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| <b>SITE NUMBER AND NAME:</b><br>NC094 – 100 Ave at NB AHD                                    | <b>HIGHWAY AND KM:</b><br>216:06, km 20.550           | <b>PREVIOUS INSPECTION:</b><br>June 20, 2024     | <b>CURRENT INSPECTION:</b><br>May 21, 2025            |
| <b>LEGAL DESCRIPTION:</b><br>NW-32-52-25-W4  | <b>NAD83 COORDINATES:</b><br>UTM12U 5935400N, 323784E |  | <b>RISK ASSESSMENT:</b><br>PF: 13   CF: 4   Total: 52 |
| <b>AVERAGE ANNUAL DAILY TRAFFIC (AADT):</b><br>5,230 (2024, Traffic from west turning north) |   | <b>CONTRACTOR MAINTENANCE AREA (CMA):</b><br>AHD |   |

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| <b>SUMMARY OF INSTRUMENTATION:</b><br>No instrumentation installed at this site.<br><br><b>LAST READING DATE:</b> N/A   | <b>INSPECTED BY:</b><br>Stantec: Leslie Cho, Sonja Pharand<br>TEC: Kristen Tappenden, Sib Phulpoto |
| <b>PRIMARY SITE ISSUE:</b><br>Slumping of the side slope embankment south of 100 Ave between two overpass bridges (81038 S2-7 and 81038 N1-1) for the Anthony Henday Drive (AHD). |  |
| <b>APPROXIMATE DIMENSIONS:</b><br>18 m wide x 17 m long x 6 m high  |  |
| <b>DATE OF ANY REMEDIAL ACTION:</b><br>No remedial action completed to date. Jersey barriers anchored into ground at toe of slope in Fall 2022 to temporarily retain landslide.   |  |

| ITEM              | CONDITIONS EXIST |    | DESCRIPTION AND LOCATION   | NOTICEABLE CHANGE FROM LAST INSPECTION |    |
|-------------------|------------------|----|--|--|----|
|                   | YES              | NO |  | YES                                    | NO |
| Pavement Distress |                  | X  |  |  |    |
| Slope Movement    | X                |    | Slump on the vegetated embankment south of 100 Ave on-ramp to northbound Anthony Henday Drive, between the two Anthony Henday overpass bridge abutments. Scarp has retrogressed since 2022 and toe is pushing against jersey barriers. Surficial material continues to move downslope. | X                                      |    |
| Erosion           |                  | X  |  |  |    |
| Seepage           |                  | X  |  |  |    |
| Culvert Distress  |                  | X  |  |  |    |
| Other             | X                |    | Pooling water at top of slope at tension barrier, light standard, and low area. Pooling water along south ditch of 100 Ave.  |  | X  |

