DAFTAR PUSTAKA

[1] Hinrichsen, D. (1998). *Coastal Waters of the World: Trends, Threats, and Strategies. Washington*, D.C. Island Press.

[2] Nakamura, T. and Ono, T. (1990) :*Estimation method of two-dimensional wave diffraction around an array of offshore breakwaters including wave directional characteristics. Proceedings of Coastal Engineering in Japan*, Vol.37, pp.534-538

[3] Sawaragi, T. (1995): *Coastal Engineering-Waves, Beaches, Wave-Structure Interactions. Developments in Geotechnical Engineering*, 78. Elsevier Science BV.

[4] Young C. Kim (2015). *Design of Coastal Structures and Sea Defenses, Series on Coastal and Ocean Engineering Practice -Vol. 2*, World Scientific Publishing Co. Pte. Ltd.

[5] Triatmodjo, B. (2014). *Perencanaan Pelabuhan*. Beta Offset Yogyakarta.

[6] Goda, Y. (2000). *Random Seas and Design of Maritime Structure, Advanced Series on Ocean Engineering-Vol. 15*, World Scientific Publishing Co. Pte. Ltd.

[7] Dean, R.G., Dalrymple, R.A. (1991). *Water Wave Mechanics for Engineers and Scientists*, World Scientific Publishing Company

S.D and Lee, H.J. (2010). *Boundary element modelling of wave diffraction interaction with wave-offshore structure and dredged region. Polish aritime Research*. 17. Hal. 67-71.

[9] Isaacson, M.Q. (1978): *Vertical cylinders of arbitrary section in waves*, J. Waterway,

[10] www.digilib.its.ac.id/public/ITS-paper-28138-3108100703-Paper.pdf diakses pada Selasa 9 Juni 2020

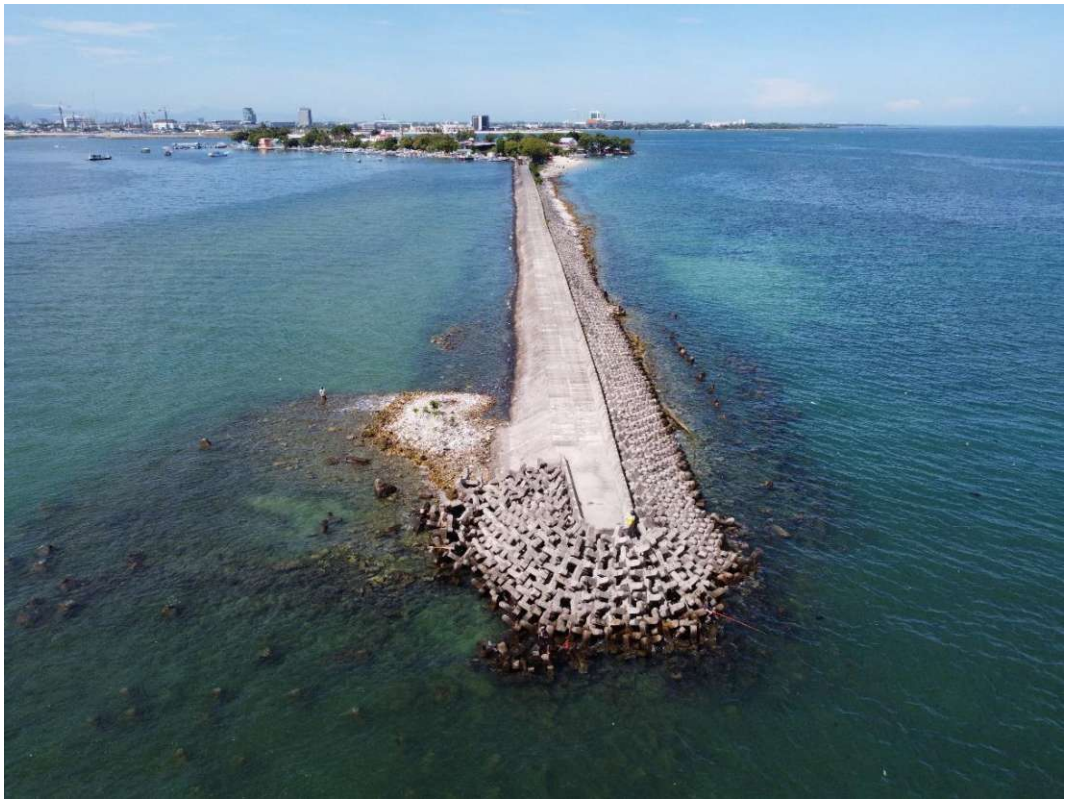
[11] Mandi, N. B. R. (2015) *Pelabuhan, Perencanaan dan Perancangan Konstruksi Bangunan Laut dan Pantai,* Denpasar:Arti Foundation

