

AUGUST 2022

Treasurer's Report

Treasurer's Report reflects bank account balances

#101 General Fund	General Fund Huntington	\$ 1,222,785.31
#203 Metro Authority	Huntington Bank	\$ 61,185.48
#206 Fire Fund	Huntington Bank	\$ 778,711.01
#207 Police	Huntington Bank	\$ 357.19
#590 Sewer CD Mat May 2018	Sewer Huntington	\$ 432,055.10
#591 Timberlee H20	Huntington Bank	\$ 423,909.46
#592 Greilickville H20	Huntington Bank	\$ 156,419.75
#594 Marina	Marina Huntington	\$ 1,117,391.34
#701 Trust & Agency	Huntington Bank	\$ 699.13
#703 Current Tax	Huntington Bank	\$ 781,396.68
#815 E. Timberwoods	Huntington Bank	\$ 0.00
#816 GSAD Receivable	Savings Huntington	\$ 6,496.89
#817 SBlue & Old Orch	Huntington Bank	\$ 0.00
#818 Old Orchard	Huntington Bank	\$ 0.00
#820 Maintenance E.R. Rds	Huntington Bank	\$ 4,409.31
#821 Maintenance S.B. Rds	Huntington Bank	\$ 4,462.83
#861 Bayview Estates Lights	Huntington Bank	\$ 2,279.62
TOTAL		\$ 4,992,559.10

INVESTMENT ACCOUNTS CD's	PURCHASED AMOUNT	PRIOR MONTH VALUE	CURRENT VALUE	EST MONTHLY INT	PAID INTEREST
#101 Goldman Sachs	\$200,000.00		\$ 197,982.00		
#101 SYNCHRONY BK	\$202,000.00		\$ 195,707.70	-\$ 6,292.30	\$ 4.16
#101 FIDELITY GOV MIMKT DAILY		\$ 2,898.04	\$ 2,902.20	-\$ 2,265.00	
#590 Ally Bank	\$250,000.00		\$ 247,735.00	-\$ 267.00	
#590 Morgan Stanley	\$150,000.00		\$ 149,733.00	-\$ 6,112.50	
#590 Flagstar Bank	\$250,000.00		\$ 243,887.50	-\$ 4,080.65	
#590 BMW BK	\$131,000.00		\$ 126,919.35	\$ 15.62	\$ 15.62
BOND INTEREST		\$ 10,868.25	\$ 10,883.87		
#594 Dreyfus MIMKT	\$ 150,000.00		\$ 156,056.43	-\$ 6,205.00	
#594 UBS Bank	\$ 250,000.00		\$ 243,795.00	\$ 54.42	\$ 54.42
BOND INTEREST		\$ 915.33	\$ 969.75		
TOTAL	\$1,583,000.00		\$ 1,576,571.80	-\$ 25,148.25	\$ 74.20
GRAND TOTAL		\$ 6,569,130.90			

Chris Mikowski, Treasurer

Connie M. Preston, Clerk

To: Elmwood Township Board
 From: Sarah Clarren, Planner/Zoning Administrator
 RE: August 2022 Planning and Zoning Report

PERMITS:	8/2022	8/2021	YTD 2022	YTD 2021
Single Family Dwelling	2	0	21	15
Attached SFD	0	0	0	0
Accessory Building	1	1	11	6
AG Building	0	0	0	0
Residential Addition	2	0	4	6
Deck	0	2	7	8
Sign	0	0	3	0
Commercial	0	0	2	0
Misc.	2	1	10	4
Total Permits	7	4	57	45
Fees Collected	\$553.12	\$120	\$4,566.00	\$3,099.44

Zoning Board of Appeals:

Past Meetings – August 3, 2022 – Case#2022-08 Request by Dan Paulson regarding property at 10406 S West-Bay Shore Dr, Parcel #45-004-016-015-20 for a 2’ foot front yard setback variance to reconstruct porch – *granted*.

Future Meetings – TBD – no new cases.

Planning Commission:

Past Meetings – August 16, 2022

- Public Hearing on ZO 2017-04-16 Map Amendment Request by Jim Hill to rezone 0 S Briar Drive (004-260-018-00), 0 E Pico Drive (004-280-019-00) and 10651 E Grandview Road (004-028-122-00) from R-1 to NC. *Recommended for approval.*
- Introduction on SPR/SUP 2022-05 Request by TC Whiskey re: property at 9440 & 9432 S Center Hwy for an expansion of previously permitted distillery tasting room, offices, & visitor center.
- Food Trucks. No substantial discussion as meeting was running late.
- Capital Improvement Plan. ZA relayed Township is working on CIP.

Future Meetings – September 20, 2022

- Public Hearing SPR/SUP 2022-05 Request by TC Whiskey re: property at 9440 & 9432 S Center Hwy for an expansion of previously permitted distillery tasting room, offices, & visitor center.
- Discussion on Master Plan
- Food Trucks
- Capital Improvement Plan

Office Updates:

- Continues with Parks & Rec on 5-year update to the Parks & Rec Plan – next meeting is 9/14. Last meeting was the Community Input Session; although not many attended, we received great feedback to incorporate within our Plan. We also received 302 responses to the survey.
- Food Trucks. Discussion remains before the Planning Commission. Commission, but there has been significant discussion; a draft zoning ordinance amendment as well as a licensing ordinance has been prepared.
- STRs. Only one license remains and on 9/6, new application was received. We are also coming close to the renewal season (10/1-10/31). Letters will be sent out in early September reminding license holders.

Elmwood Township Marina

Peter J Moon Harbormaster

10090 E. Lincoln Road Traverse City MI 49684 elmwoodmarina@gmail.com

Harbormaster Report

September 7, 2022

As we see the unofficial close of summer come and go we are definitely not through. Our Season passes are currently at #423 which is an increase from previous years by 150 over 2016 alone. The daily launch tickets have been strong and current count is 2460. Transient use has been strong all summer and the parking lot has been full on most weekends.

Our fish cleaning station is being utilized regularly with often 5 or more users at a time. The freezer is full and the fish gut hauler says he can't keep up. This area does require heavy attention to cleaning and often several times per day. Blood and entrails tend to be scattered on the ground and that requires a lot of attention. The hauler is charging the township \$1000. Per season and is preparing for a price increase. It might be a good idea to place a donation box out there and encourage our commercial charter fisherman to "donate to the cause" as they are by far the largest users. Our neighbors to the north have carried buckets of entrails and deposited them into our freezer. We currently have no rules for use in this regard.

I would like to ask the board to approve a budget for a new/used marina boat. I still recommend he purchase of a used boat that is more utility. A center counsel with 15' to 19' with 60 to 135 hp motor. \$13,000 - \$15,000. I regularly review "for sale" adds and this is the range that we need.

The costs of upgrades to the marina are increasing so fast that the plans to finish should be made a top priority. I am sure that the board shares this sentiment.

Brewery Creek is also a topic for discussion that needs to be finished ASAP as well.

I have to replace the mooring tackle on all 11 outside moorings. I have personally inspected the chain and tackle and this equipment update cannot wait. I have secured bids on materials and have a bid from our contracted diver Tom Donley. Tom has a bid of \$3213.00 labor included. Fastenal \$4462.00 and West Marine \$3519.97. Labor included.

Respectfully Submitted,

Peter J Moon
Harbormaster ETM

**CHARTER TOWNSHIP OF ELMWOOD
Park & Recreation Committee
Special Meeting
August 3, 2022 @ 4:30pm**

- a) **Call to order:** Sara Kopriva called the meeting to order@ TWP Hall@ 4:34 PM.
- b) **Roll Call:** Committee members present were Sara Kopriva, Noel Flohe, Ed Basile and Board member Deborah Allen (quorum met). Not present was Fernando Meza. Also present were TWP Planner Sarah Clarren and TWP Supervisor Jeff Shaw.
- c) **Public Comment:** None.
- d) **Agenda Modifications/Approval:** Moved by Deborah Allen, second by Ed Basile-U.
- e) **Minutes:** Moved by Deborah Allen, second by Ed Basile to approve the minutes for the regular meeting of July 13, 2022 with the correction of the misspelling of Sara Kopriva's name-U.
- f) **New Business:** None.

g) Old Business

1. Continued Discussion on Parks and Recreation Plan

- i. **Discussion on Public Information Session.** The Parks & Rec. will hold its Regular Meeting on August 10, 2022 with the public invited to attend @ 6:30 PM for their input in the Goals & Objectives of our 5- year plan process. Planner Clarren an outline of the following stations for public's input:
 - Station # 1: Cherry Bend Park assigned to Noel;
 - Station # 2 : Greilickville Harbor Park assigned to Ed;
 - Station # 3: Goals assigned to Allen & Kopriva;
 - Station # 4: Marina Phasing assigned to Allen;
 - Station # 5: What makes an ideal park assigned to Fernando;
 - Station # 6: Survey Results so far assigned to Planner Clarren;
 - Station# 7: (Tentative) Discovery Pier unassigned.Also provided were draft posters for discussion &input.

h) Comments from Committee Members and/or staff:

Planner Clarren is shooting to have the new 5-Year plan ready for public hearing / approval by December 2022; must be submitted to DNR by February 1, 2023. Kopriva noted that the Board that will hold the public hearing so they will depend on the committee's advisory direction. Clarren reported that 240 survey responses were in to-date. Supervisor Shaw reported that he will be talking to the Cedar Lake Association next week at their annual meeting/picnic. He also brought the Committee up to date on the MDOT plans along M22 from Division to Cherry Bend Road.

- i) **Public Comments:** None.

j) Adjourn: 5:15 PM.

Submitted by Noel Flohe, Parks & Rec. Committee Secretary.

**CHARTER TOWNSHIP OF ELMWOOD
REGULAR BOARD MEETING
AUGUST 8, 2022
IN THE TOWNSHIP HALL**

Call to Order:

Supervisor Shaw called the meeting to order at 6:00 p.m.

Pledge of Allegiance:

Supervisor Shaw led the Pledge of Allegiance.

Roll Call:

Present: Jeff Shaw, Connie Preston, Jim O'Rourke, Deborah Allen, Terry Lautner, Dave Darga, and Chris Mikowski

Excused: None

Declaration of Conflict of Interest:

None

Public Comment

None

Consent Calendar:

Department Reports:

Treasurer

Planning/Zoning

Harbormaster

Committee Reports:

Parks & Rec

6-13-22

Minutes:

7-11-22

Post Audit Invoices 7-13-22 through 7-31-22

MOTION BY TRUSTEE O'ROURKE, SECONDED BY TRUSTEE ALLEN TO APPROVE THE CONSENT CALENDAR AS PRESENTED. The motion passed unanimously by a voice vote.

Agenda Approval

MOTION BY TRUSTEE DARGA, SECONDED BY TRUSTEE ALLEN TO APPROVE THE AGENDA AS AMENDED BY ADDING 8F, RECYCLING. The motion passed unanimously by a voice vote.

Supervisor Remarks

Supervisor Shaw submitted a written report and added that Discovery Pier did not receive the 2% grant from the Grand Traverse Band.

Trustee Remarks

Trustee O'Rourke stated that the Fire Department did a great job on a grassfire. Trustee Allen mentioned that the Parks and Recreation Committee will be holding a presentation Wednesday night on parks and public spaces and would like to hear people's thoughts.

Engineer's Report

None

Other Officer Remarks

None

Communications from the Clerk

Clerk Preston stated that the election went very well and the Township had a 42% turnout.

Recycling

There has been concerned raised regarding the scrap metal pile behind the old fire station. Township employees collect scrap metal and then load it into the Township truck to take to the scrap metal recycling. The money is then given to the Fire Department. Employees have also been collecting pop cans for returning also for the Fire Department. The concern is with liability while hauling the metal and also that we are encouraging residents to drop off materials at the recycle center that should not be left there. The County is trying to discourage people dropping off items that cannot be recycled. MOTION BY TRUSTEE DARGA, SECONDED BY TRUSTEE O'ROURKE TO CEASE THE RECYCLING METAL AND POP CANS BY TOWNSHIP EMPLOYEES. The motion passed unanimously by a voice vote.

OLD BUSINESS

None

NEW BUSINESS

Point Broadband Application

Point Broadband submitted to the Township an Application for Access to and Ongoing Use of Public Ways by Telecommunications Providers. This is the company that Leelanau County has contracted with to expand broadband to the entire county. The Township attorney has reviewed that application and supplied a resolution to approve the permit. MOTION BY TRUTEE LAUTNER, SECONDED BY TRUSTEE DARGA TO ADOPT RESOLUTION 9 OF 2022 APPROVING THE PERMIT. The motion passed 7-0 by a roll call vote.

Special Assessment Shortfalls/Budget Amendment Resolution

Clerk Preston explained that the three, road construction special assessment districts failed to collect enough money to pay the bonds. The shortfall is \$74,503.00. The bond counsel for the special assessment districts confirmed that the Township pledged the full faith and credit of the Township to pay these bonds so the shortfall will have to come from the general fund. It appears that the shortfall is between the interest billed to the property owners and the interest paid on the bonds. Many people prepaid and we were not earning enough interest in the bank accounts. The cashflow figures were projected by financial consultants. The Board would like to know if the professionals bear any responsibility for the situation. Clerk Preston will speak to our own Township Attorney regarding that. MOTION BY CLERK PRESTON, SECONDED BY TRUSTEE O'ROURKE TO ADOPT RESOLUTION 10 OF 2022, A BUDGET AMENDMENT RESOLUTION. The motion passed 7-0 by a roll call vote.

PUBLIC COMMENT

Chief Tampa thanked the Township residents for approving the millage request. Trustee Allen wished that it be noted that there is concern in her neighborhood about drone operators not following rules.

Adjournment

Supervisor Shaw adjourned the meeting at 6:32 p.m.

DRAFT

Check Register Report

Date: 09/07/2022
 Time: 8:51 am
 Page: 1

ELMWOOD TOWNSHIP

BANK:

Check Number	Check Date	Status	Void/Stop Date	Reconcile Date	Vendor Number	Vendor Name	Check Description	Amount
Checks								
36866	08/16/2022	Printed			934	ROBERT ATKINS	PAVILION DEPOSIT REFUND	50.00
36867	08/16/2022	Printed			01005	BEERS FAMILY DENTISTRY	PAVILION DEPOSIT REFUND	50.00
36868	08/16/2022	Printed			01001	JOE & JAMIE BRUNET	PAVILION DEPOSIT REFUND	50.00
36869	08/16/2022	Printed			368	CEDAR LAKE ASSOCIATION	PAVILION DEPOSIT REFUND	50.00
36870	08/16/2022	Printed			01000	E RITA CHEYNE	PAVILION DEPOSIT REFUND	50.00
36871	08/16/2022	Printed			01003	CAROLYN FOCHTMAN	PAVILION DEPOSIT REFUND	50.00
36872	08/16/2022	Printed			01004	CAROLINE FREEMAN	PAVILION DEPOSIT REFUND	50.00
36873	08/16/2022	Printed			01002	ADAM GIACOBAZZI	PAVILION DEPOSIT REFUND	50.00
36874	08/16/2022	Printed			626	LARKIN GROUP	PAVILION DEPOSIT REFUND	50.00
36875	08/16/2022	Printed			S050	NANCY E SCOTT	PAVILION DEPOSIT REFUND	50.00
36876	08/16/2022	Printed			1609	SONS OF NORWAY	PAVILION DEPOSIT REFUND	50.00
36877	08/16/2022	Printed			01006	JEFFERY WEIS	PAVILION DEPOSIT REFUND	50.00
36878	08/16/2022	Printed			632	WEST SIDE COMMUNITY CHURCH	PAVILION DEPOSIT REFUND	50.00
36888	08/24/2022	Printed			A127	AT&T MOBILITY	ACCT#2897303700094	152.92
36889	08/24/2022	Printed			B111	BLUECROSS BLUESHIELD OF MI	GROUP 007015150710	438.49
36890	08/24/2022	Printed			C029	CHARTER COMMUNICATIONS	ACCT#8245 12 895 0008281	525.18
36891	08/24/2022	Printed			C010	CHERRYLAND ELECTRIC COOR	ACCT#9823910	113.22
36892	08/24/2022	Printed			C093	CITY OF TRAVERSE CITY UTILITIE	ACCT#531765-118432	19.02
36893	08/24/2022	Printed			C040	CONSUMERS ENERGY	ACCT#1000 2967 1540	3,556.34
36894	08/24/2022	Printed			01008	DEA DANLY	PAVILION DEPOSIT REFUND	50.00
36895	08/24/2022	Printed			1581	MARILYN DRESSEL	PAVILION DEPOSIT REFUND	50.00
36896	08/24/2022	Printed			M020	DTE ENERGY	ACCT#9100 215 3143 9	246.57
36897	08/24/2022	Printed			E013	ELEVATE NET	MARINA PHONE	149.97
36898	08/24/2022	Printed			M008	GFL ENVIRONMENTAL	ACCT#002114837	252.93
36899	08/24/2022	Printed			M008	GFL ENVIRONMENTAL	ACCT#002119662	159.44
36900	08/24/2022	Printed			G425	GUARDIAN	GROUP 00 357534	472.44
36901	08/24/2022	Printed			898	RAENETTE PALMER	PAVILION DEPOSIT REFUND	50.00
36902	08/24/2022	Printed			P043	PRIORITY HEALTH	GROUP ID 790105 S001	4,208.48
36903	08/24/2022	Printed			778	REDEMER PRESBYTERIAN CHURCH	PAVILION DEPOSIT REFUND	50.00
36904	08/24/2022	Printed			T037	TRAVERSE CITY EYE	PAVILION DEPOSIT REFUND	50.00
36905	08/24/2022	Printed			V014	VERIZON WIRELESS	acct#286887497-00001	5.48
36906	08/24/2022	Printed			V023	VSP	CLIENT ID 30031936	274.32
36907	08/24/2022	Printed			01007	ADAM WARREN	PAVILION DEPOSIT REFUND	50.00

Total Checks: 33

Checks Total (excluding void checks):

11,524.80

Total Payments: 33

Bank Total (excluding void checks):

11,524.80

Check Register Report

Date: 09/07/2022
 Time: 8:51 am
 Page: 2

ELMWOOD TOWNSHIP

BANK: ONLINE PAYMENTS

Check Number	Check Date	Status	Void/Stop Date	Reconcile Date	Vendor Number	Vendor Name	Check Description	Amount
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ONLINE PAYMENTS Checks

500013	08/16/2022	Printed			S146	SUPERFLEET MASTERCARD PROGRAM	ACCT FB627	1,681.61
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Total Checks: 1	Checks Total (excluding void checks):	1,681.61
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Total Payments: 1	Bank Total (excluding void checks):	1,681.61
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Total Payments: 34	Grand Total (excluding void checks):	13,206.41
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2022 Tax Rate Request (This form must be completed and submitted on or before September 30, 2022)

MILLAGE REQUEST REPORT TO COUNTY BOARD OF COMMISSIONERS

This form is issued under authority of MCL Sections 211.24e, 211.34 and 211.34d. Filing is mandatory. Penalty applies.

Carefully read the instructions on page 2.

County(ies) Where the Local Government Unit Levies Taxes	
Leelanau County	2022 Taxable Value of ALL Properties in the Unit as of 5-23-2022 389,809,697
Local Government Unit Requesting Millage Levy	
Elmwood Township	For LOCAL School Districts: 2022 Taxable Value excluding Principal Residence, Qualified Agricultural, Qualified Forest, Industrial Personal and Commercial Personal Properties.

This form must be completed for each unit of government for which a property tax is levied. Penalty for non-filing is provided under MCL Sec 211.119. The following tax rates have been authorized for levy on the 2022 tax roll.

(1) Source	(2) Purpose of Millage	(3) Date of Election	(4) Original Millage Authorized by Election Charter, etc.	(5)** 2021 Millage Rate Permanently Reduced by MCL 211.34d "Headlee"	(6) 2022 Current Year "Headlee" Millage Reduction Fraction	(7) 2022 Millage Rate Permanently Reduced by MCL 211.34d "Headlee"	(8) Sec. 211.34 Truth in Assessing or Equalization Millage Rollback Fraction	(9) Maximum Allowable Millage Levy *	(10) Millage Requested to be Levied July 1	(11) Millage Requested to be Levied Dec. 1	(12) Expiration Date of Millage Authorized
Allocated	Oper	11-04-69	1.0000	0.6374	0.9819	0.6258	1.0000	0.6258			Indefinite
Voted	Fire/Eme	8-2-22	2.6000	2.6000	1.0000	2.6000	1.0000	2.6000			12-02-25

Prepared by Andrew Giguere	Telephone Number (231) 256-9823	Title of Preparer Equalization Director	Date
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CERTIFICATION: As the representatives for the local government unit named above, we certify that these requested tax levy rates have been reduced, if necessary to comply with the state constitution (Article 9, Section 31), and that the requested levy rates have also been reduced, if necessary, to comply with MCL Sections 211.24e, 211.34 and, for LOCAL school districts which levy a Supplemental (Hold Harmless) Millage, 380.1211(3).

<input checked="" type="checkbox"/> Clerk	Signature	Print Name Connie M. Preston	Date
<input type="checkbox"/> Secretary			
<input checked="" type="checkbox"/> Chairperson	Signature	Print Name Jeffrey K. Shaw	Date
<input type="checkbox"/> President			

* Under Truth in Taxation, MCL Section 211.24e, the governing body may decide to levy a rate which will not exceed the maximum authorized rate allowed in column 9. The requirements of MCL 211.24e must be met prior to levying an operating levy which is larger than the base tax rate but not larger than the rate in column 9.

** **IMPORTANT:** See instructions on page 2 regarding where to find the millage rate used in column (5).

Local School District Use Only. Complete if requesting millage to be levied. See STC Bulletin 2 of 2022 for instructions on completing this section.	
Total School District Operating Rates to be Levied (HH/Supp and NH Oper ONLY)	Rate
For Principal Residence, Qualified Ag., Qualified Forest and Industrial Personal	
For Commercial Personal	
For all Other	

Supervisor's Report

9/12/22

1. The water rate study is underway. They are finishing the report for Garfield Township and they are midway through Elmwood's study.
2. I met with our Engineers and discussed Brewery Creek parking, Phase 3 at the Marina and sidewalks on Cherry Bend. Brewery Creek and Phase 3 are on the agenda tonight.
3. TCI is looking for grant money for sidewalks on Cherry Bend Road. We've been members of TCI for years, and it would be nice to get some direct benefit. If there are any grants available, I will bring it to the Board to decide if we want to proceed with sidewalks. It may be more than the Township wants to take on, but if there is sufficient money available, 2025 would be the logical time to connect our parks and the TART. I will keep you informed as we look for a potential grant.
4. Long time Elmwood Township Resident Barbara Yearn passed away September 2, 2022. Our prayers and thoughts go out to Chuck and the rest of her family.
5. Our grounds crew has been busy putting down gravel and starting to think about the transition to their fall chores. They have done a phenomenal job again this year.
6. The Cedar Lake Association had their annual meeting/picnic at the Cherry Bend Pavilion, and once again they were kind enough to invite me to attend and update them on the goings on in Elmwood Township. In addition to the great company, it is the best meal of the year! Thank you to the Association for including me and being excellent stewards of Cedar Lake.
7. Our remodeling is FINALLY being wrapped up. It has been a long, arduous process, between difficulty getting materials and keeping help on the job.
8. There is information included in your packet tonight regarding new ambulances. This is to start the process of looking for a new ambulance and deciding how much of our ARPA money we want to spend on it. More coming in future meetings.

Connie Preston

From: Keith Tampa
Sent: Wednesday, August 03, 2022 6:43 PM
To: Elmwood Supervisor
Cc: Danny Mosholder; Connie Preston
Subject: EFD FUTURE AMBULANCE - FW: Ambulance Proposals
Attachments: Stryker Pricing 8-2-22.pdf; Proposal - Demers MXP170 - Elmwood.pdf; Proposal - Braun Chief XL - Elmwood.pdf; Proposal - Osage Super Warrior - Elmwood.pdf; EVPLUS-Elmwood FD Ambulance Pricing Package 080222.pdf

Jeff,

Danny has pulled together some numbers and options for a 2nd EFD Ambulance / future replacement to our existing. I figured I'd pass them along for you to skim through to get an idea of what kind of cost we are looking at.

The pricing is not cheap. For comparison, the EVPLUS pricing is for an ambulance comparable to what we have (which was purchased from EVPLUS). The price has gone up approximately \$100k.

We may be able to save a little money by purchasing the PowerLoad and PowerCot from Stryker direct (See Danny's email below). These features, though a big ticket item, are worth their investment for safety purposes.

Non-EVPLUS units are approximately 2yrs out on delivery. Would this impact the use of any ARPA funds?

I am out of town tomorrow (8/4) but will be back around Friday afternoon and available for any questions or further discussion.

Keith

*Elmwood Township Fire and Rescue Department
10090 E. Lincoln Road
Traverse City, MI 49684
Stn: (231) 941-1647
Fax: (231)941-9927*

From: Danny Mosholder <dmosholder@elmwoodfire.org>
Sent: Tuesday, August 2, 2022 4:54 PM
To: Keith Tampa <ktampa@elmwoodfire.org>
Subject: Ambulance Proposals

Attached are 3 proposals from Kodiak Emergency Vehicles which include the Demers, Braun and Osage (Osage price on page 19). These proposals do not include the Stryker equipment.

Proposal from EV Plus includes the Stryker equipment.

Stryker quote is attached as well just for pricing purposes (I had her throw a LifePak on there as well just because I was curious on that). Speaking with Rebecca from Stryker, pricing on Stryker equipment will be increasing 10/1/22 and again on 2/1/23. She said if we wanted to order ahead of time we could get the now pricing and “delay” shipment 7 months at a time, or we could just have it delivered to the station, etc. That is why I did not have Kodiak add the pricing into the proposals (figuring we may want to order it earlier to beat price increases). We can order it through Kodiak as well, if we wanted it all to be included in one check per-say.

If I am doing my calculations correctly, it looks like Demers is still going to be the lowest price after we add the Stryker numbers.

Daniel Mosholder BS, Paramedic

EMS Director

Elmwood Township Fire & Rescue

10090 E. Lincoln Rd

Traverse City, Michigan 49684

Station (231)-941-1647

Fax (231)-941-9927



Power Pro, Power Load, Stair Chair and LP15 with Modem and Data Plan

Quote Number: 10380146

Remit to: **Stryker Medical**

Version: 1

P.O. Box 93308

Chicago, IL 60673-3308

Prepared For: ELMWOOD TOWNSHIP FIRE AND RESCUE

Rep: Rebecca McKim

Attn:

Email: rebecca.mckim@stryker.com

Phone Number: (616) 202-8449

Mobile: (616) 202-8449

Quote Date: 08/02/2022

Expiration Date: 10/31/2022

Delivery Address

End User - Shipping - Billing

Bill To Account

Name: ELMWOOD TOWNSHIP FIRE AND RESCUE

Name: ELMWOOD TOWNSHIP FIRE AND RESCUE

Name: ELMWOOD TOWNSHIP FIRE AND RESCUE

Account #: 1199280

Account #: 1199280

Account #: 1199280

Address: 10090 E LINCOLN RD

Address: 10090 E LINCOLN RD

Address: 10090 E LINCOLN RD

TRAVERSE CITY

TRAVERSE CITY

TRAVERSE CITY

Michigan 49684

Michigan 49684

Michigan 49684

Equipment Products:

#	Product	Description	Qty	Sell Price	Total
1.0	99577-001957	LIFEPAK 15 V4 Monitor/Defib - Manual & AED, Trending, Noninvasive Pacing, SpO2, SpCO, NIBP, 12-Lead ECG, EtCO2, BT. Incl at N/C: 2 pr QC Electrodes (11996-000091) & 1 Test Load (21330-001365) per device, 1 Svc Manual CD (26500-003612) per order	1	\$30,658.71	\$30,658.71
2.0	41577-000288	Ship Kit -QUIK-COMBO Therapy Cable; 2 rolls100mm Paper; RC-4, Patient Cable, 4ft.; NIBP Hose, Coiled; NIBP Cuff, Reusable, adult; 12-Lead ECG Cable, 4-Wire Limb Leads, 5ft; 12-Lead ECG Cable, 6-Wire Precordial attachment	1	\$0.00	\$0.00
3.0	21330-001176	LP 15 Lithium-ion Battery 5.7 amp hrs	3	\$396.75	\$1,190.25
4.0	11140-000098	LP15 AC Power Adapter (power cord not included)	1	\$1,380.00	\$1,380.00
5.0	11140-000015	AC power cord	1	\$66.75	\$66.75
6.0	11140-000080	Extension Cable (5ft 3 in)	1	\$256.50	\$256.50
7.0	11171-000082	Masimo RC Patient Cable - EMS, 4 FT.	1	\$201.00	\$201.00
8.0	11171-000049	Masimo Rainbow DCI Adult Reusable SpO2, SpCO, SpMet Sensor, 3 FT. For use with RC Patient Cable.	1	\$513.75	\$513.75
9.0	11171-000050	Masimo Rainbow DCIP Pediatric Reusable SpO2, SpCO, SpMet Sensor, 3 FT. For use with RC Patient Cable.	1	\$565.50	\$565.50
10.0	21300-008159	LIFEPAK 15 NIBP Straight Hose, 6'	1	\$58.50	\$58.50
11.0	11160-000011	NIBP Cuff-Reusable, Infant	1	\$18.75	\$18.75
12.0	11160-000013	NIBP Cuff-Reusable, Child	1	\$21.00	\$21.00
13.0	11160-000017	NIBP Cuff -Reusable, Large Adult	1	\$29.25	\$29.25



Power Pro, Power Load, Stair Chair and LP15 with Modem and Data Plan

Quote Number: 10380146

Remit to: **Stryker Medical**

Version: 1

P.O. Box 93308

Prepared For: ELMWOOD TOWNSHIP FIRE AND RESCUE

Chicago, IL 60673-3308

Attn:

Rep: Rebecca McKim

Email: rebecca.mckim@stryker.com

Phone Number: (616) 202-8449

Mobile: (616) 202-8449

Quote Date: 08/02/2022

Expiration Date: 10/31/2022

#	Product	Description	Qty	Sell Price	Total
14.0	11160-000019	NIBP Cuff-Reusable, Adult X Large	1	\$41.25	\$41.25
15.0	11577-000002	LIFEPAK 15 Basic carry case w/right & left pouches; shoulder strap (11577-000001) included at no additional charge when case ordered with a LIFEPAK 15 device	1	\$270.75	\$270.75
16.0	11220-000028	LIFEPAK 15 Carry case top pouch	1	\$48.75	\$48.75
17.0	11260-000039	LIFEPAK 15 Carry case back pouch	1	\$69.75	\$69.75
18.0	11996-000471	4G Modem: Verizon Cellular (for use on Stryker data plan; purchased separately)	1	\$966.75	\$966.75
20.0	639005550001	MTS POWER LOAD *INCLUDES FLOOR PLATE*	1	\$25,690.07	\$25,690.07
21.0	6252000000	Stair-PRO Model 6252	1	\$3,715.93	\$3,715.93
21.1	7777881660	1 year parts, labor & travel			
21.2	6252009001	Stair-Pro Operations Manual			
21.3	6250001162	In-Service Video (DVD)			
21.4	6252026000	Common Components			
21.5	6250021000	2 Piece ABS Panel Seat			
21.6	6250160000	Polypropelene Restraint Set(Plastic Buckles)			
21.7	6252022000	Main Frame Assy Option			
21.8	6250024000	Standard Length Lower LiftHandles			
21.9	6252027000	Footrest Option			
21.10	6252040000	Removable Head Support			
21.11	6252024000	No IV Clip Option			
22.0	650605550003	Power-PRO XT MTS High: Dual wheel lock, x-restraint package, retractable head section 02 bottle holder, 3-stage IV pole PR, equipment hook, H/E storage flat, XPS side rail, XPS mattress, Knee-Gatch, Dual compatibility, backrest storage pouch, steer-lock	1	\$21,433.63	\$21,433.63
				Equipment Total:	\$87,196.84

ProCare Products:



Power Pro, Power Load, Stair Chair and LP15 with Modem and Data Plan

Quote Number: 10380146

Version: 1
Prepared For: ELMWOOD TOWNSHIP FIRE AND RESCUE
Attn:

Remit to: **Stryker Medical**
P.O. Box 93308
Chicago, IL 60673-3308
Rep: Rebecca McKim
Email: rebecca.mckim@stryker.com
Phone Number: (616) 202-8449
Mobile: (616) 202-8449

Quote Date: 08/02/2022
Expiration Date: 10/31/2022

#	Product	Description	Qty	Sell Price	Total
19.0	78000168	KORE - Stryker data plan for modem (Verizon)	1	\$320.00	\$320.00
ProCare Total:					\$320.00

Price Totals:

Estimated Sales Tax (0.000%):	\$0.00
Freight/Shipping:	\$751.14
Grand Total:	\$88,267.98

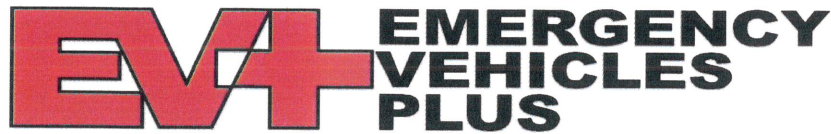
Prices: In effect for 30 days

Terms: Net 30 Days

Contact your local Sales Representative for more information about our flexible payment options.

