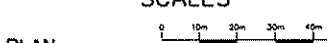
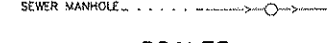
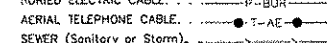
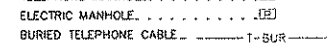
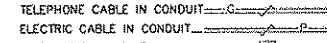
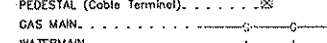
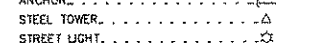
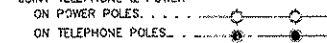
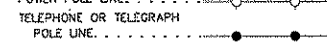
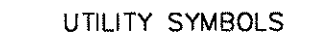
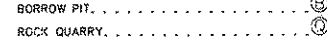
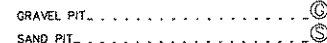
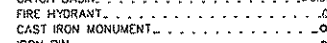
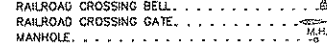
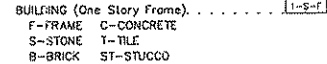
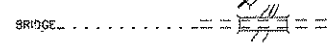
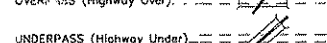
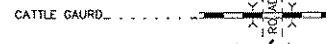
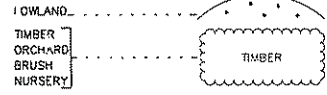


PLAN SYMBOLS

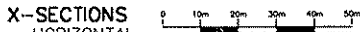
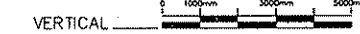
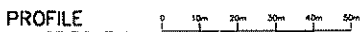
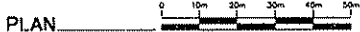
- COUNTY LINE
- TOWNSHIP OR RANGE LINE
- SECTION LINE
- QUARTER LINE
- SIXTEENTH LINE
- RIGHT OF WAY LINE
- SLOPE EASEMENT
- PRESENT RIGHT OF WAY
- PROPERTY LINE
- CORPORATE OR CITY LIMITS
- RETAINING WALL
- RAILROAD
- RAILROAD RIGHT OF WAY
- RIVER OR CREEK
- DRAINAGE DITCH
- FULVERT
- DROP INLET
- CAUSEWAY RAIL
- BARBED WIRE FENCE
- WOVEN WIRE FENCE
- CHAIN LINK FENCE
- WOOD FENCE
- STONE WALL OR FENCE
- HEDGE



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
- WATER MAIN
- TELEPHONE CABLE IN CONDUIT
- ELECTRIC CABLE IN CONDUIT
- TELEPHONE MANHOLE
- ELECTRIC MANHOLE
- BURIED TELEPHONE CABLE
- BURIED ELECTRIC CABLE
- AERIAL TELEPHONE CABLE
- SEWER (Sanitary or Storm)
- SEWER MANHOLE

SCALES



MINNESOTA DEPARTMENT OF TRANSPORTATION

ANOKA COUNTY

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

LOCATED ON CSAH 35 BETWEEN 300 m NO. OF T.H. 65 AND 81ST AVE. IN THE CITIES OF FRIDLEY AND SPRING LAKE PARK (Geographic Description)

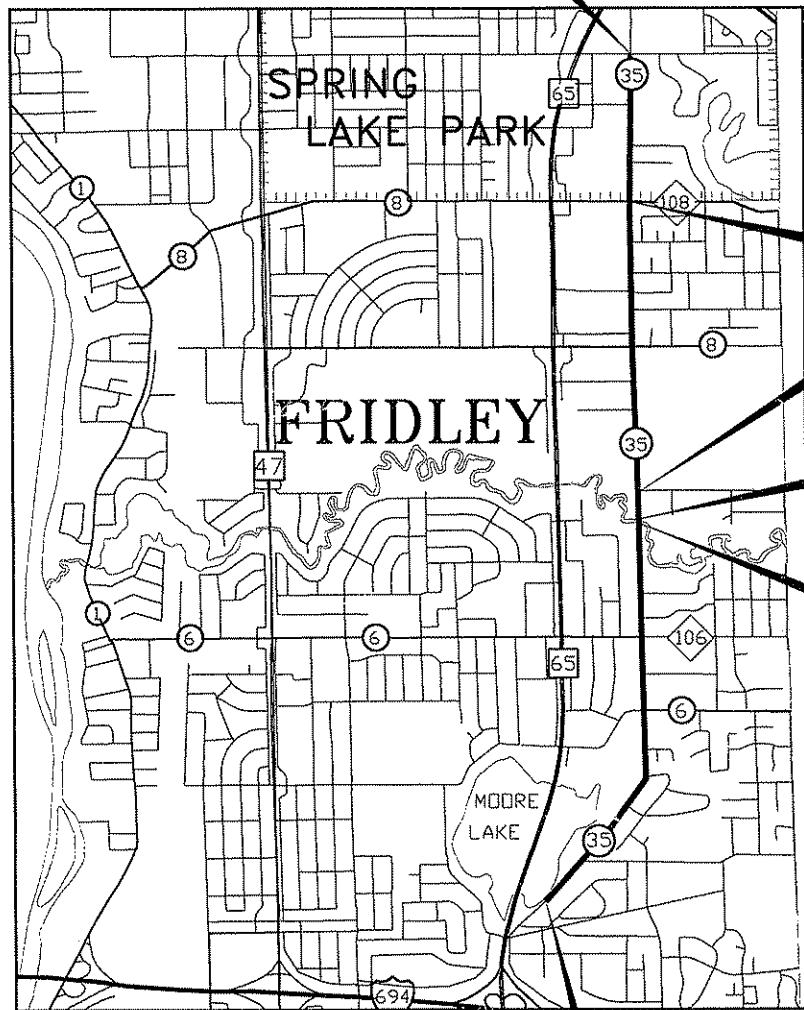
STATE PROJ. NO. 02-635-08
C.S.A.H. 35

STATE PROJ. NO. 02-635-10
C.S.A.H. 35

GROSS LENGTH 2581.42 METERS 2.581 KILOMETERS
BRIDGES-LENGTH 0.00 METERS 0.000 KILOMETERS
EXCEPTIONS-LENGTH 0.00 METERS 0.000 KILOMETERS
NET LENGTH 2581.42 METERS 2.581 KILOMETERS

GROSS LENGTH 2225.00 METERS 2.225 KILOMETERS
BRIDGES-LENGTH 0.00 METERS 0.000 KILOMETERS
EXCEPTIONS-LENGTH 0.00 METERS 0.000 KILOMETERS
NET LENGTH 2225.00 METERS 2.225 KILOMETERS

END S.A.P. 02-635-08
END M.S.A.P. 183-020-05
STA. 4+662.353



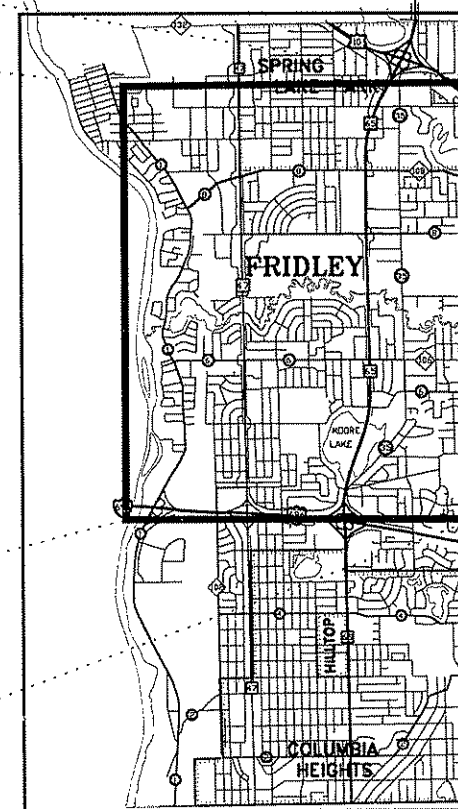
BEGIN M.S.A.P. 183-020-05
END M.S.A.P. 127-020-21
STA. 3+853.479

REVISED SIGNAL SYSTEM

BEGIN S.A.P. 02-635-08
BEGIN M.S.A.P. 127-020-21
STA. 2+081.07

END S.A.P. 02-635-10
STA. 12+540.00

BEGIN S.A.P. 02-635-10
STA. 10+315.00



MINN. PROJ. NO. _____
MINN. PROJ. NO. _____

GOVERNING SPECIFICATIONS

THE 1995 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" SHALL GOVERN. ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE MMUTCD, INCLUDING "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS - JANUARY 1998."

INDEX

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2 - 2B	STATEMENT OF ESTIMATED QUANTITIES
3 - 6	TABULATION CHARTS
7	EARTHWORK & BITUMINOUS SUMMARY
8 - 9	EROSION CONTROL DETAILS
10 - 11	CONSTRUCTION DETAILS
12	TYPICAL SECTIONS
13 - 16	EXISTING CONDITIONS AND REMOVAL PLAN
17 - 23	PLAN AND PROFILE
24 - 29	STORM TABULATIONS & LEADS
30 - 35	TRAFFIC CONTROL SIGNAL PLANS
36 - 58	CROSS-SECTIONS
59 - 62	TRAFFIC CONTROL PLANS
63 - 64	DETOUR PLAN

THIS PLAN CONTAINS 66 SHEETS

DESIGN DESIGNATION 02-635-08

ESAL ₂₀	895,887
R VALUE	50
ADT (1998)	4,781
Proj. ADT (2018)	7,650
Proj. HCADT (2018)	574
Soil Factor	NA
9.1 METRIC TON DESIGN	

DESIGN DESIGNATION 02-635-10
PREVIOUSLY GRADED UNDER SAP 02-635-01 AND 02-635-03

ESAL ₂₀	2,468,582
R VALUE	50
ADT (1998)	11,853
Proj. ADT (2018)	18,965
Proj. HCADT (2018)	1,422
Soil Factor	NA
9.1 METRIC TON DESIGN	

02-635-08/02-635-10

Functional Classification COLLECTOR-HIGH DENSITY

No. of Traffic Lanes 2 No. of Parking Lanes 0

Design Speed 65 Km/h

Based on Stopping Sight Distance

Height of eye 1,070mm Height of object 150mm

Design Speed not achieved at:

STA. _____ TO STA. _____ MPH _____

STA. _____ TO STA. _____ MPH _____

STA. _____ TO STA. _____ MPH _____

Approved 7/14/98 [Signature] ANOKA COUNTY ENGINEER

Approved 7/19/98 [Signature] CITY OF FRIDLEY

Approved 7/15/98 [Signature] CITY OF SPRING LAKE PARK

Recommended for Approval [Signature] 7/16/98 METRO-ASSISTANT DIVISION ENGINEER-STATE AID

Approved for State Aid Division [Signature] 7/16/98 APPROVED FOR STATE AID FUNDING, STATE AID ENGINEER

NO	DATE	BY	CKD	APPR	REVISION
1	7/13/98	HG			



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 7/14/98 REG. NO. 20235

DRAWN BY: HGC DATE 06/04/98
DESIGN BY: HFG DATE 06/04/98
CHECKED BY: DME DATE 06/04/98



ANOKA COUNTY
HIGHWAY DEPT.

STATE AID PROJECT NO. 02-635-08
STATE AID PROJECT NO. 02-635-10
STATE AID PROJECT NO. 127-020-21
STATE AID PROJECT NO. 183-020-05

TITLE SHEET
Sheet 1 of 66 Sheets

CHART NO.	NOTE NO.	ITEM NO.	ITEM	UNIT	TOTAL QUANTITY		ANOKA COUNTY				CITY OF FRIDLEY		CITY OF SPRING LAKE PARK		STORM SEWER (SEE NOTE 32)	
					EST	FINAL	SAP 02-635-08		SAP 02-635-10		MSAP 127-020-21		MSAP 183-020-05		EST	FINAL
		2013.601	CELLULAR MOBILE TELEPHONE	LUMP SUM	1											
		2015.601	COMPUTER EQUIPMENT	LUMP SUM	1											
		2021.501	MOBILIZATION	LUMP SUM	1											
		2031.501	FIELD OFFICE TYPE D	EACH	1											
A		2101.501	CLEARING	ho	0.50											
A		2101.502	CLEARING	TREE	54											
A		2101.506	GRUBBING	ho	0.50											
A		2101.507	GRUBBING	TREE	47											
	25	2102.502	PAVEMENT MARKING REMOVAL	m	360											
D	1	2104.501	REMOVE PIPE CULVERT	m	97											
B		2104.501	REMOVE CURB AND GUTTER	m	808											
J	1	2104.501	REMOVE FENCE	m	12											
V	1	2104.501	REMOVE SEWER PIPE (STORM)	m	290											
E		2104.503	REMOVE WOOD RETAINING WALL	m2	14											
C		2104.503	REMOVE BITUMINOUS PAVEMENT	m2	17,096											
G		2104.503	REMOVE CONCRETE PAVEMENT	m2	69											
G		2104.503	REMOVE REINFORCED CONCRETE PAVEMENT	m2	5,292											
V	2	2104.509	REMOVE PIPE BULKHEAD	EACH	3											
V	1	2104.509	REMOVE REINFORCED CONCRETE PIPE APRON	EACH	6											
V		2104.509	REMOVE DRAINAGE STRUCTURE	EACH	13											
F		2104.511	SAWING CONCRETE PAVEMENT	m	25											
K		2104.513	SAWING BITUMINOUS PAVEMENT	m	2,082											
J		2104.521	SALVAGE FENCE	m	136											
V		2104.523	SALVAGE CASTING	EACH	12											
		2104.523	SALVAGE SIGN TYPE C	EACH	51											
	3	2104.523	SALVAGE SIGN TYPE SPECIAL	EACH	13											
X		2105.501	COMMON EXCAVATION (P)	m3	17,881 (P)											
X		2105.522	SELECT GRANULAR BORROW (LV)	m3	1,866											
	4	2130.501	WATER	m3	150											
T		2211.503	AGGREGATE BASE (C.V.) CL-5A (P)	m3	4,948 (P)											
I		2232.501	MILL BITUMINOUS SURFACE 40 mm	m2	23,825											
O		2301.604	CONCRETE PAVEMENT (REINFORCED)	m2	291											
P, R		2350.604	TYPE MV 4 WEARING COURSE MIXTURE, 50 mm THICKNESS	m2	6,784											
	5	2350.604	TYPE MV 4 WEARING COURSE MIXTURE, MODIFIED	m2	22											
T		2350.609	TYPE MV 4 WEARING COURSE MIXTURE	t	6,723											
T	31	2350.609	TYPE MV 3 NON WEARING COURSE MIXTURE	t	2,549											
T	31	2350.609	TYPE LV 3 NON WEARING COURSE MIXTURE	t	4,166											
T		2357.502	BITUMINOUS MATERIAL FOR TACK COAT	L	23,728											
L		2411.604	PRECAST CONCRETE STONE RETAINING WALL	m2	379											

STATEMENT OF ESTIMATED QUANTITIES CONTINUED ON SHEET 2A

NOTES:

- INCLUDES ALL TYPES & SIZES
- INCLUDES ALL SIZES
- MUNICIPAL STREET SIGNS
- FOR DUST CONTROL AS DIRECTED BY THE ENGINEER
- FOR THE RESTORATION OF THE STORM SEWER TRENCH AT STA 2+240
- 1200 mm PIPE TO BE JACKED UNDER RAILROAD, PIPE SHALL BE JACKED BEFORE TSS REMOVAL STRUCTURE IS PLACED.
- ALL PIPE JOINTS SHALL BE TIED
- FOR RELOCATING THE INPLACE WATERMAIN AT STORM SEWER CROSSINGS
- MECHANICAL COPPER -TO-COPPER COUPLERS, INCLUDING BRASS NUTS
- 25 mm COPPER TUBING FOR STORM SEWER CROSSINGS AND CURB STOP RELOCATES
- FOR WATERMAIN PROTECTION AT STORM SEWER CROSSINGS, AS DIRECTED BY THE ENGINEER
- BID AMOUNT TO INCLUDE MODIFICATION OF MANHOLE AS SHOWN ON SHEET NO. 29
- MANHOLE CASTING FOR MANHOLE #438 SHALL BE LOCKABLE
- REPAIR PIPE JOINT ON INPLACE STORM SEWER AT APPROX STA 3+996 RT
- FOR THE PLUGGING OF THE TEMPORARY 450 mm PIPE BELOW THE 525 mm PIPE AT STRUCTURE #224
- TOTAL SUSPENDED SOLIDS REMOVAL STRUCTURE, STRUCTURES #400A & #422A (SEE SPECIAL PROVISIONS)
- STEEL CASING PIPE BENEATH ST PAUL WATERWORKS MAINS AT CR 108
- 100 mm CONCRETE APRONS IN THE CITY OF SPRING LAKE PARK
- 150 mm CONCRETE APRONS IN THE CITY OF SPRING LAKE PARK
- INCLUDED FOR CROSS-GUTTERS AT COMMERCIAL ENTRANCES
- NEW SAFETY MAILBOX SUPPORTS TO BE INSTALLED AT RESIDENTIAL MAILBOXES
- FOR STEEP EMBANKMENT STA 2+081 TO 2+158 LT
- END TREATMENT FOR THE TRAFFIC BARRIER, STA 2+158 LT
- CHAIN LINK FENCE FOR THE TOP OF THE RETAINING WALL
- FOR TRAFFIC CONTROL STAGE 2
- FOR FUTURE SIGNAL SYSTEM AT CR 108
- FOR EROSION CONTROL, AS DIRECTED BY THE ENGINEER
- SILT FENCE TO BE INSTALLED BEFORE GRADING BEGINS, STA 2+140 TO 2+182 LT 143m, STA 4+420 TO 4+655 RT 235m
- ANALYSIS 10-10-10 OR APPROVED EQUAL
- FOR PLACEMENT ON FINAL WEAR COURSE PRIOR TO STRIPING BY COUNTY

- INCLUDES QUANTITY FOR ADDITIONAL 5 mm TO DESIGN PAVEMENT THICKNESS
- STORM SEWER PARTICIPATION SHALL BE AS FOLLOWS:
02-635-08: 42%
127-020-21: 46%
183-020-05: 12%

BASIS OF PLANNED QUANTITIES

- 2350 TYPE MV 4 WEARING COURSE 2.35 kg/mm/m2 THICKNESS
- 2350 TYPE MV 3 NON WEARING COURSE 2.35 kg/mm/m2 THICKNESS
- 2350 TYPE LV 3 NON WEARING COURSE 2.35 kg/mm/m2 THICKNESS
- 2357 BITUMINOUS MATERIAL FOR TACK 0.23 L/m2 PER LIFT APPLIED
- 2575 MULCH MATERIAL TYPE 1, 4.5 t/ha
- 2575 COMMERCIAL FERTILIZER, ANALYSIS 10-10-10 (OR EQUIVALENT) 500 kg/ha ON ALL SEED AREAS
- 2575 ROADSIDE SEEDING BASED ON HORIZONTAL MEASUREMENT +10% SEED MIXTURE NO. 70A, 50 kg/ha

INDEX OF TABULATION CHARTS

CHART	SHEET #	DESCRIPTION
A	3	CLEAR & GRUB CHART
B	3	CURB & GUTTER REMOVAL
C	3	BITUMINOUS REMOVAL
D	3	REMOVE CULVERTS
E	3	REMOVE RETAINING WALL
F	3	CONCRETE SAW-CUT
G	3	CONCRETE REMOVAL
H	4	SANITARY MODIFICATIONS
I	4	BITUMINOUS MILLING
J	4	FENCE CONSTRUCTION
K	4	BITUMINOUS SAW-CUT
L	4	PRE-CAST RETAINING WALL
M	4	CONCRETE CURB & GUTTER
N	5	100 mm CONCRETE WALK
O	5	150 mm REINFORCED CONC PAVMT
P	5	BITUMINOUS WALK
Q	5	CONCRETE PEDESTRIAN RAMPS
R	5	DRIVEWAY REMOVAL & CONST
S	6	WATERMAIN UTILITIES
T	7	BITUMINOUS SUMMARY
U	24-25	DRAINAGE TABULATION
V	28	EXISTING DRAINAGE TABULATION
W	25	DRAINAGE CASTING SCHEDULE
X	7	EARTHWORK SUMMARY
Y	5	TURF ESTABLISHMENT

STANDARD PLATES	
THESE STANDARD PLATES AS APPROVED BY THE FHWA SHALL APPLY	
PLATE NO.	DESCRIPTION
M3000L	REINFORCED CONCRETE PIPE
M3006G	GASKET JOINT FOR R.C. PIPE
M3022B	PRECAST CONCRETE END SECTIONS
M3100G	CONCRETE APRON FOR REINFORCED CONCRETE PIPE
M3133C	RIPRAP AT RCP OUTLETS
M3145E	CONCRETE PIPE TIES
M4003L	MANHOLE OR CATCH BASIN (DESIGN F)
M4006L	MANHOLE OR CATCH BASIN (DESIGN G AND DESIGN H)
M4007C	PRECAST MECHANICAL JOINT SEWER MANHOLE
M4010H	CONCRETE SHORT CONE & ADJUSTING RING (SECTIONAL CONCRETE)
M4020G	MANHOLE OR CATCH BASIN COVER
M4024A	120 mm DIA PRECAST SHALLOW DEPTH CATCH BASIN
M4101D	RING CASTING FOR MANHOLE OR CATCH BASIN
M4110F	COVER CASTING FOR MANHOLE
M4126F	CATCH BASIN FRAME CASTING
M4161F	CURB BOX FOR CATCH BASIN
M4180J	MANHOLE OR CATCH BASIN STEP
M7035J	CONCRETE WALK & CURB RETURNS AT ENTRANCES
M7036D	PEDESTRIAN CURB RAMPS (FOR THE HANDICAPPED)
M7100G	CONCRETE CURB & GUTTER (DES. B)
M7111J	INSTALLATION & REINFORCEMENT OF CATCH BASIN CASTINGS
M8000I	STANDARD BARRICADES
M8307P	STEEL PLATE BEAM GUARDRAIL
M8329F	ECCENTRIC LOADER BREAKAWAY CABLE TERMINAL (ELT)
M9102D	TURF ESTABLISHMENT AREAS (AT PIPE CULVERT ENDS)
M9322J	CHAIN LINK FENCE
SEE TRAFFIC SIGNAL PLAN SHEETS FOR ADDITIONAL STANDARD PLATES	

NO	DATE	BY	CKD	APPR	REVISION
2	7/13/98	HG			
1	6/23/98	HG			



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.

Douglas A. Finch
DATE 7/14/98 REG. NO. 20235

DRAWN BY: HDG DATE 06/04/98
DESIGN BY: HDG DATE 06/04/98
CHECKED BY: DJF DATE 06/04/98



ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO. _____
STATE AID PROJECT NO. 02-635-08
STATE AID PROJECT NO. 02-635-10
COUNTY PROJECT NO. _____

STATEMENT OF ESTIMATED QUANTITIES

CHART NO.	NOTE NO.	ITEM NO.	ITEM	UNIT	TOTAL QUANTITY		ANOKA COUNTY				CITY OF FRIDLEY		CITY OF SPRING LAKE PARK		STORM (SEE NOTE 32)		
					EST	FINAL	SAP 02-635-08		SAP 02-635-10		MSAP 127-020-21		MSAP 183-020-05		EST	FINAL	
							EST	FINAL	EST	FINAL	EST	FINAL	EST	FINAL			
U		2501.515	300 mm RC PIPE APRON	EACH	2												2
U		2501.515	375 mm RC PIPE APRON	EACH	1												1
U		2501.515	1500 mm R C PIPE APRON	EACH	1												1
U		2501.602	TRASH GUARD FOR 300 mm R C PIPE APRON	EACH	2												2
U		2501.602	TRASH GUARD FOR 1500 mm R C PIPE APRON	EACH	1												1
U		2503.541	300 mm RC PIPE SEWER, DESIGN 3006, CL IV	m	504												504
U		2503.541	375 mm RC PIPE SEWER, DESIGN 3006, CL III	m	200												200
U		2503.541	450 mm RC PIPE SEWER, DESIGN 3006, CL III	m	24												24
U		2503.541	525 mm RC PIPE SEWER, DESIGN 3006, CL III	m	148												148
U		2503.541	600 mm RC PIPE SEWER, DESIGN 3006, CL III	m	73												73
U		2503.541	675 mm RC PIPE SEWER, DESIGN 3006, CL II	m	251												251
U		2503.541	675 mm RC PIPE SEWER, DESIGN 3006, CL III	m	210												210
U		2503.541	675 mm RC PIPE SEWER, DESIGN 3006, CL IV	m	113												113
U		2503.541	1050 mm RC PIPE SEWER, DESIGN 3006, CL III	m	394												394
U		2503.541	1200 mm RC PIPE SEWER, DESIGN 3006, CL II	m	1,240												1240
U	6	2503.541	1200 mm RC PIPE SEWER, DESIGN 3006, CL IV - JACKED	m	37												37
U	7	2503.541	1500 mm RC PIPE SEWER, DESIGN 3006, CL IV	m	41												41
		2503.603	PLUG & ABANDON PIPE SEWER	m	218												218
S		2504.602	ADJUST GATE VALVE	EACH	44						24		20				
S		2504.602	ADJUST HYDRANT	EACH	3								3				
S		2504.602	ADJUST CURB STOP & BOX	EACH	7						4		3				
S		2504.602	RELOCATE HYDRANT & VALVE	EACH	8						7		1				
S		2504.602	RELOCATE CURB STOP & BOX	EACH	5								5				
S		2504.602	RELOCATE GATE VALVE	EACH	10						9		1				
S		2504.602	CURB STOP & BOX	EACH	2						2						
S	9	2504.602	25 MM TYPE K COPPER PIPE SPLICE	EACH	12						6		6				
S	8	2504.603	100 MM WATERMAIN DUCTILE IRON CL 52	m	5								5				
S	8	2504.603	150 MM WATERMAIN DUCTILE IRON CL 52	m	71						71						
S	8	2504.603	200 MM WATERMAIN DUCTILE IRON CL 52	m	6						6						
S	8	2504.603	300 MM WATERMAIN DUCTILE IRON CL 52	m	6						6						
S	10	2504.603	25 MM TYPE K COPPER PIPE	m	49						29		20				
S	11	2504.604	50 mm POLYSTYRENE INSULATION	m2	49												
S	8	2504.608	DUCTILE IRON FITTINGS	kg	1,651						1,651						
U		2506.501	CONSTRUCT DRAINAGE STRUCTURE DESIGN H	m	2.3												2.3
U		2506.501	CONSTRUCT DRAINAGE STRUCTURE DESIGN F	m	20.0												20.0
U		2506.501	CONSTRUCT DRAINAGE STRUCTURE DESIGN G	m	37.2												37.2
U		2506.501	CONSTRUCT DRAINAGE STRUCTURE DESIGN SD	m	2.8												2.8
U		2506.501	CONSTRUCT DRAINAGE STRUCTURE DESIGN SPEC DES 1	m	2.6												2.6
U		2506.501	CONSTRUCT DRAIN STRUCTURE DES 1200-4020	m	5.4												5.4
U		2506.501	CONSTRUCT DRAIN STRUCTURE DES 1350-4020	m	39.6												39.6
U		2506.501	CONSTRUCT DRAIN STRUCTURE DES 1800-4020	m	17.1												17.1
U		2506.501	CONSTRUCT DRAIN STRUCTURE DES 2100-4020	m	82.0												82.0
U		2506.501	CONSTRUCT DRAIN STRUCTURE DES 2400-4020	m	6.3												6.3
V		2506.503	RECONSTRUCT DRAINAGE STRUCTURE	m	3.7												3.7
U, V	13	2506.516	CASTING ASSEMBLY	EACH	95												95
V		2506.521	INSTALL CASTING	EACH	1												1
V		2506.522	ADJUST FRAME AND RING CASTING	EACH	2												2
		2506.602	CONNECT TO EXISTING SANITARY SERVICE	EACH	4								4				
		2506.602	CONNECT TO EXISTING SANITARY STRUCTURE	EACH	1								1				

STATEMENT OF ESTIMATED QUANTITIES CONTINUED ON SHEET 2B

INDEX OF TABULATION CHARTS		
CHART	SHEET #	DESCRIPTION
A	3	CLEAR & GRUB CHART
B	3	CURB & GUTTER REMOVAL
C	3	BITUMINOUS REMOVAL
D	3	REMOVE CULVERTS
E	3	REMOVE RETAINING WALL
F	3	CONCRETE SAW-CUT
G	3	CONCRETE REMOVAL
H	4	SANITARY MODIFICATIONS
I	4	BITUMINOUS MILLING
J	4	FENCE CONSTRUCTION
K	4	BITUMINOUS SAW-CUT
L	4	PRE-CAST RETAINING WALL
M	4	CONCRETE CURB & GUTTER
N	5	100 mm CONCRETE WALK
O	5	150 mm REINFORCED CONC PAVMT
P	5	BITUMINOUS WALK
Q	5	CONCRETE PEDESTRIAN RAMPS
R	5	DRIVEWAY REMOVAL & CONST
S	6	WATERMAIN UTILITIES
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- NOTES:
- INCLUDES ALL TYPES & SIZES
 - INCLUDES ALL SIZES
 - MUNICIPAL STREET SIGNS
 - FOR DUST CONTROL AS DIRECTED BY THE ENGINEER
 - FOR THE RESTORATION OF THE STORM SEWER TRENCH AT STA 2+240
 - 1200 mm PIPE TO BE JACKED UNDER RAILROAD, PIPE SHALL BE JACKED BEFORE TSS REMOVAL STRUCTURE IS PLACED.
 - ALL PIPE JOINTS SHALL BE TIED
 - FOR RELOCATING THE INPLACE WATERMAIN AT STORM SEWER CROSSINGS
 - MECHANICAL COPPER -TO-COPPER COUPLERS, INCLUDING BRASS NUTS
 - 25 mm COPPER TUBING FOR STORM SEWER CROSSINGS AND CURB STOP RELOCATES
 - FOR WATERMAIN PROTECTION AT STORM SEWER CROSSINGS, AS DIRECTED BY THE ENGINEER
 - BID AMOUNT TO INCLUDE MODIFICATION OF MANHOLE AS SHOWN ON SHEET NO. 29
 - MANHOLE CASTING FOR MANHOLE #438 SHALL BE LOCKABLE
 - REPAIR PIPE JOINT ON INPLACE STORM SEWER AT APPROX STA 3+996 RT
 - FOR THE PLUGGING OF THE TEMPORARY 450 mm PIPE BELOW THE 525 mm PIPE AT STRUCTURE #224
 - TOTAL SUSPENDED SOLIDS REMOVAL STRUCTURE, STRUCTURES #400A & #422A (SEE SPECIAL PROVISIONS)
 - STEEL CASING PIPE BENEATH ST PAUL WATERWORKS MAINS AT CR 108
 - 100 mm CONCRETE APRONS IN THE CITY OF SPRING LAKE PARK
 - 150 mm CONCRETE APRONS IN THE CITY OF SPRING LAKE PARK
 - INCLUDED FOR CROSS-GUTTERS AT COMMERCIAL ENTRANCES
 - NEW SAFETY MAILBOX SUPPORTS TO BE INSTALLED AT RESIDENTIAL MAILBOXES
 - FOR STEEP EMBANKMENT STA 2+081 TO 2+158 LT
 - END TREATMENT FOR THE TRAFFIC BARRIER, STA 2+158 LT
 - CHAIN LINK FENCE FOR THE TOP OF THE RETAINING WALL
 - FOR TRAFFIC CONTROL STAGE 2
 - FOR FUTURE SIGNAL SYSTEM AT CR 108
 - FOR EROSION CONTROL, AS DIRECTED BY THE ENGINEER
 - SILT FENCE TO BE INSTALLED BEFORE GRADING BEGINS, STA 2+140 TO 2+182 LT 143m, STA 4+420 TO 4+655 RT 235m
 - ANALYSIS 10-10-10 OR APPROVED EQUAL
 - FOR PLACEMENT ON FINAL WEAR COURSE PRIOR TO STRIPING BY COUNTY

- 31 INCLUDES QUANTITY FOR ADDITIONAL 5 mm TO DESIGN PAVEMENT THICKNESS
- 32 STORM SEWER PARTICIPATION SHALL BE AS FOLLOWS:
 02-635-08: 42%
 127-020-21: 46%
 183-020-05: 12%

BASIS OF PLANNED QUANTITIES

- 2350 TYPE MV 4 WEARING COURSE 2.35 kg/mm/m2 THICKNESS
- 2350 TYPE MV 3 NON WEARING COURSE 2.35 kg/mm/m2 THICKNESS
- 2350 TYPE LV 3 NON WEARING COURSE 2.35 kg/mm/m2 THICKNESS
- 2357 BITUMINOUS MATERIAL FOR TACK 0.23 L/m2 PER LIFT APPLIED
- 2575 MULCH MATERIAL TYPE 1, 4.5 t/ha
- 2575 COMMERCIAL FERTILIZER, ANALYSIS 10-10-10 (OR EQUIVALENT) 500 kg/ha ON ALL SEED AREAS
- 2575 ROADSIDE SEEDING BASED ON HORIZONTAL MEASUREMENT +10% SEED MIXTURE NO. 70A, 50 kg/ha

STANDARD PLATES	
THESE STANDARD PLATES AS APPROVED BY THE FHWA SHALL APPLY	
PLATE NO.	DESCRIPTION
M3000L	REINFORCED CONCRETE PIPE
M3006G	GASKET JOINT FOR R.C. PIPE
M3022B	PRECAST CONCRETE END SECTIONS
M3100G	CONCRETE APRON FOR REINFORCED CONCRETE PIPE
M3133C	RIPRAP AT RCP OUTLETS
M3145E	CONCRETE PIPE TIES
M4005L	MANHOLE OR CATCH BASIN (DESIGN F)
M4006L	MANHOLE OR CATCH BASIN (DESIGN G AND DESIGN H)
M4007C	PRECAST MECHANICAL JOINT SEWER MANHOLE
M4010H	CONCRETE SHORT CONE & ADJUSTING RING (SECTIONAL CONCRETE)
M4020G	MANHOLE OR CATCH BASIN COVER
M4024A	120 mm DIA PRECAST SHALLOW DEPTH CATCH BASIN
M4101D	RING CASTING FOR MANHOLE OR CATCH BASIN
M4110F	COVER CASTING FOR MANHOLE
M4126F	CATCH BASIN FRAME CASTING
M4161F	CURB BOX FOR CATCH BASIN
M4180J	MANHOLE OR CATCH BASIN STEP
M7035J	CONCRETE WALK & CURB RETURNS AT ENTRANCES
M7036D	PEDESTRIAN CURB RAMPS (FOR THE HANDICAPPED)
M7100G	CONCRETE CURB & GUTTER (DES. B)
M7111J	INSTALLATION & REINFORCEMENT OF CATCH BASIN CASTINGS
M8000I	STANDARD BARRICADES
M8307P	STEEL PLATE BEAM GUARDRAIL
M8329F	ECCENTRIC LOADER BREAKAWAY CABLE TERMINAL (ELT)
M9102D	TURF ESTABLISHMENT AREAS (AT PIPE CULVERT ENDS)
M9322J	CHAIN LINK FENCE

SEE TRAFFIC SIGNAL PLAN SHEETS FOR ADDITIONAL STANDARD PLATES

NO	DATE	BY	CHKD	APPR	REVISION
3	7/13/98	HG			
2	6/23/98	HG			
1	6/17/98	HG			



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.

Douglas M. Tynan
 DATE 7/14/98 REG. NO. 22295

DRAWN BY: HDG DATE 06/04/98
 DESIGN BY: HDG DATE 06/04/98
 CHECKED BY: DMF DATE 06/04/98



ANOKA COUNTY
 HIGHWAY DEPT.

STATE PROJECT NO. _____
 STATE AID PROJECT NO. 02-635-08
 STATE AID PROJECT NO. 02-635-10
 COUNTY PROJECT NO. _____

STATEMENT OF ESTIMATED QUANTITIES
 Sheet 2A of 66 Sheets

CHART NO.	NOTE NO.	ITEM NO.	ITEM	UNIT	TOTAL QUANTITY		ANOKA COUNTY				CITY OF FRIDLEY		CITY OF SPRING LAKE PARK		STORM SEWER (SEE NOTE 32)		
					EST	FINAL	SAP 02-635-08		SAP 02-635-10		MSAP 127-020-21		MSAP 183-020-05		EST	FINAL	
							EST	FINAL	EST	FINAL	EST	FINAL	EST	FINAL			
	14	2506.602	REPAIR STORM SEWER PIPE JOINT	EACH	1												
H		2506.602	ADJUST FRAME & RING CASTING (SAN)	EACH	20						13		7				
V		2506.602	CONNECT TO EXISTING DRAINAGE STRUCTURE	EACH	3												3
V		2506.602	CONNECT TO EXISTING SEWER	EACH	8												8
V		2506.602	CONSTRUCT BULKHEAD	EACH	20												20
V	15	2506.602	MODIFY DRAINAGE STRUCTURE	EACH	1												1
V		2506.602	MODIFY DRAINAGE STRUCTURE FOR SANITARY SEWER	EACH	1												1
U	16	2506.602	TSS REMOVAL STRUCTURE	EACH	2												2
	17	2506.603	1050 mm STEEL CASING PIPE (JACKED)	m	50												50
H		2506.603	RECONSTRUCT SANITARY MANHOLES	m	5.0								5.0				
		2506.603	CONSTRUCT SANITARY MANHOLES	m	3.6								3.6				
		2506.603	250 mm SDR 35 PVC SANITARY SEWER PIPE	m	82								82				
		2511.502	RANDOM RIPRAP, CLASS V	t	64												64
N		2521.501	100 mm CONCRETE WALK	m2	19												19
M		2531.501	CONCRETE CURB & GUTTER DESIGN B-618	m	3,770												2,693
		2531.604	PEDESTRIAN CURB RAMP	m2	30												30
R	18	2531.507	100 mm CONC DRIVE PAVEMENT	m2	77												77
R	19	2531.507	150 mm CONC DRIVE PAVEMENT	m2	191												191
R	20	2531.507	200 mm CONC DRIVE PAVEMENT	m2	18												18
	21	2540.602	INSTALL MAILBOX SUPPORT	EACH	30												30
	22	2554.501	TRAFFIC BARRIER, DESIGN M8307P	m	50												50
	23	2554.523	END TREATMENT-ECCENTRIC LOADER BCT	EACH	1												1
J	24	2557.501	WIRE FENCE DESIGN 1.8 - 9322	m	95												95
J		2557.603	INSTALL FENCE	m	136												136
		2563.601	DETOUR SIGNING	LUMP SUM	1												1
		2563.601	TRAFFIC CONTROL STAGE 1	LUMP SUM	1												1
		2563.601	TRAFFIC CONTROL STAGE 2	LUMP SUM	1												1
	25	2563.602	RAISED PAVEMENT MARKER TEMPORARY	EACH	410												410
	3	2564.602	INSTALL SIGN TYPE SPECIAL	EACH	13												13
		2564.602	INTERNALLY LIT SIGNS - TYPE "D" SIGNALS	EACH	3												3
		2565.616	REVISE SIGNAL SYSTEM	SYSTEM	1												0.67 *
	26	2565.603	100 mm RIGID STEEL CONDUIT - SIGNALS	m	250												250
	27	2573.501	BALE CHECK	EACH	50												50
	28	2573.502	SILT FENCE, TYPE HEAVY DUTY	m	378												378
Y		2575.501	SEEDING	ha	0.08												0.08
Y		2575.523	EROSION CONTROL BLANKET, (TYPE 2S)	m2	500												500
Y		2575.502	SEED MIXTURE 70A	kg	4												4
Y		2575.505	SODDING, TYPE SALT RESISTANT	m2	12,313												12,313
Y		2575.511	MULCH MATERIAL, TYPE 1	t	0.4												0.4
Y		2575.519	DISK ANCHORING	ha	0.08												0.08
Y	29	2575.532	COMMERCIAL FERTILIZER, ANALYSIS 10-10-10	kg	40												40
	30	2580.501	TEMPORARY LANE MARKING	m	426												278
	25	2581.501	REMOVABLE PREFORMED PLASTIC MARKING	m	1230												148

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 * 0.33 PARTICIPATION FROM LOCAL FUNDS

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M9322J	CHAIN LINK FENCE

SEE TRAFFIC SIGNAL PLAN SHEETS FOR ADDITIONAL STANDARD PLATES

NO	DATE	BY	CHKD	APPR	REVISION
3	7/13/98	HG			SIGNAL PARTICIPATION
2	6/23/98	HG			
1	6/17/98	HG			



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.

Richard W. [Signature]
 DATE 8/14/98 REG. NO. 20235

DRAWN BY... HDG... DATE 06/04/98
 DESIGN BY... HDG... DATE 06/04/98
 CHECKED BY... DWF... DATE 06/04/98



ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. _____
 STATE AID PROJECT NO. **02-635-08**
 STATE AID PROJECT NO. **02-635-10**
 COUNTY PROJECT NO. _____

STATEMENT OF ESTIMATED QUANTITIES

Sheet **2B** of **66** Sheets

(A) CLEAR & GRUB

STATION	LOCATION	CLEARING TREE	CLEARING ha	GRUBBING TREE	GRUBBING ha
2+112 - 2+222	LT.		0.22		0.22
2+323	13.6m LT.	1		1	
2+343	13.6m LT.	1		1	
2+351	13.6m LT.	1		1	
2+360	13.6m LT.	1		1	
2+370	13.6m LT.	1		1	
2+378	13.6m LT.	1		1	
2+411	13.6m LT.	1		1	
2+422	13.7m LT.	1		1	
2+439	13.7m LT.	1		1	
2+469	13.7m LT.	1		1	
2+512	12.8m LT.	1		1	
2+603	13.7m LT.	1		1	
2+615	13.4m LT.	1		1	
2+779	9.5m LT.	1		1	
2+785	11m LT.	1		1	
2+800	11.9m LT.	1		1	
3+077	11m LT.	1		1	
3+090	11m LT.	1		1	
3+104	12.2m LT.	1		1	
3+130	11.9m LT.	1		1	
3+144	11.6m LT.	1		1	
3+488 - 3+621	13.4m LT.		.10		.10
3+887	12.5m LT.	1		1	
3+897	12.8m LT.	1		1	
3+911	12.5m LT.	1		1	
3+991 - 4+001	12.8m RT.		.02		.02
4+104 - 4+126	14.3m RT.		.04		.04
4+163 - 4+213	14.6m RT.		.04		.04
4+164 - 4+193	14.6m LT.		.02		.02
4+218	14.6m RT.	1		1	
4+220	14.6m RT.	1		1	
4+222	14.6m RT.	1		1	
4+227	14.6m RT.	1		1	
4+229	14.6m RT.	1		1	
4+232	14.6m RT.	1		1	
4+234	14.6m RT.	1		1	
4+236	14.6m RT.	1		1	
4+239	14.6m RT.	1		1	
4+243	14.6m RT.	1		1	
4+258 - 4+276	14.6m RT.		.02		.02
4+281 - 4+298	13.4m RT.		.02		.02
4+326	14.6m RT.	1		1	
4+331	14.3m RT.	1		1	
4+333	14.3m RT.	4		1	
4+398	11.0m LT.	2		1	
4+404	14.3m LT.	1		1	
4+408	13.7m LT.	2		1	
4+410	13.7m LT.	1		1	
4+411	14.0m LT.	3		1	
4+423	14.0m LT.	1		1	
4+424	13.4m LT.	1		1	
4+426	13.7m LT.	1		1	
4+557	14.6m LT.	1		1	
4+562	14.0m LT.	1		1	
4+677 - 4+695	11.9m LT.		.02		.02
TOTALS =		54	0.50	47	0.50

(B) C&G REMOVAL

STATION	LOCATION	m
2+218 - 2+239	8.4 - 26.2 RT	33
2+259 - 2+275	23.5 - 8.4 RT	31
2+389	6.7 - 14.0 LT	8
2+398	6.8 - 14.0 LT	8
2+493	6.4 - 14.0 LT	8
2+503	6.7 - 13.6 LT	7
2+600 - 2+606	6.4 - 13.6 LT	10
2+613 - 2+617	13.3 - 6.2 LT	9
2+693	13.5 - 17.6 LT	4
2+703	13.3 - 18.0 LT	5
2+842	12.2 - 17.7 LT	5
2+854	13.3 - 17.9 LT	5
3+025 - 3+038	6.4 - 19.2 LT	20
3+056 - 3+066	17.9 - 5.8 LT	18
3+066 - 3+100	5.4 LT	34
3+100 - 3+111	5.7 - 17.6 LT	17
3+122 - 3+133	18.0 - 5.7 LT	18
3+133 - 3+330	5.7 LT	197
3+137	5.7 - 14.0 LT	8
3+153 - 3+156	14.0 - 5.7 LT	9
3+189	5.8 - 14.0 LT	8
3+195	5.8 - 14.0 LT	8
3+220	5.8 - 14.0 LT	8
3+227	5.7 - 14.0 LT	8
3+330 - 3+345	5.7 - 19.5 LT	22
3+355 - 3+361	18.5 - 5.8 LT	17
3+625 - 3+633	6.1 - 17.6 LT	22
3+652 - 3+658	6.1 - 18.9 LT	33
3+680 - 3+688	17.8 - 6.2 LT	16
3+702 - 3+831	7.8 12.2 RT	129
3+831 - 3+846	12.2 - 27.6 RT	24
3+846	14.4 - 22.3 LT	8
3+861	14.3 - 22.9 LT	9
3+861 - 3+877	28.1 - 12.8 RT	24
4+656	10.4 - 17.7 LT	7
4+656	10.4 - 17.8 RT	7
2+655	12.2 - 14.0 LT	2
2+661	12.2 - 14.0 LT	2
TOTAL =		808

(C) BITUMINOUS REMOVAL

STA. TO STA.	AREA m2	REMARKS
2+81-3+702	2956	MAINLINE SHOULDER LT
3+700-3+831	1909	MAINLINE LT & RT
2+142-2+231	244	BIKE PATH LT
2+394	75	MEDTRONICS ENT. LT
2+498	72	MEDTRONICS ENT. LT
2+610	77	MEDTRONICS ENT. LT
2+658	62	APARTMENT ENT. LT
2+698	156	NGRTON AVE. LT
2+848	176	72ND AVE. LT
2+938	68	COMMERCIAL ENT. LT
3+047	296	73RD AVE. LT
3+117	205	731/2 AVE. LT
3+151	47	#7369
3+192	41	#7406
3+223	57.4	#7406
3+255	76	ONONDAGA ST. LT
3+307	76	ONONDAGA WAY
3+348	183	FIRESIDE DRIVE
3+625-3+687	585	ANDERSON TRUCK. SERV.
3+831-3+883	1487	INTERSECT. OF #8, #10B, #35
3+883-4+665	5953	MAINLINE LT & RT
3+894	80	#7703
3+945-3+956	116	#7703
3+956-3+987	376	#7707
4+009	61	#7740
4+062	144	#7740 YARD ENTRANCE
4+062	190	78TH CIRCLE N.E.
4+138	79	#7900 (QUICKWAY)
4+156	199	LAKEVIEW LANE
4+247	65	PRIVATE ENTRANCE RT
4+280	52	PRIVATE ENTRANCE RT
4+310	98	#7979-EAGLE TOOL
4+342	83	#7979-EAGLE TOOL
4+368	88	#7979-EAGLE TOOL
4+381	199	BOTH AVENUE
4+400	156	COMM. ENTRANCE RT
4+433	62	#8014
4+481	86	APARTMENT ENTRANCE LT
4+549	76	APARTMENT ENTRANCE LT
4+585	85	COMM. ENTRANCE LT
TOTAL	17096.4	

(D) REMOVE CULVERTS

STATION TO STATION	LOCATION	LENGTH m
4+055 - 4+073	10 m RT	18
4+276 - 4+282	9 m RT	6
4+330 - 4+335	10.5 m LT	5
4+338 - 4+347	8.5 m RT	9
4+347 - 4+354	10.5 m LT	7
4+363 - 4+372	8.5 m RT	9
4+429 - 4+438	10.5 m LT	9
4+475 - 4+488	10.5 m LT	13
4+542 - 4+555	11 m LT	13
4+596 - 4+604	10.5 m RT	8
TOTAL =		97

(E) REMOVE RET. WALL

STATION TO STATION	LOCATION	m2
3+142 - 2+158	9 m RT	14.2
TOTAL =		14.2

(F) CONCRETE SAW-CUT

STATION	LOCATION	100 mm DEPTH m	200 mm DEPTH m	REMARKS
2+238	LT - RT		5.5	STORM SEWER CROSSING
2+242	LT - RT		5.5	STORM SEWER CROSSING
2+884	14m LT	1.4		SIDEWALK
3+700	LT - RT		5.5	BEGIN FULL DEPTH CONST.
3+843	16m LT	1.5		SIDEWALK
3+871	13.7m RT		2.4	RE-INFORCED SIDEWALK
4+654	15.2m LT	1.4		SIDEWALK
4+654	17.5m RT	1.4		SIDEWALK
TOTALS		5.7	18.9	

(G) CONCRETE REMOVAL

STATION	LOCATION	100 mm DEPTH m2	200 mm DEPTH m2	REMARKS
2+238 - 2+242	LT - RT		22	REINFORCED ROADWAY
2+256 - 2+262	7 m LT	14.2		MTC BUS PAD
2+883 - 2+884	14m LT	8.6		SIDEWALK
3+006 - 3+011	8.5 m LT	13		MTC BUS PAD
3+700 - 4+662	LT - RT		5267	REINFORCED ROADWAY
3+842 - 3+843	13 m LT	9.3		SIDEWALK
3+870	12.5 m RT		3	RE-INFORCED SIDEWALK
4+653 - 4+654	11 m LT	10.2		SIDEWALK
4+654 - 4+655	13 m RT	13.8		SIDEWALK
TOTALS		69.1	5292	

(H) SANITARY MODIFICATIONS

STATION	LOCATION	CASTING EXISTING ELEV.	CASTING PROPOSED ELEV.	02-635-08 ADJUST (EACH)	02-635-10 ADJUST (EACH)	RE-CONSTRUCT HEIGHT m	REMARKS
10+550	12.3 RT.				1		ADJUST FOR MILL AREA
11+283	11.2 RT.				1		ADJUST FOR MILL AREA
11+497	9.4 RT.				1		ADJUST FOR MILL AREA
11+700	8.9 RT.				1		ADJUST FOR MILL AREA
12+136	7.6 RT.				1		ADJUST FOR MILL AREA
2+246	18.3 RT.	268.904	268.904	1			
2+948	9.7 LT.	272.098	272.346	1			
3+043	8.5 RT.				1		ADJUST FOR MILL AREA
3+049	9.7 LT.	272.302	272.342	1			
3+117	6.7 LT.	272.454	272.494	1			
3+128	4.3 LT.	272.516	272.556	1			
3+239	4.3 LT.	272.308	272.348	1			
3+350	4.3 LT.	272.290	272.330	1			
3+883	14.7 RT.	275.362	275.362	0		0	NO ADJUSTMENT NECESSARY
3+894	9.6 LT.	275.491	275.344	1			
4+002	10.7 LT.	275.491	275.780	1			
4+054	11.0 LT.	275.006	275.988			2.58	
4+063	16.5 RT.	275.601	275.695	1			
4+156	10.4 LT.	275.717	275.853	1			
4+267	10.7 LT.	?	276.111	1			BURIED/FIELD VERIFY FOR ADJ.
4+382	10.7 LT.	276.027	275.805	1			
4+497	10.7 LT.	275.286	275.919			2.44	
4+609	10.7 LT.	275.823	275.963	1			
TOTAL=				15	5.00	5.02	

(I) BITUMINOUS MILLING

STATION TO STATION	LOC.	WIDTH	m2	REMARKS
02-635-08				
2+081 - 3+030	C/L - 7.8 RT (VAR.)	7.8 m (MIN.)	7751	SEE REM. SHEET FOR LOC.
3+030 - 3+700	C/L - 7.8 RT (VAR.)	7.8 m (MIN.)	5116	SEE REM. SHEET FOR LOC.
02-635-10				
10+315 - 11+470	3.6 m LT & RT TO F/G	2.8	6468	
11+470 - 11+548	MATCH JOINT 6.4 m LT & RT	1.8	281	© RICE CREEK DRIVE
11+470 - 11+484	ALONG ISLAND F/G	1.8	50	© RICE CREEK DRIVE
11+505 - 11+527	ALONG ISLAND F/G	1.8	79	© RICE CREEK DRIVE
11+548 - 12+223	3.6 m RT TO F/G	2.8	1890	END CONCRETE CURB RT
11+548 - 12+330	3.6 m RT TO F/G	2.8	2190	END CONCRETE CURB LT
TOTAL =			23825	

(J) FENCE CONSTRUCTION

STATION - STATION	LOCATION	SALVAGE m	INSTALL m	REMOVE m	F & I m	REMARKS
2+165 - 2+260	14.0 m LT				95	1830 mm CHAIN LINK FENCE
3+311.1 - 3+339.2	13.5 m LT	28.1	28.1	3		CHAIN LINK FENCE
4+211.6 - 4+258.2	14.6 m RT	46.6	46.6	4		CHAIN LINK FENCE
4+440.9 - 4+474.5	14.0 m LT	33.6	33.6	2.5		WOOD FENCE
4+488.2 - 4+515.7	14.2 m LT	27.5	27.5	2		WOOD FENCE
TOTALS =		135.8	135.8	11.5	95	

(K) BITUMINOUS SAW-CUT

STATION TO STATION	LOCATION	m	REMARKS
2+081	3.6 - 6.6 LT.	3	TRANSVERSE JOINT
2+081 - 3+700	3.6 LT.	1619	MAINLINE
2+142	10.1 - 12.4 LT.	2.3	BIKEPATH
2+229 - 2+231	14.0 LT.	2.5	BIKEPATH
2+240 - 2+259	24.0 RT	14	69TH AVE.
2+386 - 2+402	16.0 LT.	16	MEDTRONICS ENT.
2+490 - 2+503	15.7 LT.	13	MEDTRONICS ENT.
2+606 - 2+613	13.3 LT.	7	MEDTRONICS ENT.
2+655 - 2+661	14.2 LT.	5.1	APARTMENT ENT.
2+693 - 2+703	18.0 LT.	10.3	NORTON AVE.
2+842 - 2+854	18.0 LT.	12.2	72ND AVE.
2+933 - 2+942	14.0 LT.	8.1	COMMERCIAL ENT.
3+038 - 3+055	19.0 LT.	18.3	73RD AVE. N.E.
3+109 - 3+122	20.0 LT.	13	73RD 1/2 AVE. N.E.
3+148 - 3+153	13.0 LT.	5	#7369
3+189 - 3+195	13.0 LT.	6.1	#7406
3+220 - 3+227	12.8 LT.	7.6	#7406
3+249 - 3+259	14.0 LT.	9.4	ONANDAGA ST.
3+301 - 3+311	14.0 LT.	9.1	ONANDAGA WAY
3+345 - 3+354	19.0 LT.	9.7	FIRESIDE DR.
3+633 - 3+680	14.0 LT.	46.2	ANDERSON TRUCKING
3+700	LT. - RT.	13	TRANSVERSE JOINT
3+847 - 3+861	22.5 LT.	14.8	CSAH 8
3+847 - 3+861	27.7 RT.	13.7	CR 108
3+890 - 3+897	12.6 RT.	7.3	#7703
3+943 - 3+953	15.2 RT.	10	#7703
3+956 - 3+987	15.2 RT.	31	#7707
4+007 - 4+014	15.2 LT.	6.8	#7740
4+058 - 4+067	15.2 LT.	9.1	#7740
4+058 - 4+067	20.0 RT.	8.4	78TH CIRCLE N.E.
4+152 - 4+160	18.0 RT.	8.5	LAKEVIEW LANE
4+245 - 4+250	15.2 RT	4.6	PRIVATE ENTRANCE
4+277 - 4+280	15.2 RT	3.2	PRIVATE ENTRANCE
4+307 - 4+313	13.7 RT.	6.5	EAGLE TOOL
4+339 - 4+347	14.0 RT.	8.2	EAGLE TOOL
4+364 - 4+371	13.6 RT.	6.7	EAGLE TOOL
4+377 - 4+386	17.7 LT.	8.3	BOTH AVENUE N.E.
4+395 - 4+406	15.2 RT.	10.9	COMM. ENTRANCE
4+431 - 4+436	15.2 LT.	5.2	#8014
4+478 - 4+484	15.2 LT.	6.4	APARTMENT ENT.
4+545 - 4+552	15.2 LT.	6.7	APARTMENT ENT.
4+582 - 4+589	15.2 LT.	7.3	COMM. ENTRANCE
4+656 - 4+662	17.5 LT.	6.3	81ST AVE.
4+656 - 4+662	18.2 RT.	6.2	81ST AVE.
4+662	17.5 LT.-18.2 RT.	35.9	81ST AVE.
TOTAL =			2081.9

(L) PRECAST CONC. RETAINING WALL

STATION	TOP BACK WALL LOC LT	TOP BACK WALL ELEV	TOP BACK CURB ELEV	ELEVATION AT FRONT WALL	EXPOSED HT	EXPOSED m2	BELOW GROUND m2
2161.40					0		
2179.34	6.60	268.62	266.900	266.909	1.711	15.348	17.940
2194.58	6.60	270.09	267.515	267.524	2.566	32.591	15.240
2209.82	6.60	270.78	268.049	268.058	2.722	40.295	15.240
2225.06	6.60	271.38	268.533	268.542	2.838	42.367	15.240
2232.07	6.60	271.01	268.742	268.751	2.259	17.865	7.010
2234.21	6.60	269.68	268.799	268.808	0.872	3.350	2.140
2239.69	6.60	271.37	268.967	268.976	2.394	8.949	5.480
2258.90	6.60	270.22	269.447	269.456	0.764	30.333	19.210
2270.58					0	4.462	11.680
SUBTOTAL:						195.559	109.18
2301.26					0		
2316.50	6.60	271.42	270.418	270.427	0.993	7.566	15.24
2331.74	6.60	271.43	270.555	270.564	0.866	14.165	15.24
2346.98					0	6.598	15.24
SUBTOTAL:						28.3312	45.72
Below ground area based on 1 meter depth.							
TOTAL:						378.79	

(M) CONCRETE CURB & GUTTER

STATION TO STATION	LIN M	REMARKS
2+081 - 2+520 LT	439.4	MAINLINE SHOULDER
2+218 - 2+234	33.0	RADIUS
2+259 - 2+275	31.0	RADIUS
2+387 LT	8.3	RADIUS
2+400 LT	8.3	RADIUS
2+492 LT	8.4	RADIUS
2+505 LT	7.9	RADIUS
2+552 - 2+683 LT	130.5	MAINLINE SHOULDER
2+601 LT	7.7	RADIUS
2+616 LT	7.2	RADIUS
2+683 LT	15.5	RADIUS
2+713 LT	15.9	RADIUS
2+713 - 2+832 LT	118.9	MAINLINE SHOULDER
2+832 LT	15.6	RADIUS
2+864 LT	15.8	RADIUS
2+864 - 3+028 LT	163.5	MAINLINE SHOULDER
3+028 LT	17.1	RADIUS
3+066 LT	15.9	RADIUS
3+066 - 3+101 LT	35.6	MAINLINE SHOULDER
3+101 LT	19.6	RADIUS
3+132	15.9	RADIUS
3+132 - 3+334	201.6	MAINLINE SHOULDER
3+144 LT	7.9	RADIUS
3+156 LT	7.9	RADIUS
3+186	7.8	RADIUS
3+198 LT	7.9	RADIUS
3+217	7.9	RADIUS
3+230	7.8	RADIUS
3+334 LT	17.5	RADIUS
3+365 LT	16.4	RADIUS
3+365 - 3+647 LT	282.7	MAINLINE SHOULDER
3+623 LT	15.5	RADIUS
3+645 - 3+667 LT	57.4	MAINLINE SHOULDER & REMAINING ISLAND
3+690 LT	15.7	RADIUS
3+655 - 3+831 LT	177.7	MAINLINE SHOULDER
3+831 LT	23.2	RADIUS
3+702 - 3+831 RT	129.1	TAPER & TURN LANE
3+831 RT	23.8	RADIUS
3+877 LT	23.6	RADIUS
3+877 - 4+367 LT	490.5	MAINLINE SHOULDER LT
4+367 LT	18.8	RADIUS
4+396 LT	18.8	RADIUS
4+396 - 4+646 LT	249.6	MAINLINE SHOULDER
4+646 LT	15.7	RADIUS
3+876 RT	24.4	RADIUS
3+876 - 4+047 RT	171.2	MAINLINE SHOULDER
4+047 RT	15.9	RADIUS
4+077 RT	15.7	RADIUS
4+077 - 4+141 RT	64.3	MAINLINE SHOULDER
4+141 RT	16.3	RADIUS
4+171 RT	15.4	RADIUS
4+171 - 4+645 RT	474.8	MAINLINE SHOULDER
4+645 RT	15.7	RADIUS
TOTAL:		3769.5

(N) 100 mm CONC. WALK

STATION	LOCATION	m2	REMARKS
2+883	13 m LT	2	SIDEWALK
3+008	9 m LT	14	BUS STOP PAD
4+652	10.2 m LT	1.5	SIDEWALK
4+652	11 m RT	1.5	SIDEWALK
TOTAL =		19.0	

(O) 150 mm REIN. CONC. PVMNT.

