STATE OF MICHIGAN
CENTRAL PROCUREMENT SERVICES
Department of Technology, Management, and Budget
525 W. ALLEGAN ST., LANSING, MICHIGAN 48913
P.O. BOX 30026 LANSING, MICHIGAN 48909

CONTRACT CHANGE NOTICE

Change Notice Number **2**

to

Contract Number **071B7700167**

CONTRACTOR	
	ALTEC INDUSTRIES INC
	2658 Desmond
	Waterford, MI 48329
	Andy Johnson
	248-807-9127
	andy.johnson@altec.com
	CV0061662

STATE			
	Program Manager	Scott Poyer	SW
		517-284-6448	
		poyers@Michigan.gov	
	Contract Administrator	Yvon Dufour	DTMB
		(517) 249-0455	
		dufoury@michigan.gov	

CONTRACT SUMMARY

AERIAL TOWERS FOR PURCHASE

INITIAL EFFECTIVE DATE	INITIAL EXPIRATION DATE	INITIAL AVAILABLE OPTIONS	EXPIRATION DATE BEFORE
July 1, 2017	June 30, 2022	2 - 1 Year	June 30, 2022

PAYMENT TERMS	DELIVERY TIMEFRAME

ALTERNATE PAYMENT OPTIONS			EXTENDED PURCHASING	
☐ P-Card	☐ PRC	☐ Other	☒ Yes	☐ No

MINIMUM DELIVERY REQUIREMENTS

DESCRIPTION OF CHANGE NOTICE

OPTION	LENGTH OF OPTION	EXTENSION	LENGTH OF EXTENSION	REVISED EXP. DATE
☐		☐		June 30, 2022

CURRENT VALUE	VALUE OF CHANGE NOTICE	ESTIMATED AGGREGATE CONTRACT VALUE
$2,500,000.00	$2,000,000.00	$4,500,000.00

DESCRIPTION

Effective 2/18/2020, this contract is hereby increased by $2,000,000. All other terms, conditions, specifications, and pricing remain the same. Per agency request, DTMB Procurement approval, and State Administrative Board approval on 2/11/2020.

Program Managers
for
Multi-Agency and Statewide Contracts

AGENCY	NAME	PHONE	EMAIL
MDOT	Scott Poyer	517-999-9999	PoyerS@michigan.gov

STATE OF MICHIGAN
ENTERPRISE PROCUREMENT

Department of Technology, Management, and Budget

525 W. ALLEGAN ST., LANSING, MICHIGAN 48913
P.O. BOX 30026 LANSING, MICHIGAN 48909

CONTRACT CHANGE NOTICE

Change Notice Number **1**

to

Contract Number **071B7700167**

CONTRACTOR	
	Altec Industries, Inc.
	2658 Desmond
	Waterford, MI 48329
	Andy Johnson
	248-807-9127
	andy.johnson@altec.com
	*******2926

STATE			
	Program Manager	Scott Poyer	SW
		517-284-6448	
		poyers@Michigan.gov	
	Contract Administrator	Yvon Dufour	DTMB
		(517) 284-6996	
		dufoury@michigan.gov	

CONTRACT SUMMARY			
AERIAL TOWERS FOR PURCHASE			
INITIAL EFFECTIVE DATE	**INITIAL EXPIRATION DATE**	**INITIAL AVAILABLE OPTIONS**	**EXPIRATION DATE BEFORE CHANGE(S) NOTED BELOW**
July 1, 2017	June 30, 2022	2 - 1 Year	June 30, 2022
PAYMENT TERMS		**DELIVERY TIMEFRAME**	
		N/A	
ALTERNATE PAYMENT OPTIONS			**EXTENDED PURCHASING**
☐ P-Card	☐ Direct Voucher (DV)	☐ Other	☒ Yes ☐ No
MINIMUM DELIVERY REQUIREMENTS			
N/A			

DESCRIPTION OF CHANGE NOTICE				
OPTION	**LENGTH OF OPTION**	**EXTENSION**	**LENGTH OF EXTENSION**	**REVISED EXP. DATE**
☐		☐		June 30, 2022
CURRENT VALUE	**VALUE OF CHANGE NOTICE**	**ESTIMATED AGGREGATE CONTRACT VALUE**		
$2,500,000.00	$0.00	$2,500,000.00		

DESCRIPTION

Effective August 4, 2017, the state wishes to clarify existing language of contract 071B7700167 with Schedule C Pricing. All other terms, conditions, specifications and pricing remain the same. Per agency request and DTMB Procurement approval.

CONTRACT # 071B7700167 - **AWARDED** SPECIFICATIONS FOR PURCHASE					
Spec #	EQUIPMENT MAKE & MODEL:	EQUIPMENT CATEGORY	Quoted Price	Hourly rate for training (per Schedule A, Statement of Work, section A.,3.3)	DELIVERY All Michigan Locations
1	Altec DM-50	Derrick	$145,545.00	$157.00	$750
2	Altec AT-30G	Aerial	$102,004.70	$157.00	$750
3	Altec AT-41M	Aerial	$105,523.50	$157.00	$750
NON-AWARDED SPECIFICATIONS FOR PURCHASE					
4	Altec ALB-42	Aerial	$169,249.00	$157.00	$750
5	Altec AT-41S	Aerial	$112,034.00	$157.00	$750
6	Altec TA-50	Aerial	$126,932.00	$157.00	$750

Catalog Pricing For PURCHASE				DELIVERY
Item #	EQUIPMENT MAKE & MODEL:	EQUIPMENT CATEGORY	Discounted Pricing (includes all set-up fees)	All Michigan Locations
1	AT-200	Aerial	$12,306	$750
2	AT235	Aerial	$17,478	$750
3	AT237	Aerial	$11,410	$750
4	AT30G	Aerial	$16,682	$750
5	AT35G	Aerial	$23,265	$750
6	AT37G	Aerial	$27,081	$750
7	AT41	Aerial	$40,531	$750
8	AT48	Aerial	$45,976	$750
9	TA50	Aerial	$55,420	$750
10	TA55	Aerial	$60,826	$750
11	TA60	Aerial	$63,855	$750
12	AA50	Aerial	$44,352	$750
13	AA55	Aerial	$47,669	$750
14	AA60	Aerial	$54,054	$750
15	AA67	Aerial	$56,994	$750
16	AA67E100	Aerial	$142,100	$750
17	AN50	Aerial	$42,362	$750
18	AN55	Aerial	$46,679	$750
19	AN60	Aerial	$51,901	$750
20	AN67	Aerial	$54,054	$750
21	AN67E100	Aerial	$140,018	$750
22	AM50	Aerial	$43,837	$750
23	AM55	Aerial	$47,461	$750
24	AM60	Aerial	$50,738	$750
25	LRV-56	Aerial	$34,516	$750
26	LRV-58	Aerial	$38,857	$750
27	LRV-60	Aerial	$40,327	$750
28	LRV-60-E70	Aerial	$58,457	$750
29	ALB37	Aerial	$39,406	$750
30	ALB42	Aerial	$43,306	$750
31	ALB50	Aerial	$45,178	$750
32	A-70	Aerial	$72,275	$750
33	A-72	Aerial	$79,811	$750
34	A-77	Aerial	$88,308	$750
35	A-82	Aerial	$97,853	$750
36	TDA-58	Aerial	$189,520	$750
37	DL42	Derrick	$46,114	$750
38	DL45	Derrick	$49,787	$750
39	DM45	Derrick	$50,817	$750
40	DM47	Derrick	$53,650	$750
41	DM50	Derrick	$56,975	$750
42	DC45	Derrick	$56,975	$750
43	DC47	Derrick	$45,372	$750
44	DH45	Derrick	$68,375	$750
45	DH48	Derrick	$71,001	$750
46	DH50	Derrick	$73,598	$750
47	D2045	Derrick	$51,628	$750
48	D2050	Derrick	$59,898	$750
49	D2055	Derrick	$63,259	$750
50	D3050	Derrick	$67,948	$750
51	D3055	Derrick	$70,736	$750
52	D3060	Derrick	$72,638	$750
53	D4050	Derrick	$77,528	$750
54	D4055	Derrick	$80,850	$750
55	D4060	Derrick	$82,173	$750
56	D4065	Derrick	$84,182	$750
57	DT65	Derrick	$98,392	$750
58	DT80	Derrick	$133,172	$750
59	DR42	Derrick	$245,790	$750
60	DB37	Derrick	$128,500	$750
61	Effer 175	Knuckleboom Crane	$78,210	$750
62	Effer 365	Knuckleboom Crane	$174,686	$750
63	Effer 505	Knuckleboom Crane	$198,446	$750
64	AC18	BoomTruck Crane	$76,803	$750
65	AC23	BoomTruck Crane	$104,850	$750
66	AC26	BoomTruck Crane	$117,912	$750
67	AC30	BoomTruck Crane	$150,920	$750
68	AC38	BoomTruck Crane	$167,002	$750
69	AC45	BoomTruck Crane	$216,041	$750
70	DRM12	Chipper	$29,000	$750

*** Pricing includes base equipment only. Does not include installation, options, or chassis. Items for sale by this Contractor that are not included in this catalog may be purchased, such as options and installation. However, those items must be quoted amongst other State of Michigan "Aerial Tower" and/or "Equipment Upfitting" contract holders.**

CONTRACT # 071B7700167 - AWARDED SPECIFICATIONS FOR RENTAL							
							DELIVERY
Spec #	EQUIPMENT MAKE & MODEL:	EQUIPMENT CATEGORY	Daily Rental	Weekly Rental	Monthly Rental	Hourly rate for training (per Schedule A, Statement of Work, section A.,3.3)	All Michigan Locations
1	Altec DM-50	Derrick	$1,000.00	$1,900.00	$3,900.00	$157.00	$750
2	Altec AT-30G	Aerial	$800.00	$1,250.00	$2,700.00	$157.00	$750
3	Altec AT-41M	Aerial	$900.00	$1,500.00	$3,000.00	$157.00	$750
5	Altec AT-41S	Aerial	$900.00	$1,500.00	$3,000.00	$157.00	$750
6	Altec TA-50	Aerial	$900.00	$1,500.00	$3,200.00	$157.00	$750

Catalog Pricing For RENTAL						DELIVERY
Item #	EQUIPMENT MAKE & MODEL:	EQUIPMENT CATEGORY	Discounted Daily Rental	Discounted Weekly Rental	Discounted Monthly Rental	All Michigan Locations
1	AT200A	Aerial	$800	$1,000	$1,850	$750
2	AT37G	Aerial	$800	$1,250	$2,700	$750
3	AT41-S/M/P	Aerial	$900	$1,500	$3,000	$750
4	TA45	Aerial	$800	$1,100	$2,900	$750
5	TA50	Aerial	$900	$1,500	$3,200	$750
6	TA55	Aerial	$1,000	$1,800	$4,500	$750
7	AA55	Aerial	$1,000	$1,900	$3,900	$750
8	AM55	Aerial	$1,000	$1,900	$3,900	$750
9	LR7-56	Aerial	$1,000	$2,000	$3,700	$750
10	DM47-TR	Derrick	$1,000	$1,900	$3,900	$750
11	AC18-70 CRANE	Boomtruck Crane	$1,000	$1,800	$3,795	$750
12	AC26-103	Boomtruck Crane	$1,250	$2,800	$5,600	$750
13	AC38-127	Boomtruck Crane	$1,800	$3,500	$8,000	$750

STATE OF MICHIGAN
ENTERPRISE PROCUREMENT

Department of Technology, Management & Budget

525 W. Allegan Street Lansing, MI 48933
P.O. Box 30026 Lansing, MI 48909

NOTICE OF CONTRACT

NOTICE OF CONTRACT NO. **071B7700167**

between

THE STATE OF MICHIGAN

and

CONTRACTOR	
	Altec Industries, Inc.
	2658 Desmond
	Waterford, MI 48329
	Andy Johnson
	248-807-9127
	Andy.johnson@altec.com
	*****2926

STATE			
	Program Manager	Scott Poyer	MDOT
		517-284-6448	
		poyers@michigan.gov	
	Contract Administrator	Yvon Dufour	DTMB
		517-284-6996	
		dufoury@michigan.gov	

CONTRACT SUMMARY			
DESCRIPTION: Aerial Towers for PURCHASE.			
INITIAL EFFECTIVE DATE	**INITIAL EXPIRATION DATE**	**INITIAL AVAILABLE OPTIONS**	**EXPIRATION DATE BEFORE CHANGE(S) NOTED BELOW**
7/1/2017	6/30/2022	2, one year	
PAYMENT TERMS		**DELIVERY TIMEFRAME**	
45 Days		180 days	
ALTERNATE PAYMENT OPTIONS			**EXTENDED PURCHASING**
☐ P-card ☐ Direct Voucher (DV) ☐ Other			☒ Yes ☐ No
MINIMUM DELIVERY REQUIREMENTS			
MISCELLANEOUS INFORMATION			
ESTIMATED CONTRACT VALUE AT TIME OF EXECUTION			**$2,500,000.00**

FOR THE CONTRACTOR:

Altec Industries, Inc.
Company Name

Authorized Agent Signature

Authorized Agent (Print or Type)

Date

FOR THE STATE:

Signature

Name & Title

DTMB Procurement
Agency

Date

STATE OF MICHIGAN

STANDARD CONTRACT TERMS

This STANDARD CONTRACT ("**Contract**") is agreed to between the State of Michigan (the "**State**") and Altec Industries, Inc. ("**Contractor**"), an Alabama Corporation. This Contract is effective on July 1, 2017 ("**Effective Date**"), and unless terminated, expires on June 30, 2021.

This Contract may be renewed for up to two (2) additional one (1) year period(s). Renewal is at the sole discretion of the State and will automatically extend the Term of this Contract. The State will document its exercise of renewal options via Contract Change Notice.

The parties agree as follows:

1. **Duties of Contractor.** Contractor must perform the services and provide the deliverables described in **Schedule A – Statement of Work** (the "**Contract Activities**"). An obligation to provide delivery of any commodity is considered a service and is a Contract Activity.

   Contractor must furnish all labor, equipment, materials, and supplies necessary for the performance of the Contract Activities, and meet operational standards, unless otherwise specified in Schedule A.

   Contractor must: (a) perform the Contract Activities in a timely, professional, safe, and workmanlike manner consistent with standards in the trade, profession, or industry; (b) meet or exceed the performance and operational standards, and specifications of the Contract; (c) provide all Contract Activities in good quality, with no material defects; (d) not interfere with the State's operations; (e) obtain and maintain all necessary licenses, permits or other authorizations necessary for the performance of the Contract; (f) cooperate with the State, including the State's quality assurance personnel, and any third party to achieve the objectives of the Contract; (g) return to the State any State-furnished equipment or other resources in the same condition as when provided when no longer required for the Contract; (h) not make any media releases without prior written authorization from the State; (i) assign to the State any claims resulting from state or federal antitrust violations to the extent that those violations concern materials or services supplied by third parties toward fulfillment of the Contract; (j) comply with all State physical and IT security policies and standards which will be made available upon request; and (k) provide the State priority in performance of the Contract except as mandated by federal disaster response requirements. Any breach under this paragraph is considered a material breach.

   Contractor must also be clearly identifiable while on State property by wearing identification issued by the State, and clearly identify themselves whenever making contact with the State.

2. **Notices.** All notices and other communications required or permitted under this Contract must be in writing and will be considered given and received: (a) when verified by written receipt if sent by courier; (b) when actually received if sent by mail without verification of receipt; or (c) when verified by automated receipt or electronic logs if sent by facsimile or email.

If to State:	If to Contractor:
Yvon Dufour *525 W. Allegan,* *Constitution Hall, 1st Floor NE* *Lansing, MI 48933* *dufoury@michigan.gov* *(517) 284-6996*	Andy Johnson – Account Manager Altec Industries, Inc. 2658 Desmond, Waterford, Mi. 48329 248-807-9127 Andy.johnson@altec.com

3. **Contract Administrator.** The Contract Administrator for each party is the only person authorized to modify any terms of this Contract, and approve and execute any change under this Contract (each a "**Contract Administrator**"):

State:	Contractor:
Yvon Dufour *525 W. Allegan,* *Constitution Hall, 1st Floor NE* *Lansing, MI 48933* *dufoury@michigan.gov* *(517) 284-6996*	Andy Johnson – Account Manager Altec Industries, Inc. 2658 Desmond, Waterford, Mi. 48329 248-807-9127 Andy.johnson@altec.com

4. **Program Manager.** The Program Manager for each party will monitor and coordinate the day-to-day activities of the Contract (each a "**Program Manager**"):

State:	Contractor:
Scott Poyer *poyers@michigan.gov* *(517) 284-6448*	Andy Johnson – Account Manager Altec Industries, Inc. 2658 Desmond, Waterford, Mi. 48329 248-807-9127 Andy.johnson@altec.com

5. **Performance Guarantee**. Contractor must at all times have financial resources sufficient, in the opinion of the State, to ensure performance of the Contract and must provide proof upon request. The State may require a performance bond (as specified in Schedule A) if, in the opinion of the State, it will ensure performance of the Contract.

6. **Insurance Requirements.** Contractor must maintain the insurances identified below and is responsible for all deductibles. All required insurance must: (a) protect the State from claims that may arise out of, are alleged to arise out of, or result from Contractor's or a subcontractor's performance; (b) be primary and non-contributing to any comparable liability insurance (including self-insurance) carried by the State; and (c) be provided by a company with an A.M. Best rating of "A" or better, and a financial size of VII or better.

Required Limits	Additional Requirements
Commercial General Liability Insurance	
Minimal Limits: $1,000,000 Each Occurrence Limit $1,000,000 Personal & Advertising Injury Limit $2,000,000 General Aggregate Limit $2,000,000 Products/Completed Operations Deductible Maximum: $50,000 Each Occurrence	Contractor must have their policy endorsed to add "the State of Michigan, its departments, divisions, agencies, offices, commissions, officers, employees, and agents" as additional insureds using endorsement CG 20 10 11 85, or both CG 2010 07 04 and CG 2037 07 0.
Umbrella or Excess Liability Insurance	
Minimal Limits: $5,000,000 General Aggregate	Contractor must have their policy endorsed to add "the State of Michigan, its departments, divisions, agencies, offices, commissions, officers, employees, and agents" as additional insureds.
Automobile Liability Insurance	
Minimal Limits: $1,000,000 Per Occurrence	Contractor must have their policy: (1) endorsed to add "the State of Michigan, its departments, divisions, agencies, offices,

	commissions, officers, employees, and agents" as additional insureds; and (2) include Hired and Non-Owned Automobile coverage.
Workers' Compensation Insurance	
Minimal Limits: Coverage according to applicable laws governing work activities.	Waiver of subrogation, except where waiver is prohibited by law.
Employers Liability Insurance	
Minimal Limits: $500,000 Each Accident $500,000 Each Employee by Disease $500,000 Aggregate Disease.	

If any of the required policies provide **claims-made** coverage, the Contractor must: (a) provide coverage with a retroactive date before the effective date of the contract or the beginning of Contract Activities; (b) maintain coverage and provide evidence of coverage for at least three (3) years after completion of the Contract Activities; and (c) if coverage is canceled or not renewed, and not replaced with another claims-made policy form with a retroactive date prior to the contract effective date, Contractor must purchase extended reporting coverage for a minimum of three (3) years after completion of work.

Contractor must: (a) provide insurance certificates to the Contract Administrator, containing the agreement or purchase order number, at Contract formation and within 20 calendar days of the expiration date of the applicable policies; (b) require that subcontractors maintain the required insurances contained in this Section; (c) notify the Contract Administrator within 5 business days if any insurance is cancelled; and (d) waive all rights against the State for damages covered by insurance. Failure to maintain the required insurance does not limit this waiver.

This Section is not intended to and is not be construed in any manner as waiving, restricting or limiting the liability of either party for any obligations under this Contract (including any provisions hereof requiring Contractor to indemnify, defend and hold harmless the State).

7. **Administrative Fee and Reporting.** Contractor must pay an administrative fee of 1% on all payments made to Contractor under the Contract including transactions with the State (including its departments, divisions, agencies, offices, and commissions), MiDEAL members, and other states (including governmental subdivisions and authorized entities). Administrative fee payments must be made by check payable to the State of Michigan and mailed to:

Department of Technology, Management and Budget
Cashiering
P.O. Box 30681
Lansing, MI 48909

Contractor must submit an itemized purchasing activity report, which includes at a minimum, the name of the purchasing entity and the total dollar volume in sales. Reports should be mailed to DTMB-Procurement.

The administrative fee and purchasing activity report are due within 30 calendar days from the last day of each calendar quarter.

8. **Extended Purchasing Program.** This contract is extended to MiDEAL members. MiDEAL members include local units of government, school districts, universities, community colleges, and nonprofit hospitals. A current list of MiDEAL members is available at www.michigan.gov/mideal. Upon written agreement between the State and Contractor, this contract may also be extended to: (a) State of Michigan employees and (b) other states (including governmental subdivisions and authorized entities).

If extended, Contractor must supply all Contract Activities at the established Contract prices and terms. The State reserves the right to impose an administrative fee and negotiate additional discounts based on any increased volume generated by such extensions.

Contractor must submit invoices to, and receive payment from, extended purchasing program members on a direct and individual basis.

9. **Independent Contractor.** Contractor is an independent contractor and assumes all rights, obligations and liabilities set forth in this Contract. Contractor, its employees, and agents will not be considered employees of the State. No partnership or joint venture relationship is created by virtue of this Contract. Contractor, and not the State, is responsible for the payment of wages, benefits and taxes of Contractor's employees and any subcontractors. Prior performance does not modify Contractor's status as an independent contractor.

10. **Subcontracting.** Contractor may not delegate any of its obligations under the Contract without the prior written approval of the State. Contractor must notify the State at least 90 calendar days before the proposed delegation, and provide the State any information it requests to determine whether the delegation is in its best interest. If approved, Contractor must: (a) be the sole point of contact regarding all contractual matters, including payment and charges for all Contract Activities; (b) make all payments to the subcontractor; and (c) incorporate the terms and conditions contained in this Contract in any subcontract with a subcontractor. Contractor remains responsible for the completion of the Contract Activities, compliance with the terms of this Contract, and the acts and omissions of the subcontractor. The State, in its sole discretion, may require the replacement of any subcontractor.

11. **Staffing.** The State's Contract Administrator may require Contractor to remove or reassign personnel by providing a notice to Contractor.

12. **Background Checks.** Upon request, Contractor must perform background checks on all employees and subcontractors and its employees prior to their assignment. The scope is at the discretion of the State and documentation must be provided as requested. Contractor is responsible for all costs associated with the requested background checks. The State, in its sole discretion, may also perform background checks.

13. **Assignment.** Contractor may not assign this Contract to any other party without the prior approval of the State. Upon notice to Contractor, the State, in its sole discretion, may assign in whole or in part, its rights or responsibilities under this Contract to any other party. If the State determines that a novation of the Contract to a third party is necessary, Contractor will agree to the novation and provide all necessary documentation and signatures.

14. **Change of Control.** Contractor will notify, at least 90 calendar days before the effective date, the State of a change in Contractor's organizational structure or ownership. For purposes of this Contract, a change in control means any of the following: (a) a sale of more than 50% of Contractor's stock; (b) a sale of substantially all of Contractor's assets; (c) a change in a majority of Contractor's board members; (d) consummation of a merger or consolidation of Contractor with any other entity; (e) a change in ownership through a transaction or series of transactions; (f) or the board (or the stockholders) approves a plan of complete liquidation. A change of control does not include any consolidation or merger effected exclusively to change the domicile of Contractor, or any transaction or series of transactions principally for bona fide equity financing purposes.

    In the event of a change of control, Contractor must require the successor to assume this Contract and all of its obligations under this Contract.

15. **Ordering.** Contractor is not authorized to begin performance until receipt of authorization as identified in Schedule A.

16. **Acceptance.** Contract Activities are subject to inspection and testing by the State within 30 calendar days of the State's receipt of them ("**State Review Period**"), unless otherwise provided in Schedule A. If the Contract Activities are not fully accepted by the State, the State will notify Contractor by the end of the State Review Period that either: (a) the Contract Activities are accepted, but noted deficiencies must be corrected; or (b) the Contract Activities are rejected. If the State finds material deficiencies, it may: (i)

reject the Contract Activities without performing any further inspections; (ii) demand performance at no additional cost; or (iii) terminate this Contract in accordance with Section 23, Termination for Cause.

Within 10 business days from the date of Contractor's receipt of notification of acceptance with deficiencies or rejection of any Contract Activities, Contractor must cure, at no additional cost, the deficiency and deliver unequivocally acceptable Contract Activities to the State. If acceptance with deficiencies or rejection of the Contract Activities impacts the content or delivery of other non-completed Contract Activities, the parties' respective Program Managers must determine an agreed to number of days for re-submission that minimizes the overall impact to the Contract. However, nothing herein affects, alters, or relieves Contractor of its obligations to correct deficiencies in accordance with the time response standards set forth in this Contract.

