

Onslow Water & Sewer Authority
Board of Directors' Regular Meeting Jacksonville City Hall
Thursday, September 18, 2025
APPROVED MINUTES

CALL TO ORDER: Having a quorum, Chairman Royce Bennett called the meeting to order at 6:00 pm. Board members present included Chairman Royce Bennett, Vice Chairman Paul Conner, Secretary/Treasurer Richard Grant, and Directors Jerry Bittner, Joe Brown, Tony Padgett, and Robert Warden. Absent was Director Greg Hines.

PLEDGE OF ALLEGIANCE: Chairman Bennett led the Board and audience in the Pledge of Allegiance.

INVOCATION: Chairman Royce Bennett provided the invocation.

CHAIRMAN'S REMARKS –Chairman Royce Bennett provided general guidance to the audience regarding the meeting.

1. APPROVAL OF AGENDA – Director Tony Padgett made a motion to approve the agenda as submitted. Vice Chairman Paul Conner made a second. All were in favor. The agenda was approved as presented.

2. APPROVAL OF CONSENT AGENDA

[A COPY OF THE GODWIN QUOTE, TRANSSOURCE PROPOSAL, STATEWIDE TERM CONTRACT AND AWARD SUMMARY FOR THE 2025-2026 TRUCK CHASSIS WITH DUMP BODY MAY BE FOUND AT EXHIBIT A, AND ARE FULLY INCORPORATED HEREIN BY REFERENCE]

A motion was made by Secretary/Treasurer Richard Grant to approve the consent agenda as presented. A second was made by Director Tony Padgett. The motion passed unanimously. Therefore, the June & July 2025 Financial Reports and June & July 2025 Operations Reports were accepted as presented, the June 18, 2025 Regular Meeting Minutes were approved as presented, the CEO was authorized to execute purchase contracts for one Mack Truck Chassis (GR64FR) with Godwin Dump Body from TranSource, Inc. along with any other documents as may be required in connection with this action, the write-off of uncollectable accounts in the amount of \$76,881.28 was approved.

3. BUSINESS

A. Progressive Design-Build (PDB) Southeast Regional (SER) WWTP Capacity Improvements Project

[A COPY OF THE RECOMMENDATION OF AWARD FROM HDR MAY BE FOUND AT EXHIBIT B, AND ARE FULLY INCORPORATED HEREIN BY REFERENCE]

Chairman Royce Bennett called on Mr. Jeffrey Lohr to present the item. Mr. Lohr began by saying the Southeast Regional WWTP services approximately 6,000 residential and commercial customers and is currently permitted to process and discharge 1.542 million gallons per day(MGD) with 0.542 MGD rating for the passive lagoon treatment train and 1.0 MGD for the membrane bioreactor train and high-rate infiltration basins. He said it is anticipated that the plant expansion would be an expansion of the same technology of the existing plant but ONWASA is interested in considering alternate technologies or processes that may be more efficient, have a smaller footprint or lower lifecycle costs. Mr. Lohr said the design will be developed to facilitate the potential need for future expansion as well and consideration will be given to interim phasing to get to 3.5 MGD to assist with spreading capital expenses as additional capacity is required by development. Mr. Lohr explained that the PDB mitigates risk to ONWASA by including constructability reviews that leverage a contractor's mentality and experience to

accelerate the construction schedule, increase construction efficiencies, improve coordination of the trades, and maintain plant operations with minimal disruptions. He went on to say the procurement method allows ONWASA to maintain its usual control over the design and has the additional advantage of bringing the contractor into the design process to identify design approaches that could accelerate the construction schedule, reduce construction cost, reduce O&M cost and life-cycle cost, enhance quality, minimize change orders and claims, and minimize risk to all parties. Mr. Lohr said some of the other benefits to this process are qualification-based design builder selection, early pricing lock in, project risk mitigation, shorter project delivery time frame, and availability of design builders and increased competition. He said the scope and related fee for this contract includes deliverable of preliminary design documents and construction documents through 60% design completion and the final GMP in design and delivery will be in the next phase and will deliver 100% design documents adding that construction/administration and observation will be added later by amendment once the final scope and pricing has been mutually agreed upon. Mr. Lohr said we intend to continue with HDR Engineering as our owner advisor through this next phase and through the ultimate completion of the project. He said the contract was reviewed by HDR and they provided their recommendation to award the progressive design build contract to TA Loving Inc adding that their letter of recommendation is included as an attachment with this item. Mr. Lohr said he would like to recognize Mr. DeSelms [Authority Attorney] adding he was instrumental in our negotiation of the contract documents for this contract and also HDR as our owner advisor brought very valuable experience to the negotiating table which we have been at for about a month. He noted that we started out at 6 million and through negotiations it was reduced to the requested amount tonight [\$4,909,395.47].

Director Tony Padgett made a motion to award the Progressive Design-Build Contract Phase 1 for the expansion of the Southeast Regional WWTP in the amount of \$4,909,395.47 to T A Loving, Inc. and their Team, and authorize the CEO to execute a contract and any additional documents as required in connection with this action in the form approved by counsel. A second was made by Director Robert Warden.

Chairman Royce Bennett asked what the total length of the contract for the total buildout would be. Mr. Lohr replied for the first phase it will begin as soon as we execute the contract which will be hopefully this month and it will be concluded in April of 2026, then we will start with the final phase which is to complete the design to 100% and start construction and that will start in May of next year and be completed by November or December of 2027. Chairman Bennett followed up with so the built in for inflation or anything is already in there and this is more or less a fixed cost for us. Mr. Lohr replied yes for the first phase and the next phase that starts from 60 to go to 100 will be negotiated at that time. Director Padgett added each phase is negotiated. Mr. Lohr replied that is right. Director Joe Brown asked how many bids were received for this project. Mr. Lohr said we received packages from six firms, and we shortlisted it to five teams and interviewed them. Director Brown said he remembers in previous projects that it was hard to get people to bid because of the technology required and the skill levels required that they didn't have readily available adding that he appreciates Mr. Lohr's answers. Director Tony Padgett added that he and Director Hines sat in on the interviews and it was very informative, and he does feel like that we have picked the right firm for the job and staff did a great job putting everything together with the questions and the consultant really helped with that. Chairman Bennett said he thinks he can speak for the whole Board when he says we thank you [Director Padgett] and Director Hines for taking the time and being willing to sit through all of that process so that we could be better informed. Director Padgett said it was very eye opening especially doing the first project like this with design adding he really thinks in the end it

will save us money and the customers. Secretary/Treasurer Grant said he's rounding up but 5 mil for the 60% but that is the design phase not the build phase, do we have any idea because you say negotiating with them is there a walk away if we can't agree on price? Mr. DeSelms said yes when it reaches the guaranteed maximum price we can walk away. Secretary/Treasurer Grant said in his research he learned that the weakness in this structure is who represents us in there so making sure you are confident in someone on our team to take this project through. Mr. Lohr replied that would be him and he is confident in that. Secretary/Treasurer Grant said if it is you and you are confident in that then he is fine with that.

All were in favor, the motion passed unanimously.

B. Amended Project Ordinance Topsail Island Booster Station

[A COPY OF THE PROPOSED CIP 032 AMENDED PROJECT ORDINANCE, CHANGE ORDER RECOMMENDATION, AND CHANGE ORDER MAY BE FOUND AT EXHIBIT C, AND ARE FULLY INCORPORATED HEREIN BY REFERENCE]

Chairman Royce Bennett called on J. Eric Adams, CFO, to present the item. Mr. Adams said this item is one of two project ordinance amendments this evening. He said the item is completed pending final asphalt testing. He shared that the amendment includes relocation of an existing water main and the addition of a metering vault to allow ONWASA to measure the volume and flow of water to and from the island.

Secretary/Treasurer Richard Grant made a motion to approve the amended project ordinance, associated budget amendment and the Carolina Utilities Company Change Order Number 1. A second was made by Vice Chairman Paul Conner.

During discussion, Director Warden raised concerns that the financial figures shown in the project summary, amendment documents, and change order did not reconcile. Mr. Adams replied that the amendment is approximately \$95,000 so the total of the amendment is \$115,000 and the purpose of that is in completing the booster station we did do an internal budget amendment that moved some professional services from construction so in addition to that we are replacing those funds. Mr. Lohr also added that we deducted liquidated damages in approximately \$20,000 because the contractor went beyond his contract. Mr. DeSelms said the way it was explained to him is that the net change in the contract price was at \$94,592.51 adding he had the same questions when it came across his desk and they added the \$20,849.49 and that is how they reach the amended price of \$115k adding the way he understood it was the that the \$20,489 had previously been moved but now they want to move it back into the project. Director Warden explained that he will not be able to vote in favor of approving when he isn't able to understand the paperwork, he has been given to support the change. Director Warden expressed that, while the justification for the change order itself was not in question, the supporting paperwork did not align. Directors discussed possible options to move the item forward conditionally upon reconciliation of figures. Mr. DeSelms advised that, if desired, the Board could reconvene at a special meeting once the corrected figures were provided. The Board requested that staff clarify and reconcile all financial figures and bring the item back for consideration at a future or special meeting once the documentation is corrected.

None were in favor. All were opposed; the motion failed.

C. Amended Project Ordinance Water and Sewer Other Improvements

[A COPY OF CIP 035 AMENDED PROJECT ORDINANCE MAY BE FOUND AT EXHIBIT D, AND ARE FULLY INCORPORATED HEREIN BY REFERENCE]

Chairman Royce Bennett called on CFO, J. Eric Adams to present the item. Mr. Adams noted that at a previous meeting funds were added to this project ordinance for the Burn Street Sewer Project based on estimates received from the engineer; however, once bids were received, the project costs came in higher than originally budgeted. He expressed confidence in the bids received explaining that two were aligned within \$500 of each other, with the third being significantly higher.

Director Robert Warden made a motion to adopt the amended project ordinance and corresponding budget amendment. A second was made by Secretary/Treasurer Richard Grant.

Director Warden requested clarification as to why the project agenda summary referenced a total amount of \$300,000 but that figure was not clearly reflected in the amended ordinance or supporting documents and noted the lack of side-by-side comparison showing prior and amended balances. Mr. Adams shared that the Water and Sewer Other Improvements Project Ordinance includes multiple small projects that exceed \$5,000 and that in FY26 we removed those from that however these are some of those final projects that we were finishing up and were previously budgeted there. He went on to share that the appropriated balance before this was \$6,385,000. Vice Chairman Paul Conner stated that while he would be voting in favor, he agreed that in the future more details should be provided. Mr. Adams acknowledged the feedback and agreed to incorporate that level of detail in future items.

In favor: Chairman Royce Bennett, Vice Chairman Paul Conner, Directors Jerry Bittner and Joe Brown

Opposed: Secretary/Treasurer Richard Grant, Directors Tony Padgett and Robert Warden.

Four were in favor. Three were opposed; the motion passed.

4. PUBLIC COMMENT

No members of the public wished to make comments.

5. CLOSED SESSION

Secretary/Treasurer Richard Grant made a motion to go into closed session pursuant to NCGS § 143-318.11(a)(3) to consult with an attorney employed or retained by the public body in order to preserve the attorney-client privilege between the attorney and the public body, which privilege is hereby acknowledged. A second was made by Director Tony Padgett. The Board entered into closed session at 6:29 pm and returned to open session at 6:53 pm. No action was taken.

