MINNESOTA DEPARTMENT OF TRANSPORTATION

ANOKA COUNTY

CONSTRUCTION PLAN FOR GRADING, AGGREGATE BASE, BITUMINOUS SURFACING, CURB & GUTTER, UTILITIES AND SIGNAL SYSTEMS

LOCATED ON CSAH 51 BETWEEN 1000' S. OF 97TH AVE. NW AND 106 TH AVE. NW (Geographic Description)

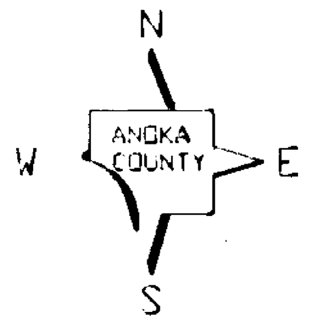
FROM A POINT 995.13'S OF SE CORNER OF NW 1/4, SEC 25, T31N,R24W TO A POINT 808.57' N OF NW CORNER OF SE 1/4, SEC 24, T31N,R24W (Legal Description)

STATE PROJ. NO. 02-651-01

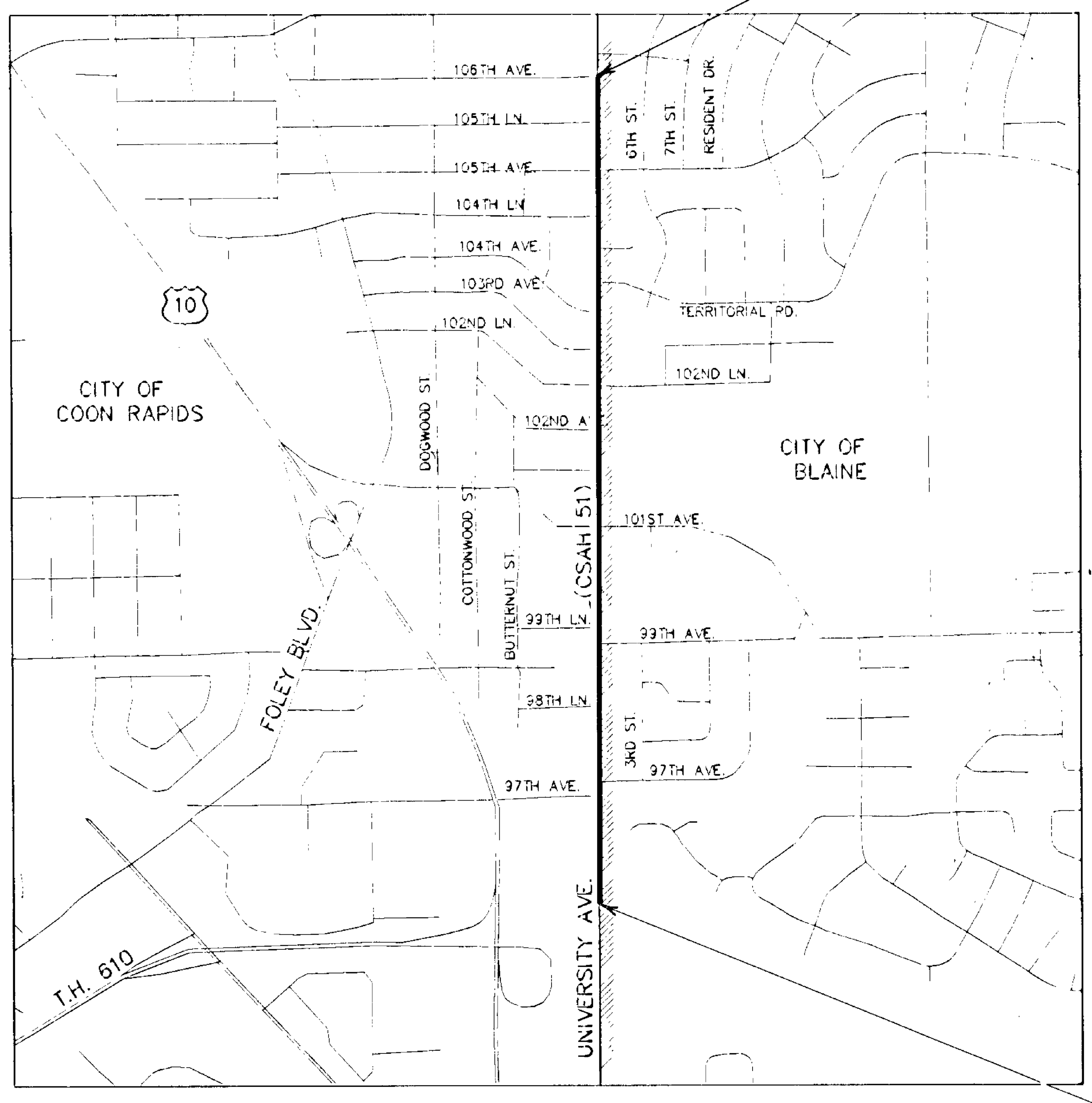
GROSS LENGTH	7162.00	FEET	1.356	MILES
BRIDGES-LENGTH	0.00	FEET	0.00	MILES
EXCEPTIONS-LENGTH	0.00	FEET	0.00	MILES
NET LENGTH	7162.00	FEET	1.356	MILES

STATE AID PROJ. NO. 114-020-04 AND 106-020-07

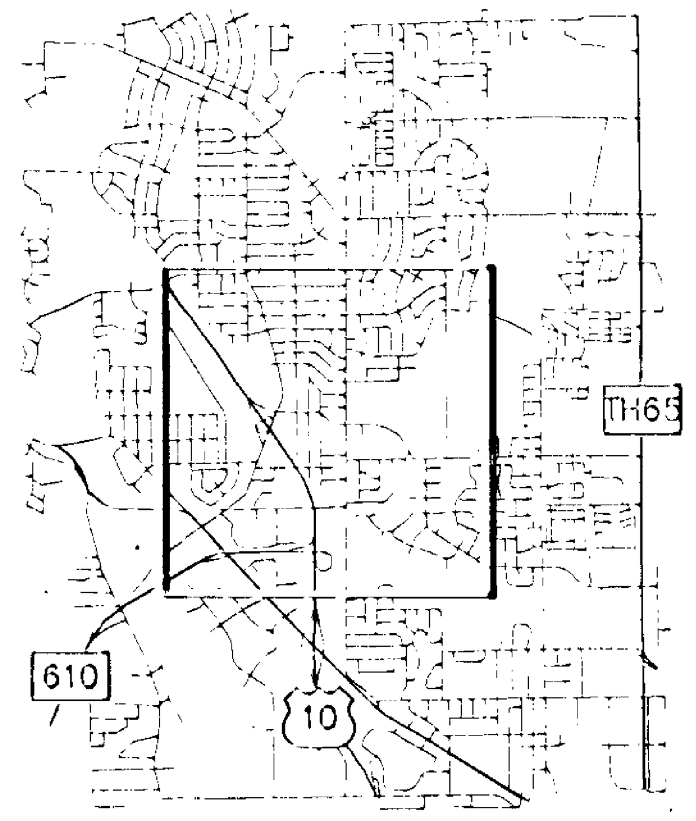
GROSS LENGTH	7162.00	FEET	1.356	MILES
BRIDGES-LENGTH	0.00	FEET	0.00	MILES
EXCEPTIONS-LENGTH	0.00	FEET	0.00	MILES
NET LENGTH	7162.00	FEET	1.356	MILES



END S.P. 02-651-01, S.A.P. 114-020-04,106-020-07
STATION 119+82.00



BEGIN S.P. 02-651-01, S.A.P. 114-020-04,106-020-07
STA. 48+20.00



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
CULVERT
DROP INLET
GAURD RAIL
BARBED WIRE FENCE
WOVEN WIRE FENCE
CHAIN LINK FENCE
WOOD FENCE
STONE WALL OR FENCE
HEDGE
LOWLAND
TIMBER / ORCHARD / BRUSH / NURSERY — TIMBER
CATTLE GAURD — ROAD
OVERPASS (Highway Over)
UNDERPASS (Highway Under)
BRIDGE
BUILDING (One Story Frame) — 1-S-F
F-FRAME C-CONCRETE
S-STONE T-TILE
B-BRICK ST-STUCCO
RAILROAD CROSSING BELL
RAILROAD CROSSING GATE
MANHOLE — M.H.
CATCH BASIN — C B
FIRE HYDRANT
CAST IRON MONUMENT
IRON PIN
GRAVEL PIT — Ⓖ
SAND PIT — Ⓢ
BORROW PIT — Ⓑ
ROCK QUARRY — Ⓠ

UTILITY SYMBOLS

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

SCALES

PLAN	0	50	100
PROFILE HORIZONTAL	0	50	100
VERTICAL	0	5	10
X-SECTIONS HORIZONTAL	0	10	20
VERTICAL	0	10	20
INDEX MAP	0	1000	2000

MINN. PROJ. NO. STP 5142 (004)
MINN. PROJ. NO. MRP 5142 (004)

GOVERNING SPECIFICATIONS

THE 1988 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" AS AMENDED BY SUPPLEMENTAL SPECIFICATIONS, DATED JANUARY 2, 1991 SHALL GOVERN.

INDEX

THIS PLAN CONTAINS 86 SHEETS

DESIGN DESIGNATION

$\Sigma N18_{20}$ 3,143,000
R VALUE 70
ADT (1993)= 16,750
Proj. ADT (2013)= 28,475
Proj. HCADT (2013)= 2,136
Soil Factor N/A
10 TON DESIGN
Shoulder Width 8'

Functional Classification HIGH DENSITY ARTERIAL
No. of Traffic Lanes 4 No. of Parking Lanes 0
Design Speed 45 MPH
Based on Stopping Sight Distance
Height of eye 3.5' Height of object 0.5'
Design Speed not achieved at: N/A

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 2/3/93 REG. NO. 20235 ENGR. [illegible] DESIGN ENGINEER
DESIGN SQUAD K. JOHNSON

Recommended for Approval [illegible] RIGHT-OF-WAY SECTION 1/26 ,1993
Recommended for Approval [illegible] TRAFFIC SECTION 1/26 ,1993
Recommended for Approval [illegible] DEPUTY COUNTY ENGINEER 1/26 ,1993
Approved 1/26 ,1993 [illegible] ANOKA COUNTY ENGINEER
Approved 5/6 ,1993 [illegible] BLAINE CITY ENGINEER
Approved 5/7 ,1993 [illegible] COON RAPIDS CITY ENGINEER
Recommended for Approval [illegible] METRO-ASSISTANT DIVISION ENGINEER-STATE AID 5/10 ,1993
Recommended for Approval [illegible] for MN/DOT TRAFFIC ENGINEER 6-25 ,1993
Recommended for Approval [illegible] for STATE AID PLANS AND SPECS ENGINEER 6/29 ,1993
Approved 6/29 ,1993 [illegible] for STATE AID ENGINEER

STATE AID PROJ. NO. 114-020-04/106-020-07
STATE PROJ. NO. 02-651-01

S.A.P. 106-101-06 AND S.A.P. 114-128-03
SIGNAL SYSTEM "A" AT 101 ST AVE.

Fed. Project No. _____

STATEMENT OF ESTIMATED QUANTITIES

CHART NO.	ITEM NO.	ITEM	UNIT	TOTAL QUANTITIES EST.	TOTAL QUANTITIES FINAL	ANOKA COUNTY S.P. 02-651-01 EST.	ANOKA COUNTY S.P. 02-651-01 FINAL	ANOKA COUNTY NON-PARTICIPATING EST.	ANOKA COUNTY NON-PARTICIPATING FINAL	CITY OF COON RAPIDS M.S.A.P. 114-020-04 EST.	CITY OF COON RAPIDS M.S.A.P. 114-020-04 FINAL	CITY OF COON RAPIDS NON-PARTICIPATING EST.	CITY OF COON RAPIDS NON-PARTICIPATING FINAL	CITY OF BLAINE M.S.A.P. 106-020-07 EST.	CITY OF BLAINE M.S.A.P. 106-020-07 FINAL	CITY OF BLAINE NON-PARTICIPATING EST.	CITY OF BLAINE NON-PARTICIPATING FINAL	STORM SEWER EST.	STORM SEWER FINAL
	0015.601	COMPUTER EQUIPMENT	LUMP SUM	1				1											
	0041.606	TRAINEES	HR	1500		1500													
	2021.501	MOBILIZATION	LUMP SUM	1		0.76				0.01				0.01		0.02		0.02	
	2031.501	FIELD OFFICE TYPE D	EACH	1		0.76				0.01				0.01		0.02		0.02	
A	2101.502	CLEARING	TREE	167		167													
A	2101.507	GRUBBING	TREE	152		152													
	2102.502	PAVEMENT MARKING REMOVAL	LIN FT	8340		8340													
H	2104.501	REMOVE RETAINING WALL	LIN FT	325		325													
V	2104.501	REMOVE SEWER PIPE (STORM)	LIN FT	5961		5961													
(16)(1) K	2104.501	REMOVE CURB & GUTTER	LIN FT	4939		4871												68	
G	2104.501	REMOVE GUARD RAIL	LIN FT	137		137													
(16)(2) E	2104.505	REMOVE BITUMINOUS PAVEMENT	SQ YD	49945		48538												1407	
(3) I	2104.505	REMOVE CONCRETE PAVEMENT	SQ YD	3011		3011													
V	2104.509	REMOVE MANHOLE OR CATCHBASIN	EACH	40		40													
V	2104.509	REMOVE CONCRETE APRON	EACH	1		1													
	2104.509	REMOVE LIGHT STANDARD AND LUMINAIRE	EACH	1		1													
	2104.509	REMOVE LIGHT BASE FOUNDATION	EACH	3		3													
C	2104.511	SAWING CONCRETE PAVEMENT	LIN FT	431		431													
(16) D	2104.513	SAWING BITUMINOUS PAVEMENT	LIN FT	3973		3561												412	
J	2104.521	SALVAGE FENCE	LIN FT	420		420													
(4)	2104.521	SALVAGE PORTABLE CURB	LIN FT	300														300	
V	2104.523	SALVAGE CASTING	EACH	38		38													
	2104.523	SALVAGE SIGN TYPE C	EACH	84		84													
R	2105.501	COMMON EXCAVATION	CU YD	38296 (P)		38296 (P)													
R	2105.525	TOPSOIL BORROW (LV)	CU YD	1866		1866													
(5)	2130.501	WATER	M-GAL	80		80													
(17)(12)	2211.503	AGGREGATE BASE PLACED CLASS 5A	CU YD	9564 (P)		9553 (P)												11 (P)	
(7)	2232.501	MILL BITUMINOUS SURFACE (1.5")	SQ YD	618		618													
(21)(13)	0331.601	2" THICK BITUMINOUS WEARING COURSE	SQ YD	2360		925				68				121				1246	
	0331.601	REPLACE TRENCH PAVEMENT	SQ YD	275														275	
(17)(11)	2340.508	TYPE 41 WEARING COURSE MIXTURE	TON	5318		5306												12	
	2340.510	TYPE 31 BINDER COURSE MIXTURE	TON	5708		5708													
	2340.514	TYPE 31 BASE COURSE MIXTURE	TON	11691		11691													
	2357.502	BITUMINOUS MATERIAL FOR TACK COAT	GALLON	5380		5380													
P	0411.603	CONSTRUCT STONE RETAINING WALL	SQ FT	1606		1606													
	0412.602	RELOCATE MAIL BOX	EACH	20		20													
(20)	2451.507	GRANULAR BEDDING (LV)	CU YD	600														600	
U	2501.525	36" SPAN RC PIPE ARCH APRON	EACH	1														1	
	2502.541	4" PERF. PE PIPE DRAIN	LIN FT	3800		3800													
U	2503.521	36" SPAN RC PIPE ARCH SEWER CLASS IIA	LIN FT	266														266	
U	2503.521	36" SPAN RC PIPE ARCH SEWER CLASS IIIA	LIN FT	260														260	
U	2503.541	12" RC PIPE SEWER DESIGN 3006	LIN FT	2890														2890	
U	2503.541	12" RC PIPE SEWER DESIGN 3006 CLASS IV	LIN FT	81														81	
U	2503.541	15" RC PIPE SEWER DESIGN 3006	LIN FT	480														480	
U	2503.541	15" RC PIPE SEWER DESIGN 3006 CLASS IV	LIN FT	49														49	
U	2503.541	18" RC PIPE SEWER DESIGN 3006	LIN FT	1230														1230	
U	2503.541	21" RC PIPE SEWER DESIGN 3006	LIN FT	551														551	
U	2503.541	24" RC PIPE SEWER DESIGN 3006	LIN FT	479														479	
U	2503.541	27" RC PIPE SEWER DESIGN 3006	LIN FT	933														933	
U	2503.541	30" RC PIPE SEWER DESIGN 3006	LIN FT	352														352	
U	2503.541	33" RC PIPE SEWER DESIGN 3006	LIN FT	310														310	
U	2503.541	42" RC PIPE SEWER DESIGN 3006	LIN FT	761														761	
M	0504.602	RELOCATE CURB STOP & BOX	EACH	32						20				12					
L	0504.602	ADJUST VALVE BOX-WATER	EACH	28						14				14					
F	0504.602	RELOCATE HYDRANT & VALVE	EACH	14						10				4					
U	2506.501	CONSTRUCT DRAINAGE STRUCTURE DESIGN 72-4020	LIN FT	24.7														24.7	
U	2506.501	CONSTRUCT DRAINAGE STRUCTURE DESIGN 84-4020	LIN FT	10.2														10.2	
U	2506.501	CONSTRUCT DRAINAGE STRUCTURE DESIGN 90-4020	LIN FT	11.0														11.0	
U	2506.501	CONSTRUCT DRAINAGE STRUCTURE DESIGN A OR F	LIN FT	288.5														288.5	
U	2506.501	CONSTRUCT DRAINAGE STRUCTURE DESIGN C OR G	LIN FT	267.4														267.4	
U	2506.503	RECONSTRUCT DRAINAGE STRUCTURE	LIN FT	55.1														55.1	
D,U	2506.516	CASTING ASSEMBLY	EACH	106														106	
U	2506.521	INSTALL CASTING	EACH	12														12	
U	2506.522	ADJUST FRAME & RING CASTING	EACH	1														1	
(18) Z	0506.602	ADJUST FRAME & RING CASTING (SPECIAL)	EACH	17						5				12					
	2511.507	GROUTED RIPRAP	CU YD	11														11	
(14)	2521.501	4" CONCRETE WALK	SQ FT	59734		59734													
(6)	0521.602	CONCRETE WALK-SPECIAL DESIGN 1	SQ FT	6021												6021			

INDEX OF TABULATION CHART

BASIS OF PLANNED QUANTITIES

2340 TYPE 41 PLANT MIXED WEARING COURSE
BITUMINOUS MIXTURE 110 LBS./SQ.YD. PER 1" THICKNESS

2340 TYPE 31 PLANT MIXED BASE AND BINDER COURSE
BITUMINOUS MIXTURE 110 LBS./SQ.YD. PER 1" THICKNESS

2357 BITUMINOUS MATERIAL FOR TACK
0.05 GALLONS PER SQ.YD. PER LIFT APPLIED

2575 MULCH MATERIAL TYPE 1,2 TONS PER ACRE

2575 COMMERCIAL FERTILIZER, ANAYSIS 10-10-10
500 LBS./ACRE ON ALL SEED AND SOD AREAS

2575 ROADSIDE SEEDING BASED ON HORIZONTAL MEASUREMENT
+10% SEED MIXTURE NO. 600, 75LBS. PER ACRE

NOTES

(1) QUANTITY INCLUDES CONC. CURB REMOVAL STA. 84+83 - 85+26 RT.
(2) QUANTITY INCLUDES 2534 S.Y. FOR BIT. PATH, 5893 S.Y. FOR SERV. RD., 5223 S.Y. FOR SIDE STREETS & 3580 S.Y. FOR ENT.
(3) QUANTITY INCLUDES SIDEWALK, DRIVEWAY & MEDIAN ISLANDS. SEE REMOVAL CHARTS.
(4) ITEM INCLUDED FOR PRECAST CURB IN CHURCH PARKING LOT STA. 84+57 RT.
(5) FOR DUST CONTROL AS DIRECTED BY THE ENGINEER.
(6) FOR MEDIAN CONSTRUCTION FROM STA. 111+55 - 119+82
(7) MILL 1.5" DEPTH ON NORTH END OF PROJ. STA. 118+83 TO 119+82 TO MAKE SMOOTH TRANSITION TO INPLACE ROADWAY.
(8) FOR PRIVATE ENTRANCE CONSTRUCTION INCLUDING APRONS.
(9) FOR COMMERCIAL ENTRANCE CONSTRUCTION INCLUDING APRONS.
(10) INCLUDES CONCRETE APRON CONSTRUCTION QUANTITIES.
(11) INCLUDES 345 TONS FOR BITUMINOUS PATH.
(12) INCLUDES 262 CU YD FOR BITUMINOUS PATH.
(13) FOR DRIVEWAY CONSTRUCTION. SEE CHART (B)
(14) INCLUDES 42,174 SQ.FT. FOR MEDIAN CONSTRUCTION.
(15) SYSTEM "A" FUNDING SP. 02-651-01 25% (CSAH FUNDS), SP. 114-020-04 12.5% (MSAS FUNDS), SAP. 114-128-03 25%(MSAS SP. 106-020-07 12.5% (MSAS FUNDS) AND SAP. 106-101-06 25% (MSAS FUNDS).
SYSTEM "B" 25% COUNTY LOCAL FUNDS, SP. 114-020-04 25% (MSAS FUNDS), 12.5% COON RAPIDS FUNDS, SP. 106-02-07 25% (MSAS FUNDS) AND 12.5% BLAINE LOCAL FUNDS
(16) INCLUDES 268 SQ.YD. BIT. PAV'T REMOVAL, 68 LIN.FT. C&G. REMOVAL AND 131 LIN FT. BIT. SAWCUT ON THIRD STREET FOR STORM SEWER OUTLET CONSTRUCTION.
(17) INCLUDES 12 TONS 2340 BIT. PAV'T (TYPE 41 WEARING COURSE), 11 CU.YD. AGG. BASE CL-5A, AND 68 LIN.FT. CURB AND GUTTER B-618, FOR RESTORATION OF 3 RD. STREET.
(18) SANITARY MANHOLE CASTINGS
(19) TO BE INSTALLED AT LOCATIONS DIRECTED BY THE ENGINEER
(20) FOR STORM SEWER TRENCH STABILIZATION AS DIRECTED BY THE ENGINEER.
(21) 189 SQ.YD. FOR SECTION UPGRADES (68 SQ.YD.+121 SQ.YD.)

REVISIONS			
DATE	BY	DATE	BY
9-13-93	JHT		

Fed. Project No. _____

STATEMENT OF ESTIMATED QUANTITIES

	CHART NO.	ITEM NO.	ITEM	UNIT	TOTAL QUANTITIES		ANOKA COUNTY S.P. 02-651-01		ANOKA COUNTY NON-PARTICIPATING		CITY OF COON RAPIDS M.S.A.P. 114-020-04		CITY OF COON RAPIDS NON-PARTICIPATING		CITY OF BLAINE M.S.A.P. 106-020-07		CITY OF BLAINE NON-PARTICIPATING		STORM SEWER	
					EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL
		2531.501	CONCRETE CURB AND GUTTER DESIGN B612	LIN FT	11741		11741													
(17)		2531.501	CONCRETE CURB AND GUTTER DESIGN B618	LIN FT	16379		12578				1624				2109				68	
		2531.501	CONCRETE CURB AND GUTTER DESIGN B624	LIN FT	96		96													
(8)(10)	B	2531.507	6" CONCRETE DRIVEWAY PAVEMENT	SQ YD	351		351													
(9)(10)	B	2531.507	8" CONCRETE DRIVEWAY PAVEMENT	SQ YD	842		842													
	Q	0531.602	CONCRETE MEDIAN NOSE SPECIAL	EACH	1		1													
(4)		0531.603	INSTALL PORTABLE CURB	LIN FT	300														300	
		2535.501	BITUMINOUS CURB	LIN FT	1744		1744													
	J	0557.603	INSTALL FENCE	LIN FT	308		308													
	X	0563.601	DETOUR SIGNING	LUMP SUM	1		0.76				0.01				0.01		0.02		0.02	
	X	0563.601	TRAFFIC CONTROL, STAGE 1	LUMP SUM	1		0.76				0.01				0.01		0.02		0.02	
	X	0563.601	TRAFFIC CONTROL, STAGE 2	LUMP SUM	1		0.76				0.01				0.01		0.02		0.02	
	X	0563.601	TRAFFIC CONTROL, STAGE 3	LUMP SUM	1		0.76				0.01				0.01		0.02		0.02	
		0563.603	ONE-WAY RAISED PAVT. MARKER, TEMP.	EACH	1072		1072													
		0563.603	REPLACEMENT ONE-WAY RAISED PAVT. MARKER, TEMP.	EACH	160		160													
	W	2564.513	CONCRETE FOOTING	EACH	2		2													
	W	2564.531	F&I SIGN PANELS TYPE C	SQ FT	859		859													
		0564.602	PAVEMENT MESSAGE (LEFT ARROW) PAINT	EACH	14		14													
		0564.602	PAVEMENT MESSAGE (RIGHT ARROW) PAINT	EACH	27		27													
		0564.602	PAVEMENT MESSAGE (ONLY) PAINT	EACH	23		23													
		0564.603	4" SOLID LINE WHITE-PAINT	LIN FT	18840		18840													
		0564.603	4" BROKEN LINE WHITE-PAINT	LIN FT	2840		2840													
		0564.603	8" SOLID LINE WHITE-PAINT	LIN FT	320		320													
		0564.603	24" SOLID LINE WHITE-POLY PREF.	LIN FT	400		400													
		0564.603	36" SOLID LINE WHITE-POLY PREF.	LIN FT	384		384													
		0564.603	4" SOLID LINE YELLOW-PAINT	LIN FT	12550		12550													
		0564.603	4" BROKEN LINE YELLOW-PAINT	LIN FT	230		230													
		0564.603	4" DOUBLE SOLID LINE YELLOW-PAINT	LIN FT	2100		2100													
		0564.603	24" SOLID LINE YELLOW-PAINT	LIN FT	380		380													
(15)		2565.511	FULL-TRAF-ACT TRAFFIC CONTROL SIGNAL SYSTEM "A"	SIG SYS	1		0.25				0.125		0.25		0.125		0.25			
(15)		2565.511	FULL-TRAF-ACT TRAFFIC CONTROL SIGNAL SYSTEM "B"	SIG SYS	1				0.25		0.25		0.125		0.25		0.125			
		0565.601	SALVAGE SIGNAL SYSTEM "A"	LUMP SUM	1		1													
		0565.601	SALVAGE SIGNAL SYSTEM "B"	LUMP SUM	1		1													
		0565.601	SALVAGE SIGNAL SYSTEM "C"	LUMP SUM	1		1													
		0565.601	SALVAGE SIGNAL SYSTEM "D"	LUMP SUM	1		1													
		0565.602	HANDHOLE TYPE C-INTERCONNECT	EACH	23		23													
		0565.602	HANDHOLE TYPE C	EACH	4		4													
		0565.603	2" RIGID STEEL CONDUIT-INTERCONNECT	LIN FT	5980		5980													
		0565.603	3" RIGID STEEL CONDUIT	LIN FT	150		150													
		0565.603	6 PAIR #19 INTERCONNECT	LIN FT	4500		4500													
(19)		2573.501	BALE CHECK	EACH	800		800													
		2575.501	SEEDING	ACRE	0.3		0.3													
		2575.502	SEED, MIXTURE 600	POUND	14		14													
	N	2575.505	SODDING TYPE LAWN	SQ YD	15601		15601													
		2575.511	MULCH MATERIAL TYPE 1	TON	0.6		0.6													
		2575.519	DISK ANCHORING	ACRE	0.3		0.3													
		2575.531	COMM FERT ANALYSIS 10-10-10	TON	0.9		0.9													
		2580.501	TEMPORARY LANE MARKING	RD STA	288		288													
		2581.501	REMOVABLE PREFORMED PLASTIC MARKING	LIN FT	11750		11750													

STANDARD PLATES

THESE STANDARD PLATES AS APPROVED BY THE FHWA SHALL APPLY.

PLATE NO.	DESCRIPTION
0005 A	SPECIFICATION REFERENCE TO STANDARD PLATES
3000 L	REINFORCED CONCRETE PIPE
3006 F	GASKET JOINT FOR R.C. PIPE
3014 J	REINFORCED CONCRETE PIPE ARCH
3110 G	CONCRETE APRON FOR REINFORCED CONCRETE PIPE ARCH
3133 B	RIPRAP AT R.C.P. OUTLET
3145 E	CONCRETE PIPE TIES
4000 I	MANHOLE OR CATCH BASIN (DESIGN A)
4002 E	MANHOLE OR CATCH BASIN (DESIGN C)
4005 K	MANHOLE OR CATCH BASIN (DESIGN F)
4006 K	MANHOLE OR CATCH BASIN (DESIGN G OR DESIGN H)
4010 G	CONCRETE SHORT CONE & ADJUSTING RING
4020 F	MANHOLE OR CATCH BASIN (UNDER TRAFF. LOADS)
4101 C	RING CASTING FOR MANHOLE
4110 E	COVER CASTING FOR MANHOLE
4126 F	CATCH BASIN FRAME CASTING
4149 C	GRATE CASTING FOR CATCH BASIN
4161 F	CURB BOX CASTING FOR CATCH BASIN
4180 H	MANHOLE OR CATCH BASIN STEP
7035 J	CONCRETE WALK & CURB RETURNS AT ENTRANCES
7036 D	PEDESTRIAN CURB RAMP (FOR THE HANDICAPPED)
7065 C	BITUMINOUS CURB
7100 F	CONCRETE CURB & GUTTER (DES. B)
7110 E	CURB & GUTTER CONSTRUCTION AT CATCH BASIN
7111 G	INSTALLATION & RINFORCEMENT OF CATCH BASIN CASTINGS
8000 I	STANDARD BARRICADES
9322 J	CHAIN LINK FENCE

SEE TRAFFIC SIGNAL PLAN SHEETS FOR ADDITIONAL STANDARD PLATES

NOTES

(1) QUANTITY INCLUDES CONC. CURB REMOVAL STA. 84+83 - 85+26 RT.
(2) QUANTITY INCLUDES 2534 S.Y. FOR BIT. PATH, 5893 S.Y. FOR SERV. RD., 5223 S.Y. FOR SIDE STREETS & 3580 S.Y. FOR ENT.
(3) QUANTITY INCLUDES SIDEWALK, DRIVEWAY & MEDIAN ISLANDS. SEE REMOVAL CHARTS.
(4) ITEM INCLUDED FOR PRECAST CURB IN CHURCH PARKING LOT STA. 84+57 RT.
(5) FOR DUST CONTROL AS DIRECTED BY THE ENGINEER.
(6) FOR MEDIAN CONSTRUCTION FROM STA. 111+55 - 119+82
(7) MILL 1.5" DEPTH ON NORTH END OF PROJ. STA. 118+83 TO 119+82 TO MAKE SMOOTH TRANSITION TO INPLACE ROADWAY.
(8) FOR PRIVATE ENTRANCE CONSTRUCTION INCLUDING APRONS.
(9) FOR COMMERCIAL ENTRANCE CONSTRUCTION INCLUDING APRONS.
(10) INCLUDES CONCRETE APRON CONSTRUCTION QUANTITIES.
(11) INCLUDES 345 TONS FOR BITUMINOUS PATH.
(12) INCLUDES 262 CU YD FOR BITUMINOUS PATH.
(13) FOR DRIVEWAY CONSTRUCTION. SEE CHART (B)
(14) INCLUDES 42,174 SQ.FT. FOR MEDIAN CONSTRUCTION.
(15) SYSTEM "A" FUNDING SP. 02-651-01 25% (CSAH FUNDS), SP. 114-020-04 12.5% (MSAS FUNDS), SAP. 114-128-03 25%(MSAS) SP. 106-020-07 12.5% (MSAS FUNDS) AND SAP. 106-101-06 25% (MSAS FUNDS).
SYSTEM "B" 25% COUNTY LOCAL FUNDS, SP. 114-020-04 25% (MSAS FUNDS), 12.5% COON RAPIDS FUNDS, SP. 106-02-07 25% (MSAS FUNDS) AND 12.5% BLAINE LOCAL FUNDS
(16) INCLUDES 268 SQ.YD. BIT. PAV'T REMOVAL, 68 LIN.FT. C&G. REMOVAL AND 131 LIN.FT. BIT. SAWCUT ON THIRD STREET FOR STORM SEWER OUTLET CONSTRUCTION.
(17) INCLUDES 30 TONS 2340 BIT. PAV'T (TYPE 41 WEARING COURSE) 11 CU.YD. AGG. BASE CL-5A, AND 68 LIN.FT. CURB AND GUTTER B-618, FOR RESTORATION OF 3 RD. STREET.
(18) SANITARY MANHOLE CASTINGS
(19) TO BE INSTALLED AT LOCATIONS DIRECTED BY THE ENGINEER.
(20) FOR STORM SEWER TRENCH STABILIZATION AS DIRECTED BY THE ENGINEER.
(21) 189 SQ.YD. FOR SECTION UPGRADES (68 SQ.YD.+121 SQ.YD.)

REVISIONS			
DATE	BY	DATE	BY
9-13-93	JHT		

STATEMENT OF ESTIMATED QUANTITIES

S.A.P. 114-020-04/106-020-07 S.P. 02-651-01 Sheet No. 3 of 85 Sheets

Fed. Project No. _____

CLEARING AND GRUBBING (A)

STATION	LOCATION	CLEARING TREE	CLEARING ACRE	GRUBBING TREE	GRUBBING ACRE
51+97	50 LT.	1		1	
52+00	52 LT.	2		1	
56+26	66 LT.	1		1	
56+31	58 LT.	1		1	
56+92	52 RT.	1		1	
57+14	56 RT.	1		1	
57+40	48 RT.	2		1	
57+68	48 RT.	1		1	
57+70	33 RT.	2		1	
60+32	48 LT.	1		1	
60+86	49 LT.	1		1	
60+88	42 LT.	2		1	
61+01	48 LT.	1		1	
61+33	51 LT.	1		1	
61+40	51 LT.	1		1	
61+70	43 LT.	1		1	
61+72	54 LT.	2		1	
61+79	58 LT.	1		1	
61+81	47 LT.	1		1	
61+82	52 LT.	1		1	
61+84	42 LT.	1		1	
61+89	58 LT.	1		1	
61+96	41 LT.	2		1	
61+99	61 LT.	1		1	
62+08	39 LT.	1		1	
62+19	60 LT.	1		1	
62+32	48 LT.	1		1	
62+87	59 LT.	4		1	
63+73	40 LT.	-		1	
64+04	35 LT.	-		1	
64+26	46 LT.	-		1	
64+28	45 LT.	1		1	
64+35	51 LT.	1		1	
64+43	50 LT.	1		1	
64+50	51 LT.	1		1	
64+59	50 LT.	1		1	
64+77	49 LT.	3		1	
65+04	49 LT.	1		1	
65+40	51 LT.	1		1	
65+89	51 LT.	2		1	
65+99	58 LT.	1		1	
67+12	54 LT.	1		1	
67+34	60 LT	1		1	
67+36	35 LT.	2		1	
67+46	39 LT.	1		1	
67+48	45 LT.	1		1	
67+63	48 LT.	1		1	
67+69	50 LT.	1		1	
67+86	53 LT.	1		1	
68+48	58 LT.	1		1	
68+60	42 LT.	1		1	
68+66	51 LT.	1		1	
68+67	42 LT.	1		1	
68+74	42 LT.	1		1	
68+82	42 LT.	1		1	
68+85	44 LT.	1		1	
68+89	42 LT.	1		1	
68+92	49 LT.	1		1	
69+06	42 LT.	1		1	
69+15	42 LT.	1		1	
69+16	59 LT.	1		1	
69+38	42 LT.	1		1	
69+43	42 LT.	1		1	
69+46	42 LT.	1		1	
69+51	42 LT.	1		1	
69+56	39 LT.	1		1	
69+66	42 LT.	1		1	
69+71	42 LT.	1		1	
69+84	43 LT.	1		1	
69+94	42 LT.	1		1	
70+49	43 LT.	1		1	
70+56	50 LT.	1		1	
70+66	47 LT.	1		1	
70+99	36 LT.	1		1	
71+10	37 LT.	1		1	
71+37	37 LT.	1		1	
71+37	52 LT.	1		1	
72+02	47 LT.	1		1	
72+20	43 LT.	1		1	
72+68	38 LT.	1		1	
72+71	46 LT.	1		1	
73+52	45 LT.	1		1	
73+68	55 LT.	1		1	
73+71	55 LT.	1		1	
73+98	40 LT.	1		1	
73+98	45 LT.	1		1	
73+98	48 LT.	1		1	
73+98	57 LT.	1		1	
74+06	58 LT.	1		1	
74+22	37 LT.	-		1	

CLEARING AND GRUBBING (A)

STATION	LOCATION	CLEARING TREE	CLEARING ACRE	GRUBBING TREE	GRUBBING ACRE
74+37	40 LT.	1		1	
74+58	39 LT.	1		1	
74+61	49 LT.	1		1	
74+75	45 LT.	1		1	
74+76	43 LT.	1		1	
74+84	58 LT.	3		1	
74+99	49 LT.	1		1	
75+12	55 LT.	1		1	
75+24	56 LT.	1		1	
75+44	36 LT.	1		1	
75+75	41 LT.	1		1	
76+23	44 LT.	1		1	
77+24	47 LT.	3		1	
77+48	45 LT.	2		1	
78+10	53 LT.	1		1	
78+34	60 RT.	1		1	
78+50	54 LT.	1		1	
78+68	60 RT.	1		1	
78+70	60 RT.	1		1	
78+72	53 LT.	1		1	
78+79	60 RT.	1		1	
78+85	59 LT.	1		1	
78+98	50 LT.	1		1	
79+16	48 LT.	1		1	
79+20	59 LT.	1		1	
80+02	42 LT.	1		1	
80+46	41 LT.	1		1	
81+22	56 LT.	1		1	
82+59	62 LT.	1		1	
82+82	57 LT.	1		1	
83+01	70 LT.	1		1	
83+04	61 LT.	-		1	
83+05	69 LT.	1		1	
83+11	52 LT.	2		1	
83+30	62 LT.	1		1	
83+40	60 LT.	1		1	
83+69	40 LT.	1		1	
83+73	62 LT.	1		1	
83+84	40 LT.	1		1	
83+84	62 LT.	1		1	
84+00	40 LT.	1		1	
84+16	60 LT.	1		1	
84+41	55 LT.	1		1	
87+44	56 RT.	1		1	
107+24	61 RT.	1		1	
107+94	60 RT.	1		1	
108+71	60 RT.	1		1	
111+43	51 LT.	2		1	
111+74	51 LT.	1		1	
112+97	54 LT.	1		1	
113+32	54 LT.	1		1	
113+35	55 LT.	1		1	
113+40	59 LT.	1		1	
113+54	48 LT.	1		1	
113+62	58 LT.	1		1	
113+21	40 LT.	1		1	
113+54	48 LT.	1		1	
113+62	58 LT.	1		1	
114+21	40 LT.	1		1	
116+09	43 LT.	1		1	
116+09	49 LT.	1		1	
116+21	53 LT.	1		1	
TOTALS		167		152	

DRIVEWAY CHART (B)

C O O N R A P I D S

STATION	ADDRESS	LOC.	REMARKS	LENGTH	WIDTH	REPLACEMENT DRIVEWAY LENGTH	REPLACEMENT DRIVEWAY WIDTH	REMOVALS SQ.YD. CONC	REMOVALS SQ.YD. BIT.	CONC.APRON SQ.YD. 6"	CONC.APRON SQ.YD. 8"	CONC.REPLMT SQ.YD. 6"	CONC.REPLMT SQ.YD. 8"	BIT.REPLMT SQ.YD.	BIT.REPLMT SQ.YD. NEW
58+30	1-S-B BLDG. #9700	LT	BIT.-RELOCATE	34	33	34	32		125	16				120	
58+83	1-S-B BLDG. #9700	LT	BIT.-REMOVE	51	38	0	0		215						
59+54	1-S-B BLDG. #9700	LT	BIT.	39	38	1	32		165		16			3	
61+21	HOUSE	LT	SAND	42	10	4	12			7					5
63+49	AMER.FAM.INS. #9734	LT	BIT.	58	33	29	32		213		16			102	
64+91	1-S-F HOUSE #9806	LT	BIT.	43	8	15	12		38	7				19	
68+37	1-S-F HOUSE #9840	LT	SAND	56	12	8	12			7					10
69+24	1 1/2-S-F HOUSE #9852	LT	SAND	43	12	5	12			7					6
70+09	1-S-F HOUSE #9800	LT	BIT.	46	20	13	20		102	11				28	
70+86	1-S-F HOUSE #9904	LT	BIT.	41	12	8	12		55	7				10	
71+28	1-S-F HOUSE #9904	LT	BIT.	46	10	13	12		51	7				17	
71+81	1-S-F HOUSE #9910	LT	SAND	47	10	14	12			7					18
73+89	1-S-F HOUSE #9930	LT	SAND	48	10	5	12			7					6
76+58	22'-32'CONC.	LT	CONC.-BIT.	43	22	10	26	27	68		13			27	
78+33	1-S-F HOUSE #10006	LT	BIT.	60	12	32	12		80	7				42	
79+44	1-S-F HOUSE #10006	LT	BIT.	43	23	15	23		110	12				37	
80+80	TWIN OFF. PARK #10026	LT	BIT.	43	22	10	26		105		13			42	
83+57	1-S-F HOUSE #10054	LT	BIT.	38	12	5	12		51	7				6	
102+02	1-S-F HOUSE #10410	LT	BIT.	9	11	6	12		11	7				8	
102+75	1-S-F HOUSE #10414	LT	BIT.	9	10	6	12		10	7				8	
10+350	1-S-F HOUSE #10416	LT	BIT.	9	10	6	12		10	7				8	
104+27	1-S-F HOUSE #10422	LT	BIT.	9	20	6	20		20	11				13	
105+03	2-S-F HOUSE #10425	LT	CONC.	10	22	7	22	24		11		16			
105+83	2-S-F HOUSE #10430	LT	BIT.	10	10	6	12		11	7				8	
111+21	2-S-F HOUSE #21	LT	BIT.	3	16				5					17	
116+75	1-S-F HOUSE #10554	LT	SAND-REMOVE	96	12										
117+57	1-S-F HOUSE #10560	LT	SAND-REMOVE	77	14										
	COON RAPIDS SUB-TOTAL							51	1445	167	58	16		515	45

B L A I N E

59+09	1 1/2-S-F HOUSE	RT.	BIT.-RELOCATE	70	29	34	29		226	15				110	
61+63	1-S-F HOUSE #9707	RT.	BIT.		20										
62+40	1-S-F HOUSE #9713	RT.	BIT.		18										
63+16	1-S-F HOUSE #9719	RT.	BIT.		18										
63+93	1-S-F HOUSE #9725	RT.	CONC.		8										
64+76	1-S-F HOUSE #9731	RT.	BIT.		20										
65+59	1-S-F HOUSE #9737	RT.	BIT.		10										
66+32	1-S-F HOUSE #9801	RT.	BIT.		24										
66+52	1-S-F HOUSE #9807	RT.	CONC.		18										
67+08	1-S-F HOUSE #9807	RT.	BIT.		12										
67+88	1-S-F HOUSE #9813	RT.	BIT.		12										
68+09	1-S-F HOUSE #9819	RT.	CONC.		10										
68+63	1-S-F HOUSE #9819	RT.	CONC.		12										
68+89	1-S-F HOUSE #9825	RT.	CONC.		12										
69+47	1-S-F HOUSE #9825	RT.	BIT.		16										
70+27	1-S-F HOUSE #9831	RT.	CONC.		20										
70+99	1-S-F HOUSE #9837	RT.	CONC.		16										
77+47	SCHOOL EXIT	RT.	BIT.	47	30	19	30		157		15			62	
79+45	1-S-F HOUSE	RT.	SAND	46	14	18	26			13					51
83+13	1-S-BR CHURCH	RT.	GRAVEL	48	12	25	26				13				71
84+37	1-S-BR CHURCH	RT.	BIT.& CURB	348	26	316	26		1139		13			1046	
84+37	1-S-BR CHURCH	RT.	NEW BIT. ENT.	67	23	67	23		171					171	
85+04	BLAINE STATE BANK	RT.	BIT.	38	23	15	26		97		13			42	
86+31	BLAINE STATE BANK	RT.	BIT.-CONC.CURB	38	25	15	26				13			42	
89+60	1-S-BR GAS STATION	RT.	BIT.-CONC.	38	30	10	30	82	37		15		32	5	
90+65	1-S-BR GAS STATION	RT.	BIT.-CONC.	38	33	10	32	92	40		16		34	4	
94+71	DEGARDENER BLDG.	RT.	BIT.	41	30	13	30		137		15			42	
97+69	IRWIN BUILDING	RT.	BIT.	41	36	18	32		164		16			62	
99+68	2-S-ST BLDG.	RT.	BIT.	43	30	13	30		137		15			42	
106+06	1-S-F HOUSE #10447	RT.	BIT.	20	11	11	12		24	7				15	
106+87	1-S-F HOUSE #10455	RT.	BIT.	15	12		12		20	7				0	
107+66	1-S-F HOUSE #10463	RT.	BIT.	16	10	5	12		18	7				6	
108+33	1-S-F HOUSE #10471	RT.	BIT.-REMOVE	34	12				45						
109+65	1-S-BL BLDG.	RT.	CONC.	4	36	13	32	16			16		44		
110+47	1-S-BL BLDG.	RT.	CONC.	4	30			13			2				
111+22	FINA STATION	RT.	MOD.CONC.APRON	4	54	4	10	4			1				
111+74	FINA STATION	RT.		5	40	13	32	22			16		44		
112+68	FINA STATION	RT.	CONC.-BIT.	5	30	13	32	17			16		44		
113+58	TOM THUMB STORE	RT.	CONC.-BIT.	5	28	13	28	16			14		39		
115+01	UNIV. CREEK PLAZA	RT.	CONC.-BIT.	5	24	15	26	13			13		44		
STORM SEWER CONST. 3 RD.ST.NE.		RT.	BIT. ENT E.SIDE	10	26	10	26		29					29	
	BLAINE SUB-TOTALS							277	2440	49	222		281	1678	122
	PROJECT TOTALS							328	3885	216	280	16	281	2193	167
	PROJECT TOTALS DRIWAY BIT.													2360	

REVISIONS			
DATE	BY	DATE	BY

TABULATION CHARTS

S.A.P. 114-020-04/106-020-07 S.P. 02-651-01 Sheet No. 4 of 85 Sheets

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SAWING CONCRETE PAVEMENT (C)

STATION	LOCATION	DESCRIPTION	LIN.FT.
59+02	LT.	LOT	21
76+58	LT.	ENT.	22
85+05	LT.	SIDEWALK	5
86+00	LT.	SIDEWALK	5
86+60	LT.	SIDEWALK	5
89+35	LT.	SIDEWALK	5
89+60	RT.	ENT.	30
90+12	RT.	SLAB	74
89+95	LT.	SIDEWALK	5
90+65	RT.	ENT.	33
92+65	LT.	SIDEWALK	5
93+18	LT.	SIDEWALK	5
95+95	LT.	SIDEWALK	5
96+52	LT.	SIDEWALK	5
99+20	LT.	SIDEWALK	5
105+03	LT.	ENT.	22
109+65	RT.	ENT.	36
110+47	RT.	ENT.	30
111+74	RT.	ENT.	40
112+68	RT.	ENT.	30
113+58	RT.	ENT.	28
119+82	LT.& RT.	MEDIAN	10
TOTAL			426

SAWING BITUMINOUS PAVEMENT (D)

STATION	LOCATION	DESCRIPTION	LIN.FT.
48+20 TO 57+67	22' LT.& RT.	BEG. PROJ.	1894
57+67	22' LT.& RT.	BEG. BIT. REMOVAL	44
57+98 TO 58+31	LT.	97th AVE	95
58+30	LT.	ENT.	55
58+83	LT.	ENT.	38
59+54	LT.	ENT.	38
59+67 TO 59+97	RT.	97th AVE	60
64+91	LT.	ENT.	8
66+29 TO 66+57	LT.	98th LN.	28
70+09	LT.	ENT.	20
70+86	LT.	ENT.	12
71+20 TO 71+64	RT.	99th AVE	44
72+94 TO 73+24	LT.	99th LN.	30
77+47	RT.	ENT.	30
78+33	LT.	ENT.	12
79+44	LT.	ENT.	23
81+43 TO 82+09	LT. & RT.	101st AVE.	120
83+57	LT.	ENT.	12
① 84+37	RT.	CHURCH BIT. LOT	281
① 84+37	RT.	CHURCH NEW BIT. LOT	67
85+00	RT.	ENT.	23
86+31	RT.	ENT.	25
86+17 TO 86+47	LT.	101st LN.	30
89+33	RT.	LOT	15
89+48 TO 89+78	LT.	102nd AVE	30
90+65	RT.	LOT	10
92+77 TO 93+07	LT. & RT.	102nd LN.	50
94+71	RT.	ENT.	30
96+08 TO 96+38	LT.	103rd AVE.	30
97+69	RT.	ENT.	36
99+38 TO 99+68	LT.	104th AVE.	30
99+68	RT.	ENT.	30
101+58 TO 101+83	RT.	TERRITORIAL RD.	30
102+02	LT.	ENT.	11
102+75	LT.	ENT.	10
103+50	LT.	ENT.	10
104+27	LT.	ENT.	20
104+32 TO 104+62	RT.	UNIVERSITY CIRCLE	30
105+83	LT.	ENT.	10
106+06	RT.	ENT.	11
106+87	RT.	ENT.	12
107+20 TO 107+50	LT.	104th LN.	30
107+66	RT.	ENT.	10
108+33	RT.	ENT.	12
110+91 TO 111+21	LT. & RT.	105Th AVE	60
111+21	LT.	ENT.	16
114+79 TO 115+09	LT.	105Th LN.	30
118+70 TO 119+00	LT.	106Th AVE.	30
119+15	RT.	GUTTER LANE	102
119+85	LT. & RT.	GUTTER LANE	225
NEW 3 RD. STREET	LT. & RT.	FOR STORM SEWER CONST.	54
NEW 3 RD. STREET	EAST SIDE	FOR STORM SEWER CONST.	10
TOTAL			3973

① FOR STORM SEWER CONST.

BITUMINOUS REMOVAL (E)

STATION TO STATION	LOCATION	DESCRIPTION	SQ. YD.
53+90 58+15	38' TO 46' RT.	BITUMINOUS PATH	377
57+68 63+00	22' LT. & RT.	UNIVERSITY AVE.	2,600
58+03 58+27	22' TO 81' LT.	INTERSECTION 97Th AVE.	303
58+15 60+26	37' TO 61' RT.	SERVICE ROAD & 97Th AVE.	756
63+00 78+00	22' LT. & RT.	UNIVERSITY AVE.	7,333
66+29 66+57	22' TO 76' LT.	INTERSECTION 98Th LANE	247
70+85 71+65	22' TO 134'RT.	SERVICE ROAD & 99Th AVE.	566
71+64 81+27	46' TO 54' RT.	BITUMINOUS PATH	856
72+94 73+24	22' TO 95' LT.	INTERSECTION 99Th LANE	279
78+00 93+00	22' LT. & RT.	UNIVERSITY AVE.	7,333
82+05 92+77	46' TO 54' RT.	BITUMINOUS PATH	923
81+18 82+20	22' TO 150'RT.	INTERSECTION 101St AVE.	920
81+18 82+20	22' TO 120'LT.	INTERSECTION 101St AVE.	760
92+45 93+37	22' TO 77' LT.	INTERSECTION 101St LANE	193
89+48 89+78	22' TO 77' LT.	INTERSECTION 102Nd AVE.	193
92+45 93+37	22' TO 77' LT&RT.	INTERSECTION 102Nd LANE	374
93+00 108+00	22' LT. & RT.	UNIVERSITY AVE.	7,333
93+04 99+53	44' TO 52' RT.	BITUMINOUS PATH	577
96+08 96+38	22' TO 77' LT.	INTERSECTION 103Rd AVE.	194
99+38 99+68	22' TO 160'LT.	INTERSECTION 104Th AVE	427
99+50 115+15	22' TO 85' RT.	SERVICE ROAD (BLAINE)	4,449
99+67 107+09	34' TO 57' LT.	SERVICE ROAD (COON RAPIDS)	1,896
107+09 107+50	22' TO 85'LT.	INTERSECTION 104Th LANE	242
108+00 115+28	22' LT. & RT.	UNIV. AVE.	3,559
110+91 111+21	22' TO 97' LT.	INTERSECTION 105Th AVE	224
110+91 111+21	22' TO 77' RT.	INTERSECTION 105Th AVE	181
114+79 115+09	22' TO 77' LT.	INTERSECTION 105Th LANE	197
115+10 115+25	51' TO 59' RT.	BITUMINOUS PATH	13
115+28 118+85	22' LT.	TO END OF BIT. REMOVAL	1,207
115+28 119+15	22' RT.	TO END OF BIT. REMOVAL	1,480
NEW 3 RD. STREET	13' LT. & RT.	FOR SEWER CONST.(84+60 RT.)	68
* DRIVEWAYS	LT. & RT.	COON RAPIDS=1340, BLAINE 2240	3,885
TOTAL			49,945

* SEE DRIVEWAY TABULATION, CHART (B)

RELOCATE HYDRANTS (F)

LOCATION STATION	LOCATION (C.R.) LT.	LOCATION (BL.) RT.	DESCRIPTION	RELOCATE TO STATION	RELOCATE TO (C.R.) LT.	RELOCATE TO (BL.) RT
52+80	28			52+80	58	
57+90	38			57+90	76	
59+58		73	NO CONSTRUCTION REQUIRED	59+58		73
64+78	27			64+78	47	
66+52		33	NO CONSTRUCTION REQUIRED	66+52		33
70+73	33			70+73	49	
71+19		76	NO CONSTRUCTION REQUIRED	71+19		76
74+70	26			74+70	52	
76+93		31		76+93		47
81+35	50			81+34	53	
84+57		33		84+57		47
86+11	68		NO CONSTRUCTION REQUIRED	86+11	68	
89+40	71		NO CONSTRUCTION REQUIRED	89+40	71	
92+70	93		NO CONSTRUCTION REQUIRED	92+70	93	
92+72		74	NO CONSTRUCTION REQUIRED	92+72		74
95+35		33		95+35		47
99+34	94			99+28	94	
101+44		65	NO CONSTRUCTION REQUIRED	101+44		65
104+77		62		104+77		69
107+13	68			107+13	72	
110+77		65	NO CONSTRUCTION REQUIRED	110+77		65
111+39	32			111+39	54	
114+71	41			114+67	51	
116+07		61	NO CONSTRUCTION REQUIRED	116+07		61
TOTAL	10	4				

GUARDRAIL REMOVAL (G)

STATION TO STATION	LOCATION	DESCRIPTION	LIN.FT.
76+79 78+16	26' LT.	PLATE BEAM	137
TOTAL			137

RETAINING WALL REMOVAL (H)

STATION TO STATION	LOCATION	DESCRIPTION	LIN.FT.
82+93 84+34	34' LT.	R/R TIES	141
115+18 115+48	36' LT.	STONE WALL	30
115+77 116+66	38' LT.	STONE WALL 24x42	89
116+82 117+47	40' LT.	STONE WALL	65
TOTAL			325

CONCRETE REMOVAL (I)

STATION TO STATION	LOCATION	DESCRIPTION	SQ.YD.
53+83 57+96	27'-32' LT.	SIDEWALK	229
58+31 66+28	28'-33' LT.	SIDEWALK	443
59+02 59+34	33'-61' LT.	LOT SLAB	100
66+58 72+79	27'-32' LT.	SIDEWALK	345
73+41 81+28	27'-32' LT.	SIDEWALK	437
81+56	61'-120' RT.	MEDIAN	18
82+15 85+05	27'-32' LT.	SIDEWALK	161
89+74 90+48	42'-60' RT.	LOT SLAB	153
107+38 110+90	27'-32' LT.	SIDEWALK	196
111+23 114+58	27'-32' LT.	SIDEWALK	186
115+12 118+70	39'-44' LT.	SIDEWALK	199
118+12 119+82	LT. & RT.	MEDIAN	216
* DRIVEWAYS	LT. & RT.	COON RAPIDS=51 S.Y. BLAINE 277 S.Y.	328
TOTAL			3011

* SEE DRIVEWAY TABULATION, CHART (B)

FENCE SALVAGE & INSTALL (J)

STA. TO STA.	LOCATION	SALVAGE	INSTALL	REMARKS
67+42 68+21	60 LT.	97	84	CHAIN LINK
70+27 70+67	40 LT.	40	40	WOOD WOVEN
78+09	50 OUT LT.	30	30	WOOD SPLIT RAIL
79+28	52 OUT LT.	11	11	WOOD SPLIT RAIL
105+38 105+87	64 RT.	49	49	LINE FENCE
111+78 113+01	34 LT.	193	135	WOODEN PRIVACY..
TOTAL		420	349	

CURB & GUTTER REMOVAL (K)

STATION TO STATION	LOCATION	DESCRIPTION	LIN.FT.
57+97	97 TH AVE. SD. & ND. GUTTER	B-618	146
58+16 60+26	30' & 54' RT. LNB	B-618	566
59+71	33' & 63' RT. LNB	X-GUTTER	30
59+71	33' & 63' RT. LNB	X-GUTTER	30
66+24	98 TH LN. SD. & ND. GUTTER	B-618	86
71+04	99 TH AVE. SD. & ND. GUTTER	B-618	234
72+82	99 TH LN. SD. & ND. GUTTER	B-618	112
77+40	SCHOOL ENT. SD. & ND. GUTTER	B-618	50
81+50	101 ST AVE SD. & ND. GUTTER	B-618	274
81+56	101 ST AVE RT.	B-612 MEDIAN	124
85+01	BANK ENT. RT.	POURED CURB	87
86+16	101 ST LN. SD. & ND. GUTTER	B-618	44
86+31	BANK ENT. RT.	POURED CURB	87
89+24 90+90	GAS STA. ENT.BLVD. RT. C/L	POURED CURB	113
89+48	102 ND AVE SD. & ND. GUTTER	B-618	36
92+77	102 ND LN. SD. & ND. GUTTER	B-618	110
96+08	103 RD LN. SD. & ND. GUTTER	B-618	40
99+50	104 TH AVE SD. & ND. GUTTER	B-618	198
99+66 107+20	COON RAPIDS SERV. RD. WEST SIDE	B-618	754
111+22 115+05	BLAINE SERV. ROAD EAST SIDE	B-618	383
107+32	104 TH LN. SD. & ND. GUTTER	B-618	10
110+90	105 TH AVE SD. & ND. GUTTER	B-618	120
114+80	105 TH LN. SD. & ND. GUTTER	B-618	42
115+05 119+82	05' TO 19' RT. LNB	B-618	489
115+10 118+65	LT. LSB	B-618	364
118+10 119+82	21' & 25' LT. LNB	B-612 MEDIAN	342
SEWER CONST. RT. 84+60	EAST & WEST GUTTER 3rd ST.	B-618	68
TOTAL			4,939

REVISIONS			
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TABULATION CHARTS

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ADJUST VALVE BOX-WATER (L)

STA.	LOC.	LN.FT.	REMARKS
52+80	LT.	30	
58+08	LT.	37	
58+45	LT.	21	
59+58	RT.	75	
59+61	RT.	59	
60+11	RT.	25	
66+52	RT.	31	
70+67	LT.	27	
71+20	RT.	65	
71+24	RT.	76	
71+82	RT.	25	
72+92	LT.	37	
74+70	LT.	25	
80+74	RT.	23	
85+98	LT.	19	
89+93	LT.	43	
92+80	RT.	33	
93+07	LT.	39	
96+53	LT.	43	
101+59	RT.	74	
104+75	RT.	61	
110+72	LT.	24	
110+92	RT.	59	
110+94	RT.	57	
110+96	RT.	56	
111+39	LT.	28	
114+82	LT.	30	
115+29	LT.	25	
TOTAL		28	

RELOCATE WATERSTOP BOXES (M)

STA.	LOC.	LN.FT.	REMARKS
59+14	RT.	65	
60+36	LT.	32	
61+52	LT.	28	
63+80	LT.	32	
65+29	LT.	44	
68+69	LT.	49	
69+57	LT.	47	
72+13	LT.	47	
74+79	RT.	27	
76+35	LT.	49	
78+45	LT.	28	
78+52	LT.	29	
78+87	RT.	60	
80+45	LT.	42	
83+46	LT.	48	
85+10	RT.	51	
90+37	RT.	34	
94+17	RT.	46	
101+89	LT.	60	
102+63	LT.	60	
103+40	LT.	60	
104+09	LT.	60	
104+83	LT.	60	
105+62	LT.	60	
106+63	RT.	54	
107+22	RT.	53	
107+94	RT.	57	
108+63	RT.	54	
109+29	RT.	61	
111+82	LT.	48	
112+63	LT.	44	
114+16	RT.	30	
TOTAL		32	

SODDING (N)

STATION TO STATION		CITY OF COON RAPIDS SQ.YD.	CITY OF BLAINE SQ.YD.	REMARKS
48+20	57+67	1,652	1,165	
57+67	62+99	485	463	
62+99	71+10		10	
62+99	72+71	1,097		
71+10	77+32		795	
72+71	77+32	528		
77+32	81+02		259	
77+32	81+31	562		
81+02	93+00		1,518	
81+31	93+00	1,739		
93+00	99+12	764		
93+00	110+00		1,222	
99+12	108+00	189		
93+00	110+00		351	
99+12	108+00	1,786		
93+00	110+00		9	
NEW 3 RD. STREET RT.			977	
NEW 3 RD. STREET LT.			30	
TOTAL		8,802	6,799	
TOTAL PROJ.			15,601 SQ. YD.	

