

DRAFT

CA-20 (b)
Attachment F

Inspection and Testing of Substation Concrete Pads And Foundations

Prepared for:

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LIST OF SITES

ST. JOHN'S AREA

BAY BULLS BIG POND
BROAD COVE
CAPE BROYLE
CHAMBERLAINS
FERMEUSE
GLENDALE
GOULDS
HARDWOODS (UPPER SITE)
HARDWOODS (LOWER SITE)
HORSECHOPS
KELLIGREWS
KENMOUNT
KING'S BRIDGE
MEMORIAL
MOBILE
MOLLY'S LANE
OXEN POND
PEPPERELL
PETTY HARBOUR
PIERRE'S BROOK
PULPIT ROCK
RIDGE ROAD
ROCKY POND
SEAL COVE (UPPER SITE)
SEAL COVE (LOWER SITE)
ST. JOHN'S MAIN
STAMP'S LANE
TOPSAIL
TORS COVE
VIRGINIA WATERS

WEST AVALON

ARGENTIA
BAY ROBERTS
BLAKETOWN
CARBONEAR

WEST AVALON (Cont'd)

CLARKE'S POND
COLLIER'S
DUNVILLE
HARBOUR GRACE
HEART'S CONTENT
HOLYROOD
ISLINGTON
NEW CHELSEA
NEW HARBOUR
OLD PERLICAN
PITTMAN'S POND
RIVERHEAD
SPRINGFIELD
TREPASSEY
UPPER ISLAND COVE
VICTORIA
WESTERN AVALON

BURIN – BONA VISTA – CENTRAL

GANDER AREA
CLARENVILLE AREA
BURIN PENINSULA

GANDER AREA

BOYD'S COVE
COBBS POND
GAMBO
GANDER
GANDER BAY
GLENWOOD
GLOVERTOWN
GREENSPOND
HARE BAY
MUSGRAVE HARBOUR
ROYCEFIELD
SUMMERFORD
TERRA NOVA
TRINITY
TWILLINGATE
WESLEYVILLE

BURIN – BONA VISTA – CENTRAL (Cont'd)

CLARENVILLE AREA

BONA VISTA
CATALINA
CLARENVILLE
LETHBRIDGE
LOCKSTON
MILTON
NORTHWEST BROOK
PORT BLANDFORD
PORT UNION
SUMMERVILLE
SUNNYSIDE

BURIN PENNISULA

BAY L'ARGENT
GARNISH
GRAND BEACH
GREEN HILL
LAURENTIAN
LINTON LAKE
MARYSTOWN
MONKSTOWN
SALT POND SPO SUBSTATION
SALT POND SPT SUBSTATION
SALT POND TURBINE YARD
WEST BROOK

WEST COAST

**GRAND FALLS AREA
DEER LAKE AREA
STEPHENVILLE AREA**

GRAND FALLS AREA

BISHOP'S FALLS
BOTWOOD
BUCHAN'S TERMINAL STATION
GRAND FALLS
INDIAN RIVER
LEWISPORTE
NEW GRAND FALLS
NOTRE DAME JUNCTION
RATTLING BROOK
SPRINGDALE

DEER LAKE AREA

BAYVIEW
DEER LAKE
FRENCHMAN'S COVE
GILLIAM'S
HUMBER
MARBLE MOUNTAIN
MASSEY DRIVE
PASADENA
SEAL COVE ROAD
WALBOURNE'S

STEPHENVILLE AREA

ABRAHAM'S COVE
BERRY HEAD
SANDY BROOK
DOYLE'S
GALLANT STREET
GRAND BAY
HARMON
LONG LAKE
LOOKOUT BROOK
PORT AUX BASQUES
ROBINSON'S

WEST COAST (Cont'd)

ROSE BLANCHE BROOK
ST. GEORGE'S BROOK
STEPHENVILLE CROSSING
STEPHENVILLE GAS TURBINE
WHEELER'S

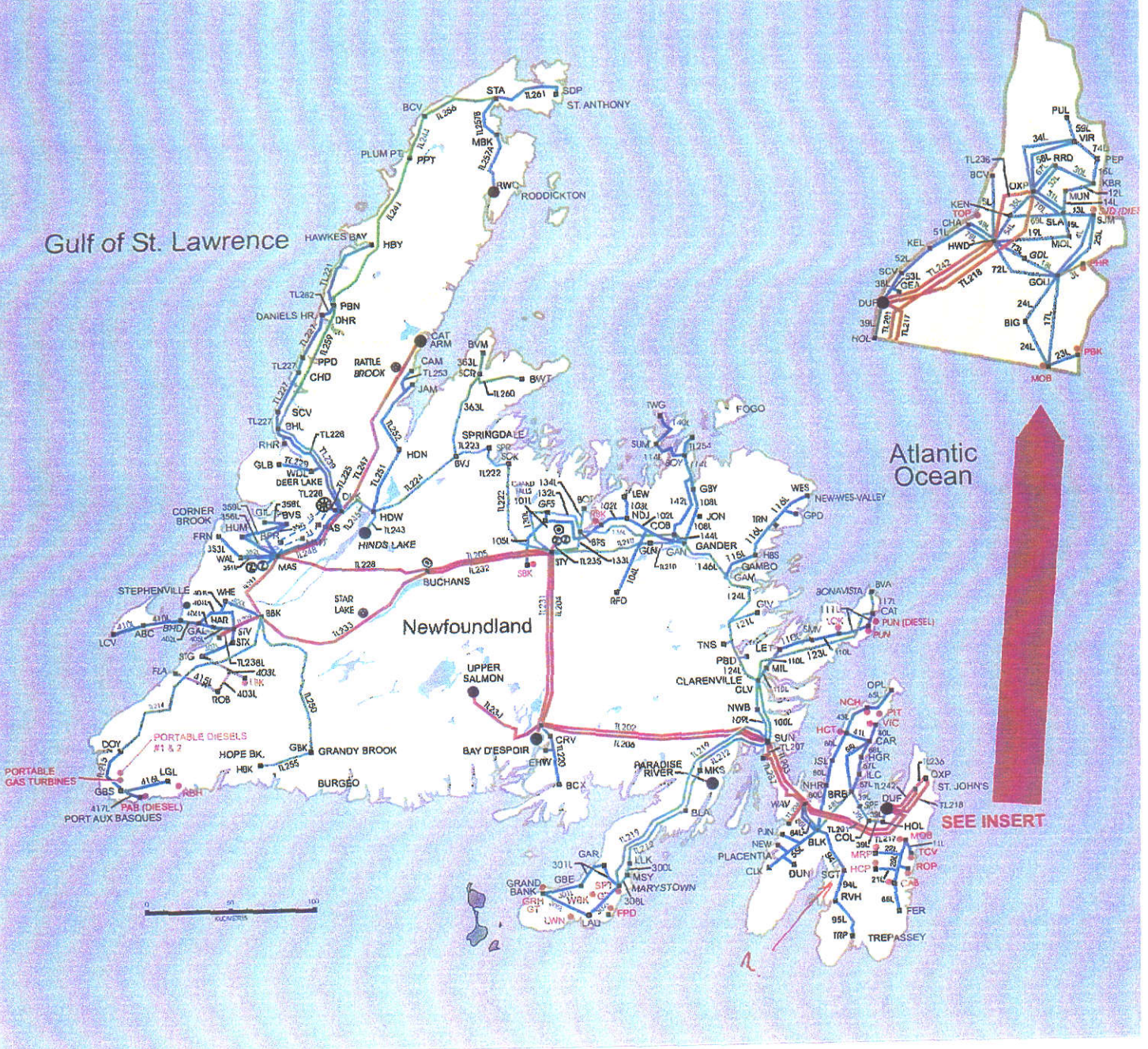
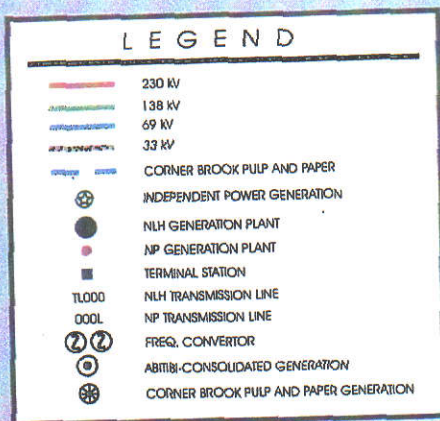


Figure 1.0 Island Generation and Transmission Grid

1.0 INTRODUCTION

In April of 2002, The SGE Group Inc. was contracted by Newfoundland Power to carry out inspections on concrete pads and foundations at 132 electrical substation sites across Newfoundland.

The purpose of this project, as outlined by Newfoundland Power representatives during an April 1, 2002 pre-job meeting, was to identify the existing conditions of all the concrete foundations and pads and to provide Newfoundland Power with prioritized methods of repair or maintenance for these. This information will then be used by Newfoundland Power to establish an on-going cost effective program of repair and maintenance.

2.0 INSPECTION PROCEDURE

Site inspections at the various substation sites were started April 5, 2002 and concluded on May 13, 2002. Prior to these inspections, a review of the drawings for the approximately twenty-one (21) different types of foundations and pads was carried out.

During the inspections, a detailed visual examination of each pad/foundation was made with detailed field notes and photos taken. Non-destructive testing on the concrete was carried out with the use of a Schmidt rebound hammer and performed according to ASTM Standard C805-85. This instrument is a surface hardness tester that provides a quick and efficient means of checking concrete uniformity and gives a good indication of the compressive strength of the concrete and the relative strength of comparable concrete members.

There were no concrete core samples taken for compressive strength tests during the inspections. These samples would only be taken if there was evidence of concrete deterioration that was caused by poor quality mix design which resulted in low strength concrete. All of the concrete deterioration noted during the inspections did not indicate this, and the strength indicated with the impact hammer tests were all above the specified amount of 20 MPa.

The vast majority of concrete damage and deterioration noted was above ground surface level or appeared to extend only marginally below this level. It was very difficult to remove much soil around the pad/foundations because of wiring and grounding mats. A hand shovel was used to observe the extent of any deterioration below ground surface level. There are several pad/foundations that had extensive cracking, and the exact depth into the concrete will have to be determined during the recommended repair procedure. These situations have been noted on the field inspection reports (attached Appendix A).

3.0 INSPECTION RESULTS

Inspection forms were developed for this project to record the general condition of each pad/foundation, as well as repair recommendations for any deficiencies noted (see attached Appendix A). There is also a priority rating system used to evaluate any corrective actions required for individual pads/foundations.

3.1 Priority Rating System

The project priority system consists of four (4) ratings and three (3) recommended time frames to carry out corrective actions. The priority descriptions are as follows:

| <u>Priority Rating</u> | <u>Description</u> |
|------------------------|---|
| 1 | This rating indicates a condition that already exists and could cause an operational problem or pose a threat to health and safety if left uncorrected. The recommended time frame for corrective action is within 1 year. |
| 2 | This indicates a condition that, if left uncorrected, may eventually hamper operational efficiency and will result in increasing costs to repair. The recommended time frame for corrective action is within 3 years. |
| 3 | This rating indicated a condition that does not affect the integrity of the structure or site operations. It is a general maintenance item that should be addressed when funding is available; however, it has the potential to develop into a more costly repair item in the future. The recommended time frame for corrective action is within 5 years. |
| 4 | This indicated a structure that is in good condition and requires no corrective action or maintenance at the present time. |

3.2 Condition Assessment

The assessment of the concrete foundations and pads included an analysis of the current condition of the structures, including both visible and latent deterioration with the objective being to treat the causes as well as the symptoms. In most cases, the underlying causes of excessive or undue deterioration can be traced to one of the following:

- .1 Physical damage such as freeze-thaw action, cracking due to thermal movement or shrinkage cracking.
- .2 Mechanical damage such as impact or abrasion;
- .3 Chemical damage such as carbonation, sulphate attack and alkali-aggregate reactions.

The concrete damage and deterioration observed throughout this inspection process has been categorized into five general conditions. These conditions, as described below, embody all of the concrete deficiencies observed with the only variance being in the severity of the deterioration or damage. This severity is reflected in the priority rating for corrective actions as noted on the inspection reports.

3.2.1 Concrete Condition 'A'

This is probably the most common deficiency condition observed in the concrete foundations and pads. It is characterized by spalling, chipping or scaling of concrete surfaces and exposure of aggregate on surface due to disintegrated sand cement matrix.

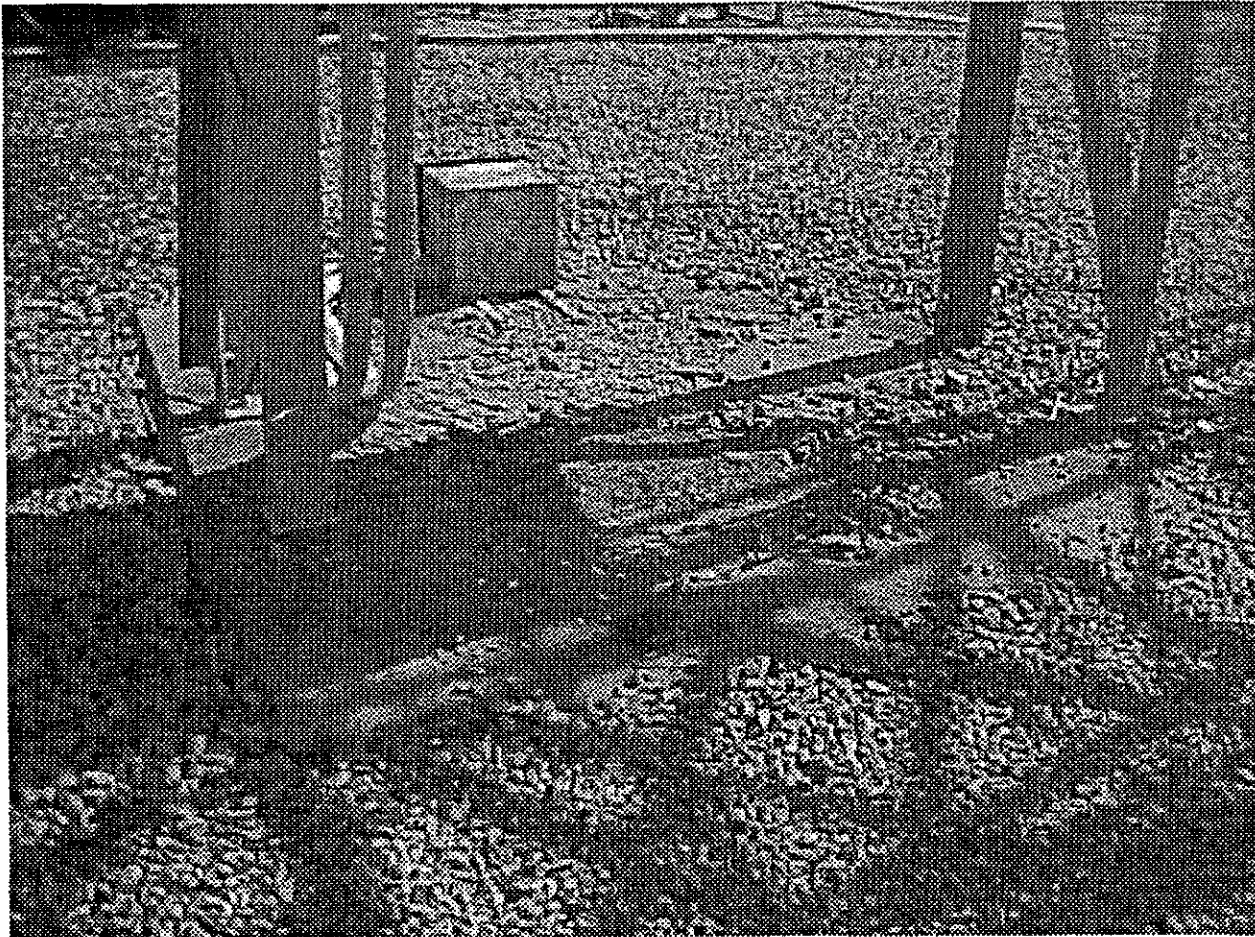


Figure 1.1 – Typical surface scaling of foundation.

3.2.2 Concrete Condition 'B'

Condition 'B' includes all forms of cracks such as hairline and alligator (map) where the width across the crack is less than 1 mm at the widest opening. This condition was most prevalent on the top surface of the pads and foundations and on the sides down to ground surface level.

The alligator or map cracking observed at several sites had a white gel on the surface along the line of the cracks. This condition usually indicates an adverse reaction between the alkalis in the cement and some of the aggregates used in the mix.

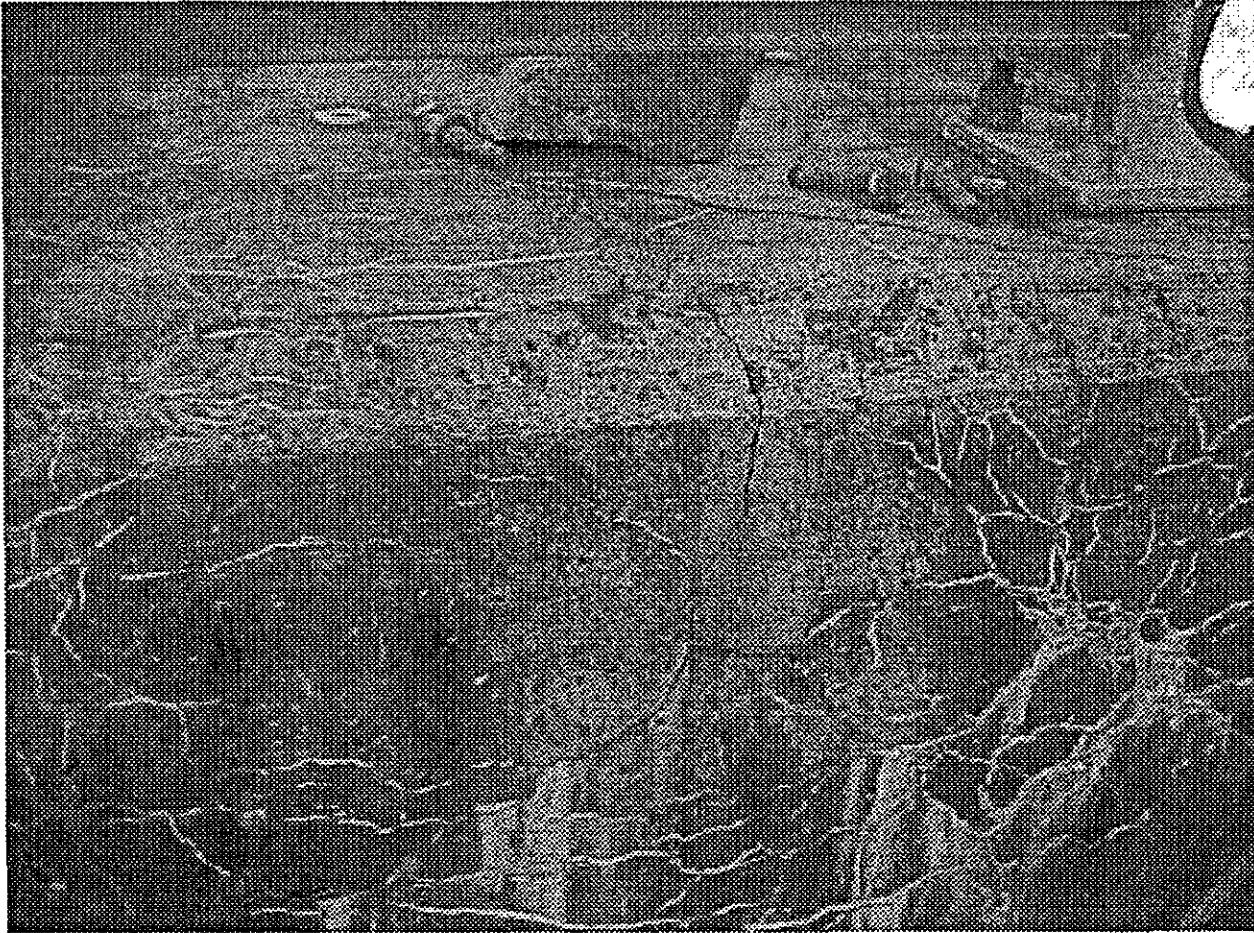


Figure 1.2 – Severe alligator or map cracking with evidence of alkali-aggregate reaction.

3.2.3 Concrete Condition 'C'

This condition is similar to Condition 'B', however, it is typical of cracking where the crack width is larger than 1 mm across. This condition was evident mostly in the high and low voltage structure foundations which typically had what appears to be shrinkage cracking that extends from the middle of the top surface of the foundation out to the four sides. There were very few cases where this type of cracking was observed in the concrete pads.

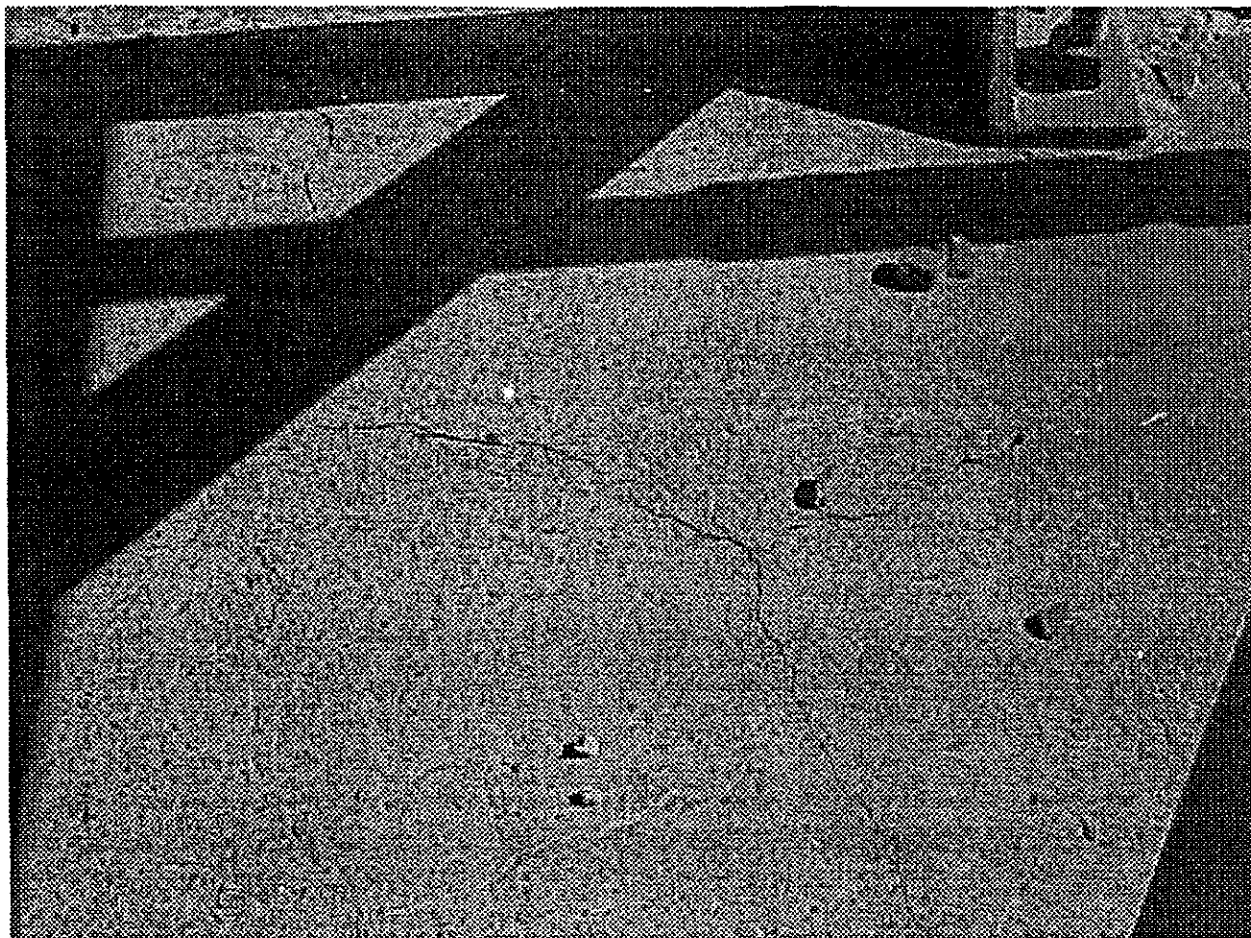


Figure 1.3 – Typical cracking for Concrete Condition ‘C’.

3.2.4 Concrete Condition ‘D’

Condition ‘D’ is indicative of a concrete foundation or pad that has the above grade concrete in a state of disrepair with numerous cracks, extensive scaling and overall deterioration. Many of the foundations/pads in this condition had extensive deterioration of concrete along the top edges and some of the structure supports founding on the concrete are starting to be undermined.

3.2.5 Concrete Condition 'E'

This condition is similar to Condition 'D', however, with more extensive deterioration or deterioration that extends well below ground surface level. A foundation/pad was put in this category because the cost to repair to an acceptable level compared to total replacement of the foundation or pad would not be cost-effective.

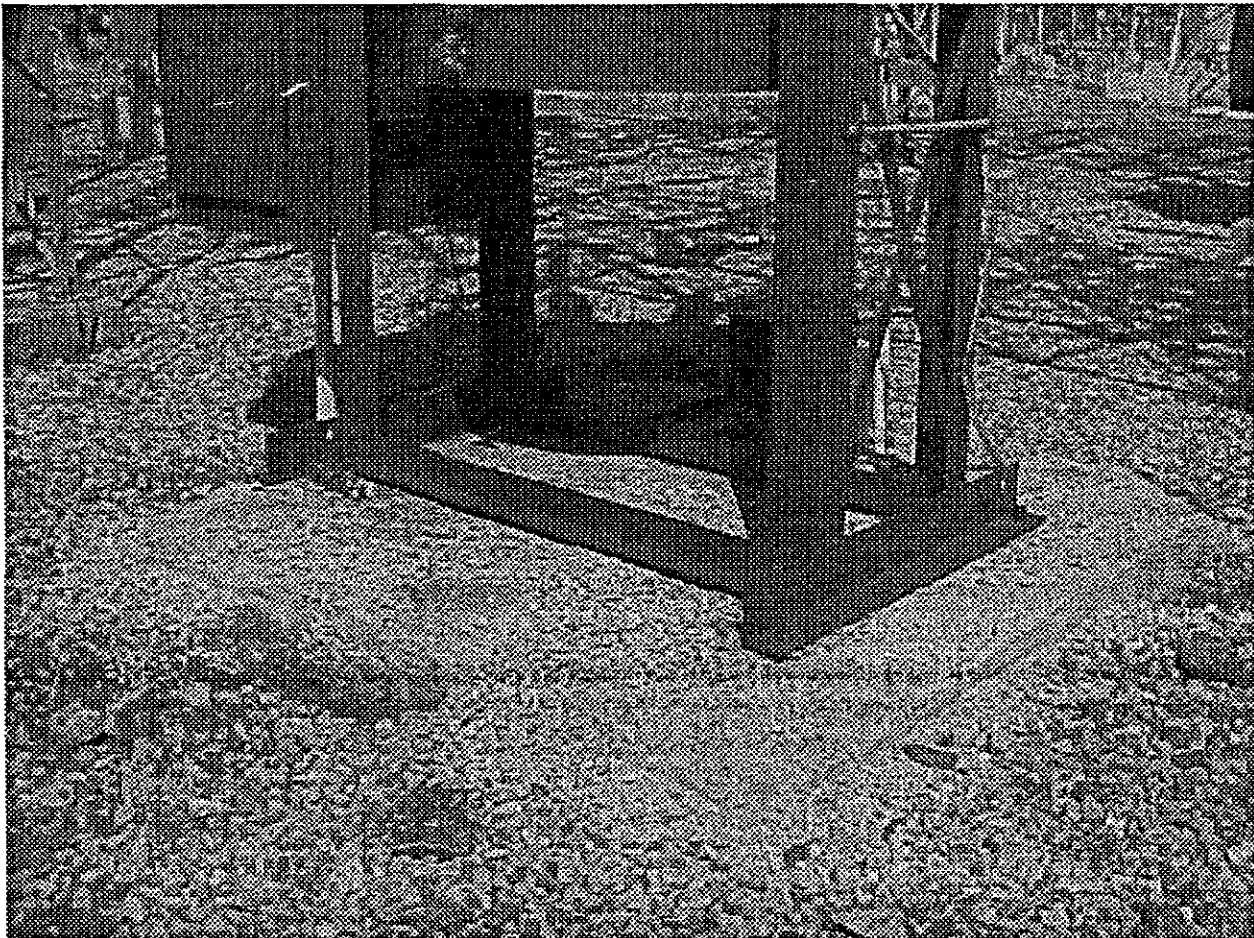


Figure 1.4 – A typical concrete pad that would be a Condition 'E'.

4.0 RECOMMENDATIONS

General deterioration in one form or another will occur over time in virtually all concrete. To ensure its long-term integrity, a proper maintenance and repair program is required with periodic inspections and assessments. This program should be developed considering financial constraints, future requirements of the structures and short, medium and long-term options to enable the most cost-effective remedial actions.

The conditions encountered during this inspection program have been identified in one of five categories previously described in Section 3.2. Corresponding recommended types of repairs are outlined below and have been noted on the inspection reports for each foundation or pad requiring corrective action or maintenance.

- **Type 'A' Repair** – This repair procedure is recommended for concrete with Condition 'A' type deficiencies. All surface loose delaminated concrete should be removed as well as all dirt, rust stains and other inhibiting materials. The area for patching should be a minimum 6 mm in depth and this area should be thoroughly cleaned by means of high pressure water blasting or other appropriate mechanical means. Proper preparation of the substrate and the use of an approved bonding agent will ensure a good bond between the patch and the existing concrete. The substrate should be washed with clean water and should be saturated surface dry (SSD) prior to the application of an approved mortar. If the repair requires several lifts then each lift would normally be applied as soon as the previous lift will support the new one. The maximum thickness per lift should be no greater than 38 mm. Adequate curing of the patched areas is important to avoid shrinkage cracking in the repaired area.
- **Type 'B' Repair** – This repair procedure is recommended for concrete with Condition 'B' type deficiencies. Extensive hairline and alligator or map cracking throughout a structure is difficult to correct when the width of the cracks are small. A sealant coating is recommended as a preventative measure to avoid further deterioration that would be caused by moisture infiltration through the cracks. This sealant should be an approved epoxy coating, and if installed correctly, should extend the useful life of the concrete structure.

The concrete surface to be sealed must be clean and sound. This would normally be attained by hydro blasting (or other acceptable mechanical means) of the cracks and surface area surrounding the cracks. All laitance, rust stains and loose concrete to be removed and the surface of the concrete should be saturated surface dry during application of the approved sealer. These are the basic procedures used for application of epoxy coatings; however, it is very important that whatever product brand is selected, the manufacturers directions for application must be followed as closely as possible.

- Type 'C' Repair – This repair procedure is recommended for concrete with Condition 'C' type deficiencies. It is recommended that all cracks greater than 1 mm in width be epoxy injected with an approved epoxy injection material and injection system. Prior to injection, the cracks should be thoroughly cleaned to remove dirt, laitance, grease, foreign particles and disintegrated material.
- Type 'D' Repair – This repair procedure is recommended for concrete with Condition 'D' type deficiencies. It is recommended that the top of the foundation or pad be removed down to solid sound concrete and the surface cleaned of any loose material. Any reinforcing steel or anchor bolts that are exposed during this process should be inspected for damage or decay and then cleaned or replaced if necessary. An approved bonding agent should then be applied to the prepared surface immediately prior to the placement of the concrete overlay.

The concrete mix design for overlays would normally be designed specific for this application.

- Type 'E' Repair – This repair procedure is recommended for concrete with Condition 'E' type deficiencies. It is recommended that pads or foundations in this condition be removed completely and replaced with a new concrete structure. It is felt that the cost to repair these structures to an acceptable standard compared to total replacement would not be justified.

The concrete pads and foundations that have been designated as Priority No. 1 for corrective actions are listed in Table 1. Several of these have been given a Type 'D' or 'E' repair status. The extent of the deterioration for these structures could not be determined conclusively during the inspection; however, it will be quite evident during the first stages of the repair procedures, and it may be more cost effective to opt for a total foundation replacement.

4.1 Future Design Considerations

It is very evident from the inspection reports that the majority of deterioration and especially the concrete cracking appears in the larger foundations for the high and low voltage structures. After reviewing the design drawings as supplied by NF Power for these foundations, it was observed that there are no vertical or horizontal reinforcing except for 15 m ties at one-third points to tie together the anchor bolts. This does not meet present-day building code requirements for minimum temperature and shrinkage reinforcement. Therefore, cracking and possible spalling of the concrete would be expected after the concrete had been exposed to several freeze/thaw

cycles. We would recommend that temperature reinforcement be considered for any future foundations to help prevent serious cracking and spalling. It should be noted that the design drawings for most of the other pads indicated reinforcing steel at top and bottom and these pads did not exhibit such an extent of deterioration.

The substation at Salt Pond (SPT) has 2 pads that have been noted for replacement. These pads had severe cracking that appeared to be related to settlement problems. If these pads are to be replaced, then careful consideration should be given to the subgrade conditions on which the concrete will be founded.

4.2 Repair Contracting Considerations

The following is provided for consideration if Newfoundland Power is contracting any or all repair work for the substation concrete foundations and pads.

A contract should offer the owner quality assurance and therefore security or value. With concrete repair, the ultimate aim is to rectify a problem and not to perpetuate it, and perceived economies at this stage could carry heavy penalties later. Contract specifications for concrete repair should include or address the following:

- The need for pre-construction survey of repair areas to clearly establish the extent of repairs with respect to payment quantities;
- Establish a protocol for the contractor or product manufacturer to certify all areas prepared for repair;
- Establish a proof-testing procedure for the Contractor to follow whereby any repair procedures are tested and accepted by the Client/Engineer prior to the beginning of repair work.
- Approved materials and equipment for repairs;
- Field quality control procedures accepted by the Owner/Engineer prior to the beginning of repair work.

TABLE 1 - LOCATION OF NO 1 PRIORITY FDN/PAD REPAIRS

| SUBSTATION AREA | SUBSTATION SITE | SGE FDN/PAD # | NF POWER FDN/PAD IDENTIFICATION | TYPE OF REPAIR |
|-------------------------|-------------------|---------------|---------------------------------|----------------|
| St. John's & Area | Goulds | 5 | T1 Transformer | D or E |
| | Memorial | 1 | T2-D(A) High Voltage | C |
| | | 5 | T2-D High Voltage | C |
| | Oxen Pond | 13 | 34L-B Oil Breaker | E |
| | Ridge Road | 3 | RRD-32L-DL High Voltage | C |
| | Rocky Pond | 1 | T1 Transformer | see report |
| | Seal Cove (Upper) | 1 | High Voltage | A |
| | Stamps Lane | 1 | SLA-T1-A High Voltage | D or E |
| | | 3 | SLA-14L-DL High Voltage | D or E |
| | | 5 | SLA-31L-DL High Voltage | D or E |
| | | 9 | SLA-BTS-1 High Voltage | D or E |
| | Topsail | 1 | Low Voltage | E |
| | | 2 | Low Voltage | E |
| | | | | |
| | | | | |
| West Avalon | Bay Roberts | 2 | High Voltage | D |
| | | 3 | High Voltage | D |
| | | 4 | High Voltage | D |
| | | 5 | 56L-DB High Voltage | D |
| | | 7 | 56L-GS High Voltage | D |
| | | 8 | High Voltage | D |
| | | 10 | 57L-DB High Voltage | D |
| | Carbonear | 13 | Oil Breaker | E |
| | Clarks Pond | 2 | CLK-03-R Recloser | D |
| | | 4 | Not in Use | D |
| | | 6 | CLK-01-R Recloser | D |
| | | 11 | Low Voltage | A |
| | | 13 | T1-D Low Voltage | A |
| | | 16 | T2-D Low Voltage | A |
| | Harbour Grace | 5 | 200219 Transformer | E |
| | Holyrood | 5 | T1 Transformer | C |
| | Trepassey | 2 | TRP-01-R Recloser | D |
| | | | | |
| Burin-Bonavista-Central | Cobbs Pond | 15 | High Voltage | D |
| | Gander | 1 | GAN-T1 High Voltage | D |
| | | 2 | High Voltage | D |
| | Clareville | 26 | 123L-PT Structure | E |
| | Lethbridge | 2 | LET-01-R-492 Recloser | E |
| | Milton | 12 | MIL-01-BP Low Voltage | A or D |
| | Laurentian | 5 | LAU-T1-D Low Voltage | D |
| | Linton | 21 | 212-PT | E |
| | Salt Pond (SPT) | 3 | SPT-301L-B Oil Breaker | E |
| | | 4 | SPT-302L-B Oil Breaker | E |

TABLE 1 - LOCATION OF NO 1 PRIORITY FDN/PAD REPAIRS

| SUBSTATION AREA | SUBSTATION SITE | SGE FDN/PAD # | NF POWER FDN/PAD IDENTIFICATION | TYPE OF REPAIR |
|--------------------|--------------------|------------------|------------------------------------|-------------------|
| West Coast | Bayview | 1 | BVS-359L-DB High Voltage | C |
| | | 3 | BVS-359L-DL High Voltage | C |
| | | 5 | BVS-357-DL High Voltage | C |
| | | 7 | BVS-358L-BP High Voltage | A & B or D |
| | | 8 | BVS-T1-A High Voltage | C |
| | | 14 | BVS-01-DL Low Voltage | A & C |
| | Pasadena | 1 | PAS-01-BP Low Voltage | C |
| | | 4 | PAS-02-BP Low Voltage | A & C |
| | | 10 | PAS-T1-A High Voltage | D |
| | | 13 | PAS-TL1-BP-2 High Voltage | D |
| | Seal Cove Road | 4 | SCR-VR-BP Low Voltage | D |
| | | 6 | Low Voltage | D |
| | | 11 | Low Voltage | D |
| | | 12 | High Voltage | D |
| | | 13 | High Voltage | D or E |
| | | 15 | High Voltage | D or E |
| | | 16 | SCR-T1-HGS High Voltage | D or E |
| | | 17 | High Voltage | D or E |
| | | 19 | SCR-T1-HGS High Voltage | D or E |
| | | 20 | High Voltage | D or E |
| | | 23 | High Voltage | A & B |
| | | 27 | High Voltage | A |
| | Walbournes | 1 | High Voltage | C |
| | | 3 | WAL-352L-B Sul Hex Breaker | C |
| | | 7 | WAL-353L-GS High Voltage | A & C |
| | | 8 | WAL-BTS-1 High Voltage | C |
| | | 9 | WAL-T1-A High Voltage | C |
| | Botwood | 4 | BOT-03-BP Low Voltage | C |
| | | 8 | BOT-T1-DL Low Voltage | A |
| | Galant Street | 1 | Low Voltage | C or E |
| | | 4 | GAL-01-BP Low Voltage | C or E |
| | | 7 | GAL-T1-D Low Voltage | C or E |

APPENDIX A

Inspection Summaries

ST. JOHN'S AREA

BAY BULLS BIG POND
BROAD COVE
CAPE BROYLE
CHAMBERLAINS
FERMEUSE
GLENDALE
GOULDS
HARDWOODS (UPPER SITE)
HARDWOODS (LOWER SITE)
HORSECHOPS
KELLIGREWS
KENMOUNT
KING'S BRIDGE
MEMORIAL
MOBILE
MOLLY'S LANE
OXEN POND
PEPPERELL
PETTY HARBOUR
PIERRE'S BROOK
PULPIT ROCK
RIDGE ROAD
ROCKY POND
SEAL COVE (UPPER SITE)
SEAL COVE (LOWER SITE)
ST. JOHN'S MAIN
STAMP'S LANE
TOPSAIL
TORS COVE
VIRGINIA WATERS

INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Bay Bulls Big Pond
St. John's & Area

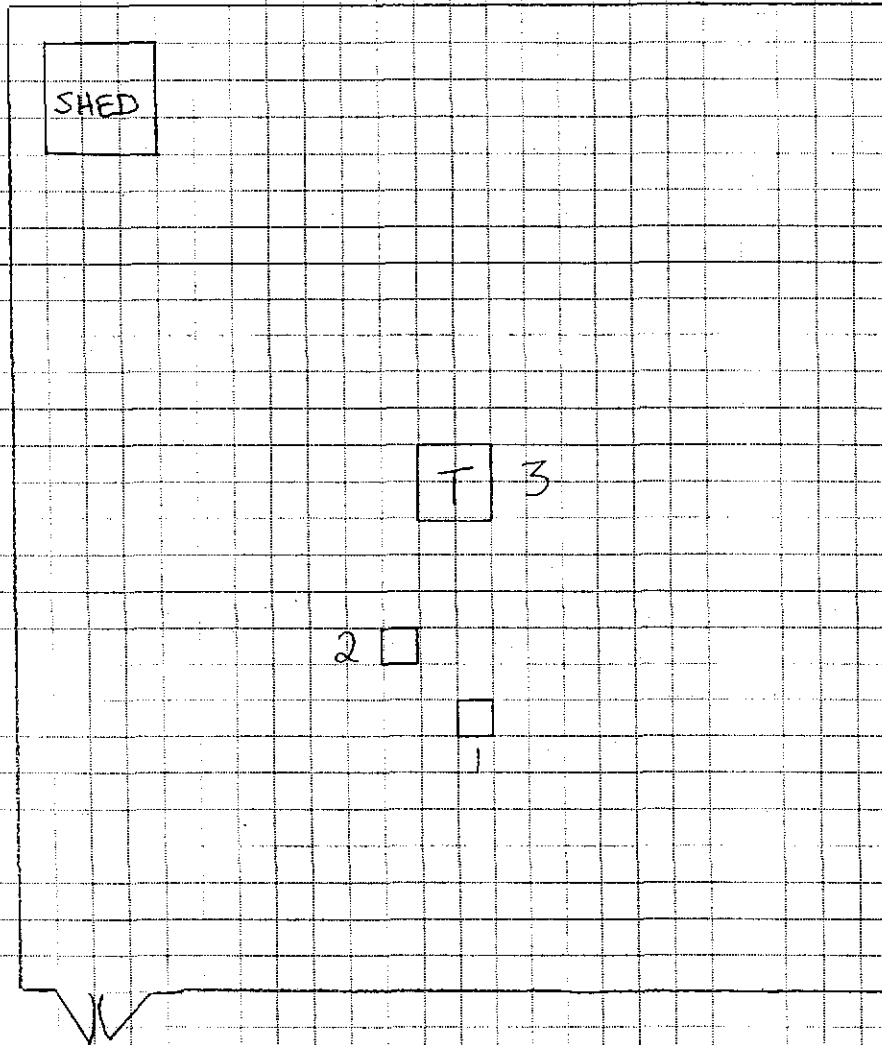
DATE INSPECTED: 11-Apr-02

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| <u>Priority Rating</u> | <u>Priority Description</u> | <u>Recommended Time Frame</u> |
|------------------------|--|-------------------------------|
| 1 | Immediate corrective action required | within 1 year |
| 2 | Corrective action required to avoid increasing costs to repair | within 3 years |
| 3 | General maintenance item | within 5 years |
| 4 | No corrective action or maintenance required at this time | |

INSPECTION OF CONCRETE PADS & FOUNDATIONS
LOCATION SKETCH

SUBSTATION SITE: BAY BULLS BIG POND
ST. JOHN'S AREA



INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Broad Cove DATE INSPECTED: 10-Apr-02
St. John's & Area

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|-----------------------------------|--------------------------|-----------------|-----------------|
| #1 - BCV-04 Recloser | Good condition (42 MPa). | | 4 |
| | | | |
| | | | |
| | | | |
| | | | |
| #2 - BCV-03-R Recloser | Good condition (35 Mpa). | | 4 |
| | | | |
| | | | |
| | | | |
| | | | |
| #3 - BCV-01-R Recloser | Good condition (31 Mpa). | | 4 |
| | | | |
| | | | |
| | | | |
| | | | |
| #4 - BCV-02-B Oil Circuit Breaker | Good condition (42 Mpa). | | 4 |
| | | | |
| | | | |
| | | | |
| | | | |
| #5 - T1 Transformer 200327 | Good condition (34 Mpa). | | 4 |
| | | | |
| | | | |
| | | | |
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| | | | |
| | | | |
| | | | |
| | | | |

Priority Rating

1
2
3
4

Priority Description

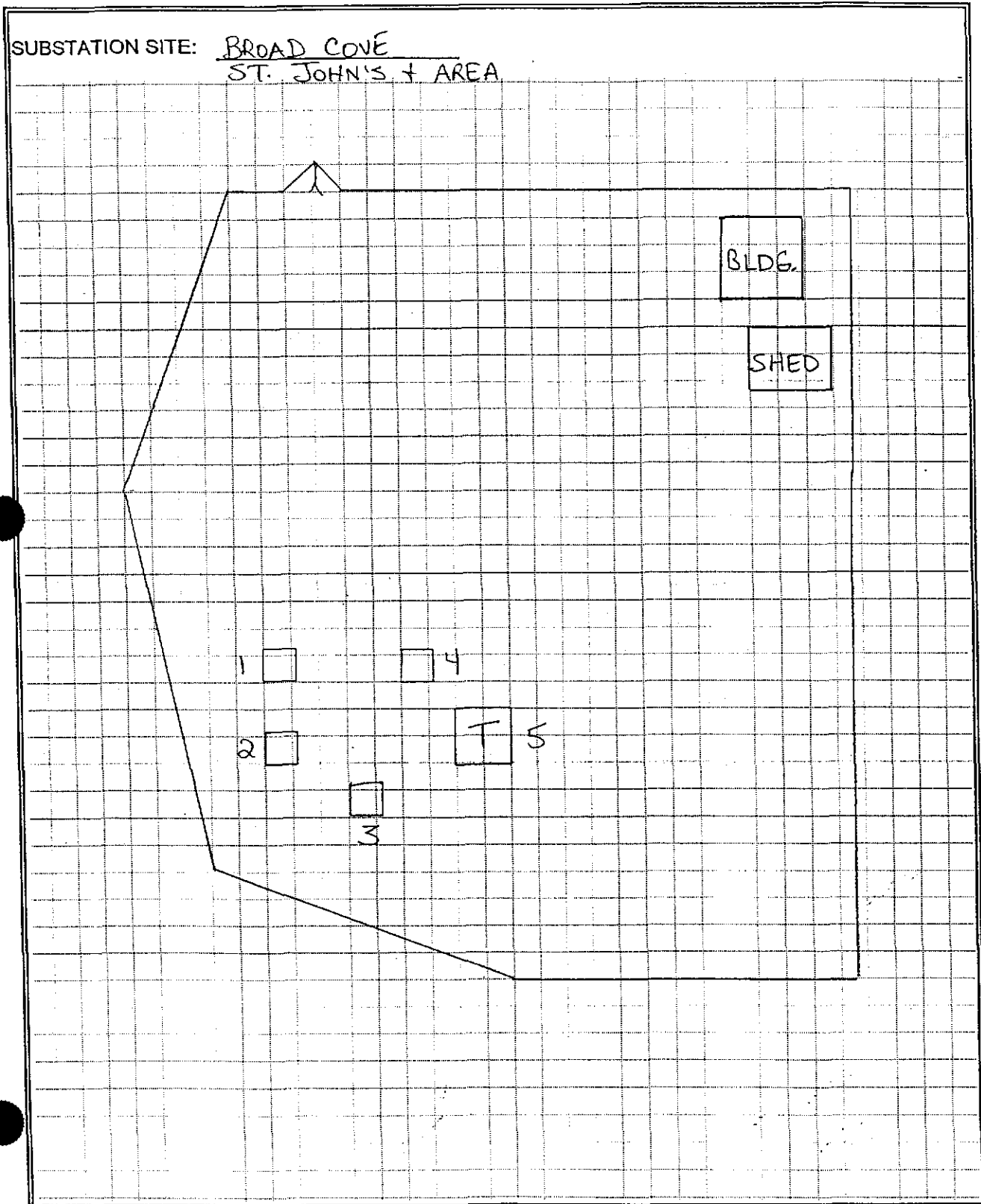
Immediate corrective action required
 Corrective action required to avoid increasing costs to repair
 General maintenance item
 No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
 within 3 years
 within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS
LOCATION SKETCH

SUBSTATION SITE: BROAD COVE
ST. JOHN'S + AREA



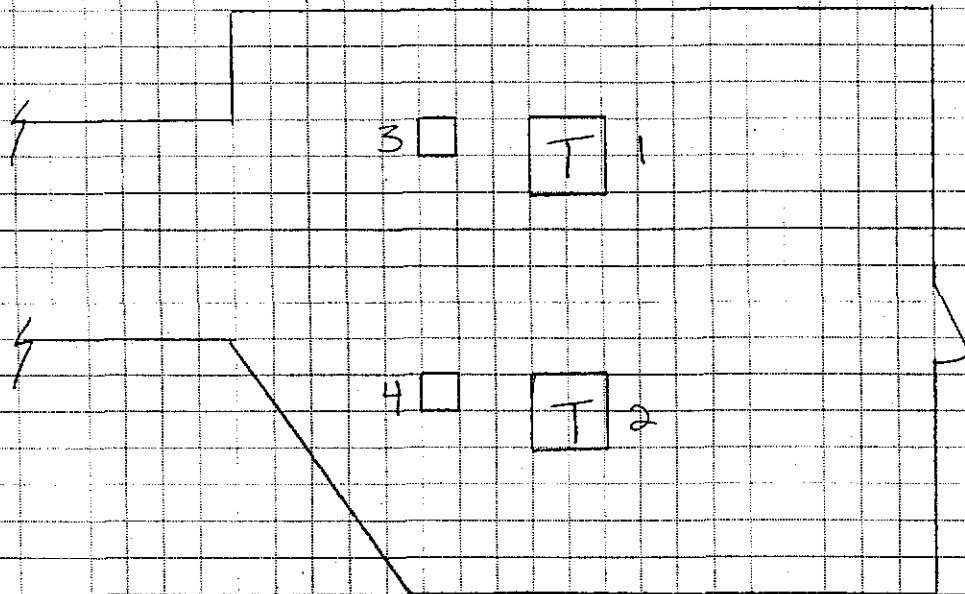
SUBSTATION SITE: Cape Broyle DATE INSPECTED: 17-Apr-02
St. John's & Area

[illegible]

| <u>Priority Rating</u> | <u>Priority Description</u> | <u>Recommended Time Frame</u> |
|------------------------|--|-------------------------------|
| 1 | Immediate corrective action required | within 1 year |
| 2 | Corrective action required to avoid increasing costs to repair | within 3 years |
| 3 | General maintenance item | within 5 years |
| 4 | No corrective action or maintenance required at this time | |

INSPECTION OF CONCRETE PADS & FOUNDATIONS
LOCATION SKETCH

SUBSTATION SITE: CAPE BROYLE
ST. JOHN'S + AREA



INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Chamberlains DATE INSPECTED: 15-Apr-02
St. John's & Area

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|--|---|-----------------|-----------------|
| #1 - T1-D Structure Low Voltage | Top surface of pad has rough finish and minor alligator cracking. Remainder of pad is in good condition (20 Mpa). | Type A Repair | 3 |
| #2 - T1-B Sul Hex Breaker | Top surface of pad has rough finish, small amount of aggregate is exposed. Otherwise pad is in fair condition (20 Mpa). | Type A Repair | 3 |
| #3 - CHA-01 Sul Hex reaker | Top surface of pad had rough finish. Otherwise pad is in good condition (20 Mpa). | | 4 |
| #4 - CHA-01-DL Structure Low Voltage | Good condition (26 Mpa). | | 4 |
| #5 - CHA-02-B Sul Hex Breaker | Top surface of pad has rough finish. Otherwise pad is in good condition (26 Mpa). | | 4 |
| #6 - CHA-02-DL Structure Low Voltage | One corner of pad is chipped (minor). Remainder of pad is in good condition (28 Mpa). | Type A Repair | 3 |

Priority Rating

1
2
3
4

Priority Description

Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
within 3 years
within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Chamberlains DATE INSPECTED: 15-Apr-02
St. John's & Area

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|--|---|-----------------|-----------------|
| #7 - T1 Transformer 200331 | Good condition (22 Mpa). | | 4 |
| #8 - 51L-GS Structure High Voltage | Top surface of pad has rough finish with areas where some aggregate is exposed. Remainder of pad is in good condition (30 Mpa). | Type A Repair | 3 |
| #9 - CHA-51L-B Circuit Breaker | Good condition (32 Mpa). | | 4 |
| #10 - 51L-DL Structure High Voltage | Top surface of pad has rough finish but has two small areas where there is some pitting. Otherwise the pad is in good condition (36 Mpa). | Type A Repair | 3 |
| #11 - 79L-B Oil Circuit Breaker | Minor sclaing on top surface of pad. Remainder of pad is in good condition (31 Mpa). | | 4 |
| #12 - 79L-DB Structure High Voltage | Top surface of pad has rough finish with areas where some aggregate is exposed. Remainder of pad is in good condition (26 Mpa). | Type A Repair | 3 |

Priority Rating

- 1
- 2
- 3
- 4

Priority Description

- Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

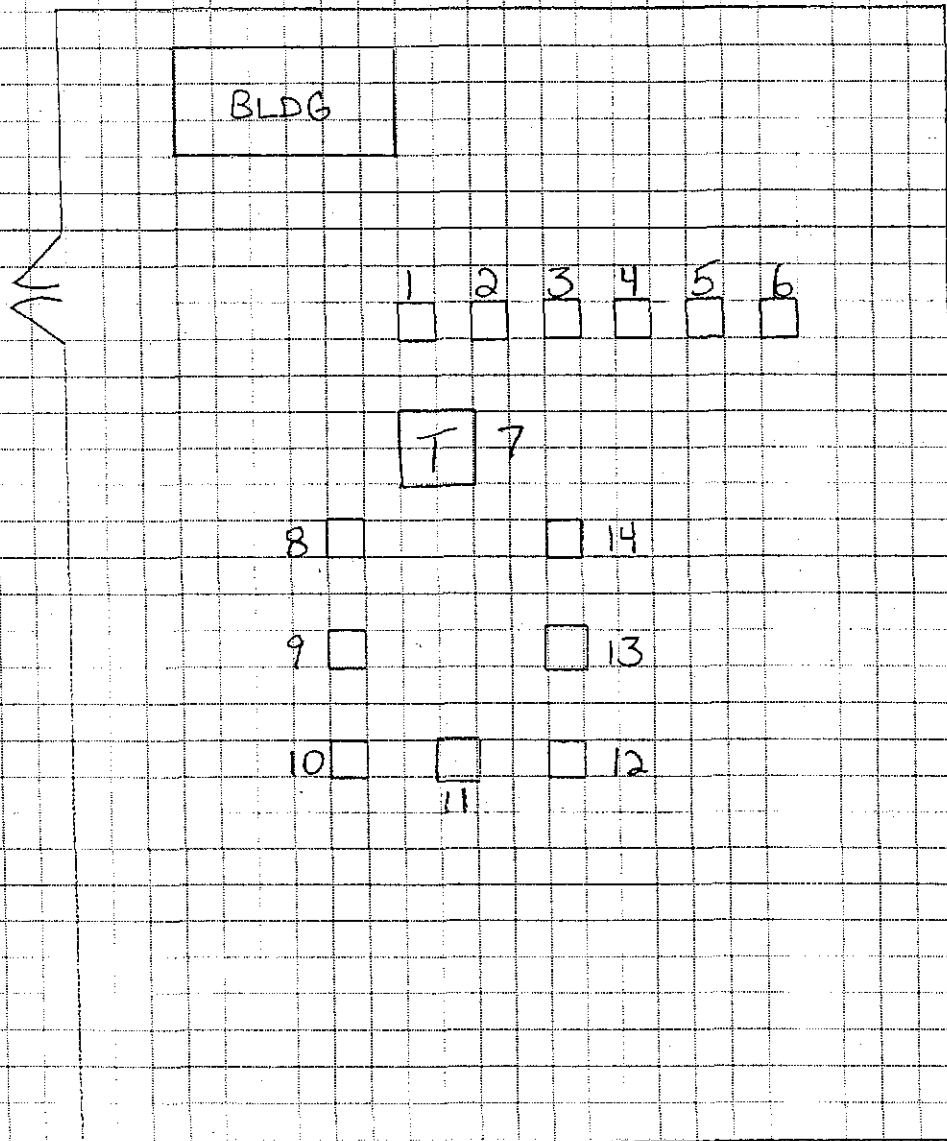
- within 1 year
within 3 years
within 5 years

SUBSTATION SITE: Chamberlains DATE INSPECTED: 15-Apr-02
St. John's & Area

| <u>Priority Rating</u> | <u>Priority Description</u> | <u>Recommended Time Frame</u> |
|------------------------|--|-------------------------------|
| 1 | Immediate corrective action required | within 1 year |
| 2 | Corrective action required to avoid increasing costs to repair | within 3 years |
| 3 | General maintenance item | within 5 years |
| 4 | No corrective action or maintenance required at this time | |

INSPECTION OF CONCRETE PADS & FOUNDATIONS
LOCATION SKETCH

SUBSTATION SITE: CHAMBERLAINS
ST. JOHN'S + AREA



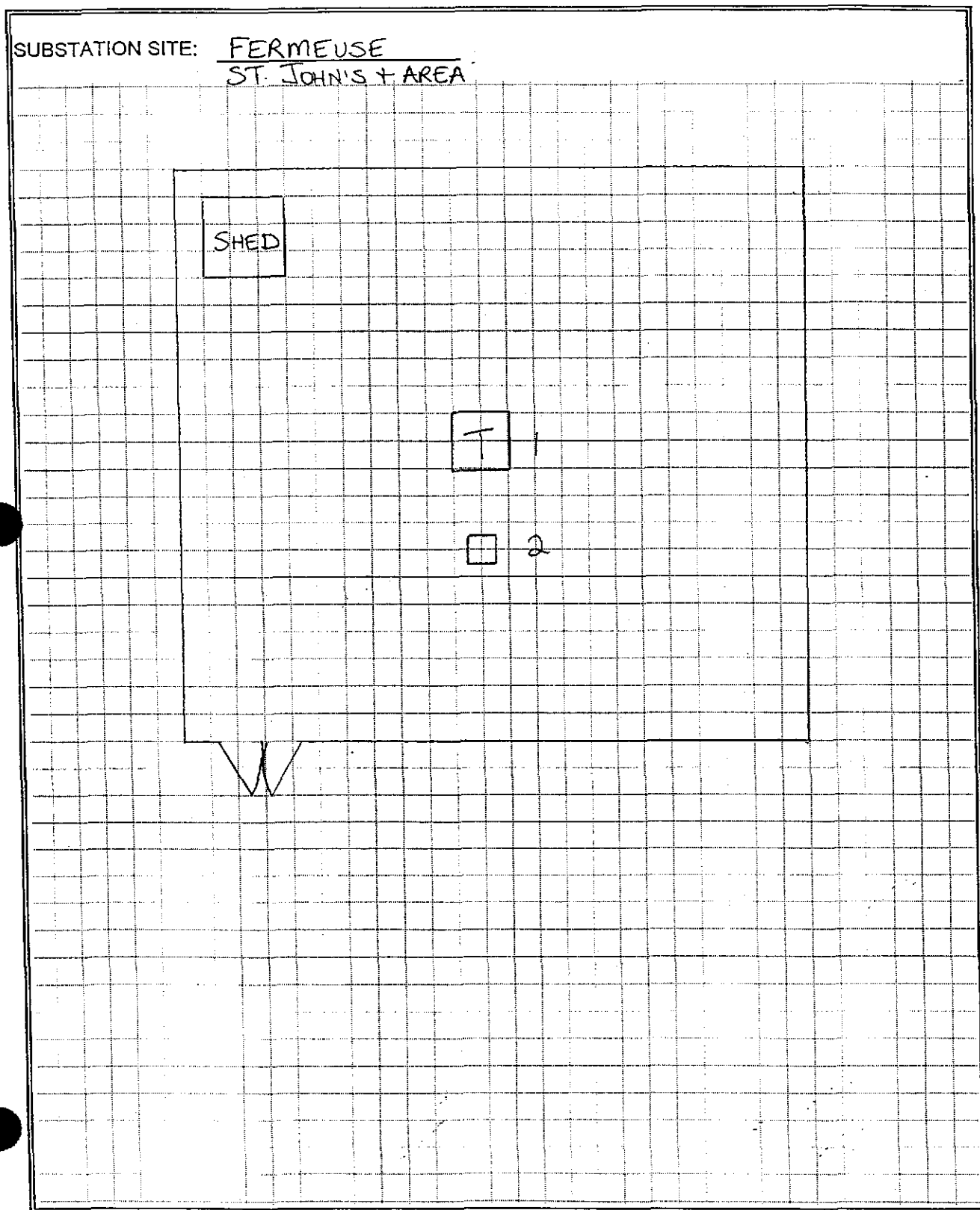
SUBSTATION SITE: Fermeuse DATE INSPECTED: 17-Apr-02
St. John's & Area

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| <u>Priority Rating</u> | <u>Priority Description</u> | <u>Recommended Time Frame</u> |
|------------------------|--|-------------------------------|
| 1 | Immediate corrective action required | within 1 year |
| 2 | Corrective action required to avoid increasing costs to repair | within 3 years |
| 3 | General maintenance item | within 5 years |
| 4 | No corrective action or maintenance required at this time | |

INSPECTION OF CONCRETE PADS & FOUNDATIONS
LOCATION SKETCH

SUBSTATION SITE: FERMEUSE
ST. JOHN'S + AREA



INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Glendale DATE INSPECTED: 12-Apr-02
St. John's & Area

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|--|---|-----------------|-----------------|
| #1 - T1-D Structure Low Voltage | Good condition (24 Mpa). | | 4 |
| #2 - GDL-01-BP Structure Low Voltage | Two minor chips on corners. Remainder of pad is in good condition (28 Mpa). | Type A Repair | 3 |
| #3 - T1-B Oil Circuit Breaker | Surface rust covered. Pad is in good condition (44 Mpa). | | 4 |
| #4 - GDL-01-B Oil Circuit Breaker | Surface is rust covered. Pad is in good condition (44 Mpa). | | 4 |
| #5 - GDL-03-B Oil Circuit Breaker | Good condition (44 Mpa). | | 4 |
| #6 - GDL-02-B Oil Circuit Breaker | Good condition (42 Mpa). | | 4 |

Priority Rating

1
2
3
4

Priority Description

Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
within 3 years
within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Glendale DATE INSPECTED: 12-Apr-02
St. John's & Area

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|---------------------|--------------------------|-----------------|-----------------|
| #7 - T2-D | Good condition (28 Mpa). | | 4 |
| Structure | | | |
| Low Voltage | | | |
| | | | |
| #8 - GDL-02-BP | Good condition (34 Mpa). | | 4 |
| Structure | | | |
| Low Voltage | | | |
| | | | |
| #9 - T2-B | Good condition (44 Mpa). | | 4 |
| Oil Hex Breaker | | | |
| | | | |
| | | | |
| #10 - GDL-04-B | Good condition (42 Mpa). | | 4 |
| Oil Circuit Breaker | | | |
| | | | |
| | | | |
| #11 - GDL-06-B | Good condition (42 Mpa). | | 4 |
| Sul Hex Breaker | | | |
| | | | |
| | | | |
| #12 - GDL-05-B | Good condition (42 Mpa). | | 4 |
| Sul Hex Breaker | | | |
| | | | |
| | | | |

Priority Rating

1
2
3
4

Priority Description

Immediate corrective action required
 Corrective action required to avoid increasing costs to repair
 General maintenance item
 No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
 within 3 years
 within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Glendale DATE INSPECTED: 12-Apr-02
St. John's & Area

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|---------------------|---|-----------------|-----------------|
| #13 - GDL-06-BP | Good condition (28 Mpa). | | 4 |
| Structure | | | |
| Low Voltage | | | |
| | | | |
| | | | |
| #14 - GDL-05-BP | 1 minor chip on one corner of top surface. | | 4 |
| Structure | Remainder of pad is in good condition (34 Mpa). | | |
| Low Voltage | | | |
| | | | |
| | | | |
| #15 - 73L-3S | Good condition (44 Mpa). | | 4 |
| Structure | | | |
| High Voltage | | | |
| | | | |
| | | | |
| #16 - T1-A | Good condition (28 Mpa). | | 4 |
| Structure | | | |
| High Voltage | | | |
| | | | |
| | | | |
| #17 - 73L-B | Good condition (42 Mpa). | | 4 |
| Oil Circuit Breaker | | | |
| | | | |
| | | | |
| | | | |
| #18 - T1 | Good condition (32 Mpa). | | 4 |
| Transformer | | | |
| 200344 | | | |
| | | | |
| | | | |

Priority Rating

1
2
3
4

Priority Description

Immediate corrective action required
 Corrective action required to avoid increasing costs to repair
 General maintenance item
 No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
 within 3 years
 within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Glendale DATE INSPECTED: 12-Apr-02
St. John's & Area

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|---------------------|--|-----------------|-----------------|
| #19 - 73L-DL | Good condition (44 Mpa). | | 4 |
| Structure | | | |
| High Voltage | | | |
| #20 - BTS-2 | Good condition (24 Mpa). | | 4 |
| Structure | | | |
| High Voltage | | | |
| #21 - 18L-B | Good condition (44 Mpa). | | 4 |
| Oil Circuit Breaker | | | |
| #22 - T2 | Good condition (24 Mpa). | | 4 |
| Transformer 200332 | | | |
| #23 - 18L-DB | Good condition (24 Mpa). | | 4 |
| Structure | | | |
| High Voltage | | | |
| #24 - T2-A | One corner has a small area chipped (minor). | | 4 |
| Structure | Remainder of pad is in good condition | | |
| High Voltage | (24 Mpa). | | |

Priority Rating

1
2
3
4

Priority Description

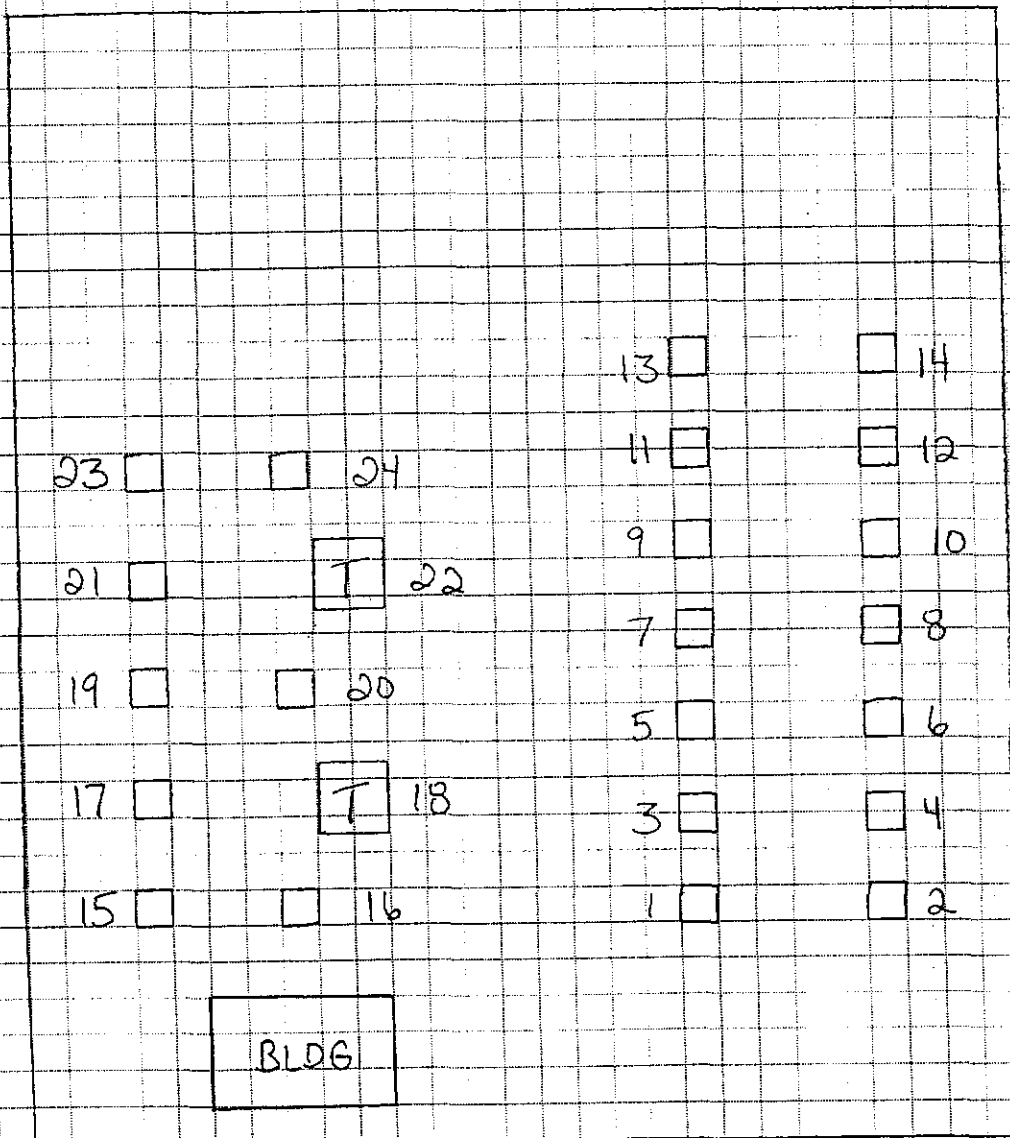
Immediate corrective action required
 Corrective action required to avoid increasing costs to repair
 General maintenance item
 No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
 within 3 years
 within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS
LOCATION SKETCH

SUBSTATION SITE: GLENDALE
ST. JOHN'S Y AREA



INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Goulds DATE INSPECTED: 12-Apr-02
St. John's & Area

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|---|--|--|-----------------|
| #1 - 4L-B Sul Hex Breaker | Good condition (44 Mpa). | | 4 |
| | | | |
| | | | |
| #2 - 18L-B Sul Hex Breaker | Minor scaling and one minor chip on top surface of pad. Additional concrete has been poured around perimeter of original pad. Overall pad is in good condition (28 Mpa). | Type A Repair | 3 |
| | | | |
| #3 - 25L-B Structure High Voltage | Additional concrete has been poured around perimeter of original pad. Scaling on the top surface of the inner section. Remainder of the pad is in good condition (28 Mpa). | Type A Repair | 3 |
| | | | |
| #4 - 3L-B Oil Circuit Breaker | Good condition (30 Mpa). | | 4 |
| | | | |
| | | | |
| #5 - T1 Transformer 200124 | Pad is in poor condition with severe cracking, chipping, and hairline cracks throughout visible area of pad. Portions of pad can be removed with boot (24 Mpa). | Type D Repair at a minimum with a Type E Repair recommended if the poor condition of the concrete extends beyond the outside areas that are visible at the present. This should be determined when the equipment is removed for repairs. | 1 |
| | | | |
| #6 - 24L-B Sul Hex Breaker | Good condition (30 Mpa). | | 4 |
| | | | |
| | | | |

Priority Rating

1
2
3
4

Priority Description

Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
within 3 years
within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Goulds DATE INSPECTED: 12-Apr-02
St. John's & Area

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|---------------------------------|--------------------------|-----------------|-----------------|
| #7 - T2 Transformer 200292 | Good condition (28 Mpa). | | 4 |
| | | | |
| | | | |
| #8 - 72L-B Sul Hex Breaker | Good condition (44 Mpa). | | 4 |
| | | | |
| | | | |
| #9 - 17L-B Sul Hex Breaker | Good condition (38 Mpa). | | 4 |
| | | | |
| | | | |
| #10 - T3- Transformer 200257 | Good condition (44 Mpa). | | 4 |
| | | | |
| | | | |
| #11 - Structure Low Voltage | Good condition (44 Mpa). | | 4 |
| | | | |
| | | | |
| #12 - T2-B Oil Circuit Breaker | Good condition (24 Mpa). | | 4 |
| | | | |
| | | | |

Priority Rating

1
2
3
4

Priority Description

Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
within 3 years
within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Goulds DATE INSPECTED: 12-Apr-02
St. John's & Area

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|--------------------------------|---|-----------------|-----------------|
| #13 - Structure Low Voltage | Good condition (32 Mpa). | | 4 |
| | | | |
| | | | |
| | | | |
| #14 - Structure Low Voltage | Good condition (42 Mpa). | | 4 |
| | | | |
| | | | |
| | | | |
| #15 - Structure Low Voltage | Good condition (34 Mpa). | | 4 |
| | | | |
| | | | |
| | | | |
| #16 - GOU-01-R Recloser | Good condition (22 Mpa). | | 4 |
| | | | |
| | | | |
| | | | |
| #17 - GOU-02-R Recloser | Minor scaling on top surface of pad. Remainder of pad is in good condition (24 Mpa). | Type A Repair | 3 |
| | | | |
| | | | |
| | | | |
| #18 - GOU-03-R Recloser | Minor scaling on top surface of pad. Remainder of pad is in good condition (34 Mpa). | Type A Repair | 3 |
| | | | |
| | | | |
| | | | |

Priority Rating

1
2
3
4

Priority Description

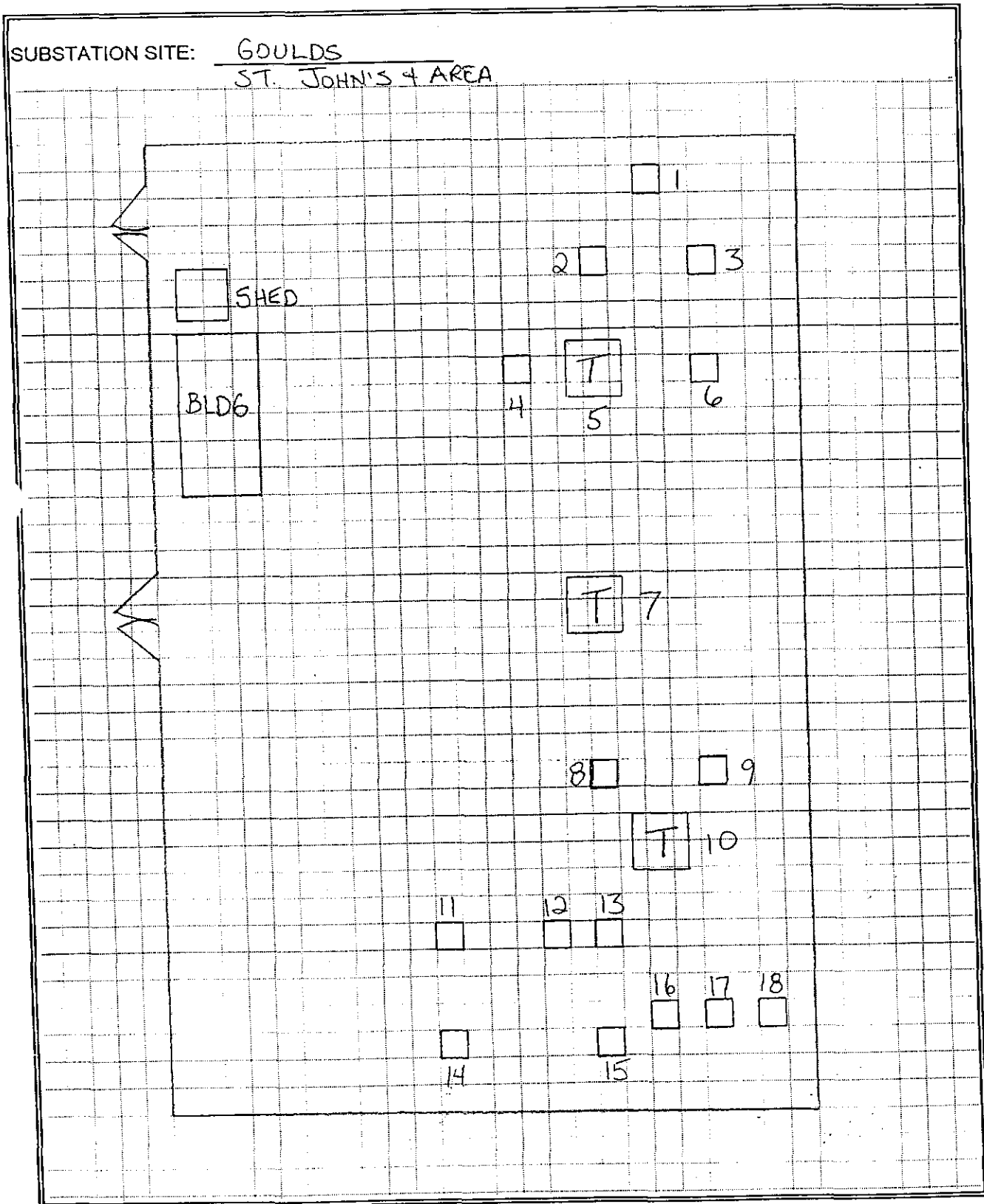
Immediate corrective action required
 Corrective action required to avoid increasing costs to repair
 General maintenance item
 No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
 within 3 years
 within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS
LOCATION SKETCH

SUBSTATION SITE: GOULDS
ST. JOHN'S 4 AREA



INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Hardwoods (Upper Section) DATE INSPECTED: 13-Apr-02
St. John's & Area

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|--|---|---|-----------------|
| #1 - Structure Low Voltage | Good condition (20 Mpa). | | 4 |
| #2 - HWD-02-BP Structure Low Voltage | One corner on top of pad is chipped off (minor). Remainder of pad is in good condition (28 Mpa). | Type A Repair | 3 |
| #3 - HWD-0 Oil Circuit Breaker | Slight scaling on top surface of pad. Remainder of pad is in good condition (42 Mpa). | | 4 |
| #4 - T2-B Oil Circuit Breaker | Good condition (42 Mpa). | | 4 |
| #5 - HWD-04-BP Structure Low Voltage | Alligator cracking throughout top of pad. Cracks extend down approx 50mm deep. One corner on top of pad is chipped off. (28 Mpa). | Type B Repair for cracking & Type A for any chipping of concrete. | 2 |
| #6 - HWD-0 Sul Hex Breaker | Pitting and minor alligator cracking throughout top of pad. Top surface of pad is rust covered. Minor chipping also present on top portion of pad (50 Mpa). | Type B Repair for cracking & Type A for any chipping of concrete. | 2 |

Priority Rating

1
2
3
4

Priority Description

Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
within 3 years
within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Hardwoods (Upper Section) DATE INSPECTED: 13-Apr-02
St. John's & Area

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|---|---|--|-----------------|
| #7 - HWD-0 Sul Hex Breaker | Good condition (42 Mpa). | | 4 |
| #8 - HWD-03-BP Structure Low Voltage | Alligator cracking throughout top portion of pad. Cracks extend down approx. 50mm. Top portion of pad seems to have been recapped before (34 Mpa). | Type B Repair | 2 |
| 9 - T1-B Oil Circuit Breaker | Good condition (38 Mpa). | | 4 |
| #10-HWD-0 Oil Circuit Breaker | Rough edges on top surface of pad. Remainder of pad is in good condition (38 Mpa). | | 4 |
| #11-HWD-0 Oil Circuit Breaker | Slight scaling and rust covered on top surface of pad. Otherwise pad is in good condition (38 Mpa). | | 4 |
| #12 - HWD-06-BP Structure Low Voltage | Alligator cracking throughout top portion of pad. Cracks extend down approx 50mm. One corner of pad is chipped/eroded away and portions of concrete can be removed with boot. Top portion of pad seems to have been recapped before (34 Mpa). | Type B Repair fo cracking & Type A Repair for other areas of chipping. | 2 |

Priority Rating

- | | |
|------------------|--|
| 1 2 3 4 | <p>Immediate corrective action required</p> <p>Corrective action required to avoid increasing costs to repair</p> <p>General maintenance item</p> <p>No corrective action or maintenance required at this time</p> |
|------------------|--|

Recommended Time Frame

- within 1 year
within 3 years
within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Hardwoods (Upper Section) DATE INSPECTED: 13-Apr-02
St. John's & Area

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|---|--|-----------------|--------------------|
| #13 - T1-A Structure High Voltage | Minor scaling and pitting on top surface of pad. Remainder of pad is in good condition (30 Mpa). | Type A Repair | 3 |
| | | | |
| | | | |
| | | | |
| #14 - T2-A Structure High Voltage | Minor scaling and pitting on top surface of pad. Remainder of pad is in good condition (42 Mpa). | Type A Repair | 3 |
| | | | |
| | | | |
| | | | |
| #15 - T2 Transformer 200236 | One portion of edge of pad is chipped away approx. 300mm long. Remainder of pad is in good condition (30 Mpa). | Type A Repair | 3 |
| | | | |
| | | | |
| | | | |
| #16 - T1 Transformer 200271 | Good condition (28 Mpa). | | 4 |
| | | | |
| | | | |
| | | | |
| #17 - T1-A Structure High Voltage | Minor scaling on top surface of pad. Remainder of pad is in good condition (38 Mpa). | | 4 |
| | | | |
| | | | |
| | | | |
| #18 - T2-A Structure High Voltage | Minor scaling on top surface of pad. Remainder of pad is in good condition (42 Mpa). | | 4 |
| | | | |
| | | | |
| | | | |

Priority Rating

- 1
- 2
- 3
- 4

Priority Description

- Immediate corrective action required
- Corrective action required to avoid increasing costs to repair
- General maintenance item
- No corrective action or maintenance required at this time

Recommended Time Frame

- within 1 year
- within 3 years
- within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Hardwoods (Upper Section) DATE INSPECTED: 13-Apr-02
St. John's & Area

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|---|--|-----------------|-----------------|
| #19 - HWD-72L-DB Structure High Voltage | Minor scaling on top surface of pad. | | 4 |
| | Remainder of pad is in good condition (38 Mpa). | | |
| | | | |
| | | | |
| #20 - HWD-79L-DB Structure High Voltage | Good condition (38 Mpa). | | 4 |
| | | | |
| | | | |
| | | | |
| #21 - 72L-B Sul Hex Breaker | Good condition (34 Mpa). | | 4 |
| | | | |
| | | | |
| | | | |
| #22 - 79L-B Oil Circuit Breaker | Good condition (30 Mpa). | | 4 |
| | | | |
| | | | |
| | | | |
| #23 - 72L-DL Structure High Voltage | Minor scaling and pitting on top surface of pad. Remainder of pad is in good condition (40 Mpa). | Type A Repair | 3 |
| | | | |
| | | | |
| | | | |
| #24 - Structure High Voltage | Good condition (28 Mpa). | | 4 |
| | | | |
| | | | |
| | | | |

Priority Rating

1
2
3
4

Priority Description

Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
within 3 years
within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Hardwoods (Upper Section) DATE INSPECTED: 13-Apr-02
St. John's & Area

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|---|--|-----------------|--------------------|
| #25 -5L-19L- BP-2 Structure High Voltage | Good condition (42 Mpa). | | 4 |
| #26 - 5L-DB Structure High Voltage | Minor scaling and pitting on top surface of pad. Remainder of pad is in good condition (44 Mpa). | Type A Repair | 3 |
| #27 - 19L-B Circuit Breaker | Top surface of pad has minor chipping, a rough finish and is rust covered. Remainder of pad is in good condition (32 Mpa). | Type A Repair | 3 |
| #28 - 5L-B Oil Circuit Breaker | Top surface of pad has minor chipping, a rough finish and is rust covered. Remainder of pad is in good condition (28 Mpa). | Type A Repair | 3 |
| #29 -19L-DB Structure High Voltage | Minor scaling and pitting on top surface of pad. Remainder of pad is in good condition (34 Mpa). | Type A Repair | 3 |
| #30-5L-19L- BP-1 Structure High Voltage | Minor scaling and pitting on top surface of pad. Remainder of pad is in good condition (32 Mpa). | Type A Repair | 3 |

Priority Rating

1
2
3
4

Priority Description

Immediate corrective action required
 Corrective action required to avoid increasing costs to repair
 General maintenance item
 No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
 within 3 years
 within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Hardwoods (Upper Section) DATE INSPECTED: 13-Apr-02
St. John's & Area

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|--|---|-----------------|-----------------|
| #31 - Structure High Voltage | Good condition (24 Mpa). | | 4 |
| | | | |
| | | | |
| #32 -54L-DB Structure High Voltage | Minor scaling and pitting on top surface of pad. Remainder of pad is in good condition (40 Mpa). | Type A Repair | 3 |
| | | | |
| | | | |
| #33 - 54L-B Sul Hex Breaker | Top surface of pad has rough finish. Otherwise pad is in good condition (28 Mpa). | | 4 |
| | | | |
| | | | |
| #34 - Structure High Voltage | Top surface of pad had rough finish and minor chipping on one edge. Remainder of pad is in good condition (42 Mpa). | Type A Repair | 3 |
| | | | |
| | | | |
| #35 -54L-GS Structure High Voltage | Top surface of pad has rough finish. Two corners of pad are chipped away (minor). Remainder of pad is in good condition (28 Mpa). | Type A Repair | 3 |
| | | | |
| | | | |
| | | | |
| | | | |

