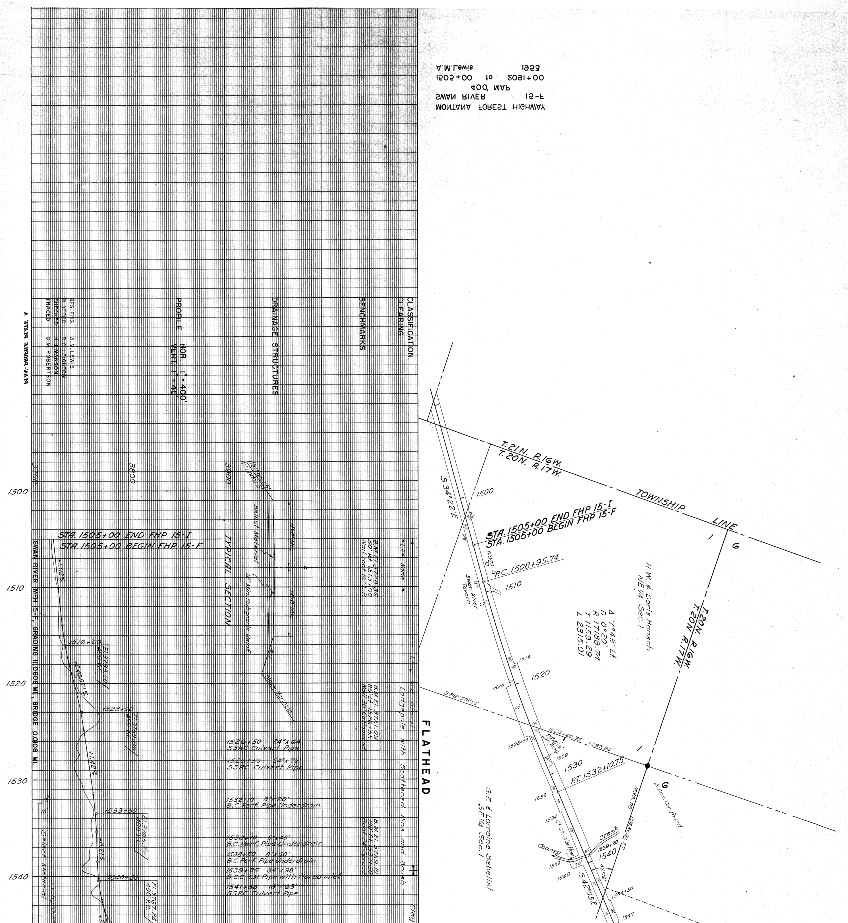
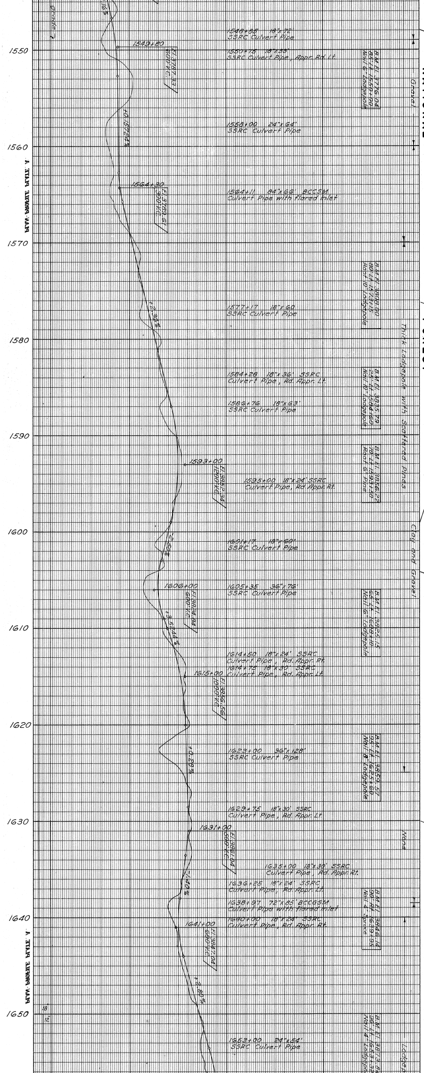
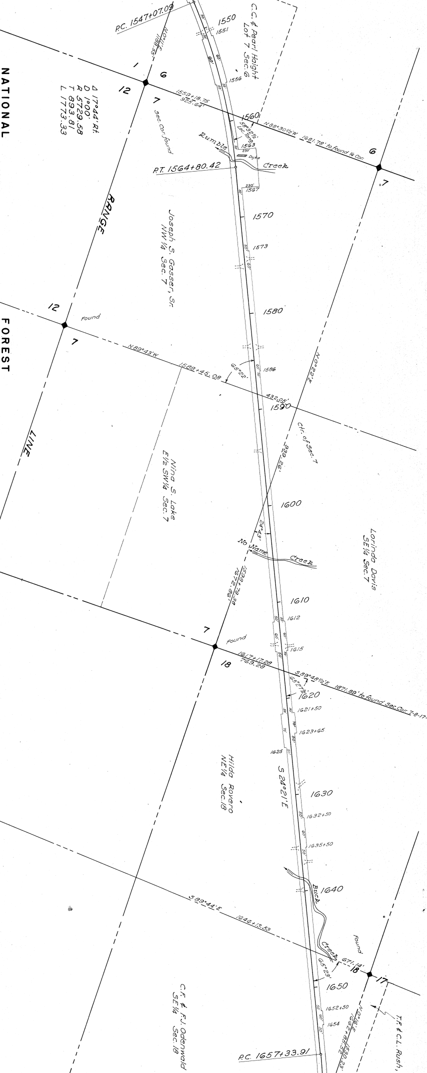
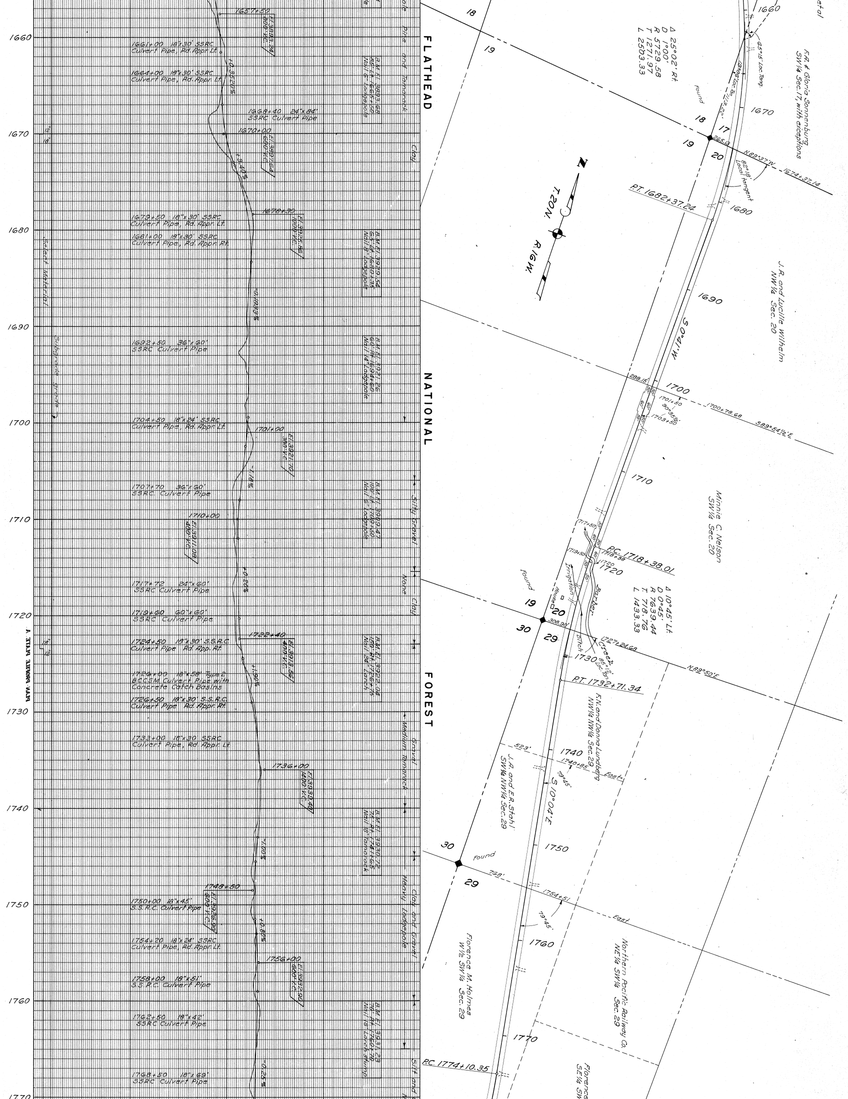
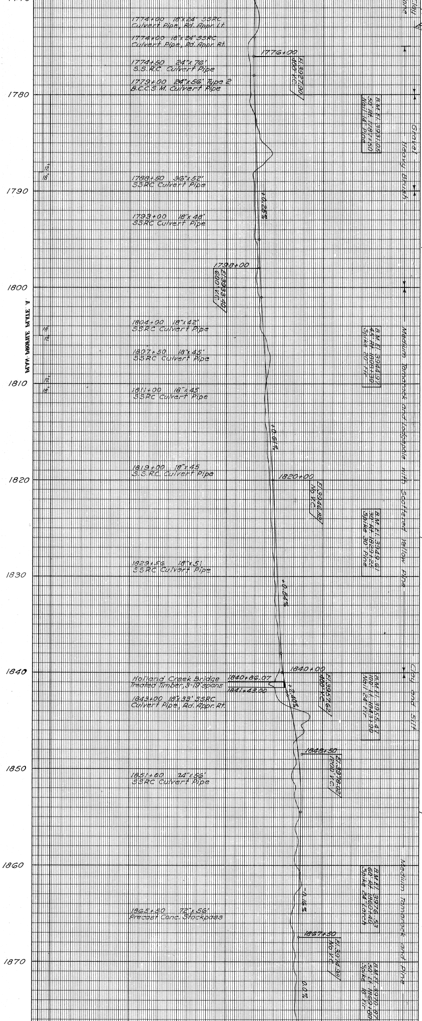
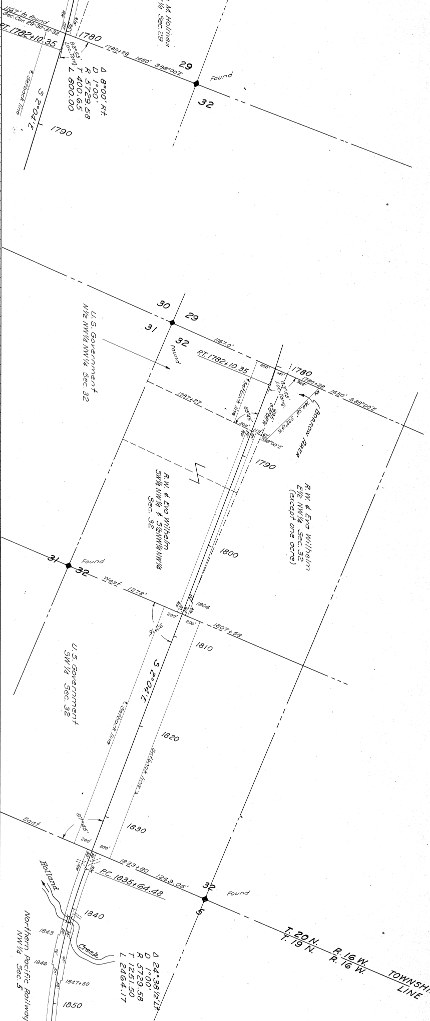

MONTANA FOREST HIGHWAY
SWAN RIVER 15-F
400' MAP
1505+00 to 2091+00
A.M.Lewis 1953
CLASSIFICATION
CLEARING
BENCHMARKS
DRAINAGE STRUCTURES
PROFILE HOR. 1"=400' VERT. 1"=40'
RES. ENG. A.M.LEWIS
PLOTTED R.C.LEIGHTON
CHECKED H.J.MANSON
TRACED G.M.ROBERTSON
3700
3800
3900
1500
1510
1520
1530
1540
STA. 1505+00 END FHP 15-I
STA. 1505+00 BEGIN FHP 15-F
SWAN RIVER MFH 15-F, GRADING 11.0608 MI., BRIDGE 0.0108 MI.
