

PPL Electric Utilities
Steel Transmission Structure
Corrosion Inspection

Lines 577-578 (Face Rock – Five Forks 1 & 2)

Inspection Summary

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September 2, 2016

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Customer: PPL Electric Utilities
Line(s): 577-578 (Face Rock – Five Forks 1 & 2)
Inspection Date: June 14th, 2016 – July 27th, 2016
Description: Inspection and Assessment of Steel Transmission Structures

Background

Once thought to be permanent structures free from deterioration and maintenance concerns, steel structures have demonstrated that they do indeed degrade over time as a result of corrosion, mechanical damage, and other contributing factors. Instituting an inspection, mitigation and repair program can help to:

- Extend the service life of structures (effectively reducing the cost of future repairs)
- Improve system safety and reliability
- Reduce emergency and unscheduled maintenance costs
- Alleviate premature pole and tower replacements

Accurate inspections, effective coatings, and structural repairs that restore original strength can add many years of service life to aging structures. This program is designed to identify corrosion on in-service structures and identify structures in need of repair so costly replacements can be avoided.

The return on investment for such a program can be measured in several ways, the most obvious of which is comparing the cost of inspections, maintenance and repairs to the replacement cost for high-value transmission structures. However, the added value of outages and emergencies that *don't* occur and structures that *don't* fail is more difficult to measure, but is very real nonetheless.

Inspection Process

The inspection process involves two primary types of evaluations:

- Structural assessment of each structure to determine existing corrosion and its effect on the integrity of the structure.
- Determination of key predictive environmental indicators present at each site which influence the rate of corrosion activity.

Structural members encased in concrete receive rudimentary concrete evaluation only. In addition, all structures receive a visual overhead inspection primarily for safety purposes.

Lines 577-578 contained **(174)** total structures. Osmose could not inspect **(3)** of the structures due to access issues. **(4)** of the structures were not found in the field, and **(1)** was not inspected because it was a wood pole. Of the remaining **(166)** fully inspected structures, **(1)** was a steel pole and **(165)** were steel towers that contained **(4)** legs each for a total of **(660)** tower legs.

Structural Assessment

Structural assessment was accomplished by measuring the section loss of steel due to corrosion on tower components, pole flats, anchor bolts, and guyed anchors. Steel thickness measurements were taken with an ultrasonic thickness gauge, caliper, micrometer or other similar measurement device. Pit depths were measured with a pit gauge or other similar device. Base plates were visually evaluated for their overall condition, but not under the same category. Additional surface preparation may have been required to adequately measure the thickness of structural components.

The condition of concrete footings were also evaluated, when applicable. Direct-buried structures were excavated to a depth of approximately 18" and the below-grade surfaces were cleaned to allow for accurate thickness measurements to determine section loss. If thinning of the member was detected, excavation continued to a maximum depth of 24" in an attempt to determine the extent of corrosion. Structural assessment results were used to determine structural condition and repair recommendations.

Key Predictive Corrosion Indicators

Key predictive corrosion indicators were measured at each structure during the inspection process. These include: Soil resistivity, alkalinity, Reduction-Oxidation (REDOX), and structure-to-soil potential measurements. Soil type and moisture level was also visually evaluated and noted. The evaluation of these indicators helps to determine:

- Potential risk of corrosion to the individual structures
- The potential risk of corrosion over the *entire* footprint of the line, in some cases
- Corrosion inspection cycle intervals
- Potential mitigation
- Additional inspections needed outside of the regular inspection cycle interval

Visual Overhead Inspections

Visual overhead inspections are conducted from ground level only, and include the evaluation of the following:

- Atmospheric corrosion
- Hardware condition
- Lightning damage
- Surrounding vegetation
- Other right of way conditions that may be a concern to line reliability or public safety

Mechanical Damage Inspections

Mechanical damage was noted during the course of the inspection. The severity of damage was classified into one of three classes:

- **Class I:** Minor deformations of smaller non-critical members, such as horizontal redundants; mostly cosmetic in nature.
- **Class II:** Significant deformation of damage to members or hardware. However, the structure is not in immediate danger of failure.
- **Class III:** Severe member damage; requires immediate attention.

Structural Conditions

This section summarizes the effect of corrosion on the integrity of a steel pole or tower leg. The (1) steel pole and (660) tower legs were categorized into five levels of corrosion/mechanical damage. Where applicable, the mitigation process for members in this condition category included a protective coating application (for "Condition A", "Condition B", and "Condition C" members). For poles to be included in the category, at least one pole flat must have met the category definition (worst case scenario):

Condition A (Good) Steel is in near original condition with only minor surface corrosion evident in a few small areas with an average section loss of $\leq 1\%$. **There were (20) tower legs that rated "Condition A".**

Condition B (Fair) Steel corrosion conditions may range from mild surface rust to all buried surfaces showing some amount of rust and some minor pitting. To meet the definition of this condition category, the average section loss must be $> 1\%$ but $\leq 10\%$. **There were (391) tower legs that rated "Condition B".**

Condition C (Poor) Steel shows moderate corrosion conditions which may include several areas to all buried surfaces showing measurable pitting, thinning or edge loss. To meet the definition of this condition category, the average section loss must be $> 10\%$ but $\leq 20\%$. **There were (35) tower legs that rated "Condition C".**

Condition D (Severe) Steel has experienced heavy corrosion activity consisting of significant thinning, pitting and/or edge loss. Corroded areas will typically have a large amount of section loss, with parts completely rusted through. To meet the definition of this condition category, the average section loss must be $> 20\%$. **There were (126) tower legs that rated "Condition D".**

Priority A structure in "Condition D", with $> 50\%$ average loss of cross section on any one pole wall or tower component or has had structural damage due to corrosion, mechanical damage, or acts of God, which may exceed the customer's allowable tolerance threshold. Poles that have two or more adjoining flats with $> 20\%$ (averaged reading on each affected adjoining flat) section loss will also be flagged as a "Priority." These will be communicated directly to the customer project manager for their immediate attention. **There were (88) tower legs that rated "Priority", along with the (1) steel pole.**

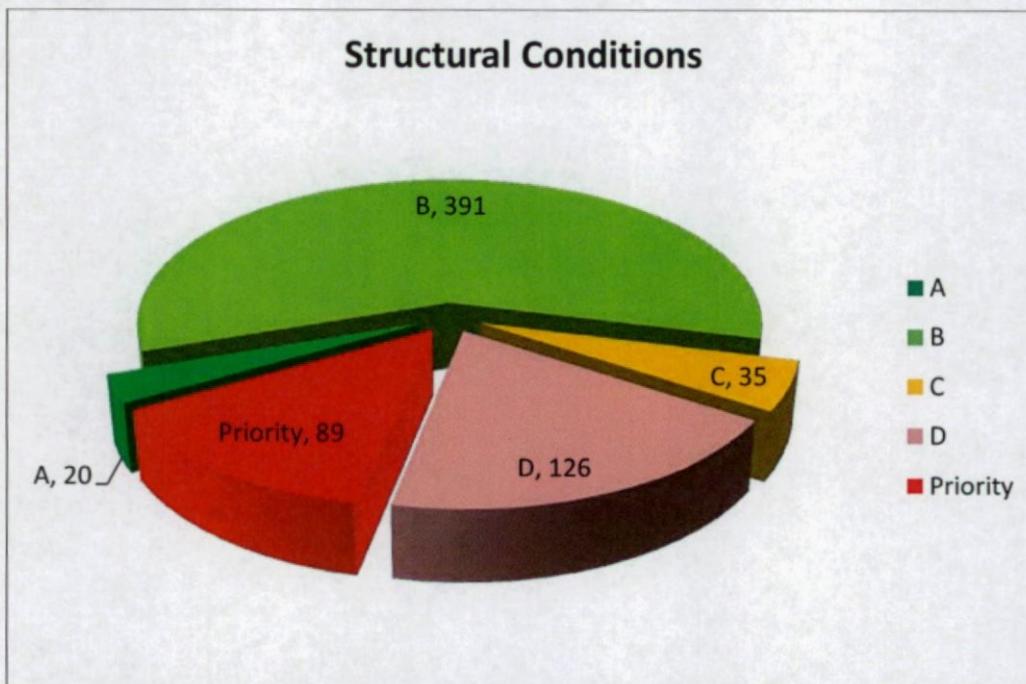


Figure 1: Structural Condition Breakdown for Lines 577-578

Determining Corrosion Activity

Environmental indicators at any given structure can be evaluated through measurable indirect field assessment techniques to determine the current and/or potential corrosion activity. The evaluation of this data was used to categorize the structures into manageable groups for follow-up maintenance and possible mitigation.

