PLOTTED:

LEGEND

- STREET CENTERLINE
- SURVEY BASELINE
- COUNTY
- SECTION
- QUARTER
- SIXTEENTH
- CORPORATE LIMITS

EXISTING

- RIGHT OF WAY
- PERMANENT EASEMENT
- PROPERTY LINE
- R.R. RIGHT OF WAY
- SANITARY SEWER AND MANHOLE
- FORCEMAIN
- SANITARY SEWER SERVICE
- WATERMAIN, HYDRANT AND VALVE
- WATER SERVICE AND CURB STOP BOX
- WATER VALVE MANHOLE
- STORM SEWER AND MANHOLE
- CATCH BASIN
- CULVERT
- BULKHEAD
- UNDERGROUND TELEPHONE CABLE OR CONDUIT
- UNDERGROUND ELECTRIC CABLE OR CONDUIT
- TELEPHONE MANHOLE
- TELEPHONE PEDESTAL
- CABLE TV PEDESTAL
- ELECTRIC MANHOLE
- POWER POLE
- DOWN GUY ANCHOR
- STEEL LIGHT POLE
- TRAFFIC SIGNAL, STANDARD
- GAS MAIN
- GAS VALVE
- SOIL BORING
- TRAVERSE POINT
- CONCRETE CURB AND GUTTER
- EXISTING PAVEMENT OR SIDEWALK (CONC / BIT)
- SIGN (HWY, PARK, STOP, ETC.)
- STREET SIGN
- DITCH
- RAILROAD TRACKS
- FENCE
- TREE (DECIDUOUS)
- TREE (CONIFEROUS)
- BUSH–SHRUB
- WOODED AREA
- BUILDING (BLDG)

PROPOSED OR NEW CONSTRUCTION

- NEW RIGHT OF WAY
- PERMANENT EASEMENT
- TEMPORARY EASEMENT
- SANITARY SEWER AND MANHOLE
- FORCEMAIN
- SANITARY SEWER SERVICE
- WATERMAIN, HYDRANT AND VALVE
- WATER SERVICE AND CURB STOP BOX
- WATER VALVE MANHOLE
- STORM SEWER WITH MANHOLE
- CATCH BASIN
- CULVERT
- BULKHEAD
- DRAIN PIPE
- DITCH
- CONCRETE CURB AND GUTTER
- SILTFENCE
- HAYBALES
- STEEL LIGHT POLE
- TRAFFIC SIGNAL, STANDARD
- SIGN (HWY, PARK, STOP, ETC.)
- STREET LIGHT FEED POINT
- STREET LIGHTING CABLE
- REMOVE TREE
- INSULATION

MINNESOTA DEPARTMENT OF TRANSPORTATION

ANOKA COUNTY

CONSTRUCTION PLANS FOR

GRADING, CURB & GUTTER, BITUMINOUS SURFACING, AND SIGNAL SYSTEM

C.S.A.H. 7 AND C.S.A.H. 20

LOCATED ON CSAH 7 FROM 578.2 FT SOUTH OF CSAH 20 NORTH TO 2,232.6 FT NORTH OF CSAH 20
GROSS LENGTH = 2811 FT, 0.532 MILES
BRIDGE LENGTH = 0 FT, 0 MILES
EXCEPTIONS LENGTH = 0 FT, 0 MILES
NET LENGTH = 2811 FT, 0.532 MILES

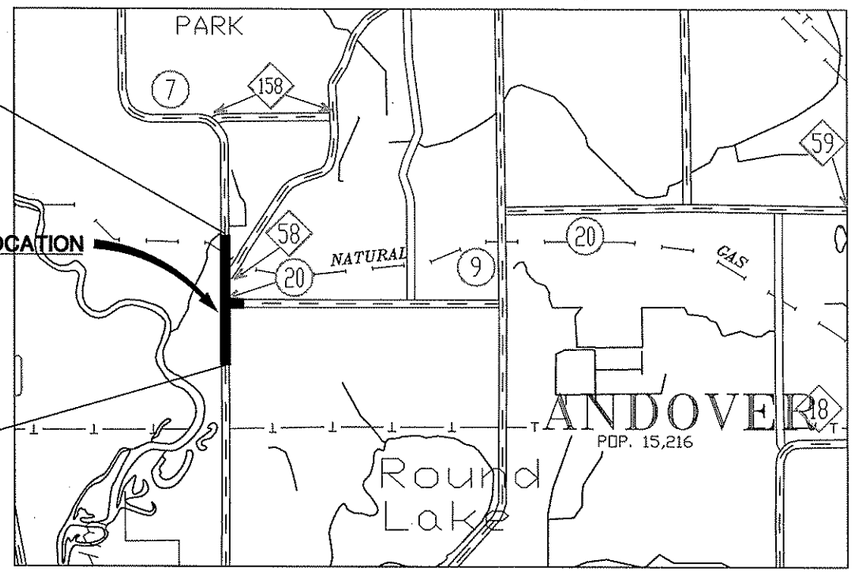
LOCATED ON CSAH 20 FROM CSAH 7 TO 304.7 FT EAST OF CSAH 7
GROSS LENGTH = 305 FT, 0.058 MILES
BRIDGE LENGTH = 0 FT, 0 MILES
EXCEPTIONS LENGTH = 0 FT, 0 MILES
NET LENGTH = 305 FT, 0.058 MILES

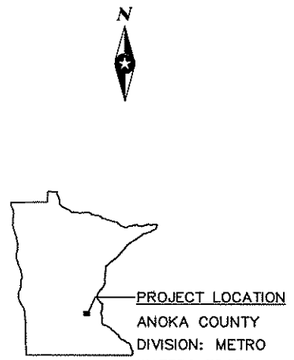
S.P. 02-607-17
S.P. 02-620-07
S.A.P. 198-020-16

END S.P. 02–607–17
STA. 30+04

PROJECT LOCATION

BEGIN S.P. 02–607–17
STA. 1+93





NOTE:
THE EXACT LOCATION OF UNDERGROUND UTILITIES SUCH AS GAS, TELEPHONE, FIBEROPTIC, ELECTRIC, CABLE TV, AND PIPE LINES ARE UNKNOWN. THE CONTRACTOR SHALL CONTACT GOPHER STATE ONE CALL BEFORE COMMENCING EXCAVATION.

GOPHER STATE ONE CALL SYSTEM.....1–800–252–1166

ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE MMUTCD INCLUDING "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS"–JANUARY 2001

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

MINN. PROJ. NO. STPX 0202(141)

GOVERNING SPECIFICATIONS

THE 2000 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" SHALL GOVERN EXCEPT AS MODIFIED BY THE SPECIFICATIONS FOR THIS PROJECT.

INDEX

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	STATEMENT OF ESTIMATED QUANTITIES
3	STREET DETAILS
4–8	STANDARD DETAILS PLAN
9–11	TABULATIONS
12	CONSTRUCTION NOTES/STANDARD PLATES
13–16	TYPICAL SECTIONS
17	ALIGNMENT PLAN
18	REMOVALS
19–21	CONSTRUCTION PLAN & PROFILES
22–30	CROSS SECTIONS
31–36	TRAFFIC SIGNAL PLAN
37–40, 4&A	SIGNING AND STRIPING PLANS
41–45	DETOUR PLAN

THIS PLAN CONTAINS 46 SHEETS.

DESIGN DESIGNATION (URBAN)

STOPPING SIGHT DISTANCE BASED ON:
3.5' HEIGHT OF EYE 0.5' HEIGHT OF OBJECT

	CSAH 7 (7TH AVENUE) S.P. 02–607–17
DESIGN	9 TON
DESIGN SPEED	55 M.P.H
R VALUE	70
SIGMA N 18	1,616,000
EXISTING A.D.T. (2001)	11,500
20 YR. PROJECTED A.D.T. (2021)	15,797
% H.C.A.D.T.	7.1
FUNCTIONAL CLASSIFICATION	B MINOR ARTERIAL
NO. OF TRAFFIC LANES	2
NO. OF PARKING LANES	0

APPROVED: _____ 4/7 2003
COUNTY ENGINEER OF ANOKA DATE

APPROVED: _____ 4/7 2003
CITY ENGINEER OF ANDOVER DATE

REVIEWED BY: _____ 4/18 2003
METRO–ASSISTANT DIVISION ENGINEER–STATE AID: REVIEWED FOR COMPLIANCE WITH STATE AID RULES/POLICY

APPROVED: _____ 4/19 2003
APPROVED FOR STATE AND FEDERAL FUNDING: STATE AID ENGINEER

ANOKA COUNTY

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: THOMAS G TABLER
Signature: _____
Date: 4/23/01 License No. 26861

FILE NO. AANOKC9902.01

1 / 45

S.P. 02-607-17 S.A.P. 198-020-16
S.P. 02-620-07

G:\CLIENTS\A_F\ANOKC\9902.01\DWG\ACS902TTL.DWG
DATE: 01-24-02 TIME: 3:57 pm USER: CPU404SP
XREFS:

STATEMENT OF ESTIMATED QUANTITIES

ITEM NO.	ITEM	UNIT	TOTAL QUANTITIES EST.	TOTAL QUANTITIES FINAL	CSAH 7 (S.P. NO. 02-607-17) ROADWAY EST.	ROADWAY FINAL	STORM SEWER EST.	STORM SEWER FINAL	NON PARTICIPATING EST.	NON PARTICIPATING FINAL	CSAH 20 (S.P. NO. 02-620-07) ROADWAY EST.	ROADWAY FINAL	STORM SEWER EST.	STORM SEWER FINAL	NON PARTICIPATING EST.	NON PARTICIPATING FINAL	S.A.P. NO. 198-020-16 ROADWAY EST.	ROADWAY FINAL	STORM SEWER EST.	STORM SEWER FINAL	NON PARTICIPATING EST.	NON PARTICIPATING FINAL
2013.601	CELLULAR MOBILE PHONE	EA	2		1.54						0.46											
2021.501	MOBILIZATION	LS	1		0.77						0.23											
2031.302	FIELD OFFICE TYPE D (MODIFIED)	EA	1		0.77						0.23											
2101.502	CLEARING	TREE	15		15																	
2101.507	GRUBBING	TREE	15		15																	
2104.501	REMOVE PIPE CULVERT	LF	203		203																	
2104.505	REMOVE DRIVEWAY PAVEMENT	SY	404		404																	
2104.513	SAW BITUMINOUS PVMT (FULL DEPTH)	LF	475		194						281											
2104.523	SALVAGE DELINEATOR	EA	5		4						1											
2104.523	SALVAGE SIGN TYPE C	EA	42		35						7											
2104.523	SALVAGE SIGN TYPE SPECIAL	EA	3		3																	
2104.605	PULVERIZE BITUMINOUS PAVEMENT	SY	17,459		16,814						645											
2105.501	COMMON EXCAVATION (P)	CY	10,819		9,679						1,140											
2105.525	TOPSOIL BORROW (LV)	CY	2,955		2,879						76											
2130.501	WATER FOR DUST CONTROL	MGAL	10		8.0						2.00											
(1) 2211.502	AGGREGATE BASE, CL-5 (P)	CY	2,519		2,465						54											
2232.501	MILL BITUMINOUS SURFACE (2")	SY	1,328								1,328											
2331.604	BITUMINOUS DRAINAGE FLUMES	SY	8		4.6						3.3											
2350.501	TYPE MV 3 NON WEARING COURSE MIX. (C)	TON	2,560		2,489						71											
2350.501	TYPE MV 3 WEARING COURSE MIXTURE (C)	TON	3,111		2,879						232											
2350.502	TYPE LV 3 NON WEARING COURSE MIX. (C)	TON	2,489		2,489																	
2357.502	BITUMINOUS MATERIAL FOR TACK COAT	GAL	1,286		1,190						96											
2501.511	18" CS PIPE CULVERT	LF	388				388															
2501.567	18" SAFETY APRON & GRATE	EA	8				8															
2531.501	CONC CURB & GUTTER, DESIGN B418	LF	962		589						373											
2563.601	TRAFFIC CONTROL	LS	1		0.77						0.23											
2563.605	POLICE OFFICER	HOUR	40		40																	
2564.531	F&I SIGN PANELS TYPE C	SF	382.59		320.71						61.88											
2564.537	INSTALL SIGN TYPE C	EA	4		3						1											
2564.537	INSTALL SIGN TYPE SPECIAL	EA	2		2																	
2564.602	F&I DELINEATOR	EA	4		4																	
2564.602	PVMT MESSAGE (LEFT ARROW) - POLY	EA	7		7																	
2564.602	PVMT MESSAGE (RIGHT ARROW) - POLY	EA	5		4						1											
2564.602	PVMT MESSAGE (THRU/LEFT ARROW) - POLY	EACH	1								1											
2564.602	PVMT MESSAGE (THRU/RIGHT ARROW) - POLY	EA	2		2																	
2564.603	24" SOLID LINE WHITE - POLY	LF	110		80						30											
2564.603	24" SOLID LINE YELLOW - EPOXY	LF	720		720																	
2564.603	4" BROKEN LINE WHITE - EPOXY	LF	830		830																	
2564.603	4" DBL SOLID LINE YELLOW - EPOXY	LF	4,775		4,500						275											
2564.603	4" SOLID LINE WHITE - EPOXY	LF	7,900		7,200						700											
2564.618	ZEBRA CROSSWALK WHITE - POLY	S.F.	630		430						200											
2565.511	FULL T ACT T CONTROL SIGNAL SYSTEM	SIG SYS	1		0.25						0.25						0.50					
2565.601	EMERGENCY VEHICLE PREEMPTION SYSTEM	LS	1														1.00					
2573.502	SILT FENCE TYPE MACHINE SLICED	LF	1,356		1,356																	
2573.512	TEMPORARY SILT CHECKS	LF	165		165																	
2575.501	SEEDING	ACRE	3.5		2.60						0.90											
2575.502	SEED, MIXTURE TYPE 50A MOD.	POUND	265		197						67.5											
2575.511	MULCH MATERAL, TYPE 1	TON	7		5.2						1.8											
2575.519	DISK ANCHORING	ACRE	4		2.6						0.9											
2575.523	EROSION CONTROL BLANKETS, CATEGORY 2	SY	13,125		12,700						425											
2575.532	COMMERCIAL FERTILIZER, ANALYSIS 22-0-5	POUND	350		260						90											

(1) AGGREGATE BASE CLASS 7 CAN BE USED IN LIEU OF CLASS 5. APPROXIMATELY 3589 CY SHALL BE OBTAINED FROM THE RECLAMATION OF THE EXISTING ROADWAY SECTION.

05/12/03 02:02:05 PM w:\AE\Anoka\99020th.dwg\ANOKC9902aest.dgn

DRAWN BY: SLP
DESIGNER: SLP
CHECKED BY: GFA
DESIGN TEAM

NO.	BY	DATE	REVISIONS

© SHORT ELLIOTT HENDRICKSON 1999. 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.

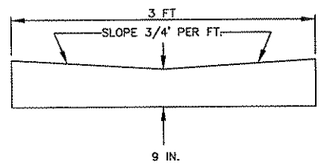
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
THOMAS G TABLER
Date: 4/23/01 Lic. No. 26861

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

ANOKA COUNTY
CSAH 7 (7TH AVENUE)
S.P. 02-607-17
S.P. 02-620-07
S.A.P. 198-020-16

ESTIMATED QUANTITIES

FILE NO. AANOKC9902
DATE 4/23/01
2/45



BITUMINOUS DRAINAGE FLUME
SEE PLANS FOR LOCATIONS

Q:\CLIENTS\A_F\ANOKC\9902.01\DWG\AC9202T1.DWG
DATE: 05-08-01 TIME: 2:01 pm USER: CPU404SP
XREFS:

DRAWN BY: SLP
DESIGNER: SLP
CHECKED BY: GFA
DESIGN TEAM

NO.	BY	DATE	REVISIONS

©SHORT ELLIOTT HENDRICKSON 2000. 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.

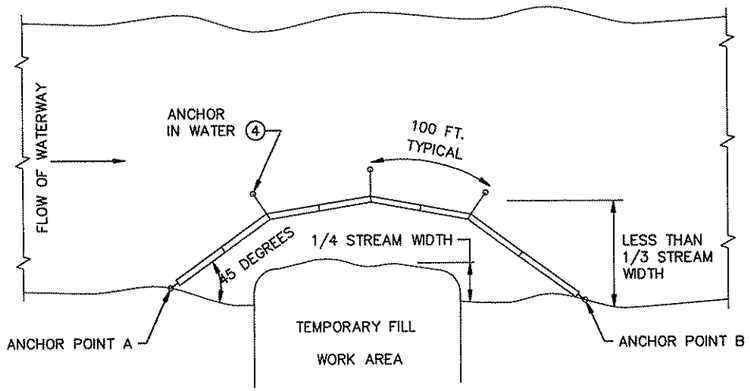
THOMAS G TABLER
Date: 4/23/01 Lic. No. 26861

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

ANOKA COUNTY
CSAH 7 (7TH AVENUE)
S.P. 02-607-17
S.P. 02-620-07
S.A.P. 198-020-16

DETAILS

FILE NO. AANOKC9902.01
DATE 4/23/01

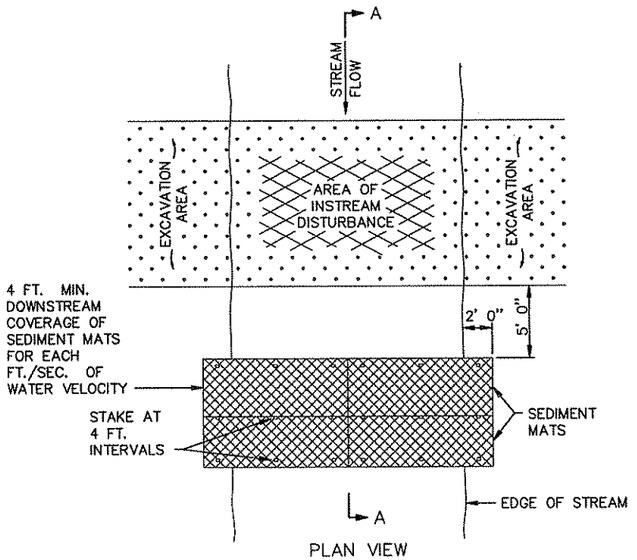


PLAN VIEW OF SILT CURTAIN ENCLOSING A WORK AREA

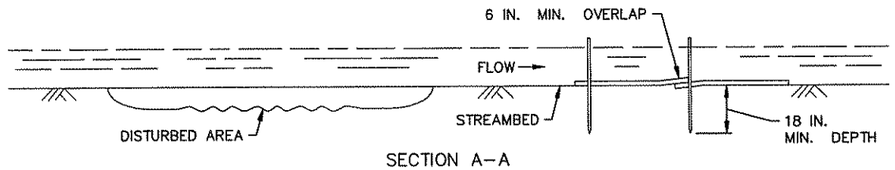
FOR CONTAINING OVERFLOWS FROM WEIRS, STANDPIPES, SETTLING PONDS

DESIGN GUIDELINES:

WHEN TEMPORARY FILL ENCROACHES LESS THAN 1/4 OF THE WIDTH OF STREAM.
MAXIMUM FLOW VELOCITY: 5 FT./SEC.
MAXIMUM FLOW DEPTH: 4 FT.



PLAN VIEW



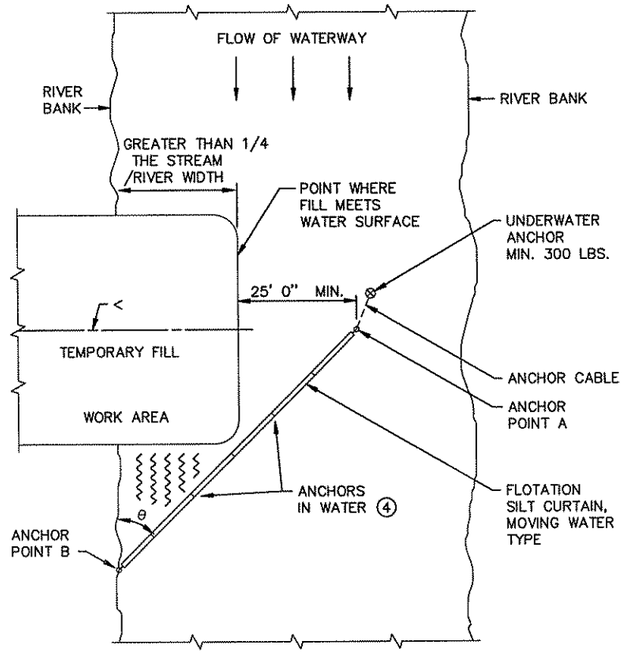
SECTION A–A

SEDIMENT MAT

TYPICAL STREAMBED INSTALLATION

DESIGN GUIDELINES:

MAXIMUM FLOW VELOCITY: 5 FT./SEC.
MAXIMUM FLOW DEPTH: 2 FT.

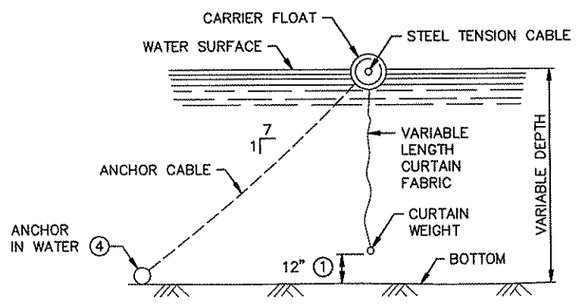


∠ θ	RIVER VELOCITY
45°	SLOW, LESS THAN 5 FT./SEC.
35°	MODERATE, 5 – 7 FT./SEC.

PLAN VIEW OF SILT CURTAIN – MOVING WATER

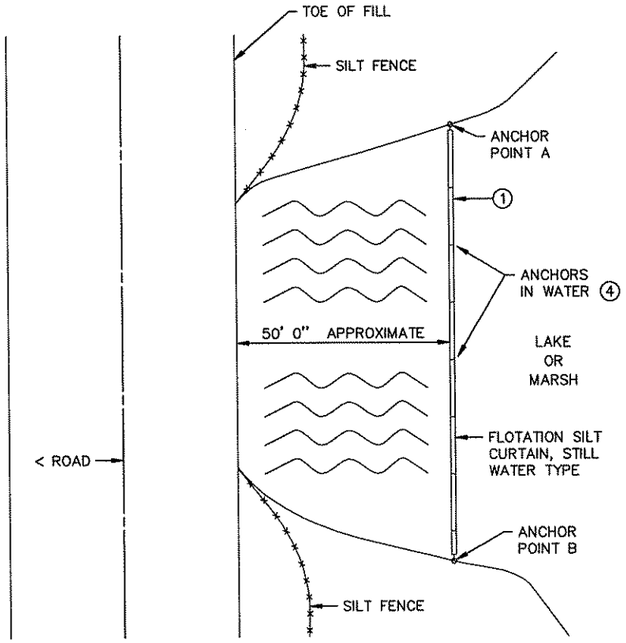
DESIGN GUIDELINES:

WHEN TEMPORARY FILL ENCROACHES MORE THAN 1/4 BUT LESS THAN 1/3 WIDTH OF THE STREAM.
MAXIMUM WATER DEPTH: 12 FT.
MINIMUM WATER DEPTH: 3 FT.
MAXIMUM WATER VELOCITY: 7 FT./SEC.



FLOTATION SILT CURTAIN DETAIL

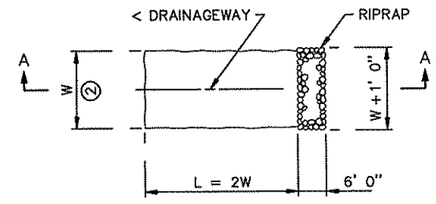
(SEE SPEC. 3887)



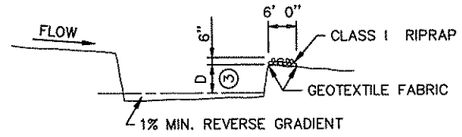
PLAN VIEW OF SILT CURTAIN – STILL WATER

DESIGN GUIDELINES:

MAXIMUM WATER DEPTH: 12 FT.
MINIMUM WATER DEPTH: 3 FT.



PLAN



SECTION A–A

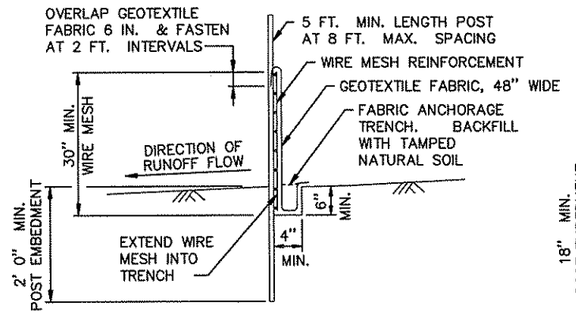
TEMPORARY SEDIMENT TRAP DETAIL

NOTES:

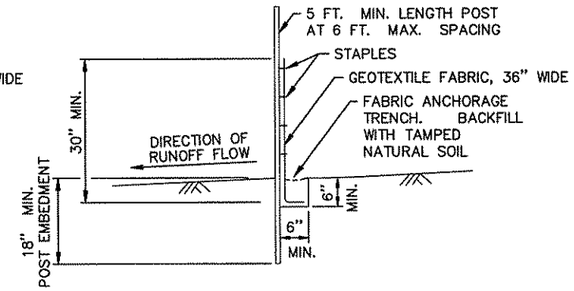
SEE SPECS. 2573, 3887 & 3894.
(1) CURTAIN 1 FT. FROM BOTTOM
(2) W = 10 FT. MIN., 20 FT. MAX.
(3) D = 2 FT.
(4) 100 FT. MAXIMUM SPACING BETWEEN ANCHORS, MINIMUM 40 LBS.

STANDARD SHEET NO. 5-297.405 (1 OF 4)	TITLE: TEMPORARY EROSION CONTROL
STANDARD APPROVED: SEPTEMBER 19, 2000	
STATE PROJ. NO. 02-607-17 S.A.P. NO. 198-020-16 STATE PROJ. NO. 02-620-07	SHEET NO. 4 OF 45 SHEETS

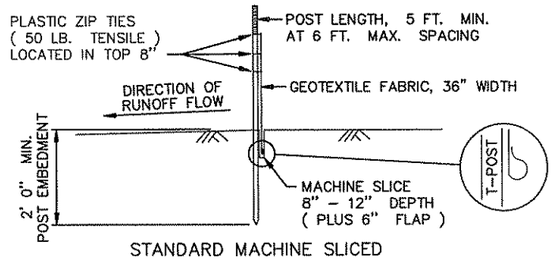
G:\CLIENTS\VA_F\VANDKC\V9902.01\DWG\VAC5027ECL.DVG
DATE: 05-09-01 TIME: 9:00 am USER: CPU404SP
XREFS:



HEAVY DUTY



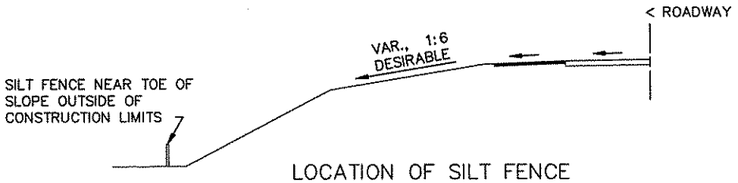
PREASSEMBLED



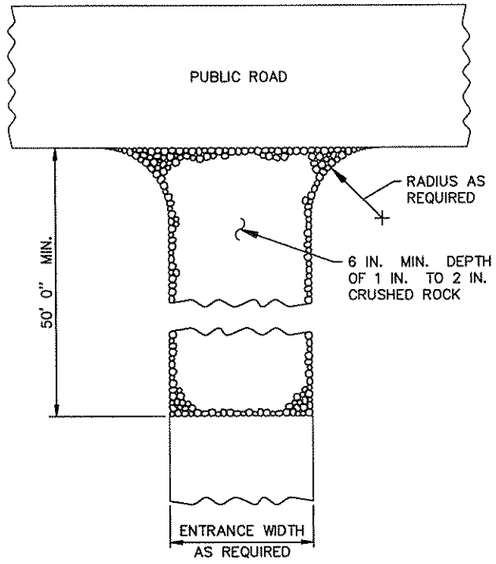
STANDARD MACHINE SLICED

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

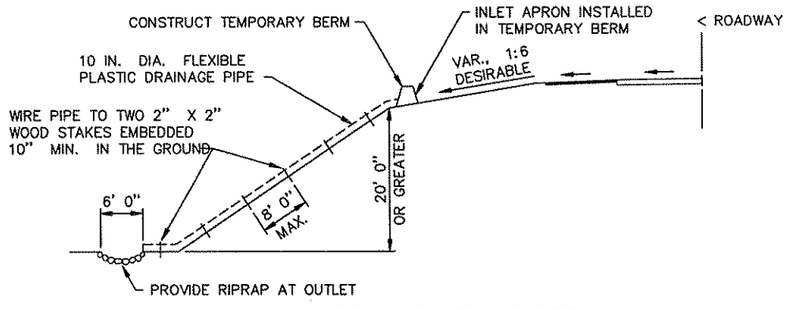
DESIGN GUIDELINES:
MAXIMUM CONTRIBUTING AREA: 3 ACRES



LOCATION OF SILT FENCE
AT TOE OF ROADWAY EMBANKMENT

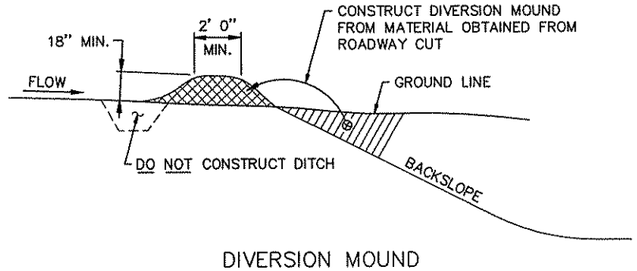


ROCK CONSTRUCTION ENTRANCE ①



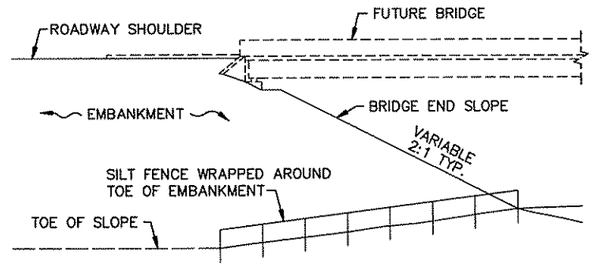
TEMPORARY DRAIN ON FILL SLOPE

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



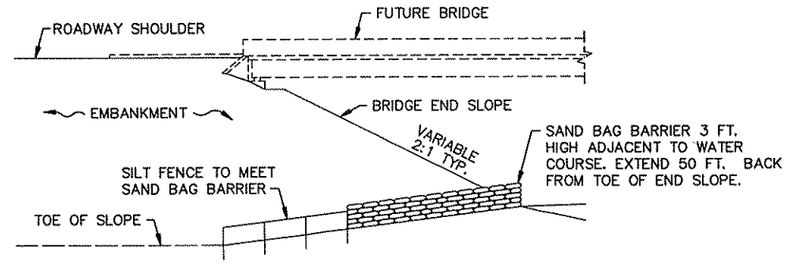
DIVERSION MOUND

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



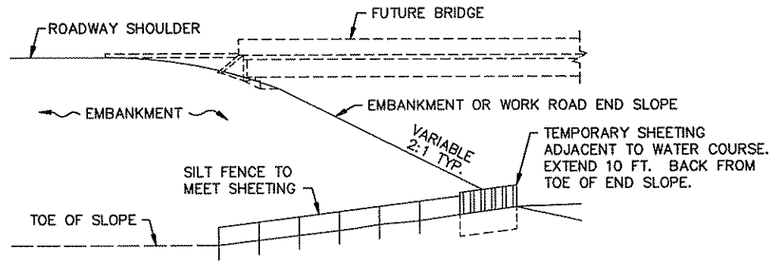
BRIDGE FILL

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



BRIDGE FILL

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



EMBANKMENT OR WORK ROAD FILL

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

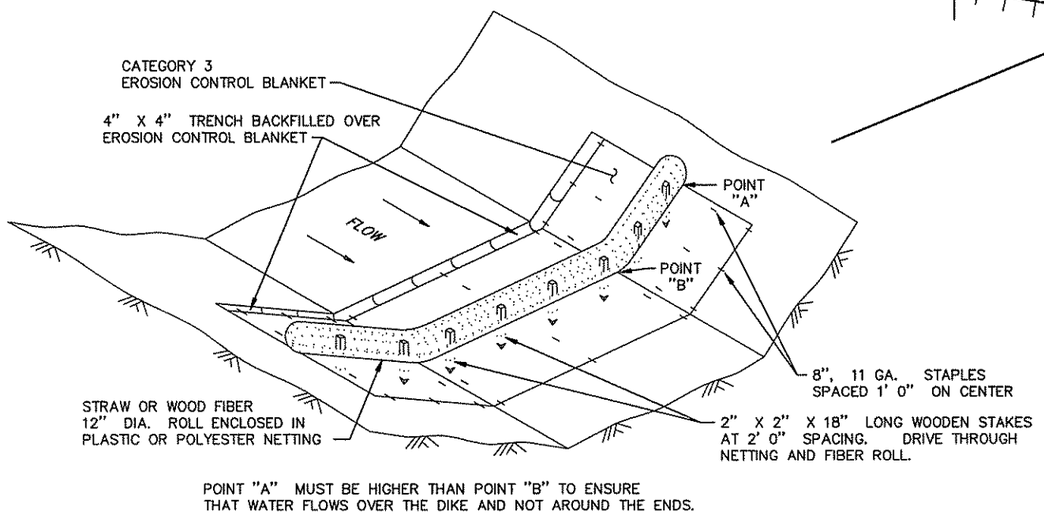
SILT FENCE AT BRIDGE EMBANKMENT

NOTES:
SEE SPECS. 2573 & 3886.

