



November 30, 2023

RE: Application for Funding Strategic Transportation Infrastructure Program- Local Road Bridge Program

On behalf of Kneehill County, funding is requested under the Local Road Bridge Program (LRB).

I hereby certify that the information contained in the enclosed application is correct and complete at the date of submission. I also certify that no amounts for Goods and Services Tax are included in the cost estimates for the project.


I understand that this project must comply with all applicable legislation and with all of the guidelines for the Program. I understand that any change to the scope or the intended expenditures indicated in the enclosed application will require an amendment approved by the department.

Sincerely,

Ken King,

Reeve

Kneehill County

A decorative graphic consisting of three horizontal, overlapping brushstrokes in shades of blue and green, located at the bottom left of the page.

Box 400, 1600 - 2nd Street NE, Three Hills, Alberta, T0M 2A0
Phone: 403-443-5541 · Toll Free: 1-866-443-5541
Email: office@kneehillcounty.com
www.kneehillcounty.com



LOCAL ROAD BRIDGE FUNDING REQUEST

| | | | |
|-----------------|----------------|---------------|------------------|
| Bridge File: | 13477 | Municipality: | Knecchill County |
| Legal Location: | NW-18-33-23-W4 | Date: | NOV 30, 2023 |

SUMMARY INFORMATION

| | | | | | | | |
|------------------------------|-----------------------------|------------------------------|-----|------------------------------|------|--|------|
| Existing Structure: | Bridge Culvert | | | | | | |
| Year Built: | 1953 | Estimated Remaining Life: | | | 2025 | | |
| Restricted Loading: | No <input type="checkbox"/> | Yes <input type="checkbox"/> | CS1 | | CS2 | | CS3 |
| Date of Last BIM Inspection: | July 14, 2022 | | | Structural Condition Rating: | | | 22.2 |
| Sufficiency Rating: | 37.8 | | | AADT: | | | 78 |
| Detour Length: | 5km | | | | | | |

OPTIONS CONSIDERED

| | | | |
|-----------------------------|---|--------------------|---------|
| Maintenance Option Cost: | | Net Present Value: | |
| Rehabilitation Option Cost: | \$250,000 | Net Present Value: | Limited |
| New Culvert Option Cost: | \$572,548 | Net Present Value: | |
| New Bridge Option Cost: | | Net Present Value: | |
| Comments on Options: | Installing a liner has limited benefits for improving the structure and safety. | | |

REQUEST

(Choose one of: Engineering Assessment, Design, Maintenance, Rehabilitation, Replacement)

| | | | |
|---|-------------|-------------------------------------|-----------|
| Request Type: | Replacement | | |
| Total Project Cost: | 572,548 | Industry Contribution: | |
| Benefit Cost Ratio = $7840 \times \text{AADT} \times \text{Detour Length} / (\text{Total Project Cost} - \text{Industry Contribution})$: | | | 5.3 |
| Municipal Share (25%): | \$143,137 | Alberta Transportation Share (75%): | \$429,411 |
| Year Requested: | 2024 | | |

ADDITIONAL BENEFITS OF THE PROJECT

(Describe any Economic Development, Safety Improvements, Alignment with GoA Initiatives etc.)

Replace two Bridge culverts with one allowing for proper slopes. Improving safety for both agricultural and oil/gas, Benefitting the entire area and Reducing Pressures on adjacent Roads.

| | |
|--------------------|-----------|
| Municipal Official | Signature |
|--------------------|-----------|

Strategic Transportation Infrastructure Program

2024 Application for Funding
Local Road Bridge Program (LRB)



BF 13477

NW-18-33-23-W4M

Introduction

Kneehill County has 213 bridge structures and culverts throughout the municipality. The majority of these bridges are bridge culverts larger than 1500 mm. Most of the structures were built in the 1950s, with an estimated life span of 50 to 60 years.

Bridges are on a five-year major inspection cycle by the province of Alberta. In coordination with these inspections and Kneehill County's long-term Road Network Plan, we are working to ensure sustainable transportation corridors throughout our County by ensuring bridge and bridge culverts are maintained over time and replaced when at the end of their life cycle.

Please accept this as our request for funding for the bridge replacement (BF 13477).

Thank you,



Mike Ziehr, CET, CLGM

Director of Infrastructure

Basic Information

| | |
|--|--|
| <i>Application Date:</i> | November 30, 2023 |
| <i>Name of Project:</i> | Local Road Bridge Funding Request |
| <i>Project Location:</i> | BF 13477 - NW-18-33-23-W4M |
| <i>Map:</i> | Attached as Appendix A |
| <i>Applicant:</i> | Kneehill County |
| <i>Address:</i> | Box 400 1600-2 nd Street NE Three Hills, AB T0M 2A0 |
| <i>Contact Information:</i> | Mike Ziehr, CET, CLGM Director of Infrastructure 403-443-5541 phone 403-443-5115 fax mike.ziehr@kneehillcounty.com |
| <i>Engineer:</i> | McElhanney 100, 402 – 11 th Ave SE, Calgary AB Canada T2G 0Y4 |
| <i>Total Project Costs:</i> | BF 13477 - \$572,548 |
| <i>LRB Program Funding Requested:</i> | LRB (75% of eligible costs)- \$429,411 |
| <i>Source of Balance:</i> | Kneehill County (25% of eligible costs)- \$143,137 |
| <i>Estimated Completion Date:</i> | December 31, 2024 |

Project Benefits

Project Rationale

Kneehill County continues to invest in their road network system. Along with a focus on securing gravel reserves, Kneehill County is developing a comprehensive road plan that identifies major maintenance and road rebuilds. A major component of this road plan is ensuring our bridge structures are safe and reliable.

