Fed. Project No. STPX0200(047)

MINNESOTA DEPARTMENT OF TRANSPORTATION

ANOKA COUNTY

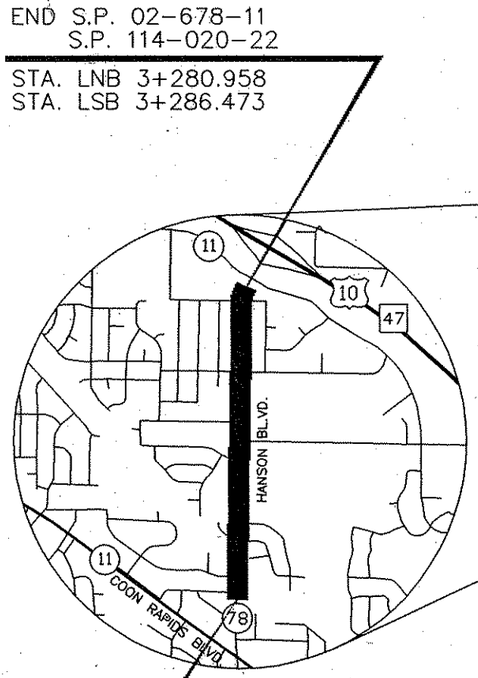
CONSTRUCTION PLAN FOR GRADING, DRAINAGE, AGGREGATE BASE, BITUMINOUS SURFACE, CURB & GUTTER, SIGNAL SYSTEMS, AND CONCRETE WALK.

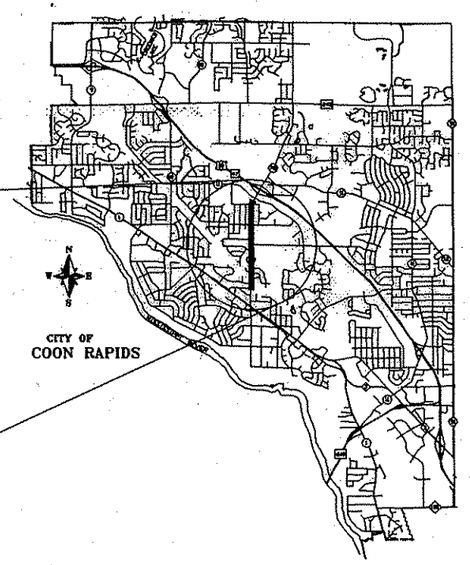
LOCATED ON C.S.A.H. 78 (HANSON BLVD.) BETWEEN 106TH AVENUE N.W. AND C.S.A.H. 11 IN COON RAPIDS

FED. PROJ. NO.	STP-0200(47)			
STATE PROJ. NO.	02-678-11			
STATE PROJ. NO.	114-020-22			
GROSS LENGTH	1888.592	m	1.888	km
BRIDGES-LENGTH	0	m	0	km
EXCEPTIONS-LENGTH	0	m	0	km
NET LENGTH	1888.592	m	1.888	km

END S.P. 02-678-11
S.P. 114-020-22

STA. LNB 3+280.958
STA. LSB 3+286.473





BEGIN S.P. 02-678-11
S.P. 114-020-22

STA. LNB 1+392.366
STA. LSB 1+392.461

N
W E
S

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

UTILITY SYMBOLS

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

SCALES

PLAN 0 50 100
PROFILE HORIZONTAL 0 50 100
VERTICAL 0 5 10
X-SECTIONS HORIZONTAL 0 10 20
VERTICAL 0 10 20
INDEX MAP 0 1

GOVERNING SPECIFICATIONS

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

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

INDEX

THIS PLAN SET CONTAINS 105 SHEETS

DESIGN DESIGNATION

ESAL$_{20}$ 3,200,000
R VALUE 50
ADT (2000)= 16,000
Proj. ADT (2020)= 20,500
Proj. HCADT (2020)= 1,400
9.1 METRIC TON DESIGN

Functional Classification ARTERIAL HIGH DENSITY
No. of Traffic Lanes 4 No. of Parking Lanes 0
Design Speed 70 km/h
Based on Stopping Sight Distance
Height of eye 1070 mm Height of object 150 mm
Design Speed not achieved at:
STA. TO STA. km/h
Design Speed for Frontage Road is **50** km/h

Approved 11/9, 1999 — ANOKA COUNTY ENGINEER
Approved 11/9, 1999 — ANOKA COUNTY TRAFFIC ENGINEER
Approved 11/9, 1999 — CITY OF COON RAPIDS ENGINEER
AL Reviewed for Compliance with State Aid Rules/Policy — For METRO ASSISTANT DIVISION ENGINEER-STATE AID 11/27/00
AK Approved for State and Federal Aid Funding — For STATE AID ENGINEER 12/9/00

NO	DATE	BY	CKD	APPR	REVISION

PARSONS
Barton-Aschman Associates, Inc.
A Unit of Parsons Transportation Group Inc.

minnesota metric

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
James C Kuntson
DATE 11-10-99 REG. NO. 10169

DRAWN BY SAP DATE
DESIGN BY JCK DATE
CHECKED BY GPO DATE

STATE PROJECT NO. 02-678-11
STATE PROJECT NO. 114-020-22
STATE PROJECT NO.

ANOKA COUNTY
HIGHWAY DEPT.

TITLE SHEET

Sheet 1 of 103 Sheets

STATEMENT OF ESTIMATED QUANTITIES

TAB NO.	ITEM NO.	ITEM	UNIT	TOTAL CONTRACT QUANTITY	ANOKA COUNTY S.P. 02-678-11 PARTICIPATING		ANOKA COUNTY S.P. 02-678-11 NON-PARTICIPATING		CITY OF COON RAPIDS S.P. 114-020-22 PARTICIPATING		CITY OF COON RAPIDS S.P. 114-020-22 NON-PARTICIPATING		PARTICIPATING STORM SEWER		SEE NOTE
					EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	
	2013.601	CELLULAR MOBILE TELEPHONE	LUMP SUM	1	1										
	2015.601	COMPUTER EQUIPMENT	LUMP SUM	1	1										
	2021.501	MOBILIZATION	LUMP SUM	1	1										
	2021.610	RAILROAD PROTECTIVE SERVICES	HOUR	480	480										
	2031.501	FIELD OFFICE TYPE D (MODIFIED)	EACH	1	1										
	2041.610	TRAINEES	HOUR	1500	1500										
E	2101.501	CLEARING	ha	0.85	0.85										
E	2101.502	CLEARING	TREE	368	368										
E	2101.506	GRUBBING	ha	0.85	0.85										
E	2101.507	GRUBBING	TREE	376	376										
	2102.502	PAVEMENT MARKING REMOVAL	m	1900	1900										
H	2104.501	REMOVE CURB AND GUTTER	m	4537	4537										
F	2104.503	REMOVE CONCRETE WALK	m^2	4808	4808										(1)
P	2104.503	REMOVE CONCRETE DRIVEWAY PAVEMENT	m^2	360	360										
F	2104.503	REMOVE BITUMINOUS PAVEMENT	m^2	29709	29709										
P	2104.501	REMOVE BITUMINOUS DRIVEWAY PAVEMENT	m^2	2507	2507										
T	2104.503	REMOVE PIPE SEWER (STORM)	m	445	445										
T	2104.509	REMOVE DRAINAGE STRUCTURE	EACH	6	6										
S	2104.509	REMOVE CASTING	EACH	2	2										
C	2104.509	REMOVE CURB STOP AND BOX	EACH	49					49						
A	2104.509	REMOVE HYDRANT	EACH	11					11						
S	2104.509	REMOVE CONCRETE APRON	EACH	2	2										
R	2104.501	REMOVE WOOD WALL	m	33	33										
R	2104.501	REMOVE MODULAR BLOCK WALL	m	60	60										
R	2104.501	REMOVE WOOD FENCE	m	55	55										
R	2104.501	REMOVE CHAIN LINK FENCE	m	139	139										
R	2104.507	REMOVE MASONRY & CONC. STRUCTURES	m^3	14	14										
	2104.511	SAWING CONCRETE PAVEMENT (FULL DEPTH)	m	10	10										
G	2104.513	SAWING BITUMINOUS PAVEMENT (FULL DEPTH)	m	402	402										
	2104.523	SALVAGE SIGN-TYPE A	EACH	2	2										
	2104.523	SALVAGE SIGN TYPE C	EACH	81	81										
	2104.523	SALVAGE VEHICULAR DOUBLE GATE	EACH	1	1										
S	2104.525	ABANDON DRAINAGE STUCTURE	EACH	26	26										
S	2104.606	ABANDON PIPE SEWER (STORM)	m	725	725										
	2105.501	COMMON EXCAVATION (EV) (P)	m^3	42433	42433										
	2105.522	SELECT GRANULAR BORROW (LV)	m^3	250	250										
	2105.525	TOPSOIL BORROW (LV)	m^3	3361	3361										
	2130.501	WATER	m^3	300	300										
Q	2211.503	AGGREGATE BASE (CV) CLASS 5 (P)	m^3	12991	12991										
P	2118.501	AGGREGATE SURFACING, CLASS 2	t	8.20	8.20										(3)

(1) INCLUDES CONCRETE WALK AND CONCRETE MEDIAN

(3) AGGREGATE SURFACING FOR GRAVEL DRIVEWAY, QUANTITY = 73.26 m2 x 0.112 = 8.20 t

NO	DATE	BY	CKD	APPR	REVISION

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Barton-Aschman Associates, Inc.
A Unit of Parsons Transportation Group Inc.

minnesota metric

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James C Kruttschnitt
DATE 2-16-00 REG. NO. 10169

DRAWN BY SAP DATE
DESIGN BY JCK DATE
CHECKED BY GPO DATE

STATE PROJECT NO. 02-678-11
STATE PROJECT NO. 114-020-22
STATE PROJECT NO.

ANOKA COUNTY
HIGHWAY DEPT.

STATEMENT OF ESTIMATED QUANTITIES

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	TAB NO.	ITEM NO.	ITEM	UNIT	TOTAL CONTRACT QUANTITY	ANOKA COUNTY S.P. 02-678-11 PARTICIPATING		ANOKA COUNTY S.P. 02-678-11 NON-PARTICIPATING		CITY OF COON RAPIDS S.P. 114-020-22 PARTICIPATING		CITY OF COON RAPIDS S.P. 114-020-22 NON-PARTICIPATING		PARTICIPATING STORM SEWER		SEE NOTE
						EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	
	Q	2331.525	TYPE 41, WEARING COURSE MIXTURE, 50 mm THICK	m^2	1136	1136										
	Q	2350.609	TYPE HV 4 WEARING COURSE MIXTURE	t	6379	6379										
	Q	2350.609	TYPE HV 3 NON WEARING COURSE MIXTURE	t	7175	7175										
REV.- 3	Q	2350.609	TYPE MV 3 NON WEARING COURSE MIXTURE	t	10548	10548										
	N	2411.603	MODULAR BLOCK WALL	m^2	85	85										
	Q	2357.502	BITUMINOUS MATERIAL FOR TACK COAT	L	22136	22136										
	T	2501.515	300 mm RC PIPE APRON	EACH	2									2		
REV.- 1	T	***2501.515***	***600mm RC PIPE APRON***	EACH	1									1		
	T	2503.541	300 mm RC PIPE SEWER DESIGN 3006 CLASS III	m	329.6									329.6		
	T	2503.541	375 mm RC PIPE SEWER DESIGN 3006 CLASS III	m	651.5									651.5		
	T	2503.541	450 mm RC PIPE SEWER DESIGN 3006 CLASS III	m	540.2									540.2		
	T	2503.541	525 mm RC PIPE SEWER DESIGN 3006 CLASS III	m	242.9									242.9		
	T	2503.541	600 mm RC PIPE SEWER DESIGN 3006 CLASS III	m	167.2									167.2		
	T	2503.541	600 mm RC PIPE SEWER DESIGN 3006 CLASS IV	m	258.4									258.4		
	T	2503.541	750 mm RC PIPE SEWER DESIGN 3006 CLASS IV	m	168.3									168.3		
	B	2504.602	ADJUST VALVE BOX	EACH	24					24						
	A	2504.602	ADJUST HYDRANT AND GATE VALVE	EACH	1					1						
	B	2504.602	HYDRANT	EACH	11					11						
REV.- 2	A	***2504.602***	***750 mm GATE VALVE AND BOX***	***EACH***	***1***					***1***						
	A	2504.602	150 mm GATE VALVE AND BOX	EACH	11					11						
	C	2504.602	25 mm CURB STOP AND BOX	EACH	46					46						
	C	2504.602	50 mm CURB STOP AND BOX	EACH	3					3						
		2504.603	150 mm WATER MAIN DUCTILE IRON CL.52	m	80					80						
	C	2504.603	25 mm TYPE K COPPER PIPE	m	283.9					283.9						
	C	2504.603	50 mm TYPE K COPPER PIPE	m	12.0					12.0						
		2504.605	50 mm POLYSTYRENE INSULATION	m^2	30					30						
	T	2506.501	CONSTRUCT DRAIN STRUCTURE DESIGN- F	m	108.4									108.4		
	T	2506.501	CONSTRUCT DRAIN STRUCTURE DESIGN- G	m	24.5									24.5		
	T	2506.501	CONSTRUCT DRAIN STRUCTURE DESIGN- H	m	20.1									20.1		
	T	2506.501	CONSTRUCT DRAIN STRUCTURE DESIGN 1500 mm 4020	m	3.5									3.5		
	T	2506.501	CONSTRUCT DRAIN STRUCTURE DESIGN 1800 mm 4020	m	5.1									5.1		
	T	2506.501	CONSTRUCT DRAIN STRUCTURE DESIGN 2100 mm 4020	m	3.6									3.6		
	S,T	2506.516	CASTING ASSEMBLY	EACH	103									103		
	S	2506.522	ADJUST FRAME AND RING CASTING (STORM)	EACH	4									4		
	T	2506.602	CONNECT TO EXISTING DRAINAGE STRUCTURE	EACH	7									7		
		2506.522	ADJUST FRAME AND RING CASTING (SANITARY)	EACH	40									40		
	T	2511.501	RANDOM RIPRAP CLASS III	m^3	12.6									12.6		
		2511.515	GEOTEXTILE FABRIC TYPE IV	m^2	28									28		
	K	2521.501	100 mm CONCRETE WALK	m^2	7235.1	4942				2293						
	K	2521.501	200 mm CONCRETE WALK-SPECIAL	m^2	31	31										

NO	DATE	BY	CKD	APPR	REVISION
1	03-07-00	LAR			REPLACED 600 mm RC PIPE APRON
2	03-13-00	LAR			ADD. 750 mm GATE VALVE & BOX
2	03-13-00	LAR			REPLACED TYPE MV 3 AS TYP. SEC.

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DATE _____ REG. NO. 10169

DRAWN BY SAP DATE _____
DESIGN BY JCK DATE _____
CHECKED BY GPO DATE _____

STATE PROJECT NO. 02-678-11
STATE PROJECT NO. 114-020-22
STATE PROJECT NO. _____

ANOKA COUNTY HIGHWAY DEPT.

STATEMENT OF ESTIMATED QUANTITIES

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	TAB NO.	ITEM NO.	ITEM	UNIT	TOTAL CONTRACT QUANTITY	ANOKA COUNTY S.P. 02-678-11 PARTICIPATING EST.	ANOKA COUNTY S.P. 02-678-11 PARTICIPATING FINAL	ANOKA COUNTY S.P. 02-678-11 NON-PARTICIPATING EST.	ANOKA COUNTY S.P. 02-678-11 NON-PARTICIPATING FINAL	CITY OF COON RAPIDS S.P. 114-020-22 PARTICIPATING EST.	CITY OF COON RAPIDS S.P. 114-020-22 PARTICIPATING FINAL	CITY OF COON RAPIDS S.P. 114-020-22 NON-PARTICIPATING EST.	CITY OF COON RAPIDS S.P. 114-020-22 NON-PARTICIPATING FINAL	PARTICIPATING STORM SEWER EST.	PARTICIPATING STORM SEWER FINAL	SEE NOTE
	O	2531.501	CONCRETE CURB AND GUTTER DESIGN B612	m	3434	*1717*				*1717*						
	O	2531.501	CONCRETE CURB AND GUTTER DESIGN B618	m	4361	4361										
	O	2531.501	CONCRETE CURB AND GUTTER (B612 MOD)	m	98	98										(2)
	O	2531.507	150 mm CONCRETE DRIVEWAY PAVEMENT	m^2	705	705										
	O	2531.507	200 mm CONCRETE DRIVEWAY PAVEMENT	m^2	33	33										
REV.- 2	L															
	J	2531.602	PEDESTRIAN CURB RAMP (CONCRETE)	EACH	44	44										
REV.- 1		*2531.604*	*CONCRETE GUTTER DESIGN SPECIAL*	*m2*	*899.2*	*449.6*				*449.6*						*(3)*
	I	2540.602	RELOCATE MAILBOX SUPPORT	EACH	44	44										
		2557.501	WIRE FENCE DESIGN 42-9322	m	70	70										
		2557.602	INSTALL VEHICULAR DOUBLE GATE	EACH	1	1										
		2563.601	TRAFFIC CONTROL STAGE 1	LUMP SUM	1	1										
		2563.601	TRAFFIC CONTROL STAGE 2	LUMP SUM	1	1										
		2563.601	TRAFFIC CONTROL STAGE 3	LUMP SUM	1	1										
		2563.601	DETOUR SIGNING	LUMP SUM	1	1										
		2563.602	RAISED PAVEMENT MARKER TEMPORARY	EACH	1660	1660										
		2563.602	RELOCATE RAISED PAVEMENT MARKER TEMPORARY	EACH	166	166										
		2564.531	SIGN PANELS TYPE C	m^2	83.5	83.5										
		2564.531	SIGN PANELS TYPE D	m^2	10.7	10.7										
		2564.537	INSTALL SIGN TYPE SPECIAL	EA	16					16						
		2564.602	CLEARANCE MARKER X4-4	EACH	32	32										
		2564.602	HAZARD MARKER X4-2	EACH	20	20										
		2564.602	PAVEMENT MESSAGE (LEFT ARROW)-POLY PREFORMED	EACH	9	9										
		2564.602	PAVEMENT MESSAGE (RIGHT ARROW)-POLY PREFORMED	EACH	6	6										
		2564.602	PAVEMENT MESSAGE (RR CROSSING)-POLY PREFORMED	EACH	4	4										
		2564.603	100 mm SOLID LINE WHITE-PAINT	m	5360	5360										
		2564.603	100 mm SOLID LINE YELLOW-PAINT	m	3400	3400										
		2564.603	100 mm BROKEN LINE WHITE-PAINT	m	760	760										
		2564.603	600 mm STOP LINE WHITE-POLY PREFORMED	m	88.5	88.5										
		2564.604	ZEBRA CROSSWALK WHITE-POLY PREFORMED	m^2	110.2	110.2										
		2565.511	FULL TRAF. ACTUATED TRAF. CONTROL SIGNAL SYS. "A"	SIG. SYS.	1	1										
		2565.511	FULL TRAF. ACTUATED TRAF. CONTROL SIGNAL SYS. "B"	SIG. SYS.	1	1										
		2565.601	EMERGENCY VEHICLE PRE-EMPTION SYSTEM "A"	LUMP SUM	1					1						
		2565.601	EMERGENCY VEHICLE PRE-EMPTION SYSTEM "B"	LUMP SUM	1					1						
	M	2573.501	BALE CHECK	EACH	250	250										
	M	2573.502	SILT FENCE, TYPE HEAVY DUTY	m^2	1618	1618										
	M	2575.501	SEEDING	ha	0.21	0.21										
	M	2575.502	SEED MIXTURE 70A	kg	10.5	10.5										
	M	2575.505	SODDING TYPE LAWN	m^2	20564	20564										
	M	2575.511	MULCH MATERIAL TYPE 1	t	0.40	0.40										
	M	2575.519	DISK ANCHORING	ha	0.21	0.21										
	M	2575.523	EROSION CONTROL BLANKETS CATEGORY 3	m^2	750	750										
	M	2575.532	COMMERCIAL FERTILIZER ANALYSIS 10-10-10	kg	750	750										
		2580.501	TEMPORARY LANE MARKING	m	4750	4750										

(2) SURMOUNTABLE

(3) CONCRETE CROSS GUTTER.
SEE DETAIL ON SHEET 18.
FOR LOCATION SEE PLAN AND PROFILE

NO	DATE	BY	CKD	APPR	REVISION
1	02-22-00	LAR			ADD ITEM FOR CROSS GUTTER
2	03-07-00	LAR			DELETED CONC. MED. NOSE SPECAL

PARSONS
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ANOKA COUNTY
HIGHWAY DEPT.

STATEMENT OF ESTIMATED QUANTITIES

THE FOLLOWING STANDARD PLATES, APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION, SHALL APPLY ON THIS PROJECT	
STANDARD PLATES	
PLATE NO.	DESCRIPTION
M3000L	REINFORCED CONCRETE PIPE
M3006G	GASKET JOINT FOR R.C. PIPE
M3100G	CONCRETE APRON FOR REINFORCED CONCRETE PIPE
M3128F	SAFETY APRON
M3133C	RIPRAP AT RCP OUTLETS
M3145E	CONCRETE PIPE TIES
M4000J	MANHOLE OR CATCH BASIN – DESIGN A
M4002F	MANHOLE OR CATCH BASIN – DESIGN C
M4005L	MANHOLE OR CATCH BASIN – DESIGN F
M4006L	MANHOLE OR CATCH BASIN – DESIGN G, H
M4010H	CONCRETE SHORT CONE AND ADJUSTING RINGS
M4011E	PRECAST CONCRETE BASE
M4020G	MANHOLE OR CATCH BASIN COVER
M4101D	RING CASTING FOR MANHOLE OR CATCH BASIN
M4110F	COVER CASTING FOR MANHOLE
M4126F	CATCH BASIN FRAME CASTING
M4149C	GRATE CASTING FOR CATCH BASIN
M4161F	CURB BOX CASTING FOR CATCH BASIN
M4180J	MANHOLE OR CATCH BASIN STEP
M7035K	CONCRETE WALK & CURB RETURNS AT ENTRANCES
M7036D	PEDESTRIAN CURB RAMP
M7100G	CONCRETE CURB AND GUTTER (DESIGN B AND DESIGN V)
M7102I	CONCRETE CURB AND GUTTER (DESIGN BR, D AND S)
M7111J	INSTALLATION OF CATCH BASIN CASTINGS
M7113A	CONCRETE APPROACH NOSE DETAIL
M8000I	STANDARD BARRICADES
M8110D	TRAFFIC SIGNAL BRACKETING (POLE MOUNTED)
M8111C	TRAFFIC SIGNAL BRACKETING (PEDESTAL MOUNTED)
M8112C	PEDESTAL FOUNDATION
M8114A	P.V.C. HANDHOLE/PULLBOX
M8115D	PEDESTRIAN PUSH BUTTON INSTALLATION
M8118C	SERVICE EQUIPMENT & POLE TRAFFIC CONTROL SIGNALS
M8119C	GROUND MOUNTED CABINET FOUNDATION
M8120K	POLE FOUNDATION (PA85)
M8121D	TRANSFER BASE AND POLE BASE PLATE (PA90M AND PA100M)
M8122C	PEDESTAL AND PEDESTAL BASE
M8123D	POLE AND MAST ARM
M8124E	MAST ARM SIGNAL HEAD MOUNTS
M8126F	POLE FOUNDATION (PA90 AND PA100)
M8127B	LIGHT BASE – DESIGN E
M8150B	INSTALLATION OF CULVERT MARKERS
M9102D	TURF ESTABLISHMENT AREAS
M9322J	CHAIN LINK FENCE

INDEX OF TABULATIONS		
TAB	SHEET	DESCRIPTION
	6–8	PUBLIC UTILITY TABULATION
A	9	REPLACE HYDRANT
B	9	ADJUST VALVE BOX – WATER
C	9	MODIFY EXISTING CURB STOP & BOXES
D	10	ADJUST FRAME & RING CASTING
E	11	CLEAR AND GRUB
F	11	BITUMINOUS AND CONCRETE REMOVAL
G	11	SAWING BITUMINOUS PAVEMENT
H	11	CURB AND GUTTER REMOVAL
I	11	MAILBOX SUPPORT TABULATION
J	12	CONCRETE PEDESTRIAN RAMPS
K	12	CONCRETE WALK AND CONCRETE MEDIAN
L	12	CONCRETE MEDIAN NOSE
M	12	TURF ESTABLISHMENT/EROSION CONTROL
N	12	CONSTRUCT RETAINING WALL
O	13	CONSTRUCT CONCRETE CURB AND GUTTER
P	13	DRIVEWAY REMOVAL AND CONSTRUCTION
Q	13	BASE AND BITUMINOUS QUANTITIES CHART
R	12	MISCELLANEOUS REMOVALS
S	35	INPLACE DRAINAGE TABULATION
T	41–42	DRAINAGE TABULATION
U	22–24	ALIGNMENT TABULATION
V	25	DRIVEWAY ALIGNMENT TABULATION

BASIS OF PLANNED QUANTITIES

2350 TYPE HV 4 PLANT MIXED WEARING COURSE BITUMINOUS MIXTURE 65 kg/m2/25mm THICKNESS

2350 TYPE HV 3 PLANT MIXED NON WEARING COURSE BITUMINOUS MIXTURE 65kg/m2/25mm THICKNESS

2350 TYPE MV 3 PLANT MIXED NON WEARING COURSE BITUMINOUS MIXTURE 65 kg/m2/25mm THICKNESS

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

2575 COMMERCIAL FERTILIZER, ANALYSIS 10–20–20, 300kg/ha ON ALL SOD AREAS

EARTHWORK SUMMARY

COMMON EXCAVATION....42433 m3

EXCAVATION
- REGULAR....26481 m3
- SUBCUT.....16052 m3
- TOPSOIL.....900 m3 SALVAGE

EMBANKMENT (CV)

EMBANKMENT (REG.).....1352 m3

TOPSOIL BORROW.....2401 m3

TOPSOIL SALVAGE.....720 m3

BALANCE

SP 02-678-11

TOPSOIL
(TOPSOIL SALVAGE (EV) x SHRINKAGE FACTOR) – TOPSOIL DRESSING (CV) x FACTOR = EXCESS (+) OR SHORTAGE (–)

(900 x 0.80) – (3121) = –2401 m3 BORROW (CV) (SEE NOTE 19).

TOPSOIL BORROW
BORROW(CV) x SWELL FACTOR = BORROW (LV)
2401 x 1.4 = 3361 m3 (LV) (PAY ITEM)

EMBANKMENT MATERIAL
[REG. EXCAVATION (EV) x SHRINKAGE FACTOR] + [SUBCUT x SHRINKAGE FACTOR] –[REG. EMBANKMENT (CV) + SUBCUT] = SHORTAGE(–) OR EXCESS (+).
[26481 x 0.80] + (16052 x 0.85) – [1352 +16052] = +17425 m3 EXCESS (CV)

EXCAVATION

(1) REGULAR GRADING AND TOPSOIL DRESSING (EV TO CV): 80% SHRINKAGE.
(2) SUBCUT COMPACTION (EV TO CV): 85% SHRINKAGE.
(3) TOPSOIL BORROW (CV TO LV): 140% SWELL.

SOIL AND CONSTRUCTION NOTES

(1) TOP OF GRADING GRADE IS DEFINED AS THE BOTTOM OF THE AGGREGATE BASE.
(2) IN FILL AREA, THE SUBGRADE SHALL BE CONSTRUCTED WITH SELECTED GRADING MATERIAL.
(3) GRANULAR MATERIAL, REGARDLESS OF SOURCE, SHALL MEET THE REQUIREMENTS OF SPEC. 3149.2B.
(4) COMPACTION OF THE GRADING PORTION OF THIS PROJECT SHALL BE BY THE "SPECIFIED DENSITY METHOD".
(5) TEST ROLLING WILL NOT BE REQUIRED.
(6) BITUMINOUS OR CONCRETE ITEMS REMOVED BY CONSTRUCTION SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE EITHER RECYCLED OR DISPOSED OF IN ACCORDANCE WITH THE REQUIREMENTS OF 2104.3C3 WITH NO DIRECT COMPENSATION MADE THEREFORE.
(7) DISPOSITION OF EXCESS EXCAVATED MATERIAL SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF 2105.3D WITH NO DIRECT COMPENSATION THEREFORE.
(8) WHERE MATCHING INTO THE INPLACE ROADWAY AT THE ENDS OF CONSTRUCTION, CUT VERTICALLY TO THE TOP OF THE GRADING GRADE, THEN AT A 20:1 TAPER TO THE BOTTOM OF THE RECOMMENDED SUBGRADE EXCAVATION.
(9) WHERE CONNECTING NEW SURFACING TO AN INPLACE PAVEMENT, THE EXCAVATION SHALL BE BACK FILLED PROMPTLY TO AVOID UNDERMINING THE INPLACE PAVEMENT.
(10) USE TACK COAT BETWEEN ALL BITUMINOUS MIXTURES PRIOR TO PLACING BITUMINOUS MIXTURES AND PRIOR TO PLACING ANY BITUMINOUS MIXTURES ON EXISTING CONCRETE AT UNIFORM RATE OF 0.23L/m2 BETWEEN BITUMINOUS LAYERS.
THE APPLICATION RATES ARE FOR UNDILUTED EMULSION (AS SUPPLIED FROM THE REFINERY); ASPHALT EMULSION MAY BE FURTHER DILUTED IN THE FIELD IN ACCORDANCE WITH SPEC.2357.
(11) COMPACTION OF THE AGGREGATE BASE LAYERS SHALL BE BY THE "SPECIFIED DENSITY METHOD", UNLESS RECYCLED MATERIALS.
(12) PLACE MINIMUM 150mm TOPSOIL OR SLOPE DRESSING ON ALL AREAS DISTURBED BY CONSTRUCTION AND SCHEDULED FOR PERMANENT TURF ESTABLISHMENT. FERTILIZED WITH COMMERCIAL FERTILIZER.
(13) SOD ALL MAINTAINED LAWNS DISTURBED BY CONSTRUCTION.
(14) ALL SOD UTILIZED WITH THE PROJECT LIMITS SHALL MEET THE REQUIREMENT OF SPEC. 3878.2A (LAWN AND SOD).
(15) ORGANIC AND NONGRANULAR EXCAVATED MATERIAL MAY BE USED IN EMBANKMENT CONSTRUCTION IN AREAS OUTSIDE OF A 1 1/2:1 SLOPE FROM THE BACK OF CURB OR GRADING P.I.
(16) BITUMINOUS REMOVAL QUANTITY BASED ON SQUARE METER REMOVED. IN PLACE SURFACE ASSUMED TO BE 244 mm IN DEPTH. CONTRACTOR SHALL INVESTIGATE AND MAKE OWN DETERMINATION OF ACTUAL PAVEMENT DEPTH.
(17) ALL SILT FENCING AS SHOWN IN THE PLANS SHALL BE IN PLACE PRIOR TO THE COMMENCEMENT OF GRADING OPERATIONS IN ADJACENT AREA.
(18) A DOUBLE ROW OF BALE CHECKS SHALL BE INSTALLED ALONG DITCH RUNS FOR EROSION CONTROL AS DIRECTED BY THE ENGINEER. BALE CHECKS DAMS SHALL E PLACED AROUND DRAINAGE STRUCTURE USED TO COLLECT RUNOFF FROM CONSTRUCTION AREA.
(19) TOPSOIL STRIPPINGS TO BE SALVAGED AND UTILIZED TO ITS FULLEST EXTENT WITHIN THE PROJECT LIMITS.

NO	DATE	BY	CKD	APPR	REVISION

PARSONS
Barton–Aschman Associates, Inc.
A Unit of Parsons Transportation Group Inc.

minnesota metric

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
James C Knutson
DATE 1-21-00 REG. NO. 10169

DRAWN BY SAP DATE
DESIGN BY JCK DATE
CHECKED BY GPO DATE

STATE PROJECT NO. 02-678-11
STATE PROJECT NO. 114-020-22
STATE PROJECT NO.

ANOKA COUNTY
ANOKA COUNTY HIGHWAY DEPT.

EARTHWORK SUMMARY/ STANDARD PLATES

Sheet 5 of 103 Sheets

EXISTING UTILITIES WITHIN CONSTRUCTION LIMITS

STATION	OFFSET (m)	DESCRIPTION	OWNER	REMARKS
WATERMAIN				
LSB 1+380 TO 1+850	3.4 LT. TO 0.0 LT.	750 mm WATER	COON RAPIDS	
LSB 1+850 TO 1+920	0.0 RT. TO 1.8 RT.	750 mm WATER	COON RAPIDS	
LSB 1+920 TO 3+160	1.8 RT. TO 3.2 RT.	750 mm WATER	COON RAPIDS	
LSB 3+160 TO 3+200	3.2 RT. TO 0.0 RT.	750 mm WATER	COON RAPIDS	
LSB 1+390	2.2 LT. TO 42.0 LT.	150 mm WATER	COON RAPIDS	
LSB 1+533	2.9 LT. TO 45.0 LT.	150 mm WATER	COON RAPIDS	
LSB 1+625	3.2 LT. TO 36.0 LT.	150 mm WATER	COON RAPIDS	
LSB 1+835	0.9 LT. TO 52.0 RT.	150 mm WATER	COON RAPIDS	
LSB 1+851	0.0 LT. TO 25.0 LT.	200 mm WATER	COON RAPIDS	
LSB 1+938	1.9 RT. TO 43.0 RT.	150 mm WATER	COON RAPIDS	
LSB 2+075 TO 2+120	20.5 LT. TO 21.6 LT.	150 mm WATER	COON RAPIDS	
LSB 2+120	21.6 LT. TO 1.8 RT.	150 mm WATER	COON RAPIDS	
LSB 2+215	1.8 RT. TO 25.0 RT.	150 mm WATER	COON RAPIDS	
LSB 2+302	1.8 RT. TO 26.0 LT.	150 mm WATER	COON RAPIDS	
LSB 2+400	1.8 RT. TO 42.0 RT.	400 mm WATER	COON RAPIDS	
LSB 2+504	1.8 RT. TO 29.0 LT.	mm WATER	COON RAPIDS	
LSB 2+626	1.8 RT. TO 34.0 RT.	250 mm WATER	COON RAPIDS	
LSB 2+630	1.8 RT. TO 26.0 LT.	150 mm WATER	COON RAPIDS	
LSB 2+802	2.2 RT. TO 38.0 LT.	150 mm WATER	COON RAPIDS	
LSB 2+806	2.2 RT. TO 50.0 RT.	200 mm WATER	COON RAPIDS	
LSB 1+529	11.3 LT.	HYDRANT	COON RAPIDS	
LSB 1+620	9.3 LT.	HYDRANT	COON RAPIDS	
LSB 1+783	9.8 LT.	HYDRANT	COON RAPIDS	
LSB 1+935	21.4 RT.	HYDRANT	COON RAPIDS	
LSB 2+121	4.2 LT.	HYDRANT	COON RAPIDS	
LSB 2+227	4.3 LT.	HYDRANT	COON RAPIDS	
LSB 2+394	18.8 RT.	HYDRANT	COON RAPIDS	
LSB 2+498	4.3 LT.	HYDRANT	COON RAPIDS	
LSB 2+683	4.2 LT.	HYDRANT	COON RAPIDS	
LSB 2+918	8.5 LT.	HYDRANT	COON RAPIDS	
LSB 3+077	7.6 LT.	HYDRANT	COON RAPIDS	
LSB 3+199	12.3 LT.	HYDRANT	COON RAPIDS	
LSB 1+390	8.4 LT.	150 mm GATE VALVE	COON RAPIDS	
LSB 1+534	9.9 LT.	150 mm GATE VALVE	COON RAPIDS	
LSB 1+625	8.1 LT.	150 mm GATE VALVE	COON RAPIDS	
LSB 1+685	10.0 RT.	mm GATE VALVE	COON RAPIDS	
LSB 1+782	8.0 LT.	150 mm GATE VALVE	COON RAPIDS	
LSB 1+835	1.9 RT.	150 mm GATE VALVE	COON RAPIDS	
LSB 1+851	1.1 LT.	200 mm GATE VALVE	COON RAPIDS	
LSB 1+938	20.6 RT.	150 mm GATE VALVE	COON RAPIDS	
LSB 2+119	2.6 LT.	150 mm GATE VALVE	COON RAPIDS	
LSB 2+119	5.0 LT.	150 mm GATE VALVE	COON RAPIDS	
LSB 2+120	4.3 LT.	150 mm GATE VALVE	COON RAPIDS	
LSB 2+215	24.8 RT.	150 mm GATE VALVE	COON RAPIDS	
LSB 2+227	2.4 LT.	150 mm GATE VALVE	COON RAPIDS	
LSB 2+302	0.8 RT.	150 mm GATE VALVE	COON RAPIDS	
LSB 2+400	16.8 RT.	600 mm GATE VALVE	COON RAPIDS	
LSB 2+413	1.8 RT.	750 mm GATE VALVE	COON RAPIDS	
LSB 2+504	2.8 LT.	150 mm GATE VALVE	COON RAPIDS	
LSB 2+626	2.6 RT.	250 mm GATE VALVE	COON RAPIDS	
LSB 2+630	1.0 RT.	150 mm GATE VALVE	COON RAPIDS	
LSB 2+802	5.6 LT.	150 mm GATE VALVE	COON RAPIDS	
LSB 2+806	15.5 RT.	200 mm GATE VALVE	COON RAPIDS	
LSB 3+076	7.0 LT.	150 mm GATE VALVE	COON RAPIDS	
LSB 3+199	10.6 LT.	150 mm GATE VALVE	COON RAPIDS	
LSB 3+202	0.4 LT.	750 mm GATE VALVE	COON RAPIDS	
WATER SERVICE				
LSB 1+385	9.7 RT.	CURB STOP & BOX	COON RAPIDS	
LSB 1+417	9.7 LT.	CURB STOP & BOX	COON RAPIDS	
LSB 1+422	10.7 RT.	CURB STOP & BOX	COON RAPIDS	
LSB 1+441	10.3 LT.	CURB STOP & BOX	COON RAPIDS	
LSB 1+464	9.4 LT.	CURB STOP & BOX	COON RAPIDS	
LSB 1+473	10.3 RT.	CURB STOP & BOX	COON RAPIDS	
LSB 1+489	10.0 LT.	CURB STOP & BOX	COON RAPIDS	
LSB 1+508	11.1 RT.	CURB STOP & BOX	COON RAPIDS	
LSB 1+511	9.7 LT.	CURB STOP & BOX	COON RAPIDS	
LSB 1+563	10.0 LT.	CURB STOP & BOX	COON RAPIDS	
LSB 1+577	10.6 RT.	CURB STOP & BOX	COON RAPIDS	
LSB 1+586	10.2 LT.	CURB STOP & BOX	COON RAPIDS	
LSB 1+620	16.2 RT.	CURB STOP & BOX	COON RAPIDS	
LSB 1+675	9.8 LT.	CURB STOP & BOX	COON RAPIDS	
LSB 1+687	9.8 LT.	CURB STOP & BOX	COON RAPIDS	
LSB 1+781	9.7 LT.	CURB STOP & BOX	COON RAPIDS	
LSB 1+802	9.3 LT.	CURB STOP & BOX	COON RAPIDS	
LSB 1+829	7.4 LT.	CURB STOP & BOX	COON RAPIDS	
LSB 1+869	15.4 RT.	CURB STOP & BOX	COON RAPIDS	

EXISTING UTILITIES WITHIN CONSTRUCTION LIMITS

STATION	OFFSET (m)	DESCRIPTION	OWNER	REMARKS
WATER SERVICE				
LSB 1+874	5.3 LT.	CURB STOP & BOX	COON RAPIDS	
LSB 1+901	4.6 LT.	CURB STOP & BOX	COON RAPIDS	
LSB 1+945	4.2 LT.	CURB STOP & BOX	COON RAPIDS	
LSB 1+972	11.1 LT.	CURB STOP & BOX	COON RAPIDS	
LSB 1+977	12.0 LT.	CURB STOP & BOX	COON RAPIDS	
LSB 2+023	4.0 LT.	CURB STOP & BOX	COON RAPIDS	
LSB 2+052	11.7 LT.	CURB STOP & BOX	COON RAPIDS	
LSB 2+155	3.9 LT.	CURB STOP & BOX	COON RAPIDS	
LSB 2+181	4.0 LT.	CURB STOP & BOX	COON RAPIDS	
LSB 2+371	3.9 LT.	CURB STOP & BOX	COON RAPIDS	
LSB 2+392	3.6 LT.	CURB STOP & BOX	COON RAPIDS	
LSB 2+420	4.0 LT.	CURB STOP & BOX	COON RAPIDS	
LSB 2+442	4.0 LT.	CURB STOP & BOX	COON RAPIDS	
LSB 2+494	15.7 RT.	CURB STOP & BOX	COON RAPIDS	
LSB 2+595	4.4 LT.	CURB STOP & BOX	COON RAPIDS	
LSB 2+624	4.4 LT.	CURB STOP & BOX	COON RAPIDS	
LSB 2+659	4.3 LT.	CURB STOP & BOX	COON RAPIDS	
LSB 2+691	3.9 LT.	CURB STOP & BOX	COON RAPIDS	
LSB 2+759	4.2 LT.	CURB STOP & BOX	COON RAPIDS	
LSB 2+820	33.8 RT.	CURB STOP & BOX	COON RAPIDS	
LSB 2+841	16.0 RT.	CURB STOP & BOX	COON RAPIDS	
LSB 2+858	8.1 LT.	CURB STOP & BOX	COON RAPIDS	
LSB 2+883	8.9 LT.	CURB STOP & BOX	COON RAPIDS	
LSB 2+892	16.8 RT.	CURB STOP & BOX	COON RAPIDS	
LSB 2+908	8.6 LT.	CURB STOP & BOX	COON RAPIDS	
LSB 2+910	16.4 RT.	CURB STOP & BOX	COON RAPIDS	
LSB 2+924	9.0 LT.	CURB STOP & BOX	COON RAPIDS	
LSB 2+934	16.6 RT.	CURB STOP & BOX	COON RAPIDS	
LSB 2+956	16.7 RT.	CURB STOP & BOX	COON RAPIDS	
LSB 2+981	8.0 LT.	CURB STOP & BOX	COON RAPIDS	
LSB 2+984	16.8 RT.	CURB STOP & BOX	COON RAPIDS	
LSB 3+002	7.9 LT.	CURB STOP & BOX	COON RAPIDS	
LSB 3+012	17.2 RT.	CURB STOP & BOX	COON RAPIDS	
LSB 3+045	16.9 RT.	CURB STOP & BOX	COON RAPIDS	
LSB 3+045	7.0 LT.	CURB STOP & BOX	COON RAPIDS	
LSB 3+056	8.1 LT.	CURB STOP & BOX	COON RAPIDS	
LSB 3+076	17.7 RT.	CURB STOP & BOX	COON RAPIDS	
LSB 3+093	8.3 LT.	CURB STOP & BOX	COON RAPIDS	
LSB 3+144	7.3 LT.	CURB STOP & BOX	COON RAPIDS	
LSB 3+153	17.1 LT.	CURB STOP & BOX	COON RAPIDS	

NO	DATE	BY	CKD	APPR	REVISION

PARSONS
Barton-Aschman Associates, Inc.
A Unit of Parsons Transportation Group Inc.

minnesota metric

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
James C Knutson
DATE 1-26-00 REG. NO. 10169

DRAWN BY SAP DATE
DESIGN BY JCK DATE
CHECKED BY GPO DATE

STATE PROJECT NO. 02-678-11
STATE PROJECT NO. 114-020-22
STATE PROJECT NO.

ANOKA COUNTY
HIGHWAY DEPT.

PUBLIC UTILITY TABULATION

EXISTING UTILITIES WITHIN CONSTRUCTION LIMITS

STATION	OFFSET (m)	DESCRIPTION	OWNER	REMARKS
SANITARY SEWER (MAIN LINE)				
LSB 1+392.727	0.404 LT.	SANITARY MANHOLE	COON RAPIDS	300 mm VCP
LSB 1+463.316	0.886 LT.	SANITARY MANHOLE	COON RAPIDS	300 mm VCP
LSB 1+536.784	0.957 LT.	SANITARY MANHOLE	COON RAPIDS	300 mm VCP
LSB 1+627.708	0.867 LT.	SANITARY MANHOLE	COON RAPIDS	300 mm VCP
LSB 1+691.586	0.781 LT.	SANITARY MANHOLE	COON RAPIDS	300 mm VCP
LSB 1+747.663	0.714 LT.	SANITARY MANHOLE	COON RAPIDS	300 mm VCP
LSB 1+843.041	2.233 RT.	SANITARY MANHOLE	COON RAPIDS	300 mm VCP
LSB 1+941.863	5.127 RT.	SANITARY MANHOLE	COON RAPIDS	300 mm VCP
LSB 1+995.898	4.945 RT.	SANITARY MANHOLE	COON RAPIDS	300 mm VCP
LSB 2+123.725	5.046 RT.	SANITARY MANHOLE	COON RAPIDS	300 mm VCP
LSB 2+228.711	4.947 RT.	SANITARY MANHOLE	COON RAPIDS	300 mm VCP
LSB 2+329.943	4.949 RT.	SANITARY MANHOLE	COON RAPIDS	300 mm VCP
LSB 2+403.106	5.198 RT.	SANITARY MANHOLE	COON RAPIDS	300 mm VCP
LSB 2+505.687	5.029 RT.	SANITARY MANHOLE	COON RAPIDS	375 mm RCP
LSB 2+539.205	4.766 RT.	SANITARY MANHOLE	COON RAPIDS	375 mm RCP
LSB 2+567.411	4.734 RT.	SANITARY MANHOLE	COON RAPIDS	375 mm RCP
LSB 2+607.551	4.955 RT.	SANITARY MANHOLE	COON RAPIDS	375 mm RCP
LSB 2+629.989	5.003 RT.	SANITARY MANHOLE	COON RAPIDS	375 mm RCP
LSB 2+651.340	5.193 RT.	SANITARY MANHOLE	COON RAPIDS	375 mm RCP
LSB 2+707.051	4.896 RT.	SANITARY MANHOLE	COON RAPIDS	375 mm RCP
LSB 2+809.315	4.664 RT.	SANITARY MANHOLE	COON RAPIDS	375 mm RCP
LSB 2+840.378	4.578 RT.	SANITARY MANHOLE	COON RAPIDS	375 mm RCP
LSB 2+875.815	4.662 RT.	SANITARY MANHOLE	COON RAPIDS	375 mm RCP
LSB 2+911.984	4.889 RT.	SANITARY MANHOLE	COON RAPIDS	375 mm RCP
LSB 3+009.395	5.432 RT.	SANITARY MANHOLE	COON RAPIDS	375 mm RCP
LSB 3+052.432	5.297 RT.	SANITARY MANHOLE	COON RAPIDS	375 mm RCP
LSB 3+111.052	4.838 RT.	SANITARY MANHOLE	COON RAPIDS	375 mm RCP
LSB 3+176.191	5.384 RT.	SANITARY MANHOLE	COON RAPIDS	375 mm RCP
LSB 3+212.229	17.955 LT.	SANITARY MANHOLE	COON RAPIDS	375 mm RCP
LSB 3+215.221	0.330 RT.	SANITARY MANHOLE	COON RAPIDS	375 mm RCP
LSB 3+276.595	6.486 RT.	SANITARY MANHOLE	COON RAPIDS	375 mm RCP
LSB 1+620.578	17.266 RT.	SANITARY MANHOLE	COON RAPIDS	200 mm PVC IN 300 mm STEEL CASING
LSB 1+836.467	34.025 RT.	SANITARY MANHOLE	COON RAPIDS	
LSB 1+850.207	30.103 LT.	SANITARY MANHOLE	COON RAPIDS	
LSB 1+986.609	8.299 LT.	SANITARY MANHOLE	COON RAPIDS	
LSB 2+299.921	8.897 LT.	SANITARY MANHOLE	COON RAPIDS	
LSB 2+329.739	8.853 LT.	SANITARY MANHOLE	COON RAPIDS	
LSB 2+402.992	21.623 RT.	SANITARY MANHOLE	COON RAPIDS	
LSB 2+629.909	43.104 RT.	SANITARY MANHOLE	COON RAPIDS	
LSB 2+809.352	17.648 RT.	SANITARY MANHOLE	COON RAPIDS	
LSB 2+905.502	31.542 RT.	SANITARY MANHOLE	COON RAPIDS	
LSB 3+276.595	6.486 RT.	SANITARY MANHOLE	COON RAPIDS	
GAS				
LNB 1+380 TO 1+738	4.8 RT. TO 4.0 LT.	GAS MAIN	MINNEGASCO	
LNB 1+380 TO 1+738	3.9 LT. TO 3.0 LT.	GAS MAIN	MINNEGASCO	
LNB 1+738 TO 1+938	4.0 LT. TO 1.8 RT.	GAS MAIN	MINNEGASCO	
LNB 1+738 TO 1+938	3.0 LT. TO 2.7 RT.	GAS MAIN	MINNEGASCO	
LNB 1+938 TO 3+154	1.8 RT.	GAS MAIN	MINNEGASCO	
LNB 1+938 TO 3+154	2.7 RT.	GAS MAIN	MINNEGASCO	
LNB 3+154 TO 3+220	1.8 RT. TO 7.0 LT.	GAS MAIN	MINNEGASCO	
LNB 3+154 TO 3+222	2.7 RT. TO 0.2 LT.	GAS MAIN	MINNEGASCO	
LNB 3+223 TO 3+300	4.5 RT. TO 4.7 RT.	GAS MAIN	MINNEGASCO	
LNB 3+197	2.0 LT.	GAS VALVE	MINNEGASCO	
LNB 3+220	7.0 LT.	GAS VALVE	MINNEGASCO	
LNB 3+222	0.3 LT.	GAS VALVE	MINNEGASCO	
TELEVISION				
LSB 2+039.187	4.861 LT.	SBTV	MEDIA ONE	
LSB 2+204.980	6.144 LT.	SBTV	MEDIA ONE	
LSB 2+257.574	7.411 LT.	SBTV	MEDIA ONE	
LSB 2+380.028	3.735 LT.	SBTV	MEDIA ONE	
LSB 3+077.030	9.603 LT.	SBTV	MEDIA ONE	
LSB 3+165.834	10.727 LT.	SBTV	MEDIA ONE	
LNB 3+234.658	7.795 RT.	SBTV	MEDIA ONE	
LSB 3+215.087	35.641 LT.	SBTV	MEDIA ONE	
LNB 3+234.658	7.295 RT.	SBTV	MEDIA ONE	

EXISTING UTILITIES WITHIN CONSTRUCTION LIMITS

STATION	OFFSET (m)	DESCRIPTION	OWNER	REMARKS
ELECTRIC				
LSB 1+427.299	7.085 LT.	POWER POLE	NSP	
LNB 1+425.516	3.869 LT.	POWER POLE	NSP	
LSB 1+526.754	7.013 LT.	POWER POLE	NSP	
LSB 1+568.096	7.275 LT.	POWER POLE	NSP	
LSB 1+635.076	7.085 LT.	POWER POLE	NSP	
LSB 1+671.238	9.905 LT.	POWER POLE	NSP	
LSB 1+746.387	9.265 LT.	POWER POLE	CONNEXUS	
LNB 1+719.145	9.946 RT.	POWER POLE	CONNEXUS	
LNB 1+887.225	2.265 RT.	POWER POLE	CONNEXUS	
LNB 1+933.150	2.793 RT.	POWER POLE	CONNEXUS	
LNB 1+995.802	3.399 RT.	POWER POLE	CONNEXUS	
LNB 2+069.069	3.612 RT.	POWER POLE	CONNEXUS	
LNB 2+143.518	3.152 RT.	POWER POLE	CONNEXUS	
LSB 2+142.367	4.937 LT.	POWER POLE	CONNEXUS	
LNB 2+228.987	3.367 RT.	POWER POLE	CONNEXUS	
LNB 2+302.101	3.609 RT.	POWER POLE	CONNEXUS	
LNB 2+316.501	3.894 RT.	POWER POLE	CONNEXUS	
LNB 2+386.980	3.170 RT.	POWER POLE	CONNEXUS	
LNB 2+393.612	4.249 RT.	POWER POLE	CONNEXUS	
LSB 2+380.394	3.764 LT.	POWER POLE	CONNEXUS	
LSB 2+408.736	4.233 LT.	POWER POLE	CONNEXUS	
LNB 2+420.661	4.007 RT.	POWER POLE	CONNEXUS	
LNB 2+463.851	3.556 RT.	POWER POLE	CONNEXUS	
LNB 2+528.885	3.882 RT.	POWER POLE	CONNEXUS	
LNB 2+532.578	13.008 RT.	POWER POLE	CONNEXUS	
LNB 2+565.830	3.948 RT.	POWER POLE	CONNEXUS	
LNB 2+580.107	3.717 RT.	POWER POLE	CONNEXUS	
LSB 2+564.250	17.167 LT.	POWER POLE	CONNEXUS	
LNB 2+641.835	3.460 RT.	POWER POLE	CONNEXUS	
LNB 2+676.651	3.459 RT.	POWER POLE	CONNEXUS	
LNB 2+765.302	3.845 RT.	POWER POLE	CONNEXUS	
LNB 2+819.701	3.434 RT.	POWER POLE	CONNEXUS	
LNB 2+901.493	3.906 RT.	POWER POLE	CONNEXUS	
LNB 2+954.428	3.598 RT.	POWER POLE	CONNEXUS	
LNB 2+997.811	3.623 RT.	POWER POLE	CONNEXUS	
LNB 3+064.878	12.482 RT.	POWER POLE	CONNEXUS	
LNB 3+109.613	3.721 RT.	POWER POLE	CONNEXUS	
LNB 3+136.148	3.840 RT.	POWER POLE	CONNEXUS	
LNB 3+155.002	3.490 RT.	POWER POLE	CONNEXUS	
LSB 3+212.550	35.025 LT.	POWER POLE	CONNEXUS	
LSB 1+568 TO 1+620	7.200 LT.	P-BUR	NSP	
LSB 1+620.000	7.2 LT. TO 15.7 RT.	P-BUR	NSP	
LNB 1+619.591	11.759 RT.	SBE	CONNEXUS	
LNB 1+828.861	12.626 RT.	SBE	CONNEXUS	
LSB 1+841.375	8.024 LT.	SBE	CONNEXUS	
LSB 1+996.386	3.851 LT.	SBE	CONNEXUS	
LSB 2+063.627	7.729 LT.	SBE	CONNEXUS	
LSB 3+237.672	17.153 LT.	SBE	CONNEXUS	
LSB 3+239.591	16.627 LT.	SBE	CONNEXUS	
LSB 3+259.203	14.485 LT.	SBE	CONNEXUS	
TELEPHONE				
LNB 1+418.316	3.880 LT.	SBT	U.S. WEST	
LNB 1+485.725	3.944 LT.	SBT	U.S. WEST	
LNB 1+611.662	4.939 RT.	SBT	U.S. WEST	
LNB 1+619.534	5.563 RT.	SBT	U.S. WEST	
LNB 1+833.650	1.499 LT.	T-VAULT	U.S. WEST	
LSB 1+917.096	16.653 LT.	SBT	U.S. WEST	
LSB 1+996.386	10.701 LT.	SBT	U.S. WEST	
LSB 2+065.214	7.375 LT.	SBT	U.S. WEST	
LNB 2+109.925	1.367 RT.	T-VAULT	U.S. WEST	
LNB 2+111.854	1.411 RT.	T-VAULT	U.S. WEST	
LSB 2+168.590	10.998 LT.	SBT	U.S. WEST	
LSB 2+221.420	11.803 LT.	SBT	U.S. WEST	
LSB 2+355.275	4.708 LT.	SBT	U.S. WEST	
LNB 2+389.635	1.412 RT.	T-VAULT	U.S. WEST	
LSB 2+432.362	6.170 LT.	SBT	U.S. WEST	
LSB 2+513.181	9.031 LT.	SBT	U.S. WEST	
LNB 2+664.479	1.774 RT.	T-VAULT	U.S. WEST	
LNB 2+686.520	15.527 RT.	SBT	U.S. WEST	
LNB 2+687.745	14.976 RT.	SBT	U.S. WEST	
LNB 2+688.925	14.985 RT.	SBT	U.S. WEST	
LNB 2+939.547	3.589 RT.	SBT	U.S. WEST	
LNB 2+940.134	1.659 RT.	T-VAULT	U.S. WEST	
LNB 2+997.186	3.595 RT.	SBT	U.S. WEST	
LNB 3+060.800	3.350 RT.	SBT	U.S. WEST	
LNB 3+130.129	14.762 RT.	SBT	U.S. WEST	
LNB 3+136.788	3.597 RT.	SBT	U.S. WEST	
LNB 3+200.836	8.604 RT.	SBT	U.S. WEST	
LNB 3+202.809	1.316 RT.	T-VAULT	U.S. WEST	
LNB 3+203.277	3.497 RT.	T-VAULT	U.S. WEST	

NO	DATE	BY	CKD	APPR	REVISION

PARSONS
Barton-Aschman Associates, Inc.
A Unit of Parsons Transportation Group Inc.

minnesota metric

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
James C Kuntzsch
DATE 1-21-00 REG. NO. 10169

DRAWN BY SAP DATE
DESIGN BY JCK DATE
CHECKED BY GPO DATE

STATE PROJECT NO. 02-678-11
STATE PROJECT NO. 114-020-22
STATE PROJECT NO.

ANOKA COUNTY
ANOKA COUNTY HIGHWAY DEPT.

PUBLIC UTILITY TABULATION

Sheet 7 of 103 Sheets

NOTES:

1. UTILITY RELOCATION/ADJUSTMENTS NECESSARY FOR CONSTRUCTION OF THE PROPOSED DRAINAGE SYSTEM MAY NOT BE LISTED IN THE ABOVE TABLE. THE UTILITY COMPANIES SHALL WORK WITH THE CONTRACTOR TO FIELD VERIFY ANY UTILITY CONFLICTS AND TO TAKE THE NECESSARY ACTION.
2. THE CONTRACTOR SHALL UTILIZE THE "GOPHER STATE ONE CALL SYSTEM" @ 1-800-252-1166, 48 HOURS PRIOR TO PERFORMING ANY EXCAVATION WORK AS REQUIRED BY MINNESOTA STATUTE CHAPTER 216D.
3. ALL ADJUSTMENTS TO CITY OF COON RAPIDS UTILITIES TO BE DONE BY CONTRACTOR. ALL ADJUSTMENTS TO PRIVATE TO BE DONE BY UTILITY OWNERS.
4. IT IS THE RESPONSIBILITY OF THE UTILITY COMPANIES TO VERIFY THE UTILITY LOCATIONS LISTED AND TO VERIFY ALL NECESSARY RELOCATIONS/ADJUSTMENTS. THE UTILITY COMPANIES SHALL WORK WITH THE CONTRACTOR TO FIELD VERIFY ANY UTILITY CONFLICT AND TO TAKE THE NECESSARY ACTION.

NSP CONTACT:
MS. PAM FOSSUM
NORTHERN STATES POWER COMPANY
8701 MONTICELLO LANE NO.
MAPLE GROVE, MN 55369-4556
PHONE: 612-493-1669

CONNEXUS ENERGY CONTACT:
MR. STEVE ZIMMERMAN
CONNEXUS ENERGY
14601 RAMSEY BOULEVARD
RAMSEY MN 55303
PHONE: 612-323-2766

MEDIA ONE
KEVIN STROP OR VAL WHITE
MEDIA ONE CABLE
1238 GREY FOX ROAD
ARDEN HILLS, MN 55112
PHONE: 651-486-2148 OR 651-486-2144

MINNEGASCO CONTACT:
MR. RICHARD J. PILON, P.E. OR MR. JOHN ANDERSON
MINNEGASCO
700 WEST LINDEN AVENUE
P.O. BOX 1165
MINNEAPOLIS, MN 55440-1165
PHONE: 612-321-5426
OR 612-454-0002 FOR FIELD LOCATION WITHIN 48 HOURS.

U.S. WEST CONTACT:
MR. LEROY DALBERG
U.S. WEST COMMUNICATIONS
9700 SCHMIDT LAKE ROAD
PLYMOUTH, MN 55442
PHONE: 612-531-6324

CITY OF COON RAPIDS:
MR. STEVE GATLIN
CITY OF COON RAPIDS
11155 ROBINSON DRIVE
COON RAPIDS, MN 55433-3761
PHONE: 612-767-6479

EXISTING UTILITIES WITHIN CONSTRUCTION LIMITS

STATION	OFFSET (m)	DESCRIPTION	OWNER	REMARKS
ELECTRIC				
LNB 2+317.968	0.912 RT.	HANDHOLE	ANOKA CO.	
LNB 2+355.478	1.047 RT.	HANDHOLE	ANOKA CO.	
LNB 2+390.394	5.814 RT.	HANDHOLE	ANOKA CO.	
LNB 2+390.747	14.648 RT.	HANDHOLE	ANOKA CO.	
LNB 2+394.135	9.651 RT.	HANDHOLE	ANOKA CO.	
LNB 2+411.505	9.576 RT.	HANDHOLE	ANOKA CO.	
LSB 2+409.810	4.265 LT.	HANDHOLE	ANOKA CO.	
LSB 2+429.261	1.070 LT.	HANDHOLE	ANOKA CO.	
LSB 2+491.383	0.987 LT.	HANDHOLE	ANOKA CO.	
LNB 2+704.585	0.797 RT.	HANDHOLE	ANOKA CO.	
LNB 2+750.616	0.770 RT.	HANDHOLE	ANOKA CO.	
LNB 2+794.375	0.842 RT.	HANDHOLE	ANOKA CO.	
LNB 2+802.332	7.161 RT.	HANDHOLE	ANOKA CO.	
LSB 2+794.600	4.635 LT.	HANDHOLE	ANOKA CO.	
LSB 2+795.340	8.080 LT.	HANDHOLE	ANOKA CO.	
LSB 2+800.889	7.035 LT.	HANDHOLE	ANOKA CO.	
LSB 2+815.117	6.018 LT.	HANDHOLE	ANOKA CO.	
LSB 2+820.823	0.980 LT.	HANDHOLE	ANOKA CO.	
LNB 2+817.031	9.233 RT.	HANDHOLE	ANOKA CO.	
LNB 2+823.187	3.243 RT.	HANDHOLE	ANOKA CO.	
LSB 2+863.545	1.122 LT.	HANDHOLE	ANOKA CO.	
LSB 2+910.919	1.256 LT.	HANDHOLE	ANOKA CO.	
LNB 3+239.006	2.578 RT.	HANDHOLE	ANOKA CO.	
LNB 3+281.228	5.543 RT.	HANDHOLE	ANOKA CO.	

NO	DATE	BY	CKD	APPR	REVISION

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minnesota metric

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James C Knutson
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ANOKA COUNTY
HIGHWAY DEPT.

PUBLIC UTILITY TABULATION

(A) REPLACE HYDRANT

EXISTING LOCATION		REMAIN IN PLACE (EACH) (1)	PROPOSED LOCATION	
STATION	OFFSET (m)		STATION	OFFSET (m)
LSB 1+529	11.3 LT.		LSB 1+528.5	11.3 LT.
LSB 1+620	9.3 LT.		LSB 1+620	18.0 LT.
LSB 1+783	9.8 LT.		LSB 1+783	25.2 LT.
LSB 1+935	21.4 RT.		LSB 1+932.5	26.5 RT.
LSB 2+121	4.2 LT.		LSB 2+121	13.0 LT.
LSB 2+227	4.3 LT.		LSB 2+227	12.4 LT.
LSB 2+394	18.8 RT.		LSB 2+391.4	25.2 RT.
LSB 2+498	4.3 LT.		LSB 2+498	12.7 LT.
LSB 2+683	4.2 LT.		LSB 2+683	12.4 LT.
LSB 2+918	8.5 LT.		LSB 2+918	12.4 LT.
LSB 3+077	7.6 LT.		LSB 3+077	12.4 LT.
LSB 3+199	12.3 LT.	1		
TOTAL		1	11	

(1) NO CONSTRUCTION REQUIRED.