Capital Terms and Conditions:

Deal Consummation: This is a quote and not a commitment. This quote is subject to final credit, pricing, and documentation approval. Legal documentation must be signed before your equipment can be delivered. Documentation will be provided upon completion of our review process and your selection of a payment schedule. Confidentiality Notice: Recipient will not disclose to any third party the terms of this quote or any other information, including any pricing or discounts, offered to be provided by Stryker to Recipient in connection with this quote, without Stryker's prior written approval, except as may be requested by law or by lawful order of any applicable government agency. A copy of Stryker Medical's Acute Care capital terms and conditions can be found at https://techweb.stryker.com/Terms_Conditions/index.html. A copy of Stryker Medical's Emergency Care capital terms and conditions can be found at <https://www.strykeremergencycare.com/terms>.



New Type I 4X4 Ambulance Options

August 2, 2022

Elmwood Fire Department
10090 E. Lincoln Road
Traverse City, MI 49684

New Ambulance Pricing Package(s): Pricing valid for thirty (30) days from proposal date

One (1) New 2022 Wheeled Coach Ambulance, as seen in WO 600708:

Original Vehicle Sales Price:	\$255,648.00
- (GPC Ford chassis discount, with Active Ford FIN Code):	-\$3,100.00
+ Stryker Power Load with floor plate:	+\$25,010.00
+ Stryker Power Pro XT Cot, High Configuration Spec:	+\$22,522.00
+ Stryker Stair Pro Model 6252:	+\$3,905.00
+ Stryker Equipment Installation and Testing:	+\$1,500.00
+ Custom Graphics Package Allowance:	+\$5,000.00
+ Final Inspection Trip, two (2) fire department representatives, Orlando, FL:	INCLUDED
+ Freight, Prep, and Delivery:	INCLUDED
Total Delivered Agreement Amount:	\$310,485.00

One (1) New 2022 Road Rescue Ambulance, as seen in WO 628127,28,29:

Original Vehicle Sales Price:	\$291,105.00
- (GPC Ford chassis discount, with Active Ford FIN Code):	-\$3,100.00
+ Stryker Power Load with floor plate:	+\$25,010.00
+ Stryker Power Pro XT Cot, High Configuration Spec:	+\$22,522.00
+ Stryker Stair Pro Model 6252:	+\$3,905.00
+ Stryker Equipment Installation and Testing:	+\$1,500.00
+ Custom Graphics Package Allowance:	+\$5,000.00
+ Final Inspection Trip, two (2) fire department representatives, Orlando, FL:	INCLUDED
+ Freight, Prep, and Delivery:	INCLUDED
Total Delivered Agreement Amount:	\$345,942.00

Sales Terms:

10% down, balance COD


Estimated Completion Time:

Wheeled Coach – November 8, 2022
Road Rescue – December 4, 2022

670 East 16th St. Holland, MI 49423
1-800-320-9749 / 616-396-1391 Fax



Ambulance Proposal

Name	Specifications
Type I - MXP170 	Overall Length 294" - 311" (747 cm - 790 cm) Overall Width 95" (241 cm) Overall Height 110" (279 cm)** Headroom 72" (183 cm) Wheelbase 174" - 192" (442 cm - 488 cm)* Payload Capacity Up to 5500 lbs (2495 kg) *Depending on chassis selection **Total height of vehicle may differ according to chassis and suspension

Product	Description	Quantity	Total
MXP170	Type I Ambulance Chassis Cab : Modular Aluminium Body 170"L x 95"W x 72" HR	1.00	\$277,710.00*

Proposal Includes:

- 4x4 chassis, 2 door, Gas
- Liquid spring suspension
- Install customer supplied computer mount and docking station
- Red in color (Ford OEM Race Red)
- Rear chevrons around doors, doors left red
- Graphics to match current fleet
- Whelen M-Series lighting
- Front grill brush guard (Ali-Arc)
- Air-horns
- Install of a customer supplied Power-LOAD/Power-PRO cot
- Box undercoat
- Digital rear clock
- "D" oxygen bottle storage
- LED dome lights
- Dual controls in module
- Delivery to Elmwood Township

*** Pricing notes:**

- **Quote is valid until 8/17/2022**
- Price is based on current expected net chassis price for a Ford F-550 at time of ambulance build. If net chassis price is higher than expected, the increase will be added to the final sales price.



Sales Options by Category

10-Base (BAS)

Item Number	Name/Description	Quantity
BAS-CER-11	KKK This specification identifies the minimum requirements for new automotive Emergency Medical Services (EMS) ambulances (except military field ambulances) built on Original Equipment Manufacturer's Chassis (OEM) that are prepared by the OEM for use as an ambulance.	1.00
BAS-DRW-11	Drawing Required Drawing Required	1.00
BAS-GPO-11	No GPO Contract Required No Group Purchasing Organization contract required	1.00
BAS-PLA-12	TYPE I - MXP170 TYPE I - MXP170	1.00
BAS-REG-11	United States Sales Administration Charge	1.00
BAS-TYP-11	Type I - Pick up Type I - Pick up	1.00

11-Chassis (CH*)

Item Number	Name/Description	Quantity
CHP-FRD-00	Conversion Ford F350/F450/F550 Chassis Cab Conversion Ford F350/F450/F550 Chassis Cab	1.00
DEC-PNT-16	Chassis to be ordered OEM custom color Chassis to be ordered OEM custom color - RED Ford Race RED	1.00
SR00103696	CHASSIS Chassis to be a F-550 4x4 GASOLINE with aluminum wheels.	1.00

12-Suspension (SUS)

Item Number	Name/Description	Quantity
SUS-LIQ-11	LiquidSpring™ Suspension Type I Compressible Liquid Adaptive Suspension System, is a smart suspension systems. Liquid-based struts and an on-board processor provide better handling and control, and a smoother, softer ride. The reduced vehicle vibration increases comfort.	1.00

13-Module (MOD)

Item Number	Name/Description	Quantity
MOD-ALU-14	MXP170 Ambulance Module Ambulance Module Structure / Door Structure and Accessories. (Included)	1.00
SR00104143	Relocate License Plate RELOCATE recessed license plate bracket between Tow Hooks on rear kick plate.- 01NOV - RN	1.00

14-Module Configuration (MCF)

Item Number	Name/Description	Quantity
MCF-CC1-11	C1 Door, ALS Access and Battery Location First door on curbside (C1) for ALS compartment access and battery slide out sealed compartment. (Included)	1.00
MCF-CC2-12	C2, Curbside Entry Door, with Opening Window	1.00



	Side entry door on curbside (C2) for patient compartment access, with flush-mounted, automotive-style opening window.	
MCF-CC3-11	C3 Door, Storage Exterior Compartment	1.00
	Third door on curbside (C3) for backboard or other storage. (Included)	
MCF-CC3-13	Stair Chair Location, Two (2) Adjustable Shelves	1.00
	Stair chair location with two (2) adjustable shelves and retaining safety belt for backboard in C3 compartment.	
MCF-CC3-22	Third door (C3) Compartment In/Out Access	1.00
	Third door (C3) Compartment In/Out Access	
MCF-CML-12	High-Intensity Compartment Tube Lighting	1.00
	High-intensity tube lighting for Compartments. With Side entry Door Steps.	
MCF-ELE-11	E Door, Electrical Exterior Compartment	1.00
	Upper door (E) for electrical panel access. (Included)	
MCF-RDR-13	A1 and A2, Rear Entry Doors, with Defrost	1.00
	Two (2) rear entry doors for patient compartment access, each with its individual exterior door handle. Includes frameless flush-mounted tinted windows and defrost feature.	
MCF-SS1-11	S1 Door, Main Oxygen Exterior Compartment	1.00
	First door on streetside (S1) for main vertical oxygen cylinder. (Included)	
MCF-SS1-15	First Door (S1) Compartment Fixed Shelf	1.00
	First Door (S1) Compartment Fixed Shelf	
MCF-SS2-15	S2 Door, Storage Exterior Comp	1.00
	Second door on streetside (S2) for equipment storage for MX/MXP170. (included)	
MCF-SS3-12	S3 Compartment, Equipment Storage, In/Out Access	1.00
	Third door on streetside (S3) for equipment storage, with interior/exterior access.	
MCF-SS3-13	Full-Depth Shelves, Two (2), Adjustable	1.00
	Two (2) full-depth, adjustable shelves in S3 compartment.	
SR00103809	C3 - Strap	1.00
	Seatbelt style strap over backboard area in C3	
SR00103811	S2- Shelves to be half depth	1.00
	The two shelves in S2 are to be 1/2 depth	
SR00103826	S3 - Delete Shelf	1.00
	S3 to have a total of 2 shelves. Delete the 3rd shelf Comments: Credit for Shelf - RN	
SR00104044	SCBA Brackets in S1	1.00
	Two SCBA Brackets to be installed one over the other in S1 beside Main Oxygen Cylinder - No partition - RN - 01NOV - F20P-2718	
SR00104045	Block I/O Access to S3	1.00
	Block I/O Access to S3 - 01NOV -RN	

15-Lighting (LGT)

Item Number	Name/Description	Quantity
LGT-FSL-14	Turn Signal Arrows, Amber (2), LED	1.00
	Two (2) amber turn-signal arrows, installed on the front of the module. Whelen M6 series (6 x 4) LED lights.	
LGT-LSL-14	Turn Signal Lights, Amber (2), LED	1.00
	Two (2) amber turn-signal lights, intermediate side mount. Whelen M7 series (7 x 3) LED lights.	
LGT-RSL-18	Third Upper Brake Light, LED	1.00
	Third upper brake light at rear of module. Whelen M6 series (6 x 4) LED light.	
LGT-RSL-23	Mid-Height Lights: Arrow, Brake, Reverse	1.00
	Two (2) amber arrows, two (2) red brake lights, and two (2) reverse lights at mid height. Whelen M6 series LED lights (6 x 4).	
LGT-RSL-28	Rear Step Plate, without Lighting	1.00



LGT-TPL-11	Rear step plate without lighting. Marker Lights, Amber (7) and Red (7), LED	1.00
	Seven (7) front upper center and corner amber LED marker lights. Seven (7) rear upper center and corner red LED marker lights.	
LGT-TPL-12	Marker Lights, Two (2) rear mid-height red LED	1.00
	Two (2) rear mid-height red LED marker lights.	
LGT-UVL-11	Ground lighting under module and chassis	1.00
	Ground lighting underneath the module (both sides and rear) and underneath chassis cab steps (both sides)	
SR00104141	Relocate: Rear Turn Brake and Reverse	1.00
	Relocate: Rear Turn Brake and Reverse to match F20P-2718 - 01NOV - RN	
SR00103818	Compartment lighting clarification	1.00
	Please program as requested. ACTIVATE with trigger; ON when entry doors open. Same as dome lights.	

16-Emergency and Working Lights (EWL)

Item Number	Name/Description	Quantity
EWL-ACC-11	Clear Lenses	1.00
	Clear lenses.	
EWL-BEZ-11	Chrome bezels	36.00
	Chrome bezels	
EWL-FWD-20	Emergency Lights, Red (3), White (1), Red (3), LED	1.00
	Seven (7) emergency lights installed on the front of the module. Includes three (3) red, one (1) white, and three (3) red. Whelen M9 series (10 x 6) LED lights.	
EWL-GRL-19	Lights in Front Grille, Red (2), Wig-Wag (2), M7	1.00
	Two (2) red and two (2) clear lights in front grille with Wig Wag flash pattern. Whelen M7 series (7 x 3) LED lights.	
EWL-INT-11	Emergency Lights on Inside of Doors, One (1) each	1.00
	One red emergency light on each compartment and entry door inside panel. Total of eight (8) round LED lights.	
EWL-ITC-14	Intersection Lights, Clear/Red (2), LED	1.00
	Two (2) clear/red intersection lights with turning priority. Whelen M7 series (7 x 3) LED lights.	
EWL-LTI-12	Emergency Lights, Red (2), LED, Inter. Side Mount	1.00
	Two (2) red emergency lights, intermediate side mount. Whelen M7 series (7 x 3) LED lights.	
EWL-LTS-18	Four (4) red LED lateral emergency lights (M9)	1.00
	Four (4) red lateral emergency lights (two (2) on each side). Whelen M9 series (10 x 6) LED lights.	
EWL-LTS-20	Scene Lights, Four (4), Clear LED, (M9)	1.00
	Four (4) lateral scene lights (two (2) on each side). Whelen M9 series (10 x 6) LED scene lights.	
EWL-PRG-11	Front center steady-burn red	1.00
	Front center red emergency light to be programmed steady-burn (closest red to center)	
EWL-RER-17	Emergency Lights, Red (2), LED, Rear Corners	1.00
	Two (2) red rear emergency lights at upper rear corners. Whelen M9 series (10 x 6) LED lights.	
EWL-RER-18	Emergency Lights, Amber (2), LED	1.00
	Two (2) rear upper amber lights. Whelen M6 series (6 x 4) LED lights.	
EWL-RER-19	Loading Lights, Two (2), LED	1.00
	Two (2) rear loading lights. Whelen M6 series (6 x 4) LED lights.	
EWL-RER-20	Emergency Lights, Red (2), LED, Addt'l, Window Hgt	1.00



SR00104137	Two (2) additional red lights at window height. Whelen M9 series (10 x 6) LED lights. Brake Over Ride Rear mid-height (window level) emergency lights to have BRAKE OVER RIDE - 01NOV - RN	1.00
SR00104148	M7 Side Emergency Lights All side M7s needs to flash at the same time (opposite of top box) - 01NOV - RN	1.00
SR00103804	Delete Center Turn on module sides Delete amber turning lights over wheel well and center the red emergency light. See last ambulance for reference. Comments: Credit for Turn Signals - RN	1.00
SR00103806	FRONT LIGHTING E LIGHTS Colors for front lights to be R/W/R/W/R/W/R	1.00
SR00103807	FRONT GRILL LIGHTS Option picked for front grill lights. Lights to be mounted on the Ali-Arc and to flash in an "X" pattern Comments: Price for light programming - RN	1.00
SR00103808	WHITE EMERGENCY LIGHTS Park Override to turn OFF ALL what emergency lights.	1.00
SR00103813	Rear Lighting Rear lighting to be all M9 type lighting (large) and to be the following on the top: Green/scene/amber/scene/red Comments: Upgrade charge - RN	1.00
SR00103815	Steady Burn all front white lights Button to have all front non OEM white lights go on steady burn mode in and out of emergency mode. Reset when button is pressed again. // Non OEM white lights will go on steady burn when "cancel white" button is held for 3 seconds, in AND out of emergency mode.	1.00

17-Audible Warning System (WRN)

Item Number	Name/Description	Quantity
WRN-BUA-11	Back-Up Alarm Back up alarm (97dB) with override switch. (Included)	1.00
WRN-HRN-11	Buell Emergency Air Horn Buell Dual Emergency Horns 10" and 12" Air Horns	1.00
WRN-SIR-11	Whelen 295SLS Hands-Free Siren Whelen model 295HFSA1 siren amplifier with 17 Scan-Lock™ siren tones.	1.00
WRN-SIR-13	Switch to Mute OEM Horn when Siren Speakers Active Switch to mute the OEM horn when the siren speakers are activated.	1.00
WRN-SPK-11	Whelen SA315 Series Speakers Whelen SA315 series speakers is a compact speaker meeting SAE Class A requirements when paired with Whelen 100 watt siren amplifier.	1.00
SR00103805	Airhorns through Ali-Arc Air-Horns are to be through Ali-Arc (airhorns and Ali-Arc already selected)	1.00
SR00103814	Second Siren Add Screaming eagle C 9-11-P siren (E506165). Please locate siren in following location (ref. Morningside)	1.00

18-Exterior Vehicle features (VFT)

Item Number	Name/Description	Quantity
VFT-ACC-12	Wheels valve stem extensions Valve extension for inner double wheel, air flexx 7.25" each	1.00
VFT-CHP-12	Ali Arc Front Bumper Ali Arc front bumper with high-polish finish.	1.00
VFT-CHP-13	Rear Tow Hooks Two (2) tow hooks are installed in the rear step plate.	1.00
VFT-FUL-11	Quarter-Tank Fuel Fill	1.00



VFT-MIR-11	Quarter-tank fuel fill. OEM exterior mirrors	1.00
	Keep OEM exterior mirrors	
VFT-MOP-11	Module Rub Rails, Aluminum	1.00
	Aluminium rub rails on module sides. (Included)	
VFT-MOP-12	Module Corner Protectors, Stainless-Steel	1.00
	Stainless-steel protectors on module corners. (Included)	
VFT-MOP-13	Module Wheel Trims, Fiberglass	1.00
	Formed fiberglass wheel trimming on module. (Included)	
VFT-MOP-14	Undercoating Protection	1.00
	Undercoating protection for module and chassis. (Included)	
VFT-MOP-15	Rear Wheel Mud Guards	1.00
	Mud guards on module for rear wheels. (Included)	
VFT-PLT-12	Chrome License Plate with Light	1.00
	Recessed chrome license plate holder with LED light.	
VFT-STP-11	Cab Steps, Anti-Skid Material with Mud Guards	1.00
	Anti-skid lateral steps. Includes mud guards for front wheels. (Included)	
VFT-STP-12	Rear Step Bumper, Retractable Center Section	1.00
	Anti-skid rear retractable step. Diamond plate corner bumper. Rubber bumperette. (Included)	

19-Convenience (CNV)

Item Number	Name/Description	Quantity
CNV-ACC-13	Valet Switch in Front Grille	1.00
	The door unlock valet switch is located on the back of the front grille, on the driver's side half portion of the grille. It allows to unlock all doors of the vehicle, but cannot lock the doors. (Included)	
CNV-ACC-15	Demers Fast Idle	1.00
	Demers fast idle is generated by the multiplex module, it allows fast charging of the batteries by the engine when specific conditions are met. (Included)	
CNV-CAM-11	Black Back-Up Camera	1.00
	Zone Defense standard back-up camera with build-in audio support and infra-red night vision.	
CNV-LCK-11	Anti-Theft System	1.00
	The anti-theft allows to leave the vehicle with the keys with the engine running to keep the vehicle at the ideal operating temperature. It protects against theft by running off the engine if the vehicle moves. (Included)	
CNV-LCK-12	ECOSMART Anti-Idling System - DELETE	1.00
	Delete the ECOSMART Anti-Idling System	
CNV-LCK-14	Disable EcoSmart Anti-idling	1.00
	Disable EcoSmart Anti-idling	

21-Paint and Decals (DEC)

Item Number	Name/Description	Quantity
DEC-PNT-11	Tri-Star Urethane Paint	1.00
	Two (2) coats of primer with two (2) coats of urethane. All four (4) sides and roof. No sanding. No buffing.	
DEC-PNT-17	Custom Paint Module to match OEM chassis color	1.00
	Module to be re-painted RED with urethane and clear coat to match OEM chassis ordered RED (includes module roof RED) Enter text here	
SR00103812	GRAPHICS	1.00
	Graphics to match current fleet	
SR00104038	Paint Module Black Over Red	1.00



Module to be Painted Black Over Red (Chassis ordered OEM Ford Race Red) - Match
F20P-2718 - 01NOV

22-Drivers Compartment (CAB)

Item Number	Name/Description	Quantity
CAB-CON-11	Floor-Mounted Console with control Floor-mounted console in front cab.	1.00
CAB-CON-13	Storage for Flare and Fire Extinguisher Storage compartment in front cab for flares and one (1) five-pound (5 lbs) fire extinguisher.	1.00
CAB-CON-14	Armrests, Driver and Passenger, Individual Individual driver- and passenger-side armrests on sides of floor-mounted console.	1.00
CAB-CON-15	Cup Holders, Dual, in Floor-Mounted Console Dual cup holders in floor-mounted console.	1.00
CAB-CON-29	Map bin storage (Dual) - Floor Console Map Bin Storage with Dual (2-slotted sections) - Floor Console	1.00
CAB-CTR-13	Control Center with Switches and Touch Pad Control center with switches and LED backlit pictograms in the floor mounted console.	1.00
CAB-LGT-11	Cab headliner with Reading Lights, Red/Clear (2) Two (2) clear and red overhead LED reading lights.	1.00
SR00104136	Air Horn Switch in Front Console Air Horn switch in front console to be located lower row (3) switches, it will be position #1 nearest to driver side - -01NOV - RN	1.00
SR00104146	Switch Location: Screaming Eagle Please put the Screaming Eagle switch in the standard location of the Master switch and put the Master switch at the very end of the right switch pad - 01NOV - RN	1.00
SR00104147	Switch for Screaming Eagle Siren Screaming Eagle should have it's own (fwd, neutral, back) switch with stays returns to neutral after being pressed. Not tied into emergency master lights. "On" is forward and "off" is back to create braking. OK to keep foot switch - 01NOV - RN	1.00
SR00103816	Front Console Front console to match F20P-2718	1.00
SR00103817	Glove Box Holder in cab 3 glove box holder on front partition in cab. See F20P-2718 for reference	1.00

23-Curbside configuration (CRB)

Item Number	Name/Description	Quantity
CRB-NET-12	Removable "A"-bar with sharps and trash. Removable "A"-bar mounted at the front end of the squad bench with sharps and trash.	1.00
CRB-TEC-11	Full-Length Seat Cushion Full-length, thermoformed, molded seat cushion.	1.00
CRB-TEC-14	Seat Backrest Individual, thermoformed, molded backrests.	3.00
CRB-TEC-23	Seating, Three (3) Passengers, 6-Pt Safety Belts Seating for three (3) passengers with 6-point safety belts. Space for Flip-down and hands-free opening mechanism.	1.00
SR00104046	Delete one seated position on bench Delete one seated position on bench - 01NOV - RN	1.00
SR00104140	Delete Sharps/Waste in Squad Bench Delete Sharps/Waste in Squad Bench - 01 NOV -RN	1.00

24-Streetside configuration (STR)

Item Number	Name/Description	Quantity
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SR00104138	Street Side Drawers to be locking SE-1 & SE-2 drawers to be locking w/key - SS cabinet - southco latch - 01NOV - RN	1.00
SR00104139	SS Rear Cabinet: Additional Shelf street side rear cabinet (former I/O area) to have (2) adjustable shelves (1 shelf STD). - 01NOV - RN	1.00
STR-ACS-23	Flip-Up Door, Tinted Self Latching Sliding Windows Aluminum flip-up frames, self latching for easy restocking of cabinets. Polycarbonate tinted self latching sliding windows.	3.00
STR-MED-12	Medical Cabinet, CPR Bench Seat, Int/Ext Access Medical cabinet with CPR bench seat, the rear lower storage compartment is accessible from the S3 exterior compartment.	1.00
STR-REA-12	Seating, One(1) EMT, 6pts Safety Belt Seating for one(1) EMT with 6pts safety belt - CPR seat	1.00

25-Forward Bulkhead (FWB)

Item Number	Name/Description	Quantity
FWB-DIV-12	Sliding Window Pass-Through Pass-through sliding window on front division for communication with cab.	1.00
FWB-LFT-11	Corner Cabinet, Streetside, Two Adjustable Shelves Corner cabinet on streetside of front wall. Includes two (2) aluminum extruded doors with see through windows, two (2) adjustable shelves and LED strip lighting.	1.00
FWB-LFT-14	Locking Radio Communication Compartment Lockable compartment on street side for radio communication	1.00
FWB-RGT-12	ALS Cabinet, without Drawer ALS cabinet on curbside of front wall. Includes four (4) aluminum extruded doors with see-through windows, adjustable shelf(s), one (1) fixed shelf at mid-height, LED strip lighting, and inside/outside access via curbside door.	1.00
FWB-RGT-13	Compartment above ALS Cabinet, Lockable Lockable compartment located above the front wall ALS cabinet.	1.00
FWB-RGT-16	See-Through Door, Two Handles Four (4) extruded doors with see through windows and handles	1.00
SR00104134	ALS Compartments to be locking Top and Bottom ALS compartments to be locking - 01NOV - RN	1.00
SR00103828	Delete angled cabinet Delete angled cabinet in walk through area. Match F20P-2718	1.00

26-Attendant seat (AST)

Item Number	Name/Description	Quantity
AST-BSE-12	EVS Swivel Seat Base, Eight (8) Positions EVS swivel 360 degrees seat base, locking in eight (8) positions at 45 degree increments.	1.00
AST-HRS-11	EVS 1780 3Pts Vac-Formed Seamless Seat The EVS 1780 is a vac-form, seamless attendant's seat.	1.00

27-Cot Configuration (COT)

Item Number	Name/Description	Quantity
COT-ANC-23	Floor Plate & Pre-wire Power-LOAD - GEN 2 (NEW) Stryker Power-Load floor plate. No cot fastener included. Include pre-wiring for charging feature. Default option for new Power-LOAD system from the field.	1.00
COT-POS-11	Center Floor-Mount Cot Configuration Center floor mount cot configuration	1.00
SR00104145	COT Floor Plate Please ensure to include aluminium trim to cover track bolts - 01NOV - RN	1.00

28-Rear Control Panel (CAR)



Item Number	Name/Description	Quantity
CAR-AUX-11	Rocker Switch Controls with LED Backlit Pictograms Auxiliary Rocker switch controls with LED backlit pictograms.	1.00
CAR-CTR-11	Rocker Switch Controls with LED Backlit Pictograms Rocker switch controls with LED backlit pictograms.	1.00
SR00104047	Auxiliary Control Panel Location Auxiliary Control Panel Location at head end of bench in place of deleted front seated position, Beneath O2 Port - 01NOV - RN	1.00

29-Oxygen (OXY)

Item Number	Name/Description	Quantity
OXY-NTW-14	Oxygen Outlets, Four (4) Four (4) oxygen outlets. Two (2) in ECC, one (1) on curbside, and one (1) on the ceiling.	1.00
OXY-OUT-11	Oxygen Outlet, Quick-Connect Quick-connect style oxygen outlet.	4.00
OXY-REG-11	Oxygen Regulator, Manual, 50 PSI Manual oxygen regulator (50PSI).	1.00
OXY-REG-13	Oxygen Control Valve, Electronic, Manual By-Pass Electronic oxygen control valve with manual by-pass.	1.00
OXY-SPO-11	Storage for Two (2) "D-Size" Portable Cylinders "D-size" Portable oxygen cylinder storage (2), located in side entry door.	1.00
OXY-SPR-11	Universal Vertical Holder for Main Oxygen Cylinder Universal vertical holder for types "K" or "M" main oxygen cylinder in S1 streetside exterior compartment.	1.00
SR00103829	Portable O2 Location Portable O2 shall be located in the pass through area Comments: O2 Cylinder brackets selected in CPQ - SR for location of install - RN	1.00

31-Suction (SUC)

Item Number	Name/Description	Quantity
SUC-LOC-11	Suction System location in ECC Main suction system is located in front streetside action area.	1.00
SUC-MOT-11	Thomas high flow vacuum pump Thomas high flow vacuum pump	1.00
SUC-OUT-11	Vacuum outlet QD in action area Vacuum outlet QD Puritan with yellow 5/16" hose 4 ft long	1.00
SUC-REG-11	Vacuum regulator with disposable canister Vacuum regulator with disposable canister (Rico RS-4X)	1.00

32-Electrical System (ELE)

Item Number	Name/Description	Quantity
ELE-ALT-11	Power Inverter, Xantrex Freedom, True Sine, 1000W The inverter/charger provides AC power using the DC power from the conversion battery bank. Recharge all battery banks and power all 120 volts AC outlets when the external shoreline is connected.	1.00
ELE-ALT-14	Super Auto Eject Power Inlet, 20 Amps, Yellow Kusmaull 120 Volts AC, 20 Amps - Automatically disconnects shoreline - Completely sealed - Yellow cover - Indicator light.	1.00
ELE-ALT-15	Electrical Outlet, 120V AC with Indicator 120V AC hospital-grade electrical outlets with indicator. (Included)	1.00
ELE-CON-13	ACDelco Conversion Batteries Two (2) ACDelco conversion Batteries. (Included)	1.00
ELE-CON-14	Electrical Outlet, 12V DC 20 amp with Indicator 12V DC, 20 amp Duplex electrical outlets. (Included)	1.00



ELE-COV-11	Shoreline cover - Change color Change Shoreline cover from Standard Yellow to One of the available colors: red, blue, grey or black. Selected color of shoreline cover : Black	1.00
ELE-GES-11	Demers Multiplex Electronic Management System Demers Electronic Management System (DEMS) – Multiplex system. (Included)	1.00
SR00104135	Relocate 110V and 12V Outlets in ALS Relocate 110V and 12V outlets in ALS, to have (1) 110V and (1) 12V in FB and FC - No outlets in upper locking compartment - F20P-2718 - 01 NOV - RN	1.00
SR00103810	S2 - Power and ground Add pre-wire POWE AND GROUND CONSTANT HOT in UPPER S2 for DEALER TO INSTALL flashlights	1.00

33-Communication System (COM)

<i>Item Number</i>	<i>Name/Description</i>	<i>Quantity</i>
COM-RAD-11	Pre-Wiring for 2-Way Radio, Two (2) Antenna Cables Wiring preparation for two-way radio, with two (2) antenna cables. (routed from front cab to radio communication compartment)	1.00
COM-RAD-14	Radio Communications Compartment Radio communications compartment universal board, Bussmann blade-type fuse panels, and harness to power the radio communication devices. (12V battery feed, ground, ignition).	1.00
COM-RAD-15	Radio Communications Front Console Radio communications front console universal board, Bussmann blade-type fuse panels, and harness.	1.00
COM-REC-11	Data Recorder Available Signals Data recorder available signals through a universal connector in the electrical compartment. (Included)	1.00

34-HVAC (CVC)

<i>Item Number</i>	<i>Name/Description</i>	<i>Quantity</i>
CVC-CLD-11	OEM Tie-In Air Conditioning Unit System The evaporator is tied-in to the OEM air conditioning system, cooling the air of the patient compartment through the ducted outlets.	1.00
CVC-DIF-11	Air Conditioning Outlets, Round Round outlets for ducted air conditioning unit. (Included)	1.00
CVC-HOT-11	OEM Tie-In Heating Unit The heating system is an extension of the OEM heating system, heating the patient compartment area through invisible opening underneath the medical cabinet at floor level. (Included)	1.00
CVC-VNT-13	Exhaust Fans (2) Two (2) exhaust fans for contaminated air. Activated by front control interface or rear console switch. (Included)	1.00

35-Interior Lights (ILG)

<i>Item Number</i>	<i>Name/Description</i>	<i>Quantity</i>
ILG-PLF-11	LED Dome Lights, Adjustable, Dig. Timer The ceiling lights have four (4) different intensities. Each time the ceiling lights button is pushed, the intensity increases, until maximum intensity is reached.	8.00

36-Grab Handles (GBR)

<i>Item Number</i>	<i>Name/Description</i>	<i>Quantity</i>
GBR-COL-12	Grab Bars Color, Yellow Color of selected grab bars is Yellow.	1.00
GBR-DRS-11	Rear Door-Mounted Grab Bars, 16" x 16"	1.00



	Two (2) door-mounted grab bars, 16" x 16", inside of rear doors (A1 and A2). (Included)	
GBR-DRS-12	Curbside Door-Mounted Grab Bar, 12"	1.00
	One (1) door-mounted grab bar, 12" each, on the inside of the side entry door (C2). (included)	
GBR-EMB-11	Embarking Grab Bars, 12"	1.00
	Two (2) entry grab bars, 12" each, mounted inside the patient compartment. One (1) near the curbside entry door, and one (1) near the R2 rear entry door. (Included)	
GBR-PLF-11	Ceiling Grab Rails, 90", Two (2)	1.00
	Two (2) ceiling-mounted grab rails, 90".	