If Contractor is unable or refuses to correct the deficiency within the time response standards set forth in this Contract, the State may cancel the order in whole or in part. The State, or a third party identified by the State, may perform the Contract Activities and recover the difference between the cost to cure and the Contract price plus an additional 10% administrative fee.

17. **Delivery.** Contractor must deliver all Contract Activities F.O.B. destination, within the State premises with transportation and handling charges paid by Contractor, unless otherwise specified in Schedule A. All containers and packaging becomes the State's exclusive property upon acceptance.

18. **Risk of Loss and Title.** Until final acceptance, title and risk of loss or damage to Contract Activities remains with Contractor. Contractor is responsible for filing, processing, and collecting all damage claims. The State will record and report to Contractor any evidence of visible damage. If the State rejects the Contract Activities, Contractor must remove them from the premises within 10 calendar days after notification of rejection. The risk of loss of rejected or non-conforming Contract Activities remains with Contractor. Rejected Contract Activities not removed by Contractor within 10 calendar days will be deemed abandoned by Contractor, and the State will have the right to dispose of it as its own property. Contractor must reimburse the State for costs and expenses incurred in storing or effecting removal or disposition of rejected Contract Activities.

19. **Warranty Period**. The warranty period, if applicable, for Contract Activities is a fixed period commencing on the date specified in Schedule A. If the Contract Activities do not function as warranted during the warranty period the State may return such non-conforming Contract Activities to the Contractor for a full refund.

20. **Terms of Payment.** Invoices must conform to the requirements communicated from time-to-time by the State. All undisputed amounts are payable within 45 days of the State's receipt. Contractor may only charge for Contract Activities performed as specified in Schedule A. Invoices must include an itemized statement of all charges. The State is exempt from State sales tax for direct purchases and may be exempt from federal excise tax, if Services purchased under this Agreement are for the State's exclusive use. Notwithstanding the foregoing, all prices are inclusive of taxes, and Contractor is responsible for all sales, use and excise taxes, and any other similar taxes, duties and charges of any kind imposed by any federal, state, or local governmental entity on any amounts payable by the State under this Contract.

    The State has the right to withhold payment of any disputed amounts until the parties agree as to the validity of the disputed amount. The State will notify Contractor of any dispute within a reasonable time. Payment by the State will not constitute a waiver of any rights as to Contractor's continuing obligations, including claims for deficiencies or substandard Contract Activities. Contractor's acceptance of final payment by the State constitutes a waiver of all claims by Contractor against the State for payment under this Contract, other than those claims previously filed in writing on a timely basis and still disputed.

    The State will only disburse payments under this Contract through Electronic Funds Transfer (EFT). Contractor must register with the State at http://www.michigan.gov/cpexpress to receive electronic fund transfer payments. If Contractor does not register, the State is not liable for failure to provide payment. Without prejudice to any other right or remedy it may have, the State reserves the right to set off at any time any amount then due and owing to it by Contractor against any amount payable by the State to Contractor under this Contract.

21. **Liquidated Damages.** Liquidated damages, if applicable, will be assessed as described in Schedule A.

22. **Stop Work Order.** The State may suspend any or all activities under the Contract at any time. The State will provide Contractor a written stop work order detailing the suspension. Contractor must comply with the stop work order upon receipt. Within 90 calendar days, or any longer period agreed to by Contractor, the State will either: (a) issue a notice authorizing Contractor to resume work, or (b) terminate the Contract or purchase order. The State will not pay for Contract Activities, Contractor's lost profits, or any additional compensation during a stop work period.

23. **Termination for Cause.** The State may terminate this Contract for cause, in whole or in part, if Contractor, as determined by the State: (a) endangers the value, integrity, or security of any location, data, or personnel; (b) becomes insolvent, petitions for bankruptcy court proceedings, or has an involuntary bankruptcy proceeding filed against it by any creditor; (c) engages in any conduct that may expose the State to liability; (d) breaches any of its material duties or obligations; or (e) fails to cure a breach within the time stated in a notice of breach. Any reference to specific breaches being material breaches within this Contract will not be construed to mean that other breaches are not material.

    If the State terminates this Contract under this Section, the State will issue a termination notice specifying whether Contractor must: (a) cease performance immediately, or (b) continue to perform for a specified period. If it is later determined that Contractor was not in breach of the Contract, the termination will be deemed to have been a Termination for Convenience, effective as of the same date, and the rights and obligations of the parties will be limited to those provided in Section 24, Termination for Convenience.

    The State will only pay for amounts due to Contractor for Contract Activities accepted by the State on or before the date of termination, subject to the State's right to set off any amounts owed by the Contractor for the State's reasonable costs in terminating this Contract. The Contractor must pay all reasonable costs incurred by the State in terminating this Contract for cause, including administrative costs, attorneys' fees, court costs, transition costs, and any costs the State incurs to procure the Contract Activities from other sources.

24. **Termination for Convenience.** The State may immediately terminate this Contract in whole or in part without penalty and for any reason, including but not limited to, appropriation or budget shortfalls. The termination notice will specify whether Contractor must: (a) cease performance of the Contract Activities immediately, or (b) continue to perform the Contract Activities in accordance with Section 25, Transition Responsibilities. If the State terminates this Contract for convenience, the State will pay all reasonable costs, as determined by the State, for State approved Transition Responsibilities.

25. **Transition Responsibilities.** Upon termination or expiration of this Contract for any reason, Contractor must, for a period of time specified by the State (not to exceed 120 calendar days), provide all reasonable transition assistance requested by the State, to allow for the expired or terminated portion of the Contract Activities to continue without interruption or adverse effect, and to facilitate the orderly transfer of such Contract Activities to the State or its designees. Such transition assistance may include, but is not limited to: (a) continuing to perform the Contract Activities at the established Contract rates; (b) taking all reasonable and necessary measures to transition performance of the work, including all applicable Contract Activities, training, equipment, software, leases, reports and other documentation, to the State or the State's designee; (c) taking all necessary and appropriate steps, or such other action as the State may direct, to preserve, maintain, protect, or return to the State all materials, data, property, and confidential information provided directly or indirectly to Contractor by any entity, agent, vendor, or employee of the State; (d) transferring title in and delivering to the State, at the State's discretion, all completed or partially completed deliverables prepared under this Contract as of the Contract termination date; and (e) preparing an accurate accounting from which the State and Contractor may reconcile all outstanding accounts (collectively, "**Transition Responsibilities**"). This Contract will automatically be extended through the end of the transition period.

26. **General Indemnification.** Contractor must defend, indemnify and hold the State, its departments, divisions, agencies, offices, commissions, officers, and employees harmless, without limitation, from and against any and all actions, claims, losses, liabilities, damages, costs, attorney fees, and expenses (including those required to establish the right to indemnification), arising out of or relating to: (a) any breach by Contractor (or any of Contractor's employees, agents, subcontractors, or by anyone else for whose acts any of them may be liable) of any of the promises, agreements, representations, warranties, or insurance requirements contained in this Contract; (b) any infringement, misappropriation, or other violation of any intellectual property right or other right of any third party; (c) any bodily injury, death, or damage to real or tangible personal property occurring wholly or in part due to action or inaction by

Contractor (or any of Contractor's employees, agents, subcontractors, or by anyone else for whose acts any of them may be liable); and (d) any acts or omissions of Contractor (or any of Contractor's employees, agents, subcontractors, or by anyone else for whose acts any of them may be liable).

The State will notify Contractor in writing if indemnification is sought; however, failure to do so will not relieve Contractor, except to the extent that Contractor is materially prejudiced. Contractor must, to the satisfaction of the State, demonstrate its financial ability to carry out these obligations.

The State is entitled to: (i) regular updates on proceeding status; (ii) participate in the defense of the proceeding; (iii) employ its own counsel; and to (iv) retain control of the defense if the State deems necessary. Contractor will not, without the State's written consent (not to be unreasonably withheld), settle, compromise, or consent to the entry of any judgment in or otherwise seek to terminate any claim, action, or proceeding. To the extent that any State employee, official, or law may be involved or challenged, the State may, at its own expense, control the defense of that portion of the claim.

Any litigation activity on behalf of the State, or any of its subdivisions under this Section, must be coordinated with the Department of Attorney General. An attorney designated to represent the State may not do so until approved by the Michigan Attorney General and appointed as a Special Assistant Attorney General.

27. **Infringement Remedies.** If, in either party's opinion, any piece of equipment, software, commodity, or service supplied by Contractor or its subcontractors, or its operation, use or reproduction, is likely to become the subject of a copyright, patent, trademark, or trade secret infringement claim, Contractor must, at its expense: (a) procure for the State the right to continue using the equipment, software, commodity, or service, or if this option is not reasonably available to Contractor, (b) replace or modify the same so that it becomes non-infringing; or (c) accept its return by the State with appropriate credits to the State against Contractor's charges and reimburse the State for any losses or costs incurred as a consequence of the State ceasing its use and returning it.

28. **Limitation of Liability.** The State is not liable for consequential, incidental, indirect, or special damages, regardless of the nature of the action.

29. **Disclosure of Litigation, or Other Proceeding.** Contractor must notify the State within 14 calendar days of receiving notice of any litigation, investigation, arbitration, or other proceeding (collectively, "**Proceeding**") involving Contractor, a subcontractor, or an officer or director of Contractor or subcontractor, that arises during the term of the Contract, including: (a) a criminal Proceeding; (b) a parole or probation Proceeding; (c) a Proceeding under the Sarbanes-Oxley Act; (d) a civil Proceeding involving: (1) a claim that might reasonably be expected to adversely affect Contractor's viability or financial stability; or (2) a governmental or public entity's claim or written allegation of fraud; or (e) a Proceeding involving any license that Contractor is required to possess in order to perform under this Contract.

30. **Reserved.**

31. **Reserved.**

32. **Non-Disclosure of Confidential Information**. The parties acknowledge that each party may be exposed to or acquire communication or data of the other party that is confidential, privileged communication not intended to be disclosed to third parties. The provisions of this Section survive the termination of this Contract.

    a. Meaning of Confidential Information. For the purposes of this Contract, the term "**Confidential Information**" means all information and documentation of a party that: (a) has been marked "confidential" or with words of similar meaning, at the time of disclosure by such party; (b) if disclosed orally or not marked "confidential" or with words of similar meaning, was subsequently summarized in writing by the disclosing party and marked "confidential" or with words of similar meaning; and, (c) should reasonably be recognized as confidential information of the disclosing party. The term "Confidential Information" does not include any information or documentation that was: (a) subject to disclosure under the Michigan Freedom of Information Act (FOIA); (b) already in the possession of the receiving party without an obligation of confidentiality; (c) developed independently by the receiving party, as demonstrated by the receiving party, without violating the disclosing party's proprietary rights; (d) obtained from a source other than the

disclosing party without an obligation of confidentiality; or, (e) publicly available when received, or thereafter became publicly available (other than through any unauthorized disclosure by, through, or on behalf of, the receiving party). For purposes of this Contract, in all cases and for all matters, State Data is deemed to be Confidential Information.

b. Obligation of Confidentiality. The parties agree to hold all Confidential Information in strict confidence and not to copy, reproduce, sell, transfer, or otherwise dispose of, give or disclose such Confidential Information to third parties other than employees, agents, or subcontractors of a party who have a need to know in connection with this Contract or to use such Confidential Information for any purposes whatsoever other than the performance of this Contract. The parties agree to advise and require their respective employees, agents, and subcontractors of their obligations to keep all Confidential Information confidential. Disclosure to a subcontractor is permissible where: (a) use of a subcontractor is authorized under this Contract; (b) the disclosure is necessary or otherwise naturally occurs in connection with work that is within the subcontractor's responsibilities; and (c) Contractor obligates the subcontractor in a written contract to maintain the State's Confidential Information in confidence. At the State's request, any employee of Contractor or any subcontractor may be required to execute a separate agreement to be bound by the provisions of this Section.

c. Cooperation to Prevent Disclosure of Confidential Information. Each party must use its best efforts to assist the other party in identifying and preventing any unauthorized use or disclosure of any Confidential Information. Without limiting the foregoing, each party must advise the other party immediately in the event either party learns or has reason to believe that any person who has had access to Confidential Information has violated or intends to violate the terms of this Contract and each party will cooperate with the other party in seeking injunctive or other equitable relief against any such person.

d. Remedies for Breach of Obligation of Confidentiality. Each party acknowledges that breach of its obligation of confidentiality may give rise to irreparable injury to the other party, which damage may be inadequately compensable in the form of monetary damages. Accordingly, a party may seek and obtain injunctive relief against the breach or threatened breach of the foregoing undertakings, in addition to any other legal remedies which may be available, to include, in the case of the State, at the sole election of the State, the immediate termination, without liability to the State, of this Contract or any Statement of Work corresponding to the breach or threatened breach.

e. Surrender of Confidential Information upon Termination. Upon termination of this Contract or a Statement of Work, in whole or in part, each party must, within 5 calendar days from the date of termination, return to the other party any and all Confidential Information received from the other party, or created or received by a party on behalf of the other party, which are in such party's possession, custody, or control; provided, however, that Contractor must return State Data to the State following the timeframe and procedure described further in this Contract. Should Contractor or the State determine that the return of any Confidential Information is not feasible, such party must destroy the Confidential Information and must certify the same in writing within 5 calendar days from the date of termination to the other party. However, the State's legal ability to destroy Contractor data may be restricted by its retention and disposal schedule, in which case Contractor's Confidential Information will be destroyed after the retention period expires.

33. **Reserved.**

34. **Reserved.**

35. **Reserved.**

36. **Records Maintenance, Inspection, Examination, and Audit.** The State or its designee may audit Contractor to verify compliance with this Contract. Contractor must retain, and provide to the State or its designee and the auditor general upon request, all financial and accounting records related to the Contract through the term of the Contract and for 4 years after the latter of termination, expiration, or final payment under this Contract or any extension ("**Audit Period**"). If an audit, litigation, or other action involving the records is initiated before the end of the Audit Period, Contractor must retain the records until all issues are resolved.

Within 10 calendar days of providing notice, the State and its authorized representatives or designees have the right to enter and inspect Contractor's premises or any other places where Contract Activities are being performed, and examine, copy, and audit all records related to this Contract. Contractor must cooperate and provide reasonable assistance. If any financial errors are revealed, the amount in error must be reflected as a credit or debit on subsequent invoices until the amount is paid or refunded. Any remaining balance at the end of the Contract must be paid or refunded within 45 calendar days.

This Section applies to Contractor, any parent, affiliate, or subsidiary organization of Contractor, and any subcontractor that performs Contract Activities in connection with this Contract.

37. **Warranties and Representations.** Contractor represents and warrants: (a) Contractor is the owner or licensee of any Contract Activities that it licenses, sells, or develops and Contractor has the rights necessary to convey title, ownership rights, or licensed use; (b) all Contract Activities are delivered free from any security interest, lien, or encumbrance and will continue in that respect; (c) the Contract Activities will not infringe the patent, trademark, copyright, trade secret, or other proprietary rights of any third party; (d) Contractor must assign or otherwise transfer to the State or its designee any manufacturer's warranty for the Contract Activities; (e) the Contract Activities are merchantable and fit for the specific purposes identified in the Contract; (f) the Contract signatory has the authority to enter into this Contract; (g) all information furnished by Contractor in connection with the Contract fairly and accurately represents Contractor's business, properties, finances, and operations as of the dates covered by the information, and Contractor will inform the State of any material adverse changes; and (h) all information furnished and representations made in connection with the award of this Contract is true, accurate, and complete, and contains no false statements or omits any fact that would make the information misleading. A breach of this Section is considered a material breach of this Contract, which entitles the State to terminate this Contract under Section 23, Termination for Cause.

38. **Conflicts and Ethics.** Contractor will uphold high ethical standards and is prohibited from: (a) holding or acquiring an interest that would conflict with this Contract; (b) doing anything that creates an appearance of impropriety with respect to the award or performance of the Contract; (c) attempting to influence or appearing to influence any State employee by the direct or indirect offer of anything of value; or (d) paying or agreeing to pay any person, other than employees and consultants working for Contractor, any consideration contingent upon the award of the Contract. Contractor must immediately notify the State of any violation or potential violation of these standards. This Section applies to Contractor, any parent, affiliate, or subsidiary organization of Contractor, and any subcontractor that performs Contract Activities in connection with this Contract.

39. **Compliance with Laws.** Contractor must comply with all federal, state and local laws, rules and regulations.

40. **Reserved.**

41. **Reserved.**

42. **Nondiscrimination.** Under the Elliott-Larsen Civil Rights Act, 1976 PA 453, MCL 37.2101, *et seq*., and the Persons with Disabilities Civil Rights Act, 1976 PA 220, MCL 37.1101, *et seq*., Contractor and its subcontractors agree not to discriminate against an employee or applicant for employment with respect to hire, tenure, terms, conditions, or privileges of employment, or a matter directly or indirectly related to employment, because of race, color, religion, national origin, age, sex, height, weight, marital status, or mental or physical disability. Breach of this covenant is a material breach of this Contract.

43. **Unfair Labor Practice.** Under MCL 423.324, the State may void any Contract with a Contractor or subcontractor who appears on the Unfair Labor Practice register compiled under MCL 423.322.

44. **Governing Law.** This Contract is governed, construed, and enforced in accordance with Michigan law, excluding choice-of-law principles, and all claims relating to or arising out of this Contract are governed by Michigan law, excluding choice-of-law principles. Any dispute arising from this Contract must be resolved in Michigan Court of Claims. Contractor consents to venue in Ingham County, and waives any objections, such as lack of personal jurisdiction or *forum non conveniens*. Contractor must appoint agents in Michigan to receive service of process.

45. **Non-Exclusivity.** Nothing contained in this Contract is intended nor will be construed as creating any requirements contract with Contractor. This Contract does not restrict the State or its agencies from acquiring similar, equal, or like Contract Activities from other sources.

46. **Force Majeure.** Neither party will be in breach of this Contract because of any failure arising from any disaster or acts of god that are beyond their control and without their fault or negligence. Each party will use commercially reasonable efforts to resume performance. Contractor will not be relieved of a breach or delay caused by its subcontractors. If immediate performance is necessary to ensure public health and safety, the State may immediately contract with a third party.

47. **Dispute Resolution.** The parties will endeavor to resolve any Contract dispute in accordance with this provision. The dispute will be referred to the parties' respective Contract Administrators or Program Managers. Such referral must include a description of the issues and all supporting documentation. The parties must submit the dispute to a senior executive if unable to resolve the dispute within 15 business days. The parties will continue performing while a dispute is being resolved, unless the dispute precludes performance. A dispute involving payment does not preclude performance.

    Litigation to resolve the dispute will not be instituted until after the dispute has been elevated to the parties' senior executive and either concludes that resolution is unlikely, or fails to respond within 15 business days. The parties are not prohibited from instituting formal proceedings: (a) to avoid the expiration of statute of limitations period; (b) to preserve a superior position with respect to creditors; or (c) where a party makes a determination that a temporary restraining order or other injunctive relief is the only adequate remedy. This Section does not limit the State's right to terminate the Contract.

48. **Media Releases.** News releases (including promotional literature and commercial advertisements) pertaining to the Contract or project to which it relates must not be made without prior written State approval, and then only in accordance with the explicit written instructions of the State.

49. **Website Incorporation.** The State is not bound by any content on Contractor's website unless expressly incorporated directly into this Contract.

50. **Entire Agreement and Order of Precedence.** This Contract, which includes Schedule A – Statement of Work, and expressly incorporated schedules and exhibits, is the entire agreement of the parties related to the Contract Activities. This Contract supersedes and replaces all previous understandings and agreements between the parties for the Contract Activities. If there is a conflict between documents, the order of precedence is: (a) first, this Contract, excluding its schedules, exhibits, and Schedule A – Statement of Work; (b) second, Schedule A – Statement of Work as of the Effective Date; and (c) third, schedules expressly incorporated into this Contract as of the Effective Date. NO TERMS ON CONTRACTOR'S INVOICES, ORDERING DOCUMENTS, WEBSITE, BROWSE-WRAP, SHRINK-WRAP, CLICK-WRAP, CLICK-THROUGH OR OTHER NON-NEGOTIATED TERMS AND CONDITIONS PROVIDED WITH ANY OF THE CONTRACT ACTIVITIES WILL CONSTITUTE A PART OR AMENDMENT OF THIS CONTRACT OR IS BINDING ON THE STATE FOR ANY PURPOSE. ALL SUCH OTHER TERMS AND CONDITIONS HAVE NO FORCE AND EFFECT AND ARE DEEMED REJECTED BY THE STATE, EVEN IF ACCESS TO OR USE OF THE CONTRACT ACTIVITIES REQUIRES AFFIRMATIVE ACCEPTANCE OF SUCH TERMS AND CONDITIONS.

51. **Severability.** If any part of this Contract is held invalid or unenforceable, by any court of competent jurisdiction, that part will be deemed deleted from this Contract and the severed part will be replaced by agreed upon language that achieves the same or similar objectives. The remaining Contract will continue in full force and effect.

52. **Waiver.** Failure to enforce any provision of this Contract will not constitute a waiver.

53. **Survival.** The provisions of this Contract that impose continuing obligations, including warranties and representations, termination, transition, insurance coverage, indemnification, and confidentiality, will survive the expiration or termination of this Contract.

54. **Contract Modification.** This Contract may not be amended except by signed agreement between the parties (a "**Contract Change Notice**"). Notwithstanding the foregoing, no subsequent Statement of Work or Contract Change Notice executed after the Effective Date will be construed to amend this Contract unless it specifically states its intent to do so and cites the section or sections amended.

STATE OF MICHIGAN

Contract No. 071B7700167
Aerial Towers

SCHEDULE A
STATEMENT OF WORK
CONTRACT ACTIVITIES

This schedule identifies the requirements of this Contract.

This contract includes Aerial Towers and related equipment for purchase and rental.

The Contractor must provide deliverables, including the staffing to accomplish all service incidentals necessary to complete the work, as set forth in this contract.

REQUIREMENT
SCOPE OF WORK
1. Specifications
1.1 The Contractor must provide the following Equipment for purchase and rental per Schedule B, Specifications:
FOR PURCHASE **Awarded:** **1. C10-010DD.17 Digger Derrick** **2. C10-034AT.17 Aerial Tower** **3. C10-045AT.17 Aerial Tower** **Not Awarded:** **4. C10-045SB.17 Aerial Tower** **5. C10-045ST.17 Aerial Tower** ***6.*** **C10-055ET.17 Aerial Tower**

A. EQUIPMENT FOR PURCHASE

1. Warranties

a) Contractor shall provide a one (1) year warranty on parts and labor.

b) Ninety (90) days warranty for travel charges.

c) The following major components are warranted for structural integrity for as long as the initial purchaser owns the product: Booms, boom articulation links, hydraulic cylinder structures, outrigger weldments, pedestals, subbases and turntables.

Note: Boom truck cranes to have 5 year structural warranty.

Up to 5 year extended warranties available, contact your Account Manager for more information.

d) For warranties call:
877-GO-ALTEC

The State reserves the right to require additional warranties.

2. Recall Requirements and Procedures

The Contractor shall notify the State and/or the ordering entity within 48 hours of a recall notice.

3. Service Levels
3.1 Time Frames

a) The State prefers Contractors shall provide information regarding standard and "quick-ship" delivery programs available for each type of equipment. Please provide the delivery time associated with each program, and identify shipping program limitations.

b) All Contract Activities must be delivered within **180** calendar days from receipt of order. The receipt of order date is pursuant to Section 2, Notice provisions of the Standard Contract Terms.

3.2 Delivery

Delivery will be expected within **180** calendar days for special orders and out of stock items, and **30** calendar days for in-stock items, upon date of order. Delivery will be made to the requested location and shall be F.O.B. Delivered or charged on a mileage rate or a one-time charge by Region per **Schedule C - Pricing.**
The State prefers Delivery terms that would provide unencumbered service with the most competitive rates. The Contractor must select between **A.** or **B.** below for their primary shipping method.

A. F.O.B. Delivered Items
Prices shall be quoted "F.O.B. Delivered" with transportation charges prepaid on ALL orders for State of Michigan and Extended Purchasing Participants. These terms apply to **ALL** locations in the State of Michigan. Other F.O.B. terms will not be accepted and may disqualify a dealer from further consideration.

B. F.O.B. dealership Items
Prices shall be quoted "F.O.B. Dealership" with transportation charges prepaid to the primary Contractor location on all orders for State of Michigan and Extended Purchasing Participants. Contractors must also quote a delivery cost per **Schedule C – Pricing**, to facilitate calculation of delivery cost to various locations within Michigan. The delivery cost per **Schedule C – Pricing,** will be added to the equipment price quoted to determine the "Total Price" for "F.O.B. Dealership" items. Mileage will be calculated based upon the "Official Michigan Department of Transportation Highway Map". Other F.O.B. terms will not be accepted and may disqualify a dealer from further consideration. The State reserves the right to make their own shipping arrangements.

Freight Charges - Should an Agency order items that are below the minimum order requirement of the Contract, or should a Contractor quote F.O.B. Shipping Point on one-time purchases, the Contractor should choose the most economically advantageous carrier and must be approved by the using agency.
United Parcel Service (UPS) must be used in instances where the weight of the shipment is less than 150 lbs., or where shipments could be separated into smaller parcels such as three (3) 50 lb. packages.
If the Contractor fails to follow these shipping instructions, the State shall pay the shipping costs on the Contractor's invoice, minus the difference for the amount that was charged and the amount that would have been charged if the requested carrier had been used. The State reserves the right to arrange their own freight.

3.3 Training

The Contractor must provide the following training:
A comprehensive orientation training shall be provided at delivery or at an alternate time requested by the State. The training shall include equipment operation, maintenance, and inspection practices.

Upon request, the Contractor shall provide 8 hours of mechanics and operators training to up to eight (8) employees. The training is to be held at each ship to address. The Contractor shall provide unit pricing for training in **Schedule C, Pricing.**

B. *RENTAL/LEASE EQUIPMENT*

1. Specifications

a) The Contractor shall provide equipment for rental and/or lease that is similar in scope to equipment included in **Schedule B, Specifications**.

b) Brand or trade names referred to herein are for identification purposes only, and do not limit the Contractor to such brands, provided alternates offered are equal in quality and function to those specified.

c) In addition, the Contractor shall provide a complete list of equipment available for rental and/or lease by category (e.g. loaders, dozers, sweepers, etc.) in **Schedule C – Pricing, Catalog Pricing for Rental.**
The list shall include:
- **i.** Daily, weekly, and monthly rental/lease rates.
- **ii.** Percentage discount offered by category for such rates.
- ***iii.*** Only listed items that meet these requirements shall be included under this contract.

d) All rental/leased equipment is to meet or exceed applicable federal and state safety standards as mandated by OSHA, and MIOSHA Motor Carrier Division. This equipment is to meet or exceed applicable American National Standards Institute (ANSI) specifications. The Contractor will provide written documentation guaranteeing compliance with all safety standards.

e) The Contractor shall provide written documentation confirming satisfactory testing on equipment where mandated by law (to include but not limited to: stress testing, dielectric testing, visual inspections) completed by a licensed and reputable testing firm.

Rental equipment shall be no more than four (4) years old. Equipment leased shall be the newest model year.

2. Availability and Delivery of Equipment

a) Rental and Lease Equipment shall be available statewide. Statewide availability includes **ALL** locations of the Upper and Lower Peninsula.
b) All requested orders must be delivered within two (2) calendar days/48 hours after receipt of order.
c) Emergencies will be responded to within one (1) to six (6) hours. Equipment shall be available as both F.O.B. delivered and F.O.B. pick-up.
d) No premium rates will be charged for delivery after normal business hours.
e) Rental or leased equipment items shall be fully fueled and operational at the time of pick-up or delivery.
f) The Contractor will be required to perform a walk-around equipment inspection at the time of delivery and pickup.
g) The Contractor, or their Designee and the Program Manager or their Designee, shall document the inspection by mutual execution of an inspection document provided by the Contractor.
h) The State is responsible for refueling all rented equipment upon its return.

3. Maintenance/Service

a) The Contractor will be responsible for all maintenance/service necessary to maintain satisfactory operation of rental equipment at no cost to the State.

b) Equipment shall be serviced according to manufacturer specifications. The Contractor shall maintain an equipment schedule for service and retain complete lifetime service records for all equipment.

c) If a repair is needed, and requires the piece of equipment to be out of service, the Contractor shall provide a replacement.

d) Contractor will maintain a Dedicated Product Support Department to ensure proper function of rented or leased equipment.

e) On-site maintenance must be performed according the recommended manufacturer maintenance schedule.

4. Training

The Contractor must provide the following training:
An orientation training shall be provided upon request at the time of delivery. The training shall be deemed sufficient by the State, to include detailed equipment operation and minor maintenance and inspection practices.

C. *GENERAL REQUIREMENTS*

1.1 Incentives

The Contractor provides the following special incentives or services:

Trade-in program is available upon request.

2.1 Technical Support and Repairs

When providing technical support, the Call Center must resolve the caller's issue within **30** minutes. If the caller's issue cannot be resolved within **2** hours, on-site service must be scheduled. The on-site service must be performed within **36** hours of the time the issue was scheduled for service.

2.2 Reporting

If applicable, the Contractor must submit, to the Contract Administrator or their designee, the following written reports:

a) *Maintenance/service report*
b) *Regional rental report*
c) *Regional purchase report*

By the second Friday of every December, the Contractor must submit a report of recycled content in commodities sold in that calendar year to **the Contract Administrator or Designee.**

2.3 Meetings

The Contractor must attend the following meetings:

a) Kick-off meeting within 30 calendar days of the Effective Date.
b) The State may request other meetings, as it deems appropriate.

3. Staffing

3.1 Contractor Representative

The Contractor must appoint a Product Representative, specifically assigned to State of Michigan accounts, that will respond to State inquiries regarding the Contract Activities, answering questions related to ordering and delivery, etc. (the "Contractor Representative").

Andy Johnson
248-807-9127
andy.johnson@altec.com

The Contractor must notify the Contract Administrator at least **30** calendar days before removing or assigning a new Contractor Representative.

3.2 Customer Service Toll-Free Number

The Contractor must specify its toll-free number for the State to make contact with the Contractor Representative. The Contractor Representative must be available for calls during the hours of 8 am to 5 pm EST.

877-GO-ALTEC

3.3 Technical Support, Repairs and Maintenance

The Contractor must specify its toll-free number for the State to make contact with the Contractor for technical support, repairs, and maintenance. The Contractor must be available for calls and service during the hours of 8 am to 5 pm EST.

877-GO-ALTEC

3.4 Disclosure of Subcontractors

If the Contractor intends to utilize subcontractors, the Contractor must disclose the following now as a part of this solicitation:

a) The legal business name; address; telephone number; a description of subcontractor's organization and the services it will provide; and information concerning subcontractor's ability to provide the Contract Activities.

b) The relationship of the subcontractor to the Contractor.

c) Whether the Contractor has a previous working experience with the subcontractor. If yes, provide the details of that previous relationship.

d) A complete description of the Contract Activities that will be performed or provided by the subcontractor.

e) The price of the subcontractor's work.

3.5 Security

The Contractor's staff may be required to make deliveries to or enter State facilities. The Contractor must:

a) Contractor shall perform detailed background screen on all employees.
b) Contractor's personnel shall wear shirts with company logo.
c) Vehicles for Mobile Service Technicians shall be marked with company logo.
d) Contractor shall perform a motor vehicle record search for employees that will be driving a company vehicle.
e) Drivers must wear uniforms with company logo and ID badges.

4. Pricing

4.1 Price Term

a) Pricing is firm for a 365 day period ("Pricing Period"). The first pricing period begins on the Effective Date. Adjustments may be requested, in writing, by either party and will take effect no earlier than the next Pricing Period. The State reserves the right to adjust the pricing period and allow automatic updates with limitations.

b) Pricing on all items listed in **Schedule B, Specifications** (or approved alternates) shall be firm-fixed. All remaining items within Contractor's **"catalog"** shall be available at a firm-fixed discount. All **"catalog"** pricing must be published and available at all times via website access, and/or electronic/printed price pages. Price quotes issued from the Contractor to the State must be verifiable via published pricing. The State reserves the right to limit "catalog" items at any time for any reason. It is expected the Contractor's Catalog items shall provide the best prices available to the State at all times and be firm-fixed. The State may remove items from the "Catalog" at any time without cause.

4.2 Price Changes

a) Adjustments will be based on changes in actual Contractor costs. Any request must be supported by written evidence documenting the change in costs. The State may consider sources, such as the Consumer Price Index; Producer Price Index; other pricing indices as needed; economic and industry data; manufacturer or supplier letters noting the increase in pricing; and any other data the State deems relevant.

b) Following the presentation of supporting documentation, both parties will have 30 days to review the information and prepare a written response. If the review reveals no need for modifications, pricing will remain unchanged unless mutually agreed to by the parties. If the review reveals that changes are needed, both parties will negotiate such changes, for no longer than 30 days, unless extended by mutual agreement.

c) The Contractor remains responsible for Contract Activities at the current price for all orders received before the mutual execution of a Change Notice indicating the start date of the new Pricing Period.

5. Ordering

5.1 Authorizing Document

The appropriate authorizing document for the Contract will be a purchase order.

5.2 Order Verification

The Contractor must have internal controls, to verify abnormal orders and to ensure that only authorized individuals place orders.

6. Acceptance

6.1 Acceptance, Inspection and Testing

The State will use the following criteria to determine acceptance of the Contract Activities:

a) Purchased equipment shall be delivered in new condition. Damaged equipment will not be accepted. The Contractor will repair or replace the damaged equipment at the Contractor's expense.

b) The Contractor shall provide documentation upon delivery that provides itemized deliverables.

c) Acceptance is not complete for partial deliveries until final deliverables are received.

6.2 Final Acceptance

a) The Contractor shall deliver the equipment. The State, or their designee, shall inspect the equipment and approve acceptance of goods upon delivery.

b) All set-up and/or training and orientation shall be completed.

7. Invoice and Payment

7.1 Invoice Requirements

All invoices submited to the State must include: (a) date; (b) purchase order; (c) quantity; (d) itemized description of the Contract Activities; (e) unit price; (f) shipping cost (if any); (g) total price; and (h) contract number.

8.2 Payment Methods

The State will make payment for Contract Activities by EFT as outlined in section 20 of Standard Contract Terms.

9. Additional Requirements

9.1 Environmental and Energy Efficient Products

The Contractor must include any relevant third-party certification, including the verification of a United States department of agriculture certified bio based product label.
The Contractor shall identify any energy efficient, bio-based, or otherwise environmental friendly products used in their products to the Program Manager (PM) 2 weeks prior to delivery.

9.2 Recycled Content and Recyclability Deliverable(s).

Without compromising performance or quality, the State prefers Deliverable(s) containing higher percentages of recycled materials. The Contractor must indicate an estimate of the percentage of recycled materials, if any, contained in each Deliverable:

- (total estimated percentage of recovered material)
- (estimated percentage of post-consumer material)
- (estimated percentage of post-industrial waste)

9.3 Hazardous Chemical Identification

In accordance with the federal Emergency Planning and Community Right-to-Know Act, 42 USC 11001, *et seq.*, as amended, the Contractor must provide a Safety Data Sheet (SDS) listing any hazardous chemicals, as defined in 40 CFR §370.2, to be delivered. Each hazardous chemical must be properly identified, including any applicable identification number, such as a National Stock Number or Special Item Number.
The Contractor must identify any hazardous chemicals that will be provided under any resulting contract.

The Contractor shall provide all current SDS to the Program Manager (PM) 2 weeks prior to delivery.

9.4 Mercury Content

Pursuant to MCL 18.1261d, mercury-free products must be procured when possible. The Contractor must explain if it intends to provide products containing mercury, the amount or concentration of mercury, and whether cost competitive alternatives exist. If a cost competitive alternative does exist, the Contractor must provide justification as to why the particular product is essential. All products containing mercury must be labeled as containing mercury.
The Contractor shall report if it intends to provide products containing mercury to the Program Manager (PM) no later than 48 hours after a purchase order is issued.

9.5 Brominated Flame Retardants

The State prefers to purchase products that do not contain brominated flame retardants (BFRs) whenever possible. The Contractor must disclose whether the products contain BFRs.
The Contractor must disclose to the Program Manager (PM) whether their products contain BFRs no later than 48 hours after a purchase order is issued.

9.6 Key Personnel

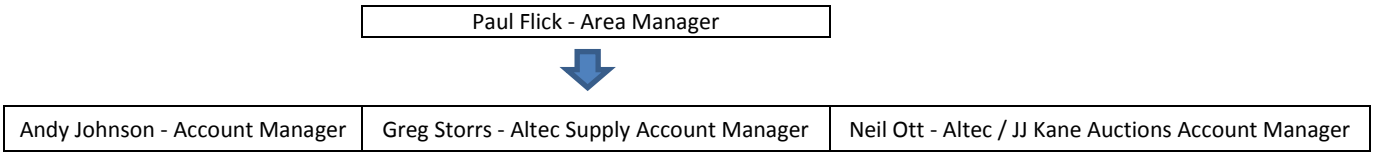
The Contractor must appoint one individual(s) who will be directly responsible for the day to day operations of the Contract ("Key Personnel"). Key Personnel must be specifically assigned to the State account, be knowledgeable on the contractual requirements, and respond to State inquires within 8 hours.

Andy Johnson
248-807-9127
andy.johnson@altec.com

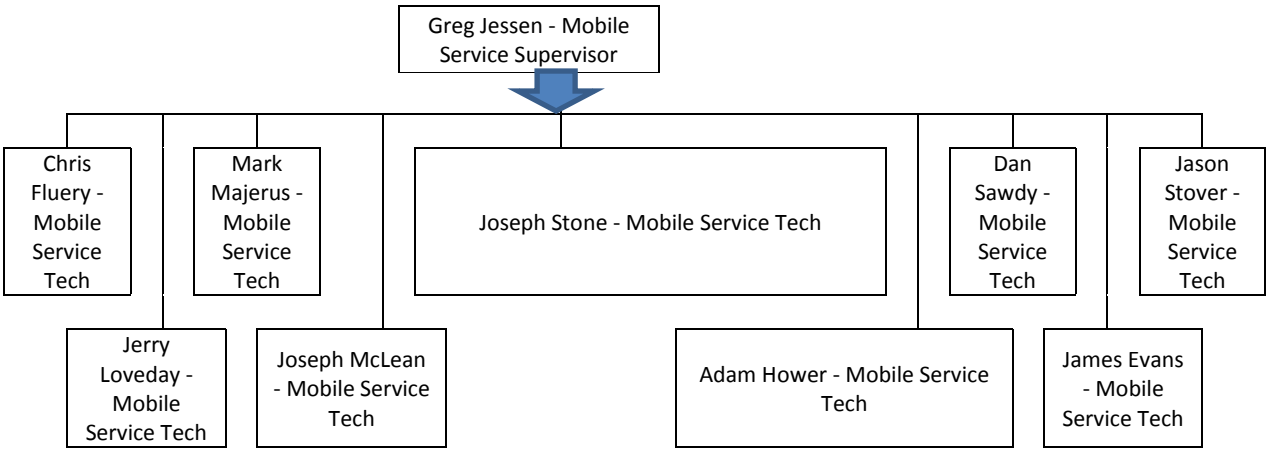
The Contractor may not remove or assign Key Personnel without the prior consent of the State. Prior consent is not required for reassignment for reasons beyond the Contractor's control, including illness, disability, death, leave of absence, personal emergency circumstances, resignation, or termination for cause. The State may request a résumé and conduct an interview before approving a change. The State may require a 30 calendar day training period for replacement personnel.

9.8 Organizational Chart

Sales Organization Chart



Service Organization Chart



10. Invoice Credits

Late or improper completion of the Contract Activities will cause loss and damage to the State and Extending Purchasing Participants and it would be impracticable and extremely difficult to fix the actual damage sustained by the State and/or Extending Purchasing Participants. Therefore, if there is late or improper completion of the Contract Activities, the State, and the Ordering Entity are entitled to collect invoice credits in the amount of 2/10th of 1% of the Purchase Order for each day the Contractor fails to remedy the late or improper completion of the Work.

11. Liquidated Damages

Unauthorized Removal of Key Personnel will interfere with the timely and proper completion of the Contract, to the loss and damage of the State, and it would be impracticable and extremely difficult to fix the actual damage sustained by the State. Therefore, the State may assess liquidated damages against Contractor as specified below.

The State is entitled to collect $500 per individual per day for the removal of any Key Personnel without prior approval of the State.

The State is entitled to collect $500 per individual per day for an unapproved or untrained key personnel replacement.

STATE OF MICHIGAN

Contract No. **071B7700167**
Aerial Towers

SCHEDULE B
SPECIFICATIONS

	Equipment - Purchase
	SPEC SECTION
1	**C10-010DD.17 Digger Derrick**
2	**C10-034AT.17 Aerial Tower**
3	**C10-045AT.17 Aerial Tower**
4	**C10-045SB.17 Aerial Tower**
5	**C10-045ST.17 Aerial Tower**
6	**C10-055ET.17 Aerial Tower**

1. - Spec. No. C10-010DD.17		
Digger Derrick, Insulated, 50 Foot Sheave Height, with Platform Body and Fiberglass through Box		
	Cab & Chassis - supplied by MDOT	YES
	Cab & Chassis will be 2017 International 7400 SBA extended cab 6x4	YES
	GVWR will be 54,000 pounds	YES
	Front GAWR will be 14,000 pounds	YES
	Rear GAWR will be 40,000 pounds	YES
	Wheel base will be 195 inches	YES
	Cab to axle length will be 120.0 inches	YES
	Axle to end frame will be 89 inches	YES
	Transmission will be an Allison 3500RDS_P with PTO provision	YES
	Engine will be a International N9 rated @ 310 HP	YES
	Unit shall be full of fuel when picked up by vendor, and shall be returned to MDOT in the same manner	YES
	Base Specifications:	YES
1.1	All holes in cab and chassis frame rails shall be drilled or punched.	YES
1.2	**There shall be no flame cutting or welding on the frame side rails**	YES
1.3	Digger derrick shall have all exposed metal surfaces, finish coated Omaha Orange DuPont Imron #43106-X or equal	YES
1.4	Flat bed body shall have all bare metal surfaces pre-cleaned and prepped prior to applying a compatible red oxide or zinc chromate primer	YES
1.5	When painting continues over a manufacture's standard paint, metal prepping and primer may be omitted, providing an acceptable bond can be achieved	YES
1.6	Utility body shall be painted Omaha Orange, DuPont Imron #43106-X or equal	YES
1.7	All components mounted below frame rails shall be painted black	YES
1.8	Cab to end frame length on all body installations shall be the same length as the body being mounted, plus the length of any setback	YES
1.9	All items removed from the cab and chassis by body installer (frame ends, fuel tanks mirrors, etc..) remain the property of the State of Michigan are to be returned with the truck	YES
1.10	All wires passing through holes in metal or non-metal wearing surfaces, which could cause wear of the insulation, shall be adequately protected by rubber or plastic grommets, and/or non-metal conduit.	YES
1.11	Ends of all wires shall be adequately anchored to prevent loosening	YES
1.12	All electrical connections shall be soldered and enclosed in heat shrink or in water tight junction blocks	YES
1.13	Scotch locks and wire nuts are not acceptable	YES
1.14	All wire connections from the utility body and tower to the chassis must be connected to the body up fit module if provided	YES
1.15	Body vendor will install body, mud flaps, lights as necessary	YES
1.16	Mud flaps will be plain with no advertising on either side	YES
1.17	No frame extensions will be accepted	YES
	Digger Derrick:	YES
1.18	50 Foot hydraulic derrick, rear mount	YES

1.19	With a turntable winch	YES
1.20	Maximum sheave height 49.3 ft.	YES
1.21	Maximum horizontal reach 40.3 ft.	YES
1.22	Maximum digging radius 28.5 ft.	YES
1.23	Boom articulation – from -20 to 80 degrees	YES
1.24	**Performance Ranges per the following:**	YES
a	**L/R Fully Retracted 2nd Ext. 3rd Ext. Both Ext.**	YES
b	10' 11,090lbs 10,080lbs 10,470lbs 9,820lbs	Meets with Platform uninstalled
c	15' 7,010lbs 6,220lbs 6,630lbs 6,040lbs	Meets with Platform uninstalled
c	20' 4,710lbs 4,450lbs 4,860,lbs 4,340lbs	Meets with Platform uninstalled
1.25	**These capacities are non-bare boom lift capacities**	YES
1.26	Unit meets or exceeds ANSI 10.31-1995.	YES
1.27	Unit serial number placard clearly states compliance	YES
1.28	Insulated "46KV and below"	YES
	Hydraulic Overload Protection System:	YES
1.29	Activates when unit is exposed to overload condition	YES
1.30	System prevents actuation of all functions that could add to the overload condition including:	YES
a	Boom Lower	YES
b	Intermediate Boom Extend	YES
c	Third Stage Boom Extend	YES
d	Winch Raise	YES
e	Digger Dig	YES
1.31	System automatically resets when overload condition is relieved	YES
1.32	Hydraulic side load protection relieves overload conditions by allowing rotation system to back drive	YES
	Load Indicator Gauge:	YES
1.33	Located at the main control panel, displays the percentage of total allowable lifting capacity being utilized	YES
1.34	By use of this gauge the operator is aware of the hydraulic and structural design rating of the derrick and proximity to the limits during operation	YES
	Electronic Controls:	YES
1.35	Intuitive electronic controls with superior metering	YES
1.36	Includes a diagnostic port which by connecting a hand held service tool, provides trouble shooting code read outs and the ability to calibrate function speeds and control sensitivity	YES
1.37	Electronic controls eliminate the risk of high pressure hose leaks near the operator and leak points are minimized throughout the machine	YES
1.38	Manual override of the electronically controlled boom, winch and digger functions at the main control valve	YES
	Standard/Low Speed Selector:	YES
1.39	Allows operator to select standard or low function speed operation	YES
1.40	In standard mode, each function operates at normal speeds	YES
1.41	In low speed the maximum operating speed of each function is slower providing finer feathering capability	YES
1.42	The function is separate from engine throttle control	YES
	Hydraulic System:	YES
1.43	Closed center hydraulic control valve for boom, winch, and digger functions are operated and controlled by a proportional pilot system which provides full metering and feathering characteristics	YES
1.44	Closed center hydraulic system with maximum flow of 43 gpm for simultaneous operations of multiple functions	YES
1.45	Because flow is provided by a single source piston pump maximum flow is available to any combinations of functions including simultaneous operations of the boom and digger/winch functions and flow combining is not necessary	YES
1.46	System is designed with compensators in each valve for smooth transitions between functions	YES
1.47	Maximum system pressure is 3000 psi	YES
1.48	Hydraulic fluid shall be "Glacial Blue Type" (Meets MilSpec 5606),	YES
1.49	Hydraulic tank will be labeled "Glacial Blue Type"	YES
1.50	Hydraulic reservoir shall be located in the aerial unit pedestal with a minimum of 60 gallon capacity	Reservoir will not be mounted in pedestal. Options include cargo area, in front of boom rest, must be above chassis frame rails

1.51	The reservoir shall be equipped with a drain plug, filler cap, air filter vent, sight level gauge, baffle system, and shut off valve at the outlet	YES
1.52	An adequate opening shall be provided by a door or cover to allow access to internal components	YES
1.53	Full flow ball valves shall be installed to prevent fluid lose during filter changes	YES
1.54	Hydraulic filters shall be 10-micron located in both the suction and return lines	YES
1.55	Proper plumbing practices shall be exercised to eliminate restrictions and excessive back pressure	YES
1.56	Hydraulic hoses shall extend and retract in tract carriers enclosed by the booms	YES
1.57	Hydraulic hoses shall have a 4 to 1 safety factor from operating to burst pressure	YES
1.58	Hydraulic system shall be driven by power take off(PTO) to be a Chelsea 277 hot shift PTO with overspeed control, or equivalent	YES
1.59	PTO shall be wired to only allow it to engage if parking brakes are set	YES
1.60	PTO control shall be dash mounted electrical switch	YES
1.61	PTO engaged light will be provide in the cab	YES
	Boom:	YES
1.62	Fiberglass hydraulic upper boom and boom tip with provisions for platform attachment	YES
1.63	Transferable hydraulic pole guides and steel boom flares at the boom tip with adjustable alignment guides include adjustable alignment guides	YES
1.64	Pole guides hydraulic cylinder driven open/close and tilt includes double pilot operated check valves to support poles in both tilt directions	YES
1.65	No derrick tong protectors	YES
1.66	Pole guide tilt interlock that prevents the upper boom from extending when the transferable guides are attached to the intermediate boom until the proximity sensors detect that the guides are tilted all the way up and out of the way.	YES
1.67	Boom storage protection system shall include a proximity switch on main boom which detects the boom supports as it is being stored and limits the boom down pressure to avoid placing excessive down force on boom stow bracket	YES
1.68	Cylinders rods are chrome plated and ends are threaded and welded	YES
1.69	Augur stow protection limits the upward travel of the auger as it reaches the top of the auger stow latch to prevent an over stow condition	YES
1.70	Two-part load line attachment point on intermediate boom	YES
1.71	All extending booms utilize self lubricating, low friction, slide bearings	YES
1.72	Rear mounted pedestal with all outer race rotation bearing bolts accessible from outside the pedestal to facilitate torque inspection	YES
	Winch:	YES
1.73	Turntable mounted winch with self-locking worm gearbox with locking counterbalance valves to provide reliable load holding	YES
1.74	Winch normal speed with 15,000 lb. bare drum capacity	YES
1.75	Full hydraulic line speed is 21.0 feet per minute on first layer, and 39.0 feet per minute on full drum	YES
1.76	Winch rope for turntable winch, rated for winch capacity	YES
1.77	Load line swivel hook, 8-1/2 ton (Crosby or equivalent)	YES
	Digger:	YES
1.78	Two speed mechanical shift, 12,000 ft-lb.	YES
1.79	Includes a rapids reversing shake feature for quick and convenient cleaning of dirt from the auger and all of the components necessary to operate digger installed	YES
1.80	Digger storage located on the street side	YES
1.81	Nylon auger wind up strap	YES
1.82	2 5/8 inch hex output shaft with 2 5/8 inch hex extension shaft(kelly bar)	YES
1.83	18 inch auger assembly to fit 2 5/8 inch hex shaft	YES
	Bucket:	YES
1.84	Digger is rated for bucket use, unit is designed and tested for combined use as a digger derrick and personnel handler per ANSI standards	YES
1.85	Bucket will be a fiberglass pin on unit	YES
1.86	Bucket will have a 300 pound capacity	YES
1.87	Bucket shall be 24 inch x 24 inch x 42 inch,	YES
1.88	Bucket shall have interior/exterior bucket access steps	YES
1.89	The bucket shall not have any holes for drainage or other wise	YES
1.90	Bucket shall include a vinyl protective cover	YES
1.91	Bucket liner rated at 50kV shall be provided	YES
1.92	Scuff pad, liner 24 x 24 inches for use with liner	YES
1.93	An eye type attachment point shall be provided on the boom for operator's body harness	YES
1.94	A bucket storage mount will be provided to store the bucket when it is removed from the boom	YES

	Controls:	YES
1.95	No hard wired upper controls and no tool circuit at boom tip	YES
1.96	Toggle throttle system - single, three position switch in control panel, high, medium, or low throttle(at lower controls)	YES
1.97	Single Station for installation on a swivel arm at rear	YES
1.98	Main control station to completely swivel from center and be capable of being used at both sides rear of truck to include 12 feet of cable, and is capable of being locked into position	YES
1.99	Red emergency stop plunger	YES
2.00	Boom, winch, and digger control handles which include mechanical interlocks that prevent inadvertent control handle movement	YES
2.01	Boom, winch, and digger control handles also include electrical interlocks that activate the hydraulic dump valve that provides hydraulic flow to main control valve	YES
2.02	Steel console cover, to include a hold down strap in front and at the rear so cover will not slam shut while operator is working	YES
	Radio remote controls:	YES
2.03	Full function for use as lower or upper controls	YES
2.04	Must be used in docking station for use as upper controls	YES
2.05	Radio remote controls can be a stand alone system or can be used in conjunction with other control systems	YES
2.06	Radio remote control layout, push lever to right and boom rotates counter-clock wise	YES
2.07	Docking station for using main radio remote control at boom tip for upper controls	YES
2.08	The docking station disables the digger and pole guide functions and actuates an interlock system to help prevent unintentional movement of the boom while the unit is being operated from the bucket	YES
2.09	Remote control docking station in cab with "out of cradle light on the dash"	YES
2.10	Electronic side load protection shall include a indicator gauge and lamp	YES
2.11	Float system will allow boom to rotate while digging and shall include alarm and visual indicator	YES
	Outriggers:	YES
2.12	Outriggers shall be A-frame, folding shoe style	YES
2.13	Primary and secondary outriggers shall have a 153 inch maximum spread	YES
2.14	Both front and rear outriggers shall be hydraulic, telescopic, enclosed H-frame type	A-Frame Type outriggers--same 2.12
2.15	Rear outriggers shall be integral with the mounting base of the aerial manlift	Outriggers and unit are connected by sub-base assembly
2.16	Penetration at maximum extension shall be 6.5 inches (for standard installations on a 40 inch frame height)	YES
2.17	Standard shoe dimensions shall be 14 x 15.25 inches	YES
2.18	Hydraulic controls for each outrigger cylinder will be supplied at the rear of the chassis so that the outriggers can be seen while in operation	YES
2.19	Outrigger/unit selector control valve shall be supplied	YES
2.20	95 dba audible alarm shall be activated when out riggers are in motion, either in or out	YES
2.21	An outrigger/boom interlock system shall prevent any function until the outriggers contacts the ground and outrigger retraction before boom is properly stowed	YES
2.22	Outrigger indicator light on dash to indicate outriggers are not stowed for transport	YES
2.23	A slope meter shall be furnished and mounted in the dash for the truck	YES
2.24	A slope meter shall be furnished and mounted on the rear of the truck	YES
	Unit and Hydraulic Accessories:	YES
2.25	Spring loaded hose reel, with 50 foot hose capacity	YES
2.26	Hose reel shall be mounted on riser just behind tool box so that operator can see the outrigger interlock and so the control console can swing freely and not hit the hose reel	YES
2.27	50 foot conductive hoses	YES
2.28	Hoses shall include quick disconnects and dust caps (male pressure, female return)	YES
2.29	Pole puller assembly with 5/8 inch chain and puller plate	YES
2.30	Pole puller storage bracket installed on curb side front outrigger housing	YES
2.31	Flow divider variable for the installation of tools at tail shelf	YES
2.32	A “boom raised” light shall be mounted in the dash to illuminate when boom is not in the stowed position	YES
2.33	“Boom raised” light shall be activated by an epoxy sealed, magnetic proximity switch, Grainger part # 6C834 or Omron type TL-W20ME2 12V - 24V No Exceptions	YES
	Platform/Flat Bed Body:	YES
2.34	Basic body fabricated from A40 grade 100% zinc alloy coated steel	YES

2.35	158 inch estimated flat bed length	YES
2.36	96 inch body width	YES
2.37	1/8inch (12 gauge) tread plate floor	YES
2.38	Heavy gauge welded steel frame constructed with structural channel crossmembers and tread plate floor	YES
2.39	D-ring recessed in body floor 360 degree rotation, two Street side and two curb side in flatbed, in a square shape, behind T-box, to include drainage holes	YES
2.40	4 inch high flatbed (no cross storage available)	YES
2.41	Stake pockets on sides only of flatbed, to be installed on 24 inch centers inside of frame	YES
2.42	Stake pockets on sides only of flatbed, to be installed on 24 inch centers inside of frame	YES
2.43	Custom cargo retaining boards 2 inch x 6 inch black composite boards, one on each side of flat bed and at side ladder access point	YES
2.44	Fender panels are either roll formed or have neoprene fenderettes, with cut outs as required for tire clearance	YES
2.45	Custom access steps, pull out ladder steps installed at curb side for access walkway, shall have a means to lock in place for transport	YES
2.46	Two (2) Steel U-shaped grab handles, one each side at rear of flatbed	YES
2.47	Subbase storage with drop down door (paddle latch) at rear	YES
2.48	Long tool storage in rear pedestal with inset subbase stop at 10 feet	YES
2.49	Undercoat body	YES
	Storage Compartments:	YES
2.50	Gel coated fiberglass T-box/saddle box suitable for installing in conjunction with a platform body on any tandem rear axle chassis with a CT dimension of 120 inches useable, traverse in first verticals only, second verticals are saddle packs	YES
2.51	42 inch overall body length	YES
2.52	96 inch body width	YES
2.53	Custom T-box/saddle box compartment height 48 inches	YES
2.54	Custom first vertical compartment, mounted on street side with one plain shelf at the top of the compartment (transverse), open to the curb side. Six locking swivel hooks (2-2-2 below shelf	YES
2.55	Second vertical street side compartment shall have an adjustable shelf with removable dividers on four (4) inch centers	YES
2.56	Custom first vertical compartment, mounted on curb side with one plain shelf at the top of the compartment (transverse), open to the street side. Three drawers below shelf. One plain sliding drawer, one sliding drawer with removable dividers on four (4) inch centers, one divided sliding drawer with stationary dividers full depth of drawer center with removable dividers on four (4) inch centers each side of divider	YES
2.57	Second vertical curb side compartment shall have an adjustable shelf with removable dividers on four (4) inch centers	YES
2.58	18 inch body compartment depth	YES
2.59	Automotive type non-porous door seals fastened to the door facing	YES
2.60	Doors are all full, double paneled, self-sealed with built in drainage for maximum weather tightness	Fiberglass Doors
2.61	Standard doors with door post(s) and partitions between compartments	YES
2.62	Integrated door header drip rail at top for maximum weather protection	YES
2.63	Stainless steel rotary paddle latches with keyed locks	YES
2.64	Custom body door holders vinyl coated cable door stops	YES
2.65	Aluminum rock guards installed on each front corner of body	YES
2.66	One (1) sloped grab handle attached to the left hand side of the second (2) curb side vertical compartment as a grab handle for 3 point access at Curb side access walkway ladder	YES
2.67	One side opening steel box, approximately 42 inches long x 30 inches high, 27 inches deep	YES
2.68	Box to be installed next to pedestal on curb side, mounted flush with the side of truck with 2 CS (barn style opening doors	YES
2.69	Side opening steel box approximately 42 inches long x 30 inches high x 27 inches deep, with rigid door holders	YES
2.70	Box to be installed curb side of flat bed	YES
2.71	Hinge rods will be stainless steel extending the full length of the door	On Box only-Not on body
	Miscellaneous Accessories:	YES
2.72	Four (4) shovel holders to be installed, two (2) mounted on each side between body and cab	YES
2.73	Fold up operators platform at T-stand control console, one street side and one curb side at rear	YES
2.74	Lower boom rest weldment	YES

2.75	Wheel chocks, two sets (pair ea.), rubber, with metal hairpin style handle 8.75" L x7.75" W x 5.00" H	YES
2.76	Wheel chock, two sets of aluminum holders mounted under each side of the body near wheels	YES
2.77	Composite plastic (or aluminum) outrigger pads, and four, (4) 24" X 24" X 1" with four (4) wood outrigger pads 24" x 24"x 3"	YES
2.78	Four (4) aluminum outrigger holders mounted under the body, two (2) on each side of body	YES
2.79	Post style cone holder (holds up to four 15" x 15" large cones) installed on street side front outrigger housing	YES
2.80	Cone holder underslung style, consists of two rings and bungee cord (holds up to four 15" x 15" large cones) installed on street side beneath rear of tail shelf	YES
2.81	Heavy duty cargo coating, Armorthane, cargo area floor and tail shelf black Gatorhyde applied to flatbed walking surface, rear of flatbed, including light channel, folding operators stations, pintle mounting tubes, ETC.	YES
2.82	Triangular reflector kit	YES
2.83	10lb fire extinguisher with heavy duty bracket installed	YES
2.84	Vinyl manual pouch for storage of all operator and parts manuals	YES
	Multi point grounding system	YES
2.85	**Hitches:**	YES
2.86	ICC (underride protection) bumper shall be installed at rear of truck	YES
2.87	T-125 style pintle hitch (30,000 lb, MGTW with 6,000 lb MVL)	YES
2.88	Glad hands at rear, straight type	YES
2.89	Trailer hitch shall be receiver type, class IV	YES
2.90	Two 3/4 inch D-rings installed for trailer safety chains	YES
2.91	Eyelet for trailer breakaway cables	YES
2.92	Per MDOT supplied - Trailer Wiring Diagram, trailer connector shall be 7-way round pin Berg type , mounted at rear of frame, wired for turn signals independent of stop, compatible with trailers that have amber or side turn lamps, provided and installed by vendor **(See Schedule E - Trailer Wiring Diagram)**	YES
	Electrical, Lighting:	YES
2.93	Electric moisture resistant back -up alarm, 95 dba sound level shall be provided	YES
2.94	All compartments will have white LED strip lighting with a master switch and a pilot light in the cab, fused separately	YES
2.95	Light channel installed at rear of unit	YES
2.96	All exterior lights on body will be LED type and conform with Motor Vehicle laws of the State of Michigan and include	YES
a	Clearance	YES
b	Stop	YES
c	Tail	YES
d	Turn	YES
e	Back up	YES
	Work/strobe light type and placement:	YES
2.97	Four (4) L.E.D. corner strobe lighting to truck. Two (2) in rear light channel and Two (2) in front grille area. To have separate master switch located in chassis cab. Whelen # 50*02Z*A, 500 series linear super - LED or equivalent	YES
2.98	Two (2) L.E.D strobe lights mounted on both sides of the body, Install on same master on/off switch as the 4 corner strobes. Whelen # 50*02Z*A, 500 series liner super - LED or equivalent	YES
2.99	Two (2) mini light bars to light support bar on both Curb side and Street side of boom rest. Lights to be visible from front, rear and sides of truck. To have separate on/off master switch located in chassis cab. Whelen R2LPHPA L.E.D. mini light bar or equivalent.	YES
3.00	Four (4) Whelen L.E.D perimeter lights. Two mounted just under mini light bars on both curb side and street side mounted all the way to the outer edge to eliminate shadows and two mounted at rear just under the tail shelf on both the curb side and street side . to have separate master switch located in chassis cab. Whelen # PELCB perimeter lights or equivalent.	YES
3.01	Two (2) Reverse/Work L.E.D Flood lights in rear chassis frame rails. To automatically come on when chassis is in reverse and to have separate on/off switch located in chassis cab. Whelen # PFBS6 work lights or equivalent	YES
3.02	Two (2) Work Lights L.E.D. Flood lights. One (1) mounted on light support bar facing cargo area. One (1) mounted at rear facing tail shelf area. To have separate master on/off switch located in Chassis Cab. Whelen # PFBS6 work lights or equivalent	YES
3.03	One (1) Go-Light mounted just below upper strobe light on Curb Side with WIRELESS chassis control and WIRELESS handheld control. Go-light Model # 20074 or equivalent	YES
	Miscellaneous:	YES

3.04	A transport height placard indicating the overall stowed height of the completed vehicle shall be mounted on the dash in clear view of the operator	YES
3.05	Dielectric test unit according to ANSI requirements	YES
3.06	Stability test unit according to ANSI requirements	YES
3.07	A dated inspection sticker shall be installed inside rear window of truck	YES
3.08	Manufactures standard warranty	YES
3.09	Provide 8 hours of operator training, at a time and location determined by the State after unit has been accepted and is ready to be placed into service	YES
3.10	2- Parts manual	YES
3.11	2- Service manual	YES
3.12	2- Operators manual	YES
3.13	1- Safety & training video	YES
Digger Derrick, Insulated, 50 Foot Sheave Height, with Platform Body and Fiberglass through Box		
Make Offered:		**Altec**
Model Offered:		**DM-50**

2. - Spec. No. C10-034AT.17		
Aerial Tower, Non-Insulated Boom 34 Foot Working Height and Utility Body		
	Cab & Chassis - supplied by MDOT	YES
	Cab & Chassis will be 2017 Ford F 450 DRW, Crew Cab, 4x4	YES
	GVWR will be 16,500 pounds	YES
	Torqshift six-speed automatic transmission with a live PTO	YES
	Engine will be a 6.8 liter V10 gas engine	YES
	Cab to axle length will be 84 inches	YES
	Unit shall be full of fuel when picked up by vendor, and shall be returned to MDOT in the same manner	YES
	Base Specifications:	YES
1.1	All holes in cab and chassis frame rails shall be drilled or punched.	YES
1.2	**There shall be no flame cutting or welding on the frame side rails**	YES
1.3	Aerial tower shall have all exposed metal surfaces, except internal boom extensions, finish coated Omaha Orange DuPont Imron #43106-X or equal	YES
1.4	Utility body shall have all bare metal surfaces pre-cleaned and prepped prior to applying a compatible red oxide or zinc chromate primer	YES
1.5	When painting continues over a manufacture's standard paint, metal prepping and primer may be omitted, providing an acceptable bond can be achieved	YES
1.6	Utility body shall be painted Omaha Orange, DuPont Imron #43106-X or equal	YES
1.7	All components mounted below frame rails shall be painted black	YES
1.8	Cab to end frame length on all body installations shall be the same length as the body being mounted, plus the length of any setback	YES
1.9	All items removed from the cab and chassis by body installer (frame ends, fuel tanks mirrors, etc..) remain the property of the State of Michigan are to be returned with the truck	YES
1.10	All wires passing through holes in metal or non-metal wearing surfaces, which could cause wear of the insulation, shall be adequately protected by rubber or plastic grommets, and/or non-metal conduit.	YES
1.11	Ends of all wires shall be adequately anchored to prevent loosening	YES
1.12	All electrical connections shall be soldered and enclosed in heat shrink or in water tight junction blocks	YES
1.13	Scotch locks and wire nuts are not acceptable	YES
1.14	All wire connections from the utility body and tower to the chassis must be connected to the body up fit module if provided	YES
1.15	Body vendor will install body, mud flaps, lights as necessary	YES
1.16	Mud flaps will be plain with no advertising on either side	YES
1.17	No frame extensions will be accepted	Frame extension will be required on a Ford chassis. The frame rails are not available from Ford with a longer length.
	Aerial Manlift:	YES
1.18	Tower will have a 34 foot working height	YES
1.19	Bucket will have a 350 pound capacity	YES
1.20	Main boom shall be constructed of 6 inch x 8 inch rectangular high strength steel	YES
1.21	The hose carrier system shall be a multi-link assembly with space to carry hoses and wiring to operate above minimum bend requirements	YES

1.22	Minimum travel of the main boom shall allow the operator to place the basket on the ground to reach the rear tail-shelf and to allow access to the compartments of the body without leaving the bucket	YES
1.23	Upper and lower support wear pads shall be 1/4 inch thick UHMW polyethylene	YES
1.24	Side support wear pads shall be threaded adjustable wear pads made of nylon	YES
1.25	Wear pads shall be replaceable without disassembly of boom sections	YES
1.26	Telescoping inner boom shall be made from 5 inch x 7 inch aluminum housed within the outer boom	Inner boom is made of 5"x7" steel with a rectangular 5"x7" filament wound, rectangular fiberglass structure.
1.27	The inner wear pads shall be of threaded adjustable nylon	YES
1.28	A hydraulic cylinder shall accomplish the telescopic action of the extension boom, The use of cables or chains to extend or retract is not acceptable	YES
1.29	Pedestal shall be a structural box shaped and include the hydraulic components	Pedestal is made of 10.75" diameter tubing.
1.30	An adequate opening shall be provided by a door or cover to allow access to internal components	YES
1.31	A hydraulic reservoir fill indicator shall be clearly visible and labeled to indicate the level of the oil	YES
1.32	The pedestal shall be machined flat for installation of the shear ball rotation bearing	YES
1.33	The pedestal structure must be of a single piece design.	YES
1.34	Turntable shall be designed to resist all torque loads	YES
1.35	A shear ball rotation bearing shall be required	YES
1.36	Bearing races shall be heat treated and sealed to prevent entry of dirt and moisture and be equipped with readily accessible zerk fittings	Bearing races are electric induction hardened.
1.37	Rotation shall be driven hydraulically by a worm and spur gear	YES
1.38	A means of adjustment shall be included to provide for proper gear backlash	YES
1.39	Rotation system shall be self locking in the event of a hydraulic system failure	YES
1.40	The input shaft shall be machine with an extended hexagon design to allow for manual rotation	YES
1.41	Rotation shall be continuous in either direction	YES
1.42	A rotation manifold shall provide for hydraulic functions	YES
1.43	Each port shall be separated by O-rings	YES
1.44	The inner core of the manifold should be attached to the turn table and allow for maintenance of all hoses without removing guards for service or inspection	YES
1.45	The outer case shall be attached securely to the pedestal to prevent rotation	YES
1.46	Sub-frame shall be secured to the vertical section of the vehicle frame and provide adequate strength to withstand the load of the aerial lift	YES
1.47	A boom support shall be provided to support the aerial lift booms in the transport position	YES
1.48	An over the center clamping device shall secure the booms to the support for road transport	YES
1.49	The hydraulic system shall be designed as an open center hydraulic system	YES
1.50	All hydraulic components including the 7 gallon hydraulic reservoir shall be housed within the aerial lift pedestal	Reservoir will be housed outside the pedestal. Tank is usually fastened to side of Pedestal.
1.51	The reservoir shall be equipped with a drain plug, filler cap, air filter vent, sight level gauge, baffle system, and shut off valve at the outlet	YES
1.52	A 10 micron return filter shall be installed as close to the reservoir as possible and must be accessible for maintenance	YES
1.53	A 100 micron suction strainer shall be installed on the inlet to the pump , with a shut-off ball valve for ease of service	YES
1.54	Hydraulic tool circuits will be provided at the basket for operator use	YES
1.55	A pressure relief valve must be built into the system to prevent overload and set at 2,000 psi	YES
1.56	Aerial lift shall be equipped with bucket and turntable mounted control stations	YES
1.57	The controls shall use full pressure proportional hydraulic valves	YES
1.59	When either control is released, boom movement shall stop and oil flow shall be redirected to the reservoir	YES
1.60	Bucket mounted control station shall permit the operator to control all boom movements, chassis start and stop controls, and emergency backup functions	YES
1.61	The turntable mounted lower control valve shall override the upper control valve and shall be capable of maintaining override of the upper control valve while unattended	YES
1.62	The aerial lift shall be powered by a hydraulic pump which produces up to 2 gpm	YES

1.63	The hydraulic system shall also include a 12 volt DC emergency backup system with a motor and pump	YES
1.64	All hydraulic hoses shall be placed within a cable track located inside of the main boom and be protected against abrasion, twisting and normal wear	YES
1.65	Hydraulic hoses shall have a 4 to 1 safety factor from operating to burst pressure	YES
1.66	Hydraulic fluid shall be "Glacial Blue Type" (Meets MilSpec 5606)	YES
1.67	Hydraulic tank will be labeled "Glacial Blue Type"	YES
1.68	Main boom will have a double action lift cylinder with a single acting holding valve mounted on the cylinder base	YES
1.69	Extension boom will have a double action cylinder with a double acting holding valve	YES
1.70	Hydraulic cylinders shall have welded and threaded end caps for maximum safety	YES
1.71	Piston shafts shall be highly polished chrome finish	YES
1.72	Walk in bucket shall be 24 inch x 30 inch x 42 inch, molded fiberglass with door that opens to curb side	YES
1.73	Bucket shall be side mounted	YES
1.74	The bucket shall be automatically leveled, as the main boom rises	YES
1.75	A bucket cover shall be provided that completely covers the top molded lip of a standard 24 inch x 30 inch 42 inch bucket	YES
1.76	The cover shall be of a good quality nylon material and shall include an elastic cord or band to keep the cover secured to the bucket	YES
1.77	Work tray with mounting will be provided	YES
1.78	A sub-frame attached to the frame of the truck shall secure the outriggers and the aerial lift to form one integral mount	YES
1.79	Outriggers shall have a minimum vertical travel clearance of 14 inches	YES
1.80	H-Frame outriggers with 2 x 8 cross tie	YES
1.81	Hydraulic activated outriggers shall be attached to the frame of the chassis at the front of the body	YES
1.82	The hydraulic cylinders shall be double action, heavy-duty welded with threaded end caps for maximum safety	YES
1.83	The pistons shall be made of aluminum with square bi-directional seals made of polyurethane material and a highly polished chrome finish shaft	YES
1.84	Holding valves shall be attached to each cylinder to prevent creep and to lock cylinders in case of line failure	YES
1.85	A manual diverter valve directs flow from the lift to the outriggers	YES
1.86	Controls for each outrigger cylinder will be supplied at the rear of the chassis so that the outriggers can be seen while in operation	YES
1.87	95 dba audible alarm shall be activated when out riggers are in motion, either in or out	YES
1.88	An outrigger/boom interlock system shall prevent lift operation until the outriggers contacts the ground and outrigger retraction before aerial lift is properly stowed	YES
1.89	Outrigger indicator light on dash to indicate outriggers are not stowed for transport	YES
1.90	Hydraulic system shall be driven by power take off(PTO) to be a Chelsea 277 hot shift PTO with overspeed control, or equivalent	YES
1.91	PTO shall be wired to only allow it to engage if parking brakes are set	YES
1.92	PTO control shall be dash mounted electrical switch	YES
1.93	PTO engaged light will be provide in the cab	YES
1.94	No part of the boom shall extend past the tail-shelf in the stowed position	YES
1.95	All exposed underbody valving shall be enclosed in a box to prevent corrosion	YES
1.96	A slope meter shall be furnished and mounted in the dash for the truck	YES
1.97	A slope meter shall be furnished and mounted on the rear of the truck	YES
1.98	A "Boom Raised" light will be mounted in the dash to illuminate when the boom is not in the stowed position	YES
1.99	“Boom raised” light shall be activated by an epoxy sealed, magnetic proximity switch, Grainger part # 6C834 or Omron type TL-W20ME2 12V - 24V No Exceptions	YES
2.00	A transport height placard indicating the overall stowed height of the completed vehicle shall be mounted on the dash in clear view of the operator	YES
2.01	Completed unit shall be tested and inspected before delivery to MDOT. A dated inspection sticker shall be installed inside rear window of truck	YES
	Utility Body	YES
2.02	The body shall be designed for a chassis with a cab to axle dimension of approximately 84 inches	YES
2.03	Body shall be Fiberglass or approved equal	YES
2.04	Utility body dimension shall be approximately:	YES
2.05	Overall width - 94 inches	YES
2.06	Load space width - 54 inches	YES

2.07	Pack height - 42 inches	Altec Osceola body will have 39" pack height.
2.08	Pack depth - 20 inches	YES
2.09	Mounting height - 25 inches	YES
2.10	A drawing of the proposed body shall be submitted with the bid	YES
2.11	Aluminum understructure	YES
2.12	Aluminum tread floor	YES
2.13	Smooth aluminum bulkhead	YES
2.14	Aluminum tailskirt	YES
2.15	Aluminum treadbright tail shelf	YES
2.16	Removable wheel well panels will be provided	YES
2.17	Steel rear mounting system shall be used	YES
2.18	Non-skid shall be provided on all compartment tops	YES
2.19	Clear vinyl rock guards shall be provided	Rock guards to be made of aluminum, vinyl is not available.
2.20	Black plastic fuel bezel(s) shall be provided. (Two required if chassis is diesel powered)	YES
2.21	Automotive quality bulb type door seals shall be furnished on all compartment doors	YES
2.22	Recessed door jambs will be provided	YES
2.23	Recessed door seals will be provided	YES
2.24	Doors will be one piece molded fiberglass	YES
2.25	Automotive finish both sides	YES
2.26	Latches will be stainless steel rotary type	YES
2.27	All locks will be keyed alike	YES
2.28	Type 304 stainless steel hardware will be provided	YES
2.29	Type 304 stainless steel door hinges will be provided	YES
2.30	Vinyl covered S/S cable door stops	YES
2.31	Master locking system will be provided on all compartments with lock provisions at rear of side cases	YES
2.32	Inside of all compartments shall be white	YES
2.33	All compartments will have white LED strip lighting with a master switch and a pilot light in the cab, fused separately	YES
2.34	Flow through ventilation system required for all compartments	YES
2.35	Street side front compartment will have one adjustable shelf with 2 inch divider pack with 4 fiberglass dividers	YES
2.36	Street side front compartment #2 will have two adjustable shelves with 2 inch divider pack with 4 fiberglass dividers	YES
2.37	Street side horizontal compartment will have one adjustable shelf	YES
2.38	Street side rear compartment will have two adjustable shelves	YES
2.39	Curb side front compartment will have two adjustable shelves and a square door vent	YES
2.40	Curb side front compartment #2 will have two adjustable shelves with 2 inch divider pack with 4 fiberglass dividers	YES
2.41	Curb side horizontal compartment will have one adjustable shelf with 2 inch divider pack with 4 fiberglass dividers	Adjustable shelf will have dividers on 4" centers. 2" centers are not available on this shelf.
2.42	Curb side rear compartment will have two adjustable shelves	YES
2.43	PVC style shovel rack/holder location T.B.D.	YES
2.44	24 inch stair access will be provided	YES
2.45	3000 watt inverter wired to boom tip and curbside rear, both shall be GFCI protected	YES
2.46	Wheel chocks, one set, rubber, with aluminum holders mounted under utility body	YES
2.47	Composite plastic (or aluminum) outrigger pads, two, (2) 24” X 24” X 1” with two (2) aluminum holders mounted under the body	YES
2.48	Triangular reflector kit	YES
2.49	10lb fire extinguisher with heavy duty bracket installed	YES
	Cameras with sound option:	YES
2.50	Camera shall be installed on the rear of vehicle to provide wide angle viewing	YES
2.51	Camera shall be installed on the passenger side of vehicle to provide wide angle viewing	YES
2.52	Camera shall be installed in the utility bed of the vehicle to provide wide angle viewing for boom location	YES
2.53	Camera display shall be mounted so driver can view it while in the drivers seat, and shall be able to switch between cameras	YES
2.54	Rear bumper will be step type with recess in center for trailer hitch constructed of 12 gauge tread plate	YES
2.55	Trailer hitch shall be receiver type, class IV	YES
2.56	Two 3/4 inch D-rings installed for trailer safety chains	YES

2.57	Eyelet for trailer breakaway cables	YES
2.58	Per MDOT supplied - Trailer Wiring Diagram, trailer connector shall be 7-way round pin Berg type , mounted at rear of frame, wired for turn signals independent of stop, compatible with trailers that have amber or side turn lamps, provided and installed by vendor **(See Schedule E - Trailer Wiring Diagram)**	YES
2.59	Spare tire will be mounted next to the boom on the street side	YES
2.60	Side mounted ladder rack mounted curb side	YES
2.61	Electric moisture resistant back -up alarm, 95 dba sound level shall be provided	YES
2.62	**All exterior lights on body will be LED type and conform with Motor Vehicle laws of the State of Michigan and include:**	YES
a	Clearance	YES
b	Stop	YES
c	Tail	YES
d	Turn	YES
e	Back up	YES
	Work/strobe light type and placement:	YES
2.63	Four (4) L.E.D. corner strobe lighting to truck. Two (2) in rear light channel and Two (2) in front grille area. To have separate master switch located in chassis cab. Whelen # 50*02Z*A, 500 series linear super - LED or equivalent	YES
2.64	Two (2) L.E.D strobe lights mounted on both sides of the body, Install on same master on/off switch as the 4 corner strobes. Whelen # 50*02Z*A, 500 series liner super - LED or equivalent	YES
2.65	Two (2) mini light bars to light support bar on both Curb side and Street side of boom rest. Lights to be visible from front, rear and sides of truck. To have separate on/off master switch located in chassis cab. Whelen R2LPHPA L.E.D. mini light bar or equivalent.	YES
2.66	Four (4) Whelen L.E.D perimeter lights. Two mounted just under mini light bars on both curb side and street side mounted all the way to the outer edge to eliminate shadows and two mounted at rear just under the tail shelf on both the curb side and street side . to have separate master switch located in chassis cab. Whelen # PELCB perimeter lights or equivalent.	YES
2.67	Two (2) Reverse/Work L.E.D Flood lights in rear chassis frame rails. To automatically come on when chassis is in reverse and to have separate on/off switch located in chassis cab. Whelen # PFBS6 work lights or equivalent	YES
2.68	Two (2) Work Lights L.E.D. Flood lights. One (1) mounted on light support bar facing cargo area. One (1) mounted at rear facing tail shelf area. To have separate master on/off switch located in Chassis Cab. Whelen # PFBS6 work lights or equivalent	YES
2.69	One (1) Go-Light mounted just below upper strobe light on Curb Side with WIRELESS chassis control and WIRELESS handheld control. Go-light Model # 20074 or equivalent	YES
2.70	Manufactures standard warranty	YES
2.71	Provide 8 hours of operator training, at a time and location determined by the State after unit has been accepted and is ready to be placed into service	YES
2.72	2- Parts manual	YES
2.73	2- Service manual	YES
2.74	2- Operators manual	YES
2.75	1- Safety & training video	YES
Aerial Tower, Non-Insulated Boom 34 Foot Working Height and Utility Body		
Make Offered:		**Altec**
Model Offered:		**AT-30G with LGS 126-75 Body**

3. - Spec. No. C10-045AT.17		
Aerial Tower, Insulated Boom 45 Foot Working Height and Utility Body with Side Access		
	Cab & Chassis - supplied by MDOT	YES
	Cab & Chassis will be 2017 International 4400 SBA extended cab 4x2	YES
	GVWR will be 27,500 pounds	YES
	Front GAWR will be 10,000 pounds	YES
	Rear GAWR will be 17,500 pounds	YES
	Wheel base will be 177 inches	YES
	Cab to axle length will be 83.9 inches	YES
	Axle to end frame will be 89 inches	YES
	Transmission will be an Allison 3500RDS_P with PTO provision	YES
	Engine will be a International N 9 rated @ 260hp	YES
	Unit shall be full of fuel when picked up by vendor, and shall be returned to MDOT in the same manner	YES
	Base Specifications:	YES

1.1	All holes in cab and chassis frame rails shall be drilled or punched.	YES
1.2	**There shall be no flame cutting or welding on the frame side rails**	YES
1.3	Aerial tower shall have all exposed metal surfaces, except internal boom extensions, finish coated Omaha Orange DuPont Imron #43106-X or equal	YES
1.4	Utility body shall have all bare metal surfaces pre-cleaned and prepped prior to applying a compatible red oxide or zinc chromate primer	YES
1.5	When painting continues over a manufacture's standard paint, metal prepping and primer may be omitted, providing an acceptable bond can be achieved	YES
1.6	Utility body shall be painted Omaha Orange, DuPont Imron #43106-X or equal	YES
1.7	All components mounted below frame rails shall be painted black	YES
1.8	Cab to end frame length on all body installations shall be the same length as the body being mounted, plus the length of any setback	YES
1.9	All items removed from the cab and chassis by body installer (frame ends, fuel tanks mirrors, etc..) remain the property of the State of Michigan are to be returned with the truck	YES
1.10	All wires passing through holes in metal or non-metal wearing surfaces, which could cause wear of the insulation, shall be adequately protected by rubber or plastic grommets, and/or non-metal conduit.	YES
1.11	Ends of all wires shall be adequately anchored to prevent loosening	YES
1.12	All electrical connections shall be soldered and enclosed in heat shrink or in water tight junction blocks	YES
1.13	Scotch locks and wire nuts are not acceptable	YES
1.14	All wire connections from the utility body and tower to the chassis must be connected to the body up fit module if provided	YES
1.15	Body vendor will install body, mud flaps, lights as necessary	YES
1.16	Mud flaps will be plain with no advertising on either side	YES
1.17	No frame extensions will be accepted	YES
	Aerial Manlift:	YES
	Aerial tower shall have the following characteristic based on a 40 inch frame height	YES
	Ground to bottom of platform: 40 feet	YES
	Working height:45 feet	YES
	Horizontal reach: 30 feet 6 inches @ 16 foot platform height	YES
	Stowed travel high: 10 feet 6 inches	Accepted/Varies by Chassis/Cab Height
	Platform capacity: 400 pounds minimum	YES
	Extension boom travel 120 inches	110"
	Main boom travel: -35 degree to + 80 degree	Acceptance/-25 - 80
	Articulated boom travel: -0 degrees to _80 degrees	Acceptance/ -3 - 80
	Jib winch capacity: 1,000 pounds	Acceptance/ 1,100
1.18	Main boom shall be constructed of 8 inch x 10 inch rectangular high strength steel	YES
1.19	Section of main boom housing the internal cable track shall be expanded to 8 inches x 14 inches to allow the hoses and cable track to operate above minimum bend requirements	YES
1.20	Minimum travel of the main boom shall allow the operator to place the basket on the ground to reach the rear tail-shelf and to allow access to the compartments of the body without leaving the basket	YES
1.21	Main boom shall include a fiberglass insert to provide an insulation gap of 14 inches when the telescoping boom is fully retracted	YES
1.22	Fiberglass insert shall be bolted and glued to provide a secure connection	YES
1.23	Boom shall be clearly labeled to indicate the area of insulated protection	YES
1.24	Upper and lower support wear pads shall be 1/4 inch thick UHMW polyethylene	YES
1.25	Side support wear pads shall be threaded adjustable wear pads made of nylon	YES
1.26	Wear pads shall be replaceable without disassembly of boom sections	YES
1.27	Extension boom shall be made from 7 inch x 9 inch fiberglass tubing	YES
1.28	The inner wear pads shall be of threaded adjustable nylon	YES
1.29	A hydraulic cylinder shall accomplish the telescopic action of the extension boom, The use of cables or chains to extend or retract is not acceptable	YES
1.30	A polyethylene sleeve shall be placed over the basket end of the extension cylinder to increase the distance of dielectric integrity	YES
1.31	Polyethylene sleeves shall be certified for 50KV	YES
1.32	Articulating arms shall be made from 7 inch x 7 inch square high strength tubing	YES
1.33	Articulating arms shall be compensating in design to maintain constant boom angle during the elevation of the articulating arm	YES
1.34	The articulating boom shall include a fiberglass insert to provide an insulation gap of 12 inches at an angle of incline	YES
1.35	The insert shall be bolted and glued to provide a secure connection	YES

1.36	The boom shall be clearly labeled to indicate the area of the insulated protection	YES
1.37	Pedestal shall be a structural box shaped and include the hydraulic components	Tubular Shape, Hydraulic Tank Separate
1.38	An adequate opening shall be provided by a door or cover to allow access to internal components	No door or cover, open hole for access
1.39	A hydraulic reservoir fill indicator shall be clearly visible and labeled to indicate the level of the oil	YES
1.40	The pedestal shall be machined flat for installation of the shear ball rotation bearing	YES
1.41	The pedestal structure must be of a single piece design and bolted directly to the lift sub frame. Risers and spacers are not acceptable	YES
1.42	Turntable shall be designed to resist all torque loads	YES
1.43	All pivot points for the boom and cylinders shall be line boarded to allow for proper alignment	YES
1.44	A 17 inch diameter shear ball rotation bearing shall be required	YES
1.45	Bearing races shall be heat treated and sealed to prevent entry of dirt and moisture and be equipped with readily accessible zerk fittings	YES
1.46	Rotation shall be driven by a worm gear, reduction gearbox	YES
1.47	A means of adjustment shall be included to provide for proper gear backlash	YES
1.48	Rotation system shall be self locking in the event of a hydraulic system failure	YES
1.49	The input shaft shall be machined with an extended hexagon design to allow for manual rotation	YES
a	Rotation shall be continuous in either direction	YES
b	A rotation manifold shall provide for hydraulic functions	YES
c	Each port shall be separated by O-rings	YES
d	The inner core of the manifold should be attached to the turn table and allow for maintenance of all hoses without removing guards for service or inspection	YES
e	The outer case shall be attached securely to the pedestal to prevent rotation	YES
f	Sub-frame shall be secured to the vertical section of the vehicle frame and provide adequate strength to withstand the load of the aerial lift	YES
1.50	A boom support shall be provided to support the aerial lift booms in the transport position	YES
1.51	An over the center clamping device shall secure the booms to the support for road transport	YES
1.52	The hydraulic system shall be designed as an open center hydraulic system	YES
1.53	All hydraulic components including the 15 gallon hydraulic reservoir shall be housed within the aerial lift pedestal	Hydraulic Tank is separate from pedestal. Can be mounted anywhere in cargo area.
1.54	The reservoir shall be equipped with a drain plug, filler cap, air filter vent, sight level gauge, baffle system, and shut off valve at the outlet	YES
1.55	A 10 micron return filter shall be installed as close to the reservoir as possible and must be accessible for maintenance	YES
1.56	A 100 micron suction strainer shall be installed on the inlet to the pump , with a shut-off ball valve for ease of service	YES
1.57	Hydraulic tool circuits will be provided at the basket for operator use	YES
1.58	A pressure relief valve must be built into the system to prevent overload and set at 2,250 psi	YES
1.59	Aerial lift shall be equipped with basket and turntable mounted control stations	YES
1.60	Levers at both the upper and lower control stations shall automatically return to neutral position when released	YES
1.61	The controls shall use full pressure proportional hydraulic valves	YES
1.62	A one handed joystick control with trigger activation will be used to operate the upper controls	YES
1.63	Boom movement can't occur if the trigger is not activated	YES
a	When either control is released, boom movement shall stop and oil flow shall be redirected to the reservoir	YES
b	Basket mounted control station shall permit the operator to control all boom movements, chassis start and stop controls, and emergency backup functions	YES
c	With the boom stowed in the rest position, the control handle is orientated so the operator will operate it with the joystick handle in the right hand facing away from the truck	YES
d	Pulling up on the joystick handle will raise the booms	YES
e	Pushing down on the joystick will lower the boom	YES
f	Pushing the joystick forward will extend the extension boom	YES
g	Pulling the joystick back will retract the extension boom	YES
h	Pushing the joy stick to the right or left will rotate the booms	YES

i	The upper control valve lockout shall be available for the basket-stow and articulating arm valve section	YES
j	The lock out requires releasing a mechanical lock prior to the movement of the valve handle	YES
1.64	The turntable mounted lower control valve shall override the upper control valve and shall be capable of maintaining override of the upper control valve while unattended	YES
1.65	The aerial lift shall be powered by a hydraulic pump which produces up to 6 gpm	YES
1.66	The hydraulic system shall also include a 12 volt DC emergency backup system with a motor and pump delivering 1.4 gpm	YES
1.67	All hydraulic hoses shall be placed within a cable track located inside of the main boom and be protected against abrasion, twisting and normal wear	YES
1.68	Hydraulic hoses shall have a 4 to 1 safety factor from operating to burst pressure	YES
1.69	Hydraulic fluid shall be "Glacial Blue Type" (Meets MilSpec 5606)	YES
1.70	Hydraulic tank will be labeled "Glacial Blue Type"	YES
1.71	Main boom will have a double action lift cylinder with a minimum 5 inch bore	YES
1.72	Extension boom will have a double action cylinder with a minimum 2 1/2 inch bore	YES
1.73	Articulating arm will have a double action cylinder with a minimum 5 inch bore	YES
1.74	Cylinder ends shall have spherical self-aligning rod ends	YES
1.75	Holding valves will be attached to each cylinder to prevent boom creep and to lock the cylinders in the event of a line failure	YES
1.76	Hydraulic cylinders shall have welded and threaded end caps for maximum safety	YES
1.77	Piston shafts shall be highly polished chrome finish	YES
1.78	Basket shall be 24 inch x 30 inch x 42 inch, side mounted, square molded fiberglass, mounted to the curb side of the boom	YES
a	A hydraulic rotator shall rotate the basket 100 degrees about the end of the boom, from curb side to street-side	90 Degrees--Our platforms are mounted closer to material handler, so our platform is square to MH when rotated
b	A control valve located at the upper controls shall control the rotation	YES
c	Entry/exit shall be gained by an inner/outer molded step	YES
1.79	The basket shall be completely enclosed and shall not have any holes for drainage or other wise	YES
a	The basket shall be automatically leveled, as the main boom rises	YES
b	The hydraulic basket leveling shall incorporate two (2) enclosed loop leveling cylinders and appropriate valving	YES
c	A control valve to stow/trim the basket shall be located at the upper controls and is optional at the lower override controls	YES
d	The basket stow requires simultaneous activation with the locking valve to prevent inadvertent movement	YES
1.80	A basket cover shall be provided that completely covers the top molded lip of a standard 24 inch x 30 inch 42 inch basket	YES
a	The cover shall be of a good quality vinyl material and shall include an elastic cord or band to keep the cover secured to the basket	YES
b	A strap with latching hook shall be permanently attached to the cover to allow for securing to the boom tip, preventing accidental loss	YES
1.81	The material handling function shall include a jib and winch that are positioned on the street-side of the boom	YES
1.82	The jib is hydraulically controlled to allow the operators to position the load vertically with a control valve located at the upper control valve	YES
1.83	The jib pole shall be manually adjusted to position the length of the reach required	YES
1.84	A load chart near the operators control station informs the operator of the jib boom carrying capacities	YES
1.85	The jib assembly shall be independent of the basket leveling system	YES
1.86	The hydraulic jib cylinder shall include its own holding valve, which prevents cylinder creep and to lock the cylinder in the event of hydraulic hose failure	YES
1.87	The self-locking worm gear winch is controlled from both the upper and lower control valves	YES
1.88	80 feet of 1/2 inch diameter double braid polyester rope with clevis hook shall be provided	YES
1.89	All boom pivot points shall be constructed of high alloy steel (130,000 psi yield strength minimum)	YES
a	All pins will require a Nitrotech Furnas treatment	YES
b	The pin results in a hardiness range of Rc64 to 71 with a finish of 40-uin	YES
c	All pivots shall be equipped with replaceable fiberglass reinforced Teflon bearings, no lubrication shall be required	YES
1.90	Hydraulic activated outriggers shall be attached to the frame of the chassis though the front compartment of the body	YES

1.91	A sub-frame attached to the frame of the truck shall secure the outriggers and the aerial lift to form one integral mount	YES
1.92	Outriggers shall have a minimum vertical travel clearance of 14 inches	YES
1.93	Outriggers shall be capable of extending to a 13 foot 6 inch spread	YES
1.94	The outrigger legs shall consist of inner and outer telescoping structural tubing	YES
1.95	Adjustable polyethylene wear pads shall prevent wear and vibration during road transport, and shall center the inner and outer tubes	YES
1.96	Hydraulic activated outriggers shall be attached to the frame of the chassis at the rear of the body, if required for stability certification	YES
1.97	The outrigger legs must not block the cargo of the body	YES
1.98	The hydraulic cylinders shall be double action, heavy-duty welded with threaded end caps for maximum safety	YES
1.99	Holding valves shall be attached to each cylinder to prevent creep and to lock cylinders in case of line failure	YES
2.00	A manual diverter valve directs flow from the lift to the outriggers	YES
2.01	Controls for each outrigger cylinder will be supplied at the rear of the chassis so that the outriggers can be seen while in operation	YES
2.02	Outrigger indicator light on dash to indicate outriggers are not stowed for transport	YES
2.03	95 dba audible alarm shall be activated when out riggers are in motion, either in or out	YES
2.04	An outrigger/boom interlock system shall prevent lift operation until the outriggers contacts the ground and outrigger retraction before aerial lift is properly stowed	YES
2.05	Hydraulic system shall be driven by power take off(PTO) to be a Chelsea 277 hot shift PTO with overspeed control, or equivalent	YES
2.06	PTO shall be wired to only allow it to engage if parking brakes are set	YES
2.07	PTO control shall be dash mounted electrical switch	YES
2.08	PTO engaged light will be provide in the cab	YES
2.09	No part of the boom shall extend past the tail-shelf in the stowed position	YES
2.10	Pedestal shall be mounted directly behind the truck cab	YES
2.11	Boom shall be to the rear in the stowed position	YES
2.12	All exposed underbody valving shall be enclosed in a box to prevent corrosion	YES
2.13	A slope meter shall be furnished and mounted in the dash for the truck	YES
2.14	A slope meter shall be furnished and mounted on the rear of the truck	YES
2.15	A "Boom Raised" light will be mounted in the dash to illuminate when the boom is not in the stowed position	YES
2.16	“Boom raised” light shall be activated by an epoxy sealed, magnetic proximity switch, Grainger part # 6C834 or Omron type TL-W20ME2 12V - 24V No Exceptions	YES
2.17	A transport height placard indicating the overall stowed height of the completed vehicle shall be mounted on the dash in clear view of the operator	YES
2.18	Outer/inner boom assembly's shall be tested and certified for electrical work at 46KV and below in accordance with ANSI A92.2 requirements	YES
2.19	The chassis insulating system (lower boom insert) shall also be tested and certified for electric work at 46KV and below in accordance with ANSI A92.2 requirements	YES
2.20	Completed unit shall be tested and inspected before delivery to MDOT. A dated inspection sticker shall be installed inside rear window of truck	YES
	Utility Body	YES
2.21	The body shall be designed for a chassis with a cab to axle dimension of approximately 84 inches and provide curbside access with step and handrail	YES
2.22	Body shall be galvanneall steel or approved equal	YES
2.23	Fiberglass body can be bid as an option, as long as it meets the general requirements and all differences are noted	YES
2.24	Utility body dimension shall be approximately:	YES
a	Load space width - 54 inches	YES
b	Top of body to top of floor -30 inches	YES
c	Horizontal compartment height - 24 inches	YES
2.25	A drawing of the proposed body shall be submitted with the bid	YES
2.26	Automotive quality bulb type door seals shall be furnished on all compartment doors	YES
2.27	Understructure will be 5 inch, 6.7 pound structural steel channel cross-members	YES
2.28	Tie channels will be 5 inch 4.1 pound structural steel channel	YES
2.29	Floor will be 3/16 inch tread plate	YES
2.30	Front boxes will be 14 gauge A/40 galvanneal steel	YES
2.31	Front and intermediate partition shall be 14 gauge A/40 galvanneal steel	YES
2.32	Rear partition will be 14 gauge A/40 galvanneal steel	YES
2.33	Wheel house panels shall be 14 gauge A/40 galvanneal steel	YES
2.34	Compartment sides shall be 14 gauge A/40 galvanneal steel	YES
2.35	All shelving shall be 16 gauge with dividers being 20 gauge galvanneal steel minimum	YES

2.36	Door will be double panel construction, 18 gauge outer and 20 gauge inner A40/galvanneal steel	YES
2.37	Hinges will be 5/16 inch diameter, electro zinc steel rod type with zinc cast hinge and nylon bushings	YES
2.38	Will include front aerial reinforcement bar, installed	YES
2.39	Latches will be flush mounted T-handle twist to open and close type	YES
2.40	All locks will be keyed alike	YES
2.41	All vertical doors will be equipped with spring loaded door holder	YES
2.42	Master locking system will be provided on all compartments with lock provisions at rear of side cases	YES
2.43	All compartments will have white LED strip lighting with a master switch and a pilot light in the cab, fused separately	YES
2.44	Curbside compartments shall be approximately 48 inches tall x 21 inches deep with vent in rear compartment and:	YES
a	Front vertical - 32 inches wide, two shelves w / dividers	YES
b	Second vertical - 24 inches wide side entry with grab handle and steps constructed of grip strut	YES
c	Horizontal - 52 inches wide x 21 inches tall	YES
d	Rear vertical - 24 inches wide, one shelf w/ divider	YES
2.45	Street side compartments shall be approximately 48 inches tall with vent in front compartment	YES
a	Front vertical - 32 inches wide, two shelves w / dividers	YES
b	Second vertical - 24 inches wide, open no shelving	YES
c	Horizontal - 52 inches wide open no shelving	YES
d	Rear vertical - 24 inches wide, one shelf w/ divider	YES
2.46	Wheel chocks, one set, rubber, with aluminum holder mounted under (or) in utility body	YES
2.47	Composite plastic (or aluminum) outrigger pads, two, (2) 24" X 24" X 1" with two (2) aluminum holders mounted under the body	YES
2.48	Triangular reflector kit	YES
2.49	10lb fire extinguisher with heavy duty bracket installed	YES
2.50	Rear bumper will be step type with recess in center for trailer hitch constructed of 12 gauge tread plate	YES
2.51	A tail shelve shall be constructed of 3/16 inch tread plate, 36 inches long x 96 inches wide x 6 inches high	YES
2.52	Trailer hitch shall be receiver type, class IV	YES
2.53	Two 3/4 inch D-rings installed for trailer safety chains	YES
2.54	Eyelet for trailer breakaway cables	YES
2.55	Per MDOT supplied - Trailer Wiring Diagram, trailer connector shall be 7-way round pin Berg type , mounted at rear of frame, wired for turn signals independent of stop, compatible with trailers that have amber or side turn lamps, provided and installed by vendor **(See Schedule E - Trailer Wiring Diagram)**	YES
2.56	Electric moisture resistant back -up alarm, 95 dba sound level shall be provided	YES
2.57	**All exterior lights on body will be LED type and conform with Motor Vehicle laws of the State of Michigan and include:**	YES
a	Clearance	YES
b	Stop	YES
c	Tail	YES
d	Turn	YES
e	Back up	YES
	Work/strobe light type and placement:	YES
2.58	Four (4) L.E.D. corner strobe lighting to truck. Two (2) in rear light channel and Two (2) in front grille area. To have separate master switch located in chassis cab. Whelen # 50*02Z*A, 500 series linear super - LED or equivalent	YES
2.59	Two (2) L.E.D strobe lights mounted on both sides of the body, Install on same master on/off switch as the 4 corner strobes. Whelen # 50*02Z*A, 500 series liner super - LED or equivalent	YES
2.60	Two (2) mini light bars to light support bar on both Curb side and Street side of boom rest. Lights to be visible from front, rear and sides of truck. To have separate on/off master switch located in chassis cab. Whelen R2LPHPA L.E.D. mini light bar or equivalent.	YES
2.61	Four (4) Whelen L.E.D perimeter lights. Two mounted just under mini light bars on both curb side and street side mounted all the way to the outer edge to eliminate shadows and two mounted at rear just under the tail shelf on both the curb side and street side . to have separate master switch located in chassis cab. Whelen # PELCB perimeter lights or equivalent.	YES

2.62	Two (2) Reverse/Work L.E.D Flood lights in rear chassis frame rails. To automatically come on when chassis is in reverse and to have separate on/off switch located in chassis cab. Whelen # PFBS6 work lights or equivalent	YES
2.63	Two (2) Work Lights L.E.D. Flood lights. One (1) mounted on light support bar facing cargo area. One (1) mounted at rear facing tail shelf area. To have separate master on/off switch located in Chassis Cab. Whelen # PFBS6 work lights or equivalent	YES
2.64	One (1) Go-Light mounted just below upper strobe light on Curb Side with WIRELESS chassis control and WIRELESS handheld control. Go-light Model # 20074 or equivalent	YES
2.65	Manufactures standard warranty	YES
2.66	Provide 8 hours of operator training, at a time and location determined by the State after unit has been accepted and is ready to be placed into service	YES
2.67	2- Parts manual	YES
2.68	2- Service manual	YES
2.69	2- Operators manual	YES
2.70	1- Safety & training video	YES
Aerial Tower, Insulated Boom 45 Foot Working Height and Utility Body with Side Access		
Make Offered:		**Altec**
Model Offered:		**AT-41M**

4. - SPEC NO. C10-045SB.17		
Aerial Tower, 45 Foot Working Height, 14 ft. Stake Body, Front Mounted Post Puller, PTO Air Compressor		
	Cab & Chassis - supplied by MDOT	YES
	Cab & Chassis will be 2017 International 4400 SBA extended cab 4x2	YES
	GVWR will be 35,000 pounds	YES
	Front GAWR will be 14,000 pounds	YES
	Rear GAWR will be 21,000 pounds	YES
	Wheel base will be 209 inches	YES
	Cab to axle length will be 141 inches	YES
	Axle to end frame will be 77 inches	YES
	Transmission will be an Allison 3500RDS_P with Dual PTO provision	YES
	Engine will be a International N9 rated @ 260hp	YES
	Unit shall be full of fuel when picked up by vendor, and shall be returned to MDOT in the same manner	YES
	Base Specifications:	YES
1.1	All holes in cab and chassis frame rails shall be drilled or punched.	YES
1.2	**There shall be no flame cutting or welding on the frame side rails**	YES
1.3	Aerial tower shall have all exposed metal surfaces, except internal boom extensions, finish coated Omaha Orange DuPont Imron #43106-X or equal	YES
1.4	Stake body shall have all bare metal surfaces pre-cleaned and prepped prior to applying a compatible red oxide or zinc chromate primer	YES
1.5	When painting continues over a manufacture's standard paint, metal prepping and primer may be omitted, providing an acceptable bond can be achieved	YES
1.6	Stake body shall be painted black non-skid surface	YES
1.7	All components mounted below frame rails shall be painted black	YES
1.8	Cab to end frame length on all body installations shall be the same length as the body being mounted, plus the length of any setback	YES
1.9	All items removed from the cab and chassis by body installer (frame ends, fuel tanks mirrors, etc..) remain the property of the State of Michigan are to be returned with the truck	YES
1.10	All wires passing through holes in metal or non-metal wearing surfaces, which could cause wear of the insulation, shall be adequately protected by rubber or plastic grommets, and/or non-metal conduit.	YES
1.11	Ends of all wires shall be adequately anchored to prevent loosening	YES
1.12	All electrical connections shall be soldered and enclosed in heat shrink or in water tight junction blocks	YES
1.13	Scotch locks and wire nuts are not acceptable	YES
1.14	All wire connections from the stake body and tower to the chassis must be connected to the body up fit module if provided	YES
1.15	Body vendor will install body, mud flaps, lights as necessary	YES
1.16	Mud flaps will be plain with no advertising on either side	YES
1.17	No frame extensions will be accepted	YES
	Aerial Manlift:	YES
1.18	Manlift shall have a working height of 45 feet maximum	YES - 47'
1.19	Platform to ground shall be 40 feet minimum	YES - 42'

1.20	Working radius from center line of truck shall be 40 feet minimum	35' radius
1.21	Aerial tower shall be mounted to the truck frame next to cab	YES
1.22	The remaining area of the set back will be used for the installation of a sign storage box.	YES
1.23	The storage box will be approximately 52 inches tall , 98 inches long and 24 inches wide	YES
1.24	The storage box will be mounted directly to truck frame	YES
1.25	The aerial tower shall be mounted to provide space for the sign storage box with out interference in any boom position	YES
1.26	Manlift shall be a 40 inch by 60 inch platform type with a 550 pound minimum capacity	- Aluminum Two-Man End-Mount Platform 60" x 36" x 45" with platform capacity of 500 lbs., 180 Degree Rotation **OR** - Single 2-Man Platform, Fiberglass (Insulated), 24" x 48" x 42", End Mount, 180 Degree Rotation, 600 lb capacity
1.27	Boom elevation shall have a range of +72° to -20° from horizontal	80° to -15°
1.28	Tower will have a continuous rotation of 360°	YES
1.29	Platform shall rotate hydraulically 180° around the end of the boom	YES
1.30	Access to platform shall be from the rear of the truck with the tower in the stowed position and platform facing the rear	YES
1.31	Platform hinged gate shall be 42 inches high X 28 inches wide and have a positive lock to prevent accidental opening (chains are NOT acceptable)	39 in high 18.3 in wide at bottom 36.7 in at top
1.32	The gate shall be installed at the center of the platform at the rear.	Installed on the CS (OR REAR) of the platform when unit is stowed (DEPENDS ON PLATFORM ROTATION THAT IS CONSIDERED STOWED)
1.33	The gate shall swing outside the platform	Fiberglass - No Gate Aluminum - Gate swings to inside
1.34	Platform shall be automatically and constantly leveled	YES
1.33	Platform controls shall be mounted at the opposite side of the platform from the access gate. Left side of platform on front (boom attachment end)	Controls are mounted opposite platform access door.
1.34	Controls shall be mounted on the inside of the railing of the platform	Controls are on the outside of the platform
1.35	The platform railing shall have a mounting bracket for a post driver.	YES
1.36	A support shall be provided on the body floor to support the weight of the post driver in the transport position sufficient capacity to carry a 70 pound air or hydraulic post driver	YES
1.37	Post driver mount shall be on the front face of platform on the curb side in the stowed position.	YES
1.38	Manlift controls shall be full metering, full pressure hydraulic at both platform and lower control station	YES
1.39	Control levers shall be individually operated	Uppers: ISO Grip (4 FUNCTION)-All boom functions on one control handle with exception of platform rotate/level Lowers: Individual handles
1.40	Lower controls shall override platform controls	YES
1.41	A suitable platform and steps with handrails shall be provided for the operator at the lower station controls	YES
1.42	All controls shall be hydraulic with NO electric connections to the platform controls	YES
1.43	The hydraulic system shall also include a 12 volt DC emergency backup system with a motor and pump	YES
1.44	Back up power and throttle two speed controls shall also be at the lower controls	YES
1.45	Hydraulic system shall be a full flow and pressure, open center system	YES
1.46	Hydraulic system shall have a pressure compensated piston pump, 7gpm, operating at 2,200psi maximum	Altec ALB units use a vane pump, not pressure compensated piston pump. 7 gpm
1.47	Hydraulic system shall be driven by power take off(PTO) to be a Chelsea 277 hot shift PTO with overspeed control, or equivalent	YES

1.48	PTO shall be wired to only allow it to engage if parking brakes are set	YES
1.49	PTO control shall be dash mounted electrical switch	YES
1.50	PTO engaged light will be provide in the cab	YES
1.51	Hydraulic reservoir shall be located in the aerial unit pedestal with a minimum of 17 gallon capacity	Reservoir is not IN the pedestal but can be mounted flush to front of pedestal
1.52	The reservoir shall be equipped with a drain plug, filler cap, air filter vent, sight level gauge, baffle system, and shut off valve at the outlet	YES
1.53	An adequate opening shall be provided by a door or cover to allow access to internal components	YES
1.54	Hydraulic filters shall be 10-micron located in both the suction and return lines	YES
1.55	Full flow ball valves shall be installed to prevent fluid lose during filter changes	YES
1.56	Hydraulic hoses shall extend and retract in tract carriers enclosed by the booms	YES
1.57	Proper plumbing practices shall be exercised to eliminate restrictions and excessive back pressure	YES
1.58	Hydraulic hoses shall have a 4 to 1 safety factor from operating to burst pressure	YES
1.59	Hydraulic fluid shall be "Glacial Blue Type" (Meets MilSpec 5606)	YES
1.60	Hydraulic tank will be labeled "Glacial Blue Type"	YES
1.61	Hydraulic system shall have the ability to operate either open center or closed center tools at the upper and lower tool circuits	Hydraulic system on ALB is built for Open Center tools. Closed center will go over releif if tools circuit is left on.
1.62	Hydraulic tool outlets for open or closed center hydraulic tools shall be provided at both the platform and at the base of the tower which can be accessed from ground level	YES
1.63	Two sets of tool outlets shall be provided at front right side of the platform.	YES
1.64	Tool outlets at the base shall be on the curb side.	YES
1.65	Quick connect air outlets from the under deck air compressor shall be provided next to the hydraulic tool outlets at the platform and at the base	YES
1.66	Tool outlets shall be sized to operate hydraulic tools without creating excessive frictional heat	YES
1.67	Hydraulic tool circuit shall provide 7gpm and 2,000psi maximum pressure with a maximum of 200psi backpressure	YES
1.68	Hydraulic tool circuit shall have priority over the tower functions without the use of a selector valve	YES
1.69	A hydraulic circuit shall be plumbed to the front of the truck for a bumper mounted post puller	YES
1.70	Outriggers shall be hydraulic, telescopic, enclosed A-frame type	YES
1.71	Outriggers shall be integral with the mounting base of the aerial manlift	YES
1.72	Holding valves shall be attached to each cylinder to prevent creep and to lock cylinders in case of line failure	YES
1.73	95 dba audible alarm shall be activated when out riggers are in motion, either in or out	YES
1.74	Outrigger controls shall be mounted so operator has clear view of the outrigger being operated	YES
1.75	Each outrigger control shall include a two speed engine throttle control	YES
1.76	An outrigger/boom interlock system shall prevent lift operation until the outriggers contacts the ground and outrigger retraction before aerial lift is properly stowed	YES
1.77	Outrigger indicator light on dash to indicate outriggers are not stowed for transport	YES
1.78	Top boom section shall be molded or pultruded fiberglass construction	Non- Comply Filament wound fiberglass boom
1.79	All other sections shall be high strength steel construction	YES
1.80	Booms shall elevate and extend by double acting cylinders equipped with internal or direct mounted check or holding valves	YES
1.81	Boom shall be straight telescopic type	YES
1.82	An eye type attachment point shall be provided on the boom for operator's body harness	YES
1.83	Boom rotation shall be through self-locking, heavy-duty worm gear box drive	YES
1.84	In addition to the safety standards outlined in Section 1, the manlift shall include an engine kill switch and dead man controls at the platform	There is a start/stop plunger at the platform, but not a dedicated, separate engine kill switch.
1.85	A boom support shall be provided to support the aerial lift booms in the transport position	YES
1.86	An over the center clamping device shall secure the booms to the support for road transport	YES
1.87	A transport height placard indicating the overall stowed height of the completed vehicle shall be mounted on the dash in clear view of the operator	YES
1.88	A slope meter shall be furnished and mounted in the dash for the truck	YES

1.89	A slope meter shall be furnished and mounted on the rear of the truck	YES
1.90	A "Boom Raised" light will be mounted in the dash to illuminate when the boom is not in the stowed position	YES
1.91	"Boom raised" light shall be activated by an epoxy sealed, magnetic proximity switch, Grainger part # 6C834 or Omron type TL-W20ME2 12V - 24V No Exceptions	YES
1.92	Inner boom assembly shall be tested and certified for electrical work at 46KV and below in accordance with ANSI A92.2 requirements	YES
1.93	Completed unit shall be tested and inspected before delivery to MDOT. A dated inspection sticker shall be installed inside rear window of truck	YES
	UNDER DECK PTO COMPRESSOR	YES
1.94	Compressor shall be PTO driven, 160cfm, positive displacement rotary screw type	YES
1.95	Compressor shall be a Sullair model #160 displacement rotary screw type or equivalent	YES
1.96	Compressor shall be fully equipped with all standard features necessary for safe operation, including:	YES
a	A.S.M.E. coded receiver	YES
b	Oil cooler	YES
c	Hosing	YES
d	Filters	YES
e	Instrumentation	YES
f	Controls	YES
g	Gauges	YES
h	Protective Circuitry	YES
1.97	All related equipment shall be mounted under deck	YES
1.98	Air compressor cooler shall be mounted in front of truck radiator	YES
1.99	All controls shall be mounted in cab	YES
2.00	Compressor shall be driven from PTO	YES
2.01	Power take off(PTO) to be a Chelsea 277 hot shift PTO with overspeed control, or equivalent	YES
2.02	PTO shall be wired to only allow it to engage if parking brakes are set	YES
2.03	PTO control shall be dash mounted electrical switch	YES
2.04	PTO engaged light will be provide in the cab	YES
2.05	The aerial tower and air compressor shall be operable together or independently	YES
2.06	Air compressor outlets shall be piped to hose reel that leads to platform and to base of tower reachable from the ground on curb side	YES
	POST PULLER, FRONT MOUNTED:	YES
2.07	Diversified Product 30,00 lb. Heavy Duty PPF 295 Post puller or equivalent	YES
2.08	Hydraulic power for the post puller will be supplied by the Aerial Tower hydraulic pump through a double acting flow divider with (1) one single valve bank	YES
a	Adjustable relief, double acting detented motor spool valve to direct oil flow to the front post puller or to the aerial tower	YES
b	Post puller circuit must also include adjustable flow control to regulate the desired speed of the post puller.	YES
2.09	A 12 volt switch shall control the hydraulic flow divider	YES
	Stake Body:	YES
2.10	Stake body shall be approximately 14 feet long by 96 inches wide	YES
2.11	Stake platform floor shall be non-skid tread plate, 3/16 inch minimum	YES
2.12	Steel rub-rail shall be 6 inch structural steel channels	YES
2.13	Long sills shall be 6 inch 8.2 pound structural steel channels	YES
2.14	Cross-members shall be 4 inch structural channel on 12 inch centers	YES
2.15	Cross-members are to be gusseted with 9 1/4 inch by 5 1/2 inch gussets at every cross sill	YES
2.16	Stake racks are to be omitted	YES
2.17	Body mounting shall be 68 inches behind cab)set back) frame extensions shall be provided by installer	YES
2.18	Mounting shall include three (3) U-bolt per side plus two (2) shear strips (one each side) minimum, welded to long sills and bolted to frame of cab and chassis	YES
2.19	Filler strips shall be:	YES
a	Hardwood or steel	YES
b	One piece	YES
c	Full length	YES
d	Contoured to frame	YES
e	Installed between body sub-frame and truck frame	YES
2.20	A false floor sign post storage area shall be fabricated and installed on top of the stake rack body.	YES
2.21	The false floor shall be the same length as the stake body	YES
2.22	The false floor shall be 81 inch's wide	YES
2.23	It shall be mounted flush with the street side of the body	YES

2.24	Four lengths of 8 inch x ¼ inch I beam shall be installed to support top of false floor and provide post storage compartments.	YES
2.25	There shall be five storage compartments with an approximate size of 8`` x 16``, 8`` x 16``, 8``x 12``and 8`` x 20``. Top of false floor shall be 3/16 `` tread plate.	YES
2.26	A single drop down door shall be provided to close all compartments	YES
2.27	The rear boom support and the platform support shall be mounted on top of the false floor	YES
2.28	Rear steps shall be fabricated and installed at the rear of stake body	YES
2.29	The step assembly shall provide access to the top of the false floor	YES
2.30	A platform shall be provided to allow entry to the basket	YES
2.31	There shall be two sets of rear steps, on the far left and far right of the body	YES
2.32	A platform approximately 40 inches wide shall be between the steps at the false floor level	YES
2.33	Each set of steps shall have three treads	YES
2.34	The top of the first tread shall be 20 inches from the ground	YES
2.35	Treads shall be approx. 28 inches wide	YES
2.36	The treads of the steps shall be fabricated from grip strut	YES
2.37	The rear bumper shall be full width of the body and extend 28 inches from the rear of the body.	YES
2.38	The rear bumper shall provide support for the steps.	YES
2.39	The rear bumper shall be fabricated from 5 inch C channel, with trailer hitch receiver installed	YES
2.40	Trailer hitch shall be receiver type, with 7000 lb. capacity	YES
2.41	Two 3/4 inch D-rings installed for trailer safety chains	YES
2.42	The steps and bumper assembly shall be attached to the truck frame and to the stack rack body.	YES
2.43	Wheel chocks, two sets, rubber, with holders mounted on driver and curb side under bed	YES
2.44	Composite plastic (or aluminum) outrigger pads, two, (2) 24” X 24” X 1” with two (2) holders mounted under the body	YES
2.45	Eyelet for trailer breakaway cables	YES
2.46	Per MDOT supplied - Trailer Wiring Diagram, trailer connector shall be 7-way round pin Berg type , mounted at rear of frame, wired for turn signals independent of stop, compatible with trailers that have amber or side turn lamps, provided and installed by vendor **(See Schedule E - Trailer Wiring Diagram)**	YES
2.47	Triangular reflector kit	YES
2.48	10lb fire extinguisher with heavy duty bracket installed	YES
2.49	Electric moisture resistant back -up alarm, 95 dba sound level shall be provided	YES
2.50	All exterior lights on body will be LED type and conform with Motor Vehicle laws of the State of Michigan and include	YES
a	Clearance	YES
b	Stop	YES
c	Tail	YES
d	Turn	YES
e	Back up	YES
	Work/strobe light type and placement:	YES
2.51	Four (4) L.E.D. corner strobe lighting to truck. Two (2) in rear light channel and Two (2) in front grille area. To have separate master switch located in chassis cab. Whelen # 50*02Z*A, 500 series linear super - LED or equivalent	YES
2.52	Two (2) L.E.D strobe lights mounted on both sides of the body, Install on same master on/off switch as the 4 corner strobes. Whelen # 50*02Z*A, 500 series liner super - LED or equivalent	YES
2.53	Two (2) mini light bars to light support bar on both Curb side and Street side of boom rest. Lights to be visible from front, rear and sides of truck. To have separate on/off master switch located in chassis cab. Whelen R2LPHPA L.E.D. mini light bar or equivalent.	YES
2.54	Four (4) Whelen L.E.D perimeter lights. Two mounted just under mini light bars on both curb side and street side mounted all the way to the outer edge to eliminate shadows and two mounted at rear just under the tail shelf on both the curb side and street side . to have separate master switch located in chassis cab. Whelen # PELCB perimeter lights or equivalent.	YES
2.55	Two (2) Reverse/Work L.E.D Flood lights in rear chassis frame rails. To automatically come on when chassis is in reverse and to have separate on/off switch located in chassis cab. Whelen # PFBS6 work lights or equivalent	YES
2.56	Two (2) Work Lights L.E.D. Flood lights. One (1) mounted on light support bar facing cargo area. One (1) mounted at rear facing tail shelf area. To have separate master on/off switch located in Chassis Cab. Whelen # PFBS6 work lights or equivalent	YES
2.57	One (1) Go-Light mounted just below upper strobe light on Curb Side with WIRELESS chassis control and WIRELESS handheld control. Go-light Model # 20074 or equivalent	YES

2.58	Manufactures standard warranty	YES
2.59	Provide 8 hours of operator training, at a time and location determined by the State after unit has been accepted and is ready to be placed into service	YES
2.60	2- Parts manual	YES
2.61	2- Service manual	YES
2.62	2- Operators manual	YES
2.63	1- Safety & training video	YES
Aerial Tower, 45 Foot Working Height, 14 ft. Stake Body, Front Mounted Post Puller, PTO Air Compressor		
Make Offered:		**Altec**
Model Offered:		**ALB-42**

