INDIVIDUAL PROJECT ORDER NUMBER 01

Describing a specific agreement between Kimley-Horn and Associates, Inc. (the Consultant), and The Town of Black Mountain (the Client) in accordance with the terms of the Master Agreement for Continuing Professional Services dated 10/07/2025, which is incorporated herein by reference.

Identification of Project:

Project Name: Veteran's Park Structures
KH Project Manager: Alex McIntyre
Project Number:016490004

Project Understanding

We understand that the Town intends to contract with Kimley-Horn to conduct a feasibility study to assess the damage and develop a preferred method of repair for the following four structures located near Veterans Park:

- The pedestrian bridge crossing the Swannanoa River downstream of I-40
- The pedestrian crossing through the culvert under I-40

This scope of work will also include evaluation of repairs to the greenway connections to these structures. The preferred method of repair will incorporate a proposed greenway alignment the reconnects the Park with the existing greenway or terminates at logical endpoints.

At least one recommended repair approach will be provided for each structure. If needed, up to two alternatives per structure (four total) may be developed to support the evaluation and selection of a preferred method. The preferred option will be determined based on hydraulic modeling, cost estimates, constructability, regulatory requirements, and overall feasibility.

Once the method(s) of repair are recommended and the Client selects a preferred option, Kimley-Horn will submit a contract amendment for the design, preparation of construction documents, permitting of the preferred project, and construction phase services.

This scope of services includes a drone-based LiDAR survey for the feasibility study. The final design scope of work will include a full topographic survey with underground utilities, a digital terrain model (DTM), breaklines, and manually verified surface features.

We understand that Jennings Environmental is under contract for the stream bank repair for the Swannanoa River, and it will be necessary to coordinate them during the hydraulic analysis task.

The damage is understood to have resulted from Hurricane Helene, and the Town plans to seek reimbursement for the repairs through the Federal Emergency Management Agency's Public Assistance (FEMA-PA) program.

Specific scope of basic Services:

Task 1 – Project Management/Meetings

- Kimley-Horn will develop one (1) project schedule with major milestones.
- Up to two (2) members of Kimley-Horn staff will organize and attend up to one (1) one-hour long virtual project kick-off meeting with the Town to coordinate efforts and to identify key Project team members.
- Kimley-Horn will submit monthly project progress reports as well as any electronic files of project presentation slides to the Town. Up to 10 progress reports (including the final invoice) are anticipated.
- Up to two (2) members of Kimley-Horn staff will organize and attend up to four (4) one-hour long virtual project status meetings with Town and FEMA.

Task 2 – Survey (Spatial Data Consultants)

Kimley-Horn will use a subconsultant, Spatial Data Consultants, to provide professional survey services. The subconsultant's scope of services is specifically noted below.

GPS GROUND CONTROL

Targeting and GPS ground control survey for a minimum of four (4) ground control stations and one (1) base station will be accomplished using appropriate techniques to provide horizontal and vertical control. This control will be in accordance with the configuration on the attached project flight and control point diagram and will be furnished by Spatial Data Consultants, Inc. (SDC). The ground control datum will be North Carolina State Plane grid coordinates, NAD83 (2011) horizontal and NAVD88 (Geoid 18) vertical, US Survey Feet.

DIGITAL AIRBORNE IMAGERY

Digital aerial imagery will be obtained with an unmanned airborne system (UAS) consisting of a GEOCUE TrueView 660 3D Imaging System and Inspired Flight 1200A Hexacopter, unmanned aircraft vehicle (UAV). Upon notice to proceed and weather permitting, color (RGB) aerial imagery will be flown of the site at approximately 197' (60 meters) above mean ground level (AMGL), resulting in an approximate ground sampling distance of 1.8 centimeters (0.06'). Upon completion of the UAS mission, the digital airborne imagery will be reviewed prior to leaving the site to confirm flight tracking and coverage are correct.

The project flight and control point diagram provided with this proposal is considered preliminary. Flight line orientation relative to the project area of interest or ground control locations may change once the project area of interest has been assessed for UAS feasibility. SDC operates in complete compliance with all FAA and DOT Aviation Division regulations for commercial UAS operations.

DIGITAL AERO-TRIANGULATION

Fully analytical aero-triangulation will be performed to both verify the existing ground control and extend the ground control network and process absolute orientation for final exterior orientation (EO) and stereo-imagery. This task will be accomplished utilizing Agisoft Metashape Professional software.