(B) ADJUST VALVE BOX – WATER

EXISTING LOCATION		DESCRIPTION	OWNER	ADJUST (EACH) (1)	RECONSTRUCT (EACH) (2)
STATION	OFFSET (m)				
LSB 1+390	8.4 LT.	150 mm GATE VALVE	COON RAPIDS	1	
LSB 1+534	9.9 LT.	150 mm GATE VALVE	COON RAPIDS	1	
LSB 1+540	3.1 LT.	750 mm GATE VALVE	COON RAPIDS		1
LSB 1+625	8.1 LT.	150 mm GATE VALVE	COON RAPIDS	1	
LSB 1+685	10.0 RT.	mm GATE VALVE	COON RAPIDS	1	
LSB 1+782	8.0 LT.	150 mm GATE VALVE	COON RAPIDS	1	
LSB 1+835	1.9 RT.	150 mm GATE VALVE	COON RAPIDS	1	
LSB 1+851	1.1 LT.	200 mm GATE VALVE	COON RAPIDS	1	
LSB 1+938	20.6 RT.	150 mm GATE VALVE	COON RAPIDS	1	
LSB 2+119	2.6 LT.	150 mm GATE VALVE	COON RAPIDS	1	
LSB 2+119	5.0 LT.	150 mm GATE VALVE	COON RAPIDS	1	
LSB 2+120	4.3 LT.	150 mm GATE VALVE	COON RAPIDS	1	
LSB 2+215	24.8 RT.	150 mm GATE VALVE	COON RAPIDS	1	
LSB 2+227	2.4 LT.	150 mm GATE VALVE	COON RAPIDS	1	
LSB 2+302	0.8 RT.	150 mm GATE VALVE	COON RAPIDS	1	
LSB 2+400	16.8 RT.	600 mm GATE VALVE	COON RAPIDS	1	
LSB 2+413	1.8 RT.	750 mm GATE VALVE	COON RAPIDS	1	
LSB 2+504	2.8 LT.	150 mm GATE VALVE	COON RAPIDS	1	
LSB 2+626	2.6 RT.	250 mm GATE VALVE	COON RAPIDS	1	
LSB 2+630	1.0 RT.	150 mm GATE VALVE	COON RAPIDS	1	
LSB 2+802	5.6 LT.	150 mm GATE VALVE	COON RAPIDS	1	
LSB 2+806	15.5 RT.	200 mm GATE VALVE	COON RAPIDS	1	
LSB 3+076	7.0 LT.	150 mm GATE VALVE	COON RAPIDS	1	
LSB 3+199	10.6 LT.	150 mm GATE VALVE	COON RAPIDS	1	
LSB 3+202	0.4 LT.	750 mm GATE VALVE	COON RAPIDS	1	
TOTAL				24	1

(1) ADJUST VALVE BOX–WATER.
(2) BURIED, FIELD VERIFY FOR RECONSTRUCTION, 750mm GATE VALVE

(C) MODIFY EXISTING CURB STOP & BOXES

EXISTING LOCATION		ADDRESS	SERVICE LINE	INSTALL NEW CURB STOP/BOX			ABANDON IN PLACE (EACH)	REMAIN IN PLACE (EACH)
STATION	OFFSET (m)		DESCRIPTION	STATION	OFFSET (m)	LENGTH (m)		
LSB 1+385	9.7 RT.	10563	25 mm COPPER				1	
LSB 1+417	9.7 LT.	10608	25 mm COPPER					1
LSB 1+422	10.7 RT.	10613	25 mm COPPER				1	
LSB 1+441	10.3 LT.	10616	25 mm COPPER					1
LSB 1+464	9.4 LT.	10624	25 mm COPPER					1
LSB 1+473	10.3 RT.	10625	25 mm COPPER				1	
LSB 1+489	10.0 LT.	10632	25 mm COPPER					1
LSB 1+508	11.1 RT.	10639	25 mm COPPER				1	
LSB 1+511	9.7 LT.	10640	25 mm COPPER					1
LSB 1+563	10.0 LT.	10654	25 mm COPPER	LSB 1+563	11.8 LT.	1.8		
LSB 1+577	10.6 RT.	10649	25 mm COPPER	LSB 1+577	24.7 RT.	14.1		
LSB 1+586	10.2 LT.	10662	25 mm COPPER	LSB 1+586	11.8 LT.	1.6		
LSB 1+620	16.2 RT.	10719	25 mm COPPER	LSB 1+620	24.7 RT.	8.5		
LSB 1+620.3	16.2 RT.	10721	25 mm COPPER	LSB 1+620.3	24.7 RT.	8.5		
LSB 1+675	9.8 LT.	10734	25 mm COPPER	LSB 1+675	11.8 LT.	2.0		
LSB 1+687	9.8 LT.	10738	25 mm COPPER	LSB 1+687	11.8 LT.	2.0		
LSB 1+781	9.7 LT.	108TH 2000	25 mm COPPER	LSB 1+781	11.8 LT.	2.1		
LSB 1+802	9.3 LT.	108TH 2000	25 mm COPPER	LSB 1+802	11.8 LT.	2.5		
LSB 1+829	7.4 LT.	108TH 2000	25 mm COPPER	LSB 1+829	11.8 LT.	4.4		
LSB 1+869	15.4 RT.	10823	25 mm COPPER	LSB 1+869	24.2 RT.	8.8		
LSB 1+874	5.3 LT.	108TH 2003	25 mm COPPER	LSB 1+874	11.8 LT.	6.5		
LSB 1+901	4.6 LT.	108TH 2005	25 mm COPPER	LSB 1+901	11.8 LT.	7.2		
LSB 1+945	4.2 LT.	10848	25 mm COPPER	LSB 1+945	11.8 LT.	7.6		
LSB 1+972	11.1 LT.	10856	25 mm COPPER	LSB 1+972	11.8 LT.	0.7		
LSB 1+977	12.0 LT.	10856	25 mm COPPER					1
LSB 2+023	4.0 LT.	10922	25 mm COPPER	LSB 2+023	11.8 LT.	7.8		
LSB 2+052	11.7 LT.	10934	25 mm COPPER					1
LSB 2+155	3.9 LT.	10984	25 mm COPPER	LSB 2+155	11.8 LT.	7.9		
LSB 2+181	4.0 LT.	(1)	25 mm COPPER	LSB 2+181	11.8 LT.	7.8		
LSB 2+371	3.9 LT.	11056	25 mm COPPER	LSB 2+371	11.9 LT.	8.0		
LSB 2+392	3.6 LT.	11064	25 mm COPPER	LSB 2+392	11.8 LT.	8.2		
LSB 2+420	4.0 LT.	11106	25 mm COPPER	LSB 2+420	11.8 LT.	7.8		
LSB 2+442	4.0 LT.	11114	25 mm COPPER	LSB 2+442	11.8 LT.	7.8		
LSB 2+494	15.7 RT.	11115	25 mm COPPER	LSB 2+494	24.7 RT.	9.0		
LSB 2+595	4.4 LT.	11164	25 mm COPPER	LSB 2+595	11.8 LT.	7.4		
LSB 2+624	4.4 LT.	11200	25 mm COPPER	LSB 2+622	11.8 LT.	7.4		
LSB 2+659	4.3 LT.	11260	25 mm COPPER	LSB 2+659	11.8 LT.	7.5		
LSB 2+691	3.9 LT.	11228	25 mm COPPER	LSB 2+691	11.8 LT.	7.9		
LSB 2+759	4.2 LT.	11290	25 mm COPPER	LSB 2+759	11.7 LT.	7.5		
LSB 2+820	33.8 RT.	11309–11315	25 mm COPPER	LSB 2+821.8	33.8 RT.	0		
LSB 2+841	16.0 RT.	11317–11327	25 mm COPPER	LSB 2+841	24.7 RT.	8.7		
LSB 2+858	8.1 LT.	11308	25 mm COPPER	LSB 2+858	11.7 LT.	3.6		
LSB 2+883	8.9 LT.	11316	25 mm COPPER	LSB 2+883	11.8 LT.	2.9		
LSB 2+892	16.8 RT.	11325–11329	25 mm COPPER	LSB 2+892	24.7 RT.	7.9		
LSB 2+908	8.6 LT.	11324	25 mm COPPER	LSB 2+908	11.8 LT.	3.2		
LSB 2+910	16.4 RT.	11317–11327	25 mm COPPER	LSB 2+910	24.9 RT.	8.5		
LSB 2+924	9.0 LT.	11332	25 mm COPPER	LSB 2+924	11.8 LT.	2.8		
LSB 2+934	16.6 RT.	11331	25 mm COPPER	LSB 2+934	24.7 RT.	8.1		
LSB 2+956	16.7 RT.	11339	25 mm COPPER	LSB 2+956	24.7 RT.	8.0		
LSB 2+981	8.0 LT.	11348	25 mm COPPER	LSB 2+981	11.8 LT.	3.8		
LSB 2+984	16.8 RT.	11349	25 mm COPPER	LSB 2+984	24.7 RT.	7.9		
LSB 3+002	7.9 LT.	11356	25 mm COPPER	LSB 3+002	11.9 LT.	4.0		
LSB 3+012	17.2 RT.	(2)	25 mm COPPER	LSB 3+012	24.7 RT.	7.5		
LSB 3+044.7	17.2 RT.	11359	25 mm COPPER	LSB 3+044.7	24.7 RT.	7.5		
LSB 3+045	7.0 LT.	11400	50 mm COPPER	LSB 3+045	11.8 LT.	4.8		
LSB 3+056	8.1 LT.	11412–11416	50 mm COPPER	LSB 3+056	11.8 LT.	3.7		
LSB 3+076	17.7 RT.	11415	25 mm COPPER	LSB 3+076	24.7 RT.	7.0		
LSB 3+093	8.3 LT.	11420–11424	50 mm COPPER	LSB 3+093	11.8 LT.	3.5		
LSB 3+144	7.3 LT.	11444	25 mm COPPER	LSB 3+144	11.8 LT.	4.5		
LSB 3+153	17.1 RT.	11491	25 mm COPPER	LSB 3+153	24.8 RT.	7.7		
					TOTAL	295.9	4	7

(1) MEADOW LANE ESTATES.
(2) UNNUMBERED LOT BETWEEN 11349 AND 11359.

NO	DATE	BY	CKD	APPR	REVISION

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PUBLIC UTILITY TABULATION

(D) ADJUST FRAME & RING CASTING

STATION	OFFSET (m)	DESCRIPTION	INPLACE TOP EL.	PROP. TOP EL.	ADJUST (EA.)	OWNER	REMARKS
INSIDE CSAH 78 ROADWAY							
LSB 1+392.727	0.404 LT.	300 mm VCP	264.241	264.240	1	COON RAPIDS	
LSB 1+463.316	0.886 LT.	300 mm VCP	264.138	264.059	1	COON RAPIDS	
LSB 1+536.784	0.957 LT.	300 mm VCP	263.743	263.763	1	COON RAPIDS	
LSB 1+620.578	17.266 RT.	200 mm PVC IN 300 mm STEEL CASING	263.762	000.00	1	COON RAPIDS	
LSB 1+627.708	0.867 LT.	300 mm VCP	263.685	263.739	1	COON RAPIDS	
LSB 1+691.586	0.781 LT.	300 mm VCP IN 600 mm STEEL CASING	264.341	264.594	1	COON RAPIDS	
LSB 1+747.663	0.714 LT.	300 mm VCP IN 600 mm STEEL CASING	264.496	264.773	1	COON RAPIDS	
LSB 1+843.041	2.233 RT.	300 mm VCP	264.107	264.180	1	COON RAPIDS	
LSB 1+941.863	5.127 RT.	300 mm VCP	263.723	264.006	1	COON RAPIDS	
LSB 1+995.898	4.945 RT.	300 mm VCP	263.765	264.098	1	COON RAPIDS	
LSB 2+123.725	5.046 RT.	300 mm VCP	263.868	264.156	1	COON RAPIDS	
LSB 2+228.711	4.947 RT.	300 mm VCP	263.002	263.308	1	COON RAPIDS	
LSB 2+329.943	4.949 RT.	300 mm VCP	263.064	263.380	1	COON RAPIDS	
LSB 2+403.106	5.198 RT.	300 mm VCP	263.282	263.483	1	COON RAPIDS	
LSB 2+505.887	5.029 RT.	375 mm RCP	263.599	263.848	1	COON RAPIDS	
LSB 2+539.205	4.766 RT.	375 mm RCP	263.703	264.175	1	COON RAPIDS	(2)
LSB 2+567.411	4.734 RT.	375 mm RCP	263.798	264.256	1	COON RAPIDS	
LSB 2+607.551	4.955 RT.	375 mm RCP	263.918	264.199	1	COON RAPIDS	
LSB 2+629.989	5.003 RT.	375 mm RCP	263.970	264.106	1	COON RAPIDS	
LSB 2+651.340	5.193 RT.	375 mm RCP	264.037	264.178	1	COON RAPIDS	
LSB 2+707.051	4.896 RT.	375 mm RCP	264.212	264.573	1	COON RAPIDS	(2)
LSB 2+809.315	4.664 RT.	375 mm RCP	264.511	264.622	1	COON RAPIDS	
LSB 2+840.378	4.578 RT.	375 mm RCP	264.571	264.642	1	COON RAPIDS	
LSB 2+875.815	4.662 RT.	375 mm RCP	264.675	264.825	1	COON RAPIDS	
LSB 2+911.984	4.889 RT.	375 mm RCP	264.720	264.910	1	COON RAPIDS	
LSB 3+009.395	5.432 RT.	375 mm RCP	264.543	264.740	1	COON RAPIDS	
LSB 3+052.432	5.297 RT.	375 mm RCP	264.624	264.809	1	COON RAPIDS	
LSB 3+111.052	4.838 RT.	375 mm RCP	264.832	264.921	1	COON RAPIDS	
LSB 3+176.191	5.384 RT.	375 mm RCP	264.899	265.184	1	COON RAPIDS	
LSB 3+215.221	0.330 RT.	375 mm RCP	264.713	264.840	1	COON RAPIDS	
LSB 3+276.595	6.486 RT.	300 mm VCP	264.764	264.814	1	COON RAPIDS	(2)
OUTSIDE CSAH 78 ROADWAY							
LSB 1+836.467	34.025 RT.	200 mm PVC	264.114	264.114		COON RAPIDS	
LSB 1+850.207	30.103 LT.	200 mm PVC	264.151	–	1	COON RAPIDS	
LSB 1+986.609	8.299 LT.		263.859	263.929	1	COON RAPIDS	
LSB 2+009.972	21.730 RT.		263.971	263.692	1	COON RAPIDS	
LSB 2+299.921	8.897 LT.	200 mm PVC	263.004	262.913	1	COON RAPIDS	
LSB 2+329.739	8.853 LT.	300 mm VCP	262.842	263.236	1	COON RAPIDS	
LSB 2+402.992	21.623 RT.	450 mm RCP	263.361	263.304	1	COON RAPIDS	
LSB 2+629.909	43.104 RT.	200 mm PVC	–	–		COON RAPIDS	
LSB 2+809.352	17.648 RT	200 mm PVC	264.452	264.522	1	COON RAPIDS	
LSB 2+905.502	31.542 RT.	200 mm PVC IN 450 mm STEEL CASING	–	–		COON RAPIDS	
LSB 3+212.229	17.955 LT.	300 mm VCP	264.379	–	1	COON RAPIDS	
LSB 3+207.286	16.000 LT.	600 mm CIP	264.416	–	1	COON RAPIDS	(1)
TOTAL					40		

(1) EXISTING WATER VALVE MANHOLE.

(2) FIELD VERIFY LOCATION AND ELEVATION OF SANITARY MANHOLES/CASTINGS ROTATE TOP CONE OF MANHOLE AND ADJUST CASTING TO AVOID CONFLICT WITH THE PROPOSED CURB IF NECESSARY. (INCIDENTAL COST TO "ADJUST FRAME AND RING CASTING (SANITARY)").

NO	DATE	BY	CKD	APPR	REVISION

PARSONS
Barton-Aschman Associates, Inc.
A Unit of Parsons Transportation Group Inc.

minnesota metric

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
James C Knutson
DATE 2-16-00 REG. NO. 10169

DRAWN BY SAP DATE
DESIGN BY JCK DATE
CHECKED BY GPO DATE

STATE PROJECT NO. 02-678-11
STATE PROJECT NO. 114-020-22
STATE PROJECT NO.

ANOKA COUNTY
HIGHWAY DEPT.

PUBLIC UTILITY TABULATION

(E) CLEAR AND GRUB

STATION	LOCATION	CLEARING TREE	CLEARING ha	GRUBBING TREE	GRUBBING ha
LSB 1+380 TO 1+537	RT		0.78		0.78
LSB 1+540 TO 1+680	RT	9		9	
LSB 1+542 TO 1+624	LT	2		2	
LSB 1+633 TO 1+690	LT	2		2	
LSB 1+715 TO 1+835	RT	20	0.02	20	0.02
LSB 1+735 TO 1+845	LT	21		21	
LSB 1+843 TO 1+938	RT	42		45	
LSB 1+855 TO 2+293	LT	36	0.02	37	0.02
LSB 1+945 TO 2+395	RT	79		79	
LSB 2+305 TO 2+505	LT	27		29	
LSB 2+408 TO 2+805	RT	38		38	
LSB 2+510 TO 2+805	LT	30		30	
LSB 2+815 TO 3+212	RT	32	0.03	32	0.03
LSB 2+812 TO 3+208	LT	30		31	
TOTALS		368	0.85	376	0.85

(F) BITUMINOUS AND CONCRETE REMOVAL

STATION	BIT. m^2	CONC. m^2	REMARKS
LSB 1+390 TO 1+700	4654		MAINLINE AND SIDE STREETS
LSB 1+700 TO 2+400	10195		MAINLINE AND SIDE STREETS
LSB 2+400 TO 3+286	14860		MAINLINE AND SIDE STREETS
LSB 3+177 TO 3+286		338	CONCRETE MEDIAN
LNB 1+485 TO 1+683		282	CONCRETE WALK
LSN 1+397 TO 1+714		444	CONCRETE WALK
LNB 1+738 TO 2+400		846	CONCRETE WALK
LSB 1+733 TO 2+400		938	CONCRETE WALK
LNB 2+400 TO 3+207		764	CONCRETE WALK
LSB 2+400 TO 3+230		1196	CONCRETE WALK
TOTALS	29709	4808	

(G) SAWING BITUMINOUS PAVEMENT

STATION	LOCATION	LENGTH m
ROADWAY		
LSB 1+389.0 TO 1+397.0	13.6 TO 19.0 LT	10.0
LSB 1+533.5 TO 1+541.0	19.0 TO 21.0 LT	8.0
LSB 1+533.5 TO 1+541.0	77.0 TO 77.0 RT	8.0
LSB 1+623.5 TO 1+632.5	20.6 TO 21.0 LT	8.0
LSB 1+856.0 TO 1+860.0	43.5 TO 39.0 LT	8.0
LSB 1+835.0 TO 1+843.0	32.0 TO 30.5 RT	8.0
LSB 1+937.5 TO 1+945.8	36.0 TO 34.9 RT	8.0
LSB 2+072.5 TO 2+082.8	15.5 TO 14.5 LT	10.0
LSB 2+296.0 TO 2+303.5	15.2 TO 18.5 LT	8.0
LSB 2+395.6 TO 2+410.0	35.0 TO 33.0 RT	14.0
LSB 2+501.5 TO 2+510.0	21.8 TO 22.0 LT	8.0
LSB 2+542.0 TO 2+547.5	29.5 TO 29.5 RT	6.0
LSB 2+551.0 TO 2+557.5	29.5 TO 29.5 RT	6.0
LSB 2+622.0 TO 2+628.8	30.0 TO 30.0 RT	6.0
LSB 2+630.8 TO 2+636.4	30.0 TO 30.0 RT	6.0
LSB 2+625.0 TO 2+633.5	16.0 TO 13.5 LT	9.0
LSB 2+802.0 TO 2+814.0	19.0 TO 20.8 LT	12.0
LSB 2+803.8 TO 2+815.8	31.5 TO 29.0 RT	12.0
LSB 2+904.0 TO 2+912.0	25.5 TO 25.5 RT	7.0
LSB 3+090.5 TO 3+099.0	25.0 TO 25.0 RT	7.5
LSB 3+141.8 TO 3+152.0	25.0 TO 25.5 RT	8.5
LSB 3+209.0 TO 3+215.5	30.0 TO 34.5 LT	8.5
LSB 3+207.8 TO 3+215.5	42.5 TO 41.0 RT	8.0
DRIVEWAYS		
LSB 1+431.9	14.5 LT	6.0
LSB 1+456.7	14.5 LT	4.8
LSB 1+481.7	14.5 LT	6.0
LSB 1+578.0	17.2 LT	3.5
LSB 1+607.0	30.0 RT	9.0
LSB 1+630.0	28.5 RT	14.5
LSB 1+648.3	16.0 LT	8.5
LSB 1+836.0	28.5 LT	8.0
LSB 1+937.5	33.0 RT	6.0
LSB 1+946.0	33.0 RT	3.5
LSB 1+965.0	17.0 LT	7.0
LSB 1+983.0	17.0 LT	6.5
LSB 2+010.0	27.0 RT	13.0
LSB 2+033.4	14.5 LT	3.0
LSB 2+058.0	14.5 LT	12.5
LSB 2+155.0	21.0 LT	7.0
LSB 2+361.0	15.0 LT	3.0
LSB 2+406.0	15.0 LT	3.0
LSB 2+418.0	15.0 LT	4.0
LSB 2+549.5	13.5 LT	7.0
LSB 2+848.8	17.5 LT	3.0
LSB 2+873.5	21.5 LT	4.5
LSB 2+895.0	20.5 LT	3.5
LSB 2+912.0	31.0 RT	3.0
LSB 2+922.5	17.5 LT	3.5
LSB 2+945.5	18.0 LT	3.0
LSB 2+959.0	27.5 RT	3.0
LSB 2+970.0	17.5 LT	6.0
LSB 2+972.5	28.5 RT	3.0
LSB 2+995.5	17.0 LT	4.0
LSB 3+0150.0	27.5 RT	4.0
LSB 3+030.0	33.5 RT	6.0
LSB 3+063.5	17.5 LT	7.5
LSB 3+092.0	18.0 LT	8.0
LSB 3+157.5 (1)	21.0 LT	4.0
LSB 3+263.0	12.5 RT	9.5
SIDEWALK		
LSB 2+212.0 (1)	19.0 LT	3.0
LSB 2+390.0 (1)	6.5 LT	1.5
LSB 2+642.0 (1)	8.0 LT	1.5
TOTAL		411.8

(1) SAWING CONCRETE PAVEMENT

(H) CURB AND GUTTER REMOVAL

STATION	LOCATION (m)	LENGTH m
LSB 1+386.5 TO 1+533.5	7.2 TO 77.0 RT	210
LSB 1+397 TO 1+533.5	19.0 TO 19.0 LT	162
LSB 1+541.6 TO 1+689	77.0 TO 7.2 RT	215
LSB 1+541.0 TO 1+623.5	21.0 TO 20.6 LT	115
LSB 1+632.5 TO 1+700	21.0 TO 6.0 LT	84.5
LSB 1+736.0 TO 1+835.0	7.0 TO 32.0 RT	118
LSB 1+747.0 TO 1+856.0	6.0 TO 43.5 LT	140
LSB 1+843.0 TO 1+937.5	30.5 TO 36.0 RT	125
LSB 1+860.0 TO 2+072.5	39.0 TO 15.5 LT	281
LSB 1+945.8 TO 2+395.6	34.9 TO 35.0 RT	481
LSB 2+082.6 TO 2+296.0	14.5 TO 15.2 LT	247
LSB 2+303.5 TO 2+501.5	18.5 TO 21.8 LT	238
LSB 2+410.0 TO 2+542.0	33.0 TO 29.5 RT	157
LSB 2+510.0 TO 2+625.0	22.0 TO 16.0 LT	153
LSB 2+547.5 TO 2+551.0	29.5 TO 29.5 RT	33
LSB 2+557.5 TO 2+622.0	29.5 TO 30.0 RT	88.5
LSB 2+628.8 TO 2+630.8	30.0 TO 30.0 RT	28
LSB 2+633.5 TO 2+802.0	13.5 TO 19.0 LT	202
LSB 2+636.4 TO 2+803.8	30.0 TO 31.5 RT	187.5
LSB 2+814.0 TO 3+209.0	20.8 TO 30.0 LT	443
LSB 2+815.8 TO 2+904.0	29.0 TO 25.5 RT	99
LSB 2+912.0 TO 3+090.5	25.5 TO 25.0 RT	202
LSB 3+099.0 TO 3+141.8	25.0 TO 25.0 RT	68
LSB 3+152.0 TO 3+207.8	25.5 TO 42.5 RT	86.5
LSB 3+177.0 TO 3+288.6	2.0 TO 7.0 RT	226
LSB 3+215.5 TO 3+272.0	34.5 TO 5.0 LT	82.5
LSB 3+215.5 TO 3+288.6	41.0 TO 18.5 RT	78
TOTAL		4550.5

(I) MAILBOX SUPPORT TABULATION (3)

STREET ADDRESS	RELOCATE EACH (1)
10608 HANSON	1
10616 HANSON	1
10624 HANSON	1
10632 HANSON	1
10640 HANSON	1
10654 HANSON	1
10662 HANSON	1
10707-10713 HANSON	1
10719-10721 HANSON	1
10823 HANSON	1
10848 HANSON	1
10856 HANSON	2
10922 HANSON	1
10930-10934 HANSON	1
10984 HANSON	1
10986 HANSON	1
11056 HANSON	1
11064 HANSON	1
11106 HANSON	1
11114 HANSON	1
11120 HANSON	1
11200-11260 HANSON	6 (2)
11300 HANSON	1
11308 HANSON	1
11316 HANSON	1
11324 HANSON	1
11332 HANSON	1
11340 HANSON	1
11315-11329 HANSON	3 (2)
11348 HANSON	1
11349 HANSON	1
11356 HANSON	1
11359 HANSON	1
11412-11416 HANSON	1
11420 HANSON	1
11424 HANSON	1
TOTAL	44

NOTE: (1) CONTRACTOR SHALL RELOCATE THE EXISTING MAILBOX(S) TO LOCATION AS DIRECTED BY THE ENGINEER.
(2) MAILBOX CABINET WITH CONCRETE PAD. PAID AS EACH MAILBOX CABINET RELOCATED.
(3) COUNTY SHALL FURNISH MAILBOX SUPPORTS SINGLE OR GROUP MAILBOXES SHALL BE RELOCATED TO A TEMPORARY POSITION DURING STAGED CONSTRUCTION AND RELOCATED TO NEWSUPPORTS AT APPROPRIATE STAGES.

NO	DATE	BY	CKD	APPR	REVISION

PARSONS
Barton-Aschman Associates, Inc.
A Unit of Parsons Transportation Group Inc.

minnesota metric

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
James C Kuntson
DATE 1-21-00 REG. NO. 10169

DRAWN BY SAP DATE
DESIGN BY JCK DATE
CHECKED BY GPO DATE

STATE PROJECT NO. 02-678-11
STATE PROJECT NO. 114-020-22
STATE PROJECT NO.

ANOKA COUNTY
ANOKA COUNTY HIGHWAY DEPT.

MISC. TABULATIONS

Sheet 11 of 103 Sheets

J CONC. PEDESTRIAN RAMPS

STATION	LOCATION	EACH
LNB 1+397	10.8 RT.	1
LNB 1+530	10.8 RT.	1
LNB 1+543	10.8 RT.	1
LNB 1+830	10.8 RT.	1
LNB 1+845	10.8 RT.	1
LNB 1+934	10.8 RT.	1
LNB 1+948	10.8 RT.	1
LNB 2+070	10.8 RT.	1
LNB 2+088	10.8 RT.	1
LNB 2+392	10.8 RT.	1
LNB 2+412	10.8 RT.	1
LNB 2+540	10.8 RT.	1
LNB 2+559	10.8 RT.	1
LNB 2+620	10.8 RT.	1
LNB 2+637	10.8 RT.	1
LNB 2+799	10.0 RT.	1
LNB 2+818	10.0 RT.	1
LNB 2+903	10.8 RT.	1
LNB 2+911	10.8 RT.	1
LNB 3+090	10.8 RT.	1
LNB 3+099	10.8 RT.	1
LNB 3+142	10.8 RT.	1
LNB 3+151	10.8 RT.	1
LNB 3+208	10.8 RT.	1
LSB 1+401	8.0 LT.	1
LSB 1+531	10.8 LT.	1
LSB 1+545	10.8 LT.	1
LSB 1+620	10.8 LT.	1
LSB 1+635	10.8 LT.	1
LSB 1+835	10.8 LT.	1
LSB 1+851	10.8 LT.	1
LSB 2+070	10.8 LT.	1
LSB 2+083	10.8 LT.	1
LSB 2+293	10.8 LT.	1
LSB 2+307	10.8 LT.	1
LSB 2+390	6.2 LT.	1
LSB 2+499	10.8 LT.	1
LSB 2+513	10.8 LT.	1
LSB 2+623	10.8 LT.	1
LSB 2+635	10.8 LT.	1
LSB 2+799	9.8 LT.	1
LSB 2+818	9.8 LT.	1
LSB 3+204	12.0 LT.	1
LSB 3+214	14.5 LT.	1
	TOTAL	44

K CONCRETE WALK AND CONCRETE MEDIAN

STATION	LOCATION	DESCRIPTION	100 mm m^2	200 mm m^2
SIDEWALK				
LSB 1+405 TO 1+530	8.5 LT.	SIDEWALK	195	
LNB 1+400 TO 1+530	11.0 RT.	SIDEWALK	197	
LSB 1+547.5 TO 1+618	11.0 LT.	SIDEWALK	109.5	
LNB 1+544 TO 1+694	11.0 RT.	SIDEWALK	225	
LNB 1+566 TO 1+569	6.2 TO 10.1 RT.	BUS STOP	11.6	
LSB 1+637.5 TO 1+645	11.0 LT.	SIDEWALK	11.2	
LSB 1+645 TO 1+654	11.0 LT.	SIDEWALK		13.5
LSB 1+654 TO 1+721	11.0 LT.	SIDEWALK	102	
LNB 1+705 TO 1+828	11.0 RT.	SIDEWALK	183	
LSB 1+731 TO 1+834	11.0 LT.	SIDEWALK	150	
LNB 1+848 TO 1+934	11.0 RT.	SIDEWALK	129	
LSB 1+852 TO 2+068	11.0 LT.	SIDEWALK	328.5	
LNB 1+946 TO 2+078	11.0 RT.	SIDEWALK	181.5	
LSB 1+985 TO 1+988	6.2 TO 10.1 LT.	BUS STOP	11.6	
LSB 2+085 TO 2+292	11.0 LT.	SIDEWALK	310.5	
LNB 2+089 TO 2+395	11.0 RT.	SIDEWALK	459	
LSB 2+274 TO 2+277	6.2 TO 10.1 LT.	BUS STOP	11.6	
LSB 2+309 TO 2+498	11.0 LT.	SIDEWALK	288	
LNB 2+412 TO 2+539	11.0 RT.	SIDEWALK	189	
LSB 2+514 TO 2+612	11.0 LT.	SIDEWALK	147	
LNB 2+608 TO 2+611	6.2 TO 10.1 RT.	BUS STOP	11.6	
LNB 2+560 TO 2+618	11.0 RT.	SIDEWALK	84	
LNB 2+639 TO 2+797	11.0 RT.	SIDEWALK	243	
LSB 2+636 TO 2+798	11.0 LT.	SIDEWALK	247.5	
LSB 2+819 TO 3+195	11.0 LT.	SIDEWALK	564	
LNB 2+819 TO 2+903	11.0 RT.	SIDEWALK	128	
LNB 3+103 TO 3+141	11.0 RT.	SIDEWALK	60	
LNB 3+152 TO 3+205	11.0 RT.	SIDEWALK	75	
LNB 2+911 TO 3+088	11.0 RT.	SIDEWALK	263	
LSB 3+214 TO 3+230	11.0 LT.	SIDEWALK	26	
SUBTOTAL: (CONCRETE WALK)			4942.1	13.5
LSB 1+403 TO 1+524	9 TO 5 RT.	CONCRETE MEDIAN	104	
LSB 1+551 TO 1+700	8 TO 7 RT.	CONCRETE MEDIAN	243	
LSB 1+723 TO 1+824	7 TO 5 RT.	CONCRETE MEDIAN	262	
LSB 1+852 TO 2+066	8 TO 5 RT.	CONCRETE MEDIAN	176	
LSB 2+092 TO 2+293	8 TO 5 RT.	CONCRETE MEDIAN	168	
LSB 2+310 TO 2+388	5 RT.	CONCRETE MEDIAN	128	
LSB 2+415 TO 2+614	8 TO 5 RT.	CONCRETE MEDIAN	168	
LSB 2+642 TO 2+793	8 TO 5 RT.	CONCRETE MEDIAN	128	
LSB 2+823 TO 3+086	8 RT.	CONCRETE MEDIAN	674	
LSB 3+105 TO 3+280	8 TO 5 RT.	CONCRETE MEDIAN	242	
SUBTOTAL: (CONCRETE MEDIAN)			2293	
LSB 1+939 TO 1+947.6	8 TO 7 RT.	CONC. MED. (MOUNTABLE)		6.9
LSB 3+209 TO 3+218	5 RT.	CONC. MED. (MOUNTABLE)		10.8
SUBTOTAL: (CONCRETE MEDIAN–MOUNTABLE)				17.7
		TOTAL	7235.1	31.2

L CONC. MEDIAN NOSE

STATION	LOCATION	STD PLATE M7113A EACH
LSN 1+403	9.0 RT.	1
LSN 1+524	5.0 RT.	1
LSN 1+551	8.0 RT.	1
LSN 1+824	5.0 RT.	1
LSN 1+852	8.0 RT.	1
LSN 2+066	5.0 RT.	1
LSN 2+092	8.0 RT.	1
LSN 2+293	5.0 RT.	1
LSN 2+310	5.0 RT.	1
LSN 2+388	5.0 RT.	1
LSN 2+415	8.0 RT.	1
LSN 2+614	5.0 RT.	1
LSN 2+642	8.0 RT.	1
LSN 2+793	5.0 RT.	1
LSN 2+823	8.0 RT.	1
LSN 3+086	8.0 RT.	1
LSN 3+105	8.0 RT.	1
	TOTAL	17

N CONSTRUCT RETAINING WALL

STATION	LOCATION	AREA m^2
LSB 3+098 TO 3+155	11.8 TO 16.0 LT.	73.2
LSB 3+159.5 TO 3+168	11.8 TO 16.0 LT.	12.2
	TOTAL	85.4

M TURF ESTABLISHMENT / EROSION CONTROL

STATION	SOD m^2 (1)	SILT FENCE m (2)	BALE CHECK EACH (3)	SEEDING ha
LNB 1+380 TO 1+700	4526			
LNB 1+700 TO 2+400	6886			
LNB 2+400 TO 3+281	9152			
LFR 0+139 TO 0+277		135		
107TH 0+112 TO 0+170		52		
LNB 1+544 TO 1+679		134		
LSB 1+660 TO 1+712		54		
LNB 1+710 TO 1+900		190		
LSB 1+742 TO 1+820		78		
LNB 1+960 TO 2+000		40		
LSB 1+987 TO 2+020		36		
LNB 2+120 TO 2+240		179		
LNB 2+305 TO 2+380		72		
LNB 2+411 TO 2+570		150		
LNB 2+650 TO 2+760		112		
LSB 2+690 TO 2+800		115		
LNB 2+916 TO 2+970		52		
LNB 3+018 TO 3+050		40		
LSB 3+010 TO 3+055		47		
LSB 3+168 TO 3+202		47		
LSB 3+217 TO 3+220		25		
LNB 3+217 TO 3+281		60		
LSB SAG POINTS			56	
LNB SAG POINTS			40	
INLET AND OUTLET OF POND			40	
ENGINEER'S DISCRETION			114	
LNB 1+403 TO 1+528 (4)				0.21
TOTAL	20564	1618	250	0.21

(1) APPLY SOD TO ALL UNPAVED AREA WITHIN THE CONSTRUCTION LIMITS.
(2) SILT FENCE SHALL BE PLACED 0.5m OUTSIDE OF THE CONSTRUCTION LIMITS.
(3) BALE CHECKS SHALL BE APPLIED AROUND THE CBS AT SAG POINTS AND AT INLET/OUTLET OF THE POND.
(4) MULCH 4.5 t/ha = 0.90 t
DISK ANCHORING = 0.21 ha
SEED 50kg/ha = 10.5kg

R MISCELLANEOUS REMOVALS

STATION	LOCATION	REMOVAL ITEMS	QUANTITIES EACH
LSB 1+920 TO 1+924	LT	WOOD WALL	5 m
LSB 2+472 TO 2+496	LT	WOOD WALL	24 m
LNB 2+850 TO 2+880	RT	WOOD WALL	28 m
LSB 1+630 TO 1+690	LT	MODULAR BLOCK WALL	50 m
LSB 3+098 TO 3+106	LT	MODULAR BLOCK WALL	10 m
LNB 1+670	RT	WOOD FENCE	5 m
LNB 763 TO 1+795	RT	WOOD FENCE	37 m
LSB 2+892	LT	WOOD FENCE	8 m
LNB 3+066	RT	WOOD FENCE	5 m
LNB 1+888 TO 1+925	RT	WOOD FENCE	47 m
LNB 1+974 TO 1+996	RT	CHAIN LINK FENCE	28 m
LSB 2+464	LT	CHAIN LINK FENCE	5 m
LSB 3+106 TO 3+167	LT	CHAIN LINK FENCE	64 m
LSB 1+922 TO 1+967	LT	MASONARY & CONC. WALL	14 m3

NO	DATE	BY	CKD	APPR	REVISION

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A Unit of Parsons Transportation Group Inc.

minnesota metric

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James D Kuntson
DATE 1-21-00 REG. NO. 10169

DRAWN BY SAP DATE
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MISC. TABULATIONS

Sheet 12 of 103 Sheets

(O) CONSTRUCT CONCRETE CURB AND GUTTER

STATION	LOCATION	DESCRIPTION	B612	(1) B618	CITY C.R. MOUNTABLE
LSB 1+396 TO 1+533	6.0 LT.	MAINLINE CURB		155.5	
LSB 1+401 TO 1+525	3.9-7.5 RT.	MEDIAN CURB	123.5		
LSB 1+541 TO 1+623	7.8 LT.	MAINLINE CURB	6.0	100.9	
LSB 1+632 TO 1+716	7.8-6.0 LT.	MAINLINE CURB		101.2	
LSB 1+549 TO 1+700	7.5-4.2 RT.	MEDIAN CURB	154.5		
LSB 1+727 TO 1+836	6.0 LT.	MAINLINE CURB		121.1	33.0
LSB 1+722 TO 1+825	4.2 RT.	MEDIAN CURB	104.0		
LSB 1+850 TO 2+072	7.8-6.0 LT.	MAINLINE CURB		270.2	
LSB 1+850 TO 2+066	7.5-4.2 RT.	MEDIAN CURB	216.1		
LSB 2+082 TO 2+295	7.8-6.0 LT.	MAINLINE CURB		233.5	
LSB 2+088 TO 2+293	7.5-4.2 RT.	MEDIAN CURB	204.3		
LSB 2+304 TO 2+501	7.8-6.0 LT.	MAINLINE CURB		201.3	5.6
LSB 2+309 TO 2+388	4.2 LT.	MEDIAN CURB	78.9		
LSB 2+413 TO 2+616	7.5-4.2 RT.	MEDIAN CURB	202.7		
LSB 2+510 TO 2+625	7.8-6.0 LT.	MAINLINE CURB		134.2	
LSB 2+633 TO 2+802	7.8-6.0 LT.	MAINLINE CURB		188.2	
LSB 2+639 TO 2+798	7.5-4.2 RT.	MEDIAN CURB	155.5		
LSB 2+814 TO 3+204	7.8-6.0 LT.	MAINLINE CURB		420.2	
LSB 3+213 TO 3+288	7.8 LT.	MAINLINE CURB		78.3	
LSB 2+822 TO 3+086	7.5-4.2 RT.	MEDIAN CURB	264.9		
LSB 3+101 TO 3+279	7.5-4.2 RT.	MEDIAN CURB	183.4		
LNB 1+401 TO 1+525	4.2-7.5 LT.	MEDIAN CURB	123.5		
LNB 1+396 TO 1+532	6.0 RT.	MAINLINE CURB		155.6	
LNB 1+541 TO 1+696	6.0 RT.	MAINLINE CURB		167.9	
LNB 1+549 TO 1+698	4.2 LT.	MEDIAN CURB	149.5		
LNB 1+706 TO 1+833	6.0-7.8 RT.	MAINLINE CURB		142.3	
LNB 1+722 TO 1+826	4.2-7.5 LT.	MEDIAN CURB	104.7		
LNB 1+842 TO 1+937	7.8 RT.	MAINLINE CURB		113.5	4.9
LNB 1+850 TO 2+066	4.2-7.5 LT.	MEDIAN CURB	216.1		
LNB 1+946 TO 2+073	6.0-7.8 RT.	MAINLINE CURB		159.8	
LNB 2+077	13.0-26.0 RT.	MEDIAN CURB (ENT.)	29.4		
LNB 2+086 TO 2+395	6.0-7.8 RT.	MAINLINE CURB		342.0	
LNB 2+088 TO 2+293	4.2-7.5 LT.	MEDIAN CURB	204.3		
LNB 2+309 TO 2+388	4.2-7.5 LT.	MEDIAN CURB	79.5		
LNB 2+410 TO 2+542	6.0 RT.	MAINLINE CURB		146.0	
LNB 2+413 TO 2+616	4.2-7.5 LT.	MEDIAN CURB	202.7		
LNB 2+549	12.0-16.0 RT.	MEDIAN CURB (ENT.)	9.1		
LNB 2+558 TO 2+621	6.0 RT.	MAINLINE CURB		83.6	
LNB 2+629	12.0-16.0 RT.	MEDIAN CURB (ENT.)	9.3		
LNB 2+636 TO 2+803	6.0-7.8 RT.	MAINLINE CURB		186.4	
LNB 2+639 TO 2+795	4.2-7.5 LT.	MEDIAN CURB	155.5		
LNB 2+816 TO 2+903	6.0 RT.	MAINLINE CURB		101.0	
LNB 2+822 TO 3+086	4.2 LT.	MEDIAN CURB	264.3		
LNB 2+911 TO 3+090	6.0 RT.	MAINLINE CURB	6.9	191.2	
LNB 3+098 TO 3+142	7.8 RT.	MAINLINE CURB	1.5	56.7	
LNB 3+101 TO 3+280	4.2-7.5 LT.	MEDIAN CURB	183.5		
LNB 3+151 TO 3+211	7.8 RT.	MAINLINE CURB		73.2	11.8
LNB 3+221 TO 3+280	4.2 RT.	MAINLINE CURB		75.1	8.4
LFR 0+141 TO 0+278	4.5 LT.	FRONTAGE RD. CURB		153.8	
LFR 0+141 TO 0+278	4.5 RT.	FRONTAGE RD. CURB		141.2	
107TH AVE 0+115 TO 0+163	4.5 LT.	ROADWAY CURB		48.0	
107TH AVE 0+115 TO 0+163	4.5 RT.	ROADWAY CURB		18.4	
LNB 1+937.374 TO 1+945.767	4.2-4.75 LT.	EMERGENCY XING			8.4
LSB 1+937.352 TO 1+945.750	7.5-6.95 RT.	EMERGENCY XING			8.4
LNB 3+206.549 TO 3+214.896	7.88 LT.	EMERGENCY XING			8.5
LSB 3+208.991 TO 3+217.726	4.19 RT.	EMERGENCY XING			8.5
TOTALS			3433.6	4360.3	97.5

(1) CROSS GUTTER AT SIDE STREETS IS INCLUDED IN PAY LENGTH FOR B618 CURB & GUTTER.

(P) DRIVEWAY REMOVAL AND CONSTRUCTION

			REMOVAL		BITUMINOUS CONSTRUCTION			CL.5 AGG.	CONCRETE CONSTRUCTION			GRAVEL CONSTRUCTION			CONCRETE APRON		
			BIT.	CONC.	WIDTH	LENGTH	AREA	BASE	WIDTH	LENGTH	AREA	WIDTH	LENGTH	AREA	150 mm	200 mm	
STATION	LOCATION	ADDRESS	m^2	m^2	m	m	m^2	m^3	m	m	m^2	m	m	m^2	m^2	m^2	REMARKS
LSB 1+431.907	LT.	10616 HANSON	38.56	5.48	6.44	5.34	34.36	3.43							14.29		
LSB 1+456.744	LT.	10624 HANSON	24.67	7.63	4.72	5.34	25.00	2.50							14.25		
LSB 1+481.670	LT.	10632 HANSON	29.74	4.64	5.49	5.37	29.53	2.94							14.40		
LSB 1+576.647	LT.	10662 HANSON	18.88	3.59	3.46	5.46	18.88	1.89							15.21		
LNB 1+607.308	RT.	10707/10713 HANSON	120.77	12.32	9.09	9.00	40.54	4.04							27.78		
LNB 1+629.245	RT.	10719/10721 HANSON	171.03	6.47	13.81	7.84	41.70	4.16							27.78		
LSB 1+648.313	LT.	10732 HANSON	21.14	10.83	8.40	4.46	37.48	3.74								33.23	
LSB 1+968.027	LT.	10856 HANSON	81.92	5.75	5.67	6.10	36.67	3.66							28.48		
LSB 1+979.799	LT.	10856 HANSON	81.92	5.75	5.67	6.10	33.67	3.36							28.41		
LNB 2+007.938	RT.	XXXXX HANSON	74.08	21.47	8.61	1.80	15.43	1.54							19.59		
LSB 2+033.037	LT.	10922 HANSON	34.67	5.91	3.25	2.80	9.10	0.90							21.74		
LSB 2+058.406	LT.	10934 HANSON	61.35	7.44	9.37	2.80	26.24	2.62							28.84		
LSB 2+154.785	LT.	10984/10986 HANSON	140.48	9.20	18.80	9.30	140.66	14.03							19.59		
LNB 2+178.481	RT.	CHURCH	414.68	24.97													
LSB 2+360.689	LT.	11056 HANSON	35.80	5.50	3.27	2.80	9.17	0.92							15.26		
LSB 2+405.985	LT.	11064 HANSON	33.40	4.30	3.27	3.60	10.08	1.01							21.74		
LSB 2+413.097	LT.	11106 HANSON	10.38	4.31	3.60	2.80	10.08	1.01							21.74		
LSB 2+439.945	LT.	11114 HANSON	26.59	5.07											21.74		
LSB 2+569.638	LT.	11164 HANSON	52.95	7.84	5.80	1.80	10.45	1.04							19.74		
LSB 2+825.000	LT.	11300 HANSON	27.49	4.57													REMOVE DRIVEWAY
LSB 2+848.753	LT.	11308 HANSON	77.30	4.70	8.19	5.97	39.48	3.94							15.26		
LSB 2+873.491	LT.	11316 HANSON	109.33	4.48	10.13	9.50	83.66	8.34							15.26		
LSB 2+897.763	LT.	11324 HANSON	95.52	4.53	9.60	8.70	70.91	7.08							15.26		
LNB 2+915.995	RT.	11331 HANSON	51.05		3.33	5.46	18.17	1.81							22.07		
LSB 2+922.484	LT.	11332 HANSON	75.97	5.27	9.60	6.00	44.96	4.48							19.61		
LSB 2+945.548	LT.	11340 HANSON	45.50	4.92	9.33	6.63	45.08	4.50							21.74		
LNB 2+959.361	RT.	11349 HANSON	32.57	9.11				1.01				3.12	2.46	7.62	21.75		GRAVEL
LSB 2+969.798	LT.	11348 HANSON	71.47	5.18	10.82	6.00	51.71	5.16							21.74		
LNB 2+972.760	RT.	11349 HANSON	32.82	6.77				1.41				3.07	3.46	10.63	21.74		GRAVEL
LSB 2+995.368	LT.	11356 HANSON	45.17	6.39	9.60	5.92	44.61	4.46							21.74		
LNB 3+014.875	RT.	11359 HANSON	53.57	9.06				1.29				3.93	2.46	9.68	21.78		GRAVEL
LNB 3+030.290	RT.	11359 HANSON	85.43	6.03				6.02				5.81	8.46	45.33	21.74		GRAVEL
LSB 3+062.341	LT.	11412/11416 HANSON	116.11	24.96	13.20	6.00	67.00	6.69							41.67		
LSB 3+091.628	LT.	11420/11424 HANSON	114.49	24.74	13.20	6.00	67.47	6.73							41.51		
LSB 3+157.459	LT.	11444 HANSON		57.91				3.40	3.60	9.60	34.18				21.57		APRON & DRIVEWAY
LNB 3+266.000	RT.	11500 HANSON		23.00													REMOVE DRIVEWAY
TOTALS			2506.80	360.09			1062.09	119.11			34.18			*73.26	705.02	33.23	

*73.26 m2 x 0.112 = 8.2 t

(Q) BASE AND BITUMINOUS QUANTITIES CHART

LOCATION	BIT. WEAR COURSE			BIT. BINDER COURSE (1)			BIT. BASE COURSE (1)			AGG. BASE CL5			TACK COAT (2)		
	AREA	DEPTH	QUANT	AREA	DEPTH	QUANT	AREA	DEPTH	QUANT	AREA	DEPTH	QUANT	AREA	LIFTS	QUANT
	m^2	mm	t	m^2	mm	t	m^2	mm	t	m^2	mm	m3	m^2		L
CSAH 78 (HANSON BLVD)															
LSB 1+390 TO 1+720	4442	50	578	4442	50	650	4442	80	993	5230	225	1177	4442	2	2043
LNB 1+390 TO 1+710	3293	50	428	3293	50	481	3293	80	736	3983	225	896	3293	2	1515
LSB 1+720 TO 2+400	8438	50	1097	8438	50	1234	8438	80	1887	9973	225	2244	8438	2	3882
LNB 1+710 TO 2+400	9292	50	1208	9292	50	1359	9292	80	2078	10869	225	2446	9292	2	4274
LSB 2+400 TO 3+280	11187	50	1454	11187	50	1636	11187	80	2501	13361	225	3006	11187	2	5146
LNB 2+400 TO 3+280	10524	50	1368	10524	50	1539	10524	80	2353	12777	225	2875	10524	2	4841
FRONTAGE ROAD AND 107TH AVE	1890	50	246	1890	50	276				2314	150	347	1890	1	435
TOTALS			6379			7175			10548			12991			22136

(1) 6mm BITUMINOUS THICKNESS ADDED TO BINDER AND BASE COURSES.
(2) TACK COAT INCLUDES TWO LAYERS (0.23L/m2).

NO	DATE	BY	CKD	APPR	REVISION

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James C Knutson
DATE 1-21-00 REG. NO. 10169

DRAWN BY SAP DATE
DESIGN BY JCK DATE
CHECKED BY GPO DATE

STATE PROJECT NO. 02-678-11
STATE PROJECT NO. 114-020-22
STATE PROJECT NO.

ANOKA COUNTY
ANOKA COUNTY HIGHWAY DEPT.

MISC. TABULATIONS

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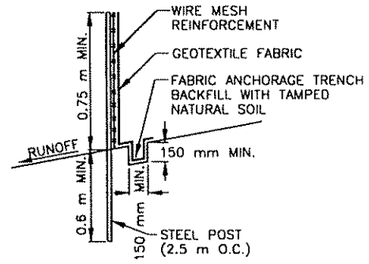
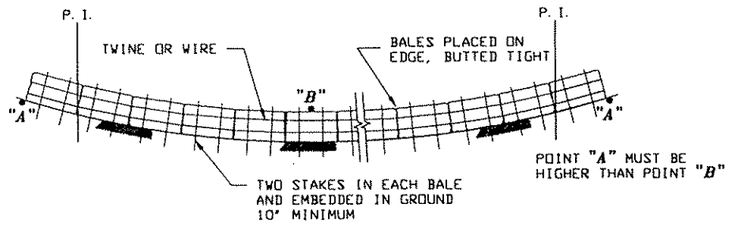
HEAVY DUTY SILT FENCE

NOTE: REMOVE FOLLOWING TURF ESTABLISHMENT

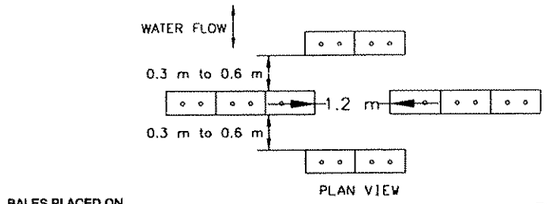


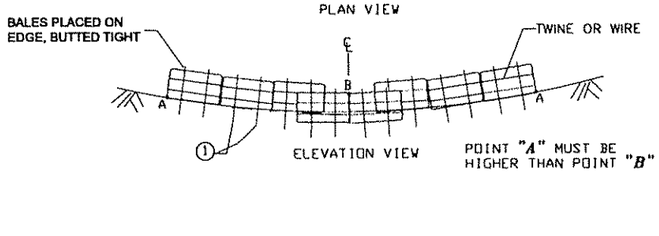
BALE DITCH SEDIMENT CHECK



BALE DITCH VELOCITY CHECK

(WILL REQUIRE A MINIMUM OF 10 BALES PER SITE)





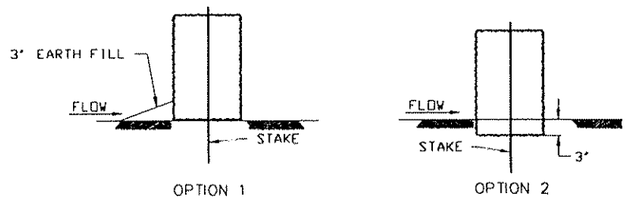
RECOMMENDED SPACING BETWEEN DITCH CHECKS	
DITCH GRADE %	SPACING (m)
2	30
4	23
6	15
8	12
10	8

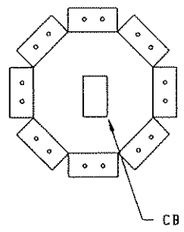
NOTE:

① TWO 50 mm X 50 mm WOOD STAKES OR REINFORCING BARS IN EACH BALE AND EMBEDDED IN THE GROUND 250 mm MINIMUM.

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

BALE CHECK DETAIL





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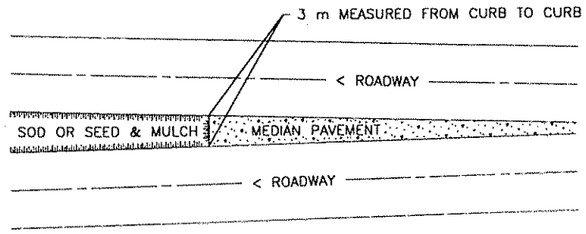
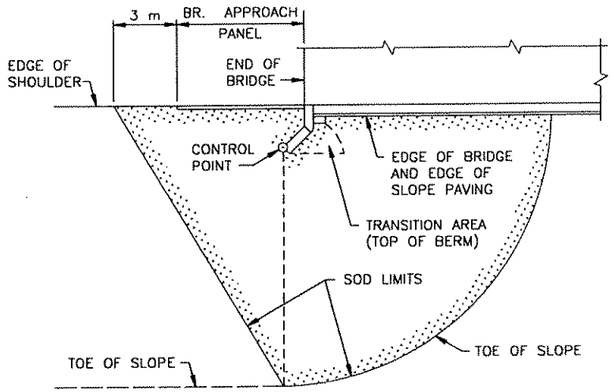
ANOKA COUNTY
ANOKA COUNTY HIGHWAY DEPT.

TEMPORARY EROSION CONTROL DETAILS

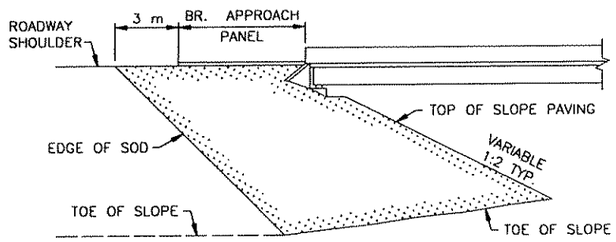
Sheet 14 of 103 Sheets



SODDING LIMITS AT GORE AREA

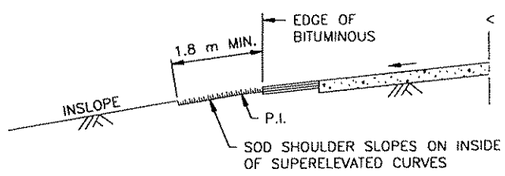


PLAN

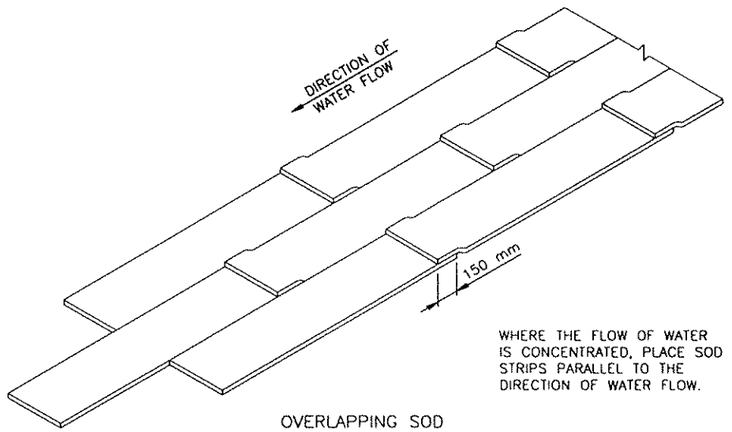


ELEVATION

SODDING LIMITS AT BRIDGE APPROACH FILLS

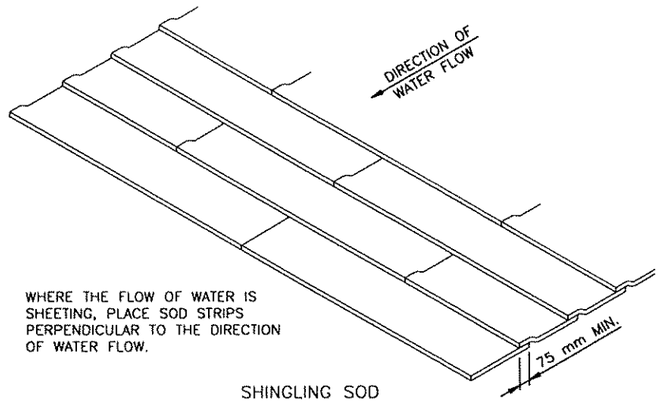


SODDING INSLOPES OF SUPERELEVATED CURVES



OVERLAPPING SOD

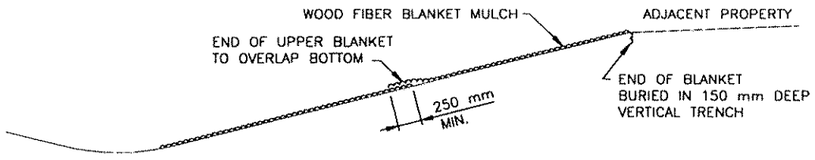
WHERE THE FLOW OF WATER IS CONCENTRATED, PLACE SOD STRIPS PARALLEL TO THE DIRECTION OF WATER FLOW.



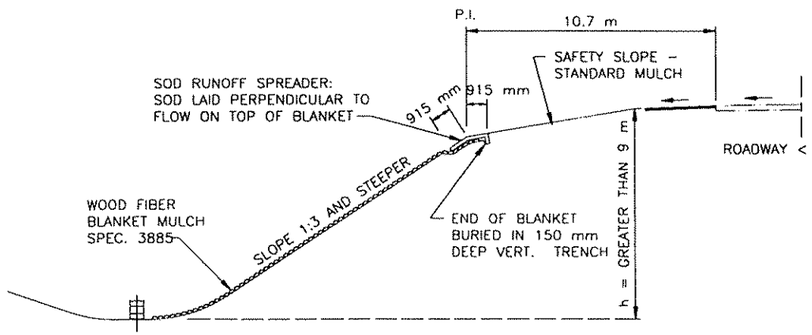
SHINGLING SOD

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

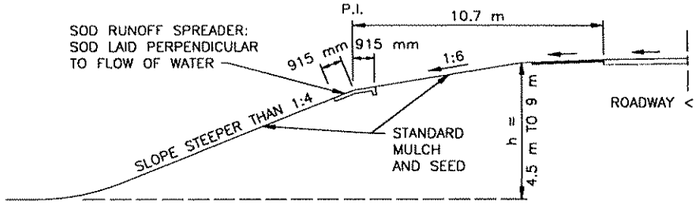
SPECIAL SOD PLACEMENT TECHNIQUES



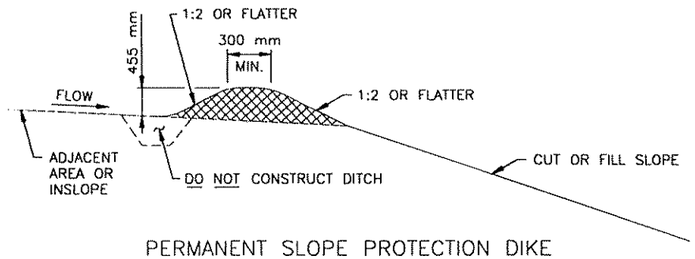
WOOD FIBER BLANKET INSTALLATION ON A CUT SLOPE



WOOD FIBER BLANKET INSTALLATION ON AN INSLOPE
(WHEN REQUIRED)



BROKEN-BACK SAFETY FILL SLOPE



PERMANENT SLOPE PROTECTION DIKE

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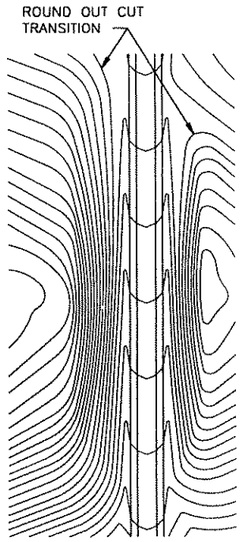
ANOKA COUNTY
ANOKA COUNTY HIGHWAY DEPT.

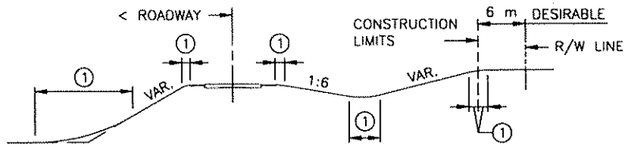
PERMANENT EROSION CONTROL DETAILS

Sheet 15 of 103 Sheets

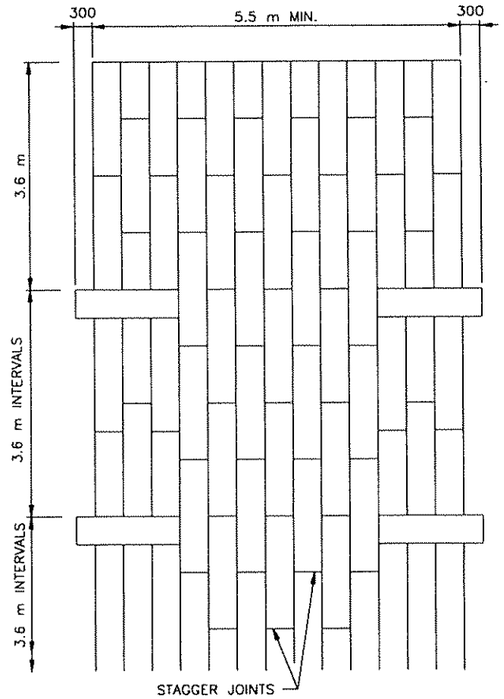
Fed. Project No. _____



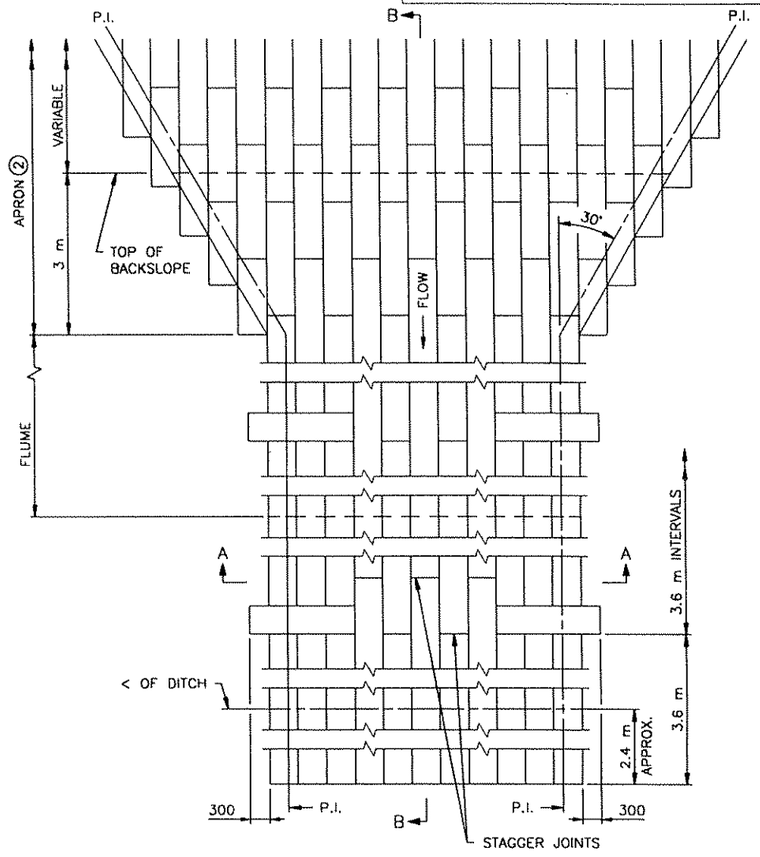
CONTOURING ROAD CUTS



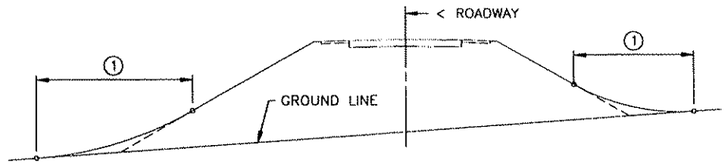
ROUNDING SHOULDERS AND BACKSLOPES



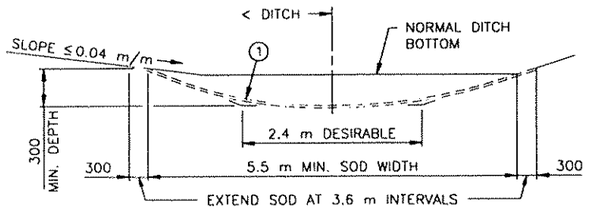
PLAN VIEW



PLAN VIEW

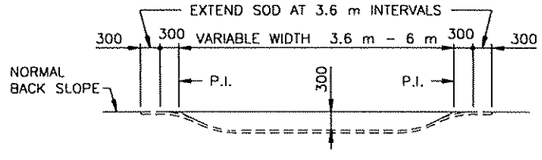


SHAPING FOR DRAINAGE ALONG THE TOE OF FILL SLOPES

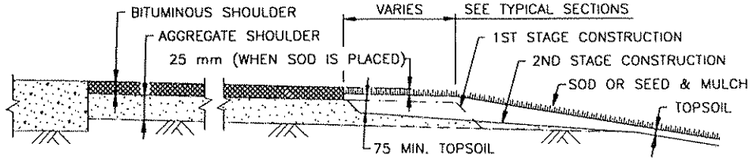


SODDED DITCH CROSS SECTION

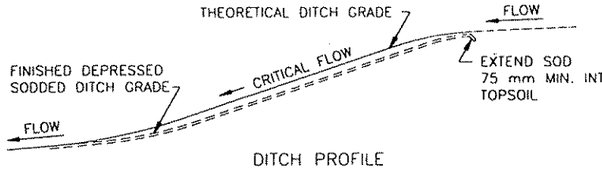
WHERE FRONT OR BACK SLOPE IS FLAT (LESS THAN 0.04 m/m), FIRST NOTCH DITCH AND THEN PROVIDE ROUNDING.



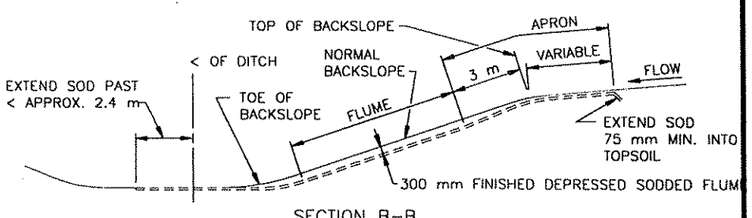
SECTION A–A



SHAPING AND TOPSOILING INSLOPES

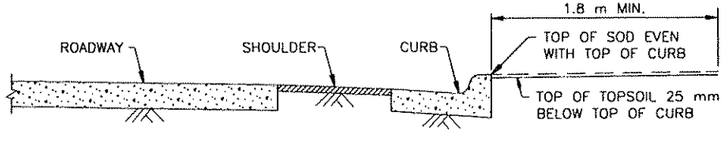


DITCH PROFILE



SECTION B–B

SODDED FLUME DETAILS



SHAPING ADJACENT TO CURBS WHEN SOD IS PLACED

SODDED DITCH DETAILS

NOTES:

SEE SPEC. 2575.3 FOR ADDITIONAL INFORMATION.

(1) FOR ROUNDING, SEE ROAD DESIGN MANUAL.

(2) CONSTRUCT TAPER AS DIRECTED BY THE ENGINEER.

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

NO	DATE	BY	CKD	APPR	REVISION

PARSONS
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A Unit of Parsons Transportation Group Inc.

