

NOTE: ALL LOTS WITH WATER METERS LOCATED AT ELEVATIONS 1340.00 OR LOWER SHALL BE REQUIRED TO INSTALL INDIVIDUAL PRESSURE REDUCING VALVES. THE FOLLOWING LOTS ARE INCLUDED IN THIS REQUIREMENT:

1, 2, 22 THRU 28, 65 THRU 69, 72 & 73

ROBERT L. & DOROTHY P. HARTMAN
DB 234 PAGE 52

CLOVERDALE GARDENS
PB 6 PAGE 25

M. W. TURNER SUBDIVISION
PB 1 PAGE 54

M. W. TURNER SUBDIVISION
PB 1 PAGE 54

PROJECT NAME: Highland Manor
DATE: 10-1993
TYPE: Sanitary Sewer
LOCATION: Blue Ridge District
TOTAL # SHEETS: 71
A/E FIRM: Lang Engineering
OF SETS: 2

SCALE: 1" = 50'

REVISIONS	REVISE PER HEALTH	REVISE PER VDOT
6	5	4
3	3	2
1	1	1

DATE: JUNE 7, 1993	SCALE: 1" = 50'
JOB NO. 930105	DRAWN BY: RGL
ACAD # 930105	CHKD: RGL
0	25
100	200

-LANG-
engineering co.
Consulting Engineers, Land Planners
P.O. BOX 18062 ROANOKE, VA 24014 (540)772-0077

HIGHLAND MANOR
SECTIONS III & IV
MASTER ENGINEERING PLAN
BLUE RIDGE DISTRICT
BOTETOURT COUNTY, VIRGINIA

SHEET NO. 5
18
OF

CURVE	DELTA	RADIUS	ARC	TANGENT	BEARING	CHORD
C1	16°05'58"	300.00	84.30	42.43	S 51°31'01" E	84.02
C2	57°09'26"	300.00	299.27	163.42	S 80°35'38" E	287.02
C3	48°40'57"	325.00	276.14	147.02	S 84°49'52" E	267.91
C4	55°25'41"	175.00	169.30	91.93	S 32°46'34" E	162.77
C5	41°59'51"	150.00	109.95	57.58	S 40°10'16" E	107.50
C6	41°24'10"	150.00	106.39	56.68	N 50°12'41" E	106.05

SANITARY SEWER
"AS-BUILTS"
OCTOBER 19, 1995

[illegible]

LOT 4
SECTION V

LOT 3
SECTION V
CONNECT TO EXISTING
BOOSTER PUMP
PRESSURIZED SYSTEM
(SEE DETAIL THIS SHEET)

JONATHAN ROAD PUMPING STATION
CONNECTION DETAIL
N.T.S.

SCALE: 1" = 50'

6					
5					
4					
3	REWSE PER HEALTH DEPT	NOV 11, 1970			
2	REWSE PER VDOT & COUNTY SPET 8, 1970				
1	REWSE PER VDOT & USSCO AUG. 4, 1970				

REVISIONS

DATE: JUNE 7, 1993
JOB No.: 930105
SCALE: 1" = 50'
DRAWN BY:

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10

HIGHLAND MANOR
SECTIONS III & IV
MASTER ENGINEERING PLAN
BLUE RIDGE DISTRICT
BOTETOURT COUNTY, VIRGINIA

SANITARY SEWER
"AS-BUILTS"
OCTOBER 19, 1995

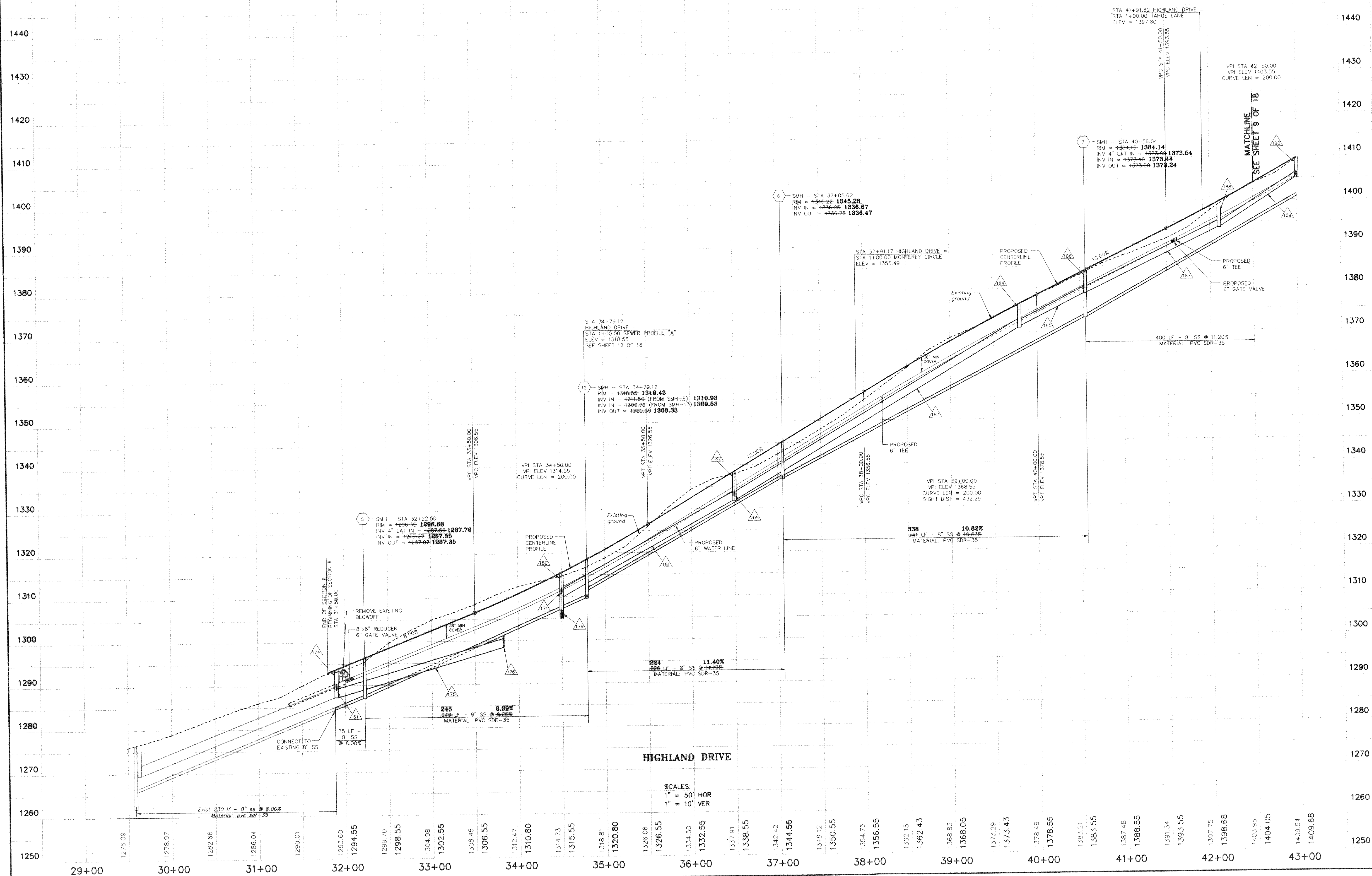
NOTE: LOTS 39 THRU 55 SHALL BE SERVED BY WATER PROVIDED BY BOOSTER PUMP SYSTEM LOCATED ON THE EXISTING TANK LOT IN APPLE TREE VILLAGE, SECTION V, COMMONLY KNOWN AS THE JONATHAN ROAD PUMPING STATION.

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1, 2, 22 THRU 28, 65 THRU 69, 72 & 73

CURVE	DELTA	RADIUS	ARC	TANGENT	BEARING	CHORD
C1	16°05'58"	300.00	84.30	16.43	S 51°31'01" E	84.02
C2	5°7'09.26"	300.00	299.27	42.32	S 80°35'38" E	287.02
C3	48°40'57"	325.00	276.14	147.02	S 84°49'52" E	267.91
C4	5°25'41"	175.00	169.30	91.93	S 32°46'54" E	162.77
C5	41°59'51"	150.00	109.95	57.58	N 40°10'16" E	107.50
C6	41°24'10"	150.00	108.39	56.68	N 50°12'41" E	106.05

SANITARY SEWER
"AS-BUILTS"
OCTOBER 19, 1995



REVISIONS	DATE
6	
5	
4	
3	
2	REVISE DETENTION POND NOV 11, 1971
1	REVISE PER VDOT & USSDC AUG 4, 1971

DATE: JUNE 7 1993 SCALE: 1" = 50'

DATE: JUNE 7, 1955
JOB No. 930105
DRAWN BY:

ACAD #: RCP01001 CHKD: RGL

C
C
C

C
L
C

L
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C

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HIGHLAND MANOR
SECTIONS III & IV
HIGHLAND DRIVE ROADWAY PROFILE
BLUE RIDGE DISTRICT
BOTETOURT COUNTY, VIRGINIA

SHEET NO.