6. CHIEF EXECUTIVE OFFICER COMMENTS

Chairman Royce Bennett called on CEO, Franky Howard, to provide comments. Mr. Howard reported continued progress in leak detection work on the island aimed at reducing system water loss. He shared that to date 44 leaks have been identified, with an estimated total flow loss of approximately 31 gallons per minute and to enhance the detection accuracy ONWASA has engaged a K9 leak detection service scheduled to begin work in October. He explained that it is a specially trained dog named Delta that detects the presence of chlorine in water and assists in locating leaks that are difficult to identify acoustically. Mr. Howard announced that ONWASA was recently awarded two safety grants through the North Carolina League of Municipalities that will be used in part for rear view camera systems for fleet vehicles and a confined space gas monitor. He credited the Finance Department and ONWASA's Safety Officer for successfully securing the

funding. Mr. Howard shared a positive employee initiative supporting the CHEW Program. He said ONWASA employees conducted a food drive, donating \$2,160 in food and gift cards to help restock the programs supplies for the new school year. He explained the effort followed a presentation from the program at the local Rotary Club meeting after which he challenged his staff to help. He concluded his remarks by thanking staff and Board members for their continued engagement and support.

6 BOARD OF DIRECTOR'S COMMENTS

Director Tony Padgett thanked those who attended the meeting and wished everyone a good night.

Director Robert Warden thanked the staff for supporting the CHEW Program adding it is a project he believes needs supporting and he appreciates staff doing that.

Director Jerry Bittner asked when the next Board meeting would be. Mr. Howard replied it is November 20th.

Secretary/Treasurer Richard Grant thanked Mr. Howard for doing the presentation for the Town of North Topsail Beach Board of Alderman meeting saying it opened a lot of eyes. He went on to say thank you for the work that is being done particularly in Ocean City saying it is much appreciated. He also thanked staff for coming and added that he thinks the focus on getting some of the old stuff out and getting it repaired is really jumping out at us and there is money in getting those leaks fixed.

Vice Chairman Paul Conner thanked everyone for what they do.

Chairman Royce Bennett thanked those in attendance and thanked the participating municipalities for passing the resolution to change ONWASA's Articles of Incorporation.

Vice Chairman Paul Conner made a motion to adjourn. Director Tony Padgett made a second. All were in favor, the meeting adjourned at 6:59 PM.

The minutes were approved on November 13, 2025.

Onslow Water & Sewer Authority Board of Directors




Michael Royce Bennett, Chairman

ATTEST:



Heather Norris, Clerk

Statewide Term Contract 2518A - Class 8 Truck Cab and Chassis

Bid Number	DPC-123307769-BP
Contract Title	Class 8 Truck Cab and Chassis
Effective Dates	April 1, 2025, through April 1, 2030
Awarded Vendor(s) and Contact(s)	<p>Aria Contracting Sales & Services Inc. Contract Manager Kristen Homan (866) 454-7573 ext. 404 Customer Service Chip Castaing (866) 454-7573</p> <p>Transource Inc. Contract Manager Matt Walsh (919) 219-5693 Customer Service Rob Shaw (919) 280-4815</p> <p>Velocity Truck Centers Brian Rashid (919) 480-2840</p>
Contract Covers	This contract is intended to cover the state’s normal requirements for class 8 truck cab and chassis with a vehicular weight of 33,000 pounds or larger, on an “as needed” basis. The vehicles covered by this contract shall be used to replace trucks that are near end-of-life and to supplement existing fleets that have taken on additional responsibilities.
Contract Type	This is a mandatory statewide term contract for state agencies, departments, institutions, universities, and community colleges - unless exempted by North Carolina general statute. Non-mandatory entities, including schools and local governments, may use this contract as allowed by general statute.
Special Note	Buying entities are strongly encouraged to confirm specifications with the vendor prior to placing a purchase order. Please reference statewide term contract 065A - Utility & Dump Truck Bodies for additional utility and/or dump truck body requirements.
Minimum Order	The minimum order amount is one (1) unit.
Contract Items and Pricing	Award & Pricing Information
Equipment Demonstration	Training is available; please confirm training instructions and pricing (if applicable) with the vendor prior to placing a purchase order.
Delivery Information	FOB destination. Vendors shall deliver Free-On-Board (FOB) Destination to any requested location within the State of North Carolina with all transportation costs and fees included in the total quoted price.
Warranty	Standard manufacturers’ warranty applies for all items. Vendors shall include a copy of the manufacturer’s standard warranty at the time of delivery.

	The vendor shall be responsible for compliance with warranty terms by any third-party service provider. The vendor shall provide contact information for third-party warranty service providers at the time of delivery.
Order Placement	Orders may be placed through eProcurement . Enter 2518A in the Contract ID field.
eProcurement	Line-item catalogs are loaded into eProcurement .
eProcurement Help Desk	(888) 211-7440
Contract Manager	Jonathan Davis (984) 236-0225
Contract Attachments	Aria Contracting Sales & Services Inc. Transource Inc. Velocity Truck Centers
Contract Addenda	

Quote

MAILING
P. O. BOX 1147 DUNN, NC 28335
910 892-0141



LOCATION
17665 HWY 421S. DUNN, NC 28334
FAX: 910 892-7402

Building Truck Equipment Since 1966

QUOTE NUMBER 0159497

QUOTE DATE 6/10/2025

Customer Number: 02-TRANSOU

Salesperson: EARL MANNING

Quote Valid for:

Sold To:
TRANSOURCE TRUCK & TRAILER
P. O. Box 446
Kernersville, NC 27285

Ship To:
TRANSOURCE TRUCK & TRAILER
8808 MIDWAY WEST RD
RALEIGH, NC 27617-4609

ATTENTION:

F.O.B. DUNN, NC	Delivery Terms	Ship VIA DELIVERED	Payment Terms NET 30
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Item Code	Description	Ordered	List Price
ONWASA PRICED USING NC SHERIFFS CONTRACT 26-10-0422 ITEM 221			
500T15/42G	BODY 500T 15 X 42 SIDES 10GA	1.00	
G63119D P23	HOIST HYVA 63119 DIRECT P23	1.00	
OAKSIDEBD15	OAK SIDE BOARD 15' (STD 6- 8")	1.00	
CPCONT4-500/H	CAB PROTECTOR HALF BIG BODY	1.00	
AC4-500BOLT	ASPHALT CHUTE 4 & 500 BOLT ON	1.00	
HANDLES	OUTSIDE HANDLES ON DUMP BODY	1.00	
OUTSIDE STEPS	OUTSIDE STEPS ON DUMP BODY	1.00	
LIGHTHOLE	LIGHT HOLES IN CP, RA, RCP	2.00	
P11529EZ-GODWIN	ALUMINUM 4 SPRING TARP SYSTEM	1.00	
ABD	BARN DOOR AIR OPERATED	1.00	
BLACKPAINT	ZINC PRIME & BLACK POWDER COAT	1.00	
INSTANDEM	INSTALL TANDEM BODY UP/DOWN	1.00	
INSPH20	HITCH PINTLE HOOK RIGID PH20	1.00	
INSGHADHAND	GLAD HANDS	1.00	
INSABD	LABOR TO INSTALL ABD	1.00	
INS6PIN	INSTALL 6-PIN ELECTRIC PLUG	1.00	
INS7PIN	INSTALL 7-PIN ELECTRIC PLUG	1.00	
INSSTT	INSTALL STT AND BACK-UP LED	2.00	
97DB BUALARM	97db BACK UP ALARM - STANDARD	1.00	
INS6HEAD	INSTALL 6-HEAD FLASHING LED	1.00	
PTOMUNCIE	PTO MUNCIE HOT SHIFT	1.00	

continued

Quote

MAILING
P. O. BOX 1147 DUNN, NC 28335
910 892-0141



LOCATION
17665 HWY 421S. DUNN, NC 28334
FAX: 910 892-7402

800 892-0181

Building Truck Equipment Since 1966

QUOTE NUMBER 0159497

QUOTE DATE 6/10/2025

Customer Number: 02-TRANSOU

Salesperson: EARL MANNING

Quote Valid for:

Sold To:
TRANSOURCE TRUCK & TRAILER
P. O. Box 446
Kernersville, NC 27285

Ship To:
TRANSOURCE TRUCK & TRAILER
8808 MIDWAY WEST RD
RALEIGH, NC 27617-4609

ATTENTION:

F.O.B. DUNN, NC	Delivery Terms	Ship VIA DELIVERED	Payment Terms NET 30
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Item Code	Description	Ordered	List Price
DELIVERY75	DELIVERY CHRG 50-99 MILES	1.00	

TO BE INSTALLED ON CUSTOMER SUPPLIED CHASSIS WITH 120" CT, FACTORY TRACTOR PACKAGE AND AUTOMATIC TRANSMISSION CAPABLE OF LIVE PTO

QUOTE PRICE 27,330.10

Quote prepared by:
Jash Cumbie
910 591-5220
jcumbie@godwinmfg.com

On installations involving more than 1 unit, Godwin Manufacturing reserves the right to only start the installation process after all the chassis' are on hand and group them together for completion, regardless of the spacing of chassis arrival. This allows us to provide the customer with a more consistent product and run our facility more efficiently. We are not responsible for floor plan accumulated while the chassis are at our facility.

Total: 26,670.58

CUSTOMER PROPOSAL

MACK[®]



PREPARED FOR

ONSLow WATER AND SEWER AUTHORITY
228 GEORGETOWN RD
JACKSONVILLE
NC 285404146

DATE

6/9/2025

PREPARED BY

TRANSOURCE, INC.
8808 MIDWAY WEST RD
RALEIGH
NC 27617-4609

QUOTE INFORMATION

BLAN2025000447C626
GRANITE 64FR MACK SPEC
Qty: 1



Truck & Trailer Centers



TECHNICAL SPECIFICATION

GRANITE 64FR MACK SPEC



MODEL DEFINING		DESCRIPTION
S	PRICE BOOK LEVEL	2026A Pricebook
S	VOLTAGE	ELECTRICAL SYSTEM 12 VOLT

APPLICATION PACKAGES		DESCRIPTION
	CHASSIS CONFIGURATION PACKAGE	ONEBOX EATS, LH BATTERY BOX, 11.8 GALLON (45L) DEF, SINGLE 22" LH FUEL TANK

CUSTOMER/VEHICLE INFO		DESCRIPTION
S	CHASSIS (BASE MODEL)	GRANITE 64FR MACKSPEC
	CUSTOMER FLEET SIZE	REGIONAL FLEET 25 OR MORE VEHICLES IN OWN FLEET OF ANY VEHICLE BRAND
	TYPE OF SERVICE	MUNICIPAL
S	WARRANTY REGISTRATION LOCATION	USA - WARRANTY REGISTRATION LOCATION
	EMISSION WARRANTY CERTIFICATION	EPA (only) for Mack MP7 / MP8 Diesel
	Order Subject to Meeting All Mack Policies, Terms and Conditions,	Including but not Limited to Applicable CARB and/or Section 177 States' Regulation requirements
	INTENDED REGISTRATION LOCATION	NORTH CAROLINA
S	INITIAL REGISTRATION LOCATION	USA REGISTRATION
	BRAND ORNAMENT	BULLDOG, GOLD
S	LANGUAGE-PUBS/DECAL/SIGNS	ENGLISH
S	ROAD CONDITION	WELL MAINTAINED SURFACED ROADS >95% DRIVING DISTANCE
	VEHICLE USE & BODY/TRAILER TYPE	DUMP TRUCK
	TRAILER TYPE	FIXED DRAWBAR TRAILER AND CENTERED AXLES
	GROSS COMBINATION WEIGHT (CA in PC29 only)	80,000 LB (36 TONNES) GROSS COMBINATION WEIGHT
S	BRAKE REGULATION	BRAKE REGULATION, STOPPING DISTANCE 94M (310FT)
	TOPOGRAPHY	GRADES <3% GREATER THAN 98% OF DRIVING DISTANCE MAX GRADE 8%
S	AMBIENT TEMP UPPER LIMIT	AMBIENT TEMPERATURE HOT. WARMER THAN 104 F (40 C) ALLOWED UP TO 25 HOURS PER YEAR
S	OPERATING TERRAIN GRADE CONDITIONS	ON-OFF HIGHWAY, STARTING GRADES<18%
S	LOADING SURFACE FACTOR	CONCRETE LOADING AND / OR UNLOADING SURFACE
	VEHICLE VOCATION	CONSTRUCTION SERVICE

