

**CASCADE CHARTER TOWNSHIP**  
**INFRASTRUCTURE COMMITTEE MEETING**  
December 1, 2021 at 9:00 am  
Cascade Township Hall – Large Conference Room  
5920 Tahoe Dr. SE  
Grand Rapids, MI 49546

- ARTICLE 1.** Call the Meeting to Order
- ARTICLE 2.** Approval of the Agenda
- ARTICLE 3.** Approval of the Minutes of the November 3, 2021 Meeting
- ARTICLE 4.** Review & Discussion of Burton Street Pedestrian Bridge Project
- ARTICLE 5.** Review & Discussion of Pathway Repair Costs
- ARTICLE 6.** Review & Discussion of Whole House Filters Project
- ARTICLE 7.** Discussion of FY 2022 Local Road Program
- ARTICLE 8.** Public Comment (Please limit comment to 3 minutes)
- ARTICLE 9.** Adjournment

**CASCADE CHARTER TOWNSHIP**  
**INFRASTRUCTURE COMMITTEE MEETING**  
November 3, 2021 at 9:00am  
Cascade Township Hall – Large Conference Room  
5920 Tahoe Dr. SE  
Grand Rapids, MI 49546

**Members Present:** Supervisor Grace Lesperance, Trustee McDonald, Trustee Shipley

**Others Present:** Township Manager (TM) Ben Swayze

**Members of the Public:** Kris Taylor, Resident

**ARTICLE 1. Call to Order:** Meeting was called to order at 9:00am

**ARTICLE 2. Approval of the Agenda:** Motion by Trustee McDonald, Supported by Supervisor Lesperance to approve the agenda. Motion carried.

**ARTICLE 3. Approval of the Minutes of the September 1, 2021 Meeting:** Motion by Supervisor Lesperance, Supported by Trustee McDonald to approve the minutes. Motion carried.

**ARTICLE 4. Discussion of Pathway Projects:** TM Swayze reviewed that there are currently 3 pathway projects that are in various stages of planning:

**Laraway Lake** – Trustee McDonald gave an update on the status of discussions with the DeCamps, whose property is key to developing a feasible pathway connection on Laraway Lake from where the pathway currently ends to Cascade Road. There are three options at varying price levels and varying degrees of impact to the DeCamp property. The plans have been shared with the Kent County Road Commission and they would be supportive of any of them. Next step would be to meet with the DeCamps and discuss the options to see what they may support. Trustee McDonald volunteered to continue those discussions with them as he has been the committee member most in contact with them.

**Cascade Road Pedestrian Bridge (over Thornapple River)** – Trustee Shipley indicated that he has heard about this need from several residents as the sidewalk on the bridge is not safe due to the proximity to high-speed traffic. Discussion ensued about what side of the bridge a potential pedestrian bridge could be on. Discussion should be had with the KCRC on what they would allow. Supervisor Lesperance indicated she would like to be involved in those discussions. Manager Swayze indicated he would set it up for later this year or early next.

**Burton Street Bridge** – Manager Swayze reviewed the current project, which was stopped by the Township Board earlier this year due to cost concerns. Manager Swayze indicated that there may be an opportunity to get the Township cost of this project more in line with what was previously budgeted. The grant

program coordinator has indicated there may be an opportunity to split the additional cost at 65/35 (the same breakdown as the original grant) which could add an additional \$650,000 in grant funds. The State of Michigan has also indicated they could partner the project with their 2023 deck replacement project, which could help cover the significant traffic control costs. Discussion ensued. The Committee indicated more details should be brought forward regarding the potential costs savings and additional grant dollars and what the resulting cost of the project to the Township would be.

*No Action, Discussion Only*

**ARTICLE 8. Public Comment:**

Kris Taylor – Resident: Mr. Taylor indicated he felt the Township should be investing more money in the repair of the existing pathway system. He and his wife use multiple area pathway systems and feel that the Cascade system is in poor condition. Identified several areas he thought needed the most attention. Discussion among the committee members and Mr. Taylor ensued. TM Swayze indicated he could begin to review areas and provide high-level estimates to the Committee on what some repairs may cost.

**ARTICLE 9. Adjournment:** *Motion by Trustee McDonald, Supported by Supervisor Lesperance to adjourn the meeting. Meeting adjourned at 10:13 am.*

**Approved by the Infrastructure Committee – TBD**

## Ben Swayze

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**From:** Berrevoets, Mike <mberrevoets@fishbeck.com>  
**Sent:** Tuesday, November 23, 2021 4:23 PM  
**To:** Ben Swayze  
**Cc:** Whittle, Greg  
**Subject:** Burton Pathway Engineers Opinion of Cost  
**Attachments:** EOC 3 - Final Project Estimate Minus Interstate Items and MSE Walls.pdf; EOC 4 - Final Project Estimate Minus Interstate Items and Entire Retaining Wall.pdf; EOC 1 - Final Cost Estimate.pdf; EOC 2 - Final Project Estimate Minus Interstate Items.pdf

Ben,

Greg has revised the Engineer's Opinion of Costs (EOC) for Burton pathway/bridge based on combining the project with the MDOT project. For all of these costs the original final design is the basis. (i.e. not moving the bridge)

We have prepared 4 EOCs based on past discussions with KCRC and MDOT.

EOC 1 - \$3.21 Million – Original final project estimate (From May)

EOC 2 - \$2.99 Million – Combining with MDOT project and MDOT paying for work on I-96 including traffic control, shoulder work, guardrail replacement.

EOC 3 - \$2.89 Million – EOC 2 plus shortening the retaining wall on the west side to about 8' tall.

EOC 4 - \$2.87 Million – EOC 2 but eliminating the entire retaining wall on the west side of I-96.

A few things to note:

1. EOC 3 & 4 would require a temporary grading permit from the property owner who was not receptive in the past to granting a grading permit. It has been a while and may be worth approaching the property owner again. We thought these options may save more money but the wall is being replaced with additional fill, restoration and tree removals.
2. EOC 4 is likely not worth the savings of approximately \$20,000.
3. The breakdowns of costs are attached in case you'd like to see the details. The EOC 1 was reviewed by MDOT when it was submitted and MDOT had the estimate slightly lower than what we are showing. We think our number is more realistic and conservative so we did not change anything to MDOT's numbers.

I'm sure everyone is aware of the volatile construction climate at the moment and should appreciate that it is difficult to predict what prices will be in a year or so when it is bid by MDOT. Hopefully things will settle down next year.

Please let me know if you need anything else. I'll plan to attend the Infrastructure Committee Meeting on Wednesday the 1<sup>st</sup>.

Thanks,

Michael L. Berrevoets, PE | Vice President/Senior Civil Engineer  
Fishbeck | w: 616.464.3927 | c: 616.299.2126 | [Fishbeck.com](http://Fishbeck.com)

## Engineer's Opinion of Costs

<b>Project Number:</b> 203653	<b>Project Engineer:</b> LAPS
<b>Estimate Number:</b> 8: Final Final Estimate - All Items Included	<b>Date Created:</b> 5/12/2021
<b>Project Type:</b> Miscellaneous	<b>Date Edited:</b> 5/13/2021
<b>Location:</b> Cascade Township	<b>Fed/State #:</b>
<b>Description:</b> Burton Street from Patterson to Highridge	<b>Fed Item:</b>
10' wide HMA pathway with associated drainage features, pedestrian ramps, and pedestrian bridge.	<b>Control Section:</b> TA 41000

Line	Category	Pay Item	Description	Quantity	Units	Unit Price	Total
0001	0001 Road	1500001	Mobilization, Max \$290,000	1.000	LSUM	\$290,000.00	\$290,000.00
0002	0001 Road	2010001	Clearing	2.000	Acre	\$1,000.00	\$2,000.00
0003	0001 Road	2020002	Tree, Rem, 19 inch to 36 inch	3.000	Ea	\$800.00	\$2,400.00
0004	0001 Road	2020003	Tree, Rem, 37 inch or Larger	1.000	Ea	\$1,200.00	\$1,200.00
0005	0001 Road	2020004	Tree, Rem, 6 inch to 18 inch	56.000	Ea	\$200.00	\$11,200.00
0006	0001 Road	2030005	Culv, End, Rem, Less than 24 inch	3.000	Ea	\$300.00	\$900.00
0007	0001 Road	2030011	Dr Structure, Rem	1.000	Ea	\$800.00	\$800.00
0008	0001 Road	2030015	Sewer, Rem, Less than 24 inch	87.000	Ft	\$15.00	\$1,305.00
0009	0001 Road	2040020	Curb and Gutter, Rem	112.000	Ft	\$8.00	\$896.00

Line	Category	Pay Item	Description	Quantity	Units	Unit Price	Total
0010	0001 Road	2040025	Fence, Rem	456.000	Ft	\$3.00	\$1,368.00
0011	0001 Road	2040035	Guardrail, Rem	248.000	Ft	\$3.00	\$744.00
0012	0001 Road	2040055	Sidewalk, Rem	10.000	Syd	\$15.00	\$150.00
0013	0001 Road	2040080	Exploratory Investigation, Vertical	10.000	Ft	\$35.00	\$350.00
0014	0001 Road	2050010	Embankment, CIP	11,440.000	Cyd	\$16.00	\$183,040.00
0015	0001 Road	2050016	Excavation, Earth	2,080.000	Cyd	\$10.00	\$20,800.00
0016	0001 Road	2050041	Subgrade Undercutting, Type II	100.000	Cyd	\$15.00	\$1,500.00
0017	0001 Road	2057001	_ Ditching, Modified	230.000	Ft	\$25.00	\$5,750.00
0018	0001 Road	2060002	Backfill, Structure, CIP	740.000	Cyd	\$23.00	\$17,020.00
0019	0001 Road	2060004	Backfill, Select	1,870.000	Cyd	\$22.00	\$41,140.00
0020	0001 Road	2080012	Erosion Control, Check Dam, Stone	21.000	Ft	\$22.00	\$462.00
0021	0001 Road	2080020	Erosion Control, Inlet Protection, Fabric Drop	11.000	Ea	\$140.00	\$1,540.00
0022	0001 Road	2080026	Erosion Control, Maintenance, Sediment Removal	200.000	Cyd	\$25.00	\$5,000.00

Line	Category	Pay Item	Description	Quantity	Units	Unit Price	Total
0023	0001 Road	2080034	Erosion Control, Sediment Trap	3.000	Ea	\$120.00	\$360.00
0024	0001 Road	2080036	Erosion Control, Silt Fence	2,730.000	Ft	\$1.75	\$4,777.50
0025	0001 Road	2087001	_ Erosion Control, Sediment Log	930.000	Ft	\$10.00	\$9,300.00
0026	0001 Road	2090001	Project Cleanup	1.000	LSUM	\$6,000.00	\$6,000.00
0027	0001 Road	3010002	Subbase, CIP	12.000	Cyd	\$25.00	\$300.00
0028	0001 Road	3020016	Aggregate Base, 6 inch	2,866.000	Syd	\$10.00	\$28,660.00
0029	0001 Road	3020020	Aggregate Base, 8 inch	130.000	Syd	\$20.00	\$2,600.00
0030	0001 Road	3070128	Shoulder, CI II, 6 inch	310.000	Syd	\$12.00	\$3,720.00
0031	0001 Road	4010012	Culv End Sect, 12 inch	5.000	Ea	\$600.00	\$3,000.00
0032	0001 Road	4010018	Culv End Sect, 18 inch	2.000	Ea	\$800.00	\$1,600.00
0033	0001 Road	4011109	Dr Marker Post	6.000	Ea	\$25.00	\$150.00
0034	0001 Road	4020033	Sewer, CI A, 12 inch, Tr Det B	121.000	Ft	\$75.00	\$9,075.00
0035	0001 Road	4020035	Sewer, CI A, 18 inch, Tr Det B	92.000	Ft	\$80.00	\$7,360.00