TYPICAL SECTION
Select Material
12" Min. Subgrade Reinf.
14.0' Min.
Slope Variable
None
Clay and Gravel
Lodgepole with Scattered Pine and Brush
1516+00
1523+00
1533+50
1540+50
1526+50 24"x 64' S.S.R.C. Culvert Pipe
1528+50 24"x 78' S.S.R.C. Culvert Pipe
1532+10 8"x 20' B.C. Perf. Pipe Underdrain
1538+70 8"x 40' B.C. Perf. Pipe Underdrain
1538+50 8"x 60' B.C. Perf. Pipe Underdrain
1539+25 84"x 98' S.C.C. S.M. Pipe with Flared inlet
1541+88 18"x 63' S.S.R.C. Culvert Pipe
FLATHEAD
T.21N. R.16W.
T.20N. R.17W.
TOWNSHIP LINE
STA. 1505+00 END FHP 15-I
STA. 1505+00 BEGIN FHP 15-F
S 34°22' E
P.C. 1508+95.74
Bldgs.
Swan River Tavern
H.W. & Doris Haasch
NE 1/4 Sec. 1
Δ 7°43' Lt.
D 0°20'
R 17188.74
T 1159.29
L 2315.01
T.20N. R.16W.
T.20N. R.17W.
1500
1510
1518
1520
1524+60.75
1525+50
1529
1530
P.T. 1532+10.75
1532
1534
1539
1539+20
1540
1544+50
1547
S 89°50 1/2' E
1287.24'
1439.96'
6
1
1/4 Sec. Cor. found
G.F. & Lorraine Sebelist
SE 1/4 Sec. 1
Creek
Coonell
Ch. Ch. to bottom
S 42°05' E

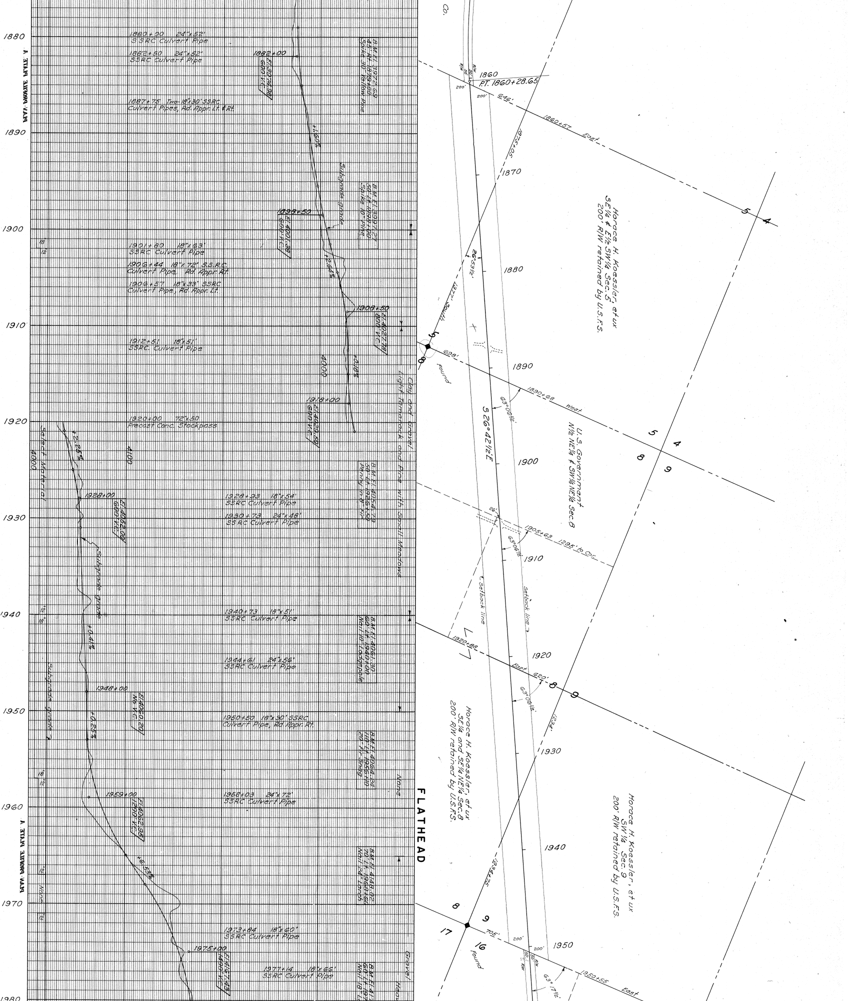

1550
1560
1570
1580
1590
1600
1610
1620
1630
1640
1650
Grade
1549+80
El. 3767.33
600' V.C.
