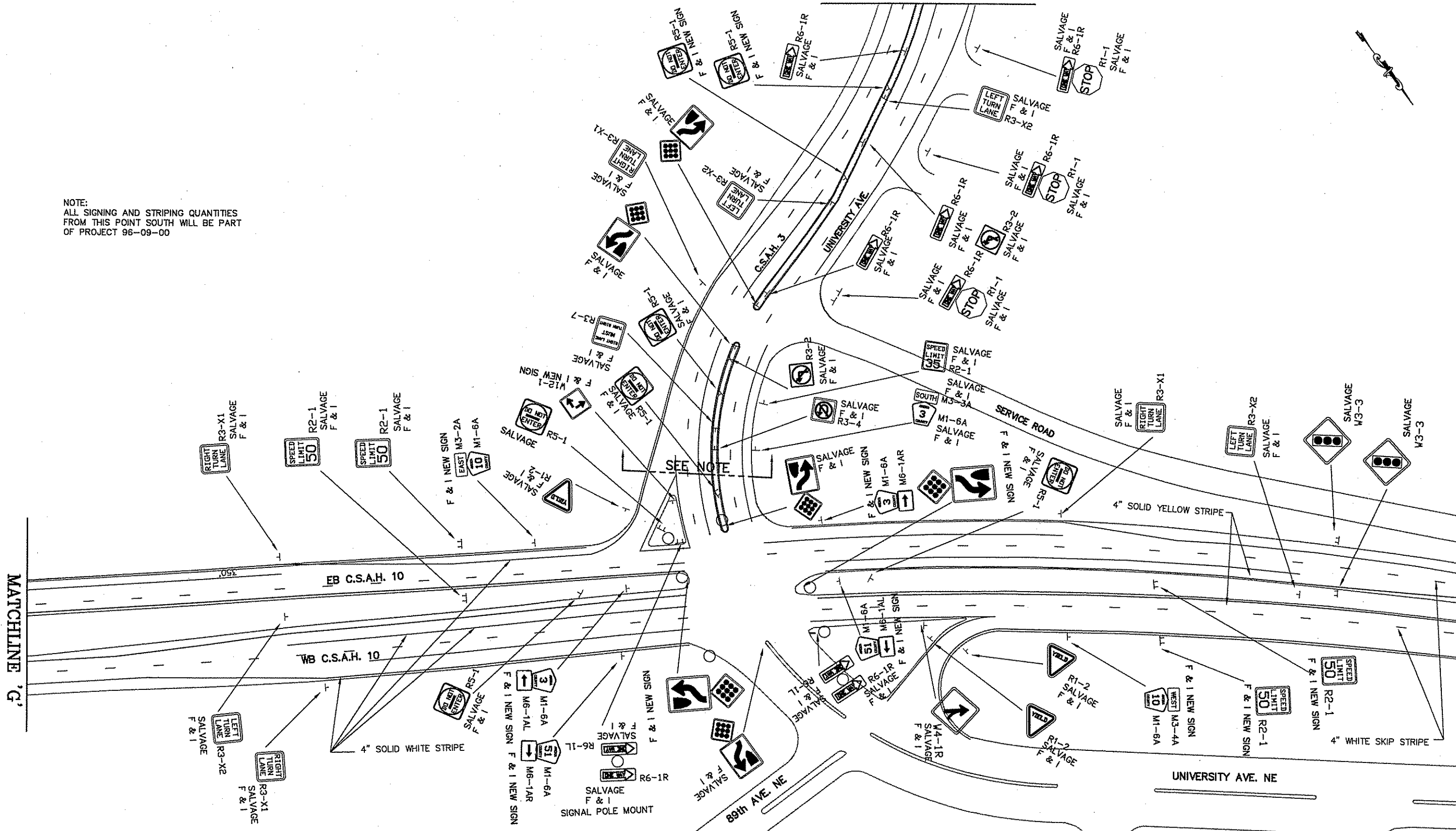
Sheet **69** of **84** Sheets

NOTE:
ALL SIGNING AND STRIPING QUANTITIES
FROM THIS POINT SOUTH WILL BE PART
OF PROJECT 96-09-00

MATCHLINE 'K'

MATCHLINE 'G'

MATCHLINE 'H'



SEE NOTE

C.S.A.H. 10 TURNBACK

NO	DATE	BY	CKD	APPR	REVISION

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

PRINT NAME: *Augusta Olson*
SIGNATURE: *Augusta Olson*
DATE: *7/10/07* REG. NO. *20826*

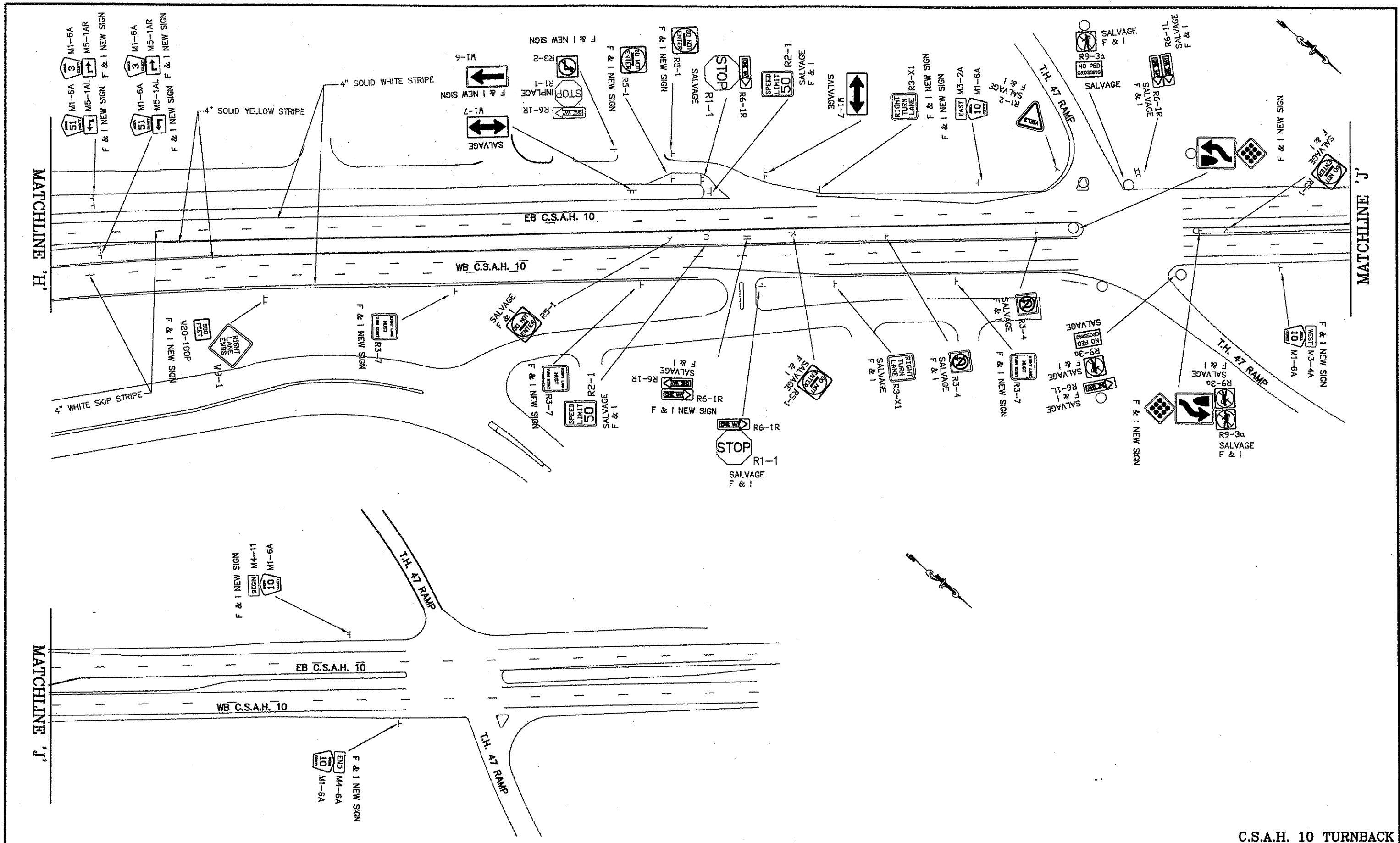
DRAWN BY: *DM* DATE: *07/02/01*
DESIGN BY: _____ DATE: _____
CHECKED BY: _____ DATE: _____



ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO. _____
STATE AID PROJECT NO. _____
STATE AID PROJECT NO. *02-610-12*
COUNTY PROJECT NO. *96-09-00*

PERMANENT
SIGN / STRIPE
Sheet *70* of *84* Sheets



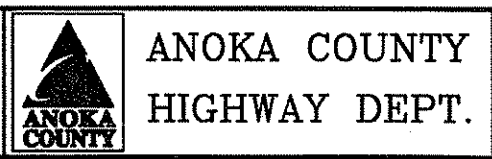
C.S.A.H. 10 TURNBACK

NO	DATE	BY	CHKD	APPR	REVISION

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

PRINT NAME: *Quasten Olson*
 SIGNATURE: *Quasten Olson*
 DATE: *7/02/01* REG. NO. *21226*

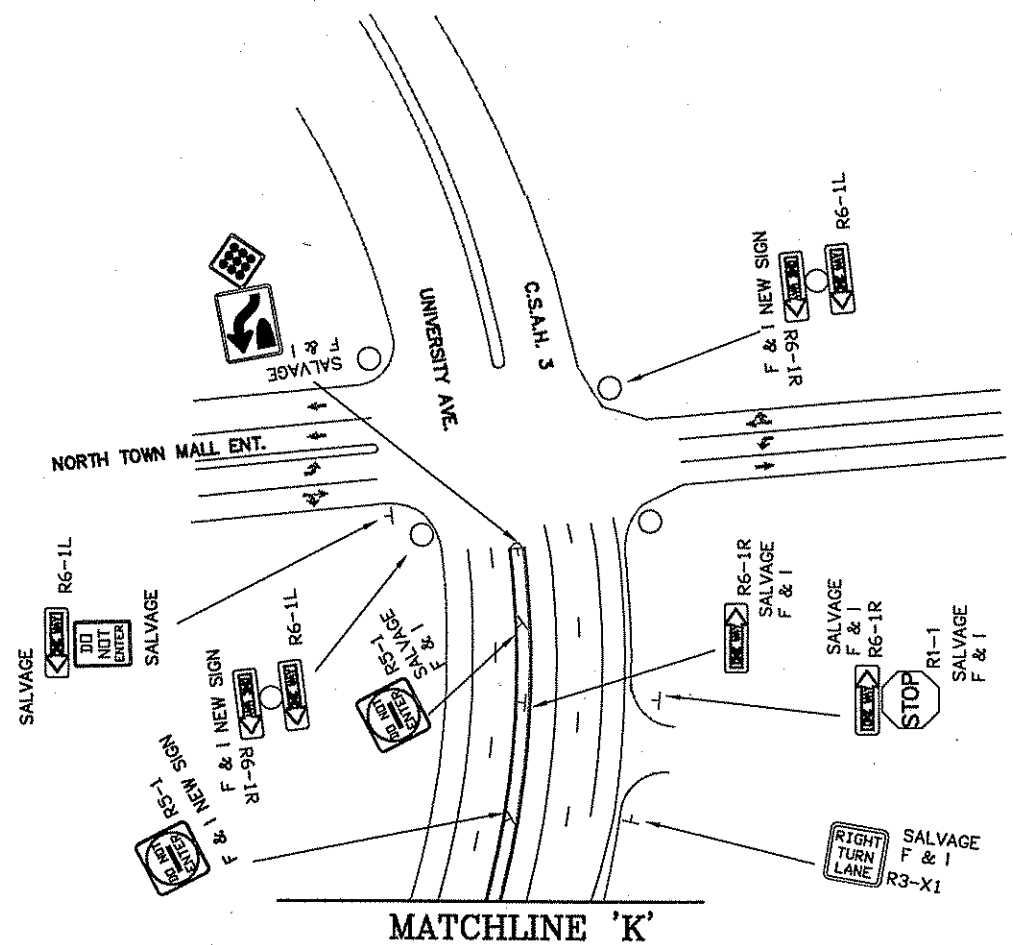
DRAWN BY: *DM* DATE: *07/02/01*
 DESIGN BY: _____ DATE: _____
 CHECKED BY: _____ DATE: _____



STATE PROJECT NO. _____
 STATE AID PROJECT NO. _____
 STATE AID PROJECT NO. *02-610-12*
 COUNTY PROJECT NO. *96-09-00*

PERMANENT SIGN / STRIPE

Sheet *71* of *84* Sheets



C.S.A.H. 10 TURNBACK

NO	DATE	BY	CHKD	APPR	REVISION

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

PRINT NAME: *Arister Olson*
 SIGNATURE: *Arister Olson*
 DATE: *7/10/01* REG. NO. *22826*

DRAWN BY: *DM* DATE: *07/02/01*
 DESIGN BY: _____ DATE: _____
 CHECKED BY: _____ DATE: _____



**ANOKA COUNTY
HIGHWAY DEPT.**

STATE PROJECT NO. _____
 STATE AID PROJECT NO. _____
 STATE AID PROJECT NO. 02-610-12
 COUNTY PROJECT NO. 96-09-00

**PERMANENT
SIGN / STRIPE**

Sheet 72 of 84 Sheets

M. U. T. C. D. CODE	SIZE	SQ. FT.	INSERT	QTY	MOUNTING POST PER INSTALLATION	MOUNTING HEIGHT
R1-1	36"x36"	9.00	STOP	16	1	7.0'
R1-2	36"x36"x36"	9.00	YIELD	14	1	7.0'
R2-1	36"x48"	12.00	SPEED LIMIT 50	17	2	7.0'
R3-2	24"x24"	4.00	NO LEFT TURN	2	1	7.0'
R3-4	24"x24"	4.00	NO RIGHT TURN	4	1	7.0'
R3-7	30"x30"	6.25	RIGHT LANE MUST TURN RIGHT	3	1	7.0'
R3-30AB	36"x 30"	7.50	ONLY ONLY	2	1	7.0'
R3-X1	30"x30"	6.25	RIGHT TURN LANE	18	1	7.0'
R3-X2	30"x30"	6.25	LEFT TURN LANE	18	1	7.0'
R4-7	30"x36"	7.50	RIGHT TURN ONLY	18	1	7.0'
X4-2	18"x18"	2.25	CHESSEBONNET			
R5-1	30"x30"	6.25	DO NOT ENTER	28	1	7.0'
R6-1R	36"x12"	3.00	ONE WAY	39	1	7.0'
R6-1L	36"x12"	3.00	ONE WAY	12		
R6-3	24"x18"	3.00	DIVIDER	5		

M. U. T. C. D. CODE	SIZE	SQ. FT.	INSERT	QTY	MOUNTING POST PER INSTALLATION	MOUNTING HEIGHT
R10-6	24"x36"	6.00	STOP HERE ON RED	1	1	7.0'
R9-3a	18"x18"	2.25	NO PEDESTRIAN	4		
R10-11b	24"x24"	4.00	NO TURN ON RED	2		
W1-6	48"x24"	8.00	ARROW	1	2	7.0'
W3-3	36"x36"	9.00	TRAFFIC LIGHT	2	1	7.0'
W4-1R	36"x36"	9.00	UPWARD ARROW	5	1	7.0'
W9-1	36"x36"	9.00	RIGHT LANE ENDS	5	1	7.0'
W20-100P	24"x18"	3.00	500 FEET			
W12-1	24"x24"	4.00	DOWNWARD ARROW	3	1	4.0'