18

OF

SANITARY SEWER
"AS-BUILTS"
OCTOBER 19, 1995

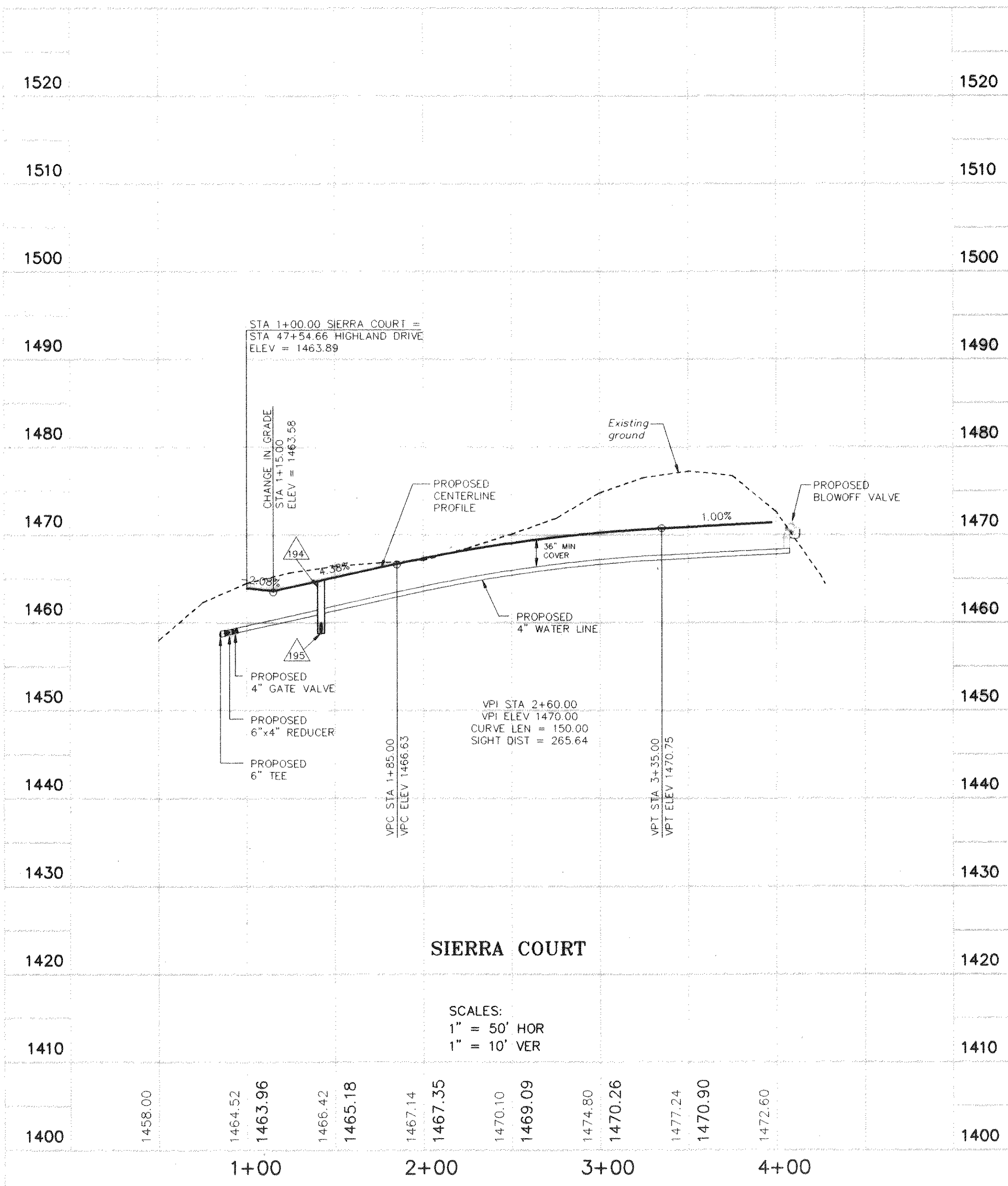
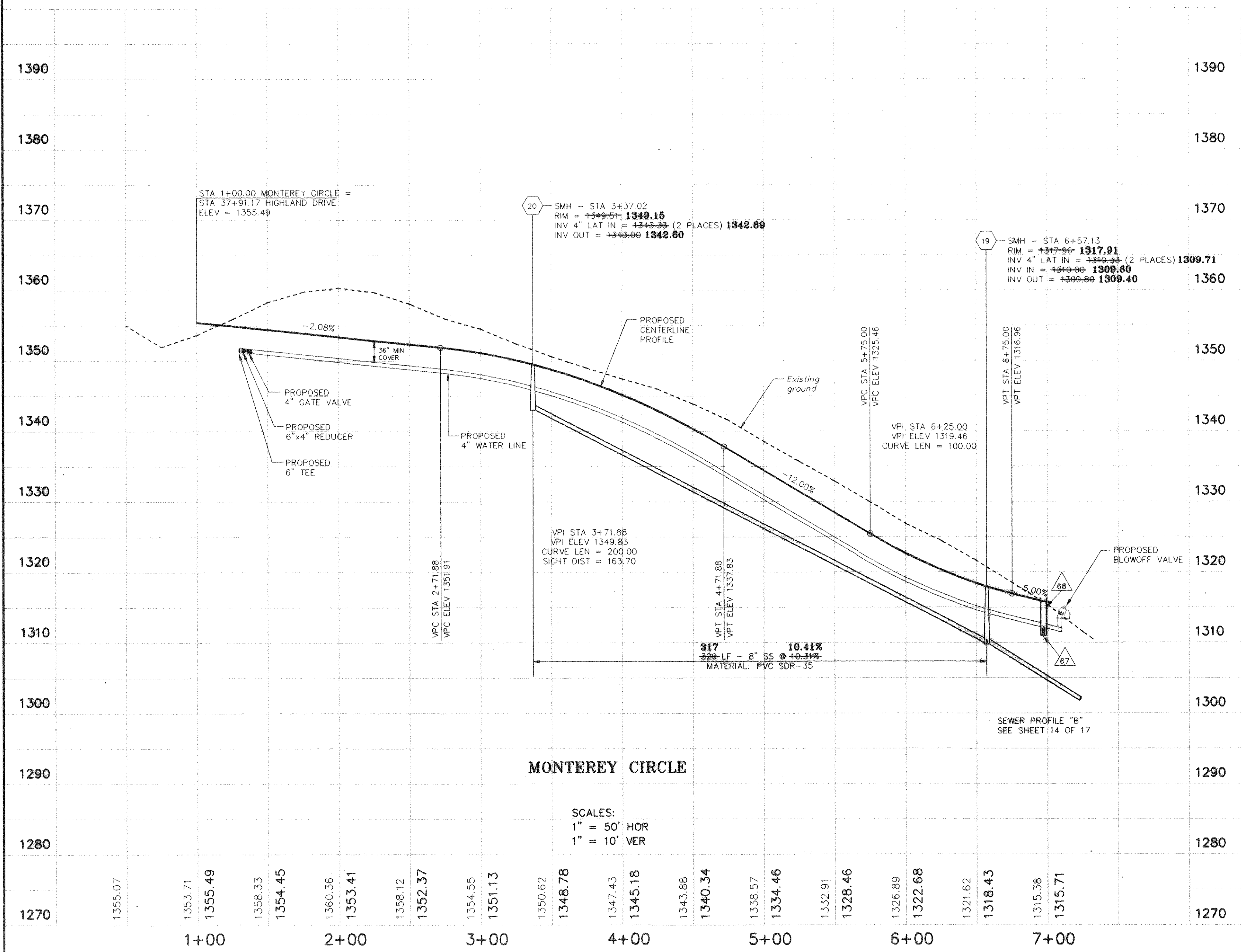
DATE	REVISIONS
6	1
5	2
4	3
3	4
2	5
1	6