Environmental Factors That Affect Corrosion

The rate at which steel corrodes below-grade varies significantly based on the physical and chemical properties of the surrounding site. Soil particle size (or texture) dictates aeration and time of wetness; two factors that work together to support corrosion activity. The coarse texture of gravel and sand usually permit free circulation of air, allowing moisture to evaporate at a much faster rate than non-aerated soils. The fine texture of clay and silt may inhibit aeration and drainage resulting in exposure of the steel to moisture for an extended period of time, increasing the rate of corrosion.

Soil Resistivity

Soil resistivity is a significant indicator in determining how corrosive a soil environment is. Soils with low resistivity allow for easy flow of current, supporting a higher level of corrosion activity. Soils with a resistivity ≤ 1000 ohm-cm tend to be more corrosive. High soil resistivity tends to limit corrosion reactions and so, soils with a resistivity of 10,000 ohm-cm are considered much less likely to support corrosion. Using a digital soil resistivity probe, soil resistivity was measured at various depths and points of each structure.

Soil Alkalinity (pH)

Steel performs at its best in soils that are neutral (6.5 - 7.5) or slightly alkaline (> 7.5). Extreme corrosion and deep pitting are associated with soils that have a very low pH (highly acidic, < 4.0). At a location deemed appropriate by the inspector, alkaline measurements were collected with a digital soil pH probe and recorded.

Half Cell Potential (VDC)

VDC measures the structure to soil potential within a site environment. The more negative the measurement (< -0.850 mV), the more likely it is that the structure will have a reduced potential for corrosion. The less negative the measurement (> -0.400 mV), the more likely it is to corrode. This measurement is usually collected at a distance of approximately two feet from each structure utilizing a digital potential meter.

Redox Measurement

Redox measures the dissolved oxygen content in the soil and can help identify the potential for Microbial Induced Corrosion (MIC).

Although bacteria itself does not typically attack metals directly, various bacteria can develop corrosive byproducts. Redox measurements that read less than 100 mV can indicate the presence of aerobic bacteria and an increased potential for corrosion activity. Redox measurements that read between 100 and 350 mV tend to be more neutral and not to support microbial activity that is detrimental to steel. Redox measurements collected from the excavation (or a location deemed appropriate by the inspector) in close proximity to the structure.

Environmental Conditions

Environmental factors at any given site can be evaluated through measurable indirect field assessment techniques (listed previously) to determine the level of corrosion activity. As environmental site conditions are not static, the structure should be re-inspected at least every 10 years, or when site conditions change due to construction, agricultural activity or other contributing factors. The (1) pole and (660) tower legs were categorized into four manageable groups for follow up maintenance and possible mitigation:

- Very Low** Reported in the data as “Condition A”. These structures demonstrate a low potential for corrosion activity with low or neutral environmental indicators. Typically these structures are at low risk, show little or no outward signs of corrosion, and do not need further attention at the time of inspection. **There were (391) tower legs that rated “Very Low”.**
- Mild** Reported in the data as “Condition B”. These structures demonstrate a slightly elevated potential for corrosion, with environmental indicators showing minor corrosion activity. These structures may show some minor physical signs of corrosion and are at the threshold where they may require some type of mitigation to offset potential deterioration. **There were (87) tower legs that rated “Mild”, along with the (1) steel pole.**
- Moderate** Reported in the data as “Condition C”. These structures demonstrate a more serious potential for corrosion activity with moderate environmental indicators. These structures will likely show some physical corrosion taking place and should have some type of mitigation applied (likely in the form of coatings) to help prevent further deterioration. **There were (176) tower legs that rated “Moderate”.**
- Severe** Reported in the data as “Condition D”. These structures have environmental indicators that reflect a severe potential for corrosion. Structures in this condition likely have extensive corrosion present and may have structural deterioration requiring further evaluation. Structures in this condition should have mitigation applied in the forms of coatings at a minimum and be evaluated for cathodic protection. If no mitigative efforts are utilized on structures in this condition, the re-inspect interval should be significantly shortened. **There were (6) tower legs that rated “Severe”.**

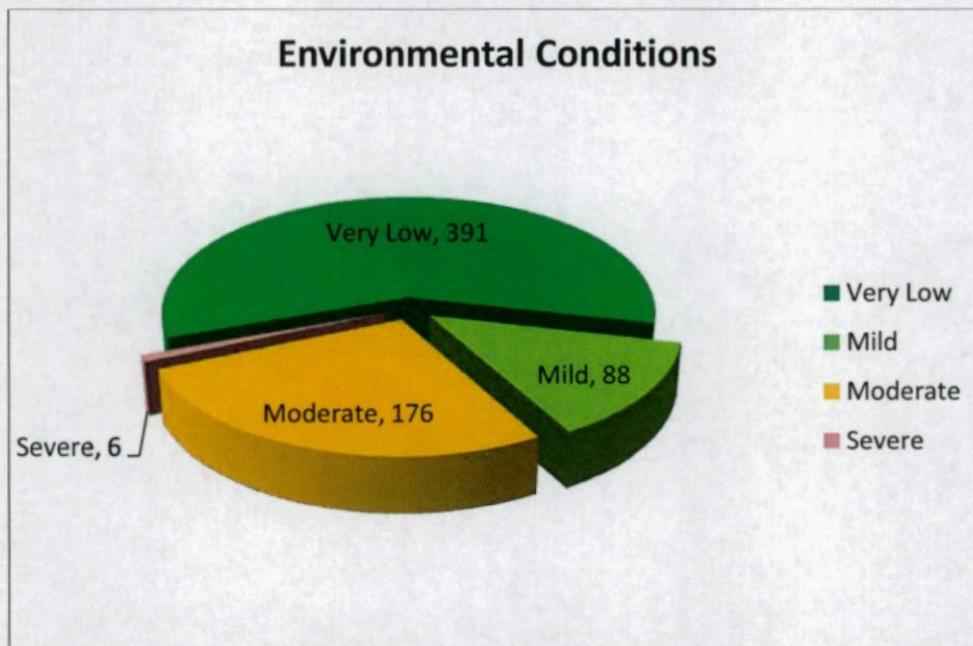


Figure 2: Environmental Condition Breakdown for Lines 577-578

Concrete Foundation Assessment

Where applicable, concrete foundations of the structures were evaluated by means of visual assessment, physical evaluation, and measurement collections. The following are descriptions of the field assessment process.

Visual Inspection

A visual inspection of each foundation will be conducted to identify signs of damage and/or deterioration. These conditions may include cracking, spalling, delamination, disintegration, exposed or corroded rebar, and exposed coarse aggregate and/or steel reinforcement.

Crack Assessment

Visibly apparent cracking in the concrete will be measured using a crack comparator gauge or other similar device to determine width. Where cracking exists, the orientation as well as any marking or staining will be recorded.