M. U. T. C. D. CODE	SIZE	SQ. FT.	INSERT	QTY	MOUNTING POST PER INSTALLATION	MOUNTING HEIGHT
	24"x12"	2.00	BEGIN	M4-11	2	
	24"x6"	1.00	END	M4-12	2	
M1-6A	24"x24"	4.00	MINN. 10		19	7.0'
			WEST	M3-4A	6	
			EAST	M3-2A	9	
	21"x15"	2.20	JCT	M2-1A	2	
	24"x12"	2.00	END	M4-6A	1	
M1-6A	24"x24"	4.00	MINN. 35		5	7.0'
	21"x15"	2.20				
			UP	M5-1AL	1	
			DOWN	M5-1AR	1	
			UP	M6-1AL	1	
			DOWN	M6-1AR	1	
	21"x15"	2.20	JCT	M2-1A	2	
M1-6A	24"x24"	4.00	MINN. 3		8	7.0'
	21"x15"	2.20			2	
			UP	M5-1AL	2	
			DOWN	M5-1AR	2	
			UP	M6-1AL	1	
			DOWN	M6-1AR	1	
	21"x15"	2.20	JCT	M2-1A	2	
M1-6A	24"x24"	4.00	MINN. 51		8	7.0'
	21"x15"	2.20			2	
			UP	M5-1AL	2	
			DOWN	M5-1AR	2	
			UP	M6-1AL	1	
			DOWN	M6-1AR	1	

- NOTE:
- ① 8 R4-7 MOUNTED ON SIGNAL POLE
 - ② 15 R6-1R MOUNTED ABOVE R1-1
7 MOUNTED ON SIGNAL POLE
 - ③ 5 R6-1L MOUNTED BACK TO BACK WITH R6-1R ON R1-1
 - ④ 5 R6-3 MOUNTED BELOW R1-1
 - ⑤ 2 R9-3a MOUNTED ON SIGNAL POLE
2 R9-3a MOUNTED BACK TO BACK ON R4-7
 - ⑥ 2 R10-11b MOUNTED ON SIGNAL POLE

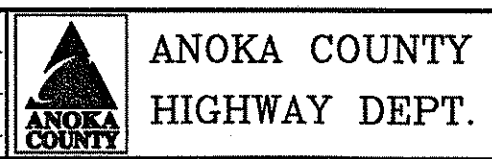
C.S.A.H. 10 TURNBACK

NO	DATE	BY	CHK	APPR	REVISION

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: Foster Olson
SIGNATURE: [Signature]
DATE: 7/10/01 REG. NO. 26826

DRAWN BY: DM DATE: 07/02/01
DESIGN BY: _____ DATE: _____
CHECKED BY: _____ DATE: _____



STATE PROJECT NO. _____
STATE AID PROJECT NO. _____
STATE AID PROJECT NO. 02-610-12
COUNTY PROJECT NO. 96-09-00

SIGN QUANTITIES
Sheet 73 of 84 Sheets

M. U. T. C. D. CODE	SIZE	SQ. FT.	INSERT	QTY	MOUNTING POST PER INSTALLATION	MOUNTING HEIGHT
R1-1	30"x30"	5.00		4	1	7.0'
R2-1	24"x30"	5.00		1	2	7.0'
R3-2	24"x24"	4.00		2	1	7.0'
R3-4	24"x24"	4.00		1	1	7.0'
R3-7	30"x30"	6.25		1	1	7.0'
R3-X1	30"x30"	6.25		2	1	7.0'
R3-X2	30"x30"	6.25		2	1	7.0'
R4-7	30"x36"	7.50		3	1	7.0'
X4-2	18"x18"	2.25				
R5-1	30"x30"	6.25		5	1	7.0'
R6-1R	36"x12"	3.00		9	1	7.0'
R6-1L	36"x12"	3.00		2		
M3-3A	24"x12"	2.00				
M1-6A	24"x24"	4.00		5	1	7.0'

①
②

NOTE:
 1 4 R6-1R MOUNTED ABOVE R1-1
 2 R6-1R MOUNTED ON SIGNAL POLE
 2 R6-1L MOUNTED ON SIGNAL POLE

C.S.A.H. 10 TURNBACK

NO	DATE	BY	CHKD	APPR	REVISION

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA
 PRINT NAME: Harsten Olson
 SIGNATURE: [Signature]
 DATE: 7/10/01 REG. NO. 26826

DRAWN BY: DM DATE: 07/02/01
 DESIGN BY: _____ DATE: _____
 CHECKED BY: _____ DATE: _____

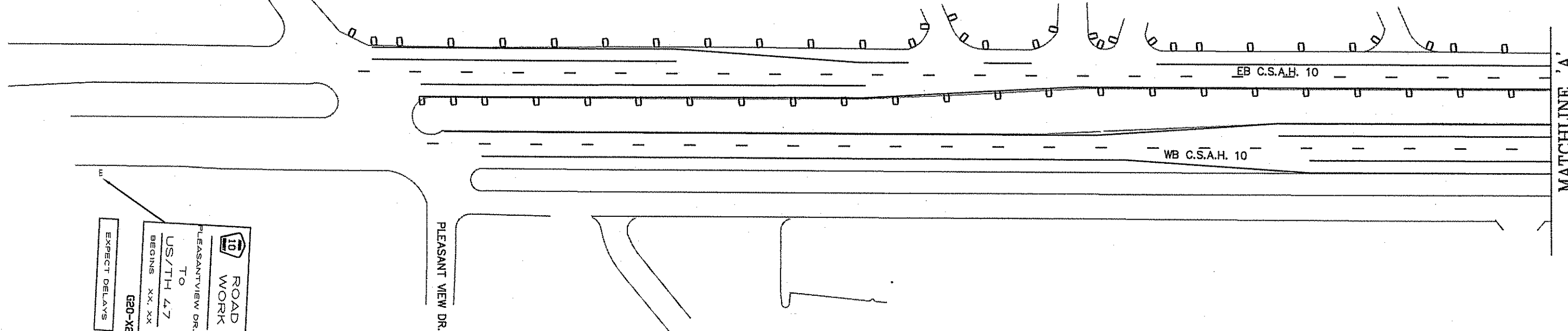
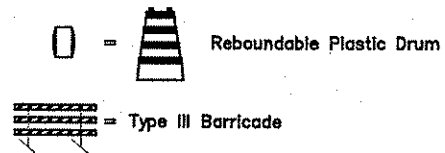


ANOKA COUNTY
 HIGHWAY DEPT.

STATE PROJECT NO. _____
 STATE AID PROJECT NO. _____
 STATE AID PROJECT NO. 02-610-12
 COUNTY PROJECT NO. 96-09-00

SIGN QUANTITIES
96-09-00
 Sheet 74 of 84 Sheets

PLEASANT VIEW DR.



ROAD WORK
 TO
 US/TH 47
 BEGINS XX.XX
 G20-X2
 EXPECT DELAYS
 INSTALL WHEN ROAD WORK COMMENCES

C.S.A.H. 10 TURNBACK

NO	DATE	BY	CHKD	APPR	REVISION

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 PRINT NAME: Kirsten Olson
 SIGNATURE: [Signature]
 DATE: 7/10/01 LICENSE NO. 26826

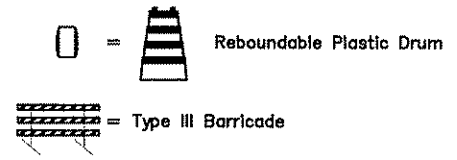
DRAWN BY: DM DATE: 07/02/01
 DESIGN BY: _____ DATE: _____
 CHECKED BY: _____ DATE: _____



ANOKA COUNTY
 HIGHWAY DEPT.

