McAdams
80 Charlotte Street, Suite 40
Asheville, NC 28801
919. 361. 5000
NCBELS: #C-0293 / NCBOLA: #C-187

TOB25003

October 24th, 2025

Jessica Trotman
Town of Black Mountain
160 Midland Avenue
Black Mountain, North Carolina 28711

**Project #811550**
**Revision to Damage, Description, and Dimensions**

General Facility Information

- **Facility Type:** Road (No Culverts)
- **Facility:** Hilltop Road
- **Facility Description:** 0.4-mile long, 18'-22' wide, 2-lane asphalt surfaced roadway with a 2'-7' wide grass shoulder
- **Approx. Year Built:** 2010
- **Location Description:** Hilltop Road in Black Mountain, North Carolina
- **Road Type:** Asphalt
- **GPS Latitude/Longitude:** 35.62377, -82.33840
- **Width (ft):** 18'-22'
- **Number of Lanes:** 2

General Damage Information

- **Date Damaged:** 9/24/2024
- **Cause of Damage:** Fast moving surface water flooding, runoff and saturated soils caused undermining of the road and resulted in slope failure

Dimensions of Road Damage

- Surface, 12.63 CY of Asphalt, 62 FT long x 11 FT wide x 6 IN deep, Fast moving surface water flooding along with mountainous runoff caused the soil to become overly saturated resulting in a shift of the road underlying materials causing the road to collapse, 0% work completed.
- Subbase, 16.84 CY of Sand, 62 FT long x 11 FT wide x 8 IN deep, Fast moving surface water flooding along with mountainous runoff caused the soil to become overly saturated resulting in a shift of the native fill and sand creating a slope failure, 0% work completed.
- Shoulder and Roadway Integral Ground, 2,273.33 CY of Native Soil and Fill Materials, 62 FT avg. long x 18 FT avg. width x 55 FT avg. depth, Fast moving surface water flooding and runoff caused the soil to become overly saturated resulting in undermining of the shoulder and a slope failure along the north side of the road , 0% work completed.
- Embankment Slope, 1,262.963 CY of Native Soil and Fill Materials, 1/2(base x height) = 1/2(20 FT avg. length (toe of slope to outside edge of shoulder) x 55 FT high (avg. height of soil loss) x 62 FT avg. length), fast moving surface water flooding along with runoff caused undermining of the road and the soils to become overly saturated resulting in a slope failure, 0% work completed.
- Storm-pipe, 12 inch corrugated metal pipe collapsed under roadway which contributed to surface runoff and slope failure.

McAdams has conducted a survey of the damaged roadway and developed preliminary engineering plans for the proposed repairs. Geotechnical survey and evaluation are necessary to determine the stability of the remaining soil and rock for rebuilding the roadway surface. The necessary repairs to Hilltop Road include excavating the collapsed 12" corrugated metal pipe, removing the remaining damaged pavement and destabilized soil within the vicinity of the slope failure, and relocating utilities to avoid proposed improvements. Significant fill dirt will need to be placed at a 2:1 slope and compacted to re-establish the roadway base and shoulder. The roadway fill slope will require geotechnical reinforcement to stabilize the new embankment. A new storm drainage system with riprap-lined ditches will need to be installed to prevent future damage. New pavement will be required. The driveway tie and retaining wall adjacent to the slide will be damaged during construction and require replacement. Steel beam guardrail will be required to protect the newly graded slope to the north of Hilltop Road.

McAdams has estimated the following project costs totaling $900,000 to repair Hilltop Road to its pre-storm condition:

- Engineering and Permitting = $220,000
- Right-of-Way and Easements = $120,000
- Construction = $476,000
- Construction Engineering & Inspection = $84,000

McAdams has prepared the following documents for reference:

- Engineer's Estimate of the probable construction cost (see Exhibit A);
- Preliminary Engineering Plans (see Exhibit B).