DATE: JUNE 7, 1993	SCALE: 1" = 50'
JOB No.: 930105	DRAWN BY:
ACAD #: RCP01002	CHKD: RCL
ACAD #: RCP01004	

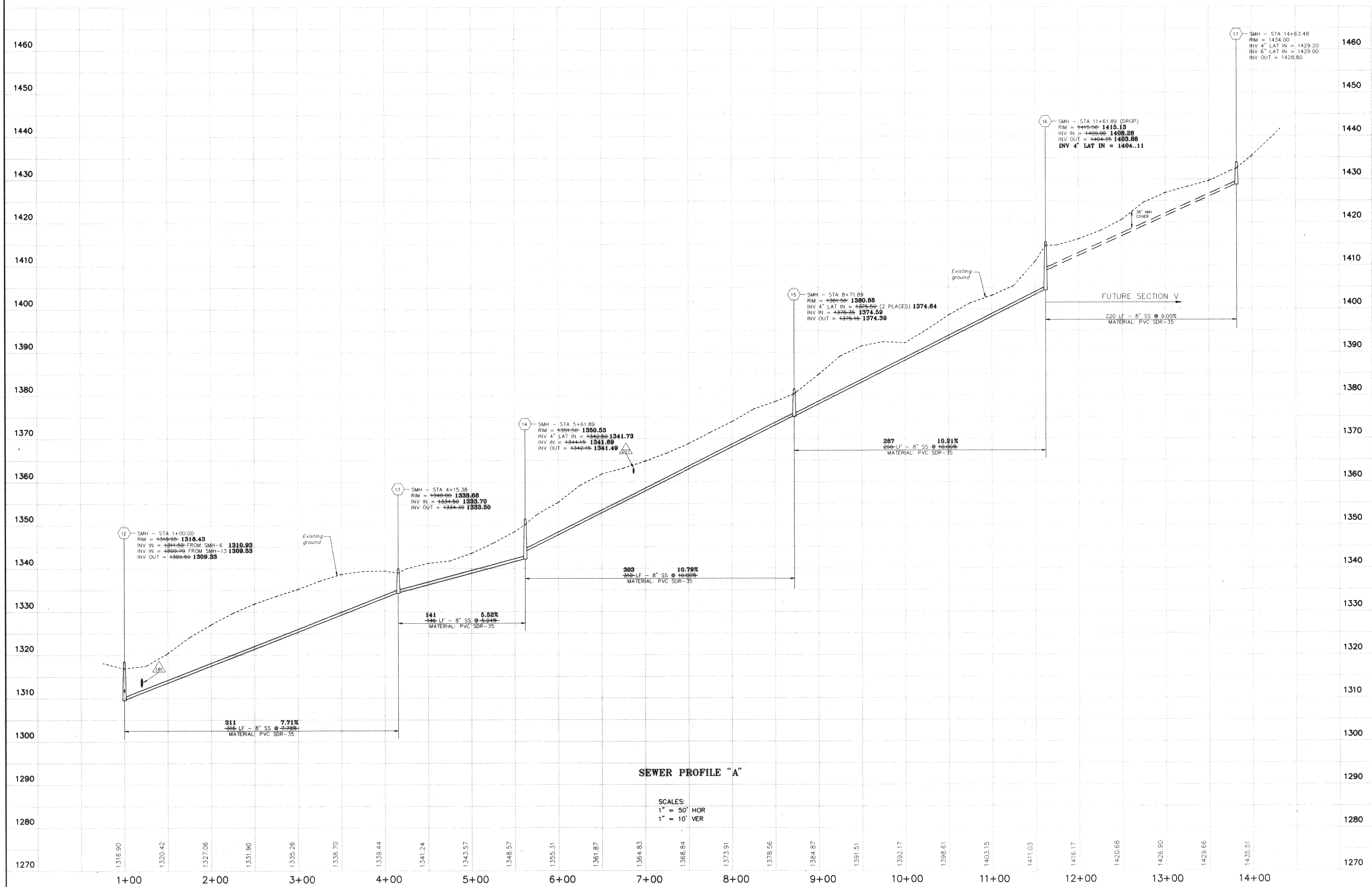
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HIGHLAND MANOR
SECTIONS III & IV
MONTEREY CIRCLE & SIERRA COURT
ROADWAY PROFILES
BLUE RIDGE DISTRICT
BOTETOURT COUNTY, VIRGINIA