+0.15724%
1564+30
El. 3789.61
300' V.C.
+2.36%
1593+00
El. 3852.34
1200' V.C.
-2.50%
1606+00
El. 3824.84
600' V.C.
+3.5214%
1615+00
El. 3856.56
1000' V.C.
+0.28%
1631+00
El. 3861.04
500' V.C.
-1.40%
1641+00
El. 3847.04
600' V.C.
+2.80%
1548+65 18"x72'
SSRC Culvert Pipe
1550+15 18"x33'
SSRC Culvert Pipe, Appr. Rd. Lt.
1558+00 24"x64'
SSRC Culvert Pipe
1564+11 84"x66' BCCSM
Culvert Pipe with flared inlet
1577+17 18"x60
SSRC Culvert Pipe
1584+28 18"x36' SSRC
Culvert Pipe, Rd. Appr. Lt.
1586+76 18"x63'
SSRC Culvert Pipe
1595+00 18"x24' SSRC
Culvert Pipe, Rd. Appr. Rt.
1601+17 18"x60'
SSRC Culvert Pipe
1605+35 36"x76'
SSRC Culvert Pipe
1614+50 18"x24' SSRC
Culvert Pipe, Rd. Appr. Rt.
1614+75 18"x30' SSRC
Culvert Pipe, Rd. Appr. Lt.
1623+00 36"x128'
SSRC Culvert Pipe
1629+75 18"x30' SSRC
Culvert Pipe, Rd. Appr. Lt.
1635+00 18"x30' SSRC
Culvert Pipe, Rd. Appr. Rt.
1636+25 18"x24' SSRC
Culvert Pipe, Rd. Appr. Lt.
1638+97 72"x85' BCCGSM
Culvert Pipe with flared inlet
1640+00 18"x24' SSRC
Culvert Pipe, Rd. Appr. Rt.
1653+00 24"x54'
SSRC Culvert Pipe
B.M. El. 3776.04
85' Lt. 1559+90
Nail 6" Lodgepole
B.M. El. 3808.00
80' Lt. 1573+15
Nail 10" Lodgepole
B.M. El. 3835.79
25' Lt. 1584+60
Nail 10" Lodgepole
B.M. El. 3856.22
70' Lt. 1593+50
Root 6" Pine
B.M. El. 3825.15
65' Lt. 1608+10
Nail 6" Lodgepole
B.M. El. 3859.57
95' Lt. 1625+60
Nail 8" Lodgepole
B.M. El. 3846.14
90' Rt. 1639+95
Nail 4" Spruce
B.M. El. 3873.84
96' Lt. 1653+33
Nail 4" Lodgepole
Gravel
Thick Lodgepole with Scattered Pines
Clay and Gravel
None
Lodgep
16
1C

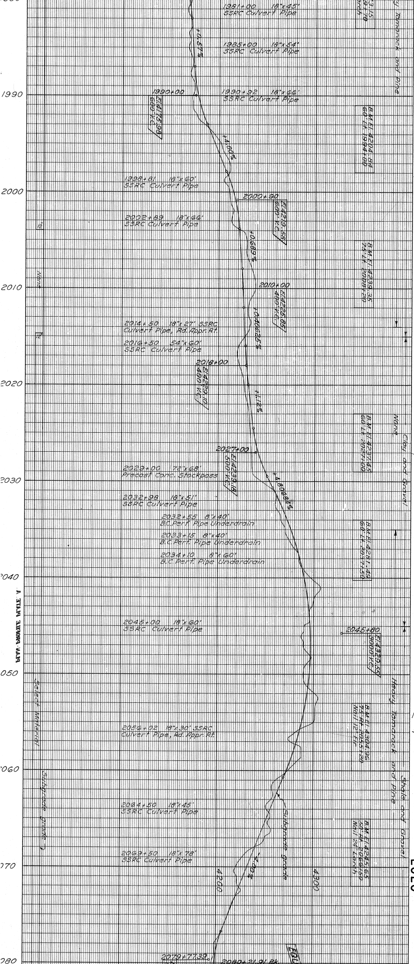

NATIONAL
FOREST
RANGE
LINE
P.C. 1547+07.09
N0°11'E
1188.55'
Δ 17°44' Rt.
D 1°00'
R 5729.58
T 893.81
L 1773.33
C.C. & Pearl Haight
Lot 7 Sec. 6
1550
1551
1556
1
6
12
7
Sec. Cor. found
1559+18.75
925.64'
1560
N88°30½'W
1681.78' to found ¼ Cor.
6
7
58°32½'
Loc. Tang.
Rumble
Creek
Dyke
1563
230'
P.T. 1564+80.42
230'
1567
1570
1573
Joseph S. Gasser, Sr.