STATION	LOCATION	m2	REMARKS
3+865.4 - 3+879.5	LT - RT	287.5	OVER WATERMAINS
	12.5 m RT	3.9	S.W. OVER WATERMAINS
TOTAL =		291.4	

(P) BITUMINOUS PATH

STATION TO STATION	LOCATION	m2
2+142.5 - 2+390.2	LT.	605
2+397.4 - 2+497.7	LT.	237
2+502.6 - 2+605.8	LT.	252
2+613.1 - 2+855.2	LT.	103
2+660.8 - 2+691.4	LT.	75
2+704.2 - 2+840.6	LT.	333
2+855.3 - 2+933.4	LT.	190
2+941.6 - 3+036.4	LT.	231
3+057.1 - 3+110.3	LT.	53
3+123.6 - 3+147.4	LT.	58
3+153.0 - 3+188.8	LT.	87
3+195.0 - 3+219.8	LT.	61
3+227.3 - 3+249.3	LT.	54
3+258.5 - 3+301.1	LT.	104
3+310.4 - 3+342.8	LT.	79
3+356.3 - 3+631.9	LT.	672
3+642.8 - 3+670.1	LT.	67
3+681.1 - 3+841.1	LT.	391
3+865.0 - 4+375.9	LT.	1115
4+387.9 - 4+654.0	LT.	566
TOTAL =		5333

NOTE: TOTAL QUANTITIES DO NOT INCLUDE BIKE-PATH THROUGH PRIVATE/COMMERCIAL ENTRANCES. (INCLUDED IN DRIVEWAY CALC.'S)

(Q) CONC. PEDESTRIAN RAMPS

STATION	LOCATION	m2	REMARKS
3+842	13.0 m LT	6	
3+867	11.3 m LT	6	
4+375	11.4 m LT	6	
4+389	10.2 m LT	6	
4+652	10.4 m LT	6	
TOTAL =		30.0	

(R) DRIVEWAY REMOVAL & CONSTRUCTION

STATION	LOC.	REMOVAL			BITUMINOUS RECONSTRUCTION		CONCRETE APRON - m2		0.2 m DEPTH CONCRETE m2	REMARKS
		WIDTH	LENGTH	m2	WIDTH	LENGTH	m2	100 mm		
2+393	LT.	8.2	9	75	6	6	42		3	COMM ENT./ X-GUT. REQ.
2+498	LT.	6.8	11	72	7	6	44		3	COMM ENT./ X-GUT. REQ.
2+610	LT.	6.8	11	77	7	6	38		3	COMM ENT./ X-GUT. REQ.
2+658	LT.	5.1	12	62	5	7	36			APARTMENT ENTRANCE
2+938	LT.	8.1	8	68	8	6	52			COMMERCIAL ENTRANCE
3+151	LT.	4.8	10	46	5	6	30		3	COMM ENT./ X-GUT. REQ.
3+192	LT.	5.6	8	46	6	6	33		3	COMM ENT./ X-GUT. REQ.
3+223	LT.	7	8	57	7	6	41		3	COMM ENT./ X-GUT. REQ.
3+625-3+687	LT.	13.8	42	585	9.8-(2)	12.0-(2)	242			ANDERSON TRUCKING
3+894	RT.	7.3	11	80	7	4	27		12	COMMERCIAL ENTRANCE
3+901	LT.	0	0	0	4	2	6	6		PRIVATE/SAND ENTRANCE
3+924	LT.	0	0	0	4	2	6	6		PRIVATE/SAND ENTRANCE
3+947	RT.	7.3	16	116	7	3	20		12	COMMERCIAL ENTRANCE
3+950	LT.	0	0	0	4	2	6	7		PRIVATE/SAND ENTRANCE
3+961	RT.	11.5	33	376	7	3	19		12	INCLUDES 3+984 BIT REM.
3+977	LT.	0	0	0	4	2	6	6		PRIVATE/SAND ENTRANCE
3+984	RT.	0	0	0	7	3	18		12	BIT REM. IN WITH 3+961
4+011	LT.	6.7	9	61	6	5	29	5		COMMERCIAL ENTRANCE
4+062	LT.	12	12	144	9	6	55		14	COMMERCIAL ENTRANCE
4+085	LT.	0	0	0	6	2	8	9		PRIVATE/SAND ENTRANCE
4+123	LT.	0	0	0	10	2	15		15	COMM./SAND ENTRANCE
4+138	LT.	8.5	9	79	9	4	32		14	COMMERCIAL ENTRANCE
4+247	RT.	5.6	12	65	5	6	28	8		PRIVATE ENTRANCE
4+270	LT.	0	0	0	5	6	30	8		PRIVATE/SAND ENTRANCE
4+279	RT.	4.4	12	52	4	6	23	6		PRIVATE ENTRANCE
4+295	LT.	0	0	0	4	2	6	7		PRIVATE/SAND ENTRANCE
4+310	RT.	9.8	10	98	7	6	43		12	COMMERCIAL ENTRANCE
4+342	RT.	8.1	10	83	7	6	44		12	COMMERCIAL ENTRANCE
4+367	RT.	8.9	10	88	7	6	44		12	COMMERCIAL ENTRANCE
4+400	RT.	13.6	11	156	11	6	64		17	COMMERCIAL ENTRANCE
4+433	LT.	5.2	12	62	5	6	32	9		PRIVATE ENTRANCE
4+481	LT.	7.3	12	86	7	6	44		12	APARTMENT ENTRANCE
4+549	LT.	6.7	11	76	7	6	40		11	APARTMENT ENTRANCE
4+585	LT.	7.3	12	85	7	6	44		12	COMMERCIAL ENTRANCE
4+620	LT.	0	0	0	7	1	4		12	COMM./SAND ENTRANCE
TOTALS =		2795*			1251	77	191	18		

NOTE: 100 mm CL #5 AGG. BASE SHALL BE INCIDENTAL TO 50mm BITUMINOUS (m2) AND ALL CONCRETE APRONS(m2)

* = SEE CHART 'C' FOR BITUMINOUS REMOVAL SUMMARY

(Y) TURF ESTABLISHMENT

STA TO STA	LOC	SOD Sq m	BLANKET Sq m	SEEDING ha	SEED kg	MULCH t	FERTILIZER kg
2+131 - 2+163			500.00	0.05	2.5	0.25	25
2+246 - 2+390	LT	545.76					
2+397 - 2+495	LT	371.42					
2+502 - 2+605	LT	390.37					
2+613 - 2+693	LT	282.54					
2+703 - 2+842	LT	526.81					
2+854 - 3+038	LT	697.36					
3+055 - 3+092	LT	138.33					
3+122 - 3+147	LT	93.23					
3+153 - 3+188	LT	132.65					
3+195 - 3+220	LT	94.75					
3+227 - 3+344	LT	373.31					
3+355 - 3+633	LT	1053.62					
3+643 - 3+670	LT	98.91					
3+680 - 3+846	LT	629.9					
3+866 - 4+377	LT	2305.1					
3+898 - 3+940	RT	136.5					
3+986 - 4+058	RT	517.18					
4+067 - 4+152	RT	608.4					
4+161 - 4+462	RT	1843.94					
4+386 - 4+656	LT	1182.16					
4+462 - 4+656	RT	290.58					
4+462 - 4+656	RT			0.03	1.5	0.15	15
TOTALS =		12312.8	500.00	0.08	4.0	0.40	40.0

NO	DATE	BY	CKD	APPR	REVISION
1	6/23/98	HG			



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.
Douglas M. Trench
 DATE 1/7/14/98 REG. NO. 2233

DRAWN BY _____ HDG. DATE 06/04/98.
 DESIGN BY _____ HDG. DATE 06/04/98.
 CHECKED BY _____ DWF. DATE 06/04/98.



ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. _____
 STATE AID PROJECT NO. 02-635-08
 STATE AID PROJECT NO. 02-635-10
 COUNTY PROJECT NO. _____

TABULATIONS
 Sheet 5 of 64 Sheets

(S)

WATERMAIN UTILITIES

STATION TO STATION	OFFSET LT.	OFFSET RT.	OWNER	F & I DIP WM (CL 52)				F & I 25 mm COPPER (meter)	F & I 50 mm INSULATION BOARD (m2)	F & I 25 mm COPPER SPLICE (EACH)	F & I CORP. STOP (EACH)	RELOCATE HYDRANT (EACH)	HYDRANT RELOCATE STATION & LOCATION	RELOCATE GATE VALVE (EACH)	RELOCATE CURB STOP & BOX (EACH)	ADJUST HYDRANT (EACH)	ADJUST GATE VALVE (EACH)	ADJUST CURB STOP & BOX (EACH)	WATERMAIN FITTINGS		REMARKS	
				100 MM (meter)	150 mm (meter)	200 mm (meter)	300 mm (meter)												(TYPE)	(QTY)		
2+238	4.3		FRIDLEY																			
2+240	4.1		FRIDLEY						2.9													
2+243		15	FRIDLEY																			
2+325	4.1		FRIDLEY																			
2+325	7.2		FRIDLEY		7						1	2+324.7-9.6 m LT.	1						45 DEG	4	LOWER 150 mm W.M.	
2+415	4.3		FRIDLEY																			
2+415	7.7		FRIDLEY		6						1	2+415 - 9.3 m LT.	1						45 DEG	4	LOWER 150 mm W.M.	
2+507	7.7		FRIDLEY		6						1	2+506.7 - 9.6 m LT.	1						45 DEG	4	LOWER 150 mm W.M.	
2+618	4.5		FRIDLEY																			
2+691.8	13.6		FRIDLEY		2						1	2+690 - 13.5 m LT.	1									
2+694	7.5		FRIDLEY		6																	
2+694.3	13.3		FRIDLEY																			
2+707	4.3		FRIDLEY																			
2+782.4	4.2		FRIDLEY																			
2+782.4	12.7-7.4		FRIDLEY		6															45 DEG	4	LOWER 150 mm W.M.
2+814.7	3.1		FRIDLEY																			
2+841	13.8		FRIDLEY		4						1	2+839.5 - 13.5 m LT.	1									
2+843	7.5		FRIDLEY		5															45 DEG	4	LOWER 150 mm W.M.
2+845.3	15.7		FRIDLEY																			
2+893.7	3.2		FRIDLEY																			
2+941.2	12.8		FRIDLEY																			
3+039.3	4.3		FRIDLEY																			
3+120.7	16.6		FRIDLEY																			
3+121.7	5.4		FRIDLEY																			
3+121.7	11.5		FRIDLEY				6													45 DEG	4	LOWER 300 mm W.M.
3+129	9.5		FRIDLEY		6															45 DEG	4	LOWER 150 mm W.M.
3+130	10.9		FRIDLEY																			
3+183.5	7.4		FRIDLEY					4		1	1											
3+209.5	11.9		FRIDLEY																			
3+211	14.0		FRIDLEY																			
3+241	14.0		FRIDLEY																			
3+253.4	7.0		FRIDLEY		6																	
3+253.4	9.0		FRIDLEY		3								1							45 DEG	4	LOWER 150 mm W.M.
3+254.6	11.3		FRIDLEY																			
3+345.8	10.8		FRIDLEY																			
3+355.7	13.6		FRIDLEY		2																	
3+402.8	7.5		FRIDLEY					5		1	1	3+357.4 - 13.5 m LT.	1									
3+413.5	11.6		FRIDLEY																			
3+452.7	11.3		FRIDLEY																			
3+453.9	9.4		FRIDLEY		2								1									
3+453.9	7.5		FRIDLEY		6															45 DEG	4	LOWER 150 mm W.M.
3+488.2	7.5		FRIDLEY					5		1												
3+528.8	7.5		FRIDLEY					5		1												
3+556.4	7.5		FRIDLEY					5		1												
3+579.7	7.5		FRIDLEY					5		1												
3+620.8	10.5		FRIDLEY																			
3+659	16.0		FRIDLEY																			
3+660.7	10.9		FRIDLEY																			
3+884.2	15.0		FRIDLEY		4								1	3+841.1 - 16.0 m LT.	1							
3+845.5	10.7		FRIDLEY																			
3+847.4	13.2		FRIDLEY																			
3+847.4	7.3		FRIDLEY				6															
3+880.3	13.8		S.L.P.																			
3+899.6		12.1	S.L.P.																			
3+900.1		12.9	S.L.P.																			
3+921.8	12.2		S.L.P.					3		1				1								
3+944.8	13.0		S.L.P.					2.2		1				1								
3+960.6		11.5	S.L.P.																			
3+965.7	12.3		S.L.P.					2		1				1								
3+990			S.L.P.																			
4+010.5		11.7	S.L.P.										1	4+010.5 - 13.3 m RT.	1							
4+019.8		10.0	S.L.P.					5.2		1												
4+060.4		11.4	S.L.P.																			
4+297.5	12.1		S.L.P.					3.2		1				1								
4+311.7		10.8	S.L.P.																			
4+325.2		11.6	S.L.P.																			
4+406.4		13.6	S.L.P.																			
4+416.7	15.0		S.L.P.																			
4+489	7.8		S.L.P.		5																	
4+489.8		9.2	S.L.P.																			
4+505.0		11.2	S.L.P.																			
4+594.9	7.8							4		1				1								
02-635-10			FRIDLEY																			
			TOTALS =		5	71	6	6	48.6	2.9	12	2	8	10	5	3	13	44	7	0	4	100 mm W.M.
																					36	150 mm W.M.
																					4	300 mm W.M.

NO	DATE	BY	CKD	APPR	REVISION

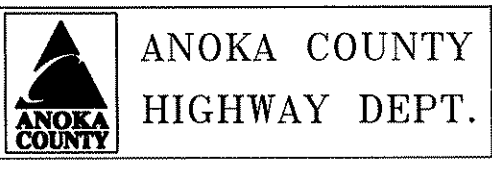


I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

Donald W. Funch

DATE 7/14/98 REG. NO. 20235

DRAWN BY: HDG DATE 06/04/98
 DESIGN BY: HDG DATE 06/04/98
 CHECKED BY: DJV DATE 06/04/98



ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. _____
 STATE AID PROJECT NO. 02-635-08
 STATE AID PROJECT NO. 02-635-10
 COUNTY PROJECT NO. _____

TABULATIONS

Sheet 6 of 64 Sheets

EARTHWORK SUMMARY (X)

Fed. Project No. _____

EXCAVATION (EV)

EMBANKMENT (CV)

BALANCE

① COMMON EXCAVATION	17,881 m ³	REGULAR	8,052 m ³
		SUBCUT	7,933 m ³
		TOPSOIL	1,896 m ³

EMBANKMENT	1,822 m ³
SUBCUT	7,933 m ³
TOPSOIL	1,035 m ³

TOPSOIL

TOPSOIL DRESSING (CV) + REG. TOPSOIL (EV) × SHRINKAGE FACTOR] = EXCESS(-) OR SHORTAGE(+)
 1,035 m³ - [1,896 m³ × 0.70] = - 292 m³ (EXCESS)

GRANULAR

[REGULAR FILL (CV) + SUBCUT (CV)] - [REGULAR EXCAVATION (EV) × SHRINKAGE FACTOR] - [SUBCUT EXCAVATION (EV) × SHRINKAGE FACTOR] - [SED. POND EXCAVATION (EV) × SHRINKAGE FACTOR] = EXCESS (-) OR SHORTAGE (+)

[1,822m + 7,933 m³] - [8,052 m³ × 0.70] - [7,933 m³ × 0.70]
 9,755 m³ - 5,636 m³ - 5,553 m³
 +1,435 m³ (SHORTAGE)

NOTE:

① EXCAVATION QUANTITIES ARE BASED ON ALL EXISTING BITUMINOUS OR CONCRETE AND BASE MATERIAL (2,775m³) HAVE BEEN REMOVED DURING REMOVAL OF THE EXISTING ROAD SURFACE. AND THEY ARE NOT INCLUDED IN THE EXCAVATION QUANTITIES.

SOIL FACTORS:

- 1.) REGULAR GRADING AND TOPSOIL DRESSING (EV TO CV): 70% SHRINKAGE
- 2.) SUBCUT COMPACTION (EV TO CV): 70% SHRINKAGE
- 3.) SELECT GRANULAR BORROW (CV TO LV): 130% SWELL

SOILS AND CONSTRUCTION NOTES

1. TOP OF PROFILE GRADE IS DEFINED AS THE BOTTOM OF THE AGGREGATE BASE.
2. IN FILL AREAS, THE SUBGRADE SHALL BE CONSTRUCTED WITH SELECTED GRADING MATERIAL.
3. SELECTED GRADING MATERIALS SHALL CONSIST OF SELECT GRANULAR MATERIALS.
4. GRANULAR MATERIAL, REGARDLESS OF SOURCE, SHALL MEET THE REQUIREMENTS OF SPEC. 3149.2B1.
5. SELECT GRANULAR MATERIAL SHALL MEET THE REQUIREMENTS OF SPEC 3149.2B2.
6. COMPACTION OF THE GRADING PORTION OF THIS PROJECT SHALL BE BY THE "SPECIFIED DENSITY METHOD".
7. TEST ROLLING WILL NOT BE REQUIRED.
8. BITUMINOUS AND/OR CONCRETE ITEMS REMOVED BY CONSTRUCTION SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL EITHER BE RECYCLED OR DISPOSED OF IN ACCORDANCE WITH THE REQUIREMENTS OF 2104.3C3 WITH NO DIRECT COMPENSATION MADE THEREFORE.
9. DISPOSITION OF EXCAVATED MATERIAL SHALL BE IN ACCORDANCE WITH SPEC. 2105.3D WITH NO DIRECT COMPENSATION MADE THEREFORE.
10. WHERE MATCHING INTO THE INPLACE ROADWAY AT THE ENDS OF CONSTRUCTION, CUT VERTICALLY TO THE TOP OF THE GRADING SUBGRADE AND THEN AT A 20:1 TAPER TO THE BOTTOM OF THE RECOMMENDED SUBGRADE EXCAVATION.
11. WHERE CONNECTING NEW SURFACING TO AN INPLACE PAVEMENT, THE EXCAVATION SHALL BE BACKFILLED PROMPTLY TO AVOID UNDERMINING THE INPLACE PAVEMENT.
12. USE TACK COAT BETWEEN ALL BITUMINOUS MIXTURES PRIOR TO PLACING BITUMINOUS MIXTURES AND PRIOR TO PLACING ANY BITUMINOUS MIXTURES ON EXISTING CONCRETE OR BITUMINOUS SURFACES. THE BITUMINOUS TACK COAT MATERIAL SHALL BE APPLIED AT A UNIFORM RATE OF 0.23 L/m² BETWEEN BITUMINOUS LAYERS. THE APPLICATION RATES ARE FOR UNDILUTED EMULSIONS (AS SUPPLIED FROM THE REFINERY); ASPHALT EMULSION MAY BE FURTHER DILUTED IN THE FIELD IN ACCORDANCE WITH SPEC. 2357.
13. COMPACTION OF THE BITUMINOUS BASE, BINDER, AND WEAR SHALL BE BY THE "MODIFIED SPECIFIED DENSITY METHOD".
14. COMPACTION OF THE AGGREGATE BASE LAYERS SHALL BE BY THE "SPECIFIED DENSITY METHOD".
15. COMPACTION OF THE STORM SEWER TRENCH MATERIAL SHALL BE BY THE SPECIFIED DENSITY METHOD."
16. TRENCH EXCAVATION BELOW THE WATER TABLE SHALL BE DEWATERED PRIOR TO BACKFILL, AND BACKFILLED WITH SELECT GRANULAR MATERIAL.
17. IN AREAS TO BE DISTURBED BY CONSTRUCTION, STRIP AND RE-USE AS SLOPE DRESSING ALL TOPSOIL AND INPLACE SLOPE DRESSING. REFER TO THE CROSS-SECTIONS FOR THE LIMITS OF TOPSOIL STRIPPING. GENERAL DEPTHS OF TOPSOIL LAYER ARE ASSUMED TO BE 100 mm.

18. SLOPE DRESSING ON THIS PROJECT IS DEFINED AS THE TOPSOIL OR OTHER SOIL PLACED DURING CONSTRUCTION TO PROVIDE A MEDIUM FOR ESTABLISHING TURF.
19. PLACE A MINIMUM OF 100 mm TOPSOIL OR SLOPE DRESSING ON ALL AREAS DISTURBED BY CONSTRUCTION AND SCHEDULED FOR PERMANENT TURF ESTABLISHMENT. FERTILIZE WITH COMMERCIAL FERTILIZER, ANALYSIS 10-10-10, AT A RATE OF 500 kg/ha OR EQUIVALENT.
20. ON ALL DISTURBED AREAS, USE MIXTURE 70A SEED WITH TYPE 1 MULCH, AND DISK ANCHORING, UNLESS SPECIFIED FOR SOD.
21. SOD ALL PERMANENT BOULEVARD AREAS, AND DISTURBED LAWNS.
22. ALL SOD UTILIZED WITHIN THE PROJECT LIMITS SHALL MEET THE REQUIREMENTS OF SPEC. 3878.2A SALT RESISTANT
23. EXCESS TOPSOIL AND MUCK EXC. MAY BE USED IN EMBANKMENT CONSTRUCTION IN AREAS OUTSIDE OF A 1:1 1/2 SLOPE FROM THE GRADING SHOULDER P.I.
24. BITUMINOUS REMOVAL QUANTITY BASED ON 100 mm BITUMINOUS SURFACING. CONTRACTOR SHALL INVESTIGATE AND MAKE THEIR OWN DETERMINATION OF ACTUAL PAVEMENT DEPTH.

② SELECT GRANULAR BORROW = [SELECT GRANULAR FILL (CV) + GRANULAR SHORTAGE (CV)] × SWELL FACTOR
 [1,435 m³] × 1.3 = 1,866 m (LV)

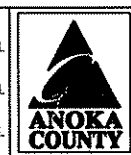
(T)		BITUMINOUS SUMMARY							
STATION TO STATION	LOCATION	DESCRIPTION	BIT. SURF. CONST. m2	WEAR 40 mm TON	BINDER 40 mm TON	BASE 70 mm TON	TACK COAT L	AGGREGATE AREA m2	AGG. CL-5 180 mm m3
02-635-10									
10+315 - 11+470	LT & RT	BEG. PROJ. TO RICE CRK RD	14784	1390			3400		
11+470 - 11+548	LT & RT	INTERSECT. OF #35 & RICE CRK RD	1065	100			245		
11+548 - 12+540	LT & RT	N. OF RICE CRK RD TO RICE CREEK	12874	1210			2961		
02-635-08									
2+801-3+027	FROM 3.6 m LT TO F/G LT	SHOULDER RECONSTRUCT AREA	3534	332	374	610	1626	4344	782
69TH AVE.	RT	RECONSTRUCT	525	49	56	91	242	587	106
2+801-3+031	FROM 3.6 m LT TO E-M RT	WEAR COURSE OVERLAY	11173	1050			2570		
NORTON AVE.	LT	RECONSTRUCT	148	14	16	26	68	178	32
72ND AVE.	LT	RECONSTRUCT	165	16	17	29	76	195	35
73RD AVE.	LT	RECONSTRUCT	396	37	42	69	182	427	77
3+066-3+702	FROM 3.6 m LT TO F/G LT	SHOULDER RECONSTRUCT AREA	2387	224	252	412	1098	2933	528
3+031-3+702	FROM 3.6 m LT TO E-M RT	WEAR COURSE OVERLAY	7531	708			3464		
73 1/2 AVE.	LT	RECONSTRUCT	151	14	16	26	69	185	34
FIRESIDE DRIVE	LT	RECONSTRUCT	164	15	17	28	75	196	35
3+702-3+831	LT & RT	FULL-WIDTH RECONSTRUCT	2258	212	239	390	1039	2502	450
CSAH B & CSAH 35	LT & RT @ INTERSECTION	RECONSTRUCT	1479	139	156	256	680	1569	282
3+876-4+662	LT & RT	FULL-WIDTH RECONSTRUCT	12466	1172	1318	2153	5734	13844	2492
78TH CIRCLE N.E.	RT	RECONSTRUCT	136	13	14	24	63	166	30
LAKEVIEW LN.	RT	RECONSTRUCT	140	13	15	25	64	170	31
80TH AVE. N.E.	LT	RECONSTRUCT	157	15	17	27	72	187	34
TOTALS =			71533	6723	2549	4166	23728	27482	4948

NO	DATE	BY	CKD	APPR	REVISION
1	6/23/98	HG			



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.
Ronald J. Erickson
 DATE 7/14/98 REG. NO. 20235

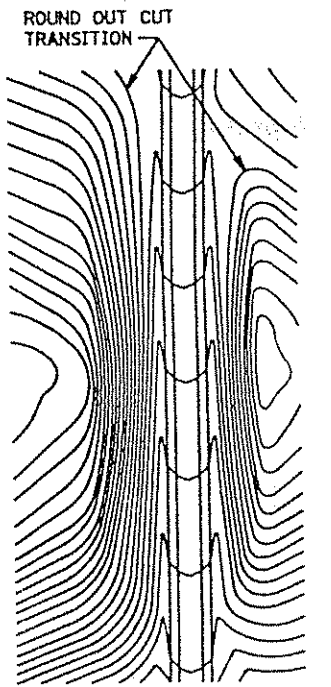
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 DESIGN BY: HJG DATE 06/04/98
 CHECKED BY: DJF DATE 06/04/98



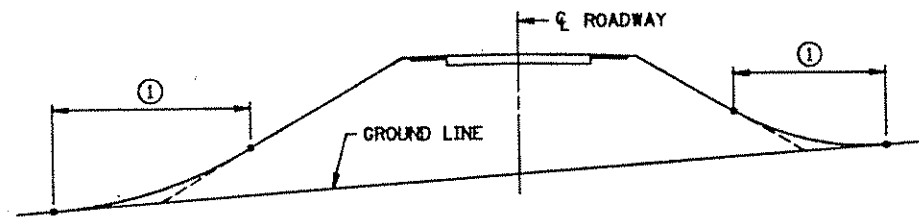
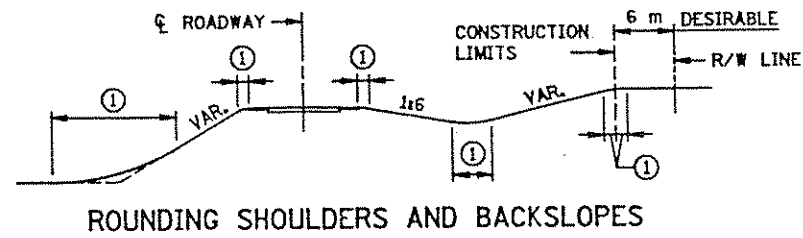
ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO. _____
 STATE AID PROJECT NO. 02-635-08
 STATE AID PROJECT NO. 02-635-10
 COUNTY PROJECT NO. _____

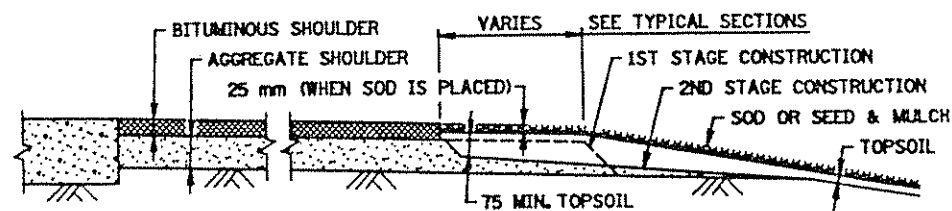
EARTHWORK
&
BITUMINOUS SUMMARY
Sheet 7 of 64 Sheets



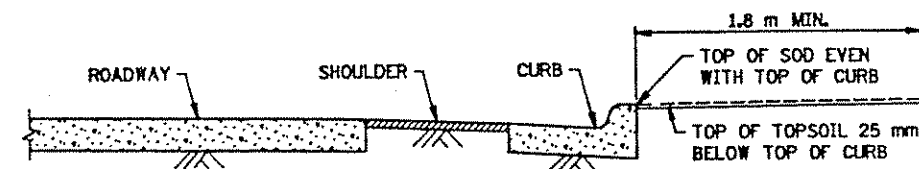
CONTOURING ROAD CUTS



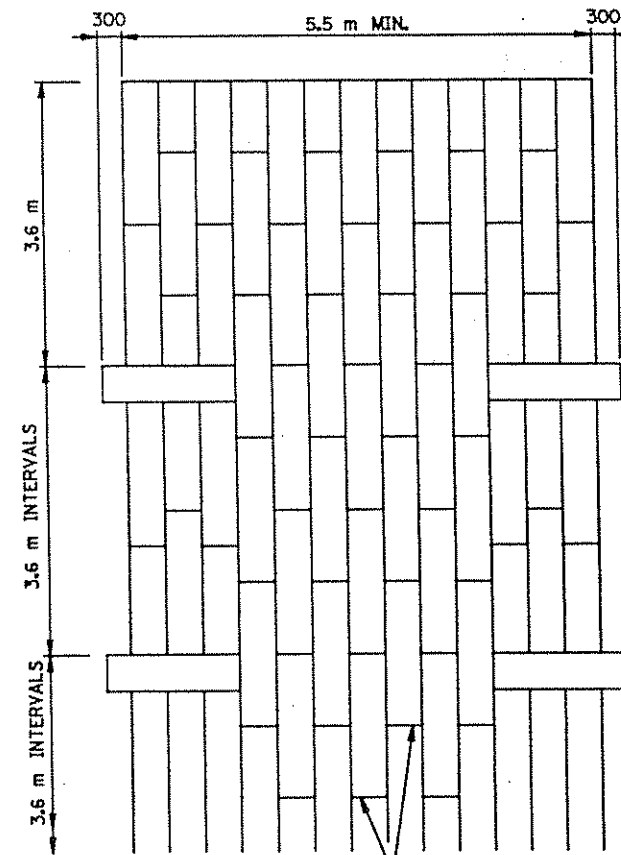
SHAPING FOR DRAINAGE ALONG THE TOE OF FILL SLOPES



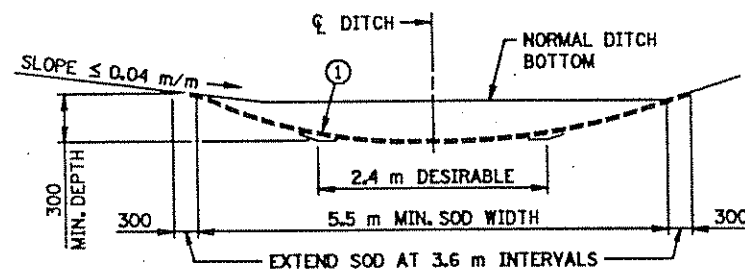
SHAPING AND TOPSOILING INSLOPES



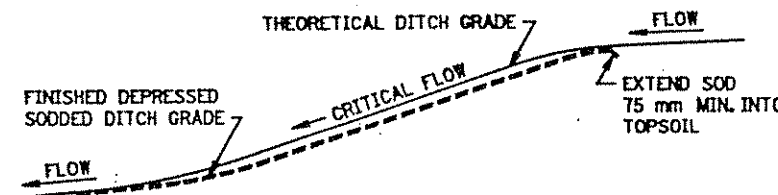
SHAPING ADJACENT TO CURBS WHEN SOD IS PLACED



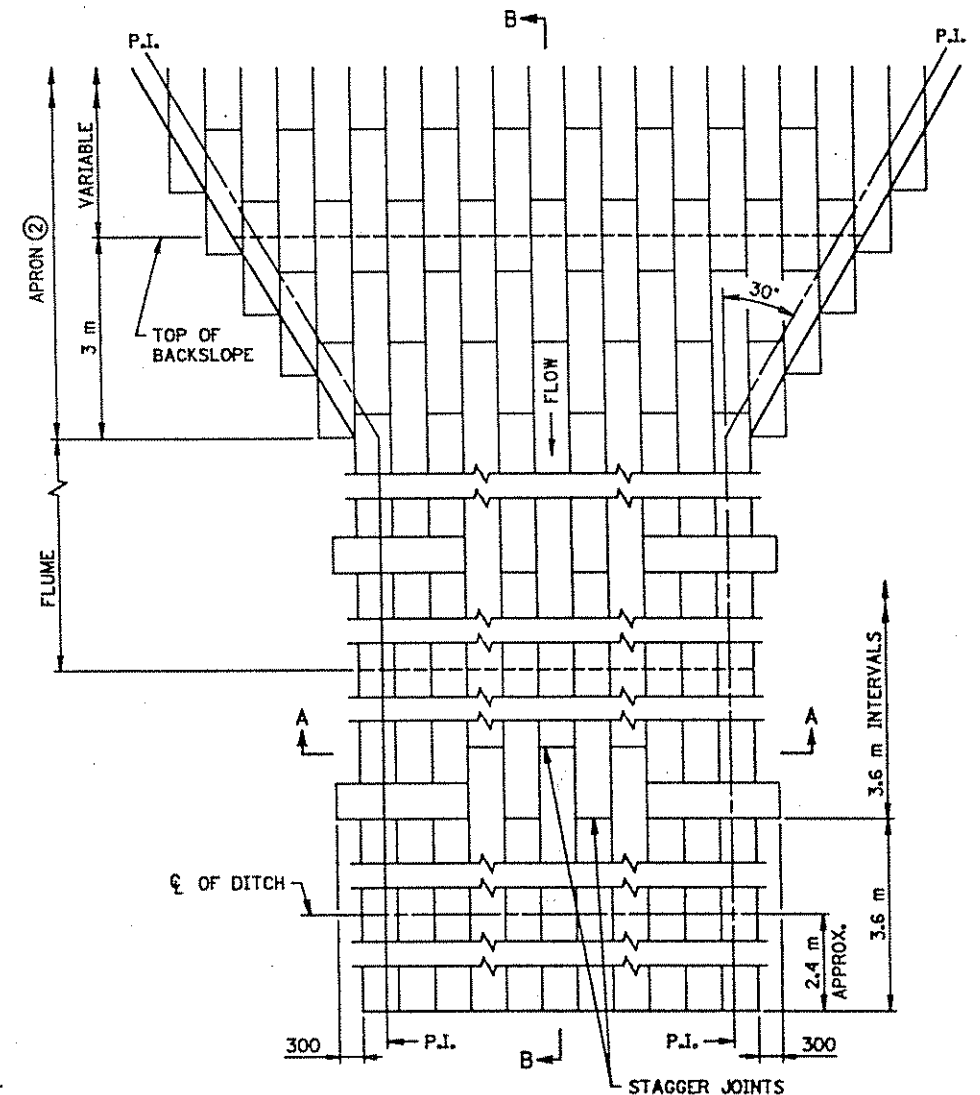
STAGGER JOINTS
PLAN VIEW



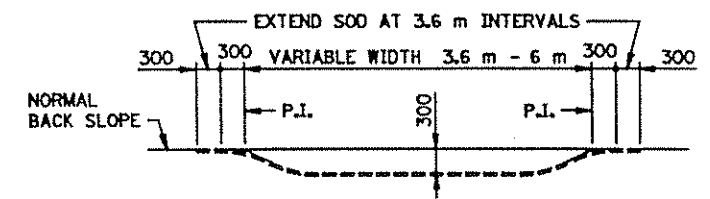
SODDED DITCH CROSS SECTION
WHERE FRONT OR BACK SLOPE IS FLAT (LESS THAN 0.04 m/m),
FIRST NOTCH DITCH AND THEN PROVIDE ROUNDING.



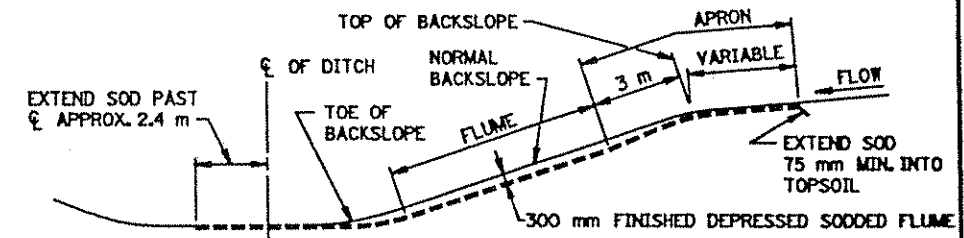
DITCH PROFILE
SODDED DITCH DETAILS



STAGGER JOINTS
PLAN VIEW



SECTION A-A



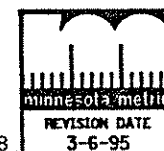
SECTION B-B

SODDED FLUME DETAILS

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

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

REVISED 6-17-98

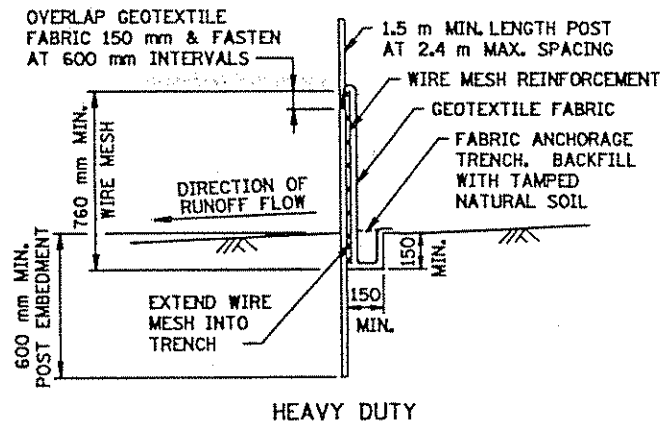


STANDARD SHEET NO.
5-297.404M
STANDARD APPROVED
DECEMBER 19, 1990

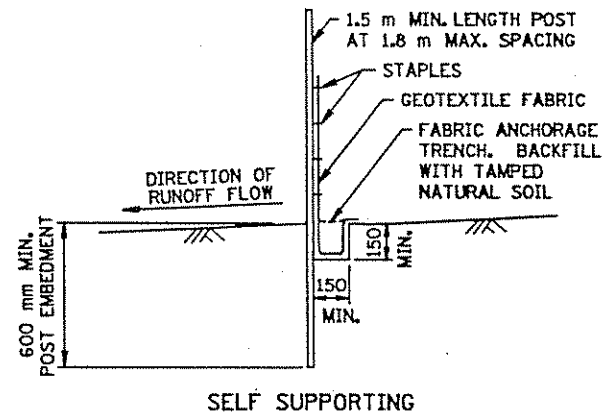
TITLE

PERMANENT EROSION CONTROL
ALONG ROADWAYS, DITCHES AND FLUMES

STATE PROJ. NO. 02-635-08/02-635-10 SHEET NO. 8 OF 64 SHEETS

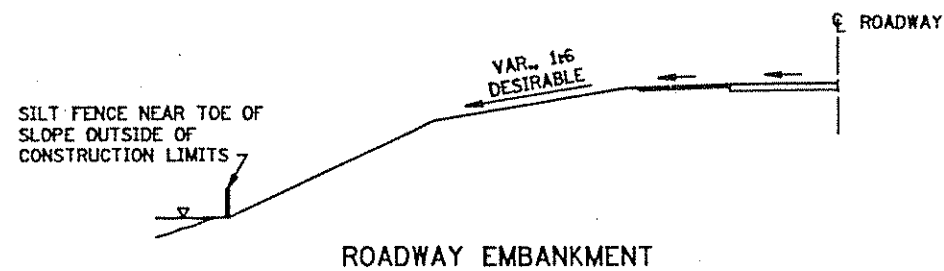


HEAVY DUTY

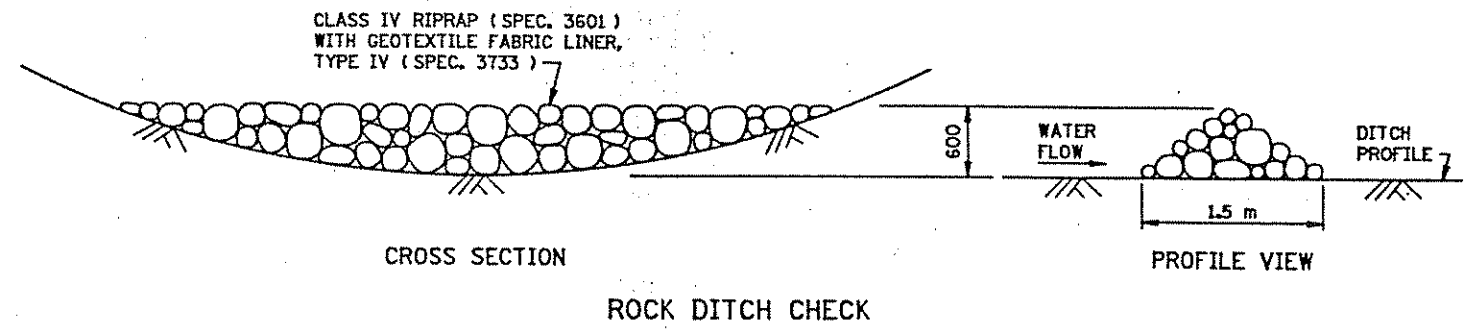


SELF SUPPORTING

SILT FENCE DETAILS
TO PROTECT AREAS FROM SHEET FLOW
(SEE SPEC. 3886)
DESIGN CRITERIA:
MAXIMUM CONTRIBUTING AREA: 1.2 ha



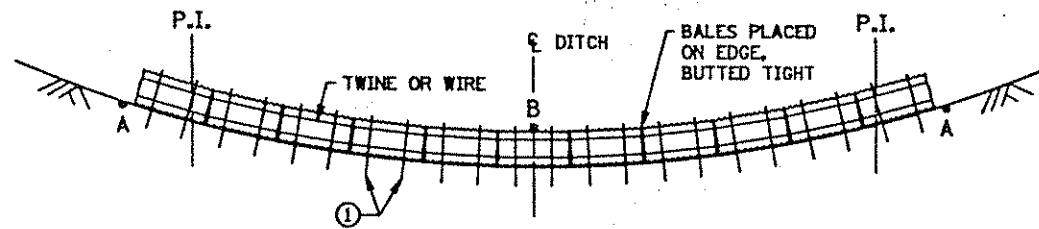
ROADWAY EMBANKMENT



CROSS SECTION

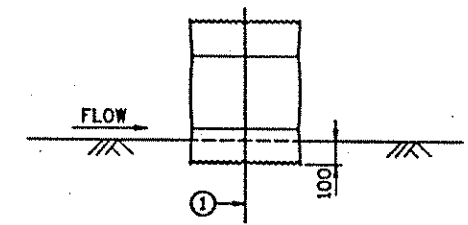
PROFILE VIEW

ROCK DITCH CHECK

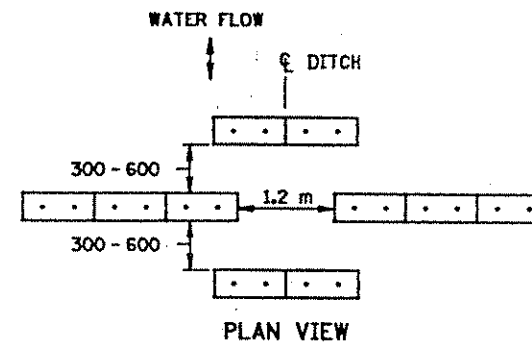


NOTE:
POINT A MUST BE HIGHER THAN POINT B

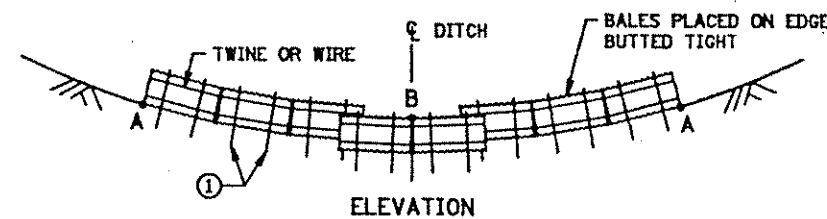
BALE DITCH SEDIMENT CHECK



BALE CHECK DETAIL



PLAN VIEW



ELEVATION

NOTE:
POINT A MUST BE HIGHER THAN POINT B

BALE DITCH VELOCITY CHECKS
(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

DESIGN CRITERIA:

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

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

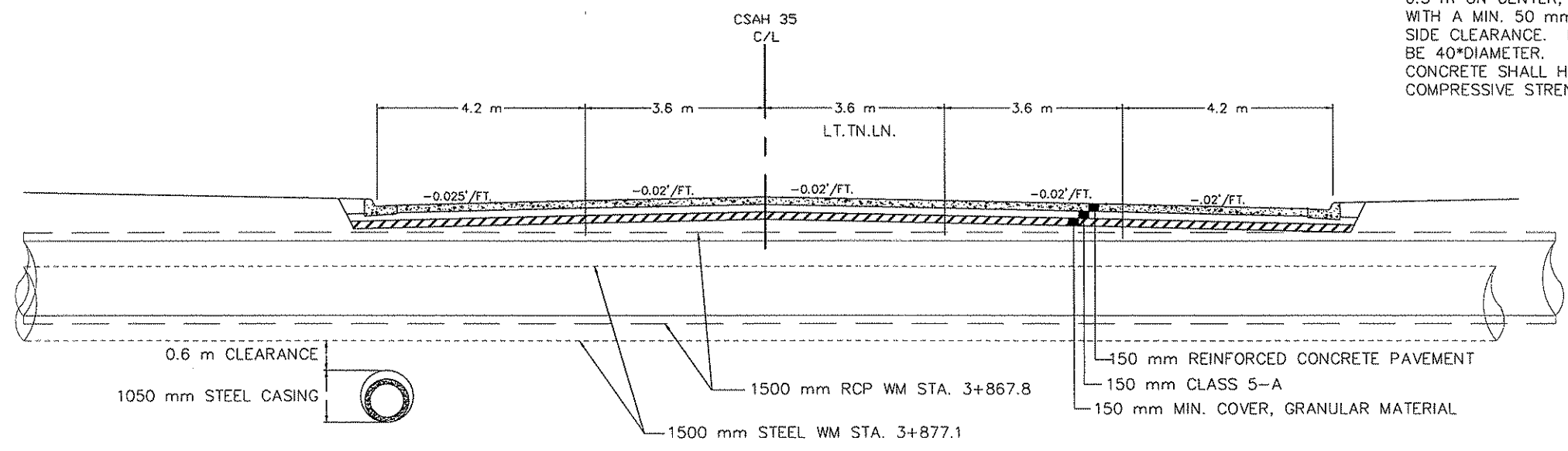
NOTE: ALL DIMENSIONS ARE IN MILLIMETERS, EXCEPT AS NOTED.