Line	Category	Pay Item	Description	Quantity	Units	Unit Price	Total
0036	0001 Road	4020153	Sewer, CI B, 12 inch, Tr Det A	55.000	Ft	\$75.00	\$4,125.00
0037	0001 Road	4020155	Sewer, CI B, 18 inch, Tr Det A	15.000	Ft	\$80.00	\$1,200.00
0038	0001 Road	4020600	Sewer, CI E, 12 inch, Tr Det B	134.000	Ft	\$75.00	\$10,050.00
0039	0001 Road	4021204	Sewer Tap, 12 inch	2.000	Ea	\$550.00	\$1,100.00
0040	0001 Road	4021206	Sewer Tap, 18 inch	1.000	Ea	\$600.00	\$600.00
0041	0001 Road	4021260	Trench Undercut and Backfill	100.000	Cyd	\$30.00	\$3,000.00
0042	0001 Road	4021275	Video Taping Sewer and Culv Pipe	423.000	Ft	\$1.50	\$634.50
0043	0001 Road	4030010	Dr Structure Cover, Type B	2.000	Ea	\$600.00	\$1,200.00
0044	0001 Road	4030040	Dr Structure Cover, Type G	3.000	Ea	\$600.00	\$1,800.00
0045	0001 Road	4030050	Dr Structure Cover, Type K	5.000	Ea	\$700.00	\$3,500.00
0046	0001 Road	4030200	Dr Structure, 24 inch dia	1.000	Ea	\$1,200.00	\$1,200.00
0047	0001 Road	4030210	Dr Structure, 48 inch dia	7.000	Ea	\$2,500.00	\$17,500.00
0048	0001 Road	4030220	Dr Structure, 60 inch dia	2.000	Ea	\$3,000.00	\$6,000.00



Line	Category	Pay Item	Description	Quantity	Units	Unit Price	Total
0049	0001 Road	4030250	Dr Structure, Add Depth of 48 inch dia, 8 foot to 15 foot	6.000	Ft	\$120.00	\$720.00
0050	0001 Road	4040091	Underdrain Outlet, 4 inch	20.000	Ft	\$15.00	\$300.00
0051	0001 Road	4040111	Underdrain, Outlet Ending, 4 inch	2.000	Ea	\$180.00	\$360.00
0052	0001 Road	5010005	HMA Surface, Rem	843.000	Syd	\$6.00	\$5,058.00
0053	0001 Road	5010025	Hand Patching	15.000	Ton	\$150.00	\$2,250.00
0054	0001 Road	5010050	HMA, 4E1	206.000	Ton	\$69.00	\$14,214.00
0055	0001 Road	5010061	HMA Approach	5.000	Ton	\$90.00	\$450.00
0056	0001 Road	6037001	_ Filling Shld Corrugations with Hot-Poured Rubber	1,090.000	Ft	\$0.50	\$545.00
0057	0001 Road	7067010	_ Gravity Wall, Precast, Furn	530.000	Sft	\$26.00	\$13,780.00
0058	0001 Road	7067010	_ Gravity Wall, Precast, Install	530.000	Sft	\$14.00	\$7,420.00
0059	0001 Road	7067010	_ Mechanically Stabilized Earth Wall, Precast, Furn	2,150.000	Sft	\$31.00	\$66,650.00
0060	0001 Road	7067010	_ Mechanically Stabilized Earth Wall, Precast, Install	2,150.000	Sft	\$17.00	\$36,550.00
0061	0001 Road	8020038	Curb and Gutter, Conc, Det F4	295.000	Ft	\$30.00	\$8,850.00
0062	0001 Road	8027001	_ Curb and Gutter, Conc, Det F5, Modified	28.000	Ft	\$35.00	\$980.00

Line	Category	Pay Item	Description	Quantity	Units	Unit Price	Total
0063	0001 Road	8030010	Detectable Warning Surface	30.000	Ft	\$32.00	\$960.00
0064	0001 Road	8030030	Curb Ramp Opening, Conc	57.000	Ft	\$30.00	\$1,710.00
0065	0001 Road	8030036	Sidewalk Ramp, Conc, 6 inch	500.000	Sft	\$6.00	\$3,000.00
0066	0001 Road	8060020	Shared use Path, Conc	52.000	Syd	\$50.00	\$2,600.00
0067	0001 Road	8060040	Shared use Path, HMA	335.000	Ton	\$90.00	\$30,150.00
0068	0001 Road	8067001	_ Pathway Grading	1,697.000	Ft	\$25.00	\$42,425.00
0069	0001 Road	8070002	Guardrail, Type T	113.000	Ft	\$35.00	\$3,955.00
0070	0001 Road	8070004	Guardrail, Type MGS-8	438.000	Ft	\$25.00	\$10,950.00
0071	0001 Road	8070044	Guardrail Approach Terminal, Type 2M	1.000	Ea	\$3,000.00	\$3,000.00
0072	0001 Road	8070051	Guardrail Departing Terminal, Type T	1.000	Ea	\$1,000.00	\$1,000.00
0073	0001 Road	8070052	Guardrail Departing Terminal, Type MGS	1.000	Ea	\$900.00	\$900.00
0074	0001 Road	8070075	Guardrail, Salv	75.000	Ft	\$2.00	\$150.00
0075	0001 Road	8070080	Guardrail Reflector	12.000	Ea	\$8.00	\$96.00

Line	Category	Pay Item	Description	Quantity	Units	Unit Price	Total
0076	0001 Road	8070201	Cable Barrier, High Tension, Salv	1,300.000	Ft	\$3.00	\$3,900.00
0077	0001 Road	8070202	Cable Barrier, High Tension, Reconst	1,300.000	Ft	\$5.50	\$7,150.00
0078	0001 Road	8080002	Fence, Woven Wire with Steel Post	270.000	Ft	\$12.00	\$3,240.00
0079	0001 Road	8080007	Fence, Protective	50.000	Ft	\$6.00	\$300.00
0080	0001 Road	8087001	_ Black Vinyl Coated Chain Link Fence, 48 inch	1,035.000	Ft	\$20.00	\$20,700.00
0081	0001 Road	8100133	Delineator Reflector, Green	3.000	Ea	\$8.00	\$24.00
0082	0001 Road	8100361	Post, Rigid, Delineator	3.000	Ea	\$20.00	\$60.00
0083	0001 Road	8100371	Post, Steel, 3 lb	42.000	Ft	\$8.00	\$336.00
0084	0001 Road	8100402	Sign, Type III, Erect, Salv	1.000	Ea	\$50.00	\$50.00
0085	0001 Road	8100403	Sign, Type III, Rem	1.000	Ea	\$20.00	\$20.00
0086	0001 Road	8100404	Sign, Type IIIA	1.000	Sft	\$25.00	\$25.00
0087	0001 Road	8100405	Sign, Type IIIB	1.000	Sft	\$25.00	\$25.00
0088	0001 Road	8110063	Pavt Mrkg, Ovly Cold Plastic, Lt Turn Arrow Sym	2.000	Ea	\$130.00	\$260.00

Line	Category	Pay Item	Description	Quantity	Units	Unit Price	Total
0089	0001 Road	8110068	Pavt Mrkg, Ovly Cold Plastic, Only	1.000	Ea	\$130.00	\$130.00
0090	0001 Road	8110094	Pavt Mrkg, Polyurea, 6 inch, White	82.000	Ft	\$3.00	\$246.00
0091	0001 Road	8110110	Pavt Mrkg, Polyurea, 12 inch, Crosswalk	220.000	Ft	\$6.00	\$1,320.00
0092	0001 Road	8110114	Pavt Mrkg, Polyurea, 24 inch, Stop Bar	24.000	Ft	\$10.00	\$240.00
0093	0001 Road	8110343	Rem Spec Mrkg	114.000	Sft	\$2.00	\$228.00
0094	0001 Road	8110350	Witness, Log, \$1,000.00	1,000.000	Dlr	\$1.00	\$1,000.00
0095	0001 Road	8110501	Pavt Mrkg, Wet Retrflc Polyurea, 6 inch, White	3,750.000	Ft	\$1.00	\$3,750.00
0096	0001 Road	8110505	Pavt Mrkg, Wet Retrflc Polyurea, 6 inch, Yellow	3,000.000	Ft	\$1.00	\$3,000.00
0097	0001 Road	8120012	Barricade, Type III, High Intensity, Double Sided, Lighted, Furn	4.000	Ea	\$90.00	\$360.00
0098	0001 Road	8120013	Barricade, Type III, High Intensity, Double Sided, Lighted, Oper	4.000	Ea	\$10.00	\$40.00
0099	0001 Road	8120022	Barricade, Type III, High Intensity, Lighted, Furn	4.000	Ea	\$90.00	\$360.00
0100	0001 Road	8120023	Barricade, Type III, High Intensity, Lighted, Oper	4.000	Ea	\$10.00	\$40.00
0101	0001 Road	8120035	Channelizing Device, 42 inch, Fluorescent, Furn	100.000	Ea	\$25.00	\$2,500.00
0102	0001 Road	8120036	Channelizing Device, 42 inch, Fluorescent, Oper	100.000	Ea	\$4.00	\$400.00
0103	0001 Road	8120040	Conc Barrier Ending, Temp, Detail 2, Adj	2.000	Ea	\$300.00	\$600.00

Line	Category	Pay Item	Description	Quantity	Units	Unit Price	Total
0104	0001 Road	8120041	Conc Barrier Ending, Temp, Detail 2, Furn	2.000	Ea	\$2,100.00	\$4,200.00
0105	0001 Road	8120042	Conc Barrier Ending, Temp, Detail 2, Oper	2.000	Ea	\$200.00	\$400.00
0106	0001 Road	8120070	Conc Barrier Reflector Replacement	10.000	Ea	\$12.00	\$120.00
0107	0001 Road	8120080	Conc Barrier, Temp, Adj	935.000	Ft	\$4.00	\$3,740.00
0108	0001 Road	8120081	Conc Barrier, Temp, Furn	1,700.000	Ft	\$14.00	\$23,800.00
0109	0001 Road	8120082	Conc Barrier, Temp, Oper	1,700.000	Ft	\$4.00	\$6,800.00
0110	0001 Road	8120110	High Intensity Light, Type B, Furn	4.000	Ea	\$110.00	\$440.00
0111	0001 Road	8120111	High Intensity Light, Type B, Oper	4.000	Ea	\$5.00	\$20.00
0112	0001 Road	8120140	Lighted Arrow, Type C, Furn	6.000	Ea	\$500.00	\$3,000.00
0113	0001 Road	8120141	Lighted Arrow, Type C, Oper	6.000	Ea	\$80.00	\$480.00
0114	0001 Road	8120142	Lighted Arrow, Type C, Standby	1.000	Ea	\$300.00	\$300.00
0115	0001 Road	8120160	Ltg for Night Work	1.000	LSUM	\$6,500.00	\$6,500.00
0116	0001 Road	8120170	Minor Traf Devices	1.000	LSUM	\$20,000.00	\$20,000.00

Line	Category	Pay Item	Description	Quantity	Units	Unit Price	Total
0117	0001 Road	8120210	Pavt Mrkg, Longit, 6 inch or Less Width, Rem	5,381.000	Ft	\$0.65	\$3,497.65
0118	0001 Road	8120211	Pavt Mrkg, Longit, Greater than 6 inch Width, Rem	26.000	Ft	\$2.00	\$52.00
0119	0001 Road	8120252	Plastic Drum, Fluorescent, Furn	105.000	Ea	\$19.75	\$2,073.75
0120	0001 Road	8120253	Plastic Drum, Fluorescent, Oper	105.000	Ea	\$2.10	\$220.50
0121	0001 Road	8120310	Sign Cover	10.000	Ea	\$24.00	\$240.00
0122	0001 Road	8120330	Sign, Portable, Changeable Message, Furn	2.000	Ea	\$3,000.00	\$6,000.00
0123	0001 Road	8120331	Sign, Portable, Changeable Message, Oper	2.000	Ea	\$300.00	\$600.00
0124	0001 Road	8120332	Sign, Portable, Changeable Message, NTCIP-Compliant, Furn	10.000	Ea	\$2,950.00	\$29,500.00
0125	0001 Road	8120333	Sign, Portable, Changeable Message, NTCIP-Compliant, Oper	10.000	Ea	\$325.00	\$3,250.00
0126	0001 Road	8120350	Sign, Type B, Temp, Prismatic, Furn	1,591.000	Sft	\$5.00	\$7,955.00
0127	0001 Road	8120351	Sign, Type B, Temp, Prismatic, Oper	1,591.000	Sft	\$1.50	\$2,386.50
0128	0001 Road	8122000	Pavt Mrkg, Wet Reflective, Type R, Tape, 6 inch, White, Temp	7,300.000	Ft	\$2.64	\$19,272.00
0129	0001 Road	8122002	Pavt Mrkg, Wet Reflective, Type R, Tape, 6 inch, Yellow, Temp	5,100.000	Ft	\$2.54	\$12,954.00
0130	0001 Road	8130010	Riprap, Plain	170.000	Syd	\$75.00	\$12,750.00