ENGINE/TRANSMISSIONS		DESCRIPTION
	ENGINE / MOTOR	MP7-425C MACK 425HP @ 1500-1800 RPM (PEAK) 2100 RPM (GOV) 1550 LB-FT, US'21
S	GHG APPLICATION, VEHICLE	GREEN HOUSE GAS VOCATIONAL APPLICATION
	TRANSMISSION	MACK TMD12AFO-HD mDRIVE HD 12 SP-(OVERDRIVE)
S	GEARBOX 12TH GEAR LOCK-OUT	WITHOUT 12TH GEARBOX GEAR LOCK-OUT

EXHAUST/EMISSIONS		DESCRIPTION
	NOX LIMITS	CARB LEGACY / EPA (200MG/HP/HR), 50 State Idle Compliance
S	IDLE EMISSION LABEL LOCATION (CA in PC29 only)	IDLE EMISSION LABEL LOCATION, LOWER LH CORNER OF DRIVER DOOR
S	DPF DIESEL PARTICULATE FILTER	CLEARTECH ONE BOX E.A.T.S. RH SIDE UNDER CAB US17 / US21
	CHASSIS MOUNTED EMISSIONS FINISH	PAINTED DEF & DPF COVER
	DIESEL EXHAUST FLUID TANK	11.8 GALLON (45 L) 22" LEFT SIDE FRAME MOUNTED
	DEF TANK VENTILATION FILTER	DEF TANK VENTILATION FILTER
	EXHAUST	SINGLE VERTICAL RIGHT SIDE CAB MOUNTED, LOWER VENTURI DIFFUSER, TURNED END

TECHNICAL SPECIFICATION *(cont.)*



EXHAUST/EMISSIONS		DESCRIPTION
	EXHAUST STACK HEIGHT	9' 6" FROM GROUND
S	EXHAUST - BRIGHT FINISH	W/O BRIGHT FINISH EXHAUST
	EMISSION ON BOARD DIAG CONTROL	EMISSION OBD, DISPLAY ONLY, USA2025

ENGINE EQUIPMENT		DESCRIPTION
S	AIR CLEANER	UNDER HOOD SINGLE ELEMENT DRY TYPE W/AIR INTAKE FROM BOTH SIDES OF HOOD
S	BUG SCREEN	BLACK ALUMINUM BUG SCREEN MOUNTED BEHIND GRILLE, WITHOUT WINTER FRONT COVER
S	AIR COMPRESSOR/DRYER	WABCO HEATED SS-HP AIR DRYER W/ WABCO 636 (37.4 CFM) AIR COMPRESSOR
S	ALTERNATOR	DELCO 12V 160A (28SI) BRUSH-TYPE
S	BATTERIES	(3) MACK 12V 760/2280 CCA THREADED STUD TYPE
S	BATTERY BOX - MOUNTING (x)	LH RAIL UNDER CAB FORWARD OF FUEL TANK (3 BATTERY MAX)
S	BATTERY BOX COVER	MOLDED PLASTIC
	EMERGENCY START CONNECTIONS	EMERGENCY START STUDS, BATTERY BOX MOUNTED
	BATTERY DISCONNECT SWITCH	FLAMING RIVER BIG SWITCH WIRED TO POSITIVE SIDE
	STARTER MOTOR	12 VOLT MELCO STARTER (MITSUBISHI ELECTRIC)
	ENGINE BRAKE	MACK MP7 POWERLEASH
S	VEHICLE/TRAILER STOP LAMP APPLICATION (CA)	VEHICLE AND TRAILER (IF APPLICABLE) STOP LAMPS ACTIVATE UPON SERVICE BRAKE APPLICATION ONLY(3899000)
S	ENGINE BRAKE ACTIVATION	ENGINE BRAKE ACTIVATION, BASIC
S	FAN DRIVE	BEHR FAN AND ELECTRONIC MODULATING VISCOUS FAN DRIVE
	COOLANT PROTECTION	PROPYLENE GLYCOL FULLY FORMULATED COOLANT (50/50 MIX DYED BLUE) TO -34DEG, W/ FILTER
	HOSES - RADIATOR/HEATER	MACK EPDM RADIATOR & HEATER HOSES, w/ 1/4 TURN BALL VALVE HEATER HOSE
S	FUEL-WATER SEPARATOR	MACK W/MANUAL DRAIN VALVE V2 (INTEGRAL W/ PRIMARY FUEL FILTER)
S	ENGINE HEATERS	120v 1500w BLOCK HEATER ONLY
	PLUG QUANTITY & TYPE	SINGLE (1) 120V-15A PLUG
	OIL SUMP	CORROSION RESISTANT OIL PAN
S	EMERGENCY ENGINE STOP (CA)	WITHOUT ENGINE STOP, EMERGENCY

CLUTCH/TRANS EQUIPMENT		DESCRIPTION
S	GEAR SHIFTER	MACK mDRIVE-PREMIUM SHIFTER
S	CLUTCH	ZF/SACHS SINGLE PLATE 17" (430MM) ORGANIC MATERIAL
S	CLUTCH ACTUATION SYSTEM & PEDAL PAD	WITHOUT CLUTCH CABLE SYSTEM
	DRIVELINE - MAIN	MERITOR RPL25HD W/PERMALUBE U-JOINTS (PROPS-L)
S	DRIVELINE - INTERAXLE	MERITOR RPL25
	DRIVESHAFT MAIN U-JOINT	UNIVERSAL JOINT HALF-ROUND TYPE (where applicable)
S	DRIVESHAFT INTERAXLE U-JOINT	HALF-ROUND UNIVERSAL JOINT
S	TRANSMISSION OUTPUT TORQUE	TRANSMISSION OUTPUT TORQUE BASIC
S	LUBRICANTS, TRANSMISSION	75W - 90 (SYNTHETIC LUBRICANT)
S	TRANSMISSION OIL COOLER	MACK mDRIVE TRANSMISSION OIL COOLER MOUNTED LH SIDE OIL TO WATER COOLER
	GRADE GRIPPER	GRADE GRIPPER

FRONT AXLE EQUIPMENT		DESCRIPTION
S	FRONT AXLE	18000# (8200 KG) MACK FXL18 STRAIGHT SPINDLE/UNITIZED BEARINGS
S	SPRINGS - FRONT	MACK TAPERLEAF 18000# (8200 KG) GROUND LOAD RATING, EQUAL BIAS

TECHNICAL SPECIFICATION *(cont.)*



FRONT AXLE EQUIPMENT		DESCRIPTION
	BRAKES - FRONT	MERITOR "S" CAM TYPE 16.5" x 6" Q+
	BRAKE DRUMS - FRONT	CENTRIFUSE - OUTBOARD MOUNTED
S	DUST SHIELDS - FRONT	DUST SHIELDS FOR FRONT AXLE
	SLACK ADJUSTERS - FRONT	HALDEX - AUTOMATIC
	BRAKE CHAMBERS - FRONT	FRONT BRAKE CHAMBER MANUFACTURER, MGM
	HUBS - FRONT	FERROUS
S	FRONT AXLE LUBRICANT	FRONT AXLE LUBE, FAG NLGI2 GREASE
S	SHOCK ABSORBERS - FRONT	DOUBLE ACTING TYPE
S	STEERING	SHEPPARD SD110

REAR AXLE EQUIPMENT		DESCRIPTION
	REAR AXLE	40000# (18100kg) MACK S400R FABRICATED STEEL HOUSING
S	DRIVE AXLE LUBRICANT	DRIVE AXLE LUBE, SHELL 75W90 SYNTHETIC OIL
S	CARRIER - REAR AXLE	150/151 SERIES (Tandem Mack Rear Axles up to 150,000lb GCW)
S	POWER DIVIDER LOCKOUT	INTERAXLE POWER DIVIDER LOCKOUT, W/BUZZER & LIGHT
	REAR AXLE RATIO	3.79 RATIO
	REAR SUSPENSION	SS40 MACK CAMELBACK MULTILEAF 40,000 lb, STANDARD DUTY
	BOGIE SPREAD, REAR	55" AXLE SPACING (BOGIE WHEELBASE)
S	AUX.SPRING BRAKE QTY	AUX SPRING BRAKE QTY, 4 CHAMBERS
S	BRAKES - REAR	MERITOR "S" CAM 16.5"x7" Q+ (Total for QTY = 2)
S	BRAKE DRUMS - REAR	BRAKE, DRIVE REAR, DRUM LIGHT WEIGHT TRUTURN
S	SLACK ADJUSTERS - REAR	HALDEX - AUTOMATIC (Total for QTY = 2)
	DUST SHIELDS - REAR BRAKE	DUST SHIELDS FOR REAR AXLE
	REAR BRAKE CHAMBER SIZE	REAR SPRING BRAKE CHAMBERS 30/30 TYPE
	BRAKE ORI REAR-MOST DRIVE AXLE	DRUM BRAKE CHAMBER ORIENTATION: High Mount - Rear of Axle - Chamber Down
	PARKING BRAKE CHAMBER	MGM TR3030LP3THD BRAKE CHAMBERS (Total for QTY = 2)
S	HUBS - REAR	IRON PRESET REAR HUB W/INTEGRATED SPINDLE NUT
	ANTILOCK BRAKE SYSTEM	BENDIX WITH TRACTION CONTROL 4S4M
S	AIR SYSTEM VALVE VENDOR	BENDIX SWITCHES AND VALVES WHERE POSSIBLE

FRAME EQUIPMENT/FUEL TANKS		DESCRIPTION
	WHEELBASE	213"
	AF (OVERHANG)	57"
	FRAME RAILS & LINERS	9.5 x 90 x 300mm - (0.37" x 3.54" x 11.81"); RBM 2,470,000 LB-IN
S	BOLT ON FRONT FRAME EXTENSION	6" BOLT ON FRAME EXTENSION
S	FRONT FRAME LENGTH	FRONT FRAME LENGTH 725MM
S	CROSSMEMBERS	BOC AND INTERMEDIATE(S) STEEL HD BACK-TO-BACK CHANNEL
S	REAR CROSSMEMBER OPTIONS	STEEL CLOSING REAR CROSSMEMBER
S	TAPERED FRAME RAIL ENDS	WITHOUT TAPERED FRAME RAIL ENDS
S	FRONT BUMPER	EXTENDED-SWEPT BACK-STEEL
S	TRUNNION BRACKET	BASIC SOLUTION TRUNNION BRACKET, STD HEIGHT
S	TOWING DEVICE, FRONT	HOOKS
S	FUEL LEVEL SENDER UNIT, LIQUID	BASIC FUEL LEVEL SENDER MOUNTED ON L.H TANK
	FUEL TANK - LH	88 GALLON (335 L) 22" ALUMINUM D-SHAPE
S	FUEL TANK - RH	W/O RH FUEL TANK