Bridges are on a five-year major inspection cycle by the Province of Alberta. In coordination with these inspections and Kneehill County’s Road Network Plan, the County is working to maintain sustainable transportation corridors throughout the county by ensuring bridge and bridge culverts are replaced or rehabilitated when at the end of their life cycle.

Traffic Volume

BF 13477 - NW-18-33-23-W4M 78 AADT/ year

Increased Travel Distance

BF 13477 - NW-18-33-23-W4M 5 km

Safety Benefits

The provision of secure and dependable transportation corridors for our residents, producers, industry, and visitors to the County is of the utmost importance to Kneehill County. In accordance with the regular inspections, BF 13477 is nearing the end of its life cycle and will need to be replaced to ensure that the local road may continue to remain open with no future restrictions.

Several areas in Kneehill County have experienced overland flooding during the Spring. Ensuring bridges and bridge structures such as BF 13477 remain fully functional during these peak flows protects valuable road infrastructure, agricultural lands, and other private resident infrastructure. It also ensures safe travel and reduces the risk of closures or restricted access to lands or residences.

Economic Benefits

Kneehill County is primarily an agricultural County. With the main provincial railway running through Kneehill County, the County holds three large grain handling terminals. In 2020, Kneehill County diversified its agriculture industry by approving a ten-acre green house that will eventually cover 70 acres after completion.

Other diverse industries that make up Kneehill County include oil and gas extraction, which has been ongoing for many years. Over the years, the County has observed a rise in the renewable energy sector including wind and solar.

All these industries contribute greatly to the economic sustainability of the County and surrounding municipalities. However, increased traffic and activity do have an impact on Kneehill County's infrastructure. It is vital that our road network system is maintained, including aging bridge structures, so that all road users can safely deliver their product in a timely manner.

Kneehill County has classified their road network into three categories:

- 1. Arterial Roads-** These are the highest level of road classification and are intended to serve traffic movement as their primary consideration with access to adjacent land as a secondary consideration. They are typically County roads which experience the highest volumes of traffic and provide connections from provincial highways, other arterial roads, collector roads, and neighboring municipalities.
- 2. Collector Roads-** These are the second highest level of road classification and consider serving traffic movement as an equally important consideration as providing access to adjacent land. They typically provide connections from arterial roads, other collector roads, local roads, and hamlets.
- 3. Local Roads-** These include all other roads that are not classified as an arterial or collector road and are intended to provide access to adjacent land as their primary consideration with traffic movement as a secondary consideration. They are typically low-volume roads that serve local traffic and are not generally used for long-distance travel.

Bridge file road classification.

BF 13477- NW-18-33-23-W4M

Local Road

Bridge Culvert

Partnership

No other funding partners have been identified as part of this project.

Outside Funding

Kneehill County has reviewed various other grant programs that would support such a project. However, we have not been successful to date with any other funding opportunities.

Supporting Documentation

Included in this package is the most recent BIM inspection report for the bridge file. Recent photos in support of the inspections are also included where available.

Project Information

Project Description

Funding is requested for the following bridge file;