Foundation Conditions

This section summarizes the effect of corrosion on the integrity of concrete foundations. (392) of the (660) tower legs had concrete foundations that were categorized into five levels of corrosion/mechanical damage:

Condition A (Good) No signs of damage and/or deterioration. Like new. The mitigation process for foundations in this condition category will include a protective coating application. Re-inspect in 10 years or sooner. **There were no tower legs that rated "Condition A".**

Condition B (Fair) No signs of spalling or exposed reinforcement. Minor cracking (not exceeding .016" wide) or deterioration which can be easily restored, and/or light scaling (less than 0.25" of surface mortar loss). **There were (46) tower legs that rated "Condition B".**

Condition C (Poor) Larger cracks (between 0.016" and 0.187" wide) and/or presence of minor spalls (< ~25% of total exposed surface or edge, up to a 1" maximum depth) with no exposed reinforcement. Foundations in this condition may also exhibit medium scaling (surface mortar loss between 0.25" and 0.50", with some exposed aggregate). **There were (290) tower legs that rated "Condition C".**

Condition D (Reject) Cracks wider than 0.187" but less than 0.25", large spalls (> ~25% of total exposed area) with possible exposed reinforcing, and/or disintegration. Severe scaling (mortar loss between 0.50" and 0.75" deep with exposed aggregate) and/or medium spalls (between 25% and 50% of total exposed surface or edge, or 1" and 3" deep) may be present. **There were (45) tower legs that rated "Condition D".**

Priority Foundations flagged as "Priority" structures may exhibit one or more of the following: cracks 0.25" or wider, very severe scaling (mortar loss depth greater than 0.75"), large spalling (large sections of concrete missing, greater than ~50% of total exposed surface or edge, greater than 3" deep), or exposed corroded rebar. **There were (11) tower legs that rated "Priority".**

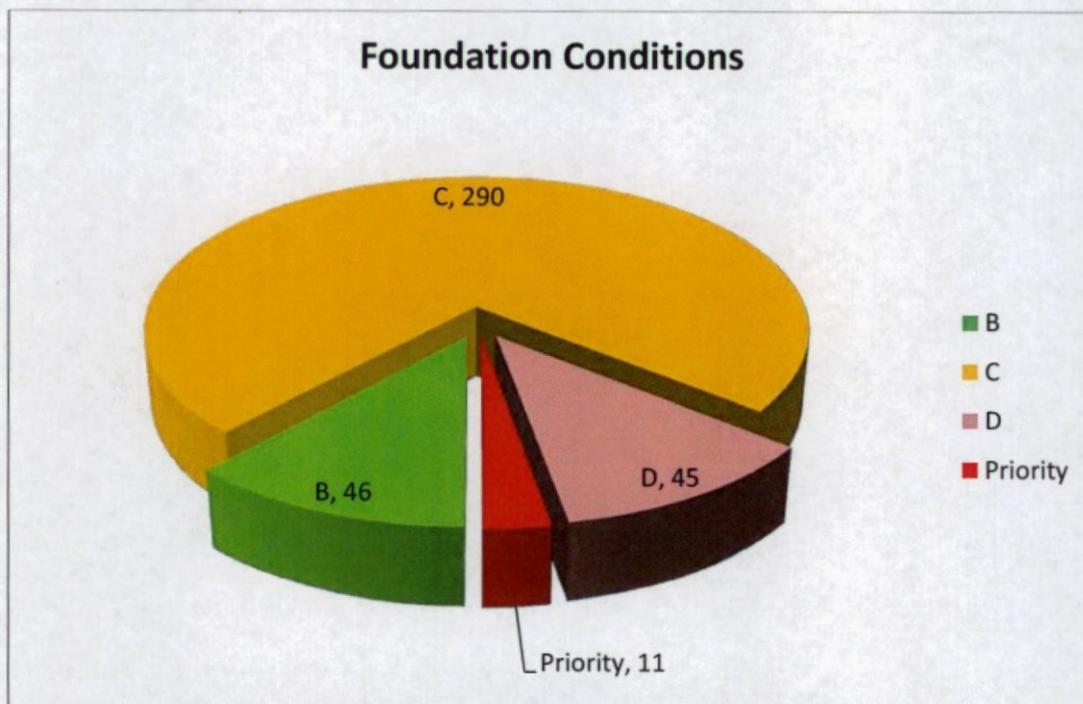


Figure 3: Foundation Condition Breakdown for Lines 577-578

Mechanical Damage

“Class I” mechanical damage was noted on (241) members during the course of this inspection, while “Class II” mechanical damage was found on (22) members. “Class III” mechanical damage was found on (2) members. Representative images of mechanical damage can be found in Appendix B.

Recommendations

Structural Repairs

Osmose Utilities Services recommends the (11) foundation and (89) structural “Priority” members be repaired within 3 months, along with the (2) “Class III” mechanically damaged members. Osmose also recommends the (126) structural and (45) foundation “Condition D” members be repaired within 12 months, along with the (22) “Class II” mechanically damaged members. The (35) structural and (290) foundation “Condition C” members should also be considered for corrosion restorations. The remaining “Condition B” members should be re-inspected within 5 years, while the remaining “Condition A” members should be re-inspected within 10 years. Restorations implemented will restore the strength lost due to corrosion and mechanical damage.

Coatings

The primary protection mechanism for steel is typically applied in the form of coatings. These coatings are most often either galvanizing or factory coatings applied by the manufacturer. Over time, the original coating deteriorates, exposing the steel substrate to the effects of corrosion. Coatings that have deteriorated and have lost capability to protect the steel should be reapplied to help extend the effective service life of the structures found to be in good condition. It is recommended that coatings be properly managed and maintained on all structures.

Osmose Contacts

Osmose personnel would be happy to discuss these recommendations in further detail. Please contact Mark Lapos at mlapos@osmose.com or Matt Gardner at mgardner@osmose.com for additional information.

Appendix A: Tables

Table 1: Inspection Breakdown of Tower Leg Structural Conditions

Index	Structure Number	Leg 1 Structural Condition	Leg 2 Structural Condition	Leg 3 Structural Condition	Leg 4 Structural Condition
1	38005S14453	C	C	C	C
2	38010S14451	B	B	B	B
3	38018S14493	C	C	B	C
4	38023S14491	B	B	C	B
5	38032S14532	D	C	C	C
6	38037S14530	B	B	B	B
7	38044S14575	C	D	C	C
8	38049S14573	B	B	B	B
9	38061S14621	B	B	B	Priority
10	38064S14615	B	B	D	C
11	38083S14680	B	D	D	Priority
12	38088S14678	B	B	B	B
13	38095S14713	C	B	B	B
14	38100S14711	B	B	B	B
15	38109S14748	B	B	D	B
16	38114S14746	B	B	B	B
17	38124S14790	C	C	B	B
18	38129S14788	B	B	B	B
19	38145S14847	B	B	B	B
20	38150S14845	B	B	B	B
21	38162S14890	B	B	C	D
22	38167S14888	B	B	B	B
23	38178S14937	B	C	Priority	Priority
24	38183S14935	B	B	B	B
25	38190S14970	B	Priority	C	B
26	38195S14968	B	B	B	B
27	38213S15027	B	B	B	C
28	38218S15025	B	B	B	B
29	38237S15091	B	B	B	B
30	38244S15096	B	B	B	B
31	38262S15157	Priority	B	B	B
32	38272S15164	B	B	B	B
33	38278S15203	D	Priority	B	Priority
34	38286S15208	B	B	B	B
35	38292S15238	B	B	B	B
36	38299S15240	B	B	B	B
37	38314S15292	B	A	B	B
38	38316S15285	B	B	B	B
39	38333S15347	Priority	B	B	B
40	38335S15338	B	B	B	B

Index	Structure Number	Leg 1 Structural Condition	Leg 2 Structural Condition	Leg 3 Structural Condition	Leg 4 Structural Condition
41	38344S15375	B	D	C	B
42	38349S15373	B	B	B	B
43	38360S15417	Priority	D	Priority	Priority
44	38378S15471	B	B	B	B
45	38382S15462	B	B	B	B
46	38392S15508	B	B	B	B
47	38397S15406	B	B	B	B
48	38418S15568	Priority	B	B	B
49	38423S15566	B	B	B	B
50	38437S15610	B	B	B	B
51	38440S15603	B	B	B	B
52	38449S15644	B	B	B	B
53	38454S15642	B	B	B	B
54	38468S15691	B	Priority	B	B
55	38473S15689	A	B	D	B
56	38475S15719	B	B	B	B
57	38480S15717	B	B	B	B
58	38493S15766	B	B	B	B
59	38500S16041	A	B	B	Priority
60	38512S15805	B	Priority	Priority	B
61	38517S15803	B	B	B	B
62	38529S15855	Priority	Priority	B	D
63	38534S15853	B	B	B	B
64	38542S15896	Priority	Priority	B	B
65	38547S15894	B	Priority	B	B
66	38562S15945	B	B	B	B
67	38567S15943	B	B	B	B
68	38586S16005	B	A	A	A
69	38591S16095	B	B	B	B
70	38598S15764	B	B	B	B
71	38605S16039	B	B	B	A
72	38618S16090	Priority	A	B	B
73	38623S16088	B	B	B	B
74	38630S16122	B	B	B	B
75	38635S16120	B	B	B	B
76	38644S16160	B	B	Priority	B
77	38649S16158	B	B	B	B
78	38658S16197	Priority	Priority	Priority	Priority
79	38663S16189	B	D	Priority	Priority
80	38698S16295	B	B	C	B
81	38703S16287	C	D	D	D
82	38733S16389	Priority	Priority	Priority	D
83	38738S16387	D	B	B	D