TECHNICAL SPECIFICATION *(cont.)*



FRAME EQUIPMENT/FUEL TANKS		DESCRIPTION
S	FUEL LINE MATERIAL	BRAIDED HOSE
S	FUEL FILLER NECK OPTIONS	WITHOUT FILLER NECK SCREEN, WITH NON-LOCKABLE FUEL TANK CAP
	FUEL SYSTEM - DUAL	W/O FUEL LINE OPTION
S	CAB ACCESS STEPS	STANDARD 2 STEP CAB ACCESS
S	STEPS (BRIGHT) - FUEL TANK	STANDARD FINISH STEPS AND BRIGHT FINISH STRAPS
AIR/BRAKE		DESCRIPTION
S	RELOCATE AIR RESERVOIRS	W/O RELOCATED AIR TANKS
	AIR TANK DRAIN VALVE	MANUAL DRAIN VALVES, WITH LANYARDS ON ALL TANKS
S	AIR TANK MATERIAL & FINISH	STEEL AIR TANK PAINTED CHASSIS COLOR
	PARKING BRAKE VALVE	TWO (2) VALVE DUAL BRAKE SYSTEM - TRAILER SUPPLY AND TRACTOR-TRAILER PARK
ELECTRICAL		DESCRIPTION
	DASH MOUNTED SWITCHES	(4) 15A, IGNITION POWERED, (2) 15A BATTERY POWERED, ALL LATCHING ON/OFF
S	ROOF & SIDE MARKER LIGHTS	(5) TRUCKLITE CHROME BULLET ROOF MARKER & STANDARD MARKER / DIRECTIONAL SIGNAL
	HEADLAMP BULB TYPE	HEADLAMP BULB TYPE, LED
S	DAYTIME RUNNING LIGHTS	W/OVERRIDE SWITCH, PARK BRAKE & ENGINE RUNNING ACTIVATED
S	DRL OVERRIDE SPEED THRESHOLD	DRL OVERRIDE SPEED THRESHOLD 8 KMPH (5 MPH)
S	TAIL LAMPS	INCANDESCENT TAIL LAMPS
TRAILER CONNECTIONS		DESCRIPTION
	HAND CONTROL VALVE	HAND CONTROL VALVE FOR TRAILER BRAKES W/ AIR CONNECTIONS OR SERVICE BRAKES W/O AIR CONNECTIONS
	TRAILER CONNECTIONS	TRAILER AIR BRAKE CONNECTIONS, END OF FRAME
	TRAILER ELECTRICAL RECEPT	SINGLE 7 PINS STD SAE TYPE, END OF FRAME
PTO		DESCRIPTION
S	TRANSMISSION MOUNTED PTO	mDRIVE Without PTO, Removable Block Off Plate
S	AMT/AUTOMATIC TRANS PTO FUNCT.	TRANSMISSION PTO FUNCTIONS BASIC
S	PTO - CONTROL	mDRIVE SINGLE PTO PREP KIT W/ ILLUMINATED DASH MOUNTED SWITCH & PIPING FOR LOCAL INSTALL
	FRONT ENGINE PTO	1350 SERIES FLANGE (DOES NOT INCLUDE FRONT FRAME EXTENSION)
S	BODY BUILDER INTERFACE	BODY LINK III W/CAB PASS-THRU
SPECIALTY EQUIPMENT		DESCRIPTION
S	LANE SUPPORT SYSTEM (LSS)	WITHOUT LANE SUPPORT SYSTEM
S	DATA CAPTURE	WITHOUT DATA CAPTURE
S	SURVEILLANCE CAMERA OPTIONS (CA)	WITHOUT CAMERA
CAB INTERIOR (A THRU G)		DESCRIPTION
S	SPEEDOMETER -&- GAUGES - UNIT(S) OF MEASURE	U.S. UNITS (PREDOMINANT)
	GAUGE - PACKAGE, SECONDARY	2ND GA PKG W/ENG OIL TEMP,TRANS OIL TEMP,PYRO,APP AIR PRESS
	GAUGE OIL TEMP-REAR AXLE	REAR AXLE OIL TEMP GAUGE IN DID (DRIVER INFORMATION DISPLAY)
	AUX.INCAB PNEUMATIC LINE	AUX. INCAB PNEUMATIC LINE CLEANOUT
S	CLIMATE UNIT	ELECTRONIC CONTROLLED CLIMATE CONTROL AIR CONDITION

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TECHNICAL SPECIFICATION *(cont.)*



CAB INTERIOR (A THRU G)		DESCRIPTION
S	CUPHOLDER	CUPHOLDER
S	DOME LAMP, INTERIOR	(4) DOME LAMPS - DOOR AND SWITCH ACTIVATED
S	DASH INDICATOR - LAMP BODY OUT OF POS	DASH MTD, INDICATOR BODY/HOIST UP "BODYBUILDER LAMP"
	FIRE EXTINGUISHER	5LB (ABC RATED) MOUNTED BETWEEN DRIVER SEAT BASE AND DOOR VALVE AIMED REARWARD
S	FLOOR COVERING	POLYURETHANE FLOOR MAT WITHOUT REMOVABLE INSERTS

CAB INTERIOR (H THRU R)		DESCRIPTION
S	INSTRUMENT CLUSTER LANGUAGE	DEFAULT: ENGLISH, SPANISH, FRENCH
S	KEY TYPES FOR DOORS	ALL CHASSIS KEYED AT RANDOM
S	KEYLESS ENTRY	W/O ELECTRONIC KEYLESS ENTRY
S	OVERHEAD CONSOLE	(2) STORAGE COMPARTMENTS AND NET RETAINERS W/CENTER MOUNTING FOR CB PROVISIONS
S	RADIO/RADIO ACCOMMODATION	PREMIUM STEREO, AM/FM, MP3, WEATHER BAND, BLUETOOTH
S	RADIO - ANTENNA	RADIO ANTENNA, CAB MOUNTED BEHIND LH DOOR
S	RADIO - BINDING POSTS FOR CB	POWER LEADS (5-WAY BINDING POSTS FOR CB RADIO) IN HEADER CONSOLE
S	AUDIO SPEAKER LOCATION	SPEAKER LOCATION, IN DOORS, MIDDLE HIGH SIDE PANEL
S	RADIO - CB RADIO MOUNTING	CB RADIO MOUNTING REINFORCEMENT IN HEADER CONSOLE
S	REAR WALL STORAGE COMPARTMENT	STORAGE POUCH REAR
	REFLECTOR KIT	EMERGENCY REFLECTOR KIT MOUNTED PARALLEL & CENTERED AGAINST BOC

CAB INTERIOR (S THRU Z)		DESCRIPTION
S	INTERIOR TRIM LEVELS	COMFORT TRIM PACKAGE, STEEL GRAY (Package 11A)
S	SEAT - DRIVER'S	MACK-AIR, HIGH BACK, 1 CHAMBER AIR LUMBAR
S	SEAT COVERING - DRIVER'S	DRIVER'S SEAT - BLENDED BLACK & GREY VINYL
	SEAT - PASSENGER'S	MACK-AIR, HIGH BACK, 1 CHAMBER AIR LUMBAR
S	SEAT COVERING - PASSENGER'S	PASSENGER'S SEAT - BLENDED BLACK & GREY VINYL
	SEAT ARM REST(S)	INBOARD MOUNTED ARM REST, DRIVER'S SEAT ONLY
S	SEAT BELT(S)	LAP & SHOULDER (BOTH SEATS) CAB MOUNTED SHOULDER BELT ADJUSTMENT
S	SEAT BELT WARNING INDICATOR	SEAT BELT REMINDER IN INSTRUMENT, WITH AUDIO
S	STARTER SWITCH	KEY TYPE
	STEERING WHEEL	2 SPOKE URETHANE GRIP, GUNMETAL SPOKES, W/O SWITCHES
S	WINDSHIELD TYPE	TWO PIECE WINDSHIELD
S	CAB GLASS	TINTED WINDSHIELD & SIDE WINDOWS & REAR WINDOW (IF EQUIPPED)
S	WINDSHIELD WASHER	W/O WINDSHIELD WASHER OPTION
S	WINDSHIELD WIPERS	2 SPEED ELECTRIC MOTOR W/INTERMITTENT FEATURE

CAB EXTERIOR		DESCRIPTION
S	HOOD LATCH TYPE & FINISH	STRAP TYPE HOOD LATCH WITH BLACK FINISH
S	EXTERIOR TRIM FINISH AND PACKAGES	GRANITE BRIGHT AIR INTAKE
S	GRILLE	BLACK FINISH BARS W/BRIGHT FINISH SURROUND GRILL MOUNTED
S	PASSENGER SIDE VISIBILITY OPTIONS	AUXILIARY WINDOW IN RH DOOR
	GRAB HANDLES	BF EXTERIOR CAB GRAB HANDLES, BLACK GRAB HANDLE RH INTERIOR WINDSHIELD POST
S	HORN - AIR	(1) MACK RECTANGULAR SINGLE TRUMPET
S	HORN - ELECTRICAL	DUAL TONE

TECHNICAL SPECIFICATION *(cont.)*



CAB EXTERIOR		DESCRIPTION
	MIRRORS - EXTERIOR	BULLDOG STYLIZED MIRRORS - LH & RH HEATED & MOTORIZED AND ILLUMINATED W/INTEGRAL CONVEX MIRROR
	MIRROR - CONVEX HOOD & FENDER	8" ROUND BF FENDER MTD W/SS BRACKETS & ADJ. ARMS R.H. & L.H. (Same as 15H2001)
	SUN VISOR - EXTERIOR	SUN VISOR, EXTERIOR, FIBERGLASS (PAINTED)

AERODYNAMIC DEVICES		DESCRIPTION
S	FRONT CHASSIS AERODYNAMIC PACKAGE	WITHOUT FRONT AERODYNAMIC FAIRINGS

WHEELS & TIRES		DESCRIPTION
	TIRES BRAND/TYPE - FRONT	11R22.5 H BRIDGESTONE M863 (13220 lbs) (Total for QTY = 2)
	WHEELS - FRONT	22.5x8.25 ACCURIDE ACCU-LITE 51408x WHITE POWDER COAT STEEL, 6.60" OFFSET, 2 HAND HOLE (Total for QTY = 2)
	TIRES BRAND/TYPE - REAR	11R22.5 H BRIDGESTONE M799 (24020 lbs) (DRIVE ONLY) (Total for QTY = 8)
	WHEELS - REAR	22.5x8.25 ACCURIDE ACCU-LITE 51408x WHITE POWDER COAT STEEL, 6.60" OFFSET, 2 HAND HOLE (Total for QTY = 8)
S	VALVE STEMS & CAPS	STANDARD VALVE STEMS AND CAPS
S	FRONT HUB/WHEEL TRIM	WITHOUT FRONT HUB/WHEEL TRIM
S	REAR HUB/WHEEL TRIM	WITHOUT REAR HUB/WHEEL TRIM (Total for QTY = 2)

COMMUNICATION SYSTEMS		DESCRIPTION
	CO-PILOT - DISPLAY FEATURES ACCESS LEVEL	CO-PILOT DISPLAY, FULL DRIVER ACCESS
S	TELEMATIC GATEWAY	TELEMATICS GATEWAY, 4G/LTE AND WLAN SYSTEM WITH DIAGNOSTIC SERVICES