NW¼ Sec. 7
1580
12
Found
7
N89°43'W
1588+45.08
65°22'
1586
432.05'
1590
N0°22'E
Ctr. of Sec. 7
939.26'
Nina S. Lake
E½ SW¼ Sec. 7
1600
24°43'
No Name
Creek
1598+78.36
1672.86'
Lorinda Davis
SE¼ Sec. 7
1610
1612
7
Found
1615
1617+17.28
769.28
18
S89°48½'E
1871.89' to found Sec. Cor. 7-8-17-
65°27½'
1620
1621+50
1623+65
1625
Hilda Rovero
NE¼ Sec. 18
S 24°21'E
1630
1632+50
1635+50
Buck
1640
S89°44'E
1646+13.53
Creek
Found
671.14'
65°23'
18
17
1650
1652+50
1654
N0°16'E
1662+85.52
1530.23'
C.F. & F.J. Odenwald
SE¼ Sec. 18
P.C. 1657+33.91
T.F. & C.L. Rush,
50'
60'
70'
80'

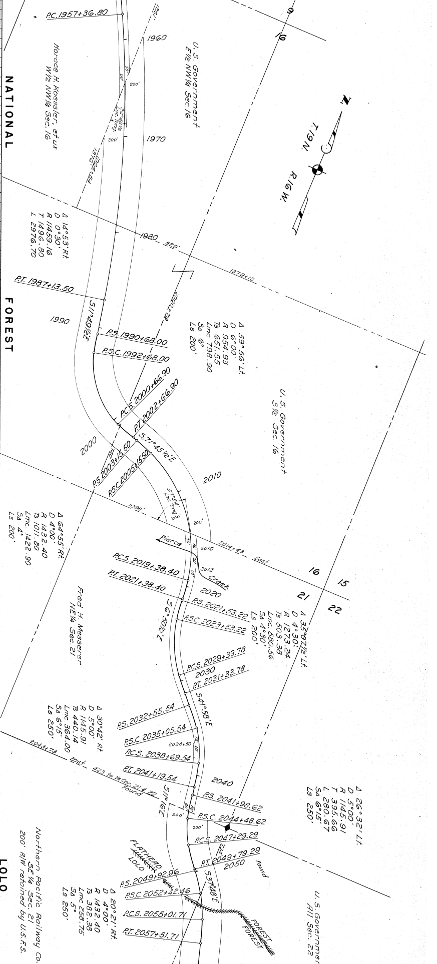

1660
1670
1680
1690
1700
1710
1720
1730
1740
1750
1760
1770
Select Material
Subgrade grade
12"
18"
1657+50
El. 3889.24
800' V.C.
1661+00 18"x30' SSRC Culvert Pipe, Rd. Appr. Lt.
1664+00 18"x30' SSRC Culvert Pipe, Rd. Appr. Lt.
+0.3520%
1668+40 24"x84' SSRC Culvert Pipe
1670+00
El. 3897.64
600' V.C.
+3.40%
1678+30
El. 3925.86
1000' V.C.
1679+50 18"x30' SSRC Culvert Pipe, Rd. Appr. Lt.
1681+00 18"x30' SSRC Culvert Pipe, Rd. Appr. Rt.
-0.1883%
1692+50 36"x60' SSRC Culvert Pipe
1701+00
El. 3921.70
300' V.C.
1704+50 18"x24' SSRC Culvert Pipe, Rd. Appr. Lt.
-1.18%
1707+70 36"x60' SSRC. Culvert Pipe
1710+00
El. 3911.08
400' V.C.
+0.20%
1717+72 24"x60' SSRC Culvert Pipe
1719+60 60"x60' SSRC Culvert Pipe
1722+40
El. 3913.56
400' V.C.
1724+50 18"x30' S.S.R.C. Culvert Pipe Rd. App. Rt.
+1.90%
1726+00 18"x58' Type 2 BCCSM Culvert Pipe with Concrete Catch Basins
1726+50 18"x30' S.S.R.C. Culvert Pipe Rd. Appr. Rt.
1733+00 18"x30' SSRC Culvert Pipe, Rd. Appr. Lt.
1736+00
El. 3939.40
1400' V.C.
-1.00%
1748+50
El. 3926.90
600' V.C.
1750+00 18"x45' S.S.R.C. Culvert Pipe
+0.80%
1754+20 18"x24' SSRC Culvert Pipe, Rd. Appr. Lt.
1756+00
El. 3932.90
600' V.C.
1758+00 18"x51' S.S.R.C. Culvert Pipe
1762+50 18"x42' SSRC Culvert Pipe
-0.25%
1768+50 18"x69' SSRC Culvert Pipe
B.M. El. 3893.68 85' Lt. 1665+50 Nail 6" Lodgepole
B.M. El. 3929.54 65' Lt. 1680+34 Nail 8" Lodgepole
B.M. El. 3921.26 60' Rt. 1694+60 Nail 14" Lodgepole
B.M. El. 3909.47 100' Lt. 1709+50 Nail 6" Lodgepole
B.M. El. 3922.04 150' Rt. 1726+75 Nail 24" Larch
B.M. El. 3930.72 75' Rt. 1741+65 Nail 18" Tamarack
B.M. El. 3931.23 70' Rt. 1760+70 Nail 18" Larch Stump
Pine and Tamarack
Clay
Silty Gravel
None
Clay
Medium Tamarack
Gravel
Heavy Lodgepole
Clay and Gravel
Silt and
FLATHEAD
NATIONAL
FOREST
18
19
17
20
30
29
1660
1670
1680
1690
1700
1710
1720
1730
1740
1750
1760
1770
et al
Δ 25°02' Rt.