Index	Structure Number	Leg 1 Structural Condition	Leg 2 Structural Condition	Leg 3 Structural Condition	Leg 4 Structural Condition
84	38749S16436	Priority	Priority	D	D
85	38754S16434	B	A	A	B
86	38768S16480	D	D	D	C
87	38773S16478	B	B	B	B
88	38788S16528	Priority	D	D	D
89	38793S16526	B	B	B	B
90	38803S16576	Priority	Priority	D	Priority
91	38808S16574	B	B	B	B
92	38824S16629	C	D	D	Priority
93	38829S16627	B	B	B	B
94	38837S16665	Priority	Priority	Priority	Priority
95	38842S16663	B	B	B	B
96	38852S16703	B	D	Priority	D
97	38857S16701	B	B	B	B
98	38866S16745	Priority	Priority	D	Priority
99	38871S16743	B	B	B	B
100	38885S16790	D	D	D	D
101	38890S16788	B	B	B	B
102	38900S16833	D	D	Priority	D
103	38905S16831	B	B	B	A
104	38916S16879	D	D	D	D
105	38921S16877	A	B	B	B
106	38933S16922	D	D	D	D
107	38938S16921	B	C	B	B
108	38951S16969	D	D	D	D
109	38956S16967	B	B	B	B
110	38972S17023	D	D	D	D
111	38977S17021	A	B	B	B
112	38982S17054	D	D	D	Priority
113	38988S17051	B	B	C	C
114	38996S17090	D	D	D	D
115	39001S17086	A	B	B	B
116	39010S17125	D	D	D	D
117	39015s17122	A	B	B	B
118	39025S17168	B	B	B	B
119	39030S17161	B	B	B	B
120	39040S17204	Priority	Priority	D	Priority
121	39045S17202	A	A	B	Priority
122	39060S17266	D	D	D	Priority
123	39072S17261	B	B	B	B
124	39079S17310	Priority	Priority	Priority	Priority
125	39090S17305	B	B	B	B
126	39107S17384	D	D	D	D

Index	Structure Number	Leg 1 Structural Condition	Leg 2 Structural Condition	Leg 3 Structural Condition	Leg 4 Structural Condition
127	39118S17379	B	B	B	B
128	39126S17435	D	Priority	D	D
129	39138S17430	B	B	C	C
130	39142S17477	D	D	D	D
131	39154S17472	B	B	C	B
132	39160S17524	D	D	D	D
133	39172S17519	B	B	B	B
134	39176S17564	Priority	Priority	D	D
135	39186S17556	B	B	B	B
136	39201S17604	D	D	D	D
137	39211S17596	B	B	B	B
138	39229S17649	D	D	D	D
139	39239S17641	B	B	D	B
140	39254S17688	Priority	Priority	D	D
141	39264S17681	B	B	B	B
142	39277S17723	Priority	Priority	D	D
143	39287S17717	B	B	B	B
144	39320S17792	Priority	Priority	Priority	Priority
145	39330S17786	B	B	B	B
146	39340S17822	Priority	Priority	Priority	Priority
147	39350S17816	B	B	B	B
148	39382S17888	Priority	D	Priority	Priority
149	39392S17882	B	A	B	B
150	39404S17922	Priority	Priority	D	D
151	39414S17916	B	B	B	Priority
152	39430S17964	D	D	Priority	Priority
153	39440S17958	D	C	B	C
154	39452S17998	Priority	D	Priority	D
155	39462S17992	B	B	D	B
156	39489S18057	Priority	D	Priority	Priority
157	39500S18050	B	B	B	B
158	39508S18083	D	Priority	D	D
159	39511S18071	B	A	B	A
160	39569S18107	D	D	D	B
161	39574S18096	B	D	B	B
162	39608S18110	B	B	B	B
163	39615S18127	D	D	D	D
164	39621S18116	D	D	D	D
165	39982S18264	B	B	B	B

Table 2: Inspection Breakdown of Tower Leg Environmental Conditions

Index	Structure Number	Leg 1 Environmental Condition	Leg 2 Environmental Condition	Leg 3 Environmental Condition	Leg 4 Environmental Condition
1	38005S14453	Mild	Mild	Mild	Mild
2	38010S14451	Very Low	Very Low	Very Low	Very Low
3	38018S14493	Mild	Moderate	Moderate	Moderate
4	38023S14491	Very Low	Very Low	Very Low	Very Low
5	38032S14532	Mild	Mild	Mild	Mild
6	38037S14530	Very Low	Very Low	Very Low	Very Low
7	38044S14575	Moderate	Moderate	Moderate	Moderate
8	38049S14573	Very Low	Very Low	Very Low	Very Low
9	38061S14621	Mild	Mild	Mild	Mild
10	38064S14615	Very Low	Very Low	Very Low	Very Low
11	38083S14680	Very Low	Very Low	Very Low	Very Low
12	38088S14678	Very Low	Very Low	Very Low	Very Low
13	38095S14713	Mild	Moderate	Moderate	Moderate
14	38100S14711	Very Low	Very Low	Very Low	Very Low
15	38109S14748	Mild	Moderate	Moderate	Moderate
16	38114S14746	Very Low	Very Low	Very Low	Very Low
17	38124S14790	Moderate	Moderate	Moderate	Moderate
18	38129S14788	Very Low	Very Low	Very Low	Very Low
19	38145S14847	Moderate	Mild	Mild	Mild
20	38150S14845	Very Low	Very Low	Very Low	Very Low
21	38162S14890	Mild	Moderate	Mild	Mild
22	38167S14888	Very Low	Very Low	Very Low	Very Low
23	38178S14937	Very Low	Very Low	Very Low	Very Low
24	38183S14935	Very Low	Very Low	Very Low	Very Low
25	38190S14970	Moderate	Moderate	Moderate	Moderate
26	38195S14968	Very Low	Very Low	Very Low	Very Low
27	38213S15027	Moderate	Moderate	Moderate	Mild
28	38218S15025	Very Low	Very Low	Very Low	Very Low
29	38237S15091	Moderate	Moderate	Moderate	Moderate
30	38244S15096	Very Low	Very Low	Very Low	Very Low
31	38262S15157	Mild	Mild	Mild	Mild
32	38272S15164	Very Low	Very Low	Very Low	Very Low
33	38278S15203	Moderate	Moderate	Moderate	Moderate
34	38286S15208	Very Low	Very Low	Very Low	Very Low
35	38292S15238	Moderate	Moderate	Moderate	Moderate
36	38299S15240	Very Low	Very Low	Very Low	Very Low
37	38314S15292	Moderate	Moderate	Moderate	Moderate
38	38316S15285	Very Low	Very Low	Very Low	Very Low
39	38333S15347	Mild	Moderate	Mild	Moderate
40	38335S15338	Very Low	Very Low	Very Low	Very Low