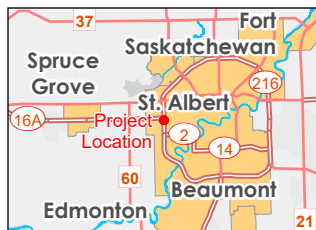
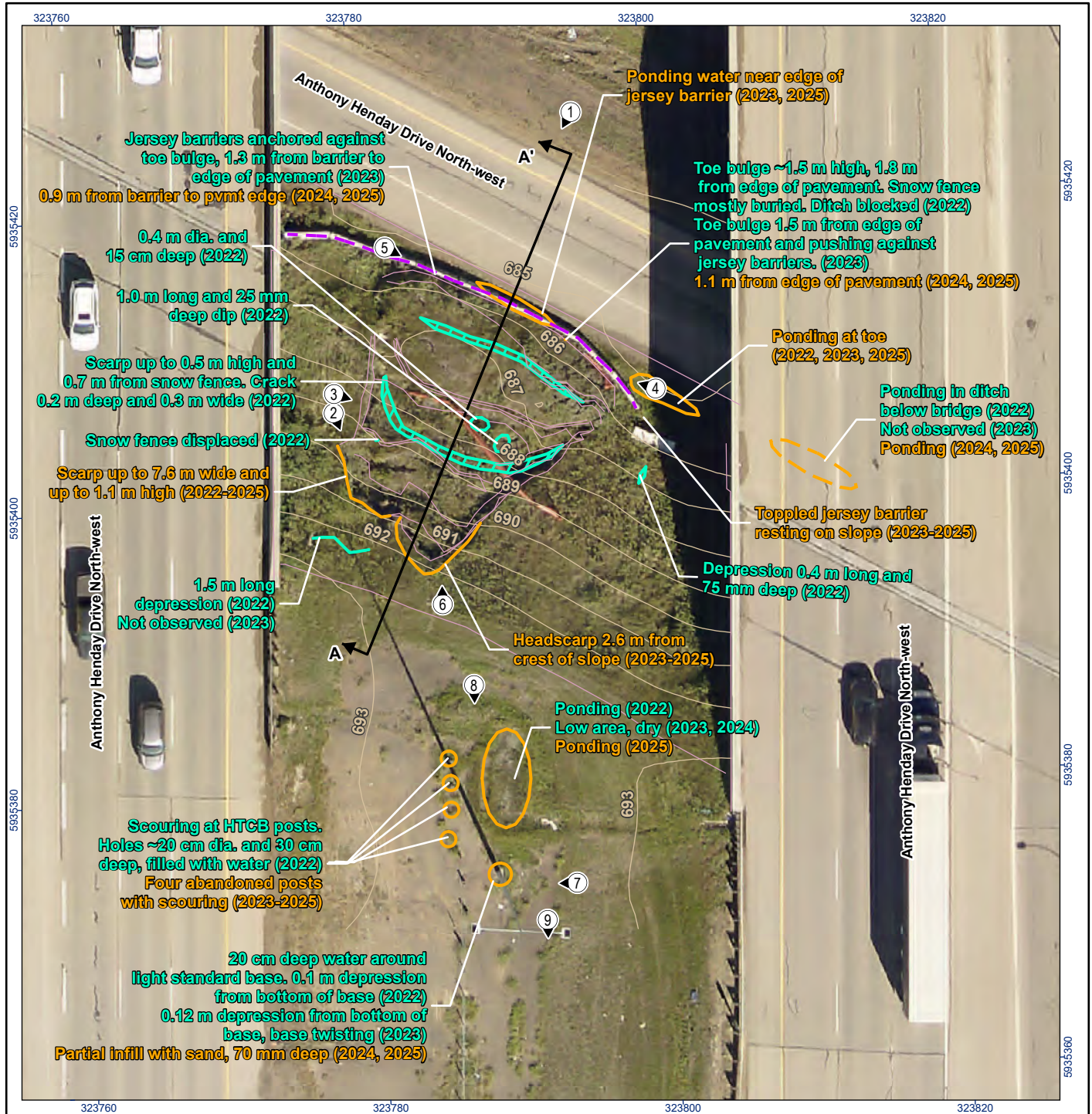
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|---|
| <b>COMMENTS</b> <ul style="list-style-type: none"> <li>The overall embankment is about 33 m wide and 8 m high. The slump exists between the two bridge abutments south of the 100 Avenue on-ramp to AHD northbound (Photo 1).</li> <li>The landslide is slightly west of center of the embankment. The scarp was measured to be approximately 2.6 m from the crest of the embankment, similar to the previous two inspections. The scarp was observed at the upper portion of the embankment and remains up to 1.1 m high (Photos 1 to 6).</li> <li>The east and west flanks of the landslide are approximately 12.5 m and 4.6 m from the east and west bridge abutment walls, respectively. These measurements have not changed since the 2022 investigation.</li> <li>The toe bulge appears relatively unchanged, with a distance of 1.1 m to the edge of pavement. The toe bulge remains approximately 1.5 m high (Photos 4 and 5).</li> </ul> |
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- Jersey barriers have been placed around the toe of the landslide and anchored into the ground. The edge of the jersey barrier is 0.9 m from the edge of the pavement, similar to 2024's measurement, and the toe of the slump is pushed against the back of the jersey barriers (Photos 4 and 5).
- One jersey barrier at the far east side of the slump was observed to be toppled in 2023 and remains resting against the slope.
- The highway surface (100 Avenue and AHD) currently does not appear to be affected by the embankment failure.
- Snow fence previously placed above the slump has shifted down the embankment, and most of the snow fence placed below the slump is buried beneath the toe bulge. The snow fence appeared to be in a similar position as observed in 2023.