CASTING ASSEMBLIES (O)

ASSEMBLY	ITEM	CASTING DETAIL	QUANTITY
A	FRAME	NO. 801	104
	GRATE	NO. 810	
	CURB BOX	NO. 821-B	
B	FRAME	NO. 700-7	2
	COVER	NO. 716	

STONE RETAINING WALL (P)

STATION TO STATION		LOC.	SQ. FT.	REMARKS
71+90	72+85	LT.	152	WRAP AROUND TO SIDE ST. AND TAPER OUT
74+50	75+75	LT.	187	
76+70	78+20	LT.	338	
78+42	79+27	LT.	255	
80+90	81+30	LT.	120	WRAP AROUND TO SIDE ST. AND TAPER OUT
85+25	86+10	RT.	182	
98+50	99+40	RT.	180	
113+85	114+57	LT.	192	WRAP AROUND TO SIDE ST. AND TAPER OUT
TOTAL			1606	

MEDIAN NOSE LOCATIONS (Q)

NO.	STATION	RAD.	OFFSET	DESCRIPTION	TYPE
1	58+33	3'	17' RT. LSB.	B612 C&G.	SPECIAL
2	58+95	2'	22' RT. LNB.	B618 C&G.	STANDARD
3	81+20	2'	16' RT. LSB.	B612 C&G.	STANDARD
4	82+30	2'	16' LT. LNB.	B612 C&G.	STANDARD
5	92+41	2'	16' LT. LSB.	B612 C&G.	STANDARD
6	93+41	2'	16' LT. LNB.	B612 C&G.	STANDARD
7	102+03	2'	21' RT. LNB.	B618 C&G.	STANDARD
8	110+55	2'	16' LT. LSB.	B612 C&G.	STANDARD
9	111+55	2'	16' LT. LNB.	B612 C&G.	STANDARD

ADJUST FRAME AND RING CASTING (SANITARY) (Z)

NO.	STATION	LOCATION FROM LS C/L	EXIST. TOP CAST. ELEV.	NEW TOP CAST. ELEV.	REMARKS
1	61+34	48' RT.	909.44	909.44	NO ADJ. REQUIRED
2	64+47	48' RT.	908.99	908.99	NO ADJ. REQUIRED
3	68+00	48' RT.	908.11	908.11	NO ADJ. REQUIRED
4	75+41	51' RT.	907.59	908.10	
5	75+41	49' RT.	907.45	906.71	
6	79+41	49' RT.	905.57	904.89	
7	82+43	48' RT.	905.12	904.64	
8	84+64	37' LT.	904.35	904.00	
9	91+11	47' RT.	904.27	903.90	
10	97+88	47' RT.	901.72	901.17	
11	99+54	43' LT.	901.48	901.94	
12	101+70	49' RT.	902.58	902.38	
13	104+48	47' RT.	901.54	902.28	
14	104+50	48' LT.	902.05	902.51	
15	107+36	49' LT.	901.20	901.17	
16	110+70	48' RT.	902.59	903.84	
17	111+06	31' LT.	904.02	903.64	
18	111+06	49' RT.	903.14	903.32	
19	113+83	48' RT.	903.89	903.41	
20	117+07	48' RT.	905.61	905.08	
				TOTAL	17

REVISIONS			
DATE	BY	DATE	BY
9-13-93	JHT		

TABULATION CHART

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EARTHWORK SUMMARY (R)

EXCAVATION

COMMON EXCAVATION . . . 46,874 CU.YD.

- REGULAR . . . . . 29,776 CU.YD.
  - MAINLINE . . . . . 29,498 CU.YD. ①
  - SERVICE ROAD . . . . . 278 CU.YD.
- SUBCUT . . . . . 17,098 CU.YD.
- TOPSOIL . . . . . 0 CU.YD.

EMBANKMENT (CV)

- GRANULAR . . . 20,903 CU.YD.
  - MAINLINE . . . . . 3,669 CU.YD.
  - SUBCUT . . . . . 17,098 CU.YD.
  - SERVICE ROAD . . . . . 136 CU.YD.
- TOPSOIL . . . . . 1,244 CU.YD.

BORROW (LV)/EXCESS (EV)

GRANULAR EXCESS . . . 12,541 CU.YD. (EV)

TOPSOIL BORROW . . . 1,866 CU.YD. (LV)

NOTES:

140% SWELL FACTOR FOR REGULAR GRADING (CV TO EV)
150% SWELL FACTOR FOR TRUCK HAUL (CV TO LV)
120% SWELL FACTOR FOR SUBCUT COMPACTION (CV TO EV)

① INCLUDES 8,875 CU. YD. CONCRETE & BITUMINOUS REMOVAL.

CONCRETE AND BITUMINOUS PAVEMENT REMOVALS WILL BE PAID FOR UNDER ITEM NO. 2104.505 ONLY.

SOILS AND CONSTRUCTION NOTES:

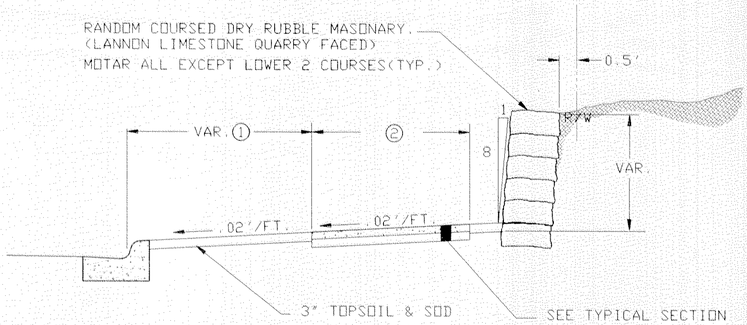
1. TOP OF GRADING GRADE IS DEFINED AS THE BOTTOM OF THE AGGREGATE BASE.
2. IN FILL AREAS, THE SUBGRADE SHALL BE CONSTRUCTED WITH SELECTED GRADING MATERIAL.
3. SELECTED GRADING MATERIALS SHALL CONSIST OF GRANULAR MATERIALS.
4. GRANULAR MATERIAL, REGARDLESS OF SOURCE, SHALL MEET THE REQUIREMENTS OF SPEC. 3149.2A
5. COMPACTION OF THE GRADING PORTION OF THIS THIS PROJECT SHALL BE BY THE "SPECIFIED DENSITY METHOD".
6. TEST ROLLING WILL NOT BE REQUIRED.
7. BITUMINOUS OR CONCRETE ITEMS REMOVED BY CONSTRUCTION SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL EITHER RECYCLED OR DISPOSED OF IN ACCORDANCE WITH THE REQUIREMENTS OF 2104.3C3.
8. DISPOSITION OF EXCESS EXCAVATED MATERIAL SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF 2105.3D.
9. 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.
10. WHERE CONNECTING NEW SURFACING TO AN INPLACE PAVEMENT, THE EXCAVATION SHALL BE BACKFILLED PROMPTLY TO AVOID UNDERMINING THE INPLACE PAVEMENT.
11. USE TACK COAT BETWEEN ALL BITUMINOUS MIXTURES PRIOR TO PLACING BITUMINOUS MIXTURES AND PRIOR TO PLACING ANY BITUMINOUS MIXTURES ON EXISTING CONCRETE OR BITUMINOUS SURFACES. THE BITUMINOUS TACK COAT MATERIAL SHALL BE APPLIED AT UNIFORM RATE OF 0.03 TO 0.05 GALLONS PER SQUARE YARD BETWEEN BITUMINOUS LAYERS. THE APPLICATION RATES ARE FOR UNDILUTED EMULSION (AS SUPPLIED FROM THE REFINERY); ASPHALT EMULSION MAY BE FURTHER DILUTED IN THE FIELD IN ACCORDANCE WITH SPEC. 2357.
12. COMPACTION OF THE BITUMINOUS BASE AND BINDER SHALL BE BY THE "SPECIFIED DENSITY METHOD", COMPACTION OF THE WEAR COURSE SHALL BE BY THE "ORDINARY COMPACTION METHOD".
13. COMPACTION OF THE AGGREGATE BASE LAYERS SHALL BE BY THE "SPECIFIED DENSITY METHOD)".
14. PLACE MINIMUM 3 INCHES 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 POUND PER ACRE. ALL TOPSOIL USED FOR RESTORATION SHALL BE TOPSOIL BORROW.
15. USE MIXTURE 600 SEED AND TYPE 1 MULCH IN AREAS TO BE SEEDED.
16. SOD ALL PERMANENT BOULEVARD AREAS.
17. ALL SOD UTILIZED WITHIN THE PROJECT LIMITS SHALL MEET THE REQUIREMENTS OF SPEC. 3878.2A (LAWN AND BOULEVARD SOD).
18. ORGANIC AND NONGRANULAR EXCAVATED MATERIAL MAY BE USED IN EMBANKMENT CONSTRUCTION IN AREAS OUTSIDE OF A 1:1 1/2:1 SLOPE FROM THE BACK OF CURB, OR GRADING P.I.
19. BITUMINOUS REMOVAL QUANTITY BASED ON SQUARE YARDS REMOVED. IN PLACE SURFACE CONSISTS OF 3" BITUMINOUS SURFACING AND 6" BITUMINOUS STABILIZED BASE. CONTRACTOR SHALL INVESTIGATE AND MAKE OWN DETERMINATION OF ACTUAL PAVEMENT DEPTH.

REVISIONS			
DATE	BY	DATE	BY

EARTHWORK SUMMARY AND CONSTRUCTION NOTES

Fed. Project No. _____

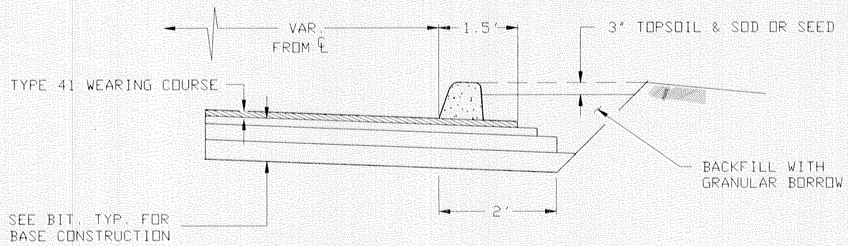
RETAINING WALL DETAIL ③



SEE PLANS AND X-SECTION FOR BOULEVARD WIDTHS.
② 5' CONC. SIDEWALK OR 8' BIT. PATH
③ SEE TABULATION CHART Ⓟ FOR LOCATION.

BITUMINOUS CURB DETAIL

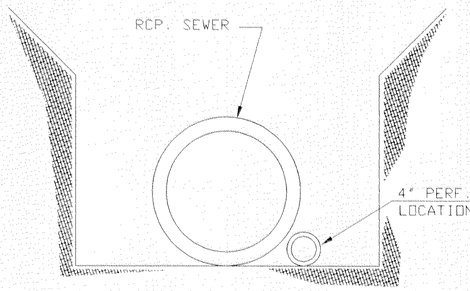
STANDARD PLATE NO. 7065
(USE IN BERM LOCATIONS)



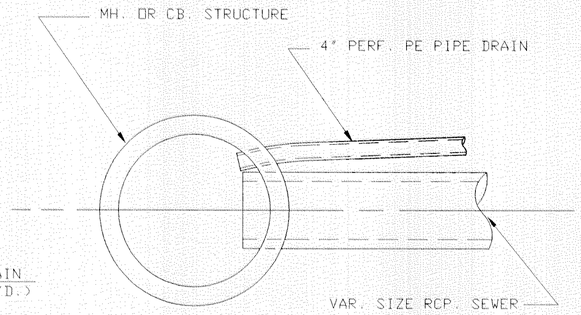
SPECIAL DRAINAGE CONSTRUCTION DETAILS

PERFORATED PIPE DRAIN INSTALLATION

INSTALLATION LOCATION

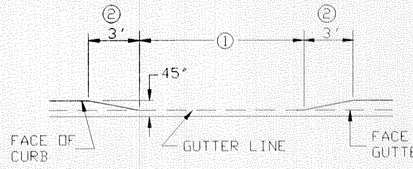


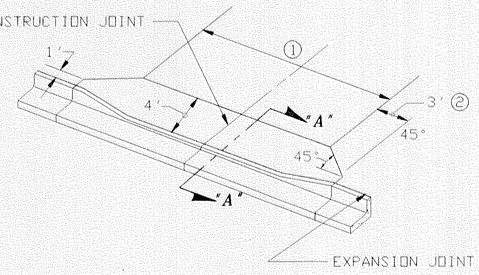
MH. OR CB. CONSTRUCTION



CONCRETE APRON DETAIL

✱ COON RAPIDS SERVICE ROAD

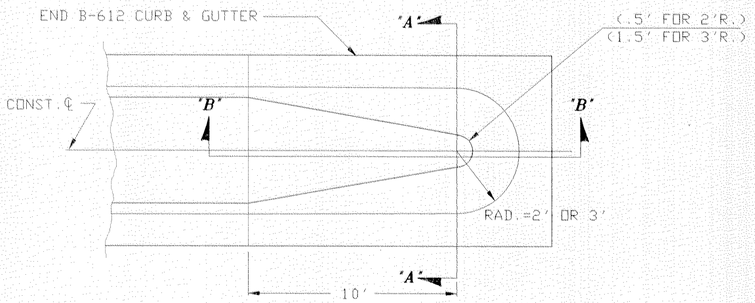




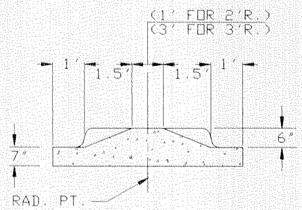
① - 12' MIN. - 32' MAX.
② - 6' FLARE ON SINGLE WIDTH DRIVES
COON RAPIDS SERVICE DRIVE.

✱ ALL OTHER APRONS PER STANDARD PLATES 7035

MEDIAN NOSE DETAIL



SECTION 'A'-'A'



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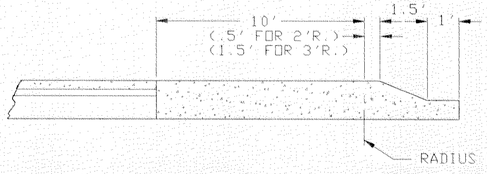
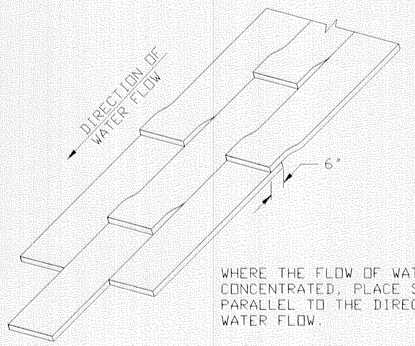


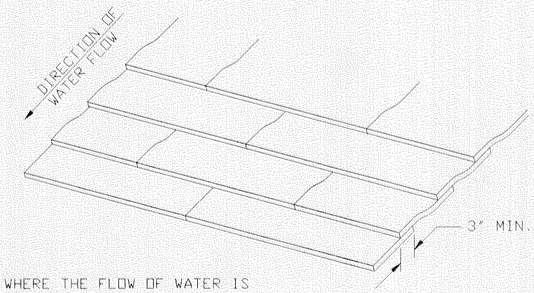
SPECIAL SOD PLACEMENT TECHNIQUES

OVERLAPPING SOD



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

SHINGLING SOD



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

REVISIONS			
DATE	BY	DATE	BY

DETAILS

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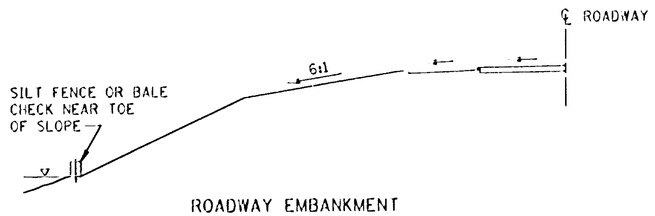
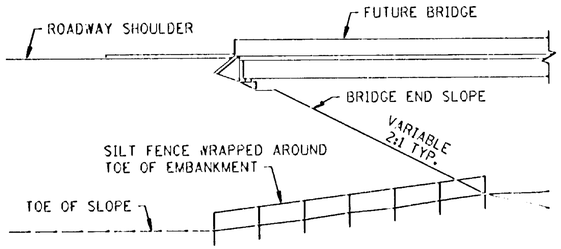
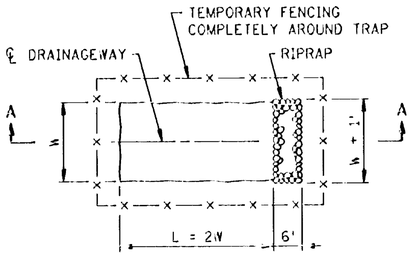


ROADWAY EMBANKMENT

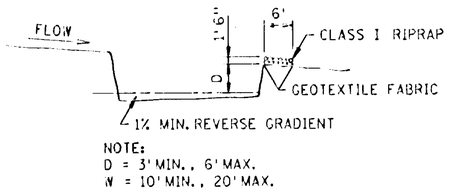


BRIDGE ABUTMENT

SILT FENCE OR BALE CHECK TO PROTECT ADJACENT CRITICAL AREAS



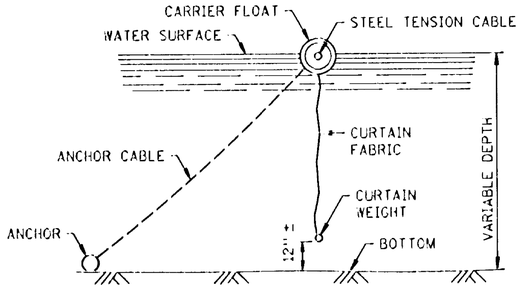
PLAN



NOTE:
D = 3' MIN., 6' MAX.
W = 10' MIN., 20' MAX.

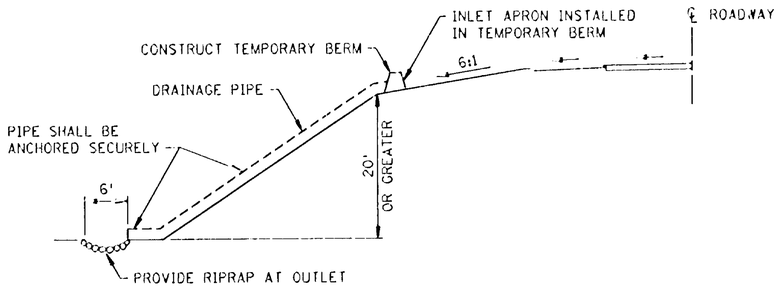
SECTION A-A

TEMPORARY SEDIMENT TRAP

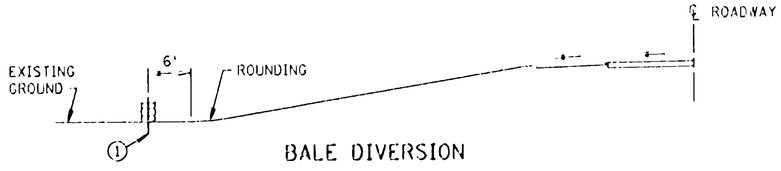


FLOATATION SILT CURTAIN

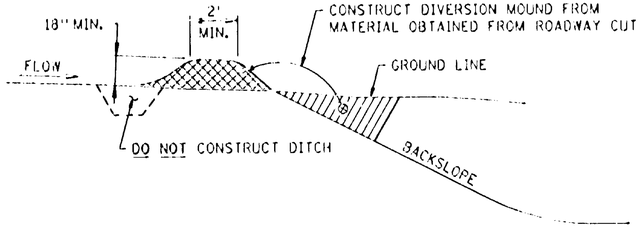
SILT FENCE DETAIL



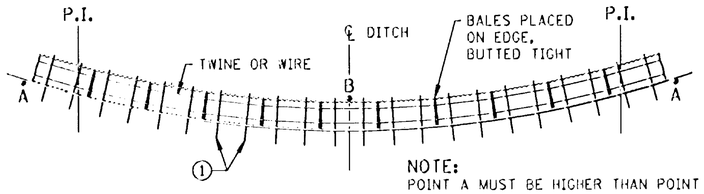
TEMPORARY DRAIN ON FILL SLOPE



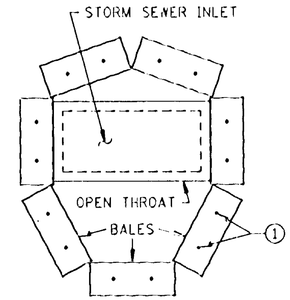
BALE DIVERSION



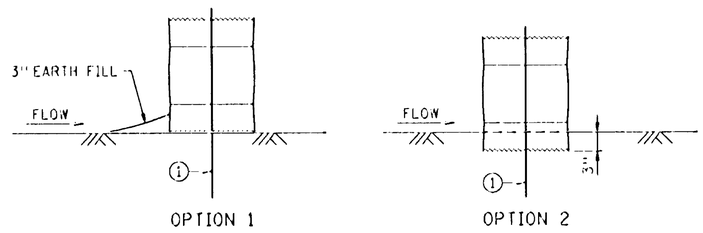
DIVERSION MOUND



BALE DITCH CHECK



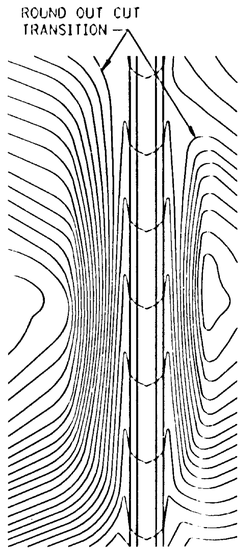
BALE CHECK TO PROTECT STORM SEWER INLETS



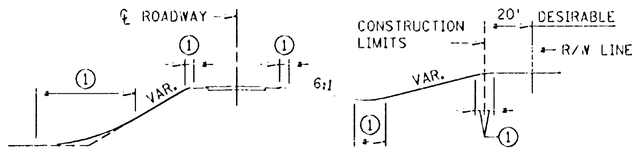
BALE CHECK DETAILS

NOTE:
① TWO 2" X 2" WOOD STAKES OR REINFORCING BARS IN EACH BALE AND EMBEDDED IN THE GROUND 10" MINIMUM.

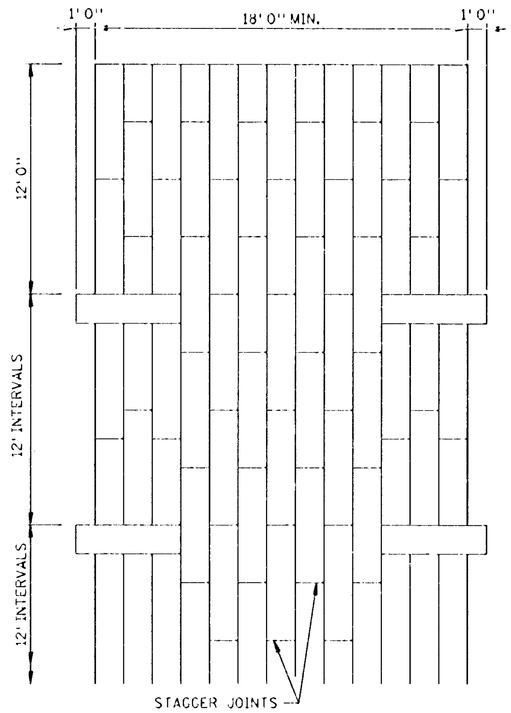
STANDARD SHEET NO. 5-297.405	TITLE: TEMPORARY EROSION CONTROL
STANDARD APPROVED: DECEMBER 19, 1990	
STATE PROJ. NO. 02-651-01	SHEET NO. 9 OF 85 SHEETS



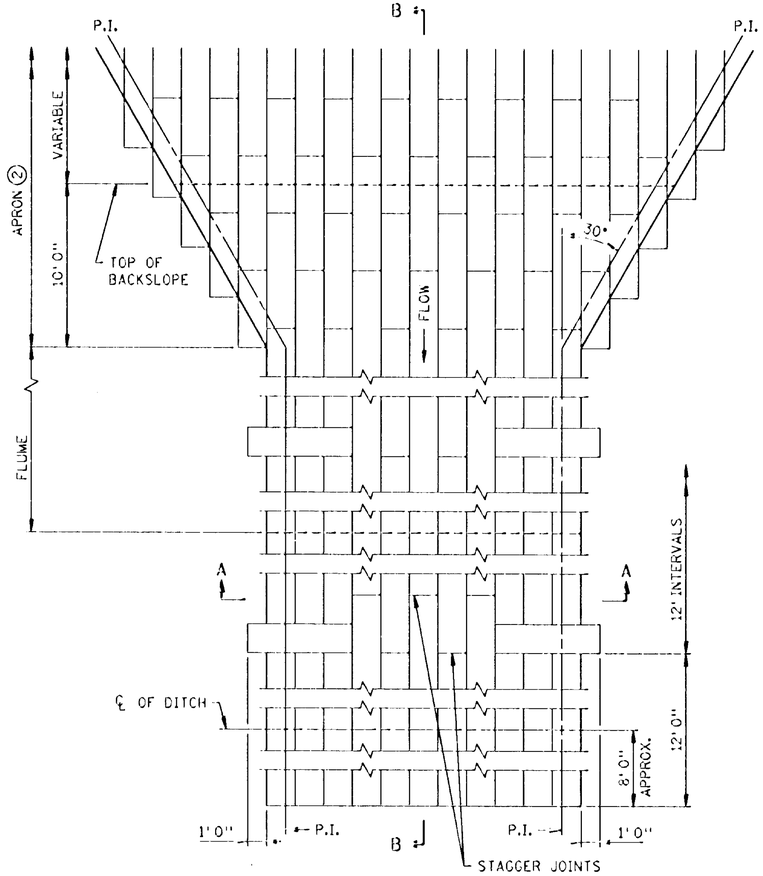
CONTOURING ROAD CUTS



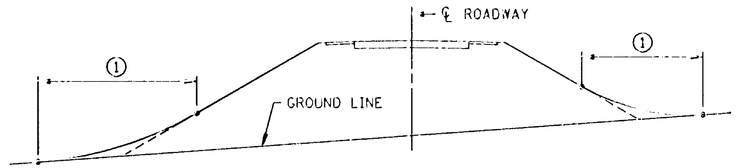
ROUNDING SHOULDERS AND BACKSLOPES



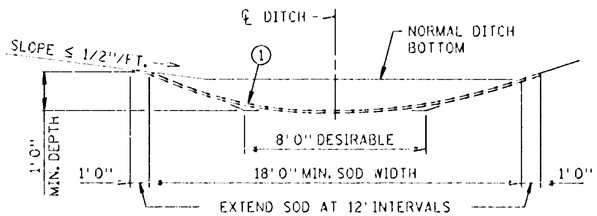
PLAN VIEW



PLAN VIEW

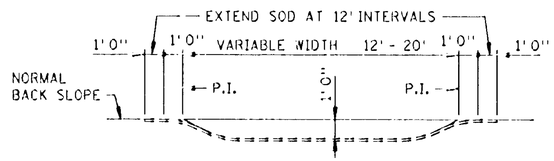


SHAPING FOR DRAINAGE ALONG THE TOE OF FILL SLOPES

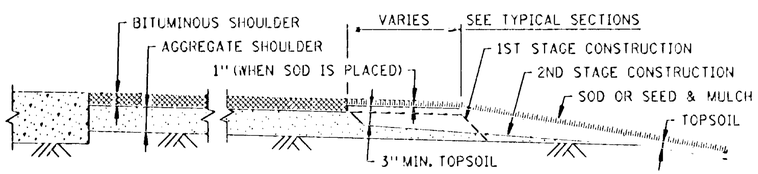


SODDED DITCH CROSS SECTION

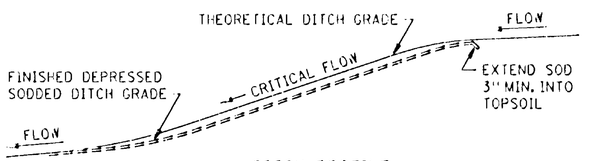
WHERE FRONT OR BACK SLOPE IS FLAT (LESS THAN 1/2"/FT.), FIRST NOTCH DITCH AND THAN PROVIDE ROUNDING.



SECTION A-A

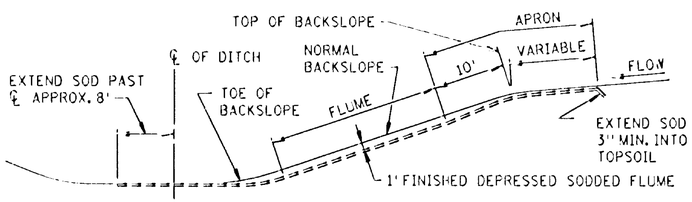


SHAPING AND TOPSOILING INSLOPES



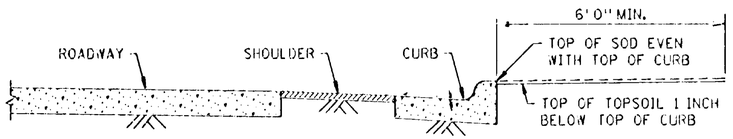
DITCH PROFILE

SODDED DITCH DETAILS



SECTION B-B

SODDED FLUME DETAILS



SHAPING ADJACENT TO CURBS WHEN SOD IS PLACED

NOTES:

SEE SPEC. 2575.3 FOR ADDITIONAL INFORMATION.

① FOR ROUNDING, SEE ROAD DESIGN MANUAL.

② CONSTRUCT TAPER AS DIRECTED BY THE ENGINEER.

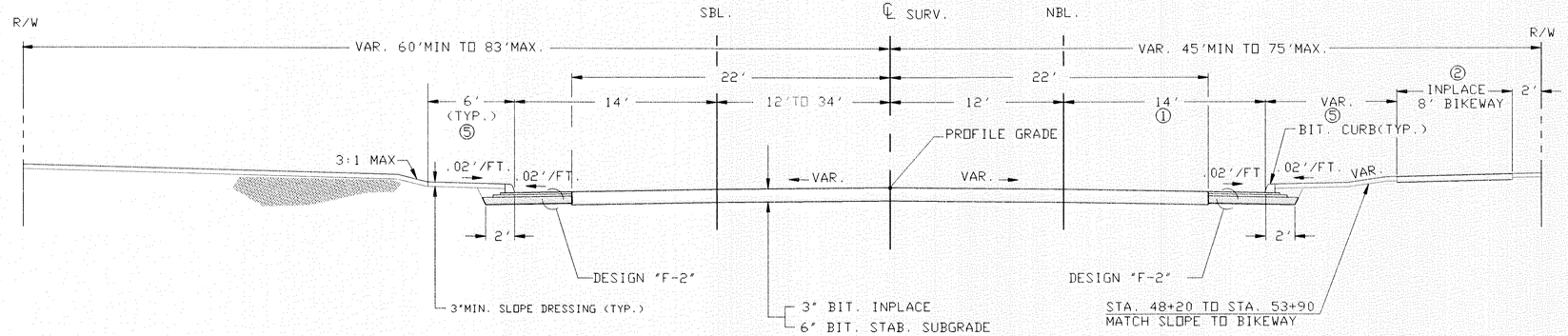
STANDARD SHEET NO. 5-297.404	TITLE: PERMANENT EROSION CONTROL ALONG ROADWAYS, DITCHES AND FLUMES
STANDARD APPROVED: DECEMBER 19, 1990	
STATE PROJ. NO. 02-651-01	SHEET NO. 10 OF 85 SHEETS

VAX780 QSA3:[45,100] FILE NAME S404L90.SPN

Fed. Project No. _____

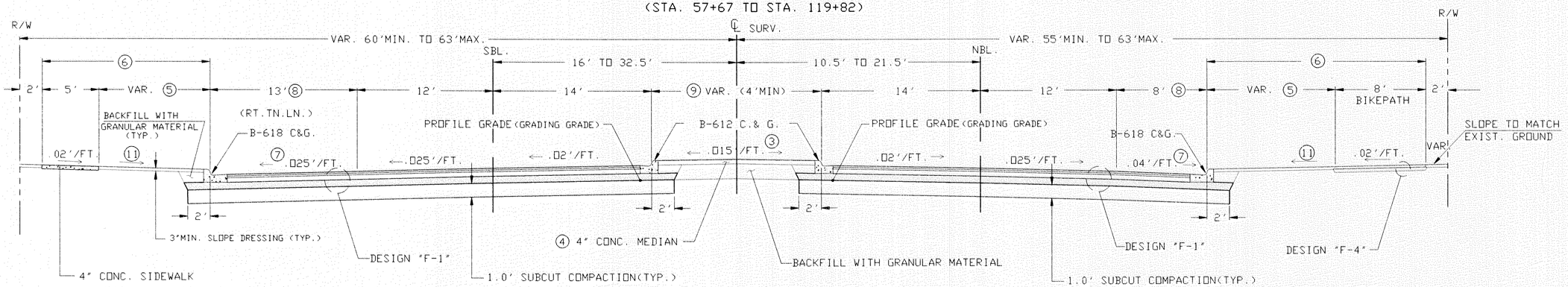
UNIVERSITY AVE.(CSAH 51)-TEMP. CONN.

(STA. 48+20 TO STA. 57+67)

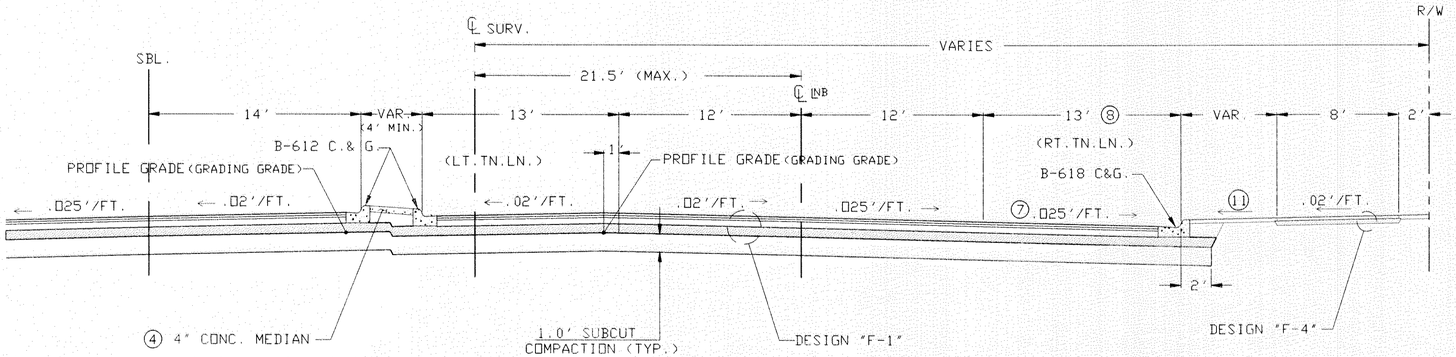


UNIVERSITY AVE.(CSAH 51)-MAINLINE

(STA. 57+67 TO STA. 119+82)



UNIVERSITY AVE.(CSAH 51)-TURNBAYS ⑩



① VARIES TO 26' FOR RT. TURN LANE, STA. 53+80 TO STA. 57+07.
② BEG. BIT. BIKEWAY/WALKWAY CONST. STA. 53+90
③ CROWN IN AREAS WHERE TOP OF CURB ELEV. LT.& RT. ARE EQUAL.
④ 4" THICK RED-PATTERNED CONC. MEDIAN FROM STA. 111+55 TO STA. 119+82.
⑤ PROVIDE 1-1/2 FT. CLEARANCE FROM FACE OF CURB TO RIGID OBSTACLES.
⑥ SEE PLAN & PROFILE SHEET FOR SERVICE ROAD LOCATIONS.
⑦ -0.025/FT. SLOPE IN RT.TN.LN. & -.04/FT. SLOPE IN SHOULDER
⑧ 13' WIDE RT.TN.LN. OR 8' WIDE SHOULDER.
⑨ VARIABLE FROM 4' TO 15', FOR LOC. SEE PLAN AND PROFILE SHEETS.
⑩ SEE CHART Ⓢ FOR LOCATIONS.
⑪ BOULEVARD SLOPE VARIES FROM 0.02'/FT. MIN. TO 0.08'/FT. MAX.

TYPICAL SECTIONS

REVISIONS			
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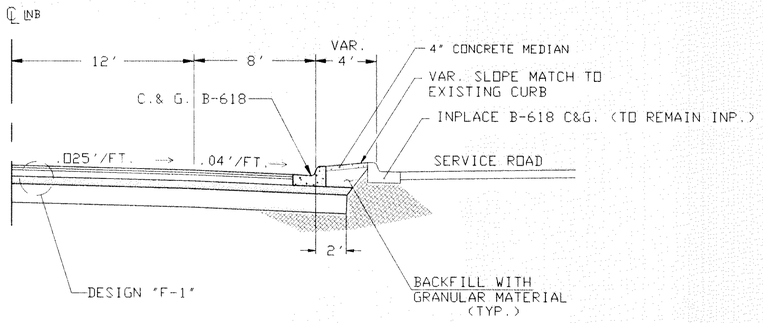
EXISTING SERVICE ROAD -BLAINE

(STA. 58+95 TO STA. 71+65 RT.)

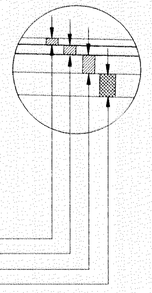


RIGHT AND LEFT TURN LANE LOCATION Ⓢ

STA. TO	STA.	LOCATION	DESCRIPTION	WIDTH
55+60	57+07	RT. LNB.	BUS STOP & RT. TURN LN.	14'
66+84	76+80	LT. LSB.	RT. TURN LN.	13'
72+02	73+00	RT. LNB.	BUS STOP	13'
73+49	76+80	LT. LNB.	RT. TURN LN.	13'
77+64	80+98	RT. LNB.	RT. TURN LN.	13'
78+35	81+20	LT. LNB.	LT. TURN LN.	13'
82+30	85+27	RT. LSB.	LT. TURN LN.	13'
82+42	98+99	LT. LSB.	RT. TURN LN.	13'
89+35	92+45	RT. LNB.	RT. TURN LN.	13'
89+41	92+41	LT. LNB.	LT. TURN LN.	13'
93+37	93+97	RT. LNB.	BUS STOP	13'
93+41	96+80	RT. LSB.	LT. TURN LN.	13'
98+61	101+21	RT. LNB.	RT. TURN LN.	13'
108+61	110+55	LT. LNB.	LT. TURN LN.	13'
108+88	110+58	RT. LNB.	RT. TURN LN.	13'
108+88	110+58	LT. LSB.	RT. TURN LN.	13'
111+48	118+40	RT. LSB.	LT. TURN LN.	13'
117+58	119+82	RT. LNB.	RT. TURN LN.	13'

DESIGN "F-1"

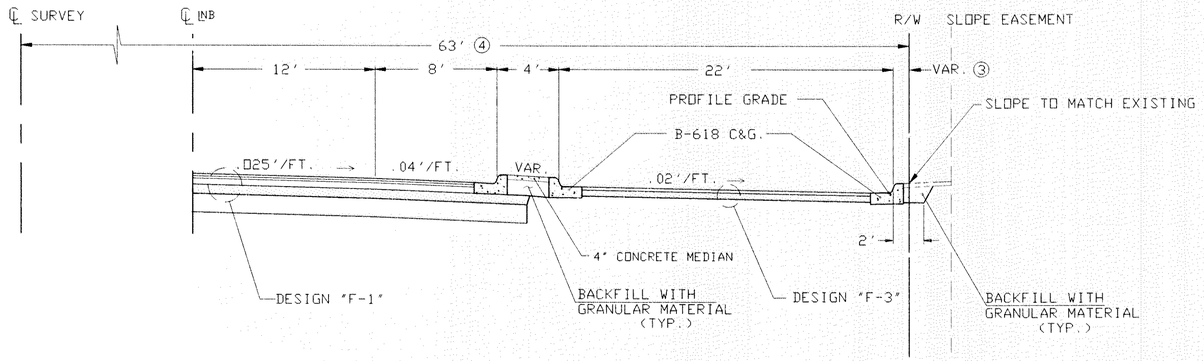
CSAH. 51



NOTE: APPLY TACK COAT (2357) BETWEEN ALL BITUMINOUS LIFTS.

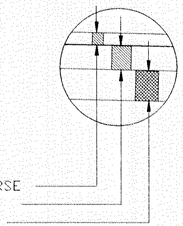
BLAINE SERVICE ROAD

(STA. 102+03 TO 108+18) ①



DESIGN "F-2"

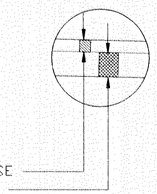
TEMP. CONN.



NOTE: APPLY TACK COAT (2357) BETWEEN ALL BITUMINOUS LIFTS.

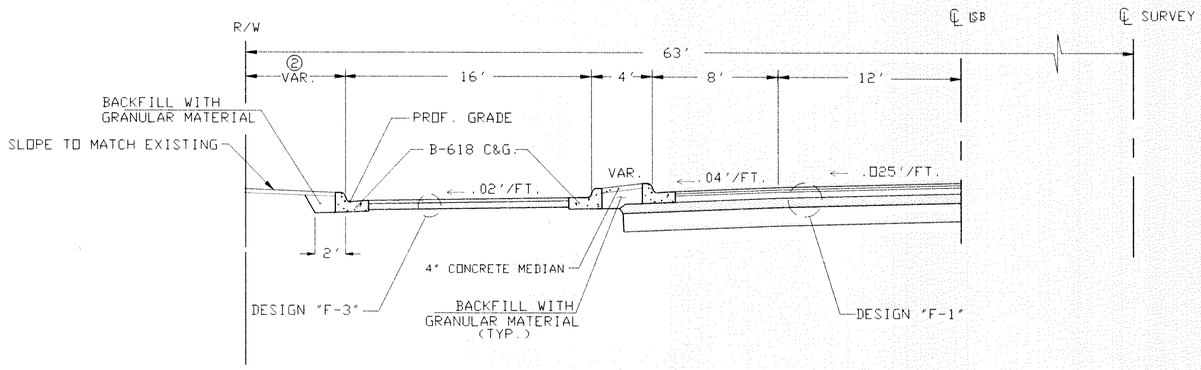
DESIGN "F-3"

SERVICE ROAD



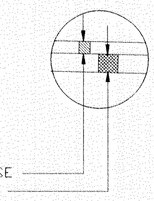
COON RAPIDS SERVICE ROAD

(STA. 99+69 TO 107+50)



DESIGN "F-4"

BIKEWAY

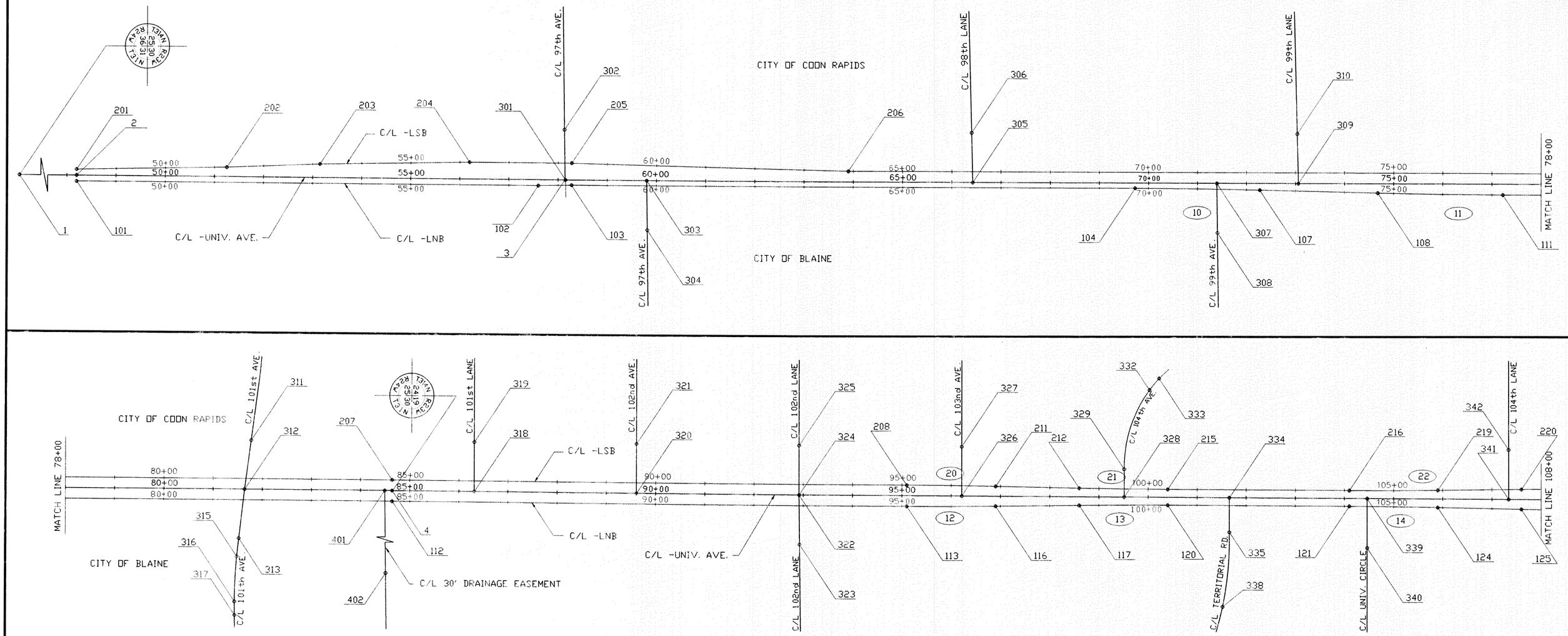


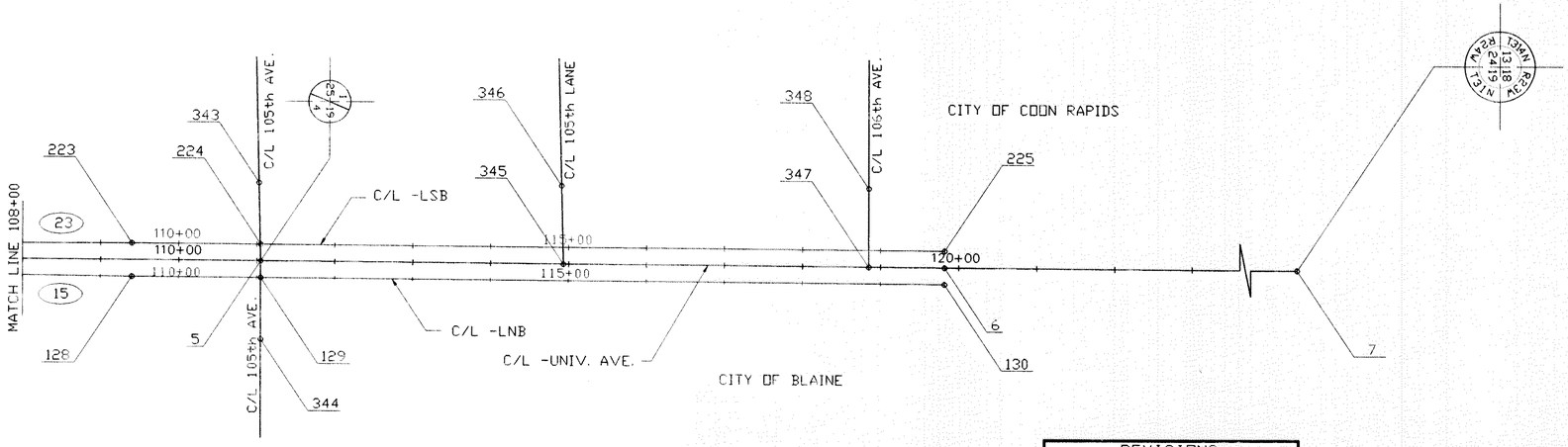
① SEE PLAN & PROFILE SHEET FOR CUL-DE-SAC CONST. STA. 108+18 TO STA 108+95 RT.
② VARIABLE 2' MIN.
③ VARIABLE 1' MIN.
④ VAR. STA. 104+76.72 TO STA. 108+21.75 FROM 65' TO 69'.

TYPICAL SECTIONS

REVISIONS			
DATE	BY	DATE	BY

Fed. Project No. _____





GRAPHIC SCALE

100 0 50 100 200

(IN FEET)

ALIGNMENT PLAN

REVISIONS			
DATE	BY	DATE	BY

S.A.P. 114-020-04/106-020-07 S.P. 02-651-01 Sheet No. 13 of 85 Sheets

Fed. Project No. _____

ALIGNMENT TABULATION (T)

CURVE NO.	POINT NO.	POINT TYPE	LOCATION	CURVE DATA DELTA	DEGREE	RADIUS	TANGENT	LENGTH	COORDINATES X	Y	AZIMUTH
			SURVEY ALIGNMENT								
	1	P.I.	LS 31+65.80 = S.E.COR.SEC.25,T31,R24						80684.515	889421.003	
	2	P.O.T.	LS 48+20 = BEGIN PROJECT						82338.713	889424.967	
	3	P.I.	LS 58+15.13 = E.1/4 COR.SEC.25,T31,R24	0 00'31"LT.				2649.33	83333.840	889427.355	0 08'14.5"
	4	P.I.	LS 84+64.41 = N.E.COR.SEC.25,T31,R24	0 08'30"RT.				2649.28	85983.086	889433.314	0 07'44.0"
	5	P.I.	LS 111+05.15 = E.1/4 COR.SEC.24,T31,R24	0 00'30"LT.				2640.74	88623.793	889445.785	0 16'14.1"
	6	P.O.T.	LS 119+82 = END PROJECT						89500.664	889449.798	
	7	P.I.	LS 137+46.09 = N.E.COR.SEC.24,T31,R24					2640.97	91264.732	889457.873	0 15'44.1"
			NORTHBOUND ALIGNMENT								
	101	P.I.	LNB 48+20.03= A PT.12'RT. LS 48+20						82338.684	889436.967	0 08'14.5"
	102	P.I.	LNB 57+59.95 = A PT. 12' RT. LS 57+59.92	1 16'23"LT.					83278.601	889439.222	358 51'54"
	103	P.I.	LNB 58+27.55 = A PT. 10.5' RT. LS 58+27.50	1 15'50"RT.					83346.186	889437.883	0 07'44"
	104	P.C.	LNB 69+72.74 = A PT. 10.5' RT. LS 69+72.69						84491.373	889440.459	0 07'44"
10	105	R.P.							84465.595	900899.590	
	106	P.I.	LNB 71+00.05 = A PT. 10.5' RT. LS 71+00.00	1 16'23"RT.	0 30'00"	11459.16	127.31	254.61	84618.682	889440.745	
	107	P.T.	LNB 72+27.35 = A PT. 13.33' RT. LS 72+27.30						84745.954	889443.860	1 24'07"
	108	P.C.	LNB 74+67.85 = A PT. 18.67' RT. LS 74+67.70						84986.385	889449.744	1 24'07"
11	109	R.P.							85215.188	900912.276	
	110	P.I.	LNB 75+95.16 = A PT. 21.5' RT. LS 75+95.00	1 16'23"RT.	0 30'00"	11459.16	127.31	254.61	85113.657	889452.859	
	111	P.T.	LNB 77+22.46 = A PT. 21.5' RT. LS 77+22.31						85240.966	889453.145	0 07'44"
	112	P.I.	LNB 84+64.63 = A PT. 21.5' RT. LS 84+64.93	0 08'30"RT.					85983.383	889454.816	0 16'14"
	113	P.C.	LNB 95+09.82 = A PT. 21.5' RT. LS 95+09.97						87028.563	889459.751	0 16'14"
12	114	R.P.							87082.674	878000.723	
	115	P.I.	LNB 95+99.85 = A PT. 21.5' RT. LS 96+00.00	0 54'01"LT.	0 30'00"	11459.16	90.03	180.06	87118.592	889460.176	
	116	P.T.	LNB 96+89.88 = A PT. 21.5' RT. LS 96+90.02						87208.617	889459.187	359 22'13"
	117	P.C.	LNB 98+59.86 = A PT. 17.41' RT. LS 98+59.98						87378.586	889457.318	359 22'13"
13	118	R.P.							87504.532	900915.782	
	119	P.I.	LNB 99+49.89 = A PT. 16.0' RT. LS 99+50.00	0 54'01"RT.	0 30'00"	11459.16	90.03	180.06	87468.613	889456.329	
	120	P.T.	LNB 100+39.92 = A PT. 16.0' RT. LS 100+40.03						87558.643	889456.754	0 16'14"
	121	P.C.	LNB 104+09.86 = A PT. 16.0' RT. LS 104+09.97						87928.579	889458.501	0 16'14"
14	122	R.P.							87874.468	900917.529	
	123	P.I.	LNB 104+99.89 = A PT. 16.0' RT. LS 105+00.00	0 54'01"RT.	0 30'00"	11459.16	90.03	180.06	88018.608	889458.926	
	124	P.T.	LNB 105+89.92 = A PT. 17.41' RT. LS 105+90.02						88108.619	889460.766	1 10'15"
	125	P.C.	LNB 107+59.90= A PT. 20.08' RT. LS 107+59.98						88278.564	889464.239	1 10'15"
15	126	R.P.							88512.718	878007.476	
	127	P.I.	LNB 108+49.93 = A PT. 21.5' RT. LS 108+50.00	0 54'01"LT.	0 30'00"	11459.16	90.03	180.06	88368.575	889466.080	
	128	P.T.	LNB 109+39.96 = A PT. 21.5' RT. LS 109+40.03						88458.607	889466.504	0 16'14"
	129	P.I.	LNB 111+13.87 = A PT. 21.5' RT. LS 111+13.94						88632.514	889467.325	0 15'44.1"
	130	P.I.	LNB 119+81.93 = A PT. 21.5' LT. LS 119+82.00						89500.566	889471.298	0 15'44.1"
			SOUTHBOUND ALIGNMENT								
	201	P.I.	LSB 48+19.52= A PT. 12' LT. LS 48+20						82338.741	889412.967	358 51'51"
	202	P.I.	LSB 51+24.69 = A PT. 18.78' LT. LS 51+25	1 16'23"LT.					82643.757	889406.919	357 35'39"
	203	P.I.	LSB 53+14.69 = A PT. 27.22' LT. LS 53+15	1 16'23"RT.					82833.777	889398.935	358 51'51"
	204	P.I.	LSB 56+19.86 = A PT. 34' LT. LS 56+20	1 16'23"RT.					83138.792	889392.887	0 08'14.5"
	205	P.I.	LSB 58+27.36 = A PT. 34' LT. LS 58+27.5	1 15'51"RT.					83346.286	889393.385	1 24'06"
	206	P.I.	LSB 63+90.00 = A PT. 21.5' LT. LS 63+90	1 16'23"LT.					83908.756	889407.148	0 07'44"
	207	P.I.	LSB 84+64.38 = A PT. 21.5' LT. LS 84+64.38	0 08'30"RT.					85983.132	889411.814	0 16'14"
	208	P.C.	LSB 95+10.03 = A PT. 21.5' LT. LS 95+09.97						87028.664	889438.251	0 16'14"
20	209	R.P.							86974.655	900875.780	
	210	P.I.	LSB 96+00.04 = A PT. 21.5' LT. LS 96+00.00	0 54'01"RT.	0 30'00"	11459.16	90.03	180.06	87118.795	889417.177	
	211	P.T.	LSB 96+90.09 = A PT. 21.5' LT. LS 96+90.02						87208.711	889439.101	1 10'15"
	212	P.C.	LSB 98+60.07 = A PT. 17.41' LT. LS 98+59.98						87378.751	889422.490	1 10'15"
21	213	R.P.							87612.905	877965.727	
	214	P.I.	LSB 99+50.08 = A PT. 16.0' LT. LS 99+50.00	0 54'01"LT.	0 30'00"	11459.16	90.03	180.06	87468.765	889424.329	
	215	P.T.	LSB 100+40.13 = A PT. 16.0' LT. LS 100+40.03						87558.794	889424.755	0 16'14"
	216	P.C.	LSB 104+10.07 = A PT. 16.0' LT. LS 104+09.97						87928.730	889426.501	0 16'14"
22	217	R.P.							87982.841	877967.473	
	218	P.I.	LSB 105+00.08 = A PT. 16.0' LT. LS 105+00.00	0 54'01"LT.	0 30'00"	11459.16	90.03	180.06	88018.759	889426.927	
	219	P.T.	LSB 105+90.13 = A PT. 17.41' LT. LS 105+90.02						88108.784	889425.938	359 22'13"
	220	P.C.	LSB 107+60.11= A PT. 20.08' LT. LS 107+59.98						88278.753	889424.070	359 22'13"
23	221	R.P.							88404.696	900882.534	
	222	P.I.	LSB 108+50.14 = A PT. 21.5' LT. LS 108+50.00	0 54'01"RT.	0 30'00"	11459.16	90.03	180.06	88368.778	889423.081	
	223	P.T.	LSB 109+40.17 = A PT. 21.5' LT. LS 109+40.03						88458.807	889423.506	0 16'14"
	224	P.I.	LSB 111+07.30 = A PT. 21.5' LT. LS 111+05.12	0 54'01"RT.					88625.933	889424.295	0 15'44.1"
	225	P.I.	LSB 119+82.14 = A PT. 21.5' LT. LS 119+82.00						89500.763	889428.299	0 15'44.1"

REVISIONS			
DATE	BY	DATE	BY

ALIGNMENT TABULATION

S.A.P. 114-020-04/106-020-07 S.P. 02-651-01 Sheet No. 14 of 85 Sheets

Fed. Project No. _____

ALIGNMENT TABULATION (CONT.) (T)

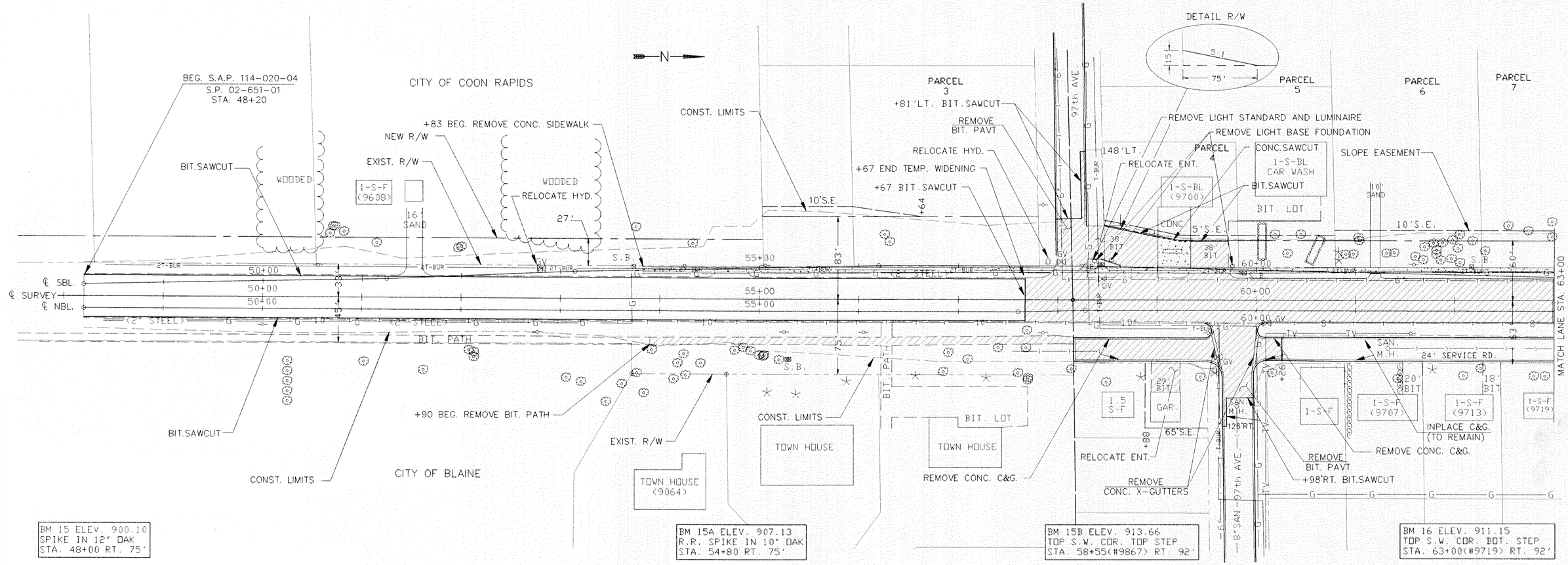
CURVE NO.	POINT NO.	POINT TYPE	LOCATION	CURVE DATA					COORDINATES		AZIMUTH
				DELTA	DEGREE	RADIUS	TANGENT	LENGTH	X	Y	
			97th AVENUE WEST								
	302	P.O.T.	0+00						83329.049	889227.412	0 07'44"
	301	P.O.T.	2+00 = CL CL SURVEY 58+15.13					200.00	83333.840	889427.355	88 37'39"
			97th AVENUE EAST								
	303	P.O.T.	0+00 = CL CL SURVEY 59+80.34						83499.049	889427.727	0 07'44"
	304	P.O.T.	2+60.63					260.63	83500.990	889688.349	89 34'24"
			98th LANE								
	306	P.O.T.	0+00						84155.124	889180.891	88 35'48"
	305	P.O.T.	2+48.40 = CL CL SURVEY 66+42.50					248.40	84161.208	889429.216	0 07'44"
			99th AVENUE								
	307	P.O.T.	0+00 = CL CL SURVEY 71+29.76						84648.466	889430.312	0 07'44"
	308	P.O.T.	2+48.06					248.06	84651.766	889678.350	89 14'16"
			99th LANE								
	310	P.O.T.	0+00						84832.025	889181.839	91 42'27"
	309	P.O.T.	2+48.98 = CL CL SURVEY 73+05.90					248.98	84824.606	889430.708	0 07'44"
			101st AVENUE								
	311	P.O.T.	0+00						85721.477	889182.221	97 13'10"
	312	P.I.	2+52.44 = CL CL SURVEY 81+71.05	0 39'33" LT.				252.44	85689.754	889432.655	0 07'44"
	313	P.C.	3+70.06						85676.316	889549.505	96 33'37"
	314	R.P.							86320.073	889623.538	6 33'37"
	315	P.I.	4+16.59	8 12'53" LT.	8 50'53"	648.00	46.53	92.91	85671.000	889595.730	96 33'37"
	316	P.T.	4+62.97						85672.343	889642.241	88 20'44"
	317	P.O.T.	4+96.59						85673.314	889675.847	88 20'44"
			101st LANE								
	319	P.O.T.	0+00						86150.134	889134.103	90 00'00"
	318	P.O.T.	2+50 = CL CL SURVEY 86+31.44					250.00	86150.134	889484.103	0 16'14"
			102nd AVENUE								
	321	P.O.T.	0+00						86150.134	889184.103	90 00'00"
	320	P.O.T.	2+05.79 = CL CL SURVEY 89+61.45					205.79	86150.134	889434.103	0 16'14"
			102nd LANE WEST								
	325	P.O.T.	0+00						86810.137	889234.339	90 00'00"
	324	P.O.T.	2+02.88 = CL CL SURVEY 92+91.45					202.88	86810.137	889437.219	0 16'14"
			102nd LANE EAST								
	322	P.O.T.	0+00 = CL CL SURVEY 92+89.74						86808.427	889437.211	0 16'14"
	323	P.O.T.	2+50.04					250.04	86811.565	889687.232	89 16'51"
			103rd AVENUE								
	327	P.O.T.	0+00						87140.143	889250.318	90 00'00"
	326	P.O.T.	1+88.46 = CL CL SURVEY 96+21.46					188.46	87140.143	889438.778	0 16'14"
			104th AVENUE								
	333	P.O.T.	0+00						87550.215	889186.590	132 00'02"
	332	P.C.	0+20.62						87536.417	889201.914	132 00'02"
	331	R.P.							87728.133	889374.534	0 16'14"
	330	P.I.	1+18.95	41 43'47"LT.	22 12'34"	257.98	98.33	183.77	87470.621	889274.986	132 00'02"
	329	P.T.	2+04.39						87470.156	889373.315	90 16'15"
	328	P.O.T.	2+71.41 = CL CL SURVEY 99+51.16						87469.839	889440.335	0 16'14"
			TERRITORIAL ROAD								
	334	P.O.T.	0+00 = CL CL SURVEY 101+64.08						87682.757	889441.340	0 16'14"
	335	P.C.	0+63.00						87685.011	889504.299	87 57'00"
	336	R.P.							87031.779	889527.680	177 57'00"
	337	P.I.	1+96.00	23 00'08"RT.	8 45'56"	653.65	133.00	262.42	87689.768	889637.214	87 57'00"
	338	P.T.	3+25.42						87642.209	889761.420	110 57'08"
			UNIVERSITY CIRCLE								
	339	P.O.T.	0+00 = CL CL SURVEY 104+46.42						87965.094	889442.673	0 16'14"
	340	P.O.T.	1+87.65					187.65	87965.094	889630.323	90 00'00"
			104th LANE								
	342	P.O.T.	0+00						88252.421	889194.030	90 00'00"
	341	P.O.T.	2+50.00 = CL CL SURVEY 107+33.75					250.00	88252.421	889444.030	0 16'14"
	343	P.O.T.	0+00						88617.807	889194.817	88 38'01"
	344	P.I.	2+51.04 = CL CL SURVEY 111+05.12	1 21'59"RT.				251.04	88623.793	889445.785	0 16'14"
	345	P.O.T.	4+79.43					228.39	88623.793	889674.175	90 00'00"
			105th LANE								
	347	P.O.T.	0+00						89006.229	889201.351	90 00'00"
	346	P.O.T.	2+46.28 = CL CL SURVEY 114+93.37					246.28	89012.039	889447.562	0 15'44"
			106th AVENUE								
	349	P.O.T.	0+00						89408.575	889198.452	91 51'46"
	348	P.O.T.	2+51.02 = CL CL SURVEY 118+81.75					251.02	89400.415	889449.339	0 15'44"
			DRAINAGE EASEMENT								
	401	P.O.T.	LS 84+49.38 = C/L - C/L DRAIN.ESMT.RT. 0+00						85968.086	889433.243	
	402	P.O.T.	E. END OF DRAIN.ESMT.- STA.6+93					693.00	85977.409	890126.180	89 13'44.7"