Index	Structure Number	Leg 1 Environmental Condition	Leg 2 Environmental Condition	Leg 3 Environmental Condition	Leg 4 Environmental Condition
41	38344S15375	Moderate	Moderate	Moderate	Moderate
42	38349S15373	Very Low	Very Low	Very Low	Very Low
43	38360S15417	Very Low	Very Low	Very Low	Very Low
44	38378S15471	Moderate	Moderate	Moderate	Moderate
45	38382S15462	Very Low	Very Low	Very Low	Very Low
46	38392S15508	Moderate	Severe	Severe	Moderate
47	38397S15406	Very Low	Very Low	Very Low	Very Low
48	38418S15568	Moderate	Moderate	Moderate	Mild
49	38423S15566	Very Low	Very Low	Very Low	Very Low
50	38437S15610	Mild	Moderate	Moderate	Mild
51	38440S15603	Very Low	Very Low	Very Low	Very Low
52	38449S15644	Moderate	Moderate	Moderate	Mild
53	38454S15642	Very Low	Very Low	Very Low	Very Low
54	38468S15691	Moderate	Moderate	Moderate	Moderate
55	38473S15689	Very Low	Very Low	Very Low	Very Low
56	38475S15719	Moderate	Moderate	Moderate	Moderate
57	38480S15717	Very Low	Very Low	Very Low	Very Low
58	38493S15766	Moderate	Mild	Mild	Mild
59	38500S16041	Moderate	Mild	Mild	Mild
60	38512S15805	Mild	Mild	Mild	Moderate
61	38517S15803	Very Low	Very Low	Very Low	Very Low
62	38529S15855	Very Low	Very Low	Very Low	Very Low
63	38534S15853	Very Low	Very Low	Very Low	Very Low
64	38542S15896	Moderate	Moderate	Moderate	Mild
65	38547S15894	Very Low	Very Low	Very Low	Very Low
66	38562S15945	Mild	Moderate	Mild	Mild
67	38567S15943	Very Low	Very Low	Very Low	Very Low
68	38586S16005	Moderate	Moderate	Moderate	Moderate
69	38591S16095	Very Low	Very Low	Very Low	Very Low
70	38598S15764	Very Low	Very Low	Very Low	Very Low
71	38605S16039	Very Low	Very Low	Very Low	Very Low
72	38618S16090	Moderate	Moderate	Mild	Moderate
73	38623S16088	Very Low	Very Low	Very Low	Very Low
74	38630S16122	Moderate	Moderate	Moderate	Severe
75	38635S16120	Very Low	Very Low	Very Low	Very Low
76	38644S16160	Moderate	Mild	Mild	Moderate
77	38649S16158	Very Low	Very Low	Very Low	Very Low
78	38658S16197	Very Low	Very Low	Very Low	Very Low
79	38663S16189	Very Low	Very Low	Very Low	Very Low
80	38698S16295	Very Low	Very Low	Very Low	Very Low
81	38703S16287	Very Low	Very Low	Very Low	Very Low
82	38733S16389	Very Low	Very Low	Very Low	Very Low

Index	Structure Number	Leg 1 Environmental Condition	Leg 2 Environmental Condition	Leg 3 Environmental Condition	Leg 4 Environmental Condition
83	38738S16387	Very Low	Very Low	Very Low	Very Low
84	38749S16436	Moderate	Moderate	Moderate	Moderate
85	38754S16434	Very Low	Very Low	Very Low	Very Low
86	38768S16480	Severe	Moderate	Moderate	Mild
87	38773S16478	Very Low	Very Low	Very Low	Very Low
88	38788S16528	Mild	Mild	Moderate	Mild
89	38793S16526	Very Low	Very Low	Very Low	Very Low
90	38803S16576	Severe	Moderate	Moderate	Moderate
91	38808S16574	Very Low	Very Low	Very Low	Very Low
92	38824S16629	Severe	Moderate	Moderate	Mild
93	38829S16627	Very Low	Very Low	Very Low	Very Low
94	38837S16665	Moderate	Moderate	Mild	Mild
95	38842S16663	Very Low	Very Low	Very Low	Very Low
96	38852S16703	Moderate	Moderate	Moderate	Moderate
97	38857S16701	Very Low	Very Low	Very Low	Very Low
98	38866S16745	Very Low	Very Low	Very Low	Very Low
99	38871S16743	Very Low	Very Low	Very Low	Very Low
100	38885S16790	Moderate	Moderate	Moderate	Mild
101	38890S16788	Very Low	Very Low	Very Low	Very Low
102	38900S16833	Mild	Mild	Mild	Mild
103	38905S16831	Very Low	Very Low	Very Low	Very Low
104	38916S16879	Mild	Mild	Mild	Mild
105	38921S16877	Very Low	Very Low	Very Low	Very Low
106	38933S16922	Mild	Mild	Mild	Moderate
107	38938S16921	Very Low	Very Low	Very Low	Very Low
108	38951S16969	Moderate	Moderate	Moderate	Mild
109	38956S16967	Very Low	Very Low	Very Low	Very Low
110	38972S17023	Moderate	Moderate	Moderate	Moderate
111	38977S17021	Very Low	Very Low	Very Low	Very Low
112	38982S17054	Very Low	Very Low	Very Low	Very Low
113	38988S17051	Very Low	Very Low	Very Low	Very Low
114	38996S17090	Moderate	Moderate	Moderate	Moderate
115	39001S17086	Very Low	Very Low	Very Low	Very Low
116	39010S17125	Moderate	Moderate	Moderate	Moderate
117	39015S17122	Very Low	Very Low	Very Low	Very Low
118	39025S17168	Very Low	Very Low	Very Low	Very Low
119	39030S17161	Very Low	Very Low	Very Low	Very Low
120	39040S17204	Moderate	Mild	Moderate	Moderate
121	39045S17202	Very Low	Very Low	Very Low	Very Low
122	39060S17266	Moderate	Moderate	Moderate	Moderate
123	39072S17261	Very Low	Very Low	Very Low	Very Low
124	39079S17310	Mild	Mild	Moderate	Mild

Index	Structure Number	Leg 1 Environmental Condition	Leg 2 Environmental Condition	Leg 3 Environmental Condition	Leg 4 Environmental Condition
125	39090S17305	Very Low	Very Low	Very Low	Very Low
126	39107S17384	Moderate	Moderate	Moderate	Moderate
127	39118S17379	Very Low	Very Low	Very Low	Very Low
128	39126S17435	Moderate	Moderate	Moderate	Moderate
129	39138S17430	Very Low	Very Low	Very Low	Very Low
130	39142S17477	Moderate	Moderate	Moderate	Moderate
131	39154S17472	Very Low	Very Low	Very Low	Very Low
132	39160S17524	Mild	Moderate	Moderate	Moderate
133	39172S17519	Very Low	Very Low	Very Low	Very Low
134	39176S17564	Very Low	Very Low	Very Low	Very Low
135	39186S17556	Very Low	Very Low	Very Low	Very Low
136	39201S17604	Mild	Moderate	Moderate	Moderate
137	39211S17596	Very Low	Very Low	Very Low	Very Low
138	39229S17649	Moderate	Moderate	Moderate	Moderate
139	39239S17641	Very Low	Very Low	Very Low	Very Low
140	39254S17688	Moderate	Moderate	Moderate	Mild
141	39264S17681	Mild	Very Low	Very Low	Very Low
142	39277S17723	Mild	Mild	Mild	Moderate
143	39287S17717	Very Low	Very Low	Very Low	Very Low
144	39320S17792	Moderate	Mild	Mild	Mild
145	39330S17786	Very Low	Very Low	Very Low	Very Low
146	39340S17822	Mild	Mild	Mild	Mild
147	39350S17816	Very Low	Very Low	Very Low	Very Low
148	39382S17888	Moderate	Mild	Moderate	Moderate
149	39392S17882	Very Low	Very Low	Very Low	Very Low
150	39404S17922	Moderate	Moderate	Moderate	Moderate
151	39414S17916	Very Low	Very Low	Very Low	Very Low
152	39430S17964	Moderate	Moderate	Moderate	Moderate
153	39440S17958	Very Low	Very Low	Very Low	Very Low
154	39452S17998	Very Low	Very Low	Very Low	Very Low
155	39462S17992	Very Low	Very Low	Very Low	Very Low
156	39489S18057	Moderate	Moderate	Moderate	Moderate
157	39500S18050	Very Low	Very Low	Very Low	Very Low
158	39508S18083	Very Low	Very Low	Very Low	Very Low
159	39511S18071	Very Low	Very Low	Very Low	Very Low
160	39569S18107	Very Low	Very Low	Very Low	Very Low
161	39574S18096	Very Low	Very Low	Very Low	Very Low
162	39608S18110	Very Low	Very Low	Very Low	Very Low
163	39615S18127	Very Low	Very Low	Very Low	Very Low
164	39621S18116	Very Low	Very Low	Very Low	Very Low
165	39982S18264	Very Low	Very Low	Very Low	Very Low