- Surface material within the slide has moved further downslope, exposing more material near the scarp (Photo 2).
- Ponding water was observed to the east of the embankment toe.
- The settlement at the base of the light standard near the crest of the embankment appeared similar to 2024, with the depression measured 70 mm deep (Photo 7).
- Ponded water was observed north of the light standard within the low area during this site visit. Water appears to be directed to this location from the overpass bridges from both sides of the embankment (Photo 8).
- An area within the highway median, south from the light standard near the crest of the embankment, is lacking vegetation (Photo 9).
- During the call-out inspection in 2022, the exposed soils within the slump appeared wet and pieces of concrete and occasional pockets of grey fill material were observed throughout the slope. The grey fill material is believed to be from the bottom ash used during bridge abutment construction.
- Samples of the exposed soil were collected in June 2022 approximately at mid-slope and near the east corner of the toe. The material appears to be soft clay, mottled brown and grey, and moist to wet. Atterberg limits tests performed on the samples indicate that the material is high plastic with liquid limits of 53% and 58%, and plastic limits of 20% and 19%, for the mid-slope and toe samples, respectively.
- The landslide appears to be a shallow failure limited to the bridge/embankment fill. The landslide may be due to a combination of poor-quality embankment backfill and softening of the embankment fill near mid-slope. In addition, typical bridge and embankment compaction methods often result in less compaction at the slope face since compaction equipment cannot adequately compact the edges and slopes. These less compacted areas could allow water to infiltrate the slope more easily.