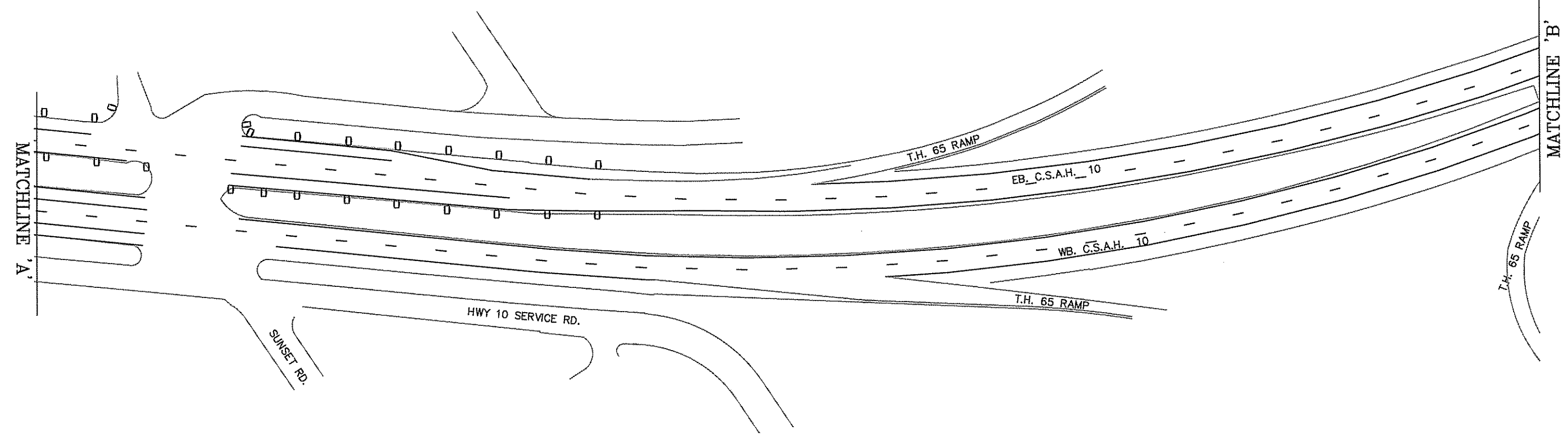
STATE PROJECT NO. _____
 STATE AID PROJECT NO. 02-610-12
 STATE AID PROJECT NO. 02-610-13
 COUNTY PROJECT NO. 96-09-00

STAGING
 Sheet 75 of 84 Sheets



MATCHLINE 'A'

MATCHLINE 'B'



C.S.A.H. 10 TURNBACK

NO	DATE	BY	CHKD	APPR	REVISION

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 PRINT NAME: Lynsten Olson
 SIGNATURE: [Signature]
 DATE: 7/10/01 LICENSE NO. 26826

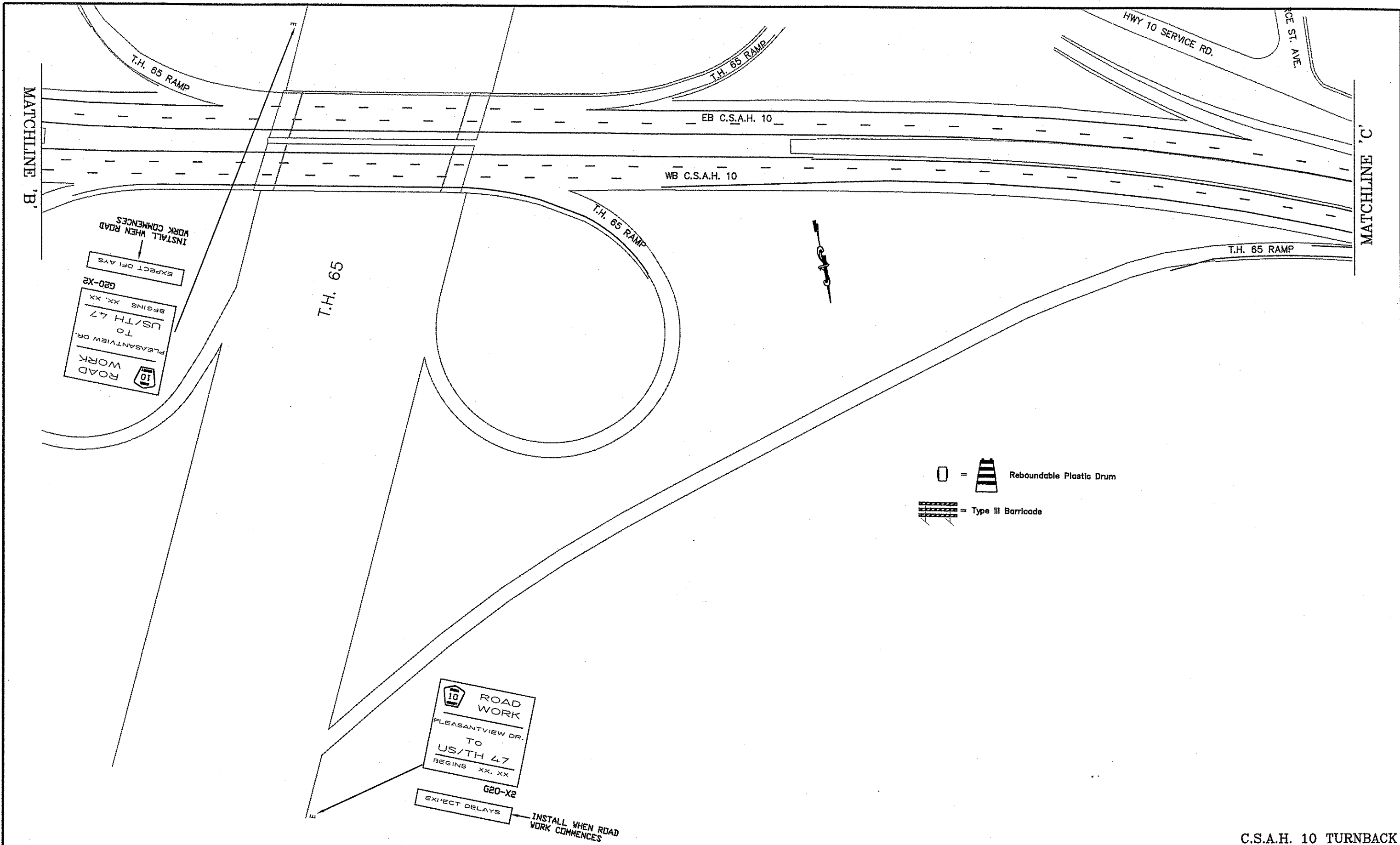
DRAWN BY: DM DATE: 07/02/01
 DESIGN BY: _____ DATE: _____
 CHECKED BY: _____ DATE: _____



ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO. _____
 STATE AID PROJECT NO. 02-610-12
 STATE AID PROJECT NO. 02-610-13
 COUNTY PROJECT NO. 96-09-00

STAGING
 Sheet 76 of 84 Sheets



MATCHLINE 'B'

MATCHLINE 'C'

ROAD WORK
 PLEASANTVIEW DR.
 TO
 US/TH 47
 BEGINS XX, XX
 G20-X2
 EXPECT DELAYS
 INSTALL WHEN ROAD
 WORK COMMENCES

ROAD WORK
 PLEASANTVIEW DR.
 TO
 US/TH 47
 BEGINS XX, XX
 G20-X2

EXPECT DELAYS
 INSTALL WHEN ROAD
 WORK COMMENCES

= Reboundable Plastic Drum
 = Type III Barricade

C.S.A.H. 10 TURNBACK

NO	DATE	BY	CHKD	APPR	REVISION

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 PRINT NAME: Kirsten Olson
 SIGNATURE: [Signature]
 DATE: 7/10/01 LICENSE NO. 26826