Table 3: Inspection Breakdown of Tower Leg Foundation Conditions

Index	Structure Number	Leg 1 Foundation Condition	Leg 2 Foundation Condition	Leg 3 Foundation Condition	Leg 4 Foundation Condition
1	38005S14453	-	-	-	-
2	38010S14451	C	C	C	D
3	38018S14493	-	-	-	-
4	38023S14491	C	C	C	C
5	38032S14532	-	-	-	-
6	38037S14530	C	C	C	C
7	38044S14575	-	-	-	-
8	38049S14573	C	D	C	C
9	38061S14621	-	-	-	-
10	38064S14615	C	C	Priority	Priority
11	38083S14680	C	C	C	C
12	38088S14678	Priority	C	D	C
13	38095S14713	-	-	-	-
14	38100S14711	C	C	C	C
15	38109S14748	-	-	-	-
16	38114S14746	C	C	C	C
17	38124S14790	-	-	-	-
18	38129S14788	C	C	C	C
19	38145S14847	-	-	-	-
20	38150S14845	C	C	C	C
21	38162S14890	-	-	-	-
22	38167S14888	C	C	C	C
23	38178S14937	C	C	C	C
24	38183S14935	C	C	C	C
25	38190S14970	-	-	-	-
26	38195S14968	B	C	C	Priority
27	38213S15027	-	-	-	-
28	38218S15025	B	C	C	C
29	38237S15091	-	-	-	-
30	38244S15096	C	C	C	C
31	38262S15157	-	-	-	-
32	38272S15164	C	C	C	C
33	38278S15203	-	-	-	-
34	38286S15208	C	C	C	C
35	38292S15238	-	-	-	-
36	38299S15240	C	C	C	C
37	38314S15292	-	-	-	-
38	38316S15285	C	C	C	C
39	38333S15347	-	-	-	-
40	38335S15338	Priority	C	Priority	Priority
41	38344S15375	-	-	-	-

Index	Structure Number	Leg 1 Foundation Condition	Leg 2 Foundation Condition	Leg 3 Foundation Condition	Leg 4 Foundation Condition
42	38349S15373	C	C	C	C
43	38360S15417	C	C	C	C
44	38378S15471	-	-	-	-
45	38382S15462	C	C	C	C
46	38392S15508	-	-	-	-
47	38397S15406	C	C	C	C
48	38418S15568	-	-	-	-
49	38423S15566	C	C	C	C
50	38437S15610	-	-	-	-
51	38440S15603	C	C	C	D
52	38449S15644	-	-	-	-
53	38454S15642	B	B	B	C
54	38468S15691	-	-	-	-
55	38473S15689	B	C	C	C
56	38475S15719	-	-	-	-
57	38480S15717	D	D	C	C
58	38493S15766	-	-	-	-
59	38500S16041	-	-	-	-
60	38512S15805	-	-	-	-
61	38517S15803	C	C	C	C
62	38529S15855	Priority	C	Priority	Priority
63	38534S15853	C	D	C	C
64	38542S15896	-	-	-	-
65	38547S15894	C	C	C	C
66	38562S15945	-	-	-	-
67	38567S15943	D	D	B	B
68	38586S16005	-	-	-	-
69	38591S16095	C	C	B	C
70	38598S15764	D	C	C	D
71	38605S16039	B	B	B	B
72	38618S16090	-	-	-	-
73	38623S16088	B	B	B	D
74	38630S16122	-	-	-	-
75	38635S16120	C	C	C	C
76	38644S16160	-	-	-	-
77	38649S16158	C	C	C	C
78	38658S16197	D	C	C	C
79	38663S16189	C	C	C	C
80	38698S16295	C	C	C	C
81	38703S16287	C	C	D	D
82	38733S16389	C	C	C	C
83	38738S16387	C	C	C	C
84	38749S16436	-	-	-	-

Index	Structure Number	Leg 1 Foundation Condition	Leg 2 Foundation Condition	Leg 3 Foundation Condition	Leg 4 Foundation Condition
85	38754S16434	C	C	C	C
86	38768S16480	-	-	-	-
87	38773S16478	B	B	B	B
88	38788S16528	-	-	-	-
89	38793S16526	C	B	B	B
90	38803S16576	-	-	-	-
91	38808S16574	C	C	C	D
92	38824S16629	-	-	-	-
93	38829S16627	C	C	C	C
94	38837S16665	-	-	-	-
95	38842S16663	D	D	C	C
96	38852S16703	-	-	-	-
97	38857S16701	C	C	B	D
98	38866S16745	C	B	B	B
99	38871S16743	C	C	B	B
100	38885S16790	-	-	-	-
101	38890S16788	B	B	C	C
102	38900S16833	-	-	-	-
103	38905S16831	B	B	C	B
104	38916S16879	-	-	-	-
105	38921S16877	B	C	B	B
106	38933S16922	-	-	-	-
107	38938S16921	B	B	B	B
108	38951S16969	-	-	-	-
109	38956S16967	C	B	C	C
110	38972S17023	-	-	-	-
111	38977S17021	C	C	D	C
112	38982S17054	D	D	D	C
113	38988S17051	C	C	C	C
114	38996S17090	-	-	-	-
115	39001S17086	C	C	C	C
116	39010S17125	-	-	-	-
117	39015S17122	C	C	C	C
118	39025S17168	D	D	D	D
119	39030S17161	D	D	D	D
120	39040S17204	-	-	-	-
121	39045S17202	B	C	C	C
122	39060S17266	-	-	-	-
123	39072S17261	C	C	C	C
124	39079S17310	-	-	-	-
125	39090S17305	D	C	D	D
126	39107S17384	-	-	-	-
127	39118S17379	C	C	C	C

Index	Structure Number	Leg 1 Foundation Condition	Leg 2 Foundation Condition	Leg 3 Foundation Condition	Leg 4 Foundation Condition
128	39126S17435	-	-	-	-
129	39138S17430	C	C	C	C
130	39142S17477	-	-	-	-
131	39154S17472	C	C	C	C
132	39160S17524	-	-	-	-
133	39172S17519	C	C	C	C
134	39176S17564	C	C	C	C
135	39186S17556	C	C	C	C
136	39201S17604	-	-	-	-
137	39211S17596	C	C	C	C
138	39229S17649	-	-	-	-
139	39239S17641	C	C	C	C
140	39254S17688	-	-	-	-
141	39264S17681	C	C	C	C
142	39277S17723	-	-	-	-
143	39287S17717	C	C	C	C
144	39320S17792	-	-	-	-
145	39330S17786	C	C	C	C
146	39340S17822	-	-	-	-
147	39350S17816	C	C	C	C
148	39382S17888	-	-	-	-
149	39392S17882	C	C	C	C
150	39404S17922	-	-	-	-
151	39414S17916	C	C	C	C
152	39430S17964	-	-	-	-
153	39440S17958	C	C	C	C
154	39452S17998	D	D	C	D
155	39462S17992	C	C	C	C
156	39489S18057	-	-	-	-
157	39500S18050	C	C	C	C
158	39508S18083	D	D	C	D
159	39511S18071	C	C	C	C
160	39569S18107	D	D	D	C
161	39574S18096	C	C	C	C
162	39608S18110	C	C	C	D
163	39615S18127	C	C	C	D
164	39621S18116	C	C	Priority	C
165	39982S18264	B	B	C	B

Table 4: Inspection Breakdown of the Pole

Index	Structure Number	Environmental Condition	Structural Condition
1	38365S15415	Mild	Priority