37-Finish and Trim (FNS)

Item Number	Name/Description	Quantity
FNS-FLR-11	Lonseal, Lonplate II, Gun metal	1.00
	Lonseal, Lonplate II, Gun Metal floor covering.	
FNS-GRD-11	Cobalt Blue Upholstery	1.00
	Colbalt blue vinyl upholstery for seat and padding covering. (Included)	
FNS-GRD-15	Safety Yellow Upholstery	1.00
	Yellow vinyl upholstery for safety exit padding covering. (Included)	
FNS-MAT-11	Wood Flooring	1.00
	Exterior grade plywood, 0,75 inches thick.	
FNS-PLF-11	Fiberglass Ceiling	1.00
	Fiberglass ceiling in Patient Compartment. (Included)	
FNS-STK-11	General Vehicle Identification	1.00
	Vehicle general labels identification. (Included)	
SR00104144	Black Upholstery and Flooring	1.00
	All upholstery, seats and flooring to be BLACK (lonplate II) - 01NOV - RN	

38-Functionality (FCT)

Item Number	Name/Description	Quantity
FCT-PLF-11	Radio Speakers, Recessed, Two (2)	1.00
	Two (2) recessed radio speakers. (Included)	
FCT-PLF-13	IV Hooks, Recessed in Ceiling, Flexible, Four (4)	1.00
	Four (4) recessed flexible IV hooks in ceiling.	
FCT-RGT-13	Storage Compartment, Sliding Doors	1.00
	Storage compartment, two (2) cabinets, LED strip lighting, and sliding doors.	
FCT-RGT-21	Trash Container, Flip-Down, Hands-Free	1.00
	Trash container bracket in curbside flip-down container.	
FCT-RGT-26	Glove Box Holder - Five (5)	1.00
	Glove Box Holder - Five (5) below curbside upper cabinet	
FCT-RWR-11	Digital Clock, Driver and Step Indicator Lights	1.00
	Digital clock, rear step indicator light, driver intention indicator lights (direction, braker) located in padding above the rear doors.	



Braun Chief XL Type I Ambulance Proposal

Presented To:

Elmwood Township Fire-Rescue
10090 E Lincoln Rd
Traverse City, MI 49684

Proposal for: One (1) Braun Chief XL Type I ambulance on a Ford F-550 gas 4x4 chassis.

Delivery timeline:

Approximately 740 days after signed proposal, subject to chassis and component availability. Lead times are currently unpredictable due to industry-wide chassis, microchip, and other shortages.

Includes:

- 4x4 chassis, 2-door, Gas
- Red in color (Ford OEM Race Red)
- All OEM, manufacturer, and dealer discounts and rebates
- Liquid spring suspension
- Installation of customer supplied computer mount and docking station
- Rear chevrons around doors, doors left red
- Graphics to match current fleet
- Whelen M-Series lighting
- Front grill brush guard (Ali-Arc)
- Air-horns
- Install of a customer supplied Power-LOAD/Power-PRO cot
- Box undercoat
- Digital rear clock
- "D" oxygen bottle storage
- LED dome lights
- Dual controls in module
- Glove storage above side door and at the rear doors
- Delivery to Elmwood Township

Price:

\$312,811.00

- Quote is valid until 8/17/2022
- Price is based on current expected net chassis price for a Ford F-550 at time of ambulance build. If net chassis price is higher than expected, the increase will be added to the final sales price.

Proposal valid for: 30 days



Configuration Options

Chassis

TYPE I - AMBULANCE - CHIEF XL I FORD - 72 INCH INTERIOR HEADROOM

2025 Chief XL Type I - 169" Module - 72" Interior Headroom. Manufactured in Van Wert, Ohio, USA.23F4550LG

CHASSIS MY23 FORD F550 193" WB 4X4 DRW (108 C.A.) GAS ENGINE

F5H 2023 FORD F550 GAS CHASSIS CAB, 193" WB 4X4 DRW (108" C.A.)

-----15-00-0010

FUEL TANK - FULL UPON FACTORY RELEASE

The chassis fuel tank of the completed unit shall be full at time of release from the ambulance manufacturer's facility.

-----20-10-0603

ENGINE BLOCK HEATER - OEM PLUG

An engine block heater shall be included in the chassis with the 125 VAC power cord.20-20-0252

HEAT SHIELDS, PROTECTIVE

Install: aluminized steel protective heat shields to the upper laterals above the exhaust system.

-----20-20-0277

HIGH IDLE SYSTEM, AUTOMATIC

A high-idle system provided on the chassis, shall activate via cruise control switches on dash only when the transmission is placed in park/neutral/parking brake, will be automatically engaged when node provides low voltage signal and when in park/neutral/parking brake.

-----20-01-0105

SUSPENSION - LIQUID SPRING TYPE I

Install: Liquid Spring

-----20-10-0206

BATTERY - TWO SYSTEM - F SERIES CHASSIS

The vehicle shall have a 12 V two (2) battery system rated at 1500 cold cranking amps. Both batteries shall be securely installed in the Ford OEM locations, under the vehicle hood.

-----20-21-0101

FLOOR CONSOLE F450/F550 STANDARD CONSOLE - ALUMINUM

PLEASE NOTE: Console drawings are for reference only and do not include all features depicted on the drawings. All consoles shall be designed, priced, and approved internally to allow for accurate BOM pricing. The prices shown are estimated for general budget pricing only and pricing is subject to design; must contact manufacturer for pricing validation.

-----20-10-0112

INBOARD ARM RESTS FOR ALUMINUM CONSOLE

Install: inboard arm rests in the cab. (arm rests Havis Shields C-ARM-102 mount to the aluminum floor console)

-----30-10-0012

AIR HORNS - BUELL DUAL TRUMPETS 10" and 12", UNDR BMPR W/SW



Mount: Air Horn - (Buell) dual trumpets, (1) 10" and (1) 12" under front bumper, one each side, compressor per drawing. Horns activated by a push button located on the MCC (master control console) unless otherwise stated. See Dwg #130-10-0030

BACKUP ALARM

Install: (OSHA approved) back up alarm with a disable control for silent backing, located on the MCC (master control console).

-----20-30-0806

RUNNING BOARDS - STAR PUNCHED DIAMOND PLATE

Aluminum diamond plate running boards with a star punched non-skid surface shall be provided on the cab. The running boards shall be dip anodized after they are formed to retain finish and increase corrosion resistance.

-----20-20-0292

LIGHTS, TWO DOME WELDON 8080 RED-CLEAR

Install: Two (2) Weldon #8080 dome lights with red/clear push on/off lenses in the cab headliner, (1) located over the drive side, (1) located over the passenger side.

-----20-30-0202

MIRRORS, EXT OEM MANUAL TELESCOPING WREMOTE & HEAT

The chassis shall have OEM manual telescoping, folding trailer tow mirrors with power/heated glass, heated convex spotter mirror, integrated clearance lamps/turn signals.

-----20-30-0261

OEM AUTO-LOCK DISABLED (cab & module doors do not auto lock or unlock)

The OEM auto-lock feature will be disabled.

-----30-10-0751

SIREN, FEDERAL EQ2B ELECTRONIC Q SIREN

A Federal EQ2B Electronic "Q" siren shall be installed, with a control head mounted in the master control console.

-----30-10-0753

SIREN, WHELEN 295-HFSA7-REMOTE WITH MICROPHONE (Meets CA Title 13)

A Whelen 295-HFSA7 remote dual siren amplifier shall be flush-mounted in the master control console located in the cab. The siren shall be capable of hands-free operation and shall be equipped with a noise canceling microphone. (Meets CA Title 13)

-----30-10-0812

SIREN SPEAKERS, CAST PRODUCTS - IN FRONT BUMPER

Install: Two (2) Cast Products - 100-watt siren speakers, shall be installed in outer ends of the front bumper.

-----30-10-0813

SIREN SPEAKERS, CAST PRODUCTS - BELOW FRONT BUMPER

Install: Two (2) Cast Products - 100-watt siren speakers, shall be installed below the front bumper.

-----20-40-0203

WHEELS, FORGED POLISHED ALUMINUM - 19.5 - F450/550 193" WB

Forged, polished aluminum wheels shall be provided, to include bright hub covers and center ornaments and valve stem extensions.



Electrical

ELECTRICAL SYSTEM - WELDON V-MUX, MICRO PROCESSOR BASED

Install: Weldon V-MUX 100% solid state microprocessor based multiplex system.

-----30-10-0110

ELECTRICAL CIRCUITS

All electrical circuits: shall have wiring and circuit protection suitable to the demand and must meet the national electric code (NEC) wiring requirements, added on wiring (18 GA through 10 GA) color coded and stamped with code numbers for easy identification, SLX high temperature thermoplastic cross link wire used. SGX insulated cable used for all under hood / underbody battery and charging system cable. High temperature (375° f) thermoplastic loom used on all harnesses.

-----30-06-0126

ELECTRICAL COMPARTMENT (PDQ) - MULTIPLEX ELECTRICAL SYSTEM

Electrical compartment / hinged door w/ (2) chrome locking lever latches/ located on the partition wall behind the attendant seat.

-----30-06-0325

FLASHER - MULTIPLEX ELECTRICAL SYSTEM

Provide: Flasher within and programmed by the multiplex electrical system.

-----30-06-0350

FLASHING HEADLIGHTS - MULTIPLEX ELECTRICAL SYSTEM

Headlights (high beams) shall be programmed through the multiplex system to alternate flash (wig-wag).

-----30-10-0190

GROUND FAULT CIRCUIT INTERRUPTER-GFCI

Install: A 125 VAC, 20 AMP circuit breaker with ground fault circuit interrupter (GFCI) electronic ground leakage detection in the load center for the shoreline circuit.

-----30-06-0285

MODULE DISCONNECT - MULTIPLEX ELECTRICAL SYSTEM

Install: In-Power disconnect to keep the module power switch engaged, after the ignition is switched to the "off" position.

-----30-06-0575

REVERSE -TRANSMISSION- FUNCTIONS - MULTIPLEX ELECTRICAL SYSTEM

System programmed to provide activation for: rear outboard warning lights, rear side warning lights, rear scene lights, the rear side scene lights - when the transmission selector lever is placed into "reverse" position.

-----30-06-0150

SPARE CIRCUIT - MULTIPLEX ELECTRICAL SYSTEM

Provide (1) spare 15-amp circuit.

-----30-06-0175

WIRING HARNESS CONNECTORS - MULTIPLEX ELECTRICAL SYSTEM

Connect all wiring harnesses via quick connect circular plug connectors.

-----30-06-0300

VOLTMETER - MULTIPLEX ELECTRICAL SYSTEM

Provide: (1) digital voltmeter on the master control console screen.

-----30-06-0026

WARNING DISPLAY - MULTIPLEX ELECTRICAL SYSTEM



Install: digital warning display integrated into the cab display console, programmed through the multiplex system to provide visual and audible indication.

-----30-06-0225

EMERGENCY MASTER SWITCH - MULTIPLEX ELECTRICAL SYSTEM

Supply: A single emergency master switch for activating all the emergency warning lights on the master control console screen, emergency master switch will activate the module power automatically, include an Emergency Master Menu button to allow access to individual warning light functions.

-----30-06-0250

CONTROL PANEL SWITCHES - MULTIPLEX ELECTRICAL SYSTEM

Switches on the master control console and attendant control panel screens shall have dimmable perimeter backlighting.

-----30-06-0275

MODULE POWER SWITCH - MULTIPLEX ELECTRICAL SYSTEM

Provide: A module power switch for the electrical system on both the Master Control Console and the Attendant Control Panel screens.

-----30-06-0101

ATTENDANT CONTROL PANEL (ACP) - MULTIPLEX ELECTRICAL SYSTEM

Attendant Control Panel (ACP) contains a color micro processor screen, controls all equipment installed in the patient compartment.

-----30-06-0375

PARK OVERRIDE - MULTIPLEX ELECTRICAL SYSTEM

Park override switch on the master control console screen, reactivates all lights disabled when the transmission is placed in the neutral/park position.

-----30-06-0400

LOAD MANAGER-SEQUENTIAL SWITCHING SYSTEM - MULTIPLEX ELECTRIC SYSTEM

Load manager-sequential switching system controlled by the microprocessor based electrical system: emergency master button shall control the sequential switching of the emergency lights and/or other warning devices, load manager shall automatically shed non-critical electrical loads during low voltage conditions.

-----30-06-0450

FRONT CLEAR DISABLE SWITCH - MULTIPLEX ELECTRICAL SYSTEM

Activation of the switch on the master control console screen to disable all forward-facing clear warning lights.

-----30-06-0076

MASTER CONTROL CONSOLE (MCC) - MULTIPLEX ELECTRICAL SYSTEM

Floor mounted Master Control Console (MCC) located in the cab, housing siren, color microprocessor display screen, controlling all the Emergency Warning functions, Patient Compartment lighting and module heat/ac functions.

-----30-06-0475

CURBSIDE SCENE LIGHTS ON WITH CURBSIDE DOOR

The Curbside scene lights: programmed to activate when the Curbside door is in the open position.

-----30-06-0500

REAR SCENE LIGHTS ON WITH REAR DOORS OPEN

Rear scene lights programmed to activate when the rear doors are in the open position.

-----30-06-0525

DISABLE SWITCH FOR REAR SCENE LIGHTS - MULTIPLEX ELECTRICAL SYSTEM

Install: disable switch at the rear door area to disable the rear scene lights.

-----30-06-0550



DISABLE SWITCH FOR SIDE SCENE LIGHTS - MULTIPLEX ELECTRICAL SYSTEM

A disable switch shall be installed at the curbside door area to disable the curbside scene lights.

-----30-06-0015

VISTA IV ACP - PUSH BUTTON

Install: Weldon V-MUX Vista IV interface module / display screen mounted on an angled flip - down panel with chrome lever latches, in the patient compartment ACP area.

-----30-06-0010

VISTA IV MCC - PUSH BUTTON

Install: Weldon V-MUX Vista IV interface module / display screen in the cab, operated through the use of push buttons.

-----30-10-0903

VISTA DISPLAY SCREEN - PUSH BUTTON - CURBSIDE - FIXED ANGLED

One (1) Vista screen shall be provided in the patient compartment on the curbside wall on a fixed angled mount with removable plate per the location on dwg. #6.

-----30-10-0901

SYSTEM ACTIVE AND CHECK OUT LIGHTS - 15 MINUTES

Switch: located at the curb and rear entry doors for activation of the V-MUX electrical system, check out light switch located at the curb and rear doors for activation of the left LED angled lights prior to entering the module, system programmed to shut down automatically after 15 minutes unless the ignition is on.

-----30-06-0050

DAYTIME RUNNING LAMPS - MULTIPLEX ELECTRICAL SYSTEM

OEM Daytime Running Light headlights activated for daytime operation, when transmission is placed in drive.

-----30-10-0071

CAMERA REAR VIEW - SINGLE SYSTEM - VISTA SCREEN

Install: camera system rear view, tied to M-Tech display screen. Per Dwg #2. Camera alignment will be conducted at final inspection, if applicable.

-----30-10-0915

SYSTEM AUTO ACTIVE WITH DOOR OPEN OR UNLOCK SIGNAL

The system will auto activate when a door is opened or when a door unlock signal is received.

-----30-10-0585

USB - DUAL OUTLET, ONE (1) INTERIOR LOCATED ON CONSOLE

Install: (1) dual USB port outlet, 5 volt / 2.1 amp, in the vehicle, located on the Master Control Console in the cab.

-----USBAA101

OUTLET, USB - ONE (1) DUAL - PRIMARY ACTION AREA

One (1) dual USB port outlet, 5 volt / 2.1 amp, shall be installed in the vehicle, located on the streetside primary action area in the patient compartment.

-----125AA101

OUTLET, 125VAC - ONE (1) INTERIOR DUPLEX - LEFT WALL ACTION AREA

One (1) 2-wire +plus ground 125 VAC duplex outlet in the street side wall in the primary action area.

-----125AA201

OUTLET, 125VAC - ONE (1) INTERIOR DUPLEX - SECONDARY ACTION AREA

One (1) 2-wire +plus ground 125 VAC duplex outlet in the street side wall in the secondary action area.

-----125IF201

OUTLET, 125VAC - ONE (1) INTERIOR DUPLEX - FRONT WALL CABINET



One (1) 2-wire +plus ground 125 VAC duplex outlet in the front wall cabinet.
-----30-10-0258

INVERTER, VANNER - 1100 WATT, LIFESINE LSC 12-1100-DC CHARGER

Install: Vanner LifeSine LSC 12-1100-DC watt inverter with battery conditioner / charger per drawing (non-hardwired).
-----12VAA101

OUTLET, 12VDC - ONE (1) - LEFT WALL ACTION AREA

One (1) 12 VDC power point outlet shall be installed in the street side wall in the primary action area. The outlet shall be labeled, "12 VDC". A Schottky diode medical isolator shall be provided to protect the 12 VDC outlet.
-----12VIF201

OUTLET, 12VDC - ONE (1) FRONT WALL - CABINET

One (1) 12 VDC power point outlet shall be installed in the patient compartment, in the front wall cabinet. The outlet shall be labeled, "12 VDC". A Schottky diode medical isolator shall be provided to protect the 12 VDC outlet.
-----30-12-0001

RECEPTACLE SHORELINE INLET-SUPER 20 AMP, AUTO EJECT - YELLOW COVER

Install: Kussmaul super auto eject shoreline inlet receptacle with yellow cover on module exterior (forward street side) near the driver's door, equipped with an integral dynamic disconnect.
-----30-10-0657

RADIO ANTENNA BASES - TWO (2) No specification needed; Standard Antenna termination point(s) will end in standard locations.

Two (2) antenna bases with attached coax cables shall be installed on the module roof. The coax cables shall terminate in the PDQ. Access to the antenna bases shall be through adjacent module interior dome lights.
-----30-10-0299

LIGHT, ATTENDANT CONTROL PANEL AREA - TECNIQ SILHO-X LED - WARM WHITE

A Tecniq Silho-X 2.75" round warm white LED light with SS trim ring, shall be mounted above the left wall forward action area counter. The light shall be operated through a button on the ACP Vista screen labeled "Attendant Light". (Braun #26415)
-----30-10-0310

LIGHT, LED ELECTRICAL COMPARTMENT -PDQ

A 12 VDC LED light shall be located in the PDQ. The light shall be wired "battery-hot" to activate when the PDQ door is in the open position. The light shall be off when the door is in the closed position.
30-11-0106

LIGHTS, DOME LED (8) WHELEN SUPER LED

Eight (8) Whelen #LED (80C0EHCR) dome lights, shall be installed. See dwg #9
-----30-11-0152

LIGHTS, RIDGEBACK LED PANEL (3) STREETSIDE - ANGLED

Install: (3) Ridgeback LED lights streetside per dwg #5.
-----30-11-0156

LIGHTS, DELETE LIGHTS ON PANEL CURBSIDE ANGLED

Delete / Omit lights on angled panel, Curbside interior.
-----30-10-0418

LIGHTS, OSS COMPARTMENTS - RIDGEBACK LED STRIP LIGHTING

Install: Ridgeback brand LED strip lighting, one each side of the door opening, activated by magnetic switch, all standard OSS compartments only, excluding battery compartment, lengths dependent on OSS dimensions.
-----40-10-0191



LOCKS POWER - PASSAGE, 5 COMPARTMENTS, KEY FOBS

Install: power door locks on module passage doors, and (5) OSS compartments, use OEM key fobs. Does not include battery bay door.40-10-0151

SWITCH DOOR UNLOCK, WATERPROOF - HIDDEN IN FRONT GRILLE AREA

Install: exterior hidden door unlock switch in grille area.

-----30-10-1006

PROGRAMMING, V-MUX - REAR WINDOW LEVEL LIGHTS - BRAKE OVER RIDE

Install: (2) low intensity Whelen 900 series red super LED warning lights with clear lenses and chrome flanges, on the rear of the module at window level, (1) on each side.

-----30-06-0201

RADIO TIE-IN POINT - (1) 12V/40 AMP - CAB CONSOLE AREA

Install (1) set of 12 volt/40 amp radio tie-in points in cab console: (1) battery hot, (1) ignition hot, (1) "grounded" stud rated max 250 amps.

-----30-06-0202

RADIO TIE-IN POINT - (1) 12V/40 AMP - PATIENT COMPARTMENT

Install (1) set of 12 volt/40 amp radio tie-in points in the patient compartment: (1) battery hot, (1) ignition hot, (1) "grounded" stud rated max 250 amps.

-----30-06-0203

RADIO TIE-IN POINT - (1) 12V/400 AMP - PDQ

Install (1) set of 12 volt/40 amp radio tie-in points in the PDQ: (1) battery hot, (1) ignition hot, (1) "grounded" stud rated max 400 amps.

-----30-10-0428

LIGHT INTERIOR OF REAR FACING OSS & PASSAGE DOORS, (1) RED TIR3 PER DOOR (VERT)

Install: (1) Whelen TIR3 Vertical mount red LED light on the interior of all rear facing exterior compartment and patient entry doors, located on each lower outer corner, light(s) on patient entry door shall random flash on the specific door(s) that are opened. (does not include the battery door) (7 lights) (Braun part #16656-Vertical mount)

Exterior Lighting

WARNING LIGHTS FLASH PATTERN ACTION SCAN - MULTIPLEX ELECTRICAL SYSTEM

The flash pattern for the warning lights shall be the (Whelen) ActionScan. These warning lights will be operated from a single button labeled "flashers" via the Multiplex System on the master control console.

-----30-06-0420

GRILLE WARNING LIGHTS TO FLASH IN AN X-PATTERN

The four (4) grill lights shall flash in an "X" pattern. Clear LENS

CLEAR LENSES ON ALL WARNING LIGHTS

-----GWLM20004

LIGHTS GRILLE - 4 WHELEN M2 SUPER LED

Four (4) Whelen M2 series super LED warning lights, with waterproof connectors shall be installed the grille area of the chassis. The lights shall operate from a switch on the master control console labeled "Flashers".

-----GWLCLR1R



GRILLE WARNING LIGHT LOCATION 1 - RED

The warning light located on the grille in location 1 shall be red.

-----GWLCLR2R

GRILLE WARNING LIGHT LOCATION 2 - RED

The warning light located on the grille in location 2 shall be red.

-----GWLCLR3W

GRILLE WARNING LIGHT LOCATION 3 - WHITE

The warning light located on the grille in location 3 shall be white.

-----GWLCLR4W

GRILLE WARNING LIGHT LOCATION 4 - WHITE

The warning light located on the grille in location 4 shall be white.

-----STRPTRN

STRAIGHT PATTERN WARNING LIGHTS

The front warning lights will be aligned in a straight pattern across the module.

-----30-25-0122

LIGHTS, ICC / LED CLEARANCE - ON MODULE FRONT - TECNIQ

Install: (5) amber Tecniq LED (S33-AA00-1) clearance / ICC lights on the front of the module near the roof line per dwg #1.

-----FWLM90007

LIGHTS FRONT MODULE - 7 WHELEN M9 SUPER LED

Seven (7) Whelen M9 Super LED warning lights with chrome flanges shall be installed on the module front. The lights shall operate from a switch on the master control console labeled "Flashers".

-----FWLCLR1R

FRONT WARNING LIGHT LOCATION 1 - RED

The warning light located on the upper front of the module in location 1 shall be red.

-----FWLCLR2W

FRONT WARNING LIGHT LOCATION 2 - WHITE

The warning light located on the upper front of the module in location 2 shall be white.

-----FWLCLR3R

FRONT WARNING LIGHT LOCATION 3 - RED

The warning light located on the upper front of the module in location 3 shall be red.

-----FWLCLR4W

FRONT WARNING LIGHT LOCATION 4 - WHITE

The warning light located on the upper front of the module in location 4 shall be white.

-----FWLCLR5R

FRONT WARNING LIGHT LOCATION 5 - RED

The warning light located on the upper front of the module in location 5 shall be red.

-----FWLCLR6W

FRONT WARNING LIGHT LOCATION 6 - WHITE

The warning light located on the upper front of the module in location 6 shall be white.

-----FWLCLR7R

FRONT WARNING LIGHT LOCATION 7 - RED

The warning light located on the upper front of the module in location 7 shall be red.

-----30-25-0123



LIGHTS, ICC / LED CLEARANCE - ON MODULE REAR - TECNIQ

Install: (5) red TECNIQ LED (S33-RR00-1) clearance / ICC lights on the rear of the module near the roof line per dwg #2.

-----ROLM90002

LIGHTS REAR MODULE, UPPER OUTER - 2 WHELEN M9 LED

Two (2) Whelen M9 series super LED warning light with chrome bezels shall be installed on the upper rear of the module, in the outer location. The lights shall operate from a switch on the master control console, labeled "Flashers".

-----ROLCLR1R

REAR OUTER MODULE LIGHT LOCATION 1 - RED

The warning light located on upper rear of the module, in outer location 1 shall be red.

-----ROLCLR2R

REAR OUTER MODULE LIGHT LOCATION 2 - RED

The warning light located on upper rear of the module, in outer location 2 shall be red.

-----RCLM90001

LIGHTS REAR MODULE, UPPER CENTER - 1 WHELEN M9 LED

One (1) Whelen M9 super LED warning light with chrome bezels shall be installed on the upper rear of the module, center location. The lights shall operate from a switch on the master control console, labeled "Flashers".

-----RCLCLR1A

REAR CENTER MODULE LIGHT LOCATION 1-AMBER

The warning light located on upper rear of the module in the center location shall be amber.

-----RSM90002

LIGHTS REAR SCENE - 2 WHELEN M9 LED

Two (2) Whelen M9 super LED scene/load lights with chrome bezels shall be installed on the upper rear of the module. The lights shall operate from a switch on the master control console, labeled "Rear Scene Lights".

-----WLM90002

LIGHTS REAR WINDOW - 2 WHELEN M9 SUPER LED

Two (2) Whelen M9 super LED warning lights with chrome flanges shall be installed on the rear of the module at window level, one (1) on each side. These lights shall operate from a switch on the master control console, labeled "Flashers".

-----WLCLR1R

WINDOW LEVEL LIGHT LOCATION 1 - RED

The warning light located on rear of the module at window level, location 1 shall be red.

-----WLCLR2R

WINDOW LEVEL LIGHT LOCATION 2 - RED

The warning light located on rear of the module at window level, location 2 shall be red.

-----30-26-3010

LIGHTS, REAR TAIL - WHELEN M6 LED STOP, TURN, BACK-UP

Install: (1) pair each of Whelen M6 series LED stop/tail lights, turn lights, and back-up lights with chrome flanges on the rear of the module.

-----FILM7T0002

LIGHTS FRONT INTERSECTION - 2 WHELEN M7 LED W/15 DEGREE TILT HOUSING

Two (2) Whelen M7 super LED warning lights, with water-proof connectors, shall be mounted in 15 degree tilt housings on the front chassis fenders, one (1) on each side. The lights shall operate from a switch on the master control console labeled "Flashers". NOTE: When vehicle is placed in park, the override switch must be on for



intersection light(s) to remain on.

-----FILCLR1R

FRONT INTERSECTION LIGHT LOCATION 1 - RED

The warning light located on front of the chassis fender in location 1 shall be red.

-----FILCLR2R

FRONT INTERSECTION LIGHT LOCATION 2 - RED

The warning light located on front of the chassis fender in location 2 shall be red.

-----RILM70002

LIGHTS INTERSECTION REAR - 2 WHELEN M7 LED

Two (2) Whelen M7 super LED warning lights with, chrome flanges and water-proof connectors, shall be installed above the rear wheel wells, one (1) on each side. These lights shall operate from a switch on the master control console screen labeled "Flashers". NOTE: When vehicle is placed in park, the override switch must be on for intersection light(s) to remain on.

-----RILCLR1R

REAR INTERSECTION LIGHT LOCATION 1 - RED

The warning light located on above the rear wheel well at location 1 shall be red.

-----RILCLR2R

REAR INTERSECTION LIGHT LOCATION 2 - RED

The warning light located on above the rear wheel well at location 2 shall be red.

-----30-27-1102

LIGHTS, ICC / LED CLEARANCE - ON MODULE SIDE - TECNIQ

Install: (2) red Tecniq LED (S33-RR00-1) clearance/ICC lights, (1) red on each side at rear of the vehicle, flash with turn signal, per Dwg #3 and #4.

-----SWLM90004

LIGHTS SIDE WARNING -4 WHELEN M9 SUPER LED

Four (4) Whelen M9 super LED warning lights with chrome flanges shall be installed, two (2) on each side of module exterior per dwg.

-----SWLCLR1R

SIDE WARNING LIGHT LOCATION 1 - RED

The warning light located on side of the module, in outer location 1 shall be red.

-----SWLCLR2R

SIDE WARNING LIGHT LOCATION 2 - RED

The warning light located on side of the module, in outer location 2 shall be red.

-----SWLCLR3R

SIDE WARNING LIGHT LOCATION 3 - RED

The warning light located on side of the module, in outer location 3 shall be red.

-----SWLCLR4R

SIDE WARNING LIGHT LOCATION 4 - RED

The warning light located on side of the module, in outer location 4 shall be red.

-----SSM90004

LIGHTS SIDE SCENE - 4 WHELEN M9 LED

Four (4) Whelen M9 24 Diode LED scene lights with chrome flanges shall be installed, two (2) each module side. These lights shall operate from switches on the master control console labeled "Left Scene Light" and "Right Scene Light".

-----30-25-0306



LIGHTS, UNDERBODY FOUR (4) WELDON 4" LED

Mount: (4) Weldon 4" round LED white lights on brackets underneath the module (Braun#52272) , turn on automatically when the vehicle is shifted into park, also activated or disabled by a switch on the MCC Vista display screen.

Module Body Construction

AWS ALUMINUM CERTIFIED WELDERS

-----39-10-0003

CONNECTIONS, MODULE

Bolt: to the chassis frame rail with (12) 5/8" -11 grade 8 bolts through OEM rubber insulating spacers installed on outriggers at twelve (12) separate locations (six each frame rail), providing noise insulation and easy removal for chassis replacement, mounting bolts to be properly torqued and secured with locktite, system used for fastening the module to the frame to be that approved by the chassis manufacturer.

40-00-0080

INSULATION - POLYURETHANE SPRAY FOAM

The walls, ceiling, passage doors, outside storage doors, the entire underside of the module floor (except for mounting pads), the underside of the outside storage compartments, the wheel wells, and the underside of the curbside step area shall be completely foam - in - place insulated with nominal 3/4" thick sprayed on Class I, urethane foam for thermal and acoustical insulation. The insulation shall comply with FMVSS #302 flame spread requirements. The underside of the body shall be properly prepared to ensure adhesion before the spray insulation is applied.

-----39-00-0001

MODULE BODY CONSTRUCTION - SEAMLESS

Module: fabricated entirely of parts cut and formed from .125" (minimum) thickness 5052-H32 flat aluminum sheet stock, using CNC machines capable of .010" repeatability. This is the only alloy that may be used for body parts that are welded together. Roll-cage type interior super-structure, aluminum partition and module welded together into a single unit, roof designed with a minimum 1.5" crown to facilitate water run-off. Floor, roof, sides, all exterior doors fabricated from .125" (minimum) thick flat aluminum sheet stock, exterior joints between the roof and side components continuous full seam welded the entire length of the module. All exterior body panel joints continuous full seam welded. No VHB bonding tape or other adhesives used in the construction of the ambulance module.

-----39-00-0002

SOLE SOURCE MODULE BODY CONSTRUCTION



Module Features / Exterior

ALUMINUM PARTS - MODULE EXTERIOR

All unpainted exterior aluminum parts to be bright dip anodized after fabrication to retain the finish and increase corrosion resistance.

-----40-00-0010

CORROSION MINIMIZATION - MODULE

All module contact with dissimilar metals shall be minimized with the use of nylon screw-hole inserts to provide hinge to door isolation with the module body, polypropylene strip hinge isolation, polyethylene backed rubber tape, ceramic coated stainless steel hinge bolts, and ECK brand corrosion inhibitor spray.

-----40-00-0020

DOOR CONSTRUCTION - GASKET PLACEMENT

All exterior hinged module doors shall be constructed in an inverted pan-formed design. The pan shall be constructed from .125" thick 5052-H32 flat sheet aluminum. The exterior door skin shall be constructed of .190" thick aluminum and welded to the pan. Door gaskets shall be attached to the interior side of the door skin on the top, bottom and outer edge of the door. The gasket on the hinge side of the door will be attached to the door frame.

-----40-00-0060

EXTERIOR COMPARTMENTS - SWEEP-OUT

Exterior module compartments: a sweep-out design to aid in facilitation of the purchaser's routine care and cleaning of the vehicle. All exterior compartment floors, with the exception of the front ALS compartment to be constructed to be flush with the bottom door frame.