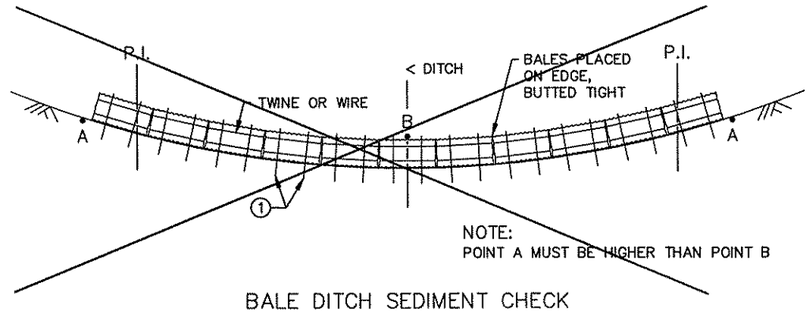
① ROCKS AT ENTRANCE CLEAN WORKSITE MUD OFF OF TRUCK TIRES BEFORE DRIVING ON MAIN ROAD. THIS WILL PREVENT AUTO DAMAGE. WE NEED TO KEEP CONSTRUCTION SEDIMENT OUT OF DRAINAGE SYSTEMS AND WETLANDS.

STANDARD SHEET NO. 5-297.405 (2 OF 4)	TITLE: TEMPORARY EROSION CONTROL
STANDARD APPROVED: SEPTEMBER 19, 2000	
STATE PROJ. NO. 02-607-17 S.A.P. NO. 198-020-16 STATE PROJ. NO. 02-620-07	SHEET NO. 5 OF 45 SHEETS

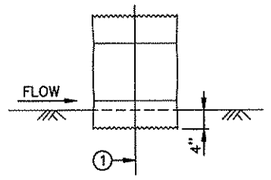
D:\CLIENTS\A_F\ANDICO\99020.01\DWG\AC99ZTEC2.DWG
DATE: 03-09-01 TIME: 9:02 am USER: CPU494SP
XREFS:



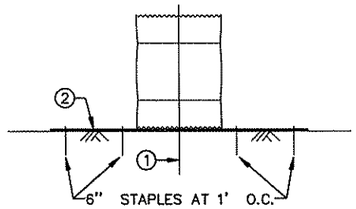
BIOROLL BLANKET SYSTEM DITCH CHECK



BALE DITCH SEDIMENT CHECK



EMBEDMENT METHOD

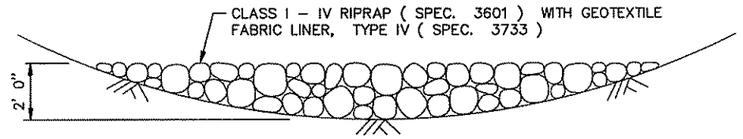


BLANKET METHOD

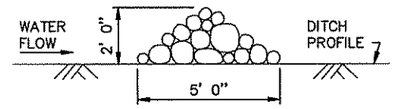
BALE CHECK DETAIL

DESIGN GUIDELINES:

	BALE	ROCK
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

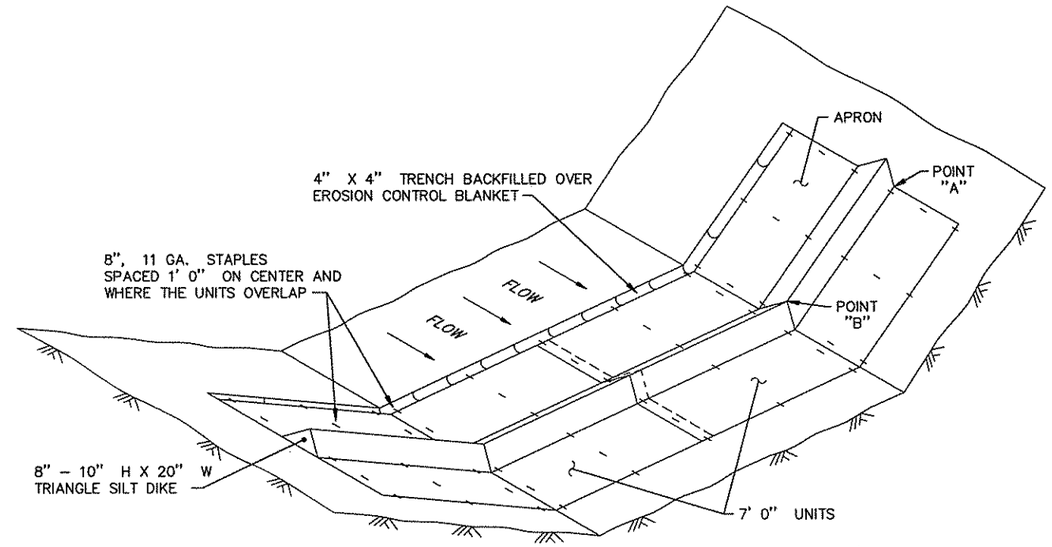


CROSS SECTION

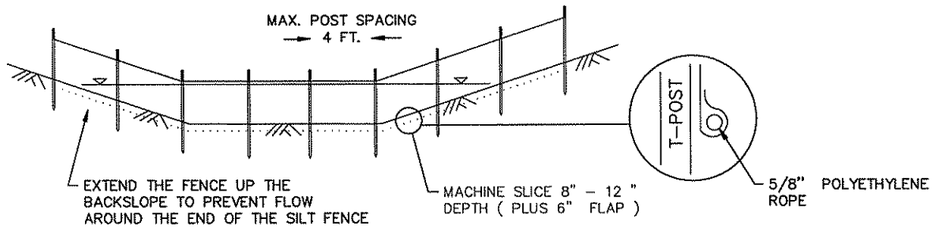


PROFILE VIEW

ROCK DITCH CHECK



GEOTEXTILE TRIANGULAR DIKE DITCH CHECK



SPACING DISTANCE = SILT FENCE HEIGHT / % CHANNEL SLOPE

DESIGN GUIDELINES	
STORM FREQUENCY	2 YR.– 24 HR.
MAX. DITCH GRADE	5%
MAX. DRAINAGE AREA	1 ACRE

NOTE:
WHEN SEDIMENT BUILD UP REACHES 1.5 FT., THE SILT SHOULD BE REMOVED OR A SECOND SILT FENCE BUILT UPSTREAM FROM THE EXISTING ONE AT A SUITABLE DISTANCE.

SILT FENCE DITCH CHECK, TYPE MACHINE SLICED

NOTES:

SEE SPECS. 2573, 3885, 3886 & 3889.

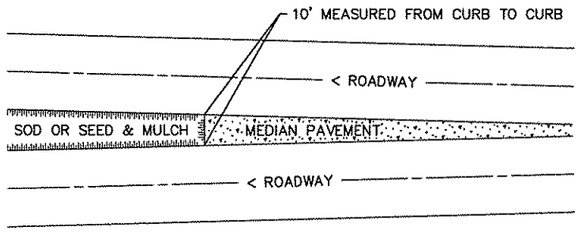
SPACING OF DITCH CHECKS IS DEPENDENT ON DRAINAGE AREA AND GRADES. SEE DISTRICT HYDRAULICS ENGINEER FOR RECOMMENDATIONS.

(1) TWO 2 IN. X 2 IN. WOOD STAKES OR REINFORCING BARS IN EACH BALE AND EMBEDDED IN THE GROUND 10 IN. MINIMUM.

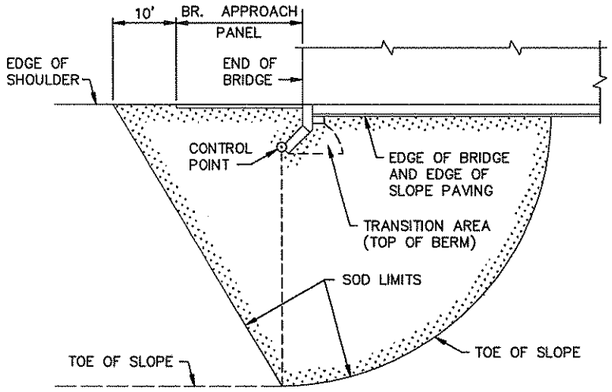
(2) PLACE A CATEGORY 3 EROSION CONTROL BLANKET, 6 FT. WIDE MINIMUM, UNDER THE BALE DITCH CHECK INSTEAD OF TRENCHING.

STANDARD SHEET NO.	TITLE:
5–297.405 (3 OF 4)	TEMPORARY EROSION CONTROL DITCH CHECKS
STANDARD APPROVED: SEPTEMBER 19, 2000	
STATE PROJ . NO. 02–607–17 S.A.P. NO. 198–020–16 STATE PROJ . NO. 02–620–07	SHEET NO. 6 OF 45 SHEETS

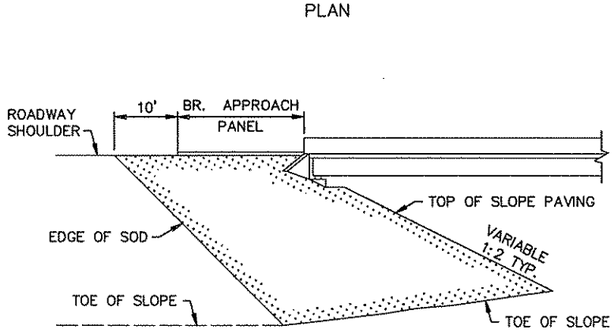
Q:\CLIENTS\A_F\VANGKG\9902.01\DWG\AC9902TEC3.DWG
DATE: 05-09-01 TIME: 8:03 am USER: CPU405SP
XREFS:



SODDING LIMITS AT GORE AREA

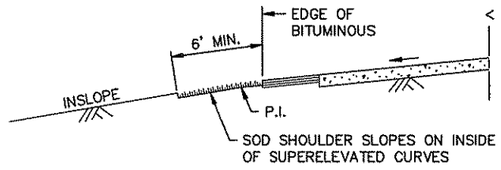


PLAN

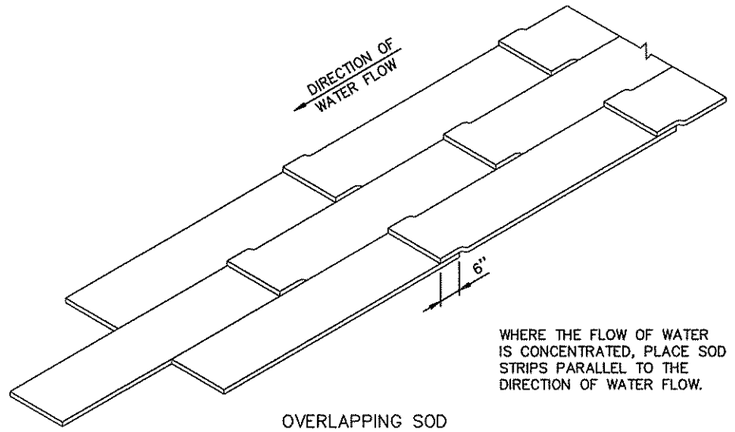


ELEVATION

SODDING LIMITS AT BRIDGE APPROACH FILLS

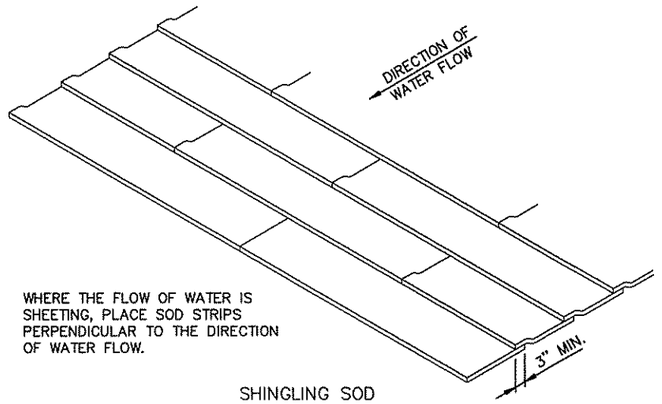


SODDING INSLOPES OF SUPERELEVATED CURVES



WHERE THE FLOW OF WATER IS CONCENTRATED, PLACE SOD STRIPS PARALLEL TO THE DIRECTION OF WATER FLOW.

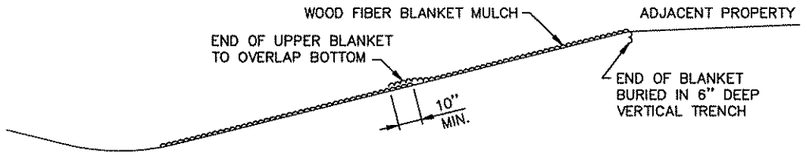
OVERLAPPING SOD



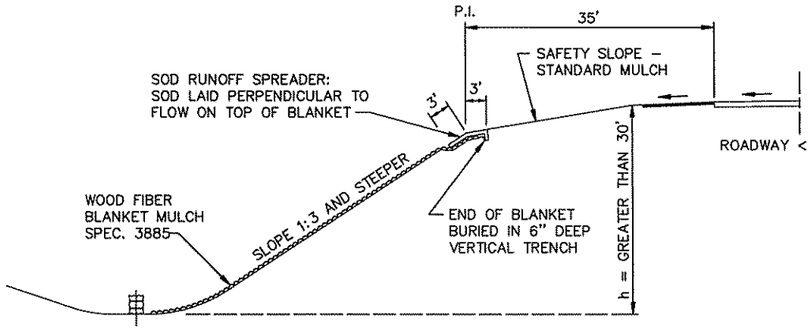
WHERE THE FLOW OF WATER IS SHEETING, PLACE SOD STRIPS PERPENDICULAR TO THE DIRECTION OF WATER FLOW.

SHINGLING SOD

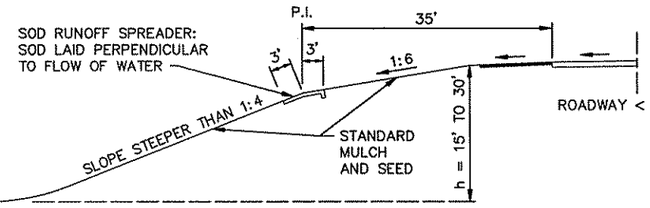
SPECIAL SOD PLACEMENT TECHNIQUES



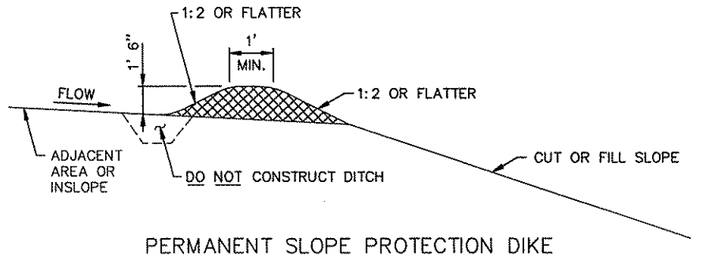
WOOD FIBER BLANKET INSTALLATION ON A CUT SLOPE



WOOD FIBER BLANKET INSTALLATION ON AN INSLOPE
(WHEN REQUIRED)

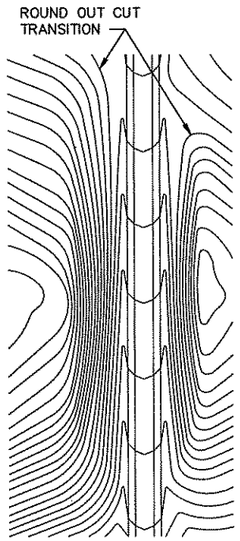


BROKEN–BACK SAFETY FILL SLOPE

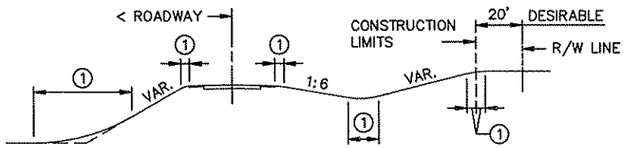


PERMANENT SLOPE PROTECTION DIKE

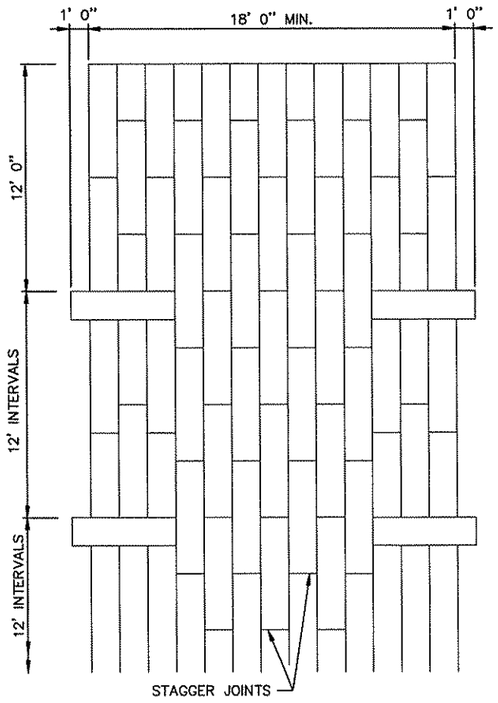
STANDARD SHEET NO. 5–297.406	TITLE: PERMANENT EROSION CONTROL ALONG ROADWAYS AND AT GORE AREAS & BRIDGE APPROACH FILLS
STANDARD APPROVED: JANUARY 31, 1985	
REVISION DATE 10–26–2000	STATE PROJ . NO. 02–607–17 S.A.P. NO. 198–020–16 STATE PROJ . NO. 02–620–07



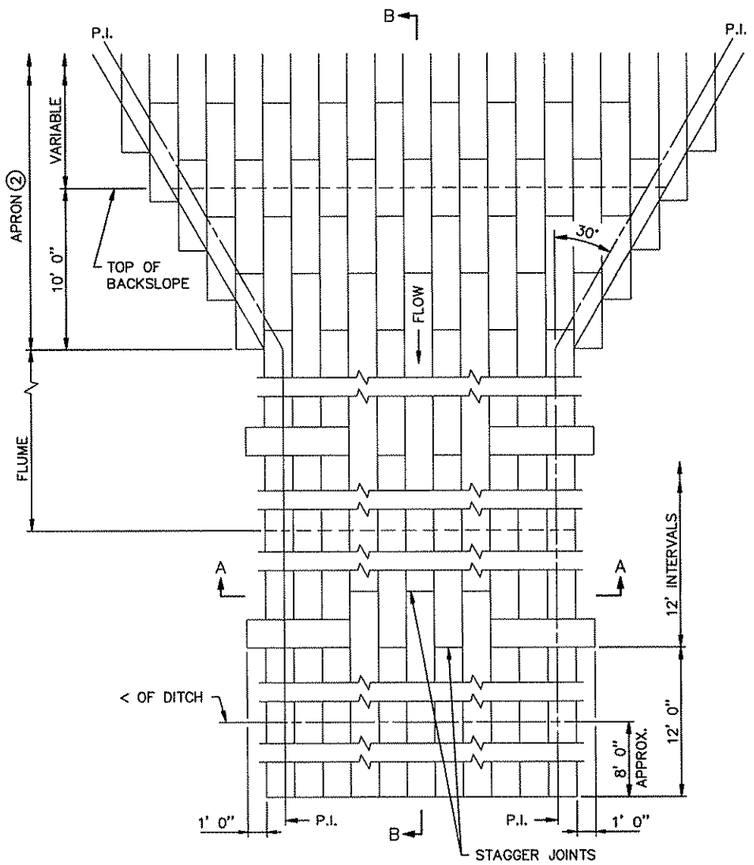
CONTOURING ROAD CUTS



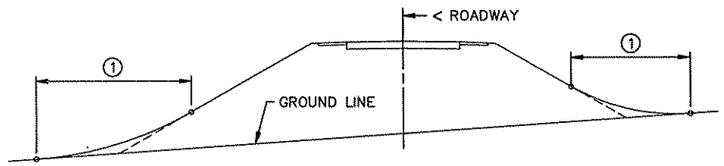
ROUNDING SHOULDERS AND BACKSLOPES



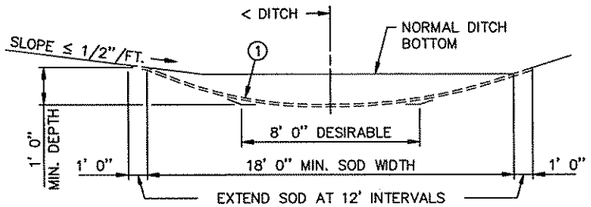
PLAN VIEW



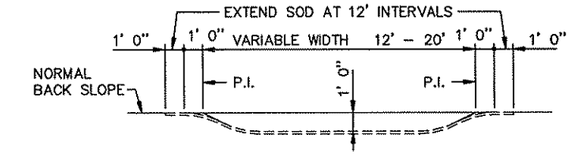
PLAN VIEW



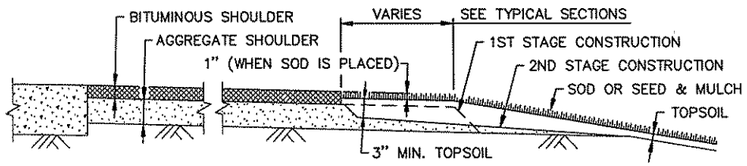
SHAPING FOR DRAINAGE ALONG THE TOE OF FILL SLOPES



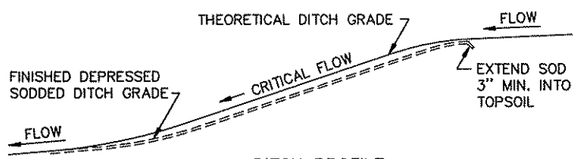
SODDED DITCH CROSS SECTION
WHERE FRONT OR BACK SLOPE IS FLAT (LESS THAN 1/2"/FT.) ,
FIRST NOTCH DITCH AND THEN PROVIDE ROUNDING.



SECTION A–A

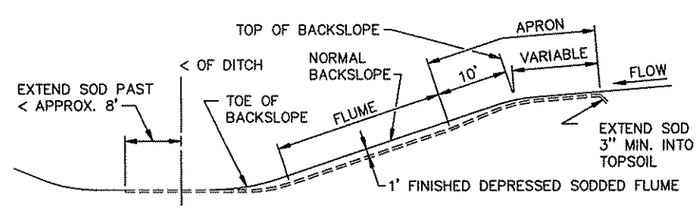


SHAPING AND TOPSOILING INSLOPES



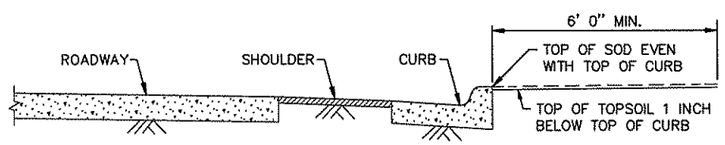
DITCH PROFILE

SODDED DITCH DETAILS



SECTION B–B

SODDED FLUME DETAILS



SHAPING ADJACENT TO CURBS WHEN SOD IS PLACED

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

REVISION DATE
10–26–2000

STANDARD SHEET NO. 5–297.404	TITLE: PERMANENT EROSION CONTROL ALONG ROADWAYS, DITCHES AND FLUMES
STANDARD APPROVED: DECEMBER 19, 1990	
STATE PROJ . NO. 02–607–17 S.A.P. NO. 198–020–16 STATE PROJ . NO. 02–620–07	SHEET NO. 8 OF 45 SHEETS

G:\CLIENTS\A_F\ANDKC\990201\DWG\MC990PEC2.DWG
DATE: 05-09-01 TIME: 9:07 am USER: CPU404SP
XREFS:

A CLEARING AND GRUBBING

STATION	LOCATION	CLEARING		GRUBBING	
	LT/RT	EACH	acre	EACH	acre
C.S.A.H. 7					
7+90	69 LT	1		1	
7+90	129 LT	1		1	
8+00	68 LT	1		1	
8+00	122 LT	1		1	
8+08	62 LT	1		1	
8+08	68 LT	1		1	
8+25	55 LT	1		1	
8+32	68 LT	1		1	
8+50	58 LT	1		1	
8+55	71 LT	1		1	
8+60	58 LT	1		1	
8+75	58 LT	1		1	
8+90	56 LT	1		1	
8+90	65 LT	1		1	
9+15	68 LT	1		1	
TOTALS		15		15	

B PULVERIZE PAVEMENT AND SAW CUT

ALIGNMENT	STATION	LOCATION	PULVERIZE BITUMINOUS	MILL	SAW CUT BITUMINOUS
			SY	SY	FT
C.S.A.H. 7	1+93	CL			46
C.S.A.H. 7	1+93–29+72	CL	16814		
C.S.A.H. 7	29+72	CL			46
TOTAL C.S.A.H. 7			16814		92
C.S.A.H. 20	1+77–4+60	CL	645		
C.S.A.H. 20	2+50–4+60	CL			241
C.S.A.H. 20	4+60	CL			40
C.S.A.H. 20	2+50–4+60	CL		722	
TOTAL C.S.A.H. 20			645	722	281

C DRIVEWAY REMOVAL / REPLACEMENT

STATION	LOCATION	REMOVAL	SAWCUT	REPLACEMENT BIT. 4in	REPLACEMENT AGG. 4in
C.S.A.H. 7		SY	FT	SY	CY
8+00–8+20	23+135 LT	159		172	25
15+09–16+14	40–115 RT		32	855	143
18+20–19+00	25–70 RT	245	70		
TOTAL		404	102	1027	168

D PROPOSED CULVERT TABULATION

ALIGNMENT	STATION	LOCATION	ELEVATION	ELEVATION	F&I 18" CMP CULVERT (FT)	F&I 18" CMP SAFETY APRON		
CSAH 7	7+15	51 LT	883.0		110	2		
CSAH 7	8+25	51 LT		884.0				
CSAH 7	8+53	47 LT	884.5		96	2		
CSAH 7	8+57	49 RT		885.5				
CSAH 7	21+08	52 LT	887.25		80	2		
CSAH 7	21+88	52 LT		886.04				
CSAH 7	21+05	56 RT	886.91		112	2		
CSAH 7	22+17	52 RT		886.12				
CSAH 7	29+14	59 LT	861.44		REMAIN IN PLACE			
CSAH 7	29+14	59 RT		860.26	REMAIN IN PLACE			
TOTAL					292	6		

GENERAL NOTES:

1) PROTECT ALL EXISTING UTILITIES.
2) ALL OFFSETS SHOWN ARE FROM THE PROPOSED ALIGNMENT.
3) CONSTRUCT ALL RADII AS PER PLANS.
4) EROSION CONTROL TO BE PLACED BEFORE REMOVAL OF BITUMINOUS PAVEMENT.
5) SAW CUT ALL BITUMINOUS AND CONCRETE AS DIRECTED BY THE ENGINEER IN THE FIELD.
6) THE LOCATION OF EXISTING UTILITIES SHOWN ARE APPROXIMATE AND MAY NOT BE COMPLETE. THE CONTRACTOR SHALL HAVE ALL UTILITIES LOCATED IN THE FIELD BEFORE DIGGING. CONTRACTOR SHALL COORDINATE WITH RELOCATION OF PRIVATE UTILITIES.
7) CONTRACTOR SHALL PROVIDE AND MAINTAIN ALL EROSION CONTROL MEASURES AS SHOWN ON THESE PLANS AND SPECIFICATIONS AND IMPLEMENT ANY ADDITIONAL EROSION CONTROL MEASURES NECESSARY, OR AS DIRECTED BY ENGINEER, IN ORDER TO PROTECT ADJACENT PROPERTY.

