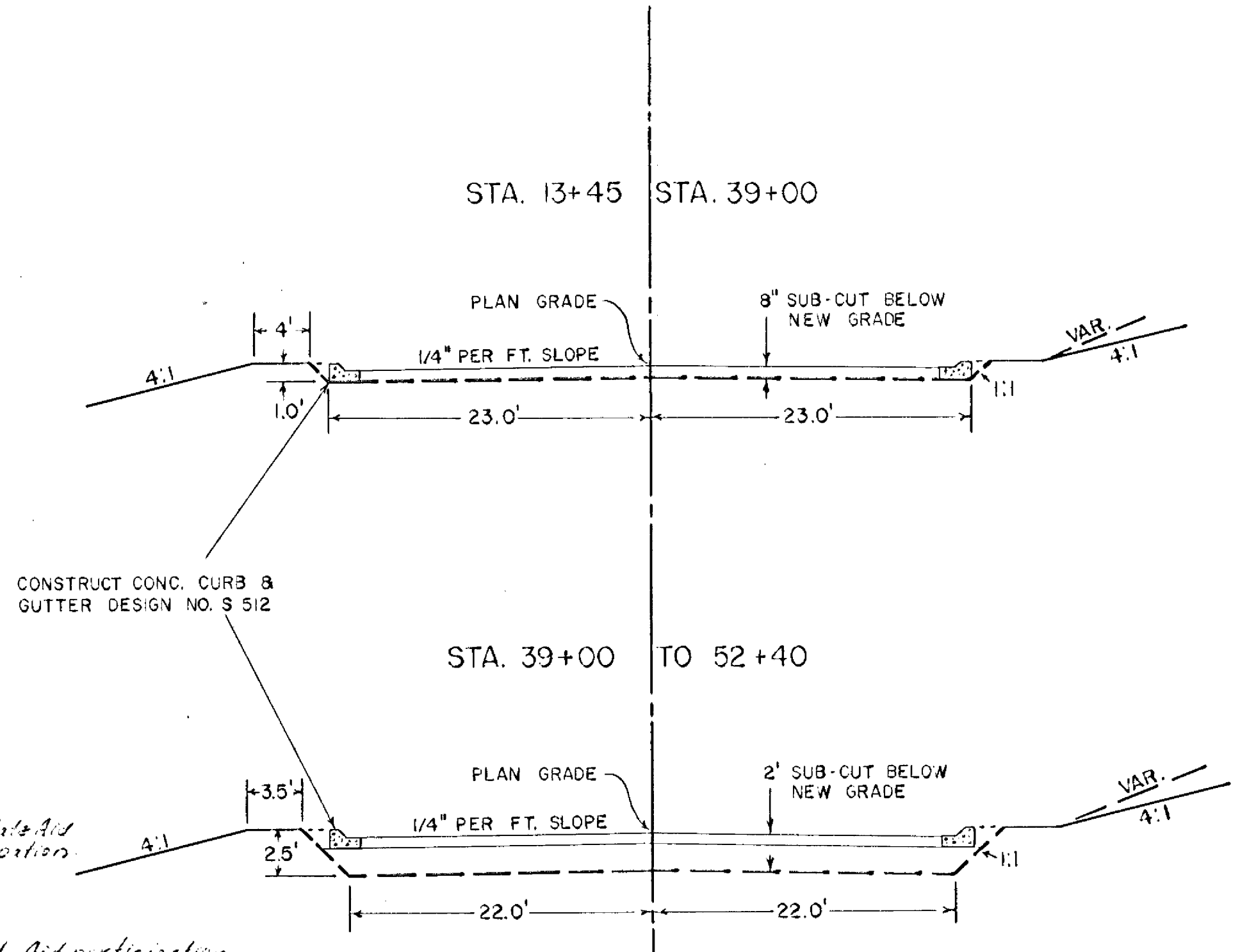


ESTIMATED QUANTITIES					
SPECIFICATION NO.	ITEM	UNIT	COLUMBIA HEIGHTS (REGULAR)	HILLTOP (MUNICIPAL)	TOTAL ESTIMATED QUANTITIES
2101.501	CLEARING	ACRE		.05	.05
2101.502	CLEARING	TREE		13	13
2101.506	GRUBBING	ACRE		.05	.05
2101.507	GRUBBING	TREE		9	9
2104.501	REMOVE PORTABLE CULVERT	LIN. FT.	42		42
2104.503	REMOVE CURB & GUTTER	LIN. FT.	300		300
2104.506	REMOVE SIDEWALK	SQ. YD.	22		22
2105.501	CLASS A EXCAVATION	CU. YD.	7,338	3000	10,338
2130.501	WATER	M- GALLON	102	38	140
2201.526	GRAVEL SUB-BASE INP. (CLASS 4)	TON	2,339	1,986	4,325
2202.526	GRAVEL BASE INP. (CLASS 5)	TON	4,015	750	4,765
2208.503	BITUMINOUS MATERIAL FOR MIXTURE	GALLON	10,387	1,933	12,320
2208.506	AGGREGATE	TON	865	161	1,026
2341.502	BIT. MATL. FOR TACK COAT	GALLON	787	146	933
2341.504	BIT. MATL. FOR MIXTURE	TON	87	16	103
2341.511	BIT. MIXTURE (BINDER COURSE)	TON	866	161	1,027
2341.511	BIT. MIXTURE (WEARING COURSE)	TON	866	161	1,027
2501.501	PIPE CULVERT EXCAVATION	CU. YD.	25	4	29
2501.511	F & I. CMP. CULV. (15")	LIN. FT.	76	24	100
2515.531	F & I. APRONS FOR CMP CULV. (15")	APRON	2		2
2506.511	RECONSTRUCT MANHOLES	LIN. FT.	3.1		3.1
2506.512	RECONSTRUCT CATCH BASINS	LIN. FT.	1.8	1.5	3.3