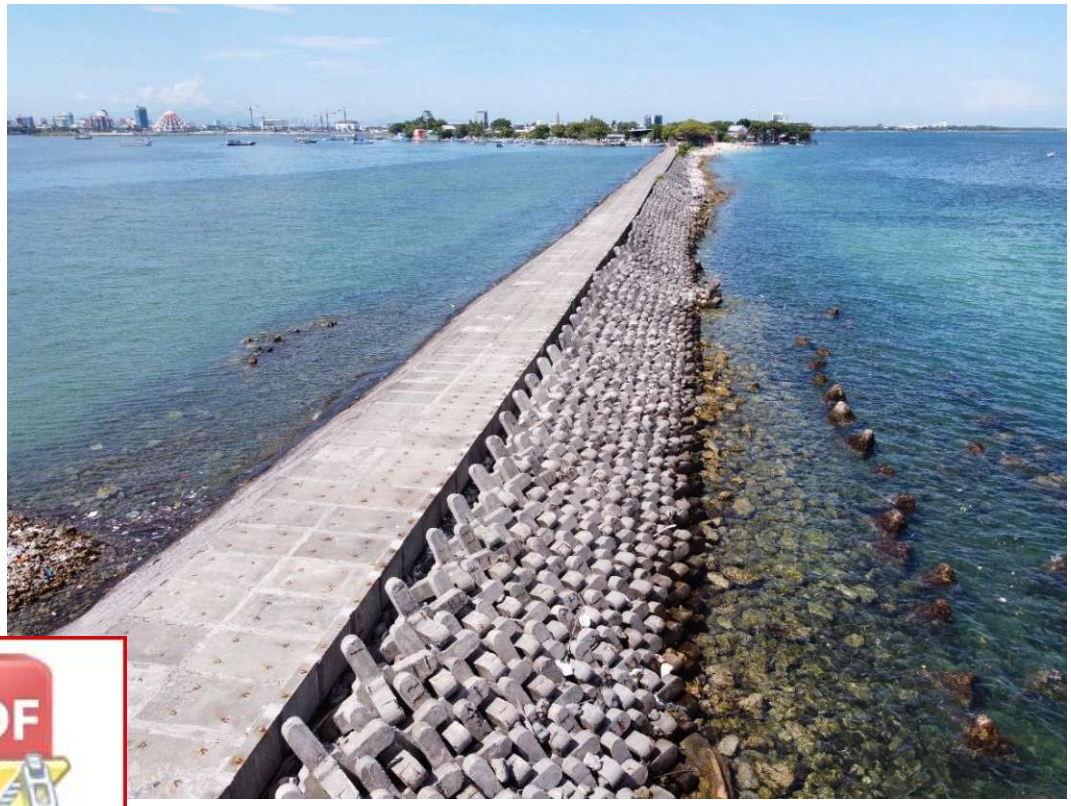
L A M P I R A N

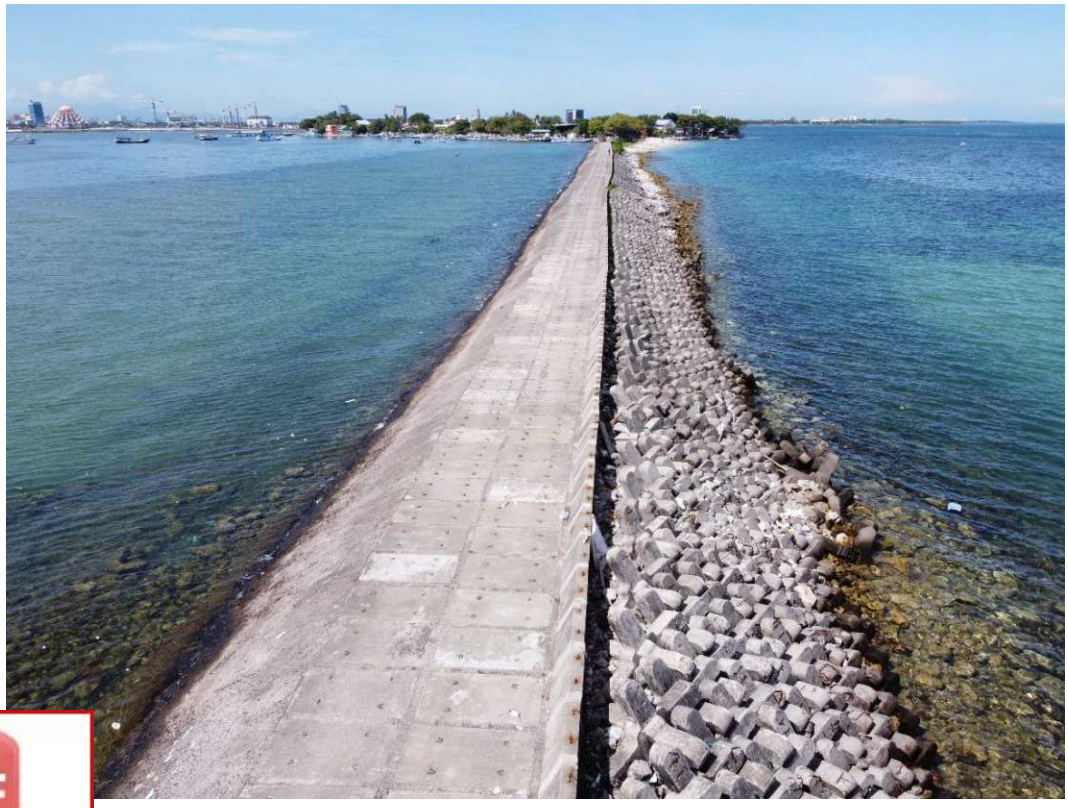
LAMPIRAN A

KONDISI BANGUNAN PELINDUNG PANTAI DI PELABUHAN SOEKARNO HATTA

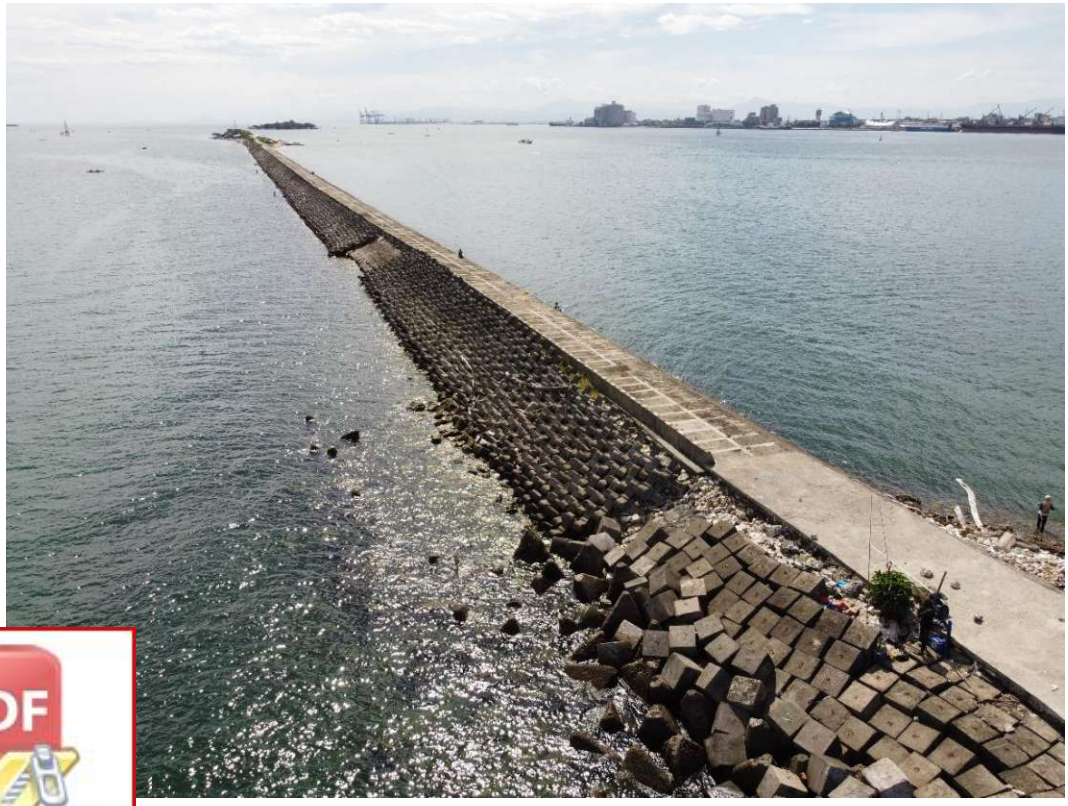
A. PULAU LAE LAE

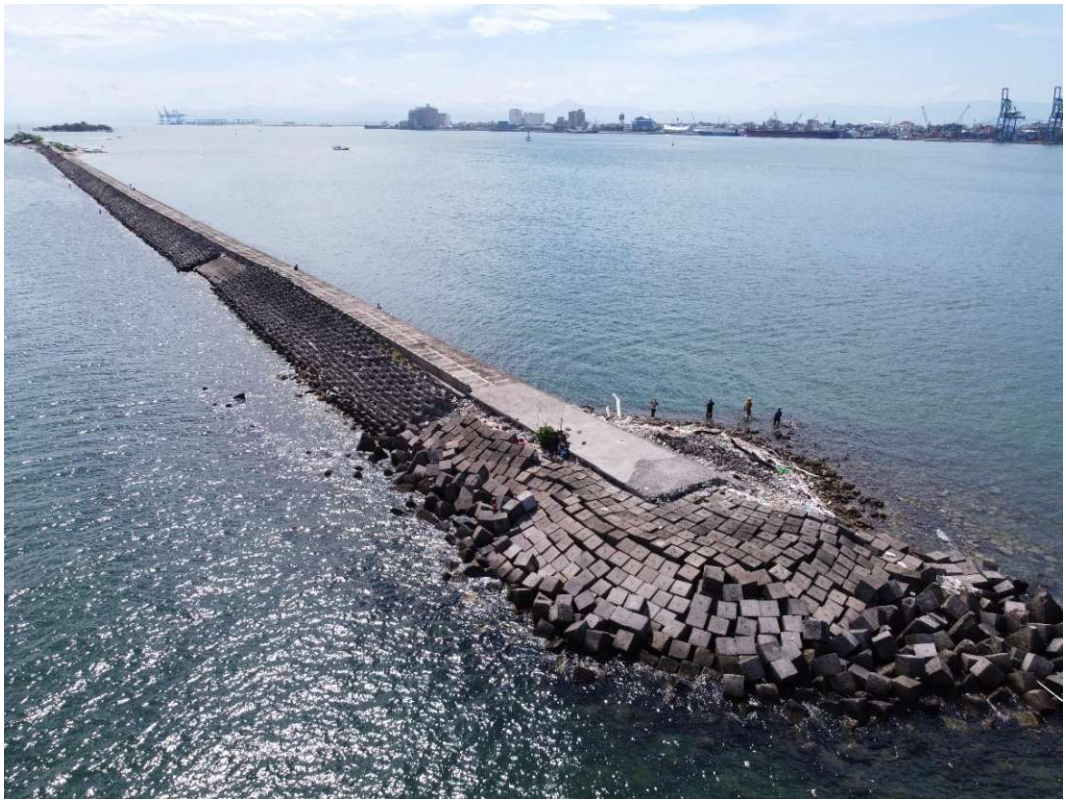






B. PULAU GUSUNG





LAMPIRAN B

INPUT KORDINAT BANGUNAN PEMECAH GELOMBANG DAN PELABUHAN

```
     8.0
    15.0       9.8     3     1
   38     6
-1346.1   -1284.0
-1362.7   -1210.6
-1424.7   -1181.4
-1441.3   -1185.5
-1497.6   -1160.9
-1569.4   -1111.9
-1632.0   -1070.7
-1681.8   -1033.3
-1729.9    -979.7
-1753.5    -906.8
-1771.3    -842.7
-1790.8    -773.9
-1810.5    -707.8
-1835.3    -622.9
-1850.6    -564.0
-1863.0    -519.8
-1863.4    -507.3
-1872.9    -500.5
-1881.6    -504.9
-1886.6    -518.0
-1874.7    -575.0
-1859.5    -634.8
-1831.2    -716.4
-1814.8    -777.2
-1792.2    -857.1
-1787.3    -950.3
-1773.3   -1037.9
-1752.5   -1095.8
-1793.5   -1162.3
-1714.8   -1216.1
-1617.2   -1276.9
-1605.9   -1309.2
-1597.1   -1315.5
-1573.9   -1312.6
-1509.2   -1357.3
-1421.7   -1401.4
-1385.7   -1348.3
-1346.1   -1284.0
    1    9      0.300    0.000     0
    9   25      0.500    0.000     1
   25   28      0.300    0.000     0
   28   30      0.500    0.000     0
   30   36      0.300    0.000     0
   36   38      0.500    0.000     0
   31     2
-1295.0    206.5
-1250.4    255.7
-1215.3    319.5
-1175.8    383.1
-1149.6    441.6
-1144.0    467.1
-1098.9    528.5
-1065.7    555.6
-1054.4    665.9
-1053.9    686.5
-1039.3    702.3
-1045.8    718.3
-1057.5    720.1
```

```
-1133.6    636.4
-1159.8    567.2
-1180.2    490.2
-1218.6    405.5
-1260.2    318.2
-1304.2    227.8
-1345.1    143.3
-1392.7     48.0
-1447.9    -63.6
-1491.6   -151.1
-1520.5   -211.9
-1518.4   -228.2
-1497.4   -226.2
-1495.8   -203.7
-1445.8    -96.8
-1393.0     11.3
-1343.7    112.4
-1295.1    206.5
   1  17     0.300    0.000     0
  17  31     0.500    0.000     2
  10     2
 -616.6   1330.2
 -538.6   1364.1
 -523.7   1400.8
 -569.5   1432.6
 -630.9   1414.8
 -668.4   1377.7
 -679.8   1318.9
 -673.2   1296.6
 -655.9   1293.9
 -616.6   1330.2
   1     6    0.300    0.000     0
   6    10    0.500    0.000     0
  32     3
  719.4   1583.5
  436.0   1524.3
  388.9   1414.6
  349.7   1409.6
  294.8   1166.5
  237.1    902.1
  175.2    621.6
   90.0    240.8
   55.5     85.7
  119.2     69.7
  132.3    133.2
  201.4    117.1
  179.9     22.9
  164.4     26.4
  150.7    -36.4
    0.0      0.0
 -148.7   -225.9
 -344.1   -524.7
 -453.2   -690.8
 -550.3   -840.4
 -523.5   -858.8
 -440.1   -733.0
 -300.8   -758.9
 -235.0   -663.3
 -193.9   -672.2
 -236.8  -1029.0
 -160.2  -1271.5
```

```
  -614.3 -1406.3
 -1025.1 -1635.4
 -1134.3 -2097.6
 -1128.3 -2151.3
 -1490.3 -2513.9
     1    29    0.500    0.000      0
    29    31    0.300    0.000      0
    31    33    0.500    0.000      0
     4
 -1490.3 -2513.9
 -4120.0 -2513.9
 -4120.0  1583.5
   719.4  1583.5
 -3500.0 -2513.9     15.0   400   480
```

LAMPIRAN C

OUTPUT .OT6 (.IPT)

```
    15.0        9.8     3     1
307
 -1346.1   -1284.0   -1347.0   -1279.9   -1348.9   -1271.7
 -1350.7   -1263.4   -1352.6   -1255.2   -1354.4   -1247.0
 -1356.2   -1238.8   -1358.1   -1230.6   -1359.9   -1222.3
 -1361.8   -1214.1   -1362.7   -1210.0   -1366.6   -1208.2