Line	Category	Pay Item	Description	Quantity	Units	Unit Price	Total
0131	0001 Road	8160100	Slope Restoration, Type A	1,160.000	Syd	\$2.50	\$2,900.00
0132	0001 Road	8160101	Slope Restoration, Type B	5,440.000	Syd	\$3.00	\$16,320.00
0133	0001 Road	8160102	Slope Restoration, Type C	2,070.000	Syd	\$4.00	\$8,280.00
0134	0001 Road	8160103	Slope Restoration, Type D	340.000	Syd	\$5.00	\$1,700.00
0135	0001 Road	8190027	Conduit, DB, 1, 1 1/2 inch	15.000	Ft	\$15.00	\$225.00
0136	0001 Road	8190159	Conduit, Schedule 80 PVC, 3 inch	100.000	Ft	\$10.00	\$1,000.00
0137	0001 Road	8200100	Pedestal, Alum	1.000	Ea	\$800.00	\$800.00
0138	0001 Road	8200105	Pedestal, Fdn	1.000	Ea	\$870.00	\$870.00
0139	0001 Road	8200180	TS, Pedestrian, Bracket Arm Mtd, Rem	1.000	Ea	\$105.00	\$105.00
0140	0001 Road	8200344	TS, Pedestrian, One Way Pedestal Mtd (LED)	1.000	Ea	\$1,030.00	\$1,030.00
0141	0001 Road	8200422	Wireless Vehicle Detection System	1.000	Ea	\$6,600.00	\$6,600.00
0142	0001 Road	8200425	Wireless Vehicle Sensor Node	6.000	Ea	\$930.00	\$5,580.00
0143	0001 Road	8220001	Shoulder Corrugations, Ground or Cut, HMA	2,195.000	Ft	\$0.50	\$1,097.50

Line	Category	Pay Item	Description	Quantity	Units	Unit Price	Total
0144	0001 Road	8230431	Gate Box, Adj, Case 1	1.000	Ea	\$500.00	\$500.00
0145	0001 Road	8230432	Gate Box, Adj, Case 2	1.000	Ea	\$300.00	\$300.00
0146	0002 Bridge	2030015	Sewer, Rem, Less than 24 inch	90.000	Ft	\$15.00	\$1,350.00
0147	0002 Bridge	2050012	Embankment, Structure, CIP	200.000	Cyd	\$20.00	\$4,000.00
0148	0002 Bridge	2057051	_ Dewatering System	1.000	LSUM	\$15,000.00	\$15,000.00
0149	0002 Bridge	2057051	_ Embankment, CIP, Special	1.000	LSUM	\$80,000.00	\$80,000.00
0150	0002 Bridge	2057051	_ Excavation, Earth, Special	1.000	LSUM	\$90,000.00	\$90,000.00
0151	0002 Bridge	2057051	_ Geotechnical Instrumentation Hardware (P01 of 41025)	1.000	LSUM	\$5,000.00	\$5,000.00
0152	0002 Bridge	2057051	_ Geotechnical Instrumentation Installation (P01 of 41025)	1.000	LSUM	\$5,000.00	\$5,000.00
0153	0002 Bridge	2057051	_ Geotechnical Instrumentation Monitoring (P01 of 41025)	1.000	LSUM	\$5,000.00	\$5,000.00
0154	0002 Bridge	2060002	Backfill, Structure, CIP	900.000	Cyd	\$23.00	\$20,700.00
0155	0002 Bridge	2060010	Excavation, Fdn	9,380.000	Cyd	\$14.00	\$131,320.00
0156	0002 Bridge	2067021	_ Fill, Lightweight, EPS Block	860.000	Cyd	\$100.00	\$86,000.00
0157	0002 Bridge	2080026	Erosion Control, Maintenance, Sediment Removal	10.000	Cyd	\$25.00	\$250.00



Line	Category	Pay Item	Description	Quantity	Units	Unit Price	Total
0158	0002 Bridge	2080036	Erosion Control, Silt Fence	900.000	Ft	\$1.75	\$1,575.00
0159	0002 Bridge	2080040	Erosion Control, Temp Plastic Sheet/ Geotextile Cover	2,590.000	Syd	\$5.00	\$12,950.00
0160	0002 Bridge	3020002	Aggregate Base, LM	630.000	Cyd	\$18.00	\$11,340.00
0161	0002 Bridge	4020305	Sewer, CI C, 18 inch, Tr Det A	90.000	Ft	\$65.00	\$5,850.00
0162	0002 Bridge	4040031	Underdrain, Fdn, 4 inch	490.000	Ft	\$6.00	\$2,940.00
0163	0002 Bridge	4040091	Underdrain Outlet, 4 inch	40.000	Ft	\$15.00	\$600.00
0164	0002 Bridge	4040111	Underdrain, Outlet Ending, 4 inch	4.000	Ea	\$180.00	\$720.00
0165	0002 Bridge	6027021	_ Conc Base Cse, Reinf, Modified	80.000	Cyd	\$250.00	\$20,000.00
0166	0002 Bridge	7050001	Prebore, Fdn Piling	275.000	Ft	\$44.50	\$12,237.50
0167	0002 Bridge	7050002	Pile Driving Equipment, Furn (P01 of 41025)	1.000	LSUM	\$142,050.00	\$142,050.00
0168	0002 Bridge	7050034	Pile, Steel, Furn and Driven, 14 inch	9,470.000	Ft	\$26.00	\$246,220.00
0169	0002 Bridge	7050050	Pile, Steel, Splice	168.000	Ea	\$69.00	\$11,592.00
0170	0002 Bridge	7057050	_ Test Pile, Dynamic Analysis	6.000	Ea	\$1,000.00	\$6,000.00

Line	Category	Pay Item	Description	Quantity	Units	Unit Price	Total
0171	0002 Bridge	7057050	Test Pile, Furn Dynamic Analysis Equipment	3.000	Ea	\$1,000.00	\$3,000.00
0172	0002 Bridge	7060001	Bridge Ltg, Furn and Rem (P01 of 41025)	1.000	LSUM	\$500.00	\$500.00
0173	0002 Bridge	7060002	Bridge Ltg, Oper and Maintain	166.000	Cyd	\$2.00	\$332.00
0174	0002 Bridge	7060040	Elec Grounding System	1.000	Ea	\$1,610.00	\$1,610.00
0175	0002 Bridge	7060050	Expansion Joint Device	22.000	Ft	\$200.00	\$4,400.00
0176	0002 Bridge	7060051	Expansion Joint Device, Cover Plate	22.000	Ft	\$175.00	\$3,850.00
0177	0002 Bridge	7060060	False Decking	4,032.000	Sft	\$0.50	\$2,016.00
0178	0002 Bridge	7060092	Reinforcement, Steel, Epoxy Coated	86,116.000	Lb	\$1.00	\$86,116.00
0179	0002 Bridge	7060100	Substructure Conc	862.000	Cyd	\$522.86	\$450,705.32
0180	0002 Bridge	7060110	Superstructure Conc	31.000	Cyd	\$214.20	\$6,640.20
0181	0002 Bridge	7060111	Superstructure Conc, Form, Finish, and Cure (P01 of 41025)	1.000	LSUM	\$13,020.00	\$13,020.00
0182	0002 Bridge	7060112	Superstructure Conc, Form, Finish, and Cure, Night Casting (P01 of 41025)	1.000	LSUM	\$69,720.00	\$69,720.00
0183	0002 Bridge	7060113	Superstructure Conc, Night Casting	166.000	Cyd	\$208.04	\$34,534.64
0184	0002 Bridge	7060209	Liner, PVC, 30 mil	380.000	Syd	\$10.00	\$3,800.00

Line	Category	Pay Item	Description	Quantity	Units	Unit Price	Total
0185	0002 Bridge	7067011	_ Simulated Stone Masonry	360.000	Syd	\$15.00	\$5,400.00
0186	0002 Bridge	7067011	_ Texturing Conc	360.000	Syd	\$15.00	\$5,400.00
0187	0002 Bridge	7070020	Bearing, Elastomeric, 3 inch	3,996.000	Sin	\$1.00	\$3,996.00
0188	0002 Bridge	7070053	Steel Diaphragm, Prest Conc Beam, Furn and Fab	2,450.000	Lb	\$4.00	\$9,800.00
0189	0002 Bridge	7070054	Steel Diaphragm, Prest Conc Beam, Erect	2,450.000	Lb	\$2.50	\$6,125.00
0190	0002 Bridge	7080125	Prest Conc Bulb-Tee Beam, Furn, 54 inch by 49 inch	849.000	Ft	\$250.00	\$212,250.00
0191	0002 Bridge	7080126	Prest Conc Bulb-Tee Beam, Erect, 54 inch by 49 inch	849.000	Ft	\$25.00	\$21,225.00
0192	0002 Bridge	7100001	Joint Waterproofing	380.000	Sft	\$6.00	\$2,280.00
0193	0002 Bridge	7100011	Conc Surface Coating	1,170.000	Syd	\$10.00	\$11,700.00
0194	0002 Bridge	7100030	Substructure Horizontal Surface Sealer	10.000	Syd	\$50.26	\$502.60
0195	0002 Bridge	8007051	_ Vibration Monitoring, Utility	1.000	LSUM	\$10,000.00	\$10,000.00
0196	0002 Bridge	8080110	Fence, Structure	6,080.000	Sft	\$12.00	\$72,960.00

**Estimate Total: \$3,205,140.16**

## Engineer's Opinion of Costs

<b>Project Number:</b> 203653	<b>Project Engineer:</b> GPW
<b>Estimate Number:</b> 9: Final Final Estimate Minus Traffic Control	<b>Date Created:</b> 11/15/2021
<b>Project Type:</b> Miscellaneous	<b>Date Edited:</b> 11/15/2021
<b>Location:</b> Cascade Township	<b>Fed/State #:</b>
Burton Street from Patterson to Highridge	<b>Fed Item:</b>
<b>Description:</b> 10' wide HMA pathway with associated drainage features, pedestrian ramps, and pedestrian bridge.	<b>Control Section:</b> TA 41000

Line	Category	Pay Item	Description	Quantity	Units	Unit Price	Total
0001	0001 Road	1500001	Mobilization, Max \$290,000	1.000	LSUM	\$290,000.00	\$290,000.00
0002	0001 Road	2010001	Clearing	2.000	Acre	\$1,000.00	\$2,000.00
0003	0001 Road	2020002	Tree, Rem, 19 inch to 36 inch	3.000	Ea	\$800.00	\$2,400.00
0004	0001 Road	2020003	Tree, Rem, 37 inch or Larger	1.000	Ea	\$1,200.00	\$1,200.00
0005	0001 Road	2020004	Tree, Rem, 6 inch to 18 inch	56.000	Ea	\$200.00	\$11,200.00
0006	0001 Road	2030005	Culv, End, Rem, Less than 24 inch	3.000	Ea	\$300.00	\$900.00
0007	0001 Road	2030011	Dr Structure, Rem	1.000	Ea	\$800.00	\$800.00
0008	0001 Road	2030015	Sewer, Rem, Less than 24 inch	87.000	Ft	\$15.00	\$1,305.00
0009	0001 Road	2040020	Curb and Gutter, Rem	112.000	Ft	\$8.00	\$896.00

Line	Category	Pay Item	Description	Quantity	Units	Unit Price	Total
0010	0001 Road	2040025	Fence, Rem	456.000	Ft	\$3.00	\$1,368.00
0011	0001 Road	2040055	Sidewalk, Rem	10.000	Syd	\$15.00	\$150.00
0012	0001 Road	2040080	Exploratory Investigation, Vertical	10.000	Ft	\$35.00	\$350.00
0013	0001 Road	2050010	Embankment, CIP	11,330.000	Cyd	\$16.00	\$181,280.00
0014	0001 Road	2050016	Excavation, Earth	1,840.000	Cyd	\$10.00	\$18,400.00
0015	0001 Road	2050041	Subgrade Undercutting, Type II	100.000	Cyd	\$15.00	\$1,500.00
0016	0001 Road	2057001	_ Ditching, Modified	230.000	Ft	\$25.00	\$5,750.00
0017	0001 Road	2060002	Backfill, Structure, CIP	740.000	Cyd	\$23.00	\$17,020.00
0018	0001 Road	2060004	Backfill, Select	1,870.000	Cyd	\$22.00	\$41,140.00
0019	0001 Road	2080012	Erosion Control, Check Dam, Stone	21.000	Ft	\$22.00	\$462.00
0020	0001 Road	2080020	Erosion Control, Inlet Protection, Fabric Drop	11.000	Ea	\$140.00	\$1,540.00
0021	0001 Road	2080026	Erosion Control, Maintenance, Sediment Removal	200.000	Cyd	\$25.00	\$5,000.00
0022	0001 Road	2080034	Erosion Control, Sediment Trap	3.000	Ea	\$120.00	\$360.00