REVISIONS			
DATE	BY	DATE	BY

ALIGNMENT TABULATION

S.A.P. 114-020-04/106-020-07 S.P. 02-651-01 Sheet No. 15 of 85 Sheets

Fed. Project No. _____



GRAPHIC SCALE

50 0 25 50 100

(IN FEET)

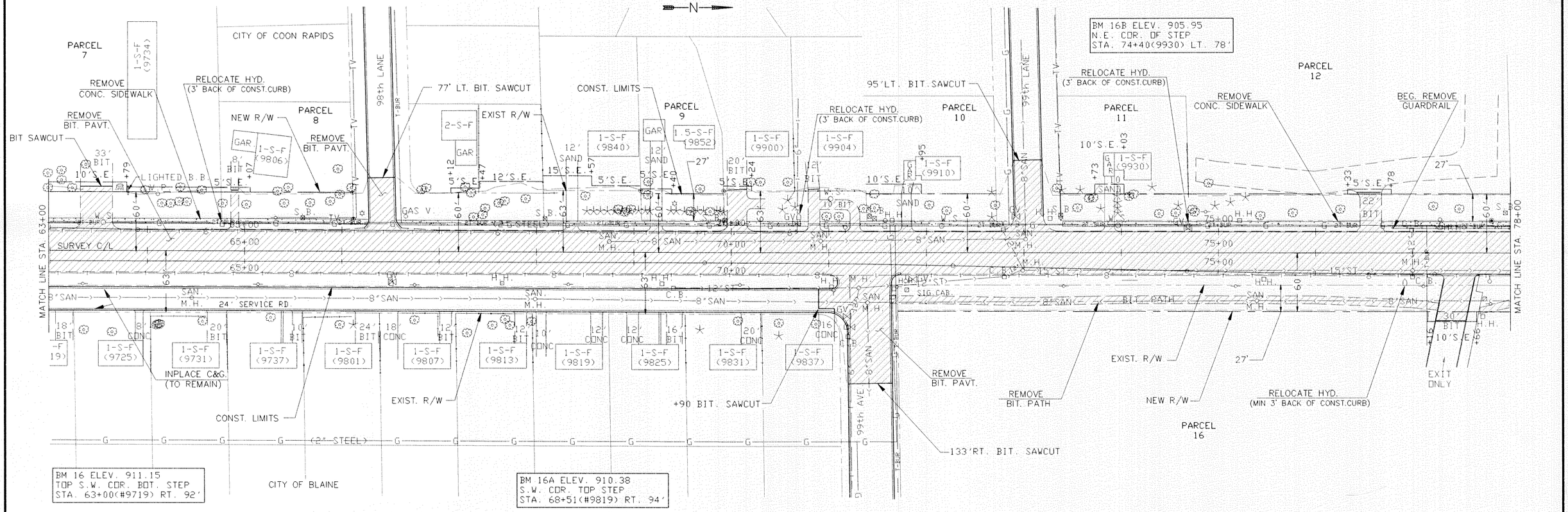
- BITUMINOUS REMOVAL
- CONCRETE REMOVAL
- BIT. SAWCUT
- CONC. SAWCUT

REVISIONS			
DATE	BY	DATE	BY

EXISTING CONDITION & REMOVAL PLAN
STA. 48+20 TO STA. 63+00

S.A.P. 114-020-04/106-020-07 S.P. 02-651-01 Sheet No. 16 of 85 Sheets

Fed. Project No. _____



GRAPHIC SCALE

50 0 25 50 100

(IN FEET)

BITUMINOUS REMOVAL

CONCRETE REMOVAL

BIT. SAWCUT

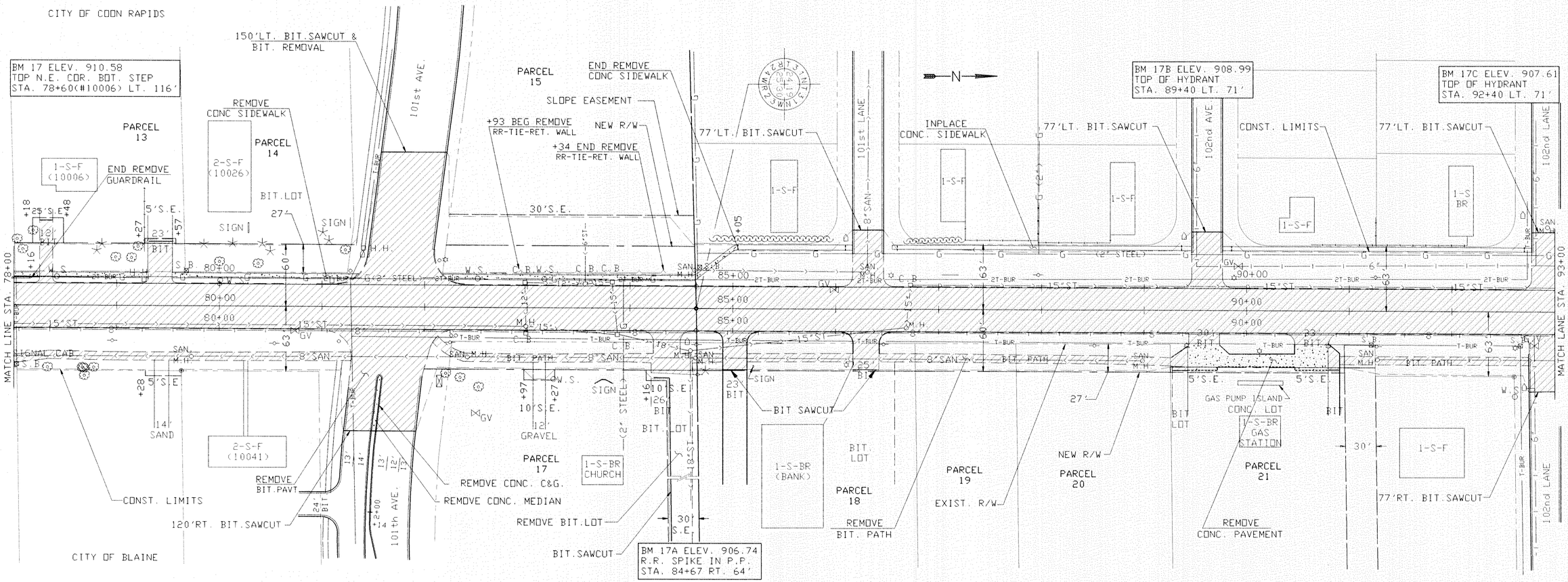
CONC. SAWCUT

REVISIONS			
DATE	BY	DATE	BY

EXISTING CONDITION & REMOVAL PLAN
STA. 63+00 TO STA. 78+00

S.A.P. 114-020-04/106-020-07 S.P. 02-651-01 Sheet No. 17 of 85 Sheets

Fed. Project No.



GRAPHIC SCALE

50 0 25 50 100

(IN FEET)

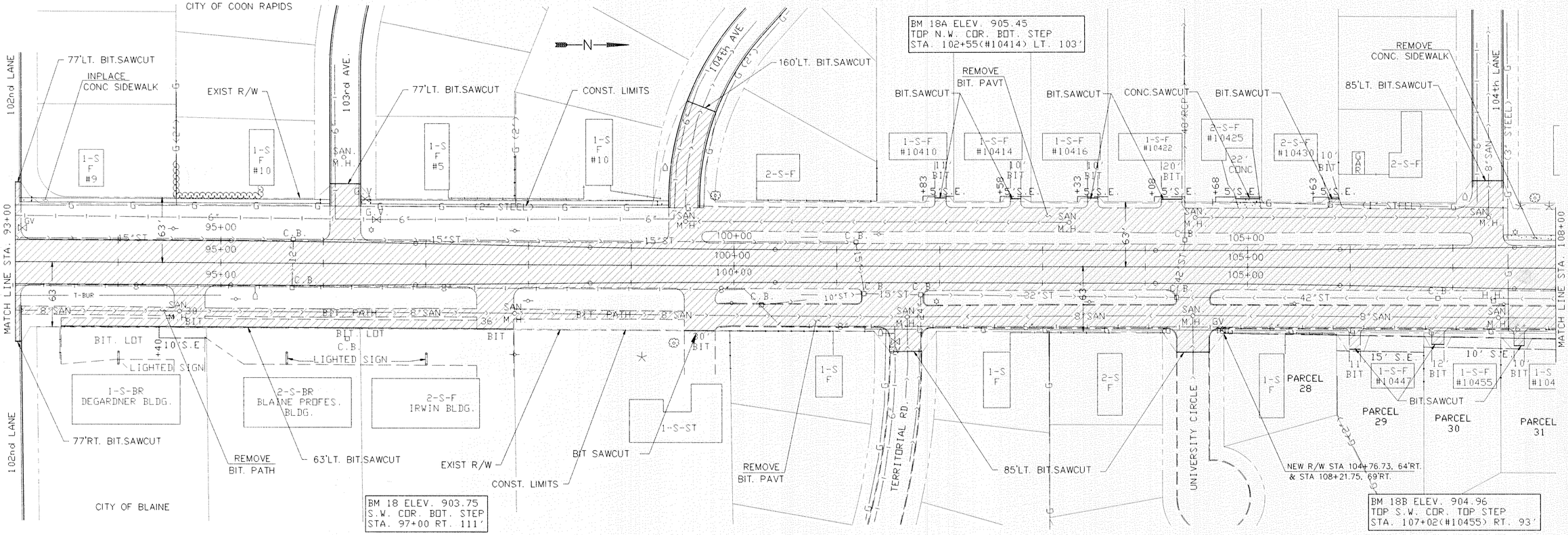
- BITUMINOUS REMOVAL
- CONCRETE REMOVAL
- BIT. SAWCUT
- CONC. SAWCUT

REVISIONS			
DATE	BY	DATE	BY

EXISTING CONDITION & REMOVAL PLAN
STA. 78+00 TO STA. 93+00

S.A.P. 114-020-04/106-020-07 S.P. 02-651-01 Sheet No. 18 of 85 Sheets

Fed. Project No.



GRAPHIC SCALE

50 0 25 50 100

(IN FEET)

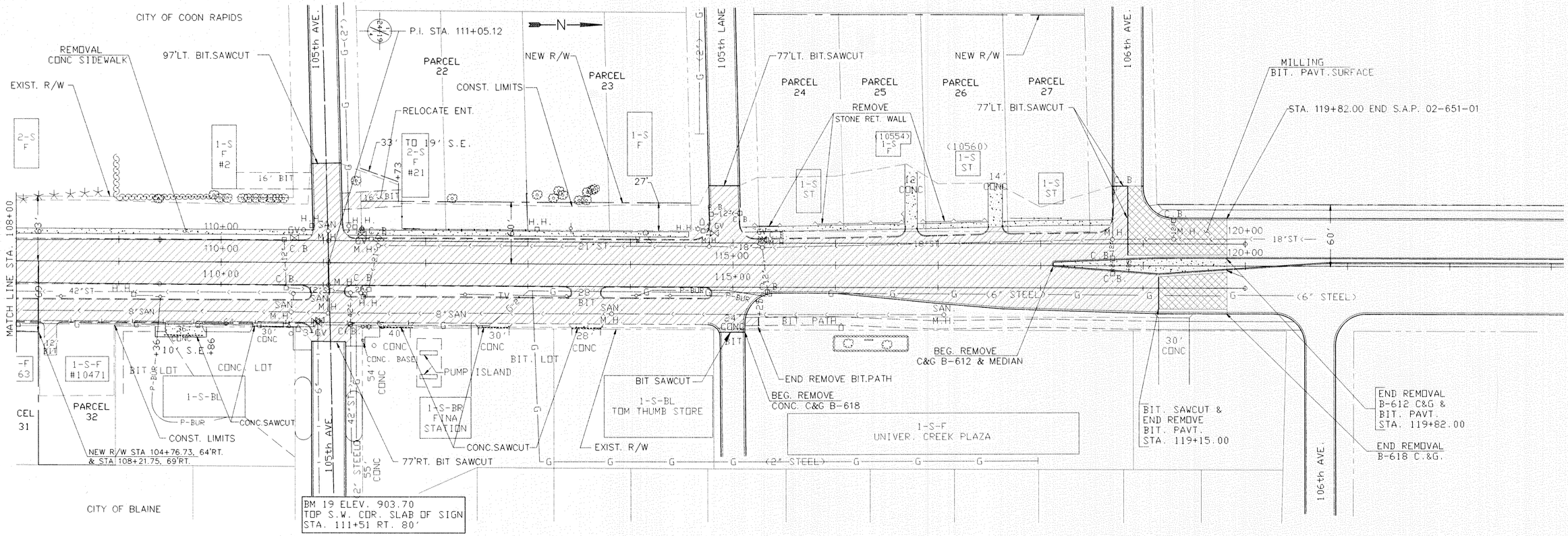
- BITUMINOUS REMOVAL
- CONCRETE REMOVAL
- BIT. SAWCUT
- CONC. SAWCUT

REVISIONS			
DATE	BY	DATE	BY

EXISTING CONDITION & REMOVAL PLAN
STA. 93+00 TO STA. 108+00

S.A.P. 114-020-04/106-020-07 S.P. 02-651-01 Sheet No. 19 of 85 Sheets

Fed. Project No. _____



BITUMINOUS REMOVAL

CONCRETE REMOVAL

MILLING BIT. SURFACE

BIT. SAWCUT

CONC. SAWCUT

GRAPHIC SCALE

50 0 25 50 100

(IN FEET)

REVISIONS			
DATE	BY	DATE	BY

EXISTING CONDITION & REMOVAL PLAN

STA. 108+00 TO STA. 119+82

S.A.P. 114-020-04/106-020-07 S.P. 02-651-01 Sheet No. 20 of 85 Sheets

Fed. Project No. _____

CITY OF COON RAPIDS

CITY OF BLAINE

STA. 48+20
BEG. S.P. 02-651-01
BEG. TEMP. WIDENING & BIT.CURB

EXIST. 44' MAT

WOODED

NEW R/W (BY MnDOT)

CONST. LIMITS

PARCEL 2

PARCEL 3

MATCH INPLACE PAVEMENT

END B-624 C&G.

+67 END BIT. CURB & BEG. B-624 C&G.

+67 END TEMP. WIDENING BEG. FULL WIDTH CONST.

+67, 86'LT. 30'R

STA. 59+27, -148'LT. BEG. B-618 C&G.

DETAIL R/W

PARCEL 5

PARCEL 4

PARCEL 6

CONST. BIT. ENT.

+58, -86'LT. 30'R

1-S-EL (9708)

1-S-EL (9700)

1-C-EL CAR WASH

BIT. LOT

5'S.E.

10'S.E.

BEG. 5' BLVD.

℄ SURVEY

℄ N.B.

℄ S.B.

INPLACE BIT. PATH

8' BIT. PATH

RET. WALKWAY

TOWN HOUSE

+00 BEG. BIT. OVERLAY

+90 BEG. BIT. PATH

EXIST. R/W

TOWN HOUSE (9364)

+67 END BIT. CURB & BEG. B-624 C&G.

+33 BEG. 3'R. MEDIAN B-612 C&G.

+16 END B-624 C&G. & BEG. B-618 C&G. (10' TRANS.)

CONST. BIT. ENT.

END B-618 C&G.

BEG. B-618 C&G.

+41, 79'RT. 25'& 41'R

+26, -90'RT. 30'& 60'R.

126'RT.

65'S.E.

GAR.

1-S-F

1-S-F (9713)

1-S-F (9715)

UNIVERSITY AVE.

24' SERV. RD.

20' EXIST. C&G

END CONST. B-618 C&G.

MATCH INPLACE PAVEMENT

CONST. CONC. MEDIAN BETWEEN NEW & EXIST. CURB

MATCH LINE STA. 63+00

97th AVE

TEMP. WIDENING
CONC. CONSTRUCTION
CONST. BIT. PATH
BITUMINOUS OVERLAY

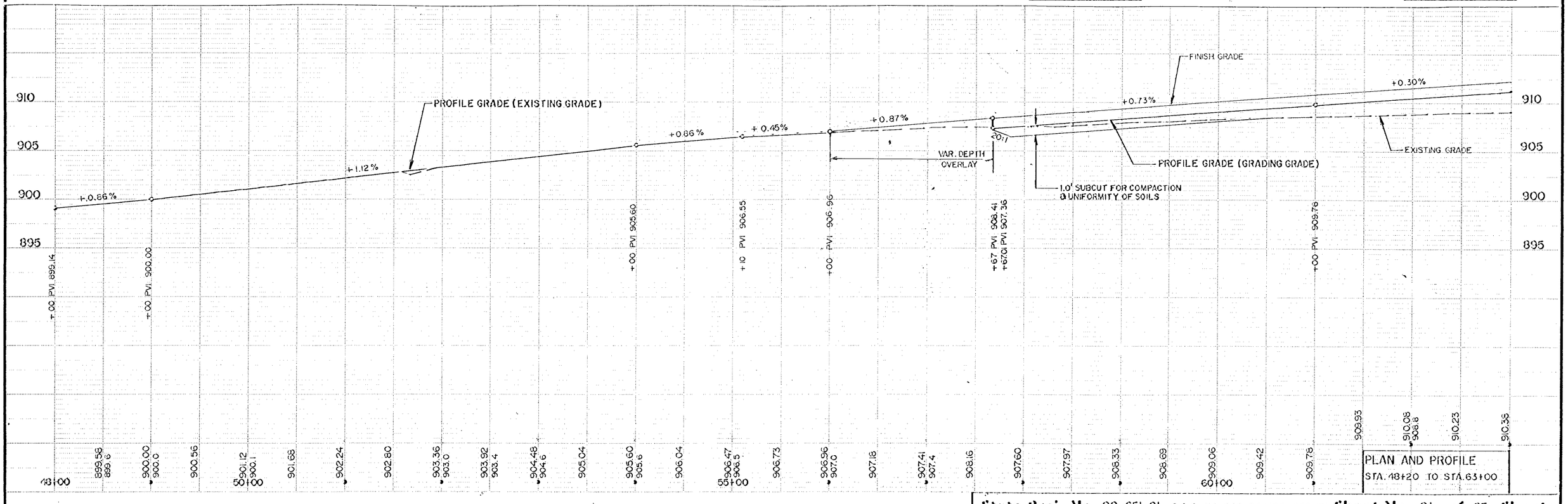
GRAPHIC SCALE
50' 0' 25' 50' 100'
(IN FEET)

BM. 15 ELEV. 900.10
SPIKE IN 12" OAK
STA. 48+00 RT. 75'

BM. 15A ELEV. 907.13
R.R. SPIKE IN 10" OAK
STA. 54+80 RT. 75'

BM. 15B ELEV. 913.66
TOP S.W. COR. TOP STEP
STA. 58+55(#9867) RT. 92'

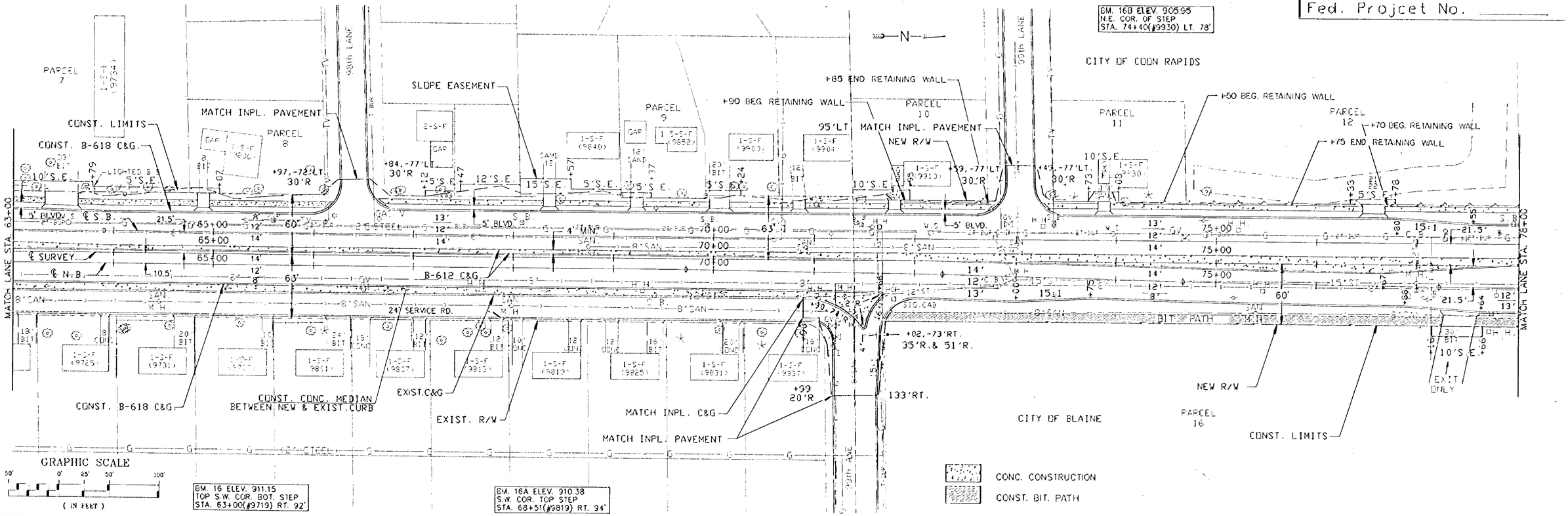
BM. 16 ELEV. 911.15
TOP S.W. COR. BOT. STEP
STA. 63+00(#9719) RT. 92'

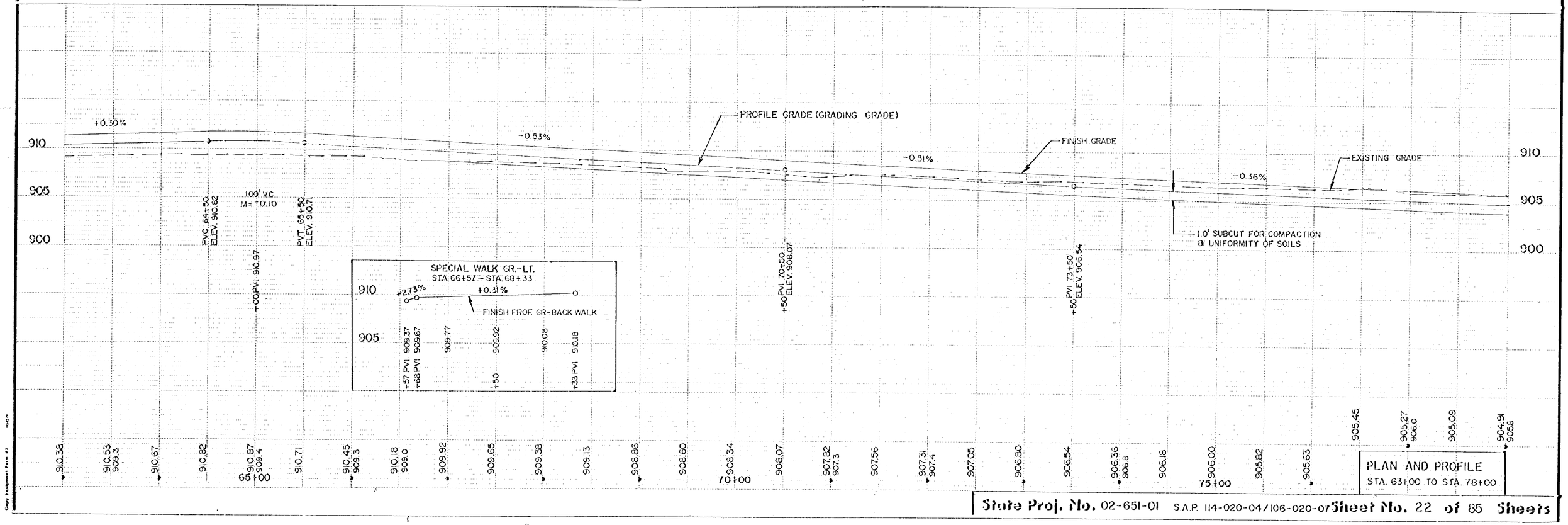


PLAN AND PROFILE
STA. 48+20 TO STA. 63+00

State Proj. No. 02-651-01 S.A.P. 114-020-04/106-020-07 Sheet No. 21 of 85 Sheets

Fed. Projcet No. _____





PLAN AND PROFILE
STA. 63+00 TO STA. 78+00

State Proj. No. 02-651-01 S.A.P. 114-020-04/106-020-07 Sheet No. 22 of 85 Sheets

Fed. Project No. _____

BM 17 ELEV. 910.58
TOP N.E. COR. BOT. STEP
STA. 78+60(#10006) LT. 116'

BM 17B ELEV. 908.99
TOP OF HYDRANT
STA. 89+40 LT. 71'

BM 17C ELEV. 907.61
TOP OF HYDRANT
STA. 92+40 LT. 71'

CITY OF COON RAPIDS

CITY OF BLAINE

PARCEL 13 | PARCEL 14 | PARCEL 15 | PARCEL 17 | PARCEL 18 | PARCEL 19 | PARCEL 20 | PARCEL 21

MATCH LANE STA. 78+00

MATCH LANE STA. 93+00

101st AVE.

102nd AVE.

102nd LANE

MATCH INPL. PAVEMENT

CONST. LIMITS

CONST. B-618 C.& G.

END CONST. SIDEWALK
BEG. INPL. SIDEWALK

INPL. SIDEWALK

+30 END RET. WALL

+90 BEG. RET. WALL

+20 END RETAINING WALL

+42 BEG. RETAINING WALL

+27 END RETAINING WALL

NEW R/W

150'LT. CNL

120'RT. CNL

CONST. B-612 C.& G.

EXIST. R/W

℄ - S. B

℄ - SURVEY

℄ - N. B.

B-612 C.& G.

8' BIT PATH

9' BIT. PATH

5' BLVD.

CONC. CONSTRUCTION

CONST BIT. PATH

GRAPHIC SCALE
50' 0' 25' 50' 100'
(IN FEET)

END CONST. C&G. AND CONC. MEDIAN MATCH TO INPL. C&G.

+25 BEG. RETAINING WALL

+10 END RETAINING WALL

BM 17A ELEV. 906.74
R.R. SPIKE IN P.P.
STA. 84+67 RT. 64'

1-S-F (10006)
2-S-F (10034)
1-S-F (CHURCH)
1-S-BR (BANK)
1-S-BR (GAS STATION)
CONC. LOT GAS PUMP ISLAND

FINISH GRADE

EXISTING GRADE

100' VC
M = +0.086

100' VC
M = -0.097

-0.36 %

+0.33%

-0.45%

10' SUBCUT FOR COMPACTION & UNIFORMITY OF SOILS

PROFILE GRADE (GRADING GRADE)

PVC. 82+50
ELEV. 903.27

PVI. 83+50
ELEV. 903.25

PVC. 87+50
ELEV. 904.55

PVI. 88+50
ELEV. 904.49

+00 PVI 903.09

+00 PVI 904.72

SPECIAL BITUMINOUS PATH GR-RT.
STA. 91+11 - STA. 92+65

-1.0%

-1.26%

FINISH PROF. GR.
(BACK OF BIT. PATH)

PVI. +11 904.06

+00 PVI 903.19

+65 PVI 902.37

910 | 905 | 900 | 895 | 890

904.91 903.8 | 904.73 | 904.55 905.2 | 904.36 | 904.18 905.1 80+00 | 904.00 | 903.82 | 903.64 | 903.46 | 903.27 | 903.18 904.2 | 903.26 | 903.42 904.4 | 903.58 | 903.74 904.8 85+00 | 903.91 | 904.07 905.2 | 904.23 | 904.40 905.6 | 904.56 | 904.63 905.6 | 904.50 | 904.27 905.2 | 904.05 905.3 | 903.82 904.9 90+00 | 903.60 | 903.37 904.2 | 903.15 | 902.92 903.6 | 902.70 | 902.47

PLAN AND PROFILE
STA. 78+00 TO STA. 93+00

Fed. Project No.

CITY OF COON RAPIDS

N

BM 18A ELEV. 905.45
TOP N.E. COR. BOT. STEP
STA. 102+55(#10414) LT. 103'

EXIST. R/W
INPLACE SIDEWALK
B-618 C.& G.
END INPLACE SIDEWALK
CONST. LIMITS
160' LT.
102nd LANE
MATCH LANE STA. 93+00
MATCH LANE STA. 108+00
℄ - S.B.
℄ SURVEY
℄ - N.B.
B-612 C.& G.
8' BIT. PATH
LIGHTED SIGN
1-S-BF DEGARDNER BLDG
2-S-BF BLAINE PROFES. BLDG
2-S-F MAIN BLDG
1-S-ST
+50 BEG. RETAINING WALL
+40 END RETAINING WALL
B-618 C.& G.
EXIST. R/W
CONST. LIMITS
CITY OF BLAINE
TERRITORIAL RD.
UNIVERSITY CIRCLE
NEW-R/W
NEW-R/W STA. 104+76.73, -64'RT.
& STA. 108+21.75, -69'RT.
PARCEL 28
PARCEL 29
PARCEL 30
PARCEL 31
ONE WAY
SAN.
S.D.
W.M.
G.V.
C.B.
BIT PATH
BIT LOT
LANDSCAPING
+35, -77' LT. 30'R
+86, -77' LT. 20'R
+66, -77' LT. 30'R
+99, -76' LT. 30'R
+89, -76' LT. 20'R
+09 41'R
+35 25'R
30'R +37, 77'RT.
30'R +21, -71'RT.
20'R +3
20'R +11
20'R +83
15' S.E.
10' S.E.

GRAPHIC SCALE
50' 0' 25' 50' 100'
(IN FEET)

CONC. CONSTRUCTION
CONST BIT. PATH

BM 18 ELEV. 903.75
S.W. COR. BOT. STEP
STA. 97+00 RT. 111'

BM 18B ELEV. 904.96
TOP S.W. COR. TOP STEP
STA. 107+02(#10455) RT. 93'

EXISTING GRADE
FINISH GRADE
200' V.C. M= +0.255'
-0.45%
+0.57%
-0.333%
100' V.C. M= -0.113'
100' V.C. M=0.065'
+0.35%
1.0' SUBCUT FOR COMPACTION & UNIFORMITY OF SOILS
PROFILE GRADE (GRADING GRADE)
SPEC. SIDEWALK GR LT. STA. 107+50 - STA. 110+00
FINISH PROFILE GR. (BACK WALK)
+0.28%
PVC 97+00 ELEV. 900.67
+00 PVI 900.22
PVT 99+00 ELEV. 900.79
PVC 102+50 ELEV. 902.78
+00 PVI 903.07
PVT 103+50 ELEV. 902.90
PVC 105+50 ELEV. 902.23
+00 PVI 902.07
PVT 106+50 ELEV. 902.24
+50 PVI 901.10
SEE CUL-DE-SAC DETAIL FOR GUTTER GRADE
-0.30%
-0.51%
+0.81%
FINISH GUTTER PROFILE GRADE
BLAINE SERVICE ROAD
+00 PVI 903.38
+00 PVI 902.18
+50 PVI 901.22
+16 PVI 901.45
100' V.C. M= -0.077
-0.45%
100' V.C. M= +0.115
+1.06%
-0.47%
COON RAPIDS SERVICE ROAD
GUTTER TRANSITION THROUGH RADIUS TO MATCH INP C.& G. - NB'S SIDE 104TH LANE
S. GUTTER = -0.89% ±
N. GUTTER = -1.19% ±
+89 PVI 901.22
+75 PVC 902.13
+25 PVI 902.66
+75 PVT 902.88
+00 PVC 902.00
+50 PVI 903.22
+00 PVT 902.96
+95 PVI 901.12

902.47 902.25 902.02 902.3 901.60 901.57 901.35 901.12 902.2 900.90 900.67 902.3 900.51 900.48 902.5 900.57 900.79 901.08 901.36 901.65 901.93 903.1 902.22 902.50 903.3 902.79 902.96 903.5 902.91 903.6 902.74 903.8 902.57 902.41 904.1 902.24 902.16 904.4 902.25 902.42 902.60 904.3 902.77 904.1

95+00 100+00 105+00

PLAN AND PROFILE
STA. 93+00 TO STA. 108+00

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Fed. Project No. _____

CITY OF COON RAPIDS

CITY OF BLAINE

P.I. STA. 111+05.12
Δ = 0°00'31" LT.

CONST. 5' CONC. SIDEWALK
95'LT.MATCH INPL. PAVEMENT

EXIST. R/W

CONST. BIT. ENT.

NEW R/W

+57 END RETAINING WALL

+85 BEG. RETAINING WALL

CONST. LIMITS

END B-618 C&G
STA. 118+70

DENOTES OVERLAY OF INP. ROADWAY

END S.P. 02-651-01
STA. 119+82.00

MATCH LANE STA. 108+00

105th AVE.

105th LANE

106th AVE.

UNIVERSITY AVE.

PARCEL 22

PARCEL 23

PARCEL 24

PARCEL 25

PARCEL 26

PARCEL 27

PARCEL 32

8' PATH

INPLACE BIT. PATH

STA. 115+65
END CONC. MEDIAN &
BEG. CONCRETE MEDIAN+SPECIAL

STA. 115+25
END CONST. BIT. PATH &
BEG. INPLACE PATH

END SPECIAL MEDIAN

STA. 119+82
END CONST. B-612 C&G. &
MATCH TO INPLACE B-612 C&G

STA. 119+82
END CONST. B-618 C.& G. &
MATCH TO INPLACE B-618 C&G

* - NEW R/W
STA. 104+76.72, 64'RT. &
STA. 108+21.75, 69'RT.

BM 19 ELEV. 903.70
TOP S.W. COR. SLAB OF SIGN
STA. 111+51 RT. 80'

GRAPHIC SCALE
50' 0' 25' 50' 100'
(IN FEET)

CONC. CONSTRUCTION
CONST BIT. PATH
OVERLAY OF INPLACE ROADWAY
BRICK MEDIAN (SEE TYPICAL SEC. DETAIL"A")

EXISTING GRADE
FINISH GRADE
PROFILE GRADE (GRADING GRADE)

100' V.C.
M = +0.10'

100' V.C.
M = -0.085'

+0.35%
-0.333%
+0.43%
+0.26%
+0.30%

PVC 109+50 ELEV. 903.29
PVI 110+00 ELEV. 903.47
PVT 110+50 ELEV. 903.30
PVC 112+50 ELEV. 902.63
PVI 112+00 ELEV. 902.47
PVT 113+50 ELEV. 902.88
PVI 118+69 ELEV. 904.91
PVI 119+15 ELEV. 905.03

1.0' SUBCUT FOR COMPACTION & UNIFORMITY OF SOILS

SUBCUT LNB ONLY

SPECIAL SIDEWALK GRADE
STA. 107+50 - STA. 110+00 LT.
+0.28%
+2.28%
FIN. PROF. GR (BACK OF WALK)
PVI 109+83
PVI 110+31

SPECIAL BITUMINOUS PATH GRADE-RT
STA. 108+78 - STA. 110+90
FINISH PROFILE GR. - BACK OF PATH
+1.23%
+0.24%
-3.5%
PVI 902.31
PVI 903.36
PVI 903.63
PVI 902.78

902.77 904.1
902.95
903.12 903.8
903.30
903.39 903.7
903.31
903.14
902.97
902.81 904.0
902.64
902.57 904.2
902.69
902.90 904.5
903.12
903.33
903.54
903.67 905.3
903.97
904.19 905.7
904.40
904.62 905.79
904.83
904.99
905.14
905.23
+82
120+00

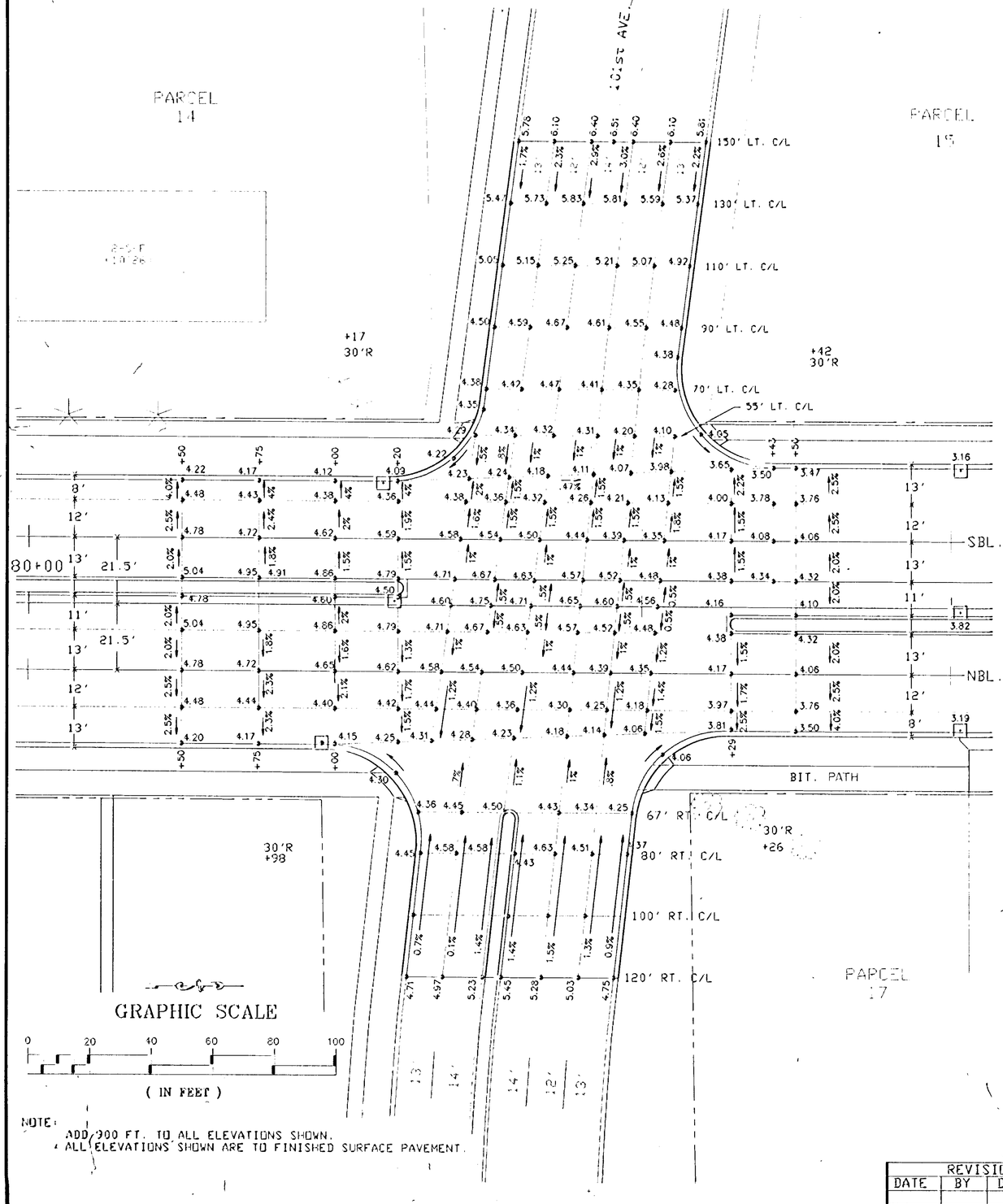
110+00
115+00

PLAN AND PROFILE
STA. 108+00 TO STA. 119+82

State Proj. No. 02-651-01 S.A.P. 114-020-04/106-020-07 Sheet No. 25 of 85 Sheets

Fed. Project No.

UNIVERSITY AVE. & 101st AVE.



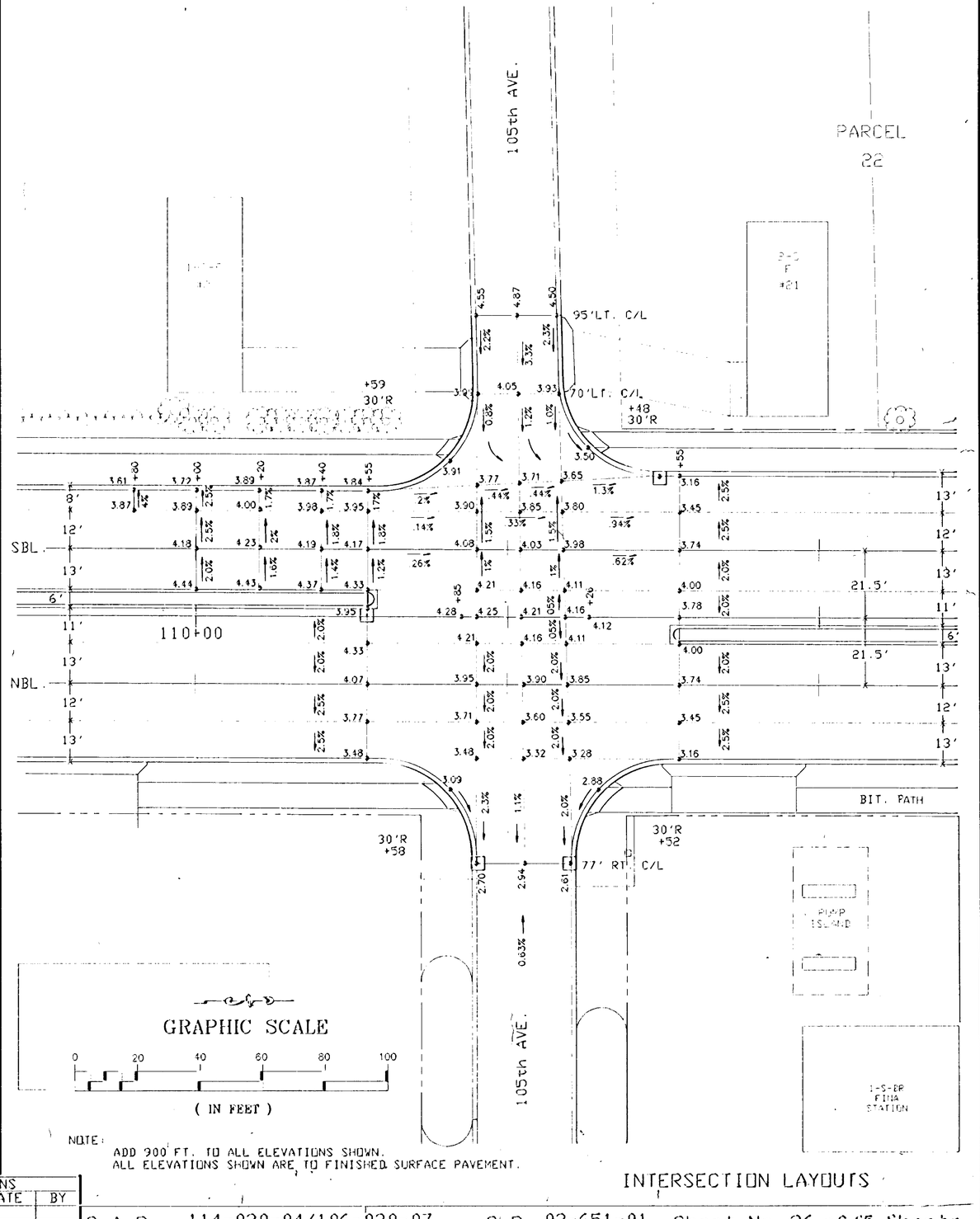
GRAPHIC SCALE

0 20 40 60 80 100

(IN FEET)

NOTE:
ADD 900 FT. TO ALL ELEVATIONS SHOWN.
ALL ELEVATIONS SHOWN ARE TO FINISHED SURFACE PAVEMENT.

UNIVERSITY AVE. & 105th AVE.



GRAPHIC SCALE

0 20 40 60 80 100

(IN FEET)

NOTE:
ADD 900 FT. TO ALL ELEVATIONS SHOWN.
ALL ELEVATIONS SHOWN ARE TO FINISHED SURFACE PAVEMENT.

REVISIONS			
DATE	BY	DATE	BY

INTERSECTION LAYOUTS

S.A.P. 114-020-04/106-020-07 S.P. 02-651-01 Sheet No. 26 of 65 Sheets

Fed. Project No. _____

DRAINAGE TABULATION

	STRUCT NO.	STATION	LOCATION	REMARKS	MH/CB	DESIGN	PAY HT LIN.FT	TOP OF CASTING ELEVATION	OUTLET ELEVATION	DRAINS TO	INST. CAST.	F&I CAST. ASSY.	FURNISH & INSTALL 12" RCP.	15" RCP.	18" RCP.	21" RCP.	24" RCP.	27" RCP.	30" RCP.	33" RCP.	42" RCP.	REV 36"RCP	REV RCP APRON	CLASS OF PIPE	REV
	3	58+34	12.9' RT. LSB		CB	C OR G	3.1	908.71	905.42	CB.# 2		A		42										II	
REV	4	58+68	21.9' LT. LSB		CB	H	2.2	907.99	905.57	CB.# 3		A		49										IV	
	2	58+72	12.9' LT. LNB		CB	C OR G	3.5	908.99	905.31	CB.# 1		A		40										II	
	1	58+96	18.9' RT. LNB		CB	C OR G	3.7	908.31	904.41	CB.# 5A		A		73										II	
REV	5	59+67	68.2' RT. LNB		CB	C OR G	2.2	907.65	905.25	CB.# 5A		A	49											IV	
	5A	59+69	18.9' RT. LNB		CB	C OR G	4.8	908.84	903.94	CB.# 7		A			288									II	
REV	6	59+96	82.5' RT. LNB		CB	H	2.3	907.96	905.45	CB.# 5		A	28											IV	
	7	62+57	18.9' RT. LNB		CB	A OR F	7.2	910.16	902.83	CB.# 9		A				428								II	
REV	8	62+57	18.9' LT. LSB		CB	H	3.7	910.16	906.24	CB.# 7		A	74											II	
REV	11	66+30	55.0' LT. LSB		CB	H	3.6	908.92	905.15	CB.# 10		A	26											II	
	10	66+56	55.0' LT. LSB		CB	C OR G	3.7	908.81	904.89	CB.# 9		A	109											II	
	9	66+85	18.9' RT. LNB		CB	A OR F	8.5	910.00	901.33	CB.# 12		A					258							II	
	14	69+07	12.9' LT. LNB		CB	C OR G	4.6	909.68	904.94	CB.# 12		A	48											II	
	15	69+07	12.9' RT. LSB		CB	C OR G	4.5	909.68	905.00	CB.# 14		A	6											II	
REV	16	69+07	23.9' LT. LSB		CB	H	3.2	908.80	905.38	CB.# 15		A	38											II	
	12	69+43	18.9' RT. LNB		CB	A OR F	7.9	908.64	900.53	CB.# 17		A					221							II	
REV	13	69+43	25.1' RT. LNB	SALV. & REINSTALL CAST.	CB	H	3.7	907.25	903.43	CB.# 12	1		6											II	
REV	19	71+20	74.0' RT. LNB	SALV. & REINSTALL CAST.	CB	H	3.7	906.98	903.11	CB.# 18	1		44											II	
	17	71+64	18.9' RT. LNB		CB	A OR F	7.8	907.50	899.62	CB.# 27		A						363						II	
	20	71+64	12.9' LT. LNB		CB	C OR G	5.1	908.35	903.10	CB.# 17		A	32											II	
	21	71+64	12.9' RT. LSB		CB	C OR G	5.0	908.35	903.18	CB.# 20		A	8											II	
REV	22	71+64	23.9' LT. LSB		CB	H	3.7	907.47	903.55	CB.# 21		A	37											II	
REV	18	71+66	60.0' RT. LNB		CB	C OR G	4.2	906.98	902.63	CB.# 17		A	40											II	
	27	75+27	18.9' RT. LNB		CB	A OR F	7.3	905.91	898.51	CB.# 34		A						303						II	
	28	75+27	12.9' LT. LNB		CB	C OR G	4.7	906.76	901.93	CB.# 27		A	32											II	
	29	75+27	12.9' RT. LSB		CB	C OR G	4.5	906.76	902.09	CB.# 28		A	16											II	
REV	30	75+27	23.9' LT. LSB		CB	H	3.2	905.88	902.46	CB.# 29		A	37											II	
	34	78+30	23.9' RT. LNB		CB	A OR F	7.0	904.81	897.60	CB.# 37		A						267						II	
REV	36	78+30	18.9' LT. LSB		CB	H	3.2	904.81	901.39	CB.# 35		A	38											II	
	35	78+32	23.9' LT. LNB		CB	C OR G	4.2	905.43	901.01	CB.# 34		A	44											II	
REV	37	80+97	23.9' RT. LNB		CB	A OR F	7.2	904.21	896.55	CB.# 41		A							206					II	
REV	40	81+17	18.9' LT. LSB		CB	H	3.6	904.15	900.35	CB.# 39		A	33											II	
	38	81+20	23.9' LT. LNB		CB	C OR G	4.2	904.39	899.96	CB.# 37		A	55											II	
	39	81+20	12.9' RT. LSB		CB	C OR G	4.4	904.61	900.02	CB.# 38		A	6											II	
	41	83+03	18.9' RT. LNB		CB	A OR F	7.1	903.19	895.87	CB.# 51		A							146					II	
	42	83+03	12.9' LT. LNB		CB	C OR G	4.9	904.04	898.94	CB.# 41		A		33										II	
	43	83+03	23.9' RT. LSB		CB	C OR G	4.7	903.82	898.97	CB.# 42		A		5										II	
REV	44	83+03	23.9' LT. LSB		CB	H	3.7	903.16	899.32	CB.# 43		A	49											II	
REV	51	84+49	18.9' RT. LNB		CB	72-4020	12.4	903.59	891.00	CB.# 51A		A										8		III	
REV	51A	84+49	26.5' RT. LNB		MH	60-4020	10.8	904.23	893.50	CB.# 54		B										258		III	
	52	84+49	23.9' RT. LSB		CB	C OR G	5.4	904.22	898.65	CB.# 51		A	38											II	
	53	84+49	23.9' LT. LSB		CB	C OR G	4.2	903.56	899.14	CB.# 52	1	A	49											II	
REV	54	84+49	306.0' RT. LNB	INSTALL CAST. FROM #55	CB	A OR F	12.5	907.28	894.65	OUTLET#1												260	1 ①	III	
REV	62	86+77	23.9' LT. LSB		CB	H	3.7	904.30	900.38	CB.# 61		A	37											II	
	59	86+92	18.9' RT. LNB		CB	A OR F	5.8	904.38	898.42	CB.# 51		A	243											II	
REV	60	86+92	12.9' LT. LNB		CB	C OR G	5.2	905.23	899.84	CB.# 59		A	32											II	
REV	61	86+92	12.9' RT. LSB		CB	C OR G	5.0	905.23	900.01	CB.# 60		A	17											II	
REV	68	89+77	55.0' LT. LSB		CB	C OR G	4.1	905.39	901.16	MH.# 67		A	31											II	
REV	69	89+46	55.0' LT. LSB		CB	H	3.7	905.31	901.47	CB.# 68	1	A	31											II	
	67	89+49	23.9' LT. LSB	INSTALL CAST. FROM #23	MH	C OR G	3.8	904.09	900.35	CB.# 66			95											II	
REV	66	90+72	23.9' LT. LSB		CB	C OR G	3.9	903.48	899.40	CB.# 65		A	43											II	
	65	90+72	23.9' LT. LNB		CB	A OR F	5.0	904.14	898.97	MH.# 63		A	46											II	
REV	64	90+88	23.9' RT. LNB		CB	H	3.7	903.41	899.49	MH.# 63	1	A	6											II	
REV	63	90+88	17.9' RT. LNB	INSTALL CAST. FROM #25	MH	A OR F	6.5	903.71	897.28	MH.# 70				150										II	
	76	93+06	55.0' LT. LSB		CB	C OR G	4.7	903.81	898.94	CB.# 75		A	26											II	
REV	75	92+80	55.0' LT. LSB		CB	C OR G	4.9	903.89	898.82	CB.# 74		A	44											II	
REV	74	92+47	23.9' LT. LSB		CB	C OR G	3.9	902.69	898.61	CB.# 73		A	38											II	
REV	73	92+40	12.9' RT. LSB		CB	C OR G	5.0	903.60	898.43	CB.# 72		A	4											II	
REV	72	92+40	23.9' LT. LNB		CB	C OR G	4.8	903.38	898.41	MH.# 70		A	43											II	
REV	71	92+78	23.9' RT. LNB		CB	H	3.7	902.72	898.85	MH.# 70	1	A	6											II	
REV	70	92+40	17.9' RT. LNB	INSTALL CAST. FROM #31	MH	A OR F	6.5	903.02	896.57	CB.# 77					247									II	
REV	79	94+87	23.9' LT. LSB		CB	H	3.2	901.61	898.25	CB.# 78		A	48											II	
REV	78	94+87	23.9' RT. LSB		CB	C OR G	4.4	902.27	897.70	CB.# 77		A	38											II	
REV	77	94+92	18.9' RT. LNB		CB	A OR F	5.6	901.64	895.83	CB.# 82		A			150									II	
	85	96+09	55.0' LT. LSB		CB	A OR F	5.2	903.79	898.37	CB.# 84		A	29											II	
REV	84	96+37	55.0' LT. LSB		CB	A OR F	4.2	902.59	898.08	CB.# 83		A	72											II	
REV	83	96+37	23.9' RT. LSB		CB	C OR G	4.2	901.73	897.36	CB.# 82		A	44											II	
	82	96+37	18.9' RT. LNB		CB	A OR F	5.4	900.96	895.38	CB.# 86		A			149									II	
REV	89	97+88	23.9' LT. LSB		CB	H	3.7	900.46	896.54	CB.# 88		A	38											II	
REV	88	97+88	13.1 RT. LSB		CB	C OR G	5.0	901.34	896.16	CB.# 87		A	11											II	
REV	87	97+88	13.3' LT. LNB		CB	C OR G	5.1	901.34	896.05	CB.# 86		A	33											II	
REV	86	97+91	19.3' RT. LNB		CB	A OR F	5.4	900.49	894.93	CB.# 90		A			204									II	
REV	95	99+70	55.0' LT. LSB		CB	H	3.7	900.84	896.96	CB.# 94		A	38											II	
REV	94	99+31	60.0' LT. LSB		CB	C OR G	3.7	900.58	896.72	CB.# 93		A	42											II	
REV	93	99+42	18.9' LT. LSB		CB	A OR F	5.2	901.04	895.67	CB.# 92		A	58											II	
	92	99+90	12.9' RT. LSB		CB	A OR F	6.5	902.17	895.46	CB.# 91		A	6											II	
	91	99+90	12.9' LT. LNB		CB	A OR F	6.6	902.17	895.44	CB.# 90		A	37											II	
	90	99+90	12.0' RT. LNB		CB	A OR F	7.6	902.06	894.32	CB.# 99		A			214									II	
REV	90A	99+90	23.9' RT. LNB		CB	C OR G	3.7	901.59	898.01	CB.# 90		A	12											II	
REV	101	101+51	55.0' RT. LNB		CB	C OR G	4.1	901.97	897.10	CB.# 100		A	30											II	
	100	101+82	66.0' RT. LNB	CONST. ON INPL. 33"RCP	CB	A OR F	9.3	902.22	892.70	CB.# 99		A						52						II	
	99	101+82	12.0' RT. LNB		MH	84-4020	11.2	903.33	892.25	CB.# 104		A						258						II	
REV	99A	102+04	18.9' RT. LNB		CB	H	3.7	902.54	898.71	CB.# 99		A	28											II	
REV	105	104+33	66.0' RT. LNB		CB	C OR G	3.7	901.73	897.90	CB.# 104		A	48											II	
	106	104+40	18.9' LT. LSB	48"R.C.P. SEWER OUTLET	CB	A OR F	11.1	902.62	891.33	OUTLET#2		A												II	
	104	104+40	18.9' RT. LNB		CB	90-4020	11.0	902.62	891.47	CB.# 106		A										70		II	
REV	107	105+99	18.9' RT. LNB		CB	60-4020	10.2	902.17	901.77	CB.# 104		A										159		II	
REV	109	105+99	12.9' LT. LNB		CB	C OR G	5.0	903.02	897.84	CB.# 107		A	33											II	

① INCLUDES 11 CU.YD. GROUTED RIPRAP

NOTE: ALL STORM SEWER PIPE IS DESIGN 3006 EXCEPT FOR ARCH PIPE.