STANDARD SHEET NO.
5-297.405M (2 OF 3)
STANDARD APPROVED
MAY 1, 1995
REVISION DATE
5-19-97

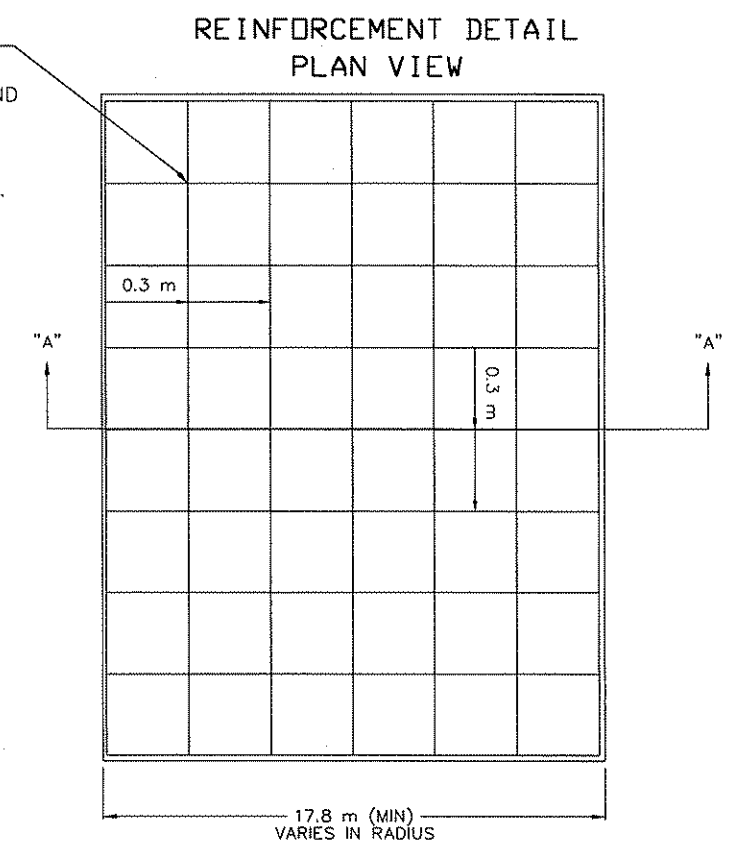
TITLE:
TEMPORARY EROSION CONTROL
STATE PROJ. NO. 02-635-08/02-635-10 SHEET NO. 9 OF 64 SHEETS

REVISED 6-17-98

SPECIAL REINFORCED CONCRETE PAVEMENT
 STA. 3+865.4 TO STA 3+879.5

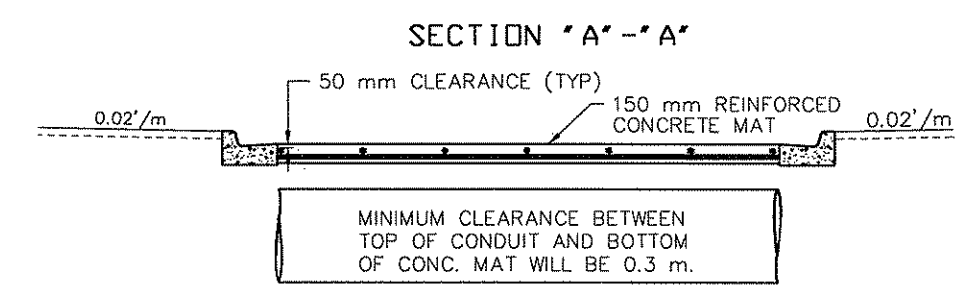
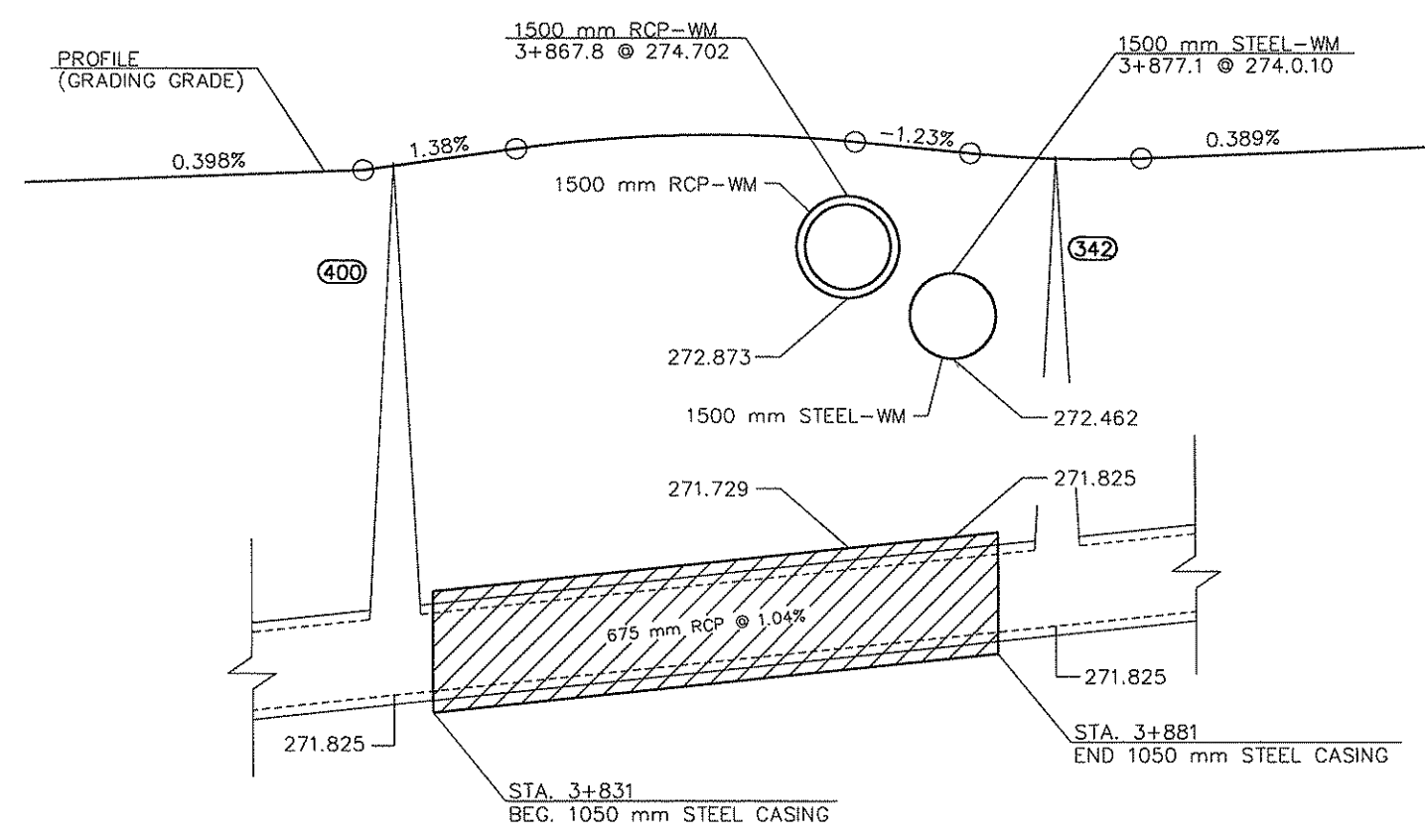


EPOXY-COATED #5 BARS PLACED 0.3 m ON CENTER, BOTH DIRECTIONS WITH A MIN. 50 mm TOP/BOTTOM AND SIDE CLEARANCE. BAR LAP SHALL BE 40*DIAMETER. CONCRETE SHALL HAVE A 28 MPa COMPRESSIVE STRENGTH AT 28 DAYS.



NOTE: NO EQUIPMENT OVER 5 TON SHALL OPERATE WITHIN 2 m OF C/L OF ST. PAUL WATERWORKS WATERMAINS.

PROFILE VIEW (⊥ TO WATERMAINS)



NO	DATE	BY	CKD	APPR	REVISION
1	6/17/98	HG			



I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 DATE 7/14/98 REG. NO. 20235

DRAWN BY: HDG DATE 06/04/98
 DESIGN BY: HEG DATE 06/04/98
 CHECKED BY: DMF DATE 06/04/98

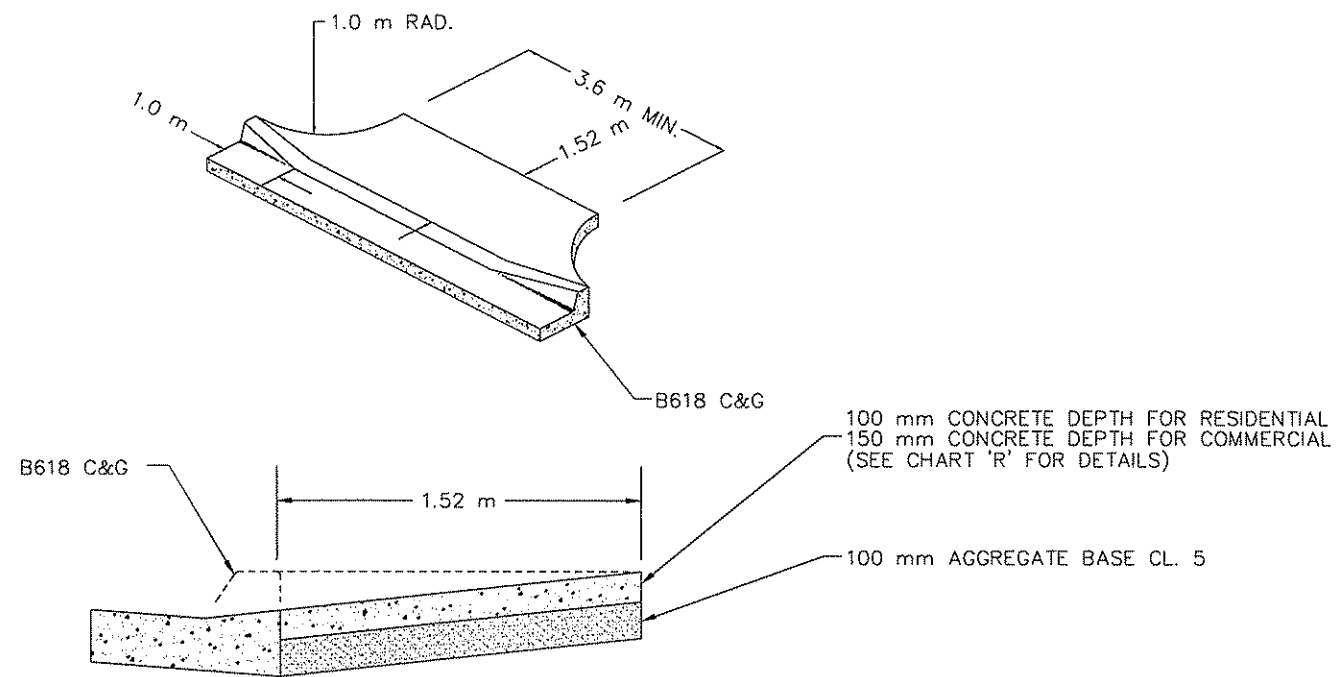


ANOKA COUNTY HIGHWAY DEPT.

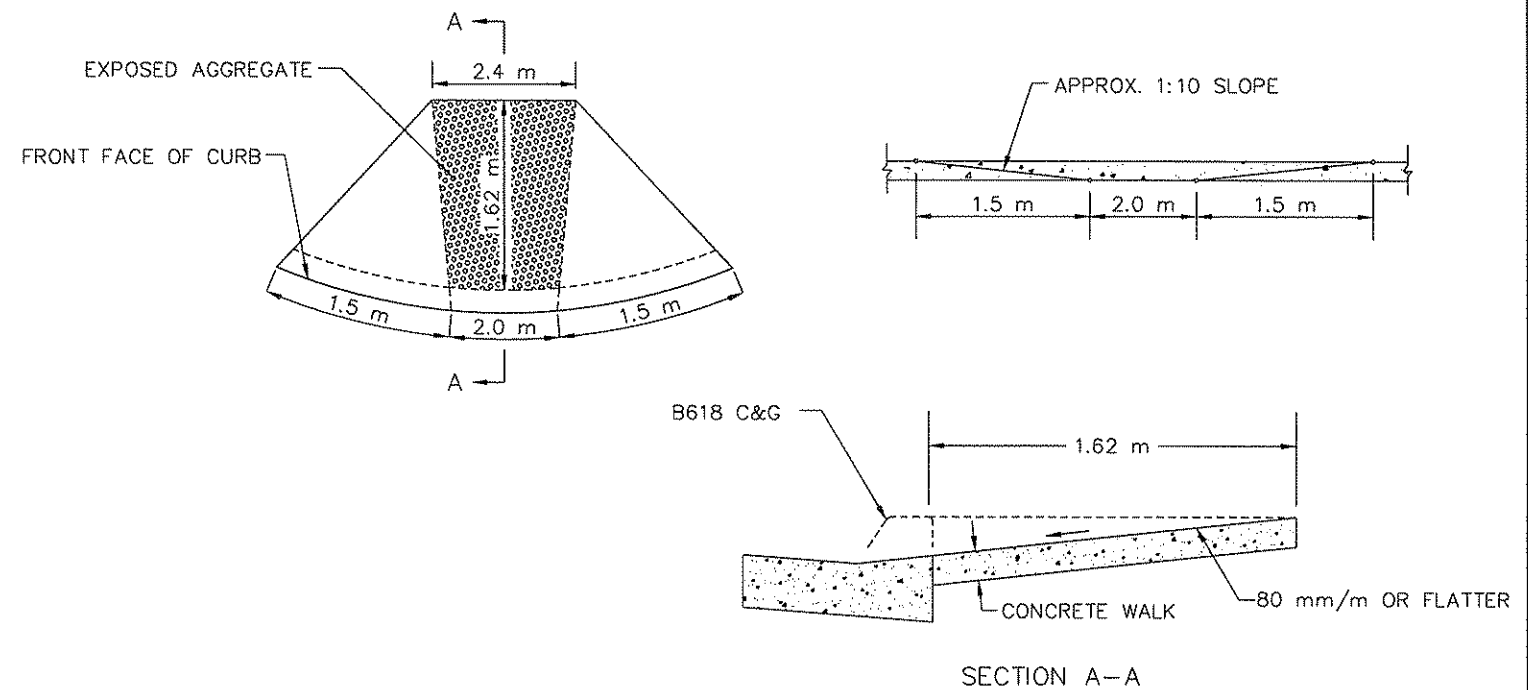
STATE PROJECT NO. _____
 STATE AID PROJECT NO. 02-635-08
 STATE AID PROJECT NO. 02-635-10
 COUNTY PROJECT NO. _____

CONSTRUCTION DETAILS
 CONC. PAYMNT @ ST. PAUL WW
 Sheet 10 of 64 Sheets

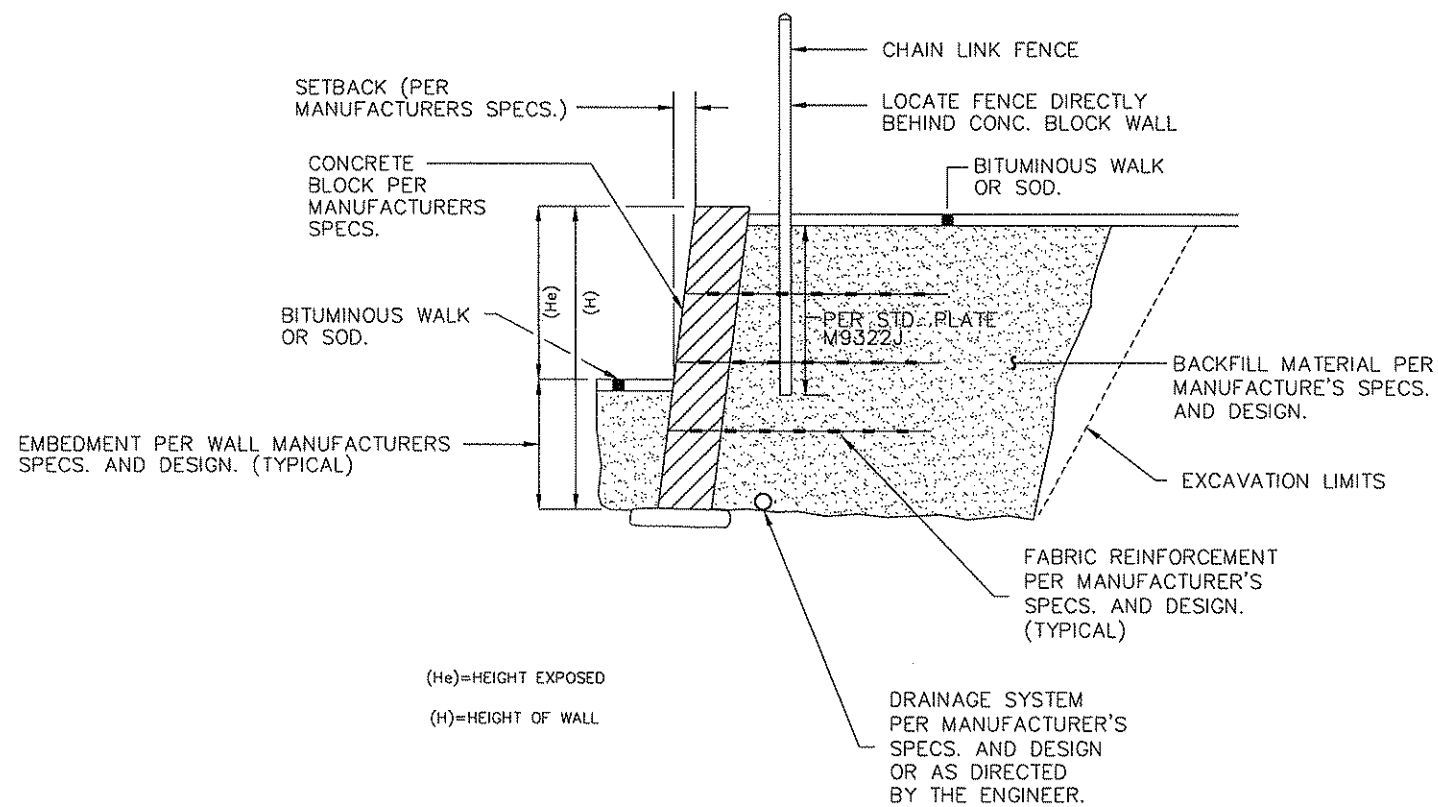
**SPRING LAKE PARK
RESIDENTIAL/COMMERCIAL
CONCRETE ENTRANCE**



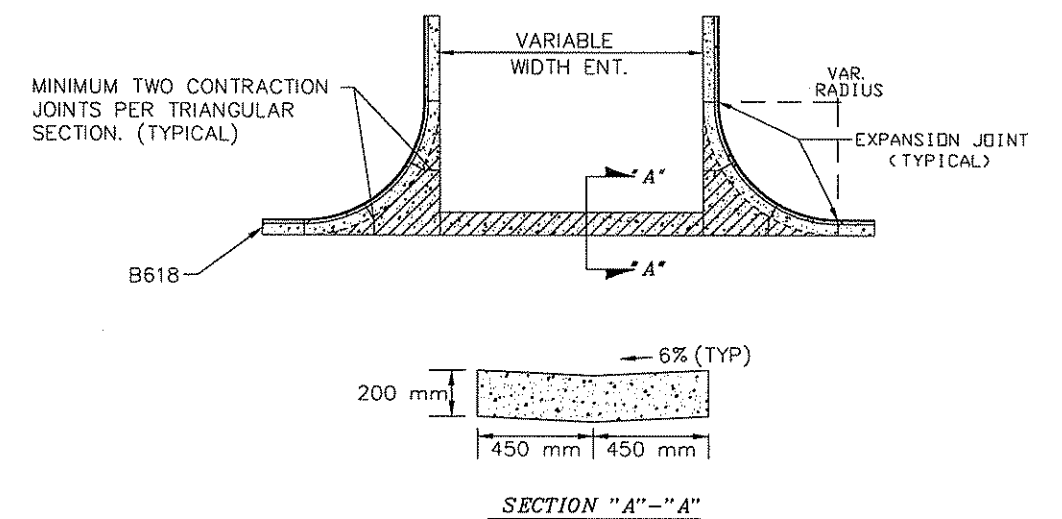
CONCRETE PEDESTRIAN RAMP



CONCRETE BLOCK RETAINING WALL DETAIL



CROSS GUTTER DETAIL



= DESIGNATES 200 mm DEPTH CONCRETE BY THE m²
CROSS-GUTTER TO BE CONSTRUCTED IN STAGES TO ALLOW FOR TRAFFIC.
SEE ENTRANCE CHART FOR LOC. & QTY.'S

NO	DATE	BY	CHKD	APPR	REVISION
1	6/17/98	HG			



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.
Douglas M. Finch
DATE 7/17/98 REG. NO. 20235

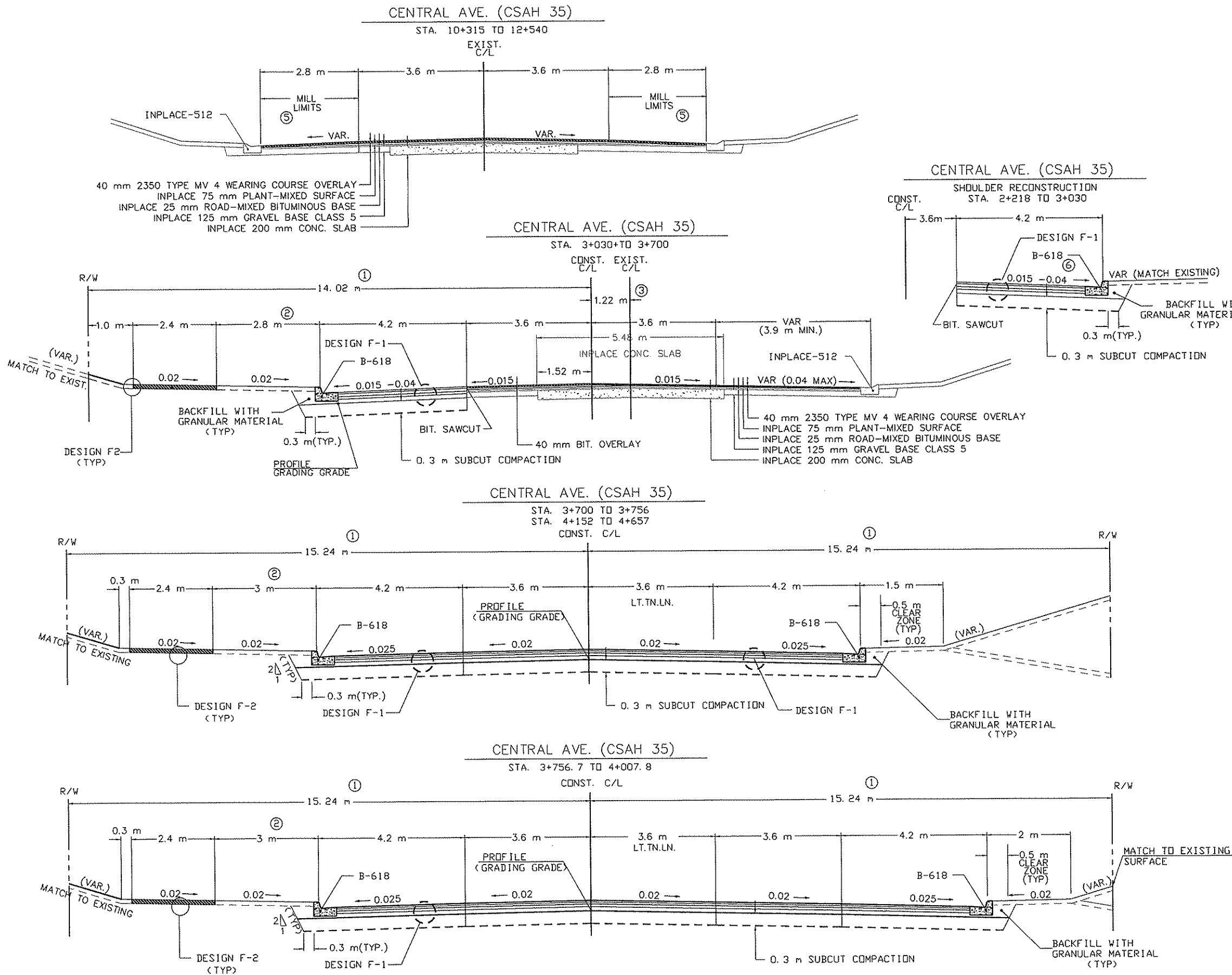
DRAWN BY: HG DATE 06/04/98
DESIGN BY: HEG DATE 06/04/98
CHECKED BY: DMF DATE 06/04/98



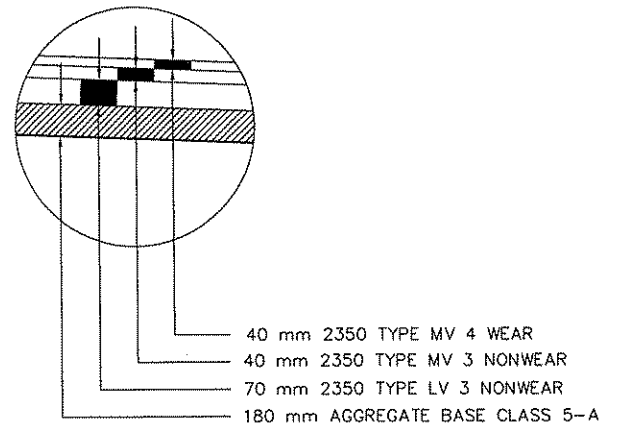
**ANOKA COUNTY
HIGHWAY DEPT.**

STATE PROJECT NO. _____
STATE AID PROJECT NO. 02-635-08
STATE AID PROJECT NO. 02-635-10
COUNTY PROJECT NO. _____

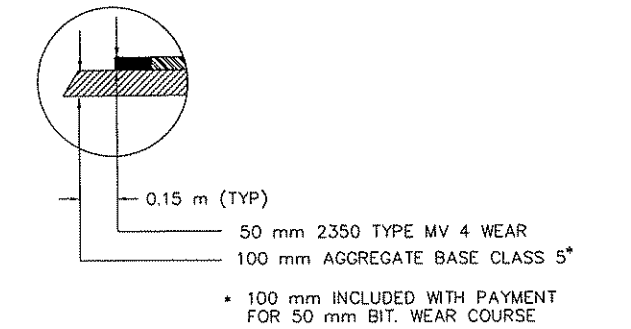
**CONSTRUCTION
DETAILS**



DESIGN F-1

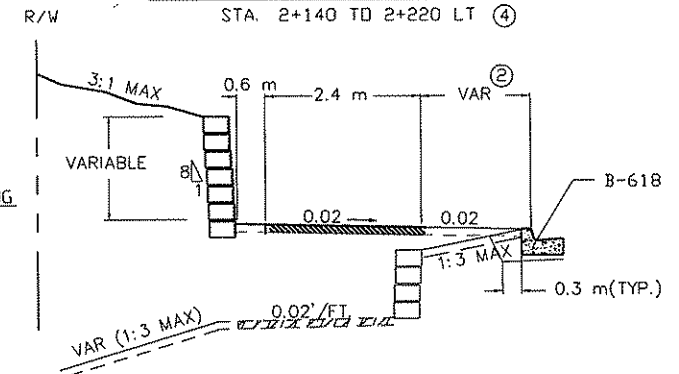


DESIGN F-2



- ① 15.24 m LT & RT FROM 3+986.5 TO END PROJECT
14.02 m LT FROM 2+206.5 TO 3+879.9
VARIES FROM 2+081 TO 2+206.5 & FROM 3+879.9 TO 3+986.5
- ② SEE PLAN & PROFILE SHEETS FOR VAR. WIDTHS
- ③ 0.0m DIFFERENCE FROM 2+081 TO 2+840
VAR. WIDTH FROM 2+840 TO 2+948 & FROM 3+879.9 TO 3+986.5
- ④ SEE TABULATION CHART FOR LOC. 'S & QTY. 'S
- ⑤ TAPERED MILL DEPTH FROM 0 mm @ 3.6 m LT & RT TO 40 mm @ FACE OF GUTTER LT & RT
- ⑥ B618 CONSTRUCTION ONLY FROM 2+081 TO 2+218 RT

RETAINING WALL DETAIL



NO	DATE	BY	CHKD	APPR	REVISION
2	7/30/98	HG			FULL DEPTH CONST. -RT SHOULDER
1	6/23/98	HG			



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

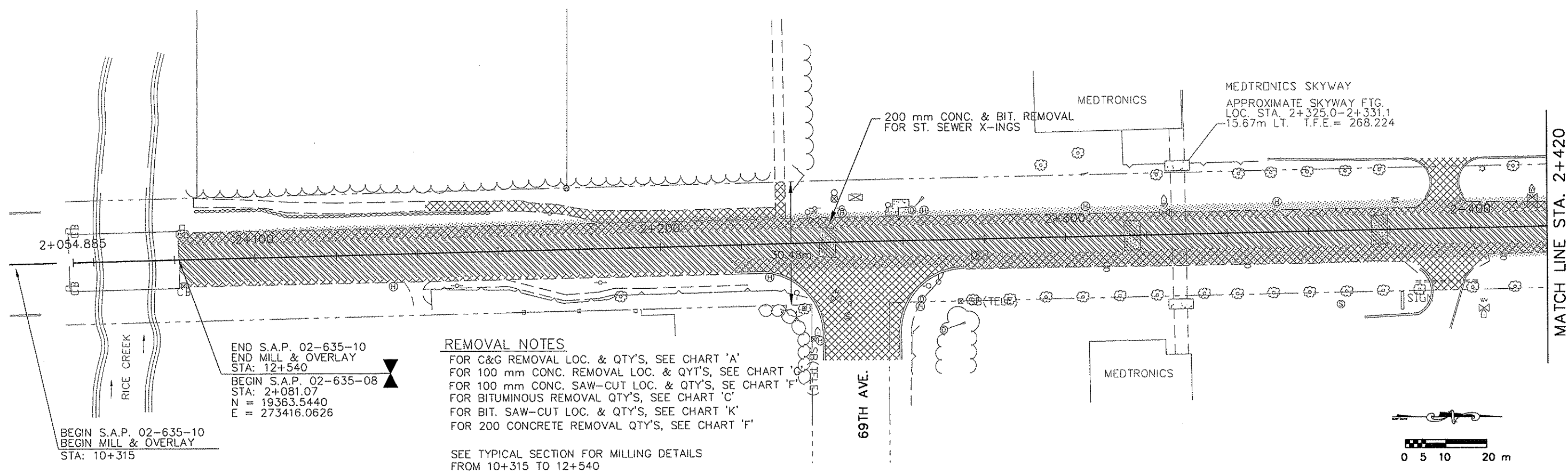
DATE _____ REG. NO. _____

DRAWN BY: HG DATE: 06/04/98
 DESIGN BY: HG DATE: 06/04/98
 CHECKED BY: DWF DATE: 06/04/98



ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO. _____
 STATE AID PROJECT NO. 02-635-08
 STATE AID PROJECT NO. 02-635-10
 COUNTY PROJECT NO. _____



END S.A.P. 02-635-10
 END MILL & OVERLAY
 STA: 12+540
 BEGIN S.A.P. 02-635-08
 STA: 2+081.07
 N = 19363.5440
 E = 273416.0626

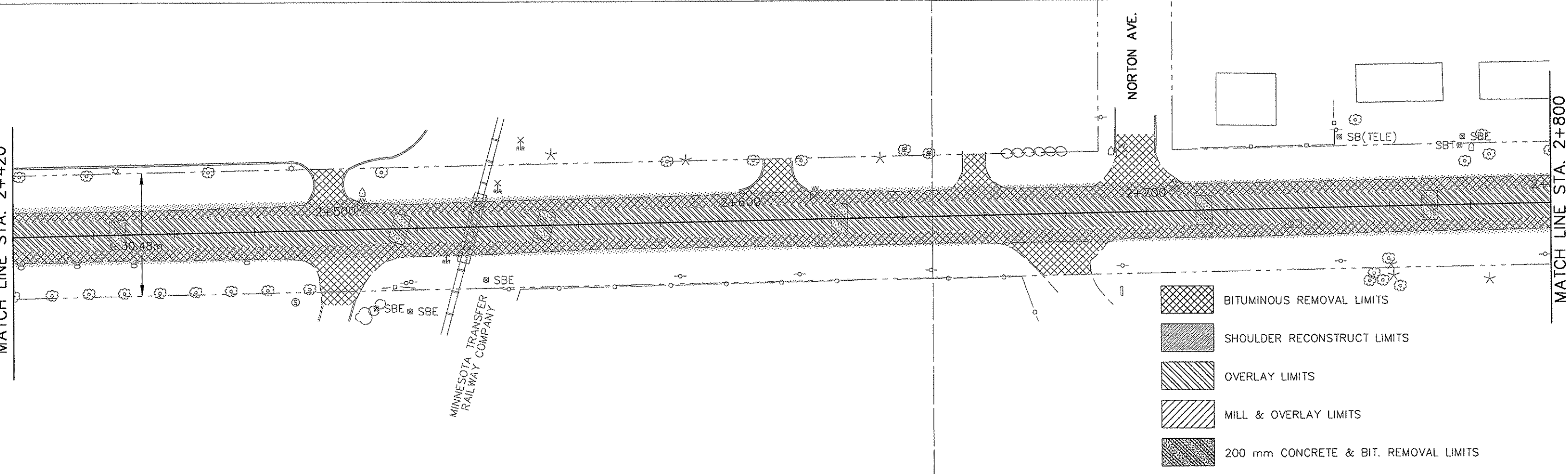
REMOVAL NOTES
 FOR C&G REMOVAL LOC. & QTY'S, SEE CHART 'A'
 FOR 100 mm CONC. REMOVAL LOC. & QTY'S, SEE CHART 'C'
 FOR 100 mm CONC. SAW-CUT LOC. & QTY'S, SE CHART 'F'
 FOR BITUMINOUS REMOVAL QTY'S, SEE CHART 'C'
 FOR BIT. SAW-CUT LOC. & QTY'S, SEE CHART 'K'
 FOR 200 CONCRETE REMOVAL QTY'S, SEE CHART 'F'

SEE TYPICAL SECTION FOR MILLING DETAILS
 FROM 10+315 TO 12+540

MATCH LINE STA. 2+420

BEGIN S.A.P. 02-635-10
 BEGIN MILL & OVERLAY
 STA: 10+315

MATCH LINE STA. 2+420



- BITUMINOUS REMOVAL LIMITS
- SHOULDER RECONSTRUCT LIMITS
- OVERLAY LIMITS
- MILL & OVERLAY LIMITS
- 200 mm CONCRETE & BIT. REMOVAL LIMITS

MATCH LINE STA. 2+800

NO	DATE	BY	CHKD	APPR	REVISION
1	7/30/98	HG			MILL & OVERLAY LIMITS SOUTH OF 73RD



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

DRAWN BY: HG DATE 05/04/98
 DESIGN BY: HG DATE 05/04/98
 CHECKED BY: DMF DATE 05/04/98



**ANOKA COUNTY
 HIGHWAY DEPT.**

STATE PROJECT NO. _____
 STATE AID PROJECT NO. 02-635-08
 STATE AID PROJECT NO. 02-635-10
 COUNTY PROJECT NO. _____






REMOVALS
 STA 2+081 TO 2+800
 Sheet 13 of 64 Sheets

P.I. 2+947.949
 N = 20230.215
 E = 273397.532

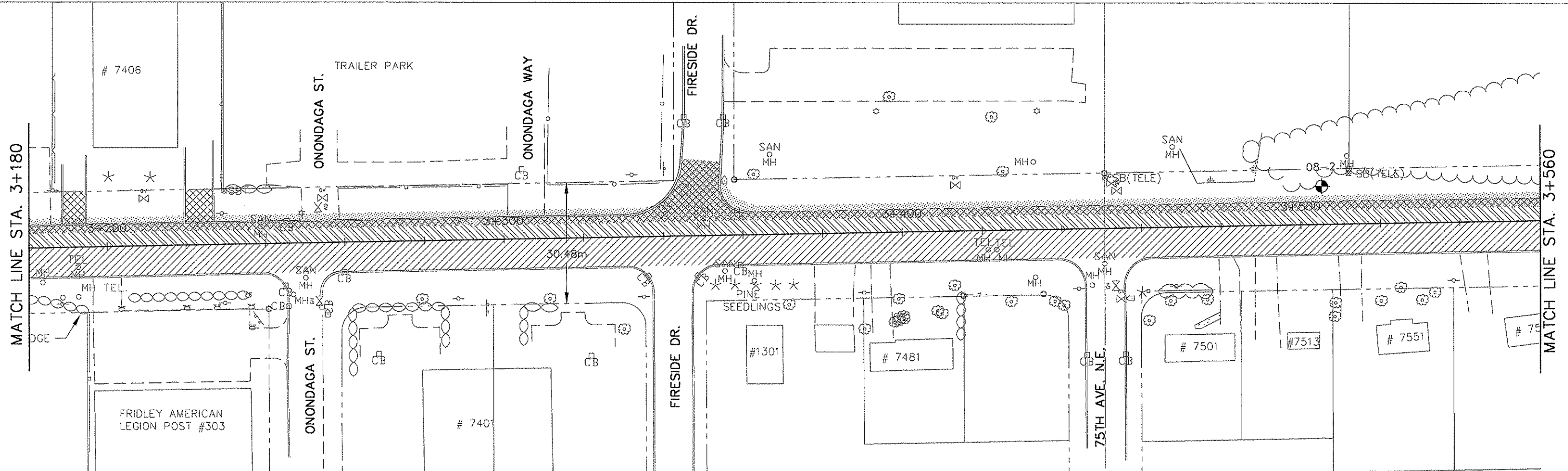
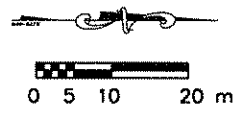
P.I. 2+840.000
 N = 20122.316
 E = 273400.829

MATCH LINE STA. 2+800

MATCH LINE STA. 3+180

-  BITUMINOUS REMOVAL LIMITS
-  SHOULDER RECONSTRUCT LIMITS
-  OVERLAY LIMITS
-  MILL & OVERLAY LIMITS
-  200 mm CONCRETE & BIT. REMOVAL LIMITS

REMOVAL NOTES
 FOR C&G REMOVAL LOC. & QTY'S, SEE CHART 'A'
 FOR 100 mm CONC. REMOVAL LOC. & QTY'S, SEE CHART 'G'
 FOR 100 mm CONC. SAW-CUT LOC. & QTY'S, SEE CHART 'F'
 FOR BITUMINOUS REMOVAL QTY'S, SEE CHART 'C'
 FOR BIT. SAW-CUT LOC. & QTY'S, SEE CHART 'K'
 FOR 200 mm CONCRETE REMOVAL QTY'S, SEE CHART 'F'



NO	DATE	BY	CKD	APPR	REVISION
1	7-30-98	HG			MILL & OVERLAY LIMITS SOUTH OF 73RD



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

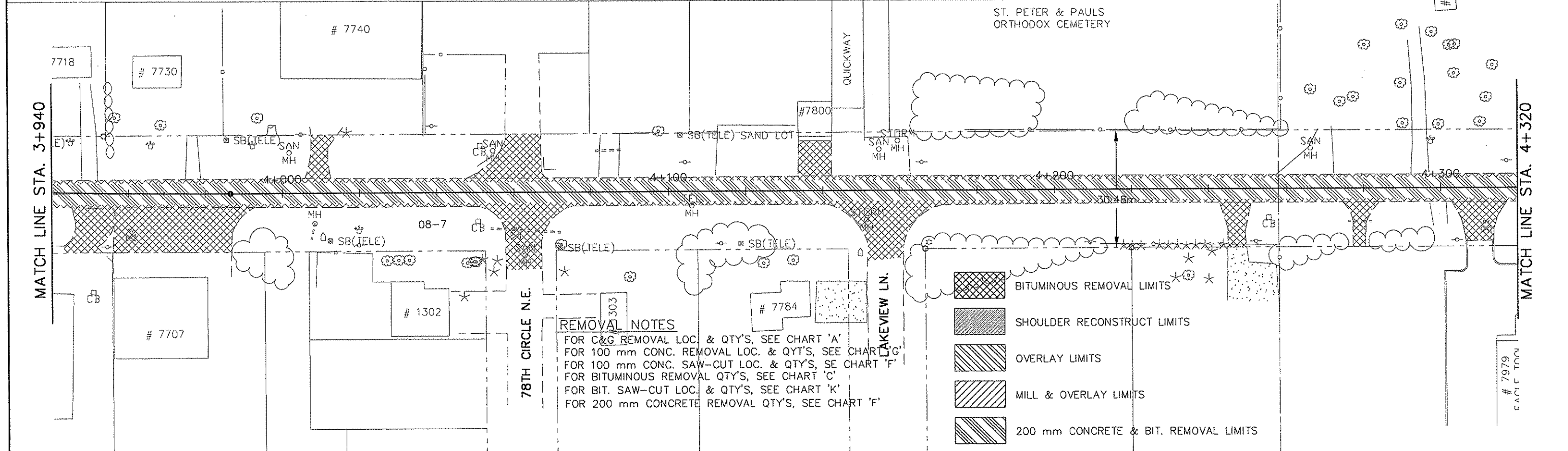
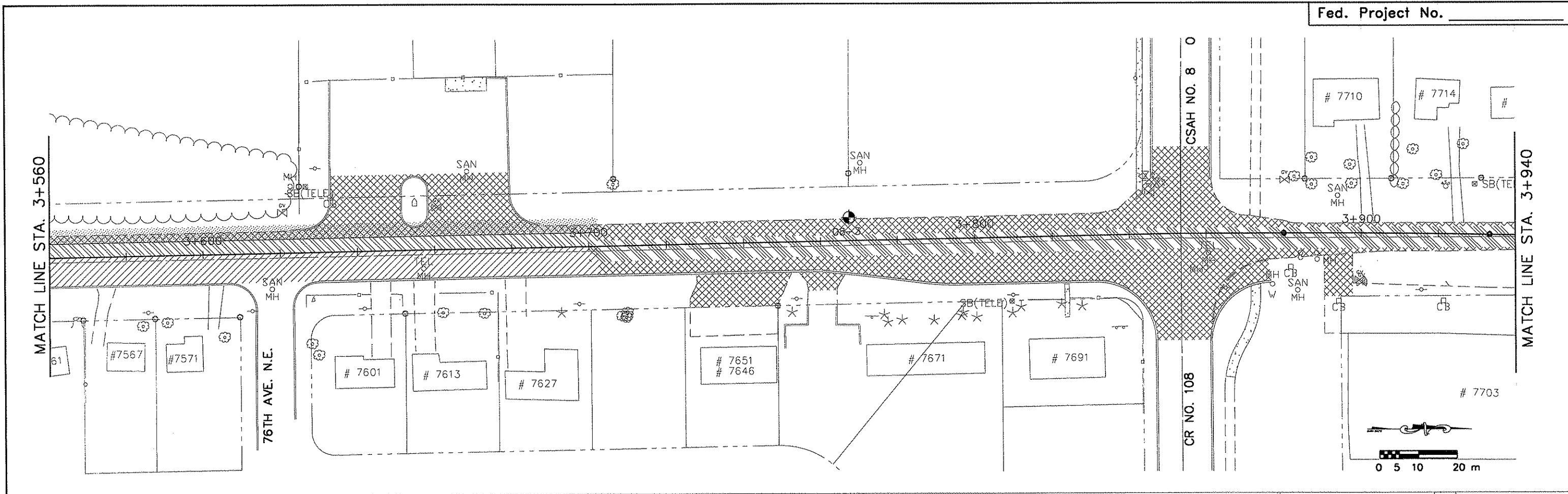
DRAWN BY: HOG DATE 06/04/98
 DESIGN BY: HOG DATE 06/04/98
 CHECKED BY: DMF DATE 06/04/98



**ANOKA COUNTY
 HIGHWAY DEPT.**

STATE PROJECT NO. _____
 STATE AID PROJECT NO. 02-635-08
 STATE AID PROJECT NO. 02-635-10
 COUNTY PROJECT NO. _____

REMOVALS
 STA 2+800 TO 3+560
 Sheet 14 of 64 Sheets



NO	DATE	BY	CKD	APPR	REVISION
1	6/17/98	HG			



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.

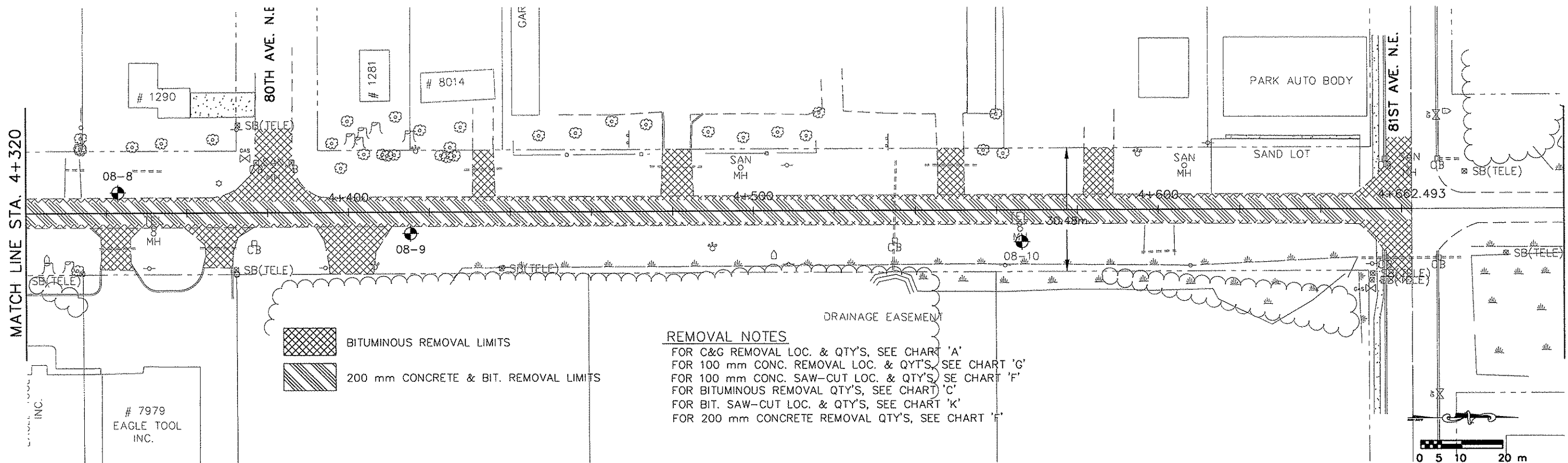
Douglas M. Funch
 DATE 7/14/98 REG. NO. 2235

DRAWN BY: HGC DATE 05/04/98
 DESIGN BY: HGC DATE 05/04/98
 CHECKED BY: CWF DATE 05/04/98

ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO. _____
 STATE AID PROJECT NO. 02-635-08
 STATE AID PROJECT NO. 02-635-10
 COUNTY PROJECT NO. _____

REMOVALS
 STA 3+560 TO 4+320
 Sheet 15 of 64 Sheets



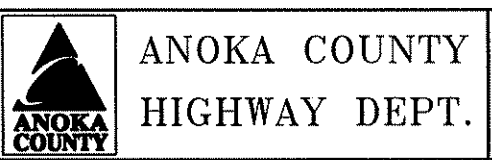
REMOVAL NOTES
 FOR C&G REMOVAL LOC. & QTY'S, SEE CHART 'A'
 FOR 100 mm CONC. REMOVAL LOC. & QTY'S, SEE CHART 'G'
 FOR 100 mm CONC. SAW-CUT LOC. & QTY'S, SEE CHART 'F'
 FOR BITUMINOUS REMOVAL QTY'S, SEE CHART 'C'
 FOR BIT. SAW-CUT LOC. & QTY'S, SEE CHART 'K'
 FOR 200 mm CONCRETE REMOVAL QTY'S, SEE CHART 'E'

NO	DATE	BY	CKD	APPR	REVISION
1	6/17/98	HG			



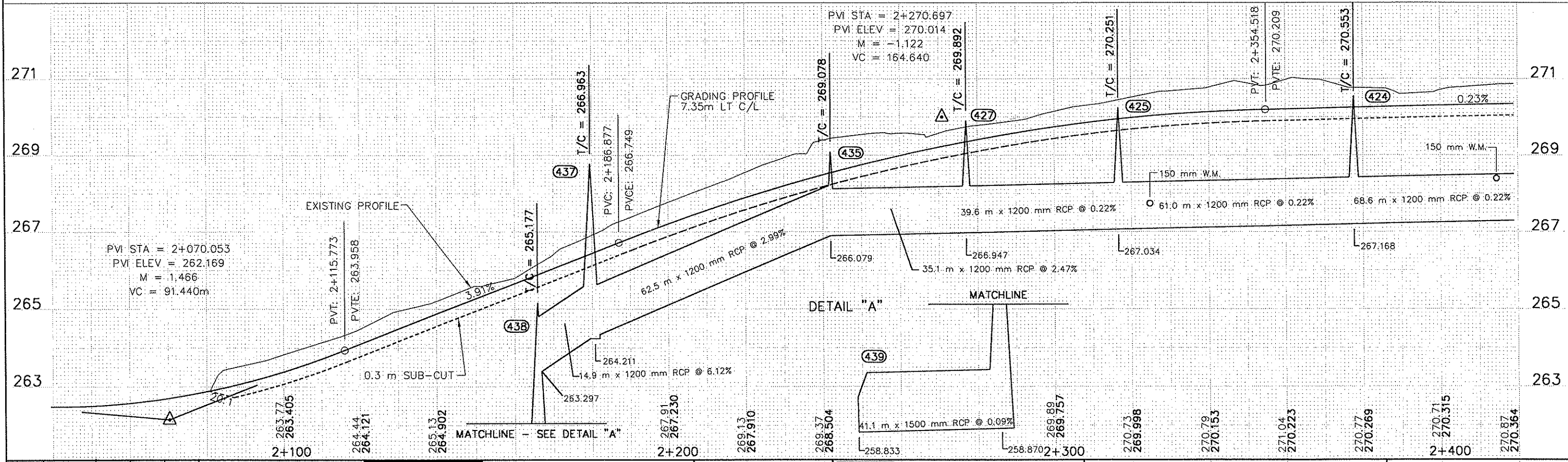
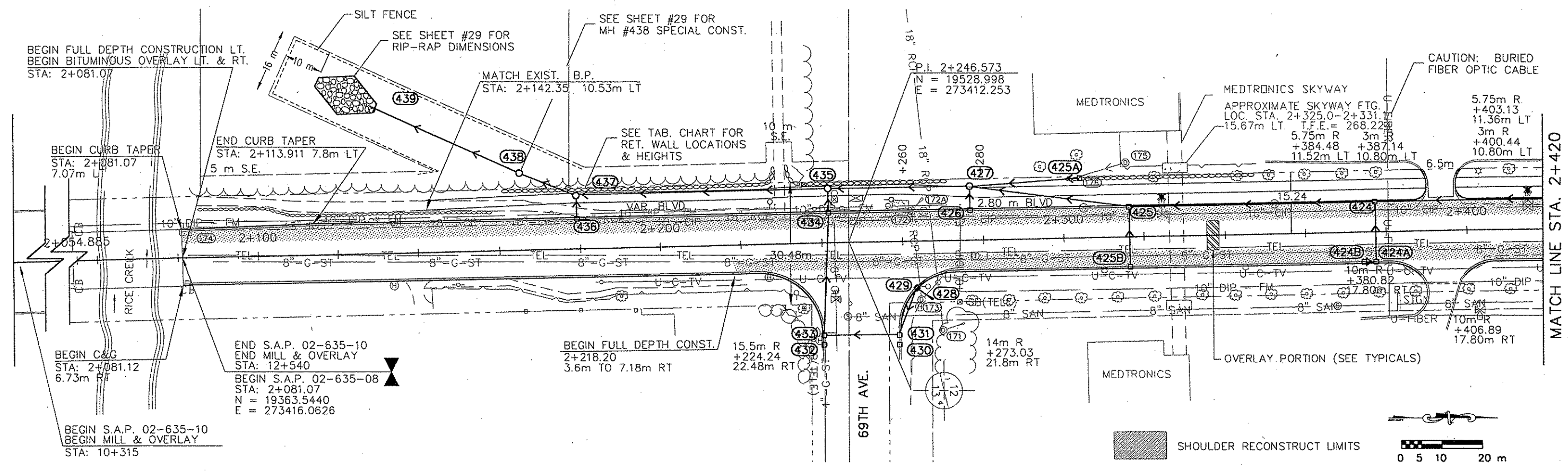
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
Douglas W. Lynch
 DATE 6/14/98 REG. NO. 20235

DRAWN BY: HGC DATE 06/04/98
 DESIGN BY: HGC DATE 06/04/98
 CHECKED BY: DMF DATE 06/04/98



STATE PROJECT NO. _____
 STATE AID PROJECT NO. 02-635-08
 STATE AID PROJECT NO. 02-635-10
 COUNTY PROJECT NO. _____

REMOVALS
 STA 4+320 TO 4+662
 Sheet 16 of 64 Sheets



NO	DATE	BY	CHKD	APPR	REVISION
1	7/30/98	HG			FULL DEPTH CONST.-RT SHOULDER



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

DATE _____ REG. NO. _____

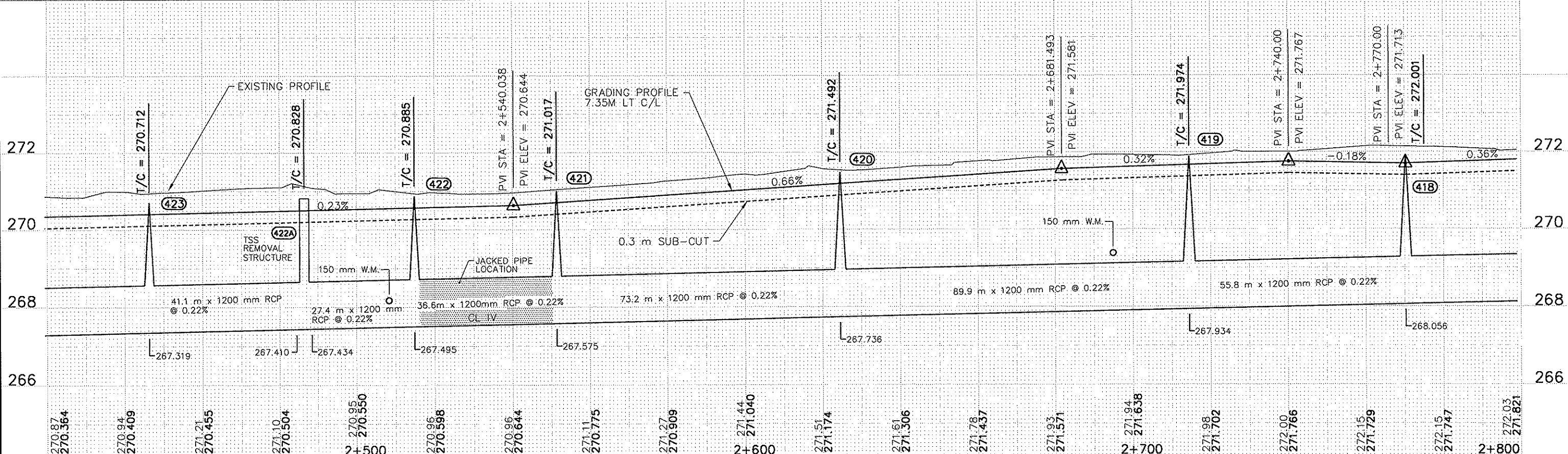
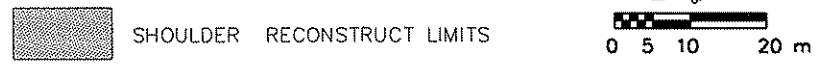
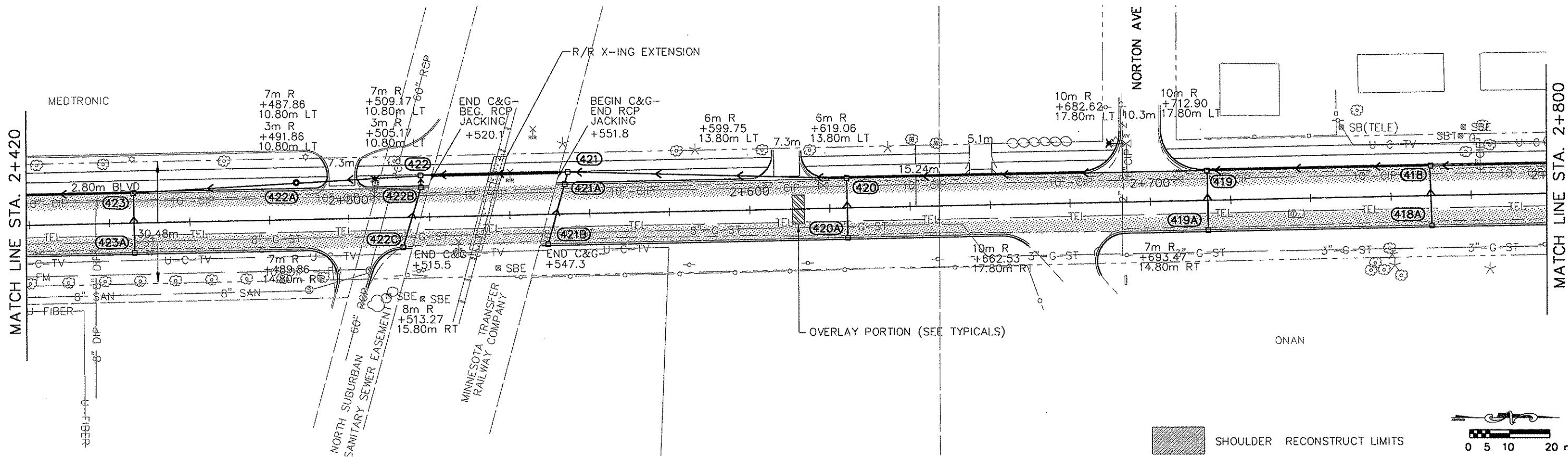
DRAWN BY: HGC DATE 06/04/98
 DESIGN BY: HGC DATE 06/04/98
 CHECKED BY: DMF DATE 06/04/98



ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO. _____
 STATE AID PROJECT NO. 02-635-08
 STATE AID PROJECT NO. 02-635-10
 COUNTY PROJECT NO. _____

PLAN & PROFILE
 STA 2+040 TO 2+420
 Sheet 17 of 64 Sheets



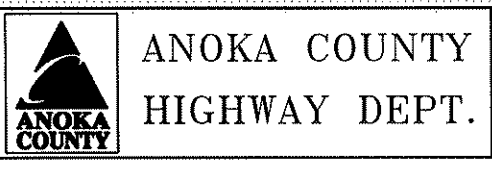
NO	DATE	BY	CKD	APPR	REVISION
2	7/30/98	HG			FULL DEPTH CONST.-RT SHOULDER
1	6/17/98	HG			



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

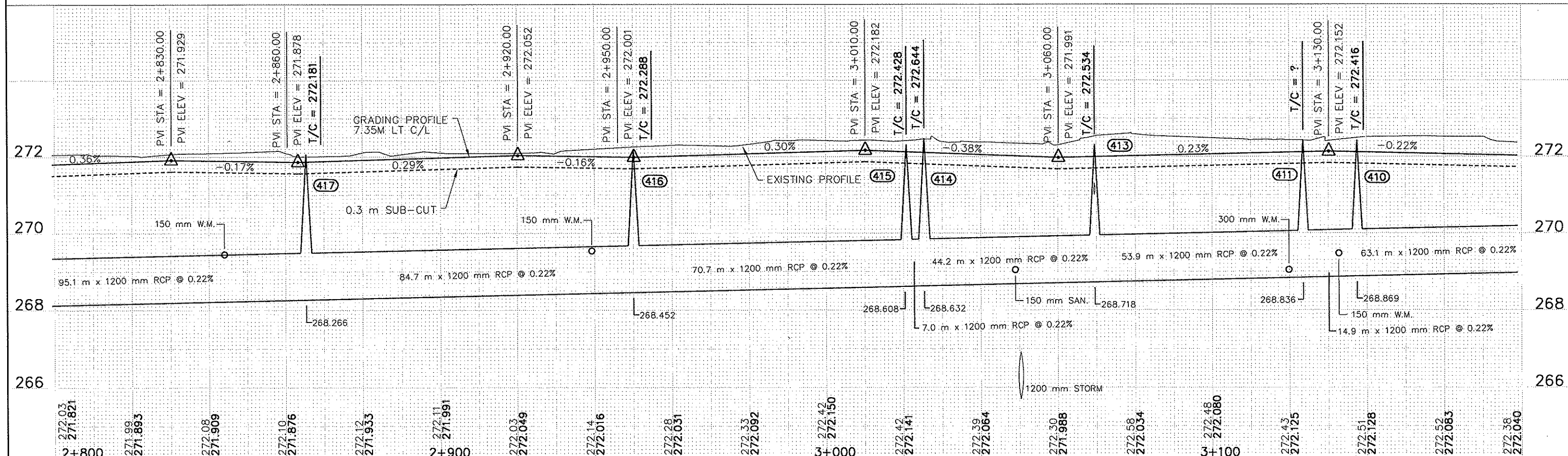
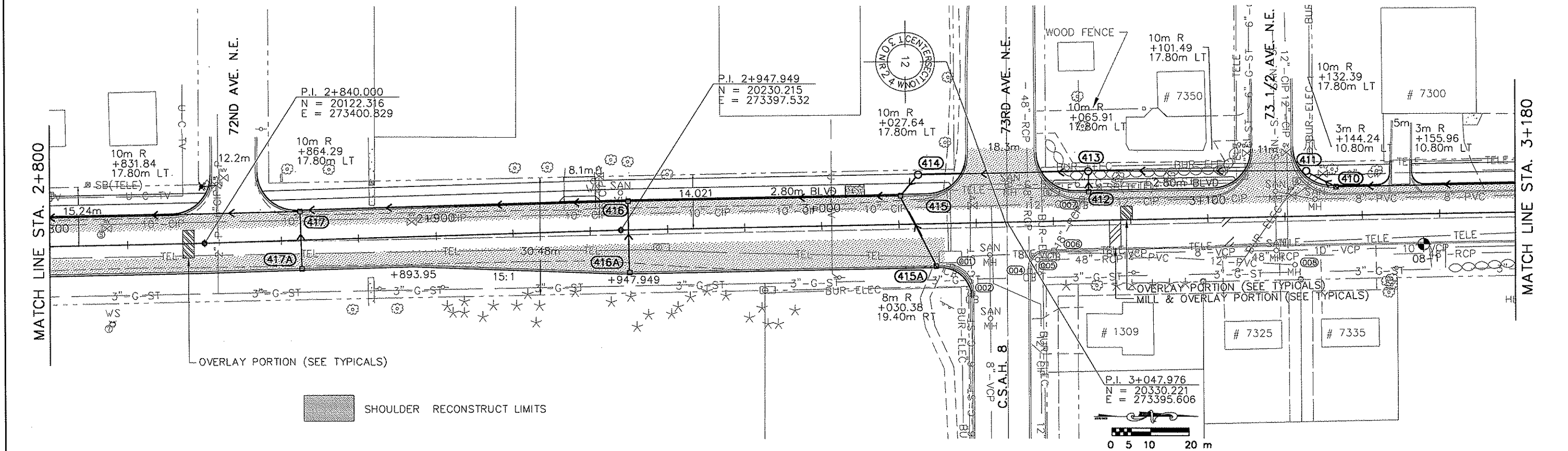
DATE _____ REG. NO. _____

DRAWN BY: _____ HGC DATE 06/04/98
 DESIGN BY: _____ HGC DATE 06/04/98
 CHECKED BY: _____ DWF DATE 06/04/98



STATE PROJECT NO. _____
 STATE AID PROJECT NO. 02-635-08
 STATE AID PROJECT NO. 02-635-10
 COUNTY PROJECT NO. _____

PLAN & PROFILE
 STA 2+420 TO 2+800
 Sheet 18 of 64 Sheets



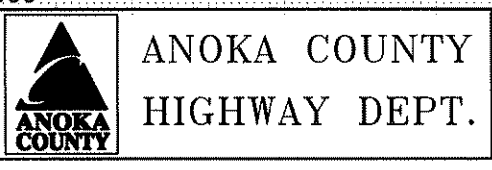
NO	DATE	BY	CKD	APPR	REVISION
1	7/30/98	HG			FULL DEPTH CONST.-RT SHOULDER



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

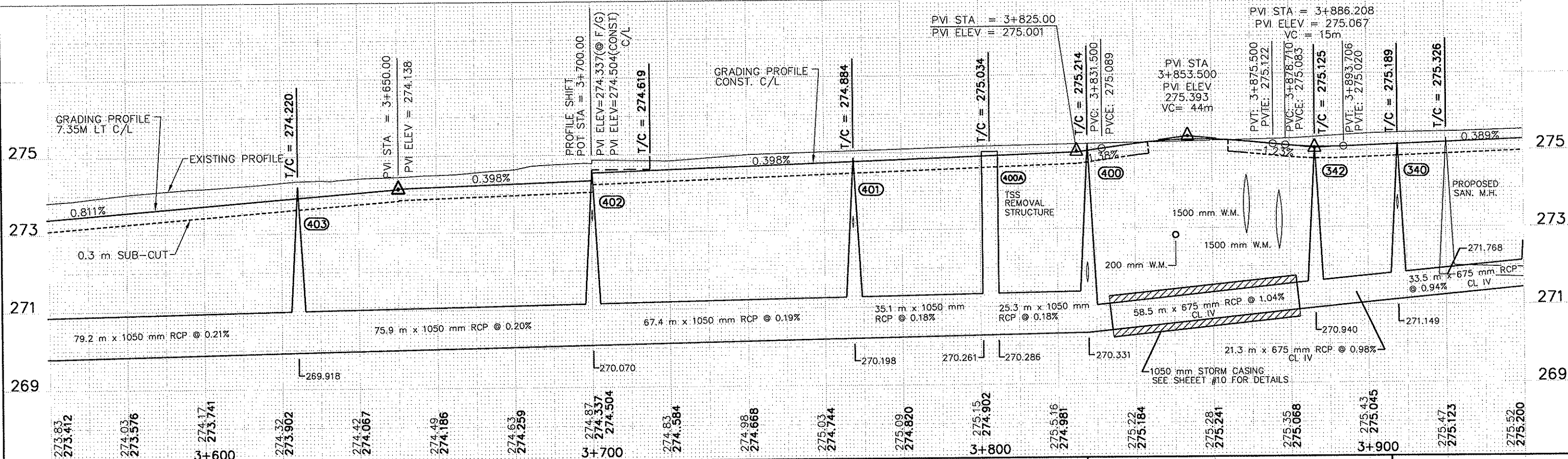
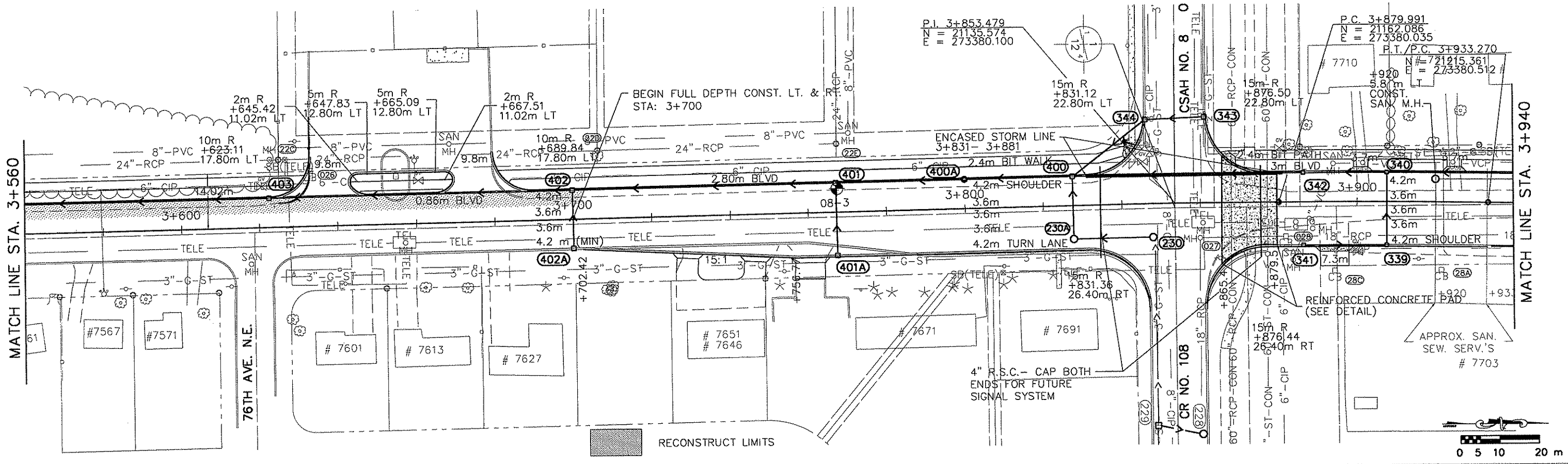
DATE _____ REG. NO. _____

DRAWN BY: HGC DATE 06/04/98
 DESIGN BY: HGC DATE 06/04/98
 CHECKED BY: DMF DATE 06/04/98



STATE PROJECT NO. _____
 STATE AID PROJECT NO. 02-635-08
 STATE AID PROJECT NO. 02-635-10
 COUNTY PROJECT NO. _____

PLAN & PROFILE
 STA 2+800 TO 3+180
 Sheet 19 of 64 Sheets



NO	DATE	BY	CHKD	APPR	REVISION
1	06/17/98	HG			SAN. MH



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.

David M. [Signature]
 DATE 1/14/98 REG. NO. 20235

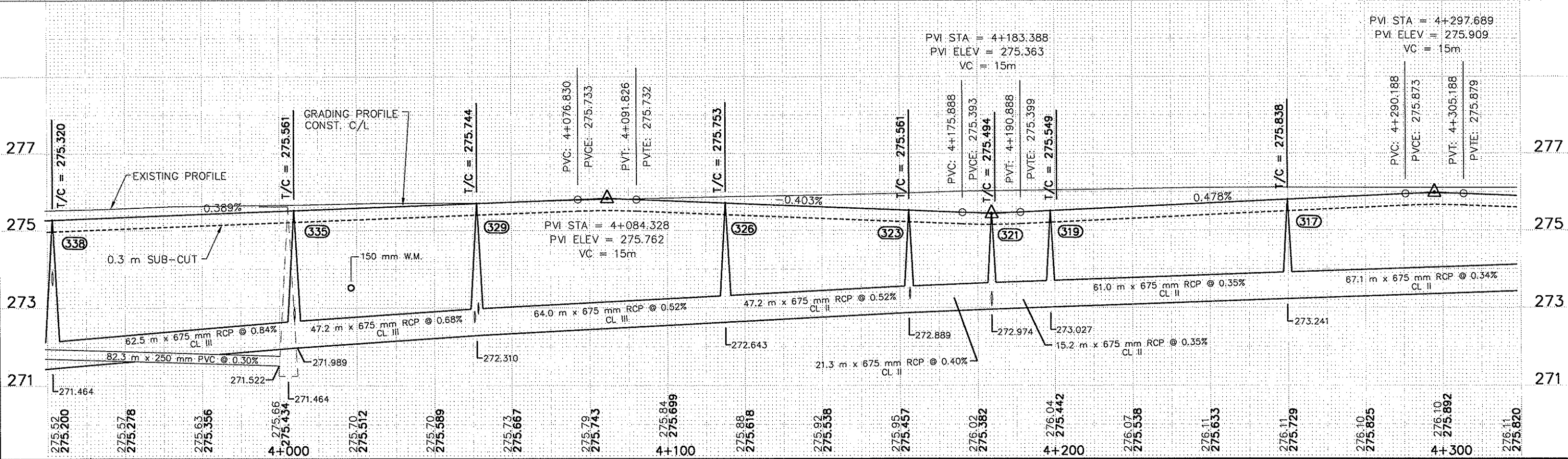
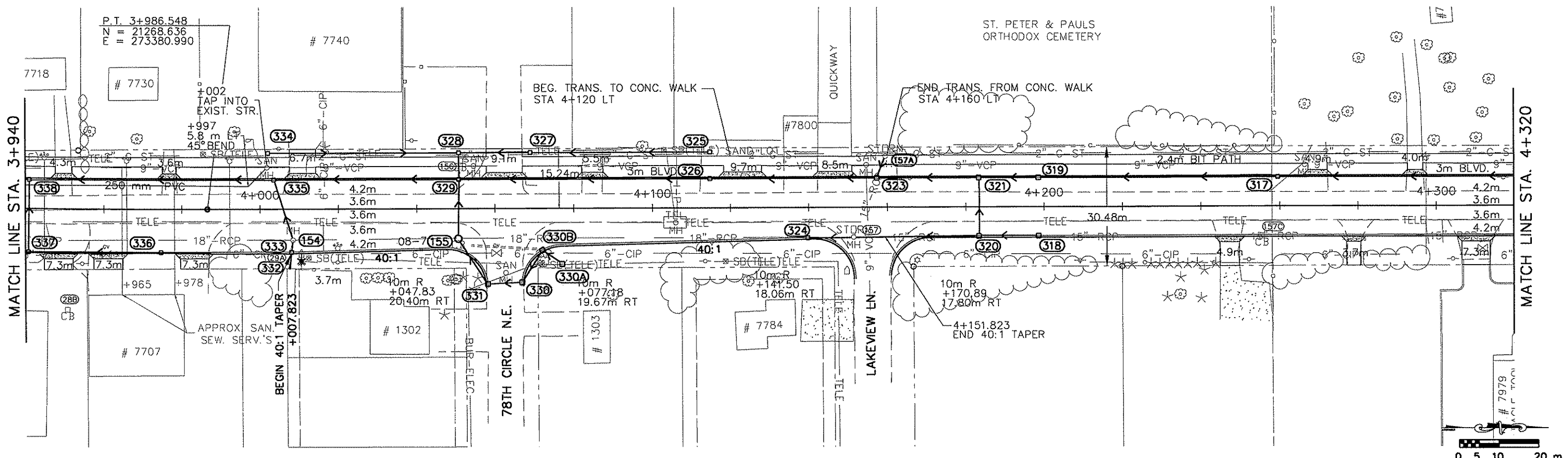
DRAWN BY: HGC DATE 06/24/98
 DESIGN BY: HGC DATE 06/24/98
 CHECKED BY: [Signature] DATE 06/24/98



ANOKA COUNTY
 HIGHWAY DEPT.

STATE PROJECT NO. _____
 STATE AID PROJECT NO. 02-635-08
 STATE AID PROJECT NO. 02-635-10
 COUNTY PROJECT NO. _____

PLAN & PROFILE
 STA 3+560 TO 3+940
 Sheet 21 of 64 Sheets



NO	DATE	BY	CKD	APPR	REVISION
1	6/17/98	HG			SAN. M.H.
NAME: S:\SDSKPROJ\000000\000000\026000.DWG					



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

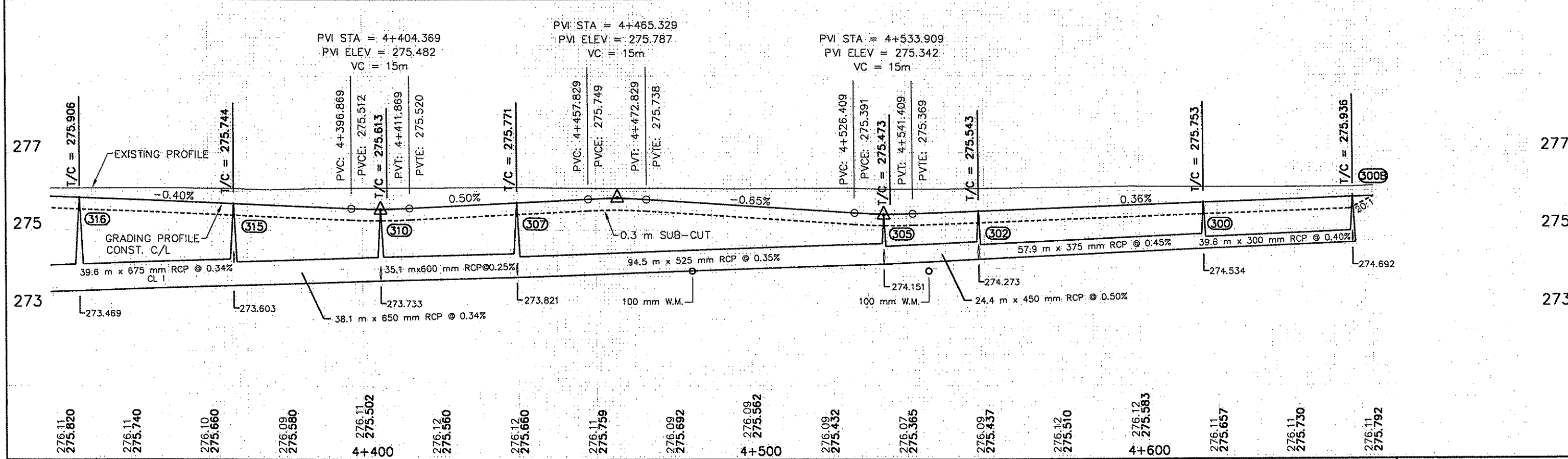
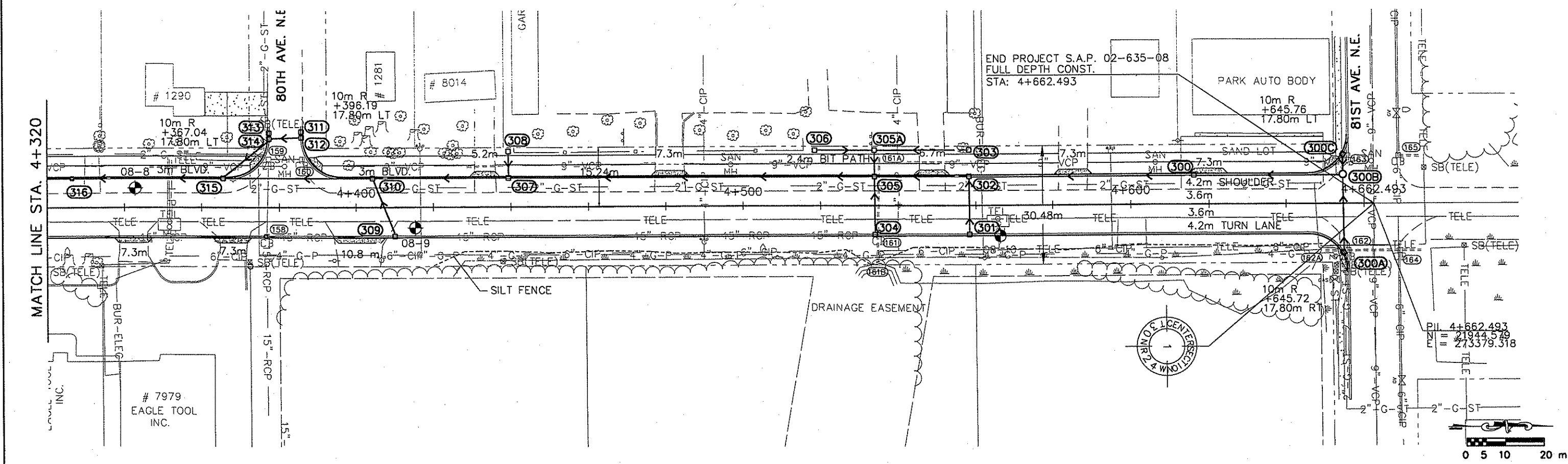
Signature
DATE: 7/14/98 REG. NO. 20035

DRAWN BY: HGC DATE 06/01/98
 DESIGN BY: HGC DATE 06/01/98
 CHECKED BY: DWF DATE 06/01/98

ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO. _____
 STATE AID PROJECT NO. 02-635-08
 STATE AID PROJECT NO. 02-635-10
 COUNTY PROJECT NO. _____

PLAN & PROFILE
 STA 3+940 TO 4+320
 Sheet 22 of 64 Sheets



NO	DATE	BY	CHKD	APPR	REVISION



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

Ronald A. Jensen
 DATE 7/14/98 REG. NO. 2235

DRAWN BY: HCC DATE 02/04/98
 DESIGN BY: HCC DATE 02/04/98
 CHECKED BY: DWF DATE 02/04/98

ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO. _____
 STATE AID PROJECT NO. 02-635-08
 STATE AID PROJECT NO. 02-635-10
 COUNTY PROJECT NO. _____

PLAN & PROFILE
 STA 4+320 TO 4+662
 Sheet 23 of 64 Sheets

U

DRAINAGE TABULATION

STRUCT NO.	STA	LOC	REMARKS	DRAINS TO	DESIGN	CASTING ELEV	INVERT ELEV	PAY HT	CASTING ASSY	300 RCP m	375 RCP m	450 RCP m	525 RCP m	600 RCP m	675 RCP m	1050 RCP m	1200 RCP m	1600 RCP m	PIPE GRADE %	PIPE UPPER ELEV	PIPE LOWER ELEV	STRUCT NO.
300A	4654.70	12.19 RT		300B	G	275.789	274.842	0.89	A	19.8									0.75	274.842	274.693	300A
300B	4654.76	7.46 LT		300	G	275.936	274.692	1.28	C	39.6									0.40	274.692	274.534	300B
300C	4654.79	12.31 LT		300B	G	275.857	274.729	1.07	A	4.9									0.75	274.729	274.692	300C
300	4616.21	7.46 LT		302	G	275.753	274.534	1.16	A		57.9								0.45	274.534	274.273	300
301	4558.29	7.46 RT		302	G	275.543	274.406	1.08	A		15.2								0.86	274.406	274.275	301
302	4558.29	7.46 LT		305	G	275.543	274.273	1.21	A			24.4							0.50	274.273	274.151	302
303	4558.29	14.48 LT		305A	H	275.543	274.424	0.89	D	24.4									1.00	274.424	274.180	303
304	4533.91	7.46 RT		305	G	275.473	274.050	1.30	A		15.2								0.92	274.293	274.153	304
305	4533.91	7.46 LT		307	G	275.473	274.151	1.26	A				94.5						0.35	274.151	273.821	305
305A	4533.90	14.48 LT		305	SD	274.808	274.180	0.74	D	7.0									0.40	274.180	274.152	305A
306	4518.70	14.48 LT		305A	H	274.869	274.296	0.69	D	15.2									0.75	274.296	274.182	306
307	4439.42	7.46 LT		310	F	275.771	273.821	1.89	A										0.25	273.821		307
308	4439.40	14.48 LT		307	G	275.204	273.985	1.26	B	7.0									0.40	273.985	273.957	308
309	4410.00	7.46 RT	BUILD STRUCTURE OVER INPLACE PIPE	310	F	275.613	273.676	1.81	A		15.2								1.00	273.866	273.714	309
310	4404.40	7.46 LT		315	F	275.613	273.733	1.82	A										0.34	273.733	273.603	310
311	4385.84	19.51 LT		312	G	275.823	274.604	1.16	A	1.5									0.75	274.604	274.593	311
312	4385.80	17.68 LT		314	G	275.829	274.586	1.18	A	8.5									1.00	274.586	274.500	312
313	4377.36	19.51 LT		314	G	275.860	274.519	1.28	A	1.5									1.00	274.519	274.503	313
314	4377.36	17.68 LT		315	G	275.854	274.500	1.29	A	14.9									2.10	274.500	274.187	314
315	4365.50	7.46 LT	675 mm Class 2	316	1350-4020	275.744	273.603	2.08	A										0.34	273.603	273.469	315
160	4376.90	7.46 RT			INPLACE	275.854	274.500	1.29	A											274.500		160
316	4326.64	7.46 LT	675 mm Class 2	317	1350-4020	275.906	273.469	2.38	A										0.34	273.469	273.241	316
317	4259.59	7.46 LT	675 mm Class 2	319	1350-4020	275.838	273.241	2.54	A										0.35	273.241	273.027	317
318	4198.63	7.46 RT	BUILD STRUCTURE OVER INPLACE PIPE	320	F	275.549	273.065	2.42	A										0.30	273.065	273.019	318
319	4198.63	7.46 LT	675 mm Class 2	321	1350-4020	275.549	273.027	2.46	A										0.35	273.027	272.974	319
320	4183.39	7.46 RT	BUILD STRUCTURE OVER INPLACE PIPE	321	F	275.494	273.019	2.35	A		15.2								1.00	273.211	273.059	320
321	4183.39	7.46 LT	675 mm Class 2	323	1350-4020	275.494	272.974	2.46	A										0.40	272.974	272.889	321
157A	4160.00	14.50 LT		323	INPLACE	275.723	273.266			7.0									0.40	273.266	273.238	157A
323	4162.05	7.46 LT	675 mm Class 2	326	1350-4020	275.607	272.889	2.60	A										0.52	272.889	272.643	323
324	4139.70	7.46 RT	SET STRUCT OVER PIPE, SET OPENING 7.46 RT	155	1200-4020	275.640	272.882	2.70	A										0.33	272.882		324
325	4114.81	14.48 LT		327	G	275.479	274.260	1.26	B	45.7									0.75	274.260	273.917	325
326	4114.81	7.46 LT	675 mm Class 3	329	1350-4020	275.753	272.643	3.05	A										0.52	272.643	272.310	326
327	4069.09	14.48 LT		328	F	275.494	273.918	1.61	B	18.3									0.75	273.918	273.781	327
328	4050.80	14.48 LT		329	F	275.189	272.897	2.33	B	7.0									0.40	272.897	272.869	328
329	4050.80	7.46 LT	675 mm Class 3	335	1350-4020	275.744	272.310	3.37	A										0.68	272.310	271.989	329
330	4066.80	19.87 RT		331	G	275.540	274.333	1.15	A	8.5									1.00	274.333	274.247	330
331	4058.18	20.09 RT		155	G	275.515	274.247	1.21	APRON	14.0									1.00	274.247	274.107	331
332	4007.50	14.63 RT	300 mm APRON WITH TRASH GUARD	333	APRON		274.071		APRON	3.7									1.00	274.071	274.034	332
333	4008.13	11.06 RT		154	G	275.421	274.034	1.33	A	3.4									0.40	274.034	274.021	333
334	4002.03	14.48 LT		328	G	275.601	274.147	1.49	B	48.8									0.75	274.147	273.781	334
335	4003.56	7.46 LT	675 mm Class 3	338	1350-4020	275.561	271.989	3.51	A										0.84	271.989	271.464	335
336	3974.60	11.06 RT		337	G	275.290	274.043	1.19	A	33.5									0.75	274.043	273.792	336
337	3941.07	11.06 RT		338	G	275.153	273.793	1.30	A		18.9								1.00	273.793	273.604	337
338	3941.07	7.46 LT	675 mm Class 4	340	1350-4020	275.320	271.464	3.80	A										0.94	271.464	271.149	338
339	3907.54	11.06 RT		340	G	275.028	273.659	1.31	A		18.9								1.00	273.659	273.470	339
340	3907.54	7.46 LT	675 mm Class 4	342	1350-4020	275.189	271.149	3.98	A										0.98	271.149	270.940	340
341	3886.21	11.06 RT		339	G	274.994	273.818	1.12	A	21.3									0.75	273.818	273.658	341
342	3886.21	7.46 LT	675 mm Class 4	400	1350-4020	275.125	270.940	4.12	A										1.04	270.940	270.331	342
343	3861.20	24.38 LT		344	G	275.153	273.659	1.43	A	14.9									0.75	273.659	273.547	343
344	3846.40	24.38 LT		400	G	275.180	273.546	1.57	A										0.75	273.546	273.375	344
230	3847.70	6.10 RT		230A	INPLACE	275.147	271.867	3.32	C		22.9								0.70	271.867	271.718	230
230A	3827.69	6.10 RT		400	F	274.912	271.718	3.23	C				21.3						0.70	271.718	271.622	230A
400	3827.69	7.46 LT		400A	2100-4020	275.214	270.331	4.82	A										0.18	270.331	270.286	400
401	3767.34	7.46 LT		402	1800-4020	274.884	270.198	4.63	A										0.19	270.198	270.070	401
401A	3767.34	11.06 RT		401	F	274.726	273.266	1.40	A	18.9									1.00	273.266	273.077	401A
402	3699.97	7.46 LT		403	1800-4020	274.631	270.070	4.44	A										0.20	270.070	269.918	402
402A	3699.97	7.46 RT		402	F	274.634	273.452	1.12	A	15.2									1.00	273.452	273.299	402A
403	3624.10	7.46 LT		404	1800-4020	274.220	269.918	4.24	A										0.21	269.918	269.752	403
404	3544.83	7.46 LT		405	1800-4020	273.571	269.752	3.76	A										0.22	269.752	269.507	404
405	3433.58	7.46 LT		406	2100-4020	272.592	269.507	3.02	A										0.20	269.507	269.370	405
406	3366.52	7.46 LT		407	2100-4020	272.219	269.370	2.73	A										0.21	269.370	269.300	406
407	3332.99	7.46 LT		408	2100-4020	272.150	269.300	2.79	A										0.22	269.300	269.106	407
408	3244.91	7.46 LT		409	2100-4020	272.184	269.106	3.02	A										0.22	269.106	269.008	408
409	3200.41	7.46 LT		410	2100-4020	272.278	269.008	3.21	A										0.22	269.008	268.869	409
410	3137.30	7.46 LT		411	2100-4020	272.416	268.869	3.49	A										0.22	268.869	268.836	410
411	3123.30	12.80 LT		413	2100-4020	272.653	268.836	3.85	C										0.22	268.836	268.718	411
412	3069.30	7.46 LT		413	G	272.120	271.068	1.17	A	5.2									1.00	271.068	271.017	412
413	3069.30	12.80 LT		414	2100-4020	272.315	268.718	3.63	C										0.22	268.718	268.632	413
414	3025.20	12.80 LT		415	2100-4																	

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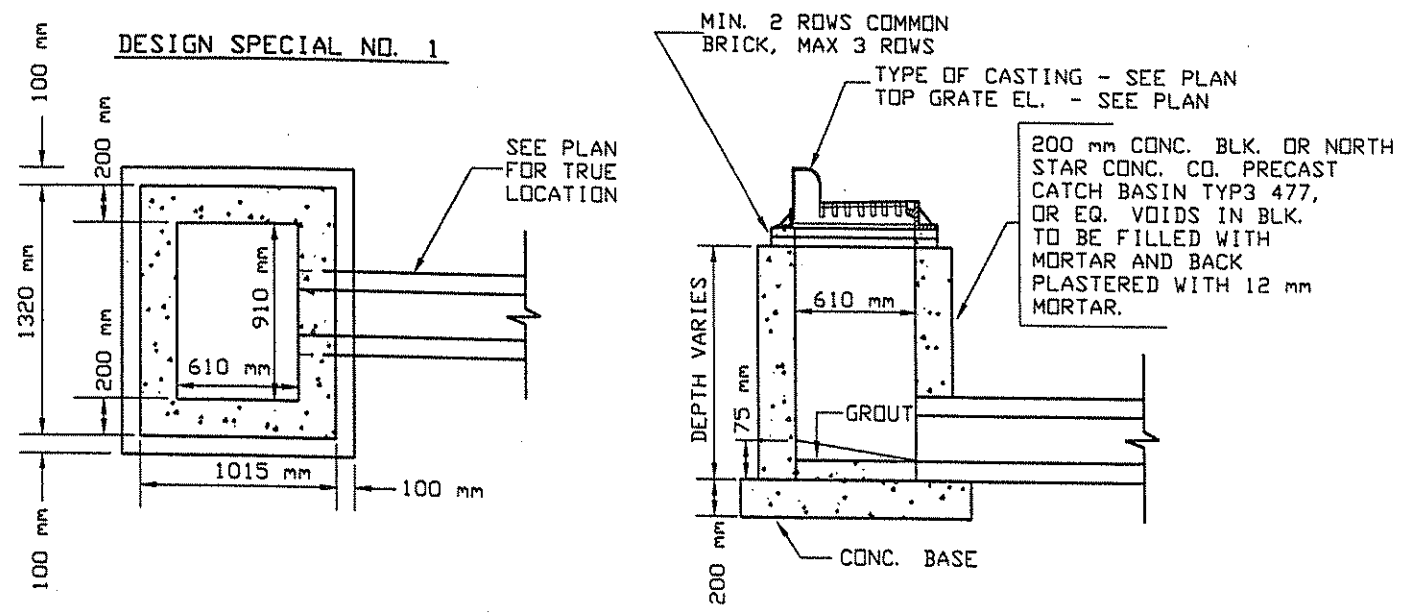
DRAINAGE TABULATION

STRUCT NO.	STA	LOC	REMARKS	DRAINS TO	DESIGN	CASTING ELEV	INVERT ELEV	PAY HT	CASTING ASSY	300 RCP m	375 RCP m	450 RCP m	525 RCP m	600 RCP m	675 RCP m	1050 RCP m	1200 RCP m	1600 RCP m	PIPE GRADE %	PIPE UPPER ELEV	PIPE LOWER ELEV	STRUCT NO.
420	2624.33	7.46 LT		421	2100-4020	271.492	267.736	3.70	A										0.22	267.736	267.575	420
*421	2554.73	10.6 LT	JACKED 1200 mm RCP - CL IV	422	2100-4020	271.017	267.575	3.38	A										0.22	267.575	267.495	421
*422	2518.0	10.6 LT		422A	2100-4020	270.885	267.495	3.33	A										0.22	267.495	267.434	422
423	2446.02	7.46 LT		424	2100-4020	270.712	267.319	3.33	A										0.22	267.319	267.168	423
424	2377.44	7.46 LT		425	2100-4020	270.553	267.168	3.32	A										0.22	267.168	267.034	424
425	2316.48	7.46 LT		427	G	269.657	268.438	1.16	A	4.6									0.22	267.034	266.947	425
426	2276.86	7.46 LT		435	2100-4020	269.916	266.947	3.00	C										2.00	268.438	268.346	426
*427	2276.86	13.24 LT		429			268.727		APRON	12.2									0.23	268.947	268.866	427
428	2273.09	19.95 RT	300 mm APRON WITH TRASH GUARD	431	G	269.392	267.958	1.37	A	14.9									2.00	268.727	268.484	428
429	2263.28	12.80 RT		433	1200-4020	268.999	267.734	1.33	E	2.4									1.50	267.958	267.734	429
430	2258.57	26.82 RT		433	SPEC DES 1	269.002	267.783	1.28	E										2.00	267.783	267.734	430
431	2258.57	24.38 RT		433	1200-4020	268.999	267.734	1.33	E				18.9						0.35	267.734	267.668	431
432	2240.28	26.82 RT		433	SPEC DES 1	268.974	267.716	1.32	E	2.4									2.00	267.716	267.668	432
433	2240.28	24.38 RT	675 mm Class 3	434	1200-40420	268.950	267.668	1.34	E										0.35	267.668	267.556	433
434	2241.81	7.46 LT	675 mm Class 3	435	G	268.843	267.556	1.23	A										0.36	267.556	267.539	434
435	2241.81*	13.24 LT		437	2100-4020	269.078	266.866	2.25	C										4.25	266.866	264.211	435
436	2179.32	7.46 LT		437	G	266.728	265.518	1.15	A	4.6									1.00	265.518	265.472	436
437	2179.32*	13.24 LT		438	2100-4020	266.996	264.211	2.82	C										6.12	264.211	263.297	437
438	2165.61	17.07 LT	MH COVER SHALL BE LOCKABLE	439	2400-4020	265.177	258.870	6.34	C										0.09	258.870	258.833	438
439	2129.03	36.58 LT	1600 mm APRON/ALL JOINTS TO BE TIED	OUTLET			258.833		APRON										0.00	258.833	258.833	439
400A	3802.00	7.46 LT	TSS REMOVAL STRUCTURE	401	TSS-RMVL	275.034			TSS-RMVL										0.18	270.261	270.198	400A
*422A	2487.00	9.25 LT	TSS REMOVAL STRUCTURE	423	TSS-RMVL	270.828			TSS-RMVL										0.22	267.410	267.319	422A
155	4050.50	7.60 RT	BUILD NEW STRUCT OVER INPLACE PIPE	329	1350-4020	275.800	272.568	3.27	C		15.2								1.00	272.797	272.644	155
330A	4076.99	14.24 RT		330B	H	275.200	274.500	0.74	A	6.1									1.00	274.500	274.439	330A
330B	4072.04	10.69 RT		330	SD	275.666	274.439	1.11	C	10.6									1.00	274.439	274.333	330B
425A	2304.30	14.0 LT	BUILD NEW STRUCT OVER INPLACE PIPE	427	SD	269.953	269.014	0.98	B	27.6									1.24	269.014	268.673	425A
406A	3358.21	10.04 LT	BUILD NEW STRUCT OVER INPLACE PIPE	406	G	272.009	270.577	1.31	B	9.0									1.50	270.577	270.442	406A
304A	4533.91	14.50 RT	375 mm APRON	304	APRON						5.2								0.64	274.192	274.149	304A
*425B	2316.48	7.46 RT		425		270.251	268.316												1.00	268.316	268.167	*425B
*424A	2377.44	7.46 RT		424		270.553	268.990												2.20	268.990	268.662	*424A
*424B	2374.44	7.46 RT		424A		270.546	269.056												2.20	269.056	268.990	*424B
*423A	2446.02	7.46 RT		423		270.712	268.896												1.40	268.896	268.678	*423A
*422B	2518.0	7.46 LT		422		270.885	268.768												1.00	268.768	268.738	*422B
*422C	2513.3	7.46 RT		422B		270.885	268.917												1.00	268.917	268.768	*422C
*421A	2553.97	7.46 LT		421		271.017	268.801												1.50	268.801	268.756	*421A
*421B	2549.4	7.46 RT		421A		271.017	269.025												1.50	269.025	268.801	*421B
*420A	2624.33	7.46 RT		420		271.492	269.472												1.50	269.472	269.248	*420A
*419A	2714.25	7.46 RT		419		271.974	270.080												1.00	270.080	269.931	*419A
*418A	2770.03	7.46 RT		418		272.001	270.211												1.50	270.211	269.987	*418A
*417A	2865.10	7.46 RT		417		272.181	270.283												1.50	270.283	270.060	*417A
*416A	2949.86	11.06 RT		416		272.288	270.261												1.50	270.261	269.983	*416A
*415A	3029.4	11.06 RT		415		272.356	270.544												1.50	270.544	270.339	*415A
									TOTALS:	220.05	95	504.1	381.0	24.4	148.4	73.2	575.0	394.2	1272.5	41.1		

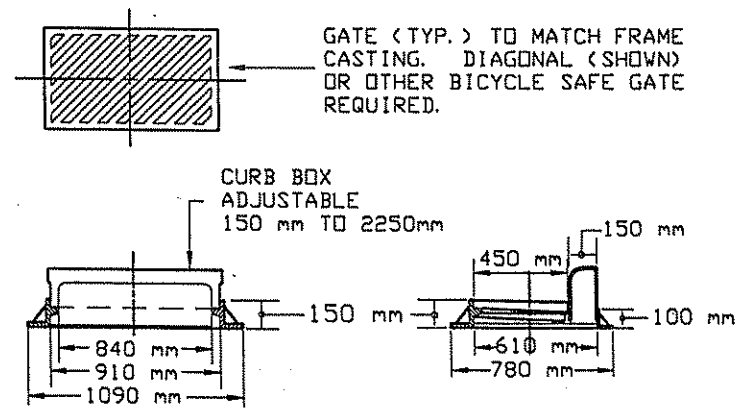
251.2 m Class 2
210.3 m Class 3
113.3 m Class 4
575.0 m Total 675 mm

SEE PLAN & PROFILE SHEETS FOR PIPE CLASS LOCATIONS

TYPICAL BOX CATCH BASIN



C. B. CASTING DETAIL DESIGN SPECIAL NO. 1



NOTE:
TO BE USED WITH C. B. DESIGN SPECIAL NO. 1

W DRAINAGE CAST. SCHED.

ASS'Y TYPE	NO. REQ'D	FRAME CASTING	GRATE CASTING	CURB BOX CASTING	RING CASTING	COVER CASTING
A	69	801	810	821-B		
B	7				700-7	720
C	12				700-7	716
D	3				700-4	720
E	4	SPECIAL DESIGN 1				
TOTAL	95					

NO	DATE	BY	CHKD	APPR	REVISION
2	8/03/98	HG			* = ADDITIONAL STORM LEADS
1	6/17/98	HG			



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. _____

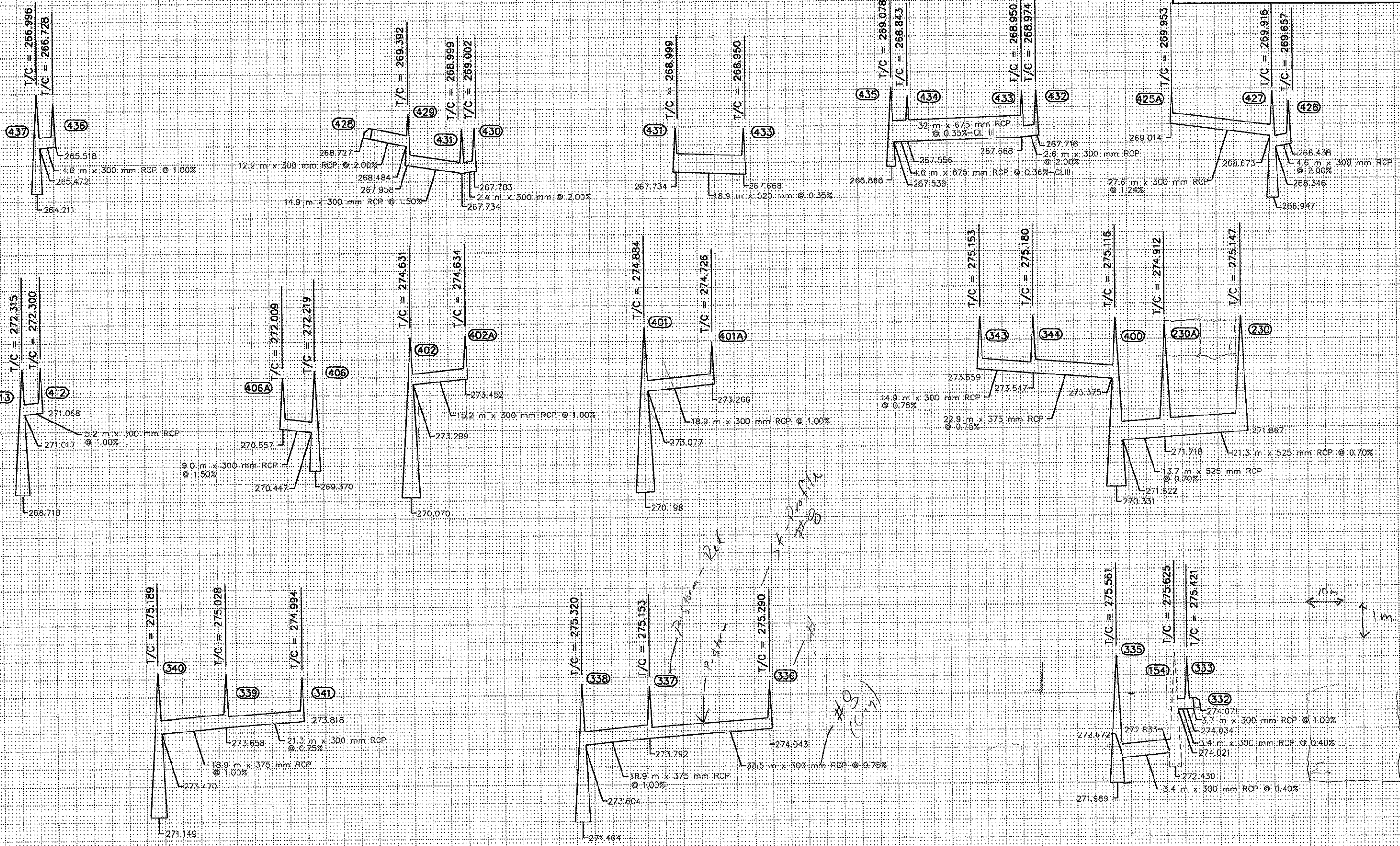
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DESIGN BY: HDG DATE 06/04/98
CHECKED BY: DWF DATE 06/04/98



ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO. _____
STATE AID PROJECT NO. 02-635-08
STATE AID PROJECT NO. 02-635-10
COUNTY PROJECT NO. _____

DRAINAGE TABULATION
Sheet 25 of 64 Sheets



NO	DATE	BY	CKD	APPR	REVISION



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

Quander M. Eriq
 DATE 7/14/98 REG. NO. 22235

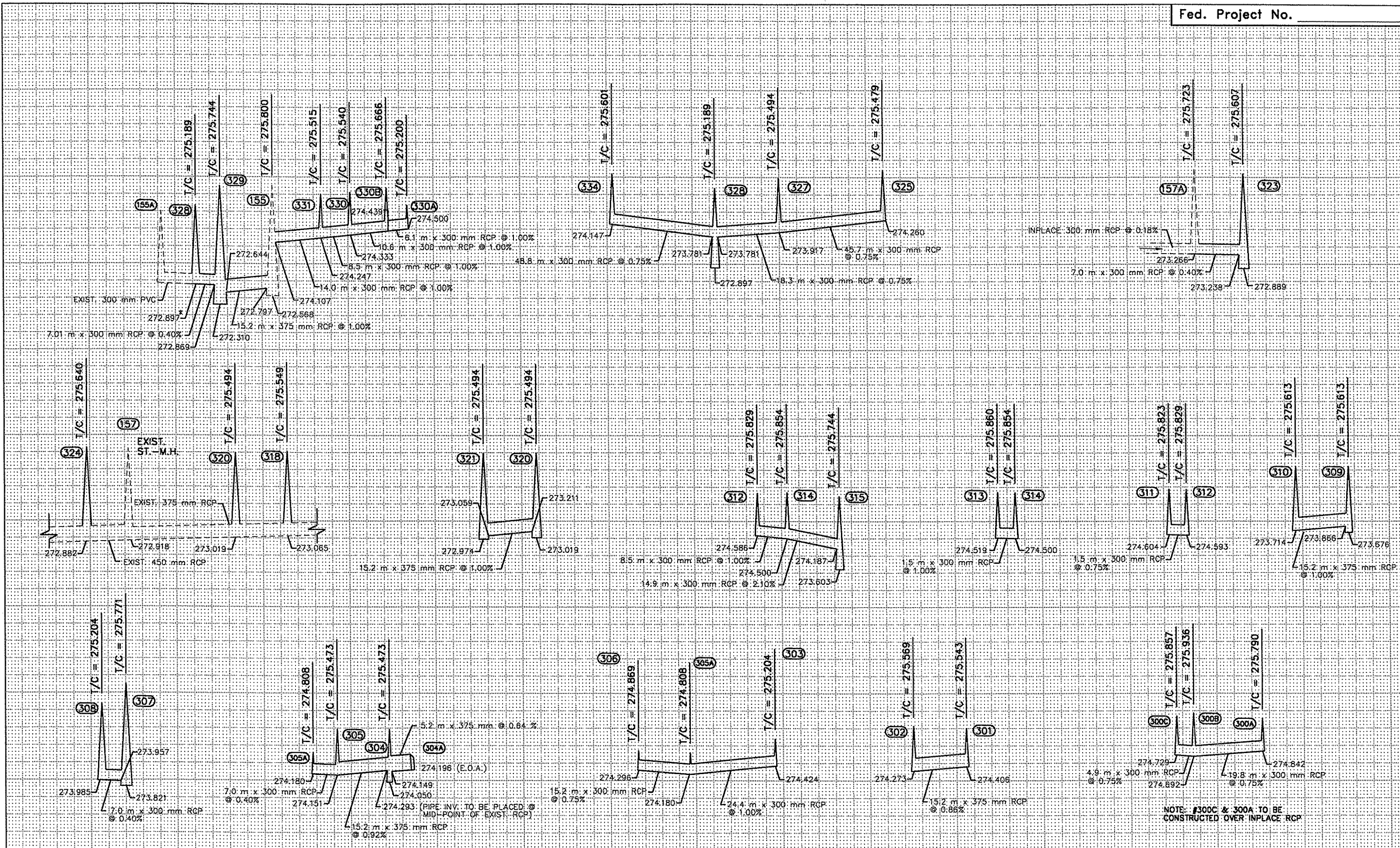
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 CHECKED BY DWT DATE 06/04/98



ANOKA COUNTY
 HIGHWAY DEPT.