5. - SPEC. NO. C10-045ST.17		
Aerial Tower, 45 Foot Working Height, 15 ft. Stake Body, PTO Air Compressor, Front Mounted Post Puller		
	Cab & Chassis - supplied by MDOT	YES
	Cab & Chassis will be 2017 International 4400 SBA extended cab 4x2	YES
	GVWR will be 35,000 pounds	YES
	Front GAWR will be 14,000 pounds	YES
	Rear GAWR will be 21,000 pounds	YES
	Wheel base will be 234 inches	YES
	Cab to axle length will be 141 inches	YES
	Axle to end frame will be 77 inches	YES
	Transmission will be an Allison 3500RDS_P with Dual PTO provision	YES
	Engine will be a International N9 rated @260hp	YES
	Unit shall be full of fuel when picked up by vendor, and shall be returned to MDOT in the same manner	YES
	Base Specifications:	YES
1.1	All holes in cab and chassis frame rails shall be drilled or punched.	YES
1.2	**There shall be no flame cutting or welding on the frame side rails**	YES
1.3	Aerial tower shall have all exposed metal surfaces, except internal boom extensions, finish coated Omaha Orange DuPont Imron #43106-X or equal	YES
1.4	Stake body shall have all bare metal surfaces pre-cleaned and prepped prior to applying a compatible red oxide or zinc chromate primer	YES
1.5	When painting continues over a manufacture's standard paint, metal prepping and primer may be omitted, providing an acceptable bond can be achieved	YES
1.6	Stake body shall be painted black with a non-skid surface	YES
1.7	All components mounted below frame rails shall be painted black	YES
1.8	Cab to end frame length on all body installations shall be the same length as the body being mounted, plus the length of any setback	YES
1.9	All items removed from the cab and chassis by body installer (frame ends, fuel tanks mirrors, etc..) remain the property of the State of Michigan are to be returned with the truck	YES
1.10	All wires passing through holes in metal or non-metal wearing surfaces, which could cause wear of the insulation, shall be adequately protected by rubber or plastic grommets, and/or non-metal conduit.	YES
1.11	Ends of all wires shall be adequately anchored to prevent loosening	YES
1.12	All electrical connections shall be soldered and enclosed in heat shrink or in water tight junction blocks	YES
1.13	Scotch locks and wire nuts are not acceptable	YES
1.14	All wire connections from the stake body and tower to the chassis must be connected to the body up fit module if provided	YES
1.15	Body vendor will install body, mud flaps, lights as necessary	YES
1.16	Mud flaps will be plain with no advertising on either side	YES
1.17	No frame extensions will be accepted	YES
	Aerial Manlift:	YES
1.18	The aerial tower shall be mounted to the truck frame next to the cab	YES
1.19	Ground to Bottom of Platform Height: 40 feet at 12.4 feet from centerline of rotation (12.2 m at 3.8 m)	YES
1.20	Working Height – 45 feet (13.7 m)	YES
1.21	Maximum Reach to Edge of Platform: 30.8 feet at 16.5 foot platform height	YES
1.22	Side by Side Boom Configuration: Travel height approximately 10’2” on a chassis with approximately 30” frame height	YES
1.23	Articulating Arm: Tubular steel structure	YES
1.24	The articulating arm shall be designed so that the articulating arm and tension link are compensating By raising the articulating arm only, the lower and upper boom maintain the same relative angle with the ground	YES

	Lift Cylinders:	YES
1.25	The rod eye shall be welded to the rod while the blind end of the cylinder is of cast steel, one piece design, that utilizes cartridge-type, bi-directional counter-balance holding valves	YES
1.26	The lower boom and arm cylinders shall have spherical-type bearings on both rod and base ends	YES
	Lower Boom:	YES
1.27	Fabricated, reinforced steel box structure.	YES
1.28	Ultra high molecular weight polyurethane slide pads shall be installed at the boom tip to guide the telescopic upper boom	YES
1.29	These pads shall have a large contact area in order to reduce wear	YES
1.30	The pads shall be shimmed and attached for ease of adjustment or replacement without disassembly of the booms.	YES
1.31	Lower Boom Pivot Pin shall be high strength chrome plated steel with self-lubricating, replaceable, non-metallic bearings	YES
	Telescopic Upper Boom:	YES
1.32	Filament wound, square fiberglass, providing a minimum of 31.5 inches of isolation	YES
1.33	The inner surface of the fiberglass boom shall be coated with polyurethane to provide a dry, smooth inner surface	YES
1.34	The outer surface shall have a smooth gelcoat finish	YES
	Upper Boom Extension:	YES
1.35	The upper boom shall be extended and retracted by a double acting hydraulic cylinder installed within the booms	YES
1.36	The boom shall extend and retract over slide bearings located in the end of the boom	YES
	Hydraulic System:	YES
1.37	Open-center hydraulic system operates at a system pressure of 3,000 psi and a free flow rate of 6.0 gpm	YES
1.38	The system consists of a pump, 15.0 gallon hydraulic oil reservoir, inlet manifold, lower control valve, tool/jib valve and single handle upper control valve assembly	YES
1.39	Hydraulic system shall be a full flow and pressure, open center system	YES
1.40	Hydraulic filters shall be 10-micron located in both the suction and return lines	YES
1.41	Full flow ball valves shall be installed to prevent fluid lose during filter changes	YES
1.42	Hydraulic hoses shall extend and retract in tract carriers enclosed by the booms	YES
1.43	Proper plumbing practices shall be exercised to eliminate restrictions and excessive back pressure	YES
1.44	Hydraulic hoses shall have a 4 to 1 safety factor from operating to burst pressure	YES
1.45	Hydraulic fluid shall be "Glacial Blue Type" (Meets MilSpec 5606)	YES
1.46	Hydraulic tank will be labeled "Glacial Blue Type"	YES
1.47	The reservoir shall be equipped with a drain plug, filler cap, air filter vent, sight level gauge, baffle system, and shut off valve at the outlet	YES
1.48	Hydraulic system shall include an auxiliary pump and a 12-volt power source to lower the platform should there be a truck engine failure	YES
1.49	Hydraulic system shall be driven by power take off(PTO) to be a Chelsea 277 hot shift PTO with overspeed control, or equivalent	YES
1.50	PTO shall be wired to only allow it to engage if parking brakes are set	YES
1.51	PTO control shall be dash mounted electrical switch	YES
1.52	PTO engaged light will be provide in the cab	YES
	Pedestal:	YES
1.53	Post-type structure design with 12.75 inch diameter vertical pedestal tube with a heavy-duty welded flange at the base end and openings that provide easy access to the hydraulic hoses	YES
1.54	Includes pedestal base plate for attachment to sub-base	YES
1.55	An adequate opening shall be provided by a door or cover in the pedestal to allow access to internal components	YES
	Rotation:	YES
1.56	Continuous rotation is provided by worm gear drive, equipped with extended shaft for manual rotation driving a shear ball bearing rotation gear	YES
	Turntable:	YES
1.57	Steel fixture-welded structure with a 1.25 inch steel bottom plate	YES
1.58	The bottom plate of the turntable should be machined after welding to ensure a flat mounting surface for the rotation bearing	YES
1.59	The hydraulic rotary joint and hydraulic hoses should be located in the turntable for ease of access	YES
1.60	The main control valve shall be located outside the turntable for convenience and ease of access and shall be covered for Protection	YES
	Platform Leveling System:	YES

1.61	The platform shall be leveled by hydraulic leveling means, contained within the upper boom	YES
1.62	Controls for leveling and tilting the platform shall be located at the platform	YES
1.63	Leveling for the platform includes two double acting cylinders incorporating counterbalance load holding valves to lock the platform in the event of hydraulic line failure	YES
1.64	The master-slave action of the cylinders shall maintain a level platform throughout the full range of boom articulation	YES
1.65	Platform shall be automatically and constantly leveled	YES
	Platform:	YES
1.66	Metal non-insulated one-man end mount design with 180 degree rotation	YES
1.67	Platform shall be a 24 inch by 30 inch aluminum platform with a 500 pound minimum capacity	27" x 30"
1.68	Access to platform shall be from the rear of the truck with the tower in the stowed position and platform facing the rear	YES
1.69	Platform hinged gate shall be 42 inches high X 24 inches wide and have a positive lock to prevent accidental opening (chains are NOT acceptable),	YES
1.70	The gate shall be installed in the curb side (right) of the platform in the stowed position	YES
1.71	The gate shall hinged at the rear and swing outside the platform.	YES
1.72	Platform controls shall be mounted at the opposite side of the platform from the access gate	YES
1.73	Controls shall be mounted on the inside of the railing of the platform	YES
1.74	The platform railing shall have a mounting bracket for a post driver	YES
1.75	A support shall be provided on the body floor to support the weight of the post driver in the transport position sufficient capacity to carry a 70 pound air or hydraulic post driver	YES
1.76	Post driver mount shall be on the rear of the platform , toward rear bumper in the stowed position	YES
1.77	The platform shall have 4 rubber dock bumpers installed on the bottom with recessed bolts	YES
1.78	The platform shall rest on the bumpers in the stowed position	YES
	Platform Controls:	YES
1.79	Pistol grip single handle control system shall include the following boom tip components	YES
1.80	A single handle pistol grip controller	YES
1.81	The handle includes an interlock guard that reduces the potential for inadvertent boom operation	YES
1.82	Auxiliary Controls for separate functions	YES
1.83	Control Console to house all control functions	YES
1.84	When either control is released, boom movement shall stop and oil flow shall be redirected to the reservoir	YES
1.85	Manlift controls shall be full metering, full pressure hydraulic at both platform and lower control station	YES
1.86	The turntable mounted lower control valve shall override the upper control valve and shall be capable of maintaining override of the upper control valve while unattended	YES
1.87	All controls shall be hydraulic with NO electric connections to the platform controls	YES
	Hydraulic Tool Circuit:	YES
1.88	Control easily accessible to the operator activates the tool circuit which provides a maximum of 9.0 gpm	6 gpm is our standard
1.89	Tool system relief pressure set at 2,000 psi	YES
1.90	A valve assembly inside the control cover with a detented control handle shall be provided	YES
1.91	The hydraulic system shall have the ability to operate either open center or closed center tools at the upper and lower tool circuits	YES
1.92	Hydraulic tool outlets for open or closed center hydraulic tools shall be provided at both the platform and at the base of the tower which can be accessed from ground level	YES
1.93	Two sets of tool outlets shall be provided at front right side of the platform.	YES
1.94	Proper plumbing practices shall be exercised to eliminate restrictions and excessive back pressure	YES
1.95	Quick connect air outlets from the under deck air compressor shall be provided next to the hydraulic tool outlets at the platform and at the base	YES
1.96	Tool outlets shall be sized to operate hydraulic tools without creating excessive frictional heat	YES
1.97	Hydraulic tool circuit shall provide 7gpm and 2,000psi maximum pressure with a maximum of 200psi backpressure	6 gpm is our standard @ 2000 psi
1.98	Hydraulic tool circuit shall have priority over the tower functions without the use of a selector valve	No, per ANSI 2016 we cannot simultaneously run tools and unit
1.99	A hydraulic circuit shall be plumbed to the front of the truck for a bumper mounted post puller	YES
	Outriggers:	YES

2.00	An outrigger/boom interlock system shall prevent lift operation until the outriggers contacts the ground and outrigger retraction before aerial lift is properly stowed	YES
2.01	Outrigger indicator light on dash to indicate outriggers are not stowed for transport	YES
2.02	Outrigger/Unit Selector Control: Located near the outrigger controls, allows operator to divert hydraulic oil from tower circuit for outrigger operation	YES
2.03	All out rigger controls shall be 12 volt electric over hydraulic switches that shall control the outrigger operation	YES
2.04	12 Volt outrigger controls mounted at rear of body	YES
2.05	Outrigger controls shall be mounted so operator has clear view of the outrigger being operated	YES
2.06	Each outrigger control shall include a two speed engine throttle control	YES
2.07	95 dba audible alarm shall be activated when out riggers are in motion, either in or out	YES
2.08	Outriggers, primary – 36 to 40 inch chassis height	YES
2.09	Pivot shoe A-frame, 154 inches at maximum spread (outside of footpad to outside of footpad) and 5 inches penetration at a 40-inch chassis height	YES
2.10	Outriggers shall be hydraulic, telescopic, enclosed A-frame type	YES
	Outriggers shall be integral with the mounting base of the aerial manlift	YES
2.11	**Boom Miscellaneous:**	YES
2.12	An eye type attachment point shall be provided on the boom for operator's body harness	YES
2.13	Lifting Eye: Provide a 1,000 Lb capacity lifting eye at the outer end of boom	YES
2.14	A boom support shall be provided to support the aerial lift booms in the transport position	YES
2.15	An over the center clamping device shall secure the booms to the support for road transport	YES
2.16	A transport height placard indicating the overall stowed height of the completed vehicle shall be mounted on the dash in clear view of the operator	YES
2.17	A slope meter shall be furnished and mounted in the dash for the truck	YES
2.18	A slope meter shall be furnished and mounted on the rear of the truck	YES
2.19	A "Boom Raised" light will be mounted in the dash to illuminate when the boom is not in the stowed position	YES
2.20	"Boom raised" light shall be activated by an epoxy sealed, magnetic proximity switch, Grainger part # 6C834 or Omron type TL-W20ME2 12V - 24V No Exceptions	YES
2.21	Completed unit shall be tested and inspected before delivery to MDOT. A dated inspection sticker shall be installed inside rear window of truck	YES
	UNDER DECK PTO COMPRESSOR:	YES
2.22	Compressor shall be PTO driven, 160 cfm, positive displacement rotary screw type	YES
2.23	Compressor shall be a Sullair model #160 displacement rotary screw type or equivalent	YES
2.24	Compressor shall be fully equipped with all standard features necessary for safe operation, including:	YES
a	A.S.M.E. coded receiver	YES
b	Oil cooler	YES
c	Hosing	YES
d	Filters	YES
e	Instrumentation	YES
f	Controls	YES
g	Gauges	YES
h	Protective Circuitry	YES
2.25	All related equipment shall be mounted under deck	YES
2.26	Air compressor cooler shall be mounted in front of truck radiator	YES
2.27	All controls shall be mounted in cab	YES
2.28	Compressor shall be driven from PTO	YES
2.29	Power take off(PTO) to be a Chelsea 277 hot shift PTO with overspeed control, or equivalent	Yes, Chelsea 280 to replace 277
2.30	PTO shall be wired to only allow it to engage if parking brakes are set	YES
2.31	PTO control shall be dash mounted electrical switch	YES
2.32	PTO engaged light will be provide in the cab	YES
2.33	The aerial tower and air compressor shall be operable together or independently	YES
2.34	Air compressor outlets shall be piped to hose reel that leads to platform and to base of tower reachable from the ground on curb side	YES
	POST PULLER, FRONT MOUNTED	YES
2.35	Diversified Product 30,00 lb. Heavy Duty PPF 295 Post puller or equivalent	YES
2.37	Hydraulic power for the post puller will be supplied by the Aerial Tower hydraulic pump through a double acting flow divider with (1) one single valve bank	YES
2.38	Adjustable relief, double acting detented motor spool valve to direct oil flow to the front post puller or to the aerial tower	YES
2.39	Post puller circuit must also include adjustable flow control to regulate the desired speed of the post puller.	YES

2.40	A 12 volt switch shall control the hydraulic flow divider	YES
	Stake Body:	YES
2.41	Stake body shall be approximately 15 feet long by 102 inches wide	YES
2.42	Stake platform floor shall be non-skid tread plate, 3/16 inch minimum	YES
2.43	Steel rub-rail and stake pockets shall be omitted	YES
2.44	Long sills shall be 6 inch 8.2 pound structural steel channels	YES
2.45	Cross-members shall be 4 inch structural channel on 12 inch centers	YES
2.46	Cross-members are to be gusseted with 9 1/4 inch by 5 1/2 inch gussets at every cross sill	YES
2.47	Stake racks are to be omitted	YES
2.48	Body mounting shall be 40 inches behind cab (setback)	YES
2.49	Mounting shall include three (3) U-bolt per side plus two (2) shear strips (one each side) minimum, welded to long sills and bolted to frame of cab and chassis	We do not use U-Bolts. Bodies are Huck Bolted through chassis frame rails
2.50	Filler strips shall be:	YES
a	Hardwood or steel	YES
b	One piece	YES
c	Full length	YES
d	Contoured to frame	YES
e	Installed between body sub-frame and truck frame	YES
2.51	A sign post storage area shall be fabricated between the long sills of the stake body	YES
2.52	The storage area shall be created by enclosing the area between the long sills on the bottom and front	YES
2.53	At the rear of the stake body a swing down door with stainless steel continuous hinge and latch shall be provided	YES
2.54	The latch shall be lockable with a pad lock	YES
2.55	The storage area shall have two full length dividers	YES
a	One divider shall be installed at the center of the storage area, The second divider shall be installed at the center between the first divider and the curb side long sill	YES
b	The first storage area will be 14 feet 6 inches with a bulk head	YES
c	The second storage area shall be 12 ft. 6 inches long with bulk head	YES
d	The third storage area shall be 7 feet 6 inches long with bulk head	YES
e	The complete storage area shall be water tight	YES
f	All material shall be 3/16 steel	YES
g	The interior and exterior of the storage area to primed and painted to prevent rust	YES
2.56	Rear steps shall be fabricated and installed at the curb rear of stake body	YES
2.57	The steps shall be vertical and not extend past the rear of the state body	YES
2.59	A loop type hand rail shall be installed on top of the stake body	YES
2.60	The steps shall have three treads	YES
2.61	The top of the first tread shall be 20 inches from the ground level	YES
2.62	Treads shall be approx. 28 inches wide	YES
2.63	The treads of the steps shall be fabricated from grip strut	YES
2.64	The rear bumper shall be full width of the body	YES
2.65	The rear bumper shall provide support for the steps.	YES
2.66	The rear bumper shall be fabricated from 5 inch C channel, with trailer hitch receiver installed	YES
2.67	Trailer hitch shall be receiver type, class IV	YES
2.68	The center of the receiver hitch shall be 21 inches above ground level	YES
2.69	The steps and bumper assemble shall be attached to the truck frame and to the stake rack body	YES
2.70	Two 3/4 inch D-rings installed for trailer safety chains	YES
2.71	Eyelet for trailer breakaway cables	YES
2.72	Per MDOT supplied - Trailer Wiring Diagram, trailer connector shall be 7-way round pin Berg type , mounted at rear of frame, wired for turn signals independent of stop, compatible with trailers that have amber or side turn lamps, provided and installed by vendor **(See Schedule E - Trailer Wiring Diagram)**	YES
2.73	An aluminum sign storage box will be supplied and installed by the vendor	YES
2.74	The sign box will be 12 inches wide x 54 inches high x 121 inches long	YES
2.75	It shall be installed on the street side edge to the rear of the stake body	YES
2.76	Two sign post storage compartments shall be fabricated on top of the stake body	YES
2.77	The first compartment shall be 6 inches tall x 8 inches wide x 18 feet long	YES
2.78	The second compartment shall be 6 inches tall by 12 inches wide by 16 feet long tall	YES
2.79	The compartments shall extend from the rear of the stake body toward the back of the truck cab	YES
2.80	The compartments shall be mounted next to the sign storage box	YES

	Curb side tool boxes and steps:	YES
2.81	The vendor shall furnish and install the following tool boxes on the curb side of the stake body	YES
2.82	The stake body will be notched so that the front of the vertical tool boxes and the steps are flush with the outside edge of the stake body	YES
2.83	The top of the tool boxes shall be 15.5 inches above the top of stake body	YES
	The tool boxes shall include:	YES
2.84	First Vertical, 43 inches tall x 22 inches wide x 18 inches deep	YES
2.85	Second Vertical, 43 inches tall x 22 inches wide x 18 inches deep	YES
2.86	Third Vertical, 43 inches tall x 22 inches wide x 18 deep	YES
2.87	Horizontal, 15.5 inches tall x 56 inches wide x 18 inches deep	YES
2.88	Forth Vertical, 43 inches tall x 26 inches wide x 18 inches deep	YES
2.89	Each vertical compartment shall have 3 adjustable shelves	YES
2.90	The horizontal compartment shall have 1 adjustable shelve	YES
2.91	A pole saw compartment shall be installed on top of the tool boxes with the rear flush with the rear of the forth vertical	YES
2.92	The pole saw compartment shall be 11.5 inches tall by 11 inches wide By 102 inches long	YES
2.93	All tool compartments and all hardware shall be 304 Stainless Steel	YES
2.94	All compartment doors shall be water proof and have slam able latches	YES
2.95	All compartment door locks shall be keyed alike	YES
2.96	The curb side steps shall be a stairs type notched into the stake body and installed between the first and second vertical tool boxes	YES
2.97	The steps shall be 28 inches wide and have three treads	YES
2.98	The lowest step shall be mounted flush with the out side of the tool boxes	YES
2.99	The first tread shall be 20 inches above ground level	YES
3.00	The treads of the steps shall be fabricated from grip strut	YES
3.01	A hand rail shall be provided	YES
3.02	Wheel chocks, two sets, rubber, with holders mounted on driver and curb side under bed	YES
3.03	Composite plastic (or aluminum) outrigger pads, two, (2) 24" X 24" X 1" with two (2) aluminum holders mounted under the body	YES
3.04	The steps shall be incorporated with the lower station platform and controls	YES
3.05	Triangular reflector kit	YES
3.06	10lb fire extinguisher with heavy duty bracket installed	YES
3.07	Electric moisture resistant back -up alarm, 95 dba sound level shall be provided	YES
3.08	All exterior lights on body will be LED type and conform with Motor Vehicle laws of the State of Michigan and include	YES
a	Clearance	YES
b	Stop	YES
c	Tail	YES
d	Turn	YES
e	Back up	YES
	Work/strobe light type and placement:	YES
3.09	Four (4) L.E.D. corner strobe lighting to truck. Two (2) in rear light channel and Two (2) in front grille area. To have separate master switch located in chassis cab. Whelen # 50*02Z*A, 500 series linear super - LED or equivalent	YES
3.10	Two (2) L.E.D strobe lights mounted on both sides of the body, Install on same master on/off switch as the 4 corner strobes. Whelen # 50*02Z*A, 500 series liner super - LED or equivalent	YES
3.11	Two (2) mini light bars to light support bar on both Curb side and Street side of boom rest. Lights to be visible from front, rear and sides of truck. To have separate on/off master switch located in chassis cab. Whelen R2LPHPA L.E.D. mini light bar or equivalent.	YES
3.12	Four (4) Whelen L.E.D perimeter lights. Two mounted just under mini light bars on both curb side and street side mounted all the way to the outer edge to eliminate shadows and two mounted at rear just under the tail shelf on both the curb side and street side . to have separate master switch located in chassis cab. Whelen # PELCB perimeter lights or equivalent.	YES
3.13	Two (2) Reverse/Work L.E.D Flood lights in rear chassis frame rails. To automatically come on when chassis is in reverse and to have separate on/off switch located in chassis cab. Whelen # PFBS6 work lights or equivalent	YES
3.14	Two (2) Work Lights L.E.D. Flood lights. One (1) mounted on light support bar facing cargo area. One (1) mounted at rear facing tail shelf area. To have separate master on/off switch located in Chassis Cab. Whelen # PFBS6 work lights or equivalent	YES
3.15	One (1) Go-Light mounted just below upper strobe light on Curb Side with WIRELESS chassis control and WIRELESS handheld control. Go-light Model # 20074 or equivalent	YES
3.16	Manufactures standard warranty	YES

3.17	Provide 8 hours of operator training, at a time and location determined by the State after unit has been accepted and is ready to be placed into service	YES
3.18	2- Parts manual	YES
3.19	2- Service manual	YES
3.20	2- Operators manual	YES
3.21	1- Safety & training video	YES
Aerial Tower, 45 Foot Working Height, 15 ft. Stake Body, PTO Air Compressor, Front Mounted Post Puller		
Make Offered:		**Altec**
Model Offered:		**AT-41S**

6. - Specification # C10-055ET.17		
Aerial Tower, Insulated Boom 55 Foot Working Height and Utility Body with Side Access		
	Cab & Chassis - supplied by MDOT	YES
	Cab & Chassis will be 2017 International 4400 SBA extended cab 4x2	YES
	GVWR will be 27,500 pounds	YES
	Front GAWR will be 10,000 pounds	YES
	Rear GAWR will be 17,500 pounds	YES
	Wheel base will be 177 inches	YES
	Cab to axle length will be 83.9 inches	YES
	Axle to end frame will be 89 inches	YES
	Transmission will be an Allison 3500RDS_P with PTO provision	YES
	Engine will be an International N9 rated @260hp	YES
	Unit shall be full of fuel when picked up by vendor, and shall be returned to MDOT in the same manner	YES
	Base Specifications:	YES
1.1	All holes in cab and chassis frame rails shall be drilled or punched.	YES
1.2	**There shall be no flame cutting or welding on the frame side rails**	YES
1.3	Aerial tower shall have all exposed metal surfaces, except internal boom extensions, finish coated Omaha Orange DuPont Imron #43106-X or equal	YES
1.4	Utility body shall have all bare metal surfaces pre-cleaned and prepped prior to applying a compatible red oxide or zinc chromate primer	YES
1.5	When painting continues over a manufacture's standard paint, metal prepping and primer may be omitted, providing an acceptable bond can be achieved	YES
1.6	Utility body shall be painted Omaha Orange, DuPont Imron #43106-X or equal	YES
1.7	All components mounted below frame rails shall be painted black	YES
1.8	Cab to end frame length on all body installations shall be the same length as the body being mounted, plus the length of any setback	YES
1.9	All items removed from the cab and chassis by body installer (frame ends, fuel tanks mirrors, etc..) remain the property of the State of Michigan are to be returned with the truck	YES
1.10	All wires passing through holes in metal or non-metal wearing surfaces, which could cause wear of the insulation, shall be adequately protected by rubber or plastic grommets, and/or non-metal conduit.	YES
1.11	Ends of all wires shall be adequately anchored to prevent loosening	YES
1.12	All electrical connections shall be soldered and enclosed in heat shrink or in water tight junction blocks	YES
1.13	Scotch locks and wire nuts are not acceptable	YES
1.14	All wire connections from the utility body and tower to the chassis must be connected to the body up fit module if provided	YES
1.15	Body vendor will install body, mud flaps, lights as necessary	YES
1.16	Mud flaps will be plain with no advertising on either side	YES
1.17	No frame extensions will be accepted	YES
	Aerial Manlift:	YES
1.18	The fiberglass boom shall be rated with a class "C" 46KV rating	YES
1.19	Tower will have a 55 foot minimum working height	54.5'
1.20	Bucket will have a 600 pound capacity	YES
1.21	Bucket shall be 20 inch x 40 inch x 42 inch,	24" x 48" x42"
1.22	Bucket shall be solid, two (2) man reinforced fiberglass	YES
1.23	The basket shall not have any holes for drainage or other wise	YES
1.24	Bucket shall have side mounted step to facilitate easy entry	YES
1.25	Bucket shall include a vinyl protective cover, liner, and scuff pad with step	YES
1.26	Bucket shall be tested to 50,000 volts AC RMS for one (1) minute	Liner is tested to 50kV-Not platform. You cannot test a platform.
1.27	Bucket shall rotate 180° around the boom	YES