ENGINE ELECTRONICS		DESCRIPTION
S	SHUTDOWN-ENG.OIL PRESSURE	OIL PRESSURE, ENGINE SHUTDOWN
S	SHUTDOWN-ENG.COOLANT TEMP	COOLANT TEMP, ENGINE SHUTDOWN
S	ENG /OIL TEMP SHUTDOWN	ENGINE PROTECTION (SHUTDOWN)
	LOW IDLE ENGINE RPM	IDLE CONTROL, 650 RPM
S	IDLE RPM UP W/LOW VOLTAGE	INCREASE 10 MINUTE MAXIMUM TIME
	IDLE SHUTDOWN	ENGINE IDLE SHUTDOWN, ENABLE
	ENGINE IDLE SHUTDOWN TIME	IDLE SHUTDOWN TIME 5 MIN.
S	IDLE S/D WARNING TIME	30 SEC IDLE S/D WARNING TIME
S	IDLE S/D IF WARM-UP TEMP	38C DEG (100F), WARM UP TEMP DELAY
S	IDLE S/D WARM-UP TIMER	5 MIN. WARM UP TIME DELAY
S	IDLE S/D IF PTO ACTIVE	ENGINE IDLE SHUTDOWN TIME OVERRIDDEN IF PTO ACTIVE
S	IDLE S/D OVERRIDE %ENGINE LOAD	IDLE SHUTDOWN OVERRIDE UPTO 20% ENGINE LOAD THRESHOLD
S	AMBIENT TEMP MIN TRESHOLD	AMBIENT TEMP MIN TRESHOLD, 16 DEG C, (60 DEG F)
S	AMBIENT TEMP MAX TRESHOLD	AMBIENT TEMP MAX TRESHOLD, 27 DEG C, (80 DEG F)
S	EHT, MAX ROAD SPEED	ELECTRONIC HAND THROTTLE, MAX ROAD SPEED, 16 KMH (10 MPH)
	EHT, MAX ENG SPEED	ELECTRONIC HAND THROTTLE, MAX ENGINE SPEED, 2100 RPM
S	EHT, MIN ENG SPEED	ELECTRONIC HAND THROTTLE, MIN ENGINE SPEED, 700 RPM
S	EHT, SPEED RAMP RATE	ELECTRONIC HAND THROTTLE, SPEED RAMP RATE, 100 RPM/SEC
	EHT HOLD TO NEAREST RPM	ELECTRONIC HAND THROTTLE HOLD TO NEAREST 50RPM
	EHT ACCEL BUMP-UP RPM	ELECTRONIC HAND THROTTLE ACCEL "BUMP-UP" 50RPM
	EHT DECEL BUMP-DOWN RPM	ELECTRONIC HAND THROTTLE DECEL "BUMP-DOWN" 50RPM

TECHNICAL SPECIFICATION *(cont.)*



TRANSMISSION ELECTRONICS		DESCRIPTION
	TRANSMISSION DRIVE MODE PACKAGES, mDRIVE	mDRIVE- ENHANCED CONSTRUCTION - ECON, PERF, & PERF+ DRIVE MODES, AUTO RETURN (premium)
S	mDRIVE MACKCELLERATOR	MACKCELLERATOR ENABLE
	SHUTDOWN-TRANS. TEMP.	TRANS. PROTECTION, ENGINE SHUT DOWN (HIGH TEMP.)
S	TRANSMISSION ELECTRONICS PACKAGE	W/O ELEC TRANS PACKAGE OPTION (all non-Allison transmissions)
	TRANSM AUTO NEUTRAL ON P-BRAKE	mDRIVE TRANSMISSION PARK BRAKE AUTO NEUTRAL
S	TRANSMISSION ELECTRONIC SHIFTING PROPERTIES	W/O ALLISON FUELSENSE 2.0 PROGRAMMING

VEHICLE ELECTRONICS		DESCRIPTION
S	ROAD SPEED LIMIT (RSL)	105 KM/H ROAD SPEED LIMITER (65MPH)
	PEDAL SPEED LIMITER	105 KM/H PEDAL ROAD SPEED LIMITER (65MPH)
S	CRUISE CONTROL	CRUISE CONTROL
S	CRUISE CONTROL, MAX SPEED	MAX CRUISE, 105 KPH (65 MPH)
	CRUISE CONTROL MIN SPEED	MIN CRUISE, 24 KPH (15 MPH)
S	CRUISE RESUME WITH CLUTCH	CRUISE RESUME WITH CLUTCH
S	ENG BRAKE ENGAGE IN CRUISE	ENG BRK ENGAGE IN CRUISE, 3 MPH, ABOVE SET SPEED
	PDLO ENGAGED VLS	POWER DIVIDER LOCK OUT (PDLO) ROAD SPEED LIMIT 40KMH (25MPH)
	DIFF LOCK SPEED LIMIT	WITHOUT DIFFERENTIAL LOCK ROAD SPEED LIMIT
S	SPEED SENSOR TAMPERING DETECTION	DETECTION OF SPEED SENSOR TAMPERING, ENABLE
S	PWR.LIMIT LVL.-MPH SENSOR	ENG TORQUE LIMITED TO 50%, IF SPEED SENSOR TAMPER DETECTED
S	DRIVER PERFORMANCE & BONUS PARAMETERS	WITHOUT DRIVER PERFORMANCE PARAMETERS
S	DATAMAX ENGINE OVERSPEED-COMPANY	ENGINE OVERSPEED, ALL CONDITIONS, TIME LOG IF ABOVE 2200 RPM
S	DATAMAX ENGINE OVERSPEED-FUEL	ENGINE OVERSPEED, FUELED, TIME LOG IF ABOVE 2100 RPM
S	DATAMAX VEHICLE OVERSPEED-ALL	VEHICLE OVERSPEED,ALL COND, TIME LOG IF ABOVE 75MPH (121KMH)
S	DATAMAX VEHICLE OVERSPEED-FUEL	VEHICLE OVERSPEED, FUELED, TIME LOG IF ABOVE 70MPH (113KMH)
S	DATAMAX IDLE LOG DELAY	ENGINE IDLE DELAY TO START LOG, 2 MIN
	PERIODIC TRIP LOG HOUR OF DAY	PERIODIC TRIP LOG HOUR OF DAY, 24:00 (MID NIGHT)

PTO ELECTRONICS		DESCRIPTION
S	TRANS PTO1 SPLITTER RANGE	PTO1 FOR SPLITTER RANGE - KEYPAD REMOTE CONTROLLED
S	TRANS PTO2 SPLITTER RANGE	PTO2 FOR SPLITTER RANGE - KEYPAD REMOTE CONTROLLED
S	PTO1 SINGLE SPEED CONTROL RPM.	PTO 1ST, SINGLE SPEED SETTING, 1000 RPM
S	PTO 1ST, MAX ROAD SPEED	1ST PTO, MAX ROAD SPEED, 10 MPH (16 KPH)
S	PTO 1ST, SPEED RAMP RATE	PTO 1ST, SPEED RAMP RATE 100 RPM/SEC
S	PTO 1ST, MAX ENGINE SPEED	PTO 1ST, MAX ENGINE SPEED, 2100 RPM
S	PTO 1ST, ROAD SPEED LIMIT	PTO 1ST, ROAD SPEED LIMIT, 97 KMH (60 MPH)
S	PTO 1ST, MINIMUM ENGINE SPEED	PTO 1ST, MINIMUM ENGINE SPEED, 600 RPM
	PTO1 HOLD TO NEAREST RPM	PTO1 HOLD TO NEAREST 50RPM
	PTO1 ACCEL BUMP-UP RPM	PTO1 ACCEL "BUMP-UP" 50RPM
	PTO1 DECEL BUMP-DOWN RPM	PTO1 DECEL "BUMP-DOWN" 50RPM
S	PTO 2ND, SINGLE SPEED SETTING	PTO 2ND, SINGLE SPEED SETTING, 1000 RPM
S	PTO 2ND, MAX ROAD SPEED	2ND PTO, MAX ROAD SPEED, 10 MPH (16 KPH)
S	PTO 2ND, SPEED RAMP RATE	PTO 2ND, SPEED RAMP RATE 100 RPM/SEC
S	PTO 2ND, MAX ENGINE SPEED	PTO 2ND, MAX ENGINE SPEED, 2100 RPM
S	PTO 2ND, ROAD SPEED LIMIT	PTO 2ND, ROAD SPEED LIMIT, 97 KMH (60 MPH)

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TECHNICAL SPECIFICATION *(cont.)*



PTO ELECTRONICS		DESCRIPTION
S	PTO 2ND, MINIMUM ENGINE SPEED	PTO 2ND, MINIMUM ENGINE SPEED, 600 RPM
	PTO2 HOLD TO NEAREST RPM	PTO2 HOLD TO NEAREST 50RPM
	PTO2 ACCEL BUMP-UP RPM	PTO2 ACCEL "BUMP-UP" 50RPM
	PTO2 DECEL BUMP-DOWN RPM	PTO2 DECEL "BUMP-DOWN" 50RPM

PAINT		DESCRIPTION
S	PAINT DESIGN	SINGLE COLOR
S	PAINT TYPE	SOLID PAINT
S	PAINT COLOR - FIRST COLOR	MACK WHITE; P9188
S	PAINT COLOR - SECOND COLOR	NO SECOND TRUCK COLOR PROVIDED; NO COLOR
S	PAINT COLOR - THIRD COLOR	NO THIRD TRUCK COLOR PROVIDED; NO COLOR
S	PAINT - CAB PAINT SYSTEM	PAINT - CAB, URETHANE CLEAR COAT
S	CAB COLOR	SAME AS FIRST COLOR - CAB
S	HOOD COLOR	SAME AS FIRST COLOR - HOOD
	SUN VISOR COLOR	SAME AS FIRST COLOR - SUN VISOR
S	ROOF FAIRING COLOR	WITHOUT ROOF FAIRING
S	CHASSIS RUNNING GEAR	MACK BLACK (60 GLOSS); 250-12370
S	BUMPER	PAINT BUMPER SAME COLOR AS CHASSIS RUNNING GEAR
S	FUEL TANK - ***NO INVENTED VARIANTS ALLOWED in the FUEL TANK PAINT FAMILY***	W/O OPTIONAL FUEL TANK PAINT
S	HUBS & DRUMS-FRONT	SAME AS CHASSIS RUNNING GEAR
S	HUBS & DRUMS-REAR	SAME AS CHASSIS RUNNING GEAR

CALCULATED CODES - KAX		DESCRIPTION
S	PROPCALC SELECTION	YES, THE ORDER MUST BE CALCULATED
	AUTO ROUTING & CLIPPING, CENTER	AUTOMATIC ROUTING & CLIPPING PLACEMENT, CENTER SECTION

BASE WARRANTY & PURCHASED COVERAGES		DESCRIPTION
S	VEHICLE WARRANTY TYPE	HEAVY DUTY WARRANTY CLASSIFICATION
S	BASIC CHASSIS COVERAGE	HEAVY DUTY STANDARD BASE COVERAGE 12 MONTHS/100,000 MILES (161,000 KM)
	EMISSION - SURCHARGE	EPA (only) for Mack MP7 / MP8 Diesel
S	ENGINE WARRANTY	MACK MP7/MP8 BASE ENGINE COVERAGE 24 MONTHS / 250,000 MILES (402,000KM)
S	EMISSION COMPONENT COVERAGE	US and CANADA EQUIPPED VEHICLE EMISSION COMPONENTS COVERAGE 60 MONTHS/100,000 MILES (161,000 KM)
S	TRANSMISSION WARRANTY	36 MONTHS: STANDARD mDRIVE HD TRANSMISSIONS HEAVY DUTY WARRANTY
S	CARRIER & AXLE HOUSING WARRANTY	STANDARD MACK HEAVY DUTY COVERAGE 60 MONTHS / 500,000 (804,672 KM)
S	AIR CONDITIONING WARRANTY	AIR CONDITIONING STANDARD COVERAGE (Sealed System Only) 12 MONTHS UNLIMITED MILEAGE
S	CHASSIS TOWING WARRANTY	STANDARD NORMAL / HEAVY DUTY CHASSIS TOWING 90 DAYS OR 5,000 MILES
S	ENGINE TOWING WARRANTY	STANDARD MACK ENGINE TOWING COVERAGE 24 MONTHS/250,000 MILES (402,000 KM)

CONNECTED SERVICES		DESCRIPTION
S	MACK INTEGRATED UPTIME	MACK INTEGRATED UPTIME - 24 MONTHS
	MACK CONNECT LOCATION & REPORTING	MACK CONNECT LOCATION & REPORTING - 24 MONTHS
S	FLEET INTEGRATION	WITHOUT FLEET INTEGRATION

TECHNICAL SPECIFICATION *(cont.)*

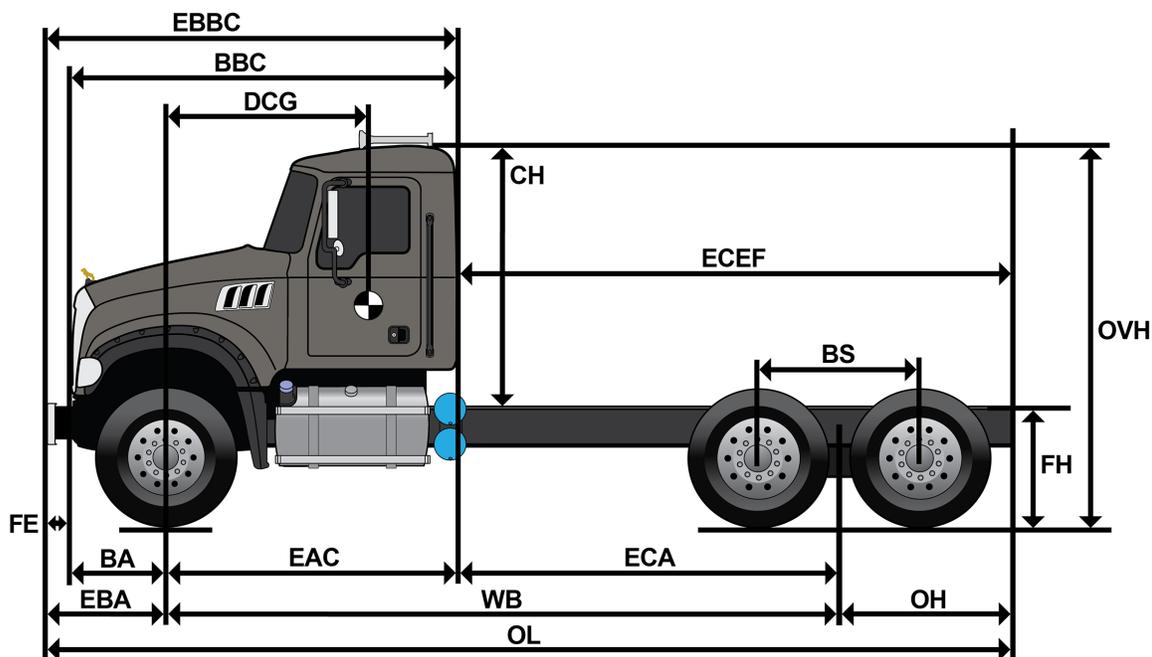


CONNECTED SERVICES		DESCRIPTION
S	PARTNERED SERVICES	NO PARTNERED SERVICES PROVIDED



VEHICLE SPECIFICATION/CALCULATED PERFORMANCE SUMMARY

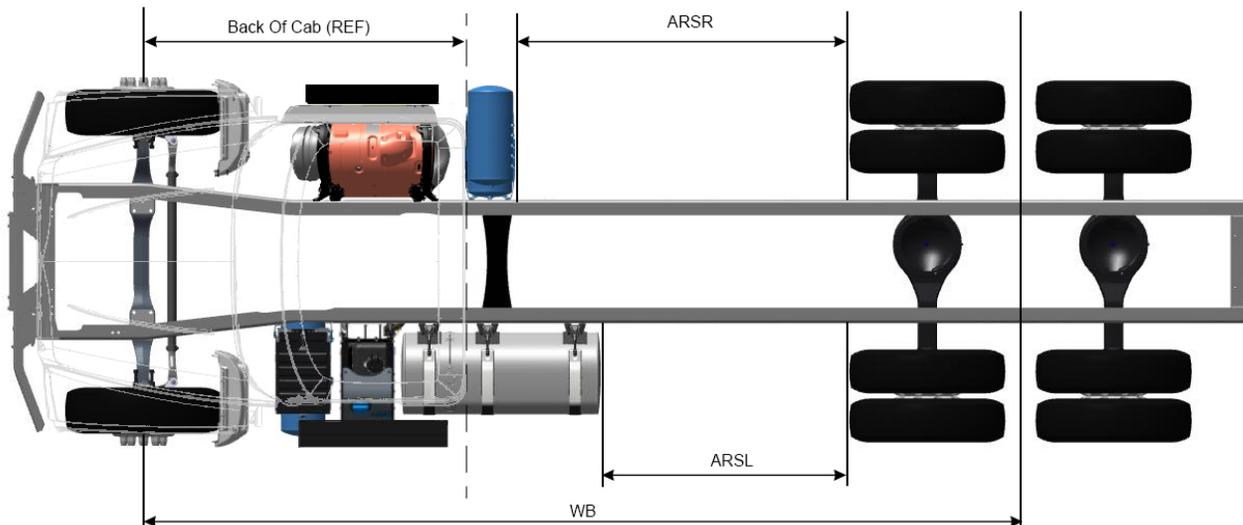
Description	Dwg Ref	Length	UOM
Front Frame Extension	FE	6.1	INCHES
Bumper to Front Axle	BA	29.0	INCHES
Eff. Bumper to Front Axle	N/A	35.1	INCHES
Wheelbase	WB	212.9	INCHES
Rear Overhang	OH	56.9	INCHES
Overall Length	OL	305.0	INCHES
Bumper to Back of Cab	BBC	116.5	INCHES
Eff. Bumper to Back of Cab	EBBC	122.6	INCHES
Eff. Cab to Rear Axle	ECA	125.4	INCHES
Eff. Front Axle to Back of Cab	EAC	87.5	INCHES
Eff. Cab to End of Frame	ECEF	182.4	INCHES
Unladen Frame Height	FH	43.2	INCHES
Cab Height	CH	70.9	INCHES
Overall Height	OVH	117.2	INCHES
Driver CG	DCG	70.9	INCHES
55" AXLE SPACING (BOGIE WHEELBASE)	BS	55.0	INCHES





VEHICLE SPECIFICATION/CALCULATED PERFORMANCE SUMMARY

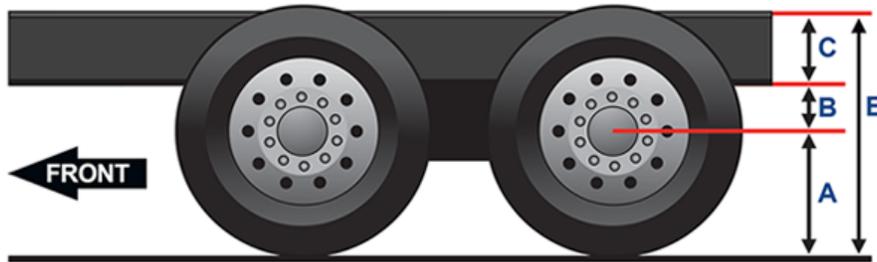
Description	Sales Code	Dwg Ref	Left Value(in)	Right Value(in)
Wheelbase	N/A	WB	212.9	212.9
Available Rail Space Right	N/A	ARSR	N/A	79.0
Available Rail Space Left	N/A	ARSL	42.2	N/A
Eff. Front Axle to Back of Cab	N/A	REF	87.5	87.5
Front Axle To Fender	CDX23X	N/A	35.4	35.4
Cleartech One Unit	DPF04F	N/A	0.0	50.0
Battery Box	393AA2	N/A	15.0	0.0
88 GALLON (335 L) 22" ALUMINUM D-SHAPE / W/O RH FUEL TANK	288AD8 / 290AA1	N/A	54.0	0.0
Ad-Blue Tank	DF10M1	N/A	17.8	0.0
Drive Tire Radius	901AJ6	N/A	21.0	21.0



Top View image is intended for illustration purposes only and is not presented to scale. Wheelbase, Axle Spacing and After frame are not shown as specified, but are a representation. Customer Adaptation (CA) options and relocated components are not represented in these images. Most CA options impact the variation of the image, thus an image may not populate. Calculations are approximate to a tolerance of ± 4 inches due to component mounting variation. Certain chassis component options are NOT represented in the Top View image, such as, but not exclusive to, Front Frame Extensions, Fuel Water Separators, Air Dryers, PTOs, Fifth Wheels, Chassis Fairings, Toolboxes, Trailer Connections. For further information on these items and their respective locations on your specification, please refer to the data sheets associated with those items in the configurator.

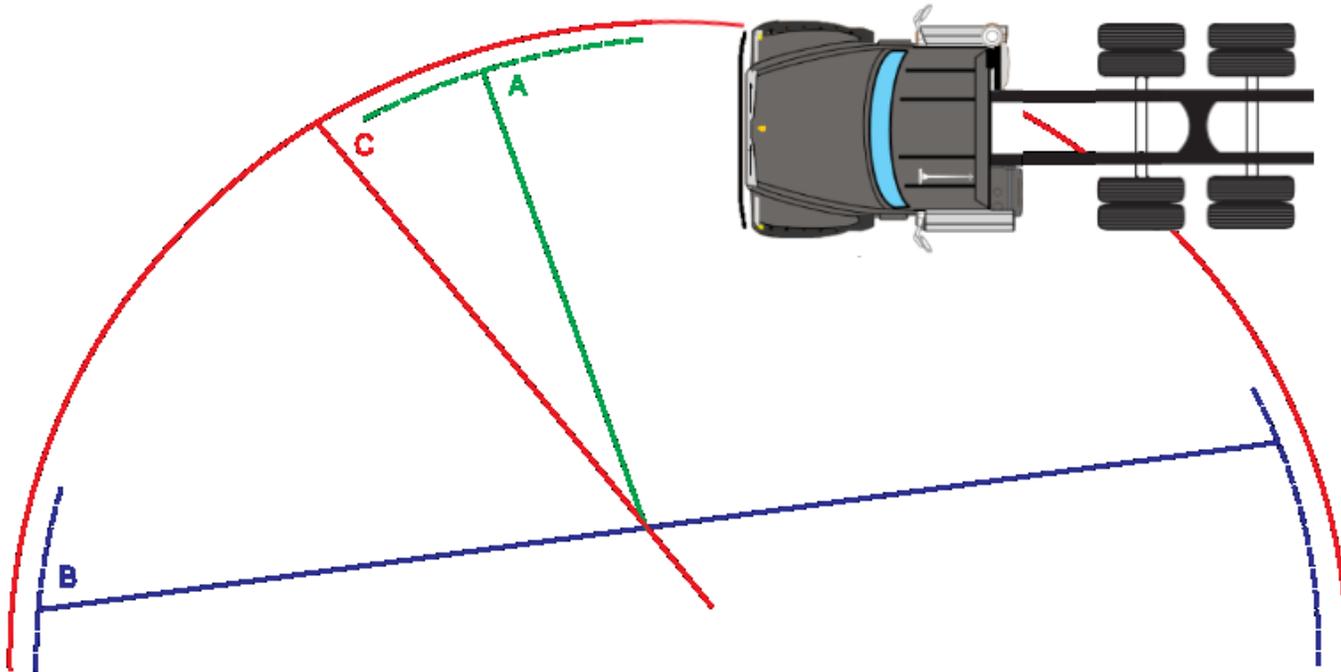


VEHICLE SPECIFICATION/CALCULATED PERFORMANCE SUMMARY					
			Rear		
Description	Sales Code	Dwg Ref	Unladen	Laden	UOM
Tire Radius	901AJ6	A	21.0	19.5	INCHES
Suspension Height	18603Y	B	10.4	9.3	INCHES
Frame Depth	YBXGAX	C	11.8	11.8	INCHES
Total Height	N/A	E	43.2	40.6	INCHES




VEHICLE SPECIFICATION/CALCULATED PERFORMANCE SUMMARY

Description	Dwg Ref	Length	UOM
SAE Turning Radius	A*	32.4	FEET
Adjusted Turning Radius	A	36.7	FEET
Curb-to-Curb Diameter	B	74.3	FEET
Wall-to-Wall Diameter	C	80.8	FEET



Tests have shown that the true location of the turning center is further to the rear than midway between drive axle sets (where applicable)

The actual location of the turning center depends on:

- Whether the drive tire equipment is single or dual.
- The overall load distribution for the vehicle (front/rear, between drive axles) in a loaded condition
- Manufacturing tolerances within the steering components


VEHICLE SPECIFICATION/CALCULATED PERFORMANCE SUMMARY

Sub-Category	Sales Code	Sales Code Description	Value	UOM
Front Axle	240AA2	18000# (8200 KG) MACK FXL18 STRAIGHT SPINDLE/UNITIZED BEARINGS	18000	LB
Front Suspension	244AB1	MACK TAPERLEAF 18000# (8200 KG) GROUND LOAD RATING, EQUAL BIAS	18000	LB
Front Tires	90002K	11R22.5 H BRIDGESTONE M863 (13220 lbs)	13220	LB
Front Wheels	5312F1	22.5x8.25 ACCURIDE ACCU-LITE 51408x WHITE POWDER COAT STEEL, 6.60" OFFSET, 2 HAND HOLE	14801	LB
Front GAWR			13220	LB
Rear Axle	268055	40000# (18100kg) MACK S400R FABRICATED STEEL HOUSING	40000	LB
Rear Suspension	18603Y	SS40 MACK CAMELBACK MULTILEAF 40,000 lb, STANDARD DUTY	40000	LB
Rear Tires	901AJ6	11R22.5 H BRIDGESTONE M799 (24020 lbs) (DRIVE ONLY)	48041	LB
Rear Wheels	3462L6	22.5x8.25 ACCURIDE ACCU-LITE 51408x WHITE POWDER COAT STEEL, 6.60" OFFSET, 2 HAND HOLE	59200	LB
Rear GAWR			40000	LB
Truck GVWR			53220	LB
Gross Combination Weight Rating			80000	LB
Tax Value GVWR (USA FET Only)			58000	LB

MACK®



Mack Trucks
www.macktrucks.com



September 10, 2025

Jeffrey T. Lohr, PE, Assoc. DBIA
Chief of Engineering
Onslow Water and Sewer Authority
228 Georgetown Road
Jacksonville, NC 28540

Re: Southeast Regional WWTP (SER WWTP) Upgrade and Expansion Project
Recommendation of Award for Phase 1 Preconstruction Services

Dear Mr. Lohr,

HDR Engineering, Inc. of the Carolinas (HDR) has evaluated the Phase 1 Preconstruction Services scope and fee received on September 10, 2025 from TA Loving Company for the above referenced project. Based upon our evaluation of the scope, fee, qualifications, references, experience, and reputation of TA Loving Company and their subconsultants, we believe their fee is reasonable and they are capable of completing the work required. We recommend award for Phase 1.

If you should have any questions or require any additional information, please do not hesitate to contact us.

Sincerely,
HDR Engineering, Inc. of the Carolinas

A handwritten signature in blue ink that reads "Mary P. Knosby".

Mary P. Knosby, PE
Senior Vice President
Water Business Group

**ONSLow WATER & SEWER AUTHORITY
TOPSAIL ISLAND BOOSTER PUMPING STATION
PROJECT NUMBER CIP-032**

AMENDED PROJECT ORDINANCE

BE IT ORDAINED by the Board of Directors of Onslow Water & Sewer Authority (ONWASA) that, pursuant to Section 13.2 of Chapter 159 of the General Statutes of North Carolina, the following Topsail Island Booster Pumping Station Project is hereby adopted:

Section I.

The Topsail Island Booster Pumping Station Project shall consist of the design, permitting and construction services necessary to create a new potable water pumping station adjacent to the North Topsail Beach Town Hall that will be connected to the primary transmission main serving Topsail Island. The purpose of this project is to help maintain adequate pressure within the water distribution system on the island during periods of high demand. We are amending this project to include a change order for relocation of existing water main and an additional vault with flow meter.

Section II.

The officers of Onslow Water & Sewer Authority are hereby directed to proceed with the Topsail Island Booster Pumping Station Project, Project Number CIP-032.

Section III.

The following revenue is anticipated to be available to complete the project:

Fund Balance	\$ 2,868,000
Total	<u>\$ 2,868,000</u>

Section IV.

The following amounts are appropriated for the project:

Professional Services	\$ 345,000
Construction	\$ 2,523,000
Total	<u>\$ 2,868,000</u>

Section V.

The Finance Officer is hereby directed to maintain within the Water & Sewer Fund sufficient specific detailed accounting records to provide the accounting required by federal and state regulations and in accordance with generally accepted accounting procedures.

Section VI.

The Finance Officer is directed to report monthly on the financial status of the project and on the total revenues received.

Section VII.

The Budget Officer is directed to include an analysis of past and future cost and revenues on this project as a part of every budget submission made to this Board.

Section VIII.

Copies of this Topsail Island Booster Pumping Station Amended Project Ordinance shall be made available to the Budget Officer for direction in carrying out these projects.

Adopted this 18th day of September 2025.

ONSLOW WATER & SEWER
AUTHORITY BOARD OF
DIRECTORS

Michael Royce Bennett, Chairman

Heather Norris, Clerk to the Board

Amended Project Ordinance
 Topsail Island Booster Pumping Station Project
 Project Number CIP-032
 Budget Amendment
 September 18, 2025

Budget Amendment – Fund 61 and Fund 40

Department Number	General Ledger Name	General Ledger Number	Amount
	Revenue – Fund Balance Appropriation	3919940	\$2,868,000
9910	Expenditure – Transfer to Capital Projects	8000040	\$2,868,000
	Revenue – Transfer from Operating	3709991	\$2,868,000
8788	Expenditure – Professional Services	8880400	\$ 345,000
8788	Expenditure – Construction	8885800	\$2,523,000



ARDURRA

July 1, 2025

Mr. Jeffrey Lohr, PE
Onslow Water and Sewer Authority
228 Georgetown Road
Jacksonville, NC 28540

**SUBJECT: Change Order Recommendation
North Topsail Beach Booster Pump Station
WKD Project Number 20200435.00.WL**

Dear Mr. Lohr:

We have reviewed the change order request from Carolina Utilities Company, LLC, for the North Topsail Beach Booster Pump Station Project and the contract schedule. This letter provides our recommendation for processing the change order and the delay of contract completion.

The change order is for the additional scope items including relocation of existing force main on Loggerhead Drive, an additional vault installation with flow meter at Marina Way, a flow meter vault at the booster station, and a geotechnical report for active shoring at water main connection as required by the North Carolina Department of Transportation. The allowance for force main relocation is reduced. The resulting amount of the change order item changes is an increase in cost of \$110,272.51.

The contract period of 210 days ended on September 25, 2024. The construction period extending past the contract completion date resulted in additional professional services at a cost of \$15,680 to ONWASA .

This change order includes the added cost for the project additional scope items and reduction of cost associated with extended professional services. The resulting change order amount is an increase of \$94,592.51 with no change in contract period. The resulting contract amount is \$2,492,105.51.

Thank you for the opportunity to provide you with our services for this project.

Sincerely,

T. Carter Hubbard, PE
Client Service Manager

Enclosures: As noted above

cc: Eric Ward, Carolina Utilities Company, LLC

	ORDER NO.	EXHIBIT C
PROJECT NAME: North Topsail Water Main and Booster Station	DATE	6/26/25
OWNER: Onslow Water and Sewer Authority	STATE	NC
CONTRACTOR: Carolina Utilities Company, LLC	COUNTY	Onslow

You are hereby requested to comply with the following changes from the contract plans and specifications:

Description of Changes (Supplemental Plans and Specifications Attached)	DECREASE in Contract Price	INCREASE in Contract Price
Geotechnical Report for active shoring at water main connection required by the North Carolina Department of Transportation. Relocation of existing force main on Loggerhead Drive An additional vault installation with flow meter at Marina Way and a flow meter vault at the booster station. Allowance for relocating existing private utilities	\$5,000.00	\$110,272.51
Professional engineering services beyond the Contract period.	\$15,680.00	
TOTALS	\$20,680.00	\$110,272.51
NET CHANGE IN CONTRACT PRICE		\$94,592.51

Justification:

Requested changes to scope and actual professional services costs through period of extended construction time.

The amount of the Contract will be **increased** by the sum of:

Ninety-Four Thousand Five Hundred Ninety-Two and 51/100 Dollars (\$ 94,592.51)

This Contract total including this and previous change orders will be:

Two Million Four Hundred Ninety-Two Thousand One Hundred Five and 51/100 Dollars (\$2,492,105.51)

The Contract period for completion will be ~~(increased)~~ ~~(decreased)~~ **unchanged** 0 calendar days

Contract period for completion including this and previous change orders 210 calendar days

This document will become a supplement to the Contract and all provisions will apply hereto.

change order and that a copy of the approve change order will be mailed upon receipt by me to my surety.



Contractor

7/1/25

EXHIBIT C

Date



Engineer

6/26/25

Date

Owner

Date

This instrument has been pre-audited in the manner required by the Local Government and Fiscal Control Act.

Finance Officer

Date

CHANGE ORDER SUMMARY
North Topsail Beach Booster Station
Onslow Water and Sewer Authority

ITEM NO.	ITEM DESCRIPTION	UNIT MEASURE	QTY	UNIT PRICE	ORIGINAL CONTRACT PRICE	CO#1 QTY CHANGE	CO#1 ADJUSTMENT	REVISED CONTRACT QTY	REVISED CONTRACT AMOUNT
GENERAL WORK									
1	Mobilization, Bonds & Insurance (3% MAX)	LS	1	\$ 70,000.00	\$ 70,000.00		\$ -	1	\$ 70,000.00
2	Allowance for Relocating Existing Private Utilities	LS	1	\$ 5,000.00	\$ 5,000.00	-1	\$ (5,000.00)	0	\$ -
3	Allowance for Materials Testing	LS	1	\$ 12,000.00	\$ 12,000.00		\$ -	1	\$ 12,000.00
BOOSTER PUMP STATION									
4	Elevated 14'x28' Booster Pump Station Building and Stairs (Complete, Incl. Floor Hatch and 3/4 Ton Monorail Hoist)	LS	1	\$ 622,000.00	\$ 622,000.00		\$ -	1	\$ 622,000.00
5	Packaged Duplex Booster Pumping System (Incl. Integrated VFDs, Flow Meter, 4" Surge Valve, etc.)	LS	1	\$ 360,000.00	\$ 360,000.00		\$ -	1	\$ 360,000.00
6	Electrical - Booster Pump Station Site (Incl. Electrical Service, Panels, Wiring and Conduits, Connection to Pump Control System Portable Generator Connection, etc.)	LS	1	\$ 285,000.00	\$ 285,000.00		\$ -	1	\$ 285,000.00
7	4-Inch Surge Relief Discharge Piping (Approx. 20 LF) and 2'x2' Concrete Splash Pad (Incl. Connection to Packaged Pumping System)	LS	1	\$ 7,000.00	\$ 7,000.00		\$ -	1	\$ 7,000.00
8	10-Inch DIP Suction and Discharge Riser Pipe (Incl. Flanged Connection to Packaged Pumping System and MJ Connection to Suction/Discharge Water Main 90 Degree Bend)	LF	34	\$ 720.00	\$ 24,480.00		\$ -	34	\$ 24,480.00
SUCTION/DISCHARGE WATER MAIN									
9	10-Inch PVC C900 Water Main by Open-Cut	LF	260	\$ 80.00	\$ 20,800.00		\$ -	260	\$ 20,800.00
10	10-Inch RJDIP Water Main by Open-Cut (Incl. DIP Bends, Fittings, Restraint)	LF	470	\$ 205.00	\$ 96,350.00		\$ -	470	\$ 96,350.00
11	10-Inch DI Gate Valve	EA	3	\$ 4,200.00	\$ 12,600.00		\$ -	3	\$ 12,600.00
12	10-Inch DI Butterfly Valve with Pedestal Mounted Motorized Actuator	EA	1	\$ 32,000.00	\$ 32,000.00		\$ -	1	\$ 32,000.00
13	10-Inch DI Swing Check Valve Assembly	EA	1	\$ 14,000.00	\$ 14,000.00		\$ -	1	\$ 14,000.00

ITEM NO.	ITEM DESCRIPTION	UNIT MEASURE	QTY	UNIT PRICE	ORIGINAL CONTRACT PRICE	CO#1 QTY CHANGE	CO#1 ADJUSTMENT	REVISED CONTRACT QTY	REVISED CONTRACT AMOUNT
14	10-Inch Restrained Flange Coupling Adapter	EA	2	\$ 1,900.00	\$ 3,800.00		\$ -	2	\$ 3,800.00
15	4' x 4' Concrete Valve Vault with 3' x 3' Flood Proof Aluminium Access Hatch	EA	1	\$ 8,000.00	\$ 8,000.00	1	\$ 8,000.00	2	\$ 16,000.00
16	4' x 6' Concrete Valve Vault with 3'x3' Flood Proof Aluminium Access Hatch	EA	1	\$ 15,000.00	\$ 15,000.00		\$ -	1	\$ 15,000.00
17	1/2 HP Sump Pump (Incl. 1-1/2" Sch. 40 PVC Discharge Piping, Ball Valve, Check Valve)	EA	2	\$ 1,600.00	\$ 3,200.00	2	\$ 3,200.00	4	\$ 6,400.00
18	Cut-In 10-Inch RJDI Gate Valve on Existing Water Main (NC 210) (Incl. Temporary Shoring in NCDOT Right-of-Way)	EA	1	\$ 4,200.00	\$ 4,200.00		\$ -	1	\$ 4,200.00
19	Cut-In Connection to 10-Inch Water Main with 10-inch RJDI Tee (NC 210) (Incl. Temporary Shoring in NCDOT Right-of-Way)	EA	2	\$ 52,000.00	\$ 104,000.00		\$ -	2	\$ 104,000.00
MARINA WAY VALVE VAULT									
20	Electrical - Marina Way (Incl. Electrical Service, Panels, Wiring and Conduits, Motorized Valve Actuators and Sump Pump Connection, etc.)	LS	1	\$ 190,000.00	\$ 190,000.00		\$ -	1	\$ 190,000.00
21	12-Inch RJDI Water Main by Open-Cut (Incl. DIP Bends, Fittings, Restraint)	LF	35	\$ 340.00	\$ 11,900.00		\$ -	35	\$ 11,900.00
22	12-Inch DI Gate Valve	EA	1	\$ 5,300.00	\$ 5,300.00		\$ -	1	\$ 5,300.00
23	12-Inch DI Gate Valve with Pedestal Mounted Motorized Actuator	EA	2	\$ 34,000.00	\$ 68,000.00		\$ -	2	\$ 68,000.00
24	12-Inch DI Swing Check Valve Assembly	EA	1	\$ 10,000.00	\$ 10,000.00		\$ -	1	\$ 10,000.00
25	12-Inch Restrained Flange Coupling Adapter	EA	3	\$ 2,400.00	\$ 7,200.00		\$ -	3	\$ 7,200.00
26	12-Inch Restrained Coupling Adapter (Plain-End to Plain-End Pipe)	EA	1	\$ 2,700.00	\$ 2,700.00		\$ -	1	\$ 2,700.00
27	8' x 8' Concrete Valve Vault with 3'x5' Flood Proof Aluminium Access Hatch	EA	1	\$ 245,000.00	\$ 245,000.00		\$ -	1	\$ 245,000.00
28	1/2 HP Sump Pump - Marina Way (Incl. 1-1/2" Sch. 40 PVC Discharge Piping, Ball Valve, Check Valve)	EA	1	\$ 1,600.00	\$ 1,600.00		\$ -	1	\$ 1,600.00
29	Cut-In Connection to 12-Inch Water Main with 12-Inch DI Tee - Marina Way	EA	2	\$ 6,000.00	\$ 12,000.00		\$ -	2	\$ 12,000.00
EXCAVATIONS/REPAIRS									
30	Concrete Driveway	SY	26	\$ 130.00	\$ 3,380.00		\$ -	26	\$ 3,380.00
31	Gravel Restoration (#57 Stone)	SY	195	\$ 28.00	\$ 5,460.00		\$ -	195	\$ 5,460.00

ITEM NO.	ITEM DESCRIPTION	UNIT MEASURE	QTY	UNIT PRICE	ORIGINAL CONTRACT PRICE	CO#1 QTY CHANGE	CO#1 ADJUSTMENT	REVISED CONTRACT QTY	REVISED CONTRACT AMOUNT	
32	Unsuitable Soil Removal & Replacement	CY	5	\$ 120.00	\$ 600.00		\$ -	5	\$ 600.00	
33	Asphalt Pavement Repair	SY	431	\$ 125.00	\$ 53,875.00		\$ -	431	\$ 53,875.00	
34	Asphalt Mill and Overlay	SY	710	\$ 65.00	\$ 46,150.00		\$ -	710	\$ 46,150.00	
TRAFFIC CONTROL										
35	Traffic Control (NCDOT Right-of-Way)	LS	1	\$ 12,000.00	\$ 12,000.00		\$ -	1	\$ 12,000.00	
EROSION CONTROL										
36	Compost Filter Sock	LF	266	\$ 12.00	\$ 3,192.00		\$ -	266	\$ 3,192.00	
37	Silt Fence	LF	275	\$ 10.00	\$ 2,750.00		\$ -	275	\$ 2,750.00	
38	Temporary Construction Entrance	EA	1	\$ 12,000.00	\$ 12,000.00		\$ -	1	\$ 12,000.00	
39	Site Stabilization - Seeding, Straw with Net	SY	622	\$ 8.00	\$ 4,976.00		\$ -	622	\$ 4,976.00	
CO-1-1	Geotechnical Report (Active Shoring Per NC DOT)	EA	0	\$ 4,175.00	\$ -	1	\$ 4,175.00	1	\$ 4,175.00	
CO-1-2	Relocation of forcemain on Loggerhead Drive	LS	0	\$ 12,400.00	\$ -	1	\$ 12,400.00	1	\$ 12,400.00	
CO-1-3	Installation of 7x13 Onwer Supplied Vault	LS		\$ 63,947.51		1	\$ 63,947.51	1	\$ 63,947.51	
CO-1-4	Core Owner Supplied Vault	LS		\$ 3,450.00		1	\$ 3,450.00	1	\$ 3,450.00	
CO-1-5	Flow meter for Marina Way	LS		\$ 17,120.00		1	\$ 17,120.00	1	\$ 17,120.00	
CO-1-6	Upgrade to SCADA for Marina Way Flow Meter	LS		\$ 1,255.00		1	\$ 1,255.00	1	\$ 1,255.00	
CO-1-7	Additoinal wiring for Marina Way Flow Meter	LS		\$ 1,725.00		1	\$ 1,725.00	1	\$ 1,725.00	
ORIGINAL CONTRACT					\$ 2,397,513.00	CO#1 CHANGE		\$ 110,272.51	TOTAL	\$ 2,507,785.51

**ONSTLOW WATER & SEWER AUTHORITY
WATER AND SEWER OPERATIONAL IMPROVEMENTS
PROJECT NUMBER CIP-035**

AMENDED PROJECT ORDINANCE

BE IT ORDAINED by the Board of Directors of Onslow Water & Sewer Authority (ONWASA) that, pursuant to Section 13.2 of Chapter 159 of the General Statutes of North Carolina, the following Water and Sewer Operational Improvements project is hereby adopted:

Section I.

The Water and Sewer Operational Improvements project shall consist of the design, permitting and construction necessary to complete smaller-scope capital improvement projects with an estimated cost greater than \$5,000 and which take more than a single fiscal year to complete. This includes local distribution and collection system upgrades/relocations/extensions and replacement of critical capital equipment (pumps, motors and control systems). Projects will be completed on a priority basis once a need is identified. This project is being amended to include funding for additional professional services on the Ocean Road sewer project and additional construction for the Burn Street sewer project.

Section II.

The officers of Onslow Water & Sewer Authority are hereby directed to proceed with the Water and Sewer Operational Improvements project.

Section III.

The following revenue is anticipated to be available to complete the project:

Fund Balance	\$ 6,685,000
Total	<u>\$ 6,685,000</u>

Section IV.

The following amounts are appropriated for the project:

Professional Services, Admin, Permits	\$ 930,000
Construction	\$ 5,755,000
Total	<u>\$ 6,685,000</u>

Section V.

The Finance Officer is hereby directed to maintain within the Water & Sewer Fund sufficient specific detailed accounting records to provide the accounting required by federal and state regulations and in accordance with generally accepted accounting procedures.

Section VI.

The Finance Officer is directed to report monthly on the financial status of the project and on the total revenues received.

Section VII.

The Budget Officer is directed to include an analysis of past and future cost and revenues on this project as a part of every budget submission made to this Board.

Section VIII.

Copies of this Water and Sewer Operational Improvements Amended Project Ordinance shall be made available to the Budget Officer for direction in carrying out these projects.

Adopted this 18th day of September 2025.

ONSLOW WATER & SEWER
AUTHORITY BOARD OF
DIRECTORS

Michael Royce Bennett, Chairman

Heather Norris, Clerk to the Board

Amended Project Ordinance
 Water and Sewer Operational Improvements
 Budget Amendment
 September 18, 2025

Budget Amendment Fund 61

Department Number	General Ledger Name	General Ledger Number	Amount
	Fund Balance Appropriated	3919940	\$6,685,000
9910	Transfer to Capital Projects	8000040	\$6,685,000

Budget Amendment Fund 40

Department Number	General Ledger Name	General Ledger Number	Amount
	Revenue – Transfer from Operating	3709982	\$6,685,000
8789	Expenditure – Professional Services	8790400	\$ 930,000
8789	Expenditure - Construction	8795800	\$5,755,000