DATE: 05-05-TUE: 9:21 am USER: TTABLER

W:\AE\ANOKC\99020101\DWG\AC9902TB1.DWG

DRAWN BY: SLP
DESIGNER: SLP
CHECKED BY: GFA
DESIGN TEAM

NO.	BY	DATE	REVISIONS

©SHORT ELLIOTT HENDRICKSON 2000. 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 LICNSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

THOMAS G TABLER
Date: 4/23/01 Lic. No. 26861

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

ANOKA COUNTY
CSAH 7 (7TH AVENUE)
S.P. 02-607-17
S.P. 02-620-07
S.A.P. 198-020-16

TABULATIONS

FILE NO. AANOKC9902.00
DATE 4/23/01

E BITUMINOUS PAVEMENT AND AGGREGATE BASE SUMMARY

LOCATION	NOTES	MV WE35035C WEARING	MV WE35035C SHLDR WEARING	MV NW35035C BINDER	LV NW35030C BASE		TACK COAT	AGGREGATE BASE CL 5
		TON	TON		TON		GAL	CY
C.S.A.H. 7								
1+93–29+72		2489		2489	2489		1190	1969
1+93–20+89			LT 225					284
8+45–13+14			RT 54					70
22+33–29+72			RT 79					101
26+77–29+72			LT 32					41
TOTAL C.S.A.H. 7		2489	390	2489	2489		1190	2465
C.S.A.H. 20								
2+00–4+60		232		71			96	54
TOTAL C.S.A.H. 20		232					96	54
TOTAL		2721	390	2560	2489		1286	2519

F TURF ESTABLISHMENT

STATION	LOCATION	SOD	SEEDING	SEED, MIX 50A MOD.	FERTILIZER 22–0–5	MULCH TYPE 1	EROS. CONT. BLNT. CAT. 2
		SY	ACRE	LBS	LBS	TON	SY
C.S.A.H. 7							
1+93–29+72	LT&RT		2.6	197	260	5.2	12700
C.S.A.H. 20							
2+00–4+60	LT&RT		.90	67.5	90	1.8	425
TOTAL			3.5	265	350	7	13125

G CONCRETE CURB AND GUTTER

STATION	LOCATION	CURB AND GUTTER B618 FT	CURB AND GUTTER B418 FT
C.S.A.H. 7			
1+93–7+01	RT		589
C.S.A.H. 20			
2+00–2+48	RT		78
2+00–4+60	LT		295
TOTAL			962

H CMP CULVERT REMOVALS

STATION	LOCATION	LENGTH	SIZE
	LT/RT	FT	IN
C.S.A.H. 7			
21+50	LT	65	18"
21+50	RT	108	18"
22+25	LT	30	18"
TOTAL C.S.A.H. 7		203	
TOTAL		203	

GENERAL NOTES:

1) PROTECT ALL EXISTING UTILITIES.
2) ALL OFFSETS SHOWN ARE FROM THE PROPOSED ALIGNMENT.
3) CONSTRUCT ALL RADII AS PER PLANS.
4) EROSION CONTROL TO BE PLACED BEFORE REMOVAL OF BITUMINOUS PAVEMENT.
5) SAW CUT ALL BITUMINOUS AND CONCRETE AS DIRECTED BY THE ENGINEER IN THE FIELD.
6) THE LOCATION OF EXISTING UTILITIES SHOWN ARE APPROXIMATE AND MAY NOT BE COMPLETE. THE CONTRACTOR SHALL HAVE ALL UTILITIES LOCATED IN THE FIELD BEFORE DIGGING. CONTRACTOR SHALL COORDINATE WITH RELOCATION OF PRIVATE UTILITIES.
7) CONTRACTOR SHALL PROVIDE AND MAINTAIN ALL EROSION CONTROL MEASURES AS SHOWN ON THESE PLANS AND SPECIFICATIONS AND IMPLEMENT ANY ADDITIONAL EROSION CONTROL MEASURES NECESSARY, OR AS DIRECTED BY ENGINEER, IN ORDER TO PROTECT ADJACENT PROPERTY.

I SILT FENCE

STATION	LOCATION	SILTFENCE	SILT CHECK
	LT/RT	FT	FT
C.S.A.H. 7			
1+78	LT/RT		30
4+00–7+78	LT	422	
8+53–11+50	RT	295	
8+91–11+50	LT	264	
12+25	LT/RT		30
20+66	LT/RT		30
21+24	RT		15
22+05	RT		30
26+00–29+74	LT	375	
29+83	LT/RT		30
TOTAL C.S.A.H. 7		1356	165

DRAWN BY: SLP
DESIGNER: SLP
CHECKED BY: GFA
DESIGN TEAM

NO.	BY	DATE	REVISIONS

©SHORT ELLIOTT HENDRICKSON 2000. 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 LICNSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
THOMAS G TABLER
Date: 4/23/01 Lic. No. 26861

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

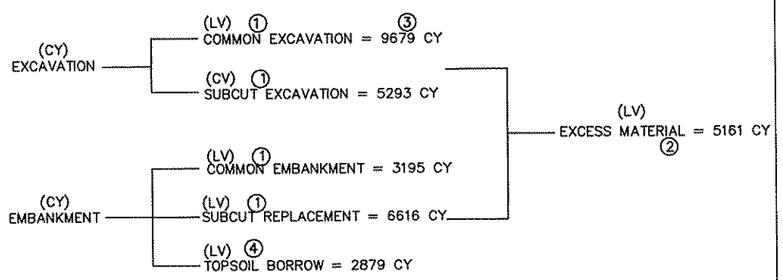
ANOKA COUNTY
CSAH 7 (7TH AVENUE)
S.P. 02–607–17
S.P. 02–620–07
S.A.P. 198–020–16

TABULATIONS

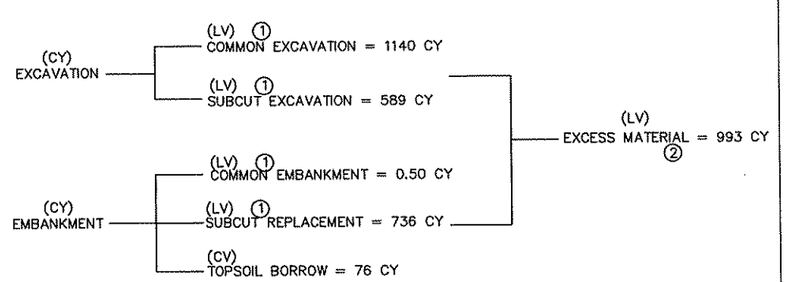
FILE NO. AANOKC9902.01
DATE 4/23/01
10/45

W:\AE\ANOKC\9902O1\DWG\AC9O2TB2.DWG
DATE: 05–05–03 TIME: 9:24 am USER: TTABLER
XREFS:

EARTHWORK SUMMARY
CSAH 7 (7TH AVENUE)



EARTHWORK SUMMARY
CSAH 20



① 125% SHRINKAGE FACTOR USED FROM LOOSE VOLUME (L.V.) TO COMPACTED VOLUME (C.V.).

② CALCULATED FROM DIFFERENCE OF EXCAVATION (E.V.) AND EMBANKMENT OF SUITABLE MATERIAL (L.V.)

③ DOES NOT INCLUDE PULVERIZED BITUMINOUS AND CLASS 5

④ 150% SHRINKAGE FACTOR USED FROM LOOSE VOLUME (L.V.) TO COMPACTED VOLUME (C.V.).

W:\AE\ANOKC\99201\DWG\AG9021B3.DWG
DATE: 05-05-03 TIME: 9:34 am USER: TTABLER
XREFS:

DRAWN BY: SLP
DESIGNER: SLP
CHECKED BY: GFA
DESIGN TEAM

NO.	BY	DATE	REVISIONS

©SHORT ELLIOTT HENDRICKSON 2000. 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.

THOMAS G TABLER
Date: 4/23/01 Lic. No. 26861

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

ANOKA COUNTY
CSAH 7 (7TH AVENUE)
S.P. 02-607-17
S.P. 02-620-07
S.A.P. 198-020-16

TABULATIONS

FILE NO. AANOKC9902.00
DATE 4/23/01

CONSTRUCTION/SOILS NOTES

1. SUITABLE GRADING MATERIAL ON THIS PROJECT SHALL CONSIST OF ALL SOILS ENCOUNTERED WITH THE EXCEPTION OF SLOPE DRESSING, DEBRIS, ORGANIC MATERIAL, MUCK AND OTHER UNSUITABLE MATERIAL.
2. ITEMS REFERRED TO AS INCIDENTAL ON THIS PROJECT SHALL BE CONSIDERED INCIDENTAL WITH NO DIRECT COMPENSATION MADE THEREFORE.
3. SELECT GRANULAR MATERIAL SHALL MEET THE REQUIREMENTS OF SPEC. 3149.2B2
4. BITUMINOUS AND CONCRETE SURFACING REMOVED BY CONSTRUCTION SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL EITHER BE RECYCLED OR DISPOSED OF OFF THE PROJECT, IN ACCORDANCE WITH THE PROVISIONS OF SPEC. 2104 AND 2105.
5. UNSUITABLE MATERIALS SHALL BE PLACED IN EMBANKMENTS OUTSIDE OF A 1-1/2H:1V SLOPE EXTENDING DOWN AND OUTWARD FROM THE GRADING PI OR THE BOULEVARD PI.
6. COMPACTION OF THE GRADING ITEMS OF THIS PROJECT SHALL BE BY THE "SPECIFIED DENSITY METHOD", EXCEPT WHEN WITHIN 3 ft. OF THE WATER TABLE, THEN BY THE "QUALITY COMPACTION METHOD".
7. COMPACTION OF THE AGGREGATE BASE ITEMS OF THIS PROJECT SHALL BE BY THE "SPECIFIED DENSITY METHOD" EXCEPT WHEN THE CONTRACTOR ELECTS TO USE RECYCLED MATERIALS FOR THE AGGREGATE BASE ITEMS, THEN THE "PENETRATION INDEX METHOD" SHALL BE UTILIZED.
8. WHERE WIDENING ADJACENT TO EXISTING PAVEMENT, CUT VERTICALLY TO THE BOTTOM OF THE CLASS 5 AGGREGATE BASE AND THEN AT A 1/2H:1V SLOPE TO THE BOTTOM OF THE RECOMMENDED SUBGRADE EXCAVATION (AS SHOWN ON THE TYPICAL SECTIONS AND THE CROSS SECTIONS). BACKFILL PROMPTLY TO AVOID UNDERMINING THE EXISTING PAVEMENT.
9. PROVIDE 20H:1V LONGITUDINAL TAPERS BETWEEN CHANGES IN SUBGRADE AND SUBCUT DEPTHS.
10. USE TACK COAT BETWEEN ALL BITUMINOUS MIXTURES AND WHERE CONCRETE CURBING ABUTS BITUMINOUS MIXTURES.
11. STRIP AND REUSE AS SLOPE DRESSING ALL EXISTING TOPSOIL, WHERE PRESENT, IN AREAS TO BE DISTURBED BY CONSTRUCTION. TOPSOIL STRIPING IS CONSIDERED TO BE COMMON EXCAVATION.
12. PLACE A MINIMUM OF SLOPE DRESSING ON ALL AREAS SCHEDULED FOR PERMANENT TURF ESTABLISHMENT. ALL EXCESS TOPSOIL SHALL BE USED AS SLOPE DRESSING BY PROVIDING A THICKNESS GREATER THAN 4 INCHES.
13. SEEDING REQUIREMENTS ON THIS PROJECT SHALL BE AS FOLLOWS:
    a. SEED MIXTURE 50A MOD. SHALL BE APPLIED AT A RATE OF 50 POUNDS PER ACRE.
    b. MULCH MATERIAL TYPE I SHALL BE APPLIED AT A RATE OF 2 TONS PER ACRE.
    c. COMMERCIAL FERTILIZER ANALYSIS 22-0-5 (OR EQUIVALENT) SHALL BE APPLIED AT A RATE OF 1000 POUNDS PER ACRE.
14. DITCH BOTTOMS, TOE OF FILL, CUT RUNOUTS AND THE TOP EDGE OF THE BACKSLOPES SHALL BE ROUNDED REGARDLESS OF THE SECTION USED ON THE CROSS SECTION SHEETS.
15. ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE MMUTCD, INCLUDING FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS, JANUARY 2001.

These standard plates, approved by the FEDERAL HIGHWAY ADMINISTRATION, shall apply on this project.

MN/DOT STANDARD PLATES

PLATE NO.	DESCRIPTION
3041 D	CORRUGATED METAL PIPE
3128 H	METAL SAFETY APRON & GRATE (2 SHEETS)
3221 C	CORRUGATED STEEL PIPE COUPLING BAND (3 SHEETS)
7100 G	CONCRETE CURB & GUTTERS (DESIGN B)

DATE: 05-05-2001 TIME: 9:35 am
W:\AE\ANOKC\990201\DWG\AC902CN1.DWG

DRAWN BY: XREFS:
DESIGNER: SLP
CHECKED BY: GFA
DESIGN TEAM

NO.	BY	DATE	REVISIONS

©SHORT ELLIOTT HENDRICKSON 2000. 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.
THOMAS G TABLER
Date: 4/23/01 Lic. No. 26861

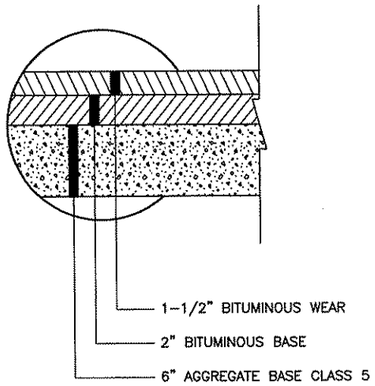
SEH®
PHONE: (651) 490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

ANOKA COUNTY
CSAH 7 (7TH AVENUE)
S.P. 02-607-17
S.P. 02-620-07
S.A.P. 198-020-16

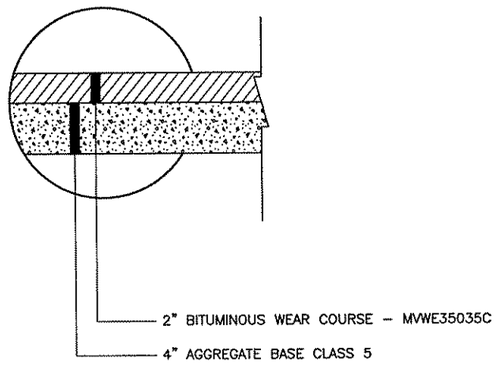
CONSTRUCTION NOTES

FILE NO. AANOKC9902.01
DATE 4/23/01

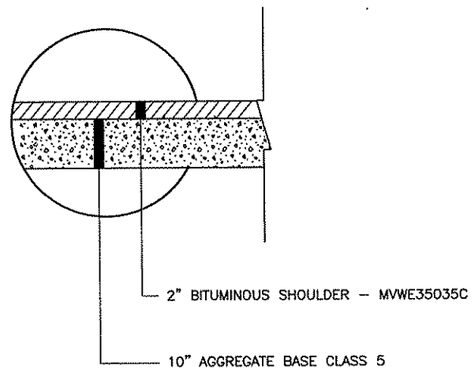
12/45



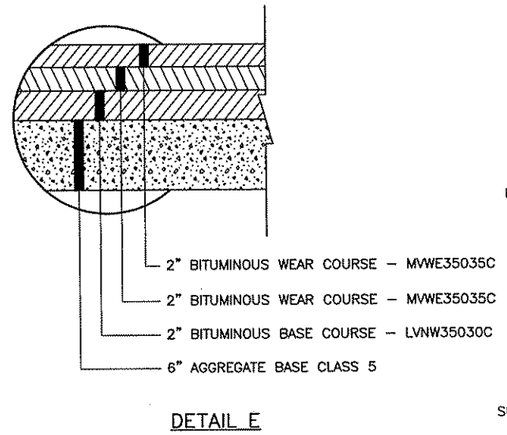
DETAIL A-EXISTING



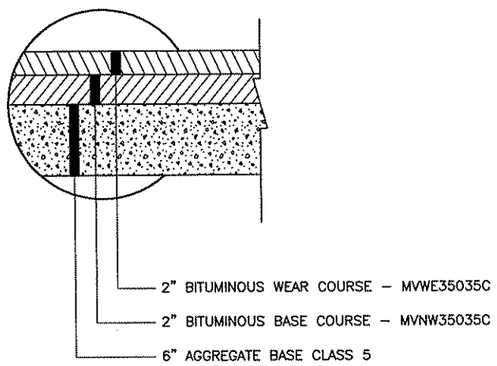
DETAIL D



DETAIL B

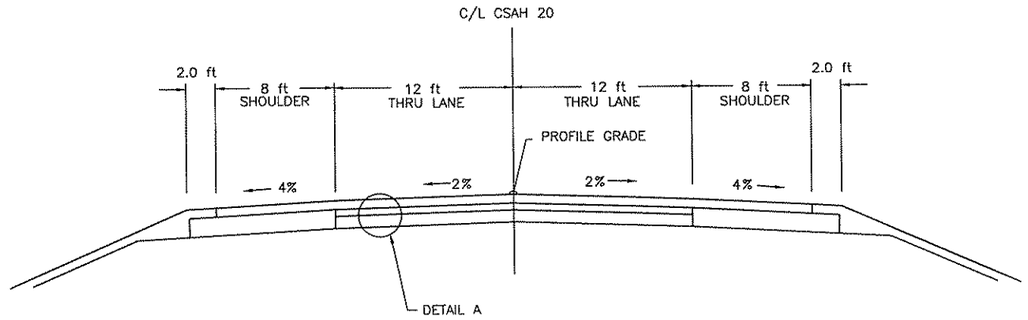


DETAIL E

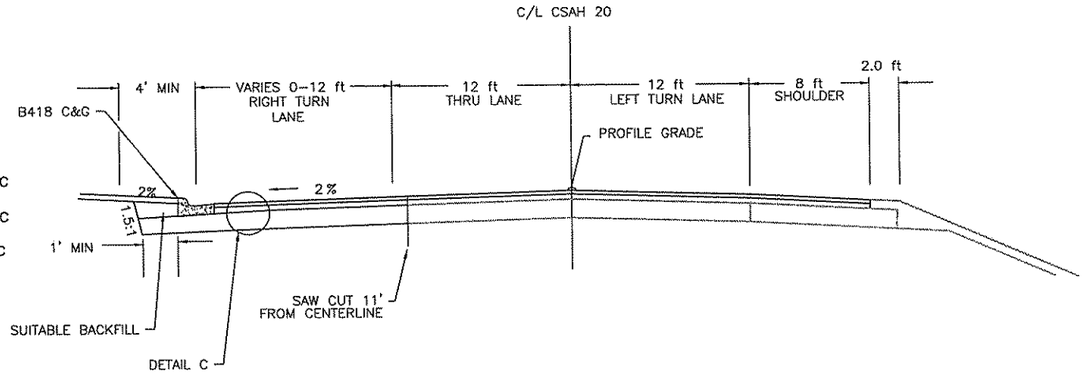


DETAIL C

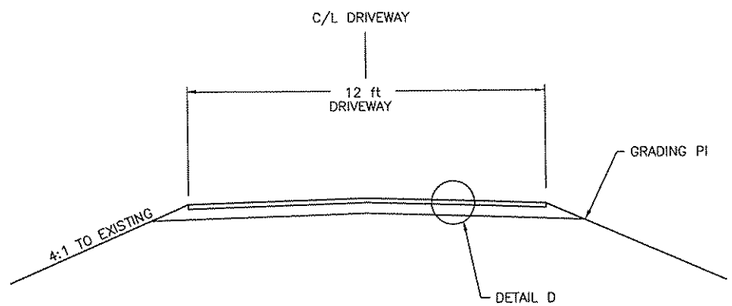
CSAH 20
EXISTING SECTION



CSAH 20 EAST OF CSAH 7
SAWCUT AND WIDEN



DRIVEWAY WEST OF CSAH 7 AT CSAH 20
STA 0+10 - STA 1+15



DATE: 05-05-TUE; 11:00 am
W:\AE\ANOKC\9902201\DWG\AC9021Y1.DWG

DRAWN BY: SLP					
DESIGNER: SLP					
CHECKED BY: GFA					
DESIGN TEAM	NO.	BY	DATE	REVISIONS	

©SHORT ELLIOTT HENDRICKSON 2000. 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 REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

THOMAS G TABLER
Date: 4/23/01 Reg. No. 26861

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

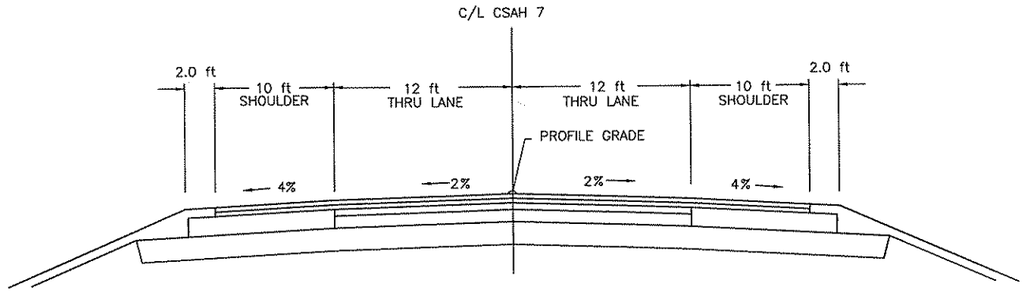
ANOKA COUNTY
CSAH 7 (7TH AVENUE)
S.P. 02-607-17
S.P. 02-620-07
S.A.P. 198-020-16

TYPICAL SECTIONS

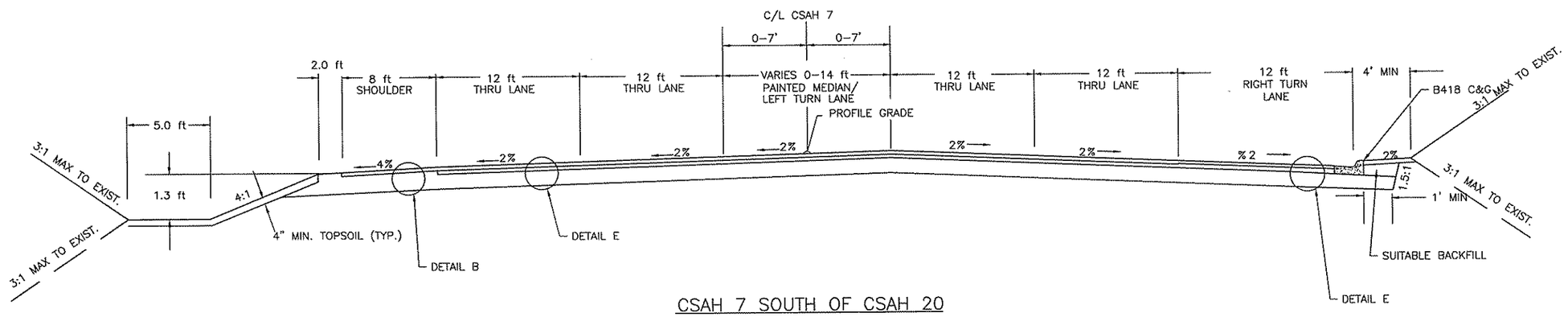
FILE NO. AANOKC9902.01
DATE 4/23/01

13/45

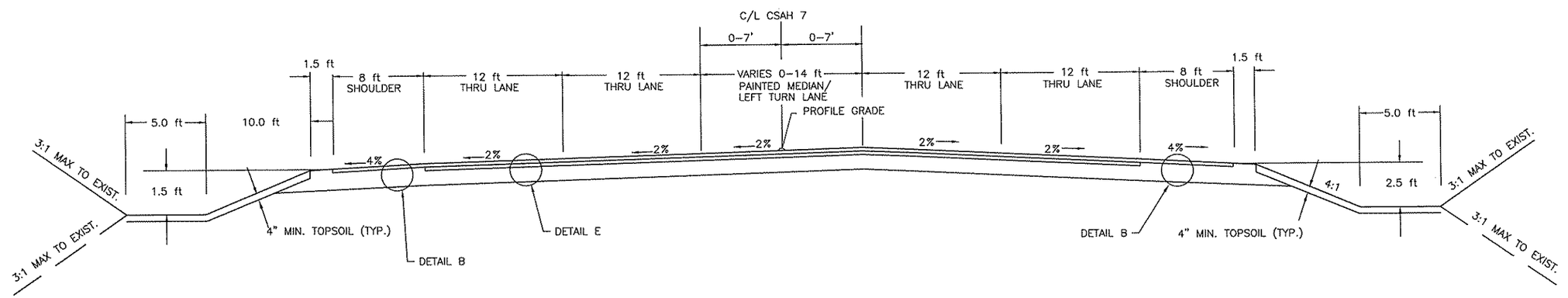
CSAH 7
EXISTING SECTION



CSAH 7 SOUTH OF CSAH 20
PROPOSED FULL RECONSTRUCT SECTION
STA 1+93 – STA 7+17



CSAH 7 SOUTH OF CSAH 20
PROPOSED FULL RECONSTRUCT SECTION
STA 7+17 – STA 13+14



W:\AE\ANOKC\9902O1\DWG\AC9902TY2.DWG
DATE: 05-05-TIME: 9:35 am

DRAWN BY: SLP	NO.	BY	DATE	REVISIONS
DESIGNER: SLP				
CHECKED BY: GFA				
DESIGN TEAM				

©SHORT ELLIOTT HENDRICKSON 2000. 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 REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
THOMAS G TABLER
Date: 4/23/01 Reg. No. 26861

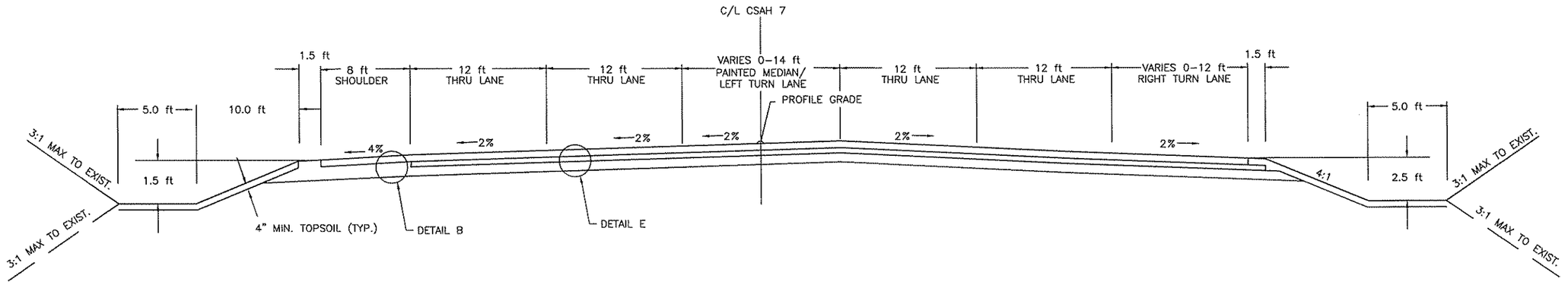
SEH®
PHONE: (651) 490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

ANOKA COUNTY
CSAH 7 (7TH AVENUE)
S.P. 02-607-17
S.P. 02-620-07
S.A.P. 198-020-16

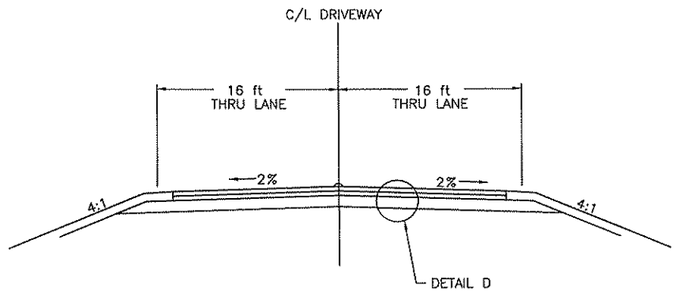
TYPICAL SECTIONS

FILE NO. AANOKC9902.01
DATE 4/23/01
14
45

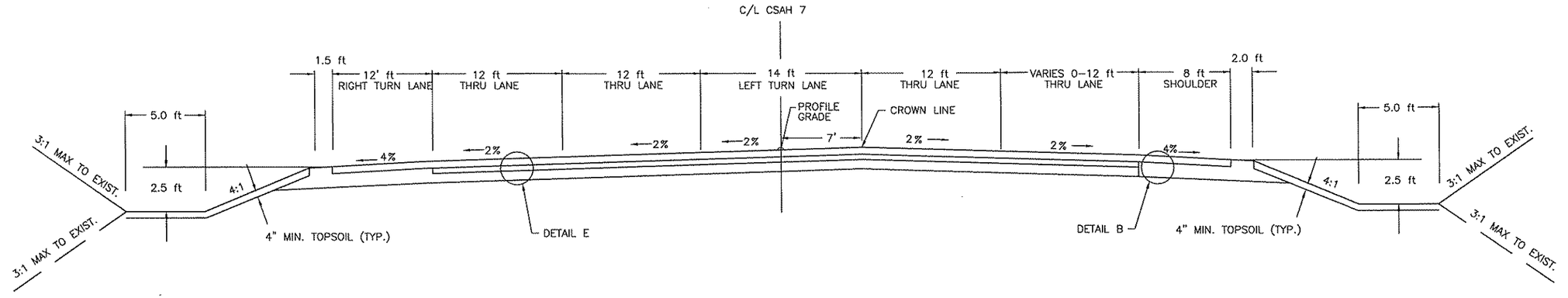
CSAH 7 NORTH OF CSAH 20
PROPOSED FULL RECONSTRUCT SECTION
STA 13+14 – STA 21+50