D 1°00'
R 5729.58
T 1271.97
L 2503.33
65°15' Loc. Tang.
19°06' Loc. Tan. 1113.22'
Found
265.13
N.89°37'W.
1674+37.14
82°18' Local tangent
F.A. & Gloria Sonnenburg SW1/4 Sec. 17, with exceptions
N
T. 20 N.
R. 16 W.
P.T. 1682+37.24
J.R. and Lucille Wilhelm NW1/4 Sec. 20
S 0°41'W
288.15'
50'
60'
1701+50
90°35½'
1703+50
1700+78.68
S89°54½'E
Minnie C. Nelson SW1/4 Sec. 20
1717+50
1719+50
P.C. 1718+38.01
1718+38
Irrigation
House
Barber
Ditch
Creek
Δ 10°45' Lt.
D 0°45'
R 7639.44
T 718.76
L 1433.33
308.90'
1727+24.68
85°1/2' Loc. Tan.
N.89°50'E
P.T. 1732+71.34
F.N. and Donna Lundberg NW1/4 NW1/4 Sec. 29
523'
1740+85
East
79°45'
S 10°04'E
J.A. and E.R. Stahl SW1/4 NW1/4 Sec. 29
768'
1754+51
East
79°45'
Florence M. Holmes W1/2 SW1/4 Sec. 29
Northern Pacific Railway Co. NE1/4 SW1/4 Sec. 29
P.C. 1774+10.35
Florence SE1/4 SW

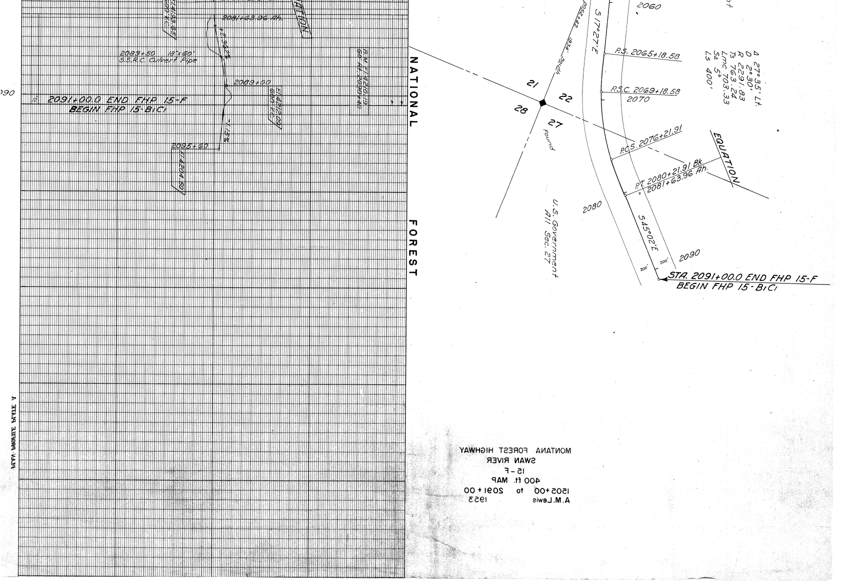

1780
1790
1800
1810
1820
1830
1840
1850
1860
1870
12"
18"
18"
12"
12"
18"
1774+00 18"x24" SSRC Culvert Pipe, Rd. Appr. Lt.
1774+00 18"x24" SSRC Culvert Pipe, Rd. Appr. Rt.
1774+50 24"x76' S.S.R.C. Culvert Pipe
1779+00 24"x56' Type 2 B.C.C.S.M. Culvert Pipe
1776+00
El. 3927.90
400' V.C.
B.M. El. 3931.05
50' Rt. 1787+50
Nail 14" Pine
1788+50 36"x52' SSRC Culvert Pipe
+0.25%
1793+00 18"x48' SSRC Culvert Pipe
1798+00
El. 3933.40
600' V.C.
1804+00 18"x42' SSRC Culvert Pipe
1807+50 18"x45' SSRC Culvert Pipe
B.M. El. 3944.97
45' Rt. 1808+30
Spike 20" Fir
1811+00 18"x45 SSRC Culvert Pipe
+0.61%
1819+00 18"x45 S.S.R.C. Culvert Pipe
1820+00
El. 3946.82
No V.C.
B.M. El. 3949.61
30' Rt. 1829+24
Spike 30" Pine
1829+56 18"x51' SSRC Culvert Pipe
+0.54%
Holland Creek Bridge Treated Timber, 3-19' spans
1840+86.07
1841+43.00
1840+00
El. 3957.62
400' V.C.
+2.40%
B.M. El. 3955.47
100' Lt. 1843+90
Nail 24" Fir
1843+00 18"x33' SSRC Culvert Pipe, Rd. Appr. Rt.
1848+50
El. 3978.02
1200' V.C.
1851+60 24"x56' SSRC Culvert Pipe
B.M. El. 3976.53
60' Rt. 1860+40
Spike 24" Larch
-0.16%
1865+50 72"x56' Precast Conc. Stockpass
1867+50
El. 3974.98
No V.C.
B.M. El. 3970.87
50' Lt. 1869+80
Spike 18" Fir
0.0%
Clay
Gravel
Heavy Brush
Medium Tamarack and Lodgepole with Scattered Yellow Pine
Clay and Silt
Medium Tamarack and Pine


1167' to found Sec. Cor. 29-30-31-32
PT. 1782+10.35
R/W
50'
50'
R/W
1780
83°55' Loc. Tang.