Table 5: Mechanical Damage Breakdown of Each Member

Index	Structure Number	Leg	Component	Class
1	38018S14493	1	Left Diagonal	I
2	38018S14493	3	Left Diagonal	I
3	38032S14532	4	Left Diagonal	I
4	38044S14575	1	Left Diagonal	I
5	38064S14615	1	Right Diagonal	I
6	38083S14680	2	Left Diagonal	I
7	38095S14713	1	Left Diagonal	I
8	38095S14713	4	Left Diagonal	I
9	38109S14748	3	Left Diagonal	I
10	38129S14788	2	Post Leg	II
11	38162S14890	4	Left Diagonal	I
12	38178S14937	2	Left Diagonal	I
13	38178S14937	3	Left Diagonal	I
14	38190S14970	4	Left Diagonal	I
15	38262S15157	3	Left Diagonal	I
16	38262S15157	4	Left Diagonal	I
17	38278S15203	2	Front Grillage	I
18	38286S15208	3	Post Leg	II
19	38292S15238	1	Left Diagonal	I
20	38292S15238	1	Front Grillage	I
21	38292S15238	2	Left Diagonal	I
22	38292S15238	3	Left Diagonal	I
23	38292S15238	4	Left Diagonal	I
24	38299S15240	2	Left Diagonal	I
25	38314S15292	3	Right Diagonal	I
26	38314S15292	3	Left Diagonal	I
27	38314S15292	4	Left Diagonal	I
28	38316S15285	4	Post Leg	II
29	38316S15285	4	Right Diagonal	I
30	38333S15347	4	Left Diagonal	I
31	38344S15375	1	Left Diagonal	I
32	38349S15373	2	Left Diagonal	I
33	38349S15373	2	Right Diagonal	I
34	38360S15417	3	Left Diagonal	I
35	38378S15471	2	Left Diagonal	I
36	38378S15471	3	Left Diagonal	I
37	38397S15406	2	Left Diagonal	I
38	38397S15406	3	Right Diagonal	I
39	38418S15568	1	Right Diagonal	I
40	38418S15568	1	Left Diagonal	I
41	38418S15568	3	Right Diagonal	I
42	38418S15568	3	Post Leg	II

Index	Structure Number	Leg	Component	Class
43	38418S15568	3	Left Diagonal	I
44	38423S15566	1	Left Diagonal	I
45	38423S15566	1	Right Diagonal	I
46	38423S15566	2	Left Diagonal	I
47	38423S15566	3	Left Diagonal	I
48	38423S15566	4	Left Diagonal	I
49	38423S15566	4	Right Diagonal	II
50	38437S15610	1	Left Diagonal	I
51	38437S15610	2	Left Diagonal	I
52	38437S15610	3	Right Diagonal	I
53	38437S15610	3	Left Diagonal	I
54	38440S15603	1	Left Diagonal	I
55	38440S15603	2	Right Diagonal	I
56	38440S15603	3	Right Diagonal	I
57	38440S15603	3	Left Diagonal	I
58	38440S15603	4	Right Diagonal	I
59	38440S15603	4	Left Diagonal	I
60	38468S15691	1	Right Diagonal	I
61	38468S15691	2	Right Diagonal	I
62	38468S15691	3	Right Diagonal	I
63	38473S15689	3	Right Diagonal	I
64	38473S15689	4	Left Diagonal	I
65	38493S15766	1	Right Diagonal	I
66	38493S15766	1	Left Diagonal	I
67	38500S16041	1	Right Diagonal	I
68	38500S16041	4	Right Diagonal	I
69	38500S16041	4	Left Diagonal	I
70	38512S15805	1	Right Diagonal	I
71	38512S15805	2	Left Diagonal	I
72	38512S15805	3	Right Diagonal	I
73	38512S15805	3	Left Diagonal	I
74	38517S15803	2	Right Diagonal	I
75	38517S15803	3	Right Diagonal	I
76	38529S15855	1	Right Diagonal	I
77	38534S15853	1	Left Diagonal	I
78	38542S15896	2	Left Diagonal	I
79	38542S15896	4	Right Diagonal	I
80	38547S15894	2	Right Diagonal	I
81	38567S15943	2	Post Leg	II
82	38567S15943	2	Left Diagonal	II
83	38586S16005	1	Right Diagonal	I
84	38586S16005	2	Left Diagonal	I
85	38586S16005	4	Left Redundant	I
86	38591S16095	1	Left Diagonal	I

Index	Structure Number	Leg	Component	Class
87	38591S16095	3	Right Diagonal	I
88	38591S16095	4	Right Diagonal	II
89	38605S16039	4	Left Diagonal	I
90	38605S16039	4	Right Diagonal	I
91	38623S16088	1	Right Diagonal	I
92	38630S16122	4	Right Diagonal	I
93	38635S16120	2	Right Diagonal	I
94	38635S16120	3	Right Diagonal	I
95	38644S16160	3	Left Diagonal	I
96	38644S16160	3	Right Diagonal	I
97	38644S16160	4	Left Diagonal	I
98	38649S16158	2	Left Diagonal	I
99	38649S16158	3	Left Diagonal	I
100	38658S16197	1	Right Diagonal	I
101	38703S16287	2	Left Diagonal	I
102	38703S16287	3	Left Diagonal	I
103	38733S16389	3	Right Diagonal	I
104	38768S16480	1	Right Diagonal	I
105	38768S16480	3	Right Diagonal	I
106	38768S16480	3	Left Diagonal	I
107	38773S16478	2	Right Diagonal	I
108	38788S16528	2	Left Diagonal	I
109	38788S16528	2	Right Diagonal	I
110	38788S16528	3	Left Diagonal	I
111	38788S16528	4	Left Diagonal	II
112	38793S16526	1	Left Diagonal	I
113	38793S16526	1	Right Diagonal	I
114	38793S16526	4	Left Diagonal	I
115	38803S16576	2	Right Diagonal	I
116	38803S16576	2	Left Diagonal	I
117	38803S16576	3	Left Diagonal	I
118	38803S16576	4	Left Diagonal	I
119	38803S16576	4	Post Leg	I
120	38824S16629	1	Left Diagonal	I
121	38824S16629	1	Right Diagonal	I
122	38824S16629	2	Right Diagonal	I
123	38824S16629	3	Left Diagonal	II
124	38824S16629	3	Right Diagonal	I
125	38824S16629	4	Left Diagonal	I
126	38824S16629	4	Right Diagonal	I
127	38829S16627	1	Right Diagonal	I
128	38829S16627	1	Left Diagonal	I
129	38829S16627	2	Left Diagonal	I
130	38829S16627	3	Right Diagonal	I

Index	Structure Number	Leg	Component	Class
131	38829S16627	4	Right Diagonal	II
132	38837S16665	1	Right Diagonal	I
133	38837S16665	1	Left Diagonal	I
134	38837S16665	2	Left Diagonal	I
135	38837S16665	2	Right Diagonal	I
136	38837S16665	3	Left Diagonal	I
137	38837S16665	3	Right Diagonal	I
138	38842S16663	1	Left Diagonal	I
139	38842S16663	3	Left Diagonal	I
140	38842S16663	4	Left Diagonal	I
141	38866S16745	1	Right Diagonal	I
142	38866S16745	1	Left Diagonal	I
143	38866S16745	2	Right Diagonal	I
144	38866S16745	2	Left Diagonal	I
145	38866S16745	2	Stub Angle	I
146	38866S16745	3	Right Diagonal	I
147	38866S16745	3	Left Diagonal	I
148	38866S16745	4	Right Diagonal	I
149	38871S16743	2	Right Diagonal	I
150	38871S16743	3	Right Diagonal	II
151	38871S16743	3	Left Diagonal	I
152	38871S16743	4	Left Diagonal	I
153	38885S16790	1	Left Diagonal	I
154	38885S16790	2	Right Diagonal	I
155	38885S16790	3	Right Diagonal	I
156	38885S16790	3	Left Diagonal	I
157	38885S16790	4	Left Diagonal	I
158	38890S16788	4	Left Diagonal	I
159	38890S16788	4	Post Leg	I
160	38890S16788	4	Right Diagonal	I
161	38900S16833	1	Left Diagonal	I
162	38900S16833	3	Left Diagonal	I
163	38900S16833	4	Left Diagonal	I
164	38905S16831	2	Left Diagonal	I
165	38905S16831	3	Left Diagonal	I
166	38905S16831	3	Right Diagonal	I
167	38905S16831	4	Left Diagonal	I
168	38916S16879	1	Left Diagonal	I
169	38916S16879	2	Left Diagonal	I
170	38916S16879	3	Left Diagonal	I
171	38916S16879	4	Left Diagonal	I
172	38921S16877	1	Right Diagonal	II
173	38921S16877	1	Left Diagonal	I
174	38921S16877	4	Left Diagonal	I