REVISIONS			
DATE	BY	DATE	BY
9/24/93			

TABULATION CHART

S.A.P. 114-020-04/106-020-07 S.P. 02-651-01 Sheet No. 27 of 85 Sheets

Fed. Project No. _____

DRAINAGE TABULATION (CONT.) (U)

	STRUCT NO.	STATION	LOCATION	REMARKS	MH/CB	DESIGN	PAY HT LIN.FT	TOP OF CASTING ELEVATION	OUTLET ELEVATION	DRAINS TO	INST. CAST.	F&I CAST. ASSY.	FURNISH & INSTALL 12" RCP	15" RCP	18" RCP	21" RCP	24" RCP	27" RCP	30" RCP	33" RCP	42" RCP	REV 36"RCP	REV RCP APRON	CLASS OF PIPE
REV	110	105+99	12.9' RT. LSB		CB	C OR G	4.9	903.02	897.92	CB.# 109		A	8											II
REV	111	105+99	18.9' LT. LSB		CB	H	3.7	902.17	898.25	CB.# 110		A	33											II
REV	108	104+62	45.3' RT. LNB		CB	C OR G	3.7	902.06	898.20	CB.# 105		A	30											II
REV	118	107+21	65.0' LT. LSB		CB	H	3.2	900.65	897.28	CB.# 117		A	28											II
	117	107+49	65.0' LT. LSB		CB	C OR G	3.2	900.57	897.18	CB.# 116		A	46											II
REV	116	107+49	18.9' LT. LSB		CB	A OR F	5.4	902.60	897.02	CB.# 115		A	62											II
REV	115	107+95	18.9' LT. LNB		CB	A OR F	6.5	903.49	896.81	CB.# 113		A	50											II
REV	113	108+29	18.9' RT. LNB		CB	60-4020	10.5	902.88	892.21	CB.# 107		A									230			II
	114	107+90	44.9' RT. LNB		CB	C OR G	3.5	901.10	897.45	CB.# 113		A	47											II
	119	110+80	18.9' RT. LNB	INSTALL CAST. FROM #56	MH	72-4020	10.9	903.51	892.69	CB.# 113	1										251			II
REV	122	110+91	55.0' RT. LNB		CB	H	3.7	902.58	898.71	CB.# 121		A	31											II
REV	123	110+50	23.9' LT. LNB		CB	H	3.7	903.95	900.08	CB.# 119		A	70											II
REV	121	111+20	55.0' RT. LNB		CB	C OR G	4.4	902.49	897.92	MH.# 120		A		7										II
REV	120	111+28	55.0' RT. LNB	CONST. ON INPL. 36"RCP	MH	60-4020	10.5	903.25	892.79	MH.# 119	1										51			II
REV	131	111+49	23.9' LT. LSB		CB	H	3.4	903.17	899.62	MH.# 130		A	29											II
	130	111+55	4.5' RT. LSB	SEE EXIST.SEWER CHART	MH			903.80	897.21	MH.# 119						123								II
	132	112+94	4.5' RT. LSB	CONST. ON INPL. 21"RCP	MH	A OR F	5.4	903.42	898.04	MH.# 130	1													II
REV	133	112+94	23.9' RT. LSB		CB	C OR G	4.6	903.21	898.42	MH.# 132		A	20											II
REV	134	112+94	12.9' LT. LNB		CB	G OR G	4.8	903.43	898.45	CB.# 133		A	5											II
REV	135	112+94	23.9' RT. LNB		CB	H	3.7	902.55	898.63	CB.# 134		A	37											II
REV	136	112+94	23.9' LT. LSB		CB	H	3.7	902.55	898.63	MH.# 132		A	29											II
	140	115+30	4.5' RT. LSB	SEE EXIST.SEWER CHART	MH			904.31	899.59	CB.# 137		A												II
REV	143	115+30	18.9' RT. LSB		CB	C OR G	4.1	904.20	899.92	MH.# 140		A		16										II
	144	115+31	12.9' LT. LNB		CB	C OR G	4.2	904.32	899.95	CB.# 143		A		11										II
REV	145	115+31	18.9' RT. LNB		CB	H	3.2	903.47	900.05	CB.# 144		A		32										II
REV	146	115+38	23.9' LT. LSB		CB	H	3.0	903.48	900.29	MH.# 140		A	30											II
	147	118+69	3.5' LT. LSB	SEE EXIST.SEWER CHART	MH			905.95	901.03	MH.# 140		A												II
REV	151	118+69	12.9' RT. LSB		CB	C OR G	3.8	905.61	901.63	CB.# 147				17										II
REV	152	118+69	12.9' LT. LNB		CB	C OR G	3.9	905.79	901.68	CB.# 151		A		16										II
REV	153	118+69	23.9' RT. LNB		CB	H	3.7	905.64	901.79	CB.# 152		A		38										II
	150	118+69	55.0' LT. LSB	NO CONST. REQUIRED	CB					MH.# 147														
				TOTALS			590.1				9	104	2884	529	1230	551	479	933	352	310	761	526	1	

EXISTING DRAINAGE TABULATION (V)

STRUCT NO.	STATION	LOCATION	REMARKS	MH/CB	TOP OF CASTING ELEVATION	OUTLET ELEVATION	EXISTING DRAINS TO	NEW DRAINS TO	RECONST. CB/MH LIN. FT.	REMOVE PIPE SEWER LIN. FT.	REMOVE DRAINAGE STRUCTURE	REMOVE R.C.P. APRON	SALVAGE CASTING EACH	INSTALL CASTING EACH	ADJUST CASTING EACH
13	69+43	36' RT LS	SALV & INSTALL CAST & CURB BOX	CB	907.25	903.33	23	12		189	1		1		
19	71+21	85' RT LS	SALV & INSTALL CAST & CURB BOX	CB	906.98	903.11	23	18		50	1		1		
23	71+32	36' RT LS	INSTALL CAST. - STRUCT.#67	MH	907.36	903.26	24			149	1		1		
26	72+80	24' LT LS	SALV.CAST. TO ANOKA CO.	CB	906.30	901.90	25			47	1		1		
24	72+81	24' LT LS	SALV.CAST. TO ANOKA CO.	CB	907.39	903.69	25			20	1		1		
25	73+00	18' RT LS	INSTALL CAST. - STRUCT.#63	MH	906.57	900.47	31			400	1		1		
31	77+00	18' RT LS	INSTALL CAST. - STRUCT.#70	MH	905.65	899.65	45			600	1		1		
32	77+00	24' RT LS	SALV.CAST. TO ANOKA CO.	CB	905.54	902.04	31			6	1		1		
33	77+00	24' LT LS	SALV.CAST. TO ANOKA CO.	CB	905.13	901.33	31			42	1		1		
47	82+99	24' LT LS	SALV.CAST. TO ANOKA CO.	CB	903.59	900.49	45 & 50			102	1		1		
45	83+00	18' RT LS	SALV.CAST. TO ANOKA CO.	MH	903.80	898.40	46			6	1		1		
46	83+00	24' RT LS	POOR CONDITION - BLOCK	CB	903.67	900.27	48			89	1				
50	83+58	24' LT LS	POOR CONDITION - BLOCK	CB	903.77	901.37	49			26	1				
49	83+84	26' LT LS	POOR CONDITION - BLOCK	CB	903.68	900.38	48			51	1				
48	83+89	25' RT LS	SALV.CAST. TO ANOKA CO.	CB	903.65	899.85	56			73	1		1		
56	84+60	41' RT LS	INSTALL CAST. - STRUCT.#119	MH	904.96	899.66	55			461	1		1		
55	84+60	291' RT LS	INSTALL CAST. - STRUCT.#54	CB	907.40	898.66	OUTLET#1			275	1	1	1		
57	86+70	18' RT LS	INSTALL CAST. - STRUCT.#120	MH	905.07	897.67	58			253	1		1		
58	86+74	24' LT LS	SALV.CAST. TO ANOKA CO.	CB	904.89	897.49	81			898	1		1		
80	95+71	23' RT LS	SALV.CAST. TO ANOKA CO.	CB	901.57	897.97	81			47	1		1		
81	95+72	24' LT LS	SALV.CAST. TO ANOKA CO.	CB	901.51	895.61	97			548	1		1		
96	100+28	37' RT LS	10"PVC AT GUTTER ELEV	CB	901.80	901.80	96A			101	1				
97	101+20	24' LT LS	SALV.CAST. TO ANOKA CO.	CB	902.52	894.62	96A			51	1		1		
96A	101+28	26' RT LS	SALV.CAST. TO ANOKA CO.	CB	902.31	894.51	98			55	1		1		
98	101+83	27' RT LS	QUAN.INCL'S. 56'REMOVAL TO CB.#100	CB	902.44	892.34	102			305	1				
102	104+32	29' RT LS	SALV.CAST.& CURB BOX-ANOKA CO.	CB	901.29	891.39	103			56	1		1		
(1) 103	104+40	27' LT LS	SALV.CAST. TO ANOKA CO.	CB	901.55	891.35	OUTLET#2			8	1		1		
(1) 112	106+87	29' RT LS	SALV.CAST.& CURB BOX-ANOKA CO.	CB	900.15	892.05	102			255	1		1		
125	110+63	23' LT LS	SALV.CAST. TO ANOKA CO.	CB	903.15	899.65	124			47	1		1		
124	110+65	24' RT LS	SALV.CAST. TO ANOKA CO.	CB	903.17	899.47	126			63	1		1		
126	111+28	29' RT LS	INSTALL CAST. - STRUCT.#132	MH	903.21	892.61	112			441	1		1		
128	111+28	59' RT LS	SALV.CAST.& CURB BOX-ANOKA CO.	CB	902.44	892.74	126			30	1		1		
127	111+46	25' RT LS	SALV.CAST. TO ANOKA CO.	CB	903.43	896.83	126			18	1		1		
129	111+48	24' LT LS	SALV.CAST. & CURB BOX	CB	903.32	898.52	130			10	1		1		
130	111+55	17' LT LS	SALV. & REINSTALL CASTING	MH	903.61	897.21	127	119	6.6	43			1	1	
137	114+78	17' LT LS	GOOD CONDITION - PRECAST	MH	904.59	899.29	130	132							1
138	114+80	51' LT LS	SALV.CAST. & CURB BOX	CB	905.25	900.75	137			34	1		1		
139	115+08	51' LT LS	SALV.CAST. & CURB BOX	CB	905.28	900.58	138			28	1		1		
140	115+30	17' LT LS	SALV. & REINSTALL CASTING	MH	904.99	899.59	137	137	4.8				1	1	
141	115+34	25' LT LS	SALV.CAST. & CURB BOX	CB	904.66	900.06	140			9	1		1		
142	115+35	26' RT LS	SALV.CAST. & CURB BOX	CB	904.78	900.38	140			43	1		1		
147	118+70	25' LT LS	SALV. & REINSTALL CASTING	MH	906.03	901.03	140	140	5.0				1	1	
149	118+70	7.4 'RT LS	SALV.CAST. & CURB BOX	CB	905.84	901.98	148			14	1		1		
148	118+70	7' LT LS	SALV.CAST. & CURB BOX	CB	905.82	901.83	147			18	1		1		
150	118+70	79.4' LT LS	NO CONSTRUCTION REQUIRED	CB	906.14	902.12	147								
			TOTALS						16.4	5961	40	1	38	3	1

(1) INCLUDES MASONRY RETAINING WALL.

REVISIONS			
DATE	BY	DATE	BY
9/24/93	KS		

TABULATION CHART

S.A.P. 114-020-04/106-020-07 S.P. 02-651-01 Sheet No. 28 of 85 Sheets

Fed. Project No.

CITY OF COON RAPIDS

N

STA. 48+20
BEG. S.P. 02-651-01
BEG. TEMP. WIDENING & BIT. CURB

WOODED

1-S-F (9628)

AND 16

WOODED

PARCEL 2

PARCEL 3

02-652

+67 END BIT. CURB & BEG. B-624 C&G.

+67 END TEMP. WIDENING BEG. FULL WIDTH CONST.

10' S.E.

97th AVE.

PARCEL 5

PARCEL 4

PARCEL 6

1-S-BL CAP WASH

1-S-BL (9700)

BIT LOT

10' SAND

10' S.E.

℄ S.B.

℄ SURVEY

℄ N.B.

50+00

55+00

UNIVERSITY AVE.

60+00

CB.#1

CB.#2

CB.#3

CB.#4

CB.#5

CB.#5A

CB.#6

CB.#7

CB.#8

24" SEW PD

INPLACE PATH

8' BIT. PATH

S.B.

BIT. LOT

TOWN HOUSE

TOWN HOUSE (9364)

TOWN HOUSE

CITY OF BLAINE

+67 END BIT. CURB & BEG. B-624 C&G.

1-S-F

CAP

1-S-F (9737)

1-S-F (9713)

1-S-F (9713)

MATCH LINE STA. 63+00

GRAPHIC SCALE

50' 0' 25' 50' 100'

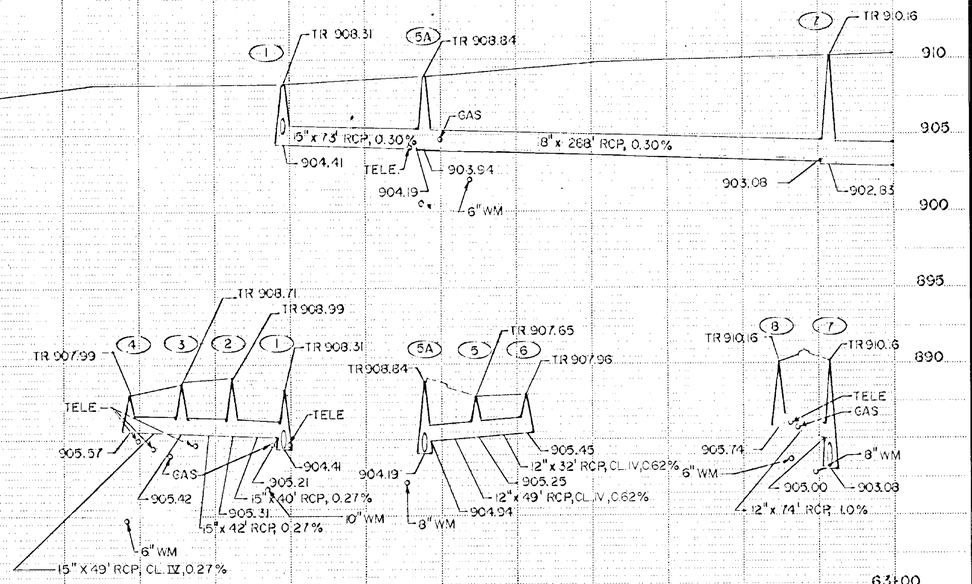
BM. 15 ELEV. 900.10
SPIKE IN 12" OAK
STA. 48+00 RT 75'

BM. 15A ELEV. 907.13
R.R. SPIKE IN 10" OAK
STA. 54+80 RT 75'

BM. 15B ELEV. 913.66
TOP S.W. COR. TOP STEP
STA. 58+55(#9667) RT 92'

BM. 16 ELEV. 911.15
TOP S.W. COR. BOT. STEP
STA. 63+00(#9719) RT 92'

NOTE: ALL PIPE IS CLASS II UNLESS OTHERWISE NOTED.



DRAINAGE PLAN
STA. 48+20 TO STA. 63+00

State Proj. No. 02-651-01 S.A.P. 114-020-04 / 106-020-07 Sheet No. 29 of 85 Sheets


Fed. Project No.
BM. 16B ELEV. 905.95
N.E. COR. OF STEP
STA. 74+40(#9930) LT. 78'
CITY OF COON RAPIDS
CITY OF BLAINE
PARCEL 7
PARCEL 8
PARCEL 9
PARCEL 10
PARCEL 11
PARCEL 12
PARCEL 16
98th LANE
99th LANE
99th AVE.
MATCH LANE STA. 63+00
MATCH LANE STA. 78+00
24' SERVICE RD.
CONST. LIMITS
EXIT ONLY
GRAPHIC SCALE
BM. 16 ELEV. 911.15
TOP S.W. COR. BOT. STEP
STA. 63+00(#9719) RT. 92'
BM. 16A ELEV. 910.38
S.W. COR. TOP STEP
STA. 68+51(#9819) RT. 34'
NOTE: ALL PIPE IS CLASS II UNLESS OTHERWISE NOTED.
21" x 428' RCP, 0.30%
24" x 258' RCP, 0.30%
24" x 221' RCP, 0.30%
27" x 363' RCP, 0.306%
27" x 303' RCP, 0.30%
TR 910.00
TR 908.64
TR 907.50
TR 905.91
DRAINAGE PLAN
STA. 63+00 TO STA. 78+00

Fed. Project No. _____

BM 17 ELEV. 910.58
TOP N.E. COR. BOT. STEP
STA. 78+60(#10006) LT. 116'

BM 17B ELEV. 908.99
TOP OF HYDRANT
STA. 89+10 LT. 71'

BM 17C ELEV. 907.61
TOP OF HYDRANT
STA. 92+10 LT. 71'

CITY OF COON RAPIDS

CITY OF BLAINE

MATCH LANE STA. 78+00

MATCH LANE STA. 93+00

101st AVE

102nd AVE

102nd LANE

PARCEL 13

PARCEL 15

PARCEL 17

PARCEL 18

PARCEL 19

PARCEL 20

PARCEL 21

1-S-F (#10306)

2-S-F (#10126)

BIT LOT

1-S-F

1-S-BR CHURCH

1-S-BR (BANK)

1-S-BR GAS STATION

CONC LOT
GAS PUMP ISLAND

1-S-F (#10141)

1-S-F (#10306)

1-S-F 30'

GRAPHIC SCALE

50' 0' 25' 50' 100'

(IN FEET)

CB.#36 CB.#35 CB.#34 CB.#40 CB.#39 CB.#38 CB.#37 CB.#44 CB.#47 CB.#43 CB.#12 CB.#41 CB.#49 CB.#50 CB.#48 CB.#45 CB.#46 CB.#53 CB.#52 CB.#51 CB.#62 CB.#61 CB.#60 CB.#59 CB.#69 CB.#68 CB.#66 CB.#65 CB.#64 CB.#74 CB.#73 CB.#72 CB.#71

MH.#67 MH.#57 MH.#56 MH.#63 MH.#70

℄ - S.B. ℄ - SURVEY ℄ - N.B.

80+00 85+00 90+00

15" ST 18" ST 21" ST 24" ST 27" ST 30" ST

2" B.P. 3" B.P. 4" B.P. 6" B.P. 8" B.P.

T-BUR

6" SAN 8" SAN

W.M. W.S. G.V. SIGN

3' BIT PATH

14' SAND

14' GRAVEL

23' BIT

25' BIT

30' ESMT.

BIT. LOT

CONC. WALK

SEWER CONST. - 84+60 RT.

SCALE = 100'

LNB - UNIV.

60' R/W

30' X 660' ESMT.

PORTABLE CURB N. EDGE BIT LOT

SECTION LINE (N. LIMIT - ESMT.)

18" R.C.P. INP. (REMOVE)

GROUTED RIPRAP

F.B.I. 1 - 36" SPAN - RCP-A APRON

F.B.I. 36" SPAN X 260' RCP-A, CL. IIIA, 0.18%

F.B.I. 36" SPAN X 266' RCP-A, CL. IIA, 0.18%

SAW CUT

BIT. WALK

CHURCH

UNIV. AVE.

3rd ST.

BM. 17A ELEV. 906.74
RR. SPIKE IN PP
STA. 84+67, RT. 64'

NOTE: ALL PIPE IS CLASS II UNLESS OTHERWISE NOTED.

910 905 900 895 890

TELE GAS

34 TR 904.81 — 27" x 267' RCP, 0.30% — 897.60

37 TR 903.82 — 30" x 206' RCP, 0.33% — 896.80 — 896.55

41 TR 903.19 — 30" x 146' RCP, 0.25% — 895.87

51 TR 903.59 — 12" x 243' RCP, 0.50% — 895.50 — 897.20 — 895.25

59 TR 904.04 — 898.42

63 TR 903.71 — 15" x 150' RCP, 0.30% — 897.28 — 896.82 — 896.57

70 TR 903.02

C/L 3Rd. ST. N.E.

35 TR 905.43 — 12" x 39' RCP, 1.0% — 901.39 — 901.01 — 6" WM

36 TR 904.81 — 12" x 44' RCP, 1.0% — 900.57 — 8" WM — 897.60

38 TR 904.59 — 12" x 6' RCP, 1.0% — 900.35 — 6" WM

39 TR 903.77 — 12" x 33' RCP, 1.0% — 900.02 — 899.96

40 TR 903.77

38 TR 904.37 — 12" x 55' RCP, 1.0% — 899.41 — 8" WM — 896.55

42 TR 904.04 — 12" x 49' RCP, 0.50% — 899.22 — 898.94 — 6" WM — 898.97

43 TR 903.82

44 TR 903.16

41 TR 903.19 — 15" x 5' RCP, 0.50% — 898.77 — 8" WM — 895.87

52 TR 904.22 — 12" x 49' RCP, 1.0% — 899.14 — 898.65 — 6" WM

53 TR 903.56 — 12" x 38" RCP, 1.0% — 898.27 — 8" WM

51 TR 903.59 — 36" SPAN x 266' RCP-A, CL. IIIA, 0.18% — 893.66 — 893.18 — 8" VCP SAN.

54 TR 907.23 — 36" SPAN x 260' RCP-A, CL. IIIA, 0.18% — 892.71

62 TR 904.30 — 12" x 37' RCP, 1.0% — 899.68 — 899.51 — 8" WM

61 TR 905.23 — 12" x 17' RCP, 1.0% — 899.34

60 TR 905.23

59 TR 904.04 — 12" x 32' RCP, 1.0% — 898.42 — 8" WM

69 TR 905.31 — 12" x 31' RCP, 1.0% — 900.97 — 900.66 — 6" WM

68 TR 905.39 — 12" x 95' RCP, 1.0% — 900.35 — 899.40 — 8" WM

67 TR 904.09 — 12" x 43' RCP, 1.0% — 898.97

66 TR 903.48 — 12" x 46' RCP, 1.0% — 898.51 — 697.03

65 TR 904.14

63 TR 903.71 — 12" x 5' RCP, 1.0% — 898.93

64 TR 903.41 — 12" x 26' RCP, 0.47% — 898.94 — 898.82

76 TR 903.89 — 12" x 44' RCP, 0.47% — 898.99

75 TR 903.60 — 12" x 38' RCP, 0.47% — 898.61

74 TR 902.69

73 TR 903.38 — 12" x 4' RCP, 0.47% — 898.43

72 TR 903.38 — 42" x 43' RCP, 0.47% — 898.21

70 TR 903.02

71 TR 902.72 — 12" x 5' RCP, 1.0% — 898.05 — 898.00 — 6" WM — 896.57 — 8" WM

78+00 80+00 85+00 90+00 93+00

DRAINAGE PLAN
STA. 78+00 TO STA. 93+00

State Proj. No. 02-651-01 S.A.P. 114-020-04/106-020-07 Sheet No. 31 of 85 Sheets

Copy Equipment Form #2

Fed. Project No. _____

CITY OF COON RAPIDS

BM 18A ELEV. 905.45
TOP N.E. COR. BOT. STEP
STA. 102+55(#10414) LT. 103'

BM 18 ELEV. 903.75
S.W. COR. BOT. STEP
STA. 97+00 RT. 111'

BM 18B ELEV. 904.96
TOP S.W. COR. TOP STEP
STA. 107+02(#10455) RT. 93'

CITY OF BLAINE

GRAPHIC SCALE

NOTE: ALL PIPE IS CLASS II UNLESS OTHERWISE NOTED.

DRAINAGE PLAN
STA. 93+00 TO STA. 108+00

REVISIONS			
DATE	BY	DATE	BY
9-9-93	JHT		

State Proj. No. 02-651-01 S.A.P. 114-020-04/106-020-07 Sheet No. 32 of 85 Sheets

Fed. Project No. _____

CITY OF COON RAPIDS

CITY OF BLAINE

PARCEL 22

PARCEL 23

PARCEL 21

PARCEL 25

PARCEL 26

PARCEL 27

105th AVE.

105th LANE

106th AVE.

N

INPLACE 21" ST

INPLACE 18" ST

INPLACE 36" ST

INP. CB. #150

MATCH LANE STA. 108+00

110+00

115+00

120+00

18"ST

21"ST

36"ST

M.H. UNIVERSITY AVE.

CB. #113 CB. #122 CB. #123 CB. #124 CB. #125 CB. #126 CB. #127 CB. #128 CB. #129 CB. #131 CB. #132 CB. #133 CB. #134 CB. #135 CB. #136 CB. #137 CB. #138 CB. #139 CB. #140 CB. #141 CB. #142 CB. #143 CB. #144 CB. #145 CB. #146 CB. #147 CB. #148 CB. #149 CB. #151 CB. #152 CB. #153

MH. #119 MH. #120 MH. #130 MH. #132 MH. #137 MH. #140 MH. #147

SAN MH

TV

GAS

ELEC

6" STEEL

BIT. LOT

CONC. LOT

PUMP ISLAND

CONC. BASE

1-S-BL

1-S-F

1-S-BL TOM THUMB STORE

1-S-F UNIVER. CREEK PLAZA

SAN MIN

GRAPHIC SCALE

50' 0' 25' 50' 100'

(IN FEET)

BM 19 ELEV. 903.70
TOP S.W. COR. SLAB OF SIGN
STA. 111+51 RT. 80'

NOTE: ALL PIPE IS CLASS II UNLESS OTHERWISE NOTED.

42"X 251' R.C.P. 0.19%

21"x125' R.C.P. 1.0%

21"x140' R.C.P. 0.60% (INP)

21"x184' R.C.P. 0.60% (INP)

18"x340' R.C.P. 0.50% (INP)

18"x60' R.C.P. 0.30% (INP)

8" R.C.P. 0.30% (INP)

42"x51' R.C.P. 0.19%

12"x70' R.C.P. 1.0%

12"x47' R.C.P. 1.0%

12"x62' R.C.P. 0.34%

12"x46' R.C.P. 0.34%

12"x28' R.C.P. 0.34%

12"x50' R.C.P. 0.34%

12"x31' R.C.P. 0.50%

12"x29' R.C.P. 1.0%

12"x37' R.C.P. 0.50%

12"x5' R.C.P. 0.50%

12"x20' R.C.P. 0.50%

12"x54' R.C.P. (INP) 1.0%

12"x30' R.C.P. 0.30%

15"x7' R.C.P. 0.50%

15"x38' R.C.P. 0.30%

15"x16' R.C.P. 0.30%

15"x11' R.C.P. 0.30%

15"x32' R.C.P. 0.30%

5'x17' R.C.P. 0.30%

6" WM

DRAINAGE PLAN

STA. 108+00 TO STA. 119+82

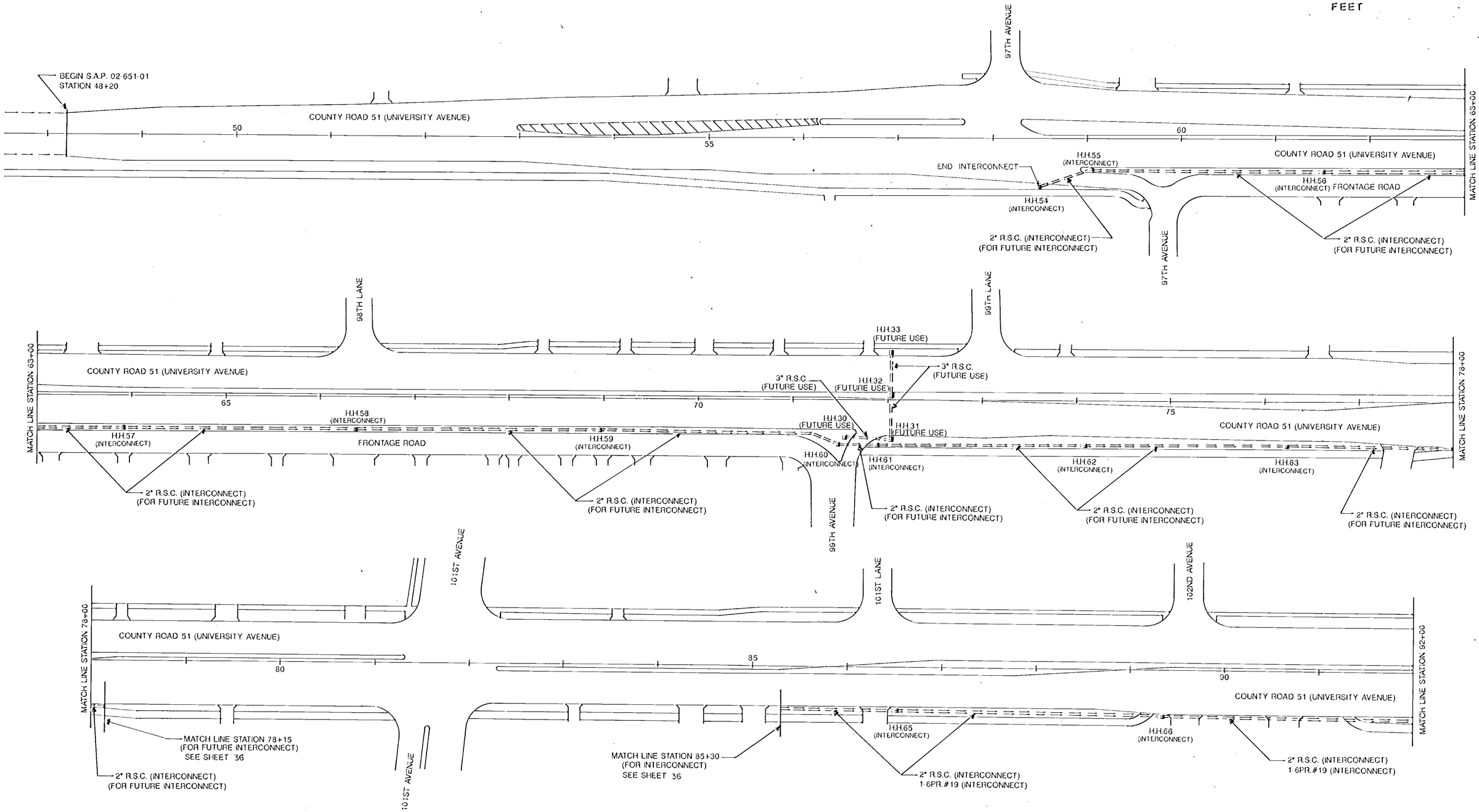
State Proj. No. 02-651-01 S.A.P. 114-020-04/108-020-07 Sheet No. 33 of 85 Sheets

Lacy Equipment Form #2 10/09

Fed. Project No. _____

BASE MAP/PLAN/PLAN/ORIG. NO.

SCALE
0 25 50 100
FEET



NO.	BY	DATE	REVISIONS

"ELECTRICAL ENGINEER CERTIFICATION"
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. Ellor
Date: 3-27-92 Reg. No. 5859

I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the laws of the state of Minnesota.
Thomas A. Schweich
Date: 3-27-92 Reg. No. 20943

SEH
ENGINEERS ■ ARCHITECTS ■ PLANNERS

ANOKA COUNTY
MINNESOTA

TRAFFIC SIGNAL INTERCONNECT
COUNTY ROAD 51 (UNIVERSITY AVENUE)

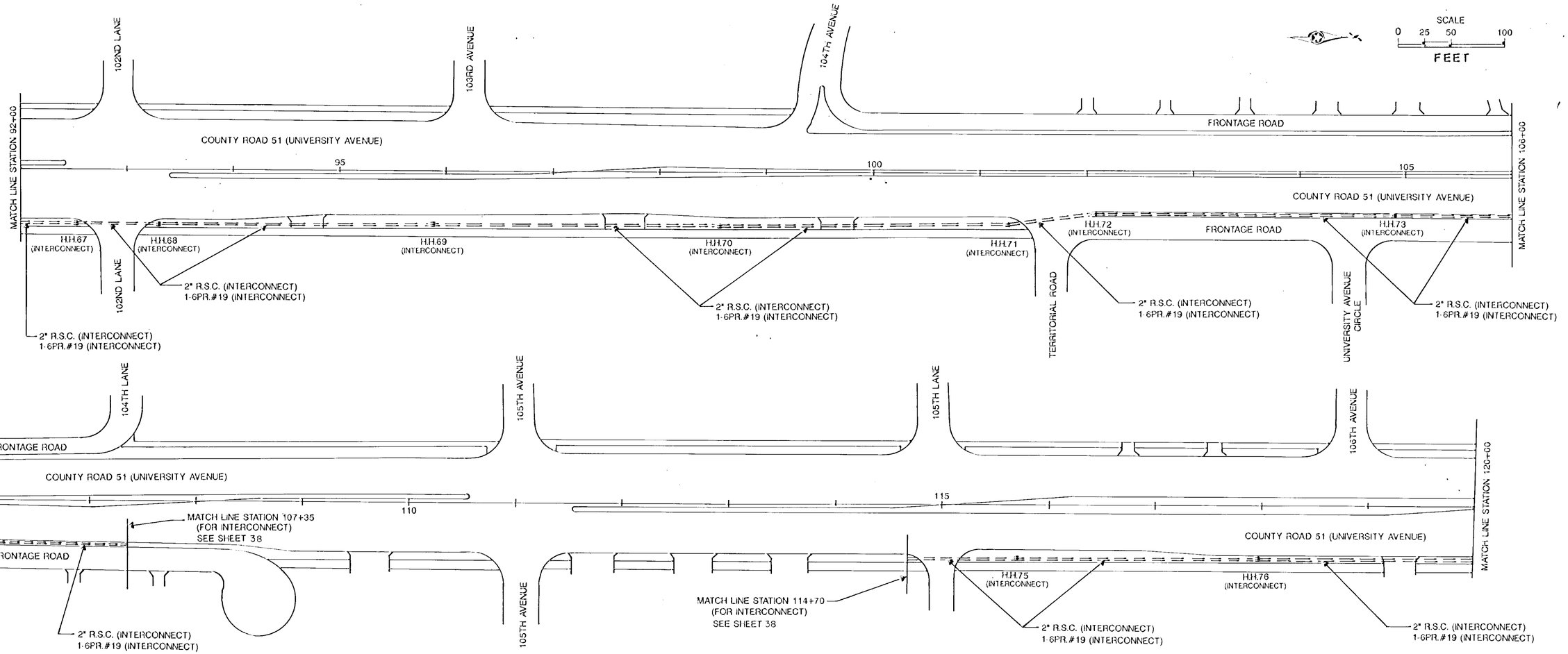
FILE NO. 92112
DATE

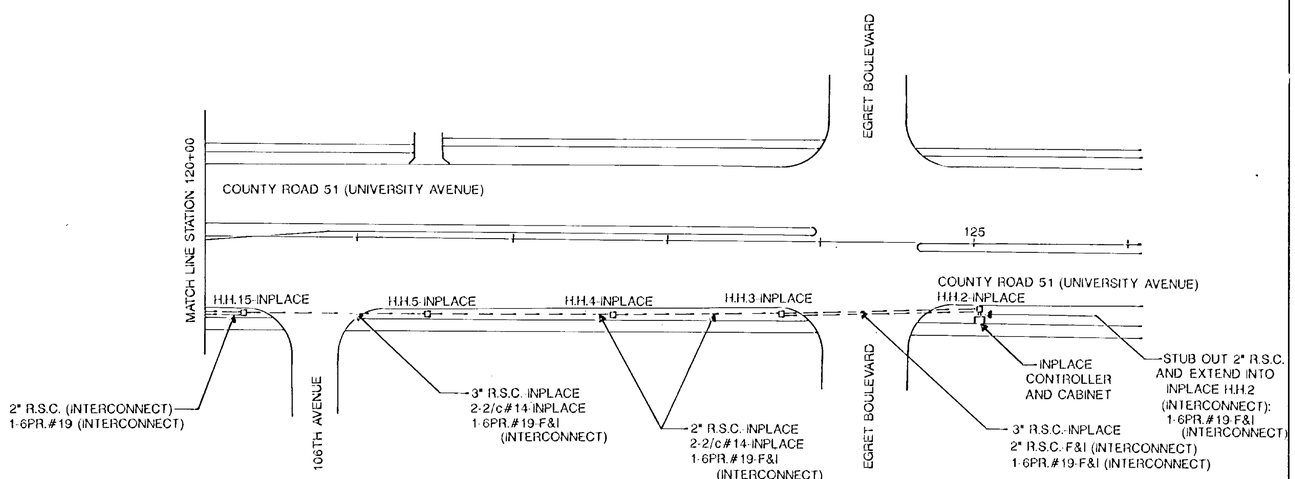
S.P. 02-651-01 S.P. _____ C.P. _____

Sheet No. 34 of 65 Sheets

Fed. Project No. _____

BASE OVERLAY PRG. NO.





NOTES:

1) ◘ = CONCRETE HANDHOLE WITH TYPE "C" COVER TO BE FURNISHED AND INSTALLED BY CONTRACTOR PER MN/DOT STANDARD PLATE 8117F.
2) □ = INPLACE CONCRETE HANDHOLE-USE INPLACE.
3) ═══ = 2" R.S.C. TO BE FURNISHED AND INSTALLED BY CONTRACTOR.
4) ——— = INPLACE CONDUIT (SIZE AS NOTED).
5) (INTERCONNECT) AND (FUTURE USE) DENOTE ITEMS TO BE PAID FOR UNDER SEPARATE PAY ITEM. SEE ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.
6) LOCATION OF HANDHOLES SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER.
7) CONTRACTOR SHALL COORDINATE INSTALLATION OF HANDHOLES AND CONDUIT WITH ROAD CONSTRUCTION.

NO.	BY	DATE	REVISIONS

"ELECTRICAL ENGINEER CERTIFICATION"
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. Eller
Date: 3-27-92 Reg. No. 5859

I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the laws of the state of Minnesota.
Thomas A. Schweich
Date: 3-27-92 Reg. No. 20943

SEH ENGINEERS ■ ARCHITECTS ■ PLANNERS

ANOKA COUNTY
MINNESOTA

TRAFFIC SIGNAL INTERCONNECT
COUNTY ROAD 51 (UNIVERSITY AVENUE)

FILE NO. 92112
DATE

S.P. 02-651-01 S.P. _____ C.P. _____

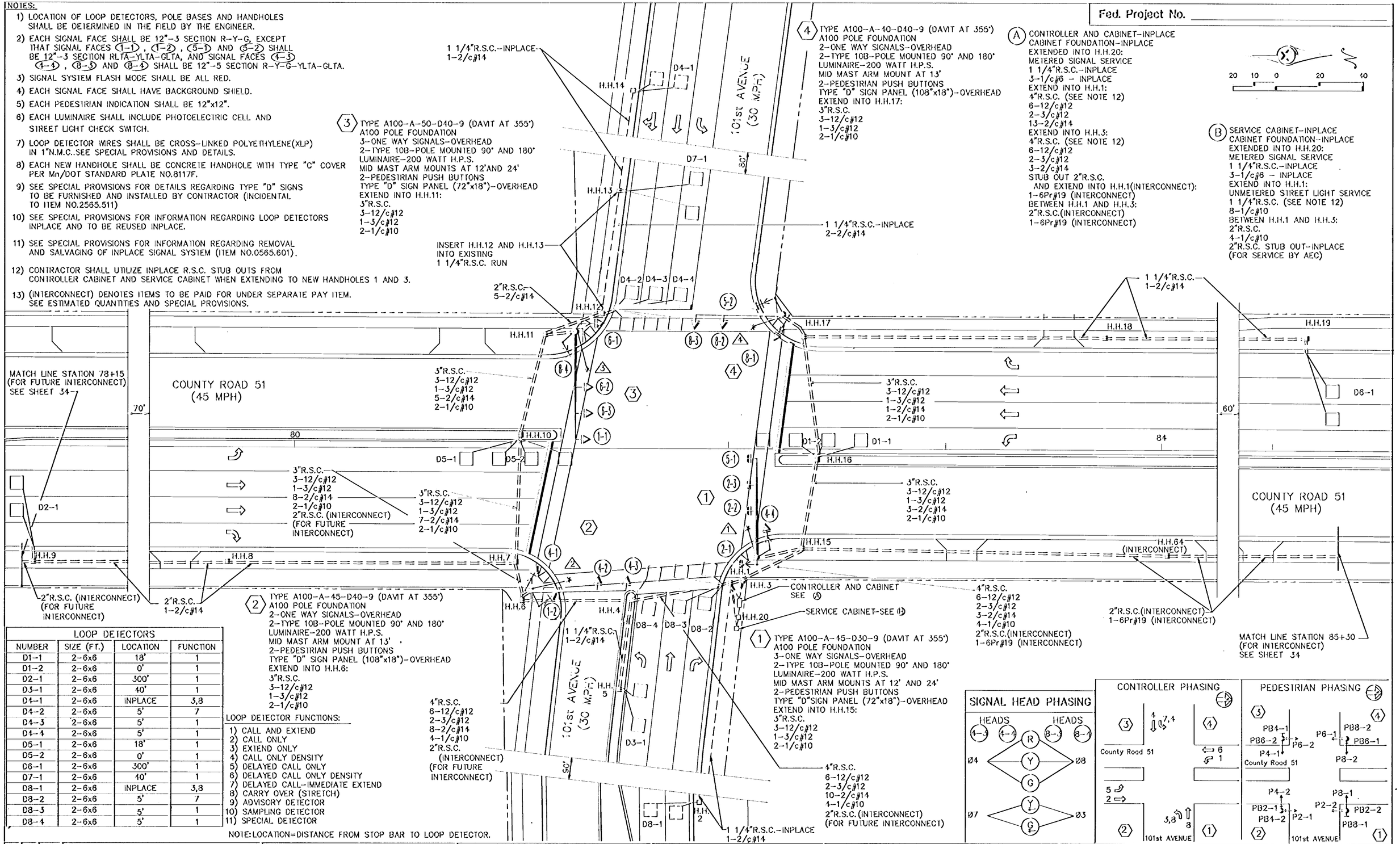
Sheet No. 35 of 85 Sheets

Fed. Project No. _____

BASE OVERLAY.DRG NO

NOTES:

1) LOCATION OF LOOP DETECTORS, POLE BASES AND HANDHOLES SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER.
2) EACH SIGNAL FACE SHALL BE 12"-3 SECTION R-Y-G, EXCEPT THAT SIGNAL FACES (1-1), (1-2), (5-1) AND (5-2) SHALL BE 12"-3 SECTION RLTA-YLTA-GLTA, AND SIGNAL FACES (4-3) (4-4), (8-3) AND (8-4) SHALL BE 12"-5 SECTION R-Y-G-YLTA-GLTA.
3) SIGNAL SYSTEM FLASH MODE SHALL BE ALL RED.
4) EACH SIGNAL FACE SHALL HAVE BACKGROUND SHIELD.
5) EACH PEDESTRIAN INDICATION SHALL BE 12"x12".
6) EACH LUMINAIRE SHALL INCLUDE PHOTOELECTRIC CELL AND STREET LIGHT CHECK SWITCH.
7) LOOP DETECTOR WIRES SHALL BE CROSS-LINKED POLYETHYLENE(XLP) IN 1"N.M.C..SEE SPECIAL PROVISIONS AND DETAILS.
8) EACH NEW HANDHOLE SHALL BE CONCRETE HANDHOLE WITH TYPE "C" COVER PER Mn/DOT STANDARD PLATE NO.8117F.
9) SEE SPECIAL PROVISIONS FOR DETAILS REGARDING TYPE "D" SIGNS TO BE FURNISHED AND INSTALLED BY CONTRACTOR (INCIDENTAL TO ITEM NO.2565.511)
10) SEE SPECIAL PROVISIONS FOR INFORMATION REGARDING LOOP DETECTORS INPLACE AND TO BE REUSED INPLACE.
11) SEE SPECIAL PROVISIONS FOR INFORMATION REGARDING REMOVAL AND SALVAGING OF INPLACE SIGNAL SYSTEM (ITEM NO.0565.601).
12) CONTRACTOR SHALL UTILIZE INPLACE R.S.C. STUB OUTS FROM CONTROLLER CABINET AND SERVICE CABINET WHEN EXTENDING TO NEW HANDHOLES 1 AND 3.
13) (INTERCONNECT) DENOTES ITEMS TO BE PAID FOR UNDER SEPARATE PAY ITEM. SEE ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.



(3) TYPE A100-A-50-D40-9 (DAVIT AT 355')
A100 POLE FOUNDATION
3-ONE WAY SIGNALS-OVERHEAD
2-TYPE 10B-POLE MOUNTED 90° AND 180°
LUMINAIRE-200 WATT H.P.S.
MID MAST ARM MOUNTS AT 12'AND 24'
2-PEDESTRIAN PUSH BUTTONS
TYPE "D" SIGN PANEL (72"x18")-OVERHEAD
EXTEND INTO H.H.11:
3"R.S.C.
3-12/c#12
1-3/c#12
2-1/c#10

(4) TYPE A100-A-40-D40-9 (DAVIT AT 355')
A100 POLE FOUNDATION
2-ONE WAY SIGNALS-OVERHEAD
2-TYPE 10B-POLE MOUNTED 90° AND 180°
LUMINAIRE-200 WATT H.P.S.
MID MAST ARM MOUNT AT 13'
2-PEDESTRIAN PUSH BUTTONS
TYPE "D" SIGN PANEL (108"x18")-OVERHEAD
EXTEND INTO H.H.17:
3"R.S.C.
3-12/c#12
1-3/c#12
2-1/c#10

(A) CONTROLLER AND CABINET-INPLACE
CABINET FOUNDATION-INPLACE
EXTENDED INTO H.H.20:
METERED SIGNAL SERVICE
1 1/4"R.S.C.-INPLACE
3-1/c#6 - INPLACE
EXTEND INTO H.H.1:
4"R.S.C. (SEE NOTE 12)
6-12/c#12
2-3/c#12
13-2/c#14
EXTEND INTO H.H.3:
4"R.S.C. (SEE NOTE 12)
6-12/c#12
2-3/c#12
3-2/c#14
STUB OUT 2"R.S.C.
AND EXTEND INTO H.H.1(INTERCONNECT):
1-6Pr#19 (INTERCONNECT)
BETWEEN H.H.1 AND H.H.3:
2"R.S.C.(INTERCONNECT)
1-6Pr#19 (INTERCONNECT)

20 10 0 20 40

(B) SERVICE CABINET-INPLACE
CABINET FOUNDATION-INPLACE
EXTENDED INTO H.H.20:
METERED SIGNAL SERVICE
1 1/4"R.S.C.-INPLACE
3-1/c#6 - INPLACE
EXTEND INTO H.H.1:
UNMETERED STREET LIGHT SERVICE
1 1/4"R.S.C. (SEE NOTE 12)
8-1/c#10
BETWEEN H.H.1 AND H.H.3:
2"R.S.C.
4-1/c#10
2"R.S.C. STUB OUT-INPLACE
(FOR SERVICE BY AEC)

(2) TYPE A100-A-45-D40-9 (DAVIT AT 355')
A100 POLE FOUNDATION
2-ONE WAY SIGNALS-OVERHEAD
2-TYPE 10B-POLE MOUNTED 90° AND 180°
LUMINAIRE-200 WATT H.P.S.
MID MAST ARM MOUNT AT 13'
2-PEDESTRIAN PUSH BUTTONS
TYPE "D" SIGN PANEL (108"x18")-OVERHEAD
EXTEND INTO H.H.6:
3"R.S.C.
3-12/c#12
1-3/c#12
2-1/c#10

(1) TYPE A100-A-45-D30-9 (DAVIT AT 355')
A100 POLE FOUNDATION
3-ONE WAY SIGNALS-OVERHEAD
2-TYPE 10B-POLE MOUNTED 90° AND 180°
LUMINAIRE-200 WATT H.P.S.
MID MAST ARM MOUNTS AT 12' AND 24'
2-PEDESTRIAN PUSH BUTTONS
TYPE "D"SIGN PANEL (72"x18")-OVERHEAD
EXTEND INTO H.H.15:
3"R.S.C.
3-12/c#12
1-3/c#12
2-1/c#10

LOOP DETECTORS			
NUMBER	SIZE (FT.)	LOCATION	FUNCTION
D1-1	2-6x6	18'	1
D1-2	2-6x6	0'	1
D2-1	2-6x6	300'	1
D3-1	2-6x6	40'	1
D4-1	2-6x6	INPLACE	3,8
D4-2	2-6x6	5'	7
D4-3	2-6x6	5'	1
D4-4	2-6x6	5'	1
D5-1	2-6x6	18'	1
D5-2	2-6x6	0'	1
D6-1	2-6x6	300'	1
D7-1	2-6x6	40'	1
D8-1	2-6x6	INPLACE	3,8
D8-2	2-6x6	5'	7
D8-3	2-6x6	5'	1
D8-4	2-6x6	5'	1

LOOP DETECTOR FUNCTIONS:
1) CALL AND EXTEND
2) CALL ONLY
3) EXTEND ONLY
4) CALL ONLY DENSITY
5) DELAYED CALL ONLY
6) DELAYED CALL ONLY DENSITY
7) DELAYED CALL--IMMEDIATE EXTEND
8) CARRY OVER (STRETCH)
9) ADVISORY DETECTOR
10) SAMPLING DETECTOR
11) SPECIAL DETECTOR

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

SIGNAL HEAD PHASING

CONTROLLER PHASING

PEDESTRIAN PHASING

NO.	BY	DATE	REVISIONS
1	JMG	6/93	Per Mn/DOT Comments

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Robert A. Eller
Date: 3-27-92 Reg. No. 5859

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Thomas A. Schwerdtfeger
Date: 3-27-92 Reg. No. 20943

SEH ENGINEERS ARCHITECTS PLANNERS

ANOKA COUNTY
MINNESOTA

TRAFFIC SIGNAL SYSTEM 'A'
INTERSECTION LAYOUT
COUNTY ROAD 51 AT 101st AVENUE

FILE NO. 92112
DATE

S.P. 02-651-01 S.P. _____ C.P. _____

Sheet No. 36 of 85 Sheets

Fed. Project No. _____

BASE OVERLAY DWG. NO.

CONTROLLER CABINET (INPLACE)

1: RED 4-3, YEL 4-3, GRN 4-3, NEU 4-3, YLTA 4-3, GLTA 4-3, SPR, NEU 4-1, RED 4-1, YEL 4-1, GRN 4-1, EQG

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

3: RLTA 1-2, YLTA 1-2, GLTA 1-2, NEU 1-2, SPR, SPR, SPR, NEU P2-1, WLK P2-1, DWK P2-1, SPR, EQG

4: RED 8-4, YEL 8-4, GRN 8-4, NEU 8-4, YLTA 8-4, GLTA 8-4, SPR, NEU 1-1, RLTA 1-1, YLTA 1-1, GLTA 1-1, EQG

5: RED 6-2, YEL 6-2, GRN 6-2, NEU 6-2, 6-1, RED 6-1, YEL 6-1, GRN 6-1, NEU, SPR, SPR, SPR, SPR, EQG

6: RED 6-3, YEL 6-3, GRN 6-3, NEU 6-3, P6-2, WLK P6-2, DWK P6-2, SPR, NEU P4-1, WLK P4-1, DWK P4-1, SPR, EQG

7: RED 4-4, YEL 4-4, GRN 4-4, NEU 4-4, YLTA 4-4, GLTA 4-4, SPR, NEU 5-1, RLTA 5-1, YLTA 5-1, GLTA 5-1, EQG

D1-1 17, D2-1 18, D3-1 19, D4-1 20, D4-2 21, D4-3 22, D4-4 23, D5-1 24, D6-1 25, D7-1 26, D8-1 27, D8-2 28, D8-3 29, D8-4 30, D1-2 37, D5-2 38, INTERCONNECT TO SYSTEM "B" 50

8: 2-2 RED, 2-2 YEL, 2-2 GRN, 2-1, 2-2 NEU, 2-1 RED, 2-1 YEL, 2-1 GRN, NEU, SPR, SPR, SPR, EQG

9: 2-3 RED, 2-3 YEL, 2-3 GRN, P2-2, 2-3 NEU, P2-2 WLK, P2-2 DWK, SPR, P8-1 NEU, P8-1 WLK, P8-1 DWK, SPR, EQG

10: 8-3 RED, 8-3 YEL, 8-3 GRN, 8-3 NEU, 8-3 YLTA, 8-3 GLTA, SPR, 8-1 NEU, 8-1 RED, 8-1 YEL, 8-1 GRN, EQG

11: 8-2 RED, 8-2 YEL, 8-2 GRN, P8-2, 8-2 NEU, P8-2 WLK, P8-2 DWK, SPR, NEU, SPR, SPR, SPR, EQG

12: 5-2 RLTA, 5-2 YLTA, 5-2 GLTA, 5-2 NEU, SPR, SPR, SPR, P6-1 NEU, P6-1 WLK, P6-1 DWK, SPR, EQG

13: PB2-1 NEU PB4-2

14: PB6-2 NEU PB4-1

15: PB2-2 NEU PB8-1

16: PB6-1 NEU PB8-2

35: SIGNAL SERVICE (INPLACE)

H.H.1: 1,2,3,4,5,6,13,14,18,19, 20,21,22,23,24,26,27, 28,29,30,38

H.H.2: 27 — D8-1

H.H.3: 50, 33,34, 50 — 7,8,9,10,11,12, 15,16,17,25,37

H.H.4: 1,2,3,4,5,6,13,14,18,19, 20,21,22,23,24,26,30,31,32,38

H.H.5: 19 — D3-1

H.H.6: 1,2,3,4,5,6,13,14, 18,20,21,22,23,24, 26,31,32 38

H.H.7: 4,5,6,14,18,20,21, 22,23,24,26,32,38

H.H.8

H.H.9: 18 — D2-1

H.H.10: 24, 38 — D5-1, D5-2

H.H.11: 4,5,6,14,20,21,22, 23,26,32 — 20,21,22,23,26

H.H.12: 21, 22, 23 — D4-2, D4-3, D4-4

H.H.13: 26 — D7-1

H.H.14: 20 — D4-1

H.H.15: 7,8,9,10,11,12, 15,16,17,25,33,34,37 — 10,11,12,16,17,25,34,37

H.H.16: 17, 37 — D1-1, D1-2

H.H.17: 10,11,12,16, 25,34

H.H.18: 25

H.H.19: 25, 25 — D6-1

H.H.20

LUMINAIRE 1 — 33

LUMINAIRE 2 — 31

LUMINAIRE 3 — 32

LUMINAIRE 4 — 34

SIGNAL SERVICE CABINET (INPLACE)

31 LUMINAIRE 2; 32 LUMINAIRE 3; 33 LUMINAIRE 1; 34 LUMINAIRE 4; 35 SIGNAL (INPLACE) SERVICE; SIGNALS NEUTRAL LIGHTING 36

SERVICE BY OTHERS — S.O.P.

CONDUIT (TO H.H.63) FOR FUTURE INTERCONNECT SEE SHEET 34

INTERCONNECT TO SIGNAL SYSTEM "B" (51/105th)VIA H.H.64-SEE SHEET 36

PB2-1 PB4-2; PB6-2 PB4-1; PB2-2 PB8-1; PB6-1 PB8-2

P4-2 (4-2); P2-1 (1-2); P8-2 (8-2); P8-1 P2-2 (2-3); P4-1 P8-2 (6-3); P6-1 (5-2)

CONDUCTOR COLOR CODING

12/c#12: R, O, BL, WH, R/BLK, O/BLK, BL/BLK, WH/BLK, BLK, BLK/WH, G/BLK, G

BLK, WH — 2-1/c#2, 2-1/c#6, 2-1/c#10

R, WH, BLK — 3/c#12

BLK, CLEAR — 2/c#14

R OR O, WH OR YEL, BLK OR BL — 3/c#20

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

NO.	BY	DATE	REVISIONS

"ELECTRICAL ENGINEER CERTIFICATION"
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.
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Date: 3-27-92 Reg. No. 5859

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Thomas J. Schweich
Date: 3-27-92 Reg. No. 20943

SEH ENGINEERS ARCHITECTS PLANNERS

ANOKA COUNTY
MINNESOTA

TRAFFIC SIGNAL SYSTEM 'A'
FIELD WIRING DIAGRAM
COUNTY ROAD 51 AT 101th AVENUE

FILE NO. 92112
DATE

S.P. 02-651-01 S.P. _____ C.P. _____

Sheet No. 37 of 85 Sheets

Fed. Project No. _____

BASE OVERLAY/PVMT NO

NOTES:
1) LOCATION OF CONTROLLER CABINET, SERVICE CABINET, LOOP DETECTORS, POLE BASES AND HANDHOLES SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER.

2) EACH SIGNAL FACE SHALL BE 12"-3 SECTION R-Y-G, EXCEPT THAT SIGNAL FACES (1-1), (1-2), (5-1) AND (5-2) SHALL BE 12"-3 SECTION RLTA-YLTA-GLTA.

3) SIGNAL SYSTEM FLASH MODE SHALL BE ALL RED.

4) EACH SIGNAL FACE SHALL HAVE BACKGROUND SHIELD.

5) EACH PEDESTRIAN INDICATION SHALL BE 12"x12".

6) EACH LUMINAIRE SHALL INCLUDE PHOTOELECTRIC CELL AND STREET LIGHT CHECK SWITCH.

7) SEE SPECIAL PROVISIONS AND DETAILS FOR ANOKA COUNTY SERVICE CABINET INFORMATION.

8) SEE SPECIAL PROVISIONS FOR COUNTY FURNISHED MATERIALS.

9) LOOP DETECTOR WIRES SHALL BE CROSS-LINKED POLYETHYLENE(XLP) IN 1"N.M.C..SEE SPECIAL PROVISIONS AND DETAILS.

10) EACH HANDHOLE SHALL BE CONCRETE HANDHOLE WITH TYPE "C" COVER PER Mn/DOT STANDARD PLATE NO.8117F.

11) SEE SPECIAL PROVISIONS AND DETAILS REGARDING TYPE "D" SIGNS TO BE FURNISHED AND INSTALLED BY CONTRACTOR (INCIDENTAL TO ITEM NO.2565.511).

12) SEE SPECIAL PROVISIONS FOR INFORMATION REGARDING REMOVAL AND SALVAGING OF INPLACE SIGNAL SYSTEM (ITEM NO.0565.601).

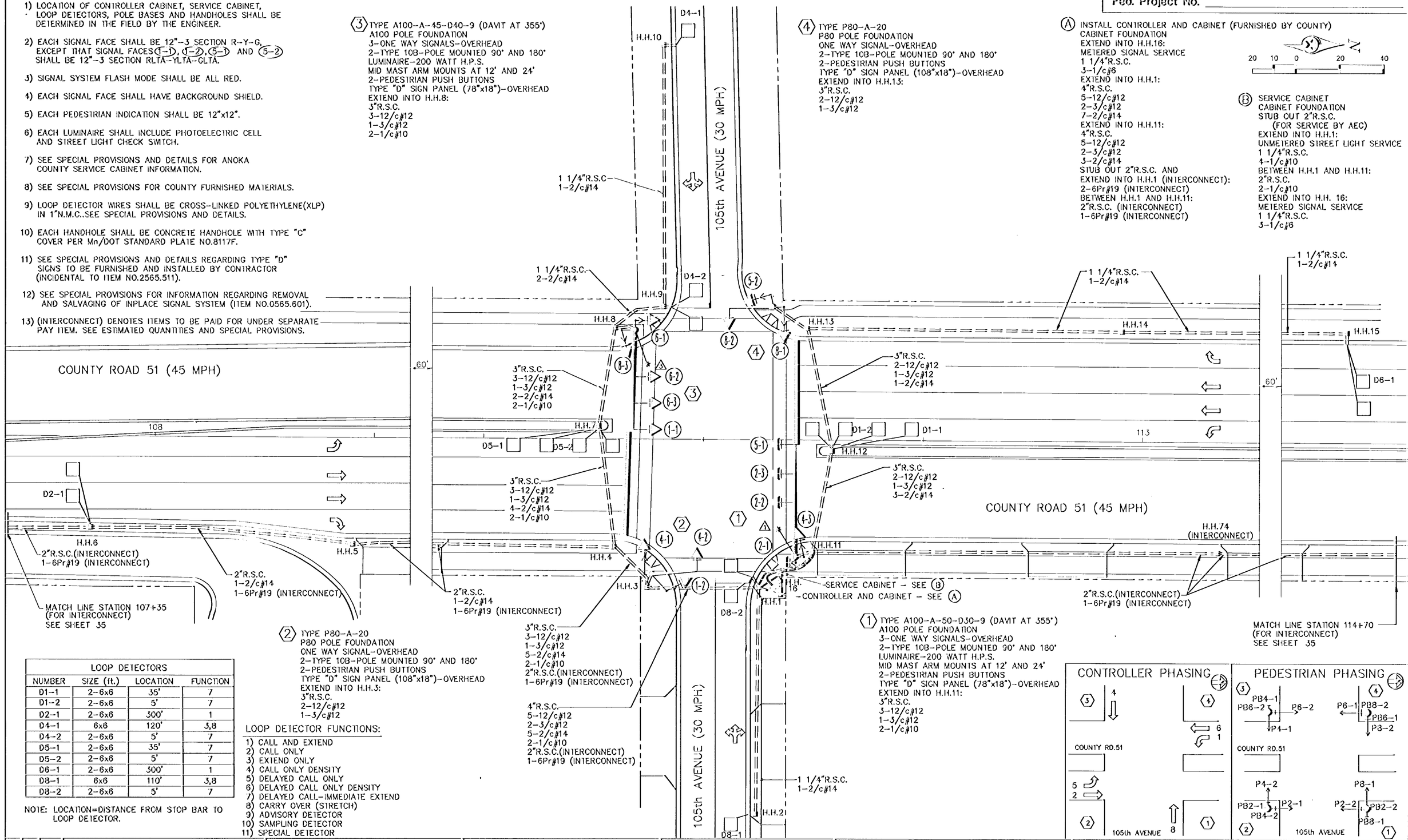
13) (INTERCONNECT) DENOTES ITEMS TO BE PAID FOR UNDER SEPARATE PAY ITEM. SEE ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.

(3) TYPE A100-A-45-D40-9 (DAVIT AT 355°)
A100 POLE FOUNDATION
3-ONE WAY SIGNALS-OVERHEAD
2-TYPE 10B-POLE MOUNTED 90° AND 180°
LUMINAIRE-200 WATT H.P.S.
MID MAST ARM MOUNTS AT 12' AND 24'
2-PEDESTRIAN PUSH BUTTONS
TYPE "D" SIGN PANEL (78"x18")-OVERHEAD
EXTEND INTO H.H.8:
3"R.S.C.
3-12/c#12
1-3/c#12
2-1/c#10

(4) TYPE P80-A-20
P80 POLE FOUNDATION
ONE WAY SIGNAL-OVERHEAD
2-TYPE 10B-POLE MOUNTED 90° AND 180°
2-PEDESTRIAN PUSH BUTTONS
TYPE "D" SIGN PANEL (108"x18")-OVERHEAD
EXTEND INTO H.H.13:
3"R.S.C.
2-12/c#12
1-3/c#12

(A) INSTALL CONTROLLER AND CABINET (FURNISHED BY COUNTY)
CABINET FOUNDATION
EXTEND INTO H.H.16:
METERED SIGNAL SERVICE
1 1/4"R.S.C.
3-1/c#6
EXTEND INTO H.H.1:
4"R.S.C.
5-12/c#12
2-3/c#12
7-2/c#14
EXTEND INTO H.H.11:
4"R.S.C.
5-12/c#12
2-3/c#12
3-2/c#14
STUB OUT 2"R.S.C. AND
EXTEND INTO H.H.1 (INTERCONNECT):
2-6Pr#19 (INTERCONNECT)
BETWEEN H.H.1 AND H.H.11:
2"R.S.C. (INTERCONNECT)
1-6Pr#19 (INTERCONNECT)

(B) SERVICE CABINET
CABINET FOUNDATION
STUB OUT 2"R.S.C.
(FOR SERVICE BY AEC)
EXTEND INTO H.H.1:
UNMETERED STREET LIGHT SERVICE
1 1/4"R.S.C.
4-1/c#10
BETWEEN H.H.1 AND H.H.11:
2"R.S.C.
2-1/c#10
EXTEND INTO H.H. 16:
METERED SIGNAL SERVICE
1 1/4"R.S.C.
3-1/c#6



(2) TYPE P80-A-20
P80 POLE FOUNDATION
ONE WAY SIGNAL-OVERHEAD
2-TYPE 10B-POLE MOUNTED 90° AND 180°
2-PEDESTRIAN PUSH BUTTONS
TYPE "D" SIGN PANEL (108"x18")-OVERHEAD
EXTEND INTO H.H.3:
3"R.S.C.
2-12/c#12
1-3/c#12

(1) TYPE A100-A-50-D30-9 (DAVIT AT 355°)
A100 POLE FOUNDATION
3-ONE WAY SIGNALS-OVERHEAD
2-TYPE 10B-POLE MOUNTED 90° AND 180°
LUMINAIRE-200 WATT H.P.S.
MID MAST ARM MOUNTS AT 12' AND 24'
2-PEDESTRIAN PUSH BUTTONS
TYPE "D" SIGN PANEL (78"x18")-OVERHEAD
EXTEND INTO H.H.11:
3"R.S.C.
3-12/c#12
1-3/c#12
2-1/c#10

LOOP DETECTORS			
NUMBER	SIZE (ft.)	LOCATION	FUNCTION
D1-1	2-6x6	35'	7
D1-2	2-6x6	5'	7
D2-1	2-6x6	300'	1
D4-1	6x6	120'	3,8
D4-2	2-6x6	5'	7
D5-1	2-6x6	35'	7
D5-2	2-6x6	5'	7
D6-1	2-6x6	300'	1
D8-1	6x6	110'	3,8
D8-2	2-6x6	5'	7

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

LOOP DETECTOR FUNCTIONS:
1) CALL AND EXTEND
2) CALL ONLY
3) EXTEND ONLY
4) CALL ONLY DENSITY
5) DELAYED CALL ONLY
6) DELAYED CALL ONLY DENSITY
7) DELAYED CALL-IMMEDIATE EXTEND
8) CARRY OVER (STRETCH)
9) ADVISORY DETECTOR
10) SAMPLING DETECTOR
11) SPECIAL DETECTOR

CONTROLLER PHASING

PEDESTRIAN PHASING

NO.	BY	DATE	REVISIONS
1	JMC	6/93	Per Mn/DOT Comments

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SEH
ENGINEERS ▲ ARCHITECTS ▲ PLANNERS

ANOKA COUNTY
MINNESOTA

TRAFFIC SIGNAL SYSTEM 'B'
INTERSECTION LAYOUT
COUNTY ROAD 51 AT 105th AVENUE

FILE NO. 92112
DATE

S.P. 02-651-01 S.P. _____ C.P. _____

Sheet No. 38 of 85 Sheets

Fed. Project No. _____

BASE OVERLAY/DRG NO.