2506.522	ADJ. FRAME & RING CASTINGS	ASSEM.	3		3
2531.501	CONCRETE CURB & GUTTER (DESIGN S 512)	LIN. FT.	5,708	1,224	6,932
2576.501	SODDING	SQ. YD.	2,973	582	3,555
2503.512-12	F & I. RCP SEWER 12" (CLASS II)	LIN. FT.	308		308
2503.512-24	F & I. RCP SEWER 24" (CLASS II)	LIN. FT.	985		985
2506.506	CONSTRUCT MANHOLES DESIGN A OR F	LIN. FT.	41.5		41.5
2506.506	CONSTRUCT MANHOLES DESIGN C OR G	LIN. FT.	13.3		13.3

50% State Aid Participation
10% State Aid Participation

TYPICAL GRADING SECTIONS



SPECIAL DETAILS

CROSS CULVERT STA. 52+23 TO BE EXTENDED L.T. & RT. APRONS IN PLACE TO BE REMOVED & REPLACED AFTER CULV. IS EXTENDED

BITUMINOUS SURFACE IN PLACE TO BE SALVAGED AND PLACED IN LAYERS TO SATISFACTION OF ENGINEER BETWEEN STA. 39+00 TO 52+40. SALVAGE OPERATION TO BE CONSIDERED INCIDENTAL TO CLASS 'A' EXCAVATION.

EXCESS CLASS 'A' EXCAVATION (APPROX. 6300 CU. YDS.) TO BE DISPOSED OF BY THE CONTRACTOR. ALL MATERIAL THAT MUST BE HAULED OFF PROJECT WILL BE HAULED IN RUBBER Tired VEHICLES WITH JACKSON ST. THE ONLY EXIT FROM PROJECT.

ALL AREAS TO BE SODDED WILL BE COVERED WITH A MINIMUM OF 3 INCHES OF TOPSOIL OR CLAY FOUND WITHIN LIMITS OF PROJECT. THIS WILL BE CONSIDERED INCIDENTAL TO CLASS 'A' EXCAVATION.

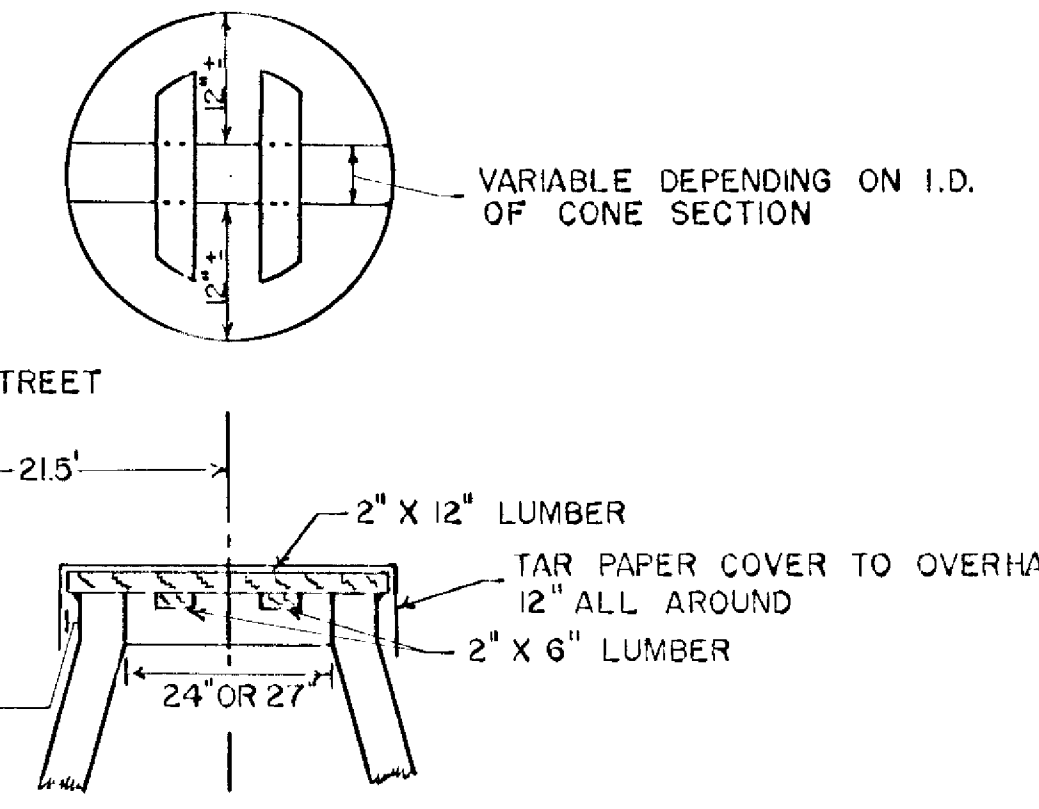
STORM SEWER
TOP OF MASONRY OF ALL M.H. & C.B. SHOULD BE SET 1.25' BELOW GUTTER GRADE TO ALLOW FOR ADJUSTING RINGS & CASTINGS TO BE INSTALLED WHEN OUTFALL SEWER IS PROVIDED.

* TOP OPENINGS OF ALL M.H. & C.B. SHOULD BE SEALED WITH WOOD COVERS SIMILAR TO THAT SHOWN BELOW.

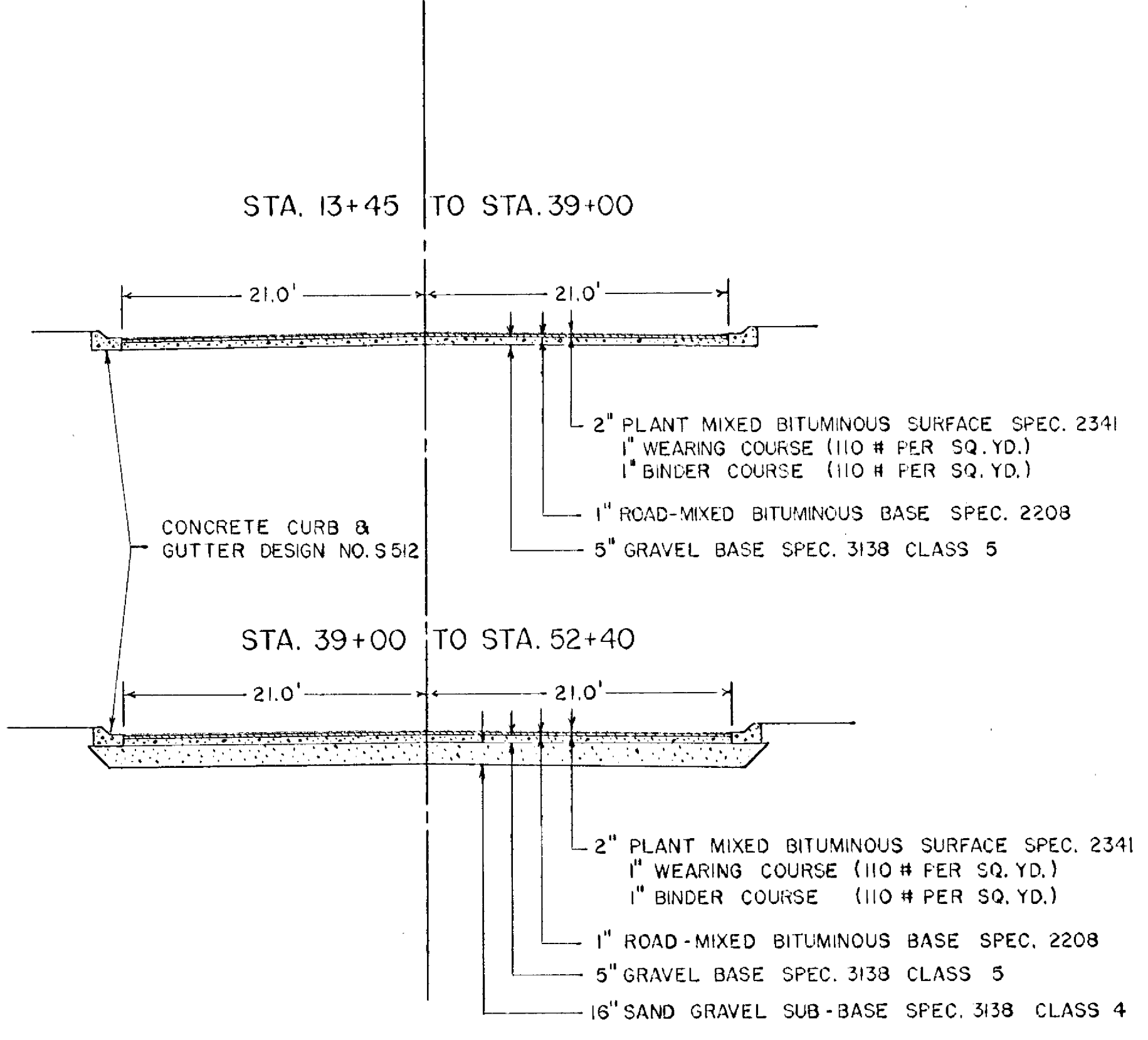
ALL EXISTING STORM SEWER M.H. & C.B. ARE SEALED AS SHOWN.

* WOOD COVER WILL BE CONSIDERED INCIDENTAL TO M.H. CONSTRUCTION

DETAIL OF WOODEN COVERS FOR M.H. OR C.B. CONES



TYPICAL BASE & SURFACE SECTIONS



BASIS FOR PLANNED QUANTITIES

* SAND-GRAVEL SUB-BASE	130 # PER CU. FT. COMPACTED
GRAVEL BASE	135 # " " " "
ROAD MIXED BITUMINOUS BASE	
BITUMINOUS MATERIAL FOR MIXTURE	0.60 GAL. PER 100 # AGG.
AGGREGATE	110 # PER SQ. YD. PER 1" DEPTH
PLANT MIXED BITUMINOUS SURFACE	
BITUMINOUS MATERIAL FOR TACK COAT	0.05 GAL. PER SQ. YD.
BITUMINOUS MATERIAL FOR MIXTURE	4.5% FOR BINDER 5.5% FOR WEARING
BIT. MIXTURE FOR BINDER & WEARING COURSE	110 # PER SQ. YD.
* PRESENT SURFACE MATERIAL TO BE USED IN SUB-BASE ALSO	
NOTE: ESTIMATE INCLUDES QUANTITIES FOR APPROACHES	

STORM SEWER SCHEDULE

M.H. NO.	CASTING	TOP OF CONE ELEV.	FL. ELEV.	DESIGN
1	NONE	168.60	166.57	C OR G
2	"	168.60	166.13	C OR G
3	"	169.40	167.08	C OR G
4	"	183.20	174.56	A OR F
5	"	183.60	174.26	A OR F
6	"	184.10	174.00	A OR F
7	"	186.60	175.92	A OR F
8	"	182.10	173.30	C OR G

STORM SEWER DEPTHS (FOR INFORMATION ONLY)

DEPTH	LENGTH
0'-6"	253'
10'-12"	55'
6'-8"	361'
8'-10"	75'
10'-12"	416'
12'-14"	133'