Priority Rating

1
2
3
4

Priority Description

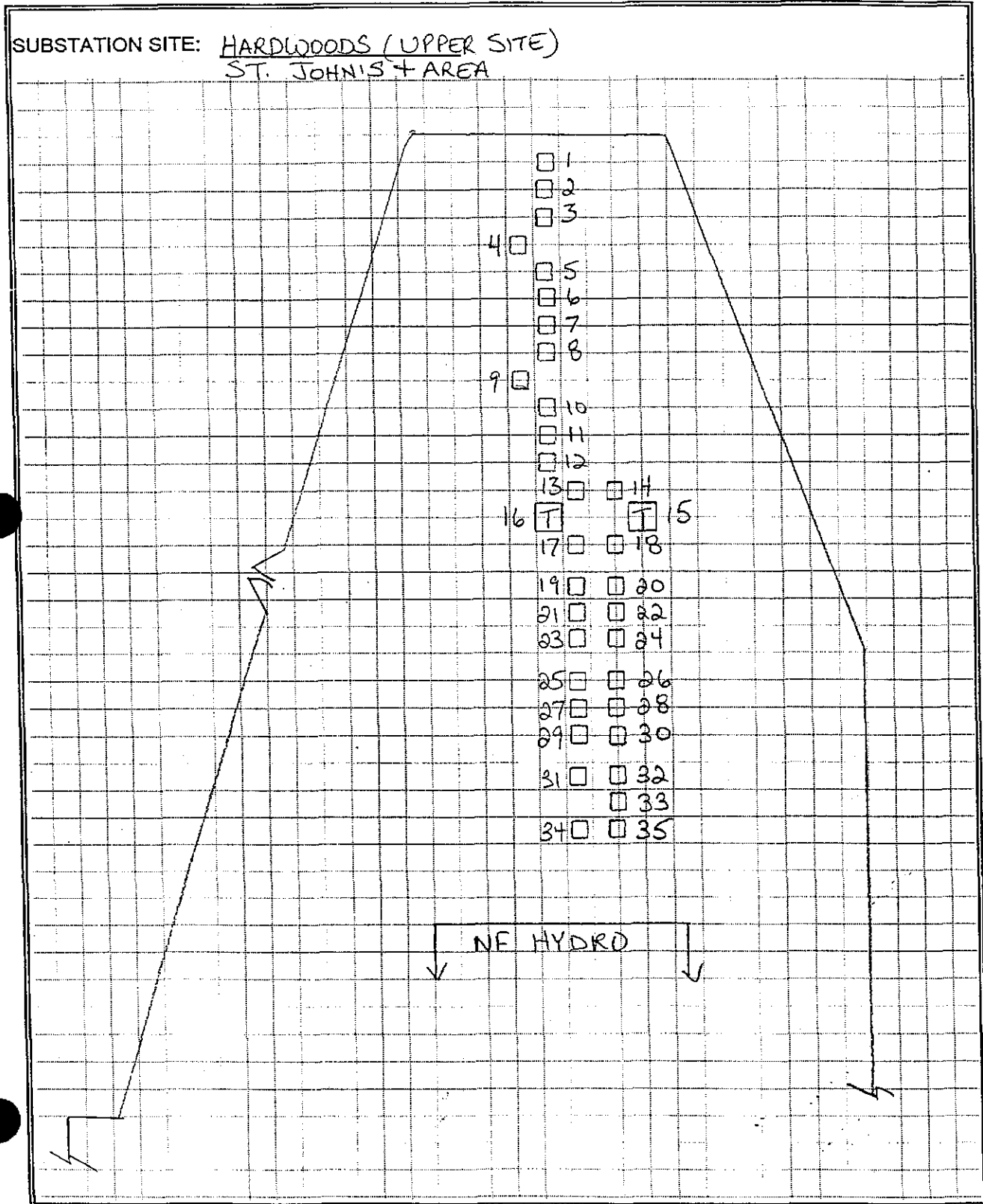
Immediate corrective action required
 Corrective action required to avoid increasing costs to repair
 General maintenance item
 No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
 within 3 years
 within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS
LOCATION SKETCH

SUBSTATION SITE: HARDWOODS (UPPER SITE)
ST. JOHN'S + AREA



INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Hardwoods (Lower Section) DATE INSPECTED: 13-Apr-02
St. John's & Area

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|--|---|-----------------|-----------------|
| #1 - HWD-07-DL Structure Low Voltage | Slight scaling on top surface. Otherwise pad is in good condition (38 Mpa). | | 4 |
| #2 - HWD-07-B SYNIZ Breaker | Good condition (40 Mpa). | | 4 |
| #3 - HWD-08-B SYNIZ Breaker | Good condition (42 Mpa). | | 4 |
| #4 - HWD-08-BP Structure Low Voltage | Good condition (38 Mpa). | | 4 |
| #5 - HWD-T3-D Structure Low Voltage | Good condition (28 Mpa). | | 4 |
| #6 - T3-B SYNIZ Breaker | Good condition (40 Mpa). | | 4 |

Priority Rating

1
2
3
4

Priority Description

Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
within 3 years
within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Hardwoods (Lower Section) DATE INSPECTED: 13-Apr-02
St. John's & Area

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|---|---|-----------------|-----------------|
| #7 - Structure Low Voltage | Good condition (40 Mpa). | | 4 |
| | | | |
| | | | |
| | | | |
| #8 - Structure High Voltage | Good condition (34 Mpa). | | 4 |
| | | | |
| | | | |
| | | | |
| #9 - T3 Transformer 200341 | Good condition (24 Mpa). | | 4 |
| | | | |
| | | | |
| | | | |
| #10 - HWD- T3-A Structure High Voltage | Good condition (32 Mpa). | | 4 |
| | | | |
| | | | |
| | | | |
| #11 - 73L-B Sul Hex Breaker | Good condition (42 Mpa). | | 4 |
| | | | |
| | | | |
| | | | |
| #12 - 73L- GS Structure High Voltage | One hairline crack with approx. 1-2mm separation through corner of pad and also through anchorbolt, extends down approx. 150mm. Corner has potential to chip off if not repaired. Remainder of pad is in good condition (34 Mpa). | Type C Repair | 2 |
| | | | |
| | | | |
| | | | |

Priority Rating

1
2
3
4

Priority Description

Immediate corrective action required
 Corrective action required to avoid increasing costs to repair
 General maintenance item
 No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
 within 3 years
 within 5 years

SUBSTATION SITE: Hardwoods (Lower Section) DATE INSPECTED: 13-Apr-02
St. John's & Area

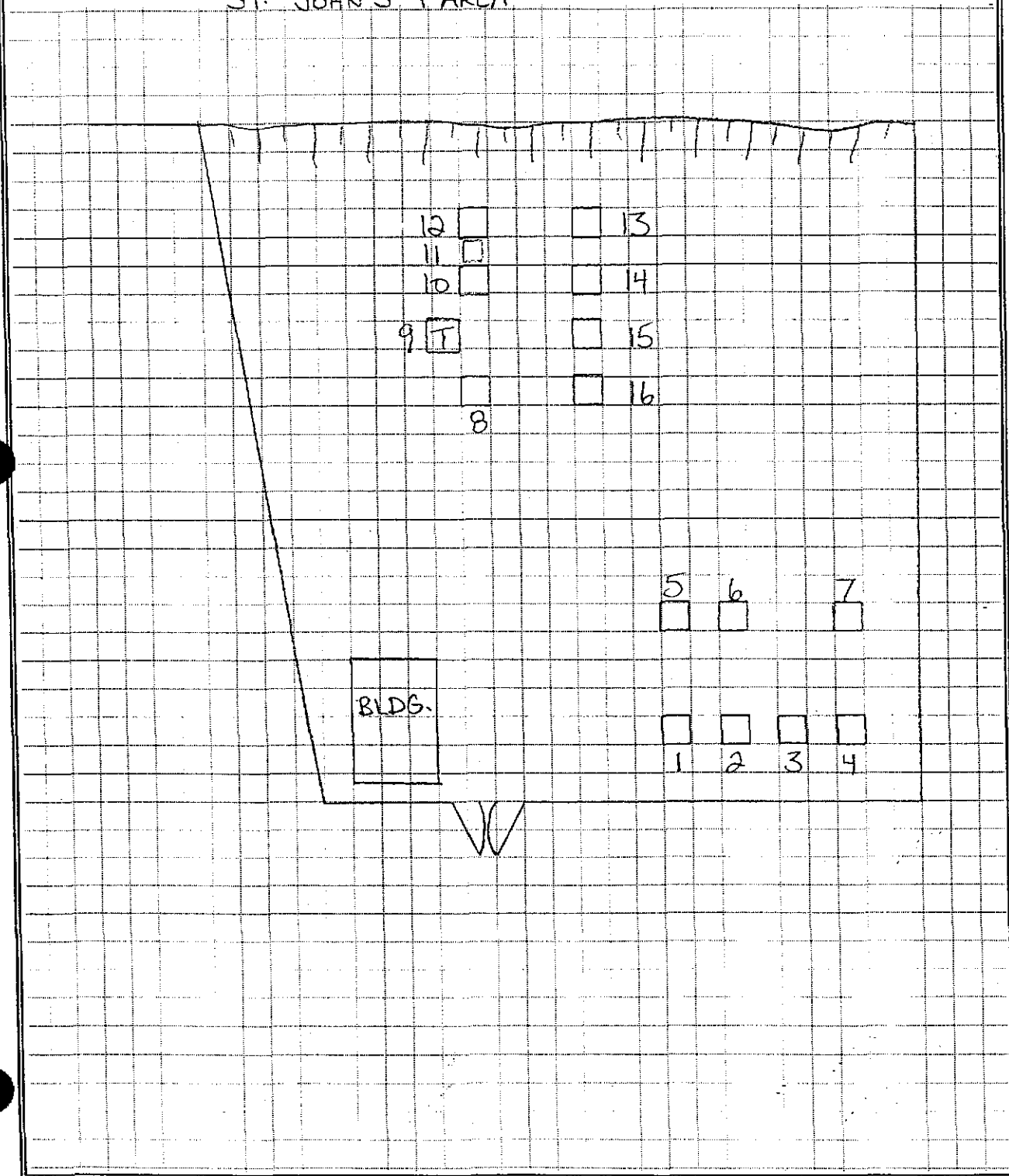
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| <u>Priority Rating</u> | <u>Priority Description</u> | <u>Recommended Time Frame</u> |
|------------------------|--|-------------------------------|
| 1 | Immediate corrective action required | within 1 year |
| 2 | Corrective action required to avoid increasing costs to repair | within 3 years |
| 3 | General maintenance item | within 5 years |
| 4 | No corrective action or maintenance required at this time | |

INSPECTION OF CONCRETE PADS & FOUNDATIONS

LOCATION SKETCH

SUBSTATION SITE: HARDWOODS (LOWER SITE)
ST. JOHN'S & AREA



SUBSTATION SITE: Horsechops DATE INSPECTED: 17-Apr-02
St. John's & Area

| <u>Priority Rating</u> | <u>Priority Description</u> | <u>Recommended Time Frame</u> |
|------------------------|--|-------------------------------|
| 1 | Immediate corrective action required | within 1 year |
| 2 | Corrective action required to avoid increasing costs to repair | within 3 years |
| 3 | General maintenance item | within 5 years |
| 4 | No corrective action or maintenance required at this time | |

INSPECTION OF CONCRETE PADS & FOUNDATIONS
LOCATION SKETCH

SUBSTATION SITE: HORSECHOPS
ST. JOHN'S + AREA

HYDRO PLANT



INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Kelligrews DATE INSPECTED: 15-Apr-02
St. John's & Area

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|--|---|-------------------|-----------------|
| #1 - Structure Low Voltage | Good condition (36 Mpa). | | 4 |
| #2 - KEL-02 Recloser | Minor scaling on top surface of pad. Remainder of pad is in good condition (34 Mpa). | Future Monitoring | 4 |
| #3 - KEL-02-BP Structure Low Voltage | One small hairline crack (less than 1mm separation) on top surface of pad. Remainder of pad is in good condition (30 Mpa). | Type B Repair | 3 |
| #4 - KEL-01-R Recloser | Good condition (42 Mpa). | | 4 |
| #5 - KEL-01-DL Structure Low Voltage | One minor hairline crack (less than 1mm separation and approx. 50mm long). Remainder of pad is in good condition (50 Mpa). | Type B Repair | 3 |
| #6 - T1-B Oil Circuit Breaker | Good condition (30 Mpa). | | 4 |

Priority Rating

1
2
3
4

Priority Description

Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
within 3 years
within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Kelligrews DATE INSPECTED: 15-Apr-02
St. John's & Area

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|--------------------|---------------------------------------|-----------------|-----------------|
| #7 - T1-D | Minor chipping on two corners of pad. | Type A Repair | 3 |
| Structure | Remainder of pad is in good condition | | |
| Low Voltage | (28 Mpa). | | |
| | | | |
| | | | |
| #8 - T1 | Good condition (38 Mpa). | | 4 |
| Transformer | | | |
| 200144 | | | |
| | | | |
| | | | |
| #9 - 52L-DL | Good condition (30 Mpa). | | 4 |
| Structure | | | |
| High Voltage | | | |
| | | | |
| | | | |
| #10 - 52L-B | Good condition (28 Mpa). | | 4 |
| Oil Circuit | | | |
| Breaker | | | |
| | | | |
| | | | |
| #11 - 51L-DB | Good condition (28 Mpa). | | 4 |
| Structure | | | |
| High Voltage | | | |
| | | | |
| | | | |
| #12 - 51L-B | Good condition (28 Mpa). | | 4 |
| Oil Circuit | | | |
| Breaker | | | |
| | | | |
| | | | |

Priority Rating

1
2
3
4

Priority Description

Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

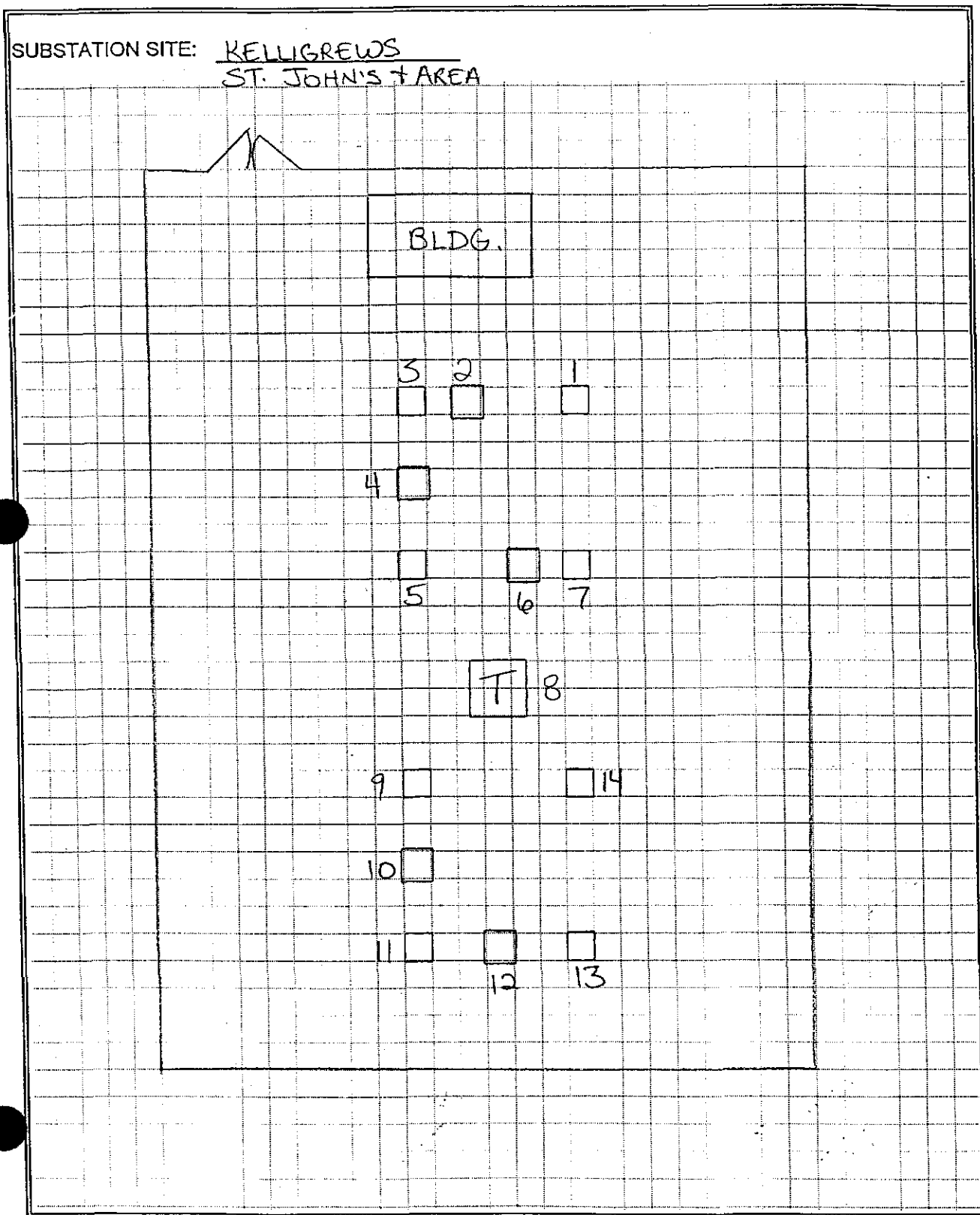
within 1 year
within 3 years
within 5 years

SUBSTATION SITE: Kelligrews DATE INSPECTED: 15-Apr-02
St. John's & Area

| <u>Priority Rating</u> | <u>Priority Description</u> | <u>Recommended Time Frame</u> |
|------------------------|--|-------------------------------|
| 1 | Immediate corrective action required | within 1 year |
| 2 | Corrective action required to avoid increasing costs to repair | within 3 years |
| 3 | General maintenance item | within 5 years |
| 4 | No corrective action or maintenance required at this time | |

INSPECTION OF CONCRETE PADS & FOUNDATIONS
LOCATION SKETCH

SUBSTATION SITE: KELLIGREWS
ST. JOHN'S AREA



INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Kenmount DATE INSPECTED: April 5, 2002

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|---|---|-------------------|-----------------|
| #1 - No # Low Voltage Structure | Good Condition (28MPa) | | 4 |
| | | | |
| | | | |
| #2 - No # Not in Use | Good Condition (28MPa) | | 4 |
| | | | |
| | | | |
| #3 - No # Not in Use | Good Condition (30MPa) | | 4 |
| | | | |
| | | | |
| #4 - Ken-03-DL Low Voltage Structure | Good Condition . There is several very small hairline cracks starting to develop (30MPa) | Future Monitoring | 4 |
| | | | |
| | | | |
| #5 - Ken-03-B Sul Hex Breaker | Good Condition (40MPa) | | 4 |
| | | | |
| | | | |
| #6 - KEN-04-DL Sul Hex Breaker | Good Condition (40MPa) | | 4 |
| | | | |
| | | | |

Priority Rating

1
2
3
4

Priority Description

Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
within 3 years
within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Kenmount DATE INSPECTED: April 5, 2002

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|---|--|---------------------|-----------------|
| #7 - KEN-04-DL Low Voltage Structure | Good Condition (46MPa) | | 4 |
| | | | |
| | | | |
| #8 - No # Not in Use | Good Condition (40MPa) | | 4 |
| | | | |
| | | | |
| #9 - No # Not in Use | Good Condition (40MPa) | | 4 |
| | | | |
| | | | |
| #10 - No # Not in Use | Good Condition | | 4 |
| | | | |
| | | | |
| #11 - No # Not in Use | Good Condition (38MPa) | | 4 |
| | | | |
| | | | |
| #12 - Ken-02-DL Low Voltage Structure | Good Condition with some very minor scaling starting to show on top surface | Type A minor Repair | 3 |
| | | | |
| | | | |

Priority Rating

1
2
3
4

Priority Description

Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
within 3 years
within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Kenmount DATE INSPECTED: April 5, 2002

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|--|---|---------------------|--------------------|
| #13 - Ken-02 Recloser | Good Condition (30MPa) | | 4 |
| | | | |
| | | | |
| | | | |
| #14 - T1-B Oil Breaker | Good Condition (34MPa) | | 4 |
| | | | |
| | | | |
| | | | |
| #15 - Ken-T2-D Low Voltage Structure | Good Condition . Very minor scaling starting to show on top surface (35MPa) | Type A Minor Repair | 3 |
| | | | |
| | | | |
| | | | |
| #16 - T2-B Recloser | Good Condition (36MPa) | | 4 |
| | | | |
| | | | |
| | | | |
| #17 - No # Low Voltage Structure | Good Condition (42MPa) | | 4 |
| | | | |
| | | | |
| | | | |
| #18 - No # Not in Use | There are 3 small pads together All in Good Condition | | 4 |
| | | | |
| | | | |
| | | | |

Priority Rating

1
2
3
4

Priority Description

Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
within 3 years
within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Kenmount DATE INSPECTED: April 5, 2002

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|---------------------------------|------------------------|-----------------|-----------------|
| #19 - No # Not in Use | Good Condition (36MPa) | | 4 |
| | | | |
| | | | |
| | | | |
| #20 - No # Not in Use | Good Condition (38MPa) | | 4 |
| | | | |
| | | | |
| | | | |
| #21 - No # Not in Use | Good Condition | | 4 |
| | | | |
| | | | |
| | | | |
| #22 - No # 2 600X600 Pads | Good Condition (44MPa) | | 4 |
| | | | |
| | | | |
| | | | |
| #23 - No # 2 600X600 Pads | Good Condition (46MPa) | | 4 |
| | | | |
| | | | |
| | | | |
| #24 - T2-200342 Transformer | Good Condition (38MPa) | | 4 |
| | | | |
| | | | |
| | | | |

Priority Rating

1
2
3
4

Priority Description

Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
within 3 years
within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Kenmount DATE INSPECTED: April 5, 2002

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|-------------------------------------|---|--|-----------------|
| #25 - T1-200329 Transformer | Good Condition (32MPa) | | 4 |
| | | | |
| | | | |
| | | | |
| #26 - 69L-DB High Voltage Structure | Fair to Good Condition. There are two areas on the top surface that appears to have been resurfaced previously. These areas are now loose but concrete in under looks good | Type A Repair to remove and replace the two areas previously patched | 3 |
| | | | |
| #27 - T2-A High Voltage Structure | Good Condition. | | 4 |
| | | | |
| | | | |
| #28 - No # High Voltage Structure | Good Condition. (30MPa) | | 4 |
| | | | |
| | | | |
| #29 - 54L-GS High Voltage Structure | Good Condition (28MPa) | | 4 |
| | | | |
| | | | |
| #30 - Ken-54L-B Oil Breaker | Fair to Good Condition. The surface has the cement/sand matrix deteriorated a little and the top edges are coarse with exposed aggregate. | Type A Repair | 3 |
| | | | |
| | | | |

Priority Rating

1
2
3
4

Priority Description

Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
within 3 years
within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Kenmount DATE INSPECTED: April 5, 2002

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|---|------------------------|-----------------|-----------------|
| #31 - 54L-DL High Voltage Structure | Good Condition (36MPa) | | 4 |
| | | | |
| | | | |
| | | | |
| #32 - 35L-B Sul Hex Breaker | Good Condition (32MPa) | | 4 |
| | | | |
| | | | |
| | | | |
| #33 - 35L-DL High Voltage Structure | Good Condition (34MPa) | | 4 |
| | | | |
| | | | |
| | | | |
| #34 - 69L-B Oil Breaker | Good Condition (42MPa) | | 4 |
| | | | |
| | | | |
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| | | | |

Priority Rating

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Priority Description

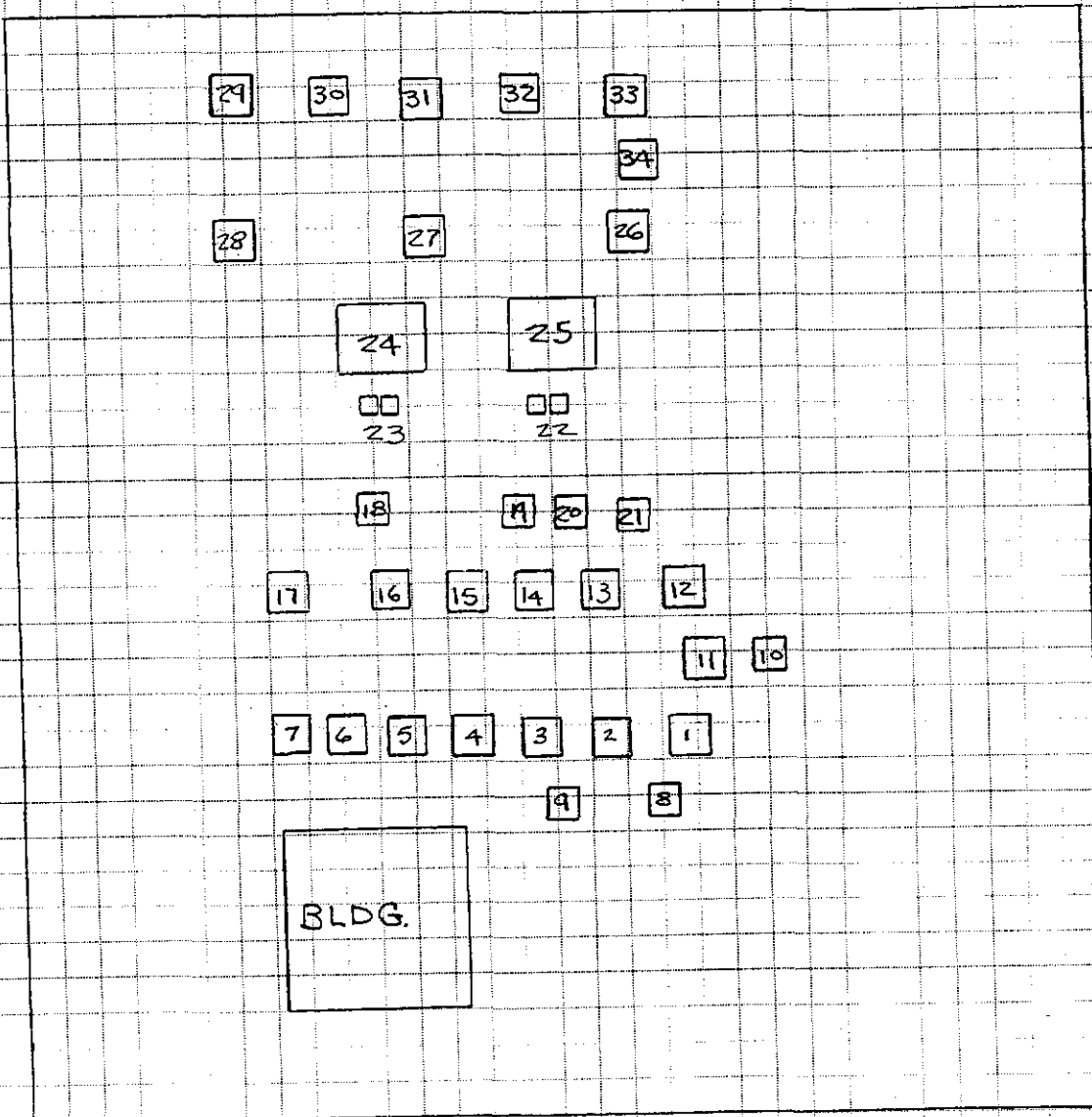
Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
within 3 years
within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS
LOCATION SKETCH

SUBSTATION SITE: KENMOUNT
ST. JOHN'S AREA



KENMOUNT Rd

INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: King's Bridge DATE INSPECTED: 9-Apr-02
St. John's & Area

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|--|--|-----------------|-----------------|
| #2 - T3 Transformer 200293 | Good condition. | | 4 |
| #3 - KBR-16L-GS Structure High Voltage | 1 small hairline crack side of pad (separation of less than 1mm) approx. 150mm long. | Type B Repair | 3 |
| #4 - 16L-B Oil Circuit Breaker | Good condition (48 Mpa). | | 4 |
| #5 - KBR-16L-DL Structure High Voltage | One area along top edge is spalled off. Remainder of pad is in good condition. | Type A Repair | 3 |
| #6 - KBR-T3-A Structure High Voltage | Good condition (48 Mpa). | | 4 |
| #7 - Structure High Voltage | Good condition. | | 4 |

Priority Rating

1
2
3
4

Priority Description

Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
within 3 years
within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: King's Bridge DATE INSPECTED: 9-Apr-02
St. John's & Area

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|---|---|--|-----------------|
| #8 - T1 Transformer 200131 | Good condition. | | 4 |
| #9 - T2 Transformer 200130 | Several small chunks of concrete removed. Minor scaling on top part of pad. Small crack on 1 corner. Remainder of pad is in fair condition (40 Mpa). | Type A Repair | 2 |
| #10 - KBR - 2L-DB Structure High Voltage | Several small pieces of concrete removed on top surface. Overall in good condition. | | 4 |
| #11 - KBR - 30L-DB Structure High Voltage | Slight spalling on a couple corners. Paste removed part way down upper portion of pad, aggregate is exposed in two areas. Overall in fair condition (36 Mpa). | Type A Repair at a minimum with possible Type D depending on amount of loose concrete encountered during repair preparation. | 2 |
| #12 - KBR - BTS-3 Structure High Voltage | Alligator cracking throughout top and sides of pad (approx. top 350mm portion). Spalling on two corners with aggregate exposed on sides of pad in several areas. Overall condition is generally poor. | Type D Repair | 2 |
| #13 - Structure High Voltage | Alligator cracking throughout top and sides of pad. Slight spalling on corners and minor scaling on top surface of pad. Slight honeycombing in several areas, overall in fair condition (42 Mpa). | Type A Repair | 3 |

Priority Rating1
2
3
4Priority Description

Immediate corrective action required
 Corrective action required to avoid increasing costs to repair
 General maintenance item
 No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
 within 3 years
 within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: King's Bridge DATE INSPECTED: 9-Apr-02
St. John's & Area

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|--------------------|---|--|-----------------|
| #14 - KBR-T1-A | Slight scaling on top surface. Good condition. | | 4 |
| Structure | | | |
| High Voltage | | | |
| | | | |
| | | | |
| #15 - | 1 small hairline crack side of pad | Type A & Type B Repair | 3 |
| Structure | (separation of less than 1mm) approx. | | |
| High Voltage | 150mm long. Slight spalling on one corner. Remainder of pad in good condition. | | |
| | (43 Mpa) | | |
| | | | |
| #16 - | Slight spalling on edges of pad. | Type A Repair | 3 |
| Pothead | | | |
| Structure | | | |
| | | | |
| | | | |
| #17 - KBR-CT-2 | Top of pad is in good condition. Sides of pad is showing signs of honeycombing. | | 4 |
| Structure | | | |
| | | | |
| | | | |
| #18 - | Good condition (36 Mpa). | | 4 |
| Pothead | | | |
| Structure | | | |
| | | | |
| | | | |
| #19 - 12L-B | Alligator cracking and associated hairline cracking throughout top of pad. Slight | Type B Repair with possible Type D Repair in future. | 2 |
| Oil Circuit | spalling on corners of pad. Damage around | | |
| Breaker | area where junction box is installed. | | |
| | Damage seems to be contained to top | | |
| | 50-75mm of pad. | | |

Priority Rating

1
2
3
4

Priority Description

Immediate corrective action required
 Corrective action required to avoid increasing costs to repair
 General maintenance item
 No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
 within 3 years
 within 5 years

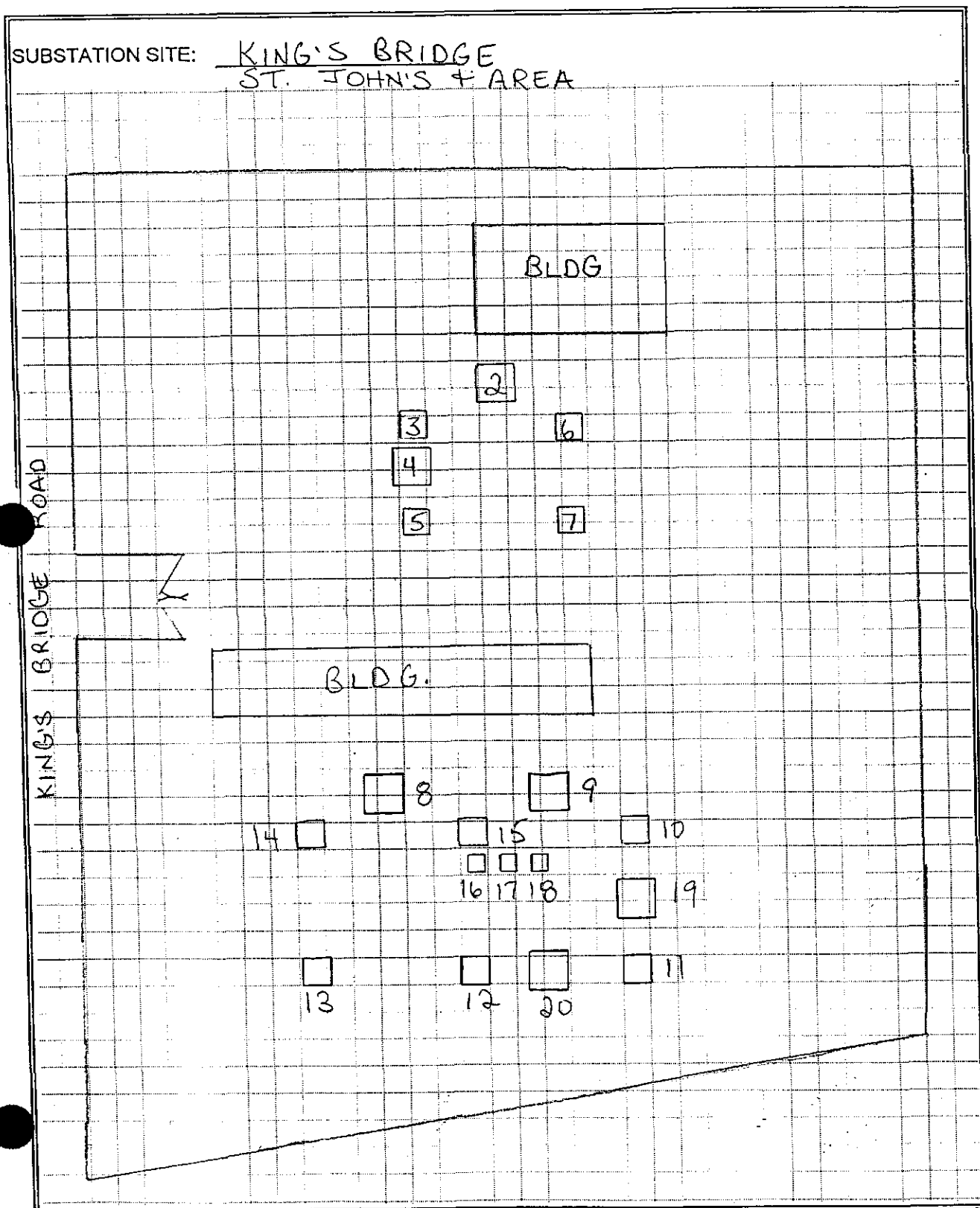
SUBSTATION SITE: King's Bridge DATE INSPECTED: 9-Apr-02
St. John's & Area

[illegible]

| <u>Priority Rating</u> | <u>Priority Description</u> | <u>Recommended Time Frame</u> |
|------------------------|--|-------------------------------|
| 1 | Immediate corrective action required | within 1 year |
| 2 | Corrective action required to avoid increasing costs to repair | within 3 years |
| 3 | General maintenance item | within 5 years |
| 4 | No corrective action or maintenance required at this time | |

INSPECTION OF CONCRETE PADS & FOUNDATIONS
LOCATION SKETCH

SUBSTATION SITE: KING'S BRIDGE
ST. JOHN'S AREA



INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Memorial DATE INSPECTED: 12-Apr-02
St. John's & Area

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|---|---|-----------------|-----------------|
| #1 - T2-D(A) Structure High Voltage | Alligator cracking and associated hairline cracking on top surface and sides of pad. Some hairline cracks have 1mm separation and are approx 200mm long (28 Mpa). | Type C Repair | 1 |
| #2 - T1-D(A) Structure High Voltage | Five minor hairline cracks (less than 1mm separation). Remainder of pad is in fair condition (32 Mpa). | Type B Repair | 3 |
| #3 - T1 Transformer 200142 | Alligator cracking and associated hairline cracking on top surface of pad. Remainder of pad is in fair condition (32 Mpa). | Type B Repair | 2 |
| #4 - T2 Transformer 200273 | Good condition (36 Mpa). | | 4 |
| #5 - T2-D Structure High Voltage | Alligator cracking and associated hairline cracking on top surface and sides of pad. Some hairline cracks have 1mm separation and are approx 200mm long (32 Mpa). | Type C Repair | 1 |
| #6 - T1-D Structure High Voltage | Two hairline cracks on pad that extend down approx. 150mm and have a an approx separation of less than 1mm. Remainder of pad is in fair condition (28 Mpa). | Type B Repair | 2 |

Priority Rating

1
2
3
4

Priority Description

Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
within 3 years
within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Memorial DATE INSPECTED: 12-Apr-02
St. John's & Area

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|--------------------|--|-----------------|-----------------|
| #7 - 12L-DL | Minor alligator cracking on top surface. | Type B Repair | 2 |
| Structure | Four minor hairline cracks (typical location | | |
| High Voltage | midway across each side of pad) that | | |
| | have less than 1mm separation (34 Mpa). | | |
| | | | |
| #8 - 12L-DB | Minor alligator cracking throughout top and | Type B Repair | 2 |
| Structure | sides of pad. Several hairline cracks (less | | |
| High Voltage | than 1mm separation) that extend down | | |
| | from top of pad approx. 150mm) (28 Mpa). | | |
| | | | |
| #9 - 14L-DB | Faint alligator cracking and three minor | Type B Repair | 3 |
| Structure | hairline cracks (less than 1mm separation) | | |
| High Voltage | on top surface (32 Mpa). Remainder of | | |
| | pad is in fair condition. | | |
| | | | |
| #10 - 14L-DL | Faint alligator cracking on top surface of | Type B Repair | 3 |
| Structure | pad. One minor hairline crack approx. | | |
| High Voltage | 100mm long. Remainder of pad is in good | | |
| | condition (34 Mpa). | | |
| | | | |
| #11 - 12L-B | Good condition (22 Mpa). | | 4 |
| Oil Circuit | | | |
| Breaker | | | |
| | | | |
| | | | |
| #12 - 14L-B | Good condition (22 Mpa). | | 4 |
| Oil Circuit | | | |
| Breaker | | | |
| | | | |
| | | | |

Priority Rating

- 1
- 2
- 3
- 4

Priority Description

- Immediate corrective action required
- Corrective action required to avoid increasing costs to repair
- General maintenance item
- No corrective action or maintenance required at this time

Recommended Time Frame

- within 1 year
- within 3 years
- within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Memorial DATE INSPECTED: 12-Apr-02
St. John's & Area

[illegible]

Priority Rating

1
2
3
4

Priority Description

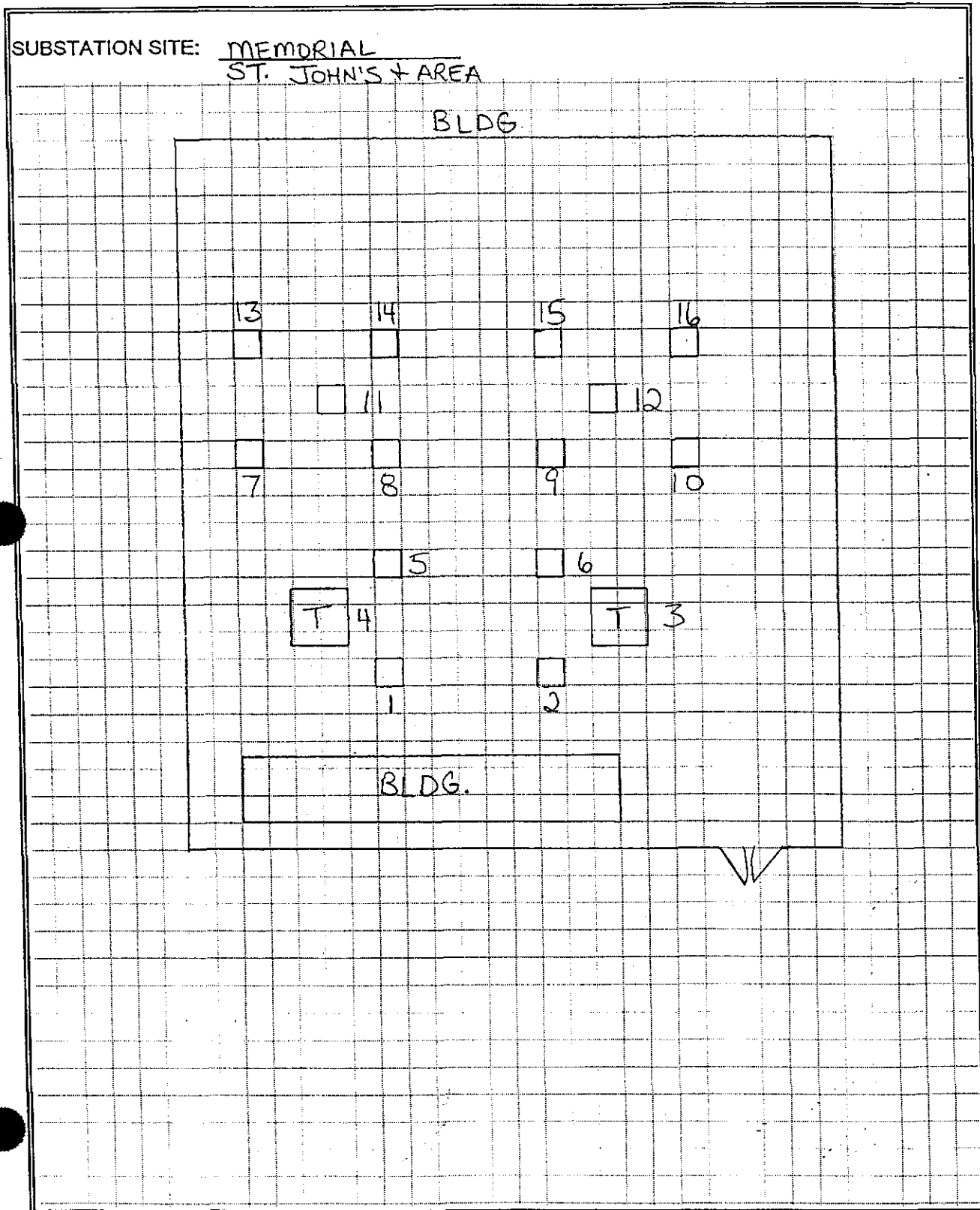
Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
within 3 years
within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS
LOCATION SKETCH

SUBSTATION SITE: MEMORIAL
ST. JOHN'S + AREA



SUBSTATION SITE: Mobile (Lower Section) DATE INSPECTED: 17-Apr-02
St. John's & Area

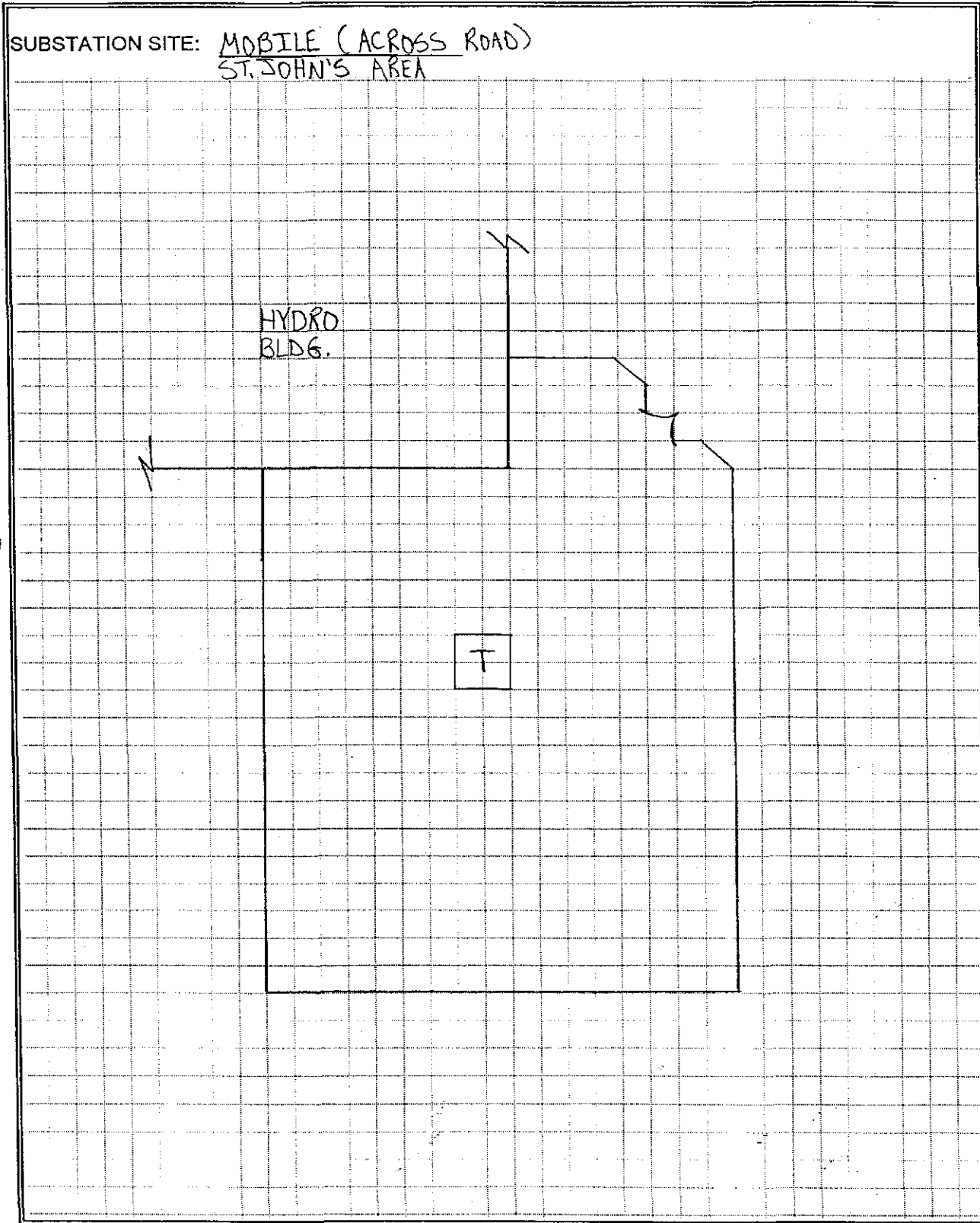
| <u>Priority Rating</u> | <u>Priority Description</u> | <u>Recommended Time Frame</u> |
|------------------------|--|-------------------------------|
| 1 | Immediate corrective action required | within 1 year |
| 2 | Corrective action required to avoid increasing costs to repair | within 3 years |
| 3 | General maintenance item | within 5 years |
| 4 | No corrective action or maintenance required at this time | |

INSPECTION OF CONCRETE PADS & FOUNDATIONS
LOCATION SKETCH

SUBSTATION SITE: MOBILE (ACROSS ROAD)
ST. JOHN'S AREA

HYDRO
BLDG.

T



INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Mobile (Upper Section) DATE INSPECTED: 17-Apr-02
St. John's & Area

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|--------------------------------------|--|--------------------|-----------------|
| #1 - 23L-B Oil Circuit Breaker | Minor alligator cracking and minor scaling on top surface. One edge on top surface is eroded back approx. 75mm deep, some aggregate is exposed (42 Mpa). | Type A & B Repairs | 2 |
| #2 - T3 Transformer 200132 | Spill pan installed under transformer. Visible portion of pad seems to be in good condition (26 Mpa). | | 4 |
| #3 - T2 Transformer 200266 | Spill pan installed under transformer. No visible areas of concrete to inspect. | | |
| #4 - MOB-02-R Recloser | Good condition (26 Mpa). | | 4 |
| #5 - MOB-01-R Recloser | Good condition (26 Mpa). | | 4 |
| #6 - 20L-B Oil Circuit Breaker | Good condition (28 Mpa). | | 4 |

Priority Rating

1
2
3
4

Priority Description

Immediate corrective action required
 Corrective action required to avoid increasing costs to repair
 General maintenance item
 No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
 within 3 years
 within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS



DATE INSPECTED:



Recommended Time Frame

Immediate corrective action required

within 1 year

Corrective action required to avoid increasing costs to repair

within 3 years

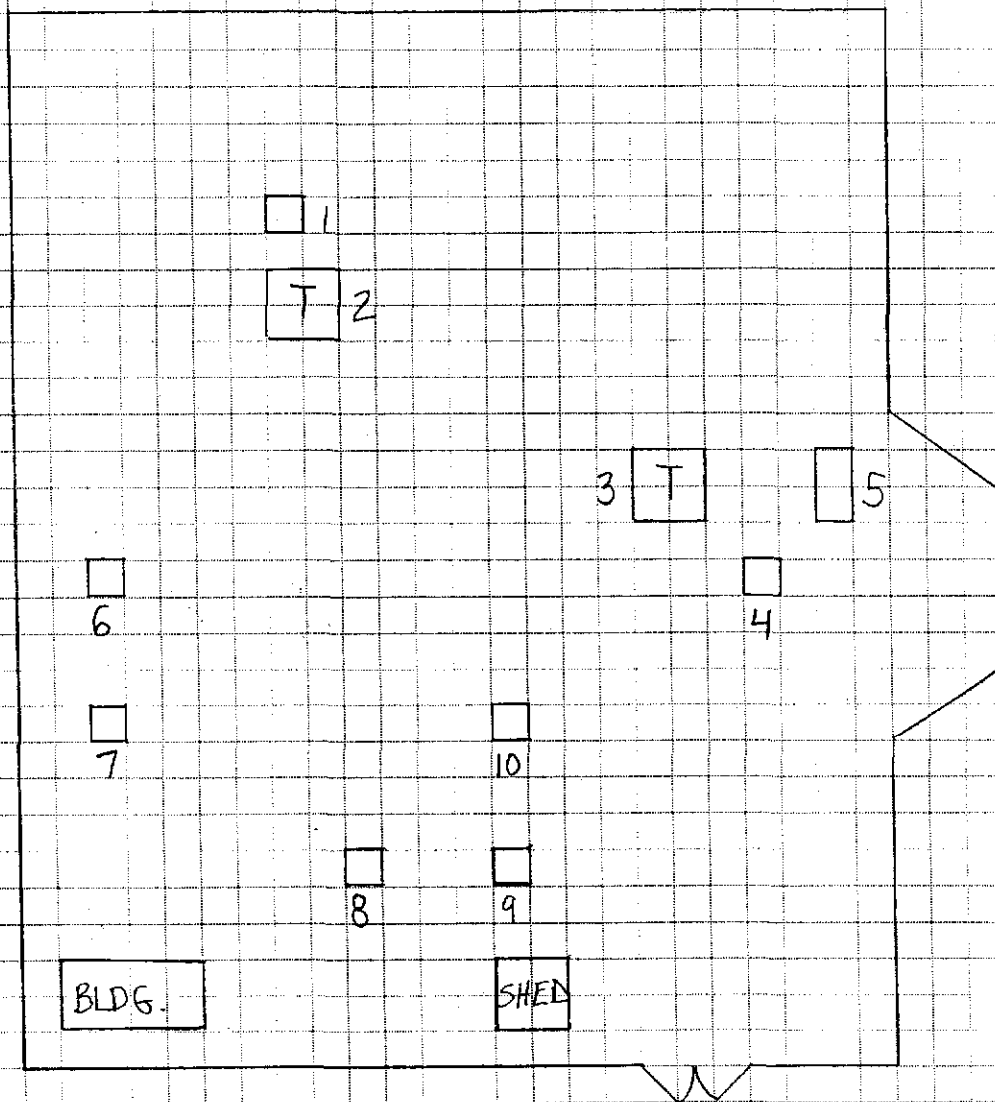
General maintenance item

within 5 years

No corrective action or maintenance required at this time

INSPECTION OF CONCRETE PADS & FOUNDATIONS
LOCATION SKETCH

SUBSTATION SITE: MOBILE
ST. JOHN'S + AREA



INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Molloy's Lane DATE INSPECTED: 11-Apr-02
St. John's & Area

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|--|--|-----------------|-----------------|
| #1 - MOL-07-DB Structure Low Voltage | One corner of pad is chipped. Remainder of pad is in good condition. | Type A Repair | 3 |
| #2 - Not In Use | Minor scaling on top surface of pad. Remainder of pad is in good condition (28 Mpa). | | 4 |
| #3 - Pothead Structure Low Voltage | Good condition. | | 4 |
| #4 - MOL-06-DB Oil Circuit Breaker | Minor scaling on top surface. Remainder of pad is in good condition (42 Mpa). | | 4 |
| #5 - Pothead-06 Structure Low Voltage | Small amount of pitting on top surface. Remainder of pad is in good condition. | | 4 |
| #6 - MOL-06-BP Structure Low Voltage | Top surface is rust covered. Remainder of pad is in good condition (42 Mpa). | | 4 |

Priority Rating

1
2
3
4

Priority Description

Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
within 3 years
within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Molloy's Lane DATE INSPECTED: 11-Apr-02
St. John's & Area

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|---|---|-----------------|-----------------|
| #7 - MOL-03-B Oil Circuit Breaker | Good condition. | | 4 |
| #8 - MOL-03 Pothead Structure Low Voltage | Good condition (42 Mpa). | | 4 |
| #9 - MOL-J2-BP Structure Low Voltage | Good condition. | | 4 |
| #10 - MOL-02-B Oil Circuit Breaker | Good condition (28 Mpa). | | 4 |
| #11-MOL-02 Pothead Structure Low Voltage | Good condition. | | 4 |
| #12 - Structure Low Voltage | Several hairline cracks (less than 1mm separation and extend down approx. 175mm) and associated alligator cracking. Some of the cracks pass through bolt locations in pad (32 Mpa). | Type B Repair | 2 |

Priority Rating1
2
3
4Priority Description

Immediate corrective action required
 Corrective action required to avoid increasing costs to repair
 General maintenance item
 No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
 within 3 years
 within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Molloy's Lane DATE INSPECTED: 11-Apr-02
St. John's & Area

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|------------------------------------|--|-----------------|-----------------|
| #13 - Not In Use | Rust on top surface of pad, otherwise pad is in good condition. | | 4 |
| | | | |
| | | | |
| | | | |
| #14 - MOL-T2-B Oil Circuit Breaker | Minor pitting and scaling on top surface of pad. Remainder of pad is in good condition (38 Mpa). | Type A Repair | 3 |
| | | | |
| | | | |
| #15 - T2-DB Structure Low Voltage | Several hairline cracks (less than 1mm separation and extend down approx. 175mm) and associated alligator cracking. Some of the cracks pass through bolt locations in pad. | Type B Repair | 2 |
| | | | |
| | | | |
| #16 - T1-DB Structure Low Voltage | Rust on top surface of pad, otherwise pad is in good condition (34 Mpa). | | 4 |
| | | | |
| | | | |
| #17 - T1-B Oil Circuit Breaker | Good condition. | | 4 |
| | | | |
| | | | |
| #18-MOL-04 Oil Circuit Breaker | Minor scaling and some rust on top surface of pad. Remainder of pad is in good condition (31 Mpa). | | 4 |
| | | | |
| | | | |

Priority Rating

1
2
3
4

Priority Description

Immediate corrective action required
 Corrective action required to avoid increasing costs to repair
 General maintenance item
 No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
 within 3 years
 within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Molloy's Lane DATE INSPECTED: 11-Apr-02
St. John's & Area

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|--|---|-----------------|-----------------|
| #19 - MOL-04 Pothead Structure Low Voltage | Minor pitting on top surface of pad. | Type A Repair | 3 |
| | Remainder of pad is in good condition. | | |
| | | | |
| | | | |
| #20 - MOL-04-DL Structure Low Voltage | Good condition (28 Mpa). | | 4 |
| | | | |
| | | | |
| | | | |
| #21-MOL-01 Oil Circuit Breaker | Minor scaling on top surface of pad. | | 4 |
| | Remainder of pad is in good condition. | | |
| | | | |
| | | | |
| #22 - MOL-01 Pothead Structure Low Voltage | Good condition (44 Mpa). | | 4 |
| | | | |
| | | | |
| | | | |
| #23-MOL-05 Oil Circuit Breaker | Good condition. | | 4 |
| | | | |
| | | | |
| | | | |
| #24 - MOL-05 Pothead Structure | Minor scaling on top surface of pad. | | 4 |
| | Remainder of pad is in good condition (44 Mpa). | | |
| | | | |
| | | | |

Priority Rating

1
2
3
4

Priority Description

Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
within 3 years
within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Molloy's Lane
St. John's & AreaDATE INSPECTED: 11-Apr-02

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|---|--|-----------------|-----------------|
| #25 - MOL-05-DL Structure Low Voltage | Good condition. | | 4 |
| #26-MOL-08 Oil Circuit Breaker | Minor scaling and some rust on top surface of pad. Remainder of pad is in good condition (44 Mpa). | | 4 |
| #27 - MOL-08 Pothead Structure Low Voltage | Good condition. | | 4 |
| #28 - MOL-09-B Oil Circuit Breaker | Top surface is rust covered and remainder of pad is in good condition (54 Mpa). | | 4 |
| #29 - MOL-09 Pothead Structure Low Voltage | Good condition. | | 4 |
| #30 - MOL-09-BP Structure Low Voltage | Good condition (44 Mpa). | | 4 |

Priority Rating1
2
3
4Priority Description

Immediate corrective action required

Corrective action required to avoid increasing costs to repair

General maintenance item

No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year

within 3 years

within 5 years

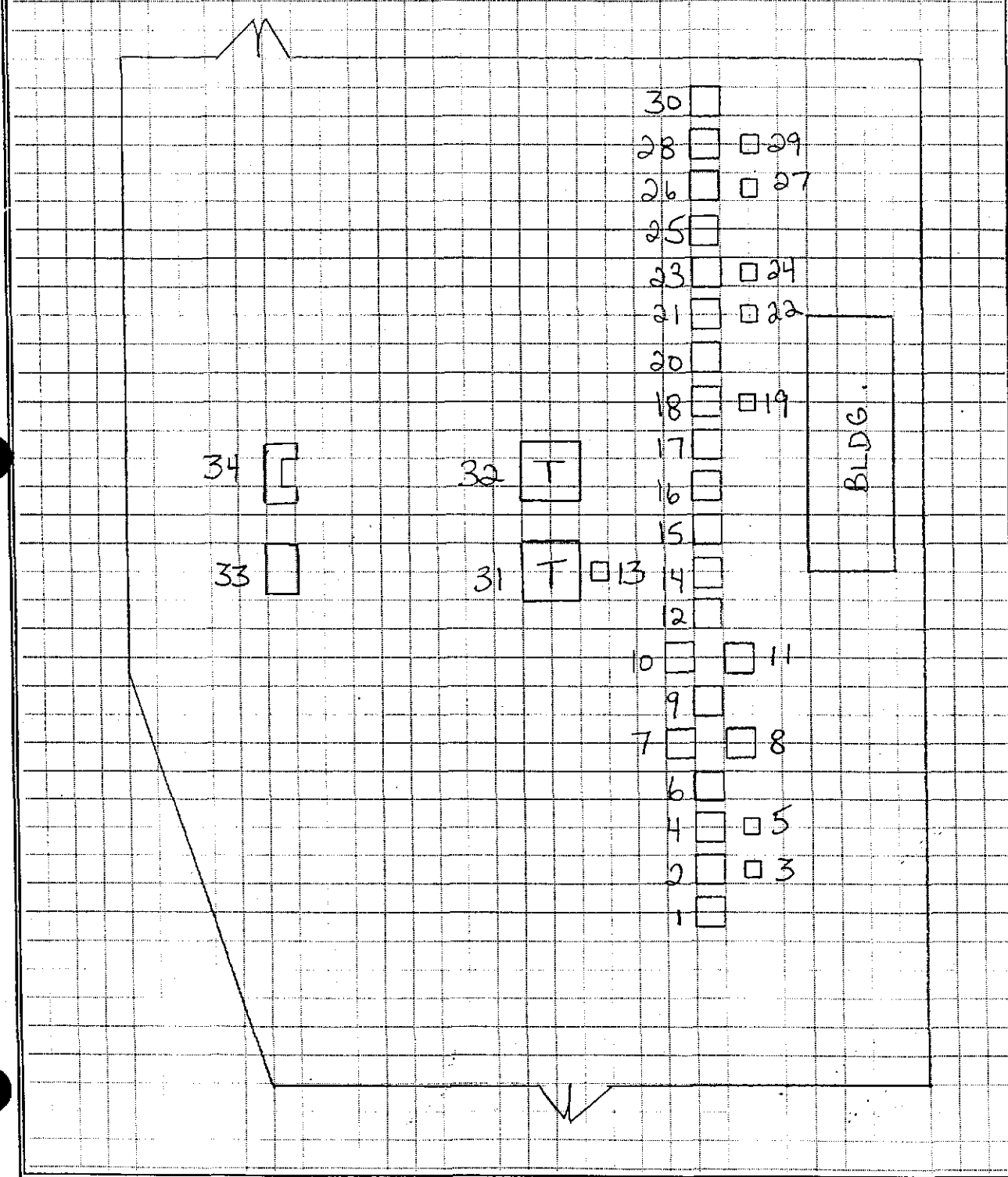
SUBSTATION SITE: Molloy's Lane DATE INSPECTED: 11-Apr-02
St. John's & Area

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| <u>Priority Rating</u> | <u>Priority Description</u> | <u>Recommended Time Frame</u> |
|------------------------|--|-------------------------------|
| 1 | Immediate corrective action required | within 1 year |
| 2 | Corrective action required to avoid increasing costs to repair | within 3 years |
| 3 | General maintenance item | within 5 years |
| 4 | No corrective action or maintenance required at this time | |

INSPECTION OF CONCRETE PADS & FOUNDATIONS
LOCATION SKETCH

SUBSTATION SITE: MOLLOY'S LANE
ST. JOHN'S + AREA.



INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Oxen Pond DATE INSPECTED: April 5, 2002

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|--------------------|--|-----------------|-----------------|
| #1 - No # | Good Condition (42MPa) | | 4 |
| Structure | | | |
| Low Voltage | | | |
| | | | |
| | | | |
| #2 - OXP-01-B | Good Condition (40MPa) | | 4 |
| Oil Breaker | | | |
| | | | |
| | | | |
| | | | |
| #3 - OXP-01-BP | Good Condition (40MPa) | | 4 |
| Structure | | | |
| Low Voltage | | | |
| | | | |
| | | | |
| #4 - 3616 | Good Condition | | 4 |
| Metering Tank | | | |
| | | | |
| | | | |
| | | | |
| #5 - T1-200279 | Good Condition (28MPa) | | 4 |
| Transformer | | | |
| | | | |
| | | | |
| | | | |
| #6 - OXP-70L | Good Condition with exception of a small | Type A Repair | 3 |
| -DP | hairline crack on top and one side. | | |
| Structure | | | |
| High Voltage | | | |
| | | | |
| | | | |

Priority Rating

1
2
3
4

Priority Description

Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
within 3 years
within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Oxen Pond DATE INSPECTED: April 5, 2002

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|--------------------|--|--|-----------------|
| #7 - OXP-34L | Fair condition - 3 cracks that extend out from middle of block to sides. Minor | Type A Repair for Honeycombing and Type C Repair for the cracking. | 2 |
| -DB | alligator cracking and one small area with honeycombing located on side of foundation (42MPa) | | |
| Structure | | | |
| High Voltage | | | |
| #8 - OXP-34L | Good condition with several minor hairline cracks. (34MPa) | Type B Repair | 3 |
| -DL | | | |
| Structure | | | |
| High Voltage | | | |
| #9 - OXP-32L | Good condition with several minor hairline cracks. (36MPa) | Type B Repair | 3 |
| -DB | | | |
| Structure | | | |
| High Voltage | | | |
| #10 - No # | Good condition with several minor hairline cracks (32MPa) | Type B Repair | 3 |
| Structure | | | |
| High Voltage | | | |
| #11 - T1-A | Fair condition with several areas of honeycombing that may have exposed reinforcing steel. (28MPa) | Type A Repair | 2 |
| Structure | | | |
| High Voltage | | | |
| #12 - 70L-B | Good Condition (36MPa) | | 4 |
| Oil Breaker | | | |
| | | | |
| | | | |
| | | | |

Priority Rating

1
2
3
4

Priority Description

Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
within 3 years
within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Oxen Pond DATE INSPECTED: April 5, 2002

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|---|--|--|-----------------|
| #13 - 34L-B Oil Breaker | Poor condition with the top and sides badly deteriorated. Concrete can be easily picked away with shovel. A minimum of 150 to 200 mm of the top should be replaced. Strength test along the sides indicated 20 to 24 Mpa (relatively low). | Type E Repair recommended considering the type of foundation and the depth of concrete required to repair the top of the foundation. Total replacement would be the most cost effective approach | 1 |
| #14 - 32L-B Oil Breaker | Fair to Good Condition. There are two minor cracks and some surface cement/sand matrix deterioration. | Type Type B Repair | 3 |
| #15 - 67L-GS Structure High Voltage | Good Condition (40MPa) Several very minor Hairline cracks starting to develop. | Future Monitoring | 4 |
| #16 - OXP-31L -DP Structure High Voltage | Good Condition (38MPa) Several very minor Hairline cracks starting to develop. | Future Monitoring | 4 |
| #17 - OXP-31L -DB Structure High Voltage | Good Condition (44MPa) Several very minor Hairline cracks starting to develop. | Future Monitoring | 4 |
| #18 - 35-L-DB Structure High Voltage | Good Condition (45MPa) | | 4 |

Priority Rating

1
2
3
4

Priority Description

Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
within 3 years
within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Oxen Pond DATE INSPECTED: April 5, 2002

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|--------------------------------|--|-------------------|-----------------|
| #19 - 58L-DB Structure | Good Condition (44MPa) | Future Monitoring | 4 |
| High Voltage | Several very minor Hairline cracks starting to develop. | | |
| | | | |
| #20 - 67L-DB Structure | Good Condition (41MPa) | | 4 |
| High Voltage | | | |
| | | | |
| #21 - 58L-B Sul Hex Breaker | Good Condition The surface is a little coarse on exposed concrete | | 4 |
| | | | |
| #22 - 35L-B Oil Breaker | Good Condition (38MPa) | | 4 |
| | | | |
| #23 - 31L-B Sul Hex Breaker | Good Condition (37MPa) | | 4 |
| | | | |
| #24 - No # Oil Breaker | Good Condition (40Mpa) | | 4 |
| | | | |

Priority Rating

1
2
3
4

Priority Description

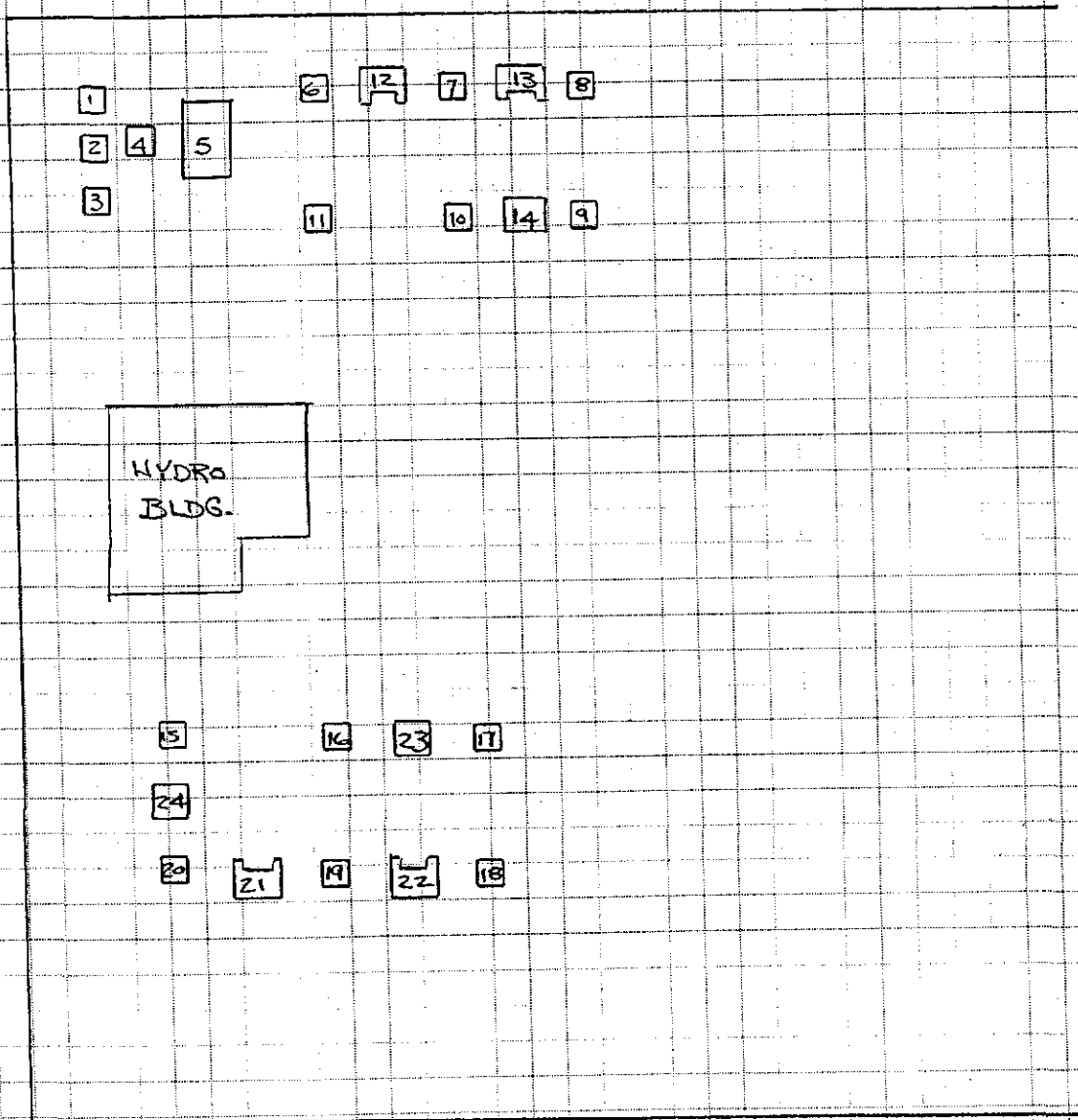
Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
within 3 years
within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS
LOCATION SKETCH

SUBSTATION SITE: OXEN POND
ST. John's + AREA



INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Pepperell DATE INSPECTED: 10-Apr-02
St. John's & Area

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|---|--|------------------------|-----------------|
| #1 - T1 Transformer 200309 | Good condition (28 Mpa). | | 4 |
| | | | |
| | | | |
| | | | |
| #2 - T1-A Structure High Voltage | Small area of minor alligator cracking on top surface of pad. Remainder of pad is in good condition (28 Mpa). | Type B Repair | 3 |
| | | | |
| | | | |
| | | | |
| #3 - PEP-16L-DL Structure High Voltage | Good condition (32 Mpa). | | 4 |
| | | | |
| | | | |
| | | | |
| #4 - Not In Use | Good condition (32 Mpa). | | 4 |
| | | | |
| | | | |
| | | | |
| #5 - 16L-B Sul Hex Breaker | Good condition (32 Mpa). | | 4 |
| | | | |
| | | | |
| | | | |
| #6 - PEP-16L-GS Structure High Voltage | Top corner of pad is cracked to a depth of approx. 150mm with portions of concrete removed. Minor alligator and associated hairline cracking throughout top of pad. Spalling on top and sides of pad (28 Mpa). | Type A & Type C Repair | 2 |
| | | | |
| | | | |
| | | | |

Priority Rating

1
2
3
4

Priority Description

Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
within 3 years
within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Pepperell
St. John's & Area

DATE INSPECTED: 10-Apr-02

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Priority Rating

1
2
3
4

Priority Description

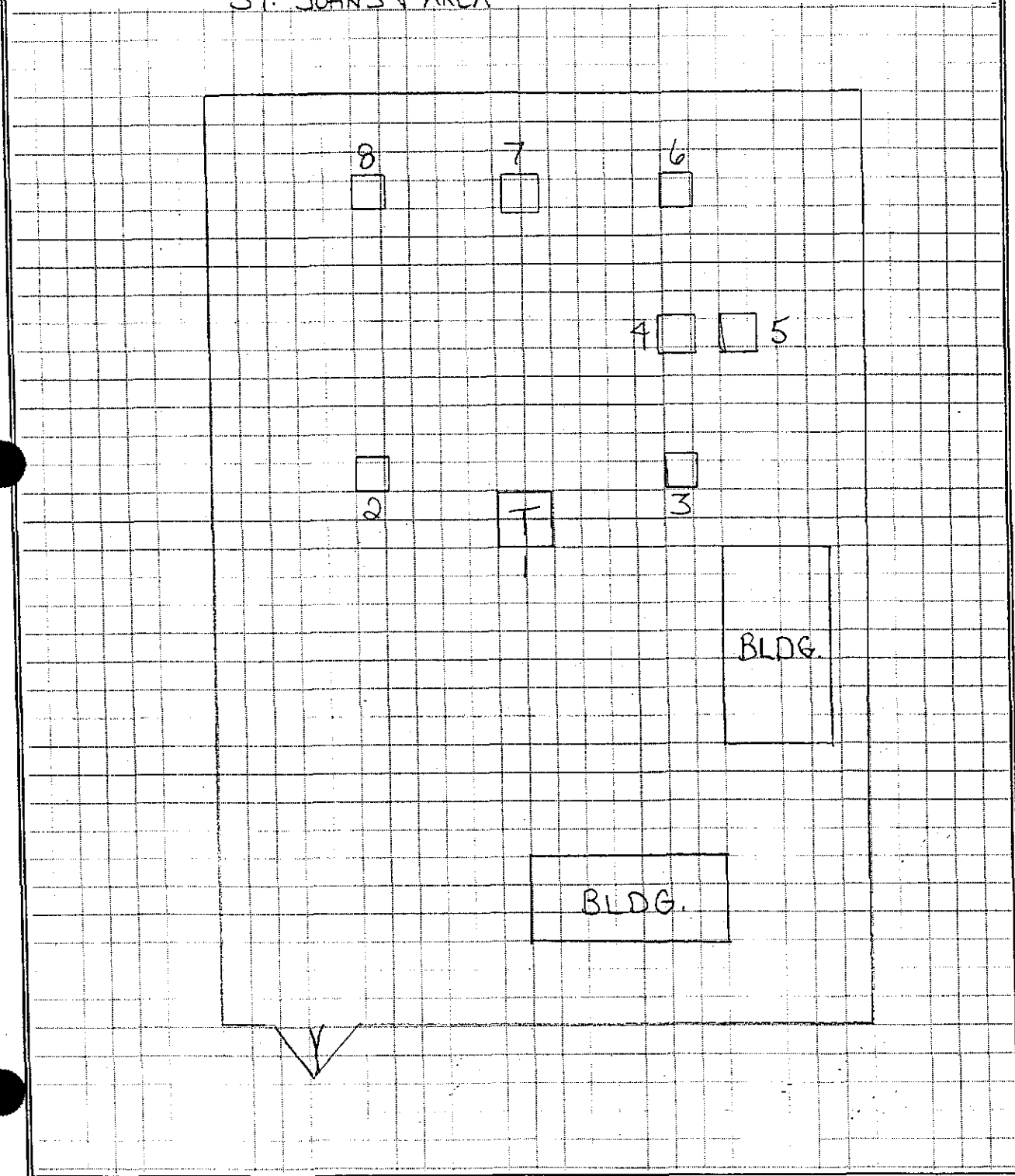
Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

☐ within 1 year
☐ within 3 years
☐ within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS
LOCATION SKETCH

SUBSTATION SITE: PEPPERELL
ST. JOHN'S + AREA



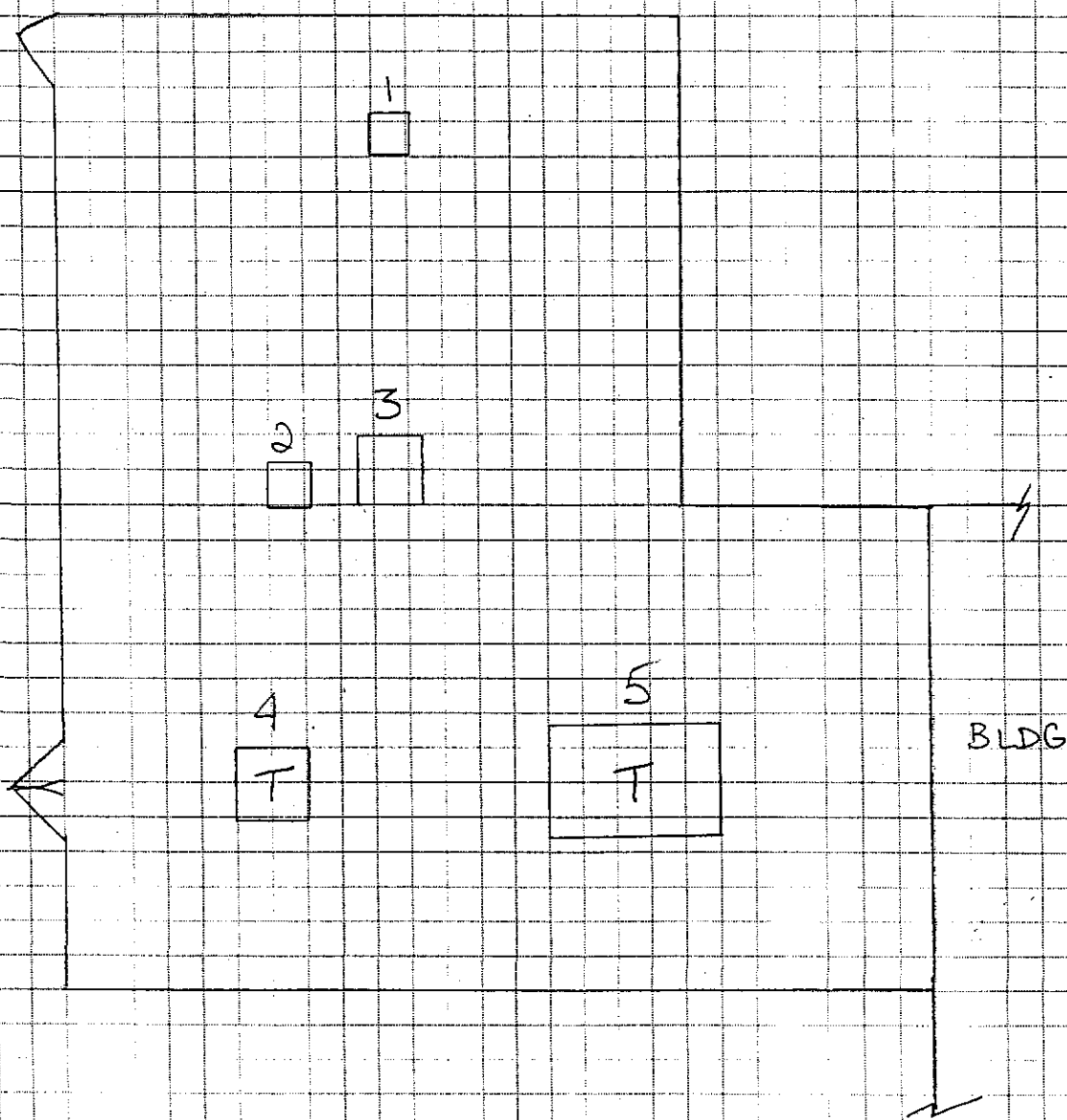
SUBSTATION SITE: Petty Harbour DATE INSPECTED: 10-Apr-02
St. John's & Area

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|-----------------------------|---|--|-----------------|
| #1 - PHR-3L-B SYNIZ Breaker | Good condition (34 Mpa). | | 4 |
| #2 - PHR-01-R Recloser | Good condition (24MPa). | | 4 |
| #3 Not In Use | Good condition (42 Mpa). | | 4 |
| #4 - T3 Transformer 200098 | Good condition (42 Mpa). | | 4 |
| #5 - T1 Transformer 200325 | Spill pan installed under transformer. Visible portion of pad indicates that an addition was poured alongside the original pad. Several hairline cracks are visible along with some scaling and pitting (28 Mpa). | Type A Repair for limited concrete that was visible. | 3 |

| <u>Priority Rating</u> | <u>Priority Description</u> | <u>Recommended Time Frame</u> |
|------------------------|--|-------------------------------|
| 1 | Immediate corrective action required | within 1 year |
| 2 | Corrective action required to avoid increasing costs to repair | within 3 years |
| 3 | General maintenance item | within 5 years |
| 4 | No corrective action or maintenance required at this time | |

INSPECTION OF CONCRETE PADS & FOUNDATIONS
LOCATION SKETCH

SUBSTATION SITE: PETTY HARBOUR
ST. JOHN'S + AREA



SUBSTATION SITE: Pierre's Brook DATE INSPECTED: 17-Apr-02
St. John's & Area

| <u>Priority Rating</u> | <u>Priority Description</u> | <u>Recommended Time Frame</u> |
|------------------------|--|-------------------------------|
| 1 | Immediate corrective action required | within 1 year |
| 2 | Corrective action required to avoid increasing costs to repair | within 3 years |
| 3 | General maintenance item | within 5 years |
| 4 | No corrective action or maintenance required at this time | |

INSPECTION OF CONCRETE PADS & FOUNDATIONS
LOCATION SKETCH

SUBSTATION SITE: PIERRE'S BROOK
ST. JOHN'S AREA

HYDRO PLANT



INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Pulpit Rock DATE INSPECTED: 9-Apr-02
St. John's & Area

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|---|--|-----------------|-----------------|
| #1 - Metering Box Structure Low Voltage | Slight spalling on one corner. Overall pad is in good condition (28MPa). | Type A Repair | 3 |
| #2 - Not In Use | Good condition. | | 4 |
| #3 - PUL-01-R Recloser | Top of pad has several hairline cracks that extend from top of pad down approx. 100mm. Overall condition of pad is fair. (37 Mpa). | Type B Repair | 2 |
| #4 - PUL-01-BP Structure Low Voltage | Good condition. | | 4 |
| #5 - Not In Use | Good condition. | | 4 |
| #6 - PUL-02-R Recloser | Four small areas of minor alligator cracking (28MPa). | Type B Repair | 3 |

Priority Rating

1
2
3
4

Priority Description

Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
within 3 years
within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Pulpit Rock DATE INSPECTED: 9-Apr-02
St. John's & Area

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|---|---|-----------------|-----------------|
| #7 - PUL-02-BP Structure Low Voltage | One small area on top of pad has aggregate exposed (34MPa). Remainder of pad is in good condition. | Type A Repair | 3 |
| #8 - Metering Tank | Good condition. | | 4 |
| #9 - Not In Use | Good condition. | | 4 |
| #10 - T1 Transformer 200345 | Three small hairline cracks, less than 1mm separation. Remainder of pad is in good condition (28MPa). | Type B Repair | 3 |
| #11- Battery Charger Cabinet Structure | Spalling and pitting in several areas on top of pad. Overall pad is in fair condition (24 Mpa). | Type A Repair | 3 |
| #12 - Structure High Voltage | Minor spalling on one corner. Overall pad is in good condition. | Type A Repair | 3 |

Priority Rating1
2
3
4Priority Description

Immediate corrective action required
 Corrective action required to avoid increasing costs to repair
 General maintenance item
 No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
 within 3 years
 within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Pulpit Rock
St. John's & Area