BF 13477 - NW-18-33-23-W4M

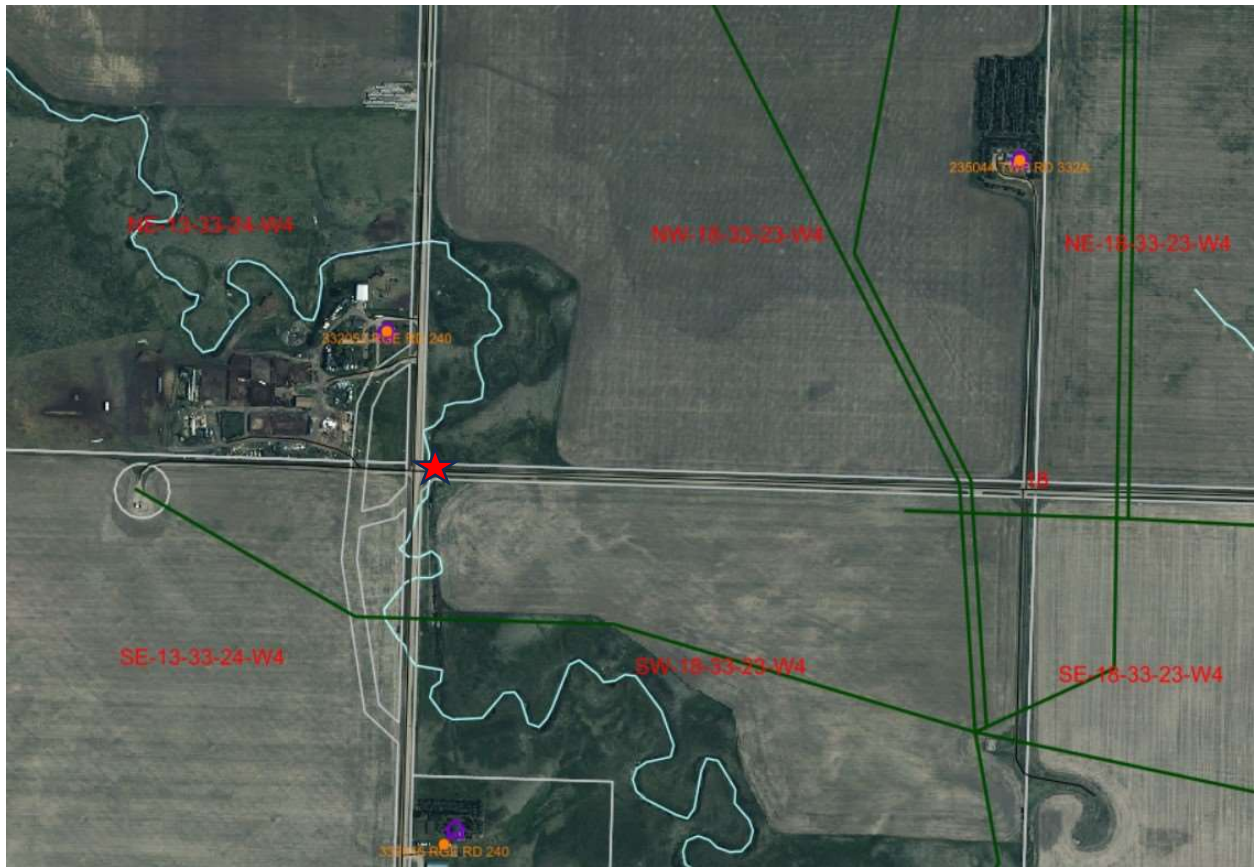
Replacement of Structure

Financial Information

The estimated cost for the bridge file id as indicated below. It is anticipated that the bridge will be complete by the end of 2024.

| | 2024 |
|----------------------------|-----------|
| LRB Funds: | |
| BF 13477 - NW-18-33-23-W4M | \$429,411 |
| Applicant: | |
| BF 13477 - NW-18-33-23-W4M | \$143,137 |
| Other Funds: | \$0 |
| Total: | \$572,548 |

Appendix A- Map of BF 13477 Kneehill County



Bridge Inspection

| | |
|-------------------------------------|-----------------|
| Bridge File: | BF 13477 |
| Location: | NW-18-33-23-W4M |
| Year Built: | 1953 |
| Structural Condition Rating: | 22.2% |

| Bridge Culvert Inspection | | | |
|---------------------------|---|---------------------|------------------|
| Bridge File Number | 13477 -1 Bridge Culvert | Form Type | CULM |
| Year Built | 1953 | Lot No. | 3 |
| Bridge or Town Name | TROCHU | Inspector Name | Calvin Roberts |
| Located Over | TRIBUTARY TO GHOSTPINE CREEK, 3.50.14, WATERCRS-ST | Inspector Class | BR CLS A |
| Located On | LOCAL ROAD | Assistant Name | |
| Water Body Cl./Year | | Assistant Class | |
| Navigabil. Cl./Year | | Inspection Date | 14-Jul-2022 |
| Legal Land Location | SW SEC 18 TWP 33 RGE 23 W4M | Arrive Time | 11:10 |
| Longitude, Latitude | -113:15:52, 51:49:51 | Depart Time | 12:00 |
| Road Authority | KNEEHILL COUNTY | Data Entry By | Monique Johnston |
| Contract Main. Area | CMA20 | Data Entry Date | 23-Aug-2022 |
| Clear Roadway/Skew | 6.3 / | Reviewer Name | Garry Roberts |
| AADT/Year | 78 / 2022 (E) | Review Date | 19-Jul-2022 |
| Road Classification | RLU-208G-60 | Dept. Reviewer Name | Glenn McCarron |
| Detour Length (km) | 3 | Dept. Review Date | 06-Sep-2022 |
| | | Follow-Up By | |

| Bridge Culvert Information | | | | | | | | |
|----------------------------|--------|------|----------------|------|--------|---------------|--------------------|-------|
| Number of Culverts | 2 | | | | | | | |
| Pipe # | Barrel | Span | Rise (or Dia.) | Type | Length | Corr. Profile | PI./Slab Thickness | Shape |
| 1 | MAIN | - | 1500 | SP | 16.7 | 152X51 | 3.0 | ROUND |
| 2 | MAIN | - | 1500 | SP | 14.7 | 152X51 | 3.0 | ROUND |
| Special Features | | | | | | | | |
| Special Features Comment | | | | | | | | |

| Utilities (Located at) | | | |
|------------------------|---|---------------|----|
| Utility Attachments | | | |
| Telephone | South row | Gas | |
| Power | North row and runs to west | Municipal | |
| Others | | Problem (Y/N) | No |
| Remarks | Cable is ripped through roof of east culvert. | | |

| Approach Road / Embankment | | | | |
|--|-------|----------|----------|--|
| | | Last | Now | Explanation of Condition |
| Horizontal Alignment | | 5 | 5 | Located 20m E of intersection. |
| Vertical Alignment | | 6 | 6 | |
| Roadway Width (m) | 6.300 | | | |
| Embankment | | 4 | 4 | Sharp shoulders above. 0.7m over west pipe. |
| Sideslope (__:1) | 1.0 | | | |
| (Height of Cover(m) : 0.4) | | | | |
| Guardrail (Y/N) | No | | | |
| Approach Road / Embankment General Rating | | 5 | 5 | |