-----40-00-0030

EXTERIOR COMPARTMENTS DESIGN

All exterior compartments shall be vented and include: sound absorbing slip resistant polyurethane material sprayed on the inside of all compartments and compartment shelving, slide out trays and closeouts, baffled seep holes provided to prevent water from splashing or seeping into the exterior compartments, full-length, two-way adjustable, stainless steel hinges on all exterior compartment doors with 3/16" stainless steel hinge pins, compartment doors installed, flush with the module body, when double doors are provided, each door to have exterior handle, but only the forward door lockable, rearward door is secured when forward door is locked), all exterior compartments and passage doors keyed alike, lockable Eberhard "free-floating" type chrome plated handles with rotary locks. gasket installed under each handle to protect the paint; drip rails installed above all exterior compartment doors.

-----40-00-0050

EXTERIOR COMPARTMENTS, VENTING

(9) square inches (minimum) of venting inside #1, #2, #3, & #4 exterior storage compartments to provide for easier closure of the compartment doors.

-----40-00-0055

EXTERIOR COMPARTMENTS, VENTING - OXYGEN STORAGE

(9) square inches (minimum) of venting provided in the exterior oxygen storage compartment, to dissipate any leaking oxygen gas.

-----40-00-0070

HANDLES, EBERHARD - CHROME FREE FLOATING TYPE

Install: Eberhard #EMC-1-2110 chrome "free-floating" handles on each exterior module door, large enough to accommodate a gloved hand.

-----40-10-0072



LOWERED MODULE SIDES

Module sides to be as low as possible and still comply with KKK-1822-F ramp break over angle.
40-10-0321

STEPWELL, CURBSIDE DOORWAY - MID STEP AREA

Install: aluminum diamond plate step well and mid-level step in curbside doorway threshold area.

-----40-00-0091

THRESHOLD, STAINLESS STEEL - ALL OSS STORAGE COMPARTMENTS

Each exterior storage compartment with a hinged door: stainless steel lower threshold at the door opening to protect the paint.

-----40-00-0083

UNDERCOATING SEAL

Spray: Entire underbody (excluding drive shaft, wheels, fuel tank, and 12" either side of exhaust system) with undercoating seal for reduced corrosion.

-----40-10-0340

STONE GUARDS, MOD FRNT -ANODIZED DIAMOND PLATE

Install: anodized aluminum diamond plate stone guards on module front, (1) each side.

-----40-10-0030

DOCK BUMPERS, REAR

Install rear dock bumpers.

-----40-10-0066

DOOR SLIDING - MODULE CURBSIDE PASSAGE

Install EZ Glide curb door.

-----40-10-0088

DOORS - REAR PASSAGE

Patient compartment rear door opening: doors flush without a protruding flange or lip, right rear passage door lockable, chrome exterior handle, left rear door non-locking, chrome exterior handle, all handles installed with a gasket, hinge full length stainless steel with a 3/16" stainless steel hinge pin, two-way adjustable, each rear door two-point slam action automotive type rotary latching system to the body, right rear door lock to the body at the top and bottom, not to left rear door, doors .213" steel door latch activator rods with clevis adjusters, doors lockable from inside and outside, shut on molded, air-core, automotive type door seals to prevent water from leaking into vehicle interior.

-----40-10-0130

EMERGENCY RELEASE LEVER, REAR PATIENT PASSAGE DOORS

Install emergency release lever, attached to each rear passage door latch to be free-floating from the interior door linkages.40-10-0505

WINDOWS, PASSAGE DOOR - (CURB SLIDING, REAR FIXED)

Curbside passage door (sliding) window with removable screen, rear passage doors w/ non-openable window, windows 5% dark tint, secured with black oxide coated fasteners, open doors not to block warning lights.40-10-0103

FENDERETTES - POLISHED ALUMINUM

Install: Polished aluminum fenderettes around the rear wheel well openings.

-----40-10-0119

HOLD-OPEN - REAR DOORS - GRABBERS

Install: door grabbers (1 pair) with hard rubber inserts on rear doors.

-----40-10-0360



KICKPLATE/THRESHOLD, REAR DOORWAY - ANODIZED DIAMOND PLATE

Install: anodized aluminum diamond plate kick plate at the rear exterior doorway, providing a kick / scuff plate at rear of the vehicle above rear step, per dwg # 2.

-----40-10-0182

LICENSE PLATE HOLDER - CPI CAST RECESSED MODULE REAR CENTER KICKPLATE/THRESHOLD WITH DUAL LED LIGHT

Install: Cast products license plate holder on rear of the module below doors, to be recessed into module, to have dual Whelen Mini-LED lights, to activate with chassis headlamp switch. (CPI # LP0002-1-C-CHA).

-----40-10-0204

MUD FLAPS, REAR - BLACK RUBBER FIBERGLASS REINFORCED - THREE COLOR

Install black rubber, fiberglass reinforced mud flaps with a minimum 1/4" thickness bolted to underside of module behind rear wheels, to provide adequate coverage of rear dual wheels of the chassis, mud flaps to be (3) color with the Manufacturers Logo.

-----40-10-0266

REAR STEP/BUMPER -FLIP-UP CENTER SECTION - STAR PUNCHED AND ANODIZED

Affix: rear bumper to chassis frame, constructed with a hinged center section, (2) steel braces to secure step to chassis frame, outer 17" on each end of bumper constructed from heavy gauge stamped polished stainless steel bumper parts, to provide smooth rounded corners, step constructed of star punched .125" thick aluminum diamond plate, (2) rear LED step illumination lights provided. All diamond plate surfaces to be anodized; strip of black PVC installed on face of step.

-----40-10-0383

TOW EYES, RECESSED MODULE REAR KICKPLATE / THRESHOLD

(2) tow eyes to be recessed into rear threshold per dwg.

-----40-10-0280

RUB RAILS, ANODIZED ALUMINUM

Install: anodized polished aluminum rub rails on lower sides of body, below outside compartment sill areas., rub rails to be offset 3/16" from body.

-----40-00-0019

DOOR SKINS, OUTSIDE STORAGE COMPARTMENTS - DIAMOND PLATE INTERIOR SKINS

Interior door skins for all outside storage compartments constructed of .063" thick aluminum diamond plate.

-----OS1XL1STD

OSS #1 - STREETSIDE FORWARD

OSS #1 streetside forward, hinged door with spring-loaded gas cylinder, locking handle installed on the exterior of the door.

-----OS1XL1OP4

OSS #1 - OXYGEN STORAGE

OSS #1 streetside forward, for housing an O2 cylinder.

-----OS102WELD

OSS #1 - OXYGEN STORAGE BRACKET WELDED IN FOR H or M CYLINDER

An oxygen storage bracket shall be welded in OSS #1 for retention of "H" or "M" oxygen cylinders.

-----OS2XL1STD

OSS #2 - STREETSIDE CENTER

OSS #2 streetside center, hinged double doors with spring-loaded gas cylinders, handles installed on the exterior of each door, forward door with locking handle.

-----40-09-0164

ZICO SCBA HOLDERS KD-UH-6-SF TWO (2)



Install: (2) Zico SCBA holders KD-UH-6-SF (#23891) in a specified fixed location.

-----OS2XL1OP3

OSS #2 - (1) ADJUSTABLE SHELF WITH (2) ANGLED SCBA BRACKETS

OSS #2 streetside center, with one (1) adjustable shelf, and two (2) SCBA brackets angled in corners.

-----OS2SCBA2C

OSS #2 - SCBA BRACKETS TWO (2) ANGLED IN CORNERS

Outside storage compartment #2 shall have two (2) SCBA brackets angled in the corners.

-----OS2SHELF1

OSS #2 - SHELF ONE (1) ADJUSTABLE WITH TRACK

Outside storage compartment #2 shall contain one (1) adjustable shelf with track.

-----OS3XL1STD

OSS #3 - STREETSIDE REAR - TALL DOOR

OSS #3 streetside rear, hinged door with spring-loaded gas cylinder, locking handle installed on the exterior of the door.

-----OS3XL1OP7

OSS #3 - SHALLOW UPPER SECTION WITH (1) FULL DEPTH ADJUSTABLE SHELF

OSS #3 streetside rear, one (1) lower compartment adjustable shelf, and upper section of shallow depth.

-----OS3SHELF1

OSS #3 - SHELF ONE (1) ADJUSTABLE WITH TRACK

Outside storage compartment #3 shall contain one (1) adjustable shelf with track.

-----OS4XL1STD

OSS #4 - CURBSIDE REAR

OSS #4 curbside rear, hinged door with spring-loaded gas cylinder, locking handle installed on the exterior of the door.

-----OS4XL1OP4

OSS #4 - BACKBOARD AND (2) ADJUSTABLE SHELVES WITH INSIDE/OUTSIDE ACCESS AND FIXED DIVIDER

OSS #4 curbside rear, with one (1) fixed vertical divider for backboard/scoop stretcher storage on one side and and two (2) adjustable shelves with inside/outside storage access on other.

-----OS4BB

OSS #4 - BACKBOARD - SCOOP STRETCHER STORAGE

Compartment #4 shall provide storage for backboards / scoop stretcher, with a (1) inch adjustable strap with black plastic buckle.

-----OS4DIV1

OSS #4 - FIXED DIVIDER

One (1), fixed divider with sprayed on polyurethane material shall be provided and installed in outside storage compartment #4 per dwg. #4.

-----OS4SHELF2

OSS #4 - SHELVES TWO (2) ADJUSTABLE WITH TRACK

Two (2) adjustable shelves with track in outside storage compartment #4.

-----OSS5XL1SRT

OSS #5 - SHORT DOOR

OSS #5, curbside forward, inside/outside access, hinged short door and a locking handle.

-----OS5XL1OP5

OSS #5 - INSIDE/OUTSIDE ACCESS TO THE ALS CABINET - #5B ADDITIONAL STORAGE AREA



OSS #5 curbside forward, Inside/outside access to the ALS cabinet, added #5B additional storage with separate door, non-locking handle.

Module Interior / Patient Compartment

CABINET CONSTRUCTION - INTERIOR - ALUMINUM

All interior cabinets shall be constructed of .090" thick welded aluminum.

-----50-60-0220

EMBLEMS / SIGNS - REAR PATIENT COMPARTMENT

(2) "No Smoking / Oxygen Equipped / Fasten Seat Belts" signs: (1) sign installed in the cab, (1) above the oxygen outlets in the patient compartment street side cabinet.

-----50-60-0300

FLOOR CONSTRUCTION- PATIENT COMPARTMENT, NON-WOOD COMPOSITE

Sub-floor in the patient compartment: constructed of .125" thick aluminum over .125" and .190" thick reinforcing hat sections and mounting laterals, aluminum sub-floor covered with a 3/4" non-wood composite material, all corner molding, edging and trim anodized aluminum or stainless steel and sealed to prevent fluids from seeping under the cabinets.

-----50-60-0301

FLOORING - COVE

Patient compartment floor radius: coved with pre-formed floor coving material, installed behind the vinyl floor covering, along both the street side and curbside walls.

-----50-60-0391

HEADLINER - REAR PATIENT COMPARTMENT

Headliner in the patient compartment shall be one-piece, seamless, .090 thick aluminum finished with sprayed-on multi-use polychromatic coating.

50-51-1013

HOLD OPENS FOR INTERIOR DOORS

All interior cabinets with doors less than 6" tall shall have friction hinges as hold opens for door(s). Doors 6" and taller shall be designed using gas shocks as hold opens for the door(s).

-----50-60-0660

PADDED EDGING PROTECTION

Install: padded corner edging where necessary on exposed corners and edges in the patient compartment for patient and attendant protection.

50-00-0202

ROUNDED INTERIOR CORNERS

Interior vertical edges: rounded/padded corners in the following locations: forward and aft edges of the CPR seat, the wall at the aft end of the squad bench, the partition opening cabinet edges and the upper front wall cabinet.

-----50-51-1011

RECESSED ADJUSTABLE SHELF TRACK - CABINETS

Install recessed adjustable shelf track in cabinets.

-----50-51-5001

UPHOLSTERY - PATRIOT PLUS CHARCOAL #8605



All cushions, head pads and seating surfaces shall be covered with Patriot Plus Charcoal #8605
-----50-60-0661

INTERIOR MODULE PADS

Vinyl upholstered, foam cushioned head/back pads shall be installed as follows: the lower edge of the upper front wall cabinet (above the partition doorway or window), above the rear doors, above the side door, and on the street side wall behind and on each side of the CPR seat. The pads shall be covered with a flame-retardant color coordinated vinyl upholstery material.
-----50-51-6003

LONPLATE II, NON-SLIP EMBOSSED SM. GRID - GUNMETAL #424

The floor in the patient compartment shall be covered with Lonseal brand "Lonplate II" non-slip; small grid (embossed) Gunmetal #424.
-----50-51-2002

CABINET DOORS - CLEAR POLYCARBONATE

All cabinet doors shall be clear polycarbonate material / installed in aluminum track lined with PPL inserts / An edge mounted aluminum handle shall be installed on each sliding cabinet door.
-----50-51-3001

CABINETS/ WALLS - POLYCHROMATIC COATING - MARBLE STONE

Headliner, walls, cabinet faces, and cabinet interiors MultiSpec color to be #99-7371 Marble Stone
-----IS-CNT2-ACR

COUNTER TOP, SOLID ACRYLIC - SECONDARY ACTION AREA

Install: solid acrylic countertop with 1/2" lip on the secondary action area.
-----IS-CNT-ACR

COUNTER TOP, SOLID ACRYLIC

Install: solid acrylic countertop with 1/2" lip on the primary action area.
-----50-51-4033

COUNTERTOP - SOLID ACRYLIC - RAVEN BOULDER (GRAY/BLACK)

Install a solid acrylic counter top, Raven Boulder (#810).50-01-0408

LATCHES, CABINET, CN10 COMPLIANT AS APPLICABLE - INCLUDING RADIO CABINET

The ACP (attendant control panel) door, the PDQ (power distribution quarters) door, and the radio cabinet door shall be secured with chrome locking lever latches/ all remaining interior hinged cabinet doors with center squeeze latches/all interior drawers with locking flush pull latches.50-10-0229

LEFT WALL - ATTENDANT CONTROL PANEL - WITH FLAT AREA

A Weldon Vista Control Screen shall be mounted on a hinged access panel and secured with two (2) latches. The panel will be located to the immediate right of the attendant's seat. The forward portion of the panel will contain a flat area that may be used for future radio mounting, etc.
-----IS1XL10P2

CABINET - RESTOCKNG FRAME WITH SLIDING POLYCARBONATE DOORS AND (1) ADJ. SHELF EACH SIDE OF CENTER DIVIDER

Left wall, upper rear interior cabinet (#1): sliding polycarbonate doors w/ a flip-up restocking frame, gas filled hold-open shocks, full length handles w/ outer most sliding door to have handles on both ends, center divider, (1) adjustable each side
-----IS2XL10P1

CABINET - FIXED FRAME WITH SLIDING POLYCARBONATE DOORS AND (1) ADJ. SHELF EACH SIDE OF CENTER DIVIDER



Left wall, upper interior cabinet (#2): fixed frame, sliding polycarbonate doors w/full length handles, the outer most sliding door to have handles on both ends, center divider with (1) adjustable shelf, each side.

-----IS3XL1OP2

CABINET - SLIDING POLYCARBONATE DOORS WITH (2) ADJ. SHELVES, SHALLOW DEPTH STORAGE RECESSED INTO OSS #3

Left wall rear interior cabinet (#3): fixed frame, sliding polycarbonate doors w/ full length handles, the outer most sliding door to have handles on both ends, (2) adjustable shelves, shallow depth storage.

-----IS4XL1OP3

CABINET - (2) PULL-OUT DRAWERS TOWARDS THE AISLE WITH LOCKING STAINLESS STEEL FLUSH PULL LATCHES

Left wall interior cabinet (#4) below secondary action area: two (2) vertically stacked drawers facing the aisle. Each drawer shall have a locking, stainless steel, flush pull latch.

-----IS5XL1OP3

PULL-OUT DRAWER WITH HINGED ACRYLIC WRITING SURFACE AND LOCKING STAINLESS STEEL FLUSH PULL LATCH

Left lower wall: (1) drawer (#5) aisle facing, primary action area, under the attendant control panel, hinged acrylic writing surface, locking stainless steel flush pull latch.

-----50-60-0017

ASPIRATOR / SUCTION - SSCOR - WITH ELECTRIC PUMP - COUNTER

An SSCOR suction system shall be installed on the action wall counter near the attendant's seat. The 12 VDC SSCOR electric pump to be installed in an exterior compartment per the location on the drawing (must use SSCOR pump and tubing).

-----50-50-0547

SQUAD BENCH LID, PADDED, NO SHARPS /TRASH ACCESS

The squad bench lid shall be one-piece, liftable, on a full length continuous hinge / lid area shall have a padded cushion covered with color coordinated vinyl upholstery material/ cushion upholstery shall be sewn with seams only at the vertical corners /automatic latching fastener shall be installed to secure the squad bench lid in the closed position.

-----IC1XL1OP2

INSIDE/OUTSIDE ACCESS TO OSS #4 WITH HINGED POLYCARBONATE DOOR, FULL LENGTH HANDLE, AND CENTER SQUEEZE LATCH

Compartment #1 on the rearward curb side wall, inside/outside access to OSS #4, hinged polycarbonate door, full length handle, center squeeze latch.

-----IC2XL1OP24

SQUAD BENCH WITH NO SHARPS/WASTE. SECOND PATIENT TRANSPORT ON THE SQUAD BENCH.

The Curbside wall shall have a squad bench which will include storage, and a lid with hold opens.

-----IC3XL1C1

CABINETS - RIGHT WALL, UPPER #3- SLIDING DOOR

Curb side interior wall cabinet #3: overhead, fixed frame with sliding polycarbonate doors, with full length handles, outermost door to have a handle on both ends.

-----IC3XL1OP3

OVERHEAD CABINET WITH SLIDING POLYCARBONATE DOORS. OXYGEN OUTLET MOUNTED BESIDE THE CABINET.

Curb side interior wall cabinet #3: overhead, fixed frame with sliding polycarbonate doors, with full length handles, outermost door to have a handle on both ends.

-----50-50-0541

HOLD OPENS - SQUAD BENCH LID - GAS CYLINDERS



Gas cylinder hold-open(s) shall be provided and installed to hold lid in the open and closed position.
-----50-60-0718

SQUAD BENCH FACE - VINYL FLOORING MATERIAL

The face of the squad bench shall be covered with vinyl flooring material.
-----SQ-BN-BASE

SQUAD BENCH BASE W/STORAGE

A storage area shall be provided in the squad bench base. The squad bench base shall be constructed of .090" thick aluminum for maximum storage capacity and minimum weight. The interior of the squad bench shall be sprayed with sound absorbing polyurethane material.
-----IF3PDQ

CABINET - PDQ

The Power Distribution Quarters (PDQ) shall hold electrical components, (i.e., power distribution nodes, circuit breakers, etc.), hinged door with (2) chrome locking lever latches, located on the partition wall behind the attendant seat.
-----IF1XL1C9

CABINET - FRONT WALL, UPPER #1 - HINGED ALUMINUM DOOR W/INSERT

The front wall interior cabinet #1, flip up hinged aluminum door with polycarbonate insert and gas shock hold-open(s), center squeeze latch, (1) adjustable shelf.
-----IF1XL1OP9

CABINET WITH HINGED ALUMINUM DOOR WITH POLYCARBONATE INSERT AND CENTER SQUEEZE LATCH WITH (1) ADJUSTABLE SHELF

Install cabinet with a hinged aluminum door with polycarbonate insert and gas shock hold-open(s) in the upper front wall.
-----IF2XL1OP1

CABINET - UPPER/LOWER WITH HINGED POLYCARBONATE DOORS, CENTER SQUEEZE LATCHES, (1) ADJ. SHELF PER CABINET

Front interior wall cabinet #2 fixed frame separated into (2) cabinet sections, upper and lower, each enclosed with (1) set of hinged polycarbonate doors with center squeeze latches, (1) adjustable shelf per section
-----IF3XL1OP1

CABINET - VENTED RADIO CABINET PDQ ABOVE

Power Distribution Quarters (PDQ) compartment and a vented radio compartment below the PDQ, lower front wall, left.
-----IF3XL1RAD

CABINET - FRONT WALL, LOWER BELOW PDQ (SINGLE VENTED DOOR)

A radio cabinet with a vented, hinged aluminum door, secured by a chrome locking lever latch, located on the front lower left wall, door to open towards rear of the module.
-----IF4XL1OP1

PASS-THROUGH WINDOW OPEN TO THE CAB

Window opening, pass-through from cab to module.
-----50-20-0507

PASS THROUGH - CAB TO MODULE, WINDOW OPENING

A window opening: provided in the rear of the cab to accommodate pass-through communications to the patient compartment, bellows provided to connect the cab to the module.
50-50-0115

SEATING - ATTENDANT - EVS HIBAC, SWIVEL BASE CN8 COMPLIANT



A rear facing EVS HiBAC attendant seat shall be installed at the head of the patient cot. The seat shall be equipped with a sliding swivel base and V4 belting. The seat shall be padded and covered with color coordinated, cushioned vinyl.

-----50-50-0121

SEATING - ATTENDANT - CENTERED WITH COT

Attendant seat to be centered with cot per dwg #9

-----CPROP3

SEATING - CPR - EVS WITH V4 HARNESS

A CPR seat shall be installed on the street side of the patient compartment aft of the primary action area counter. The CPR seat shall be KKK-A-1822F Change Notice 8 compliant with V4 harness style shoulder / seat belt and conform to all applicable FMVSS and SAE J3026 requirements.

-----SQSTOP3

SEATING - CN8 COMPLIANT TWO (2) EVS V4

A Squad bench seat with two (2) EVS individual seating positions on the curb side of the patient compartment. The squad bench seat shall be KKK-A-1822F Change Notice 8 compliant with (2) V4 harness style shoulder / seat belts and conform to all applicable FMVSS and SAE J3026 requirements. The headrest and backrest will be constructed of energy absorbing material. The seat bottom, backrest, and headrest shall be padded and covered with color coordinated, cushioned vinyl material.

-----50-41-0408

HEAT/AIR CONDITIONING, PROAIR IW-3856 CD CENTER DUCTED - 700 CFM (56,000 BTU HEAT / 38,000 BTU COOL) BRUSHLESS BLOWER

-----50-61-0001

ASSIST HANDLES, (6) BLACK RUBBER

Install: a total of (6) 10-7/8" black vulcanized rubber with steel core assist handles installed: (1) handle on each rear door, (1) on the curbside door, (1) at the curbside doorway and (2) at the rear doorway.

-----50-60-0730

DOOR PANELS - MODULE PASSAGE DOORS - FULL LENGTH ALUMINUM - W/ACCESS PANELS

Interior rear and curbside passage door panels to be full length aluminum, Multi-Spec sprayed to match interior color and contain removable latch access panel per dwg. # 6 & # 8. (Total 3).

-----50-60-0256

EXHAUST VENTILATOR, 3-SPEED - MULTIPLEX ELECTRIC SYSTEM

Install: three-speed, 250 CFM (minimum) exhaust fan in the street side cabinet in the patient compartment, fan pulse width modulated from a switch on the attendant control panel vista screen, exhaust system to have a louvered grille inside and a chrome vent outside, system vent through the side of the vehicle, not through the roof.

-----50-60-0322

GLOVE DISPENSER - (3) BOX - ABOVE ENTRY DOOR - CURBSIDE (ABS)

A three (3) - box glove dispenser unit, with a clear acrylic hinged access panel with three (3) cut-outs, shall be provided above the curbside entry door. A 1/4" turn latch will be installed on the face of the glove box access panel.

-----50-60-0340

GRAB RAIL, 1-1/4" DIAMETER, (96") OVER COT AREA

(1) 1-1/4" diameter x 96" long stainless steel grab rail installed on the ceiling for attendant/ patient balance control, attached to the ceiling with (3) mounting brackets that secure it to the super structure of the module. Installation to comply with AMD-008 requirements.

50-60-0437



IV HANGERS - CEILING RECESSED - CAST PRODUCTS #IV2008-1 (4)

Two (2) additional Cast Products #IV2008-1 recessed, dual, ceiling I.V. hangers shall be provided and installed.
-----50-60-0652

OXYGEN SYSTEM, MANUAL SYSTEM

Manual Oxygen System with Regulator.
-----50-60-1602

OXYGEN OUTLET (2) LEFT WALL - OHIO MED - ACTION AREA

Two (2) Ohio Medical flush mounted; quick release wall outlets shall be installed in the forward street side cabinet action area. Per dwg #5
-----50-60-1640

OXYGEN OUTLET (1) RIGHT WALL - OHIO MED - HEAD END OF SEATING AREA

One (1) Ohio Medical flush mounted; quick release wall outlet shall be installed in the right wall above the head end of the curbside seating area. Per dwg #6
-----50-60-1680

OXYGEN OUTLET (1) CEILING - OHIO MED - ABOVE HEAD OF COT

One (1) Ohio Medical flush mounted; quick release oxygen outlet shall be installed in the ceiling above the head of cot in the center mount position. Per dwg #9
-----50-60-0629

FLOW METER, OXYGEN - THORPE STYLE

One (1) Thorpe style oxygen flow meter (15LPM) shipped loose with the completed vehicle.
-----50-60-0273

OXYGEN - CAST PORTABLE OXYGEN STORAGE BRACKET ONE (1) FOR "D" IN PASS THRU

Install: (1) Cast Products #OA1201 storage bracket, for a "D" oxygen cylinder, in the pass thru.
-----50-60-0711

SHARPS LOCKING CONTAINER, 5 QT WALL MOUNT

A Locking wall enclosure for 5 quart Sharps Container shall be installed on an interior wall of the module. The 5 quart sharps container shall be included. Location of container to be per drawings. The container shall have a biohazard warning label.50-60-0803

TRASH CONTAINER, 8QT WALL MOUNT

Install: 8 QT Trash Container on interior wall of module, attached with nylon strap and footman loops. Location to be per drawings.50-60-0761

STAINLESS STEEL WALL PROTECTION - INTERIOR STREETSIDE

A brushed stainless steel panel shall be provided on the street side wall from the bottom of the CPR seat.
-----50-60-0820

ANTI-SLIP MATTING - CURBSIDE STEPWELL

Anti-Slip charcoal gray matting shall be installed in the curbside step well.



Optional Patient Compartment Items

BAR - "A" - AT HEAD OF SQUAD BENCH

Install A-Bar at the head of the squad bench.

-----50-60-0099

CLOCK - FRANKLIN DIGITAL - REAR HEAD PAD

Install: a Franklin digital clock in the head pad above the rear doors per dwg. #8

-----50-62-0446

COT FASTENER - STRYKER FLOOR PLATE AND 12v PRE-WIRE FOR CUSTOMER FUTURE INSTALL OF A POWER OR PERFORMANCE COT LOAD SYSTEM

Install Stryker Floor plate kit and 12v pre-wire for Customer supplied / Customer installed Stryker Performance or Power Load Cot

Paint / Graphics

60-01-0001

PAINT PROCEDURE

All non-anodized aluminum module body surfaces: completely chemically steam cleaned, filled with premium body filler as needed, sanded smooth and primed with an epoxy primer and then primed again with a high solid primer, cured primer surfacer shall be DA sanded with 320 grit and cleaned. A high solid primer shall then be applied, where needed, as a sealer.

-----60-01-0005

STANDARDS AND SPECIFICATIONS FOR VEHICLE PAINT APPEARANCE

Adhere to Standards and Specifications for Vehicle Paint Appearance.

-----60-10-0108

CAB - OEM PAINT OEM Race Red

-----60-01-0017

BUFF PAINT - STANDARD CAB TYPE I

The paint on the cab shall be buffed to a high shine using a recommended paint buff system.

-----60-01-0004

BUFFING, PAINT - MODULE

The paint on the module sides shall be buffed to a high shine using a recommended paint buff system.

-----60-01-0002

PAINT MODULE - OEM PAINT PLUS CLEAR COAT OEM Race Red

Paint module OEM to match the chassis. The entire module shall be clear-coated, using an Axalta Process, sprayed over the final paint coat.

-----60-30-0200

REFLECTIVE - DOOR REFLECTIVITY

Install reflective material (25" x 2.5" red/silver chevron style), on the lower interior stainless steel panel of each rear door and hinged side door. NOTE: If a sliding side door is provided, install a 1.50" x 40.00" white reflective



stripe on the rear facing edge.

-----60-25-0101

REFLECTIVE - BLACK MATERIAL IN RUB RAILS

Install black reflective material in rub rails.