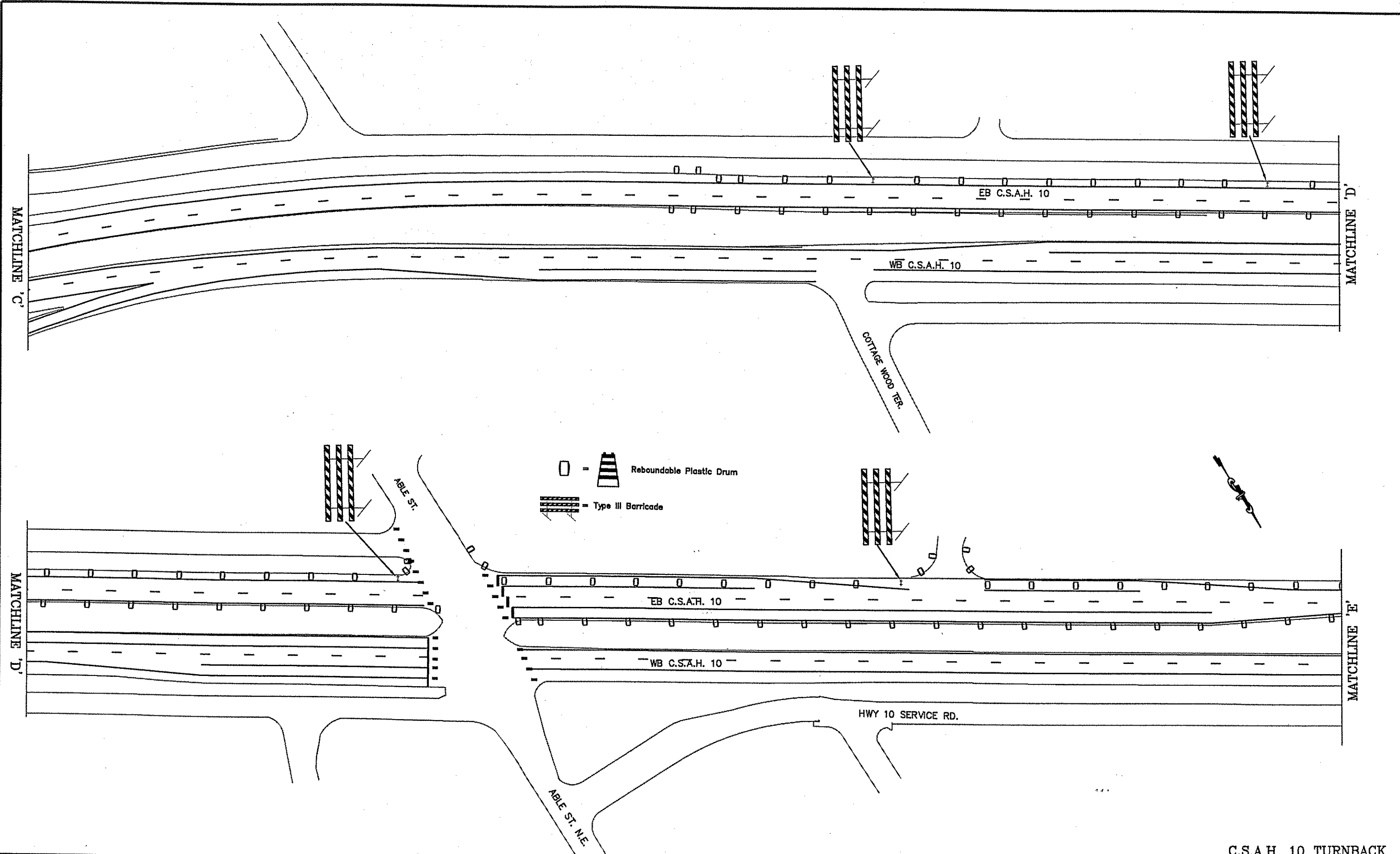
DRAWN BY: DM DATE: 07/02/01
 DESIGN BY: _____ DATE: _____
 CHECKED BY: _____ DATE: _____



ANOKA COUNTY
 HIGHWAY DEPT.

STATE PROJECT NO. _____
 STATE AID PROJECT NO. 02-610-12
 STATE AID PROJECT NO. 02-610-13
 COUNTY PROJECT NO. 96-09-00

STAGING
 Sheet 77 of 84 Sheets



C.S.A.H. 10 TURNBACK

NO	DATE	BY	CKD	APPR	REVISION

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

PRINT NAME: *Ernest Olson*
 SIGNATURE: *Ernest Olson*
 DATE: *7/10/01* LICENSE NO. *26826*

DRAWN BY: *DM* DATE: *07/02/01*
 DESIGN BY: _____ DATE: _____
 CHECKED BY: _____ DATE: _____

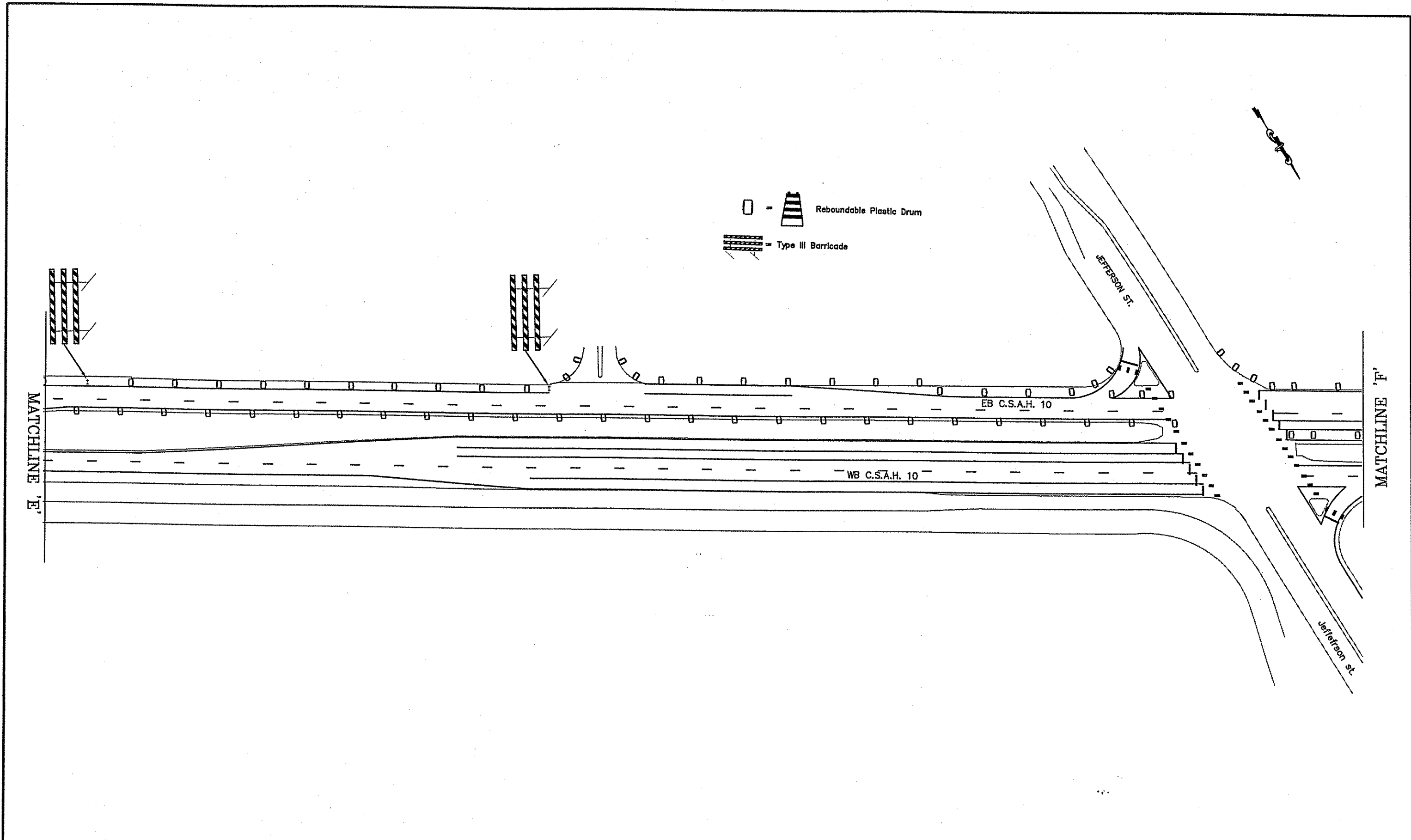


ANOKA COUNTY
 HIGHWAY DEPT.