| Upstream End | | | | |
|---|-------|------|-----|--------------------------|
| Culvert Component | | Last | Now | Explanation of Condition |
| (Pipe # : 1, Span Type: Primary Span) | | | | |
| Direction | | N | | West pipe |
| End Treatment (Concrete, Steel, Others, None) | STEEL | | | |
| Headwall | | X | X | |
| Collar | | X | X | |
| Wingwalls | | X | X | |
| (Shape :) | | | | |

| Upstream End | | | | |
|--|-------|----------|----------|--|
| Culvert Component | | Last | Now | Explanation of Condition |
| (Pipe # : 1, Span Type: Primary Span) | | | | |
| Cutoff Wall | | X | X | |
| Bevel End | | 3 | 2 | Severe floor perforations - floor 90% perforated. Drift and plywood accumulated at inlet. |
| Heaving (mm) | 0 | | | |
| Invert Above/Below Stream Bed | ABOVE | | | |
| Above/Below (mm) | 150 | | | |
| Scour Protection | | 4 | 4 | |
| (Type : RIP RAP) | | | | |
| (Avg. Rock Size(mm) : 300) | | | | |
| Scour/Erosion | | 4 | 4 | Minor scour. |
| Beavers (Y/N) | No | | | |
| Upstream End General Rating | | 3 | 2 | Non- hazard. |

| Bridge Culvert Barrel | | | | |
|--|-------------|------|-----|---|
| Culvert Component | | Last | Now | Explanation of Condition |
| (Pipe # : 1, Primary Span, Location Code: MAIN, Span (mm): , Rise (mm): 1500, Type: SP) | | | | |
| Barrel Last Accessible Date | 14-Jul-2022 | | | W pipe. |
| Special Features | | | | |
| Special Feature | | | | |
| (Type :) | | | | |
| Special Feature | | | | |
| (Type :) | | | | |
| Roof | | 7 | 7 | |
| Measured Rise (mm) | 1487 | | | |
| Measured At Ring No. | 2 | | | |
| Sag (mm) | 13 | | | |
| Percent Sag | 1 | | | |
| Sidewall | | 7 | 7 | |
| Measured Span (mm) | 1528 | | | |
| Measured At Ring No. | 2 | | | |
| Deflection (mm) | 28 | | | |
| Percent Deflection | 1 | | | |
| Floor | | 3 | 2 | Severe floor perforations in R1, extensive perforations in R2. Isolated perforations, R3, R4 and R5. |
| Bulge (mm) | 0 | | | |
| Measured At Ring No. | | | | |
| Abrasion (Y/N) | No | | | |
| Circumferential Seams | | 7 | 7 | |
| Separation (mm) | 0 | | | |
| Longitudinal Seams | | 7 | 7 | |
| Total No. of Cracked Rings | 0 | | | |
| Total No. of Rings with Two Cracked Seams | 0 | | | |
| Min. Remaining Steel Between Cracks (mm) | | | | |
| Proper Lap (Y/N) | No | | | |
| Longitudinal Stagger (Y/N) | Yes | | | |
| Coating | | 3 | 2 | Corrosion with pitting on floor. Severe floor perforations in R1, extensive perforations in R2. Isolated perforations R3-R5. |
| Corrosion By Soil (Y/N) | No | | | |
| Corrosion By Water (Y/N) | Yes | | | |

| Bridge Culvert Barrel | | | | |
|---|------|----------|----------|--|
| Culvert Component | | Last | Now | Explanation of Condition |
| (Pipe # : 1, Primary Span, Location Code: MAIN, Span (mm): , Rise (mm): 1500, Type: SP) | | | | |
| Camber POS/ZERO/NEG | ZERO | | | |
| Ponding (Y/N) | No | | | |
| Fish Passage Adequacy | | 5 | X | |
| Baffle | | X | X | |
| (Type :) | | | | |
| Waterway Adequacy | | 5 | 5 | (Water level above culvert at peak flow. 29Aug2007). |
| Icing (Y/N) | No | | | |
| Silting (Y/N) | No | | | |
| Drift (Y/N) | No | | | |
| Barrel General Rating | | 6 | 2 | G.R. governed by floor. Non-hazard currently. |

| Downstream End | | | | |
|---|-------|----------|----------|----------------------------------|
| Culvert Component | | Last | Now | Explanation of Condition |
| (Pipe # : 1, Span Type: Primary Span) | | | | |
| Direction | | S | | West pipe |
| End Treatment (Concrete, Steel, Others, None) | STEEL | | | |
| Headwall | | X | X | |
| Collar | | X | X | |
| Wingwalls | | X | X | |
| (Shape :) | | | | |
| Cutoff Wall | | X | X | |
| Bevel End | | 3 | 3 | Extensive perforations in floor. |
| Heaving (mm) | 0 | | | |
| Invert Above/Below Stream Bed | ABOVE | | | |
| Above/Below (mm) | 200 | | | |
| Scour Protection | | 5 | 5 | |
| (Type : RIP RAP) | | | | |
| (Avg. Rock Size(mm) : 400) | | | | |
| Scour/Erosion | | 5 | 5 | |
| Beavers (Y/N) | No | | | |
| Downstream End General Rating | | 3 | 3 | |