Graphics to match current fleet

Vehicle Manuals

80-20-0001

VEHICLE MANUALS (1) PACKAGE SET

One (1) Delivery Manual Package shall be supplied with the vehicle, and shall include the following items:
Ambulance manufacturer parts, service, and operation manuals, OEM chassis owner's guide, complete 12 VDC
and 125 VAC wiring schematics for all included standard and optional systems, Multiplex Electrical system
programming - electronic media

-----90-10-0007

STATEMENT OF LIMITED WARRANTY NEW AMBULANCES



Dealer Name: Kodiak Emergency Vehicles

Salesperson: Ahren Taszreak

Customer Name: Elmwood Township Fire-Rescue
 & Address 10090 E Lincoln Rd
Traverse City, MI 49684

Shipping Address: _____

Fleet Number: _____

Contact Name: Daniel Mosholder

Email: Dmoshold@emich.edu

Phone: _____

Fax: _____

Chassis Type: F-550 4x4 Gas - RED

Osage Unit #: _____

VIN: _____

ALL ITEMS ON THE FOLLOWING PAGES MARKED WITH 1 OR GREATER ARE INCLUDED IN PRICE
ALL ITEMS MARKED WITH A 1 OR GREATER ARE IN ADDITION TO STANDARD

Qty	CHEVROLET G-SERIES TYPE III - 2024 CHASSIS ONLY	
	Chevy G3500, 139" WB - Gas	EST
	Chevy G4500, 159" WB - Gas	EST
	CHEVROLET G-SERIES TYPE III - 2024 CONVERSION ONLY	
	Chevrolet 2148 Warrior	
	Chevrolet 2168 Super Warrior	
	FORD E-SERIES TYPE III - 2024 CHASSIS ONLY	
	Ford E350, 138" WB - GAS	EST
	Ford E450, 158" WB - GAS	EST
	FORD E-SERIES TYPE III - 2024 CONVERSION ONLY	
	Ford 2148 Warrior	
	Ford 2168 Super Warrior	
	MERCEDES-BENZ SPRINTER - 2024 CHASSIS ONLY	
	Mercedes-Benz Sprinter Diesel Chassis	EST
	MERCEDES-BENZ SPRINTER - 2024 CONVERSION ONLY	
	Mercedes-Benz Sprinter 2148 Warrior III	
	FORD F-SERIES TYPE I - 2024 w/UREA - D.E.F. - CHASSIS ONLY	
	(Call for Chassis Availability)	
	F-450, 169" WB, 4x2	EST
	F-450, 169" WB, 4x4	EST
	F-550, 193" WB, 4x2	EST
	F-550, 193" WB, 4x4	EST
	Option: Liquid Spring Suspension (Front: 110lbs, Rear: 150lbs)	
	Option: Add Front Liquid Spring	
	Option: Add Aluminum Wheels	
	FORD F-SERIES TYPE I - 2024 GAS - CHASSIS ONLY	
	(Call for Chassis Availability)	
	F-450, 169" WB, 4x2	EST
	F-450, 169" WB, 4x4	EST
	F-550, 193" WB, 4x2	EST
1	F-550, 193" WB, 4x4	EST
1	Option: Liquid Spring Suspension (Front: 110lbs, Rear: 150lbs)	
	Option: Add Front Liquid Spring	
1	Option: Add Aluminum Wheels	
	FORD F-SERIES TYPE I - 2024 CONVERSION ONLY	
	Ford 2148 Warrior	
1	Ford 2168 Super Warrior	

RAM TYPE I w/UREA - 2024 CHASSIS ONLY

Ram 4500, 168" WB, 4x2	EST
Ram 4500, 168" WB, 4x4	EST
Ram 5500, 192" WB, 4x2	EST
Ram 5500, 192" WB, 4x4	EST
Option: Liquid Spring Suspension	
Option: Add Front Liquid Spring	
Option: Add Aluminum Wheels	

RAM TYPE I - 2024 GAS - CHASSIS ONLY

Ram 4500, 168" WB, 4x2	EST
Ram 4500, 168" WB, 4x4	EST
Ram 5500, 192" WB, 4x2	EST
Ram 5500, 192" WB, 4x4	EST
Option: Liquid Spring Suspension	
Option: Add Front Liquid Spring	
Option: Add Aluminum Wheels	

RAM TYPE I 2024 CONVERSION ONLY

Ram 2148 Warrior
Ram 2168 Super Warrior

CHEVROLET TYPE I - 2024 CHASSIS ONLY

Chevy 5500, 189" WB, 4x2 w/Liquid Spring (Includes TM-21 A/C Compressor)	EST
Chevy 5500, 189" WB, 4x4 w/Liquid Spring (Includes TM-21 A/C Compressor)	EST

CHEVROLET TYPE I 2024 CONVERSION ONLY

Chevy 2168 Super Warrior (172" body, front mount condenser, cab steps included)

Freightliner / International TYPE I - 2024 CONVERSION ONLY

2168/Freightliner / International Med-Duty
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STANDARD FEATURES/OPTIONS MODULE

- Warrior: 148" L x 68" Headroom
- Super Warrior: 168" L x 72" Headroom
- Aluminum Diamond Plate Running Boards
- Rear Mud Flaps
- Totally "Seamless" Body Construction
- Exterior Side & Roof Panels .125" Aluminum
- One-Piece Exterior Side Panels
- One-Piece Crowned Roof
- Frame Members 2" x 2" Aluminum Tubing
- Frame Members on 12" Centers or Less
- Diamond Plate Shields:
 - Across Lower Rear of Body
 - Across Lower Front of Body
 - Lower 1/3 of Entry Doors
- All Exterior Doors "Pan-Formed" / Extruded Double Break Construction
- All Body Openings "Seamless"
- All Door Latches Mounted Behind Gaskets
- Exterior Compartment @ Front Left for Storage of Oxygen Tank and Back Boards
- Exterior Compartment Adjustable Shelving
- Exterior Compartment Lighting
- Cast "Grabber" Door Holders
- Lower Body Impact Rub Rails
- Polished Stainless Steel Fenderettes
- Flip-up Rear Step Bumper w/ 4" x 18" Dock Bumpers
- Automotive Undercoating

WARNING SYSTEM

- Two Red Whelen ION-T Mounted in grill
- Four Red Whelen ION-T Intersection Lights Mounted in Front and Rear Fenders
- Eight Red LED Whelen 9x7 Modular Lights
- One Clear LED Whelen 9x7 Front Modular Light
- One Amber LED Whelen 9x7 Rear Modular Light
- Two LED Whelen 9x7 Scene Lights Per Side
- Two LED Whelen 9x7 Rear Load Lights
- Primary / Secondary Switching
- Whelen 295 SL5A1 Siren
- Siren / Horn Switch
- Cast Siren Speaker
- Rear DOT Lighting Whelen LED 4x6 w/ Chrome Flanges: Red Tail / Brake, Amber Arrow Turn
- Reverse are LED

PAINT & MARKINGS

- 8" Belt Line Paint Stripe
- Base Coat / Clear Coat Modular Paint
- "No Smoking" & "Fasten Seat Belt" Signs
- Ambulance / Star-of-Life Decals

ELECTRICAL

- Digital Voltmeter
- Audible Low-Voltage Alarm
- Weldon V-Mux Electrical System w/ Load Management & Sequencing System
- Wiring Color-Coded and Heat Embossed Every 6" w/ Function
- Power Distribution Panel Easily Accessible Via Hinged Access Door in Action Area
- One Piece Molded Front Switch Console
- Hinge Mounted Attendant Switch Console
- Control Console Backlighting Dimmer
- Battery Switch Activated via Ignition Switch
- Open Door Warning Light
- Hand Held 300,000 CP Spotlight
- Whelen Dual Intensity LED Patient Compartment Dome Lights
- Exterior Weatherproof Shoreline Receptacle
- Two Interior 110V Duplex Receptacles
- Two Interior 12V Cigar Style Receptacles
- One Pre-Wire Antenna Cable
- Electrical Back-up Alarm

INTERIOR

- All Vertical Corners 1" Radii
- Stainless Steel Aisle Panel, Left Side, Full Length x 18" x .060"
- Lon-Plate, non skid Vinyl Flooring Rolled 3" Up Both Sides of the Aisle
- EMT Seat, Pedestal Mounted Deluxe Seamless Vinyl Captains Chair w/3-Pt Belt
- CPR Seat, three piece, molded contoured cushions
- Squad Bench
- Retractable Seat Belts for All Locations
- Handicap Style, 1 1/2" Diameter, Full Length, Stainless Steel Overhead Grab Rail. This Rail shall be treated with Agion Anti-Bacterial Coating.
- Handicap Style, 1 1/2" Diameter, Stainless Steel Door Pulls on Patient Compartment Doors. These Bars shall be treated with Agion Anti-Bacterial Coating.
- Padded Bulk-Head Cabinet Doors
- ALS Compartment w/ In/Out Access
- R-29 Reflectics Insulation Through-out Module
- Thermostatically Controlled Patient Compartment Heat & Cool System
- 3-Speed Manual Fan Control
- Rear Heat & Cool Unit Mounted Floor Level;
 - * Moisture Drains Directly Through Floor
 - * Short Coolant Circulation Distance
 - * Eliminates Vertical Circulation of Coolant
 - * Unit Easily Accessible for Maintenance
- Overhead Air Distribution w/ Floor Level Filtered Air Return for Optimum Circulation
- Two Recessed, Swing-up Dual IV Hangers
- "Zico" Retaining Bracket for Oxygen "M" Cyl
- Three "Ohio" Oxygen Outlets
- SSCOR Suction System
- Locking Sharps Container (Shipped Loose)
- Locking Drug Compartment
- Digital Clock
- Stryker "Performance Load" Cot Fastener
- Seamless Seat Cushions

EMERGENCY & EXTERIOR LIGHTING & SIREN OPTIONS

Continued

Qty

Whelen Smart Linear LED's

	Additional 900 Solid LED, R, B or A
	Additional 900 Solid LED, C
	Additional 900 Green
	Additional 900 R/B or R/A LED
	Additional 900 R/C or B/C LED
	Upgrade 900 LED to Solid C
	Upgrade 900 LED to Green
	Upgrade 900 to Split R/B or R/A
	Upgrade 900 to Split R/C or B/C
	700 LED I.L.O. ION-T, R, B or A
	700 LED I.L.O. ION-T R/B or R/A
	700 LED I.L.O. ION-T, All or 1/2 Clr
	Additional 700 LED R, B or A
	Additional 700, R/B or R/A
	Additional 700 LED All or 1/2 Clr
	Additional 600 LED, R, B or A
	Additional 600, R/B or R/A
	Additional 600 LED All or 1/2 Clr
	Additional 500 LED, R, B or A
	Additional 500, R/B or R/A
	Additional 500 LED, All or 1/2 Clr
7	Upgrade 900 to M9 LED, R, B, A, R/B, R/A
1	Upgrade 900 to M9, All or 1/2 Clear
6	Additional M9, Red, B, A, R/B, R/A
2	Additional M9 (All or 1/2 CLR)
4	Upgrade ION-T to M6 Red, B, A
	Upgrade ION-T to M6, R/B, or R/A
	Upgrade ION-T to M6 All or 1/2 CLR
	Additional M6 LED, R, B or A
	Additional M6, R/B or R/A
	Additional M6 LED, All or 1/2 Clr
	Upgrade ION-T to M7 R, B or A
	Upgrade ION-T to M7 R/B, or R/A
	Upgrade ION-T to M7 All or 1/2 CLR
	Additional M7 LED, R, B or A
	Additional M7 LED, R/B, R/A
	Additional M7 LED, All or 1/2 Clr
	Whelen ION-T, R, B, A
	Whelen ION-T, R/B or R/A
	Whelen ION-T, All or 1/2 Clr
	Whelen OS Light
	Add Any Light to Interior of Door (Add to Light Price)
	Specify Flash Pattern to set LED's to Action Scan
	LED's to be: Unsynchronized x Synchronized on K Flasher

Qty

Scene Lights

	Whelen 90COENZR 24-DIODE Scene Light, Additional
	Whelen 700 Scene LED Additional
6	M9 LED Scene, Upgrade
	M9 LED Scene, Additional
	M7 LED Scene, Upgrade
	M7 LED Scene, Additional
	Pioneer Single w/Flange, Upgrade PCPSM1C
	Pioneer Spot & Flood w/Flange, Upgrade PCPSM2C
	Pioneer Single w/Flange, Additional PCPSM1C
	Pioneer Spot & Flood w/Flange, Additional PCPSM2C
	Upgrade Brake/Tail to M6 (Pair)
1	Upgrade Turn to M6 (Pair)
1	Upgrade Reverse to M6 (Pair)

ELECTRICAL OPTIONS	
Qty	Inverters, Chargers, Batteries, Shorelines & Outlets
	Pre-Wire for Vanner Inverter with Remote Switch
1	Vanner Inverter / Conditioner w/ Remote Switch, Model LSC12-1100
	Choose One: Inverter on with <u> X </u> Ignition <u> </u> Switch in Rear Panel
	Iota P.C. 30 Battery Charger
	Iota P.C. 45 Battery Charger (Requires 30 Amp Shoreline)
	NOTE: BATTERY CHARGER REQUIRED IN KKK-F
	Add 2nd 20amp shoreline and circuit
	OEM Batteries Mounted in Slide Out Tray in Exterior Battery Compt. (N/A on Type I)
1	Additional (3rd) Matching Battery (Requires Ordering Exterior Battery Compartment
	Upgrade to Twist Lock 30 Amp Shoreline
1	Upgrade to Kusssmaul Auto Eject Shoreline Plug, 20 Amp BLACK COVER
	Upgrade to Kusssmaul Auto Eject Shoreline Plug, 32 Amp
1	Shoreline Indicator at Shoreline
Qty	Outlets & Interior Lighting
5	110 V Outlet, Additional per Outlet
5	12V DC Outlet, Cigar Style, Additional per Outlet Note: Outlets will be Ignition Hot unless otherwise specified
1	110/USB Outlet
	Dual USB Outlet
	Single Overhead Reading Light in Cab
2	R/W Dome Light in Cab
	LED Federal Little Lite
	Check-Out Lights, 2 - 12 Volt LED, 36",
	Additional LED Check Out Lights (Per Light)
1	Interior Cabinet Lighting w/On/Off Switch Mounted in Action Panel (Strip LED)
1	Power Door Lock Control Head
7	Power Door Lock Per Door
1	LED Lights (3) Above Rear Entry Doors (Brake & Turn)
	Whelen Round LED Domelights w/Chrome Flange (Upgrade per Lt)
	Whelen Rectangular LED Domes (Upgrade per Light)
	Intertech Round LED Domes (Upgrade per Light)
2	Additional Dome Lights (Add to Cost of Upgrade Light, if Ordered)
	Upgrade Dome to Red/Clear
	Upgrade Dome to Blue/Clear
	Heart of Chrome Customs UV Light
Qty	Switches & Secure Idle
1	(3) Switch Auxiliary Panel
	Extra Switch & Pre-Wire (Separate From V-MUX System)
	Hidden Switch in Grill for Door Locks (All Other Chassis)
1	Hidden Switch in Grill for Door Locks (F Series)
1	Idle Lock Security System
1	2nd Switch Panel on Curbside Wall
Qty	Pre-wires, Radios, Intercom, & Clocks
3	Antenna Pre-Wire, (additional per Pre-Wire)
2	Pre-Wire & Ground for Radio, (additional per Pre-Wire)
	Install Customer Radio Cable (each)
	Note: Specify Brand of Radio Cable: _____
	Install Customer Antenna (each)
	Install Customer Radio Head (each)
	Two Radio Speakers in Patient Compartment
1	Volume Control for Rear Speakers Mounted in Action Area
1	Intelli-Tech Time Manager
	Carbon Monoxide Monitor

Qty	ELECTRICAL OPTIONS
	Continued
Qty	V-Mux Options
1	Warning Lights in Secondary w/Park Brake or Park ("Park" n.a. on some chassis)
1	Park Brake Override Switch
	Full Set of Diagnostic Screens (w/Vista IV Upgrade Only)
	Truck Information Screen (w/Vista IV Upgrade Only)
1	Up to 10 Intensities on Dome Lights (Off-Hi-Lo is Standard)
1	Up to 10 Speeds on Exhaust Fans (Off-On is Standard)
1	Up to 10 Speeds on HVAC Fan
1	Custom Flash Patterns (Specify on Page 9)
1	Rear Flashers on in Reverse (Specify on Page 9)
1	Side Scene on in Reverse
1	Brake Override
	Custom Load Sequencing (On or Off) (Specify on Page 9)
	Custom Load Shedding (Specify on Page 9)
	Upgrade Switches to Vista IV Screens
	3rd Vista IV Monitor in Rear
	3-Switch Pod & 3-Lights for Silent Intercom
	Reverse Camera Tied into V-MVX Screen (w/Vista IV Upgrade Only)
	O2 Sensor for V-MVX System (Requires Ordering M-16) (w/Vista IV Upgrade Only)
	Exterior Temperature Readout (w/Vista IV Upgrade Only)
	Ammeter Readout (w/Vista IV Upgrade Only)
Qty	HVAC Systems
	110V Heater in Patient Compartment w/ 2nd Shoreline
	Danhardt 110V Heat/Cool Unit Installed in Squad Bench
	Stadco Model CP7 Diesel 6KW Liquid Cooled Generator (S-Warrior Only)
	Norcold 1.7 cubic feet Refrigerator
	Dometic Refrigerated Drawer CD-030
	IV Warmer Pad, (Pet Pad) (110V)
	IV Warmer Pad, (Smithworks) (12V)
1	Digital Thermostat
	Auxiliary Condenser
	Upcharge to Install Condenser on Front of Module
	Rooftop-Mount Condenser
	2nd Engine - Driven Compressor
Qty	Mirrors, Hind-Sight, Backup Camera, & Spotlights
	Velvac XG2020 Velvac Heat/Remotes, Black White (Black Std. on G-Cuts)
	Same As Above, Chrome
	Brigade Sonar Backup Assist
1	Safety Vision Color Reverse Camera
	Safety Vision Color Reverse & Interior Cameras
	Brigade Color Reverse Camera
	Brigade Color Reverse and Interior Cameras
	Go-Light Wireless Remote Control Roof Mount LED Spotlight, White
	Go-Light Wireless Remote Control Roof Mount LED Spotlight, Chrome

INTERIOR OPTIONS	
Qty	Laminate & Vinyl
1	Custom Laminate Color
1	Custom Vinyl Color
	Note Provide Colors: Laminate Color: Dove Grey (Standard Colors: Dove Grey, Grey Glace, Grey Nebula) Vinyl Color: Black (Standard Colors: Cobalt Blue, Wedge Wood Blue, Ash Gray, Desert Rose Red) Lonplate Color: #424 Gunmetal #176 Pewter, #424 Gunmetal, #165 Sapphire
Qty	Flooring, Aisle, Backboard Slots
	Lonspeck #SX112 Magnetic Gray
	Lon-Coin Flooring Note: Provide Color:
	Lon-Plate Flooring, Custom Color Note: Provide Custom Color:
	Composite Subfloor
Qty	Seating, Squad Bench, EMT, CPR
1	Swivel Pedestal for EVS Attendant Seat
	Price to Upgrade EMT Seat:
1	3-Pt. Child Seat
	4-Pt. Bucket Seat
	4-Pt. Child Seat
	5-Pt. Bucket Seat
	5-Pt. Child Seat
	6-Pt. Bucket Seat
	6-Pt. Child Seat
	Add Recline to EVS Seat
	EVS Mobility I w/3-pt, 1769 Seat NOTE: This Seat Requires 39" From Wall for Swivel
	3-Pt 1769 Seat, fixed Pedestal, I.L.O. Bench or CPR
	4-Pt 1769 Seat, fixed Pedestal, I.L.O. Bench or CPR
	Armrest for EVS Seat (Each)
	6-Point Seat Belt, Per Position
3	Note: Specify Color (If no color is chosen, black will be provided: Black <input checked="" type="checkbox"/> Orange <input type="checkbox"/> Red <input type="checkbox"/> Yellow <input type="checkbox"/>
	Aluminum Plates in Wall for Future Installation of 6-Pt. Belts (per seating position)
	Cargo Net, End of Squad Bench
	12" Seat Belt Extension
	Seat Belt Monitor (requires sensors below)
	Sensor for EVS Seat (per position)
	Sensor for 2-Point Belt (per position)
	Sensor for 6-Point Belt (per position)

INTERIOR OPTIONS

Continued

Qty

Doors, Locks, & Latches

1	Café Double Doors, (Warrior)
	Full Plexiglas ALS Doors (3/8" Plexiglas, No Frames)
	Single Roll-up Shutter on ALS
	Lock for Roll-up Shutter on ALS
3	Lock on Interior Cabinet
	Simplex Combination Lock
	Southco Stainless Steel Latches, (per Latch)
2	Southco Stainless Steel D-Ring Latch (per latch)
	Chrome Rectangular Latch (per latch)

Qty

Counter Tops

Note: Select One of the Following No/Charge Standard Counter Top Colors:

1	Speckled Gray
	Speckled Blue
	Speckled Red
	Speckled Tan
	Speckled Color Finish in Silk Stone Action Area Countertop
	Speckled Color Finish in Silk Stone Monitor Shelf Countertop
	Note: Provide Color of Silk Stone Counter Top if Ordered:
	Custom Silkstone Color
	Swivel Bracket for Zoll X Series
	Swivel Bracket for LP12 or LP15
	Technimount for 20LL X Series
	Technimount for LP15

Qty

Sharps, Waste, & Drawers

	Sharps & Waste Drawer
	Tilt-Out Sharps or Waste
	Sharps/Waste thru Fiberglass Counter into #2 Compartment (Warrior Only)
	Waste Disposal thru Silk Stone Countertop into #2 Outside Compartment
	Sharps Disposal thru Silk Stone Countertop into #2 Outside Compartment
2	Drawer for General Storage (Indicate Location)
	Drawer with Flip-up Writing Service
	Sharps & Waste in Bench w/ Flip-Up Plexiglass Lids

Qty

Grab Rails & Bars, Armrests

1	Additional Grab Rail Over Squad Bench
	Armrest/Bar at Head of Squad Bench, SS Removable
	A-Bar w/Sharps & Waste @ Head of Squad Bench, SS Removable (Warrior Models Only) This Bar shall be treated with Agion Anit-Bacterial Coating
1	Custom A-Bar
	Armrest at Head of Squad Bench, Upholstered
	12" Stainless Grab Handle
7	Make Grab Bar Yellow (Price Each)

Qty

Insulation & Sound Deadening

1	Sound Deadening Under Floor
1	3M Sound Deadening on Back of Exterior Compartments
1	Delux Insulation on Side Entry Step

INTERIOR OPTIONS

Continued

Qty

Additional Headroom, Crawl Through (Type I), Bariatric Package

- Custom Headroom. Fill in Height
- Crawl Through to Cab, (Type I)
- Move Struts to Ends of Bench
- Move Paddle Latches to Ends of Bench

DEDUCTIONS:

- Single Bench Lid
- Delete Gas Struts on Bench
- Laminated Counter

Qty

Additional Interior Options & Special Instructions

EXTERIOR OPTIONS

Continued

Qty

Rub Rail, Tow Hooks, Mud Flaps, Chains

Rear Tow Hooks (Mounted on Rear Bumper Frame)

1

Recessed Rear Tow Hooks

On-Spot Chains

Grip Strut Running Boards, (vs. Diamond Plate) Available on RAM Only

1

Grip Strut Inserts in Running Boards

1

Reflective Tape in Rub Rail--*FILL IN COLOR* _____

Clear-View Star-of-Life (Per Window)

Stainless Steel Fuel Guard

1pr. Rubber Mud Flaps for Front Wheels

1

Taller Front Stone Guards

Southpark Handle at Side Door

Buckstop Bumper & Grill Guard, Black

Buckstop Bumper & Grill Guard, Black (For Medium-Duty)

Buckstop Bumper Only, Black (For Medium-Duty)

1

Ali Arc Bumper

Thunderstruck Bumper

Warn Transformer Black Grill Guard w/Center Bar

Luverne Black Prowler

Luverne Stainless Prowler Grill Guard

Cast Fuel Fill Door

1

Rubber Fenderettes

Rubber Rub Rails

Billstein Shocks Per Axle

DELETE:

Shelf in #2 Compartment

Exterior Compartment

Divider & Fixed Shelf in #1 or #5

Qty

MISCELLANEOUS OPTIONS

1

Credit for Shipping Spare Tire Loose

Ford Jack & Tire Tools (not included in Cutaways)

Fire Extinguisher, 5lb

Install Decals

1

Delete Decal Package

EXTENDED WARRANTIES

MS-06 Extended Electrical Warranty 7-years/100,000

MS-07 Extended Cabinet Warranty 15-years/100,000

**Note: Does Customer Require a Spot for Stryker Stair Chair?
State Dimension and Location**

Qty

Additional Exterior & Miscellaneous Options & Special Instructions

EXTERIOR OPTIONS

(Continued)

Qty

PAINT OPTIONS

- Second Stripe at Skirtline to Match Beltline
- Hockey Stick Design, Single Stripe
- Heartbeat Stripe, (Osage Standard Design)
- Custom Heartbeat to Match Customers Existing Unit
- 2nd Stripe, Same Color
- 2nd Stripe, Different Color
- Paint Cab (Door jams included)
- ½ Red / ½ White Cab & Box (Including Door Jambs)
- 1 Any Color of Paint other than White
- 1 Wet Sand & Buff
- 1 Westsand & Buff roof
- Paint Roof White
- 1 Delete Standard Beltline Paint
- Large SOL on Rear Quarter w/54" Ref. Snake

Qty

Pinstripe

- 1/4" Reflective Pinstripe
- 1/2" Reflective Pinstripe
- 7/8" Reflective Pinstripe
- 2" & Wider Reflective Stripes, Per Inch of Width
- 6" 3M Reflective Chevron, One Color
- 6" 3M Reflective Chevron, Two Alternating Colors
- 6" Oracal Reflexite Chevron, One Color
- 6" Oracal Reflexite Chevron, Two Colors
- 6" 3M Diamond Grade Chevron, One Color
- 6" 3M Diamond Grade Chevrons, Two Alternating Colors
- 6" Chevron on Rear Doors, One Color
- 6" Chevron on Rear Doors, Two Colors
- 6" Oracal Reflexite Chevron on Rear Doors, One Color
- 6" Oracal Reflexite Chevron on Rear Doors, Two Colors
- 6" Diamond Grade Chevron on Rear Doors, One Color
- 6" Diamond Grade Chevron on Rear Doors, Two Colors

NOTE: Chevrons outside & above Rear Doors
Fill-in Color(s) _____

NOTE: Pinstripe is One Stripe Above and One Below Standard Band

PROVIDE THE FOLLOWING IF APPLICABLE:

- Primary Paint Color OEM RED
- Primary Paint Code & MFG
- Secondary Paint Color BLACK
- Secondary Paint Code & MFG
- Primary Pinstripe Color
- Secondary Pinstripe Color

Qty

Demo Decals

- Osage Logo Decal
- "Osage" Windshield Decall

Qty

Additional Paint Options & Special Instructions

- 1 Graphics to match current fleet
- 1 Black over red paint (Ford OEM red chassis, match)

Elmwood Township Marina

Peter J Moon Harbormaster

10090 E. Lincoln Road Traverse City MI 49684 elmwoodmarina@gmail.com

September 7, 2022

Proposal for replacement of chain and tackle for outside mooring.

Requirements for bid:

Chain 3/8" hot galvanized GR 30

Shackles 7/16"

Eye to Eye swivel 5/8"

Labor by Tom Donley

Tom Donley bid- \$3213.75

Fastenal "Jake"- \$4462.00

West Marine- \$3519.97

All these bids include cost for material with installation done by Tom Donley our contracted diver.

Tom's rate to perform the above work is \$125.00 per buoy for a total of \$1375.00 and included in totals shown.

Respectfully Submitted,

Pete Moon
Harbormaster ETM



Wade Trim, Inc.
10850 E. Traverse Highway, Suite 2260 • Traverse City, MI 49684
231.947.7400 • www.wadetrim.com

September 6, 2022

Elmwood Charter Township
10090 East Lincoln Road
Traverse City, MI 49684

Attention: Mr. Jeff Shaw

Re: Proposal for Professional Services
Timberlee Water System Improvements

Dear Jeff:

Wade Trim is pleased to submit this proposal to Elmwood Township to complete design and construction documents for improvements to the Timberlee Water System. The following proposal outlines our understanding of the project, scope of services to complete the project, and cost to provide these services.

Project Understanding

The Timberlee Water System was initially constructed in the early 1970s with a few later additions in 1991 and 2001. Originally constructed as a private system for the specific development, the Township took over ownership and operation in the 1980s. Over the past ten years, the Timberlee Water System has been under scrutiny from the Michigan Department of Environment, Great Lakes, and Energy (EGLE) due to the aging hydropneumatic tanks and number of people served by the system. Recent meetings with EGLE resulted in the Township deciding to pursue replacing the hydropneumatic tanks. In addition to the replacement of the tanks mentioned above, the system has also had issues with the Cottonwood Booster Station short cycling. A review of that station showed the components (pump and tank) are mismatched in size, and adjustments need to be made making that portion of the overall system run much more efficiently.

Scope of Services

In general terms, the project will entail removing and replacing the large hydropneumatic tank that pressurizes the entire system in addition to the small tank and booster pumps at the Cottonwood Booster Pump Station. In order to complete the design, permitting, and bidding for this project, we propose the following scope of services:

- Field survey of the project site and buildings.
- Review of the system hydraulic model and verification of EGLE requirements for the system.
- Hydropneumatic tank and booster pump design and equipment selection.
- Design of piping modifications as needed for new equipment.
- Review of electrical and controls onsite for needed upgrades.
- Constructability review for replacing tanks while minimizing customer impact.
- Completion and submission of the EGLE Act 399 Permit Application for Water System Construction.
- Development of construction drawings and details.
- Development of the project technical specifications and contract documents.
- Provide preliminary and final project cost estimates.

- Advertise project for bids and respond to contractor-submitted requests for information. Advertisement fees to be paid for by the Township.
- Attend and run the bid opening.
- Review bids and provide a bid award letter for Township Board consideration.

Schedule

Once approved, we will start with the field survey as soon as schedule permits, striving to complete the fieldwork this fall. Design and permitting would be completed over winter with contract documents ready for a late winter/early spring bid opening. This would allow construction during the summer or fall of 2023. Timing of bidding and construction will depend on how the project is financed and the availability of suitable contractors bidding the work.

Cost of Services

Wade Trim proposes to complete the work outlined above on a Time and Materials Basis for an Estimated Fee of **\$41,000**.

The scope provided includes a cursory review of the electrical and controls on the site for verification that it will work with the new equipment. Any significant improvements required would be brought to the Township's attention and an electrical/controls subconsultant would be needed to assist with the updates. Subconsultants cost are not included in this proposal but, if needed, would be presented to the Township as an Amendment to this proposal.

We sincerely appreciate the opportunity to present this proposal to the Township. If you have any questions or would like to discuss further, please call at your earliest convenience. If the Township would like to proceed, please sign and return the attached Professional Services Agreement to our office. Our receipt of the executed Agreement will serve as our authorization to proceed.

Sincerely,

Wade Trim, Inc.



Ken D. Schwerdt, PE
Project Manager

KDS:jlb
ELM 201401C
20220826_SHAW-LTR.DOCX
Attachment



Agreement

To engage the Services of Wade Trim , Inc. as a Design, Planning, Testing and/or Land Survey Professional.

This Agreement, entitled Timberlee Water System Improvements between Elmwood Charter Township of 10090 East Lincoln Road, Traverse City, Michigan 49684 hereinafter called "Owner," and Wade Trim , Inc., 10850 East Traverse Highway, Suite 2260, Traverse City, Michigan 49684, hereinafter called "Professional," is as follows:

The Owner and Professional, for mutual consideration hereinafter set forth, agree as follows:

A. Professional agrees to perform certain professional services for Owner as follows:

As outlined in Wade Trim's proposal letter dated September 6, 2022.

B. Owner agrees to pay Professional as compensation for his services as follows:

On a Time and Materials Basis, for an Estimated Fee of **\$41,000**.

C. Owner agrees to establish an allowance of \$N/A for additional services on this Project (not less than 10% of the compensation amount specified in Item B.)

D. The Owner and Professional agree to conditions as set forth on the reverse side in the General Provisions of this Agreement.

E. The Owner and Professional agree to the following schedule:

As outlined in Wade Trim's proposal letter dated September 6, 2022.

F. Professional has the option to render this Agreement null and void, if it is not executed within 60 days.

Owner: _____

Professional: _____

By: _____
(Print Name)

By: Brian C. Sousa, PE
(Print Name)

Title: _____

Title: Vice President

Date Signed: _____

Date Signed: _____

Witness: _____

Witness: _____

General Provisions

1.01 Basic Agreement

A. Professional shall provide, or cause to be provided, the services set forth in this Agreement, and Owner shall pay Professional for such Services as set forth herein.

2.01 Payment Procedures

A. *Preparation of Invoices.* Professional will prepare a monthly invoice in accordance with Professional's standard invoicing practices and submit the invoice to Owner.

B. *Payment of Invoices.* Invoices are due and payable within 30 days of receipt. If Owner fails to make any payment due Professional for services and expenses within 30 days after receipt of Professional's invoice, the amounts due Professional will be increased at the rate of 1.0% per month (or the maximum rate of interest permitted by law, if less) from said thirtieth day. In addition, Professional may, without liability, after giving seven days written notice to Owner, suspend services under this Agreement until Professional has been paid in full all amounts due for services, expenses, and other related charges. Payments will be credited first to interest and then to principal.

3.01 Additional Services

A. If authorized by Owner, or if required because of changes in the Project, Professional shall furnish services in addition to those set forth above.

B. Owner shall pay Professional for such additional services as follows: For additional services of Professional's employees engaged directly on the Project an amount equal to the cumulative hours charged to the Project by each class of Professional's employees times standard hourly rates for each applicable billing class; plus reimbursable expenses and Professional's consultants' charges with a 15% mark-up, if any.

4.01 Termination

A. The obligation to provide further services under this Agreement may be terminated:

1. For cause,

a. By either party upon 30 days written notice in the event of substantial failure by the other party to perform in accordance with the Agreement's terms through no fault of the terminating party.

b. By Professional:

1) upon seven days written notice if Professional believes that Professional is being requested by Owner to furnish or perform services which are outside of the agreed upon scope of services without compensation, which are contrary to Professional's responsibilities as a licensed professional; or

2) upon seven days written notice if the Professional's services for the Project are delayed or suspended for more than 90 days for reasons beyond Professional's control.

3) Professional shall have no liability to Owner on account of such termination.

c. Notwithstanding the foregoing, this Agreement will not terminate as a result of a substantial failure under paragraph 4.01.A.1.a if the party receiving such notice begins, within seven days of receipt of such notice, to correct its failure and proceeds diligently to cure such failure within no more than 30 days of receipt of notice; provided, however, that if and to the extent such substantial failure cannot be reasonably cured within such 30 day period, and if such party has diligently attempted to cure the same and thereafter continues diligently to cure the same, then the cure period provided for herein shall extend up to, but in no case more than, 60 days after the date of receipt of the notice.

2. For convenience, by Owner effective upon the receipt of notice by Professional.

B. The terminating party under paragraphs 4.01.A.1 or 4.01.A.2 may set the effective date of termination at a time up to 30 days later than otherwise provided to allow Professional to demobilize personnel and equipment from the Project site, to complete tasks whose value would otherwise be lost, to prepare notes as to the status of completed and uncompleted tasks, and to assemble Project materials in orderly files. Professional shall be compensated for Basic Services performed through the date of termination as set forth herein and for work performed per 4.01.B in the manner set forth in 3.01.

5.01 Controlling Law

A. This Agreement is to be governed by the law of the state in which the Project is located.

6.01 Successors, Assigns, and Beneficiaries

A. Owner and Professional each is hereby bound and the partners, successors, executors, administrators, employees and legal representatives of Owner and Professional (and to the extent permitted by paragraph 6.01.B the assigns of Owner and Professional) are hereby bound to the other party to this Agreement and to the partners, successors, executors, administrators, and legal representatives (and said assigns) of such other party, in respect of all covenants, agreements, and obligations of this Agreement.

B. Neither Owner nor Professional may assign, sublet, or transfer any rights under or interest (including, but without limitation, moneys that are due or may become due) in this Agreement without the written consent of the other, except to the extent that any assignment, subletting, or transfer is mandated or restricted by law. Unless specifically stated to the contrary in any written consent to an assignment, no assignment will release or discharge the assignor from any duty or responsibility under this Agreement.