Line	Category	Pay Item	Description	Quantity	Units	Unit Price	Total
0023	0001 Road	2080036	Erosion Control, Silt Fence	2,180.000	Ft	\$1.75	\$3,815.00
0024	0001 Road	2087001	_ Erosion Control, Sediment Log	930.000	Ft	\$10.00	\$9,300.00
0025	0001 Road	2090001	Project Cleanup	1.000	LSUM	\$6,000.00	\$6,000.00
0026	0001 Road	3010002	Subbase, CIP	12.000	Cyd	\$25.00	\$300.00
0027	0001 Road	3020016	Aggregate Base, 6 inch	1,950.000	Syd	\$10.00	\$19,500.00
0028	0001 Road	3020020	Aggregate Base, 8 inch	130.000	Syd	\$20.00	\$2,600.00
0029	0001 Road	4010012	Culv End Sect, 12 inch	5.000	Ea	\$600.00	\$3,000.00
0030	0001 Road	4010018	Culv End Sect, 18 inch	2.000	Ea	\$800.00	\$1,600.00
0031	0001 Road	4011109	Dr Marker Post	4.000	Ea	\$25.00	\$100.00
0032	0001 Road	4020033	Sewer, CI A, 12 inch, Tr Det B	121.000	Ft	\$75.00	\$9,075.00
0033	0001 Road	4020035	Sewer, CI A, 18 inch, Tr Det B	92.000	Ft	\$80.00	\$7,360.00
0034	0001 Road	4020153	Sewer, CI B, 12 inch, Tr Det A	55.000	Ft	\$75.00	\$4,125.00
0035	0001 Road	4020155	Sewer, CI B, 18 inch, Tr Det A	15.000	Ft	\$80.00	\$1,200.00

Line	Category	Pay Item	Description	Quantity	Units	Unit Price	Total
0036	0001 Road	4020600	Sewer, CI E, 12 inch, Tr Det B	134.000	Ft	\$75.00	\$10,050.00
0037	0001 Road	4021204	Sewer Tap, 12 inch	2.000	Ea	\$550.00	\$1,100.00
0038	0001 Road	4021206	Sewer Tap, 18 inch	1.000	Ea	\$600.00	\$600.00
0039	0001 Road	4021260	Trench Undercut and Backfill	100.000	Cyd	\$30.00	\$3,000.00
0040	0001 Road	4021275	Video Taping Sewer and Culv Pipe	423.000	Ft	\$1.50	\$634.50
0041	0001 Road	4030010	Dr Structure Cover, Type B	2.000	Ea	\$600.00	\$1,200.00
0042	0001 Road	4030040	Dr Structure Cover, Type G	3.000	Ea	\$600.00	\$1,800.00
0043	0001 Road	4030050	Dr Structure Cover, Type K	5.000	Ea	\$700.00	\$3,500.00
0044	0001 Road	4030200	Dr Structure, 24 inch dia	1.000	Ea	\$1,200.00	\$1,200.00
0045	0001 Road	4030210	Dr Structure, 48 inch dia	7.000	Ea	\$2,500.00	\$17,500.00
0046	0001 Road	4030220	Dr Structure, 60 inch dia	2.000	Ea	\$3,000.00	\$6,000.00
0047	0001 Road	4030250	Dr Structure, Add Depth of 48 inch dia, 8 foot to 15 foot	6.000	Ft	\$120.00	\$720.00
0048	0001 Road	5010005	HMA Surface, Rem	163.000	Syd	\$6.00	\$978.00

Line	Category	Pay Item	Description	Quantity	Units	Unit Price	Total
0049	0001 Road	5010025	Hand Patching	15.000	Ton	\$150.00	\$2,250.00
0050	0001 Road	5010061	HMA Approach	5.000	Ton	\$90.00	\$450.00
0051	0001 Road	7067010	_ Gravity Wall, Precast, Furn	530.000	Sft	\$26.00	\$13,780.00
0052	0001 Road	7067010	_ Gravity Wall, Precast, Install	530.000	Sft	\$14.00	\$7,420.00
0053	0001 Road	7067010	_ Mechanically Stabilized Earth Wall, Precast, Furn	2,150.000	Sft	\$31.00	\$66,650.00
0054	0001 Road	7067010	_ Mechanically Stabilized Earth Wall, Precast, Install	2,150.000	Sft	\$17.00	\$36,550.00
0055	0001 Road	8020038	Curb and Gutter, Conc, Det F4	295.000	Ft	\$30.00	\$8,850.00
0056	0001 Road	8027001	_ Curb and Gutter, Conc, Det F5, Modified	28.000	Ft	\$35.00	\$980.00
0057	0001 Road	8030010	Detectable Warning Surface	30.000	Ft	\$32.00	\$960.00
0058	0001 Road	8030030	Curb Ramp Opening, Conc	57.000	Ft	\$30.00	\$1,710.00
0059	0001 Road	8030036	Sidewalk Ramp, Conc, 6 inch	500.000	Sft	\$6.00	\$3,000.00
0060	0001 Road	8060020	Shared use Path, Conc	52.000	Syd	\$50.00	\$2,600.00
0061	0001 Road	8060040	Shared use Path, HMA	335.000	Ton	\$90.00	\$30,150.00



Line	Category	Pay Item	Description	Quantity	Units	Unit Price	Total
0062	0001 Road	8067001	_ Pathway Grading	1,697.000	Ft	\$25.00	\$42,425.00
0063	0001 Road	8080002	Fence, Woven Wire with Steel Post	270.000	Ft	\$12.00	\$3,240.00
0064	0001 Road	8087001	_ Black Vinyl Coated Chain Link Fence, 48 inch	1,035.000	Ft	\$20.00	\$20,700.00
0065	0001 Road	8100371	Post, Steel, 3 lb	42.000	Ft	\$8.00	\$336.00
0066	0001 Road	8100402	Sign, Type III, Erect, Salv	1.000	Ea	\$50.00	\$50.00
0067	0001 Road	8100403	Sign, Type III, Rem	1.000	Ea	\$20.00	\$20.00
0068	0001 Road	8100404	Sign, Type IIIA	1.000	Sft	\$25.00	\$25.00
0069	0001 Road	8100405	Sign, Type IIIB	1.000	Sft	\$25.00	\$25.00
0070	0001 Road	8110063	Pavt Mrkg, Ovly Cold Plastic, Lt Turn Arrow Sym	2.000	Ea	\$130.00	\$260.00
0071	0001 Road	8110068	Pavt Mrkg, Ovly Cold Plastic, Only	1.000	Ea	\$130.00	\$130.00
0072	0001 Road	8110094	Pavt Mrkg, Polyurea, 6 inch, White	82.000	Ft	\$3.00	\$246.00
0073	0001 Road	8110110	Pavt Mrkg, Polyurea, 12 inch, Crosswalk	220.000	Ft	\$6.00	\$1,320.00
0074	0001 Road	8110114	Pavt Mrkg, Polyurea, 24 inch, Stop Bar	24.000	Ft	\$10.00	\$240.00

Line	Category	Pay Item	Description	Quantity	Units	Unit Price	Total
0075	0001 Road	8110343	Rem Spec Mrkg	114.000	Sft	\$2.00	\$228.00
0076	0001 Road	8110350	Witness, Log, \$1,000.00	1,000.000	Dir	\$1.00	\$1,000.00
0077	0001 Road	8120012	Barricade, Type III, High Intensity, Double Sided, Lighted, Furn	4.000	Ea	\$90.00	\$360.00
0078	0001 Road	8120013	Barricade, Type III, High Intensity, Double Sided, Lighted, Oper	4.000	Ea	\$10.00	\$40.00
0079	0001 Road	8120022	Barricade, Type III, High Intensity, Lighted, Furn	4.000	Ea	\$90.00	\$360.00
0080	0001 Road	8120023	Barricade, Type III, High Intensity, Lighted, Oper	4.000	Ea	\$10.00	\$40.00
0081	0001 Road	8120035	Channelizing Device, 42 inch, Fluorescent, Furn	100.000	Ea	\$25.00	\$2,500.00
0082	0001 Road	8120036	Channelizing Device, 42 inch, Fluorescent, Oper	100.000	Ea	\$4.00	\$400.00
0083	0001 Road	8120140	Lighted Arrow, Type C, Furn	2.000	Ea	\$500.00	\$1,000.00
0084	0001 Road	8120141	Lighted Arrow, Type C, Oper	2.000	Ea	\$80.00	\$160.00
0085	0001 Road	8120142	Lighted Arrow, Type C, Standby	1.000	Ea	\$300.00	\$300.00
0086	0001 Road	8120160	Ltg for Night Work	1.000	LSUM	\$6,500.00	\$6,500.00
0087	0001 Road	8120170	Minor Traf Devices	0.500	LSUM	\$20,000.00	\$10,000.00
0088	0001 Road	8120210	Pavt Mrkg, Longit, 6 inch or Less Width, Rem	181.000	Ft	\$0.65	\$117.65

Line	Category	Pay Item	Description	Quantity	Units	Unit Price	Total
0089	0001 Road	8120211	Pavt Mrkg, Longit, Greater than 6 inch Width, Rem	26.000	Ft	\$2.00	\$52.00
0090	0001 Road	8120330	Sign, Portable, Changeable Message, Furn	2.000	Ea	\$3,000.00	\$6,000.00
0091	0001 Road	8120331	Sign, Portable, Changeable Message, Oper	2.000	Ea	\$300.00	\$600.00
0092	0001 Road	8120350	Sign, Type B, Temp, Prismatic, Furn	341.000	Sft	\$5.00	\$1,705.00
0093	0001 Road	8120351	Sign, Type B, Temp, Prismatic, Oper	341.000	Sft	\$1.50	\$511.50
0094	0001 Road	8130010	Riprap, Plain	170.000	Syd	\$75.00	\$12,750.00
0095	0001 Road	8160100	Slope Restoration, Type A	610.000	Syd	\$2.50	\$1,525.00
0096	0001 Road	8160101	Slope Restoration, Type B	5,440.000	Syd	\$3.00	\$16,320.00
0097	0001 Road	8160102	Slope Restoration, Type C	2,070.000	Syd	\$4.00	\$8,280.00
0098	0001 Road	8160103	Slope Restoration, Type D	340.000	Syd	\$5.00	\$1,700.00
0099	0001 Road	8190027	Conduit, DB, 1, 1 1/2 inch	15.000	Ft	\$15.00	\$225.00
0100	0001 Road	8190159	Conduit, Schedule 80 PVC, 3 inch	100.000	Ft	\$10.00	\$1,000.00
0101	0001 Road	8200100	Pedestal, Alum	1.000	Ea	\$800.00	\$800.00

Line	Category	Pay Item	Description	Quantity	Units	Unit Price	Total
0102	0001 Road	8200105	Pedestal, Fdn	1.000	Ea	\$870.00	\$870.00
0103	0001 Road	8200180	TS, Pedestrian, Bracket Arm Mtd, Rem	1.000	Ea	\$105.00	\$105.00
0104	0001 Road	8200344	TS, Pedestrian, One Way Pedestal Mtd (LED)	1.000	Ea	\$1,030.00	\$1,030.00
0105	0001 Road	8200422	Wireless Vehicle Detection System	1.000	Ea	\$6,600.00	\$6,600.00
0106	0001 Road	8200425	Wireless Vehicle Sensor Node	6.000	Ea	\$930.00	\$5,580.00
0107	0001 Road	8230431	Gate Box, Adj, Case 1	1.000	Ea	\$500.00	\$500.00
0108	0001 Road	8230432	Gate Box, Adj, Case 2	1.000	Ea	\$300.00	\$300.00
0109	0002 Bridge	2030015	Sewer, Rem, Less than 24 inch	90.000	Ft	\$15.00	\$1,350.00
0110	0002 Bridge	2050012	Embankment, Structure, CIP	200.000	Cyd	\$20.00	\$4,000.00
0111	0002 Bridge	2057051	_ Dewatering System	1.000	LSUM	\$15,000.00	\$15,000.00
0112	0002 Bridge	2057051	_ Embankment, CIP, Special	1.000	LSUM	\$80,000.00	\$80,000.00
0113	0002 Bridge	2057051	_ Excavation, Earth, Special	1.000	LSUM	\$90,000.00	\$90,000.00
0114	0002 Bridge	2057051	_ Geotechnical Instrumentation Hardware (P01 of 41025)	1.000	LSUM	\$5,000.00	\$5,000.00
0115	0002 Bridge	2057051	_ Geotechnical Instrumentation Installation (P01 of 41025)	1.000	LSUM	\$5,000.00	\$5,000.00