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James C Knutson

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STATE PROJECT NO. 02-678-11

STATE PROJECT NO. 114-020-22

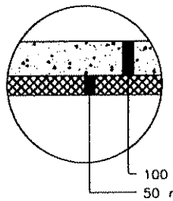
STATE PROJECT NO. _____

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

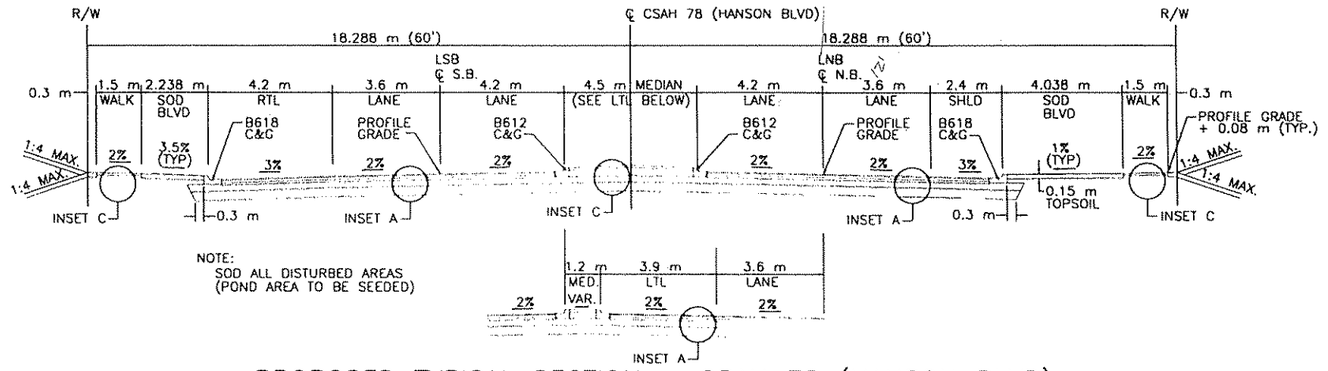
PERMANENT EROSION CONTROL DETAILS

Sheet 16 of 103 Sheets

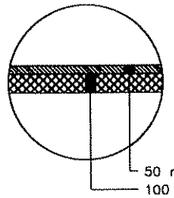


INSET C – CONCRETE SIDEWALK

TYPICAL PAVEMENT SECTION

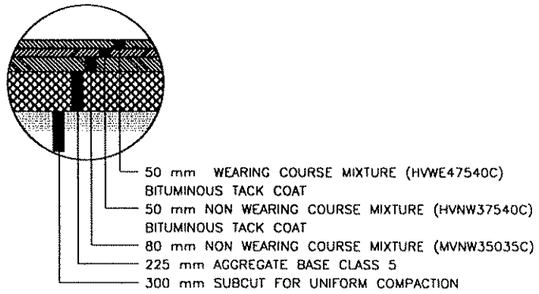


PROPOSED TYPICAL SECTION – CSAH 78 (HANSON BLVD)



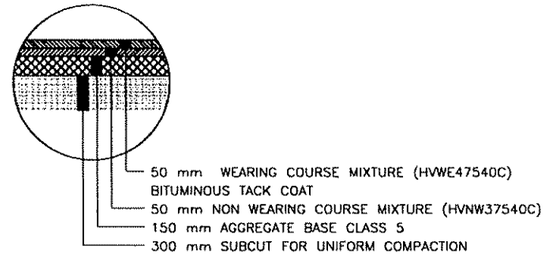
INSET D – BITUMINOUS DRIVEWAY

TYPICAL PAVEMENT SECTION



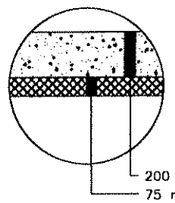
INSET A – CSAH 78 (HANSON BLVD)

TYPICAL PAVEMENT SECTION



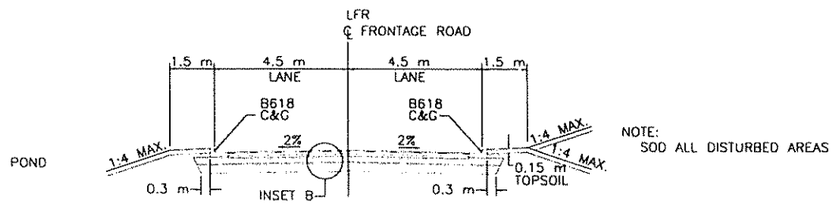
INSET B – FRONTAGE ROAD

TYPICAL PAVEMENT SECTION



INSET E – CONCRETE DRIVEWAY AND CONCRETE MEDIAN MOUNTABLE

TYPICAL PAVEMENT SECTION



PROPOSED TYPICAL SECTION – FRONTAGE ROAD

NO	DATE	BY	CKD	APPR	REVISION

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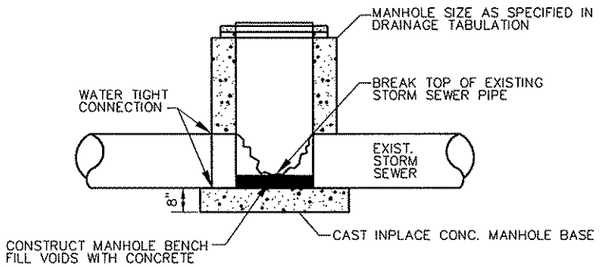
ANOKA COUNTY
HIGHWAY DEPT.

TYPICAL SECTIONS

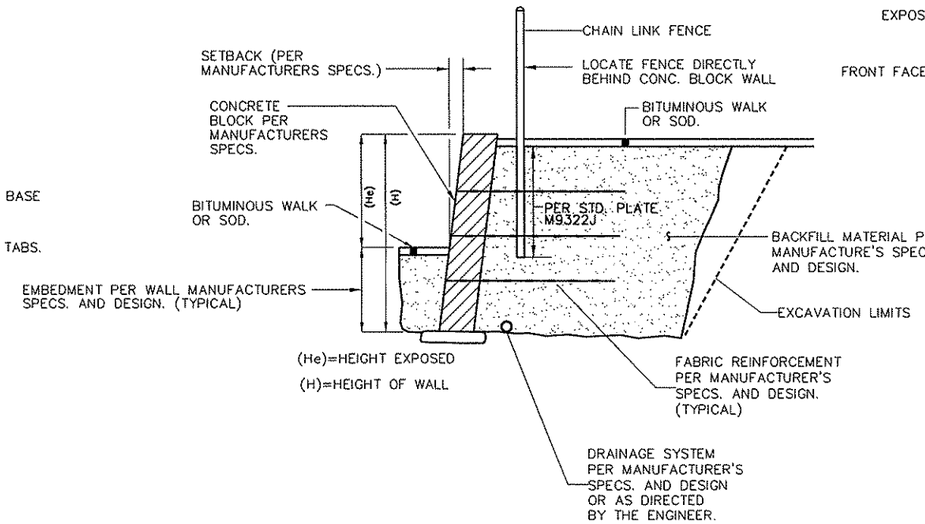
Sheet 17 of 103 Sheets

CONSTRUCT MANHOLE OVER EXISTING STORM SEWER

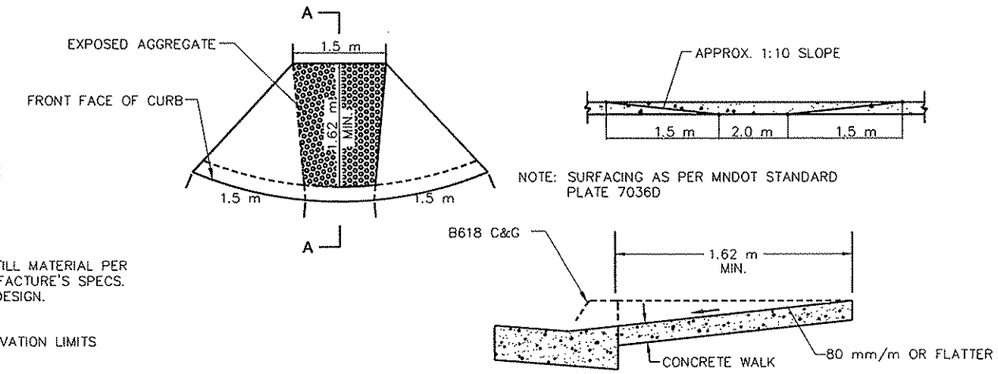


NOTE: PAID FOR AS 2506.501, SIZE OF MANHOLE AS SPECIFIED IN DRAINAGE TABS.

CONCRETE BLOCK RETAINING WALL DETAIL

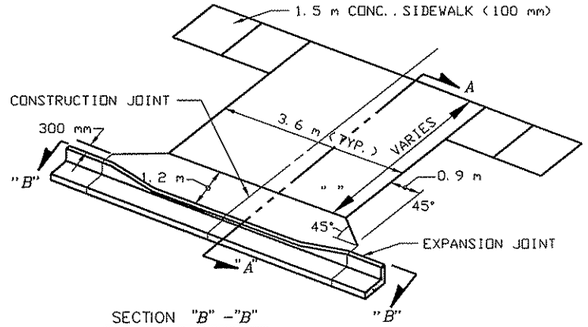


CONCRETE PEDESTRIAN RAMP

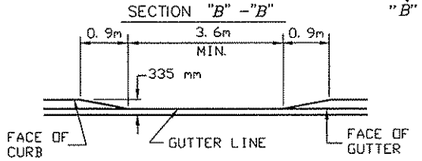


SECTION A–A

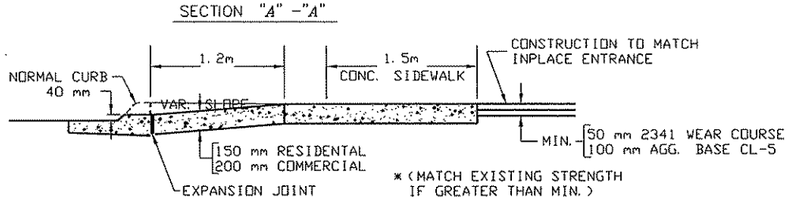
CONCRETE APRON DETAIL



SECTION "B" –"B"



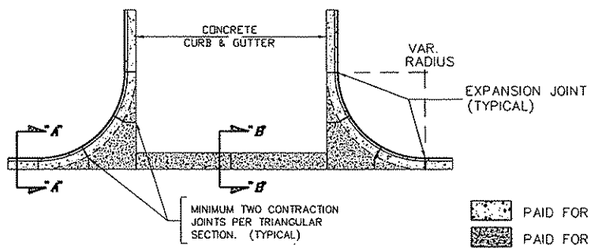
SECTION "A" –"A"

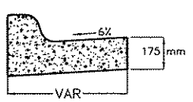


SPECIAL REINFORCED CONCRETE GUTTER

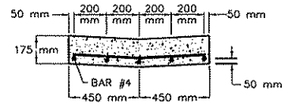
CROSS GUTTER DETAIL

STA. 1+078.500 TO 1+099.200 LT. LSB



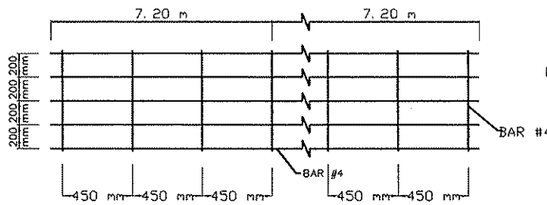


SECTION "A"–"A"



SECTION "B"–"B"

BAR REINFORCEMENT PLAN



PAID FOR AS 2531.501 CONCRETE CURB & GUTTER DESIGN B618.

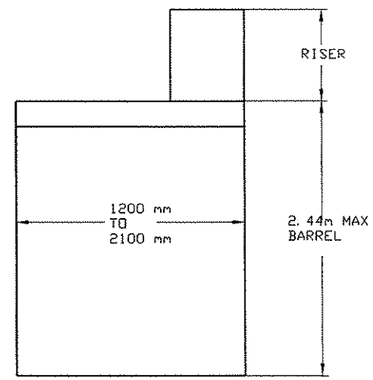
PAID FOR AS 2531.604 CONCRETE GUTTER DESIGN SPECIAL.

NOTE: CURB IN RADIUS SHALL BE FORMED AND POURED AS ONE UNIT, WITH THE CROSS GUTTER TO BE CONSIDERED PART OF THE TRIANGULAR SECTION FOR PAYMENT PURPOSES.

CONSTRUCT CROSS GUTTER SAME THICKNESS AS B-618 CURB & GUTTER.

CONSTRUCT ONE SIDE AT A TIME TO PROVIDE FOR TRAFFIC.

4020 STRUCTURE



NOTE: PAY ITEM FOR 4020 STRUCTURE SHALL INCLUDE BASE, RISER, 4020 SLAB, AND BARREL SECTION ACCORDING TO THE SIZE AND HEIGHT SPECIFIED IN THE DRAINAGE TABULATION.

NO	DATE	BY	CKD	APPR	REVISION
1	02-22-00	LAR			REBAR TO CROSS GUTTER

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DATE _____ REG. NO. 10169

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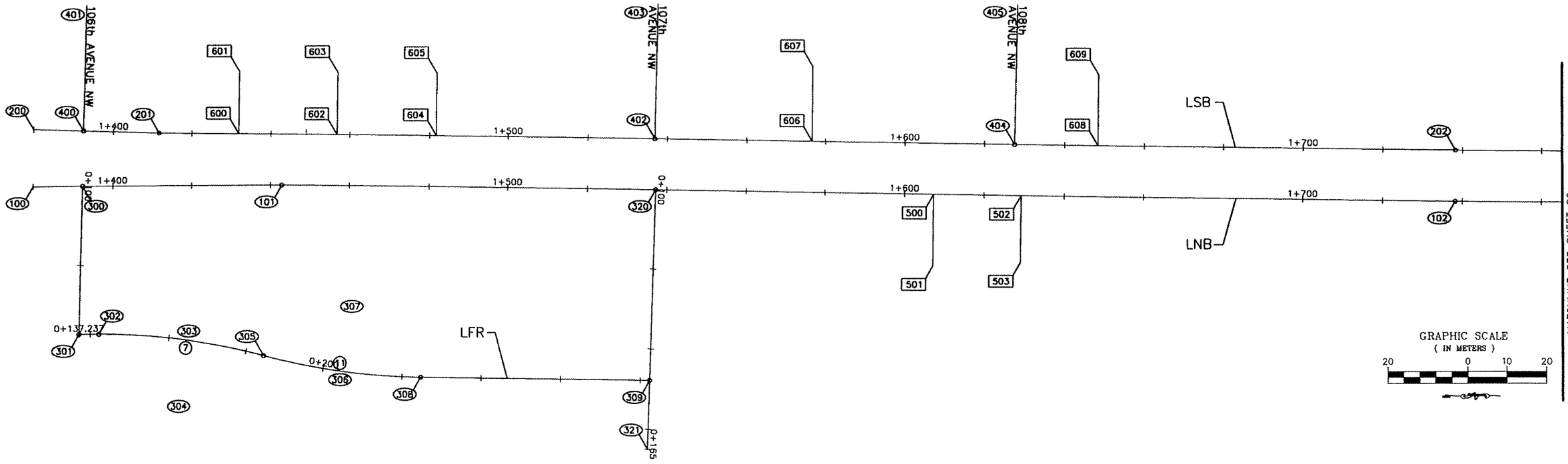
STATE PROJECT NO. 02-678-11
STATE PROJECT NO. 114-020-22
STATE PROJECT NO. _____

ANOKA COUNTY HIGHWAY DEPT.

MISC. DETAILS

Sheet 18 of 103 Sheets



NO	DATE	BY	CKD	APPR	REVISION

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minnesota metric

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James C Kuntzow

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STATE PROJECT NO. 114-020-22
STATE PROJECT NO.

ANOKA COUNTY
HIGHWAY DEPT.

ALIGNMENT PLAN

STA. 1+380 TO 1+765

Sheet 19 of 103 Sheets

GRAPHIC SCALE
(IN METERS)
20 0 10 20

MATCHLINE SEE SHEET 19

108TH LANE

108TH AVENUE NW

108TH LANE

1+800 1+900 2+000 2+100

LSB

LNB

MATCHLINE SEE BELOW LEFT

GRAPHIC SCALE
(IN METERS)
20 0 10 20

MATCHLINE SEE ABOVE RIGHT

110TH LANE

111TH LANE

111TH AVENUE

LSB

LNB

2+200 2+300 2+400 2+500

MATCHLINE SEE SHEET 21

NO	DATE	BY	CKD	APPR	REVISION

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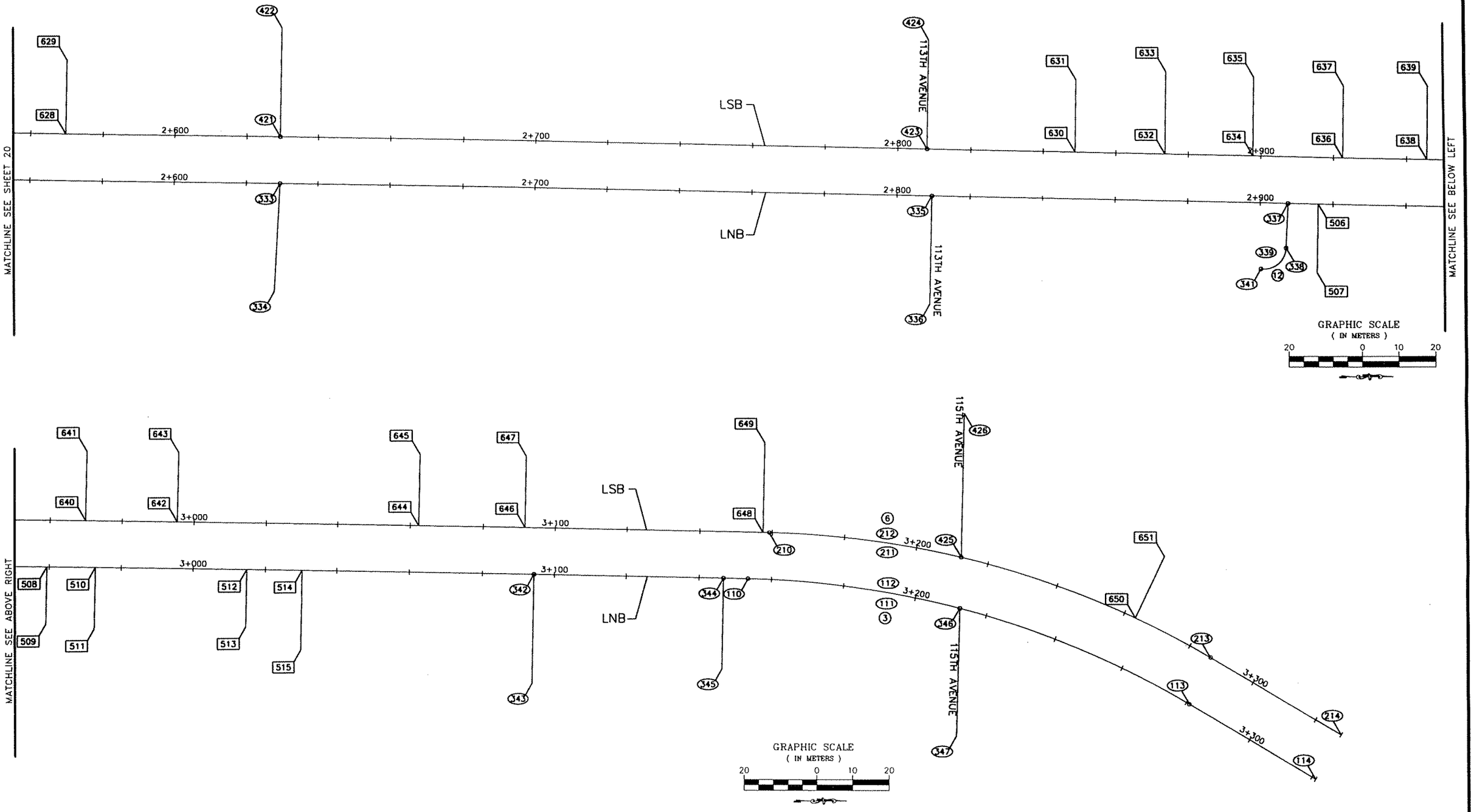
STATE PROJECT NO. 114-020-22
STATE PROJECT NO.

ANOKA COUNTY
ANOKA COUNTY HIGHWAY DEPT.

ALIGNMENT PLAN
STA. 1+765 TO 2+560

Sheet 20 of 103 Sheets



NO	DATE	BY	CKD	APPR	REVISION

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STATE PROJECT NO. 114-020-22
STATE PROJECT NO.

ANOKA COUNTY
ANOKA COUNTY HIGHWAY DEPT.

ALIGNMENT PLAN
STA. 2+560 TO 3+320
Sheet 21 of 103 Sheets

(U) ALIGNMENT TABULATION

CURVE NO.	POINT NO.	POINT TYPE	LOCATION	CURVE DATA DELTA	DEGREE	RADIUS (m)	TANGENT (m)	LENGTH (m)	COORDINATES EASTING X	NORTHING Y	AZIMUTH	REMARKS
LNB = CSAH 78 (HANSON BLVD) NORTHBOUND CENTERLINE												
	100	POT	LNB 1+380.000	359-58-18					148383.147	44643.354	359-58-18	
	101	PI	LNB 1+442.928						148383.116	44706.282	00-47-07	
	102	PC	LNB 1+738.192						148387.163	45001.518		
	103	RP							146634.437	45025.546		
1	104	PI	LNB 1+788.504	03-17-17	00-59.46.6	1752.890	50.311	100.595	148387.853	45051.825	357-29-50	
	105	PRC	LNB 1+838.787						148385.656	45102.088		
	106	RP							150123.986	45178.067		
2	107	PI	LNB 1+888.728	03-17-17	01-00-13.2	1739.990	49.940	99.854	148383.475	45151.981	00-47-07	
	108	PT	LNB 1+938.641						148384.160	45201.917		
	109	PI	LNB 1+996.466						148384.952	45259.737	01-14-40	
	110	PC	LNB 3+153.599						148410.083	46416.597		
	111	RP							148659.507	46411.179		
3	112	PI	LNB 3+218.699	29-14-56	07-00-00.0	249.483	65.099	127.359	148411.496	46481.681	30-29-36	
	113	PT	LNB 3+280.958						148444.530	46537.777		
	114	POT	LNB 3+321.179						148464.940	46572.434		
LSB = CSAH 78 (HANSON BLVD) SOUTHBOUND CENTERLINE												
	200	POT	LSB 1+380.000						148368.703	44643.553	01-58-17	
	201	PI	LSB 1+411.500						148369.786	44675.034	00-47-07	
	202	PC	LSB 1+738.192						148374.264	45001.696		
	203	RP							146634.437	45025.546		
4	204	PI	LSB 1+788.133	03-17-17	01-00-13.2	1739.990	49.941	99.854	148374.949	45051.632	357-29-50	
	205	PRC	LSB 1+838.047						148372.768	45101.525		
	206	RP	LSB						150123.986	45178.067		
5	207	PI	LSB 1+888.357	03-17-17	00-59-46.6	1752.890	50.311	100.594	148370.571	45151.788	00-47-07	
	208	PT	LSB 1+938.640						148371.261	45202.094		
	209	PI-EQ	LSB 1+996.466 BACK = LSB 1+996.363 AHEAD						148372.053	45259.914	01-14-40	
	210	PC	LSB 3+159.114						148397.306	46422.390		
	211	RP	LSB						148646.730	46416.972		
6	212	PI	LSB 3+224.213	29-14-56	07-00-00.0	249.483	65.099	127.359	148398.720	46487.474	30-29-36	
	213	PT	LSB 3+286.473						148431.754	46543.569		
	214	POT	LSB 3+328.095						148452.875	46579.435		
LFR = CSAH 78 S.E. FRONTAGE ROAD CENTERLINE												
	300	POT	LFR 0+100.000=LNB 1+392.366						148383.141	44655.719	91-34-25	
	301	POT	LFR 0+137.237						148420.364	44654.697		File name: SR78
	302	PC	LFR 0+142.237						148420.361	44659.697		
7	303	PI	LFR 0+163.528	15-09-33	10-54-53.5	160.000	21.290	42.332	148420.351	44680.987	15-07-51	
	304	RP	LFR 0+142.237						148580.361	44659.776		
	305	PRC	LFR 0+184.569						148425.908	44701.540		
11	306	PI	LFR 0+204.707	14-20-49	10-54-53.5	160.000	20.138	40.064	148431.165	44720.979	00-47-02	
	307	RP	LFR 0+184.569						148271.455	44743.304		
	308	PT	LFR 0+224.634						148431.440	44741.115		
	309	POT	LFR 0+282.410						148432.231	44798.885		
107TH AVENUE NW EAST OF CSAH 78												
	320	POT	0+100.000=LNB 1+537.185					65.000	148384.408	44800.530	91-58-12	
	321	POT	0+165.000						148449.370	44798.296		
108TH AVENUE NW EAST OF CSAH 78												
	323	POT	0+100.000 = LNB 1+839.345					20.000	148385.631	45102.645	271-18-48	
	324	POT	0+120.000						148405.626	45102.187		

NO	DATE	BY	CKD	APPR	REVISION

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ANOKA COUNTY
ANOKA COUNTY HIGHWAY DEPT.

ALIGNMENT TABULATION

(U) ALIGNMENT TABULATION

CURVE NO.	POINT NO.	POINT TYPE	LOCATION	CURVE DATA DELTA	DEGREE	RADIUS (m)	TANGENT (m)	LENGTH (m)	COORDINATES EASTING X	NORTHING Y	AZIMUTH	REMARKS
108TH LANE NW EAST OF CSAH 78												
	325	POT	0+100 = LNB 1+941.632					30.000	148384.200	45204.908	269-53-16	
	326	POT	0+130						148414.201	45204.966		
ENTRANCE EAST OF CSAH 78 (EPIPHANY CHURCH)												
	327	POT	0+100 = LNB 2+079.452					40.000	148386.754	45342.703	270-01-42	
	328	POT	0+140						148426.755	45342.723		
111TH AVENUE NW EAST OF CSAH 78												
	329	POT	0+100 = LNB 2+403.012					40.000	148393.781	45666.187	271-20-36	
	330	POT	0+140						148433.771	45665.249		
ENTRANCE EAST OF CSAH 78												
	331	POT	0+100 = LNB 2+549.784					30.000	148396.969	45812.924	271-14-40	
	332	POT	0+130						148426.962	45812.272		
ENTRANCE EAST OF CSAH 78 (#11205)												
	333	POT	0+100 = LNB 2+629.333					30.000	148398.697	45892.454	273-19-14	
	334	POT	0+130						148428.647	45890.717		
113TH AVENUE NW EAST OF CSAH 78												
	335	POT	0+100 = LNB 2+809.590					30.000	148432.603	46071.946	271-22-45	
	336	POT	0+130						148402.611	46072.668		
ENTRANCE EAST OF CSAH 78												
	337	POT	0+100 = LNB 2+907.757						148404.743	46170.812	272-52-21	
	338	PC	0+112.357						148417.085	46170.193		
12	339	RP		95-20-22	282-32-23.5	6.181	6.786	10.285	148416.775	46164.020		
	341	POC	0+122.642						148422.893	46163.137		
ENTRANCE EAST OF CSAH 78 (#11415)												
	342	POT	0+100 = LNB 3+094.391					30.000	148408.797	46357.402	271-14-40	
	343	POT	0+130						148438.789	46356.751		
ENTRANCE EAST OF CSAH 78 (#11449)												
	344	POT	0+100 = LNB 3+146.755					25.000	148409.934	46409.754	271-14-40	
	345	POT	0+125						148434.928	46409.211		
115TH AVENUE NW EAST OF CSAH 78												
	346	POT	0+100 = LNB 3+212.492					35.000	148418.267	46474.781	271-41-20	
	347	POT	0+135						148453.252	46473.749		
106TH AVENUE NW WEST OF CSAH 78												
	400	POT	0+100 = LSB 1+392.461					40.000	148369.131	44656.006	91-35-21	
	401	POT	0+140						148329.146	44657.115		
107TH AVENUE NW WEST OF CSAH 78												
	402	POT	0+100 = LSB 1+536.558					40.864	148371.504	44800.362	91-33-32	
	403	POT	0+140.864						148330.655	44801.474		
108TH AVENUE NW WEST OF CSAH 78												
	404	POT	0+100 = LSB 1+627.474					35.929	148372.747	44890.987	91-26-47	
	405	POT	0+135.929						148336.829	44891.894		
108TH LANE NW WEST OF CSAH 78												
	406	POT	0+100 = LSB 1+839.465					7.651	148372.707	45102.942	91-18-48	
	407	PC	0+107.651					12.905	148365.058	45103.117		
	408	RP							148365.918	45138.107		
13	409	PI	0+120.555	40-28-43	49-53-42.5	35.000	12.905	24.727	148352.157	45103.343	131-53-08	
	410	PT	0+132.378						148342.550	45112.050		
	411	POT	0+157.071						148324.166	45128.537		

NO	DATE	BY	CKD	APPR	REVISION

PARSONS
Barton-Aschman Associates, Inc.
A Unit of Parsons Transportation Group Inc.

minnesota metric

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
James C Kyntaras
DATE 1-21-00 REG. NO. 10169

DRAWN BY SAP DATE
DESIGN BY JCK DATE
CHECKED BY GPO DATE

STATE PROJECT NO. 02-678-11
STATE PROJECT NO. 114-020-22
STATE PROJECT NO.

ANOKA COUNTY
ANOKA COUNTY HIGHWAY DEPT.

ALIGNMENT TABULATION

Sheet 23 of 103 Sheets

(U) ALIGNMENT TABULATION

CURVE NO.	POINT NO.	POINT TYPE	LOCATION	CURVE DATA DELTA	DEGREE	RADIUS (m)	TANGENT (m)	LENGTH (m)	COORDINATES EASTING X	NORTHING Y	AZIMUTH	REMARKS
ENTRANCE WEST OF CSAH 78 (#10936)												
	412	POT	0+100 = LSB 2+077.098						148373.807	45340.629	91-14-40	
	413	PC	0+117.297						148362.189	45340.882		
14	414	RP		12-32-47	33-49-06.0	51.640		11.308	148361.067	45289.254	78-41-53	
	416	POC	0+122.928						148350.947	45339.893		
110TH LANE NW WEST OF CSAH 78												
	417	POT	0+100 = LSB 2+299.488					30.000	148378.637	45562.967	91-30-17	
	418	POT	0+130						148348.647	45563.755		
111TH LANE NW WEST OF CSAH 78												
	419	POT	0+100 = LSB 2+505.478					40.000	148383.110	45768.909	91-50-50	
	420	POT	0+140						148343.131	45770.198		
ENTRANCE WEST OF CSAH 78 (#11200)												
	421	POT	0+100 = LSB 2+629.247					30.000	148385.798	45892.648	91-16-10	
	422	POT	0+130						148355.806	45893.313		
113TH AVENUE NW WEST OF CSAH 78												
	423	POT	0+100 = LSB 2+808.058					30.000	148389.682	46071.417	91-22-40	
	424	POT	0+130						148359.690	46072.138		
115TH AVENUE NW WEST OF CSAH 78												
	425	POT	0+100 = LSB 3+212.458					40.000	148404.135	46475.193	91-22-40	
	426	POT	0+140						148364.147	46476.155		

NO	DATE	BY	CKD	APPR	REVISION

PARSONS
Barton-Aschman Associates, Inc.
A Unit of Parsons Transportation Group Inc.

minnesota metric

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James C Kratzer
DATE 1-21-00 REG. NO. 10169

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STATE PROJECT NO. 114-020-22
STATE PROJECT NO.

ANOKA COUNTY
HIGHWAY DEPT.

ALIGNMENT TABULATION

Sheet 24 of 103 Sheets

(V) DRIVEWAY ALIGNMENT TABULATION

POINT NO.	LOCATION	LENGTH (m)	COORDINATES EASTING X	COORDINATES NORTHING Y	AZIMUTH	REMARKS
500	0+100 = LNB 1+607.308	18.000	148385.369	44870.647	270-47-07	
501	0+018.000		148403.367	44870.400		
502	0+100 = LNB 1+629.245	16.838	148385.670	44892.582	270-47-07	
503	0+016.838		148402.506	44892.351		
504	0+100 = LNB 2+007.938	14.332	148385.201	45271.206	271-14-40	
505	0+014.332		148399.530	45270.895		
506	0+100 = LNB 2+915.995	19.000	148404.922	46179.049	271-14-40	
507	0+019.000		148423.918	46178.636		
508	0+100 = LNB 2+959.361	15.838	148405.864	46222.405	271-14-40	
509	0+015.838		148421.699	46222.061		
510	0+100 = LNB 2+972.760	17.000	148406.155	46235.800	271-14-40	
511	0+017.000		148423.151	46235.431		
512	0+100 = LNB 3+014.875	15.838	148407.070	46277.906	271-14-40	
513	0+015.838		148422.904	46277.562		
514	0+100 = LNB 3+030.290	22.000	148407.405	46293.317	271-14-40	
515	0+022.000		148429.399	46292.839		
600	0+100 = LSB 1+431.907	15.838	148370.066	44695.439	90-47-07	
601	0+015.838		148354.230	44695.656		
602	0+100 = LSB 1+456.744	15.838	148370.406	44720.274	90-47-07	
603	0+015.838		148354.570	44720.491		
604	0+100 = LSB 1+481.670	15.838	148370.748	44745.198	90-47-07	
605	0+015.838		148354.912	44745.415		
606	0+100 = LSB 1+576.647	19.000	148372.050	44840.166	90-47-07	
607	0+019.000		148353.052	44840.426		
608	0+100 = LSB 1+648.313	18.000	148373.032	44911.825	90-47-07	
609	0+018.000		148355.034	44912.072		
610	0+100 = LSB 1+968.027	19.141	148371.664	45231.477	90-47-07	
611	0+019.141		148352.524	45231.740		
612	0+100 = LSB 1+979.799	19.144	148371.825	45243.248	90-47-07	
613	0+019.144		148352.683	45243.511		
614	0+100 = LSB 2+033.037	15.838	148372.850	45296.579	91-14-40	
615	0+015.838		148357.015	45296.923		
616	0+100 = LSB 2+058.406	15.838	148373.401	45321.942	91-14-40	
617	0+015.838		148357.566	45322.286		
618	0+100 = LSB 2+154.785	22.838	148375.494	45418.298	91-14-40	
619	0+022.838		148352.661	45418.794		
620	0+100 = LSB 2+360.689	15.838	148379.966	45624.154	91-14-40	
621	0+015.838		148364.131	45624.498		
622	0+100 = LSB 2+405.985	15.838	148380.949	45669.439	91-14-40	
623	0+015.838		148365.115	45669.783		
624	0+100 = LSB 2+413.097	15.838	148381.104	45676.549	91-14-40	
625	0+015.838		148365.269	45676.893		
626	0+100 = LSB 2+439.945	15.838	148381.687	45703.391	91-14-40	
627	0+015.838		148365.852	45703.735		

(V) DRIVEWAY ALIGNMENT TABULATION

POINT NO.	LOCATION	LENGTH (m)	COORDINATES EASTING X	COORDINATES NORTHING Y	AZIMUTH	REMARKS
628	0+100 = LSB 2+569.638	20.272	148384.504	45833.053	91-14-40	
629	0+020.272		148364.237	45833.493		
630	0+100 = LSB 2+848.753	19.838	148390.565	46112.102	91-14-40	
631	0+019.838		148370.732	46112.533		
632	0+100 = LSB 2+873.491	22.588	148391.103	46136.835	91-14-40	
633	0+022.588		148368.520	46137.325		
634	0+100 = LSB 2+897.763	21.588	148391.630	46161.101	91-14-40	
635	0+021.588		148370.047	46161.570		
636	0+100 = LSB 2+922.484	19.838	148392.167	46185.816	91-14-40	
637	0+019.838		148372.333	46186.247		
638	0+100 = LSB 2+945.548	20.167	148392.668	46208.875	91-14-40	
639	0+020.167		148372.506	46209.313		
640	0+100 = LSB 2+969.798	19.338	148393.194	46233.119	91-14-40	
641	0+019.338		148373.861	46233.539		
642	0+100 = LSB 2+995.368	19.338	148393.750	46258.683	91-14-40	
643	0+019.338		148374.416	46259.103		
644	0+100 = LSB 3+062.341	19.838	148395.204	46325.640	91-14-40	
645	0+019.838		148375.371	46326.071		
646	0+100 = LSB 3+091.628	19.838	148395.840	46354.920	91-14-40	
647	0+019.838		148376.007	46355.351		
648	0+100 = LSB 3+157.459	25.000	148397.270	46420.735	91-14-40	
649	0+025.000		148372.276	46421.278		
650	0+100 = LSB 3+263.273	18.805	148420.927	46523.060	115-09-56	
651	0+018.805		148403.907	46531.057		

NO	DATE	BY	CKD	APPR	REVISION

PARSONS
Barton-Aschman Associates, Inc.
A Unit of Parsons Transportation Group Inc.

minnesota metric

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
Signature
DATE 1-21-00 REG. NO. 10169

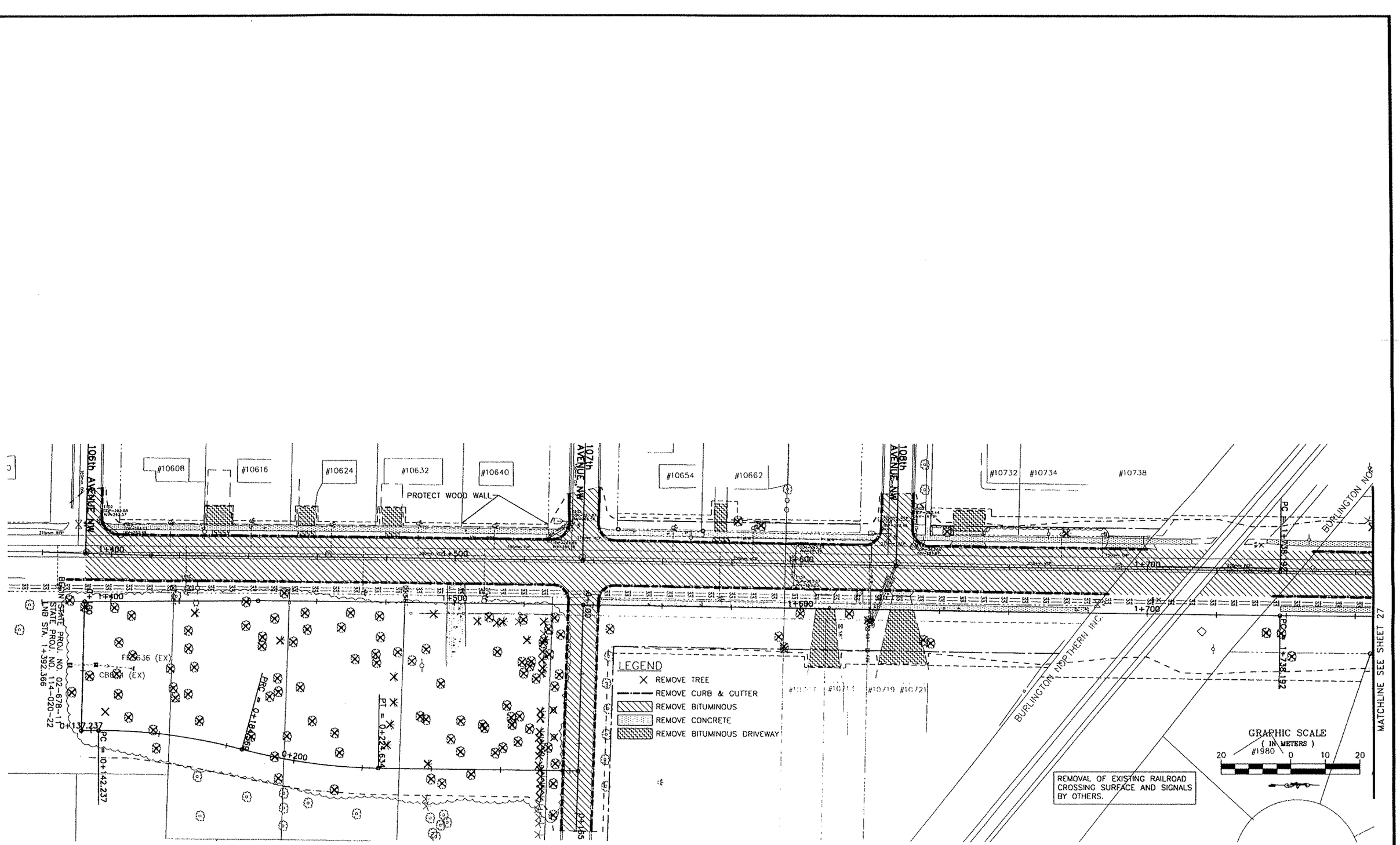
DRAWN BY SAP DATE
DESIGN BY JCK DATE
CHECKED BY GPO DATE

STATE PROJECT NO. 02-678-11
STATE PROJECT NO. 114-020-22
STATE PROJECT NO.

ANOKA COUNTY
HIGHWAY DEPT.

DRIVEWAY ALIGNMENT TABULATION

Sheet 25 of 103 Sheets



NO	DATE	BY	CKD	APPR	REVISION

PARSONS
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minnesota metric

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James C Knutson

DATE 2-16-00 REG. NO. 10169

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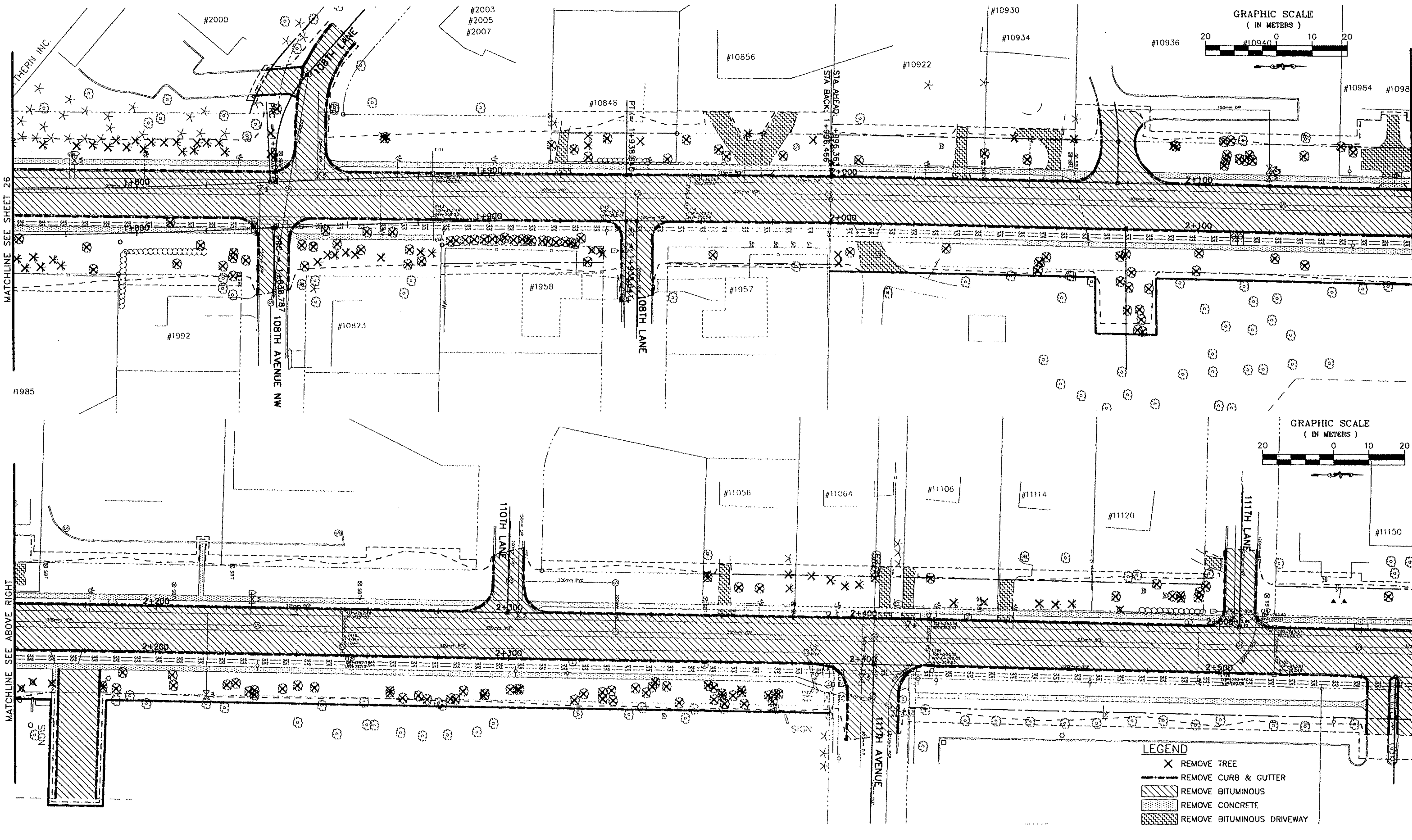
DESIGN BY JCK DATE
CHECKED BY GPO DATE

STATE PROJECT NO. 02-678-11
STATE PROJECT NO. 114-020-22
STATE PROJECT NO.

ANOKA COUNTY
HIGHWAY DEPT.

INPLACE TOPOGRAPHY AND REMOVAL PLAN
STA. 1+380 TO 1+765

Sheet 26 of 103 Sheets



GRAPHIC SCALE
(IN METERS)
20 0 10 20
108TH LANE
108TH AVENUE NW
110TH LANE
111TH AVENUE
111TH LANE
MATCHLINE SEE SHEET 26
MATCHLINE SEE BELOW LEFT
MATCHLINE SEE ABOVE RIGHT
MATCHLINE SEE SHEET 28
STA AHEAD 1+996.363
STA BACK 1+996.466
1+800
1+900
2+000
2+100
2+200
2+300
2+400
2+500
#2000
#2003
#2005
#2007
#10856
#10848
#10922
#10930
#10934
#10936
#10940
#10984
#1992
#10823
#1958
#1957
#1985
#11056
#11064
#11106
#11114
#11120
#11150
SIGN
LEGEND
REMOVE TREE
REMOVE CURB & GUTTER
REMOVE BITUMINOUS
REMOVE CONCRETE
REMOVE BITUMINOUS DRIVEWAY

NO	DATE	BY	CKD	APPR	REVISION

PARSONS
Barton-Aschman Associates, Inc.
A Unit of Parsons Transportation Group Inc.

minnesota metric

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James C Knutson

DATE 1-21-00 REG. NO. 10169

DRAWN BY SAP DATE
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CHECKED BY GPO DATE

STATE PROJECT NO. 02-678-11
STATE PROJECT NO. 114-020-22
STATE PROJECT NO.

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

INPLACE TOPOGRAPHY AND REMOVAL PLAN
STA. 1+765 TO 2+560

MATCHLINE SEE SHEET 27

MATCHLINE SEE BELOW LEFT

MATCHLINE SEE ABOVE RIGHT

#11164

#11200–
#11260

#11300

#11308

#11316

#11324

#11332

#11299

#11205

#11444

#11348

#11356

#11400

#11412

#11416

#11420

#11424

#11359

#11349

#11415

#11491

#11435

#11441

#11449

113TH AVENUE

2+600

2+700

2+800

2+900

3+000

3+100

3+200

3+300

GRAPHIC SCALE
(IN METERS)
20 0 10 20

LEGEND
- REMOVE TREE
- REMOVE CURB & GUTTER
- REMOVE BITUMINOUS
- REMOVE CONCRETE
- REMOVE BITUMINOUS DRIVEWAY

NO	DATE	BY	CKD	APPR	REVISION

PARSONS
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minnesota metric

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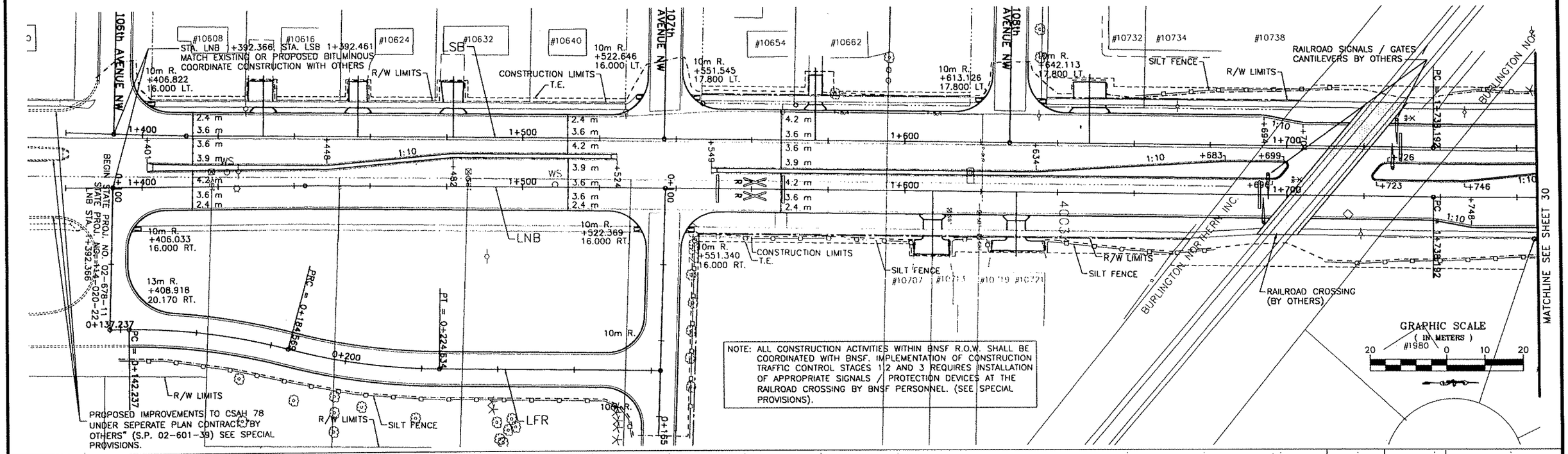
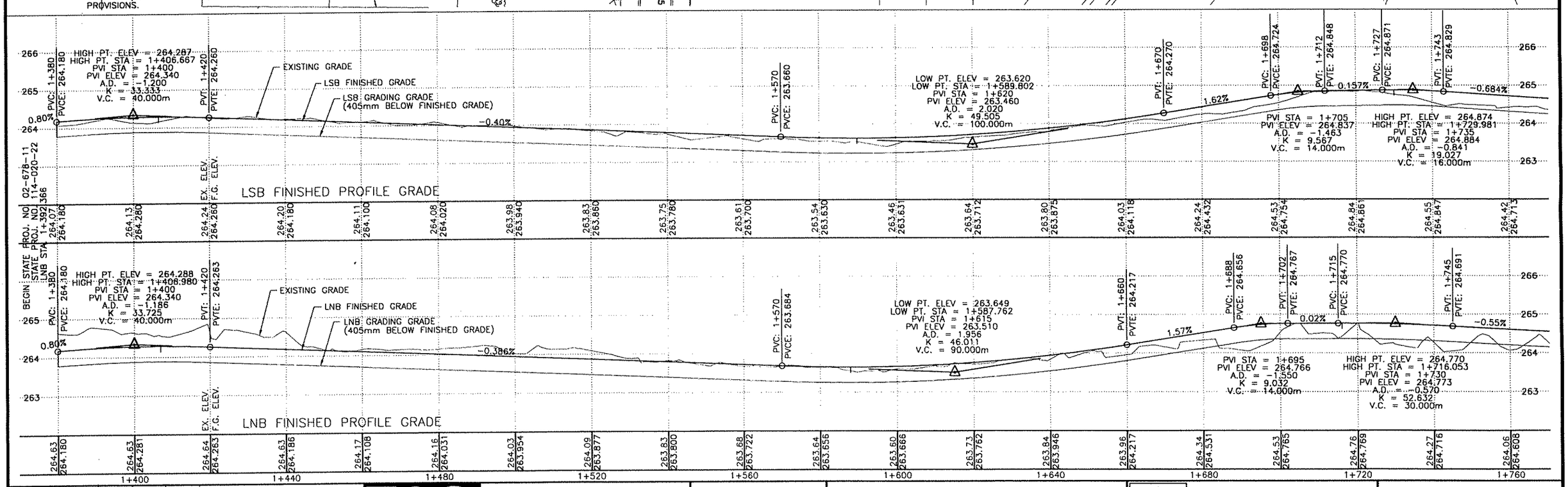
ANOKA COUNTY
HIGHWAY DEPT.

INPLACE TOPOGRAPHY AND REMOVAL PLAN
STA. 2+560 TO 3+320

Sheet 28 of 103 Sheets





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James C Knutson
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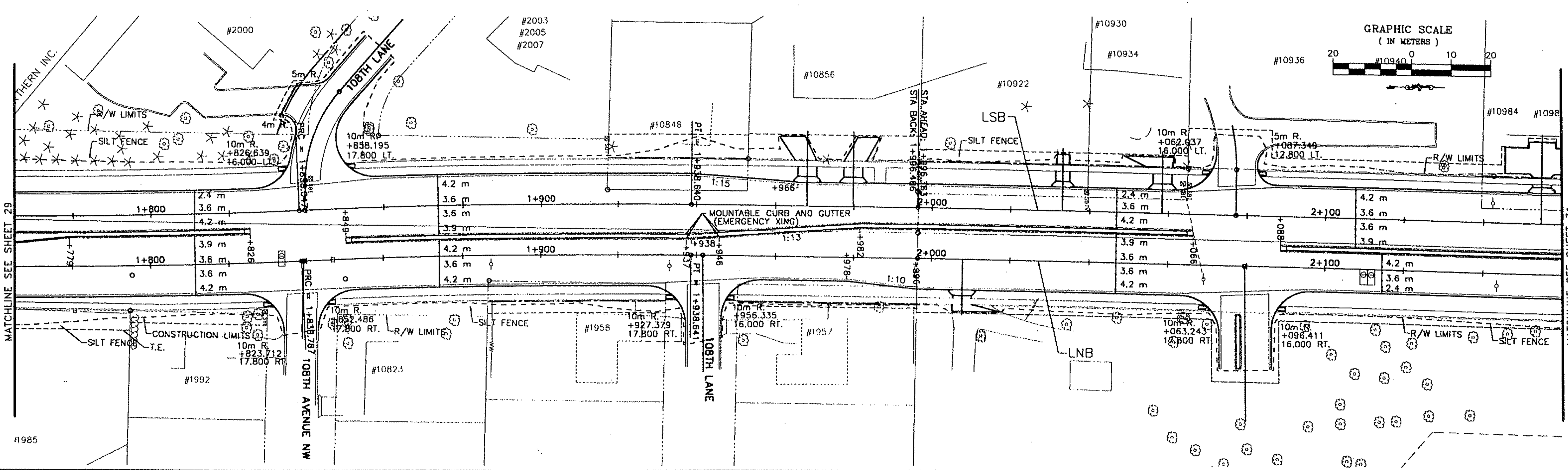
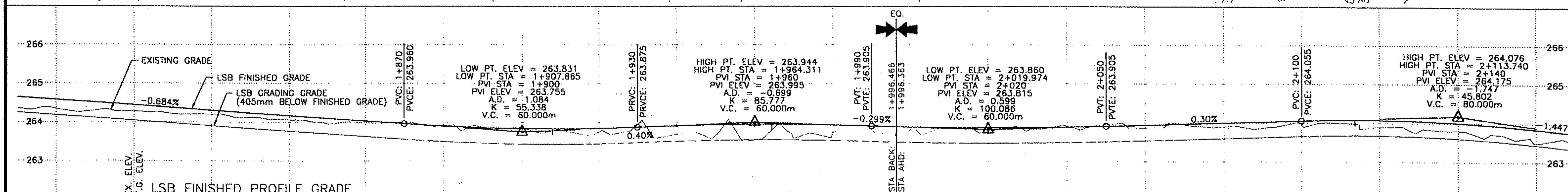
STATE PROJECT NO.

ANOKA COUNTY
HIGHWAY DEPT.

CONSTRUCTION PLAN AND PROFILE
STA. 1+380 TO 1+760

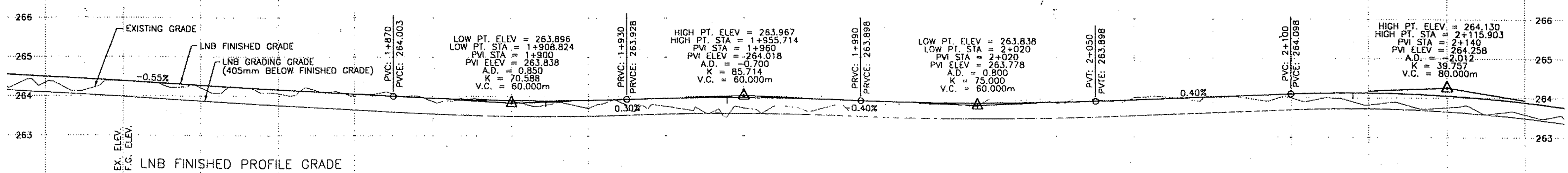
Sheet 29 of 103 Sheets





LSB FINISHED PROFILE GRADE

EX. ELEV.	264.34	264.28	264.20	264.06	263.97	263.92	263.85	263.75	263.69	263.54	263.74	263.80	263.76	263.90	263.87	263.90	263.97	263.89	263.80	263.48
F.G. ELEV.	264.576	264.439	264.302	264.166	264.029	263.901	263.836	263.844	263.909	263.943	263.929	263.880	263.860	263.880	263.935	263.995	264.055	264.071	264.000	263.842



LNB FINISHED PROFILE GRADE

EX. ELEV.	264.35	264.38	264.22	264.07	264.04	263.87	263.88	263.70	263.75	263.71	263.70	263.81	263.77	263.84	263.99	264.03	264.00	263.82	263.76	263.58
F.G. ELEV.	264.498	264.388	264.278	264.168	264.058	263.955	263.902	263.905	263.952	263.965	263.932	263.865	263.838	263.865	263.938	264.018	264.098	264.128	264.057	263.885

1+800 1+840 1+880 1+920 1+960 2+000 2+040 2+080 2+120 2+160

NO	DATE	BY	CKD	APPR	REVISION

PARSONS
Barton-Aschman Associates, Inc.
A Unit of Parsons Transportation Group Inc.

minnesota metric

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James C Kurtak
DATE 1-21-00 REG. NO. 10169

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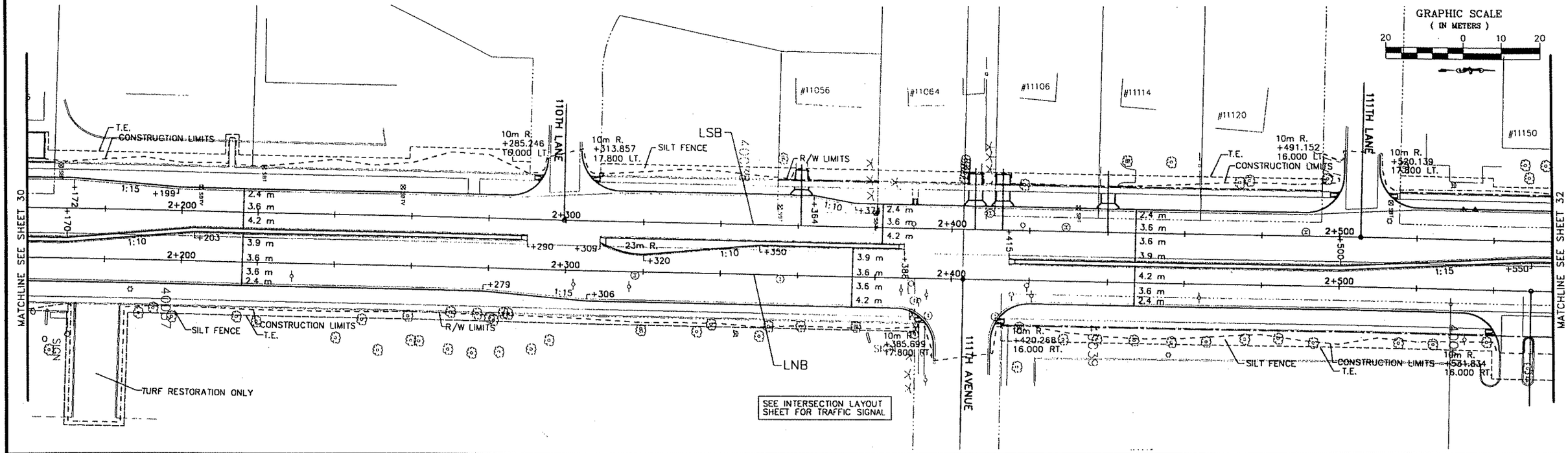
STATE PROJECT NO.

ANOKA COUNTY
ANOKA COUNTY HIGHWAY DEPT.

CONSTRUCTION PLAN AND PROFILE
STA. 1+760 TO 2+160



NO	DATE	BY	CKD	APPR	REVISION

PARSONS
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A Unit of Parsons Transportation Group Inc.

minnesota metric

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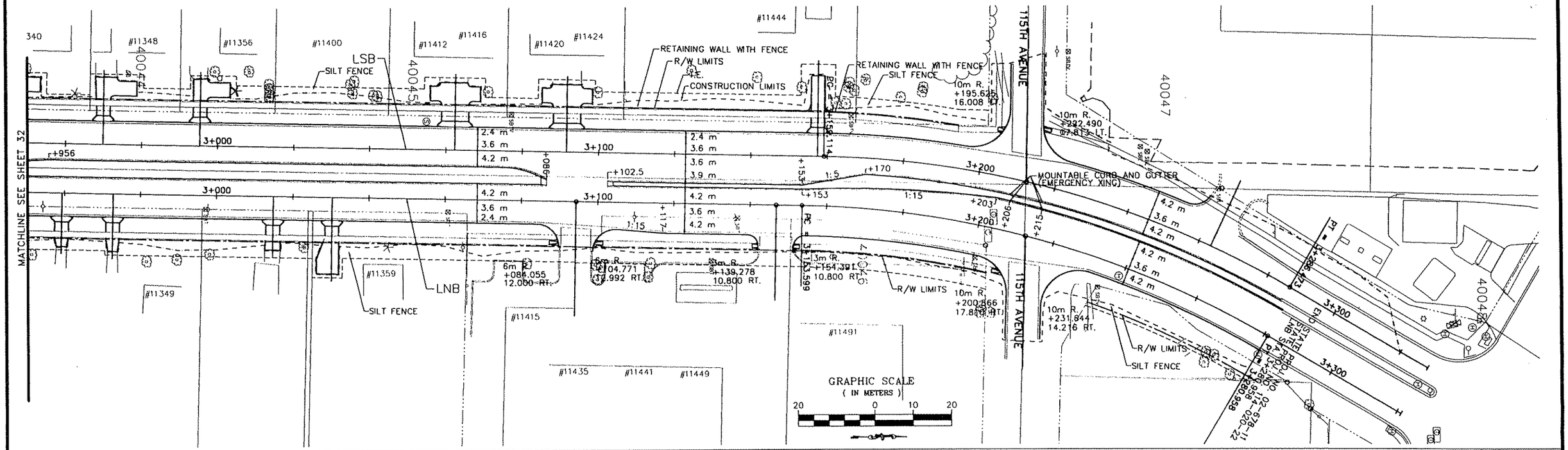
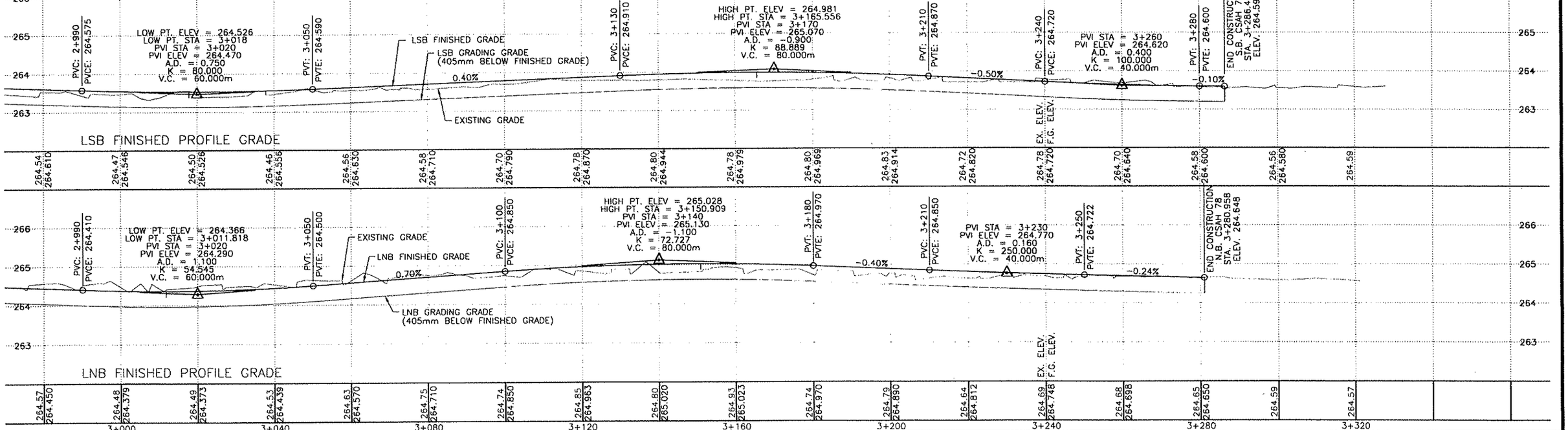
STATE PROJECT NO. 114-020-22
STATE PROJECT NO.

ANOKA COUNTY
HIGHWAY DEPT.

CONSTRUCTION PLAN AND PROFILE
STA. 2+160 TO 2+560

Sheet 31 of 103 Sheets





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Daniel C Knutson
DATE 1-21-00 REG. NO. 10169

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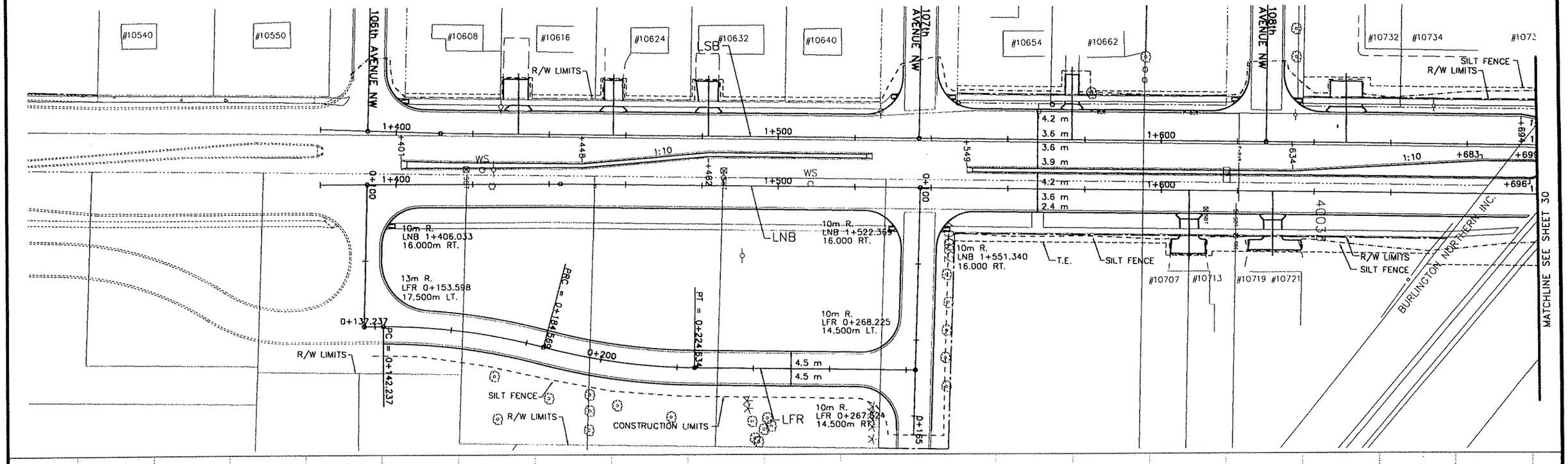
STATE PROJECT NO. 02-678-11
STATE PROJECT NO. 114-020-22
STATE PROJECT NO.

ANOKA COUNTY
HIGHWAY DEPT.

CONSTRUCTION PLAN AND PROFILE
STA. 2+950 TO 3+300

Sheet 33 of 103 Sheets



NO	DATE	BY	CKD	APPR	REVISION

PARSONS
Barton-Aschman Associates, Inc.
A Unit of Parsons Transportation Group Inc.

minnesota metric

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
James C Knutson
DATE 1-21-00 REG. NO. 10169

DRAWN BY SAP DATE
DESIGN BY JCK DATE
CHECKED BY GPO DATE

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ANOKA COUNTY
HIGHWAY DEPT.

