

No. 4	No. 5	No. 4	No. 2	No. 4	No. 4-5	No. 4
1'-5"	1'-5"	1'-5"	1'-5"	1'-5"	1'-5"	1'-5"
1'-10"	1'-10"	1'-10"	1'-10"	1'-10"	1'-10"	1'-10"
2 Rock bolts at two foot centers in ribs spaced 3-3.5 apart spanned by wire mesh						
Not pertinent						
No follow						
3'-0" water 130 cubic feet (shale)						

EXCAVATION PROGRESS

ESTIMATED ROCK CONDITION (TERZAGHI NO.)

TEMPORARY SUPPORT SYSTEM

BEDDING SPACING

FRACTURE SPACING

WATER CONDITION

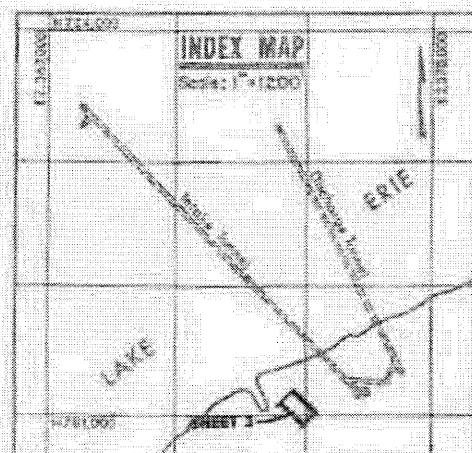
DEPTH OF COVER

(Rev. 12 1/73)

PERRY NUCLEAR POWER PLANT

Geologic Map of Tunnel Excavations

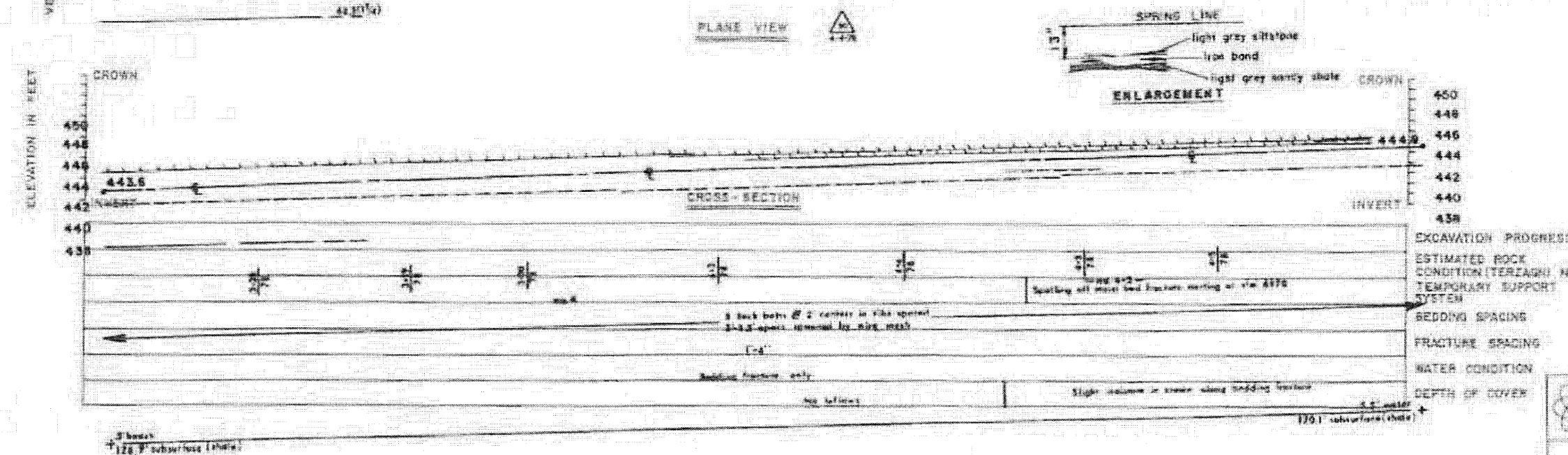
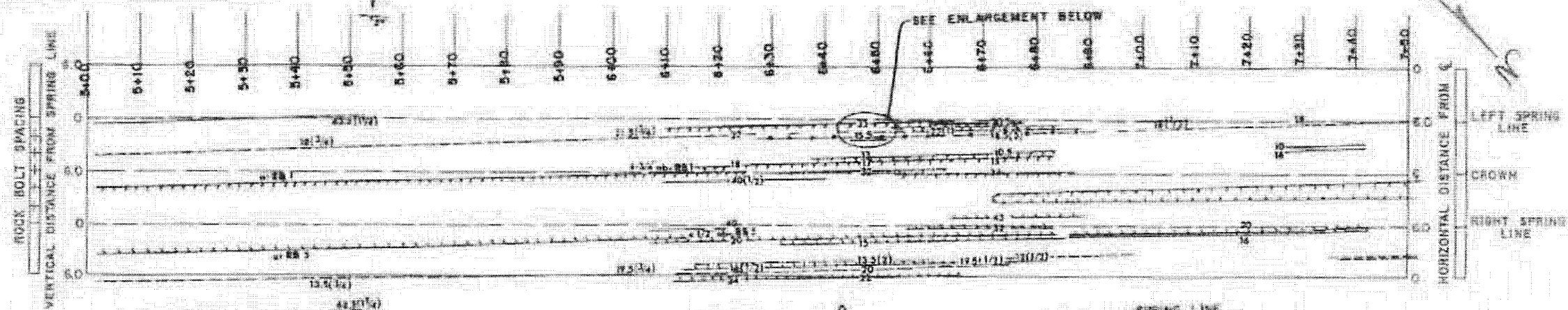
Figure 2.3-47 (Sheet 2 of 34)

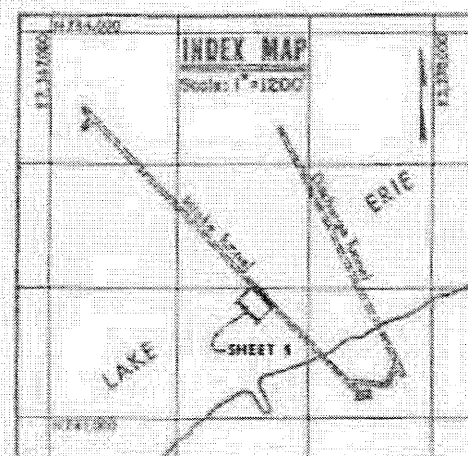


SYMBOLS

HARD, TAN, BROWN, CHESTY,
IRON BED OR LAMINAE
DISCONTINUOUS IRON BED
HARD, LIGHT GREY, SANDY
SHALE TO SILTSTONE BED
DISCONTINUOUS IRON BED
WITHIN GREY BED
FRACTURE
FAULT
BEDDING PARTING
VERTICAL JOINT
INCLINED JOINT
BEDDING, STRIKE AND DIP

MOISTURE ALONG BEDDING
PARTING
SEEPAGE FROM FEATURE
OVEREXCAVATION OR
OVERBREAK ZONE, MAXIMUM
AMOUNT SHOWN
METHANE GAS, MAXIMUM
PERCENT L.E.L. WITH DATE
OF OCCURRENCE



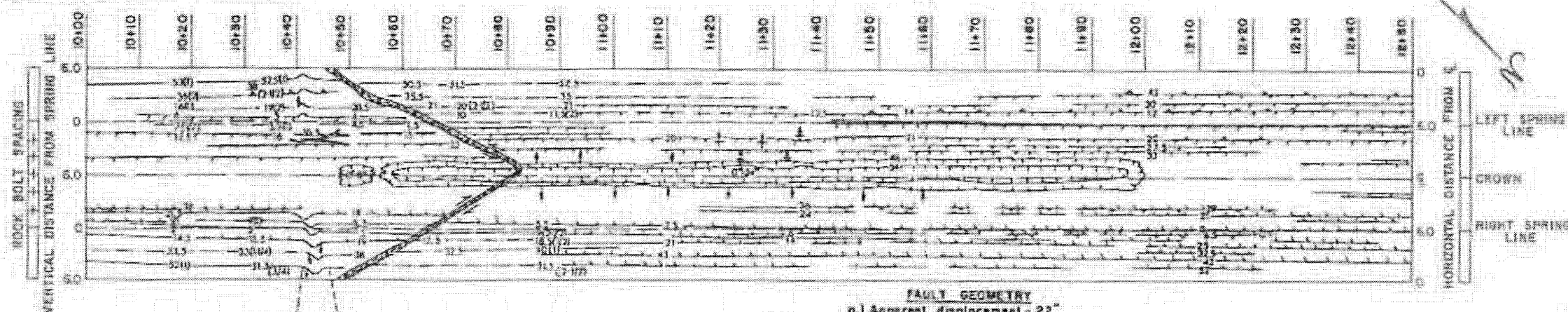


SYMBOLS

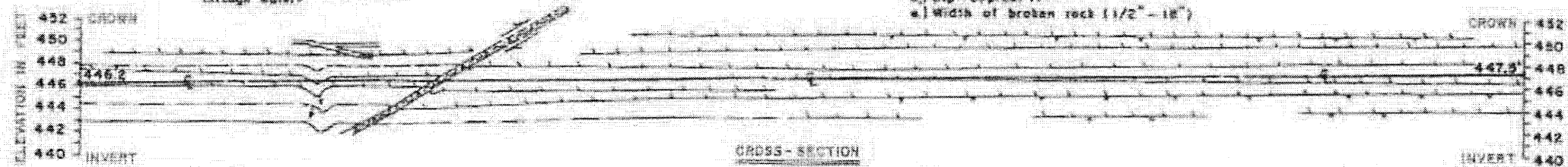
1/4" HARD, TAN, BROWN, CHERTY, IRON BED OR LAMINAE
 1/2" DISCONTINUOUS IRON BED
 1/2" HARD, LIGHT GREY, SANDY SHALE TO SILTSTONE BED
 10/16" DISCONTINUOUS IRON BED WITHIN GREY BED
 FRACTURE
 FAULT (with sense of motion)
 BEDDING PARTING
 VERTICAL JOINT
 INCLINED JOINT
 BEDDING, STRIKE AND DIP

MOISTURE ALONG BEDDING PARTING
 SEEPAGE FROM FEATURE
 OVEREXCAVATION OR OVERBREAK ZONE, MAXIMUM AMOUNT SHOWN
 METHANE GAS, MAXIMUM PERCENT I.E.L. WITH DATE OF OCCURRENCE

*Note:
 Number(s) in parentheses indicates bed thickness
 Number preceding parenthesis indicates inches above or below spring line at station of measurement.



FAULT GEOMETRY
 a.) Apparent displacement - 22"
 b.) Actual vertical displacement - 12"
 c.) Strike - N 47° E
 d.) Dip - approx. 17°
 e.) Width of broken rock (1 1/2" - 18")



no. 3-6		no. 3-6		no. 4-5	
3 rock bolts at 2' centers in steel ribs at 3'-3.5' centers		0-24' of overbreak between rock bolt no. 3-2		3 rock bolts at 2' centers in ribs at 3.5' centers, spanned by wire mesh	
2'-10"		2'-9"		Full shielding - Rock bolts in linear pattern completely shield upper 3/8 of tunnel	
10'		Bedding fractures & 1/2" to 1 1/2" thick, highly fractured fault zone w/gauge		Bedding fractures only, spaced as above	
No inflows		Slight seep from fault		Slight inflow from rock bolts	
7.3 water		Water dripping from shielding		Slight moisture along approx. 20% of bedding fractures and rock bolts	
111.7 subsurface (shale)		2 inflows at approx. 1 gal./min.		6.3 water	
				10.2 subsurface (shale)	

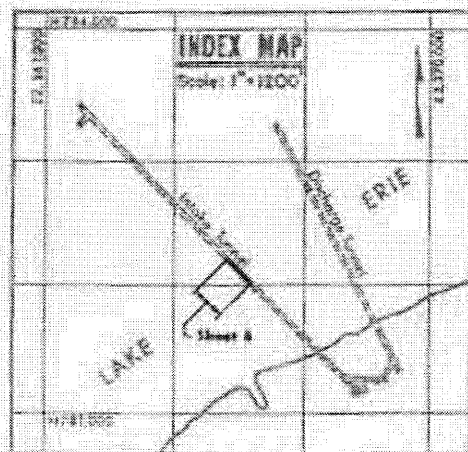
EXCAVATION PROGRESS
 ESTIMATED ROCK CONDITION (TERZAGHI NO.)
 TEMPORARY SUPPORT SYSTEM
 BEDDING SPACING
 FRACTURE SPACING
 WATER CONDITION
 DEPTH OF COVER

(Rev. 12 1/70)

PERRY NUCLEAR POWER PLANT

Geologic Map of Tunnel Excavations

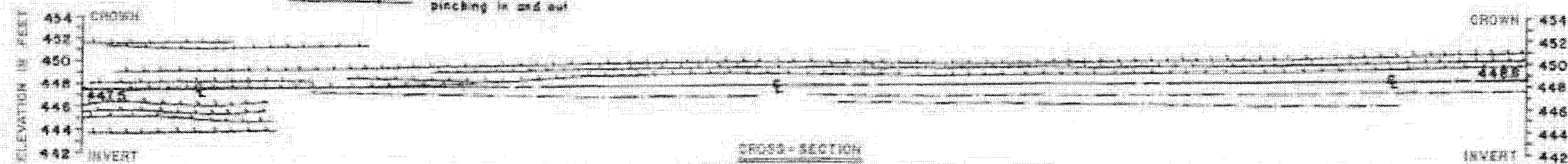
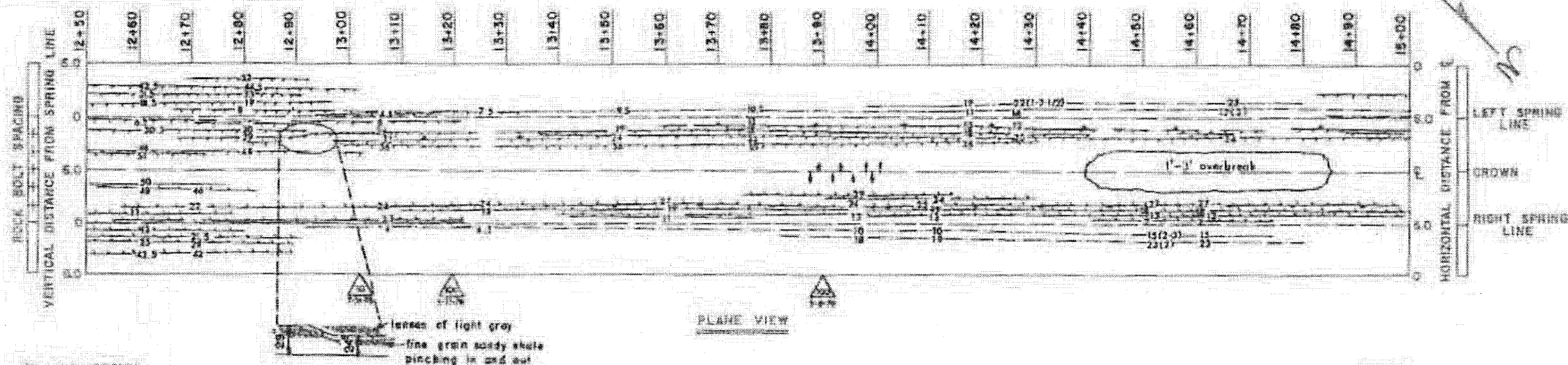
Figure 2.5-4 (Sheet 3 of 24)



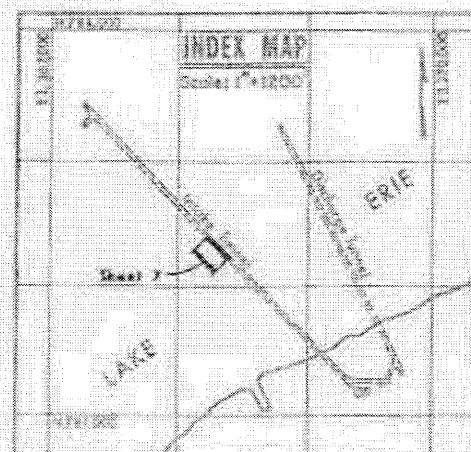
- SYMBOLS**
- 1 1/2" HARD, TAN, BROWN, CHERT, IRON BED OR LAMINAE
 - 12 (2-3)" DISCONTINUOUS IRON BED
 - 12 (1)" HARD, LIGHT GREY SANDY SHALE TO SILTSTONE BED
 - 10/12, 1" DISCONTINUOUS IRON BED WITHIN GREY BED
 - 1/2" FRACTURE
 - 1/2" FAULT
 - 1/2" BEDDING PARTING
 - 1/2" VERTICAL JOINT
 - 1/2" INCLINED JOINT
 - 1/2" BEDDING, STRIKE AND DIP

- MOISTURE ALONG BEDDING PARTING
- SEEPAGE FROM FEATURE
- OVEREXCAVATION OR OVERBREAK ZONE, MAXIMUM AMOUNT SHOWN
- METHANE GAS, MAXIMUM PERCENT L.E.L. WITH DATE OF OCCURRENCE

Notes:
Number(s) in parentheses indicates bed thickness.
Number preceding parenthesis indicates inches above or below spring line at station of measurement.