SHEET NO.
11
OF
18



SANITARY SEWER
"AS-BUILTS"
OCTOBER 19, 1995



DATE	JUNE 7, 1993
JOB No.	930105
ACAD #	RC01006
DRAWN BY	REL
CHKD	REL

SCALE: 1" = 50'

REVISIONS

NO.	DATE	DESCRIPTION
1		REVISE PER VDOT & USCO AUG 4, 1993

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**HIGHLAND MANOR
SECTIONS III & IV
SANITARY SEWER PROFILE "A"
BLUE RIDGE DISTRICT
BOTETOURT COUNTY, VIRGINIA**

SHEET NO. 12

18

SANITARY SEWER
"AS-BUILTS"
OCTOBER 19, 1995

REVISIONS	DATE
6	
5	
4	
3	
2	
1	REVISE PER VDOT & USCD AUG 4, 1993

DATE: JUNE 7, 1993
JOB No.: 930105
ACAD # RCP01007
RCP01003

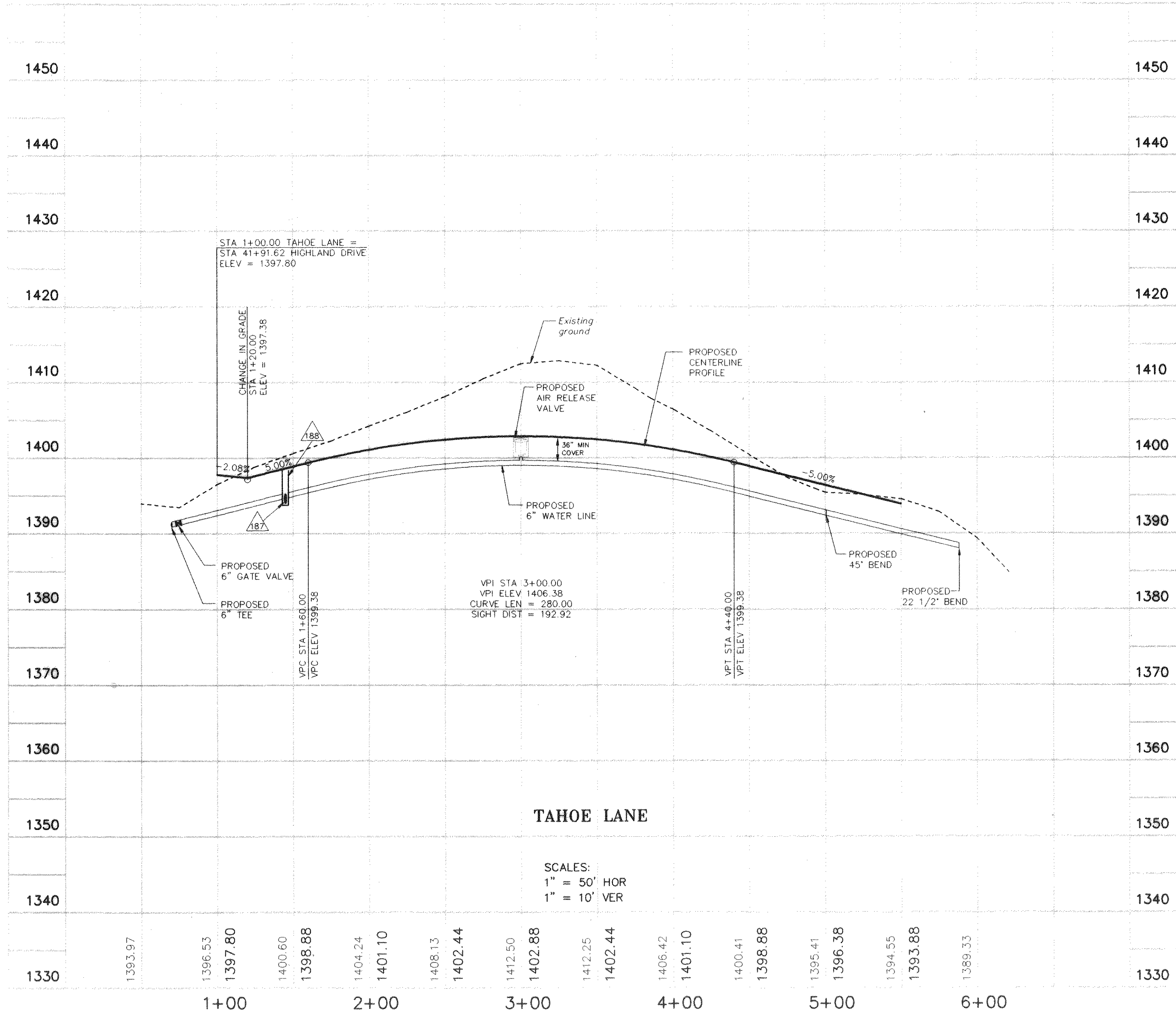
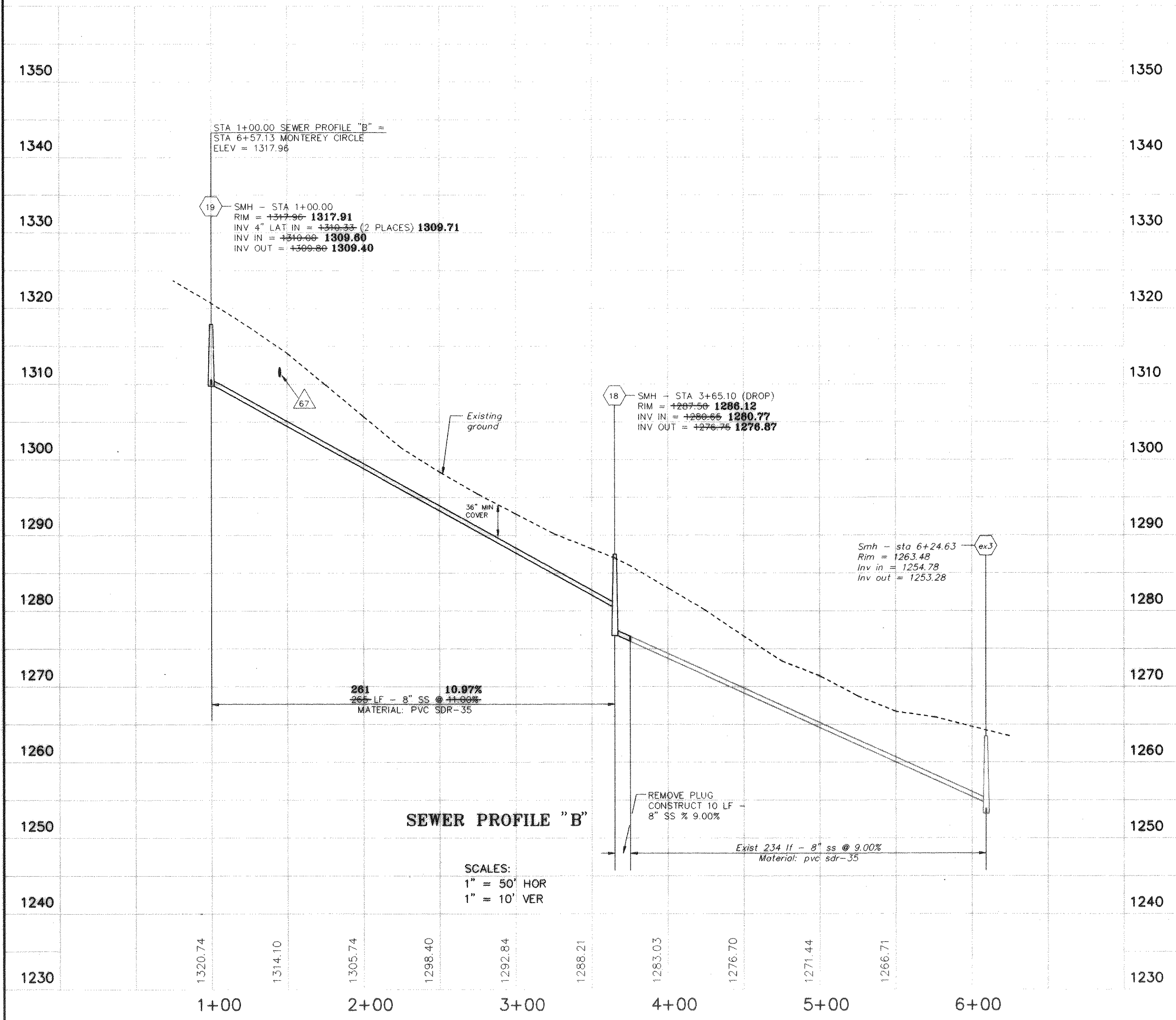
SCALE: 1" = 50'
DRAWN BY:
CHKD: RGL

0 25 50 100 200

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Consulting Engineers - Land Planners
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HIGHLAND MANOR
SECTIONS III & IV
SANITARY SEWER PROFILE "B" &
TAHOE LANE ROADWAY PROFILE
BLUE RIDGE DISTRICT
BOTETOURT COUNTY, VIRGINIA