CSAH 7 NORTH OF CSAH 20
DRIVEWAY EAST SIDE CSAH 7
STA 15+77



CSAH 7 NORTH OF CSAH 20
PROPOSED FULL RECONSTRUCT SECTION
STA 21+50 – STA 26+77



DATE: 04-23-01 TIME: 1:48 pm
W:\AE\ANOKC\990201\DWG\AC902TY3.DWG

DRAWN BY: XREFS:	NO.	BY	DATE	REVISIONS
DESIGNER: SLP				
CHECKED BY: GFA				
DESIGN TEAM				

©SHORT ELLIOTT HENDRICKSON 2000. 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 REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
THOMAS G TABLER
Date: 4/23/01 Reg. No. 26861

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

ANOKA COUNTY
CSAH 7 (7TH AVENUE)
S.P. 02–607–17
S.P. 02–620–07
S.A.P. 198–020–16

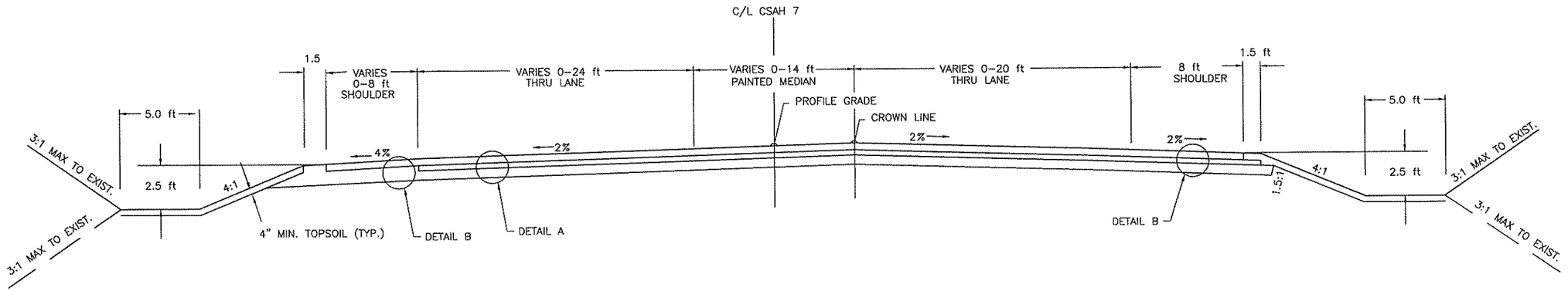
TYPICAL SECTIONS

FILE NO. AANOKC9902.01
DATE 4/23/01
15/45

CSAH 7 NORTH OF CSAH 20

PROPOSED FULL RECONSTRUCT SECTION

STA 26+77 – STA 29+72



DATE: 04-23-01 TIME: 1:51 pm

W:\AE\ANOKC\9902O1\DWG\AC9021Y4.DWG

DRAWN BY: XREFS:				
DESIGNER: SLP				
CHECKED BY: GFA				
DESIGN TEAM	NO.	BY	DATE	REVISIONS

©SHORT ELLIOTT HENDRICKSON 2000. 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 REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

THOMAS G TABLER

Date: 4/23/01 Reg. No. 26861

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

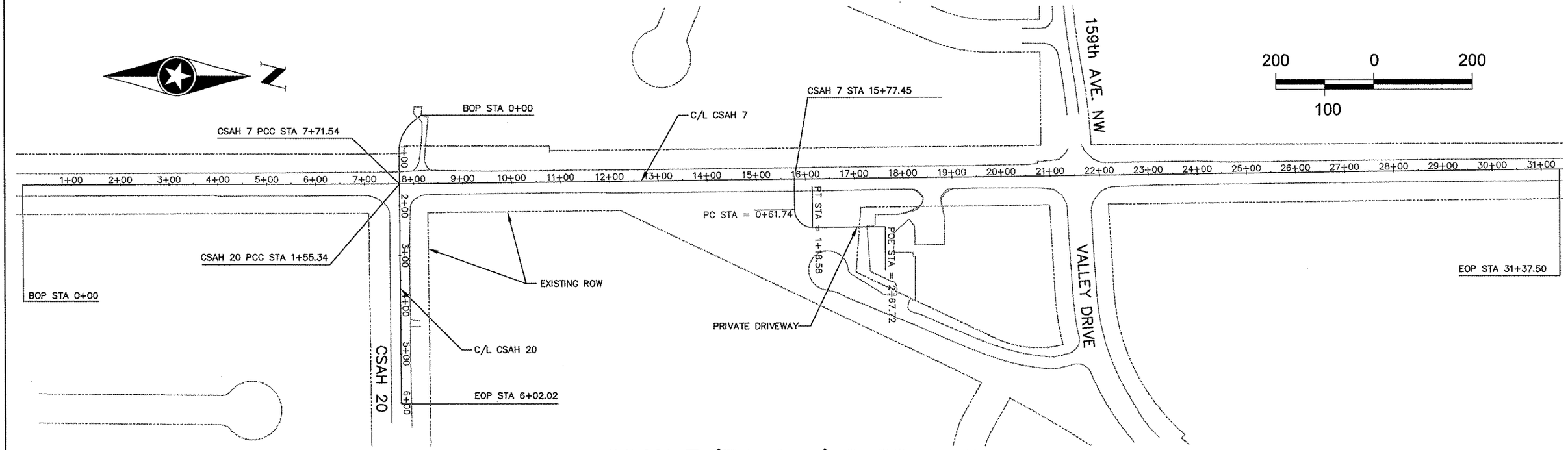
ANOKA COUNTY
CSAH 7 (7TH AVENUE)
S.P. 02-607-17
S.P. 02-620-07
S.A.P. 198-020-16

TYPICAL SECTIONS

FILE NO. AANOKC9902.01

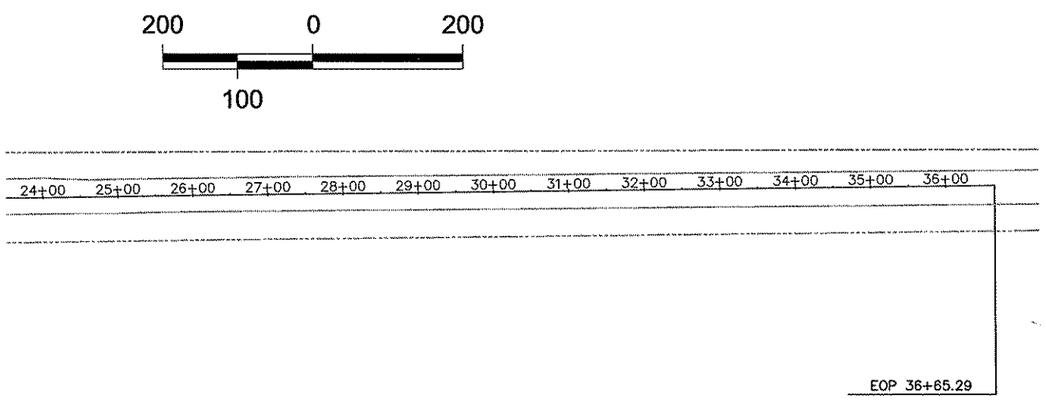
DATE 4/23/01

16/45



CSAH 7 (7th Ave.) & CSAH 20

POINT	STATION	NORTHING	EASTING	DIRECTION	DISTANCE	DELTA ANGLE	TANGENT	RADIUS	ARC LENGTH
POB	0+00.00	26188.9100	28078.7300	N 89°22'51" E	61.74				
PC	0+61.74	26189.5700	28140.4700						
RADIUS	N/A	26225.5700	28140.4700			159°09'18"	36.29	36.00	56.84
PI	0+98.03	26189.5700	28176.7500						
PT	1+18.58	26225.8600	28176.4600	N 0°27'31" W	149.14				
EOP	2+67.72	26375.0000	28175.2700						



PRIVATE DRIVEWAY

POINT	STATION	NORTHING	EASTING	DIRECTION	DISTANCE	DEFLECTION ANGLE
POB	0+00.00	24611.5119	28089.4324	N 00°08'53" W	771.54	
PI	7+71.54	25383.0470	28087.4378	N 00°37'09" W	1383.92	00°28'16"
PI	21+55.46	26766.8876	28072.4829	N 00°40'40" W	1509.83	00°03'31"
EOP	36+65.29	28083.6301	28056.9028			

CSAH 7 (7th Ave.)

POINT	STATION	NORTHING	EASTING	DIRECTION	DISTANCE	DELTA ANGLE	TANGENT	RADIUS	ARC LENGTH
POB	0+00.00	25427.3949	27948.8281	N 38°49'04" W	21.88				
PC	0+21.88	25410.3465	27962.5440						
RADIUS	N/A	25457.3599	28020.9799			51°36'56"	36.27	75.00	67.56
PI	0+58.15	25382.0877	27985.2791						
PT	0+89.45	25382.3620	28021.5471	N 89°34'00" E	512.57				
EOP	6+02.02	25386.2384	28534.1034						

CSAH 20

W:\AE\ANOKC\99020\DWG\AC9902ALI.DWG
DATE: 05-05-03 TIME: 10:59 am USER: TTABLER
XREFS: Q:\CLIENTS\A_F\ANOKC\9902.01\DWG\ALIGN.

DRAWN BY: MJM
DESIGNER: MJM
CHECKED BY: TAS
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.

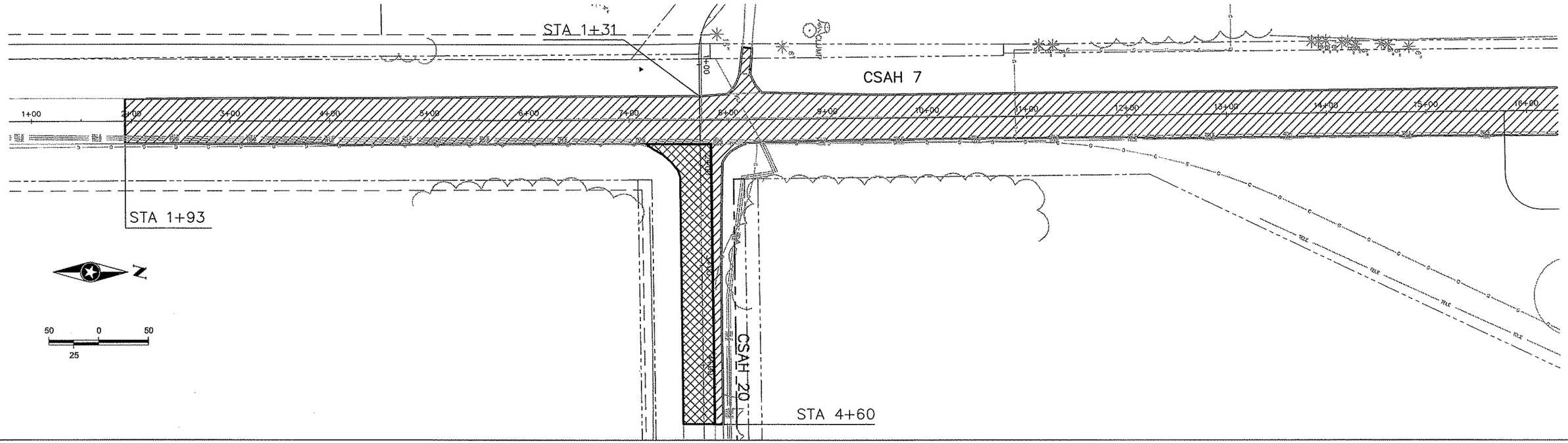
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
Date: 4/23/01 THOMAS G TABLER P.E. Reg. No. 26861

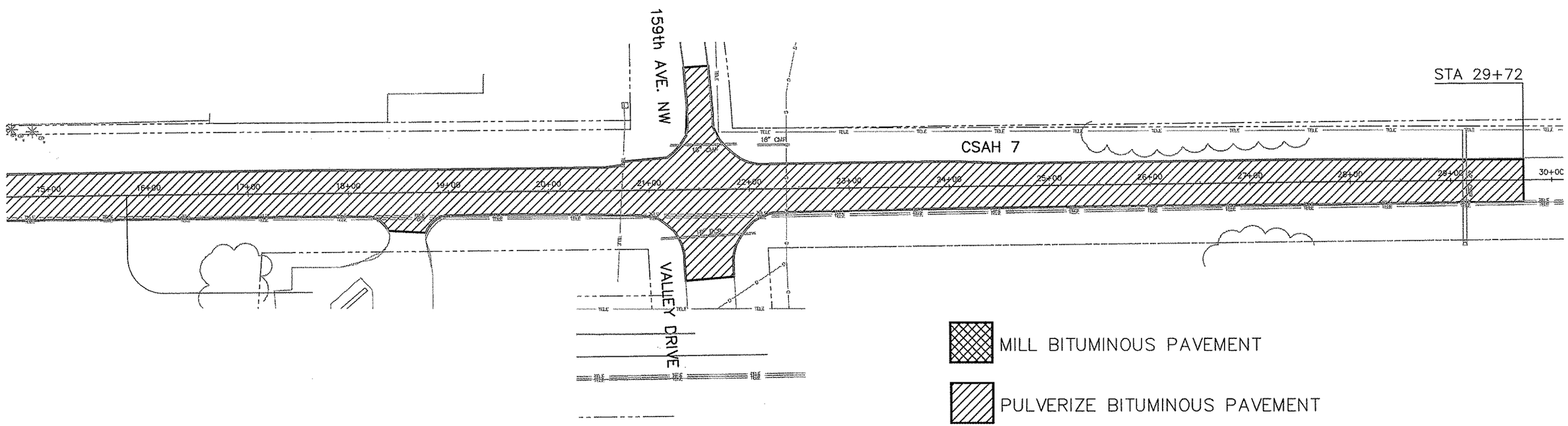
SEH®
PHONE: (651) 490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

ANOKA COUNTY
CSAH 7 (7TH AVENUE)
S.P. 02-607-17
S.P. 02-620-07
S.A.P. 198-020-16

ALIGNMENT PLAN

FILE NO. AANOKC0002.00
DATE 4/23/01
17
45





W:\AE\ANOKC\980201\DWG\AC9028N1.DWG
DATE: 04-07-03 TIME: 10:24 am USER: TTABLER
XREFS: Q:\CLIENTS\A_F\ANOKC\9802.01\DWG\REMOVAL, W:\AE\ANOKC\980201\EP\AC9028A_1, Q:\CLIENTS\A_F\ANOKC\9802.01\AKC9802, W:\AE\ANOKC\980201\TRAFFIC\SIGN&STRIPE\7-20SSBASE,

DRAWN BY: MJM					
DESIGNER: MJM					
CHECKED BY: TAS					
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.

THOMAS G TABLER P.E.
Date: 4/23/01 Reg. No. 26861

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

ANOKA COUNTY
CSAH 7 (7TH AVENUE)
S.P. 02-607-17
S.P. 02-620-07
S.A.P. 198-020-16

REMOVALS

FILE NO. AANOKC0002.00
DATE 4/23/01

STREET RADII		
RADIUS	STATION	OFFSET
50	7+01.3	92.7 RT.
20	7+43.8	60.3 LT.
20	7+96.3	60.4 LT.
35	8+30.2	73.98 RT.
65	15+00.0	106.9 RT.
40	15+98.6	71.0 RT.
20	16+13.5	58.5 RT.

CLEAR AND GRUB TREES AS NEEDED FOR DITCH GRADING
EX. DRAINAGE EASEMENT
SILTFENCE
8' SHOULDER
60 ft
95 ft
15' T/E
EXIST. R/W
31' TO EDGE
STA = 1+93 MATCH EXISTING
55:1
+78
15:1
+53
B418 C&G
43' F/C
EX. DRAINAGE EASEMENT
B/L CSAH 7
50' RAD
35' RAD
8' SHOULDER
31' TO EDGE
GAS MAIN TO BE RELOCATED BY OTHERS
LOCATION TO BE DETERMINED.
STA = 7+71.54 CSAH 7
STA = 1+55.34 CSAH 20
CSAH 20
STA = 15+77.44 CSAH 7
STA = 0+00.00 DRIVEWAY
+14
+40
43' TO EDGE
65' RAD
40' RAD
20' RAD
32' BIT SW
1+00
2+00
2+94.17
691.95
688.17
691.24
50
0
50
100
scale 25
feet
N

NOTES:
① 3 FOOT BEAVERTAILS FOR CURB AND GUTTER AT CURB AND GUTTER TERMINI

1'
6:1
6:1
② CONSTRUCT DITCH BLOCK. PAID FOR AS COMMON EX.

CSAH 7 (7TH AVENUE)

EXISTING GRADE
PROPOSED GRADE
0.49%
2.73%
STA 7+71.54 ℄ CSAH 20
STA = 1+93.00
EL = 881.33
MATCH EXISTING
PVI STA = 3+50.00
EL = 886.00
CURVE LENGTH = 600.00
K = 1.68
PVT STA = 6+50.00
EL = 887.46
PVC STA = 16+50.00
EL = 892.32

881.61 883.46 883.77 885.07 884.18 886.31 886.34 887.17 887.03 887.70 888.07 888.19 888.14 888.67 887.97 889.16 887.88 889.65 889.97 890.13 890.20 890.62 891.05 891.10 891.63 891.59 891.29 892.08 892.68 892.51 893.07

900 895 890 885 880 875 870 865 860 855

2+00 3+00 4+00 5+00 6+00 7+00 8+00 9+00 10+00 11+00 12+00 13+00 14+00 15+00 16+00 17+00

S.P. 02-607-17
S.P. 02-620-07
S.P. 198-020-16

©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.
Name Thomas G Tobler P.E.
Date: 4/23/01 Lic. No. 26861

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

ANOKA COUNTY
CSAH 7 (7TH AVENUE)
S.P. 02-607-17
S.P. 02-620-07
S.A.P. 198-020-16

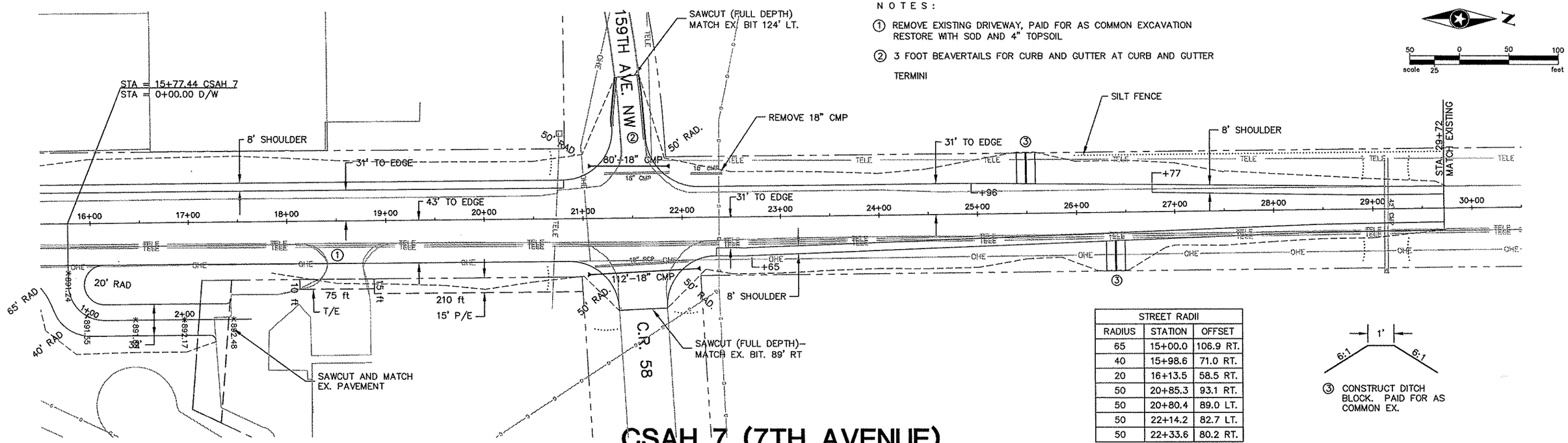
PLAN AND PROFILE
CSAH 7 (7TH AVENUE)

FILE NO. AANOKC9902.01
DATE 4/23/01
19 / 45

DRAWN BY: SLP
DESIGNER: GFA
CHECKED BY: GFA
DESIGN TEAM

NO.	BY	DATE	REVISIONS

W:\AE\ANOKC\9902O1\EP\RCP01001.DWG
DATE: 04-03-03 TIME: 2:22 pm USER: TTABLER
XREFS: Q:\CLIENTS\A_F\ANOKC\9902.01\EP\RCPRT001, Q:\CLIENTS\A_F\ANOKC\9902.01\EP\RCPRT001, Q:\CLIENTS\A_F\ANOKC\9902.01\EP\AC9902BA_1, Q:\CLIENTS\A_F\ANOKC\9902.01\AC9902, W:\AE\ANOKC\9902O1\TRAFFIC\SIGNASTRIPE\7-20SSBASE,



NOTES:

1. REMOVE EXISTING DRIVEWAY, PAID FOR AS COMMON EXCAVATION RESTORE WITH SOD AND 4" TOPSOIL
2. 3 FOOT BEAVERTAILS FOR CURB AND GUTTER AT CURB AND GUTTER TERMINI

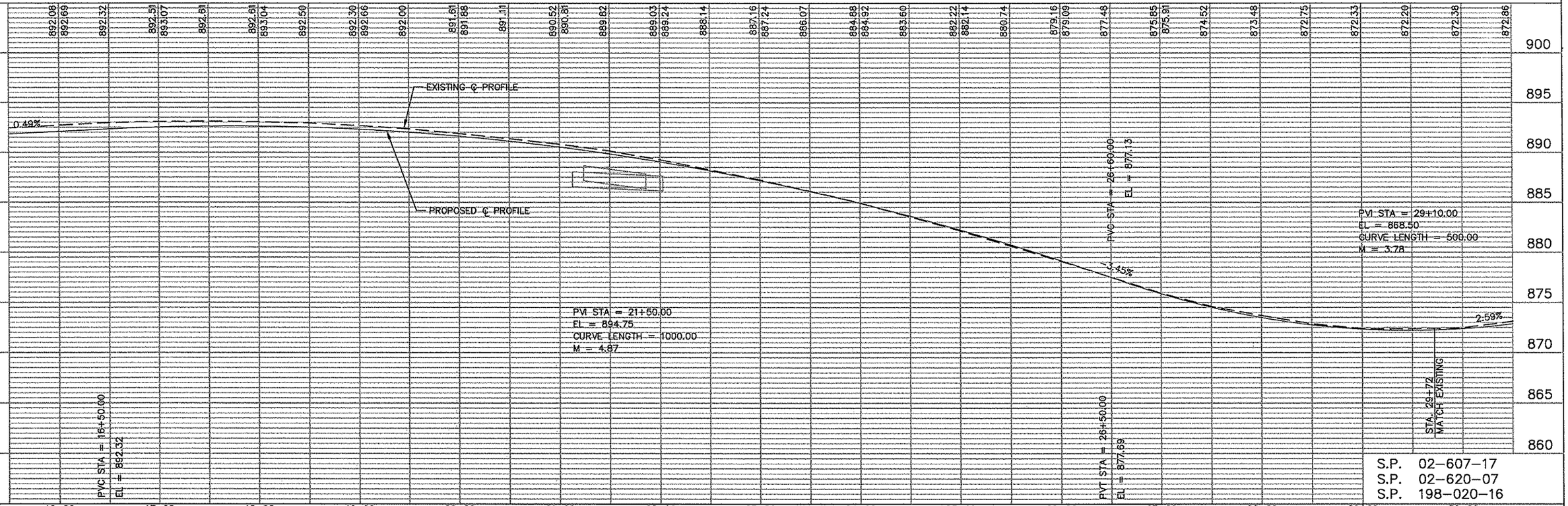
N

scale 25: 50 0 50 100 feet

STREET RADII		
RADIUS	STATION	OFFSET
65	15+00.0	106.9 RT.
40	15+98.6	71.0 RT.
20	16+13.5	58.5 RT.
50	20+85.3	93.1 RT.
50	20+80.4	89.0 LT.
50	22+14.2	82.7 LT.
50	22+33.6	80.2 RT.

③ CONSTRUCT DITCH BLOCK. PAID FOR AS COMMON EX.

CSAH 7 (7TH AVENUE)



S.P. 02-607-17
S.P. 02-620-07
S.P. 198-020-16

W:\AE\ANOKC\9902001\EP\RCP02001.DWG
DATE: 04-03-03 TIME: 2:54 pm USER: TTABLER
XREFS: Q:\CLIENTS\A_F\ANOKC\9902.01\EP\RCPRF001, Q:\CLIENTS\A_F\ANOKC\9902.01\EP\AC9028A_L, Q:\CLIENTS\A_F\ANOKC\9902.01\EP\AC9028-L, Q:\CLIENTS\A_F\ANOKC\9902.01\AC99021, W:\AE\ANOKC\9902001\TRAFFIC\SIGN&STRIPE\7-20SSBASE,

DESIGN TEAM		NO.	BY	DATE	REVISIONS
DRAWN BY:	SLP				
DESIGNER:	GFA				
CHECKED BY:	GFA				

©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.

Name Thomas G Tobler, P.E.
Date: 4/23/01 Reg. No. 26861

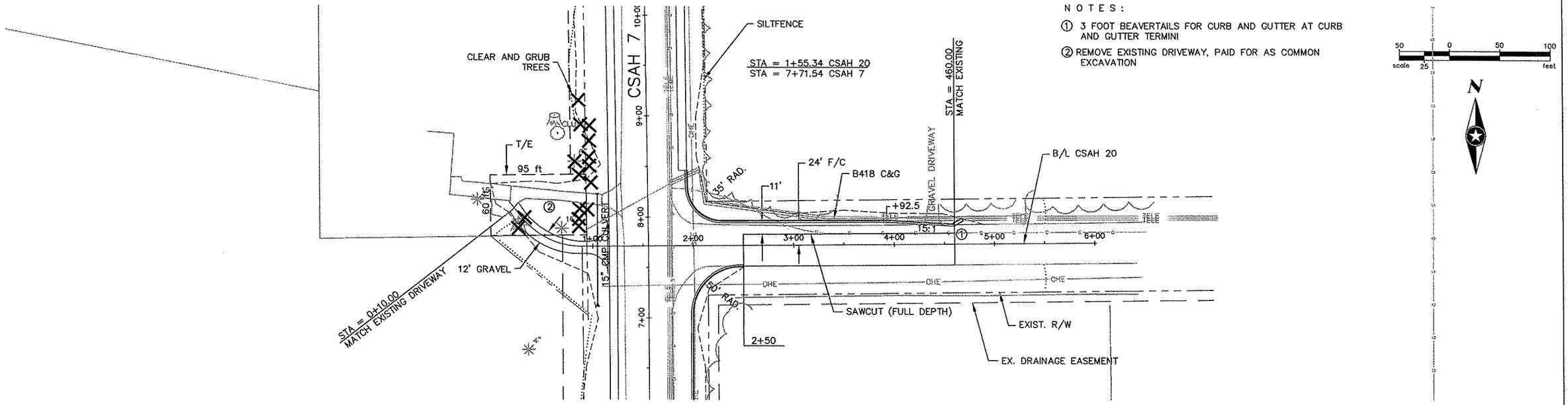
SEH®
PHONE: (651) 490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

ANOKA COUNTY
CSAH 7 (7TH AVENUE)
S.P. 02-607-17
S.P. 02-620-07
S.A.P. 198-020-16

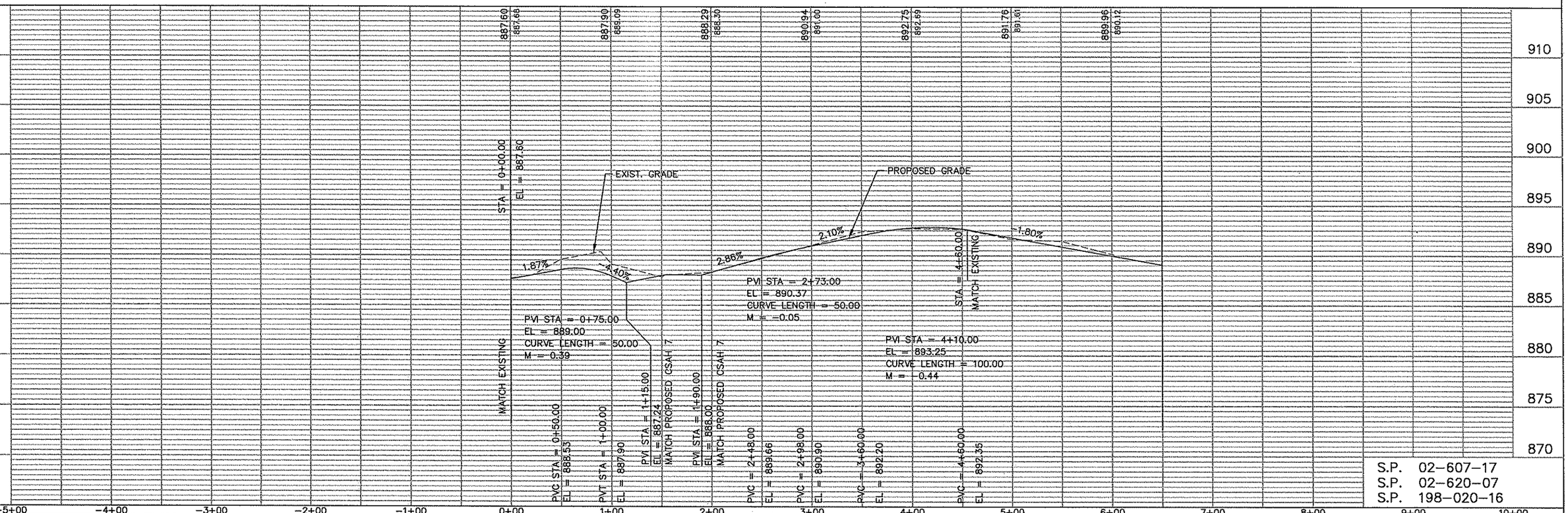
PLAN AND PROFILE
CSAH 7 (7TH AVENUE)

FILE NO. AANOKC9902.01
DATE 4/23/01

20 / 45



CSAH 20 (151ST AVE NW)



S.P. 02-607-17
S.P. 02-620-07
S.P. 198-020-16

W:\AE\ANOKC\9902201\EP\RCP91002.DWG
DATE: 04-03-03 TIME: 2:55 pm USER: TTABLER
XREFS: Q:\CLIENTS\A_F\ANOKC\9902.01\EP\RCPF002, Q:\CLIENTS\A_F\ANOKC\9902.01\EP\RCPF002, Q:\CLIENTS\A_F\ANOKC\9902.01\EP\XC902BA_1, Q:\CLIENTS\A_F\ANOKC\9902.01\MKC9902, W:\AE\ANOKC\9902201\TRAFFIC\SIGN&STRIPE\7-20SSBASE

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: SLP				
DESIGNER: GFA				
CHECKED BY: GFA				

©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.