7.01 General Considerations

A. The standard of care for all professional engineering and related services

performed or furnished by Professional under this Agreement will be the care and skill ordinarily used by members of the subject profession practicing under similar circumstances at the same time and in the same locality. Professional makes no warranties, express or implied, under this Agreement or otherwise, in connection with Professional's services. Professional and its consultants may use or rely upon the design services of others, including, but not limited to, contractors, manufacturers, and suppliers and Professional shall not be responsible for design services provided by others.

B. Professional shall not at any time supervise, direct, or have control over any contractor's work, nor shall Professional have authority over or responsibility for the means, methods, techniques, sequences, or procedures of construction selected or used by any contractor, for safety precautions and programs incident to a contractor's work progress, nor for any failure of any contractor to comply with laws and regulations applicable to contractor's work.

C. Professional neither guarantees the performance of any contractor nor assumes responsibility for any contractor's failure to furnish and perform its work in accordance with the contract between Owner and such contractor.

D. Professional shall not be responsible for the acts or omissions of any contractor, subcontractor, or supplier, or of any contractor's agents or employees or any other persons (except Professional's own employees) at the Project site or otherwise furnishing or performing any of construction work; or for any decision made on interpretations or clarifications of the construction contract given by Owner without consultation and advice of Professional.

E. The provisions in this Agreement supersede and render null and void any contrary provisions in the contract documents between Owner and Contractor.

F. All design documents prepared or furnished by Professional are instruments of service, and Professional retains an ownership and property interest (including the copyright and the right of reuse) in such documents, whether or not the Project is completed.

G. To the fullest extent permitted by law, Owner and Professional (1) waive against each other, and the other's employees, officers, directors, agents, insurers, partners, and consultants, any and all claims for or entitlement to special, incidental, indirect, or consequential damages arising out of, resulting from, or in any way related to the Project, and (2) agree that Professional's total liability to Owner under this Agreement shall be limited to \$50,000 or the total amount of compensation received by Professional, whichever is less.

H. The parties acknowledge that Professional's scope of services does not include any services related to a Hazardous Environmental Condition (including but not limited to the presence of asbestos, PCBs, petroleum, hazardous substances or waste, and radioactive materials). If Professional or any other party encounters a Hazardous Environmental Condition, Professional may, at its option and without liability for consequential or any other damages, suspend performance of services on the portion of the Project affected thereby until Owner: (i) retains appropriate specialist consultants or contractors to identify and, as appropriate, abate, remediate, or remove the Hazardous Environmental Condition; and (ii) warrants that the Site is in full compliance with applicable Laws and Regulations.

8.01 Dispute Resolution

Except for debt collection cases for less than \$25,000, and except as otherwise provided herein, all claims, counterclaims, disputes and other matters in question between the parties hereto arising out of or relating to this Agreement or the breach thereof will be decided by arbitration in accordance with the Construction Industry Arbitration Rules of the American Arbitration Association then obtaining, subject to the limitations and restrictions stated below. This agreement to arbitrate and any other agreement or consent to arbitrate entered into in accordance herewith as provided in this paragraph will be specifically enforceable under the prevailing arbitration law of any court having jurisdiction.

Notice of demand for arbitration must be filed in writing with the other parties to this Agreement and with the American Arbitration Association. The demand must be made within a reasonable time after the claim, dispute, or other matter in question has arisen. In no event may the demand for arbitration be made after the expiration of one year from the date the cause of action accrued. The cause of action whether based in tort, contract, indemnity, contribution, or any other form of action, legal or equitable, shall be deemed to have accrued at the time the party asserting the claim either knew or, by the exercise of reasonable diligence, should have known of the existence of the facts underlying such claim, dispute or other matter in question regardless of when damages occur. After the expiration of said one year, any claim between the parties hereto shall be barred.

No arbitration arising out of, or relating to this Agreement may include, by consolidation, joinder or in any other manner, any person or entity who is not a party to this Agreement.

The award rendered by the arbitrators will be final, not subject to appeal and judgment may be entered upon it in any court having jurisdiction thereof.

9.01 Total Agreement

A. This Agreement (together with any expressly incorporated appendix), constitutes the entire agreement between Owner and Professional, supersedes all prior written or oral understandings, and becomes binding as if fully executed at the time Professional commences work. To the extent that the terms of any appendices or documents referenced in this Agreement conflict with the terms of this Agreement, the terms of this Agreement shall govern. This Agreement may only be amended, supplemented, modified, or canceled by a duly executed written instrument.



PROJECT FUNDING ANALYSIS

To: Jeff Shaw, Supervisor | Elmwood Township

From: Wayne Hofmann | Wade Trim
Kenneth Schwerdt, PE | Wade Trim

Date: July 6, 2022

Subject: Funding/Finance for Timberlee Water System Project

This document identifies potential funding sources for water system improvements within Elmwood Township at the former Timberlee resort area. Our understanding of the system includes the following:

- Domestic use only, with no fire protection.
- System consists of 3 wells, a hydropneumatic tank, booster pump station, pressure reducing valves, 6" mains, and flushing hydrants.
- There are 125 connections with 190+/- living units served, including condo/apartment properties.
- The work proposed includes replacing a large hydropneumatic tank, some booster pumps and updating some electric and controls. Total estimate is around \$400,000.
- The Township has received letters from EGLE for 20+ years as the existing tank is past its design life (50+ years old) and operates over its rated pressure capacity. Although there are no current violations, it is a long-term issue on sanitary surveys.
- There is no contamination risk detected within the drinking water system.

The Township is unlikely to qualify for grant portions of popular water funding programs such as USDA-Rural Development or the Michigan Drinking Water Revolving Fund, due to the Township's relatively high median household income (\$68,570). Further, since this project primarily serves a residential community, it is not likely to compete for economic development funding.

However, the both programs are an option for low-interest, sub-market rate loans to support the project. The Township's debt for business-type activities consists of 2004 Special Assessment bonds



scheduled for retirement in 2024. Once retired, those funds would be available to service debt associated with the Timberlee water system improvements.

The most likely sources of funding are listed in this memorandum.

AMERICAN RESCUE PLAN ACT STATE AND LOCAL FISCAL RECOVERY FUNDS

Elmwood Township will receive \$472,893 in local recovery funds from the American Rescue Plan Act (ARPA). One of the four enumerated uses for ARPA funds are investments in water and sewer infrastructure. The water system improvements, either in whole or a portion of, would be an eligible use for these funds.

Since there are likely other needs within the Township, an option would be to partially fund the water system project using ARPA funding and issuing debt for the remainder.

USDA RURAL UTILITIES SERVICE WATER AND WASTE DISPOSAL PROGRAMS

Currently, the Median Household Income of Elmwood Township exceeds the USDA's maximum income for grant eligibility, although the Township would qualify for the agency's market rate of 2.5% for loans, which may go out to 40 years. For a project this size, pursuing USDA loans may exceed the Township's needs. Also, USDA would not participate in the project if the Township's water and sewer funds are combined.

MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY (EGLE)

The Drinking Water State Revolving Fund (DWSRF) provides funding for drinking water projects in the State of Michigan. Elmwood Township does not qualify for additional subsidy in the form of grants or principal forgiveness through DWSRF.

Currently, DWSRF offers loan terms of 1.875% over 20 years and 2.125% over 30 years. While a DWSRF loan is an option, the process of developing a project planning document may not provide the savings over a short-term bond or municipal note. Short-term infrastructure bonds and municipal notes may range from 3-5% currently depending on scale and term.

MICHIGAN LEGISLATURE

Michigan Strategic Fund Michigan Infrastructure Grant

Since 2019, the Michigan Legislature has included Michigan Infrastructure Grants and Michigan Enhancement Grants within the state budget appropriations process. There is no formal process for applying for a grant and requests should be communicated to local Representatives and State Senators. While funding is in the form of a grant, recipients are required to enter formal grant agreements and comply with certain requirements through the Michigan Strategic Fund.

As a best practice, it is recommended that a short summary of a priority project is submitted to both the local representative and Senatorial offices by the end of January, so that it may be considered during the state budget process.

It should be noted that many factors impact the competitiveness of a project funding request that have nothing to do with the merits of the project. These grants are typically made when state revenues exceed projected expectations. Also, political considerations and the position of the elected representatives on relevant committees are critical factors impacting whether a request is included in the final State budget.

Due to the nature of the Timberlee water system project, it is not likely it would be considered a high priority for a Michigan Infrastructure Grant.

CONCLUSIONS

The Township's best source of grant funding for the Timberlee water system project is to utilize ARPA funds. Water system improvements are a clear, enumerated use under the US Treasury Guidelines and using these funds provide a relatively low level of administrative burden for a community the size of Elmwood Township in comparison to other sources such as USDA and DWSRF.

Issuing short-term debt in support of the project is also an option, considering the Township's impending retirement of debt associated with the water system. Any long-term funding decisions should be made considering the long-term capital and operational needs of your infrastructure systems. Wade Trim will be happy to discuss potential options further with the Township if desired.

WRH:KS

ELM2001.05C

[projectwise/Documents/Projects/E/Elm2001/05c/Docs/Correspondence/](#)



MEMORANDUM

To: Jeff Shaw, Supervisor, Elmwood Township

From: Ken Schwerdt, Wade Trim

Date: August 31, 2022

Subject: Elmwood Marina Phase III Project Completion

We are in the final stages of completing the plans, contract documents, and permits for Phase III of the Elmwood Township Marina Improvements. Due to unforeseen delays and additional work requested, we are requesting an adjustment to our design and permitting budget. The additional work performed and costs incurred includes the following:

- Contracting with alternate subcontractors due to the retirement of the AE mechanical subconsultant during the extended project duration.
- Revising an approved site plan in final design to incorporate below grade storm water management due to marina staff and customer concerns and requests to not have wetland bioretention basins at the waterfront promenade.
- Adding seawall across the park frontage to the south of Brewery Creek to our United States Army Corps of Engineers (USACE)/Michigan Department of Environment, Great Lakes and Energy (EGLE) Permit Application.
- Assessing the site in multiple phases to match and maximize the available grants from the state after significant changes to the grant program after the COVID-19 pandemic.
- Total Amendment Cost = \$40,820

This Amendment would complete the plans and submittal for permits to the USACE and to the Michigan Department of Natural Resources (MDNR) funding project manager for review. Additional time is anticipated to coordinate with the State regarding moving forward with the project into construction given the number of grants and alternate funding sources that are likely to be required to construct the project. This will be reflected in the Bidding and Construction Administration costs that will be determined once the Township has a clear direction on how it wants to proceed with the project's construction.

Please let us know if you need any additional information or would like to discuss in more detail.

KDS:jlb

ELM 2012.01C

20220824_PLANCOMPLETION-MEMORANDUM.DOCX

Attachment



Standard Professional Services Amendment

Amendment No. 3

To authorize additional services for a contract entitled Elmwood Township Municipal Marina Phase 3 Improvements dated September 10, 2019 between Elmwood Charter Township of 10090 East Lincoln Road, Traverse City, Michigan 49684, the Owner and Wade Trim, Inc., 10850 East Traverse Highway, Suite 2260, Traverse City, Michigan 49684, the Professional (the "contract").

The Owner and the Professional, for mutual considerations hereinafter set forth, agree as follows:

A. The Professional agrees to perform additional services for the Owner as follows:

Complete designs for Marina Phase 3 project, including additional work and expenses incurred due to extended project duration, as outlined in our Memorandum dated August 31, 2022.

B. Owner agrees to pay Professional as compensation for his services as follows:

Lump Sum Fee of \$40,820.

C. It is mutually agreed by the Owner and the Professional that the schedule is modified as follows:

D. All of the terms and conditions of the Contract not inconsistent with this Amendment are reaffirmed and incorporated herein by reference.

Owner: _____

Professional: _____

By: _____
(Print Name)

By: Brian C. Sousa, PE
(Print Name)

Title: _____

Title: Vice President

Date Signed: _____

Date Signed: August 31, 2022

Witness: _____

Witness: _____



MEMORANDUM

To: Jeff Shaw, Township Supervisor

From: Ken Schwerdt, Wade trim

Date: September 6, 2022

Subject: Brewery Creek Parking Lot Project update

We recently received the Geotechnical Report completed for the Brewery Creek Parking Lot Improvements done by Soils & Structures. While we anticipated the site would need some level of additional pavement structure to keep it from settling, the recommended section by the geotechnical engineer was more extensive than we expected.

The recommendation covers approximately the western two thirds of the parking areas and calls for a 4' undercut, a geogrid covered with crushed concrete aggregate backfill, a separation fabric, and a thickened pavement section that includes 5 inches of asphalt. We used this section to update our cost estimate and found the total construction costs increased to approximately \$2.5 million to complete the parking layout proposed. We also consulted with local contractors to validate our cost estimate as this extensive of a pavement section is not a normal bid cost that we encounter.

Implementing the recommended pavement section doubles our original estimate of \$1.2 million so we thought it best to update the Township and reassess the project prior to moving forward. Options we have considered include:

- Continue with the project knowing construction costs will likely be higher than \$2 million.
- Construct the site as planned using a standard pavement section knowing it is likely to fail in areas within the standard design life of 20 years. Costs are estimated around \$1.5 million.
- Grade the site and place curb & gutter, but just place a gravel surface which is easily repaired. \$1.2 million.
- Reassess the layout to utilize existing paved areas and reconstructing only those areas necessary to add parking in existing building envelopes and to improve trailer movement for access. We have not estimated cost for this yet but assume it would be significantly less than the other two options. It is also likely to produce fewer parking spaces than the full rebuild as the existing ponds restrict several areas beyond the limit for maneuvering and parking longer vehicle and trailer combinations.

We will need to look at potential layouts for the final option in order to estimate costs and could have that completed prior to the October board meeting. At this time we would like feedback/direction from the Township prior to continuing.

KDS:kds

ELM201801C

pw:\wtpwint12.wadetrtrim.com:projectwise\Documents\Projects\ELM2018\01c\Docs\Correspondence\2022-0906 Memo.docx



**REPORT OF
PAVEMENT INVESTIGATION
FOR
BREWERY CREEK DEVELOPMENT**

**ELMWOOD CHARTER TOWNSHIP
LEELANAU COUNTY
MICHIGAN**

AUGUST 12, 2022



*Wade Trim
10850 East Traverse Highway, Suite 2260
Traverse City, Michigan 49684*

Project No. 2022.1138



SOILS & STRUCTURES

August 12, 2022

Wade Trim
10850 East Traverse Highway, Suite 2260
Traverse City, Michigan 49684

Attention: Mr. Garth Bogart, P.E.

Regarding: Brewery Creek Development Parking Lot – Pavement Investigation
Elmwood Charter Township, Leelanau County, Michigan
Project No. 2022.1138

Dear Mr. Bogart:

Soils & Structures is pleased to present this pavement investigation report for the Brewery Creek Development project in Elmwood Charter Township, Leelanau County, Michigan.

The investigation included seventeen (17) test borings extended to a depth of approximately 4.0 feet. The test borings were conducted in accordance with industry standards. The pavement section and subgrade condition were evaluated in-situ in accordance with ASTM D 6951.

The report, test boring location plan, and test boring logs are enclosed. The report provides recommendations for pavement cross section designs, thicknesses, material properties and the anticipated service life of the proposed systems. Construction notes and drainage considerations have also been included.

We appreciate the opportunity to provide engineering services to Wade Trim. If you have any questions regarding this report, please contact our office.

Sincerely,
Soils & Structures, Inc.

Trevor J. Brandt, E.I.T.

Reviewed by:

Don R. Dunkin, P.E.

Contents

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Appendix

Test Boring Location Diagram
USACE DCP Boring Logs (B-1 through B-17)
Laboratory Tests

Location of Pavement Investigation

The investigation was conducted at the Brewery Creek Development located in Elmwood Charter Township, Leelanau County, Michigan.

Purpose of Investigation

The purpose of this investigation is to provide a pavement cross-section recommendation for the proposed parking lot and access drive.

Design Information

The construction of a parking lot and access drive has been proposed for the Brewery Creek Development. The proposed parking lot and access drive will have a footprint of approximately 12,850 square yards.

The pavements are anticipated to be subjected to primarily passenger vehicles pulling trailers loaded with boats. Occasional commercial truck traffic (mainly snow removal equipment) is also expected. An estimate of 500,000 lifetime Equivalent Single Axle Loads (ESALS) was assumed for the recommended hot mix asphalt section. The pavement is expected to experience high volumes of stop-and-go traffic and hard turning moments.

If traffic volume counts are known or collected and are significantly greater than anticipated, then Soils & Structures should be contacted so that the pavement recommendations included in this report may be reviewed and revised if necessary.

Tests Performed

The investigation for the access drive and parking lot included seventeen (17) test borings extended to a depth of approximately 4.0 feet. The test borings are designated at Test Boring B-1 through Test Boring B-17. The test borings were conducted in accordance with industry sampling standards. The locations were determined by Soils & Structures. A Geoprobe® was used to obtain samples while performing B-1 through B-15 and B-17. A hand auger was used to obtain samples while performing B-16.

Prior to performing the test borings, the soil strength was evaluated in-situ at test borings B-1 through B-17 using the United States Army Corps of Engineers Dynamic Cone Penetrometer (USACE DCP) to a depth of 3.0 feet. The DCP is a steel rod 5/8-inch in diameter with a pointed cone end that is driven into the subgrade using a sliding hammer. The weight of the hammer can be adjusted from 17.6 pounds to 10.1 pounds if weaker soils are encountered. This rate of penetration is used to estimate a California Bearing Ratio (CBR) value for the soil, which is used to interpret support conditions of the subgrade. Discussion of results will follow in further sections. Results of the DCP tests are included in the Appendix along with soil boring information.

Soil samples were classified according to the Unified Soil Classification System. This method is a standardized system for classifying soil according to its engineering properties. Please refer to the appendix of this report for the Unified Classification System Chart. The classification is shown in the "Material Description" column of the test boring logs.

Laboratory testing consisted of natural moisture content, sieve (particle size) analysis, and loss on ignition testing. The tests were performed on representative soil samples. The tests were performed in accordance with applicable ASTM standards. The moisture content documents the presence of groundwater in a soil sample. The sieve test determines the particle distribution which is used to classify the soil and estimate its properties. Loss on ignition tests determine the organic matter content of a soil.

Description of Subgrade and Groundwater Conditions

The existing pavement profile consists of 1.25 to 3.25 inches of asphalt with an average thickness of 1.9 inches over 4.6 to 8.4 inches of aggregate base. The average thickness of the aggregate base is 6.8 inches. The aggregate base consists of fine-to-coarse sand with natural gravel and silt. Sieve tests on representative samples showed that the aggregate base meets MDOT 23A dense-graded aggregate requirements. DCP results for the aggregate base showed CBR values ranging from 8.0 to 87.9 percent with an average of 38.73 percent, indicating generally poor support conditions for an aggregate base.

Topsoil is present at the surface at boring B-6 through B-8 and B-16. The thickness of the topsoil ranges from 5.5 to 16.0 inches with an average thickness of 10.1 inches.

A sand subgrade with a varying silt and gravel content is present below the aggregate base and topsoil. Sieve tests performed on representative samples of the sand subgrade showed that the fines content ranges from 5.6 to 10.2 percent. Samples retrieved from the area of B-1, B-13 and B-17 met MDOT Class II gradation requirements. Samples retrieved from the area of B-2, B-5 and B-11 met MDOT Class III gradation requirements. DCP results for the sand subgrade showed CBR values ranging from 8.8 to 60.8 percent with an average of 26.6 percent, indicating generally good support conditions for a subgrade in areas where organic soils were not present.

Organic soils were encountered in eight of the seventeen test borings between depths of 14.5 and 35.0 inches. The majority of the organic soil consists of sand with a percentage of wood pulp. The organic content of the sand as measured by loss on ignition tests ranges from 5.8 to 8.8 percent. The moisture content of the sand ranges from 24.0 to 30.8 percent. Peat was encountered in localized pockets in the area of B-5 and B-7. The peat is black, fibrous and contains a varying amount of sand and wood pulp. The organic content of the peat as measured by loss on ignition tests ranges from 64.7 to 79.9 percent. The moisture content of the peat ranges from 224.8 to 412.9 percent. The shear strength of the peat was negligible and could not be measured with a pocket penetrometer. This data indicates the organic soil is highly compressible.

Groundwater was encountered at all test boring locations except B-4, B-5, B-11, B-14, and B-15. Groundwater is present between a depth of 22.0 and 45.0 inches. The average depth to groundwater is 31.75 inches. Long term groundwater monitoring was not performed as part of this investigation.

Analysis and Recommendations

The existing pavements on this site have a footprint of approximately 7,400 square yards. On average the aggregate base and existing asphalt have a combined thickness of approximately 8.5 inches. Based on the data collected, the existing pavement system lacks sufficient material quality and thickness to be included in the proposed expansion as is, but can be modified to facilitate recycling. Utilizing recycled materials will reduce the service life of the pavement system, but help reduce upfront costs.

The following two reconstruction options are recommended:

1. FULL RECONSTRUCTION UTILIZING HMA PAVEMENTS AND SALVAGED AGGREGATE. (15-20-year design life)

This process would involve pulverizing the existing HMA pavements and aggregate base to generate a homogenous mixture of materials. The pulverizing process would extend to the bottom of the existing aggregate base. The inclusion of asphalt millings in the base will help offset potential support issues caused by the high sand content of the existing aggregate.

Constructing new pavement sections adjacent to the pulverized area is not recommended because support conditions will probably not be uniform. However, the material could be used for undercuts and a portion of the aggregate base. After topsoil in the proposed expansion area is removed and the subgrade is thoroughly proof-rolled, the reclaimed material would be uniformly distributed across the site. Imported aggregates would then be placed over the reclaimed material to bring the site to grade. Efforts should be made during construction to minimize repetitive loading and overloading of the exposed reclaimed section with construction

traffic.

2. FULL RECONSTRUCTION UTILIZING HMA PAVEMENTS USING IMPORTED AGGREGATES (20-year design life)

This option would require complete removal of existing pavements and the aggregate base. Topsoil should be removed from the proposed expansion areas. The site would then be regraded and proof-rolled prior to placement of the new aggregate base and HMA overlay. Areas of soft or yielding soil would be either removed and replaced (undercutting) or mechanically stabilized using geo-grids. This option is the most reliable HMA pavement option with respect to long term serviceability, however it will be the most expensive.

Two recommended pavement cross-sections are presented in this section of the report:

1. A full construction option utilizing HMA pavements with recycled aggregate;
2. A full construction option utilizing HMA pavements with imported aggregate.

These recommendations were developed based on the discussions and assumptions included in this REPORT and the design procedures outlined in the "AASHTO Guide for Design of Pavement Structures - 1993." The subgrade should be prepared as described in this section of the report. The recommended pavement section materials listed in Table One refer to and should comply with the standard material designations included in applicable MDOT specifications and guidelines, including the 2012 MDOT "Standard Specifications for Construction."

A CBR of 5.0 percent, which correlates to a subgrade resilient modulus of 6,000 psi, was assumed for the existing subgrade. A calculated service life loading of 500,000 ESALS was assumed for the pavement sections. Based on these values, a minimum-required structural number (SN) of 4.08 will be necessary to support the design traffic loading.

The recommended cross-section meets the minimum-required design structural number. The cross-section been designed to withstand the assumed traffic loads mentioned above, as well as environmental stresses experienced due to Michigan's wet freeze/thaw cycles. An 90% Reliability was assumed for all pavement sections. Initial and terminal serviceability values are 4.5 and 2.25, respectively.

I. Full Reconstruction (15-20 Years) with Hot-Mix Asphalt and Recycled Aggregate

Cross-section recommendations are listed in Table One. The design life assumes that incremental maintenance repairs such as joint sealing, localized patching, and/or sealcoating is performed as required throughout the life of the pavement.

The combined thickness of the salvaged aggregate and imported aggregate should be 10.0 inches.

Table 1: Recommended Pavement Sections – HMA Section

Pavement Cross Section Materials	Parking Lot and Access Drive	
	Material	Thickness (in)
HMA Wearing Course	4E1	2.0
HMA Base Course	3E1	3.0
Aggregate Base ¹	21AA	10.0
Aggregate Base	Salvaged	
Geogrid ²	TX-140	-
Non-Woven Geotextile ³	-	-

Note 1: The recommended aggregate base material for HMA pavements is MDOT 21AA crushed limestone. A 21AA Modified crushed concrete product, 21A dense-graded aggregate, or 22A dense-graded aggregate may also be used, but will likely result in a shorter service life due to lower quality material properties.

Note 2: Geogrid should be included as needed in areas where undercutting would extend more than 1 foot beneath the water table.

Note 3: Non-Woven Geotextile should be included in areas where geogrid is being placed on top of organics due to excessive depths of required undercuts. Geotextile should be installed beneath the geogrid in order to prevent the aggregate base from being contaminated with organics.

II. Full Reconstruction (20 Years) with Hot-Mix Asphalt Pavement Sections and Imported Aggregates

Cross-section recommendations are listed in Table Two. The design life assumes that incremental maintenance repairs such as joint sealing, localized patching, and/or sealcoating is performed as required throughout the life of the pavement.

Table 2: Recommended Pavement Sections – HMA Section

Pavement Cross Section Materials	Parking Lot and Access Drive	
	Material	Thickness (in)
HMA Wearing Course	4E1	2.0
HMA Base Course	3E1	3.0
Aggregate Base ¹	21AA	10.0
Geogrid ²	TX-140	-
Non-Woven Geotextile ³	-	-

Note 1: The recommended aggregate base material for HMA pavements is MDOT 21AA crushed limestone. A 21AA Modified crushed concrete product may also be used, but will likely result in a shorter service life due to lower quality material properties.

Note 2: Geogrid should be included as needed in areas where undercutting would extend more than 1 foot beneath the water table.

Note 3: Non-Woven Geotextile should be included in areas where geogrid is being placed on top of organics due to excessive depths of required undercuts. Geotextile should be installed beneath the geogrid in order to prevent the aggregate base from being contaminated with organics.

The sand subgrade should be thoroughly proof-rolled prior to the placement of subsequent pavement layers. Organic soils were encountered near the surface of the site in the area of B-7, B-8, B-13, B-14 and B-17 which may lead to instabilities under loading from construction traffic. Contingencies should be held for undercutting of soft or yielding soils. Highly organic soils should be removed and replaced with sand meeting MDOT Class II specifications. If organic soils are the cause of instabilities in an area where the undercuts will extend up to 1.0 foot below the water table then the use of pumps in combination with a coarse-graded aggregate such as MDOT 6AA is recommended for removal and replacement operations.

Where removal and replacement is not feasible due to organic soil extending far below the water table then the area should be mechanically stabilized using geogrid. The recommended geogrid product is a triaxial product such as Tensar TX-140. Use of geogrid in lieu of undercutting would require new angular (crushed) aggregate as aggregate interlock is required to take full advantage of the grids. Triaxial geogrid will limit the required depth of excavations. The minimum thickness of aggregate over the geogrid should be 10.0 inches for HMA pavements.

Geogrid sections should overlap a minimum of 12.0 inches and should extend at least 2.0 feet beyond the perimeter of the pavement. Metal pins should be used to secure the grids in place both at points of overlap and at the edges to prevent displacement while placing the aggregate base. Construction vehicle loads should be minimized when spreading the aggregate over the geogrid.

Compaction of the pavement layers may need to be limited to static methods where groundwater is present near the surface of the site. If the adjacent subgrade cannot dissipate the excess pore water pressure induced by vibratory rollers groundwater will likely appear at the surface of the site.

General Hot-Mix Asphalt (HMA) Recommendations

The paving contractor should submit the proposed mix design and any associated backup data to the owner and engineer-of-record for approval prior to placement.

MDOT Tier I Recycled Asphalt Pavement (RAP) specifications should be utilized for both the wearing and leveling courses with performance grade PG 64-28 asphalt binder. MDOT Tier II RAP specifications may be applied to the leveling course but should utilize asphalt binder performance grade PG-58-28.

Target void content should be 3.5 percent for both the wearing and leveling courses. The asphalt pavement should be compacted to 94 to 97 percent of the theoretical maximum density (determined via the Superpave "Rice" Method). Additionally, a tack coat of SS-1h emulsion should be applied between each laid asphalt layer at a rate of 0.1 gallon/square yard.

The pavement section should be constructed in accordance with the Michigan Department of Transportation "2012 Standard Specifications for Construction" as well as applicable state and local requirements. Support conditions and compaction should be assessed during construction in accordance with the "Quality Control and Testing" section of this report. This assessment should occur prior to installation of individual pavement layers (i.e. prior to placement of aggregate base and prior to placement of pavements).

Drainage Considerations for Pavement Areas

The pavement areas should be properly drained to minimize the effects of frost heaving and the loss of subgrade support due to water infiltration. Pavements should be sloped at a minimum of 1.5 percent to ensure movement of surface water away from the cross section.

Underdrain will be a critical component to extending the life of the pavement, especially due to the higher fines content of subgrade soils at this site. Ring wraps should be installed adjacent to stormwater structures where they form low points in the pavement. Soils and Structures can review proposed drain tile layouts and details on request.

Underdrains should consist of a 6-inch diameter perforated pipe. The underdrain trench

should extend at least 18.0 inches below the aggregate base. The trench should be lined in a non-woven geotextile fabric with proper overlap. The wrapped portion of the drain tile should be backfilled with MDOT 34R peastone with the top portion of the trench backfilled with MDOT 21AA aggregate. This detail is an expanded drain tile recommendation and is probably more expensive than typical pavement drainage specifications, which typically call for a 4-inch perforated pipe. However, these specifications will provide a longer service life for the drain system.

Soils & Structures can review and augment the above recommendations upon request if provided a completed storm water management plan for the proposed access drive.

Quality Control Testing

The subgrade support should be continually observed while being loaded during construction processes for any indication of instabilities. Care should be taken to avoid repeated heavy traffic loading in traffic patterns where early instabilities are observed in order to avoid further disturbance of the subgrade. Vibratory compaction may need to be minimized during installation of the pavement layers.

Compaction tests (ASTM D 6938) are recommended to confirm that backfill and subgrade/aggregate base in pavement or drainage installation areas are compacted to the specified density. When utility excavation backfill material is being placed, compaction tests should be performed at the rate of one test per 400 cubic yards of fill and throughout the depth of the fill with a minimum of five tests at each 1.0 foot elevation interval. The recommended testing frequency in the pavement subgrade and aggregate base is one test per 2,500 square feet. Tests should also be performed in the backfill over utilities. The maximum density should be determined in accordance with ASTM D 1557 or ASTM D 4253 procedures.

A dynamic cone should not be substituted for compaction tests for evaluating backfill.

Compaction Testing should be performed by technicians supervised by a registered geotechnical engineer. Proof rolling should be performed by a senior technician or field engineer under the supervision of a registered geotechnical engineer.

Asphalt quality control testing should adhere to the 2012 MDOT Standards for Construction. Asphalt temperatures during placement should be at least 275 degrees Fahrenheit; material that arrives at temperatures below 250 degrees Fahrenheit shall be rejected. Asphalt density testing should be performed with a nuclear density gauge at a minimum rate of one test per 500 square feet of pavement. At least five total verification cores in each course should be taken to assess relative compaction, calibrate the nuclear density gauge, and evaluate thickness. A minimum of two loose mix samples per mix per day should be taken at the plant and delivered to the quality-assurance firm's laboratory for vacuum extraction-gradations. The asphalt contractor should provide a minimum of two (2) theoretical maximum density verifications per day. Additionally, areas that display poor workmanship, which may include (but are not limited to) segregation, "cold screed scrapes", wearing courses not flush with curbs or rims, roller marks, shoving, smearing or tearing of the mat, flushing, or excessive cold joints should be repaired or replaced by the contractor immediately.

Once a construction option has been selected, please contact Soils & Structures and we will prepare a set of project specific Construction notes to be included in the bid documents if desired.

General Conditions & Reliance

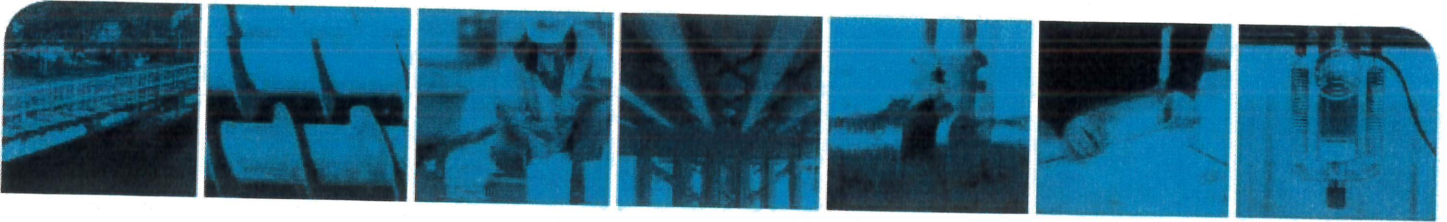
The report was prepared in accordance with generally accepted practices of the geotechnical engineering profession. The scope of work consisted of performing four test borings providing soil related recommendations for the design and construction of site pavements. The scope of work did not include an environmental study or wetland determination.

