

Rancho Seco
Final Status Survey Summary Report
March 24, 2008
Turbine Building Piping System +40
Survey Unit F8990072

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Reviewed By: [Signature] Date: 3/24/08
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Approved By: [Signature] Date: 5-12-08
Dismantlement Superintendent, Radiological

FINAL STATUS SURVEY SUMMARY REPORT

Survey Unit:

F8990072, Turbine Building Piping System +40

Survey Unit Description:

Operating History: This system collected clean water leakage and condensate from the turbine and routed it to the drain tank. This system was contaminated by radioactive system leakage into steam, feed and cooling water systems. Operating records and the HSA document occurrences of radioactive contamination associated with this system piping.

Site Characterization: Direct measurements were made of the interior surfaces of the system piping which confirmed the presence of plant-derived radionuclides. Direct measurements of the interior showed a mean gross activity level of 56,208 dpm/100 cm² and a maximum value of 680,000 dpm/100 cm². Based on the classification procedure (DSIP-0020) and levels of gross activity reported, the system was determined to be a Class 1 system.

HSA Events: ODR-800111, 871122.

Survey Unit Design Information:

The Survey Unit Design Parameters are presented in Table 1 below. The survey unit and measurement locations are depicted on the maps in Attachment 1. Direct measurement locations were spaced at 15cm intervals and 22.8 m² were scanned for 100% coverage. The instrumentation used for the survey along with the MDC values are listed in Tables 2-1 and 2-2 in Attachment 2.

Table 1. Survey Unit Design Parameters

Survey Design Parameter	Value	Comment
Survey Area:	F899	Turbine Building Piping System +40
Survey Unit:	0072	Structure Surface
Class:	1	LTP Table 5-4
SU Area (m²):	22.8	
Evaluator:	Erin L. Brown	
DCGL (dpm/100 cm²):	100000	Gross Activity DCGL
Area Factor:	1	Class 1
Design DCGL_{mc} (dpm/100 cm²):	100000	Class 1
LBGR (dpm/100 cm²):	50000	Default = 50% DCGL
Design Sigma (dpm/100 cm²):	23464	
Type I Error:	0.05	
Type II Error:	0.05	
Predominant Nuclide:	Cs-137	
Sample Area (m²):	N/A	Class 1
Scan Area (m²):	22.8	
Scan Coverage (%):	100%	Class 1
Z_{1-α}:	1.645	
Z_{1-β}:	1.645	
Sign P:	0.97725	
Calculated Relative Shift:	2.2	
Relative Shift Used:	2.2	Uses 3.0 if Relative Shift is >3
N-Value:	12	
Design N-Value + 20%:	15	NUREG-1575 Table 5-5
Design Min Samples N:	15	Class 1
Grid Spacing L:	1.2	Class 1

Survey Results:

A total of 819 direct measurements were made in F8990072. The results including mean, median, standard deviation and range are shown in Table 2. All direct measurements were less than the DCGL. None of the measurements indicated areas of elevated activity. Scan activity ranged from 919 to 3891 dpm/100 cm², based on the pipe detector efficiency.

Table 2. Direct Measurement Results

Measurement ID	Gross Activity (dpm/100 cm ²)
F8990072-M0001GI	1566
F8990072-M0002GI	1816
F8990072-M0003GI	2175
F8990072-M0007GI	1434
F8990072-M0008GI	1309
F8990072-M0009GI	1387
F8990072-M0013GI	1484
F8990072-M0014GI	1353
F8990072-M0015GI	1322
F8990072-M0019GI	1534
F8990072-M0020GI	1302
F8990072-M0021GI	1453
F8990072-M0025GI	1514
F8990072-M0026GI	1322
F8990072-M0027GI	1231
F8990072-M0031GI	1334
F8990072-M0032GI	1237
F8990072-M0033GI	1188
F8990072-M0037GI	1345
F8990072-M0038GI	1176
F8990072-M0039GI	1140
F8990072-M0043GI	1403
F8990072-M0044GI	1175
F8990072-M0045GI	1125
F8990072-M0049GI	1484
F8990072-M0050GI	1268
F8990072-M0051GI	1207
F8990072-M0055GI	1457
F8990072-M0056GI	1245
F8990072-M0057GI	1258
F8990072-M0067GI	1506
F8990072-M0068GI	1305
F8990072-M0069GI	1183
F8990072-M0073GI	1445
F8990072-M0074GI	1386
F8990072-M0075GI	1136
F8990072-M0076GI	1178
F8990072-M0077GI	1328
F8990072-M0079GI	1449
F8990072-M0080GI	1349

F8990072-M0081GI	1679
F8990072-M0085GI	1301
F8990072-M0086GI	1505
F8990072-M0087GI	1794
F8990072-M0091GI	1308
F8990072-M0092GI	1456
F8990072-M0093GI	1516
F8990072-M0097GI	1414
F8990072-M0098GI	1358
F8990072-M0099GI	1283
F8990072-M0103GI	1337
F8990072-M0104GI	1383
F8990072-M0105GI	1795
F8990072-M0109GI	1303
F8990072-M0110GI	1252
F8990072-M0111GI	1452
F8990072-M0115GI	1636
F8990072-M0121GI	1078
F8990072-M0122GI	1064
F8990072-M0123GI	1068
F8990072-M0127GI	1155
F8990072-M0128GI	1245
F8990072-M0129GI	1295
F8990072-M0133GI	1410
F8990072-M0134GI	1243
F8990072-M0135GI	1038
F8990072-M0139GI	1343
F8990072-M0140GI	1390
F8990072-M0141GI	1512
F8990072-M0145GI	1278
F8990072-M0146GI	1482
F8990072-M0147GI	1499
F8990072-M0151GI	1285
F8990072-M0152GI	1263
F8990072-M0153GI	1325
F8990072-M0157GI	1791
F8990072-M0158GI	1490
F8990072-M0159GI	1306
F8990072-M0160GI	1395
F8990072-M0163GI	1457
F8990072-M0164GI	1377
F8990072-M0165GI	1112
F8990072-M0169GI	1321
F8990072-M0170GI	1421
F8990072-M0171GI	1397
F8990072-M0175GI	1215
F8990072-M0176GI	1152
F8990072-M0177GI	1178
F8990072-M0181GI	1496
F8990072-M0187GI	1186
F8990072-M0188GI	1199
F8990072-M0189GI	1362
F8990072-M0193GI	1404
F8990072-M0194GI	1473
F8990072-M0195GI	1360
F8990072-M0199GI	1389

F8990072-M0200GI	1497
F8990072-M0201GI	1609
F8990072-M0205GI	1162
F8990072-M0206GI	1190
F8990072-M0207GI	1352
F8990072-M0217GI	1431
F8990072-M0218GI	1615
F8990072-M0219GI	1708
F8990072-M0223GI	1458
F8990072-M0224GI	1656
F8990072-M0225GI	1878
F8990072-M0229GI	1731
F8990072-M0235GI	1444
F8990072-M0236GI	1291
F8990072-M0237GI	953
F8990072-M0238GI	967
F8990072-M0239GI	1090
F8990072-M0240GI	1307
F8990072-M0241GI	1289
F8990072-M0242GI	1373
F8990072-M0243GI	1468
F8990072-M0247GI	1570
F8990072-M0248GI	1515
F8990072-M0249GI	1643
F8990072-M0253GI	1389
F8990072-M0254GI	1397
F8990072-M0255GI	1470
F8990072-M0259GI	1302
F8990072-M0260GI	1366
F8990072-M0261GI	1504
F8990072-M0265GI	1326
F8990072-M0266GI	1358
F8990072-M0267GI	1248
F8990072-M0271GI	1492
F8990072-M0272GI	1409
F8990072-M0273GI	1196
F8990072-M0277GI	1395
F8990072-M0278GI	1505
F8990072-M0279GI	1588
F8990072-M0283GI	1334
F8990072-M0284GI	1263
F8990072-M0285GI	1381
F8990072-M0289GI	1621
F8990072-M0295GI	1343
F8990072-M0296GI	1372
F8990072-M0297GI	1619
F8990072-M0301GI	1442
F8990072-M0302GI	1427
F8990072-M0303GI	1292
F8990072-M0307GI	1318
F8990072-M0308GI	1374
F8990072-M0309GI	1643
F8990072-M0313GI	1259
F8990072-M0314GI	1265
F8990072-M0315GI	1515
F8990072-M0319GI	1279

F8990072-M0320GI	1304
F8990072-M0321GI	1317
F8990072-M0325GI	1559
F8990072-M0326GI	1582
F8990072-M0327GI	1991
F8990072-M0328GI	1914
F8990072-M0329GI	1948
F8990072-M0330GI	1998
F8990072-M0331GI	1959
F8990072-M0332GI	1972
F8990072-M0333GI	2016
F8990072-M0334GI	2081
F8990072-M0335GI	2078
F8990072-M0336GI	2006
F8990072-M0337GI	2018
F8990072-M0338GI	2047
F8990072-M0339GI	2087
F8990072-M0340GI	2040
F8990072-M0341GI	2038
F8990072-M0342GI	2074
F8990072-M0343GI	2138
F8990072-M0344GI	2030
F8990072-M0345GI	2075
F8990072-M0346GI	2088
F8990072-M0347GI	2071
F8990072-M0348GI	2077
F8990072-M0349GI	1986
F8990072-M0350GI	2026
F8990072-M0351GI	2069
F8990072-M0352GI	1992
F8990072-M0353GI	2056
F8990072-M0354GI	2064
F8990072-M0355GI	2081
F8990072-M0356GI	2097
F8990072-M0357GI	2085
F8990072-M0358GI	2045
F8990072-M0359GI	2060
F8990072-M0360GI	2010
F8990072-M0361GI	2034
F8990072-M0362GI	1995
F8990072-M0363GI	2115
F8990072-M0364GI	2033
F8990072-M0365GI	2084
F8990072-M0366GI	2055
F8990072-M0367GI	2046
F8990072-M0368GI	2057
F8990072-M0369GI	2003
F8990072-M0370GI	2109
F8990072-M0371GI	1979
F8990072-M0372GI	2005
F8990072-M0373GI	1997
F8990072-M0374GI	2105
F8990072-M0375GI	2093
F8990072-M0376GI	1952
F8990072-M0377GI	1555
F8990072-M0378GI	1834

F8990072-M0379GI	1941
F8990072-M0380GI	1909
F8990072-M0381GI	2001
F8990072-M0382GI	2082
F8990072-M0383GI	2081
F8990072-M0384GI	2099
F8990072-M0385GI	2107
F8990072-M0386GI	2088
F8990072-M0387GI	2109
F8990072-M0388GI	2074
F8990072-M0389GI	2111
F8990072-M0390GI	2122
F8990072-M0391GI	2052
F8990072-M0392GI	2041
F8990072-M0393GI	2050
F8990072-M0394GI	2086
F8990072-M0395GI	2115
F8990072-M0396GI	2113
F8990072-M0397GI	2067
F8990072-M0398GI	2081
F8990072-M0399GI	2019
F8990072-M0400GI	2001
F8990072-M0401GI	2011
F8990072-M0402GI	2059
F8990072-M0403GI	2024
F8990072-M0404GI	1963
F8990072-M0405GI	1841
F8990072-M0406GI	2002
F8990072-M0407GI	2126
F8990072-M0408GI	2101
F8990072-M0409GI	2125
F8990072-M0410GI	2085
F8990072-M0411GI	2094
F8990072-M0412GI	2035
F8990072-M0413GI	2105
F8990072-M0414GI	2089
F8990072-M0415GI	2109
F8990072-M0416GI	2089
F8990072-M0417GI	2123
F8990072-M0418GI	2095
F8990072-M0419GI	2062
F8990072-M0420GI	2095
F8990072-M0421GI	2138
F8990072-M0422GI	2071
F8990072-M0423GI	2033
F8990072-M0424GI	1500
F8990072-M0437GI	1332
F8990072-M0438GI	1626
F8990072-M0439GI	1871
F8990072-M0440GI	1907
F8990072-M0441GI	2076
F8990072-M0442GI	2119
F8990072-M0443GI	1978
F8990072-M0444GI	2085
F8990072-M0445GI	2112
F8990072-M0446GI	2157

F8990072-M0447GI	2190
F8990072-M0448GI	2139
F8990072-M0449GI	2172
F8990072-M0450GI	2189
F8990072-M0451GI	2167
F8990072-M0452GI	2077
F8990072-M0453GI	2219
F8990072-M0454GI	2179
F8990072-M0455GI	2206
F8990072-M0456GI	2181
F8990072-M0457GI	2133
F8990072-M0458GI	2012
F8990072-M0459GI	1688
F8990072-M0460GI	1350
F8990072-M0461GI	1339
F8990072-M0462GI	1334
F8990072-M0498GI	1241
F8990072-M0499GI	1205
F8990072-M0500GI	1291
F8990072-M0504GI	1131
F8990072-M0505GI	1136
F8990072-M0506GI	1232
F8990072-M0510GI	1405
F8990072-M0511GI	1738
F8990072-M0512GI	1981
F8990072-M0513GI	1975
F8990072-M0514GI	2066
F8990072-M0515GI	2066
F8990072-M0516GI	2152
F8990072-M0517GI	2069
F8990072-M0518GI	2061
F8990072-M0519GI	2059
F8990072-M0520GI	2066
F8990072-M0521GI	2050
F8990072-M0522GI	2071
F8990072-M0523GI	2147
F8990072-M0524GI	2084
F8990072-M0525GI	2078
F8990072-M0526GI	2087
F8990072-M0527GI	2093
F8990072-M0528GI	2091
F8990072-M0529GI	2112
F8990072-M0530GI	2071
F8990072-M0531GI	2047
F8990072-M0532GI	2110
F8990072-M0533GI	2057
F8990072-M0534GI	2072
F8990072-M0535GI	2040
F8990072-M0536GI	2059
F8990072-M0537GI	2118
F8990072-M0538GI	2073
F8990072-M0539GI	2066
F8990072-M0540GI	2081
F8990072-M0541GI	2068
F8990072-M0542GI	2085
F8990072-M0543GI	2059

F8990072-M0544GI	2070
F8990072-M0545GI	2095
F8990072-M0546GI	2078
F8990072-M0547GI	2092
F8990072-M0548GI	2084
F8990072-M0549GI	2014
F8990072-M0550GI	2037
F8990072-M0551GI	2112
F8990072-M0552GI	2035
F8990072-M0553GI	2107
F8990072-M0554GI	2078
F8990072-M0555GI	2037
F8990072-M0556GI	2075
F8990072-M0557GI	2110
F8990072-M0558GI	2064
F8990072-M0559GI	2120
F8990072-M0560GI	2024
F8990072-M0561GI	2073
F8990072-M0571GI	1484
F8990072-M0572GI	1802
F8990072-M0573GI	1876
F8990072-M0574GI	2005
F8990072-M0575GI	1975
F8990072-M0576GI	2181
F8990072-M0577GI	2093
F8990072-M0578GI	2152
F8990072-M0579GI	2110
F8990072-M0580GI	2152
F8990072-M0581GI	2133
F8990072-M0582GI	2100
F8990072-M0583GI	2028
F8990072-M0584GI	2073
F8990072-M0585GI	2009
F8990072-M0586GI	2101
F8990072-M0587GI	2017
F8990072-M0588GI	2121
F8990072-M0589GI	2081
F8990072-M0590GI	2098
F8990072-M0591GI	2111
F8990072-M0592GI	2084
F8990072-M0593GI	2120
F8990072-M0594GI	2069
F8990072-M0595GI	2131
F8990072-M0596GI	2134
F8990072-M0597GI	2007
F8990072-M0598GI	2051
F8990072-M0599GI	2001
F8990072-M0600GI	1879
F8990072-M0601GI	1942
F8990072-M0602GI	2103
F8990072-M0603GI	2056
F8990072-M0604GI	2076
F8990072-M0605GI	2098
F8990072-M0606GI	2114
F8990072-M0607GI	2055
F8990072-M0608GI	2141

F8990072-M0609GI	2110
F8990072-M0610GI	2146
F8990072-M0611GI	2204
F8990072-M0612GI	2150
F8990072-M0613GI	2117
F8990072-M0614GI	2116
F8990072-M0615GI	2102
F8990072-M0616GI	2087
F8990072-M0617GI	1984
F8990072-M0618GI	2012
F8990072-M0632GI	1344
F8990072-M0633GI	1688
F8990072-M0634GI	1877
F8990072-M0635GI	1910
F8990072-M0636GI	1903
F8990072-M0637GI	2073
F8990072-M0638GI	1974
F8990072-M0639GI	2000
F8990072-M0640GI	2126
F8990072-M0641GI	2130
F8990072-M0642GI	2112
F8990072-M0643GI	2165
F8990072-M0644GI	2174
F8990072-M0645GI	2161
F8990072-M0646GI	2204
F8990072-M0647GI	2137
F8990072-M0648GI	2169
F8990072-M0649GI	2133
F8990072-M0650GI	2144
F8990072-M0651GI	2131
F8990072-M0652GI	2094
F8990072-M0653GI	1985
F8990072-M0654GI	1597
F8990072-M0655GI	1344
F8990072-M0656GI	1313
F8990072-M0657GI	1390
F8990072-M0693GI	1248
F8990072-M0694GI	1302
F8990072-M0695GI	1260
F8990072-M0699GI	1347
F8990072-M0700GI	1372
F8990072-M0701GI	1342
F8990072-M0705GI	1645
F8990072-M0706GI	1698
F8990072-M0711GI	1467
F8990072-M0712GI	1509
F8990072-M0713GI	1571
F8990072-M0717GI	1283
F8990072-M0718GI	1272
F8990072-M0719GI	1315
F8990072-M0723GI	1302
F8990072-M0724GI	1368
F8990072-M0725GI	1047
F8990072-M0729GI	1546
F8990072-M0730GI	1435
F8990072-M0731GI	1247

F8990072-M0735GI	1300
F8990072-M0736GI	1283
F8990072-M0737GI	1102
F8990072-M0741GI	1397
F8990072-M0742GI	1295
F8990072-M0743GI	1062
F8990072-M0744GI	1074
F8990072-M0747GI	1294
F8990072-M0748GI	1182
F8990072-M0749GI	1021
F8990072-M0750GI	1134
F8990072-M0753GI	1822
F8990072-M0754GI	1485
F8990072-M0755GI	1387
F8990072-M0759GI	1238
F8990072-M0760GI	1121
F8990072-M0761GI	1271
F8990072-M0765GI	1428
F8990072-M0766GI	1414
F8990072-M0767GI	1083
F8990072-M0771GI	1257
F8990072-M0772GI	1265
F8990072-M0773GI	1383
F8990072-M0777GI	1304
F8990072-M0778GI	1284
F8990072-M0779GI	1384
F8990072-M0783GI	1307
F8990072-M0784GI	1295
F8990072-M0785GI	1185
F8990072-M0786GI	1312
F8990072-M0789GI	1627
F8990072-M0790GI	2059
F8990072-M0791GI	2693
F8990072-M0795GI	1796
F8990072-M0796GI	2520
F8990072-M0797GI	3455
F8990072-M0801GI	1784
F8990072-M0802GI	2543
F8990072-M0803GI	3518
F8990072-M0807GI	2081
F8990072-M0808GI	3231
F8990072-M0809GI	3871
F8990072-M0813GI	2008
F8990072-M0814GI	3004
F8990072-M0815GI	3891
F8990072-M0819GI	1390
F8990072-M0820GI	1497
F8990072-M0821GI	1525
F8990072-M0825GI	1610
F8990072-M0826GI	1708
F8990072-M0827GI	1598
F8990072-M0831GI	1506
F8990072-M0832GI	1818
F8990072-M0833GI	2302
F8990072-M0837GI	1766
F8990072-M0838GI	2014

F8990072-M0839GI	2371
F8990072-M0843GI	1362
F8990072-M0844GI	1668
F8990072-M0845GI	1542
F8990072-M0849GI	1632
F8990072-M0850GI	1869
F8990072-M0851GI	2192
F8990072-M0855GI	2218
F8990072-M0856GI	2141
F8990072-M0857GI	2176
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F8990072-M0862GI	1754
F8990072-M0863GI	1661
F8990072-M0867GI	1678
F8990072-M0868GI	1861
F8990072-M0869GI	1888
F8990072-M0873GI	1533
F8990072-M0874GI	1466
F8990072-M0875GI	1757
F8990072-M0879GI	1535
F8990072-M0880GI	1499
F8990072-M0881GI	1643
F8990072-M0885GI	1583
F8990072-M0886GI	1501
F8990072-M0887GI	1362
F8990072-M0891GI	1399
F8990072-M0892GI	1359
F8990072-M0893GI	1486
F8990072-M0897GI	1234
F8990072-M0898GI	1210
F8990072-M0899GI	1255
F8990072-M0903GI	1443
F8990072-M0904GI	1309
F8990072-M0905GI	1387
F8990072-M0909GI	1407
F8990072-M0910GI	1246
F8990072-M0911GI	1146
F8990072-M0915GI	1321
F8990072-M0916GI	1340
F8990072-M0917GI	1243
F8990072-M0927GI	1335
F8990072-M0928GI	1199
F8990072-M0929GI	1208
F8990072-M0933GI	1428
F8990072-M0934GI	1359
F8990072-M0935GI	1004
F8990072-M0936GI	989
F8990072-M0937GI	1091
F8990072-M0939GI	1393
F8990072-M0940GI	1371
F8990072-M0941GI	1400
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F8990072-M0946GI	1253
F8990072-M0947GI	1400
F8990072-M0951GI	1619
F8990072-M0952GI	1402

F8990072-M0953GI	1119
F8990072-M0957GI	1293
F8990072-M0958GI	1228
F8990072-M0959GI	1485
F8990072-M0963GI	1402
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F8990072-M0969GI	1577
F8990072-M0970GI	1501
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F8990072-M0989GI	1300
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F8990072-M1006GI	1947
F8990072-M1007GI	2026
F8990072-M1008GI	1923
F8990072-M1009GI	2070
F8990072-M1010GI	1993
F8990072-M1011GI	1695
F8990072-M1012GI	2001
F8990072-M1013GI	1921
F8990072-M1014GI	2018
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F8990072-M1017GI	1832
F8990072-M1018GI	1921
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F8990072-M1023GI	1829
F8990072-M1024GI	1924
F8990072-M1025GI	1909
F8990072-M1026GI	1963
F8990072-M1027GI	1840
F8990072-M1028GI	1774
F8990072-M1029GI	1850

F8990072-M1030GI	1840
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F8990072-M1033GI	1887
F8990072-M1034GI	1921
F8990072-M1035GI	1905
F8990072-M1036GI	1925
F8990072-M1037GI	1962
F8990072-M1038GI	1928
F8990072-M1039GI	1909
F8990072-M1040GI	1882
F8990072-M1041GI	1896
F8990072-M1042GI	1902
F8990072-M1043GI	1711
F8990072-M1044GI	1939
F8990072-M1045GI	1820
F8990072-M1046GI	1702
F8990072-M1047GI	1837
F8990072-M1048GI	1848
F8990072-M1049GI	1706
F8990072-M1050GI	1746
F8990072-M1051GI	1828
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F8990072-M1053GI	1743
F8990072-M1054GI	1905
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F8990072-M1061GI	1813
F8990072-M1062GI	1871
F8990072-M1063GI	1881
F8990072-M1064GI	1923
F8990072-M1065GI	1959
F8990072-M1066GI	1879
F8990072-M1067GI	1895
F8990072-M1068GI	1874
F8990072-M1069GI	1898
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F8990072-M1076GI	1486
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F8990072-M1085GI	1759

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F8990072-M1089GI	1728
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F8990072-M1104GI	1580
F8990072-M1105GI	1550
F8990072-M1106GI	1460
F8990072-M1107GI	1516
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F8990072-M1109GI	1462
F8990072-M1110GI	1452
F8990072-M1111GI	1842
F8990072-M1112GI	2056
F8990072-M1113GI	1624
F8990072-M1114GI	1483
F8990072-M1115GI	1280
F8990072-M1116GI	1250
F8990072-M1117GI	1372
F8990072-M1118GI	1349
F8990072-M1119GI	1242
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F8990072-M1121GI	1267
F8990072-M1122GI	1302
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F8990072-M1135GI	1427
F8990072-M1136GI	1471
F8990072-M1137GI	1469
F8990072-M1138GI	1479
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F8990072-M1151GI	1299
F8990072-M1152GI	1351
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F8990072-M1194GI	1352
F8990072-M1195GI	1354
F8990072-M1196GI	1323
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F8990072-M1209GI	1343
F8990072-M1210GI	1336
F8990072-M1211GI	1301
F8990072-M1212GI	1307
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F8990072-M1228GI	1312
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F8990072-M1233GI	991
F8990072-M1234GI	972
F8990072-M1235GI	929
F8990072-M1236GI	995
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F8990072-M1239GI	980
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F8990072-M1241GI	966
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F8990072-M1243GI	1001
F8990072-M1244GI	968
F8990072-M1245GI	969
F8990072-M1246GI	1183
F8990072-M1247GI	1099
F8990072-M1248GI	1288
Mean:	1663
Median:	1619
Standard Deviation:	385
Range:	919 - 3891

Survey Unit Data Assessment:

The survey design required 819 direct measurements for the Sign Test. The critical value and the results of the Sign Test are presented in Table 4. The sample mean and median values were less than the DCGL. The sample standard deviation was less than the design standard deviation so no additional samples were required.

Table 4. Data Assessment Results

Survey Results Parameter	Value	Comment
Material Background Used (dpm/100 cm ²):	N/A	
Ambient Background Used (dpm/100 cm ²):	N/A	Average Ambient BKG = 0
Actual Direct Measurements (N):	819	
Median (dpm/100 cm ²):	1619	
Mean (dpm/100 cm ²):	1663	
Direct Measurement Standard Deviation (dpm/100 cm ²):	385	
Total Standard Deviation (dpm/100 cm ²):	385	Based on samples and backgrounds.
Maximum (dpm/100 cm ²):	3891	
Material Type:	N/A	Background Subtract Not Applied
Sign Test Final N Value:	819	
S+ Value:	819	
Critical Value:	433	
Sufficient Samples Collected:	Yes	
Maximum Value < DCGL:	Yes	
Median Value < DCGL:	Yes	
Mean Value < DCGL:	Yes	
Maximum Value < DCGL_{emc}:	Yes	Class 1
Total Standard Deviation <= Sigma:	Yes	
Pass the Sign Test?	Yes	
Reject the Null Hypothesis?	Yes	
Does the Survey Unit Pass All Criteria?	Yes	

Survey Unit Investigations and Results:

No investigations were required and no investigation results are reported.

ALARA Statement:

As stated in Chapter 4 of the LTP, as long as the residual activity within the survey unit is less than the DCGL (i.e. the survey unit average activity is less than the DCGL), the ALARA criterion has been met.

Changes in Initial Survey Unit Assumptions:

The survey unit was designed as a Class 1 structure survey and the sample results are consistent with that classification. The variability of the survey results was less than the characterization data used for survey design. No potential areas of elevated activity were detected.

Conclusion:

The FSS of this survey unit was properly designed as a Class 1 survey based on Table 5-4 of the LTP. The required number of direct measurements was made and the scan coverage met the requirement of Table 5-6 of the LTP. No direct measurements exceeded the DCGL of 100000 dpm/100 cm² or the grout limit of 21000dpm/100cm². No investigations were required.

The direct measurement data support rejection of the null hypothesis, providing high confidence that the survey unit satisfied the release criteria and that the data quality objectives were met.

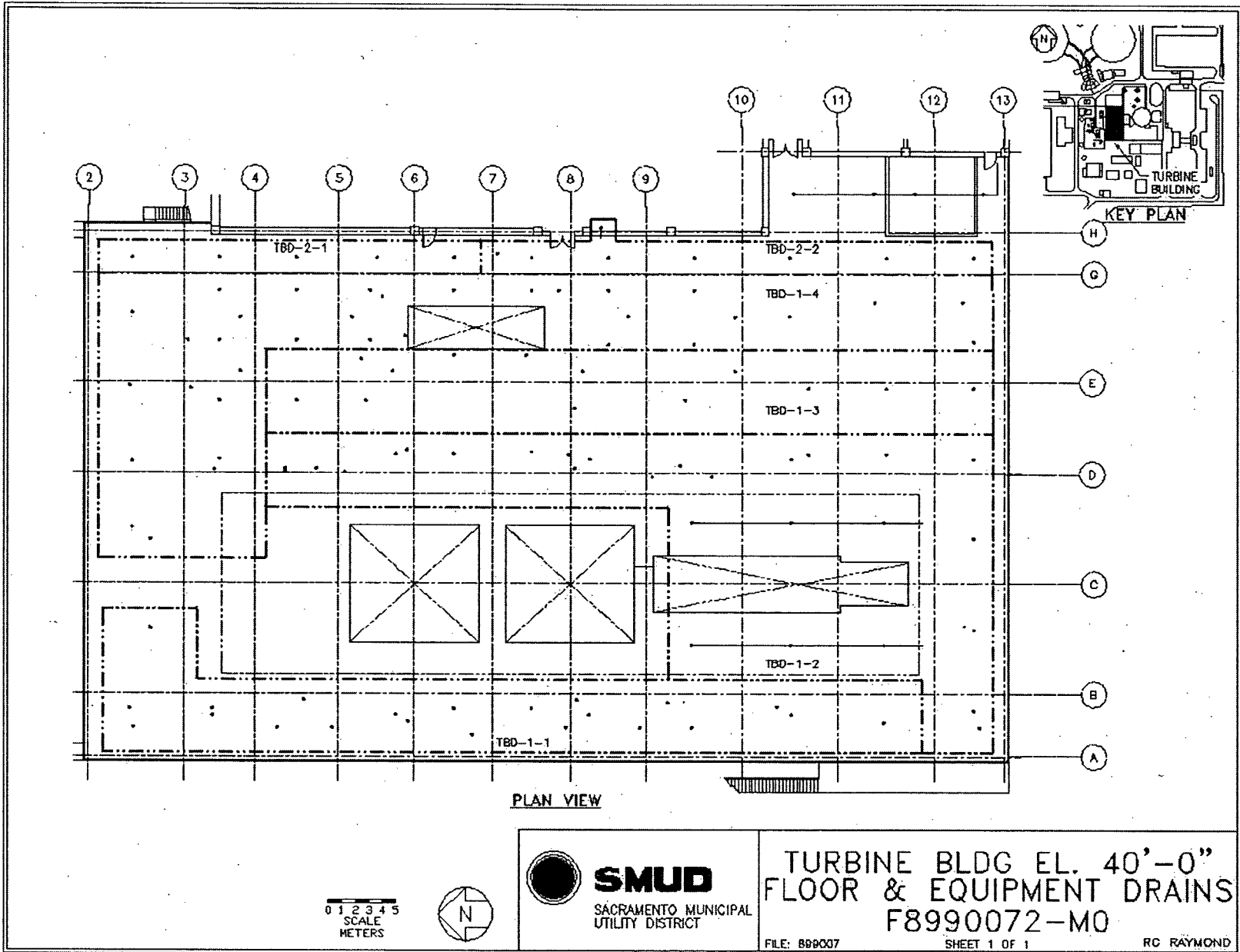
It is concluded that survey unit F8990072 meets the release criteria of 10CFR20.1402.

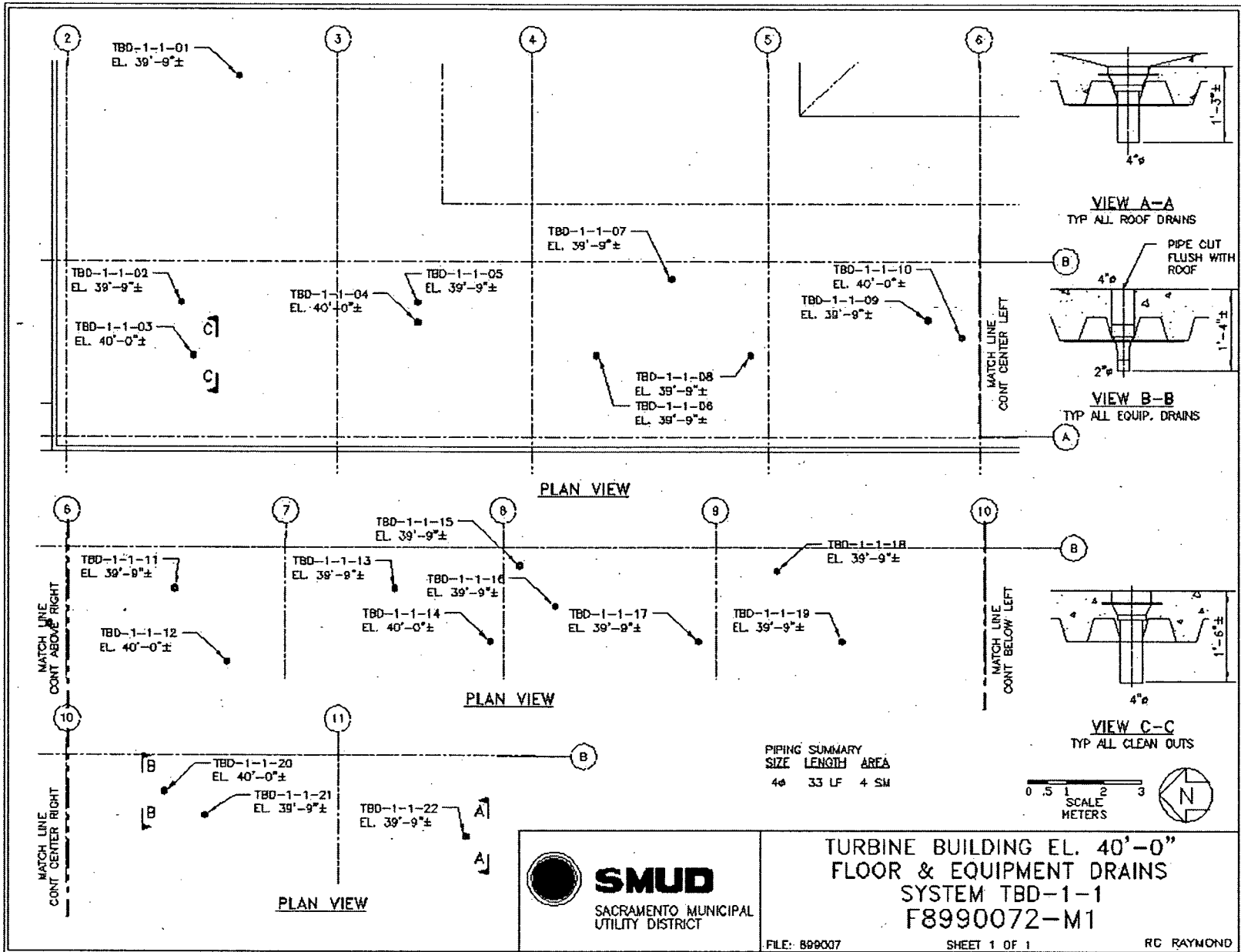
Attachment 1

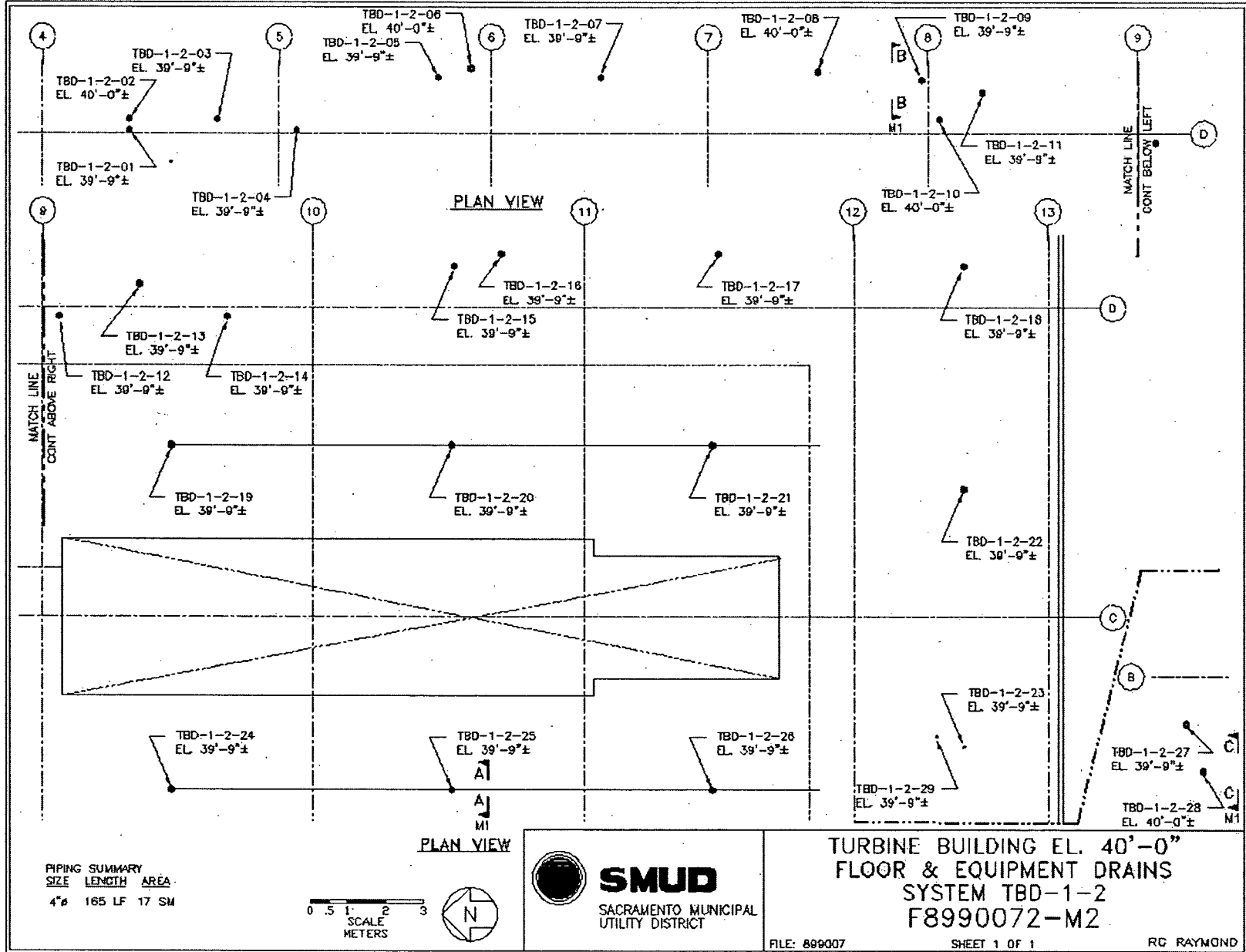
Maps

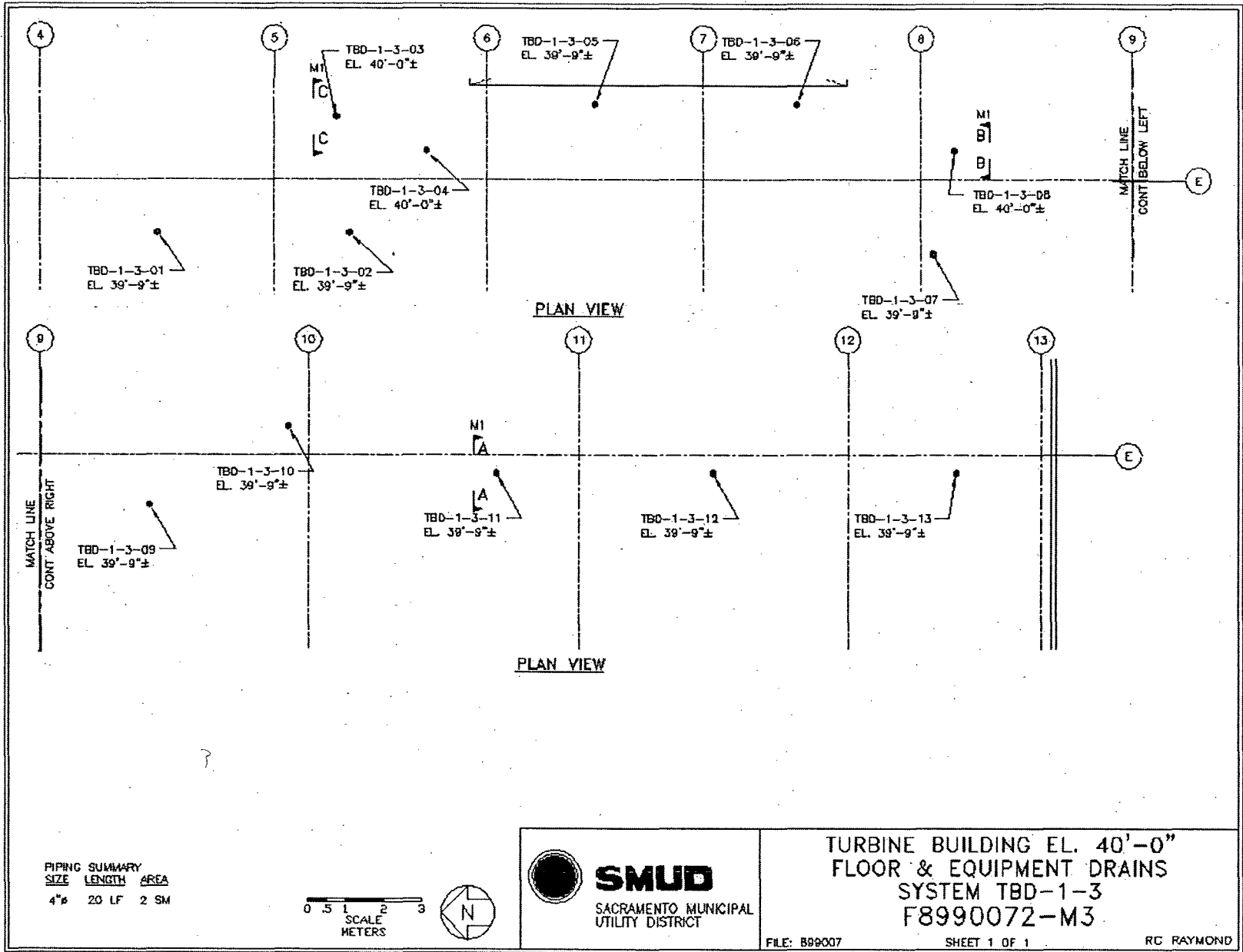
March 24, 2008

Survey Unit F8990072










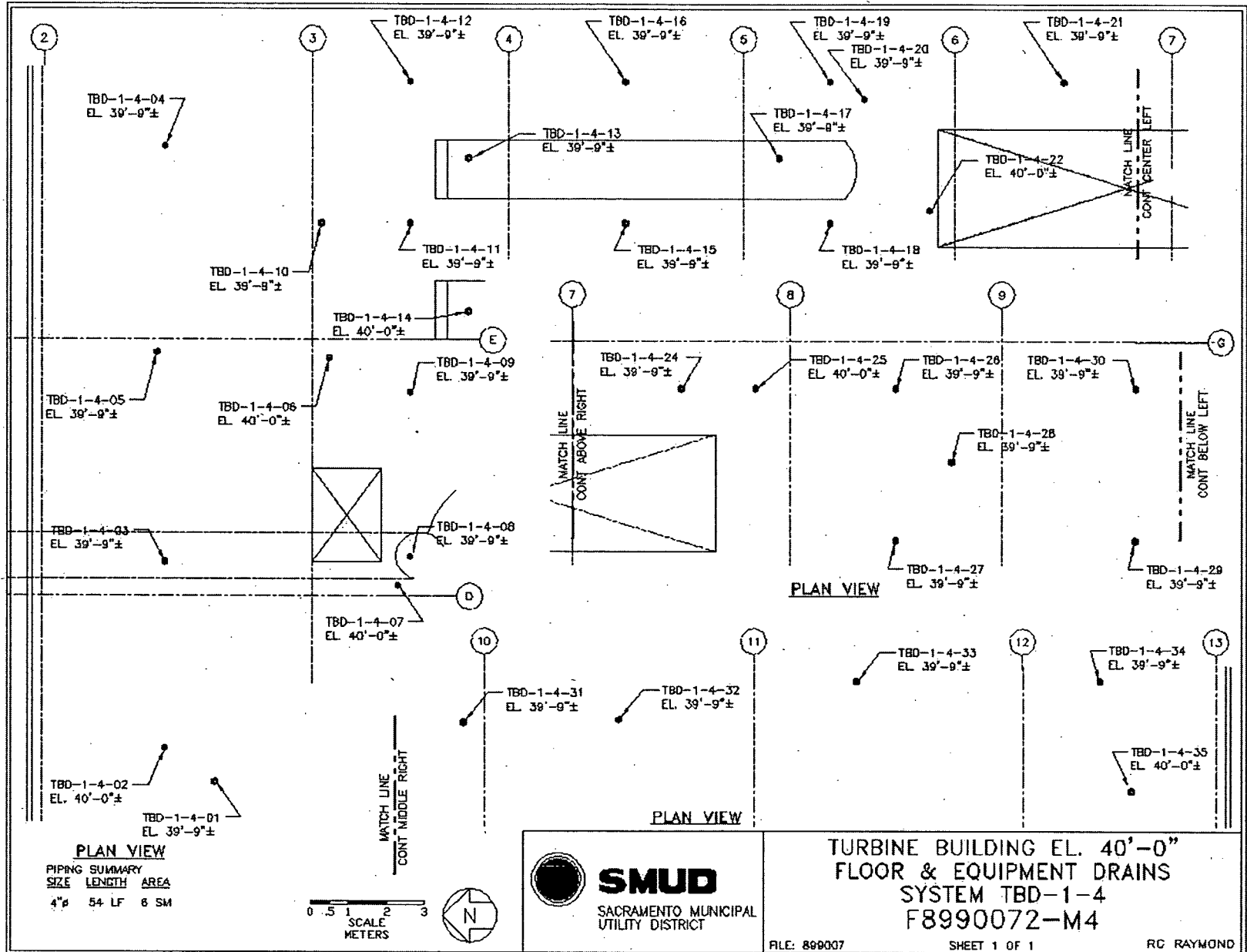
PIPING SUMMARY

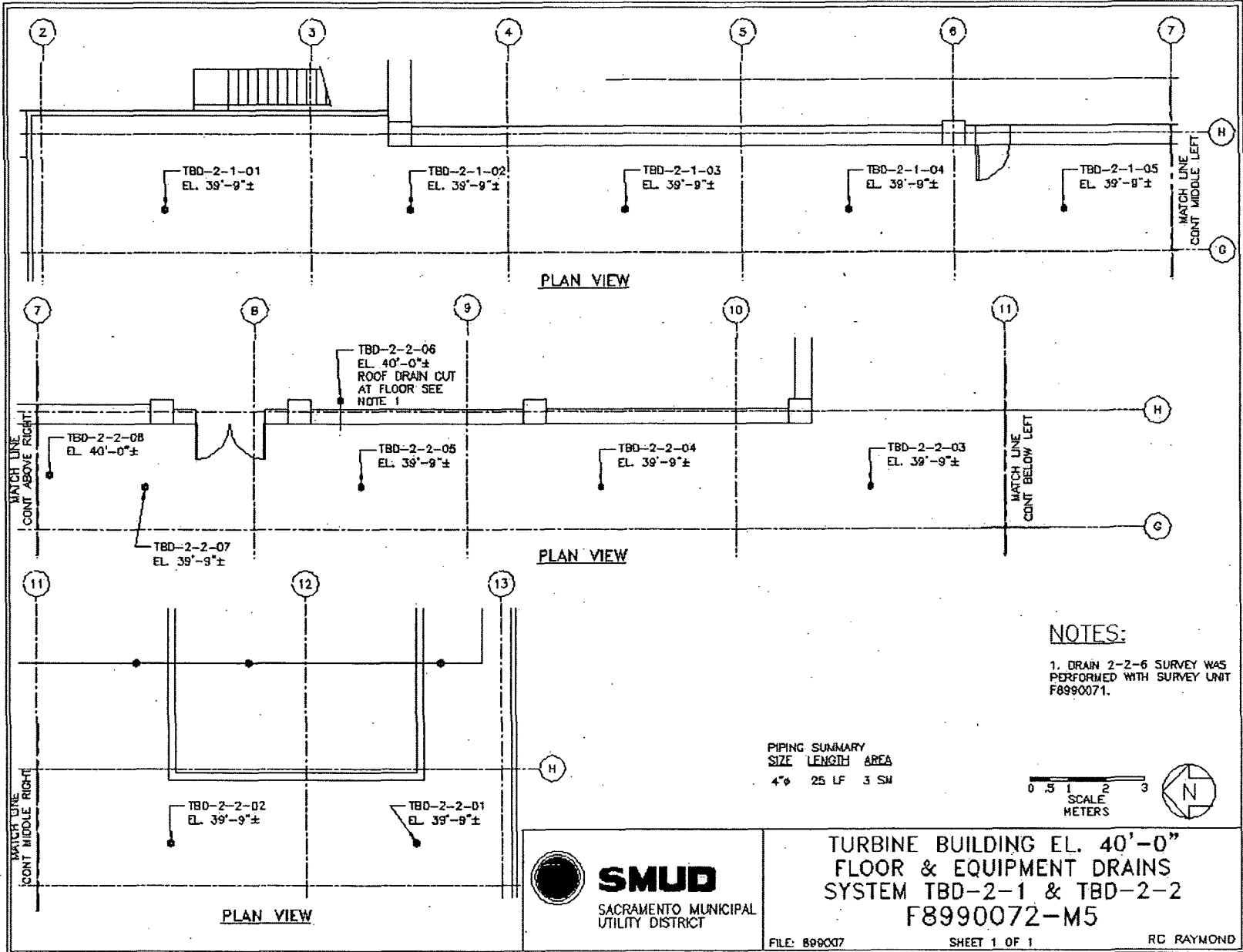
SIZE	LENGTH	AREA
4"φ	20 LF	2 SM



SMUD
SACRAMENTO MUNICIPAL
UTILITY DISTRICT

TURBINE BUILDING EL. 40'-0"
FLOOR & EQUIPMENT DRAINS
SYSTEM TBD-1-3
F8990072-M3





Attachment 2

Instrumentation

March 24, 2008

Survey Unit F8990072

Table 2-1. Survey Unit Instrumentation

Instrument Model; Serial No.	Detector Model; Serial No.	MDC Static (dpm/100 cm²)	MDC Scan (dpm/100 cm²)
M2350; 142512	44-157; 215958	1750	N/A
M2350; 142509	44-157; 201151	1750	N/A

Table 2-2. Investigation Criteria and DCGL

Parameter	Value (dpm/100 cm²)
Investigation Criteria - Direct	100000
Investigation Criteria – Scan	N/A
DCGL _W	100000
DCGL _{EMC}	N/A

Attachment 3

Investigation

March 24, 2008

Survey Unit F8990072

(none required)

Attachment 4

Data Assessment

March 24, 2008

Survey Unit F8990072