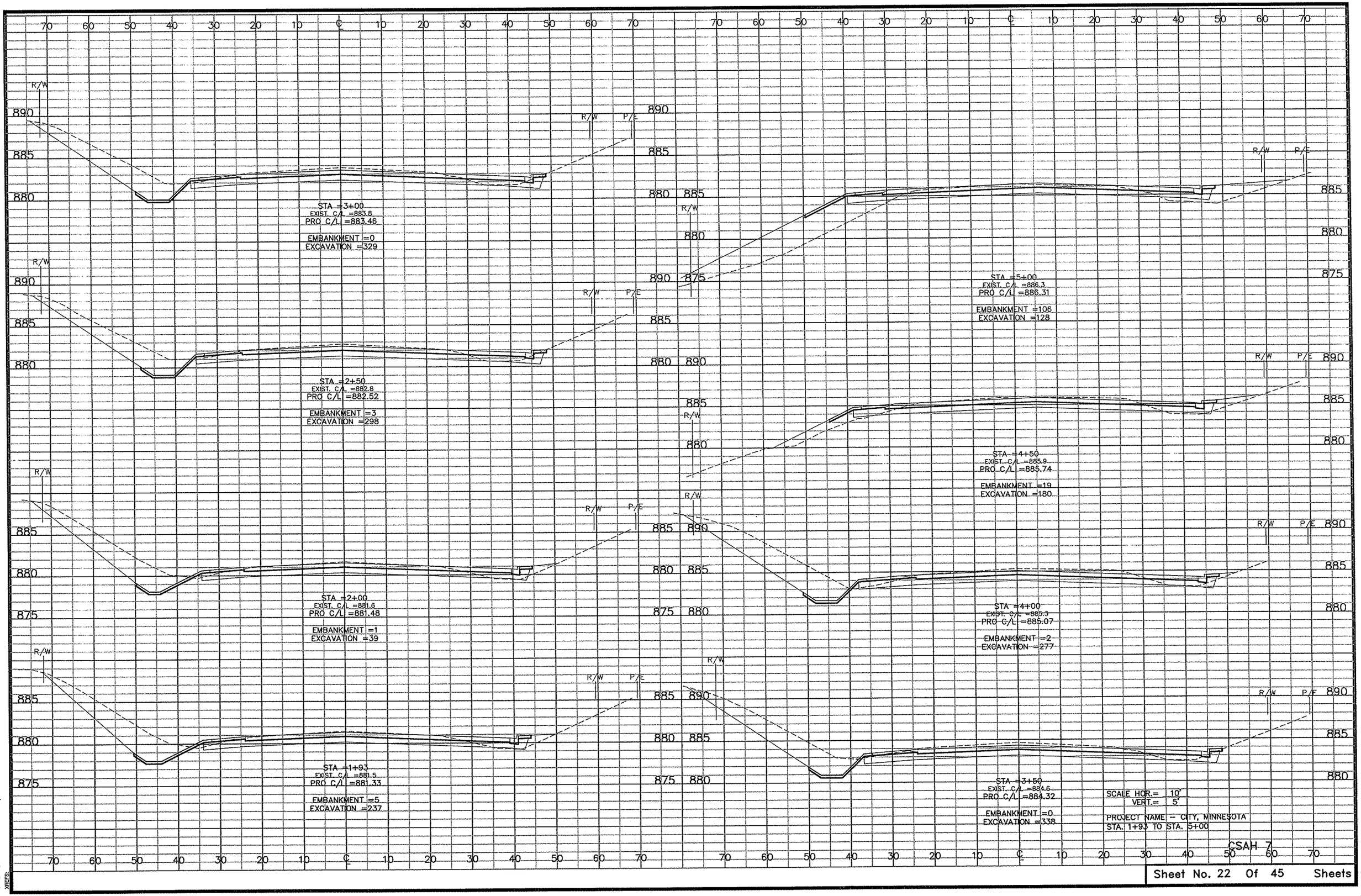
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
Name Thomas G Tabler, P.E.
Date: 4/23/01 Reg. No. 26861

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

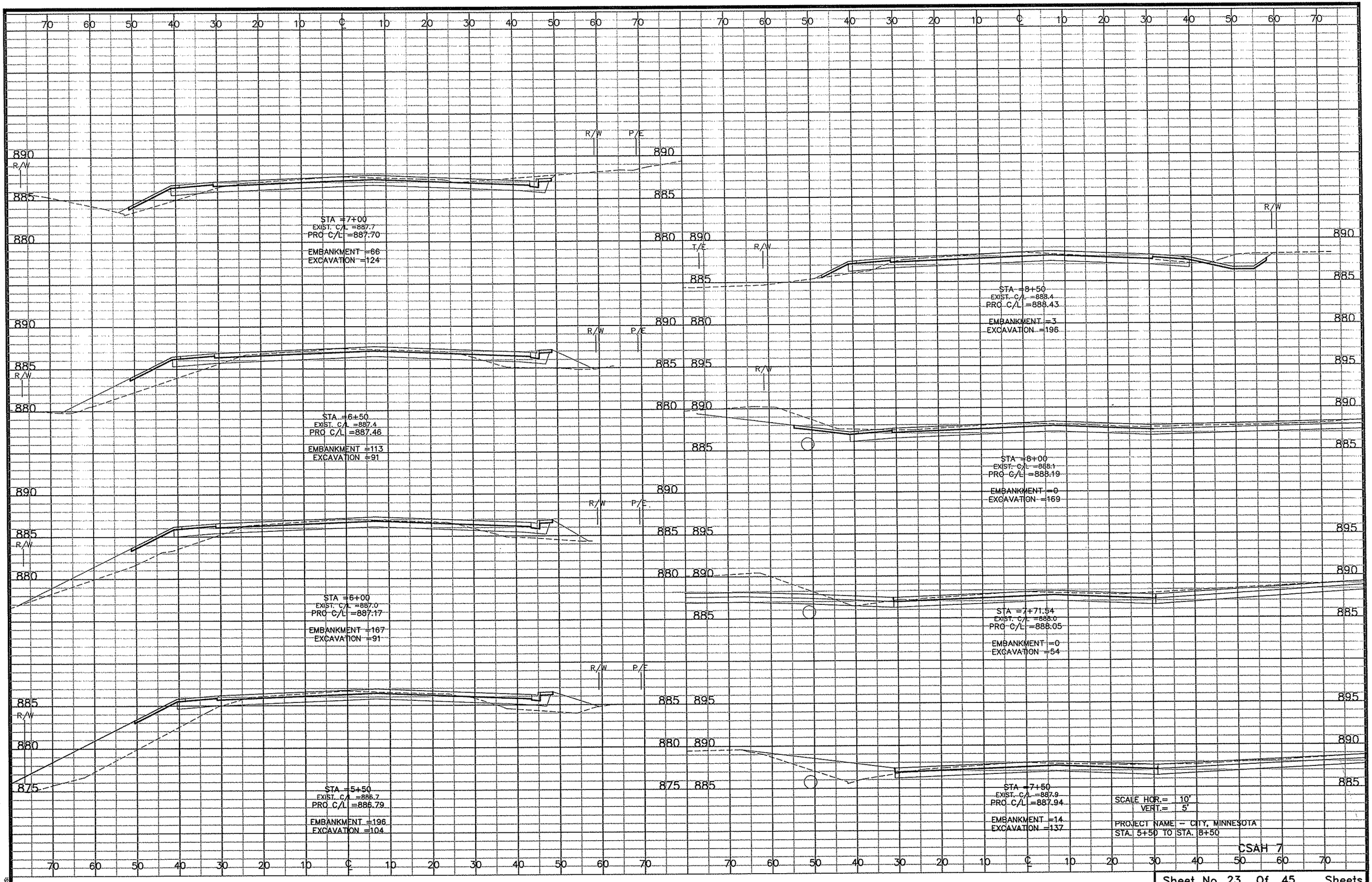
ANOKA COUNTY
CSAH 7 (7TH AVENUE)
S.P. 02-607-17
S.P. 02-620-07
S.A.P. 198-020-16

PLAN AND PROFILE
CSAH 20 (151ST AVE NW)

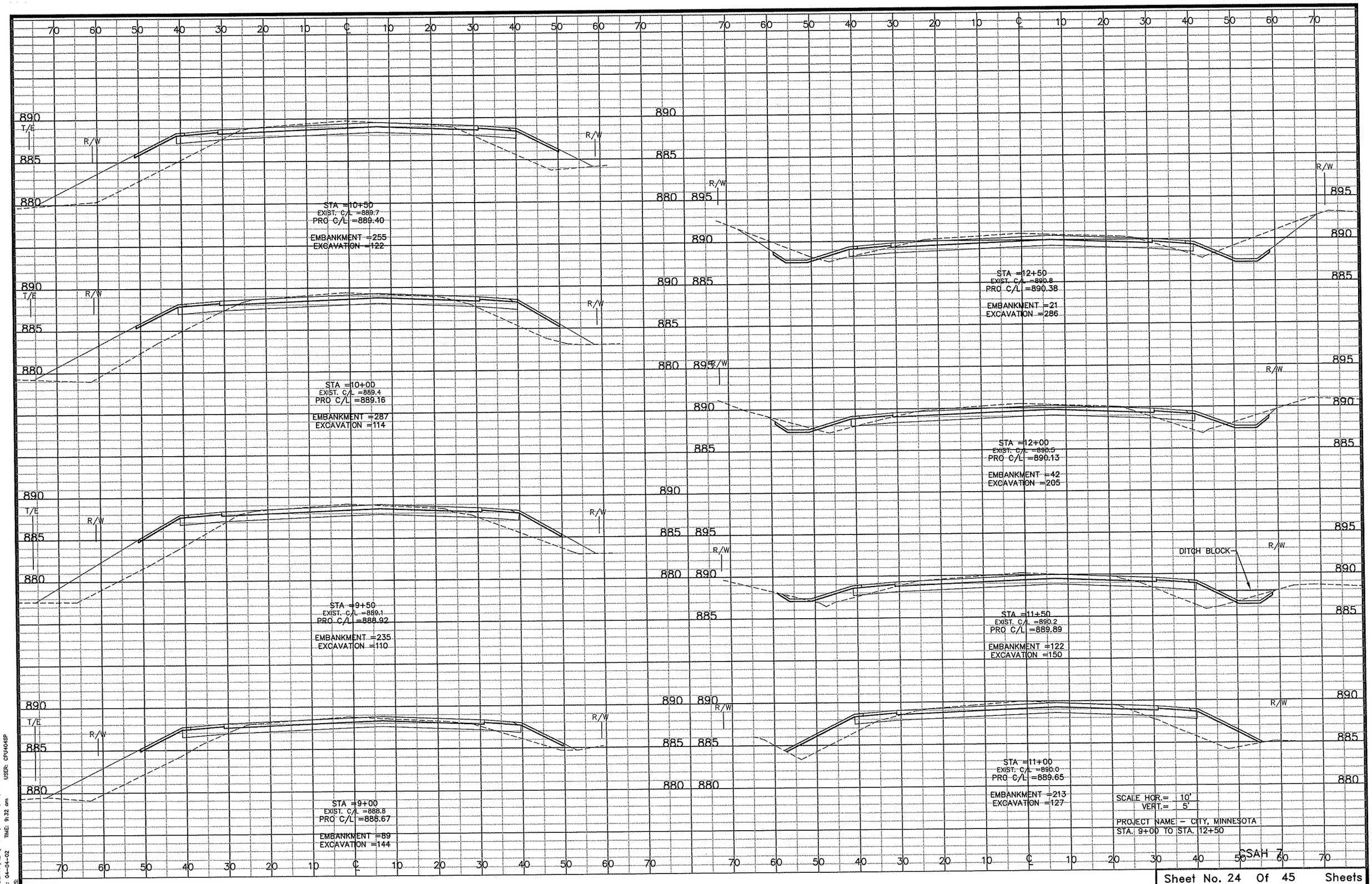
FILE NO. AANOKC9902.01
DATE 4/23/01
21/45



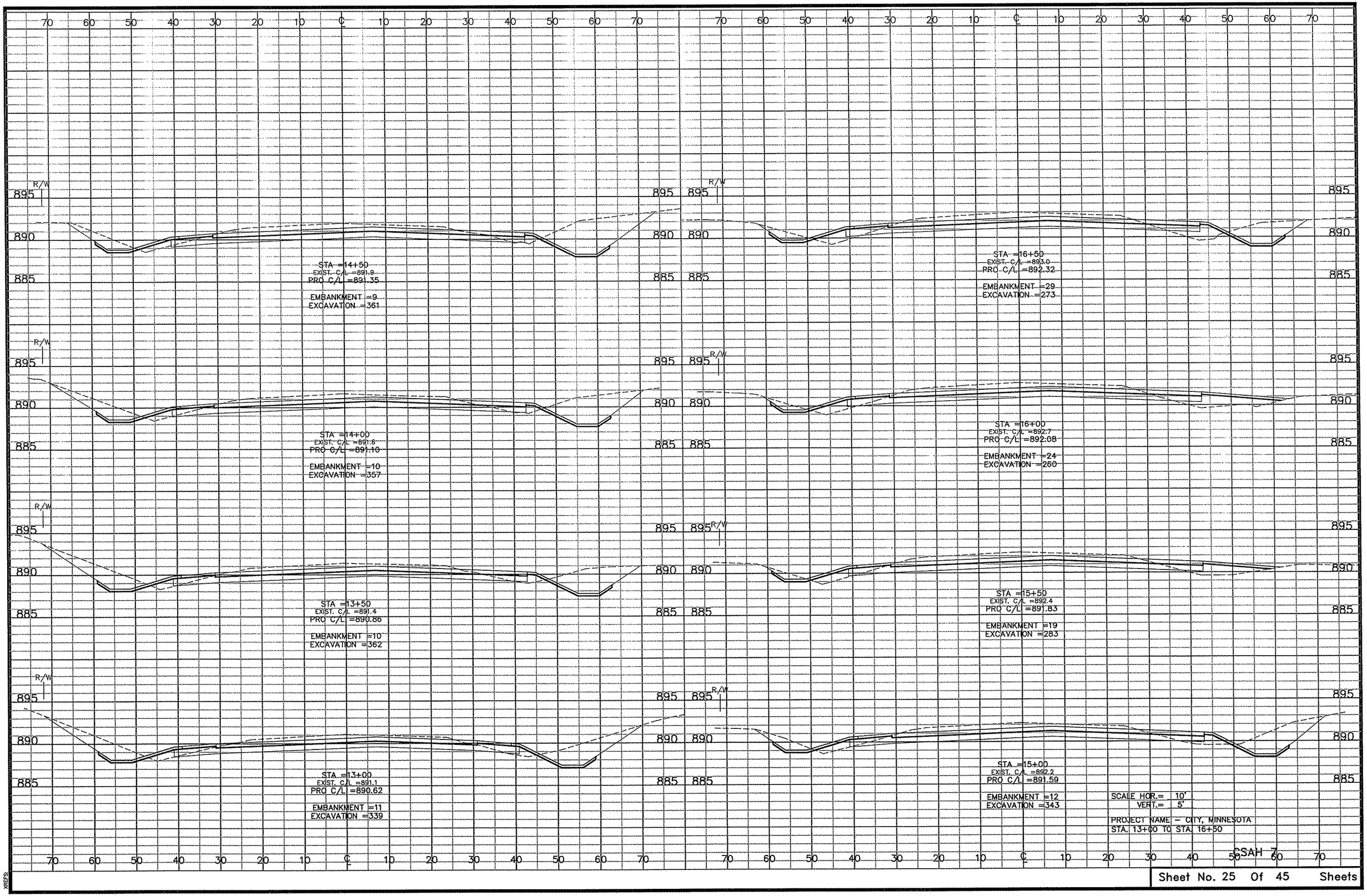
G:\CLIENTS\A_F\ANOKC\99002.01\EP\RC001001.DWG
DATE: 02-12-02 TIME: 3:12 pm USER: CPU575P
XREFS:



C:\CLIENTS\A_F\ANOKC\9502.01\EP\RC002001.DWG
DATE: 02-12-02 TIME: 3:43 pm USER: CPU5175P
XREFS:

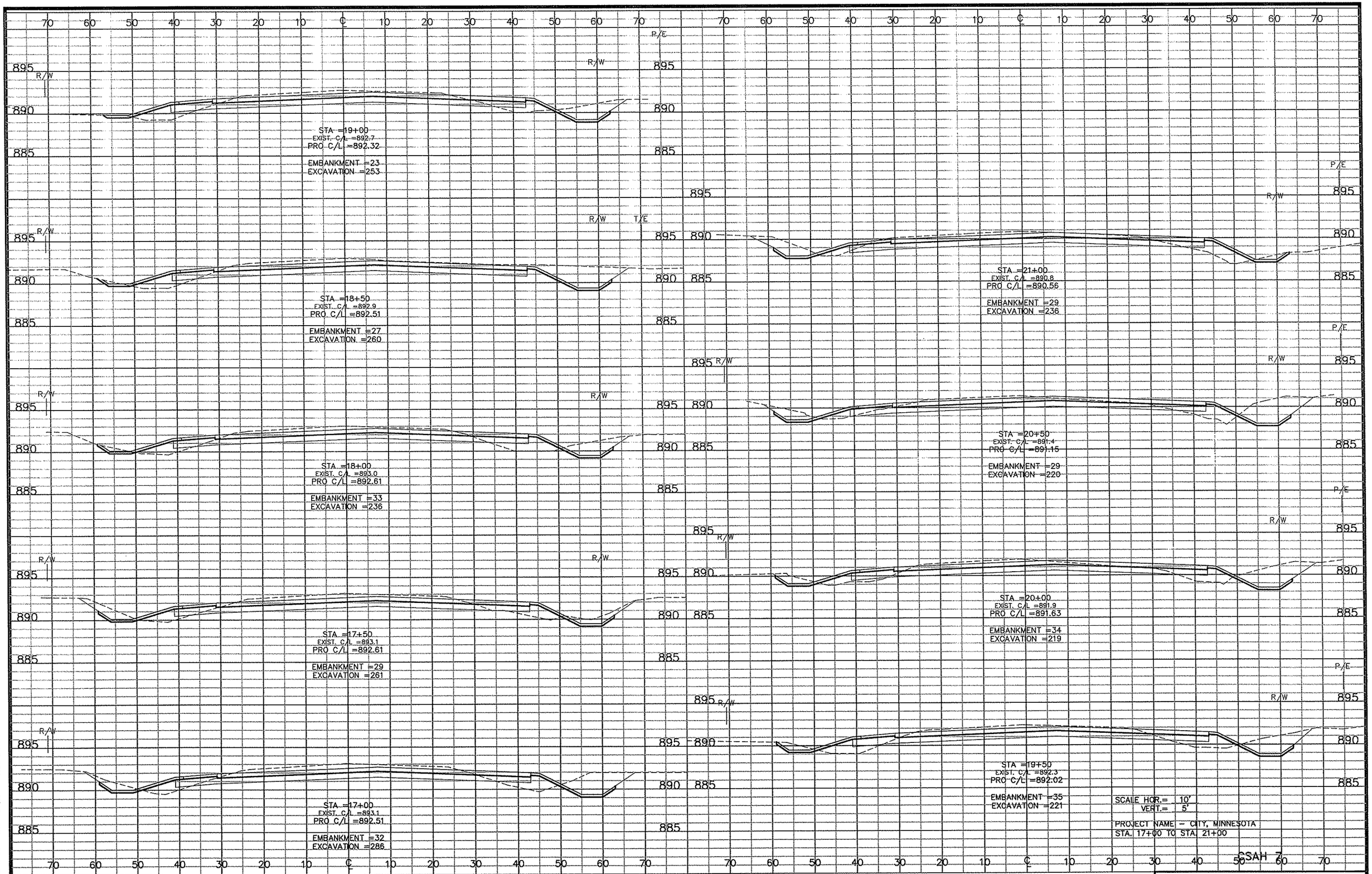


Q:\CLIENTS\A-F\ANOKC\9902.01\EPI\R0003001.DWG
DATE: 04-04-02 TIME: 9:32 am USER: CPU404SP
XREFS:



Sheet No. 25 Of 45 Sheets

G:\CLIENTS\A_F\ANOKC\99102.01\EP\RC007001.DWG
DATE: 02-12-02 TIME: 4:30 pm USER: CPU517SP
XREFS:



SCALE HOR.= 10'
VERT.= 5'

PROJECT NAME – CITY, MINNESOTA
STA. 17+00 TO STA. 21+00

SAH 7

Sheet No. 26 Of 45 Sheets

D:\CLIENTS\A_F\ANOKC\9902.01\EP\RCD08001.DWG
DATE: 02-12-02 TIME: 4:34 pm USER: CPU5179P
XREFS:

STA =23+00
EXIST. C/L =887.2
PRO C/L =887.24

EMBANKMENT =26
EXCAVATION =150

STA =22+50
EXIST. C/L =888.2
PRO C/L =888.22

EMBANKMENT =16
EXCAVATION =212

STA =22+00
EXIST. C/L =889.2
PRO C/L =889.10

EMBANKMENT =11
EXCAVATION =181

STA =21+55.46
EXIST. C/L =890.0
PRO C/L =889.80

EMBANKMENT =1
EXCAVATION =17

STA =21+50
EXIST. C/L =890.1
PRO C/L =889.88

EMBANKMENT =22
EXCAVATION =188

DITCH BLOCK

STA =25+50
EXIST. C/L =880.6
PRO C/L =880.91

EMBANKMENT =51
EXCAVATION =75

STA =25+00
EXIST. C/L =882.1
PRO C/L =882.37

EMBANKMENT =53
EXCAVATION =86

STA =24+50
EXIST. C/L =883.5
PRO C/L =883.73

EMBANKMENT =51
EXCAVATION =103

STA =24+00
EXIST. C/L =884.9
PRO C/L =885.00

EMBANKMENT =46
EXCAVATION =113

STA =23+50
EXIST. C/L =886.1
PRO C/L =886.17

EMBANKMENT =39
EXCAVATION =119

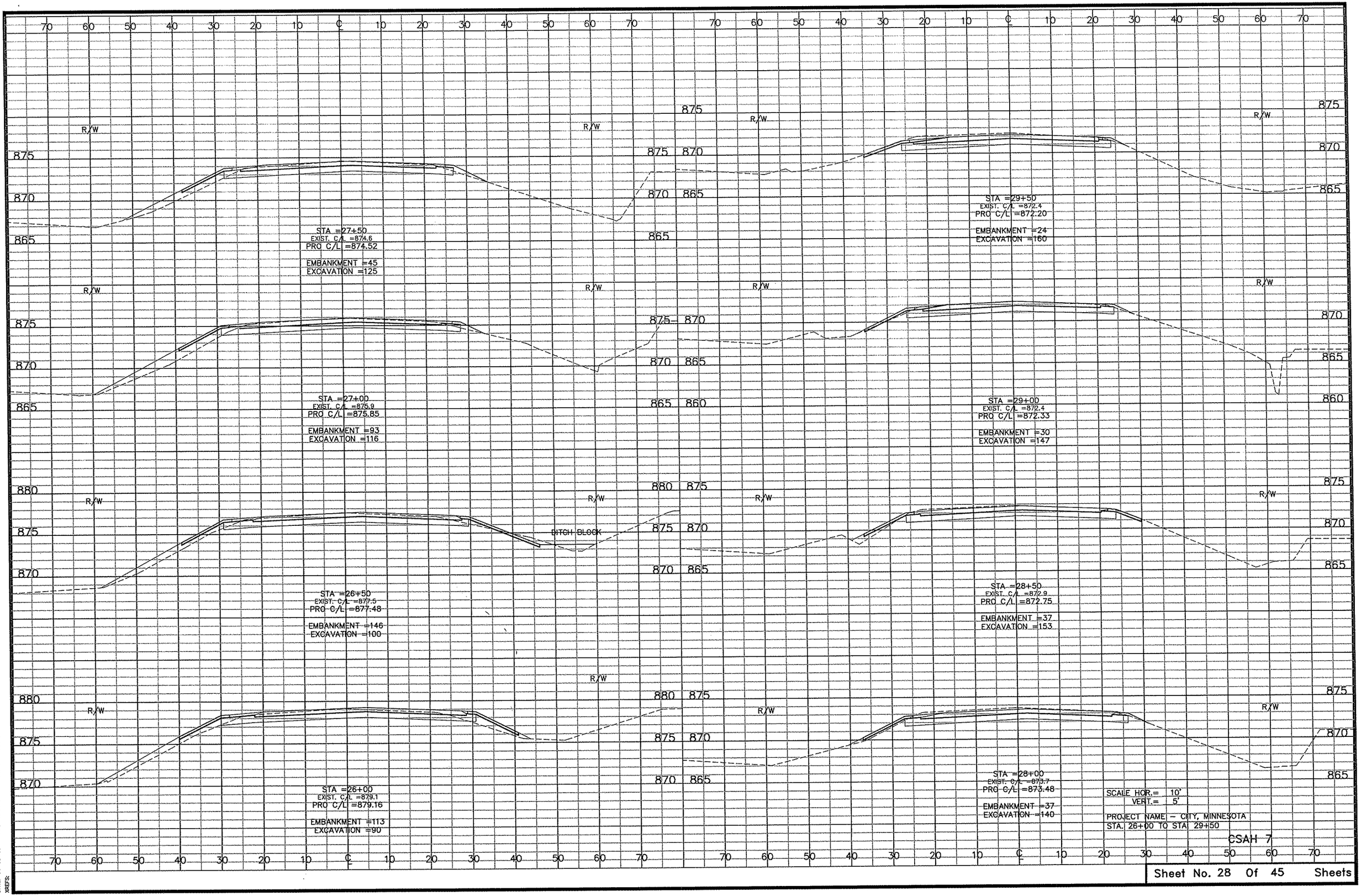
SCALE HOR.= 10'
VERT.= 5'

PROJECT NAME – CITY, MINNESOTA
STA. 21+50 TO STA. 25+50

CSAH 7

Sheet No. 27 Of 45 Sheets

Q:\CLIENTS\A_F\ANOKC\9902.01\EP\RC004001.DWG USER: CPU5175P
DATE: 02-13-02 TIME: 10:41 am
XREFS:



Sheet No. 28 Of 45 Sheets

W:\AE\ANOKC\989201\EP\RC009001.DWG
DATE: 04-03-03 TIME: 7:50 am USER: TTABLER
XREFS:

STA =1+00
EXIST. C/L =889.1
PRO C/L =887.90

EMBANKMENT =0
EXCAVATION =67

STA =0+89.45
EXIST. C/L =890.3
PRO C/L =888.29

EMBANKMENT =0
EXCAVATION =204

R/W

STA =0+50
EXIST. C/L =889.6
PRO C/L =888.53

EMBANKMENT =0
EXCAVATION =78

T/E T/E

STA =0+21.88
EXIST. C/L =888.0
PRO C/L =888.01

EMBANKMENT =0
EXCAVATION =41

T/E T/E

STA =0+00
EXIST. C/L =887.7
PRO C/L =887.60

EMBANKMENT =0
EXCAVATION =0

R/W

STA =3+00
EXIST. C/L =891.0
PRO C/L =890.81

EMBANKMENT =0
EXCAVATION =51

R/W R/W

STA =2+50
EXIST. C/L =889.6
PRO C/L =889.59

EMBANKMENT =0
EXCAVATION =43

STA =2+00
EXIST. C/L =888.3
PRO C/L =888.16

EMBANKMENT =0
EXCAVATION =152

STA =1+55
EXIST. C/L =888.0
PRO C/L =888.05

EMBANKMENT =0
EXCAVATION =28

STA =1+50
EXIST. C/L =887.9
PRO C/L =887.95

EMBANKMENT =0
EXCAVATION =302

SCALE HOR.= 10'
VERT.= 5'

CSAH 7 & CSAH 20 – ANOKA COUNTY, MINNESOTA
STA. 0+00 TO STA. 3+00

CSAH 20

Sheet No. 29 Of 45 Sheets

C:\CLIENTS\A_F\ANOKC\9802.01\EP\RC001002.DWG
DATE: 05-09-01 TIME: 3:18 pm USER: CPU4404SP
3REFS

70 60 50 40 30 20 10 ℄ 10 20 30 40 50 60 70

R/W

895

890

885

900

STA =4+50
EXIST. C/L =892.6
PRO C/L =892.52

EMBANKMENT =0
EXCAVATION =42

R/W

895

890

STA =4+00
EXIST. C/L =892.6
PRO C/L =892.63

EMBANKMENT =0
EXCAVATION =60

R/W

900

895

890

STA =3+50
EXIST. C/L =892.0
PRO C/L =891.86

EMBANKMENT =0
EXCAVATION =72

70 60 50 40 30 20 10 ℄ 10 20 30 40 50 60 70

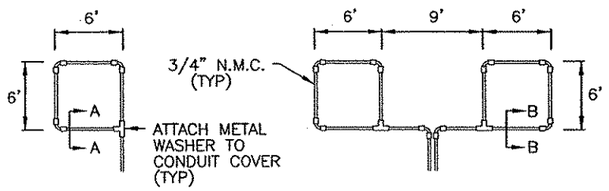
SCALE HOR.= 10'
VERT.= 5'

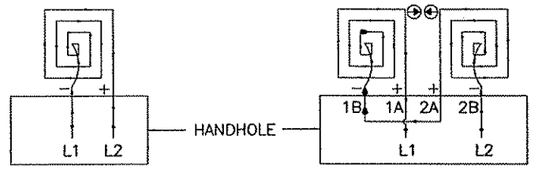
CSAH 7 & CSAH 20 – ANOKA COUNTY, MINNESOTA
STA. 3+50 TO STA. 4+50

CSAH 20

Sheet No. 30 Of 45 Sheets

Q:\CLIENTS\A_F\ANOKC\89802.01\EP\RC002002.DWG
DATE: 05-03-01 TIME: 9:21 am USER: CPU4045P
XREFS:



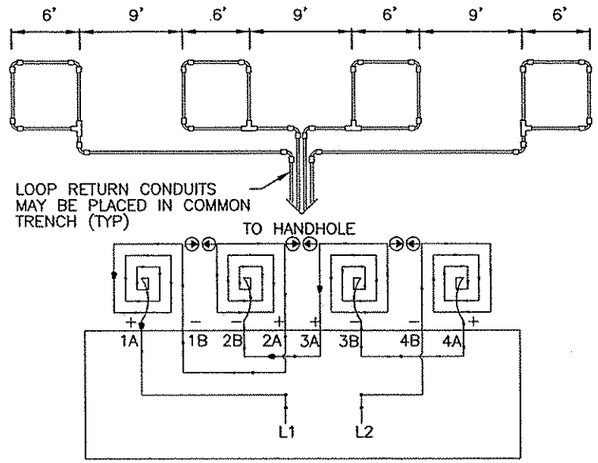


LOOP CONNECTIONS SHALL BE LABELED AND SPLICED IN THE HANDHOLE AS FOLLOWS:

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

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

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

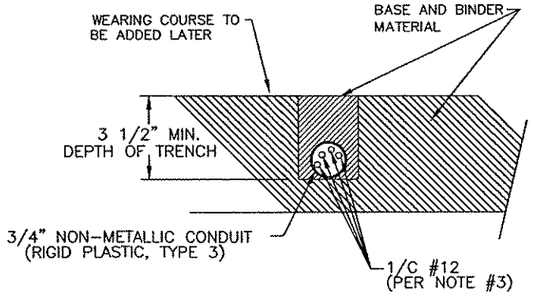


LOOP CONNECTIONS SHALL BE LABELED AND SPLICED IN THE HANDHOLE AS FOLLOWS:

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

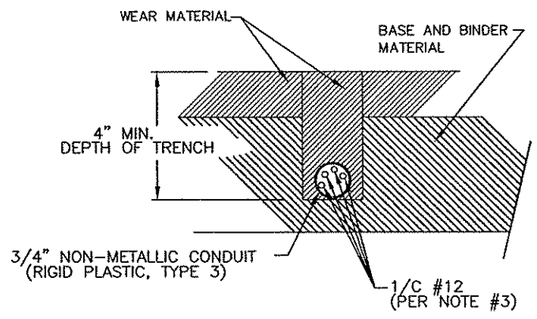
SPLICE CONTROL CABLE TO L1 & L2 IN HANDHOLE. ALL CONDUCTORS SHALL BE TAGGED IN HANDHOLE (1A, 1B, ECT)

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



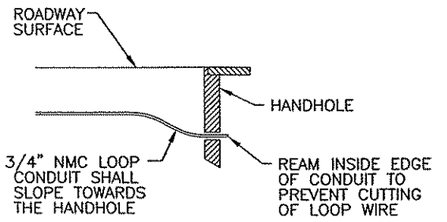
SECTION A-A

DETAIL FOR LOOP INSTALLATION IN NEW ROADWAY



SECTION B-B

DETAIL FOR LOOP INSTALLATION IN EXISTING ROADWAY



DRAINAGE DETAIL

LOOP DETECTOR WIRING

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

STANDARD PLATES

THESE STANDARD PLATES AS APPROVED BY FHWA SHALL APPLY:

PLATE NO.		DESCRIPTION
*	7035 L	CONCRETE WALK AND CURB RETURNS AT ENTRANCES
*	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 PLATE
	8122 C	PEDESTAL AND PEDESTAL BASE
*	8123 E	POLE AND MAST ARM
*	8124 E	MAST ARM SIGNAL HEAD MOUNTS
*	8126 F	PA90 AND PA100 POLE FOUNDATION

* – APPLIES TO THIS PROJECT

CONDUCTOR COLOR CODE

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

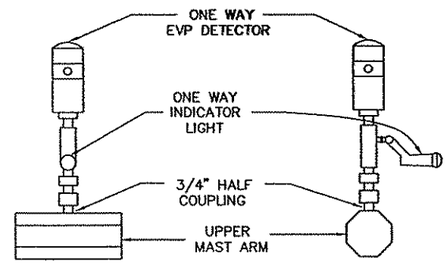
LEGEND OF SYMBOLS

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

ABBREVIATIONS

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

EVP DETECTOR AND LIGHT MOUNTING DETAIL ON MAST ARM



S.P. 02-607-17
S.P. 02-620-07
S.A.P. 198-020-16

DRAWN BY:	JMG	1	JMG	03/03	REVISED TO CURRENT STANDARDS
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: April 23, 2001 John M. Gray, P.E. Lic. No. 22457

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

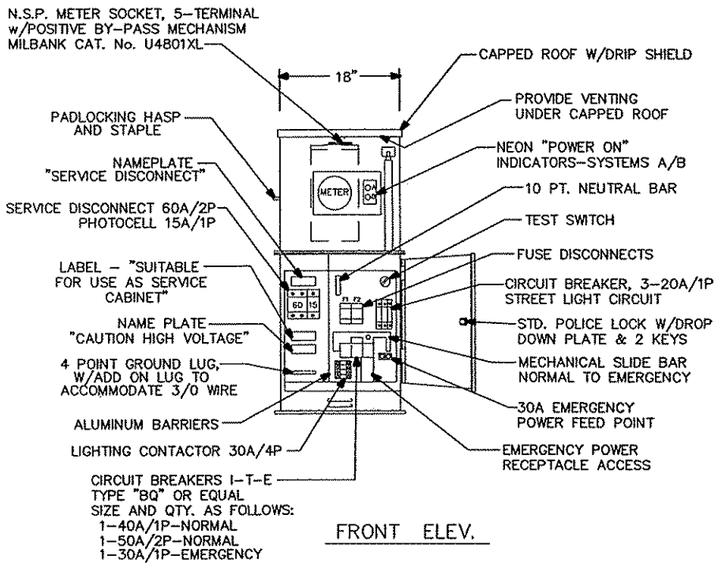
ANOKA COUNTY
CSAH 7 (7TH AVENUE)
S.P. 02-607-17
S.P. 02-620-07
S.A.P. 198-020-16

TRAFFIC SIGNAL SYSTEM DETAILS & STANDARD PLATES
CSAH 7 AT CSAH 20

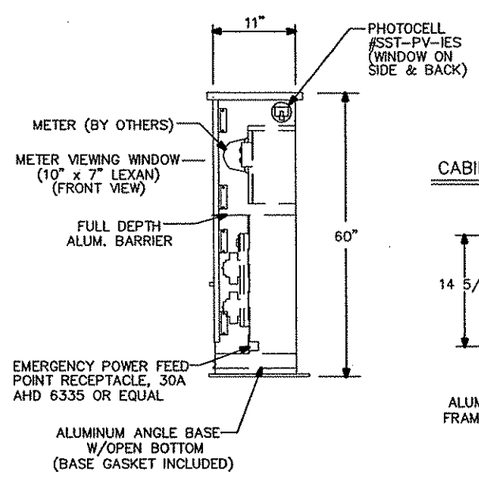
FILE NO. ANOKC9902.01
DATE 4-23-01
31 / 45

C:\CLIENTS\V_F_ANOKC\9902.01\TRAFFIC\SIGNALS\72007ETL.DWG
5/11/01

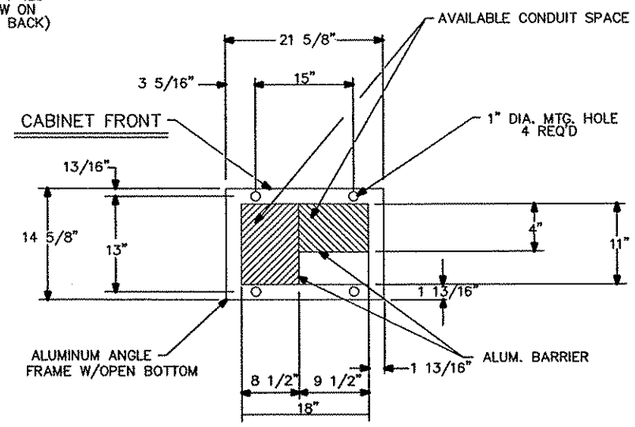
SIGNAL SERVICE CABINET



FRONT ELEV.

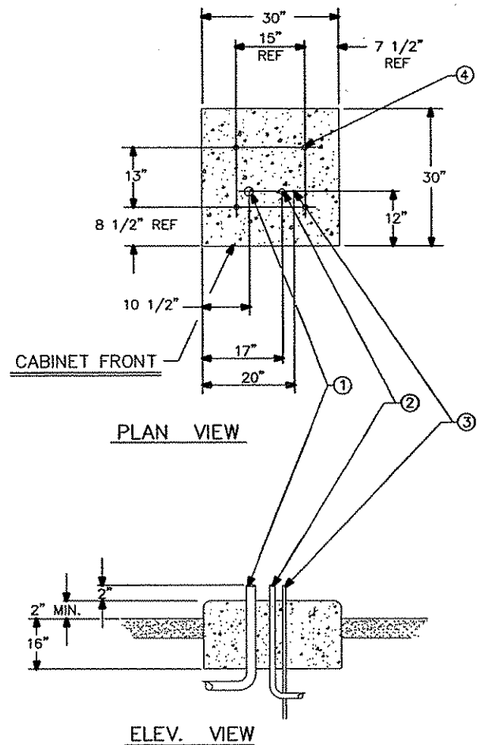


RIGHT SIDE ELEV.



BASE VIEW

SERVICE CABINET FOUNDATION



PLAN VIEW

ELEV. VIEW

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

CONSTRUCTION NOTES

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

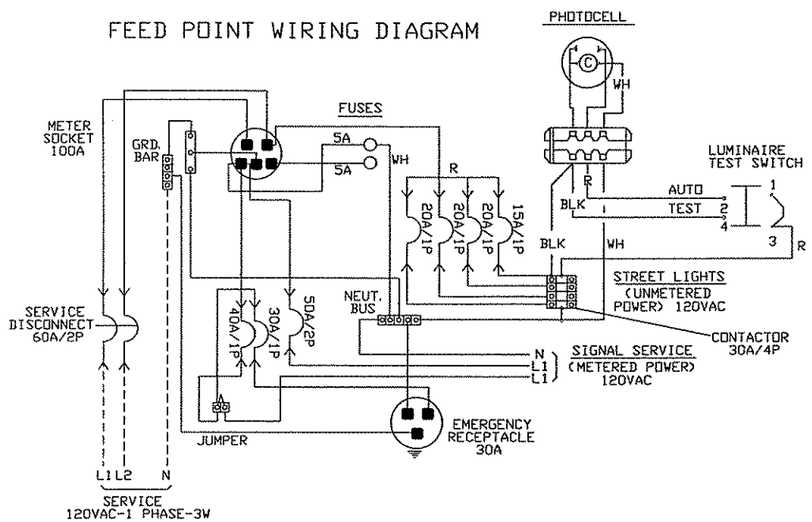
DOORS TO BE NEOPRENE GASKETED. ALL HINGES, PINS AND LOCKS TO BE OF NON-CORRODING CONSTRUCTION.

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

NEMA 3R ENCLOSURE SHALL BE "UL" APPROVED.

CABINET SHALL HAVE BASE GASKET INCLUDED.

FEED POINT WIRING DIAGRAM



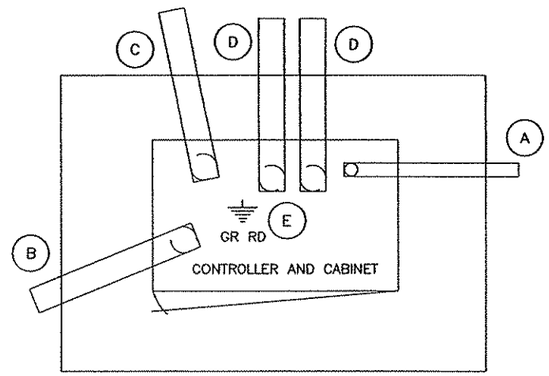
Ⓐ 2" R.S.C. FOR SERVICE CONNECTION (VIA HH 14)

Ⓑ 4" R.S.C. TO HH 1

Ⓒ 4" R.S.C. TO HH 13

Ⓓ 3" R.S.C. STUBOUT, THREAD & CAP BOTH ENDS (FOR FUTURE USE).

Ⓔ 5/8" DIA X 15' GROUND ROD



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

SEE INTERSECTION LAYOUT FOR CONDUIT & CABLE INFORMATION

TYPICAL CONTROLLER CABINET PAD LAYOUT

NO SCALE

S.P. 02-607-17
S.P. 02-620-07
S.A.P. 198-020-16

DRAWN BY: JMG	1	JMG	03/03	REVISED TO CURRENT STANDARDS PER COUNTY	
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. Gray, P.E.
Date: April 23, 2001 Lic. No. 22457

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

ANOKA COUNTY
CSAH 7 (7TH AVENUE)
S.P. 02-607-17
S.P. 02-620-07
S.A.P. 198-020-16

TRAFFIC SIGNAL SYSTEM
EQUIPMENT PAD DETAILS
CSAH 7 AT CSAH 20

FILE NO. ANOKC9902.01
DATE 4-23-01
32 / 45

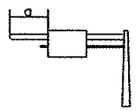
C:\CLIENTS\J_F\ANOKC\9902.01\TRAFFIC\SIGNALS\Y200ETL.DWG
5/11/01

MAST ARM MOUNTED SIGNING

SIGN PANELS – TYPE D							
SIGN PANEL	SIZE (inches)	NO. REQ.	BRACKETS PER SIGN	BRACKET SPACING (**)	AREA (sq.ft.) PER SIGN	POLE NO.	a
D–1	102x24	1	4	–	17.00	2	28'
D–2	90x24	1	4	–	15.00	3	8'
D–3	102x24	1	4	–	17.00	4	28'
	TOTALS	3			49.00		

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

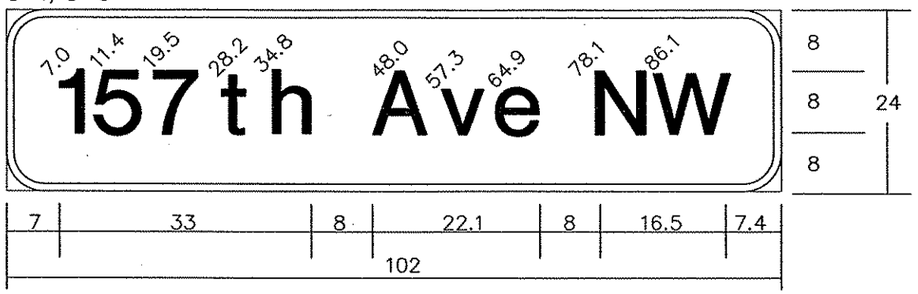
SIGN PANELS – TYPE C							
SIGN PANEL	SIZE (in.)	NO. REQ.	NO. POSTS PER SIGN	POST SPACING (in.)	SQ. FT. PER SIGN	POLE NO.	a
R9–3a	18x18	2	①	–	2.25	3,4	–
	TOTALS	2			4.50		



NOTES:

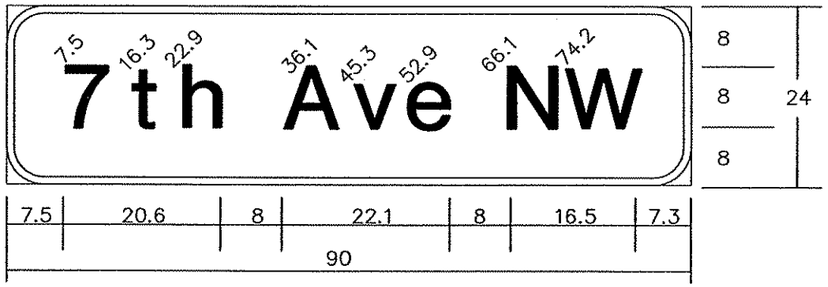
1) TYPE D SIGN COLOR–WHITE LEGEND AND BORDER ON GREEN BACKGROUND, FULLY REFLECTORIZED.
2) CORNERS EXTENDING BEYOND THE BORDER SHALL NOT BE TRIMMED.
3) FOR STRUCTURAL DETAILS, TYPE D SIGNS, SEE STANDARD SIGNS MANUAL AND SPECIAL PROVISIONS (PAGE 105A).
4) ① = MOUNT SIGN PANEL ON TRAFFIC SIGNAL MAST ARM POLE AS NOTED IN PLANS AND SPECIAL PROVISIONS.
5) TYPE C AND D SIGN PANELS SHALL BE FURNISHED AND INSTALLED BY SIGNAL CONTRACTOR INCIDENTAL TO ITEM NO. 2565.511 FOR SIGNAL SYSTEM. SEE SPECIAL PROVISIONS.
6) ALL SIGNS SHALL BE FABRICATED USING VIP SHEETING.

D–1, D–3



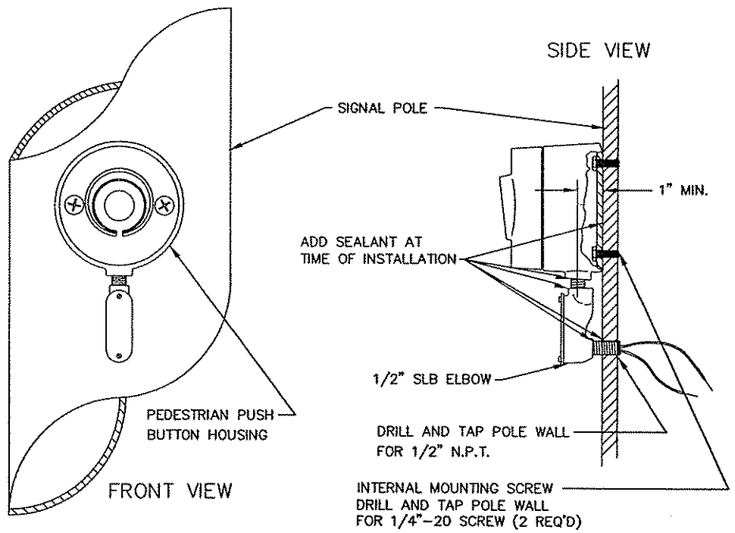
D–1, D–3; 102" x 24", 3.0" Radius, 1.0" Border, White on Green
"157th Ave NW" E Mod.

D–2



D–2; 90" x 24", 3.0" Radius, 1.0" Border, White on Green
"7th Ave NW" E Mod.

MAST ARM POLE
PEDESTRIAN PUSH BUTTON DETAIL



S.P. 02–607–17
S.P. 02–620–07
S.A.P. 198–020–16

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: JMG	1	JMG	03/03	REVISED TO CURRENT STANDARDS
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: April 23, 2001 John M. Gray, P.E. Lic. No. 22457

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

ANOKA COUNTY
CSAH 7 (7TH AVENUE)
S.P. 02–607–17
S.P. 02–620–07
S.A.P. 198–020–16

TRAFFIC SIGNAL SYSTEM
SIGNING & DETAILS
CSAH 7 AT CSAH 20

FILE NO. ANOKC9902.01
DATE 4–23–01
33 / 45

Q:\CLIENTS\A_F\ANOKC\9902.01\TRAFFIC\SIGNALS\200ETL.DWG
5/1/01

NOTES:

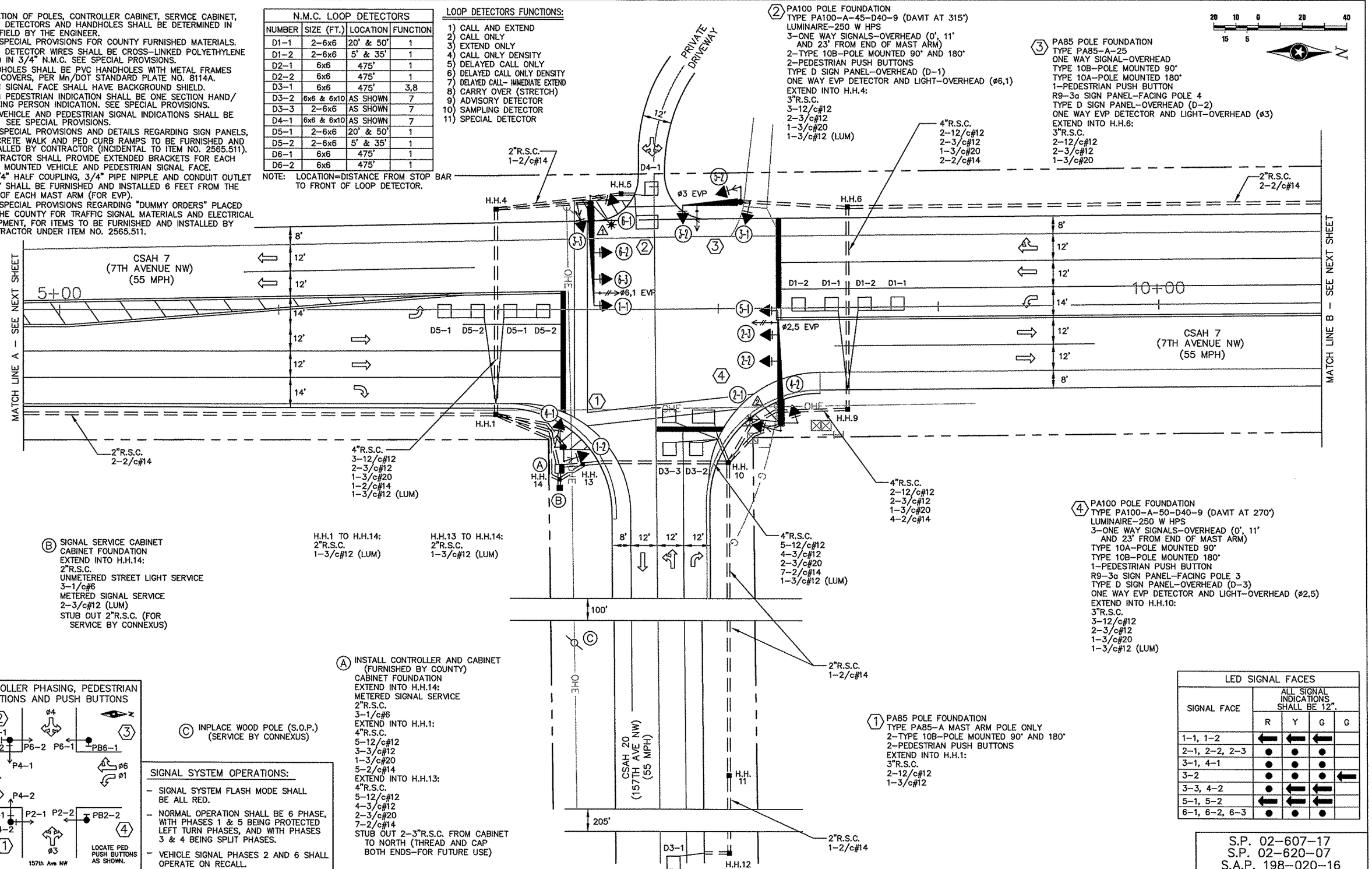
1) LOCATION OF POLES, CONTROLLER CABINET, SERVICE CABINET, LOOP DETECTORS AND HANDHOLES SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER.
2) SEE SPECIAL PROVISIONS FOR COUNTY FURNISHED MATERIALS.
3) LOOP DETECTOR WIRES SHALL BE CROSS-LINKED POLYETHYLENE (XLP) IN 3/4" N.M.C. SEE SPECIAL PROVISIONS.
4) HANDHOLES SHALL BE PVC HANDHOLES WITH METAL FRAMES AND COVERS, PER Mn/DOT STANDARD PLATE NO. 8114A.
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 AND PEDESTRIAN SIGNAL INDICATIONS SHALL BE LED. SEE SPECIAL PROVISIONS.
8) SEE SPECIAL PROVISIONS AND DETAILS REGARDING SIGN PANELS, CONCRETE WALK AND PED CURB RAMPS TO BE FURNISHED AND INSTALLED BY CONTRACTOR (INCIDENTAL TO ITEM NO. 2565.511).
9) CONTRACTOR SHALL PROVIDE EXTENDED BRACKETS FOR EACH POLE MOUNTED VEHICLE AND PEDESTRIAN SIGNAL FACE.
10) A 3/4" HALF COUPLING, 3/4" PIPE NIPPLE AND CONDUIT OUTLET BODY SHALL BE FURNISHED AND INSTALLED 6 FEET FROM THE END OF EACH MAST ARM (FOR EVP).
11) SEE SPECIAL PROVISIONS REGARDING "DUMMY ORDERS" PLACED BY THE COUNTY FOR TRAFFIC SIGNAL MATERIALS AND ELECTRICAL EQUIPMENT, FOR ITEMS TO BE FURNISHED AND INSTALLED BY CONTRACTOR UNDER ITEM NO. 2565.511.

N.M.C. LOOP DETECTORS			
NUMBER	SIZE (FT.)	LOCATION	FUNCTION
D1-1	2-6x6	20' & 50'	1
D1-2	2-6x6	5' & 35'	1
D2-1	6x6	475'	1
D2-2	6x6	475'	1
D3-1	6x6	475'	3,8
D3-2	6x6 & 6x10	AS SHOWN	7
D3-3	2-6x6	AS SHOWN	7
D4-1	6x6 & 6x10	AS SHOWN	7
D5-1	2-6x6	20' & 50'	1
D5-2	2-6x6	5' & 35'	1
D6-1	6x6	475'	1
D6-2	6x6	475'	1

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



② PA100 POLE FOUNDATION
TYPE PA100-A-45-D40-9 (DAVIT AT 315')
LUMINAIRE-250 W HPS
3-ONE WAY SIGNALS-OVERHEAD (0', 11' AND 23' 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 (ø6,1)
EXTEND INTO H.H.4:
3"R.S.C.
3-12/c#12
2-3/c#12
1-3/c#20
1-3/c#12 (LUM)

③ PA85 POLE FOUNDATION
TYPE PA85-A-25
ONE WAY SIGNAL-OVERHEAD
TYPE 10B-POLE MOUNTED 90°
TYPE 10A-POLE MOUNTED 180°
1-PEDESTRIAN PUSH BUTTON
R9-3a SIGN PANEL-FACING POLE 4
TYPE D SIGN PANEL-OVERHEAD (D-2)
ONE WAY EVP DETECTOR AND LIGHT-OVERHEAD (ø3)
EXTEND INTO H.H.6:
3"R.S.C.
2-12/c#12
2-3/c#12
1-3/c#20

④ PA100 POLE FOUNDATION
TYPE PA100-A-50-D40-9 (DAVIT AT 270')
LUMINAIRE-250 W HPS
3-ONE WAY SIGNALS-OVERHEAD (0', 11' AND 23' 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 3
TYPE D SIGN PANEL-OVERHEAD (D-3)
ONE WAY EVP DETECTOR AND LIGHT-OVERHEAD (ø2,5)
EXTEND INTO H.H.10:
3"R.S.C.
3-12/c#12
2-3/c#12
1-3/c#20
1-3/c#12 (LUM)

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

H.H.1 TO H.H.14:
2"R.S.C.
1-3/c#12 (LUM)

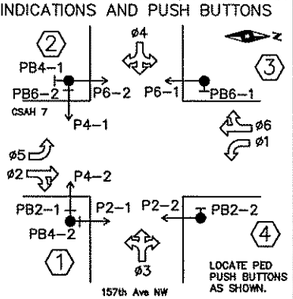
H.H.13 TO H.H.14:
2"R.S.C.
1-3/c#12 (LUM)

Ⓐ 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.
5-12/c#12
3-3/c#12
1-3/c#20
5-2/c#14
EXTEND INTO H.H.13:
4"R.S.C.
5-12/c#12
4-3/c#12
2-3/c#20
7-2/c#14
STUB OUT 2-3"R.S.C. FROM CABINET TO NORTH (THREAD AND CAP BOTH ENDS-FOR FUTURE USE)

Ⓒ INPLACE WOOD POLE (S.O.P.) (SERVICE BY CONNEXUS)

① PA85 POLE FOUNDATION
TYPE PA85-A MAST ARM POLE ONLY
2-TYPE 10B-POLE MOUNTED 90° AND 180°
2-PEDESTRIAN PUSH BUTTONS
EXTEND INTO H.H.1:
3"R.S.C.
2-12/c#12
1-3/c#12

CONTROLLER PHASING, PEDESTRIAN INDICATIONS AND PUSH BUTTONS



SIGNAL SYSTEM OPERATIONS:

- SIGNAL SYSTEM FLASH MODE SHALL BE ALL RED.
- NORMAL OPERATION SHALL BE 6 PHASE, WITH PHASES 1 & 5 BEING PROTECTED LEFT TURN PHASES, AND WITH PHASES 3 & 4 BEING SPLIT PHASES.
- VEHICLE SIGNAL PHASES 2 AND 6 SHALL OPERATE ON RECALL.

