

**EXHIBIT “D”
HIDALGO COUNTY
Agreement #C-21-0944-02-08
Work Authorization Form**

WORK AUTHORIZATION NO. 3

THIS WORK AUTHORIZATION is made pursuant to the terms and conditions of Section 7 of the Agreement made by and between **HIDALGO COUNTY**, action herein by and through the **Commissioner’s Court**, hereinafter called the “**Owner**,” and, B2Z Engineering, LLC, hereinafter called “**Engineer**”.

PART 1. SCOPE OF WORK

The purpose of this Work Authorization is for the Engineer to provide illumination design for six (6) tunnels along the Pct 2 Recreational Trails Connectivity Project.

The **Engineer** is to provide the Services as required by the Agreement with Owner. This includes but is not limited to the services identified in **EXHIBIT “A” – Scope of Services to be provided by the Engineer** which is attached hereto and incorporated by reference.

PART 2. ESTIMATED COST

The estimated cost for services under this Work Authorization is **\$64,899.70**. This amount is based upon the costs outlined in the Estimated **Cost Proposal** attached hereto as **EXHIBIT “B”**.

PART 3. PAYMENT

Compensation and payment to the Engineer for the services established under this Work Authorization shall be made in accordance with the Professional Services Agreement between Owner and Engineer.

PART 4. FUNDING

This Work Authorization No. shall be funded through funding source:

Account No. - - - - - - - - - - - - - - - -

Requisition Number **(MUST BE INCLUDED AFTER CC APPROVAL)**

PART 5. PERIOD OF SERVICE

This Work Authorization shall become effective on the date of final acceptance of the parties hereto, and terminate upon completion of the scope of work provided in this work authorization or (DATE).

PART 6. RESPONSIBILITIES AND OBLIGATIONS

This Authorization does not waive the parties’ responsibilities and obligations provided under the **Agreement**.

PART 7. ACKNOWLEDGEMENT AND CONFIRMATION

Acknowledgement and confirmation by Hidalgo County Precinct No. 2 Commissioner Eduardo Cantu, as to content and detail of this Work Authorization No. 3.

**HIDALGO COUNTY
COMMISSIONER PRECINCT No. 2:**

BY: _____
Eduardo "Eddie" Cantu, Commissioner

PART 8. ACCEPTANCE AND APPROVAL

This Work Authorization is hereby accepted, approved by Hidalgo County Commissioners' Court on 11/14/23 as indicated below and effective as of **14th day of November, 2023.**

EXECUTED as of the day and year first written above.

APPROVED BY COMMISSIONERS' COURT ON NOVEMBER, 14TH, 2023.

Agenda Item No. 93236

Executive Office: _____

ENGINEER:
B2Z ENGINEERING, LLC

OWNER:
HIDALGO COUNTY

Aisha Gonzalez, President

Richard F. Cortez, County Judge

ATTEST:

By: Arturo Guajardo Jr., County Clerk

LIST OF ATTACHMENTS:

Exhibit "A" – *Scope of Services to be provided by Engineer*

Exhibit "B" – *Cost Proposal*

EXHIBIT “A”

Services to be provided by the Engineer

PROJECT INFO:

- **Project Name:** Recreational Trails Connectivity Project
– Tunnels Illumination Design
- **Project Limits:** From City of Mission to McAllen
From City of Hidalgo to Pharr
From Hidalgo to McAllen

GENERAL SCOPE OF WORK:

The work to be performed by the **Engineer** under this work authorization shall consist of providing Engineering Services for design tunnel lighting at six crossings to be included in the Plans, Specification, and Estimate (PS&E) of the proposed Recreational Trails Connectivity Project located within the Cities of Mission, McAllen, Pharr, Hidalgo, San Juan, and within the unincorporated areas along the project limits in Hidalgo County hereinafter denoted as the **Project**.

The **Engineer** will furnish all equipment, materials, supplies, and incidentals as needed to perform the services required by this Work Authorization, except as otherwise specified in Exhibit A, “Services to be provided by the **Owner**.”

Specific activities to be performed by the **Engineer**, as generally outlined in the Contract, including the following:

SECTION 2 – WORK PERFORMED

Services

Provided By:

ENGINEER COUNTY

YES NO Conduct Photometric Analysis

The **Engineer** will conduct a photometric analysis by developing Alternative Tunnel Lighting Schemes using AGI32 software for the surface and tunnel portions of the project. Input factors include variable mounting heights, fixture types, lighting patterns, spacing, and aims. The **Engineer** will produce scaled layouts that show iso-footcandle contour lines showing the proposed tunnels requiring lighting coverage. Minimum, maximum, and average lighting intensities will also be offered, along with uniformity ratios. The results of the analyses will be compared, and a recommendation will be made for implementation, considering overall system cost efficiency. The **Engineer** will collect the needed survey data to support the PS&E task. Survey tasks include data collection, utility coordination, elevation for utilities, preliminary topographic map, control points for base map, and information.