Line	Category	Pay Item	Description	Quantity	Units	Unit Price	Total
0116	0002 Bridge	2057051	_ Geotechnical Instrumentation Monitoring (P01 of 41025)	1.000	LSUM	\$5,000.00	\$5,000.00
0117	0002 Bridge	2060002	Backfill, Structure, CIP	900.000	Cyd	\$23.00	\$20,700.00
0118	0002 Bridge	2060010	Excavation, Fdn	9,380.000	Cyd	\$14.00	\$131,320.00
0119	0002 Bridge	2067021	_ Fill, Lightweight, EPS Block	860.000	Cyd	\$100.00	\$86,000.00
0120	0002 Bridge	2080026	Erosion Control, Maintenance, Sediment Removal	10.000	Cyd	\$25.00	\$250.00
0121	0002 Bridge	2080036	Erosion Control, Silt Fence	900.000	Ft	\$1.75	\$1,575.00
0122	0002 Bridge	2080040	Erosion Control, Temp Plastic Sheet/ Geotextile Cover	2,590.000	Syd	\$5.00	\$12,950.00
0123	0002 Bridge	3020002	Aggregate Base, LM	630.000	Cyd	\$18.00	\$11,340.00
0124	0002 Bridge	4020305	Sewer, CI C, 18 inch, Tr Det A	90.000	Ft	\$65.00	\$5,850.00
0125	0002 Bridge	4040031	Underdrain, Fdn, 4 inch	490.000	Ft	\$6.00	\$2,940.00
0126	0002 Bridge	4040091	Underdrain Outlet, 4 inch	40.000	Ft	\$15.00	\$600.00
0127	0002 Bridge	4040111	Underdrain, Outlet Ending, 4 inch	4.000	Ea	\$180.00	\$720.00
0128	0002 Bridge	6027021	_ Conc Base Cse, Reinf, Modified	80.000	Cyd	\$250.00	\$20,000.00
0129	0002 Bridge	7050001	Prebore, Fdn Piling	275.000	Ft	\$44.50	\$12,237.50

Line	Category	Pay Item	Description	Quantity	Units	Unit Price	Total
0130	0002 Bridge	7050002	Pile Driving Equipment, Furn (P01 of 41025)	1.000	LSUM	\$142,050.00	\$142,050.00
0131	0002 Bridge	7050034	Pile, Steel, Furn and Driven, 14 inch	9,470.000	Ft	\$26.00	\$246,220.00
0132	0002 Bridge	7050050	Pile, Steel, Splice	168.000	Ea	\$69.00	\$11,592.00
0133	0002 Bridge	7057050	_ Test Pile, Dynamic Analysis	6.000	Ea	\$1,000.00	\$6,000.00
0134	0002 Bridge	7057050	_ Test Pile, Furn Dynamic Analysis Equipment	3.000	Ea	\$1,000.00	\$3,000.00
0135	0002 Bridge	7060001	Bridge Ltg, Furn and Rem (P01 of 41025)	1.000	LSUM	\$500.00	\$500.00
0136	0002 Bridge	7060002	Bridge Ltg, Oper and Maintain	166.000	Cyd	\$2.00	\$332.00
0137	0002 Bridge	7060040	Elec Grounding System	1.000	Ea	\$1,610.00	\$1,610.00
0138	0002 Bridge	7060050	Expansion Joint Device	22.000	Ft	\$200.00	\$4,400.00
0139	0002 Bridge	7060051	Expansion Joint Device, Cover Plate	22.000	Ft	\$175.00	\$3,850.00
0140	0002 Bridge	7060060	False Decking	4,032.000	Sft	\$0.50	\$2,016.00
0141	0002 Bridge	7060092	Reinforcement, Steel, Epoxy Coated	86,116.000	Lb	\$1.00	\$86,116.00
0142	0002 Bridge	7060100	Substructure Conc	862.000	Cyd	\$522.86	\$450,705.32

Line	Category	Pay Item	Description	Quantity	Units	Unit Price	Total
0143	0002 Bridge	7060110	Superstructure Conc	31.000	Cyd	\$214.20	\$6,640.20
0144	0002 Bridge	7060111	Superstructure Conc, Form, Finish, and Cure (P01 of 41025)	1.000	LSUM	\$13,020.00	\$13,020.00
0145	0002 Bridge	7060112	Superstructure Conc, Form, Finish, and Cure, Night Casting (P01 of 41025)	1.000	LSUM	\$69,720.00	\$69,720.00
0146	0002 Bridge	7060113	Superstructure Conc, Night Casting	166.000	Cyd	\$208.04	\$34,534.64
0147	0002 Bridge	7060209	Liner, PVC, 30 mil	380.000	Syd	\$10.00	\$3,800.00
0148	0002 Bridge	7067011	_ Simulated Stone Masonry	360.000	Syd	\$15.00	\$5,400.00
0149	0002 Bridge	7067011	_ Texturing Conc	360.000	Syd	\$15.00	\$5,400.00
0150	0002 Bridge	7070020	Bearing, Elastomeric, 3 inch	3,996.000	Sin	\$1.00	\$3,996.00
0151	0002 Bridge	7070053	Steel Diaphragm, Prest Conc Beam, Furn and Fab	2,450.000	Lb	\$4.00	\$9,800.00
0152	0002 Bridge	7070054	Steel Diaphragm, Prest Conc Beam, Erect	2,450.000	Lb	\$2.50	\$6,125.00
0153	0002 Bridge	7080125	Prest Conc Bulb-Tee Beam, Furn, 54 inch by 49 inch	849.000	Ft	\$250.00	\$212,250.00
0154	0002 Bridge	7080126	Prest Conc Bulb-Tee Beam, Erect, 54 inch by 49 inch	849.000	Ft	\$25.00	\$21,225.00
0155	0002 Bridge	7100001	Joint Waterproofing	380.000	Sft	\$6.00	\$2,280.00
0156	0002 Bridge	7100011	Conc Surface Coating	1,170.000	Syd	\$10.00	\$11,700.00

Line	Category	Pay Item	Description	Quantity	Units	Unit Price	Total
0157	0002 Bridge	7100030	Substructure Horizontal Surface Sealer	10.000	Syd	\$50.26	\$502.60
0158	0002 Bridge	8007051	_ Vibration Monitoring, Utility	1.000	LSUM	\$10,000.00	\$10,000.00
0159	0002 Bridge	8080110	Fence, Structure	6,080.000	Sft	\$12.00	\$72,960.00

**Estimate Total: \$2,994,681.91**



## Engineer's Opinion of Costs

<b>Project Number:</b> 203653	<b>Project Engineer:</b> GPW
<b>Estimate Number:</b> 10: Final Final Estimate Minus Traffic Control and MSE Walls	<b>Date Created:</b> 11/15/2021
<b>Project Type:</b> Miscellaneous	<b>Date Edited:</b> 11/17/2021
<b>Location:</b> Cascade Township	<b>Fed/State #:</b>
Burton Street from Patterson to Highridge	<b>Fed Item:</b>
<b>Description:</b> 10' wide HMA pathway with associated drainage features, pedestrian ramps, and pedestrian bridge.	<b>Control Section:</b> TA 41000

Line	Category	Pay Item	Description	Quantity	Units	Unit Price	Total
0001	0001 Road	1500001	Mobilization, Max \$290,000	1.000	LSUM	\$290,000.00	\$290,000.00
0002	0001 Road	2010001	Clearing	2.000	Acre	\$1,000.00	\$2,000.00
0003	0001 Road	2020002	Tree, Rem, 19 inch to 36 inch	3.000	Ea	\$800.00	\$2,400.00
0004	0001 Road	2020003	Tree, Rem, 37 inch or Larger	1.000	Ea	\$1,200.00	\$1,200.00
0005	0001 Road	2020004	Tree, Rem, 6 inch to 18 inch	56.000	Ea	\$200.00	\$11,200.00
0006	0001 Road	2030005	Culv, End, Rem, Less than 24 inch	3.000	Ea	\$300.00	\$900.00
0007	0001 Road	2030011	Dr Structure, Rem	1.000	Ea	\$800.00	\$800.00
0008	0001 Road	2030015	Sewer, Rem, Less than 24 inch	87.000	Ft	\$15.00	\$1,305.00
0009	0001 Road	2040020	Curb and Gutter, Rem	112.000	Ft	\$8.00	\$896.00

Line	Category	Pay Item	Description	Quantity	Units	Unit Price	Total
0010	0001 Road	2040025	Fence, Rem	456.000	Ft	\$3.00	\$1,368.00
0011	0001 Road	2040055	Sidewalk, Rem	10.000	Syd	\$15.00	\$150.00
0012	0001 Road	2040080	Exploratory Investigation, Vertical	10.000	Ft	\$35.00	\$350.00
0013	0001 Road	2050010	Embankment, CIP	13,840.000	Cyd	\$16.00	\$221,440.00
0014	0001 Road	2050016	Excavation, Earth	1,840.000	Cyd	\$10.00	\$18,400.00
0015	0001 Road	2050041	Subgrade Undercutting, Type II	100.000	Cyd	\$15.00	\$1,500.00
0016	0001 Road	2057001	_ Ditching, Modified	230.000	Ft	\$25.00	\$5,750.00
0017	0001 Road	2060002	Backfill, Structure, CIP	300.000	Cyd	\$23.00	\$6,900.00
0018	0001 Road	2080012	Erosion Control, Check Dam, Stone	21.000	Ft	\$22.00	\$462.00
0019	0001 Road	2080020	Erosion Control, Inlet Protection, Fabric Drop	11.000	Ea	\$140.00	\$1,540.00
0020	0001 Road	2080026	Erosion Control, Maintenance, Sediment Removal	200.000	Cyd	\$25.00	\$5,000.00
0021	0001 Road	2080034	Erosion Control, Sediment Trap	3.000	Ea	\$120.00	\$360.00
0022	0001 Road	2080036	Erosion Control, Silt Fence	2,180.000	Ft	\$1.75	\$3,815.00

Line	Category	Pay Item	Description	Quantity	Units	Unit Price	Total
0023	0001 Road	2087001	_ Erosion Control, Sediment Log	930.000	Ft	\$10.00	\$9,300.00
0024	0001 Road	2090001	Project Cleanup	1.000	LSUM	\$6,000.00	\$6,000.00
0025	0001 Road	3010002	Subbase, CIP	12.000	Cyd	\$25.00	\$300.00
0026	0001 Road	3020016	Aggregate Base, 6 inch	1,950.000	Syd	\$10.00	\$19,500.00
0027	0001 Road	3020020	Aggregate Base, 8 inch	130.000	Syd	\$20.00	\$2,600.00
0028	0001 Road	4010012	Culv End Sect, 12 inch	5.000	Ea	\$600.00	\$3,000.00
0029	0001 Road	4010018	Culv End Sect, 18 inch	2.000	Ea	\$800.00	\$1,600.00
0030	0001 Road	4011109	Dr Marker Post	4.000	Ea	\$25.00	\$100.00
0031	0001 Road	4020033	Sewer, CI A, 12 inch, Tr Det B	121.000	Ft	\$75.00	\$9,075.00
0032	0001 Road	4020035	Sewer, CI A, 18 inch, Tr Det B	92.000	Ft	\$80.00	\$7,360.00
0033	0001 Road	4020153	Sewer, CI B, 12 inch, Tr Det A	55.000	Ft	\$75.00	\$4,125.00
0034	0001 Road	4020155	Sewer, CI B, 18 inch, Tr Det A	15.000	Ft	\$80.00	\$1,200.00
0035	0001 Road	4020600	Sewer, CI E, 12 inch, Tr Det B	134.000	Ft	\$75.00	\$10,050.00