SHEET NO.
14
18
OF



REVISIONS		DATE
6		
5		
4		
3		
2	REVISE STORM DRAIN TABLE	NOV 11, 1991
1	REVISE STORM DRAIN TABLE	SEPT 8, 1991

61 38 LF = 18" RCP CL III, SLOPE = 0.50%

INV IN = 1288.65, INV OUT = 1288.45

62 38 LF = 18.0", TOP ELEV = 1293.73

INV 15" IN = 1286.90, INV OUT = 1288.65

63 193 LF = 15" RCP CL III, SLOPE = 1.83%

INV IN = 1292.44, INV OUT = 1288.90

64 STORM DRAIN MANHOLE: RM ELEV = 1300.85

INV IN = 1292.64, INV OUT = 1300.85

65 105 LF = 15" RCP CL III, SLOPE = 4.00%

INV IN = 1297.00, INV OUT = 1292.64

66 STORM DRAIN MANHOLE: RM ELEV = 1302.91

INV IN = 1297.00, INV OUT = 1302.91

67 136 LF = 15" RCP CL III, SLOPE = 10.00%

INV IN = 1311.00, INV OUT = 1297.20

68 DI=3C, L = 10.0", TOP ELEV = 1316.35

INV 15" OUT = 1316.35

69 15" MOD EW-1" WITH DISSIPATOR: INV OUT = 1427.00

70 168 LF = 15" RCP CL III, SLOPE = 13.68%

INV IN = 1450.00, INV OUT = 127.00

71 15" TYPE III GRATE = 1456.00

INV 15" OUT = 1450.00

72 18" EW-1PC: INV OUT = 1313.00

73 18 LF = 18" RCP CL III, SLOPE = 6.37%

INV IN = 1317.00, INV OUT = 1313.00

74 STORM DRAIN MANHOLE: RM ELEV = 1332.00

INV 18" IN = 1328.05, INV 18" OUT = 1317.00

75 238 LF = 15" RCP CL III, SLOPE = 4.98%

INV IN = 1334.95, INV OUT = 1328.05

76 DI=3B, L = 10.0", TOP ELEV = 1335.96

INV 15" IN = 1335.20, INV 15" OUT = 1334.95

77 40 LF = 15" RCP CL III, SLOPE = 1.83%

INV IN = 1337.95, INV OUT = 1335.20

78 DI=3B, L = 20.0", TOP ELEV = 1343.72

INV 15" IN = 1343.00, INV 15" OUT = 1337.95

79 180 LF = 15" RCP CL III, SLOPE = 13.00%

INV IN = 1365.15, INV OUT = 1338.15

80 DI=3B, L = 18.0", TOP ELEV = 1370.72

INV 15" IN = 1365.15, INV 15" OUT = 1365.15

81 190 LF = 15" RCP CL III, SLOPE = 12.55%

INV IN = 1389.19, INV OUT = 1365.35

82 DI=3B, L = 18.0", TOP ELEV = 1395.01

INV 15" IN = 1389.19, INV 15" OUT = 1389.19

83 180 LF = 15" RCP CL III, SLOPE = 11.00%

INV IN = 1408.50, INV OUT = 1389.39

84 DI=3B, L = 16.0", TOP ELEV = 1413.72

INV 15" IN = 1408.50, INV 15" OUT = 1408.50

85 180 LF = 15" RCP CL III, SLOPE = 10.00%

INV IN = 1426.70, INV OUT = 1408.70

86 DI=3B, L = 16.0", TOP ELEV = 1431.72

INV 15" IN = 1426.70, INV 15" OUT = 1426.70

87 30 LF = 15" RCP CL III, SLOPE = 2.00%

INV IN = 1389.99, INV OUT = 1389.39

88 DI=3B, L = 10.0", TOP ELEV = 1395.61

INV 15" OUT = 1395.61

89 30 LF = 15" RCP CL III, SLOPE = 2.00%

INV IN = 1427.50, INV OUT = 1426.90

90 DI=3B, L = 10.0", TOP ELEV = 1431.72

INV 15" OUT = 1431.72

91 38 LF = 15" RCP CL III, SLOPE = 2.00%

INV IN = 1311.50, INV OUT = 1310.75

92 DI=3B, L = 16.0", TOP ELEV = 1315.53

INV 15" OUT = 1315.53

93 DI=3B, L = 18.0", TOP ELEV = 1293.73

INV 18" IN = 1288.45, INV 24" IN = 1287.75

94 INV 30" OUT = 1287.75