| Upstream End | | | | |
|---|-------|------|-----|--------------------------|
| Culvert Component | | Last | Now | Explanation of Condition |
| (Pipe # : 2, Span Type: Secondary Span) | | | | |
| Direction | | N | | East pipe |
| End Treatment (Concrete, Steel, Others, None) | STEEL | | | |
| Headwall | | X | X | |
| Collar | | X | X | |
| Wingwalls | | X | X | |
| (Shape :) | | | | |
| Cutoff Wall | | X | X | |

| Upstream End | | | | |
|--|-------------|----------|----------|--|
| Culvert Component | | Last | Now | Explanation of Condition |
| (Pipe # : 2, Span Type: Secondary Span) | | | | |
| Bevel End | | 6 | 6 | |
| Heaving (mm) | 0 | | | |
| Invert Above/Below Stream Bed | ABOVE | | | |
| Above/Below (mm) | 100 | | | |
| Scour Protection | | 6 | 6 | |
| (Type : RIP RAP) | | | | |
| (Avg. Rock Size(mm) : 300) | | | | |
| Scour/Erosion | | 6 | 6 | |
| Beavers (Y/N) | No | | | |
| Upstream End General Rating | | 6 | 6 | |
| Bridge Culvert Barrel | | | | |
| Culvert Component | | Last | Now | Explanation of Condition |
| (Pipe # : 2, Secondary Span, Location Code: MAIN, Span (mm): , Rise (mm): 1500, Type: SP) | | | | |
| Barrel Last Accessible Date | 14-Jul-2022 | | | E pipe |
| Special Features | | | | |
| Special Feature | | | | |
| (Type :) | | | | |
| Special Feature | | | | |
| (Type :) | | | | |
| Roof | | 6 | 6 | Hole in roof of R5 from cable trenching; steel plate over top. |
| Measured Rise (mm) | 1578 | | | |
| Measured At Ring No. | 5 | | | Upwards deflection. |
| Sag (mm) | 78 | | | |
| Percent Sag | 5 | | | |
| Sidewall | | 6 | 6 | Construction holes R2 east sidewall - 25mm dimension. |
| Measured Span (mm) | 1426 | | | |
| Measured At Ring No. | 5 | | | Inwards deflection. |
| Deflection (mm) | 74 | | | |
| Percent Deflection | 5 | | | |
| Floor | | 7 | 7 | |
| Bulge (mm) | 0 | | | |
| Measured At Ring No. | | | | |
| Abrasion (Y/N) | No | | | |
| Circumferential Seams | | 7 | 7 | |
| Separation (mm) | 0 | | | |
| Longitudinal Seams | | 7 | 7 | |
| Total No. of Cracked Rings | 0 | | | |
| Total No. of Rings with Two Cracked Seams | 0 | | | |
| Min. Remaining Steel Between Cracks (mm) | | | | |
| Proper Lap (Y/N) | No | | | |
| Longitudinal Stagger (Y/N) | Yes | | | |
| Coating | | 6 | 6 | Minor corrosion on floor. |
| Corrosion By Soil (Y/N) | No | | | |
| Corrosion By Water (Y/N) | Yes | | | |
| Camber POS/ZERO/NEG | ZERO | | | |

| Bridge Culvert Barrel | | | | |
|---|----|----------|----------|--|
| Culvert Component | | Last | Now | Explanation of Condition |
| (Pipe # : 2, Secondary Span, Location Code: MAIN, Span (mm): , Rise (mm): 1500, Type: SP) | | | | |
| Ponding (Y/N) | No | | | |
| Fish Passage Adequacy | | 5 | X | |
| Baffle | | X | X | |
| (Type :) | | | | |
| Waterway Adequacy | | 5 | 5 | (Water level above culvert at peak flow. 29Aug2007). |
| Icing (Y/N) | No | | | |
| Silting (Y/N) | No | | | |
| Drift (Y/N) | No | | | |
| Barrel General Rating | | 6 | 6 | |

| Downstream End | | | | |
|---|-------|----------|----------|--------------------------|
| Culvert Component | | Last | Now | Explanation of Condition |
| (Pipe # : 2, Span Type: Secondary Span) | | | | |
| Direction | | S | | East pipe |
| End Treatment (Concrete, Steel, Others, None) | STEEL | | | |
| Headwall | | X | X | |
| Collar | | X | X | |
| Wingwalls | | X | X | |
| (Shape :) | | | | |
| Cutoff Wall | | X | X | |
| Bevel End | | 5 | 5 | Dent to west sidewall. |
| Heaving (mm) | 0 | | | |
| Invert Above/Below Stream Bed | ABOVE | | | |
| Above/Below (mm) | 500 | | | |
| Scour Protection | | 6 | 5 | |
| (Type : RIP RAP) | | | | |
| (Avg. Rock Size(mm) : 400) | | | | |
| Scour/Erosion | | 6 | 5 | |
| Beavers (Y/N) | No | | | |
| Downstream End General Rating | | 6 | 5 | |

| Structure Usage | | | | |
|--------------------------------------|-----------|----------|----------|--------------------------|
| | | Last | Now | Explanation of Condition |
| Channel (U/S and D/S) | | | | |
| Alignment | | 6 | 6 | |
| Bank Stability | | 5 | 5 | |
| HWM (m below Top of Culvert) | | | | No HWM visible. |
| Drift (Y/N) | No | | | |
| Channel Bottom Degrading/Aggrading | DEGRADING | | | |
| Beavers (Y/N) | No | | | |
| (Fish Compensation Measure 1 : NONE) | | | | |
| (Fish Compensation Measure 2 : NONE) | | | | |
| Channel General Rating | | 6 | 6 | |