Sincerely,
**McAdams**

EXHIBIT A, PAGE 1

County: **Buncombe**

| CONSTR. COST |
|---|
| $560,000 |

Route: Hilltop Road
From:
Typical Section: 2-Lane Shoulder
Number of Lanes: 2-Lane
Drainage Type: Ditch Section

**Date**
10/24/2025

Prepared By: McAdams
Requested By: Town of Black Mountain
Priced By: McAdams

| Line Item | Des | Sec No. | Description | Quantity | Unit | Price | Amount |
|---|---|---|---|---|---|---|---|
| M | | | MOBLIZATION | 1 | LS | $ 20,778.25 | $ 20,778.25 |
| 0000400000-N | | | CONSTRUCTION SURVEYING | 1 | LS | $ 35,000.00 | $ 35,000.00 |
| 0001000000-E | | | CLEARING & GRUBBING .. ACRE(S) | 0.2 | AC | $ 100,000.00 | $ 20,000.00 |
| 0008000000-E | | | SUPPLEMENTARY CLEARING & GRUBBING | 1 | AC | $ 10,000.00 | $ 10,000.00 |
| | | | | | | | |
| 0022000000-E | | | UNCLASSIFIED EXCAVATION | 110 | CY | $ 75.00 | $ 8,250.00 |
| 0106000000-E | | | BORROW EXCAVATION | 1,500 | CY | $ 55.00 | $ 82,500.00 |
| | | | | | | | |
| 0134000000-E | | | DRAINAGE DITCH EXCAVATION | 70 | CY | $ 20.00 | $ 1,400.00 |
| 0156000000-E | | | REMOVAL OF EXISTING ASPHALT PAVEMENT | 220 | SY | $ 35.00 | $ 7,700.00 |
| | | | | | | | |
| 0318000000-E | | | FOUNDATION CONDITIONING MATERIAL, MINOR STRUCTURES | 20 | TON | $ 120.00 | $ 2,400.00 |
| 0320000000-E | | | FOUNDATION CONDITIONING GEOTEXTILE | 40 | SY | $ 20.00 | $ 800.00 |
| 0335850000-E | | | 18" DRAINAGE PIPE ELBOWS | 2 | EA | $ 650.00 | $ 1,300.00 |
| 0344000000-E | | | 18" SIDE DRAIN PIPE | 76 | LF | $ 80.00 | $ 6,080.00 |
| 0448300000-E | | | 18" RC PIPE CULVERTS, CLASS IV | 32 | LF | $ 200.00 | $ 6,400.00 |
| 0995000000-E | | | PIPE REMOVAL | 20 | LF | $ 20.00 | $ 400.00 |
| | | | | | | | |
| 1011000000-N | | | FINE GRADING | 320 | SY | $ 15.00 | $ 4,800.00 |
| 1121000000-E | | | AGGREGATE BASE COURSE | 110 | TON | $ 60.00 | $ 6,600.00 |
| 1503000000-E | | | ASPHALT CONC INTERMEDIATE COURSE, TYPE I19.0C | 45 | TON | $ 300.00 | $ 13,500.00 |
| 1519000000-E | | | ASPHALT CONC SURFACE COURSE, TYPE S9.5B | 30 | TON | $ 300.00 | $ 9,000.00 |
| 1575000000-E | | | ASPHALT BINDER FOR PLANT MIX | 5 | TON | $ 900.00 | $ 4,500.00 |
| | | | | | | | |
| 2286000000-N | | | MASONRY DRAINAGE STRUCTURES | 2 | EA | $ 5,125.00 | $ 10,250.00 |
| 2308000000-E | | | MASONRY DRAINAGE STRUCTURES | 9 | LF | $ 600.00 | $ 5,400.00 |
| 2354200000-N | | | FRAME WITH GRATE, STD 840.24 | 1 | EA | $ 1,600.00 | $ 1,600.00 |
| 2366000000-N | | | FRAME WITH TWO GRATES, STD 840.24 | 1 | EA | $ 1,400.00 | $ 1,400.00 |
| 2396000000-N | | | FRAME WITH COVER, STD 840.54 | 1 | EA | $ 1,300.00 | $ 1,300.00 |
| | | | | | | | |
| 2612000000-E | | | 6" CONCRETE DRIVEWAY | 30 | SY | $ 200.00 | $ 6,000.00 |
| 2845000000-N | | | ADJUSTMENT OF METER BOXES OR VALVE BOXES | 1 | EA | $ 1,500.00 | $ 1,500.00 |
| | | | | | | | |