STATE PROJECT NO. _____
 STATE AID PROJECT NO. 02-635-08
 STATE AID PROJECT NO. 02-635-10
 COUNTY PROJECT NO. _____

STORM-SEWER LEADS
 Sheet 26 of 64 Sheets



NO	DATE	BY	CKD	APPR	REVISION



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

David J. Jurek
 DATE 3/14/98 REG. NO. 20235

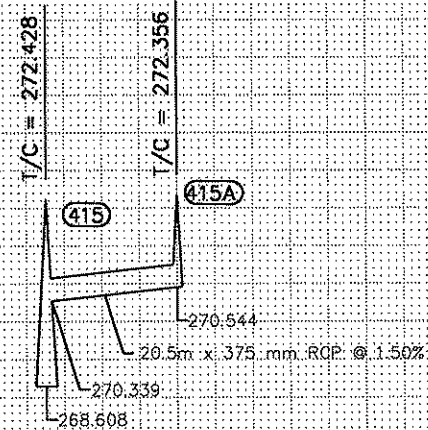
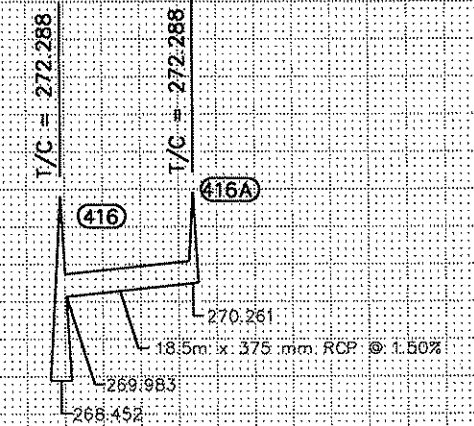
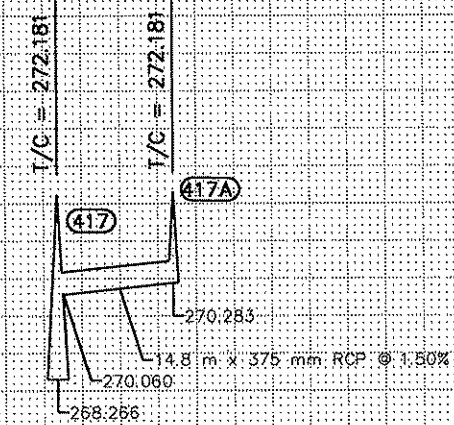
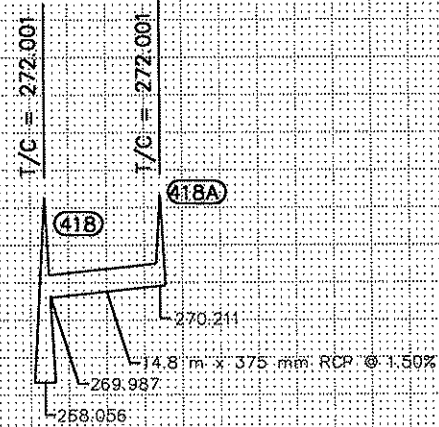
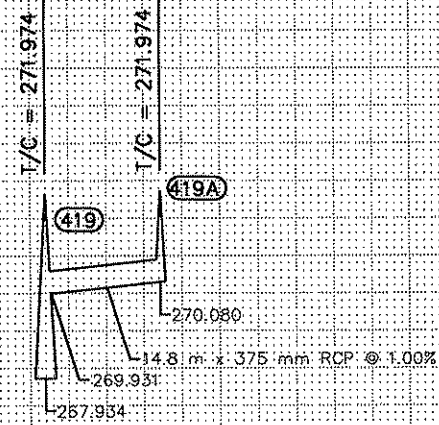
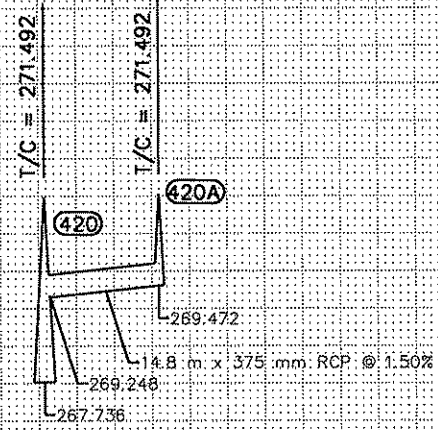
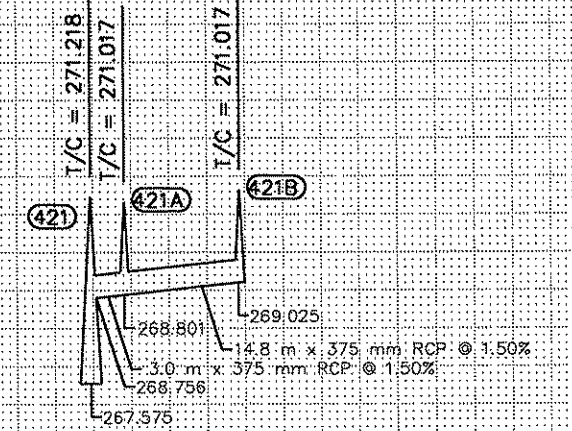
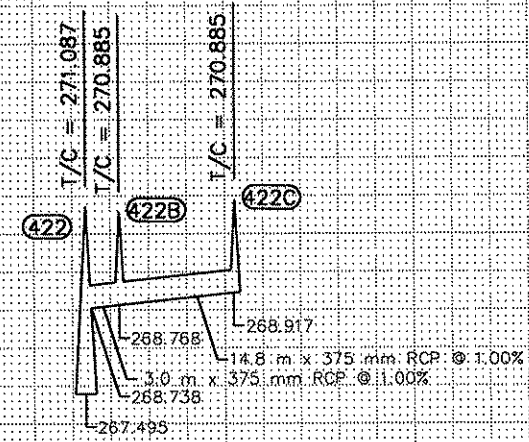
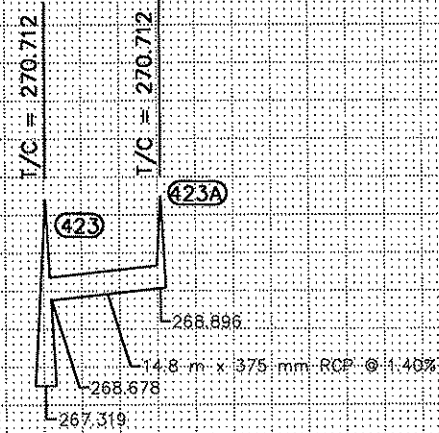
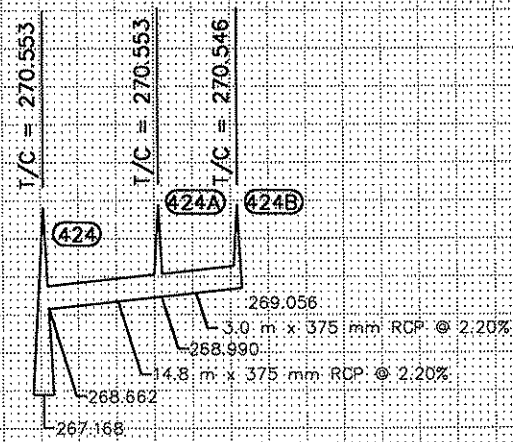
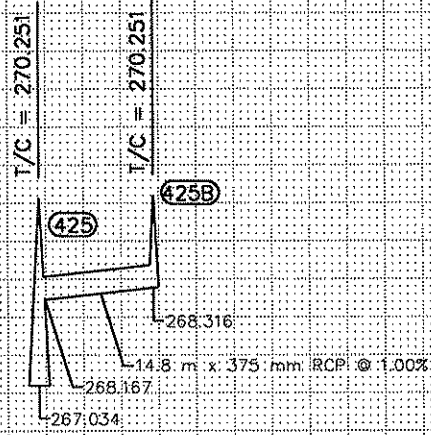
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ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. _____
 STATE AID PROJECT NO. 02-635-08
 STATE AID PROJECT NO. 02-635-10
 COUNTY PROJECT NO. _____

STORM-SEWER LEADS
 Sheet 27 of 64 Sheets



NO	DATE	BY	CKD	APPR	REVISION
1	8/03/98	HG			ADDITIONAL STORM LEADS



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

DATE _____ REG. NO. _____

DRAWN BY HG DATE 06/04/98
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 CHECKED BY JMF DATE 06/04/98



ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO. _____
 STATE AID PROJECT NO. 02-635-08
 STATE AID PROJECT NO. 02-635-10
 COUNTY PROJECT NO. _____

STORM-SEWER LEADS

Sheet 27B of 64 Sheets

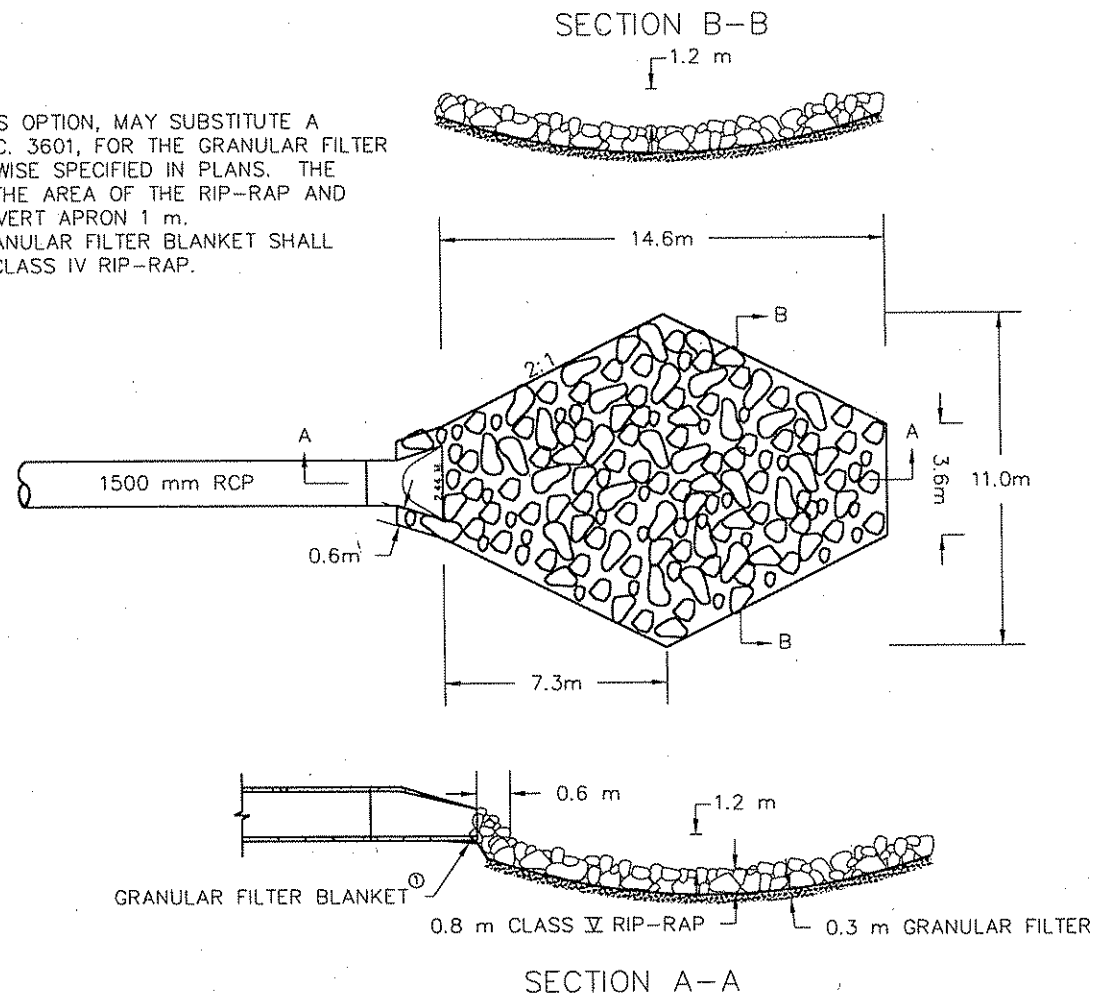
(V)

EXISTING DRAINAGE TABULATION

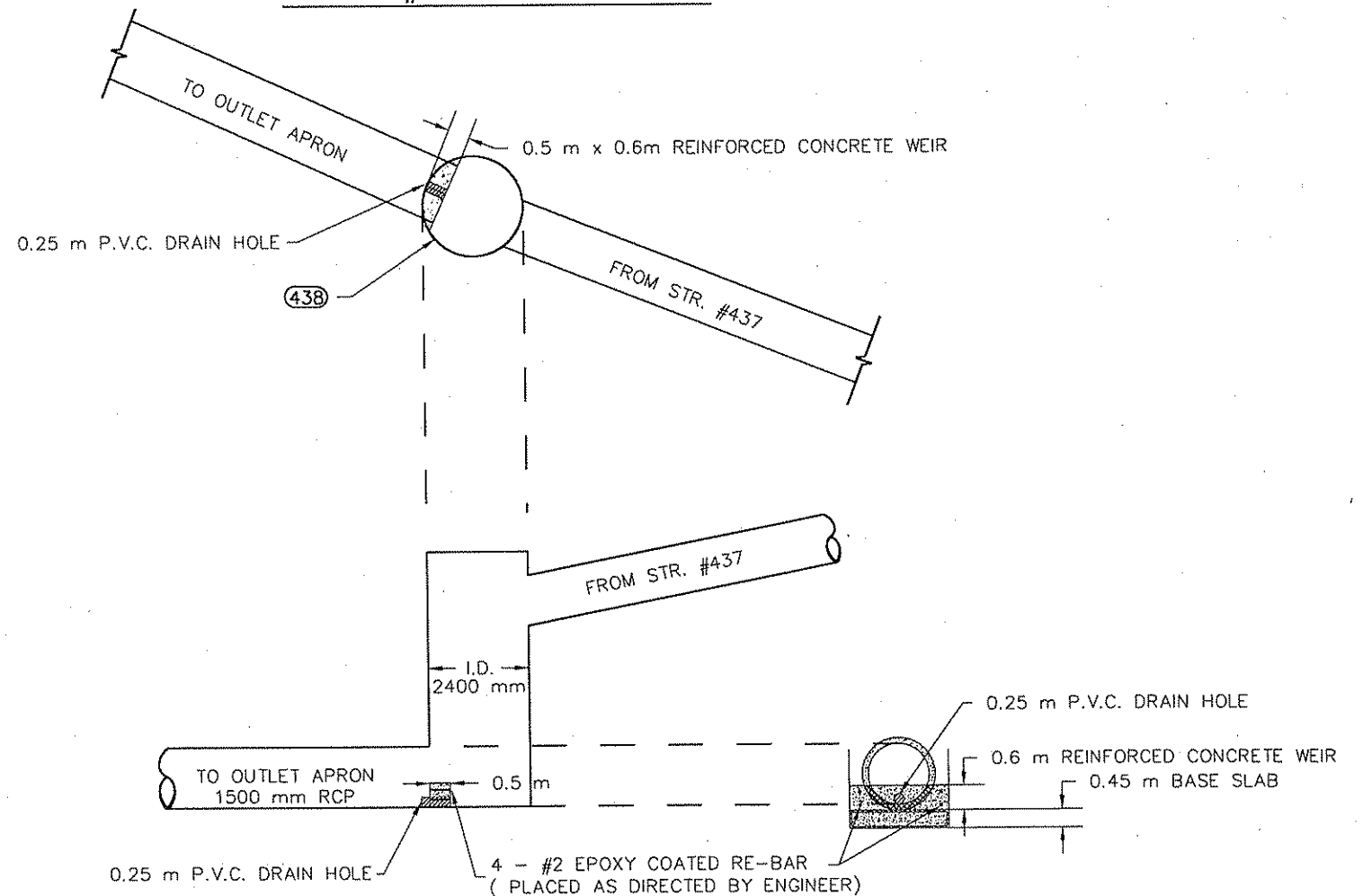
STRUCT NO.	STATION	CB/MH	LOC.	DRAINS TO	INVERT ELEV	UPPER ELEV	LOWER ELEV	PIPE SIZE	PIPE LENGTH	PIPE SLOPE (m/m)	INPLACE TOP CASTING ELEV	PROP. TOP CASTING ELEV	BOTTOM OF RECONST ELEV	RECONST HT	ADJ. CAST. (EACH)	INSTALL. CAST. (EACH)	SALV. CAST.	F & I CAST. ASSY.	PIPE CONN.	STRUCT. CONN.	REM. DRAIN STR. (EACH)	REM. STORM SEWER PIPE m	REM. APRON (EACH)	REM. PIPE PLUGS	INSTALL. PIPE PLUG	ABAN. STORM SEWER m	MOD. DRAIN STRUCT	STR NO	REMARKS	
1	3033.4	CB	10.1 RT	2	271.788	271.788	271.727	300	12	0.0053	272.342																	1	NO WORK REQUIRED	
2	3038.6	CB	17.1 RT	3	271.727			375	8		272.492																		2	NO WORK REQUIRED
4	3053.5	CB	11.6 RT	5	271.135	271.135	271.151	450	4	-0.0038	272.358																		4	NO WORK REQUIRED
5	3055.6	MH	8.5 RT		265.481	265.481	265.451		5	0.0059	272.400																		5	NO WORK REQUIRED
6	3059.9	CB	6.4 RT	5	270.270	270.270	270.221	450	5	0.0100	272.129																		6	NO WORK REQUIRED
7	3067.5	CB	6.7 LT	6	270.541	270.541	270.373	450	15	0.0110	272.294											1			2	15			7	NO WORK REQUIRED
8	3122.4	MH	11.3 RT	6	271.407	271.407	270.971	300	62	0.0070	272.717																		8	NO WORK REQUIRED
9	3245.5	CB	6.7 LT	10	270.407	270.407	270.227	600	13	0.0134	272.190									1		1			2	18			9	CONNECT 100 mm PVC TO 40B
10	3244.9	CB	9.4 RT	5	266.329	266.329	265.481	1200	190	0.0045	272.077																		10	NO WORK REQUIRED
11	3245.5	CB	14.6 RT	10	270.443	270.443	270.322	300	5	0.0222	272.205																		11	NO WORK REQUIRED
12	3259.5	CB	6.1 RT	10	270.834	270.834	270.578	450	15	0.0168	272.205																		12	NO WORK REQUIRED
13	3254.1	CB	14.9 RT	11	270.727	270.727	270.556	300	9	0.0200	272.300																		13	NO WORK REQUIRED
13A	3268.1	CB	27.1 RT	13	271.385	271.385	270.879		18	0.0277	272.361																		13A	NO WORK REQUIRED
13B	3305.0	CB	18.9 LT	18	271.273	271.273	270.700	300	37	0.0153	271.818									1			8					13B	CONNECT PIPE TO 407	
14	3321.4	CB	28.4 RT	15	270.956	270.956	270.550		25	0.0164	272.266																		14	NO WORK REQUIRED
15	3336.0	CB	8.5 RT	16	270.550	270.550	270.532	300	13	0.0014	271.952																		15	NO WORK REQUIRED
16	3348.5	CB	8.8 RT		270.532	270.532					271.964																		16	NO WORK REQUIRED
17	3358.9	CB	6.4 RT		269.974	269.974					272.138																		17	NO WORK REQUIRED
17A	3362.6	MH	10.4 RT																										17A	NO WORK REQUIRED
18	3340.6	MH	6.7 LT	19	270.639	270.639	270.288	450	18	0.0192	272.254																		18	NO WORK REQUIRED
21	3355.5	CB	31.1 LT	19	270.837	270.837	270.532	300	23	0.0130	271.964									1			18					21	CONNECT PIPE TO 406A	
19	3358.6	CB	7.3 LT	17	269.983	269.983	269.974	450	14	0.0007	272.175														2	14			19	NO WORK REQUIRED
22A	3433.3	MH	18.6 LT	22	269.715	269.715	269.413	900	29	0.0104	272.321									1			5		2	19		22A	CONNECT 900 mm RCP TO 405	
22	3433.3	MH	10.4 RT	10	266.761	266.761	266.329	1200			272.766																		22	NO WORK REQUIRED
24	3445.8	CB	30.5 RT	23	272.495																								24	NO WORK REQUIRED
23	3447.3	MH	12.8 RT	22	272.608						272.608																		23	NO WORK REQUIRED
25	3455.5	CB	30.5 RT	24	271.184			300	10		272.556																		25	NO WORK REQUIRED
22B	3512.8	MH	18.6 LT	22A	270.651	270.187	600	80	0.0058	272.784																			22B	NO WORK REQUIRED
22C	3624.1	MH	18.6 LT	22B	271.074	270.651	600	111	0.0038	274.244																			22C	NO WORK REQUIRED
22D	3706.4	MH	18.6 LT	22C	271.318	271.318	271.074	600	82	0.0030	274.580																		22D	NO WORK REQUIRED
22E	3767.3	MH	18.6 LT	22D	271.495	271.495	271.318	600	61	0.0029	274.482																		22E	NO WORK REQUIRED
26	3633.2	CB	15.2 LT	22C	273.287	273.287	272.190	300	10	0.1125	274.229														1			26	NO WORK REQUIRED	
27	3860.0	MH	7.6 RT	22B	271.855	271.855	271.763	450	55	0.0017	275.186																		27	NO WORK REQUIRED
28	3881.6	CB	7.6 RT	27	271.967	271.967	271.855	450	22	0.0052	275.223																		28	NO WORK REQUIRED
28A	3921.0	CB	15.8 RT	28C	273.857	273.857	273.473	150	27	0.0140	275.445																		28A	NO WORK REQUIRED
28B	3950.8	CB	26.2 RT	28A	274.647	274.647	273.857	150	32	0.0249	275.464																		28B	NO WORK REQUIRED
154	4008.4	MH	7.9 RT	28	272.431	272.431	271.967	450	127	0.0037	275.165	275.537	273.254	2.11		1	1											154	RECONSTRUCT	
29A	4007.5	APRON	12.2 RT	154	274.086	273.397	300	4		0.1614																			29A	NO WORK REQUIRED
155	4050.5	CB	7.6 RT	154	272.568	272.568	272.431	450	42	0.0033	274.775																		155	BUILD NEW 155
156	4051.1	CB	12.2 LT	155	272.857	272.857	272.812	300	20	0.0023	274.933																		156	CONNECT 300 mm PVC TO 328
224	3849.0	CB	181.0 RT	225	272.056	272.979	272.955	525	4	0.0062	275.067													1	1			224	BACKFILL CB BELOW 525mm RCP	
229	3849.0	CB	59.1 RT	230	272.233	272.233	271.867	525	52	0.0070	274.863																		229	NO WORK REQUIRED
229	3849.0	CB	59.1 RT	228	272.233	272.233	271.763	375	12	0.0395	274.863																		229	ABANDON 375 mm RCP FROM 229 TO 228
228	3860.9	MH	61.3 RT	EAST																									228	NO WORK REQUIRED
157	4151.4	MH	7.6 RT	155	272.918	272.918	272.568	375	101	0.0035	275.890																		157	NO WORK REQUIRED
157A	4159.9	MH	14.5 LT	157	273.290	273.290	273.281	375	24	0.0004	275.790	275.790																	157A	ABANDON PIPE FROM 157A TO 157
157B	4159.9	MH	90.7 LT	157A	273.424	273.424	273.290	300	76	0.0018	276.975																		157B	CONNECT 300 mm PVC TO 322
157C	4255.6	CB	7.6 RT	157			272.918	375	96	-2.8516	275.302	275.805	273.906	1.62															157C	NO WORK REQUIRED
158	4376.6	CB	7.6 RT	157C	273.595	273.595	273.125	300	20	0.0132	275.845																		158	RECONSTRUCT?
159	4377.2	CB	12.2 LT	158	274.388	274.388	274.125	300	9	0.0128	275.774																		159	ABANDON PIPE FROM 159 TO 158
160	4386.1	CB	12.5 LT	159	274.500	274.500	274.388	300	9	0.0128	275.774																		160	NO WORK REQUIRED
161	4534.8	CB	7.5 RT	158	274.058	274.058	273.626	375	158	0.0027	275.186																		161	CONNECT INPLACE 375 mm RCP TO 304
161A	4534.8	APRON	12.2 LT	161		274.589	274.485	300	20																				161A	REMOVE APRON
161B	4533.9	APRON	14.6 RT	161		274.150	274.058	375	5																				161B	REMOVE APRON
162	4655.8	CB	12.2 RT	162A	275.028	275.028	275.055	375	3	-0.0082	275.790																		162	CONNECT INPLACE 375 mm RCP TO 300A
163	4655.8	CB	12.2 LT	---	275.095			375			275.857																		163	REMOVE 23 m OF 375 mm RCP TO SOUTH
164	4668.9	CB	12.2 RT	162	275.140	275.140	275.028	375	13	0.0086	275.720																		164	NO WORK REQUIRED
165	4668.9	CB	12.2 LT	163	275.034	275.034	275.095	375	13	-0.0047	275.796																		165	NO WORK REQUIRED
158A	4362.0	CB	79.2 RT	158	275.046	275.046	274.189	300	73	0.0117	275.930																		158A	NO WORK REQUIRED
162A	4650.3	APRON	12.5 RT																											

RIP-RAP AT OUTLET DETAIL

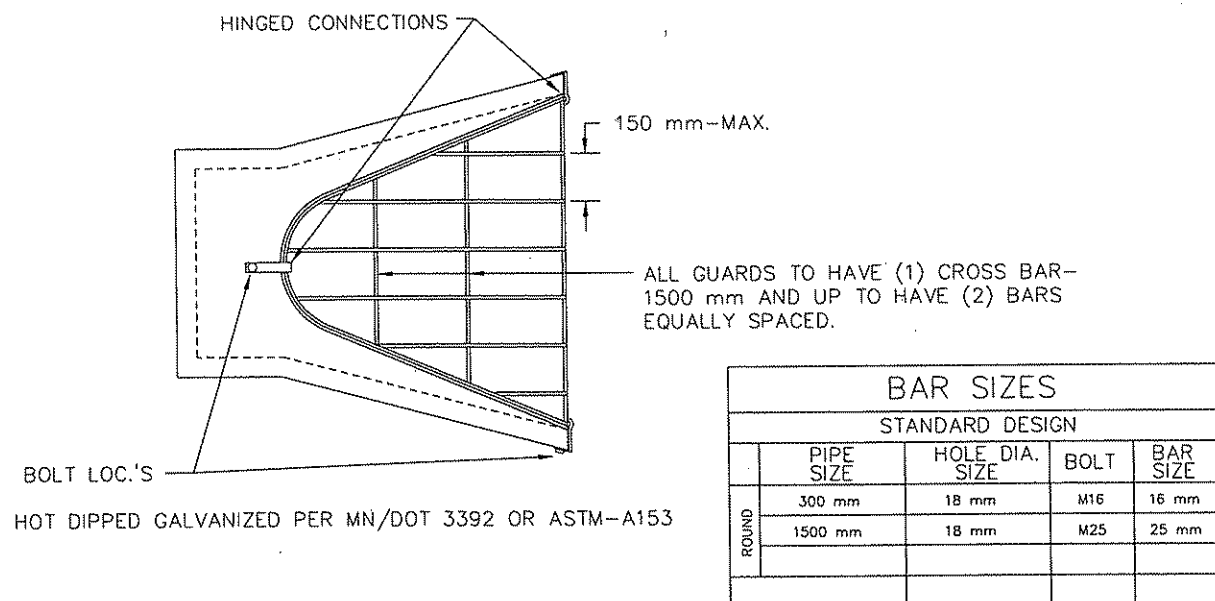
① THE CONTRACTOR, AT HIS OPTION, MAY SUBSTITUTE A GEOTEXTILE FABRIC, SPEC. 3601, FOR THE GRANULAR FILTER BLANKET UNLESS OTHERWISE SPECIFIED IN PLANS. THE FABRIC SHOULD COVER THE AREA OF THE RIP-RAP AND EXTEND UNDER THE CULVERT APRON 1 m. GRANULAR FILTER & GRANULAR FILTER BLANKET SHALL BE INCIDENTAL TO THE CLASS IV RIP-RAP.



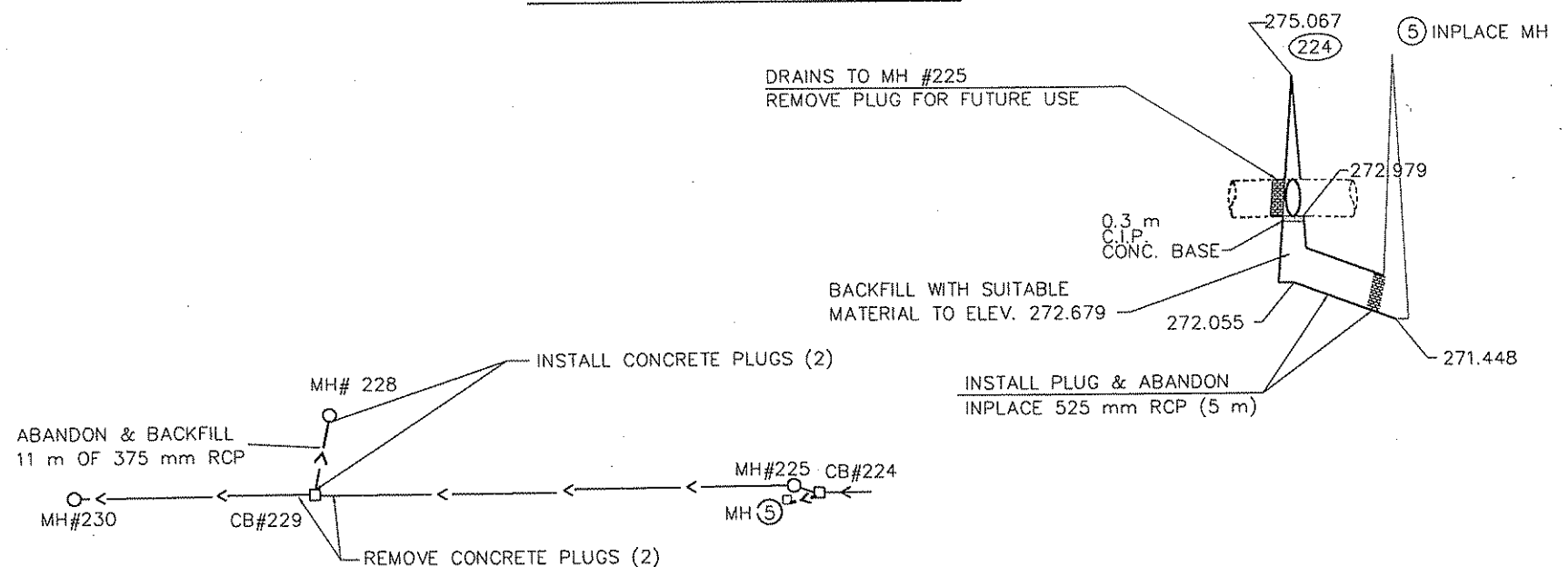
STR. #438 WEIR DETAIL



STANDARD TRASH GUARD FOR FLARED ENDS



C.R. 108 STORM DETAIL



NO	DATE	BY	CHKD	APPR	REVISION
ND	6/23/98	HG			TRASH GUARD / RIP-RAP DETAILS
ND					



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 6/14/98 REG. NO. 20225

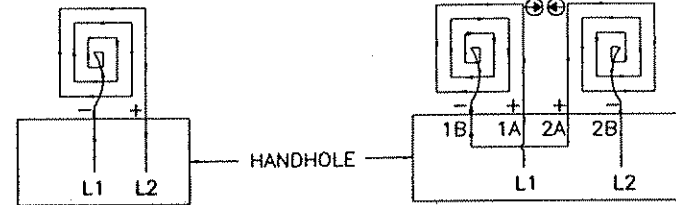
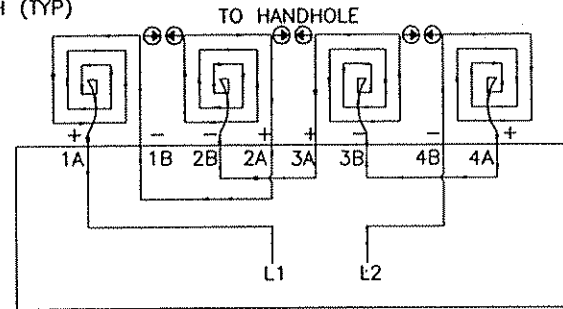
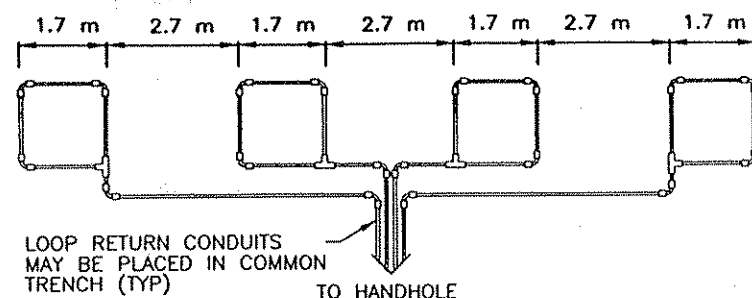
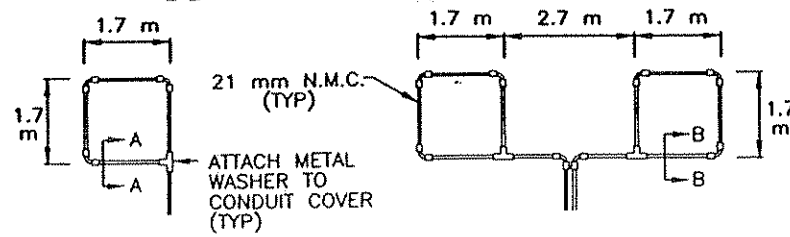
DRAWN BY: _____ DATE 06/04/98
 DESIGN BY: WFG DATE 06/04/98
 CHECKED BY: DMC DATE 06/04/98



ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. _____
 STATE AID PROJECT NO. 02-635-08
 STATE AID PROJECT NO. 02-635-10
 COUNTY PROJECT NO. _____

STORM SEWER DETAILS
 Sheet 29 of 64 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

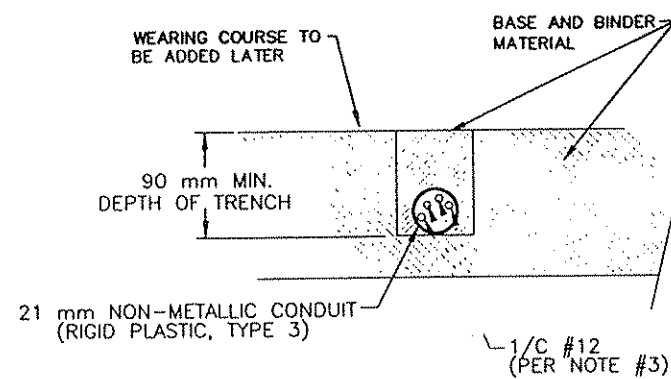
LOOP DETECTOR
DETAIL 'B'
(LOOP PHASING FOR
SERIES CONNECTION)

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

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

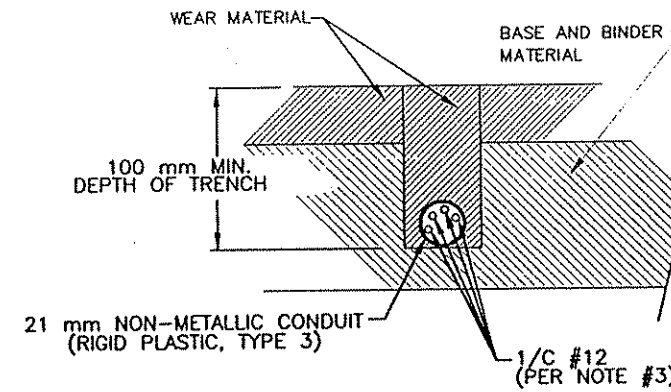
SPLICE CONTROL CABLE TO L1 & L2 IN HANDHOLE.
ALL CONDUCTORS SHALL BE TAGGED IN HANDHOLE
(1A, 1B, ECT)

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



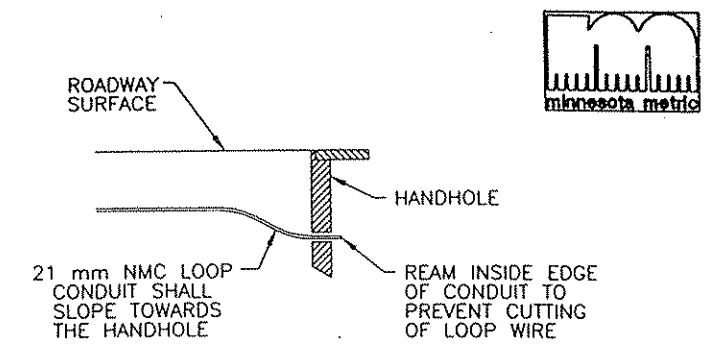
SECTION A-A

DETAIL FOR LOOP INSTALLATION
IN NEW ROADWAY



SECTION B-B

DETAIL FOR LOOP INSTALLATION
IN EXISTING ROADWAY



DRAINAGE DETAIL

LOOP DETECTOR WIRING

- 1) ALL CORNERS SHALL BE 90° CONDUIT BENDS.
- 2) CONNECT WIRES IN HANDHOLES USING SPLICE KIT METHOD DESCRIBED IN THE SPECIAL PROVISIONS.
- 3) LOOP DETECTOR WIRES SHALL BE #12 AWG CROSSED LINKED POLYETHYLENE (XLP). SEE SPECIAL PROVISIONS.
- 4) LOOP LEAD IN WIRES SHALL BE TWISTED A MIN. OF FIVE (5) TURNS PER 0.3 m (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.

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 - 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 - IN PLACE	⊙
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 - IN PLACE	⊙
WOOD POLE	⊙
WOOD POLE - IN PLACE	⊙
SOURCE OF POWER	⊙
RAILROAD SIGNAL - IN PLACE	⊙
RIGHT OF WAY LINE	—
CENTERLINE	—
EDGE OF ROADWAY	—
SHOULDERLINE	—
CURB LINE	—
STOP BAR	—
EMERGENCY VEHICLE DETECTOR	→

STANDARD PLATES	
THESE STANDARD PLATES AS APPROVED BY FHWA SHALL APPLY:	
PLATE NO.	DESCRIPTION
• MB110 D	TRAFFIC SIGNAL BRACKETING - POLE MOUNTED
• MB111 C	TRAFFIC SIGNAL BRACKETING - PEDESTAL MOUNTED
• MB112 C	PEDESTAL FOUNDATION
• MB114 A	PVC HANDHOLE/PULLBOX
• MB115 D	PEDESTRIAN PUSH BUTTON INSTALLATION
• MB118 C	SERVICE EQUIPMENT AND POLE-TRAFFIC CONTROL SIGNALS
• MB119 C	GROUND MOUNTED CABINET FOUNDATION
• MB120 K	PABS POLE FOUNDATION
• MB121 D	TRANSFORMER BASE AND POLE BASE PLATE
• MB122 C	PEDESTAL AND PEDESTAL BASE
• MB123 D	POLE AND MAST ARM
• MB124 E	MAST ARM SIGNAL HEAD MOUNTS
• MB126 F	PABO AND PA100 POLE FOUNDATION

• - APPLIES TO THIS PROJECT

ABBREVIATIONS

J-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 SWTCH	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	SWTCH
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.	BY	DATE	REVISIONS	ITEM	DESIGN	CHECKED

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: 4/24/98 Reg. No. 22457



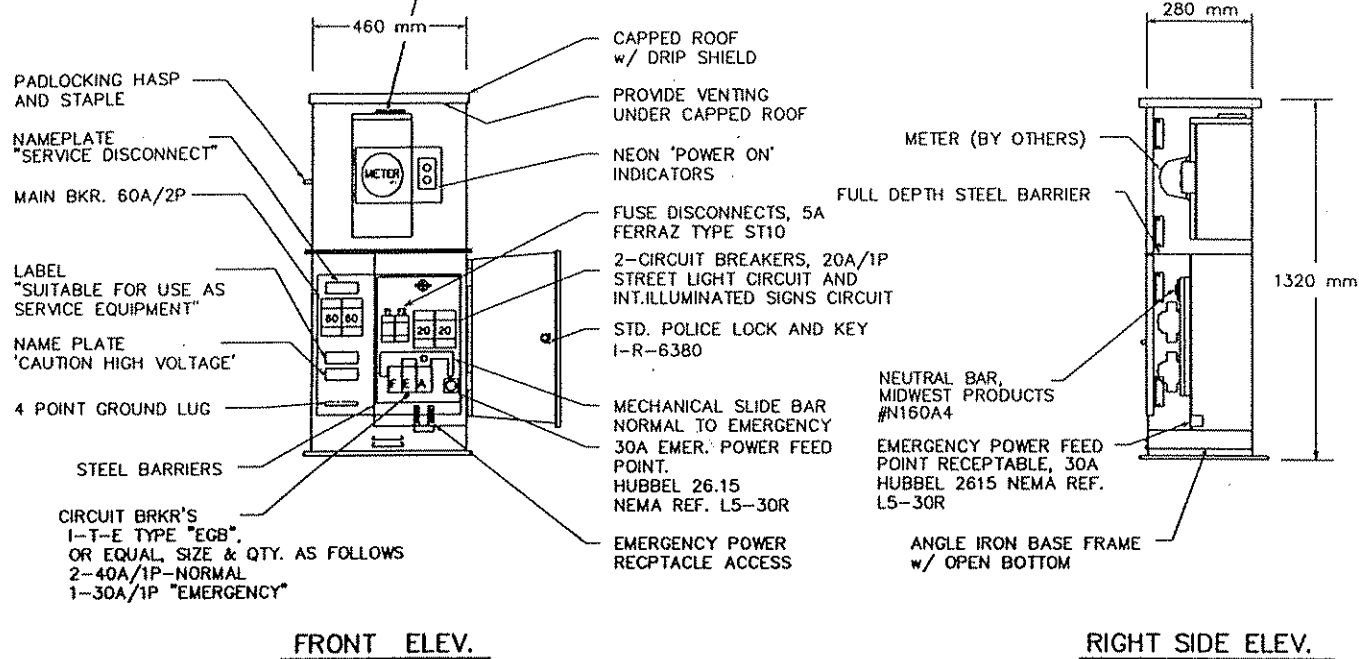
ANOKA COUNTY, MINNESOTA
CITY OF FRIDLEY
STATE AID PROJ. NO. 02-635-08

REVISE SIGNAL SYSTEM
DETAILS & STANDARD PLATES
CENTRAL AVENUE NE (CSAH 35) AT 69TH AVENUE NE

FILE NO. ANOKC9708
DATE 4/24/98
30
64

SIGNAL SERVICE CABINET

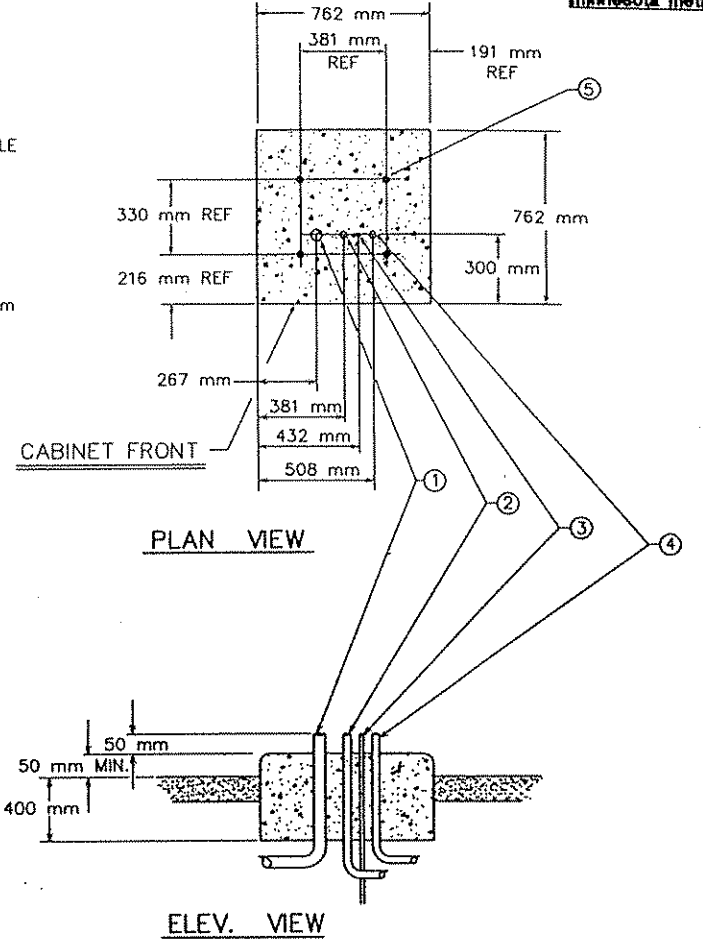
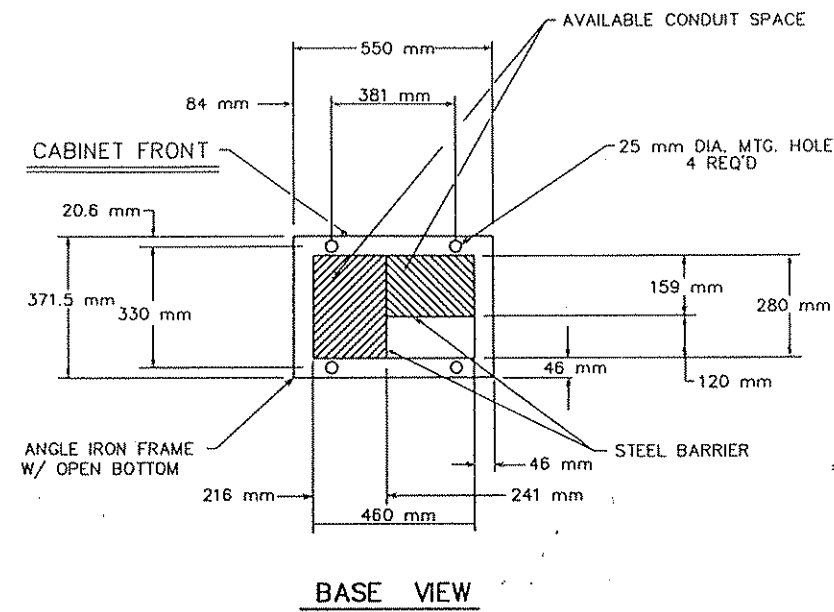
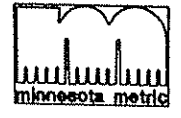
N.S.P. METER SOCKET, 5-TERMINAL w/POSTIVE BY-PASS MECHANISM MILBANK CAT. No. U-2272-RL.



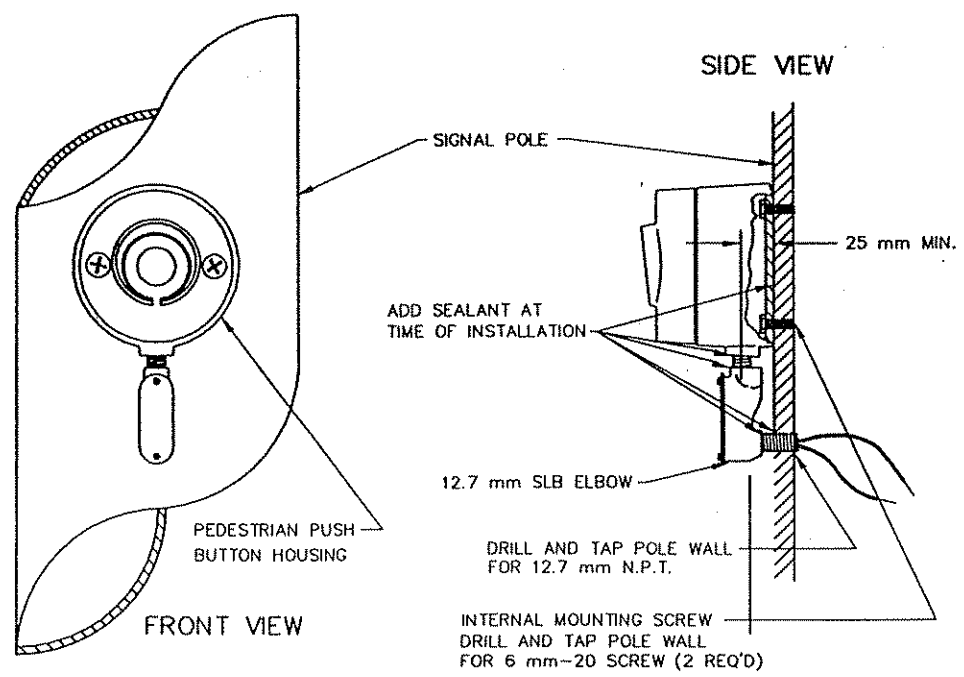
CONSTRUCTION NOTES

ENCLOSURE SHALL BE FABRICATED FROM #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

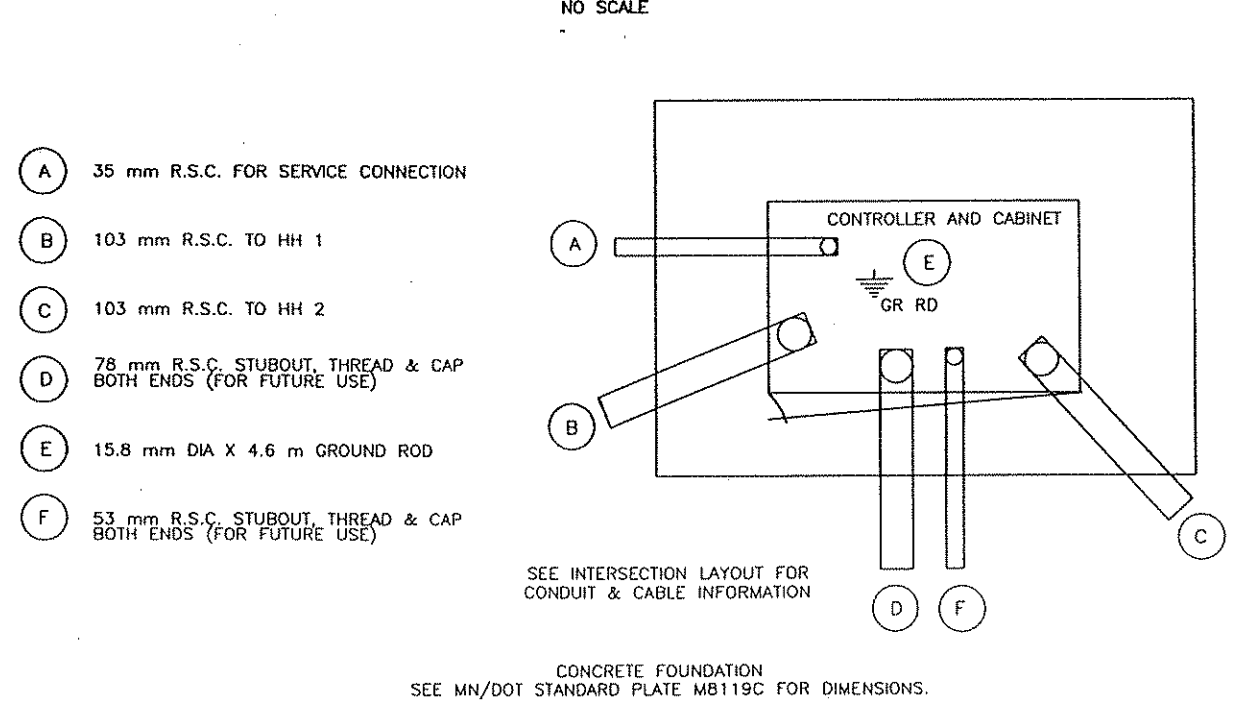
SERVICE CABINET FOUNDATION



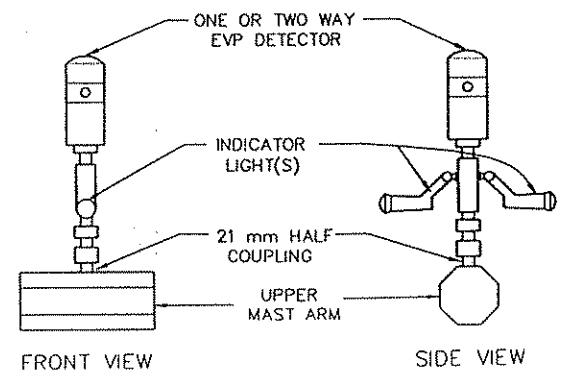
PEDESTRIAN PUSH BUTTON DETAIL



TYPICAL CONTROLLER CABINET PAD LAYOUT



EVP DETECTOR AND LIGHT MOUNTING DETAIL ON MAST ARM



NO.	BY	DATE	REVISIONS	ITEM	DESIGN	CHECKED

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.

John M. Gray

Date: 4/24/98 Reg. No. 22457



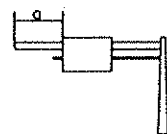
ANOKA COUNTY, MINNESOTA
CITY OF FRIDLEY
STATE AID PROJ. NO. 02-635-08

REVISE SIGNAL SYSTEM
DETAILS
CENTRAL AVENUE NE (CSAH 35) AT 69TH AVENUE NE

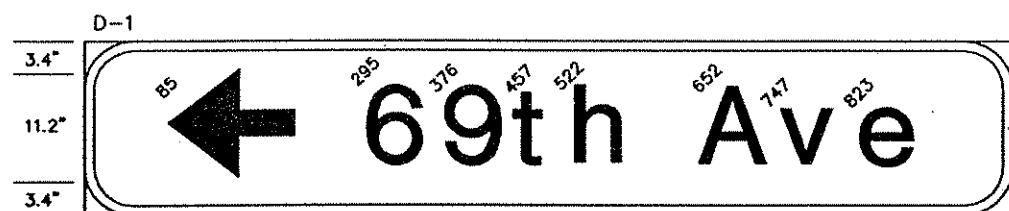
FILE NO. ANOKC9708
DATE 4/24/98
31
64



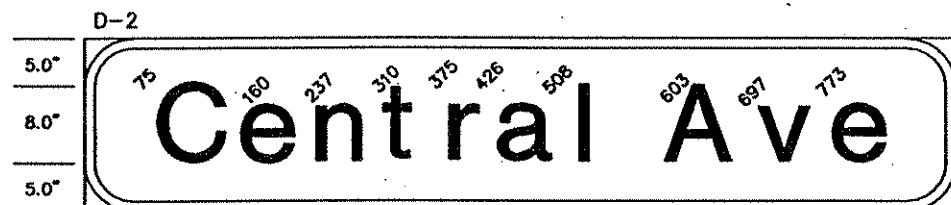
TYPE "D" SIGNS (INTERNALLY LIT) - F & I								
SIGN PANEL	SIZE (inches)	SIZE (meters)	NO. REQ.	NO. POSTS PER SIGN	POST SPACING (mm)	AREA (sq.m.) PER SIGN	POLE NO.	Ø
D-1	96x18	2.44x0.46	1	2	1375	1.12	2	2.5 m
D-2	90x18	2.29x0.46	1	2	1375	1.06	3	2.5 m
D-3	96x18	2.44x0.46	1	2	1375	1.12	4	2.5 m
TYPE "C" SIGNS - F & I								
R10-12	24x30	0.61x0.76	1	2	300	0.46	2	0.5 m



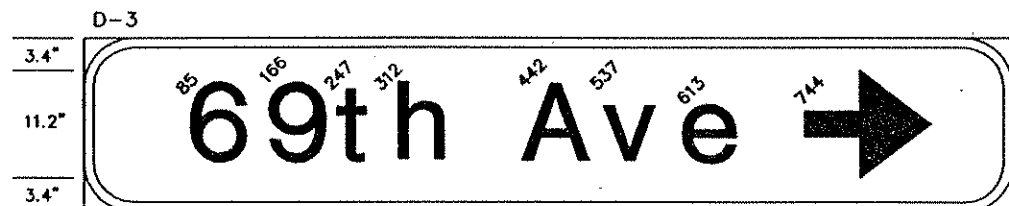
NOTE: ALL DIMENSIONS OF DETAILED SIGN PANELS ARE IN INCHES.



D-1
96"x18", 3"R, 1.0"B.
Line 1 78.9: 5-13 ARROW 180, 8"-6" E MOD.



D-2
90"x18", 3"R, 1.0"B.
Line 1 75.0: 8"-6" E MOD.