Maintenance Recommendations

| Completed Work | | Planned Work | | | | | | |
|---|--|------------------|-------------|--|---------------------|------------------|--------------------|-----|
| Work Type | Status | Rec. Year | Target Year | Inspector Comments | Department Comments | Est. Repl. Yr | Maint. Reqd. (Y/N) | Yes |
| REMOVE DRIFT ACCUMULATION | PRIORITY REQUIRED | 2023 | | Remove from inlet of west pipe. | | 2025 | | Yes |
| INSTALL CONCRETE/STEEL LINING | PRIORITY REQUIRED | 2023 | | In west pipe - full length. Concrete floor or assess for liner. High priority. | | | | |
| Structural Condition Rating (Last/Now) | | 66.7/22.2 | | Sufficiency Rating (Last/Now) | | 58.7/37.8 | | |
| Special Comments for Next Inspection | EYR is dependent on floor repairs. Inspect on 24 month cycle until repaired or replaced. | | | | | | | |
| Previous Inspector's Name | | Calvin Roberts | | Previous Assistant's Name | | | | |
| Next Inspection Date | | 14-Apr-2027 | | Previous Inspection Date | | 06-Sep-2017 | | |
| Inspection Cycle (Default) (months) | | 57 | | | | | | |
| Comment | | | | | | | | |

| Maintenance Recommendations | | | | | | | | | |
|---|--|-------------------|--|---------------------------|--|--|------|-------------------|-----|
| Completed Work | | | | | | | | | |
| Planned Work | | | | | | | | | |
| | Work Type | Status | Rec. Year | Target Year | Inspector Comments | Department Comments | | | |
| | REMOVE DRIFT ACCUMULATION | PRIORITY REQUIRED | 2023 | | Remove from inlet of west pipe. | | | | |
| | INSTALL CONCRETE/STEEL LINING | PRIORITY REQUIRED | 2023 | | In west pipe - full length. Concrete floor or assess for liner. High priority. | | | | |
| Structural Condition Rating (Last/Now) (%) | | 66.7/22.2 | Sufficiency Rating (Last/Now) (%) | | 58.7/37.8 | Est. Repl. Yr | 2025 | Maint. Req. (Y/N) | Yes |
| Special Comments for Next Inspection | EYR is dependent on floor repairs. Inspect on 24 month cycle until repaired or replaced. | | | | Department Comments | HUC6 BOUNDARY: THREEHILLS - KNEEHILLS CREEKS - ROSEBUD RIVER; RISK ZONE: WHITE | | | |
| Previous Inspector's Name | Calvin Roberts | | | Previous Assistant's Name | | | | | |
| Next Inspection Date | 14-Apr-2027 | | | Previous Inspection Date | | 06-Sep-2017 | | | |
| Inspection Cycle (Default) (months) | 57 | | | | | | | | |
| Comment | | | | | | | | | |

Design Cost Estimate "B"

2511-01757-00 - Bridge Construction and Other Work
 Township Road 332A, Ghostpine Creek
 Kneehill County



McElhanney

| | | | | | | |
|---|-------|---|----------------|---------------------------------|-----|----------------------------------|
| Culvert Type: Corrugated Steel Pipe (CSP) | | Galvanized Coating (g/m ²): | 610 | Bridge File: 13477 | | |
| Inside Dia. (m): | 2.70 | Thickness (mm): | 2.8 | Number of Pipes: | 1 | Date: 10/16/2023 |
| Invert Length (m): | 30.00 | Corrugation Prof.: | 125 mm x 25 mm | Surface Area (m ²): | 254 | Prepared By: NA, Reviewed By: RH |