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

S.P. 02-607-17
S.P. 02-620-07
S.A.P. 198-020-16

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: JMG	1	JMG	03/03	REVISED PER COUNTY COMMENTS
DESIGNER: JMG	2	JMG	05/03	ADDED NOTE 11 PER COUNTY COMMENTS
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: April 23, 2001
John M. Gray, P.E.
Lic. No. 22457

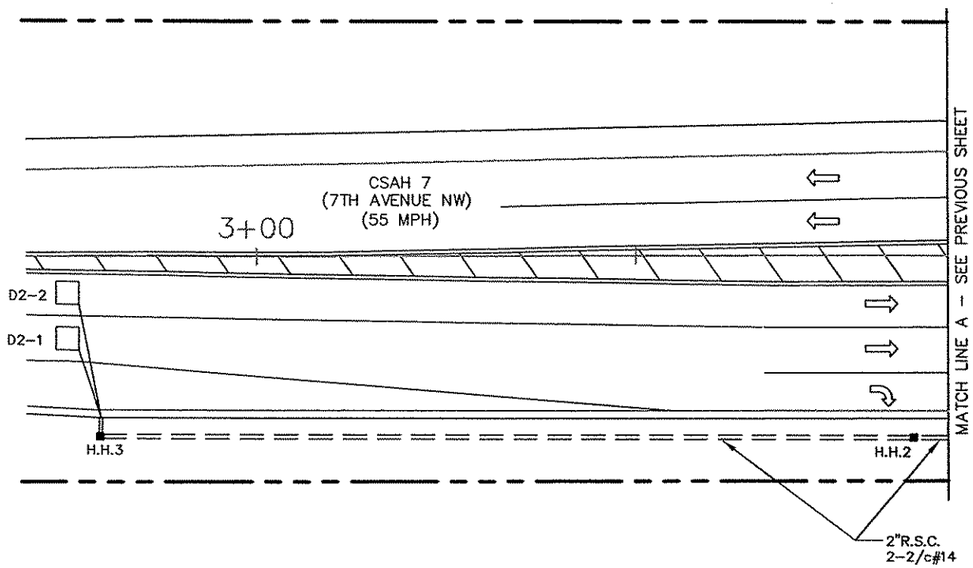
SEH®
PHONE: (651) 490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

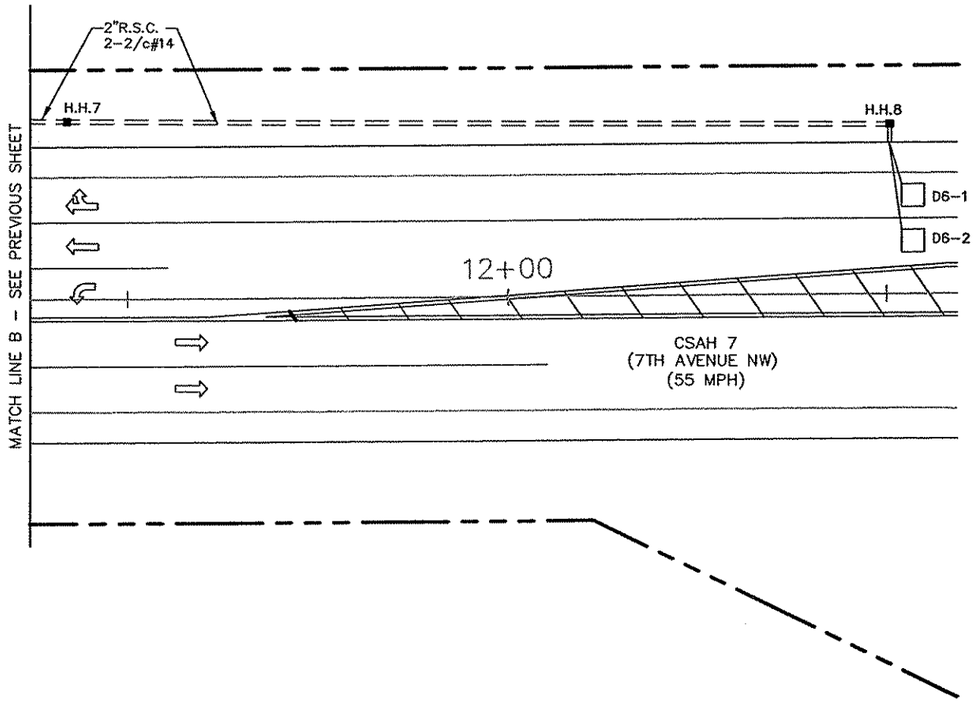
ANOKA COUNTY
CSAH 7 (7TH AVENUE)
S.P. 02-607-17
S.P. 02-620-07
S.A.P. 198-020-16

TRAFFIC SIGNAL SYSTEM INTERSECTION LAYOUT
CSAH 7 AT CSAH 20

FILE NO. ANOKC9902.01
DATE 4-23-01
34 / 45

C:\CLIENTS\A_T_A\ANOKC\9902.01\TRAFFIC\SIGNALS\T202SIG.DWG 5/11/01





S.P. 02-607-17
S.P. 02-620-07
S.A.P. 198-020-16

DRAWN BY: JMG
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: April 23, 2001 John M. Croy, P.E. Lic. No. 22457

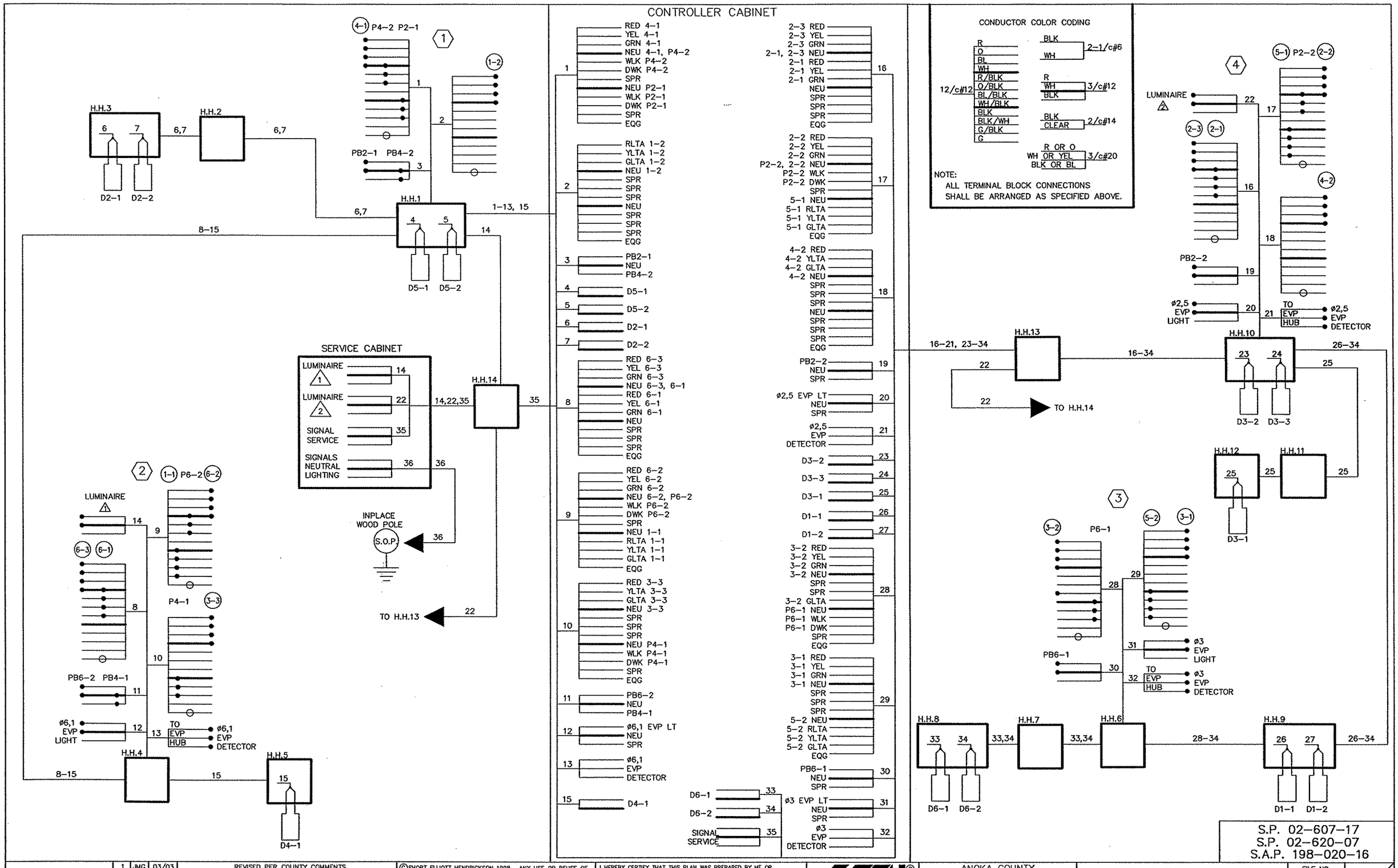
SEH®
PHONE: (651) 490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

ANOKA COUNTY
CSAH 7 (7TH AVENUE)
S.P. 02-607-17
S.P. 02-620-07
S.A.P. 198-020-16

TRAFFIC SIGNAL SYSTEM
INTERSECTION LAYOUT
CSAH 7 AT CSAH 20

FILE NO. ANOKC9902.01
DATE 4-23-01
35 / 45

G:\CLIENTS\ANOKC\9902.01\TRAFFIC\SIGNALS\7202SIG.DWG
5/11/01



S.P. 02-607-17
S.P. 02-620-07
S.A.P. 198-020-16

DRAWN BY: JMG	1	JMG	03/03	REVISED PER COUNTY COMMENTS	©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. Gray, P.E. Date: April 23, 2001 Lic. No. 22457
DESIGNER: JMG						
CHECKED BY: JMG						
DESIGN TEAM	NO.	BY	DATE	REVISIONS		

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

ANOKA COUNTY
CSAH 7 (7TH AVENUE)
S.P. 02-607-17
S.P. 02-620-07
S.A.P. 198-020-16

TRAFFIC SIGNAL SYSTEM
FIELD WIRING DIAGRAM
CSAH 7 AT CSAH 20

FILE NO. ANOKC9902.01
DATE 4-23-01
36 / 45

C:\CLIENTS\A_F\ANOKC\9902.01\TRAFFIC\SIGNALS\720WIRE.DWG
5/11/01

SIGN PANELS TYPE "C"

SIGN NO.	QUANT.	POSTS NO. & TYPE	POSTS KNEE BRACES QUANT.	POSTS LENGTH	MTG. HT. (ft) (1)	PANEL SIZE (in.)	PANEL AREA (ft^2)	PANEL TOTAL AREA (ft^2)	MMUTCD CODE	PANEL LEGEND	NOTE
C-1	1	1-U	–	13.0	7	30 x 30	6.25	6.25	R1-1	STOP	
C-2	1	2-U		13.5	7	36 x 36	9.00	9.00	R1-1	STOP	
						36 x 12	3.00	3.00	R1-X2	CROSS TRAFFIC DOES NOT STOP	
C-3	1	2-U	–	14.5	7	48 x 48	16.00	16.00	R1-1	STOP	
						36 x 12	3.00	3.00	R1-X2	CROSS TRAFFIC DOES NOT STOP	(2)
						15"			–	CYLINDER DELINEATOR	
C-4	2	1-U		13.0	7	24 x 30	5.00	10.00	R2-1	SPEED LIMIT 55	
C-5	3	2-U		14.5	7	36 x 48	12.00	36.00	R2-1	SPEED LIMIT 55	
C-6	1	2-U	–	13.0	7	66 x 30	13.75	13.75	R3-30ACCA	LANE DESIGNATIONS (LEFT; THRU; THRU; RIGHT)	
C-7	2	2-U	–	13.0	7	48 x 30	7.50	15.00	R3-30ACD	LANE DESIGNATIONS (LEFT; THRU; THRU/RIGHT)	
C-8	1	1-U	–	13.0	7	36 x 30	7.50	7.50	R3-30DA	LANE DESIGNATIONS (THRU/LEFT; RIGHT ONLY)	
C-9	1	1-U	–	13.0	7	30 x 30	6.25	6.25	R3-X1	RIGHT TURN LANE	
						48 x 24	8.00	8.00	W1-7	DOUBLE ARROW	
C-10	1	2-U	–	12.5	7	18 x 18			X4-2	HAZARD MARKER	(3)
						18 x 18			X4-2	HAZARD MARKER	(3)
C-11	1	2-U	–	15.0	7	36 x 36	9.00	9.00	W3-3	SIGNAL AHEAD	
C-12	1	2-U	–	15.0	7	36 x 36	9.00	9.00	W3-3	SIGNAL AHEAD	(7)
C-13	3	2-U	–	15.0	7	48 X 48	16.00	48.00	W3-3	SIGNAL AHEAD	
C-14	1	2-U	–	15.0	7	36 x 36	9.00	9.00	W4-2R	RIGHT LANE REDUCTION	
C-15	2	1-U	–	15.0	8	24 x 24	4.00	8.00	M1-6	ANOKA COUNTY ROAD 7	(4)
						21 x 15	2.19	4.38	M6-4A	DOUBLE ARROW	(5)
C-16	1	1-U	–	15.0	8	24 x 24	4.00	4.00	M1-6	ANOKA COUNTY ROAD 20	(4)
						21 x 15	2.19	2.19	M6-1A	ARROW (POINTED LEFT)	(5)
C-17	1	1-U	–	15.0	8	24 x 24	4.00	4.00	M1-6	ANOKA COUNTY ROAD 20	(4)
						21 x 15	2.19	2.19	M6-1A	ARROW (POINTED RIGHT)	(5)
C-18	1	1-U	–	15.0	8	24 x 24	4.00	4.00	M1-6	ANOKA COUNTY ROAD 58	(4)
						21 x 15	2.19	2.19	M6-1A	ARROW (POINTED LEFT)	(5)
C-19	1	1-U	–	15.0	8	24 x 24	4.00	4.00	M1-6	ANOKA COUNTY ROAD 58	(4)
						21 x 15	2.19	2.19	M6-1A	ARROW (POINTED RIGHT)	(5)
C-20	1	1-U	–	15.0	8	21 x 15	2.19	2.19	M2-1A	JCT	(5)
						24 x 24	4.00	4.00	M1-6	ANOKA COUNTY ROAD 7	(4)
C-21	2	1-U	–	15.0	8	21 x 15	2.19	4.38	M2-1A	JCT	(5)
						24 x 24	4.00	8.00	M1-6	ANOKA COUNTY ROAD 20	(4)
C-22	2	1-U	–	15.0	8	21 x 15	2.19	4.38	M2-1A	JCT	(5)
						24 x 24	4.00	8.00	M1-6	ANOKA COUNTY ROAD 58	(4)
C-23	1	1-U	–	14.5	8	24 x 12	2.00	2.00	M3-1A	NORTH	(5)
						24 x 24	4.00	4.00	M1-6	ANOKA COUNTY ROAD 7	(4)
C-24	1	1-U	–	12.5	7	24 x 12	2.00	2.00	M3-1A	NORTH	(5)
						24 x 24	4.00	4.00	M1-6	ANOKA COUNTY ROAD 7	(4)
						24 x 24			–	P.O.W./M.I.A. MEMORIAL HIGHWAY (C-1XX)	(6)
C-25	1	2-U	–	14.5	8	24 x 12	2.00	2.00	M3-1A	NORTH	(2,5)
						24 x 24	4.00	4.00	M1-6	ANOKA COUNTY ROAD 58	(2,4)
						36 x 36	9.00	9.00	R1-1	STOP	(7)
						36 x 12	3.00	3.00	R1-X2	CROSS TRAFFIC DOES NOT STOP	
C-26	1	1-U	–	14.5	8	24 x 12	2.00	2.00	M3-2A	EAST	(5)
						24 x 24	4.00	4.00	M1-6	ANOKA COUNTY ROAD 20	(4)
C-27	1	1-U	–	14.5	8	24 x 12	2.00	2.00	M3-3A	SOUTH	(5)
						24 x 24	4.00	4.00	M1-6	ANOKA COUNTY ROAD 7	(4)
C-28	1	1-U	–	12.5	7	24 x 12	2.00	2.00	M3-3A	SOUTH	(5)
						24 x 24	4.00	4.00	M1-6	ANOKA COUNTY ROAD 7	(4)
						24 x 24			–	P.O.W./M.I.A. MEMORIAL HIGHWAY (C-1XX)	(6)
C-29	1	1-U	–	14.5	8	24 x 12	2.00	2.00	M4-6A	END	(5)
						24 x 24	4.00	4.00	M1-6	ANOKA COUNTY ROAD 20	(4)
C-29	1	1-U	–	14.5	8	66 x 12	5.50	5.50	–	"AT SIGNAL"	
						66 x 30	13.75	13.75	R3-30ACCA	LANE DESIGNATIONS (LEFT; THRU; THRU; RIGHT)	
TOTAL	40							376.34			

SALVAGE SIGNS TYPE "C"

SIGN NO.	QUANT.	POSTS NO. & TYPE	POSTS KNEE BRACES QUANT.	PANEL SIZE (in.)	MMUTCD CODE	PANEL LEGEND	NOTE
C-100	1	1-U	–	30 x 30	R1-1	STOP	
C-101	1	2-U	–	36 x 36	R1-1	STOP	
C-102	2	2-U	–	48 x 48	R1-1	STOP	
				15"	–	CYNDER DELINEATOR	(2)
C-103	5	1-U	–	24 x 30	R2-1	SPEED LIMIT 55	
C-104	3	1-U	–	30 x 30	R3-X1	RIGHT TURN LANE	
C-105	2	1-U	–	30 x 30	R3-7R	RIGHT LANE MUST TURN RIGHT	
C-106	2	2-U	–	60 x 48	R16-X9	STATE LAW; UNLAWFUL TO PASS ON SHOULDER	
C-107	1	2-U	–	48 x 24	W1-7	DOUBLE ARROW	
				18 x 18	X4-2	HAZARD MARKER	(3)
				18 x 18	X4-2	HAZARD MARKER	(3)
C-108	1	2-U	–	48 x 48	W3-1	STOP AHEAD	
C-109	2	1-U	–	24 x 24	M1-6	ANOKA COUNTY ROAD 7	(4)
				21 x 15	M6-4A	DOUBLE ARROW	(5)
C-110	1	1-U	–	24 x 24	M1-6	ANOKA COUNTY ROAD 20	(4)
				21 x 15	M6-1A	ARROW (POINTED LEFT)	(5)
C-111	1	1-U	–	24 x 24	M1-6	ANOKA COUNTY ROAD 20	(4)
				21 x 15	M6-1A	ARROW (POINTED RIGHT)	(5)
C-112	1	1-U	–	24 x 24	M1-6	ANOKA COUNTY ROAD 58	(4)
				21 x 15	M6-1A	ARROW (POINTED LEFT)	(5)
C-113	1	1-U	–	24 x 24	M1-6	ANOKA COUNTY ROAD 58	(4)
				21 x 15	M6-1A	ARROW (POINTED RIGHT)	(5)
C-114	1	1-U	–	21 x 15	M2-1A	JCT	(5)
				24 x 24	M1-6	ANOKA COUNTY ROAD 7	(4)
C-115	2	1-U	–	21 x 15	M2-1A	JCT	(5)
				24 x 24	M1-6	ANOKA COUNTY ROAD 20	(4)
C-115	2	1-U	–	21 x 15	M2-1A	JCT	(5)
				24 x 24	M1-6	ANOKA COUNTY ROAD 58	(4)
C-116	2	1-U	–	21 x 15	M3-1A	NORTH	(5)
				24 x 24	M1-6	ANOKA COUNTY ROAD 7	(4)
C-117	1	2-U	–	21 x 15	M3-1A	NORTH	(5)
				24 x 24	M1-6	ANOKA COUNTY ROAD 58	(4)
				36 x 36	R1-1	STOP	(7)
C-118	1	1-U	–	21 x 15	M3-2A	EAST	(5)
				24 x 24	M1-6	ANOKA COUNTY ROAD 20	(4)
C-119	2	1-U	–	21 x 15	M3-3A	SOUTH	(5)
				24 x 24	M1-6	ANOKA COUNTY ROAD 7	(4)
C-120	1	1-U	–	21 x 15	M6-4A	END	(5)
				24 x 24	M1-6	ANOKA COUNTY ROAD 20	(4)
C-121	2	1-U	–	–	–	EMPTY POST	
TOTAL	38						

SPECIFIC NOTES

(1) Mounting height is minimum. See Special Provisions
(2) Mounted on left sign post.
(3) Yellow on Yellow.
(4) White and Yellow on Blue.
(5) White on Blue.
(6) Install Salvaged Sign.
(7) Install back to back.

G:\CLIENTS\A_F\ANOKC\9902.01\TRAFFIC\SIGN&STRIPE\YST01.DWG
DATE: 04-10-01 TIME: 7:56 am USER: CPULSSP
XREFS:

DRAWN BY: MJM
DESIGNER: MJM
CHECKED BY: TAS
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.
Thomas A. Sohrweide, P.E.
Date: 4/23/01 Reg. No. 20943

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

ANOKA COUNTY
CSAH 7 (7th Ave.)
S.P. 02-607-17
S.P. 02-620-07
S.A.P. 198-020-16

SIGNING AND STRIPING PLANS
TABULATIONS

FILE NO. AANOKC0002.00
DATE 4/23/01

SALVAGE AND INSTALL SIGNS TYPE "C"

SIGN NO.	QUANT.	POSTS NO. & TYPE	POSTS KNEE BRACES QUANT.	PANEL SIZE (in.)	MMUTCD CODE	PANEL LEGEND	NOTE
C-125	2	–	–	24 x 24	–	P.O.W./M.I.A. MEMORIAL HIGHWAY	(6)
C-126	1	1-U	–	18 x 30	–	FAMILY OF CHRIST...	(6)
				18 x 30	–	FAMILY OF CHRIST...	(6,7)
C-127	1	1-U	–	30 x 24	–	ADOPT-A-HIGHWAY; ANOKA WOMEN OF TODAY	(6,7)
TOTAL	4						

SPECIFIC NOTES

(1) Mounting height is minimum. See Special Provisions
(2) Mounted on left sign post.
(3) Yellow on Yellow.
(4) White and Yellow on Blue.
(5) White on Blue.
(6) Install Salvaged Sign.
(7) Install back to back.

LEGEND OF SYMBOLS

- TYPE "C" SIGN PANEL SUPPORT (SEE TABLE FOR NUMBER OF POSTS.)
- 4" DOUBLE SOLID YELLOW PAVEMENT MARKINGS
- 4" SOLID WHITE PAVEMENT MARKINGS
- 4" BROKEN WHITE PAVEMENT MARKINGS
- PAVEMENT MESSAGES
- ZEBRA CROSSWALK – WHITE
- 24" SOLID WHITE STOP BAR
- 4" DOUBLE SOLID YELLOW WITH 24" SOLID YELLOW AT 45° (20' SPACING)
- ① FURNISH AND INSTALL TYPE "C" SIGN OR DELINEATOR
- ② INPLACE TYPE "C" SIGN OR DELINEATOR
- ③ SALVAGE TYPE "C" SIGN OR DELINEATOR
- ④ INSTALL TYPE "C" SIGN OR DELINEATOR
- SYMBOL FOR INPLACE STREET NAME SIGN AND POST TO BE SALVAGED AND INSTALLED BY CONTRACTOR

SALVAGE STREET NAME SIGNS

SIGN NO.	QUANT.	NO. OF POSTS & TYPE	PANEL LEGEND	NOTE
S-100	1	1-R	7TH AV NW	
			157TH AV NW	
TOTAL	1			

SALVAGE AND INSTALL STREET NAME SIGNS

SIGN NO.	QUANT.	NO. OF POSTS & TYPE	PANEL LEGEND	NOTE
S-101	1	1-R	7TH AV NW	
			159TH AV NW	
S-102	1	1-R	CTY RD 7	
			VALLEY DRIVE NW	
TOTAL	2			

DELINEATORS AND MARKERS

SIGN NO.	QUANT.	NO. OF POSTS & TYPE	LOCATION	NOTE
CYL.	1	15"	BELOW C-3	(2)
CYL.	1	15"	NB DITCH	
X4-2	2	18 x 18	BELOW C-10	(3)
TOTAL	4			

SALVAGE DELINEATORS AND MARKERS

TYPE	QUANT.	SIZE	LOCATION
CYL.	2	15"	BELOW C-102
CYL.	1	15"	NB DITCH
X4-2	2	18 x 18	BELOW C-107
TOTAL	5		

PAVEMENT MARKING TABULATION

ITEM	UNIT	QUANT.
4" SOLID LINE WHITE – LATEX	ft	7900
4" BROKEN LINE WHITE – LATEX	ft	830
4" DOUBLE SOLID LINE YELLOW – LATEX	ft	4700
24" SOLID LINE WHITE – POLY-PREFORMED	ft	110
24" SOLID LINE YELLOW – LATEX	ft	720
ZEBRA CROSSWALK WHITE – POLY-PREFORMED	ft^2	630
PAVEMENT MESSAGE WHITE (LEFT ARROW) – POLY-PREFORMED	EACH	7
PAVEMENT MESSAGE WHITE (RIGHT ARROW) – POLY-PREFORMED	EACH	7

1.5" Radius, 0.4" Border, 0.4" Indent, Black on White;
[AT SIGNAL] D;

GENERAL NOTES

1. Location of all signs and pavement markings shown are approximate and shall be located by the Engineer in the field prior to installation
2. See Mn/DOT Standard Signs Manual for punching code and detailed drawings for Type "C" sign details.
3. Punching codes for Type "C" sign panels shall be governed by the number of sign posts specified on the plans at each location (Not by what is shown on the detailed drawings in the Standard Signs Manual). Dimensions shall be specified on pages 108–111 of the Standard Signs Manual.
4. See detail sheets in the Special Provisions for details regarding sign structures, sign posts and other applicable details.
5. All traffic control devices shall conform to the Minnesota Manual on Uniform Traffic Control Devices, including the Field Manual for Temporary Traffic Control Zone layouts (Dated January, 2001).
6. Coordinate installation of all posts and pavement markings with road construction.
7. Stop bars shall be epoxy pavement marking material. See special provisions.
8. Post lengths are approximate and include embedment, but do not include additional length required for splice.
9. All riser (vertical) "U" posts shall be spliced. Driven stub posts shall be at least 7' long.
10. Use 3# riser stub posts, risers, stringers and lateral braces. All shown to conform to Mn/DOT 3401.
12. Use stainless steel 5/16" bolts, washers and nylon insert locks as shown for all ground mounted and overhead signs.
13. Multiple post Type "C" signs shall be reinforced with at least one lateral brace. Installations where the total panel height is 60" or more shall have two lateral braces located approximately at the quater points.

DRAWN BY: MJM
DESIGNER: MJM
CHECKED BY: TAS
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.
Thomas A. Sohrweide, P.E.
Date: 4/23/01 Reg. No. 20943

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

ANOKA COUNTY
CSAH 7 (7th Ave.)
S.P. 02-607-17
S.P. 02-620-07
S.A.P. 198-020-16

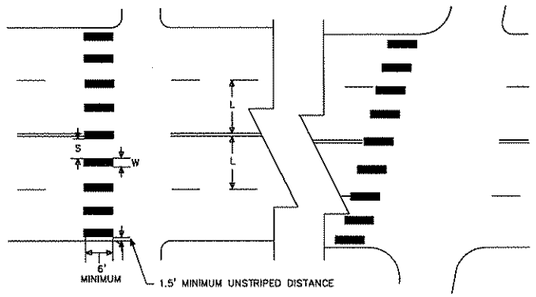
SIGNING AND STRIPING PLANS TABULATIONS

FILE NO. AANOKC0002.00
DATE 4/23/01
38/45

G:\CLIENTS\A-F\ANOKC\9802.01\TRAFFIC\SIGNASTRIPE\7S702.DWG
DATE: 05-15-01 TIME: 2:09 pm USER: CPU153SP
XREFS:

MARKINGS FOR PEDESTRIAN CROSSWALKS

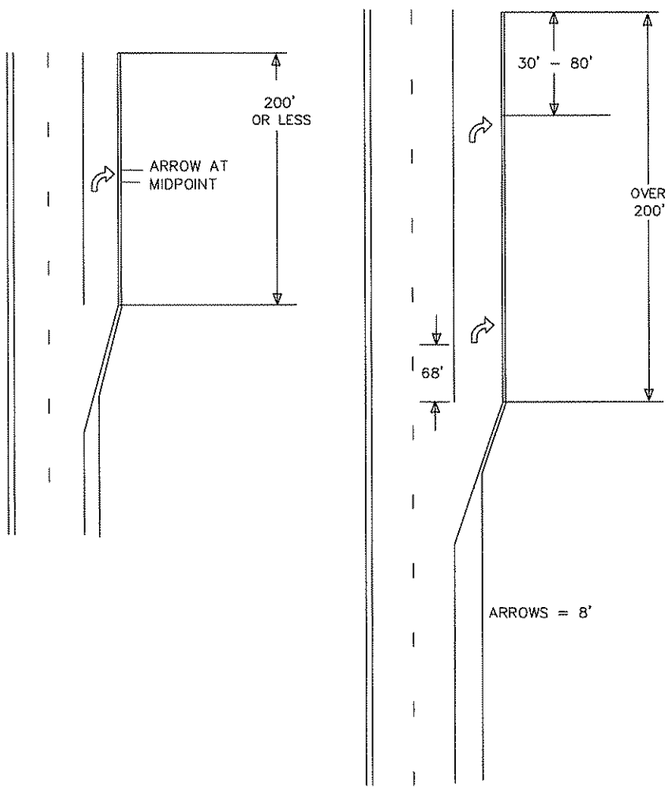
(L) WIDTH OF INSIDE LANE	(W) WIDTH OF PAINTED AREA	(S) WIDTH OF SPACE
9'	2.0'	2.5'
10'	2.5'	2.5'
11'	2.5'	3.0'
12'	3.0'	3.0'
13'	3.0'	3.5'



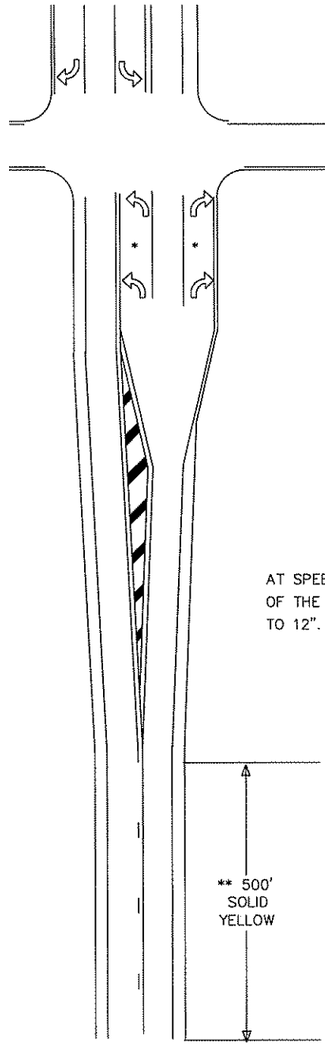
NOTES:

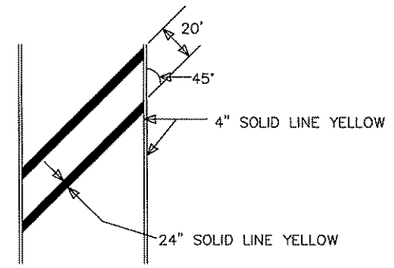
1. PAINTED AREAS TO BE CENTERED ON CENTERLINE AND LANE LINES.
2. A MINIMUM OF 1.5 FEET CLEAR DISTANCE SHALL BE LEFT ADJACENT TO THE CURB. IF LAST PAINTED AREA FALLS INTO THIS DISTANCE IT MUST BE OMITTED.
3. ON TWO LANE TWO WAY STREETS, USE SPACING SHOWN FOR AN 11 FOOT INSIDE LANE.
4. FOR DIVIDED ROADWAYS, ADJUSTMENTS IN SPACING OF THE BLOCKS SHOULD BE MADE IN THE MEDIAN SO THAT THE BLOCKS ARE MAINTAINED IN THEIR PROPER LOCATION ACROSS THE TRAVELED PORTION OF THE ROADWAY.
5. AT SKEWED CROSSWALKS, THE BLOCKS ARE TO REMAIN PARALLEL TO THE LANE LINES AS SHOWN.