DATE INSPECTED: 9-Apr-02

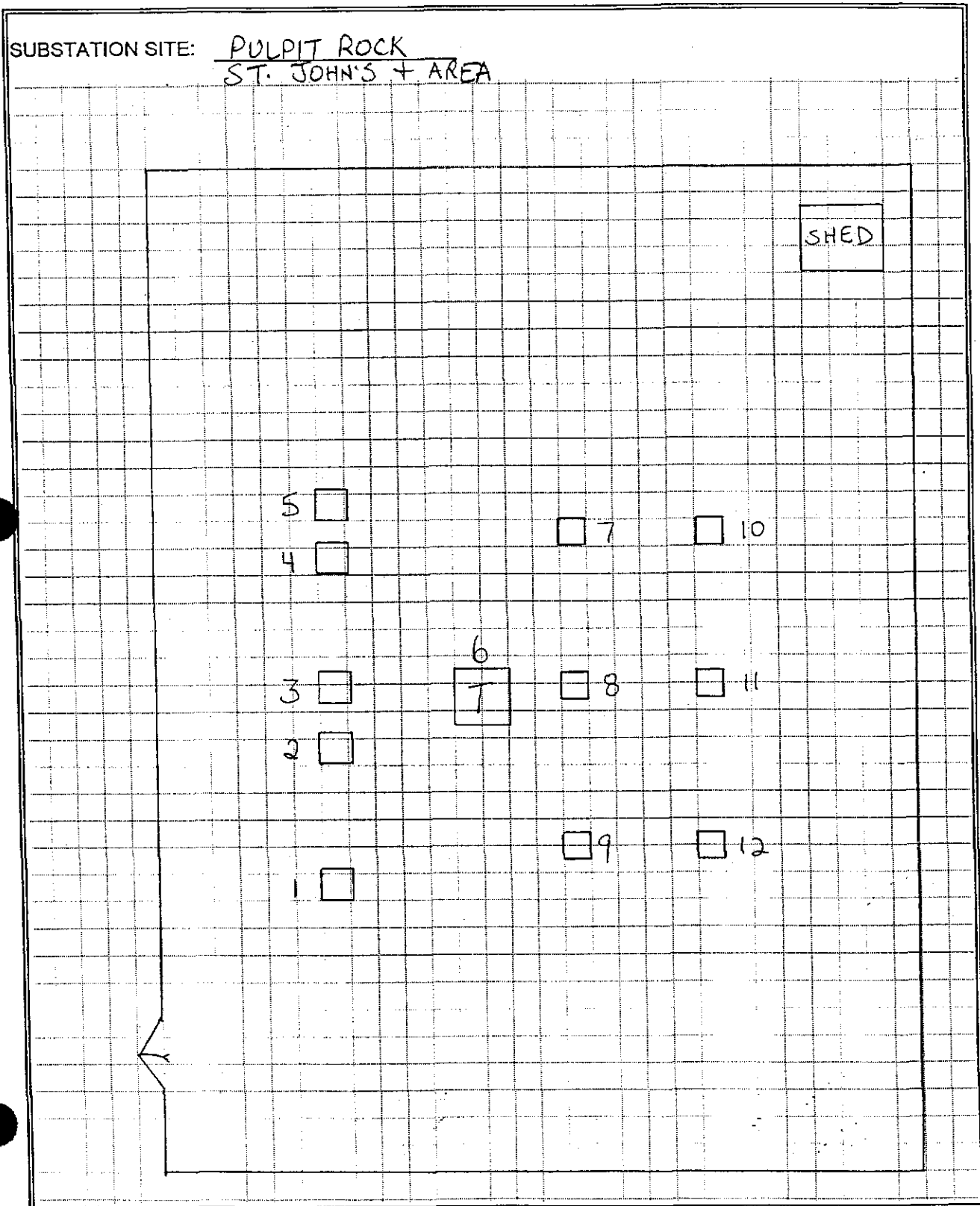
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Recommended Time Frame

- | | |
|---|--|
| 1 | Immediate corrective action required |
| 2 | Corrective action required to avoid increasing costs to repair |
| 3 | General maintenance item |
| 4 | No corrective action or maintenance required at this time |

INSPECTION OF CONCRETE PADS & FOUNDATIONS
LOCATION SKETCH

SUBSTATION SITE: PULPIT ROCK
ST. JOHN'S + AREA



INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Ridge Road DATE INSPECTED: 10-Apr-02
St. John's & Area

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|--|--|--|-----------------|
| #1 - T1 Transformer 200188 | Several minor hairline cracks on top surface of pad. Overall pad is in fair condition (44 Mpa). | Type B Repair | 3 |
| #2 - T2 Transformer 200228 | Several minor hairline cracks and patches of minor alligator cracking on top surface of pad. Remainder of pad is in good condition (58 Mpa). | | 4 |
| #3 - RRD-32L-DL Structure High Voltage | Alligator and associated hairline cracking throughout pad. Some of these cracks extend down through pad approx. 200mm with a separation of 2mm. One corner has potential to separate from main portion of pad if no action is taken. | Type C Repair | 1 |
| #4 - Structure High Voltage | Good condition (44 Mpa). | | 4 |
| #5 - RRD-T2-A Structure High Voltage | Good condition (44 Mpa). | | 4 |
| #6 - 30L-B Sul Hex Breaker | Minor spalling, hairline and alligator cracking throughout top of pad (52 Mpa). | Type A Repair for spalling & Type B Repair for cracks. | 2 |

Priority Rating

1
2
3
4

Priority Description

Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
within 3 years
within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Ridge Road DATE INSPECTED: 10-Apr-02
St. John's & Area

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|--|---|-------------------|-----------------|
| #7 - RRD-T3-A Structure High Voltage | Good condition (54 Mpa). | | 4 |
| #8 - RRD-67L-DB Structure High Voltage | Slight spalling on corners. Remainder of pad is in good condition (50 Mpa). | Type A Repair | 3 |
| #9 - 67L-B 3ul Hex Breaker | Alligator cracking and associated hairline cracking (approx. 150mm long and less than 1mm separation). Remainder of pad is in fair condition (56 Mpa). | Type B Repair | 3 |
| #10 - Structure High Voltage | Good condition (46 Mpa). | | 4 |
| #11 - 32L-B Sul Hex Breaker | Minor alligator and hairline cracking, pitting and spalling. Slight damage on pad, possibly as a result of truck outriggers, with an area of exposed aggregate. Overall condition is fair (46 Mpa). | Type A & B Repair | 2 |
| #12 - T3- Transformer 200272 | Good condition (26 Mpa). | | 4 |

Priority Rating

1
2
3
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Priority Description

Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

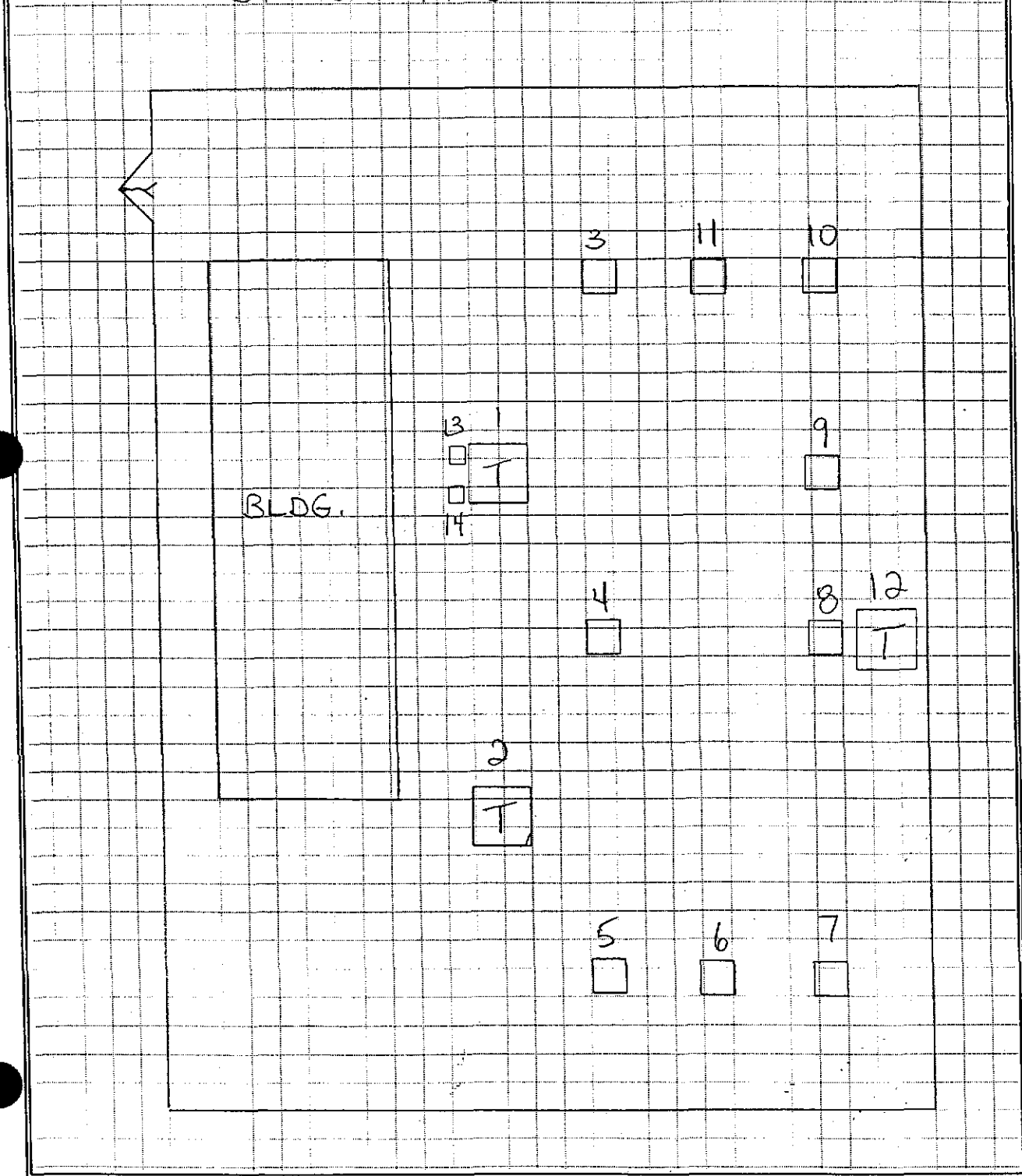
within 1 year
within 3 years
within 5 years

SUBSTATION SITE: Ridge Road DATE INSPECTED: 10-Apr-02
St. John's & Area

| <u>Priority Rating</u> | <u>Priority Description</u> | <u>Recommended Time Frame</u> |
|------------------------|--|-------------------------------|
| 1 | Immediate corrective action required | within 1 year |
| 2 | Corrective action required to avoid increasing costs to repair | within 3 years |
| 3 | General maintenance item | within 5 years |
| 4 | No corrective action or maintenance required at this time | |

INSPECTION OF CONCRETE PADS & FOUNDATIONS
LOCATION SKETCH

SUBSTATION SITE: RIDGE ROAD
ST. JOHN'S 4 AREA



INSPECTION OF CONCRETE PADS & FOUNDATIONS

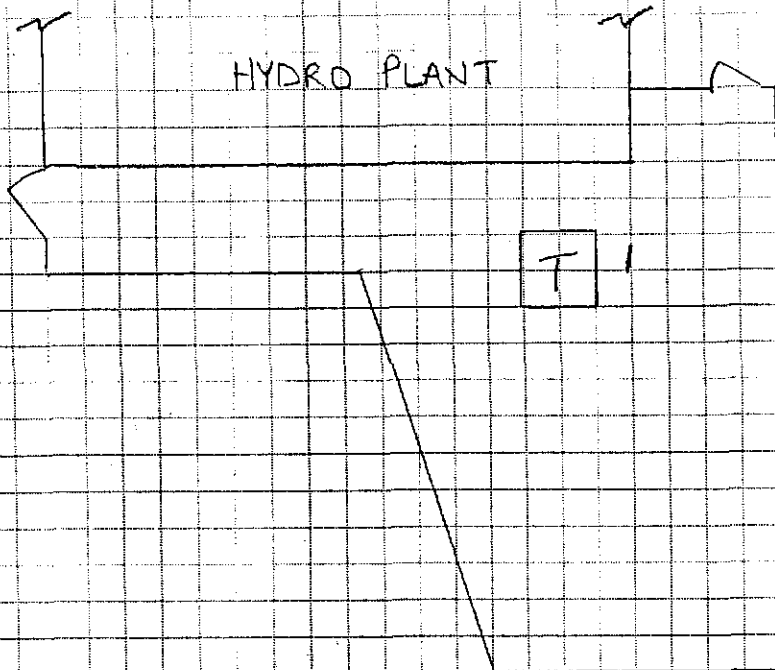
DATE INSPECTED: 17-Apr-02

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| <u>Priority Rating</u> | <u>Priority Description</u> | <u>Recommended Time Frame</u> |
|------------------------|--|-------------------------------|
| 1 | Immediate corrective action required | within 1 year |
| 2 | Corrective action required to avoid increasing costs to repair | within 3 years |
| 3 | General maintenance item | within 5 years |
| 4 | No corrective action or maintenance required at this time | |

INSPECTION OF CONCRETE PADS & FOUNDATIONS
LOCATION SKETCH

SUBSTATION SITE: ROCKY POND
ST. JOHN'S AREA



INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Seal Cove (Upper Section) DATE INSPECTED: 15-Apr-02
St. John's & Area

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|--|--|--|-----------------|
| #1 - Structure High Voltage | Small pad has hairline cracking throughout one side (this area is partly eroded away portions of concrete can be removed with boot), overall small pad in poor condition 42 Mpa. Main pad is in fair condition, with chipping and alligator cracking one corner. | Type A Repair for large pad and replace smaller pad section. | 1 |
| #2 - Structure High Voltage | Small pad has two minor hairline cracks, otherwise pad is in good condition (28 Mpa) | Type B Repair | 3 |
| #3 - SCV-38L-DL Structure High Voltage | Small pad has minor alligator cracking on top surface, remainder of small pad in fair condition (42 Mpa). Main pad has alligator cracking through top surface with one hairline crack on one corner that extends down side approx. 250mm. | Type B Repair | 2 |
| #4 - 38L-B Oil Circuit Breaker | Good condition (22 Mpa). | | 4 |
| #5 - 38L-BP Structure High Voltage | Small pad is in good condition (36 Mpa). Main pad has alligator cracking on top and side surfaces (36 Mpa). | Type B Repair | 2 |
| #6 - T2-FD Structure High Voltage | One small area on top of pad is pitted. Remainder of pad is in good condition (50 Mpa). | Type A Repair | 3 |

Priority Rating

1
2
3
4

Priority Description

Immediate corrective action required
 Corrective action required to avoid increasing costs to repair
 General maintenance item
 No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
 within 3 years
 within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Seal Cove (Upper Section) DATE INSPECTED: 15-Apr-02
St. John's & Area

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|---------------------------------------|---|---|-----------------|
| #7 - T2 Transformer 200121 | Spill pan installed under transformer. Addition poured alongside original pad. Visible section of pad seems to be in good condition (24 Mpa). | | 4 |
| #8 - SCV-T2-A Structure High Voltage | Minor alligator cracking on top and side surfaces of pad. Overall in fair condition (50 Mpa). | Type B Repair | 2 |
| #9 - T1-A Structure High Voltage | Good condition (40 Mpa). | | 4 |
| #10 - T1 Transformer 200283 | Spill pan installed under transformer. Visible portion of pad shows signs of alligator cracking (42 Mpa). | Type B Repair based on limited visibility of concrete | 3 |
| #11 - SCV-T1-A Structure High Voltage | Good condition (44 Mpa). | | 4 |
| #12 - Structure High Voltage | Small pad is in good condition (44 Mpa). Main portion of pad has minor alligator cracking on one area, otherwise pad is in good condition (34 Mpa). | | 4 |

Priority Rating

1
2
3
4

Priority Description

Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
within 3 years
within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Seal Cove (Upper Section) DATE INSPECTED: 15-Apr-02
St. John's & Area

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|--|---|--------------------|-----------------|
| #13 - Structure High Voltage | Small pad is in good condition (42 Mpa). | | 4 |
| | | | |
| | | | |
| | | | |
| #14 - SCV-52L-DB Structure High Voltage | Small pad has one corner chipped. Minor alligator cracking on sides of pad, otherwise pad is in good condition (44 Mpa) | Type A & B Repairs | 3 |
| | | | |
| | | | |
| #15 - 52L-B Sul Hex Breaker | Minor alligator cracking on top and sides of pad. One end of pad has one corner eroded away with some aggregate exposed and portions can be kicked away with boot (42 Mpa). | Type A & B Repairs | 2 |
| | | | |
| #16 - SCV-52L-BP Structure High Voltage | Minor alligator cracking on sides of pad. On top surface of pad there are two hairline cracks, overall pad is in fair condition (28 Mpa). | Type B Repair | 3 |
| | | | |
| #17 - Structure High Voltage | Two hairline cracks present that extend down from top surface of pad approx. 100mm, otherwise pad is in good condition (42 Mpa). | Type B Repair | 3 |
| | | | |
| | | | |
| #18 - Structure High Voltage | One minor hairline crack present on pad, otherwise pad is in good condition (28 Mpa) | Type B Repair | 3 |
| | | | |
| | | | |

Priority Rating

1
2
3
4

Priority Description

Immediate corrective action required
 Corrective action required to avoid increasing costs to repair
 General maintenance item
 No corrective action or maintenance required at this time

Recommended Time Frame

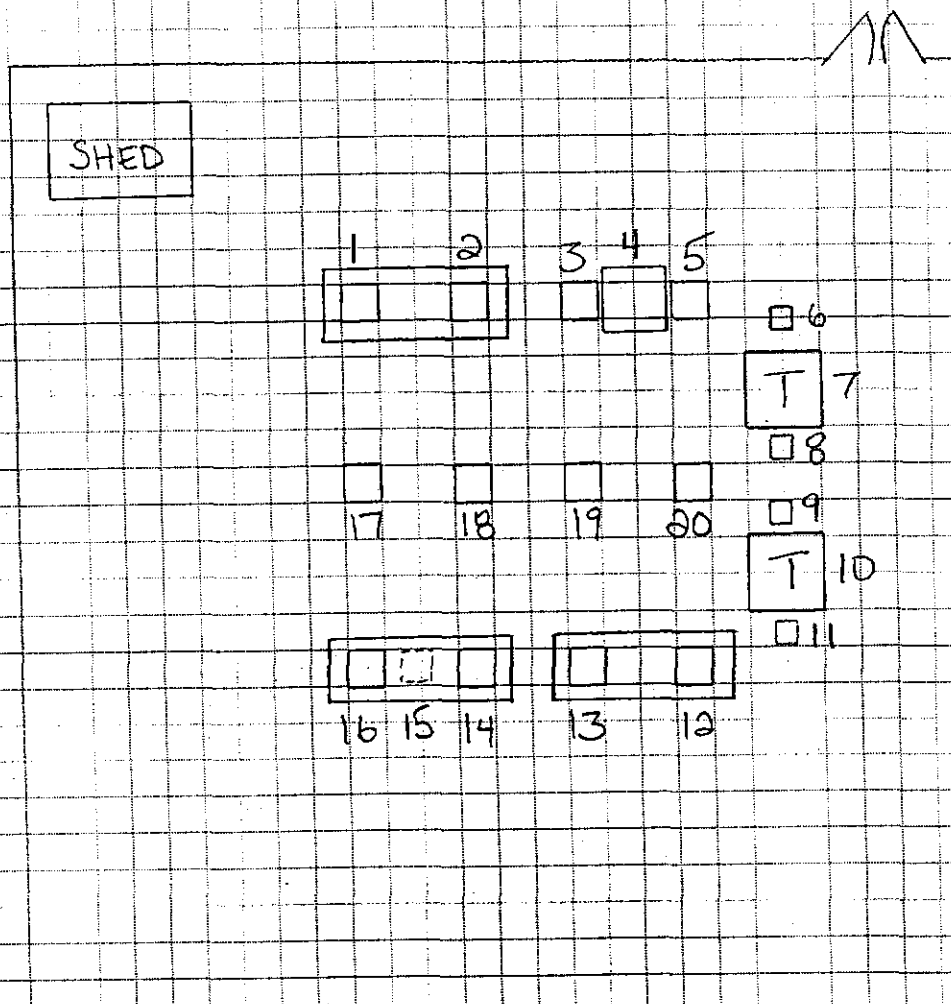
within 1 year
 within 3 years
 within 5 years

SUBSTATION SITE: Seal Cove (Upper Section) DATE INSPECTED: 15-Apr-02
St. John's & Area

| <u>Priority Rating</u> | <u>Priority Description</u> | <u>Recommended Time Frame</u> |
|------------------------|--|-------------------------------|
| 1 | Immediate corrective action required | within 1 year |
| 2 | Corrective action required to avoid increasing costs to repair | within 3 years |
| 3 | General maintenance item | within 5 years |
| 4 | No corrective action or maintenance required at this time | |

INSPECTION OF CONCRETE PADS & FOUNDATIONS
LOCATION SKETCH

SUBSTATION SITE: SEAL COVE (UPPER SITE)
ST. JOHN'S + AREA

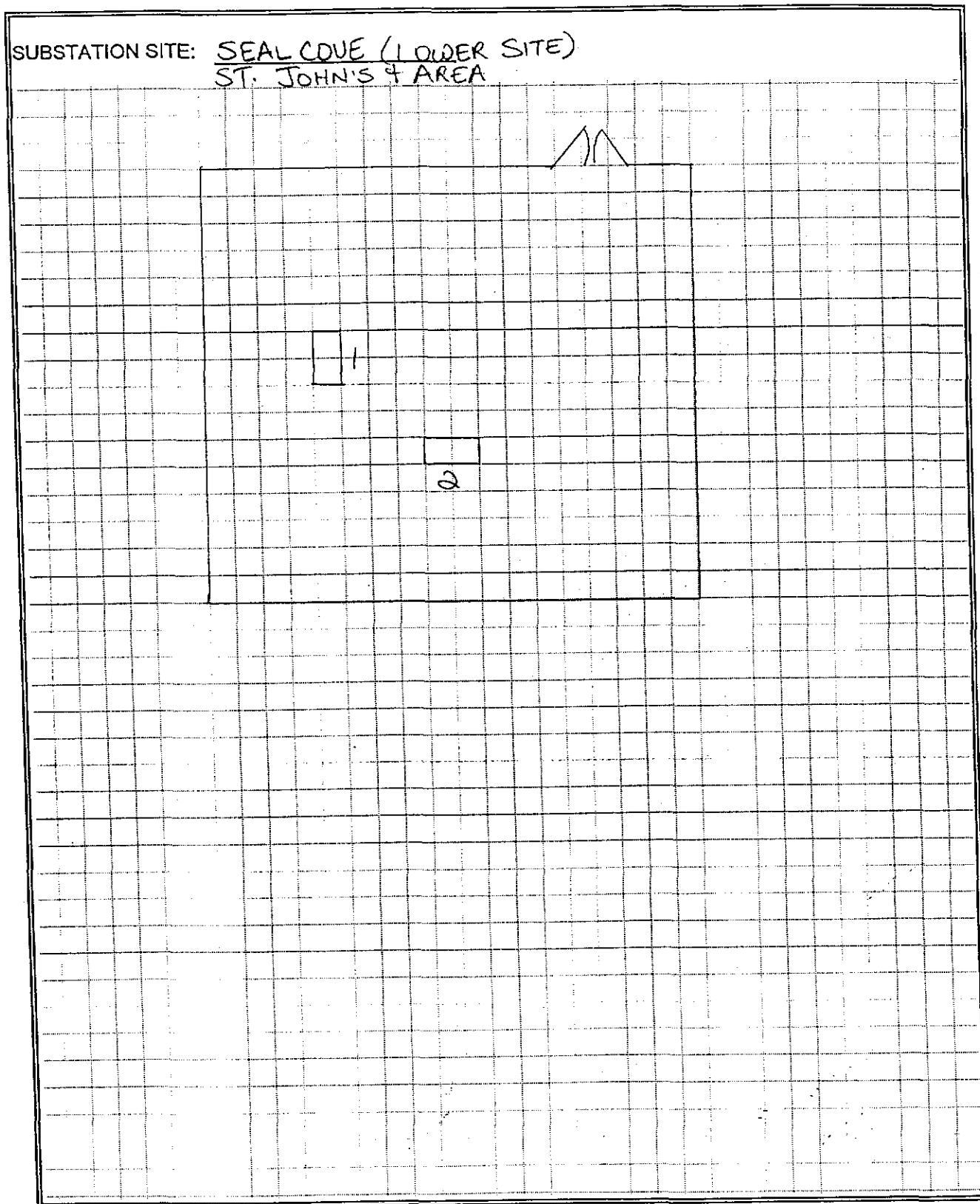


SUBSTATION SITE: Seal Cove (Lower Section) DATE INSPECTED: 15-Apr-02
St. John's & Area

| <u>Priority Rating</u> | <u>Priority Description</u> | <u>Recommended Time Frame</u> |
|------------------------|--|-------------------------------|
| 1 | Immediate corrective action required | within 1 year |
| 2 | Corrective action required to avoid increasing costs to repair | within 3 years |
| 3 | General maintenance item | within 5 years |
| 4 | No corrective action or maintenance required at this time | |

INSPECTION OF CONCRETE PADS & FOUNDATIONS
LOCATION SKETCH

SUBSTATION SITE: SEAL COVE (LOWER SITE)
ST. JOHN'S & AREA



INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: St. John's Main DATE INSPECTED: 11-Apr-02
St. John's & Area

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|--|--|-----------------|-----------------|
| #1 - 13L Pothead Structure High Voltage | Alligator cracking throughout top of pad that extend down approx. 75mm and have separated approx. 1-2mm (42 Mpa). | Type C Repair | 2 |
| #2 - 13L Pothead Structure High Voltage | Several hairline cracks on top surface of pad. Three of these cracks extend down side of pad approx. 50mm with no visible separation (40 Mpa). | Type B Repair | 3 |
| #3 - 13L Pothead Structure High Voltage | Two hairline cracks on top surface of pad with less than 1mm separation (40 Mpa). | Type B Repair | 3 |
| #4 - Not In Use | Good condition (30 Mpa). | | 4 |
| #5 - Not In Use | Good condition (40 Mpa). | | 4 |
| #6 - Not In Use | One minor hairline crack on top surface. Remainder of pad is in good condition (40 Mpa). | Type B Repair | 3 |

Priority Rating

- 1
- 2
- 3
- 4

Priority Description

- Immediate corrective action required
- Corrective action required to avoid increasing costs to repair
- General maintenance item
- No corrective action or maintenance required at this time

Recommended Time Frame

- within 1 year
- within 3 years
- within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: St. John's Main DATE INSPECTED: 11-Apr-02
St. John's & Area

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|---|---|--------------------|-----------------|
| #7 - SJM-25L-GS Structure High Voltage | Good condition. | | 4 |
| #8 - 25L-B Sul Hex Breaker | Good condition (40 Mpa). | | 4 |
| #9 - SJM-13L-DL Structure High Voltage | One corner is chipped away approx. 50mm long. Remainder of pad is in good condition. | Type A Repair | 3 |
| #10 - 13L-B Sul Hex Breaker | Alligator cracking and associated hairline cracking throughout top of pad (less than 1mm separation). Remainder of pad is in fair condition (50 Mpa). | Type B Repair | 2 |
| #11 - SJM-13L-GS Structure High Voltage | One corner is chipped away approx. 50mm long. Remainder of surface is rust covered. | Type A Repair | 3 |
| #12 - Not In Use | Additional pad poured alongside existing pad. Some scaling and minor hairline cracking (less than 1mm separation) on top surface of pad (48 Mpa). | Type A & B Repairs | 3 |

Priority Rating

1
2
3
4

Priority Description

Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
within 3 years
within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: St. John's Main DATE INSPECTED: 11-Apr-02
St. John's & Area

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|--------------------|--|--------------------|-----------------|
| #13 - Structure | Spalling on all four corners of pad, parts of corners can be moved away with boot. | Type A & B Repair | 2 |
| High Voltage | Alligator cracking throughout top surface of pad. Concrete is very brittle along top edges of pad. | | |
| | | | |
| #14 - SJM-26L-DL | Good condition. | | 4 |
| Structure | | | |
| High Voltage | | | |
| | | | |
| #15 - SJM-BTS-1 | Good condition. | | 4 |
| Structure | | | |
| High Voltage | | | |
| | | | |
| #16 - SJM-BTS-2 | Good condition (48 Mpa). | | 4 |
| Structure | | | |
| High Voltage | | | |
| | | | |
| #17 - SJM-T1-A | Minor alligator cracking on top surface. | Type A & B Repairs | 3 |
| Structure | Minor spalling on one corner. Remainder of pad is in good condition | | |
| High Voltage | | | |
| | | | |
| #18 - T1 | Two areas chipped away on top edge of surface, possibly done while moving | Type A Repair | 3 |
| Transformer 200294 | transformer. Remainder of pad is in good condition. | | |
| | | | |
| | | | |

Priority Rating

- 1
- 2
- 3
- 4

Priority Description

- Immediate corrective action required
- Corrective action required to avoid increasing costs to repair
- General maintenance item
- No corrective action or maintenance required at this time

Recommended Time Frame

- within 1 year
- within 3 years
- within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: St. John's Main DATE INSPECTED: 11-Apr-02
St. John's & Area

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|---------------------------------------|---|-----------------|-----------------|
| #19 - T4 Transformer 200117 | Good condition. | | 4 |
| | | | |
| | | | |
| #20 - SJM-05-BP Structure Low Voltage | Good condition. | | 4 |
| | | | |
| | | | |
| #21 - T4-B Oil Circuit Breaker | Good condition (30 Mpa). | | 4 |
| | | | |
| | | | |
| #22 - T4-B BP Structure Low Voltage | Good condition. | | 4 |
| | | | |
| | | | |
| #23 - SJM-01-BP Structure Low Voltage | One corner of pad is chipped. Remainder of pad is in good condition (34 Mpa). | | 4 |
| | | | |
| | | | |
| #24 - SJM-01-BP Structure Low Voltage | Minor chipping on top surface. Remainder of pad is in good condition. | Type A Repair | 3 |
| | | | |
| | | | |

Priority Rating

1
2
3
4

Priority Description

Immediate corrective action required
 Corrective action required to avoid increasing costs to repair
 General maintenance item
 No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
 within 3 years
 within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: St. John's Main DATE INSPECTED: 11-Apr-02
St. John's & Area

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|---------------------------------------|--|-----------------|-----------------|
| #25 - SJM-01 Pothead Structure | Pitting around one bolthole. Remainder of pad is in good condition. | Type A Repair | 3 |
| | | | |
| | | | |
| #26 - SJM-12-B Oil Circuit Breaker | Minor scaling on top surface. Remainder of pad is in good condition (40 Mpa). | | 4 |
| | | | |
| | | | |
| #27 - SJM-12 Pothead Structure | Pitting around one bolthole. Remainder of pad is in good condition. | Type A repair | 3 |
| | | | |
| | | | |
| #28 - SJM-12-BP Structure Low Voltage | Good condition (38 Mpa). | | 4 |
| | | | |
| | | | |
| #29 - T2 Transformer 200317 | Several areas on top surface of pad are chipped. Remainder of pad is in good condition (24 Mpa). | Type A Repair | 3 |
| | | | |
| | | | |
| #30 - Not In Use | Good condition. | | 4 |
| | | | |
| | | | |

Priority Rating

- 1
- 2
- 3
- 4

Priority Description

- Immediate corrective action required
- Corrective action required to avoid increasing costs to repair
- General maintenance item
- No corrective action or maintenance required at this time

Recommended Time Frame

- within 1 year
- within 3 years
- within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: St. John's Main DATE INSPECTED: 11-Apr-02
St. John's & Area

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|---------------------------------------|--|---|-----------------|
| #31 - Not In Use | Good condition (42 Mpa). | | 4 |
| | | | |
| | | | |
| | | | |
| #32 - Not In Use | Good condition. | | 4 |
| | | | |
| | | | |
| | | | |
| #33 - Structure High Voltage | Pitting in two areas of top surface of pad. Remainder of pad is in good condition (34 Mpa). | Type A Repair | 3 |
| | | | |
| | | | |
| | | | |
| #34 - Not In Use | Severe alligator cracking throughout top of pad. Pitting and cracking also present. | Recommend replacement if pad is to be used in future. | |
| | | | |
| | | | |
| | | | |
| #35 - SJM-T2-A Structure High Voltage | Good condition (42 Mpa). | | 4 |
| | | | |
| | | | |
| | | | |
| #36 - Not In Use | Severe alligator cracking throughout top of pad with associated hairline cracking. Overall pad is in poor condition. | Recommend replacement if pad is to be used in future. | |
| | | | |
| | | | |
| | | | |

Priority Rating

1
2
3
4

Priority Description

Immediate corrective action required
 Corrective action required to avoid increasing costs to repair
 General maintenance item
 No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
 within 3 years
 within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: St. John's Main DATE INSPECTED: 11-Apr-02
St. John's & Area

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|--|---|-----------------|-----------------|
| #37 - SJM-BTS-4 Structure High Voltage | Good condition (42 Mpa). | | 4 |
| #38 - 4L Pothead Structure | Minor amount of pitting on top surface of pad. Remainder of pad is in good condition. | Type A Repair | 3 |
| #39 - 4L Pothead Structure | Good condition (34 Mpa). | | 4 |
| #40 - 4L Pothead Structure | Minor amount of pitting on top surface of pad. Remainder of pad is in good condition. | Type A Repair | 3 |
| #41 - SJM-4L Structure High Voltage | Pitting in several areas of top surface of pad. Remainder of pad is in good condition (26 Mpa). | Type A Repair | 3 |
| #42 - Structure High Voltage | Minor hairline cracking on top surface (less than 1mm separation) that extend down approx. 100mm. | Type B Repair | 2 |

Priority Rating

1
2
3
4

Priority Description

Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
within 3 years
within 5 years

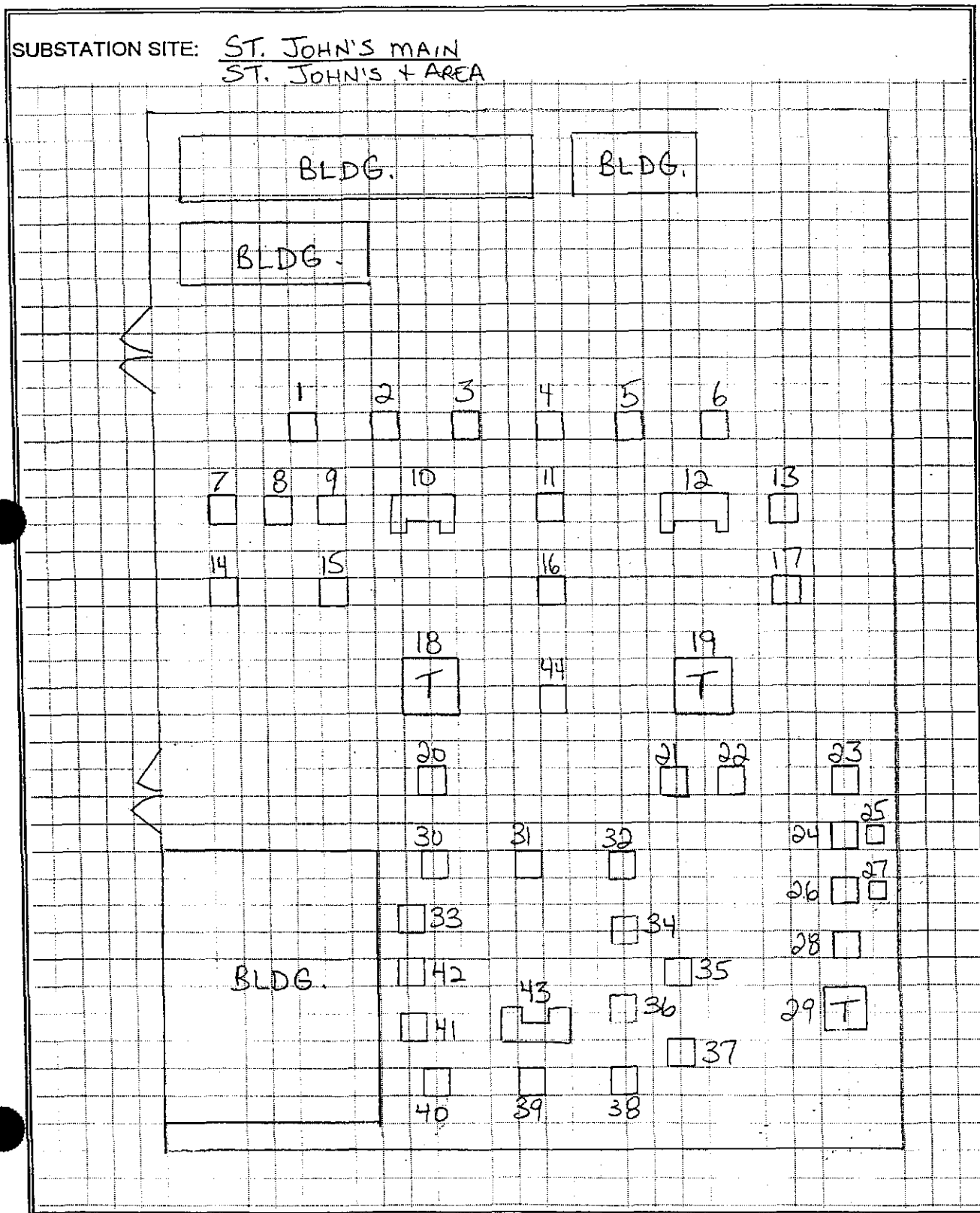
SUBSTATION SITE: St. John's Main DATE INSPECTED: 11-Apr-02
St. John's & Area

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| <u>Priority Rating</u> | <u>Priority Description</u> | <u>Recommended Time Frame</u> |
|------------------------|--|-------------------------------|
| 1 | Immediate corrective action required | within 1 year |
| 2 | Corrective action required to avoid increasing costs to repair | within 3 years |
| 3 | General maintenance item | within 5 years |
| 4 | No corrective action or maintenance required at this time | |

INSPECTION OF CONCRETE PADS & FOUNDATIONS
LOCATION SKETCH

SUBSTATION SITE: ST. JOHN'S MAIN
ST. JOHN'S + AREA



INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Stamps Lane

DATE INSPECTED: April 5, 2002

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|--------------------|--|--|-----------------|
| #1 SLA-T1-A | Top 800mm of foundation has severe | Type D repair at a minimum. However if | 1 |
| Structure | alligator cracking and numerous other | it is observed during the removal of the | |
| High Voltage | cracks >1mm. Concrete also chipped and | disintegrated concrete that the cracking | |
| | spalled off along top edges & corners with | continues extensively below grade then a | |
| | rusty appearance on surface. Over all this | Type E repair would be recommended. | |
| | foundation is in poor condition. (32MPa) | | |
| #2 14L-B | Good Condition (36 Mpa) | | 4 |
| Sul Hex | | | |
| Breaker | | | |
| | | | |
| | | | |
| #3 | Top 800mm of foundation has severe | Type D repair at a minimum. However if | 1 |
| SLA-14L-DL | alligator cracking and numerous other | it is observed during the removal of the | |
| Structure | cracks >1mm. Concrete also chipped and | disintegrated concrete that the cracking | |
| High Voltage | spalled off along top edges & corners with | continues extensively below grade then a | |
| | little support remaining for structure base | Type E repair would be recommended. | |
| | base plates. Poor condition overall. | | |
| #4 31L-B | | | 4 |
| Oil Breaker | Good Condition (40MPa) | | |
| | | | |
| | | | |
| | | | |
| #5 SLA-31L- | Top 300mm of foundation has alligator | Type D repair at a minimum. However if | 1 |
| DL | cracking and numerous other cracks >1mm | it is observed during the removal of the | |
| Structure | Concrete is chipped and spalled off on one | disintegrated concrete that the cracking | |
| High Voltage | corner | continues extensively below grade then a | |
| | | Type E repair would be recommended. | |
| | | | |
| #6 69-B | The surface of the middle portion of the pad | Type A repair | 2 |
| Sul Hex | is scaling off (approx. 5mm layer) | | |
| Breaker | Remainer of concrete pad is in Good | | |
| | Condition. (38MPa) | | |
| | | | |
| | | | |

Priority Rating

- 1
- 2
- 3
- 4

Priority Description

- Immediate corrective action required
- Corrective action required to avoid increasing costs to repair
- General maintenance item
- No corrective action or maintenance required at this time

Recommended Time Frame

- within 1 year
- within 3 years
- within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Stamps Lane DATE INSPECTED: April 5, 2002

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|--|--|---|-----------------|
| #7-SLA-69L-DL Structure High Voltage | Several minor cracks (<1mm) Fair to Good Condition. (37MPa) Note: Foundation completely covered with stone. | Type B repair | 3 |
| #8 - SLA-T2-A Structure High Voltage | The top edges are deteriorated and spalled off. Some spalling & chipping on top surface. Note: Foundation completely covered with stone. | Type D minor repair. | 2 |
| #9 - SLA-BTS-1 Structure High Voltage | Top 300mm of foundation has severe alligator cracking and numerous other cracks >1mm. Concrete also chipped and spalled off along top edges & corners with rusty appearance on surface. Over all this foundation is in poor condition. (34MPa) | Type D repair at a minimum. However if it is observed during the removal of the disintegrated concrete that the cracking continues extensively below grade then a Type E repair would be recommended. | 1 |
| #10 - T1-200220 Transformer | Good Condition (43MPa) | | 4 |
| #11 - T2-20013 Transformer | Good Condition (34MPa) | | 4 |
| #12 - SLA-BTS-5 Structure High Voltage | One corner has a crack extending outward from anchor bolt across corner. Remainder of foundation in good condition | Type C repair | 2 |

Priority Rating

1
2
3
4

Priority Description

Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
within 3 years
within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Stamps Lane DATE INSPECTED: April 5, 2002

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|---|--|-----------------|-----------------|
| #13 - 70L-B Sul Hex Breaker | Good Condition (40MPa) | | 4 |
| | | | |
| | | | |
| #14 - SLA-15L -DB Structure High Voltage | Good Condition (40MPa) | | 4 |
| | | | |
| | | | |
| #15 - 15-LB Oil Breaker | Good condition with exception of areas with roughened surface because of weathered cement sand matrix. (25MPa) | Type A repair | 3 |
| | Note: Hard to get smooth surface for accurate impact hammer reading. | | |
| #16 - SLA-13L -DB Structure High Voltage | Fair to Good Condition Starting to show several very small cracks on top and one on side. (<1mm) | Type A | 3 |
| | | | |
| | | | |
| #17 - 13-L-B Sul Hex Breaker | Good Condition (46MPa) | | 4 |
| | | | |
| | | | |
| #18 - No # | Good Condition | | 4 |
| | | | |
| | | | |

Priority Rating

- 1
- 2
- 3
- 4

Priority Description

- Immediate corrective action required
- Corrective action required to avoid increasing costs to repair
- General maintenance item
- No corrective action or maintenance required at this time

Recommended Time Frame

- within 1 year
- within 3 years
- within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Stamps Lane DATE INSPECTED: April 5, 2002

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|--|--|-----------------|-----------------|
| #19 - SLA-T3-A Structure High Voltage | Good Condition (38MPa) | | 4 |
| | | | |
| | | | |
| #20 - SLA-T4-A Structure High Voltage | Good Condition with exception of one corner with a crack originating from anchor bolt and extending out to side. | Type C | 2 |
| | | | |
| | | | |
| #21 - T4-20033 Transformer | Good Condition | | 4 |
| | | | |
| | | | |
| #22 - T3-20024 Transformer | Good Condition (38MPa) | | 4 |
| | | | |
| | | | |
| #23 - SLA-08-DL Structure Low Voltage | Good Condition With only very minor alligator crackin on top surface. 42MPa. | | 4 |
| | | | |
| | | | |
| #24 - SLA-08-B Oil Breaker | Good Condition | | 4 |
| | | | |
| | | | |

Priority Rating

1
2
3
4

Priority Description

Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
within 3 years
within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Stamps Lane DATE INSPECTED: April 5, 2002

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|---|-------------------|-----------------|-----------------|
| #25 - SLA-09-B Oil Breaker | Good Condition | | 4 |
| | | | |
| | | | |
| | | | |
| #26 - SLA-09 -DL Structure Low Voltage | Good Condition | | 4 |
| | | | |
| | | | |
| | | | |
| #27 - SLA-10B Oil Breaker | Good Condition | | 4 |
| | | | |
| | | | |
| | | | |
| #28 - SLA-T3-B Oil Breaker | Good Condition | | 4 |
| | | | |
| | | | |
| | | | |
| #29 - SLA-T3 -B-BP Structure Low Voltage | Good Condition | | 4 |
| | | | |
| | | | |
| | | | |
| #30 - SLA-T4-D Structure Low Voltage | Good Condition | | 4 |
| | | | |
| | | | |
| | | | |

Priority Rating

1
2
3
4

Priority Description

Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
within 3 years
within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Stamps Lane DATE INSPECTED: April 5, 2002

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|---|--|-----------------|-----------------|
| #31 - SLA-T4-B Oil Breaker | Good Condition with exception of one side where the cement sand matrix is deteriorating and surface is coarse. | Type A Repair | 3 |
| | | | |
| | | | |
| #32 - SLA-11-B Oil Breaker | Good Condition with exception of one side where the cement sand matrix is deteriorating and surface is coarse. | Type A Repair | 3 |
| | (42MPa) | | |
| | | | |
| #33 - SLA-11 -DL Structure Low Voltage | Good Condition with exception of one side where the cement sand matrix is deteriorating and surface is coarse. | Type A Repair | 3 |
| | (40MPa) | | |
| | | | |
| #34 - SLA-12DB Structure Low Voltage | Good Condition (40MPa) | | 4 |
| | | | |
| | | | |
| #35 - SLA-12B Oil Breaker | Good Condition (42MPa) | | 4 |
| | | | |
| | | | |
| #36 - SLA-13-B Sul Hex Breaker | Good Condition (39MPa) | | 4 |
| | | | |
| | | | |

Priority Rating

1
2
3
4

Priority Description

Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
within 3 years
within 5 years

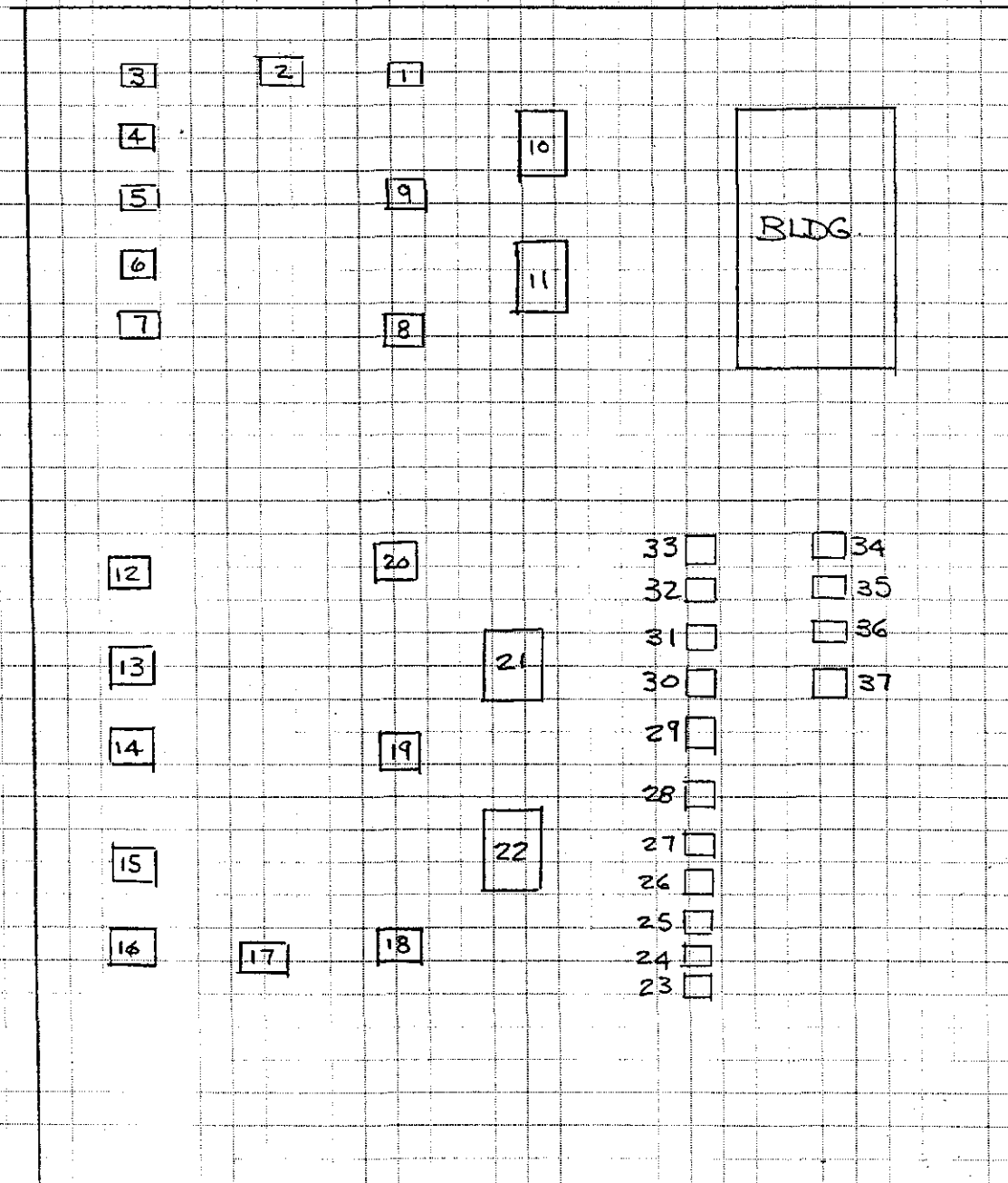
SUBSTATION SITE: Stamps Lane DATE INSPECTED: April 5, 2002

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| <u>Priority Rating</u> | <u>Priority Description</u> | <u>Recommended Time Frame</u> |
|------------------------|--|-------------------------------|
| 1 | Immediate corrective action required | within 1 year |
| 2 | Corrective action required to avoid increasing costs to repair | within 3 years |
| 3 | General maintenance item | within 5 years |
| 4 | No corrective action or maintenance required at this time | |

INSPECTION OF CONCRETE PADS & FOUNDATIONS
LOCATION SKETCH

SUBSTATION SITE: STAMPS LANE
ST. JOHN'S & AREA



INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Topsail DATE INSPECTED: 12-Apr-02
St. John's & Area

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|----------------------------------|---|-----------------------------------|-----------------|
| #1 - Structure Low Voltage | Pad inspected through wire fence (no access). Pad is approx. 2m above ground with cracks extending down from top of pad approx. 1.2m. Severe chipping also present with aggregate exposed in several areas. Overall pad is in poor condition. | Type E Repair (Total Replacement) | 1 |
| #2 - Structure Low Voltage | Pad inspected through wire fence (no access). Pad is approx. 2m above ground with cracks extending down from top of pad approx. 1.2m. Chipping also present with aggregate exposed in several areas. Overall pad is in poor condition (44 Mpa). | Type E Repair (Total Replacement) | 1 |
| #3 - Structure Low Voltage | Minor chipping and cracking on edges of pad. Remainder of pad is in fair condition. | Type B Repair | 2 |
| #4 - Structure Low Voltage | Minor scaling on top surface. Remainder of pad is in good condition (44 Mpa). | | 4 |
| #5 - T1- Transformer | Severe chipping and cracking on top surface of pad. Portions of concrete and aggregate can be removed with boot. Some areas on top surface are heavily pitted. Overall pad is in poor condition (44 Mpa). | Type D Repair | 2 |

Priority Rating

1
2
3
4

Priority Description

Immediate corrective action required
 Corrective action required to avoid increasing costs to repair
 General maintenance item
 No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
 within 3 years
 within 5 years

0.000

0.000

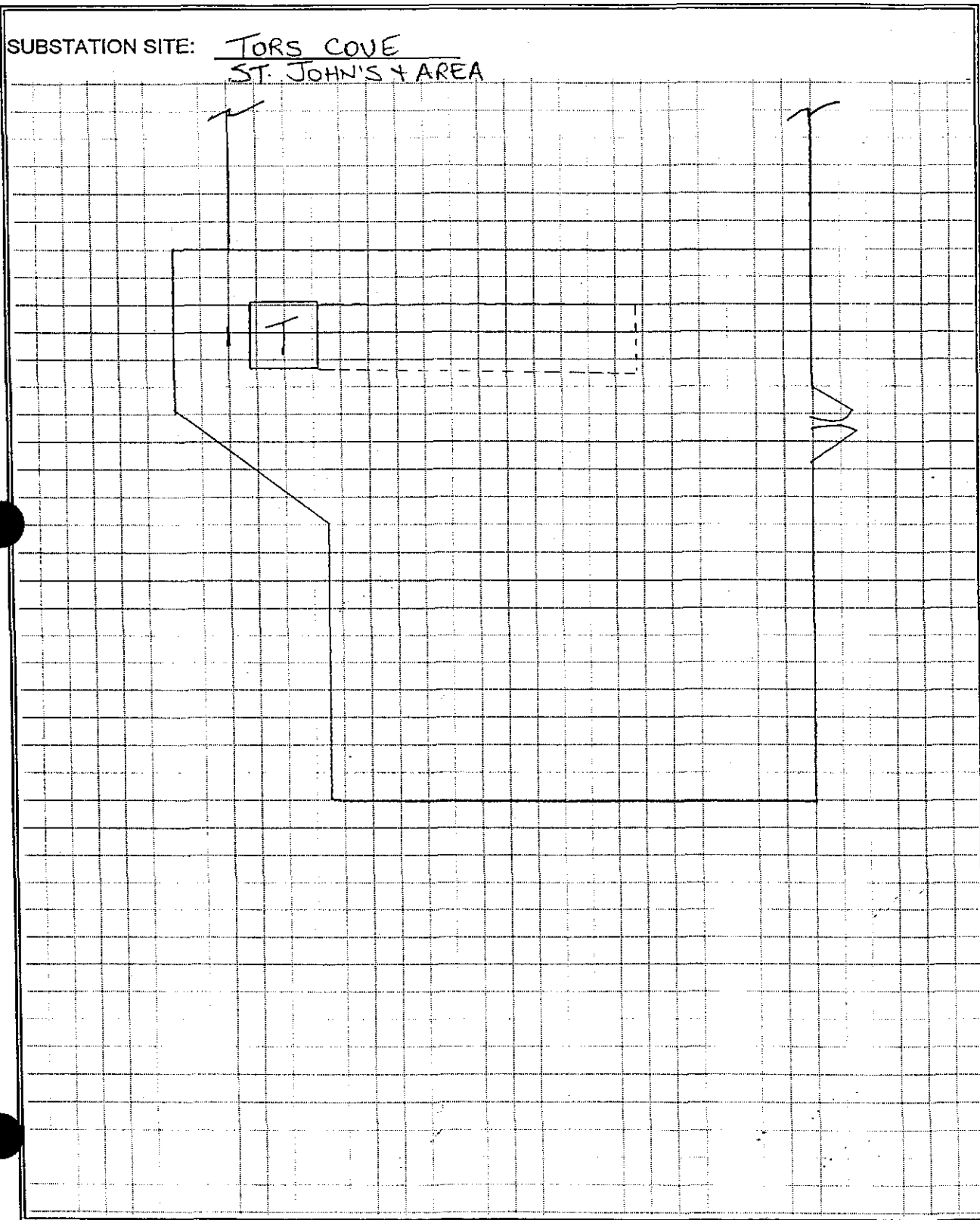


SUBSTATION SITE: Tors Cove DATE INSPECTED: 17-Apr-02
St. John's & Area

| <u>Priority Rating</u> | <u>Priority Description</u> | <u>Recommended Time Frame</u> |
|------------------------|--|-------------------------------|
| 1 | Immediate corrective action required | within 1 year |
| 2 | Corrective action required to avoid increasing costs to repair | within 3 years |
| 3 | General maintenance item | within 5 years |
| 4 | No corrective action or maintenance required at this time | |

INSPECTION OF CONCRETE PADS & FOUNDATIONS
LOCATION SKETCH

SUBSTATION SITE: TORS COVE
ST. JOHN'S AREA



INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Virginia Waters DATE INSPECTED: 10-Apr-02
St. John's & Area

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|-------------------------------------|---|-----------------|--------------------|
| #1 - VIR-07-B Sul Hex Breaker | Good condition. | | 4 |
| #2 - VIR-04 Pothead Structure | Minor pitting in several areas on top surface of pad. Remainder of pad is in fair condition (28 Mpa). | Type A Repair | 3 |
| #3 - VIR-05 Pothead Structure | Good condition. | | 4 |
| #4 - Not In Use | Good condition. | | 4 |
| #5 - Not In Use | Good condition. | | 4 |
| #6 - VIR-03 Pothead Structure | Good condition (30 Mpa). | | 4 |

Priority Rating

1
2
3
4

Priority Description

Immediate corrective action required
 Corrective action required to avoid increasing costs to repair
 General maintenance item
 No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
 within 3 years
 within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Virginia Waters DATE INSPECTED: 10-Apr-02
St. John's & Area

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|---|--|-----------------|-----------------|
| #7 - VIR-01 Pothead Structure | Several areas on top surface of pad show pitting and spalling on edges. As a result some aggregate is exposed. Overall pad is in fair condition (28 Mpa). | Type A Repair | 3 |
| #8 - VIR-07-BP Structure Low Voltage | Good condition. | | 4 |
| #9 - VIR-04-BP Structure Low Voltage | One minor hairline crack (less than 1mm separation). Minor pitting and spalling on several areas of top surface of pad. Overall pad is in fair condition (42 Mpa). | Type A Repair | 3 |
| #10 - VIR-04 Sul Hex Breaker | Small amount of pitting on top surface of pad. Remainder of pad is in good condition. | Type A Repair | 3 |
| #11 - VIR-05 Oil Circuit Breaker | Good condition. | | 4 |
| #12 - VIR-05-BP Structure Low Voltage | Good condition. | | 4 |

Priority Rating

1
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3
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Priority Description

Immediate corrective action required
 Corrective action required to avoid increasing costs to repair
 General maintenance item
 No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
 within 3 years
 within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Virginia Waters DATE INSPECTED: 10-Apr-02
St. John's & Area

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|---|---|-----------------|-----------------|
| #13 - VIR-02 Oil Circuit Breaker | Minor pitting on top surface of pad. Remainder of pad is in good condition (34 Mpa). | | 4 |
| | | | |
| | | | |
| #14 - T2-B Oil Circuit Breaker | Good condition. | | 4 |
| | | | |
| | | | |
| #15 - BTS-2 Structure Low Voltage | Good condition (42 Mpa). | | 4 |
| | | | |
| | | | |
| #16 - T1-D Structure Low Voltage | Minor amount of pitting on top surface of pad. Remainder of pad is in good condition. | Type A Repair | 3 |
| | | | |
| | | | |
| #17 - T1-B Oil Circuit Breaker | Small amounts of pitting and spalling on top surface and edges of pad. Overall pad is in fair condition (36 Mpa). | Type A Repair | 3 |
| | | | |
| | | | |
| #18 - VIR-06 Sul Hex Breaker | Minor pitting on top surface of pad. Remainder of pad is in good condition. | Type A Repair | 3 |
| | | | |
| | | | |

Priority Rating

1
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3
4

Priority Description

Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
within 3 years
within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Virginia Waters DATE INSPECTED: 10-Apr-02
St. John's & Area

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|---|--|-----------------|-----------------|
| #19 - VIR-06-BP Structure Low Voltage | Spalling on one corner. Remainder of pad is in fair condition (42 Mpa). | Type A Repair | 3 |
| #20 - VIR-03 Oil Circuit Breaker | Small amounts of pitting on top surface. Remainder of pad is in good condition. | Type A Repair | 3 |
| #21 - VIR-01 Oil Circuit Breaker | Spalling in several areas of pad. Remainder of pad is in fair condition (28 Mpa). | Type A Repair | 3 |
| #22 - VIR-01-BP Structure Low Voltage | Minor pitting on top surface. Remainder of pad is in good condition. | Type A Repair | 3 |
| #23 - T3 Transformer 200336 | Good condition (32 Mpa). | | 4 |
| #24 - T1 Transformer 200256 | Addition was poured alongside existing pad. Some minor hairline cracks on top surface. Remainder of pad is in good condition (28 Mpa). | Type B Repair | 3 |

Priority Rating

1
2
3
4

Priority Description

Immediate corrective action required
 Corrective action required to avoid increasing costs to repair
 General maintenance item
 No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
 within 3 years
 within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Virginia Waters DATE INSPECTED: 10-Apr-02
St. John's & Area

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|---------------------|---|-----------------|-----------------|
| #25 - T2-A | Good condition. | | 4 |
| Structure | | | |
| High Voltage | | | |
| | | | |
| | | | |
| #26 - T1-A | Minor pitting on top surface. Remainder of pad is in good condition (34 Mpa). | Type A Repair | 3 |
| Structure | | | |
| High Voltage | | | |
| | | | |
| | | | |
| 27 - | Minor spalling on top edges of pad. | Type A Repair | 3 |
| Structure | Remainder of pad is in good condition. | | |
| High Voltage | | | |
| | | | |
| | | | |
| #28 - 59L- | Good condition (34 Mpa). | | 4 |
| BP | | | |
| Structure | | | |
| High Voltage | | | |
| | | | |
| #29 - 59L-B | One side of pad has two areas where aggregate is exposed and paste is removed. Remainder of pad is in good condition. | Type A Repair | 3 |
| Oil Circuit Breaker | | | |
| | | | |
| | | | |
| #30 - 59L-GS | One hairline crack that extends from top of pad down approx. 100mm, less than 1mm separation. Remainder of pad is in good condition (28 Mpa). | Type B Repair | 3 |
| Structure | | | |
| High Voltage | | | |
| | | | |
| | | | |

Priority Rating

1
2
3
4

Priority Description

Immediate corrective action required
 Corrective action required to avoid increasing costs to repair
 General maintenance item
 No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
 within 3 years
 within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Virginia Waters
St. John's & Area

DATE INSPECTED: 10-Apr-02

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|---|--|-----------------|-----------------|
| #31 - 74L-B Oil Circuit Breaker | One small area of spalling. Another small on top of pad contains a patch of alligator cracks. Remainder of pad is in fair condition. | Type A Repair | 3 |
| #32 - 74L-DB Structure High Voltage | Pitting and spalling throughout several areas on top surface of pad. Remainder of pad is in good condition (42 Mpa). | Type A Repair | 3 |
| #33 - 58L-B Oil Circuit Breaker | Good condition. | | 4 |
| #34 - 58L-GS Structure High Voltage | Good condition (42 Mpa) | | 4 |
| #35 - 34L-B Oil Circuit Breaker | Good condition. | | 4 |
| #36 - 34L-GS Structure High Voltage | Four hairline cracks that run from midway on each side of pad down approx. 150mm long and have approx 1mm separation (42 Mpa). | Type C Repair | 2 |

Priority Rating

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Priority Description

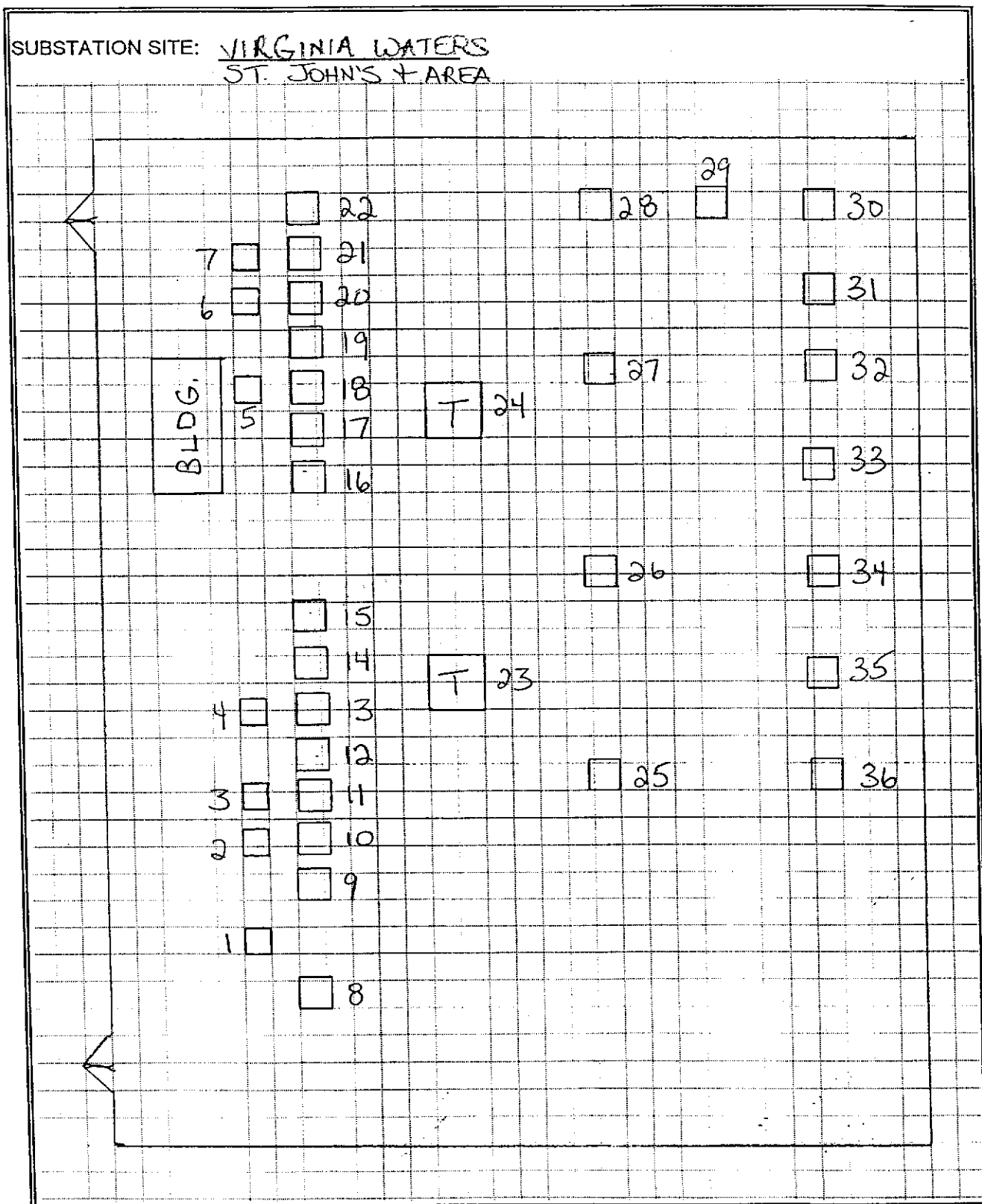
Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
within 3 years
within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS
LOCATION SKETCH

SUBSTATION SITE: VIRGINIA WATERS
ST. JOHN'S + AREA



WEST AVALON

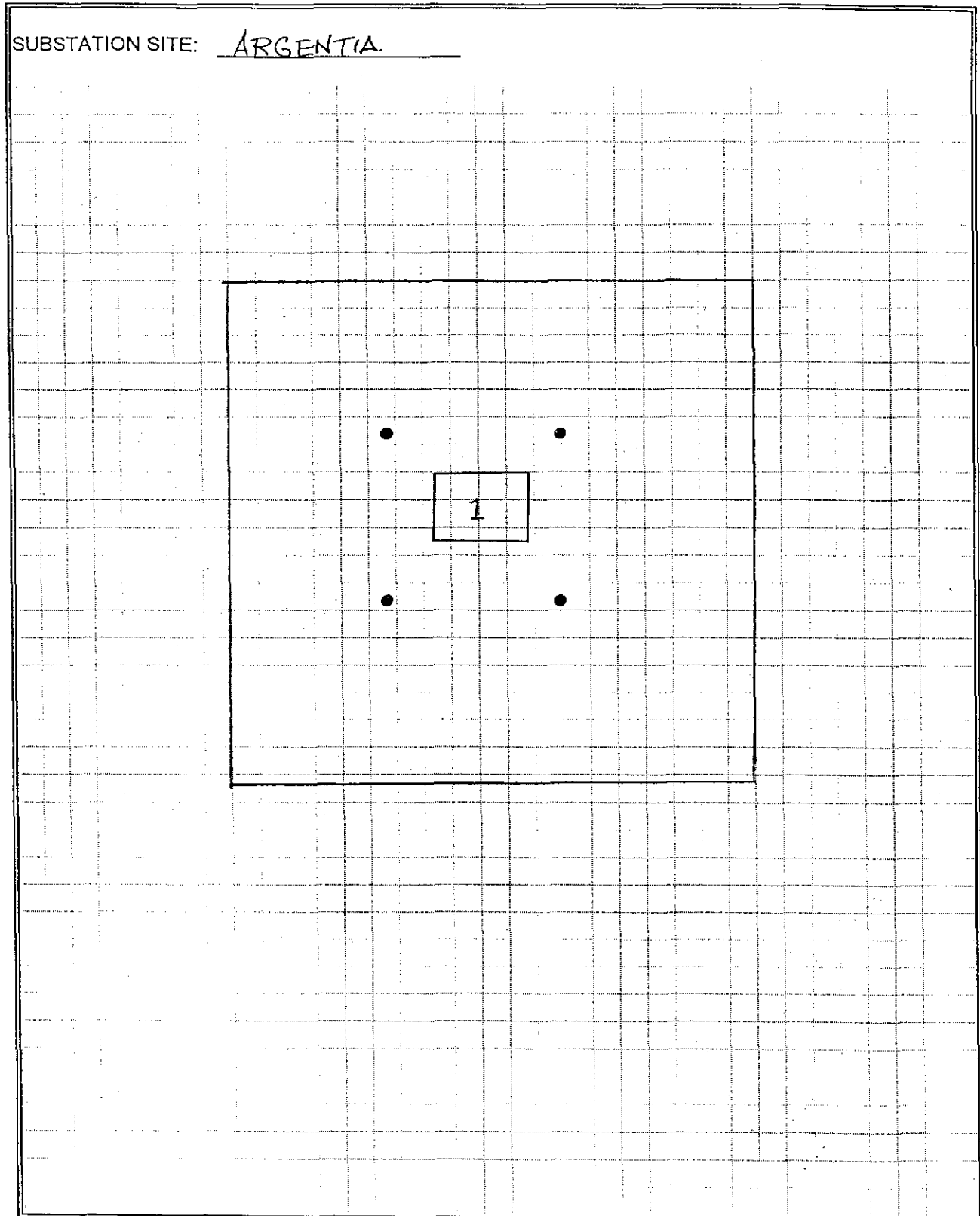
ARGENTIA
BAY ROBERTS
BLAKETOWN
CARBONEAR
CLARKE'S POND
COLLIER'S
DUNVILLE
HARBOUR GRACE
HEART'S CONTENT
HOLYROOD
ISLINGTON
NEW CHELSEA
NEW HARBOUR
OLD PERLICAN
PITTMAN'S POND
RIVERHEAD
SPRINGFIELD
TREPASSEY
UPPER ISLAND COVE
VICTORIA
WESTERN AVALON

SUBSTATION SITE: Argentina DATE INSPECTED May 10, 2002

| <u>Priority Rating</u> | <u>Priority Description</u> | <u>Recommended Time Frame</u> |
|------------------------|--|-------------------------------|
| 1 | Immediate corrective action required | within 1 year |
| 2 | Corrective action required to avoid increasing costs to repair | within 3 years |
| 3 | General maintenance item | within 5 years |
| 4 | No corrective action or maintenance required at this time | |

INSPECTION OF CONCRETE PADS & FOUNDATIONS
LOCATION SKETCH

SUBSTATION SITE: ARGENTIA.



INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Bay Roberts DATE INSPECTED May 9, 2002

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|-----------------------------------|---|--|-----------------|
| #1 - no # High Voltage | Fair Condition. Alligator cracking & some spalling/chipping on corners. There are areas that sound hollow when the top surface was checked with impact hammer. | Type A Repair however will eventually require a Type D Repair. | 2 |
| #2 - No # High Voltage | Fair to Poor Condition Alligator cracking & severe spalling and chipping away of corners and top edges. (38MPa - taken below grade) | Type D Repair | 1 |
| #3 - No # High Voltage | Fair to Poor Condition Alligator cracking & severe spalling and chipping away of corners and top edges. | Type D Repair | 1 |
| #4 - No # High Voltage | Fair to Poor Condition The top surface and the top 100mm of the sides have severe alligator cracking and chipping away on two corners. | Type D Repair | 1 |
| #5 - 56L-DB High Voltage | Fair to Poor Condition The top surface and the top 100mm of the sides have severe alligator cracking and chipping away on two corners. | Type D Repair | 1 |
| #6 - BRB-56L -B Oil Breaker | Fair Condition. (36MPa) Two sides(above grade) and top surface are scaling. | Type A Repair | 2 |

Priority Rating

1
2
3
4

Priority Description

Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
within 3 years
within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Bay Roberts DATE INSPECTED May 9, 2002

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|-----------------------------------|--|---|-----------------|
| #7 - 56L-GS High Voltage | Fair to Poor Condition The top surface and the top 100mm of the sides have severe alligator cracking and chipping away on corners. There are two cracks (>1mm) across the top surface. (34MPa) | Type D Repair and Type C Repair on cracks if they extend below the level of concrete removal for the type D repair. | 1 |
| #8 - No # High Voltage | Fair to Poor Condition The top surface and the top 100mm of the sides have severe alligator cracking and chipping away on corners. There are two cracks (>1mm) across the top surface. | Type D Repair and Type C Repair on cracks if they extend below the level of concrete removal for the type D repair. | 1 |
| #9 - BRB-57L -B Oil Breaker | Good Condition. (38MPa) | | 4 |
| #10 - 57L-DB High Voltage | Fair to Poor Condition The top surface and the top 100mm of the sides have severe alligator cracking and chipping away on corners. There are several cracks (>1mm) across the top surface. | Type D Repair and Type C Repair on cracks if they extend below the level of concrete removal for the type D repair. | 1 |
| #11 - No # High Voltage | Fair To Good Condition Minor alligator cracking on top surface and minor crack (<1mm) on one side (36 Mpa) | Type B Repair | 2 |
| #12 - BRB-T3 -B Oil Breaker | Good Condition. (38 Mpa) | | 4 |

Priority Rating

1
2
3
4

Priority Description

Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
within 3 years
within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Bay Roberts DATE INSPECTED May 9, 2002

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|-----------------------------------|---|-------------------|-----------------|
| #13 - T3-B-DT High Voltage | Fair Condition. Some alligator cracking on surface and sides as well as several hairline cracks (<1mm). One corner has concrete chipped. | Type D Repair | 2 |
| #14 - No # High Voltage | Fair Condition. Some alligator cracking on surface and sides as well as a number of hairline cracks (<1mm). Some corner concrete chipping. | Type D Repair | 2 |
| #15 - BRB-T2 -B Oil Breaker | Good Condition. (38 Mpa) Minor cement/sand matrix deterioration | Future Monitoring | 4 |
| #16 - T2-B-DB | Fair Condition. Some alligator cracking on surface and sides as well as a number of hairline cracks (<1mm). Some corner concrete chipping. | Type D Repair | 2 |
| #17 - No # Low Voltage | Good Condition. (36 Mpa) | | 4 |
| #18 - BRB-05 Recloser | Good Condition (32 Mpa) | | 4 |

Priority Rating

1
2
3
4

Priority Description

Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
within 3 years
within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Bay Roberts DATE INSPECTED May 9, 2002

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|--------------------|--|-------------------|-----------------|
| #19 - BRB-05 | Good Condition. (38 Mpa) | Future Monitoring | 4 |
| -BP | Very minor alligator cracking on top surface | | |
| Low Voltage | | | |
| | | | |
| | | | |
| #20 - BRB-02 | Good Condition. (38 Mpa) | Future Monitoring | 4 |
| -B | Very minor alligator cracking on top surface | | |
| Oil Breaker | | | |
| | | | |
| | | | |
| #21 - BRB-03 | Good Condition. (36 Mpa) | | 4 |
| -B | | | |
| Oil Breaker | | | |
| | | | |
| | | | |
| #22 - BRB-03 | Good Condition. (38 Mpa) | | 4 |
| -DL | | | |
| Low Voltage | | | |
| | | | |
| | | | |
| #23 - BRB-04 | Good Condition. (38 Mpa) | | 4 |
| -B | | | |
| Oil Breaker | | | |
| | | | |
| | | | |
| #24 - BRB-01 | Good Condition. (36 Mpa) | | 4 |
| -BP | | | |
| Low Voltage | | | |
| | | | |
| | | | |

Priority Rating

1
2
3
4

Priority Description

Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
within 3 years
within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Bay Roberts DATE INSPECTED May 9, 2002

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|-----------------------------------|---|-----------------|-----------------|
| #25 - BRB-01 -B Oil Breaker | Good Condition. (38 Mpa) | | 4 |
| | | | |
| | | | |
| | | | |
| #26 - BRB-T1 -B Oil Breaker | Good Condition. (36 Mpa) | | 4 |
| | | | |
| | | | |
| | | | |
| #27 - T1-D Low Voltage | Good Condition. (40 Mpa) | | 4 |
| | | | |
| | | | |
| | | | |
| #28 - No # Low Voltage | Good Condition. (38 Mpa) | | 4 |
| | | | |
| | | | |
| | | | |
| #29 - T3 200330 Transformer | Good Condition. (40 Mpa) Minor Spall on one corner | Type A Repair | 3 |
| | | | |
| | | | |
| | | | |
| #30 - T2 200302 Transformer | Good Condition. (38 Mpa) | | 4 |
| | | | |
| | | | |
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Priority Rating

1
2
3
4

Priority Description

Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
within 3 years
within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Bay Roberts DATE INSPECTED May 9, 2002

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|-----------------------------------|---|-----------------|-----------------|
| #31 - T1 200303 Transformer | Good Condition. (34 Mpa) | | 4 |
| | | | |
| | | | |
| | | | |
| #32 - T1-A High Voltage | Good Condition. (38 Mpa) | | 4 |
| | | | |
| | | | |
| | | | |
| #33 - T2-A High Voltage | Good Condition. (36 Mpa) | | 4 |
| | | | |
| | | | |
| | | | |
| #34 - BTS-3 High Voltage | Good Condition. (38 Mpa) | | 4 |
| | | | |
| | | | |
| | | | |
| #35 - -No # High Voltage | Good Condition. (32MPa) Very Minor Chipping on one corner. | Type A Repair. | 3 |
| | | | |
| | | | |
| | | | |
| #36 - No # High Voltage | Good Condition. (32MPa) Very Minor Chipping on one corner. | Type A Repair. | 3 |
| | | | |
| | | | |
| | | | |

Priority Rating

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4

Priority Description

Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
within 3 years
within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Bay Roberts DATE INSPECTED May 9, 2002

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|-------------------------------------|---|-----------------|-----------------|
| #37 - 48L-DB High Voltage | Fair Condition. There are several hairline cracks (<1mm) on the surface & Minor alligator cracking. (36MPa) | Type B Repair | 2 |
| | | | |
| | | | |
| #38 - 48L-B Oil Breaker | Good Condition. (38 Mpa) | | 4 |
| | | | |
| | | | |
| #39 - BRB -BTS-1 High Voltage | Fair to Good Condition. (36 Mpa) Some minor alligator cracking and cement/sand matrix deterioration on one corner. | Type A Repair | 3 |
| | | | |
| | | | |
| #40 - BRB -39L-B Oil Breaker | Good Condition. (40 Mpa) | | 4 |
| | | | |
| | | | |
| #41 - 39L-DL High Voltage | Good Condition. (40 Mpa) | | 4 |
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Priority Rating

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Priority Description

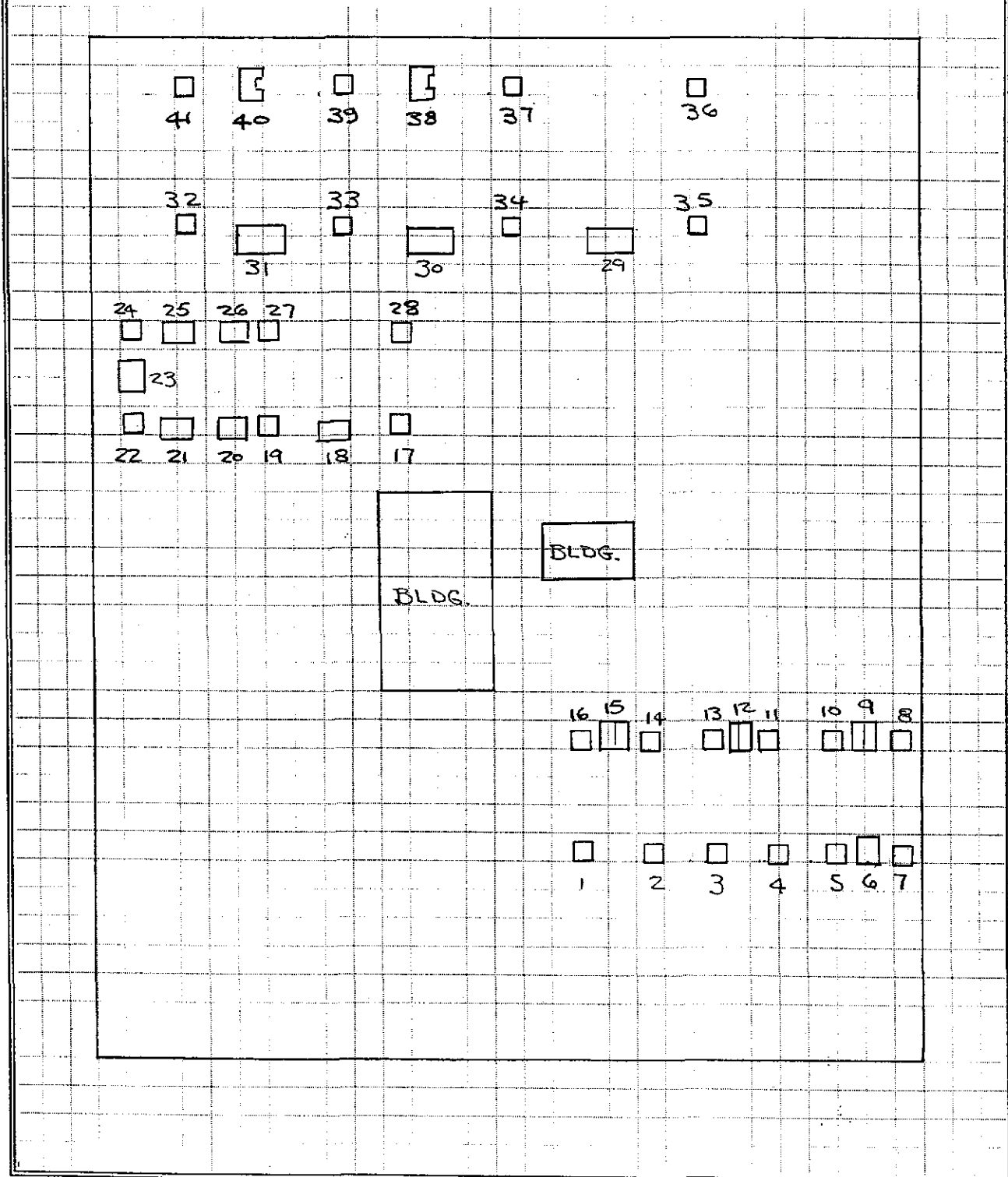
Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
within 3 years
within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS
LOCATION SKETCH

SUBSTATION SITE: Bay Roberts



INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Blaketown DATE INSPECTED May 10, 2002

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|--------------------|-------------------------------|-----------------|-----------------|
| #1 - BLK-02 | Good Condition (new concrete) | | 4 |
| -BK | | | |
| Low Voltage | | | |
| | | | |
| | | | |
| 32 - BLK-02-B | Good Condition (new concrete) | | 4 |
| Oil Breaker | | | |
| | | | |
| | | | |
| | | | |
| #3 - BLK-01-B | Good Condition (new concrete) | | 4 |
| Oil Breaker | | | |
| | | | |
| | | | |
| | | | |
| #4 - BLK-01 | Good Condition (new concrete) | | 4 |
| -BP | | | |
| Low Voltage | | | |
| | | | |
| | | | |
| | | | |
| #5 - BLK-25kv | Good Condition (new concrete) | | 4 |
| -PT-JB | | | |
| Low Voltage | | | |
| | | | |
| | | | |
| | | | |
| #6 - BLK-T2-D | Good Condition (new concrete) | | 4 |
| Low Voltage | | | |
| | | | |
| | | | |
| | | | |

Priority Rating

1
2
3
4

Priority Description

Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
within 3 years
within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Blaketown DATE INSPECTED May 10, 2002