LiDAR ACQUISITION

Quality Level-0 (QL0) LiDAR point cloud data will be obtained with a GEOCUE TrueView 660 3D Imaging System and Inspired Flight 1200A Hexacopter UAV. The LiDAR point cloud data will be collected at approximately two hundred (200) points per square meter (ppsm), simultaneously with the digital airborne imagery referenced above at approximately 197' (60 meters) AMGL. The unadjusted laser point cloud data will be reviewed in the field prior to leaving the site to ensure flight tracking and coverage are correct.

LiDAR POST PROCESSING

Trajectory data from the Trimble-Applanix APX-20 UAV IMU will be processed using Applanix POSPac UAV software. The laser point cloud data will be fully calibrated, georeferenced, and adjusted to the project specific ground control using Microdrones mdLiDAR and Terrasolid post processing software. The final adjusted laser point cloud will be colorized utilizing Global Mapper software.

DIGITAL MAPPING

Digital terrain model (DTM), planimetric and topographic mapping for the area indicated the attached flight and control point diagram, approximately six (6) acres, will be captured at a horizontal scale of one-inch equals fifty feet (1" =50') with one-foot (1') contours. This digital mapping will be produced utilizing our DATEM Summit Evolution Pro Softcopy Workstations. All visible planimetric features appropriate for this scale of mapping will be captured.

OBSCURE AREA – SUPPLEMENTAL FIELD SURVEY

Areas within the survey limits obscured by vegetation, shadows, view angle or any other natural condition will be left void of mapping unless the LiDAR point cloud density in such areas is sufficient to model the ground surface and meet the required contour vertical accuracy.

SDC will observe, annotate, and incorporate culvert size, material, and invert elevations with photogrammetric data prior to final delivery.

DIGITAL ORTHOIMAGE

A color (RGB) digital orthoimage of the area indicated on the attached flight and control point diagram will be produced at 0.1-foot pixel resolution. This digital orthoimage will be processed using Agisoft Metashape Professional and Adobe Photoshop software. The final composite orthoimage will include full exploitation image coverage in TIFF and MrSID image formats.

STANDARDS OF ACCURACY

Digital mapping will conform to American Society of Photogrammetry and Remote Sensing (ASPRS), Positional Accuracy Standards for Digital Geospatial Data (Edition 1, Version 1.0, dated November, 2014) and Federal Geographic Data Committee (FGDC) Geospatial Positioning Accuracy Standards.

In addition, all digital mapping compiled under this scope will comply with North Carolina Administrative Code 56.1606 (21 NCAC 56.1606), Specifications for Topographic and Planimetric Mapping, Including Ground, Airborne and Spaceborne Surveys.

Kimley-Horn will conduct one (1) two (2) hour site visit to verify the survey. Up to two (2) members of Kimley-Horn staff will attend the survey verification field walk.

Task 3 – Hydraulic Assessment

Kimley-Horn understands Jennings Environmental ("Jennings") is responsible for the stream bank repair within the project area. Kimley-Horn will coordinate with Jennings to obtain and utilize the most current hydraulic models and stream restoration plans. Up to two (2) members of Kimley-Horn staff will organize and attend up to two (2) one-hour long virtual coordination meetings with Jennings.

This task will involve a feasibility-level evaluation of potential repair approaches for the pedestrian bridge, stream configuration, and greenway crossing through the I-40 culvert.

Kimley-Horn will obtain mapping, existing flood studies, and hydraulic models for the study area, including those provided by Jennings Environmental and the NC Floodplain Mapping Program. A field visit will be conducted to verify site conditions and collect supplemental data as needed.

Kimley-Horn will acquire hydraulic models that are publicly available from the NC Floodplain Mapping Program. The modeling effort will include a duplicate effective, corrected effective, and proposed condition model run(s) for up to two (2) potential repair approaches for each of the two (2) structures, totaling four (4) potential repair approaches. These models will not be submitted to FEMA for review or permitting during this task. It is assumed that no modifications will be made to the effective hydrology and that no routing will be performed for the proposed improvements. Up to two (2) iterations of the proposed conditions will be analyzed for this task.

Kimley-Horn will analyze the effects of bridge placement, stream restoration, and I-40 culvert crossing on floodplain encroachment, stormwater discharge, and erosion control. Sensitive areas and permitting requirements will be identified.