TYPICAL MESSAGE PLACEMENT FOR TURN LANES



TYPICAL MARKINGS FOR LEFT TURN ISLANDS





AT SPEEDS LESS THAN 40 MPH THE WIDTH OF THE CROSSHATCH LINE MAY BE REDUCED TO 12".

DRAWN BY: MJM
DESIGNER: MJM
CHECKED BY: TAS
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.
Thomas A. Sohrweide, P.E.
Date: 4/23/01 Reg. No. 20943

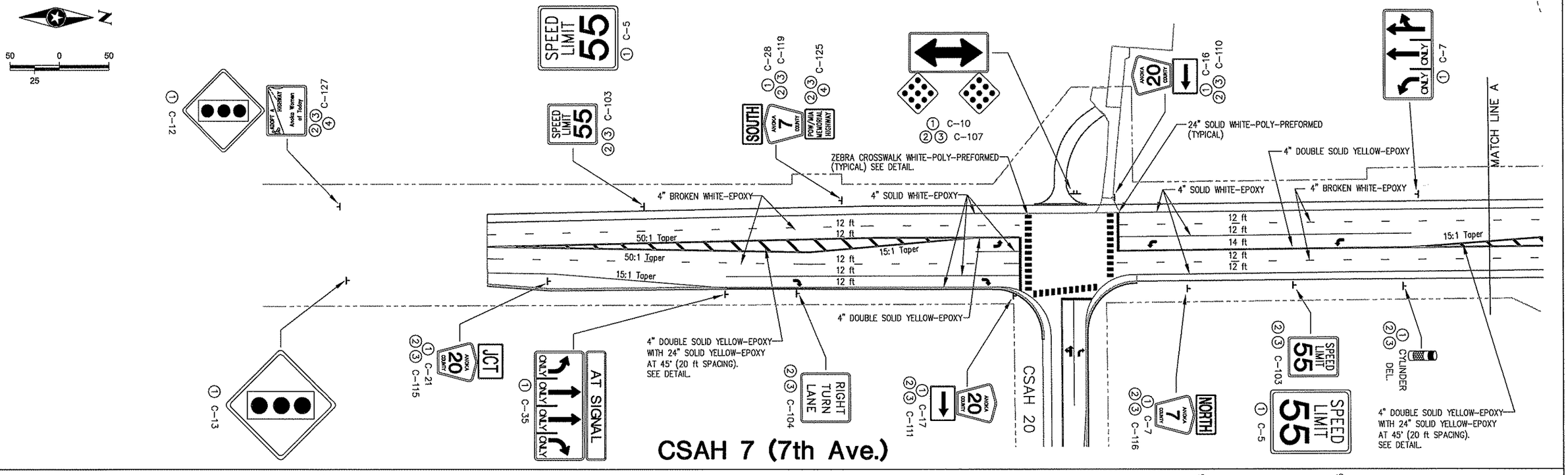
SEH®
PHONE: (651) 490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

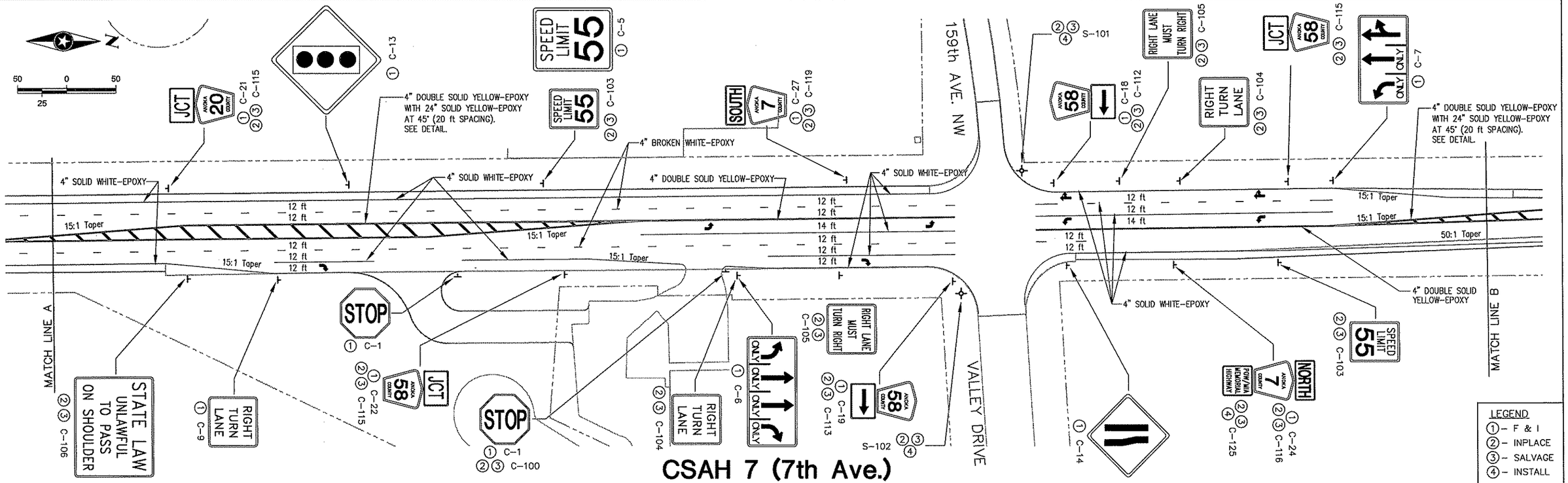
ANOKA COUNTY
CSAH 7 (7th Ave.)
S.P. 02-607-17
S.P. 02-620-07
S.A.P. 198-020-16

SIGNING AND STRIPING PLANS DETAILS

FILE NO. AANOKC0002.00
DATE 4/23/01
39/45

G:\CLIENTS\A-F\ANOKC\9902.01\TRAFFIC\SIGN&STRIPE\TST03.DWG
DATE: 04-10-01 TIME: 8:09 am USER: CPUTSSP
XREFS:





LEGEND
1 – F & I
2 – INPLACE
3 – SALVAGE
4 – INSTALL

DRAWN BY: MJM	NO.	BY	DATE	REVISIONS
DESIGNER: MJM				
CHECKED BY: TAS				
DESIGN TEAM				

©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.
Thomas A. Sohrweide, P.E.
Date: 4/23/01 Reg. No. 20943

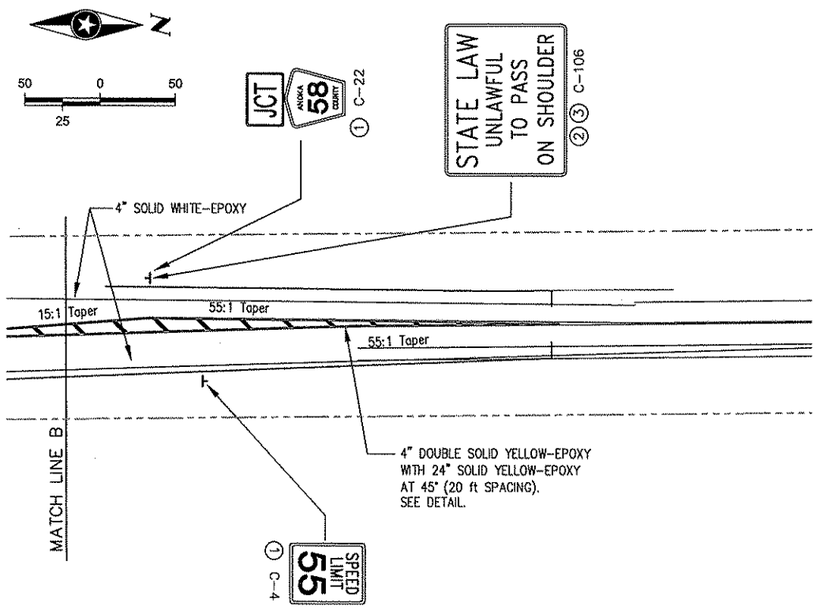
SEH®
PHONE: (651) 490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

ANOKA COUNTY
CSAH 7 (7th Ave.)
S.P. 02-607-17
S.P. 02-620-07
S.A.P. 198-020-16

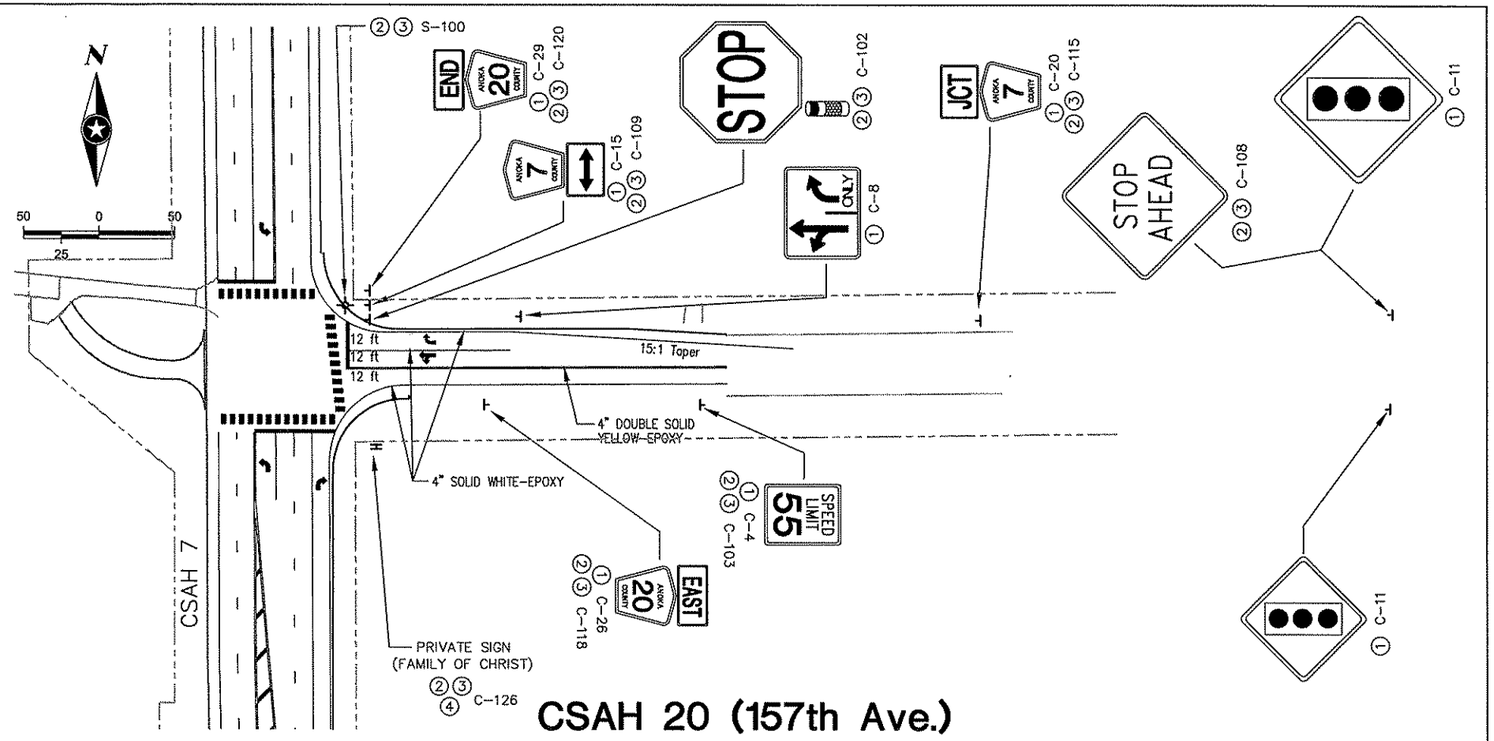
SIGNING AND STRIPING PLANS

FILE NO. AANOKC0002.00
DATE 4/23/01
40 / 45

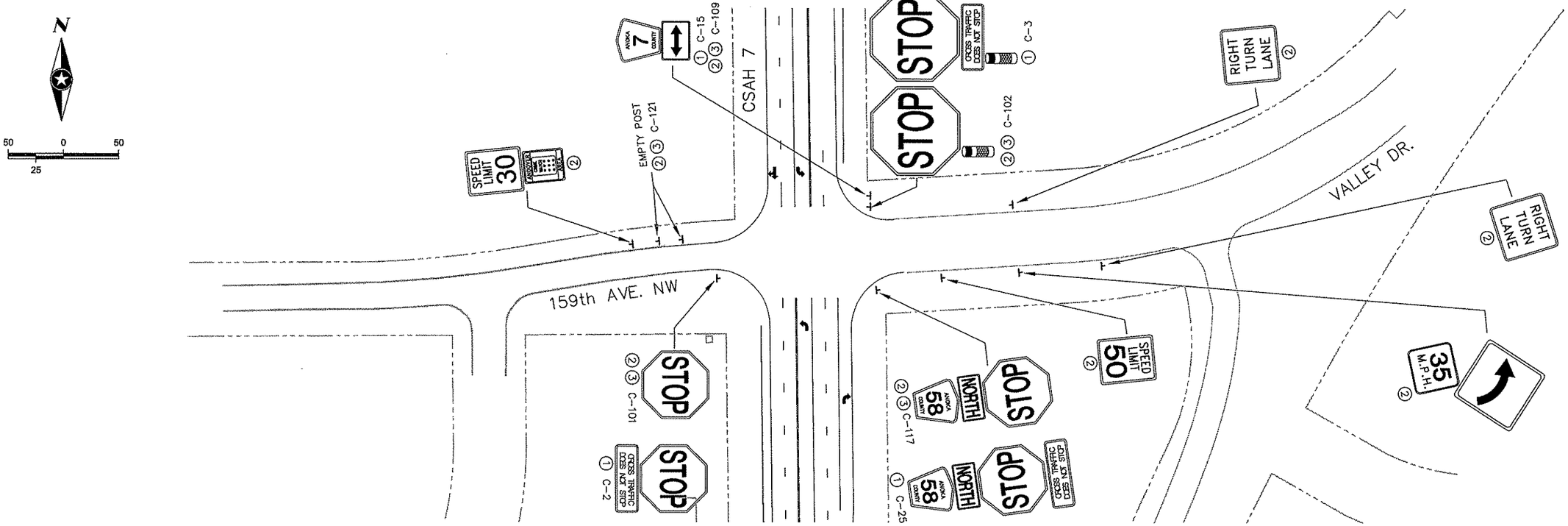
W:\AE\ANOKC\98020\TRAFFIC\SIGN&STRIPE\7STO4.DWG
DATE: 05-13-03 TIME: 10:18 am USER: TTABLER
XREFS: Q:\CLIENTS\A_F\ANOKC\98020\01\TRAFFIC\SIGN&STRIPE\7-20SSBASE.



CSAH 7 (7th Ave.)



CSAH 20 (157th Ave.)



LEGEND
① – F & I
② – INPLACE
③ – SALVAGE
④ – INSTALL

W:\AE\ANOKC\9902001\TRAFFIC\SIGN&STRIPE\7STD5.DWG
DATE: 05-13-03 TIME: 9:18 am USER: TTABLER
XREFS: Q:\CLIENTS\A_F\ANOKC\9902.01\TRAFFIC\SIGN&STRIPE\7-20SSBASE,

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MJM				
DESIGNER: MJM				
CHECKED BY: TAS				

©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.
Thomas A. Schrweide, P.E.
Date: 4/23/01 Reg. No. 20943

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

ANOKA COUNTY
CSAH 7 (7th Ave.)
S.P. 02-607-17
S.P. 02-620-07
S.A.P. 198-020-16

SIGNING AND STRIPING PLANS

FILE NO. AANOKC0002.00
DATE 4/23/01
40a / 45

MATCH LINE A

Rum River

Round Lake

149th Ave. NW

S. Coon Creek Dr. NW

Bunker Lake Blvd. NW

7

9

116

47

ROAD WORK AHEAD W20-1

R11-3 ROAD CLOSED 2½ MILES AHEAD LOCAL TRAFFIC ONLY

DETOUR M4-10R

M6-3A M1-6 M3-1A M4-8 DETOUR NORTH

M4-9A M4-8 M1-6 END DETOUR

M5-1AR M1-6 M3-3A M4-8 DETOUR SOUTH

M6-1AR M1-6 M3-3A M4-8 DETOUR SOUTH

M5-1AR M1-6 M3-3A M4-8 DETOUR SOUTH

M4-8 M3-1A M1-6 M6-3A DETOUR NORTH

M4-8 M3-1A M1-6 M6-1AR DETOUR NORTH

M4-8 M3-1A M1-6 M5-1AR DETOUR NORTH

M4-8 M3-3A M1-6 M6-3A DETOUR SOUTH

M4-8 M3-1A M1-6 M6-3A DETOUR NORTH

M4-8 M3-1A M1-6 M6-1AR DETOUR NORTH

M4-8 M3-1A M1-6 M5-1AR DETOUR NORTH

M4-8 M3-1A M1-6 M6-3A DETOUR NORTH

M4-8 M3-1A M1-6 M6-3A DETOUR NORTH

M4-8 M3-1A M1-6 M6-1AR DETOUR NORTH

M4-8 M3-1A M1-6 M6-3A DETOUR NORTH

M4-8 M3-1A M1-6 M6-3A DETOUR NORTH

M4-8 M3-1A M1-6 M6-1AR DETOUR NORTH

M4-8 M3-1A M1-6 M5-1AR DETOUR NORTH

M4-8 M3-1A M1-6 M6-3A

MATCH LINE B

Roanoak St. NW

Valley Dr. NW

165th St. NW

Tulip St. NW

161st Ave. NW

159th Ave. NW

157th Ave. NW

149th Ave. NW

7th Ave. NW

Round Lake Blvd. NW

Rum River

Round Lake

MATCH LINE A

NOT TO SCALE

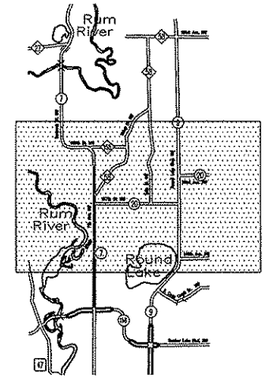
LEGEND

- TYPE "C" SIGN SUPPORT
- TYPE III BARRICADE SUPPORT
- TYPE "D" SIGN SUPPORT
- PROJECT LOCATION

NOTES

Drawing not to scale. Sign spacing shall be in accordance with the MMUTCD.

ANDOVER



DRAWN BY: MJM DESIGNER: MJM CHECKED BY: TAS 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. Thomas A. Sohrweide Date: 4/23/01 Thomas A. Sohrweide, P.E. Reg. No. 20943

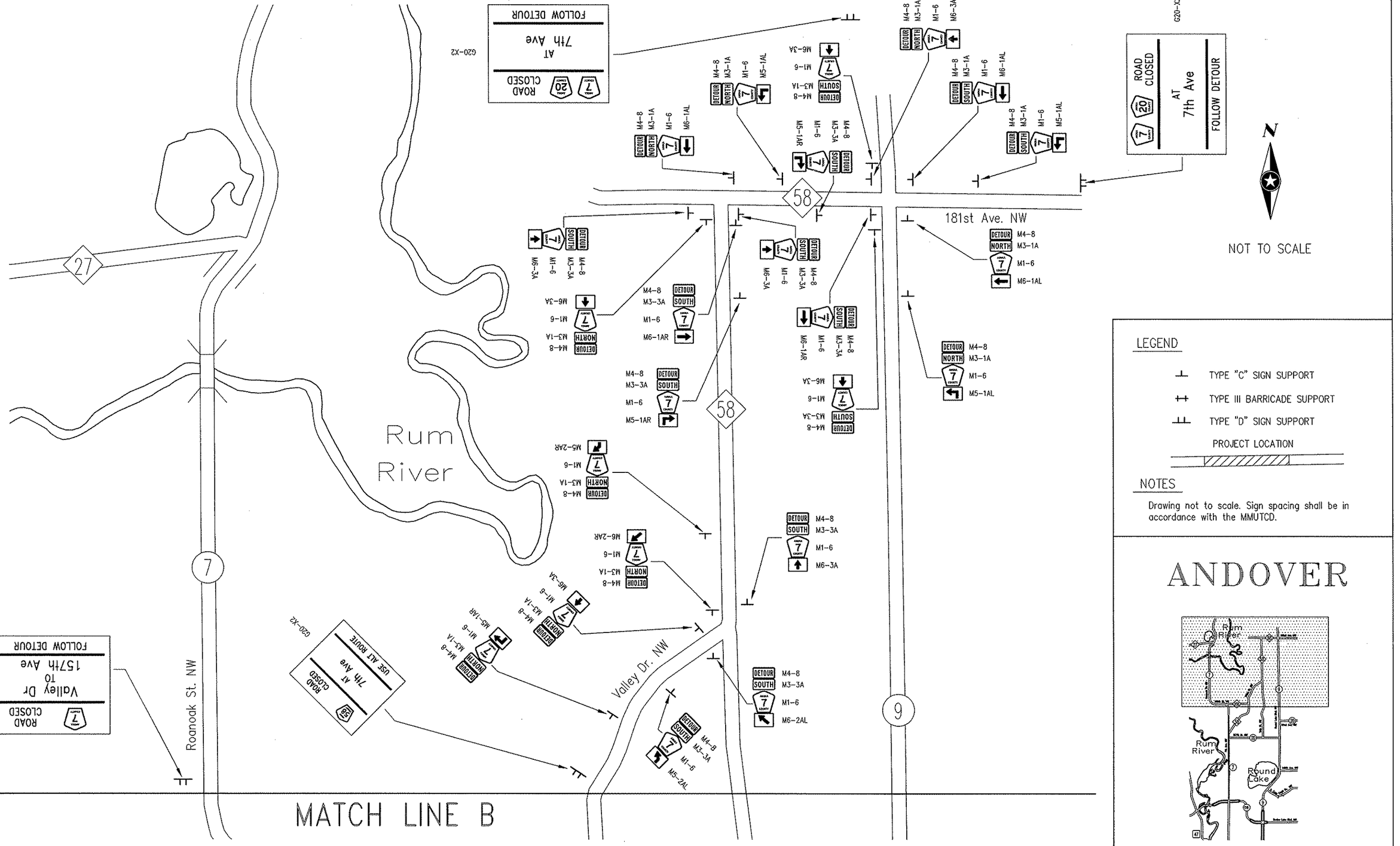
SEH®
PHONE: (651) 490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

ANOKA COUNTY
CSAH 7 (7th Ave.)
S.P. 02-607-17
S.P. 02-620-07
S.A.P. 198-020-16

DETOUR PLAN

FILE NO. AANOKC0002.00
DATE 4/23/01
42 / 45

G:\CLIENTS\A_F\ANOKC\9902.01\TRAFFIC\DETOUR\DET02.DWG
DATE: 04-16-01 TIME: 3:38 pm USER: CPUTSSP
XREFS:



LEGEND

- TYPE "C" SIGN SUPPORT
- TYPE III BARRICADE SUPPORT
- TYPE "D" SIGN SUPPORT
- PROJECT LOCATION

NOTES

Drawing not to scale. Sign spacing shall be in accordance with the MMUTCD.

ANDOVER

G:\CLIENTS\A_F\ANOKC\99002.01\TRAFFIC\DETOUR\DET03.DWG
DATE: 04-16-01 TIME: 4:31 pm USER: CPU153SP
XREFS:

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MJM				
DESIGNER: MJM				
CHECKED BY: TAS				

©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.

Thomas A. Sohrweide, P.E.
Date: 4/23/01 Reg. No. 20943

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

ANOKA COUNTY
CSAH 7 (7th Ave.)
S.P. 02-607-17
S.P. 02-620-07
S.A.P. 198-020-16

DETOUR PLAN

FILE NO. AANOKC0002.00
DATE 4/23/01

DETOUR NOTES & GUIDELINES

GENERAL INFORMATION:

1. THE DEVICES IN THIS DETOUR PLAN WILL BE FURNISHED, INSTALLED, AND MAINTAINED UNLESS OTHERWISE NOTED.

ALL TRAFFIC CONTROL DEVICES AND SIGNING SHALL CONFORM TO THE MMUTCD, INCLUDING FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS, JANUARY 2001.

SIGNING:

1. ALL TRAFFIC CONTROL DEVICES OPEN TO TRAFFIC THAT ARE NOT CONSISTENT WITH TRAFFIC OPERATION SHALL BE COVERED, REMOVED OR REVISED.
2. WHEN SIGNS ARE INSTALLED, THEY SHALL BE MOUNTED AT THE PROPER HEIGHT AND LATERAL OFFSET AS DETAILED IN THE MMUTCD.
3. ALL ORANGE SIGNS SHALL BE MADE OF DIAMOND GRADE ORANGE REFLECTIVE SHEETING OR AN APPROVED SUBSTITUTE.
4. THE REMOVAL OF THE TEMPORARY SIGNS WILL BE COORDINATED TO ASSURE THAT THE FINAL SIGNS ARE INSTALLED AS NEEDED, OR TEMPORARY SIGNING WILL BE PROVIDED UNTIL THE FINAL SIGNING IS INSTALLED.
5. PERMANENT SIGNING IN ACCORDANCE WITH THE SIGNING PLANS SHALL BE INSTALLED IN THOSE AREAS WHERE CONSTRUCTION IS SUBSTANTIALLY COMPLETED AT THE DIRECTION OF THE ENGINEER AS THE SIGNS ARE NEEDED TO REGULATE, GUIDE, OR WARN TRAFFIC IN THE PROJECT AREA.
6. ALL G20-X1 (ROAD CLOSED BEGINNING MONTH DAY) SIGNS SHALL BE INSTALLED A MINIMUM OF SEVEN DAYS PRIOR TO ACTUAL DATE OF ROAD CLOSURE AND IMPLEMENTATION OF DETOUR SIGNING. SIGNS TO BE REMOVED AT THE TIME OF DETOUR INSTALLATION.

MMUTCD CODE	SIZE	INSERT	QUANTITY
W20-1	48" x 48"	ROAD WORK AHEAD	2
W20-2	48" x 48"	DETOUR AHEAD	2
W20-3	48" x 48"	ROAD CLOSED AHEAD + 1000 FEET	4
W20-100P	36" x 24"	1500 FEET	4
M4-8A	24" x 12"	DETOUR NORTH ANOKA 7 COUNTY	5
M3-1A	24" x 12"		4
M1-6	24" x 24"		1
VAR.	21" x 15"		4
		M5-1AR	3
		M5-1AL	1
		M5-2AR	14
		M6-1AR	
		M6-1AL	
		M6-2AR	
		M6-3A	
M4-8A	24" x 12"	DETOUR SOUTH ANOKA 7 COUNTY	4
M3-3A	24" x 12"		3
M1-6	24" x 24"		1
VAR.	21" x 15"		3
		M5-1AR	3
		M5-1AL	1
		M5-2AL	10
		M6-1AR	
		M6-1AL	
		M6-2AL	
		M6-3A	

MMUTCD CODE	SIZE	INSERT	QUANTITY
M4-6A	24" x 12"	END DETOUR ANOKA 7 COUNTY	2
M4-8A	24" x 12"		
M1-6	24" x 24"		
G20-X1	60" x 48"	ROAD CLOSED BEGINNING XXXX ##	2
G20-X2	132" x 108"	ANOKA 7 COUNTY ROAD CLOSED 157th Ave TO Valley Dr FOLLOW DETOUR	4
G20-X2	132" x 108"	ANOKA 7 COUNTY ROAD CLOSED Valley Dr TO 157th Ave FOLLOW DETOUR	1
G20-X2	132" x 108"	ANOKA 7 COUNTY ANOKA 20 COUNTY ROAD CLOSED AT 7th Ave FOLLOW DETOUR	2
G20-X2	96" x 84"	ANOKA 58 COUNTY ROAD CLOSED AT 7th Ave USE ALT ROUTE	1

G:\CLIENTS\A_F\ANOKC\P0002.01\TRAFFIC\DETOUR\DETO4.DWG
DATE: 04-19-01 TIME: 6:29 pm USER: CPU153SP
XREFS:

DRAWN BY: MJM
DESIGNER: MJM
CHECKED BY: TAS
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.
Thomas A. Sohrweide, P.E.
Date: 4/23/01 Reg. No. 20943

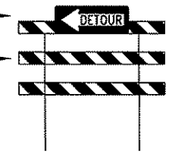
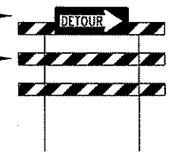
SEH®
PHONE: (651) 490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

ANOKA COUNTY
CSAH 7 (7th Ave.)
S.P. 02-607-17
S.P. 02-620-07
S.A.P. 198-020-16

DETOUR PLAN

FILE NO. AANOKC0002.00
DATE 4/23/01

MMUTCD CODE	SIZE	INSERT	QUANTITY
R11-3 TYPE III	60" x 30" 8 FOOT		1
R11-3 TYPE III	60" x 30" 8 FOOT		1
R11-3 TYPE III	60" x 30" 8 FOOT		2
R11-4 TYPE III	60" x 30" 8 FOOT		4
R11-4 TYPE III	60" x 30" 8 FOOT		4

MMUTCD CODE	SIZE	INSERT	QUANTITY
M4-10L TYPE III	48" x 18" 8 FOOT		1
M4-10R TYPE III	48" x 18" 8 FOOT		1
TYPE "A" FLASHER	–		26

DRAWN BY: MJM
DESIGNER: MJM
CHECKED BY: TAS
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.
Thomas A. Sohrweide, P.E.
Date: 4/23/01 Reg. No. 20943

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

ANOKA COUNTY
CSAH 7 (7th Ave.)
S.P. 02-607-17
S.P. 02-620-07
S.A.P. 198-020-16

DETOUR PLAN

FILE NO. AANOKC0002.00
DATE 4/23/01
45/45

G:\CLIENTS\A_F\ANOKC\9802.00\TRAFFIC\DETOUR\DDETDS.DWG
DATE: 04-21-01 TIME: 2:57 pm USER: CPULSSP
XREFS: