

**PLANS SYMBOLS**

STATE LINE	-----	SPRINGS	.....
COUNTY LINE	-----	MARSH	.....
TOWNSHIP OR RANGE LINE	-----	TIMBER	(T).....
SECTION LINE	-----	ORCHARD	(O).....
QUARTER LINE	-----	BRUSH	(B).....
SIXTEENTH LINE	-----	NURSERY	(N).....
RIGHT OF WAY LINE	-----	CATCH BASIN	C.B. □
PRESENT RIGHT OF WAY LINE	-----	FIRE HYDRANT	▽
CONTROL OF ACCESS LINE	-----	CATTLE GUARD	---X---
PROPERTY LINE (Except Land Lines)	-----	OVERPASS (Highway Over)	---X---
VACATED PLATTED PROPERTY	-----	UNDERPASS (Highway Under)	---X---
CORPORATE OR CITY LIMITS	-----	BRIDGE	---X---
TRUNK HIGHWAY CENTER LINE	-----	BUILDING (One Story Frame)	---X---
RETAINING WALL	-----	F-FRAME C-CONCRETE	---X---
RAILROAD	-----	S-STONE T-TILE	---X---
RAILROAD RIGHT OF WAY LINE	-----	B-BRICK ST-STUCCO	---X---
RIVER OR CREEK	-----	IRON PIPE OR ROD	○
DRY RUN	-----	MONUMENT (STONE, CONCRETE, OR METAL)	○
DRAINAGE DITCH	-----	WOODEN HUB	○
DRAIN TILE	-----	GRAVEL PIT	①
CULVERT	-----	SAND PIT	②
DROP INLET	○	BORROW PIT	③
GUARD RAIL	-----	ROCK QUARRY	④
BARBED WIRE FENCE	-----		
WOVEN WIRE FENCE	-----		
CHAIN LINK FENCE	-----		
RAILROAD SNOW FENCE	-----		
STONE WALL OR FENCE	-----		
HEDGE	-----		
RAILROAD CROSSING SIGN	-----		
ELECTRIC WARNING SIGN	-----		
CROSSING GATE	-----		
MEANDER CORNER	-----		

**UTILITIES SYMBOLS**

POWER POLE LINE	-----	CONDUIT	-----
TELEPHONE OR TELEGRAPH POLE LINE	-----	TELEPHONE CABLE IN CONDUIT	-----
JOINT TELEPHONE AND POWER OR POWER POLES ON TELEPHONE POLES	-----	ELECTRIC CABLE IN CONDUIT	-----
ANCHOR	△	TELEPHONE MANHOLE	□
STEEL TOWER	△	ELECTRIC MANHOLE	□
STREET LIGHT	☆	BURNED TELEPHONE CABLE	T-BUR
PEDESTAL (TELEPHONE CABLE TERMINAL)	☆	BURNED ELECTRIC CABLE	P-BUR
GAS MAIN	G	AERIAL TELEPHONE CABLE	T-AE
WATER MAIN	W	SEWER, (SANITARY OR STORM)	S
		SEWER MANHOLE	□

**PIT DATA**

PIT NO. _____	Located in _____
PIT NO. _____	Located in _____

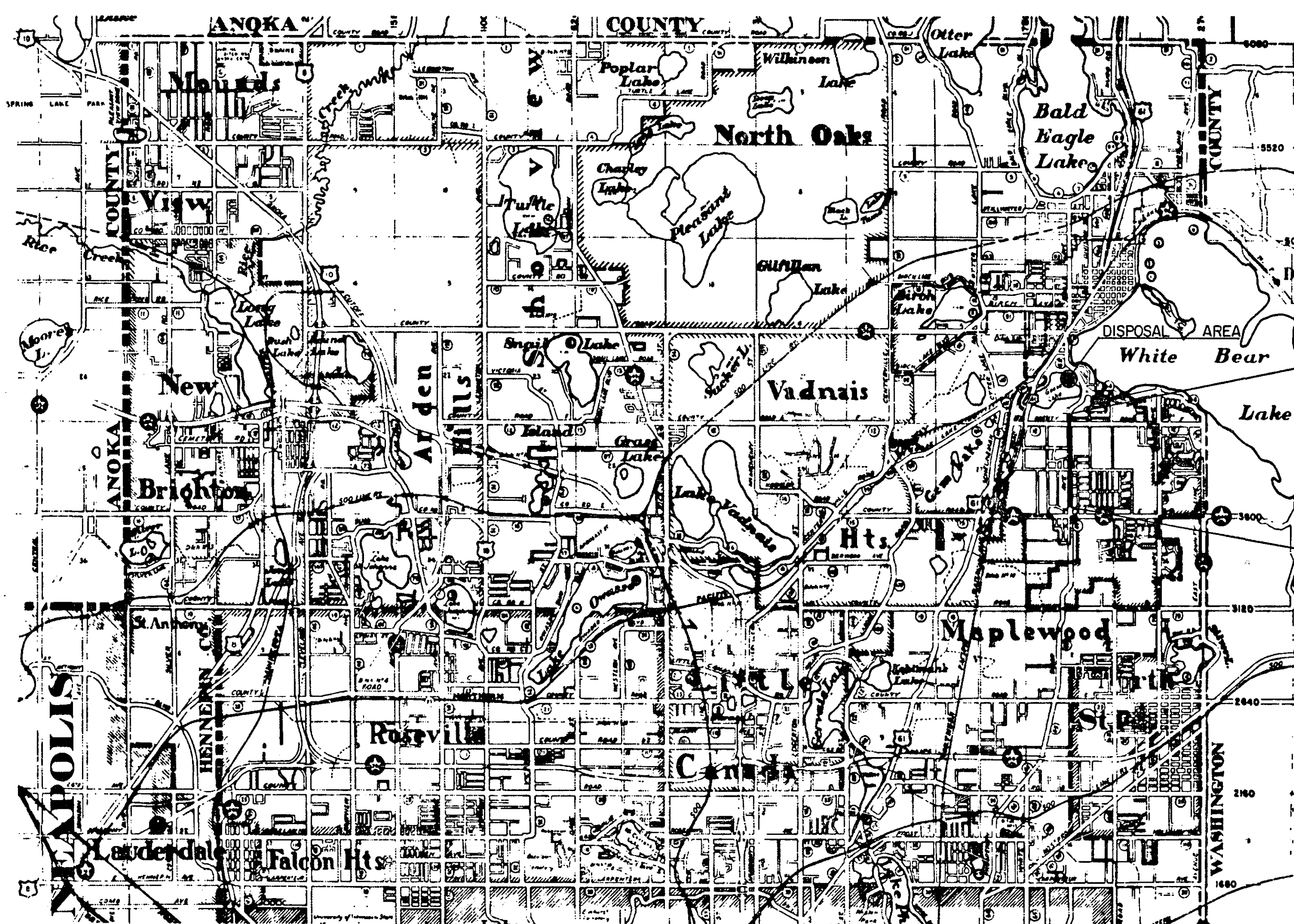
**OFFICE OF COUNTY ENGINEER  
RAMSEY COUNTY  
CONSTRUCTION PLAN  
FOR GRADING AND CONCRETE SURFACING  
WHITE BEAR AVE.**

BETWEEN: SPRUCE PLACE AND: FLORAL DRIVE.  
FROM: A POINT 396.37 FEET NORTH OF THE SOUTH 1/4 CORNER OF SECTION 26, T.30N., R. 22 W. TO: A POINT 246.78 FEET NORTH OF THE SOUTH 1/4 CORNER OF SECTION 23, T.30N., R. 22 W.

GROSS LENGTH	518 FEET	0.9693 MILES
BRIDGES-LENGTH	0 FEET	0 MILES
EXCEPTIONS-LENGTH	0 FEET	0 MILES
NET LENGTH	518 FEET	0.9693 MILES

PLAN, 1 Inch = 50 Feet  
PROFILE, Horiz. 1 Inch = 50 Feet Vert. 1 Inch = 5 Feet  
CROSS-SECTIONS, 1 Inch = 10 Feet  
LAYOUT, 0.75 Inch = 5280 Feet

DESIGN DESIGNATION	
A.D.T. 1969	= 6500
A.D.T. 1985	= 13,400
DHV	=
D (DIRECTIONAL DISTRIBUTION)	= 50-50
T (HEAVY COMMERCIAL)	= 700
DESIGN SPEED	= 50 M.P.H.
DESIGN LOAD	= 9 TON
SOIL FACTOR	= 100 %



END PROJ. STA. 164+18

BEG. PROJ. STA. 113+00

**INDEX**

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	TYPICAL SECTION & ESTIMATED QUANTITIES
3	DRAINAGE CHART & DETAILS
4	CLEARING AND GRUBBING CHART
5-9	PLAN PROFILES & CONSTRUCTION PLANS
10-19	CROSS SECTIONS

RECOMMENDED FOR APPROVAL *W. J. [Signature]* DATE 2-11-70  
 RECOMMENDED FOR APPROVAL *D. B. [Signature]* DATE 2-11-70  
 RECOMMENDED FOR APPROVAL *E. C. [Signature]* DATE 2-11-70  
 RECOMMENDED FOR APPROVAL \_\_\_\_\_ DATE \_\_\_\_\_  
 RECOMMENDED FOR APPROVAL \_\_\_\_\_ DATE \_\_\_\_\_  
 APPROVED \_\_\_\_\_ DATE \_\_\_\_\_

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. [Signature]* REG. NO. 2042 DATE 4-2-70  
ENGINEER

RECOMMENDED FOR APPROVAL *Dean R. [Signature]* DATE 3/5/70  
COUNTY ENGINEER

APPROVED *Thomas A. [Signature]* DATE 4-6-70  
CHAIRMAN OF THE RAMSEY COUNTY BOARD

APPROVED \_\_\_\_\_ DATE \_\_\_\_\_  
MAYOR, CITY OF WHITE BEAR LAKE

APPROVED \_\_\_\_\_ DATE \_\_\_\_\_

**MINNESOTA STATE HIGHWAY DEPARTMENT**

RECOMMENDED FOR APPROVAL *C. E. [Signature]* DATE 5-22-70

RECOMMENDED FOR APPROVAL *J. [Signature]* DATE 4-9-70  
DISTRICT STATE AID ENGINEER

APPROVAL *[Signature]* DATE 5/20/70  
STATE AID ENGINEER

THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION DATED JANUARY 1, 1968 AS AMENDED BY "SUPPLEMENTAL SPECIFICATIONS" DATED JULY 1, 1969 SHALL GOVERN.

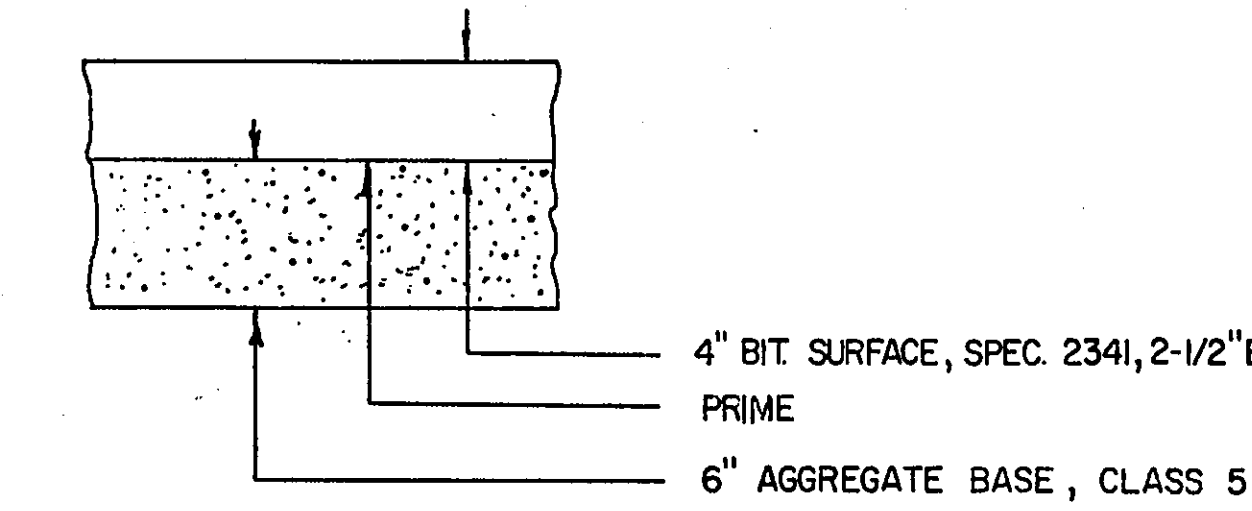
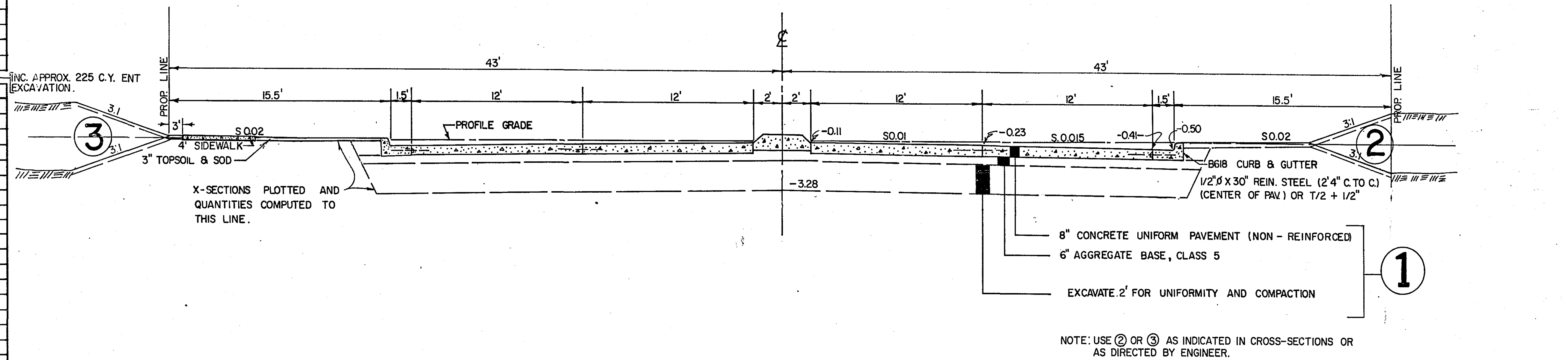
MICROFILMED  
RAMSEY CO. ENGR.

STATEMENT OF ESTIMATED QUANTITIES

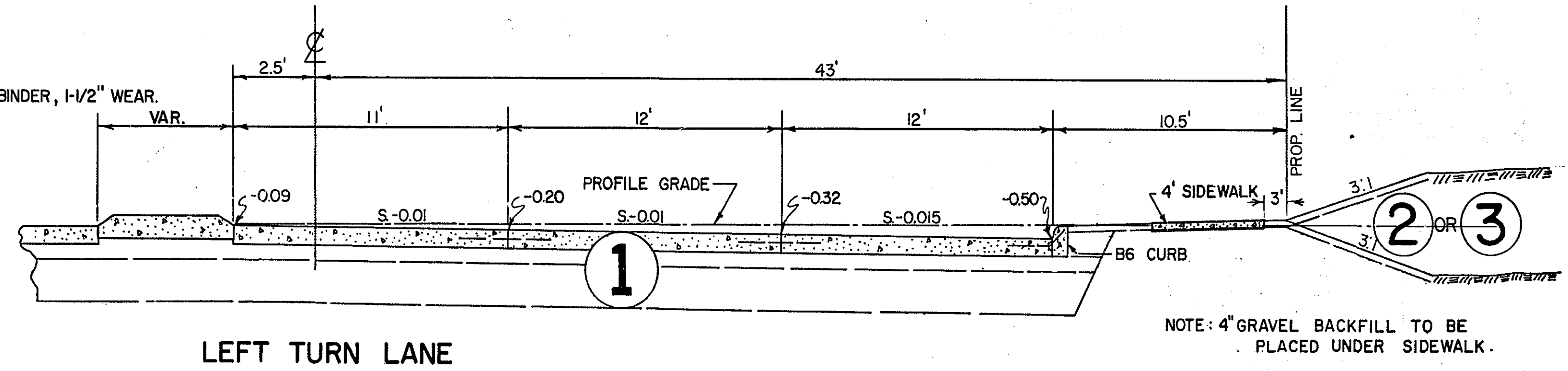
ITEM NO.	ITEM	UNIT	TOTAL ESTIMATED QUANTITIES
2021.501	MOBILIZATION	LUMP SUM	1
2101.502	CLEARING	TREE	106
2101.507	GRUBBING	TREE	107
2104.502	REMOVE PAVEMENT	S.Y.	11,825
2104.506	REMOVE SIDEWALK	S.F.	150
2104.510	REMOVE FENCE	L.F.	322
2104.511	REMOVE MANHOLES AND CATCH BASINS	STRUCTURE	7
2104.515	REMOVE PIPE SEWERS	L.F.	629
2105.501	COMMON EXCAVATION	C.Y.	47,787
2130.501	WATER	(M) GAL.	400
2211.501	AGGREGATE BASE, CLASS 5	TON	12,760
2503.521	INSTALL CONCRETE SEWER	L.F.	312
2301.502	CONCRETE PAVEMENT, STD. WIDTH	S.Y.	27,296
2301.503	CONCRETE PAVEMENT, IRREGULAR WIDTH	S.Y.	1,160
2301.511	STRUCTURAL CONCRETE	C.Y.	6,257
2301.529	REINFORCEMENT BARS	POUND	20,000
2301.531	STANDARD JOINTS, DESIGN L-1	L.F.	10,236
2301.531	STANDARD JOINTS, DESIGN L-6	L.F.	10,092
2301.531	STANDARD JOINTS, DESIGN L-8	L.F.	1,236
2301.531	STANDARD JOINTS, DESIGN C	L.F.	12,387
2301.536	DOWEL BAR ASSEMBLIES	L.F.	576
2357.502	BITUMINOUS MATERIAL FOR TACK COAT	GAL.	337
2341.504	BITUMINOUS MATERIAL FOR MIXTURE	TON	81
2341.508	WEARING COURSE MIXTURE	TON	529
2341.510	BINDER COURSE MIXTURE	TON	641
2341.514	BASE COURSE MIXTURE	TON	738
2358.501	BITUMINOUS MATERIAL FOR PRIME COAT	GAL.	1,809
2451.503	GRANULAR BACKFILL	C.Y.	477
2503.502	22' SPAN CONCRETE PIPE-ARCH SEWER CLASS IV	L.F.	134
2503.502	12' REINFORCED CONCRETE SEWER CLASS IV	L.F.	562
2503.502	15' REINFORCED CONCRETE SEWER CLASS II	L.F.	814
2503.502	24' REINFORCED CONCRETE SEWER CLASS II	L.F.	142
2503.502	36' REINFORCED CONCRETE SEWER CLASS II	L.F.	14
501.620	INSTALL 15' CONCRETE APRON	APRON	1
2506.506	CONSTRUCT MANHOLES DESIGN A OR F	L.F.	9.72
2506.509	CONSTRUCT CATCH BASINS, DESIGN L.P. 4-N	STRUCTURE	7
2506.509	CONSTRUCT CATCH BASINS, DESIGN R.C.-2	STRUCTURE	12
2506.516	CASTING ASSEMBLIES	ASSEMBLY	27
2506.521	INSTALL CASTINGS	ASSEMBLY	5
2506.522	ADJUST FRAME AND RING CASTINGS	ASSEMBLY	41
2506.511	RECONSTRUCT MANHOLES	L.F.	62
2521.501	4' CONCRETE WALK	S.F.	39,688
2501.536	12' CONCRETE APRONS	APRON	4
2531.501	CONCRETE CURB AND GUTTER, DESIGN B618	L.F.	8848
2531.502	CONCRETE CURB DESIGN BR 6-8	L.F.	1440
2531.503	CONCRETE MEDIAN	S.Y.	2214
2531.507	4' CONCRETE DRIVEWAY PAVEMENT	S.Y.	720
123.603	RENTAL BACKHOE	hour	50
503.665	RELOCATE SANITARY SEWER SERVICE	L.F.	37
2575.505	SODDING	S.Y.	12,871
2575.531	COMMERCIAL FERTILIZER, ANALYSIS 12-12-12	TON	1.0
2575.551	TOPSOIL	C.Y.	971
504.612	3/4" COPPER WATER SERVICE CONNECTION	L.F.	37
504.679	ADJUST VALVE BOX	BOX	30
503.698	SEWER INSULATION	L.F.	92
104.604	REMOVE HYDRANT	EACH	10
504.666	INSTALL HYDRANT	EACH	10
504.652	WATER MAIN INSULATION	S.Y.	41
2506.506	CONSTRUCT MANHOLES, DESIGN C OR G	L.F.	13.81

① TO BE USED ON PRIVATE PROPERTY TO REPLACE IN KIND 4" GRAVEL BASE TO BE INCIDENTAL.

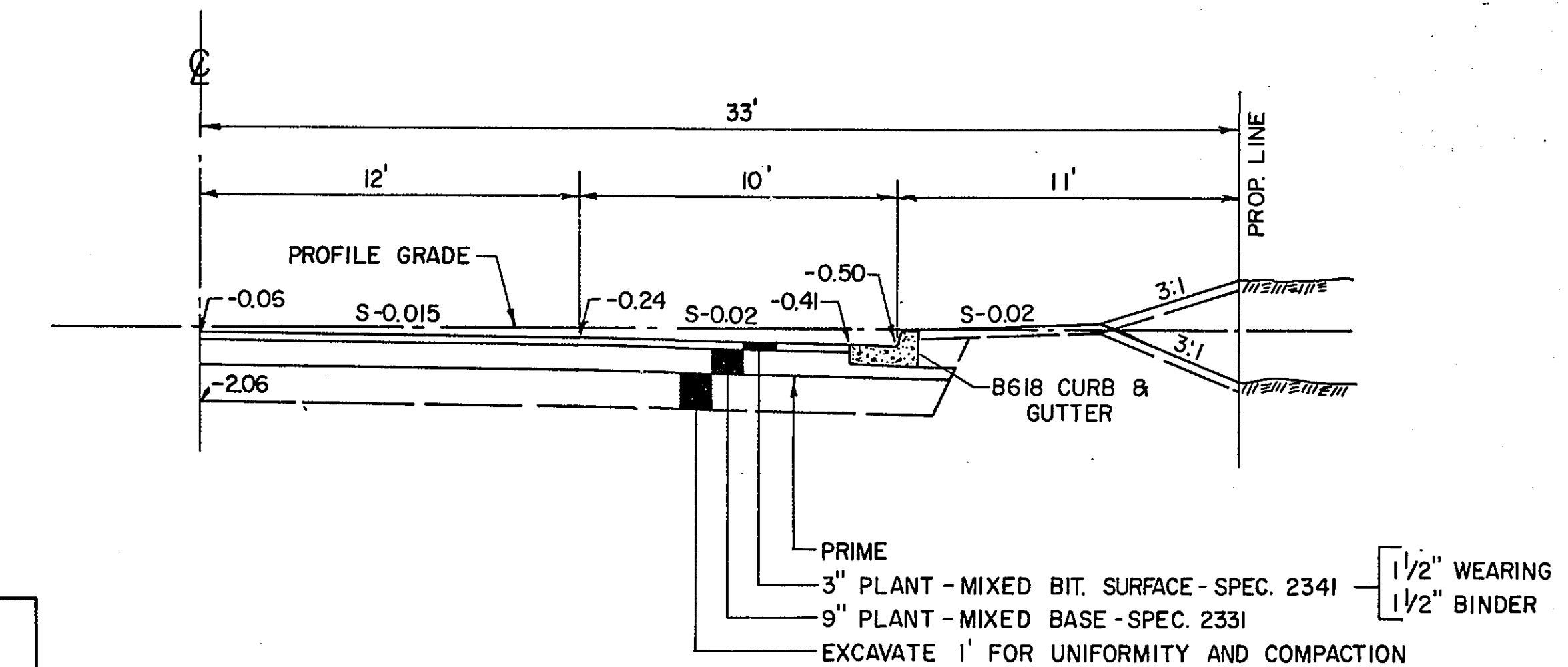
TYPICAL SECTION  
WHITE BEAR AVE.



SIDE STREET SURFACING



LEFT TURN LANE



HALF SECTION  
COUNTY ROAD "F"

STANDARD DETAIL PLATES

0001A	SPECIFICATION REFERENCE TO STANDARD PLATES
1016C	CONCRETE PAVEMENTS NON-REINFORCED
1103D	DOWEL BAR ASSEMBLY
1104D	DOWEL BAR ASSEMBLY
1106C	DOWEL BAR ASSEMBLY
1107F	DOWEL BAR ASSEMBLY
1108E	DOWEL BAR ASSEMBLY
1120K	CONTRACTION JOINT
1140I	LONGITUDINAL JOINTS
1141B	PAVEMENT KEYWAY FOR KEYED JOINT CONSTRUCTION
1150K	CONSTRUCTION OF HEADER JOINTS
3000F	REINFORCED CONCRETE PIPE
3014E	REINFORCED CONCRETE PIPE-ARCH
3100F	CONCRETE APRON FOR REINFORCED CONCRETE PIPE
4000G	MANHOLE OR CATCH BASIN, DESIGN A
4005H	MANHOLE OR CATCH BASIN, DESIGN F
4010D	CONC. SHORT CONE & ADJUSTING RING
4011C	PRECAST CONCRETE BASE
4016C	CURB OPENING CATCH BASIN
4102C	MANHOLE OR CATCH BASIN RING CASTING
4110D	COVER CASTING FOR MANHOLE, CASTING NO. 712
4180F	MANHOLE STEP CASTING
4002D	MANHOLE OR CATCH BASIN, DESIGN C

STANDARD DETAIL PLATES

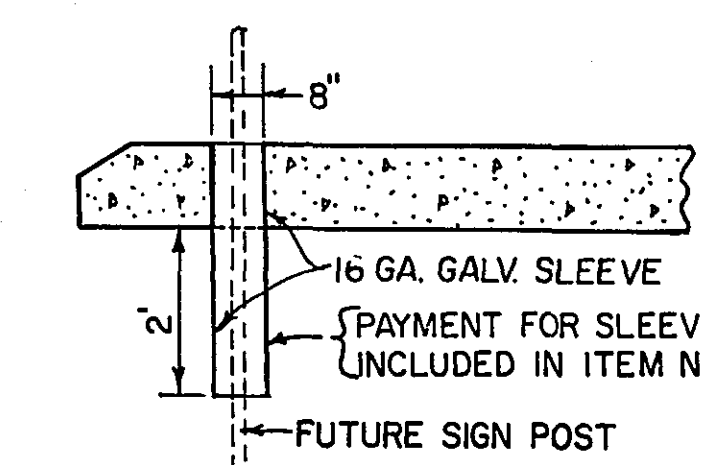
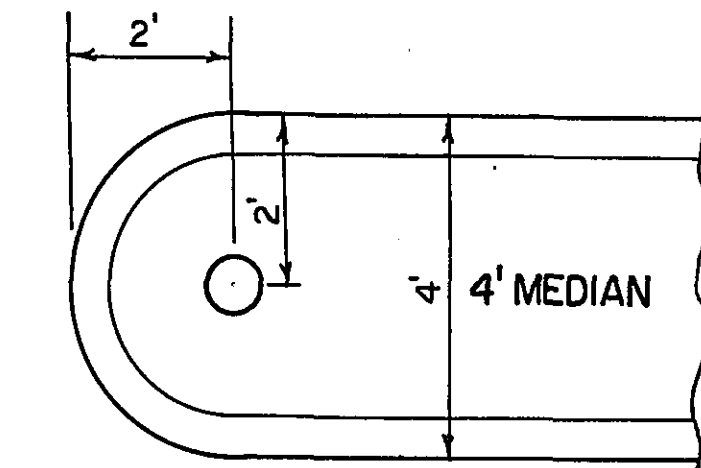
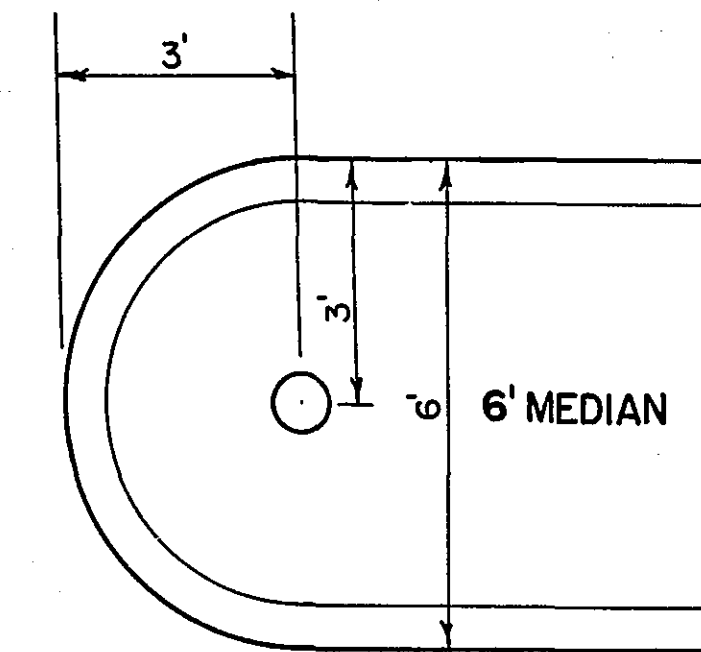
7020D	CONCRETE CURBS, DESIGN BR6-8
7100D	CONCRETE CURB AND GUTTERS, DESIGN B618
7105C	CONCRETE MEDIAN
7111D	INSTALLATION OF CATCH BASIN CASTING
8000C	STANDARD BARRICADES
8008D	CONTRACTOR'S SIGN
9102C	SODDING AT PIPE CULVERT ENDS



CLEARING & GRUBBING				
STATION	LOCATION	TYPE	CLEAR	GRUB
115+41	RT. 44'	6" PINE		
115+45	LT. 33'	STUMP		
115+93	RT. 46'	4" PINE		
116+06	LT. 40'	12" PINE		
116+35	RT. 45'	4" PINE		
116+47	RT. 46'	3" PINE		
116+48	LT. 38'	12" PINE		
116+57	LT. 38'	12" PINE		
117+86	RT. 46'	DEAD ELM		
118+03	LT. 32'	STUMP		
126+93	LT. 35'	24" OAK		
128+20	LT. 34'	10" OAK		
128+23	LT. 39'	10" OAK		
128+54	LT. 41'	10" OAK		
128+78	LT. 42'	12" OAK		
129+13	LT. 35'	8" OAK		
129+24	LT. 39'	TW 8" OAK	2	
129+38	LT. 34'	12" OAK		
129+44	LT. 34'	10" OAK		
130+30	LT. 36'	14" OAK		
130+55	LT. 35'	16" OAK		
131+06	LT. 33'	30" OAK		
131+44	RT. 41'	6" BIRCH		
131+57	LT. 35'	26" OAK		
131+87	LT. 33'	18" OAK		
132+12	LT. 33'	TW 18" OAK	2	
132+34	LT. 34'	18" OAK		
132+75	LT. 35'	20" OAK		
133+19	LT. 35'	18" OAK		
134+11	LT. 43'	6" C. APPLE		
135+04	LT. 39'	6" C. ELM		
135+97	RT. 37'	4" PINE		
136+16	RT. 36'	4" PINE		
137+65	RT. 42'	10" LOCUST		
137+87	LT. 35'	14" B. ELDER		
138+06	LT. 36'	16" B. ELDER		
138+07	RT. 42'	10" MAPLE		
138+23	LT. 36'	16" B. ELDER		
138+88	LT. 34'	24" OAK		
139+06	LT. 37'	18" OAK		
140+18	LT. 36'	TW STUMP		
140+24	RT. 39'	STUMP		
140+70	RT. 39'	4" PINE		
141+55	LT. 35'	STUMP		

CLEARING & GRUBBING				
STATION	LOCATION	TYPE	CLEAR	GRUB
143+13	RT. 42'	4" ASH		
146+06	LT. 32'	14" OAK		
146+21	LT. 33'	20" OAK		
146+39	LT. 35'	14" OAK		
147+79	LT. 33	16" OAK		
148+17	RT. 30'	20" OAK		
149+02	RT. 44'	8" MAPLE		
153+21	RT. 38'	16" ASH		
153+77	RT. 28'	6" C. ELM		
153+81	LT. 40'	12" ELM		
153+93	RT. 26'	4" C. ELM		
154+36	RT. 30'	8" ASH		
154+92	LT. 35'	30" OAK		
155+19	LT. 40'	8" PINE		
155+71	LT. 37'	30" OAK		
155+91	LT. 46'	12" PINE		
156+37	LT. 36'	6" APPLE		
156+41	LT. 35'	26" OAK		
156+44	RT. 37'	4" PINE		
156+51	RT. 38'	4" PINE		
156+71	LT. 35'	18" OAK		
157+03	LT. 34'	16" OAK		
157+17	RT. 32'	24" OAK		
157+42	LT. 33'	10" ELM		
157+44	LT. 37'	6" ELM		
157+46	LT. 37'	6" ELM		
157+66	RT. 30'	18" OAK		
157+80	LT. 33'	20" OAK		
157+83	RT. 28'	20" OAK		
158+10	LT. 32'	TW 10" ELM	2	
158+39	LT. 35'	24" OAK		
158+59	RT. 31'	30" OAK		
158+72	LT. 36'	26" OAK		
158+93	RT. 37'	10" ELM		
159+14	LT. 36'	24" OAK		
159+26	RT. 35'	40" OAK		
159+37	LT. 36'	6" COT. WD.		
159+44	RT. 35'	24" OAK		
159+62	LT. 34'	16" OAK		
159+83	LT. 39'	12" COT. WD.		
159+86	LT. 42'	4" C. ELM		
159+90	LT. 38'	8" ELM		
160+12	LT. 37'	5" C. ELM		
160+14	LT. 36'	TW 5" C. ELM	2	
160+26	LT. 38'	4" B. ELDER		
160+50	RT. 32'	18" OAK		
161+95	RT. 34'	22" ELM		
162+71	RT. 35'	24" ELM		
162+87	RT. 39'	4" PINE		
162+93	RT. 38'	4" PINE		
163+11	RT. 35'	20" OAK		
163+70	LT. 24'	30" OAK		
164+45	LT. 28'	8" R. OAK		
164+54	LT. 29'	6" R. OAK		
150+18 TO 150+77	RT. 48' - 49'	PINE GROVE	9	9
TOTALS			106	107

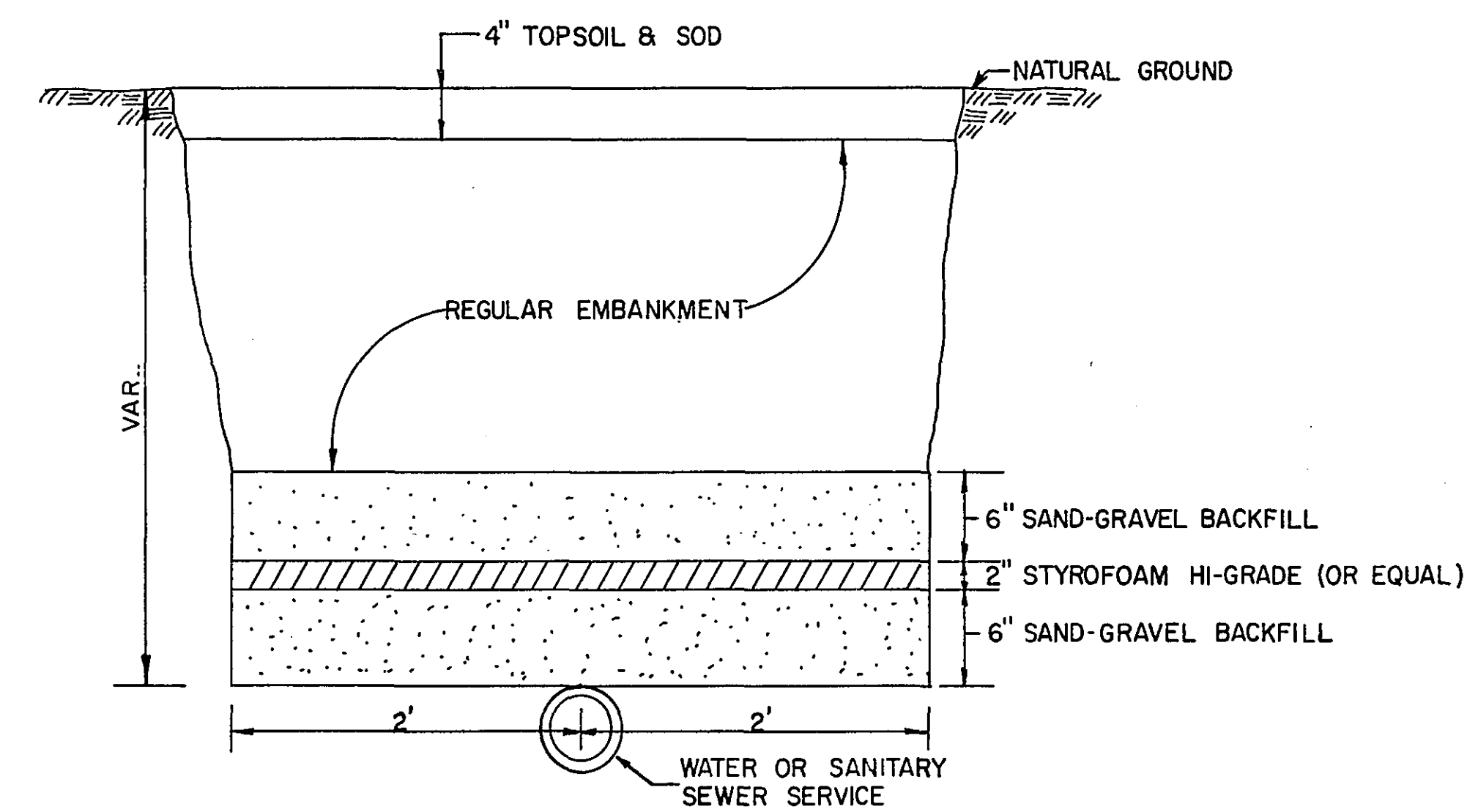
NOTE CONTRACTOR SHALL VERIFY REMOVAL OF ALL TREES WITH PROJECT ENGR.



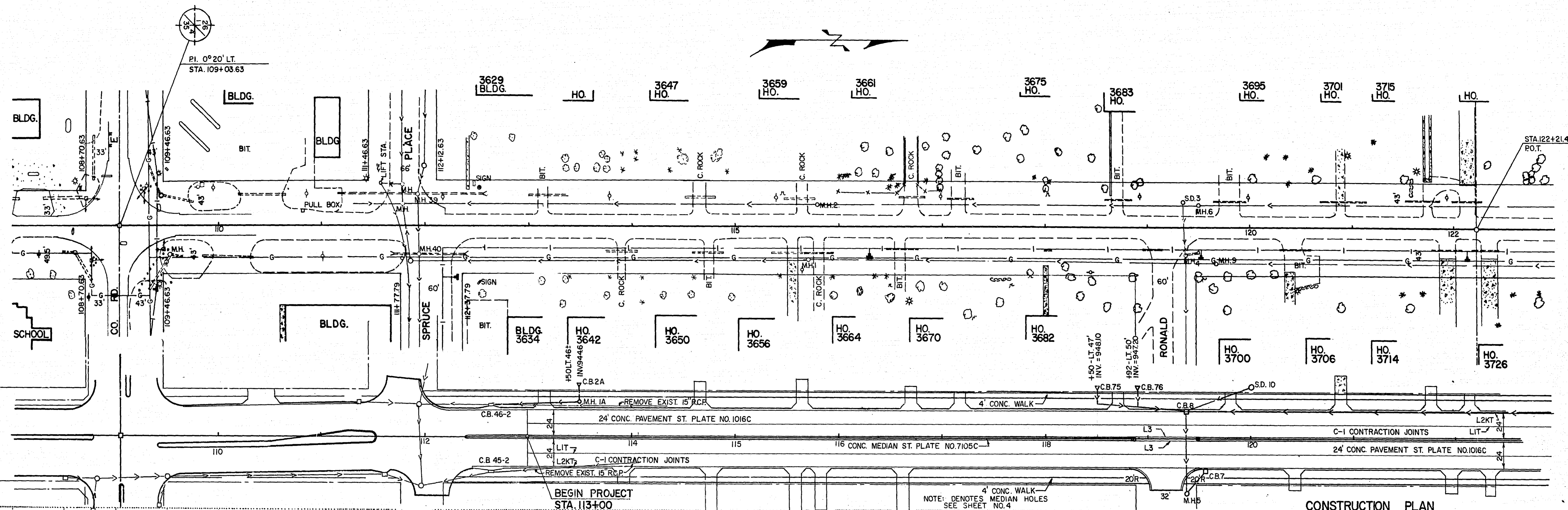
PLACEMENT OF MEDIAN HOLES

FENCE REMOVAL CHART				
STATION	TO	STATION	LOCATION	L.F.
115+98		116+98	LT. 33'	86'
139+07			LT. 39'-56'	17'
132+05		133+05	LT. 38'	100'
134+06		135+08	LT. 37'	102'
160+54			RT. 31'-48'	17'
TOTAL				322'

HYDRANT RELOCATIONS		
STATION	EXIST. LOCATION	NEW LOCATION
116+29	RT. 27'	RT. 30'
119+54	RT. 27'	RT. 30'
122+15	RT. 28'	RT. 30'
125+50	RT. 27'	RT. 30'
129+81	RT. 28'	RT. 30'
133+09	RT. 27'	RT. 31'
137+72	LT. 27'	LT. 31'
143+39	LT. 28'	LT. 30'
156+16	LT. 23'	LT. 30'
161+96	LT. 48'	LT. 52'



WATER AND SANITARY SERVICE INSULATION DETAIL

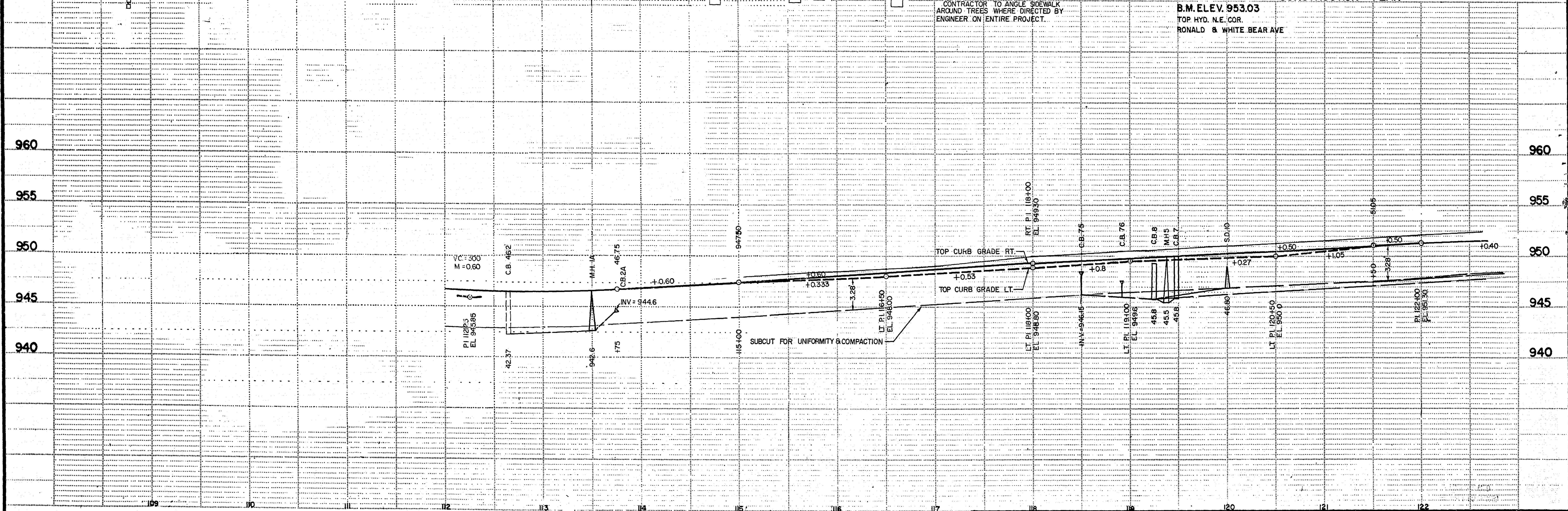


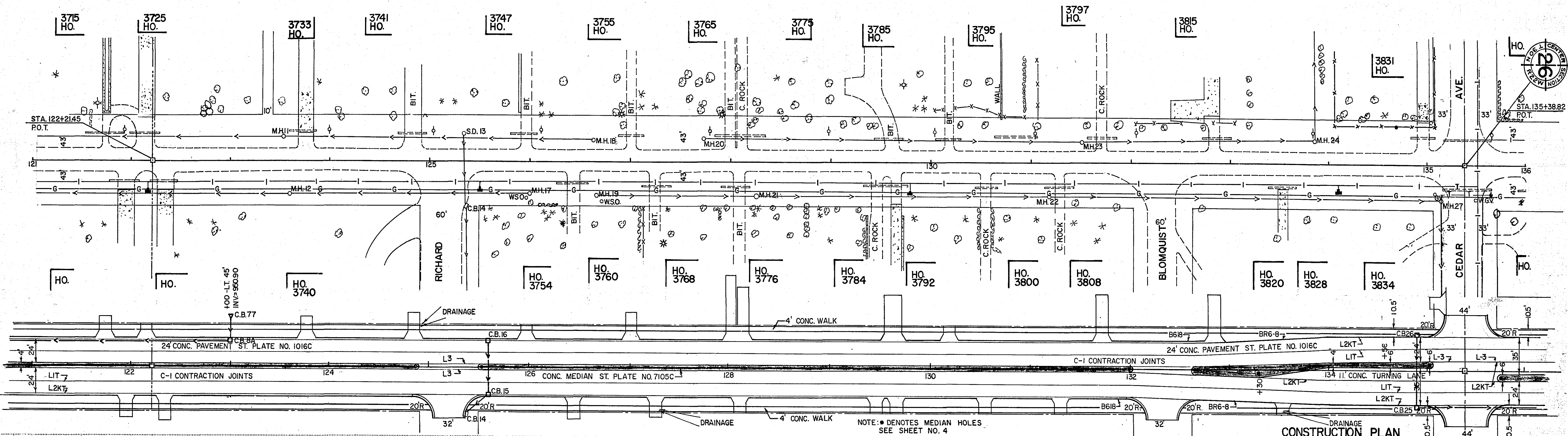
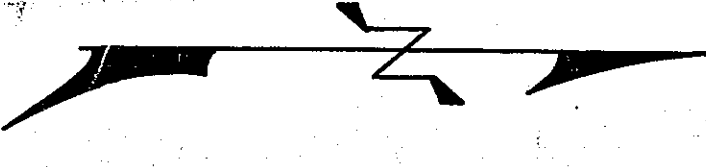
BEGIN PROJECT STA. 113+00

NOTE: DENOTES MEDIAN HOLES SEE SHEET NO. 4  
 CONTRACTOR TO ANGLE SIDEWALK AROUND TREES WHERE DIRECTED BY ENGINEER ON ENTIRE PROJECT.

B.M. ELEV. 953.03  
 TOP HYD. N.E. COR.  
 RONALD & WHITE BEAR AVE

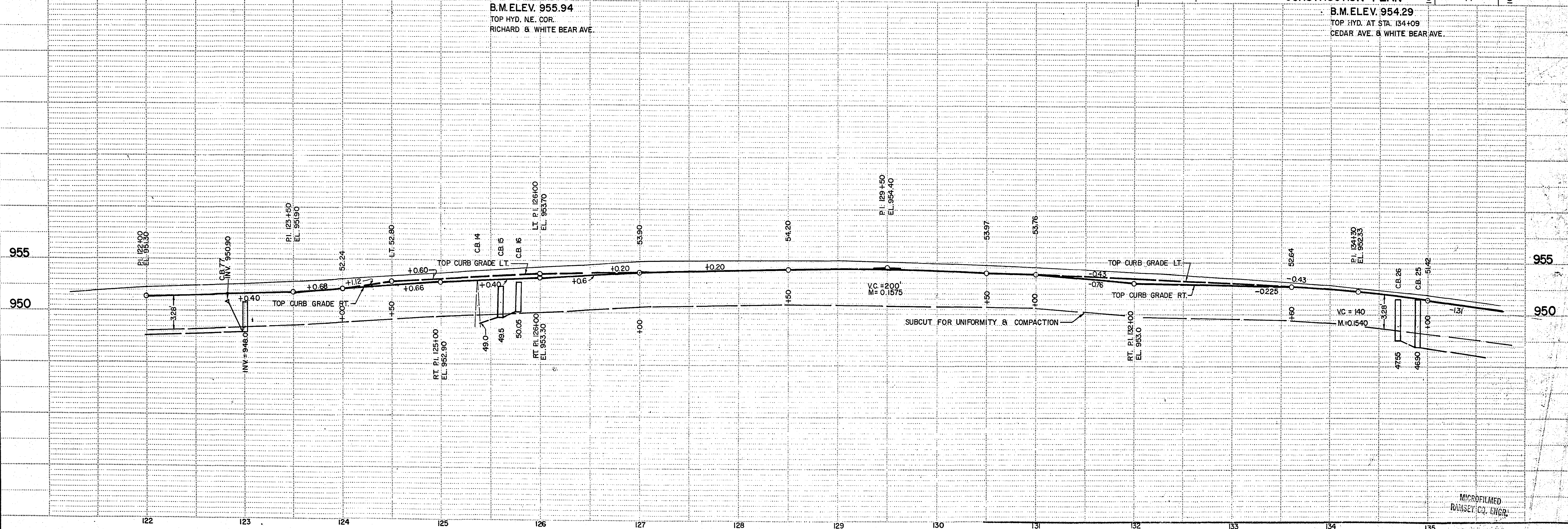
CONSTRUCTION PLAN





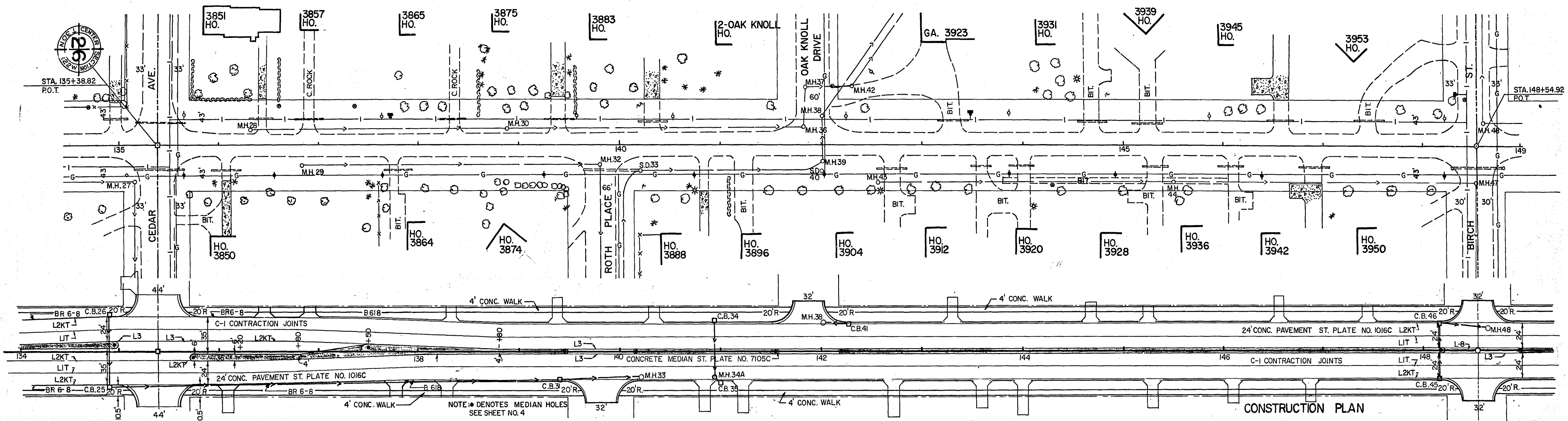
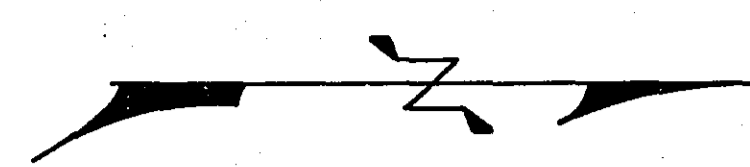
B.M. ELEV. 955.94  
 TOP HYD. NE. COR.  
 RICHARD & WHITE BEAR AVE.

CONSTRUCTION PLAN  
 B.M. ELEV. 954.29  
 TOP HYD. AT STA. 134+09  
 CEDAR AVE. & WHITE BEAR AVE.



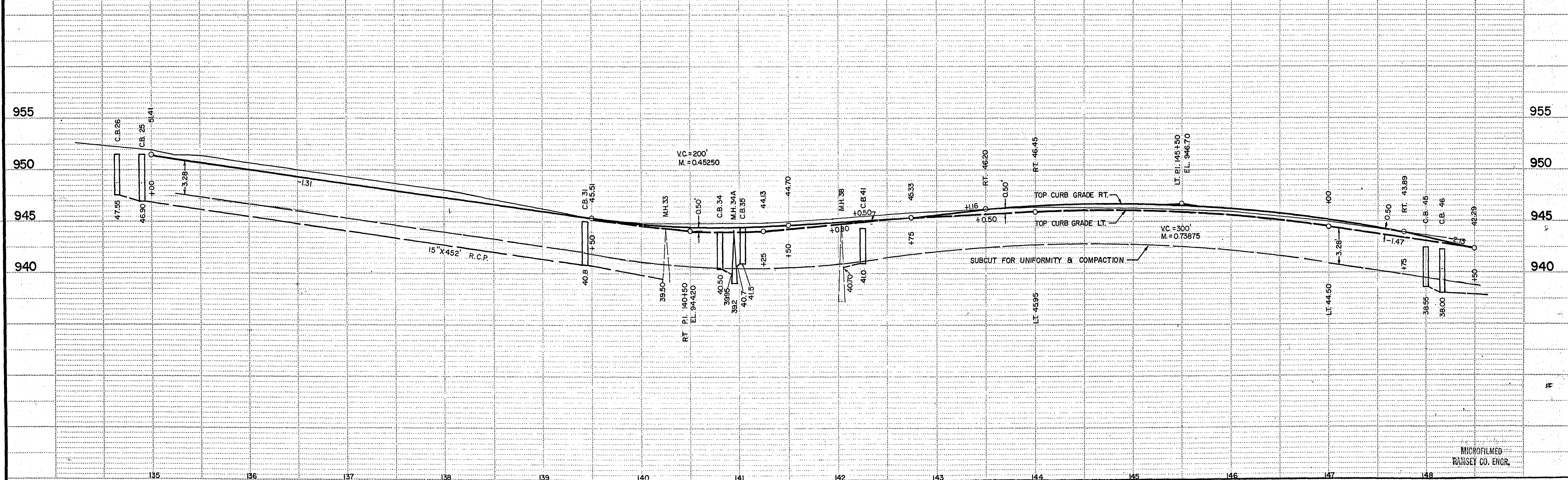
MICROFILMED  
RAMSEY CO. ENGR.

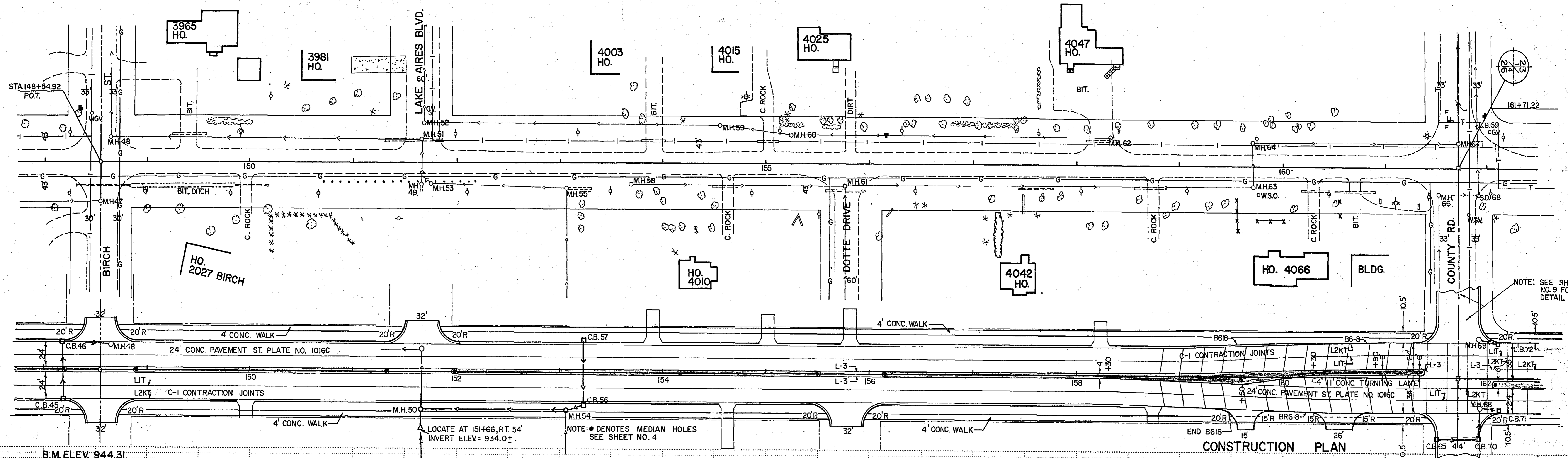
NORTH STAR © NO. 102 - ST. PAUL - MINNEAPOLIS, MINNESOTA ©



B.M. ELEV. 954.29  
 TOP HYD. S.S.E. COR.  
 CEDAR AVE. & WHITE BEAR AVE.

B.M. ELEV. 944.31  
 TOP HYD. S.W. COR.  
 BIRCH ST. & WHITE BEAR AVE.



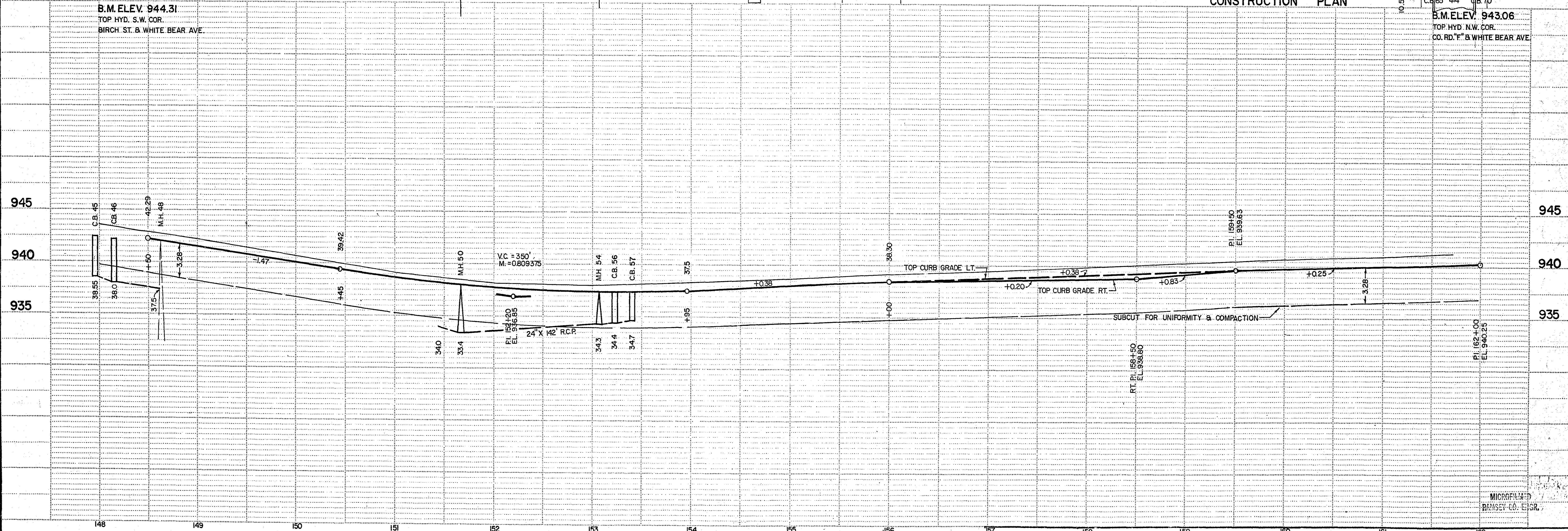


B.M. ELEV. 944.31  
TOP HYD. S.W. COR.  
BIRCH ST. & WHITE BEAR AVE.

B.M. ELEV. 943.06  
TOP HYD. N.W. COR.  
CO. RD. "F" & WHITE BEAR AVE.

NOTE: ● DENOTES MEDIAN HOLES  
SEE SHEET NO. 4

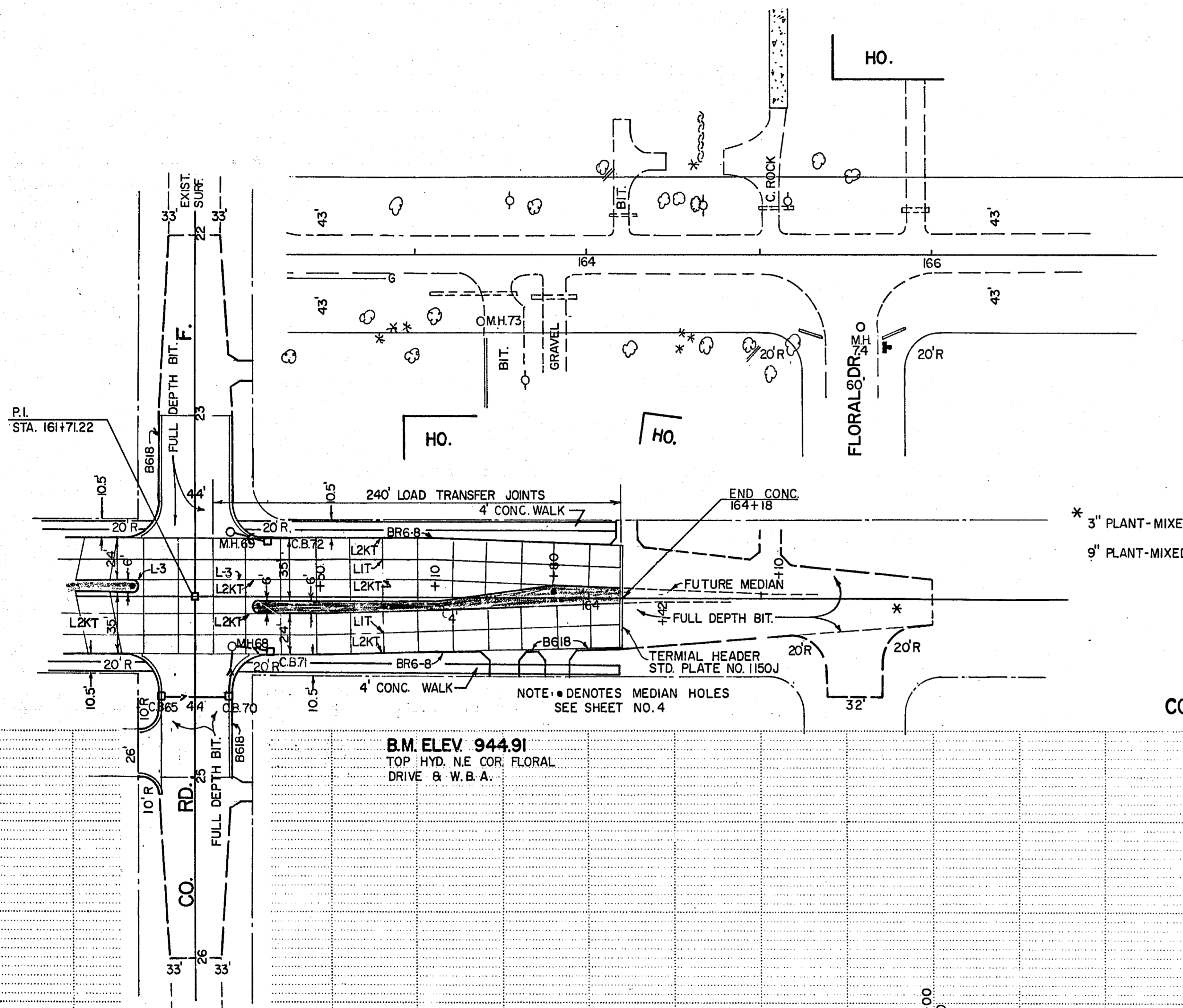
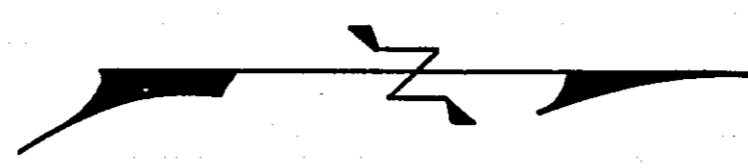
CONSTRUCTION PLAN