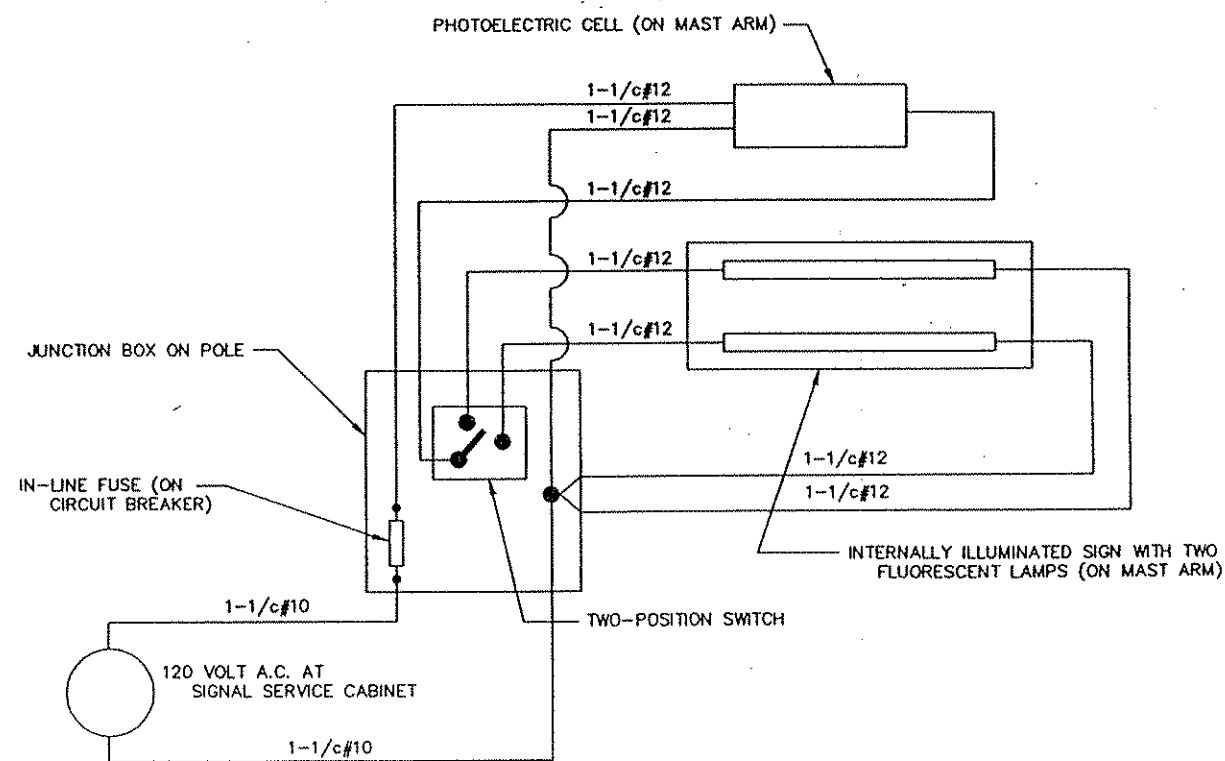
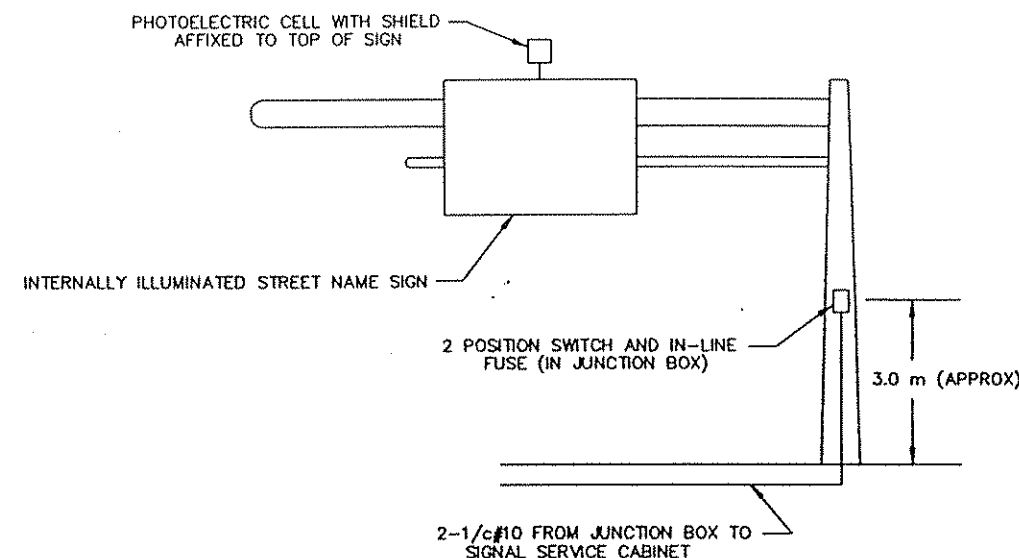
D-3
96"x18", 3"R, 1.0"B.
Line 1 78.9: 8"-6" E MOD., 5-13 ARROW 0

NOTES:

- COLOR FOR SIGNS D-1 AND D-3 SHALL BE WHITE LEGEND AND BORDER ON BLUE BACKGROUND, FULLY REFLECTORIZED.
- COLOR FOR SIGN D-2 SHALL BE WHITE LEGEND AND BORDER ON GREEN BACKGROUND, FULLY REFLECTORIZED.
- CORNERS EXTENDING BEYOND THE BORDER SHALL NOT BE TRIMMED.
- FOR STRUCTURAL DETAILS, TYPE "D" SIGNS, SEE DETAILS AND STANDARD SIGNS MANUAL.
- FOR TYPE "D" STRINGER AND PANEL-JOINT DETAIL, SEE DETAILS AND STANDARD SIGNS MANUAL.
- TYPE "D" SIGN PANELS SHALL BE INTERNALLY ILLUMINATED STREET NAME SIGN PANELS. SEE SPECIAL PROVISIONS AND DETAILS ON THIS SHEET FOR FURTHER INFORMATION.
- TYPE "C" SIGN PANELS SHALL BE FURNISHED AND INSTALLED BY SIGNAL CONTRACTOR INCIDENTAL TO ITEM NO. 2565.616 FOR THIS SIGNAL SYSTEM. SEE SPECIAL PROVISIONS.
- ALL INTERNALLY ILLUMINATED SIGN PANELS SHALL BE MEASURED AND PAID FOR BY THE SIGNAL CONTRACTOR UNDER ITEM NO. 2564.602 (INTERNALLY LIT SIGN-TYPE "D"-SIGNALS).
- SEE STANDARD SIGNS MANUAL FOR ARROW DETAILS.

INTERNALLY ILLUMINATED STREET NAME SIGN ELECTRICAL DETAILS

EACH SIGN (ONE PER MAST ARM POLE) IS TO BE FED WITH SEPARATE WIRES FROM THE SIGNAL SERVICE CABINET.



NO.	BY	DATE	REVISIONS	ITEM	DESIGN	CHECKED

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.
John M. Shroy
 Date: 4/24/98 Reg. No. 22457



ANOKA COUNTY, MINNESOTA
 CITY OF FRIDLEY
 STATE AID PROJ. NO. 02-635-08

REVISE SIGNAL SYSTEM
 MAST ARM SIGNING DETAILS
 CENTRAL AVENUE NE (CSAH 35) AT 69TH AVENUE NE

FILE NO. ANOKC9708
 DATE 4/24/98
 32
 64

NOTES:

- EACH NEW VEHICLE SIGNAL FACE SHALL HAVE A BACKGROUND SHIELD.
- ALL RED INDICATIONS SHALL BE REPLACED WITH 300 mm LED RED INDICATIONS. SEE SPECIAL PROVISIONS.
- ALL ITEMS OF SIGNAL SYSTEM ARE INPLACE AND SHALL BE REUSED AS SHOWN, EXCEPT AS NOTED BY R & S (REMOVE AND SALVAGE), S & R (SALVAGE AND REINSTALL), AND F & I (FURNISH AND INSTALL).
- CONTRACTOR SHALL PROVIDE EXTENDED BRACKETS FOR EACH POLE MOUNTED VEHICLE SIGNAL FACE.
- CONTRACTOR SHALL PAINT ALL NEW AND INPLACE ITEMS OF SIGNAL SYSTEM. SEE SPECIAL PROVISIONS.
- LOCATION OF POLES, HANDHOLES, LOOP DETECTORS AND CABINETS SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER.
- SEE SPECIAL PROVISIONS REGARDING REMOVAL, SALVAGING AND/OR REINSTALLING OF INPLACE MATERIALS.
- NEW HANDHOLES SHALL BE PVC HANDHOLES WITH METAL FRAMES AND COVERS PER MN/DOT STANDARD PLATE NO. MB114A.
- ALL INPLACE PEDESTRIAN INDICATIONS SHALL BE REMOVED AND SALVAGED BY THE CONTRACTOR, AND SHALL BE REPLACED WITH ONE SECTION HAND/WALKING PERSON INDICATIONS (WITH THE HAND INDICATION BEING LED).

LOOP DETECTORS				
NUMBER	SIZE (m)	LOCATION	FUNCTION	STATUS
D1-1	2-1.7x1.7	1.5 m & 10.5 m	11,12	F & I
D1-2	2-1.7x1.7	1.5 m & 6 m	11,12	F & I
D2-1	1.7x1.7	91 m	1	F & I
D2-2	1.7x1.7	91 m	1	F & I
D4-1	2-1.7x1.7	60 m	8	INPLACE
D4-2	2-1.7x1.7	0 m & 3 m	7	F & I
D4-3	2-1.7x1.7	0 m & 3 m	7	F & I
D4-4	2-1.7x1.7	0 m & 3 m	1	F & I
D6-1	1.7x1.7	91 m	1	F & I
D6-2	1.7x1.7	91 m	1	F & I

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

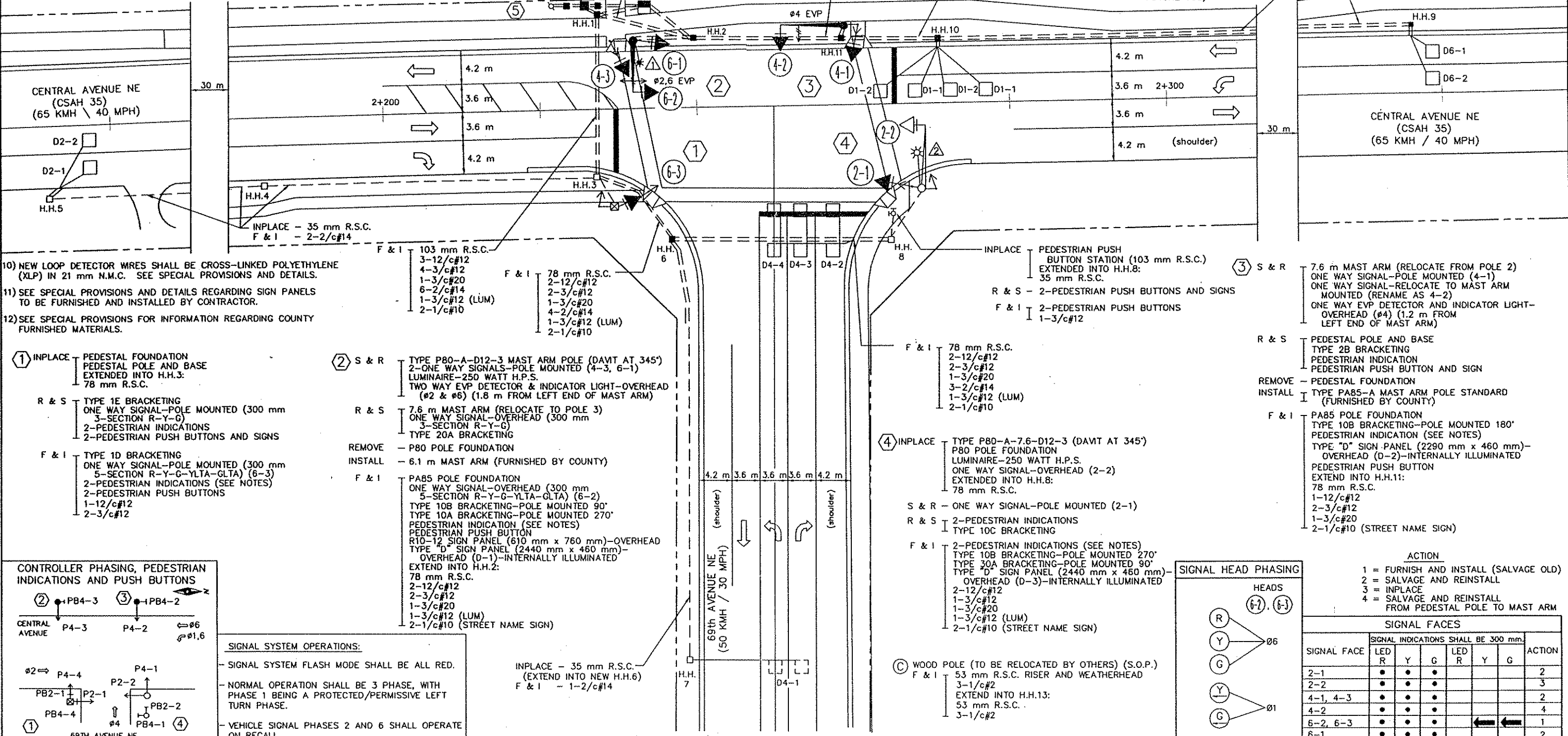
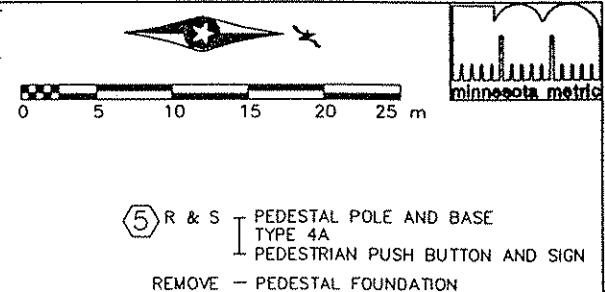
* = F & I LOOP DETECTOR, BUT DO NOT MAKE OPERATIONAL (FOR FUTURE USE)

LOOP DETECTORS FUNCTIONS:

- CALL AND EXTEND
- CALL ONLY
- EXTEND ONLY
- CALL ONLY DENSITY
- DELAYED CALL ONLY
- DELAYED CALL ONLY DENSITY
- DELAYED CALL- IMMEDIATE EXTEND
- CARRY OVER (STRETCH)
- ADVISORY DETECTOR
- SAMPLING DETECTOR
- CALL DURING #4 ONLY
- EXTEND DURING #1 AND #6 ONLY

- (B) R & S - SERVICE CABINET REMOVE - CABINET FOUNDATION F & I - CABINET FOUNDATION SERVICE CABINET EXTEND INTO H.H.13: 53 mm R.S.C. 3-1/c#2 EXTEND INTO H.H.12: 35 mm R.S.C. METERED SIGNAL SERVICE 3-1/c#6 EXTEND INTO H.H.1: 53 mm R.S.C. UNMETERED STREET LIGHT/SIGN SERVICE 2-3/c#12 (LUM) 6-1/c#10 (STREET NAME SIGNS)

- (A) R & S - CONTROLLER AND CABINET REMOVE - CABINET FOUNDATION INSTALL - CONTROLLER AND CABINET (FURNISHED BY COUNTY) F & I - CABINET FOUNDATION EXTEND INTO H.H.12: 35 mm R.S.C. METERED SIGNAL SERVICE 3-1/c#6 EXTEND INTO H.H.1: 103 mm R.S.C. 3-12/c#12 4-3/c#12 1-3/c#20 2-3/c#20 4-2/c#14 STUB OUT 1-53 mm R.S.C. AND 1-78 mm R.S.C. FROM CABINET TO EAST (THREAD AND CAP BOTH ENDS-FOR FUTURE USE)



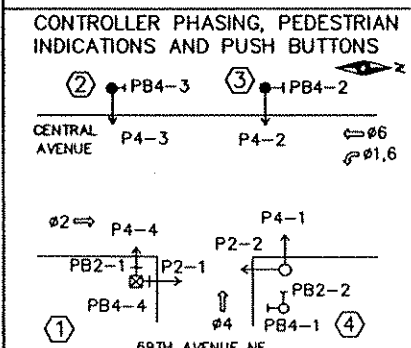
- NEW LOOP DETECTOR WRES SHALL BE CROSS-LINKED POLYETHYLENE (XLP) IN 21 mm N.M.C. SEE SPECIAL PROVISIONS AND DETAILS.
- SEE SPECIAL PROVISIONS AND DETAILS REGARDING SIGN PANELS TO BE FURNISHED AND INSTALLED BY CONTRACTOR.
- SEE SPECIAL PROVISIONS FOR INFORMATION REGARDING COUNTY FURNISHED MATERIALS.

- (1) INPLACE PEDESTAL FOUNDATION PEDESTAL POLE AND BASE EXTENDED INTO H.H.3: 78 mm R.S.C.
- R & S - TYPE 1E BRACKETING ONE WAY SIGNAL-POLE MOUNTED (300 mm 3-SECTION R-Y-G) 2-PEDESTRIAN INDICATIONS 2-PEDESTRIAN PUSH BUTTONS AND SIGNS
- F & I - TYPE 1D BRACKETING ONE WAY SIGNAL-POLE MOUNTED (300 mm 5-SECTION R-Y-G-YLTA-GLTA) (6-3) 2-PEDESTRIAN INDICATIONS (SEE NOTES) 2-PEDESTRIAN PUSH BUTTONS 1-12/c#12 2-3/c#12

- (2) S & R - TYPE P80-A-D12-3 MAST ARM POLE (DAVT AT 345') 2-ONE WAY SIGNALS-POLE MOUNTED (4-3, 6-1) LUMINAIRE-250 WATT H.P.S. TWO WAY EVP DETECTOR & INDICATOR LIGHT-OVERHEAD (#2 & #6) (1.8 m FROM LEFT END OF MAST ARM)
- R & S - 7.6 m MAST ARM (RELOCATE TO POLE 3) ONE WAY SIGNAL-OVERHEAD (300 mm 3-SECTION R-Y-G) TYPE 20A BRACKETING
- REMOVE - P80 POLE FOUNDATION
- INSTALL - 6.1 m MAST ARM (FURNISHED BY COUNTY)
- F & I - PA85 POLE FOUNDATION ONE WAY SIGNAL-OVERHEAD (300 mm 5-SECTION R-Y-G-YLTA-GLTA) (6-2) TYPE 10B BRACKETING-POLE MOUNTED 90° TYPE 10A BRACKETING-POLE MOUNTED 270° PEDESTRIAN INDICATION (SEE NOTES) PEDESTRIAN PUSH BUTTON R10-12 SIGN PANEL (610 mm x 760 mm)-OVERHEAD TYPE "D" SIGN PANEL (2440 mm x 460 mm)-OVERHEAD (D-1)-INTERNALLY ILLUMINATED EXTEND INTO H.H.2: 78 mm R.S.C. 2-12/c#12 2-3/c#12 1-3/c#20 1-3/c#12 (LUM) 2-1/c#10 (STREET NAME SIGN)

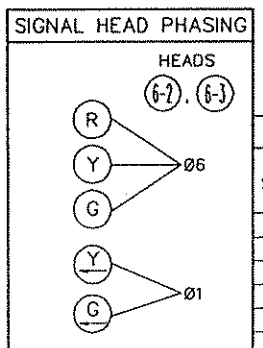
- (4) INPLACE TYPE P80-A-7.6-D12-3 (DAVT AT 345') P80 POLE FOUNDATION LUMINAIRE-250 WATT H.P.S. ONE WAY SIGNAL-OVERHEAD (2-2) EXTENDED INTO H.H.8: 78 mm R.S.C.
- S & R - ONE WAY SIGNAL-POLE MOUNTED (2-1)
- R & S - 2-PEDESTRIAN INDICATIONS TYPE 10C BRACKETING
- F & I - 2-PEDESTRIAN INDICATIONS (SEE NOTES) TYPE 10B BRACKETING-POLE MOUNTED 270° TYPE 30A BRACKETING-POLE MOUNTED 90° TYPE "D" SIGN PANEL (2440 mm x 460 mm)-OVERHEAD (D-3)-INTERNALLY ILLUMINATED 2-12/c#12 1-3/c#12 1-3/c#20 1-3/c#12 (LUM) 2-1/c#10 (STREET NAME SIGN)

- (3) S & R - 7.6 m MAST ARM (RELOCATE FROM POLE 2) ONE WAY SIGNAL-POLE MOUNTED (4-1) ONE WAY SIGNAL-RELOCATE TO MAST ARM MOUNTED (RENAME AS 4-2) ONE WAY EVP DETECTOR AND INDICATOR LIGHT-OVERHEAD (#4) (1.2 m FROM LEFT END OF MAST ARM)
- R & S - PEDESTAL POLE AND BASE TYPE 2B BRACKETING PEDESTRIAN INDICATION PEDESTRIAN PUSH BUTTON AND SIGN
- REMOVE - PEDESTAL FOUNDATION
- INSTALL - TYPE PA85-A MAST ARM POLE STANDARD (FURNISHED BY COUNTY)
- F & I - PA85 POLE FOUNDATION TYPE 10B BRACKETING-POLE MOUNTED 180° PEDESTRIAN INDICATION (SEE NOTES) TYPE "D" SIGN PANEL (2290 mm x 460 mm)-OVERHEAD (D-2)-INTERNALLY ILLUMINATED PEDESTRIAN PUSH BUTTON EXTEND INTO H.H.11: 78 mm R.S.C. 1-12/c#12 2-3/c#12 1-3/c#20 2-1/c#10 (STREET NAME SIGN)



SIGNAL SYSTEM OPERATIONS:

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

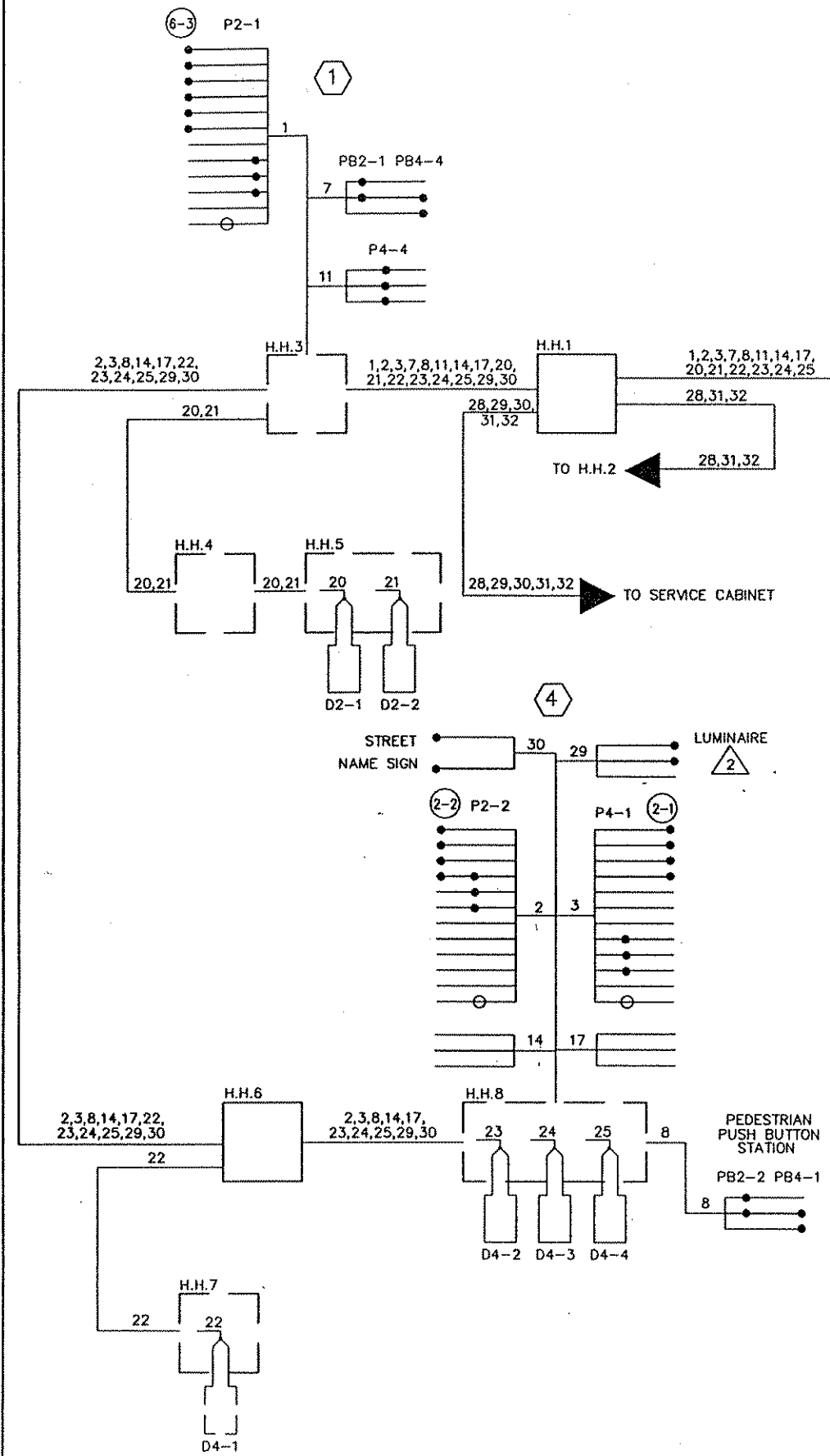


ACTION

- FURNISH AND INSTALL (SALVAGE OLD)
- SALVAGE AND REINSTALL
- INPLACE
- SALVAGE AND REINSTALL FROM PEDESTAL POLE TO MAST ARM

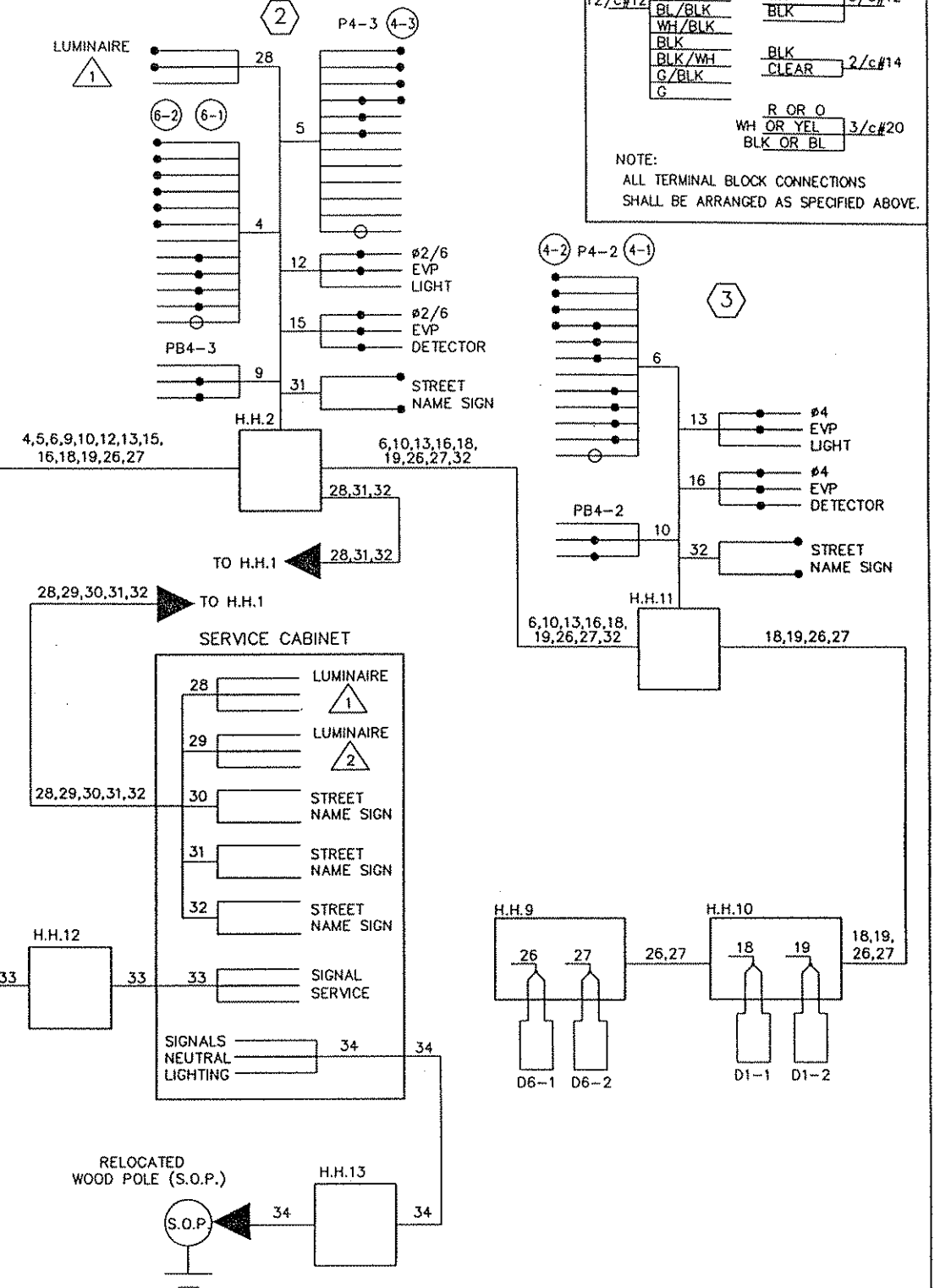
SIGNAL FACE	SIGNAL INDICATIONS SHALL BE 300 mm			ACTION
	LED R	LED Y	LED G	
2-1	•	•	•	2
2-2	•	•	•	3
4-1, 4-3	•	•	•	2
4-2	•	•	•	4
6-2, 6-3	•	•	•	1
6-1	•	•	•	2

CONTROLLER CABINET



- RED 6-3
 - YEL 6-3
 - GRN 6-3
 - NEU 6-3
 - YLTA 6-3
 - GLTA 6-3
 - SPR
 - NEU P2-1
 - WLK P2-1
 - DWK P2-1
 - SPR
 - NEU
 - EQG
- RED 2-2
 - YEL 2-2
 - GRN 2-2
 - NEU 2-2, P2-2
 - WLK P2-2
 - DWK P2-2
 - SPR
 - NEU
 - SPR
 - SPR
 - SPR
 - EQG
- RED 2-1
 - YEL 2-1
 - GRN 2-1
 - NEU 2-1
 - SPR
 - SPR
 - SPR
 - NEU P4-1
 - WLK P4-1
 - DWK P4-1
 - SPR
 - EQG
- RED 6-2
 - YEL 6-2
 - GRN 6-2
 - NEU 6-2
 - YLTA 6-2
 - GLTA 6-2
 - SPR
 - NEU 6-1
 - RED 6-1
 - YEL 6-1
 - GRN 6-1
 - EQG
- RED 4-3
 - YEL 4-3
 - GRN 4-3
 - NEU 4-3, P4-3
 - WLK P4-3
 - DWK P4-3
 - SPR
 - NEU
 - SPR
 - SPR
 - SPR
 - EQG
- RED 4-2
 - YEL 4-2
 - GRN 4-2
 - NEU 4-2, P4-2
 - WLK P4-2
 - DWK P4-2
 - SPR
 - NEU 4-1
 - RED 4-1
 - YEL 4-1
 - GRN 4-1
 - EQG

- PB2-1
- NEU
- PB4-4
- PB2-2
- NEU
- PB4-1
- SPR
- NEU
- PB4-3
- SPR
- NEU
- PB4-2
- P4-4 WLK
- P4-4 NEU
- P4-4 DWK
- Ø2/6
- EVP
- LIGHT
- Ø4
- EVP
- LIGHT
- FUTURE
- EVP
- LIGHT
- Ø2/6
- EVP
- DETECTOR
- Ø4
- EVP
- DETECTOR
- FUTURE
- EVP
- DETECTOR
- D1-1
- D1-2
- D2-1
- D2-2
- D4-1
- D4-2
- D4-3
- D4-4
- D6-1
- D6-2
- SIGNAL
- SERVICE



CONDUCTOR COLOR CODING

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

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

1	JMG	5/98	REVISED CONDUIT ACROSS 69TH AVENUE PER COUNTY				
NO.	BY	DATE	REVISIONS	ITEM	DESIGN	CHECKED	

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: 4/24/98 Reg. No. 22457

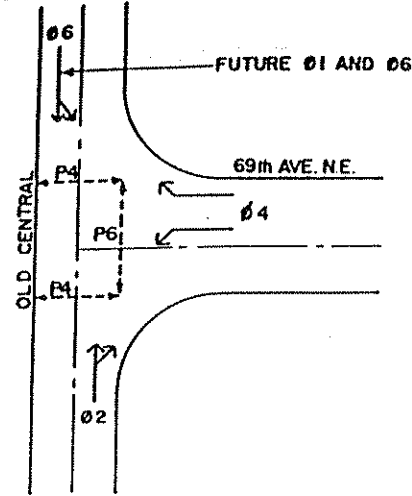


ANOKA COUNTY, MINNESOTA
 CITY OF FRIDLEY
 STATE AID PROJ. NO. 02-635-08

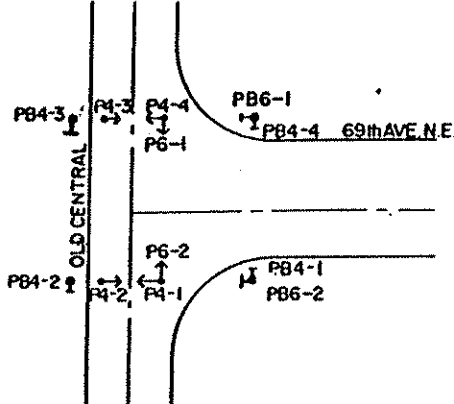
REVISE SIGNAL SYSTEM
 FIELD WIRING DIAGRAM
 CENTRAL AVENUE NE (CSAH 35) AT 69TH AVENUE NE

FILE NO.	34
ANOKC9708	
DATE	4/24/98
	64

CONTROLLER PHASING



PEDESTRIAN PHASING



POLE SCHEDULE

PEDESTAL POLE (1)

SIGNAL PEDESTAL POLE WITH FRANGIBLE BASE
 LOCATE POLE BASE 54' SOUTH AND 29' EAST OF THE INTERSECTION CENTERLINE.
 1- ONEWAY, 3-SECTION SIGNAL, TYPE 1E (6-1), W/PEDESTRIAN INDICATIONS (P4-1) & (P6-2)
 2- PEDESTRIAN PUSH BUTTONS, POLE MOUNTED

EXTEND IN HH 3

3" R.S.C. 10'
 3-12/C #12
 2-3/6 #12

MAST ARM POLE (2)

TYPE P80-A-25-D-40 MAST ARM POLE WITH TRANSFORMER BASE.
 LOCATE POLE BASE 38' SOUTH AND 27' WEST OF THE INTERSECTION CENTERLINE. ORIENT MAST ARM 90° FROM OLD CENTRAL AVE.

1- ONEWAY, 3 SECTION SIGNAL, OVERHEAD @ 20' (6-2)
 1- TWOWAY SIGNAL, TYPE 20A, POLE MOUNTED @ 270° (6-3) & (4-1)
 2- WAY EVP DETECTOR/LIGHT

MAST ARM POLE (2) CONT.

1- 250 WATT, HIGH PRESSURE SODIUM LUMINAIRE, MOUNTED @ 345°

EXTEND INTO HH 1
 3" R.S.C. 25'
 2-12/C #12
 2-3/6 #12
 3-1/6 #10
 1-3/6 #20

PEDESTAL POLE (3)

SIGNAL PEDESTAL POLE W/ FRANGIBLE BASE
 LOCATE POLE BASE 43' NORTH & 25' WEST OF THE INTERSECTION CENTERLINE

1- TWOWAY SIGNAL, TYPE 2B, MOUNTED @ 360° (4-2) & 90° (2-1)
 1 SET OF PEDESTRIAN INDICATIONS (P4-3)

1- PEDESTRIAN PUSH BUTTON, POLE MOUNTED

EXTEND INTO HH 9
 3" R.S.C. 15'
 1-12/C #12
 2-3/6 #12
 1-3/6 #20

ONE WAY EVP DETECTOR/LIGHT

MAST ARM POLE (4)

TYPE P80-A-25-D-40 MAST ARM POLE WITH TRANSFORMER BASE
 LOCATE POLE BASE 65' NORTH & 32' EAST OF THE INTERSECTION CENTERLINE. ORIENT MAST ARM 90° FROM OLD CENTRAL AVE.

1- ONEWAY, 3 SECTION SIGNAL, OVERHEAD @ 25' (2-2)
 1- ONEWAY, 3 SECTION SIGNAL, TYPE 10C, POLE MOUNTED @ 270° (2-3), WITH 2 SETS OF PEDESTRIAN INDICATIONS (P6-1) & (P4-4)

1- 250 WATT, HIGH PRESSURE SODIUM LUMINAIRE MOUNTED @ 345°

EXTEND INTO HH 8
 3" R.S.C. 30'
 2-12/C #12
 2-1/6 #10
 1-3/6 #20

5 PEDESTAL FOUNDATION PEDESTAL POLE AND BASE
 TYPE 4A
 PEDESTRIAN PUSH BUTTON AND SIGN
 EXTEND INTO H.H. 2
 1 1/4" R.S.C.
 2-3/6 #12



1-1/4" R.S.C.
 1-2/66 #14

FUTURE 6'x8' DETECTOR

3" R.S.C. 70'
 1-12/C #12
 2-3/6 #12
 5-2/65 #14
 1-3/6 #20

S.O.P.
 EXTEND INTO HH12 40'
 1-1/4" R.S.C.
 3-1/6 #8

CONTROLLER CABINET
 EXTEND INTO HH1 25'
 2-3" R.S.C.
 6-12/C #12
 4-3/6 #12
 1-2/65 #14
 3-1/6 #20
 1-1/4" R.S.C.
 3-1/6 #8

SERVICE CABINET
 EXTEND INTO HH11
 1-1/4" R.S.C. 25'
 3-1/6 #8
 1-1/4" R.S.C.
 4-1/6 #10
 EXTEND INTO HH 12 10'
 1-1/4" R.S.C.
 3-1/6 #8

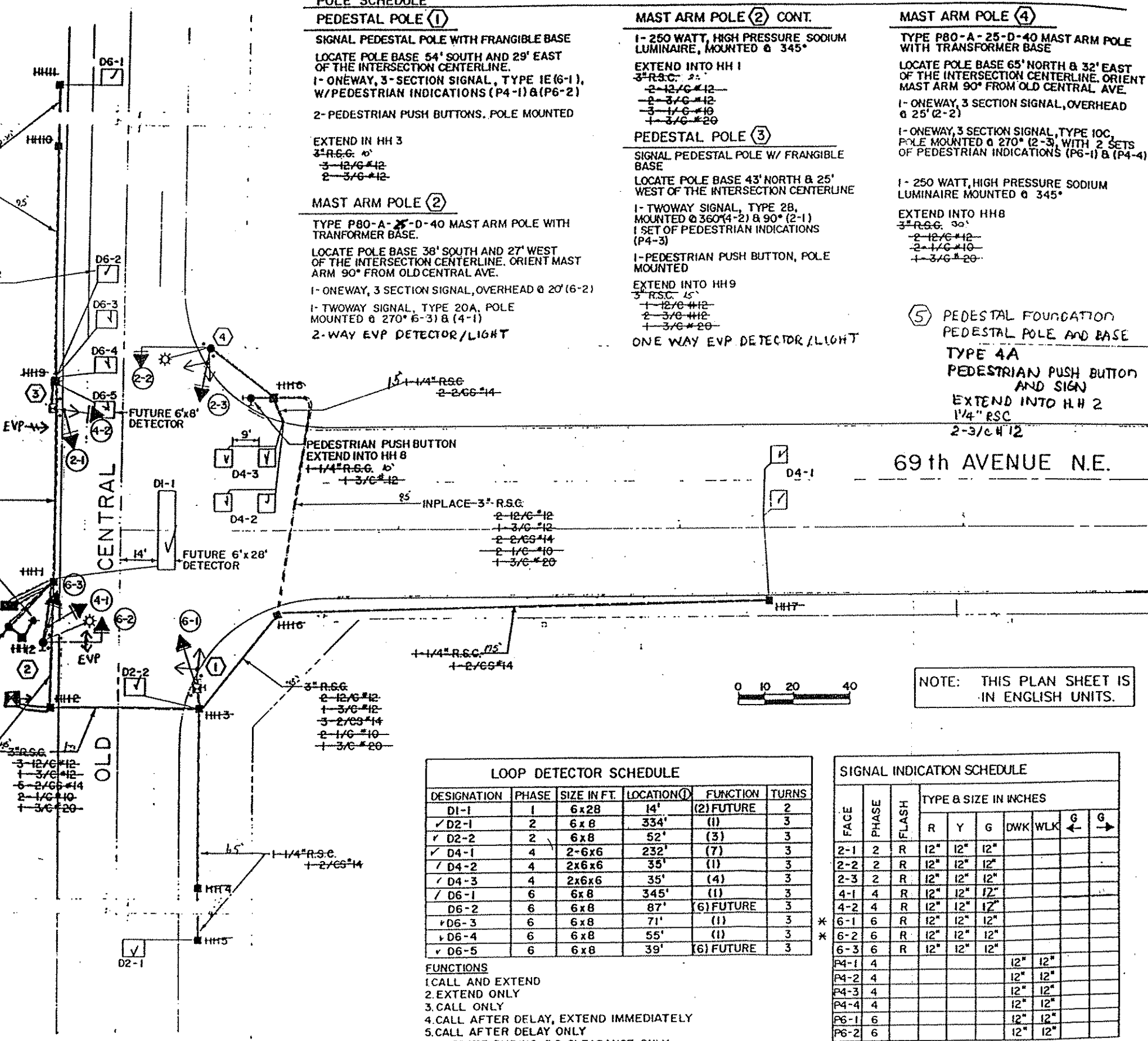
5- INSTALL AT LOCATION DETERMINED IN THE FIELD BY THE ENGINEER 2" STEEL GUARD POSTS AT EACH PEDESTAL POLE AND MAST ARM POLE.

6- APPROX. 2 FEET OF 3/6 #20 SHALL BE COILED, TAPED AND MARKED IN SIGNAL HEAD 4-2 ON PEDESTAL POLE 3, FOR FUTURE EMERGENCY VEHICLE PRE-EMPTION EQUIPMENT.

7- SUFFICIENT 3/6 #20 TO REACH THE EMERGENCY VEHICLE PRE-EMPTION EQUIPMENT SHALL BE INSTALLED AND LOOPED IN CONDUIT OUTLET BODY ON POLES 2 AND 4.

NOTES:

- 1- ALL UNDERGROUND CONDUIT TO BE INSTALLED UNDER THE EXISTING ROADWAY SHALL BE AUGERED OR PUSHED.
- 2- EXACT LOCATION OF SIGNAL POLES TO BE DETERMINED IN THE FIELD BY THE ENGINEER.
- 3- FUTURE DETECTOR LOOPS SHALL BE INSTALLED NOW AND WIRED TO CONTROLLER CABINET WHERE THEY SHALL BE TAPED AND MARKED FOR FUTURE USE.
- 4- A 3/4" HALF COUPLING, 3/4" PIPE NIPPLE AND GAPPED CONDUIT OUTLET BODY FOR FUTURE EMERGENCY VEHICLE PRE-EMPTION EQUIPMENT SHALL BE FURNISHED AND INSTALLED APPROX. 2 FEET FROM THE END OF MAST ARM ON POLES 2 AND 4.



NOTE: THIS PLAN SHEET IS IN ENGLISH UNITS.

LOOP DETECTOR SCHEDULE

DESIGNATION	PHASE	SIZE IN FT.	LOCATION (1)	FUNCTION	TURNS
DI-1	1	6x28	14'	(2) FUTURE	2
✓ D2-1	2	6x8	334'	(1)	3
✓ D2-2	2	6x8	52'	(3)	3
✓ D4-1	4	2-6x6	232'	(7)	3
✓ D4-2	4	2x6x6	35'	(1)	3
✓ D4-3	4	2x6x6	35'	(4)	3
✓ D6-1	6	6x8	345'	(1)	3
D6-2	6	6x8	87'	(6) FUTURE	3
✓ D6-3	6	6x8	71'	(1)	3
✓ D6-4	6	6x8	55'	(1)	3
✓ D6-5	6	6x8	39'	(6) FUTURE	3

FUNCTIONS

1. CALL AND EXTEND
2. EXTEND ONLY
3. CALL ONLY
4. CALL AFTER DELAY, EXTEND IMMEDIATELY
5. CALL AFTER DELAY ONLY
6. OPERATE DURING 6 CLEARANCE ONLY
7. "EXTENDING" DETECTOR (STRETCH)

SIGNAL INDICATION SCHEDULE

FACE	PHASE	FLASH	TYPE & SIZE IN INCHES							
			R	Y	G	DWK	WLK	G ←	G →	
2-1	2	R	12"	12"	12"					
2-2	2	R	12"	12"	12"					
2-3	2	R	12"	12"	12"					
4-1	4	R	12"	12"	12"					
4-2	4	R	12"	12"	12"					
6-1	6	R	12"	12"	12"					
6-2	6	R	12"	12"	12"					
6-3	6	R	12"	12"	12"					
P4-1	4					12"	12"			
P4-2	4					12"	12"			
P4-3	4					12"	12"			
P4-4	4					12"	12"			
P6-1	6					12"	12"			
P6-2	6					12"	12"			

* FUTURE 5 SECTION HEAD (N.I.C.)

NO.	BY	DATE	REVISIONS	ITEM	DESIGN	CHECKED

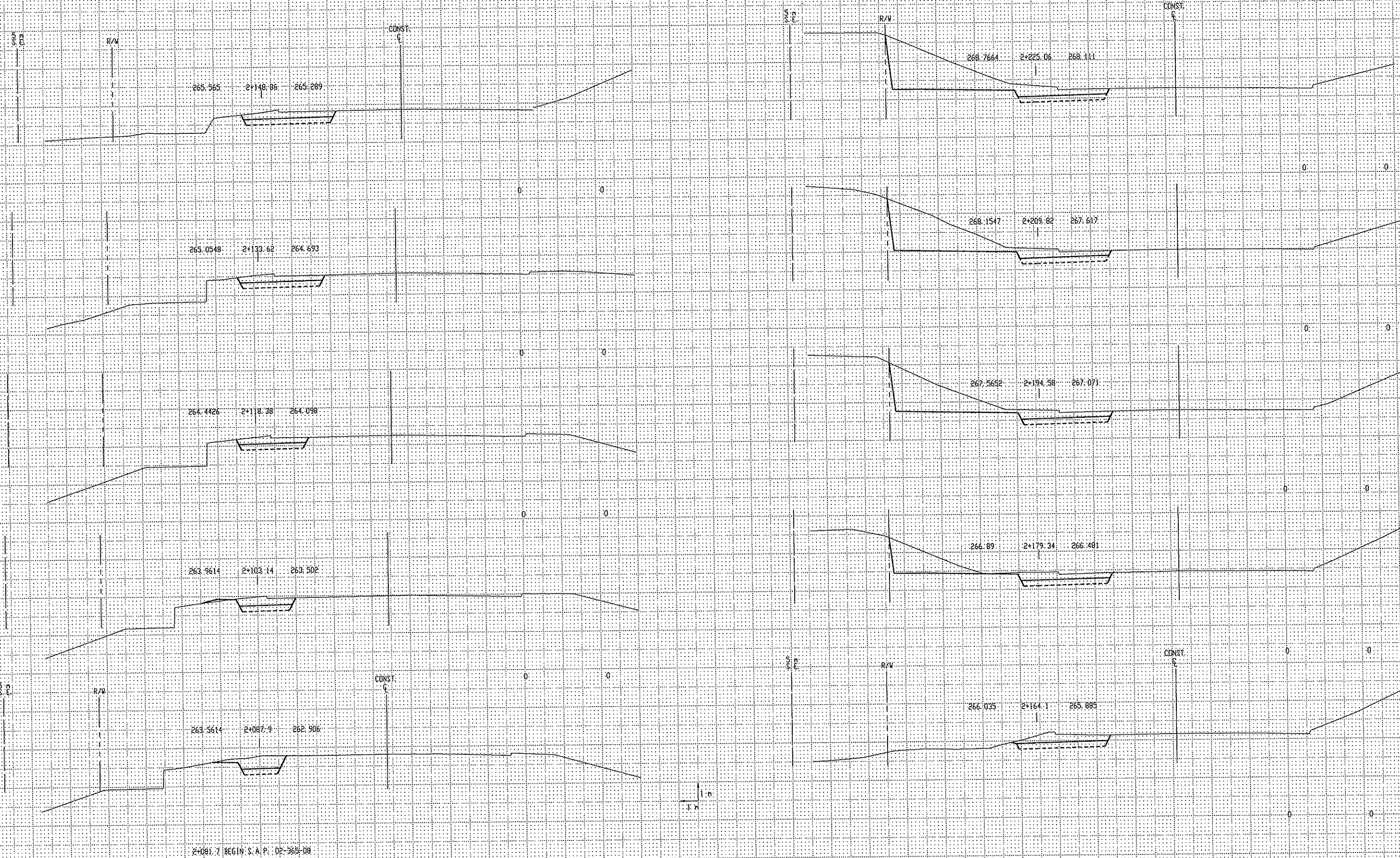
I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the laws of the state of Minnesota.
 Date: 4/24/98 Reg. No. 22457



ANOKA COUNTY, MINNESOTA
 CITY OF FRIDLEY
 STATE AID PROJ. NO. 02-635-08

REVISE SIGNAL SYSTEM
 FOR INFORMATION ONLY
 CENTRAL AVENUE NE (CSAH 35) AT 69TH AVENUE NE

FILE NO. ANOKC9708
 DATE 4/24/98
 35
 64



1	8/05/98	HG				C/L SHIFT
NO	DATE	BY	CKD	APPR		REVISION
NAME:						



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

DATE _____ REG. NO. _____

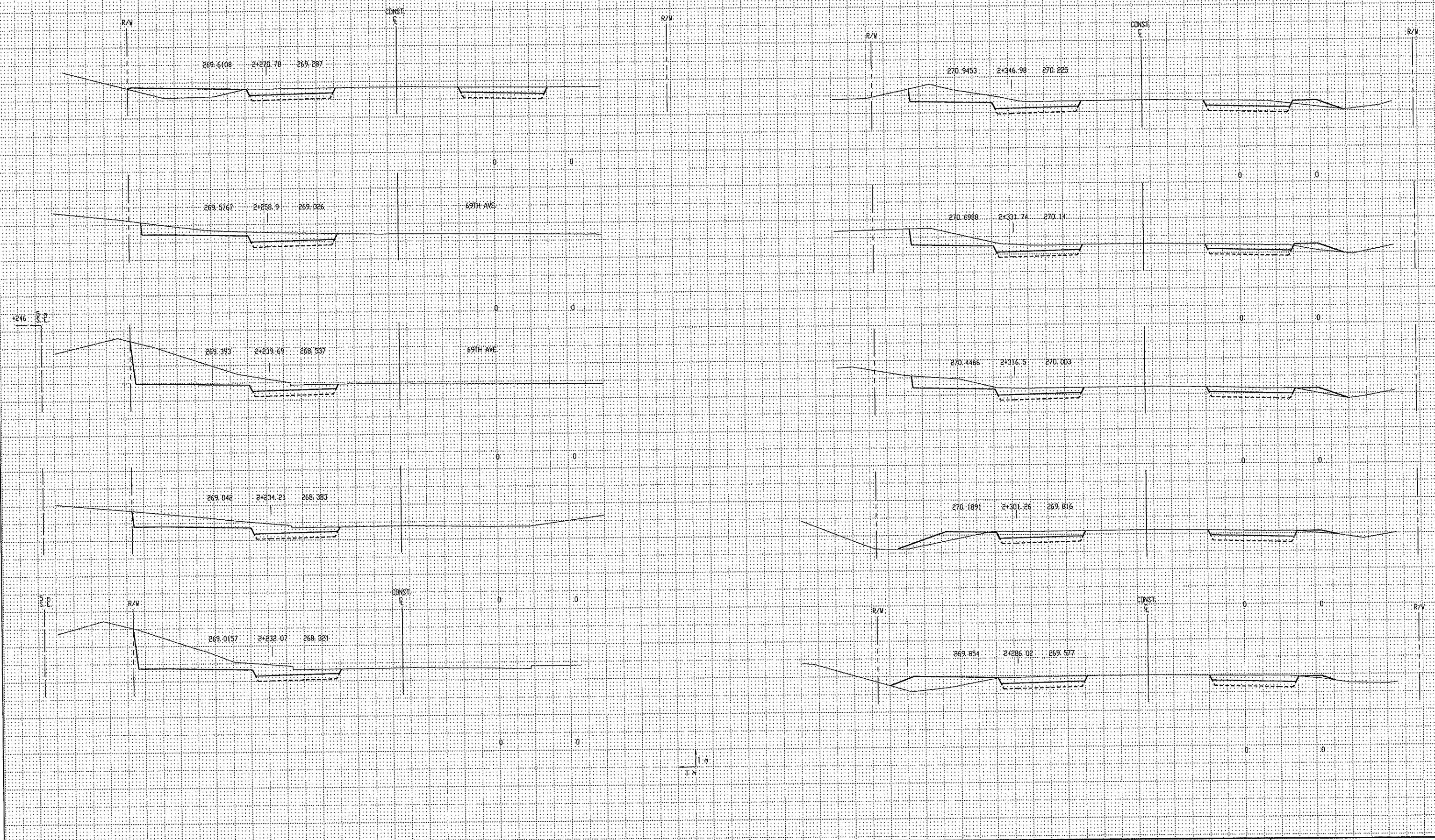
DRAWN BY HDG DATE 06/04/98
 DESIGN BY MFG DATE 06/04/98
 CHECKED BY DVF DATE 06/04/98



ANOKA COUNTY
 HIGHWAY DEPT.