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|--|-------------------------------|-----------------|-----------------|
| #7 - BLK-T2-D Low Voltage | Good Condition (new Concrete) | | 4 |
| | | | |
| | | | |
| | | | |
| #8 - BLK-T2 -P-296 200296 Transformer | Good Condition. (38 Mpa) | | 4 |
| | | | |
| | | | |
| | | | |
| | | | |
| #9 - BLK-48L -DL High Voltage | Good Condition. (38MPa) | | 4 |
| | | | |
| | | | |
| | | | |
| | | | |
| #10 - BLK -BTS-2 High Voltage | Good Condition. (38MPa) | | 4 |
| | | | |
| | | | |
| | | | |
| | | | |
| #11 - No # High Voltage | Good Condition (38MPa) | | 4 |
| | | | |
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| | | | |
| | | | |
| #12 - T3-P314 Transformer | Good Condition. (40 Mpa) | | 4 |
| | | | |
| | | | |
| | | | |
| | | | |

Priority Rating

1
2
3
4

Priority Description

Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
within 3 years
within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Blaketown DATE INSPECTED May 10, 2002

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|--------------------|--|-------------------|-----------------|
| #13 - BLK-T3 | Fair to Good Condition. (32 Mpa) | Future Monitoring | 4 |
| -A | Appears to have had a top replacement | | |
| High Voltage | some years ago. The has some minor cement/sand matrix deterioration. | | |
| | | | |
| | | | |
| #14 - BLK-64L | Fair to Good Condition. (36 Mpa) | Future Monitoring | 4 |
| -GS | The exposed surfaces has some minor | | |
| High Voltage | cement/sand matrix deterioration resulting | | |
| | in coarse surface appearance. | | |
| | | | |
| | | | |
| #15 - BLK-64L | Fair to Good Condition. (36 Mpa) | Future Monitoring | 4 |
| -B | The exposed surfaces has some minor | | |
| Oil Breaker | cement/sand matrix deterioration resulting | | |
| | in coarse surface appearance. | | |
| | | | |
| | | | |
| #16 - BLK-64L | Fair Condition. (34MPa) | Type B Repair | 2 |
| -DL | There are numerous alligator cracks on | | |
| High Voltage | the sides & several hairline cracks (<1mm) | | |
| | Extending outward from the middle of the | | |
| | top surface. | | |
| | | | |
| #17 - BLK-48L | Fair to Good Condition. (36 Mpa) | Future Monitoring | 4 |
| -B | The exposed surfaces has some minor | | |
| Oil Breaker | cement/sand matrix deterioration resulting | | |
| | in coarse surface appearance. | | |
| | | | |
| | | | |
| #18 - BLK-55L | Good Condition. (new concrete) | | 4 |
| -DB | | | |
| High Voltage | | | |
| | | | |
| | | | |
| | | | |

Priority Rating

- 1
- 2
- 3
- 4

Priority Description

- Immediate corrective action required
- Corrective action required to avoid increasing costs to repair
- General maintenance item
- No corrective action or maintenance required at this time

Recommended Time Frame

- within 1 year
- within 3 years
- within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Blaketown DATE INSPECTED May 10, 2002

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|--------------------|---|-----------------|-----------------|
| #19 - BLK | Fair to Good Condition (new concrete) | Type B Repair | 3 |
| -66kv-PT-JB | One small crack (<1mm) starting to | | |
| High Voltage | develop from one anchor bolt outward to | | |
| | side. | | |
| | | | |
| #20 - BLK-T3 | Good Condition. (new concrete) | | 4 |
| -B | | | |
| Oil Breaker | | | |
| | | | |
| | | | |
| #21 - BLK-T3 | Good Condition. (new concrete) | | 4 |
| -D | | | |
| High Voltage | | | |
| | | | |
| | | | |
| #22 - BLK-80L | Good Condition. (new concrete) | | 4 |
| -B | | | |
| Oil Breaker | | | |
| | | | |
| | | | |
| #23 - BLK-80L | Good Condition. (new concrete) | | 4 |
| -GS | | | |
| High Voltage | | | |
| | | | |
| | | | |
| #24 - BLK-86L | Good Condition. (new concrete) | | 4 |
| -B | | | |
| Oil Breaker | | | |
| | | | |
| | | | |

Priority Rating

1
2
3
4

Priority Description

Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

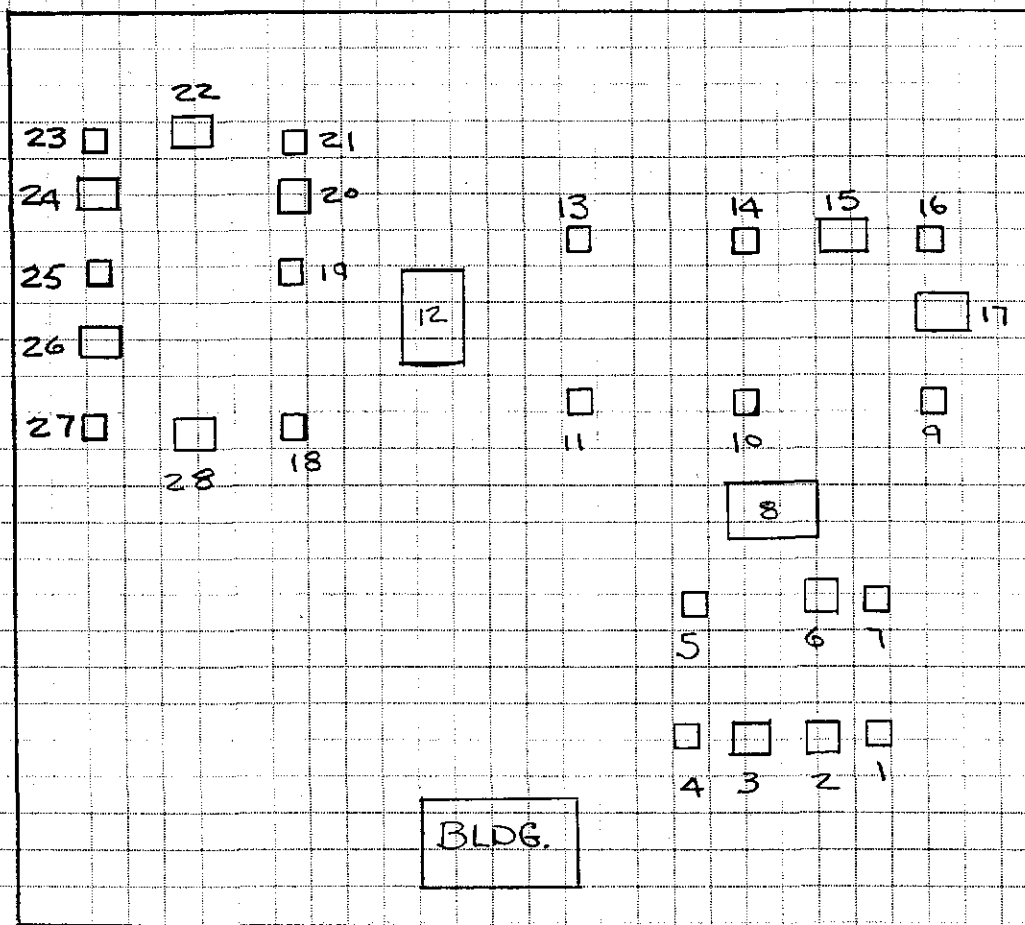
within 1 year
within 3 years
within 5 years

SUBSTATION SITE: Blaketown DATE INSPECTED May 10, 2002

| <u>Priority Rating</u> | <u>Priority Description</u> | <u>Recommended Time Frame</u> |
|------------------------|--|-------------------------------|
| 1 | Immediate corrective action required | within 1 year |
| 2 | Corrective action required to avoid increasing costs to repair | within 3 years |
| 3 | General maintenance item | within 5 years |
| 4 | No corrective action or maintenance required at this time | |

INSPECTION OF CONCRETE PADS & FOUNDATIONS
LOCATION SKETCH

SUBSTATION SITE: BLAKE TOWN



T. C. H.

INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Carbonear DATE INSPECTED May 9, 2002

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|-----------------------------------|-------------------------|-----------------|-----------------|
| #1 - No # Low Voltage | Good Condition. (32MPa) | | 4 |
| | | | |
| | | | |
| | | | |
| #2 - No # Not in Use | Good Condition | | 4 |
| | | | |
| | | | |
| | | | |
| #3 - CAR-04 -R Recloser | Good Condition. (34MPa) | | 4 |
| | | | |
| | | | |
| | | | |
| #4 - CAR-04 -DL Low Voltage | Good Condition. (44MPa) | | 4 |
| | | | |
| | | | |
| | | | |
| #5 - CT-539 | Good Condition. (34MPa) | | 4 |
| | | | |
| | | | |
| | | | |
| #6 - CAR-03 -R Recloser | Good Condition. (42MPa) | | 4 |
| | | | |
| | | | |
| | | | |

Priority Rating

1
2
3
4

Priority Description

Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
within 3 years
within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Carbonear DATE INSPECTED May 9, 2002

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|--------------------|---|-----------------|-----------------|
| #7 - CAR-02 | Good Condition. (40MPa) | | 4 |
| -DL | | | |
| Low Voltage | | | |
| | | | |
| | | | |
| #8 - CAR-02 | Good Condition. (42MPa) | | 4 |
| -R | | | |
| Recloser | | | |
| | | | |
| | | | |
| #9 - Car-01 | Good Condition. (38MPa) | | 4 |
| -R | | | |
| Recloser | | | |
| | | | |
| | | | |
| #10 - CAR-01 | Good Condition. (38MPa) | | 4 |
| -BP | | | |
| Low Voltage | | | |
| | | | |
| | | | |
| #11 - T1 | Fair to Good Condition. (46MPa) | Type B Repair | 3 |
| -P333 | There are two hairline cracks (<1mm) | | |
| Transformer | across the top surface. | | |
| | There appears to have been some repair work done to the surface recently. | | |
| | | | |
| #12 - 56L-DB | Good Condition. (36MPa) | | 4 |
| High Voltage | | | |
| | | | |
| | | | |

Priority Rating

1
2
3
4

Priority Description

Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
within 3 years
within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Carbonear DATE INSPECTED May 9, 2002

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|------------------------------|---|------------------------------------|-----------------|
| #13 - 56L Oil Breaker | Poor Condition. There is a major crack(>1mm) extending across the pad & horizontally the length of the pad. The crack extends at least to a depth of 500mm into the pad. | Type E Repair. (total replacement) | 1 |
| #14 - 68L-DB High Voltage | Good Condition. (40MPa) | | 4 |
| #15 - 68L-B Oil Breaker | Good Condition. (42MPa) | | 4 |
| #16 - BTS-1 High Voltage | Good Condition. (42MPa) | | 4 |
| #17 - 41L-B Oil Breaker | Good Condition. (40MPa) | | 4 |
| #18 - 41L-DL High Voltage | Fair Condition. The top edge along one side of the pad is chipped away. | Type A Repair | 3 |

Priority Rating

1
2
3
4

Priority Description

Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

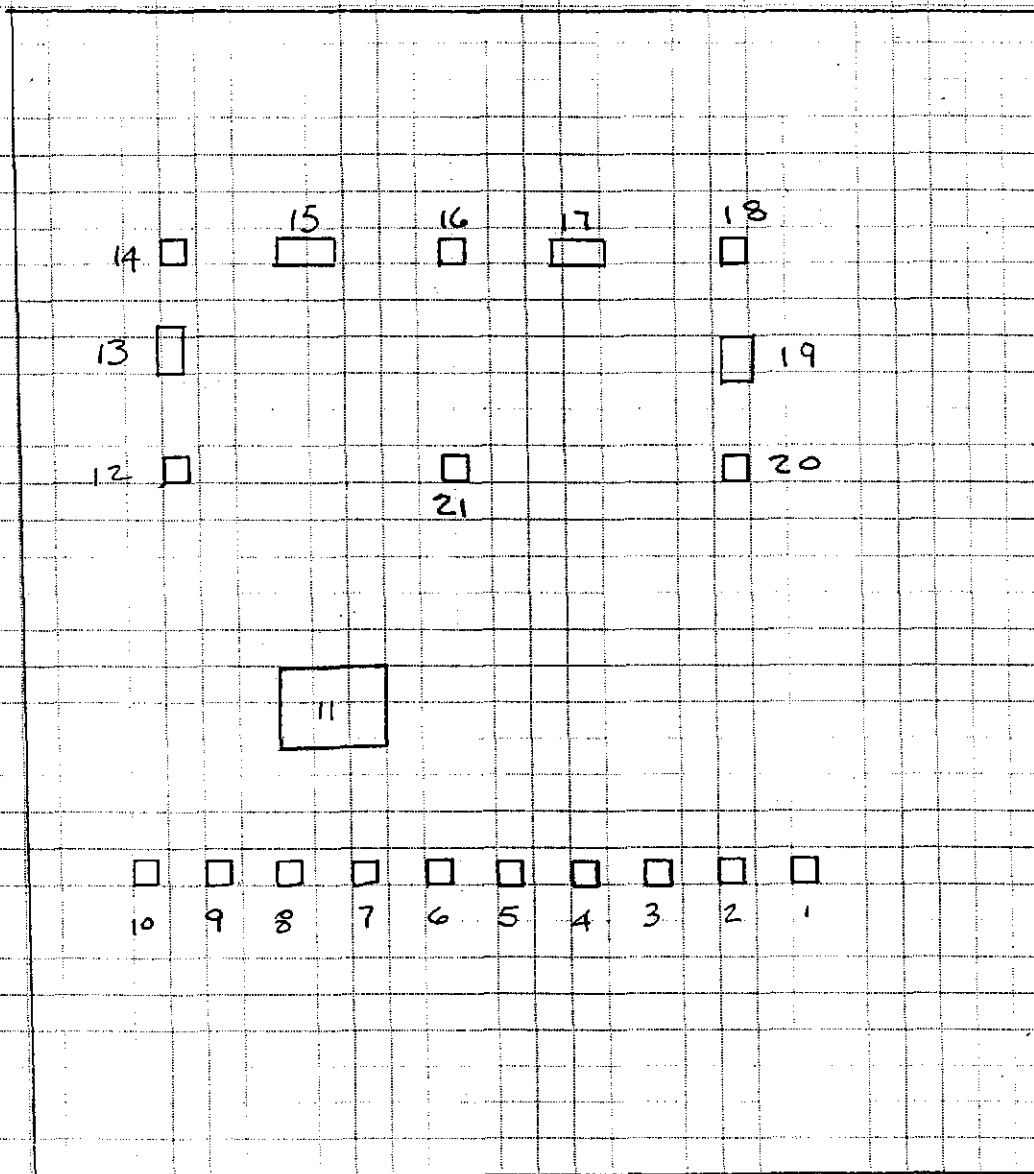
within 1 year
within 3 years
within 5 years

SUBSTATION SITE: Carbonear DATE INSPECTED May 9, 2002

| <u>Priority Rating</u> | <u>Priority Description</u> | <u>Recommended Time Frame</u> |
|------------------------|--|-------------------------------|
| 1 | Immediate corrective action required | within 1 year |
| 2 | Corrective action required to avoid increasing costs to repair | within 3 years |
| 3 | General maintenance item | within 5 years |
| 4 | No corrective action or maintenance required at this time | |

INSPECTION OF CONCRETE PADS & FOUNDATIONS
LOCATION SKETCH

SUBSTATION SITE: CARBONEAR



INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Clarke's Pond DATE INSPECTED: 19-Apr-02
West Avalon

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|--|---|-----------------|-----------------|
| #1 - CLK-03-BP Structure Low Voltage | Pitting on top surface of pad resulting in areas where aggregate is exposed. Remainder of pad is in good condition (36 Mpa). | Type A Repair | 2 |
| #2 - CLK-03-R Recloser | Alligator cracking throughout top surface of pad. Minor scaling and pitting also present throughout top surface of pad. Lower section of pad seems to be in good condition (44 Mpa). | Type D Repair | 1 |
| #3 - Structure Low Voltage | Spalling on three corners of pad. Pitting also present on top surface of pad to a degree that aggregate can be removed with boot (26 Mpa). | Type A Repair | 2 |
| #4 - Not In Use | Alligator cracking throughout top surface of pad. Minor scaling and pitting also present throughout top surface of pad. Lower section of pad seems to be in good condition (54 Mpa). | Type D Repair | 1 |
| #5 - CLK-01-BP Structure Low Voltage | Spalling on one corner and one edge of pad Affected to a depth of approx. 150mm so that aggregate is exposed and can be removed with boot (28 Mpa). | Type A Repair | 2 |
| #6 - CLK-01-R Recloser | Alligator cracking throughout top surface of pad. Minor scaling and pitting also present throughout top surface of pad. Lower section of pad seems to be in good condition (48 Mpa). | Type D Repair | 1 |

Priority Rating

1
2
3
4

Priority Description

Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
within 3 years
within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Clarke's Pond DATE INSPECTED: 19-Apr-02
West Avalon

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|--|--|-----------------|-----------------|
| #7 - CLK-02-BP Structure Low Voltage | Spalling on one corner and one edge of pad Affected to a depth of approx. 150mm so that aggregate is exposed and can be removed with boot (28 Mpa). | Type A Repair | 2 |
| #8 - CLK-04-R1 Recloser | Minor scaling on top surface of pad. Remainder of pad is in good condition (28 Mpa). | | 4 |
| #9 - CLK-04-BP Structure Low Voltage | Good condition (28 Mpa). | | 4 |
| #10 - Not In Use | Minor pitting and scaling on one area of pad. Remainder of pad is in good condition (28 Mpa). | Type A Repair | 3 |
| #11 - Structure Low Voltage | Spalling and flaking on all corners of pad. Some areas of pitting and eroding present with some areas of exposed aggregate that can be removed with boot (38 Mpa). | Type A Repair | 1 |
| #12 - Structure Low Voltage | Top surface of pad has rough finish with minor pitting and scaling, otherwise pad is in good condition (34 Mpa). | | 4 |

Priority Rating

1
2
3
4

Priority Description

Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
within 3 years
within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Clarke's Pond DATE INSPECTED: 19-Apr-02
West Avalon

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|----------------------|---|-----------------|-----------------|
| #13 - T1-D Structure | One corner and edge eroded away (approx. 300mm long to a depth of approx. 38mm). | Type A Repair | 1 |
| Low Voltage | Rough finish on top surface of pad with minor pitting throughout. Exposed aggregate can be removed with boot (32 Mpa). | | |
| | | | |
| #14 - Structure | One corner and edge eroded away (approx. 200mm long to a depth of approx. 30mm). | Type A Repair | 2 |
| Metering Box | Remainder of surface has rough finish but is in good condition (28 Mpa). | | |
| | | | |
| #15 - Structure | One corner and edge eroded away (approx. 200mm long to a depth of approx. 30mm). | Type A Repair | 2 |
| Metering | Remainder of surface has rough finish with minor scaling (34 Mpa). | | |
| Bank Cabinet | | | |
| | | | |
| #16 - T2-D Structure | Spalling on one corner of pad. Remainder of top surface of pad is affected by pitting and scaling to an approx depth of 13mm. | Type A Repair | 1 |
| Low Voltage | Lower portion of pad seems to be okay (20 Mpa). | | |
| | | | |
| #17 - Structure | Good condition (28 Mpa). | | 4 |
| Low Voltage | | | |
| | | | |
| #18 - T1 Transformer | Spill pan installed under transformer. No concrete visible to make assessment of condition of pad. | | |
| 200223 | | | |
| | | | |
| | | | |

Priority Rating

- 1
- 2
- 3
- 4

Priority Description

- Immediate corrective action required
- Corrective action required to avoid increasing costs to repair
- General maintenance item
- No corrective action or maintenance required at this time

Recommended Time Frame

- within 1 year
- within 3 years
- within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Clarke's Pond DATE INSPECTED: 19-Apr-02
West Avalon

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|--|--|-----------------|-----------------|
| #19 - Structure High Voltage | Three corners of pad have spalling evident one of these corners is severe. Pitting and scaling is also present throughout top surface of pad (22 Mpa). | Type A Repair | 2 |
| | | | |
| | | | |
| #20 - T1-A Structure High Voltage | Spalling and eroding on one corner and edge of pad. Aggregate is exposed and portions of concrete can be removed with boot (24 Mpa). | Type A Repair | 2 |
| | | | |
| | | | |
| #21 - Structure High Voltage | Spalling and eroding on one corner and edge of pad. Aggregate is exposed and portions of concrete can be removed with boot (32 Mpa). | Type A Repair | 2 |
| | | | |
| | | | |
| #22 - T2-A Structure High Voltage | One edge and part of side is spalled and eroded away with some aggregate exposed. Some areas on top surface of pad are pitted and also has minor scaling (30 Mpa). | Type A Repair | 2 |
| | | | |
| | | | |
| #23 - CLK-55L-DB Structure High Voltage | Spalling and eroding on one corner and edge of pad. Aggregate is exposed and portions of concrete can be removed with boot (34 Mpa). | Type A Repair | 2 |
| | | | |
| | | | |
| #24 - CLK-55L-B Oil Circuit Breaker | Good condition (28 Mpa). | | 4 |
| | | | |
| | | | |
| | | | |

Priority Rating

1
2
3
4

Priority Description

Immediate corrective action required
 Corrective action required to avoid increasing costs to repair
 General maintenance item
 No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
 within 3 years
 within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Clarke's Pond
West Avalon

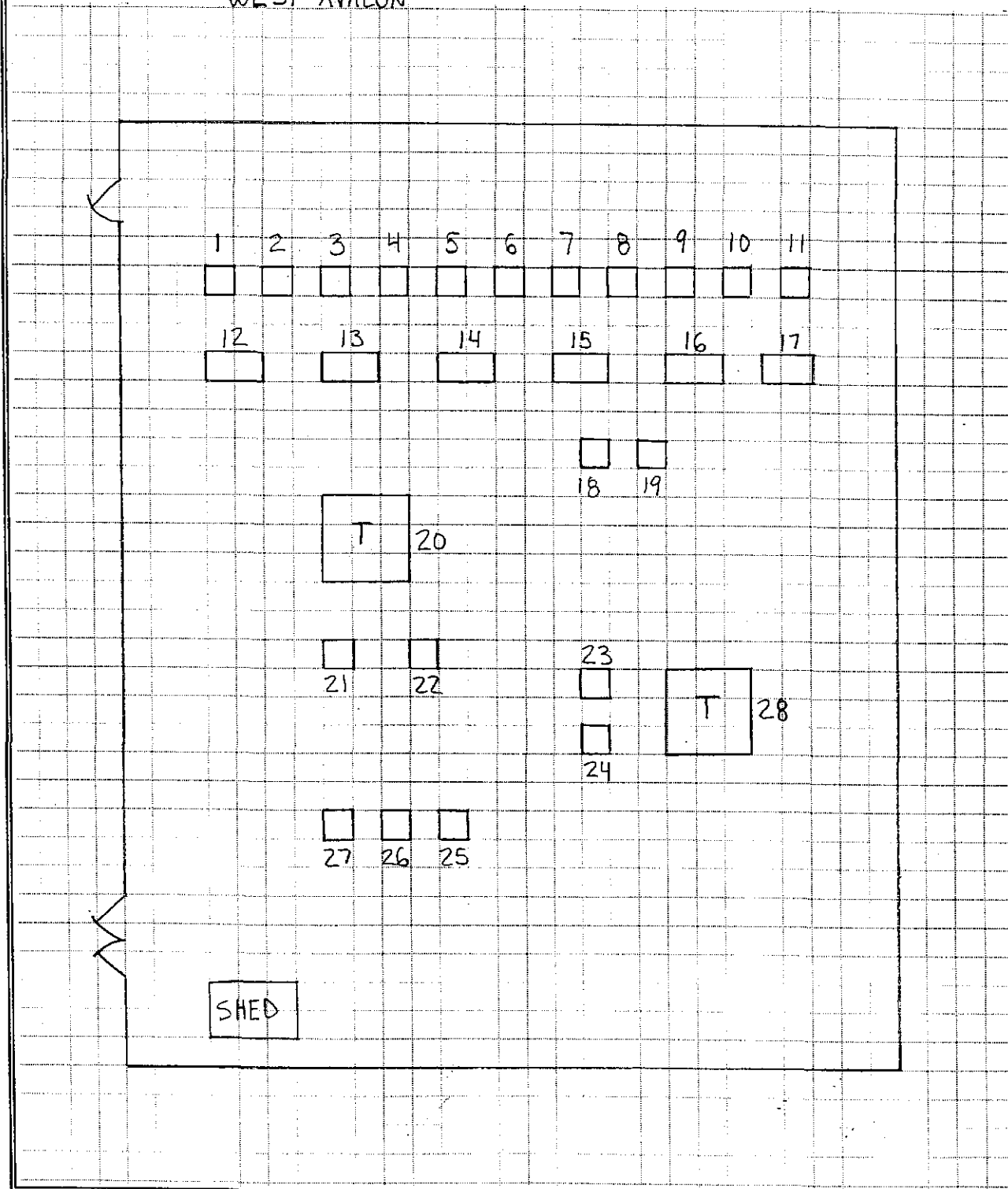
DATE INSPECTED: 19-Apr-02

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| <u>Priority Rating</u> | <u>Priority Description</u> | <u>Recommended Time Frame</u> |
|------------------------|--|-------------------------------|
| 1 | Immediate corrective action required | within 1 year |
| 2 | Corrective action required to avoid increasing costs to repair | within 3 years |
| 3 | General maintenance item | within 5 years |
| 4 | No corrective action or maintenance required at this time | |

INSPECTION OF CONCRETE PADS & FOUNDATIONS
LOCATION SKETCH

SUBSTATION SITE: CLARKE'S POND
WEST AVALON



INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Colliers DATE INSPECTED May 9, 2002

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|-------------------------------|--|-----------------|-----------------|
| #1 - COL-01-R Recloser | Good Condition. (30 Mpa) | | 4 |
| | | | |
| | | | |
| #2 - P-346 Transformer | Good Condition. (32 Mpa) Appears to have been a cap (150mm) placed on top of existing concrete to bring up elevation. There are two areas in the newer concrete where there is some honeycombing. | Type A Repair | 3 |
| | | | |
| #3 - No # High Voltage | Good Condition (32 Mpa) | | 4 |
| | | | |
| | | | |
| #4 - No # High Voltage | Good Condition (34 Mpa) | | 4 |
| | | | |
| | | | |
| #5 - COL-39L -A4 High Voltage | Good Condition (30 Mpa) | | 4 |
| | | | |
| | | | |
| #6 - COL-39L -A3 High Voltage | Good Condition (32 Mpa) | | 4 |
| | | | |
| | | | |

Priority Rating

1
2
3
4

Priority Description

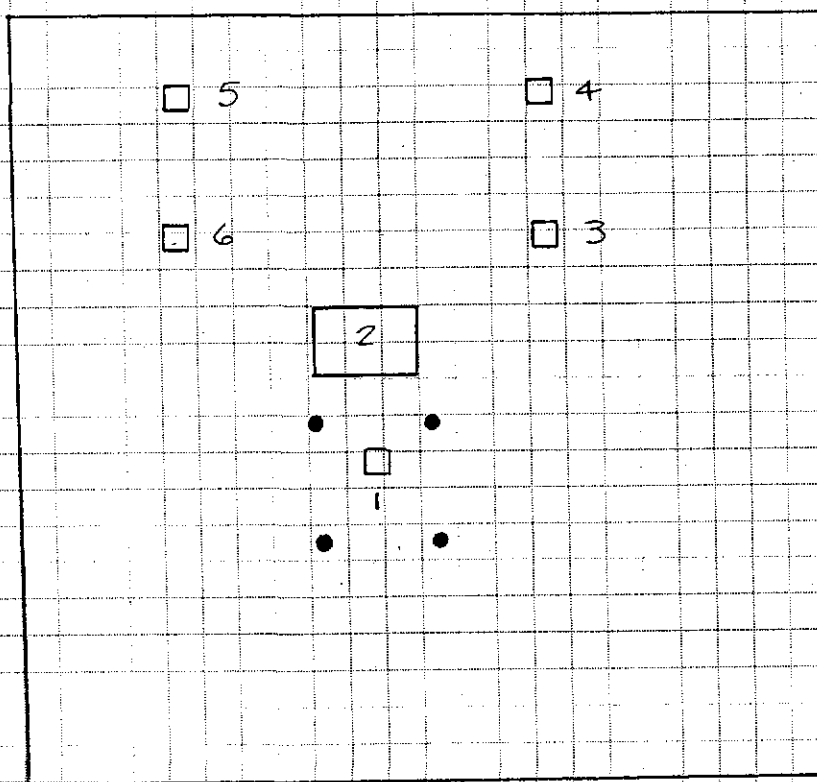
Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
within 3 years
within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS
LOCATION SKETCH

SUBSTATION SITE: COLLIERS

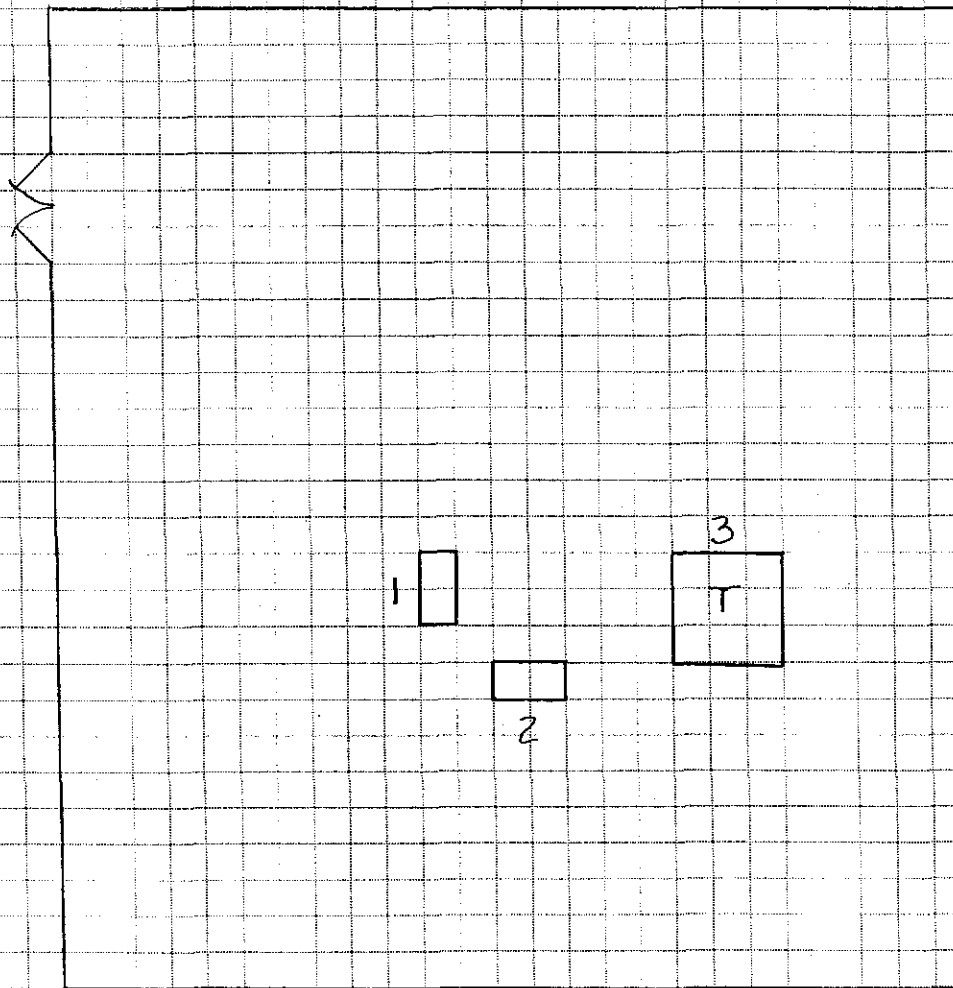


SUBSTATION SITE: Dunville DATE INSPECTED: 19-Apr-02
West Avalon

| <u>Priority Rating</u> | <u>Priority Description</u> | <u>Recommended Time Frame</u> |
|------------------------|--|-------------------------------|
| 1 | Immediate corrective action required | within 1 year |
| 2 | Corrective action required to avoid increasing costs to repair | within 3 years |
| 3 | General maintenance item | within 5 years |
| 4 | No corrective action or maintenance required at this time | |

INSPECTION OF CONCRETE PADS & FOUNDATIONS
LOCATION SKETCH

SUBSTATION SITE: DUNVILLE
WEST AVALON



INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Harbour Grace DATE INSPECTED May 9, 2002

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|-----------------------------|---|--|-----------------|
| #1 - HGR-01-R Recloser | Good Condition. (40MPa) | | 4 |
| | | | |
| | | | |
| #2 - HGR-03-R Recloser | Fair Condition . (30MPa) The surface has severe scaling (approx. 20mm deep) | Type A Repair | 2 |
| | | | |
| | | | |
| #3 - HGR-57L -B Oil Breaker | Fair to Good Condition. (34MPa) One side of the pad has the top edge starting to chip away. | Type A Repair | 2 |
| | | | |
| | | | |
| #4 - No # Not in Use | Fair to Poor Condition. The corners are chipped away and a couple of the sides has sever chipping damage. | Not recommended to be used again. | |
| | | | |
| | | | |
| #5 - 200219 Transformer | Poor Condition. It appears that there have been a top replacement on this pad some time ago (top 150mm). This top is now in a very deteriorated condition with severe cracks and scaling. | Type E Repair. A total replacement of this pad would be recommended. | 1 |
| | | | |
| #6 - HRG-68L -B Oil Breaker | Poor Condition. The surface has severe scaling as well as the top 50mm along the sides. | Type D Repair | 2 |
| | | | |
| | | | |

Priority Rating

1
2
3
4

Priority Description

Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

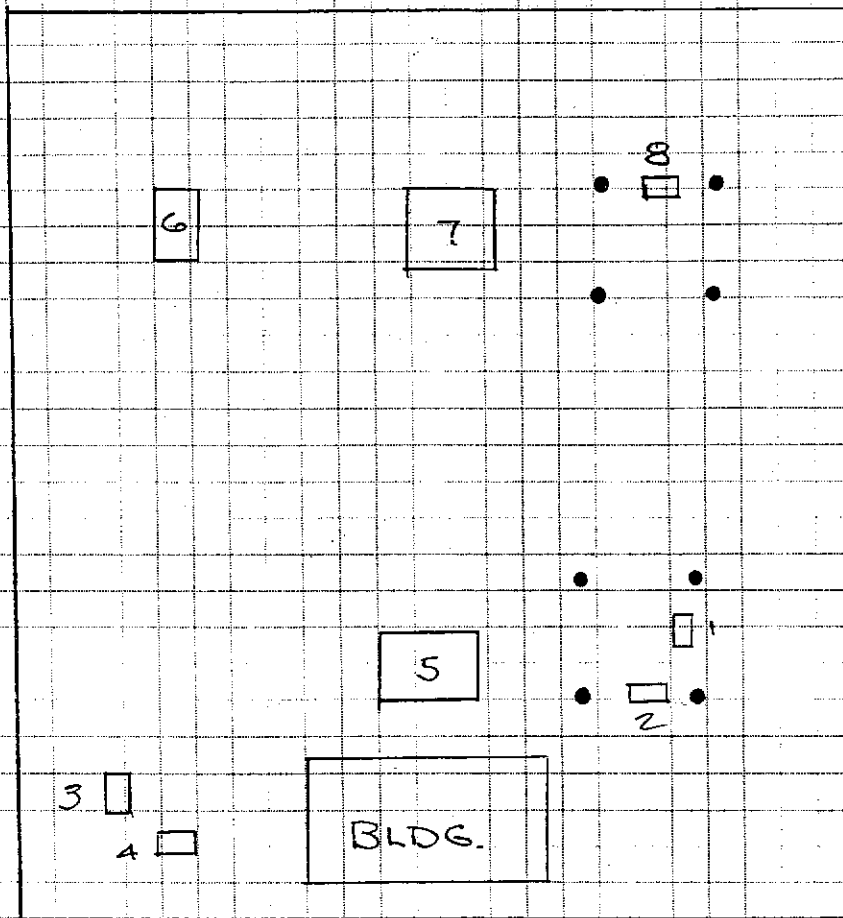
within 1 year
within 3 years
within 5 years

SUBSTATION SITE: Harbour Grace DATE INSPECTED May 9, 2002

| <u>Priority Rating</u> | <u>Priority Description</u> | <u>Recommended Time Frame</u> |
|------------------------|--|-------------------------------|
| 1 | Immediate corrective action required | within 1 year |
| 2 | Corrective action required to avoid increasing costs to repair | within 3 years |
| 3 | General maintenance item | within 5 years |
| 4 | No corrective action or maintenance required at this time | |

INSPECTION OF CONCRETE PADS & FOUNDATIONS
LOCATION SKETCH

SUBSTATION SITE: HARBOUR GRACE



INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Hearts Content DATE INSPECTED: 18-Apr-02
West Avalon

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|--|--|-----------------|-----------------|
| #1 - HCT-41L-BP Structure High Voltage | Minor scaling on top surface of pad. Remainder of pad is in good condition (22 Mpa). | | 4 |
| #2 - HCT-41L-B Sul Hex Breaker | Pad has an addition to original pad. Minor pitting on top surface (20 Mpa). | | 4 |
| #3 - HCT-41L-DB Structure High Voltage | Top surface of pad has rough finish with some minor pitting, otherwise pad is in good condition (28 Mpa). | | 4 |
| #4 - HCT-16L-DL Structure High Voltage | Top surface of pad has rough finish with minor pitting and chipping. Remainder of pad is in good condition (28 Mpa). | | 4 |
| #5 - HCT-43L-B Sul Hex Breaker | Top surface of pad has scaling, chipping, and pitting with some areas of exposed aggregate (40 Mpa). | Type A Repair | 3 |
| #6 - HCT-43L-DB Structure High Voltage | Top surface of pad has rough finish with some minor scaling. Remainder of pad is in good condition (42 Mpa). | | 4 |

Priority Rating

1
2
3
4

Priority Description

Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
within 3 years
within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Hearts Content
West Avalon

DATE INSPECTED: 18-Apr-02

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|--|---|-----------------|-----------------|
| #7 - Structure High Voltage | Good condition (40 Mpa). | | 4 |
| | | | |
| | | | |
| | | | |
| #8 - T3 Transformer 200184 | Spill pan installed under transformer. No portions of concrete visible to make an assessment. | | |
| | | | |
| | | | |
| #9 - HCT-T3-A Structure High Voltage | One corner of pad is chipped away (approx. 150mm) some pitting on top surface of pad. Minor cracking also present on pad (30 Mpa). | Type A Repair | 3 |
| | | | |
| | | | |
| #10 - HCT-BTS-1 Structure High Voltage | Good condition (38 Mpa). | | 4 |
| | | | |
| | | | |
| | | | |
| #11 - Structure High Voltage | Good condition (34 Mpa). | | 4 |
| | | | |
| | | | |
| | | | |
| #12 - Structure High Voltage | Minor pitting and scaling on top surface of pad. Remainder of pad is in good condition (44 Mpa). | Type A Repair | 3 |
| | | | |
| | | | |
| | | | |

Priority Rating

1
2
3
4

Priority Description

Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
within 3 years
within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Hearts Content DATE INSPECTED: 18-Apr-02
West Avalon

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|--|--|-------------------|-----------------|
| #13 - Structure High Voltage | Minor scaling on top surface of pad. Slight alligator cracking on two sides of pad (44 Mpa). | Type A & B Repair | 3 |
| | | | |
| | | | |
| #14 - HCT-80L-DL Structure High Voltage | Good condition (24 Mpa). | | 4 |
| | | | |
| | | | |
| #15 - 80L-B Oil Circuit reaker | Minor scaling and pitting on top surface of pad (42 Mpa). | Type A Repair | 3 |
| | | | |
| | | | |
| #16 - Structure High Voltage | Rough finish on top surface of pad, also top surface has pitting and alligator cracking in several areas (20 Mpa). | Type A & B Repair | 2 |
| | | | |
| | | | |
| #17 - Structure High Voltage | Good condition (28 Mpa). | | 4 |
| | | | |
| | | | |
| #18 - T1 Transformer 200094 | Spill pan installed under transformer. Visible portion of pad seems to be in good condition (35 Mpa). | | 4 |
| | | | |
| | | | |

Priority Rating

1
2
3
4

Priority Description

Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

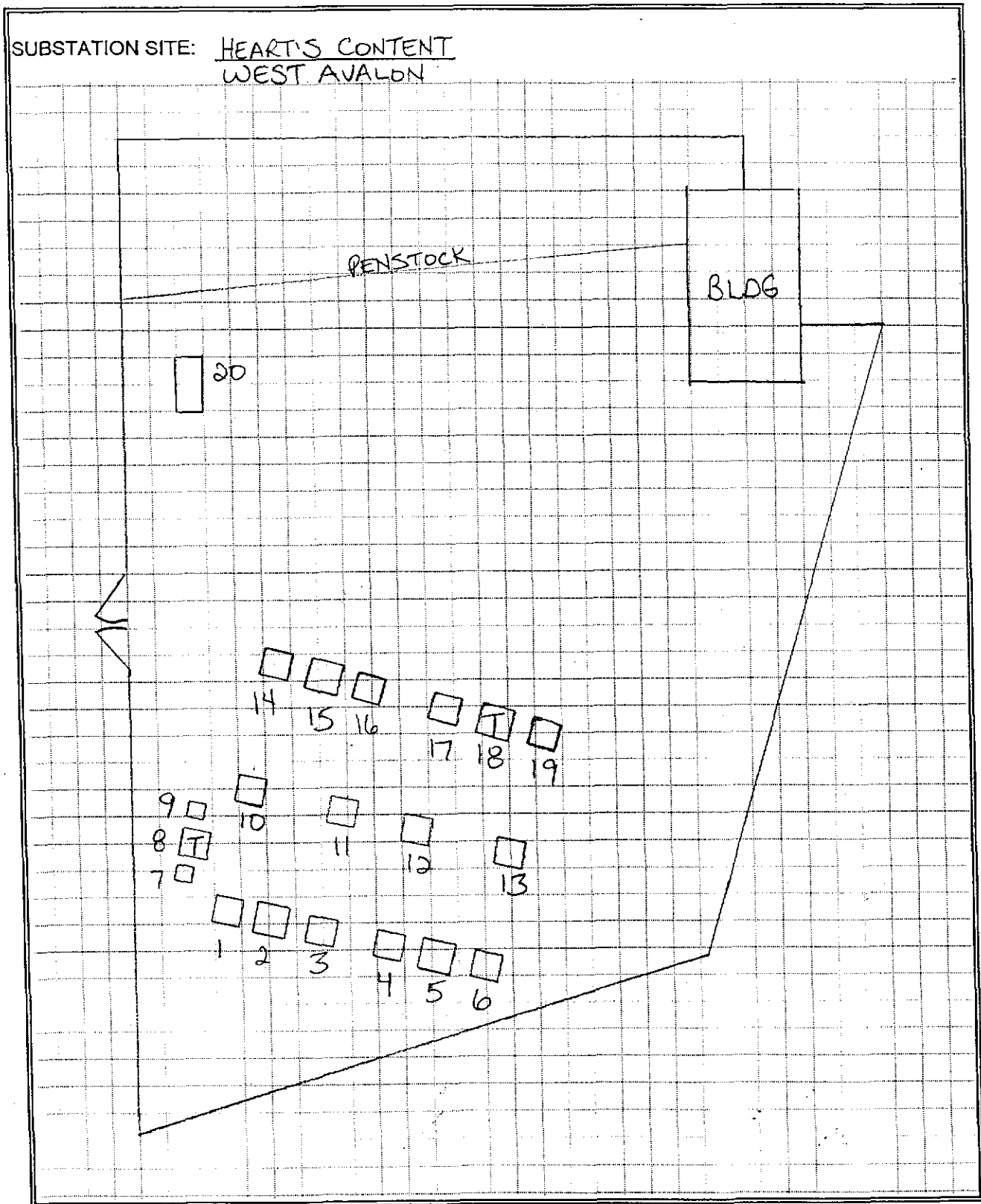
within 1 year
within 3 years
within 5 years

SUBSTATION SITE: Hearts Content DATE INSPECTED: 18-Apr-02
West Avalon

| <u>Priority Rating</u> | <u>Priority Description</u> | <u>Recommended Time Frame</u> |
|------------------------|--|-------------------------------|
| 1 | Immediate corrective action required | within 1 year |
| 2 | Corrective action required to avoid increasing costs to repair | within 3 years |
| 3 | General maintenance item | within 5 years |
| 4 | No corrective action or maintenance required at this time | |

INSPECTION OF CONCRETE PADS & FOUNDATIONS
LOCATION SKETCH

SUBSTATION SITE: HEART'S CONTENT
WEST AVALON



INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Holyrood DATE INSPECTED: 15-Apr-02
West Avalon

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|---|---|--|-----------------|
| #1 - HOL-39L-A2 Structure High Voltage | Good condition (30 Mpa). | | 4 |
| #2 - HOL-39L-A2-GS Structure High Voltage | Top surface of pad has rough finish with aggregate exposed in several areas. Three corners of pad are chipped/eroded away There is also scaling on the top surface of pad (42 Mpa). | Type A Repair | 2 |
| #3 - HOL-39L-A1-GS Structure High Voltage | Minor alligator cracking is present throughout top surface of pad. One corner is chipped. Lower portion of pad seems to be okay (46 Mpa). | Type B Repair for cracks & Type A Repair for chipped areas | 2 |
| #4 - HOL-T1-HGS Structure High Voltage | Alligator cracking throughout top surface of pad. Remainder of pad seems to be in fair condition (50 Mpa). | Type B repair | 2 |
| #5 - T1 Transformer 200306 | Alligator cracking and associated hairline cracking throughout top surface of pad. Cracks extend down approx 150mm with a separation of 1-2mm. Portions of pad have potential to separate from pad (34 Mpa). | Type C Repair | 1 |
| #6 - HOL-T1-D Structure Low Voltage | Minor alligator cracking throughout top surface of pad. One corner of pad is chipped (46 Mpa). | Type B Repair for cracks & Type A Repair for chipped areas | 3 |

Priority Rating

1
2
3
4

Priority Description

Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
within 3 years
within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Holyrood DATE INSPECTED: 15-Apr-02
West Avalon

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|---|--|---|-----------------|
| #7 - Structure Low Voltage | Good condition (46 Mpa). | | 4 |
| | | | |
| | | | |
| #8 - HOL-02-DL Structure Low Voltage | Good condition (44 Mpa). | | 4 |
| | | | |
| | | | |
| #9 - HOL-02-R Recloser | Four hairline cracks on top of pad (less than 1mm separation). There is one area on edge of pad that is spalled away leaving aggregate exposed (approx. 300mm long). Remainder of pad is in fair condition (36 Mpa). | Type B Repair for cracks & Type A Repair for spalled area | 2 |
| | | | |
| #10 - HOL-01-R Recloser | Minor scaling and rough finish on top surface of pad. Remainder of pad is in good condition (22 Mpa). | | 4 |
| | | | |
| | | | |
| #11 - HOL-01-BP Structure Low Voltage | Minor scaling on top surface of pad, otherwise pad is in good condition (42 Mpa). | Type A Repair | 3 |
| | | | |
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Priority Rating

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Priority Description

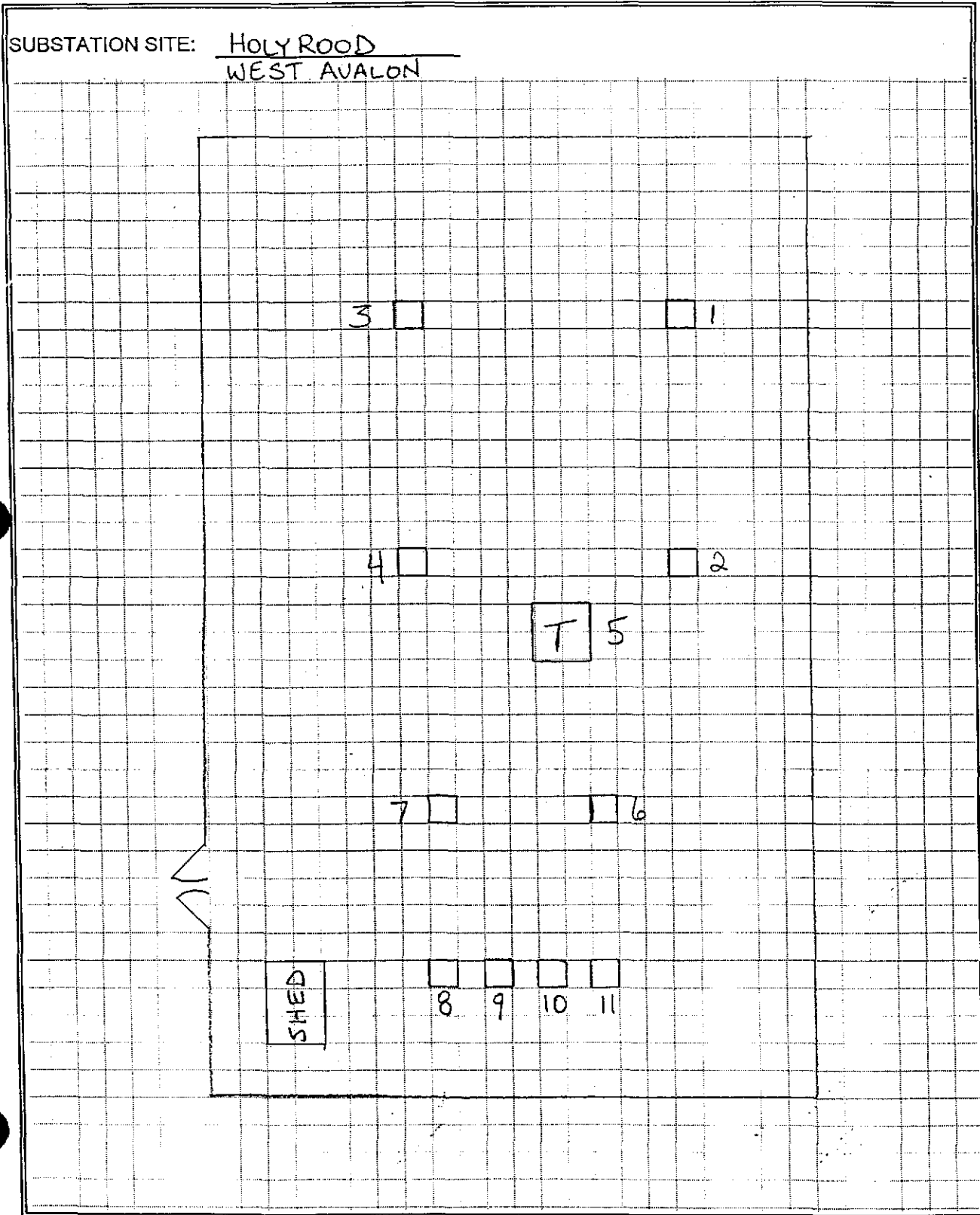
Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
within 3 years
within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS
LOCATION SKETCH

SUBSTATION SITE: HOLY ROOD
WEST AVALON



INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Islington DATE INSPECTED: 18-Apr-02
West Avalon

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|----------------------------|--|-----------------|-----------------|
| #1 - ISL-01-R Recloser | Good condition (42 Mpa). | | 4 |
| | | | |
| | | | |
| | | | |
| #2 - T1 Transformer 200090 | Good condition (24 Mpa). | | 4 |
| | | | |
| | | | |
| | | | |
| #3 - Not In Use | Good condition. | | 4 |
| | | | |
| | | | |
| | | | |
| #4 - Not In Use | One area of pad has some pitting with some aggregate exposed, remainder of pad is in good condition. | Type A Repair | 3 |
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Priority Rating

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Priority Description

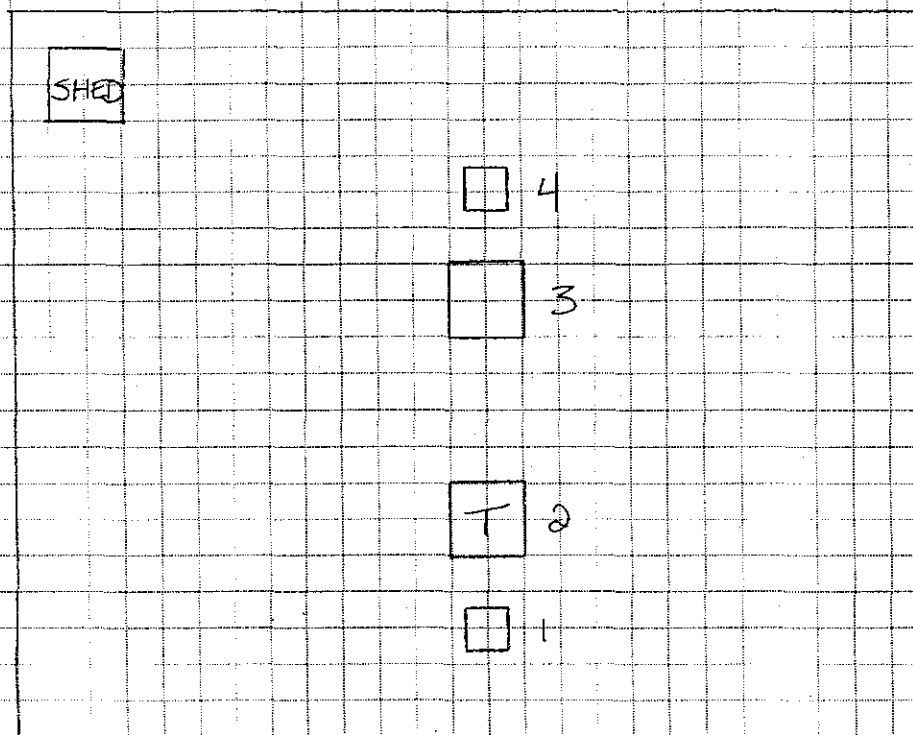
Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
within 3 years
within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS
LOCATION SKETCH

SUBSTATION SITE: ISLINGTON
WEST AVALON



INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: New Chelsea
West Avalon

DATE INSPECTED: 18-Apr-02

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|--|--|-----------------|-----------------|
| #1 - Structure High Voltage | Top surface has rough finish, otherwise pad is in good condition (38 Mpa). | | 4 |
| | | | |
| | | | |
| #2 - Structure High Voltage | Good condition (24 Mpa). | | 4 |
| | | | |
| | | | |
| #3 - T2-D Structure High Voltage | Good condition (44 Mpa). | | 4 |
| | | | |
| | | | |
| #4 - T2-B Oil Circuit Breaker | Rough finish on top surface of pad, otherwise pad is in good condition (38 Mpa) | | 4 |
| | | | |
| | | | |
| #5 - Structure High Voltage | Rough finish on top surface of pad, one area of minor pitting, remainder of pad is in good condition (34 Mpa). | | 4 |
| | | | |
| | | | |
| #6 - Structure High Voltage | Rough finish on top surface of pad. One minor hairline crack also present. Remainder of pad is in good condition (26 Mpa). | Type B Repair | 3 |
| | | | |
| | | | |

Priority Rating

1
2
3
4

Priority Description

Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
within 3 years
within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: New Chelsea
West Avalon

DATE INSPECTED: 18-Apr-02

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|---|---|-----------------|-----------------|
| #7 - Structure High Voltage | Rough finish on top surface of pad, otherwise pad is in good condition (40 Mpa) | | 4 |
| | | | |
| | | | |
| #8 - T3 Transformer 200008 200009 200010 | Above ground structure supporting transformers. | | |
| | | | |
| #9 - 65L-GS Structure High Voltage | Good condition (40 Mpa). | | 4 |
| | | | |
| | | | |
| #10 - 65L-B Oil Circuit Breaker | Good condition (34 Mpa). | | 4 |
| | | | |
| | | | |
| #11 - 65L-BP Structure High Voltage | Good condition (42 Mpa). | | 4 |
| | | | |
| | | | |
| #12 - Structure High Voltage | Minor scaling on top surface of pad. Remainder of pad is in fair condition (30 Mpa). | | 4 |
| | | | |
| | | | |

Priority Rating

- 1
- 2
- 3
- 4

Priority Description

- Immediate corrective action required
- Corrective action required to avoid increasing costs to repair
- General maintenance item
- No corrective action or maintenance required at this time

Recommended Time Frame

- within 1 year
- within 3 years
- within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: New Chelsea DATE INSPECTED: 18-Apr-02
West Avalon

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|--|---|-----------------|-----------------|
| #13 - T1 Transformer 200252 | Spill pan installed under transformer. Visible area of pad seems to be in good condition (34 Mpa). | | 4 |
| #14 - Structure High Voltage | Rough finish on top surface of pad. Otherwise pad is in good condition (30 Mpa). | | 4 |
| #15 - 43L-DB Structure High Voltage | Minor pitting on top surface, also top surface has rough finish. Remainder of pad is in good condition (34 Mpa). | Type A Repair | 3 |
| #16 - 43L-B Oil Circuit Breaker | Minor pitting on top surface, also top surface has rough finish. Remainder of pad is in good condition (28 Mpa). | Type A Repair | 3 |
| #17 - 43L-BP Structure High Voltage | Minor pitting on top surface, also top surface has rough finish. Remainder of pad is in good condition (34 Mpa). | Type A Repair | 3 |
| #18 - NCH-44L-R Recloser | Minor pitting in one area of top surface of pad, top of pad also has rough finish with some aggregate exposed (34 Mpa). | Type A Repair | 3 |

Priority Rating

1
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3
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Priority Description

Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

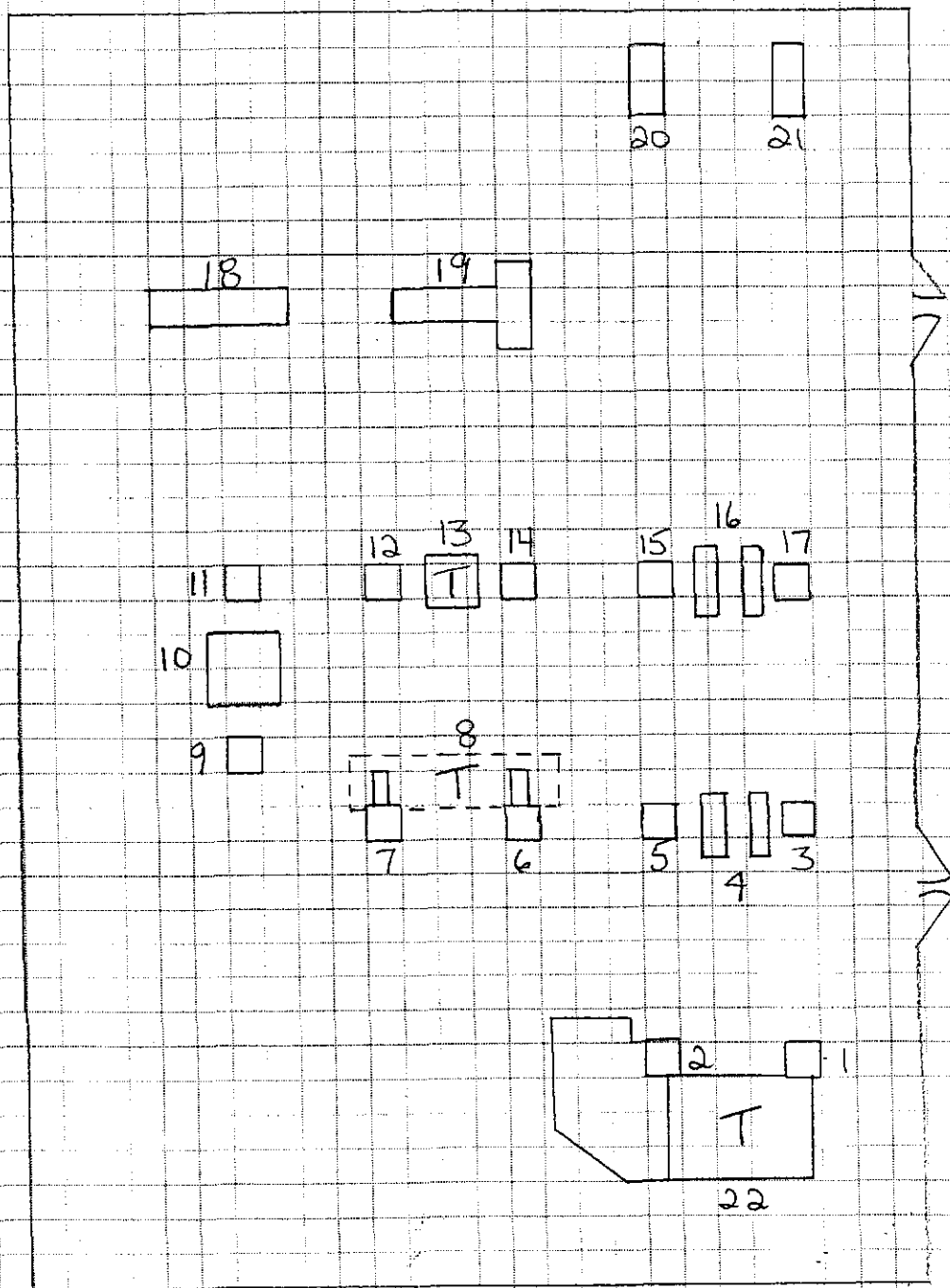
within 1 year
within 3 years
within 5 years

SUBSTATION SITE: New Chelsea DATE INSPECTED: 18-Apr-02
West Avalon

| <u>Priority Rating</u> | <u>Priority Description</u> | <u>Recommended Time Frame</u> |
|------------------------|--|-------------------------------|
| 1 | Immediate corrective action required | within 1 year |
| 2 | Corrective action required to avoid increasing costs to repair | within 3 years |
| 3 | General maintenance item | within 5 years |
| 4 | No corrective action or maintenance required at this time | |

INSPECTION OF CONCRETE PADS & FOUNDATIONS
LOCATION SKETCH

SUBSTATION SITE: NEW CHELSEA
WEST AVALON



SUBSTATION SITE: New Harbour DATE INSPECTED: 19-Apr-02
West Avalon

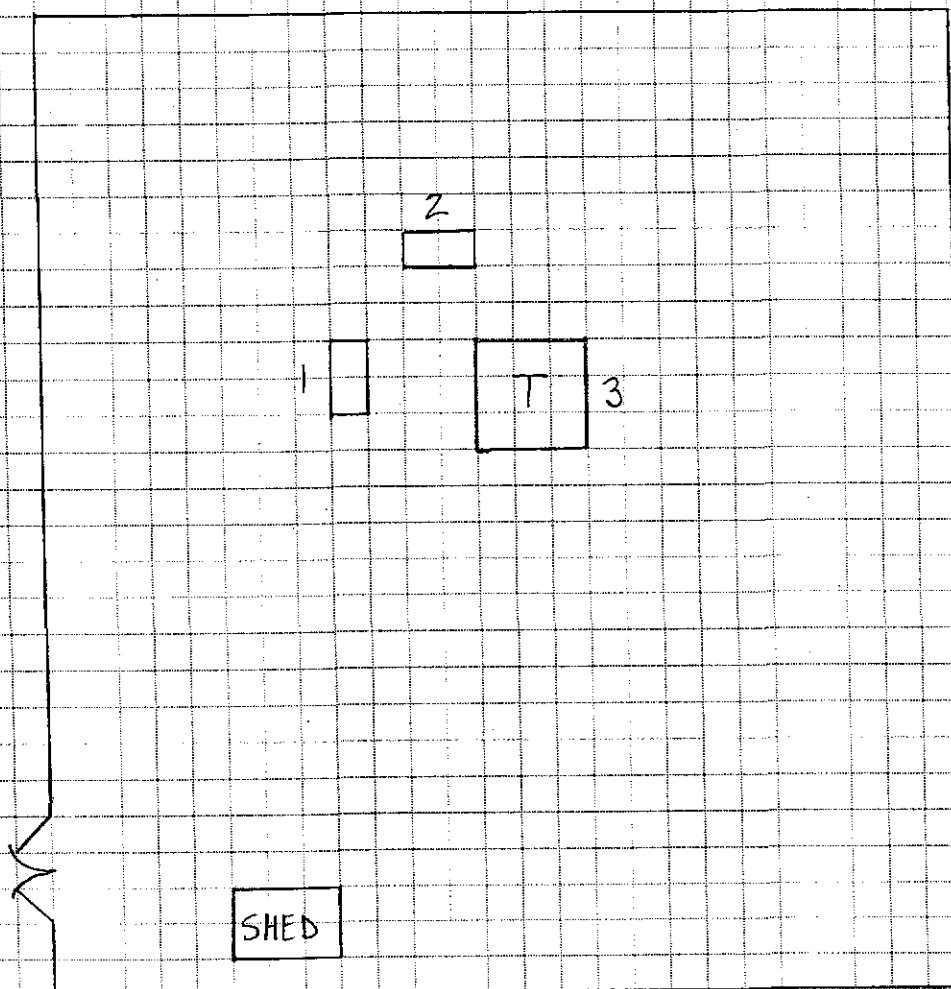
Priority Rating

Recommended Time Frame

☐ within 1 year
☐ within 3 years
☐ within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS
LOCATION SKETCH

SUBSTATION SITE: NEW HARBOUR
WEST AVALON

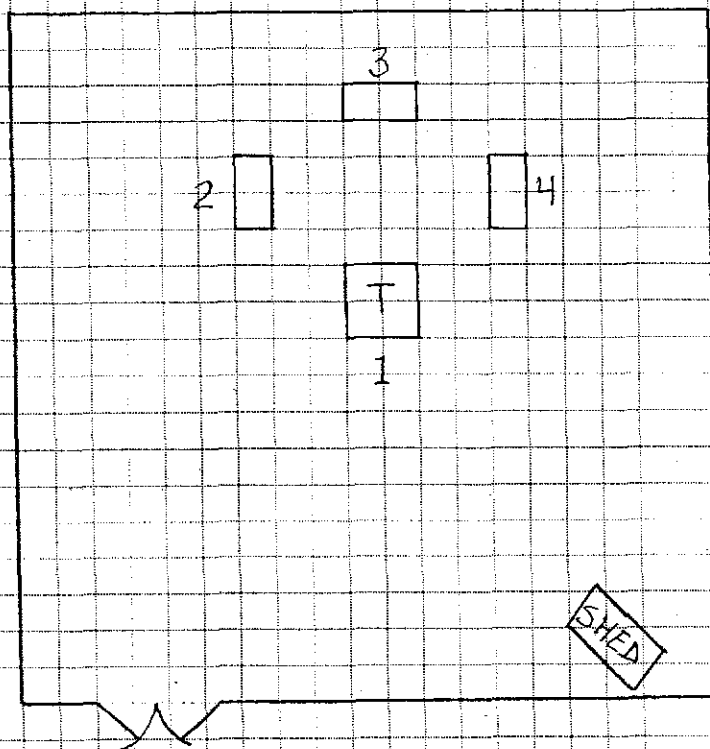


SUBSTATION SITE: Old Perlican DATE INSPECTED: 18-Apr-02
West Avalon

| <u>Priority Rating</u> | <u>Priority Description</u> | <u>Recommended Time Frame</u> |
|------------------------|--|-------------------------------|
| 1 | Immediate corrective action required | within 1 year |
| 2 | Corrective action required to avoid increasing costs to repair | within 3 years |
| 3 | General maintenance item | within 5 years |
| 4 | No corrective action or maintenance required at this time | |

**INSPECTION OF CONCRETE PADS & FOUNDATIONS
LOCATION SKETCH**

SUBSTATION SITE: OLD PERLICAN
WEST AVALON



INSPECTION OF CONCRETE PADS & FOUNDATIONS

DATE INSPECTED: 18-Apr-02

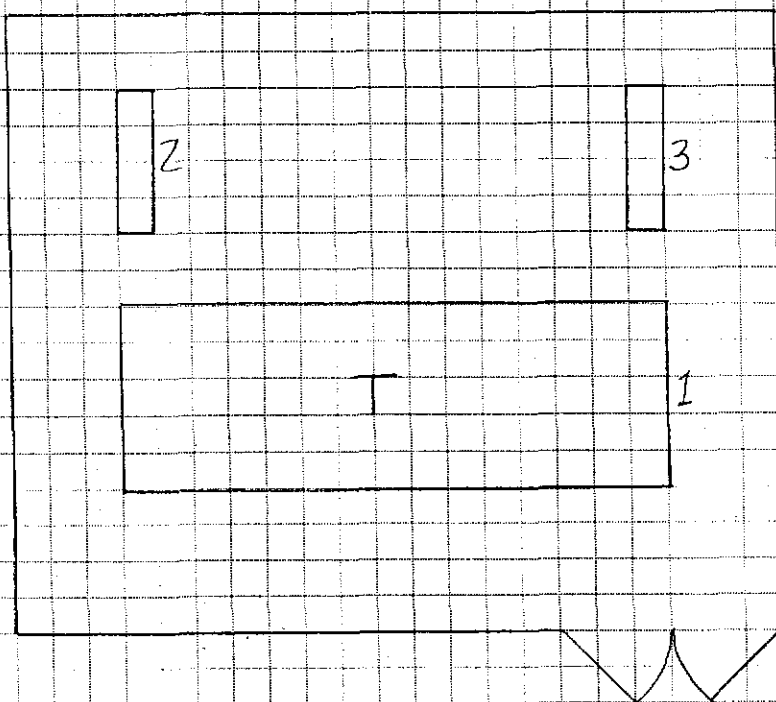
11#3 -

Recommended Time Frame

- | | |
|---|--|
| 1 | Immediate corrective action required |
| 2 | Corrective action required to avoid increasing costs to repair |
| 3 | General maintenance item |
| 4 | No corrective action or maintenance required at this time |

INSPECTION OF CONCRETE PADS & FOUNDATIONS
LOCATION SKETCH

SUBSTATION SITE: PITTMAN'S POND
WEST AVALON



INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Riverhead DATE INSPECTED May 10, 2002

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|--------------------|---|-------------------|-----------------|
| #1 - RVH-02 | Good Condition. (38 Mpa) | Future Monitoring | 4 |
| -R | Surface is coarse in areas with weathered | | |
| Recloser | cement/sand matrix. | | |
| | | | |
| | | | |
| #2 - RVH-01 | Good Condition. (40 Mpa) | | 4 |
| - R | Surface is coarse in areas with weathered | | |
| Recloser | cement/sand matrix. | | |
| | | | |
| | | | |
| #3 - T1 | Fair Condition. | Type A Repair | 2 |
| Transformer | The edges and corners are chipped away | | |
| | above grade. | | |
| | | | |
| | | | |
| #4 - RVH-95L | Good Condition. (32 Mpa) | | 4 |
| -B | | | |
| Oil Breaker | | | |
| | | | |
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Priority Rating

1
2
3
4

Priority Description

Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

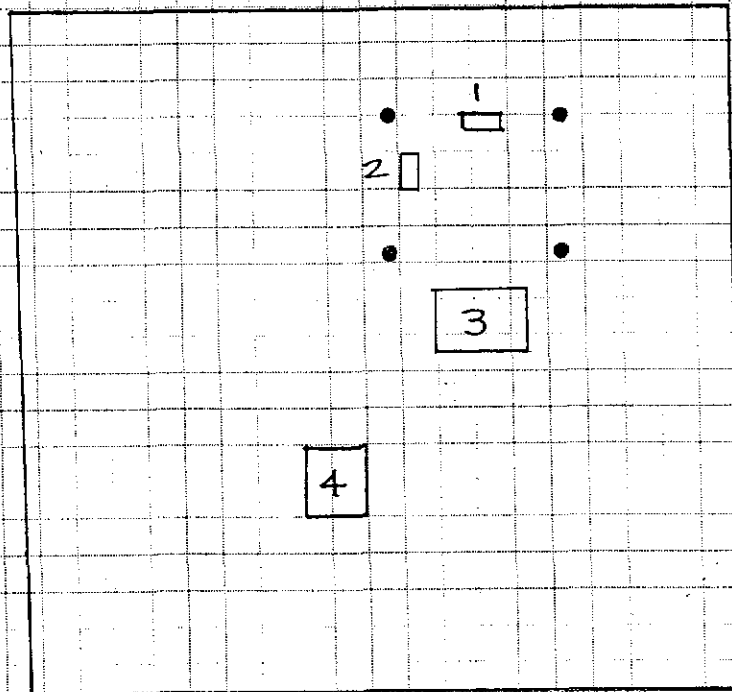
Recommended Time Frame

within 1 year
within 3 years
within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS
LOCATION SKETCH

SUBSTATION SITE: RIVERHEAD

MAIN ROAD



INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Springfield DATE INSPECTED May 9, 2002

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|--------------------|--|-----------------|-----------------|
| #1 - SPF-01 | Good Condition. (38 Mpa) | | 4 |
| -DI | | | |
| Low Voltage | | | |
| | | | |
| | | | |
| #2 - SPF-01 | Good Condition. (42 Mpa) | | 4 |
| -R | | | |
| Recloser | | | |
| | | | |
| | | | |
| #3 - SPF-02 | Good Condition. (40MPa) | | 4 |
| -R | | | |
| Recloser | | | |
| | | | |
| | | | |
| #4 - SPF-102 | Good Condition. (38 Mpa) | | 4 |
| -BP | | | |
| Low Voltage | | | |
| | | | |
| | | | |
| #5 - SPF-03 | Fair to good Condition. (36MPa) | Type B Repair | 2 |
| -DL | Some alligator cracking throughout the | | |
| Low Voltage | top surface. One crack (<1mm) from | | |
| | one anchor bolt out to side. | | |
| | | | |
| | | | |
| #6 - SPF-03 | Good Condition. (38 Mpa) | | 4 |
| -R | | | |
| Recloser | | | |
| | | | |
| | | | |

Priority Rating

- 1
- 2
- 3
- 4

Priority Description

- Immediate corrective action required
- Corrective action required to avoid increasing costs to repair
- General maintenance item
- No corrective action or maintenance required at this time

Recommended Time Frame

- within 1 year
- within 3 years
- within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Springfield DATE INSPECTED May 9, 2002

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|--------------------|---|-------------------|-----------------|
| #7 -CT-373 | Good Condition. (36 Mpa) | Future Monitoring | 4 |
| | Slight cement/sand matrix deterioration | | |
| | | | |
| | | | |
| #8 - SPF-1T1 | Good Condition. (44 Mpa) | | 4 |
| -D | | | |
| Low Voltage | | | |
| | | | |
| | | | |
| #9 - T1 | Good Condition. (42 Mpa) | Future Monitoring | 4 |
| 200277 | Minor alligator cracking starting to show | | |
| Transformer | on top surface. | | |
| | | | |
| | | | |
| #10 - SPF-T1 | Good Condition. (40 Mpa) | | 4 |
| -A | | | |
| High Voltage | | | |
| | | | |
| | | | |
| #11 - SPF-39L | Good Condition. (38 Mpa) | | 4 |
| AS | | | |
| High Voltage | | | |
| | | | |
| | | | |
| #12 - SPF-39L | Good Condition. (44 Mpa) | | 4 |
| -A6-GS | | | |
| High Voltage | | | |
| | | | |
| | | | |

Priority Rating

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Priority Description

Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

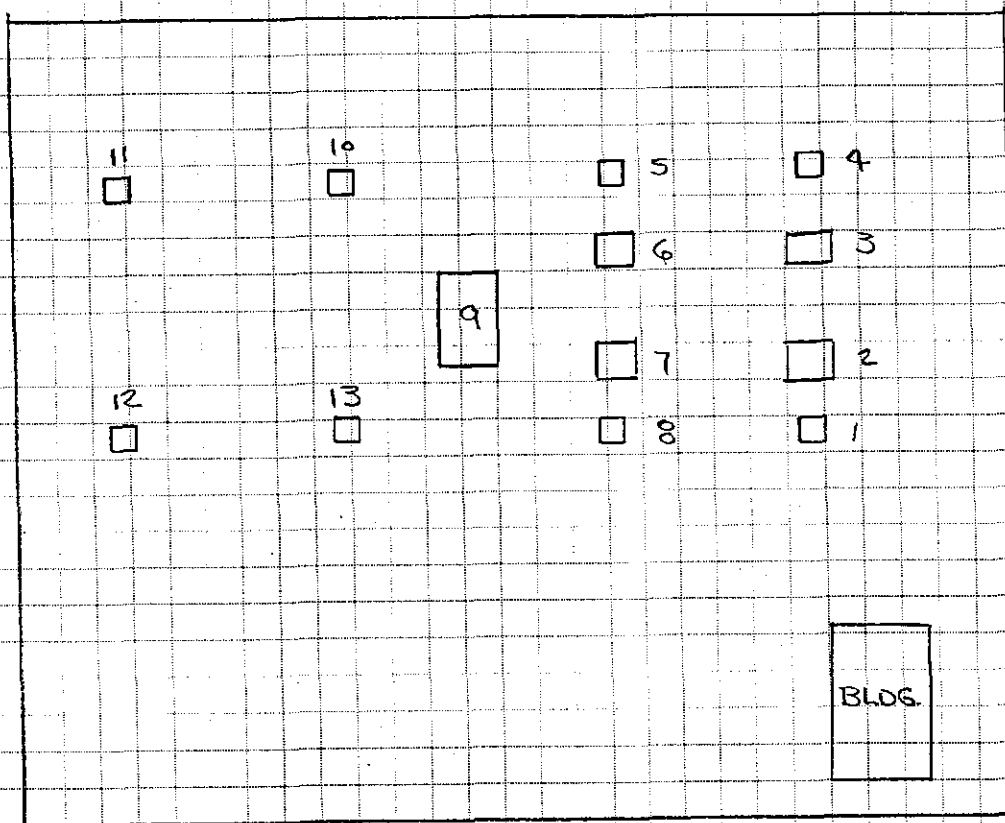
within 1 year
within 3 years
within 5 years

SUBSTATION SITE: Springfield DATE INSPECTED May 9, 2002

| <u>Priority Rating</u> | <u>Priority Description</u> | <u>Recommended Time Frame</u> |
|------------------------|--|-------------------------------|
| 1 | Immediate corrective action required | within 1 year |
| 2 | Corrective action required to avoid increasing costs to repair | within 3 years |
| 3 | General maintenance item | within 5 years |
| 4 | No corrective action or maintenance required at this time | |

INSPECTION OF CONCRETE PADS & FOUNDATIONS
LOCATION SKETCH

SUBSTATION SITE: SPRING FIELD

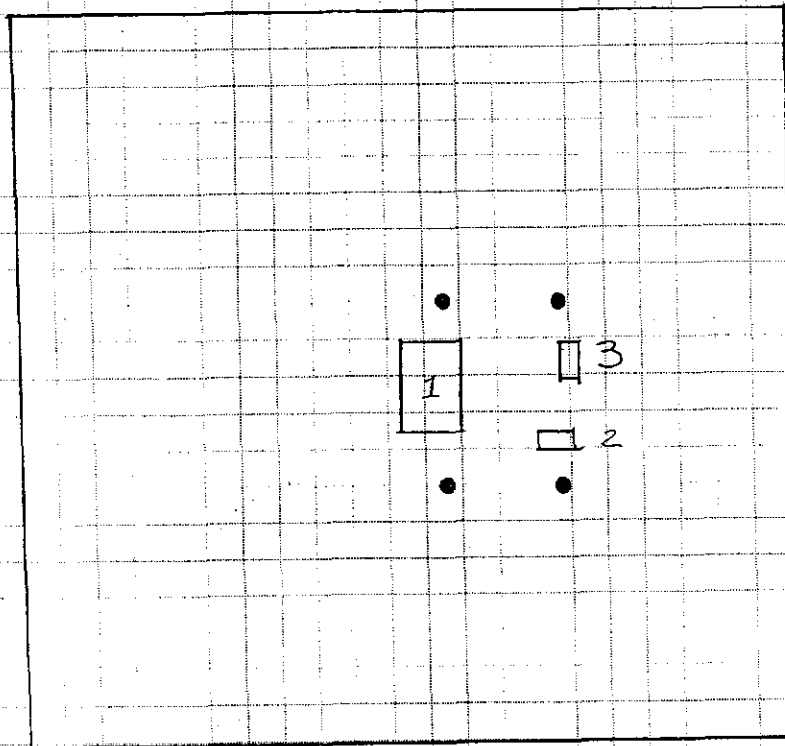


SUBSTATION SITE: Trepassey DATE INSPECTED May 13, 2002

| <u>Priority Rating</u> | <u>Priority Description</u> | <u>Recommended Time Frame</u> |
|------------------------|--|-------------------------------|
| 1 | Immediate corrective action required | within 1 year |
| 2 | Corrective action required to avoid increasing costs to repair | within 3 years |
| 3 | General maintenance item | within 5 years |
| 4 | No corrective action or maintenance required at this time | |

INSPECTION OF CONCRETE PADS & FOUNDATIONS
LOCATION SKETCH

SUBSTATION SITE: TREPASSEY



MAIN ROAD.

INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Upper Island Cove DATE INSPECTED May 8, 2002

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|-------------------------------|-------------------------|-----------------|-----------------|
| #1 - ILC-01-R Recloser | Good Condition. (30MPa) | | 4 |
| | | | |
| | | | |
| | | | |
| #2 - ILC-02-R Recloser | Good Condition. (30MPa) | | 4 |
| | | | |
| | | | |
| | | | |
| #3 - 200263 Transformer | Good Condition. (38MPa) | | 4 |
| | | | |
| | | | |
| | | | |
| #4 - ILC-57L -A2 High Voltage | Good Condition. (38MPa) | | 4 |
| | | | |
| | | | |
| | | | |
| #5 - ILC-T1-A High Voltage | Good Condition. (36MPa) | | 4 |
| | | | |
| | | | |
| | | | |
| #6 - No # High Voltage | Good Condition. (32MPa) | | 4 |
| | | | |
| | | | |
| | | | |

Priority Rating

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Priority Description

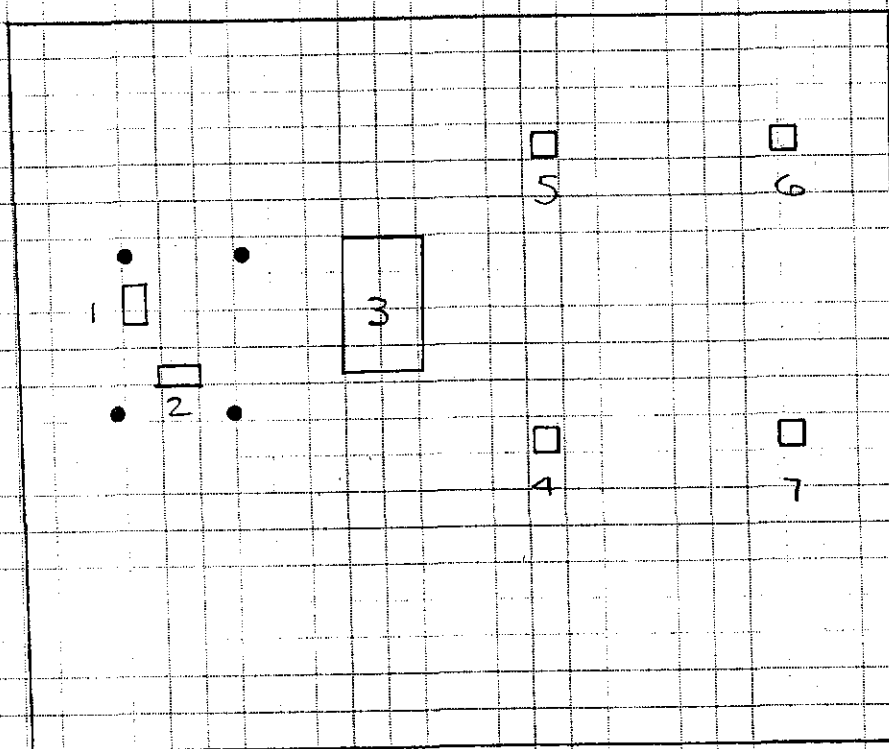
Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
within 3 years
within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS
LOCATION SKETCH

SUBSTATION SITE: UPPER ISLAND COVE



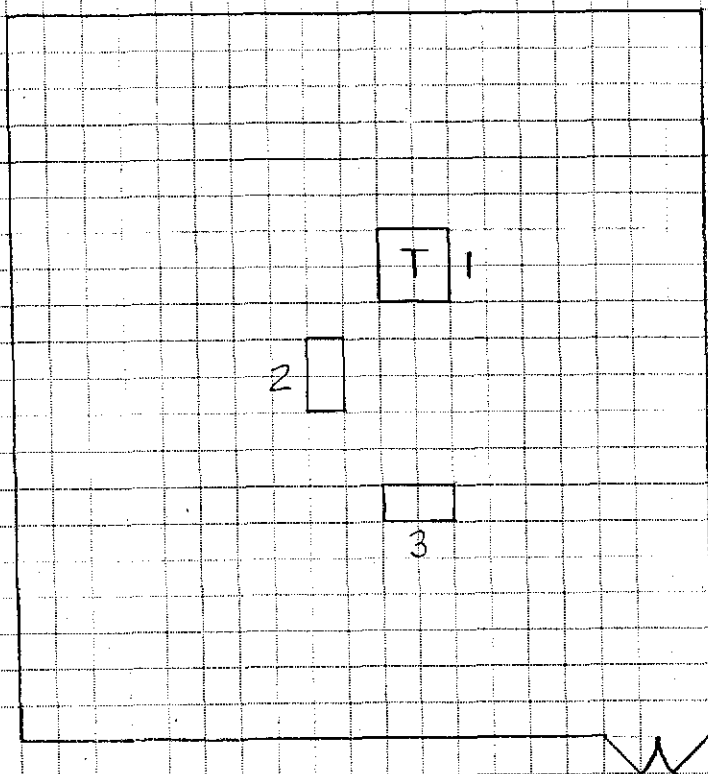
ROAD

SUBSTATION SITE: Victoria DATE INSPECTED: 18-Apr-02
West Avalon

| <u>Priority Rating</u> | <u>Priority Description</u> | <u>Recommended Time Frame</u> |
|------------------------|--|-------------------------------|
| 1 | Immediate corrective action required | within 1 year |
| 2 | Corrective action required to avoid increasing costs to repair | within 3 years |
| 3 | General maintenance item | within 5 years |
| 4 | No corrective action or maintenance required at this time | |

INSPECTION OF CONCRETE PADS & FOUNDATIONS
LOCATION SKETCH

SUBSTATION SITE: VICTORIA
WEST AYALON



INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Western Avalon DATE INSPECTED May 10, 2002

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|--------------------|-------------------------------------|-----------------|-----------------|
| #1 - WAV-01 | Good Condition. (32 Mpa) | | 4 |
| -R | | | |
| Recloser | | | |
| | | | |
| | | | |
| #2 - WAV-02 | Good Condition. (38 Mpa) | | 4 |
| - R | | | |
| Recloser | | | |
| | | | |
| | | | |
| #3 - T6 P-232 | Good Condition. (36 Mpa) | | 4 |
| Transformer | | | |
| | | | |
| | | | |
| | | | |
| #4 - WAV-86L | Fair to Good Condition. (36 Mpa) | Type B Repair | 2 |
| -B | Several hairline cracks (<1mm) near | | |
| Oil Breaker | corners. | | |
| | | | |
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Priority Rating

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4

Priority Description

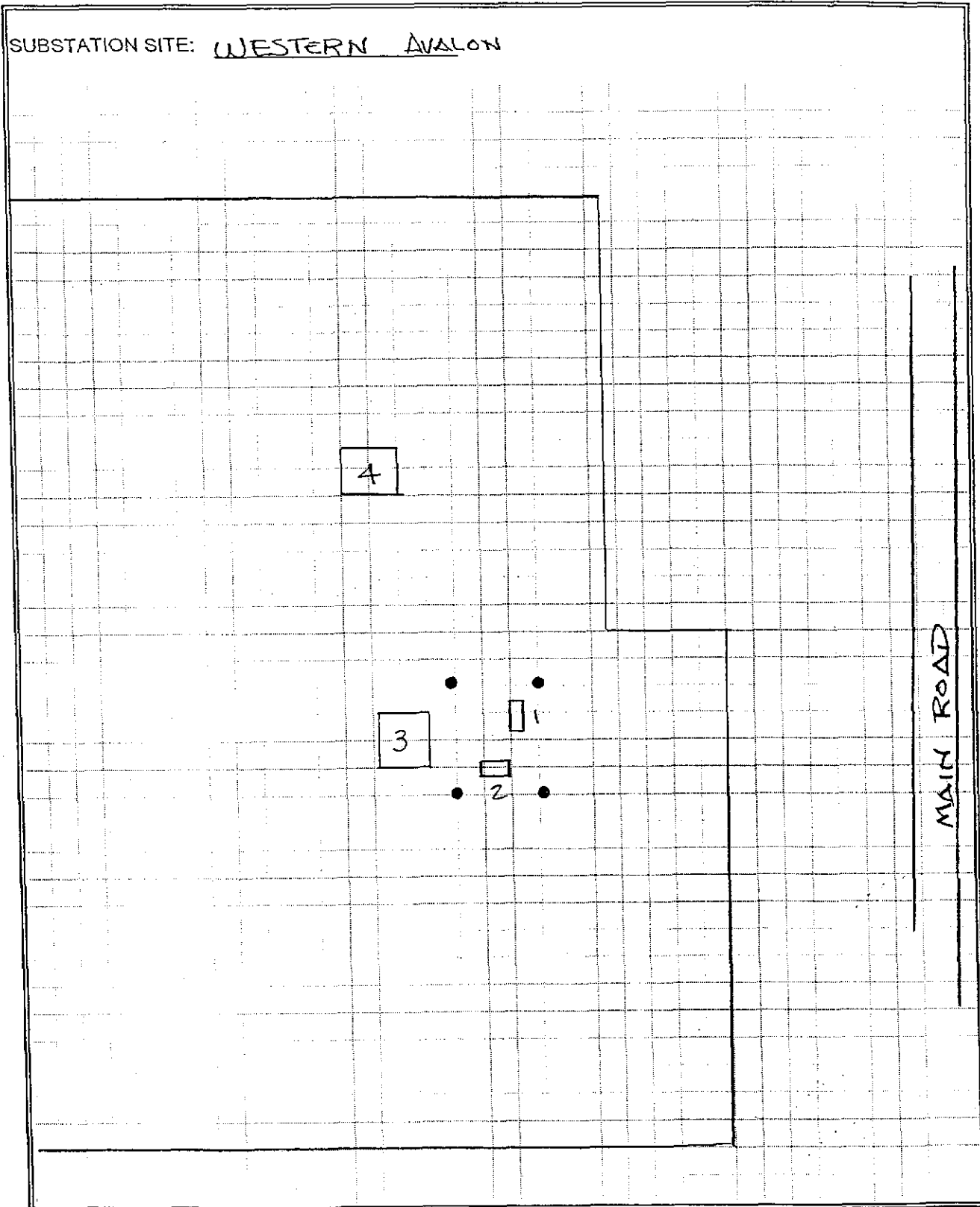
Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
within 3 years
within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS
LOCATION SKETCH

SUBSTATION SITE: WESTERN AVALON



BURIN – BONA VISTA – CENTRAL

GANDER AREA
CLARENVILLE AREA
BURIN PENINSULA AREA

GANDER AREA

BOYD'S COVE
COBBS POND
GAMBO
GANDER
GANDER BAY
GLENWOOD
GLOVERTOWN
GREENSPOND
HARE BAY
MUSGRAVE HARBOUR
ROYCEFIELD
SUMMERFORD
TERRA NOVA
TRINITY
TWILLINGATE
WESLEYVILLE

INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Boyds Cove DATE INSPECTED April 24, 2002

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|---------------------------------------|---|-----------------|-----------------|
| #1 - BOY -114L-GS2 High Voltage | Good Condition. (44MPa) | | 4 |
| | | | |
| | | | |
| | | | |
| #2 - BOY -TL254-B Oil Breaker | Good Condition. (40MPa) | | 4 |
| | | | |
| | | | |
| | | | |
| #3 - BOY -TL254-GS High Voltage | Good Condition. (42MPa) | | 4 |
| | | | |
| | | | |
| | | | |
| #4 - BOY -114L-A1 High Voltage | Good Condition. (42MPa) | | 4 |
| | | | |
| | | | |
| | | | |
| #5 - BOY-T1 Transformer | Good Condition. (new concrete) (42MPa) | | 4 |
| | | | |
| | | | |
| | | | |
| #6 - No # High Voltage | Good Condition | | 4 |
| | | | |
| | | | |
| | | | |

Priority Rating

1
2
3
4

Priority Description

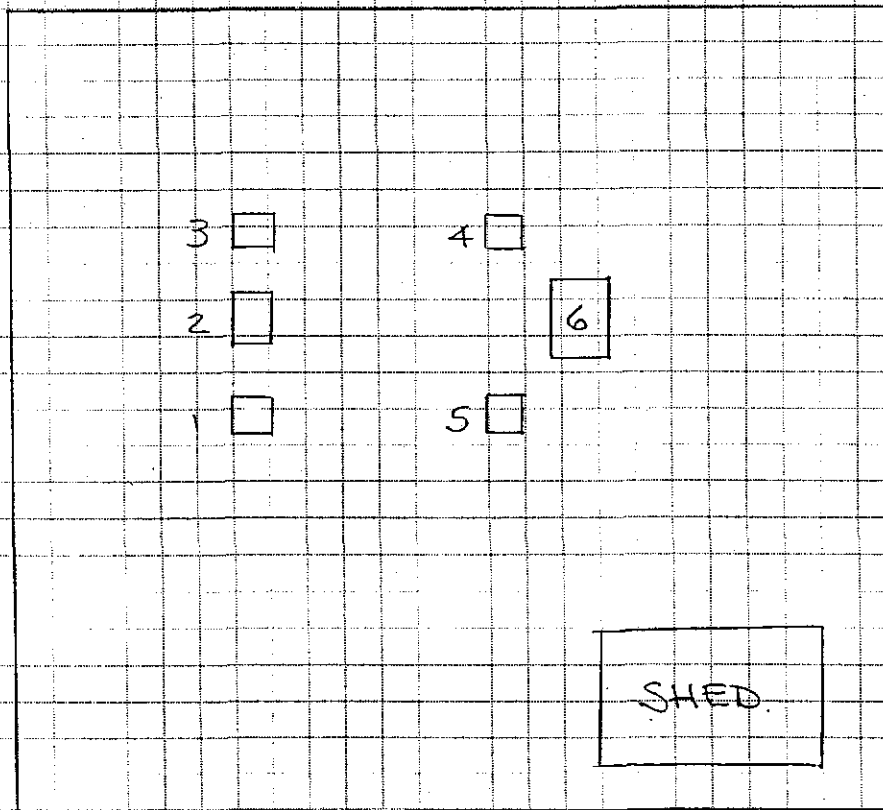
Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
within 3 years
within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS
LOCATION SKETCH

SUBSTATION SITE: Boyd's Cove



ROAD

INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Cobbs Pond DATE INSPECTED April 23, 2002

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|--------------------|---|-------------------|-----------------|
| #1 - COB-144L | Fair Condition. (38MPa) | Type C Repair | 2 |
| -GS | There are several cracks (>1mm) that | | |
| High Voltage | extend from the middle of the top surface | | |
| | out to the sides. | | |
| | | | |
| #2 - COB-144 | Fair to Good Condition. (36MPa) | Type A Repair | 3 |
| -210-D1 | Several minor hairline cracks and minor | | |
| High Voltage | alligator cracking in the middle of the top | | |
| | surface. | | |
| | | | |
| #3 - COB-210L | Fair Condition. (38MPa) | Type A & B Repair | 2 |
| -GS | There are several cracks (<1mm) that | | |
| High Voltage | extend from the middle of the top surface | | |
| | out to the sides. | | |
| | Minor spalling on one side. | | |
| | | | |
| #4 - COB-144 | Good Condition. (36MPa) | | 4 |
| -210B | | | |
| Oil Breaker | | | |
| | | | |
| | | | |
| #5 - COB-210L | Fair Condition. (38MPa) | Type A & B Repair | 2 |
| -A | There are several cracks (<1mm) that | | |
| High Voltage | extend from the middle of the top surface | | |
| | out to the sides. | | |
| | Honeycombing evident on one side. | | |
| | | | |
| #6 - No # | Good Condition | | 4 |
| Not in Use | | | |
| | | | |
| | | | |
| | | | |

Priority Rating

1
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Priority Description

Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
within 3 years
within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Cobbs Pond DATE INSPECTED April 23, 2002

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|--------------------|---|-------------------|-----------------|
| #7 - COB-T1 | Fair to Good Condition. (36MPa) | Type A & B Repair | 3 |
| 144-DL | Two minor hairline cracks in to surface | | |
| High Voltage | and one small area in top showing minor chipping. | | |
| | | | |
| #8 - COB-T1 | Good Condition. (39MPa) | | 4 |
| -144-B | | | |
| Oil Breaker | | | |
| | | | |
| #9 - COB-T1-A | Two cracks (<1mm) from middle of top | Type B Repair | 3 |
| High Voltage | surface to the sides. | | |
| | | | |
| | | | |
| #10 - COB-T2 | Good Condition. (36MPa) | | 4 |
| 200313 | | | |
| Transformer | | | |
| | | | |
| | | | |
| #11 - COB-142L | Good Condition. (38MPa) | | 4 |
| -B | | | |
| Oil Breaker | | | |
| | | | |
| | | | |
| #12 - COB-136L | Good Condition. (38MPa) | | 4 |
| #NAME? | | | |
| High Voltage | | | |
| | | | |
| | | | |

Priority Rating

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Priority Description

Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
within 3 years
within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Cobbs Pond DATE INSPECTED: _____

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|--|--|-----------------|-----------------|
| #13 - COB-210 -136-B Oil Breaker | Good Condition. (38MPa) | | 4 |
| #14 - COB-210 -136-D2 High Voltage | Fair Condition. (38MPa) There are several cracks (>1mm) that extend from the middle of the top surface out to the sides. | Type C Repair | 2 |
| #15 - No # High Voltage | Poor to Fair Condition. There are numerous cracks from middle of top surface to sides and a lot of cracks around the anchor bolts. Some spalling on the corners. | Type D Repair | 1 |
| #16 - No # High Voltage | Fair Condition. Cracks extending from middle of top surface to sides (<1mm) and slight alligator cracking around middle of top surface | Type B Repair | 2 |
| #17 - COB-136 -T1-D2 High Voltage | Fair Condition. Cracks extending from middle of top surface to sides (<1mm) and slight alligator cracking around middle of top surface | Type B Repair | 2 |
| #18 - COB-136 -T1-B Oil Breaker | Good Condition. (38MPa) | | 4 |

Priority Rating

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Priority Description

Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
within 3 years
within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Cobbs Pond DATE INSPECTED April 23, 2002

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|--|--|-------------------|-----------------|
| #19 - COB-136L -A High Voltage | Fair Condition. Cracks extending from middle of top surface to sides. (<1mm) One piece of rebar exposed on one side (34MPa) | Type A & B Repair | 2 |
| #20 - COB-T1 -200304 Transformer | Good Condition. (32MPa) | | 4 |
| #21 - COB-T1 -DL Low Voltage | Good Condition. (38MPa) | | 4 |
| #22 - COB-T1 -B Oil Breaker | Good Condition. (36MPa) | | 4 |
| #23 - No # Not in Use | Good Condition | | 4 |
| #24 - COB-5-S -D Low Voltage | Fair Condition. Cracks extending from middle of top surface to sides. (<1mm) | Type B Repair | 2 |

Priority Rating

1
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Priority Description

Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
within 3 years
within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Cobbs Pond DATE INSPECTED April 23, 2002

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|------------------------------------|--|-------------------|-----------------|
| #25 - COB-02 -BP Low Voltage | Fair Condition. Cracks extending from middle of top surface to sides. (<1mm) (34MPa) | Type B Repair | 2 |
| | | | |
| | | | |
| #26 - COB-02 -B Breaker | Good Condition. (40MPa) | | 4 |
| | | | |
| | | | |
| #27 - COB-03 -B Oil Breaker | Good Condition. (40MPa) | | 4 |
| | | | |
| | | | |
| #28 - COB-01 DB Low Voltage | Fair Condition. Cracks extending from middle of top surface to sides. (<1mm) and around the anchor bolt on one corner. Also some scaling on this corner. | Type A & B Repair | 2 |
| | | | |
| | | | |
| #29 - COB-01-B Oil Breaker | Good Condition. (38MPa) | | 4 |
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Priority Rating

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Priority Description

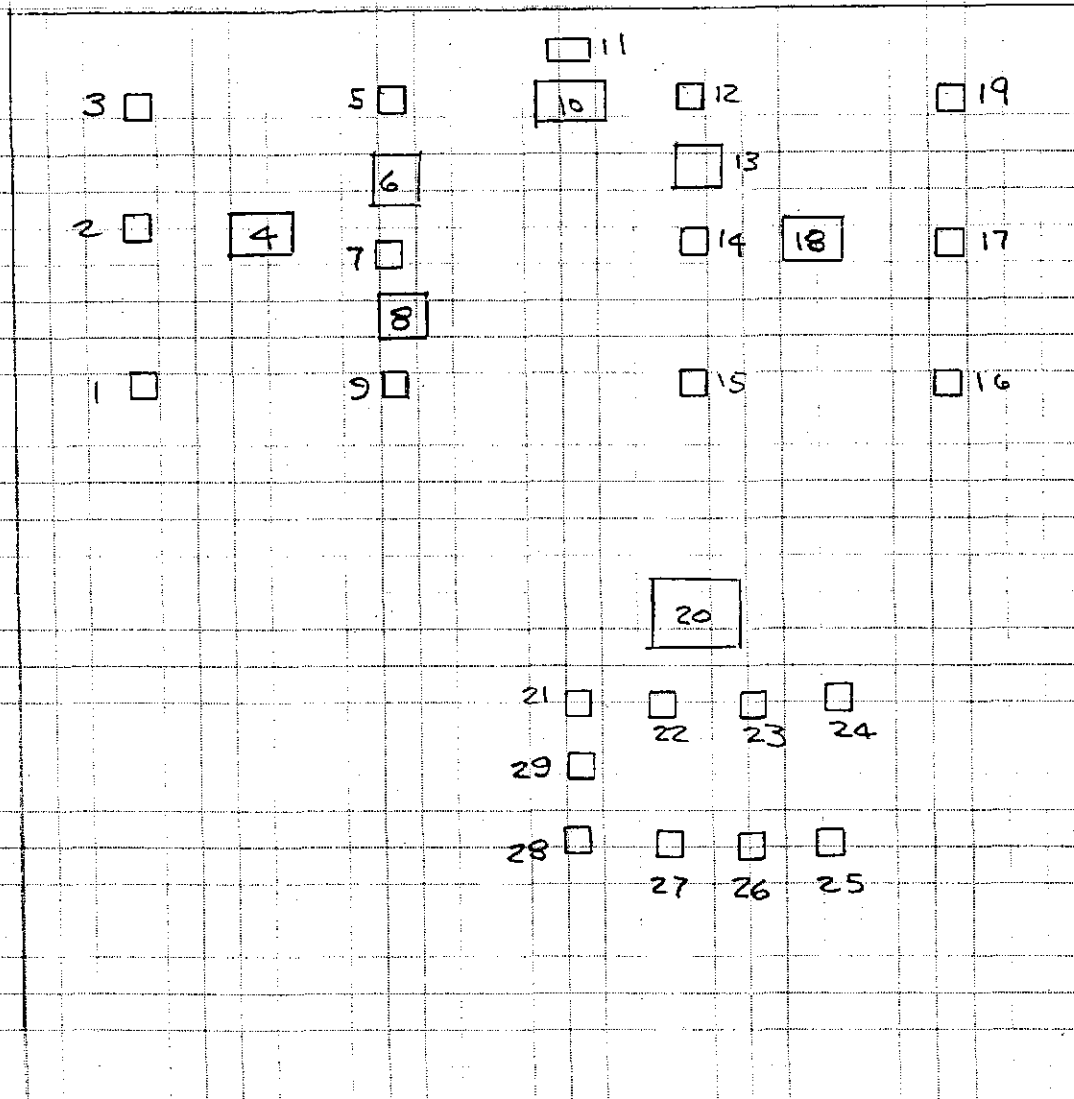
Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
within 3 years
within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS
LOCATION SKETCH

SUBSTATION SITE: COBBS POND



INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Gambo DATE INSPECTED April 23, 2002

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|--------------------------------------|--|-----------------|--------------------|
| #1 - GAM -115L-B Oil Breaker | Poor Condition. Sever scaling on top surface. | Type D Repair | 2 |
| | | | |
| | | | |
| | | | |
| #2 - GAM-T2 200301 Transformer | Poor Condition. Sever scaling on top surface | Type D Repair | 2 |
| | | | |
| | | | |
| | | | |
| #3 - GAM-01 -R1 Recloser | Good Condition. (38MPa) | | 4 |
| | | | |
| | | | |
| | | | |
| #4 - GAM-02 -R1 Recloser | Good Condition | | 4 |
| | | | |
| | | | |
| | | | |
| #5 - 220578 Regulators | Good Condition. (38MPa) Equipment is placed on wooden timbers which are sitting on the concrete pad. | | 4 |
| | | | |
| | | | |
| | | | |
| #6 - GAM-T1 200212 Transformer | Good Condition. (38MPa) | | 4 |
| | | | |
| | | | |
| | | | |

Priority Rating

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Priority Description

Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
within 3 years
within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Gambo DATE INSPECTED April 23, 2002

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|---------------------------------------|---|-----------------|-----------------|
| #7 - GAM -146L-DB High Voltage | Good Condition. (36MPa) | | 4 |
| | | | |
| | | | |
| #8 - GAM -146L-DB Oil Breaker | Good Condition. (40MPa) | | 4 |
| | | | |
| | | | |
| #9 - No # High Voltage | Good Condition. (38MPa) | | 4 |
| | | | |
| | | | |
| #10 - GAM -124L-B Oil Breaker | Good Condition. (40MPa) | | 4 |
| | | | |
| | | | |
| #11 - GAM -124L-DL High Voltage | Fair Condition There are cracks that extend from the middle of the top surface to the sides (<1mm) | Type B Repair | 3 |
| | | | |
| #12 - GAM 124L-GS1 High Voltage | Good Condition. (36MPa) | | 4 |
| | | | |
| | | | |

Priority Rating

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Priority Description

Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

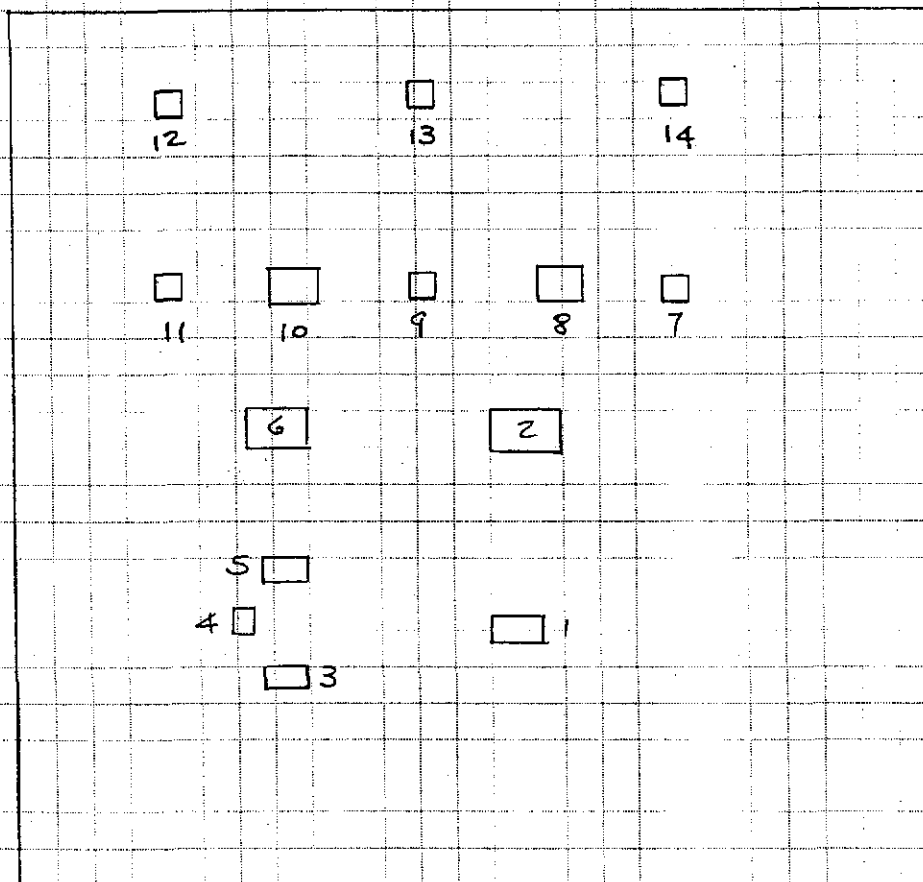
within 1 year
within 3 years
within 5 years

SUBSTATION SITE: Gambo DATE INSPECTED April 23, 2002

| <u>Priority Rating</u> | <u>Priority Description</u> | <u>Recommended Time Frame</u> |
|------------------------|--|-------------------------------|
| 1 | Immediate corrective action required | within 1 year |
| 2 | Corrective action required to avoid increasing costs to repair | within 3 years |
| 3 | General maintenance item | within 5 years |
| 4 | No corrective action or maintenance required at this time | |

INSPECTION OF CONCRETE PADS & FOUNDATIONS
LOCATION SKETCH

SUBSTATION SITE: GAMBO



ACCESS ROAD

INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Gander DATE INSPECTED April 24, 2002

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|--------------------------------------|---|---|-----------------|
| #1 - GAN-T1 -A High Voltage | Poor Condition. The top & sides are scaling with two of the base plates undermined. The sizing of this foundation for the structure is questionable. The anchor bolts are within 50mm of the sides. | Type D Repair. However the size and anchor bolt placement in this foundation should be reviewed to determine if it was constructed to specifications. A total replacement of the foundation may be warranted. | 1 |
| #2 - No # High Voltage | Poor Condition. The top & sides are scaling with two of the base plates undermined. The sizing of this foundation for the structure is questionable. The anchor bolts are within 50mm of the sides. (34MPa @ 300mm down from top) | Type D Repair. However the size and anchor bolt placement in this foundation should be reviewed to determine if it was constructed to specifications. A total replacement of the foundation may be warranted. | 1 |
| #3 - GAN -146L-DB High Voltage | Fair Condition. Cracks (>1mm) extending from middle of top surface out to sides. Alligator cracking in middle of top and some scaling on one side. (38MPa) | Type A & Type C Repair. | 2 |
| #4 - GAN-BTS -1 High Voltage | Fair Condition. Cracks (>1mm) extending from middle of top surface out to sides. Alligator cracking in middle of top and some scaling on one side. (38MPa) | Type A & Type C Repair. | 2 |
| #5 - PT 120005 | Good Condition. (40MPa) | | 4 |
| #6 - No # Circuit Breaker | Good Condition. (38MPa) | | 4 |

Priority Rating

1
2
3
4

Priority Description

Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
within 3 years
within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Gander

DATE INSPECTED April 24, 2002

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|---|--|------------------------|-----------------|
| #7 - No # Circuit Breaker | Good Condition | | 4 |
| | | | |
| | | | |
| #8 - No # Circuit Breaker | Good Condition (36MPa) | | 4 |
| | | | |
| | | | |
| #9 - GAN -146L-DL High Voltage | Fair Condition. Cracks (>1mm) extending from middle of top surface out to sides. Alligator cracking in middle of top. (40MPa) | Type C Repair | 2 |
| | | | |
| #10 - GAN -144L-DB High Voltage | Fair Condition. Cracks (>1mm) extending from middle of top surface out to sides. Alligator cracking in middle of top. (38MPa) One corner has concrete spalled off. | Type A & Type C Repair | 2 |
| | | | |
| #11,12,13,14 No #'s Circuit Breakers | Good Condition. (40 to 44MPa) | | 4 |
| | | | |
| | | | |
| #15 - GAN-T2 P175 Transformer | Fair to Good Condition. There are two cracks (>1mm) that extend from the middle of the top surface to the sides. (38MPa) | Type C Repair | 2 |
| | | | |
| | | | |

Priority Rating

1
2
3
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Priority Description

Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
within 3 years
within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Gander DATE INSPECTED April 24, 2002

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|--------------------------------------|---|-----------------|-----------------|
| #16 - GAN-T1 P-249 Transformer | Good Condition (new concrete) (36MPa) | | 4 |
| | | | |
| | | | |
| #17 - GAN-T2 -B Oil Breaker | Good Condition (40MPa) | | 4 |
| | | | |
| | | | |
| #18 - GAN -102L-B Oil Breaker | Good Condition (38MPa) | | 4 |
| | | | |
| | | | |
| #19 - GAN -108L-B Oil Breaker | Good Condition | | 4 |
| | | | |
| | | | |
| #20 - P1 200001 Transformer | Fair Condition Top surface is scaling and there is some chipping along top edges. | Type A Repair | 2 |
| | | | |
| | | | |
| #21 - GAN-T1 -B Oil Breaker | Good Condition (38MPa) | | 4 |
| | | | |
| | | | |

Priority Rating

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Priority Description

Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

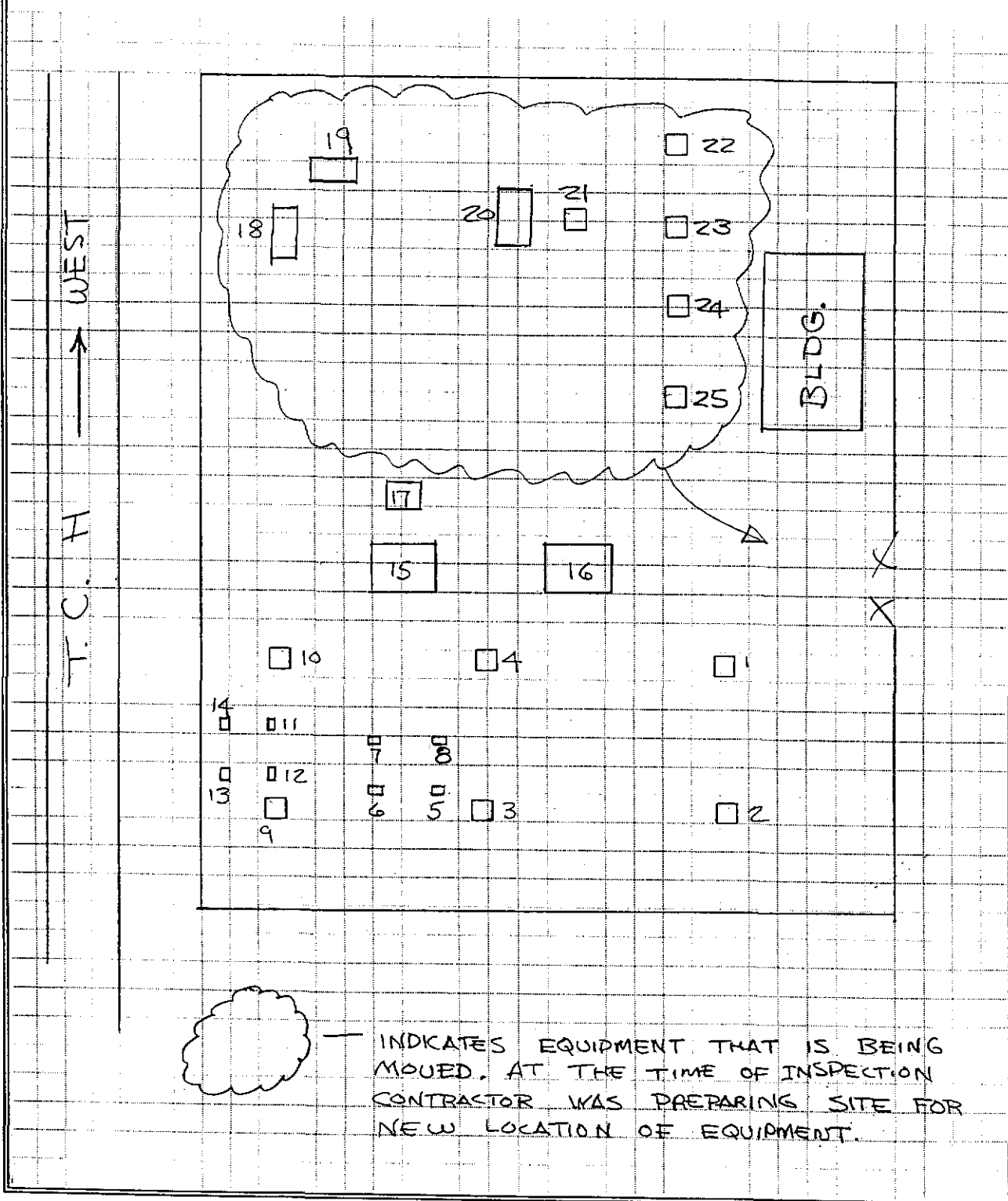
within 1 year
within 3 years
within 5 years

SUBSTATION SITE: Gander DATE INSPECTED April 24, 2002

| <u>Priority Rating</u> | <u>Priority Description</u> | <u>Recommended Time Frame</u> |
|------------------------|--|-------------------------------|
| 1 | Immediate corrective action required | within 1 year |
| 2 | Corrective action required to avoid increasing costs to repair | within 3 years |
| 3 | General maintenance item | within 5 years |
| 4 | No corrective action or maintenance required at this time | |

INSPECTION OF CONCRETE PADS & FOUNDATIONS
LOCATION SKETCH

SUBSTATION SITE: GANDER



INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Gander Bay

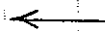
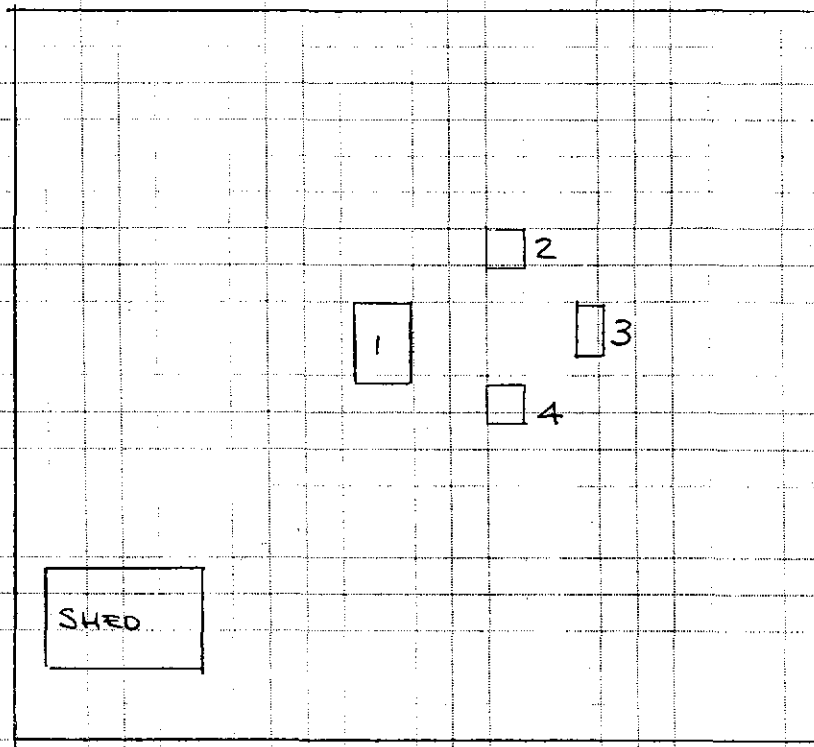
DATE INSPECTED April 23, 2002

[illegible]

| <u>Priority Rating</u> | <u>Priority Description</u> | <u>Recommended Time Frame</u> |
|------------------------|--|-------------------------------|
| 1 | Immediate corrective action required | within 1 year |
| 2 | Corrective action required to avoid increasing costs to repair | within 3 years |
| 3 | General maintenance item | within 5 years |
| 4 | No corrective action or maintenance required at this time | |

INSPECTION OF CONCRETE PADS & FOUNDATIONS
LOCATION SKETCH

SUBSTATION SITE: GANDER BAY



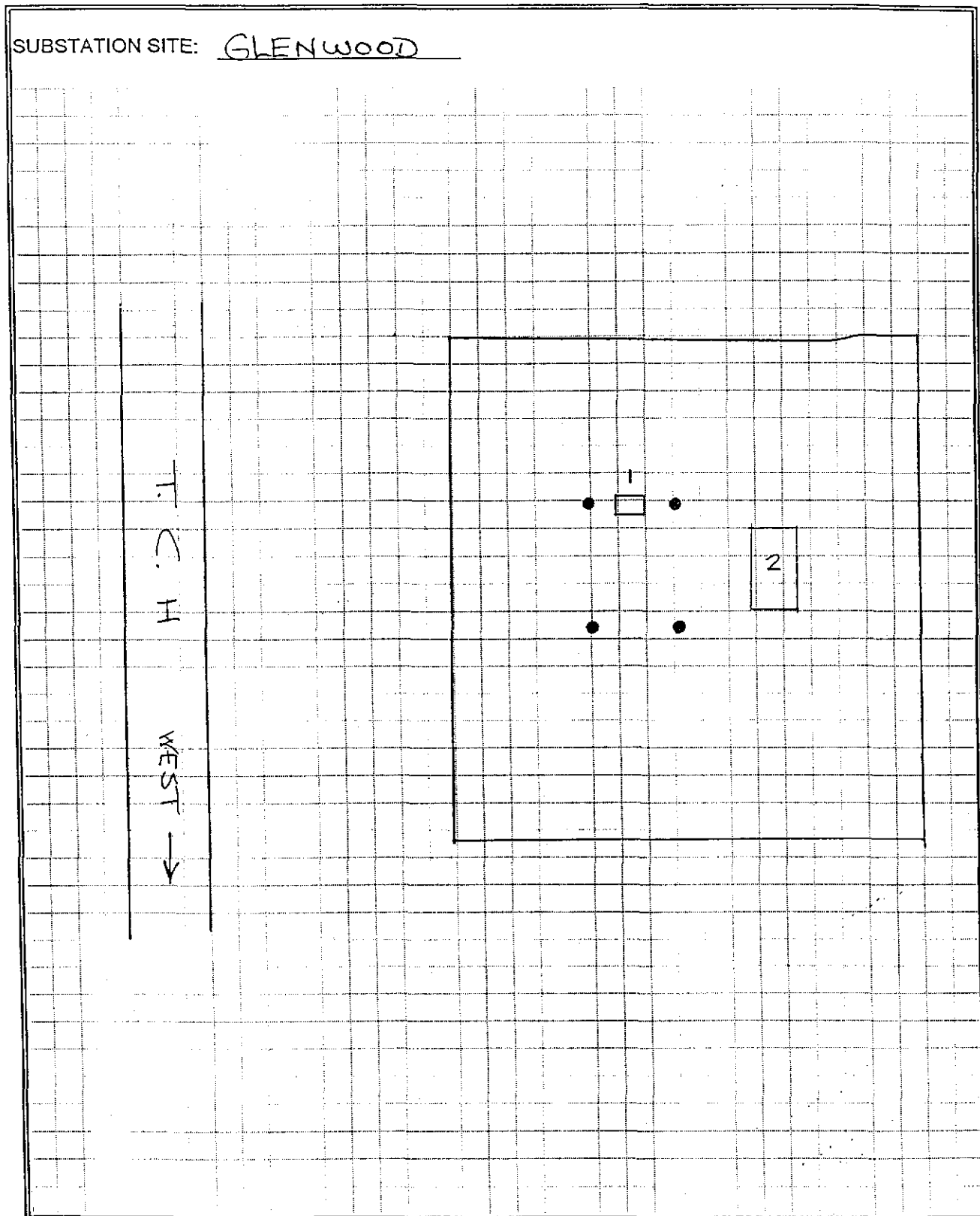
ROAD TO GANDER

SUBSTATION SITE: Glenwood DATE INSPECTED April 24, 2002

| <u>Priority Rating</u> | <u>Priority Description</u> | <u>Recommended Time Frame</u> |
|------------------------|--|-------------------------------|
| 1 | Immediate corrective action required | within 1 year |
| 2 | Corrective action required to avoid increasing costs to repair | within 3 years |
| 3 | General maintenance item | within 5 years |
| 4 | No corrective action or maintenance required at this time | |

INSPECTION OF CONCRETE PADS & FOUNDATIONS
LOCATION SKETCH

SUBSTATION SITE: GLENWOOD



INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Glovertown DATE INSPECTED: April 15, 2002

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|--|---|-------------------|-----------------|
| #1 - GLV-01 -DL Low Voltage Structure | Good Condition. Very minor alligator cracking starting to appear. (38MPa) | Future Monitoring | 4 |
| #2 - GLV-01- R1 Recloser | Good Condition (38MPa) | | 4 |
| #3 - GLV-02 -R1 Recloser | Good Condition (36MPa) | | 4 |
| #4 - GLV-02 -DL Low Voltage Structure | Good Condition There are several very minor hairline cracks (36MPa) | Type B Repair | 3 |
| #5 - No # Low Voltage Structure | Good Condition There is a small area near one of the structure legs with minor spalling. | Type A Repair | 3 |
| #6 - 366 Metering Tank | Good Condition (40MPa) | | 4 |

Priority Rating

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Priority Description

Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

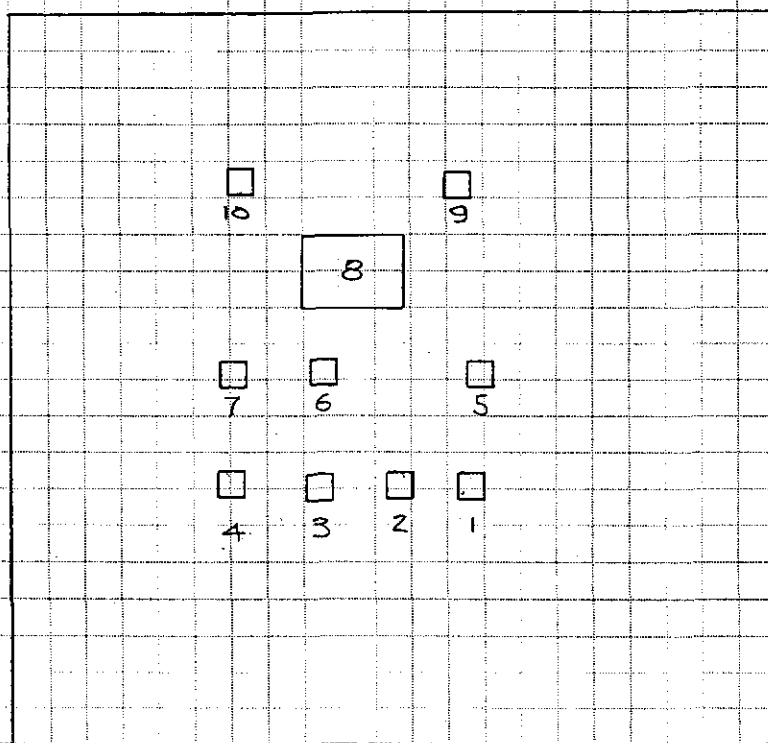
within 1 year
within 3 years
within 5 years

SUBSTATION SITE: Glovertown DATE INSPECTED: April 15, 2002

| <u>Priority Rating</u> | <u>Priority Description</u> | <u>Recommended Time Frame</u> |
|------------------------|--|-------------------------------|
| 1 | Immediate corrective action required | within 1 year |
| 2 | Corrective action required to avoid increasing costs to repair | within 3 years |
| 3 | General maintenance item | within 5 years |
| 4 | No corrective action or maintenance required at this time | |

INSPECTION OF CONCRETE PADS & FOUNDATIONS
LOCATION SKETCH

SUBSTATION SITE: GLOVERTOWN



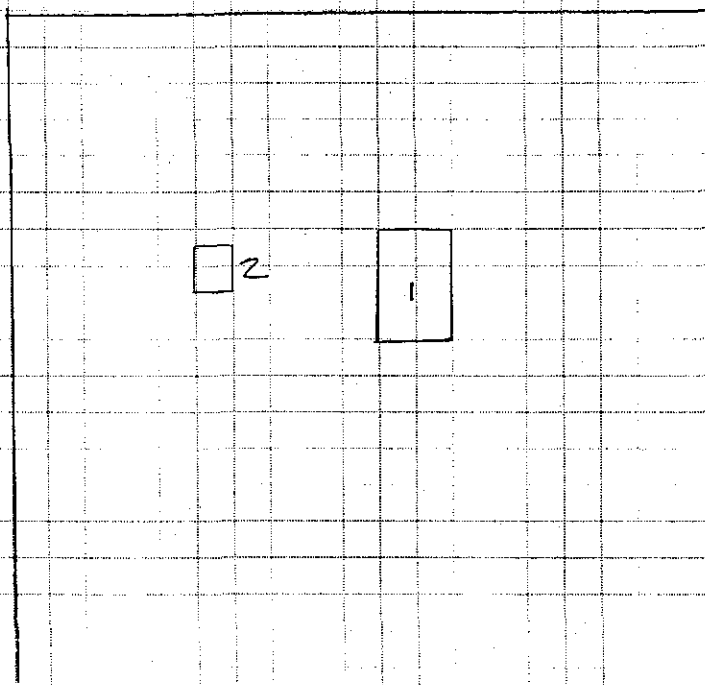
MAIN ROAD

SUBSTATION SITE: Greenpond DATE INSPECTED April 23, 2002

| <u>Priority Rating</u> | <u>Priority Description</u> | <u>Recommended Time Frame</u> |
|------------------------|--|-------------------------------|
| 1 | Immediate corrective action required | within 1 year |
| 2 | Corrective action required to avoid increasing costs to repair | within 3 years |
| 3 | General maintenance item | within 5 years |
| 4 | No corrective action or maintenance required at this time | |

INSPECTION OF CONCRETE PADS & FOUNDATIONS
LOCATION SKETCH

SUBSTATION SITE: GREENSPOND



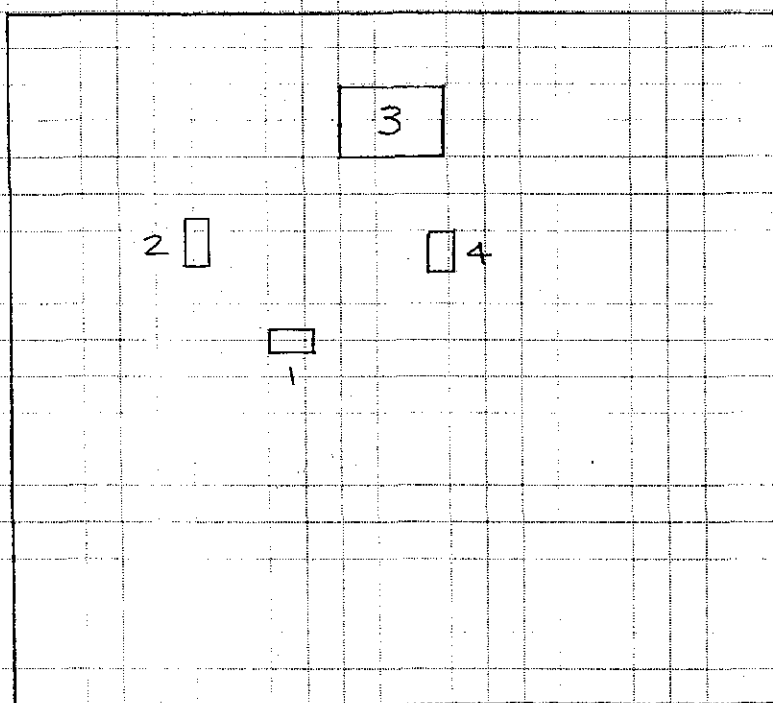
← TO GREENSPOND

SUBSTATION SITE: Hare Bay DATE INSPECTED April 23, 2002

| <u>Priority Rating</u> | <u>Priority Description</u> | <u>Recommended Time Frame</u> |
|------------------------|--|-------------------------------|
| 1 | Immediate corrective action required | within 1 year |
| 2 | Corrective action required to avoid increasing costs to repair | within 3 years |
| 3 | General maintenance item | within 5 years |
| 4 | No corrective action or maintenance required at this time | |

INSPECTION OF CONCRETE PADS & FOUNDATIONS
LOCATION SKETCH

SUBSTATION SITE: HARE BAY

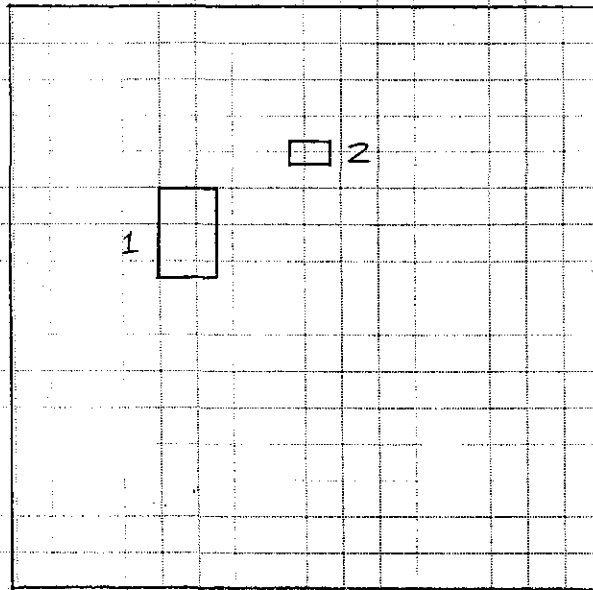


SUBSTATION SITE: Musgrave Harbour DATE INSPECTED April 23, 2002

| <u>Priority Rating</u> | <u>Priority Description</u> | <u>Recommended Time Frame</u> |
|------------------------|--|-------------------------------|
| 1 | Immediate corrective action required | within 1 year |
| 2 | Corrective action required to avoid increasing costs to repair | within 3 years |
| 3 | General maintenance item | within 5 years |
| 4 | No corrective action or maintenance required at this time | |

INSPECTION OF CONCRETE PADS & FOUNDATIONS
LOCATION SKETCH

SUBSTATION SITE: MUSGRAVE HR.



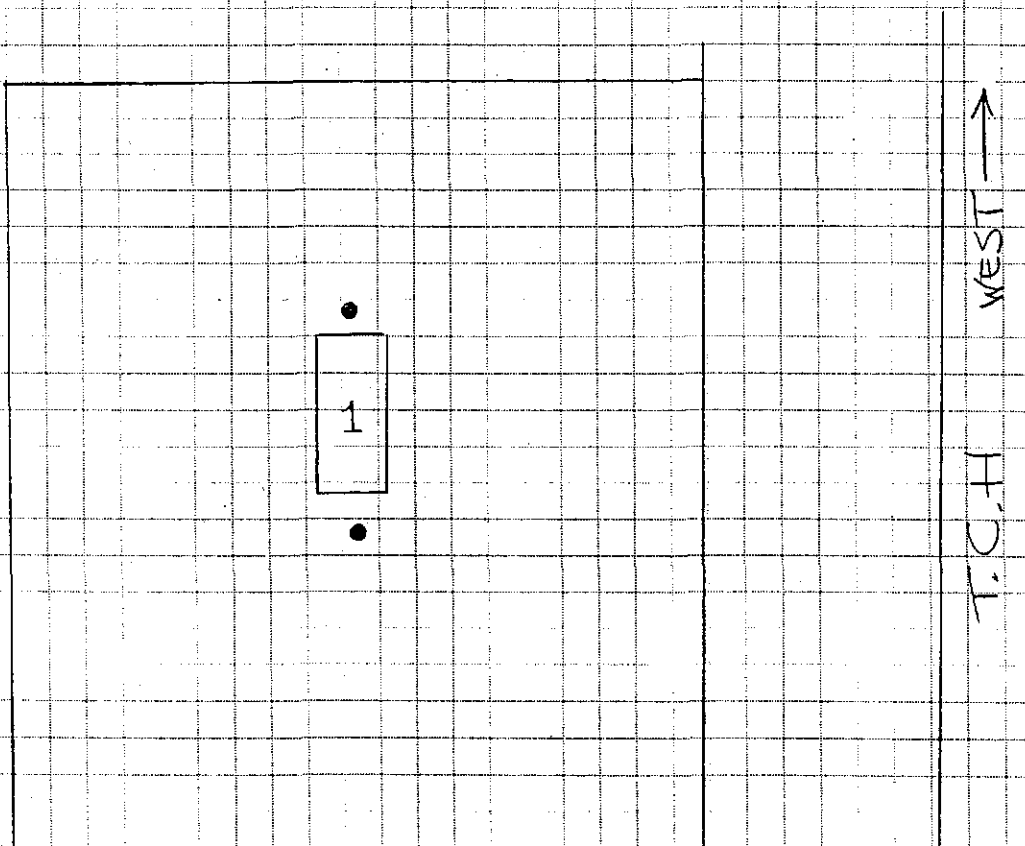
TO WESLEYVILLE →

SUBSTATION SITE: Roycefield DATE INSPECTED April 24, 2002

| <u>Priority Rating</u> | <u>Priority Description</u> | <u>Recommended Time Frame</u> |
|------------------------|--|-------------------------------|
| 1 | Immediate corrective action required | within 1 year |
| 2 | Corrective action required to avoid increasing costs to repair | within 3 years |
| 3 | General maintenance item | within 5 years |
| 4 | No corrective action or maintenance required at this time | |

INSPECTION OF CONCRETE PADS & FOUNDATIONS
LOCATION SKETCH

SUBSTATION SITE: Roycefield



INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Summerford DATE INSPECTED April 24, 2002

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|--------------------|--------------------------------|-----------------|-----------------|
| #1 - SUM-02 | Good Condition. (46MPa) | | 4 |
| -R1 | | | |
| Recloser | | | |
| | | | |
| | | | |
| #2 - SUM-01 | Good Condition. (42MPa) | | 4 |
| -R1 | | | |
| Recloser | | | |
| | | | |
| | | | |
| #3 - SUM-T1 | Good Condition. (new concrete) | | 4 |
| 200264 | (38MPa) | | |
| Transformer | | | |
| | | | |
| | | | |
| #4 - SUM | Good Condition. (40MPa) | | 4 |
| -140L-B | | | |
| Oil Breaker | | | |
| | | | |
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Priority Rating

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Priority Description

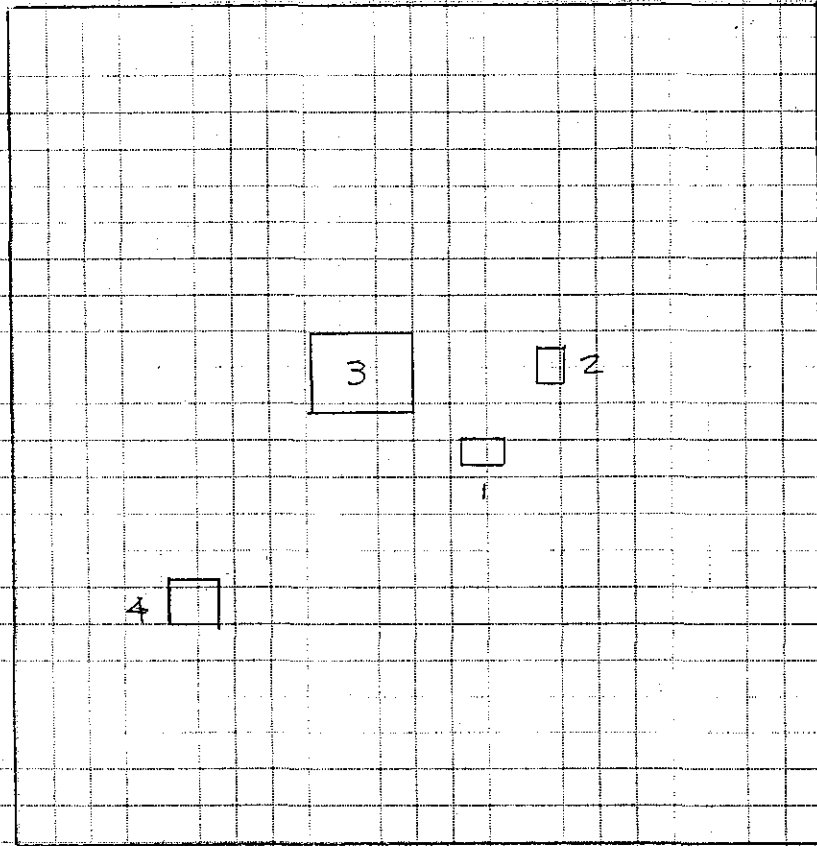
Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
within 3 years
within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS
LOCATION SKETCH

SUBSTATION SITE: SUMMERFORD

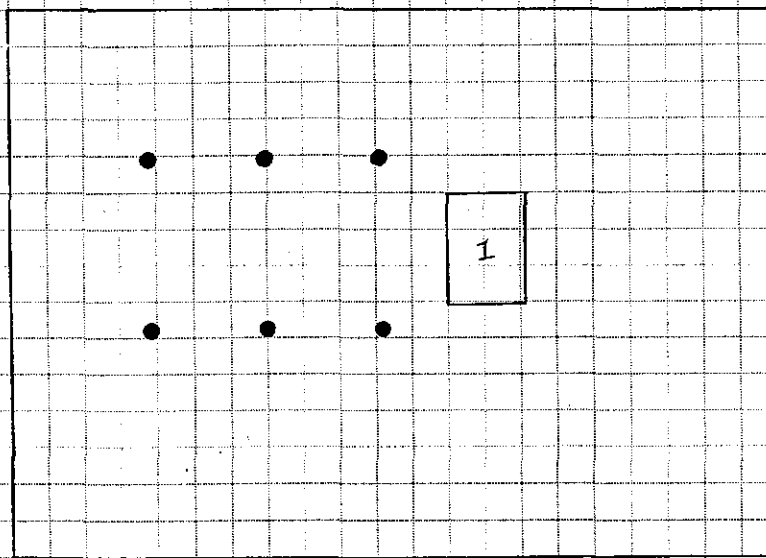


SUBSTATION SITE: Terra Nova DATE INSPECTED: April 15, 2002

| <u>Priority Rating</u> | <u>Priority Description</u> | <u>Recommended Time Frame</u> |
|------------------------|--|-------------------------------|
| 1 | Immediate corrective action required | within 1 year |
| 2 | Corrective action required to avoid increasing costs to repair | within 3 years |
| 3 | General maintenance item | within 5 years |
| 4 | No corrective action or maintenance required at this time | |

INSPECTION OF CONCRETE PADS & FOUNDATIONS
LOCATION SKETCH

SUBSTATION SITE: TERRA NOVA



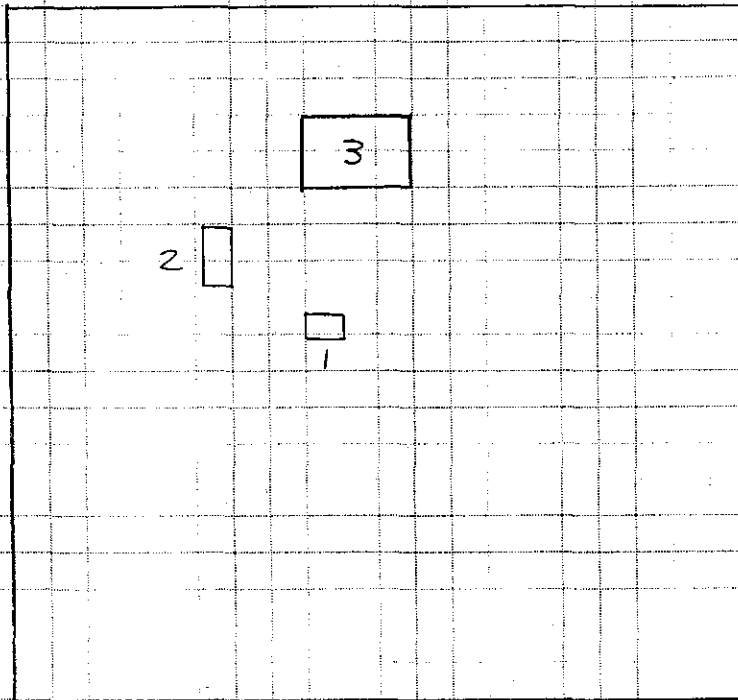
ROAD

SUBSTATION SITE: Trinity DATE INSPECTED April 23, 2002

| <u>Priority Rating</u> | <u>Priority Description</u> | <u>Recommended Time Frame</u> |
|------------------------|--|-------------------------------|
| 1 | Immediate corrective action required | within 1 year |
| 2 | Corrective action required to avoid increasing costs to repair | within 3 years |
| 3 | General maintenance item | within 5 years |
| 4 | No corrective action or maintenance required at this time | |

INSPECTION OF CONCRETE PADS & FOUNDATIONS
LOCATION SKETCH

SUBSTATION SITE: TRINITY



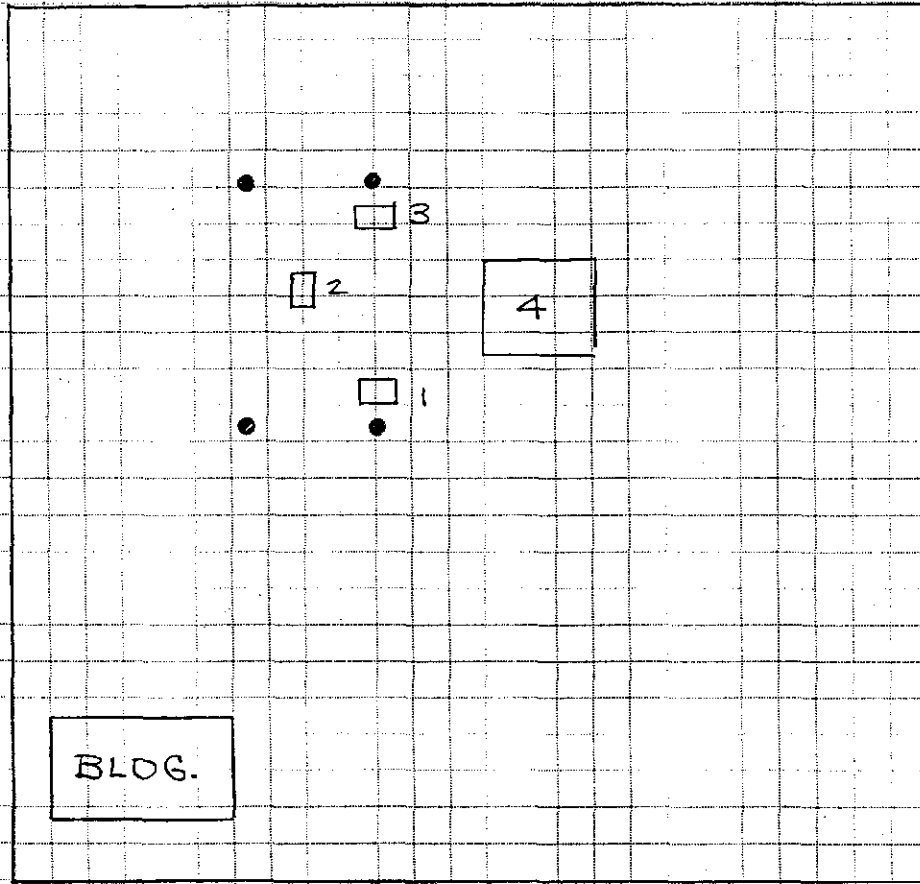
← TO GAMBO

SUBSTATION SITE: Twillingate DATE INSPECTED April 24, 2002

| <u>Priority Rating</u> | <u>Priority Description</u> | <u>Recommended Time Frame</u> |
|------------------------|--|-------------------------------|
| 1 | Immediate corrective action required | within 1 year |
| 2 | Corrective action required to avoid increasing costs to repair | within 3 years |
| 3 | General maintenance item | within 5 years |
| 4 | No corrective action or maintenance required at this time | |

INSPECTION OF CONCRETE PADS & FOUNDATIONS
LOCATION SKETCH

SUBSTATION SITE: TWILLINGATE



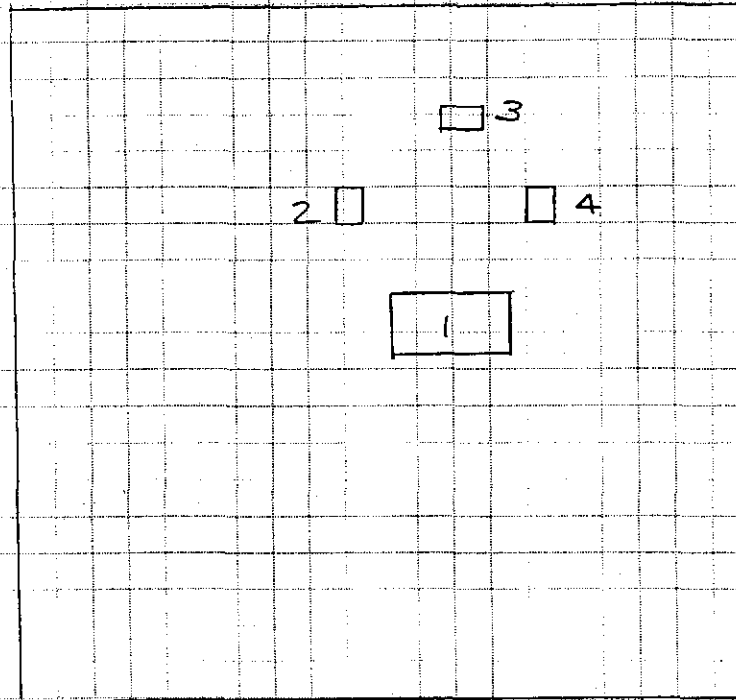
ROAD

SUBSTATION SITE: Wesleyville DATE INSPECTED April 23, 2002

| <u>Priority Rating</u> | <u>Priority Description</u> | <u>Recommended Time Frame</u> |
|------------------------|--|-------------------------------|
| 1 | Immediate corrective action required | within 1 year |
| 2 | Corrective action required to avoid increasing costs to repair | within 3 years |
| 3 | General maintenance item | within 5 years |
| 4 | No corrective action or maintenance required at this time | |

INSPECTION OF CONCRETE PADS & FOUNDATIONS
LOCATION SKETCH

SUBSTATION SITE: WESLEYVILLE



ACCESS ROAD

CLARENVILLE AREA

BONAVISTA
CATALINA
CLARENVILLE
LETHBRIDGE
LOCKSTON
MILTON
NORTHWEST BROOK
PORT BLANDFORD
PORT UNION
SUMMERVILLE
SUNNYSIDE

INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Bonavista DATE INSPECTED: April 16, 2002

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|---|--|-----------------|-----------------|
| #1 - BVA -117L-GS High Voltage Structure | Good Condition. (38MPa) | | 4 |
| #2 - BVA -117L-A High Voltage Structure | Good Condition (36MPa) | | 4 |
| #3 - P-343 Transformer | Good Condition. (40MPa) | | 4 |
| #4 - No # Low Voltage Structure | Fair Condition. Corner spalled off and hairline cracks from middle of top surface out to sides. (36MPa) | Type B Repair | 3 |
| #5 - No # Not in Use | Good Condition | | 4 |
| #6 - No # Metering Tank | Good Condition (40MPa) | | 4 |

Priority Rating

1
2
3
4

Priority Description

Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
within 3 years
within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Bonavista DATE INSPECTED: April 16, 2002

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|--------------------|---|-----------------|-----------------|
| #7 - BVA-03 | Fair to Good Condition | | |
| -DL | Two minor hairline cracks in top surface | Type B Repair | 3 |
| Low Voltage | (38MPa) | | |
| Structure | | | |
| #8 - BVA-03 | Good Condition. (44MPa) | | 4 |
| -R-456 | | | |
| Recloser | | | |
| | | | |
| #9 - BVA-01 | Fair to Good Condition | Type B Repair | 3 |
| -BP | Hairline cracks(<1mm) from middle of top | | |
| Low Voltage | surface to each side | | |
| Structure | | | |
| #10 - BVA-01 | Good Condition (38MPa) | | 4 |
| -R-259 | | | |
| Recloser | | | |
| | | | |
| #11 - BVA-02 | Good Condition (36MPa) | | 4 |
| -R-256 | | | |
| Recloser | | | |
| | | | |
| #12 - BVA-02 | Fair Condition. Several hairline cracks | Type B Repair | 2 |
| -BP | (<1mm) in top surface and small alligator | | |
| Low Voltage | cracking. | | |
| Structure | | | |

Priority Rating

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Priority Description

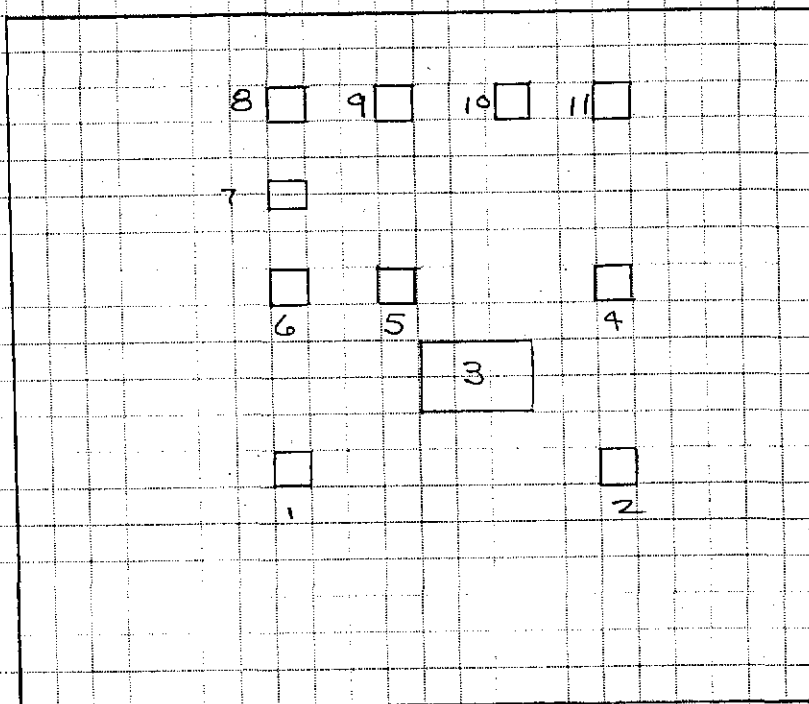
Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
within 3 years
within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS
LOCATION SKETCH

SUBSTATION SITE: BONAVISTA



INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Catalina DATE INSPECTED: April 16, 2002

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|--|---|-----------------|-----------------|
| #1 - CAT-03-DL Low Voltage Structure | Good Condition. Starting to show some weathering around top edge (40MPa) | | 4 |
| #2 - CAT-02R -376 Recloser | Good Condition. Starting to show some weathering around top edge (28MPa) | | 4 |
| #3 - CAT-01-R Recloser | Fair Condition. The cement/sand matrix is deteriorated on the the top surface & edges. | Type A Repair | 2 |
| #4 - CAT-01-BP Low Voltage Structure | Fair Condition. The cement/sand matrix is deteriorated on the the top surface & edges. Some chipping on one corner near base plate. (38MPa) | Type A Repair | 2 |
| #5 - CAT-03-R -471 Recloser | Good Condition. Starting to show some weathering around top edge (36MPa) | | 4 |
| #6 - CAT-T2-D Low Voltage Structure | Good Condition. Starting to show some weathering around top edge (28MPa) | | 4 |

Priority Rating

1
2
3
4

Priority Description

Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
within 3 years
within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Catalina

DATE INSPECTED: April 16, 2002

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|---|---|-----------------|--------------------|
| #7 - No # Metering Tank | Good Condition. Starting to show some weathering around top edge (38MPa) | | 4 |
| | | | |
| | | | |
| #8 - No # Not in Use | Good Condition | | 4 |
| | | | |
| | | | |
| #9 - No # Low Voltage Structure | Fair Condition. Some general surface weathering and hairline cracks (<1mm) that extend from middle to each side. (28MPa) | Type B Repair | 3 |
| | | | |
| | | | |
| #10 - T2-P-297 Transformer | Good Condition with several minor spall areas on one side. (34MPa) | Type A Repair | 3 |
| | | | |
| | | | |
| #11 - CAT-T1 -HGS High Voltage Structure | Fair Condition. Some general surface weathering and hairline cracks (<1mm) that extend from middle to each side. (38MPa) | Type B Repair | 3 |
| | | | |
| | | | |
| #12 - CAT-T2 -HGS High Voltage Structure | Good Condition. (38MPa) | | 4 |
| | | | |
| | | | |

Priority Rating

1
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3
4

Priority Description

Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
within 3 years
within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Catalina DATE INSPECTED: April 16, 2002

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|---|--|---|-----------------|
| #13 - 117L-B Oil Breaker | Good Condition. There appears to be some settlement on one corner of the pad. The equipment is on a slight lean. (28MPa) | Should be monitored to ensure that equipment is not adversely affected by further settlement. | 4 |
| #14 - CAT-117L -GS High Voltage Structure | Fair to Good Condition There is one corner that has severe weathering of the cement/sand matrix. (36MPa) | Type A Repair | 3 |
| #15 - CAT-T1-A High Voltage Structure | Good Condition (32MPa) | | 4 |
| #16 - CAT-T1 -239 Transformer | Good Condition (38MPa) | | 4 |
| #17 - T1-B Oil Breaker | Good Condition. (34MPa) | | 4 |
| #18 - No # Low Voltage Structure | Good Condition (36MPa) | | 4 |

Priority Rating

1
2
3
4

Priority Description

Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
within 3 years
within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Catalina DATE INSPECTED: April 16, 2002

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|---|--|-------------------|--------------------|
| #19 - No # Not in Use | Good Condition | | 4 |
| | | | |
| | | | |
| | | | |
| #20 - No # Low Voltage Structure | Good Condition. Some minor cement/sand matrix deterioration | Future Monitoring | 4 |
| | | | |
| | | | |
| | | | |
| #21 - CAT-111L -DB Low Voltage Structure | Fair to Good Condition. Several hairline cracks (<1mm) (38MPa) | Type B Repair | 3 |
| | | | |
| | | | |
| | | | |
| #22 - No # Not in Use | Good Condition | | 4 |
| | | | |
| | | | |
| | | | |
| #23 - No # Low Voltage Structure | Good Condition. (38MPa) | | 4 |
| | | | |
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Priority Rating

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Priority Description

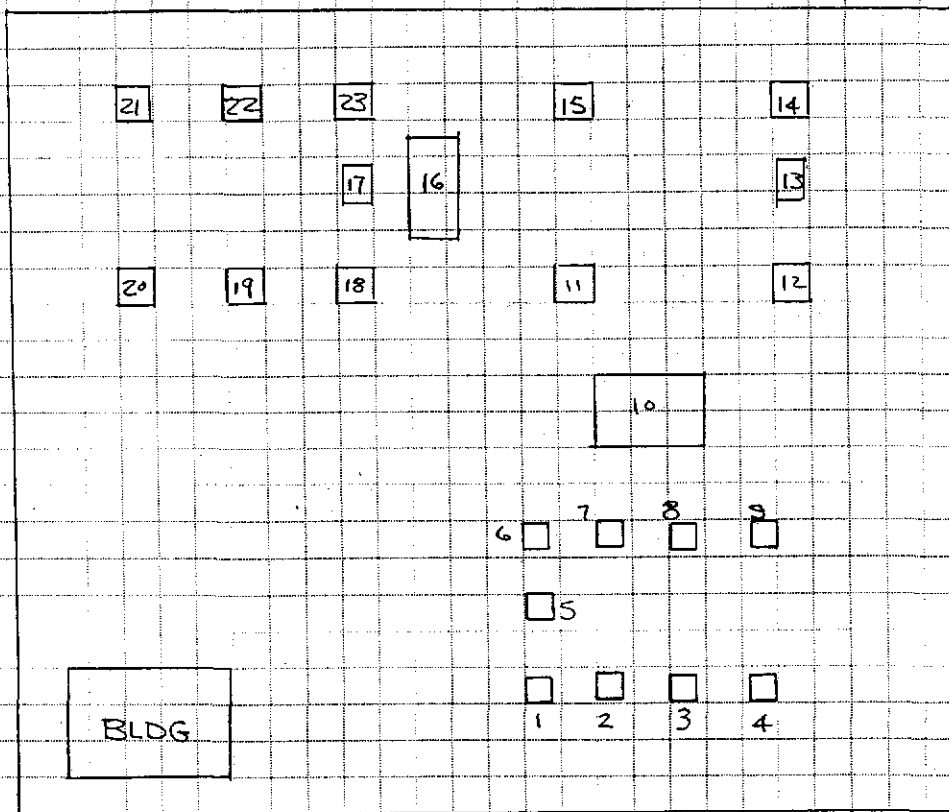
Immediate corrective action required
Corrective action required to avoid increasing costs to repair.
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
within 3 years
within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS
LOCATION SKETCH

SUBSTATION SITE: CATALINA



← ROAD TO CATALINA

INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Clareville DATE INSPECTED: April 15, 2002

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|--|---|--------------------|-----------------|
| #1 - CLV-110L-B Oil Breaker | Good Condition (38MPa) | | 4 |
| | | | |
| | | | |
| | | | |
| #2 - CLV-T1-349 Transformer | Good Condition. Starting to show some surface weathering | Future Monitoring | 4 |
| | | | |
| | | | |
| | | | |
| #3 - 123L-DB High Voltage Structure | Fair Condition with a number of hairline cracks extending out from middle to sides & some alligator cracking in the middle of the top surface. Appears to have had some repairs previously. | Type B Repairs | 2 |
| | | | |
| | | | |
| #4 - CLV-T1-A High Voltage Structure | Fair Condition with a number of hairline cracks extending out from middle to sides & some alligator cracking in the middle of the top surface. Some cracks are >1mm in width and there is minor chipping on one corner. (34MPa) | Type B & C Repairs | 2 |
| | | | |
| | | | |
| #5 - CLV-123L-B Oil Breaker | Fair to Good Condition There is minor cement/sand matrix deterioration and several hairline cracks | Type B Repair | 2 |
| | | | |
| | | | |
| #6 - CLV-123L -GS High Voltage Structure | Fair Condition with a number of hairline cracks extending out from middle to sides & some alligator cracking in the middle of the top surface. Some cracks are >1mm in width. (36MPa) | Type B & C Repair | 2 |
| | | | |
| | | | |

Priority Rating

1
2
3
4

Priority Description

Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
within 3 years
within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Clarenville DATE INSPECTED: April 15, 2002

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|--|--|-----------------|-----------------|
| #7 - CLV-BTS-3 High Voltage Structure | Fair Condition with a number of hairline cracks extending out from middle to sides & some alligator cracking in the middle of the top surface. (34MPa) | Type B Repairs | 2 |
| #8 - 124L-B Breaker | This pad appears to have been changed to accommodate a larger piece of equipment Pads have been added to the sides of the original one. There are several cracks >1mm in the original pad. The newer pads are in good condition. | Type C Repair | 2 |
| #9 - CLV-100L -DB High Voltage Structure | Fair Condition with a number of hairline cracks extending out from middle to sides & some alligator cracking in the middle of the top surface. Some cracks are >1mm in width. (34MPa) | Type C Repair | 2 |
| #10 - CLV-BTS -2 High Voltage Structure | Fair Condition with a number of hairline cracks extending out from middle to sides & some alligator cracking in the middle of the top surface. | Type B Repair | 2 |
| #11 - CLV-100L -B Oil Breaker | Fair to Good Condition Surface beginning to show some weathering. Several hairline cracks. (32MPa) | Type B Repair | 3 |
| #12 - CLV-100L -GS High Voltage Structure | Fair to Good Condition. Ther is minor cement/sand matrix deterioration and several hairline cracks | Type B Repair | 2 |

Priority Rating

1
2
3
4

Priority Description

Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
within 3 years
within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Clareville DATE INSPECTED: April 15, 2002

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|--------------------------|---|-----------------|-----------------|
| #13 - No # | Fair to Good Condition | Type B Repair | 2 |
| High Voltage Structure | Has one crack extending out from middle to each side. (38MPa) | | |
| | | | |
| | | | |
| #14 - CLV-109L -B | Good Condition. One minor crack on outside edge of pad. (36MPa) | Type B Repair | 3 |
| Oil Breaker | | | |
| | | | |
| | | | |
| #15 - CLV-109L -DL | Fair Condition. Has several cracks across the top of the foundation. (>1mm) (36MPa) | Type C Repair | 2 |
| High Voltage Structure | | | |
| | | | |
| | | | |
| #16 - CLV-T2-A | Fair to good Condition with several hairline cracks extending out from middle to sides & minor alligator cracking in the middle of the top surface. | Type B Repair | 3 |
| High Voltage Structure | | | |
| | | | |
| | | | |
| #17 - T2-270 Transformer | One area on the pad has surface scaling & cement/sand matrix severely weathered. Remainder of pad in good condition. (34MPa) | Type A Repair | 2 |
| | | | |
| | | | |
| | | | |
| #18 - CLV-03 -DL | Fair to good condition. Minor hairline cracks and minor alligator cracks. | Type B Repair | 3 |
| Low Voltage Structure | | | |
| | | | |
| | | | |

Priority Rating

1
2
3
4

Priority Description

Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
within 3 years
within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Clareville DATE INSPECTED: April 15, 2002

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|--|---|---|-----------------|
| #19 - CLV-03-B -253 Oil Breaker | Good Condition (36MPa) | | 4 |
| | | | |
| | | | |
| | | | |
| #20 - 452 Metering Tank | Fair to Good Condition Two minor cracks (38MPa) | Type B Repair | 3 |
| | | | |
| | | | |
| | | | |
| #21 - CLV-T2-D Low Voltage Structure | Fair to good Condition Several cracks & some chipping of concrete. There is also a piece of wood embedded in the concrete. | Type A & B Repair. Wood should be removed from concrete before repairs are started. | 3 |
| | | | |
| | | | |
| #22 - CLV-01 -BP Low Voltage Structure | Fair to Good Condition Several minor hairline cracks as well as minor alligator cracking. | Type B Repair | 3 |
| | | | |
| | | | |
| | | | |
| #23 - CLV-01 -B-159 Oil Breaker | Good Condition (36MPa) | | 4 |
| | | | |
| | | | |
| | | | |
| #24 - CLV-02-B -160 Oil Breaker | Good Condition (36MPa) | | 4 |
| | | | |
| | | | |
| | | | |

Priority Rating

1
2
3
4

Priority Description

Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

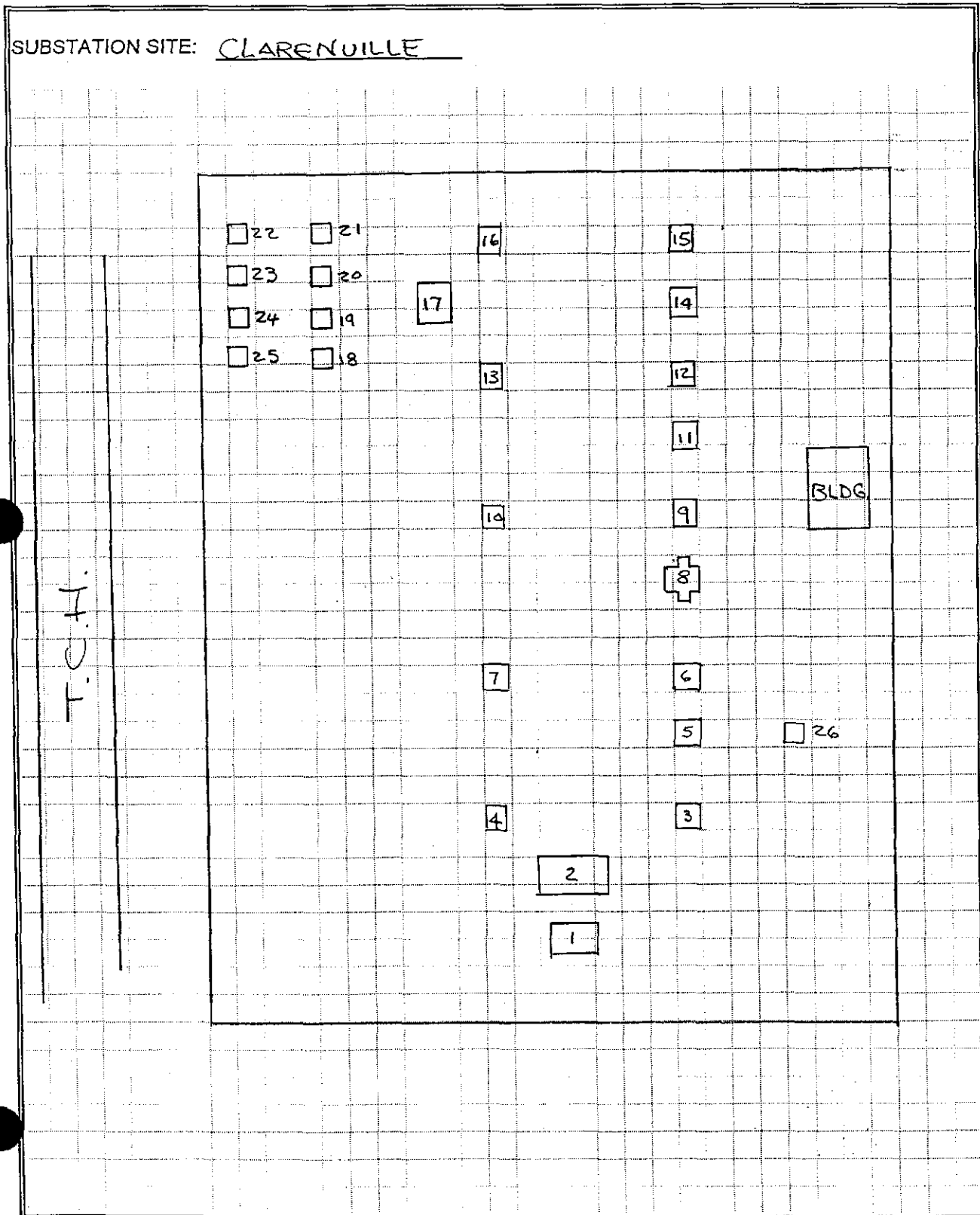
within 1 year
within 3 years
within 5 years