1.28	Bucket shall have a safety belt anchor loop	YES
1.29	An eye type attachment point shall be provided on the boom for operator's body harness	YES
1.30	Manlift controls shall be full metering, full pressure hydraulic at both platform and lower control station	YES
1.31	Upper controls shall be single stick type to operate all boom functions including lower boom section	YES
1.32	Upper controls shall be mounted curbside, back of platform	YES
1.33	Upper/lower control levers shall be individually operated and the lower station controls shall override platform controls	YES
1.34	A suitable platform and steps shall be provided for the operator at the lower station controls	YES
1.35	All controls shall be hydraulic with NO electric connections to the platform controls	YES
1.36	Hydraulic system shall include an auxiliary pump and a 12-volt power source to lower the platform should there be a truck engine failure	YES
1.37	12 volt back up power and throttle two speed controls shall also be at the lower controls	YES
1.38	Hydraulic system shall be a full flow and pressure, open center system	YES
1.39	Hydraulic fluid shall be "Glacial Blue Type" (Meets MilSpec 5606)	YES
1.40	Hydraulic tank will be labeled "Glacial Blue Type"	YES
1.41	Hydraulic system shall have a pressure compensated piston pump, 7gpm, operating at 2,250 psi maximum	Gear pump; 3000 psi max @ 8.2 gpm
1.42	Hydraulic system shall be driven by power take off(PTO) to be a Chelsea 277 hot shift PTO with overspeed control, or equivalent	YES
1.43	PTO shall be wired to only allow it to engage if parking brakes are set	YES
1.44	PTO control shall be dash mounted electrical switch	YES
1.45	PTO engaged light will be provide in the cab	YES
1.46	Hydraulic reservoir shall be located in the aerial unit pedestal with a minimum of 25 gallon capacity	Reservoir will not be mounted in pedestal. Options include cargo area, in front of boom rest, etc.
1.47	The reservoir shall be equipped with a drain plug, filler cap, air filter vent, sight level gauge, baffle system, and shut off valve at the outlet	YES
1.47	An adequate opening shall be provided by a door or cover to allow access to internal components	YES
1.49	Full flow ball valves shall be installed to prevent fluid lose during filter changes	YES
1.50	Hydraulic filters shall be 100-micron suction strainer located and 10-micron return filter	YES
1.51	Proper plumbing practices shall be exercised to eliminate restrictions and excessive back pressure	YES
1.52	Hydraulic hoses shall extend and retract in tract carriers enclosed by the booms	YES
1.53	Hydraulic hoses shall have a 4 to 1 safety factor from operating to burst pressure	YES
1.54	Both front and rear outriggers shall be hydraulic, telescopic, enclosed H-frame type	Front are A-frame, rear are modified A-frame
1.55	Front outriggers shall be integral with the mounting base of the aerial manlift	YES
1.56	Controls for each outrigger cylinder will be supplied at the rear of the chassis so that the outriggers can be seen while in operation	YES
1.57	95 dba audible alarm shall be activated when out riggers are in motion, either in or out	YES
1.58	An outrigger/boom interlock system shall prevent lift operation until the outriggers contacts the ground and outrigger retraction before aerial lift is properly stowed	YES
1.59	Outrigger indicator light on dash to indicate outriggers are not stowed for transport	YES
1.60	A transport height placard indicating the overall stowed height of the completed vehicle shall be mounted on the dash in clear view of the operator	YES
1.61	A slope meter shall be furnished and mounted in the dash for the truck	YES
1.62	A slope meter shall be furnished and mounted on the rear of the truck	YES
1.63	In addition to the safety standards outlined in Section 1, the manlift shall include an engine kill switch and dead man controls at the platform	YES
1.64	Platform to ground shall be 50 feet minimum	49.5'
1.65	Working radius from centerline of truck shall be 36 foot minimum at 22 foot elevation	Reach is 36.2' at 19.9' platform height
1.66	Outer/inner boom assembly shall include an outer boom, telescopic inner boom, extension system and hose assemblies	YES
1.67	Outer boom shall consist of a 10 inch x 12 inch steel section	YES
1.68	A 8-5/8 inch x 10-5/8 inch rectangular fiberglass inner boom shall be housed within the outer boom	YES
1.69	Extension system shall consist of a hydraulic cylinder, two (2) integral holding valves and dual 60 pound roller chains housed entirely within the boom assembly	YES
1.70	Hoses routed through the outer/inner boom assembly shall non-conductive and fully contained within the boom Assembly	YES

1.71	Aerial lift shall have a minimum inner boom extension of 141 inches	126"
1.72	Outer/inner boom assembly shall articulate from 25° below horizontal to 85° above horizontal	-25 to 75 degrees
1.73	A boom support cradle and a ratchet type boom tie down strap shall be provided	YES
1.74	Outer/inner boom assembly shall be offset to one side to provide easy access to the platform	YES
1.75	Lower boom assembly shall have each end of a high strength fiberglass insert (chassis insulating system) shall be installed over a rectangular 10 inch x 12 inch high strength steel section	Lower boom is 11" x 13"
1.76	Lower boom shall include a parallelogram linkage to maintain the knuckle at a constant angle to the turret	YES
1.77	Chassis insulation system/lower boom fiberglass insert shall provide an insulation gap of 24 inches	YES
1.78	A fiberglass section in the compensation link shall maintain the 24 inch insulation gap in all boom positions	YES
1.79	Steel and fiberglass sections shall be bonded with pressure-injected epoxy to fill any voids with 32 bolts added after adhesive cures to assure maximum strength	24 Bolts
1.80	A stainless steel stud shall be provided at each end of insert to shunt the system during electrical testing (insert must be tested per ANSI A92.2)	YES
1.81	Turret wings shall be 5/8 inch thick	YES
1.82	The 1-¼ inch thick turret plate shall be machined flat to support the rotation bearing with bearing cover provided to prevent foreign material from interfering with lift rotation	YES
1.83	Rotation shall be continuous and unrestricted in either direction accomplished by a hydraulically driven worm and spur gear acting on a shear-ball rotation bearing	YES
1.84	An eccentric ring gearbox mounting shall allow for precise adjustments to the gearbox to pinion clearance	YES
1.85	Critical bolts holding lift to the rotation bearing and the rotation bearing to the pedestal are to be SAE grade 8	YES
1.86	Pedestal shall be round in shape with an access opening on both sides	YES
1.87	Extension cylinder shall have wear rings on piston and end gland for extended seal life	Not available
1.88	Dual holding valves shall be mounted at the extension cylinder base to prevent boom creep during travel or uncontrolled movement in case of hydraulic hose failure	YES
1.89	Extension cylinder shall be removable without removing inner boom	YES
1.90	Hydraulic regeneration system feature on extension cylinder shall provide extension and retraction at approximately the same speed	YES
1.91	Boom elevation cylinder shall have a single holding valve	YES
1.92	Pins shall be high strength alloy steel and chrome plated	YES
1.93	Cylinder pins shall be held in place with “Torque Seal” marked bolts at one end and a pin cap on the other end	Pins have dual retention systems of various designs
1.94	A lifting eye attachment shall be near the end of the outer boom having a 1,000 pound maximum capacity	YES
1.95	A vertical line lifting socket for 3 inch diameter line lifting attachments shall be part of the platform support structure	YES
1.96	Socket shall be automatically leveled with the platform	YES
1.97	A full length sub-frame shall be constructed of 6 inch x 4 inch tube and ¼ inch plate	YES
1.98	H-frame outriggers shall be shear plate mounted to the frame and equipped with pilot operated check valves, internal thermal relief valves and separate controls	A-frame and modified A-frame outriggers
1.99	Outriggers shall furnish up 90-½ inches of spread and a maximum of 9 inches of penetration with 15 inches of ground clearance	YES
2.00	Outrigger feet shall pivot up to 10° in all directions	Rear outriggers have fixed shoes
2.01	Outrigger boom interlock shall prevent lift from being operated until the outriggers contact the ground and prevent outriggers from being retracted until boom is properly stowed	Outrigger interlocks activate when outriggers are lowered close to the ground, not when they contact the ground. No outrigger pressure switches
2.02	A “boom raised” light shall be mounted in the dash to illuminate when boom is not in the stowed position	YES
2.03	“Boom raised” light shall be activated by an epoxy sealed, magnetic proximity switch, Grainger part # 6C834 or Omron type TL-W20ME2 12V - 24V No Exceptions	YES
	Material Handling Jib:	YES
2.04	Material handling jib and winch system shall consist of a winch and jib pole	YES
2.05	Jib pole and winch shall be automatically leveled with the platform	YES
2.06	Up to 1,000 pound material handling capacity shall be provided at elevated boom angles	YES
2.07	Winch shall be hydraulically powered through a self-locking worm gear drive	YES

2.08	**No load-holding brake shall be required**	YES
2.09	Winch line speeds shall be 15 to 30 feet per minute	YES
2.10	70 feet of ½ inch diameter polyester rope with a clevis hook shall be provided	YES
2.11	Angle of jib pole shall be manually adjusted from horizontal to 50° above horizontal in 10° increments	14 to 89 degrees
2.12	Jib pole assembly shall rotate to any of seven (7) load-lifting positions	Rotates in 90 degree increments
2.13	The jib and winch assembly shall rotate to a stowed position 180° from the end hung position or easily removed when not needed	Altec ARM Jib
2.14	4 inch square jib pole shall hydraulically tilt with 90° of travel relative to the platform from horizontal to vertical	3" Round Jib ARM
2.15	Jib pole shall be automatically leveled with the platform providing a total of 200° of jib pole articulation relative to the upper boom	Altec ARM Jib uses two hydraulic cylinders to move jib in a variety of positions- Not just a straight boom arm jib
2.16	Jib pole shall hydraulically extend and retract providing 16 inches travel from 44 inches to 60 inches	Altec ARM Jib uses two hydraulic cylinders to move jib in a variety of positions- Not just a straight boom arm jib
2.17	Outer/inner boom assembly's shall be tested and certified for electrical work at 46KV and below in accordance with ANSI A92.2 requirements	YES
2.18	The chassis insulating system (lower boom insert) shall also be tested and certified for electric work at 46KV and below in accordance with ANSI A92.2 requirements	YES
2.19	Completed unit shall be tested and inspected before delivery to MDOT. A dated inspection sticker shall be installed inside rear window of truck	YES
	Utility Body:	YES
2.20	The body shall be designed for a chassis with a cab to axle dimension of approximately 84 inches and provide curbside access with step and handrail	YES
2.21	Steel or fiberglass body can be bid, as long as it meets the general requirements and all differences are noted	Steel
2.22	Utility body dimension shall be approximately:	YES
a	Load space width - 54 inches	YES
b	Top of body to top of floor -30 inches	YES
c	Horizontal compartment height - 24 inches	YES
2.23	A drawing of the proposed body shall be submitted with the bid	YES
2.24	Automotive quality bulb type door seals shall be furnished on all compartment doors	YES
2.25	Understructure will be 5 inch, 6.7 pound structural steel channel cross-members	YES
2.26	Tie channels will be 5 inch 4.1 pound structural steel channel	YES
2.27	Floor will be 3/16 inch tread plate	YES
2.28	Front boxes will be 14 gauge A/40 galvanneal steel	16 gauge will be used
2.29	Front and intermediate partition shall be 14 gauge A/40 galvanneal steel	YES
2.30	Rear partition will be 14 gauge A/40 galvanneal steel	16 gauge will be used
2.31	Wheel house panels shall be 14 gauge A/40 galvanneal steel	YES
2.32	Compartment sides shall be 14 gauge A/40 galvanneal steel	16 gauge will be used
2.33	All shelving shall be 16 gauge with dividers being 20 gauge galvanneal steel minimum	Shelves will be 18 gauge galvenized
2.34	Door will be double panel construction, 18 gauge outer and 20 gauge inner A40/galvanneal steel	YES
2.35	Hinges will be 5/16 inch diameter, electro zinc steel rod type with zinc cast hinge and nylon bushings	Hinge rods will be stainless steel
2.36	Will include front aerial reinforcement bar, installed	YES
2.37	Latches will be flush mounted paddle handle type, paddle type locks	YES
2.38	All locks will be keyed alike	YES
2.39	All vertical doors will be equipped with spring loaded door holder	YES
2.40	Master locking system will be provided on all compartments with lock provisions at rear of side cases	YES
2.41	A tail shelve shall be constructed of 3/16 inch tread plate, 36 inches long x 96 inches wide x 6 inches high	94" wide to match body width; 5" high to match body understructure
2.42	Rear bumper will be step type with recess in center for trailer hitch constructed of 12 gauge tread plate	Grip strut preferred for step bumper
2.43	Trailer hitch shall be receiver type, class IV	YES
2.44	Two 3/4 inch D-rings installed for trailer safety chains	YES
2.45	Eyelet for trailer breakaway cables	YES

2.46	Per MDOT supplied - Trailer Wiring Diagram, trailer connector shall be 7-way round pin Berg type , mounted at rear of frame, wired for turn signals independent of stop, compatible with trailers that have amber or side turn lamps, provided and installed by vendor **(See Schedule E - Trailer Wiring Diagram)**	YES
2.47	Electric moisture resistant back -up alarm, 95 dba sound level shall be provided	YES
2.48	All compartments will have white LED strip lighting with a master switch and a pilot light in the cab, fused separately	YES
2.49	Curbside compartments shall be approximately 48 inches tall x 21 inches deep with vent in rear compartment	20" deep
a	Front vertical - 32 inches wide, two shelves w / dividers	YES
b	Second vertical - 24 inches wide side entry with grab handle and steps constructed of grip strut	YES
c	Horizontal - 52 inches wide x 21 inches tall	YES
d	Rear vertical - 24 inches wide, one shelf w/ divider	YES
2.50	Street side compartments shall be approximately 48 inches tall with vent in front compartment	YES
a	Front vertical - 32 inches wide, two shelves w / dividers	YES
b	Second vertical - 24 inches wide, open no shelving	YES
c	Horizontal - 52 inches wide open no shelving	YES
d	Rear vertical - 24 inches wide, one shelf w/ divider	YES
2.51	Wheel chocks, two sets, rubber, with holders mounted in utility body	YES
2.52	Composite plastic (or aluminum) outrigger pads, two, (2) 24” X 24” X 1” with two (2) aluminum holders mounted under the body	YES
2.53	Triangular reflector kit	YES
2.54	10lb fire extinguisher with heavy duty bracket installed	YES
	Cameras with sound option:	YES
2.55	Camera shall be installed on the rear of vehicle to provide wide angle viewing	YES
2.56	Camera shall be installed on the passenger side of vehicle to provide wide angle viewing	YES
2.57	Camera shall be installed in the utility bed of the vehicle to provide wide angle viewing for boom location	YES
2.58	Camera display shall be mounted so driver can view it while in the drivers seat, and shall be able to switch between cameras	YES
2.59	All exterior lights on body will be LED type and conform with Motor Vehicle laws of the State of Michigan and include	YES
a	Clearance	YES
b	Stop	YES
c	Tail	YES
d	Turn	YES
e	Back up	YES
	Work/strobe light type and placement:	YES
2.60	Four (4) L.E.D. corner strobe lighting to truck. Two (2) in rear light channel and Two (2) in front grille area. To have separate master switch located in chassis cab. Whelen # 50*02Z*A, 500 series linear super - LED or equivalent	YES
2.61	Two (2) L.E.D strobe lights mounted on both sides of the body, Install on same master on/off switch as the 4 corner strobes. Whelen # 50*02Z*A, 500 series liner super - LED or equivalent	YES
2.62	Two (2) mini light bars to light support bar on both Curb side and Street side of boom rest. Lights to be visible from front, rear and sides of truck. To have separate on/off master switch located in chassis cab. Whelen R2LPHPA L.E.D. mini light bar or equivalent.	YES
2.63	Four (4) Whelen L.E.D perimeter lights. Two mounted just under mini light bars on both curb side and street side mounted all the way to the outer edge to eliminate shadows and two mounted at rear just under the tail shelf on both the curb side and street side . to have separate master switch located in chassis cab. Whelen # PELCB perimeter lights or equivalent.	YES
2.64	Two (2) Reverse/Work L.E.D Flood lights in rear chassis frame rails. To automatically come on when chassis is in reverse and to have separate on/off switch located in chassis cab. Whelen # PFBS6 work lights or equivalent	YES
2.65	Two (2) Work Lights L.E.D. Flood lights. One (1) mounted on light support bar facing cargo area. One (1) mounted at rear facing tail shelf area. To have separate master on/off switch located in Chassis Cab. Whelen # PFBS6 work lights or equivalent	YES
2.66	One (1) Go-Light mounted just below upper strobe light on Curb Side with WIRELESS chassis control and WIRELESS handheld control. Go-light Model # 20074 or equivalent	YES
2.67	Manufactures standard warranty	YES

2,68	Provide 8 hours of operator training, at a time and location determined by the State after unit has been accepted and is ready to be placed into service	YES
2.69	2- Parts manual	YES
2.70	2- Service manual	YES
2.71	2- Operators manual	YES
2.72	1- Safety & training video	YES
Aerial Tower, Insulated Boom 55 Foot Working Height and Utility Body with Side Access		
Make Offered:		**Altec**
Model Offered:		**TA-50**

CONTRACT # 071B7700167 - **AWARDED** SPECIFICATIONS FOR PURCHASE					
Spec #	EQUIPMENT MAKE & MODEL:	EQUIPMENT CATEGORY	Quoted Price	Hourly rate for training (per Schedule A, Statement of Work, section A.,3.3)	DELIVERY All Michigan Locations
1	Altec DM-50	Derrick	$145,545.00	$157.00	$750
2	Altec AT-30G	Aerial	$102,004.70	$157.00	$750
3	Altec AT-41M	Aerial	$105,523.50	$157.00	$750
NON-AWARDED SPECIFICATIONS FOR PURCHASE					
4	Altec ALB-42	Aerial	$169,249.00	$157.00	$750
5	Altec AT-41S	Aerial	$112,034.00	$157.00	$750
6	Altec TA-50	Aerial	$126,932.00	$157.00	$750

Catalog Pricing For PURCHASE				DELIVERY
Item #	EQUIPMENT MAKE & MODEL:	EQUIPMENT CATEGORY	Discounted Pricing (includes all set-up fees)	All Michigan Locations
1	AT-200	Aerial	$12,306	$750
2	AT235	Aerial	$17,478	$750
3	AT237	Aerial	$11,410	$750
4	AT30G	Aerial	$16,682	$750
5	AT35G	Aerial	$23,265	$750
6	AT37G	Aerial	$27,081	$750
7	AT41	Aerial	$40,531	$750
8	AT48	Aerial	$45,976	$750
9	TA50	Aerial	$55,420	$750
10	TA55	Aerial	$60,826	$750
11	TA60	Aerial	$63,855	$750
12	AA50	Aerial	$44,352	$750
13	AA55	Aerial	$47,669	$750
14	AA60	Aerial	$54,054	$750
15	AA67	Aerial	$56,994	$750
16	AA67E100	Aerial	$142,100	$750
17	AN50	Aerial	$42,362	$750
18	AN55	Aerial	$46,679	$750
19	AN60	Aerial	$51,901	$750
20	AN67	Aerial	$54,054	$750
21	AN67E100	Aerial	$140,018	$750
22	AM50	Aerial	$43,837	$750
23	AM55	Aerial	$47,461	$750
24	AM60	Aerial	$50,738	$750
25	LRV-56	Aerial	$34,516	$750
26	LRV-58	Aerial	$38,857	$750
27	LRV-60	Aerial	$40,327	$750
28	LRV-60-E70	Aerial	$58,457	$750
29	ALB37	Aerial	$39,406	$750
30	ALB42	Aerial	$43,306	$750
31	ALB50	Aerial	$45,178	$750
32	A-70	Aerial	$72,275	$750
33	A-72	Aerial	$79,811	$750
34	A-77	Aerial	$88,308	$750
35	A-82	Aerial	$97,853	$750
36	TDA-58	Aerial	$189,520	$750
37	DL42	Derrick	$46,114	$750
38	DL45	Derrick	$49,787	$750
39	DM45	Derrick	$50,817	$750
40	DM47	Derrick	$53,650	$750
41	DM50	Derrick	$56,975	$750
42	DC45	Derrick	$56,975	$750
43	DC47	Derrick	$45,372	$750
44	DH45	Derrick	$68,375	$750
45	DH48	Derrick	$71,001	$750
46	DH50	Derrick	$73,598	$750
47	D2045	Derrick	$51,628	$750
48	D2050	Derrick	$59,898	$750
49	D2055	Derrick	$63,259	$750
50	D3050	Derrick	$67,948	$750
51	D3055	Derrick	$70,736	$750
52	D3060	Derrick	$72,638	$750
53	D4050	Derrick	$77,528	$750
54	D4055	Derrick	$80,850	$750
55	D4060	Derrick	$82,173	$750
56	D4065	Derrick	$84,182	$750
57	DT65	Derrick	$98,392	$750
58	DT80	Derrick	$133,172	$750
59	DR42	Derrick	$245,790	$750
60	DB37	Derrick	$128,500	$750
61	Effer 175	Knuckleboom Crane	$78,210	$750
62	Effer 365	Knuckleboom Crane	$174,686	$750
63	Effer 505	Knuckleboom Crane	$198,446	$750
64	AC18	BoomTruck Crane	$76,803	$750
65	AC23	BoomTruck Crane	$104,850	$750
66	AC26	BoomTruck Crane	$117,912	$750
67	AC30	BoomTruck Crane	$150,920	$750
68	AC38	BoomTruck Crane	$167,002	$750
69	AC45	BoomTruck Crane	$216,041	$750
70	DRM12	Chipper	$29,000	$750

*** Pricing includes base equipment only. Does not include installation, options, or chassis. Items for sale by this Contractor that are not included in this catalog may be purchased, such as options and installation. However, those items must be bid amongst other State of Michigan contract holders.**

CONTRACT # 071B7700167 - AWARDED SPECIFICATIONS FOR RENTAL							
							DELIVERY
Spec #	EQUIPMENT MAKE & MODEL:	EQUIPMENT CATEGORY	Daily Rental	Weekly Rental	Monthly Rental	Hourly rate for training (per Schedule A, Statement of Work, section A.,3.3)	All Michigan Locations
1	Altec DM-50	Derrick	$1,000.00	$1,900.00	$3,900.00	$157.00	$750
2	Altec AT-30G	Aerial	$800.00	$1,250.00	$2,700.00	$157.00	$750
3	Altec AT-41M	Aerial	$900.00	$1,500.00	$3,000.00	$157.00	$750
5	Altec AT-41S	Aerial	$900.00	$1,500.00	$3,000.00	$157.00	$750
6	Altec TA-50	Aerial	$900.00	$1,500.00	$3,200.00	$157.00	$750

Catalog Pricing For RENTAL						DELIVERY
Item #	EQUIPMENT MAKE & MODEL:	EQUIPMENT CATEGORY	Discounted Daily Rental	Discounted Weekly Rental	Discounted Monthly Rental	All Michigan Locations
1	AT200A	Aerial	$800	$1,000	$1,850	$750
2	AT37G	Aerial	$800	$1,250	$2,700	$750
3	AT41-S/M/P	Aerial	$900	$1,500	$3,000	$750
4	TA45	Aerial	$800	$1,100	$2,900	$750
5	TA50	Aerial	$900	$1,500	$3,200	$750
6	TA55	Aerial	$1,000	$1,800	$4,500	$750
7	AA55	Aerial	$1,000	$1,900	$3,900	$750
8	AM55	Aerial	$1,000	$1,900	$3,900	$750
9	LR7-56	Aerial	$1,000	$2,000	$3,700	$750
10	DM47-TR	Derrick	$1,000	$1,900	$3,900	$750
11	AC18-70 CRANE	Boomtruck Crane	$1,000	$1,800	$3,795	$750
12	AC26-103	Boomtruck Crane	$1,250	$2,800	$5,600	$750
13	AC38-127	Boomtruck Crane	$1,800	$3,500	$8,000	$750