CONSTRUCTION
PLAN AND PROFILE
FRONTAGE ROAD-107TH AVE NW

Sheet 34 of 103 Sheets

INPLACE DRAINAGE TABULATION (2)

(S)

STRUCT. NO.	STRUCT. TYPE	STATION	LOCATION	INPLACE TOP OF RING ELEV	FLOW LINE ELEV	FLOWS TO STRUCT.	INPLACE PIPE SEWER m	PROPOSED TOP OF RING ELEV	EXISTING CASTING ASSEMBLY EACH	NEW CASTING ASSEMBLY EACH	ADJUST FRAME CASTING EACH	CONNECT TO EX. STRUCTURE EACH	ABAND. C.B. EACH	REMOVE C.B. EACH	REMOVE CASTING (5) EACH	REMOVE PIPE SEWER m	ABANDON PIPE SEWER m	INPLACE PIPE SIZE & TYPE	REMARKS
E102	CB	LSB 1+396.672	10.449 LT.	263.98	262.57	E103	7		B-1					1	1	8		300mm RCP	
E103	CB	LSB 1+402.507	5.492 LT.	264.10	262.49	E104	124		B-1					1	1	124		375mm RCP	
E104	CB	LSB 1+527.060	5.747 LT.	263.69	262.18	E106	71		B-1					1	1	71		375mm RCP	
E105	CB	LSB 1+533.237	11.197 LT.	263.87	262.58	E104	8		B-1				1		1	8		300mm RCP	
E106	CB	LSB 1+598.542	5.748 LT.	263.37	261.99	E110	30		B-1				1		1		30	375mm RCP	
E107	CB	LNB 1+597.901	5.961 LT.	263.37	262.03	E106	12		B-1				1		1		12	300mm RCP	
E108	CB	LSB 1+622.748	13.450 LT.	263.45		E109	9		B-1				1		1	9		300mm RCP	
E110	MH	LSB 1+632.323	5.725 LT.	263.66	261.91	E109	6		A-7				1		1	6		375mm RCP	
E109	CB	LSB 1+632.389	13.058 LT.	263.44	261.91				B-1				1		1			375mm RCP	
E111	APR	LSB 1+884.153	7.229 LT.			E112	6		FES								6	375mm RCP	(4)
E112	CB	LSB 1+884.077	0.849 LT.	263.79	259.38	E113	12		B-1				1		1		12	375mm RCP	
E113	CB	LNB 1+884.324	0.990 LT.	263.79	259.23	E114	6		B-1				1		1		6	375mm RCP	
E114	APR	LNB 1+884.246	5.390 RT.						FES										(4)
E115	CB	LNB 1+932.158	0.173 LT.	263.60	262.74	E116	23		B-1				1		1		23	300mm RCP	
E116	CB	LNB 1+955.747	0.069 LT.	263.57	262.59	E117	12		B-1				1		1		12	300mm RCP	
E117	CB	LSB 1+956.979	0.044 LT.	263.57	262.51	E118	295		B-1				1		1		295	375mm RCP	
E118	CB	LSB 2+252.793	0.049 LT.	262.78	261.52	E119	9		B-1				1		1	9		450mm RCP	
E119	MH	LNB 2+252.920	2.507 LT.			E121	130		A-7				1		1		130	600mm RCP	
E120	CB	LNB 2+253.023	0.149 LT.	262.78	260.91	E119	1		B-1				1		1	1		300mm RCP	
E121	MH	LNB 2+383.920	2.977 LT.			E122	9		A-7				1		1	9		600mm RCP	
E122	MH	LNB 2+386.457	7.557 RT.			E123	20		B-1					1	1	20		600mm RCP	
E123	MH	LNB 2+407.456	11.370 RT.	263.38	259.72			263.378	A-7		1	3						1350mm RCP	
E124	CB	LNB 2+418.585	0.215 LT.	263.12	259.93	E123	17	263.407	B-1	A-70		2						1200mm RCP	
E125	CB	LSB 2+419.060	0.134 LT.	263.19	262.13	E124	12		B-1					1	1	12		300mm RCP	
E128	CB	LSB 2+501.265	3.988 LT.	263.80	262.42	E127	8		B-1				1		1	8		300mm RCP	
E127	CB	LSB 2+510.166	3.614 LT.	263.80	261.91	E126	20	263.712	B-1		1	1						1200mm RCP	(3)
E129	CB	LSB 2+515.515	0.105 LT.	263.51	262.13	E127	6		B-1				1		1	6		375mm RCP	
E126	CB	LNB 2+499.600	0.185 LT.	263.43	260.06	E124	80	263.693	B-1	A-70		1						1200mm RCP	
E130	CB	LNB 2+515.519	0.164 RT.	263.51	262.19	E129	12		B-1				1		1		12	300mm RCP	
E131	CB	LSB 2+814.059	8.994 LT.	264.21	262.72				B-1				1		1	7		450mm RCP	(1)
E132	CB	LSB 2+819.620	0.198 LT.	264.38	262.80	E131	10		B-1				1		1	10		375mm RCP	
E133	CB	LSB 3+007.440	0.164 LT.	264.35	263.19	E132	187		B-1				1		1		187	375mm RCP	
E134	CB	LNB 3+007.197	0.238 LT.	264.35	263.35	E133	12		B-1				1		1	12		300mm RCP	
E135	CB	LNB 3+199.549	0.413 LT.			E136	23		B-1				1		1	23		300mm RCP	
E136	CB	LSB 3+197.469	8.676 LT.			E137	28		B-1				1		1	28		300mm RCP	
E143	CB	LSB 3+204.532	22.311 LT.			E144	7.8	264.14	SPEC.		1							300mm RCP	
E144	CB	LSB 3+211.386	22.421 LT.			E145	4	264.14	SPEC.					1	1			300mm RCP	
E137	CB	LSB 3+224.735	10.658 LT.			E138	48						1		1	48		300mm RCP	
E138	CB	LSB 3+270.884	5.390 LT.			E139	34	264.430	B-1		1							300mm RCP	
E141	CB	LNB 3+246.508	4.621 RT.			E142	26		B-1				1		1	26		300mm RCP	
E142	CB	LNB 3+274.249	9.998 RT.			E138	31	264.80	M-1									300mm RCP	(6)
																		300mm RCP	
																		300mm RCP	
								TOTALS		2	4	7	26	6	32	445	725		

(1) ABANDON EX SEWER FROM E131 TO PROP. CB324
(2) SEE TABULATION OF NEW DRAINAGE STRUCTURES AND PIPE SEWERS FOR ADDITIONAL INFORMATION ON EXISTING DRAINAGE STRUCTURES
(3) REPLACE EX B-1 CASTING/FRAME WITH A-7 CASTING/FRAME.
(4) REMOVE APRON.
(5) REMOVE CB OR ABANDON CB SHALL INCLUDE CASTING REMOVALS, NO SEPARATE PAYMENT WILL BE MADE.
(6) LEAVE AS IS.

NO	DATE	BY	CKD	APPR	REVISION

PARSONS
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minnesota metric

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James C Knutson
DATE 1-21-00 REG. NO. 10169

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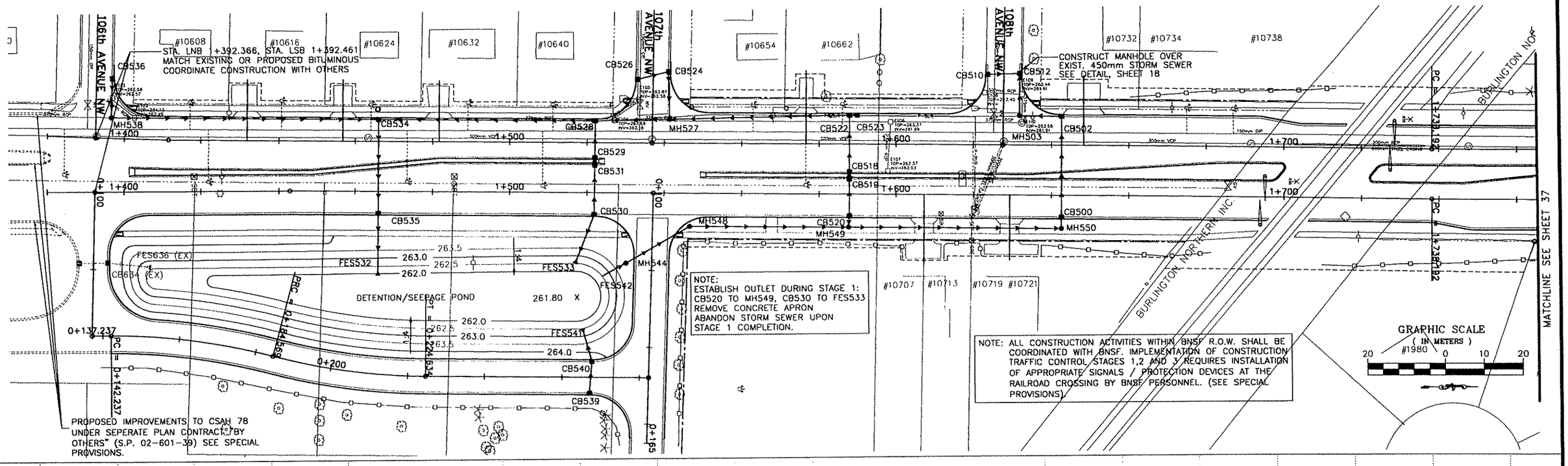
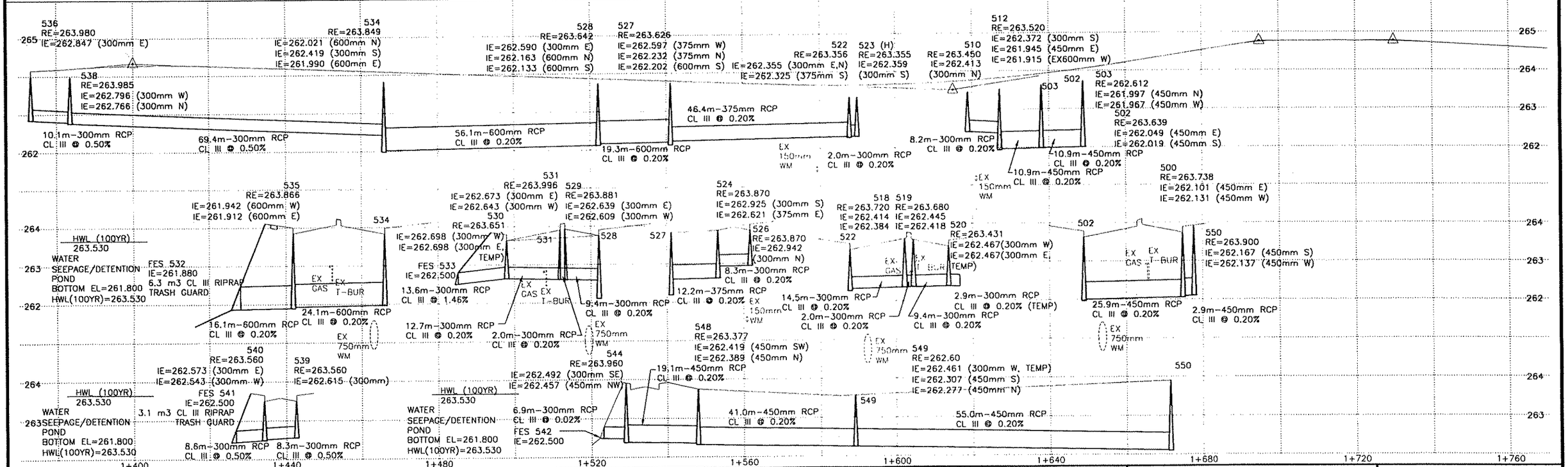
STATE PROJECT NO. 02-678-11
STATE PROJECT NO. 114-020-22
STATE PROJECT NO.

ANOKA COUNTY
ANOKA COUNTY HIGHWAY DEPT.

INPLACE DRAINAGE TABULATION





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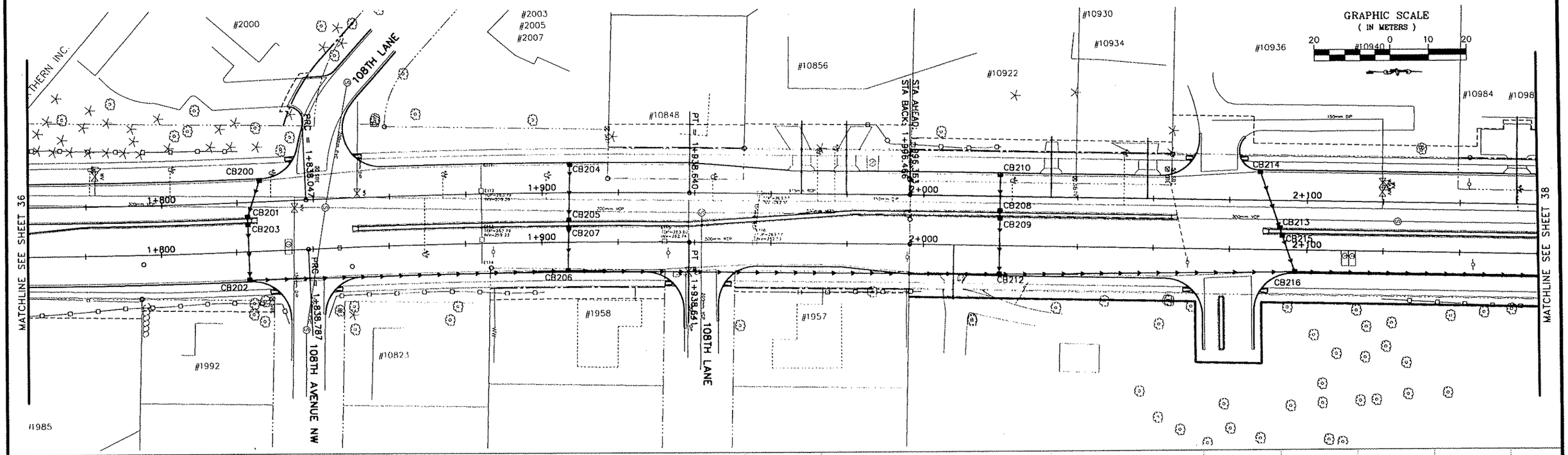
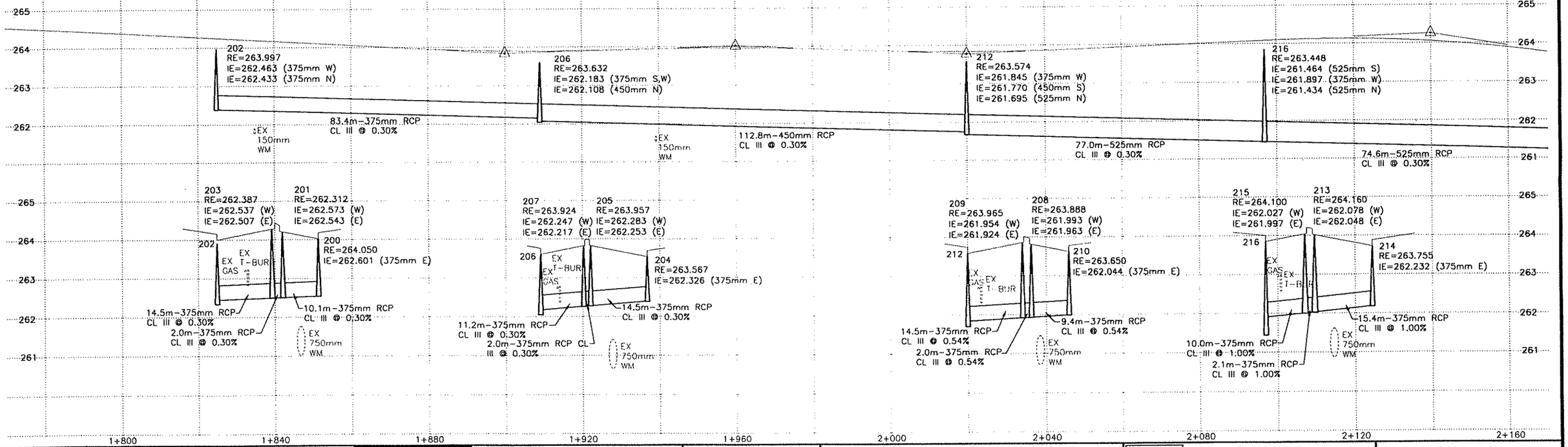
STATE PROJECT NO.

ANOKA COUNTY
HIGHWAY DEPT.

DRAINAGE
PLAN AND PROFILE
STA. 1+380 TO 1+760

Sheet 36 of 103 Sheets





NO	DATE	BY	CKD	APPR	REVISION

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minnesota metric

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James C Kuntson
DATE 1-21-00 REG. NO. 10169

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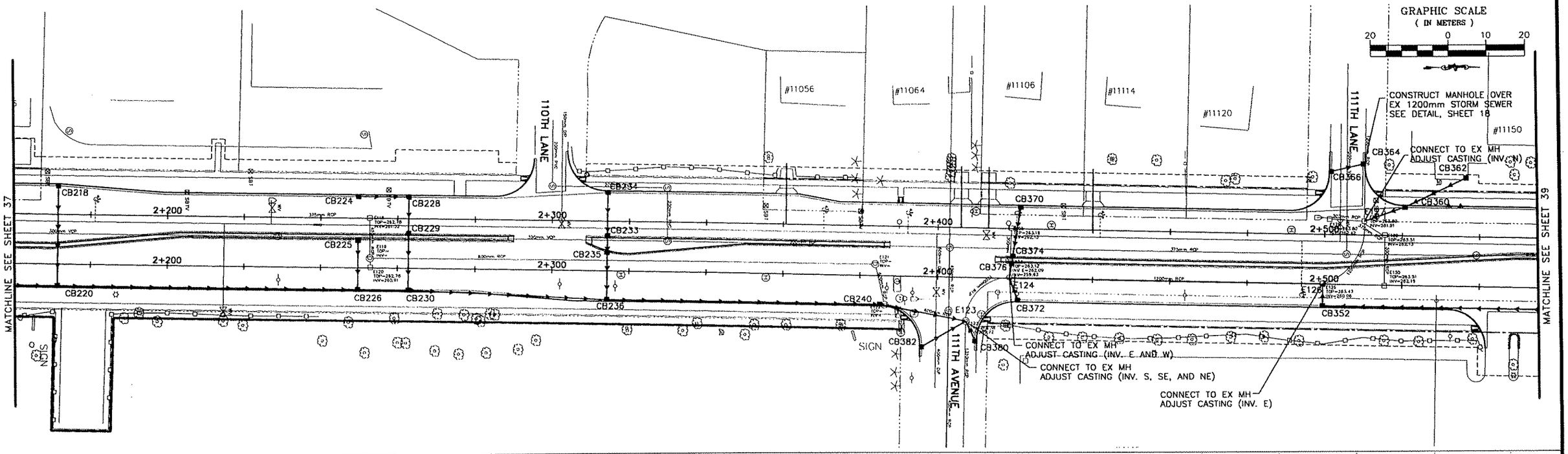
STATE PROJECT NO.

ANOKA COUNTY
HIGHWAY DEPT.

DRAINAGE
PLAN AND PROFILE
STA. 1+760 TO 2+160

Sheet 37 of 103 Sheets



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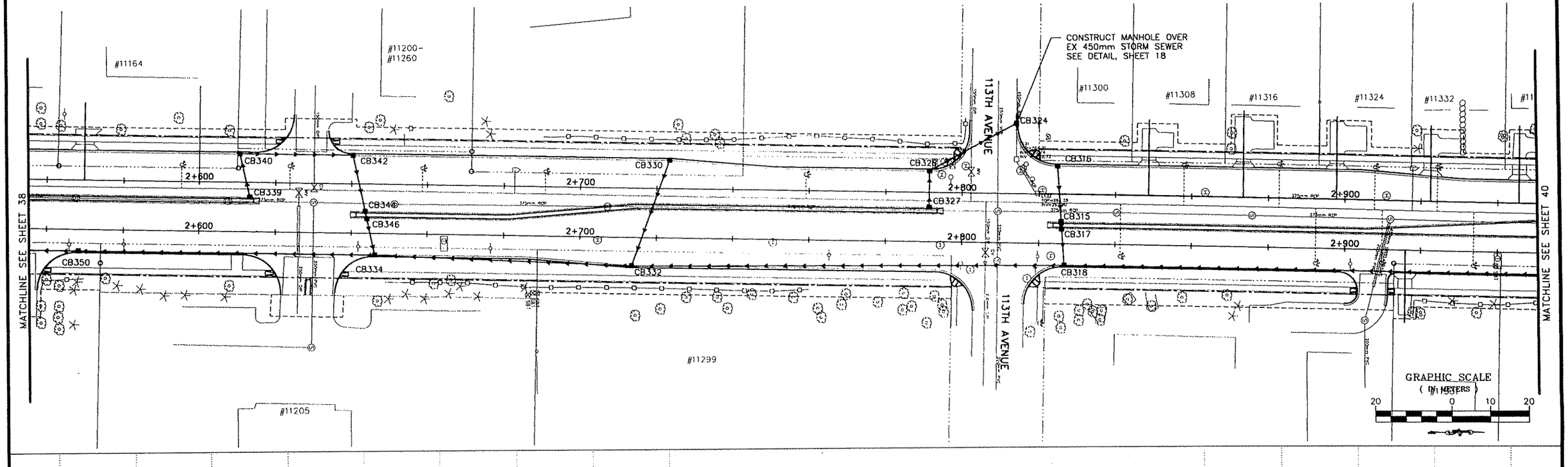
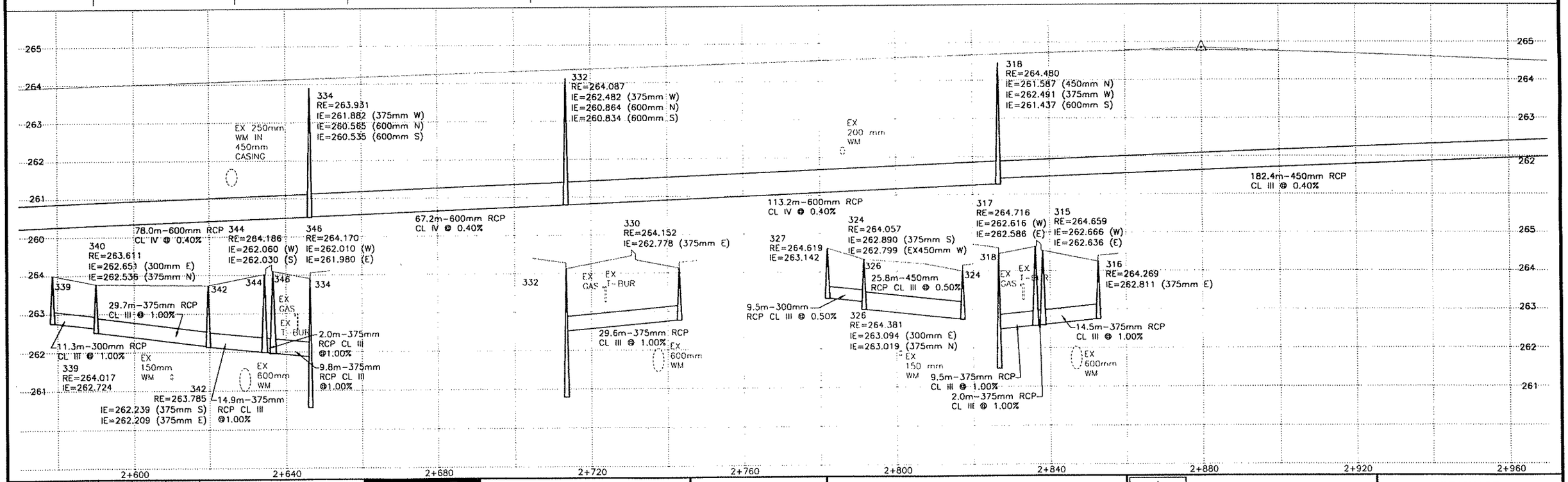
ANOKA COUNTY
HIGHWAY DEPT.

DRAINAGE
PLAN AND PROFILE
STA. 2+160 TO 2+560

Sheet 38 of 103 Sheets





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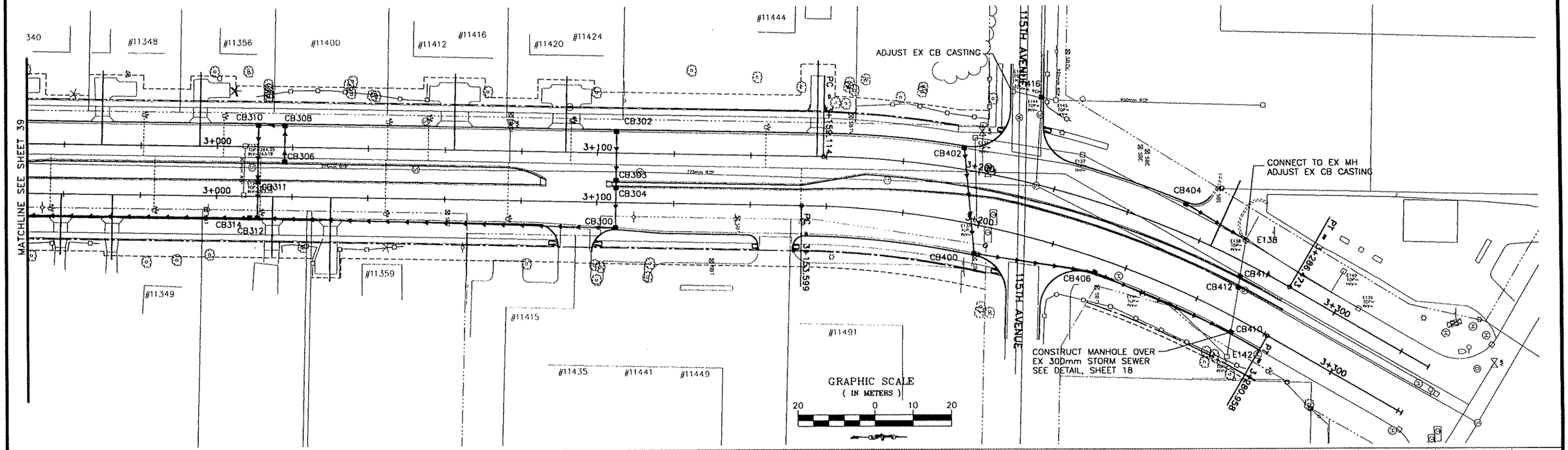
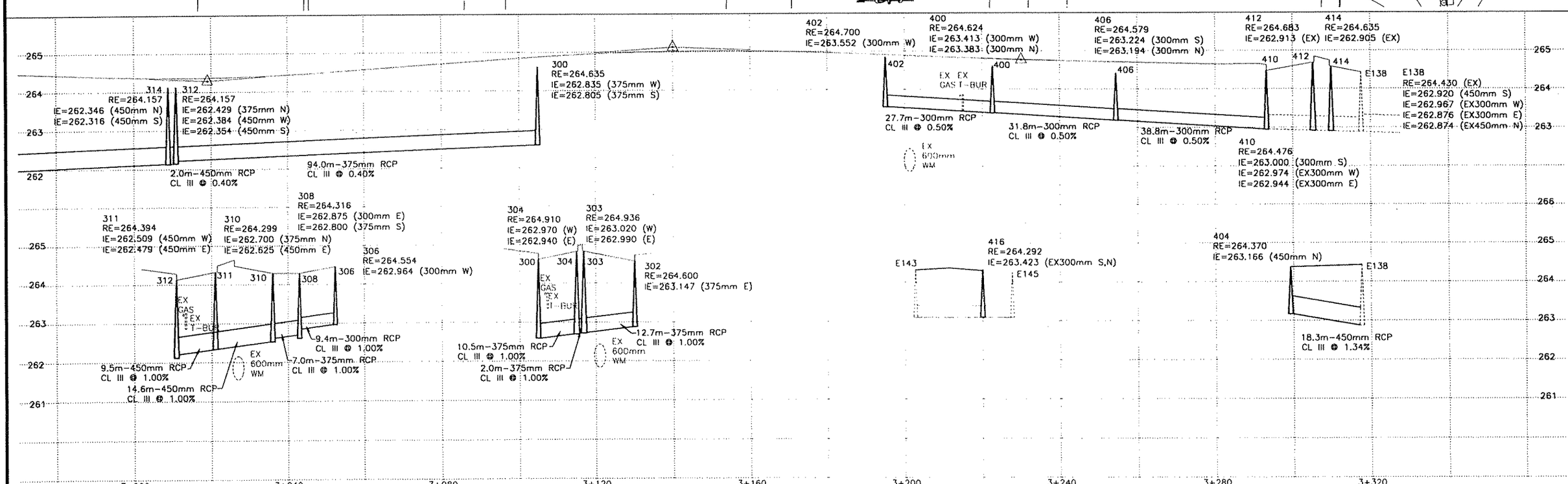
DRAINAGE
PLAN AND PROFILE
STA. 2+560 TO 2+950

Sheet 39 of 103 Sheets





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ANOKA COUNTY
HIGHWAY DEPT.

DRAINAGE
PLAN AND PROFILE
STA. 2+950 TO 3+300

Sheet 40 of 103 Sheets

(T)

DRAINAGE TABULATION (1) (2)

STRUCT. NO.	STATION	LOCATION	COORDINATES (3) X	COORDINATES (3) Y	CONSTRUCTION M.H. or C.B.	CONSTRUCTION DESIGN	CONSTRUCTION PAY HEIGHT METERS	CASTING ASSEMBLY	RC PIPE SEWER, DES3006 (m) CL III 300 mm	CL III 375 mm	CL III 450 mm	CL III 525 mm	CL III 600 mm	CL IV 600 mm	CL IV 750 mm	RIPRAP CL III (m3)	DRAINS TO	DRAINAGE NOTES
518	LSB 1+589.800	7.100 R	148379.323	44851.219	CB	G	1.006	B-1	14.5								522	(7)
519	LNB 1+587.800	3.800 R	148381.281	44851.193	CB	G	1.221	B-1	2.0								518	(7)
520	LNB 1+587.800	5.621 R	148390.722	44851.063	CB	G	0.923	B-1	9.4								519	
520									2.9								549	
522	LSB 1+587.800	7.421 L	148364.783	44851.419	CB	G	0.990	B-1		46.4							527	
523	LSB 1+589.800	7.421 L	148364.810	44853.419	CB	H	0.955	B-1	2.0								522	
528	LSB 1+522.146	5.621 L	148365.682	44785.747	CB	F	1.468	B-1					56.1				534	
531	LNB 1+521.872	7.120 L	148377.080	44785.461	CB	G	1.313	B-1	2.0								529	(7)
529	LSB 1+522.146	3.800 R	148375.122	44785.510	CB	G	1.232	B-1	9.4								528	(7)
530	LNB 1+521.872	5.621 R	148389.818	44785.141	CB	G	0.912	B-1	12.7								531	
530									13.6								533	
524	LSB 1+541.174	18.442 L	148353.124	44804.949	CB	G	1.221	SPEC.		12.2							527	
526	LSB 1+533.031	16.405 L	148355.049	44796.779	CB	H	0.888	SPEC.	8.3								524	
527	LSB 1+541.430	6.140 L	148365.421	44805.033	MH	G	1.384	A-7D					19.3				528	
534	LSB 1+466.000	5.621 L	148364.913	44729.606	CB	F	1.818	B-1					24.1				535	
538	LSB 1+396.470	5.311 L	148363.961	44660.196	MH	G	1.175	A-7D	69.4								534	
536	LSB 1+396.459	15.431 L	148353.847	44660.533	CB	H	1.093	SPEC.	10.1								538	
535	LNB 1+466.000	5.363 R	148389.053	44729.275	CB	F	1.914	B-1					16.1				532	
532	LNB 1+466.000	21.715 R	148405.145	44729.054	FES											6.4	POND	
533	LNB 1+517.035	18.315 R	148402.445	44780.131	FES											3.1	POND	
539	LFN 0+267.714	4.120 R	148436.142	44793.545	CB	H	0.905	SPEC.	8.3								540	
540	LFN 0+267.725	4.120 L	148427.909	44784.258	CB	G	0.976	SPEC.	8.6								541	
541	LFN 0+265.228	12.673 L	148419.323	44781.878	FES											3.1	POND	
542	LNB 1+525.143	20.874 R	148405.115	44788.203					6.9								544	POND OUTLET
544	LNB 1+530.127	18.144 R	148402.453	44793.224	MH	G	1.248	A-7D			19.1						548	
548	LNB 1+546.640	8.541 R	148393.075	44809.869	MH	G	1.240	A-7D			41.0						549	
549	LNB 1+587.800	8.541 R	148393.636	44850.842	MH	G	1.282	A-7D			55.0						550	
550	LNB 1+642.619	8.538 R	148394.390	44905.837	MH	F	1.723	A-7D			2.9						500	
500	LNB 1+642.614	5.621 R	148391.473	44905.872	CB	F	1.607	B-1			25.9						502	
502	LSB 1+642.613	7.421 L	148365.534	44906.227	CB	F	1.579	B-1			10.9						503	
503	LSB 1+631.741	7.400 L	148365.259	44895.358	MH	F	1.605	A-7D			10.9						512	(4) (5) (9)
512	LSB 1+631.741	18.434 L	148354.372	44895.507	CB	4020-1800	1.564	SPEC.									EX PIPE	
510	LSB 1+623.510	18.126 L	148354.568	44887.272	CB	H	0.996	SPEC.	8.2								512	
200	LSB 1+826.137	5.621 L	148367.630	45089.418	CB	F	1.406	B-1		10.1							201	
201	LSB 1+822.670	3.820 R	148377.190	45682.289	CB	F	1.728	B-1		2.0							203	(7)
203	LNB 1+823.214	7.121 L	148379.147	45086.360	CB	F	1.840	B-1		14.5							202	(7)
202	LNB 1+825.214	7.421 R	148393.683	45086.786	CB	F	1.523	B-1		83.4							206	
204	LSN 1+907.327	7.421 L	148363.690	45170.750	CB	H	1.199	B-1		14.5							205	
205	LSN 1+906.927	7.121 R	148378.234	45170.441	CB	F	1.664	B-1		2.0							207	(7)
207	LNB 1+907.155	3.821 L	148380.192	45170.399	CB	F	1.667	B-1		11.2							206	(7)
206	LNB 1+907.850	7.421 R	148391.435	45170.160	CB	F	1.483	B-1			112.8						212	
210	LSB 2+019.897	5.621 L	148366.945	45283.564	CB	F	1.566	B-1		9.4							208	
208	LSB 2+019.897	3.821 R	148376.384	45283.359	CB	F	1.883	B-1		2.0							209	(7)
209	LNB 2+019.897	7.121 L	148378.342	45283.317	CB	F	2.000	B-1		14.6							212	(7)
212	LNB 2+019.897	7.421 R	148.392.880	45283.001	CB	F	1.838	B-1				77.0					216	
214	LSB 2+087.849	7.421 L	148366.621	45351.539	CB	F	1.482	B-1		15.4							213	
213	LSB 2+092.929	7.121 R	148381.270	45356.302	CB	F	2.072	B-1		2.1							215	(7)
215	LNB 2+093.613	3.821 L	148383.242	45356.944	CB	F	2.062	B-1		10.0							216	(7)
216	LNB 2+096.911	5.621 R	148392.753	45360.036	CB	F	1.973	B-1				74.6					220	
218	LSB 2+171.478	7.421 L	148368.437	45435.149	CB	F	1.505	B-1		25.9							220	
220	LNB 2+171.478	5.621 R	148394.373	45434.585	CB	F	2.311	B-1				78.3					226	
224	LSB 2+249.800	5.590 L	148371.969	45513.412	CB	H	1.104	B-1		13.0							228	
225	LNB 2+249.800	7.121 L	148383.335	45513.166	CB	H	1.347	B-1	12.8								226	
226	LNB 2+249.800	5.621 R	148396.074	45512.889	CB	F	2.050	B-1				13.0					230	
228	LSB 2+262.817	5.621 L	148372.220	45526.427	CB	F	1.681	B-1		9.4							229	
229	LSB 2+262.817	3.821 R	148381.660	45526.222	CB	F	2.043	B-1		14.8							230	
230	LNB 2+262.817	5.621 R	148396.357	45525.903	CB	F	2.190	B-1					51.6				236	
234	LSB 2+314.357	7.421 L	148371.540	45577.994	CB	F	1.682	B-1		11.2							233	
233	LSB 2+314.357	3.821 R	148382.779	45577.750	CB	F	2.117	B-1		4.3							235	
235	LNB 2+314.357	4.818 L	148387.039	45577.658	CB	F	2.180	B-1		12.2							236	
236	LNB 2+314.357	7.421 R	148399.275	45577.392	CB	F	2.610	B-1							70.8		240	
240	LNB 2+385.199	7.421 R	148400.814	45648.217	CB	F	3.209	B-1							22.6		E123	(6) (8)

DRAINAGE NOTES:
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(3) COORDINATES, STATION AND OFFSETS ARE GIVEN TO CENTER OF CASTINGS, WHICH IS 0.379m FROM FACE OF CURB WHERE APPLY.
(4) CENTER OF STRUCTURES FROM CENTER OF CASTINGS:
(MEASURED AWAY FROM CENTERLINE OF ROADWAY)

STRUCTURE TYPE	DISTANCE
G,H,F	0.079 m
4020-1500	0.319
4020-1800	0.468
4020-2100	0.621

(5) CONSTRUCT MANHOLE OVER EX. STORM SEWER, SEE SHEET 18 FOR DETAILS.
(6) CONNECT TO EX STORM MANHOLE AT ELEVATION SHOWN ON PLANS.
(7) CENTER OF 4020-1200 SHALL BE 0.160m FROM CENTER OF CASTING MEASURED AWAY FROM MEDIAN CURB.
(8) REPLACE EX. CASTING WITH A-7D ASSEMBLY.
(9) EX STORM SEWER IS 0.78m NORTH OF THE PROP. CASTING.

NO	DATE	BY	CKD	APPR	REVISION

PARSONS
Barton-Aschman Associates, Inc.
A Unit of Parsons Transportation Group Inc.

minnesota metric

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
James C Knutson
DATE 1-21-00 REG. NO. 10169

DRAWN BY SAP DATE
DESIGN BY JCK DATE
CHECKED BY GPO DATE

STATE PROJECT NO. 02-678-11
STATE PROJECT NO. 114-020-22
STATE PROJECT NO.

ANOKA COUNTY
HIGHWAY DEPT.

DRAINAGE TABULATION

Sheet 41 of 103 Sheets

(T)

DRAINAGE TABULATION (1) (2)

STRUCT. NO.	STATION	LOCATION	COORDINATES (3) X	COORDINATES (3) Y	CONSTRUCTION M.H. or C.B.	CONSTRUCTION DESIGN	PAY HEIGHT METERS	CASTING ASSEMBLY	RC PIPE SEWER, DES3006 (m) CLASS III 300 mm	375 mm	450 mm	525 mm	600 mm	CLASS IV 600 mm	750 mm	RIPRAP CLASS III (m3)	DRAINS TO	DRAINAGE NOTES
300	LNB 3+104.899	6.614 R	148415.637	46367.764	CB	F	1.789	B-1		94.0							312	
302	LSB 3+104.897	5.621 L	148390.508	46368.309	CB	F	1.412	B-1		12.7							303	
303	LSB 3+104.897	7.121 R	148403.247	46368.033	CB	F	1.906	B-1		2.0							304	(7)
304	LNB 3+104.899	3.821 L	148405.205	46367.990	CB	F	1.929	B-1		10.5							300	(7)
306	LSB 3+017.897	3.821 R	148398.059	46281.124	CB	F	1.544	B-1	9.4								308	
308	LSB 3+017.897	5.621 L	148388.619	46281.329	CB	F	1.475	B-1		7.0							310	
310	LSB 3+010.897	5.621 L	148388.467	46274.331	CB	F	1.623	B-1			14.6						311	
311	LNB 3+010.897	3.821 L	148403.163	46274.011	CB	F	1.874	B-1			9.5						312	
312	LNB 3+010.897	5.621 R	148412.603	46273.806	CB	F	1.762	B-1			2.0						314	
314	LSB 3+008.897	5.621 R	148412.560	46271.807	CB	F	1.800	B-1			182.4						318	
316	LSB 2+824.738	7.383 L	148382.663	46088.254	CB	F	1.416	B-1		14.5							315	
315	LSB 2+825.830	7.121 R	148397.187	46089.030	CB	F	1.982	B-1		2.0							317	(7)
317	LNB 2+825.977	3.821 L	148399.147	46089.135	CB	F	2.088	B-1		9.5							318	(7)
318	LNB 2+826.688	5.621 R	148408.603	46089.641	CB	F	3.003	B-1						113.2			332	
324	LSB 2+813.940	18.333 L	148371.480	46077.696	CB	H	1.349	SPEC.									E106	(5)
326	LSB 2+791.422	5.700 L	148383.621	46054.908	CB	G	1.322	SPEC.			25.8						324	
327	LSB 2+791.420	3.821 R	148393.140	46054.701	CB	F	1.437	B-1	9.5								326	
330	LSB 2+723.281	7.421 L	148380.421	45986.821	CB	H	1.334	B-1		29.6							332	
332	LNB 2+713.496	7.421 R	148407.944	45976.436	CB	F	3.212	B-1						67.2			334	
334	LNB 2+646.295	5.621 R	148404.685	45909.290	CB	F	3.356	B-1						78			350	
339	LSB 2+613.329	3.821 R	148389.272	45876.652	CB	H	1.253	B-1	11.3								340	
340	LSB 2+610.587	7.421 L	148379.773	45874.115	CB	G	1.149	B-1		29.7							342	
342	LSB 2+640.243	7.421 L	148378.618	45903.803	CB	F	1.535	B-1		14.9							344	(4) (6)
344	LSB 2+643.636	7.121 R	148393.230	45906.879	CB	F	2.115	B-1		2.0							346	(7)
346	LNB 2+644.092	3.821 L	148395.197	45907.293	CB	F	2.150	B-1		9.8							334	(7)
350	LNB 2+568.242	5.621 R	148403.069	45831.255	CB	4020-1500	3.471	B-1							68.6		352	(4)
352	LNB 2+499.600	5.621 R	148395.694	45762.756	CB	4020-1800	3.489	B-1							6.3		E126	(4) (8)
360	LSB 2+520.639	7.421 L	148376.020	45784.227	CB	G	1.120	B-1		11.2							E127	(6) (8)
362	LSB 2+536.291	15.264 L	148368.519	45800.053	CB	H	1.055	B-1		17.6							360	
364	LSB 2+510.294	18.834 L	148364.806	45773.595	CB	4020-2100	3.550	SPEC.									E127	(5) (8)
366	LSB 2+501.538	16.335 L	148366.693	45765.324	CB	F	1.179	SPEC.			9.1						364	
370	LSB 2+421.387	5.621 L	148375.664	45684.960	CB	H	0.948	B-1		12.9							374	
372	LNB 2+420.768	5.621 R	148399.787	45683.817	CB	H	1.392	B-1		6.3							E124	(6) (8)
374	LSB 2+419.433	7.121 R	148388.361	45682.729	CB	F	1.438	B-1		2.0							376	(7)
376	LNB 2+419.134	3.821 L	148390.312	45682.388	CB	G	1.382	B-1		3.6							E124	(7) (8)
380	LNB 2+409.888	16.482 R	148410.409	45672.704	CB	H	1.056	SPEC.		5.7							E123	(6) (8)
382	LNB 2+396.077	18.324 R	148411.950	45658.856	CB	H	0.953	SPEC.		13.4							E123	(6) (8)
400	LNB 3+200.353	7.431 R	148422.728	46461.429	CB	G	1.201	B-1	31.8								406	
402	LSB 3+195.138	5.629 L	148395.130	46459.155	CB	H	1.108	B-1	27.7								400	
404	LSB 3+253.174	7.454 L	148363.690	45170.750	CB	H	1.191	B-1			18.3						E138	(6)
406	LNB 3+232.465	3.764 R	148427.741	46492.804	CB	G	1.345	B-1	38.8								410	
410	LNB 3+272.829	3.845 R	148391.435	45170.160	CB	F	1.486	B-1									412	(5)
412	LNB 3+268.351	7.498 L	148431.765	46530.229	CB	F	1.729	B-1									414	(5)
414	LSB 3+278.558	3.798 R	148428.958	46530.710	CB	F	1.690	B-1									E138	(5)
416	LSB 3+212.661	22.46 LT.	148382.055	46479.546	CB	G	0.828	SPEC.										(5)
TOTALS									329.6	651.5	540.2	242.9	167.2	258.4	168.3	12.6		

TOTALS		
	F	108.409
	G	24.470
	H	20.126
	4020-1500	3.471
	4020-1800	5.053
	4020-2100	3.550

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(MEASURED AWAY FROM CENTERLINE OF ROADWAY)

STRUCTURE	DISTANCE
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4020-1500	0.319
4020-1800	0.468
4020-2100	0.621

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(9) EX STORM SEWER IS 0.78m NORTH OF THE PROP. CASTING.

DRAINAGE CASTING SCHEDULE

ASSEMBLIES TYPE	NUMBER REQUIRED	FRAME, GRATE, CURB BOX CASTING NO.	STANDARD PLATE NO.
B-1	80	FRAME CASTING NO. 801 GRATE CASTING NO. 810 CURB BOX NO. 821B	M4126 M4149 M4161
A-7D	9	FRAME CASTING NO. 700-7 GRATE CASTING NO. 715	M4101 M4110
SPECIAL	14	NEENAH R-3067 GRATE CASTING TYPE DR/DL	NA

NO	DATE	BY	CKD	APPR	REVISION

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minnesota metric

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STATE PROJECT NO. 114-020-22
STATE PROJECT NO.

ANOKA COUNTY
HIGHWAY DEPT.

DRAINAGE TABULATION

Sheet 42 of 103 Sheets

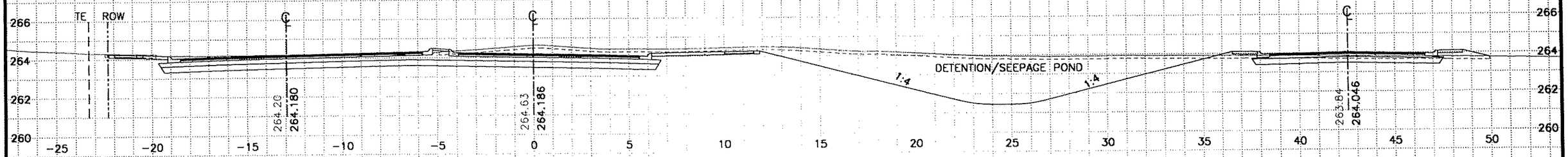
LSB
1+440

LNB
1+440

CUT: 1204
SUBCUT: 215

FILL: 215
TOPSOIL: 116

LFR
0+186.468



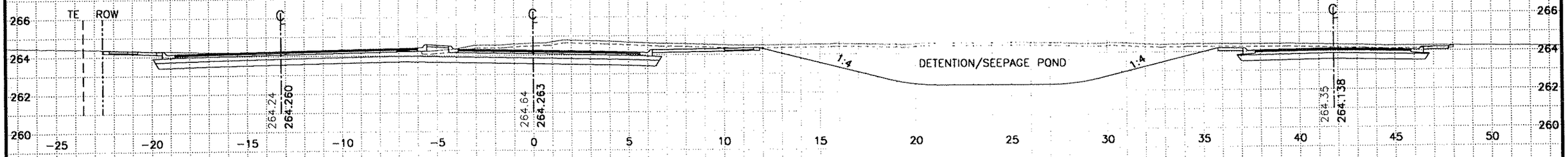
LSB
1+420

LNB
1+420

CUT: 1056
SUBCUT: 231

FILL: 232
TOPSOIL: 78

LFR
0+165.999



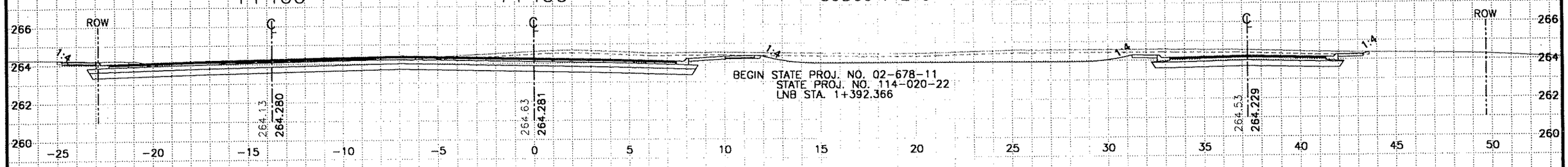
LSB
1+400

LNB
1+400

CUT: 832
SUBCUT: 246

FILL: 247
TOPSOIL: 78

LFR
0+145.913

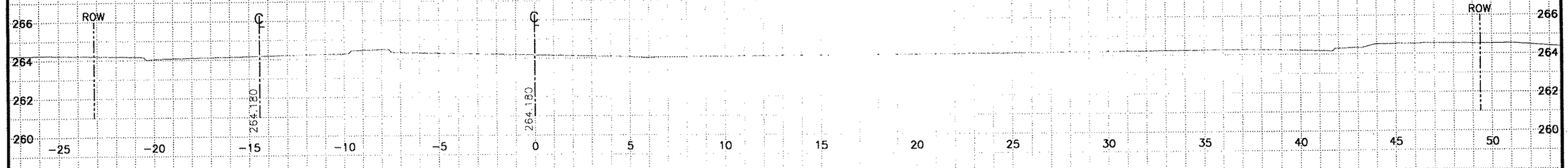


LSB
1+380

LNB
1+380

CUT: 186
SUBCUT: 98

FILL: 98
TOPSOIL: 0



NO	DATE	BY	CKD	APPR	REVISION

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Barton-Aschman Associates, Inc.
A Unit of Parsons Transportation Group Inc.

minnesota metric

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STATE PROJECT NO. 114-020-22
STATE PROJECT NO. _____

ANOKA COUNTY

ANOKA COUNTY
HIGHWAY DEPT.

CROSS
SECTIONS
STA. 1+380 TO STA. 1+440

Sheet 43 of 103 Sheets

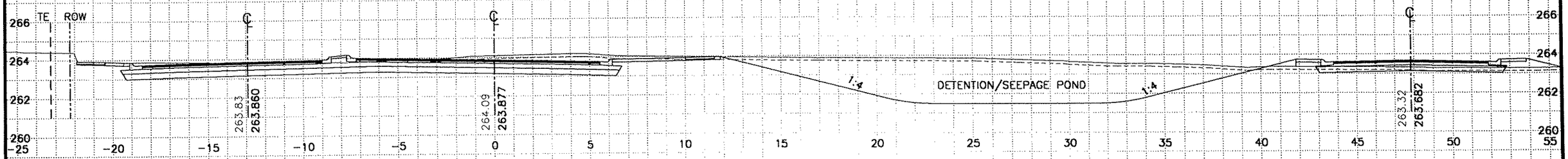
LSB
1+520

LNB
1+520

CUT: 766
SUBCUT: 214

FILL: 214
TOPSOIL: 116

LFR
0+266.882



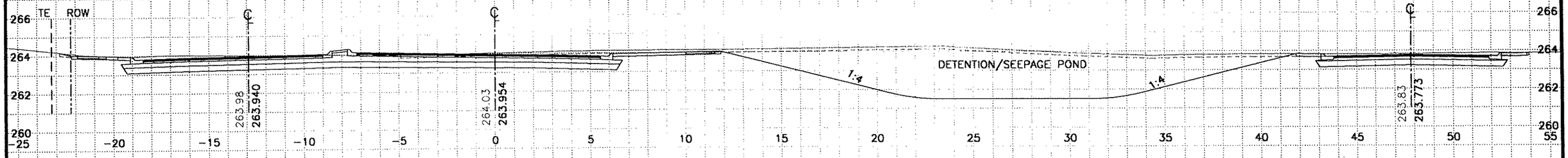
LSB
1+500

LNB
1+500

CUT: 1331
SUBCUT: 214

FILL: 214
TOPSOIL: 116

LFR
0+246.882



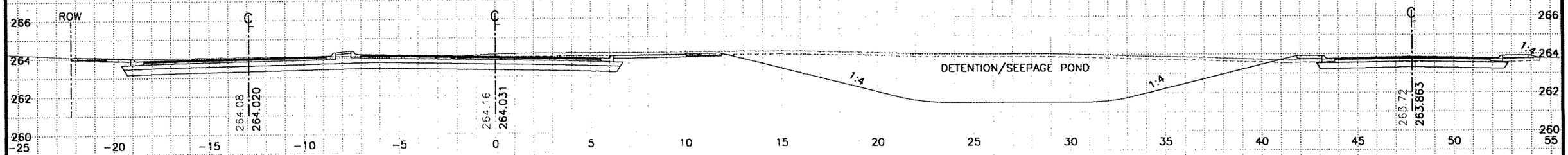
LSB
1+480

LNB
1+480

CUT: 1408
SUBCUT: 214

FILL: 214
TOPSOIL: 114

LFR
0+226.882



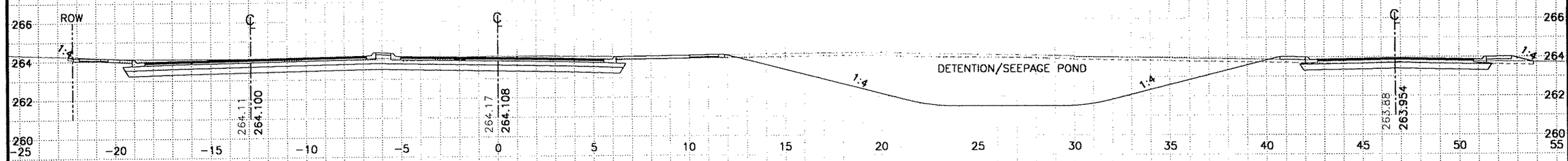
LSB
1+460

LNB
1+460

CUT: 1379
SUBCUT: 214

FILL: 214
TOPSOIL: 108

LFR
0+206.831



NO	DATE	BY	CKD	APPR	REVISION

PARSONS
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minnesota metric

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STATE PROJECT NO. 114-020-22
STATE PROJECT NO. _____

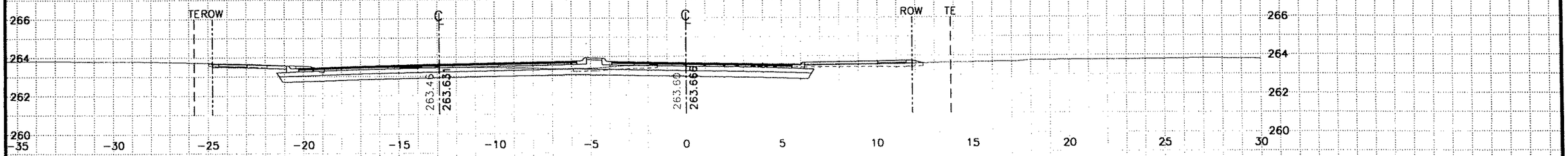
ANOKA COUNTY
HIGHWAY DEPT.

CROSS SECTIONS
STA. 1+460 TO STA. 1+520

Sheet 44 of 103 Sheets

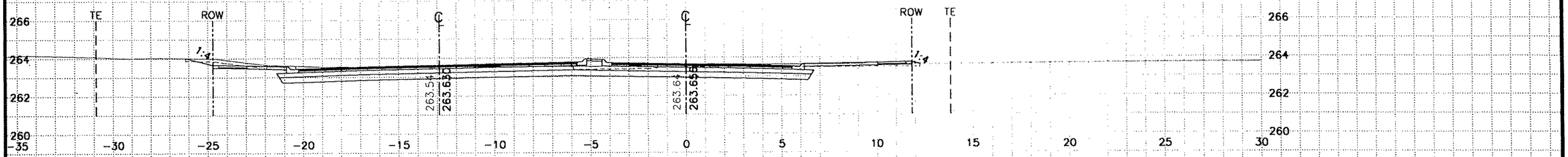
LSB 1+600 / LNB 1+600

CUT: 133 FILL: 169
SUBCUT: 168 TOPSOIL: 22



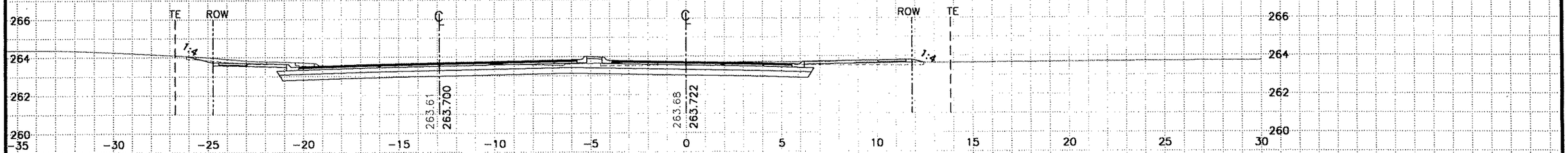
LSB 1+580 / LNB 1+580

CUT: 163 FILL: 166
SUBCUT: 166 TOPSOIL: 22



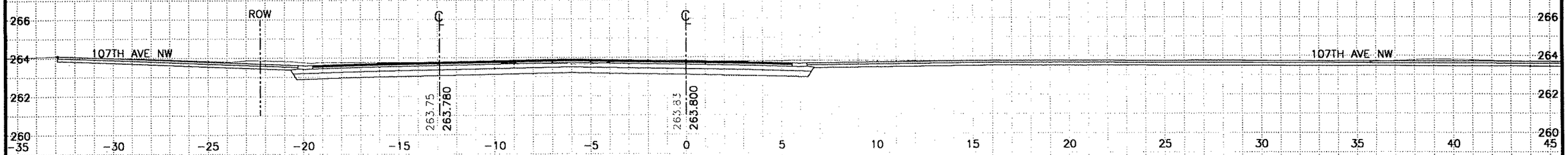
LSB 1+560 / LNB 1+560

CUT: 171 FILL: 163
SUBCUT: 163 TOPSOIL: 23



LSB 1+540 / LNB 1+540

CUT: 235 FILL: 187
SUBCUT: 187 TOPSOIL: 120



NO	DATE	BY	CKD	APPR	REVISION

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STATE PROJECT NO. 114-020-22
STATE PROJECT NO. _____

ANOKA COUNTY
HIGHWAY DEPT.

CROSS SECTIONS
STA. 1+540 TO STA. 1+600

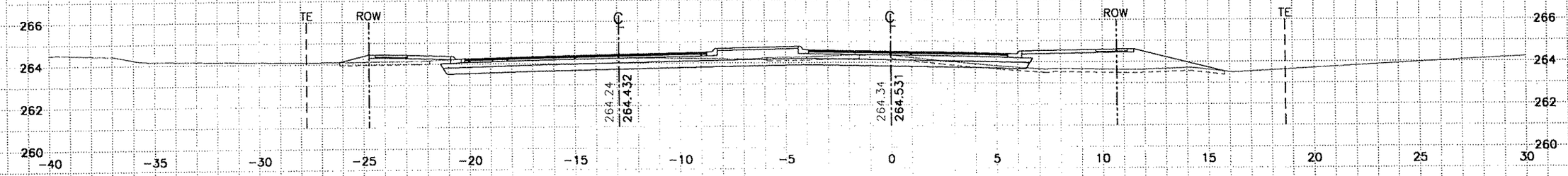
Sheet 45 of 103 Sheets

LSB
1+680

LNB
1+680

CUT: 13
SUBCUT: 166

FILL: 273
TOPSOIL: 26

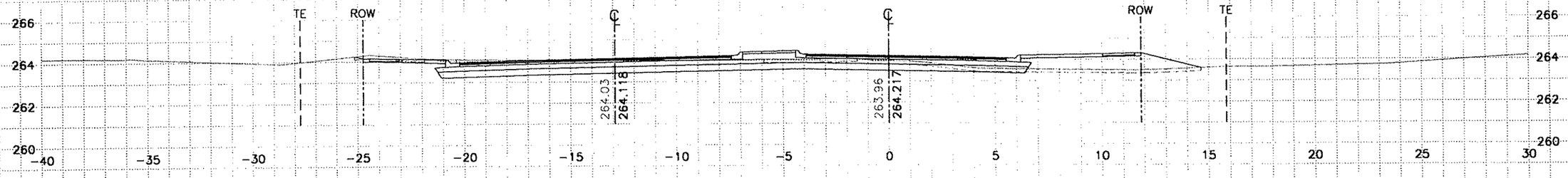


LSB
1+660

LNB
1+660

CUT: 66
SUBCUT: 166

FILL: 203
TOPSOIL: 24

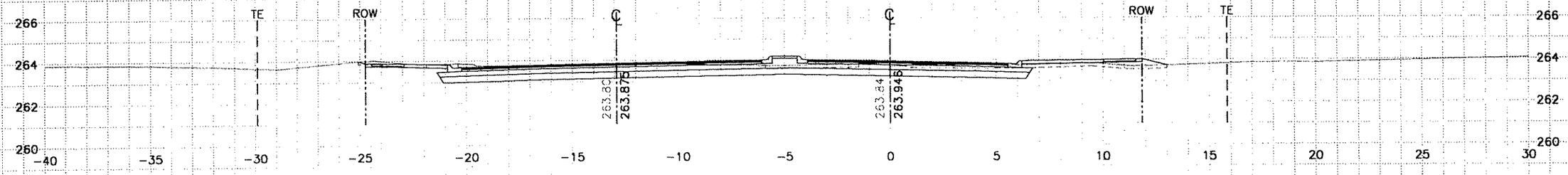


LSB
1+640

LNB
1+640

CUT: 131
SUBCUT: 166

FILL: 170
TOPSOIL: 24

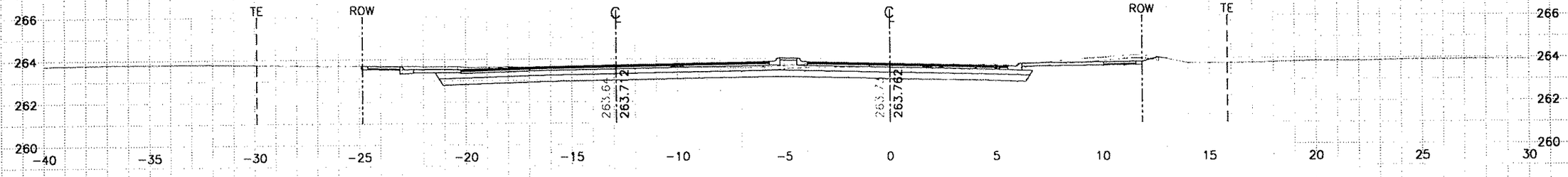


LSB
1+620

LNB
1+620

CUT: 133
SUBCUT: 168

FILL: 169
TOPSOIL: 22



NO	DATE	BY	CKD	APPR	REVISION

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ANOKA COUNTY
HIGHWAY DEPT.

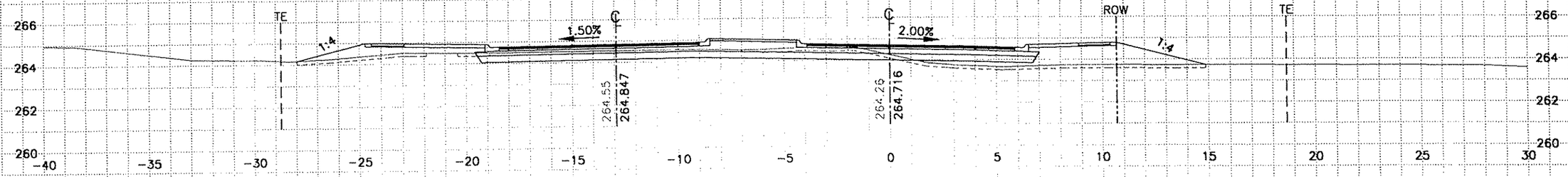
CROSS
SECTIONS
STA. 1+620 TO STA. 1+680

Sheet 46 of 103 Sheets

LSB 1+740

LNB 1+740

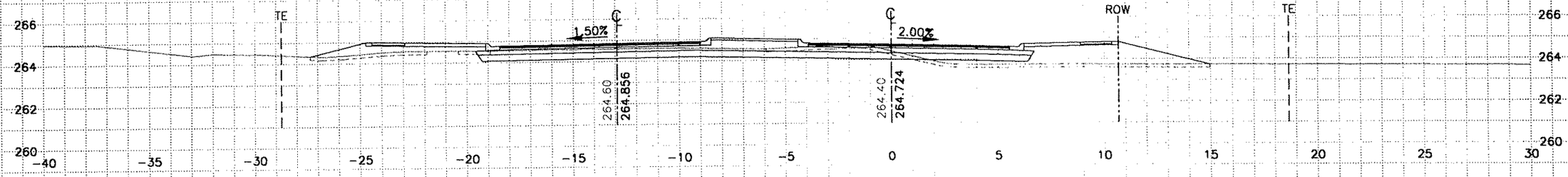
CUT: 91
SUBCUT: 154
FILL: 318
TOPSOIL: 45



LSB 1+738.192

LNB 1+738.192

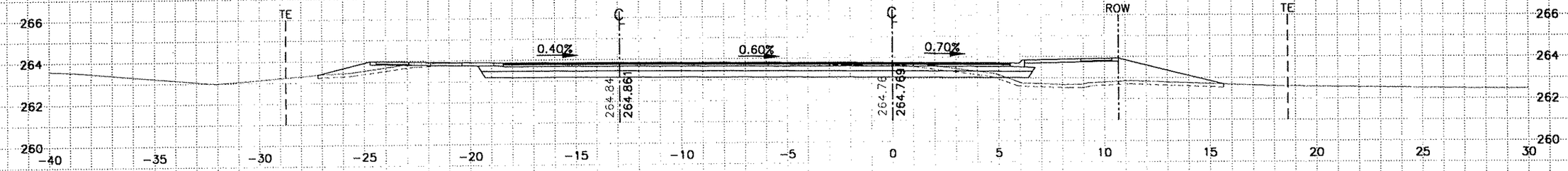
CUT: 10
SUBCUT: 15
FILL: 31
TOPSOIL: 5



LSB 1+720

LNB 1+720

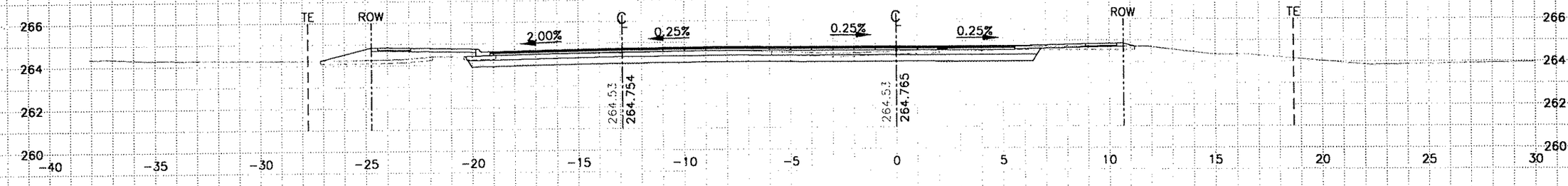
CUT: 53
SUBCUT: 141
FILL: 242
TOPSOIL: 23



LSB 1+700

LNB 1+700

CUT: 32
SUBCUT: 163
FILL: 260
TOPSOIL: 33



NO	DATE	BY	CKD	APPR	REVISION

PARSONS
Barton-Aschman Associates, Inc.
A Unit of Parsons Transportation Group Inc.

minnesota metric

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STATE PROJECT NO. 02-678-11
STATE PROJECT NO. 114-020-22
STATE PROJECT NO. _____

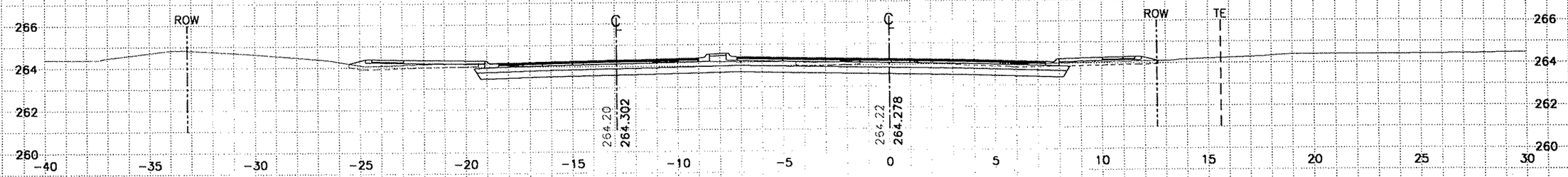
ANOKA COUNTY
HIGHWAY DEPT.