STATE PROJECT NO. _____
 STATE AID PROJECT NO. 02-635-08
 STATE AID PROJECT NO. 02-635-10
 COUNTY PROJECT NO. _____

CROSS- SECTION
 STA 2+087.9 TO 2+225.06
 Sheet 36 of 64 Sheets



1	8/05/98	HG				C/L SHIFT
NO	DATE	BY	CKD	APPR		REVISION
NAME:						



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

DATE _____ REG. NO. _____

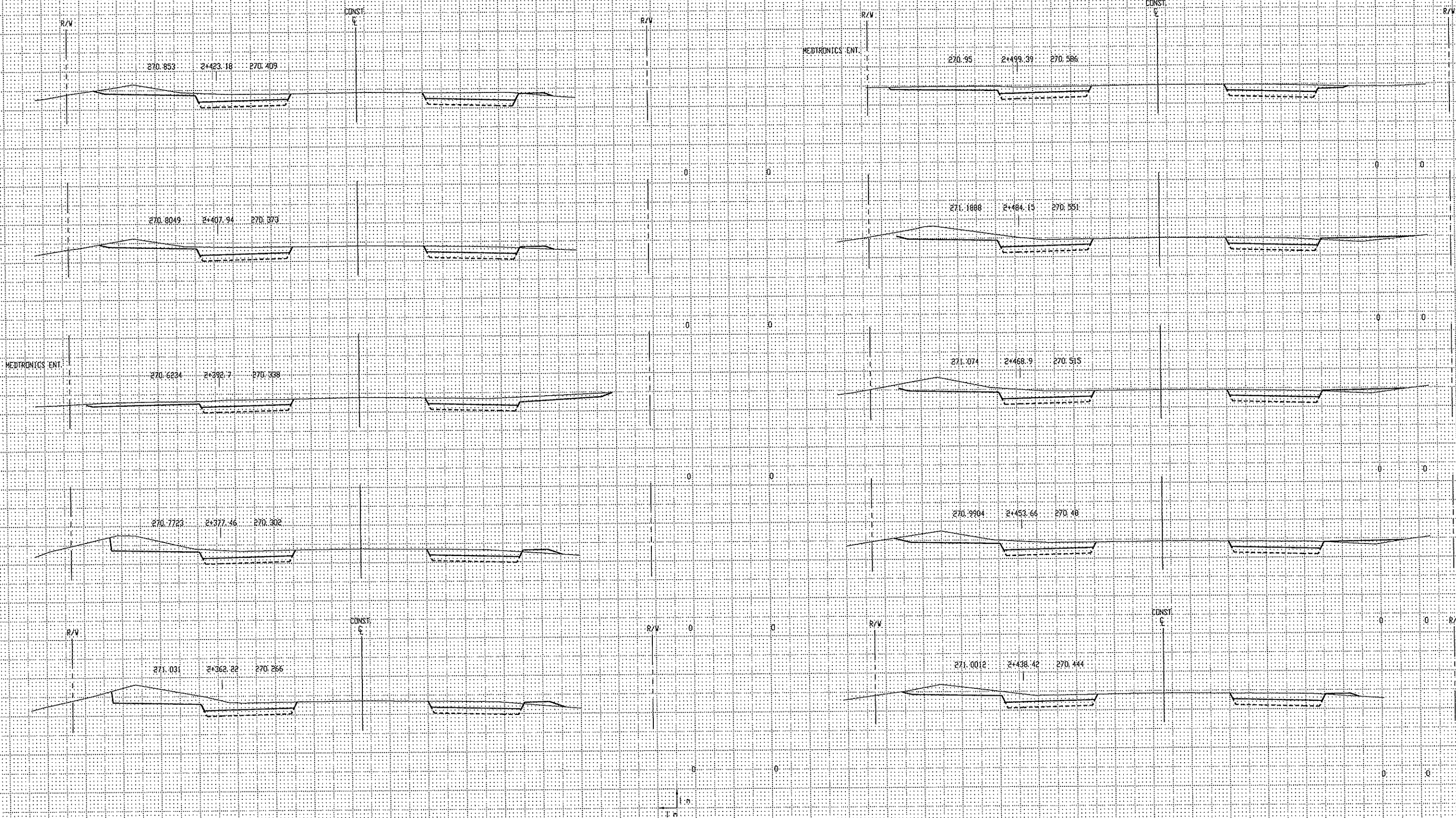
DRAWN BY: HDG DATE: 06/04/98
 DESIGN BY: MFG DATE: 06/04/98
 CHECKED BY: DWF DATE: 06/04/98



ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO. _____
 STATE AID PROJECT NO. 02-635-08
 STATE AID PROJECT NO. 02-635-10
 COUNTY PROJECT NO. _____

CROSS-SECTION
 STA 2+232.07 TO 2+346.98
 Sheet 37 of 64 Sheets



1	8/05/98	HG				C/L SHIFT
NO	DATE	BY	CKD	APPR		REVISION
NAME:						



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

DATE _____ REG. NO. _____

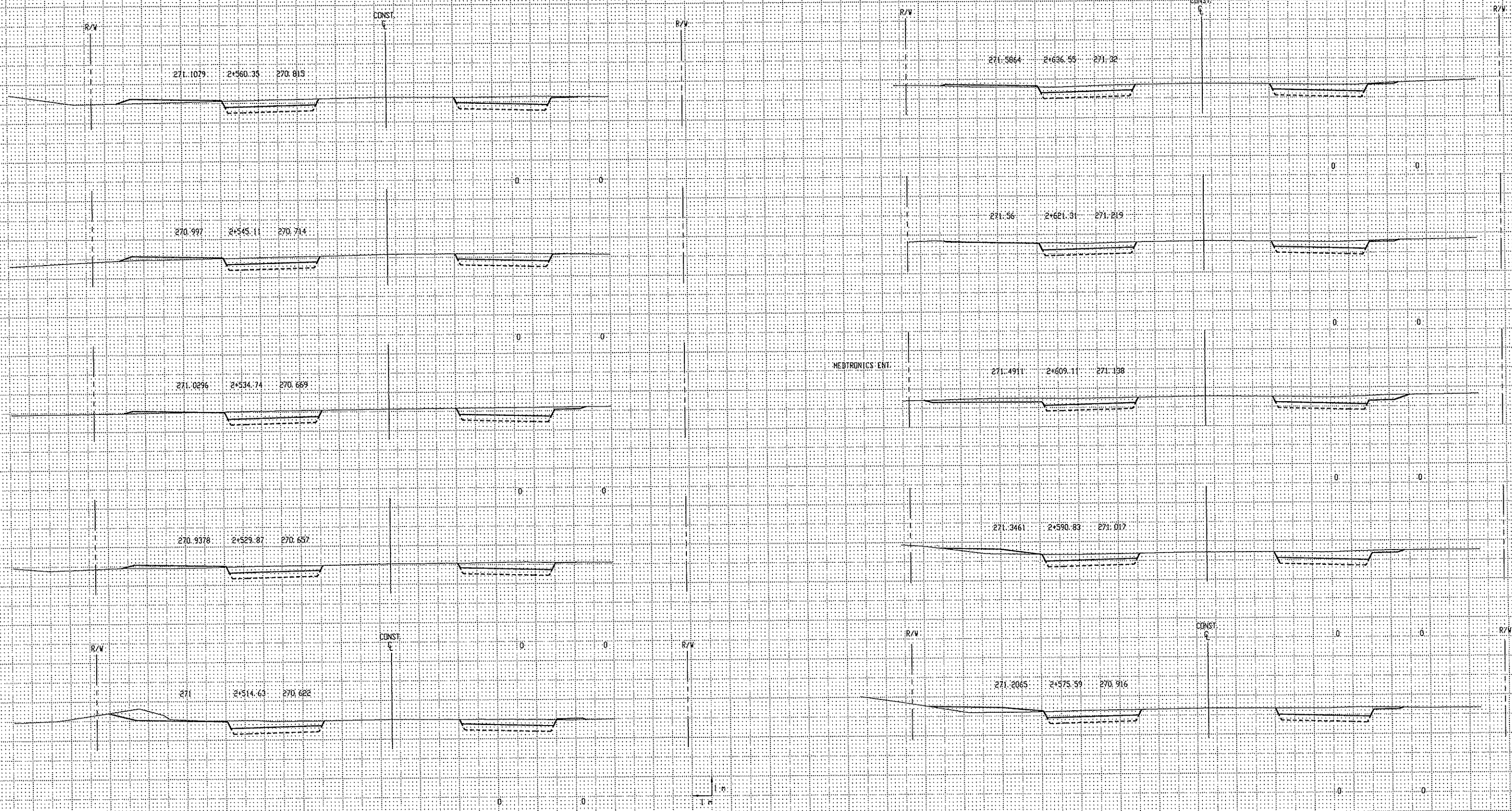
DRAWN BY HJG DATE 06/04/98
 DESIGN BY MFG DATE 06/04/98
 CHECKED BY BWF DATE 06/04/98



ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO. _____
 STATE AID PROJECT NO. 02-635-08
 STATE AID PROJECT NO. 02-635-10
 COUNTY PROJECT NO. _____

CROSS-SECTION
 STA 2+362.22 TO 2+499.39
 Sheet 38 of 64 Sheets



1	8/05/98	HG				C/L SHIFT
NO	DATE	BY	CKD	APPR		REVISION
NAME:						



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

DATE _____ REG. NO. _____

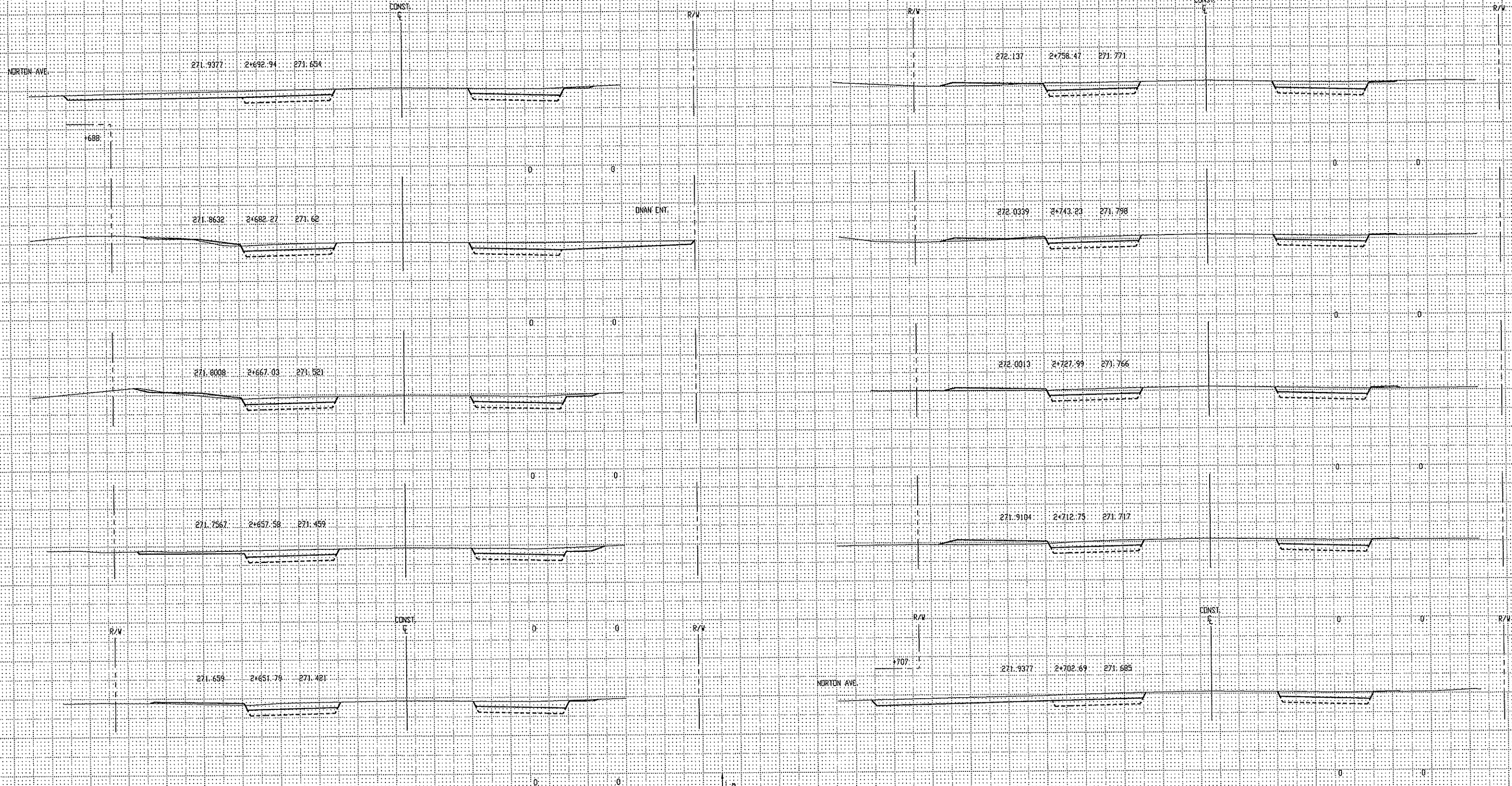
DRAWN BY HDE DATE 06/04/99
 DESIGN BY MFG DATE 06/04/99
 CHECKED BY DVF DATE 06/04/99



ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO. _____
 STATE AID PROJECT NO. 02-635-08
 STATE AID PROJECT NO. 02-635-10
 COUNTY PROJECT NO. _____

CROSS- SECTION
 STA 2+514.63 TO 2+636.55
 Sheet 39 of 64 Sheets



1	8/05/98	HG				C/L SHIFT
NO	DATE	BY	CKD	APPR		REVISION
NAME						



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

DATE _____ REG. NO. _____

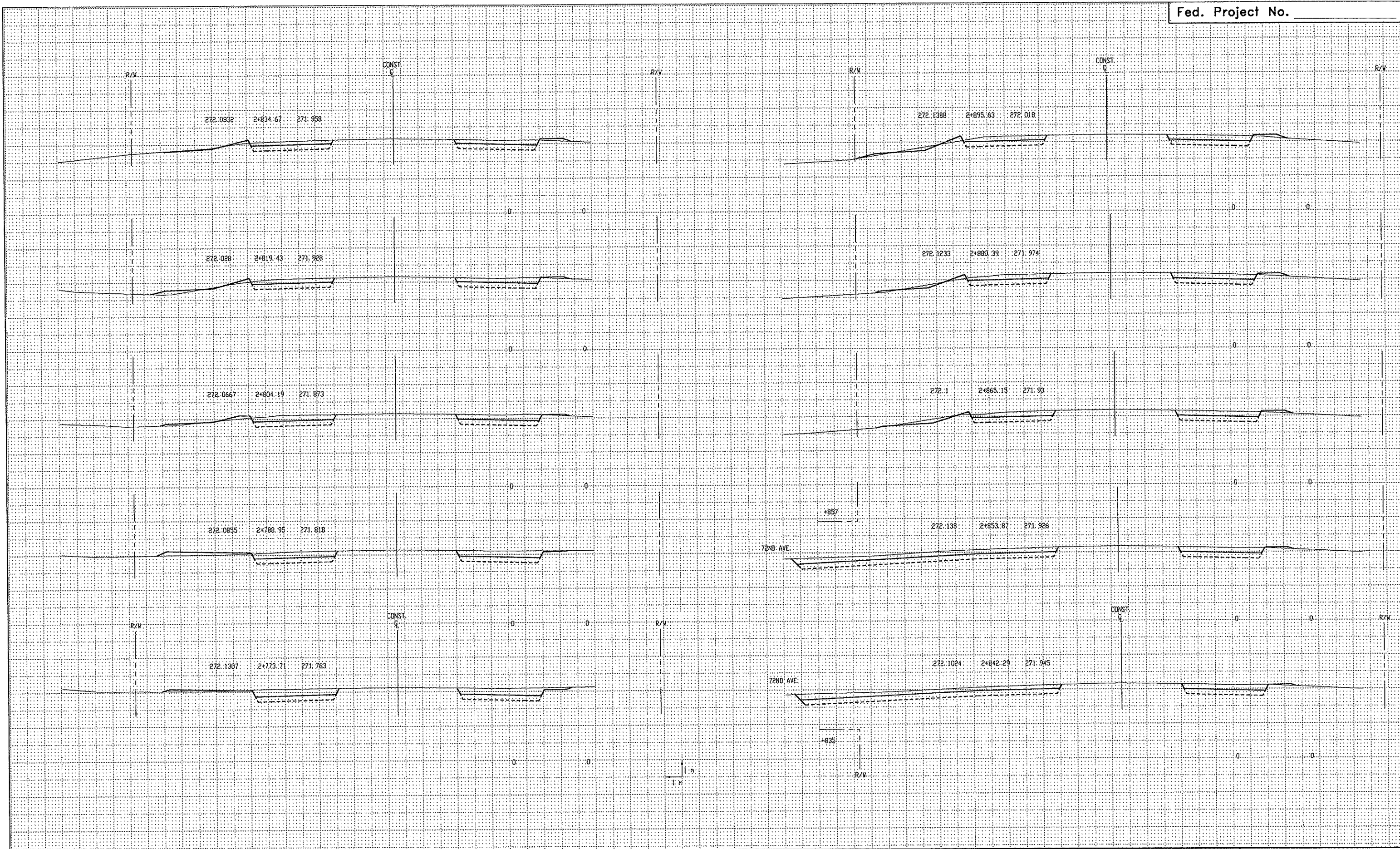
DRAWN BY HG DATE 06/04/98
 DESIGN BY MFG DATE 06/04/98
 CHECKED BY DVF DATE 06/04/98



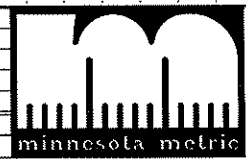
ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO. _____
 STATE AID PROJECT NO. 02-635-08
 STATE AID PROJECT NO. 02-635-10
 COUNTY PROJECT NO. _____

CROSS-SECTION
 STA 2+651.79 TO 2+758.47
 Sheet 40 of 64 Sheets



1	8/05/98	HG			C/L SHIFT
ND	DATE	BY	CKD	APPR	REVISION
NAME:					



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

DATE _____ REG. NO. _____

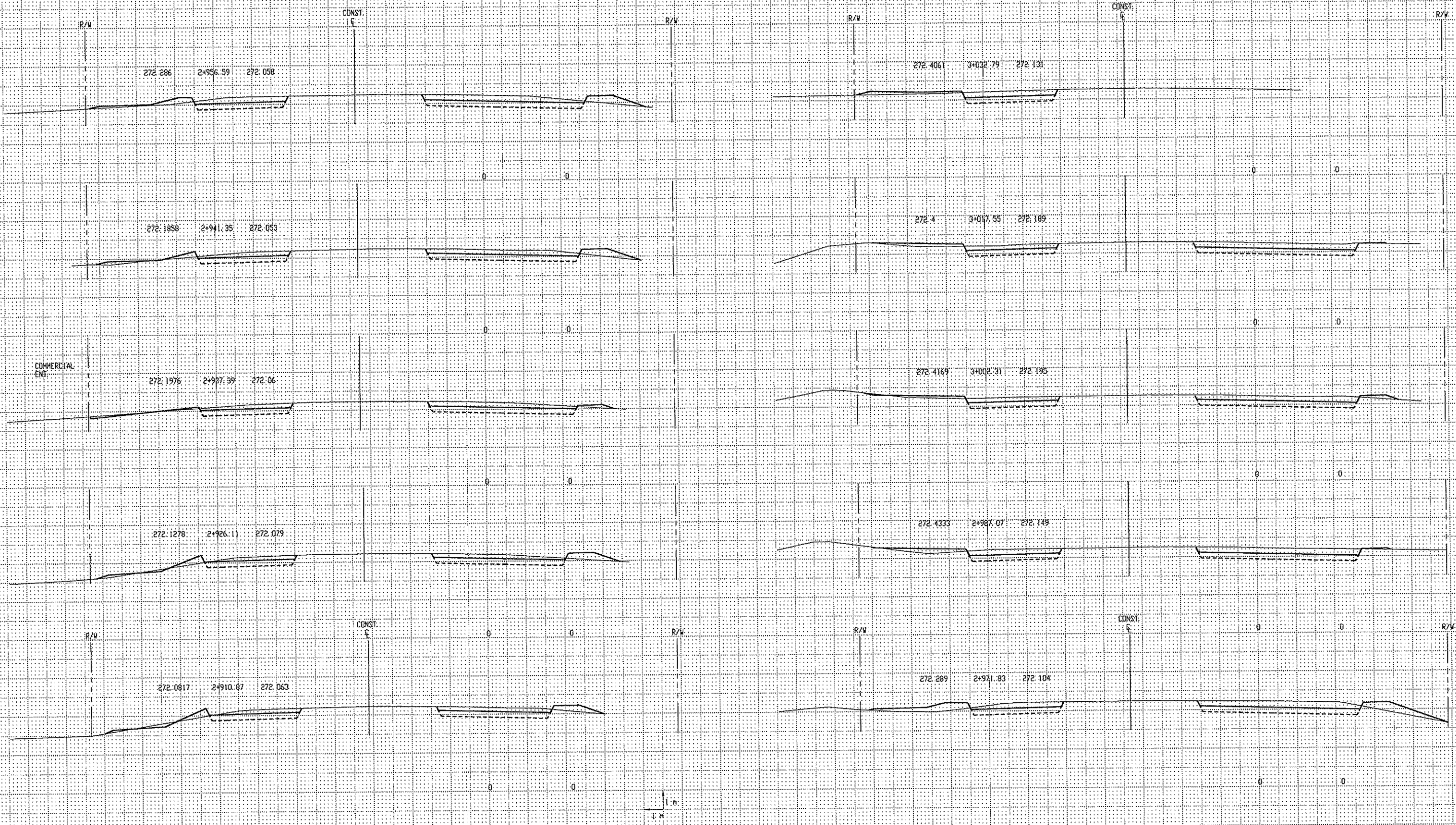
DRAWN BY HJG DATE 06/04/98
 DESIGN BY MEG DATE 06/04/98
 CHECKED BY DWF DATE 06/04/98



ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO. _____
 STATE AID PROJECT NO. 02-635-08
 STATE AID PROJECT NO. 02-635-10
 COUNTY PROJECT NO. _____

CROSS-SECTION
 STA 2+773.71 TO 2+895.63
 Sheet 41 of 64 Sheets



1	8/05/98	HG			C/L SHIFT
ND	DATE	BY	CKD	APPR	REVISION
NAME:					



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

DATE _____ REG. NO. _____

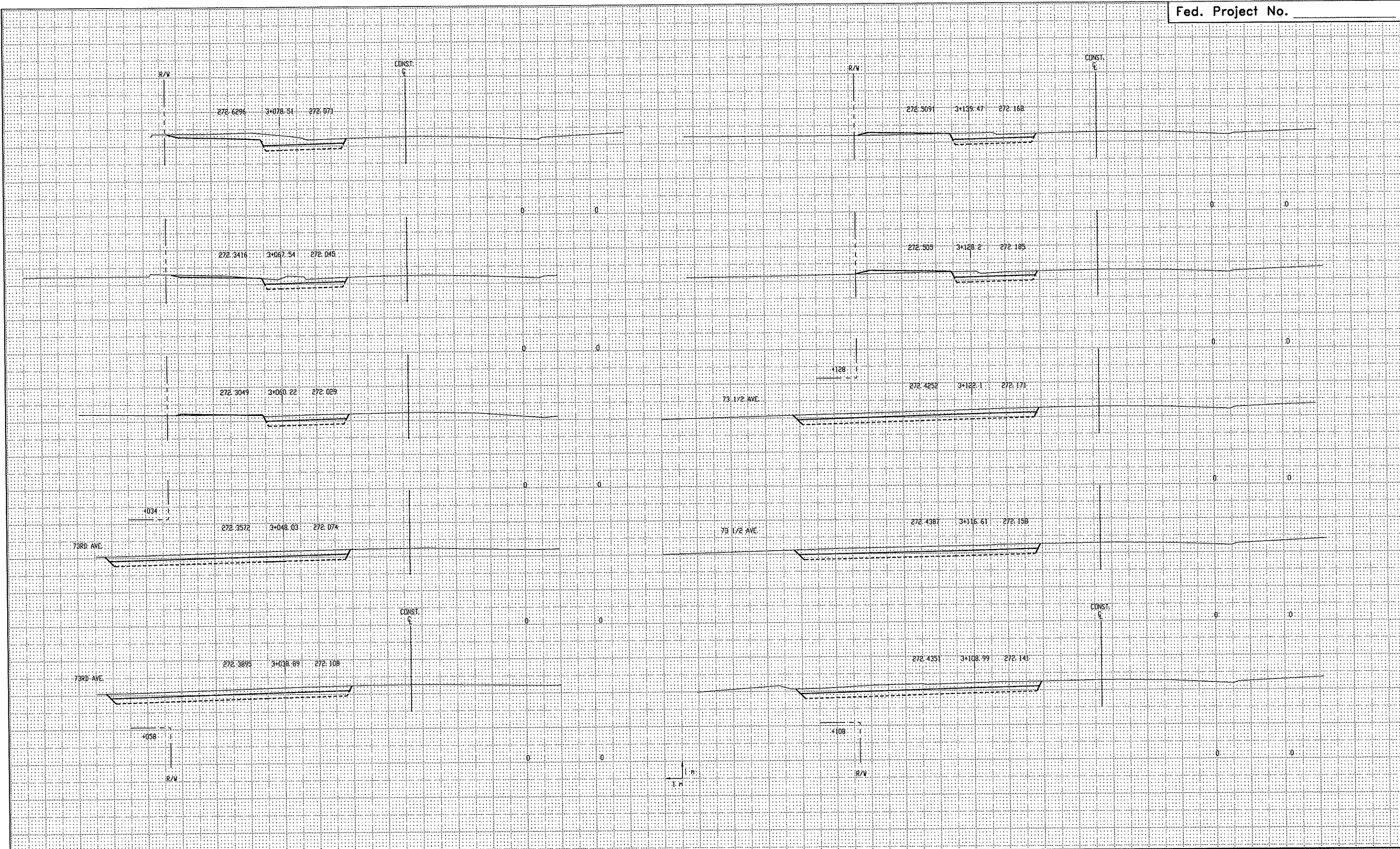
DRAWN BY: HG DATE: 06/04/98
 DESIGN BY: MFG DATE: 06/04/98
 CHECKED BY: DMF DATE: 06/04/98



ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO. _____
 STATE AID PROJECT NO. 02-635-08
 STATE AID PROJECT NO. 02-635-10
 COUNTY PROJECT NO. _____

CROSS-SECTION
 STA 2+910.87 TO 3+032.79
 Sheet 42 of 64 Sheets



NO	DATE	BY	CKD	APPR	REVISION



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

Ronald J. [Signature]
 DATE 5/14/98 REG. NO. 2235

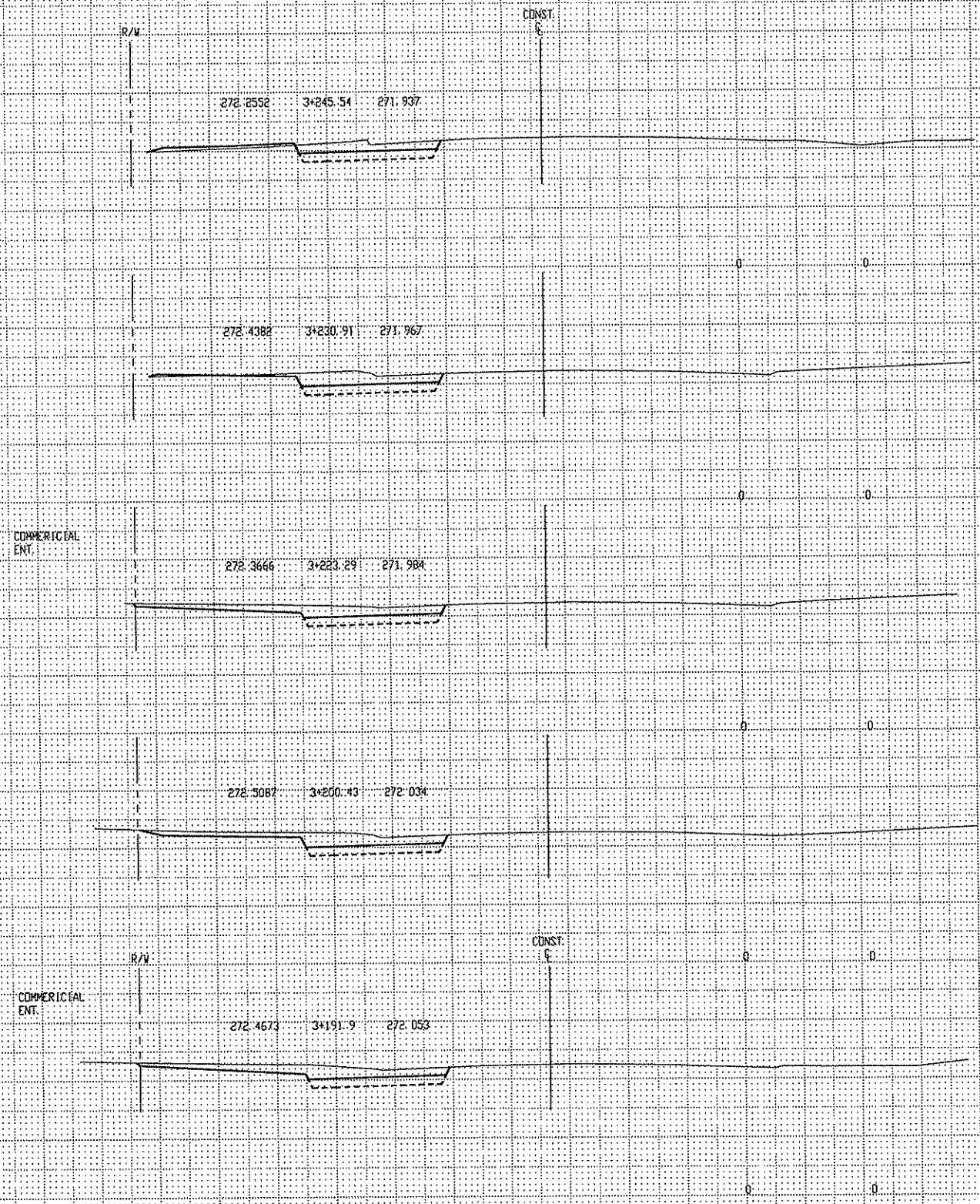
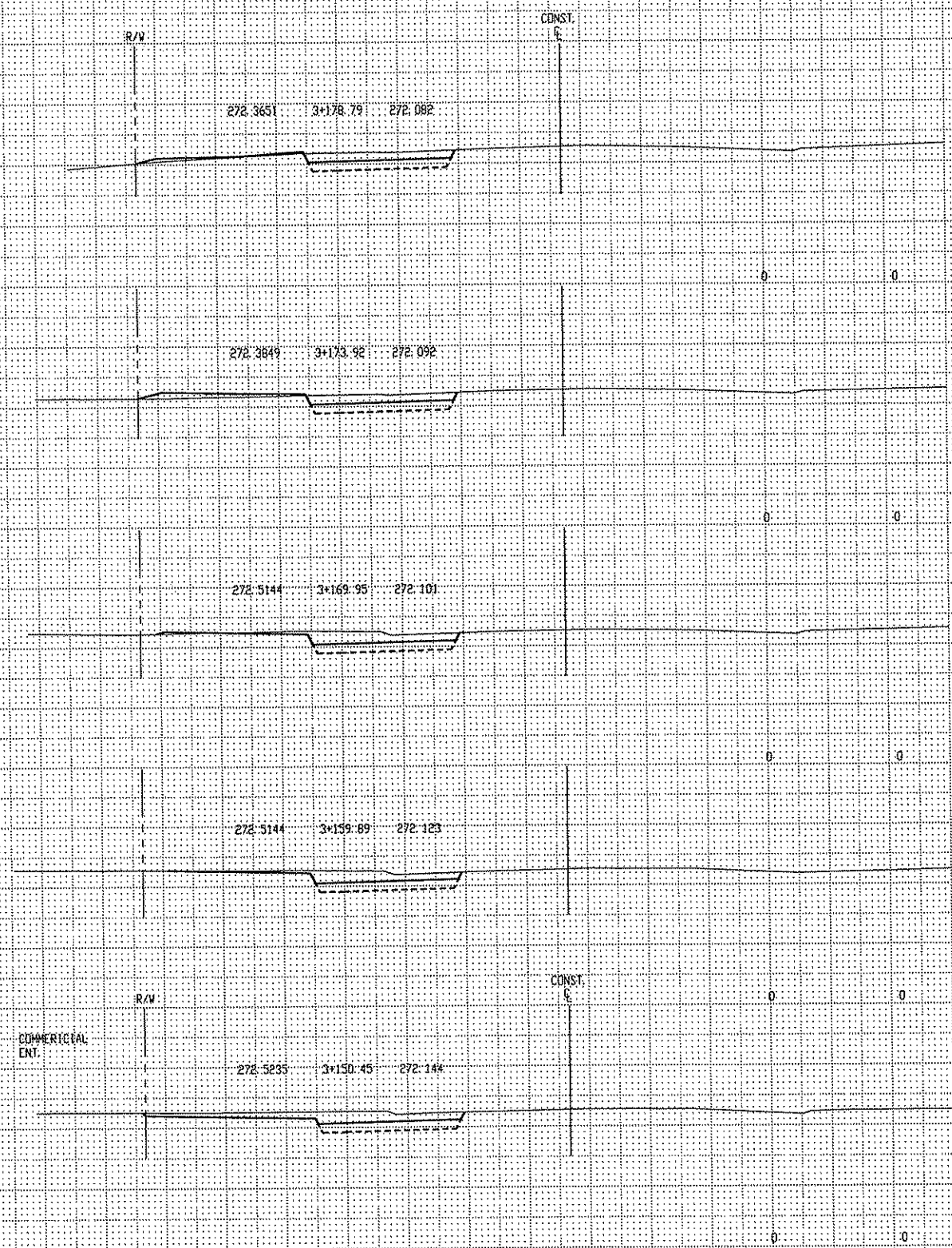
DRAWN BY HDG DATE 06/04/98
 DESIGN BY MFG DATE 06/04/98
 CHECKED BY DMF DATE 06/04/98



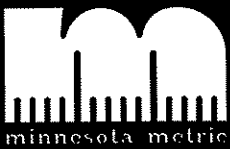
ANOKA COUNTY
 HIGHWAY DEPT.

STATE PROJECT NO. _____
 STATE AID PROJECT NO. 02-635-08
 STATE AID PROJECT NO. 02-635-10
 COUNTY PROJECT NO. _____

CROSS- SECTION
 STA 3+038.89 TO 3+139.47
 Sheet 43 of 64 Sheets



NO	DATE	BY	CKD	APPR	REVISION



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

Robert J. Juvak
 DATE 7/14/98 REG. NO. 20235

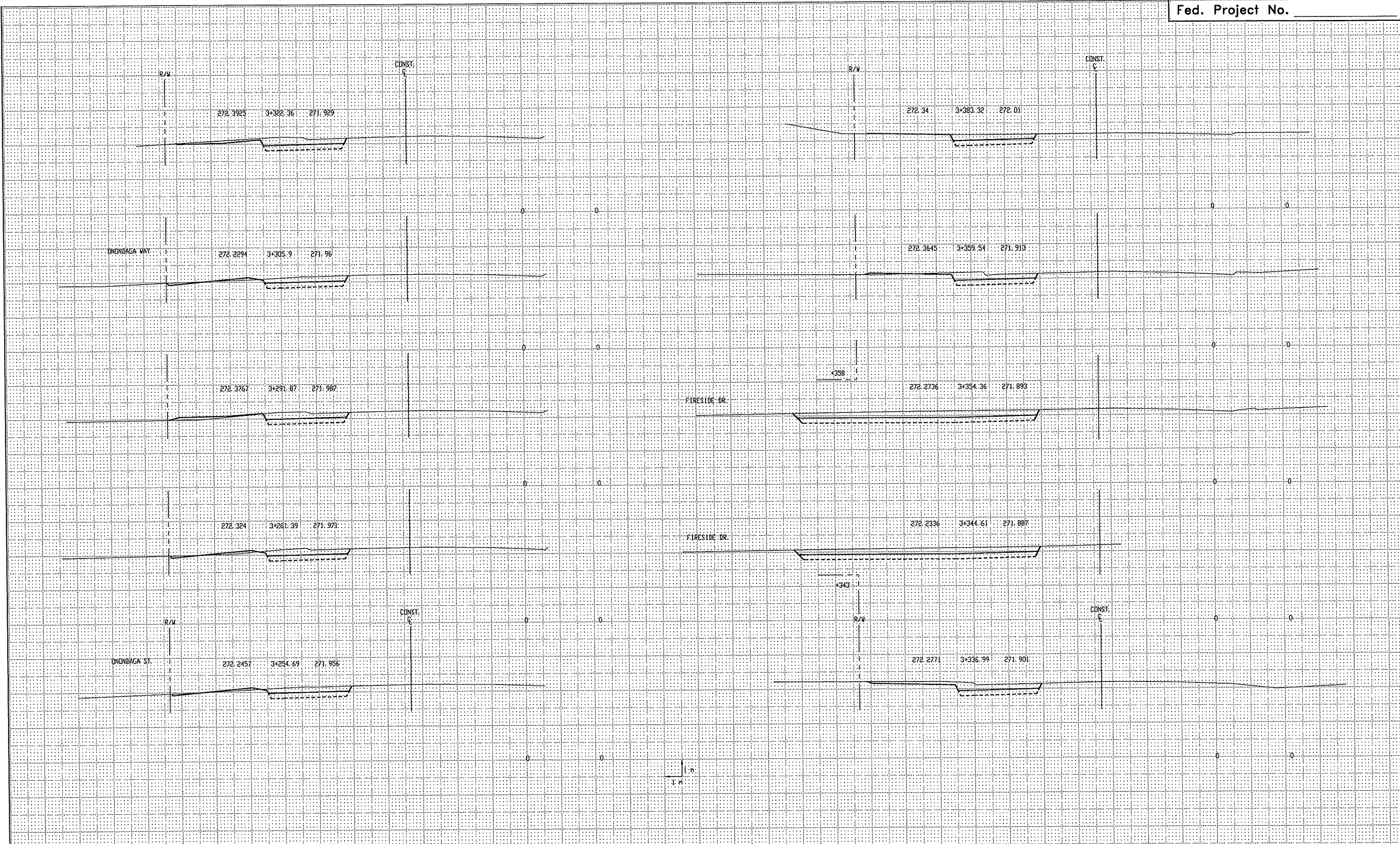
DRAWN BY HDG DATE 06/04/98
 DESIGN BY MFG DATE 06/04/98
 CHECKED BY DMF DATE 06/04/98



ANOKA COUNTY
 HIGHWAY DEPT.

STATE PROJECT NO. _____
 STATE AID PROJECT NO. 02-635-08
 STATE AID PROJECT NO. 02-635-10
 COUNTY PROJECT NO. _____

CROSS- SECTION
 STA 3+150.45 TO 3+245.54
 Sheet 44 of 64 Sheets



NO	DATE	BY	CKD	APPR	REVISION



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

Rouglas W. Favel
 DATE 7/14/98 REG. NO. 22235

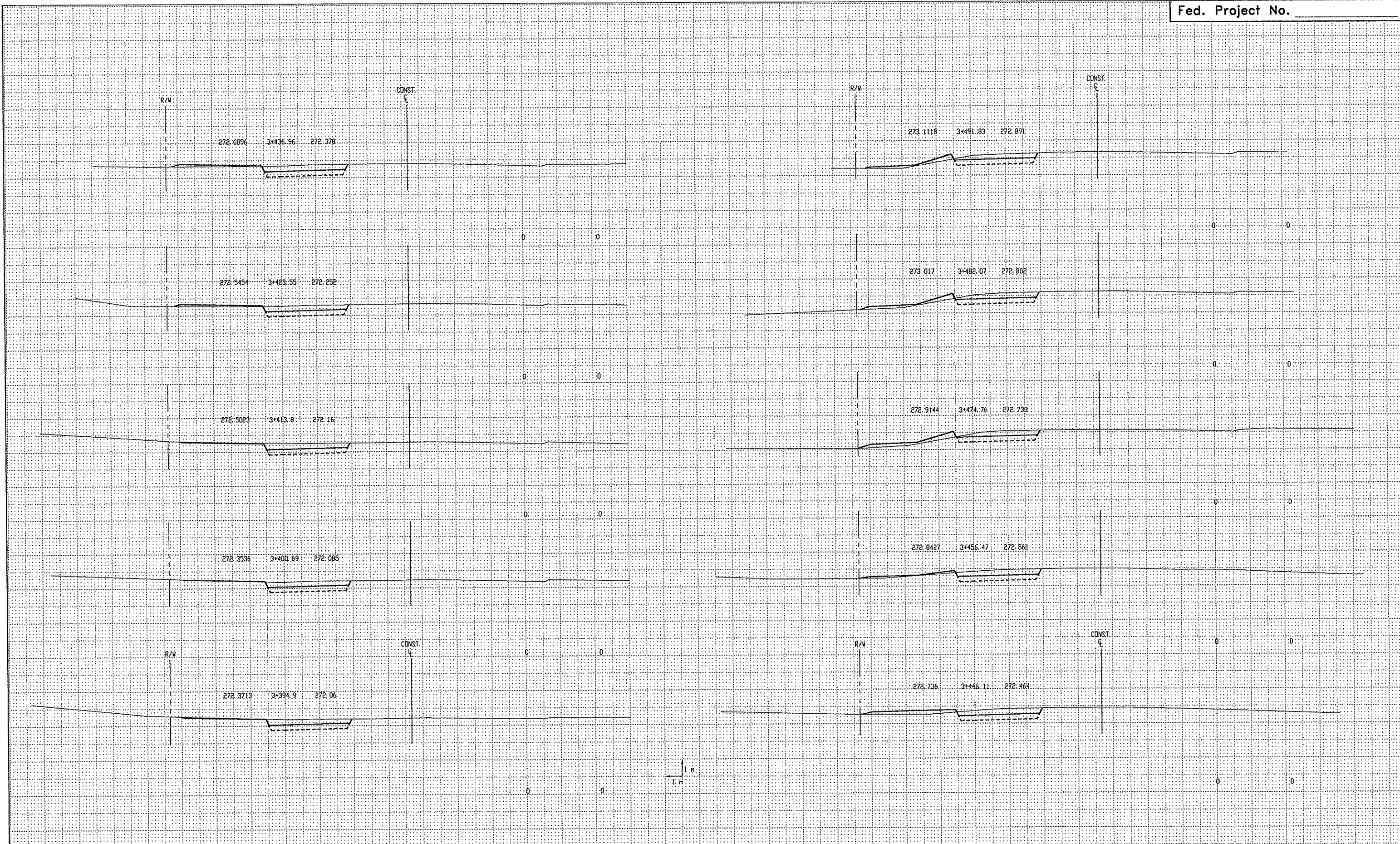
DRAWN BY HDG DATE 06/04/98
 DESIGN BY MFG DATE 06/04/98
 CHECKED BY DWF DATE 06/04/98



ANOKA COUNTY
 HIGHWAY DEPT.

STATE PROJECT NO. _____
 STATE AID PROJECT NO. 02-635-08
 STATE AID PROJECT NO. 02-635-10
 COUNTY PROJECT NO. _____

CROSS- SECTION
 STA 3+254.69 TO 3+383.32
 Sheet 45 of 64 Sheets



NO	DATE	BY	CKD	APPR	REVISION



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

Douglas W. Tormal
 DATE 7/14/98 REG. NO. 22235

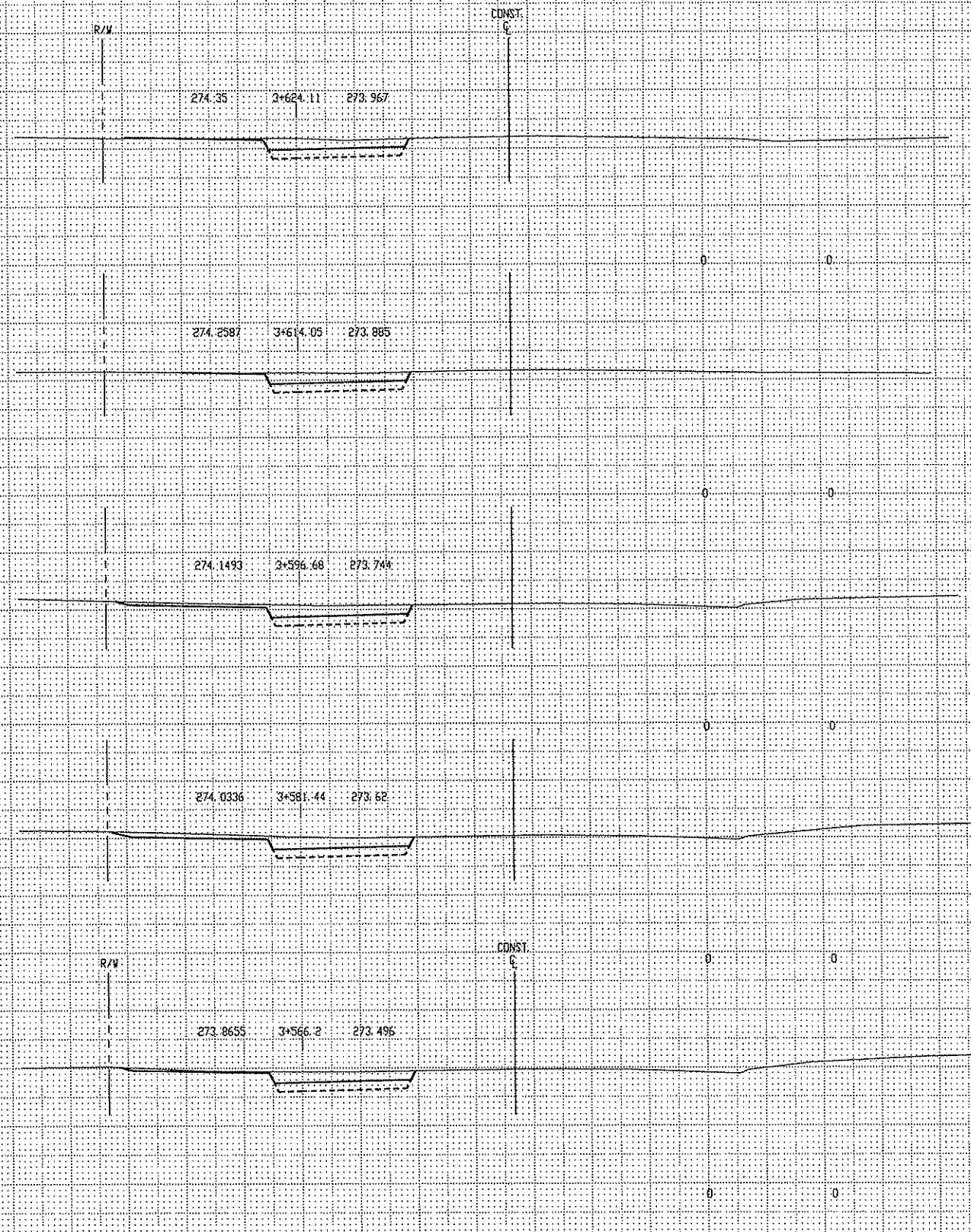
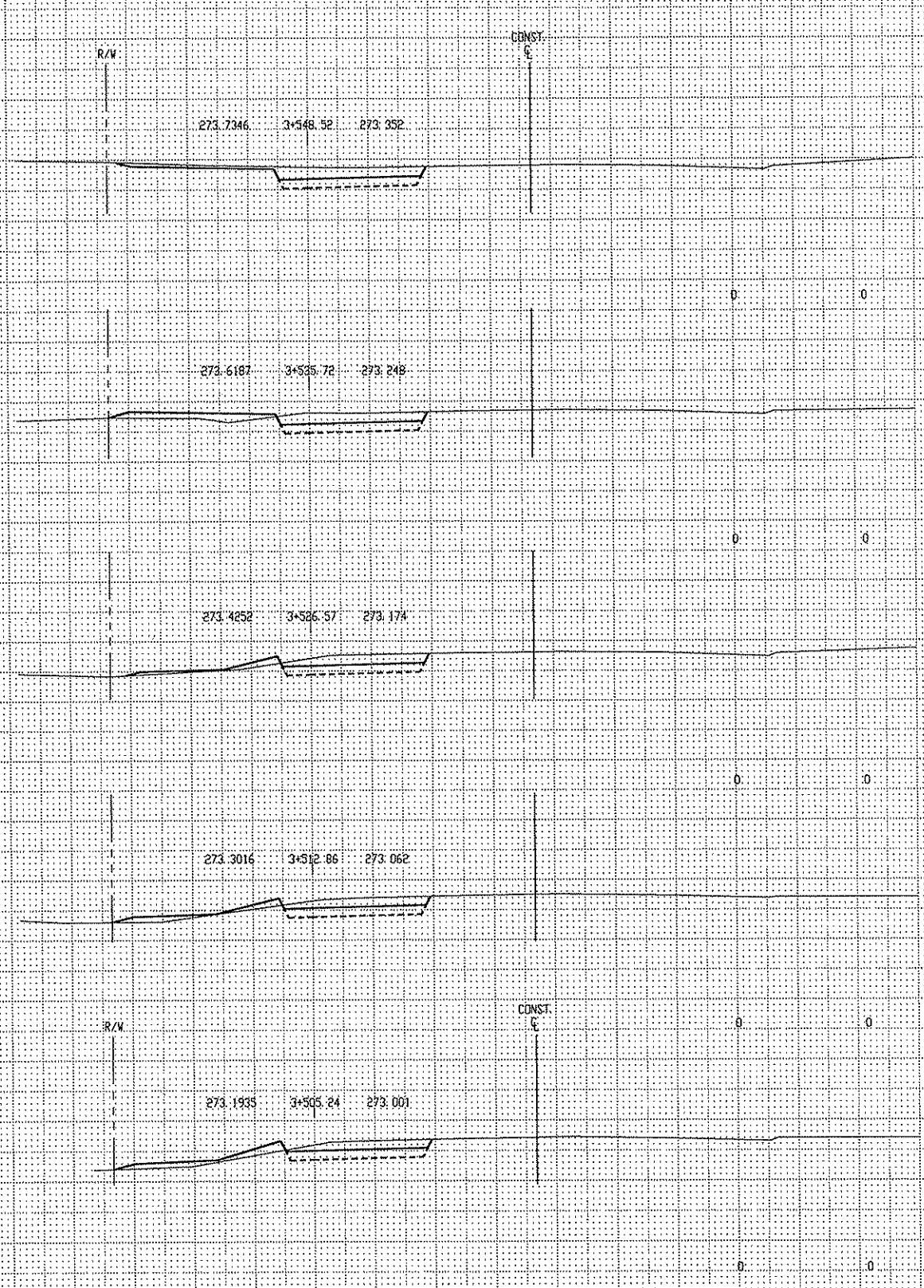
DRAWN BY HDG DATE 06/04/98
 DESIGN BY MFG DATE 06/04/98
 CHECKED BY DWF DATE 06/04/98



ANOKA COUNTY
 HIGHWAY DEPT.

STATE PROJECT NO. _____
 STATE AID PROJECT NO. 02-635-08
 STATE AID PROJECT NO. 02-635-10
 COUNTY PROJECT NO. _____

CROSS- SECTION
 STA 3+394.9 TO 3+491.83
 Sheet 46 of 64 Sheets



NO	DATE	BY	CKD	APPR	REVISION



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

Douglas M. Tynal
 DATE 7/14/98 REG. NO. 20235

DRAWN BY HJG DATE 06/04/98
 DESIGN BY MFG DATE 06/04/98
 CHECKED BY DWF DATE 06/04/98

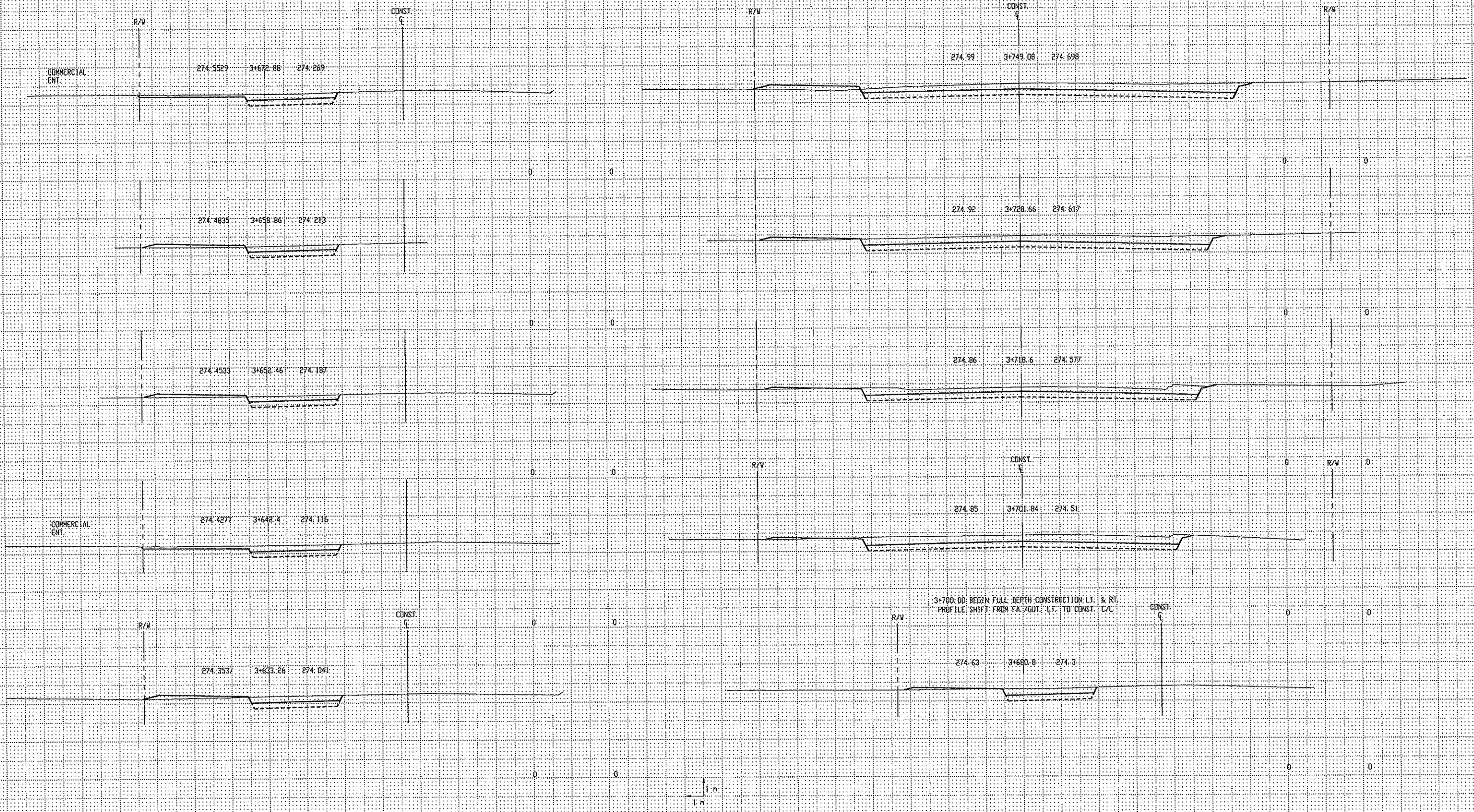


**ANOKA COUNTY
 HIGHWAY DEPT.**

STATE PROJECT NO. _____
 STATE AID PROJECT NO. 02-635-08
 STATE AID PROJECT NO. 02-635-10
 COUNTY PROJECT NO. _____

CROSS- SECTION
 STA 3+505.24 TO 3+624.11

Sheet 47 of 64 Sheets



NO	DATE	BY	CKD	APPR	REVISION



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

August D. Junch
 DATE 7/14/98 REG. NO. 20235

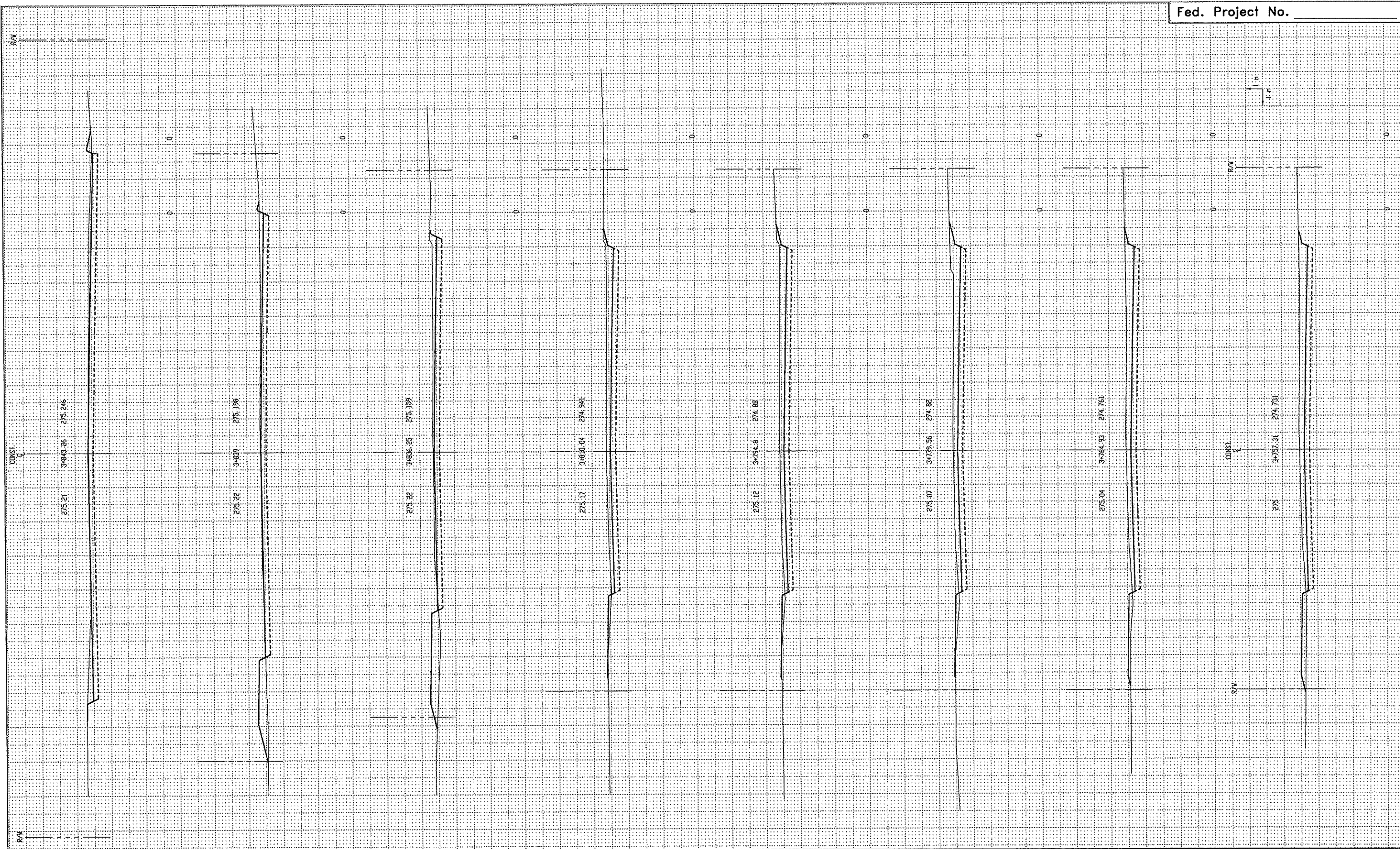
DRAWN BY HDG DATE 06/04/98
 DESIGN BY MFG DATE 06/04/98
 CHECKED BY DWF DATE 06/04/98



ANOKA COUNTY
 HIGHWAY DEPT.