Line	Category	Pay Item	Description	Quantity	Units	Unit Price	Total
0036	0001 Road	4021204	Sewer Tap, 12 inch	2.000	Ea	\$550.00	\$1,100.00
0037	0001 Road	4021206	Sewer Tap, 18 inch	1.000	Ea	\$600.00	\$600.00
0038	0001 Road	4021260	Trench Undercut and Backfill	100.000	Cyd	\$30.00	\$3,000.00
0039	0001 Road	4021275	Video Taping Sewer and Culv Pipe	423.000	Ft	\$1.50	\$634.50
0040	0001 Road	4030010	Dr Structure Cover, Type B	2.000	Ea	\$600.00	\$1,200.00
0041	0001 Road	4030040	Dr Structure Cover, Type G	3.000	Ea	\$600.00	\$1,800.00
0042	0001 Road	4030050	Dr Structure Cover, Type K	5.000	Ea	\$700.00	\$3,500.00
0043	0001 Road	4030200	Dr Structure, 24 inch dia	1.000	Ea	\$1,200.00	\$1,200.00
0044	0001 Road	4030210	Dr Structure, 48 inch dia	7.000	Ea	\$2,500.00	\$17,500.00
0045	0001 Road	4030220	Dr Structure, 60 inch dia	2.000	Ea	\$3,000.00	\$6,000.00
0046	0001 Road	4030250	Dr Structure, Add Depth of 48 inch dia, 8 foot to 15 foot	6.000	Ft	\$120.00	\$720.00
0047	0001 Road	5010005	HMA Surface, Rem	163.000	Syd	\$6.00	\$978.00
0048	0001 Road	5010025	Hand Patching	15.000	Ton	\$150.00	\$2,250.00

Line	Category	Pay Item	Description	Quantity	Units	Unit Price	Total
0049	0001 Road	5010061	HMA Approach	5.000	Ton	\$90.00	\$450.00
0050	0001 Road	7067010	_ Gravity Wall, Precast, Furn	890.000	Sft	\$26.00	\$23,140.00
0051	0001 Road	7067010	_ Gravity Wall, Precast, Install	890.000	Sft	\$14.00	\$12,460.00
0052	0001 Road	8020038	Curb and Gutter, Conc, Det F4	295.000	Ft	\$30.00	\$8,850.00
0053	0001 Road	8027001	_ Curb and Gutter, Conc, Det F5, Modified	28.000	Ft	\$35.00	\$980.00
0054	0001 Road	8030010	Detectable Warning Surface	30.000	Ft	\$32.00	\$960.00
0055	0001 Road	8030030	Curb Ramp Opening, Conc	57.000	Ft	\$30.00	\$1,710.00
0056	0001 Road	8030036	Sidewalk Ramp, Conc, 6 inch	500.000	Sft	\$6.00	\$3,000.00
0057	0001 Road	8060020	Shared use Path, Conc	52.000	Syd	\$50.00	\$2,600.00
0058	0001 Road	8060040	Shared use Path, HMA	335.000	Ton	\$90.00	\$30,150.00
0059	0001 Road	8067001	_ Pathway Grading	1,697.000	Ft	\$25.00	\$42,425.00
0060	0001 Road	8080002	Fence, Woven Wire with Steel Post	270.000	Ft	\$12.00	\$3,240.00
0061	0001 Road	8087001	_ Black Vinyl Coated Chain Link Fence, 48 inch	1,035.000	Ft	\$20.00	\$20,700.00

Line	Category	Pay Item	Description	Quantity	Units	Unit Price	Total
0062	0001 Road	8100371	Post, Steel, 3 lb	42.000	Ft	\$8.00	\$336.00
0063	0001 Road	8100402	Sign, Type III, Erect, Salv	1.000	Ea	\$50.00	\$50.00
0064	0001 Road	8100403	Sign, Type III, Rem	1.000	Ea	\$20.00	\$20.00
0065	0001 Road	8100404	Sign, Type IIIA	1.000	Sft	\$25.00	\$25.00
0066	0001 Road	8100405	Sign, Type IIIB	1.000	Sft	\$25.00	\$25.00
0067	0001 Road	8110063	Pavt Mrkg, Ovly Cold Plastic, Lt Turn Arrow Sym	2.000	Ea	\$130.00	\$260.00
0068	0001 Road	8110068	Pavt Mrkg, Ovly Cold Plastic, Only	1.000	Ea	\$130.00	\$130.00
0069	0001 Road	8110094	Pavt Mrkg, Polyurea, 6 inch, White	82.000	Ft	\$3.00	\$246.00
0070	0001 Road	8110110	Pavt Mrkg, Polyurea, 12 inch, Crosswalk	220.000	Ft	\$6.00	\$1,320.00
0071	0001 Road	8110114	Pavt Mrkg, Polyurea, 24 inch, Stop Bar	24.000	Ft	\$10.00	\$240.00
0072	0001 Road	8110343	Rem Spec Mrkg	114.000	Sft	\$2.00	\$228.00
0073	0001 Road	8110350	Witness, Log, \$1,000.00	1,000.000	Dir	\$1.00	\$1,000.00
0074	0001 Road	8120012	Barricade, Type III, High Intensity, Double Sided, Lighted, Furn	4.000	Ea	\$90.00	\$360.00
0075	0001 Road	8120013	Barricade, Type III, High Intensity, Double Sided, Lighted, Oper	4.000	Ea	\$10.00	\$40.00

Line	Category	Pay Item	Description	Quantity	Units	Unit Price	Total
0076	0001 Road	8120022	Barricade, Type III, High Intensity, Lighted, Furn	4.000	Ea	\$90.00	\$360.00
0077	0001 Road	8120023	Barricade, Type III, High Intensity, Lighted, Oper	4.000	Ea	\$10.00	\$40.00
0078	0001 Road	8120035	Channelizing Device, 42 inch, Fluorescent, Furn	100.000	Ea	\$25.00	\$2,500.00
0079	0001 Road	8120036	Channelizing Device, 42 inch, Fluorescent, Oper	100.000	Ea	\$4.00	\$400.00
0080	0001 Road	8120140	Lighted Arrow, Type C, Furn	2.000	Ea	\$500.00	\$1,000.00
0081	0001 Road	8120141	Lighted Arrow, Type C, Oper	2.000	Ea	\$80.00	\$160.00
0082	0001 Road	8120142	Lighted Arrow, Type C, Standby	1.000	Ea	\$300.00	\$300.00
0083	0001 Road	8120160	Ltg for Night Work	1.000	LSUM	\$6,500.00	\$6,500.00
0084	0001 Road	8120170	Minor Traf Devices	0.500	LSUM	\$20,000.00	\$10,000.00
0085	0001 Road	8120210	Pavt Mrkg, Longit, 6 inch or Less Width, Rem	181.000	Ft	\$0.65	\$117.65
0086	0001 Road	8120211	Pavt Mrkg, Longit, Greater than 6 inch Width, Rem	26.000	Ft	\$2.00	\$52.00
0087	0001 Road	8120330	Sign, Portable, Changeable Message, Furn	2.000	Ea	\$3,000.00	\$6,000.00
0088	0001 Road	8120331	Sign, Portable, Changeable Message, Oper	2.000	Ea	\$300.00	\$600.00
0089	0001 Road	8120350	Sign, Type B, Temp, Prismatic, Furn	341.000	Sft	\$5.00	\$1,705.00

Line	Category	Pay Item	Description	Quantity	Units	Unit Price	Total
0090	0001 Road	8120351	Sign, Type B, Temp, Prismatic, Oper	341.000	Sft	\$1.50	\$511.50
0091	0001 Road	8130010	Riprap, Plain	170.000	Syd	\$75.00	\$12,750.00
0092	0001 Road	8160100	Slope Restoration, Type A	610.000	Syd	\$2.50	\$1,525.00
0093	0001 Road	8160101	Slope Restoration, Type B	5,440.000	Syd	\$3.00	\$16,320.00
0094	0001 Road	8160102	Slope Restoration, Type C	2,070.000	Syd	\$4.00	\$8,280.00
0095	0001 Road	8160103	Slope Restoration, Type D	340.000	Syd	\$5.00	\$1,700.00
0096	0001 Road	8190027	Conduit, DB, 1, 1 1/2 inch	15.000	Ft	\$15.00	\$225.00
0097	0001 Road	8190159	Conduit, Schedule 80 PVC, 3 inch	100.000	Ft	\$10.00	\$1,000.00
0098	0001 Road	8200100	Pedestal, Alum	1.000	Ea	\$800.00	\$800.00
0099	0001 Road	8200105	Pedestal, Fdn	1.000	Ea	\$870.00	\$870.00
0100	0001 Road	8200180	TS, Pedestrian, Bracket Arm Mtd, Rem	1.000	Ea	\$105.00	\$105.00
0101	0001 Road	8200344	TS, Pedestrian, One Way Pedestal Mtd (LED)	1.000	Ea	\$1,030.00	\$1,030.00
0102	0001 Road	8200422	Wireless Vehicle Detection System	1.000	Ea	\$6,600.00	\$6,600.00



Line	Category	Pay Item	Description	Quantity	Units	Unit Price	Total
0103	0001 Road	8200425	Wireless Vehicle Sensor Node	6.000	Ea	\$930.00	\$5,580.00
0104	0001 Road	8230431	Gate Box, Adj, Case 1	1.000	Ea	\$500.00	\$500.00
0105	0001 Road	8230432	Gate Box, Adj, Case 2	1.000	Ea	\$300.00	\$300.00
0106	0002 Bridge	2030015	Sewer, Rem, Less than 24 inch	90.000	Ft	\$15.00	\$1,350.00
0107	0002 Bridge	2050012	Embankment, Structure, CIP	200.000	Cyd	\$20.00	\$4,000.00
0108	0002 Bridge	2057051	_ Dewatering System	1.000	LSUM	\$15,000.00	\$15,000.00
0109	0002 Bridge	2057051	_ Embankment, CIP, Special	1.000	LSUM	\$80,000.00	\$80,000.00
0110	0002 Bridge	2057051	_ Excavation, Earth, Special	1.000	LSUM	\$90,000.00	\$90,000.00
0111	0002 Bridge	2057051	_ Geotechnical Instrumentation Hardware (P01 of 41025)	1.000	LSUM	\$5,000.00	\$5,000.00
0112	0002 Bridge	2057051	_ Geotechnical Instrumentation Installation (P01 of 41025)	1.000	LSUM	\$5,000.00	\$5,000.00
0113	0002 Bridge	2057051	_ Geotechnical Instrumentation Monitoring (P01 of 41025)	1.000	LSUM	\$5,000.00	\$5,000.00
0114	0002 Bridge	2060002	Backfill, Structure, CIP	900.000	Cyd	\$23.00	\$20,700.00
0115	0002 Bridge	2060010	Excavation, Fdn	9,380.000	Cyd	\$14.00	\$131,320.00
0116	0002 Bridge	2067021	_ Fill, Lightweight, EPS Block	860.000	Cyd	\$100.00	\$86,000.00

Line	Category	Pay Item	Description	Quantity	Units	Unit Price	Total
0117	0002 Bridge	2080026	Erosion Control, Maintenance, Sediment Removal	10.000	Cyd	\$25.00	\$250.00
0118	0002 Bridge	2080036	Erosion Control, Silt Fence	900.000	Ft	\$1.75	\$1,575.00
0119	0002 Bridge	2080040	Erosion Control, Temp Plastic Sheet/ Geotextile Cover	2,590.000	Syd	\$5.00	\$12,950.00
0120	0002 Bridge	3020002	Aggregate Base, LM	630.000	Cyd	\$18.00	\$11,340.00
0121	0002 Bridge	4020305	Sewer, CI C, 18 inch, Tr Det A	90.000	Ft	\$65.00	\$5,850.00
0122	0002 Bridge	4040031	Underdrain, Fdn, 4 inch	490.000	Ft	\$6.00	\$2,940.00
0123	0002 Bridge	4040091	Underdrain Outlet, 4 inch	40.000	Ft	\$15.00	\$600.00
0124	0002 Bridge	4040111	Underdrain, Outlet Ending, 4 inch	4.000	Ea	\$180.00	\$720.00
0125	0002 Bridge	6027021	_ Conc Base Cse, Reinf, Modified	80.000	Cyd	\$250.00	\$20,000.00
0126	0002 Bridge	7050001	Prebore, Fdn Piling	275.000	Ft	\$44.50	\$12,237.50
0127	0002 Bridge	7050002	Pile Driving Equipment, Furn (P01 of 41025)	1.000	LSUM	\$142,050.00	\$142,050.00
0128	0002 Bridge	7050034	Pile, Steel, Furn and Driven, 14 inch	9,470.000	Ft	\$26.00	\$246,220.00
0129	0002 Bridge	7050050	Pile, Steel, Splice	168.000	Ea	\$69.00	\$11,592.00