#### RECOMMENDATIONS

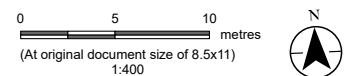
- The MCI and/or HMC should monitor the slump for progression towards 100 Avenue and the jersey barriers should be adjusted or maintained, as necessary.
- Stantec has completed the landslide remediation design for removal and replace. The design includes excavating the landslide mass in benches with an overall slope of 2H:1V followed by rebuilding the embankment with granular fill reinforced with geogrid.
- TEC could consider annual surveys to monitor the movement of the slide.
- Site inspection frequency should continue annually.

| PREPARED BY: Sonja Pharand, P.Eng. | REVIEWED BY: Leslie Cho, M.Eng., P.Eng. | PERMIT TO PRACTICE |
|------------------------------------|---|--------------------|
|                                    |   |                    |



**Notes**  
 1. Coordinate System: NAD 1983 CSRS UTM Zone 12N  
 2. Data Sources: Geogratis, ©Department of Natural Resources Canada, All rights reserved.  
 3. Imagery: City of Edmonton, 2024.

- ① Photos and Direction
- Jersey Barrier
- 2025 Observation
- Previous Observation
- 2022 Survey
- Ground Elevation Contour (m AMSL)
- ↔ Cross-Section Location



**Stantec**

Project Location  
 City of Edmonton,  
 Alberta

Prepared by MK on 2025-07-28  
 QR by SP on 2025-07-29  
 IR by LC on 2025-07-30

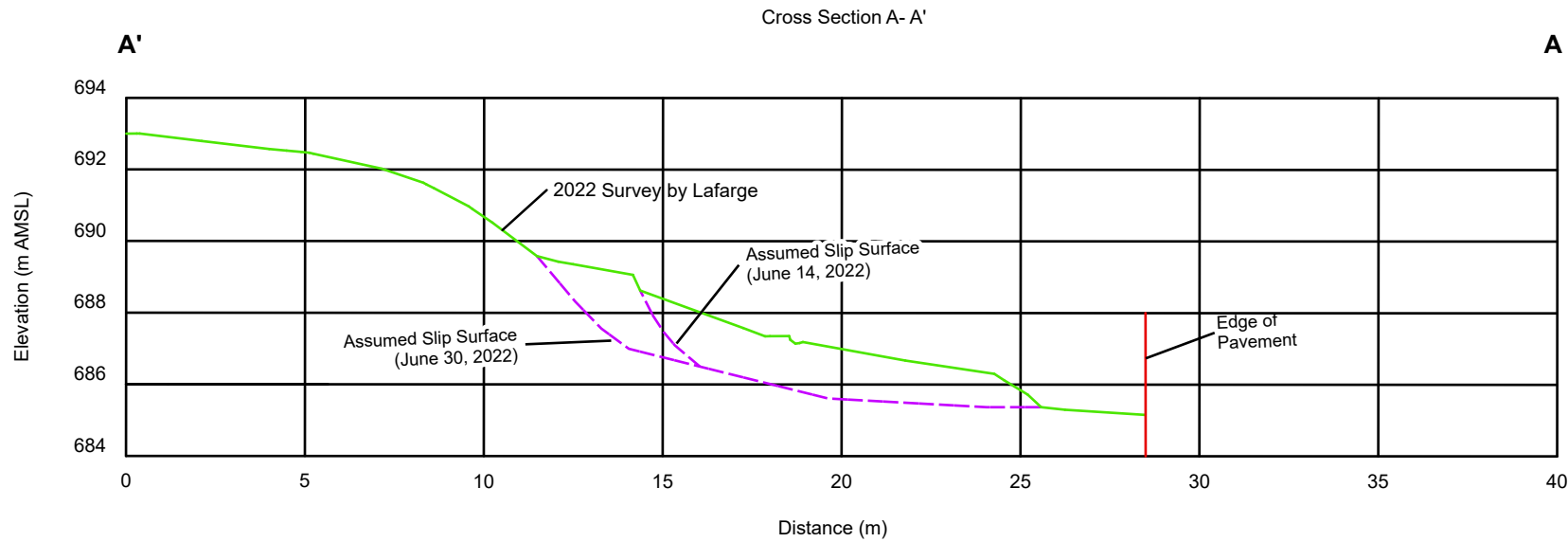
Client/Project  
 Transportation and Economic Corridors  
 Geohazard Monitoring Program  
 NC094 – 100 Ave at NB AHD

Figure No.  
 1

Title  
 Site Plan

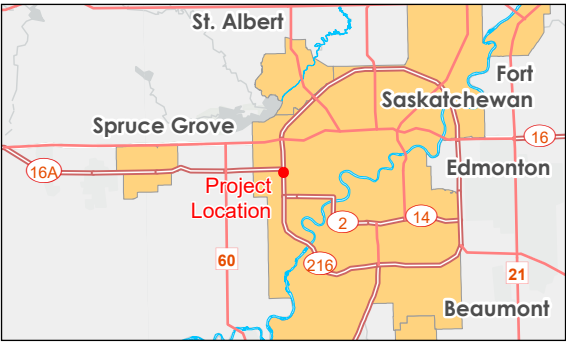


\\cd1001-c200\workgroup\1233\active\12331522\03\_data\gis\_cad\figures\annual\_inspection\NC094\2025\_Figure\_fig\_2\_cross\_section.nc094 Revised: 2025-07-28 By: MKuHl



- Cross-Section Location
- Approximate Ground Surface
- Assumed Slip Surface

- Notes**
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  3. Imagery: City of Edmonton, 2024.



**Project Location**  
City of Edmonton,  
Alberta

Prepared by MK on 2025-07-28  
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**Client/Project**  
Transportation and Economic Corridors  
Geohazard Monitoring Program  
NC094 – 100 Ave at NB AHD

123315222

**Figure No.**  
**2**

**Title**  
**Ground Profile of Section A-A'**



2025 Site Inspection Photos at NC094



**Photo 1:** Slump on south embankment. Looking southwest.



**Photo 2:** Scarps near top of slump. Looking southeast.



2025 Site Inspection Photos at NC094



**Photo 3:** Mid to upper portion of slump with displaced snow fence, looking east.



**Photo 4:** Toe bulge of slump with scarping/cracking. Looking northwest.



2025 Site Inspection Photos at NC094



**Photo 5:** Toe of the embankment/slump. Looking southeast.



**Photo 6:** Slumping viewed from the crest of the embankment. Looking north.



2025 Site Inspection Photos at NC094



**Photo 7:** Scouring/settlement of ground around the light standard closest to the embankment. Looking west.



**Photo 8:** Low area south of embankment crest, ponded water present. Looking south.



2025 Site Inspection Photos at NC094



**Photo 9:** Highway median, lacking vegetation. Looking south.