| 3030000000-E | | | STEEL BEAM GUARDRAIL | 125 | LF | $ 50.00 | $ 6,250.00 |
| 3288000000-N | | | GUARDRAIL END UNITS, TYPE TL-2 | 2 | EA | $ 4,000.00 | $ 8,000.00 |
| | | | | | | | |
| 3628000000-E | | | RIP RAP, CLASS I | 43 | TON | $ 100.00 | $ 4,300.00 |
| 3649000000-E | | | RIP RAP, CLASS B | 11 | TON | $ 100.00 | $ 1,100.00 |
| 3656000000-E | | | GEOTEXTILE FOR DRAINAGE | 95 | SY | $ 5.00 | $ 475.00 |
| | | | | | | | |
| | | | **EROSION CONTROL** | | | | |
| 3656000000-E | | | GEOTEXTILE FOR DRAINAGE | 95 | SY | $ 5.00 | $ 475.00 |
| 6000000000-E | | | TEMPORARY SILT FENCE | 340 | LF | $ 5.00 | $ 1,700.00 |
| 6006000000-E | | | STONE FOR EROSION CONTROL, CLASS A | 60 | TON | $ 50.00 | $ 3,000.00 |
| 6009000000-E | | | STONE FOR EROSION CONTROL, CLASS B | 175 | TON | $ 40.00 | $ 7,000.00 |
| 6012000000-E | | | SEDIMENT CONTROL STONE | 65 | TON | $ 50.00 | $ 3,250.00 |
| 6015000000-E | | | TEMPORARY MULCHING | 0.5 | ACR | $ 2,000.00 | $ 1,000.00 |
| 6018000000-E | | | SEED FOR TEMPORARY SEEDING | 100 | LB | $ 7.00 | $ 700.00 |
| 6021000000-E | | | FERTILIZER FOR TEMPORARY SEEDING | 0.5 | TON | $ 2,500.00 | $ 1,250.00 |
| 6024000000-E | | | TEMPORARY SLOPE DRAINS | 200 | LF | $ 20.00 | $ 4,000.00 |
| 6029000000-E | SP | | SAFETY FENCE | 60 | LF | $ 5.00 | $ 300.00 |
| 6030000000-E | | | SILT EXCAVATION | 260 | CY | $ 15.00 | $ 3,900.00 |
| 6036000000-E | | | MATTING FOR EROSION CONTROL | 8,190 | SY | $ 5.00 | $ 40,950.00 |
| 6042000000-E | | | 1/4" HARDWARE CLOTH | 20 | LF | $ 8.00 | $ 160.00 |
| 6071010000-E | | | WATTLE | 20 | LF | $ 15.00 | $ 300.00 |
| 6071013000-E | | | WATTLE BARRIER | 280 | LF | $ 15.00 | $ 4,200.00 |
| 6071002000-E | | | FLOCCULANT | 40 | LB | $ 15.00 | $ 600.00 |
| 6084000000-E | | | SEEDING & MULCHING | 0.5 | ACR | $ 3,000.00 | $ 1,500.00 |
| 6087000000-E | | | MOWING | 0.5 | ACR | $ 500.00 | $ 250.00 |
| 6090000000-E | | | SEED FOR REPAIR SEEDING | 50 | LB | $ 15.00 | $ 750.00 |
| 6093000000-E | | | FERTILIZER FOR REPAIR SEEDING | 0.25 | TON | $ 3,000.00 | $ 750.00 |
| 6096000000-E | | | SEED FOR SUPPLEMENTAL SEEDING | 50 | LB | $ 10.00 | $ 500.00 |
| 6108000000-E | | | FERTILIZER TOPDRESSING | 0.5 | TON | $ 3,000.00 | $ 1,500.00 |
| 6114500000-N | | | SPECIALIZED HAND MOWING | 10 | MHR | $ 65.00 | $ 650.00 |
| 6117000000-N | | | RESPONSE FOR EROSION CONTROL | 13 | EA | $ 275.00 | $ 3,575.00 |
| 6117500000-N | SP | | CONCRETE WASHOUT STRUCTURE | 1 | EA | $ 1,500.00 | $ 1,500.00 |
| 6132000000-N | SP | | GENERIC EROSION CONTROL ITEM - PREFABRICATED CONCRETE WASHOUT | 2 | EA | $ 2,000.00 | $ 4,000.00 |
| | | | | | | | |
| | | | **UTILITIES (WATER & SEWER)** | | | | |
| 5325400000-E | | | 4" WATER LINE | 180 | LF | $ 150.00 | $ 27,000.00 |
| 5329000000-E | | | DUCTILE IRON WATER PIPE FITTINGS | 500 | LB | $ 10.00 | $ 5,000.00 |