Line	Category	Pay Item	Description	Quantity	Units	Unit Price	Total
0130	0002 Bridge	7057050	_ Test Pile, Dynamic Analysis	6.000	Ea	\$1,000.00	\$6,000.00
0131	0002 Bridge	7057050	_ Test Pile, Furn Dynamic Analysis Equipment	3.000	Ea	\$1,000.00	\$3,000.00
0132	0002 Bridge	7060001	Bridge Ltg, Furn and Rem (P01 of 41025)	1.000	LSUM	\$500.00	\$500.00
0133	0002 Bridge	7060002	Bridge Ltg, Oper and Maintain	166.000	Cyd	\$2.00	\$332.00
0134	0002 Bridge	7060040	Elec Grounding System	1.000	Ea	\$1,610.00	\$1,610.00
0135	0002 Bridge	7060050	Expansion Joint Device	22.000	Ft	\$200.00	\$4,400.00
0136	0002 Bridge	7060051	Expansion Joint Device, Cover Plate	22.000	Ft	\$175.00	\$3,850.00
0137	0002 Bridge	7060060	False Decking	4,032.000	Sft	\$0.50	\$2,016.00
0138	0002 Bridge	7060092	Reinforcement, Steel, Epoxy Coated	86,116.000	Lb	\$1.00	\$86,116.00
0139	0002 Bridge	7060100	Substructure Conc	862.000	Cyd	\$522.86	\$450,705.32
0140	0002 Bridge	7060110	Superstructure Conc	31.000	Cyd	\$214.20	\$6,640.20
0141	0002 Bridge	7060111	Superstructure Conc, Form, Finish, and Cure (P01 of 41025)	1.000	LSUM	\$13,020.00	\$13,020.00
0142	0002 Bridge	7060112	Superstructure Conc, Form, Finish, and Cure, Night Casting (P01 of 41025)	1.000	LSUM	\$69,720.00	\$69,720.00
0143	0002 Bridge	7060113	Superstructure Conc, Night Casting	166.000	Cyd	\$208.04	\$34,534.64

Line	Category	Pay Item	Description	Quantity	Units	Unit Price	Total
0144	0002 Bridge	7060209	Liner, PVC, 30 mil	380.000	Syd	\$10.00	\$3,800.00
0145	0002 Bridge	7067011	_ Simulated Stone Masonry	360.000	Syd	\$15.00	\$5,400.00
0146	0002 Bridge	7067011	_ Texturing Conc	360.000	Syd	\$15.00	\$5,400.00
0147	0002 Bridge	7070020	Bearing, Elastomeric, 3 inch	3,996.000	Sin	\$1.00	\$3,996.00
0148	0002 Bridge	7070053	Steel Diaphragm, Prest Conc Beam, Furn and Fab	2,450.000	Lb	\$4.00	\$9,800.00
0149	0002 Bridge	7070054	Steel Diaphragm, Prest Conc Beam, Erect	2,450.000	Lb	\$2.50	\$6,125.00
0150	0002 Bridge	7080125	Prest Conc Bulb-Tee Beam, Furn, 54 inch by 49 inch	849.000	Ft	\$250.00	\$212,250.00
0151	0002 Bridge	7080126	Prest Conc Bulb-Tee Beam, Erect, 54 inch by 49 inch	849.000	Ft	\$25.00	\$21,225.00
0152	0002 Bridge	7100001	Joint Waterproofing	380.000	Sft	\$6.00	\$2,280.00
0153	0002 Bridge	7100011	Conc Surface Coating	1,170.000	Syd	\$10.00	\$11,700.00
0154	0002 Bridge	7100030	Substructure Horizontal Surface Sealer	10.000	Syd	\$50.26	\$502.60
0155	0002 Bridge	8007051	_ Vibration Monitoring, Utility	1.000	LSUM	\$10,000.00	\$10,000.00
0156	0002 Bridge	8080110	Fence, Structure	6,080.000	Sft	\$12.00	\$72,960.00
<b>Estimate Total: \$2,894,781.91</b>							

## Engineer's Opinion of Costs

<b>Project Number:</b> 203653	<b>Project Engineer:</b> GPW
<b>Estimate Number:</b> 11: Final Final Estimate Minus Traffic Control and Entire Retaining Wall	<b>Date Created:</b> 11/17/2021
<b>Project Type:</b> Miscellaneous	<b>Date Edited:</b> 11/17/2021
<b>Location:</b> Cascade Township	<b>Fed/State #:</b>
Burton Street from Patterson to Highridge	<b>Fed Item:</b>
<b>Description:</b> 10' wide HMA pathway with associated drainage features, pedestrian ramps, and pedestrian bridge.	<b>Control Section:</b> TA 41000

Line	Category	Pay Item	Description	Quantity	Units	Unit Price	Total
0001	0001 Road	1500001	Mobilization, Max \$290,000	1.000	LSUM	\$290,000.00	\$290,000.00
0002	0001 Road	2010001	Clearing	2.000	Acre	\$1,000.00	\$2,000.00
0003	0001 Road	2020002	Tree, Rem, 19 inch to 36 inch	3.000	Ea	\$800.00	\$2,400.00
0004	0001 Road	2020003	Tree, Rem, 37 inch or Larger	1.000	Ea	\$1,200.00	\$1,200.00
0005	0001 Road	2020004	Tree, Rem, 6 inch to 18 inch	56.000	Ea	\$200.00	\$11,200.00
0006	0001 Road	2030005	Culv, End, Rem, Less than 24 inch	3.000	Ea	\$300.00	\$900.00
0007	0001 Road	2030011	Dr Structure, Rem	1.000	Ea	\$800.00	\$800.00
0008	0001 Road	2030015	Sewer, Rem, Less than 24 inch	87.000	Ft	\$15.00	\$1,305.00
0009	0001 Road	2040020	Curb and Gutter, Rem	112.000	Ft	\$8.00	\$896.00

Line	Category	Pay Item	Description	Quantity	Units	Unit Price	Total
0010	0001 Road	2040025	Fence, Rem	456.000	Ft	\$3.00	\$1,368.00
0011	0001 Road	2040055	Sidewalk, Rem	10.000	Syd	\$15.00	\$150.00
0012	0001 Road	2040080	Exploratory Investigation, Vertical	10.000	Ft	\$35.00	\$350.00
0013	0001 Road	2050010	Embankment, CIP	14,940.000	Cyd	\$16.00	\$239,040.00
0014	0001 Road	2050016	Excavation, Earth	1,840.000	Cyd	\$10.00	\$18,400.00
0015	0001 Road	2050041	Subgrade Undercutting, Type II	100.000	Cyd	\$15.00	\$1,500.00
0016	0001 Road	2057001	_ Ditching, Modified	230.000	Ft	\$25.00	\$5,750.00
0017	0001 Road	2080012	Erosion Control, Check Dam, Stone	21.000	Ft	\$22.00	\$462.00
0018	0001 Road	2080020	Erosion Control, Inlet Protection, Fabric Drop	11.000	Ea	\$140.00	\$1,540.00
0019	0001 Road	2080026	Erosion Control, Maintenance, Sediment Removal	200.000	Cyd	\$25.00	\$5,000.00
0020	0001 Road	2080034	Erosion Control, Sediment Trap	3.000	Ea	\$120.00	\$360.00
0021	0001 Road	2080036	Erosion Control, Silt Fence	2,180.000	Ft	\$1.75	\$3,815.00
0022	0001 Road	2087001	_ Erosion Control, Sediment Log	930.000	Ft	\$10.00	\$9,300.00

Line	Category	Pay Item	Description	Quantity	Units	Unit Price	Total
0023	0001 Road	2090001	Project Cleanup	1.000	LSUM	\$6,000.00	\$6,000.00
0024	0001 Road	3010002	Subbase, CIP	12.000	Cyd	\$25.00	\$300.00
0025	0001 Road	3020016	Aggregate Base, 6 inch	1,950.000	Syd	\$10.00	\$19,500.00
0026	0001 Road	3020020	Aggregate Base, 8 inch	130.000	Syd	\$20.00	\$2,600.00
0027	0001 Road	4010012	Culv End Sect, 12 inch	5.000	Ea	\$600.00	\$3,000.00
0028	0001 Road	4010018	Culv End Sect, 18 inch	2.000	Ea	\$800.00	\$1,600.00
0029	0001 Road	4011109	Dr Marker Post	4.000	Ea	\$25.00	\$100.00
0030	0001 Road	4020033	Sewer, CI A, 12 inch, Tr Det B	121.000	Ft	\$75.00	\$9,075.00
0031	0001 Road	4020035	Sewer, CI A, 18 inch, Tr Det B	92.000	Ft	\$80.00	\$7,360.00
0032	0001 Road	4020153	Sewer, CI B, 12 inch, Tr Det A	55.000	Ft	\$75.00	\$4,125.00
0033	0001 Road	4020155	Sewer, CI B, 18 inch, Tr Det A	15.000	Ft	\$80.00	\$1,200.00
0034	0001 Road	4020600	Sewer, CI E, 12 inch, Tr Det B	134.000	Ft	\$75.00	\$10,050.00
0035	0001 Road	4021204	Sewer Tap, 12 inch	2.000	Ea	\$550.00	\$1,100.00

Line	Category	Pay Item	Description	Quantity	Units	Unit Price	Total
0036	0001 Road	4021206	Sewer Tap, 18 inch	1.000	Ea	\$600.00	\$600.00
0037	0001 Road	4021260	Trench Undercut and Backfill	100.000	Cyd	\$30.00	\$3,000.00
0038	0001 Road	4021275	Video Taping Sewer and Culv Pipe	423.000	Ft	\$1.50	\$634.50
0039	0001 Road	4030010	Dr Structure Cover, Type B	2.000	Ea	\$600.00	\$1,200.00
0040	0001 Road	4030040	Dr Structure Cover, Type G	3.000	Ea	\$600.00	\$1,800.00
0041	0001 Road	4030050	Dr Structure Cover, Type K	5.000	Ea	\$700.00	\$3,500.00
0042	0001 Road	4030200	Dr Structure, 24 inch dia	1.000	Ea	\$1,200.00	\$1,200.00
0043	0001 Road	4030210	Dr Structure, 48 inch dia	7.000	Ea	\$2,500.00	\$17,500.00
0044	0001 Road	4030220	Dr Structure, 60 inch dia	2.000	Ea	\$3,000.00	\$6,000.00
0045	0001 Road	4030250	Dr Structure, Add Depth of 48 inch dia, 8 foot to 15 foot	6.000	Ft	\$120.00	\$720.00
0046	0001 Road	5010005	HMA Surface, Rem	163.000	Syd	\$6.00	\$978.00
0047	0001 Road	5010025	Hand Patching	15.000	Ton	\$150.00	\$2,250.00
0048	0001 Road	5010061	HMA Approach	5.000	Ton	\$90.00	\$450.00



Line	Category	Pay Item	Description	Quantity	Units	Unit Price	Total
0049	0001 Road	8020038	Curb and Gutter, Conc, Det F4	295.000	Ft	\$30.00	\$8,850.00
0050	0001 Road	8027001	_ Curb and Gutter, Conc, Det F5, Modified	28.000	Ft	\$35.00	\$980.00
0051	0001 Road	8030010	Detectable Warning Surface	30.000	Ft	\$32.00	\$960.00
0052	0001 Road	8030030	Curb Ramp Opening, Conc	57.000	Ft	\$30.00	\$1,710.00
0053	0001 Road	8030036	Sidewalk Ramp, Conc, 6 inch	500.000	Sft	\$6.00	\$3,000.00
0054	0001 Road	8060020	Shared use Path, Conc	52.000	Syd	\$50.00	\$2,600.00
0055	0001 Road	8060040	Shared use Path, HMA	335.000	Ton	\$90.00	\$30,150.00
0056	0001 Road	8067001	_ Pathway Grading	1,697.000	Ft	\$25.00	\$42,425.00
0057	0001 Road	8080002	Fence, Woven Wire with Steel Post	270.000	Ft	\$12.00	\$3,240.00
0058	0001 Road	8087001	_ Black Vinyl Coated Chain Link Fence, 48 inch	1,035.000	Ft	\$20.00	\$20,700.00
0059	0001 Road	8100371	Post, Steel, 3 lb	42.000	Ft	\$8.00	\$336.00
0060	0001 Road	8100402	Sign, Type III, Erect, Salv	1.000	Ea	\$50.00	\$50.00
0061	0001 Road	8100403	Sign, Type III, Rem	1.000	Ea	\$20.00	\$20.00