 -1374.3   -1204.6   -1382.1   -1200.9   -1389.8   -1197.3
 -1397.6   -1193.7   -1405.3   -1190.1   -1413.1   -1186.4
 -1420.8   -1182.8   -1424.7   -1181.0   -1428.8   -1182.0
 -1437.2   -1184.0   -1441.3   -1185.0   -1445.3   -1183.2
 -1453.4   -1179.6   -1461.4   -1176.1   -1469.5   -1172.5
 -1477.5   -1168.9   -1485.5   -1165.4   -1493.6   -1161.8
 -1497.6   -1160.0   -1501.2   -1157.6   -1508.4   -1152.7
 -1515.6   -1147.8   -1522.7   -1142.8   -1529.9   -1137.9
 -1537.1   -1133.0   -1544.3   -1128.1   -1551.5   -1123.2
 -1558.6   -1118.3   -1565.8   -1113.4   -1569.4   -1111.0
 -1572.9   -1108.7   -1579.8   -1104.2   -1586.8   -1099.6
 -1593.7   -1095.1   -1600.7   -1090.5   -1607.7   -1085.9
 -1614.6   -1081.4   -1621.6   -1076.8   -1628.5   -1072.3
 -1632.0   -1070.0   -1635.6   -1067.4   -1642.7   -1062.1
 -1649.8   -1056.8   -1656.9   -1051.5   -1664.0   -1046.2
 -1671.1   -1040.9   -1678.2   -1035.6   -1681.8   -1033.0
 -1684.5   -1030.0   -1689.8   -1024.0   -1695.2   -1018.0
 -1700.5   -1012.0   -1705.9   -1006.0   -1711.2   -1000.0
 -1716.5    -994.0   -1721.9    -988.0   -1727.2    -982.0
 -1729.9    -979.0   -1731.2    -974.9   -1733.8    -966.8
 -1736.5    -958.7   -1739.1    -950.6   -1741.7    -942.5
 -1744.3    -934.4   -1746.9    -926.3   -1749.6    -918.2
 -1752.2    -910.1   -1753.5    -906.0   -1754.6    -902.0
 -1756.8    -894.0   -1759.1    -886.0   -1761.3    -878.0
 -1763.5    -870.0   -1765.7    -862.0   -1768.0    -854.0
 -1770.2    -846.0   -1771.3    -842.0   -1772.5    -837.7
 -1775.0    -829.1   -1777.4    -820.4   -1779.8    -811.8
 -1782.3    -803.2   -1784.7    -794.6   -1787.1    -785.9
 -1789.6    -777.3   -1790.8    -773.0   -1792.0    -768.9
 -1794.5    -760.6   -1797.0    -752.4   -1799.4    -744.1
 -1801.9    -735.9   -1804.3    -727.6   -1806.8    -719.4
 -1809.3    -711.1   -1810.5    -707.0   -1811.6    -703.1
 -1813.9    -695.4   -1816.1    -687.7   -1818.4    -680.0
 -1820.6    -672.2   -1822.9    -664.5   -1825.2    -656.8
 -1827.4    -649.0   -1829.7    -641.3   -1831.9    -633.6
 -1834.2    -625.9   -1835.3    -622.0   -1836.4    -617.9
 -1838.6    -609.6   -1840.8    -601.3   -1842.9    -593.0
 -1845.1    -584.7   -1847.3    -576.4   -1849.5    -568.1
 -1850.6    -564.0   -1851.8    -559.5   -1854.3    -550.5
 -1856.8    -541.5   -1859.3    -532.5   -1861.8    -523.5
 -1863.0    -519.0   -1863.2    -513.0   -1863.4    -507.0
 -1868.2    -503.5   -1872.9    -500.0   -1877.3    -502.0
 -1881.6    -504.0   -1884.1    -511.0   -1886.6    -518.0
 -1885.8    -522.1   -1884.1    -530.2   -1882.4    -538.4
 -1880.7    -546.5   -1879.0    -554.6   -1877.3    -562.8
 -1875.6    -570.9   -1874.7    -575.0   -1873.6    -579.2
 -1871.4    -587.6   -1869.3    -596.1   -1867.1    -604.5
 -1864.9    -612.9   -1862.8    -621.4   -1860.6    -629.8
 -1859.5    -634.0   -1858.1    -638.1   -1855.3    -646.3
 -1852.4    -654.5   -1849.6    -662.7   -1846.8    -670.9
 -1843.9    -679.1   -1841.1    -687.3   -1838.3    -695.5
 -1835.4    -703.7   -1832.6    -711.9   -1831.2    -716.0
 -1830.0    -720.4   -1827.7    -729.1   -1825.3    -737.8
 -1823.0    -746.5   -1820.7    -755.2   -1818.3    -763.9
 -1816.0    -772.6   -1814.8    -777.0   -1813.7    -781.0
```


-1811.4	-789.0	-1809.2	-797.0	-1806.9	-805.0
-1804.6	-813.0	-1802.4	-821.0	-1800.1	-829.0
-1797.8	-837.0	-1795.6	-845.0	-1793.3	-853.0
-1792.2	-857.0	-1792.0	-861.2	-1791.5	-869.7
-1791.1	-878.1	-1790.6	-886.6	-1790.2	-895.0
-1789.8	-903.5	-1789.3	-912.0	-1788.9	-920.4
-1788.4	-928.9	-1788.0	-937.3	-1787.5	-945.8
-1787.3	-950.0	-1786.7	-954.0	-1785.4	-961.9
-1784.1	-969.8	-1782.8	-977.7	-1781.6	-985.6
-1780.3	-993.5	-1779.0	-1001.4	-1777.8	-1009.3
-1776.5	-1017.2	-1775.2	-1025.1	-1773.9	-1033.0
-1773.3	-1037.0	-1771.8	-1041.1	-1768.8	-1049.4
-1765.9	-1057.7	-1762.9	-1066.0	-1759.9	-1074.3
-1757.0	-1082.6	-1754.0	-1090.9	-1752.5	-1095.0
-1754.8	-1098.7	-1759.3	-1106.2	-1763.9	-1113.6
-1768.4	-1121.1	-1773.0	-1128.5	-1777.6	-1135.9
-1782.1	-1143.4	-1786.7	-1150.8	-1791.2	-1158.3
-1793.5	-1162.0	-1789.9	-1164.5	-1782.8	-1169.4
-1775.6	-1174.3	-1768.5	-1179.2	-1761.3	-1184.1
-1754.2	-1189.0	-1747.0	-1193.9	-1739.8	-1198.8
-1732.7	-1203.7	-1725.5	-1208.6	-1718.4	-1213.5
-1714.8	-1216.0	-1711.3	-1218.1	-1704.3	-1222.4
-1697.4	-1226.7	-1690.4	-1231.0	-1683.4	-1235.3
-1676.5	-1239.6	-1669.5	-1243.9	-1662.5	-1248.1
-1655.5	-1252.4	-1648.6	-1256.7	-1641.6	-1261.0
-1634.6	-1265.3	-1627.7	-1269.6	-1620.7	-1273.9
-1617.2	-1276.0	-1615.8	-1280.1	-1613.0	-1288.4
-1610.1	-1296.6	-1607.3	-1304.9	-1605.9	-1309.0
-1601.5	-1312.0	-1597.1	-1315.0	-1591.3	-1314.3
-1579.7	-1312.8	-1573.9	-1312.0	-1570.3	-1314.5
-1563.1	-1319.5	-1555.9	-1324.5	-1548.7	-1329.5
-1541.6	-1334.5	-1534.4	-1339.5	-1527.2	-1344.5
-1520.0	-1349.5	-1512.8	-1354.5	-1509.2	-1357.0
-1505.6	-1358.8	-1498.3	-1362.5	-1491.0	-1366.2
-1483.7	-1369.8	-1476.4	-1373.5	-1469.1	-1377.2
-1461.8	-1380.8	-1454.5	-1384.5	-1447.2	-1388.2
-1439.9	-1391.8	-1432.6	-1395.5	-1425.3	-1399.2
-1421.7	-1401.0	-1419.4	-1397.7	-1414.9	-1391.1
-1410.4	-1384.4	-1405.9	-1377.8	-1401.4	-1371.2
-1396.9	-1364.6	-1392.4	-1357.9	-1387.9	-1351.3
-1385.7	-1348.0	-1383.5	-1344.4	-1379.1	-1337.3
-1374.7	-1330.2	-1370.3	-1323.1	-1365.9	-1316.0
-1361.5	-1308.9	-1357.1	-1301.8	-1352.7	-1294.7
-1348.3	-1287.6				
6					
1 69	.300	.000	0		
70 186	.500	.000	0		
187 218	.300	.000	0		
219 240	.500	.000	0		
241 288	.300	.000	0		
289 307	.500	.000	0		
289					
-1295.0	206.5	-1292.2	209.6	-1286.6	215.7
-1281.1	221.9	-1275.5	228.0	-1269.9	234.2
-1264.3	240.3	-1258.8	246.5	-1253.2	252.6
-1250.4	255.7	-1248.5	259.2	-1244.6	266.3
-1240.7	273.4	-1236.8	280.5	-1232.8	287.6
-1228.9	294.7	-1225.0	301.8	-1221.1	308.9
-1217.2	316.0	-1215.3	319.5	-1213.1	323.0
-1208.7	330.1	-1204.3	337.2	-1199.9	344.2
-1195.5	351.3	-1191.2	358.4	-1186.8	365.4

-1182.4	372.5	-1178.0	379.6	-1175.8	383.1
-1174.2	386.8	-1170.9	394.1	-1167.6	401.4
-1164.3	408.7	-1161.1	416.0	-1157.8	423.3
-1154.5	430.6	-1151.2	437.9	-1149.6	441.6
-1148.7	445.9	-1146.8	454.4	-1144.9	462.9
-1144.0	467.1	-1141.5	470.5	-1136.5	477.3
-1131.5	484.2	-1126.5	491.0	-1121.4	497.8
-1116.4	504.6	-1111.4	511.4	-1106.4	518.3
-1101.4	525.1	-1098.9	528.5	-1095.6	531.2
-1088.9	536.6	-1082.3	542.0	-1075.7	547.5
-1069.0	552.9	-1065.7	555.6	-1065.3	559.8
-1064.4	568.3	-1063.5	576.8	-1062.7	585.3
-1061.8	593.8	-1060.9	602.3	-1060.0	610.8
-1059.2	619.2	-1058.3	627.7	-1057.4	636.2
-1056.6	644.7	-1055.7	653.2	-1054.8	661.7
-1054.4	665.9	-1054.3	671.1	-1054.0	681.4
-1053.9	686.5	-1050.3	690.5	-1042.9	698.3
-1039.3	702.3	-1040.9	706.3	-1044.2	714.3
-1045.8	718.3	-1051.7	719.2	-1057.5	720.1
-1060.2	717.1	-1065.7	711.1	-1071.1	705.2
-1076.5	699.2	-1082.0	693.2	-1087.4	687.2
-1092.8	681.2	-1098.3	675.3	-1103.7	669.3
-1109.1	663.3	-1114.6	657.3	-1120.0	651.3
-1125.4	645.4	-1130.9	639.4	-1133.6	636.4
-1135.1	632.6	-1138.0	624.9	-1140.9	617.2
-1143.8	609.5	-1146.7	601.8	-1149.6	594.1
-1152.5	586.4	-1155.4	578.7	-1158.3	571.0
-1159.8	567.2	-1160.9	562.9	-1163.2	554.4
-1165.5	545.8	-1167.7	537.3	-1170.0	528.7
-1172.3	520.1	-1174.5	511.6	-1176.8	503.0
-1179.1	494.5	-1180.2	490.2	-1181.9	486.4
-1185.4	478.6	-1188.9	470.9	-1192.4	463.2
-1195.9	455.5	-1199.4	447.8	-1202.9	440.1
-1206.4	432.4	-1209.9	424.7	-1213.4	417.0
-1216.9	409.3	-1218.6	405.5	-1220.3	401.9
-1223.8	394.6	-1227.3	387.3	-1230.7	380.0
-1234.2	372.8	-1237.7	365.5	-1241.1	358.2
-1244.6	350.9	-1248.1	343.7	-1251.5	336.4
-1255.0	329.1	-1258.5	321.8	-1260.2	318.2
-1262.0	314.4	-1265.7	306.9	-1269.4	299.4
-1273.0	291.8	-1276.7	284.3	-1280.4	276.8
-1284.0	269.2	-1287.7	261.7	-1291.4	254.2
-1295.0	246.6	-1298.7	239.1	-1302.4	231.6
-1304.2	227.8	-1306.1	224.0	-1309.8	216.3
-1313.5	208.6	-1317.2	200.9	-1320.9	193.2
-1324.6	185.5	-1328.4	177.9	-1332.1	170.2
-1335.8	162.5	-1339.5	154.8	-1343.2	147.1
-1345.1	143.3	-1346.9	139.6	-1350.6	132.3
-1354.3	125.0	-1357.9	117.6	-1361.6	110.3
-1365.2	103.0	-1368.9	95.6	-1372.6	88.3
-1376.2	81.0	-1379.9	73.7	-1383.5	66.3
-1387.2	59.0	-1390.9	51.7	-1392.7	48.0
-1394.5	44.3	-1398.2	36.8	-1401.9	29.4
-1405.6	22.0	-1409.3	14.5	-1412.9	7.1
-1416.6	-.4	-1420.3	-7.8	-1424.0	-15.2
-1427.7	-22.7	-1431.3	-30.1	-1435.0	-37.6
-1438.7	-45.0	-1442.4	-52.4	-1446.1	-59.9
-1447.9	-63.6	-1449.7	-67.2	-1453.4	-74.5
-1457.0	-81.8	-1460.6	-89.1	-1464.3	-96.4
-1467.9	-103.7	-1471.6	-111.0	-1475.2	-118.3
-1478.9	-125.6	-1482.5	-132.9	-1486.1	-140.2

```
-1489.8    -147.5   -1491.6    -151.1   -1493.4    -154.9
-1497.0    -162.5   -1500.6    -170.1   -1504.2    -177.7
-1507.9    -185.3   -1511.5    -192.9   -1515.1    -200.5
-1518.7    -208.1   -1520.5    -211.9   -1520.0    -216.0
-1518.9    -224.1   -1518.4    -228.2   -1513.2    -227.7
-1502.7    -226.7   -1497.4    -226.2   -1497.0    -220.6
-1496.2    -209.3   -1495.8    -203.7   -1494.0    -199.9
-1490.4    -192.2   -1486.9    -184.6   -1483.3    -177.0
-1479.7    -169.3   -1476.2    -161.7   -1472.6    -154.1
-1469.0    -146.4   -1465.4    -138.8   -1461.9    -131.2
-1458.3    -123.5   -1454.7    -115.9   -1451.2    -108.3
-1447.6    -100.6   -1445.8     -96.8   -1444.0     -93.2
-1440.5     -86.0   -1437.0     -78.8   -1433.5     -71.6
-1430.0     -64.4   -1426.4     -57.2   -1422.9     -50.0
-1419.4     -42.8   -1415.9     -35.5   -1412.4     -28.3
-1408.8     -21.1   -1405.3     -13.9   -1401.8      -6.7
-1398.3        .5   -1394.8       7.7   -1393.0      11.3
-1391.2      14.9   -1387.7      22.1   -1384.2      29.4
-1380.7      36.6   -1377.2      43.8   -1373.6      51.0
-1370.1      58.2   -1366.6      65.5   -1363.1      72.7
-1359.5      79.9   -1356.0      87.1   -1352.5      94.3
-1349.0     101.6   -1345.5     108.8   -1343.7     112.4
-1341.8     116.0   -1338.1     123.3   -1334.4     130.5
-1330.6     137.7   -1326.9     145.0   -1323.1     152.2
-1319.4     159.5   -1315.7     166.7   -1311.9     173.9
-1308.2     181.2   -1304.4     188.4   -1300.7     195.6
-1297.0     202.9
  2
  1   130      .300      .000    0
131   493      .500      .000    0
 59
 -616.6    1330.2    -612.7    1331.9    -604.9    1335.3
 -597.1    1338.7    -589.3    1342.1    -581.5    1345.5
 -573.7    1348.8    -565.9    1352.2    -558.1    1355.6
 -550.3    1359.0    -542.5    1362.4    -538.6    1364.1
 -536.7    1368.7    -533.0    1377.9    -529.3    1387.0
 -525.6    1396.2    -523.7    1400.8    -527.5    1403.5
 -535.2    1408.8    -542.8    1414.1    -550.4    1419.4
 -558.0    1424.7    -565.7    1430.0    -569.5    1432.6
 -573.9    1431.3    -582.7    1428.8    -591.4    1426.2
 -600.2    1423.7    -609.0    1421.2    -617.7    1418.6
 -626.5    1416.1    -630.9    1414.8    -634.0    1411.7
 -640.3    1405.5    -646.5    1399.3    -652.8    1393.2
 -659.0    1387.0    -665.3    1380.8    -668.4    1377.7
 -669.2    1373.5    -670.8    1365.1    -672.5    1356.7
 -674.1    1348.3    -675.7    1339.9    -677.4    1331.5
 -679.0    1323.1    -679.8    1318.9    -678.2    1313.3
 -674.9    1302.2    -673.2    1296.6    -668.9    1295.9
 -660.2    1294.6    -655.9    1293.9    -652.6    1296.9
 -646.1    1303.0    -639.5    1309.0    -633.0    1315.1
 -626.4    1321.1    -619.9    1327.2
  2
  1    38      .300      .000    0
 39    59      .500      .000    0
818
  719.4    1583.5     715.5    1582.7     707.6    1581.0
  699.7    1579.4     691.8    1577.7     684.0    1576.1
  676.1    1574.5     668.2    1572.8     660.4    1571.2
  652.5    1569.5     644.6    1567.9     636.7    1566.2
  628.9    1564.6     621.0    1562.9     613.1    1561.3
  605.3    1559.7     597.4    1558.0     589.5    1556.4
```

581.6	1554.7	573.8	1553.1	565.9	1551.4
558.0	1549.8	550.1	1548.1	542.3	1546.5
534.4	1544.9	526.5	1543.2	518.7	1541.6
510.8	1539.9	502.9	1538.3	495.0	1536.6
487.2	1535.0	479.3	1533.3	471.4	1531.7
463.6	1530.1	455.7	1528.4	447.8	1526.8
439.9	1525.1	436.0	1524.3	434.3	1520.4
431.0	1512.5	427.6	1504.7	424.2	1496.9
420.9	1489.0	417.5	1481.2	414.1	1473.4
410.8	1465.5	407.4	1457.7	404.0	1449.9
400.7	1442.0	397.3	1434.2	393.9	1426.4
390.6	1418.5	388.9	1414.6	384.0	1414.0
374.2	1412.7	364.4	1411.5	354.6	1410.2
349.7	1409.6	348.8	1405.7	347.0	1397.8
345.3	1390.0	343.5	1382.2	341.7	1374.3
340.0	1366.5	338.2	1358.6	336.4	1350.8
334.6	1342.9	332.9	1335.1	331.1	1327.3
329.3	1319.4	327.6	1311.6	325.8	1303.7
324.0	1295.9	322.3	1288.1	320.5	1280.2
318.7	1272.4	316.9	1264.5	315.2	1256.7
313.4	1248.8	311.6	1241.0	309.9	1233.2
308.1	1225.3	306.3	1217.5	304.5	1209.6
302.8	1201.8	301.0	1193.9	299.2	1186.1
297.5	1178.3	295.7	1170.4	294.8	1166.5
293.9	1162.5	292.2	1154.5	290.4	1146.5
288.7	1138.5	286.9	1130.4	285.2	1122.4
283.4	1114.4	281.7	1106.4	279.9	1098.4
278.2	1090.4	276.4	1082.4	274.7	1074.4
272.9	1066.3	271.2	1058.3	269.4	1050.3
267.7	1042.3	266.0	1034.3	264.2	1026.3
262.5	1018.3	260.7	1010.3	259.0	1002.3
257.2	994.2	255.5	986.2	253.7	978.2
252.0	970.2	250.2	962.2	248.5	954.2
246.7	946.2	245.0	938.2	243.2	930.1
241.5	922.1	239.7	914.1	238.0	906.1
237.1	902.1	236.2	898.1	234.4	890.1
232.7	882.1	230.9	874.0	229.1	866.0
227.4	858.0	225.6	850.0	223.8	842.0
222.1	834.0	220.3	826.0	218.5	818.0
216.8	809.9	215.0	801.9	213.2	793.9
211.5	785.9	209.7	777.9	207.9	769.9
206.2	761.9	204.4	753.8	202.6	745.8
200.8	737.8	199.1	729.8	197.3	721.8
195.5	713.8	193.8	705.8	192.0	697.7
190.2	689.7	188.5	681.7	186.7	673.7
184.9	665.7	183.2	657.7	181.4	649.7
179.6	641.6	177.9	633.6	176.1	625.6
175.2	621.6	174.3	617.6	172.5	609.7
170.8	601.8	169.0	593.8	167.2	585.9
165.4	578.0	163.7	570.0	161.9	562.1
160.1	554.2	158.3	546.2	156.6	538.3
154.8	530.4	153.0	522.4	151.2	514.5
149.5	506.6	147.7	498.6	145.9	490.7
144.1	482.8	142.4	474.8	140.6	466.9
138.8	459.0	137.0	451.0	135.3	443.1
133.5	435.2	131.7	427.2	129.9	419.3
128.2	411.4	126.4	403.4	124.6	395.5
122.8	387.6	121.1	379.6	119.3	371.7
117.5	363.8	115.7	355.8	114.0	347.9
112.2	340.0	110.4	332.0	108.6	324.1
106.9	316.2	105.1	308.2	103.3	300.3

101.5	292.4	99.8	284.4	98.0	276.5
96.2	268.6	94.4	260.6	92.7	252.7
90.9	244.8	90.0	240.8	89.1	236.7
87.3	228.6	85.5	220.4	83.6	212.2
81.8	204.1	80.0	195.9	78.2	187.7
76.4	179.6	74.6	171.4	72.8	163.2
70.9	155.1	69.1	146.9	67.3	138.8
65.5	130.6	63.7	122.4	61.9	114.3
60.0	106.1	58.2	97.9	56.4	89.8
55.5	85.7	59.5	84.7	67.4	82.7
75.4	80.7	83.4	78.7	91.3	76.7
99.3	74.7	107.3	72.7	115.2	70.7
119.2	69.7	120.0	73.7	121.7	81.6
123.3	89.5	124.9	97.5	126.6	105.4
128.2	113.4	129.8	121.3	131.5	129.2
132.3	133.2	136.6	132.2	145.3	130.2
153.9	128.2	162.5	126.2	171.2	124.1
179.8	122.1	188.4	120.1	197.1	118.1
201.4	117.1	200.5	113.2	198.7	105.3
196.9	97.5	195.1	89.6	193.3	81.8
191.5	73.9	189.8	66.1	188.0	58.2
186.2	50.4	184.4	42.5	182.6	34.7
180.8	26.8	179.9	22.9	172.1	24.6
164.4	26.4	163.5	22.5	161.8	14.6
160.1	6.8	158.4	-1.1	156.7	-8.9
155.0	-16.8	153.3	-24.6	151.6	-32.5
150.7	-36.4	146.7	-35.4	138.8	-33.5
130.9	-31.6	122.9	-29.7	115.0	-27.8
107.1	-25.9	99.1	-23.9	91.2	-22.0
83.3	-20.1	75.3	-18.2	67.4	-16.3
59.5	-14.4	51.6	-12.5	43.6	-10.5
35.7	-8.6	27.8	-6.7	19.8	-4.8
11.9	-2.9	4.0	-1.0	.0	.0
-2.3	-3.4	-6.8	-10.3	-11.3	-17.1
-15.8	-24.0	-20.3	-30.8	-24.8	-37.7
-29.3	-44.5	-33.8	-51.3	-38.3	-58.2
-42.8	-65.0	-47.3	-71.9	-51.8	-78.7
-56.3	-85.6	-60.8	-92.4	-65.3	-99.3
-69.8	-106.1	-74.3	-112.9	-78.9	-119.8
-83.4	-126.6	-87.9	-133.5	-92.4	-140.3
-96.9	-147.2	-101.4	-154.0	-105.9	-160.9
-110.4	-167.7	-114.9	-174.6	-119.4	-181.4
-123.9	-188.3	-128.4	-195.1	-132.9	-201.9
-137.4	-208.8	-141.9	-215.6	-146.4	-222.5
-148.7	-225.9	-150.9	-229.3	-155.4	-236.1
-159.8	-242.9	-164.2	-249.7	-168.7	-256.5
-173.1	-263.3	-177.6	-270.0	-182.0	-276.8
-186.4	-283.6	-190.9	-290.4	-195.3	-297.2
-199.8	-304.0	-204.2	-310.8	-208.7	-317.6
-213.1	-324.4	-217.5	-331.2	-222.0	-338.0
-226.4	-344.7	-230.9	-351.5	-235.3	-358.3
-239.7	-365.1	-244.2	-371.9	-248.6	-378.7
-253.1	-385.5	-257.5	-392.3	-261.9	-399.1
-266.4	-405.9	-270.8	-412.7	-275.3	-419.4
-279.7	-426.2	-284.1	-433.0	-288.6	-439.8
-293.0	-446.6	-297.5	-453.4	-301.9	-460.2
-306.4	-467.0	-310.8	-473.8	-315.2	-480.6
-319.7	-487.4	-324.1	-494.1	-328.6	-500.9
-333.0	-507.7	-337.4	-514.5	-341.9	-521.3
-344.1	-524.7	-346.4	-528.2	-350.9	-535.1
-355.5	-542.0	-360.0	-548.9	-364.6	-555.8

LAMPIRAN D

OUTPUT .OP7

NUMBER OF TOTAL POINTS =　57934　POINTS IN X=　280　POINTS IN Y=　273　GRID L
ENGTH DS=　15.0
IGNORING THE EFFECT OF TRANSMITTED WAVES