| Item | Reference | Description | Unit | Estimated Rate | Estimated Quantity | Estimated Contract Cost |
|------|------------------------------------|---|----------------|----------------|--------------------|-------------------------|
| 1 | | Mobilization 10% | Lump Sum | \$ 43,000.00 | 1 | \$ 43,000.00 |
| 2 | | Site Occupancy | Days | \$ 1,000.00 | 20 | \$ 20,000.00 |
| 3 | | Traffic Accommodation for Bridge Construction | Lump Sum | \$ 10,000.00 | 1 | \$ 10,000.00 |
| 4 | Environmental | Site Isolation and Water Accommodation | Lump Sum | \$ 10,000.00 | 1 | \$ 10,000.00 |
| 5 | | Fish Capture and Release | Days | \$ 4,000.00 | 2 | \$ 8,000.00 |
| 6 | | Total Suspended Solids (TSS) Testing | Days | \$ 1,500.00 | 4 | \$ 6,000.00 |
| 7 | | Demolition and Disposal of Bridge Structure | Lump Sum | \$ 20,000.00 | 1 | \$ 20,000.00 |
| 8 | | Excavation - Structural | m ³ | \$ 40.00 | 2,000 | \$ 80,000.00 |
| 9 | | CSP with Couplers - Supply | m | \$ 2,800.00 | 30 | \$ 84,000.00 |
| 10 | | CSP - Assembly | m | \$ 1,020.00 | 30 | \$ 30,600.00 |
| 11 | | Backfill - Granular | m ³ | \$ 80.00 | 350 | \$ 28,000.00 |
| 12 | | Backfill - Non Granular (Clay Seals) | m ³ | \$ 50.00 | 450 | \$ 22,500.00 |
| 13 | | Heavy Rock Riprap (Class 1) | m ³ | \$ 250.00 | 100 | \$ 25,000.00 |
| 14 | Roadway Work | Grading, Culvert Embankment & Berm Construction | m ³ | \$ 35.00 | 1,500 | \$ 52,500.00 |
| 15 | | Gravel Surfacing | Tonne | \$ 75.00 | 20 | \$ 1,500.00 |
| 16 | | New Fence -Supply and Install - Class B | km | \$ 20,000.00 | 0.1 | \$ 2,000.00 |
| 17 | Perm. Erosion and Sediment Control | Straw Rolls | m | \$ 20.00 | 100 | \$ 2,000.00 |
| 18 | | Erosion Control Soil Covering – Type B | m ² | \$ 10.00 | 200 | \$ 2,000.00 |

| | | | | | |
|---|--|--|--|-----|----------------|
| CONTRACT COST | | | | \$ | 447,100 |
| MODIFIED COST (EXCLUDING SITE OCCUPANCY) | | | | \$ | 427,100 |
| Contingencies | | | | 15% | \$ 64,065 |

| Unit Price Averages | 2020 | 2021 | 2022 | Contract Unit Price | \$ | 1,680 |
|---------------------|----------|----------|----------|---|-----------|-----------|
| All Culverts | \$ 1,352 | \$ 1,718 | \$ 1,805 | Unit Price Excluding Traffic Accommodation and Roadway Work | \$ | 1,430 |
| Central Region | \$ 1,552 | \$ 1,726 | \$ 2,118 | Preliminary Engineering Budget | Proposal | \$ 21,383 |
| Fill Height > 6 m | \$ 1,092 | \$ 2,418 | \$ 1,344 | Engineering Budget (Detailed Design) | Estimated | \$ 20,000 |
| Fill Height < 6 m | \$ 1,579 | \$ 1,823 | \$ 1,613 | Engineering Budget (Tender and Construction Support) | Estimated | \$ 40,000 |

| | | | | | |
|---------------------------|--|--|--|----|----------------|
| TOTAL PROJECT COST | | | | \$ | 572,548 |
|---------------------------|--|--|--|----|----------------|

Notes:

- Unit Prices are based on Alberta Transportation and Economic Corridors averages, local market, past experience, and engineering judgement.
- Assumptions were made to develop these quantities that might change as design develops.
- Roadway Work Items including top soil handling, seeding and detour excluded
- This estimate excludes the cost to purchase additional right-of-way

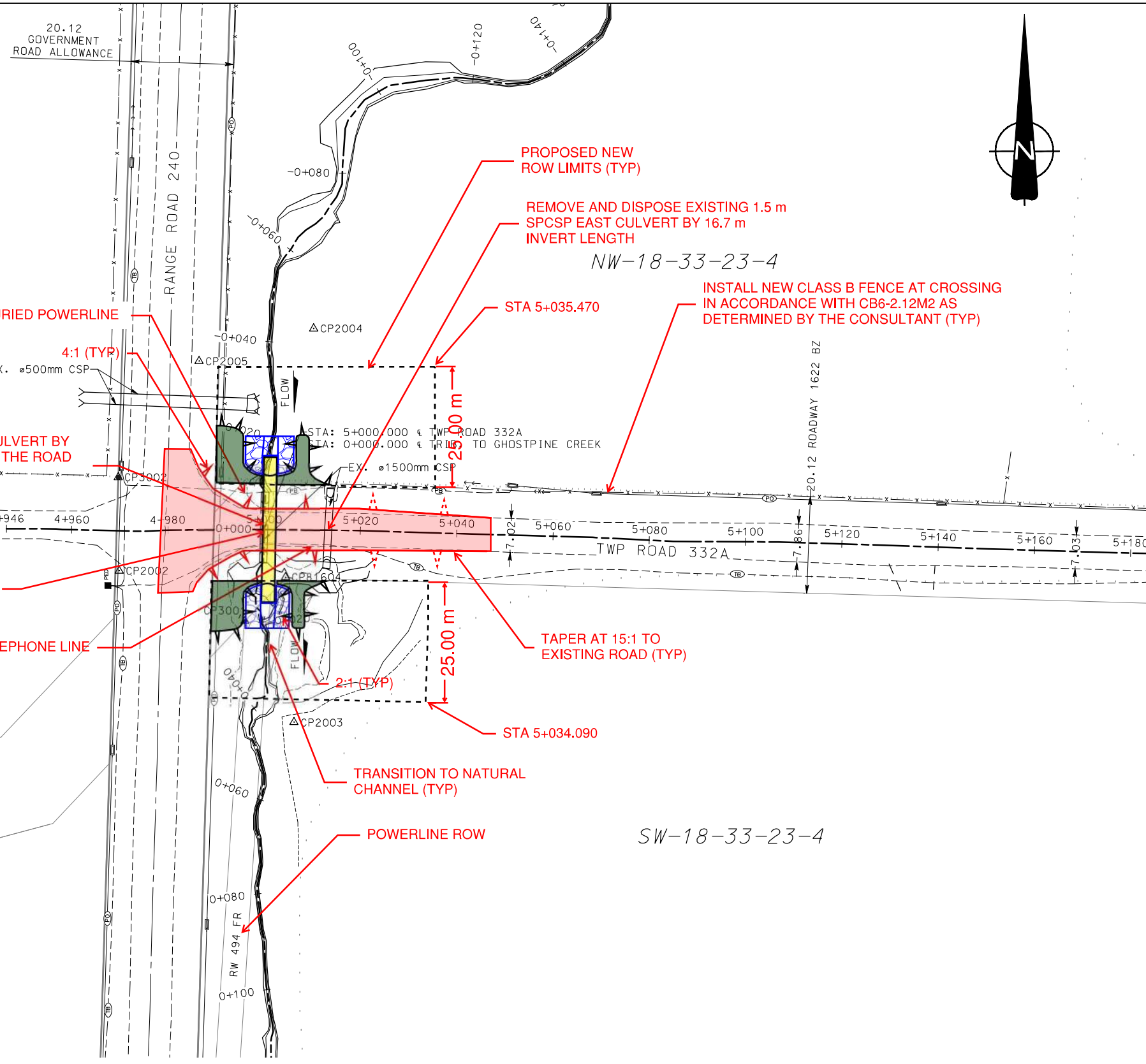
DRAWING 13477-01-SP
 HWY -
 CONTRACT -
 DESCRIPTION BRIDGE FILE 13477 - TWP RD 332A, 2.5km WEST OF TROCHU AND TRIBUTARY TO GHOSTPINE CREEK
 PHOTO
 DATE 2023-07-26
 BY MCELHANNEY
 SURVEYED
 DEPARTMENT BAR CODE