1780+28
1450' S88°00'E
M. Holmes
1/4 Sec. 29
29
32
Found
Δ 8°00' Rt.
D 1°00'
R 5729.58
T 400.65
L 800.00
Setback line
S 2°04' E
1790
30
29
31
32
Found
U.S. Government
N1/2 NW1/4 NW1/4 Sec. 32
1167.0'
PT. 1782+10.35
200'
141'
1780
364'
1780+28
1450' S88°00'E
83°55' Loc. Tang.
Setback line
1787+27
85°45'
200'
S08°08'W 695'
744.38' S22°19'W
113'
67'
S88°00'E
R/W
50'
50'
BORROW AREA
1790
R.W. & Eva Wilhelm
SW1/4 NW1/4 & S1/2 NW1/4 NW1/4 Sec. 32
R.W. & Eva Wilhelm
E1/2 NW1/4 Sec. 32
(except one acre)
1800
31
32
Found
West
1278'
R/W
50'
50'
R/W
1806
200'
200'
92°15'
1807+58
1810
S 2°04' E
U.S. Government
SW1/4 Sec. 32
Setback line
1820
Setback line
East
87°45'
1830
200'
200'
50'
50'
R/W
R/W
1833+80
1269.05'
P.C. 1835+64.48
32
5
Found
Holland
Creek
1840
1843
50'
50'
1846
70'
60'
50'
50'
1847+50
1850
Δ 24°38½' Lt.
D 1°00'
R 5729.58
T 1251.50
L 2464.17
Northern Pacific Railway
NW1/4 Sec. 5
T. 20 N.
T. 19 N.
R. 16 W.
R. 16 W.
TOWNSHI
LINE


PLAN-PROFILE PLATE A
1880
1890
1900
1910
1920
1930
1940
1950
1960
1970
1980
1880+00 24"x52' SSRC Culvert Pipe
1882+50 24"x52' SSRC Culvert Pipe
1882+00
El. 3974.98 600' V.C.
B.M. El. 3972.69 45' Rt. 1879+00 Spike 30" Yellow Pine
1887+75 Two-18"x30' SSRC Culvert Pipes, Rd. Appr. Lt. & Rt.
+1.60%
Subgrade grade
B.M. El. 3997.27 50' Lt. 1898+00 Spike 10" Pine
1898+50
El. 4001.38 600' V.C.
1901+80 18"x63' SSRC Culvert Pipe
1906+44 18"x72' S.S.R.C. Culvert Pipe, Rd. Appr. Rt.
1906+57 18"x33' SSRC Culvert Pipe, Rd. Appr. Lt.
+2.04%
1908+50
El. 4027.78 800' V.C.
1912+51 18"x51' SSRC. Culvert Pipe
4000
+0.18%
1918+00
El. 4029.50 600' V.C.
1920+00 72"x50 Precast Conc. Stockpass
Clay and Gravel
Light Tamarack and Pine with Small Meadows
Select Material
4000
4100
+2.25%
1928+00
El. 4062.00 600' V.C.
1928+93 18"x54' SSRC Culvert Pipe
1930+73 24"x48' SSRC Culvert Pipe
B.M. El. 4054.79 50' Lt. 1926+50 Penny in 8" Fir.
Subgrade grade
1940+73 18"x51' SSRC Culvert Pipe
B.M. El. 4061.30 60' Lt. 1940+00 Nail 10" Lodgepole
+0.41%
1944+61 24"x56' SSRC Culvert Pipe
1948+00
El. 4060.20 No V.C.
Subgrade grade
+0.25%
1950+50 18"x30' SSRC Culvert Pipe, Rd. Appr. Rt.
B.M. El. 4064.24 110' Lt. 1956+10 20" Fir Snag
None
1959+00
El. 4062.95 1200' V.C.
1958+03 24"x72' SSRC Culvert Pipe
+6.53%
B.M. El. 4148.02 70' Lt. 1968+66 Nail 24" Larch
None
1973+84 18"x60' SSRC Culvert Pipe
1975+00
El. 4167.43 1400' V.C.
1977+14 18"x66' SSRC Culvert Pipe
B.M. El. 41 60' Lt. 197 Nail 18" L
Gravel
Hea
12
18
FLATHEAD
Co.
R/W
1860
P.T. 1860+28.65
200'
646'
1860+57 East
1870
1861+50
5 4
Horace H. Koessler, et ux SE1/4 & E1/2 SW1/4 Sec. 5 200' R/W retained by U.S.F.S.
26°53'1/2"
1880
1877 South
5 6 8
698'
Found
1890
1890+68 West
63°00'1/2"
S26°42'1/2"E
5 4 8 9
U.S. Government N1/2 NE1/4 & SW1/4 NE1/4 Sec. 8
1900
26'
1905+63 1295' to Cor.
63°06'1/2"
1910
℄ Setback line
Setback line
1920
1920+88
East 620'
8 9
63°0'1/2"
1234'
1930
Horace H. Koessler, et ux SE1/4 and SE1/4 NE1/4 Sec. 8 200' R/W retained by U.S.F.S.
Horace H. Koessler, et ux SW1/4 Sec. 9 200' R/W retained by U.S.F.S.
1940
1934+55
8 9 17 16
705'
Found
200'
1950
1950+55 East
63°17'1/2"


1981+00 18"x45' SSRC Culvert Pipe
1985+00 18"x54' SSRC Culvert Pipe
1990
1990+00
El.4175.90
600' V.C.