*Hidalgo County Pct. 2 – WA#3
Recreational Trails Connectivity Project – Tunnels Illumination Design*

YES NO General Notes for Illumination
The **Engineer** will set up the General Notes for the tunnel lighting design, conforming to TxDOT standards.

YES NO Quantities Summary Sheet
The **Engineer** will prepare a Summary of Quantities sheet showing all items to be furnished and installed by the contractor along with their respective specification item number and description code as applicable.

YES NO Proposed Tunnel Lighting Layouts
The **Engineer** will prepare layout sheets that will show, at a minimum, the following:

- Existing topographic features
- Existing Utilities
- Existing and proposed Right-of-Way
- Proposed Tunnel alignment and geometry
- Proposed light fixtures, mounting heights and positions
- Proposed conduit runs and callouts
- Proposed electrical services
- Tables with light fixture details
- Special notes
- Sheet quantities
- Special mounting details for tunnel light fixtures as needed

The tunnel lighting systems will be designed to be water-resistant considering their low elevation and proximity to drainage ditches.

The **Engineer** will contact the local power company for electrical service requirements for the project.

Tunnel lighting layout sheets will be set up at an appropriate scale on 11x17 size drawings.

The **Engineer** will produce submittals for the Client’s review at the 90% and 100% completion levels.

*Hidalgo County Pct. 2 – WA#3
Recreational Trails Connectivity Project – Tunnels Illumination Design*

<u>YES</u>	<u>NO</u>	Voltage Drop Calculations The Engineer will design wiring circuits to connect the proposed lighting fixtures as efficiently as practical. The Engineer will calculate circuit voltage drops to meet TxDOT and NEC requirements. Accordingly, The Engineer will determine wire sizes, conduit sizes, and electrical service requirements.
<u>YES</u>	<u>NO</u>	Wiring Diagrams The Engineer will prepare sheet layouts that will show wiring diagrams and details as follows: <ul style="list-style-type: none">• Electrical service details• Circuit runs, branches, and lengths• Cable sizes and types• Light fixtures details• Electrical service design
<u>YES</u>	<u>NO</u>	Standard Sheets The Engineer will prepare all tunnel lighting-related standard sheets necessary for the 90% and 100% submittals.
<u>YES</u>	<u>NO</u>	Specifications The Engineer will review and select the proper standard specifications for the tunnel lighting design. The Engineer will also develop special specifications, if necessary, to accommodate special one-time-use items. Such special specifications will be submitted for review and approval.
<u>YES</u>	<u>NO</u>	Cost Estimate The Engineer will calculate all relevant item quantities Tunnel Lighting Design. Based on Pharr District average bid prices, The Engineer will also develop a construction cost estimate, which will be submitted in spreadsheet form at 90% and 100% completion levels.
<u>YES</u>	<u>NO</u>	Field Investigation and Coordination Meetings The Engineer will conduct field investigations at the project sites to record existing conditions and availability of electrical service. The Engineer will also identify potential illumination design issues.

EXHIBIT "B"
WA#3~COST PROPOSAL
Tunnel Lighting Design Along Precinct 2 Recreational Trails Connectivity Project
Work Authorization #3

		MANHOURS					Total Hours	Subtotal
		SENIOR PROJECT MANAGER	SENIOR ENGINEER	PROJECT ENGINEER	CADD OPERATOR	ADMIN/ CLERICAL		
TASKS								
1	Conduct Photometric Analysis	4	8	16	16		44	\$6,064.32
2	General Notes for Tunnel Lighting	2	2	4	8		16	\$2,053.62
3	Quantities Summary Sheet	2	8	16	16		42	\$5,581.48
4	Proposed Tunnel Lighting Layouts (6 Tunnels)	8	20	70	70	10	178	\$21,952.56
5	Voltage Drop Calculations	2	4	16	16		38	\$4,783.20
6	Wiring Diagrams	3	6	28	28		65	\$8,050.32
7	Standard Sheets	1	3	6	10		20	\$2,449.53
8	Specifications	1	1	2	2		6	\$878.75
9	Cost Estimate	2	4	8	8		22	\$3,032.16
10	Field Investigation & Coordination	2		16	40	16	74	\$6,894.76
SUB-TOTAL							431	\$61,740.70
Labor Hours		27	56	182	214	26		
Hourly Base Rates		\$ 75.00	\$ 62.00	\$ 45.00	\$ 23.00	\$ 22.00		
Contract Rate FY2022		\$ 241.42	\$ 199.57	\$ 144.85	\$ 74.03	\$ 70.82		
Total Labor Costs		\$ 6,518.34	\$ 11,175.92	\$ 26,362.70	\$ 15,842.42	\$ 1,841.32	\$ 61,740.70	\$61,740.70

Direct Expenses	Units	
Mileage (\$0.56/mile)	284	\$ 159.00
Aerial Drone Flight (\$250/hr)	12	\$ 3,000.00
Total Direct Expenses		\$ 3,159.00

WA#2 - Total Cost **\$ 64,899.70**