95 150 LF = 24" RCP CL III, SLOPE = 6.94%

INV IN = 1298.50, INV OUT = 1287.75

96 24" EW-1PC: INV IN = 1298.50

97 24" EW-1PC: INV IN = 1302.00

98 DI=3B, L = 16.0", TOP ELEV = 1302.00

99 24 LF = 24" RCP CL III, SLOPE = 5.00%

INV IN = 1305.00, INV OUT = 1302.00

100 DI=3B, L = 18.0", TOP ELEV = 1315.53

101 INV 18" IN = 1315.53, INV 24" IN = 1305.00

102 204 LF = 24" RCP CL III, SLOPE = 10.69%

INV IN = 1331.80, INV OUT = 1310.00

103 DI=3B, L = 18.0", TOP ELEV = 1338.53

104 INV 18" IN = 1338.53, INV 24" IN = 1332.00

105 INV 24" OUT = 1331.80

106 331 LF = 24" RCP CL III, SLOPE = 11.78%

INV IN = 1371.00, INV OUT = 1317.00

107 DI=3B, L = 16.0", TOP ELEV = 1376.49

108 INV 18" IN = 1371.50, INV 24" OUT = 1371.00

109 82 LF = 18" RCP CL III, SLOPE = 8.90%

INV IN = 1375.00, INV OUT = 1371.50

110 DI=3B, L = 16.0", TOP ELEV = 1384.13

111 INV 18" IN = 1379.00, INV 18" OUT = 1378.80

112 149 LF = 18" RCP CL III, SLOPE = 9.90%

INV IN = 1383.15, INV OUT = 1378.80

113 DI=3C, L = 8.0", TOP ELEV = 1398.69, INV 15" SHAPIN

INV 18" IN = 1394.00, INV 18" OUT = 1393.80

114 98 LF = 18" RCP CL III, SLOPE = 11.78%

INV IN = 1404.95, INV OUT = 1393.80

115 DI=3B, L = 16.0", TOP ELEV = 1409.74

116 INV 15" IN = 1405.20, INV 18" OUT = 1404.95

117 385 LF = 15" RCP CL III, SLOPE = 9.97%

INV IN = 1451.40, INV OUT = 1405.20

118 DI=3B, L = 14.0", TOP ELEV = 1455.81

119 INV 15" IN = 1451.50, INV 15" OUT = 1451.30

120 193 LF = 15" RCP CL III, SLOPE = 13.00%

INV IN = 1458.80, INV OUT = 1451.50

121 DI=3B, L = 14.0", TOP ELEV = 1464.76, INV 15" SHAPIN

INV 15" IN = 1459.00, INV 15" OUT = 1458.80

122 193 LF = 15" RCP CL III, SLOPE = 13.00%

INV IN = 1463.00, INV 15" OUT = 1458.80

123 DI=3B, L = 18.0", TOP ELEV = 1468.87, INV 15" SHAPIN

INV 15" IN = 1463.20, INV 15" OUT = 1463.00

124 193 LF = 15" RCP CL III, SLOPE = 6.94%

INV IN = 1473.80, INV OUT = 1463.20

125 DI=3B, L = 16.0", TOP ELEV = 1479.50

126 INV 15" IN = 1474.00, INV 15" OUT = 1473.80

127 360 LF = 15" RCP CL III, SLOPE = 5.68%

INV IN = 1476.00, INV OUT = 1474.00

128 DI=3B, L = 16.0", TOP ELEV = 1481.32

129 INV 15" OUT = 1481.32

130 138 LF = 15" RCP CL III, SLOPE = 14.09%

INV IN = 1380.00, INV OUT = 1361.00

131 DI=3C, L = 6.0", TOP ELEV = 1391.50

132 INV 15" OUT = 1391.50

133 30 LF = 15" RCP CL III, SLOPE = 0.50%

INV IN = 1405.35, INV OUT = 1405.20

134 DI=3B, L = 14.0", TOP ELEV = 1409.75

135 INV 15" OUT = 1409.75

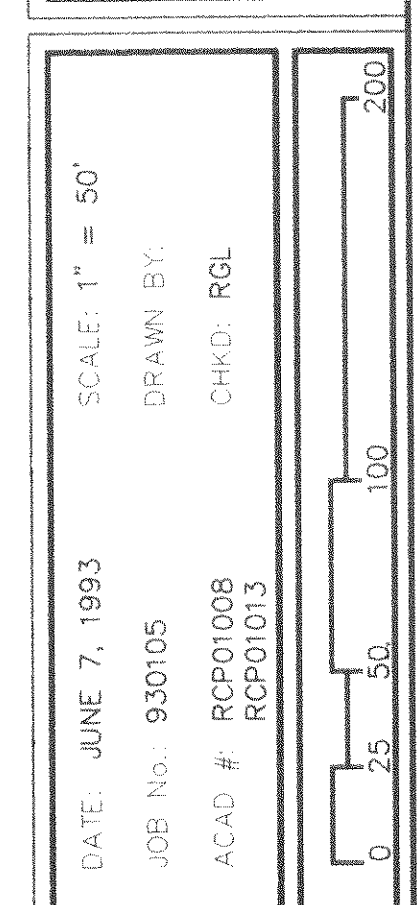
136 38 LF = 15" RCP CL III, SLOPE = 10.00%

INV IN = 1333.13, INV OUT = 1332.75

137 DI=3B, L = 14.0", TOP ELEV = 1338.53

138 INV 15" OUT = 1333.13

139 15" MOD EW-1" WITH DISSIPATOR: ELEV = 1361.00



SHEET NO.
15
18