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July 25, 2024

Priority Electric Corp.  
1343 McIntyre St  
Regina, Saskatchewan S4R 2M9

Attention: Quincy Sisson

Re: Normanview Mall Light Pole Foundation Assessment

Dear Quincy Sisson:

Priority Electric Corp. has requested KGS Group perform the assessment of a light pole foundation located in the Normanview Mall in Regina, SK. A light pole located East of the medical clinic and West of the Shell was struck by a vehicle and the property owner would like a structural assessment of the light post foundation. The purpose of the assessment was to assess the structural integrity of the foundation and determine if the foundation requires repairs.

On July 18, 2024, Andrew Wiebe, P.Eng. of KGS Group performed a visual review of the light post foundation. This letter outlines the observations of the light post foundation's current condition and recommendations for repair. No drawings of the light post foundation were provided. Photos are provided in Appendix A.

## **1.0 BACKGROUND**

The light pole foundation is a trapezoidal reinforced concrete structure. The top section measures 18 inches by 18 inches and tapers over a depth of 20 inches to a bottom section measuring 28 inches by 28 inches. The foundation consists of four 1-inch diameter anchor rods that are spaced 8 inches apart. These anchor rods extend their threaded ends approximately 3 inches above the top surface of the concrete.

## 2.0 OBSERVATIONS

The light pole foundation does not exhibit any significant cracks or spalling of the concrete, indicating that the structural integrity of the reinforced concrete remains in good condition. However, one of the four anchor rods has been sheared off at 1 inch from the top of the concrete, and the remaining extension of this anchor rod is slightly bent. The remaining anchor rod does not exhibit any fracture or stress cracks; therefore, it is still usable after repair. The sheared anchor rod does not provide sufficient thread for the bolt connection to the light pole. Therefore, repair of the damaged anchor rod is required.

The remaining three anchor rods were not damaged and are in good condition. The concrete around all anchor rods does not exhibit any signs of localized damage so no concrete repair is required.

## 3.0 CONCLUSION AND RECOMMENDATIONS

Upon completion of the assessment, it was determined that the structural integrity of the light pole foundation remains in good condition, except for the sheared anchor rod. This anchor rod requires repairs prior to the installation of a new light pole.

A common method for anchor rod repair involves cutting or drilling another hole in the concrete foundation and installing a drilled-in epoxy type anchor rod. However, due to the close spacing of the existing anchor rods, this approach is not viable in this case. Therefore, it is recommended to repair the sheared anchor rod by extending it. If the base plate's bolt pattern of the new light pole does not align with the existing anchor rod pattern, it is also recommended to modify the base plate accordingly.

According to AISC Design Guide 01 – Base Plate and Anchor Rod Design, when an anchor rod is too short, it can be repaired by extending the anchor rod using one of the following methods. Figure 1 shows that the first method involves using a coupling nut to extend the anchor rod. This strategy requires enlarging the anchor rod hole to accommodate the coupling nut and using oversized shims to allow the plate washer and nut to clear the coupling nut. Table 1 lists the dimensions of typical coupling nuts that can be used to determine the required hole size and plate fillers. Figure 2 shows that the second method involves butt-welding a piece of threaded rod to the existing rod. This process requires special detailing, including a run-out tab, to create a proper groove weld. If necessary, the run-out tab can be trimmed off after welding, and the rod can be ground flush. Figure 3 shows that the third method involves welding two lap plates to the existing threaded rod. All three repair strategies should be field confirmed to ensure their applicability to this specific instance.

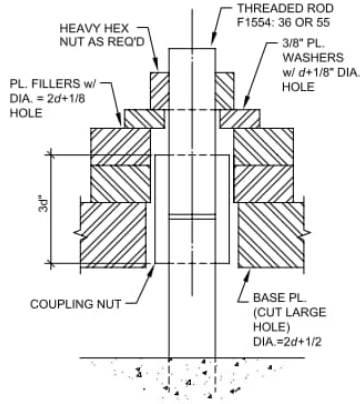
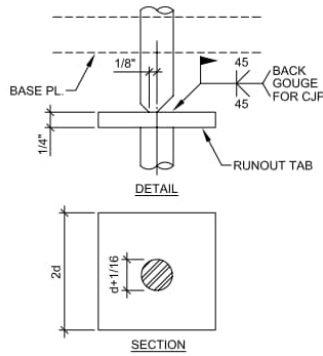


Figure 1: Coupling nut detail



NOTE: CAN TRIM & GRIND RUN OFF TAB AFTER WELDING IF REQD  
MATERIAL: F1554: 36 OR 55 WITH SUPPLEMENT S1.

Figure 2: Groove weld splice detail

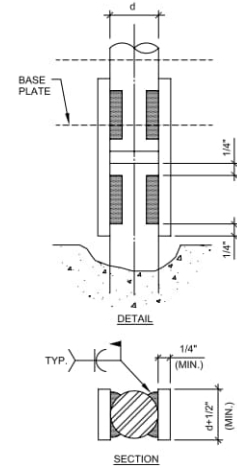


Figure 3: Lap plate splice detail

**TABLE 1: HEX COUPLING NUT DIMENSIONS**

Diameter of Rod, in.	Width Across Flats, in.	Width Across Corners, in.	Height of Nut, in.
3/4	1 1/8	1 5/16	2 1/4
7/8	1 5/16	1 1/2	2 5/8
1	1 1/2	1 3/4	3
1 1/4	1 7/8	2 3/16	3 3/4
1 1/2	2 1/4	3 1/8	4 1/2
1 3/4	2 3/4	3 3/16	5 1/4
2	3 1/8	3 5/8	6
2 1/2	3 7/8	4 1/2	7 1/2

Dimensions based on IFI #128 of Industrial Fastener Institute. Material conforms to ASTM A563 Grade A.

If there are any questions or concerns, please contact Gordon Chui at [gchui@kgsgroup.com](mailto:gchui@kgsgroup.com).

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## STATEMENT OF LIMITATIONS AND CONDITIONS

### Limitations

This report has been prepared for Priority Electric Corp.. This report represents KGS Group's professional judgment and exercising due care consistent with the preparation of similar reports. The information, data, recommendations and conclusions in this report are subject to the constraints and limitations in the Agreement and the qualifications in this report. This report must be read as a whole, and sections or parts should not be read out of context.

This report is based on information made available to KGS Group by The Priority Electric Corp Unless stated otherwise, KGS Group has not verified the accuracy, completeness or validity of such information, makes no representation regarding its accuracy and hereby disclaims any liability in connection therewith. KGS Group shall not be responsible for conditions/issues it was not authorized or able to investigate or which were beyond the scope of its work. The information and conclusions provided in this report apply only as they existed at the time of KGS Group's work.

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# APPENDIX A

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Photo Log

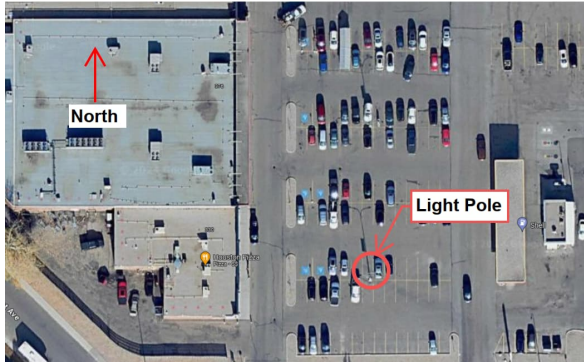


Photo 1: Light Pole Location



Photo 2: Light Pole Foundation



Photo 3: Sheared anchor rod



Photo 4: Bent anchor rod