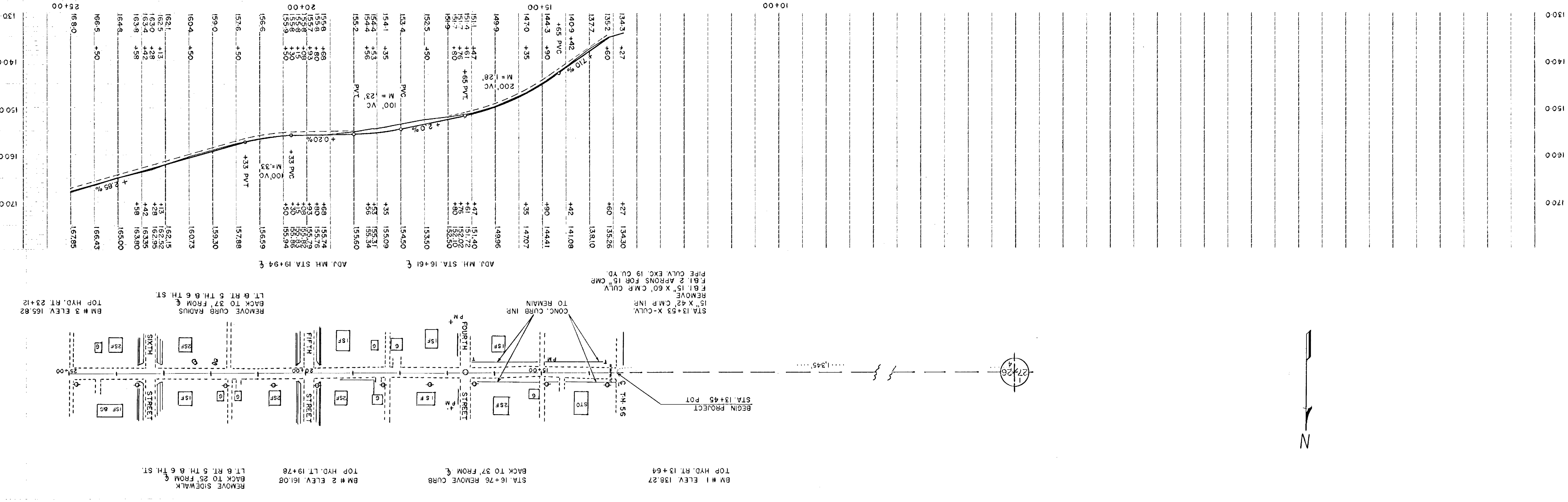
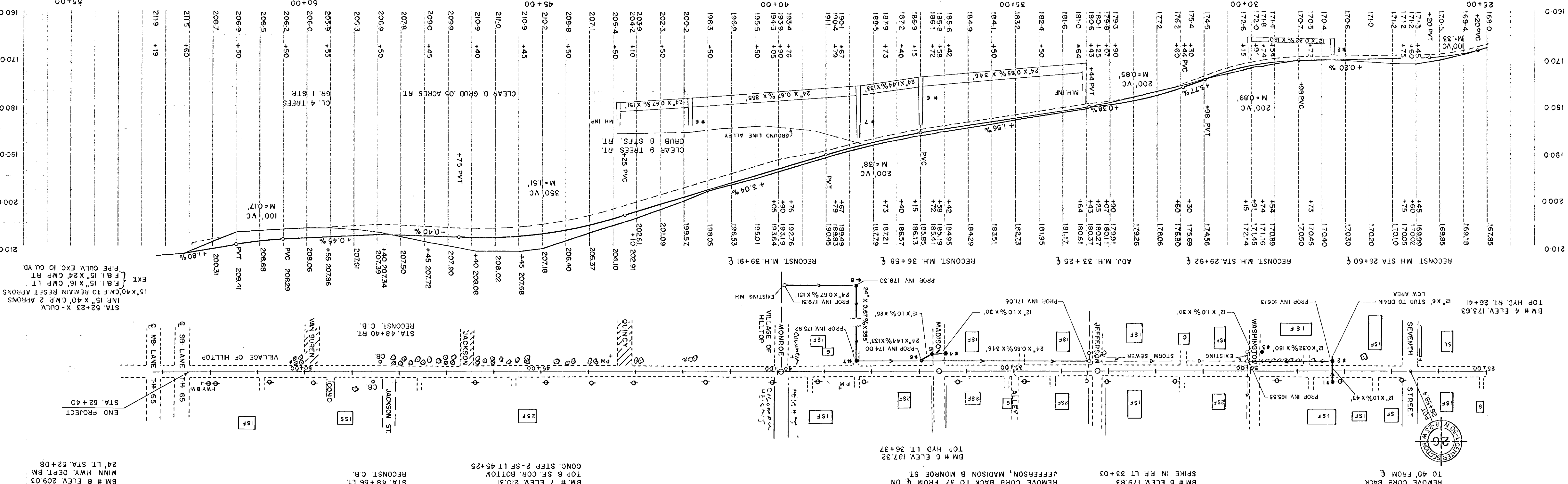
STANDARD DETAIL PLATES

THE FOLLOWING STANDARD DETAIL PLATES, APPROVED BY THE BUREAU OF PUBLIC ROADS, SHALL APPLY ON THIS PROJECT.

PLATE NO.	DESCRIPTION
4000D, 4002C, 4005D, 4006C	MANHOLE OR CATCH BASIN
7102 B	CONCRETE CURB & GUTTER DESIGN NO. S 512
8000A, 8001, 8003 & 8008A	STANDARD SIGNS & BARRICADES

Minn. Project No. _____ S.A.P. 02-604-04
State Project No. _____

DATE: 02-13-84
DRAWN: [Illegible]
CHECKED: [Illegible]
PROJECT: [Illegible]
SHEET: 3 OF 9 SHEETS



SA.P 02-604-04

BM #1 ELEV. 138.27
TOP HYD. RT. 13+64
BACK TO 37' FROM E'
STA. 16+76 REMOVE CURB

BM #3 ELEV. 165.82
TOP HYD. RT. 23+12
BACK TO 47' FROM E'
LT. & RT. 5' TH. & 6' TH. ST.
REMOVE CURB RADIUS