SUBSTATION SITE: Clarendville DATE INSPECTED: April 15, 2002

| <u>Priority Rating</u> | <u>Priority Description</u> | <u>Recommended Time Frame</u> |
|------------------------|--|-------------------------------|
| 1 | Immediate corrective action required | within 1 year |
| 2 | Corrective action required to avoid increasing costs to repair | within 3 years |
| 3 | General maintenance item | within 5 years |
| 4 | No corrective action or maintenance required at this time | |

INSPECTION OF CONCRETE PADS & FOUNDATIONS
LOCATION SKETCH

SUBSTATION SITE: CLARENVILLE



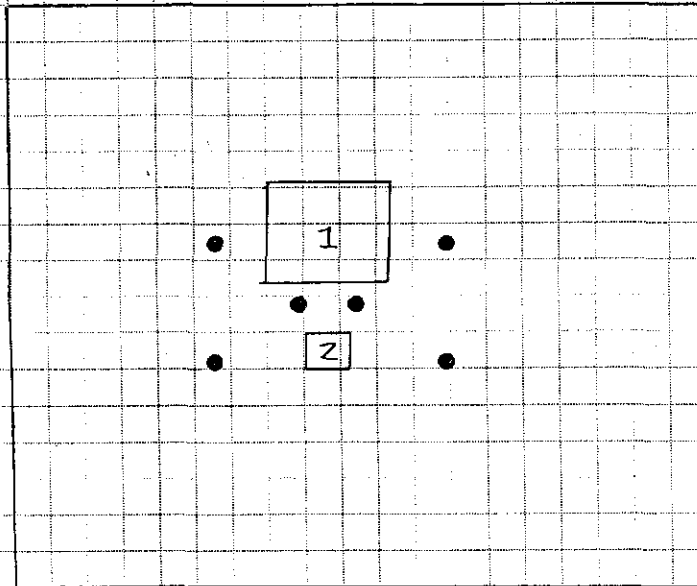
SUBSTATION SITE: Lethbridge DATE INSPECTED: April 15, 2002

| <u>Priority Rating</u> | <u>Priority Description</u> | <u>Recommended Time Frame</u> |
|------------------------|--|-------------------------------|
| 1 | Immediate corrective action required | within 1 year |
| 2 | Corrective action required to avoid increasing costs to repair | within 3 years |
| 3 | General maintenance item | within 5 years |
| 4 | No corrective action or maintenance required at this time | |

INSPECTION OF CONCRETE PADS & FOUNDATIONS
LOCATION SKETCH

SUBSTATION SITE: LETHBRIDGE

CABOT HIGHWAY



INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Lockston DATE INSPECTED: April 16, 2002

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|--------------------|---------------------------------------|-----------------|-----------------|
| #1 - LOK-T4 | Spill pan installed on pad. | | |
| -P177 | Could not inspect concrete | | |
| Transformer | | | |
| | | | |
| | | | |
| #2 - LOK-T1 | Spill pan installed on pad. | | |
| -P176 | Could not inspect concrete | | |
| Transformer | | | |
| | | | |
| | | | |
| #3 - LOK-01 | Good Condition. Starting to show some | | 4 |
| -R-222 | general weathering on surface | | |
| Recloser | (36MPa) | | |
| | | | |
| | | | |
| #4 - LOK-T3 | Spill pan installed on pad. | | |
| -P222 | Could not inspect concrete | | |
| Transformer | | | |
| | | | |
| | | | |
| #5 - LOK-T2 | Spill pan installed on pad. | | |
| -P209 | Could not inspect concrete | | |
| Transformer | | | |
| | | | |
| | | | |
| #6 - LOK-110L | Good Condition. Starting to show some | | 4 |
| -B | general weathering on surface | | |
| Oil Breaker | (34MPa) | | |
| | | | |
| | | | |

Priority Rating

1
2
3
4

Priority Description

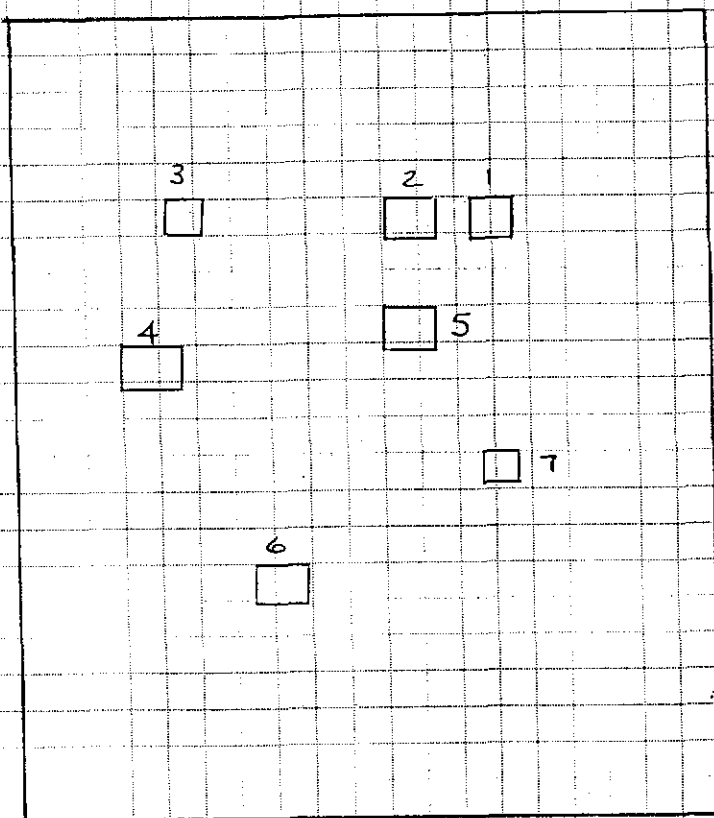
Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
within 3 years
within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS
LOCATION SKETCH

SUBSTATION SITE: LOCKSTON



← ROXAUSTA

CAROT HIGHWAY

INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: MILTON DATE INSPECTED: April 15, 2002

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|---|---|-----------------|-----------------|
| #1 - Mil-110L -A2 High Voltage Structure | Fair Condition with cracks(some>1mm) extending out from middle to each side of foundation. Some minor alligator cracking. (40MPa) | Type C Repair | 2 |
| #2 - Mil-110L -A1 High Voltage Structure | Fair Condition with cracks(some>1mm) extending out from middle to each side of foundation. Some minor alligator cracking. | Type C Repair | 2 |
| #3 - No # High Voltage Structure | Good Condition | | 4 |
| #4 - Mil-T1-A High Voltage Structure | Good Condition (38MPa) | | 4 |
| #5 - Mil-T1 -339 Transformer | Good Condition overall There are a couple of areas on top surface that has minor scaling | Type A Repair | 3 |
| #6 - No # Low Voltage Structure | Good Condition with the exception of one corner that has the outside 25mm chipped away. | Type A Repair | 3 |

Priority Rating

1
2
3
4

Priority Description

Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
within 3 years
within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: MILTON DATE INSPECTED: April 15, 2002

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|--|---|---|-----------------|
| #7 - 309 Metering Tank | Good Condition (38MPa) | | 4 |
| | | | |
| | | | |
| | | | |
| #8 - Mil-T1-D Low Voltage Structure | Good Condition (36MPa) | | 4 |
| | | | |
| | | | |
| | | | |
| #9 - Mil-02-BP Low Voltage Structure | Good Condition (38MPa) | | 4 |
| | | | |
| | | | |
| | | | |
| #10 - Mil-02-R 513 Recloser | Good Condition with the exception of top edge along on side which is being chipped away. | Type A Repair | 2 |
| | | | |
| | | | |
| | | | |
| #11 - Mil-01-R -419 Recloser | Good Condition with the exception of top edge along on side which is being chipped away. Not as severe as # 10 | Type A Repair | 2 |
| | | | |
| | | | |
| #12 - Mil-01 -BP Low Voltage Structure | Fair Condition with 3 sides having the top edges severely weathered away The concrete under one of the structure base plates is severely deteriorated. | Type A Repair at a minimum with a Type D recommended to achieve long term structural integrity of foundation. | 1 |
| | | | |
| | | | |

Priority Rating

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Priority Description

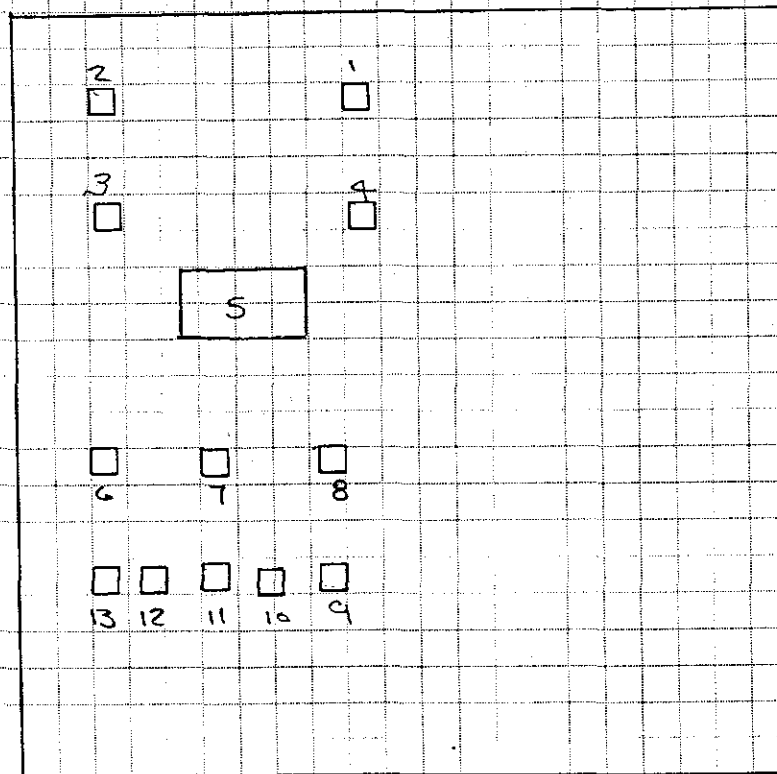
Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
within 3 years
within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS
LOCATION SKETCH

SUBSTATION SITE: MILTON



ROAD TO RANDOM ISLAND →

INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Northwest Brook DATE INSPECTED: April 15, 2002

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|--------------------|---------------------------------------|-------------------|-----------------|
| #1 - Nwb-09L | Good Condition (28MPa) | | 4 |
| -GSI | | | |
| High Voltage | | | |
| Structure | | | |
| #2 - Nwb-109L | Good Condition (28MPa) | | 4 |
| -GS2 | | | |
| High Voltage | | | |
| Structure | | | |
| #3 - Nwb-T1 | Good Condition (26MPa) | | 4 |
| -HGS | | | |
| High Voltage | | | |
| Structure | | | |
| #4 Nwb-T1A | Good Condition (38MPa) | | 4 |
| High Voltage | | | |
| Structure | | | |
| #5 - Nwb-T1 | Good Condition However the surface is | Future Monitoring | 4 |
| -220319 | starting to shown minor cement/sand | | |
| Transformer | matrix deterioration. | | |
| #6 - Nwb-VR | Good Condition However the surface is | Future Monitoring | 4 |
| -220361 | starting to shown minor cement/sand | | |
| Voltage | matrix deterioration. | | |
| Regulator | | | |

Priority Rating

1
2
3
4

Priority Description

Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
within 3 years
within 5 years

| | |
|--|---------------------------------------|
| INSPECTION OF CONCRETE PADS & FOUNDATIONS | |
| SUBSTATION SITE: <u>Northwest Brook</u> | DATE INSPECTED: <u>April 15, 2002</u> |

DATE INSPECTED: April 15, 2002



A solid black circular stamp, likely a seal or a placeholder for a logo, located at the bottom left of the page.

1
2
3
4

Priority Description

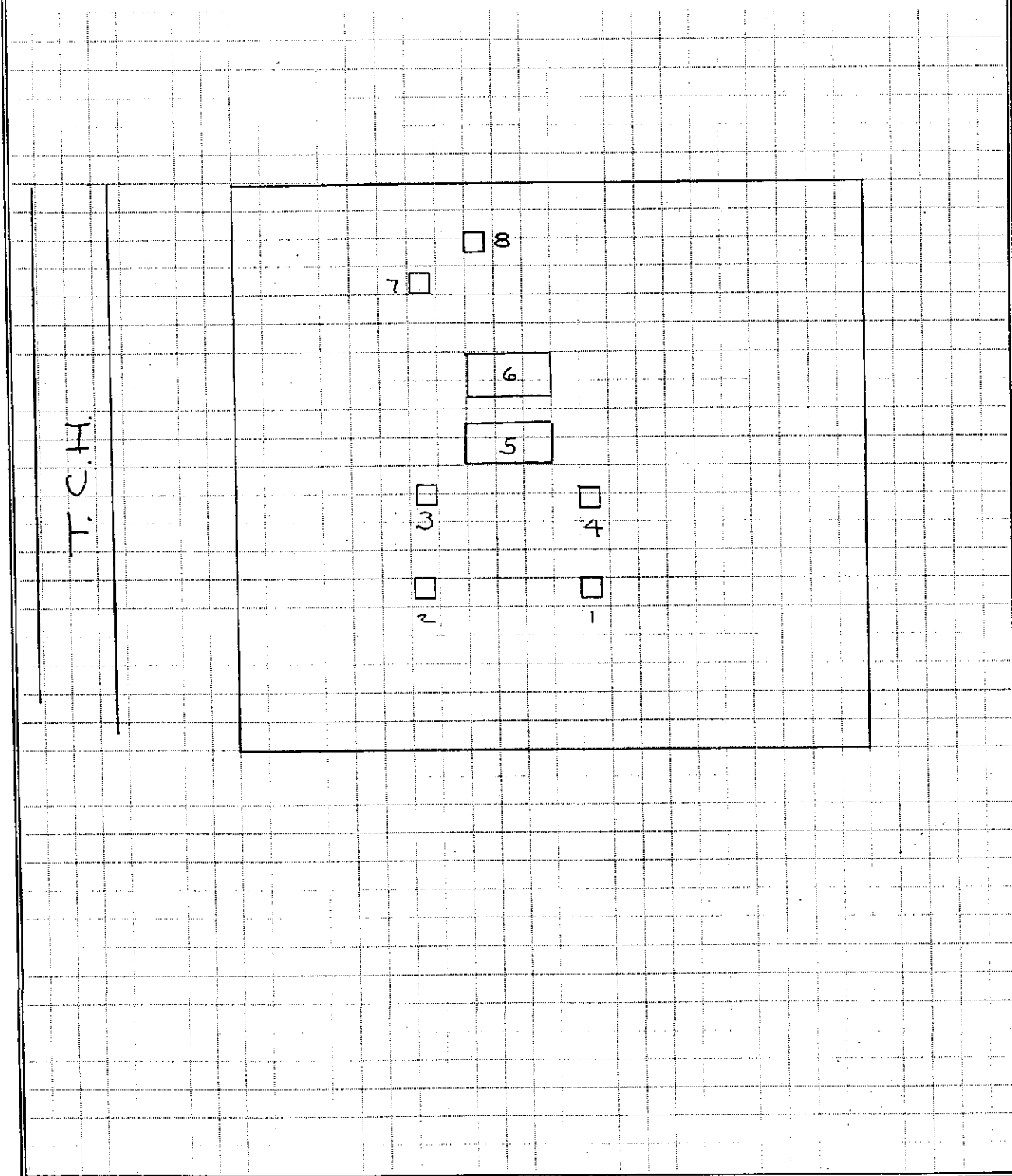
Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
within 3 years
within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS
LOCATION SKETCH

SUBSTATION SITE: NORTH WEST BROOK.



INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Port Blandford DATE INSPECTED: April 15, 2002

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|--|------------------------|-----------------|-----------------|
| #1 - PBD-T1 -HGS High Voltage Structure | Good Condition (42MPa) | | 4 |
| #2 - PBD-T1 -A High Voltage Strucrure | Good Condition (34MPa) | | 4 |
| #3 - PBD-T1 -P338 Transformer | Good Condition (46MPa) | | 4 |
| #4 - 5785 Metering Tank | Good Condition (48MPa) | | 4 |
| #5 - PBD-01 -R483 Recloser | Good Condition (48MPa) | | 4 |
| | | | |
| | | | |
| | | | |
| | | | |

Priority Rating

- 1
- 2
- 3
- 4

Priority Description

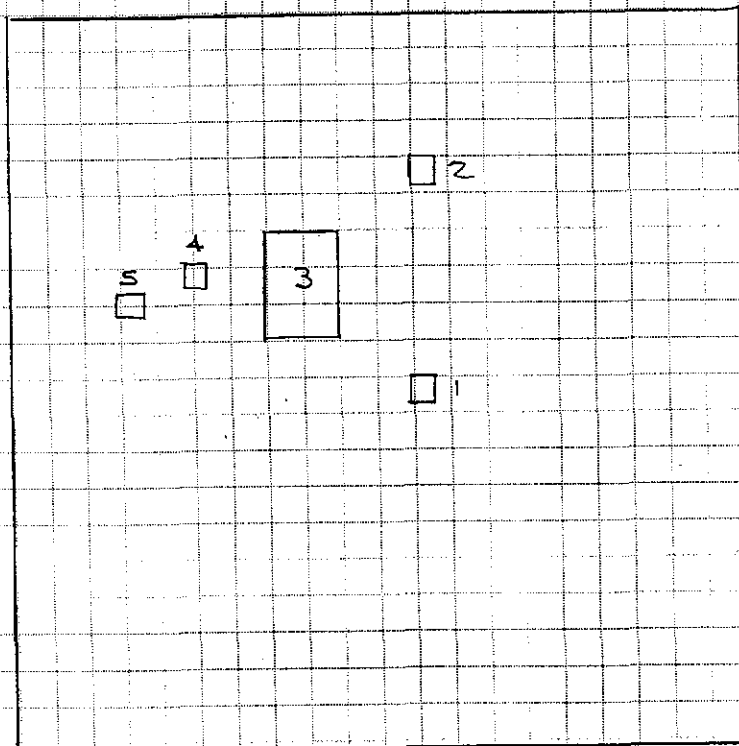
- Immediate corrective action required
- Corrective action required to avoid increasing costs to repair
- General maintenance item
- No corrective action or maintenance required at this time

Recommended Time Frame

- within 1 year
- within 3 years
- within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS
LOCATION SKETCH

SUBSTATION SITE: PORT BLANDFORD



T.C.H.

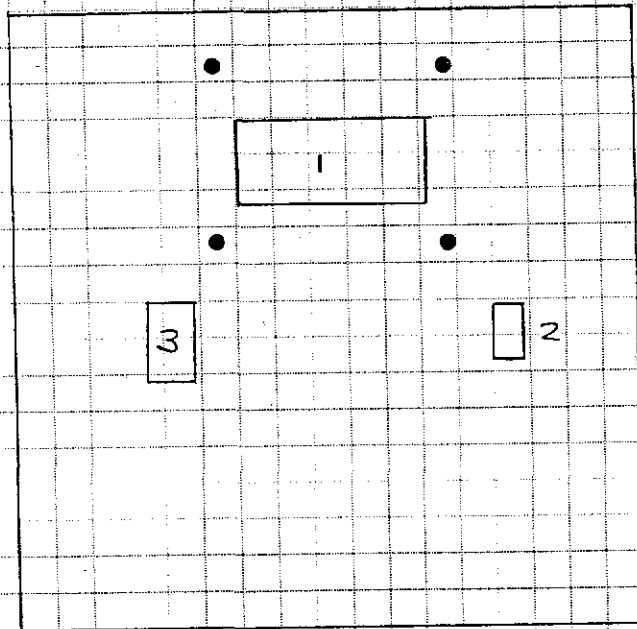
SUBSTATION SITE: Port Union DATE INSPECTED: April 16, 2002

| <u>Priority Rating</u> | <u>Priority Description</u> | <u>Recommended Time Frame</u> |
|------------------------|--|-------------------------------|
| 1 | Immediate corrective action required | within 1 year |
| 2 | Corrective action required to avoid increasing costs to repair | within 3 years |
| 3 | General maintenance item | within 5 years |
| 4 | No corrective action or maintenance required at this time | |

INSPECTION OF CONCRETE PADS & FOUNDATIONS
LOCATION SKETCH

SUBSTATION SITE: PORT UNION

MAIN ROAD.

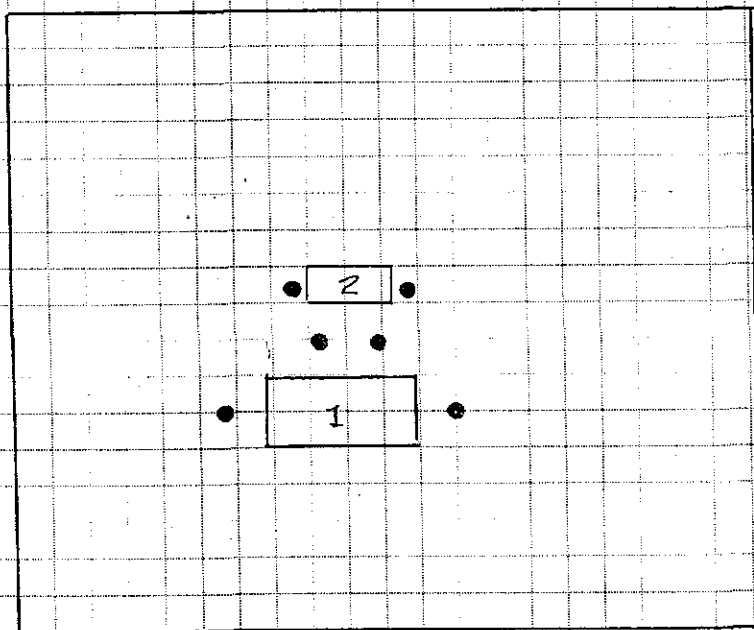


INSPECTION OF CONCRETE PADS & FOUNDATIONS

INSPECTION OF CONCRETE PADS & FOUNDATIONS
LOCATION SKETCH

SUBSTATION SITE: SUMMERVILLE

CABOT HIGHWAY



INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Sunnyside DATE INSPECTED: April 15, 2002

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|--|---|--|-----------------|
| #1 - No # Low Voltage Structure | Good Condition. The surface has some minor roughness but structural sound (28MPa) | | 4 |
| | | | |
| | | | |
| #2 - No # Not in Use | Good Condition. The surface has some minor roughness but structural sound (38MPa) | | 4 |
| | | | |
| | | | |
| #3 - Sun-02-BP Low Voltage Structure | Good Condition. The surface has some minor roughness but structural sound (42MPa) | | 4 |
| | | | |
| | | | |
| #4 - Sun-01-B Breaker | Good Condition (38MPa) | | 4 |
| | | | |
| | | | |
| #5 - Sun-01-BP Low Voltage Structure | Fair to Good Condition. There appears to have been a resurface applied to the top. There are several hollow areas which indicates a bonding problem between the old & new concrete. | Future Monitoring and an eventual replacement of the concrete cap. | 4 |
| | | | |
| #6 - Sun-03 -R515 Recloser | Good Condition | | 4 |
| | | | |
| | | | |

Priority Rating

1
2
3
4

Priority Description

Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
within 3 years
within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Sunnside DATE INSPECTED: April 15, 2002

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|--|---|--|-----------------|
| #7 - Sun-03-BP Low Voltage Structure | Fair to Good Condition. There appears to have been a resurface applied to the top. There are several hollow areas which indicates a bonding problem between the old & new concrete. | Future Monitoring and an eventual replacement of the concrete cap. | 4 |
| #8 - No # Low Voltage Structure | Good Condition (36MPa) | | 4 |
| #9 - No # Metering Tank | Good Condition | | 4 |
| #10 - No # Low Voltage Structure | Good Condition (40MPa) | | 4 |
| #11 - P348 Transformer | Good Condition (38MPa) | | 4 |

Priority Rating

1
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3
4

Priority Description

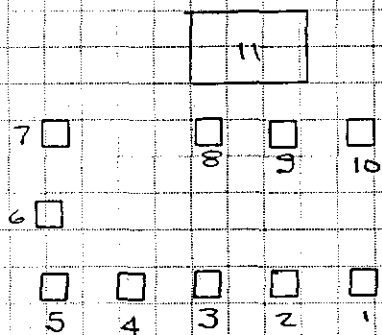
Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
within 3 years
within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS
LOCATION SKETCH

SUBSTATION SITE: Sunny Side



TCH

BURIN PENNISULA

BAY L'ARGENT
GARNISH
GRAND BEACH
GREEN HILL
LAURENTIAN
LINTON LAKE
MARYSTOWN
MONKSTOWN
SALT POND SPO SUBSTATION
SALT POND SPT SUBSTATION
SALT POND TURBINE YARD
WEST BROOK

SUBSTATION SITE: Bay L'Argent DATE INSPECTED: April 16, 2002

| <u>Priority Rating</u> | <u>Priority Description</u> | <u>Recommended Time Frame</u> |
|------------------------|--|-------------------------------|
| 1 | Immediate corrective action required | within 1 year |
| 2 | Corrective action required to avoid increasing costs to repair | within 3 years |
| 3 | General maintenance item | within 5 years |
| 4 | No corrective action or maintenance required at this time | |

INSPECTION OF CONCRETE PADS & FOUNDATIONS
LOCATION SKETCH

SUBSTATION SITE: Bay L'ARGENT

HIGHWAY TO MARYSTOWN →

2

1

ROAD

ACCESS

SUBSTATION SITE: Garnish DATE INSPECTED April 19,2002

| <u>Priority Rating</u> | <u>Priority Description</u> | <u>Recommended Time Frame</u> |
|------------------------|--|-------------------------------|
| 1 | Immediate corrective action required | within 1 year |
| 2 | Corrective action required to avoid increasing costs to repair | within 3 years |
| 3 | General maintenance item | within 5 years |
| 4 | No corrective action or maintenance required at this time | |

INSPECTION OF CONCRETE PADS & FOUNDATIONS
LOCATION SKETCH

SUBSTATION SITE: GARNISH

ROAD TO GARNISH →

1

2

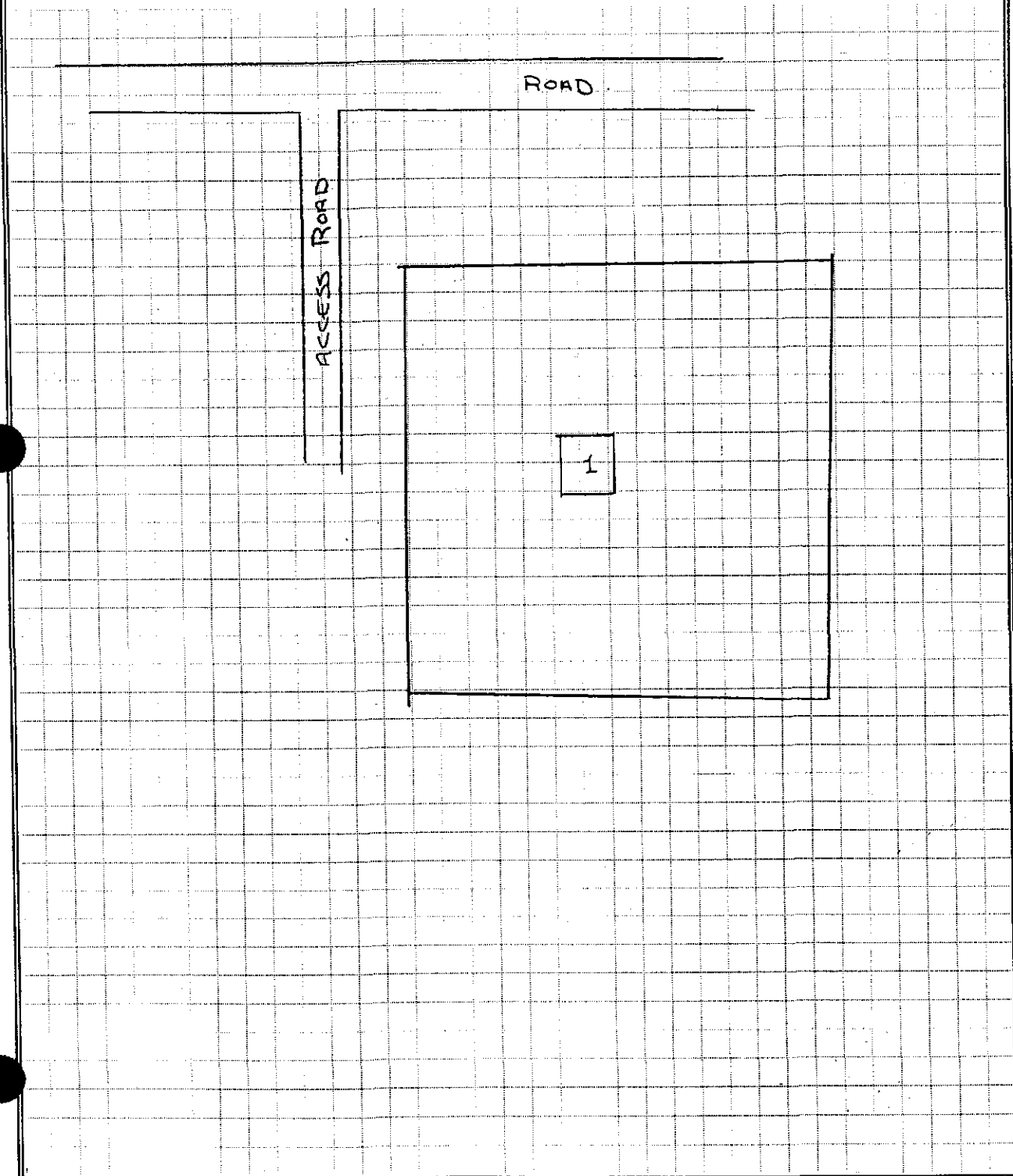
3

SUBSTATION SITE: Grand Beach DATE INSPECTED April 19, 2002

| <u>Priority Rating</u> | <u>Priority Description</u> | <u>Recommended Time Frame</u> |
|------------------------|--|-------------------------------|
| 1 | Immediate corrective action required | within 1 year |
| 2 | Corrective action required to avoid increasing costs to repair | within 3 years |
| 3 | General maintenance item | within 5 years |
| 4 | No corrective action or maintenance required at this time | |

INSPECTION OF CONCRETE PADS & FOUNDATIONS
LOCATION SKETCH

SUBSTATION SITE: GRAND BEACH



INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Greenhill DATE INSPECTED April 19, 2002

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|--------------------------------------|--|-----------------|-----------------|
| #1 - GRH-T1A High Voltage | Good Condition. (36MPa) | | 4 |
| | | | |
| | | | |
| | | | |
| #2 - GRH -BTS1 High Voltage | Good Condition. (38MPa) Very Minor chipping on two corners. | Type A Repair | 3 |
| | | | |
| | | | |
| | | | |
| #3 - GRH-T2A High Voltage | Good Condition. (38MPa) | | 4 |
| | | | |
| | | | |
| | | | |
| #4 - GRH-301 -LDB High Voltage | Good Condition (38MPa) | | 4 |
| | | | |
| | | | |
| | | | |
| #5 - GRH -301L-B Oil Breaker | Good Condition (36MPa) | | 4 |
| | | | |
| | | | |
| | | | |
| #6 - GRH-305 -LGS High Voltage | Good Condition | | 4 |
| | | | |
| | | | |
| | | | |

Priority Rating

1
2
3
4

Priority Description

Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
within 3 years
within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Greenhill DATE INSPECTED April 19, 2002

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|--------------------------------------|-------------------------|-----------------|-----------------|
| #7 - GRH -305L-B Oil Breaker | Good Condition. (36MPa) | | 4 |
| | | | |
| | | | |
| | | | |
| #8 - GRH-305 -LDL High Voltage | Good Condition. (40MPa) | | 4 |
| | | | |
| | | | |
| | | | |
| #9 - GRH-T1 -P-282 Transformer | Good Condition. (32MPa) | | 4 |
| | | | |
| | | | |
| | | | |
| #10 - GRH-T2 P-310 Transformer | Good Condition. (38MPa) | | 4 |
| | | | |
| | | | |
| | | | |
| #11 - GRH -CAP-D Low Voltage | Good Condition. (40MPa) | | 4 |
| | | | |
| | | | |
| | | | |
| #12 - GRH-03 -B Oil Breaker | Good Condition. (38MPa) | | 4 |
| | | | |
| | | | |
| | | | |

Priority Rating

1
2
3
4

Priority Description

Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
within 3 years
within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Greenhill DATE INSPECTED April 19, 2002

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|--------------------|-------------------------------------|-----------------|-----------------|
| #13 - GRH-T2 | Good Condition. (40MPa) | | 4 |
| -B | | | |
| Oil Breaker | | | |
| | | | |
| | | | |
| #14 - GRH-T2 | Good Condition. (38MPa) | Type A Repair | 3 |
| -D | Some minor cement/sand matrix | | |
| Low Voltage | deterioration along chamfered edge. | | |
| | | | |
| | | | |
| #15 - GRH- 02 | Good Condition. (36MPa) | | 4 |
| -B | | | |
| Oil Breaker | | | |
| | | | |
| | | | |
| #16 - GRH-01 | Good Condition. 42MPa) | | 4 |
| -BP | | | |
| Low Voltage | | | |
| | | | |
| | | | |
| #17 - GRH-01 | Good Condition. (40MPa) | | 4 |
| -B | | | |
| Oil Breaker | | | |
| | | | |
| | | | |
| #18 - No # | Good Condition. 38MPa) | | 4 |
| Low Voltage | | | |
| | | | |
| | | | |
| | | | |

Priority Rating

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4

Priority Description

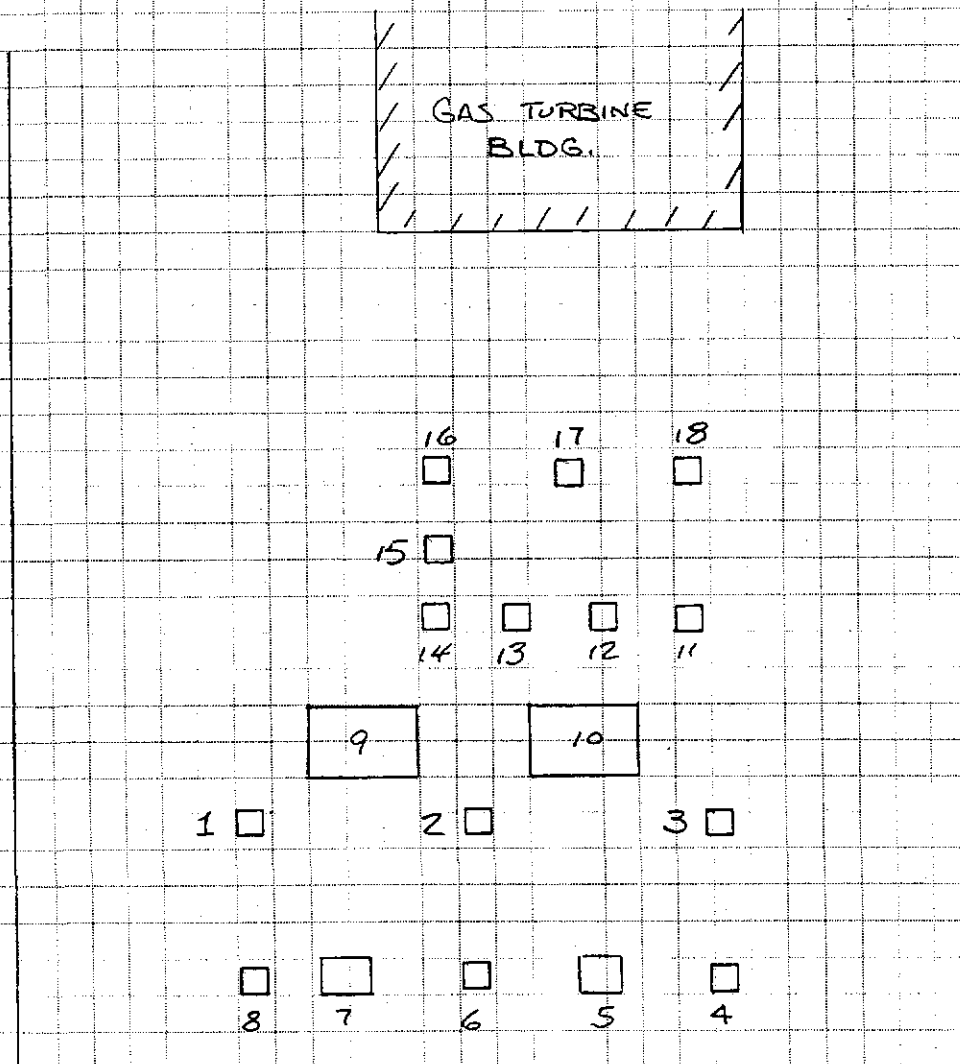
Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
within 3 years
within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS
LOCATION SKETCH

SUBSTATION SITE: GREEN HILL



INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Laurentian DATE INSPECTED April 18, 2002

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|-----------------------|--|-------------------|-----------------|
| #1 - LAU-02 | Good Condition | | 4 |
| -DL | Very minor alligator cracking | | |
| Low Voltage Structure | (40MPa) | | |
| | | | |
| | | | |
| #2 - LAU-02-R | Good Condition (40MPa) | | 4 |
| Recloser | | | |
| | | | |
| | | | |
| | | | |
| #3 - LAU-01-R | Good Condition (38MPa) | | 4 |
| Recloser | | | |
| | | | |
| | | | |
| | | | |
| #4 - LAU-01 | Good Condition. | Future monitoring | 4 |
| -BP | There is some minor cement/sand matrix | | |
| Low Voltage Structure | deterioration starting show. | | |
| | | | |
| | | | |
| | | | |
| #5 - LAU-T1-D | Poor Condition. The top is deteriorated to a state where aggregate is exposed and the sides are chipped away. The corners near the anchor bolts are deteriorated. Concrete below grade is in good condition. | Type D Repair | 1 |
| Low Voltage Structure | | | |
| | | | |
| | | | |
| | | | |
| #6 - No # | Good Condition. (38MPa) | | 4 |
| Metering Tank | | | |
| | | | |
| | | | |
| | | | |
| | | | |

Priority Rating

1
2
3
4

Priority Description

Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
within 3 years
within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Laurentian DATE INSPECTED April 18, 2002

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|---|--|-----------------|--------------------|
| #7 - No # Not in Use | Good Condition | | 4 |
| | | | |
| | | | |
| | | | |
| #8 - No # Low Voltage Structure | Fair Condition The cement/sand matrix on the top surface is badly deteriorated with loose aggregate. | Type A Repair | 2 |
| | | | |
| | | | |
| #9 - T1-P298 Transformer | Good Condition. (32MPa) | | 4 |
| | | | |
| | | | |
| #10 - T1A High Voltage Structure | Good Condition (38MPa) | | 4 |
| | | | |
| | | | |
| #11 - BTS1 High Voltage Structure | Good Condition (38MPa) | | 4 |
| | | | |
| | | | |
| #12 - No # High Voltage Structure | Good Condition. (40MPa) | | 4 |
| | | | |
| | | | |
| | | | |

Priority Rating

1
2
3
4

Priority Description

Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
within 3 years
within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Laurentian DATE INSPECTED April 18, 2002

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|--|--|-----------------|-----------------|
| #13 - 302-LDB High Voltage Structure | Fair to Good Condition There is some minor cement/sand matrix deterioration & one small concrete spall | Type A Repair | 3 |
| | | | |
| | | | |
| #14 - LAU -302L-B Oil Breaker | Good Condition. (38MPa) | | 4 |
| | | | |
| | | | |
| #15 - 305-LGS High Voltage Structure | Fair Condition. One corner has a large piece of concrete spalled off. Several other corners have exposed & loose aggregate. | Type A Repair | 2 |
| | | | |
| | | | |
| #16 - LAU -305L-B Oil Breaker | Good Condition. (36MPa) | | 4 |
| | | | |
| | | | |
| #17 - 305-LDB High Voltage Structure | Fair to Good Condition. There is some cement/sand matrix deterioration along top edges and several hairline cracks (<1mm) extending outward from anchor bolts. | Type B Repair | 3 |
| | | | |
| | | | |
| | | | |
| | | | |

Priority Rating

1
2
3
4

Priority Description

Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
within 3 years
within 5 years

A 10x10 grid with the following numbered squares:

- 1: Row 8, Column 5
- 2: Row 8, Column 6
- 3: Row 8, Column 7
- 4: Row 8, Column 8
- 5: Row 7, Column 5
- 6: Row 7, Column 6
- 7: Row 7, Column 7
- 8: Row 7, Column 8
- 9: Row 6, Column 4 (2x2 block)
- 10: Row 5, Column 2
- 11: Row 5, Column 4
- 12: Row 4, Column 6
- 13: Row 3, Column 6
- 14: Row 3, Column 5
- 15: Row 3, Column 4
- 16: Row 3, Column 3
- 17: Row 3, Column 2

ROAD To St. LAWRENCE →

INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Linton Lake DATE INSPECTED: April 18, 2002

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|--|--|-----------------|--------------------|
| #1 - LLK-01-R Recloser | Good Condition. (40MPa) | | 4 |
| | | | |
| | | | |
| | | | |
| #2 - No # Not in Use Equipment out for repair | Good Condition. (38MPa) | | 4 |
| | | | |
| | | | |
| | | | |
| #3 - LLK-T1-281 Transformer | Spill pan installed. could not inspect concrete | | |
| | | | |
| | | | |
| | | | |
| #4 - LLK-T1 -HGS High Voltage Structure | Good Condition. | | 4 |
| | | | |
| | | | |
| | | | |
| #5 - No # High Voltage Structure | Good Condition (42MPa) | | 4 |
| | | | |
| | | | |
| | | | |
| #6 - No # High Voltage Structure | Good Condition (40MPa) | | 4 |
| | | | |
| | | | |
| | | | |

Priority Rating

1
2
3
4

Priority Description

Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
within 3 years
within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Linton Lake DATE INSPECTED: April 18, 2002

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|--------------------|---|-----------------|-----------------|
| #7 - No # | Good Condition | | 4 |
| High Voltage | (38MPa) | | |
| Structure | | | |
| | | | |
| #s 8,9,10,11 | All in Good Condition | | 4 |
| No #s | New foundations installed in the last | | |
| High Voltage | couple of years. | | |
| Structure | | | |
| | | | |
| #s 12,13,14,15 | All in Good Condition | | 4 |
| No #s | New foundations installed in the last | | |
| High Voltage | couple of years. | | |
| Structure | | | |
| | | | |
| #16 - PL-212-B | Spill pan installed | | |
| Oil Breaker | Could not inspect concrete | | |
| | | | |
| | | | |
| #s 17,18,19,20 | All in Good Condition | | 4 |
| No #s | New foundations installed in the last | | |
| High Voltage | couple of years. | | |
| Structure | | | |
| | | | |
| #21 - 212 PT | Poor Condition with numerous cracks | Type E Repair | 1 |
| | and comers spalled off. | | |
| | | | |
| | Note: NF Power rep. was not sure if | | |
| | NF Power or Hydro owned this foudation. | | |
| | | | |

Priority Rating

1
2
3
4

Priority Description

Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

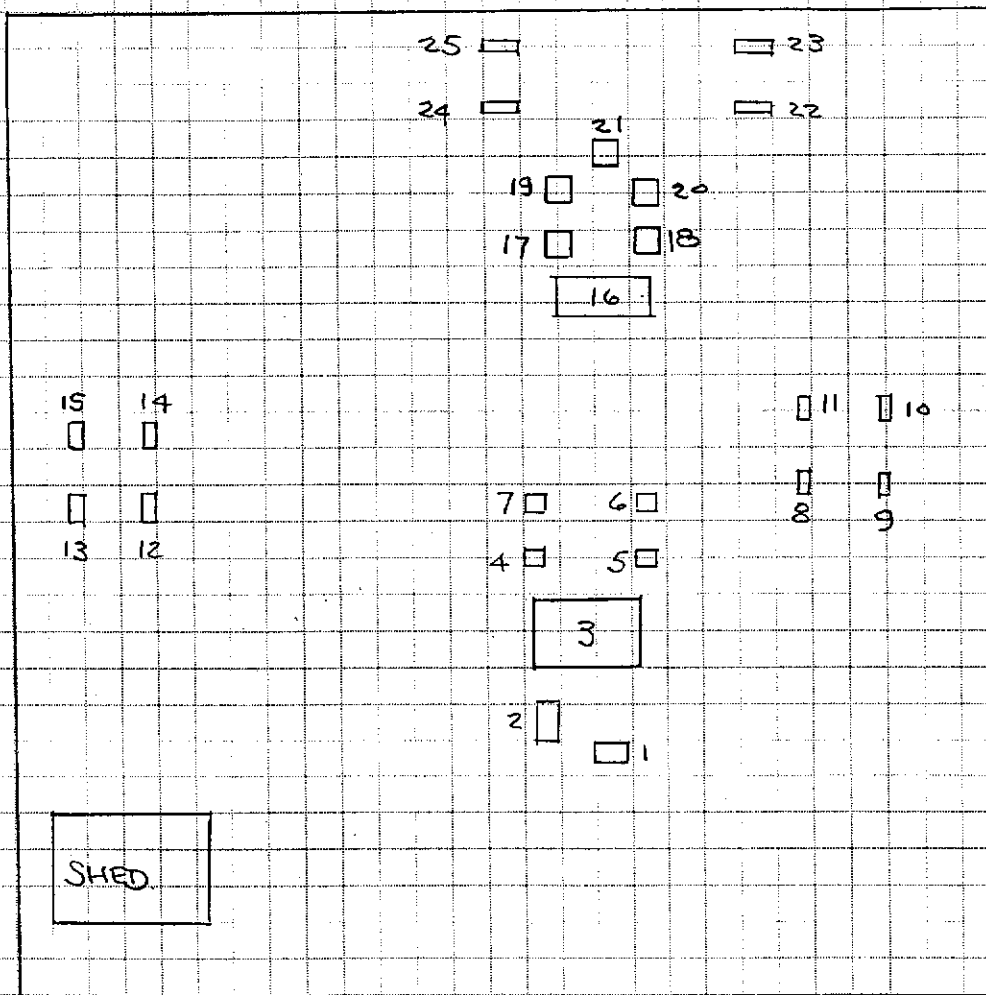
within 1 year
within 3 years
within 5 years

SUBSTATION SITE: Linton Lake DATE INSPECTED: April 18, 2002

| <u>Priority Rating</u> | <u>Priority Description</u> | <u>Recommended Time Frame</u> |
|------------------------|--|-------------------------------|
| 1 | Immediate corrective action required | within 1 year |
| 2 | Corrective action required to avoid increasing costs to repair | within 3 years |
| 3 | General maintenance item | within 5 years |
| 4 | No corrective action or maintenance required at this time | |

INSPECTION OF CONCRETE PADS & FOUNDATIONS
LOCATION SKETCH

SUBSTATION SITE: LINTON LAKE



HIGHWAY ← TO MARYSTOWN

INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Marystown DATE INSPECTED: April 18, 2002

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|--|--|-------------------|--------------------|
| #1 - MSY-01 - BP Low Vptage Structure | Good Condition. (38MPa) | | 4 |
| #2 - MSY-01 -R-424 Recloser | Good Condition with one minor spall on one corner. | Type A Repair | 3 |
| #3 - MSY-02 -R-384 Recloser | Good Condition. (38MPa) | | 4 |
| #4 - MSY-02 -BP Low Voltage Structure | Fair to Good Condition There are two hairline cracks (<1mm) | Type B Repair | 3 |
| #5 - MSY-03 -R Recloser | Good Condition Very minor shipping along top edges | Future Monitoring | 4 |
| #6 - MSY-04 -DL Low Voltage Structure | Fair Condition. There are several cracks from top surface out to sides (<1mm) | Type B Repair | 3 |

Priority Rating

1
2
3
4

Priority Description

Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
within 3 years
within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Marystown DATE INSPECTED: April 18, 2002

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|---|--|-------------------|-----------------|
| #7 - MSY-04 -R Recloser | Good Condition Very minor shipping along top edges (39MPa) | Future Monitoring | 4 |
| | | | |
| | | | |
| #8 - NO # Metering Tank | Good Condition Very minor shipping along top edges (38MPa) | Future Monitoring | 4 |
| | | | |
| | | | |
| #9 - No # Low Voltage Structure | Good Condition ((40MPa) | | |
| | | | |
| | | | |
| #10 - T1-311 Transformer | Good condition. There is some cement/sand matrix deterioration and there appears to have been an extension added to one side of the pad. | Future Monitoring | 4 |
| | | | |
| | | | |
| #11 - 308L-A High Voltage Structure | Fair to Good Condition. Two Hairline cracks from middle of top surface to sides (40MPa) | Type B Repair | 3 |
| | | | |
| | | | |
| #12 - T1-A High Voltage Structure | Fair to Good Condition. Two Hairline cracks from middle of top surface to sides (40MPa) | Type B Repair | 3 |
| | | | |
| | | | |

Priority Rating

1
2
3
4

Priority Description

Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
within 3 years
within 5 years

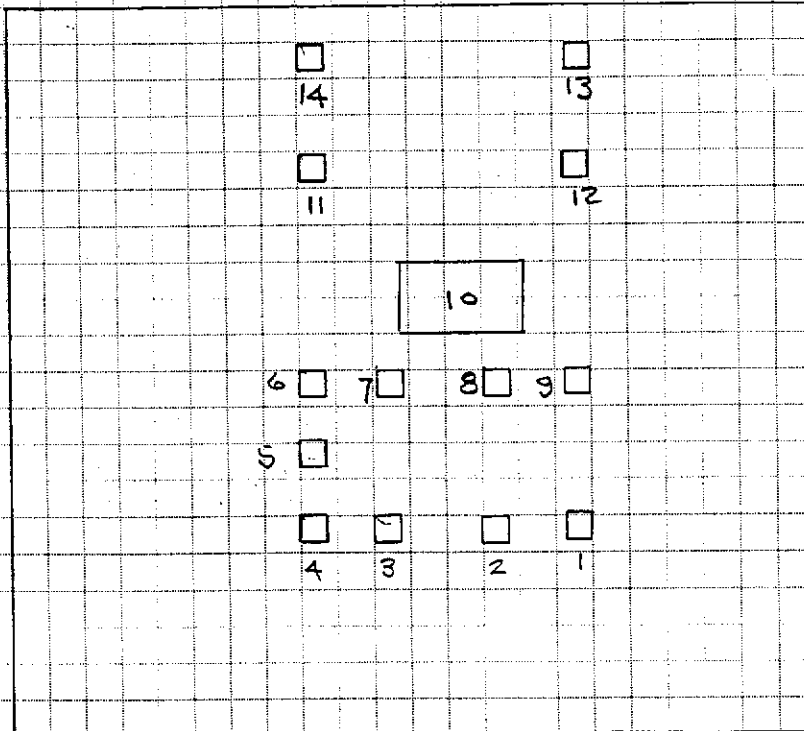
SUBSTATION SITE: Marystown DATE INSPECTED: April 18, 2002

[illegible]

| <u>Priority Rating</u> | <u>Priority Description</u> | <u>Recommended Time Frame</u> |
|------------------------|--|-------------------------------|
| 1 | Immediate corrective action required | within 1 year |
| 2 | Corrective action required to avoid increasing costs to repair | within 3 years |
| 3 | General maintenance item | within 5 years |
| 4 | No corrective action or maintenance required at this time | |

INSPECTION OF CONCRETE PADS & FOUNDATIONS
LOCATION SKETCH

SUBSTATION SITE: MARYSTOWN



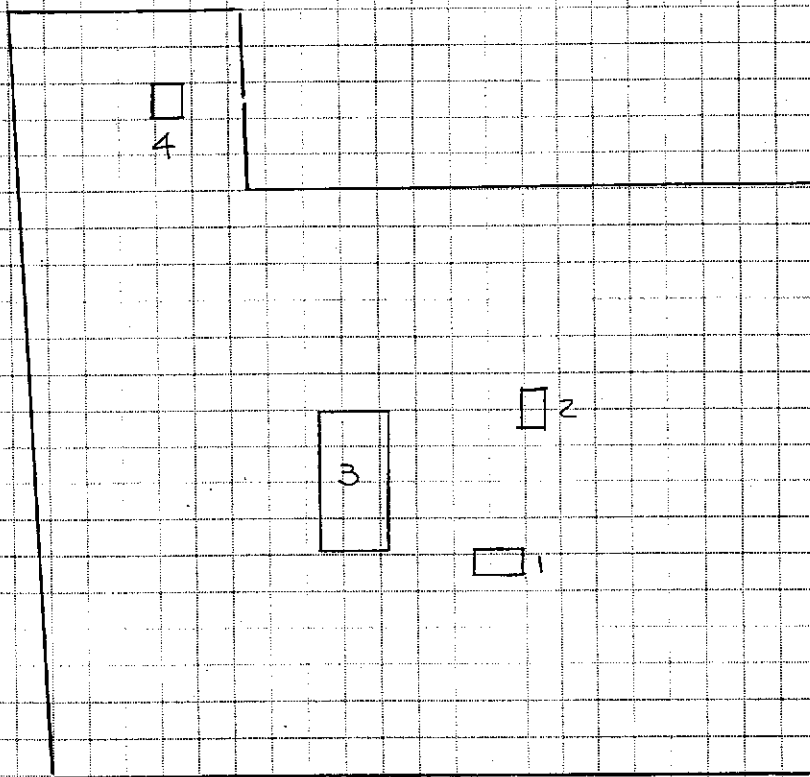
MAIN ROAD TO MARYSTOWN →

SUBSTATION SITE: Monkstown DATE INSPECTED: April 16, 2002

| <u>Priority Rating</u> | <u>Priority Description</u> | <u>Recommended Time Frame</u> |
|------------------------|--|-------------------------------|
| 1 | Immediate corrective action required | within 1 year |
| 2 | Corrective action required to avoid increasing costs to repair | within 3 years |
| 3 | General maintenance item | within 5 years |
| 4 | No corrective action or maintenance required at this time | |

INSPECTION OF CONCRETE PADS & FOUNDATIONS
LOCATION SKETCH

SUBSTATION SITE: MONKSTOWN



INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Salt Pond (SPO Substation) DATE INSPECTED April 18, 2002

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|--------------------|-------------------------|-----------------|-----------------|
| #1 - SPO-02 | Good Condition. (42MPa) | | 4 |
| -BP | | | |
| Low Voltage | | | |
| | | | |
| | | | |
| #2 - SPO-02 | Good Condition. (40MPa) | | 4 |
| -R-343 | | | |
| Recloser | | | |
| | | | |
| | | | |
| #3 - SPO-01- | Good Condition. (42MPa) | | 4 |
| Recloser | | | |
| | | | |
| | | | |
| | | | |
| #4 - SPO-01 | Good Condition. (40MPa) | | 4 |
| -DL | | | |
| Low Voltage | | | |
| | | | |
| | | | |
| #5 - SPO-03 | Good Condition. (40MPa) | | 4 |
| -R-510 | | | |
| | | | |
| | | | |
| | | | |
| #6 - SPO-03 | Good Condition. (42MPa) | | 4 |
| -BP | | | |
| Low Voltage | | | |
| | | | |
| | | | |

Priority Rating

1
2
3
4

Priority Description

Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
within 3 years
within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Salt Pond (SPO Substation) DATE INSPECTED April 18, 2002

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|------------------------------------|---|-----------------|-----------------|
| #7 - SPO-T1 -D Low Voltage | Good Condition | | 4 |
| | | | |
| | | | |
| #8 - 2733 Metering Tank | Good Condition. (40MPa) | | 4 |
| | | | |
| | | | |
| #9 - SPO-T4 -B Synix Breaker | Good Condition Several areas with minor honeycombing (38MPa) | Type A Repair | 3 |
| | | | |
| #10 - SPO-T4 Transformer | Good Condition. (38MPa) | | 4 |
| | | | |
| | | | |
| #11 - No # High Voltage | Good Condition (36MPa) | | 4 |
| | | | |
| | | | |
| #12 - No # High Voltage | Fair to Good Condition Some cement/sand Matrix deterioration and scaling on one corner. | Type A Repair | 3 |
| | | | |
| | | | |

Priority Rating

- 1
- 2
- 3
- 4

Priority Description

- Immediate corrective action required
- Corrective action required to avoid increasing costs to repair
- General maintenance item
- No corrective action or maintenance required at this time

Recommended Time Frame

- within 1 year
- within 3 years
- within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Salt Pond (SPO Substation) DATE INSPECTED April 18, 2002

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|--|-------------------------|-----------------|-----------------|
| #13 - No # High Voltage | Good Condition. (38MPa) | | 4 |
| | | | |
| | | | |
| | | | |
| #14 - SPO -308-L-DB High Voltage | Good Condition (37MPa) | | 4 |
| | | | |
| | | | |
| | | | |
| #15 - SPO -308L-B Synix Breaker | Good Condition | | 4 |
| | | | |
| | | | |
| | | | |
| #16 - No # High Voltage | Good Condition. (40MPa) | | 4 |
| | | | |
| | | | |
| | | | |
| #17 - SPO -TL219-DL High Voltage | Good Condition (40MPa) | | 4 |
| | | | |
| | | | |
| | | | |
| #18 - SPO -TL219-B Synix Breaker | Good Condition. (44MPa) | | 4 |
| | | | |
| | | | |
| | | | |

Priority Rating

1
2
3
4

Priority Description

Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
within 3 years
within 5 years

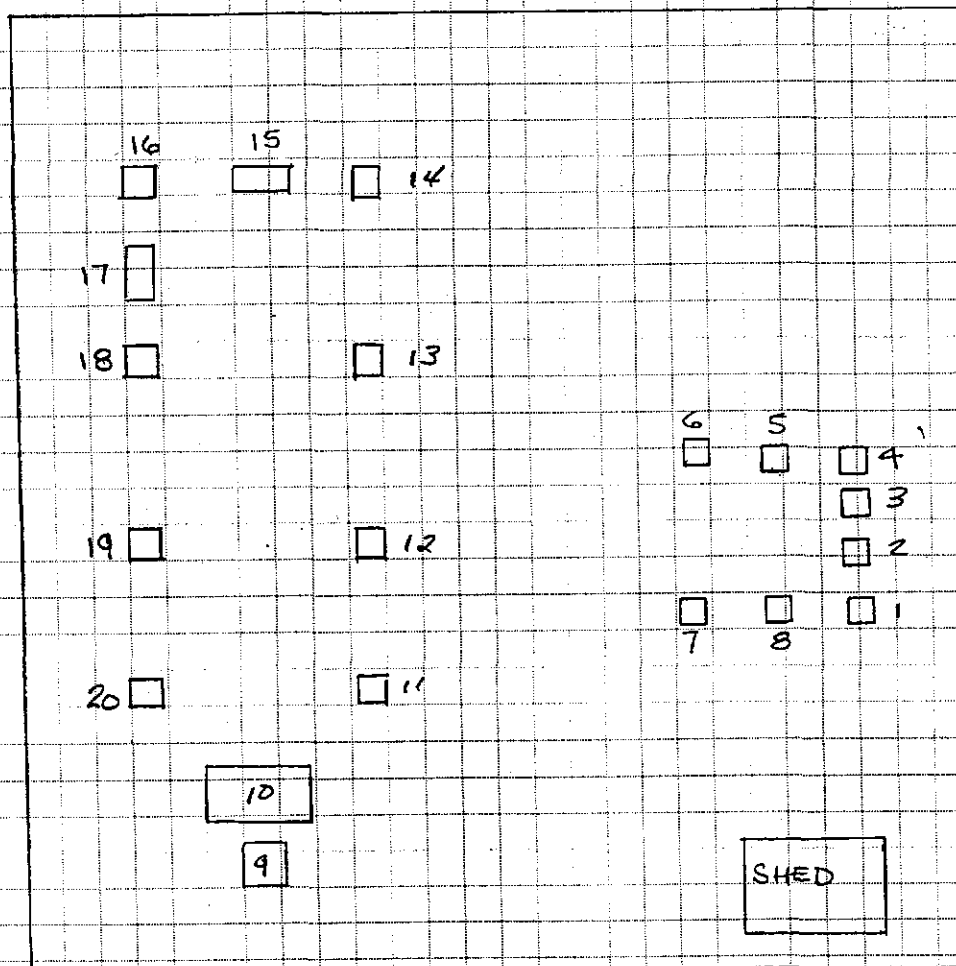
| | |
|--|--------------------------------------|
| INSPECTION OF CONCRETE PADS & FOUNDATIONS | |
| SUBSTATION SITE: <u>Salt Pond (SPO Substation)</u> | DATE INSPECTED <u>April 18, 2002</u> |

SUBSTATION SITE: Salt Pond (SPO Substation) DATE INSPECTED April 18, 2002

| <u>Priority Rating</u> | <u>Priority Description</u> | <u>Recommended Time Frame</u> |
|------------------------|--|-------------------------------|
| 1 | Immediate corrective action required | within 1 year |
| 2 | Corrective action required to avoid increasing costs to repair | within 3 years |
| 3 | General maintenance item | within 5 years |
| 4 | No corrective action or maintenance required at this time | |

INSPECTION OF CONCRETE PADS & FOUNDATIONS
LOCATION SKETCH

SUBSTATION SITE: SALT POND
SPO SUBSTATION



INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Salt Pond (SPT Substation) DATE INSPECTED April 18,2002

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|------------------------------------|--|--|-----------------|
| #1 - No # Not in Use | Fair to Good with some alligator cracking and several hairline cracks(<1mm) | Type B Repair if structure is to be used again | 3 |
| | | | |
| | | | |
| #2 - SPT-T1 Transformer | Fair Condition. Two corners have cracking (>1mm) that extends fully across the corner. The remainder of the pad is in Good Condition | Type C Repair | 2 |
| | | | |
| #3 - SPT-301L -B Oil Breaker | Poor Condition. There are excessive amounts of cracking (>1mm) throughout the foundation which has compromised the structural integrity of the concrete. The equipment on the foundation appears to be larger than it was designed for. | Type E Repair Total replacement of foundation with correct foundation type for this equipment. There appears to be a settlement problem with the foundation. The underlying material should be inspected. | 1 |
| #4 - SPT-302L -B Oil Breaker | Poor Condition. There are excessive amounts of cracking (>1mm) throughout the foundation which has compromised the structural integrity of the concrete. | Type E Repair Total replacement of foundation with correct foundation type for this equipment. There appears to be a settlement problem with the foundation. The underlying material should be inspected. | 1 |
| | | | |
| #5 - No # Not in Use | Major cracks along length of pad & across the end. | Should be replaced if it is required in the future. | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

Priority Rating

- 1
- 2
- 3
- 4

Priority Description

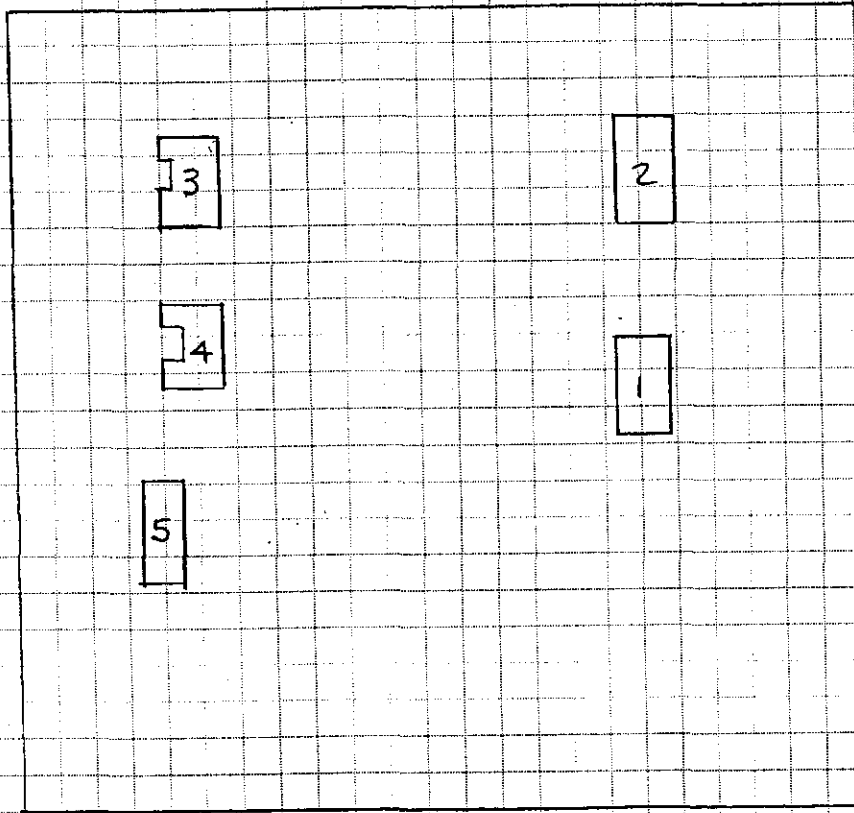
- Immediate corrective action required
- Corrective action required to avoid increasing costs to repair
- General maintenance item
- No corrective action or maintenance required at this time

Recommended Time Frame

- within 1 year
- within 3 years
- within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS
LOCATION SKETCH

SUBSTATION SITE: SALT POND
SPT SUBSTATION



DRIVEWAY:

SUBSTATION SITE: Salt Pond (Turbine Yard) DATE INSPECTED April 18, 2002

| <u>Priority Rating</u> | <u>Priority Description</u> | <u>Recommended Time Frame</u> |
|------------------------|--|-------------------------------|
| 1 | Immediate corrective action required | within 1 year |
| 2 | Corrective action required to avoid increasing costs to repair | within 3 years |
| 3 | General maintenance item | within 5 years |
| 4 | No corrective action or maintenance required at this time | |

INSPECTION OF CONCRETE PADS & FOUNDATIONS
LOCATION SKETCH

SUBSTATION SITE: SALT POND
TURBINE YARD

BLDG.

1

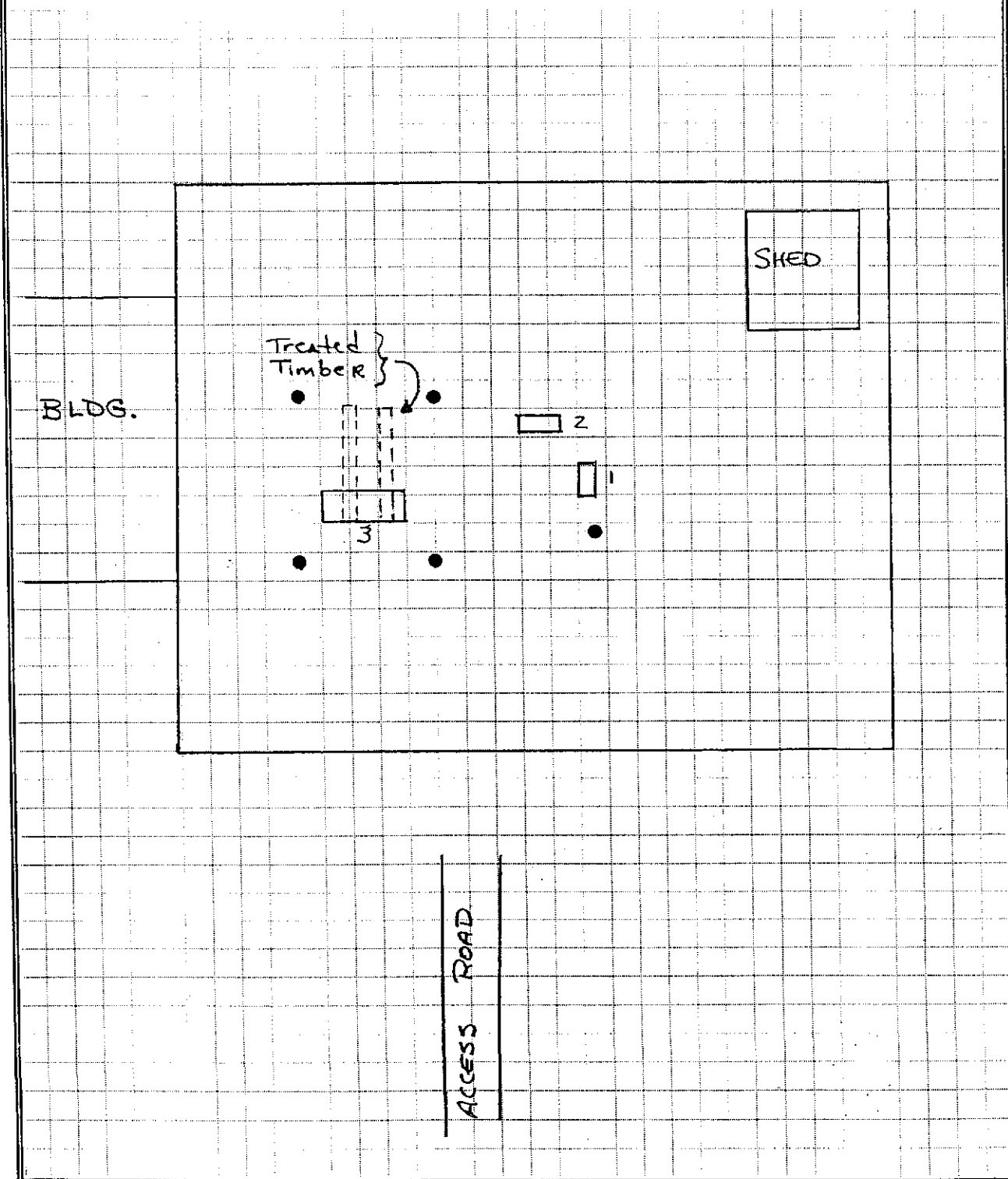
DRIVEWAY

SUBSTATION SITE: West Brook DATE INSPECTED: April 18, 2002

| <u>Priority Rating</u> | <u>Priority Description</u> | <u>Recommended Time Frame</u> |
|------------------------|--|-------------------------------|
| 1 | Immediate corrective action required | within 1 year |
| 2 | Corrective action required to avoid increasing costs to repair | within 3 years |
| 3 | General maintenance item | within 5 years |
| 4 | No corrective action or maintenance required at this time | |

INSPECTION OF CONCRETE PADS & FOUNDATIONS
LOCATION SKETCH

SUBSTATION SITE: WEST BROOK



WEST COAST

GRAND FALLS AREA
DEER LAKE AREA
STEPHENVILLE AREA

GRAND FALLS AREA

BISHOP'S FALLS
BOTWOOD
BUCHAN'S TERMINAL STATION
GRAND FALLS
INDIAN RIVER
LEWISPORTE
NEW GRAND FALLS
NOTRE DAME JUNCTION
RATTLING BROOK
SPRINGDALE

INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Bishop's Falls
West

DATE INSPECTED: 7-May-02

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|--|---|-----------------|-----------------|
| #1 - BFS-02-BP Structure Low Voltage | Rough finish on top surface of pad, otherwise pad is in good condition (34 Mpa) | | 4 |
| #2 - BFS-02-R1 Recloser | One minor hairline crack that extends down approx. 100mm with less than 1mm separation, and associated alligator cracking also present (44 Mpa). | Type B Repair | 3 |
| #3 - BFS-01-R1 Recloser | Four hairline cracks present (located midway across each edge) that extend down 150mm with less than 1mm separation. Minor alligator cracking and scaling also present on top surface (46 Mpa). | Type B Repair | 2 |
| #4 - BFS-01-BP Structure Low Voltage | Four hairline cracks present (located midway across each edge) that extend down 250mm with approx. 1mm separation (29 Mpa). | Type C Repair | 2 |
| #5 - BFS-T1-DL Structure Low Voltage | Five hairline cracks with approx. separation of cracks 2mm, also alligator cracking present on top surface of pad (34 Mpa). | Type C Repair | 2 |
| #6 - Metering Tank | Six hairline cracks present that extend down approx. 325mm and have approx. 2mm separation. Associated alligator cracking also present on top surface (50 Mpa). | Type C Repair | 2 |

Priority Rating

1
2
3
4

Priority Description

Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
within 3 years
within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Bishop's Falls
West

DATE INSPECTED: 7-May-02

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|---|---|---|-----------------|
| #7 - Not In Use | Six hairline cracks present that extend down approx. 325mm and have approx. 2mm separation. Associated alligator cracking also present on top surface (51 Mpa). | Type C Repair if this pad is to be used again | 2 |
| #8 - Structure Low Voltage | Four hairline cracks present (located midway across each edge) that extend down 250mm with approx. 2-3mm separation. Minor alligator cracking also present on top surface (28 Mpa). | Type C Repair | 2 |
| #9 - BFS-T1 Transformer 200305 | Good condition (28 Mpa). | | 4 |
| #10 - BFS-T1-A Structure High Voltage | Good condition (29 Mpa). | | 4 |
| #11 - BFS-136L-B Oil Circuit Breaker | Minor scaling present on top surface of pad. Remainder of pad is in good condition (30 Mpa). | | 4 |
| #12 - BFS-132-DB Structure High Voltage | Four hairline cracks present (located midway across each edge) that extend down 150mm with less than 1mm separation. Minor alligator cracking and pitting present on top surface of pad (30 Mpa). | Type B Repair | 2 |

Priority Rating

1
2
3
4

Priority Description

Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
within 3 years
within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Bishop's Falls DATE INSPECTED: 7-May-02
West

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|--|--|-----------------|-----------------|
| #13 - BFS-132L-B Oil Circuit Breaker | Rough finish on top surface of pad. Remainder of pad is in good condition (29 Mpa). | | 4 |
| #14 - BFS-BTS-1 Structure High Voltage | Four hairline cracks present (located midway across each edge) that extend down 200mm with approx. 1mm separation (30 Mpa). | Type C Repair | 2 |
| #15 - BFS-134L-B Oil Circuit Breaker | Good condition (28 Mpa). | | 4 |
| #16 - BFS-134L-DB Structure High Voltage | Rough finish and minor scaling present on top surface of pad. Remainder of pad is in good condition (28 Mpa). | | 4 |
| #17 - BFS-133L-B Oil Circuit Breaker | Two hairline cracks present (located midway across each edge) that extend down 200mm with approx. 1mm separation (44 Mpa). | Type C Repair | 2 |
| #18 - BFS-133L-DL Structure High Voltage | Six hairline cracks present (located midway across each edge) that extend down 375mm with approx. 1-2mm separation. Minor alligator cracking also present on top surface (28 Mpa). | Type C Repair | 2 |

Priority Rating

1
2
3
4

Priority Description

Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
within 3 years
within 5 years

SUBSTATION SITE: Bishop's Falls DATE INSPECTED: 7-May-02
West

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Priority Rating

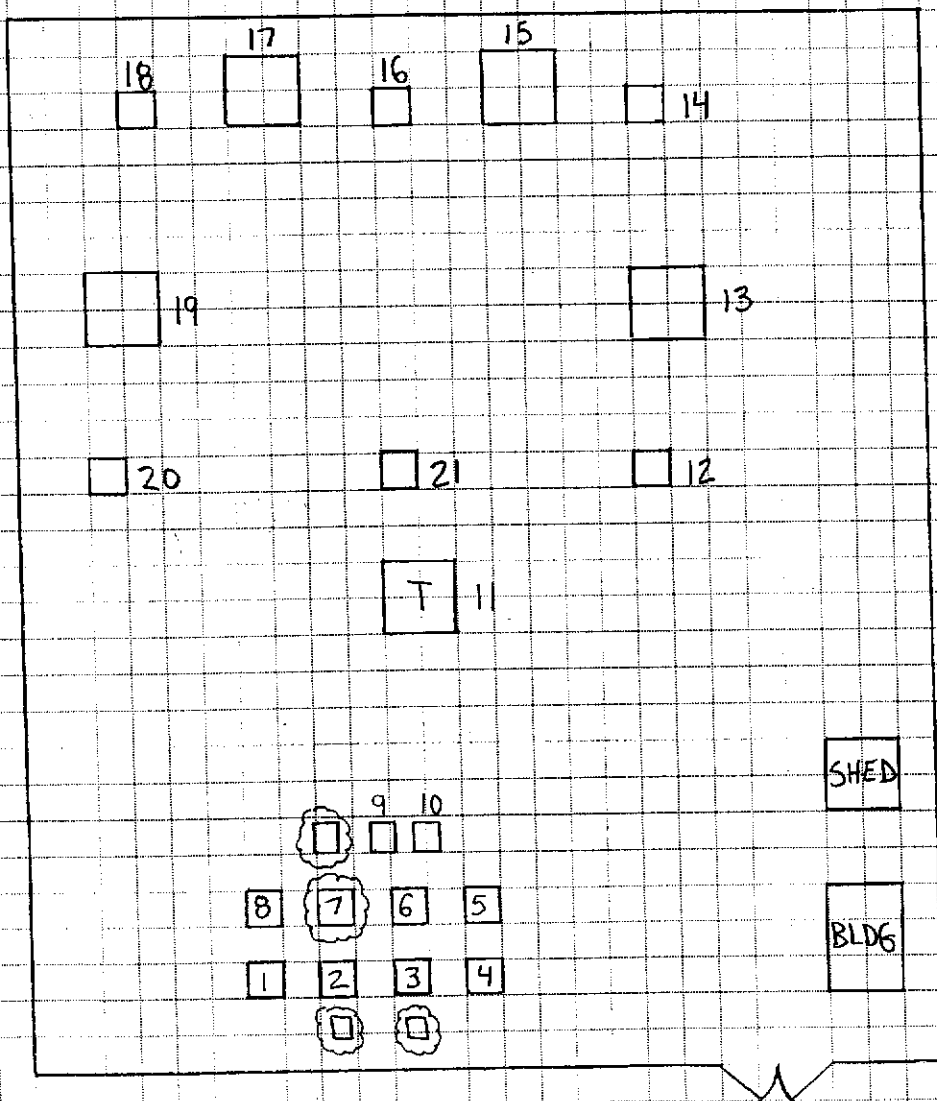
Priority Description

Recommended Time Frame

- | | |
|---|--|
| 1 | Immediate corrective action required |
| 2 | Corrective action required to avoid increasing costs to repair |
| 3 | General maintenance item |
| 4 | No corrective action or maintenance required at this time |

INSPECTION OF CONCRETE PADS & FOUNDATIONS
LOCATION SKETCH

SUBSTATION SITE: BISHOP'S FALLS
GRAND FALLS AREA



☁ - NOT IN USE

INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Botwood DATE INSPECTED: 7-May-02
West

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|---|--|-----------------|-----------------|
| #1 - BOT-02-DL Structure Low Voltage | Good condition (28 Mpa). | | 4 |
| #2 - BOT-02-R1 Recloser | Good condition (35 Mpa). | | 4 |
| #3 - BOT-03-R1 Recloser | Faint alligator cracking present on top surface of pad. Remainder of pad is in good condition (41 Mpa). | | 4 |
| #4 - BOT-03-BP Structure Low Voltage | Six hairline cracks present that extend down approx. 325mm and have approx. 3mm separation. Associated alligator cracking also present on top surface. One corner of pad has potential to separate (42 Mpa). | Type C Repair | 1 |
| #5 - BOT-01-BP Structure High Voltage | Hairline cracks present that extend down approx. 250mm and have approx. separation of 1mm. Associated alligator cracking present throughout top 100mm of pad (42 Mpa). | Type C Repair | 2 |
| #6 - BOT-01-R1 Recloser | Good condition (44 Mpa). | | 4 |

Priority Rating

1
2
3
4

Priority Description

Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

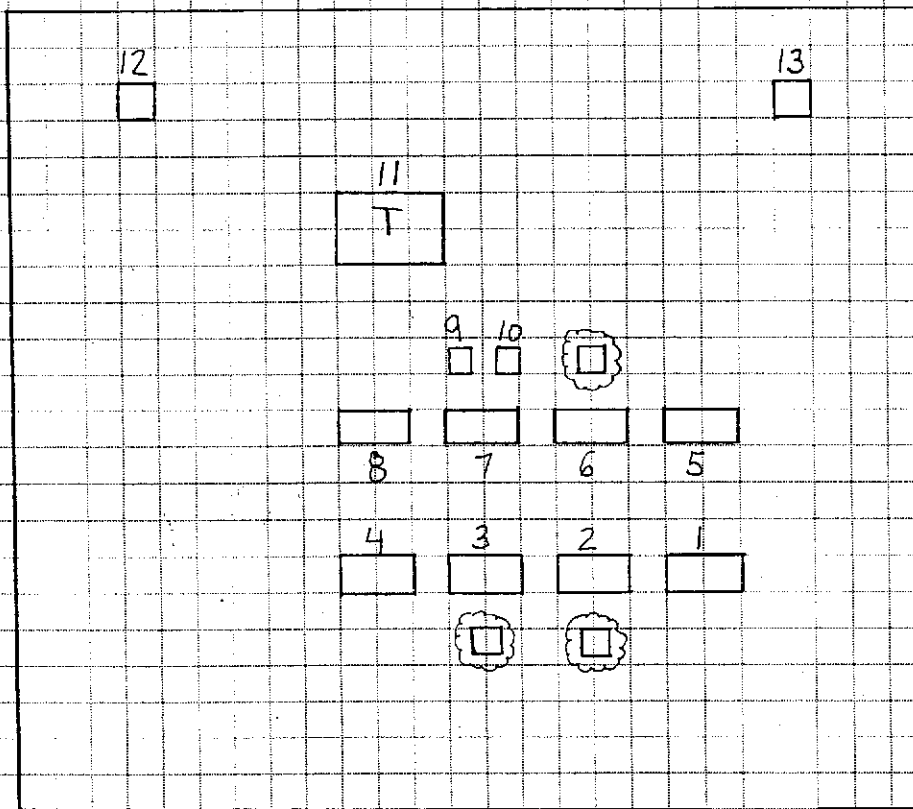
within 1 year
within 3 years
within 5 years

SUBSTATION SITE: Botwood DATE INSPECTED: 7-May-02
West

| <u>Priority Rating</u> | <u>Priority Description</u> | <u>Recommended Time Frame</u> |
|------------------------|--|-------------------------------|
| 1 | Immediate corrective action required | within 1 year |
| 2 | Corrective action required to avoid increasing costs to repair | within 3 years |
| 3 | General maintenance item | within 5 years |
| 4 | No corrective action or maintenance required at this time | |

INSPECTION OF CONCRETE PADS & FOUNDATIONS
LOCATION SKETCH

SUBSTATION SITE: BOTWOOD
GRAND FALLS AREA



☁ - NOT IN USE

INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Buchans Terminal Station DATE INSPECTED: 2-May-02
West

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|--|---|-----------------|-----------------|
| #1 - BUC-02-BP Structure Low Voltage | Good condition (44 Mpa). | | 4 |
| #2 - BUC-02-R1 Recloser | Minor scaling on top surface of pad. Remainder of pad is in good condition (28 Mpa). | | 4 |
| #3 - BUC-2-GS Structure Low Voltage | Good condition (46 Mpa). | | 4 |
| #4 - BUC-01-R1 Recloser | Rough finish on top surface of pad. Remainder of pad is in good condition (28 Mpa). | | 4 |
| #5 - BUC-01-BP Structure Low Voltage | Good condition (44 Mpa). | | 4 |
| #6 - B3T2 Structure Low Voltage | Good condition (44 Mpa). | | 4 |

Priority Rating

1
2
3
4

Priority Description

Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
within 3 years
within 5 years