Line	Category	Pay Item	Description	Quantity	Units	Unit Price	Total
0062	0001 Road	8100404	Sign, Type IIIA	1.000	Sft	\$25.00	\$25.00
0063	0001 Road	8100405	Sign, Type IIIB	1.000	Sft	\$25.00	\$25.00
0064	0001 Road	8110063	Pavt Mrkg, Ovly Cold Plastic, Lt Turn Arrow Sym	2.000	Ea	\$130.00	\$260.00
0065	0001 Road	8110068	Pavt Mrkg, Ovly Cold Plastic, Only	1.000	Ea	\$130.00	\$130.00
0066	0001 Road	8110094	Pavt Mrkg, Polyurea, 6 inch, White	82.000	Ft	\$3.00	\$246.00
0067	0001 Road	8110110	Pavt Mrkg, Polyurea, 12 inch, Crosswalk	220.000	Ft	\$6.00	\$1,320.00
0068	0001 Road	8110114	Pavt Mrkg, Polyurea, 24 inch, Stop Bar	24.000	Ft	\$10.00	\$240.00
0069	0001 Road	8110343	Rem Spec Mrkg	114.000	Sft	\$2.00	\$228.00
0070	0001 Road	8110350	Witness, Log, \$1,000.00	1,000.000	Dir	\$1.00	\$1,000.00
0071	0001 Road	8120012	Barricade, Type III, High Intensity, Double Sided, Lighted, Furn	4.000	Ea	\$90.00	\$360.00
0072	0001 Road	8120013	Barricade, Type III, High Intensity, Double Sided, Lighted, Oper	4.000	Ea	\$10.00	\$40.00
0073	0001 Road	8120022	Barricade, Type III, High Intensity, Lighted, Furn	4.000	Ea	\$90.00	\$360.00
0074	0001 Road	8120023	Barricade, Type III, High Intensity, Lighted, Oper	4.000	Ea	\$10.00	\$40.00
0075	0001 Road	8120035	Channelizing Device, 42 inch, Fluorescent, Furn	100.000	Ea	\$25.00	\$2,500.00

Line	Category	Pay Item	Description	Quantity	Units	Unit Price	Total
0076	0001 Road	8120036	Channelizing Device, 42 inch, Fluorescent, Oper	100.000	Ea	\$4.00	\$400.00
0077	0001 Road	8120140	Lighted Arrow, Type C, Furn	2.000	Ea	\$500.00	\$1,000.00
0078	0001 Road	8120141	Lighted Arrow, Type C, Oper	2.000	Ea	\$80.00	\$160.00
0079	0001 Road	8120142	Lighted Arrow, Type C, Standby	1.000	Ea	\$300.00	\$300.00
0080	0001 Road	8120160	Ltg for Night Work	1.000	LSUM	\$6,500.00	\$6,500.00
0081	0001 Road	8120170	Minor Traf Devices	0.500	LSUM	\$20,000.00	\$10,000.00
0082	0001 Road	8120210	Pavt Mrkg, Longit, 6 inch or Less Width, Rem	181.000	Ft	\$0.65	\$117.65
0083	0001 Road	8120211	Pavt Mrkg, Longit, Greater than 6 inch Width, Rem	26.000	Ft	\$2.00	\$52.00
0084	0001 Road	8120330	Sign, Portable, Changeable Message, Furn	2.000	Ea	\$3,000.00	\$6,000.00
0085	0001 Road	8120331	Sign, Portable, Changeable Message, Oper	2.000	Ea	\$300.00	\$600.00
0086	0001 Road	8120350	Sign, Type B, Temp, Prismatic, Furn	341.000	Sft	\$5.00	\$1,705.00
0087	0001 Road	8120351	Sign, Type B, Temp, Prismatic, Oper	341.000	Sft	\$1.50	\$511.50
0088	0001 Road	8130010	Riprap, Plain	170.000	Syd	\$75.00	\$12,750.00

Line	Category	Pay Item	Description	Quantity	Units	Unit Price	Total
0089	0001 Road	8160100	Slope Restoration, Type A	610.000	Syd	\$2.50	\$1,525.00
0090	0001 Road	8160101	Slope Restoration, Type B	5,440.000	Syd	\$3.00	\$16,320.00
0091	0001 Road	8160102	Slope Restoration, Type C	2,070.000	Syd	\$4.00	\$8,280.00
0092	0001 Road	8160103	Slope Restoration, Type D	340.000	Syd	\$5.00	\$1,700.00
0093	0001 Road	8190027	Conduit, DB, 1, 1 1/2 inch	15.000	Ft	\$15.00	\$225.00
0094	0001 Road	8190159	Conduit, Schedule 80 PVC, 3 inch	100.000	Ft	\$10.00	\$1,000.00
0095	0001 Road	8200100	Pedestal, Alum	1.000	Ea	\$800.00	\$800.00
0096	0001 Road	8200105	Pedestal, Fdn	1.000	Ea	\$870.00	\$870.00
0097	0001 Road	8200180	TS, Pedestrian, Bracket Arm Mtd, Rem	1.000	Ea	\$105.00	\$105.00
0098	0001 Road	8200344	TS, Pedestrian, One Way Pedestal Mtd (LED)	1.000	Ea	\$1,030.00	\$1,030.00
0099	0001 Road	8200422	Wireless Vehicle Detection System	1.000	Ea	\$6,600.00	\$6,600.00
0100	0001 Road	8200425	Wireless Vehicle Sensor Node	6.000	Ea	\$930.00	\$5,580.00
0101	0001 Road	8230431	Gate Box, Adj, Case 1	1.000	Ea	\$500.00	\$500.00

Line	Category	Pay Item	Description	Quantity	Units	Unit Price	Total
0102	0001 Road	8230432	Gate Box, Adj, Case 2	1.000	Ea	\$300.00	\$300.00
0103	0002 Bridge	2030015	Sewer, Rem, Less than 24 inch	90.000	Ft	\$15.00	\$1,350.00
0104	0002 Bridge	2050012	Embankment, Structure, CIP	200.000	Cyd	\$20.00	\$4,000.00
0105	0002 Bridge	2057051	_ Dewatering System	1.000	LSUM	\$15,000.00	\$15,000.00
0106	0002 Bridge	2057051	_ Embankment, CIP, Special	1.000	LSUM	\$80,000.00	\$80,000.00
0107	0002 Bridge	2057051	_ Excavation, Earth, Special	1.000	LSUM	\$90,000.00	\$90,000.00
0108	0002 Bridge	2057051	_ Geotechnical Instrumentation Hardware (P01 of 41025)	1.000	LSUM	\$5,000.00	\$5,000.00
0109	0002 Bridge	2057051	_ Geotechnical Instrumentation Installation (P01 of 41025)	1.000	LSUM	\$5,000.00	\$5,000.00
0110	0002 Bridge	2057051	_ Geotechnical Instrumentation Monitoring (P01 of 41025)	1.000	LSUM	\$5,000.00	\$5,000.00
0111	0002 Bridge	2060002	Backfill, Structure, CIP	900.000	Cyd	\$23.00	\$20,700.00
0112	0002 Bridge	2060010	Excavation, Fdn	9,380.000	Cyd	\$14.00	\$131,320.00
0113	0002 Bridge	2067021	_ Fill, Lightweight, EPS Block	860.000	Cyd	\$100.00	\$86,000.00
0114	0002 Bridge	2080026	Erosion Control, Maintenance, Sediment Removal	10.000	Cyd	\$25.00	\$250.00
0115	0002 Bridge	2080036	Erosion Control, Silt Fence	900.000	Ft	\$1.75	\$1,575.00

Line	Category	Pay Item	Description	Quantity	Units	Unit Price	Total
0116	0002 Bridge	2080040	Erosion Control, Temp Plastic Sheet/ Geotextile Cover	2,590.000	Syd	\$5.00	\$12,950.00
0117	0002 Bridge	3020002	Aggregate Base, LM	630.000	Cyd	\$18.00	\$11,340.00
0118	0002 Bridge	4020305	Sewer, CI C, 18 inch, Tr Det A	90.000	Ft	\$65.00	\$5,850.00
0119	0002 Bridge	4040031	Underdrain, Fdn, 4 inch	490.000	Ft	\$6.00	\$2,940.00
0120	0002 Bridge	4040091	Underdrain Outlet, 4 inch	40.000	Ft	\$15.00	\$600.00
0121	0002 Bridge	4040111	Underdrain, Outlet Ending, 4 inch	4.000	Ea	\$180.00	\$720.00
0122	0002 Bridge	6027021	_ Conc Base Cse, Reinf, Modified	80.000	Cyd	\$250.00	\$20,000.00
0123	0002 Bridge	7050001	Prebore, Fdn Piling	275.000	Ft	\$44.50	\$12,237.50
0124	0002 Bridge	7050002	Pile Driving Equipment, Furn (P01 of 41025)	1.000	LSUM	\$142,050.00	\$142,050.00
0125	0002 Bridge	7050034	Pile, Steel, Furn and Driven, 14 inch	9,470.000	Ft	\$26.00	\$246,220.00
0126	0002 Bridge	7050050	Pile, Steel, Splice	168.000	Ea	\$69.00	\$11,592.00
0127	0002 Bridge	7057050	_ Test Pile, Dynamic Analysis	6.000	Ea	\$1,000.00	\$6,000.00
0128	0002 Bridge	7057050	_ Test Pile, Furn Dynamic Analysis Equipment	3.000	Ea	\$1,000.00	\$3,000.00

Line	Category	Pay Item	Description	Quantity	Units	Unit Price	Total
0129	0002 Bridge	7060001	Bridge Ltg, Furn and Rem (P01 of 41025)	1.000	LSUM	\$500.00	\$500.00
0130	0002 Bridge	7060002	Bridge Ltg, Oper and Maintain	166.000	Cyd	\$2.00	\$332.00
0131	0002 Bridge	7060040	Elec Grounding System	1.000	Ea	\$1,610.00	\$1,610.00
0132	0002 Bridge	7060050	Expansion Joint Device	22.000	Ft	\$200.00	\$4,400.00
0133	0002 Bridge	7060051	Expansion Joint Device, Cover Plate	22.000	Ft	\$175.00	\$3,850.00
0134	0002 Bridge	7060060	False Decking	4,032.000	Sft	\$0.50	\$2,016.00
0135	0002 Bridge	7060092	Reinforcement, Steel, Epoxy Coated	86,116.000	Lb	\$1.00	\$86,116.00
0136	0002 Bridge	7060100	Substructure Conc	862.000	Cyd	\$522.86	\$450,705.32
0137	0002 Bridge	7060110	Superstructure Conc	31.000	Cyd	\$214.20	\$6,640.20
0138	0002 Bridge	7060111	Superstructure Conc, Form, Finish, and Cure (P01 of 41025)	1.000	LSUM	\$13,020.00	\$13,020.00
0139	0002 Bridge	7060112	Superstructure Conc, Form, Finish, and Cure, Night Casting (P01 of 41025)	1.000	LSUM	\$69,720.00	\$69,720.00
0140	0002 Bridge	7060113	Superstructure Conc, Night Casting	166.000	Cyd	\$208.04	\$34,534.64
0141	0002 Bridge	7060209	Liner, PVC, 30 mil	380.000	Syd	\$10.00	\$3,800.00

Line	Category	Pay Item	Description	Quantity	Units	Unit Price	Total
0142	0002 Bridge	7067011	_ Simulated Stone Masonry	360.000	Syd	\$15.00	\$5,400.00
0143	0002 Bridge	7067011	_ Texturing Conc	360.000	Syd	\$15.00	\$5,400.00
0144	0002 Bridge	7070020	Bearing, Elastomeric, 3 inch	3,996.000	Sin	\$1.00	\$3,996.00
0145	0002 Bridge	7070053	Steel Diaphragm, Prest Conc Beam, Furn and Fab	2,450.000	Lb	\$4.00	\$9,800.00
0146	0002 Bridge	7070054	Steel Diaphragm, Prest Conc Beam, Erect	2,450.000	Lb	\$2.50	\$6,125.00
0147	0002 Bridge	7080125	Prest Conc Bulb-Tee Beam, Furn, 54 inch by 49 inch	849.000	Ft	\$250.00	\$212,250.00
0148	0002 Bridge	7080126	Prest Conc Bulb-Tee Beam, Erect, 54 inch by 49 inch	849.000	Ft	\$25.00	\$21,225.00
0149	0002 Bridge	7100001	Joint Waterproofing	380.000	Sft	\$6.00	\$2,280.00
0150	0002 Bridge	7100011	Conc Surface Coating	1,170.000	Syd	\$10.00	\$11,700.00
0151	0002 Bridge	7100030	Substructure Horizontal Surface Sealer	10.000	Syd	\$50.26	\$502.60
0152	0002 Bridge	8007051	_ Vibration Monitoring, Utility	1.000	LSUM	\$10,000.00	\$10,000.00
0153	0002 Bridge	8080110	Fence, Structure	6,080.000	Sft	\$12.00	\$72,960.00
<b>Estimate Total: \$2,869,881.91</b>							