STATE PROJECT NO. _____
 STATE AID PROJECT NO. 02-635-08
 STATE AID PROJECT NO. 02-635-10
 COUNTY PROJECT NO. _____

CROSS-SECTION
 STA 3+633.26 TO 3+749.08
 Sheet 48 of 64 Sheets



NO	DATE	BY	CKD	APPR	REVISION



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

Douglas A. Tavel
 DATE 7/14/98 REG. NO. 20275

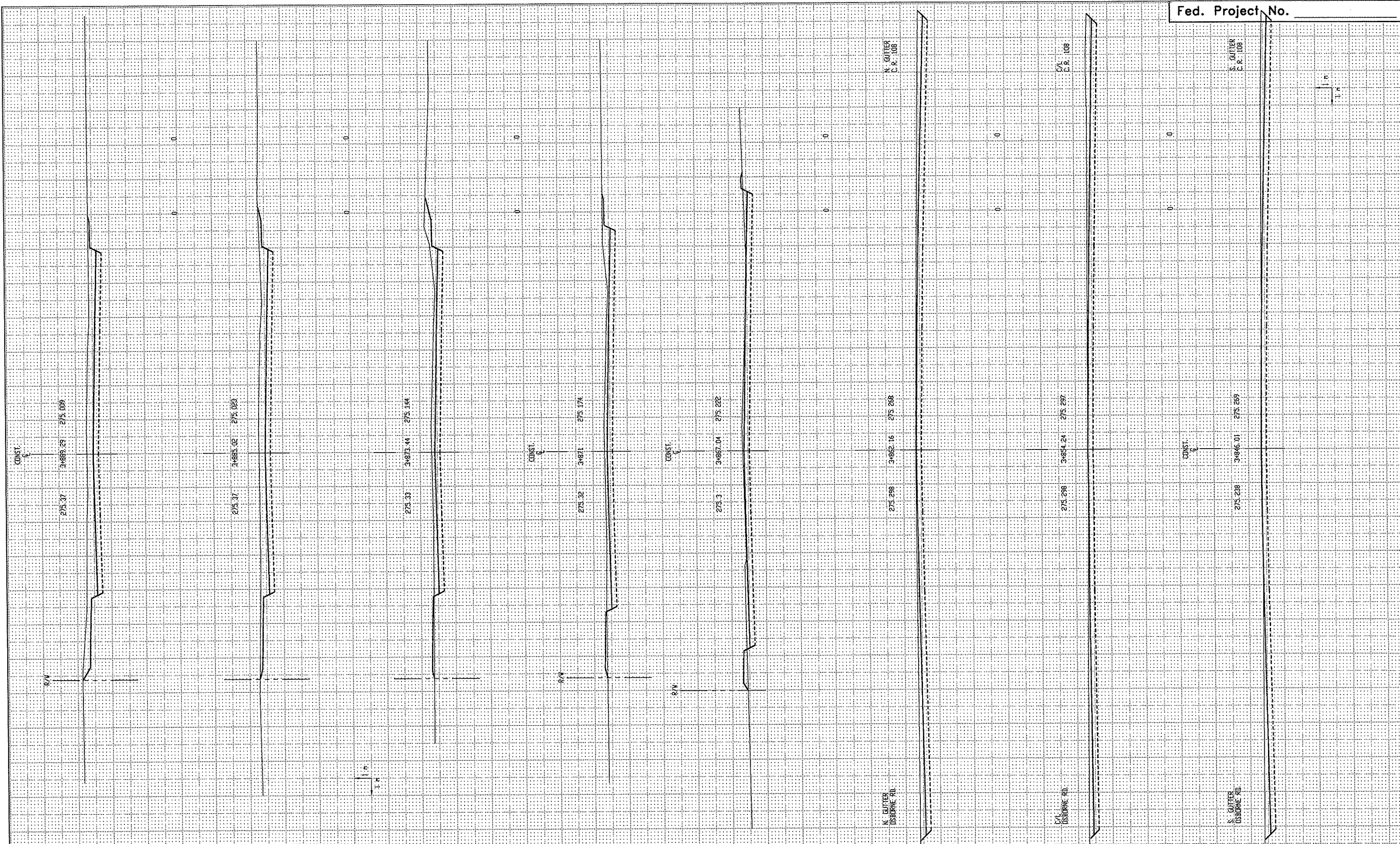
DRAWN BY HJG DATE 06/04/98
 DESIGN BY MFG DATE 06/04/98
 CHECKED BY DWF DATE 06/04/98



ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO. _____
 STATE AID PROJECT NO. 02-635-08
 STATE AID PROJECT NO. 02-635-10
 COUNTY PROJECT NO. _____

CROSS- SECTION
 STA 3+757.31 TO 3+843.26
 Sheet 49 of 64 Sheets



NO	DATE	BY	CKD	APPR	REVISION



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

Rouger M. Thore
 DATE 7/14/98 REG. NO. 20235

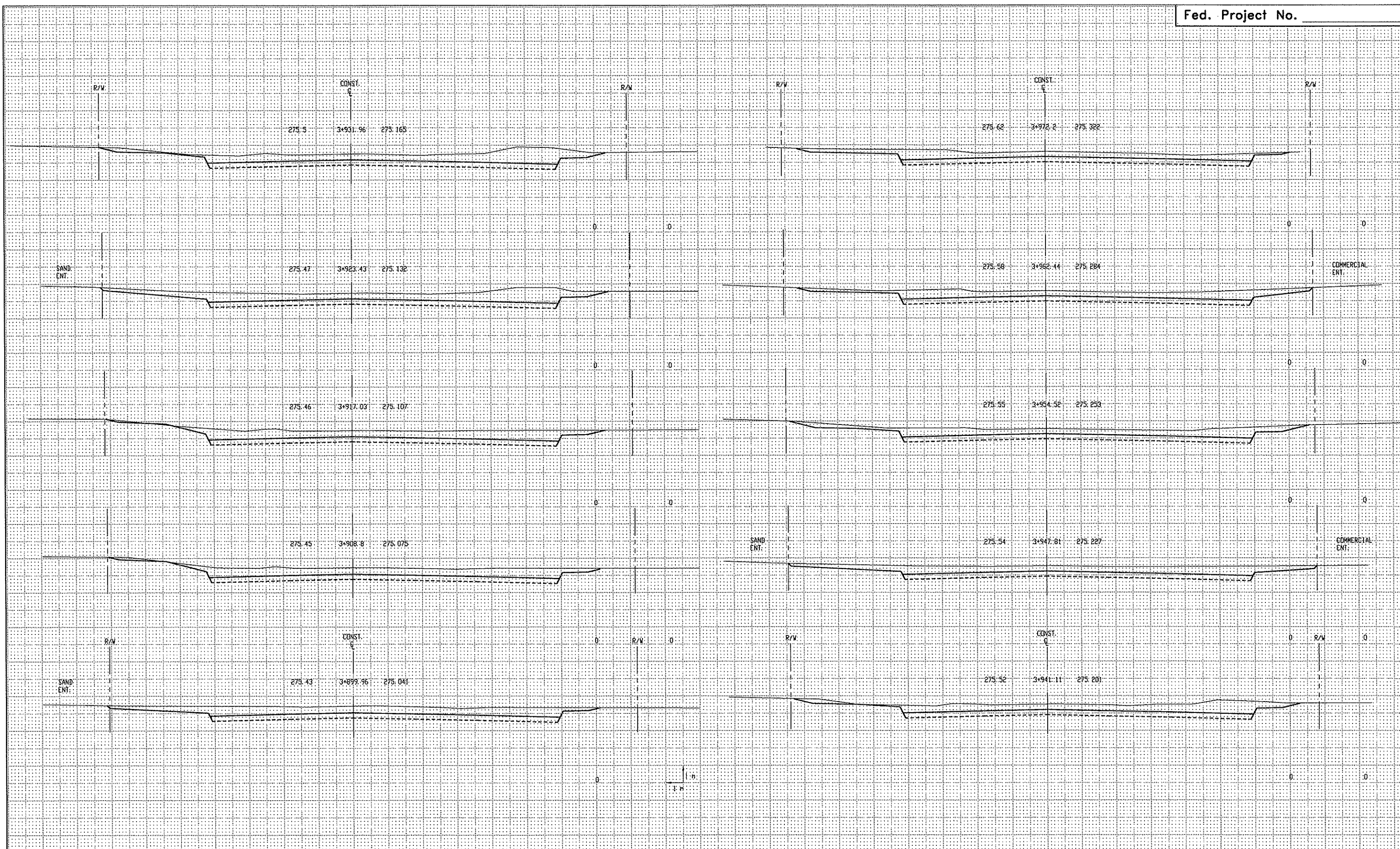
DRAWN BY HJG DATE 06/04/98
 DESIGN BY MFG DATE 06/04/98
 CHECKED BY DWF DATE 06/04/98



**ANOKA COUNTY
 HIGHWAY DEPT.**

STATE PROJECT NO. _____
 STATE AID PROJECT NO. 02-635-08
 STATE AID PROJECT NO. 02-635-10
 COUNTY PROJECT NO. _____

CROSS- SECTION
 STA 3+846.01 TO 3+889.29
 Sheet 50 of 64 Sheets



NO	DATE	BY	CKD	APPR	REVISION



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

Ronald W. Tavel
 DATE 4/14/98 REG. NO. 20255

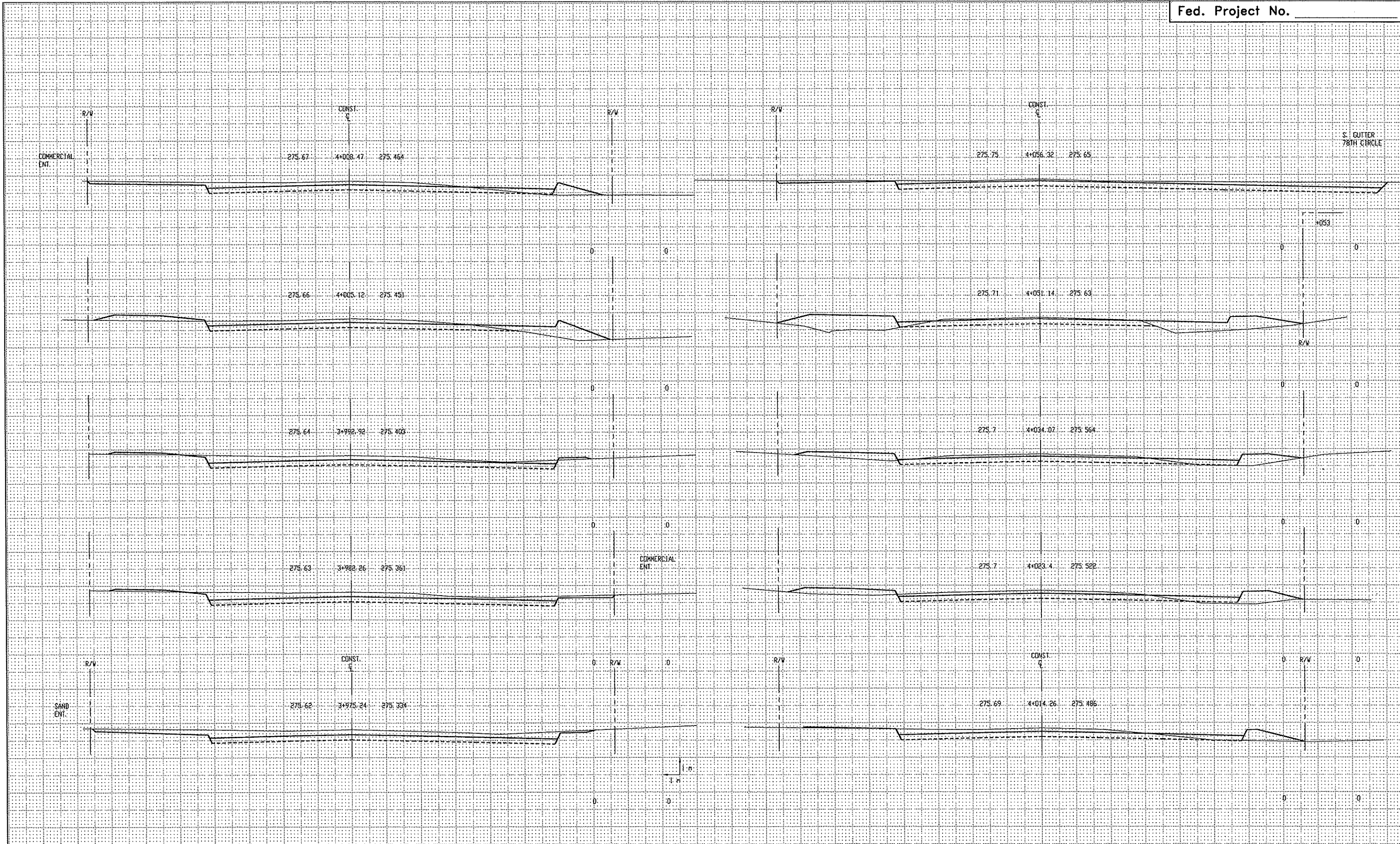
DRAWN BY HBC DATE 06/04/98
 DESIGN BY MFG DATE 06/04/98
 CHECKED BY BVF DATE 06/04/98



**ANOKA COUNTY
 HIGHWAY DEPT.**

STATE PROJECT NO. _____
 STATE AID PROJECT NO. 02-635-08
 STATE AID PROJECT NO. 02-635-10
 COUNTY PROJECT NO. _____

CROSS- SECTION
 STA 3+899.96 TO 3+972.2
 Sheet 51 of 64 Sheets



NO	DATE	BY	CKD	APPR	REVISION



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

Douglas W. Turch
 DATE 7/14/98 REG. NO. 20235

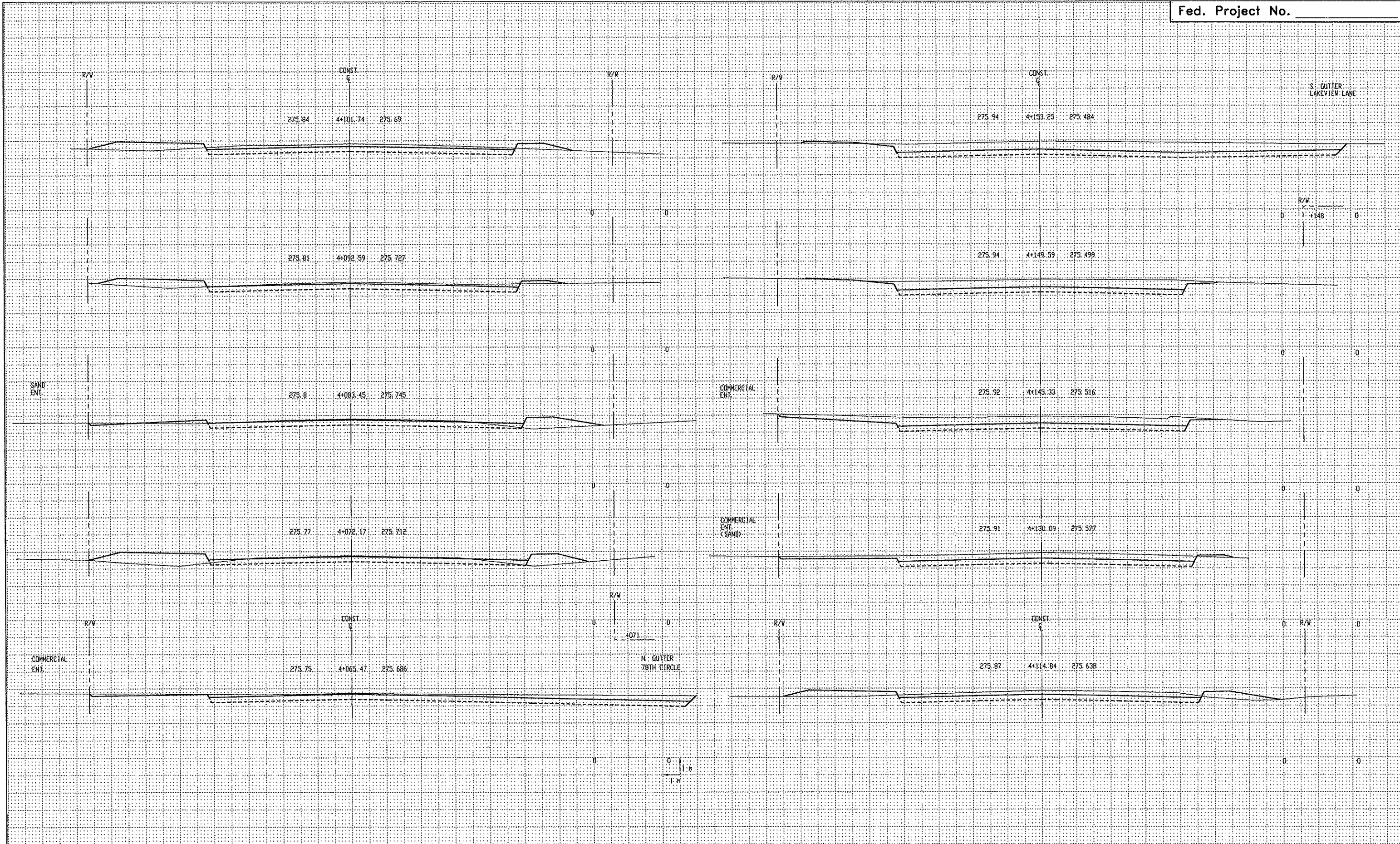
DRAWN BY HBG DATE 06/04/98
 DESIGN BY MFG DATE 06/04/98
 CHECKED BY DWF DATE 06/04/98



**ANOKA COUNTY
 HIGHWAY DEPT.**

STATE PROJECT NO. _____
 STATE AID PROJECT NO. 02-635-08
 STATE AID PROJECT NO. 02-635-10
 COUNTY PROJECT NO. _____

CROSS- SECTION
 STA 3+975.24 TO 4+056.32
 Sheet 52 of 64 Sheets



NO.	DATE	BY	CKD	APPR	REVISION



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

Douglas M. Fink
 DATE 7/14/98 REG. NO. 20035

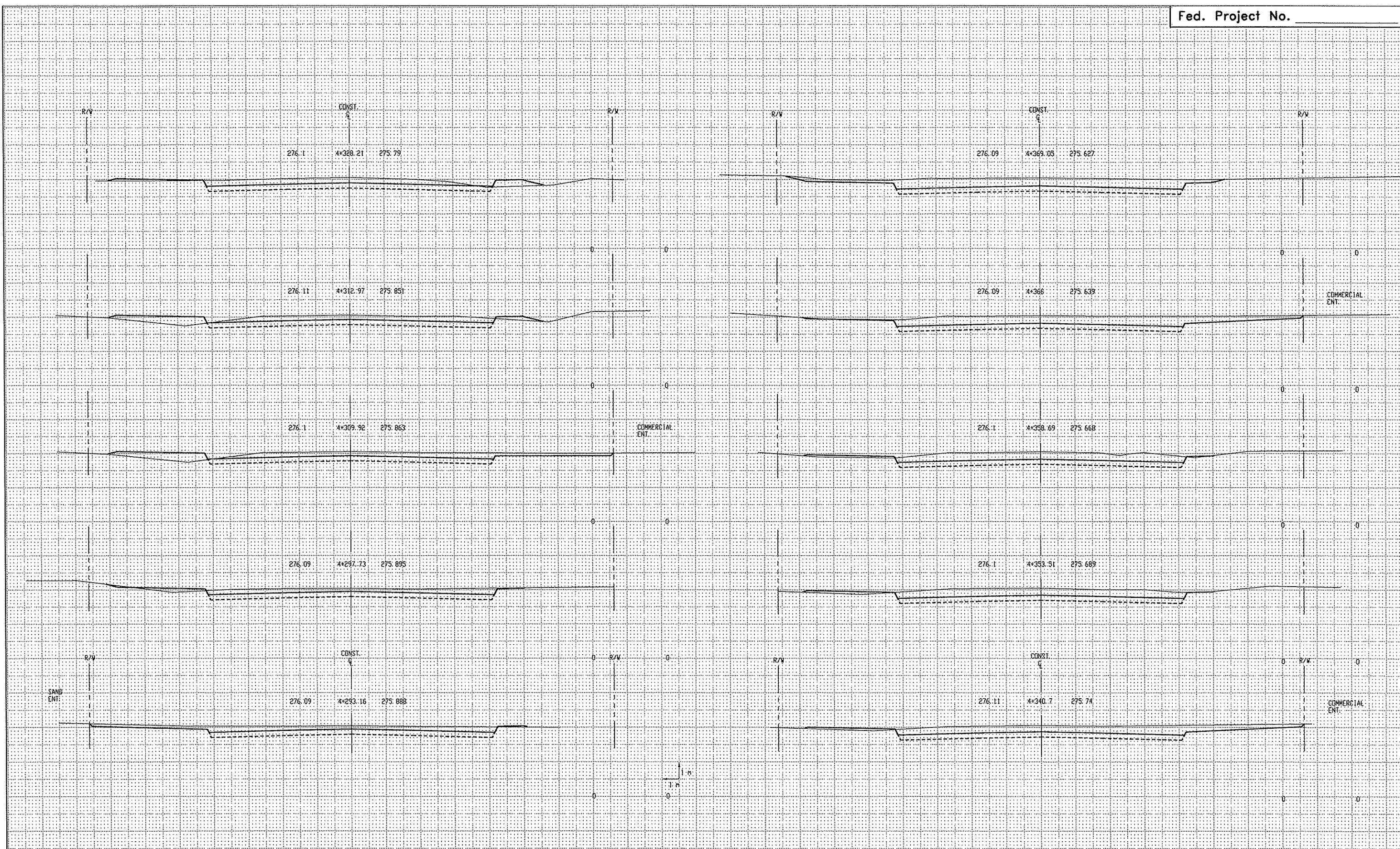
DRAWN BY HDG DATE 06/04/98
 DESIGN BY MFG DATE 06/04/98
 CHECKED BY DWF DATE 06/04/98



ANOKA COUNTY
 HIGHWAY DEPT.

STATE PROJECT NO. _____
 STATE AID PROJECT NO. 02-635-08
 STATE AID PROJECT NO. 02-635-10
 COUNTY PROJECT NO. _____

CROSS- SECTION
 STA 4+065.47 TO 4+153.25
 Sheet 53 of 64 Sheets



NO	DATE	BY	CKD	APPR	REVISION



I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
Robert H. [Signature]
 DATE 7/14/98 REG. NO. 20235

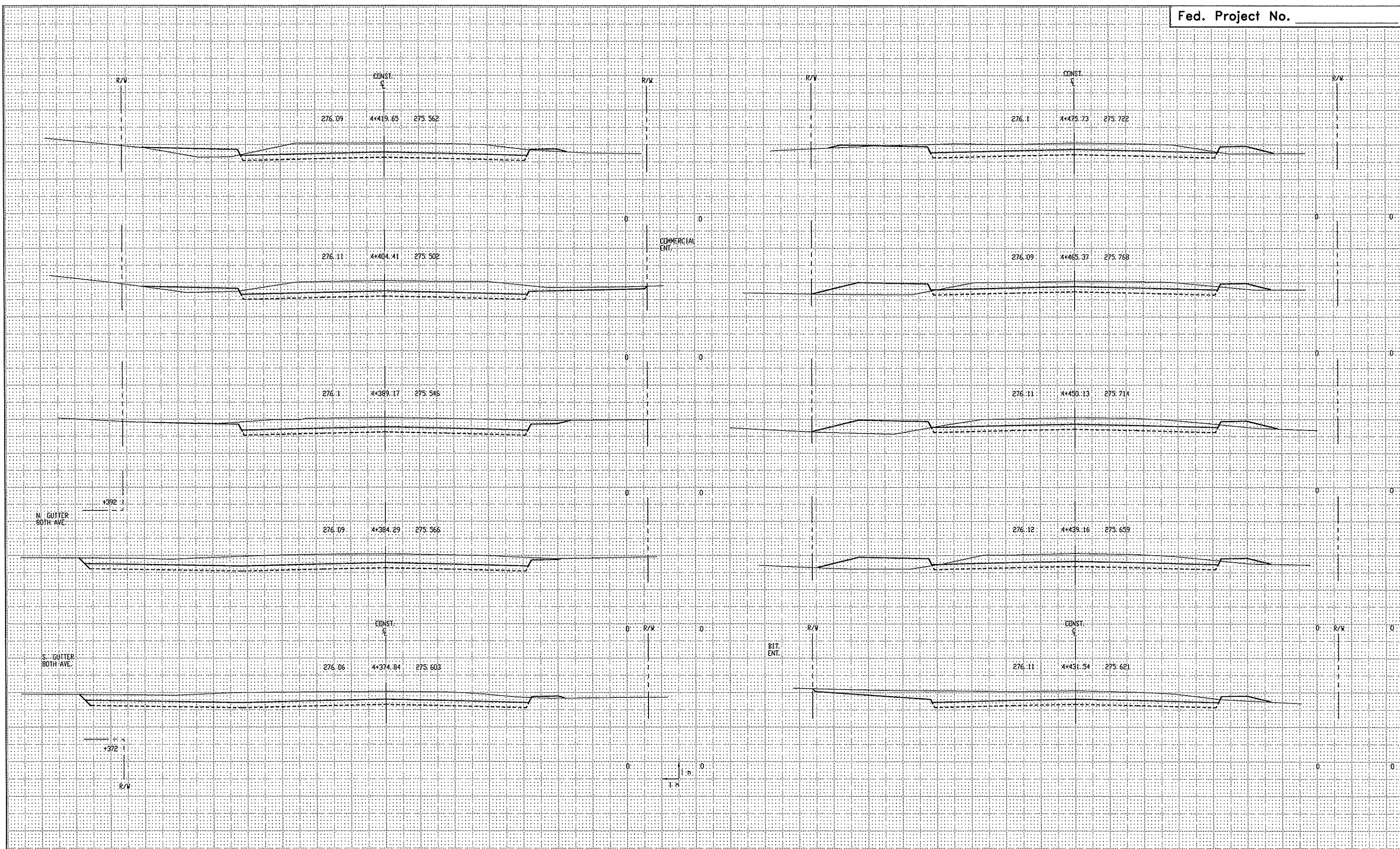
DRAWN BY: HBG DATE: 06/04/98
 DESIGN BY: MFG DATE: 06/04/98
 CHECKED BY: DVF DATE: 06/04/98



ANOKA COUNTY
 HIGHWAY DEPT.

STATE PROJECT NO. _____
 STATE AID PROJECT NO. 02-635-08
 STATE AID PROJECT NO. 02-635-10
 COUNTY PROJECT NO. _____

CROSS- SECTION
 STA 4+293.16 TO 4+369.05
 Sheet 55 of 64 Sheets



NO	DATE	BY	CKD	APPR	REVISION



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

Robert A. Jensen
 DATE 7/14/98 REG. NO. 20235

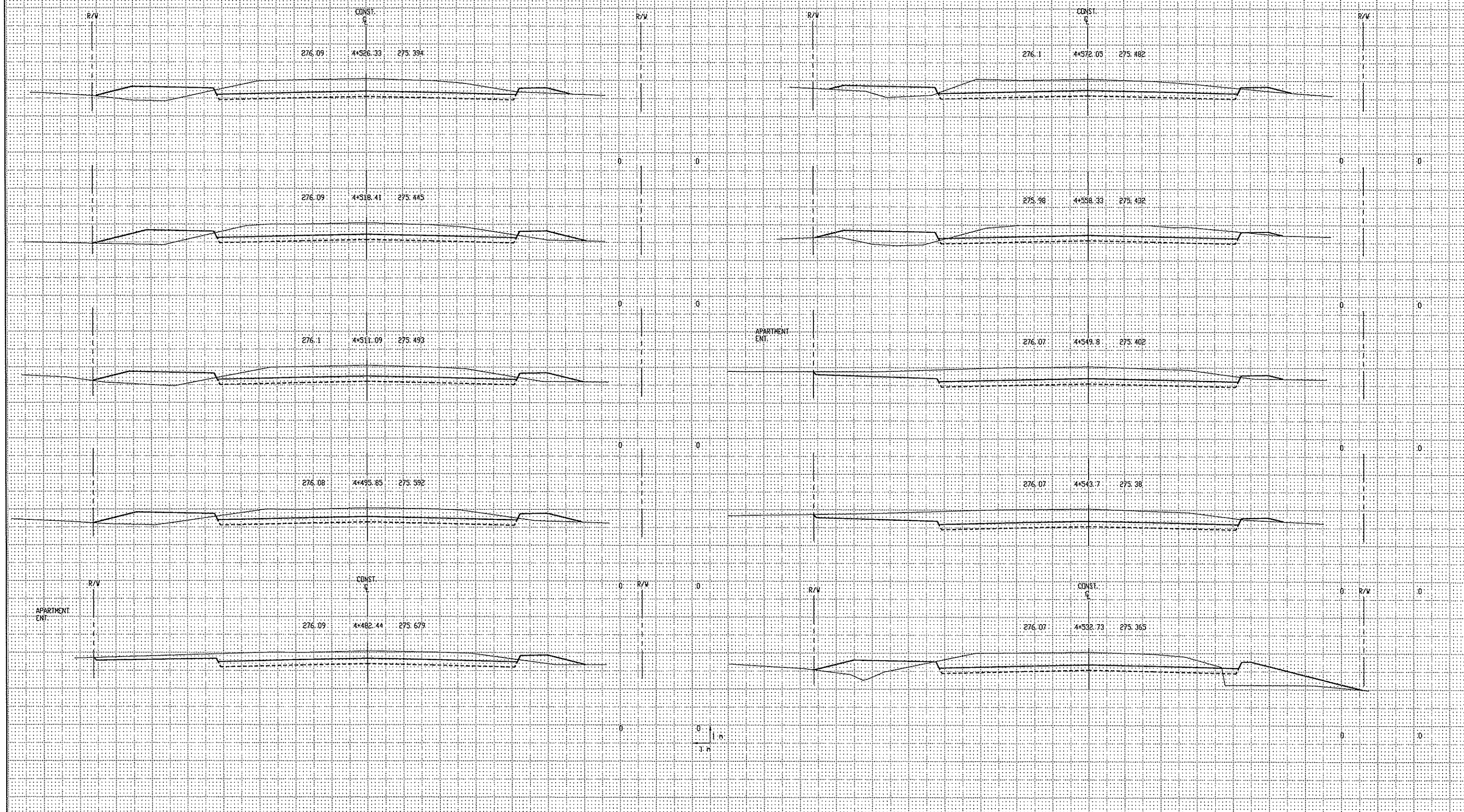
DRAWN BY: HDG DATE: 06/04/98
 DESIGN BY: MFG DATE: 06/04/98
 CHECKED BY: DWF DATE: 06/04/98



ANOKA COUNTY
 HIGHWAY DEPT.

STATE PROJECT NO. _____
 STATE AID PROJECT NO. 02-635-08
 STATE AID PROJECT NO. 02-635-10
 COUNTY PROJECT NO. _____

CROSS- SECTION
 STA 4+374.84 TO 4+475.73
 Sheet 56 of 64 Sheets



NO	DATE	BY	CKD	APPR	REVISION



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

Ronald W. Funch
 DATE 7/14/98 REG. NO. 30235

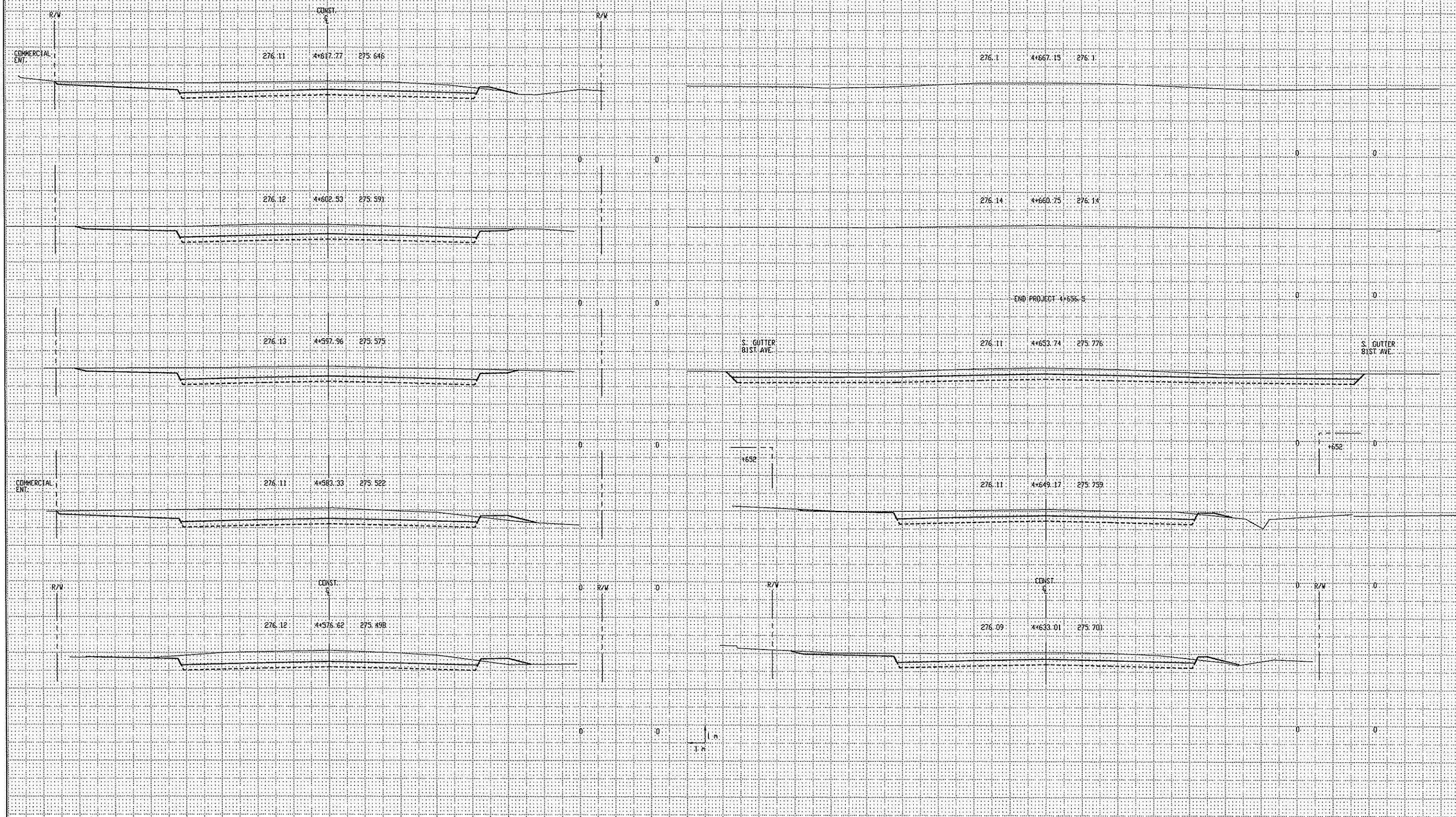
DRAWN BY HBG DATE 06/04/98
 DESIGN BY MFG DATE 06/04/98
 CHECKED BY DJV DATE 06/04/98



ANOKA COUNTY
 HIGHWAY DEPT.

STATE PROJECT NO. _____
 STATE AID PROJECT NO. 02-635-08
 STATE AID PROJECT NO. 02-635-10
 COUNTY PROJECT NO. _____

CROSS- SECTION
 STA 4+482.44 TO 4+572.05
 Sheet 57 of 64 Sheets



NO	DATE	BY	CKD	APPR	REVISION



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

Donald A. [Signature]
 DATE 7/14/98 REG. NO. 20235

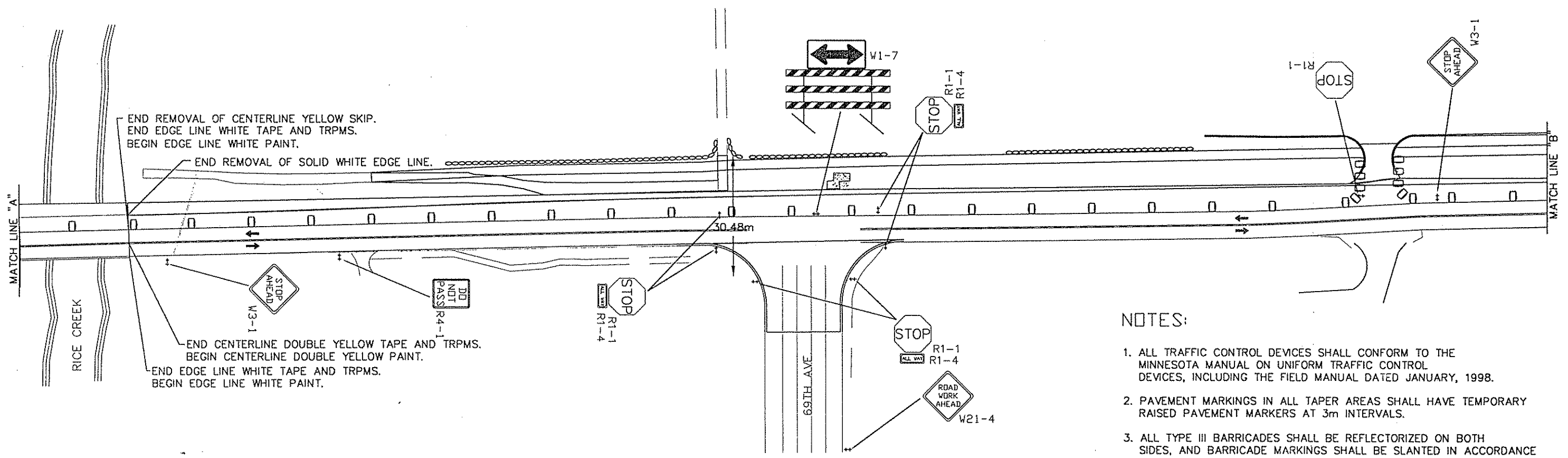
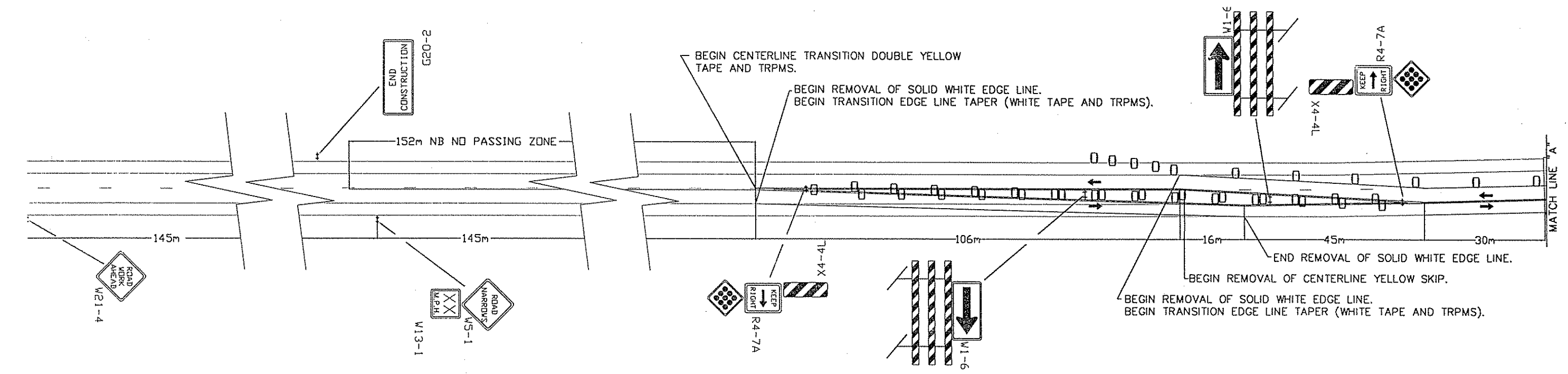
DRAWN BY HDG DATE 06/04/98
 DESIGN BY MFG DATE 06/04/98
 CHECKED BY DMF DATE 06/04/98



ANOKA COUNTY
 HIGHWAY DEPT.

STATE PROJECT NO. _____
 STATE AID PROJECT NO. 02-635-08
 STATE AID PROJECT NO. 02-635-10
 COUNTY PROJECT NO. _____

CROSS- SECTION
 STA 4+576.62 TO 4+667.15
 Sheet 58 of 64 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 AT 3m 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.

NO	DATE	BY	CKD	APPR	REVISION



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

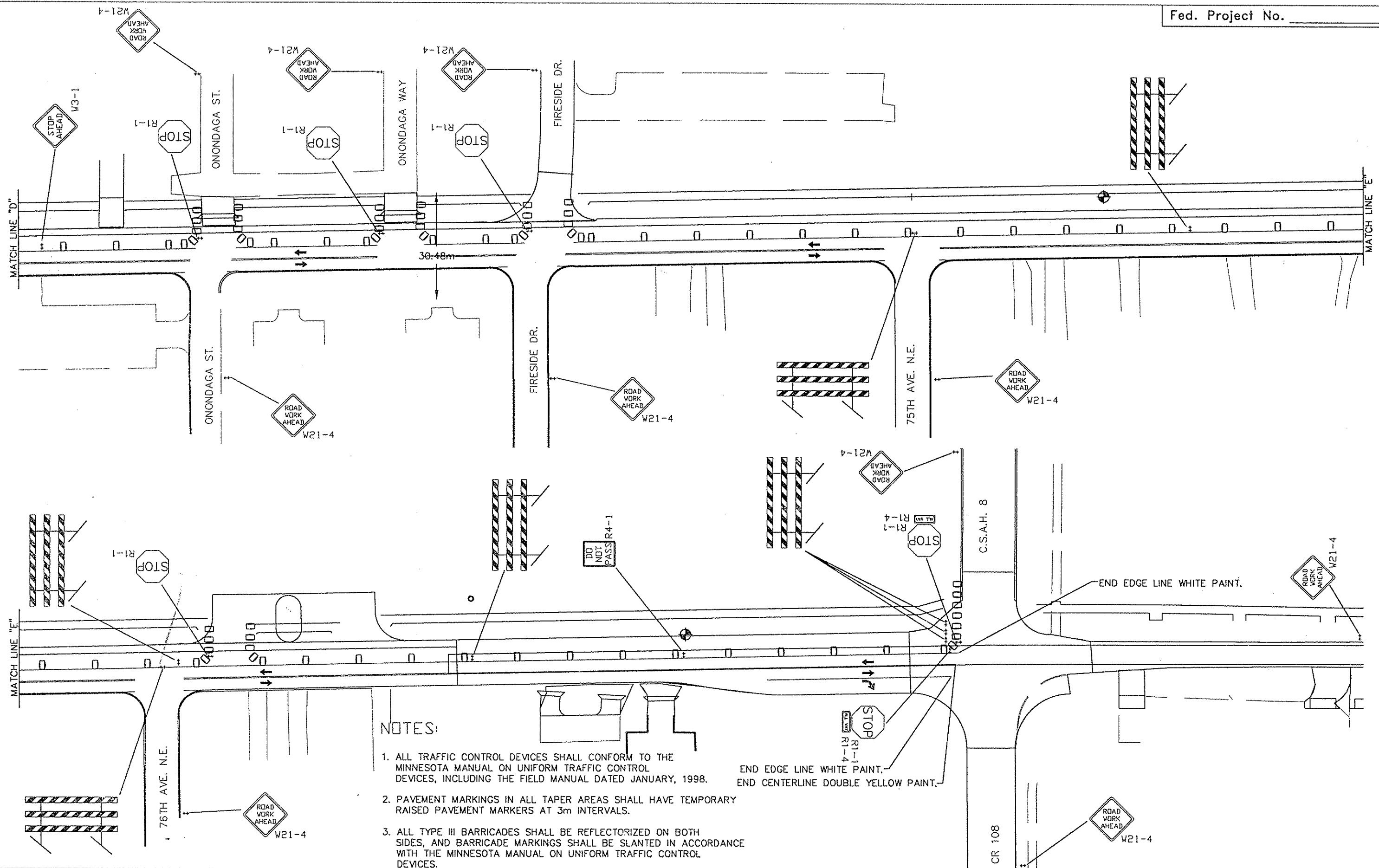
Douglas W. Jensen
 DATE 5/14/98 REG. NO. 22235

DRAWN BY _____ DATE _____
 DESIGN BY _____ DATE _____
 CHECKED BY _____ DATE _____

ANOKA COUNTY HIGHWAY DEPT.

STATE PROJECT NO. _____
 STATE AID PROJECT NO. 02-635-08
 STATE AID PROJECT NO. 02-635-10
 COUNTY PROJECT NO. _____

STAGE 2
 OLD CENTRAL AVE
 C.S.A.H. 35
 Sheet 59 of 64 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 AT 3m 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.

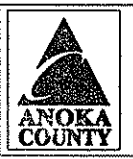
NO	DATE	BY	CKD	APPR	REVISION



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

Bonglat W. Jern...
 DATE 7/14/98 REG. NO. 20275

DRAWN BY _____ DATE _____
 DESIGN BY _____ DATE _____
 CHECKED BY _____ DATE _____



**ANOKA COUNTY
 HIGHWAY DEPT.**

STATE PROJECT NO. _____
 STATE AID PROJECT NO. 02-635-08
 STATE AID PROJECT NO. 02-635-10
 COUNTY PROJECT NO. _____

STAGE 2
 OLD CENTRAL AVE
 C.S.A.H. 35
 Sheet 61 of 64 Sheets

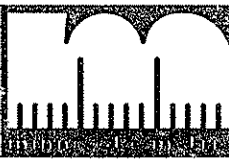
M. U. T. C. D. CODE	SIZE	INSERT	STAGE II QTY
R1-1	48" x 48"		• 20
R1-4	18" x 16"		• 11
R4-1	24" x 30"		• 4
W10-1	36" DIA		• 1
R4-7A	24" x 30"		• 2
X4-2	18" x 18"		• 0
R5-1	30" x 30"		• 2
R11-2	48" x 30"		• 1
TYPE III	8 FT.		• 1
W1-6R	48" x 24"		• 2
TYPE III	8 FT.		• 2
TYPE III	8 FT.		• 14
W3-1	48" x 48"		• 3
X4-4	12" x 36"		• 2
W21-4	48" x 48"		• 17
W5-1	36" x 36"		• 1
W13-1	18" x 18"		• 1

M. U. T. C. D. CODE	SIZE	INSERT	STAGE II QTY
G20-2	60" x 24"		• 1
REBOUNDABLE DRUM REFLECTORIZED			• 278

NOTES:

1. ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, INCLUDING THE FIELD MANUAL DATED JANUARY, 1998.
2. PAVEMENT MARKINGS IN ALL TAPER AREAS SHALL HAVE TEMPORARY RAISED PAVEMENT MARKERS AT 3m 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.

NO	DATE	BY	CKD	APPR	REVISION



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

Douglas M. Jensen
 DATE 5/14/98 REG. NO. 20235

DRAWN BY _____ DATE _____
 DESIGN BY _____ DATE _____
 CHECKED BY _____ DATE _____



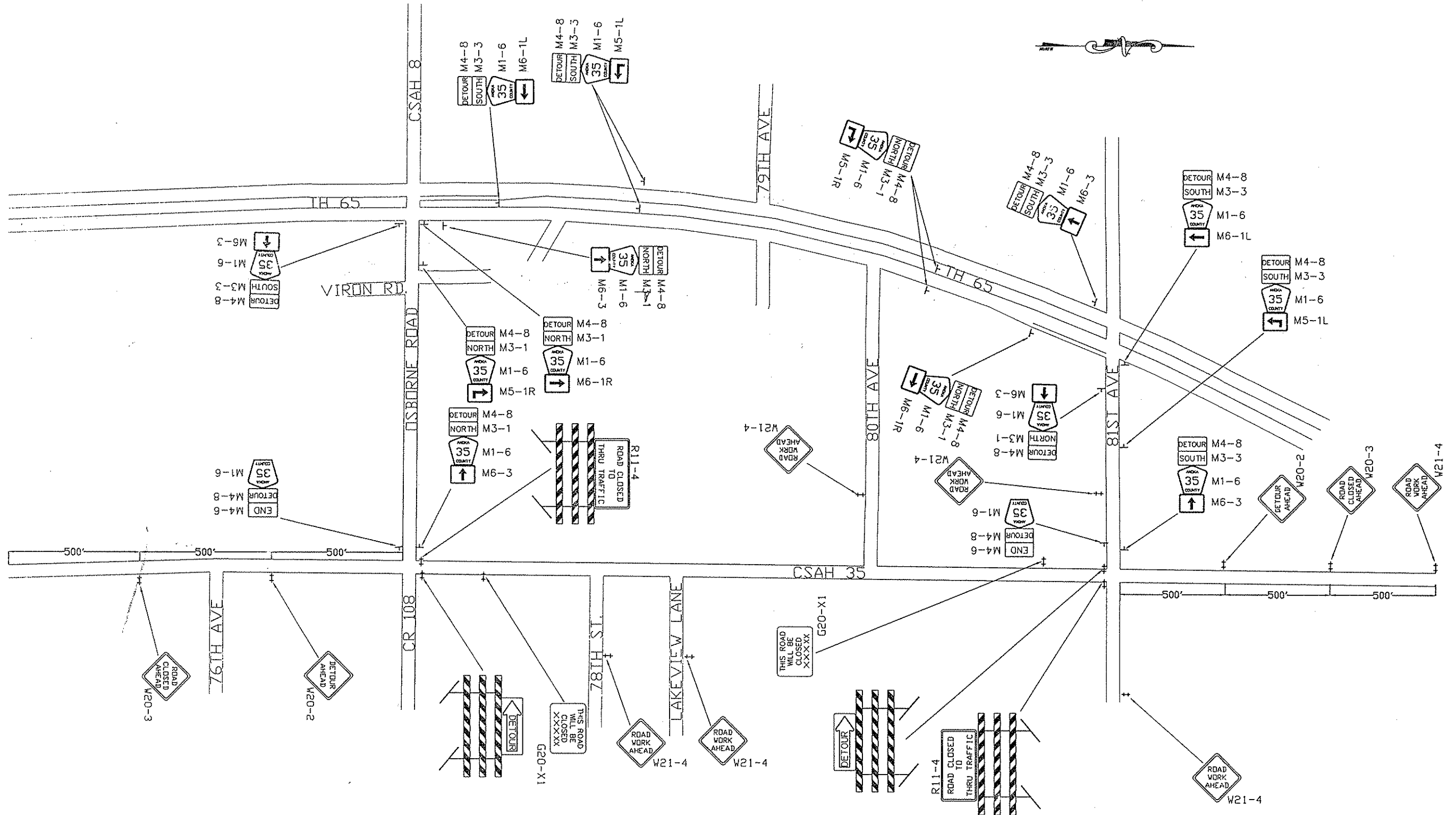
ANOKA COUNTY
 HIGHWAY DEPT.

STATE PROJECT NO. 02-635-08
 STATE AID PROJECT NO. 02-635-08
 STATE AID PROJECT NO. 02-635-10
 COUNTY PROJECT NO. _____

STAGE 2
 OLD CENTRAL AVE
 C.S.A.H. 35
 Sheet 62 of 64 Sheets

NOTES:

- 1) ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES INCLUDING THE FIELD MANUAL DATED APRIL 1995.
- 2) ALL TYPE III BARRICADES SHALL BE REFLECTORIZED ON BOTH SIDES, AND ALL BARRICADES MARKINGS SHALL BE SLANTED IN ACCORDANCE WITH THE MnMUTCD.



NO	DATE	BY	CHKD	APPR	REVISION



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

Randolph J. Brown
 DATE 7/14/18 REG. NO. 2235

DRAWN BY _____ DATE _____
 DESIGN BY _____ DATE _____
 CHECKED BY _____ DATE _____



**ANOKA COUNTY
 HIGHWAY DEPT.**

STATE PROJECT NO. _____
 STATE AID PROJECT NO. 02-635-08
 STATE AID PROJECT NO. 02-635-10
 COUNTY PROJECT NO. _____

DETOUR
 CSAH 35

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M. U. T. C. D. CODE	SIZE	INSERT	QUANTITY	M. U. T. C. D. CODE	SIZE	INSERT	QUANTITY	
R11-4	60' x 30'		• 2	W21-4	48' x 48'		• 6	
TYPE III	8 FOOT			W21-4	48' x 48'		• 2	
M4-10R	48' x 18'		• 1	W21-4	48' x 48'		• 2	
TYPE III	8 FOOT			M4-8	24' x 12'		• 3	
M4-10L	48' x 18'		• 1	M3-2	21' x 12'		M5-1R	• 2
TYPE III	8 FOOT			M1-6	24' x 24'		M6-1R	• 3
					21' x 15'		M6-3	• 3
G20-X1	60' x 48'		• 2	M4-8	24' x 12'		M5-1L	• 3
M4-6	24' x 12'		• 2	M3-4	21' x 12'		M6-1L	• 2
M4-8	24' x 12'			M1-6	24' x 24'		M6-3	• 3
M1-6	24' x 24'				21' x 15'			

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) ALL TYPE III BARRICADES SHALL BE REFLECTORIZED ON BOTH SIDES, AND ALL BARRICADES MARKINGS SHALL BE SLANTED IN ACCORDANCE WITH THE MnMUTCD.

NO	DATE	BY	CKD	APPR	REVISION



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

Roger J. Funch
 DATE 7/14/98 REG. NO. 20235

DRAWN BY _____ DATE _____
 DESIGN BY _____ DATE _____
 CHECKED BY _____ DATE _____



**ANOKA COUNTY
 HIGHWAY DEPT.**

STATE PROJECT NO. _____
 STATE AID PROJECT NO. 02-635-08
 STATE AID PROJECT NO. 02-635-10
 COUNTY PROJECT NO. _____

DETOUR
 CSAH 35

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