CONTROLLER CABINET

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

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

3
- RED 8-3
- YEL 8-3
- GRN 8-3
- NEU 8-3
- SPR
- SPR
- SPR
- NEU 1-1
- RLTA 1-1
- YLTA 1-1
- GLTA 1-1
- EQG

4
- RED 6-2
- YEL 6-2
- GRN 6-2
- NEU 6-2,6-1
- RED 6-1
- YEL 6-1
- GRN 6-1
- NEU
- SPR
- SPR
- SPR
- EQG

5
- RED 6-3
- YEL 6-3
- GRN 6-3
- NEU 6-3,P6-2
- WLK P6-2
- DWK P6-2
- SPR
- NEU P4-1
- WLK P4-1
- DWK P4-1
- SPR
- EQG

6
- RED 4-3
- YEL 4-3
- GRN 4-3
- NEU 4-3
- SPR
- SPR
- SPR
- NEU 5-1
- RLTA 5-1
- YLTA 5-1
- GLTA 5-1
- EQG

7
- RED 2-2
- YEL 2-2
- GRN 2-2
- NEU 2-2,2-1
- RED 2-1
- YEL 2-1
- GRN 2-1
- NEU
- SPR
- SPR
- SPR
- SPR
- EQG

8
- 2-3 RED
- 2-3 YEL
- 2-3 GRN
- P2-2,2-3 NEU
- P2-2 WLK
- P2-2 DWK
- SPR
- P8-1 NEU
- P8-1 WLK
- P8-1 DWK
- SPR
- EQG

9
- 8-1 RED
- 8-1 YEL
- 8-1 GRN
- P8-2,8-1 NEU
- P8-2 WLK
- P8-2 DWK
- SPR
- P6-1 NEU
- P6-1 WLK
- P6-1 DWK
- SPR
- EQG

10
- 8-2 RED
- 8-2 YEL
- 8-2 GRN
- 8-2 NEU
- SPR
- SPR
- SPR
- 5-2 NEU
- 5-2 RLTA
- 5-2 YLTA
- 5-2 GLTA
- EQG

11
- PB2-1
- NEU
- PB4-2

12
- PB6-2
- NEU
- PB4-1

13
- PB2-2
- NEU
- PB8-1

14
- PB6-1
- NEU
- PB8-2

15 D1-1

16 D2-1

17 D4-1

18 D4-2

19 D5-1

20 D6-1

21 D8-1

22 D8-2

25 SIGNAL SERVICE

50 INTERCONNECT TO SYSTEM "A"

51 INTERCONNECT TO SIGNAL SYSTEM AT 51/EGRET

27 D1-2

28 D5-2

H.H.1
- 1,2,3,4,5,11,12,16,17, 18,19,21,22.28
- 50,51
- 24
- 51
- 22
- 1,2,3,4,5,11,12,16 17,18,19,23.28
- 50
- 23,24

H.H.2
- 21
- 21
- D8-1

H.H.3
- 3,4,5,12,16,17, 18,19,23.28
- 50

H.H.4
- 3,4,5,12,17,18, 19,23.28
- 16
- 50

H.H.5
- 16, 50
- 16,50

H.H.6
- 16
- D2-1

H.H.7
- 19
- 28
- D5-1
- D5-2

H.H.8
- 3,4,5,12,17, 18,23
- 17,18

H.H.9
- 18
- D4-2

H.H.10
- 17
- D4-1

H.H.11
- 51
- 24
- 6,7,8,9,10,13,14,15,20.27
- 9,10,14,15,20.27
- 51

H.H.12
- 15
- 27
- D1-1
- D1-2

H.H.13
- 9,10,14,15,20.27
- 9,10,14,20

H.H.14
- 20
- 20

H.H.15
- 20
- D6-1

H.H.16
- 25
- 25

SIGNAL SERVICE CABINET

- 23 — 23 — LUMINAIRE 3
- 24 — 24 — LUMINAIRE 1
- 25 — 25 — SIGNAL SERVICE
- SIGNALS NEUTRAL LIGHTING — 26

SERVICE BY OTHERS
- 26
- S.O.P.

LUMINAIRE 3
- 23
- 3,4,5,12, 17,18,23

LUMINAIRE 1
- 24
- 7
- 6
- 8
- 13
- PB2-2 PB8-1

P8-1 P2-2 (2-3)

(1-1) P4-2 P2-1 (2)
- 1
- 2
- 11
- PB2-1 PB4-2

(1-2) (4-2)

(4-3) (5-1)

(2-1) (2-2)

(1)

(3)
- 6-1 6-2
- 4
- 3
- 5
- 6-3
- PB6-2 PB4-1
- 12
- P4-1 P6-2

(8-3) (1-1)

(8-1) P8-2 P6-1 (4)
- 9
- 10
- PB6-1 PB8-2
- 14

(5-2) (8-2)

INTERCONNECT TO SIGNAL SYSTEM "A"(51/101st)VIA H.H.73-SEE SHEET 35
- 50

INTERCONNECT TO INPLACE SIGNAL SYSTEM (51/EGRET)VIA H.H.74 SEE SHEET 38

CONDUCTOR COLOR CODING

12/c#12: R, O, BL, WH, R/BLK, O/BLK, BL/BLK, WH/BLK, BLK, BLK/WH, G/BLK, G

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

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

NO.	BY	DATE	REVISIONS

"ELECTRICAL ENGINEER CERTIFICATION"
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. Elder
Date: 3-27-92 Reg. No. 5859

I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the laws of the state of Minnesota.
Thomas J. Schwerdtfeger
Date: 3-27-92 Reg. No. 20943

SEH ENGINEERS ARCHITECTS PLANNERS

ANOKA COUNTY
MINNESOTA

TRAFFIC SIGNAL SYSTEM 'B'
FIELD WIRING DIAGRAM
COUNTY ROAD 51 AT 105th AVENUE

FILE NO. 92112
DATE

S.P. 02-651-01 S.P. _____ C.P. _____

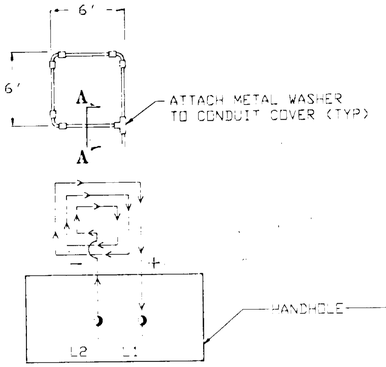
Sheet No. 39 of 85 Sheets

Fed. Project No. _____

BASE OVERLAY ORG NO

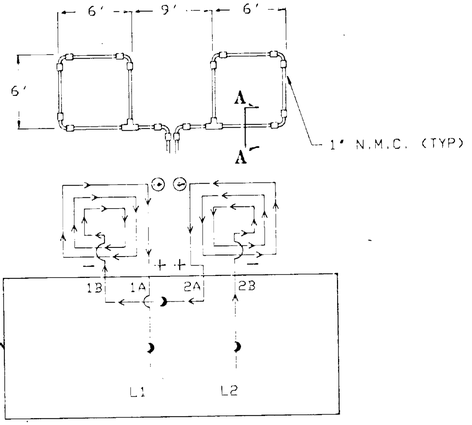
LOOP DETECTOR DETAIL 'A'

PLAN VIEW (NOT TO SCALE)
(LOOP PHASING FOR SINGLE CONNECTION)



LOOP DETECTOR DETAIL 'B'

PLAN VIEW (NOT TO SCALE)
(LOOP PHASING FOR SERIES CONNECTION)



LOOP CONNECTIONS SHALL BE LABELED AND SPLICED IN THE HANDHOLE AS FOLLOWS: L1 TO 1A, 1B TO 2A, AND 2B TO L2.

LOOP DETECTOR WIRING

NOTES:

1) ALL CORNERS SHALL BE 90° CONDUIT BENDS

2) CONNECT WIRES IN HANDHOLES USING SPLICE KIT METHOD DESCRIBED IN THE SPECIAL PROVISIONS.

3) LOOP DETECTOR WIRES SHALL BE # 12 AWG CROSSED LINKED POLYETHYLENE (XLP). SEE SPECIAL PROVISIONS.

4) LOOP LEAD IN WIRES SHALL BE TWISTED A MIN. OF (5) TURNS PER FOOT THROUGH THE CONDUIT TO THE HANDHOLE.

5) N.M.C. DESIGNATES NON-METALLIC CONDUIT (SPEC. 3803)

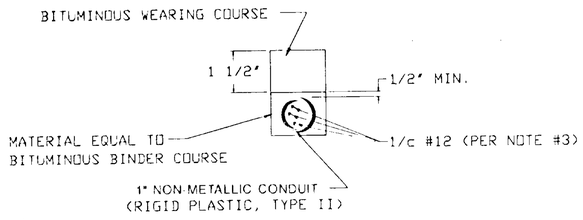
6) LOOPS 6'x6' THRU 6'x10' SHALL HAVE (4) TURNS.

7) LOOPS 6'x 11' THRU 6'x14' SHALL HAVE (3) TURNS

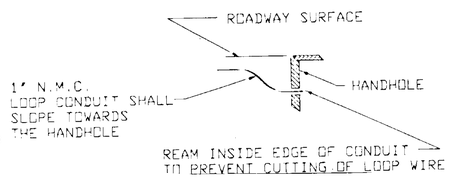
8) LOOPS 6'x15' AND LARGER SHALL HAVE (2) TURNS.

9) A CLOSED CELL FOAM BACKER ROD SHALL BE FURNISHED AND INSTALLED WITH THE LAST TURN OF WIRE IN THE 1" N.M.C. LOOP ASSEMBLY.

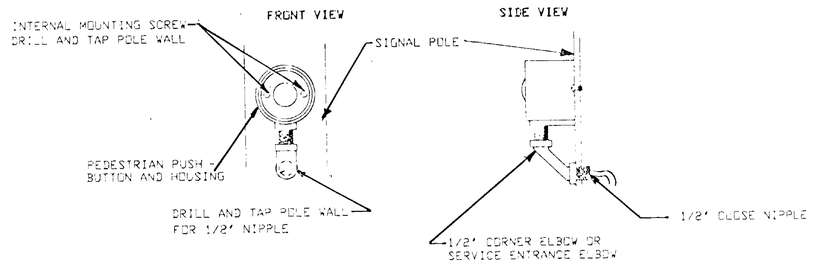
CROSS SECTION A-A



DRAINAGE DETAIL



PEDESTRIAN PUSH BUTTON DETAIL



ABBREVIATIONS

EQUIPMENT AND INDICATIONS

RED-RED
YEL-YELLOW
GRN-GREEN
WLK-WALK
NEU-NEUTRAL
DWK DON'T WALK
LUM-LUMINAIRE
DNL-DOWNLIGHT
H.H.-HANDHOLE
EQG-EQUIPMENT GROUND
R.S.C.-RIGID STEEL CONDUIT
GLTA-GREEN LEFT TURN ARROW
YRTA-YELLOW RIGHT TURN ARROW
D2-1(eg)-DETECTOR-PHASE"2"
GR.R-GROUND ROD
SER.-SERVICE
P2-2 PEDESTRIAN INDICATIONS
2-1(eg)-SIGNAL HEADS-PHASE"2"
SPR.-SPARE CONDUCTORS
N.M.C.-NON METALLIC CONDUIT
E.V.P.-EMERGENCY VEHICLE PRE-EMPTION
J.B.-JUNCTION BOX
W.P.-WOOD POLE
P.E.C.-PHOTOELECTRIC CELL
S.O.P.-SOURCE OF POWER
H.P.S.-HIGH PRESSURE SODIUM
F & I-FURNISH AND INSTALL
R & S-REMOVE AND SALVAGE
Br.Gr.-BARE GROUND

CONDUCTOR COLOR CODE

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

LEGEND OF SYMBOLS

CONTROLLER AND SERVICE EQPT NOs. _____
SIGNAL BASE NO. _____
SIGNAL FACE NO. _____
LUMINAIRE NO. _____
CONTROLLER AND CABINET _____
CONTROLLER AND CABINET IN PLACE _____
HANDHOLE _____
HANDHOLE IN PLACE _____
RIGID STEEL CONDUIT (R.S.C.) _____
RIGID STEEL CONDUIT (R.S.C.) 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 _____

STANDARD PLATES

	PLATE NO.	DESCRIPTION
*	8110 C	TRAFFIC SIGNAL BRACKETING - POLE MOUNTED
	8111 B	TRAFFIC SIGNAL BRACKETING - PEDESTAL MOUNTED
	8112 C	PEDESTAL FOUNDATION
	8113 C	MAGNETIC VEHICLE DETECTOR INSTALLATION
	8115 C	PEDESTRIAN PUSH BUTTON INSTALLATION
*	8117 F	PRECAST CONCRETE HAND HOLE
	8118 C	SERVICE EQUIPMENT AND POLE
*	8119 C	GROUND MOUNTED CABINET FOUNDATION
*	8120 J	P-80 AND P-90 POLE FOUNDATION
*	8121 C	TRANSFORMER BASE WITH POLE BASE PLATE
	8122 C	PEDESTAL AND PEDESTAL BASE
*	8123 C	POLE AND MAST ARM
*	8124 D	SIGNAL HEAD MOUNTS
	8126 D	P-100 POLE FOUNDATION
	8130 D	SAW CUT LOOP DETECTORS
*	0095 A	SPECIFICATION REFERENCE
	3124 B	METAL APRON CONNECTION
	3281 C	CORRUGATED STEEL PIPE COUPLING BAND
	7035 J	CONCRETE WALK AND CURB RETURNS AT ENTRANCES
	7100 F	CONCRETE CURB AND GUTTERS

* APPLIES TO THIS PROJECT

NO.	BY	DATE	REVISIONS

"ELECTRICAL ENGINEER CERTIFICATION"
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. Eller
Date: 3-27-92 Reg. No. 5839

I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the laws of the state of Minnesota.
Thomas A. Schwerdtfeger
Date: 3-27-92 Reg. No. 20943

SEH ENGINEERS ARCHITECTS PLANNERS

ANOKA COUNTY
MINNESOTA

SIGNALS "A" & "B"
DETAILS
COUNTY ROAD 51 AT 101ST AVENUE
COUNTY ROAD 51 AT 105TH AVENUE

FILE NO. 92112
DATE

S.P. 02-651-01 S.P. _____ C.P. _____

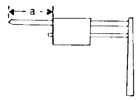
Sheet No. 40 of 85 Sheets

BASE OVERLAY DWG. NO.

SIGN DETAILS

TYPE "D" SIGNS

SIGN PANEL	SIZE	NO. REQ.	NO. BRACKETS PER SIGN	BRACKET SPACING	SQ.FT. PER SIGN	POLE NO.	a
D-1	108"x18"	2	3*	42"	13.50	2	5'
						4	5'
D-2	78"x18"	2	3*	30"	9.75	1	34'
						3	30'
D-3	108"x18"	2	3*	42"	13.50	2	22'
						4	18'
D-4	72"x18"	2	3*	27"	9.00	1	30'
						3	30'

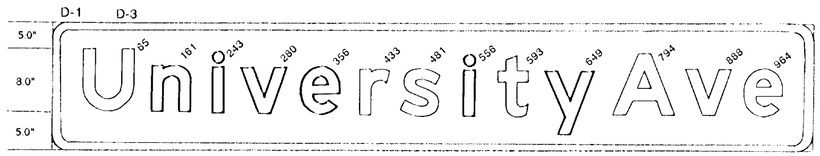


*=USE POSTS

NOTES:

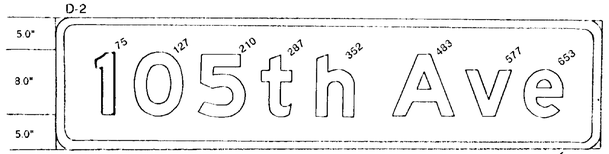
1) COLOR- WHITE LEGEND AND BORDER ON GREEN BACKGROUND, FULLY REFLECTORIZED.
2) CORNERS EXTENDING BEYOND THE BORDER SHALL NOT BE TRIMMED.
3) FOR STRUCTURAL DETAILS, TYPE D SIGNS, SEE STANDARD SIGNS MANUAL, PAGE 105A AND B.
4) FOR TYPE D STRINGER AND PANEL-JOINT DETAIL, SEE STANDARD MANUAL.
5) SIGN PANELS TO BE FURNISHED AND INSTALLED INCIDENTAL TO ITEM NO. 2565.511.
6) SIGNS D-1 AND D-2 TO BE INSTALLED AT SYSTEM "B". SIGNS D-3 AND D-4 TO BE INSTALLED AT SYSTEM "A".

D-1 D-3



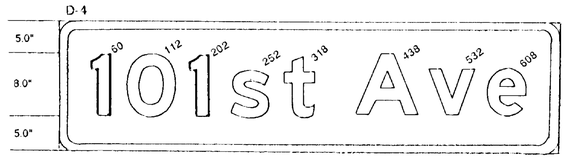
108" x 18", 3"R. 1.0"B.
LINE 1 95.1: 8" 6" E MOD.

D-2



78" x 18", 3"R. 1.0"B.
LINE 1 62.9: 8" 6" E MOD.

D-4

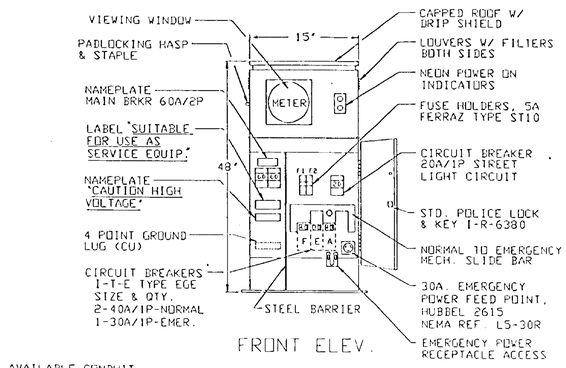


72" x 18", 3"R. 1.0"B.
LINE 1 60.0: 8" 6" E MOD.

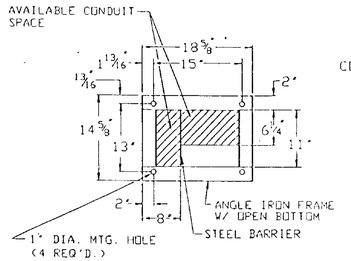
Fed. Project No. _____

ANOKA COUNTY HIGHWAY DEPARTMENT

SIGNAL SERVICE CABINET DETAIL



FRONT ELEV.



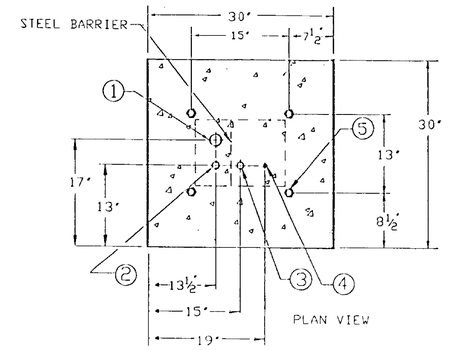
BASE LAYOUT.

CONSTRUCTION NOTES:

ENCLOSURE SHALL BE FABRICATED FROM #12 GA. ALL WELDED COLD ROLLED STEEL FOR OUTDOOR WEATHER PROOF SERVICE. DOORS TO BE GASKETED, ALL HINGES, PINS AND LOCKS TO BE OF NONE CORRODING CONSTRUCTION. CABINET TO BE PRIMED INSIDE AND OUT WITH RUST INHIBITING PRIMER. FINISH PER MN/DOT #3527.

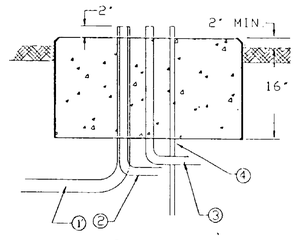
NO SCALE

SIGNAL SERVICE CABINET FOUNDATION DETAIL



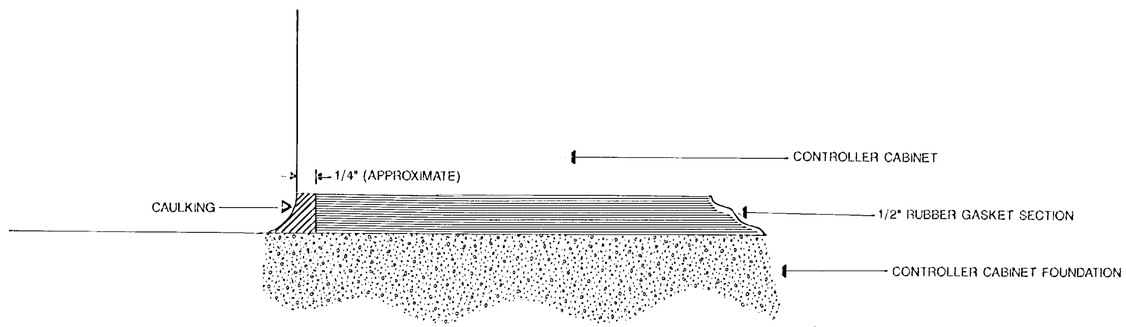
LEGEND

① 2" RSC FROM SOURCE OF POWER. (VIA HANDHOLE)
② 1 1/4" RSC TO HANDHOLE. (STREET LIGHTING)
③ 1 1/4" RSC TO CONTROLLER CABINET (VIA HANDHOLE) SEE PLANS FOR SPECFIC ROUTING
④ GROUNDING ROD
⑤ ANCHOR BOLTS. (4)



NO SCALE

CONTROLLER CABINET CAULKING DETAIL



NOTE: CAULK TOP AND BOTTOM OF RUBBER GASKET SECTION BEFORE INSTALLING.

NO.	BY	DATE	REVISIONS

"ELECTRICAL ENGINEER CERTIFICATION"
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 Ellar
Date: 3-27-92 Reg. No. 5859

I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the laws of the state of Minnesota.
Thomas A. Schwerdtle
Date: 3-27-92 Reg. No. 20943

SEH ENGINEERS ARCHITECTS PLANNERS

ANOKA COUNTY
MINNESOTA

SIGNALS "A" & "B"
DETAILS
COUNTY ROAD 51 AT 101ST AVENUE
COUNTY ROAD 51 AT 105TH AVENUE

FILE NO. 92112
DATE

S.P. 02-651-01 S.P. _____ C.P. _____

Sheet No. 41 of 85 Sheets

BASE OVERLAY DRG. NO.

Notes:

1) SEE SPECIAL PROVISIONS FOR CONTRACTOR RESPONSIBILITY FOR THE LOCATION OF UTILITIES.
2) SEE SPECIAL PROVISIONS FOR COUNTY FURNISHED MATERIALS.
3) LUMINAIRE (1) SHALL HAVE P.E.C.
4) SEE SPECIAL PROVISIONS FOR ANOKA COUNTY SERVICE CABINET DETAILS.
5) ALL HANDHOLES SHALL BE CONCRETE WITH TYPE 'C' COVERS.
6) LOOP DETECTOR WIRES SHALL BE CROSS-LINKED POLYETHYLENE (XLP) IN 1"N.M.C. SEE SPECIAL PROVISIONS AND DETAILS.
7) ALL PEDESTRIAN INDICATIONS SHALL BE 12"x12".
8) SEE SPECIAL PROVISIONS FOR DETAILS ON WOOD POLE SCREW ANCHORS.
9) SEE DETAIL SHEET FOR WOOD POLE, SPAN WIRE MOUNTING AND PEDESTRIAN PUSH BUTTON DETAILS.
10) HANDHOLES 8 AND 10 ARE INPLACE AND SHALL BE USED AS PART OF SIGNAL SYSTEM
11) CONTRACTOR SHALL COIL AND STORE SUFFICIENT CABLE AND SPAN WIRE AT EACH POLE LOCATION IN ORDER TO ALLOW FOR FUTURE CONSTRUCTION AND CONTINUED USE OF SIGNAL SYSTEM. SEE SPECIAL PROVISIONS
12) ⊗ =ANTICIPATED LOCATION OF WOOD POLE (FOR TRAFFIC SIGNALS) AFTER COMPLETION OF FUTURE CONSTRUCTION ALONG COUNTY ROAD 51.

BIKEWAY LEGEND

REMOVE BIT. BIKEWAY

CONSTRUCT BIT. BIKEWAY

(1) 45' WOOD POLE-CLASS 2
2-DOWN GUYS, GUY GUARDS AND SCREW ANCHORS
TYPE 10B-WOOD POLE MOUNTED (3-1)
TYPE 10B-WOOD POLE MOUNTED (6-3)
LUMINAIRE -250 WATT H.P.S. AND 15' MAST ARM
2-PEDESTRIAN PUSH BUTTONS AND SIGNS
METAL JUNCTION BOX
2"R.S.C. RISER AND WEATHERHEAD ABOVE JUNCTION BOX
2-12/c#12
1-3/c#12

(2) 45' WOOD POLE-CLASS 2
2-DOWN GUYS, GUY GUARDS AND SCREW ANCHORS
TYPE 10B-WOOD POLE MOUNTED (2-1)
TYPE 10B-WOOD POLE MOUNTED (8-2)
2-PEDESTRIAN PUSH BUTTONS AND SIGNS
METAL JUNCTION BOX
3"R.S.C. RISER AND WEATHERHEAD ABOVE JUNCTION BOX
3-12/c#12
1-3/c#12
5-2/c#14
EXTEND INTO H.H.10:
1 1/4"R.S.C. RISER BELOW JUNCTION BOX
4-2/c#14
EXTEND INTO H.H.11:
1 1/4"R.S.C. RISER BELOW JUNCTION BOX
1-2/c#14

(3) 35' WOOD POLE-CLASS 2
2-DOWN GUYS, GUY GUARDS AND SCREW ANCHORS
TYPE 10B-WOOD POLE MOUNTED (2-3)
TYPE 10B-WOOD POLE MOUNTED (7-1)
2-PEDESTRIAN PUSH BUTTONS AND SIGNS
METAL JUNCTION BOX
3" R.S.C. RISER AND WEATHERHEAD ABOVE JUNCTION BOX
4-12/c#12
1-3/c#12
5-2/c#14
EXTEND INTO H.H.3:
3" R.S.C. RISER BELOW JUNCTION BOX
4-12/c#12
2-3/c#12
5-2/c#14

(4) 35' WOOD POLE-CLASS 2
2-DOWN GUYS, GUY GUARDS AND SCREW ANCHORS
TYPE 10B-WOOD POLE MOUNTED (4-2)
TYPE 10B-WOOD POLE MOUNTED (6-1)
2-PEDESTRIAN PUSH BUTTONS AND SIGNS
METAL JUNCTION BOX
3"R.S.C. RISER AND WEATHERHEAD ABOVE JUNCTION BOX
3-12/c#12
1-3/c#12
2-1/c#10
EXTEND INTO H.H.5:
3" R.S.C. RISER BELOW JUNCTION BOX
4-12/c#12
2-3/c#12
2-1/c#10

(A) SERVICE CABINET (SEE SPECIAL PROVISIONS)
CABINET FOUNDATION
EXTEND TO INPLACE WOOD POLE:
2" R.S.C. RISER AND WEATHERHEAD
3-1/c#6 (FOR SERVICE BY OTHERS)
EXTEND INTO H.H.14:
METERED SIGNAL SERVICE
1 1/4"R.S.C.
3-1/c#6
EXTEND INTO H.H.1:
UNMETERED STREET LIGHT SERVICE
1 1/4"R.S.C.
2-1/c#10

(B) CONTROLLER AND CABINET
CABINET FOUNDATION
EXTEND INTO H.H.14:
METERED SIGNAL SERVICE
1 1/4"R.S.C.
3-1/c#6
EXTEND INTO H.H.1:
4" R.S.C.
4-12/c#12
2-3/c#12
5-2/c#14
EXTEND INTO H.H.3:
4" R.S.C.
4-12/c#12
2-3/c#12
5-2/c#14

Fed. Project No. _____

SCALE
30 0 30 60
FEET

SIGNAL INDICATIONS

FACE	PHASE	FLASH	R	Y	G	RLTA	YLTA	GLTA
2-1	2	R	12	12	12			
2-2	2	R	12	12	12			
2-3	2	R	12	12	12			
3-1	3	R				12	12	12
3-2	3	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			
7-1	7	R				12	12	12
7-2	7	R				12	12	12
8-1	8	R	12	12	12			
8-2	8	R	12	12	12			

Note: ALL SIZES ARE IN INCHES.

LOOP DETECTORS

NUMBER	SIZE (FT.)	LOCATION	FUNCTION
D2-1	2-6x6	300'	1
D3-1	MULTIPLE	—	1
D4-1	2-6x6	200'	3,8
D4-2	2-6x6	—	1
D4-3	2-6x6	—	7
D6-1	2-6x6	330'	1
D7-1	MULTIPLE	—	1
D8-1	2-6x6	200'	3,8
D8-2	2-6x6	—	1
D8-3	2-6x6	—	7

LOOP DETECTORS FUNCTIONS:
1) CALL AND EXTEND
2) CALL ONLY
3) EXTEND ONLY
4) CALL ONLY DENSITY
5) DELAYED CALL ONLY
6) DELAYED CALL ONLY DENSITY
7) DELAYED CALL-IMMEDIATE EXTEND
8) CARRY OVER (STRETCH)
9) ADVISORY DETECTOR
10) SAMPLING DETECTOR
11) SPECIAL DETECTOR
12) CALL AND EXTEND AFTER TIME DELAY

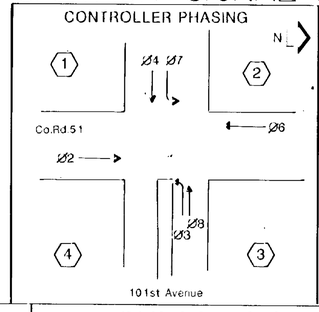
Note: LOCATION=DISTANCE FROM STOP BAR TO LOOP DETECTOR

FUTURE RIGHT-OF-WAY
1-7/16"SPAN WIRE 2-12/c#12 1-3/c#12 2-1/c#10
INPLACE HANDHOLE TO SYSTEM AT 99th AVE.
H.H.8
COUNTY ROAD 51 (45 MPH)
79
D2-1
H.H.7
H.H.6
FUTURE CONSTRUCTION
1 1/4"R.S.C. 1-2/c#14
1 1/4"R.S.C. 1-2/c#14
1-7/16"SPAN WIRE 2-12/c#12
3"R.S.C.-INPLACE 4-2/c#14
1-7/16"SPAN WIRE
D7-1
D4-2
D4-3
1-7/16"SPAN WIRE 1-12/c#12
INPLACE LUMINAIRE AND WOOD POLE REMOVE BY OTHERS.
1-7/16"SPAN WIRE 2-12/c#12 1-3/c#12 5-2/c#14
FUTURE CONSTRUCTION
FUTURE RIGHT-OF-WAY
1 1/4"R.S.C. 1-2/c#14
H.H.9
D4-1
H.H.11
H.H.12
H.H.13
D6-1
84
(LUMINAIRE TO BE F&I BY OTHERS) INPLACE WOOD POLE (S.O.P.)
COUNTY ROAD 51 (45 MPH)
H.H.5
H.H.4
H.H.3
H.H.14
D8-2
D8-3
1-7/16"SPAN WIRE 3-12/c#12 1-3/c#12 5-2/c#14
CONTROLLER AND CABINET SEE (B)
SERVICE CABINET SEE (A)
FUTURE RIGHT-OF-WAY
3"R.S.C.-INPLACE 4-12/c#12 2-3/c#12 1-2/c#14 2-1/c#10
1-7/16" SPAN WIRE 1-12/c#12
1-7/16" SPAN WIRE
1-7/16" SPAN WIRE 1-12/c#12
3"R.S.C.-INPLACE 4-12/c#12 2-3/c#12 2-2/c#14 2-1/c#10
D3-1
101st AVENUE NE (30 MPH)
H.H.2
D8-1
1 1/4" R.S.C. 1-2/c#14

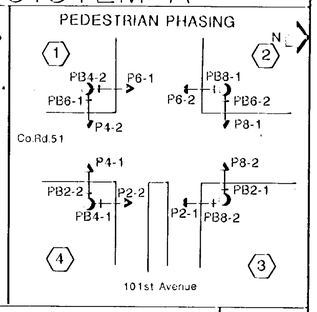
FOR INFORMATION ONLY

SALVAGE SIGNAL SYSTEM "A"

CONTROLLER PHASING



PEDESTRIAN PHASING



NO.	BY	DATE	REVISIONS

"ELECTRICAL ENGINEER CERTIFICATION"
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. Eller
Date: 3-27-92 Reg. No. 5859

I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the laws of the state of Minnesota.
Thomas A. Lehmkuehler
Date: 3-27-92 Reg. No. 20943

SEH ENGINEERS ARCHITECTS PLANNERS

ANOKA COUNTY
MINNESOTA

INPLACE SIGNAL SYSTEM
INTERSECTION LAYOUT
COUNTY ROAD 51 (UNIVERSITY AVE) AT 101st AVENUE NE

FILE NO. 92112
DATE

S.P. 02-651-01 S.P. _____ C.P. _____

Sheet No. 42 of 85 Sheets

BASE OVERLAY DRG. NO.

Fed. Project No. _____

CONTROLLER CABINET

1
- RLTA 7-1
- YLTA 7-1
- GLTA 7-1
- NEU 7-1, 7-2
- RLTA 7-2
- YLTA 7-2
- GLTA 7-2
- NEU P8-2
- WLK P8-2
- DWK P8-2
- SPR
- EQG

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

3
- RED 2-1
- YEL 2-1
- GRN 2-1
- NEU 2-1
- SPR
- SPR
- SPR
- NEU P6-2
- WLK P6-2
- DWK P6-2
- SPR
- EQG

4
- RED 8-2
- YEL 8-2
- GRN 8-2
- NEU 8-2, P8-1
- WLK P8-1
- DWK P8-1
- SPR
- NEU 8-1
- RED 8-1
- YEL 8-1
- GRN 8-1
- EQG

5
- RED 4-2
- YEL 4-2
- GRN 4-2
- NEU 4-2, P4-1
- WLK P4-1
- DWK P4-1
- SPR
- NEU 4-1
- RED 4-1
- YEL 4-1
- GRN 4-1
- EQG

6
- RED 6-1
- YEL 6-1
- GRN 6-1
- NEU 6-1
- SPR
- SPR
- SPR
- NEU P2-2
- WLK P2-2
- DWK P2-2
- SPR
- EQG

7
- RED 6-3
- YEL 6-3
- GRN 6-3
- NEU 6-3, P6-1
- WLK P6-1
- DWK P6-1
- SPR
- NEU 6-2
- RED 6-2
- YEL 6-2
- GRN 6-2
- EQG

8
- 3-1 RLTA
- 3-1 YLTA
- 3-1 GLTA
- 3-2, 3-1 NEU
- 3-2 RLTA
- 3-2 YLTA
- 3-2 GLTA
- P4-2 NEU
- P4-2 WLK
- P4-2 DWK
- SPR
- EQG

9
- PB2-1
- NEU
- PB8-2

10
- PB6-2
- NEU
- PB8-1

11
- PB2-2
- NEU
- PB4-1

12
- PB6-1
- NEU
- PB4-2

13
- SIGNAL
- SERVICE

15 D2-1
16 D3-1
17 D4-1
18 D4-2
19 D4-3
20 D6-1
21 D7-1
22 D8-1
23 D8-2
24 D8-3

1,2,3,4,9,10,17,18, 19,20,21 → H.H.3 → 1,2,3,4,9,10,17,18,19,20,21

13 → H.H.14 → 13

13 → SERVICE CABINET

SERVICE CABINET
- LUMINAIRE (Unmetered) — 25 → 25
- 13 → 13 — SIGNAL, SERVICE (Metered)
- 14 → 14 — SIGNALS, NEUTRAL, LIGHTING
- 14 → S.O.P. — SERVICE BY OTHERS

1A → W.P.3

③ P2-1 (2-3)
- (7-1) P8-2: 1A → 1
- 2 → 2A
- PB2-1 PB8-2: 9 → 2A

W.P.3: 1A → 2A,3,4,10, 17,18,19,20,21

2A → (2-2) → 3,4,10,17,18,19,20,21 → W.P.2

② (2-1) P6-2 — P8-1 (8-2)
- 3 → 4A
- 4 → 4A
- PB6-2 PB8-1: 10 → 4A

(8-1) 4A

W.P.2: 4A → 17,18,19,21 → 20

20 → H.H.11 → 20 → H.H.12 → 20 → H.H.13 → 20 → D6-1

17,18,19,21 → H.H.10 → 17,18,19,21 → H.H.8 → 18, 19, 21 → 17 → H.H.9 → 17 → D4-2, D4-3, D7-1, D4-1

1A → ④ P4-1 (4-2) — P2-2 (6-1)
- (7-2) 1A
- (4-1) 5A
- 5A → 5 → 6
- PB2-2 PB4-1: 11

W.P.4: 1A, 5A → 7,8,12,25

7,8,12,25 → (6-2) 7 → 7A

① LUMINAIRE (1) — 25 → P4-2 (3-1)
- (6-3) P6-1: 7A
- 8A
- PB6-1 PB4-2: 12
- (3-2) 8 → 8A

W.P.1: 7A,8,12,25 → 8,8A

5,6,7,8,11,12,15,16,22,23,24 → H.H.1
- 23 → D8-2
- 24 → D8-3
- 25 → 5,6,7,8,11,12,15,16,25 → H.H.4
- 22 → H.H.2 → 22 → D3-1
- D8-1

H.H.4: 16 → D3-1 → 5,6,7,8,11, 12,15,25 → H.H.5 → 5,6,7,8,11,12,25 → 15 → H.H.6 → 15 → H.H.7 → 15 → D2-1

CONDUCTOR COLOR CODING

12/C#12
- R — BLK — 2-1/C#4
- O — WH — 2-1/C#6
- BL — 2-1/C#10
- WH — R — W — 3/C#12
- R/BLK — BLK
- O/BLK — BLK — CLEAR — 2/C#14
- BL/BLK
- WH/BLK
- BLK — R OR O — WH OR YEL — BLK OR BL — 3/C#20
- BLK/WH
- G/BLK
- G

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

SALVAGE SIGNAL SYSTEM "A"

FOR INFORMATION ONLY

NO.	BY	DATE	REVISIONS

"ELECTRICAL ENGINEER CERTIFICATION"
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. Eller
Date: 3-27-92 Reg. No. 5859

I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the laws of the state of Minnesota.
Thomas A. Lahowetz
Date: 3-27-92 Reg. No. 20943

SEH ENGINEERS ARCHITECTS PLANNERS

ANOKA COUNTY
MINNESOTA

INPLACE SIGNAL SYSTEM
FIELD WIRING DIAGRAM
COUNTY ROAD 51 (UNIVERSITY AVE.) AT 101st AVENUE N.E.

FILE NO. 92112
DATE

S.P. 02-651-01 S.P. _____ C.P. _____

Sheet No. 43 of 85 Sheets

Fed. Project No. _____

BASE OVERLAY DRG. NO.

NOTES:

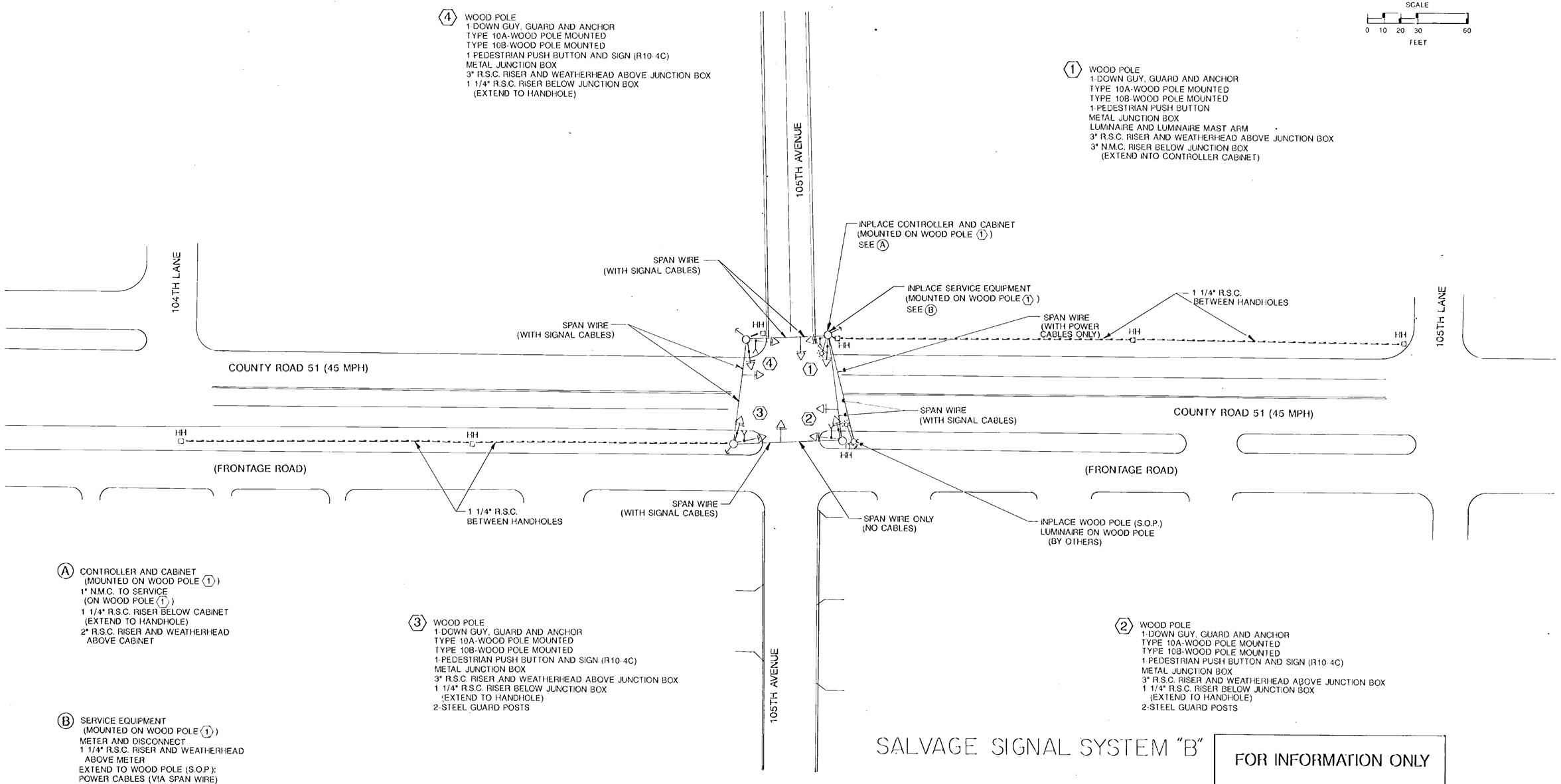
1) ALL SIGNAL FACES ARE 12"-3 SECTION R-Y-G.

2) ALL PEDESTRIAN INDICATIONS ARE 9"x9".

3) ALL SIGNAL FACES HAVE BACKGROUND SHIELDS.

4) QUANTITY AND LOCATION OF LOOP DETECTORS AND SIGNAL CABLES SHALL BE DETERMINED BY CONTRACTOR.

SCALE
0 10 20 30 60
FEET



SALVAGE SIGNAL SYSTEM "B"

FOR INFORMATION ONLY

NO.	BY	DATE	REVISIONS

"ELECTRICAL ENGINEER CERTIFICATION"
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. Siller
Date: 3-27-92 Reg. No. 5859

I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the laws of the state of Minnesota.
Thomas A. Schweich
Date: 3-27-92 Reg. No. 20943

ENGINEERS ■ ARCHITECTS ■ PLANNERS

ANOKA COUNTY
MINNESOTA

INPLACE SIGNAL SYSTEM
COUNTY ROAD 51 AT 105TH AVENUE

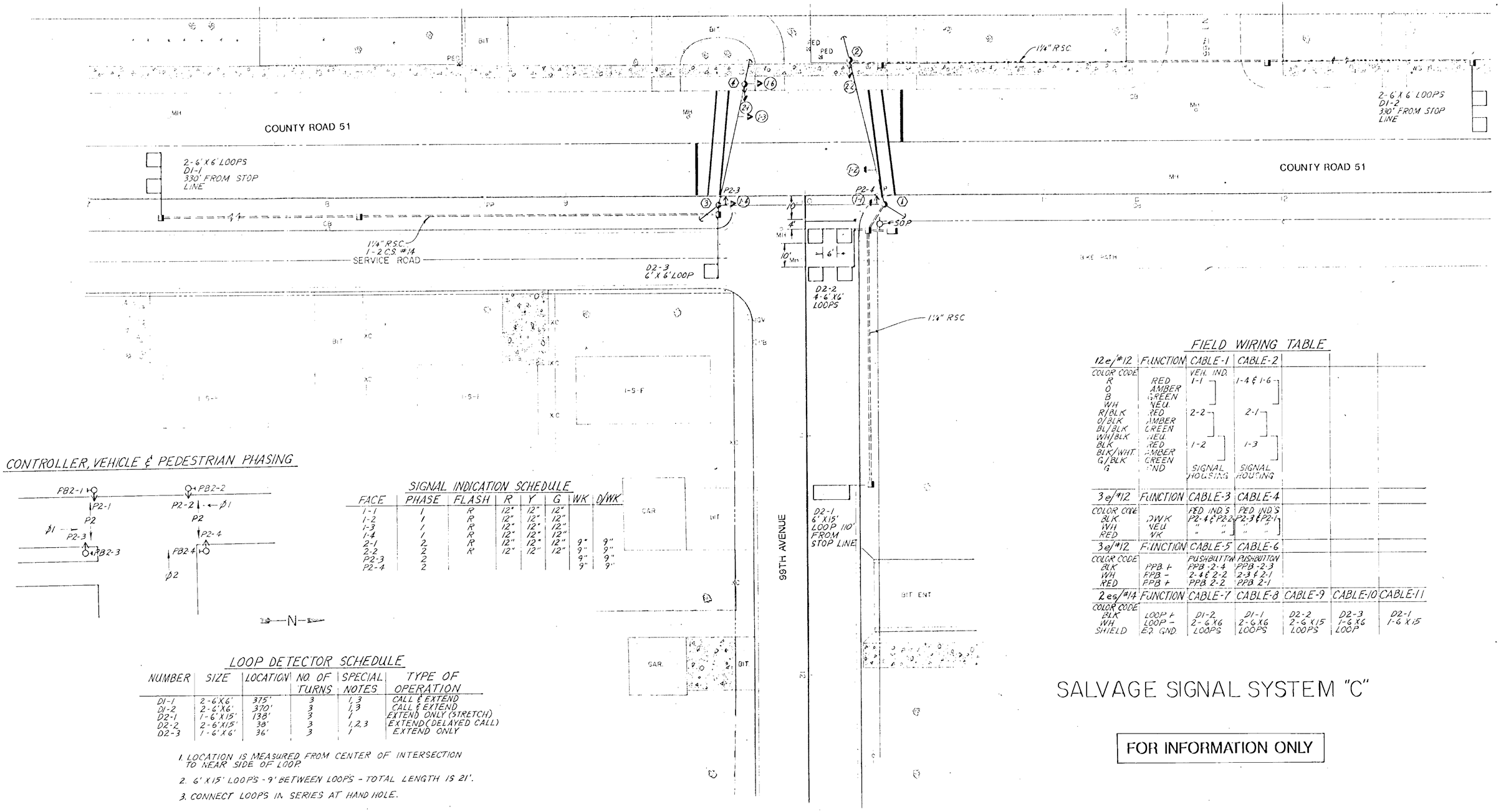
FILE NO. 92112
DATE

S.P. 02-651-01 S.P. _____ C.P. _____

Sheet No. 44 of 85 Sheets

Fed. Project No. _____

BASE OVERLAY DRG. NO.



CONTROLLER, VEHICLE & PEDESTRIAN PHASING

SIGNAL INDICATION SCHEDULE

FACE	PHASE	FLASH	R	Y	G	WK	D/WK
1-1	1	R	12"	12"	12"		
1-2	1	R	12"	12"	12"		
1-3	1	R	12"	12"	12"		
1-4	1	R	12"	12"	12"		
2-1	2	R	12"	12"	12"	9"	9"
2-2	2	R	12"	12"	12"	9"	9"
P2-3	2					9"	9"
P2-4	2					9"	9"

LOOP DETECTOR SCHEDULE

NUMBER	SIZE	LOCATION	NO. OF TURNS	SPECIAL NOTES	TYPE OF OPERATION
D1-1	2-6'X6'	315'	3	1, 3	CALL & EXTEND
D1-2	2-6'X6'	370'	3	1, 3	CALL & EXTEND
D2-1	1-6'X15'	138'	3	1	EXTEND ONLY (STRETCH)
D2-2	2-6'X15'	38'	3	1, 2, 3	EXTEND (DELAYED CALL)
D2-3	1-6'X6'	36'	3	1	EXTEND ONLY

1. LOCATION IS MEASURED FROM CENTER OF INTERSECTION TO NEAR SIDE OF LOOP
2. 6'X15' LOOPS - 9' BETWEEN LOOPS - TOTAL LENGTH IS 21'.
3. CONNECT LOOPS IN SERIES AT HAND HOLE.

FIELD WIRING TABLE

12e/#12	FUNCTION	CABLE-1	CABLE-2
COLOR CODE		VEH. IND.	
R	RED	1-1	1-4 & 1-6
O	AMBER		
B	GREEN		
WH	NEU.		
R/BLK	RED	2-2	2-1
O/BLK	AMBER		
BL/BLK	GREEN		
WH/BLK	NEU.		
BLK	RED	1-2	1-3
BLK/WHT	AMBER		
G/BLK	GREEN		
G	GND	SIGNAL HOUSING	SIGNAL HOUSING

3e/#12	FUNCTION	CABLE-3	CABLE-4
COLOR CODE		PED IND'S	PED IND'S
BLK	D/WK	P2-4 & P2-2	P2-3 & P2-1
WH	NEU	" "	" "
RED	VK	" "	" "

3e/#12	FUNCTION	CABLE-5	CABLE-6
COLOR CODE		PUSHBUTTON	PUSHBUTTON
BLK	PPB +	PPB-2-4	PPB-2-3
WH	PPB -	2-4 & 2-2	2-3 & 2-1
RED	PPB +	PPB 2-2	PPB 2-1

2 ea/#14	FUNCTION	CABLE-7	CABLE-8	CABLE-9	CABLE-10	CABLE-11
COLOR CODE						
BLK	LOOP +	D1-2	D1-1	D2-2	D2-3	D2-1
WH	LOOP -	2-6'X6'	2-6'X6'	2-6'X15'	1-6'X6'	1-6'X15'
SHIELD	EQ. GND	LOOPS	LOOPS	LOOPS	LOOP	

SALVAGE SIGNAL SYSTEM "C"

FOR INFORMATION ONLY

NO.	BY	DATE	REVISIONS

"ELECTRICAL ENGINEER CERTIFICATION"
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. Elbe
Date: 3-27-92 Reg. No. 5859

I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the laws of the state of Minnesota.
Thomas A. Schweich
Date: 3-27-92 Reg. No. 20943

SEH ENGINEERS ARCHITECTS PLANNERS

ANOKA COUNTY
MINNESOTA

INPLACE SIGNAL SYSTEM
COUNTY ROAD 51 AT 99TH AVENUE

FILE NO. 92112
DATE

S.P. 02-651-01 S.P. _____ C.P. _____

Sheet No. 45 of 85 Sheets

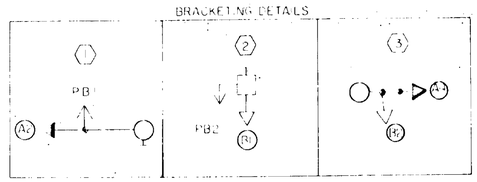
Fed. Project No. _____

BASE (OVER) LAY(ORG. NO)

LEGEND OF SYMBOLS

	CONTROLLER AND CABINET
	HANDHOLE (PULLBOX)
	RIGID STEEL CONDUIT (R.S.C.)
	PEDESTAL
	SIGNAL FACE
	SIGNAL FACE WITH BACKGROUND SHIELD
	PEDESTRIAN INDICATIONS
	PEDESTRIAN PUSH BUTTON ON PEDESTAL OR POLE
	MAST ARM AND POLE
	MAST ARM AND LUMINAIRE
	MAG DET. IN NON-METALLIC CONDUIT (N.M.C.)
	SOURCE OF POWER (S.O.P.)
	WOOD POLE

BRACKETING DETAILS

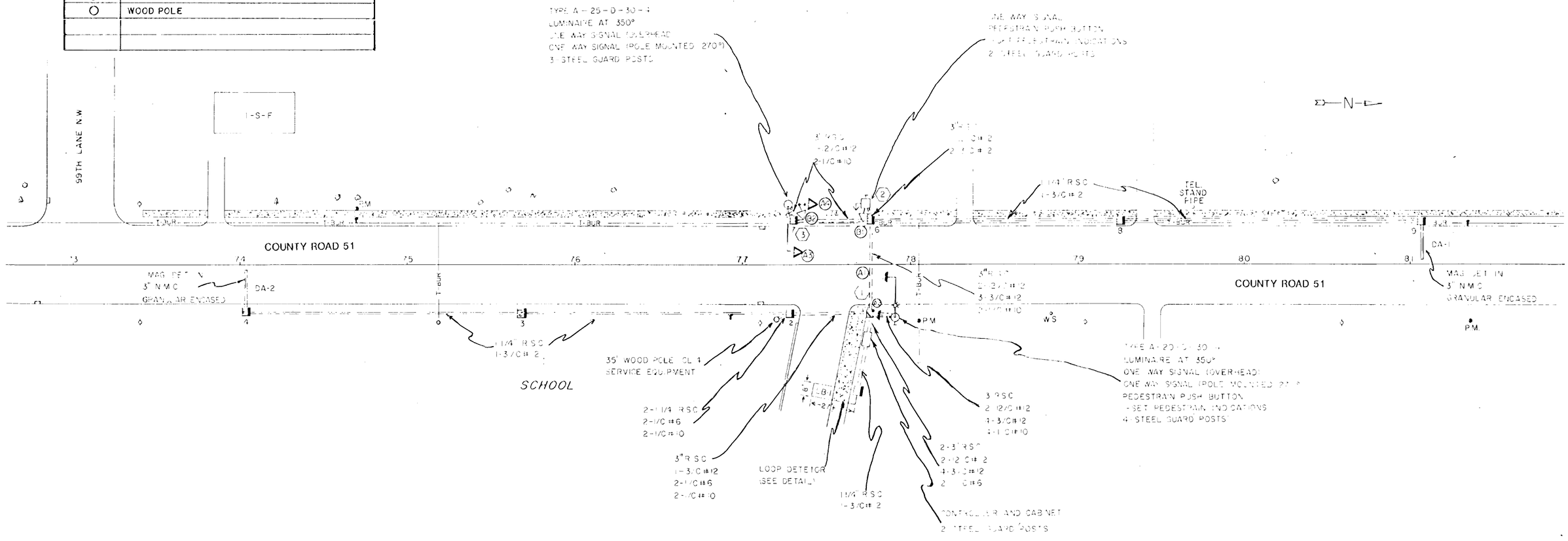


SCALE

0 10 20 30 40 50 100

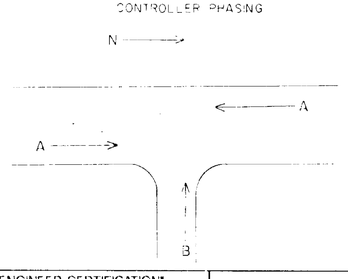
DISTANCE IN FEET

NOTE: #6 AND #8 SHALL BE RHW OR THHW

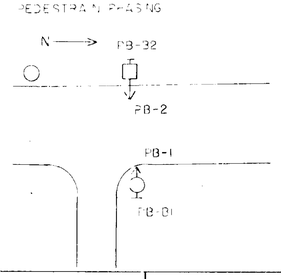


FACE	PHASE	FLASH	INDICATION SIZE					
			R	Y	G	↓	↑	→
A1	A	Y	12"	12"	12"	—	—	—
A2	A	Y	12"	12"	12"	—	—	—
A3	A	Y	12"	12"	12"	—	—	—
A4	A	Y	12"	12"	12"	—	—	—
B1	B	R	12"	12"	12"	—	—	—
B2	B	R	12"	12"	12"	—	—	—

CONTROLLER PHASING



PEDESTRIAN PHASING



FOR INFORMATION ONLY

FULL ACTUATED TRAFFIC CONTROL SIGNAL INTERSECTION LAYOUT

INTERSECTION CO. RD. 51 AT UNIV. SCHOOL

SALVAGE SIGNAL SYSTEM "D"

NO.	BY	DATE	REVISIONS

"ELECTRICAL ENGINEER CERTIFICATION"

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Date: 3-27-92 Reg. No. 5859

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Date: 3-27-92 Reg. No. 20943

ENGINEERS ARCHITECTS PLANNERS

ANOKA COUNTY
MINNESOTA

INPLACE SIGNAL SYSTEM
COUNTY ROAD 51 AT UNIVERSITY AVENUE SCHOOL

FILE NO. 92112

DATE

S.P. 02-651-01 S.P. _____ C.P. _____

Sheet No. 46 of 85 Sheets

BASE OVERLAY DRG. NO.

Fed. Project No. _____

ABBREVIATIONS

EQUIPMENT AND INDICATIONS

RED - RED
YEL - YELLOW
GRN - GREEN
LTA - LEFT TURN ARROW
THA - THRU ARROW
RTA - RIGHT TURN ARROW
TRA - THRU AND RIGHT ARROW
WLK - WALK
NEU - NEUTRAL
DWK - DON'T WALK
SW - SWITCH
SWD - SWITCHED
LUM - LUMINAIRE
DNL - DOWNLIGHT

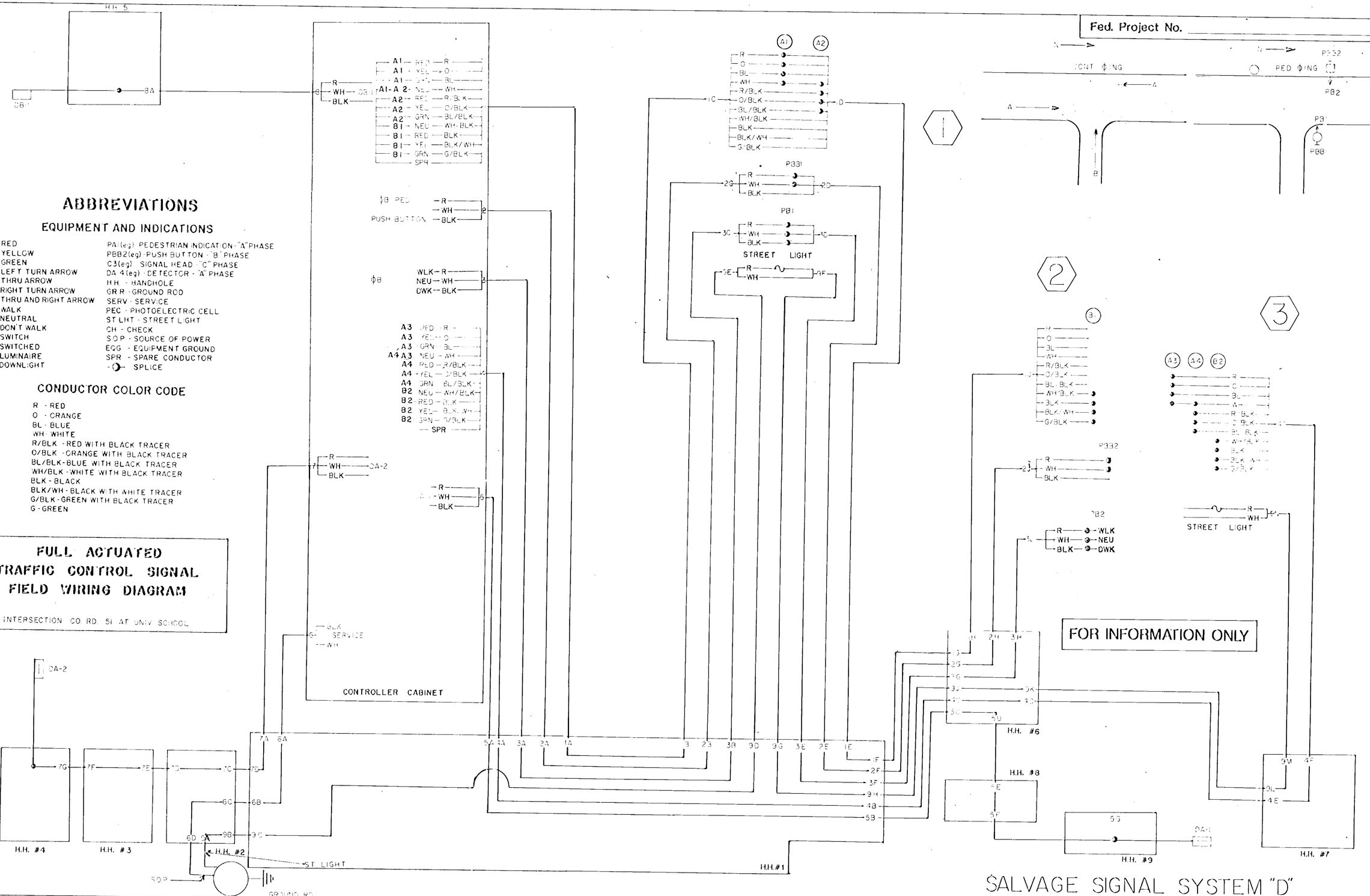
PA1(eg) - PEDESTRIAN INDICATION - "A" PHASE
PBB2(eg) - PUSH BUTTON - "B" PHASE
C3(eg) - SIGNAL HEAD - "C" PHASE
DA 4(eg) - DETECTOR - "A" PHASE
H.H. - HANDHOLE
GR R - GROUND ROD
SERV - SERVICE
PEC - PHOTOELECTRIC CELL
ST LHT - STREET LIGHT
CH - CHECK
SOP - SOURCE OF POWER
EGG - EQUIPMENT GROUND
SPR - SPARE CONDUCTOR
-○- SPLICE

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

FULL ACTUATED TRAFFIC CONTROL SIGNAL FIELD WIRING DIAGRAM

INTERSECTION CO RD 51 AT UNIV SCHOOL



FOR INFORMATION ONLY

SALVAGE SIGNAL SYSTEM "D"

NO.	BY	DATE	REVISIONS

"ELECTRICAL ENGINEER CERTIFICATION"
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. Elder
Date: 3-27-92 Reg. No. 5859

I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the laws of the state of Minnesota.
Thomas A. Schweitzer
Date: 3-27-92 Reg. No. 20943

SEH ENGINEERS ARCHITECTS PLANNERS

ANOKA COUNTY
MINNESOTA

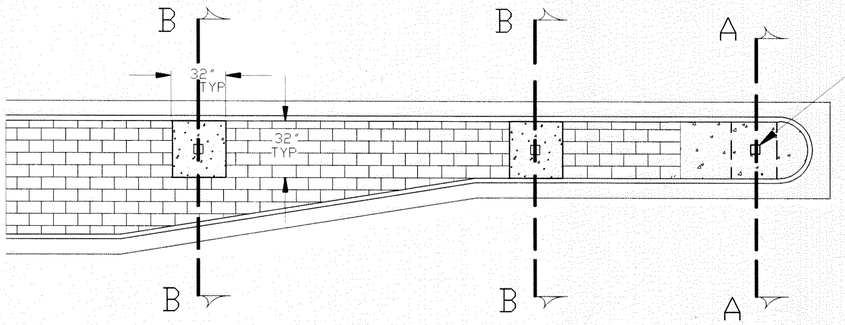
INPLACE SIGNAL SYSTEM
COUNTY ROAD 51 AT UNIVERSITY AVENUE SCHOOL

FILE NO. 92112
DATE

S.P. 02-651-01 S.P. _____ C.P. _____

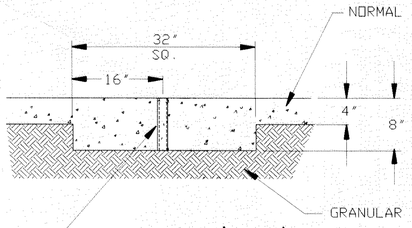
Sheet No. 47 of 85 Sheets

Fed. Project No. _____

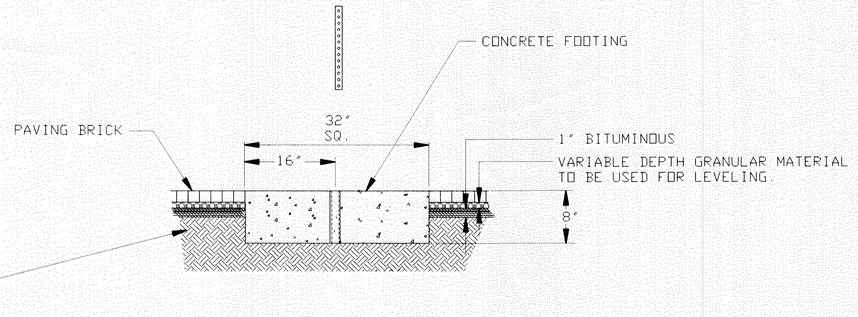


INSTALL 1 3/4" x 1 3/4" x 8" SOLID GALVANIZED SQUARE TUBING IN ISLAND NOSE DURING CONCRETE POUR. PLUMB AS REQUIRED. TAPE BOTTOM OF TUBING TO PREVENT CONCRETE FROM ENTERING TUBING.