STATE PROJECT NO. _____
 STATE AID PROJECT NO. 02-610-12
 STATE AID PROJECT NO. 02-610-13
 COUNTY PROJECT NO. 96-09-00

STAGING

Sheet 78 of 84 Sheets



C.S.A.H. 10 TURNBACK

NO	DATE	BY	CHKD	APPR	REVISION

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

PRINT NAME: *Birgsten Olson*

SIGNATURE: *Birgsten Olson*

DATE: *7/10/01* LICENSE NO. *21824*

DRAWN BY: *DM* DATE: *07/02/01*

DESIGN BY: _____ DATE: _____

CHECKED BY: _____ DATE: _____



ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO. _____

STATE AID PROJECT NO. 02-610-12

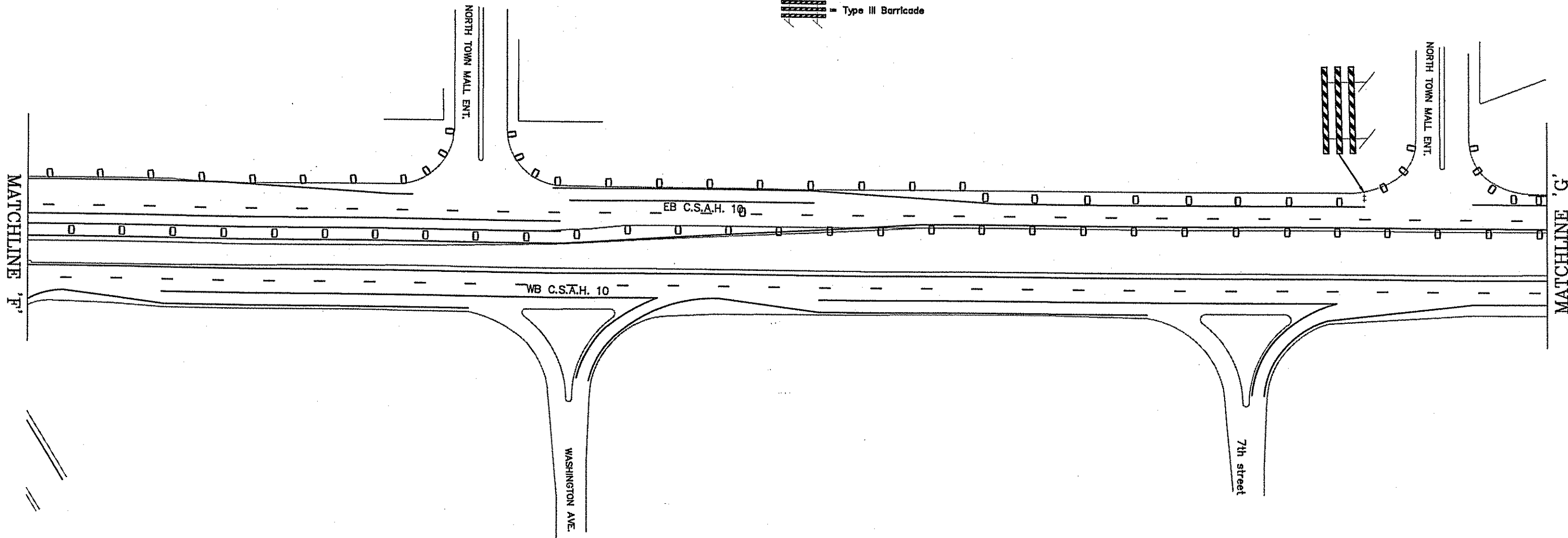
STATE AID PROJECT NO. 02-610-13

COUNTY PROJECT NO. 96-09-00

STAGING

Sheet 79 of 84 Sheets

 = Reboundable Plastic Drum
 = Type III Barricade



C.S.A.H. 10 TURNBACK

NO	DATE	BY	CHKD	APPR	REVISION

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

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 PRINT NAME: *Bjorn Olson*
 SIGNATURE: *Bjorn Olson*
 DATE: *7/10/01* REG. NO. *26826*

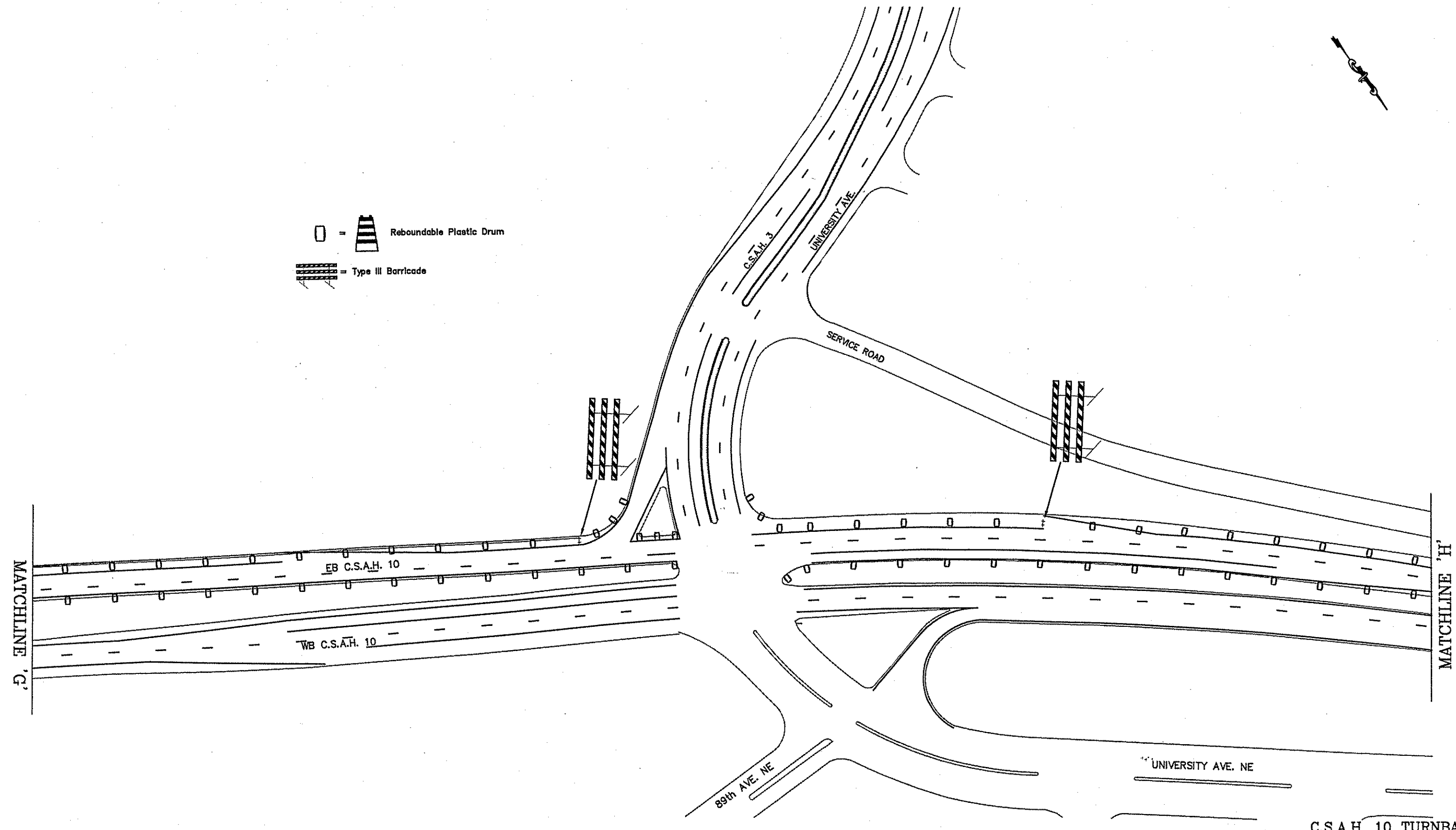
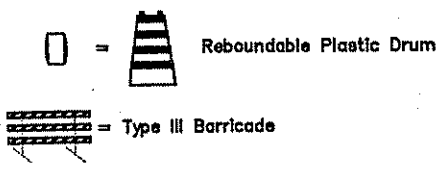
DRAWN BY: DM DATE: 07/02/01
 DESIGN BY: _____ DATE: _____
 CHECKED BY: _____ DATE: _____



ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO. _____
 STATE AID PROJECT NO. 02-610-12
 STATE AID PROJECT NO. 02-610-13
 COUNTY PROJECT NO. 96-09-00

STAGING
 Sheet 80 of 84 Sheets



NO	DATE	BY	CKD	APPR	REVISION

NAME: S:\SDSK\PROJ\000000\000000\028000.DWG

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 PRINT NAME: *Gregory Olson*
 SIGNATURE: *Gregory Olson*
 DATE: *11/01/01* REG. NO. *26821*

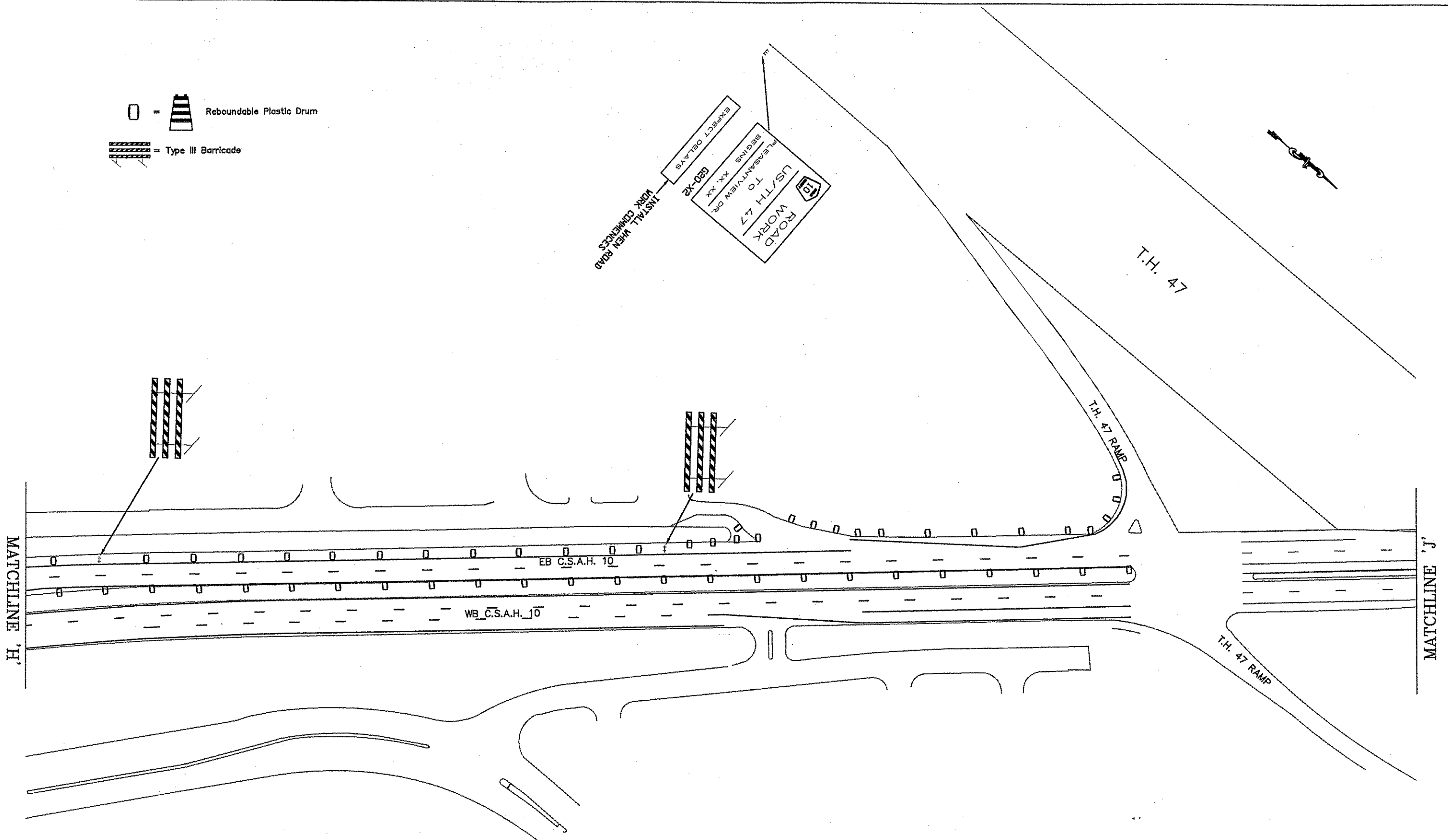
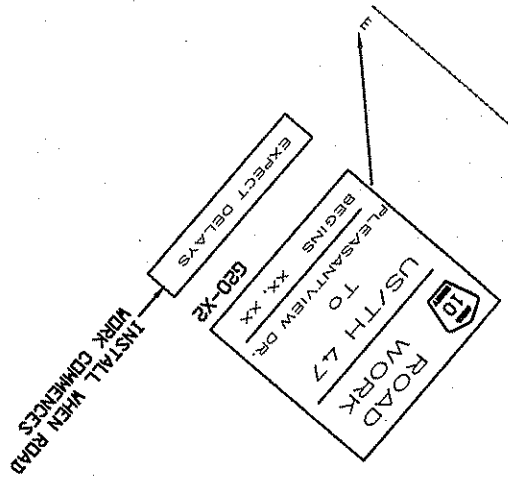
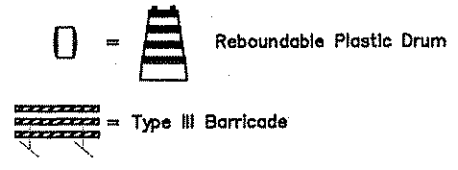
DRAWN BY: DM DATE: 07/02/01
 DESIGN BY: DATE:
 CHECKED BY: DATE:



**ANOKA COUNTY
 HIGHWAY DEPT.**

STATE PROJECT NO. _____
 STATE AID PROJECT NO. 02-610-12
 STATE AID PROJECT NO. 02-610-13
 COUNTY PROJECT NO. 96-09-00

STAGING
 Sheet 81 of 84 Sheets



C.S.A.H. 10 TURNBACK

NO	DATE	BY	CHKD	APPR	REVISION

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 PRINT NAME: *Dustin Olson*
 SIGNATURE: *Dustin Olson*
 DATE: *7/10/01* REG. NO. *26826*

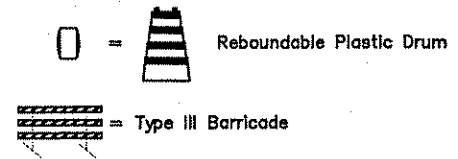
DRAWN BY: DM DATE: 07/02/01
 DESIGN BY: DATE:
 CHECKED BY: DATE:



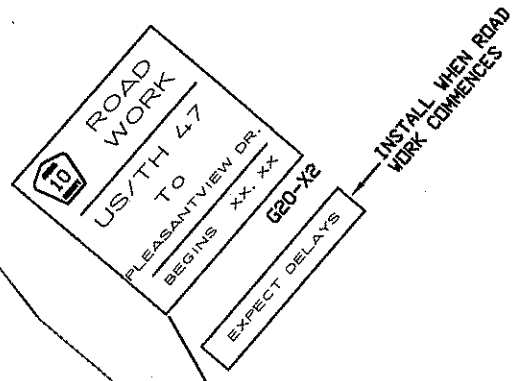
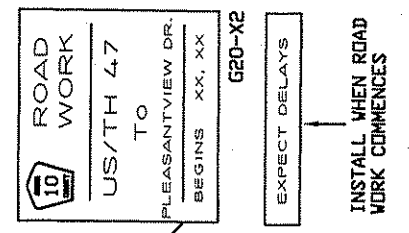
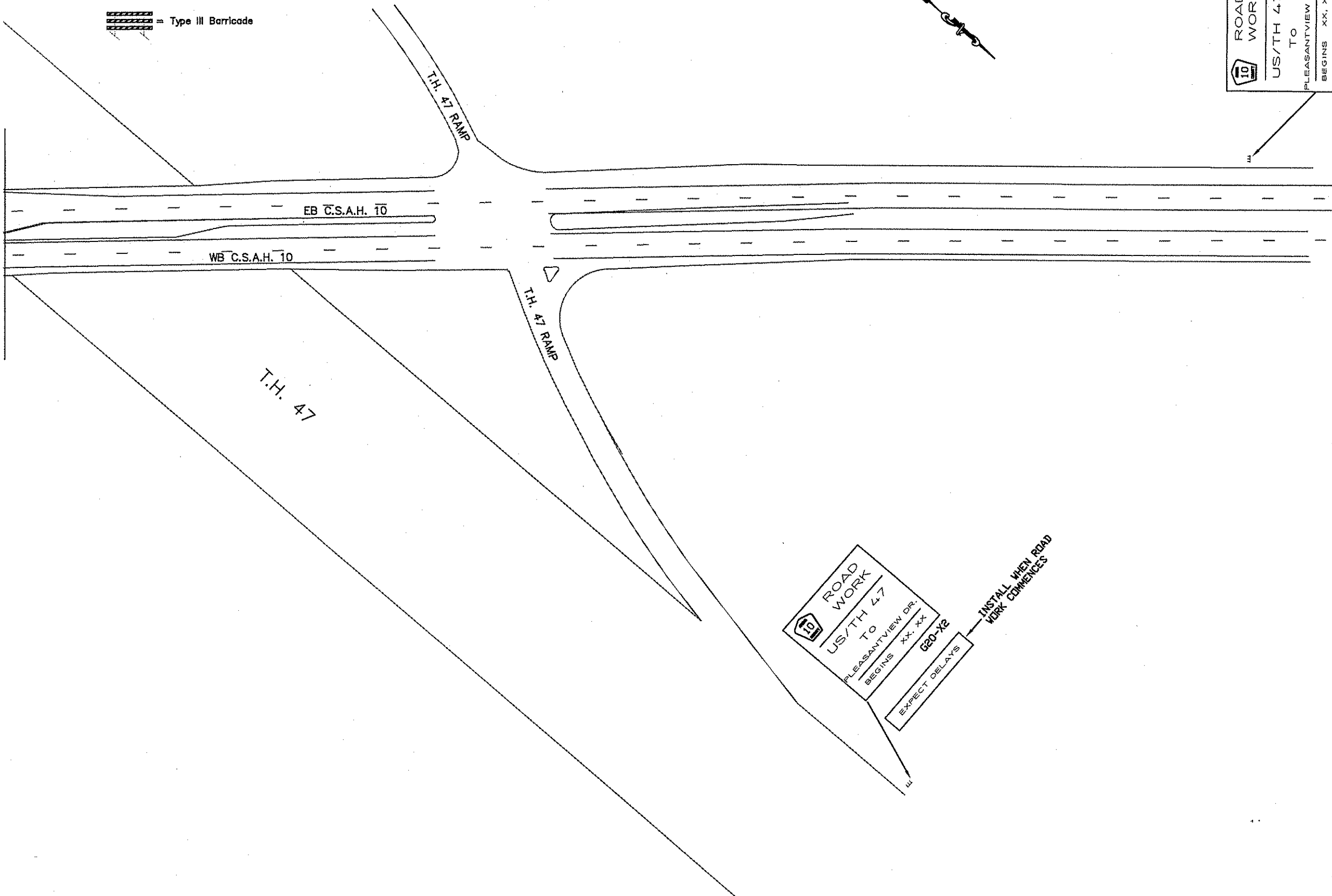
ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO. _____
 STATE AID PROJECT NO. _____
 STATE AID PROJECT NO. 02-610-12
 COUNTY PROJECT NO. 96-09-00

STAGING
 Sheet 82 of 84 Sheets



MATCHLINE 'J'



C.S.A.H. 10 TURNBACK

NO	DATE	BY	CHKD	APPR	REVISION

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

PRINT NAME: Christen Wilson

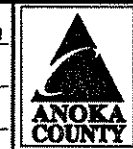
SIGNATURE: [Signature]

DATE: 7/10/01 REG. NO. 26826

DRAWN BY: DM DATE: 07/02/01

DESIGN BY: _____ DATE: _____

CHECKED BY: _____ DATE: _____



ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO. _____

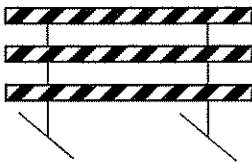
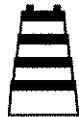
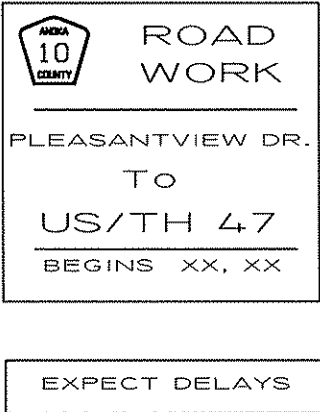
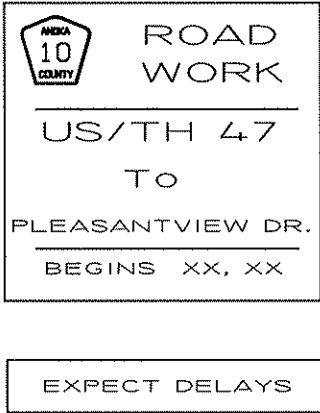
STATE AID PROJECT NO. _____

STATE AID PROJECT NO. 02-610-12

COUNTY PROJECT NO. 96-09-00

STAGING

Sheet 83 of 84 Sheets

M. U. T. C. D. CODE	SIZE	INSERT	QUANTITY
TYPE III	8 FOOT		SEE NOTE • 11
REBOUNDABLE PLASTIC DRUM			• 426
G20-X2	132' X 108'		• 3
G20-X2	132' X 108'		• 3

NOTES:

- 1) ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE MOST RECENT EDITION OF THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, INCLUDING THE FIELD MANUAL DATED JANUARY, 1999.
- 2) ALL TYPE III BARRICADES SHALL BE REFLECTORIZED ON BOTH SIDES. BARRICADES MARKINGS SHALL BE SLANTED IN ACCORDANCE WITH THE M. U. T. C. D.



SIGN TO BE INSTALLED A MINIMUM OF SEVEN DAYS PRIOR TO BEGINNING OF ROAD WORK AND SHALL REMAIN INPLACE UNTIL THERE ARE NO LONGER ANY RESTRICTIONS TO TRAFFIC IN EITHER DIRECTION OF CSAH 10. THE EXPECT DELAYS MESSAGE IS TO REPLACE BEGINS XX, XX WHEN ROAD WORK COMMENCES.



SIGN TO BE INSTALLED A MINIMUM OF SEVEN DAYS PRIOR TO BEGINNING OF ROAD WORK AND SHALL REMAIN INPLACE UNTIL THERE ARE NO LONGER ANY RESTRICTIONS TO TRAFFIC IN EITHER DIRECTION OF CSAH 10. THE EXPECT DELAYS MESSAGE IS TO REPLACE BEGINS XX, XX WHEN ROAD WORK COMMENCES.

C.S.A.H. 10 TURNBACK

NO	DATE	BY	CHKD	APPR	REVISION

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 PRINT NAME: *Ernst J. Olson*
 SIGNATURE: *[Signature]*
 DATE: *7/10/01* REG. NO. *26826*

DRAWN BY: *DM* DATE: *07/02/01*
 DESIGN BY: _____ DATE: _____
 CHECKED BY: _____ DATE: _____



ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO. _____
 STATE AID PROJECT NO. _____
 STATE AID PROJECT NO. *02-610-12*
 COUNTY PROJECT NO. *96-09-00*

STAGING
QUANTITIES
Sheet *84* of *84* Sheets