CROSS SECTIONS
STA. 1+700 TO STA. 1+740

Sheet 47 of 103 Sheets

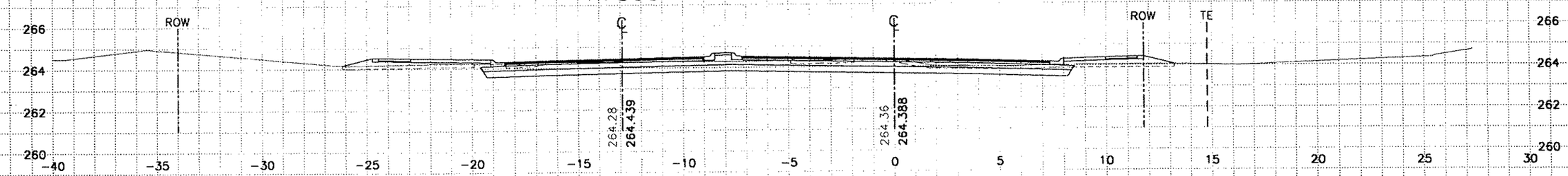
LSB 1+820 / LNB 1+820

CUT: 118 SUBCUT: 157 FILL: 172 TOPSOIL: 25



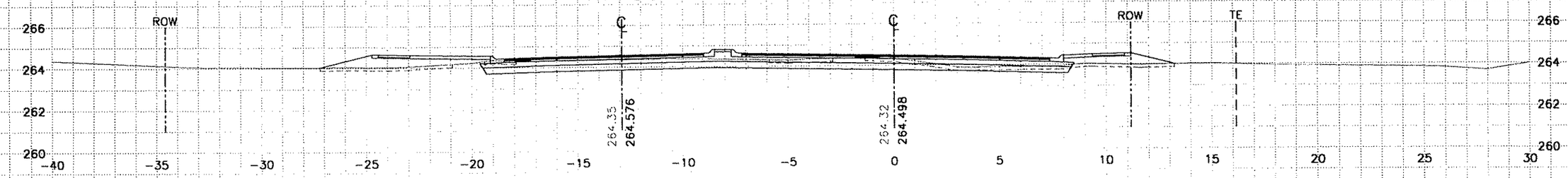
LSB 1+800 / LNB 1+800

CUT: 63 SUBCUT: 166 FILL: 222 TOPSOIL: 27



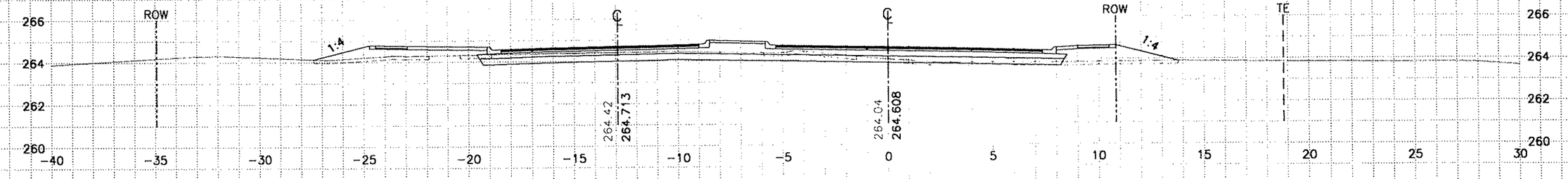
LSB 1+780 / LNB 1+780

CUT: 23 SUBCUT: 166 FILL: 276 TOPSOIL: 33



LSB 1+760 / LNB 1+760

CUT: 16 SUBCUT: 160 FILL: 325 TOPSOIL: 45



NO	DATE	BY	CKD	APPR	REVISION

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ANOKA COUNTY
HIGHWAY DEPT.

CROSS SECTIONS
STA. 1+760 TO STA. 1+820

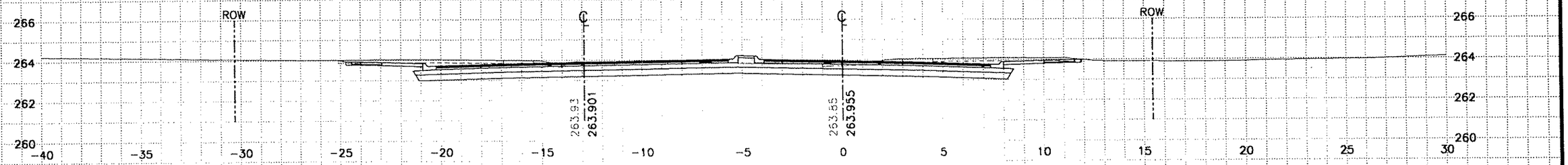
Sheet 48 of 103 Sheets

LSB
1+880

LNB
1+880

CUT: 206
SUBCUT: 175

FILL: 176
TOPSOIL: 18

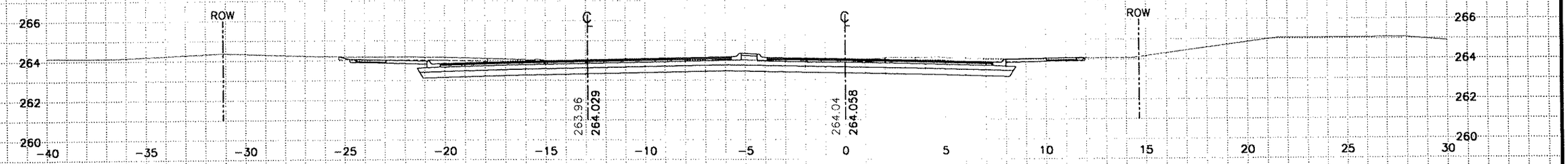


LSB
1+860

LNB
1+860

CUT: 185
SUBCUT: 172

FILL: 168
TOPSOIL: 22

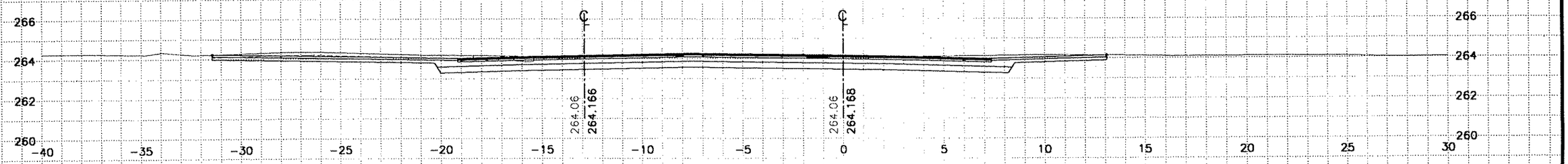


LSB
1+840

LNB
1+840

CUT: 141
SUBCUT: 167

FILL: 174
TOPSOIL: 24

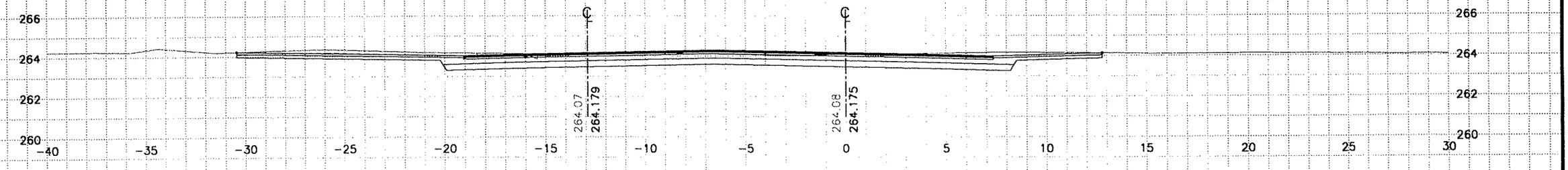


LSB
1+838.047

LNB
1+838.787

CUT: 9
SUBCUT: 10

FILL: 11
TOPSOIL: 1



NO	DATE	BY	CKD	APPR	REVISION

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ANOKA COUNTY

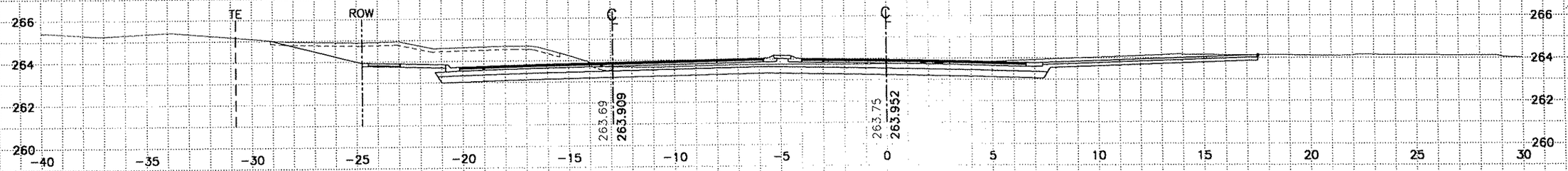
ANOKA COUNTY
HIGHWAY DEPT.

CROSS SECTIONS
STA. 1+838.787 TO STA. 1+880

Sheet 49 of 103 Sheets

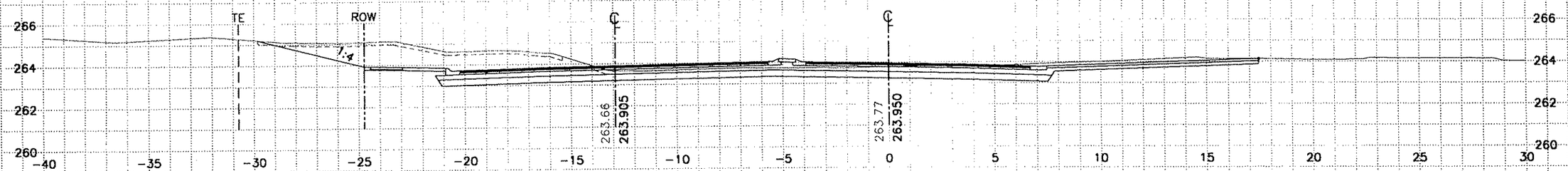
LSB 1+940 / LNB 1+940

CUT: 279 FILL: 174
SUBCUT: 171 TOPSOIL: 24



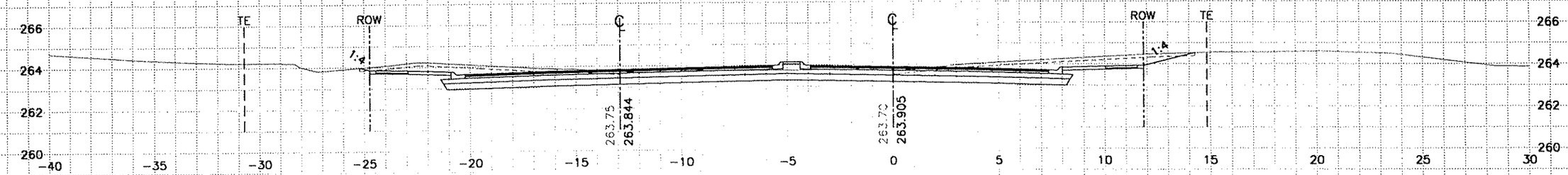
LSB 1+938.640 / LNB 1+938.641

CUT: 14 FILL: 9
SUBCUT: 9 TOPSOIL: 1



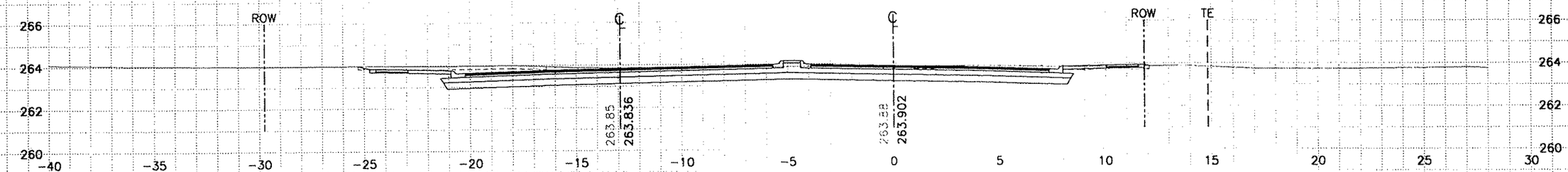
LSB 1+920 / LNB 1+920

CUT: 246 FILL: 165
SUBCUT: 164 TOPSOIL: 17



LSB 1+900 / LNB 1+900

CUT: 202 FILL: 174
SUBCUT: 174 TOPSOIL: 18



NO	DATE	BY	CKD	APPR	REVISION

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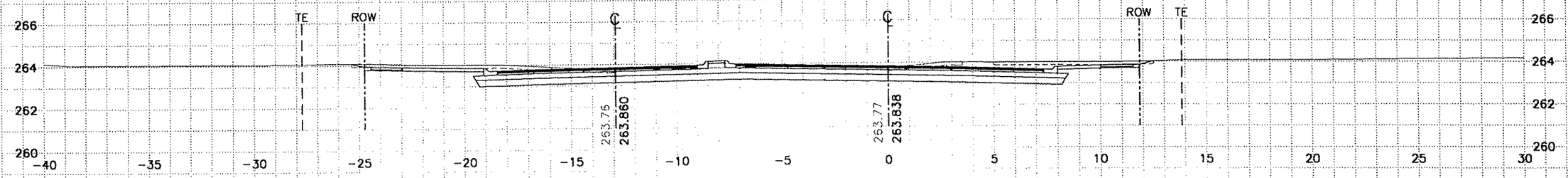
ANOKA COUNTY
HIGHWAY DEPT.

CROSS SECTIONS
STA. 1+900 TO STA. 1+940

Sheet 50 of 103 Sheets

LSB 2+020 / LNB 2+020

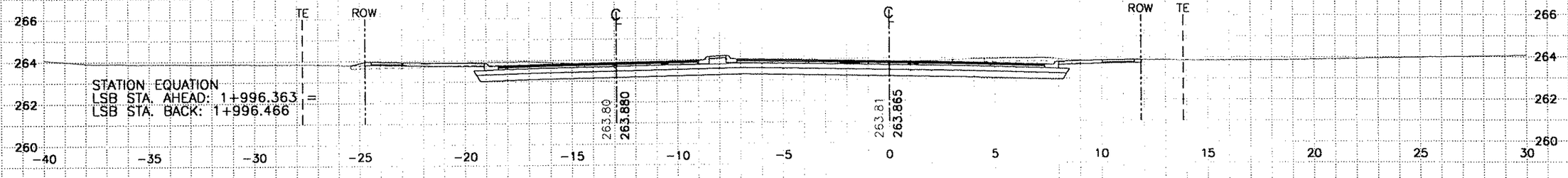
CUT: 223 FILL: 167
SUBCUT: 166 TOPSOIL: 24



LSB 2+000 / LNB 2+000

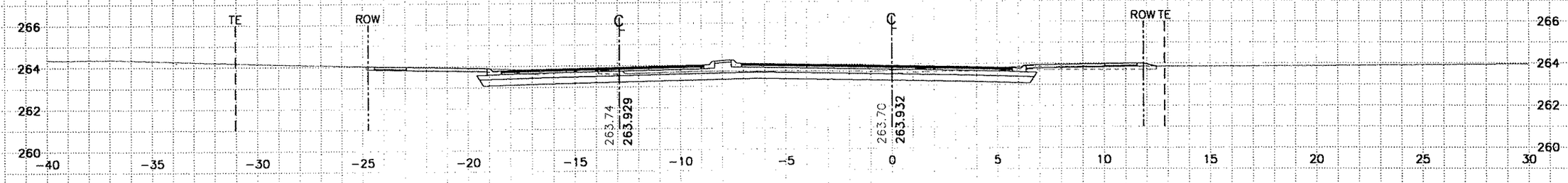
CUT: 145 FILL: 167
SUBCUT: 166 TOPSOIL: 30

STATION EQUATION
LSB STA. AHEAD: 1+996.363 =
LSB STA. BACK: 1+996.466



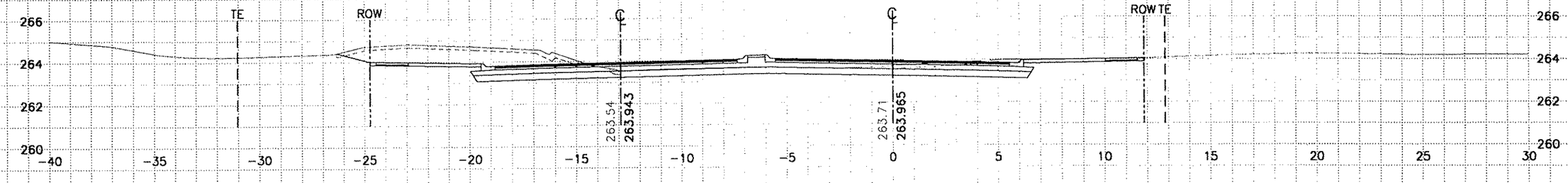
LSB 1+980 / LNB 1+980

CUT: 174 FILL: 170
SUBCUT: 167 TOPSOIL: 30



LSB 1+960 / LNB 1+960

CUT: 277 FILL: 170
SUBCUT: 168 TOPSOIL: 22



NO	DATE	BY	CKD	APPR	REVISION

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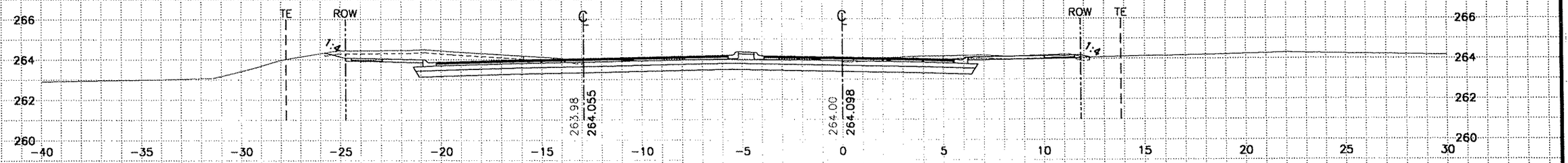
ANOKA COUNTY
HIGHWAY DEPT.

CROSS SECTIONS
STA. 1+960 TO STA. 2+020

Sheet 51 of 103 Sheets

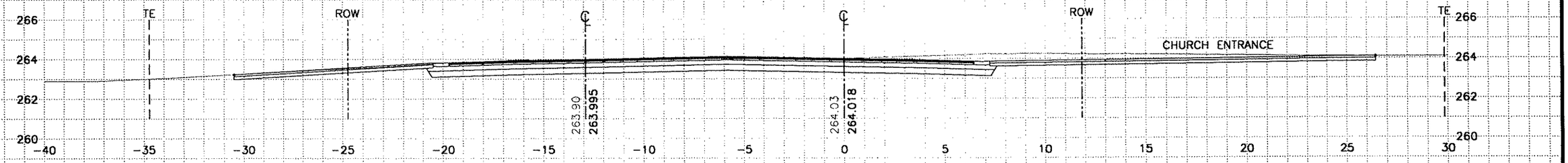
LSB 2+100 / LNB 2+100

CUT: 1369 FILL: 188
SUBCUT: 166 TOPSOIL: 22



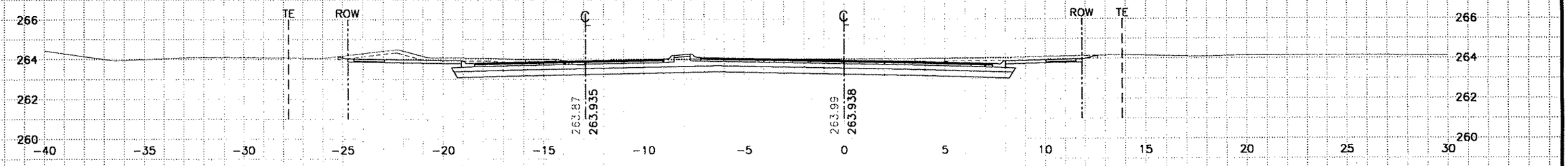
LSB 2+080 / LNB 2+080

CUT: 1395 FILL: 188
SUBCUT: 166 TOPSOIL: 24



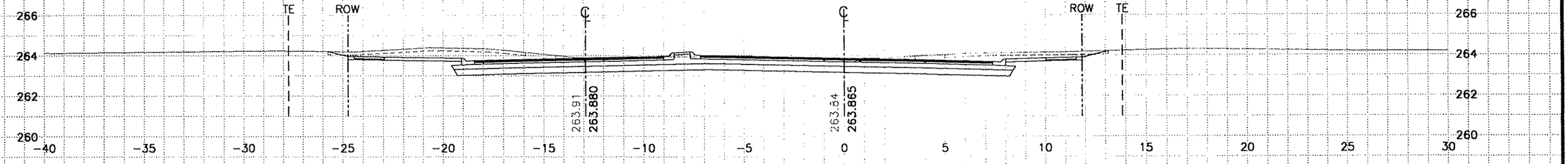
LSB 2+060 / LNB 2+060

CUT: 315 FILL: 165
SUBCUT: 166 TOPSOIL: 30



LSB 2+040 / LNB 2+040

CUT: 303 FILL: 166
SUBCUT: 166 TOPSOIL: 24



NO	DATE	BY	CKD	APPR	REVISION

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STATE PROJECT NO. 114-020-22
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ANOKA COUNTY
HIGHWAY DEPT.

CROSS SECTIONS
STA. 2+040 TO STA. 2+100

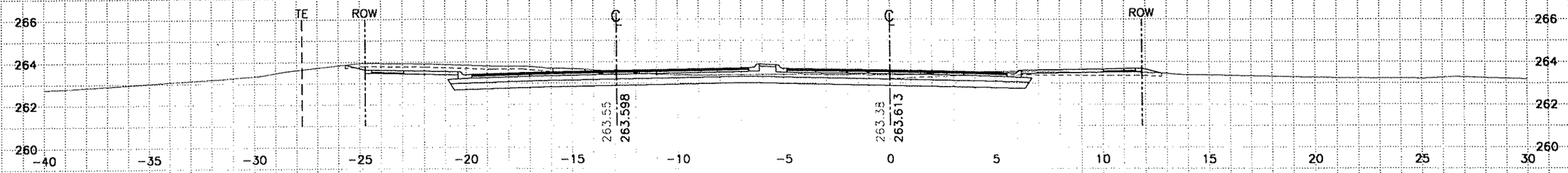
Sheet 52 of 103 Sheets

LSB
2+180

LNB
2+180

CUT: 123
SUBCUT: 165

FILL: 173
TOPSOIL: 29

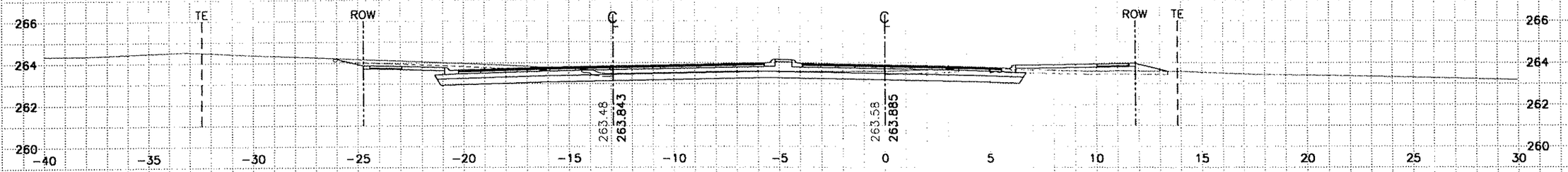


LSB
2+160

LNB
2+160

CUT: 78
SUBCUT: 165

FILL: 177
TOPSOIL: 27

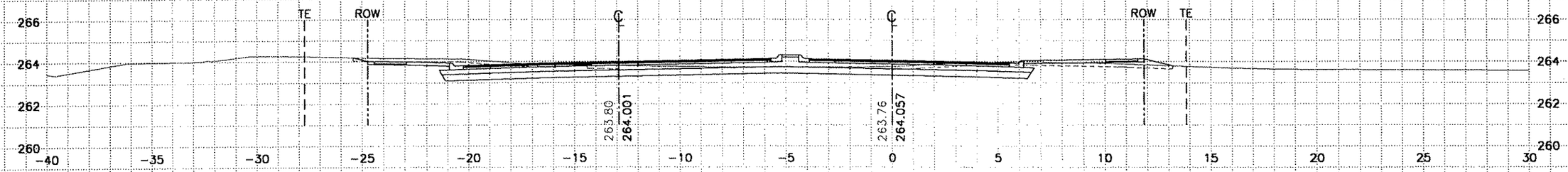


LSB
2+140

LNB
2+140

CUT: 85
SUBCUT: 165

FILL: 170
TOPSOIL: 24

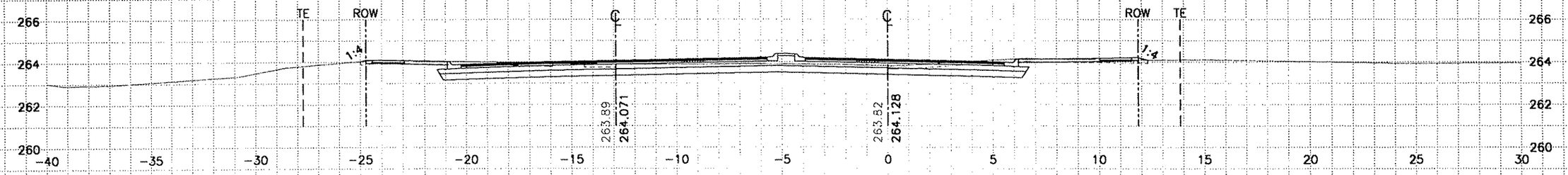


LSB
2+120

LNB
2+120

CUT: 159
SUBCUT: 166

FILL: 167
TOPSOIL: 24



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ANOKA COUNTY

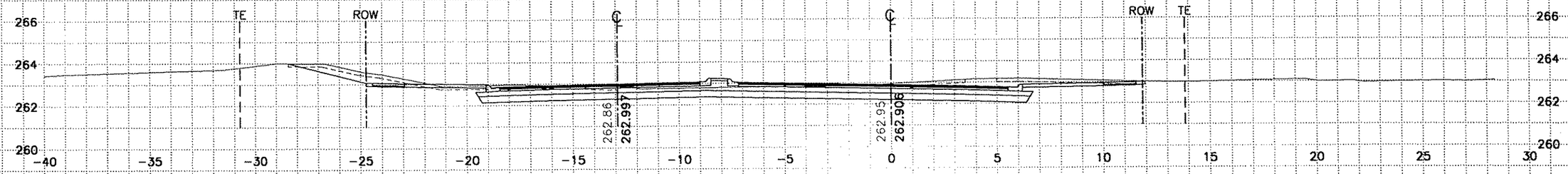
ANOKA COUNTY
HIGHWAY DEPT.

CROSS SECTIONS
STA. 2+120 TO STA. 2+180

Sheet 53 of 103 Sheets

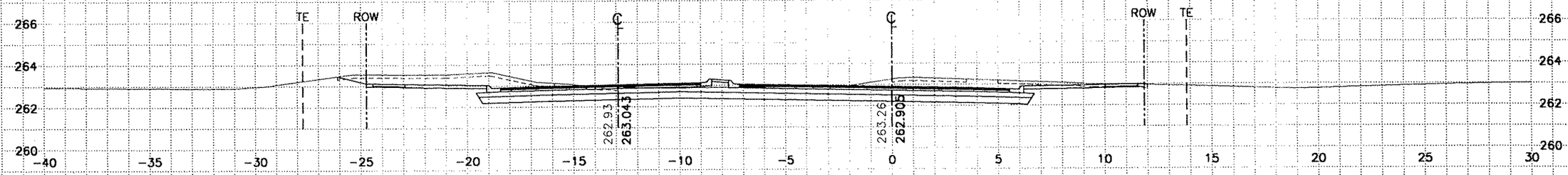
LSB 2+260 / LNB 2+260

CUT: 334 FILL: 156
SUBCUT: 156 TOPSOIL: 30



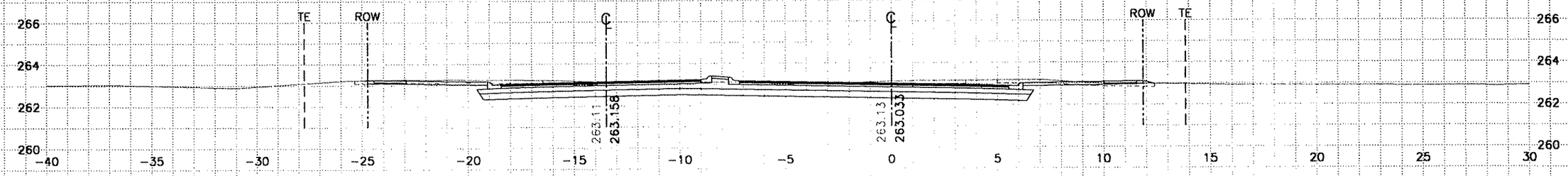
LSB 2+240 / LNB 2+240

CUT: 334 FILL: 156
SUBCUT: 156 TOPSOIL: 30



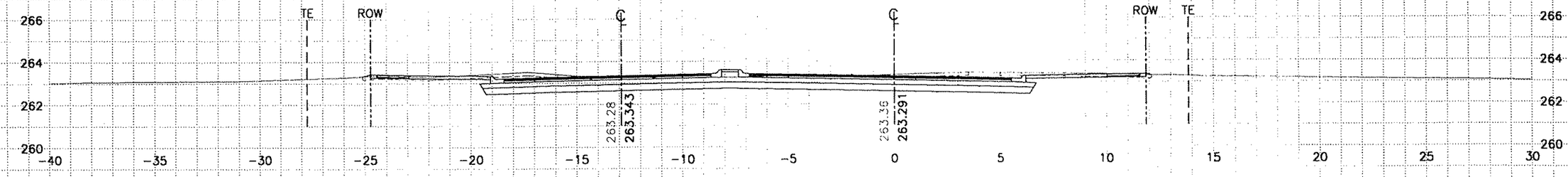
LSB 2+220 / LNB 2+220

CUT: 265 FILL: 156
SUBCUT: 156 TOPSOIL: 30



LSB 2+200 / LNB 2+200

CUT: 207 FILL: 166
SUBCUT: 161 TOPSOIL: 24



NO	DATE	BY	CKD	APPR	REVISION

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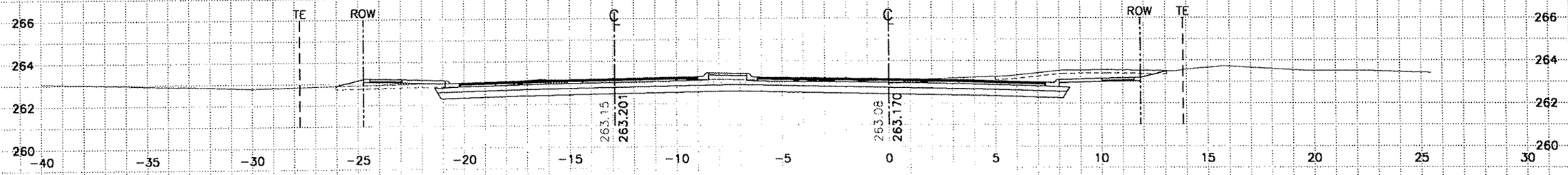
ANOKA COUNTY
HIGHWAY DEPT.

CROSS SECTIONS
STA. 2+200 TO STA. 2+260

Sheet 54 of 103 Sheets

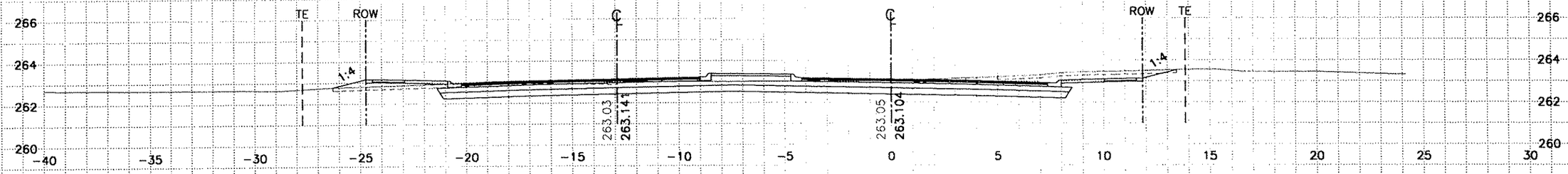
LSB 2+340 / LNB 2+340

CUT: 212 FILL: 198
SUBCUT: 180 TOPSOIL: 24



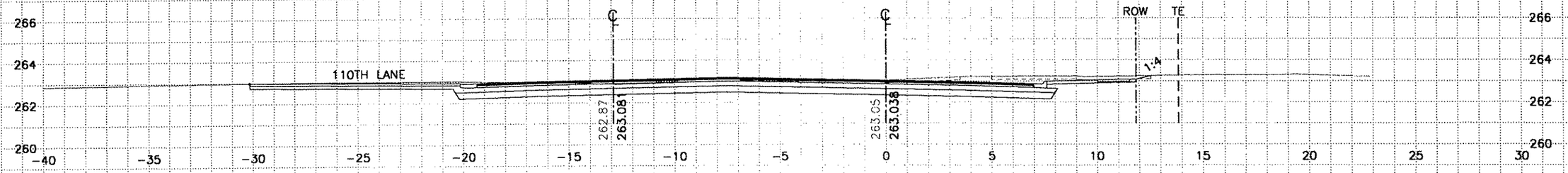
LSB 2+320 / LNB 2+320

CUT: 208 FILL: 178
SUBCUT: 174 TOPSOIL: 22



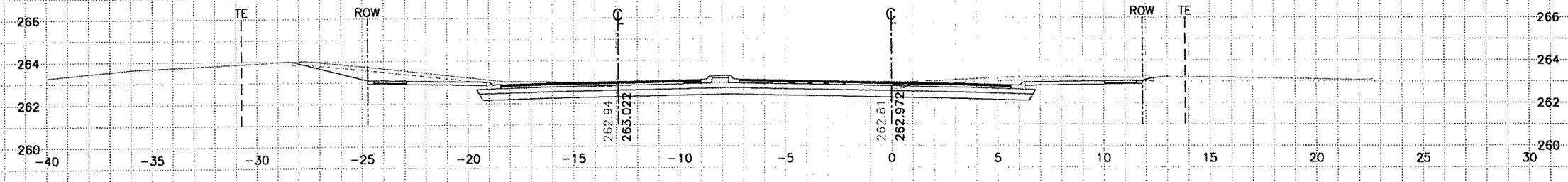
LSB 2+300 / LNB 2+300

CUT: 259 FILL: 156
SUBCUT: 162 TOPSOIL: 39



LSB 2+280 / LNB 2+280

CUT: 298 FILL: 156
SUBCUT: 156 TOPSOIL: 33



NO	DATE	BY	CKD	APPR	REVISION

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STATE PROJECT NO. 114-020-22
STATE PROJECT NO. _____

ANOKA COUNTY

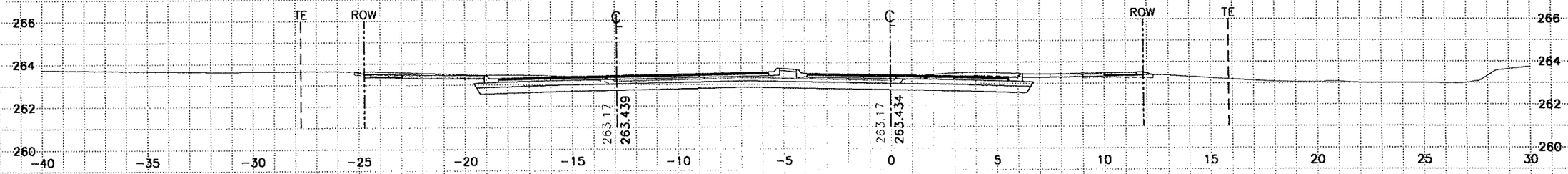
ANOKA COUNTY HIGHWAY DEPT.

CROSS SECTIONS
STA. 2+280 TO STA. 2+340

Sheet 55 of 103 Sheets

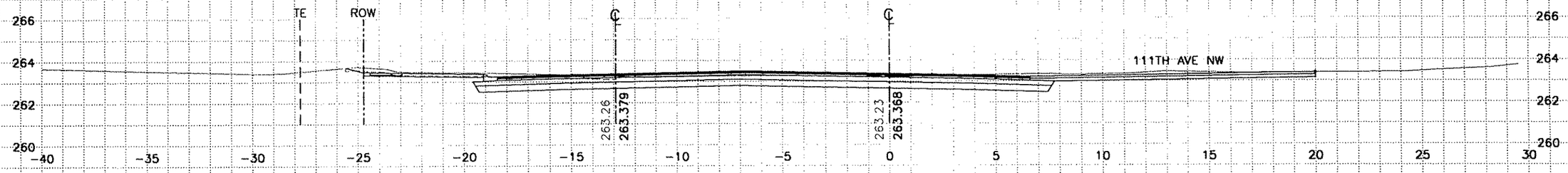
LSB 2+420 / LNB 2+420

CUT: 168 FILL: 164
SUBCUT: 160 TOPSOIL: 22



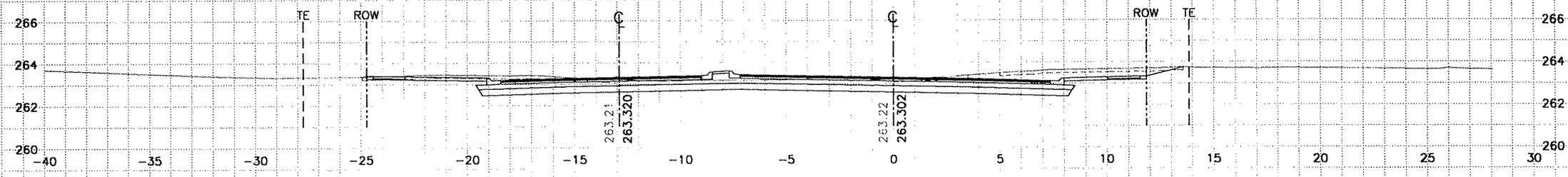
LSB 2+400 / LNB 2+400

CUT: 206 FILL: 168
SUBCUT: 166 TOPSOIL: 27



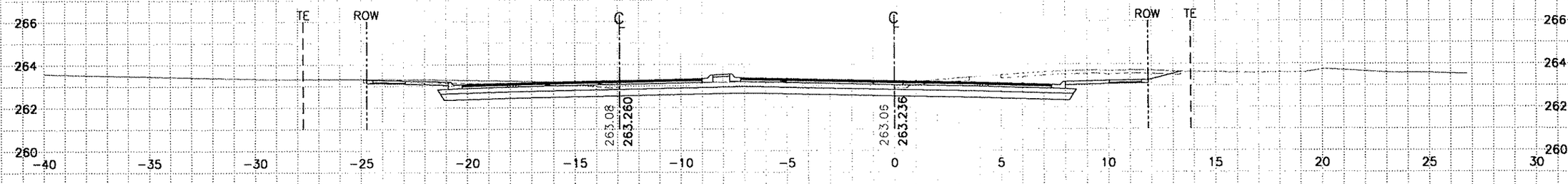
LSB 2+380 / LNB 2+380

CUT: 245 FILL: 180
SUBCUT: 174 TOPSOIL: 21



LSB 2+360 / LNB 2+360

CUT: 232 FILL: 188
SUBCUT: 180 TOPSOIL: 24



NO	DATE	BY	CKD	APPR	REVISION

PARSONS
Barton-Aschman Associates, Inc.
A Unit of Parsons Transportation Group Inc.

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

DATE _____ REG. NO. 10169

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STATE PROJECT NO. 02-678-11
STATE PROJECT NO. 114-020-22
STATE PROJECT NO. _____

ANOKA COUNTY
ANOKA COUNTY HIGHWAY DEPT.

CROSS SECTIONS
STA. 2+360 TO STA. 2+420

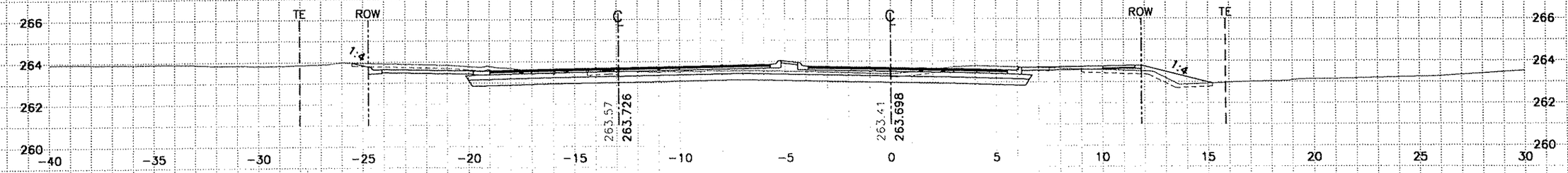
Sheet 56 of 103 Sheets

LSB
2+500

LNB
2+500

CUT: 195
SUBCUT: 158

FILL: 167
TOPSOIL: 36

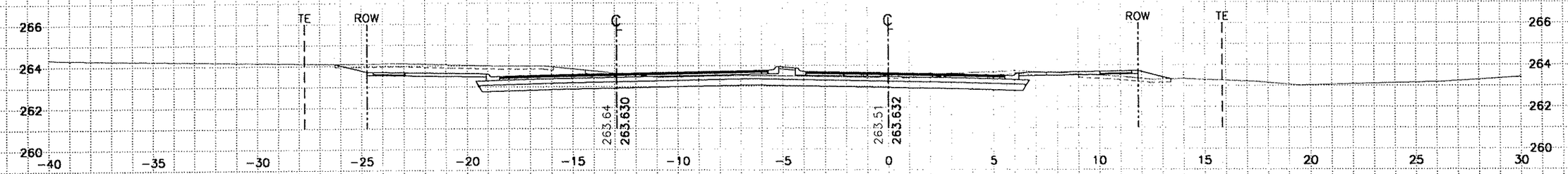


LSB
2+480

LNB
2+480

CUT: 214
SUBCUT: 157

FILL: 167
TOPSOIL: 36

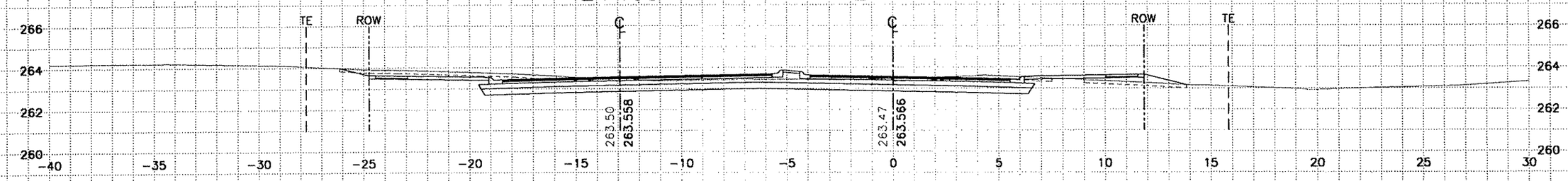


LSB
2+460

LNB
2+460

CUT: 166
SUBCUT: 157

FILL: 168
TOPSOIL: 33

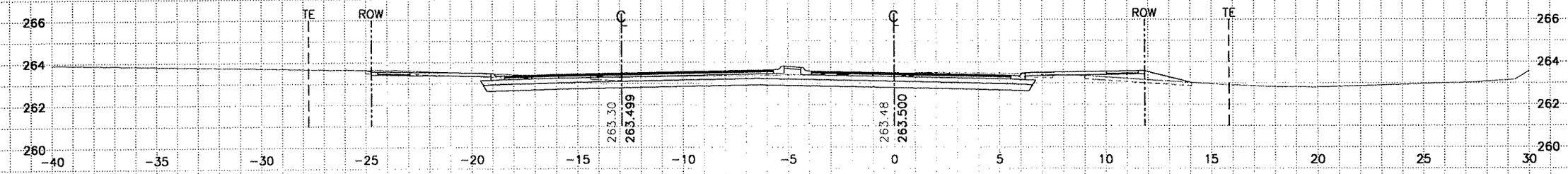


LSB
2+440

LNB
2+440

CUT: 156
SUBCUT: 156

FILL: 162
TOPSOIL: 24



NO	DATE	BY	CKD	APPR	REVISION

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STATE PROJECT NO. 114-020-22
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ANOKA COUNTY
HIGHWAY DEPT.

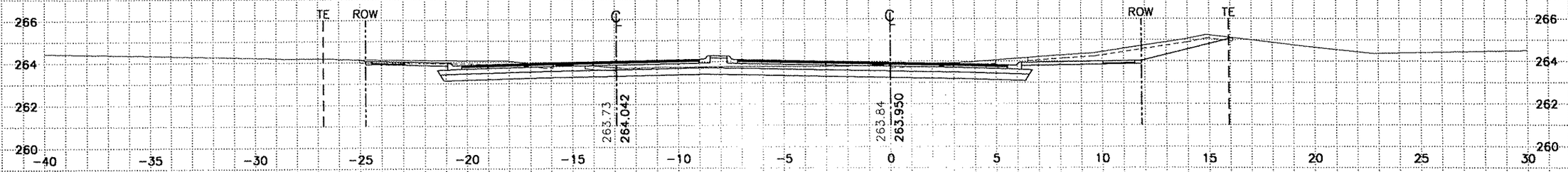
CROSS SECTIONS
STA. 2+440 TO STA. 2+500

Sheet 57 of 103 Sheets

LSB 2+580

LNB 2+580

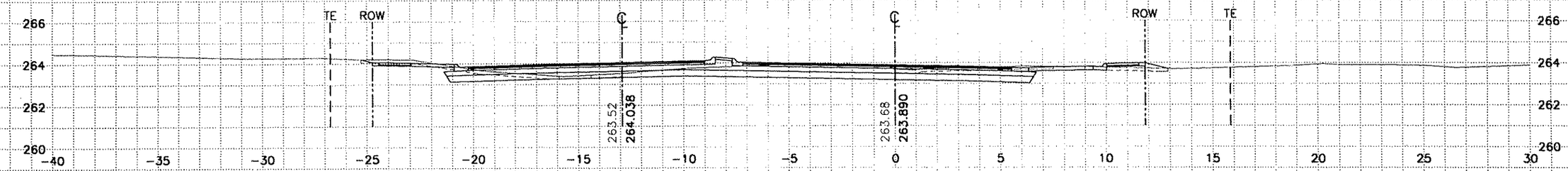
CUT: 186 FILL: 170
SUBCUT: 168 TOPSOIL: 27



LSB 2+560

LNB 2+560

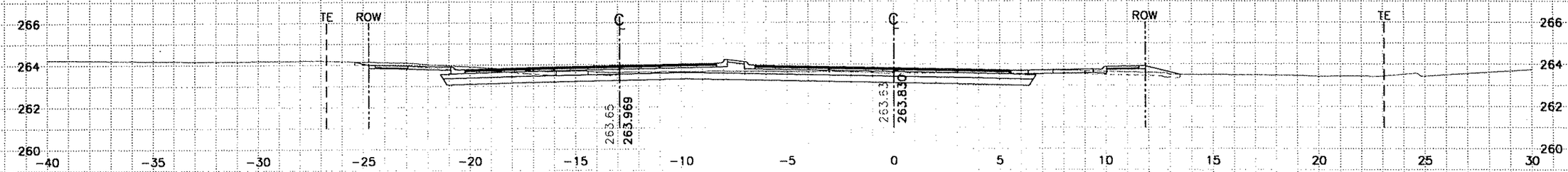
CUT: 123 FILL: 167
SUBCUT: 165 TOPSOIL: 27



LSB 2+540

LNB 2+540

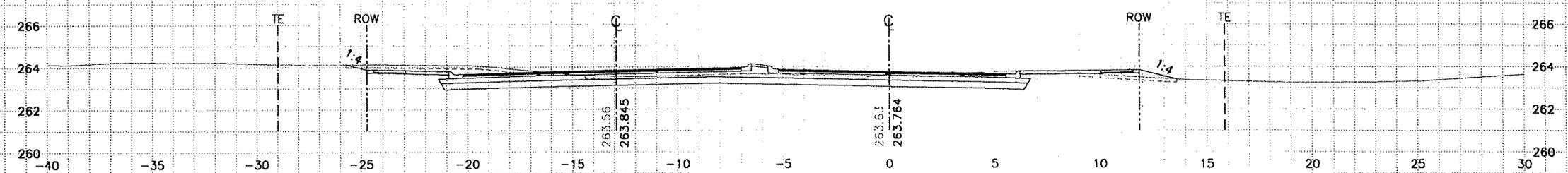
CUT: 156 FILL: 168
SUBCUT: 162 TOPSOIL: 27



LSB 2+520

LNB 2+520

CUT: 163 FILL: 171
SUBCUT: 161 TOPSOIL: 27



NO	DATE	BY	CKD	APPR	REVISION

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STATE PROJECT NO. 114-020-22
STATE PROJECT NO. _____

ANOKA COUNTY
HIGHWAY DEPT.

CROSS SECTIONS
STA. 2+520 TO STA. 2+580

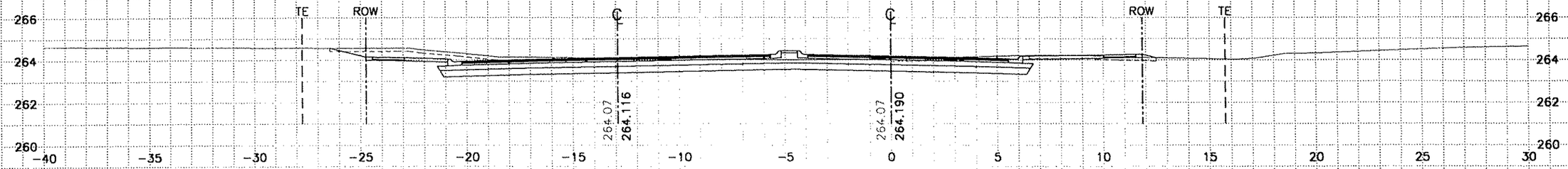
Sheet 58 of 103 Sheets

LSB
2+660

LNB
2+660

CUT: 163
SUBCUT: 168

FILL: 168
TOPSOIL: 24

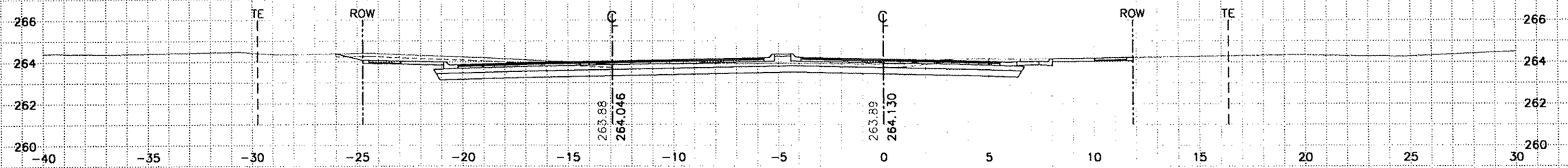


LSB
2+640

LNB
2+640

CUT: 152
SUBCUT: 162

FILL: 156
TOPSOIL: 24

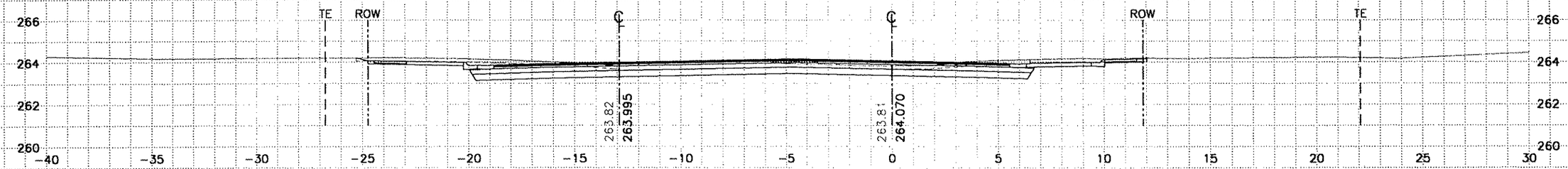


LSB
2+620

LNB
2+620

CUT: 185
SUBCUT: 156

FILL: 156
TOPSOIL: 27

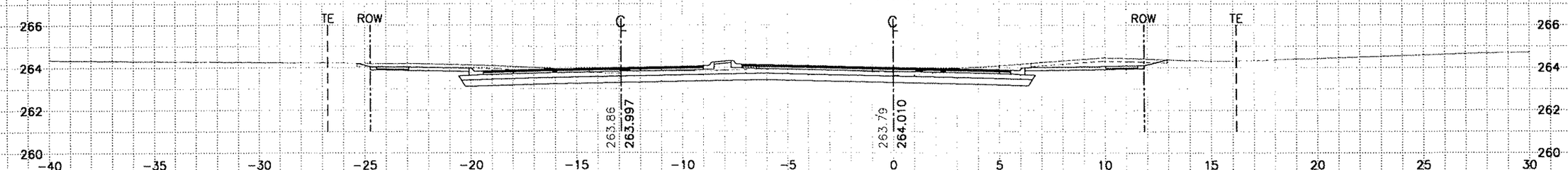


LSB
2+600

LNB
2+600

CUT: 238
SUBCUT: 162

FILL: 168
TOPSOIL: 33



NO	DATE	BY	CKD	APPR	REVISION

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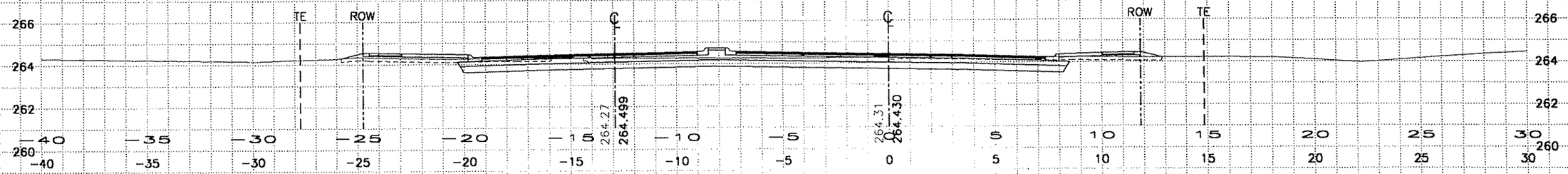
ANOKA COUNTY
HIGHWAY DEPT.

CROSS SECTIONS
STA. 2+600 TO STA. 2+660

Sheet 59 of 103 Sheets

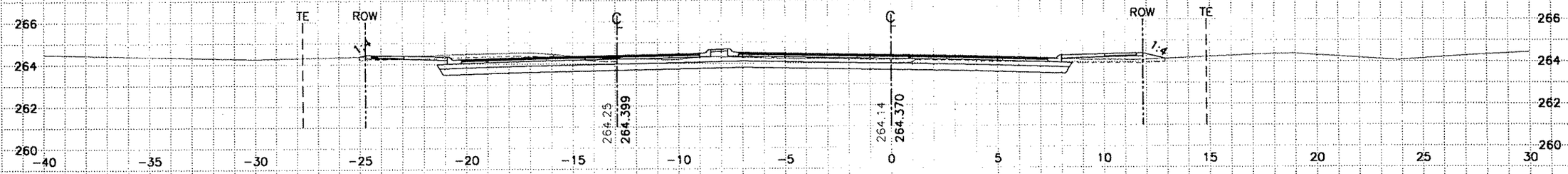
LSB 2+740 / LNB 2+740

CUT: 115 FILL: 193
SUBCUT: 176 TOPSOIL: 18



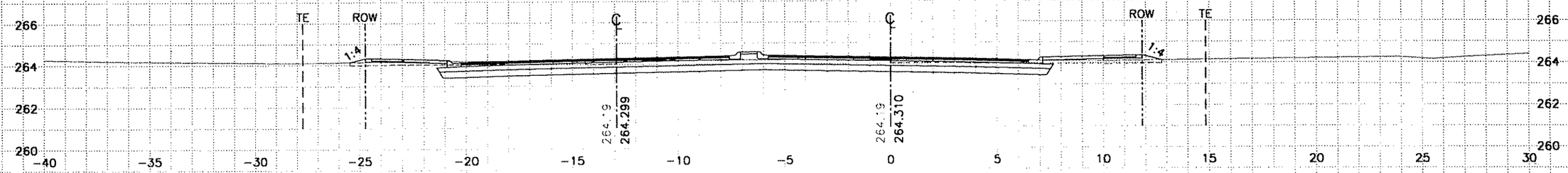
LSB 2+720 / LNB 2+720

CUT: 121 FILL: 186
SUBCUT: 177 TOPSOIL: 24



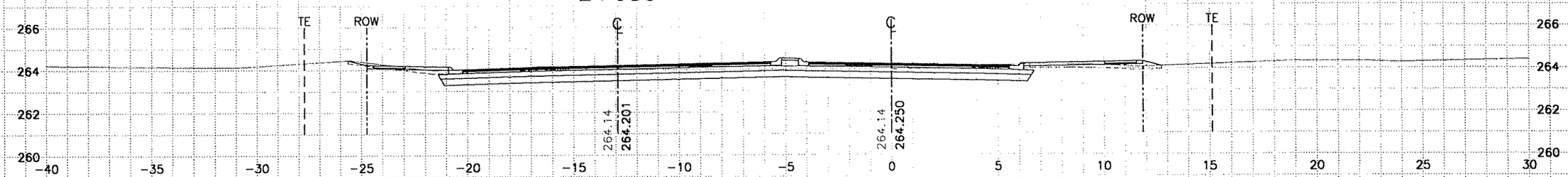
LSB 2+700 / LNB 2+700

CUT: 117 FILL: 180
SUBCUT: 171 TOPSOIL: 24



LSB 2+680 / LNB 2+680

CUT: 151 FILL: 174
SUBCUT: 168 TOPSOIL: 24



NO	DATE	BY	CKD	APPR	REVISION

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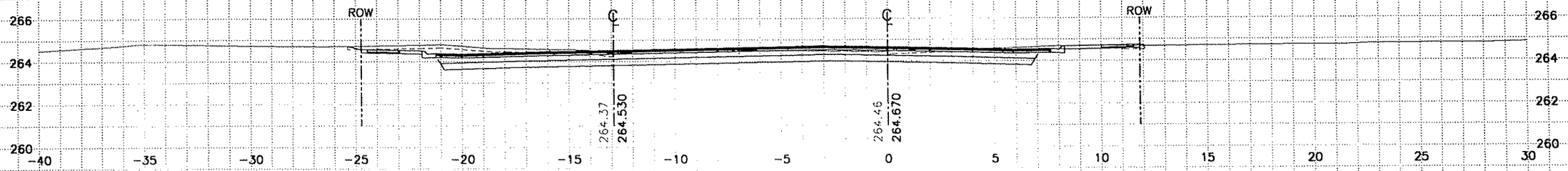
ANOKA COUNTY
HIGHWAY DEPT.

CROSS SECTIONS
STA. 2+680 TO STA. 2+740

Sheet 60 of 103 Sheets

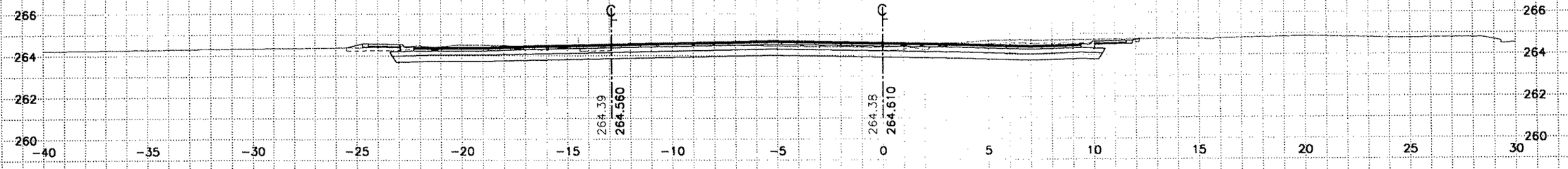
LSB 2+820 — LNB 2+820

CUT: 132 FILL: 238
SUBCUT: 200 TOPSOIL: 6



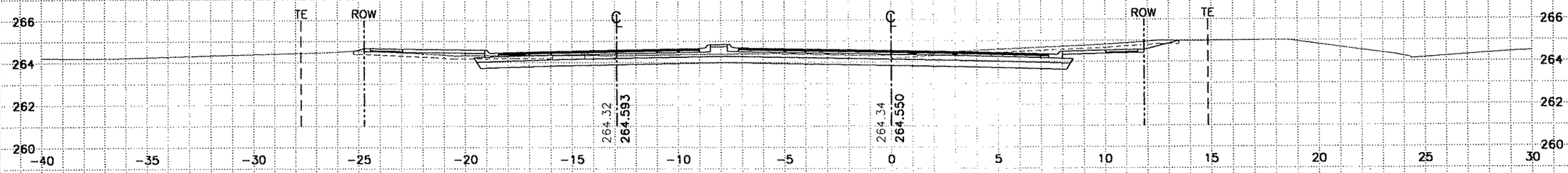
LSB 2+800 — LNB 2+800

CUT: 137 FILL: 175
SUBCUT: 199 TOPSOIL: 27



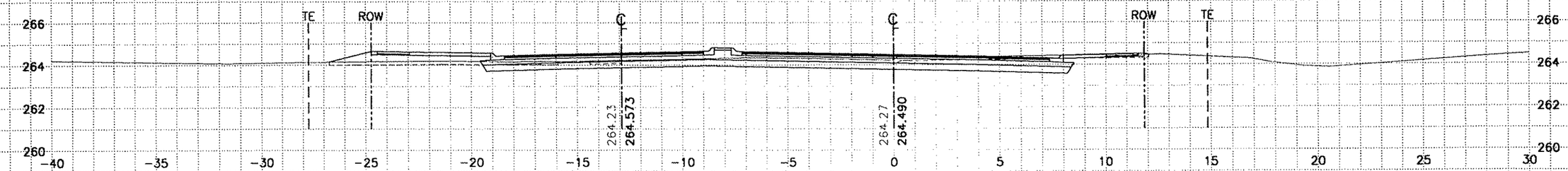
LSB 2+780 — LNB 2+780

CUT: 113 FILL: 183
SUBCUT: 166 TOPSOIL: 27



LSB 2+760 — LNB 2+760

CUT: 88 FILL: 194
SUBCUT: 169 TOPSOIL: 24



NO	DATE	BY	CKD	APPR	REVISION

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STATE PROJECT NO. 114-020-22
STATE PROJECT NO. _____

ANOKA COUNTY
HIGHWAY DEPT.

CROSS SECTIONS
STA. 2+760 TO STA. 2+820

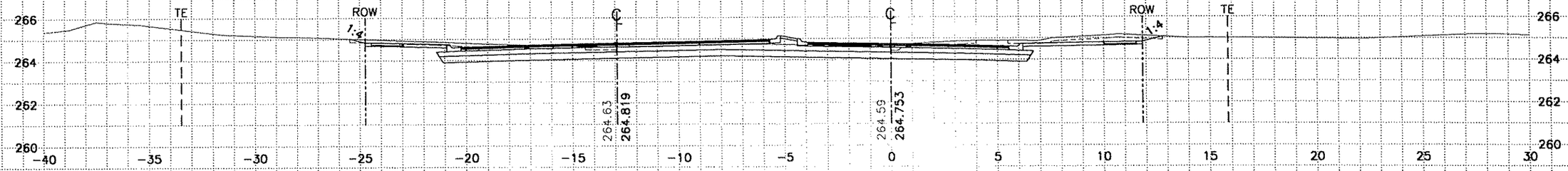
Sheet 61 of 103 Sheets

LSB
2+900

LNB
2+900

CUT: 251
SUBCUT: 167

FILL: 168
TOPSOIL: 30

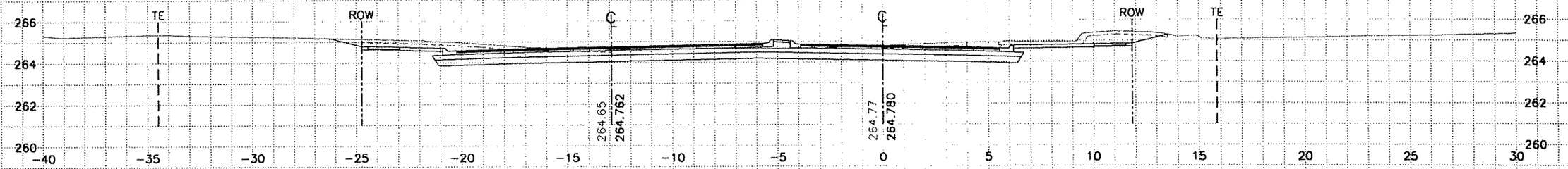


LSB
2+880

LNB
2+880

CUT: 254
SUBCUT: 167

FILL: 166
TOPSOIL: 33

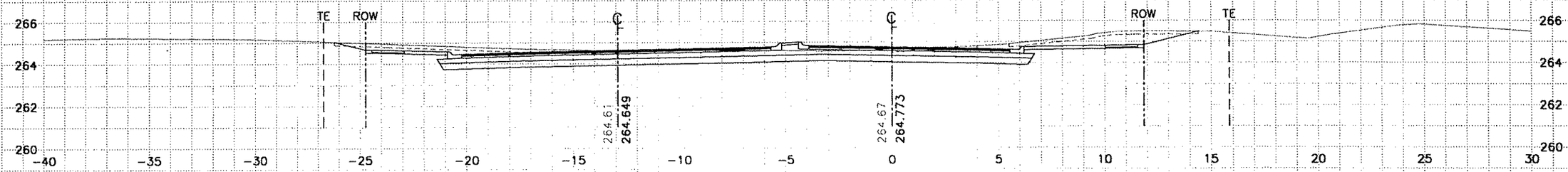


LSB
2+860

LNB
2+860

CUT: 215
SUBCUT: 166

FILL: 166
TOPSOIL: 30

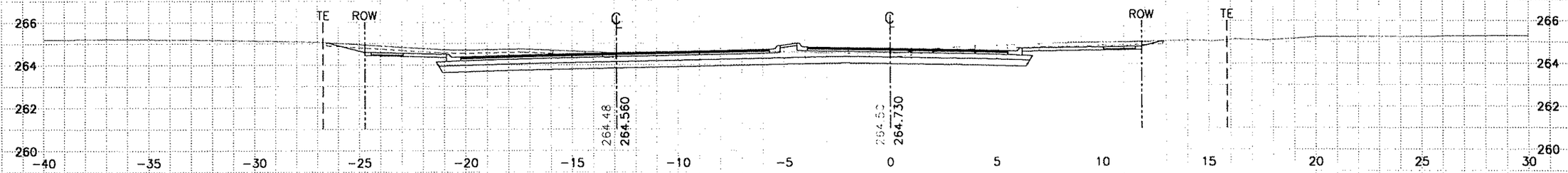


LSB
2+840

LNB
2+840

CUT: 161
SUBCUT: 167

FILL: 168
TOPSOIL: 15



NO	DATE	BY	CKD	APPR	REVISION

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ANOKA COUNTY
HIGHWAY DEPT.