1 1/2" x 1 1/2" x 8" SOLID GALVANIZED TUBING WITH 7/16" DIA. HOLES 1" ON CENTER, ON ALL 4 SIDES. WALL THICKNESS GAUGE #12 (.105 IN.) INSERTED AT TIME OF SIGN INSTALLATION TYPICAL.

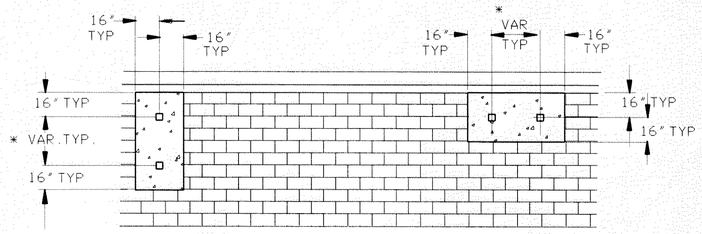


SECTION A - A



SECTION B - B

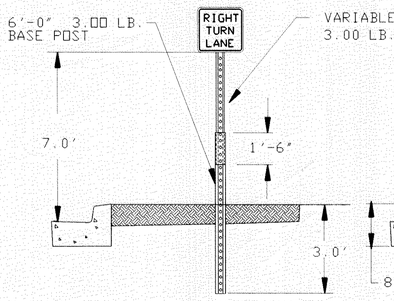
INSTALL 1 3/4" x 1 3/4" x 8" SOLID WALL GALVANIZED SQUARE TUBING. TAPE BOTTOM OF TUBING TO PREVENT CONCRETE FROM ENTERING TUBE. PLUMB AND ALIGIN AT TIME OF POUR AS REQUIRED.TYPICAL.



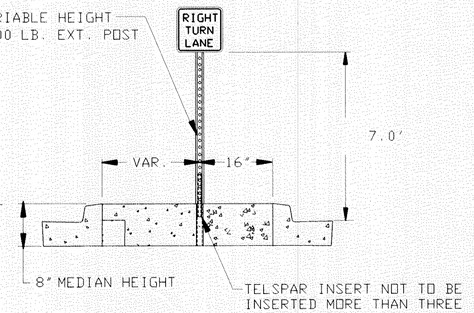
DOUBLE POST FOOTINGS

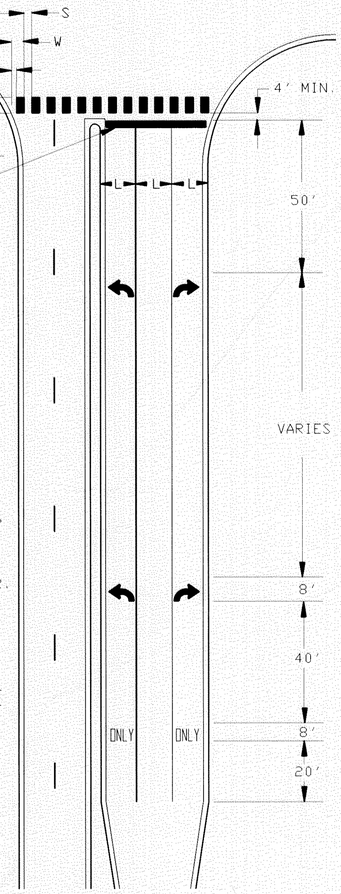
ISLAND MOUNT BREAK-AWAY SIGN POST INSTALLATIONS REQUIRING MORE THAN ONE POST

GROUND POST MOUNT SIGN
INSTALLATION TYPICAL



ISLAND MOUNT BREAK-AWAY SIGN
POST INSTALLATION TYPICAL





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

NOTES:

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

2.) ZEBRA CROSSWALKS AND STOP BARS.

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

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

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

6.) ON TWO LANE STREETS, USE SPACING SHOWN FOR AN 11' INSIDE LANE.

NOTES:

CONCRETE FOOTINGS ARE REQUIRED IN ALL MEDIAN AREAS WHERE PAVING BRICKS ARE USED, EXCEPT IN THE MEDIAN NOSE WHEN A SOLID CONCRETE POUR IS USED.

HEAVY LINES REPRESENT THE APPROXIMATE LIMITS OF CONCRETE FOOTINGS TO BE POURED FOR EACH ISLAND MOUNT SIGN POST INSTALLATION WITHIN SPECIAL MEDIAN AREAS.

IF THE ISLAND IS LESS THAN 48" WIDE , THE WIDTH OF THE CONCRETE FOOTING WILL EQUAL THE WIDTH OF THE ISLAND. IF MORE THAN ONE POST IS REQUIRED FOR AN INSTALLATION, SEE DETAIL "DOUBLE POST FOOTINGS"

SECTION B-B THE SOLID GALVANIZED SQUARE TUBING FOR THE 'DO NOT ENTER' SIGNS SHALL BE SET AT THE PROPER ANGLE. REFER TO THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

FOR PAYMENT OF CONCRETE FOOTINGS REFER TO THE STATEMENT OF ESTIMATED QUANTITIES, ITEM 2564.513 CONCRETE FOOTINGS.

* WHEN THE DISTANCE BETWEEN SIGN POSTS VARIES, REFER TO THE STANDARD SIGNS MANUAL FOR THE SPACING CHART THAT RELATES TO THE SIZE AND SHAPE OF THE INSTALLATION.

IF THE WIDTH OF THE ISLAND IS LESS THAN THE CONCRETE FOOTING MEASUREMENTS REQUIRED BY THIS DETAIL AND THE SPACING CHART IN THE STANDARD SIGNS MANUAL, THE LENGHT OF THE FOOTING WILL EQUAL THE WIDTH OF THE ISLAND.

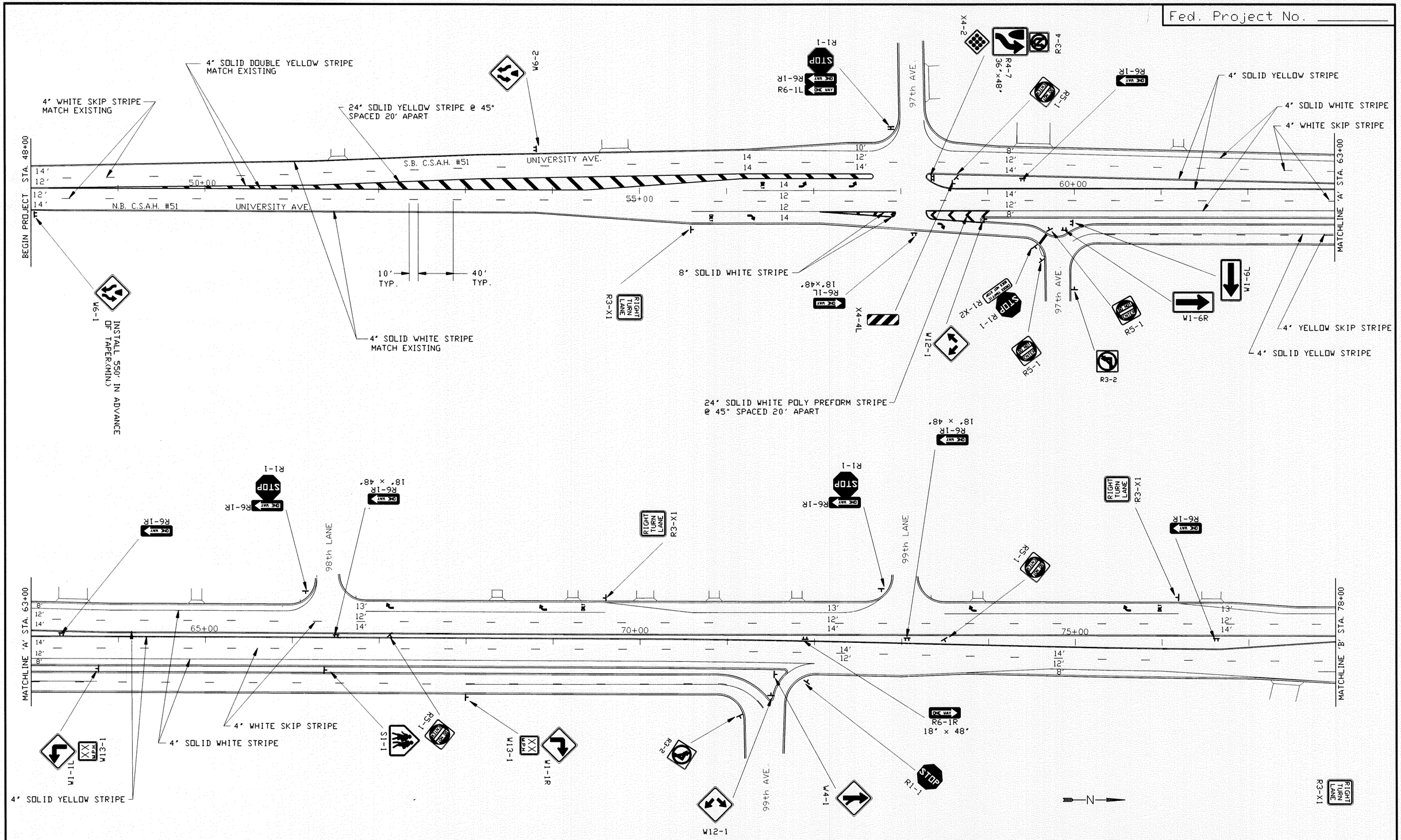
EXPANSION MATERIAL WILL BE REQUIRED ON ALL FOOTINGS CONFINED BY THE BACK OF CURB.

REVISIONS			
DATE	BY	DATE	BY

SIGNING AND STRIPING DETAILS

S.A.P. 114-020-04/106-020-07 S.P. 02-651-01 C.P. _____

Fed. Project No. _____



1. SEE SHEET 48 of 85 SHEETS FOR SIGNING SCHEDULE, SIGN POST MOUNTING AND PAVEMENT MESSAGE DETAILS
2. LOCATIONS OF ALL SIGNS ARE APPROXIMATE. EXACT LOCATIONS WILL BE DETERMINED IN THE FIELD BY THE ENGINEER

DESIGN 11-2-92 D.M.

REVISIONS			
DATE	BY	DATE	BY
4/20/93	DM		
6/09/93	DM		

PERMANENT SIGNING AND STRIPING
C.S.A.H. 51 STA. 48+00 TO STA. 78+00

S.A.P. 114-020-04/106-020-07 S.P. 02-651-01 C.P. _____

Sheet No. 49 of 85 Sheets

Fed. Project No. _____

MATCHLINE 'B' STA. 78+00

MATCHLINE 'C' STA. 93+00

MATCHLINE 'C' STA. 93+00

MATCHLINE 'D' STA. 108+00

80+00 85+00 90+00 95+00 100+00 105+00

101st AVE 101st LANE 102nd AVE 102nd LANE 103rd AVE 104th AVE 104th LANE

10' TYP. 40' TYP.

4' WHITE SKIP STRIPE

4' SOLID WHITE STRIPE

4' SOLID YELLOW STRIPE

4' SOLID DOUBLE YELLOW STRIPE

TERRITORIAL RD.

UNIVERSITY CIRCLE

1. SEE SHEET 48 of 85 SHEETS FOR SIGNING SCHEDULE, SIGN POST MOUNTING AND PAVEMENT MESSAGE DETAILS

2. LOCATIONS OF ALL SIGNS ARE APPROXIMATE. EXACT LOCATIONS WILL BE DETERMINED IN THE FIELD BY THE ENGINEER

DESIGN 11-6-92 D.M.

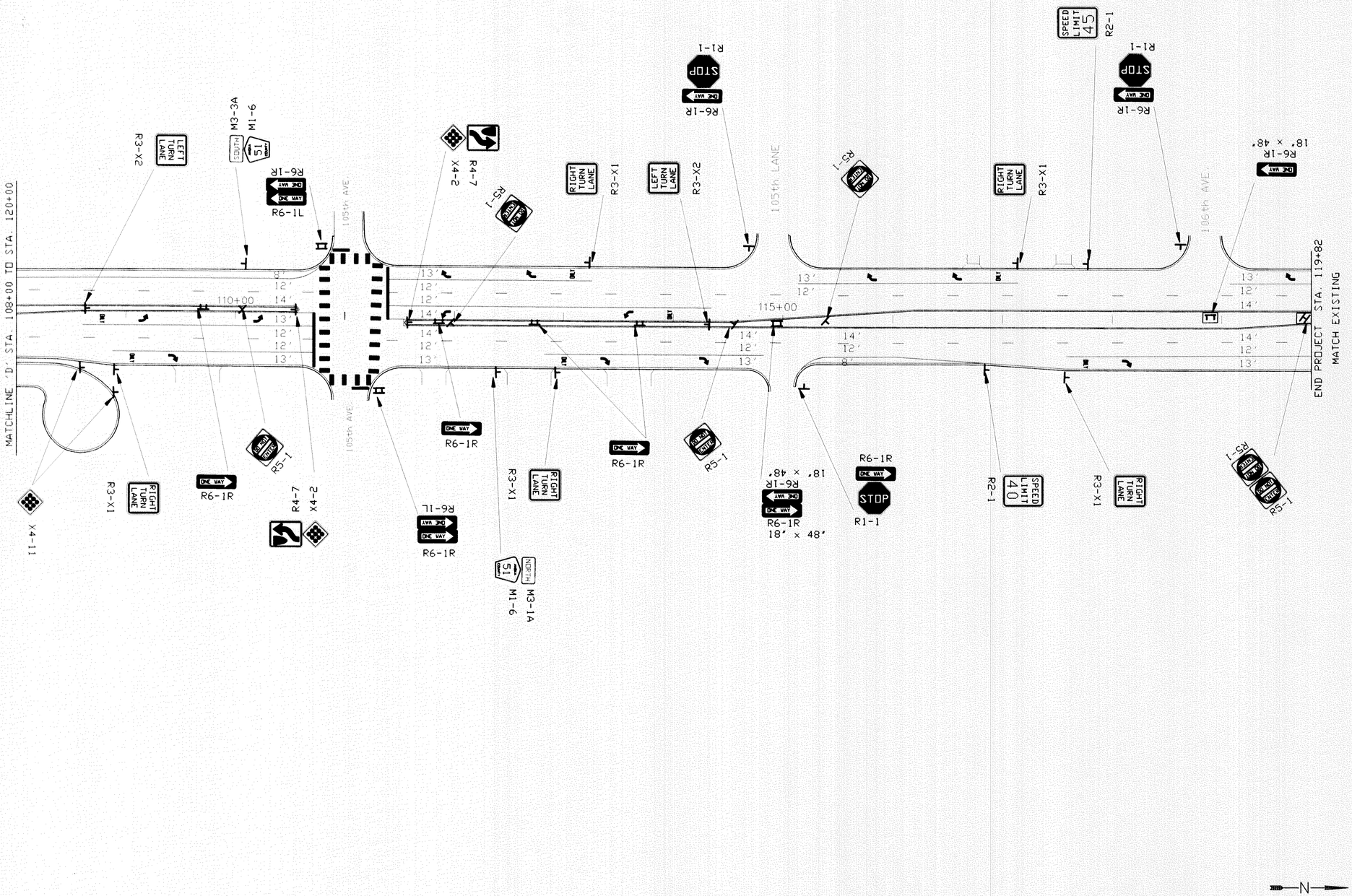
REVISIONS			
DATE	BY	DATE	BY
4/20/93	D.M.		
6/09/93	D.M.		

PERMANENT SIGNING AND STRIPING
C.S.A.H. 51 STA. 78+00 TO STA. 108+00

S.A.P. 114-020-04/106-020-07 S.P. 02-651-01 C.P. _____

Sheet No. 50 of 85 Sheets

Fed. Project No. _____



▭ DENOTES LOCATION OF CONCRETE SIGN FOOTING.

1. SEE SHEET 48 of 85 SHEETS FOR SIGNING SCHEDULE, SIGN POST MOUNTING AND PAVEMENT MESSAGE DETAILS
2. LOCATIONS OF ALL SIGNS ARE APPROXIMATE. EXACT LOCATIONS WILL BE DETERMINED IN THE FIELD BY THE ENGINEER

DESIGN 11-6-98 D.M.

REVISIONS			
DATE	BY	DATE	BY
4/20/99	DM		
6/09/99	DM		

PERMANENT SIGNING AND STRIPING
C.S.A.H. 51 STA. 108+00 TO STA. 119+23

S.A.P. 114-020-04/106-020-07 S.P. 02-651-01 C.P. _____

Sheet No. 51 of 85 Sheets

Fed. Project No. _____

M.U.T.C.D. CODE	Ⓦ SIZE (INCHES)	AREA (SQ.FT.)	QTY. GROUND POST MOUNT INSTALLATIONS	QTY. ISLAND MOUNT INSTALLATIONS	SIGN PANEL	POST / INSTALLATIONS	MOUNTING HEIGHT	
R1-1	30" x 30"	6.25	16	1	STOP	1	7.0'	(1) INSTALLATION w/R6-1R MOUNTED ABOVE (8) INSTALLATIONS w/R6-1R MOUNTED ABOVE (3) INSTALLATIONS w/R6-1R AND R6-1L ABOVE BACK TO BACK (1) INSTALLATION w/R1-X2 MOUNTED BELOW
R1-X2	36" x 12"	3.00	1	0	CROSS TRAFFIC DOES DOES NOT STOP	1	7.0'	(1) MOUNTED BELOW R1-1
R2-1	24" x 30"	5.00	1	0	SPEED LIMIT 40 MPH	1	7.0'	
			1	0	SPEED LIMIT 45 MPH	1	7.0'	
R3-2	24" x 24"	4.00	2	0	NO LEFT TURN	1	7.0'	
R3-4	24" x 24"	4.00	0	1	NO U TURN	1	7.0'	(1) MOUNTED TO BACK TO BACK R4-7
R3-X1	30" x 30"	6.25	16	0	RIGHT TURN LANE	1	7.0'	
R3-X2	30" x 30"	6.25	0	6	LEFT TURN LANE	1	7.0'	
R4-7	30" x 24"	5.00	0	8		1	7.0'	
R4-7	36" x 48"	12.00	0	1	KEEP RIGHT	2	7.0'	(1) INSTALL W/R3-4 MOUNTED TO BACK
X4-2	18" x 18"	2.25	0	9	HAZZARD MARKER			MOUNTED BELOW R4-7
R5-1	30" x 30"	6.25	1	21	DO NOT ENTER	1	7.0'	(2) INSTALLATION w/R3-4 MOUNTED BACK TO BACK (1) INSTALLATION MOUNTED TO BACK OF R1-2 (1) INSTALLATION MOUNTED TO BACK OF W6-3 (1) INSTALLATION MOUNTED BACK TO BACK w/R5-1
R6-1R	36" x 12"	3.00	15	18				(10) INSTALLATION MOUNTED ABOVE R1-1
R6-1R	48" x 18"	6.00	0	11	ONE WAY (RIGHT)	2	7.0'	(3) INSTALLATION (R6-1R / R6-1L) MOUNTED BACK TO BACK ABOVE R1-1
R6-1L	36" x 12"	3.00	7	0				(4) INSTALLATION (R6-1R / R6-1L) MOUNTED BACK TO BACK
R6-1L	48" x 18"	6.00	1	0	ONE WAY (LEFT)	2	7.0'	(1) INSTALLATION (R6-1R / R6-1L 48"x18") MOUNTED BACK TO BACK
R2-1	24" x 30"	5.00	2	0	BEGIN ONE WAY	1	7.0'	
S1-1	36" x 36"	9.00	1	1	SCHOOL ADVANCE SIGN	2	7.0'	
W1-1R	30" x 30"	6.25	2	0	TURN SIGN (RIGHT)	2	7.0'	(2) INSTALLATION WITH W13-1 MOUNTED BELOW
W1-1L	30" x 30"	6.25	0	1	TURN SIGN (LEFT)	2	7.0'	(1) INSTALLATION WITH W13-1 MTD. BELOW
W13-1	24" x 24"	4.00	2	1	ADVISORY SPEED XX M.P.H.			(2) INSTALLATION MOUNTED BELOW W1-1R (1) INSTALLATION MOUNTED BELOW W1-1L SPEED TO BE DETERMINED BY THE ENGINEER IN THE FIELD.

M.U.T.C.D. CODE	Ⓦ SIZE (INCHES)	AREA (SQ.FT.)	QTY. GROUND POST MOUNT INSTALLATIONS	QTY. ISLAND MOUNT INSTALLATIONS	SIGN PANEL	POST / INSTALLATIONS	MOUNTING HEIGHT	
W1-6	48" x 24"	8.00	1	3	LARGE ARROW (RIGHT or LEFT)	2	7.0'	
W3-1a	30" x 30"	6.25	0	1	STOP AHEAD	1	7.0'	
W4-1R	48" x 48"	16.00	0	1	MERGE	2	7.0'	
W6-1	48" x 48"	16.00	1	0	DIVIDED HIGHWAY	2	7.0'	
W6-2	48" x 48"	16.00	1	0	DIVIDED HIGHWAY (ENDS)	2	7.0'	
W6-3	30" x 30"	6.25	1	0	TWO WAY TRAFFIC	1	7.0'	(1) INSTALLATION W/R5-1 MOUNTED TO BACK
W12-1	24" x 24"	4.00	0	2	DOUBLE ARROW	1	4.0'	
W14-1	30" x 30"	6.25	1	0	DEAD END	1	7.0'	
X4-4L	12" x 36"	3.00	0	1	CLEARANCE MARKER (LEFT)	1	4.0'	
X4-11	18" x 18"	2.25	2	0	OBJECT MARKER (END OF ROAD)	1	4.0'	
M1-6	24" x 24"	4.00	4	0		1	7.0'	
M3-1A	21" x 15"	2.18	2	0	NORTH			MOUNTED ABOVE M6-1
M3-3A	21" x 15"	2.18	2	0	SOUTH			MOUNTED ABOVE M6-1

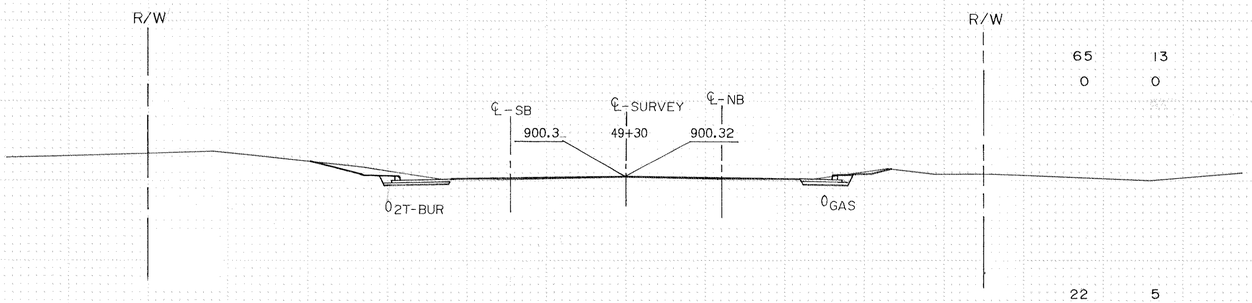
TABULATION CHART Ⓦ
PERMANENT SIGNING QUANTITY SHEET
C.S.A.H. 51

REVISIONS			
DATE	BY	DATE	BY
4/20/93	DM		
5/10/93	DM		

S.A.P. 114-020-04/106-020-07 S.P. 02-651-01 C.P. _____ Sheet No. 52 of 85 Sheets

Fed. Proj. No.

EXCAVATION EMBANKMENT
COMMON GRANULAR
SUBGRADE SELECT GRANULAR



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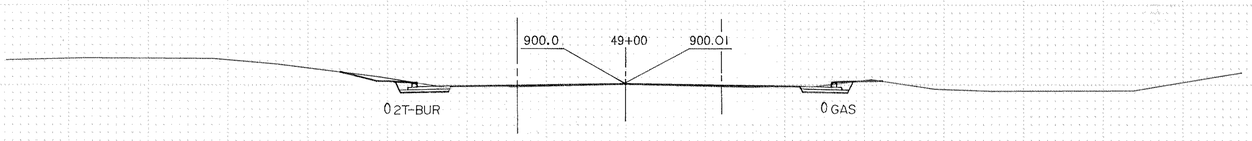

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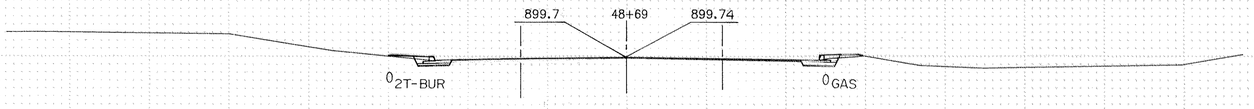

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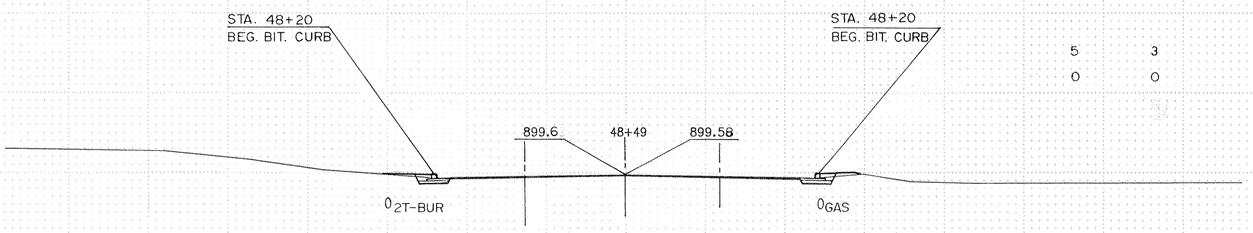

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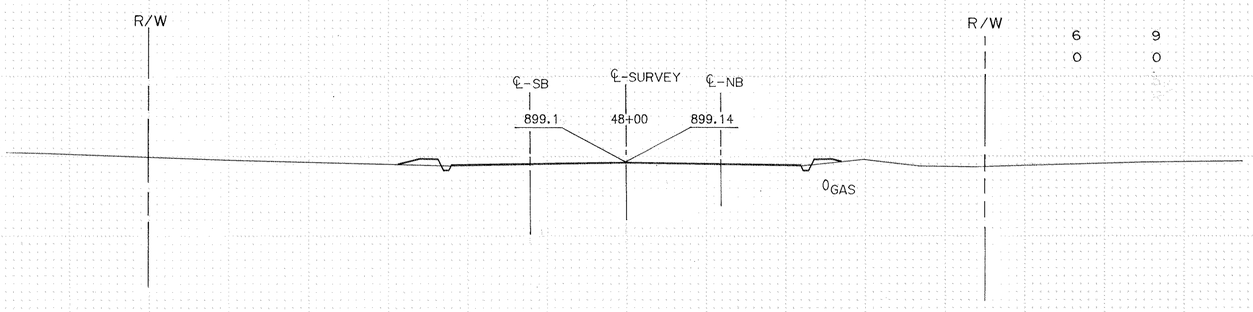

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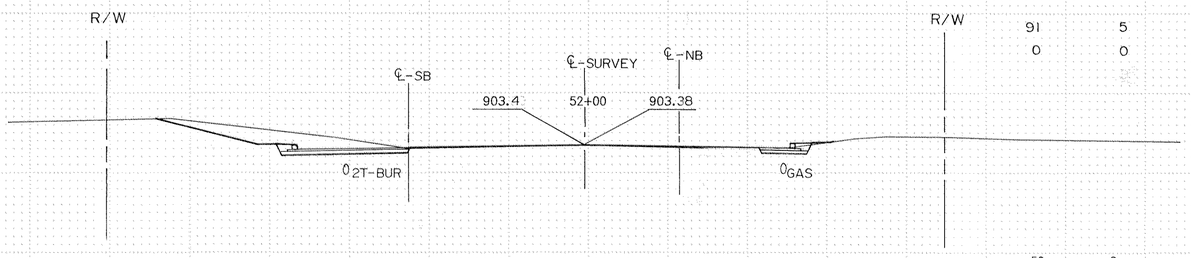

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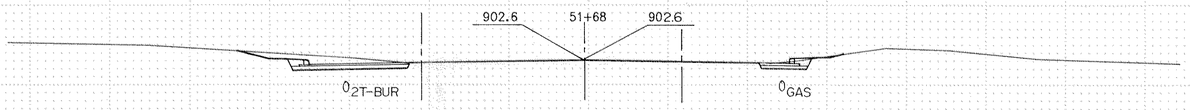

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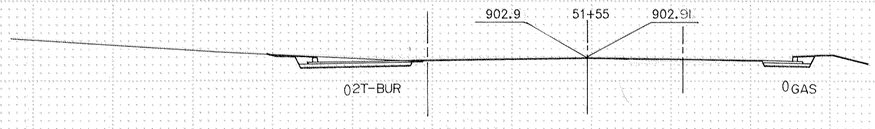

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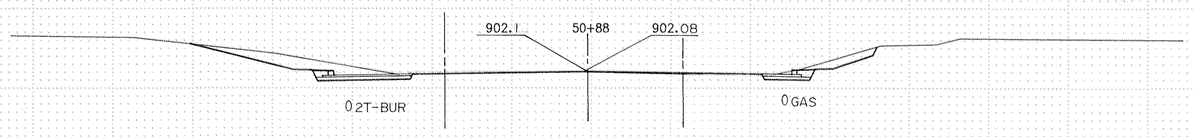

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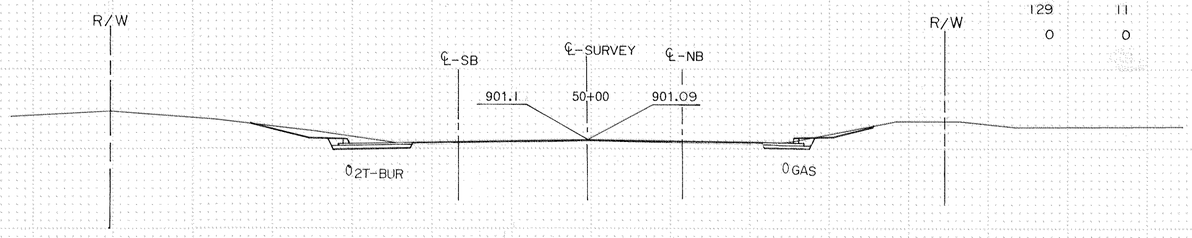

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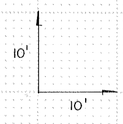
X-SECTIONS BASED ON NB PROFILE

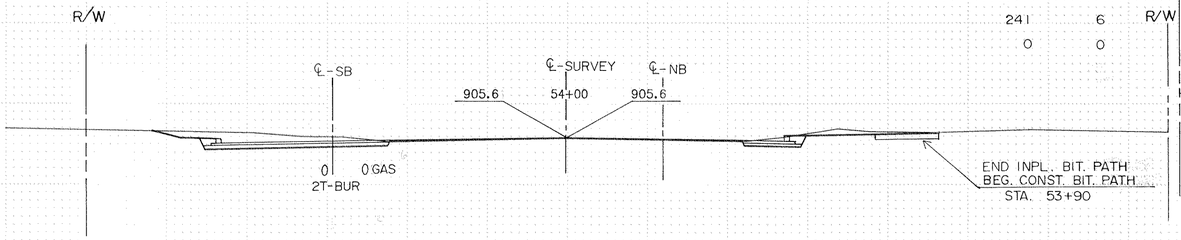


CROSS - SECTIONS
STA. 48+20 TO STA. 52+00

Fed. Proj. No.

EXCAVATION EMBANKMENT

COMMON SUBGRADE	GRANULAR SELECT GRANULAR



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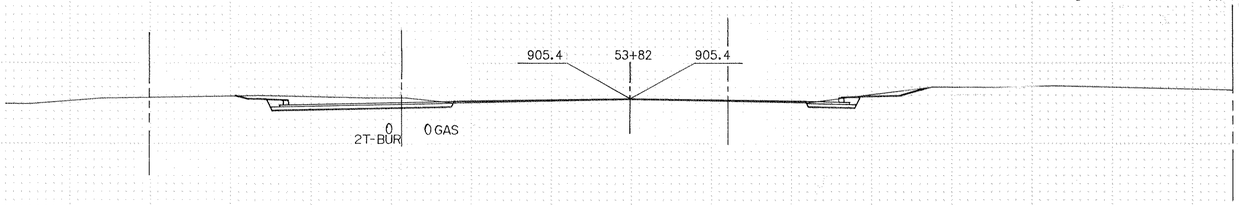

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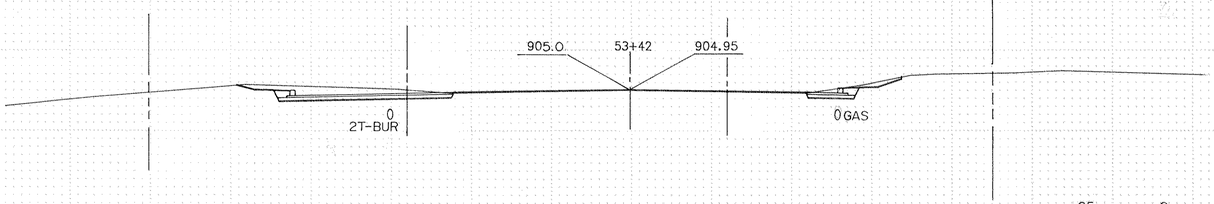

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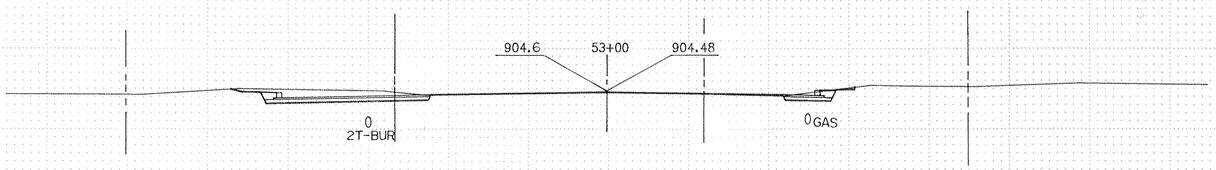

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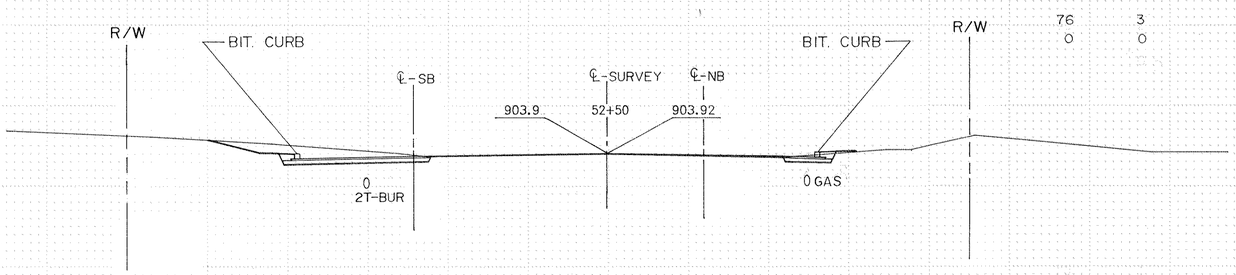

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EXCAVATION EMBANKMENT

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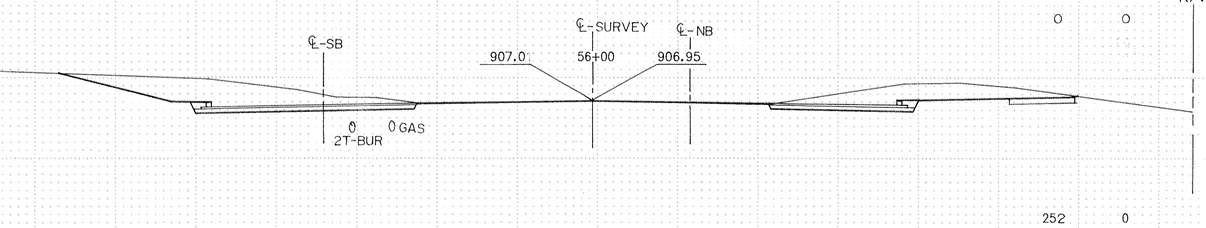

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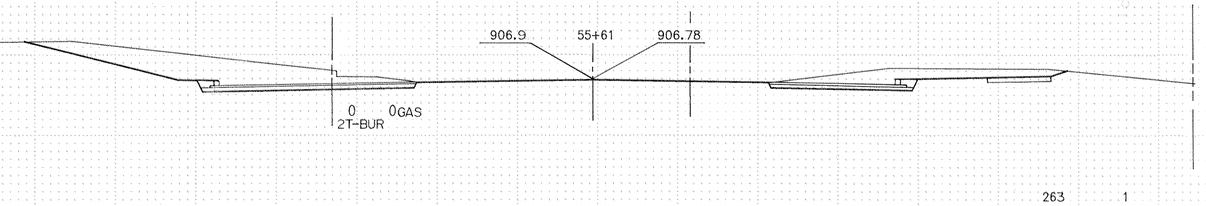

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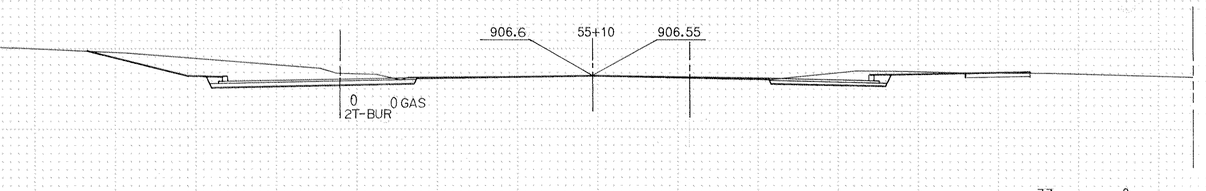
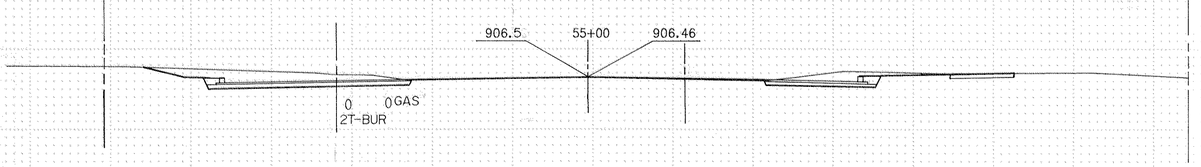
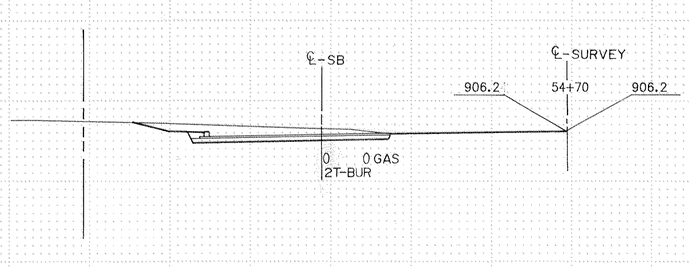


263 1
0 0



33 0
0 0



X-SECTIONS BASED ON NB PROFILE

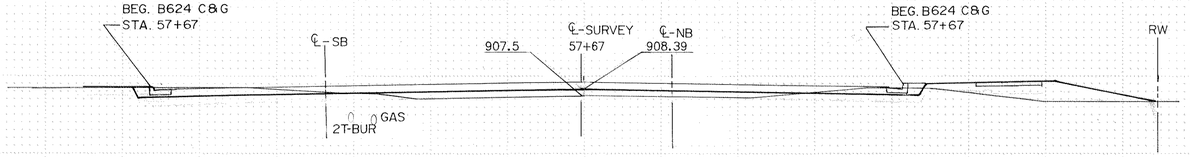
10'
10'

CROSS-SECTIONS

STA. 52+50 TO STA. 56+00

EXCAVATION EMBANKMENT
COMMON GRANULAR
SUBGRADE SELECT GRANULAR

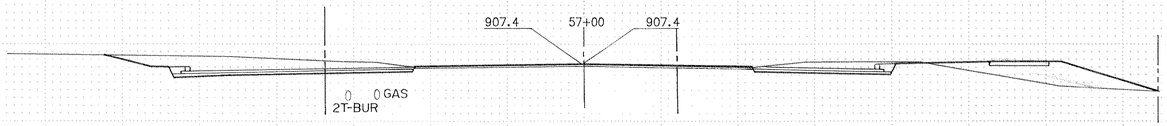
END OVERLAY INP. ROADWAY &
BEG. FULL CONST.
STA 57+67



203
0

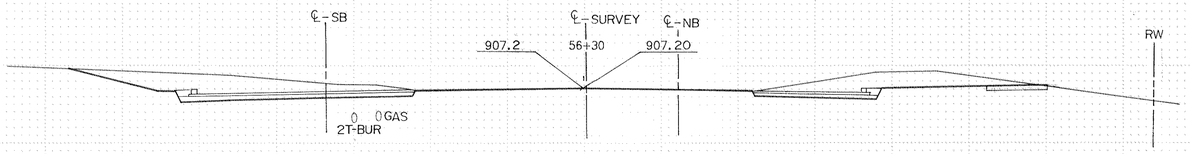
105
0

BEG. OVERLAY INP. ROADWAY
STA 57+00



332
0

26
0

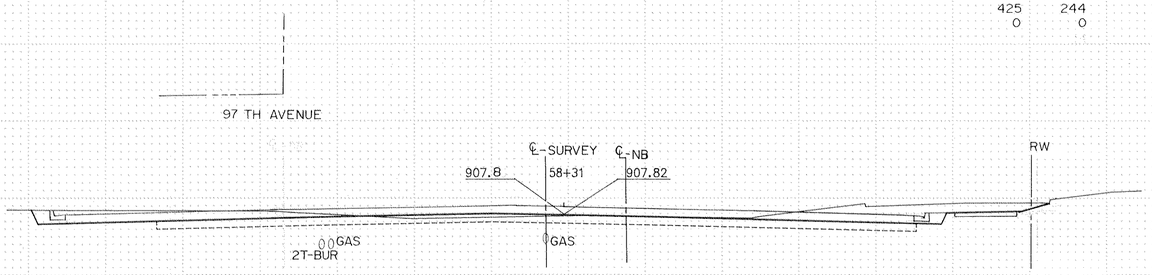


Fed. Proj. No.

EXCAVATION EMBANKMENT
COMMON GRANULAR
SUBGRADE SELECT GRANULAR

425
0

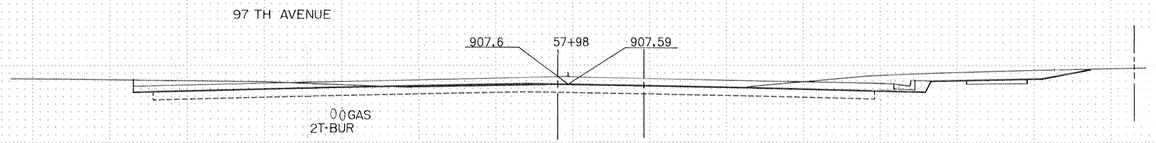
244
0



STA. 58+16 END B624 C&G.
BEG. B618 C&G.

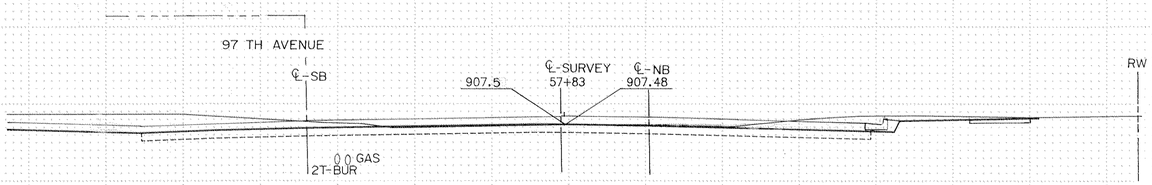
229
0

114
0



113
0

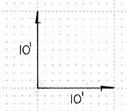
51
0



89
0

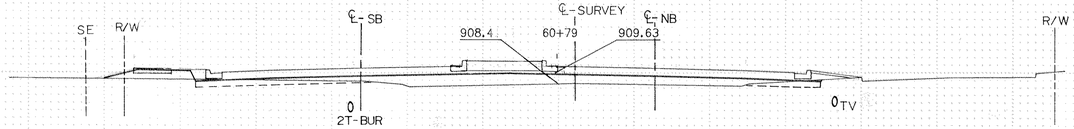
47
0

X-SECTIONS BASED ON NB PROFILE

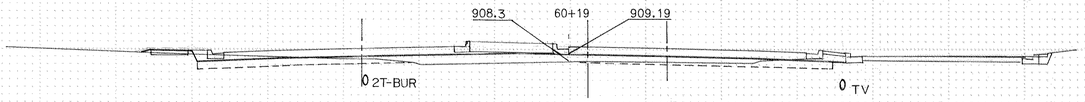


CROSS-SECTIONS
STA. 56+30 TO STA. 58+31

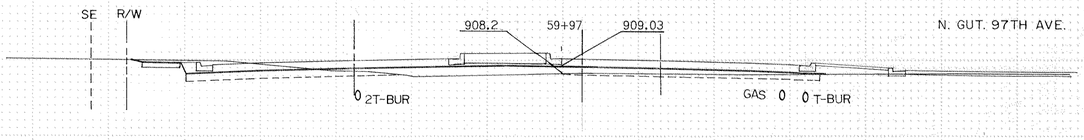
EXCAVATION EMBANKMENT
COMMON GRANULAR
SUBGRADE SELECT GRANULAR



80 197
0 0

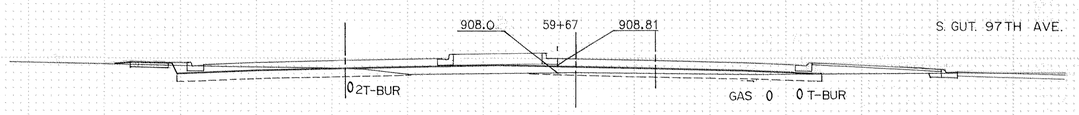


42 63
0 0



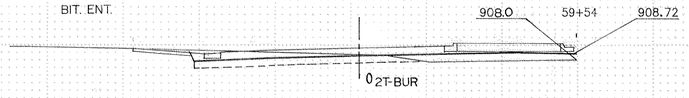
N. GUT. 97TH AVE.

62 83
0 0

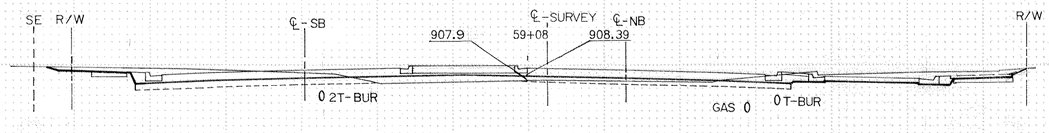


S. GUT. 97TH AVE.

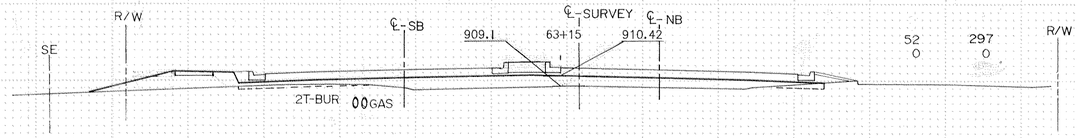
BIT. ENT.



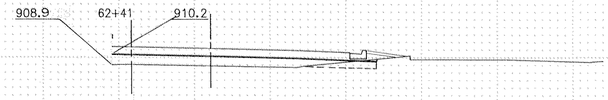
164 165
0 0



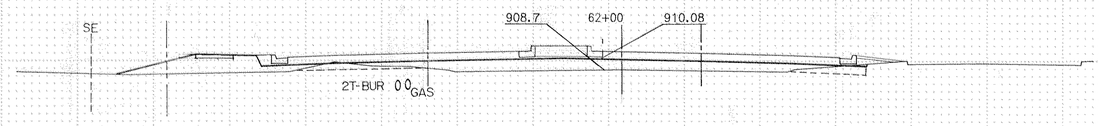
EXCAVATION EMBANKMENT
COMMON GRANULAR
SUBGRADE SELECT GRANULAR

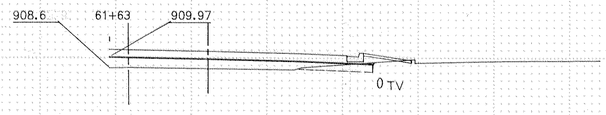


52 297
0 0

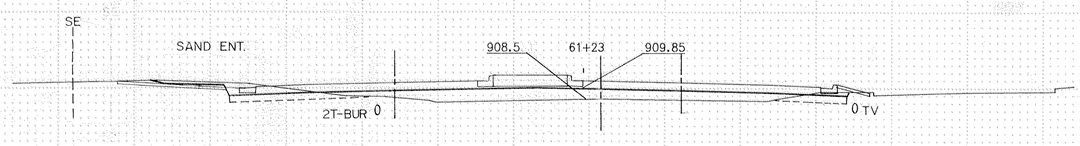


72 515
0 0

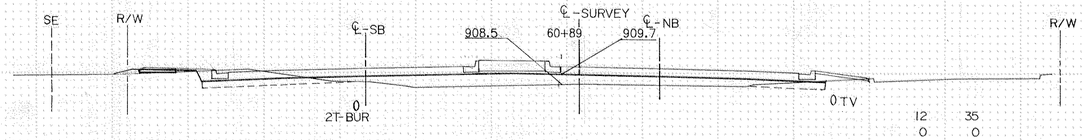




87 304
0 0

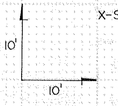


51 114
0 0



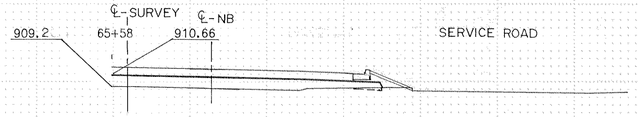
12 35
0 0

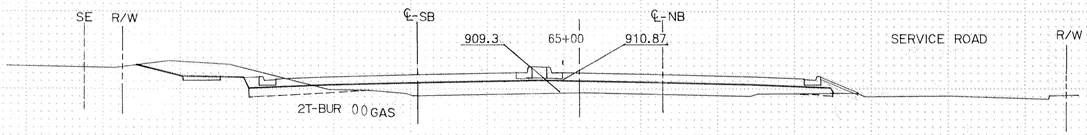
X-SECTIONS BASED ON NB PROFILE

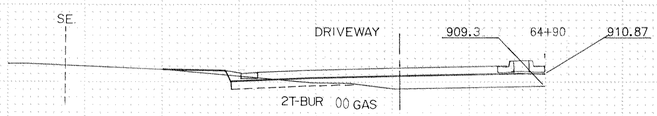


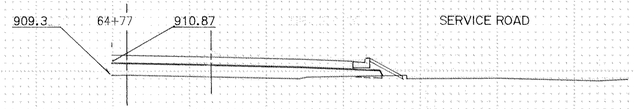
CROSS-SECTIONS
STA. 59+08 TO STA. 63+15

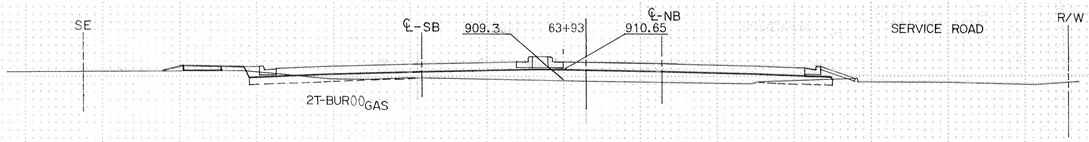
EXCAVATION EMBANKMENT
COMMON GRANULAR
SUBGRADE SELECT GRANULAR

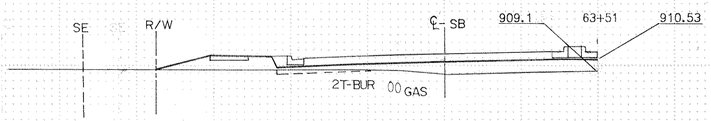






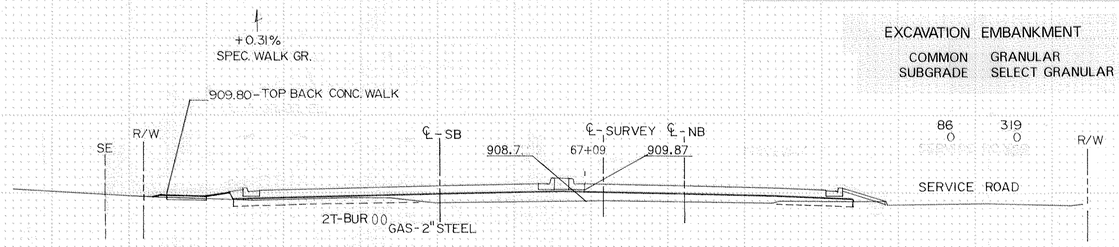


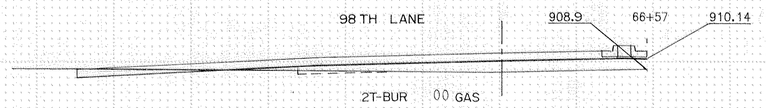


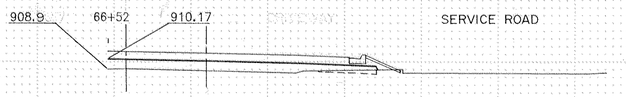


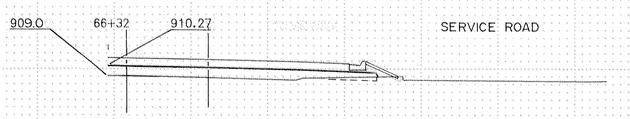
Fed. Proj. No.

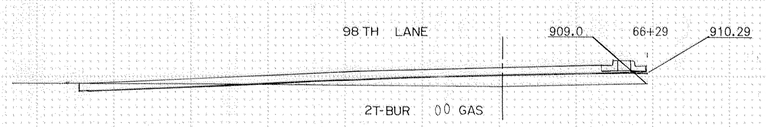
EXCAVATION EMBANKMENT
COMMON GRANULAR
SUBGRADE SELECT GRANULAR

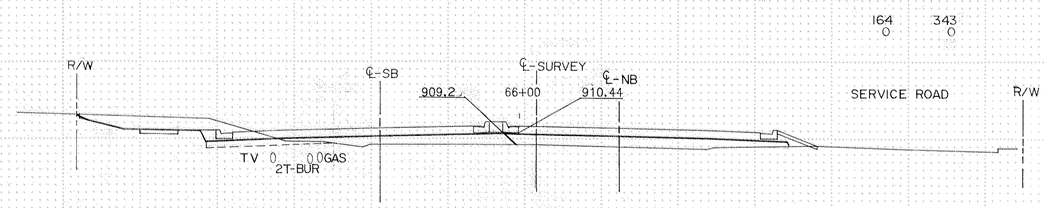








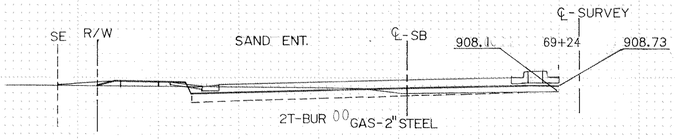




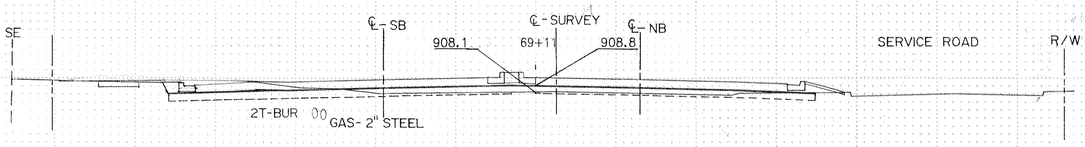
CROSS - SECTIONS
STA. 63+51 TO STA. 67+09

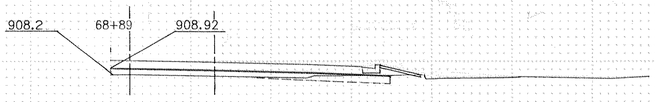
EXCAVATION EMBANKMENT
COMMON GRANULAR
SUBGRADE SELECT GRANULAR

Fed. Proj. No.