| SURVEY CONTROL POINTS | | | | | |
|-----------------------|-----------|----------|-------------|------------|-----------|
| LABEL | STATION | OFFSET | NORTHING | EASTING | ELEVATION |
| CP2002 | 4+970.108 | 8.311 | 5744652.255 | 343938.858 | 863.658 |
| CP2003 | 5+006.705 | 39.961 | 5744621.809 | 343975.111 | 861.359 |
| CP2004 | 5+009.716 | -41.842 | 5744703.565 | 343979.201 | 862.085 |
| CP2005 | 4+986.950 | -35.022 | 5744696.768 | 343955.436 | 863.853 |
| CP3000 | 5+773.613 | 11.504 | 5744628.891 | 347442.413 | 878.280 |
| CP3001 | 4+995.749 | 19.025 | 5744642.839 | 343964.927 | 860.896 |
| CP3002 | 4+969.476 | -11.090 | 5744672.666 | 343938.672 | 862.824 |
| CP3003 | 4+963.342 | 822.518 | 5743838.419 | 343913.367 | 876.476 |
| CP3004 | 4+994.671 | -824.492 | 5745485.345 | 343963.817 | 874.313 |
| CP3005 | 4+971.108 | -825.251 | 5745486.574 | 343959.029 | 875.158 |
| CP20000 | 5+786.191 | 11.711 | 5744627.356 | 344754.981 | 879.349 |
| CP81604 | 5+004.569 | 9.856 | 5744651.939 | 343973.372 | 861.360 |

NE-13-33-24-4

SE-13-33-24-4

SW-18-33-23-4



SURVEY PLAN
 1:500

LEGEND:

| | | | |
|--|----------------------------|--|--|
| | SURVEY CONTROL POINT | | EXISTING BURIED TELEPHONE LINE (APPROXIMATE - NOT SURVEYED) |
| | POWER POLE | | EXISTING UNDERGROUND POWER LINE (APPROXIMATE - NOT SURVEYED) |
| | FOUND IRON PIN | | EXISTING OVERHEAD POWERLINE |
| | EXISTING PHONE PEDESTAL | | EXISTING CULTIVATION LINE |
| | EXISTING SIGN | | |
| | EXISTING FENCE (WIRE) | | |
| | EXISTING FENCE (WOOD RAIL) | | |
| | EXISTING SHOULDER | | |
| | EXISTING TOP OF BANK | | |
| | EXISTING BOTTOM OF BANK | | |

CONSULTANT
McElhanney
 100, 402
 11 Ave SW
 Calgary AB
 Canada T2G 0Y4
 Tel 403 262 5942

McE JOB #:2511-01757-00

| | | |
|---|----------|---------|
| PERMIT TO PRACTICE | DESIGNER | CHECKER |
| PRELIMINARY NOT FOR CONSTRUCTION | | |

| REV | DATE | REVISION | BY |
|-----|------|----------|----|
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

Kneehill
COUNTY

BRIDGE FILE 13477
 TWP RD 332A, 2.5km WEST OF TROCHU
 AND TRIBUTARY TO GHOSTPINE CREEK
 SURVEY PLAN

| | | | |
|----------|---------|--------|-------------|
| CONTRACT | HIGHWAY | SHEET | DRAWING |
| - | - | 1 OF 3 | 13477-01-SP |