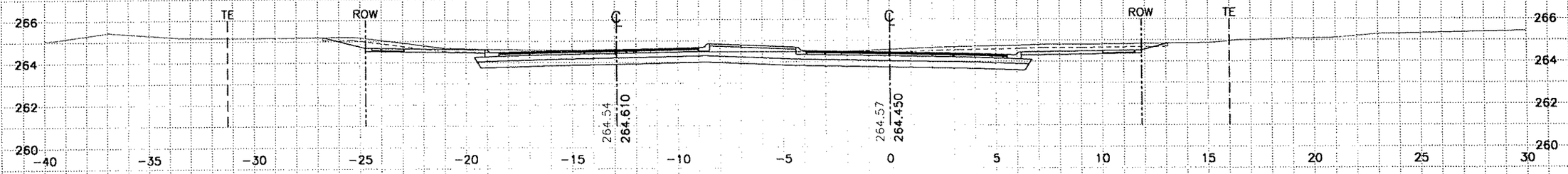
CROSS SECTIONS
STA. 2+840 TO STA. 2+900

Sheet 62 of 103 Sheets

LSB
2+980

LNB
2+980

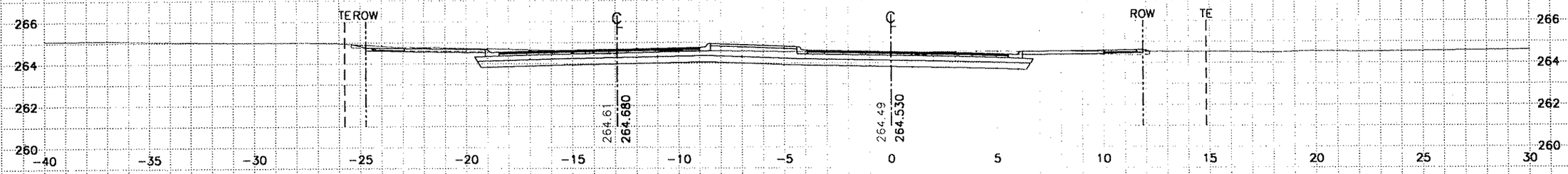
CUT: 307 FILL: 156
SUBCUT: 156 TOPSOIL: 30



LSB
2+960

LNB
2+960

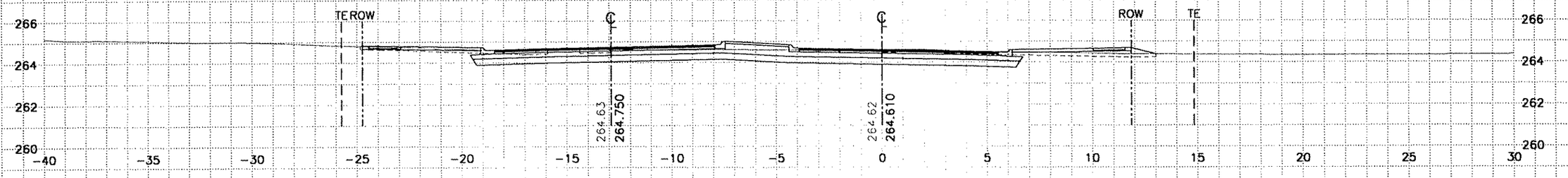
CUT: 223 FILL: 159
SUBCUT: 156 TOPSOIL: 30



LSB
2+940

LNB
2+940

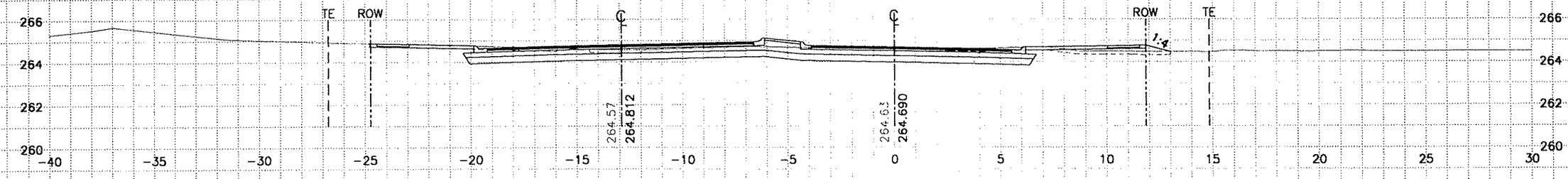
CUT: 187 FILL: 165
SUBCUT: 158 TOPSOIL: 27



LSB
2+920

LNB
2+920

CUT: 210 FILL: 169
SUBCUT: 163 TOPSOIL: 24



NO	DATE	BY	CKD	APPR	REVISION

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ANOKA COUNTY
HIGHWAY DEPT.

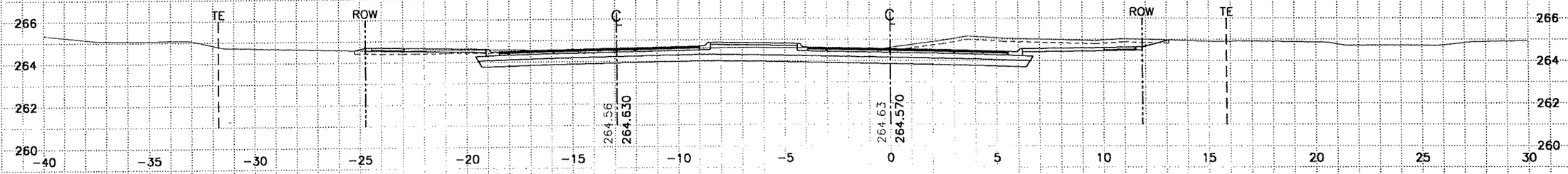
CROSS SECTIONS
STA. 2+920 TO STA. 2+980

Sheet 63 of 103 Sheets

LSB
3+060

LNB
3+060

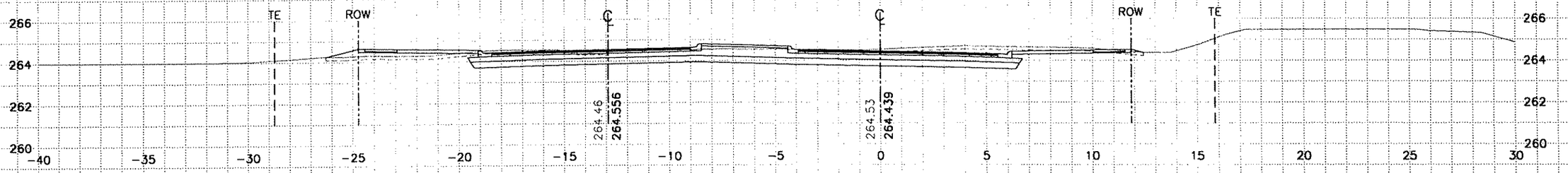
CUT: 286 FILL: 161
SUBCUT: 156 TOPSOIL: 33



LSB
3+040

LNB
3+040

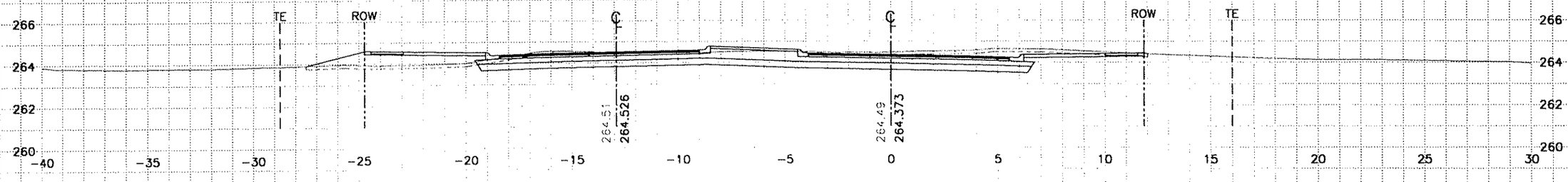
CUT: 270 FILL: 182
SUBCUT: 156 TOPSOIL: 36



LSB
3+020

LNB
3+020

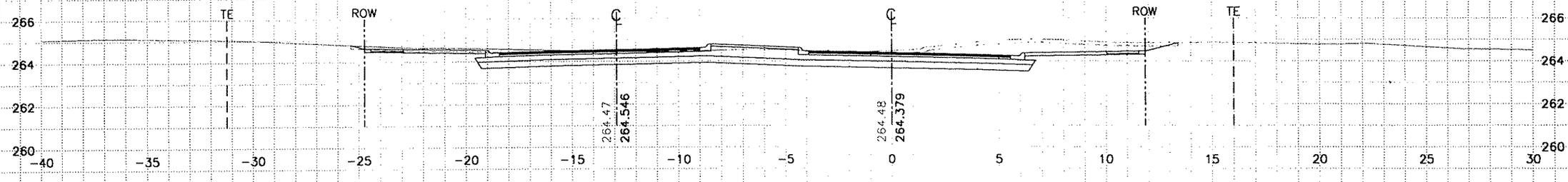
CUT: 338 FILL: 178
SUBCUT: 156 TOPSOIL: 33



LSB
3+000

LNB
3+000

CUT: 379 FILL: 156
SUBCUT: 156 TOPSOIL: 36



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STATE PROJECT NO. 114-020-22
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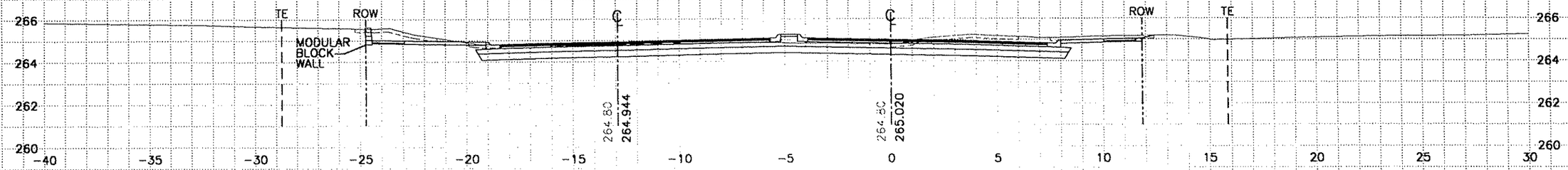
ANOKA COUNTY
HIGHWAY DEPT.

CROSS SECTIONS
STA. 3+000 TO STA. 3+060

Sheet 64 of 103 Sheets

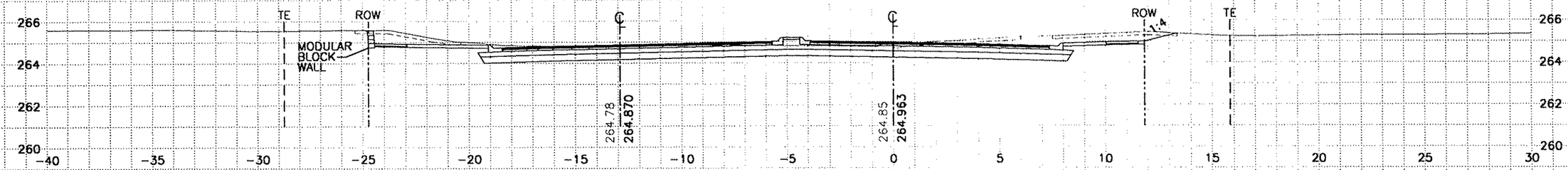
LSB 3+140 / LNB 3+140

CUT: 136 FILL: 118
SUBCUT: 117 TOPSOIL: 17



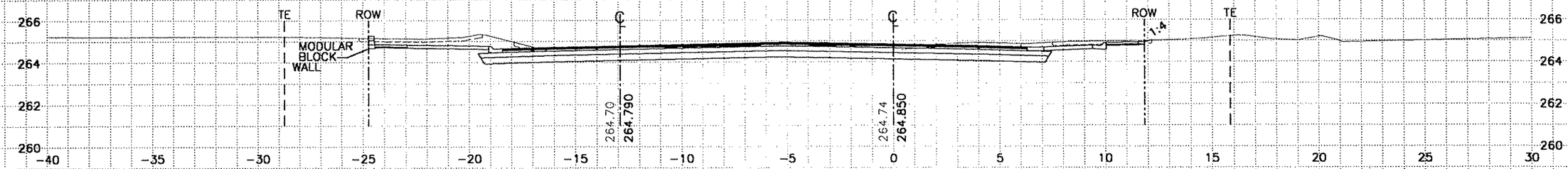
LSB 3+120 / LNB 3+120

CUT: 233 FILL: 162
SUBCUT: 165 TOPSOIL: 15



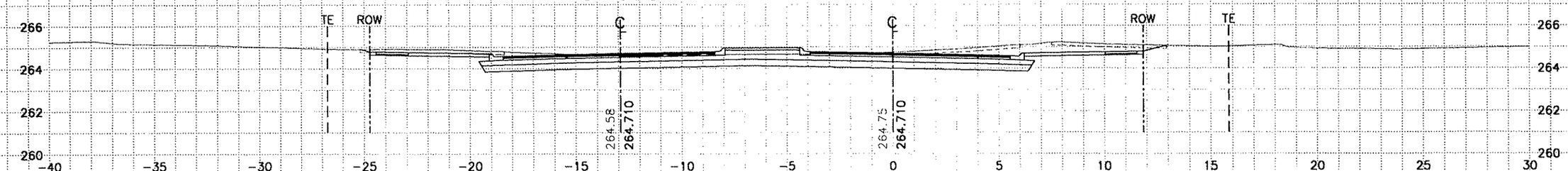
LSB 3+100 / LNB 3+100

CUT: 253 FILL: 156
SUBCUT: 159 TOPSOIL: 33



LSB 3+080 / LNB 3+080

CUT: 297 FILL: 156
SUBCUT: 156 TOPSOIL: 30



NO	DATE	BY	CKD	APPR	REVISION

PARSONS
Barton-Aschman Associates, Inc.
A Unit of Parsons Transportation Group Inc.

minnesota metric

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

DATE _____ REG. NO. 10169

DRAWN BY SAP DATE _____
DESIGN BY JCK DATE _____
CHECKED BY GPO DATE _____

STATE PROJECT NO. 02-678-11
STATE PROJECT NO. 114-020-22
STATE PROJECT NO. _____

ANOKA COUNTY
HIGHWAY DEPT.

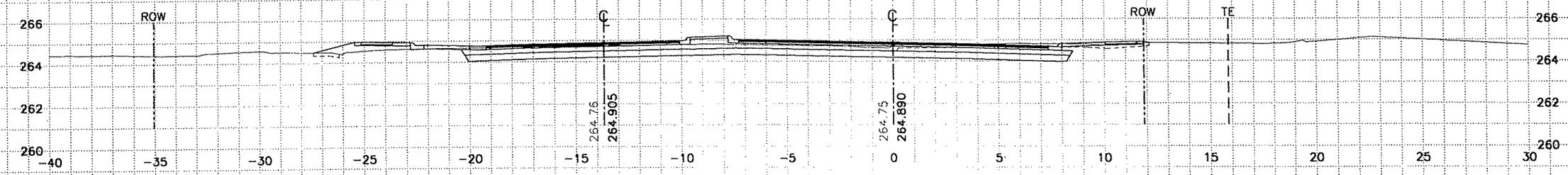
CROSS SECTIONS
STA. 3+080 TO STA. 3+140

Sheet 65 of 103 Sheets

LSB
3+202.305

LNB
3+200

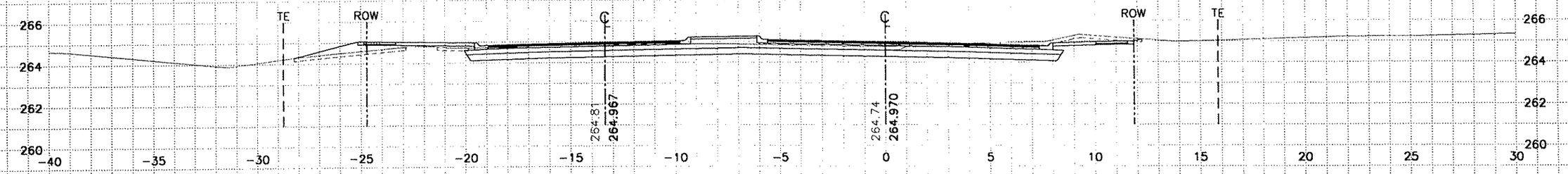
CUT: 124 FILL: 199
SUBCUT: 173 TOPSOIL: 30



LSB
3+181.160

LNB
3+180

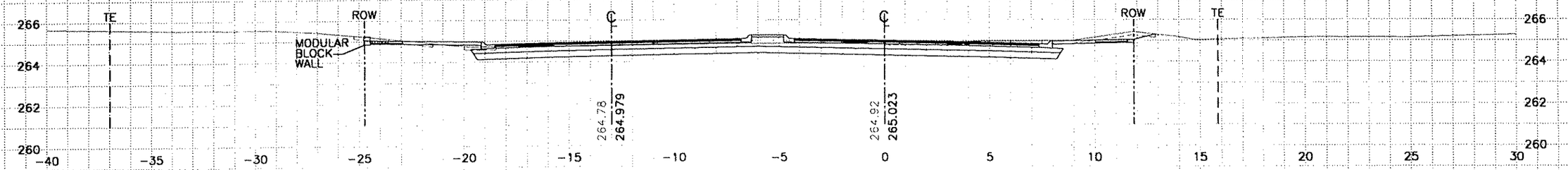
CUT: 132 FILL: 178
SUBCUT: 167 TOPSOIL: 21



LSB
3+160.048

LNB
3+160

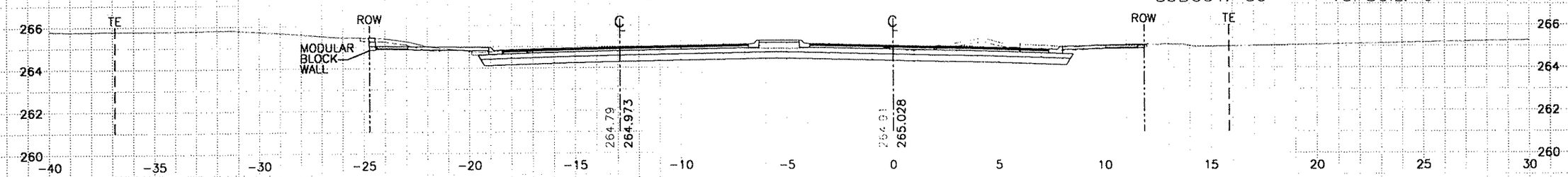
CUT: 155 FILL: 170
SUBCUT: 165 TOPSOIL: 21



LSB
3+153.599

LNB
3+153.599

CUT: 49 FILL: 50
SUBCUT: 50 TOPSOIL: 6



NO	DATE	BY	CKD	APPR	REVISION

PARSONS
Barton-Aschman Associates, Inc.
A Unit of Parsons Transportation Group Inc.

minnesota metric

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DATE _____ REG. NO. 10169

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CHECKED BY GPO DATE

STATE PROJECT NO. 02-678-11
STATE PROJECT NO. 114-020-22
STATE PROJECT NO.

ANOKA COUNTY
HIGHWAY DEPT.

CROSS SECTIONS
STA. 3+153.599 TO STA. 3+200

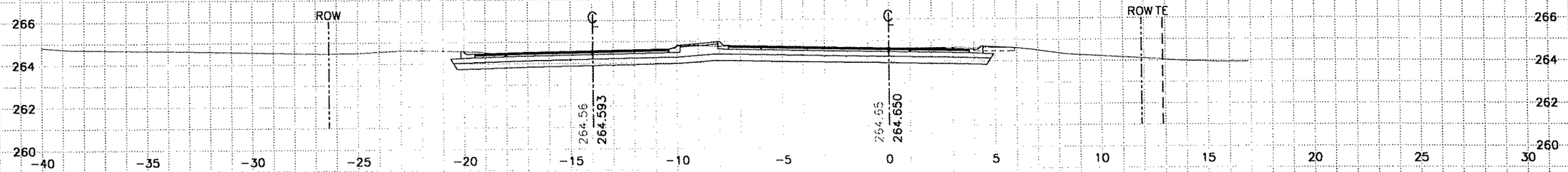
Sheet 66 of 103 Sheets

LSB
3+287.006

LNB
3+280

CUT: 9
SUBCUT: 8

FILL: 9
TOPSOIL: 2

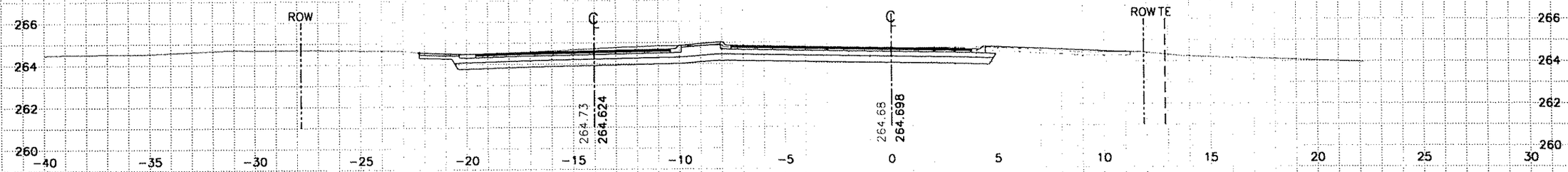


LSB
3+265.849

LNB
3+260

CUT: 179
SUBCUT: 152

FILL: 165
TOPSOIL: 24

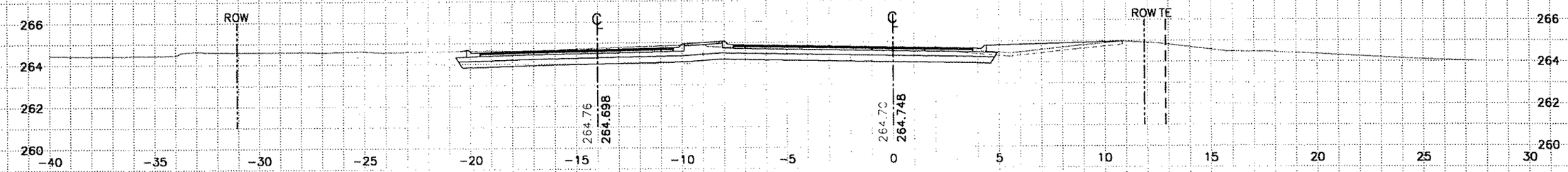


LSB
3+244.658

LNB
3+240

CUT: 143
SUBCUT: 157

FILL: 190
TOPSOIL: 22

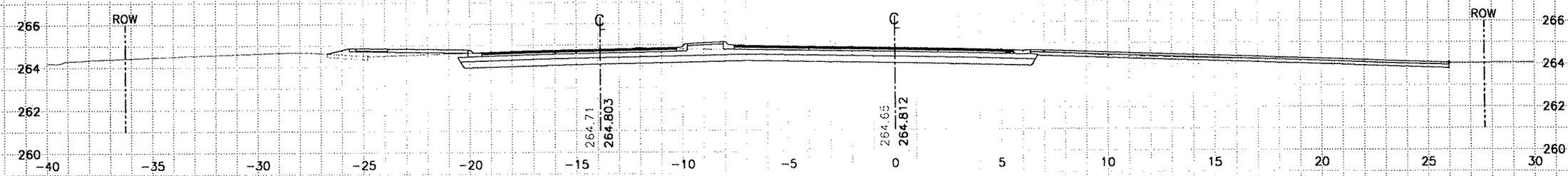


LSB
3+223.474

LNB
3+220

CUT: 110
SUBCUT: 168

FILL: 211
TOPSOIL: 18



NO	DATE	BY	CKD	APPR	REVISION

PARSONS
Barton-Aschman Associates, Inc.
A Unit of Parsons Transportation Group Inc.

minnesota metric

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DATE _____ REG. NO. 10169

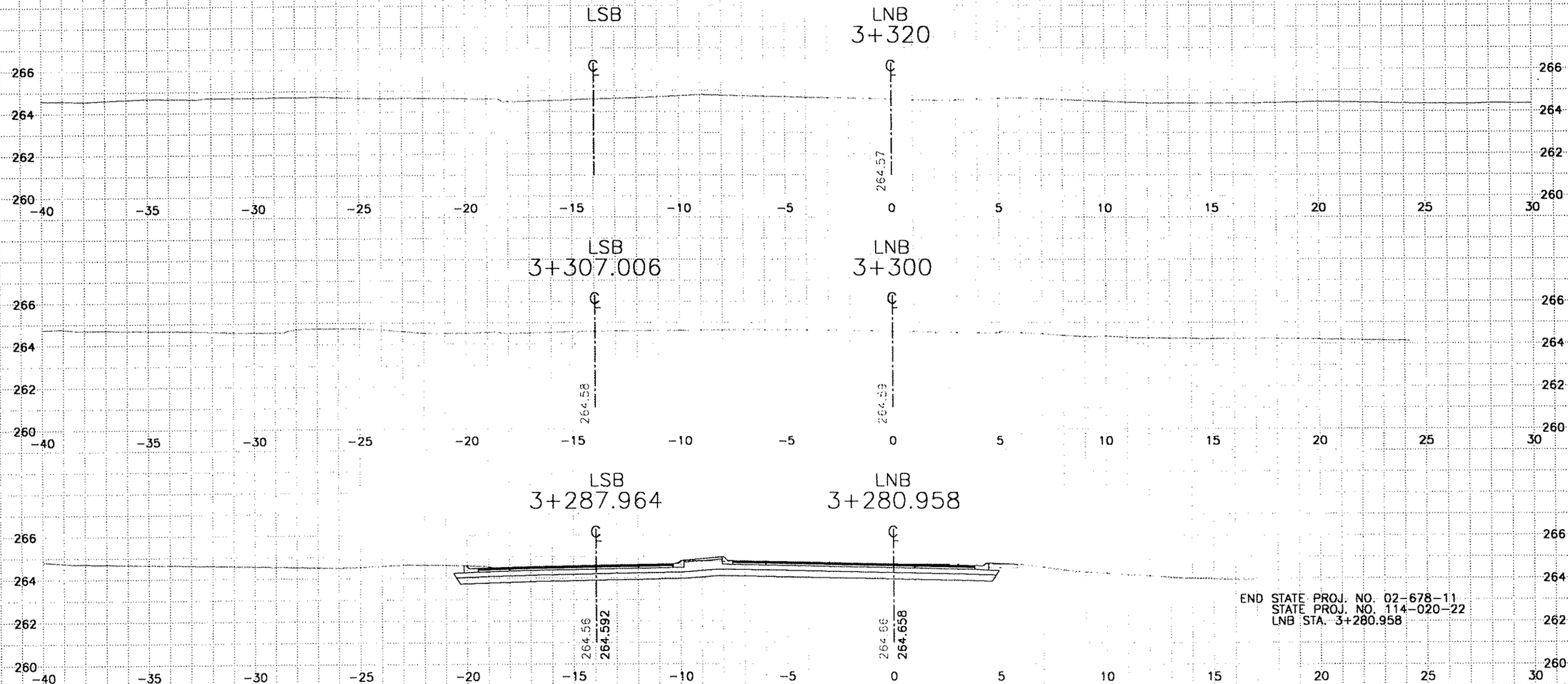
DRAWN BY SAP DATE _____
DESIGN BY JCK DATE _____
CHECKED BY GPO DATE _____

STATE PROJECT NO. 02-678-11
STATE PROJECT NO. 114-020-22
STATE PROJECT NO. _____

ANOKA COUNTY
HIGHWAY DEPT.

CROSS SECTIONS
STA. 3+220 TO STA. 3+280

Sheet 67 of 103 Sheets



NO	DATE	BY	CKD	APPR	REVISION

PARSONS
Barton-Aschman Associates, Inc.
A Unit of Parsons Transportation Group Inc.

minnesota metric

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

DATE _____ REG. NO. 10169

DRAWN BY SAP DATE _____
DESIGN BY JCK DATE _____
CHECKED BY GPO DATE _____

STATE PROJECT NO. 02-678-11
STATE PROJECT NO. 114-020-22
STATE PROJECT NO. _____

ANOKA COUNTY
HIGHWAY DEPT.

CROSS SECTIONS
STA. 3+280.958

Sheet 68 of 103 Sheets

NOTES :

① LOCATIONS OF POLES, EQUIPMENT PAD, LOOP DETECTORS AND HANDHOLES WILL BE DETERMINED IN THE FIELD BY THE ENGINEER.

② SEE SPECIAL PROVISIONS FOR COUNTY FURNISHED MATERIALS.

③ LOOP DETECTOR WIRES SHALL BE 12 AWG; CROSS-LINKED POLYETHYLENE (XLP) IN 21 mm N.M.C. (SEE SPECIAL PROVISIONS AND DETAILS.)

④ NEW HANDHOLES SHALL BE PVC HANDHOLES WITH METAL FRAMES AND COVERS PER Mn/DOT STANDARD PLATE NO. M8114.

⑤ EACH SIGNAL FACE SHALL HAVE A BACKGROUND SHIELD.

⑥ ALL VEHICLE SIGNAL INDICATIONS AND ALL "HAND" AND "MAN" PEDESTRIAN INDICATIONS SHALL BE L.E.D. TYPE. (SEE SPECIAL PROVISIONS.)

⑦ EACH PEDESTRIAN INDICATION SHALL BE A SINGLE SECTION HAND / WALKING PERSON INDICATION. (SEE SPECIAL PROVISIONS.)

⑧ SEE SPECIAL PROVISIONS AND DETAILS REGARDING SIGN PANELS TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR.

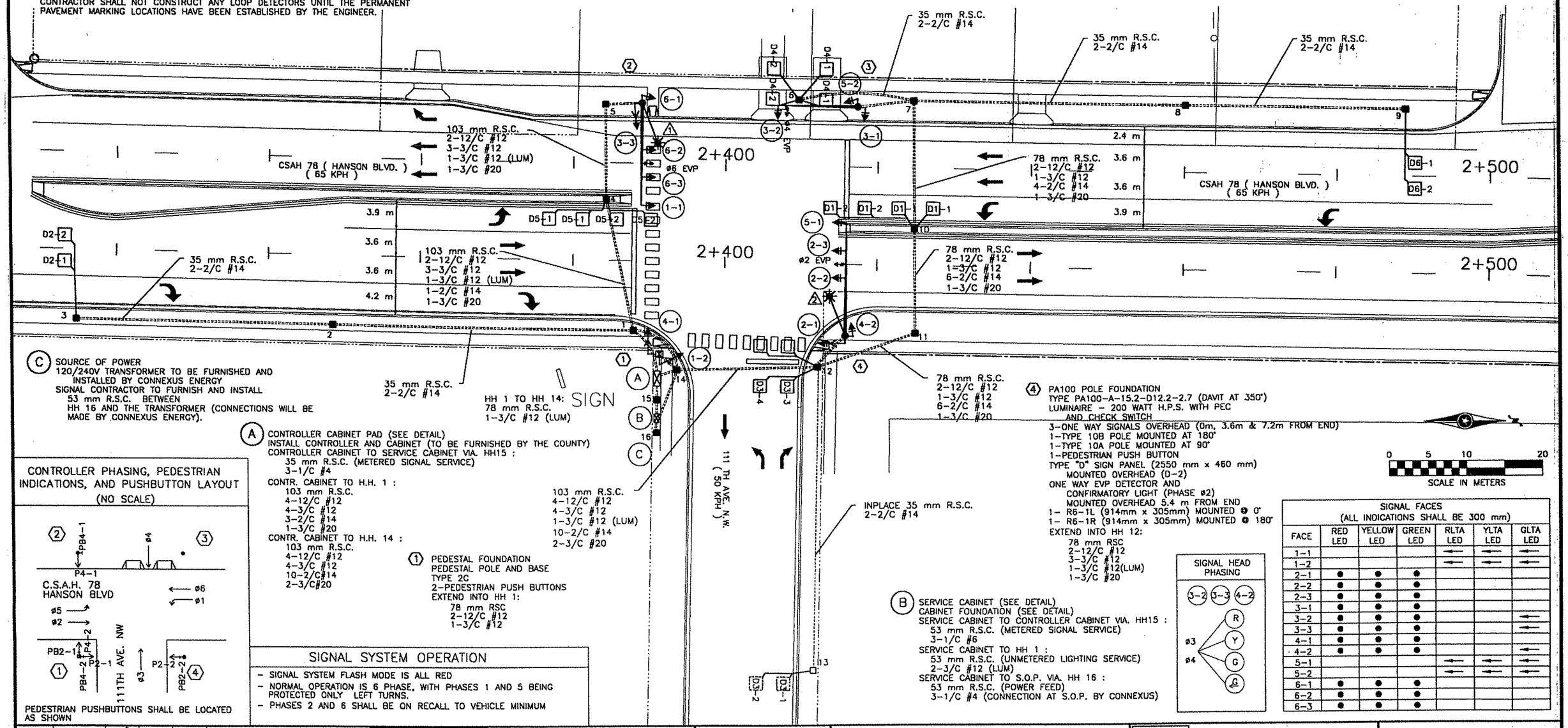
⑨ THE PAVEMENT MARKINGS AND DIMENSIONS SHOWN ARE APPROXIMATE. PERMANENT PAVEMENT MARKINGS WILL BE DETERMINED IN THE FIELD BY THE ENGINEER. THE CONTRACTOR SHALL NOT CONSTRUCT ANY LOOP DETECTORS UNTIL THE PERMANENT PAVEMENT MARKING LOCATIONS HAVE BEEN ESTABLISHED BY THE ENGINEER.

② PA100 POLE FOUNDATION
TYPE PA100-A-13.7-D12.2-2.7 (DAVIT AT 350°)
LUMINAIRE - 200 WATT H.P.S. WITH PEC AND CHECK SWITCH
3-ONE WAY SIGNALS OVERHEAD (0m, 3.6m & 7.2m FROM END)
1-TYPE 10A POLE MOUNTED AT 180°
1-TYPE 10B POLE MOUNTED AT 90°
1-PEDESTRIAN PUSH BUTTON
TYPE "D" SIGN PANEL (2550 mm x 460 mm) MOUNTED OVERHEAD (D-2)
ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT (ø6) MOUNTED OVERHEAD 5.4m FROM END
1- R6-1L (914mm x 305mm) MOUNTED ❹ 0°
EXTEND INTO HH 5:
78 mm RSC
2-12/C #12
3-3/C #12
1-3/C #12(LUM)
1-3/C #20

③ PA90 POLE FOUNDATION
TYPE PA90-A-10.7
1-ONE WAY SIGNAL OVERHEAD (0m FROM END)
2-TYPE 10A POLE MOUNTED AT 90° & 180°
TYPE "D" SIGN PANEL (2550 mm x 460 mm) MOUNTED OVERHEAD (D-1)
ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT (ø4) MOUNTED OVERHEAD 1.0m FROM END
EXTEND INTO HH 7:
78 mm RSC
2-12/C #12
1-3/C #12
1-3/C #20

LOOP DETECTORS				
NUMBER	SIZE (m)	FUNCTION	LOCATION m*	TYPE
D1-1	2-1.7x1.7	1	6, 10.5	NMC
D1-2	2-1.7x1.7	1	-3, 1.5	NMC
D2-1	1.7x1.7	1	76	NMC
D2-2	1.7x1.7	1	76	NMC
D3-1	1.7x1.7	3, 8	INPLACE	
D3-2	1.7x1.7	3, 8	INPLACE	
D3-3	2-1.7x1.7	7	-1.5, 2.5	NMC
D3-4	2-1.7x1.7	1	-1.5, 2.5	NMC
D4-1	2-1.7x1.7	7	AS SHOWN	NMC
D4-2	2-1.7x1.7	7	AS SHOWN	NMC
D5-1	2-1.7x1.7	1	-3, 1.5	NMC
D5-2	2-1.7x1.7	1	6, 10.5	NMC
D6-1	1.7x1.7	1	76	NMC
D6-2	1.7x1.7	1	76	NMC

* LOCATION IS DISTANCE FROM STOP BAR TO FRONT OF DETECTOR
LOOP DETECTOR FUNCTION CODES:
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



C SOURCE OF POWER
120/240V TRANSFORMER TO BE FURNISHED AND INSTALLED BY CONNEXUS ENERGY
SIGNAL CONTRACTOR TO FURNISH AND INSTALL 53 mm R.S.C. BETWEEN HH 16 AND THE TRANSFORMER (CONNECTIONS WILL BE MADE BY CONNEXUS ENERGY).

A CONTROLLER CABINET PAD (SEE DETAIL)
INSTALL CONTROLLER AND CABINET (TO BE FURNISHED BY THE COUNTY)
CONTROLLER CABINET TO SERVICE CABINET VIA. HH15 :
35 mm R.S.C. (METERED SIGNAL SERVICE)
3-1/C #4
CONTR. CABINET TO H.H. 1 :
103 mm R.S.C.
4-12/C #12
4-3/C #12
3-2/C #14
1-3/C #20
CONTR. CABINET TO H.H. 14 :
103 mm R.S.C.
4-12/C #12
4-3/C #12
10-2/C#14
2-3/C#20

① PEDESTAL FOUNDATION
PEDESTAL POLE AND BASE
TYPE 2C
2-PEDESTRIAN PUSH BUTTONS
EXTEND INTO HH 1:
78 mm RSC
2-12/C #12
1-3/C #12

B SERVICE CABINET (SEE DETAIL)
CABINET FOUNDATION (SEE DETAIL)
SERVICE CABINET TO CONTROLLER CABINET VIA. HH15 :
53 mm R.S.C. (METERED SIGNAL SERVICE)
3-1/C #6
SERVICE CABINET TO HH 1 :
53 mm R.S.C. (UNMETERED LIGHTING SERVICE)
2-3/C #12 (LUM)
SERVICE CABINET TO S.O.P. VIA. HH 16 :
53 mm R.S.C. (POWER FEED)
3-1/C #4 (CONNECTION AT S.O.P. BY CONNEXUS)

④ PA100 POLE FOUNDATION
TYPE PA100-A-15.2-D12.2-2.7 (DAVIT AT 350°)
LUMINAIRE - 200 WATT H.P.S. WITH PEC AND CHECK SWITCH
3-ONE WAY SIGNALS OVERHEAD (0m, 3.6m & 7.2m FROM END)
1-TYPE 10B POLE MOUNTED AT 180°
1-TYPE 10A POLE MOUNTED AT 90°
1-PEDESTRIAN PUSH BUTTON
TYPE "D" SIGN PANEL (2550 mm x 460 mm) MOUNTED OVERHEAD (D-2)
ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT (PHASE ø2) MOUNTED OVERHEAD 5.4 m FROM END
1- R6-1L (914mm x 305mm) MOUNTED ❹ 0°
1- R6-1R (914mm x 305mm) MOUNTED ❹ 180°
EXTEND INTO HH 12:
78 mm RSC
2-12/C #12
3-3/C #12
1-3/C #12(LUM)
1-3/C #20

SIGNAL HEAD PHASING

0 5 10 20
SCALE IN METERS

CONTROLLER PHASING, PEDESTRIAN INDICATIONS, AND PUSHBUTTON LAYOUT (NO SCALE)

PEDESTRIAN PUSHBUTTONS SHALL BE LOCATED AS SHOWN

SIGNAL SYSTEM OPERATION
- SIGNAL SYSTEM FLASH MODE IS ALL RED
- NORMAL OPERATION IS 6 PHASE, WITH PHASES 1 AND 5 BEING PROTECTED ONLY LEFT TURNS.
- PHASES 2 AND 6 SHALL BE ON RECALL TO VEHICLE MINIMUM

SIGNAL FACES (ALL INDICATIONS SHALL BE 300 mm)						
FACE	RED LED	YELLOW LED	GREEN LED	RLTA LED	YLTA LED	GLTA LED
1-1				←	←	←
1-2				←	←	←
2-1	●	●	●			
2-2	●	●	●			
2-3	●	●	●			
3-1	●	●	●			
3-2	●	●	●			←
3-3	●	●	●			←
4-1	●	●	●			
4-2	●	●	●			←
5-1				←	←	←
5-2				←	←	←
6-1	●	●	●			
6-2	●	●	●			
6-3	●	●	●			

NO	DATE	BY	CKD	APPR	REVISION

PARSONS
Barton-Aschman Associates, Inc.
A Unit of Parsons Transportation Group Inc.

minnesota metric

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
DATE 1/21/00 REG. NO. 26302

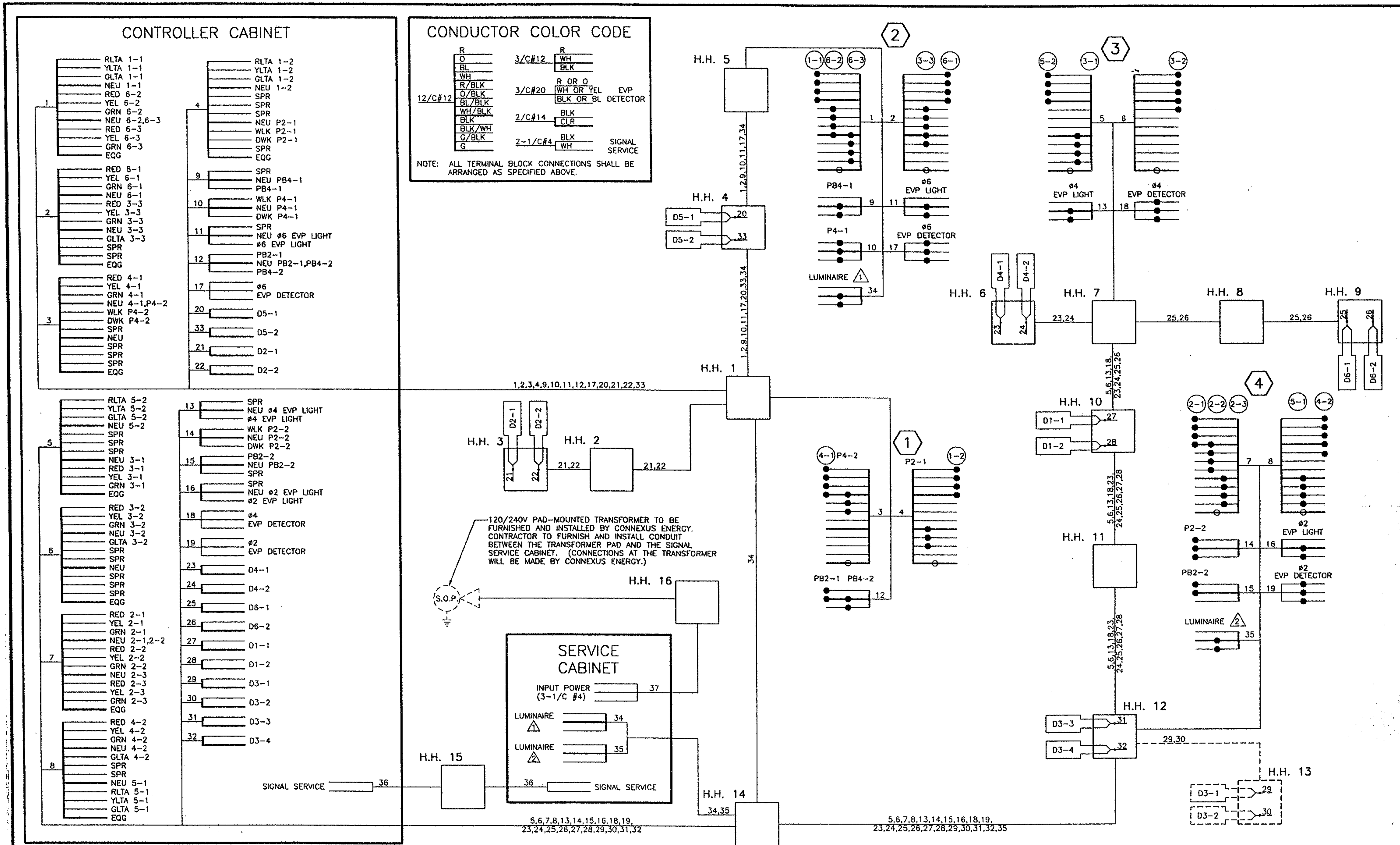
DRAWN BY SAP DATE
DESIGN BY LEW DATE
CHECKED BY DRA DATE

STATE PROJECT NO. 02-678-11
STATE PROJECT NO. 114-020-22
STATE PROJECT NO.
SYSTEM "A"

ANOKA COUNTY HIGHWAY DEPT.

INTERSECTION LAYOUT
TRAFFIC SIGNAL SYSTEM
CSAH 78 AND 111TH AVE NW

Sheet 69 of 103 Sheets



CONTROLLER CABINET
RLTA 1-1
YLTA 1-1
GLTA 1-1
NEU 1-1
RED 6-2
YEL 6-2
GRN 6-2
NEU 6-2,6-3
RED 6-3
YEL 6-3
GRN 6-3
EQG
RLTA 1-2
YLTA 1-2
GLTA 1-2
NEU 1-2
NEU P2-1
WLK P2-1
DWK P2-1
NEU PB4-1
PB4-1
WLK P4-1
NEU P4-1
DWK P4-1
NEU ø6 EVP LIGHT
ø6 EVP LIGHT
PB2-1
NEU PB2-1,PB4-2
PB4-2
ø6 EVP DETECTOR
D5-1
D5-2
D2-1
D2-2
RED 6-1
YEL 6-1
GRN 6-1
NEU 6-1
RED 3-3
YEL 3-3
GRN 3-3
NEU 3-3
GLTA 3-3
RED 4-1
YEL 4-1
GRN 4-1
NEU 4-1,P4-2
WLK P4-2
DWK P4-2
RLTA 5-2
YLTA 5-2
GLTA 5-2
NEU 5-2
NEU 3-1
RED 3-1
YEL 3-1
GRN 3-1
NEU ø4 EVP LIGHT
ø4 EVP LIGHT
WLK P2-2
NEU P2-2
DWK P2-2
PB2-2
NEU PB2-2
NEU ø2 EVP LIGHT
ø2 EVP LIGHT
ø4 EVP DETECTOR
ø2 EVP DETECTOR
D4-1
D4-2
D6-1
D6-2
D1-1
D1-2
D3-1
D3-2
D3-3
D3-4
RED 3-2
YEL 3-2
GRN 3-2
NEU 3-2
GLTA 3-2
RED 2-1
YEL 2-1
GRN 2-1
NEU 2-1,2-2
RED 2-2
YEL 2-2
GRN 2-2
NEU 2-3
RED 2-3
YEL 2-3
GRN 2-3
RED 4-2
YEL 4-2
GRN 4-2
NEU 4-2
GLTA 4-2
NEU 5-1
RLTA 5-1
YLTA 5-1
GLTA 5-1
SPR
EQG
SIGNAL SERVICE
CONDUCTOR COLOR CODE
12/C#12
R
O
BL
WH
R/BLK
O/BLK
BL/BLK
WH/BLK
BLK
BLK/WH
G/BLK
G
3/C#12
R
WH
BLK
3/C#20
R OR O
WH OR YEL
BLK OR BL
EVP DETECTOR
2/C#14
BLK
CLR
2-1/C#4
BLK
WH
SIGNAL SERVICE
NOTE: ALL TERMINAL BLOCK CONNECTIONS SHALL BE ARRANGED AS SPECIFIED ABOVE.
H.H. 1
H.H. 2
H.H. 3
H.H. 4
H.H. 5
H.H. 6
H.H. 7
H.H. 8
H.H. 9
H.H. 10
H.H. 11
H.H. 12
H.H. 13
H.H. 14
H.H. 15
H.H. 16
1,2,3,4,9,10,11,12,17,20,21,22,33
1,2,9,10,11,17,34
1,2,9,10,11,17,20,33,34
21,22
23,24
25,26
5,6,13,18,23,24,25,26
5,6,13,18,23,24,25,26,27,28
5,6,7,8,13,14,15,16,18,19,23,24,25,26,27,28,29,30,31,32
5,6,7,8,13,14,15,16,18,19,23,24,25,26,27,28,29,30,31,32,35
29,30
34,35
PB4-1
P4-1
LUMINAIRE
ø6 EVP LIGHT
ø6 EVP DETECTOR
ø4 EVP LIGHT
ø4 EVP DETECTOR
P4-2
P2-1
PB2-1 PB4-2
P2-2
PB2-2
ø2 EVP LIGHT
ø2 EVP DETECTOR
120/240V PAD-MOUNTED TRANSFORMER TO BE FURNISHED AND INSTALLED BY CONNEXUS ENERGY. CONTRACTOR TO FURNISH AND INSTALL CONDUIT BETWEEN THE TRANSFORMER PAD AND THE SIGNAL SERVICE CABINET. (CONNECTIONS AT THE TRANSFORMER WILL BE MADE BY CONNEXUS ENERGY.)
S.O.P.
SERVICE CABINET
INPUT POWER (3-1/C #4)
LUMINAIRE
SIGNAL SERVICE

NO	DATE	BY	CKD	APPR	REVISION

PARSONS
Barton-Aschman Associates, Inc.
A Unit of Parsons Transportation Group Inc.

minnesota metric

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DATE 1/21/00 REG. NO. 25302

DRAWN BY SAP DATE
DESIGN BY LEW DATE
CHECKED BY DRA DATE

STATE PROJECT NO. 02-678-11
STATE PROJECT NO. 114-020-22
STATE PROJECT NO.
SYSTEM "A"

ANOKA COUNTY HIGHWAY DEPT.

FIELD WIRING DIAGRAM
TRAFFIC SIGNAL SYSTEM
CSAH 78 AND 111TH AVE NW

Sheet 70 of 103 Sheets

NOTES :

① LOCATIONS OF POLES, EQUIPMENT PAD, LOOP DETECTORS AND HANDHOLES WILL BE DETERMINED IN THE FIELD BY THE ENGINEER.

② SEE SPECIAL PROVISIONS FOR COUNTY FURNISHED MATERIALS.

③ LOOP DETECTOR WIRES SHALL BE 12 AWG. CROSS-LINKED POLYETHYLENE (XLP) IN 21 mm N.M.C. (SEE SPECIAL PROVISIONS AND DETAILS.)

④ NEW HANDHOLES SHALL BE PVC HANDHOLES WITH METAL FRAMES AND COVERS PER Mn/DOT STANDARD PLATE NO. M8114.

⑤ EACH SIGNAL FACE SHALL HAVE A BACKGROUND SHIELD.

⑥ ALL VEHICLE SIGNAL INDICATIONS AND ALL "HAND" AND "MAN" PEDESTRIAN INDICATIONS SHALL BE L.E.D. TYPE. (SEE SPECIAL PROVISIONS.)

⑦ EACH PEDESTRIAN INDICATION SHALL BE A SINGLE SECTION HAND / WALKING PERSON INDICATION. (SEE SPECIAL PROVISIONS.)

⑧ SEE SPECIAL PROVISIONS AND DETAILS REGARDING SIGN PANELS TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR.

⑨ THE PAVEMENT MARKINGS AND DIMENSIONS SHOWN ARE APPROXIMATE. PERMANENT PAVEMENT MARKINGS WILL BE DETERMINED IN THE FIELD BY THE ENGINEER. THE CONTRACTOR SHALL NOT CONSTRUCT ANY LOOP DETECTORS UNTIL THE PERMANENT PAVEMENT MARKING LOCATIONS HAVE BEEN ESTABLISHED BY THE ENGINEER.

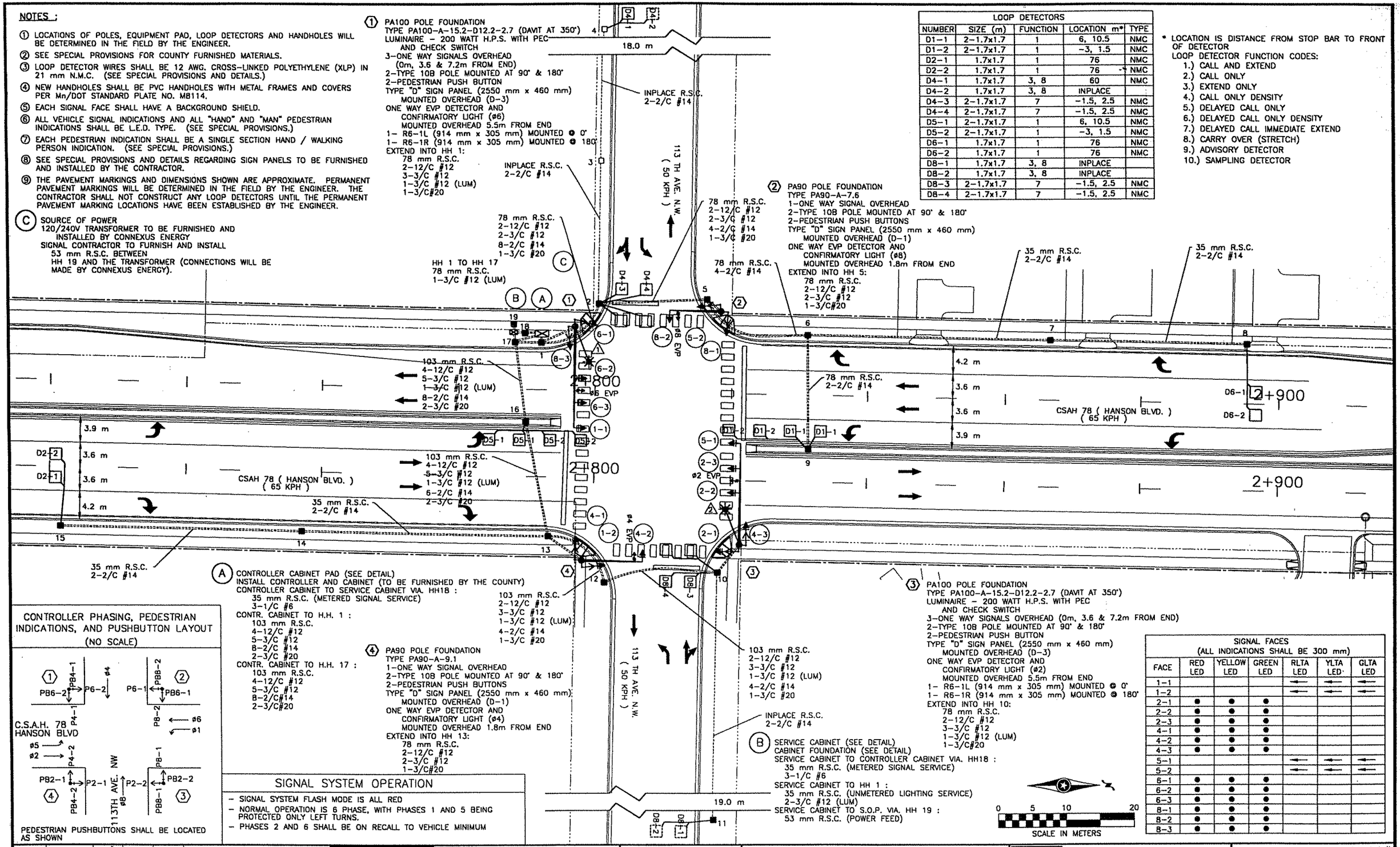
(C) SOURCE OF POWER
120/240V TRANSFORMER TO BE FURNISHED AND INSTALLED BY CONNEXUS ENERGY
SIGNAL CONTRACTOR TO FURNISH AND INSTALL
53 mm R.S.C. BETWEEN
HH 19 AND THE TRANSFORMER (CONNECTIONS WILL BE MADE BY CONNEXUS ENERGY).

① PA100 POLE FOUNDATION
TYPE PA100-A-15.2-D12.2-2.7 (DAVIT AT 350°)
LUMINAIRE - 200 WATT H.P.S. WITH PEC AND CHECK SWITCH
3-ONE WAY SIGNALS OVERHEAD (0m, 3.6 & 7.2m FROM END)
2-TYPE 10B POLE MOUNTED AT 90° & 180°
2-PEDESTRIAN PUSH BUTTON
TYPE "D" SIGN PANEL (2550 mm x 460 mm) MOUNTED OVERHEAD (D-3)
ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT (ø6) MOUNTED OVERHEAD 5.5m FROM END
1- R6-1L (914 mm x 305 mm) MOUNTED @ 0°
1- R6-1R (914 mm x 305 mm) MOUNTED @ 180°
EXTEND INTO HH 1:
78 mm R.S.C.
2-12/C #12
3-3/C #12
1-3/C #12 (LUM)
1-3/C#20

② PA90 POLE FOUNDATION
TYPE PA90-A-7.6
1-ONE WAY SIGNAL OVERHEAD
2-TYPE 10B POLE MOUNTED AT 90° & 180°
2-PEDESTRIAN PUSH BUTTONS
TYPE "D" SIGN PANEL (2550 mm x 460 mm) MOUNTED OVERHEAD (D-1)
ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT (ø8) MOUNTED OVERHEAD 1.8m FROM END
EXTEND INTO HH 5:
78 mm R.S.C.
2-12/C #12
2-3/C #12
1-3/C#20

LOOP DETECTORS				
NUMBER	SIZE (m)	FUNCTION	LOCATION m*	TYPE
D1-1	2-1.7x1.7	1	6, 10.5	NMC
D1-2	2-1.7x1.7	1	-3, 1.5	NMC
D2-1	1.7x1.7	1	76	NMC
D2-2	1.7x1.7	1	76	NMC
D4-1	1.7x1.7	3, 8	60	NMC
D4-2	1.7x1.7	3, 8	INPLACE	
D4-3	2-1.7x1.7	7	-1.5, 2.5	NMC
D4-4	2-1.7x1.7	7	-1.5, 2.5	NMC
D5-1	2-1.7x1.7	1	6, 10.5	NMC
D5-2	2-1.7x1.7	1	-3, 1.5	NMC
D6-1	1.7x1.7	1	76	NMC
D6-2	1.7x1.7	1	76	NMC
D8-1	1.7x1.7	3, 8	INPLACE	
D8-2	1.7x1.7	3, 8	INPLACE	
D8-3	2-1.7x1.7	7	-1.5, 2.5	NMC
D8-4	2-1.7x1.7	7	-1.5, 2.5	NMC

* LOCATION IS DISTANCE FROM STOP BAR TO FRONT OF DETECTOR
LOOP DETECTOR FUNCTION CODES:
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



(A) CONTROLLER CABINET PAD (SEE DETAIL)
INSTALL CONTROLLER AND CABINET (TO BE FURNISHED BY THE COUNTY)
CONTROLLER CABINET TO SERVICE CABINET VIA. HH18 :
35 mm R.S.C. (METERED SIGNAL SERVICE)
3-1/C #6
CONTR. CABINET TO H.H. 1 :
103 mm R.S.C.
4-12/C #12
5-3/C #12
8-2/C #14
2-3/C #20
CONTR. CABINET TO H.H. 17 :
103 mm R.S.C.
4-12/C #12
5-3/C #12
8-2/C#14
2-3/C#20

④ PA90 POLE FOUNDATION
TYPE PA90-A-9.1
1-ONE WAY SIGNAL OVERHEAD
2-TYPE 10B POLE MOUNTED AT 90° & 180°
2-PEDESTRIAN PUSH BUTTONS
TYPE "D" SIGN PANEL (2550 mm x 460 mm) MOUNTED OVERHEAD (D-1)
ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT (ø4) MOUNTED OVERHEAD 1.8m FROM END
EXTEND INTO HH 13:
78 mm R.S.C.
2-12/C #12
2-3/C #12
1-3/C#20

CONTROLLER PHASING, PEDESTRIAN INDICATIONS, AND PUSHBUTTON LAYOUT
(NO SCALE)

PEDESTRIAN PUSHBUTTONS SHALL BE LOCATED AS SHOWN

SIGNAL SYSTEM OPERATION
- SIGNAL SYSTEM FLASH MODE IS ALL RED
- NORMAL OPERATION IS 6 PHASE, WITH PHASES 1 AND 5 BEING PROTECTED ONLY LEFT TURNS.
- PHASES 2 AND 6 SHALL BE ON RECALL TO VEHICLE MINIMUM

(B) SERVICE CABINET (SEE DETAIL)
CABINET FOUNDATION (SEE DETAIL)
SERVICE CABINET TO CONTROLLER CABINET VIA. HH18 :
35 mm R.S.C. (METERED SIGNAL SERVICE)
3-1/C #6
SERVICE CABINET TO HH 1 :
35 mm R.S.C. (UNMETERED LIGHTING SERVICE)
2-3/C #12 (LUM)
SERVICE CABINET TO S.O.P. VIA. HH 19 :
53 mm R.S.C. (POWER FEED)

③ PA100 POLE FOUNDATION
TYPE PA100-A-15.2-D12.2-2.7 (DAVIT AT 350°)
LUMINAIRE - 200 WATT H.P.S. WITH PEC AND CHECK SWITCH
3-ONE WAY SIGNALS OVERHEAD (0m, 3.6 & 7.2m FROM END)
2-TYPE 10B POLE MOUNTED AT 90° & 180°
2-PEDESTRIAN PUSH BUTTON
TYPE "D" SIGN PANEL (2550 mm x 460 mm) MOUNTED OVERHEAD (D-3)
ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT (ø2) MOUNTED OVERHEAD 5.5m FROM END
1- R6-1L (914 mm x 305 mm) MOUNTED @ 0°
1- R6-1R (914 mm x 305 mm) MOUNTED @ 180°
EXTEND INTO HH 10:
78 mm R.S.C.
2-12/C #12
3-3/C #12
1-3/C #12 (LUM)
1-3/C#20

103 mm R.S.C.
2-12/C #12
3-3/C #12
1-3/C #12 (LUM)
4-2/C #14
1-3/C #20

INPLACE R.S.C.
2-2/C #14

SIGNAL FACES (ALL INDICATIONS SHALL BE 300 mm)						
FACE	RED LED	YELLOW LED	GREEN LED	RLTA LED	YLTA LED	GLTA LED
1-1				←	←	←
1-2				←	←	←
2-1	●	●	●			
2-2	●	●	●			
2-3	●	●	●			
4-1	●	●	●			
4-2	●	●	●			
4-3	●	●	●			
5-1				←	←	←
5-2				←	←	←
6-1	●	●	●			
6-2	●	●	●			
6-3	●	●	●			
8-1	●	●	●			
8-2	●	●	●			
8-3	●	●	●			

0 5 10 20
SCALE IN METERS

NO	DATE	BY	CKD	APPR	REVISION

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STATE PROJECT NO. 02-678-11
STATE PROJECT NO. 114-020-22
STATE PROJECT NO.
SYSTEM "B"

ANOKA COUNTY HIGHWAY DEPT.

INTERSECTION LAYOUT
TRAFFIC SIGNAL SYSTEM
CSAH 78 AND 113TH AVE NW

Sheet 71 of 103 Sheets

CONTROLLER CABINET

1
- RED 6-1
- YEL 6-1
- GRN 6-1
- NEU 6-1,P6-2
- WLK P6-2
- DWK P6-2
- GRN 6-2
- NEU 8-3
- RED 8-3
- YEL 8-3
- GRN 8-3
- EQG

2
- RED 6-3
- YEL 6-3
- GRN 6-3
- NEU 6-3,6-2
- RED 6-2
- YEL 6-2
- GRN 6-2
- NEU 1-1
- RLTA 1-1
- YLTA 1-1
- GLTA 1-1
- EQG

5
- RED 8-1
- YEL 8-1
- GRN 8-1
- NEU 8-1,P8-2
- WLK P8-2
- DWK P8-2
- SPR
- NEU 5-2
- RLTA 5-2
- YLTA 5-2
- GLTA 5-2
- EQG

6
- RED 8-2
- YEL 8-2
- GRN 8-2
- NEU 8-2
- SPR
- SPR
- SPR
- NEU P6-1
- WLK P6-1
- DWK P6-1
- SPR
- EQG

9
- WLK P4-1
- NEU P4-1
- DWK P4-1

10
- PB6-2
- NEU PB6-2,PB4-1
- PB4-1

11
- SPR
- NEU ø6 EVP LIGHT
- ø6 EVP LIGHT

14
- PB6-1
- NEU PB6-1,PB8-2
- PB8-2

15
- SPR
- NEU ø8 EVP LIGHT
- ø8 EVP LIGHT

19
- ø6
- EVP DETECTOR

21
- ø8
- EVP DETECTOR

23 — D4-1

24 — D4-2

25 — D4-3

26 — D4-4

31 — D6-1

32 — D6-2

33 — D1-1

34 — D1-2

3
- RED 4-1
- YEL 4-1
- GRN 4-1
- NEU 4-1
- RLTA 1-2
- YLTA 1-2
- GLTA 1-2
- NEU 1-2
- SPR
- SPR
- SPR
- EQG

4
- RED 4-2
- YEL 4-2
- GRN 4-2
- NEU 4-2,P4-2
- WLK P4-2
- DWK P4-2
- SPR
- NEU P2-1
- WLK P2-1
- DWK P2-1
- SPR
- EQG

7
- RED 2-1
- YEL 2-1
- GRN 2-1
- NEU 2-1,P2-2
- WLK P2-2
- DWK P2-2
- SPR
- NEU 4-3
- RED 4-3
- YEL 4-3
- GRN 4-3
- EQG

8
- RED 2-3
- YEL 2-3
- GRN 2-3
- NEU 2-3,2-2
- RED 2-2
- YEL 2-2
- GRN 2-2
- NEU 5-1
- RLTA 5-1
- YLTA 5-1
- GLTA 5-1
- EQG

12
- PB4-2
- NEU PB4-2,PB2-1
- PB2-1

13
- SPR
- NEU ø4 EVP LIGHT
- ø4 EVP LIGHT

16
- WLK P8-1
- NEU P8-1
- DWK P8-1

17
- PB2-2
- NEU PB2-2,PB8-1
- PB8-1

18
- SPR
- NEU ø2 EVP LIGHT
- ø2 EVP LIGHT

20
- ø4
- EVP DETECTOR

22
- ø2
- EVP DETECTOR

27 — D2-1

28 — D2-2

29 — D5-1

30 — D5-2

35 — D8-3

36 — D8-4

37 — D8-1

38 — D8-2

SIGNAL SERVICE — 41

H.H. 1

1,2,5,6,9,10,11,14,15,19,21,23,24,25,26,31,32,33,34

H.H. 2

25 — D4-3

26 — D4-4

23,24

H.H. 3

H.H. 4

23 — D4-1

24 — D4-2

H.H. 5

5,6,14,15,21,23,24,25,26,31,32,33,34

5,6,14,15,21,31,32,33,34

H.H. 6

31,32,33,34

31,32

H.H. 7

31,32

H.H. 8

31 — D6-1

32 — D6-2

H.H. 9

33,34

D1-1 — 33

D1-2 — 34

H.H. 10

D8-3 — 35

D8-4 — 36

37,38

H.H. 11

D8-1 — 37

D8-2 — 38

H.H. 12

7,8,16,17,18,22,35,36,37,38,40

H.H. 13

3,4,7,8,12,13,16,17,18,20,22,27,28,35,36,37,38,40

H.H. 14

27,28

H.H. 15

D2-1 — 27

D2-2 — 28

H.H. 16

D5-1 — 29

D5-2 — 30

3,4,7,8,12,13,16,17,18,20,22,29,30,35,36,37,38,40

H.H. 17

3,4,7,8,12,13,16,17,18,20,22,27,28,29,30,35,36,37,38,40

39,40

39

H.H. 18

41

H.H. 19

42

SERVICE CABINET

39 — LUMINAIRE 1

40 — LUMINAIRE 2

41 — SIGNAL SERVICE

INPUT POWER (3-1/C #4) — 42

1

6-1 P6-2 8-3

1-1 6-2 6-3

1 2

P4-1 — ø6 EVP LIGHT

9 11

PB6-2 PB4-1 — ø6 EVP DETECTOR

10 19

LUMINAIRE 1 — 39

2

8-1 P8-2 5-2

P6-1 8-2

5 6

PB6-1 PB8-2 — ø8 EVP LIGHT

14 15

ø8 EVP DETECTOR — 21

3

2-1 P2-2 4-3

5-1 2-2 2-3

7 8

P8-1 — ø2 EVP LIGHT

16 18

PB2-2 PB8-1 — ø2 EVP DETECTOR

17 22

LUMINAIRE 2 — 40

4

4-1 1-2

P2-1 P4-2 4-2

3 4

PB4-2 PB2-1 — ø4 EVP LIGHT

12 13

ø4 EVP DETECTOR — 20

CONDUCTOR COLOR CODE

12/C#12
- R
- O
- BL
- WH
- R/BLK
- O/BLK
- BL/BLK
- WH/BLK
- BLK
- BLK/WH
- G/BLK
- G

3/C#12 — R, WH, BLK

3/C#20 — R OR O, WH OR YEL, BLK OR BL — EVP DETECTOR

2/C#14 — BLK, CLR

2-1/C#4 — BLK, WH — SIGNAL SERVICE

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

S.O.P

120/240V PAD-MOUNTED TRANSFORMER TO BE FURNISHED AND INSTALLED BY CONNEXUS ENERGY. CONTRACTOR TO FURNISH AND INSTALL CONDUIT BETWEEN THE TRANSFORMER PAD AND THE SIGNAL SERVICE CABINET. (CONNECTIONS AT THE TRANSFORMER WILL BE MADE BY CONNEXUS ENERGY.)

NO	DATE	BY	CKD	APPR	REVISION

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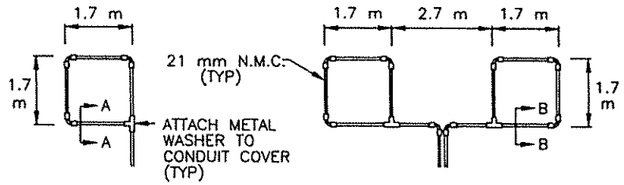
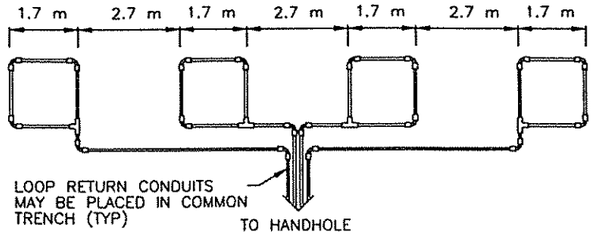
STATE PROJECT NO.
SYSTEM "B"

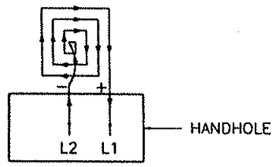
ANOKA COUNTY HIGHWAY DEPT.