SUBSTATION SITE: Buchans Terminal Station DATE INSPECTED: 2-May-02
West

Priority Rating

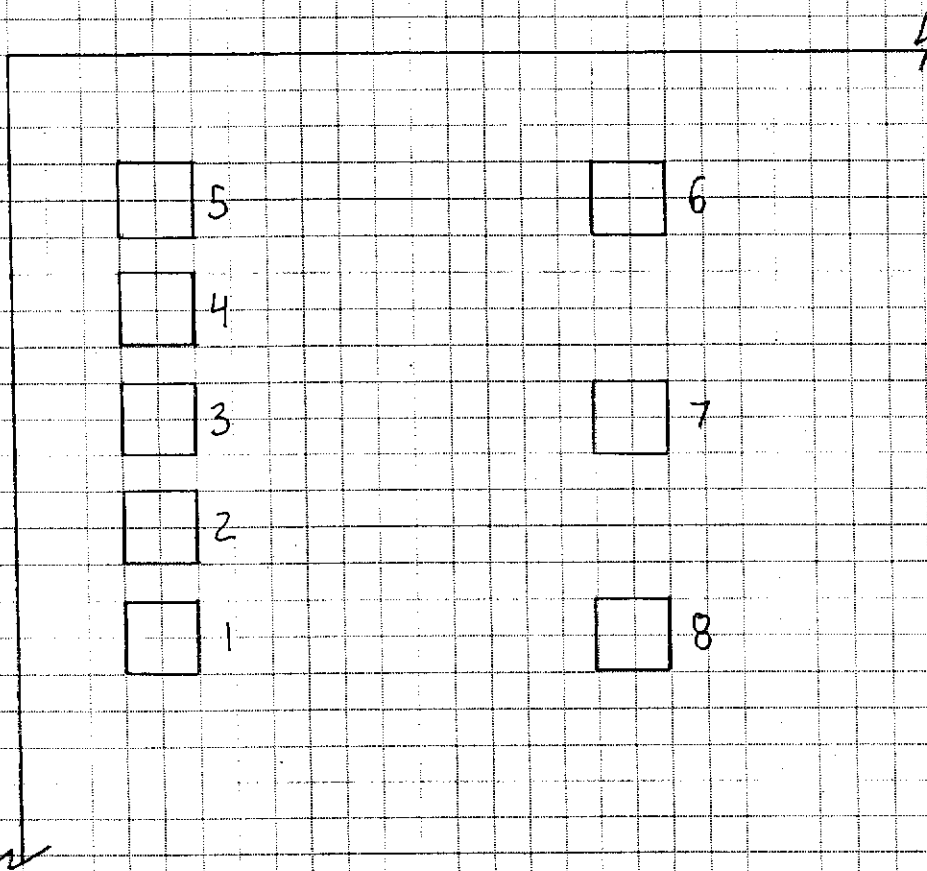
- 1
2
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Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

☐ within 1 year
☐ within 3 years
☐ within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS
LOCATION SKETCH

SUBSTATION SITE: BUCHANAN'S TERMINAL STATION
GRAND FALLS AREA



* REMAINDER OF YARD IS NF HYDRO

SUBSTATION SITE: Grand Falls DATE INSPECTED: 6-May-02
West

Priority Rating

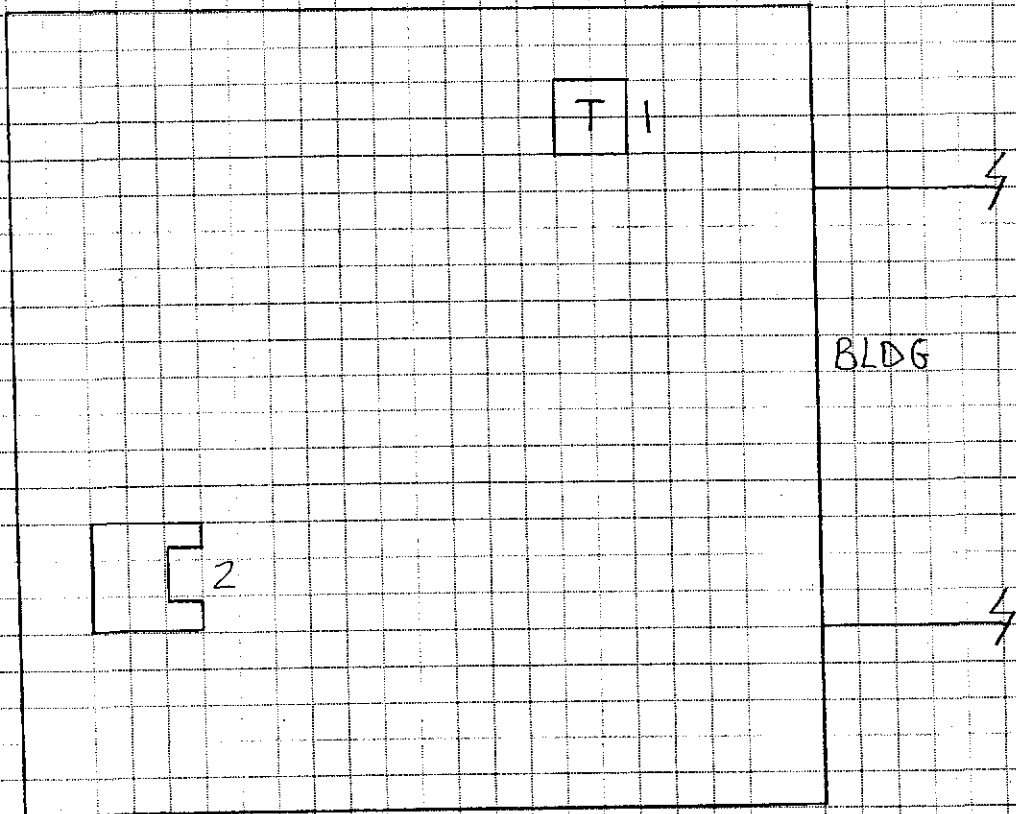
- 1
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4

Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

☐ within 1 year
☐ within 3 years
☐ within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS
LOCATION SKETCH

SUBSTATION SITE: GRAND FALLS
GRAND FALLS AREA



SUBSTATION SITE: Indian River DATE INSPECTED: 1-May-02
West

Priority Rating

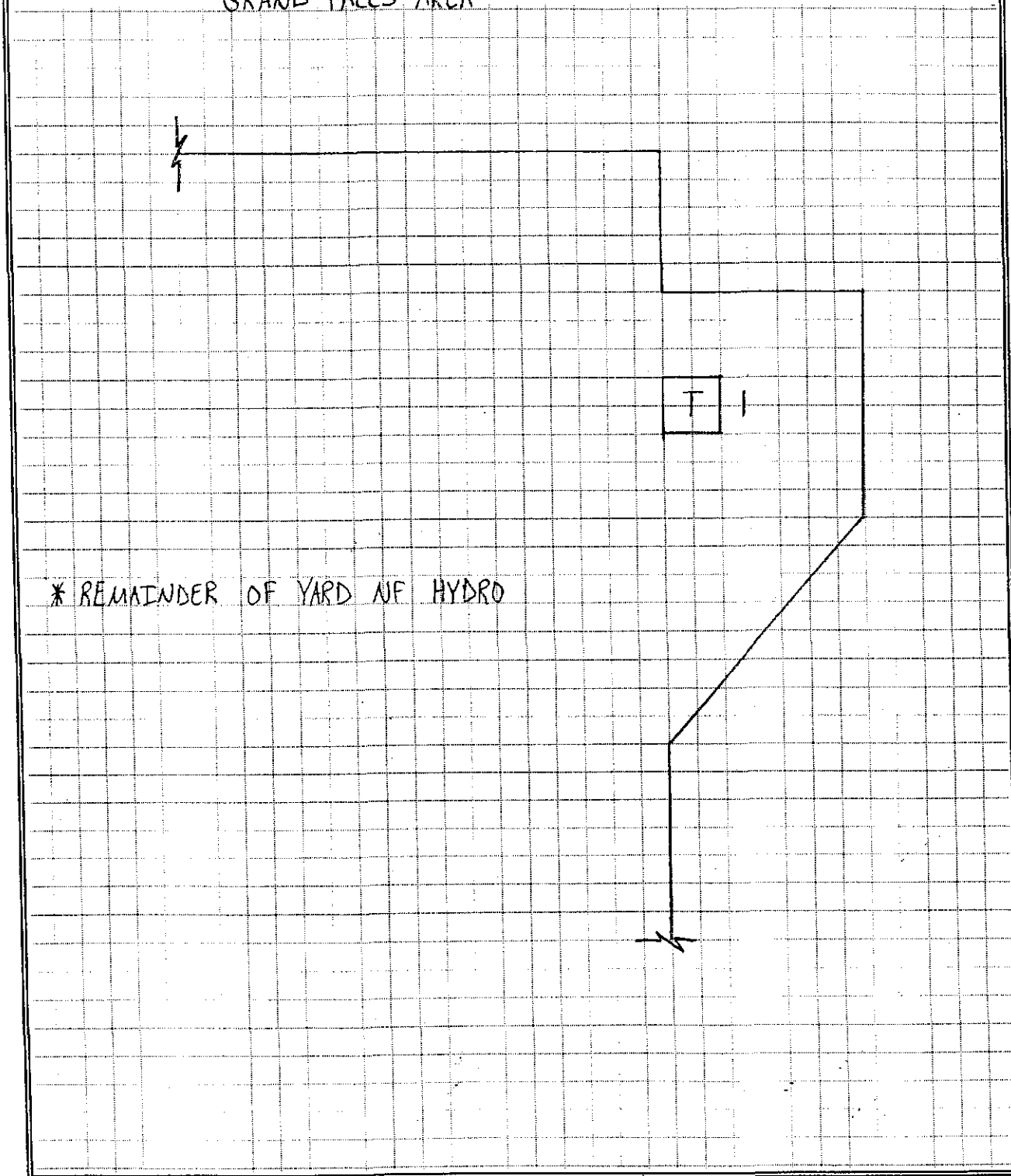
- 1
2
3
4

Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

☐ within 1 year
☐ within 3 years
☐ within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS
LOCATION SKETCH

SUBSTATION SITE: INDIAN RIVER
GRAND FALLS AREA



INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Lewisporte DATE INSPECTED April 24, 2002

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|--------------------|---|-----------------|-----------------|
| #1 - LEW-T1 | Good Condition. (42MPa) | Type A Repair | 3 |
| -A | Two corners have minor chipping. | | |
| High Voltage | | | |
| | | | |
| | | | |
| #2 - LEW-T1 | Good Condition. (40MPa) | Type A Repair | 3 |
| -HGS | Minor chipping on three corners. | | |
| High Voltage | | | |
| | | | |
| | | | |
| #3 - LEW-T1 | Good Condition. (35MPa) | | 4 |
| 200340 | | | |
| transformer | | | |
| | | | |
| | | | |
| #4 - LEW-02 | Fair to Good Condition. (38MPa) | Type A Repair | 3 |
| -BP | The top edge near the corners are very | | |
| Low Voltage | rough/coarse. This appears to be a result | | |
| | of the formwork. The pad appears to be | | |
| | relatively new. | | |
| | | | |
| #5 - LEW-02 | Good Condition (new concrete) | | 4 |
| -R1 | (38MPa) | | |
| Recloser | | | |
| | | | |
| | | | |
| #6 - LEW-04 | Fair to Good Condition. (38MPa) | Type A Repair | 3 |
| -BP | The top edge near the corners are very | | |
| Low Voltage | rough/coarse. This appears to be a result | | |
| | of the formwork. The pad appears to be | | |
| | relatively new. | | |
| | | | |

Priority Rating

- 1
- 2
- 3
- 4

Priority Description

- Immediate corrective action required
- Corrective action required to avoid increasing costs to repair
- General maintenance item
- No corrective action or maintenance required at this time

Recommended Time Frame

- within 1 year
- within 3 years
- within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Lewisporte DATE INSPECTED April 24, 2002

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|--------------------|---|-----------------|-----------------|
| #7 - LEW-04 | Good Condition. (new concrete) | | 4 |
| -R1 | (38MPa) | | |
| Recloser | | | |
| | | | |
| | | | |
| #8 - LEW-03 | Good Condition. (new concrete) | | 4 |
| -R1 | (38MPa) | | |
| Recloser | | | |
| | | | |
| | | | |
| #9 - LEW-03 | Fair to Good Condition. (38MPa) | Type A Repair | 3 |
| -BP | The top edge near the corners are very | | |
| Low Voltage | rough/coarse. This appears to be a result | | |
| | of the formwork. The pad appears to be | | |
| | relatively new. | | |
| | | | |
| #10 - LEW-01 | Good Condition. (new concrete) | | 4 |
| -R1 | | | |
| Recloser | | | |
| | | | |
| | | | |
| #11 - LEW-01 | Fair to Good Condition. | Type A Repair | 3 |
| -BP | The top edge near the corners are very | | |
| Low Voltage | rough/coarse. This appears to be a result | | |
| | of the formwork. The pad appears to be | | |
| | relatively new. | | |
| | | | |
| #12 - 548 | Good Condition. (good condition) | | 4 |
| Metering Tank | (40MPa) | | |
| | | | |
| | | | |
| | | | |

Priority Rating

1
2
3
4

Priority Description

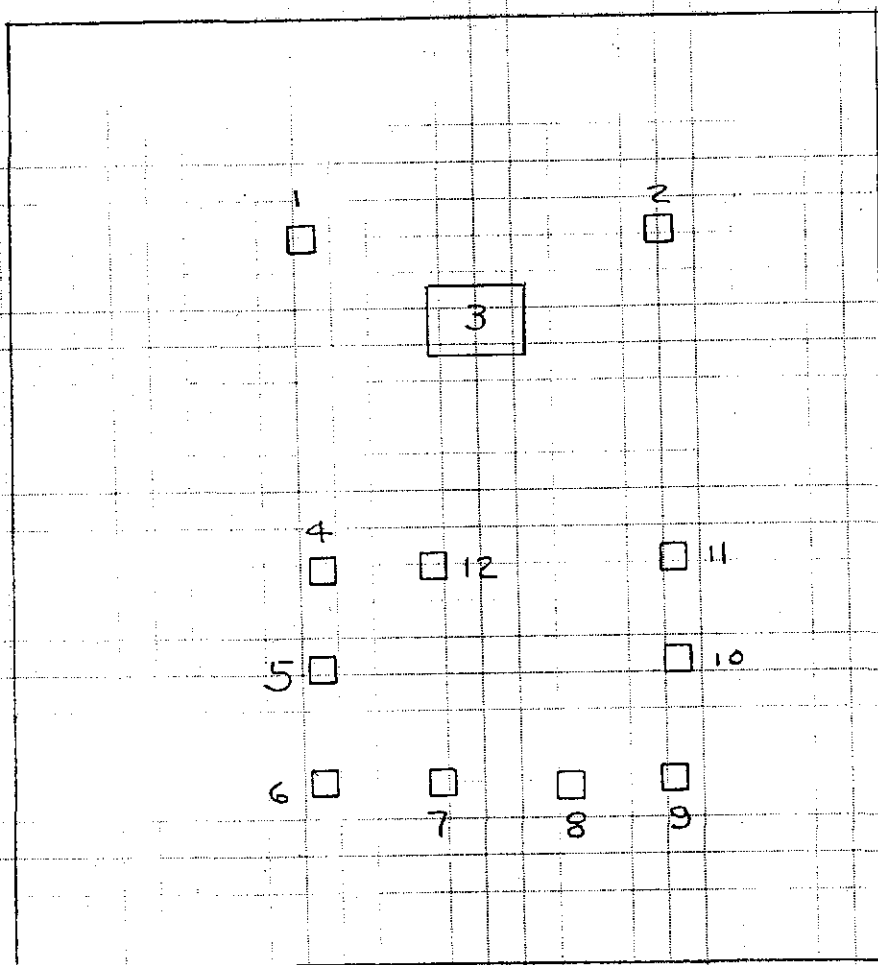
Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
within 3 years
within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS
LOCATION SKETCH

SUBSTATION SITE: LEWISPORTE



ACCESS ROAD

INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: New Grand Falls DATE INSPECTED: 6-May-02
West

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|--|---|--------------------|-----------------|
| #1 - GFS-06-BP Structure Low Voltage | Alligator cracking present throughout top and sides of pad. Four hairline cracks present (located midway across each side) that extend down approx. 450mm with a separation of 1-2mm. Minor pitting on top surface also present (38 Mpa). | Type B & C Repairs | 2 |
| #2 - GFS-06-B Oil Circuit Breaker | Faint alligator cracking on top and sides of pad (46 Mpa). | Type B Repairs | 3 |
| #3 - GFS-10-B Oil Circuit Breaker | Minor scaling and alligator cracking present on top and sides of pad (50 Mpa). | Type A & B Repairs | 3 |
| #4 - GFS-10-BP Structure Low Voltage | Alligator cracking present throughout top and sides of pad. Four hairline cracks present (located midway across each side) that extend down approx. 275mm with a separation of 1mm. Minor pitting on top surface also present (52 Mpa). | Type B & C Repair | 2 |
| #5 - GFS-02-B Oil Circuit Breaker | Minor scaling and alligator cracking present on top and sides of pad (44 Mpa). | Type A & B Repairs | 3 |
| #6 - GFS-09-B Oil Circuit Breaker | Minor scaling and alligator cracking present on top and sides of pad (44 Mpa). | Type A & B Repairs | 3 |

Priority Rating

1
2
3
4

Priority Description

Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
within 3 years
within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: New Grand Falls DATE INSPECTED: 6-May-02
West

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|---|---|--------------------|-----------------|
| #7 - GFS-09-BP Structure Low Voltage | Alligator cracking present throughout top and sides of pad. Four hairline cracks present (located midway across each side) that extend down approx. 250mm with a separation of <1mm. Minor pitting on top | Type B Repairs | 2 |
| #8 - GFS-08-BP Structure Low Voltage | Scaling present on top surface. Three hairline cracks present (located midway across each side) that extend down approx. 200mm and have less than 1mm separation (52 Mpa). | Type A & B Repairs | 2 |
| #9 - GFS-08-B Oil Circuit Breaker | Minor alligator cracking present on top and sides of pad (36 Mpa). | Type B Repairs | 3 |
| #10 - GFS-T3-B Oil Circuit Breaker | Minor alligator cracking present on top and sides of pad (44 Mpa). | Type B Repairs | 3 |
| #11 - GFS-T3-DL Structure Low Voltage | Minor alligator cracking on one area of top surface of pad (44 Mpa). | Type B Repair | 3 |
| #12 - GFS-07-B Oil Circuit Breaker | Minor scaling and faint alligator cracking present on top surface of pad (46 Mpa). | Type A Repair | 3 |

Priority Rating1
2
3
4Priority Description

Immediate corrective action required
 Corrective action required to avoid increasing costs to repair
 General maintenance item
 No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
 within 3 years
 within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: New Grand Falls DATE INSPECTED: 6-May-02
West

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|---|---|--------------------|-----------------|
| #13 - GFS-T2-B Oil Circuit Breaker | Minor scaling and alligator cracking present on top and sides of pad (47 Mpa). | Type A & B Repairs | 3 |
| #14 - GFS-T2-DL Structure Low Voltage | Minor alligator cracking and two hairline cracks present on pad (less than 1mm separation) 44 Mpa. | TypeB Repair | 3 |
| #15 - T3 Transformer 200299 | Good condition (34 Mpa). | | 4 |
| #16 - T2 Transformer 200274 | Good condition (44 Mpa). | | 4 |
| #17 - Structure High Voltage | Minor pitting and alligator cracking on top and sides of pad. One hairline crack present that extends down from edge of approx. 300mm with approx. 1mm separation (53 Mpa). | Type A & B Repairs | 2 |
| #18 - GFS-132L-DB Structure High Voltage | Two areas of alligator cracking present on top surface. One hairline crack that runs from top edge of pad down approx. 300mm with 1mm separation (44 Mpa). | Type A & B Repairs | 2 |

Priority Rating

- 1
- 2
- 3
- 4

Priority Description

- Immediate corrective action required
- Corrective action required to avoid increasing costs to repair
- General maintenance item
- No corrective action or maintenance required at this time

Recommended Time Frame

- within 1 year
- within 3 years
- within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: New Grand Falls DATE INSPECTED: 6-May-02
West

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|--|--|--------------------|-----------------|
| #19 - GFS-132L-B Oil Circuit Breaker | Some areas of pitting on top surface of pad. Minor alligator cracking present on top and sides of pad (44 Mpa). | Type A & B Repairs | 3 |
| #20 - GFS-132L-GS Structure High Voltage | Two areas of alligator cracking present on top surface of pad (41 Mpa). | Type B Repairs | 3 |
| #21 - GFS-130L-B Oil Circuit Breaker | One area of minor alligator cracking present on top surface of pad (44 Mpa). | | 4 |
| #22 - GFS-130L-DL Structure High Voltage | Alligator cracking present on top surface of pad. Two hairline cracks present that extend down from top edge of pad approx. 250mm and has less than 1mm separation (48 Mpa). | Type B & C Repairs | 2 |
| #23 - GFS-T2-A Structure High Voltage | Top surface of pad is not level and has some scaling, alligator cracking, and pitting present (44 Mpa). | Type A Repairs | 3 |
| #24 - GFS-T3-A Structure High Voltage | Alligator cracking present on top surface of pad. Three hairline cracks present that extend down from top edge of pad approx. 250mm and has approx. 1mm separation (48 Mpa). | Type B Repair | 2 |

Priority Rating

- 1
- 2
- 3
- 4

Priority Description

- Immediate corrective action required
- Corrective action required to avoid increasing costs to repair
- General maintenance item
- No corrective action or maintenance required at this time

Recommended Time Frame

- within 1 year
- within 3 years
- within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: New Grand Falls DATE INSPECTED: 6-May-02
West

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|--|---|-----------------|-----------------|
| #25 - T1 Transformer 200146 | Good condition (34 Mpa). | | 4 |
| #26 - Structure High Voltage | Faint alligator cracking present on top surface. Remainder of pad is in good condition (34 Mpa). | | 4 |
| #27 - Structure High Voltage | Rough finish on top surface of pad with minor pitting and alligator cracking also present (45 Mpa). | | 4 |
| #28 - GFS-T1-B Oil Circuit Breaker | Minor scaling on top surface of pad, otherwise pad is in good condition (45 Mpa) | | 4 |
| #29 - GFS-T1-DL Structure High Voltage | Areas of pitting present on top surface of pad. Remainder of pad is in good condition (44 Mpa). | Type A Repair | 3 |
| #30 - GFS-101L-B SYNIZ Breaker | Areas of faint alligator cracking present on sides of pad (45 Mpa). | | 4 |

Priority Rating

1
2
3
4

Priority Description

Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

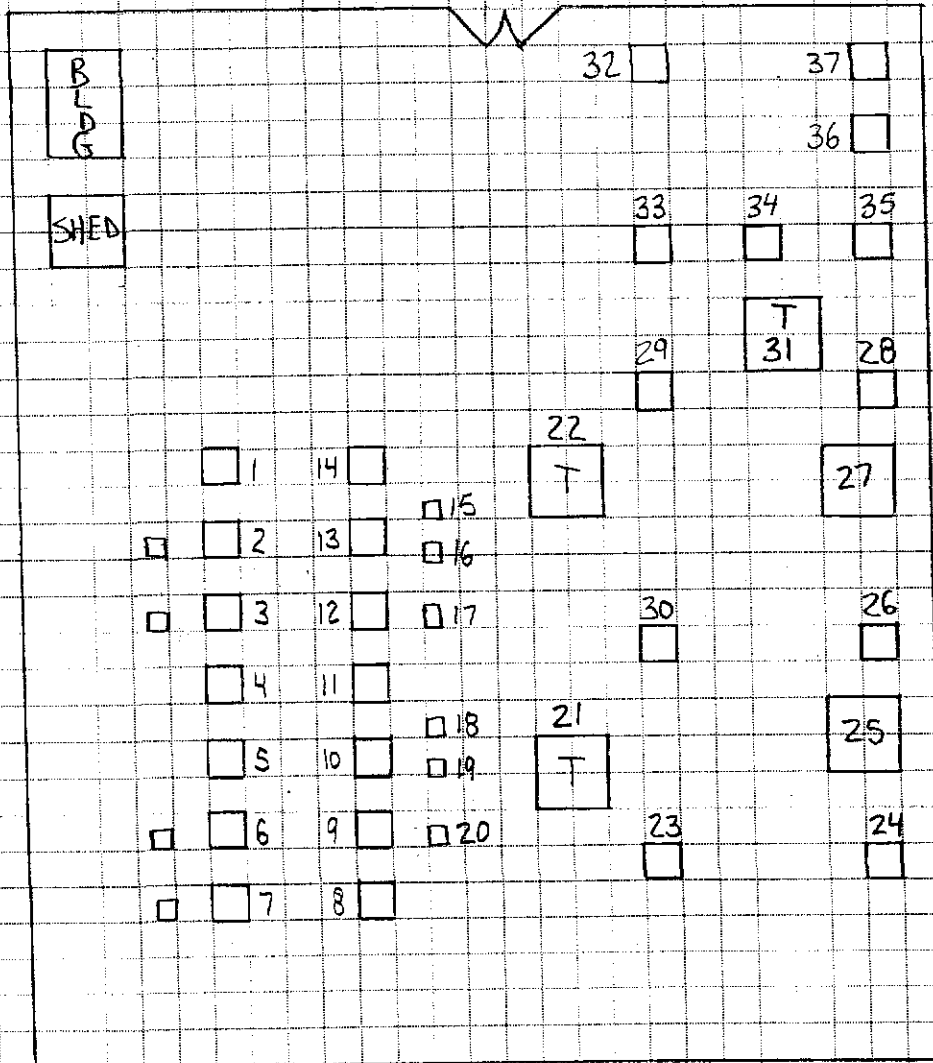
within 1 year
within 3 years
within 5 years

SUBSTATION SITE: New Grand Falls DATE INSPECTED: 6-May-02
West

| <u>Priority Rating</u> | <u>Priority Description</u> | <u>Recommended Time Frame</u> |
|------------------------|--|-------------------------------|
| 1 | Immediate corrective action required | within 1 year |
| 2 | Corrective action required to avoid increasing costs to repair | within 3 years |
| 3 | General maintenance item | within 5 years |
| 4 | No corrective action or maintenance required at this time | |

**INSPECTION OF CONCRETE PADS & FOUNDATIONS
LOCATION SKETCH**

SUBSTATION SITE: NEW GRAND FALLS
GRAND FALLS AREA

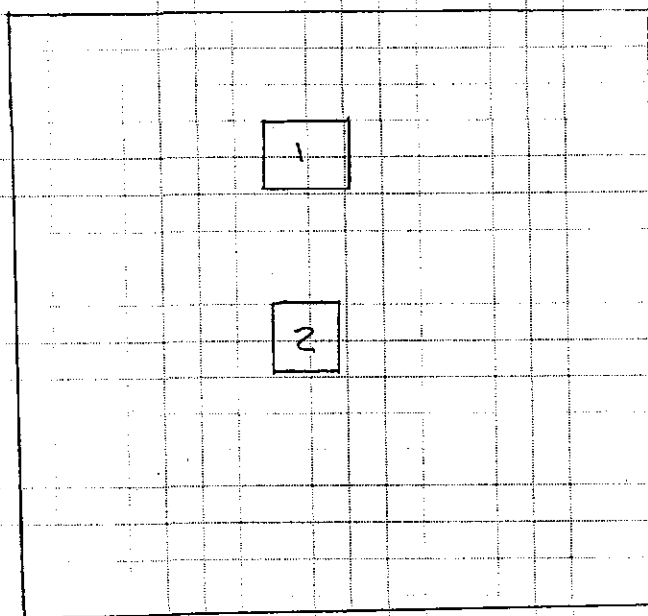


SUBSTATION SITE: North Dame Junction DATE INSPECTED April 24, 2002

| <u>Priority Rating</u> | <u>Priority Description</u> | <u>Recommended Time Frame</u> |
|------------------------|--|-------------------------------|
| 1 | Immediate corrective action required | within 1 year |
| 2 | Corrective action required to avoid increasing costs to repair | within 3 years |
| 3 | General maintenance item | within 5 years |
| 4 | No corrective action or maintenance required at this time | |

INSPECTION OF CONCRETE PADS & FOUNDATIONS
LOCATION SKETCH

SUBSTATION SITE: NORTE DAME JUNCTION



INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Rattling Brook DATE INSPECTED: 7-May-02
West

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|------------------------------------|--|---|-----------------|
| #1 - T2 Transformer 200179 | Spill pan installed under transformer. Small visible area looks okay (28 Mpa). (30 Mpa). | Based on limited visibility of concrete | 4 |
| | | | |
| | | | |
| #2 - T1 Transformer 200180 | Spill pan installed under transformer. Small visible area looks okay (28 Mpa). (24 Mpa). | Based on limited visibility of concrete | 4 |
| | | | |
| | | | |
| #3 - RBK-01L-B Circuit Breaker | Two areas where small chunks of concrete are removed from pad (34 Mpa). Remainder of pad is in good condition. | Type A Repair | 3 |
| | | | |
| | | | |
| #4 - T4 Transformer 200113 | Spill pan installed under transformer. Small visible area looks okay (28 Mpa). (36 Mpa). | Based on limited visibility of concrete | 4 |
| | | | |
| | | | |
| #5 - RBK-01-R1 Recloser | Both sections of pad (old & new) are in good condition (42 Mpa). | | 4 |
| | | | |
| | | | |
| #6 - RBK-102L-B Sul Hex Breaker | Rough finish on top surface of pad. Remainder of pad is in good condition (28 Mpa). | | 4 |
| | | | |
| | | | |

Priority Rating

- 1
- 2
- 3
- 4

Priority Description

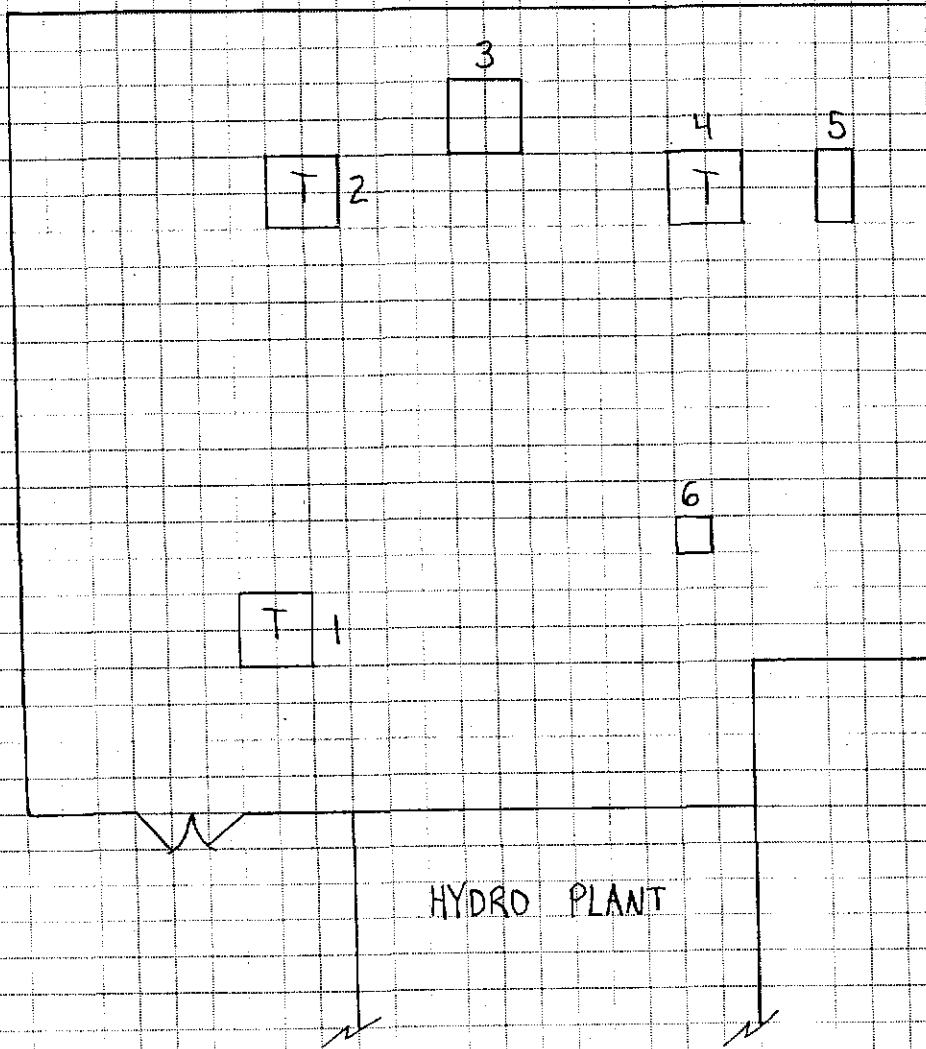
- Immediate corrective action required
- Corrective action required to avoid increasing costs to repair
- General maintenance item
- No corrective action or maintenance required at this time

Recommended Time Frame

- within 1 year
- within 3 years
- within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS
LOCATION SKETCH

SUBSTATION SITE: RATTLING BROOK
GRAND FALLS AREA



INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Springdale DATE INSPECTED: 2-May-02
West

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|--------------------------------------|---|-----------------|--------------------|
| #1 - SPR-T1 Transformer 200347 | Good condition (34 Mpa). | | 4 |
| | | | |
| | | | |
| | | | |
| #2 - SPR-04-R1 Recloser | One minor area of alligator cracking. Remainder of pad is in good condition (50 Mpa). | Type B Repair | 3 |
| | | | |
| | | | |
| | | | |
| #3 - SPR-13-R1 Recloser | Area on top edge of pad is eroded with some aggregate exposed, otherwise pad is in good condition (44 Mpa). | Type A Repair | 2 |
| | | | |
| | | | |
| | | | |
| #4 - SPR-02-R1 Recloser | Good condition (44 Mpa). | | 4 |
| | | | |
| | | | |
| | | | |
| #5 - SPR-01-R1 Recloser | Good condition (46 Mpa). | | 4 |
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Priority Rating

1
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4

Priority Description

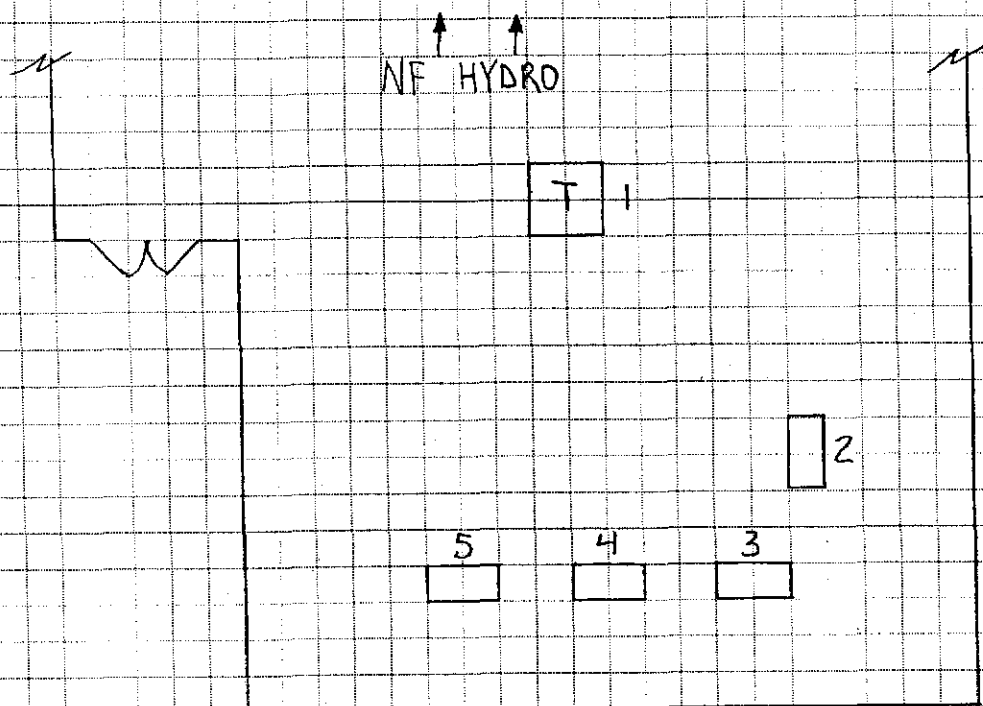
Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
within 3 years
within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS
LOCATION SKETCH

SUBSTATION SITE: SPRINGDALE
GRAND FALLS AREA



* SHARED WITH NF HYDRO

CORNER BROOK AREA

BAYVIEW
DEER LAKE
FRENCHMAN'S COVE
GILLIAM'S
HUMBER
MARBLE MOUNTAIN
MASSEY DRIVE
PASADENA
SEAL COVE ROAD
WALBOURNE'S

INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Bayview DATE INSPECTED: 26-Apr-02
West

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|---|--|-----------------|-----------------|
| #1 - BVS-359L-DB Structure High Voltage | Hairline cracking throughout top and sides of pad. Some of these cracks extend down approx. 350-400mm with separation between cracks of 2-3mm (28 Mpa). | Type C Repair | 1 |
| #2 - BVS-359L-B Oil Circuit Breaker | Good condition (31 Mpa). | | 4 |
| #3 - BVS-359L-DL Structure High Voltage | Alligator cracking present throughout top of pad. Hairline cracking throughout top and sides of pad that extend down approx. 500mm with separation between cracks of 3-4mm (34 Mpa). | Type C Repair | 1 |
| #4 - BVS-357L-B Oil Circuit Breaker | Minor scaling on top surface of pad. Remainder of pad is in good condition (28 Mpa). | | 4 |
| #5 - BVS-357L-DL Structure High Voltage | Alligator cracking present throughout top of pad. Hairline cracking throughout top and sides of pad that extend down approx. 500mm with separation between cracks of 3-4mm (31 Mpa). | Type C Repair | 1 |
| #6 - BVS-358L-B Oil Circuit Breaker | Good condition (28 Mpa). | | 4 |

Priority Rating

1
2
3
4

Priority Description

Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
within 3 years
within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Bayview DATE INSPECTED: 26-Apr-02
West

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|--------------------|---|--|-----------------|
| #7 - BVS-358L-BP | Top portion of pad seems to have been recapped (approx 75mm thick). | Type A & B Repair for short to medium term option and Type D Repair for longer term option which would involve the removal of the recap and crack repair below the recap prior to recapping. | 1 |
| Structure | Hairline cracking running down sides of pad below recapped area (approx. 300mm deep). Recapped area also has hairline cracking and pitting/chipping present in several areas (34 Mpa). | | |
| High Voltage | | | |
| | | | |
| #8 - BVS-T1-A | Alligator cracking present throughout top of pad. Hairline cracking throughout top and sides of pad that extend down approx. 500mm with separation between cracks of 3-4mm (28 Mpa). | Type C Repair | 1 |
| Structure | | | |
| High Voltage | | | |
| | | | |
| #9 - | Rough finish on top surface of pad. Some minor pitting in area below base of structure. Remainder of pad is in good condition (27 Mpa). | Type A Repair | 3 |
| Structure | | | |
| High Voltage | | | |
| | | | |
| #10 - T1 | Some minor scaling on top surface and one area is chipped. Remainder of pad is in good condition (35 Mpa). | Type A Repair | 3 |
| Transformer | | | |
| 200307 | | | |
| | | | |
| | | | |
| #11 - BVS-04-DL | Some alligator cracking present throughout top surface of pad. Hairline cracking throughout top and sides of pad that extend down approx. 350-400mm with separation between cracks of 1-2mm (24 Mpa). | Type C Repair | 2 |
| Structure | | | |
| Low Voltage | | | |
| | | | |
| #12 - BVS-04-R | Minor scaling on top surface of pad. Remainder of pad is in good condition (35 Mpa). | | 4 |
| Recloser | | | |
| | | | |
| | | | |
| | | | |

Priority Rating

Priority Description

Recommended Time Frame

- | | | |
|---|--|----------------|
| 1 | Immediate corrective action required | within 1 year |
| 2 | Corrective action required to avoid increasing costs to repair | within 3 years |
| 3 | General maintenance item | within 5 years |
| 4 | No corrective action or maintenance required at this time | |

INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Bayview DATE INSPECTED: 26-Apr-02
West

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|---|--|--|-----------------|
| #13 - BVS-01-R Recloser | Minor scaling and pitting on top surface of pad. Remainder of pad is in good condition (34 Mpa). | Type A Repair | 3 |
| | | | |
| | | | |
| #14 - BVS-01-DL Structure Low Voltage | Scaling on top surface of pad. Hairline cracking throughout top surface of pad that extend down 350-400mm and have a separation of 2-3mm (28 Mpa). | Type C Repair for cracks & Type A Repair for scaling | 1 |
| | | | |
| | | | |
| #15 - BVS-02-R Recloser | Scaling present on top surface of pad. Remainder of pad is in good condition (45 Mpa). | | 4 |
| | | | |
| | | | |
| #16 - BVS-T1-B Oil Circuit Breaker | Minor scaling and minor alligator cracking present throughout top of pad. Otherwise pad is in good condition (31 Mpa). | Type A Repair | 3 |
| | | | |
| | | | |
| #17 - BVS-T1-D Structure Low Voltage | Top surface of pad has minor scaling and pitting. Two hairline cracks on top surface of pad that extend down approx. 100mm with separation between cracks of 1-2mm (25 Mpa). | Type A & C Repairs | 2 |
| | | | |
| | | | |
| #18 - BVS-03-R Recloser | Scaling present on top surface of pad. Remainder of pad is in good condition (46 Mpa). | | 4 |
| | | | |
| | | | |

Priority Rating

1
2
3
4

Priority Description

Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

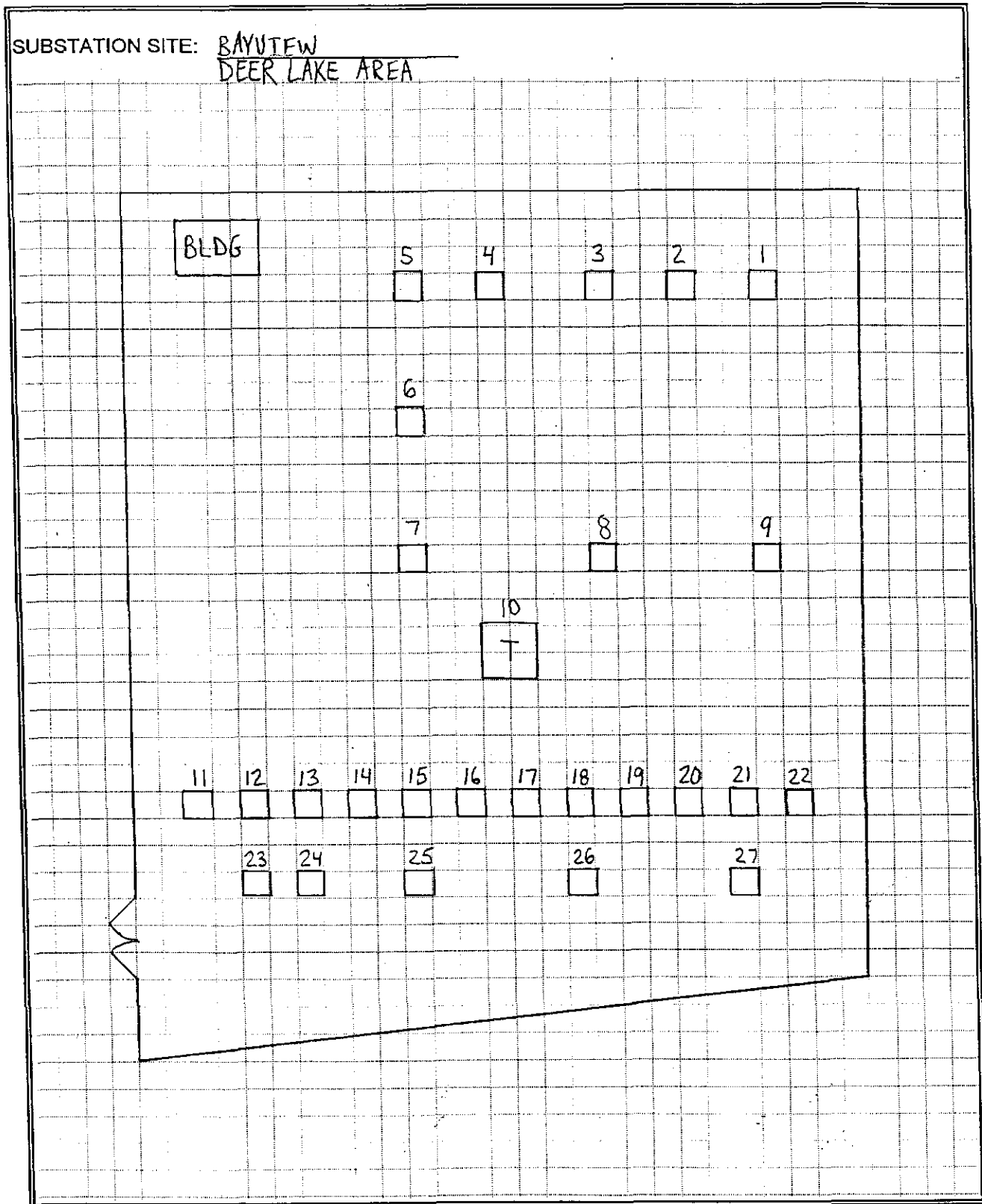
within 1 year
within 3 years
within 5 years

SUBSTATION SITE: Bayview DATE INSPECTED: 26-Apr-02
West

| <u>Priority Rating</u> | <u>Priority Description</u> | <u>Recommended Time Frame</u> |
|------------------------|--|-------------------------------|
| 1 | Immediate corrective action required | within 1 year |
| 2 | Corrective action required to avoid increasing costs to repair | within 3 years |
| 3 | General maintenance item | within 5 years |
| 4 | No corrective action or maintenance required at this time | |

INSPECTION OF CONCRETE PADS & FOUNDATIONS
LOCATION SKETCH

SUBSTATION SITE: BAYVIEW
DEER LAKE AREA



INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Deer Lake DATE INSPECTED: 1-May-02
West

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|--|---|--|-----------------|
| #1 - DLK-03-BP Structure Low Voltage | Minor scaling and alligator cracking present on top surface of pad. Four hairline cracks (located midway across each top edge) that extend down approx. 150mm and have a separation of 1-2mm (44 Mpa). | Type C for cracks & Type A for scaling | 2 |
| #2 - DLK-03-R Recloser | Minor alligator cracking on top surface of pad. Remainder of pad is in good condition (34 Mpa). | Type B Repair | 3 |
| #3 - DLK-01-R Recloser | One minor hairline crack and very faint alligator cracking present on top surface of pad (44 Mpa). | Type B Repair | 3 |
| #4 - DLK-01-BP Structure Low Voltage | Minor scaling on top surface of pad. Remainder of pad is in good condition (31 Mpa). | | 4 |
| #5 - DLK-04-R Recloser | Minor scaling on top surface of pad. Remainder of pad is in good condition (41 Mpa). | | 4 |
| #6 - Metering Tank | Four hairline cracks (located midway across each top edge) that extend down approx. 150mm and have a separation of approx 1-2mm. Minor scaling and alligator cracking also present on top surface (36 Mpa). | Type C Repair for cracks & Type A for minor scaling. | 2 |

Priority Rating

- 1
- 2
- 3
- 4

Priority Description

- Immediate corrective action required
- Corrective action required to avoid increasing costs to repair
- General maintenance item
- No corrective action or maintenance required at this time

Recommended Time Frame

- within 1 year
- within 3 years
- within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Deer Lake DATE INSPECTED: 1-May-02
West

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|---|--|--|-----------------|
| #7 - DLK-T1-D Structure | Four hairline cracks (located midway across each top edge) that extend down approx. 150mm and have a separation of approx 1mm. Minor scaling and alligator cracking also present on top surface (29 Mpa). | Type C Repair for cracks & Type A for minor scaling. | 2 |
| #8 - T1 Transformer 200262 | One minor hairline crack, remainder of pad is in good condition (37 Mpa). | Type B Repair | 3 |
| #9 - DLK-T1-A High Voltage Structure | Minor scaling on top surface of pad. Four hairline cracks (midway across each edge of pad) that extend down sides of pad approx. 175mm and have an approx. separation of less than 1mm (29 Mpa). | Type B Repair for cracking & Type A Repair for scaling | 3 |
| #10 - High Voltage Structure | Minor scaling on top surface of pad. Four hairline cracks (midway across each edge of pad) that extend down sides of pad approx. 150mm and have an approx. separation of 1mm (35 Mpa). | Type B Repair for cracking & Type A Repair for scaling | 2 |
| #11 - DLK-TL225-GS High Voltage Structure | Minor scaling and pitting present on top surface of pad. Two hairline cracks present (located midway across top edge of pad) that extend down sides of pad approx. 175mm and have less than 1mm separation (29 Mpa). | Type B Repair for cracking & Type A Repair for scaling | 3 |
| #12 - High Voltage Structure | Two hairline cracks (located midway across each top edge) that extend down approx. 150mm and have a separation of approx 1mm. Minor scaling and alligator cracking also present on top surface (34 Mpa). | Type B Repair for cracking & Type A Repair for scaling | 2 |

Priority Rating

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3
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Priority Description

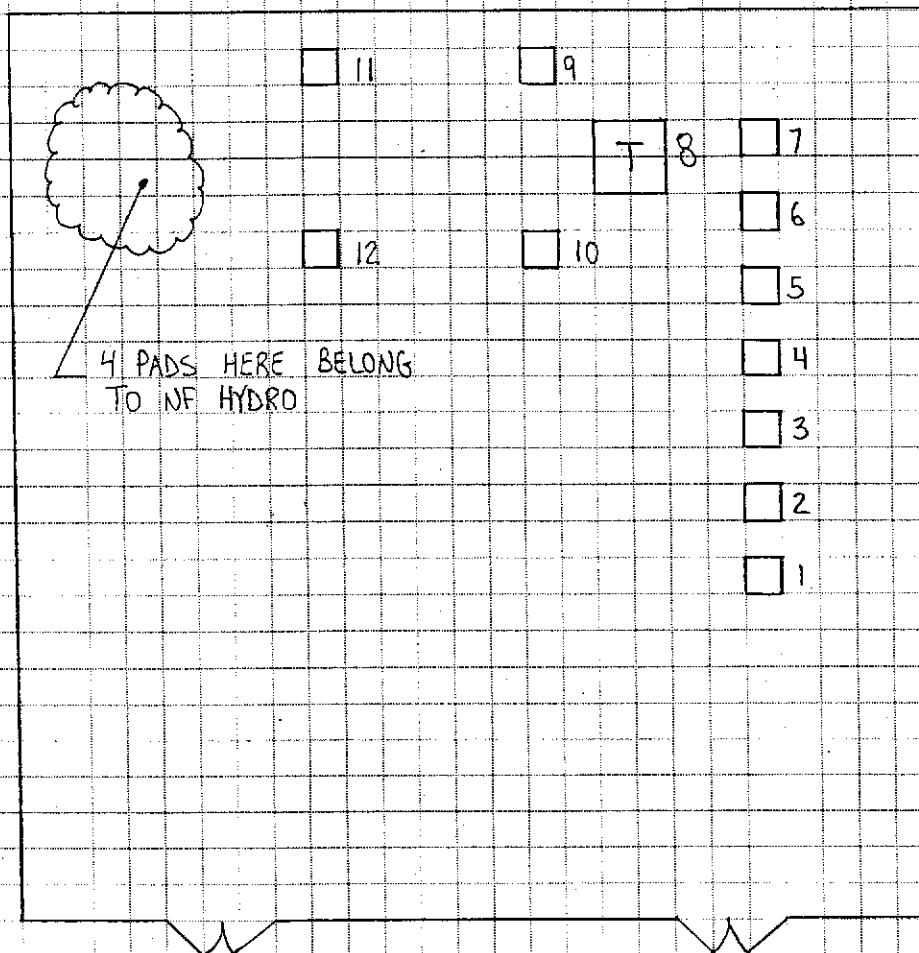
Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
within 3 years
within 5 years

**INSPECTION OF CONCRETE PADS & FOUNDATIONS
LOCATION SKETCH**

SUBSTATION SITE: DEER LAKE
DEER LAKE AREA

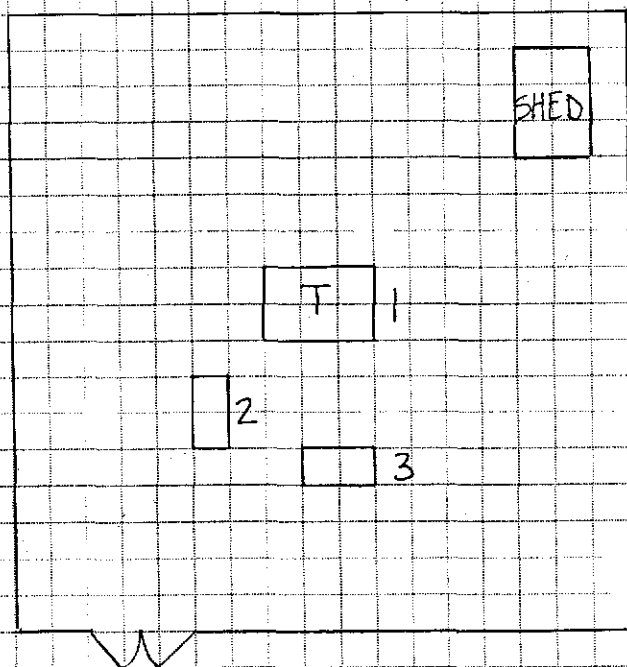


SUBSTATION SITE: Frenchman's Cove DATE INSPECTED: 29-Apr-02
West

| <u>Priority Rating</u> | <u>Priority Description</u> | <u>Recommended Time Frame</u> |
|------------------------|--|-------------------------------|
| 1 | Immediate corrective action required | within 1 year |
| 2 | Corrective action required to avoid increasing costs to repair | within 3 years |
| 3 | General maintenance item | within 5 years |
| 4 | No corrective action or maintenance required at this time | |

**INSPECTION OF CONCRETE PADS & FOUNDATIONS
LOCATION SKETCH**

SUBSTATION SITE: FRENCHMAN'S COVE
DEER LAKE AREA



SUBSTATION SITE: Gilliams DATE INSPECTED: 29-Apr-02
West

Priority Rating

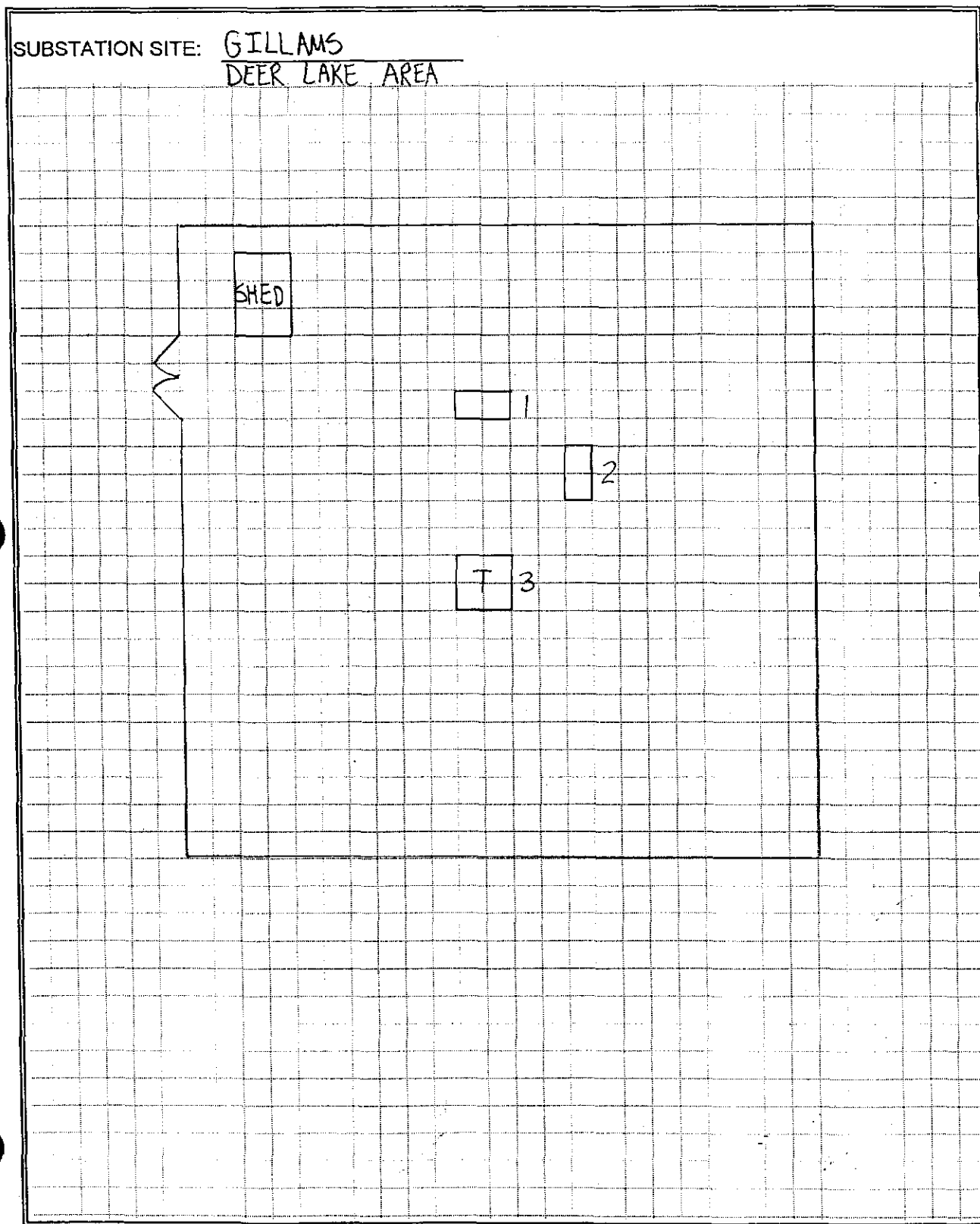
- 1
2
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4

Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

☐ within 1 year
☐ within 3 years
☐ within 5 years

**INSPECTION OF CONCRETE PADS & FOUNDATIONS
LOCATION SKETCH**

SUBSTATION SITE: GILLAMS
DEER LAKE AREA



INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Humber DATE INSPECTED: 29-Apr-02
West

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|--|---|-----------------|-----------------|
| #1 - T3 Transformer 200258 | Good condition (34 Mpa). | | 4 |
| #2 - T2 Transformer 200122 | Rough finish on top surface of pad, otherwise pad is in good condition (34 Mpa) | | 4 |
| #3 - Structure High Voltage | Rough finish on pad with some exposed aggregate, otherwise pad is in good condition (26 Mpa). | | 4 |
| #4 - HUM-T3-A Structure High Voltage | Rough finish on pad with some exposed aggregate, otherwise pad is in good condition (24 Mpa). | | 4 |
| #5 - HUM-T2-A Structure High Voltage | Rough finish on top surface of pad, with some minor cracking (26 Mpa). | Type B repair | 3 |
| #6 - HUM-359L-DL Structure High Voltage | Good condition (20 Mpa). | | 4 |

Priority Rating

1
2
3
4

Priority Description

Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
within 3 years
within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Humber DATE INSPECTED: 29-Apr-02
West

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|--|---|-----------------|-----------------|
| #7 - HUM-359L-B Oil Circuit | Good condition (31 Mpa). | | 4 |
| | | | |
| | | | |
| | | | |
| #8 - HUM-BTS-1 Structure High Voltage | Rough finish on pad, otherwise pad is in good condition (30 Mpa). | | 4 |
| | | | |
| | | | |
| | | | |
| #9 - HUM-356L-B Hex Breaker | Good condition (42 Mpa). | | 4 |
| | | | |
| | | | |
| | | | |
| #10 - HUM-356L-DL Structure High Voltage | Rough finish on pad, otherwise pad is in good condition (28 Mpa). | | 4 |
| | | | |
| | | | |
| | | | |
| #11 - HUM-08-BP Structure Low Voltage | Good condition (41 Mpa). | | 4 |
| | | | |
| | | | |
| | | | |
| #12 - HUM-08-R Recloser | Minor scaling on top surface of pad. Remainder of pad is in good condition (30 Mpa). | | 4 |
| | | | |
| | | | |
| | | | |

Priority Rating

- 1
- 2
- 3
- 4

Priority Description

- Immediate corrective action required
- Corrective action required to avoid increasing costs to repair
- General maintenance item
- No corrective action or maintenance required at this time

Recommended Time Frame

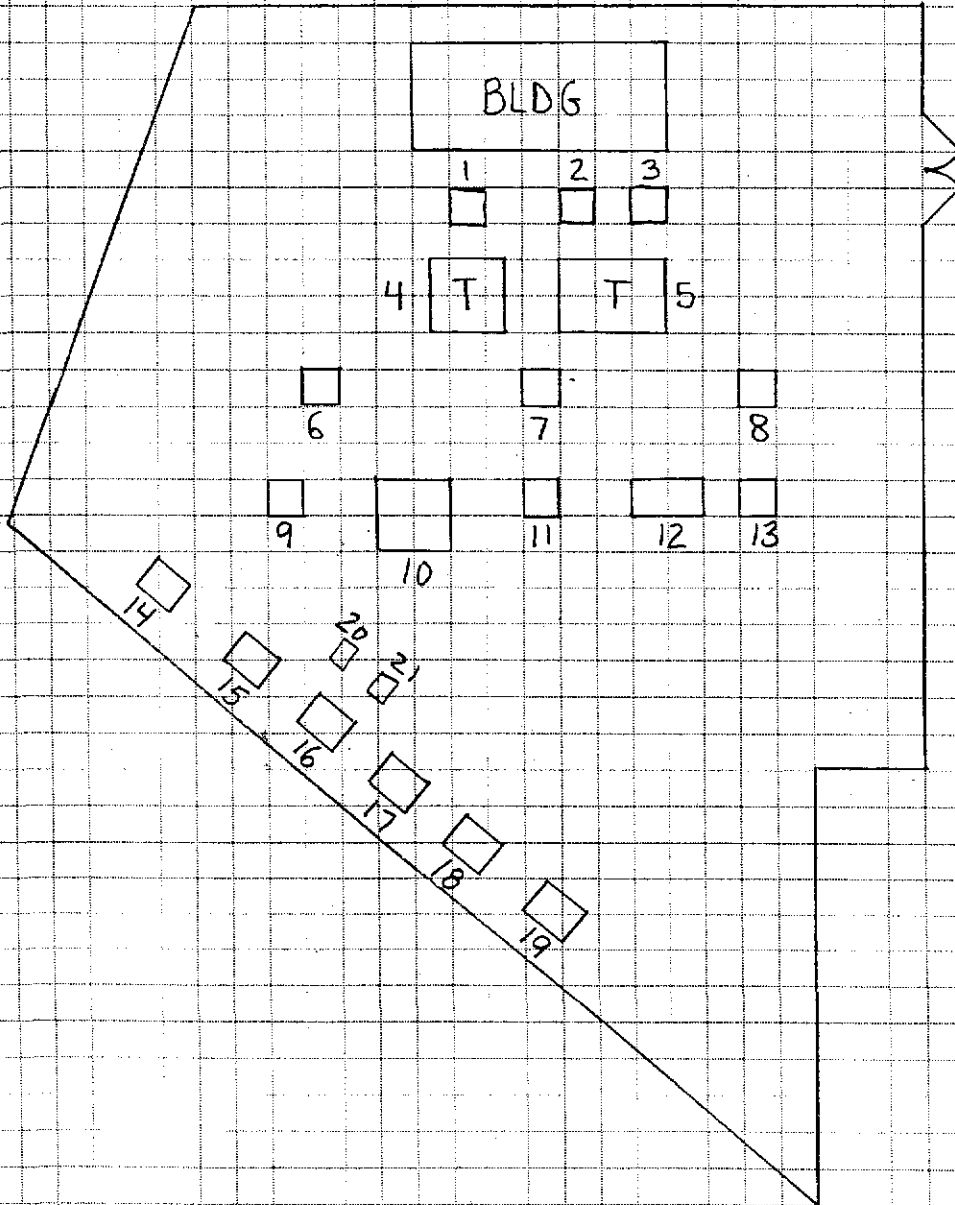
- within 1 year
- within 3 years
- within 5 years

SUBSTATION SITE: Humber DATE INSPECTED: 29-Apr-02
West

| <u>Priority Rating</u> | <u>Priority Description</u> | <u>Recommended Time Frame</u> |
|------------------------|--|-------------------------------|
| 1 | Immediate corrective action required | within 1 year |
| 2 | Corrective action required to avoid increasing costs to repair | within 3 years |
| 3 | General maintenance item | within 5 years |
| 4 | No corrective action or maintenance required at this time | |

INSPECTION OF CONCRETE PADS & FOUNDATIONS
LOCATION SKETCH

SUBSTATION SITE: HUMBER
DEER LAKE AREA



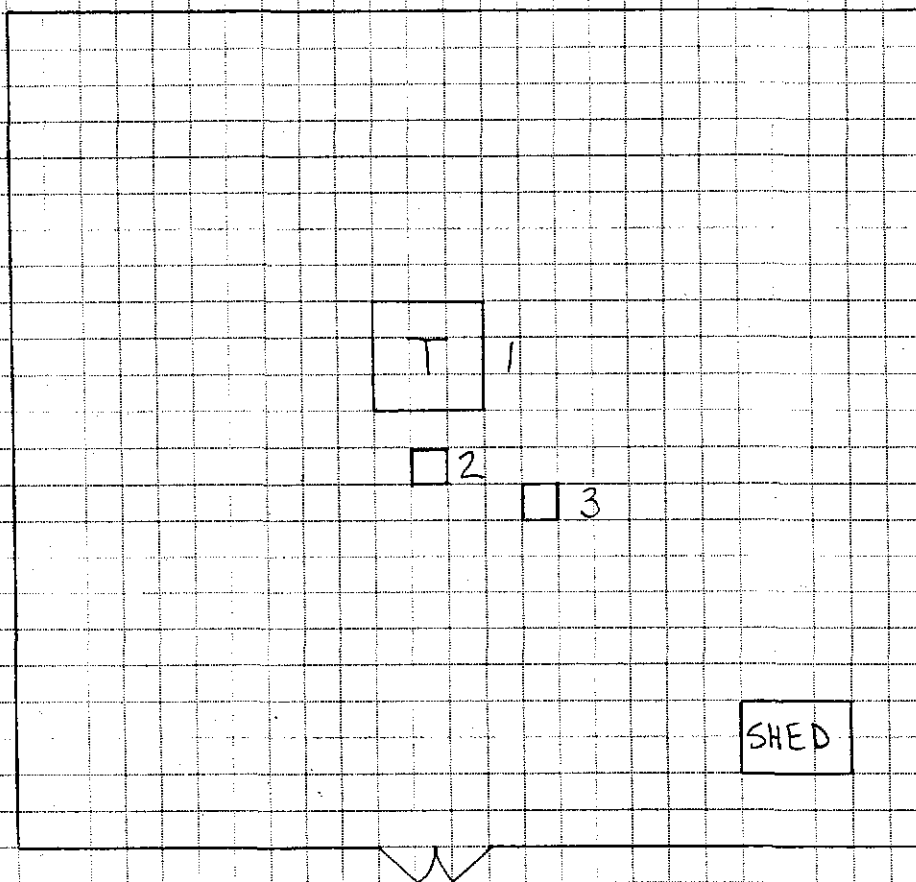
SUBSTATION SITE: Marble Mountain DATE INSPECTED: 1-May-02
West

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| <u>Priority Rating</u> | <u>Priority Description</u> | <u>Recommended Time Frame</u> |
|------------------------|--|-------------------------------|
| 1 | Immediate corrective action required | within 1 year |
| 2 | Corrective action required to avoid increasing costs to repair | within 3 years |
| 3 | General maintenance item | within 5 years |
| 4 | No corrective action or maintenance required at this time | |

**INSPECTION OF CONCRETE PADS & FOUNDATIONS
LOCATION SKETCH**

SUBSTATION SITE: MARBLE MOUNTAIN
DEER LAKE AREA

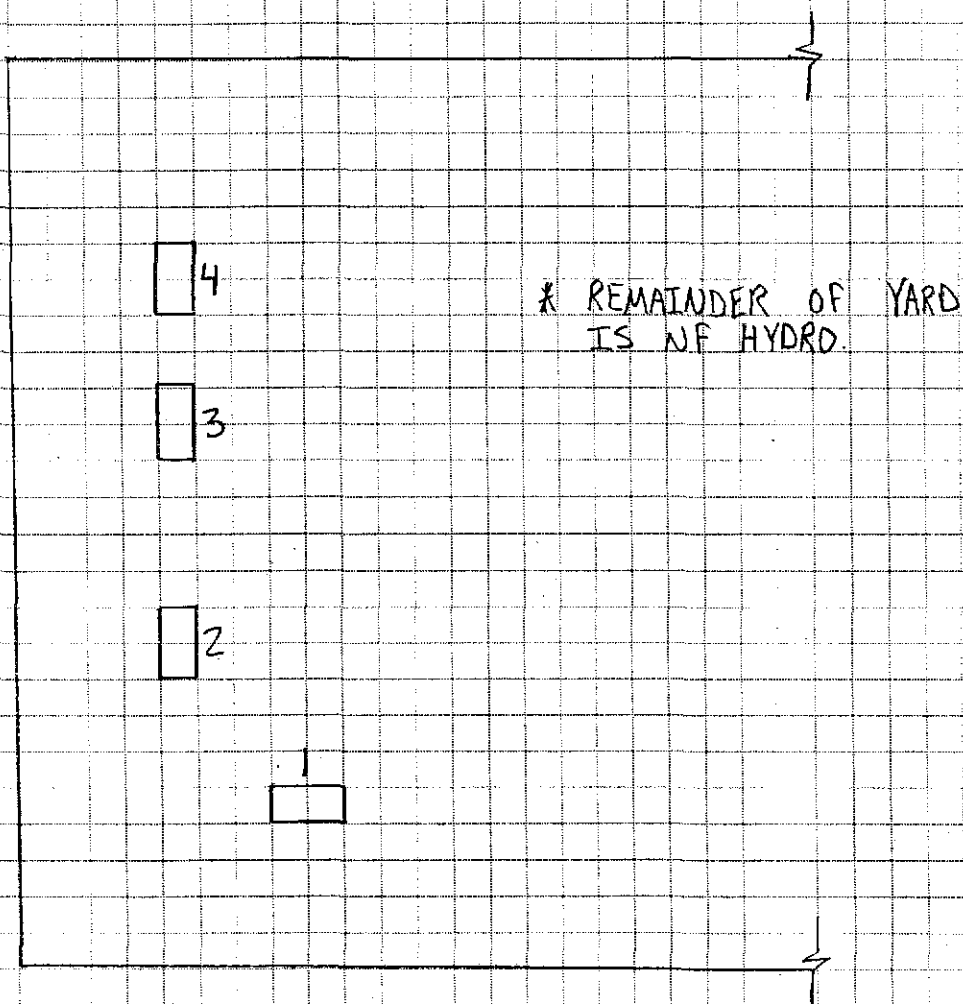


SUBSTATION SITE: Massey Drive DATE INSPECTED: 29-Apr-02
West

| <u>Priority Rating</u> | <u>Priority Description</u> | <u>Recommended Time Frame</u> |
|------------------------|--|-------------------------------|
| 1 | Immediate corrective action required | within 1 year |
| 2 | Corrective action required to avoid increasing costs to repair | within 3 years |
| 3 | General maintenance item | within 5 years |
| 4 | No corrective action or maintenance required at this time | |

INSPECTION OF CONCRETE PADS & FOUNDATIONS
LOCATION SKETCH

SUBSTATION SITE: MASSEY DRIVE
DEER LAKE AREA



INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Pasadena DATE INSPECTED: 1-May-02
West

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|--|--|---|-----------------|
| #1 - PAS-01-BP Structure Low Voltage | Pad is off level on top surface Hairline cracking and associated alligator cracking present throughout top and sides of pad (approx. 350mm long & 2-3mm apart) 44 Mpa. Possible settlement problem. | Type C Repair | 1 |
| #2 - PAS-01-R Recloser | Uneven top surface (seems to be sunken on one corner). Minor scaling on top surface of pad, otherwise pad is in good condition (28 Mpa). | Type A Repair | 3 |
| #3 - PAS-02-R Recloser | Minor scaling on top surface of pad. Remainder of pad is in good condition (34 Mpa). | | 4 |
| #4 - PAS-02-BP Structure Low Voltage | Minor scaling and pitting on top surface of pad. Four hairline cracks (midway across each edge of pad) and associated alligator cracking present. Cracks extend down sides approx 150mm with a separation of 2-3mm (41 Mpa). | Type A Repair for scaling & Pitting Type C Repair for cracks | 1 |
| #5 - Structure Low Voltage | Hairline cracking and associated alligator cracking present throughout top and sides of pad. Cracks are approx. 350mm long and have a separation of approx. 2-3mm (44 Mpa). | Type C repair | 2 |
| #6 - Metering Tank | Minor scaling on top surface of pad. Remainder of pad is in good condition (34 Mpa). | | 4 |

Priority Rating

1
2
3
4

Priority Description

Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
within 3 years
within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Pasadena DATE INSPECTED: 1-May-02
West

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|--------------------|--|--|-----------------|
| #7 - PAS-T1-D | Weathering and eroding on all edges of top surface of pad. Scaling portions can be removed with boot. Hairline and associated | Type A Repair for scaling & Type C Repair for cracks | 2 |
| Structure | alligator cracking present throughout top | | |
| Low Voltage | and sides of pad. Approx. top 200mm of pad seems to be affected by cracking with crack separation approx 1-2mm (41 Mpa). | | |
| #8 - T1 | Good condition (34 Mpa). | | 4 |
| Transformer | | | |
| 200250 | | | |
| #9 - | Minor scaling and pitting on top surface of pad. Four hairline cracks (midway across each edge of pad) and associated | Type A Repair for scaling & Type C Repair for cracks | 2 |
| Structure | alligator cracking present. Cracks extend down sides approx 350mm with a separation of 2-3mm (41 Mpa). | | |
| High Voltage | | | |
| #10 - PAS-T1-A | Severe scaling, weathering and eroding on all top edges of pad. Alligator cracking also present on top surface of pad. Portions of concrete can be kicked away with boot. Only approx top 150mm seems to be affected (36 Mpa). | Type D Repair | 1 |
| Structure | | | |
| High Voltage | | | |
| #11 - | Minor scaling on top surface of pad. Four hairline cracks (midway across each edge of pad) that extend down sides of pad approx. 150mm and have an approx. separation of 2-3mm (34 Mpa). | Type A Repair for scaling & Type C Repair for cracks | 2 |
| Structure | | | |
| High Voltage | | | |
| #12 - PAS-L1-BP-1 | Minor scaling on top surface of pad. Two minor hairline cracks that have a separation of approx. 1mm (30 Mpa). | Type B Repair for scaling & Type C Repair for cracks | 2 |
| Structure | | | |
| High Voltage | | | |

Priority Rating

1
2
3
4

Priority Description

Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

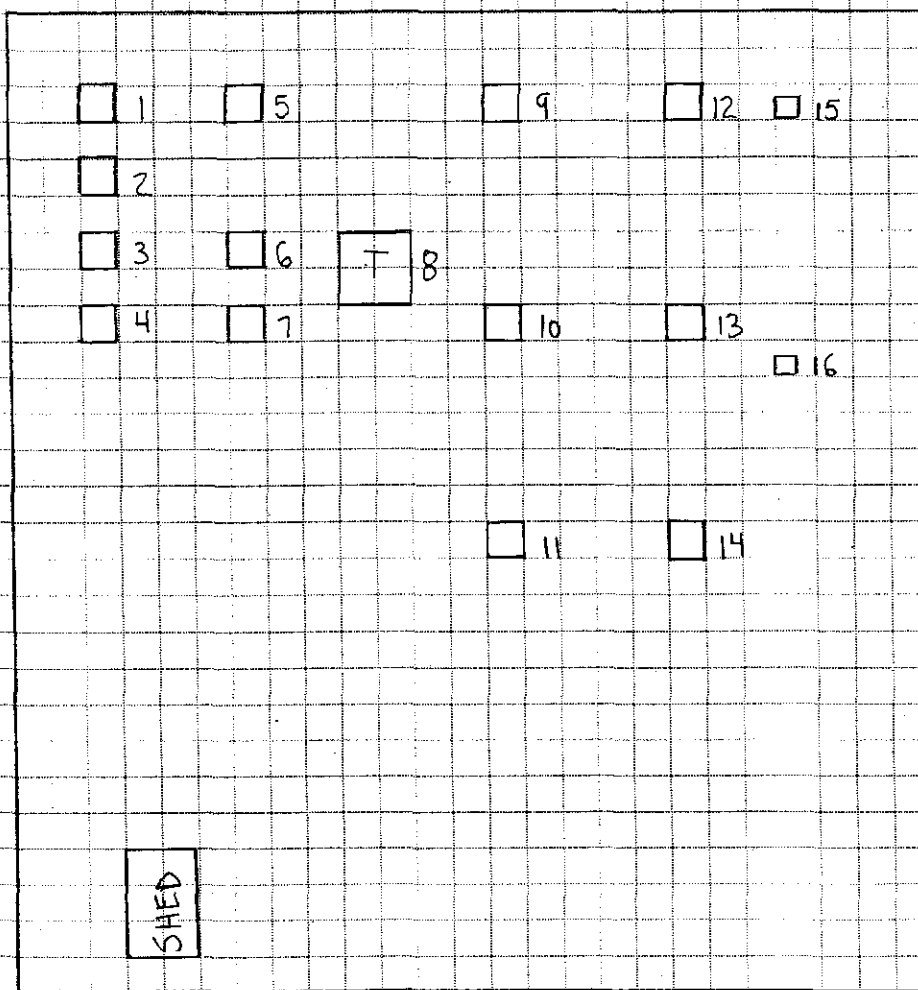
within 1 year
within 3 years
within 5 years

SUBSTATION SITE: Pasadena DATE INSPECTED: 1-May-02
West

| <u>Priority Rating</u> | <u>Priority Description</u> | <u>Recommended Time Frame</u> |
|------------------------|--|-------------------------------|
| 1 | Immediate corrective action required | within 1 year |
| 2 | Corrective action required to avoid increasing costs to repair | within 3 years |
| 3 | General maintenance item | within 5 years |
| 4 | No corrective action or maintenance required at this time | |

**INSPECTION OF CONCRETE PADS & FOUNDATIONS
LOCATION SKETCH**

SUBSTATION SITE: PASADENA
DEER LAKE AREA



INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Seal Cove Road
West

DATE INSPECTED: 2-May-02

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|--------------------------------------|---|-----------------|-----------------|
| #1 - SCR-01-R Recloser | Minor scaling on top surface of pad. Remainder of pad is in good condition (42 Mpa). | | 4 |
| | | | |
| | | | |
| #2 - SCR-02-R Recloser | Minor scaling on top surface of pad. One section along edge of pad is chipped away (44 Mpa). | Type A Repair | 3 |
| | | | |
| | | | |
| #3 - Not In Use | Good condition (44 Mpa). | | 4 |
| | | | |
| | | | |
| #4 - SCR-VR-BP Structure Low Voltage | Spalling on all four corners of pad. Top 75mm section of pad is scaled, eroded, and weathered. Alligator cracking present throughout top of pad (34 Mpa). | Type D Repair | 1 |
| | | | |
| | | | |
| #5 - SCR-VR-DL Structure Low Voltage | Rough finish on previously recapped top surface of pad, otherwise pad is in good condition (28 Mpa). | | 4 |
| | | | |
| | | | |
| #6 - Structure Low Voltage | Spalling on all four corners of pad. Top 75mm section of pad is scaled, eroded, and weathered. Alligator cracking present throughout top of pad (23 Mpa). | Type D Repair | 1 |
| | | | |
| | | | |

Priority Rating

1
2
3
4

Priority Description

Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
within 3 years
within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Seal Cove Road
West

DATE INSPECTED: 2-May-02

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|--------------------|---|---|-----------------|
| #7 - SCR-VR-DB | Three minor hairline cracks present (these cracks have already been sealed). | Type B Repair | 3 |
| Structure | Remainder of pad is in good condition | | |
| Low Voltage | (44 Mpa). | | |
| | | | |
| #8 - SCR-VR | Spill pan installed under voltage regulator. | Based on limited visibility of concrete | 4 |
| Voltage | Visible portion of concrete seems to be in | | |
| Regulator | good condition. | | |
| 220371 | | | |
| | | | |
| #9 - SCR-T1 | Spill pan installed under transformer. | Based on limited visibility of concrete | 4 |
| Transformer | Visible portion of concrete seems to be in | | |
| 200323 | good condition. | | |
| | | | |
| | | | |
| #10 - SCR-363L-GS | Top 100mm of pad has already been recapped. Minor scaling on top portion of | | 4 |
| Structure | pad. Remainder of pad is in good condition | | |
| High Voltage | (40 Mpa). | | |
| | | | |
| | | | |
| #11 - | Top 100mm of pad has been recapped. | Type D Repair | 1 |
| Structure | Recap is in poor condition with scaling and | | |
| High Voltage | eroding (portions of recap can be removed with boot). Lower portion of pad seems to | | |
| | be in fair condition (30 Mpa). | | |
| | | | |
| #12 - | Top 100mm of pad has been recapped. | Type D Repair | 1 |
| Structure | Recap is in poor condition with scaling and | | |
| High Voltage | eroding (portions of recap can be removed with boot). Lower portion of pad seems to | | |
| | be in fair condition (30 Mpa). | | |
| | | | |

Priority Rating

1
2
3
4

Priority Description

Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
within 3 years
within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Seal Cove Road
West

DATE INSPECTED: 2-May-02

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|---|---|--|-----------------|
| #13 - Structure High Voltage | Top 100mm of pad has been recapped. Recap is in poor condition with scaling and eroding (portions of recap can be removed with boot). Lower portion of pad seems to be affected by weathering and eroding (28 Mpa). | Type D Repair, however if substantial effort & cost is involved in preparation for repairs then total replacement would be a more cost effective long term solution. | 1 |
| #14 - Structure High Voltage | Top 100mm of pad has been recapped. Minor scaling present on recap. Recap and area below recap are in good condition (34 Mpa). | | 4 |
| #15 - Structure High Voltage | Top 100mm of pad has been recapped. Recap is in poor condition with scaling and eroding (portions of recap can be removed with boot). Lower portion of pad is showing signs of weathering and eroding (28 Mpa). | Type D Repair, however if substantial effort & cost is involved in preparation for repairs then total replacement would be a more cost effective long term solution. | 1 |
| #16 - SCR-T1-HGS Structure High Voltage | Top 125mm of pad has been recapped. Recapped area of pad is in good condition. Area below recap is showing signs of weathering and eroding and several locations (44 Mpa). | Type D Repair, however if substantial effort & cost is involved in preparation for repairs then total replacement would be a more cost effective long term solution. | 1 |
| #17 - Structure High Voltage | Top 100mm of pad has been recapped. Recap is in good condition. Several areas under recap have weathered, eroded, and scaled away (34 Mpa). | Type D Repair, however if substantial effort & cost is involved in preparation for repairs then total replacement would be a more cost effective long term solution. | 1 |
| #18 - SCR-T1-A Structure High Voltage | Top 100mm of pad has been recapped. Some areas of recap are starting to scale and erode away to a depth of approx. 12mm in areas (34 Mpa). | Type A Repair | 2 |

Priority Rating1
2
3
4Priority Description

Immediate corrective action required

Corrective action required to avoid increasing costs to repair

General maintenance item

No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year

within 3 years

within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Seal Cove Road
West

DATE INSPECTED: 2-May-02

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|--|--|--|-----------------|
| #19 - SCR-T1-HGS Structure High Voltage | Top 125mm of pad has been recapped. | Type D Repair, however if substantial effort & cost is involved in preparation for repairs then total replacement would be a more cost effective long term solution. | 1 |
| | Recap has cracking and scaling throughout. Area below recap is showing signs of weathering and eroding (24 Mpa). | | |
| | | | |
| | | | |
| #20 - Structure High Voltage | Top 100mm of pad has been recapped. | Type D Repair, however if substantial effort & cost is involved in preparation for repairs then total replacement would be a more cost effective long term solution. | 1 |
| | Recap is in poor condition with scaling and eroding (portions of recap can be removed with boot). Lower portion of pad is showing signs of weathering and eroding. Steel baseplate for structure exposed (28 Mpa). | | |
| | | | |
| | | | |
| #21 - SCR-T1-GS Structure High Voltage | Top 100mm of pad has been recapped. | | 4 |
| | Otherwise, pad is in good condition (34 Mpa). | | |
| | | | |
| | | | |
| #22 - Structure High Voltage | Four corners of pad are spalled to a depth of approx. 125mm. Minor scaling on sides of pad. Remainder of pad is in good condition (29 Mpa). | Type A Repair | 2 |
| | | | |
| | | | |
| | | | |
| #23 - Structure High Voltage | Four corners of pad have eroded away. | Type A & B Repair | 1 |
| | Minor alligator cracking present throughout sides of pad. One area has a small portion of concrete removed (44 Mpa). | | |
| | | | |
| | | | |
| #24 - SCR-TL-260-DB Structure High Voltage | Good condition (26 Mpa). | | 4 |
| | | | |
| | | | |
| | | | |