1	-3500.00	-2498.90	.990	66.2
2	-3485.00	-2498.90	1.038	128.8
3	-3470.00	-2498.90	.955	-164.7
4	-3455.00	-2498.90	1.025	-95.4
5	-3440.00	-2498.90	1.020	-34.7
6	-3425.00	-2498.90	.944	35.6
7	-3410.00	-2498.90	1.056	102.0
8	-3395.00	-2498.90	.992	162.5
9	-3380.00	-2498.90	.954	-124.5
10	-3365.00	-2498.90	1.070	-61.1
11	-3350.00	-2498.90	.966	1.1
12	-3335.00	-2498.90	.978	74.3
13	-3320.00	-2498.90	1.059	135.7
14	-3305.00	-2498.90	.952	-159.0
15	-3290.00	-2498.90	1.012	-88.2
16	-3275.00	-2498.90	1.027	-27.4
17	-3260.00	-2498.90	.953	41.8
18	-3245.00	-2498.90	1.047	108.3
19	-3230.00	-2498.90	.984	170.0
20	-3215.00	-2498.90	.969	-117.5
21	-3200.00	-2498.90	1.070	-55.3
22	-3185.00	-2498.90	.946	8.1
23	-3170.00	-2498.90	.993	82.0
24	-3155.00	-2498.90	1.073	141.4
25	-3140.00	-2498.90	.926	-152.6
26	-3125.00	-2498.90	1.018	-79.9
27	-3110.00	-2498.90	1.054	-21.4
28	-3095.00	-2498.90	.926	47.4
29	-3080.00	-2498.90	1.041	117.1
30	-3065.00	-2498.90	1.023	176.2
31	-3050.00	-2498.90	.938	-112.6
32	-3035.00	-2498.90	1.055	-46.1
33	-3020.00	-2498.90	.998	14.6
34	-3005.00	-2498.90	.954	86.3
35	-2990.00	-2498.90	1.049	151.3
36	-2975.00	-2498.90	.994	-146.2
37	-2960.00	-2498.90	.972	-76.4
38	-2945.00	-2498.90	1.019	-10.7
39	-2930.00	-2498.90	1.010	53.8
40	-2915.00	-2498.90	.991	119.7
41	-2900.00	-2498.90	.978	-172.3
42	-2885.00	-2498.90	1.034	-106.1
43	-2870.00	-2498.90	1.004	-44.1
44	-2855.00	-2498.90	.947	26.5
45	-2840.00	-2498.90	1.059	92.9
46	-2825.00	-2498.90	1.001	152.7
47	-2810.00	-2498.90	.933	-134.0
48	-2795.00	-2498.90	1.084	-69.1
49	-2780.00	-2498.90	.986	-10.2
50	-2765.00	-2498.90	.931	65.5
51	-2750.00	-2498.90	1.096	128.8
52	-2735.00	-2498.90	.982	-172.0
53	-2720.00	-2498.90	.939	-97.0
54	-2705.00	-2498.90	1.067	-33.2
55	-2690.00	-2498.90	.993	28.8
56	-2675.00	-2498.90	.984	98.7
57	-2660.00	-2498.90	.999	163.2
58	-2645.00	-2498.90	.987	-128.2

59	-2630.00	-2498.90	1.063	-64.5
60	-2615.00	-2498.90	.956	-2.3
61	-2600.00	-2498.90	.953	73.1
62	-2585.00	-2498.90	1.101	134.7
63	-2570.00	-2498.90	.972	-165.0
64	-2555.00	-2498.90	.951	-90.4
65	-2540.00	-2498.90	1.051	-27.4
66	-2525.00	-2498.90	.974	37.5
67	-2510.00	-2498.90	1.033	106.0
68	-2495.00	-2498.90	1.001	166.4
69	-2480.00	-2498.90	.915	-120.2
70	-2465.00	-2498.90	1.100	-53.9
71	-2450.00	-2498.90	1.028	1.9
72	-2435.00	-2498.90	.887	76.7
73	-2420.00	-2498.90	1.065	144.9
74	-2405.00	-2498.90	1.025	-156.7
75	-2390.00	-2498.90	.964	-85.9
76	-2375.00	-2498.90	1.033	-21.5
77	-2360.00	-2498.90	.946	44.1
78	-2345.00	-2498.90	1.023	115.5
79	-2330.00	-2498.90	1.069	174.1
80	-2315.00	-2498.90	.920	-118.9
81	-2300.00	-2498.90	1.006	-46.3
82	-2285.00	-2498.90	1.046	13.8
83	-2270.00	-2498.90	.966	81.2
84	-2255.00	-2498.90	1.027	148.4
85	-2240.00	-2498.90	.982	-148.6
86	-2225.00	-2498.90	.976	-77.4
87	-2210.00	-2498.90	1.058	-14.5
88	-2195.00	-2498.90	.963	49.4
89	-2180.00	-2498.90	.994	121.3
90	-2165.00	-2498.90	1.055	-177.9
91	-2150.00	-2498.90	.932	-111.8
92	-2135.00	-2498.90	1.005	-39.1
93	-2120.00	-2498.90	1.076	20.7
94	-2105.00	-2498.90	.960	85.1
95	-2090.00	-2498.90	.971	156.3
96	-2075.00	-2498.90	1.008	-138.7
97	-2060.00	-2498.90	1.018	-72.1
98	-2045.00	-2498.90	1.051	-9.3
99	-2030.00	-2498.90	.944	54.9
100	-2015.00	-2498.90	.946	129.6
101	-2000.00	-2498.90	1.092	-167.1
102	-1985.00	-2498.90	1.018	-108.0
103	-1970.00	-2498.90	.934	-36.5
104	-1955.00	-2498.90	1.026	31.0
105	-1940.00	-2498.90	1.003	93.3
106	-1925.00	-2498.90	.972	162.7
107	-1910.00	-2498.90	1.047	-131.7
108	-1895.00	-2498.90	1.011	-69.7
109	-1880.00	-2498.90	.955	-.8
110	-1865.00	-2498.90	.996	66.8
111	-1850.00	-2498.90	.997	132.4
112	-1835.00	-2498.90	1.037	-160.8
113	-1820.00	-2498.90	1.053	-99.8
114	-1805.00	-2498.90	.914	-34.0
115	-1790.00	-2498.90	.953	41.7
116	-1775.00	-2498.90	1.091	103.7
117	-1760.00	-2498.90	1.016	164.5
118	-1745.00	-2498.90	.987	-126.1
119	-1730.00	-2498.90	1.001	-62.2

120	-1715.00	-2498.90	.922	6.8
121	-1700.00	-2498.90	1.032	77.2
122	-1685.00	-2498.90	1.070	136.0
123	-1670.00	-2498.90	.960	-156.8
124	-1655.00	-2498.90	1.043	-88.4
125	-1640.00	-2498.90	.997	-29.2
126	-1625.00	-2498.90	.873	44.9
127	-1610.00	-2498.90	1.058	115.3
128	-1595.00	-2498.90	1.089	172.6
129	-1580.00	-2498.90	.998	-121.5
130	-1565.00	-2498.90	1.010	-55.8
131	-1550.00	-2498.90	.914	10.6
132	-1535.00	-2498.90	.970	84.9
133	-1520.00	-2498.90	1.075	145.5
134	-1505.00	-2498.90	.970	-149.4
135	-1490.00	-2498.90	1.096	-78.2
136	-3500.00	-2483.90	.985	66.2
137	-3485.00	-2483.90	1.038	129.0
138	-3470.00	-2483.90	.959	-164.7
139	-3455.00	-2483.90	1.023	-95.7
140	-3440.00	-2483.90	1.013	-34.4
141	-3425.00	-2483.90	.956	35.8
142	-3410.00	-2483.90	1.053	101.3
143	-3395.00	-2483.90	.978	163.1
144	-3380.00	-2483.90	.971	-124.2
145	-3365.00	-2483.90	1.067	-62.1
146	-3350.00	-2483.90	.949	1.7
147	-3335.00	-2483.90	.996	74.7
148	-3320.00	-2483.90	1.059	134.7
149	-3305.00	-2483.90	.939	-158.6
150	-3290.00	-2483.90	1.022	-87.9
151	-3275.00	-2483.90	1.028	-27.8
152	-3260.00	-2483.90	.951	41.8
153	-3245.00	-2483.90	1.044	108.3
154	-3230.00	-2483.90	.983	170.5
155	-3215.00	-2483.90	.981	-117.9
156	-3200.00	-2483.90	1.056	-55.9
157	-3185.00	-2483.90	.941	9.4
158	-3170.00	-2483.90	1.016	81.5
159	-3155.00	-2483.90	1.055	140.3
160	-3140.00	-2483.90	.918	-150.9
161	-3125.00	-2483.90	1.046	-80.4
162	-3110.00	-2483.90	1.035	-22.6
163	-3095.00	-2483.90	.921	49.1
164	-3080.00	-2483.90	1.064	116.5
165	-3065.00	-2483.90	1.002	175.5
166	-3050.00	-2483.90	.943	-111.1
167	-3035.00	-2483.90	1.073	-47.1
168	-3020.00	-2483.90	.970	14.2
169	-3005.00	-2483.90	.967	88.0
170	-2990.00	-2483.90	1.070	149.8
171	-2975.00	-2483.90	.959	-146.7
172	-2960.00	-2483.90	.982	-74.3
173	-2945.00	-2483.90	1.050	-12.0
174	-2930.00	-2483.90	.976	52.7
175	-2915.00	-2483.90	.986	122.0
176	-2900.00	-2483.90	1.015	-172.9
177	-2885.00	-2483.90	1.011	-107.8
178	-2870.00	-2483.90	.985	-42.2
179	-2855.00	-2483.90	.983	26.6
180	-2840.00	-2483.90	1.045	91.0

181	-2825.00	-2483.90	.975	154.2
182	-2810.00	-2483.90	.971	-133.6
183	-2795.00	-2483.90	1.074	-71.2
184	-2780.00	-2483.90	.951	-8.7
185	-2765.00	-2483.90	.974	66.4
186	-2750.00	-2483.90	1.096	126.2
187	-2735.00	-2483.90	.933	-171.2
188	-2720.00	-2483.90	.974	-94.8
189	-2705.00	-2483.90	1.093	-35.4
190	-2690.00	-2483.90	.951	27.8
191	-2675.00	-2483.90	.977	101.0
192	-2660.00	-2483.90	1.036	163.5
193	-2645.00	-2483.90	.991	-130.4
194	-2630.00	-2483.90	1.022	-64.8
195	-2615.00	-2483.90	.953	.5
196	-2600.00	-2483.90	1.003	72.5
197	-2585.00	-2483.90	1.086	132.0
198	-2570.00	-2483.90	.925	-163.8
199	-2555.00	-2483.90	.981	-88.3
200	-2540.00	-2483.90	1.078	-28.6
201	-2525.00	-2483.90	.960	36.1
202	-2510.00	-2483.90	1.008	106.2
203	-2495.00	-2483.90	.993	168.4
204	-2480.00	-2483.90	.965	-119.9
205	-2465.00	-2483.90	1.098	-57.2
206	-2450.00	-2483.90	.957	2.2
207	-2435.00	-2483.90	.922	80.8
208	-2420.00	-2483.90	1.117	142.6
209	-2405.00	-2483.90	.988	-159.0
210	-2390.00	-2483.90	.944	-84.0
211	-2375.00	-2483.90	1.048	-20.8
212	-2360.00	-2483.90	.961	44.3
213	-2345.00	-2483.90	1.037	114.0
214	-2330.00	-2483.90	1.032	173.0
215	-2315.00	-2483.90	.906	-115.9
216	-2300.00	-2483.90	1.055	-46.3
217	-2285.00	-2483.90	1.042	11.5
218	-2270.00	-2483.90	.939	81.9
219	-2255.00	-2483.90	1.034	149.1
220	-2240.00	-2483.90	.984	-148.4
221	-2225.00	-2483.90	.990	-77.5
222	-2210.00	-2483.90	1.052	-15.5
223	-2195.00	-2483.90	.948	50.2
224	-2180.00	-2483.90	1.013	121.2
225	-2165.00	-2483.90	1.036	-178.8
226	-2150.00	-2483.90	.927	-109.4
227	-2135.00	-2483.90	1.055	-40.1
228	-2120.00	-2483.90	1.047	17.6
229	-2105.00	-2483.90	.909	87.7
230	-2090.00	-2483.90	1.017	158.5
231	-2075.00	-2483.90	1.042	-140.5
232	-2060.00	-2483.90	1.001	-74.1
233	-2045.00	-2483.90	1.005	-9.4
234	-2030.00	-2483.90	.930	58.6
235	-2015.00	-2483.90	1.024	129.9
236	-2000.00	-2483.90	1.095	-171.6
237	-1985.00	-2483.90	.938	-107.7
238	-1970.00	-2483.90	.960	-32.9
239	-1955.00	-2483.90	1.057	29.4
240	-1940.00	-2483.90	.980	93.2
241	-1925.00	-2483.90	.998	163.3

242	-1910.00	-2483.90	1.042	-134.0
243	-1895.00	-2483.90	.965	-69.0
244	-1880.00	-2483.90	.968	1.5
245	-1865.00	-2483.90	1.025	66.9
246	-1850.00	-2483.90	1.023	131.3
247	-1835.00	-2483.90	1.025	-163.7
248	-1820.00	-2483.90	.975	-99.5
249	-1805.00	-2483.90	.923	-28.3
250	-1790.00	-2483.90	1.044	40.8
251	-1775.00	-2483.90	1.092	99.6
252	-1760.00	-2483.90	.963	163.5
253	-1745.00	-2483.90	.958	-124.5
254	-1730.00	-2483.90	1.000	-59.7
255	-1715.00	-2483.90	.973	8.0
256	-1700.00	-2483.90	1.063	74.6
257	-1685.00	-2483.90	1.043	134.1
258	-1670.00	-2483.90	.937	-156.7
259	-1655.00	-2483.90	1.018	-88.3
260	-1640.00	-2483.90	.967	-26.5
261	-1625.00	-2483.90	.936	48.3
262	-1610.00	-2483.90	1.138	112.0
263	-1595.00	-2483.90	1.059	167.1
264	-1580.00	-2483.90	.899	-120.7
265	-1565.00	-2483.90	1.001	-51.4
266	-1550.00	-2483.90	.949	12.2
267	-1535.00	-2483.90	1.003	85.7
268	-1520.00	-2483.90	1.150	144.0
269	-1505.00	-2483.90	.949	-157.9
270	-1490.00	-2483.90	.865	-74.3
271	-1475.00	-2483.90	1.215	-6.4
272	-3500.00	-2468.90	.981	66.7
273	-3485.00	-2468.90	1.044	129.0
274	-3470.00	-2468.90	.958	-164.9
275	-3455.00	-2468.90	1.020	-95.7
276	-3440.00	-2468.90	1.013	-34.2
277	-3425.00	-2468.90	.962	35.6
278	-3410.00	-2468.90	1.046	100.9
279	-3395.00	-2468.90	.975	163.8
280	-3380.00	-2468.90	.985	-124.4
281	-3365.00	-2468.90	1.056	-62.8
282	-3350.00	-2468.90	.942	2.8
283	-3335.00	-2468.90	1.015	74.5
284	-3320.00	-2468.90	1.049	133.9
285	-3305.00	-2468.90	.930	-157.6
286	-3290.00	-2468.90	1.038	-88.0
287	-3275.00	-2468.90	1.023	-28.5
288	-3260.00	-2468.90	.945	42.3
289	-3245.00	-2468.90	1.048	108.4
290	-3230.00	-2468.90	.985	170.4
291	-3215.00	-2468.90	.983	-118.2
292	-3200.00	-2468.90	1.045	-55.9
293	-3185.00	-2468.90	.947	10.3
294	-3170.00	-2468.90	1.028	80.6
295	-3155.00	-2468.90	1.032	140.0
296	-3140.00	-2468.90	.926	-149.4
297	-3125.00	-2468.90	1.063	-81.6
298	-3110.00	-2468.90	1.008	-23.0
299	-3095.00	-2468.90	.931	50.6
300	-3080.00	-2468.90	1.080	115.3
301	-3065.00	-2468.90	.977	175.3
302	-3050.00	-2468.90	.958	-109.9