EXHIBIT A, PAGE 2

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 5709200000-E | | | 4" FORCE MAIN SEWER | 80 | LF | $ 180.00 | $ 14,400.00 |
| | | | | | | | |
| | | | **STRUCTURES** | | | | |
| 8802030000-E | | | SEGMENTAL GRAVITY RETAINING WALLS | 110 | SF | $ 120.00 | $ 13,200.00 |
| | | | | | | | |
| | | | MISCELLANEOUS (5% STR & UTILITIES) | | | | $ 3,000.00 |
| | | | MISCELLANEOUS (10% ROADWAY) | | | | $ 36,000.00 |

**Lgth** **0.2 Mi.**

| | |
|---|---|
| **Contract Cost** ..... | $ 476,000.00 |
| **E. & C.** ..... | $ 84,000.00 |
| **Estimated Construction Cost** ..... | **$ 560,000.00** |

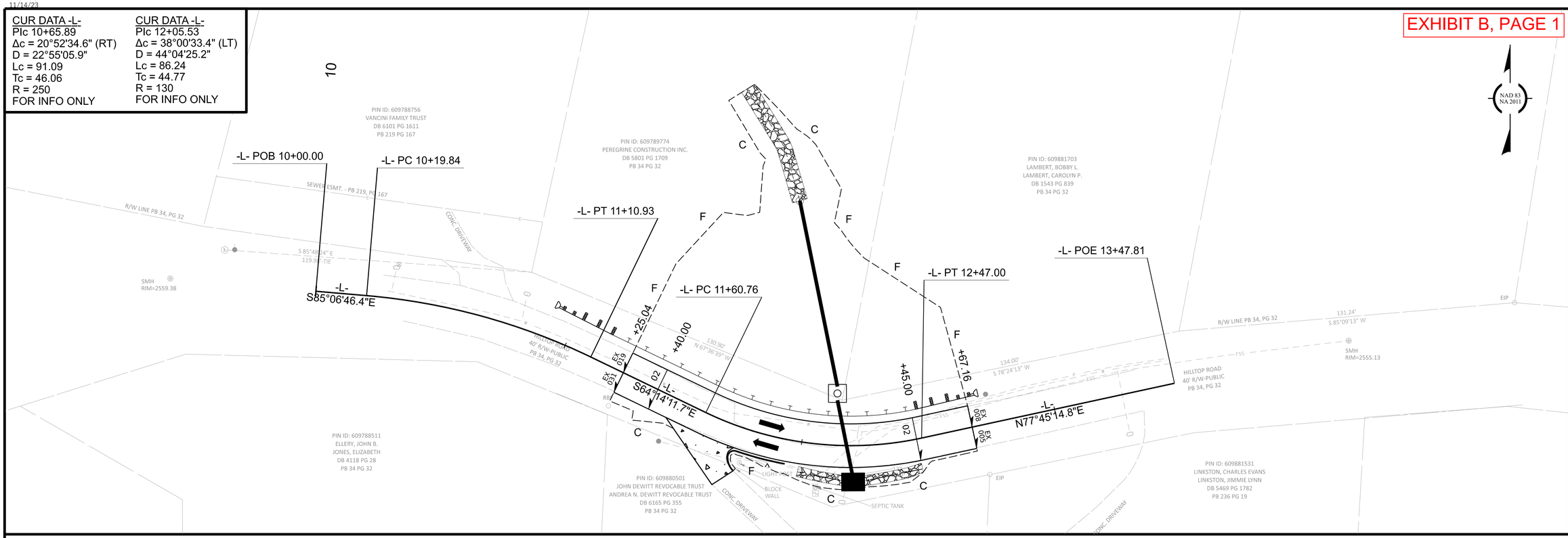
Note: ROW costs are not included in this estimate.