The report and the associated test borings were prepared specifically for the previously described project and site. Soils & Structures should be consulted if a significant change in the scope of the project is made, or if a specific design criterion (such as traffic counts) is known or changed.

The test borings represent point information and may not have encountered all of the soil types and materials present on this site. This report does not constitute a guarantee of the soil or groundwater conditions or that the test boring is an exact representation of the soil or groundwater conditions at all points on this site.

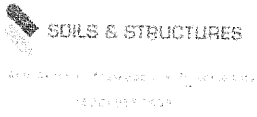
The descriptions and recommendations contained in this report are based on an interpretation of the test borings and laboratory tests. The test borings should not be used independently of the report. If soil conditions are encountered which are significantly different from the test borings, Soils & Structures should be consulted for additional recommendations.

The report and test borings may be relied upon by Wade Trim for the design, construction, permitting, and financing associated with the construction of new pavement at the Brewery Creek Development located in Elmwood Charter Township, Leelanau County, Michigan. The use of the report and test borings by third parties not associated with this project or for other sites has not been agreed upon by Soils & Structures. Soils & Structures does not recommend or consent to third party use or reliance of the report or test borings unless allowed to review the proposed use of these materials. Unless obtained in writing, consent to third party use should not be assumed. Third parties using the report or test boring logs do so at their own risk and are offered no guarantee or promise of indemnity.



Appendix

Test Boring Location
Diagram
USACE DCP Boring Logs (B-1
through B-17)
Laboratory Tests



TEST BORING LOCATION DIAGRAM

Project Name: Brewery Creek Development Parking Lot - Pavement Investigation
Location: Elmwood Charter Township, Leelanau County, Michigan
Project Number: 2022.1138 Date: 07.11.2022

Note: The background image is an aerial photograph of the site.

Not to Scale

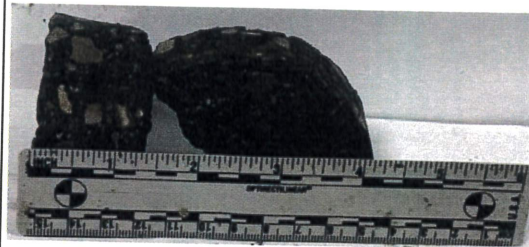
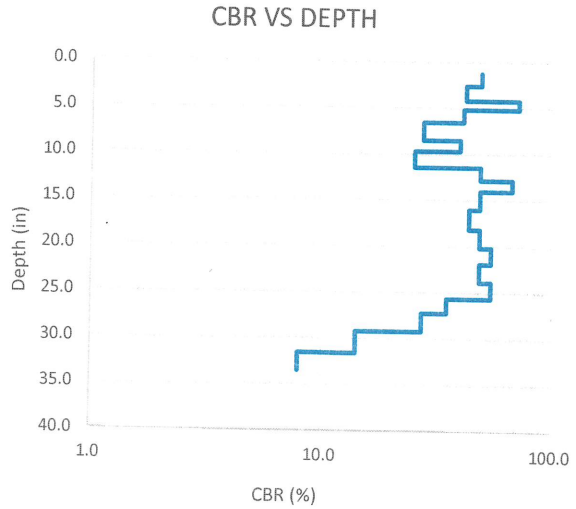




Project Name Brewery Creek Development Parking Lot - Pavement Investigation
 Project Number 2022.1138
 Date 7/11/2022
 Client Wade Trim
 Boring Type Geoprobe®
 Location See BLD

Boring ID B-1
 DCP Starting Depth (in) 1.25

# of Blows	Cumulative Penetration (mm)	Hammer Type	Soil Type	CBR %
0	220	1	SM	
7	255	1	SM	48.1
7	295	1	SM	41.5
7	320	1	SM	70.2
6	355	1	SM	40.5
6	405	1	SP-SM	27.2
5	435	1	SP-SM	39.3
5	480	1	SP-SM	24.9
7	515	1	SP-SM	48.1
8	545	1	SM	66.4
10	595	1	SM	48.1
10	650	1	SM	43.3
10	700	1	SM	48.1
10	745	1	SM	54.2
10	795	1	SM	48.1
10	840	1	SM	54.2
6	880	1	SM	34.9
6	930	1	SM	27.2
4	990	1	SM	14.1
2	1040	1	SM	7.9



From	To	Thickness	Description	Classification
0	1.25	1.25	ASPHALT LEVELING COURSE - Deteriorated	
1.25	8	6.75	AGGREGATE BASE - Fine-to-Coarse SAND with Natural Gravel and Silt, brown	SM
8	13	5	Fine-to-Medium SAND with Silt, brown	SP-SM
13	27	14	Fine-to-Coarse Silty SAND with Natural Gravel, black-gray	SM
27	50	23	Fine Silty SAND with trace Natural Gravel, dark brown	SM

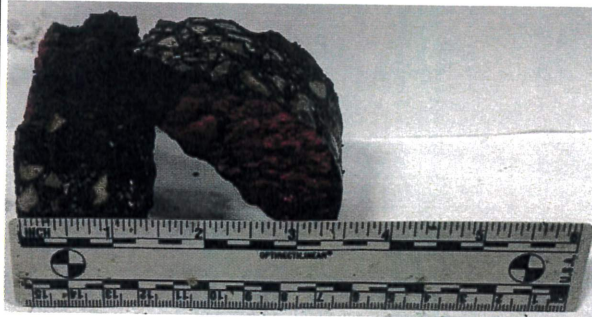
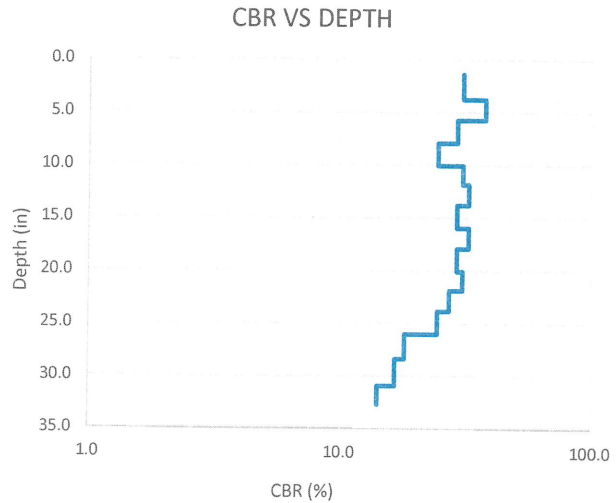
Comments: Groundwater encountered at 22 inches. Fabric at 8 inches.



Project Name Brewery Creek Development Parking Lot - Pavement Investigation
 Project Number 2022.1138
 Date 7/11/2022
 Client Wade Trim
 Boring Type Geoprobe®
 Location See BLD

Boring ID B-2
 DCP Starting Depth (in) 1.375

# of Blows	Cumulative Penetration (mm)	Hammer Type	Soil Type	CBR %
0	205	1	SP	
8	265	1	SP	30.6
8	315	1	SP	37.5
7	370	1	SW-SM	29.0
6	425	1	SW-SM	24.4
6	470	1	SW-SM	30.6
7	520	1	SW-SM	32.3
7	575	1	SW-SM	29.0
7	625	1	SW-SM	32.3
7	680	1	SW-SM	29.0
6	725	1	SW-SM	30.6
6	775	1	SW-SM	27.2
6	830	1	SW-SM	24.4
5	890	1	SW-SM	18.1
5	955	1	SW-SM	16.5
3	1000	1	SW-SM	14.1



From	To	Thickness	Description	Classification
0	1.375	1.375	ASPHALT LEVELING COURSE - Deteriorated	
1.375	7.5	6.125	AGGREGATE BASE - Fine-to-Coarse SAND with Natural Gravel and trace Silt, brown	SP
7.5	50	42.5	Fine-to-Medium SAND with Natural Gravel and Silt, dark brown	SW-SM

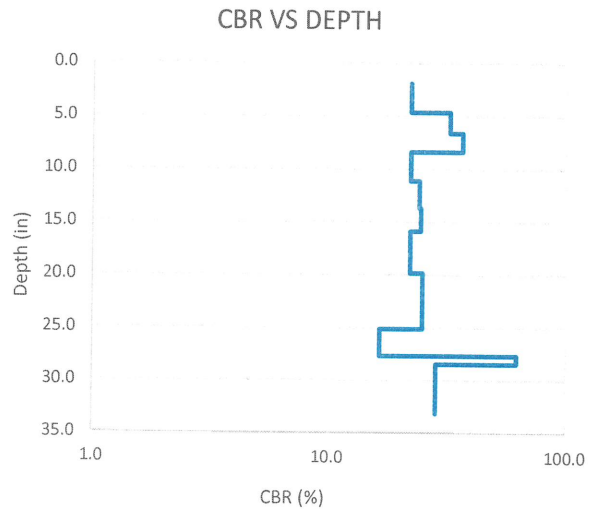
Comments: Groundwater encountered at 36 inches. Fabric at 7.5 inches. 2 inch lense of clay at 37 inches.



Project Name Brewery Creek Development Parking Lot - Pavement Investigation
 Project Number 2022.1138
 Date 7/11/2022
 Client Wade Trim
 Boring Type Geoprobe®
 Location See BLD

Boring ID B-3
 DCP Starting Depth (in) 1.875

# of Blows	Cumulative Penetration (mm)	Hammer Type	Soil Type	CBR %
0	225	1	SP-SM	
7	295	1	SP-SM	22.2
7	345	1	SP-SM	32.3
7	390	1	SP-SM	36.3
7	460	1	SP	22.2
7	525	1	SP	24.1
6	580	1	SP	24.4
5	630	1	SP	22.2
5	680	1	SP	22.2
5	725	1	SP	24.9
5	770	1	SP	24.9
5	815	1	SP	24.9
5	880	1	SP	16.5
5	900	1	SP	61.8
5	940	1	SP-SM	28.4
5	980	1	SP-SM	28.4
5	1020	1	SP-SM	28.4



From	To	Thickness	Description	Classification
0	1.875	1.875	ASPHALT LEVELING COURSE - Intact	
1.875	9.5	7.625	AGGREGATE BASE - Fine-to-Coarse SAND with Natural Gravel and Silt, brown	SP-SM
9.5	30	20.5	Fine SAND, light brown	SP
30	50	20	Fine-to-Coarse SAND with Silt and trace Natural Gravel, brown	SP-SM

Comments: Groundwater encountered at 30 inches. Fabric at 9.5 inches. Lense of Silt at 16 inches and 40 inches.



Project Name Brewery Creek Development Parking Lot - Pavement Investigation

Project Number 2022.1138

Date 7/11/2022

Client Wade Trim

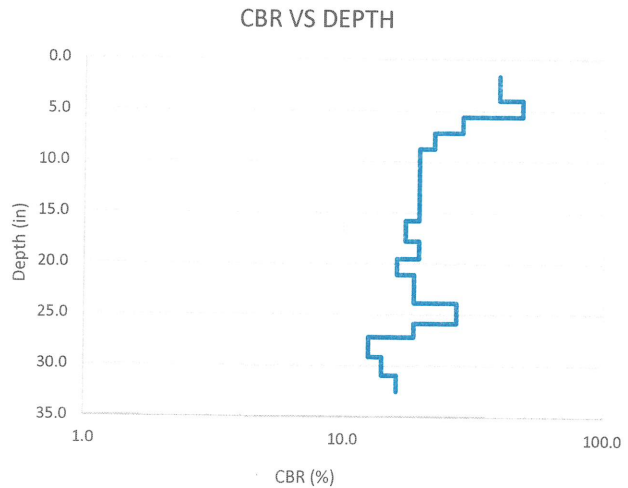
Boring Type Geoprobe®

Location See BLD

Boring ID B-4

DCP Starting Depth (in) 1.625

# of Blows	Cumulative Penetration (mm)	Hammer Type	Soil Type	CBR %
0	215	1	SP-SM	
10	275	1	SP-SM	39.3
8	315	1	SP-SM	48.1
5	355	1	SP-SM	28.4
4	395	1	SM	22.2
4	440	1	SM	19.4
4	485	1	SM	19.4
4	530	1	SM	19.4
4	575	1	SM	19.4
4	625	1	SM	17.3
4	670	1	SM	19.4
3	710	1	SM	16.0
3	745	1	SM	18.6
3	780	1	SM	18.6
3	805	1	SP-SM	27.2
3	830	1	SP-SM	27.2
3	865	1	SP-SM	18.6
3	915	1	SP	12.5
3	960	1	SP	14.1
3	1000	1	SP	16.0



From	To	Thickness	Description	Classification
0	1.625	1.625	ASPHALT LEVELING COURSE - Intact	
1.625	8.5	6.875	AGGREGATE BASE - Fine-to-Coarse SAND with Natural Gravel and Silt, brown	SP-SM
8.5	24	15.5	Fine-to-Coarse Silty SAND with trace Natural Gravel, Wood Pulp, and Roots, dark brown	SM
24	29	5	Fine SAND with Silt, brown	SP-SM
29	50	21	Fine-to-Medium SAND with trace Natural Gravel and Silt, brown	SP

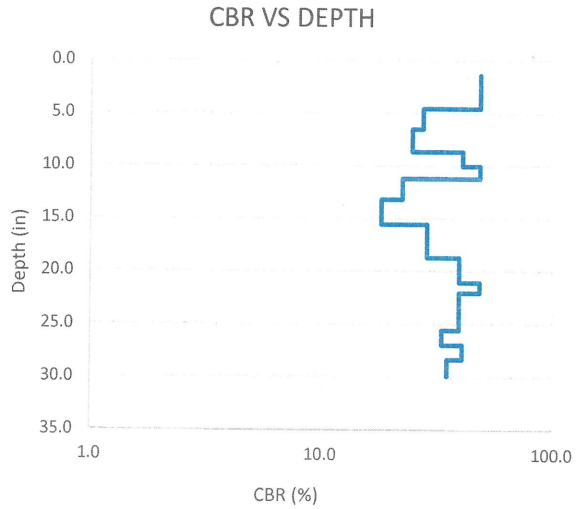
Comments: No groundwater encountered. 1-inch lense of Organics with wood pulp at 31 inches.



Project Name Brewery Creek Development Parking Lot - Pavement Investigation
 Project Number 2022.1138
 Date 7/11/2022
 Client Wade Trim
 Boring Type Geoprobe®
 Location See BLD

Boring ID B-5
 DCP Starting Depth (in) 1.375

# of Blows	Cumulative Penetration (mm)	Hammer Type	Soil Type	CBR %
0	205	1	SP-SM	
8	245	1	SP-SM	48.1
8	285	1	SP-SM	48.1
6	335	1	SP-SM	27.2
6	390	1	SW-SM	24.4
6	425	1	SW-SM	40.5
6	455	1	SW-SM	48.1
5	505	1	SW-SM	22.2
5	565	1	SW-SM	18.1
5	605	1	SW-SM	28.4
5	645	1	SW-SM	28.4
5	675	1	SW-SM	39.3
5	705	1	SW-SM	39.3
5	730	1	SW-SM	48.1
5	760	1	SW-SM	39.3
5	790	1	SW-SM	39.3
5	820	1	SW-SM	39.3
5	855	1	SW-SM	33.0
6	890	1	SW-SM	40.5
6	930	1	SW-SM	34.9
6	970	1	SP	34.9
5	1015	1	SP	24.9



From	To	Thickness	Description	Classification
0	1.375	1.375	ASPHALT WEARING/LEVELING COURSE - Deteriorated	
1.375	8.5	7.125	AGGREGATE BASE - Fine-to-Coarse SAND with Natural Gravel and Silt, brown	SP-SM
8.5	30	21.5	Fine-to-Medium SAND with Natural Gravel and Silt, dark brown	SW-SM
30	35	5	Fine-to-Medium SAND, brown	SP
35	50	15	PEAT, fibrous with Wood Pulp, black	PT

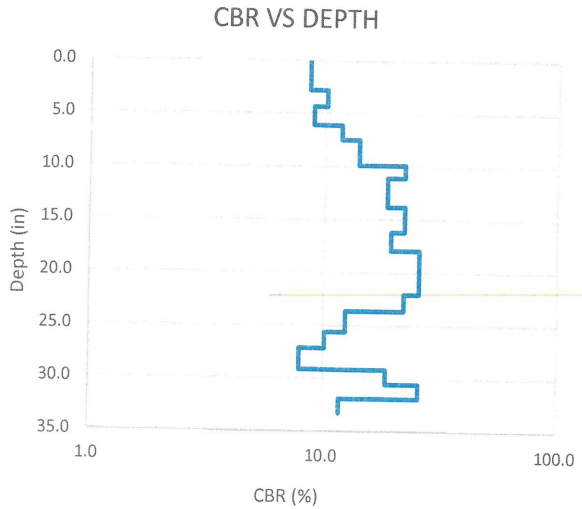
Comments: No groundwater encountered.



Project Name Brewery Creek Development Parking Lot - Pavement Investigation
 Project Number 2022.1138
 Date 7/11/2022
 Client Wade Trim
 Boring Type Geoprobe®
 Location See BLD

Boring ID B-6
 DCP Starting Depth (in) 0

# of Blows	Cumulative Penetration (mm)	Hammer Type	Soil Type	CBR %
0	175	1	TP	
3	245	1	TP	8.6
2	285	1	TP	10.2
2	330	1	SP	8.9
2	365	1	SP	11.8
2	395	1	SP	14.1
2	425	1	SP	14.1
3	455	1	SP	22.2
3	490	1	SM	18.6
3	525	1	SM	18.6
3	555	1	SM	22.2
3	585	1	SM	22.2
4	630	1	SM	19.4
4	665	1	SM	25.7
4	700	1	SM	25.7
4	735	1	SM	25.7
4	775	1	SM	22.2
3	825	1	SM	12.5
2	865	1	SM	10.2
2	915	1	SM	7.9
3	950	1	SP	18.6
4	985	1	SP	25.7
2	1020	1	SP	11.8



NO CORE OBTAINED

From	To	Thickness	Description	Classification
0	5.5	5.5	TOPSOIL - Sandy with Gravel, brown	TP
5.5	12	6.5	Fine SAND, light brown	SP
12	30	18	Fine-to-Coarse Silty SAND, dark brown	SM
30	50	20	Fine SAND with Organics and Wood Pulp, black	SP

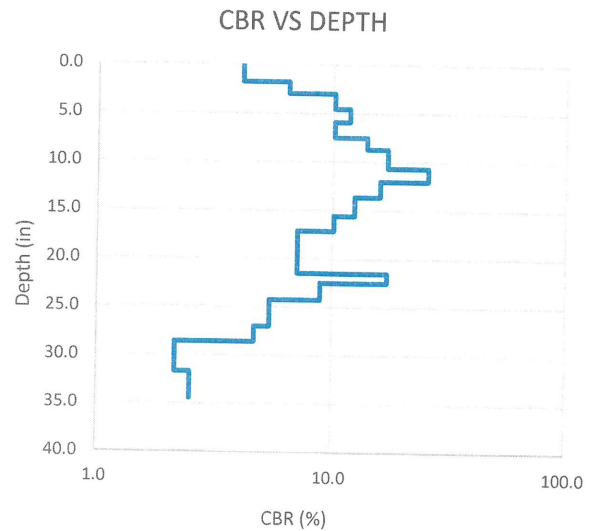
Comments: Groundwater encountered at 30 inches.



Project Name Brewery Creek Development Parking Lot - Pavement Investigation
 Project Number 2022.1138
 Date 7/11/2022
 Client Wade Trim
 Boring Type Geoprobe®
 Location See BLD

Boring ID B-7
 DCP Starting Depth (in) _____

# of Blows	Cumulative Penetration (mm)	Hammer Type	Soil Type	CBR %
0	145	1	TP	
1	190	1	TP	4.1
1	220	1	TP	6.5
2	260	1	TP	10.2
2	295	1	TP	11.8
2	335	1	SP	10.2
2	365	1	SP	14.1
2	390	1	SP	17.3
2	415	1	SP	17.3
4	450	1	SP	25.7
3	490	1	SP	16.0
3	540	1	PT	12.5
2	580	1	PT	10.2
2	635	1	PT	7.1
2	690	1	SP	7.1
2	715	1	SP	17.3
2	760	1	SP	8.9
2	830	1	PT	5.4
1	870	1	PT	4.7
1	950	1	PT	2.2
1	1020	1	PT	2.5



NO CORE OBTAINED

From	To	Thickness	Description	Classification
0	6	6	TOPSOIL - Sandy with Natural Gravel, brown	TP
6	14.5	8.5	Fine-to-Coarse SAND, light brown	SP
14.5	19.5	5	PEAT with Wood Pulp, black	PT
19.5	24.5	5	Fine SAND with trace Natural Gravel, brown	SP
24.5	50	25.5	PEAT, fibrous with Wood Pulp, black	PT

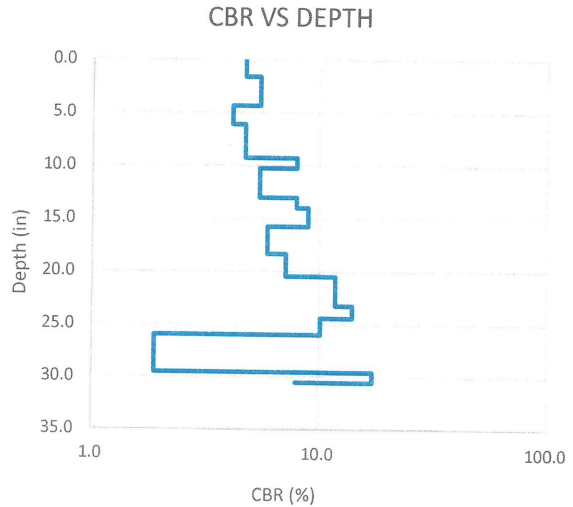
Comments: Groundwater encountered at 24 inches.



Project Name Brewery Creek Development Parking Lot - Pavement Investigation
 Project Number 2022.1138
 Date 7/11/2022
 Client Wade Trim
 Boring Type Geoprobe®
 Location See BLD

Boring ID B-8
 DCP Starting Depth (in) 0

# of Blows	Cumulative Penetration (mm)	Hammer Type	Soil Type	CBR %
0	175	1	TP	
1	215	1	TP	4.7
1	250	1	TP	5.4
1	285	1	TP	5.4
1	330	1	TP	4.1
1	370	1	TP	4.7
1	410	1	TP	4.7
1	435	1	TP	7.9
1	470	1	TP	5.4
1	505	1	TP	5.4
1	530	1	SM	7.9
2	575	1	SM	8.9
2	640	1	SM	5.9
2	695	1	SM	7.1
2	730	1	SM	11.8
2	765	1	SM	11.8
2	795	1	SM	14.1
2	835	1	SP	10.2
1	925	1	SP	1.9
2	950	1	SP	17.3
2	1000	1	SP	7.9



NO CORE OBTAINED

From	To	Thickness	Description	Classification
0	13	13	Sandy TOPSOIL, brown	TP
13	24.5	11.5	Fine Silty SAND with Natural Gravel, brown	SM
24.5	50	25.5	Fine SAND with Roots and Wood Pulp, black	SP

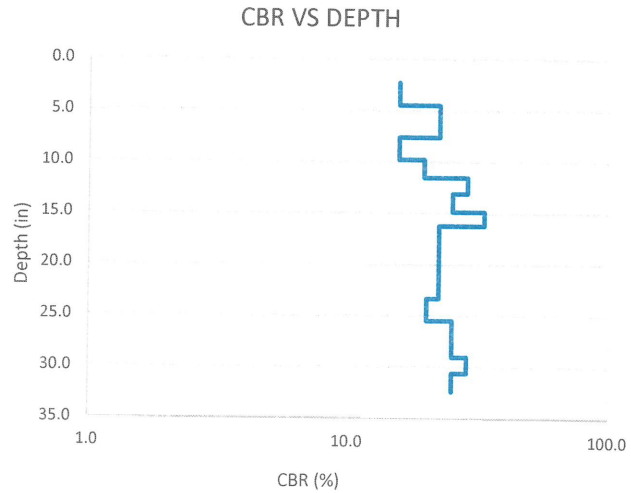
Comments: Groundwater encountered at 35 inches. Lense of Silt 24 inches.



Project Name Brewery Creek Development Parking Lot - Pavement Investigation
 Project Number 2022.1138
 Date 7/11/2022
 Client Wade Trim
 Boring Type Geoprobe®
 Location See BLD

Boring ID B-9
 DCP Starting Depth (in) 2.25

# of Blows	Cumulative Penetration (mm)	Hammer Type	Soil Type	CBR %
0	245	1	SP	
4	300	1	SP	15.5
4	340	1	SP	22.2
4	380	1	SP	22.2
4	435	1	SP	15.5
4	480	1	SP	19.4
5	520	1	SP-SM	28.4
5	565	1	SP-SM	24.9
5	600	1	SP-SM	33.0
6	660	1	SP-SM	22.2
6	720	1	SP-SM	22.2
6	780	1	SP-SM	22.2
5	835	1	SP-SM	19.9
5	880	1	SP-SM	24.9
5	925	1	SP-SM	24.9
5	965	1	SP-SM	28.4
5	1010	1	SP-SM	24.9



From	To	Thickness	Description	Classification
0	2.25	2.25	ASPHALT LEVELING COURSE - Intact	
2.25	8.5	6.25	AGGREGATE BASE - Fine-to-Coarse SAND with Natural Gravel and trace Silt, brown	SP
8.5	13	4.5	Fine SAND, light brown	SP
13	50	37	Fine-to-Medium SAND with Silt and trace Natural Gravel, brown	SP-SM

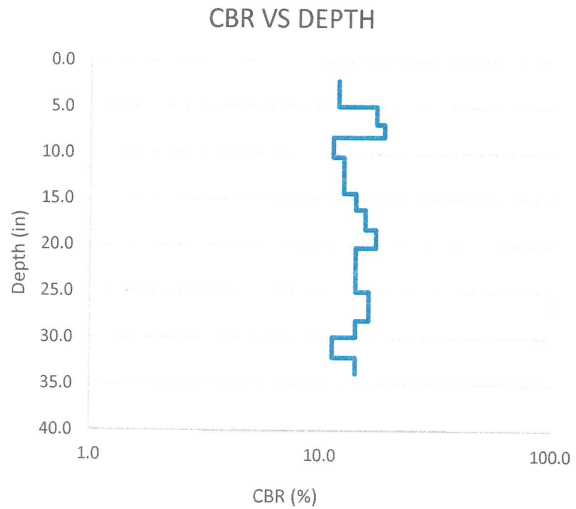
Comments: Groundwater encountered at 45 inches.



Project Name Brewery Creek Development Parking Lot - Pavement Investigation
 Project Number 2022.1138
 Date 7/11/2022
 Client Wade Trim
 Boring Type Geoprobe®
 Location See BLD

Boring ID B-10
 DCP Starting Depth (in) 2.125

# of Blows	Cumulative Penetration (mm)	Hammer Type	Soil Type	CBR %
0	220	1	SP-SM	
4	290	1	SP-SM	11.8
4	340	1	SP-SM	17.3
3	375	1	SP-SM	18.6
3	430	1	SP	11.2
3	480	1	SP	12.5
3	530	1	SP	12.5
3	575	1	SP	14.1
4	630	1	SP	15.5
4	680	1	SP	17.3
4	740	1	SP	14.1
4	800	1	SP	14.1
3	840	1	SP	16.0
3	880	1	SP	16.0
3	925	1	SP	14.1
3	980	1	SP	11.2
3	1025	1	SP	14.1



From	To	Thickness	Description	Classification
0	2.125	2.125	ASPHALT LEVELING COURSE - Intact	
2.125	9	6.875	AGGREGATE BASE - Fine-to-Coarse SAND with Silt and Natural Gravel, brown	SP-SM
9	16.5	7.5	Fine SAND, light brown	SP
16.5	50	33.5	Fine-to-Medium SAND with Lense of Clay, brown	SP

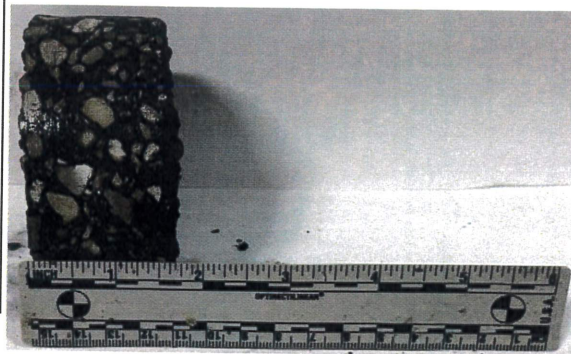
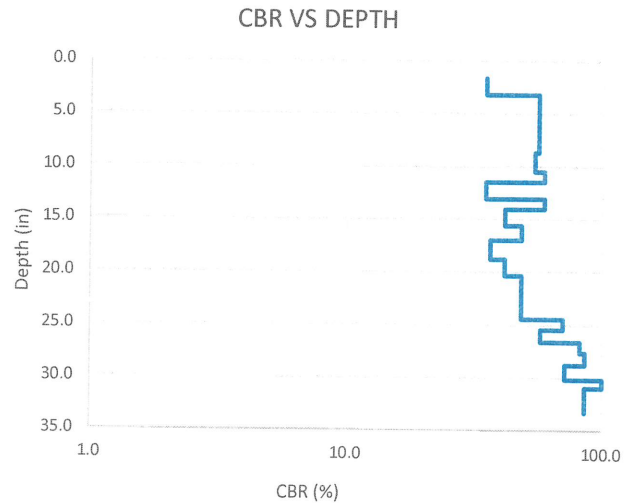
Comments: Groundwater encountered at 29 inches. Fabric at 9 inches.



Project Name Brewery Creek Development Parking Lot - Pavement Investigation
 Project Number 2022.1138
 Date 7/11/2022
 Client Wade Trim
 Boring Type Geoprobe®
 Location See BLD

Boring ID B-11
 DCP Starting Depth (in) 1.625

# of Blows	Cumulative Penetration (mm)	Hammer Type	Soil Type	CBR %
0	205	1	SP	
6	245	1	SP	34.9
8	280	1	SP	55.9
8	315	1	SP	55.9
8	350	1	SP	55.9
8	385	1	SP	55.9
10	430	1	SM	54.2
6	455	1	SM	59.0
6	495	1	SM	34.9
6	520	1	SM	59.0
7	560	1	SM	41.5
7	595	1	SM	48.1
7	640	1	SP	36.3
7	680	1	SP	41.5
7	715	1	SP	48.1
7	750	1	SP	48.1
7	785	1	SP	48.1
7	810	1	SW-SM	70.2
7	840	1	SW-SM	57.2
8	865	1	SW-SM	81.5
10	895	1	SW-SM	85.3
10	930	1	SW-SM	71.8
10	950	1	SW-SM	100.0
10	980	1	SW-SM	85.3
10	1010	1	SW-SM	85.3



From	To	Thickness	Description	Classification
0	1.625	1.625	ASPHALT LEVELING COURSE - Intact	
1.625	10	8.375	AGGREGATE BASE - Fine-to-Coarse SAND with Natural Gravel and trace Silt, brown	SP
10	17	7	Fine Silty SAND, dark brown	SM
17	25	8	Fine SAND, light brown	SP
25	50	25	Fine-to-Medium SAND with Natural Gravel and Silt, dark brown	SW-SM

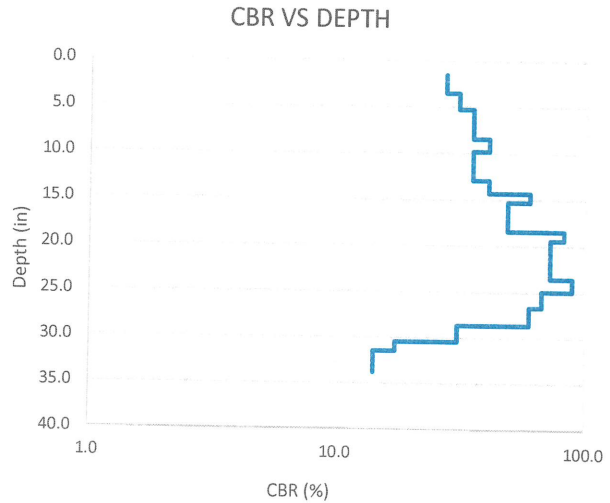
Comments: No groundwater encountered. Fabric at 10 inches.