MICROFILM  
BRANSEY CO. ENGR.

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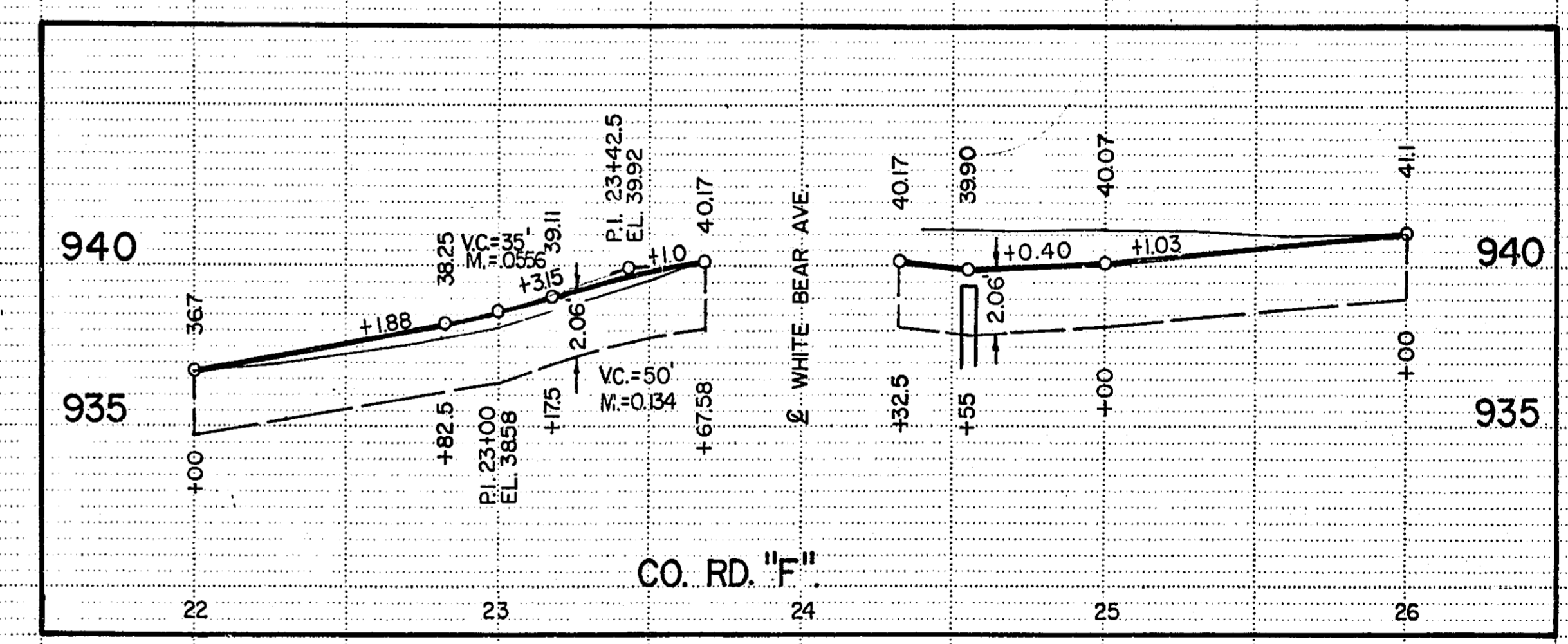
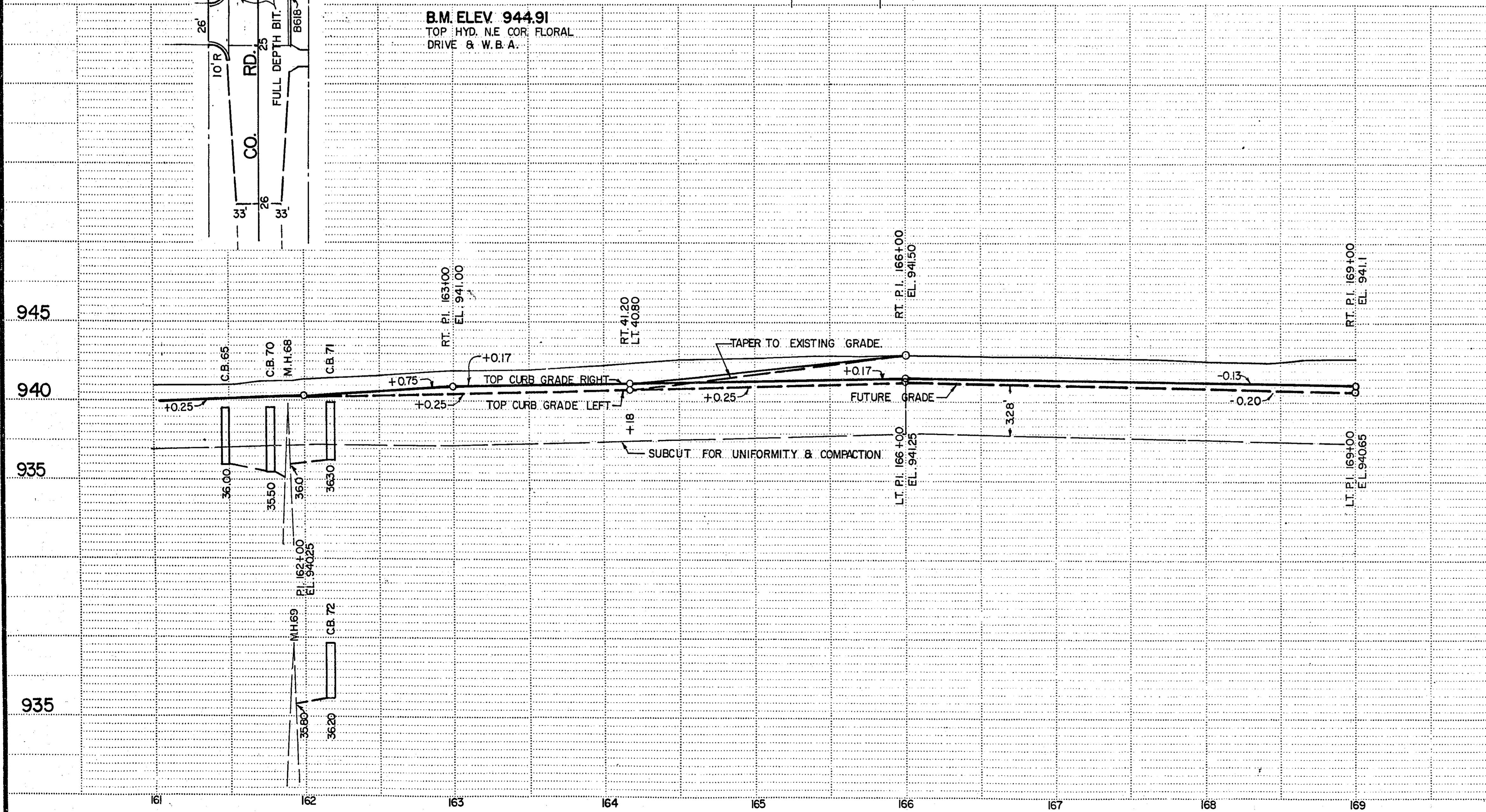




\* 3" PLANT-MIXED BITUMINOUS SURFACE SPEC. 2341 (1-1/2" WEARING 1-1/2" BINDER)  
 9" PLANT-MIXED BITUMINOUS BASE SPEC. 2331.

CONSTRUCTION PLAN

B.M. ELEV. 944.91  
 TOP HYD. N.E. COR. FLORAL  
 DRIVE & W.B.A.



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