FIELD WIRING DIAGRAM
TRAFFIC SIGNAL SYSTEM
CSAH 78 AND 113TH AVE NW

Sheet 72 of 103 Sheets

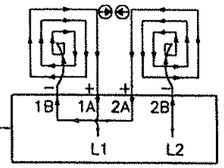






LOOP DETECTOR DETAIL 'A'

(LOOP PHASING FOR SINGLE CONNECTION)

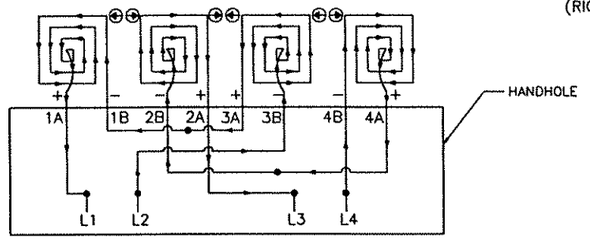


LOOP CONNECTIONS SHALL BE LABELED AND SPLICED IN THE HANDHOLE AS FOLLOWS:

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

LOOP DETECTOR DETAIL 'B'

(LOOP PHASING FOR SERIES CONNECTION)



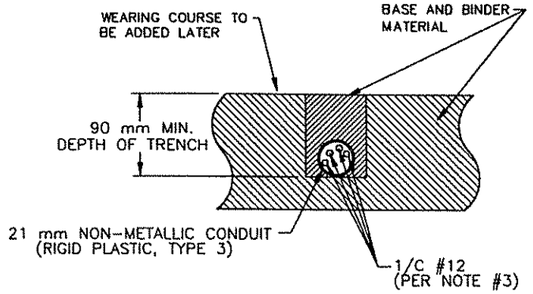
LOOP CONNECTIONS SHALL BE LABELED AND SPLICED IN THE HANDHOLE AS FOLLOWS:

L1 TO 1A	L3 TO 2A
1B TO 3A	2B TO 4A
3B TO L2	4B TO L4

ALL SPLICES SHALL BE LOCATED IN THE HANDHOLE. ALL CONDUCTORS SHALL BE TAGGED IN THE HANDHOLE (1A, 1B, ETC.).

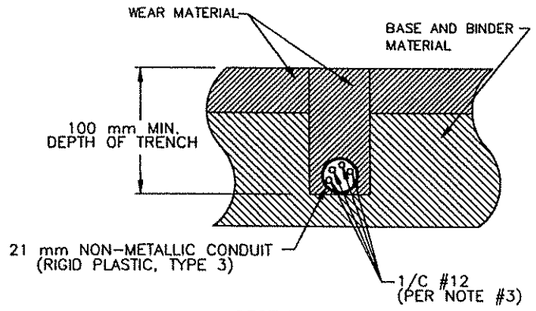
LOOP DETECTOR DETAIL 'C'

(LOOP PHASING FOR TWO DOUBLE-LOOP DETECTORS EACH WITH SERIES CONNECTION)



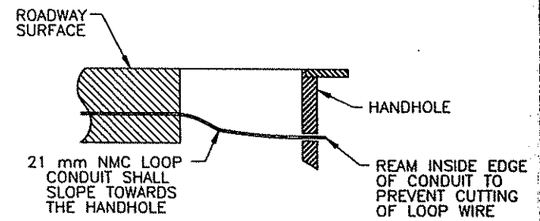
SECTION A-A

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 0.3 METER (1 FOOT) THROUGH THE CONDUIT TO THE HANDHOLE.
5. NMC DESIGNATES NON-METALLIC CONDUIT (SPEC. 3803)
6. LOOPS 1.7 m x 1.7 m THRU 1.7 m x 4.3 m SHALL HAVE (4) TURNS.
7. LOOPS 1.7 m x 4.6 m AND LARGER SHALL HAVE (2) TURNS.

STANDARD PLATES

THESE STANDARD PLATES AS APPROVED BY FHWA SHALL APPLY:

PLATE NO.	DESCRIPTION
* M7036 D	PEDESTRIAN CURB RAMP
* M8110 D	TRAFFIC SIGNAL BRACKETING - POLE MOUNTED
* M8111 C	TRAFFIC SIGNAL BRACKETING - PEDESTAL MOUNTED
* M8112 C	PEDESTAL FOUNDATION - TRAFFIC CONTROL SIGNALS
* M8114 A	PVC HANDHOLE/PULLBOX
* M8115 D	PEDESTRIAN PUSH BUTTON INSTALLATION
M8118 C	SERVICE EQUIPMENT AND POLE-TRAFFIC CONTROL SIGNALS
* M8119 C	GROUND MOUNTED CABINET FOUNDATION
* M8120 K	PA85 POLE FOUNDATION
* M8121 D	TRANSFORMER BASE AND POLE BASE PLATE
* M8122 C	PEDESTAL AND PEDESTAL BASE
* M8123 D	POLE AND MAST ARM
* M8124 E	MAST ARM SIGNAL HEAD MOUNTS
* M8126 F	POLE FOUNDATION (PA90 AND PA100)

* - APPLIES TO THIS PROJECT

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

ABBREVIATIONS

3-1(EG)	SIGNAL HEAD PHASE "3" - NO "1"	P2-1(EG)	PEDESTRIAN 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

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

NO	DATE	BY	CKD	APPR	REVISION

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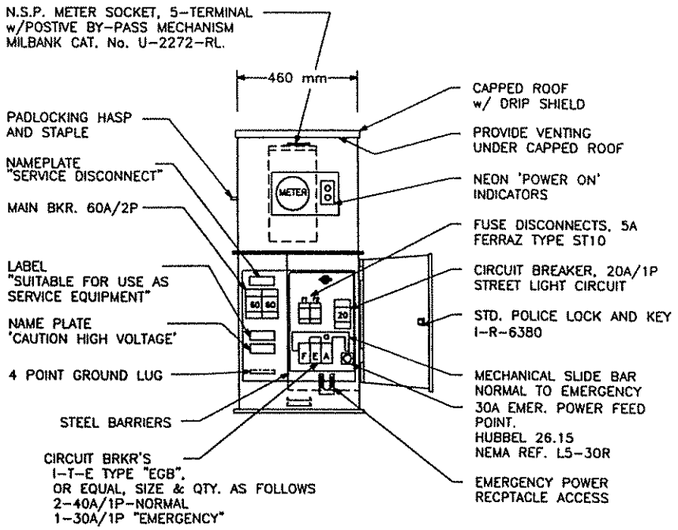
STATE PROJECT NO.

ANOKA COUNTY HIGHWAY DEPT.

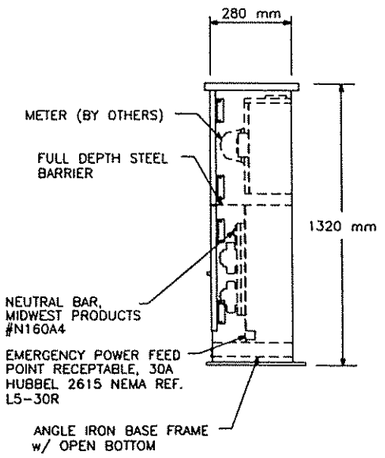
DETAILS AND STANDARD PLATES TRAFFIC SIGNAL SYSTEM

Sheet 73 of 103 Sheets

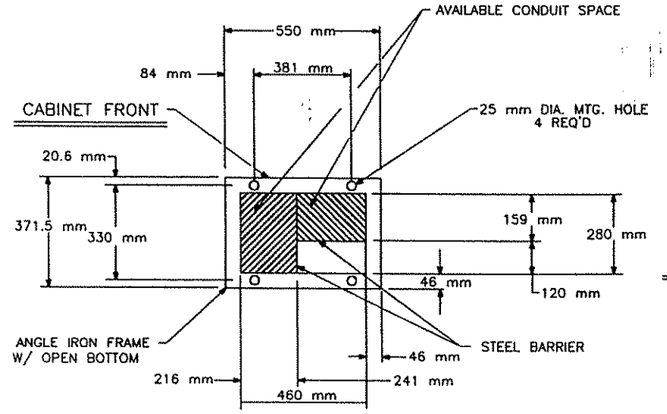
SIGNAL SERVICE CABINET



FRONT ELEV.

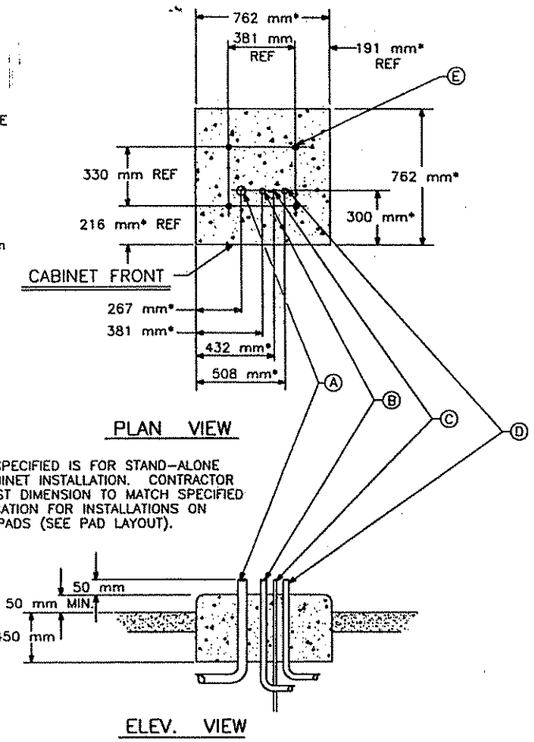


RIGHT SIDE ELEV.



BASE VIEW

SERVICE CABINET FOUNDATION



PLAN VIEW

ELEV. VIEW

* DIMENSION SPECIFIED IS FOR STAND-ALONE SERVICE CABINET INSTALLATION. CONTRACTOR SHALL ADJUST DIMENSION TO MATCH SPECIFIED CABINET LOCATION FOR INSTALLATIONS ON EQUIPMENT PADS (SEE PAD LAYOUT).

CONSTRUCTION NOTES

ENCLOSURE SHALL BE FABRICATED FROM #12 GA. ALL WELDED COLD ROLLED STEEL FOR OUTDOOR WEATHER PROOF SERVICE. DOORS TO BE GASKETED, ALL HINGES, PINS AND LOCKS TO BE OF NON CORRODING CONSTRUCTION. CABINET TO BE PRIMED INSIDE AND OUT WITH RUST INHIBITING PRIMER. FINISH PER MN/DOT #3527.

ENCLOSURE SHALL BE 'UL' APPROVED

Ⓐ 53 mm RSC TO S.O.P. (TRANSFORMER AND PAD TO BE F. & I. BY CONNEXUS ENERGY)

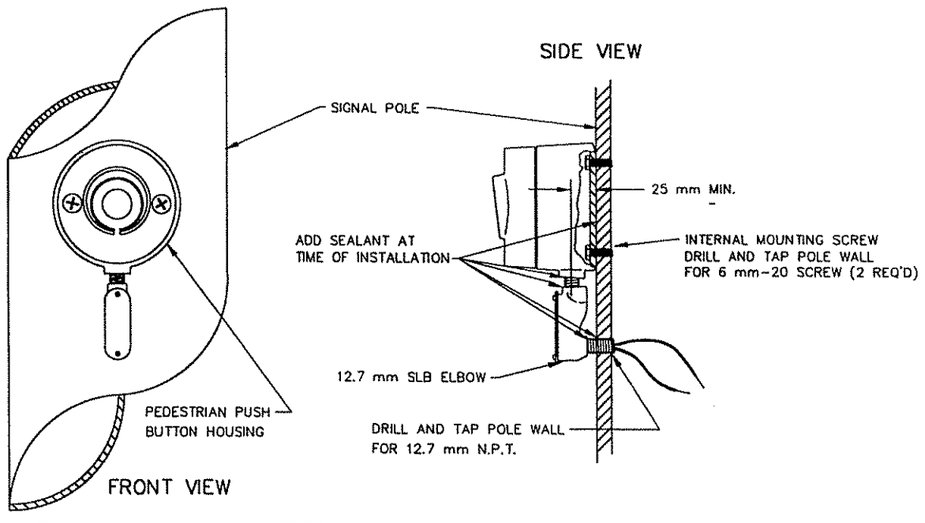
Ⓑ 53 mm RSC TO CONTROLLER CABINET

Ⓒ GROUNDING ROD

Ⓓ 53 mm RSC TO HANDHOLE 2 (FOR INTERSECTION LIGHTING)

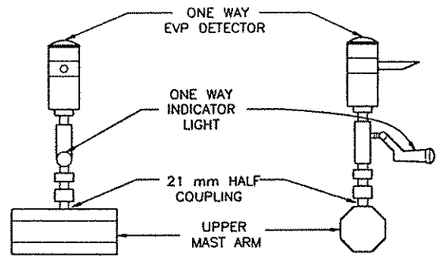
Ⓔ ANCHOR BOLT LOCATIONS (4 REQUIRED)

MAST ARM POLE PEDESTRIAN PUSH BUTTON DETAIL



FRONT VIEW

EVP DETECTOR AND LIGHT MOUNTING DETAIL ON MAST ARM



FRONT VIEW SIDE VIEW

NO	DATE	BY	CKD	APPR	REVISION

PARSONS
Barton-Aschman Associates, Inc.
A Unit of Parsons Transportation Group Inc.

minnesota metric

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

DATE 1/21/00 REG. NO. 25302

DRAWN BY SAP DATE
DESIGN BY LEW DATE
CHECKED BY DRA DATE

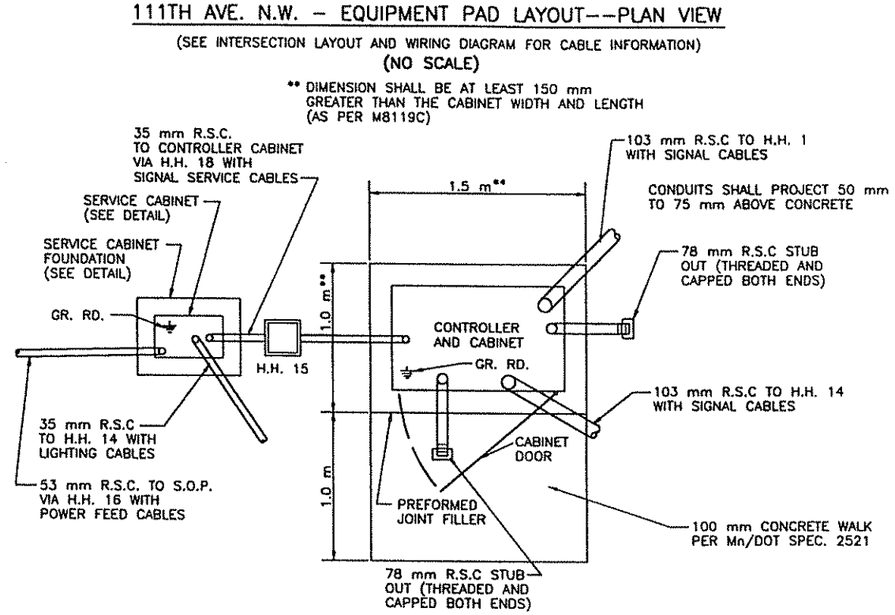
STATE PROJECT NO. 02-678-11
STATE PROJECT NO. 114-020-22
STATE PROJECT NO.

ANOKA COUNTY HIGHWAY DEPT.

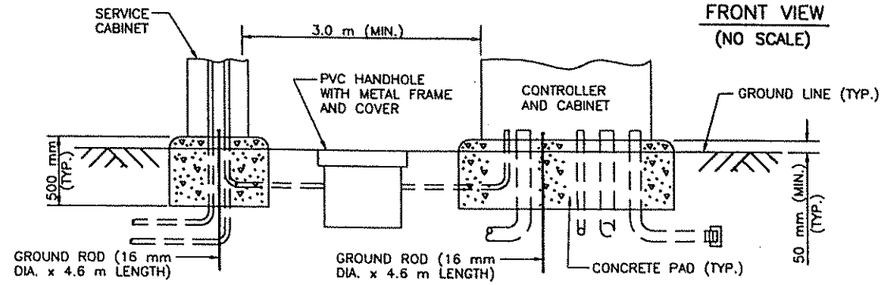
DETAILS
TRAFFIC SIGNAL SYSTEM

111TH AVE. N.W. – EQUIPMENT PAD LAYOUT--PLAN VIEW

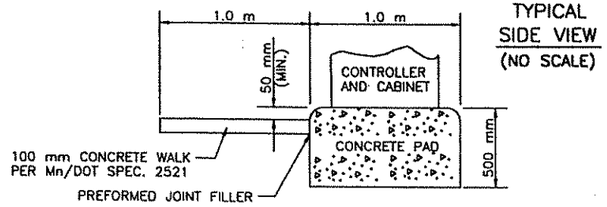
(SEE INTERSECTION LAYOUT AND WIRING DIAGRAM FOR CABLE INFORMATION)
(NO SCALE)



TYPICAL FRONT VIEW
(NO SCALE)

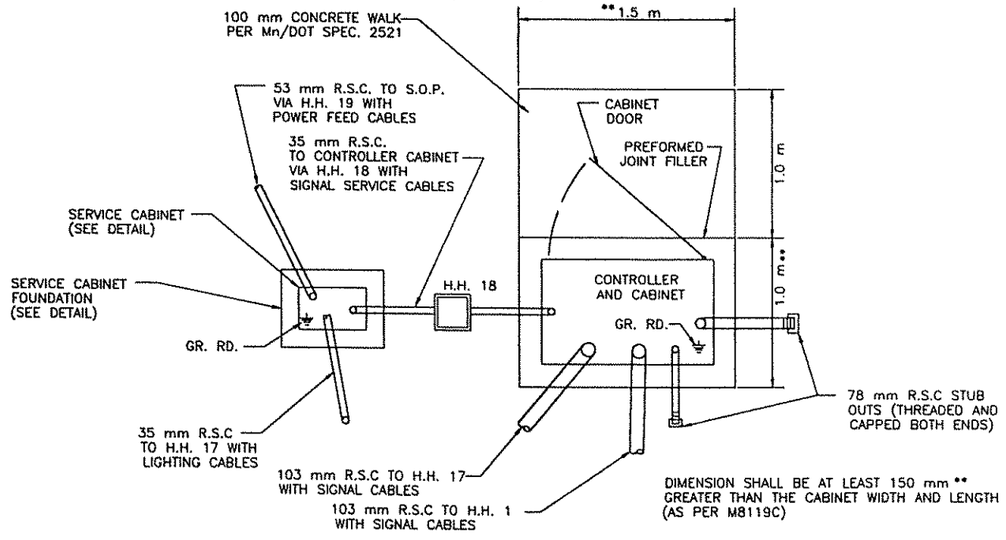


TYPICAL SIDE VIEW
(NO SCALE)



113TH AVE. N.W. – EQUIPMENT PAD LAYOUT--PLAN VIEW

(SEE INTERSECTION LAYOUT AND WIRING DIAGRAM FOR CABLE INFORMATION)
(NO SCALE)



CONSTRUCTION NOTES :

1. SEE SPECIAL PROVISIONS FOR COUNTY FURNISHED MATERIALS.
2. THE UPPER EDGES OF THE EQUIPMENT PAD SHALL BE BEVELLED OR CHAMFERRED IN A NEAT MANNER AS DIRECTED BY THE ENGINEER.
3. THE TOP OF THE CONDUITS SHALL BE THREADED AND CAPPED AFTER INSTALLATION (UNTIL CABLES ARE INSTALLED).
4. ALL CONDUITS SHALL PROJECT A MINIMUM OF 50 mm ABOVE THE CONCRETE AND SHALL BE LOCATED INSIDE THE CABINET WHERE DIRECTED BY THE ENGINEER, BUT SHALL NOT INTERFERE WITH THE CABINET COMPONENTS OR FUNCTION (SUPPORTING MEMBERS, ETC.).
5. ALL CONCRETE CONSTRUCTION (EQUIPMENT PAD AND SIDEWALK AREAS) SHALL BE MIX 3A32 OR APPROVED EQUAL.
6. CONDUITS WITH BOTH ENDS TERMINATING WITHIN THE PAD SHALL NOT EXTEND BENEATH THE CONCRETE.
7. THE EXACT LOCATION OF CONDUITS WITHIN THE PAD SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD.

NO	DATE	BY	CKD	APPR	REVISION

PARSONS
Barton-Aschman Associates, Inc.
A Unit of Parsons Transportation Group Inc.

minnesota metric

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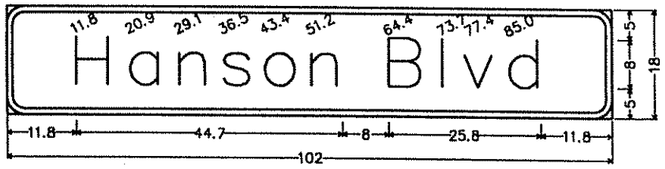
DATE 1/21/00 REG. NO. 25302

DRAWN BY SAP DATE
DESIGN BY LEW DATE
CHECKED BY DRA DATE

STATE PROJECT NO. 02-678-11
STATE PROJECT NO. 114-020-22
STATE PROJECT NO.

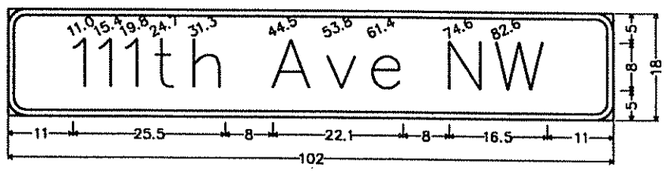
ANOKA COUNTY HIGHWAY DEPT.

DETAILS AND SIGNING TRAFFIC SIGNAL SYSTEM



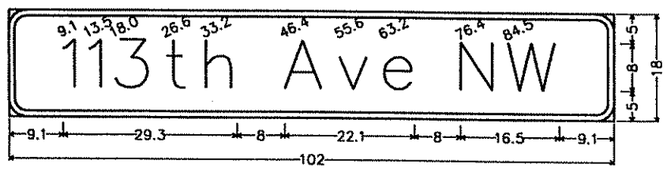
102" x 18", 3.0 RADIUS, 1.0" BORDER, WHITE ON GREEN
LINE 1 90.2" : 8"-6" SERIES E-MOD

D-1



102" x 18", 3.0 RADIUS, 1.0" BORDER, WHITE ON GREEN
LINE 1 91.0" : 8"-6" SERIES E-MOD

D-2



102" x 18", 3.0 RADIUS, 1.0" BORDER, WHITE ON GREEN
LINE 1 92.9" : 8"-6" SERIES E-MOD

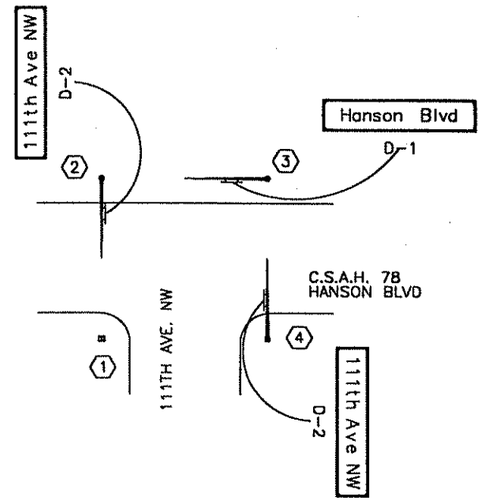
D-3

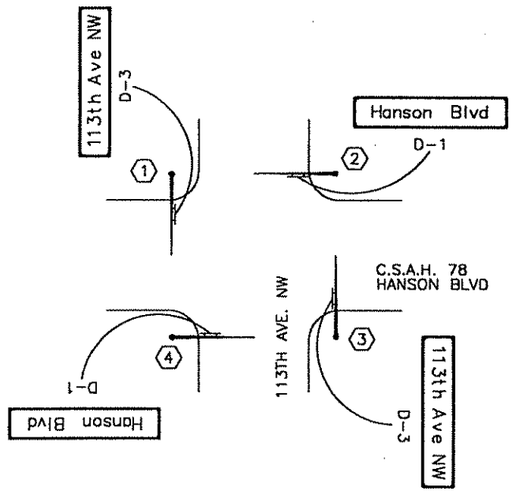
TYPE "D" SIGNS - FURNISH AND INSTALL									
SIGN PANEL	SIZE (inches)	SIZE (m)	NO. REQ.	NO. POSTS PER SIGN	POST SPACING (mm)	AREA PER SIGN (sq. m.)	POLE NO.		DIM. "a"
							111TH	113TH	
D-1	102x18	2.55x0.46	3	3	1145	1.17	3	2,4	3.0 m
D-2	102x18	2.55x0.46	2	3	1145	1.17	2,4		3.0 m
D-3	102x18	2.55x0.46	2	3	1145	1.17		1,3	3.0 m

NOTE: ALL DIMENSIONS OF DETAILED SIGN PANELS ARE IN INCHES.

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 "C" AND "D" SIGNS, SEE DETAILS AND STANDARD SIGNS MANUAL.
4) FOR TYPE "D" STRINGER AND PANEL-JOINT DETAIL, SEE DETAILS AND STANDARD SIGNS MANUAL.





MAST ARM MOUNTED SIGNING

NO	DATE	BY	CKD	APPR	REVISION

PARSONS
Barton-Aschman Associates, Inc.
A Unit of Parsons Transportation Group Inc.

minnesota metric

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
DATE 4/21/00 REG. NO. 25302

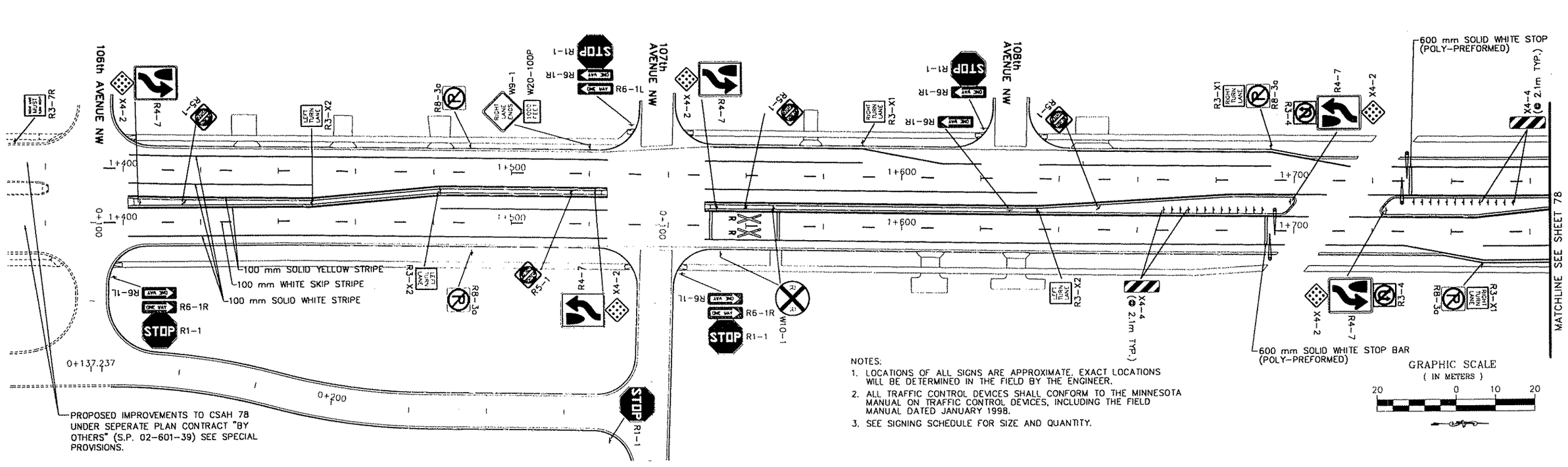
DRAWN BY SAP DATE
DESIGN BY LEW DATE
CHECKED BY DRA DATE

STATE PROJECT NO. 02-678-11
STATE PROJECT NO. 114-020-22
STATE PROJECT NO.

ANOKA COUNTY
HIGHWAY DEPT.

TYPE D SIGNING
TRAFFIC SIGNAL SYSTEM

Sheet 76 of 103 Sheets



NOTES:
1. LOCATIONS OF ALL SIGNS ARE APPROXIMATE. EXACT LOCATIONS WILL BE DETERMINED IN THE FIELD BY THE ENGINEER.
2. ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE MINNESOTA MANUAL ON TRAFFIC CONTROL DEVICES, INCLUDING THE FIELD MANUAL DATED JANUARY 1998.
3. SEE SIGNING SCHEDULE FOR SIZE AND QUANTITY.

GRAPHIC SCALE
(IN METERS)
20 0 10 20

NO	DATE	BY	CKD	APPR	REVISION

PARSONS
Barton-Aschman Associates, Inc.
A Unit of Parsons Transportation Group Inc.

minnesota metric

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
James C Kantor
DATE 2-16-00 REG. NO. 10169

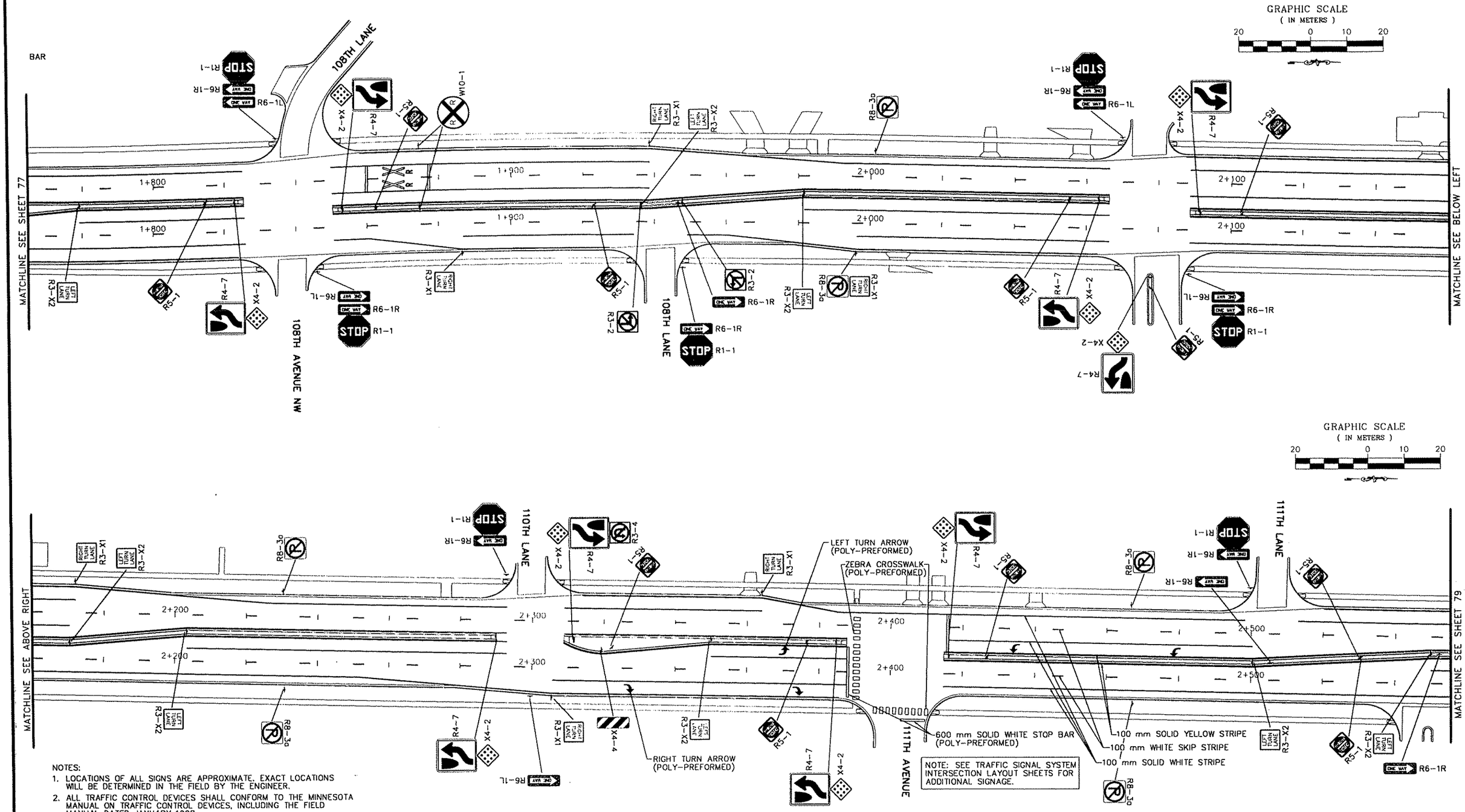
DRAWN BY SAP DATE
DESIGN BY JCK DATE
CHECKED BY GPO DATE

STATE PROJECT NO. 02-678-11
STATE PROJECT NO. 114-020-22
STATE PROJECT NO.

ANOKA COUNTY
HIGHWAY DEPT.

PERMANENT SIGNING AND STRIPING
STA. 1+380 TO 1+765

Sheet 77 of 103 Sheets



NOTES:

1. LOCATIONS OF ALL SIGNS ARE APPROXIMATE. EXACT LOCATIONS WILL BE DETERMINED IN THE FIELD BY THE ENGINEER.
2. ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE MINNESOTA MANUAL ON TRAFFIC CONTROL DEVICES, INCLUDING THE FIELD MANUAL DATED JANUARY 1998.
3. SEE SIGNING SCHEDULE FOR SIZE AND QUANTITY.

NO	DATE	BY	CKD	APPR	REVISION

PARSONS
Barton-Aschman Associates, Inc.
A Unit of Parsons Transportation Group Inc.

minnesota metric

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

James C Kuntzsch

DATE 1-21-00 REG. NO. 10169

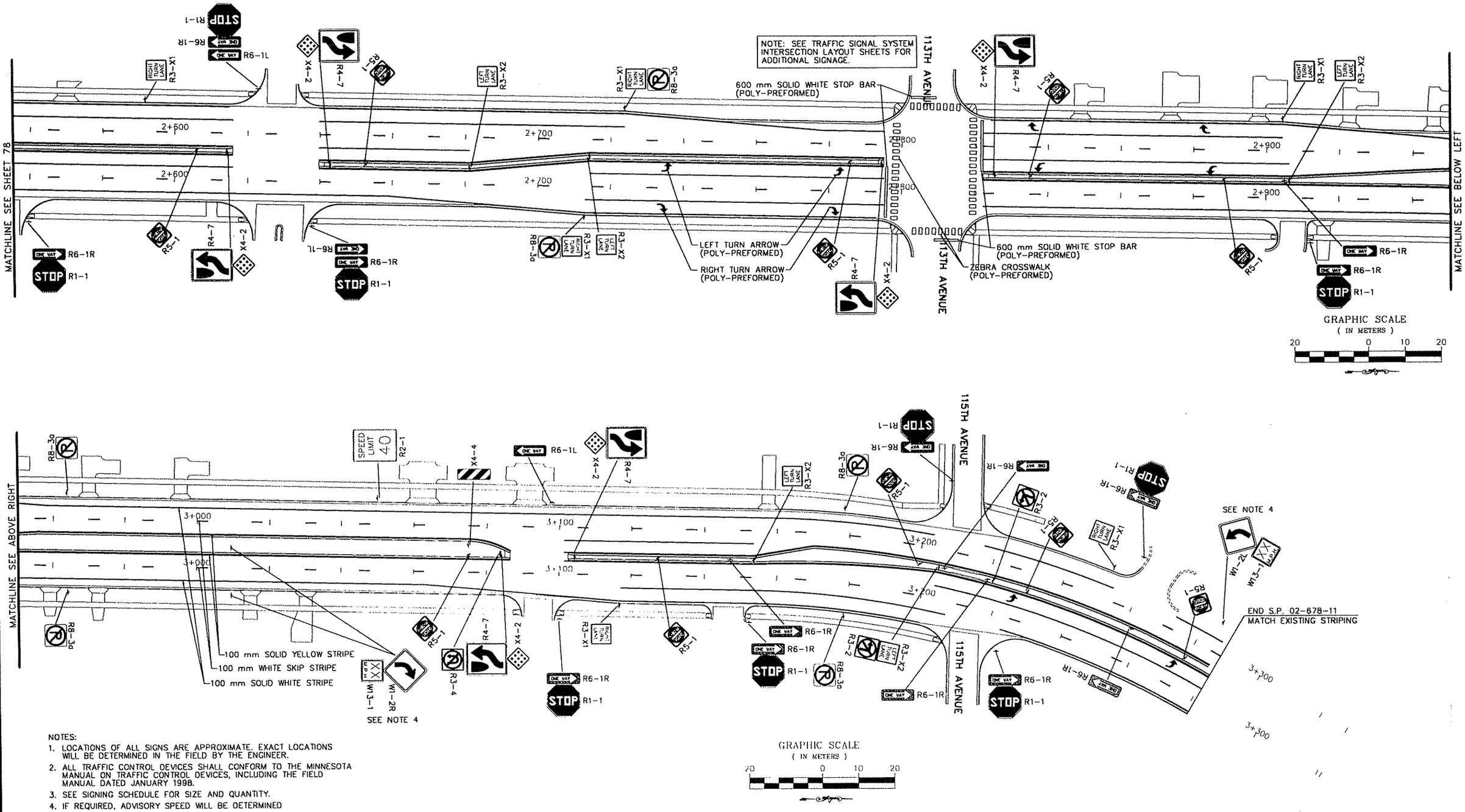
DRAWN BY SAP DATE
DESIGN BY JCK DATE
CHECKED BY GPO DATE

STATE PROJECT NO. 02-678-11
STATE PROJECT NO. 114-020-22
STATE PROJECT NO.

ANOKA COUNTY
HIGHWAY DEPT.

PERMANENT
SIGNING AND STRIPING
STA. 1+765 TO 2+560

Sheet 78 of 103 Sheets



NOTES:

1. LOCATIONS OF ALL SIGNS ARE APPROXIMATE. EXACT LOCATIONS WILL BE DETERMINED IN THE FIELD BY THE ENGINEER.
2. ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE MINNESOTA MANUAL ON TRAFFIC CONTROL DEVICES, INCLUDING THE FIELD MANUAL DATED JANUARY 1998.
3. SEE SIGNING SCHEDULE FOR SIZE AND QUANTITY.
4. IF REQUIRED, ADVISORY SPEED WILL BE DETERMINED

NO	DATE	BY	CKD	APPR	REVISION

PARSONS
Barton-Aschman Associates, Inc.
A Unit of Parsons Transportation Group Inc.

minnesota metric

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James C Kuntzen
DATE 1-21-00 REG. NO. 10169

DRAWN BY SAP DATE
DESIGN BY JCK DATE
CHECKED BY GPO DATE

STATE PROJECT NO. 02-678-11
STATE PROJECT NO. 114-020-22
STATE PROJECT NO.

ANOKA COUNTY HIGHWAY DEPT.

PERMANENT SIGNING AND STRIPING
STA. 2+560 TO 3+320

Sheet 79 of 103 Sheets

M.U.T.C.D. CODE	PANEL SIZE INCHES	PANEL SIZE mm	PANEL AREA SQ. FT.	PANEL AREA m^2	QUANTITY GROUND POST MOUNT INSTALLATIONS	QUANTITY ISLAND MOUNT INSTALLATIONS	SIGN PANEL	# POSTS/INSTALLATION	MOUNTING HEIGHT FT.	MOUNTING HEIGHT m	TOTAL PANEL AREA m^2	
R6-1R	36" X 12"	914 X 305	3.00	0.279	20	0	ONE WAY STOP	1	7.0	2.1 m	5.580	(3)
R1-1	30" X 30"	762 X 762	6.25	0.581	21	0					12.201	
R2-1	36" X 48"	914 X 1220	12.00	1.115	1	0	SPEED LIMIT 40	2	7.0	2.1 m	1.115	
R3-X1	30" X 30"	762 X 762	6.25	0.581	15	0	RIGHT TURN LANE	1	7.0	2.1 m	8.715	
R3-X2	30" X 30"	762 X 762	6.25	0.581	0	16	LEFT TURN LANE	1	7.0	2.1 m	9.296	
R3-2	24" X 24"	610 X 610	4.00	0.372	0	4		1	7.0	2.1 m	1.488	
R3-4	24" X 24"	610 X 610	4.00	0.372	4	0		1	7.0	2.1 m	1.488	
R3-7R	30" X 30"	762 X 762	6.25	0.581	1	0	MUST	1	7.0	2.1 m	0.581	
R5-1	30" X 30"	762 X 762	6.25	0.581	0	24		1	7.0	2.1 m	13.944	
R4-7	24" X 30"	610 X 762	5.00	0.465	0	20		1	7.0	2.1 m	9.280	
X4-2	18" X 18"	455 X 455	–	(1)	0	20			7.0	2.1 m	(1)	(1)
R6-1R	48" X 18"	1220 X 455	6.00	0.557	3	6	ONE WAY	2	7.0	2.1 m	5.013	
R6-1L	36" X 12"	914 X 305	3.00	0.279	9	0	ONE WAY	1	7.0	2.1 m	2.511	(4)
R6-1L	48" X 18"	1220 X 455	6.00	0.557	0	2		2	7.0	2.1 m	1.114	
R8-3a	24" X 24"	610 X 610	4.00	0.372	16	–		1	7.0	2.1 m	5.952	(6)
W10-1	36" DIA.	914 DIA.	5.89	0.547	2	2	RR	2	7.0	2.1 m	2.188	
										SUBTOTAL	80.466	

M.U.T.C.D. CODE	PANEL SIZE INCHES	PANEL SIZE mm	PANEL AREA SQ. FT.	PANEL AREA m^2	QUANTITY GROUND POST MOUNT INSTALLATIONS	QUANTITY ISLAND MOUNT INSTALLATIONS	SIGN PANEL	# POSTS/INSTALLATION	MOUNTING HEIGHT FT.	MOUNTING HEIGHT m	TOTAL PANEL AREA m^2	
X4-4	12" X 36"	305 X 914	–	(2)	0	32		1	7.0	2.1 m	(2)	(2)
W1-2L	30" X 30"	762 X 762	6.25	0.581	1	0	XX M.P.H.	2	7.0	2.1 m	0.581	
W13-1	24" X 24"	610 X 610	4.00	0.372	1	0					0.372	(5)
W1-2R	30" X 30"	762 X 762	6.25	0.581	1	0	XX M.P.H.	2	7.0	2.1 m	0.581	
W13-1	24" X 24"	610 X 610	4.00	0.372	1	0					0.372	(5)
W9-1	36" X 36"	914 X 914	9.00	0.835	1	0	RIGHT LANE ENDS 1000 FEET	2	7.0	2.1 m	0.835	
W20-100P	24" X 18"	610 X 455	3.00	0.278	1	0					0.278	
										SUBTOTAL	3.019	
										TOTAL	83.485	

(1) PAID FOR UNDER 2564.602 (HAZARD MARKER X4-2) BY THE EACH.
(2) PAID FOR UNDER 2564.602 (CLEARANCE MARKER X4-4) BY THE EACH.
(3) 20- R6-1R MOUNTED ABOVE R1-1.
(4) 9- R6-1L MOUNTED ABOVE R1-1.
(5) TO BE DETERMINED IN THE FIELD.
(6) 5- R8-3a MOUNTED BELOW R3-X1.

NO	DATE	BY	CKD	APPR	REVISION

PARSONS
Barton-Aschman Associates, Inc.
A Unit of Parsons Transportation Group Inc.

minnesota metric

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James C Knutson
DATE 1-21-00 REG. NO. 10169

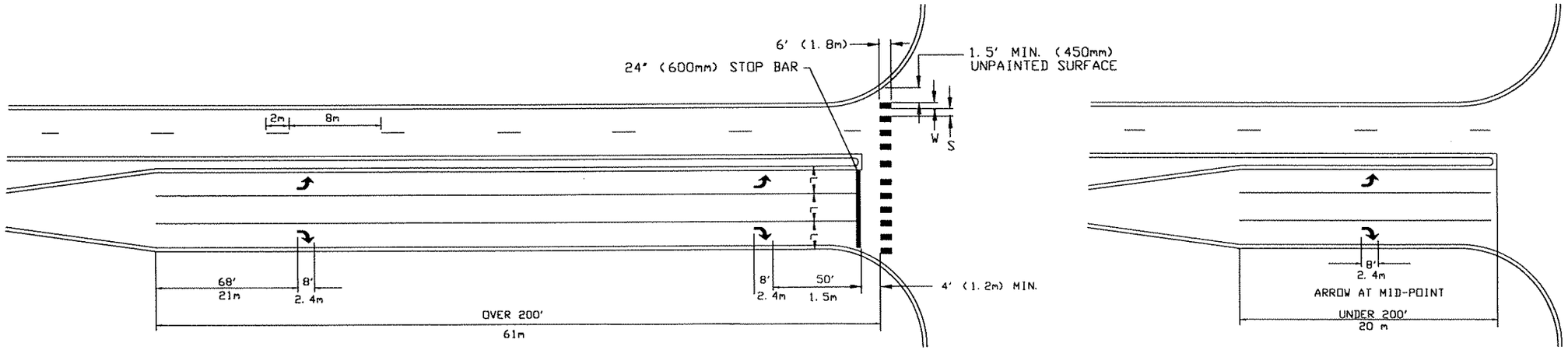
DRAWN BY SAP DATE
DESIGN BY JCK DATE
CHECKED BY GPO DATE

STATE PROJECT NO. 02-678-11
STATE PROJECT NO. 114-020-22
STATE PROJECT NO.

ANOKA COUNTY
HIGHWAY DEPT.

PERMANENT SIGNING TABULATION

Sheet 80 of 103 Sheets



(L) WIDTH OF INSIDE LANE	(W) WIDTH OF PAINTED AREAS	(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'

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

NOTES: CROSSWALKS:

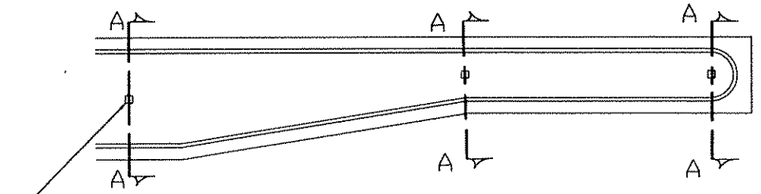
1.) PAINTED AREAS ARE TO BE CENTERED ON CENTER AND LANE LINES, EVEN IF INTERSECTION IS NOT ALIGNED.

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

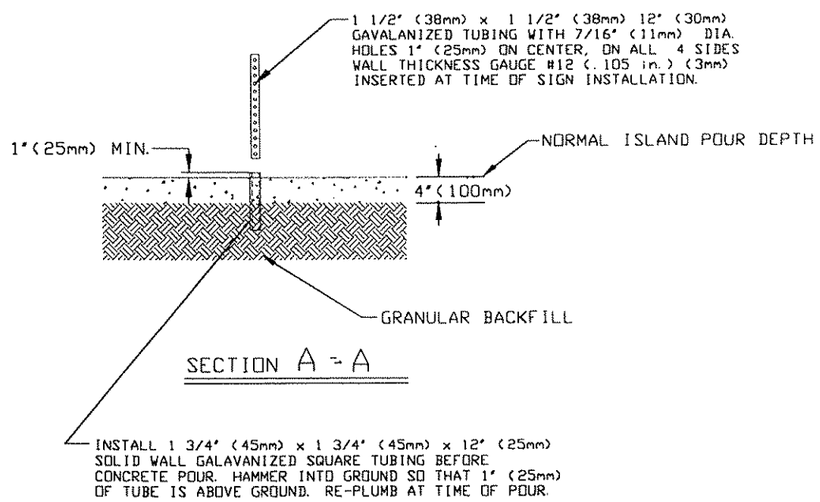
3.) ZEBRA CROSSWALKS ARE TO BE PARALLEL TO THE DRIVING LANE OR LANES. EVEN IF THE STREET IS ON AN ANGLE TO THE INTERSECTION.

4.) A MIN. OF 1.5' (450mm) CLEAR DISTANCE MUST BE LEFT ADJACENT TO THE CURB. IF LAST PAINTED AREA FALLS INTO THIS AREA, IT MUST BE OMITTED.

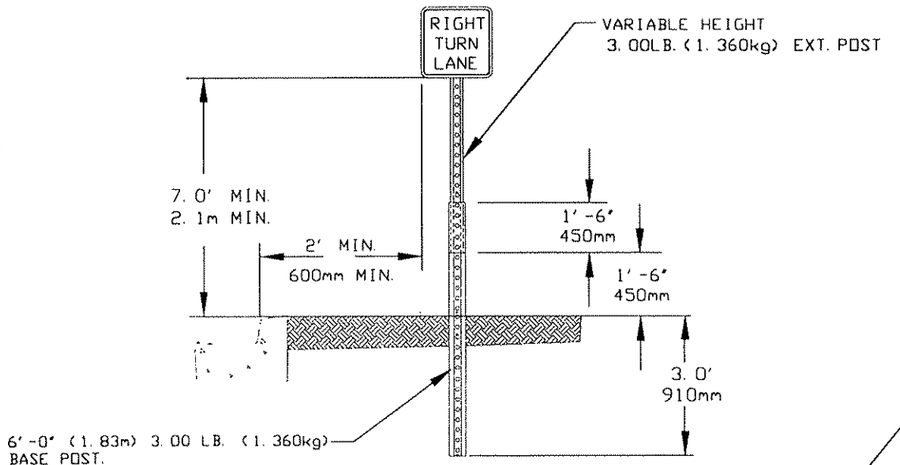
5.) ON TWO LANE STREETS, USE SPACING SHOWN FOR AN 11' (3.3m) INSIDE LANE.



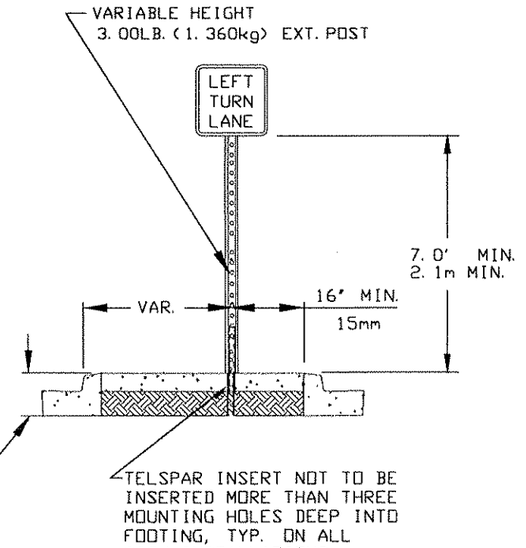
1 3/4"(45mm) x 1 3/4"(45mm) x 12"(30mm) SOLID GALVANIZED SQUARE TUBING SEE BELOW



GROUND POST MOUNT SIGN INSTALLATION TYPICAL



ISLAND MOUNT BREAK-AWAY SIGN INSTALLATION TYPICAL



NO	DATE	BY	CKD	APPR	REVISION

PARSONS
Barton-Aschman Associates, Inc.
A Unit of Parsons Transportation Group Inc.

minnesota metric

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
James C Knutson
DATE 1-21-00 REG. NO. 10169

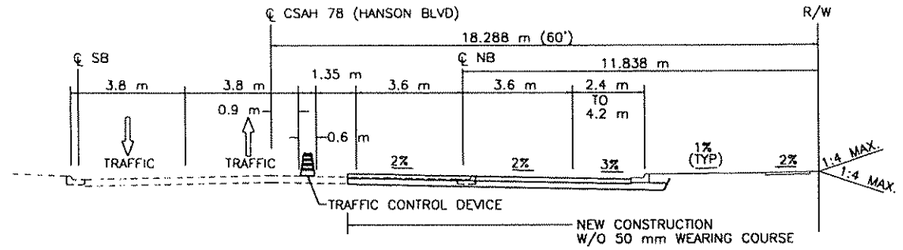
DRAWN BY SAP DATE
DESIGN BY JCK DATE
CHECKED BY GPO DATE

STATE PROJECT NO. 02-678-11
STATE PROJECT NO. 114-020-22
STATE PROJECT NO.

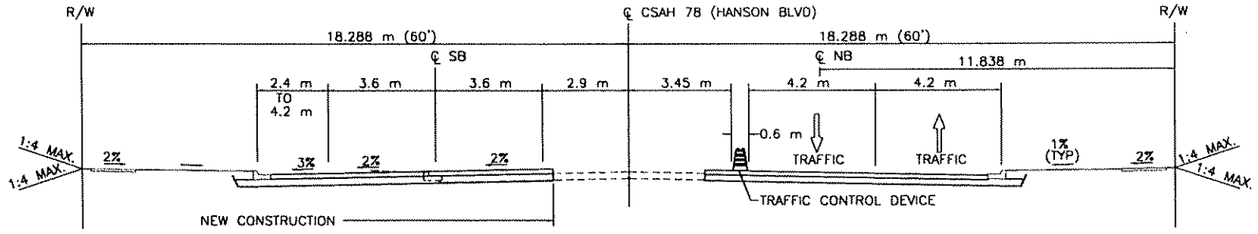
ANOKA COUNTY HIGHWAY DEPT.

SIGNING AND STRIPING DETAILS

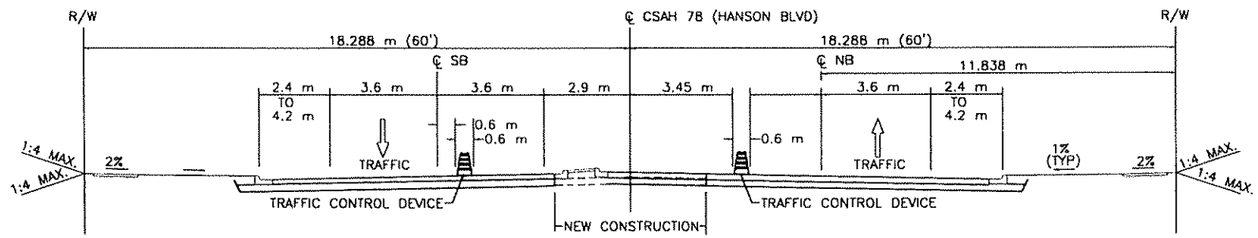
Sheet 81 of 103 Sheets



STAGE 1 TYPICAL SECTION – CSAH 78 (HANSON BLVD)



STAGE 2 TYPICAL SECTION – CSAH 78 (HANSON BLVD)



STAGE 3 TYPICAL SECTION – CSAH 78 (HANSON BLVD)

NO	DATE	BY	CKD	APPR	REVISION

PARSONS
Barton-Aschman Associates, Inc.
A Unit of Parsons Transportation Group Inc.

minnesota metric

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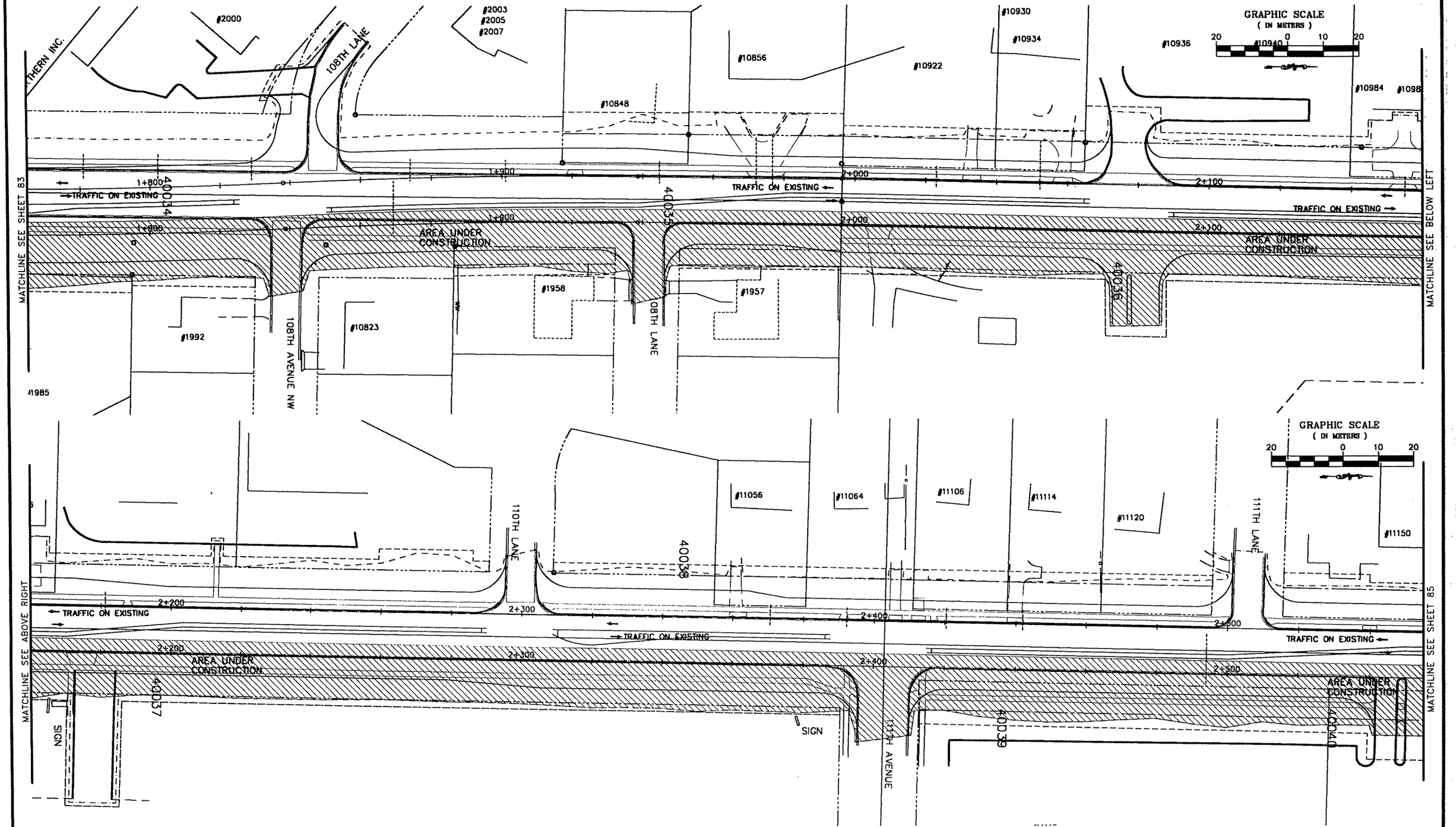
ANOKA COUNTY
HIGHWAY DEPT.

CONSTRUCTION STAGING
TYPICAL SECTIONS

Sheet 82 of 103 Sheets



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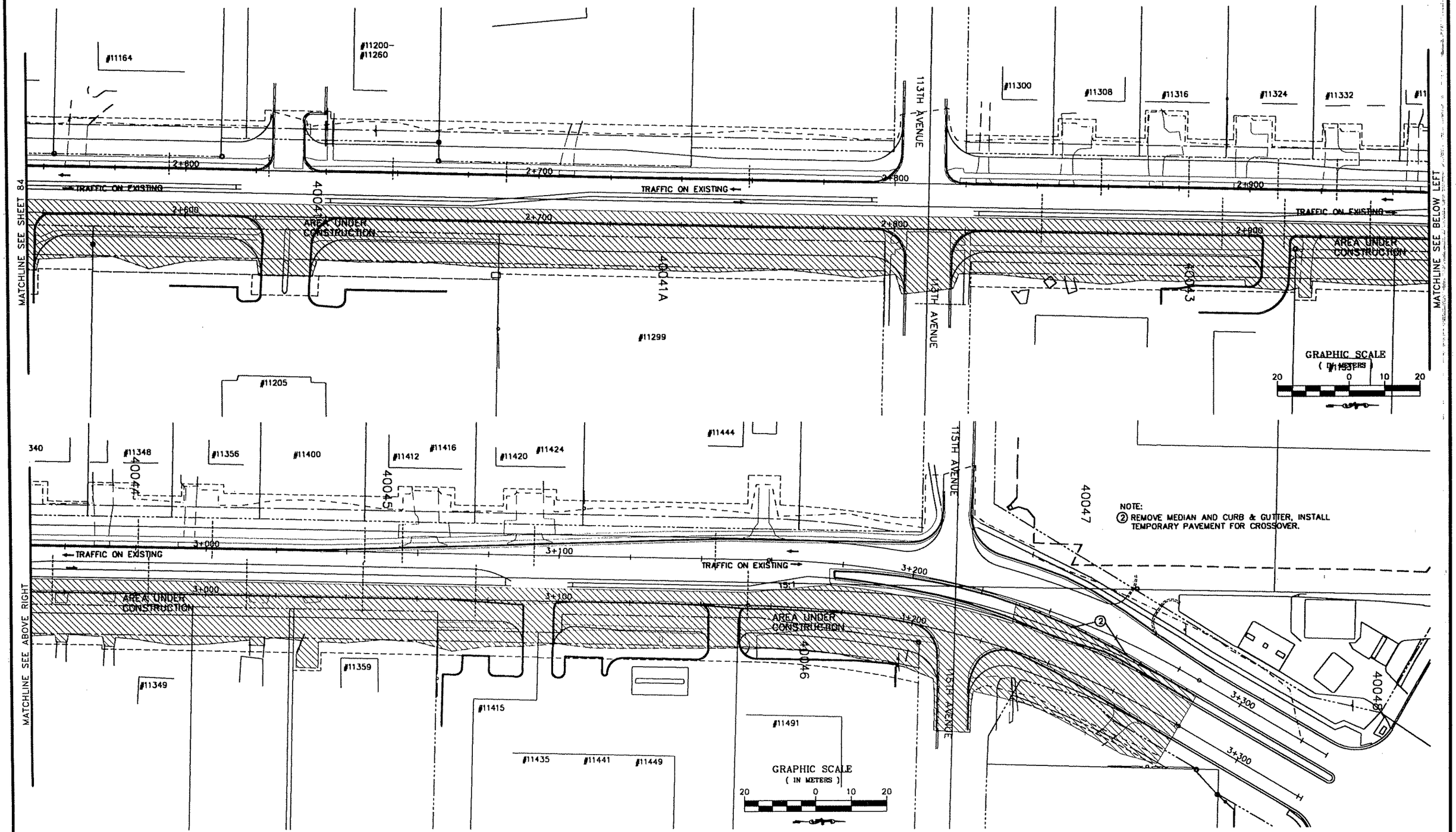
ANOKA COUNTY
HIGHWAY DEPT.

CONSTRUCTION STAGING
STAGE 1
STA. 1+765 TO 2+560

Sheet 84 of 103 Sheets



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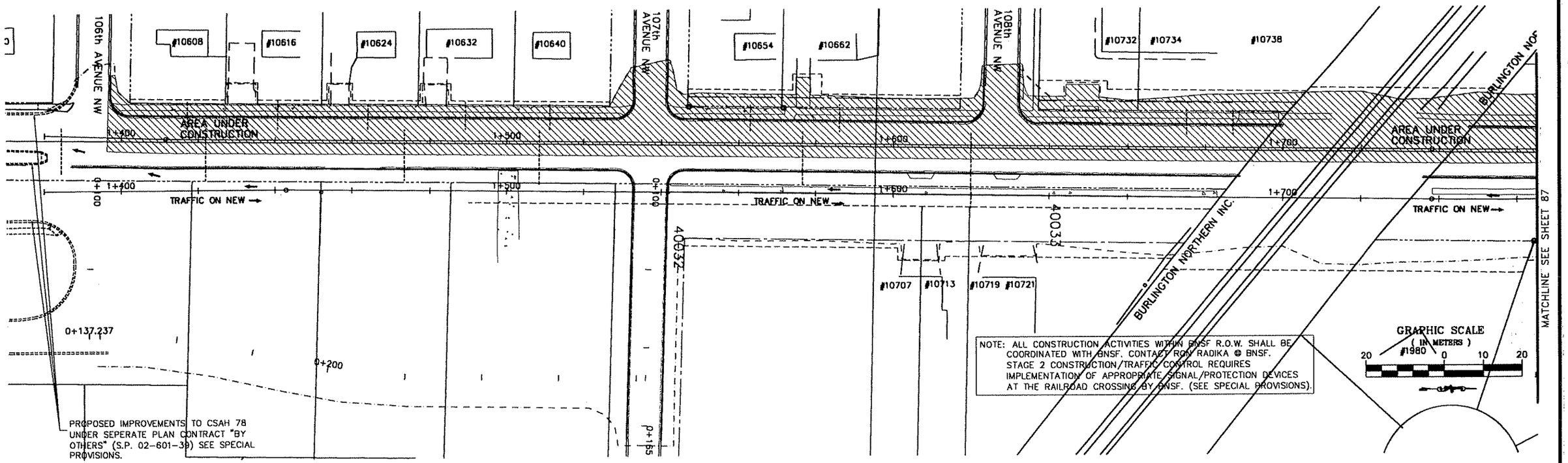
ANOKA COUNTY
HIGHWAY DEPT.