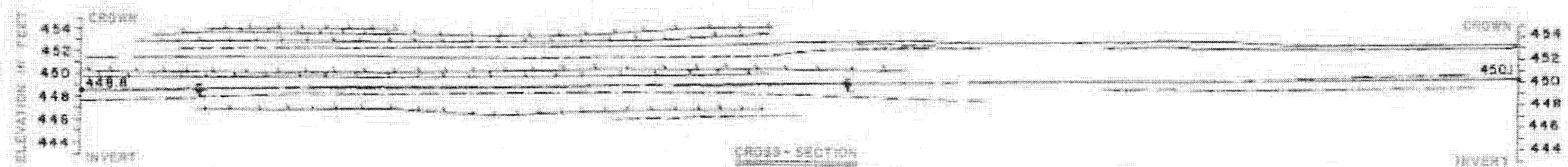
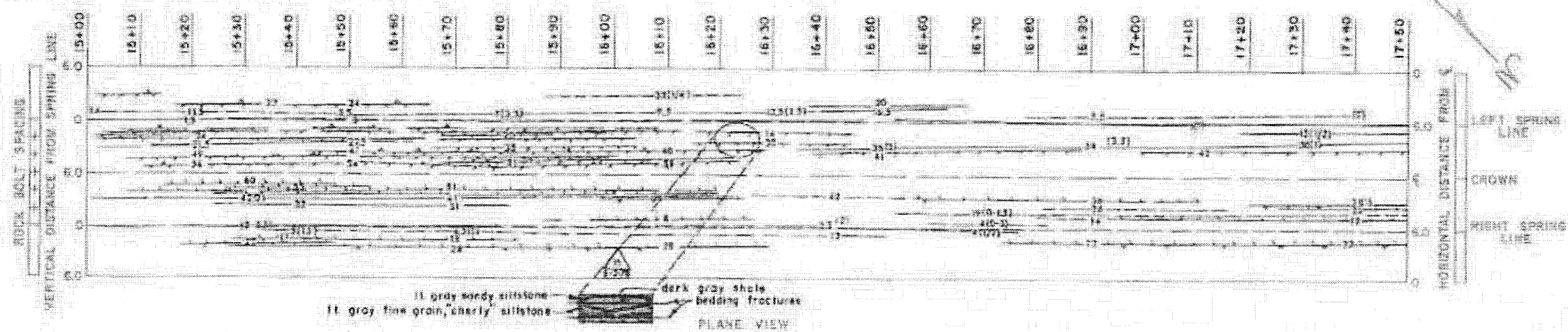


12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	50	52	54	56	58	60	62	64	66	68	70	72	74	76	78	80	82	84	86	88	90	92	94	96	98	100	102	104	106	108	110	112	114	116	118	120	122	124	126	128	130	132	134	136	138	140	142	144	146	148	150	152	154	156	158	160	162	164	166	168	170	172	174	176	178	180	182	184	186	188	190	192	194	196	198	200	202	204	206	208	210	212	214	216	218	220	222	224	226	228	230	232	234	236	238	240	242	244	246	248	250	252	254	256	258	260	262	264	266	268	270	272	274	276	278	280	282	284	286	288	290	292	294	296	298	300	302	304	306	308	310	312	314	316	318	320	322	324	326	328	330	332	334	336	338	340	342	344	346	348	350	352	354	356	358	360	362	364	366	368	370	372	374	376	378	380	382	384	386	388	390	392	394	396	398	400	402	404	406	408	410	412	414	416	418	420	422	424	426	428	430	432	434	436	438	440	442	444	446	448	450	452	454	456	458	460	462	464	466	468	470	472	474	476	478	480	482	484	486	488	490	492	494	496	498	500	502	504	506	508	510	512	514	516	518	520	522	524	526	528	530	532	534	536	538	540	542	544	546	548	550	552	554	556	558	560	562	564	566	568	570	572	574	576	578	580	582	584	586	588	590	592	594	596	598	600	602	604	606	608	610	612	614	616	618	620	622	624	626	628	630	632	634	636	638	640	642	644	646	648	650	652	654	656	658	660	662	664	666	668	670	672	674	676	678	680	682	684	686	688	690	692	694	696	698	700	702	704	706	708	710	712	714	716	718	720	722	724	726	728	730	732	734	736	738	740	742	744	746	748	750	752	754	756	758	760	762	764	766	768	770	772	774	776	778	780	782	784	786	788	790	792	794	796	798	800	802	804	806	808	810	812	814	816	818	820	822	824	826	828	830	832	834	836	838	840	842	844	846	848	850	852	854	856	858	860	862	864	866	868	870	872	874	876	878	880	882	884	886	888	890	892	894	896	898	900	902	904	906	908	910	912	914	916	918	920	922	924	926	928	930	932	934	936	938	940	942	944	946	948	950	952	954	956	958	960	962	964	966	968	970	972	974	976	978	980	982	984	986	988	990	992	994	996	998	1000	1002	1004	1006	1008	1010	1012	1014	1016	1018	1020	1022	1024	1026	1028	1030	1032	1034	1036	1038	1040	1042	1044	1046	1048	1050	1052	1054	1056	1058	1060	1062	1064	1066	1068	1070	1072	1074	1076	1078	1080	1082	1084	1086	1088	1090	1092	1094	1096	1098	1100	1102	1104	1106	1108	1110	1112	1114	1116	1118	1120	1122	1124	1126	1128	1130	1132	1134	1136	1138	1140	1142	1144	1146	1148	1150	1152	1154	1156	1158	1160	1162	1164	1166	1168	1170	1172	1174	1176	1178	1180	1182	1184	1186	1188	1190	1192	1194	1196	1198	1200	1202	1204	1206	1208	1210	1212	1214	1216	1218	1220	1222	1224	1226	1228	1230	1232	1234	1236	1238	1240	1242	1244	1246	1248	1250	1252	1254	1256	1258	1260	1262	1264	1266	1268	1270	1272	1274	1276	1278	1280	1282	1284	1286	1288	1290	1292	1294	1296	1298	1300	1302	1304	1306	1308	1310	1312	1314	1316	1318	1320	1322	1324	1326	1328	1330	1332	1334	1336	1338	1340	1342	1344	1346	1348	1350	1352	1354	1356	1358	1360	1362	1364	1366	1368	1370	1372	1374	1376	1378	1380	1382	1384	1386	1388	1390	1392	1394	1396	1398	1400	1402	1404	1406	1408	1410	1412	1414	1416	1418	1420	1422	1424	1426	1428	1430	1432	1434	1436	1438	1440	1442	1444	1446	1448	1450	1452	1454	1456	1458	1460	1462	1464	1466	1468	1470	1472	1474	1476	1478	1480	1482	1484	1486	1488	1490	1492	1494	1496	1498	1500	1502	1504	1506	1508	1510	1512	1514	1516	1518	1520	1522	1524	1526	1528	1530	1532	1534	1536	1538	1540	1542	1544	1546	1548	1550	1552	1554	1556	1558	1560	1562	1564	1566	1568	1570	1572	1574	1576	1578	1580	1582	1584	1586	1588	1590	1592	1594	1596	1598	1600	1602	1604	1606	1608	1610	1612	1614	1616	1618	1620	1622	1624	1626	1628	1630	1632	1634	1636	1638	1640	1642	1644	1646	1648	1650	1652	1654	1656	1658	1660	1662	1664	1666	1668	1670	1672	1674	1676	1678	1680	1682	1684	1686	1688	1690	1692	1694	1696	1698	1700	1702	1704	1706	1708	1710	1712	1714	1716	1718	1720	1722	1724	1726	1728	1730	1732	1734	1736	1738	1740	1742	1744	1746	1748	1750	1752	1754	1756	1758	1760	1762	1764	1766	1768	1770	1772	1774	1776	1778	1780	1782	1784	1786	1788	1790	1792	1794	1796	1798	1800	1802	1804	1806	1808	1810	1812	1814	1816	1818	1820	1822	1824	1826	1828	1830	1832	1834	1836	1838	1840	1842	1844	1846	1848	1850	1852	1854	1856	1858	1860	1862	1864	1866	1868	1870	1872	1874	1876	1878	1880	1882	1884	1886	1888	1890	1892	1894	1896	1898	1900	1902	1904	1906	1908	1910	1912	1914	1916	1918	1920	1922	1924	1926	1928	1930	1932	1934	1936	1938	1940	1942	1944	1946	1948	1950	1952	1954	1956	1958	1960	1962	1964	1966	1968	1970	1972	1974	1976	1978	1980	1982	1984	1986	1988	1990	1992	1994	1996	1998	2000	2002	2004	2006	2008	2010	2012	2014	2016	2018	2020	2022	2024	2026	2028	2030	2032	2034	2036	2038	2040	2042	2044	2046	2048	2050	2052	2054	2056	2058	2060	2062	2064	2066	2068	2070	2072	2074	2076	2078	2080	2082	2084	2086	2088	2090	2092	2094	2096	2098	2100	2102	2104	2106	2108	2110	2112	2114	2116	2118	2120	2122	2124	2126	2128	2130	2132	2134	2136	2138	2140	2142	2144	2146	2148	2150	2152	2154	2156	2158	2160	2162	2164	2166	2168	2170	2172	2174	2176	2178	2180	2182	2184	2186	2188	2190	2192	2194	2196	2198	2200	2202	2204	2206	2208	2210	2212	2214	2216	2218	2220	2222	2224	222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- SYMBOLS**
- $\frac{1}{4}(\frac{1}{4})^*$ HARD, TAN, BROWN, CHERTY, IRON BED OR LAMINAE
 - $\frac{1}{2}(\frac{1}{2})^*$ DISCONTINUOUS IRON BED
 - $\frac{1}{4}(\frac{1}{4})^*$ HARD, LIGHT GRAY, SANDY SHALE TO SILTSTONE BEDS
 - $\frac{1}{2}(\frac{1}{2})^*$ DISCONTINUOUS IRON BED WITHIN GRAY BED
 - $\frac{1}{4}(\frac{1}{4})^*$ FRACTURE
 - $\frac{1}{4}(\frac{1}{4})^*$ FAULT
 - $\frac{1}{4}(\frac{1}{4})^*$ BEDDING PARTING
 - $\frac{1}{4}(\frac{1}{4})^*$ VERTICAL JOINT
 - $\frac{1}{4}(\frac{1}{4})^*$ INCLINED JOINT
 - $\frac{1}{4}(\frac{1}{4})^*$ BEDDING, STRIKE AND DIP

- $\frac{1}{4}(\frac{1}{4})^*$ MOISTURE ALONG BEDDING PARTING
 - $\frac{1}{4}(\frac{1}{4})^*$ SEEPAGE FROM FEATURE
 - $\frac{1}{4}(\frac{1}{4})^*$ OVEREXCAVATION OR OVERBREAK ZONE, MAXIMUM AMOUNT SHOWN
 - $\frac{1}{4}(\frac{1}{4})^*$ METHANE GAS, MAXIMUM PERCENT L.E.L. WITH DATE OF OCCURRENCE
- * Note:
Number(s) in parentheses indicates bed thickness.
Number preceding parenthesis indicates inches above or below spring line at station of measurement.



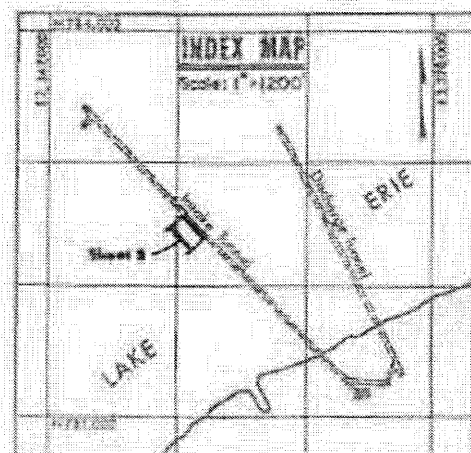
Approx. 4-10'	Approx. 20' of bedding fractures show minimal moisture	Approx. 10' of bedding fractures show moisture
14.5' water	107.2' water/face (shale)	103.9' water/face (shale)

EXCAVATION PROGRESS
ESTIMATED ROCK CONDITION (TERZAGHI NO.)
TEMPORARY SUPPORT SYSTEM
BEDDING SPACING
FRACTURE SPACING
WATER CONDITION
DEPTH OF COVER

(Rev. 12 1/03)
PERRY NUCLEAR POWER PLANT

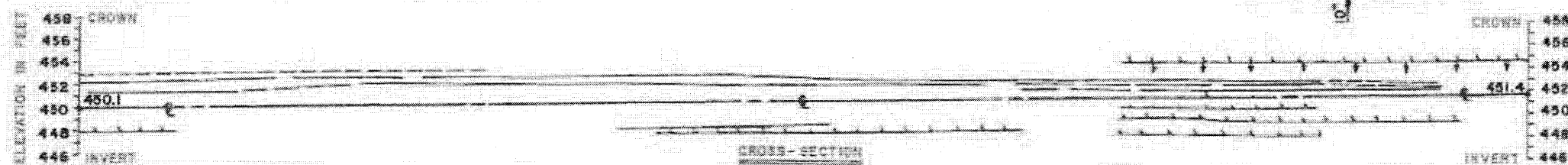
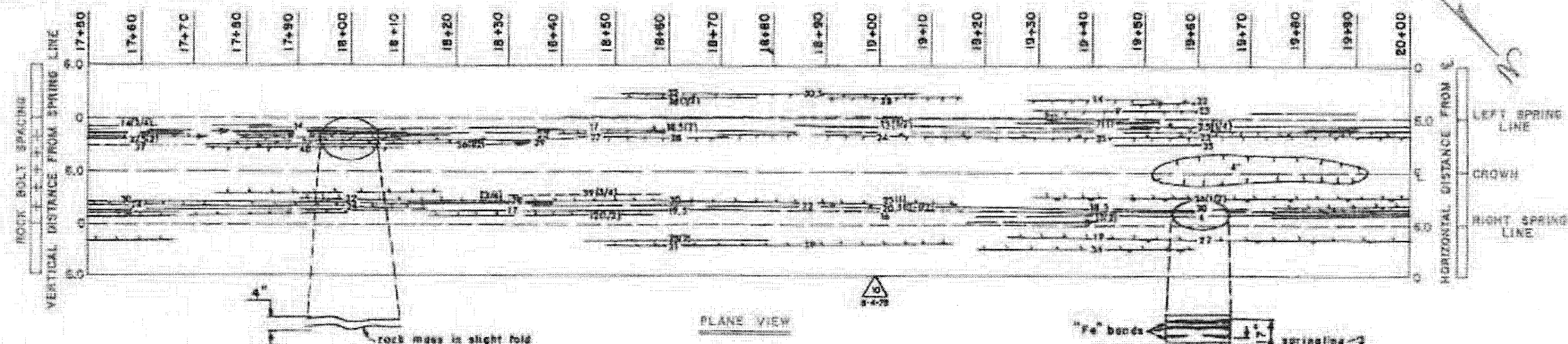
Geologic Map of Tunnel Excavations

Figure 2.3-47 (Sheet 7 of 24)



- SYMBOLS**
- (1/4)" HARD, TAN, BROWN, CHERTY, IRON BED OR LAMINAE
 - 12 (0-1)" DISCONTINUOUS IRON BED
 - 13 (1)" HARD, LIGHT GREY, SANDY SHALE TO SILTYSTONE BED
 - 14 (0-1)" DISCONTINUOUS IRON BED WITHIN GREY BED
 - FRACTURE
 - FAULT
 - BEDDING PARTING
 - VERTICAL JOINT
 - INCLINED JOINT
 - BEDDING, STRIKE AND DIP

- MOISTURE ALONG BEDDING PARTING
 - SEEPAGE FROM FEATURE
 - OVEREXCAVATION OR OVERBREAK ZONE, MAXIMUM AMOUNT SHOWN
 - METHANE GAS, MAXIMUM PERCENT L.E.L. WITH DATE OF OCCURRENCE
- * Note: Number(s) in parentheses indicates bed thickness. Number preceding parentheses indicates inches above or below spring line of station at measurement.



no. 4	Slight scaling along crown for entire length (between rock bolt 2 & 4)	Slight scaling from roof (0'-2')	no. 4
5 rock bolts at 3.0' centers in steel ribs at 3.5' to 4.0' centers, spanned by wire mesh		Same, ribs at 4.0' centers	
Approx. 4'	Approx. 4' to 10'	5'-10-9"	
Bedding fractures only			
Traces of moisture along a couple bedding fractures		Slight moisture on approx. 50% of the excavation	
10.5% water	101.6% subsurface (shale)	17.5% water	101.3% subsurface (shale)

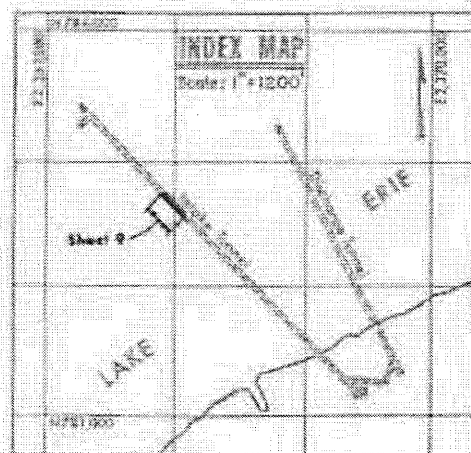
EXCAVATION PROGRESS
ESTIMATED ROCK
CONDITION (TERZAGHI NO.)
TEMPORARY SUPPORT
SYSTEM
BEDDING SPACING
FRACTURE SPACING
WATER CONDITION
DEPTH OF COVER

(REV. 12 1/03)

PERRY NUCLEAR POWER PLANT

Geologic Map of Tunnel
Excavations

Figure 2.3-47 (Sheet 8 of 24)

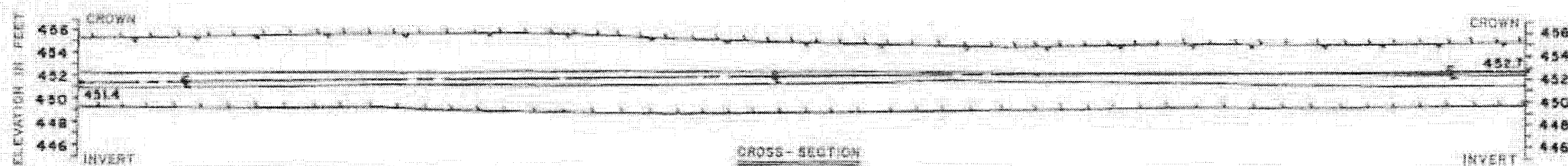
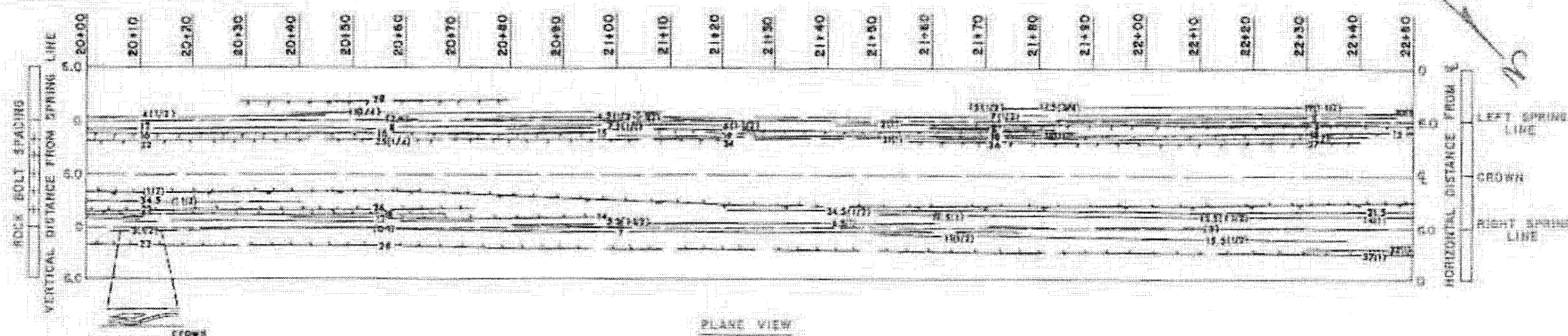


SYMBOLS

(X)* HARD, TAN, BROWN, CHERTY, IRON BED OR LAMINAE
 (120-2)* DISCONTINUOUS IRON BED
 (120-2)* HARD, LIGHT GREY, SANDY SHALE TO SILTSTONE BED
 (120-2)* DISCONTINUOUS IRON BED WITHIN GREY BED
 L FRACTURE
 F FAULT
 P BEDDING PARTING
 V VERTICAL JOINT
 I INCLINED JOINT
 S BEDDING, STRIKE AND DIP

MOISTURE ALONG BEDDING PARTING
 SEEPAGE FROM FEATURE
 OVEREXCAVATION OR OVERBREAK ZONE, MAXIMUM AMOUNT SHOWN
 METHANE GAS, MAXIMUM PERCENT L.E.L. WITH DATE OF OCCURRENCE

*Note: Number(s) in parentheses indicates bed thickness. Number preceding parentheses indicates inches above or below boring line at station of measurement.



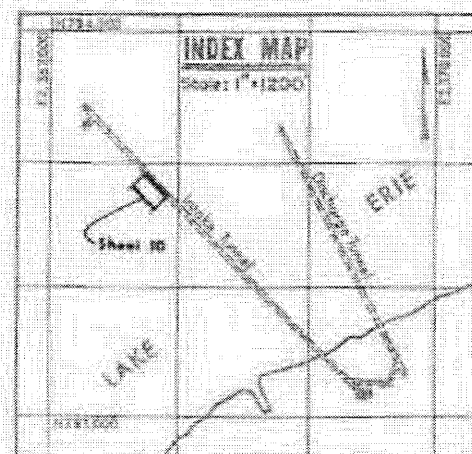
STATION	20+00	20+20	20+40	20+60	20+80	21+00	21+20	21+40	21+60	21+80	22+00	22+20	22+40	22+60	22+80
Excavation Progress															
Estimated Rock Condition (ITERZAGH) NO.															
Temporary Support System															
Bedding Spacing															
Fracture Spacing															
Water Condition															
Depth of Cover															

(Rev. 12 1/03)

PERRY NUCLEAR POWER PLANT

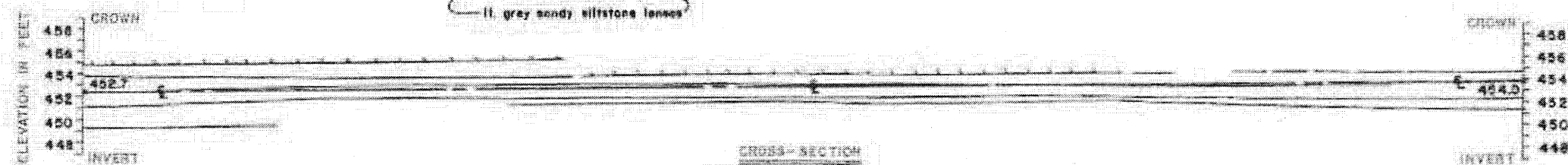
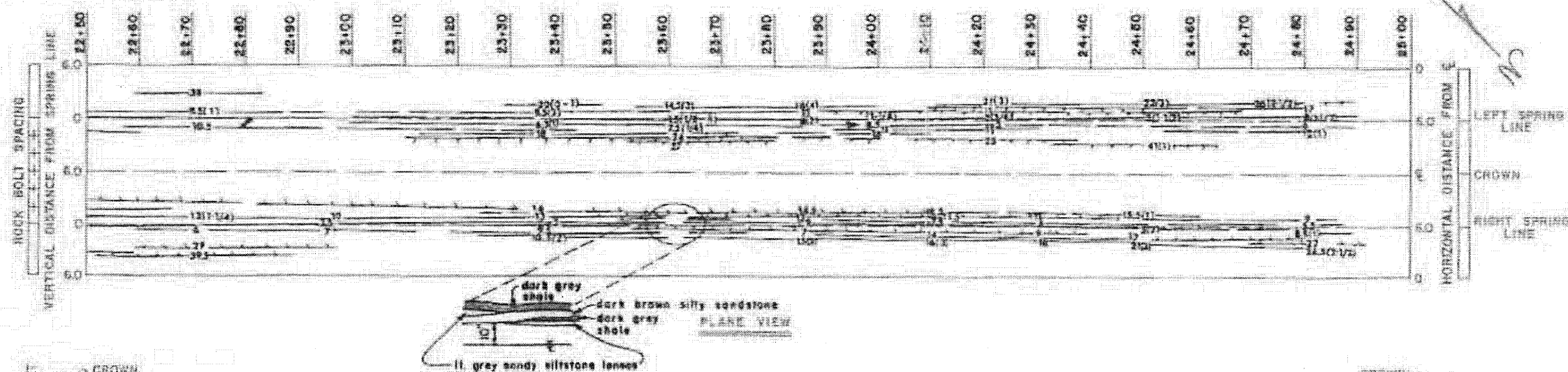
Geologic Map of Tunnel Excavations

Figure 2.5-17 (Sheet 9 of 24)



- SYMBOLS**
- 4 (1/2)" HARD, TAN, BROWN, CHERTY, IRON BED OR LAMINAE
 - 12 (0-2)" DISCONTINUOUS IRON BED
 - 12 (1)" HARD, LIGHT GREY, SANDY SHALE TO SILTSTONE BED
 - 12 (0-2)" DISCONTINUOUS IRON BED WITHIN GREY BED
 - 1/2" FRACTURE
 - FAULT
 - BEDDING PARTING
 - VERTICAL JOINT
 - INCLINED JOINT
 - BEDDING, STRIKE AND DIP

- MOISTURE ALONG BEDDING PARTING
 - SEEPAGE FROM FEATURE
 - OVEREXCAVATION OR OVERBREAK ZONE, MAXIMUM AMOUNT SHOWN
 - METHANE GAS, MAXIMUM PERCENT L.E.L. WITH DATE OF OCCURRENCE
- Note:*
Number(s) in parentheses indicate bed thickness.
Number preceding parenthesis indicates inches above or below spring line at station of measurement.



CROSS-SECTION	
no. 4	no. 4
Slight overbreak between rock bolt nos. 3 & 4, 0" - 6" deep (max) 2:1	Slight overbreak between rock bolt nos. 2 & 3, 0" - 6" deep (max) 2:1
3 rock bolts at 2' centers in steel ribs at 3' to 4' centers, spaced by wire mesh	
3' - 1"	2' - 9"
Bedding fractures only, spaced on above	
Moist bedding fractures, above springline along east wall	No seepage
12.5' water	18.5' water
100' F. submersible (shale)	100' F. submersible (shale)

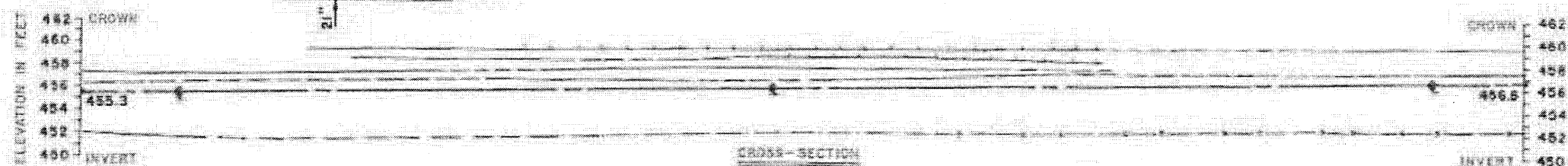
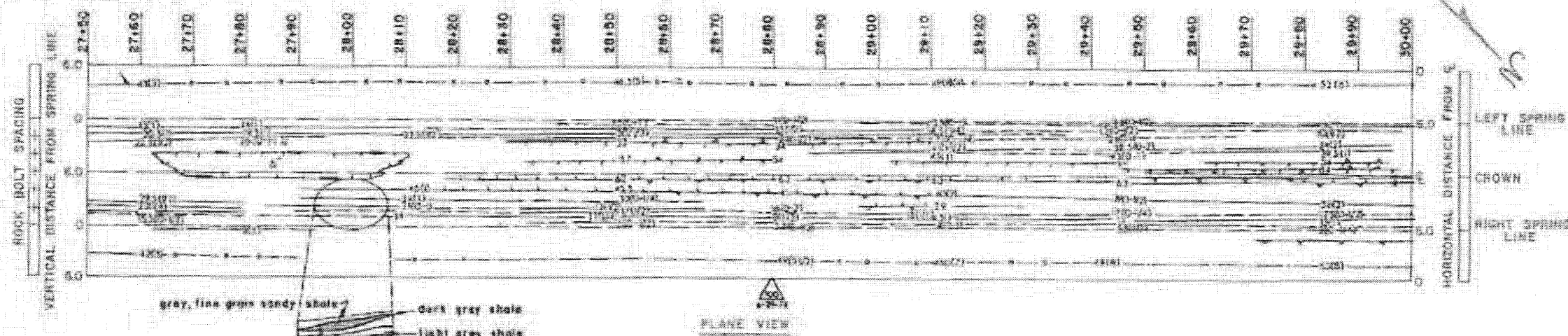
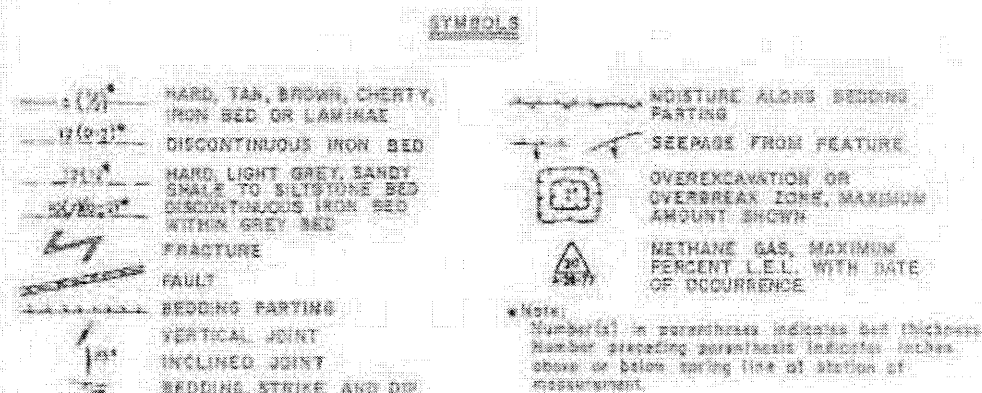
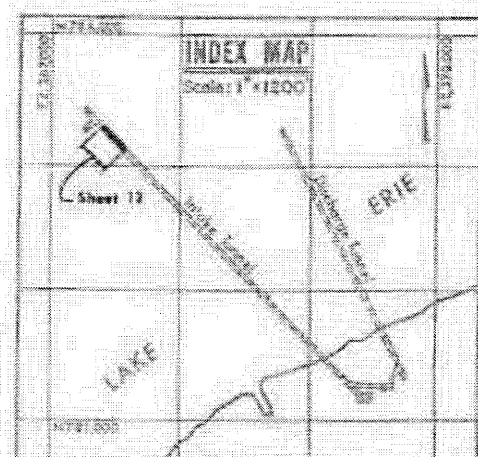
EXCAVATION PROGRESS
ESTIMATED ROCK
CONDITION (TERZAGHI NO.)
TEMPORARY SUPPORT
SYSTEM
BEDDING SPACING
FRACTURE SPACING
WATER CONDITION
DEPTH OF COVER

(Rev. 12 1/03)

PERRY NUCLEAR POWER PLANT

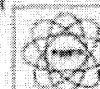
Geologic Map of Tunnel
Excavations

Figure 2.5-47 (Sheet 10 of 24)



Overbreak 5" deep limited by vertical joints, trending parallel to tunnel bearing		No. 4		Slight overbreak along entire section in crown	
5 rock bolts at 2' centers in steel ribs at 4' centers spanned by wire mesh		1 rock bolts at 4' centers in steel ribs at 4' centers spanned by wire mesh		5 rock bolts at 2' centers in steel ribs at 4' centers spanned by wire mesh	
Bedding fractures only, spaced as above		Slight moisture from all bedding fractures		Slight moisture from bed-4" to 6" distance in crown	
20.5 water		22.5 water		22.5 water	
22.5 surface shale		22.5 surface shale		22.5 surface shale	

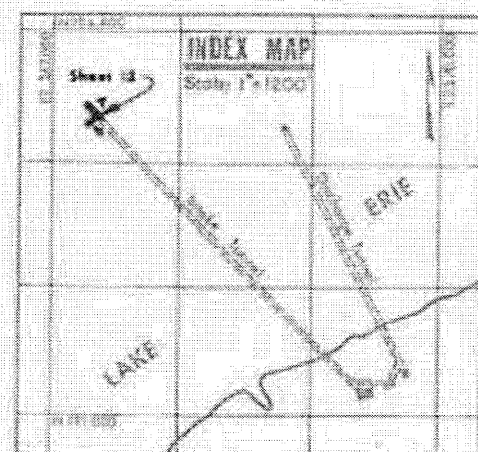
EXCAVATION PROGRESS
ESTIMATED ROCK CONDITION (TERZAGHI NO.)
TEMPORARY SUPPORT SYSTEM
BEDDING SPACING
FRACTURE SPACING
WATER CONDITION
DEPTH OF COVER



PERRY NUCLEAR POWER PLANT

Geologic Map of Tunnel Excavations

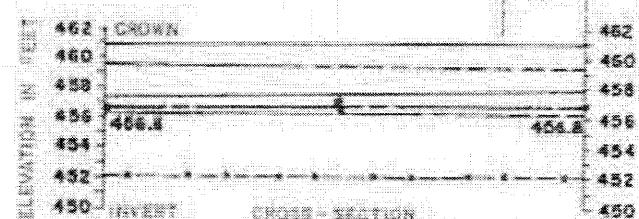
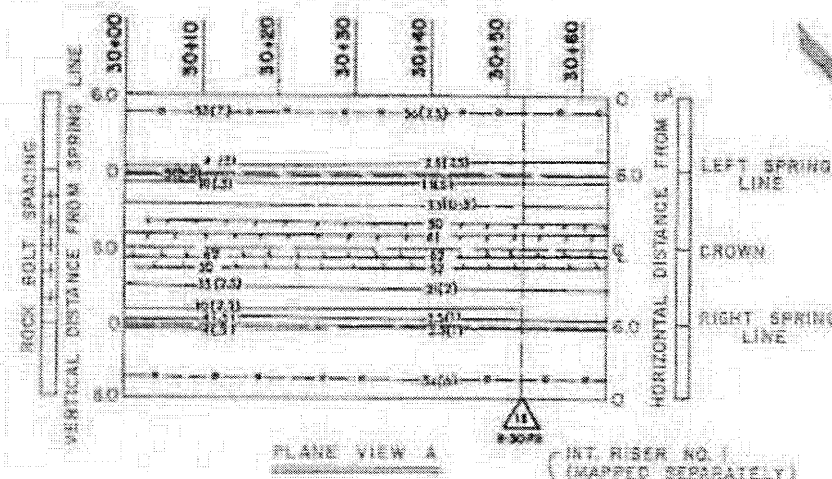
Figure 2.5-47 (Sheet 12 of 24)



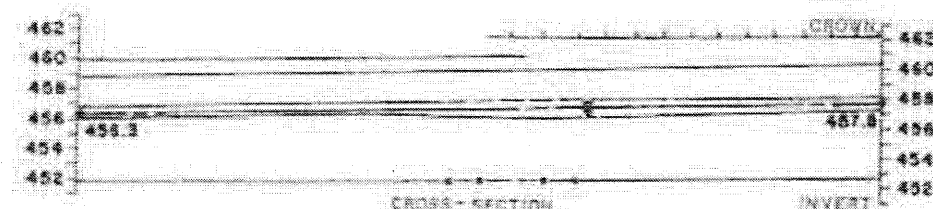
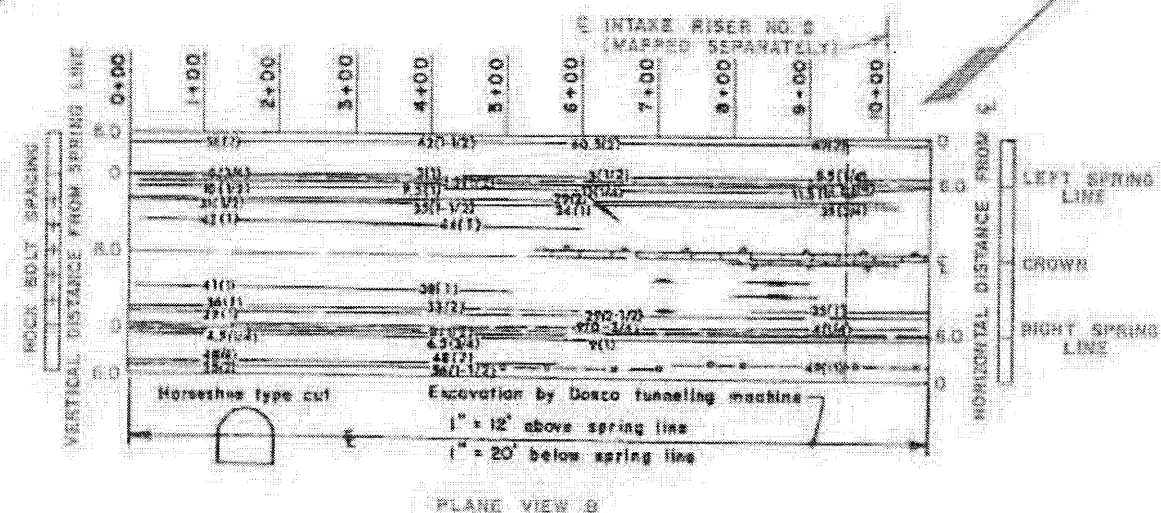
- SYMBOLS**
- 4(1/2)" HARD, TAN, BROWN, CHERT, IRON BED OR LAMINAE
 - 12(8-2)" DISCONTINUOUS IRON BED
 - 12(1)" HARD, LIGHT GREY, SANDY SHALE TO SILTSTONE BED
 - 12(2/2)" DISCONTINUOUS IRON BED WITHIN GREY BED
 - ⚡ FRACTURE
 - FAULT
 - BEDDING PARTING
 - VERTICAL JOINT
 - INCLINED JOINT
 - BEDDING, STRIKE AND DIP

- MOISTURE ALONG BEDDING PARTING
- SEEPAGE FROM FEATURE
- OVEREXCAVATION OR OVERBREAK ZONE, MAXIMUM AMOUNT SHOWN
- METHANE GAS, MAXIMUM PERCENT L.E.L. WITH DATE OF OCCURRENCE

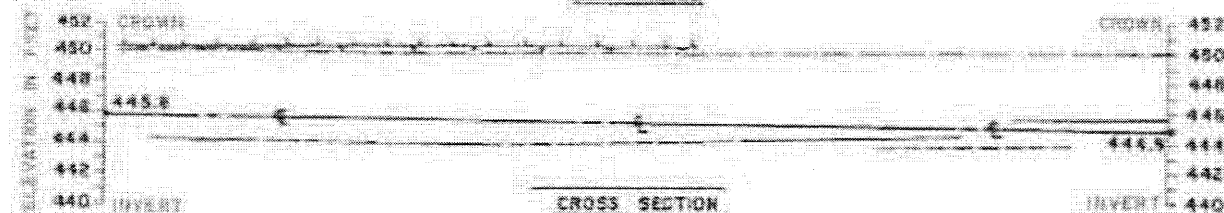
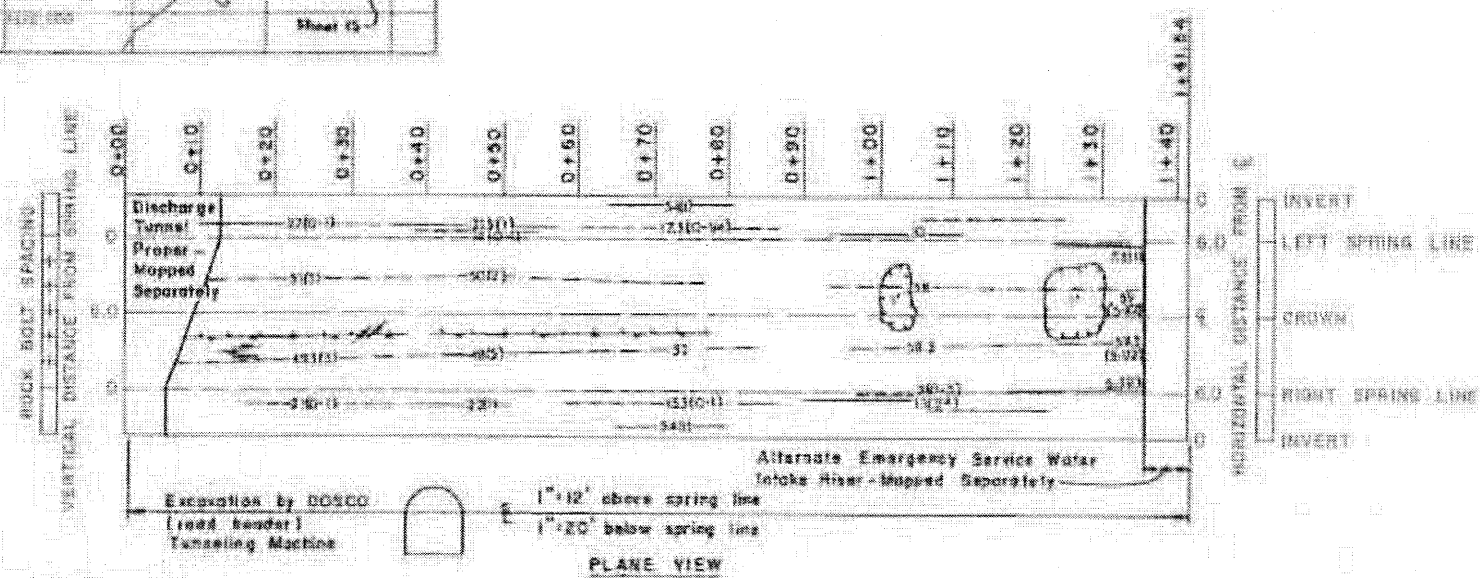
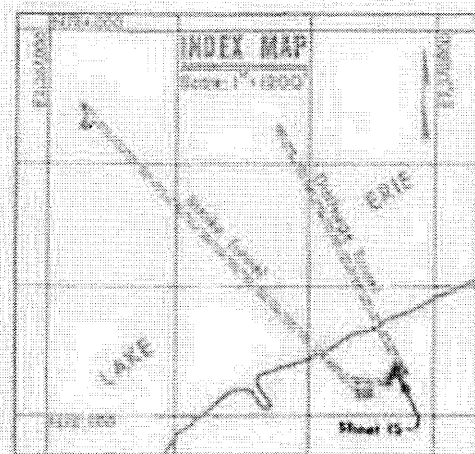
*Note: Numbers in parenthesis indicates bed thickness. Number preceding parenthesis indicates inches above or below spring line at station of measurement.



EXCAVATION PROGRESS	
no. 4	ESTIMATED ROCK CONDITION (TERZAGHI NO.)
Slight overbreak along entire section	TEMPORARY SUPPORT SYSTEM
5 rock bolts at 2' centers in steel ribs at 4' centers spanned by wire mesh	BEDDING SPACING
4'-0"	FRACTURE SPACING
Bedding fractures only, spaced as above	WATER CONDITION
Slight moisture along all bedding fractures	DEPTH OF COVER
22.5' heavy water	
91.2' subsurface (shale)	



EXCAVATION PROGRESS	
no. 4	ESTIMATED ROCK CONDITION (TERZAGHI NO.)
2 rock bolts at 2' centers in steel ribs at 4' centers, spanned by wire mesh	TEMPORARY SUPPORT SYSTEM
5'-0"	BEDDING SPACING
Bedding fractures only, spaced as above	FRACTURE SPACING
No seepage	WATER CONDITION
21.2' heavy water	DEPTH OF COVER
91.2' subsurface (shale)	



7'-0"	7'-0"	7'-0"	7'-0"
No. 4			
5 rock bolts at 7' centers in steel ribs at 3.0' x 15' centers, spanned by wire mesh			
1/2" x 2"	6" x 2"	1" x 8"	Approx. 15' x 15' openings
1" x 12"	Bedding fractures only, spaced as above		
Slight seepage from bedding parting along west wall		No inflow	
Approx. 250' maximum 12" gravel fill		Approx. 250' maximum 12" gravel fill	
110' x 12"		110' x 12"	

EXCAVATION PROGRESS

ESTIMATED ROCK CONDITION (TERZAGHI NO. 1)

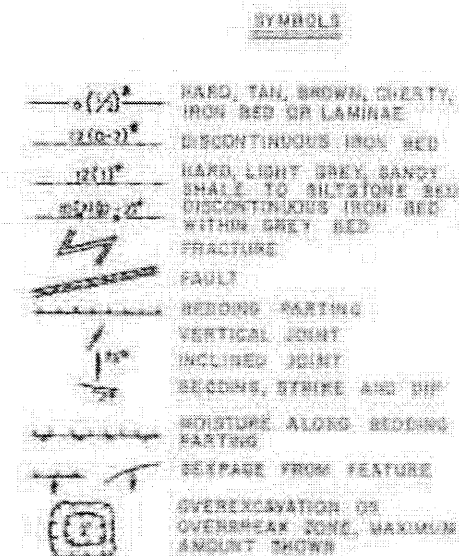
TEMPORARY SUPPORT SYSTEM

BEDDING SPACING

FRACTURE SPACING

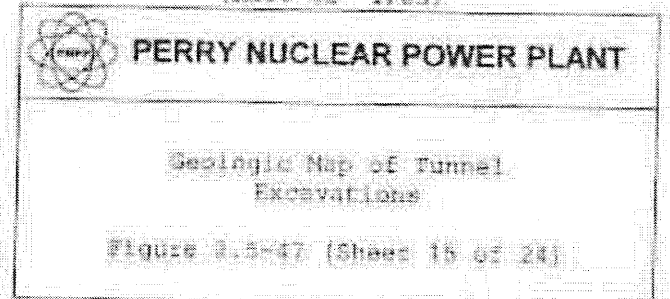
WATER CONDITION

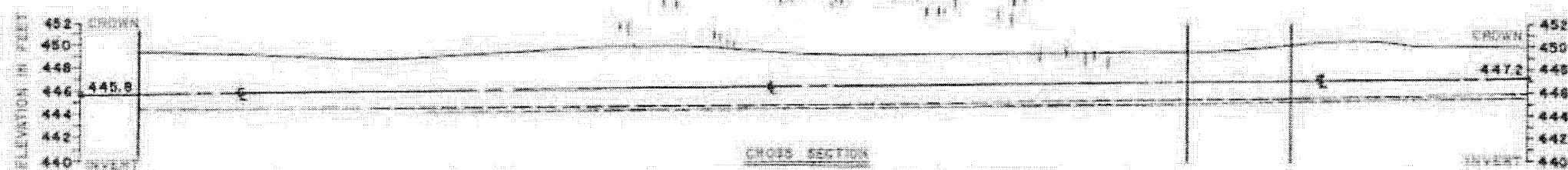
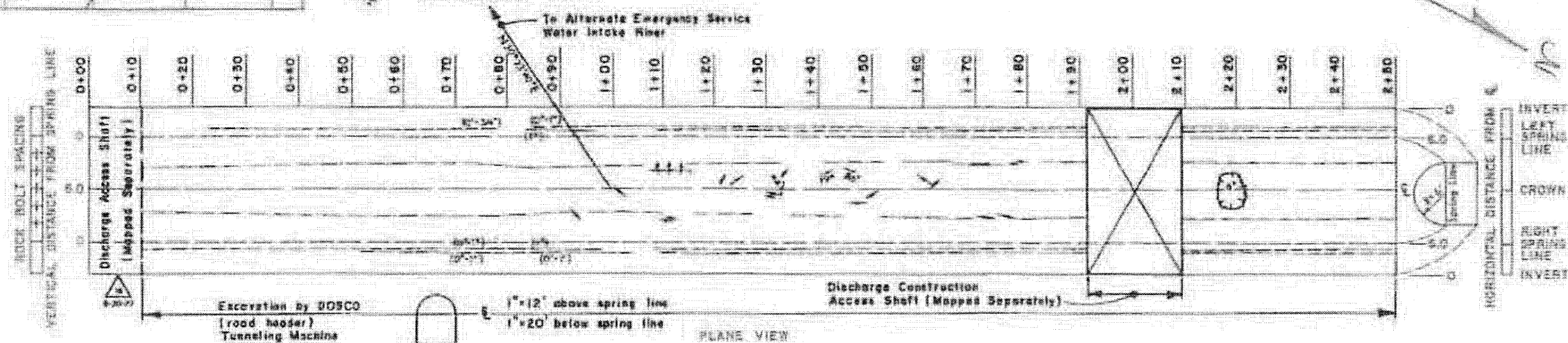
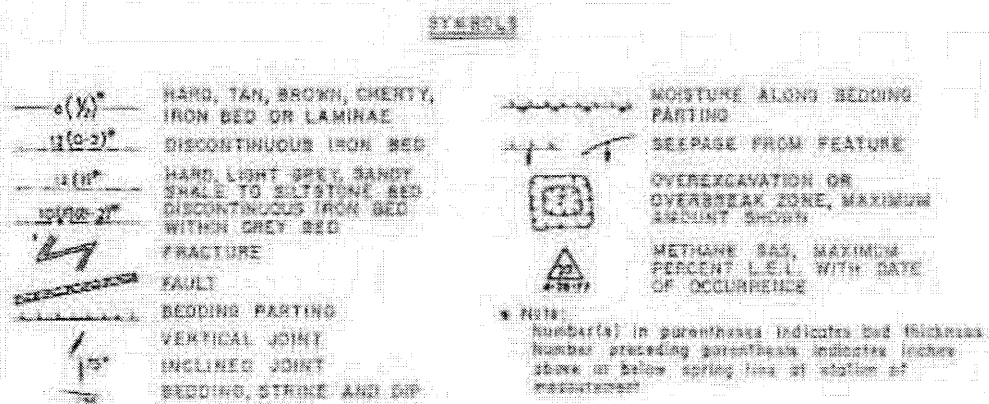
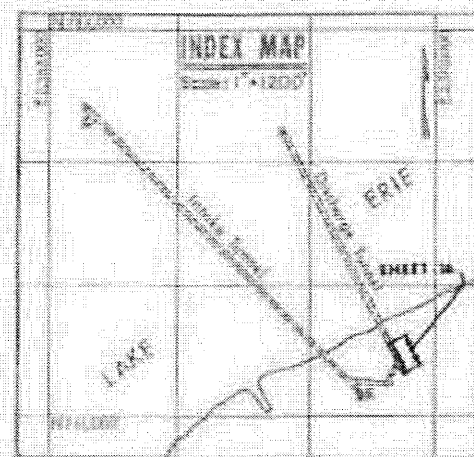
DEPTH OF COVER



*Note:
Numbers in parentheses indicates bed thickness.
Number preceding parenthesis indicates inches above or below spring line of station of measurement.

(Rev. 12 1/03)





Excavation Progress									
ESTIMATED ROCK CONDITION (TERZAGHI NO.)									
TEMPORARY SUPPORT SYSTEM									
BEDDING SPACING									
FRACTURE SPACING									
WATER CONDITION									
DEPTH OF COVER									
Approx. 11.5' maximum									
27.5' steel 10' & 10.7' shale									

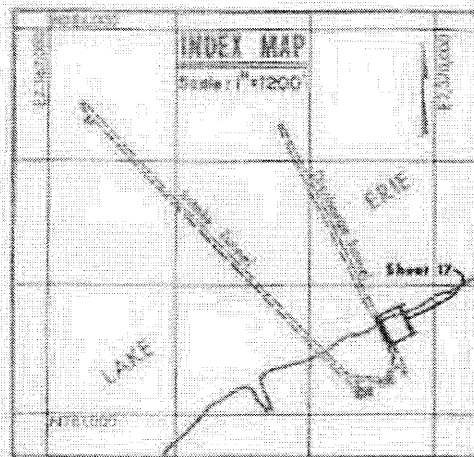
Excavation Progress
 Estimated Rock Condition (Terzaghi No.)
 Temporary Support System
 Bedding Spacing
 Fracture Spacing
 Water Condition
 Depth of Cover

(Rev. 12 1/83)

PERRY NUCLEAR POWER PLANT

Geologic Map of Tunnel Excavations

Figure 2.5-47 (Sheet 15 of 24)

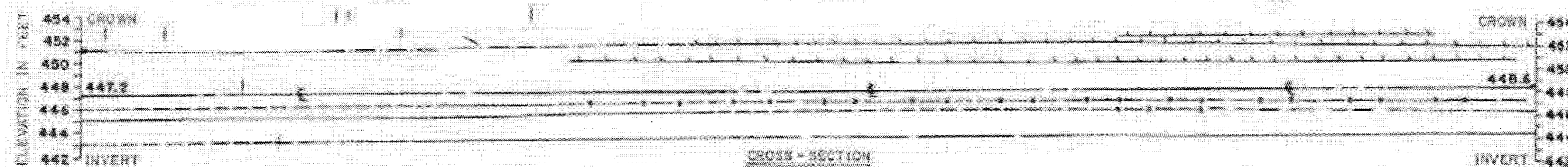
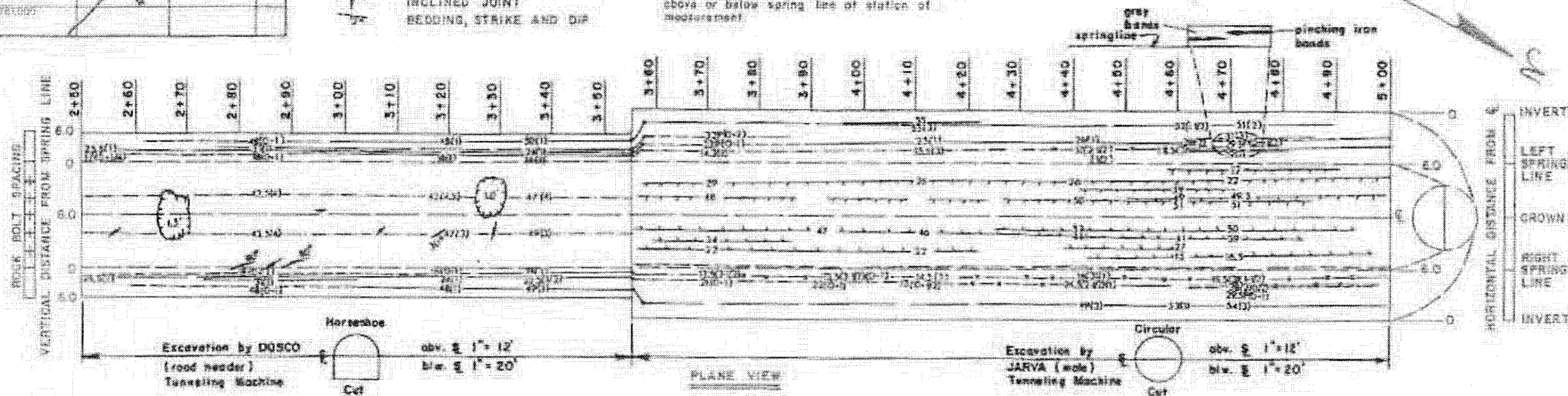


SYMBOLS

12(10-25)
 12(10)
 10(100-25)
 10(100-25)
 FRACTURE
 FAULT
 BEDDING PARTING
 VERTICAL JOINT
 INCLINED JOINT
 BEDDING, STRIKE AND DIP

MOISTURE ALONG BEDDING PARTING
 SEEPAGE FROM FEATURE
 OVEREXCAVATION OR OVERBREAK ZONE, MAXIMUM AMOUNT SHOWN

* Note:
 Number(s) in parentheses indicates bed thickness.
 Number preceding parenthesis indicates inches above or below spring line of station of measurement.



11.30 7/8	11.75 7/8	12.25 7/8	12.75 7/8	13.25 7/8	13.75 7/8	14.25 7/8	14.75 7/8	15.25 7/8	15.75 7/8	16.25 7/8	16.75 7/8	17.25 7/8	17.75 7/8	18.25 7/8	18.75 7/8	19.25 7/8	19.75 7/8	20.25 7/8	20.75 7/8	21.25 7/8	21.75 7/8	22.25 7/8	22.75 7/8	23.25 7/8	23.75 7/8	24.25 7/8	24.75 7/8	25.25 7/8	25.75 7/8	26.25 7/8	26.75 7/8	27.25 7/8	27.75 7/8	28.25 7/8	28.75 7/8	29.25 7/8	29.75 7/8	30.25 7/8	30.75 7/8	31.25 7/8	31.75 7/8	32.25 7/8	32.75 7/8	33.25 7/8	33.75 7/8	34.25 7/8	34.75 7/8	35.25 7/8	35.75 7/8	36.25 7/8	36.75 7/8	37.25 7/8	37.75 7/8	38.25 7/8	38.75 7/8	39.25 7/8	39.75 7/8	40.25 7/8	40.75 7/8	41.25 7/8	41.75 7/8	42.25 7/8	42.75 7/8	43.25 7/8	43.75 7/8	44.25 7/8	44.75 7/8	45.25 7/8	45.75 7/8	46.25 7/8	46.75 7/8	47.25 7/8	47.75 7/8	48.25 7/8	48.75 7/8	49.25 7/8	49.75 7/8	50.25 7/8	50.75 7/8	51.25 7/8	51.75 7/8	52.25 7/8	52.75 7/8	53.25 7/8	53.75 7/8	54.25 7/8	54.75 7/8	55.25 7/8	55.75 7/8	56.25 7/8	56.75 7/8	57.25 7/8	57.75 7/8	58.25 7/8	58.75 7/8	59.25 7/8	59.75 7/8	60.25 7/8	60.75 7/8	61.25 7/8	61.75 7/8	62.25 7/8	62.75 7/8	63.25 7/8	63.75 7/8	64.25 7/8	64.75 7/8	65.25 7/8	65.75 7/8	66.25 7/8	66.75 7/8	67.25 7/8	67.75 7/8	68.25 7/8	68.75 7/8	69.25 7/8	69.75 7/8	70.25 7/8	70.75 7/8	71.25 7/8	71.75 7/8	72.25 7/8	72.75 7/8	73.25 7/8	73.75 7/8	74.25 7/8	74.75 7/8	75.25 7/8	75.75 7/8	76.25 7/8	76.75 7/8	77.25 7/8	77.75 7/8	78.25 7/8	78.75 7/8	79.25 7/8	79.75 7/8	80.25 7/8	80.75 7/8	81.25 7/8	81.75 7/8	82.25 7/8	82.75 7/8	83.25 7/8	83.75 7/8	84.25 7/8	84.75 7/8	85.25 7/8	85.75 7/8	86.25 7/8	86.75 7/8	87.25 7/8	87.75 7/8	88.25 7/8	88.75 7/8	89.25 7/8	89.75 7/8	90.25 7/8	90.75 7/8	91.25 7/8	91.75 7/8	92.25 7/8	92.75 7/8	93.25 7/8	93.75 7/8	94.25 7/8	94.75 7/8	95.25 7/8	95.75 7/8	96.25 7/8	96.75 7/8	97.25 7/8	97.75 7/8	98.25 7/8	98.75 7/8	99.25 7/8	99.75 7/8	100.25 7/8	100.75 7/8	101.25 7/8	101.75 7/8	102.25 7/8	102.75 7/8	103.25 7/8	103.75 7/8	104.25 7/8	104.75 7/8	105.25 7/8	105.75 7/8	106.25 7/8	106.75 7/8	107.25 7/8	107.75 7/8	108.25 7/8	108.75 7/8	109.25 7/8	109.75 7/8	110.25 7/8	110.75 7/8	111.25 7/8	111.75 7/8	112.25 7/8	112.75 7/8	113.25 7/8	113.75 7/8	114.25 7/8	114.75 7/8	115.25 7/8	115.75 7/8	116.25 7/8	116.75 7/8	117.25 7/8	117.75 7/8	118.25 7/8	118.75 7/8	119.25 7/8	119.75 7/8	120.25 7/8	120.75 7/8	121.25 7/8	121.75 7/8	122.25 7/8	122.75 7/8	123.25 7/8	123.75 7/8	124.25 7/8	124.75 7/8	125.25 7/8	125.75 7/8	126.25 7/8	126.75 7/8	127.25 7/8	127.75 7/8	128.25 7/8	128.75 7/8	129.25 7/8	129.75 7/8	130.25 7/8	130.75 7/8	131.25 7/8	131.75 7/8	132.25 7/8	132.75 7/8	133.25 7/8	133.75 7/8	134.25 7/8	134.75 7/8	135.25 7/8	135.75 7/8	136.25 7/8	136.75 7/8	137.25 7/8	137.75 7/8	138.25 7/8	138.75 7/8	139.25 7/8	139.75 7/8	140.25 7/8	140.75 7/8	141.25 7/8	141.75 7/8	142.25 7/8	142.75 7/8	143.25 7/8	143.75 7/8	144.25 7/8	144.75 7/8	145.25 7/8	145.75 7/8	146.25 7/8	146.75 7/8	147.25 7/8	147.75 7/8	148.25 7/8	148.75 7/8	149.25 7/8	149.75 7/8	150.25 7/8	150.75 7/8	151.25 7/8	151.75 7/8	152.25 7/8	152.75 7/8	153.25 7/8	153.75 7/8	154.25 7/8	154.75 7/8	155.25 7/8	155.75 7/8	156.25 7/8	156.75 7/8	157.25 7/8	157.75 7/8	158.25 7/8	158.75 7/8	159.25 7/8	159.75 7/8	160.25 7/8	160.75 7/8	161.25 7/8	161.75 7/8	162.25 7/8	162.75 7/8	163.25 7/8	163.75 7/8	164.25 7/8	164.75 7/8	165.25 7/8	165.75 7/8	166.25 7/8	166.75 7/8	167.25 7/8	167.75 7/8	168.25 7/8	168.75 7/8	169.25 7/8	169.75 7/8	170.25 7/8	170.75 7/8	171.25 7/8	171.75 7/8	172.25 7/8	172.75 7/8	173.25 7/8	173.75 7/8	174.25 7/8	174.75 7/8	175.25 7/8	175.75 7/8	176.25 7/8	176.75 7/8	177.25 7/8	177.75 7/8	178.25 7/8	178.75 7/8	179.25 7/8	179.75 7/8	180.25 7/8	180.75 7/8	181.25 7/8	181.75 7/8	182.25 7/8	182.75 7/8	183.25 7/8	183.75 7/8	184.25 7/8	184.75 7/8	185.25 7/8	185.75 7/8	186.25 7/8	186.75 7/8	187.25 7/8	187.75 7/8	188.25 7/8	188.75 7/8	189.25 7/8	189.75 7/8	190.25 7/8	190.75 7/8	191.25 7/8	191.75 7/8	192.25 7/8	192.75 7/8	193.25 7/8	193.75 7/8	194.25 7/8	194.75 7/8	195.25 7/8	195.75 7/8	196.25 7/8	196.75 7/8	197.25 7/8	197.75 7/8	198.25 7/8	198.75 7/8	199.25 7/8	199.75 7/8	200.25 7/8	200.75 7/8	201.25 7/8	201.75 7/8	202.25 7/8	202.75 7/8	203.25 7/8	203.75 7/8	204.25 7/8	204.75 7/8	205.25 7/8	205.75 7/8	206.25 7/8	206.75 7/8	207.25 7/8	207.75 7/8	208.25 7/8	208.75 7/8	209.25 7/8	209.75 7/8	210.25 7/8	210.75 7/8	211.25 7/8	211.75 7/8	212.25 7/8	212.75 7/8	213.25 7/8	213.75 7/8	214.25 7/8	214.75 7/8	215.25 7/8	215.75 7/8	216.25 7/8	216.75 7/8	217.25 7/8	217.75 7/8	218.25 7/8	218.75 7/8	219.25 7/8	219.75 7/8	220.25 7/8	220.75 7/8	221.25 7/8	221.75 7/8	222.25 7/8	222.75 7/8	223.25 7/8	223.75 7/8	224.25 7/8	224.75 7/8	225.25 7/8	225.75 7/8	226.25 7/8	226.75 7/8	227.25 7/8	227.75 7/8	228.25 7/8	228.75 7/8	229.25 7/8	229.75 7/8	230.25 7/8	230.75 7/8	231.25 7/8	231.75 7/8	232.25 7/8	232.75 7/8	233.25 7/8	233.75 7/8	234.25 7/8	234.75 7/8	235.25 7/8	235.75 7/8	236.25 7/8	236.75 7/8	237.25 7/8	237.75 7/8	238.25 7/8	238.75 7/8	239.25 7/8	239.75 7/8	240.25 7/8	240.75 7/8	241.25 7/8	241.75 7/8	242.25 7/8	242.75 7/8	243.25 7/8	243.75 7/8	244.25 7/8	244.75 7/8	245.25 7/8	245.75 7/8	246.25 7/8	246.75 7/8	247.25 7/8	247.75 7/8	248.25 7/8	248.75 7/8	249.25 7/8	249.75 7/8	250.25 7/8	250.75 7/8	251.25 7/8	251.75 7/8	252.25 7/8	252.75 7/8	253.25 7/8	253.75 7/8	254.25 7/8	254.75 7/8	255.25 7/8	255.75 7/8	256.25 7/8	256.75 7/8	257.25 7/8	257.75 7/8	258.25 7/8	258.75 7/8	259.25 7/8	259.75 7/8	260.25 7/8	260.75 7/8	261.25 7/8	261.75 7/8	262.25 7/8	262.75 7/8	263.25 7/8	263.75 7/8	264.25 7/8	264.75 7/8	265.25 7/8	265.75 7/8	266.25 7/8	266.75 7/8	267.25 7/8	267.75 7/8	268.25 7/8	268.75 7/8	269.25 7/8	269.75 7/8	270.25 7/8	270.75 7/8	271.25 7/8	271.75 7/8	272.25 7/8	272.75 7/8	273.25 7/8	273.75 7/8	274.25 7/8	274.75 7/8	275.25 7/8	275.75 7/8	276.25 7/8	276.75 7/8	277.25 7/8	277.75 7/8	278.25 7/8	278.75 7/8	279.25 7/8	279.75 7/8	280.25 7/8	280.75 7/8	281.25 7/8	281.75 7/8	282.25 7/8	282.75 7/8	283.25 7/8	283.75 7/8	284.25 7/8	284.75 7/8	285.25 7/8	285.75 7/8	286.25 7/8	286.75 7/8	287.25 7/8	287.75 7/8	288.25 7/8	288.75 7/8	289.25 7/8	289.75 7/8	290.25 7/8	290.75 7/8	291.25 7/8	291.75 7/8	292.25 7/8	292.75 7/8	293.25 7/8	293.75 7/8	294.25 7/8	294.75 7/8	295.25 7/8	295.75 7/8	296.25 7/8	296.75 7/8	297.25 7/8	297.75 7/8	298.25 7/8	298.75 7/8	299.25 7/8	299.75 7/8	300.25 7/8	300.75 7/8	301.25 7/8	301.75 7/8	302.25 7/8	302.75 7/8	303.25 7/8	303.75 7/8	304.25 7/8	304.75 7/8	305.25 7/8	305.75 7/8	306.25 7/8	306.75 7/8	307.25 7/8	307.75 7/8	308.25 7/8	308.75 7/8	309.25 7/8	309.75 7/8	310.25 7/8	310.75 7/8	311.25 7/8	311.75 7/8	312.25 7/8	312.75 7/8	313.25 7/8	313.75 7/8	314.25 7/8	314.75 7/8	315.25 7/8	315.75 7/8	316.25 7/8	316.75 7/8	317.25 7/8	317.75 7/8	318.25 7/8	318.75 7/8	319.25 7/8	319.75 7/8	320.25 7/8	320.75 7/8	321.25 7/8	321.75 7/8	322.25 7/8	322.75 7/8	323.25 7/8	323.75 7/8	324.25 7/8	324.75 7/8	325.25 7/8	325.75 7/8	326.25 7/8	326.75 7/8	327.25 7/8	327.75 7/8	328.25 7/8	328.75 7/8	329.25 7/8	329.75 7/8	330.25 7/8	330.75 7/8	331.25 7/8	331.75 7/8	332.25 7/8	332.75 7/8	333.25 7/8	333.75 7/8	334.25 7/8	334.75 7/8	335.25 7/8	335.75 7/8	336.25 7/8	336.75 7/8	337.25 7/8	337.75 7/8	338.25 7/8	338.75 7/8	339.25 7/8	339.75 7/8	340.25 7/8	340.75 7/8	341.25 7/8	341.75 7/8	342.25 7/8	342.75 7/8	343.25 7/8	343.75 7/8	344.25 7/8	344.75 7/8	345.25 7/8	345.75 7/8	346.25 7/8	346.75 7/8	347.25 7/8	347.75 7/8	348.25 7/8	348.75 7/8	349.25 7/8	349.75 7/8	350.25 7/8	350.75 7/8	351.25 7/8	351.75 7/8	352.25 7/8	352.75 7/8	353.25 7/8	353.75 7/8	354.25 7/8	354.75 7/8	355.25 7/8	355.75 7/8	356.25 7/8	356.75 7/8	357.25 7/8	357.75 7/8	358.25 7/8	358.75 7/8	359.25 7/8	359.75 7/8	360.25 7/8	360.75 7/8	361.25 7/8	361.75 7/8	362.25 7/8	362.75 7/8	363.25 7/8	363.75 7/8	364.25 7/8	364.75 7/8	365.25 7/8	365.75 7/8	366.25 7/8	366.75 7/8	367.25 7/8	367.75 7/8	368.25 7/8	368.75 7/8	369.25 7/8	369.75 7/8	370.25 7/8	370.75 7/8	371.25 7/8	371.75 7/8	372.25 7/8	372.75 7/8	373.25 7/8	373.75 7/8	374.25 7/8	374.75 7/8	375.25 7/8	375.75 7/8	376.25 7/8	376.75 7/8	377.25 7/8	377.75 7/8	378.25 7/8	378.75 7/8	379.25 7/8	379.75 7/8	380.25 7/8	380.75 7/8	381.25 7/8	381.75 7/8	382.25 7/8	382.75 7/8	383.25 7/8	383.75 7/8	384.25 7/8	384.75 7/8	385.25 7/8	385.75 7/8	386.25 7/8	386.75 7/8	387.25 7/8	387.75 7/8	388.25 7/8	388.75 7/8	389.25 7/8	389.75 7/8	390.25 7/8	390.75 7/8	391.25 7/8	391.75 7/8	392.25 7/8	392.75 7/8	393.25 7/8	393.75 7/8	394.25 7/8	394.75 7/8	395.25 7/8	395.75 7/8	396.25 7/8	396.75 7/8	397.25 7/8	397.75 7/8	398.25 7/8	398.75 7/8	399.25 7/8	399.75 7/8	400.25 7/8	400.75 7/8	401.25 7/8	401.75 7/8	402.25 7/8	402.75 7/8	403.25 7/8</
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EXCAVATION PROGRESS
 ESTIMATED ROCK CONDITION (TERZAGHI NO.)
 TEMPORARY SUPPORT SYSTEM
 BEDDING SPACING
 FRACTURE SPACING
 WATER CONDITION
 DEPTH OF COVER

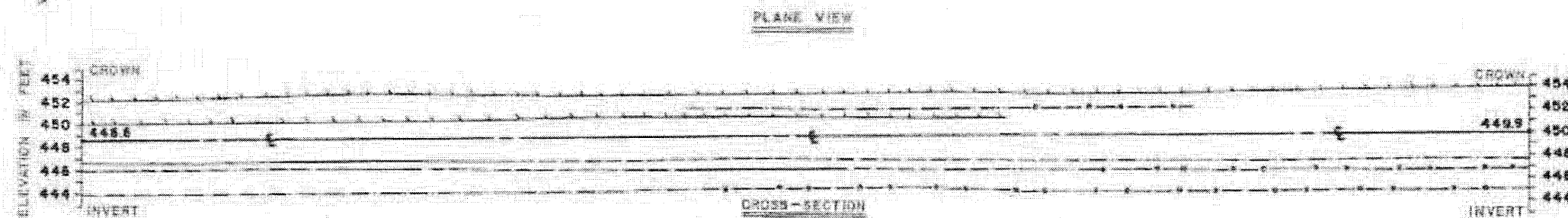
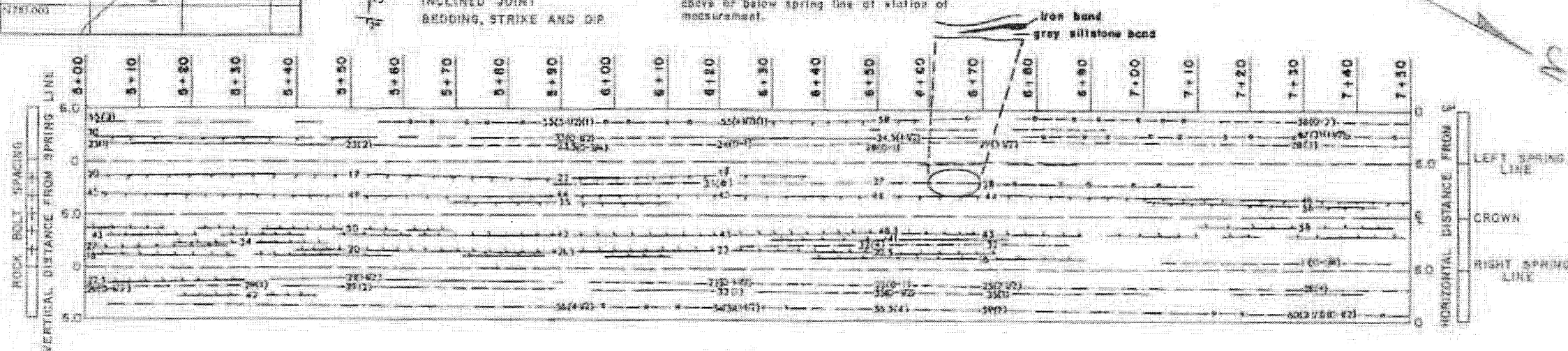
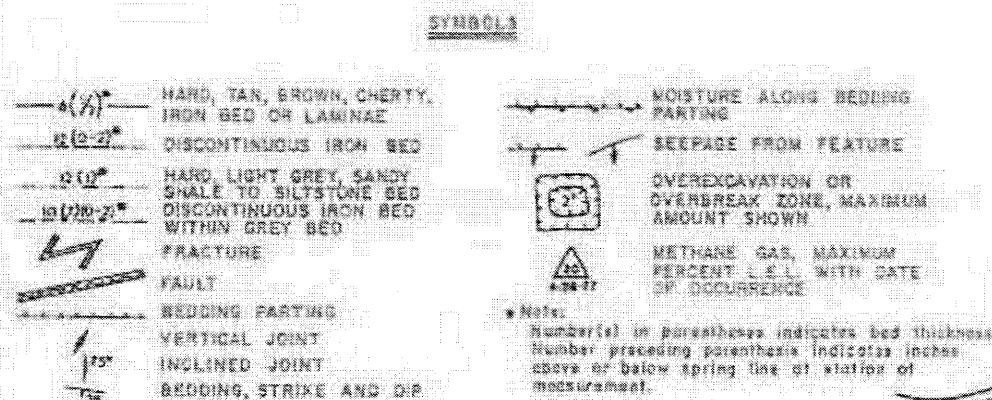
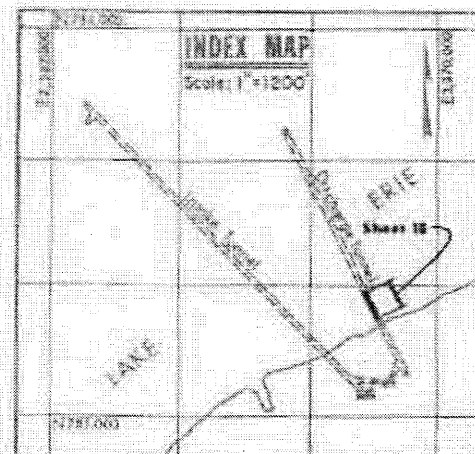
(REV. 12 1/03)



PERRY NUCLEAR POWER PLANT

Geologic Map of Tunnel Excavations

Figure 2.5-47 (Sheet 17 of 24)



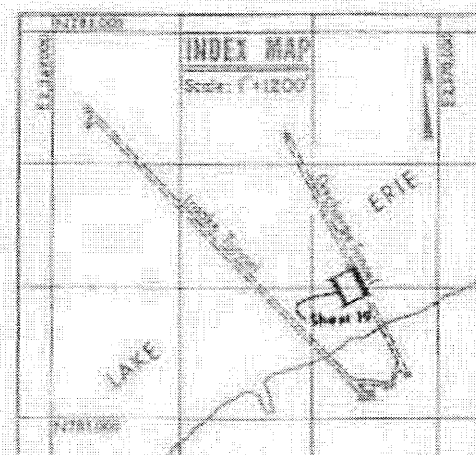
Excavation Progress	Excavation Progress
ESTIMATED ROCK CONDITION (TERIAGHI NO.)	ESTIMATED ROCK CONDITION (TERIAGHI NO.)
TEMPORARY SUPPORT SYSTEM	TEMPORARY SUPPORT SYSTEM
BEDDING SPACING	BEDDING SPACING
FRACTURE SPACING	FRACTURE SPACING
WATER CONDITION	WATER CONDITION
DEPTH OF COVER	DEPTH OF COVER

(Rev. 12 1/83)

PERRY NUCLEAR POWER PLANT

Geologic Map of Tunnel Excavations

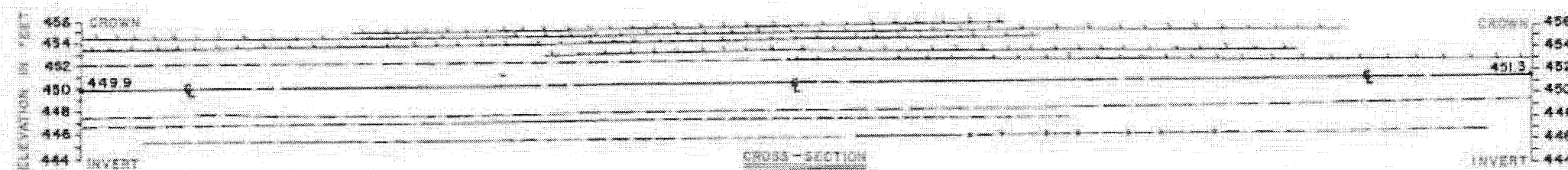
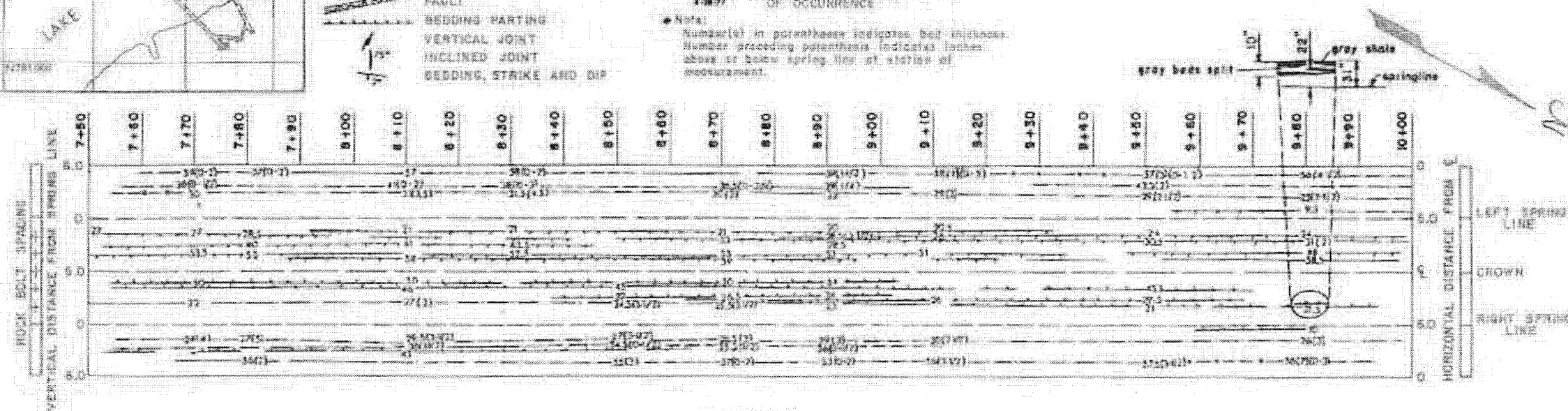
Figure 2.5-47 (Sheet 18 of 24)



0.1/100' HARD, TAN, BROWN, CHERTY, IRON BED OR LAMINAE
 12(6-2)' DISCONTINUOUS IRON BED
 11(1)' HARD, LIGHT GREY, SANDY SHALE TO SILTYSTONE BED
 20(7/8-2)' DISCONTINUOUS IRON BED WITHIN GREY BED
 FRACTURE
 FAULT
 BEDDING PARTING
 VERTICAL JOINT
 INCLINED JOINT
 BEDDING, STRIKE AND DIP

SYMBOLS

MOISTURE ALONG BEDDING PARTING
 SEEPAGE FROM FEATURE
 OVEREXCAVATION OR OVERBREAK ZONE, MAXIMUM AMOUNT SHOWN
 METHANE GAS, MAXIMUM PERCENT L.E.L. WITH DATE OF OCCURRENCE
 • Note:
 Numbers in parentheses indicates bed thickness.
 Number preceding parenthesis indicates lenses above or below spring line at station of measurement.



no. 4	EXCAVATION PROGRESS
rock bolts at 2' centers in steel ribs at 2'-4' centers, spaced by wire mesh	ESTIMATED ROCK CONDITION (VERZAGHI NO.)
8'-12'	TEMPORARY SUPPORT SYSTEM
Bedding fractures only, spaced as above	BEDDING SPACING
No inflow	FRACTURE SPACING
2.5' top water	WATER CONDITION
116.1' subsurface (shale)	DEPTH OF COVER
7.5' top water	
111.7' subsurface (shale)	

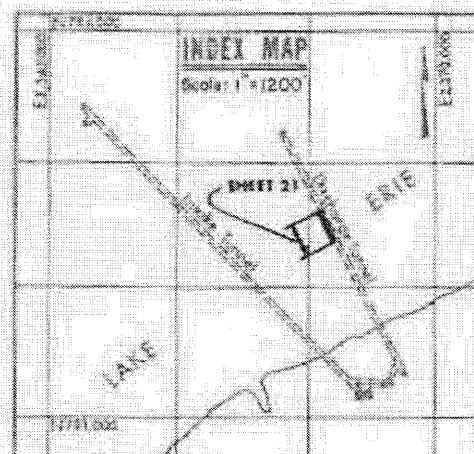
EXCAVATION PROGRESS
 ESTIMATED ROCK CONDITION (VERZAGHI NO.)
 TEMPORARY SUPPORT SYSTEM
 BEDDING SPACING
 FRACTURE SPACING
 WATER CONDITION
 DEPTH OF COVER



PERRY NUCLEAR POWER PLANT

Geologic Map of Tunnel Excavations

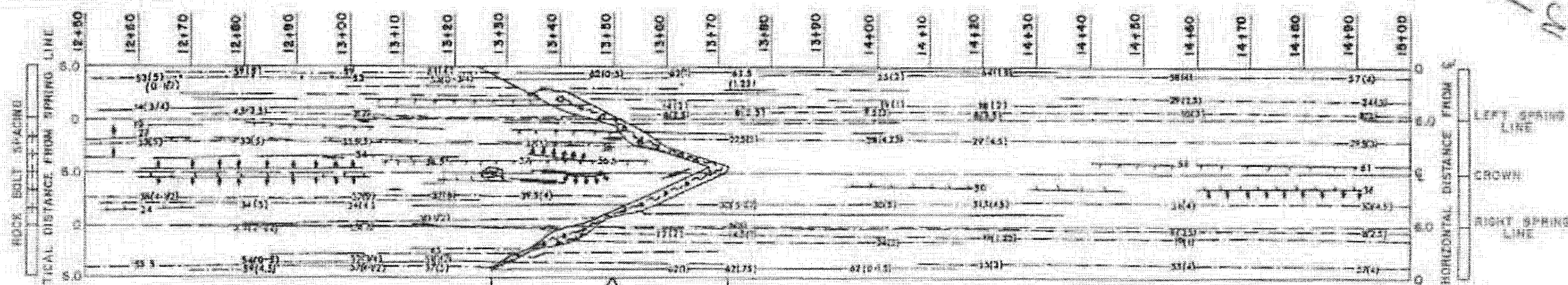
Figure 2.5-47 (Sheet 19 of 24)



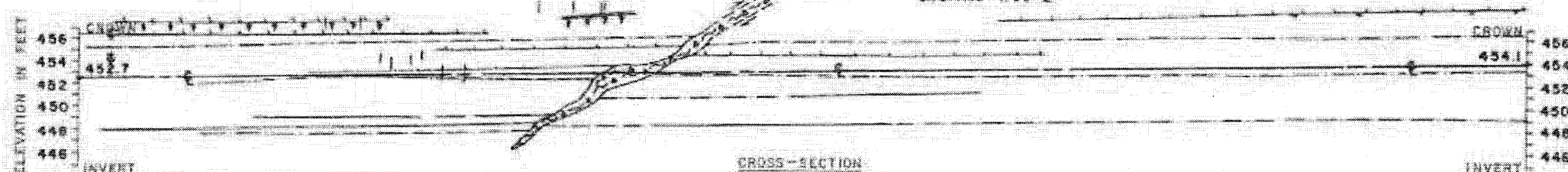
- SYMBOLS**
- HARD, TAN, BROWN, CHERTY, IRON BED OR LAMINAR
 - DISCONTINUOUS IRON BED
 - HARD, LIGHT GREY, SANDY SHALE TO SILTSTONE BED
 - DISCONTINUOUS IRON BED WITHIN GREY BED
 - FRACTURE
 - FAULT (with sense of motion)
 - BEDDING PARTING
 - VERTICAL JOINT
 - INCLINED JOINT
 - BEDDING, STRIKE AND DIP

- MOISTURE ALONG BEDDING PARTING
- SEEPAGE FROM FEATURE
- OVEREXCAVATION ON OVERBREAK ZONE, MAXIMUM AMOUNT SHOWN
- METHANE GAS, MAXIMUM PERCENT L.E.L. WITH DATE OF OCCURRENCE

Note:
Number(s) in parentheses indicates bed thickness.
Number preceding parenthesis indicates inches above or below spring line at station of measurement.



FAULT GEOMETRY
a) Apparent displacement - 12" to 25" d) Dip approx. 15.5°
b) Actual vertical displacement - 8 1/2" to 11 1/2" e) Width of broken rock (1/2" to 24")
c) Strike - N66°E



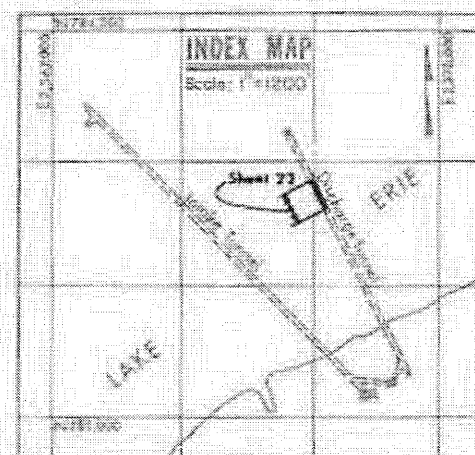
No. 4		No. 4-8		No. 8	
5 rock bolts at 7' centers in steel ribs at 3.5' centers, spanned by wire mesh		Full shielding employed		5 rock bolts at 7' centers in steel ribs at 3.5' centers spanned by wire mesh	
3' x 9"		Ribs at 2' centers		3' x 9"	
Bedding fractures spaced as above, joints widely spaced		Joint pairs shown at 2' - 15' apart otherwise bedding fractures at 3' - 9"		Bedding fractures only, spaced as above	
Main bedding fractures where indicated		Several minor joints in fractured areas		Two max. joints at E.J. gal. box south	
8.5' water				12.5' water	
101.2' subsurface (shale)				101.2' subsurface (shale)	

EXCAVATION PROGRESS
ESTIMATED ROCK
CONDITION (TERZAGHI NO.)
TEMPORARY SUPPORT
SYSTEM
BEDDING SPACING
FRACTURE SPACING
WATER CONDITION
DEPTH OF COVER

PERRY NUCLEAR POWER PLANT

Geologic Map of Tunnel
Excavations

Figure 2.5-47 (Sheet 21 of 24)

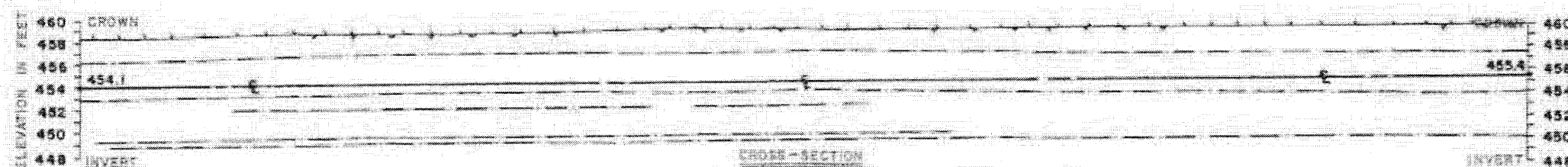
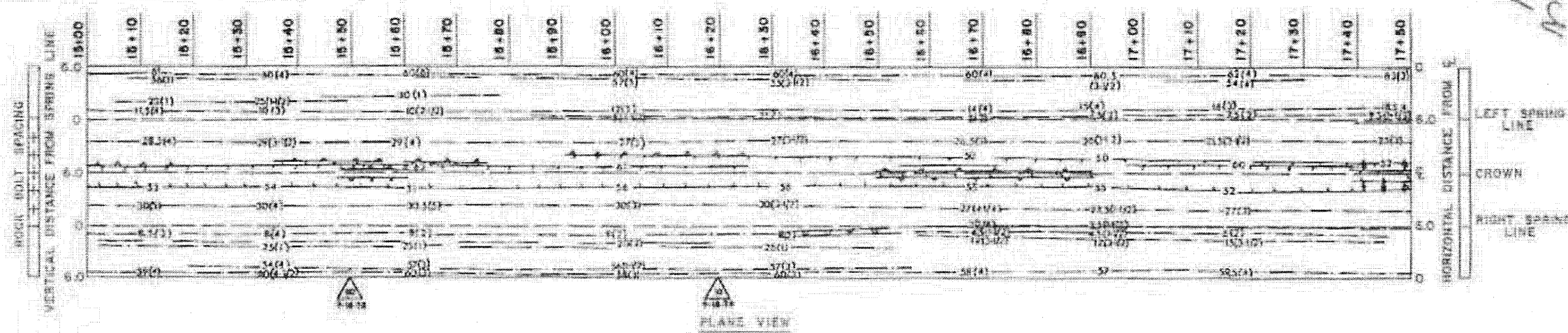


4(1/2)" HARD, TAN, BROWN, CHERTY IRON BED OR LAMINAE
 12(0-2)" DISCONTINUOUS IRON BED
 12(1/2)" HARD, LIGHT GREY, SANDY SHALE TO SILTSTONE BED
 2(1/2)-3(1/2)" DISCONTINUOUS IRON BED WITHIN GREY BED
 FRACTURE
 FAULT (with sense of motion)
 BEDDING PARTING
 VERTICAL JOINT
 INCLINED JOINT
 BEDDING, STRIKE AND DIP

SYMBOLS

MOISTURE ALONG BEDDING PARTING
 SEEPAGE FROM FEATURE
 OVEREXCAVATION OR OVERBREAK ZONE, MAXIMUM AMOUNT SHOWN
 METHANE GAS, MAXIMUM PERCENT L.E.L. WITH DATE OF OCCURRENCE

* Note:
 Numbers in parentheses indicates bed thickness
 Number preceding parentheses indicates inches above or below spring line at station of measurement.



2.11 7.8		2.11 7.8		2.11 7.8		2.11 7.8	
Slight overbreak along entire excavation (0'-6")						no. 4	
Stack bolts at 2' centers in steel ribs at 40'-45' centers spanned by wire mesh							
3'-9"		4'-9"			3'-10"		
Bedding fractures only, spaced as above							
Minimal seepage from bedding parting							
Moisture from bedding parting	* Moisture from bedding parting		Moisture from bedding parting		Moisture from bedding parting		
+ 14.5' water on 3' subsurface (hole)				+ 13.5' water on 3' subsurface (hole)			

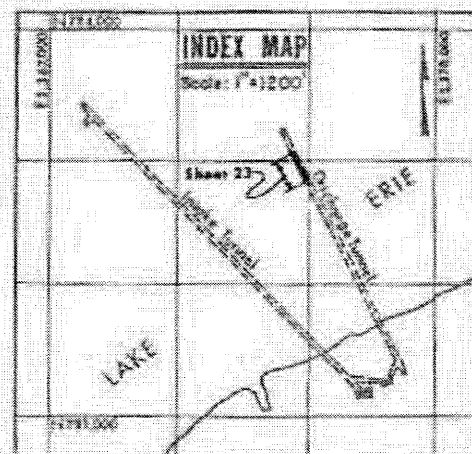
EXCAVATION PROGRESS
 ESTIMATED ROCK CONDITION (TERZAGHI NO.)
 TEMPORARY SUPPORT SYSTEM
 BEDDING SPACING
 FRACTURE SPACING
 WATER CONDITION
 DEPTH OF COVER

(Rev. 12 1/83)

PERRY NUCLEAR POWER PLANT

Geologic Map of Tunnel Excavations

Figure 2.5-47 (Sheet 22 of 24)

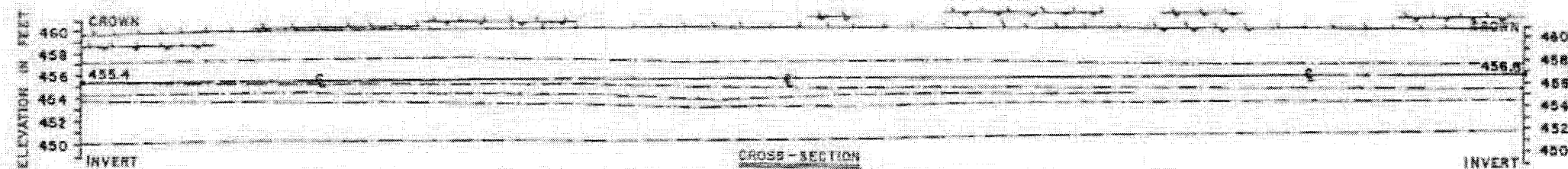
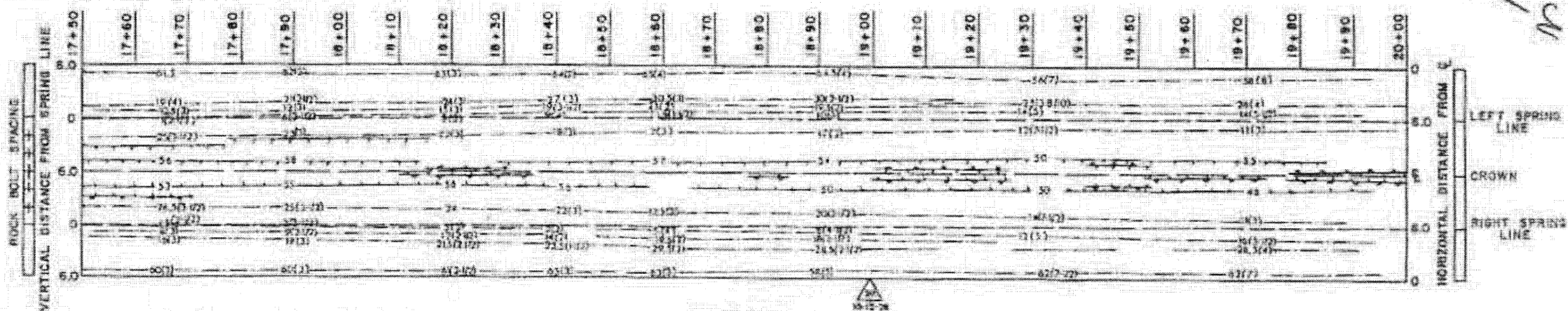


SYMBOLS

(1/2)" HARD, TAN, BROWN, CHERTY, IRON BED OR LAMINAE
 (1/2)"-2" DISCONTINUOUS IRON BED
 (1/2)" HAND, LIGHT GREY, SANDY SHALE TO SILTSTONE BED
 (1/2)"-2" DISCONTINUOUS IRON BED WITHIN GREY BED
 FRACTURE
 FAULT
 BEDDING PARTING
 VERTICAL JOINT
 INCLINED JOINT
 BEDDING, STRIKE AND DIP

MOISTURE ALONG BEDDING PARTING
 SEEPAGE FROM FEATURE
 OVEREXCAVATION OR OVERBREAK ZONE, MAXIMUM AMOUNT SHOWN
 METHANE GAS, MAXIMUM PERCENT L.E.L. WITH DATE OF OCCURRENCE

Note:
Number(s) in parentheses indicates bed thickness.
Number preceding parenthesis indicates inches above or below spring line at station of measurement.



3' x 10"		4' x 12"	
Moisture from bedding partings		Moisture from bedding partings	
Moisture from bedding partings		Moisture from bedding partings	
Moisture from bedding partings		Moisture from bedding partings	
Moisture from bedding partings		Moisture from bedding partings	

EXCAVATION PROGRESS
 ESTIMATED ROCK CONDITION (TERZAGHI NO.)
 TEMPORARY SUPPORT SYSTEM
 BEDDING SPACING
 FRACTURE SPACING
 WATER CONDITION
 DEPTH OF COVER

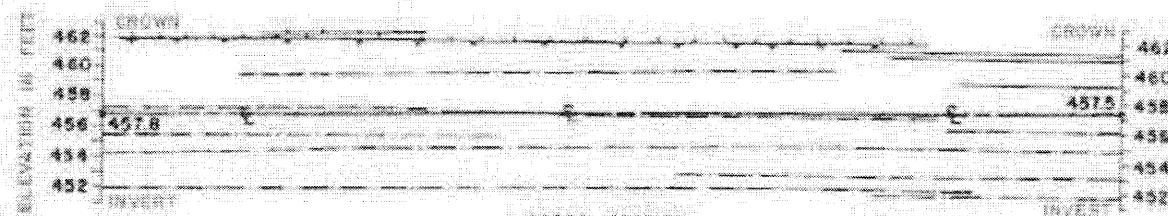
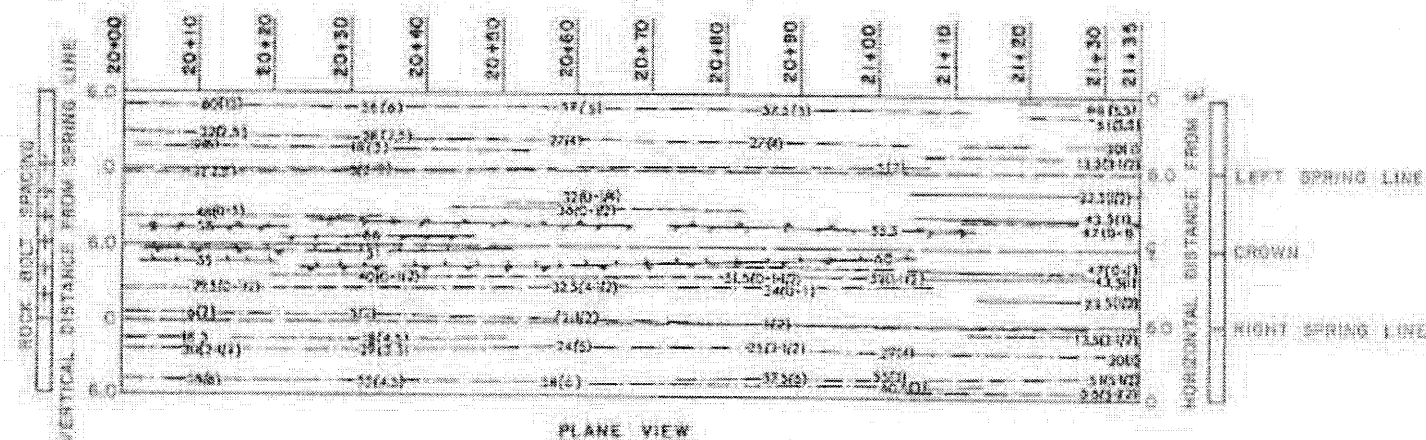
(Rev. 12 1/03)



PERRY NUCLEAR POWER PLANT

Geologic Map of Tunnel Excavations

Figure 2.5-47 (Sheet 23 of 24)



Excavation Address	ESTIMATED ROCK CONDITION (TERZAUGH NO.)	TEMPORARY SUPPORT SYSTEM	BEDDING SPACING	FRACTURE SPACING	WATER CONDITION	DEPTH OF COVER
20+00	20+10	20+20	20+30	20+40	20+50	20+60
20+70	20+80	20+90	21+00	21+10	21+20	21+30
21+40	21+50	21+60	21+70	21+80	21+90	22+00

- SYMBOLS**
- HARD, TAN, BROWN, CHERTY, IRON BED OR LAMINAE
 - DISCONTINUOUS IRON BED
 - HARD, LIGHT GREY, SANDY SHALE TO SILTSTONE BED
 - DISCONTINUOUS IRON BED WITHIN GREY BED
 - FRACTURE
 - FAULT
 - BEDDING PARTING
 - VERTICAL JOINT
 - INCLINED JOINT
 - BEDDING, STRIKE AND DIP
 - WHISTLE ALONG BEDDING PARTING
 - SEEPAGE FROM FEATURE
 - OVEREXCAVATION OR OVERBREAK ZONE, MAXIMUM AMOUNT SHOWN

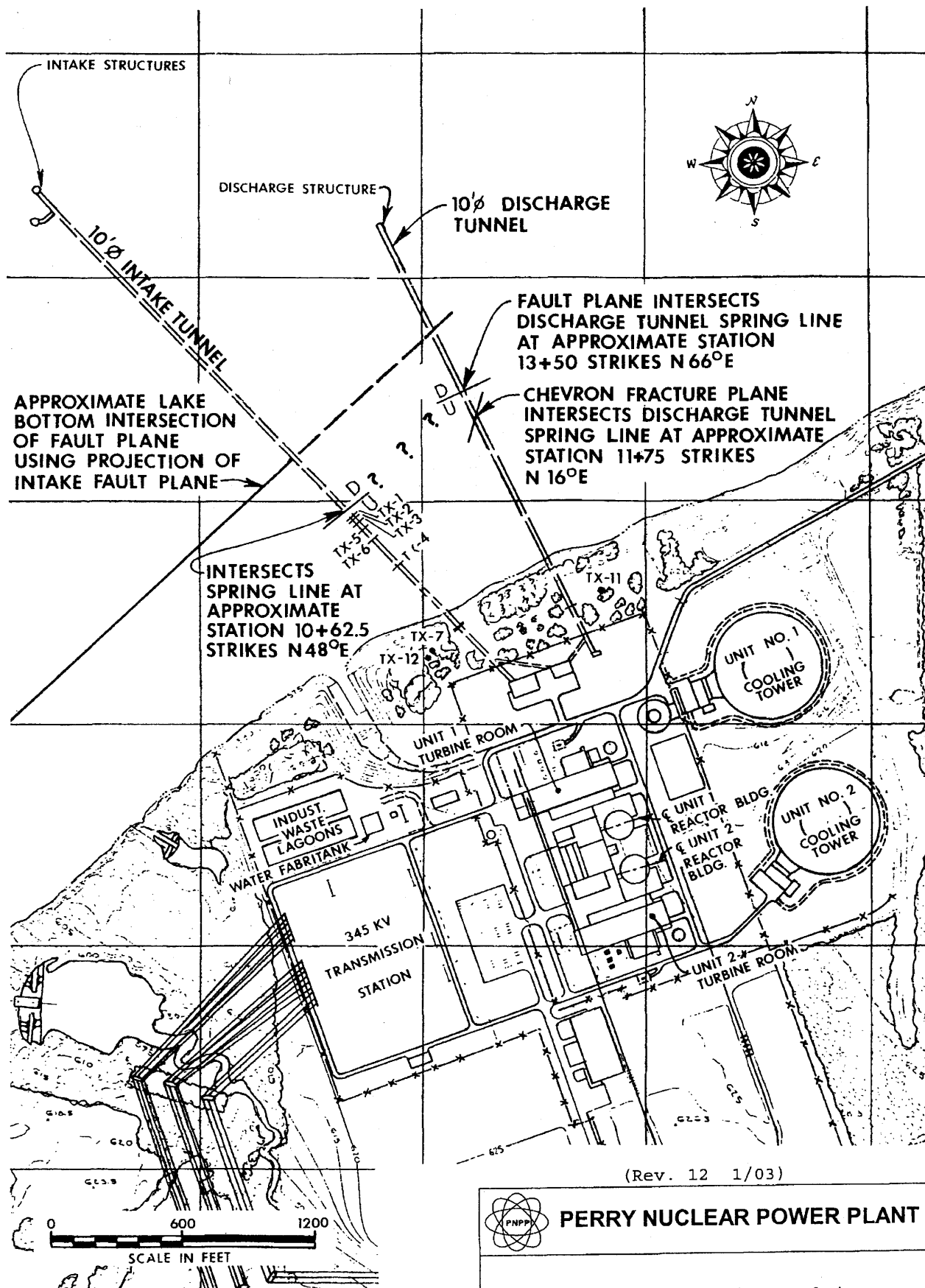
Note:
Number(s) in parentheses indicates bed thickness.
Number preceding parenthesis indicates inches above or below spring line of station of measurement.

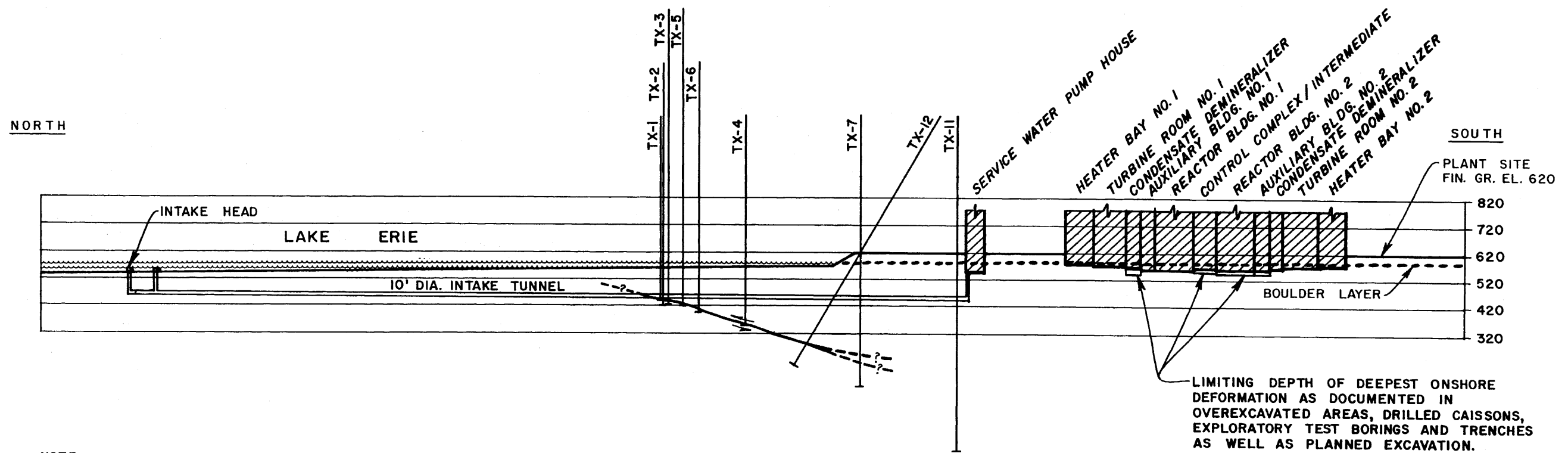
(Rev. 12 1/03)

PERRY NUCLEAR POWER PLANT


Geologic Map of Tunnel Excavations

Figure 2.5-47 (Sheet 24 of 24)





(Rev. 12 1/03)

 **PERRY NUCLEAR POWER PLANT**

Schematic Northwest -
Southeast Cross Section

Figure 2.5-49