1990+92 18"x66' SSRC Culvert Pipe
B.M. El.4204.84
60' Lt. 1994+00
+1.00%
1998+81 18"x60' SSRC Culvert Pipe
2000
2000+90
El.4219.58
600' V.C.
2002+89 18"x66' SSRC Culvert Pipe
+0.689%
B.M. El.4239.35
75' Lt. 2008+20
2010
2010+00
El.4225.85
400' V.C.
2014+50 18"x27' SSRC Culvert Pipe, Rd. Appr. Rt.
2016+50 54"x60' SSRC Culvert Pipe
2018+00
El.4229.10
400' V.C.
2020
+1.12%
B.M. El.4237.45
60' Lt. 2027+00
2027+00
2029+00 72"x68" Precast Conc. Stockpass
El.4229.18
500' V.C.
2030
+4.80%
2032+98 18"x51' SSRC Culvert Pipe
2032+55 8"x40' B.C.Perf. Pipe Underdrain
2033+15 8"x40' B.C.Perf. Pipe Underdrain
2034+10 8"x60' B.C.Perf. Pipe Underdrain
B.M. El.4281.49
60' Lt. 2037+50
2040
2045+00 18"x60' SSRC Culvert Pipe
2045+80
El.4320.55
900' V.C.
2050
B.M. El.4304.96
Nail 12" Fir
2056+02 18"x30' SSRC Culvert Pipe, Rd. Appr. Rt.
2060
2064+50 18"x45' SSRC Culvert Pipe
Subgrade grade
B.M. El.4245.65
Nail 24" Larch
2069+50 18"x78' SSRC Culvert Pipe
2070
4200
4300
2079+77.39
2080+21.91 Bk.
2080
Select Material
Subgrade grade
None
Clay and Gravel
Heavy Tamarack and Pine
Shale and Gravel
Tamarack and Pine
NATIONAL
FOREST
LOLO


P.C. 1957+36.80
1960
1970
1980
1990
2000
2010
2020
2030
2040
2050
U.S. Government E1/2 NW1/4 Sec.16
Horace H. Koessler, et ux W1/2 NW1/4 Sec.16
T.19N. R.16W.
N
9
16
200'
829'
1979+13
Δ 14°53' Rt.
D 0°30'
R 11459.16
T 1496.80
L 2976.70
P.T. 1987+13.50
S11°49 1/2'E
Δ 59°56' Lt.
D 6°00'
R 954.93
Ts 651.55
Lmc 798.90
SΔ 6°
Ls 200'
P.S. 1990+68.00
P.S.C. 1992+68.00
P.C.S. 2000+66.90
P.T. 2002+66.90
P.S. 2003+15.50
P.S.C. 2005+15.50
S71°45 1/2'E
U.S. Government S1/2 Sec. 16
1098'
Δ 64°55' Rt.
D 4°00'
R 1432.40
Ts 1011.80
Lmc 1422.90
SΔ 4°
Ls 200'
Pierce Creek
2014+43
East
16 15
21 22
P.C.S. 2019+38.40
P.T. 2021+38.40
S6°50 1/2'E
P.S. 2021+53.22
P.S.C. 2023+53.22
Δ 35°27 1/2' Lt.
D 4°30'
R 1273.24
Ts 503.38
Lmc 580.56
SΔ 4°30'
Ls 200'
Fred H. Messerer NE1/4 Sec. 21
P.C.S. 2029+33.78
P.T. 2031+33.78
S41°58'E
P.S. 2032+55.54
P.S.C. 2035+05.54
2034+50
P.C.S. 2038+69.54
P.T. 2041+19.54
Δ 30°42' Rt.
D 5°00'
R 1145.91
Ts 440.14
Lmc 364.00
SΔ 6°15'
Ls 250'
2043+73
East 423 to 1/4 Cor. 21 & 22 Found
S11°16'E
P.S. 2041+98.62
P.S.C. 2044+48.62
P.C.S. 2047+29.29
P.T. 2049+79.29
Found
Δ 26°32' Lt.
D 5°00'
R 1145.91
T 395.66
L 280.67
SΔ 6°15'
Ls 250'
FLATHEAD LOLO
P.S. 2049+92.96
P.S.C. 2052+42.46
P.C.S. 2055+01.71
P.T. 2057+51.71
S37°48'E
Δ 20°21' Rt.
D 4°00'
R 1432.40
Ts 382.38
Lmc 258.75
SΔ 5°
Ls 250'
Northern Pacific Railway Co. SE1/4 Sec. 21
200' R/W retained by U.S.F.S.
U.S. Government All Sec. 22
FOREST FOREST


2081+63.96 Ah.
El.4193.65
600' V.C.
ATION
2083+50 18"x60'
S.S.R.C. Culvert Pipe
+2.362%
B.M. El.4210.19
60' Rt. 2090+40
2089+00
El.4212.09
600' V.C.
090
12
2091+00.0 END FHP 15-F
BEGIN FHP 15-BiCi
-1.15%
2095+60
El.4204.50
NATIONAL
FOREST
2060
S17°27'E
2052+42
1934' South
P.S. 2065+18.58
P.S.C. 2069+18.58
2070
Δ 27°35' Lt.
D 2°30'
R 2291.83
Ts 763.24
Lmc 703.33
SΔ 5°
Ls 400'
21
22
28
27
Found
P.C.S. 2076+21.91
EQUATION
P.T. 2080+21.91 Bk.
= 2081+63.96 Ah.
2080
U.S. Government
All Sec. 27
S45°02'E
2090
200'
200'
STA. 2091+00.0 END FHP 15-F
BEGIN FHP 15-BiCi