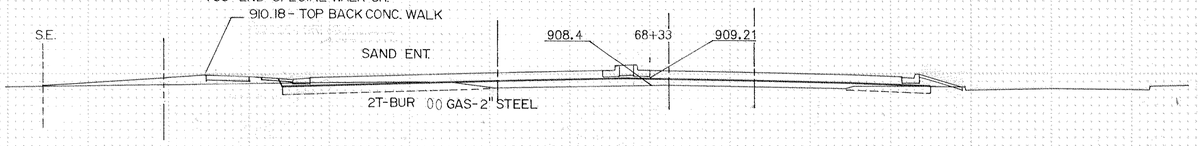


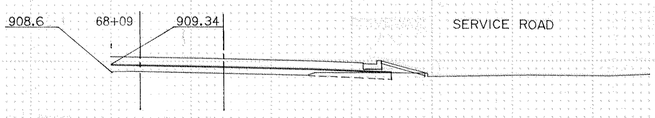
277 279
0 0



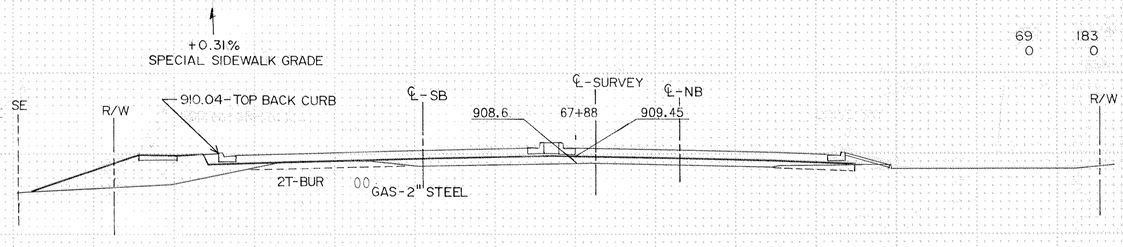


181 235
0 0

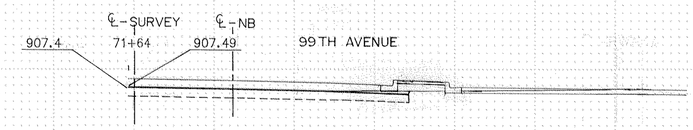




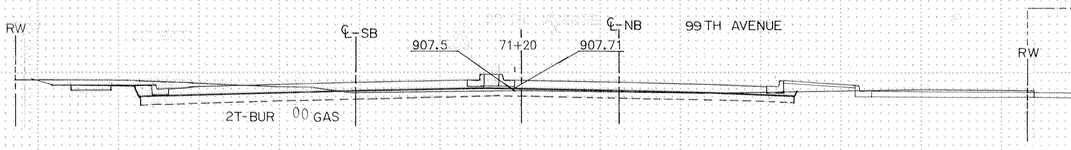
69 183
0 0

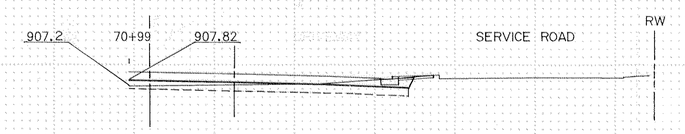


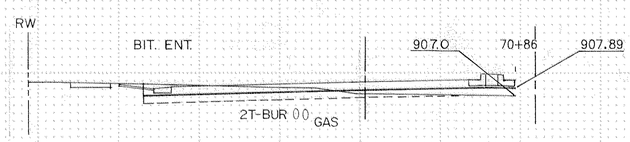
EXCAVATION EMBANKMENT
COMMON GRANULAR
SUBGRADE SELECT GRANULAR

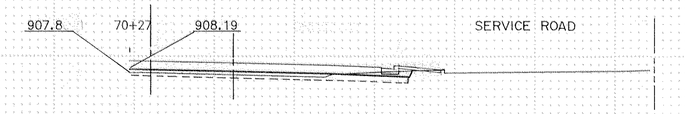


248 144
0 0

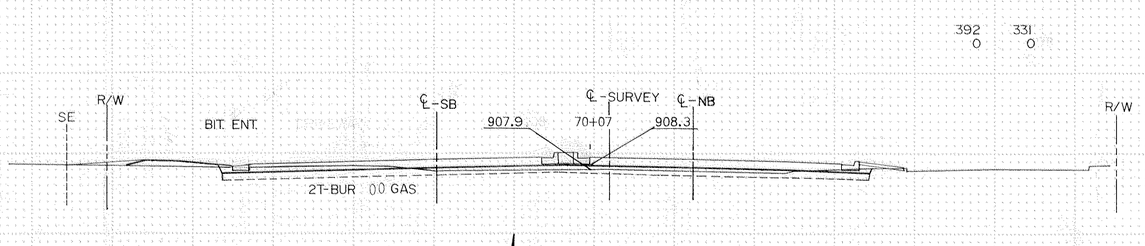


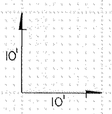






392 331
0 0



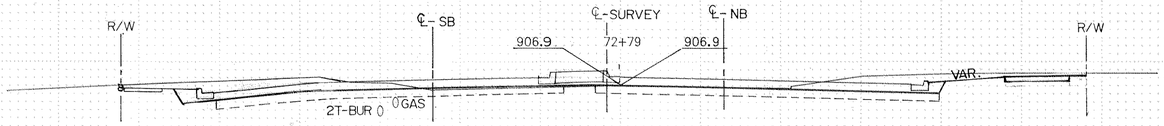


X-SECTIONS BASED ON NB PROFILE

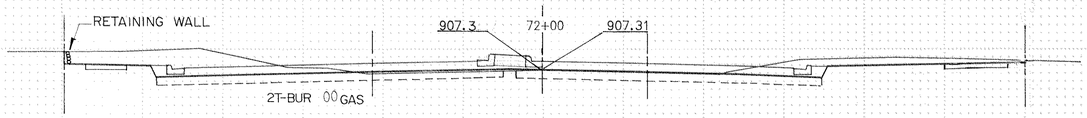
CROSS - SECTIONS
STA. 67+88 TO STA. 71+64

Fed. Proj. No.

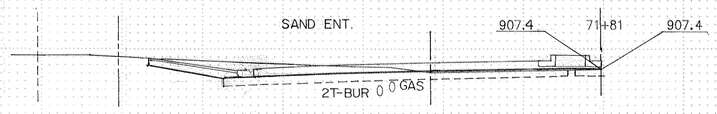
EXCAVATION EMBANKMENT
COMMON GRANULAR
SUBGRADE SELECT GRANULAR



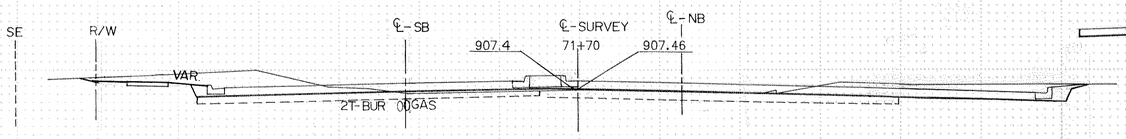
519 241
0 0



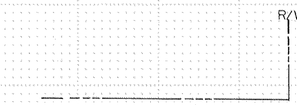
SE END +95

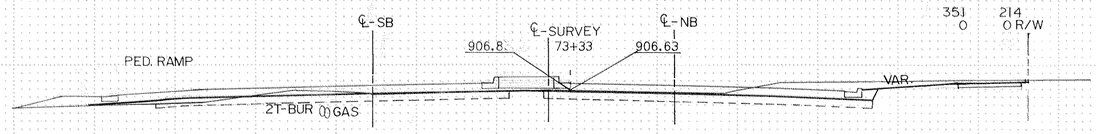


195 90
0 0

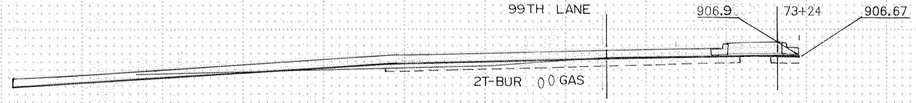


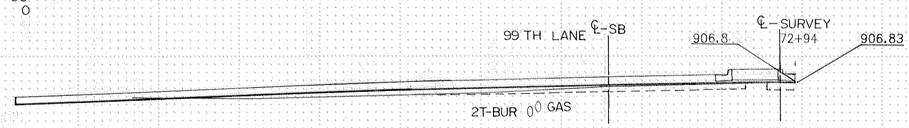
EXCAVATION EMBANKMENT
COMMON GRANULAR
SUBGRADE SELECT GRANULAR





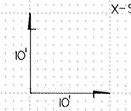
351 214
0 0 R/W





305 166
0 0

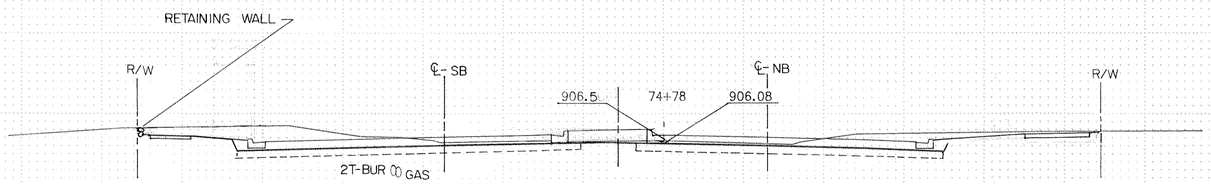
X-SECTIONS BASED ON NB PROFILES



CROSS-SECTIONS
STA. 71+70 TO STA. 73+33

EXCAVATION EMBANKMENT
COMMON GRANULAR
SUBGRADE SELECT GRANULAR

Fed. Proj. No.



525
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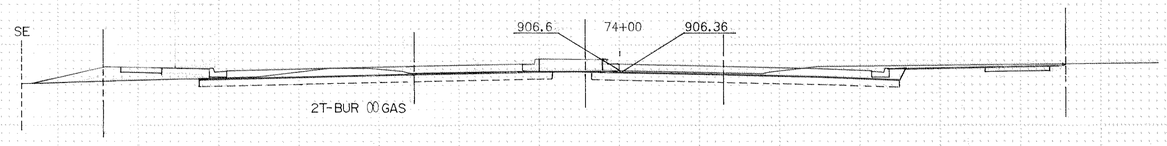
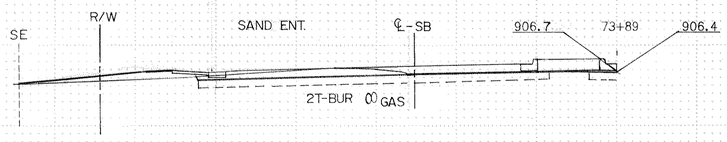
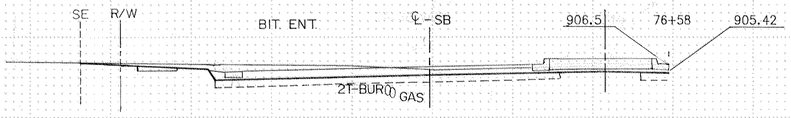
245
0



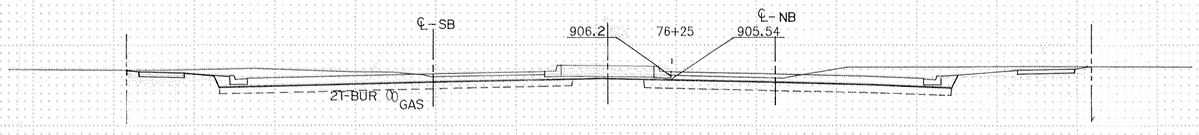


EXCAVATION EMBANKMENT
COMMON GRANULAR
SUBGRADE SELECT GRANULAR



647
0

227
0



772
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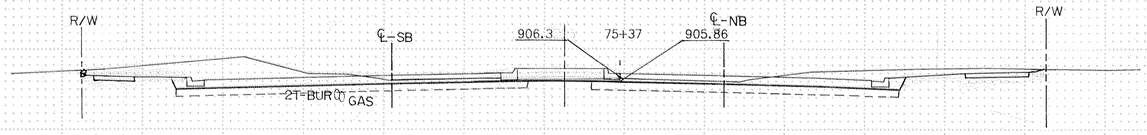
265
0



504
0

177
0

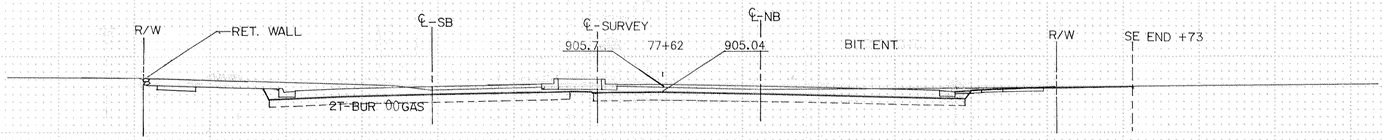
X-SECTIONS BASED ON NB PROFILE

10'
10'

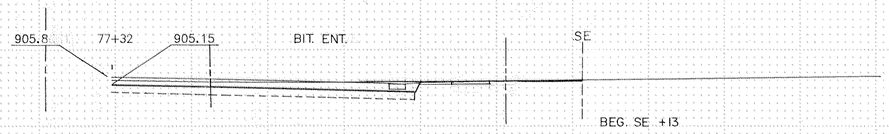
CROSS - SECTIONS
STA. 73+89 TO STA. 76+58

Fed. Proj. No.

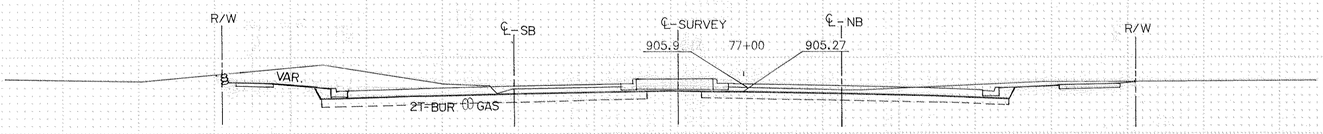
EXCAVATION	EMBANKMENT
COMMON	GRANULAR
SUBGRADE	SELECT GRANULAR



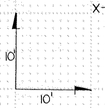
344	124
0	0



505	195
0	0



X-SECTIONS BASED ON NB PROFILE

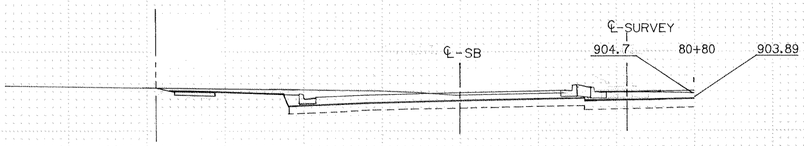


CROSS-SECTIONS

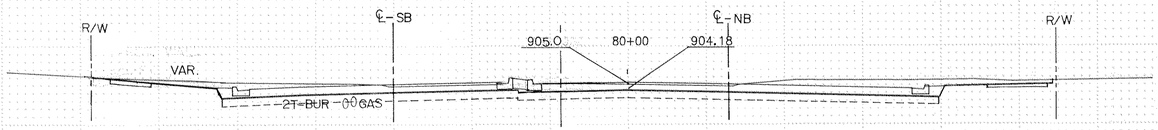
STA. 77+00 TO STA. 77+62

Fed. Proj. No.

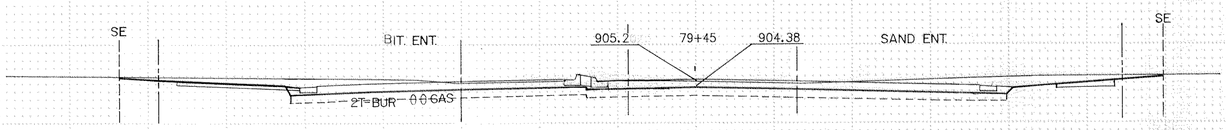
EXCAVATION EMBANKMENT
COMMON GRANULAR
SUBGRADE SELECT GRANULAR



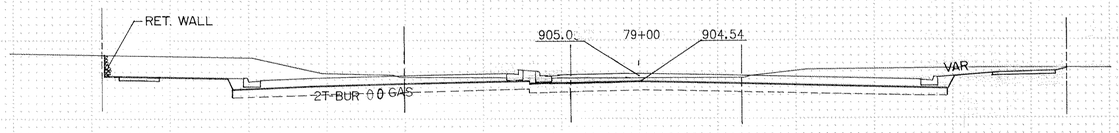
1051 386
0 0



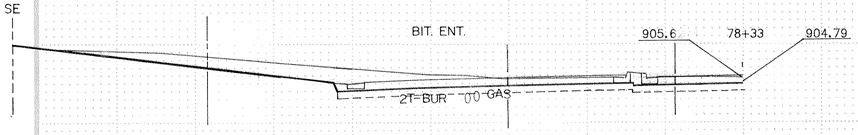
464 187
0 0



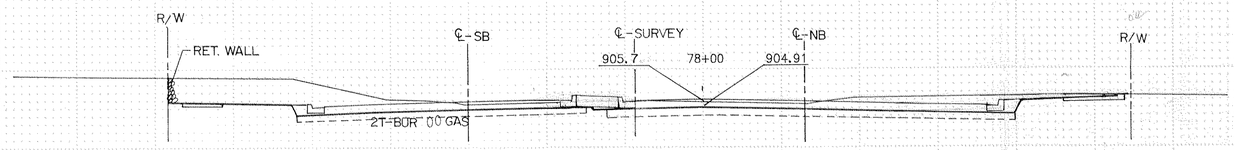
424 153
0 0



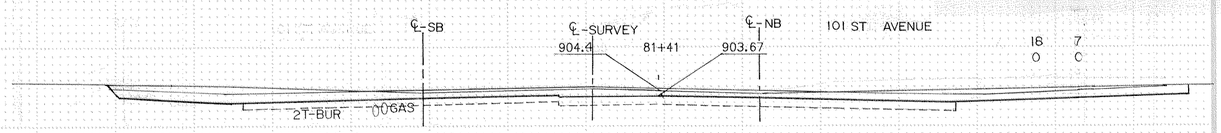
SE



1066 334
0 0

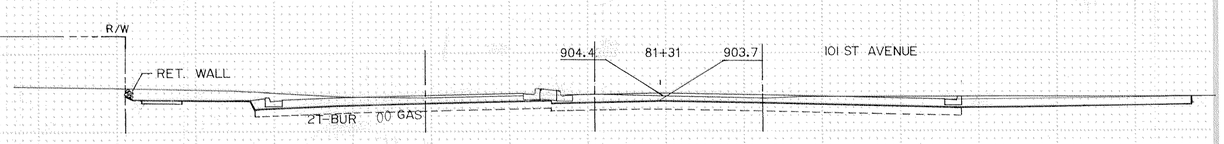


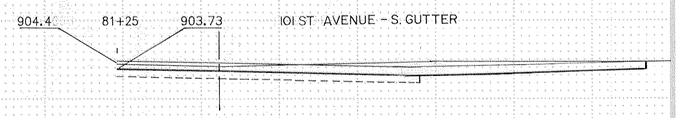
EXCAVATION EMBANKMENT
COMMON GRANULAR
SUBGRADE SELECT GRANULAR



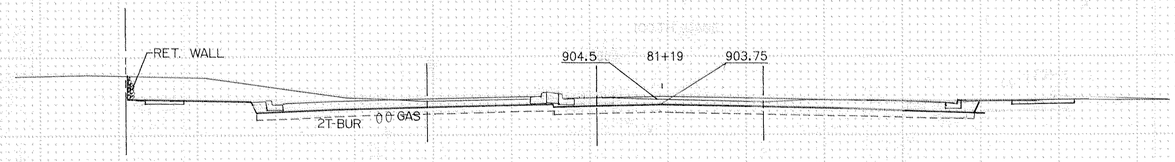
18 7
0 0

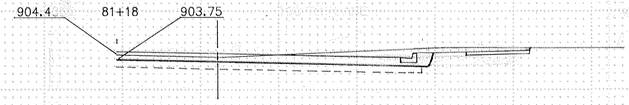
82 34
0 0



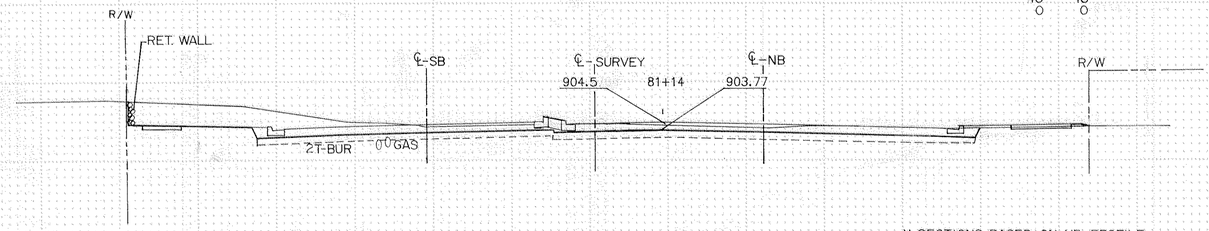


97 40
0 0

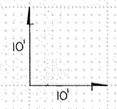




46 16
0 0



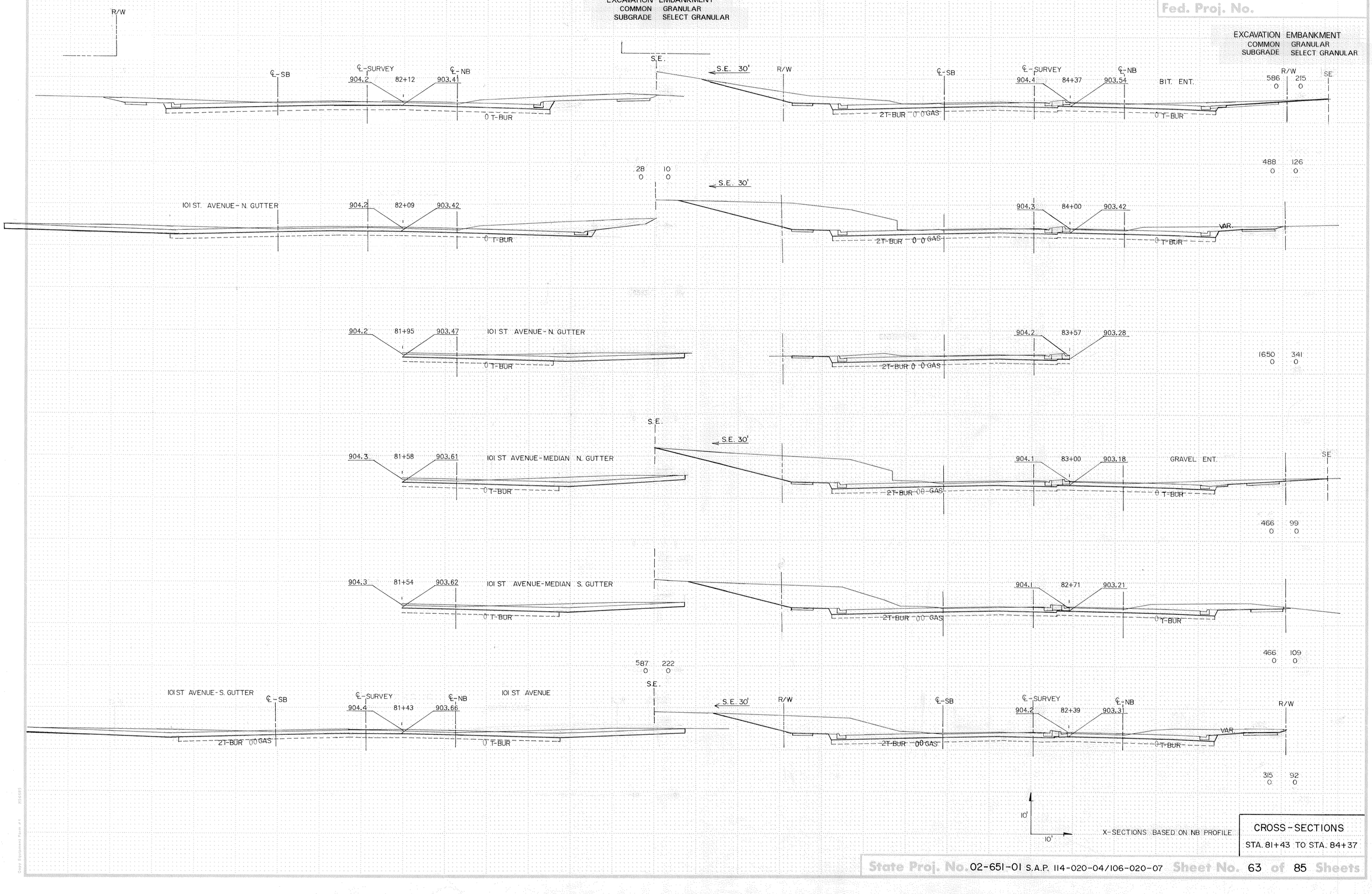
X-SECTIONS BASED ON NB PROFILE



CROSS - SECTIONS
STA. 78+00 TO STA. 81+41

Fed. Proj. No.

EXCAVATION EMBANKMENT
COMMON GRANULAR
SUBGRADE SELECT GRANULAR

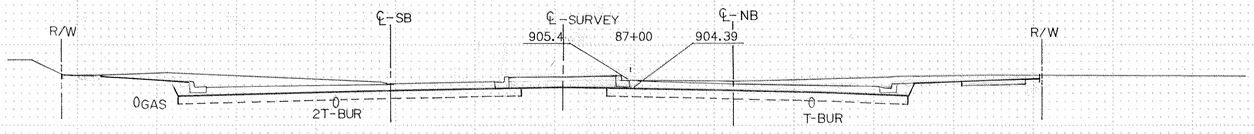


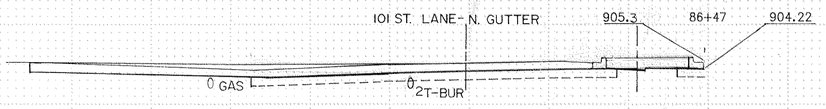
X-SECTIONS BASED ON NB PROFILE

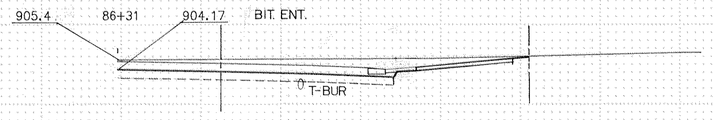
CROSS-SECTIONS
STA. 81+43 TO STA. 84+37

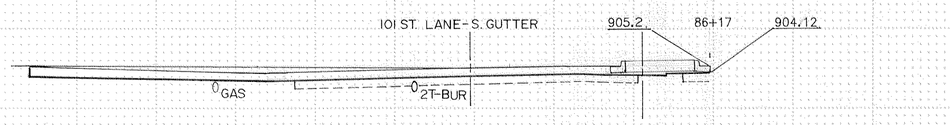
Fed. Proj. No.

	EXCAVATION	EMBANKMENT
	COMMON	GRANULAR
	SUBGRADE	SELECT GRANULAR
	894	303
	0	0

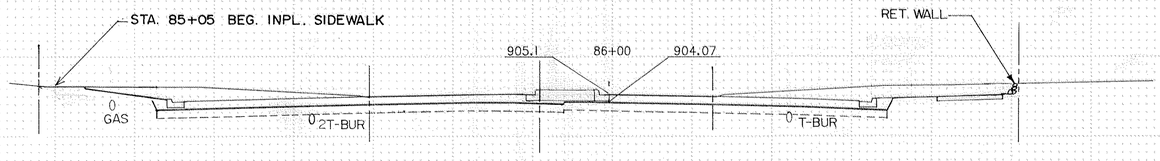




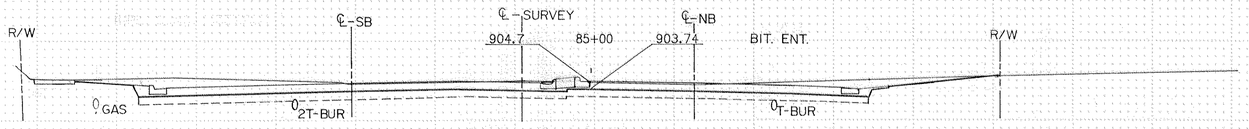




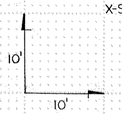
	984	319
	0	0



	941	339
	0	0



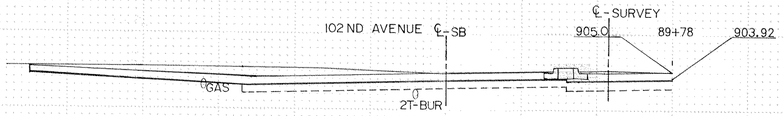
X-SECTIONS BASED ON NB PROFILE

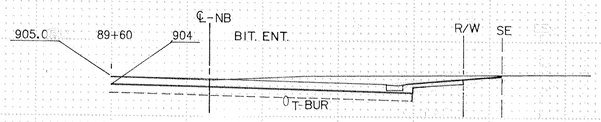


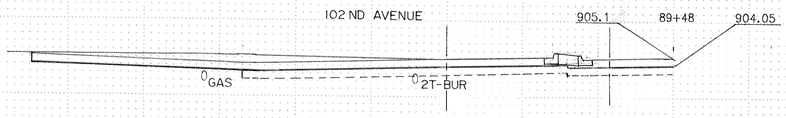
CROSS - SECTIONS
STA. 85+00 TO STA. 87+00

EXCAVATION EMBANKMENT
COMMON GRANULAR
SUBGRADE SELECT GRANULAR

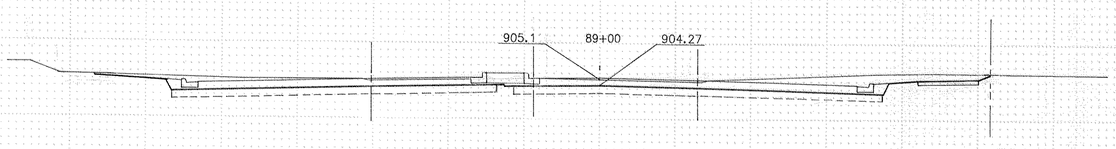
Fed. Proj. No.



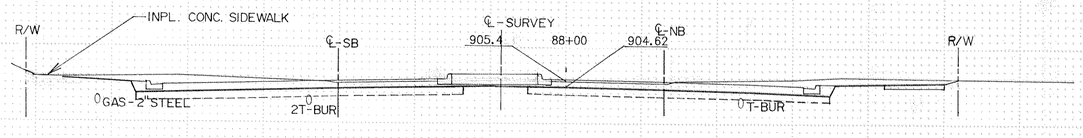


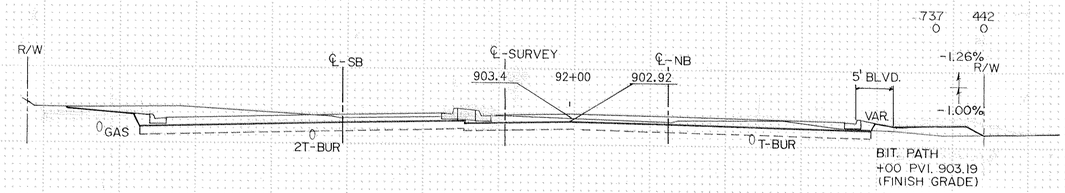


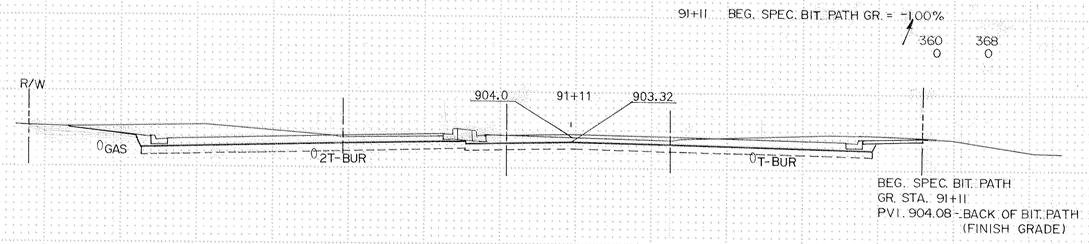
989
0
351
0

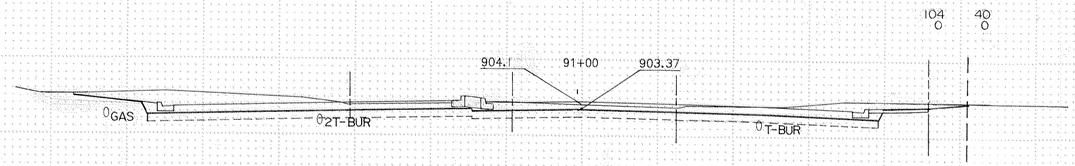


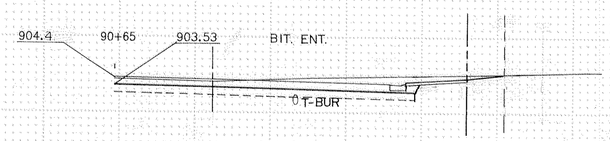
872
0
324
0



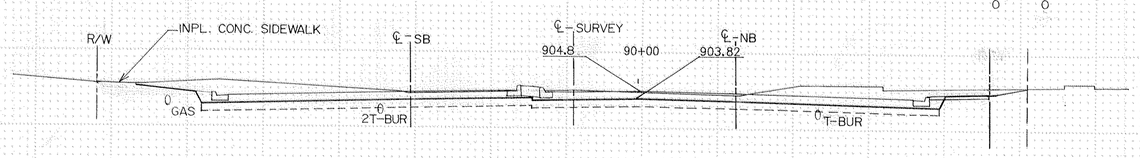




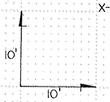




1013
0
359
0



X-SECTIONS BASED ON NB PROFILE

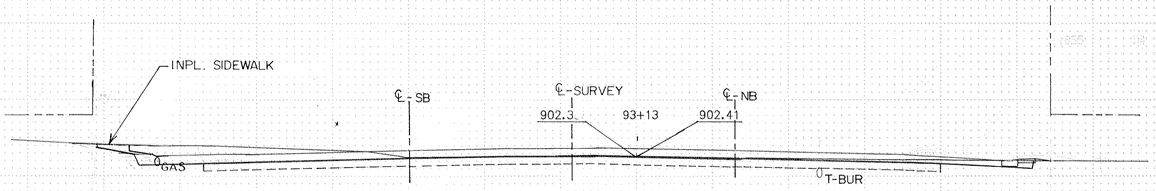


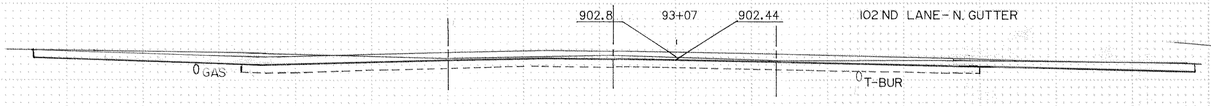
CROSS-SECTIONS
STA. 88+00 TO STA. 92+00

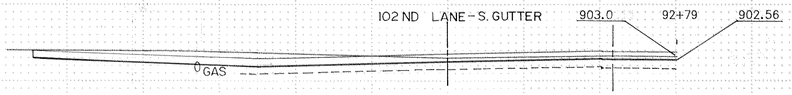
EXCAVATION EMBANKMENT
COMMON GRANULAR
SUBGRADE SELECT GRANULAR

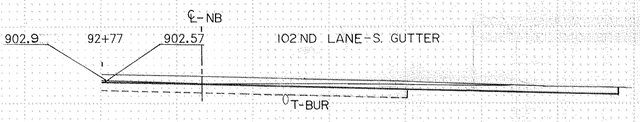
Fed. Proj. No.

EXCAVATION EMBANKMENT
COMMON GRANULAR
SUBGRADE SELECT GRANULAR



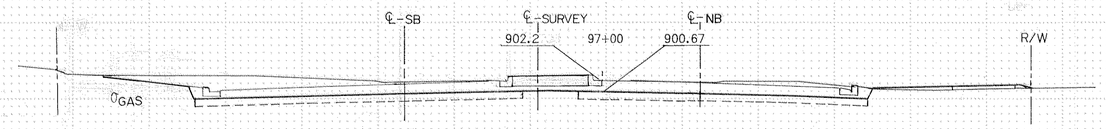


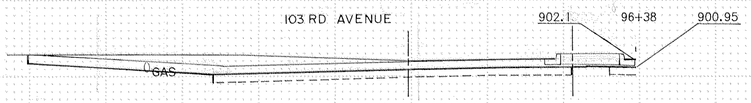




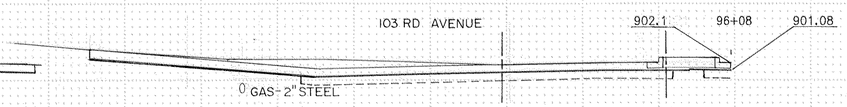
92+65 END SPECIAL BITUMINOUS PATH GR.
PVI 902.54 (FINISH GRADE)
-1.26%

1088 331
0 0

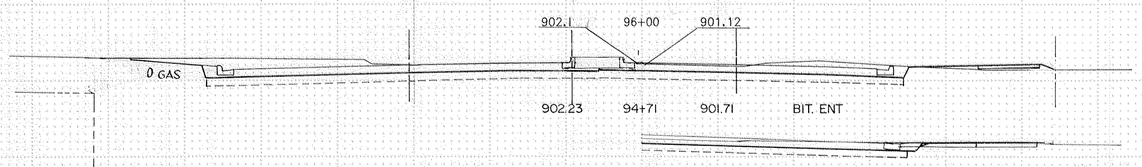




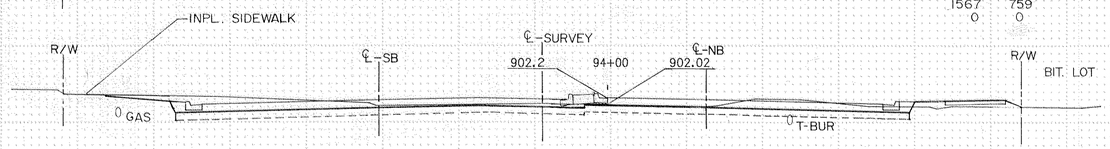
35 21
0 0



946 361
0 0

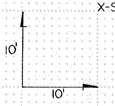


1567 759
0 0



549 324
0 0

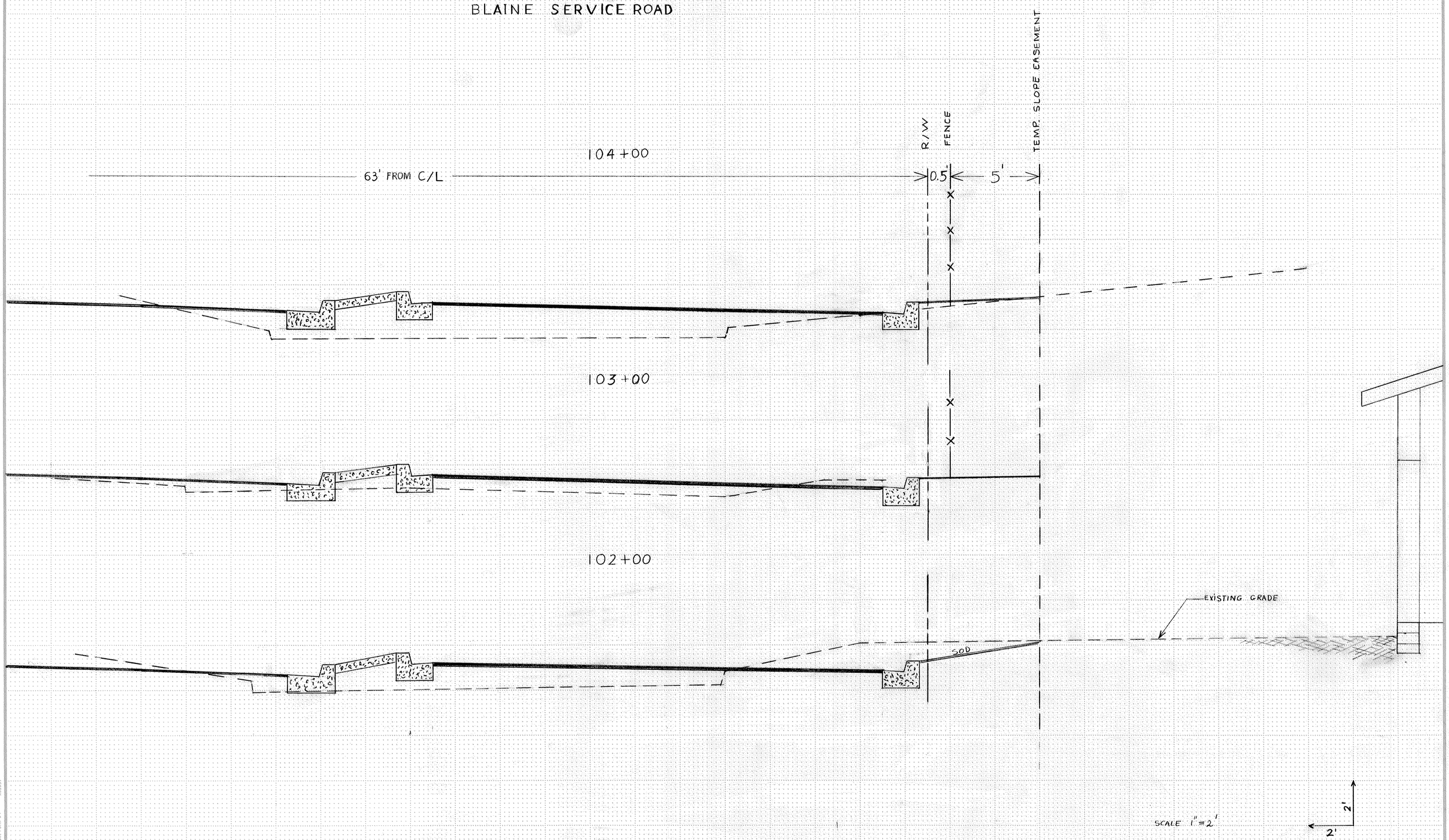
X-SECTIONS BASED ON NB. PROFILE



CROSS-SECTIONS
STA. 92+77 TO STA. 97+00

Fed. Proj. No.

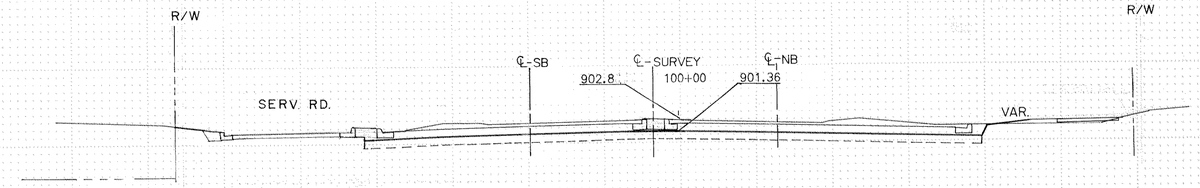
BLAINE SERVICE ROAD



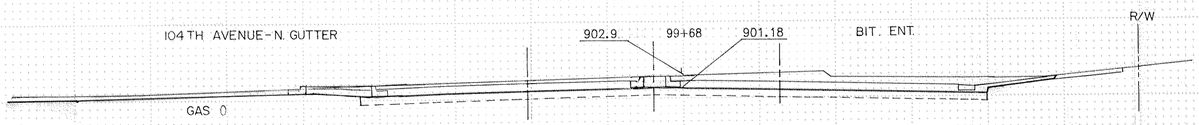
State Proj. No. 02-651-01 Sheet No. of Sheets

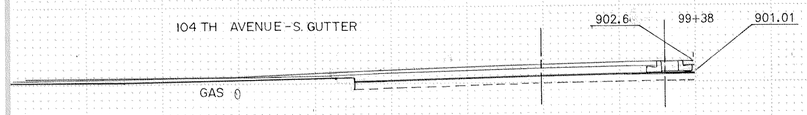
Fed. Proj. No.

EXCAVATION EMBANKMENT
COMMON GRANULAR
SUBGRADE SELECT GRANULAR

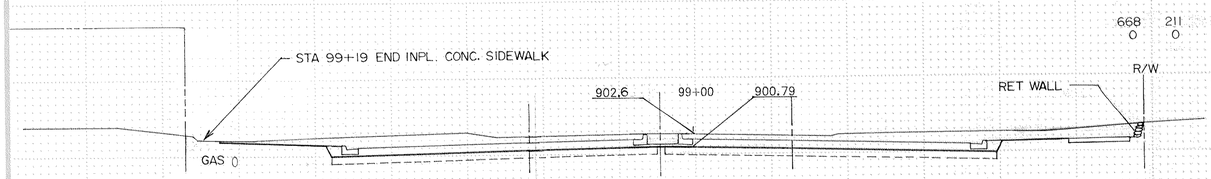


263 100
0 0

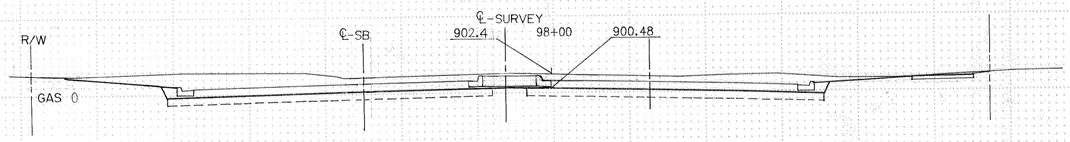


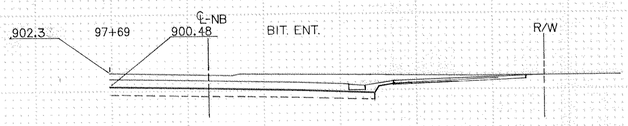


668 211
0 0

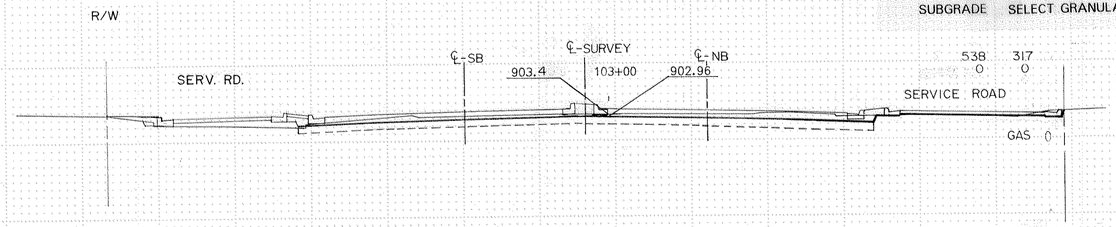


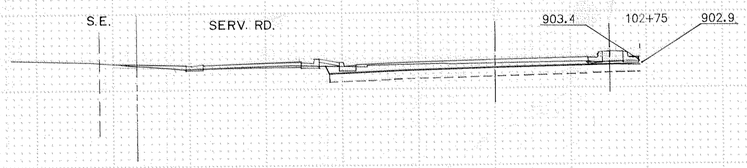
1122 315
0 0



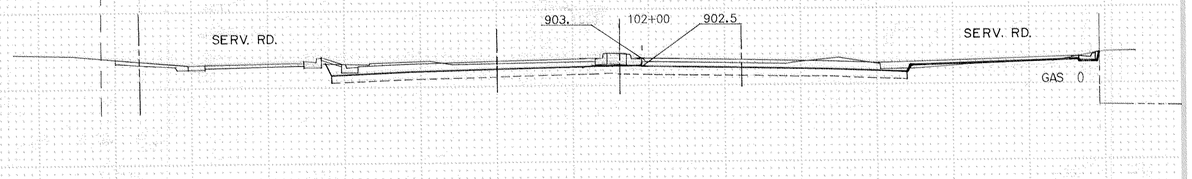


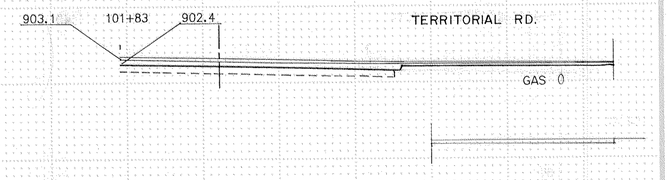
EXCAVATION EMBANKMENT
COMMON GRANULAR
SUBGRADE SELECT GRANULAR

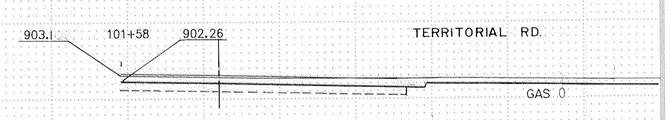




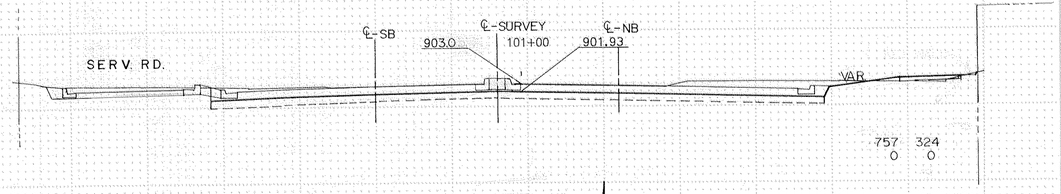
566 304
0 0





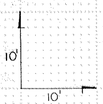


682 300
0 0



757 324
0 0

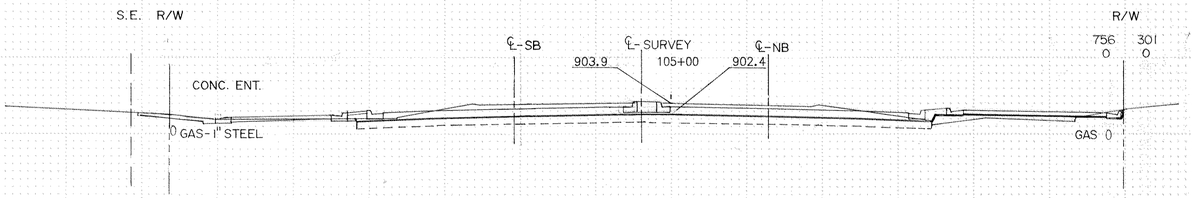
X-SECTIONS BASED ON NB PROFILE

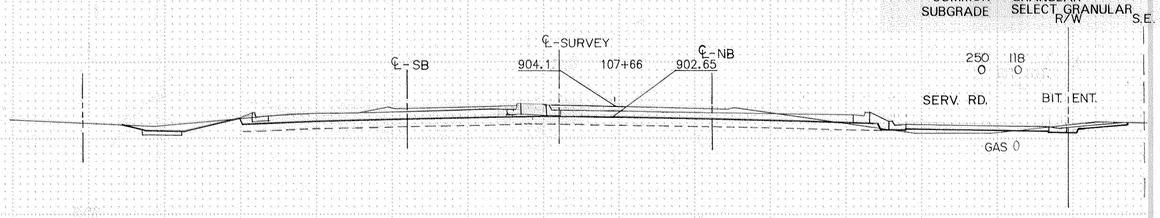


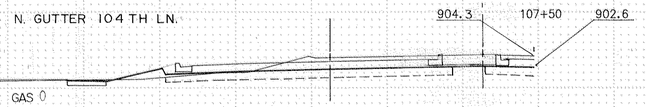
CROSS-SECTIONS
STA. 97+69 TO STA. 103+00

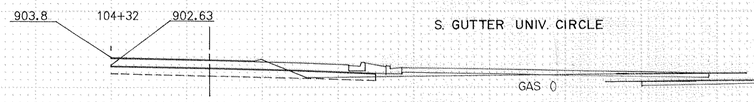
EXCAVATION EMBANKMENT
COMMON GRANULAR
SUBGRADE SELECT GRANULAR

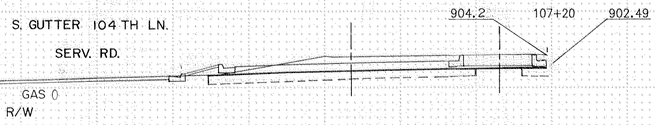
Fed. Proj. No.

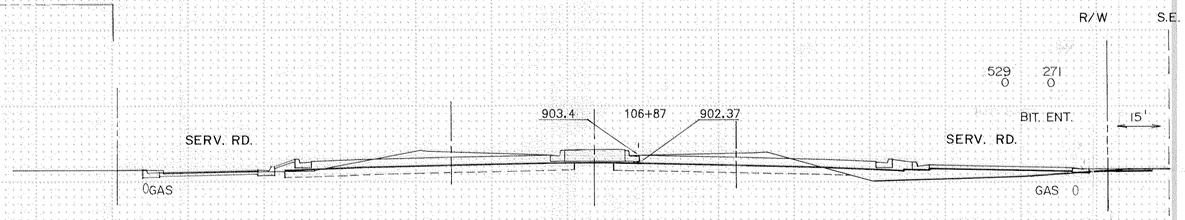


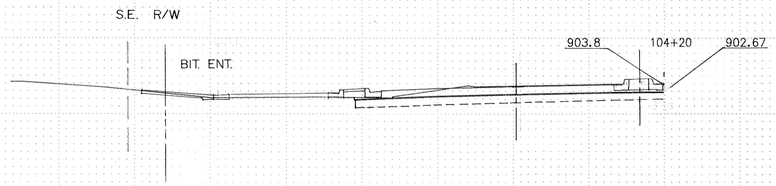


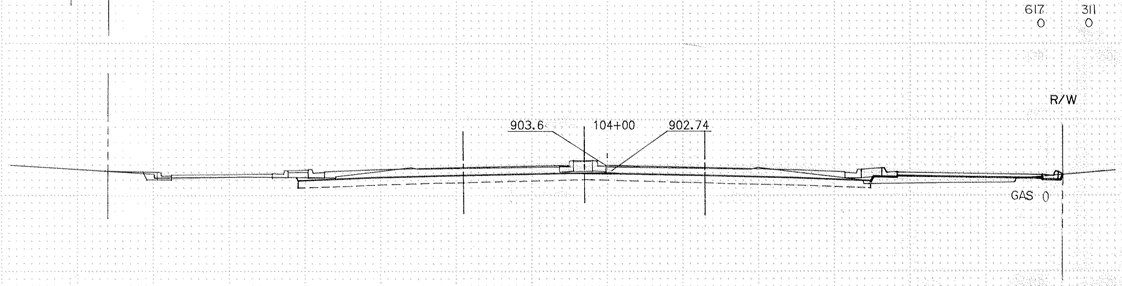


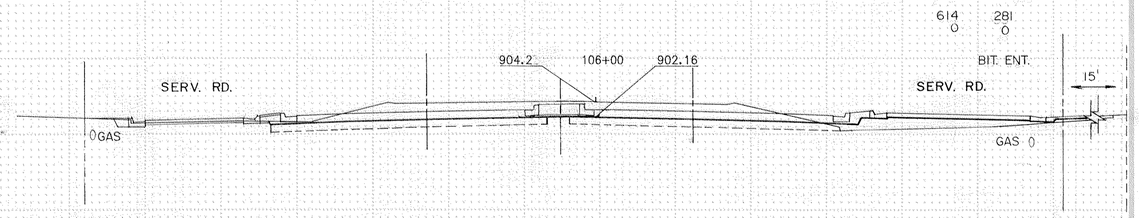


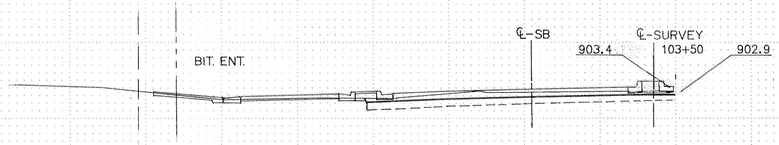


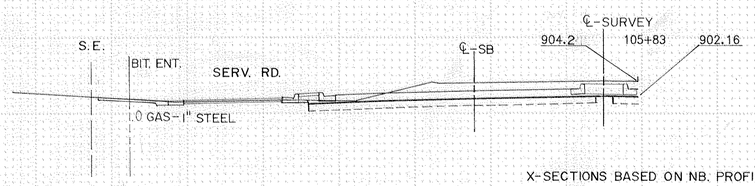




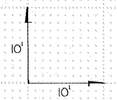








X-SECTIONS BASED ON NB. PROFILE

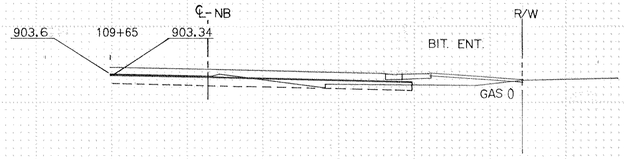


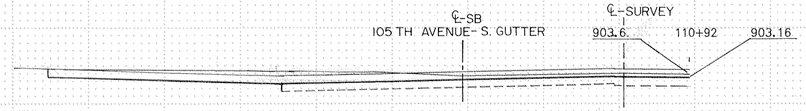
CROSS - SECTIONS
STA. 103+50 TO STA. 107+66

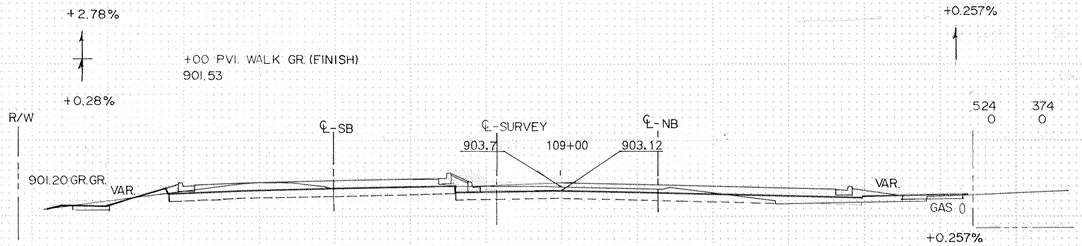
EXCAVATION EMBANKMENT
COMMON GRANULAR
SUBGRADE SELECT GRANULAR

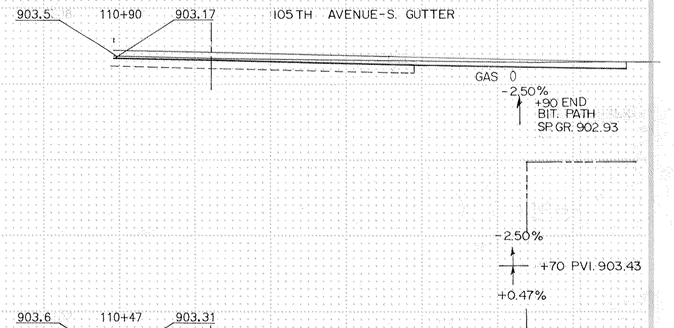
Fed. Proj. No.

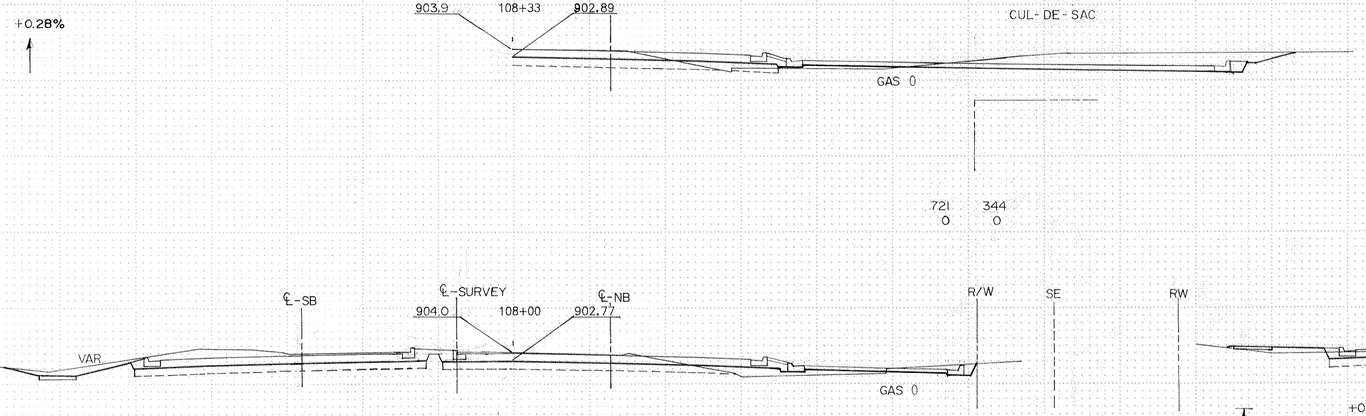
EXCAVATION EMBANKMENT
COMMON GRANULAR
SUBGRADE SELECT GRANULAR

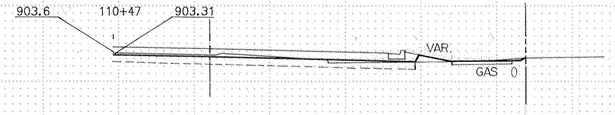


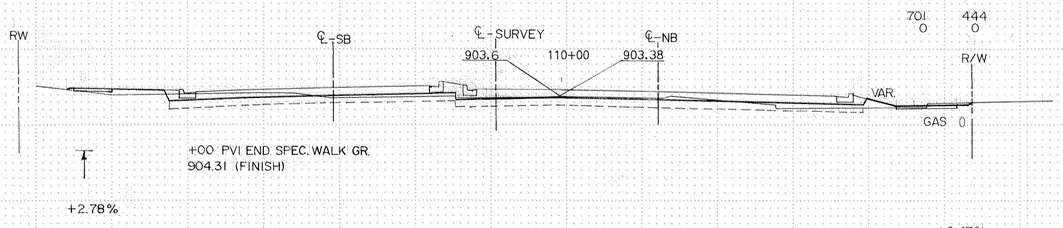


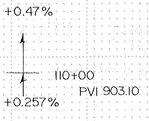




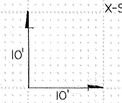








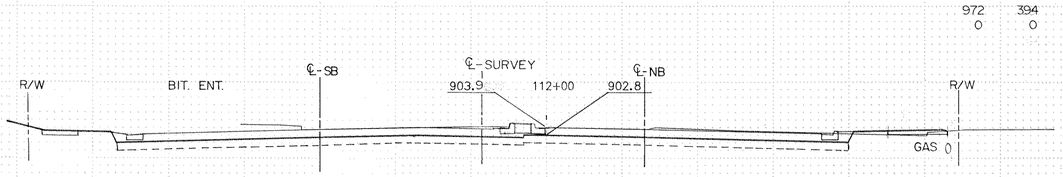
X-SECTIONS BASED ON NB PROFILE

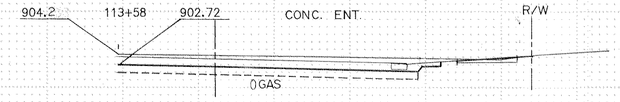


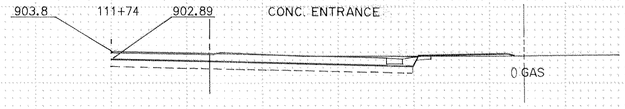
CROSS-SECTIONS
STA. 108+00 TO STA. 110+92

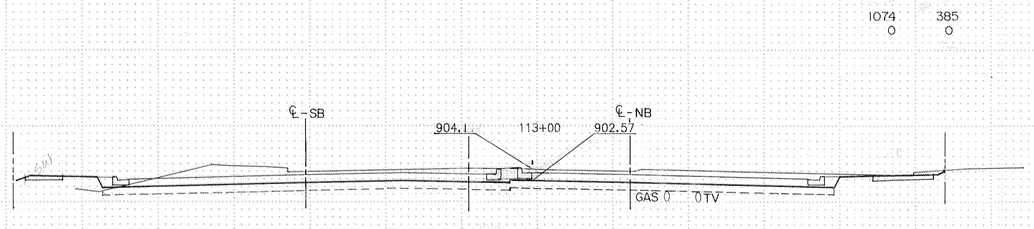
EXCAVATION EMBANKMENT
COMMON GRANULAR
SUBGRADE SELECT GRANULAR

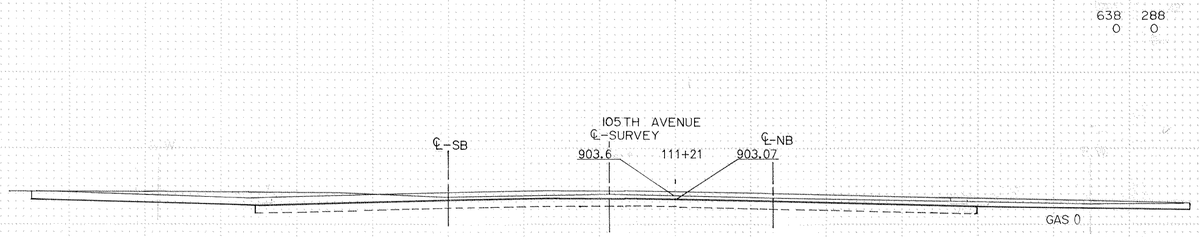
EXCAVATION EMBANKMENT
COMMON GRANULAR
SUBGRADE SELECT GRANULAR

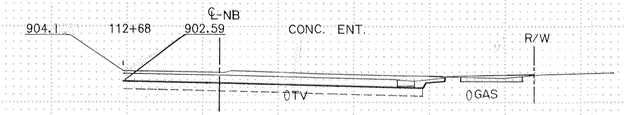




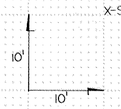








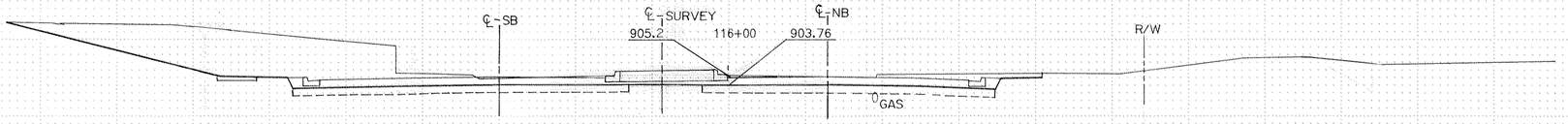
X-SECTIONS BASED ON NB PROFILE



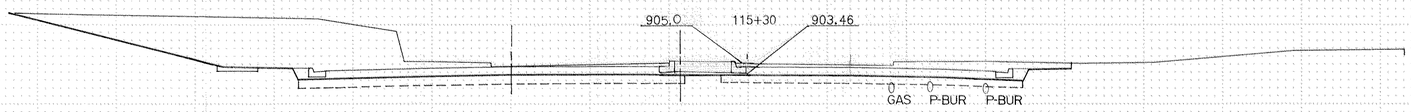
CROSS-SECTIONS
STA. 111+21 TO STA. 113+58

Fed. Proj. No.