Index	Structure Number	Leg	Component	Class
175	38933S16922	1	Left Diagonal	I
176	38933S16922	4	Left Diagonal	I
177	38938S16921	2	Left Diagonal	I
178	38938S16921	3	Left Diagonal	I
179	38938S16921	4	Left Diagonal	I
180	38951S16969	1	Left Diagonal	I
181	38951S16969	2	Left Diagonal	I
182	38951S16969	2	Right Diagonal	I
183	38951S16969	4	Left Diagonal	I
184	38956S16967	2	Post Leg	II
185	38972S17023	2	Right Diagonal	I
186	38972S17023	3	Left Diagonal	I
187	38972S17023	4	Horizontal Redundant	II
188	38977S17021	1	Right Diagonal	I
189	38977S17021	2	Left Diagonal	I
190	38977S17021	4	Left Diagonal	I
191	38977S17021	4	Right Diagonal	I
192	38982S17054	1	Left Diagonal	I
193	38982S17054	4	Left Diagonal	I
194	38982S17054	4	Right Diagonal	I
195	38996S17090	4	Left Diagonal	I
196	39001S17086	2	Right Diagonal	I
197	39001S17086	3	Left Diagonal	I
198	39001S17086	4	Left Diagonal	I
199	39010S17125	1	Left Diagonal	I
200	39010S17125	2	Left Diagonal	I
201	39015s17122	3	Right Diagonal	II
202	39030S17161	3	Anchor Bolt	III
203	39040S17204	2	Left Diagonal	I
204	39040S17204	4	Right Diagonal	I
205	39045S17202	1	Right Diagonal	I
206	39045S17202	4	Right Diagonal	I
207	39060S17266	3	Left Diagonal	I
208	39079S17310	2	Right Diagonal	I
209	39079S17310	3	Right Diagonal	I
210	39079S17310	4	Right Diagonal	I
211	39090S17305	1	Right Diagonal	I
212	39090S17305	2	Left Diagonal	I
213	39090S17305	3	Right Diagonal	I
214	39090S17305	3	Left Diagonal	I
215	39090S17305	4	Right Diagonal	II
216	39107S17384	2	Right Diagonal	I
217	39107S17384	2	Left Diagonal	I
218	39107S17384	4	Front Grillage	I

Index	Structure Number	Leg	Component	Class
219	39107S17384	4	Right Diagonal	I
220	39118S17379	4	Right Diagonal	I
221	39126S17435	1	Right Diagonal	I
222	39126S17435	2	Right Diagonal	I
223	39126S17435	4	Left Diagonal	I
224	39142S17477	1	Left Diagonal	I
225	39142S17477	1	Right Diagonal	I
226	39142S17477	2	Left Diagonal	I
227	39142S17477	2	Right Diagonal	I
228	39142S17477	3	Right Diagonal	I
229	39142S17477	4	Left Diagonal	I
230	39154S17472	1	Left Diagonal	II
231	39154S17472	2	Right Diagonal	III
232	39154S17472	3	Left Diagonal	I
233	39154S17472	4	Left Diagonal	I
234	39160S17524	3	Right Diagonal	I
235	39172S17519	1	Left Diagonal	I
236	39176S17564	2	Left Diagonal	I
237	39201S17604	3	Post Leg	I
238	39201S17604	3	Left Diagonal	I
239	39211S17596	2	Left Diagonal	I
240	39340S17822	2	Left Diagonal	I
241	39340S17822	2	Left Diagonal Redundant	I
242	39340S17822	3	Left Diagonal	II
243	39340S17822	3	Right Diagonal	I
244	39340S17822	3	Right Diagonal Redundant	I
245	39392S17882	3	Left Diagonal	I
246	39404S17922	1	Left Diagonal	I
247	39414S17916	1	Right Diagonal	I
248	39414S17916	2	Left Diagonal	I
249	39414S17916	4	Right Diagonal	I
250	39414S17916	4	Left Diagonal	II
251	39430S17964	4	Left Diagonal	II
252	39440S17958	1	Post Leg	II
253	39440S17958	1	Right Diagonal	I
254	39440S17958	4	Right Diagonal	I
255	39489S18057	1	Right Diagonal	I
256	39489S18057	2	Right Diagonal	I
257	39489S18057	2	Left Diagonal	I
258	39489S18057	3	Right Diagonal	I
259	39489S18057	3	Left Diagonal	I
260	39489S18057	4	Right Diagonal	I
261	39500S18050	1	Left Diagonal	I
262	39500S18050	2	Right Diagonal	I

Index	Structure Number	Leg	Component	Class
263	39508S18083	1	Right Diagonal	I
264	39508S18083	2	Left Diagonal	I
265	39508S18083	3	Left Diagonal	I

Appendix B: Images

Structural Conditions

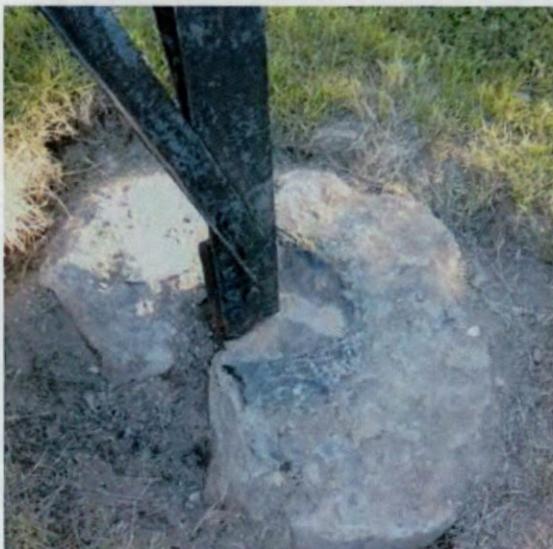
Structure 38178S14937 Leg 4 - Priority



Structure 38365S15415 - Priority



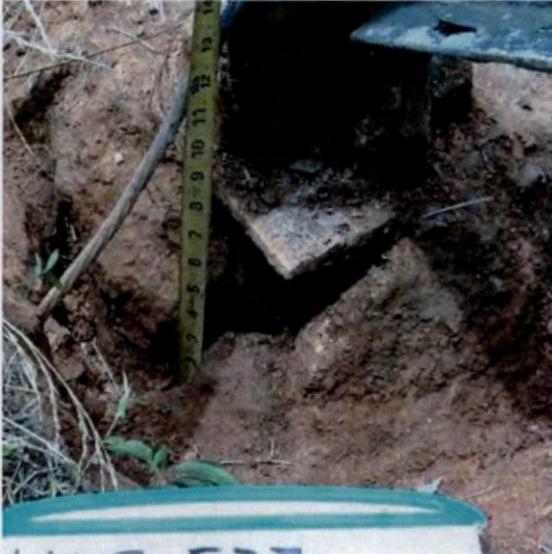
Structure 38529S15855 Leg 4 - Condition D



Structure 38663S16189 Leg 4 - Condition D



Structure 38064S14615 Leg 4 - Priority



Structure 38335S15338 Leg 3 - Priority



Structure 38567S15943 Leg 1 - Condition D



Structure 39030S17161 Leg 1 - Condition D



Mechanical Damage

Structure 39030S17161 Leg 3 - Class III



Structure 39154S17472 Leg 2 - Class III



Structure 38286S15208 Leg 3 - Class II



Structure 39090S17305 Leg 4 - Class II