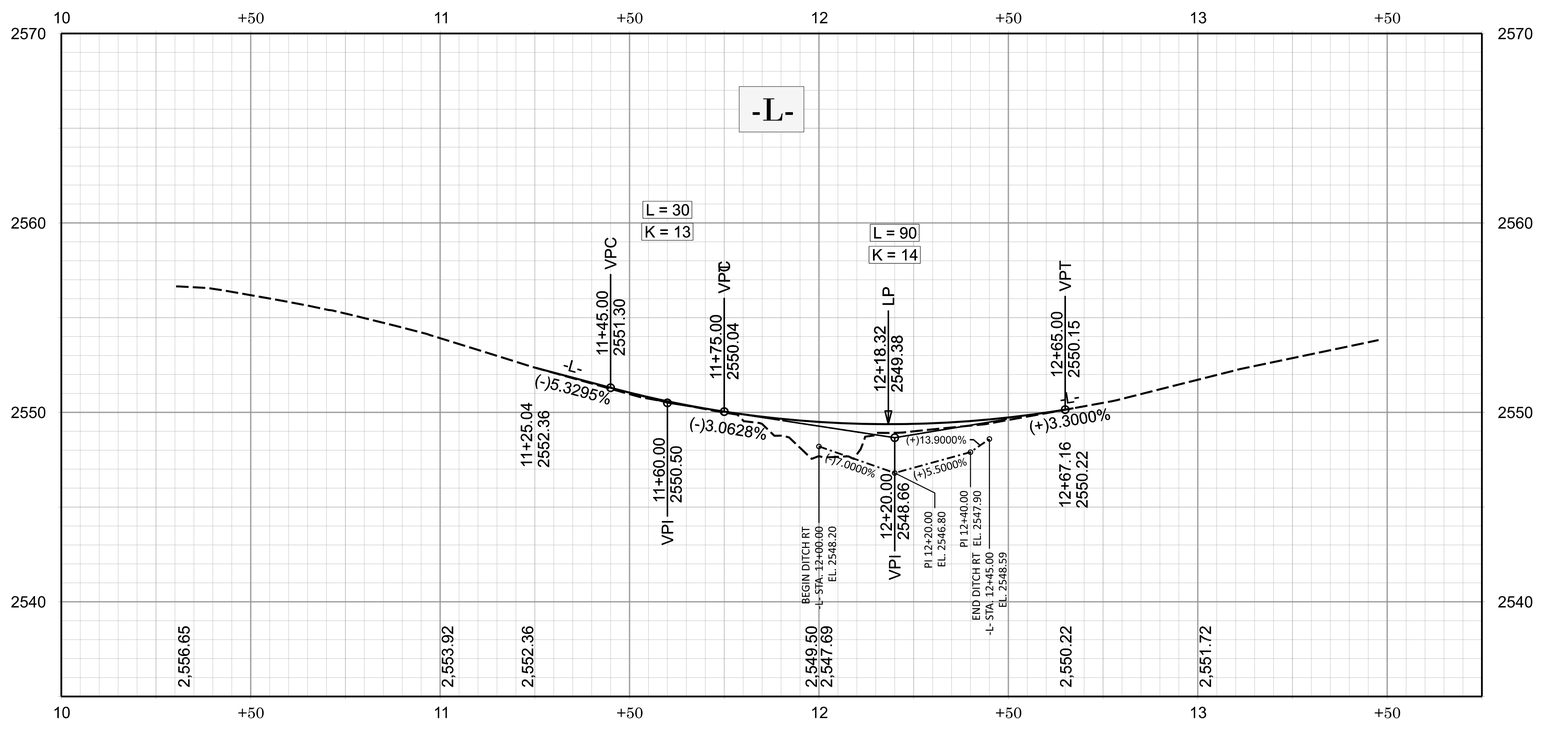


11/14/23

| CUR DATA -L- | CUR DATA -L- |
|---|---|
| PIc 10+65.89 | PIc 12+05.53 |
| Δc = 20°52'34.6" (RT) | Δc = 38°00'33.4" (LT) |
| D = 22°55'05.9" | D = 44°04'25.2" |
| Lc = 91.09 | Lc = 86.24 |
| Tc = 46.06 | Tc = 44.77 |
| R = 250 | R = 130 |
| FOR INFO ONLY | FOR INFO ONLY |

EXHIBIT B, PAGE 1




TOB-25003

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TOWN OF
BLACK MOUNTAIN
HILLTOP ROAD STABILIZATION

BUNCOMBE COUNTY

ROADWAY DESIGN ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PREPARED BY
McADAMS
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N.C.B.E.L.S. License Number: C-0293

REVISIONS

MCADAMS/ewright - 10/24/2025

EXHIBIT B, PAGE 2