CONSTRUCTION STAGING
STAGE 1
STA. 2+560 TO 3+320

Sheet 85 of 103 Sheets



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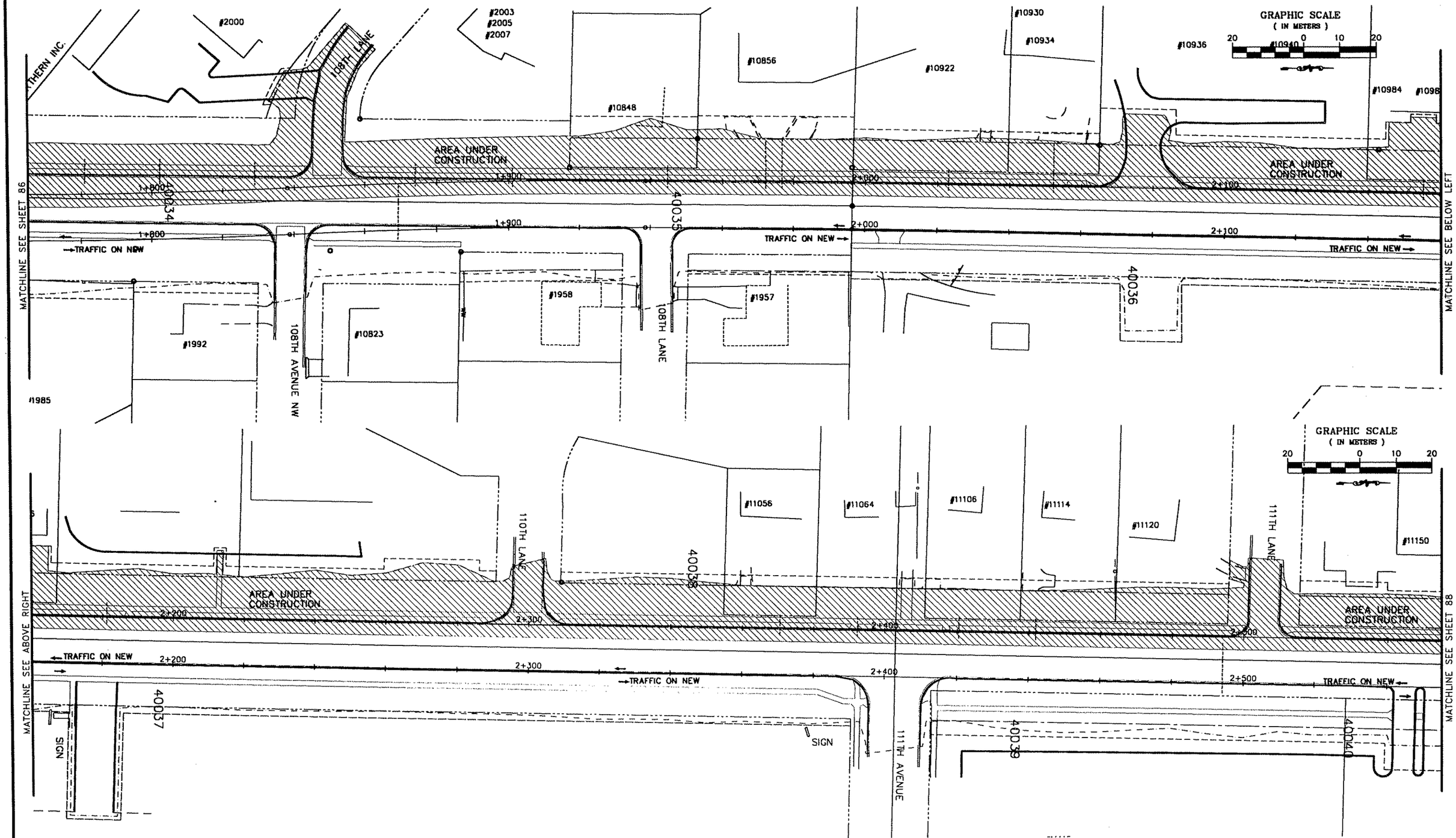
ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

CONSTRUCTION STAGING STAGE 2
STA. 1+380 TO 1+765

Sheet 86 of 103 Sheets



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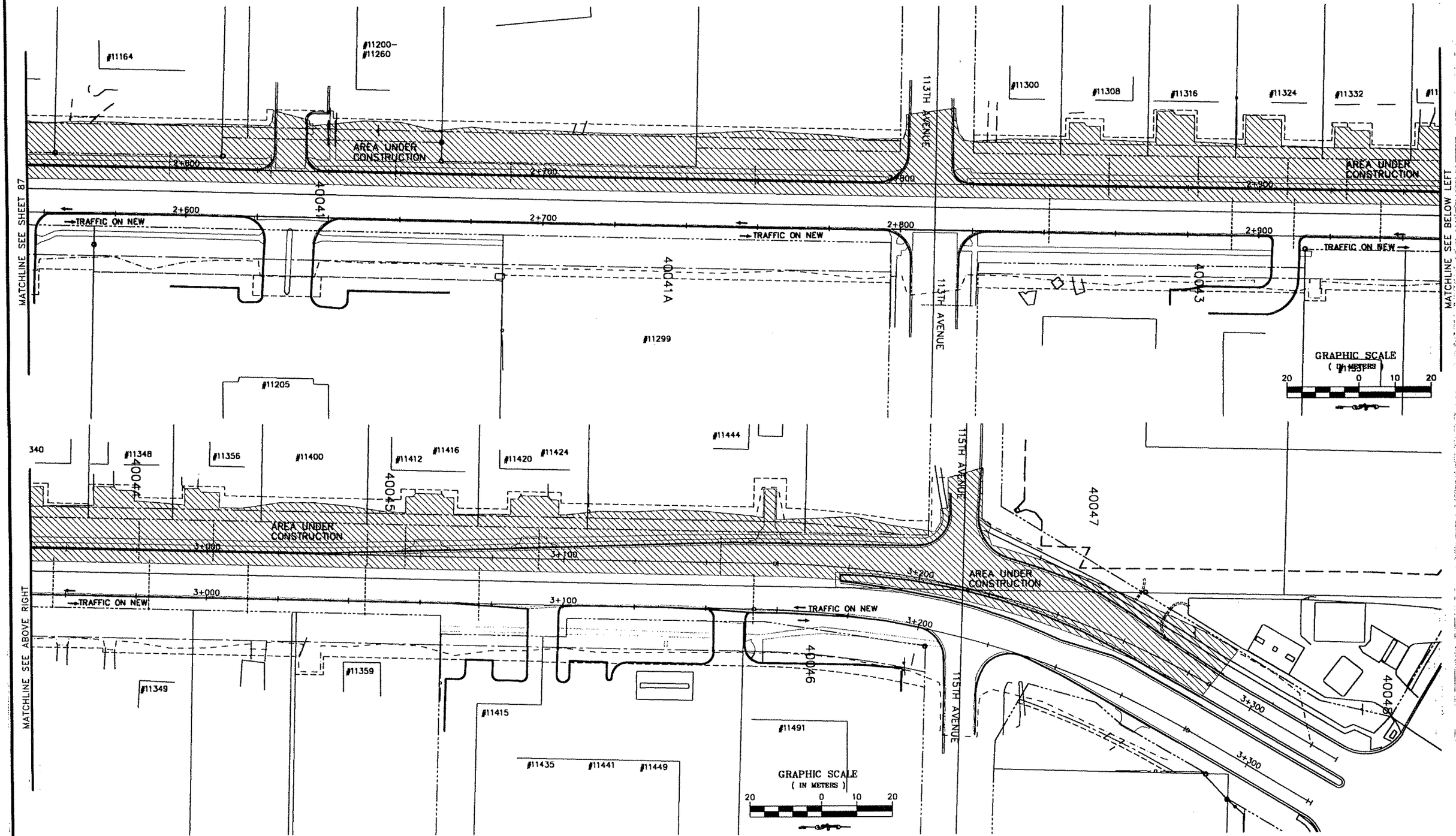
ANOKA COUNTY
HIGHWAY DEPT.

CONSTRUCTION STAGING
STAGE 2
STA. 1+765 TO 2+560

Sheet 87 of 103 Sheets



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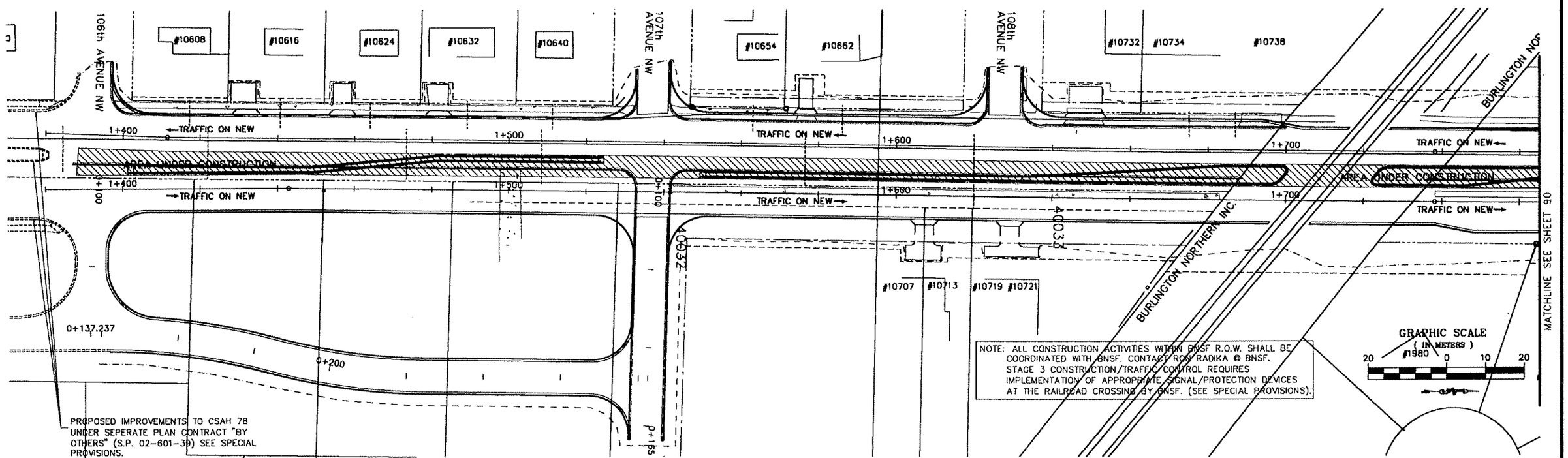
ANOKA COUNTY
HIGHWAY DEPT.

CONSTRUCTION STAGING
STAGE 2
STA. 2+560 TO 3+320

Sheet 88 of 103 Sheets



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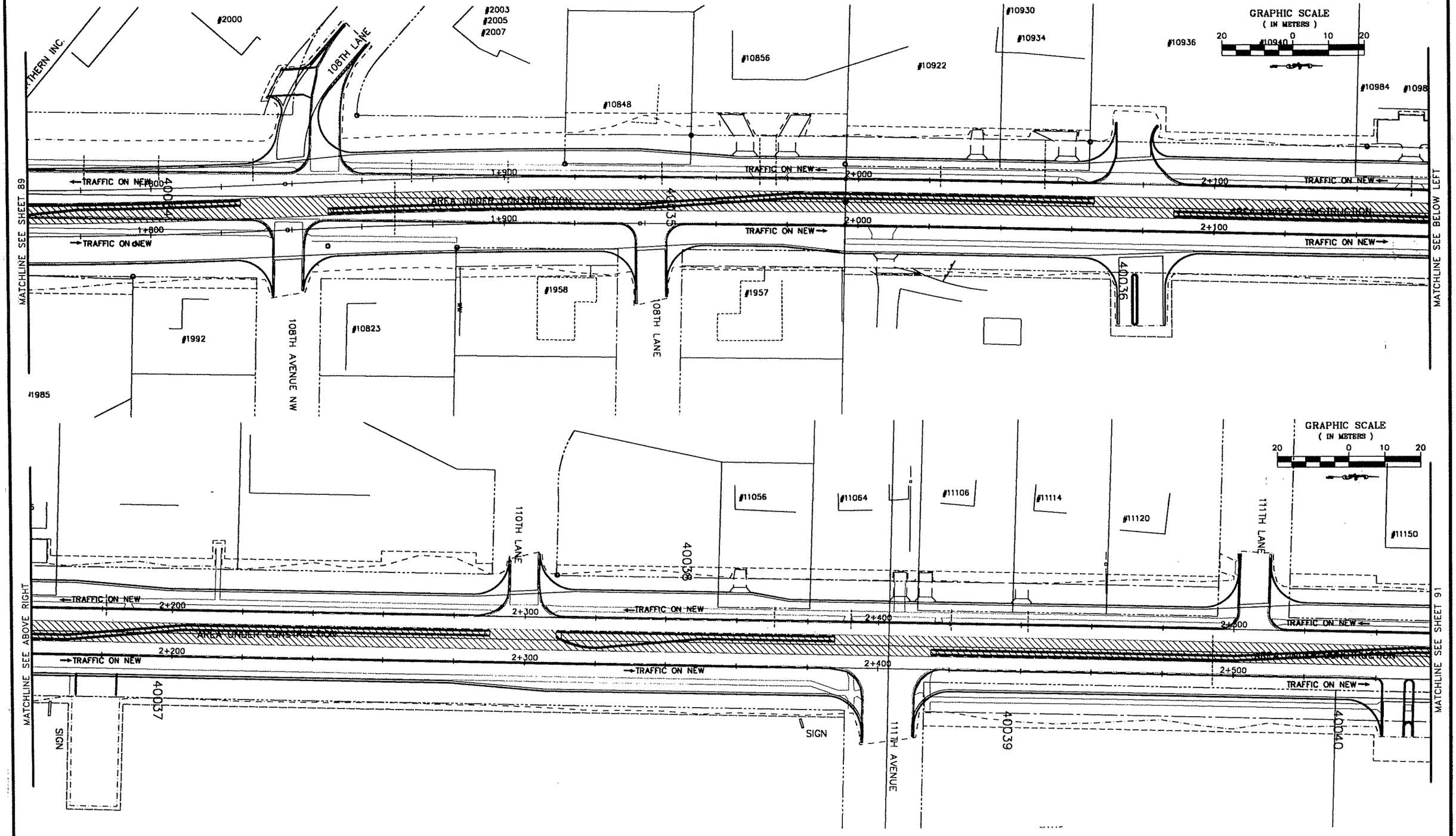
STATE PROJECT NO.

ANOKA COUNTY
HIGHWAY DEPT.

CONSTRUCTION STAGING
STAGE 3
STA. 1+380 TO 1+765

Sheet 89 of 103 Sheets



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ANOKA COUNTY
HIGHWAY DEPT.

CONSTRUCTION STAGING
STAGE 3
STA. 1+765 TO 2+560

Sheet 90 of 103 Sheets

#11164

#11200–
#11260

113TH AVENUE

#11300

#11308

#11316

#11324

#11332

MATCHLINE SEE SHEET 90

TRAFFIC ON NEW

2+600

2+700

2+800

2+900

AREA UNDER CONSTRUCTION

40041

40041A

40043

#11299

#11205

GRAPHIC SCALE
(IN METERS)
20 0 10 20

340

#11348

#11356

#11400

#11412

#11416

#11420

#11424

#11444

115TH AVENUE

40044

40045

40047

3+000

3+100

3+200

3+300

40046

40048

MATCHLINE SEE ABOVE RIGHT

#11359

#11349

#11415

#11491

#11435

#11441

#11449

GRAPHIC SCALE
(IN METERS)
20 0 10 20

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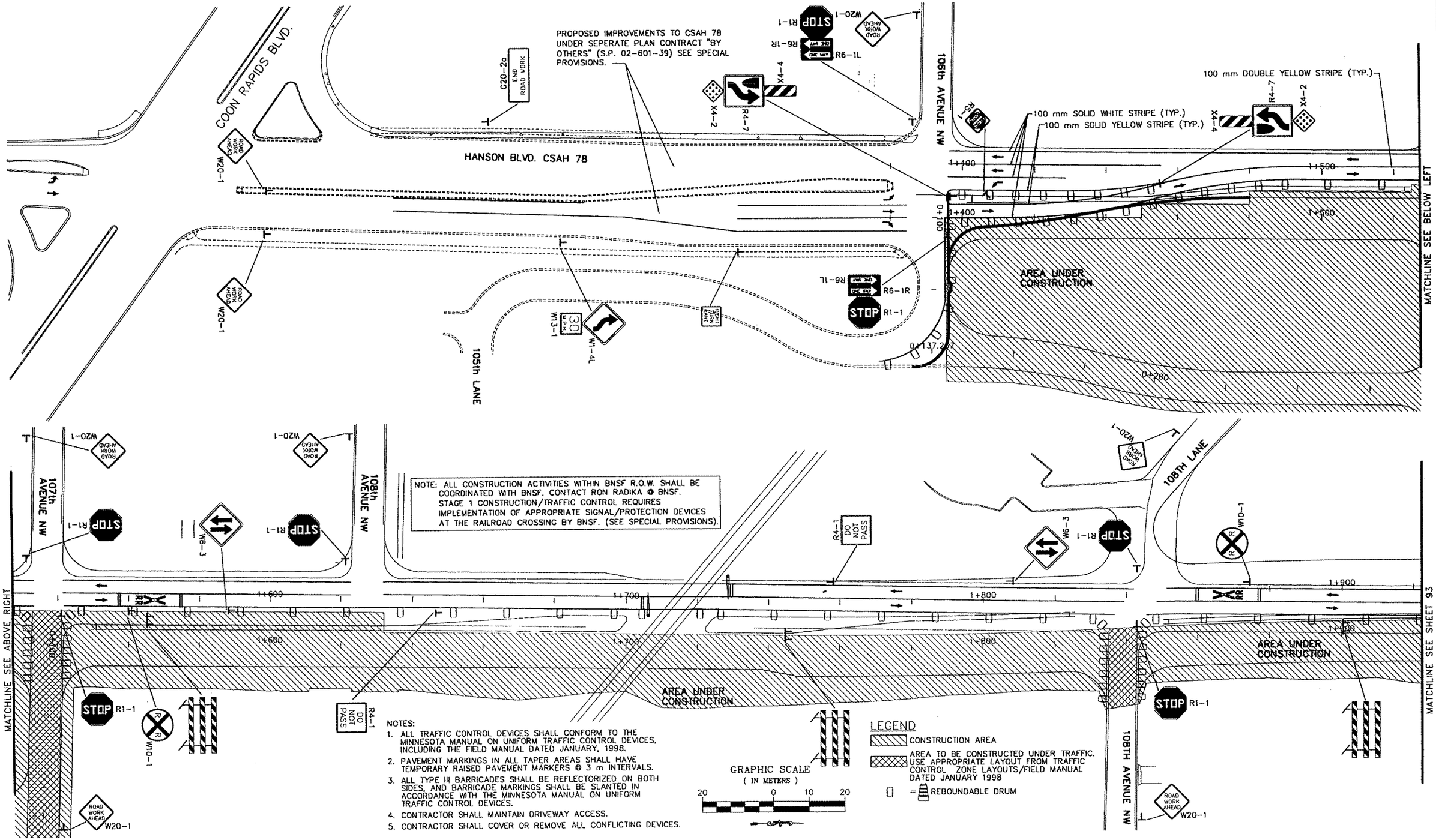
ANOKA COUNTY

ANOKA COUNTY
HIGHWAY DEPT.

CONSTRUCTION STAGING
STAGE 3
STA. 2+560 TO 3+320

Sheet 91 of 103 Sheets



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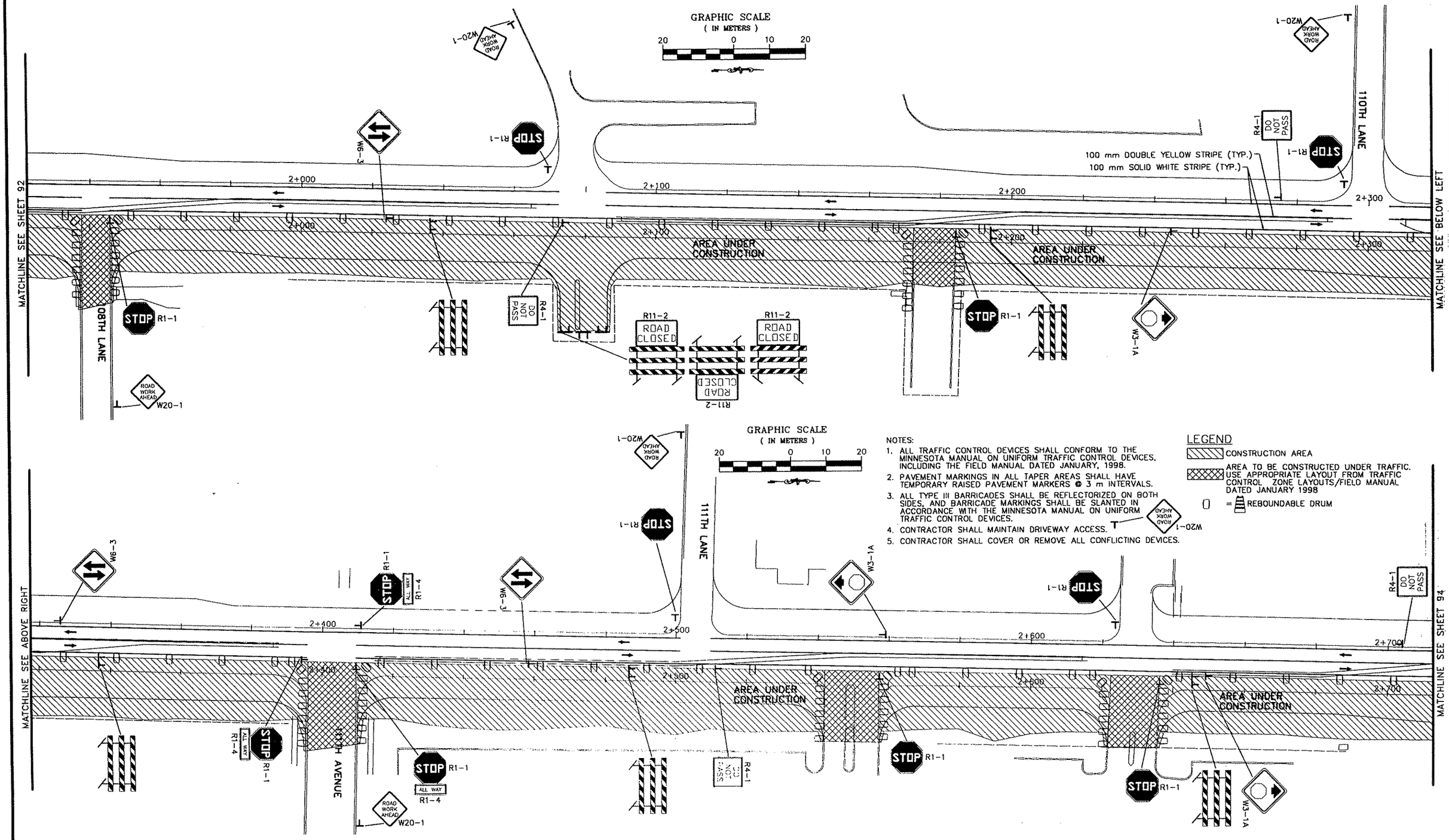
ANOKA COUNTY
HIGHWAY DEPT.

TRAFFIC CONTROL
STAGE 1
C.S.A.H. 78 (HANSON BLVD.)

Sheet 92 of 103 Sheets



NOTES:

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3. ALL TYPE III BARRICADES SHALL BE REFLECTORIZED ON BOTH SIDES, AND BARRICADE MARKINGS SHALL BE SLANTED IN ACCORDANCE WITH THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
4. CONTRACTOR SHALL MAINTAIN DRIVEWAY ACCESS.
5. CONTRACTOR SHALL COVER OR REMOVE ALL CONFLICTING DEVICES.

LEGEND

- CONSTRUCTION AREA
- AREA TO BE CONSTRUCTED UNDER TRAFFIC. USE APPROPRIATE LAYOUT FROM TRAFFIC CONTROL ZONE LAYOUTS/FIELD MANUAL DATED JANUARY 1998
- = REBOUNDABLE DRUM

NO	DATE	BY	CKD	APPR	REVISION

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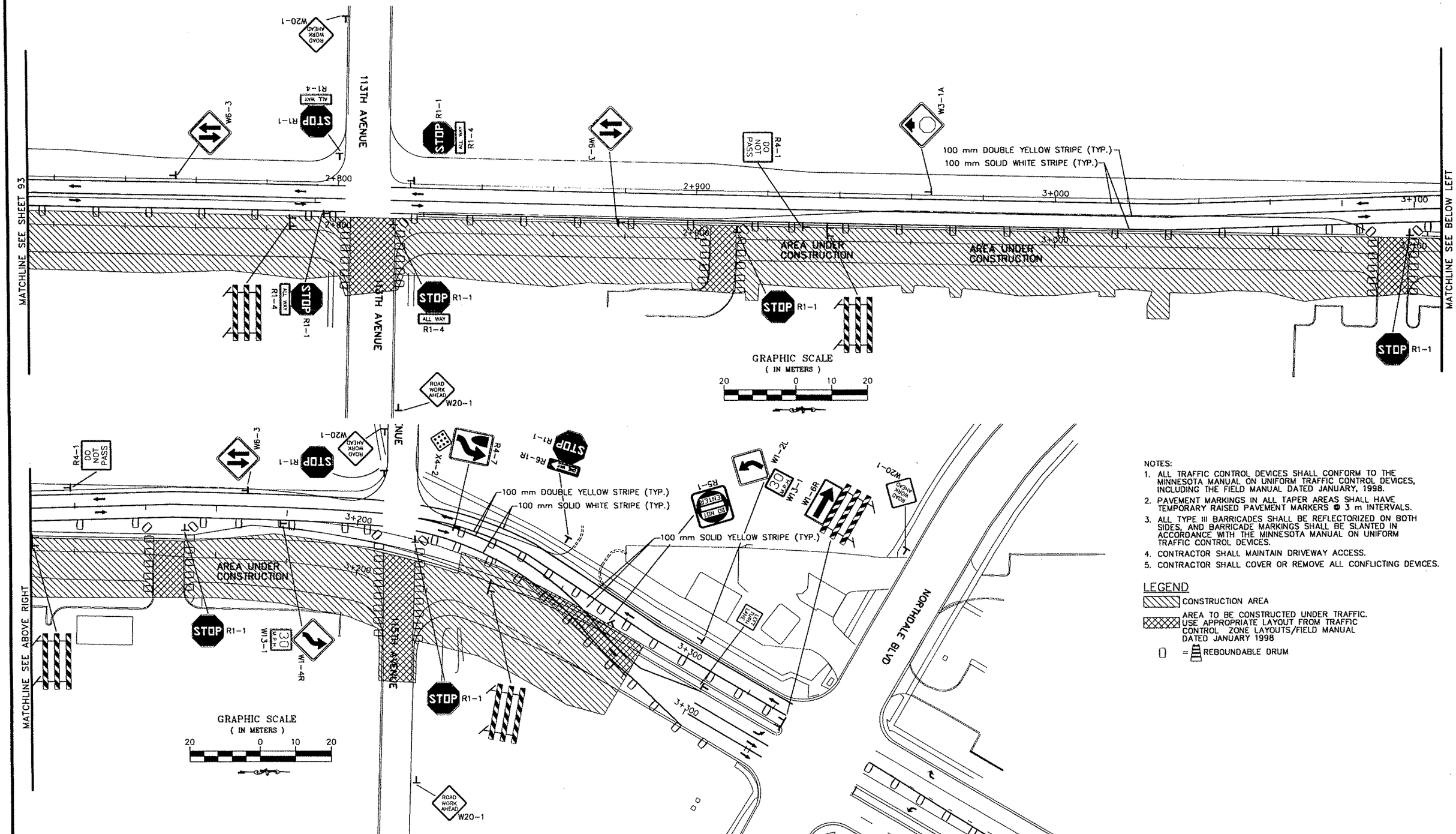
ANOKA COUNTY
HIGHWAY DEPT.

TRAFFIC CONTROL
STAGE 1
C.S.A.H. 78 (HANSON BLVD.)

Sheet 93 of 103 Sheets



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ANOKA COUNTY
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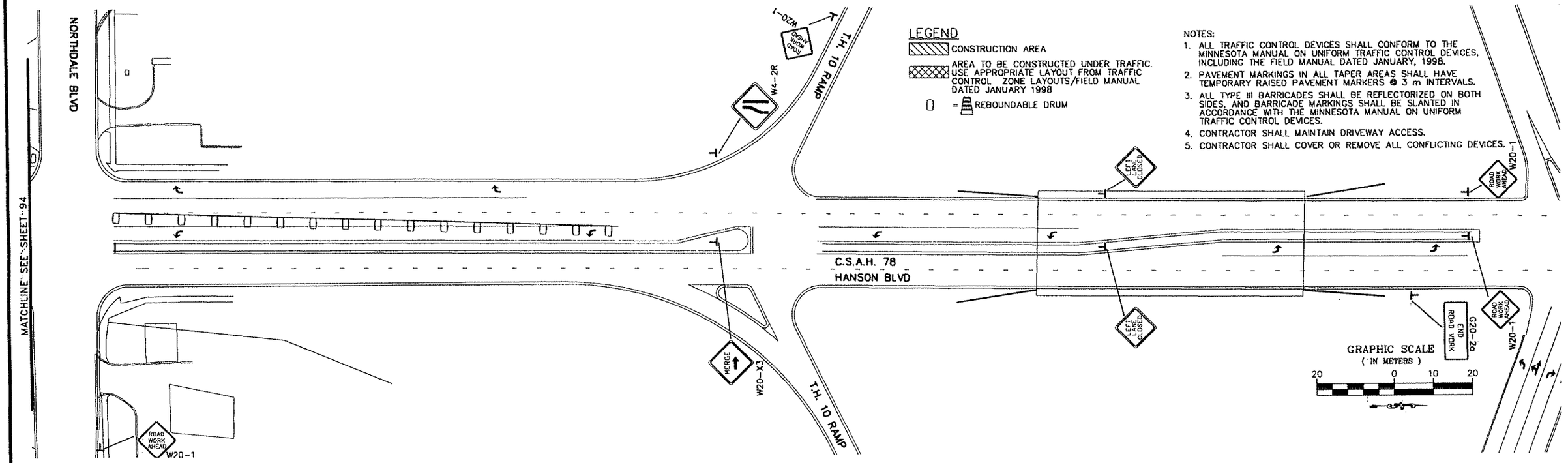
TRAFFIC CONTROL
STAGE 1
C.S.A.H. 78 (HANSON BLVD.)

Sheet 94 of 103 Sheets



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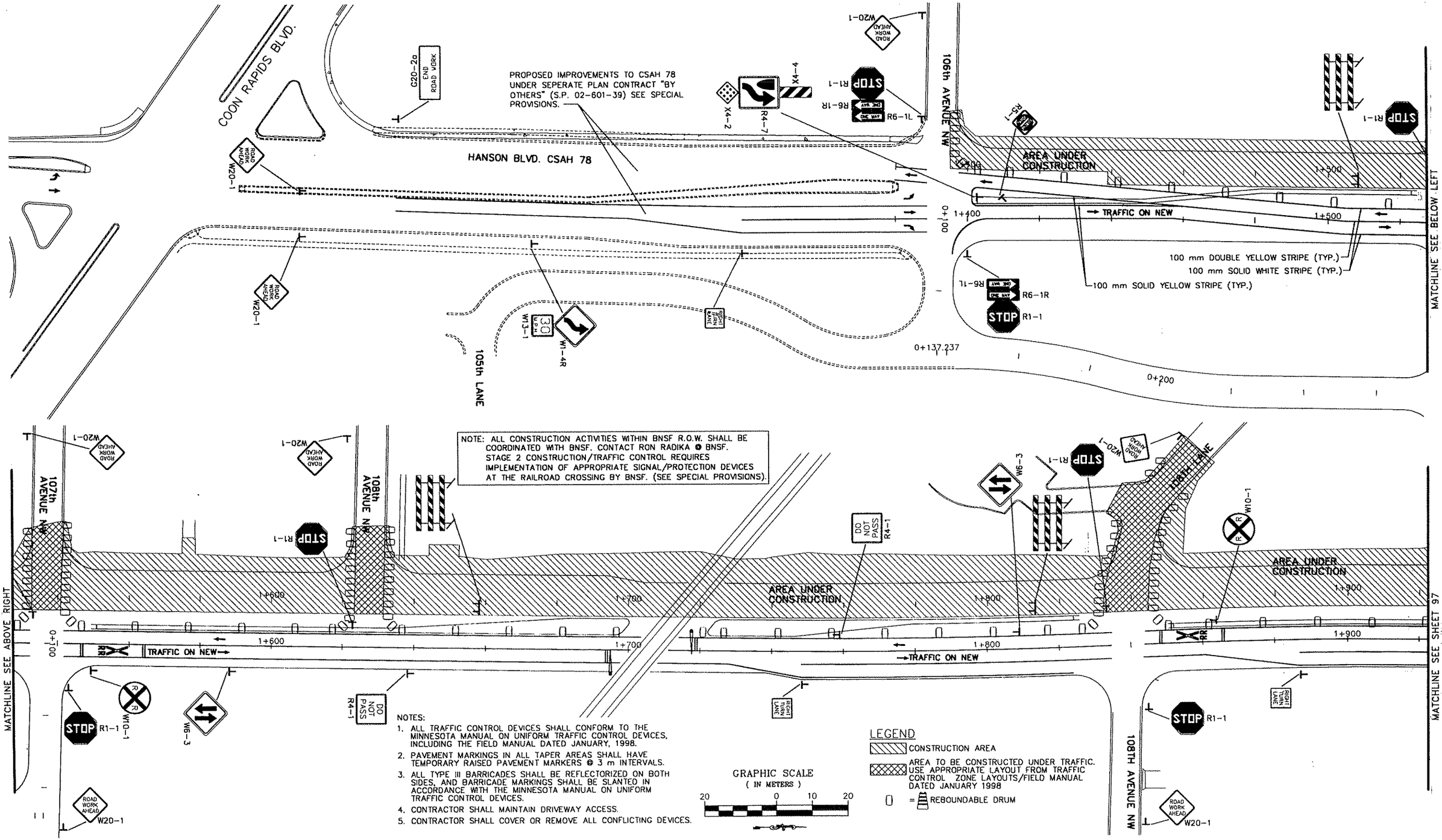
TRAFFIC CONTROL
STAGE 1
C.S.A.H. 78 (HANSON BLVD.)

Sheet 95 of 103 Sheets



NOTE: ALL CONSTRUCTION ACTIVITIES WITHIN BNSF R.O.W. SHALL BE COORDINATED WITH BNSF. CONTACT RON RADIKA @ BNSF. STAGE 2 CONSTRUCTION/TRAFFIC CONTROL REQUIRES IMPLEMENTATION OF APPROPRIATE SIGNAL/PROTECTION DEVICES AT THE RAILROAD CROSSING BY BNSF. (SEE SPECIAL PROVISIONS).

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GRAPHIC SCALE
(IN METERS)
20 0 10 20

LEGEND
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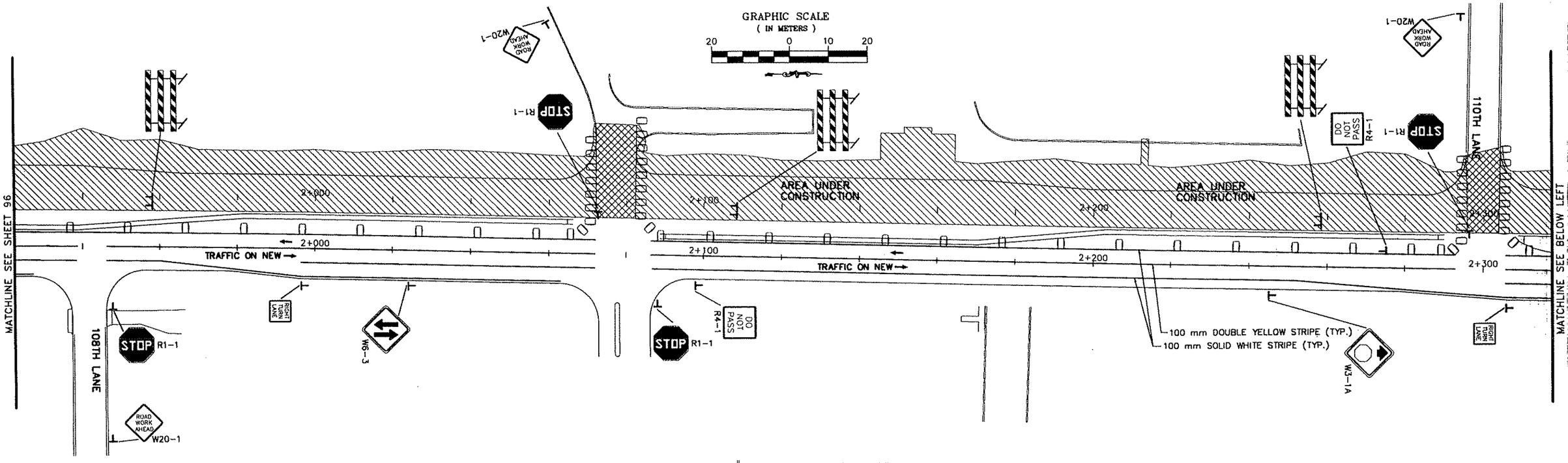
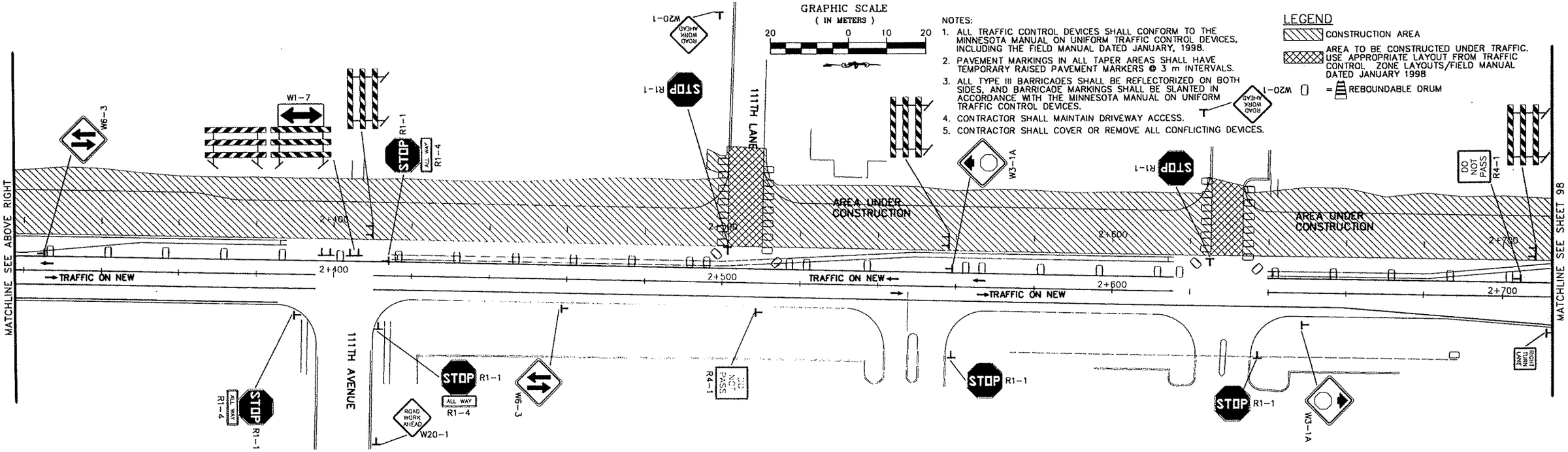
TRAFFIC CONTROL
STAGE 2
C.S.A.H. 78 (HANSON BLVD.)
Sheet 96 of 103 Sheets





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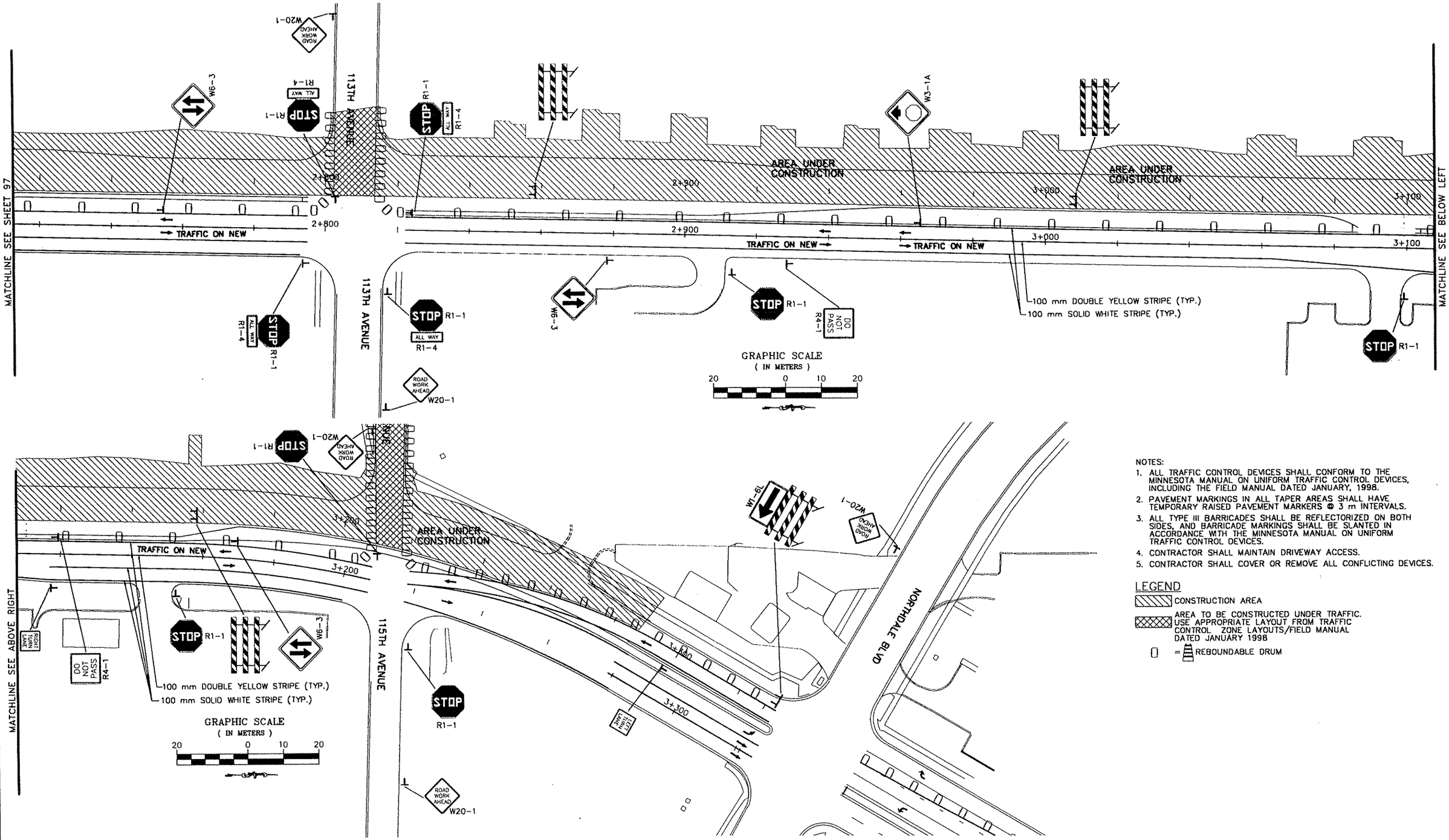
TRAFFIC CONTROL
STAGE 2
C.S.A.H. 78 (HANSON BLVD.)
Sheet 97 of 103 Sheets



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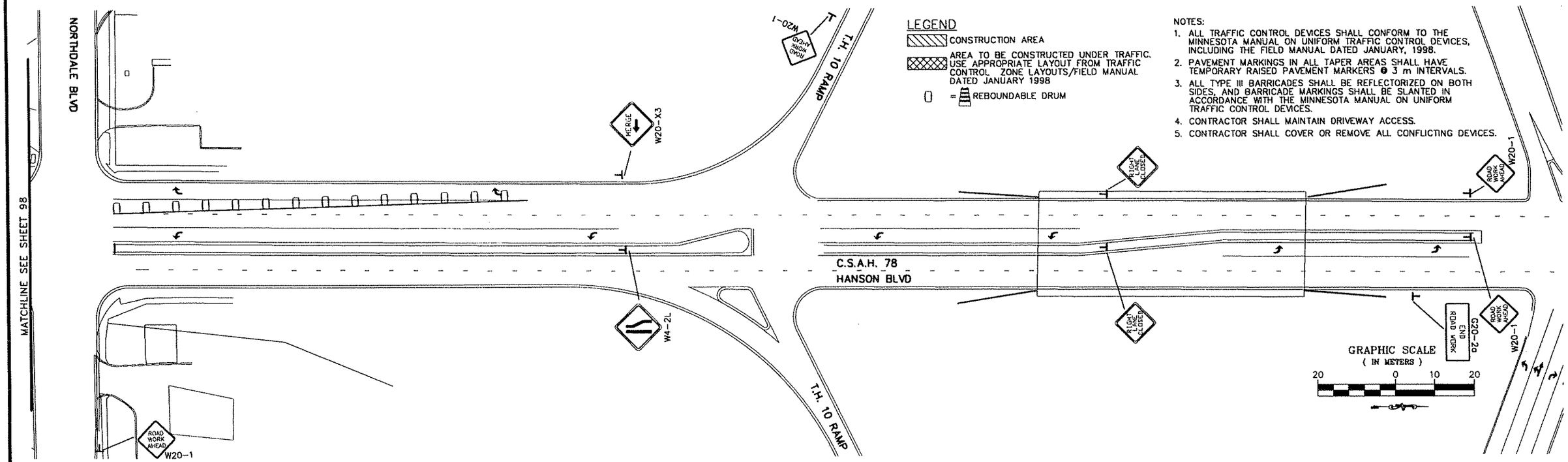
TRAFFIC CONTROL
STAGE 2
C.S.A.H. 78 (HANSON BLVD.)

Sheet 98 of 103 Sheets



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TRAFFIC CONTROL
STAGE 2
C.S.A.H. 78 (HANSON BLVD.)

Sheet 99 of 103 Sheets

COON RAPIDS BLVD.

G20-2a END ROAD WORK

PROPOSED IMPROVEMENTS TO CSAH 78 UNDER SEPERATE PLAN CONTRACT "BY OTHERS" (S.P. 02-601-39) SEE SPECIAL PROVISIONS.

W20-1 ROAD WORK AHEAD

R1-1 STOP

HANSON BLVD. CSAH 78

106th AVENUE NW

1+400 ←TRAFFIC ON NEW 1+500

0+100

1+400 →TRAFFIC ON NEW 1+500

100 mm SOLID WHITE STRIPE (TYP.)

100 mm SOLID YELLOW STRIPE (TYP.)

MATCHLINE SEE BELOW LEFT

W20-1 ROAD WORK AHEAD

W13-1 30 m.p.h.

W1-4R

RIGHT TURN LANE

R4-7

X4-2

105th LANE

0+137.237

0+200

107th AVENUE NW

108th AVENUE NW

NOTE: ALL CONSTRUCTION ACTIVITIES WITHIN BNSF R.O.W. SHALL BE COORDINATED WITH BNSF. CONTACT RON RADIKA @ BNSF. STAGE 3 CONSTRUCTION/TRAFFIC CONTROL REQUIRES IMPLEMENTATION OF APPROPRIATE SIGNAL/PROTECTION DEVICES AT THE RAILROAD CROSSING BY BNSF. (SEE SPECIAL PROVISIONS).

108TH LANE

W10-1

MATCHLINE SEE ABOVE RIGHT

TRAFFIC ON NEW ← 1+600 1+700

0+100

1+600 TRAFFIC ON NEW →

1+700 AREA UNDER CONSTRUCTION

←TRAFFIC ON NEW 1+800 1+900

1+800 →TRAFFIC ON NEW

AREA UNDER CONSTRUCTION 1+900

MATCHLINE SEE SHEET 101

NOTES:

1. ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, INCLUDING THE FIELD MANUAL DATED JANUARY, 1998.
2. PAVEMENT MARKINGS IN ALL TAPER AREAS SHALL HAVE TEMPORARY RAISED PAVEMENT MARKERS @ 3 m INTERVALS.
3. ALL TYPE III BARRICADES SHALL BE REFLECTORIZED ON BOTH SIDES, AND BARRICADE MARKINGS SHALL BE SLANTED IN ACCORDANCE WITH THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
4. CONTRACTOR SHALL MAINTAIN DRIVEWAY ACCESS.
5. CONTRACTOR SHALL COVER OR REMOVE ALL CONFLICTING DEVICES.

GRAPHIC SCALE
(IN METERS)
20 0 10 20

LEGEND
- CONSTRUCTION AREA
- AREA TO BE CONSTRUCTED UNDER TRAFFIC. USE APPROPRIATE LAYOUT FROM TRAFFIC CONTROL ZONE LAYOUTS/FIELD MANUAL DATED JANUARY 1998
- [] = REBOUNDABLE DRUM

NO	DATE	BY	CKD	APPR	REVISION

PARSONS
Barton-Aschman Associates, Inc.
A Unit of Parsons Transportation Group Inc.

minnesota metric

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
James C Knutson
DATE 2-16-00 REG. NO. 10169

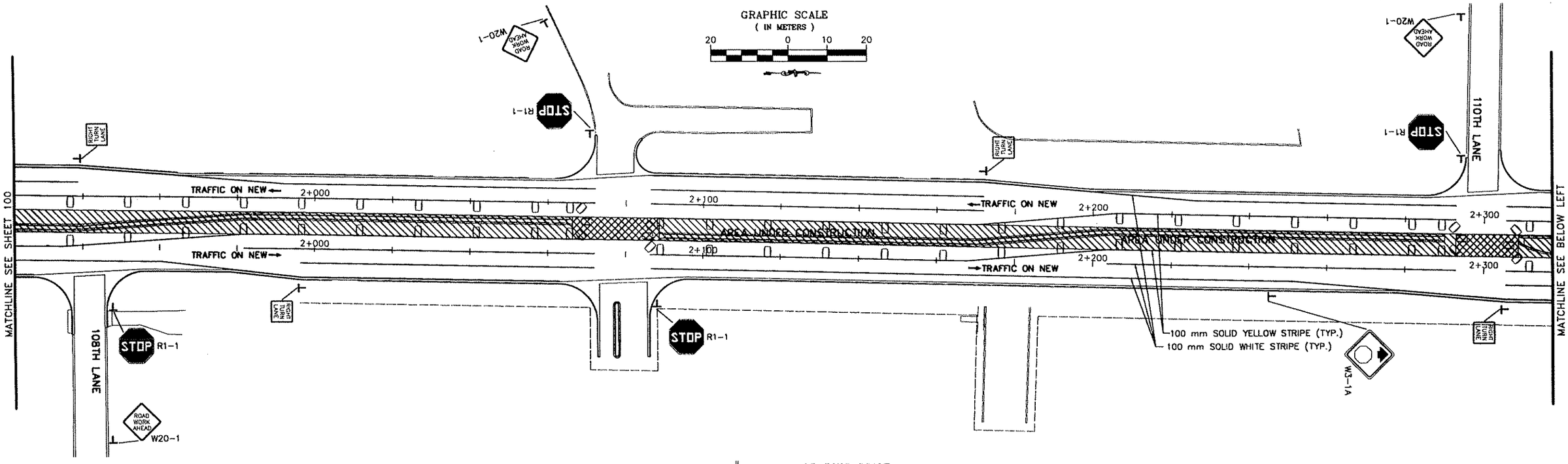
DRAWN BY SAP DATE
DESIGN BY JCK DATE
CHECKED BY GPO DATE

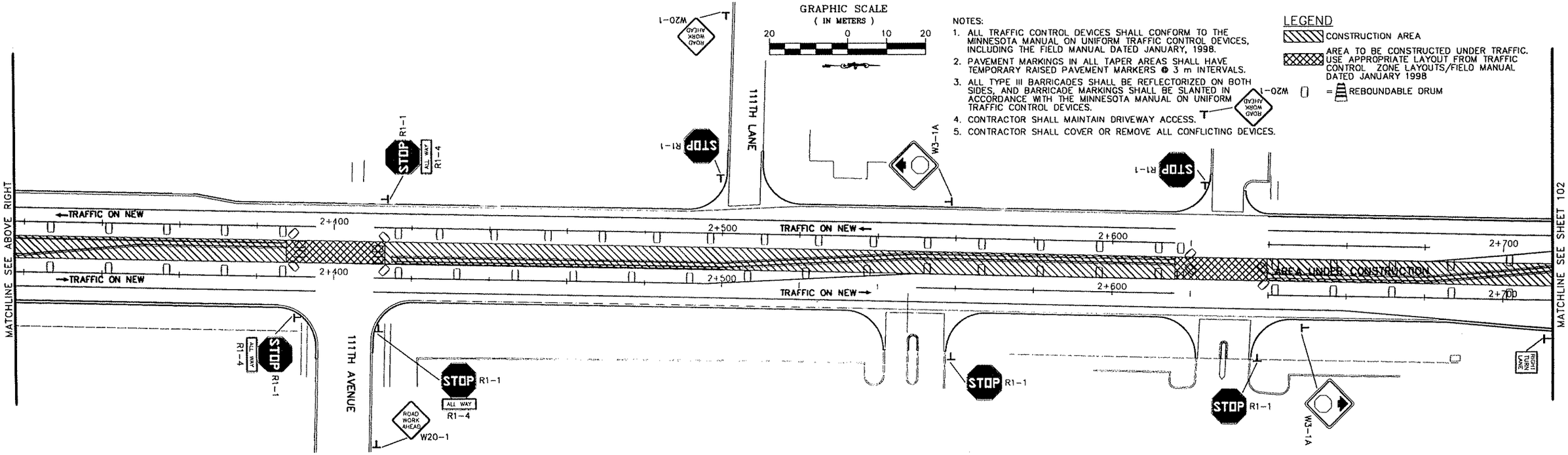
STATE PROJECT NO. 02-678-11
STATE PROJECT NO. 114-020-22
STATE PROJECT NO.

ANOKA COUNTY
HIGHWAY DEPT.

TRAFFIC CONTROL
STAGE 3
C.S.A.H. 78 (HANSON BLVD.)

Sheet 100 of 103 Sheets





NO	DATE	BY	CKD	APPR	REVISION

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James C Knutson
DATE 1-21-00 REG. NO. 10169

DRAWN BY SAP DATE
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STATE PROJECT NO. 02-678-11
STATE PROJECT NO. 114-020-22
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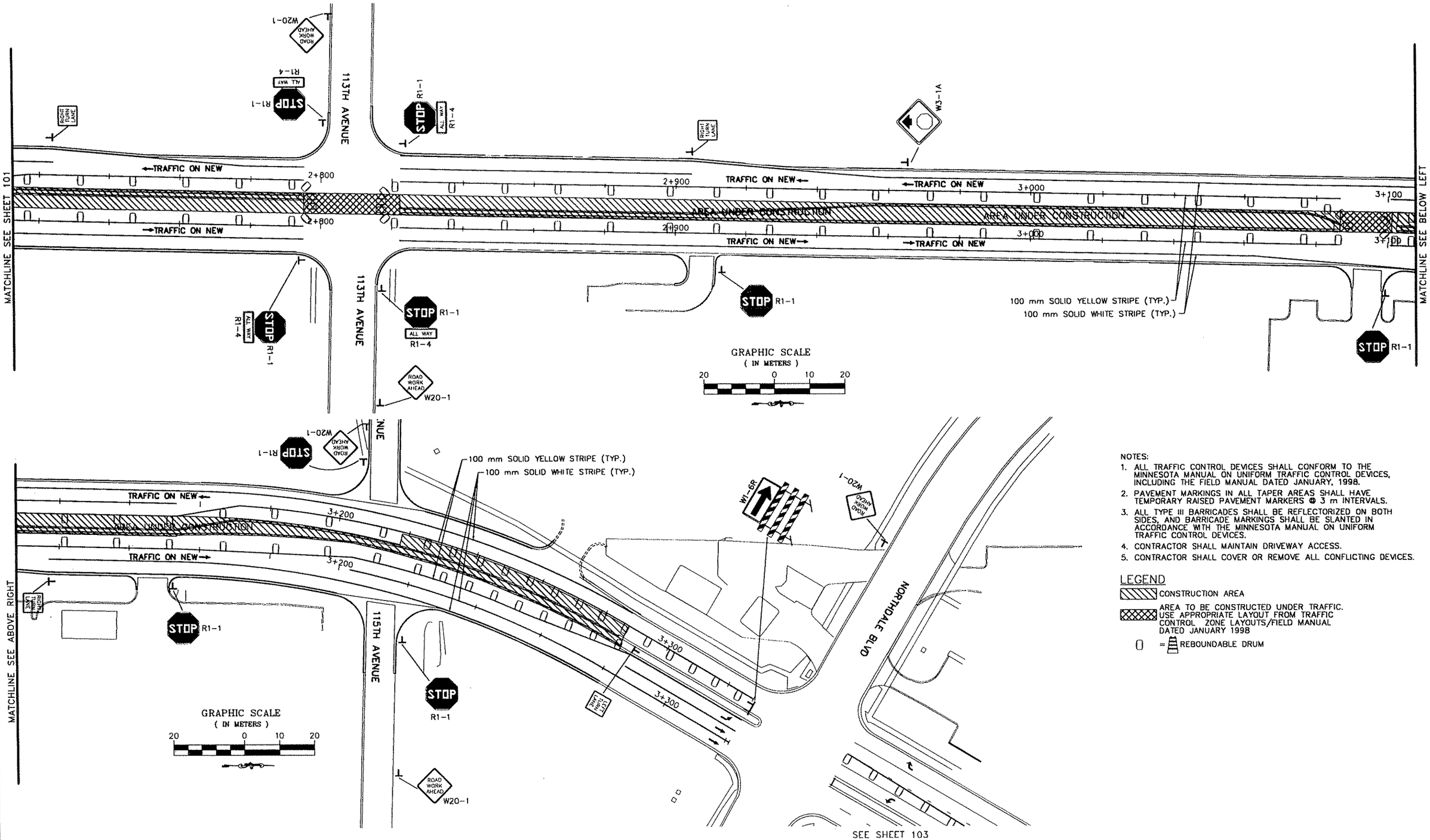
ANOKA COUNTY
HIGHWAY DEPT.

TRAFFIC CONTROL
STAGE 3
C.S.A.H. 78 (HANSON BLVD.)
Sheet 101 of 103 Sheets



NOTES:

1. ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, INCLUDING THE FIELD MANUAL DATED JANUARY, 1998.
2. PAVEMENT MARKINGS IN ALL TAPER AREAS SHALL HAVE TEMPORARY RAISED PAVEMENT MARKERS @ 3 m INTERVALS.
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4. CONTRACTOR SHALL MAINTAIN DRIVEWAY ACCESS.
5. CONTRACTOR SHALL COVER OR REMOVE ALL CONFLICTING DEVICES.

LEGEND

CONSTRUCTION AREA

AREA TO BE CONSTRUCTED UNDER TRAFFIC. USE APPROPRIATE LAYOUT FROM TRAFFIC CONTROL ZONE LAYOUTS/FIELD MANUAL DATED JANUARY 1998

() = REBOUNDABLE DRUM

NO	DATE	BY	CKD	APPR	REVISION

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James C Kyntesor

DATE 1-21-00 REG. NO. 10169

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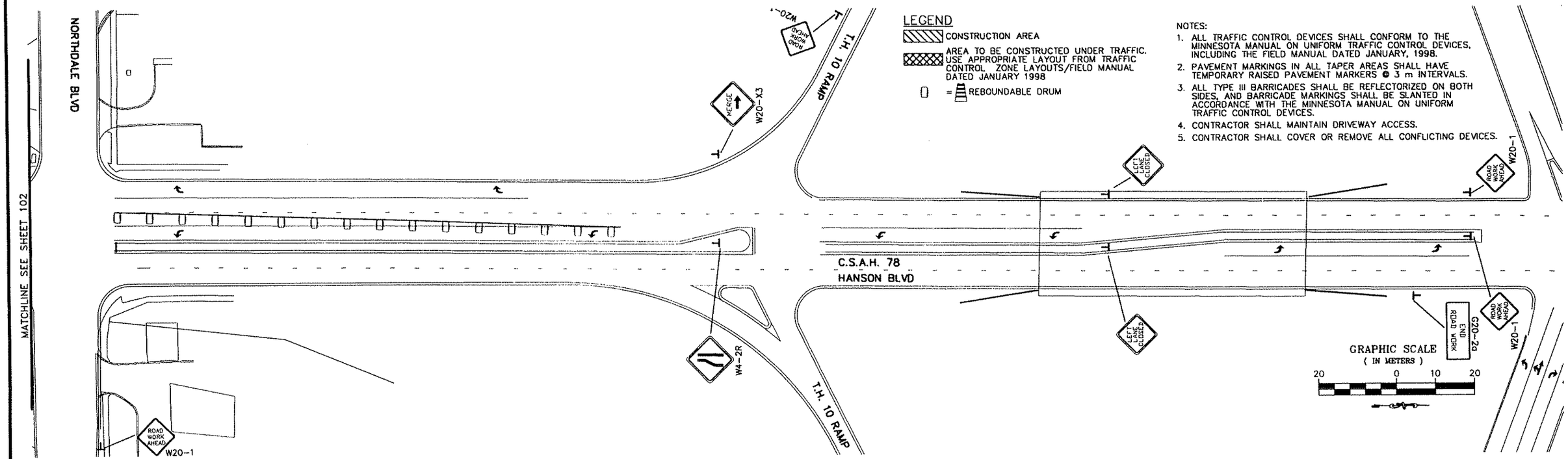
STATE PROJECT NO.

ANOKA COUNTY
HIGHWAY DEPT.

TRAFFIC CONTROL
STAGE 3
C.S.A.H. 78 (HANSON BLVD.)

Sheet 102 of 103 Sheets



NO	DATE	BY	CKD	APPR	REVISION

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STATE PROJECT NO. 02-678-11
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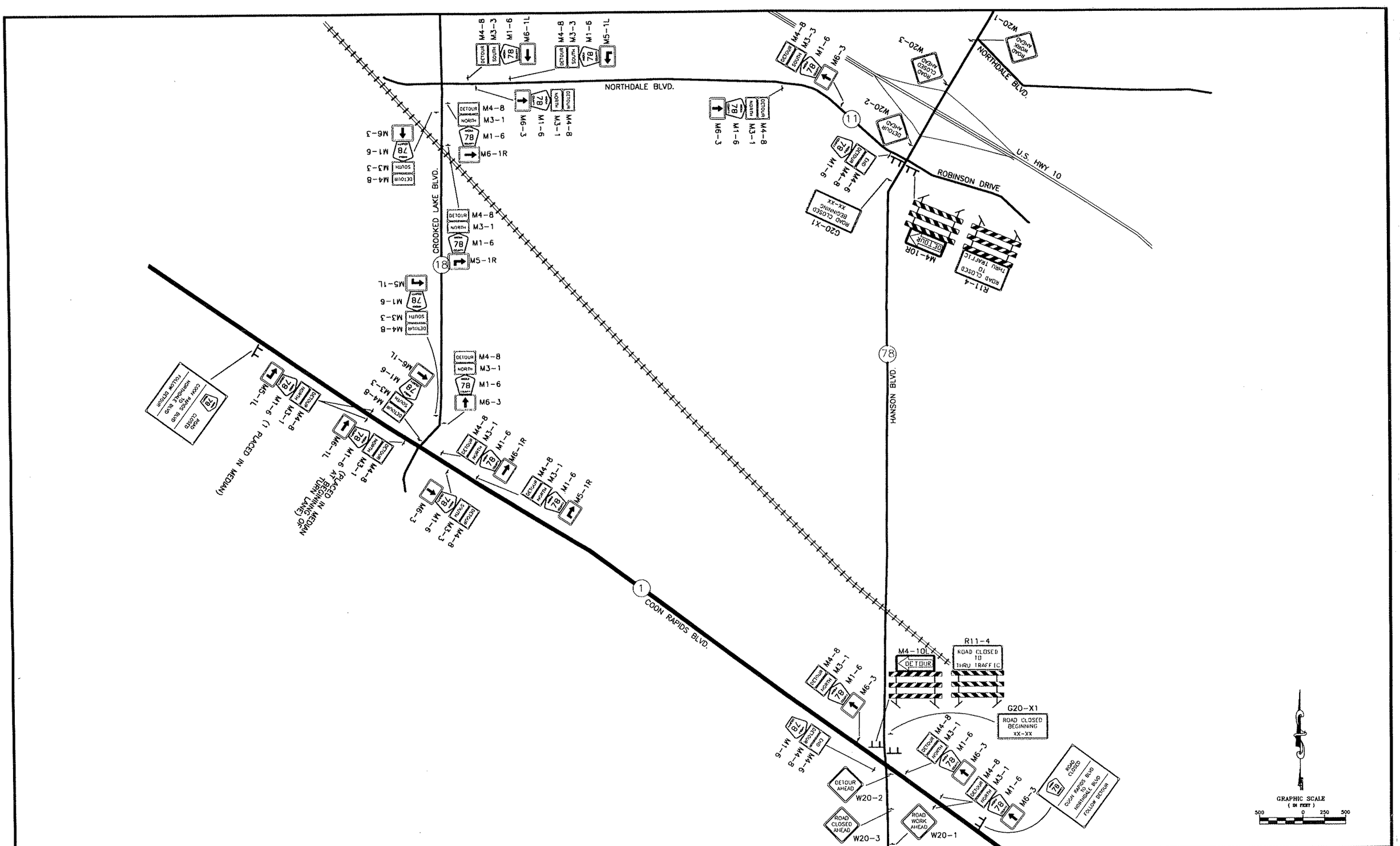
ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

TRAFFIC CONTROL
STAGE 3
C.S.A.H. 78 (HANSON BLVD.)

Sheet 103 of 103 Sheets



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James C. Knutson

DATE 1-21-00 REG. NO. 10169

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STATE PROJECT NO. 02-678-11
STATE PROJECT NO. 114-020-22
STATE PROJECT NO.

ANOKA COUNTY
HIGHWAY DEPT.

DETOUR PLAN

Sheet 103a of 103 Sheets

M.U.T.C.D. CODE	PANEL SIZE INCHES	PANEL SIZE mm	PANEL AREA SQ. FT.	PANEL AREA m^2	QUANTITY GROUND POST MOUNT INSTALLATIONS	QUANTITY ISLAND MOUNT INSTALLATIONS	SIGN PANEL	# POSTS/INSTALLATION	MOUNTING HEIGHT FT.	MOUNTING HEIGHT m	TOTAL PANEL AREA m^2
M4-8	24" X 12"	610 X 305	2.00	0.186			DETOUR SOUTH				1.302
M3-3	24" X 12"	610 X 305	2.00	0.186							1.302
M1-6	24" X 24"	610 X 610	4.00	0.372			78	1	7.0	2.1 m	2.604
M6-3	21" X 15"	534 X 381	2.19	0.203	3	0					0.609
M5-1L	21" X 15"	534 X 381	2.19	0.203	2	0					0.406
M6-1L	21" X 15"	534 X 381	2.19	0.203	2	0					0.406
M4-8	24" X 12"	610 X 305	2.00	0.186			DETOUR NORTH				2.604
M3-1	24" X 12"	610 X 305	2.00	0.186							2.604
M1-6	24" X 24"	610 X 610	4.00	0.372			78	1	7.0	2.1 m	5.208
M6-3	21" X 15"	534 X 381	2.19	0.203	6	1					1.421
M5-1R	21" X 15"	534 X 381	2.19	0.203	2	0					0.406
M6-1R	21" X 15"	534 X 381	2.19	0.203	2	0					0.406
M5-1L	21" X 15"	534 X 381	2.19	0.203	1	1					0.406
M6-1L	21" X 15"	534 X 381	2.19	0.203	0	1					0.203
M4-6	24" X 12"	610 X 305	2.00	0.186			END DETOUR				0.372
M4-8	24" X 12"	610 X 305	2.00	0.186							0.372
M1-6	24" X 24"	610 X 610	4.00	0.372	2	0	78	1	7.0	2.1 m	0.744
G20-X2	96" X 84"	2440 X 2130	56.00	5.200	2	0	78 ROAD CLOSED COON RAPIDS BLVD TO NORTHDALE BLVD FOLLOW DETOUR	2	7.0	2.1 m	10.400
G20-X1	48" X 60"	1220 X 1525	20.00	1.860	2	0	ROAD CLOSED BEGINNING XX XX	2	7.0	2.1 m	3.720
M4-10L	48" X 18"	1220 X 455	6.00	0.555	1	0	DETOUR	0	7.0	2.1 m	0.555
TYPE III	8 FOOT	2440									
M4-10R	48" X 18"	1220 X 455	6.00	0.555	1	0	DETOUR	0	7.0	2.1 m	0.555
TYPE III	8 FOOT	2440									
										SUBTOTAL	36.605

M.U.T.C.D. CODE	PANEL SIZE INCHES	PANEL SIZE mm	PANEL AREA SQ. FT.	PANEL AREA m^2	QUANTITY GROUND POST MOUNT INSTALLATIONS	QUANTITY ISLAND MOUNT INSTALLATIONS	SIGN PANEL	# POSTS/INSTALLATION	MOUNTING HEIGHT FT.	MOUNTING HEIGHT m	TOTAL PANEL AREA m^2
R11-4	60" X 30"	1525 X 762	12.50	1.162	2	0	ROAD CLOSED TO THRU TRAFFIC	0	7.0	2.1 m	2.324
TYPE III	8 FOOT	2440			2	0					
W20-1	48" X 48"	1220 X 1220	16.00	1.488	2	0	ROAD WORK AHEAD W20-1	2	7.0	2.1 m	2.976
W20-2	48" X 48"	1220 X 1220	16.00	1.488	2	0	DETOUR AHEAD W20-2	2	7.0	2.1 m	2.976
W20-3	48" X 48"	1220 X 1220	16.00	1.488	2	0	ROAD CLOSED AHEAD W20-3	2	7.0	2.1 m	2.976
										SUBTOTAL	11.252
										TOTAL	47.857

(1) ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE MOST RECENT EDITION OF THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, INCLUDING THE FIELD MANUAL DATED JANUARY, 1998.

(2) ALL TYPE III BARRICADES SHALL BE REFLECTORIZED ON BOTH SIDES. BARRICADE MARKINGS SHALL BE SLANTED IN ACCORDANCE WITH THE M.U.T.C.D.

NO	DATE	BY	CKD	APPR	REVISION

PARSONS
Barton-Aschman Associates, Inc.
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minnesota metric

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James C Knutson
DATE 1-21-00 REG. NO. 10160

DRAWN BY SAP DATE
DESIGN BY JCK DATE
CHECKED BY GPO DATE

STATE PROJECT NO. 02-678-11
STATE PROJECT NO. 114-020-22
STATE PROJECT NO.

ANOKA COUNTY
HIGHWAY DEPT.

DETOUR SIGNING TABULATION

Sheet 103b of 103 Sheets