Priority Rating

- 1
- 2
- 3
- 4

Priority Description

- Immediate corrective action required
- Corrective action required to avoid increasing costs to repair
- General maintenance item
- No corrective action or maintenance required at this time

Recommended Time Frame

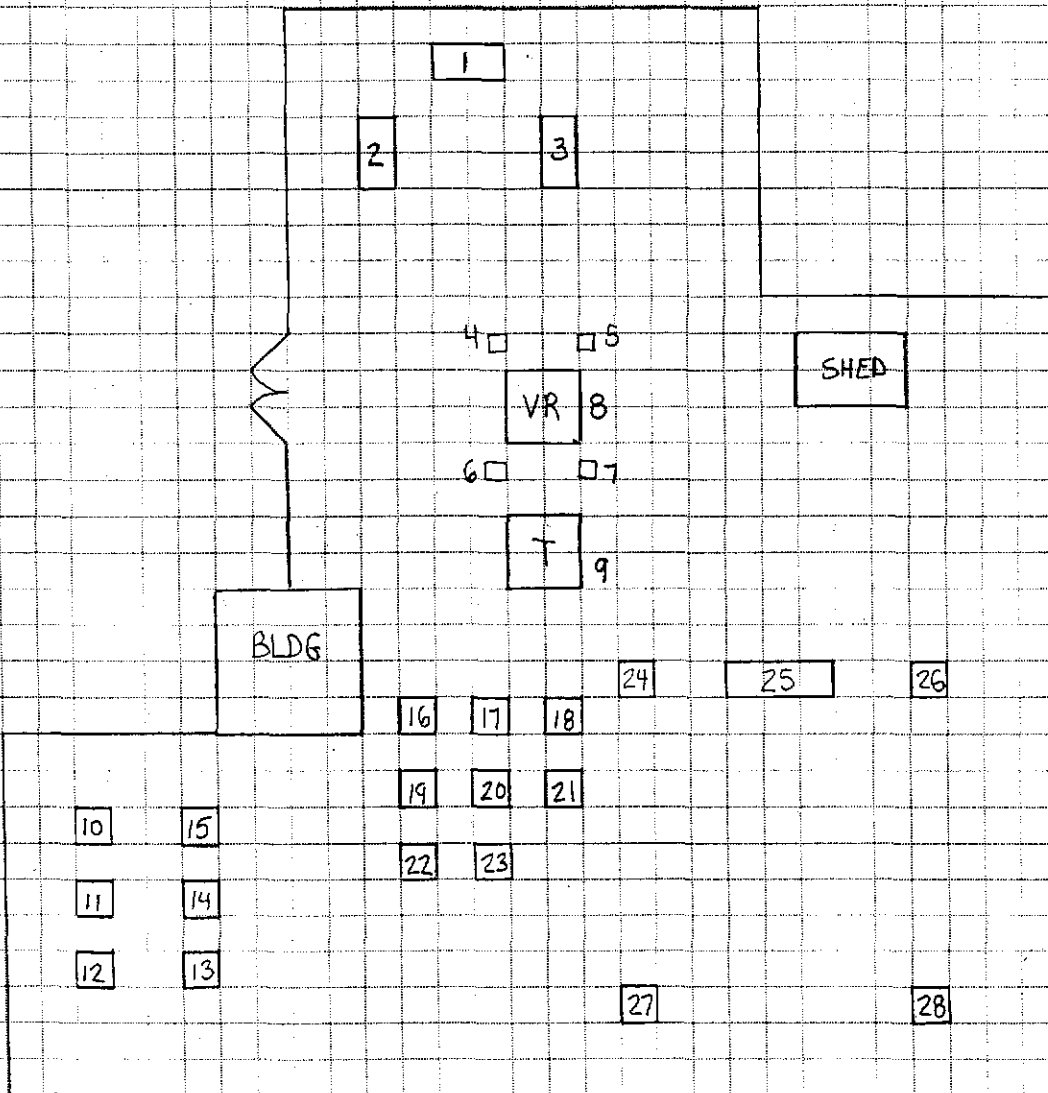
- within 1 year
- within 3 years
- within 5 years

SUBSTATION SITE: Seal Cove Road DATE INSPECTED: 2-May-02
West

| <u>Priority Rating</u> | <u>Priority Description</u> | <u>Recommended Time Frame</u> |
|------------------------|--|-------------------------------|
| 1 | Immediate corrective action required | within 1 year |
| 2 | Corrective action required to avoid increasing costs to repair | within 3 years |
| 3 | General maintenance item | within 5 years |
| 4 | No corrective action or maintenance required at this time | |

**INSPECTION OF CONCRETE PADS & FOUNDATIONS
LOCATION SKETCH**

SUBSTATION SITE: SEAL COVE ROAD
DEER LAKE AREA



INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Walbournes DATE INSPECTED: 26-Apr-02
West

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|---|---|-------------------|-----------------|
| #1 - Structure High Voltage | Hairline cracking present throughout top of pad that extend down from edge of pad to a depth of approx. 100mm with a separation between cracks of 3-4mm (52 Mpa). | Type C Repair | 1 |
| #2 - WAL-352L-B Sul Hex Breaker | Good condition (41 Mpa). | | 4 |
| #3 - WAL-352L-DL Structure High Voltage | Scaling and hairline cracking present throughout top of pad. One crack runs down side of pad approx. 150-200mm with separation of crack approx. 3mm (50 Mpa). | Type C Repair | 1 |
| #4 - WAL-351L-B Oil Circuit Breaker | Minor scaling and alligator cracking present throughout top of pad. Three small hairline cracks with separation of 1mm (37 Mpa). | Type A & B Repair | 2 |
| #5 - WAL-353L-BP Structure High Voltage | Scaling and eroding present throughout top surface of pad. Several small hairline cracks extend down sides of pad approx. 100-150mm with a separation between cracks of 2-3mm (28 Mpa). | Type A & C Repair | 2 |
| #6 - WAL-353L-B Oil Circuit Breaker | Scaling and minor alligator cracking throughout top of pad. Remainder of pad is in fair condition (46 Mpa). | Type A Repair | 3 |

Priority Rating

1
2
3
4

Priority Description

Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

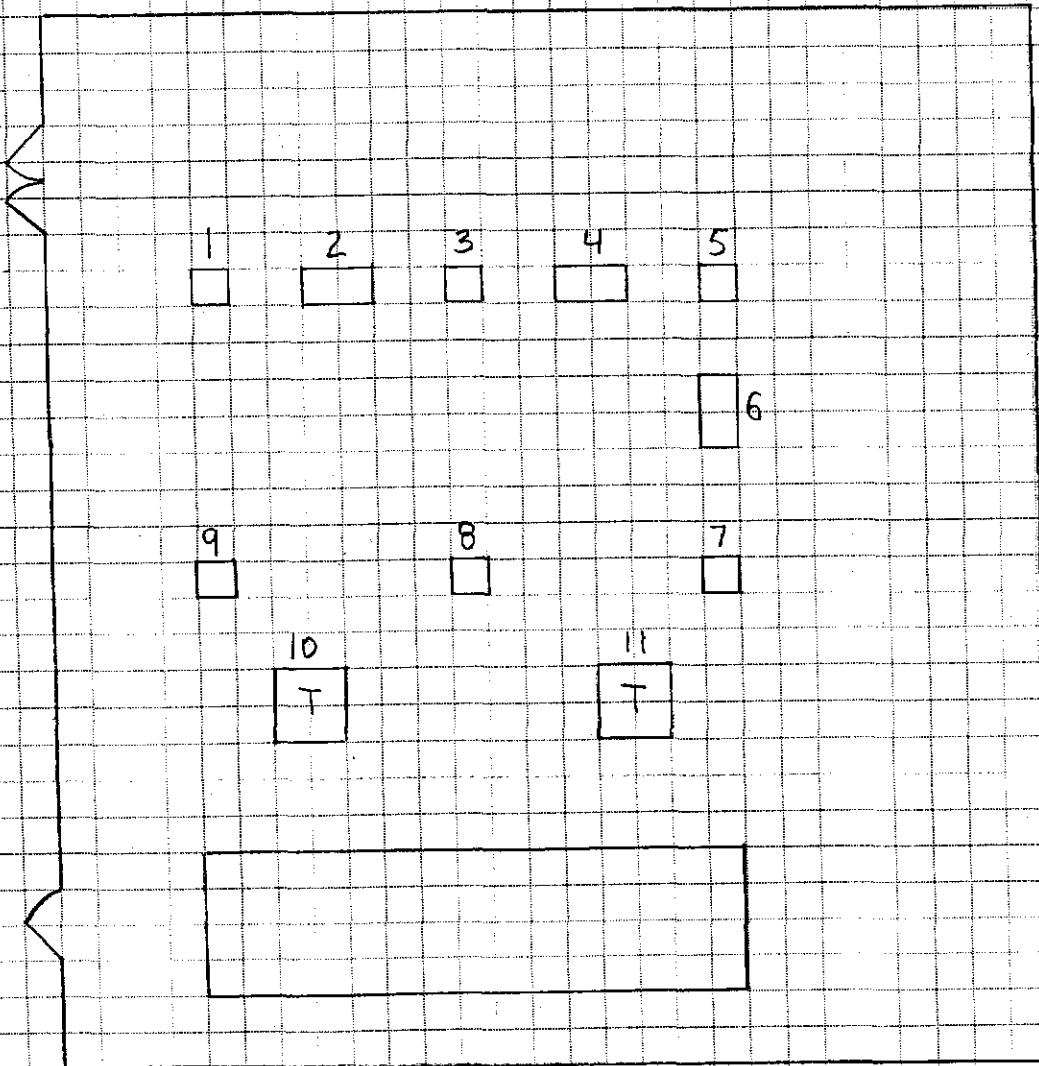
within 1 year
within 3 years
within 5 years

SUBSTATION SITE: Walbournes DATE INSPECTED: 26-Apr-02
West

| <u>Priority Rating</u> | <u>Priority Description</u> | <u>Recommended Time Frame</u> |
|------------------------|--|-------------------------------|
| 1 | Immediate corrective action required | within 1 year |
| 2 | Corrective action required to avoid increasing costs to repair | within 3 years |
| 3 | General maintenance item | within 5 years |
| 4 | No corrective action or maintenance required at this time | |

INSPECTION OF CONCRETE PADS & FOUNDATIONS
LOCATION SKETCH

SUBSTATION SITE: WALBOURNE'S
DEER LAKE AREA



STEPHENVILLE AREA

ABRAHAM'S COVE
BERRY HEAD
DOYLE'S
GALLANT STREET
GRAND BAY
HARMON
LONG LAKE
LOOKOUT BROOK
PORT AUX BASQUES
ROBINSON'S
ROSE BLANCHE BROOK
SANDY BROOK
STEPHENVILLE CROSSING
STEPHENVILLE GAS TURBINE
ST. GEORGES
WHEELER'S

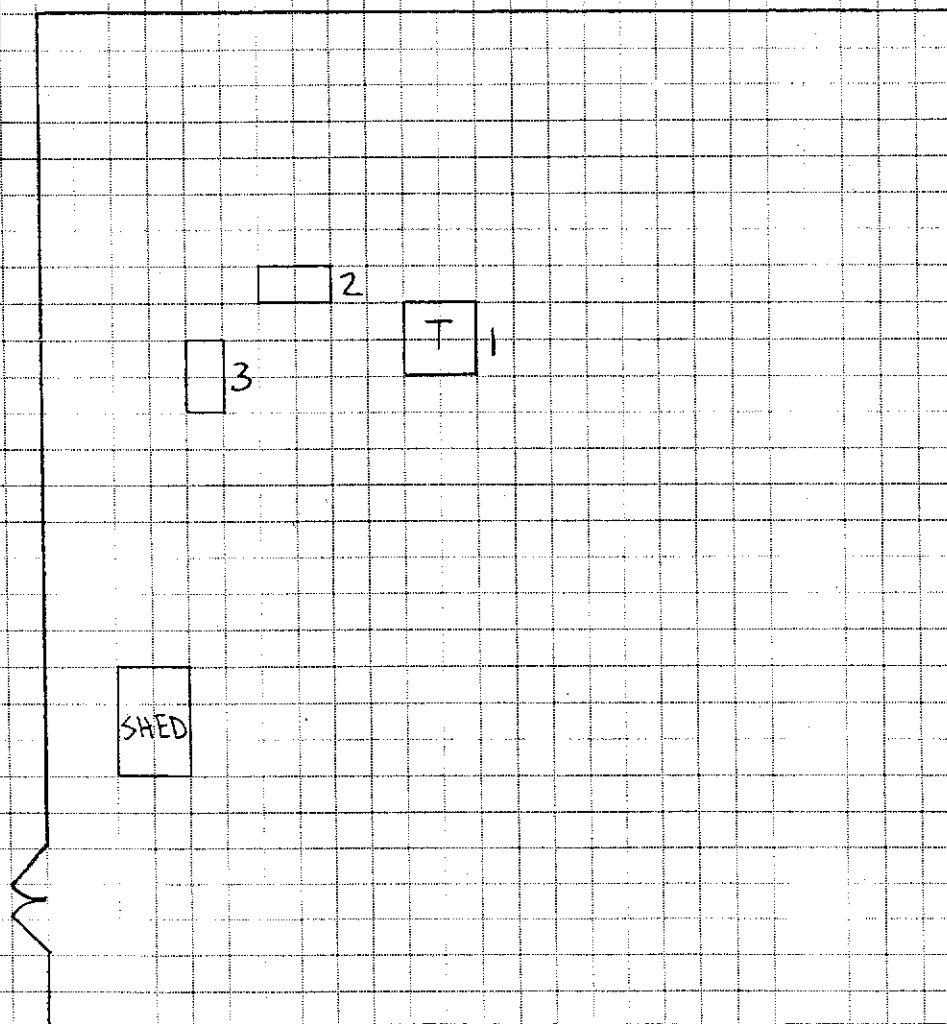
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Recommended Time Frame

- | | |
|---|--|
| 1 | Immediate corrective action required |
| 2 | Corrective action required to avoid increasing costs to repair |
| 3 | General maintenance item |
| 4 | No corrective action or maintenance required at this time |

**INSPECTION OF CONCRETE PADS & FOUNDATIONS
LOCATION SKETCH**

SUBSTATION SITE: ABRAHAMS COVE
STEPHENVILLE AREA



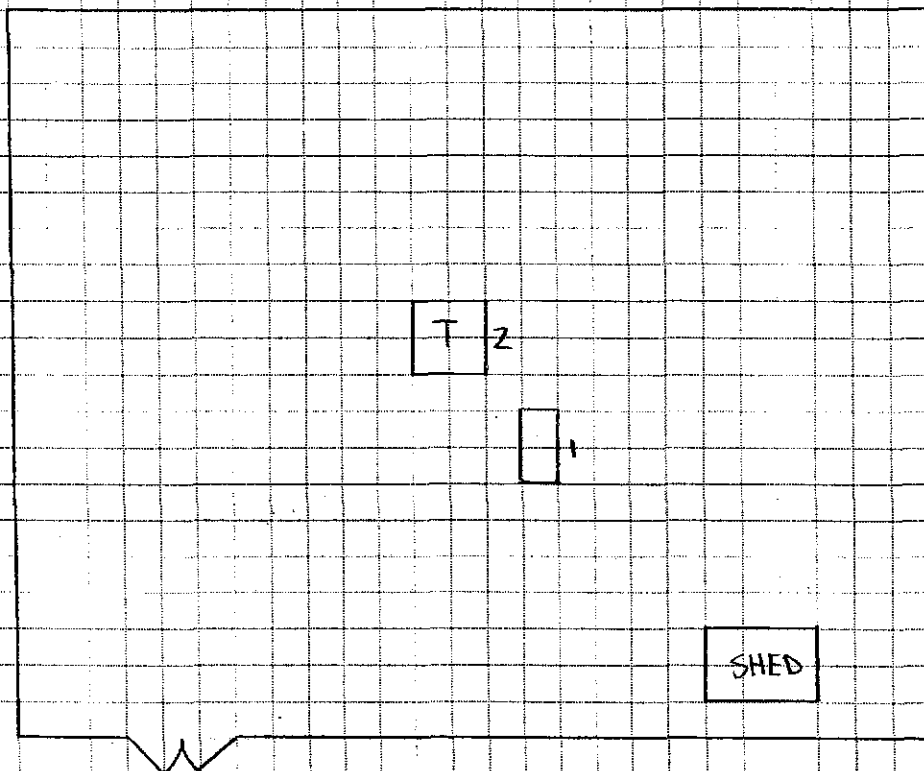
SUBSTATION SITE: Berry Head DATE INSPECTED: 25-Apr-02
West

[illegible]

| <u>Priority Rating</u> | <u>Priority Description</u> | <u>Recommended Time Frame</u> |
|------------------------|--|-------------------------------|
| 1 | Immediate corrective action required | within 1 year |
| 2 | Corrective action required to avoid increasing costs to repair | within 3 years |
| 3 | General maintenance item | within 5 years |
| 4 | No corrective action or maintenance required at this time | |

INSPECTION OF CONCRETE PADS & FOUNDATIONS
LOCATION SKETCH

SUBSTATION SITE: BERRY HEAD
STEPHENVILLE AREA



INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Doyles West DATE INSPECTED: 24-Apr-02

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|--------------------------------------|---|---|-----------------|
| #1 - DOY-01-R Recloser | Good condition (28 Mpa). | | 4 |
| #2 - T1 Transformer 200221 | Addition poured around original pad. There are several small hairline cracks on the top surface (less than 1mm separation). Two corners of pad are chipped, and top surface is rust covered (42 Mpa). | Type B Repair for cracks & Type A for chipped corners | 3 |
| #3 - Structure High Voltage | Rough finish on top surface of pad. Remainder of pad is in good condition (36 Mpa). | | 4 |
| #4 - DOY-T2-A Structure High Voltage | Rough finish on top surface of pad. Remainder of pad is in good condition (34 Mpa). | | 4 |
| #5 - Structure High Voltage | Good condition (32 Mpa). | | 4 |
| #6 - Structure High Voltage | Two areas of minor alligator cracking on sides of pad. Remainder of pad is in good condition (34 Mpa). | Type B Repair | 3 |

Priority Rating

1
2
3
4

Priority Description

Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
within 3 years
within 5 years

SUBSTATION SITE: Doyles DATE INSPECTED: 24-Apr-02
West

Priority Rating

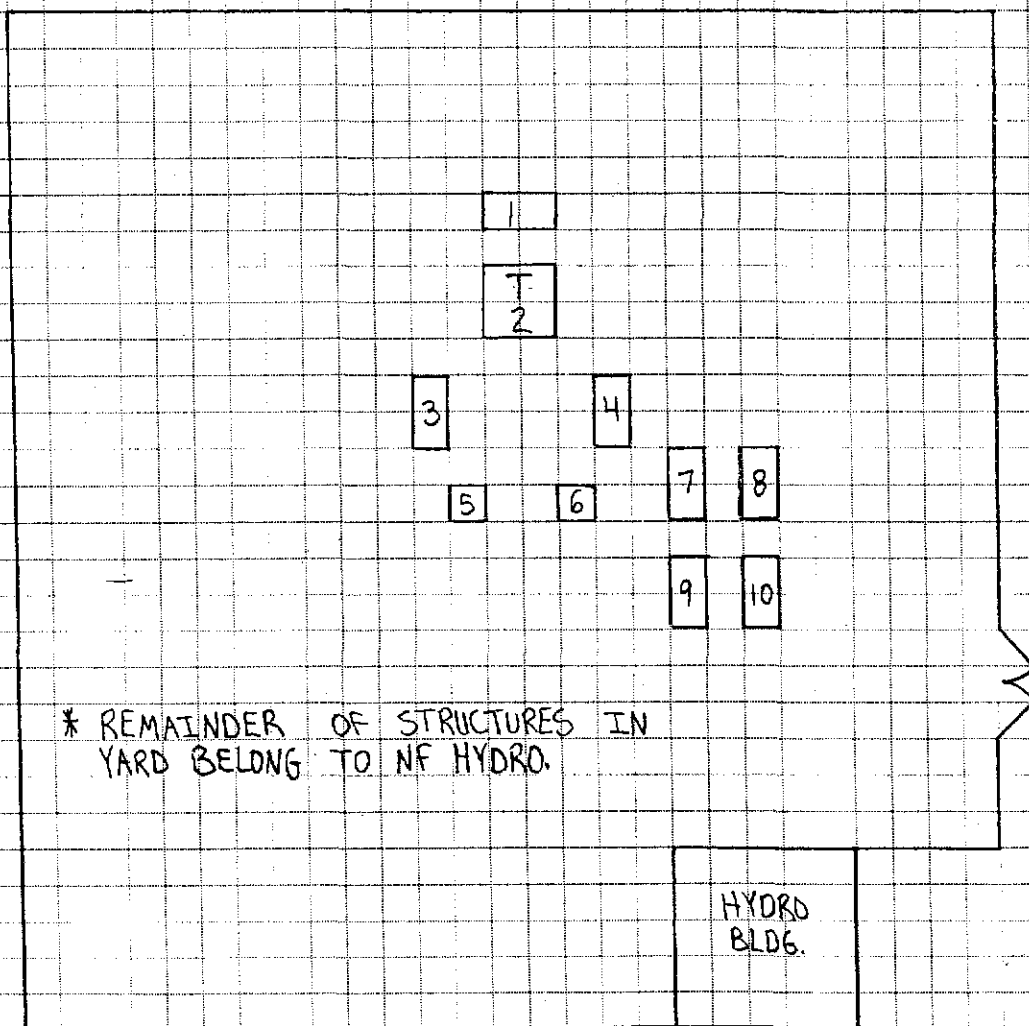
- 1
2
3
4

Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

within 1 year
within 3 years
within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS
LOCATION SKETCH

SUBSTATION SITE: DOYLE'S
STEPHENVILLE AREA



INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Gallant Street DATE INSPECTED: 25-Apr-02
West

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|--------------------------------------|--|--|-----------------|
| #1 - Structure Low Voltage | Severe hairline cracking that seems to originate from four corners of steel structure outwards towards edge of pad. Portions of concrete pad have potential to separate, some cracks now have separation of approx 4-5mm (44 Mpa). | Type C Repair for a short to medium term option however a Type E - total replacement is recommended for a long term solution and to ensure structural stability of the foundation. | 1 |
| #2 - Not In Use | Minor scaling and alligator cracking on top surface of pad (44 Mpa). | Type A & B Repair | 3 |
| #3 - GAL-01-R closer | Minor scaling on top surface of pad (44 Mpa). | | 4 |
| #4 - GAL-01-BP Structure Low Voltage | Severe hairline cracking that seems to originate from four corners of steel structure outwards towards edge of pad. Portions of concrete pad have potential to separate, some cracks now have separation of approx 3-4mm (42 Mpa). | Type C Repair for a short to medium term option however a Type E - total replacement is recommended for a long term solution and to ensure structural stability of the foundation. | 1 |
| #5 - GAL-05-R Recloser | Scaling present on top surface of pad, some areas of minor alligator cracking (44 Mpa). | Type A & B Repair | 2 |
| #6 - Metering Tank Structure | Minor scaling and alligator cracking on top surface of pad (36 Mpa). | Type A & B Repair | 3 |

Priority Rating

- 1
- 2
- 3
- 4

Priority Description

- Immediate corrective action required
- Corrective action required to avoid increasing costs to repair
- General maintenance item
- No corrective action or maintenance required at this time

Recommended Time Frame

- within 1 year
- within 3 years
- within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Gallant Street DATE INSPECTED: 25-Apr-02
West

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|---|--|--|-----------------|
| #7 - GAL-T1-D Structure Low Voltage | Severe hairline cracking that seems to originate from four corners of steel structure outwards towards edge of pad. Portions of concrete pad have potential to separate, some cracks now have separation of approx 2-3mm (44 Mpa). | Type C Repair for a short to medium term option however a Type E - total replacement is recommended for a long term solution and to ensure structural stability of the foundation. | 1 |
| #8 - Metering Tank Structure | Rough finish on top of pad, otherwise pad is in good condition (28 Mpa). | | 4 |
| #9 - GAL- 24-R Recloser | Rough finish on top of pad, otherwise pad is in good condition (34 Mpa). | | 4 |
| #10 - GAL- 03-BP Structure Low Voltage | Minor scaling and rough finish on top surface of pad. Remainder of pad is in good condition (36 Mpa). | | 4 |
| #11 - GAL- 03-R Recloser | Minor scaling and rough finish on top surface of pad. Remainder of pad is in good condition (28 Mpa). | | 4 |
| #12 - Not In Use | Rough finish on top surface of pad (30 Mpa). | | 4 |

Priority Rating

1
2
3
4

Priority Description

Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
within 3 years
within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Gallant Street DATE INSPECTED: 25-Apr-02
West

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|--|---|-----------------|-----------------|
| #13 - Structure Low Voltage | Minor scaling and rough finish on top surface of pad, remainder of pad is in good condition (37 Mpa). | | 4 |
| | | | |
| | | | |
| #14 - T1-Transformer 200278 | Good condition (44 Mpa). | | 4 |
| | | | |
| | | | |
| #15 - T2-Transformer 200265 | Good condition (42 Mpa). | | 4 |
| | | | |
| | | | |
| #16 - GAL-406L-DB Structure High Voltage | Minor scaling and rough finish on top surface of pad, remainder of pad is in good condition (44 Mpa). | | 4 |
| | | | |
| | | | |
| #17 - GAL-BTS-1 Structure High Voltage | Minor scaling and rough finish on top surface of pad, remainder of pad is in good condition (28 Mpa). | | 4 |
| | | | |
| | | | |
| #18 - GAL-T2-A Structure High Voltage | Rough finish on top surface of pad (44 Mpa). | | 4 |
| | | | |
| | | | |

Priority Rating

- 1
- 2
- 3
- 4

Priority Description

- Immediate corrective action required
- Corrective action required to avoid increasing costs to repair
- General maintenance item
- No corrective action or maintenance required at this time

Recommended Time Frame

- within 1 year
- within 3 years
- within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Gallant Street DATE INSPECTED: 25-Apr-02
West

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|--|---|-----------------|-----------------|
| #19 - GAL-402L-DB Structure High Voltage | Minor scaling and rough finish on top surface of pad. One chunk taken out of edge of pad approx. 150mm long, otherwise pad is in good condition (42 Mpa). | Type A Repair | 3 |
| #20 - GAL-402L-B Sul Hex Breaker | Rough finish on top surface of pad, remainder of pad is in good condition (34 Mpa). | | 4 |
| #21 - GAL-402L-GS Structure High Voltage | Good condition (32 Mpa). | | 4 |
| #22 - GAL-401L-B Sul Hex Breaker | Good condition (44 Mpa). | | 4 |
| #23 - GAL-401L-GS Structure High Voltage | Minor scaling on top surface of pad, remainder of pad is in good condition (32 Mpa). | | 4 |
| #24 - GAL-406L-B Sul Hex Breaker | Good condition (42 Mpa). | | 4 |

Priority Rating

1
2
3
4

Priority Description

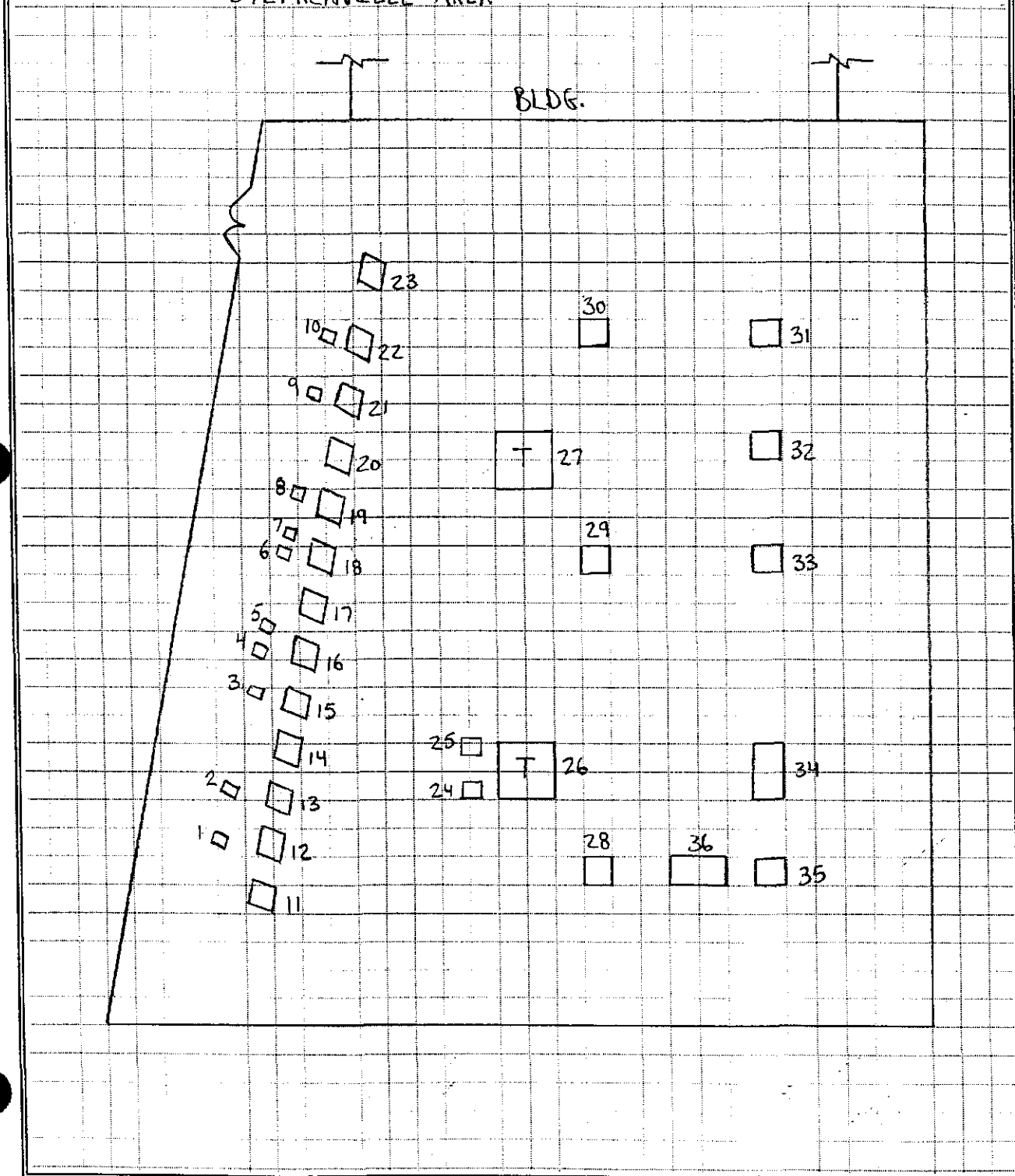
Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
within 3 years
within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS
LOCATION SKETCH

SUBSTATION SITE: GALLANT STREET
STEPHENVILLE AREA



INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Grand Bay West DATE INSPECTED: 23-Apr-02

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|---|---|-----------------|-----------------|
| #1 - GBS-417L-BP Structure High Voltage | Rough finish on top surface of pad. Remainder of pad is in good condition (34 Mpa). | | 4 |
| #2 - GBS-417L-B Oil Circuit Breaker | One corner chipped on pad, otherwise pad is in good condition (26 Mpa). | Type A Repair | 3 |
| #3 - GBS-417L-DB Structure High Voltage | Good condition (22 Mpa). | | 4 |
| #4 - GBS-416L-B Oil Circuit Breaker | Good condition (38 Mpa). | | 4 |
| #5 - GBS-416L-DB Structure High Voltage | Minor scaling on top surface of pad. Remainder of pad is in good condition (30 Mpa). | | 4 |
| #6 - GBS-TL-215-B Oil Circuit Breaker | Good condition (28 Mpa). | | 4 |

Priority Rating

Priority Description

Recommended Time Frame

- | | | |
|---|--|----------------|
| 1 | Immediate corrective action required | within 1 year |
| 2 | Corrective action required to avoid increasing costs to repair | within 3 years |
| 3 | General maintenance item | within 5 years |
| 4 | No corrective action or maintenance required at this time | |

INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Grand Bay DATE INSPECTED: 23-Apr-02
West

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|---|---|-----------------|-----------------|
| #7 - GBS-TL-215-DB Structure High Voltage | Rough finish on top surface of pad. Remainder of pad is in good condition (28 Mpa). | | 4 |
| #8 - BICI Sul Hex Breaker NF Hydro | Rough finish on top surface of pad. Remainder of pad is in good condition. | | 4 |
| #9 - BICI Structure High Voltage NF Hydro | Rough finish on top surface of pad. Remainder of pad is in good condition (22 Mpa). | | 4 |
| #10 - GBS-T1-A Structure High Voltage | Minor scaling and spalling on top surface, also rough finish on top surface of pad. Remainder of pad is in good condition. (28 Mpa). | Type A Repair | 3 |
| #11 - Transformer (In For Repairs) | Good condition (28 Mpa). | | 4 |
| #12 - Structure Low Voltage | Rough finish on top surface of pad. Remainder of pad is in good condition (34 Mpa). | | 4 |

Priority Rating

1
2
3
4

Priority Description

Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
within 3 years
within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Grand Bay DATE INSPECTED: 23-Apr-02
West

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|---------------------------------------|--|-----------------|-----------------|
| #13 - Metering Tank | Rough finish on top surface of pad. Remainder of pad is in good condition (34 Mpa). | | 4 |
| | | | |
| | | | |
| #14 - GBS-02-BP Structure Low Voltage | Rough finish on top surface of pad. Remainder of pad is in good condition (30 Mpa). | | 4 |
| | | | |
| | | | |
| #15 - GBS-02-R Recloser | Rough finish on top surface of pad. Remainder of pad is in good condition (28 Mpa). | | 4 |
| | | | |
| | | | |
| #16 - GBS-01-R Recloser | Rough finish on top surface of pad. Remainder of pad is in good condition (34 Mpa). | | 4 |
| | | | |
| | | | |
| #17 - GBS-01-DL Structure Low Voltage | Good condition (28 Mpa). | | 4 |
| | | | |
| | | | |
| #18 - Structure Low Voltage | Rough finish on top surface of pad. Remainder of pad is in good condition (26 Mpa). | | 4 |
| | | | |
| | | | |

Priority Rating

1
2
3
4

Priority Description

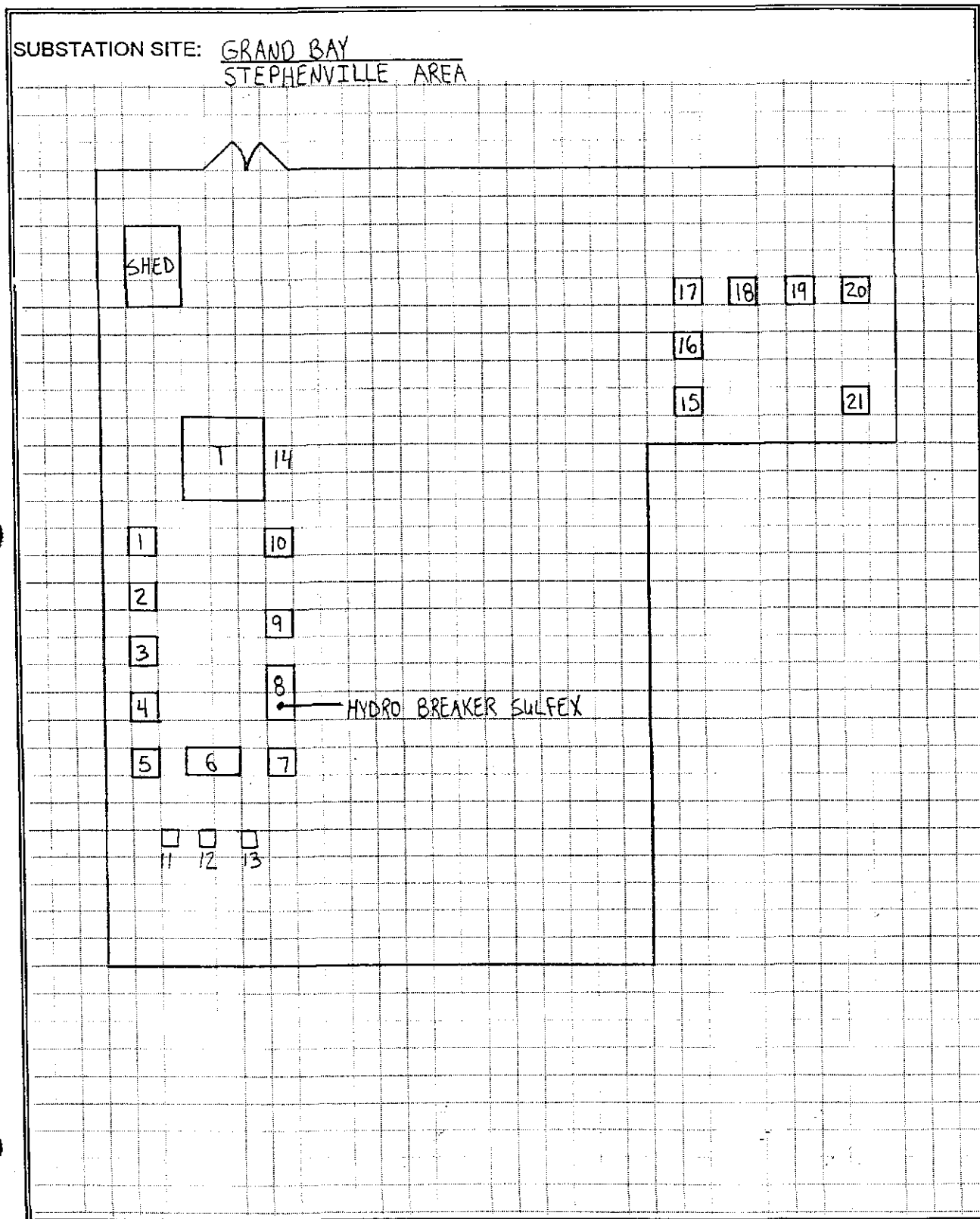
Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
within 3 years
within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS
LOCATION SKETCH

SUBSTATION SITE: GRAND BAY
STEPHENVILLE AREA

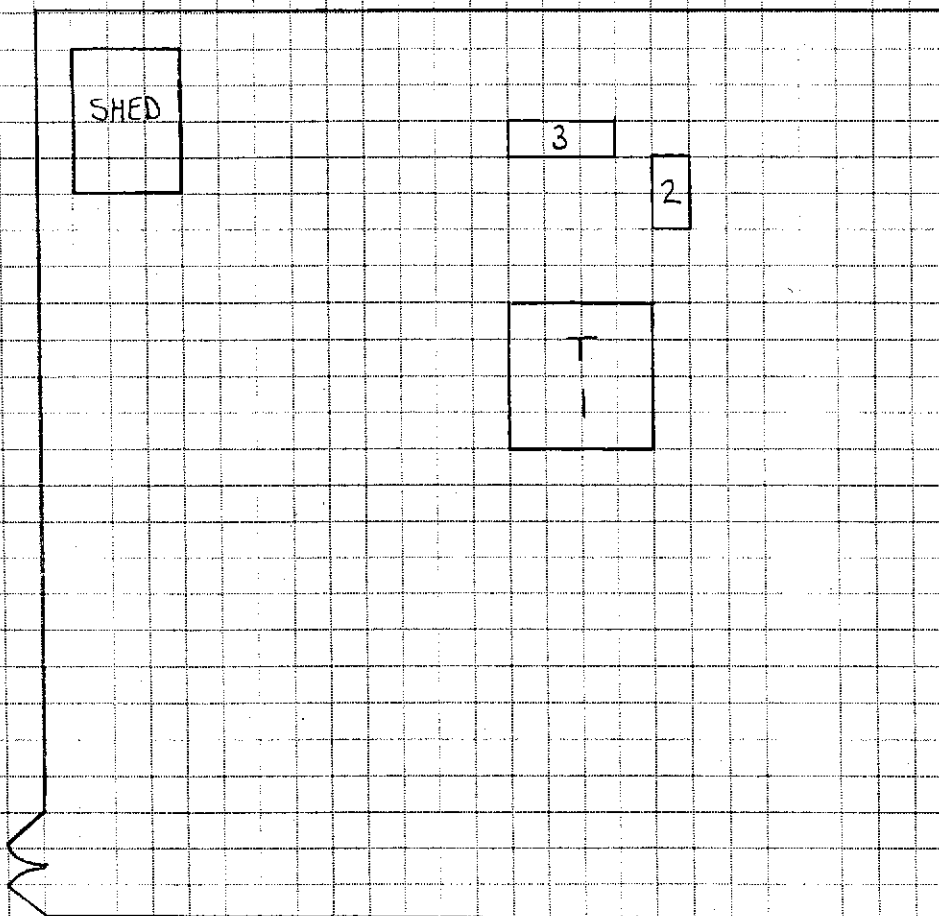


SUBSTATION SITE: Harmon DATE INSPECTED: 24-Apr-02
West

| <u>Priority Rating</u> | <u>Priority Description</u> | <u>Recommended Time Frame</u> |
|------------------------|--|-------------------------------|
| 1 | Immediate corrective action required | within 1 year |
| 2 | Corrective action required to avoid increasing costs to repair | within 3 years |
| 3 | General maintenance item | within 5 years |
| 4 | No corrective action or maintenance required at this time | |

INSPECTION OF CONCRETE PADS & FOUNDATIONS
LOCATION SKETCH

SUBSTATION SITE: HARMON
STEPHENVILLE AREA



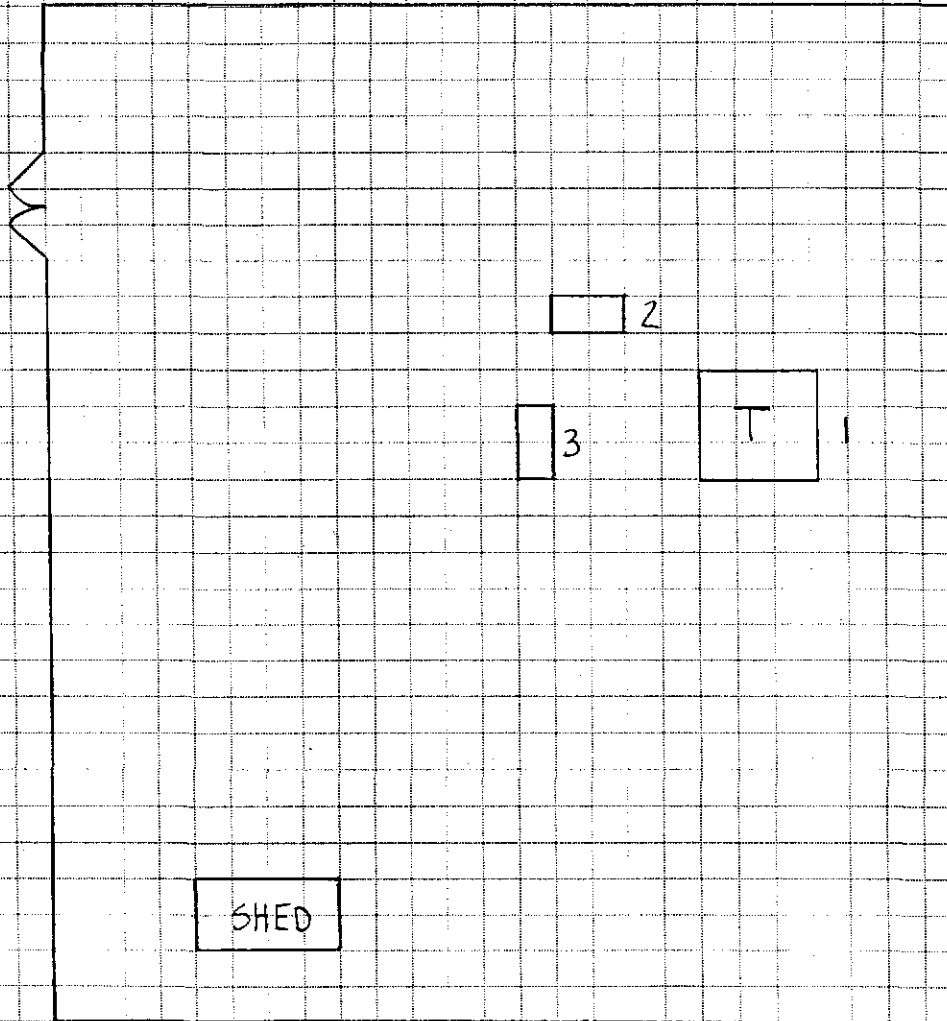
SUBSTATION SITE: Long Lake DATE INSPECTED: 23-Apr-02
West

[illegible]

| <u>Priority Rating</u> | <u>Priority Description</u> | <u>Recommended Time Frame</u> |
|------------------------|--|-------------------------------|
| 1 | Immediate corrective action required | within 1 year |
| 2 | Corrective action required to avoid increasing costs to repair | within 3 years |
| 3 | General maintenance item | within 5 years |
| 4 | No corrective action or maintenance required at this time | |

INSPECTION OF CONCRETE PADS & FOUNDATIONS
LOCATION SKETCH

SUBSTATION SITE: LONG LAKE
STEPHENVILLE AREA



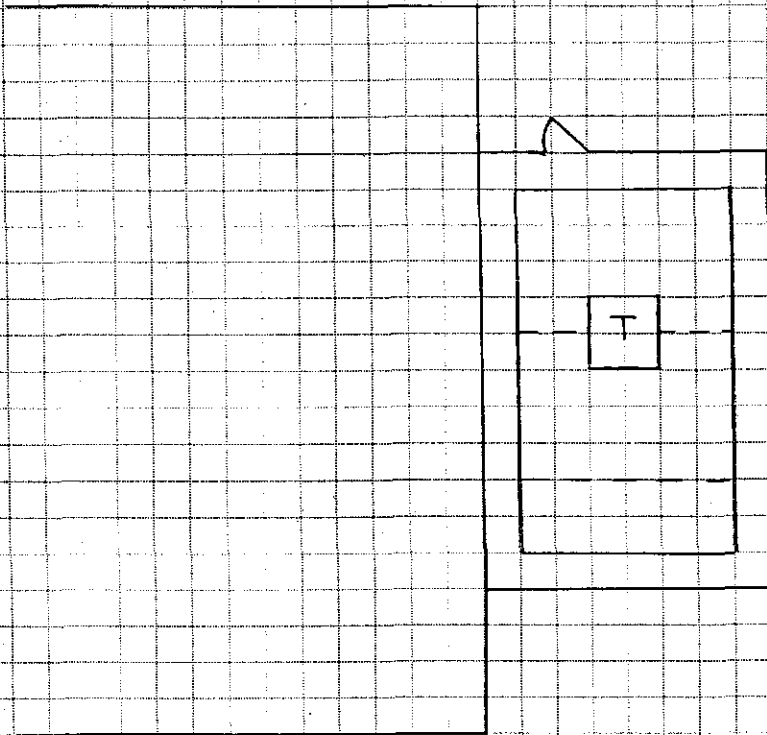
SUBSTATION SITE: Lookout Brook DATE INSPECTED: 24-Apr-02
West

[illegible]

| <u>Priority Rating</u> | <u>Priority Description</u> | <u>Recommended Time Frame</u> |
|------------------------|--|-------------------------------|
| 1 | Immediate corrective action required | within 1 year |
| 2 | Corrective action required to avoid increasing costs to repair | within 3 years |
| 3 | General maintenance item | within 5 years |
| 4 | No corrective action or maintenance required at this time | |

**INSPECTION OF CONCRETE PADS & FOUNDATIONS
LOCATION SKETCH**

SUBSTATION SITE: LOOKOUT BROOK
STEPHENVILLE AREA



INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Port Aux Basques
West

DATE INSPECTED: 23-Apr-02

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|--|--|-----------------|-----------------|
| #1 - PAB-02-R Recloser | Good condition (42 Mpa). | | 4 |
| | | | |
| | | | |
| #2 - PAB-05-BP Structure Low Voltage | Good condition (28 Mpa). | | 4 |
| | | | |
| | | | |
| #3 - PAB-05-R Recloser | Minor scaling and rough finish on top surface of pad. Otherwise pad is in good condition (28 Mpa). | | 4 |
| | | | |
| | | | |
| #4 - Metering Tank | Rough finish on top surface of pad. Remainder of pad is in good condition (28 Mpa). | | 4 |
| | | | |
| | | | |
| #5 - PAB-06-BP Structure Low Voltage | One corner of pad has a minor chip and top surface of pad has rough finish, otherwise pad is in good condition (28 Mpa). | Type A Repair | 3 |
| | | | |
| | | | |
| #6 - PAB-06-R Recloser | Minor scaling and rough finish on top surface of pad. Otherwise pad is in good condition (41 Mpa). | | 4 |
| | | | |
| | | | |

Priority Rating

1
2
3
4

Priority Description

Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
within 3 years
within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Port Aux Basques
West

DATE INSPECTED: 23-Apr-02

[illegible]

Priority Rating

- 1
2
3
4

Priority Description

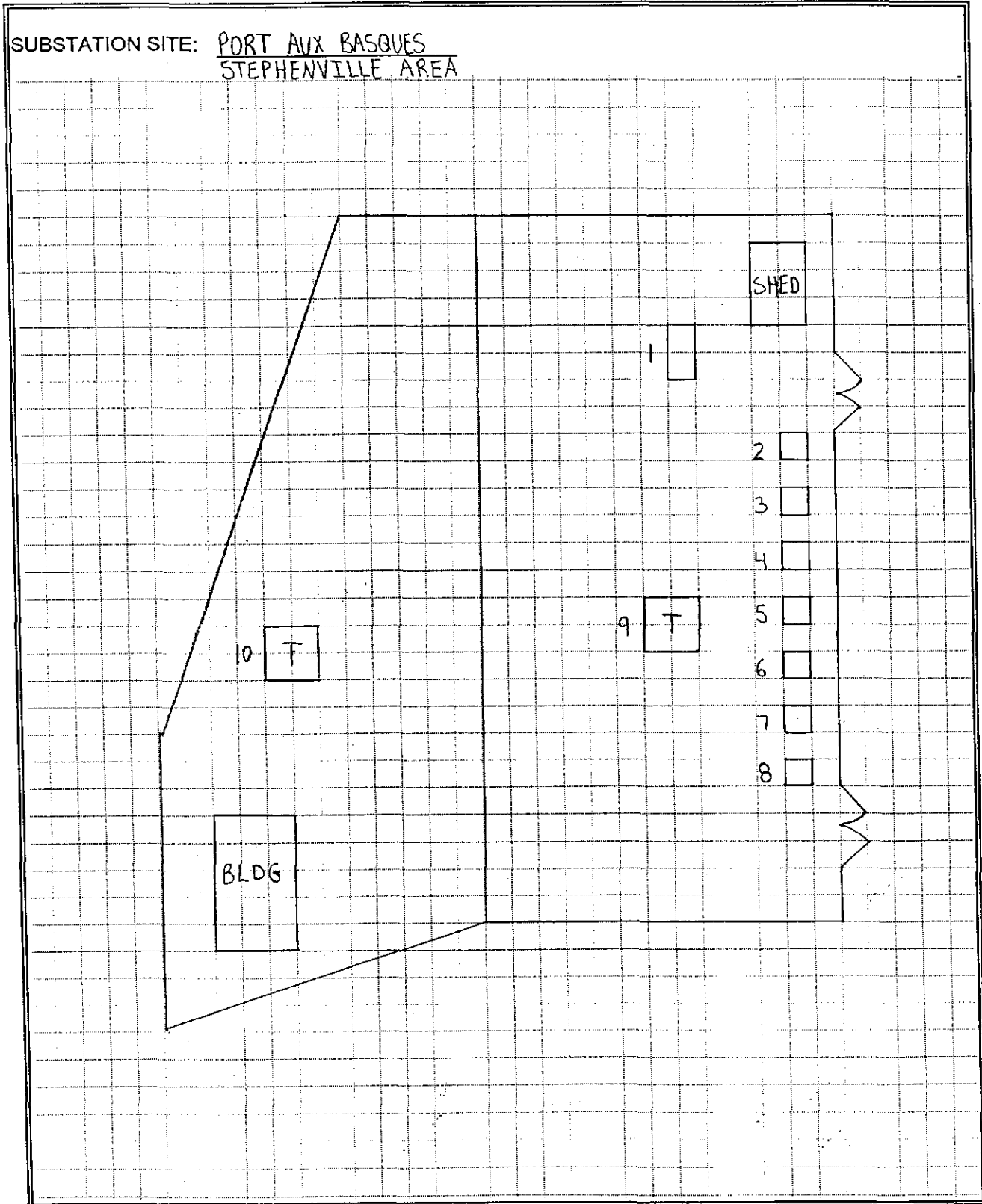
- Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

- within 1 year
within 3 years
within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS
LOCATION SKETCH

SUBSTATION SITE: PORT AUX BASQUES
STEPHEENVILLE AREA



SUBSTATION SITE: Robinson's DATE INSPECTED: 24-Apr-02
West

Priority Rating

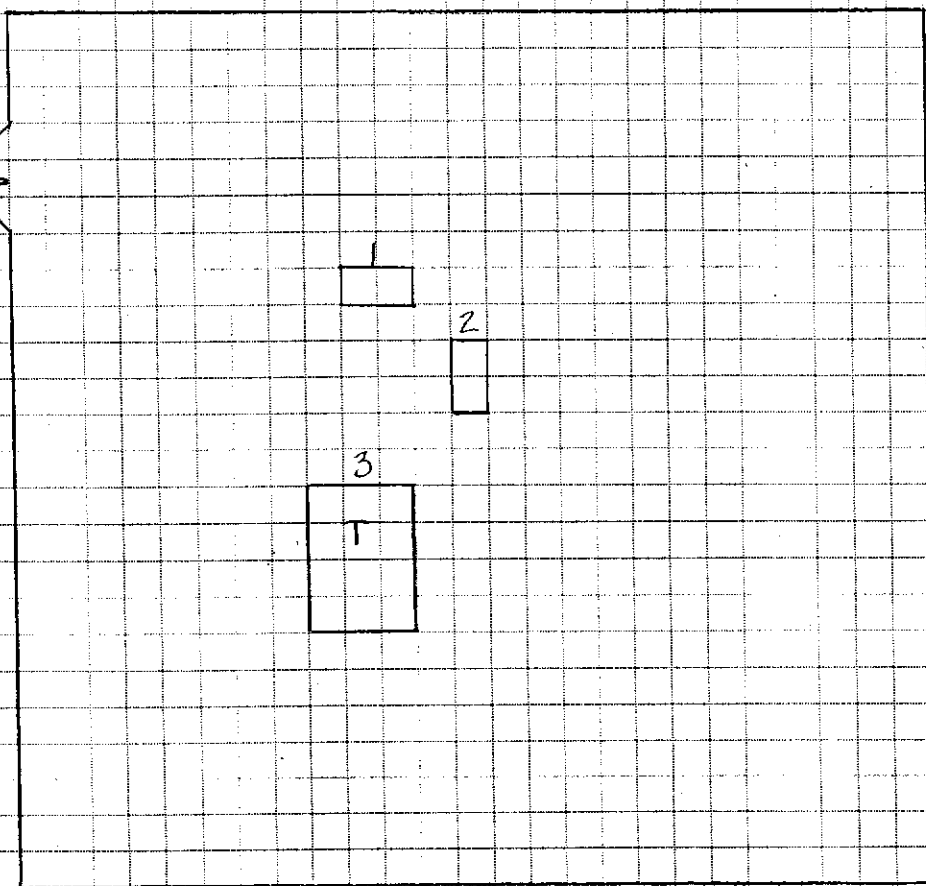
- 1
2
3
4

Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

within 1 year
within 3 years
within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS
LOCATION SKETCH

SUBSTATION SITE: ROBINSONS
STEPHENVILLE AREA

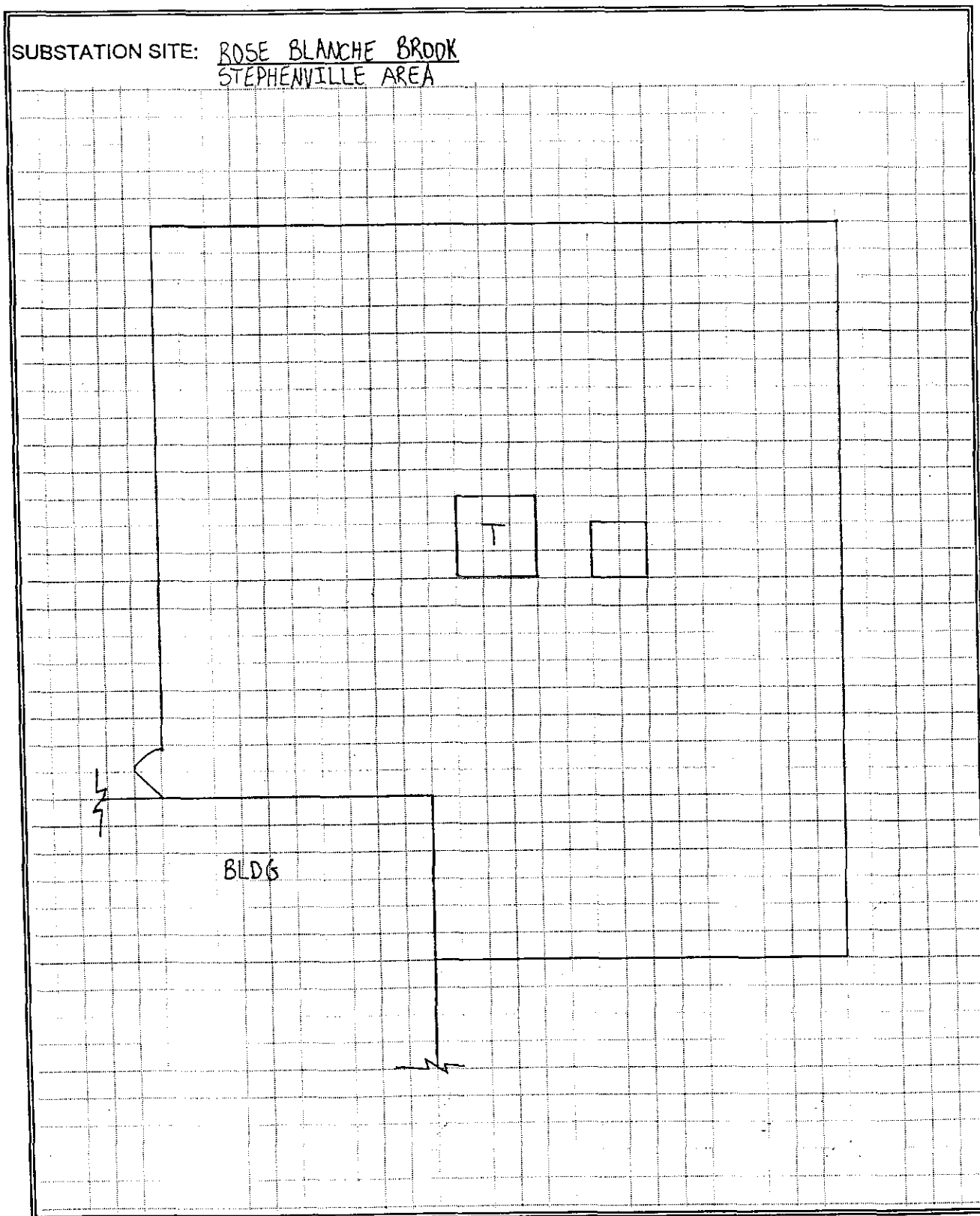


SUBSTATION SITE: Rose Blanche Brook DATE INSPECTED: 23-Apr-02
West

| <u>Priority Rating</u> | <u>Priority Description</u> | <u>Recommended Time Frame</u> |
|------------------------|--|-------------------------------|
| 1 | Immediate corrective action required | within 1 year |
| 2 | Corrective action required to avoid increasing costs to repair | within 3 years |
| 3 | General maintenance item | within 5 years |
| 4 | No corrective action or maintenance required at this time | |

INSPECTION OF CONCRETE PADS & FOUNDATIONS
LOCATION SKETCH

SUBSTATION SITE: ROSE BLANCHE BROOK
STEPHENVILLE AREA



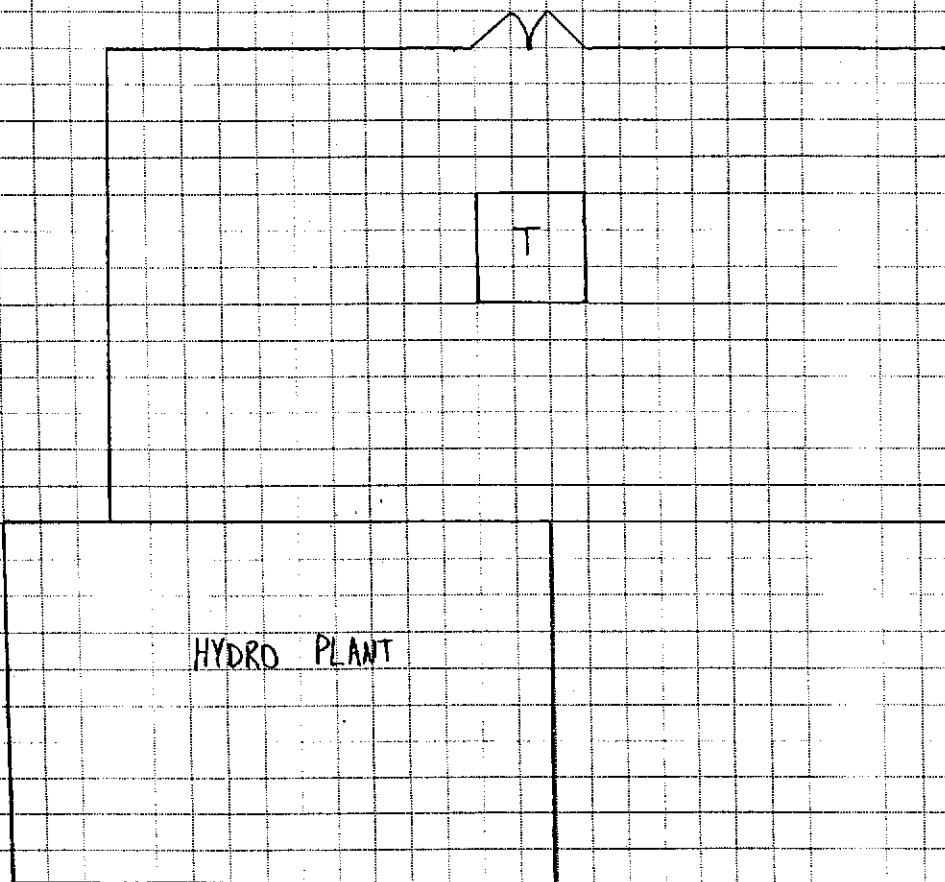
SUBSTATION SITE: Sandy Brook
West

DATE INSPECTED: 7-May-02

| <u>Priority Rating</u> | <u>Priority Description</u> | <u>Recommended Time Frame</u> |
|------------------------|--|-------------------------------|
| 1 | Immediate corrective action required | within 1 year |
| 2 | Corrective action required to avoid increasing costs to repair | within 3 years |
| 3 | General maintenance item | within 5 years |
| 4 | No corrective action or maintenance required at this time | |

INSPECTION OF CONCRETE PADS & FOUNDATIONS
LOCATION SKETCH

SUBSTATION SITE: SANDY BROOK
STEPHENVILLE AREA



INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Stephenville Crossing DATE INSPECTED: 24-Apr-02
West

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|--------------------------------------|---|-----------------|-----------------|
| #1 - RTU Cabinet | Good condition (41 Mpa). | | 4 |
| | | | |
| | | | |
| | | | |
| #2 - STX-01-BP Structure Low Voltage | Minor scaling on top surface of pad. Remainder of pad is in good condition (42 Mpa). | | 4 |
| | | | |
| | | | |
| | | | |
| #3 - STX-01-R closer | Good condition (42 Mpa). | | 4 |
| | | | |
| | | | |
| | | | |
| #4 - Not In Use | Good condition (26 Mpa). | | 4 |
| | | | |
| | | | |
| | | | |
| #5 - STX-02-BP Structure Low Voltage | Minor scaling on top surface of pad. Remainder of pad is in good condition (42 Mpa). | | 4 |
| | | | |
| | | | |
| | | | |
| #6 - STX-T1-D Structure Low Voltage | Minor scaling on top surface of pad. Remainder of pad is in good condition (44 Mpa). | | 4 |
| | | | |
| | | | |
| | | | |

Priority Rating

1
2
3
4

Priority Description

Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
within 3 years
within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Stephenville Crossing DATE INSPECTED: 24-Apr-02
West

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|---|--|-----------------|--------------------|
| #7 - Metering Tank Structure | Minor scaling on top surface of pad. | | 4 |
| | Remainder of pad is in good condition | | |
| | (38 Mpa). | | |
| | | | |
| #8 - Structure Low Voltage | Minor scaling on top surface of pad, also | Type A Repair | 3 |
| | one chip is taken out of top of pad (46 Mpa) | | |
| | | | |
| | | | |
| #9 - T1 Transformer 200286 | One hairline crack midway across one | Type B Repair | 3 |
| | side and extends down from edge approx. | | |
| | 200mm with 2mm separation (28 Mpa). | | |
| | | | |
| #10 - STX- T1-A Structure High Voltage | Minor scaling on top surface of pad. | Type A Repair | 3 |
| | Remainder of pad is in good condition | | |
| | (44 Mpa). | | |
| | | | |
| #11 - STX- 407L-GS1 Structure High Voltage | One hairline crack midway across one | Type C Repair | 3 |
| | side and extends down from edge approx. | | |
| | 200mm with 2mm separation (46 Mpa). | | |
| | | | |
| #12 - Structure High Voltage | One hairline crack extends down from top | Type B Repair | 3 |
| | edge of pad approx. 75mm with 1mm | | |
| | separation. Minor scaling also present on | | |
| | top surface of pad (34 Mpa). | | |

Priority Rating

1
2
3
4

Priority Description

Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

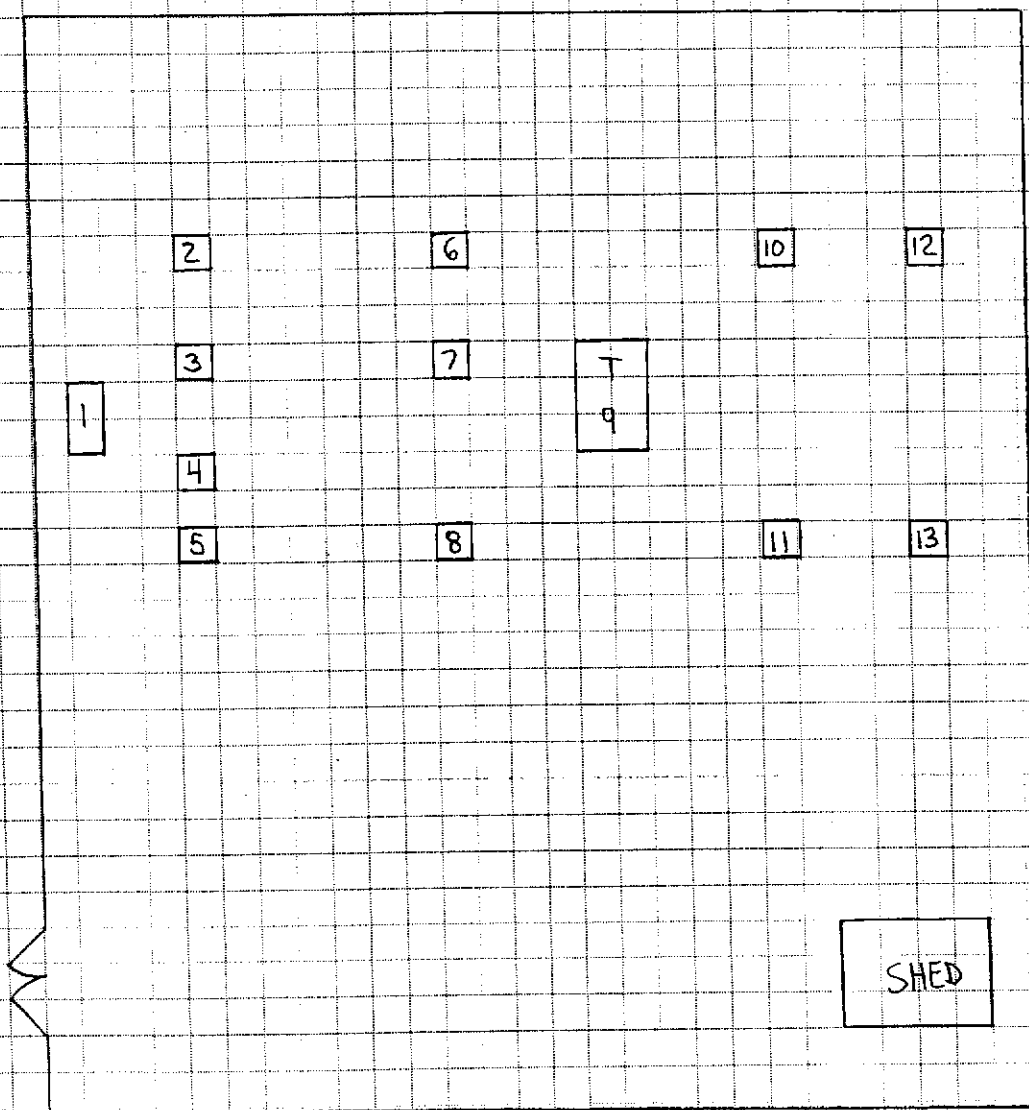
within 1 year
within 3 years
within 5 years

SUBSTATION SITE: Stephenville Crossing DATE INSPECTED: 24-Apr-02
West

| <u>Priority Rating</u> | <u>Priority Description</u> | <u>Recommended Time Frame</u> |
|------------------------|--|-------------------------------|
| 1 | Immediate corrective action required | within 1 year |
| 2 | Corrective action required to avoid increasing costs to repair | within 3 years |
| 3 | General maintenance item | within 5 years |
| 4 | No corrective action or maintenance required at this time | |

INSPECTION OF CONCRETE PADS & FOUNDATIONS
LOCATION SKETCH

SUBSTATION SITE: STEPHENVILLE CROSSING
STEPHENVILLE AREA



INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: Stephenville Gas Turbine West DATE INSPECTED: 25-Apr-02

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|---|--|-----------------|-----------------|
| #1 - STV-405L-DB Structure High Voltage | Minor scaling on top surface of pad, remainder of pad is in good condition (28 Mpa). | | 4 |
| #2 - STV-405L-B Sul Hex Breaker | Minor scaling on top surface of pad, remainder of pad is in good condition (34 Mpa). | | 4 |
| #3 - STV-405L-GS Structure High Voltage | Minor scaling on top surface of pad, remainder of pad is in good condition (36 Mpa). | | 4 |
| #4 - STV-401L-B Sul Hex Breaker | Minor scaling on top surface of pad, remainder of pad is in good condition (36 Mpa). | | 4 |
| #5 - STV-401L-DB Structure High Voltage | Minor scaling and pitting on top surface of pad. Remainder of pad is in good condition (34 Mpa). | Type A Repair | 3 |
| #6 - STV-407L-B Oil Circuit Breaker | Minor scaling on top surface of pad, remainder of pad is in good condition (32 Mpa). | | 4 |

Priority Rating

1
2
3
4

Priority Description

Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

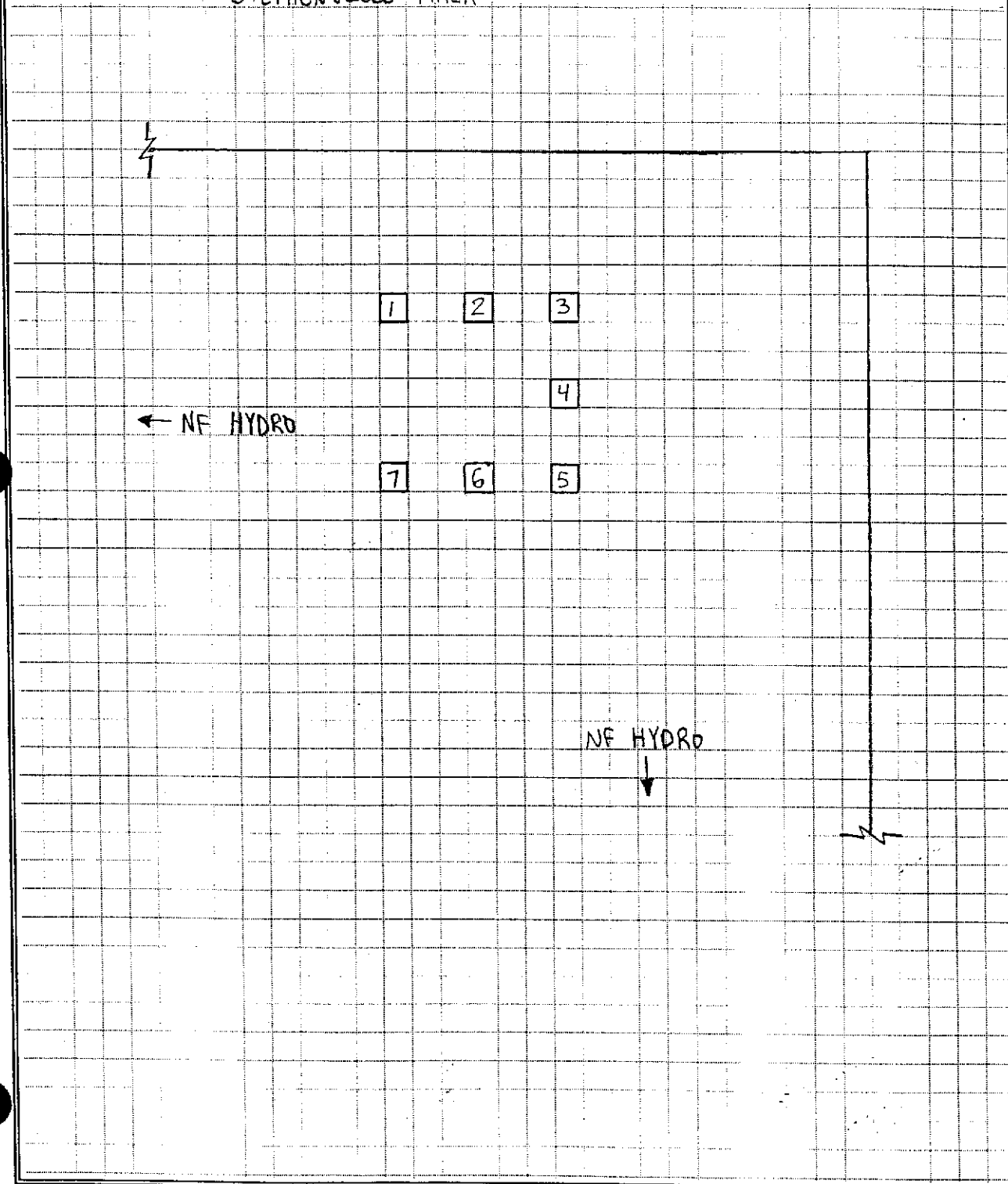
within 1 year
within 3 years
within 5 years

SUBSTATION SITE: Stephenville Gas Turbine DATE INSPECTED: 25-Apr-02
West

| <u>Priority Rating</u> | <u>Priority Description</u> | <u>Recommended Time Frame</u> |
|------------------------|--|-------------------------------|
| 1 | Immediate corrective action required | within 1 year |
| 2 | Corrective action required to avoid increasing costs to repair | within 3 years |
| 3 | General maintenance item | within 5 years |
| 4 | No corrective action or maintenance required at this time | |

INSPECTION OF CONCRETE PADS & FOUNDATIONS
LOCATION SKETCH

SUBSTATION SITE: STEPHENVILLE GAS TURBINE
STEPHENVILLE AREA



INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: St. George's
West

DATE INSPECTED: 24-Apr-02

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|--|---|--|-----------------|
| #1 - STG-407L-GS3 Structure High Voltage | Minor scaling on top surface of pad. Remainder of pad is in good condition (34 Mpa). | Future Monitoring | 4 |
| #2 - STG-T2-A Structure High Voltage | Rough finish on top surface of pad. Remainder of pad is in good condition (30 Mpa). | | 4 |
| #3 - Structure High Voltage | Rough finish and minor scaling on top surface of pad. One corner of pad seems to have been repaired and remains in good condition (34 Mpa). | Future Monitoring | 4 |
| #4 - STG-T1-A Structure High Voltage | One hairline crack midway across pad that extends down side approx. 150mm and has 2mm separation. Minor scaling on top surface of pad (35 Mpa). | Type C Repair for crack & Type A Repair for scaling. | 2 |
| #5 - T2 Transformer 200218 | Additional section poured alongside original pad. Pad is in good condition (44 Mpa). | | 4 |
| #6 - Structure | Minor pitting on top surface of pad and minor spalling on edges of pad. Remainder of pad is in good condition (36 Mpa). | Type A Repair | 3 |

Priority Rating

1
2
3
4

Priority Description

Immediate corrective action required
Corrective action required to avoid increasing costs to repair
General maintenance item
No corrective action or maintenance required at this time

Recommended Time Frame

within 1 year
within 3 years
within 5 years

INSPECTION OF CONCRETE PADS & FOUNDATIONS

SUBSTATION SITE: St. George's
West

DATE INSPECTED: 24-Apr-02

| Fdn/Pad Type & No. | General Condition | Recommendations | Priority Rating |
|--|---|--|-----------------|
| #7 - STG-403L-B Oil Circuit Breaker | Rough finish on top surface of pad. Otherwise pad is in good condition (26 Mpa). | | 4 |
| #8 - STG-403L-B SYNIZ Breaker | Minor scaling on top part of pad. Remainder of pad is in good condition (34 Mpa). | Future Monitoring | 4 |
| #9 - Structure High Voltage | Good condition (42 Mpa). | | 4 |
| #10 - T1 Transformer 200316 | Rough finish on top surface of pad. Otherwise pad is in good condition (24 Mpa). | | 4 |
| #11 - STG-T1-D Structure Low Voltage | Minor scaling on top surface of pad. One hairline crack that extends from top edge of pad down approx 200mm and has approx. 2mm separation. Remainder of pad is in good condition (28 Mpa). | Type C Repair for crack & Type A Repair for scaling. | 2 |
| #12 - Metering Box Structure | Rough finish and minor scaling on top surface of pad. Otherwise pad is in good condition (31 Mpa). | Future Monitoring | 4 |

Priority Rating

- 1
- 2
- 3
- 4

Priority Description

- Immediate corrective action required
- Corrective action required to avoid increasing costs to repair
- General maintenance item
- No corrective action or maintenance required at this time

Recommended Time Frame

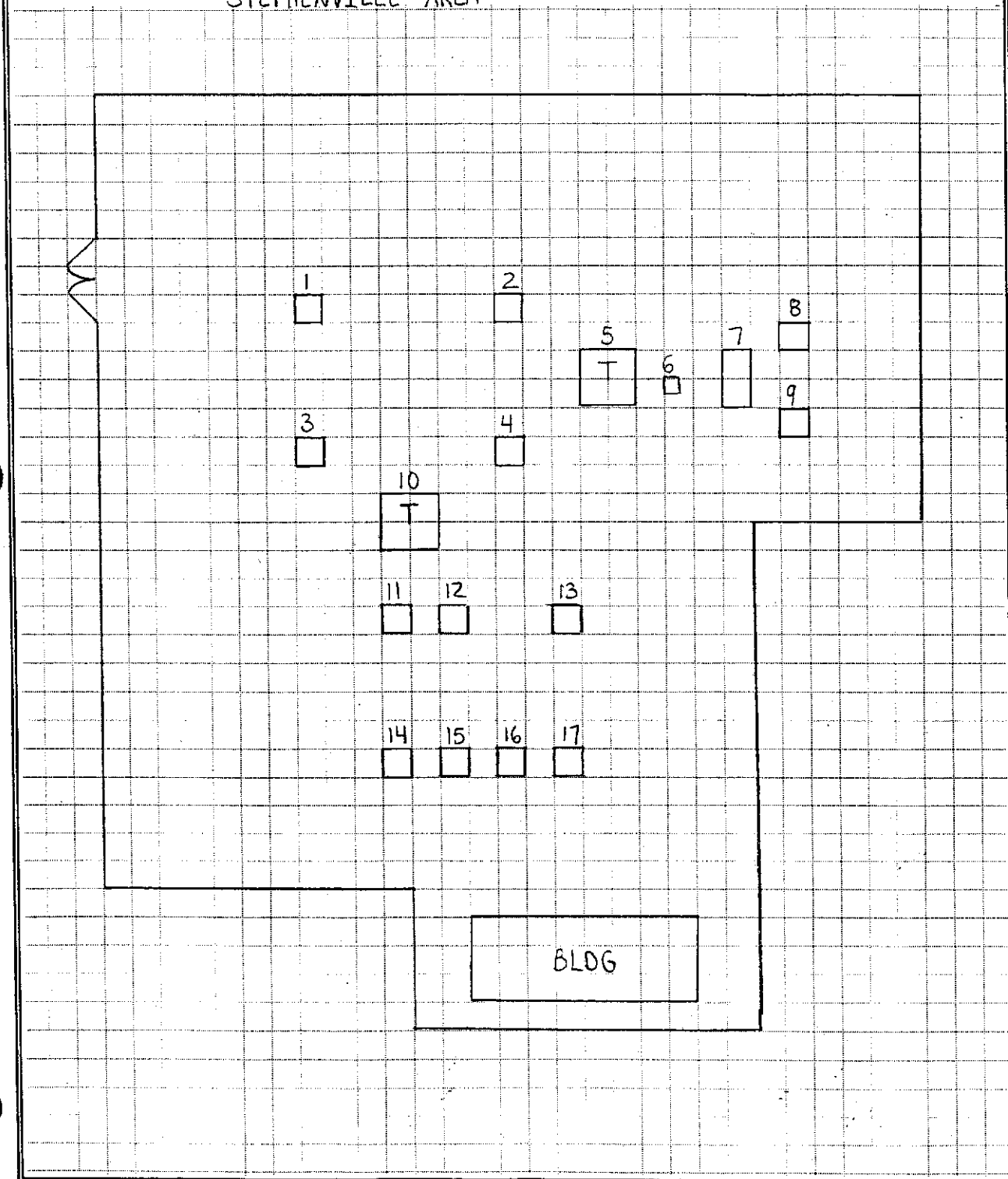
- within 1 year
- within 3 years
- within 5 years

SUBSTATION SITE: St. George's DATE INSPECTED: 24-Apr-02
West

| <u>Priority Rating</u> | <u>Priority Description</u> | <u>Recommended Time Frame</u> |
|------------------------|--|-------------------------------|
| 1 | Immediate corrective action required | within 1 year |
| 2 | Corrective action required to avoid increasing costs to repair | within 3 years |
| 3 | General maintenance item | within 5 years |
| 4 | No corrective action or maintenance required at this time | |

**INSPECTION OF CONCRETE PADS & FOUNDATIONS
LOCATION SKETCH**

SUBSTATION SITE: ST. GEORGE'S
STEPHENVILLE AREA



SUBSTATION SITE: Wheeler DATE INSPECTED: 24-Apr-02
West

| <u>Priority Rating</u> | <u>Priority Description</u> | <u>Recommended Time Frame</u> |
|------------------------|--|-------------------------------|
| 1 | Immediate corrective action required | within 1 year |
| 2 | Corrective action required to avoid increasing costs to repair | within 3 years |
| 3 | General maintenance item | within 5 years |
| 4 | No corrective action or maintenance required at this time | |

INSPECTION OF CONCRETE PADS & FOUNDATIONS
LOCATION SKETCH

SUBSTATION SITE: WHEELERS
STEPHENVILLE AREA