Project Name Brewery Creek Development Parking Lot - Pavement Investigation
 Project Number 2022.1138
 Date 7/11/2022
 Client Wade Trim
 Boring Type Geoprobe®
 Location See BLD

Boring ID B-12
 DCP Starting Depth (in) 1.5

# of Blows	Cumulative Penetration (mm)	Hammer Type	Soil Type	CBR %
0	195	1	SP-SM	
6	245	1	SP-SM	27.2
6	290	1	SP-SM	30.6
6	330	1	SP-SM	34.9
6	370	1	SP	34.9
6	405	1	SP	40.5
6	445	1	SP	34.9
6	485	1	SP	34.9
6	520	1	SM	40.5
6	545	1	SM	59.0
8	585	1	SM	48.1
8	625	1	SM	48.1
8	650	1	SM	81.5
10	685	1	SM	71.8
10	720	1	SM	71.8
10	755	1	SM	71.8
12	790	1	SM	88.0
12	835	1	SM	66.4
12	885	1	SM	59.0
6	930	1	SP	30.6
2	955	1	SP	17.3
2	985	1	SP	14.1
2	1015	1	SP	14.1



From	To	Thickness	Description	Classification
0	1.5	1.5	ASPHALT LEVELING COURSE - Intact	
1.5	8	6.5	AGGREGATE BASE - Fine-to-Coarse SAND with Natural Gravel and Silt, brown	SP-SM
8	14	6	Fine-to-Coarse SAND with trace Natural Gravel, dark brown	SP
14	30	16	Fine-to-Medium Silty SAND with Natural Gravel, mottled brown-gray	SM
30	39	9	Fine-to-Medium SAND with Wood Pulp, black	SP
39	50	11	Fine-to-Coarse SAND with Wood Pulp and Natural Gravel, black	SP

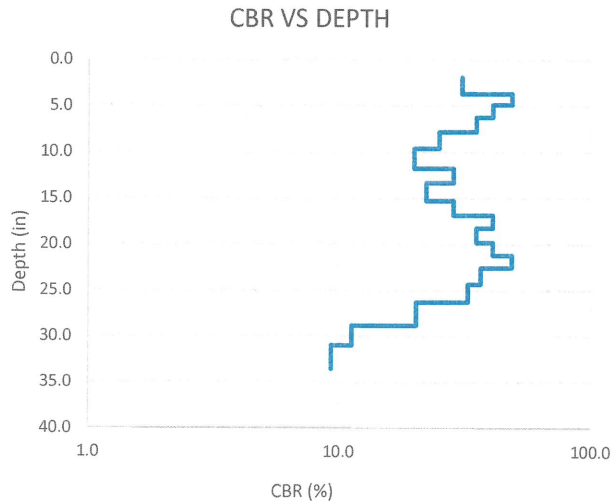
Comments: Groundwater encountered at 36 inches. Fabric at 8 inches.



Project Name Brewery Creek Development Parking Lot - Pavement Investigation
 Project Number 2022.1138
 Date 7/11/2022
 Client Wade Trim
 Boring Type Geoprobe®
 Location See BLD

Boring ID B-13
 DCP Starting Depth (in) 1.875

# of Blows	Cumulative Penetration (mm)	Hammer Type	Soil Type	CBR %
0	235	1	SP	
6	280	1	SP	30.6
6	310	1	SP	48.1
6	345	1	SP	40.5
6	385	1	SP	34.9
5	430	1	SP	24.9
5	485	1	SP	19.9
5	525	1	SP	28.4
5	575	1	SP	22.2
5	615	1	SP	28.4
6	650	1	SM	40.5
6	690	1	SM	34.9
6	725	1	SM	40.5
7	760	1	SM	48.1
7	805	1	SM	36.3
7	855	1	SP	32.3
6	920	1	SP	20.3
3	975	1	SP	11.2
3	1040	1	SP	9.3



From	To	Thickness	Description	Classification
0	1.875	1.875	ASPHALT LEVELING COURSE - Intact	
1.875	9.5	7.625	AGGREGATE BASE - Fine-to-Coarse SAND with Natural Gravel and trace Silt, brown	SP
9.5	17	7.5	Fine-to-Medium SAND with Silt, light brown	SP
17	26	9	Fine Silty SAND with Natural Gravel	SM
26	50	24	Fine SAND with Wood Pulp, black	SP

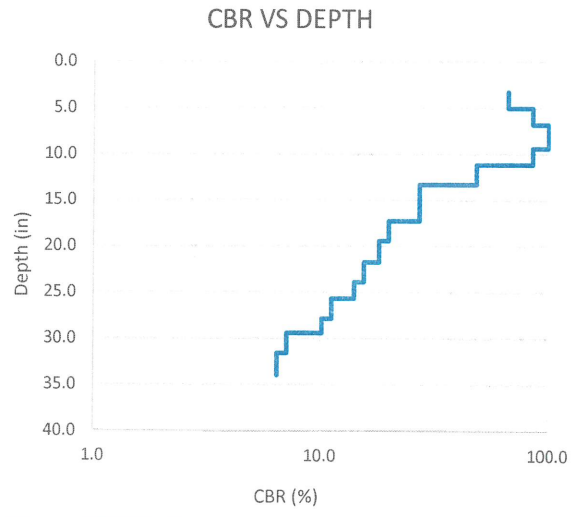
Comments: Groundwater encountered at 35 inches.



Project Name Brewery Creek Development Parking Lot - Pavement Investigation
 Project Number 2022.1138
 Date 7/11/2022
 Client Wade Trim
 Boring Type Geoprobe®
 Location See BLD

Boring ID B-14
 DCP Starting Depth (in) 3.25

# of Blows	Cumulative Penetration (mm)	Hammer Type	Soil Type	CBR %
0	255	1	SP	
12	300	1	SP	66.4
15	345	1	SP	85.3
15	375	1	SP	100.0
15	410	1	SP	100.0
15	455	1	SP	85.3
11	510	1	SP	48.1
6	560	1	SP	27.2
6	610	1	SP	27.2
5	665	1	SM	19.9
5	725	1	SM	18.1
4	780	1	SM	15.5
3	825	1	SM	14.1
3	880	1	SP	11.2
2	920	1	SP	10.2
2	975	1	SP	7.1
2	1035	1	SP	6.5



From	To	Thickness	Description	Classification
0	1.5	1.5	ASPHALT WEARING COURSE - Intact	
1.5	3.25	1.75	ASPHALT LEVELING COURSE - Intact	
3.25	11	7.75	AGGREGATE BASE - Fine-to-Coarse SAND with Natural Gravel, brown	SP
11	19	8	Fine-to-Medium SAND, light brown	SP
19	26.5	7.5	Silty SAND with trace Natural Gravel, dark brown	SM
26.5	50	23.5	Fine-to-Coarse SAND with Wood Pulp, black	SP

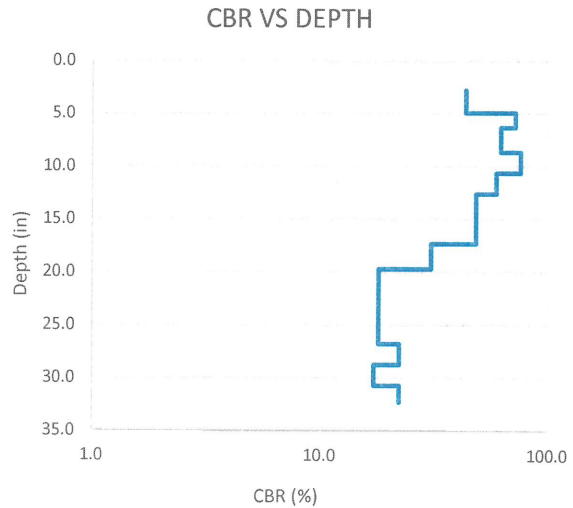
Comments: No groundwater encountered.



Project Name Brewery Creek Development Parking Lot - Pavement Investigation
 Project Number 2022.1138
 Date 7/11/2022
 Client Wade Trim
 Boring Type Geoprobe®
 Location See BLD

Boring ID B-15
 DCP Starting Depth (in) 2.75

# of Blows	Cumulative Penetration (mm)	Hammer Type	Soil Type	CBR %
0	260	1	SP	
10	315	1	SP	43.3
10	350	1	SP	71.8
15	410	1	SM	61.8
15	460	1	SM	75.8
12	510	1	SM	59.0
12	570	1	SM	48.1
12	630	1	SM	48.1
8	690	1	SP	30.6
5	750	1	SP	18.1
5	810	1	SP	18.1
5	870	1	SP	18.1
5	920	1	SP	22.2
4	970	1	SP	17.3
4	1010	1	SP	22.2



From	To	Thickness	Description	Classification
0	0.875	0.875	ASPHALT WEARING COURSE - Intact	
0.875	2.75	1.875	ASPHALT LEVELING COURSE - Intact	
2.75	8.5	5.75	AGGREGATE BASE - Fine-to-Coarse SAND with Natural Gravel and trace Silt	SP
8.5	18.5	10	Fine Silty SAND with trace Natural Gravel, dark brown	SM
18.5	50	31.5	Fine-to-Coarse SAND, brown	SP

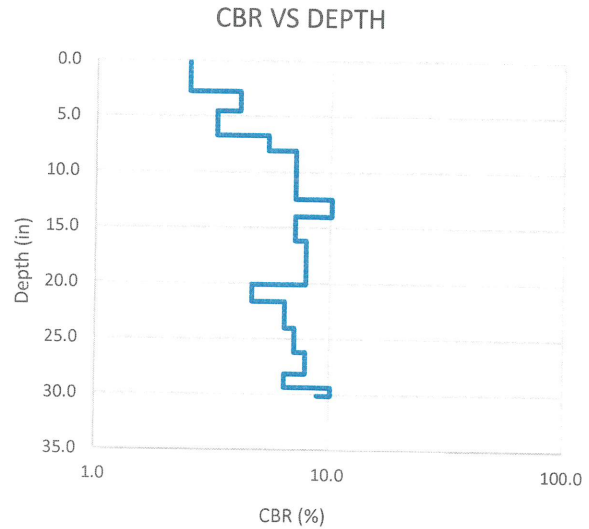
Comments: Groundwater encountered at 8.5 inches. Fabric at 13 inches.



Project Name Brewery Creek Development Parking Lot - Pavement Investigation
 Project Number 2022.1138
 Date 7/11/2022
 Client Wade Trim
 Boring Type Hand Auger
 Location See BLD

Boring ID B-16
 DCP Starting Depth (in) 0

# of Blows	Cumulative Penetration (mm)	Hammer Type	Soil Type	CBR %
0	180	1	TP	
1	250	1	TP	2.5
1	295	1	TP	4.1
1	350	1	TP	3.3
1	385	1	TP	5.4
2	440	1	TP	7.1
2	495	1	TP	7.1
2	535	1	TP	10.2
2	590	1	SP	7.1
2	640	1	SP	7.9
2	690	1	SP	7.9
1	730	1	SP	4.7
2	790	1	SP	6.5
2	845	1	SP	7.1
2	895	1	SP	7.9
1	925	1	SP	6.5
1	945	1	SP	10.2
2	990	1	SP	8.9
1	1000	1	SP	22.2



NO CORE OBTAINED

From	To	Thickness	Description	Classification
0	16	16	TOPSOIL - Fine-to-Medium SAND with Roots and Wood Pulp	TP
16	36	20	Fine-to-Medium SAND with Natural Gravel	SP

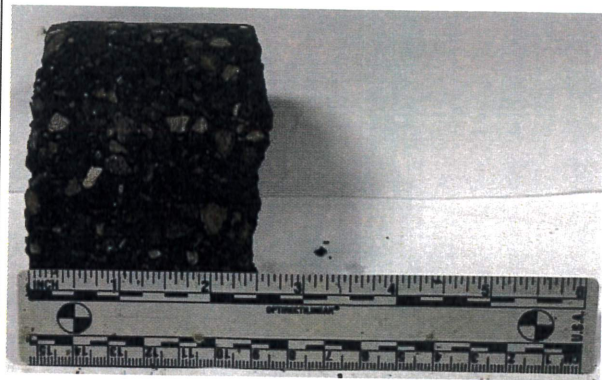
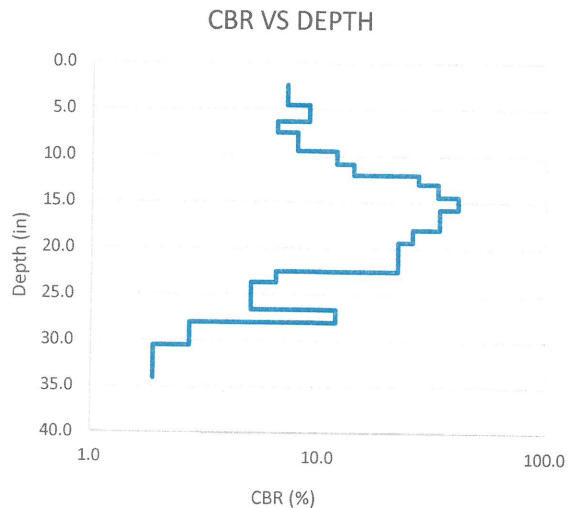
Comments: Groundwater encountered at 24 inches.



Project Name Brewery Creek Development Parking Lot - Pavement Investigation
 Project Number 2022.1138
 Date 7/11/2022
 Client Wade Trim
 Boring Type Geoprobe®
 Location See BLD

Boring ID B-17
 DCP Starting Depth (in) 2.375

# of Blows	Cumulative Penetration (mm)	Hammer Type	Soil Type	CBR %
0	235	1	SP-SM	
2	290	1	SP-SM	7.1
2	335	1	SP-SM	8.9
1	365	1	SP-SM	6.5
2	415	1	SP-SM	7.9
2	450	1	SM	11.8
2	480	1	SM	14.1
3	505	1	SM	27.2
5	540	1	SM	33.0
6	575	1	SM	40.5
8	630	1	SP	33.7
4	665	1	SP	25.7
8	745	1	SP	22.2
1	775	1	SP	6.5
2	850	1	SP	5.0
2	885	1	SP	11.8
1	950	1	SP	2.7
1	1040	1	SP	1.9



From	To	Thickness	Description	Classification
0	2.375	2.375	ASPHALT WEARING/LEVELING COURSE - Intact	
2.375	7	4.625	AGGREGATE BASE - Fine-to-Coarse SAND with Natural Gravel and Silt, gray	SP-SM
7	10.5	3.5	Fine-to-Medium SAND with Silt, light brown	SP-SM
10.5	17	6.5	Fine Silty SAND with trace Natural Gravel, dark brown	SM
17	50	33	Fine SAND with Wood Pulp, black	SP

Comments: Groundwater encountered at 35 inches. Lense of Gravel at 17 inches.



Organic Content (ASTM D2974)

Project Name	Brewery Creek Development Parking Lot - Pavement Investigation
Job Number	2022.1138
Client	Wade Trim
Date	7/21/2022

Borehole/Pit No.				
Sample ID	B-7	B-14	B-5	B-12
Depth to Top	E	D	D	E
Sample Type	2	2.25	3	3.25
	Geoprobe	Geoprobe	Geoprobe	Geoprobe

Material Description				
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Container Weight	g	314.2	328.6	392.7	377.4
Weight of Wet Soil & Container	g	520.4	608.6	500.2	625.7
Weight of Dry Soil & Container	g	354.4	554.4	425.8	567.2
Weight of Burnt Soil & Container	g	322.3	541.3	404.4	550.5
Weight of Wet Soil	g	206.2	280.0	107.5	248.3
Weight of Dry Soil	g	40.2	225.8	33.1	189.8
Weight of Burnt Soil	g	8.1	212.7	11.7	173.1
Percent Moisture		412.9%	24.0%	224.8%	30.8%
Organic Content		79.9%	5.8%	64.7%	8.8%

Remarks				
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Borehole/Pit No.				
Sample ID				
Depth to Top	ft			
Sample Type				

Material Description				
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Container Weight	g				
Weight of Wet Soil & Container	g				
Weight of Dry Soil & Container	g				
Weight of Burnt Soil & Container	g				
Weight of Wet Soil	g				
Weight of Dry Soil	g				
Weight of Burnt Soil	g				
Percent Moisture					
Organic Content					

Remarks				
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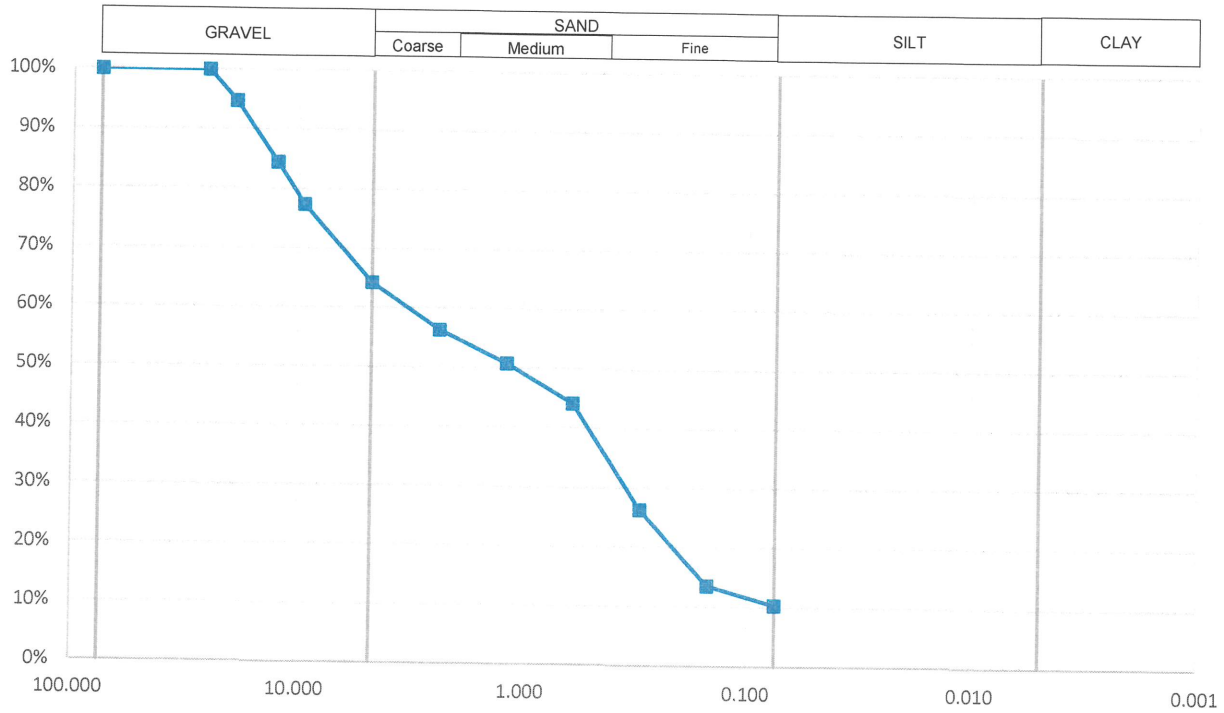
Tested	Checked	Approved	
	mvanweelden	mvanweelden	



Particle Size Distribution Report

Sample Location B-3,12
 Sample Depth (ft) Aggregate Base
 Sample ID MSK_202207150

Project Name Brewery Creek Development Parking
 Lot - Pavement Investigation
 Project Number 2022.1138
 Client Wade Trim
 Date 7/21/2022



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0%	5.3%	30.5%	9.6%	20.9%	23.4%	0.0%	0.0%
D85	D60	D50	D30	D15	D10	Loss By Wash	
12.8695	3.4682	1.1096	0.3626	0.1663	0.0724	10.2%	

Sieve	
Particle Size (mm)	% Passing
75.000	100%
25.000	100%
19.000	95%
12.500	84%
9.500	77%
4.750	64%
2.360	56%
1.180	51%
0.600	44%
0.300	26%
0.150	14%
0.075	10.4%

Hydrometer	
Particle Size (mm)	% Passing

Material Description
Fine-to-Coarse SAND with Gravel and Silt (SP-SM)

Remarks
Material meets MDOT 23A dense-graded aggregate gradation requirements

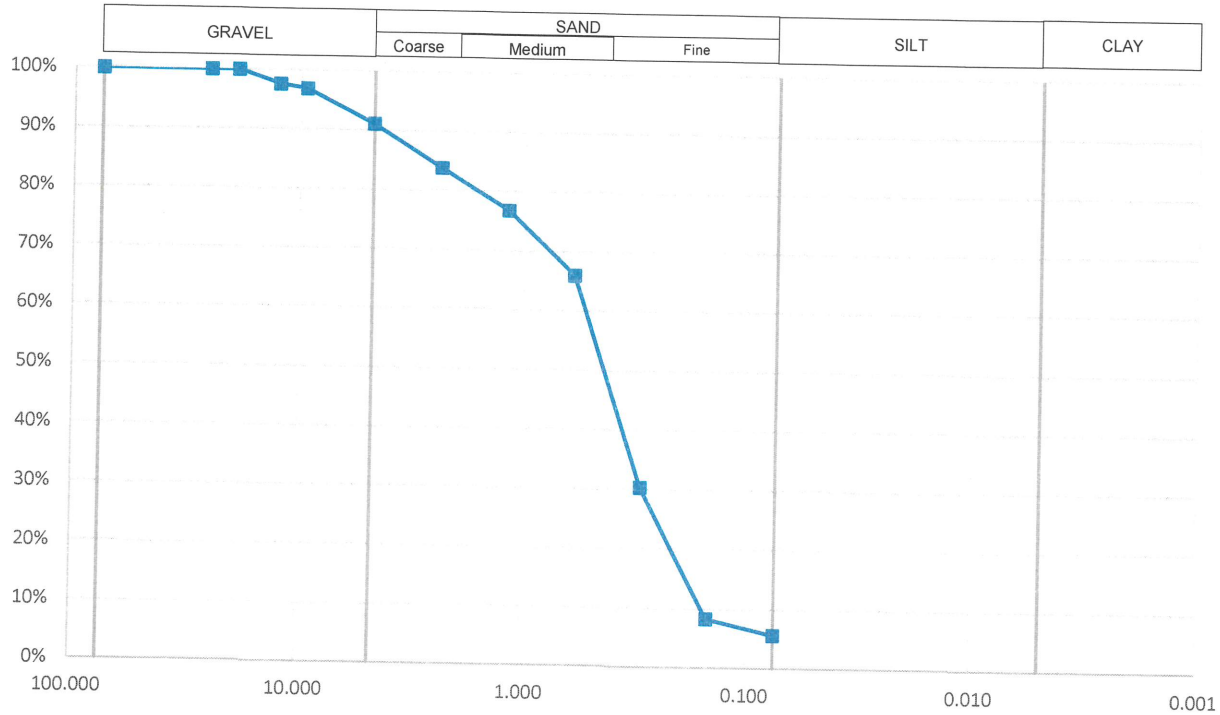
Technician	
Checked	mvanweelden
Approved	mvanweelden



Particle Size Distribution Report

Sample Location B-1,13,17
 Sample Depth (ft) Sand Subbase
 Sample ID MSK_2022071512

Project Name Brewery Creek Development Parking
 Lot - Pavement Investigation
 Project Number 2022.1138
 Client Wade Trim
 Date 7/21/2022



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0%	0.0%	8.9%	9.5%	36.5%	39.5%	0.0%	0.0%
D85	D60	D50	D30	D15	D10	Loss By Wash	
2.7507	0.5502	0.4660	0.2981	0.1957	0.1615	5.6%	

Sieve	
Particle Size (mm)	% Passing
75.000	100%
25.000	100%
19.000	100%
12.500	98%
9.500	97%
4.750	91%
2.360	84%
1.180	77%
0.600	66%
0.300	30%
0.150	8%
0.075	5.6%

Hydrometer	
Particle Size (mm)	% Passing

Material Description
Fine-to-Medium SAND with Silt (SP)

Remarks
Material meets MDOT Class II granular material gradation requirements

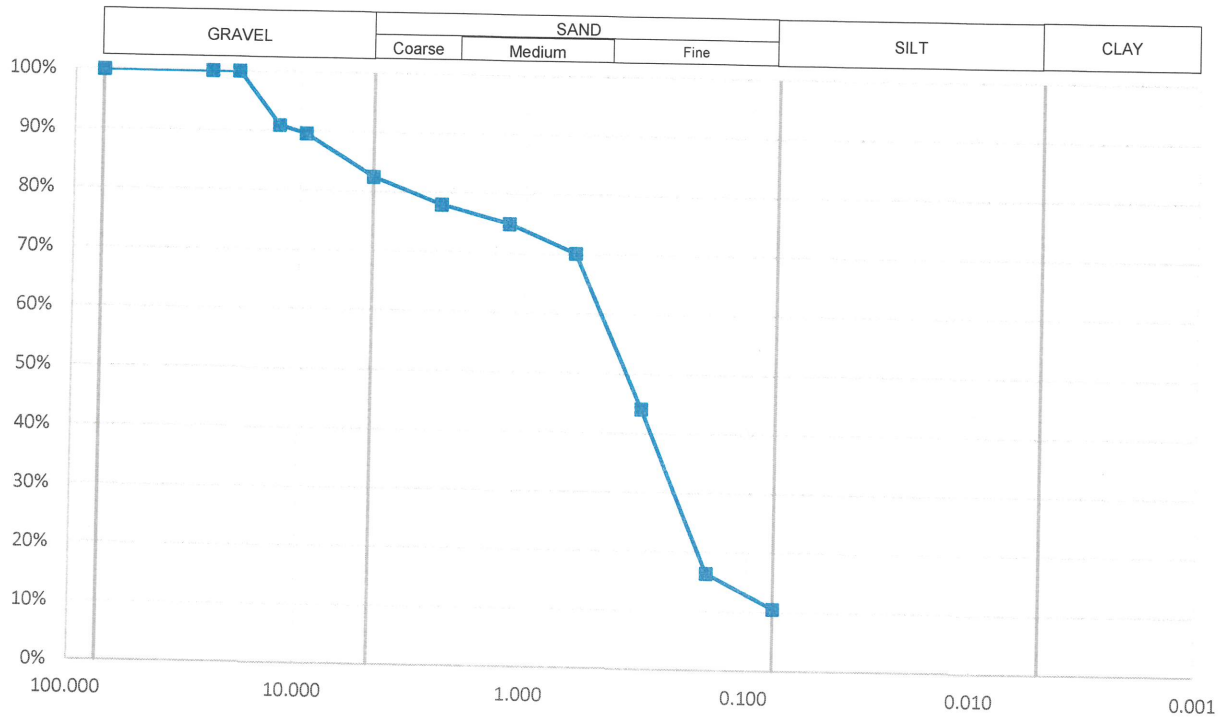
Technician	
Checked	mvanweelden
Approved	mvanweelden



Particle Size Distribution Report

Sample Location B-2,5,11
 Sample Depth (ft) Sand Subbase
 Sample ID MSK_2022071511

Project Name Brewery Creek Development Parking
 Lot - Pavement Investigation
 Project Number 2022.1138
 Client Wade Trim
 Date 7/21/2022



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0%	0.0%	17.6%	5.3%	22.2%	44.4%	0.0%	0.0%
D85	D60	D50	D30	D15	D10	Loss By Wash	
6.4783	0.4841	0.3690	0.2239	0.1324	0.0718	10.2%	

Sieve	
Particle Size (mm)	% Passing
75.000	100%
25.000	100%
19.000	100%
12.500	91%
9.500	90%
4.750	82%
2.360	78%
1.180	75%
0.600	70%
0.300	44%
0.150	16%
0.075	10.5%

Hydrometer	
Particle Size (mm)	% Passing

Material Description
 Fine-to-Medium SAND with Gravel and Silt (SW-SM)

Remarks
 Material meets MDOT Class III granular material gradation requirements

Technician	
Checked	mvanweelden
Approved	mvanweelden



**Determination of Water Content (Moisture) of Soil and Rock by Mass
(ASTM D2216)**

Project Name	Brewery Creek Development Parking Lot - Pavement Investigation
Project Number	2022.1138
Client	Wade Trim
Date	7/21/2022

Borehole/Pit No.		B-2	B-12	B-10	B-15	B-7
Sample ID		B	C	C	C	E
Depth to Top	ft	0.75	1.2	1.25	1.75	2
Sample Type		Geoprobe	Geoprobe	Geoprobe	Geoprobe	Geoprobe
Mass of Container	g	10.30	10.50	10.60	10.50	314.20
Mass of Wet Soil and Container	g	70.30	70.50	70.60	70.50	520.40
Accepted Dry mass + container	g	64.90	66.70	64.90	64.20	354.40
Water Content	%	9.9	6.8	10.5	11.7	412.9
Remarks						

Borehole/Pit No.		B-14	B-3	B-12	B-5	B-12
Sample ID		D	C	D	D	E
Depth to Top	ft	2.25	2.5	2.5	3	3.25
Sample Type		Geoprobe	Geoprobe	Geoprobe	Geoprobe	Geoprobe
Mass of Container	g	328.60	10.50	10.60	392.70	377.40
Mass of Wet Soil and Container	g	608.60	70.50	70.60	500.20	625.70
Accepted Dry mass + container	g	554.40	62.90	53.30	425.80	567.20
Water Content	%	24.0	14.5	40.5	224.8	30.8
Remarks						

Borehole/Pit No.						
Sample ID						
Depth to Top	ft					
Sample Type						
Mass of Container	g					
Mass of Wet Soil and Container	g					
Accepted Dry mass + container	g					
Water Content	%					
Remarks						

Tested	Checked	Approved
	mvanweelden	mvanweelden

TO: Elmwood Township Board
FROM: Connie Preston, Clerk
SUBJECT: Special Assessment District Shortfalls
DATE: September 7, 2022

Resolution 11 of 2022 is to satisfy State of Michigan requirements that we have a plan to eliminate the deficit in our 2021 audit under the combined Special Assessment Districts. The Board has already voted to transfer the money from our General Fund to the Timberlee Road Construction Special Assessment Districts to eliminate that debt. The Board must still decide how to pay off the Greilickville Water Bonds. The bond estimated payoff amount for October is \$125,780 for a savings of about \$7700 over continuing to make the normal payments due in March of 2023 and 2024. The outstanding revenue to be billed to the residents only totals \$16,647. The Board can use the General Fund to make the payments or use the Greilickville operating fund to help with the payments. The current cash balance of the Greilickville Water operating fund is \$156,740. The end of year projected balance is \$158,000. Once the Board decides which fund to use and whether to pay off early, I will bring budget amendments to the Board for approval.

CHARTER TOWNSHIP OF ELMWOOD
RESOLUTION #11 OF 2022
DEFICIT ELIMINATION PLAN

At a regular meeting of the Board of the Charter Township of Elmwood, held in the Township Hall located at 10090 E. Lincoln Rd. Traverse City Michigan, on the 12th day of September, 2022 there were

PRESENT:

ABSENT:

The following resolution was offered by _____ and seconded by _____.

WHEREAS, The Charter Township of Elmwood's Special Assessment Fund had a deficit fund balance on December 31, 2021 and,

WHEREAS, 1971 PA 140 requires that a Deficit Elimination Plan be formulated by the local unit of government and filed with the Michigan Department of Treasury;

NOW THEREFORE BE IT RESOLVED, that the Charter Township of Elmwood's legislative body adopts the following as the Charter Township of Elmwood's Special Assessment Fund Deficit Elimination Plan:

Deficit as of December 31, 2021	\$ (19047.00)
Revenues	
Special Assessment Payments	\$8798.00
General Fund	
Operating Transfer*	\$75094.00
Expenses (Bond Payment)	\$64,845.00
Balance	\$0.00

*Unrestricted fund balance of the general fund as of 12-31-2021 is \$1,817,335.00

BE IT FURTHER RESOLVED that the Charter Township of Elmwood's Clerk submits the Deficit Elimination Plan to the Michigan Department of Treasury for certification

Upon a roll call vote, the following voted:

YES:

NO:

RESOLUTION DECLARED ADOPTED

Jeff Shaw, Supervisor

I, the undersigned, the Clerk of the Charter Township of Elmwood, Leelanau County, Michigan, do hereby certify that the foregoing is a true and complete copy of certain proceedings taken by the Township Board of said municipality at its regular meeting held on September 12, 2022 relative to adoption of the resolution therein set forth; that said meeting was conducted and public notice of said meeting was given pursuant to and in full compliance with the Open Meetings Act, being Act 267, Public Acts of Michigan, 1976, and that the minutes of said meeting were kept and will be or have been made available as required by said Act.

Dated: September 13, 2022

Connie Preston, Clerk