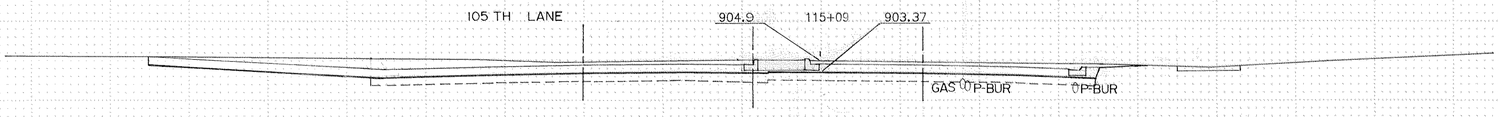
EXCAVATION	EMBANKMENT
COMMON	GRANULAR
SUBGRADE	SELECT GRANULAR



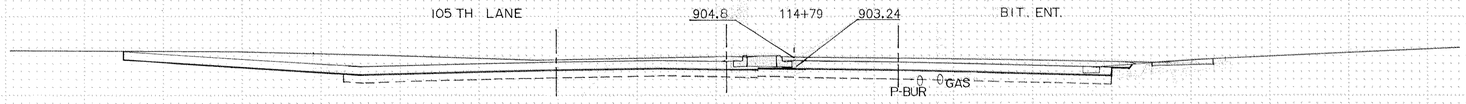
1373 304
0 0



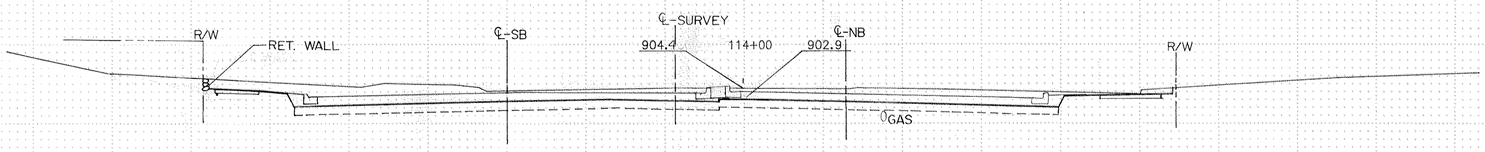
1165 220
0 0



279 68
0 0



301 102
0 0



878 280
0 0

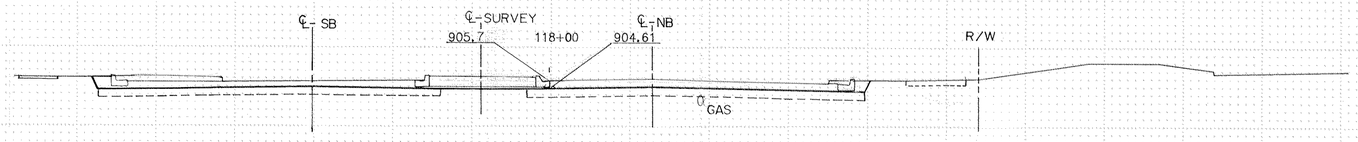
X-SECTIONS BASED ON NB PROFILE

10'
10'

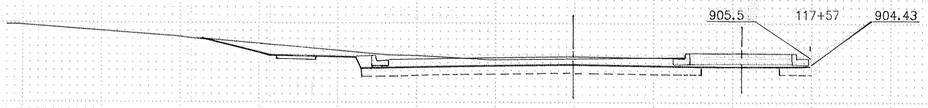
CROSS - SECTIONS
STA. 114+00 TO STA. 115+30

Fed. Proj. No.

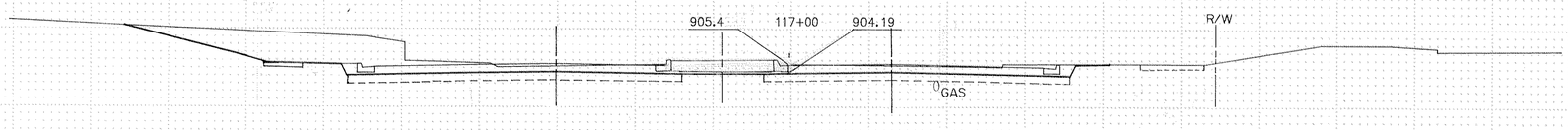
	EXCAVATION	EMBANKMENT
	COMMON	GRANULAR
	SUBGRADE	SELECT GRANULAR

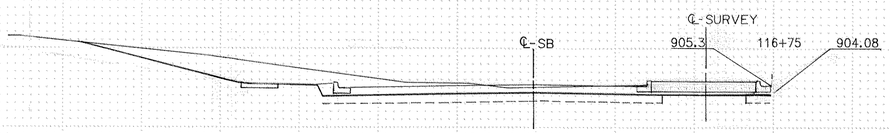


501 217
0 0



883 303
0 0





X-SECTIONS BASED ON NB PROFILE

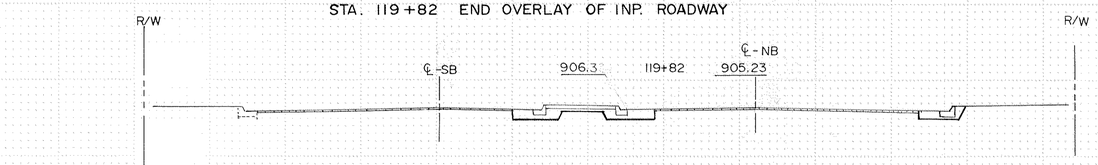
10'
10'

CROSS-SECTIONS
STA. 116+75 TO STA. 118+00

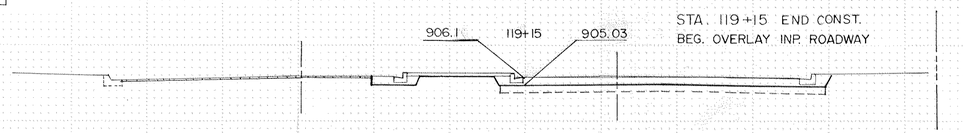
EXCAVATION COMMON	EMBANKMENT GRANULAR
SUBGRADE	SELECT GRANULAR

Fed. Proj. No.

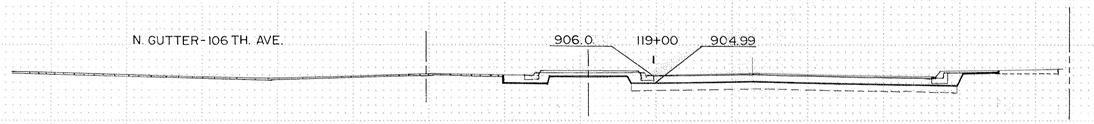
STA. 119+82 END OVERLAY OF INP. ROADWAY



104 0
0 0

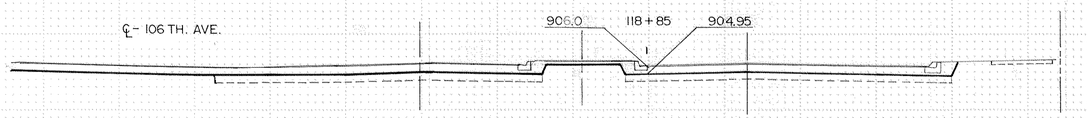


45 10
0 0

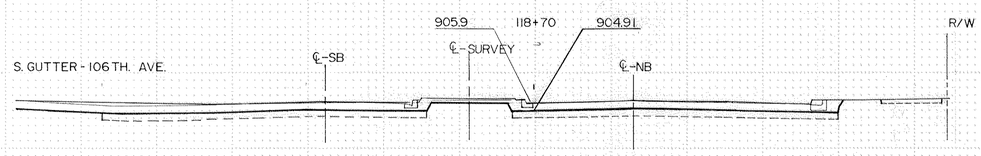


88 34
0 0

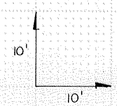
STA. 118+85 END CONST.
BEG. OVERLAY INP. ROADWAY



221 48
0 0



X-SECTIONS BASED ON NB PROFILE



CROSS - SECTIONS
STA. 118+75 TO STA. 119+82

Fed. Project No. ______

C.A.S.H. 51 DETOUR LAYOUT

DESIGN 11-1-92 D.M.

REVISIONS			
DATE	BY	DATE	BY

S.A.P. 114-020-04/106-020-07 S.P. 02-651-01 C.P. ______

Fed. Project No. _____

M.U.T.C.D. CODE	SIZE	INSERT	QTY
W20-2	48" x 48"	DETOUR AHEAD 500 FT 1000 FT	• 4 • 2 • 1
W20-2 M4-10L	48" x 48" 48" x 18"	ROAD CLOSED 1/4 MILE AHEAD LOCAL TRAFFIC ONLY DETOUR	• 2
W20-2 M4-10R	48" x 48" 48" x 18"	ROAD CLOSED 1/2 MILE AHEAD LOCAL TRAFFIC ONLY DETOUR	• 2
M3-1 M1-6 W20-2 TYPE III	21" x 15" 24" x 12" 48" x 48" 8 FT.	NORTH IOWA 51 COUNTY DETOUR AHEAD	• 2
M3-3 M1-6 W20-2 TYPE III	21" x 15" 24" x 24" 48" x 48" 8 FT.	SOUTH IOWA 51 COUNTY DETOUR AHEAD	• 2
X4-4 MOUNT ON BACKSIDE M4-8 M3-3 M1-6	36" x 18" 21" x 12" 21" x 12" 24" x 24" 21" x 15"	DETOUR SOUTH IOWA 51 COUNTY M5-1L	• 1

M.U.T.C.D. CODE	SIZE	INSERT	QTY
M1-6 G20-X2 *G20-X2 SUP.	24" x 24" 132" x 108" 12" x 108"	IOWA 51 COUNTY ROAD WORK 96th AVE TO 106th AVE BEGINS (DATE) USE ALTERNATE ROUTE	• 1
M1-6 G20-X2 *G20-X2 SUP.	24" x 24" 132" x 108" 12" x 108"	IOWA 51 COUNTY ROAD WORK 106th AVE TO 96th AVE BEGINS (DATE) USE ALTERNATE ROUTE	• 1
M1-6 G20-X2 *G20-X2 SUP.	24" x 24" 96" x 84" 12" x 84"	IOWA 51 COUNTY ROAD WORK 106th AVE TO 96th AVE BEGINS (DATE) USE ALTERNATE ROUTE	• 1
M4-8 M3-1 M1-6 	21" x 12" 21" x 12" 24" x 24" 21" x 15"	DETOUR NORTH IOWA 51 COUNTY M5-1L M6-1R M6-1L M6-3	• 3 • 1 • 3 • 11
M4-8 M3-3 M1-6 	21" x 12" 21" x 12" 24" x 24" 21" x 15"	DETOUR SOUTH IOWA 51 COUNTY M5-1R M5-1L M6-1R M6-1L M6-3 M6-2R	• 7 • 1 • 1 • 2 • 12 • 2

* NOTE
INSTALL "USE ALTERNATE ROUTE" PLATE IMMEDIATELY FOLLOWING THE COMMENCEMENT OF CONSTRUCTION

* NOTE
INSTALL "USE ALTERNATE ROUTE" PLATE IMMEDIATELY FOLLOWING THE COMMENCEMENT OF CONSTRUCTION

* NOTE
INSTALL "USE ALTERNATE ROUTE" PLATE IMMEDIATELY FOLLOWING THE COMMENCEMENT OF CONSTRUCTION

STANDARD TRAFFIC CONTROL NOTES

1) LOCATIONS OF ALL SIGNS ARE APPROXIMATE. EXACT LOCATIONS WILL BE DETERMINED IN THE FIELD BY THE ENGINEER.
2) ALL BARRICADES AND SIGNS SHALL BE PROPERLY WEIGHTED WITH SANDBAGS.
3) ALL BARRICADES SHALL HAVE REFLECTIVE MATERIAL ON BOTH SIDES.
4) ALL BARRICADE MARKINGS SHALL BE SLANTED IN ACCORDANCE WITH THE MINNESOTA MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.
5) ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE MOST RECENT EDITION OF THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, INCLUDING APPENDIX 'B', DATED NOV. 1992
6) ADDITIONS OR CHANGES TO THIS PLAN MAY BE MADE AS DETERMINED BY THE ENGINEER.

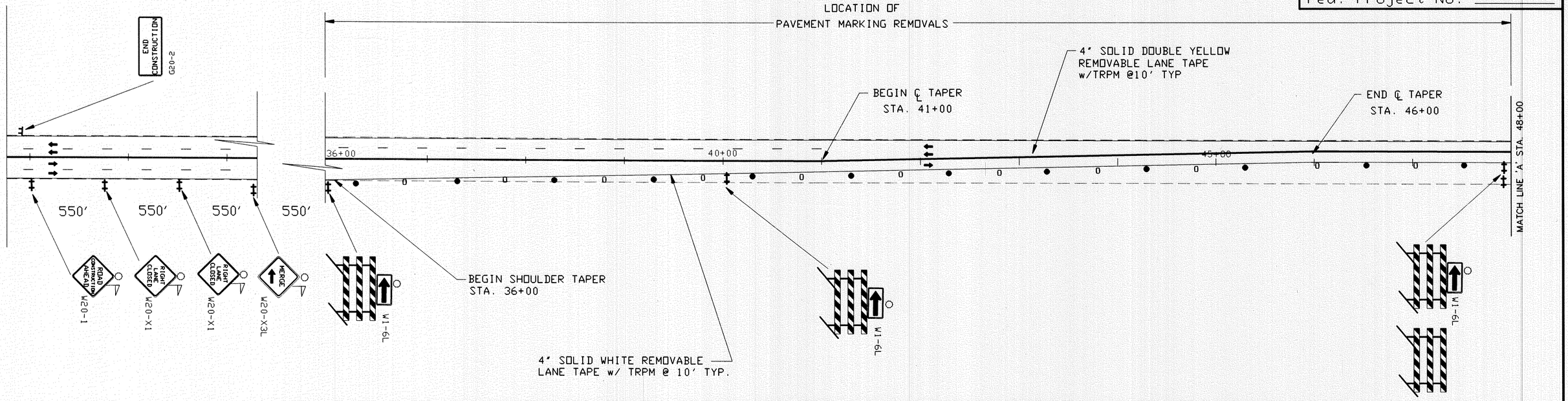
DETOUR QUANTITIES – C.A.S.H. 51

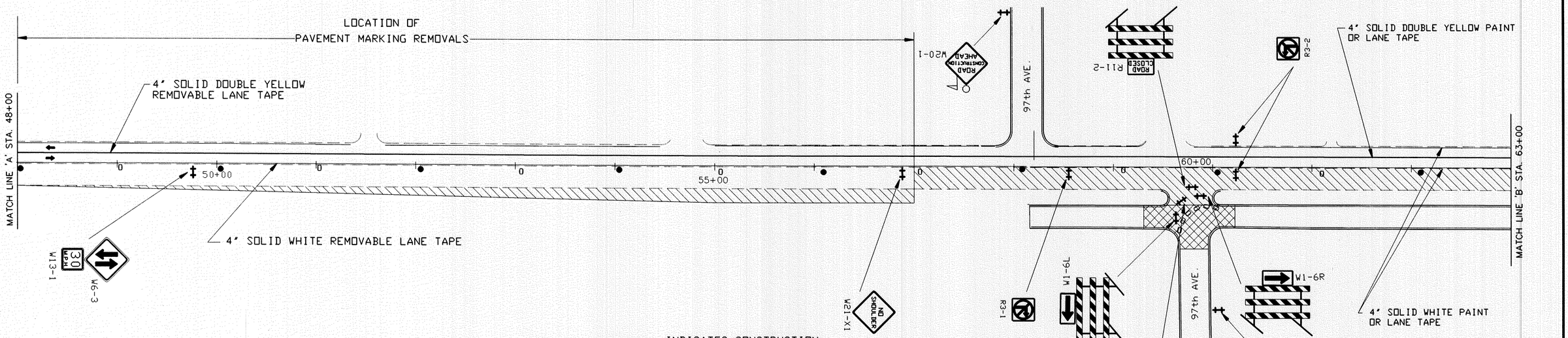
DESIGN 11-1-92 D.M.

REVISIONS			
DATE	BY	DATE	BY
6/09/93	DM		

S.A.P. 114-020-04/106-020-07 S.P. 02-651-01 C.P. _____

Fed. Project No. _____





INDICATES CONSTRUCTION THIS STAGE

INDICATES CONSTRUCTION THIS STAGE (UNDER TRAFFIC)

0 = REBOUNDABLE DRUM

● = W14-X7L REBOUNDABLE DRUM

STANDARD TRAFFIC CONTROL NOTES

1) LOCATIONS OF ALL SIGNS ARE APPROXIMATE. EXACT LOCATIONS WILL BE DETERMINED IN THE FIELD BY THE ENGINEER.
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6) ADDITIONS OR CHANGES TO THIS PLAN MAY BE MADE AS DETERMINED BY THE ENGINEER.

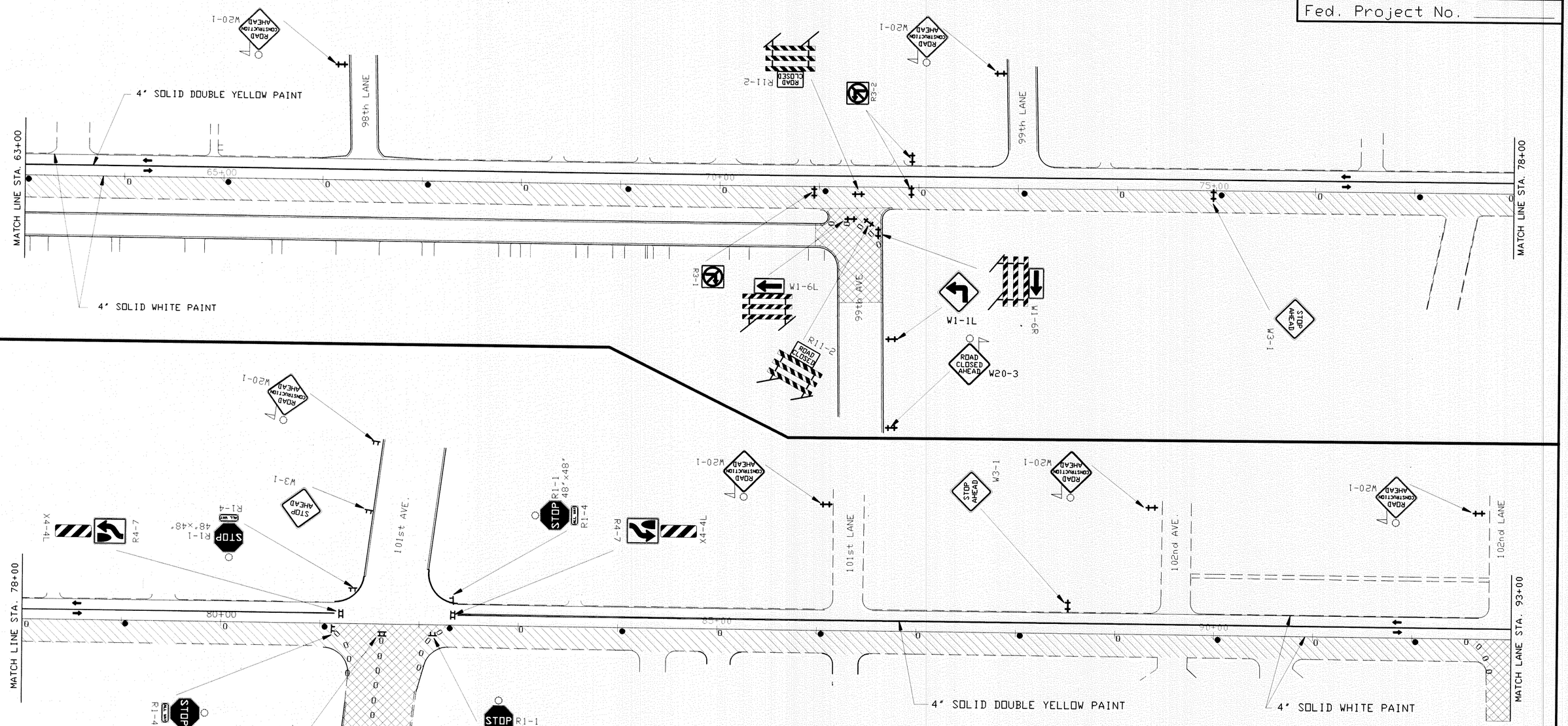
DESIGN 11-30-92 DM

REVISIONS			
DATE	BY	DATE	BY

C.S..AH. 51 STAGE 1 TRAFFIC CONTROL
3200' BEFORE BEGINING OF PROJECT TO STA. 63+00

S.A.P. 114-020-04/106-020-07 S.P. 02-651-01 Sheet No. 75 of 85 Sheets

Fed. Project No. _____



0 = REBOUNDABLE DRUM

W14-X7L

● = REBOUNDABLE DRUM

INDICATES CONSTRUCTON THIS STAGE

INDICATES CONSTRUCTON THIS STAGE (UNDER TRAFFIC)

STANDARD TRAFFIC CONTROL NOTES

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6) ADDITIONS OR CHANGES TO THIS PLAN MAY BE MADE AS DETERMINED BY THE ENGINEER.

—N—

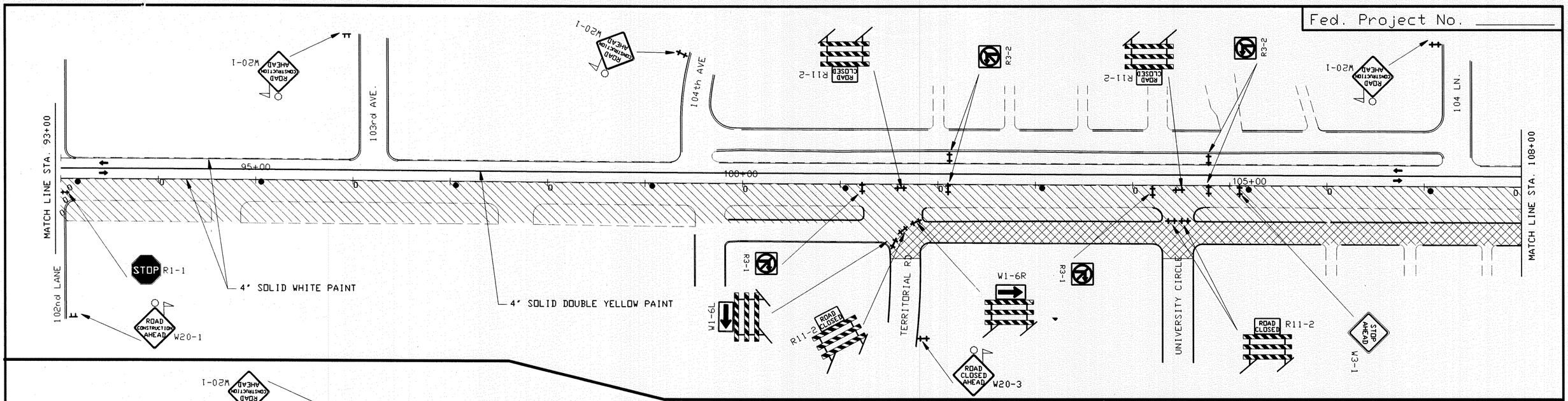
DESIGN 11-29-92 DM

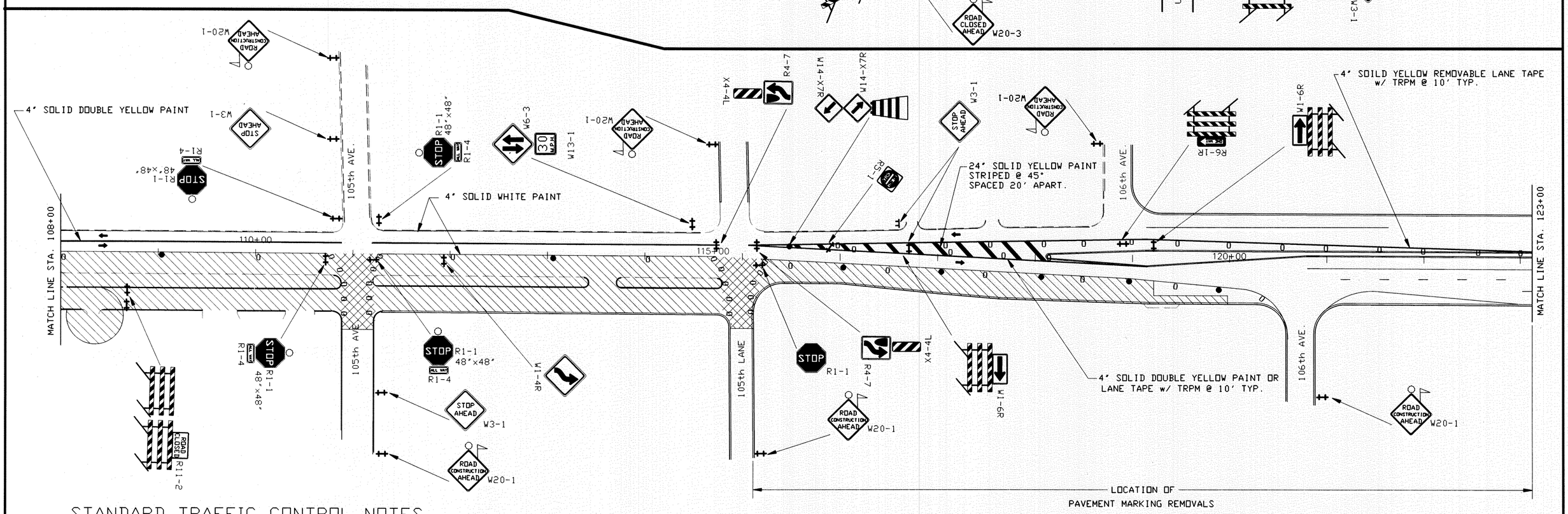
REVISIONS			
DATE	BY	DATE	BY
6/09/93	DM		

C.S.A.H. 51 STAGE I TRAFFIC CONTROL
STA. 63+00 TO STA. 93+00

S.A.P. 114-020-04/106-020-07 S.P. 02-651-01 Sheet No. 76 of 85 Sheets

Fed. Project No. _____





STANDARD TRAFFIC CONTROL NOTES

1) LOCATIONS OF ALL SIGNS ARE APPROXIMATE. EXACT LOCATIONS WILL BE DETERMINED IN THE FIELD BY THE ENGINEER.
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0 = REBOUNDABLE DRUM

● = REBOUNDABLE DRUM

W14-X7L

INDICATES CONSTRUCTION THIS STAGE

INDICATES CONSTRUCTION THIS STAGE (UNDER TRAFFIC)

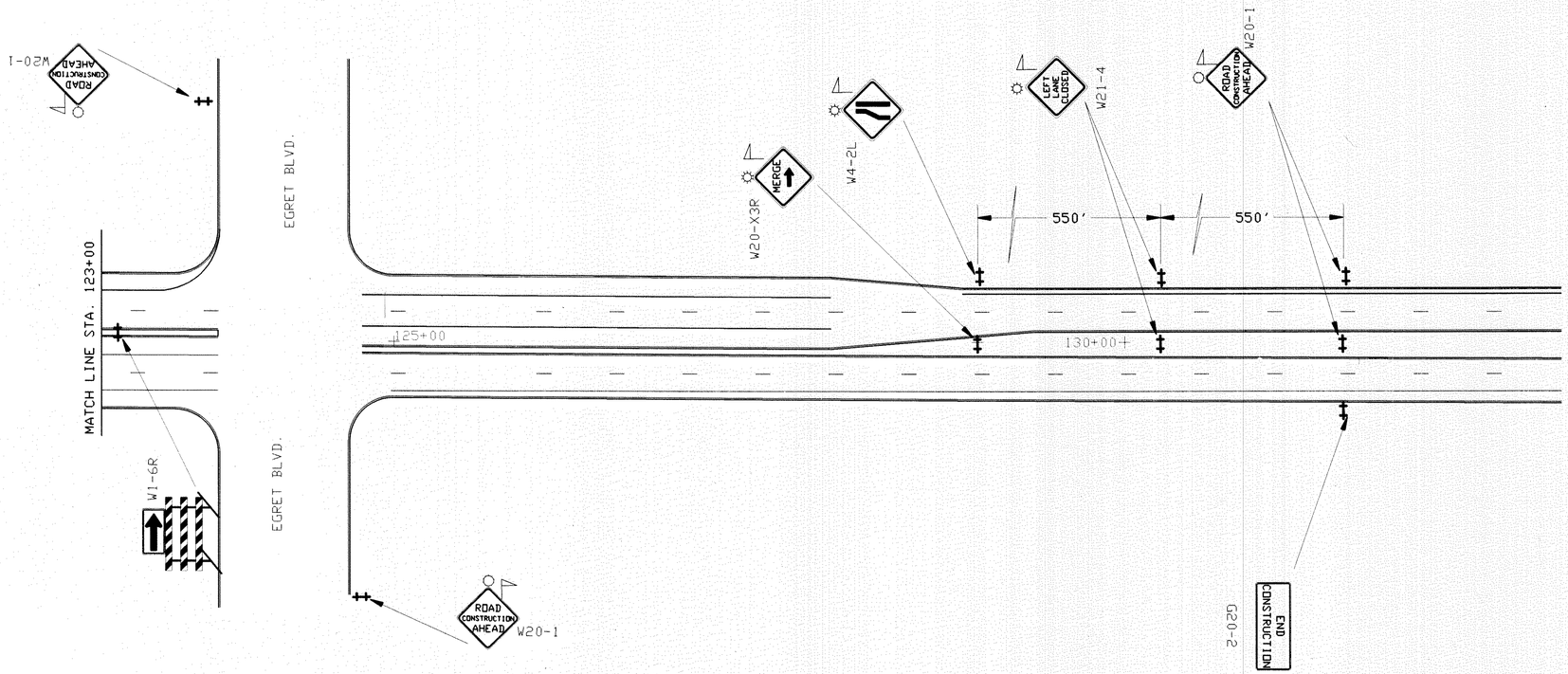
REVISIONS			
DATE	BY	DATE	BY
6/09/93	DM		

N

C.S.A.H. 51 STAGE 1 TRAFFIC CONTROL
STA. 93+00 TO STA. 123+00

S.A.P. 114-020-04/106-020-07 S.P. 02-651-01 Sheet No. 77 of 85 Sheets

Fed. Project No. _____



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6) ADDITIONS OR CHANGES TO THIS PLAN MAY BE MADE AS DETERMINED BY THE ENGINEER.

C.S.A.H. 51 STAGE 1 TRAFFIC CONTROL
STA. 123+00 TO APPROX. 1900' NORTH

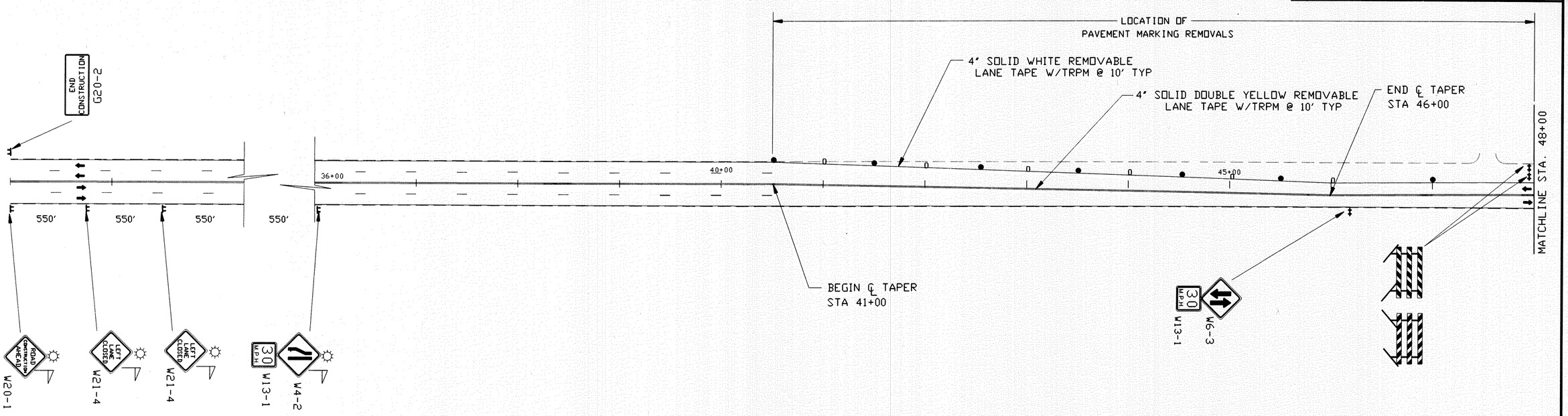
DESIGN 11-30-92 DM

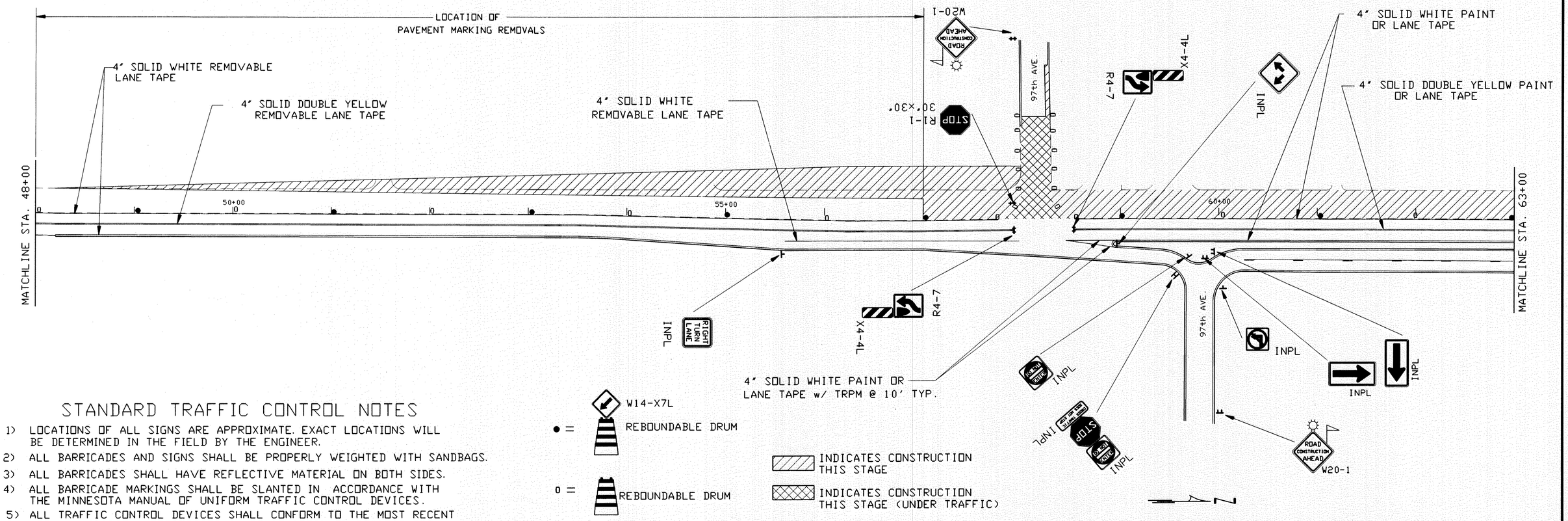
REVISIONS			
DATE	BY	DATE	BY
6/09/93	DM		

S.A.P. 114-020-04/106-020-07 S.P. 02-651-01 C.P. _____

Sheet No. 78 of 85 Sheets

Fed. Project No. _____





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● = W14-X7L REBOUNDABLE DRUM

o = REBOUNDABLE DRUM

INDICATES CONSTRUCTION THIS STAGE

INDICATES CONSTRUCTION THIS STAGE (UNDER TRAFFIC)

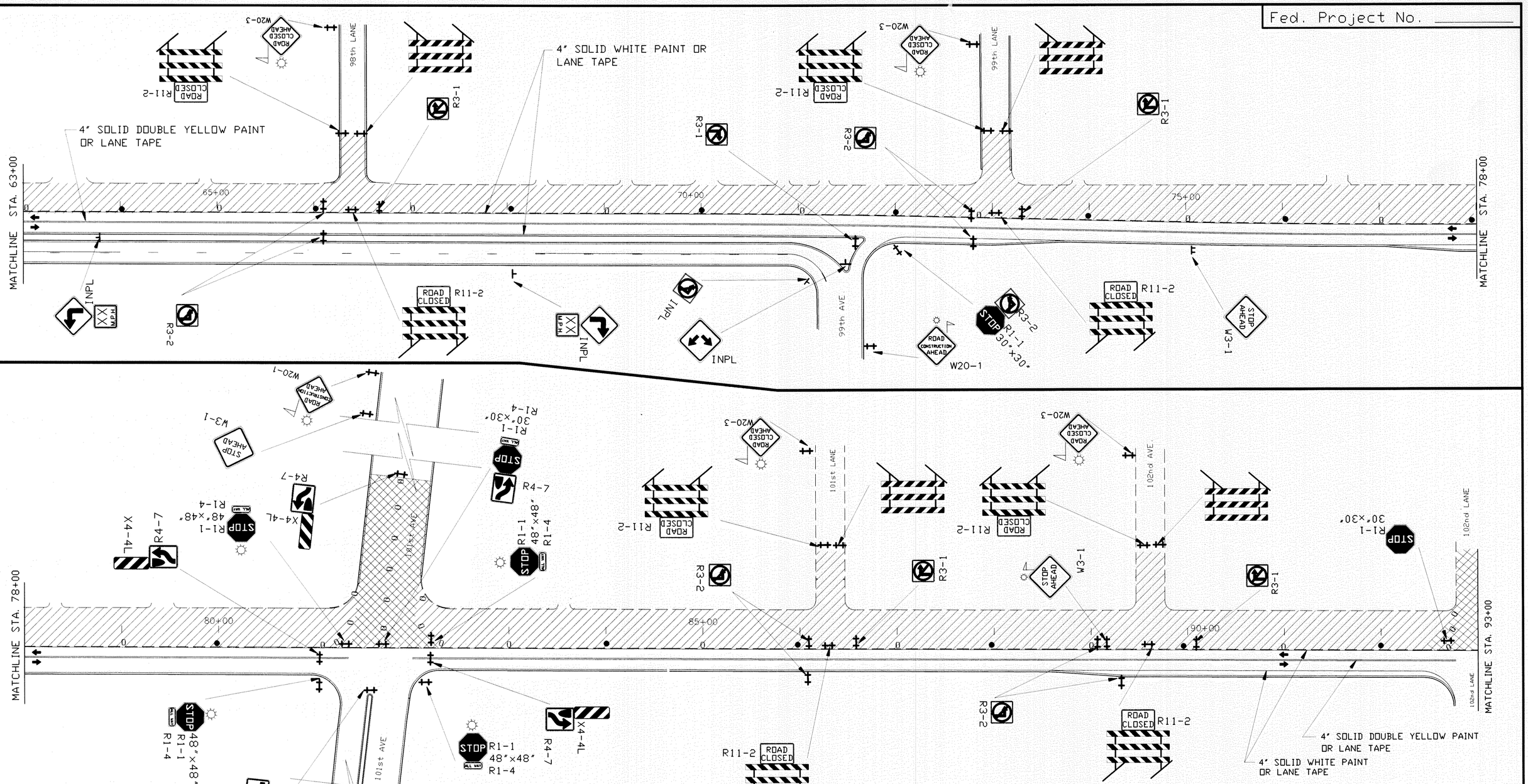
REVISIONS			
DATE	BY	DATE	BY
6/09/93	DM		

C.S.A.H. 51 STAGE II TRAFFIC CONTROL
3200' BEFORE BEGINING OF PROJECT TO STA 63+00

S.A.P. 114-020-04/106-020-07 S.P. 02-651-01 C.P. _____

Sheet No. 79 of 85 Sheets

Fed. Project No. _____



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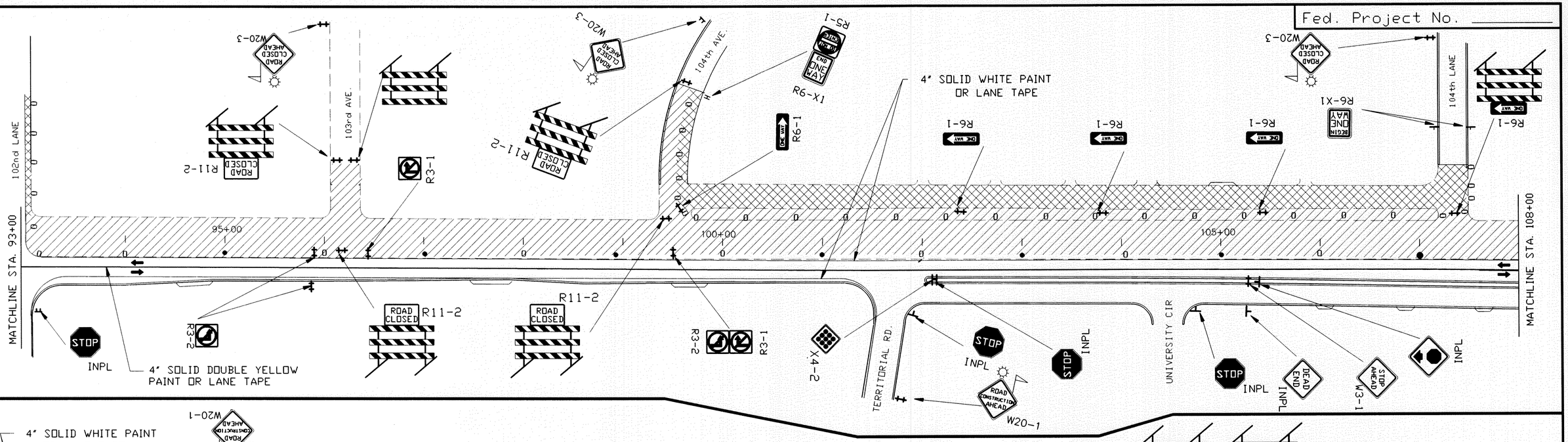
C.S.A.H. 51 STAGE II TRAFFIC CONTROL
STA. 63+00 TO STA. 93+00

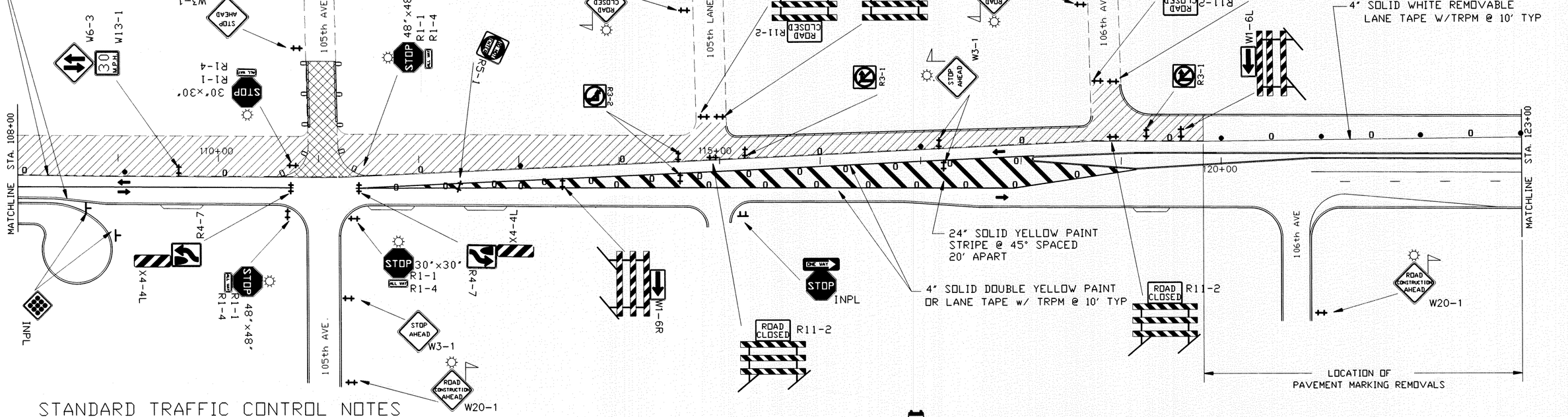
REVISIONS			
DATE	BY	DATE	BY
6/09/93	DM		

S.A.P. 114-020-04/106-020-07 S.P. 02-651-01 C.P. _____

Sheet No. 80 of 85 Sheets

Fed. Project No. _____





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6) ADDITIONS OR CHANGES TO THIS PLAN MAY BE MADE AS DETERMINED BY THE ENGINEER.

INDICATES CONSTRUCTION THIS STAGE

INDICATES CONSTRUCTION THIS STAGE (UNDER TRAFFIC)

O = REBOUNDABLE DRUM

W14-X7L

● = REBOUNDABLE DRUM

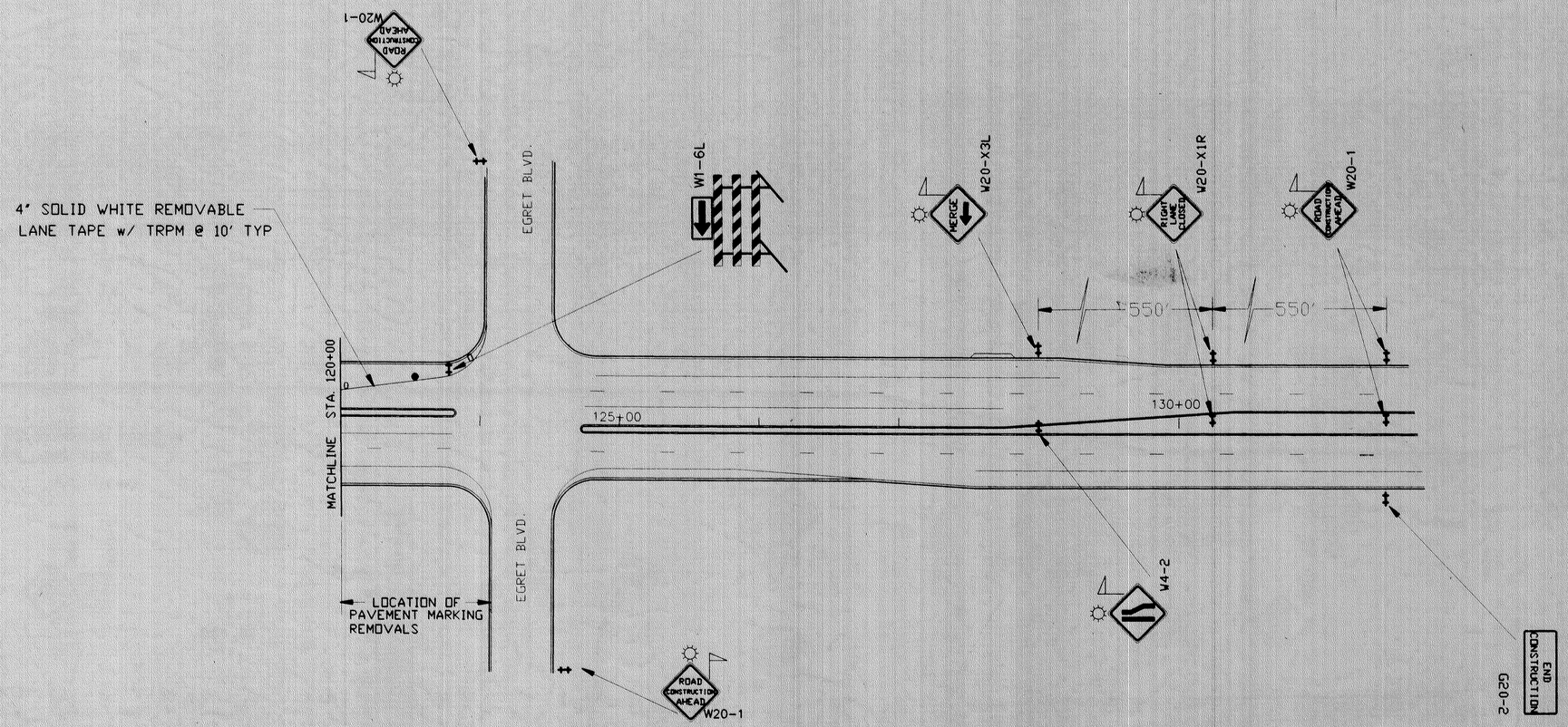
REVISIONS			
DATE	BY	DATE	BY
6/09/93	DM		

C.S.A.H. 51 STAGE II TRAFFIC CONTROL
STA. 93+00 TO STA. 123+00

S.A.P. 114-020-04/106-020-07 S.P. 02-651-01 C.P. _____

Sheet No. 81 of 85 Sheets

Fed. Project No. _____



STANDARD TRAFFIC CONTROL NOTES

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O = REBOUNDABLE DRUM

W14-X7L

● = REBOUNDABLE DRUM

C.S.A.H. 51 STAGE II TRAFFIC CONTROL
STA. 123+00 TO APPROX. 1900' NORTH

REVISIONS			
DATE	BY	DATE	BY
6/09/93	DM		

S.A.P. 114-020-04/106-020-07 S.P. 02-651-01 C.P. _____ Sheet No. 82 of 85 Sheets

Fed. Project No. _____

STANDARD TRAFFIC CONTROL NOTES

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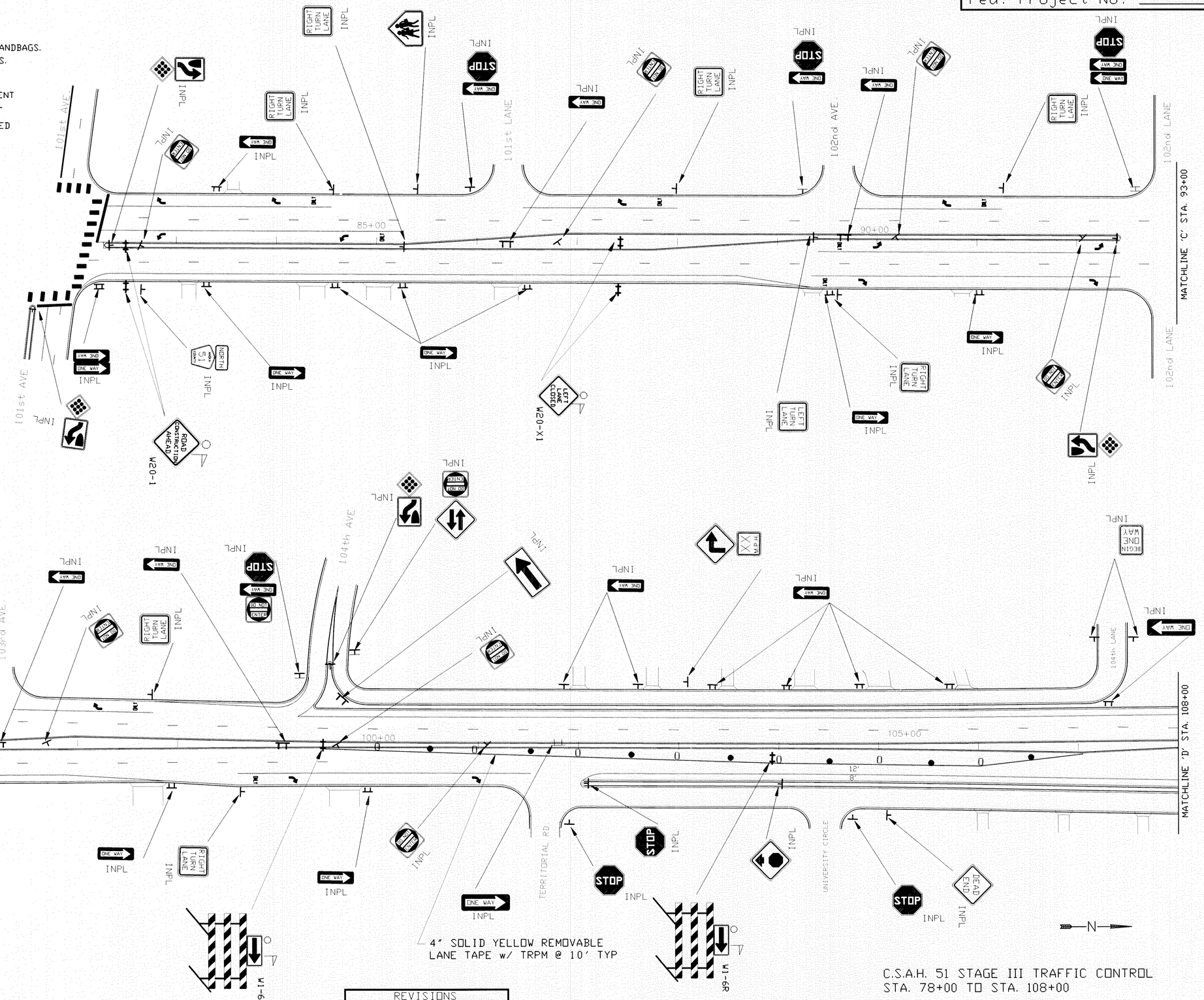
6) ADDITIONS OR CHANGES TO THIS PLAN MAY BE MADE AS DETERMINED BY THE ENGINEER.

0 = REBOUNDABLE DRUM

W14-X7R

● = REBOUNDABLE DRUM



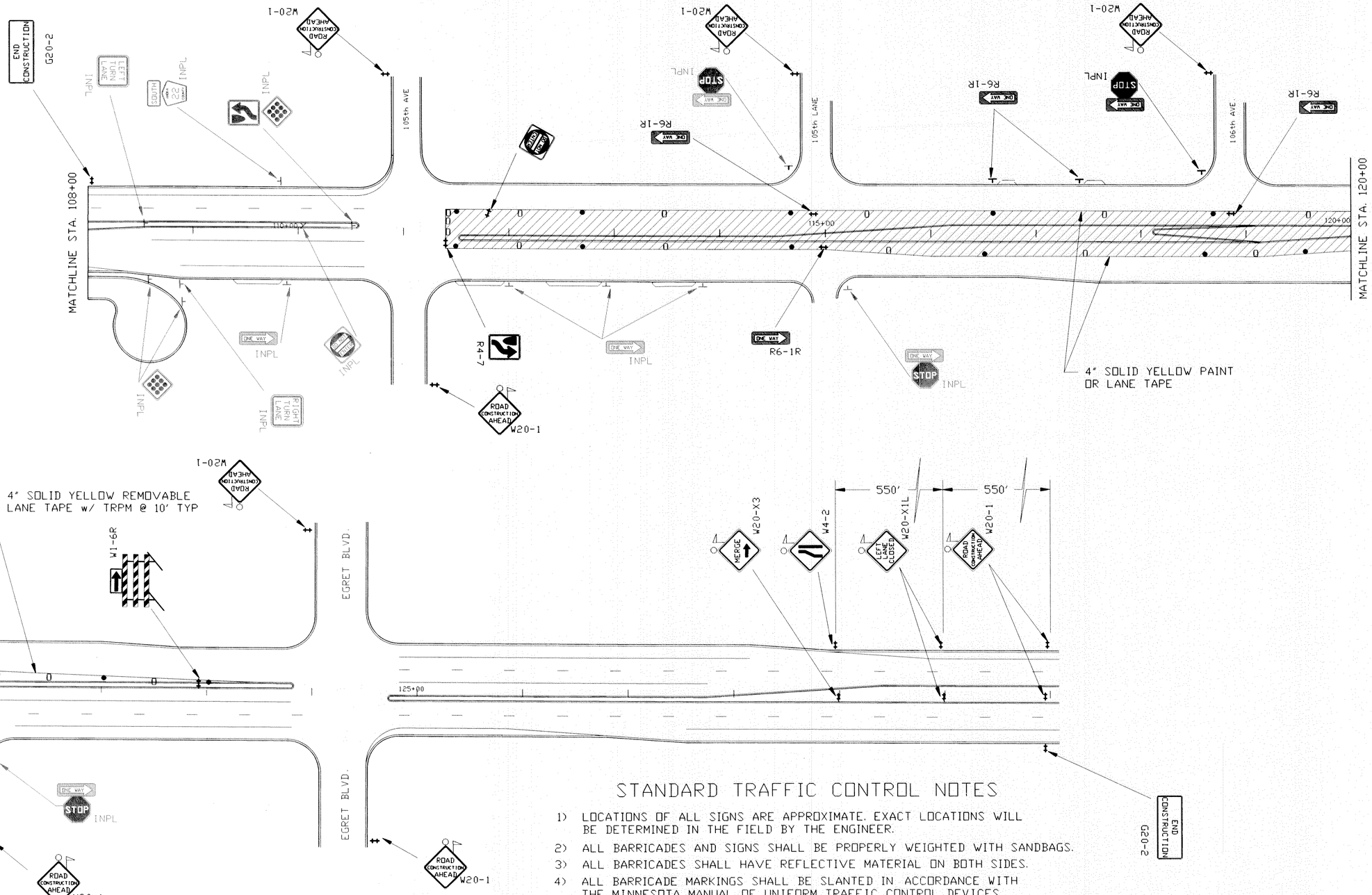
C.S.A.H. 51 STAGE III TRAFFIC CONTROL
STA. 78+00 TO STA. 108+00

REVISIONS			
DATE	BY	DATE	BY
9/09/93	DM		

S.A.P. 114-020-04/106-020-07 S.P. 02-651-01 C.P. _____

Sheet No. 83 of 85 Sheets

Fed. Project No. _____



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6) ADDITIONS OR CHANGES TO THIS PLAN MAY BE MADE AS DETERMINED BY THE ENGINEER.

C.S.A.H. 51 STAGE III TRAFFIC CONTROL
STA. 108+00 TO STA. 120+00
STA. 120+00 TO APPROX. 900' NORTH

REVISIONS			
DATE	BY	DATE	BY
6/09/93	DM		

S.A.P. 114-020-04/106-020-07 S.P. 02-651-01 C.P. _____

Sheet No. 84 of 85 Sheets

Ⓧ M.U.T.C.D. CODE	SIZE	INSERT	STAGE I QTY	STAGE II QTY	STAGE III QTY
RED FLASHER			• 8	• 8	• 0
R1-1	30"x30"	STOP ALL WAY	• 3	• 7	• 0
R1-1	48"x48"		• 8	• 6	• 0
R1-4	18"x16"		• 9	• 10	• 0
R3-1	36"x36"		• 4	• 9	• 0
R3-2	36"x36"		• 8	• 14	• 0
R4-7	30"x36"		• 5	• 9	• 1
R5-1	30"x30"	DO NOT ENTER	• 1	• 1	• 1
R6-1R	36"x12"	ONE WAY	• 1	• 5	• 4
W4-2R	48"x48"		• 0	• 1	• 0
R6-X1	24"x30"	END ONE WAY	• 0	• 1	• 0
R6-X1	24"x30"	BEGIN ONE WAY	• 0	• 1	• 0
R11-2	48"x30"	ROAD CLOSED	• 10	• 16	• 0
W1-1R	48"x48"		• 1	• 0	• 0
W1-1L	48"x48"		• 1	• 0	• 0
W1-4R	48"x48"		• 1	• 0	• 0
W1-6L	48"x24"		• 6	• 2	• 0
W1-6R	48"x24"		• 6	• 1	• 4
W3-1	48"x48"	STOP AHEAD	• 9	• 9	• 0
W4-2L	48"x48"		• 1	• 1	• 2
W6-3	48"x48"		• 2	• 2	• 0
W13-1	24"x24"	30 M.P.H.	• 2	• 3	• 0

Ⓧ M.U.T.C.D. CODE	SIZE	INSERT	STAGE I QTY	STAGE II QTY	STAGE III QTY
FLAG / FLASHER					
W20-1	48"x48"	ROAD CONSTRUCTION AHEAD	• 23	• 14	• 11
FLAG / FLASHER					
W20-3	48"x48"	ROAD CLOSED AHEAD	• 3	• 9	• 0
FLAG / FLASHER					
W20-X1L	48"x48"	LEFT LANE CLOSED	• 2	• 2	• 4
FLAG / FLASHER					
W20-X1R	48"x48"	RIGHT LANE CLOSED	• 2	• 2	• 0
FLAG / FLASHER					
W20-X3L	48"x48"	MERGE	• 1	• 1	• 0
FLAG / FLASHER					
W20-X3R	48"x48"	MERGE	• 1	• 0	• 2
W20-X3R	48"x48"	NO SHOULDER	• 1	• 0	• 0
G20-2	60"x24"	END CONSTRUCTION	• 2	• 2	• 2
X4-2	18"x18"		• 0	• 1	• 0
X4-4	12"x36"		• 4	• 7	• 0
TYPE III	8 FT		• 25	• 29	• 4
REBOUNDABLE DRUM			• 175	• 185	• 47
W14-X7R	24"x24"		• 22	• 0	• 23
W14-X7L	24"x24"		• 51	• 44	• 0

Fed. Project No. _____

REVISIONS			
DATE	BY	DATE	BY

TABULATION CHART Ⓧ
C.S.A.H. 51 TRAFFIC CONTROL
STAGE 1/2/3, QUANTITIES

S.A.P. 114-020-04/106-020-07 S.P. 02-651-01 C.P. _____

Sheet No. 85 of 85 Sheets