Task 4 – Structural Damage Assessment

Kimley-Horn will conduct a limited, visual, non-destructive, walk-through site visit to observe readily accessible existing conditions of the two structures. No destructive, intrusive, or materials testing investigation will be conducted as part of this scope. The conditions will be documented with representative photographs and field notes utilizing construction document PDFs provided by the Client. The intent of the site visit is to review the general condition of the structures and document any current, significant repair and/or maintenance items as well as review conditions of previous repair work. Kimley-Horn will perform the following as part of this walk-through:

- Observe and note the condition of readily accessible structural elements such as slabs (structural and topping slabs), beams, and columns.
- Observe and note identified locations of exposed reinforcing steel corrosion or significant section loss and provide recommendations and cost estimates for further testing, if required.

Task 5 – Method of Repair Statement

Kimley-Horn will prepare a report describing the observed conditions observed during Task 4 and provide recommendations for repairs or replacement. The recommendations will also be based on our field reconnaissance and experience from related projects. The following will be included in the Report:

- Brief description of the two structures, scope of work for this assessment, and a summary of previous repairs and upgrades.
- General ratings (e.g. very good, good, fair, poor) of observed structural and waterproofing elements.
- Key findings outlining specific elements requiring additional narrative.
- Identify applicable local, state, and federal codes and standards (including consensus-based codes, floodplain management, ADA, etc.) that must be met in the repair/restoration (PAPPG Ch. 8, pp. 171-178).
- Identify any potential EHP compliance requirements (e.g., wetlands, floodplains, historic resources) and document anticipated permitting or consultation needs (PAPPG Ch. 10, p. 237-249).
- Recommendations for additional field or laboratory testing will be listed including the criteria to determine if and where more extensive review and testing are required.
- Budgetary repair/replacement quantity estimates will be developed with associated unit costs for each recommended repair/replacement item based on similar repairs from recent projects within this region. Repair quantities will be based on limited observations as part of this scope. Recently observed unit costs will be provided for each repair item to assist in establishing an overall repair program budget.
- Representative photographs that depict typical deficiencies observed.
- Field notes of observed structural and waterproofing elements.

All findings will be compiled into a concise report stamped by a licensed professional engineer. The deliverable will include an exhibit showing the preferred repair method with preliminary sizing and layout of proposed improvements. It will also include an evaluation of potential materials and construction methods, considering durability, cost, and ease of construction. These elements will be compared across each repair alternative to establish the preferred method.

Additional Services if required:

Any services not specifically provided for in the above scope will be billed as additional services and performed at Kimley-Horn's then-current hourly rates. Additional services Kimley-Horn can provide include, but are not limited to, the following:

- Final design/ Construction documents
- Permitting
- Bid Phase Services
- Construction Phase Services
- Accessibility Review
- Utility Coordination
- Driveway permits/right-of-way encroachment

- Right of Way services
- Geotechnical Engineering Services
- Architectural design services
- Plumbing, Mechanical, Lighting, Fire Protection, or Fire Alarm assessments or design

Fee and Expenses

Kimley-Horn will perform the services in Tasks 1 - 5 on a labor fee plus expense basis with the maximum labor fee shown below.

Task	Description	KH Fee	Subconsultant Fee	Subconsultant
1	Project Management/Meetings	$12,855		
2	Survey	$7,405	$5,900	SDC
3	Hydraulic Assessment	$45,095		
4	Damage Assessment	$9,645		
5	Method of Repair Statement	$27,145		
	Total Fee	**$102,145**	**$5,900**	**$108,045**

Kimley-Horn will not exceed the total maximum labor fee shown without authorization from the Client. However, Kimley-Horn reserves the right to reallocate amounts among tasks as necessary.

Labor fee will be billed on an hourly basis according to our then-current rates. Direct reimbursable expenses such as express delivery services, air travel, and other direct expenses will be billed at 1.15 times cost. A percentage of labor fee will be added to each invoice to cover certain other expenses as to these tasks such as telecommunications, in-house reproduction, postage, supplies, project related computer time, and local mileage. Administrative time related to the project may be billed hourly. All permitting, application, and similar project fees will be paid directly by the Client. Should the Client request Kimley-Horn to advance any such project fees on the Client's behalf, an invoice for such fees, with a fifteen percent (15%) markup, will be immediately issued to and paid by the Client.

Payment will be due within 25 days of your receipt of the invoice and should include the invoice number and Kimley-Horn project number.

ACCEPTED:

TOWN OF BLACK MOUNTAIN

BY:_____

TITLE:_____

DATE:_____

KIMLEY-HORN AND ASSOCIATES, INC.

BY:_____

TITLE:_____

P.E. No.: _____

DATE:_____